



| Bank Number | VREF      | Pin Name/Function         | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F484 | DQS for X8 | DQS for X16 |
|-------------|-----------|---------------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| GXB_L1      |           | REFCLK1Ln                 |                      |                        |                         |                              | F5   |            |             |
| GXB_L1      |           | REFCLK1Lp                 |                      |                        |                         |                              | G4   |            |             |
| GXB_L1      |           | GXB_TX_L5n                |                      |                        |                         |                              | D3   |            |             |
| GXB_L1      |           | GXB_TX_L5p                |                      |                        |                         |                              | D4   |            |             |
| GXB_L1      |           | GXB_RX_L5p,GXB_REFCLK_L5p |                      |                        |                         |                              | C2   |            |             |
| GXB_L1      |           | GXB_RX_L5n,GXB_REFCLK_L5n |                      |                        |                         |                              | C1   |            |             |
| GXB_L1      |           | GXB_TX_L4n                |                      |                        |                         |                              | E1   |            |             |
| GXB_L1      |           | GXB_TX_L4p                |                      |                        |                         |                              | E2   |            |             |
| GXB_L1      |           | GXB_RX_L4p,GXB_REFCLK_L4p |                      |                        |                         |                              | G2   |            |             |
| GXB_L1      |           | GXB_RX_L4n,GXB_REFCLK_L4n |                      |                        |                         |                              | G1   |            |             |
| GXB_L1      |           | GXB_TX_L3n                |                      |                        |                         |                              | J1   |            |             |
| GXB_L1      |           | GXB_TX_L3p                |                      |                        |                         |                              | J2   |            |             |
| GXB_L1      |           | GXB_RX_L3p,GXB_REFCLK_L3p |                      |                        |                         |                              | L2   |            |             |
| GXB_L1      |           | GXB_RX_L3n,GXB_REFCLK_L3n |                      |                        |                         |                              | L1   |            |             |
| GXB_L0      |           | GXB_TX_L2n                |                      |                        |                         |                              | N1   |            |             |
| GXB_L0      |           | GXB_TX_L2p                |                      |                        |                         |                              | N2   |            |             |
| GXB_L0      |           | GXB_RX_L2p,GXB_REFCLK_L2p |                      |                        |                         |                              | R2   |            |             |
| GXB_L0      |           | GXB_RX_L2n,GXB_REFCLK_L2n |                      |                        |                         |                              | R1   |            |             |
| GXB_L0      |           | GXB_TX_L1n                |                      |                        |                         |                              | U1   |            |             |
| GXB_L0      |           | GXB_TX_L1p                |                      |                        |                         |                              | U2   |            |             |
| GXB_L0      |           | GXB_RX_L1p,GXB_REFCLK_L1p |                      |                        |                         |                              | W2   |            |             |
| GXB_L0      |           | GXB_RX_L1n,GXB_REFCLK_L1n |                      |                        |                         |                              | W1   |            |             |
| GXB_L0      |           | GXB_TX_L0n                |                      |                        |                         |                              | Y3   |            |             |
| GXB_L0      |           | GXB_TX_L0p                |                      |                        |                         |                              | Y4   |            |             |
| GXB_L0      |           | GXB_RX_L0p,GXB_REFCLK_L0p |                      |                        |                         |                              | AA2  |            |             |
| GXB_L0      |           | GXB_RX_L0n,GXB_REFCLK_L0n |                      |                        |                         |                              | AA1  |            |             |
| GXB_L0      |           | REFCLK0Lp                 |                      |                        |                         |                              | V4   |            |             |
| GXB_L0      |           | REFCLK0Ln                 |                      |                        |                         |                              | U4   |            |             |
| 3A          |           | TDO                       |                      | TDO                    |                         |                              | M5   |            |             |
| 3A          |           | nCSO                      |                      | DATA4                  |                         |                              | R4   |            |             |
| 3A          |           | TMS                       |                      | TMS                    |                         |                              | P5   |            |             |
| 3A          |           | AS_DATA3                  |                      | DATA3                  |                         |                              | T4   |            |             |
| 3A          |           | TCK                       |                      | TCK                    |                         |                              | V5   |            |             |
| 3A          |           | AS_DATA2                  |                      | DATA2                  |                         |                              | AA5  |            |             |
| 3A          |           | TDI                       |                      | TDI                    |                         |                              | W5   |            |             |
| 3A          |           | AS_DATA1                  |                      | DATA1                  |                         |                              | AB3  |            |             |
| 3A          |           | DCLK                      |                      | DCLK                   |                         |                              | V3   |            |             |
| 3A          |           | AS_DATA0,ASDO             |                      | DATA0                  |                         |                              | AB4  |            |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA6                  | DIFFIO_RX_B1n           | DIFFOUT_B1n                  | R6   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA5                  | DIFFIO_TX_B2n           | DIFFOUT_B2n                  | U7   |            |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA8                  | DIFFIO_RX_B1p           | DIFFOUT_B1p                  | R5   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA7                  | DIFFIO_TX_B2p           | DIFFOUT_B2p                  | U8   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA10                 | DIFFIO_RX_B3n           | DIFFOUT_B3n                  | P6   | DQS1B      |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA9                  | DIFFIO_TX_B4n           | DIFFOUT_B4n                  | W8   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA12                 | DIFFIO_RX_B3p           | DIFFOUT_B3p                  | N6   | DQS1B      |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA11                 | DIFFIO_TX_B4p           | DIFFOUT_B4p                  | W9   |            |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA14                 | DIFFIO_RX_B5n           | DIFFOUT_B5n                  | T7   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA13                 | DIFFIO_TX_B6n           | DIFFOUT_B6n                  | U6   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | CLKUSR                 | DIFFIO_RX_B5p           | DIFFOUT_B5p                  | T8   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA15                 | DIFFIO_TX_B6p           | DIFFOUT_B6p                  | V6   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | PR_DONE                | DIFFIO_RX_B7n           | DIFFOUT_B7n                  | M6   |            |             |
| 3A          | VREFB3AN0 | IO                        |                      | PR_READY               | DIFFIO_TX_B8n           | DIFFOUT_B8n                  | R7   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | PR_ERROR               | DIFFIO_RX_B7p           | DIFFOUT_B7p                  | M7   |            |             |
| 3A          | VREFB3AN0 | IO                        |                      |                        | DIFFIO_TX_B8p           | DIFFOUT_B8p                  | P7   | DQ1B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B9n           | DIFFOUT_B9n                  | AB6  |            |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B10n          | DIFFOUT_B10n                 | V9   | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B9p           | DIFFOUT_B9p                  | AB5  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B10p          | DIFFOUT_B10p                 | V10  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B11n          | DIFFOUT_B11n                 | P8   | DQS2B      |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B12n          | DIFFOUT_B12n                 | AA7  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B11p          | DIFFOUT_B11p                 | N8   | DQS2B      |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B12p          | DIFFOUT_B12p                 | AB7  |            |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B13n          | DIFFOUT_B13n                 | AA8  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B14n          | DIFFOUT_B14n                 | T9   | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B13p          | DIFFOUT_B13p                 | AB8  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B14p          | DIFFOUT_B14p                 | U10  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        | CLK0n,FPLL_BL_FBn    |                        | DIFFIO_RX_B15n          | DIFFOUT_B15n                 | M8   |            |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B16n          | DIFFOUT_B16n                 | AA10 | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        | CLK0p,FPLL_BL_FBp    |                        | DIFFIO_RX_B15p          | DIFFOUT_B15p                 | M9   |            |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B16p          | DIFFOUT_B16p                 | AA9  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B17n          | DIFFOUT_B17n                 | Y10  |            |             |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF      | Pin Name/Function | Optional Function(s)                  | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F484 | DQS for X8 | DQS for X16 |
|-------------|-----------|-------------------|---------------------------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_RX_B18n          | DIFFOUT_B18n                 | T10  | DQ3B       |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_TX_B17p          | DIFFOUT_B17p                 | Y9   | DQ3B       |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_RX_B18p          | DIFFOUT_B18p                 | R9   | DQ3B       |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_RX_B19n          | DIFFOUT_B19n                 | U11  | DQSn3B     |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_TX_B20n          | DIFFOUT_B20n                 | R12  | DQ3B       |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_RX_B19p          | DIFFOUT_B19p                 | U12  | DQS3B      |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_TX_B20p          | DIFFOUT_B20p                 | P12  |            |             |
| 3B          | VREFB3BNO | IO                | FPLL_CLKOUT1,FPLL_CLKOUTn             |                        | DIFFIO_TX_B21n          | DIFFOUT_B21n                 | AB10 | DQ3B       |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_RX_B22n          | DIFFOUT_B22n                 | R10  | DQ3B       |             |
| 3B          | VREFB3BNO | IO                | FPLL_CLKOUT0,FPLL_CLKOUTp,FPLL_CLK_FB |                        | DIFFIO_TX_B21p          | DIFFOUT_B21p                 | AB11 | DQ3B       |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_RX_B22p          | DIFFOUT_B22p                 | R11  | DQ3B       |             |
| 3B          | VREFB3BNO | IO                | CLK1n                                 |                        | DIFFIO_RX_B23n          | DIFFOUT_B23n                 | P9   |            |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_TX_B24n          | DIFFOUT_B24n                 | Y11  | DQ3B       |             |
| 3B          | VREFB3BNO | IO                | CLK1p                                 |                        | DIFFIO_RX_B23p          | DIFFOUT_B23p                 | N9   |            |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_TX_B24p          | DIFFOUT_B24p                 | AA12 | DQ3B       |             |
| 4A          | VREFB4ANO | IO                | RZQ_0                                 |                        | DIFFIO_TX_B25n          | DIFFOUT_B25n                 | AB13 |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B26n          | DIFFOUT_B26n                 | V13  | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B25p          | DIFFOUT_B25p                 | AB12 | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B26p          | DIFFOUT_B26p                 | U13  | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B27n          | DIFFOUT_B27n                 | T12  | DQSn4B     |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B28n          | DIFFOUT_B28n                 | AA14 | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B27p          | DIFFOUT_B27p                 | T13  | DQS4B      |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B28p          | DIFFOUT_B28p                 | AA13 |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B29n          | DIFFOUT_B29n                 | AB15 | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B30n          | DIFFOUT_B30n                 | Y14  | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B29p          | DIFFOUT_B29p                 | AA15 | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B30p          | DIFFOUT_B30p                 | Y15  | DQ4B       |             |
| 4A          | VREFB4ANO | IO                | CLK2n                                 |                        | DIFFIO_RX_B31n          | DIFFOUT_B31n                 | V14  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B32n          | DIFFOUT_B32n                 | AB17 | DQ4B       |             |
| 4A          | VREFB4ANO | IO                | CLK2p                                 |                        | DIFFIO_RX_B31p          | DIFFOUT_B31p                 | V15  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B32p          | DIFFOUT_B32p                 | AB18 | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B33n          | DIFFOUT_B33n                 | AB20 |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B34n          | DIFFOUT_B34n                 | Y16  | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B33p          | DIFFOUT_B33p                 | AB21 | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B34p          | DIFFOUT_B34p                 | Y17  | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B35n          | DIFFOUT_B35n                 | T14  | DQSn5B     | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B36n          | DIFFOUT_B36n                 | AA17 | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B35p          | DIFFOUT_B35p                 | U15  | DQS5B      | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B36p          | DIFFOUT_B36p                 | AA18 |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B37n          | DIFFOUT_B37n                 | AA19 | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B38n          | DIFFOUT_B38n                 | V20  | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B37p          | DIFFOUT_B37p                 | AA20 | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B38p          | DIFFOUT_B38p                 | W19  | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                | CLK3n                                 |                        | DIFFIO_RX_B39n          | DIFFOUT_B39n                 | V16  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B40n          | DIFFOUT_B40n                 | AB22 | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                | CLK3p                                 |                        | DIFFIO_RX_B39p          | DIFFOUT_B39p                 | W16  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B40p          | DIFFOUT_B40p                 | AA22 | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B41n          | DIFFOUT_B41n                 | Y22  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B42n          | DIFFOUT_B42n                 | Y20  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B41p          | DIFFOUT_B41p                 | W22  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B42p          | DIFFOUT_B42p                 | Y19  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B43n          | DIFFOUT_B43n                 | P14  | DQSn6B     | DQSn1B      |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B44n          | DIFFOUT_B44n                 | Y21  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B43p          | DIFFOUT_B43p                 | R14  | DQS6B      | DQS1B       |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B44p          | DIFFOUT_B44p                 | W21  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B45n          | DIFFOUT_B45n                 | U22  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B46n          | DIFFOUT_B46n                 | V19  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B45p          | DIFFOUT_B45p                 | V21  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B46p          | DIFFOUT_B46p                 | V18  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B47n          | DIFFOUT_B47n                 | U16  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B48n          | DIFFOUT_B48n                 | U21  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B47p          | DIFFOUT_B47p                 | U17  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B48p          | DIFFOUT_B48p                 | U20  | DQ6B       | DQ1B        |
| 5A          | VREFB5ANO | IO                | RZQ_1                                 |                        | DIFFIO_TX_R1p           | DIFFOUT_R1p                  | T19  | DQ1R       |             |
| 5A          | VREFB5ANO | IO                |                                       | INIT_DONE              | DIFFIO_RX_R2p           | DIFFOUT_R2p                  | T18  |            |             |
| 5A          | VREFB5ANO | IO                |                                       | PR_REQUEST             | DIFFIO_TX_R1n           | DIFFOUT_R1n                  | T20  | DQ1R       |             |
| 5A          | VREFB5ANO | IO                |                                       | CRC_ERROR              | DIFFIO_RX_R2n           | DIFFOUT_R2n                  | T17  |            |             |
| 5A          | VREFB5ANO | IO                |                                       | nCEO                   | DIFFIO_TX_R3p           | DIFFOUT_R3p                  | T22  | DQ1R       |             |
| 5A          | VREFB5ANO | IO                |                                       |                        | DIFFIO_RX_R4p           | DIFFOUT_R4p                  | T15  | DQ1R       |             |
| 5A          | VREFB5ANO | IO                |                                       | CvP_CONFDONE           | DIFFIO_TX_R3n           | DIFFOUT_R3n                  | R22  | DQ1R       |             |
| 5A          | VREFB5ANO | IO                |                                       |                        | DIFFIO_RX_R4n           | DIFFOUT_R4n                  | R15  | DQ1R       |             |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF     | Pin Name/Function | Optional Function(s)                       | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F484 | DQS for X8 | DQS for X16 |
|-------------|----------|-------------------|--|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 5A          | VREFB5A0 | IO                |  | DEV_OE                 | DIFFIO_TX_R5p           | DIFFOUT_R5p                  | R21  |            |             |
| 5A          | VREFB5A0 | IO                |  |                        | DIFFIO_RX_R6p           | DIFFOUT_R6p                  | R16  | DQS1R      |             |
| 5A          | VREFB5A0 | IO                |  | DEV_CLRn               | DIFFIO_TX_R5n           | DIFFOUT_R5n                  | P22  | DQ1R       |             |
| 5A          | VREFB5A0 | IO                |  |                        | DIFFIO_RX_R6n           | DIFFOUT_R6n                  | R17  | DQSn1R     |             |
| 5A          | VREFB5A0 | IO                |  |                        | DIFFIO_TX_R7p           | DIFFOUT_R7p                  | P19  | DQ1R       |             |
| 5A          | VREFB5A0 | IO                |  |                        | DIFFIO_RX_R8p           | DIFFOUT_R8p                  | P16  | DQ1R       |             |
| 5A          | VREFB5A0 | IO                |  |                        | DIFFIO_TX_R7n           | DIFFOUT_R7n                  | P18  |            |             |
| 5A          | VREFB5A0 | IO                |  |                        | DIFFIO_RX_R8n           | DIFFOUT_R8n                  | P17  | DQ1R       |             |
| 5B          | VREFB5B0 | IO                | CLK6p                                      |                        | DIFFIO_RX_R17p          | DIFFOUT_R17p                 | N16  |            |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R18p          | DIFFOUT_R18p                 | N20  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                | CLK6n                                      |                        | DIFFIO_RX_R17n          | DIFFOUT_R17n                 | M16  |            |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R18n          | DIFFOUT_R18n                 | N21  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R19p          | DIFFOUT_R19p                 | N19  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                | FPLL_BR_CLKOUT0,FPLL_BR_CLKOUTp,FPLL_BR_FB |                        | DIFFIO_TX_R20p          | DIFFOUT_R20p                 | M22  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R19n          | DIFFOUT_R19n                 | M18  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                | FPLL_BR_CLKOUT1,FPLL_BR_CLKOUTn            |                        | DIFFIO_TX_R20n          | DIFFOUT_R20n                 | L22  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R21p          | DIFFOUT_R21p                 | K17  | DQS2R      |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R22p          | DIFFOUT_R22p                 | M20  |            |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R21n          | DIFFOUT_R21n                 | L17  | DQSn2R     |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R22n          | DIFFOUT_R22n                 | M21  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R23p          | DIFFOUT_R23p                 | L19  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R24p          | DIFFOUT_R24p                 | K21  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R23n          | DIFFOUT_R23n                 | L18  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R24n          | DIFFOUT_R24n                 | K22  |            |             |
| 7A          |          | GND               |  |                        |                         |                              | F17  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T1p           | DIFFOUT_T1p                  | H21  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T2p           | DIFFOUT_T2p                  | E21  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T1n           | DIFFOUT_T1n                  | G21  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T2n           | DIFFOUT_T2n                  | D21  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T3p           | DIFFOUT_T3p                  | E19  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T4p           | DIFFOUT_T4p                  | C20  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T3n           | DIFFOUT_T3n                  | D19  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T4n           | DIFFOUT_T4n                  | B20  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T5p           | DIFFOUT_T5p                  | J21  | DQS1T      | DQS1T       |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T6p           | DIFFOUT_T6p                  | B18  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T5n           | DIFFOUT_T5n                  | J22  | DQSn1T     | DQSn1T      |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T6n           | DIFFOUT_T6n                  | B17  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T7p           | DIFFOUT_T7p                  | C21  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T8p           | DIFFOUT_T8p                  | G22  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T7n           | DIFFOUT_T7n                  | B21  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T8n           | DIFFOUT_T8n                  | F22  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T9p           | DIFFOUT_T9p                  | G20  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T10p          | DIFFOUT_T10p                 | E22  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T9n           | DIFFOUT_T9n                  | H20  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T10n          | DIFFOUT_T10n                 | D22  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T11p          | DIFFOUT_T11p                 | C19  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T12p          | DIFFOUT_T12p                 | B22  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T11n          | DIFFOUT_T11n                 | C18  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T12n          | DIFFOUT_T12n                 | A22  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T13p          | DIFFOUT_T13p                 | F19  | DQS2T      | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T14p          | DIFFOUT_T14p                 | E20  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T13n          | DIFFOUT_T13n                 | F18  | DQSn2T     | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T14n          | DIFFOUT_T14n                 | F20  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T15p          | DIFFOUT_T15p                 | A18  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T16p          | DIFFOUT_T16p                 | A20  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T15n          | DIFFOUT_T15n                 | A17  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T16n          | DIFFOUT_T16n                 | A19  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T17p          | DIFFOUT_T17p                 | K20  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T18p          | DIFFOUT_T18p                 | B16  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T17n          | DIFFOUT_T17n                 | K19  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T18n          | DIFFOUT_T18n                 | C16  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T19p          | DIFFOUT_T19p                 | D17  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T20p          | DIFFOUT_T20p                 | G17  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T19n          | DIFFOUT_T19n                 | E16  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T20n          | DIFFOUT_T20n                 | G16  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T21p          | DIFFOUT_T21p                 | G18  | DQS3T      | DQS2T       |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T22p          | DIFFOUT_T22p                 | J19  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T21n          | DIFFOUT_T21n                 | H18  | DQSn3T     | DQSn2T      |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T22n          | DIFFOUT_T22n                 | J18  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T23p          | DIFFOUT_T23p                 | E15  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T24p          | DIFFOUT_T24p                 | A15  | DQ3T       | DQ2T        |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF     | Pin Name/Function | Optional Function(s)                       | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F484 | DQS for X8 | DQS for X16 |
|-------------|----------|-------------------|--|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T23n          | DIFFOUT_T23n                 | F15  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T24n          | DIFFOUT_T24n                 | A14  |            |             |
| 7A          | VREFB7A0 | IO                | CLK11p                                     |                        | DIFFIO_RX_T25p          | DIFFOUT_T25p                 | H16  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T26p          | DIFFOUT_T26p                 | J17  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                | CLK11n                                     |                        | DIFFIO_RX_T25n          | DIFFOUT_T25n                 | H15  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T26n          | DIFFOUT_T26n                 | K16  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T27p          | DIFFOUT_T27p                 | C15  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T28p          | DIFFOUT_T28p                 | G15  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T27n          | DIFFOUT_T27n                 | B15  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T28n          | DIFFOUT_T28n                 | F14  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T29p          | DIFFOUT_T29p                 | H14  | DQS4T      | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T30p          | DIFFOUT_T30p                 | B13  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T29n          | DIFFOUT_T29n                 | J13  | DQSn4T     | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T30n          | DIFFOUT_T30n                 | A13  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T31p          | DIFFOUT_T31p                 | E14  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T32p          | DIFFOUT_T32p                 | J11  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T31n          | DIFFOUT_T31n                 | F13  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T32n          | DIFFOUT_T32n                 | H10  |            |             |
| 7A          | VREFB7A0 | IO                | CLK10p                                     |                        | DIFFIO_RX_T33p          | DIFFOUT_T33p                 | H13  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T34p          | DIFFOUT_T34p                 | G11  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                | CLK10n                                     |                        | DIFFIO_RX_T33n          | DIFFOUT_T33n                 | G13  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T34n          | DIFFOUT_T34n                 | F12  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T35p          | DIFFOUT_T35p                 | D13  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T36p          | DIFFOUT_T36p                 | B12  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T35n          | DIFFOUT_T35n                 | C13  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T36n          | DIFFOUT_T36n                 | A12  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T37p          | DIFFOUT_T37p                 | H11  | DQS5T      |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T38p          | DIFFOUT_T38p                 | L8   |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T37n          | DIFFOUT_T37n                 | G12  | DQSn5T     |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T38n          | DIFFOUT_T38n                 | K9   | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T39p          | DIFFOUT_T39p                 | D12  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T40p          | DIFFOUT_T40p                 | C11  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T39n          | DIFFOUT_T39n                 | E12  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                | RZQ_2                                      |                        | DIFFIO_TX_T40n          | DIFFOUT_T40n                 | B11  |            |             |
| 8A          | VREFB8A0 | IO                | CLK9p                                      |                        | DIFFIO_RX_T41p          | DIFFOUT_T41p                 | G10  |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T42p          | DIFFOUT_T42p                 | L7   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                | CLK9n                                      |                        | DIFFIO_RX_T41n          | DIFFOUT_T41n                 | F10  |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T42n          | DIFFOUT_T42n                 | K7   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T43p          | DIFFOUT_T43p                 | J7   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                | FPLL_TL_CLKOUT0,FPLL_TL_CLKOUTp,FPLL_TL_FB |                        | DIFFIO_TX_T44p          | DIFFOUT_T44p                 | H8   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T43n          | DIFFOUT_T43n                 | J8   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                | FPLL_TL_CLKOUT1,FPLL_TL_CLKOUTn            |                        | DIFFIO_TX_T44n          | DIFFOUT_T44n                 | G8   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T45p          | DIFFOUT_T45p                 | J9   | DQS6T      |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T46p          | DIFFOUT_T46p                 | A10  |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T45n          | DIFFOUT_T45n                 | H9   | DQS6T      |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T46n          | DIFFOUT_T46n                 | A9   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T47p          | DIFFOUT_T47p                 | B10  | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T48p          | DIFFOUT_T48p                 | A5   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T47n          | DIFFOUT_T47n                 | C9   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T48n          | DIFFOUT_T48n                 | B5   |            |             |
| 8A          | VREFB8A0 | IO                | CLK8p,FPLL_TL_FBp                          |                        | DIFFIO_RX_T49p          | DIFFOUT_T49p                 | E10  |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T50p          | DIFFOUT_T50p                 | B6   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                | CLK8n,FPLL_TL_FBn                          |                        | DIFFIO_RX_T49n          | DIFFOUT_T49n                 | F9   |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T50n          | DIFFOUT_T50n                 | B7   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T51p          | DIFFOUT_T51p                 | A8   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T52p          | DIFFOUT_T52p                 | C6   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T51n          | DIFFOUT_T51n                 | A7   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T52n          | DIFFOUT_T52n                 | D6   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T53p          | DIFFOUT_T53p                 | E9   | DQS7T      |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T54p          | DIFFOUT_T54p                 | D7   |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T53n          | DIFFOUT_T53n                 | D9   | DQSn7T     |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T54n          | DIFFOUT_T54n                 | C8   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T55p          | DIFFOUT_T55p                 | G6   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T56p          | DIFFOUT_T56p                 | F7   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T55n          | DIFFOUT_T55n                 | H6   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T56n          | DIFFOUT_T56n                 | E7   |            |             |
| 9A          |          | MSEL0             |  | MSEL0                  |                         |                              | L6   |            |             |
| 9A          |          | CONF_DONE         |  | CONF_DONE              |                         |                              | K6   |            |             |
| 9A          |          | MSEL1             |  | MSEL1                  |                         |                              | J6   |            |             |
| 9A          |          | nSTATUS           |  | nSTATUS                |                         |                              | H5   |            |             |
| 9A          |          | nCE               |  | nCE                    |                         |                              | G5   |            |             |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF | Pin Name/Function | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F484 | DQS for X8 | DQS for X16 |
|-------------|------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 9A          |      | MSEL2             |                      | MSEL2                  |                         |                              | A2   |            |             |
| 9A          |      | MSEL3             |                      | MSEL3                  |                         |                              | E5   |            |             |
| 9A          |      | nCONFIG           |                      | nCONFIG                |                         |                              | A4   |            |             |
| 9A          |      | MSEL4             |                      | MSEL4                  |                         |                              | F3   |            |             |
| 9A          |      | GND               |                      |                        |                         |                              | C5   |            |             |
|             |      | GND               |                      |                        |                         |                              | AB19 |            |             |
|             |      | GND               |                      |                        |                         |                              | AB14 |            |             |
|             |      | GND               |                      |                        |                         |                              | AB9  |            |             |
|             |      | GND               |                      |                        |                         |                              | AB2  |            |             |
|             |      | GND               |                      |                        |                         |                              | AB1  |            |             |
|             |      | GND               |                      |                        |                         |                              | AA11 |            |             |
|             |      | GND               |                      |                        |                         |                              | AA6  |            |             |
|             |      | GND               |                      |                        |                         |                              | AA4  |            |             |
|             |      | GND               |                      |                        |                         |                              | AA3  |            |             |
|             |      | GND               |                      |                        |                         |                              | Y18  |            |             |
|             |      | GND               |                      |                        |                         |                              | Y5   |            |             |
|             |      | GND               |                      |                        |                         |                              | Y2   |            |             |
|             |      | GND               |                      |                        |                         |                              | Y1   |            |             |
|             |      | GND               |                      |                        |                         |                              | W4   |            |             |
|             |      | GND               |                      |                        |                         |                              | W3   |            |             |
|             |      | GND               |                      |                        |                         |                              | V22  |            |             |
|             |      | GND               |                      |                        |                         |                              | V17  |            |             |
|             |      | GND               |                      |                        |                         |                              | V12  |            |             |
|             |      | GND               |                      |                        |                         |                              | V7   |            |             |
|             |      | GND               |                      |                        |                         |                              | V2   |            |             |
|             |      | GND               |                      |                        |                         |                              | V1   |            |             |
|             |      | GND               |                      |                        |                         |                              | U9   |            |             |
|             |      | GND               |                      |                        |                         |                              | U5   |            |             |
|             |      | GND               |                      |                        |                         |                              | U3   |            |             |
|             |      | GND               |                      |                        |                         |                              | T21  |            |             |
|             |      | GND               |                      |                        |                         |                              | T16  |            |             |
|             |      | GND               |                      |                        |                         |                              | T2   |            |             |
|             |      | GND               |                      |                        |                         |                              | T1   |            |             |
|             |      | GND               |                      |                        |                         |                              | R13  |            |             |
|             |      | GND               |                      |                        |                         |                              | R3   |            |             |
|             |      | GND               |                      |                        |                         |                              | P10  |            |             |
|             |      | GND               |                      |                        |                         |                              | P4   |            |             |
|             |      | GND               |                      |                        |                         |                              | P2   |            |             |
|             |      | GND               |                      |                        |                         |                              | P1   |            |             |
|             |      | GND               |                      |                        |                         |                              | N22  |            |             |
|             |      | GND               |                      |                        |                         |                              | N17  |            |             |
|             |      | GND               |                      |                        |                         |                              | N15  |            |             |
|             |      | GND               |                      |                        |                         |                              | N13  |            |             |
|             |      | GND               |                      |                        |                         |                              | N11  |            |             |
|             |      | GND               |                      |                        |                         |                              | N7   |            |             |
|             |      | GND               |                      |                        |                         |                              | N5   |            |             |
|             |      | GND               |                      |                        |                         |                              | N3   |            |             |
|             |      | GND               |                      |                        |                         |                              | M14  |            |             |
|             |      | GND               |                      |                        |                         |                              | M12  |            |             |
|             |      | GND               |                      |                        |                         |                              | M10  |            |             |
|             |      | GND               |                      |                        |                         |                              | M4   |            |             |
|             |      | GND               |                      |                        |                         |                              | M2   |            |             |
|             |      | GND               |                      |                        |                         |                              | M1   |            |             |
|             |      | GND               |                      |                        |                         |                              | L21  |            |             |
|             |      | GND               |                      |                        |                         |                              | L15  |            |             |
|             |      | GND               |                      |                        |                         |                              | L13  |            |             |
|             |      | GND               |                      |                        |                         |                              | L11  |            |             |
|             |      | GND               |                      |                        |                         |                              | L5   |            |             |
|             |      | GND               |                      |                        |                         |                              | L3   |            |             |
|             |      | GND               |                      |                        |                         |                              | K14  |            |             |
|             |      | GND               |                      |                        |                         |                              | K12  |            |             |
|             |      | GND               |                      |                        |                         |                              | K10  |            |             |
|             |      | GND               |                      |                        |                         |                              | K8   |            |             |
|             |      | GND               |                      |                        |                         |                              | K4   |            |             |
|             |      | GND               |                      |                        |                         |                              | K2   |            |             |
|             |      | GND               |                      |                        |                         |                              | K1   |            |             |
|             |      | GND               |                      |                        |                         |                              | J20  |            |             |
|             |      | GND               |                      |                        |                         |                              | J15  |            |             |
|             |      | GND               |                      |                        |                         |                              | J5   |            |             |
|             |      | GND               |                      |                        |                         |                              | J3   |            |             |
|             |      | GND               |                      |                        |                         |                              | H22  |            |             |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF | Pin Name/Function | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F484 | DQS for X8 | DQS for X16 |
|-------------|------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
|             |      | GND               |                      |                        |                         |                              | H12  |            |             |
|             |      | GND               |                      |                        |                         |                              | H7   |            |             |
|             |      | GND               |                      |                        |                         |                              | H4   |            |             |
|             |      | GND               |                      |                        |                         |                              | H3   |            |             |
|             |      | GND               |                      |                        |                         |                              | H2   |            |             |
|             |      | GND               |                      |                        |                         |                              | H1   |            |             |
|             |      | GND               |                      |                        |                         |                              | G19  |            |             |
|             |      | GND               |                      |                        |                         |                              | G9   |            |             |
|             |      | GND               |                      |                        |                         |                              | G3   |            |             |
|             |      | GND               |                      |                        |                         |                              | F16  |            |             |
|             |      | GND               |                      |                        |                         |                              | F6   |            |             |
|             |      | GND               |                      |                        |                         |                              | F2   |            |             |
|             |      | GND               |                      |                        |                         |                              | F1   |            |             |
|             |      | GND               |                      |                        |                         |                              | E13  |            |             |
|             |      | GND               |                      |                        |                         |                              | E4   |            |             |
|             |      | GND               |                      |                        |                         |                              | E3   |            |             |
|             |      | GND               |                      |                        |                         |                              | D20  |            |             |
|             |      | GND               |                      |                        |                         |                              | D10  |            |             |
|             |      | GND               |                      |                        |                         |                              | D5   |            |             |
|             |      | GND               |                      |                        |                         |                              | D2   |            |             |
|             |      | GND               |                      |                        |                         |                              | D1   |            |             |
|             |      | GND               |                      |                        |                         |                              | C17  |            |             |
|             |      | GND               |                      |                        |                         |                              | C4   |            |             |
|             |      | GND               |                      |                        |                         |                              | C3   |            |             |
|             |      | GND               |                      |                        |                         |                              | B14  |            |             |
|             |      | GND               |                      |                        |                         |                              | B9   |            |             |
|             |      | GND               |                      |                        |                         |                              | B2   |            |             |
|             |      | GND               |                      |                        |                         |                              | B1   |            |             |
|             |      | GND               |                      |                        |                         |                              | A21  |            |             |
|             |      | GND               |                      |                        |                         |                              | A11  |            |             |
|             |      | VCC               |                      |                        |                         |                              | P15  |            |             |
|             |      | VCC               |                      |                        |                         |                              | P13  |            |             |
|             |      | VCC               |                      |                        |                         |                              | P11  |            |             |
|             |      | VCC               |                      |                        |                         |                              | N14  |            |             |
|             |      | VCC               |                      |                        |                         |                              | N12  |            |             |
|             |      | VCC               |                      |                        |                         |                              | N10  |            |             |
|             |      | VCC               |                      |                        |                         |                              | M15  |            |             |
|             |      | VCC               |                      |                        |                         |                              | M13  |            |             |
|             |      | VCC               |                      |                        |                         |                              | M11  |            |             |
|             |      | VCC               |                      |                        |                         |                              | L16  |            |             |
|             |      | VCC               |                      |                        |                         |                              | L14  |            |             |
|             |      | VCC               |                      |                        |                         |                              | L12  |            |             |
|             |      | VCC               |                      |                        |                         |                              | L10  |            |             |
|             |      | VCC               |                      |                        |                         |                              | K15  |            |             |
|             |      | VCC               |                      |                        |                         |                              | K13  |            |             |
|             |      | VCC               |                      |                        |                         |                              | K11  |            |             |
|             |      | VCC               |                      |                        |                         |                              | J16  |            |             |
|             |      | VCC               |                      |                        |                         |                              | J14  |            |             |
|             |      | VCC               |                      |                        |                         |                              | J12  |            |             |
|             |      | VCC               |                      |                        |                         |                              | J10  |            |             |
|             |      | DNU               |                      |                        |                         |                              | B3   |            |             |
|             |      | DNU               |                      |                        |                         |                              | B4   |            |             |
|             |      | DNU               |                      |                        |                         |                              | E17  |            |             |
|             |      | DNU               |                      |                        |                         |                              | L9   |            |             |
|             |      | VCCPGM            |                      |                        |                         |                              | V8   |            |             |
|             |      | VCCPGM            |                      |                        |                         |                              | R19  |            |             |
|             |      | VCCPGM            |                      |                        |                         |                              | F8   |            |             |
|             |      | VCCBAT            |                      |                        |                         |                              | A3   |            |             |
|             |      | VCCIO3A           |                      |                        |                         |                              | T6   |            |             |
|             |      | VCCIO3A           |                      |                        |                         |                              | Y8   |            |             |
|             |      | VCCIO3B           |                      |                        |                         |                              | Y13  |            |             |
|             |      | VCCIO3B           |                      |                        |                         |                              | W10  |            |             |
|             |      | VCCIO3B           |                      |                        |                         |                              | T11  |            |             |
|             |      | VCCIO3B           |                      |                        |                         |                              | R8   |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | U19  |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | AA21 |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | AA16 |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | W20  |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | W15  |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | U14  |            |             |
|             |      | VCCIO5A           |                      |                        |                         |                              | R18  |            |             |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF      | Pin Name/Function | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F484 | DQS for X8 | DQS for X16 |
|-------------|-----------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
|             |           | VCCIO5A           |                      |                        |                         |                              | P20  |            |             |
|             |           | VCCIO5B           |                      |                        |                         |                              | M19  |            |             |
|             |           | VCCIO5B           |                      |                        |                         |                              | K18  |            |             |
|             |           | VCCIO7A           |                      |                        |                         |                              | B19  |            |             |
|             |           | VCCIO7A           |                      |                        |                         |                              | H17  |            |             |
|             |           | VCCIO7A           |                      |                        |                         |                              | G14  |            |             |
|             |           | VCCIO7A           |                      |                        |                         |                              | F21  |            |             |
|             |           | VCCIO7A           |                      |                        |                         |                              | F11  |            |             |
|             |           | VCCIO7A           |                      |                        |                         |                              | E18  |            |             |
|             |           | VCCIO7A           |                      |                        |                         |                              | D15  |            |             |
|             |           | VCCIO7A           |                      |                        |                         |                              | C22  |            |             |
|             |           | VCCIO7A           |                      |                        |                         |                              | C12  |            |             |
|             |           | VCCIO7A           |                      |                        |                         |                              | A16  |            |             |
|             |           | VCCIO8A           |                      |                        |                         |                              | A6   |            |             |
|             |           | VCCIO8A           |                      |                        |                         |                              | G7   |            |             |
|             |           | VCCIO8A           |                      |                        |                         |                              | E8   |            |             |
|             |           | VCCIO8A           |                      |                        |                         |                              | C7   |            |             |
|             |           | VCCPD3A           |                      |                        |                         |                              | W6   |            |             |
|             |           | VCCPD3B4A         |                      |                        |                         |                              | W17  |            |             |
|             |           | VCCPD3B4A         |                      |                        |                         |                              | W14  |            |             |
|             |           | VCCPD3B4A         |                      |                        |                         |                              | W12  |            |             |
|             |           | VCCPD3B4A         |                      |                        |                         |                              | W11  |            |             |
|             |           | VCCPD5A           |                      |                        |                         |                              | P21  |            |             |
|             |           | VCCPD5B           |                      |                        |                         |                              | N18  |            |             |
|             |           | VCCPD5B           |                      |                        |                         |                              | M17  |            |             |
|             |           | VCCPD7A8A         |                      |                        |                         |                              | E11  |            |             |
|             |           | VCCPD7A8A         |                      |                        |                         |                              | D16  |            |             |
|             |           | VCCPD7A8A         |                      |                        |                         |                              | D14  |            |             |
|             |           | VCCPD7A8A         |                      |                        |                         |                              | D8   |            |             |
|             |           | VCCPD7A8A         |                      |                        |                         |                              | C10  |            |             |
| 3A          | VREFB3AN0 | VREFB3AN0         |                      |                        |                         |                              | Y7   |            |             |
| 3B          | VREFB3BN0 | VREFB3BN0         |                      |                        |                         |                              | Y12  |            |             |
| 4A          | VREFB4AN0 | VREFB4AN0         |                      |                        |                         |                              | AB16 |            |             |
| 5A          | VREFB5AN0 | VREFB5AN0         |                      |                        |                         |                              | R20  |            |             |
| 5B          | VREFB5BN0 | VREFB5BN0         |                      |                        |                         |                              | L20  |            |             |
| 7A          | VREFB7AN0 | VREFB7AN0         |                      |                        |                         |                              | C14  |            |             |
| 8A          | VREFB8AN0 | VREFB8AN0         |                      |                        |                         |                              | B8   |            |             |
|             |           | NC                |                      |                        |                         |                              | Y6   |            |             |
|             |           | NC                |                      |                        |                         |                              | V11  |            |             |
|             |           | VCCH_GXBL         |                      |                        |                         |                              | M3   |            |             |
|             |           | VCCH_GXBL         |                      |                        |                         |                              | T3   |            |             |
|             |           | VCCL_GXBL         |                      |                        |                         |                              | P3   |            |             |
|             |           | VCCL_GXBL         |                      |                        |                         |                              | K3   |            |             |
|             |           | RREF_TL           |                      |                        |                         |                              | A1   |            |             |
|             |           | VCCA_FPLL         |                      |                        |                         |                              | T5   |            |             |
|             |           | VCCA_FPLL         |                      |                        |                         |                              | F4   |            |             |
|             |           | VCCA_FPLL         |                      |                        |                         |                              | U18  |            |             |
|             |           | VCCA_FPLL         |                      |                        |                         |                              | H19  |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | E6   |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | D18  |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | W18  |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | W13  |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | W7   |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | D11  |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | L4   |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | N4   |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | K5   |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | J4   |            |             |

Note:

(1) For more information about pin definition and pin connection guidelines, refer to the [Cyclone V Device Family Pin Connection Guidelines](#).



| Bank Number | VREF      | Pin Name/Function         | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | U484 | DQS for X8 | DQS for X16 |
|-------------|-----------|---------------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| GXB_L1      |           | REFCLK1Ln                 |                      |                        |                         |                              | G4   |            |             |
| GXB_L1      |           | REFCLK1Lp                 |                      |                        |                         |                              | F5   |            |             |
| GXB_L1      |           | GXB_TX_L5n                |                      |                        |                         |                              | D3   |            |             |
| GXB_L1      |           | GXB_TX_L5p                |                      |                        |                         |                              | D4   |            |             |
| GXB_L1      |           | GXB_RX_L5p,GXB_REFCLK_L5p |                      |                        |                         |                              | C2   |            |             |
| GXB_L1      |           | GXB_RX_L5n,GXB_REFCLK_L5n |                      |                        |                         |                              | C1   |            |             |
| GXB_L1      |           | GXB_TX_L4n                |                      |                        |                         |                              | E1   |            |             |
| GXB_L1      |           | GXB_TX_L4p                |                      |                        |                         |                              | E2   |            |             |
| GXB_L1      |           | GXB_RX_L4p,GXB_REFCLK_L4p |                      |                        |                         |                              | G2   |            |             |
| GXB_L1      |           | GXB_RX_L4n,GXB_REFCLK_L4n |                      |                        |                         |                              | G1   |            |             |
| GXB_L1      |           | GXB_TX_L3n                |                      |                        |                         |                              | J1   |            |             |
| GXB_L1      |           | GXB_TX_L3p                |                      |                        |                         |                              | J2   |            |             |
| GXB_L1      |           | GXB_RX_L3p,GXB_REFCLK_L3p |                      |                        |                         |                              | L2   |            |             |
| GXB_L1      |           | GXB_RX_L3n,GXB_REFCLK_L3n |                      |                        |                         |                              | L1   |            |             |
| GXB_L0      |           | GXB_TX_L2n                |                      |                        |                         |                              | N1   |            |             |
| GXB_L0      |           | GXB_TX_L2p                |                      |                        |                         |                              | N2   |            |             |
| GXB_L0      |           | GXB_RX_L2p,GXB_REFCLK_L2p |                      |                        |                         |                              | R2   |            |             |
| GXB_L0      |           | GXB_RX_L2n,GXB_REFCLK_L2n |                      |                        |                         |                              | R1   |            |             |
| GXB_L0      |           | GXB_TX_L1n                |                      |                        |                         |                              | U1   |            |             |
| GXB_L0      |           | GXB_TX_L1p                |                      |                        |                         |                              | U2   |            |             |
| GXB_L0      |           | GXB_RX_L1p,GXB_REFCLK_L1p |                      |                        |                         |                              | W2   |            |             |
| GXB_L0      |           | GXB_RX_L1n,GXB_REFCLK_L1n |                      |                        |                         |                              | W1   |            |             |
| GXB_L0      |           | GXB_TX_L0n                |                      |                        |                         |                              | Y3   |            |             |
| GXB_L0      |           | GXB_TX_L0p                |                      |                        |                         |                              | Y4   |            |             |
| GXB_L0      |           | GXB_RX_L0p,GXB_REFCLK_L0p |                      |                        |                         |                              | AA2  |            |             |
| GXB_L0      |           | GXB_RX_L0n,GXB_REFCLK_L0n |                      |                        |                         |                              | AA1  |            |             |
| GXB_L0      |           | REFCLK0Lp                 |                      |                        |                         |                              | V4   |            |             |
| GXB_L0      |           | REFCLK0Ln                 |                      |                        |                         |                              | U4   |            |             |
| 3A          |           | TDO                       |                      | TDO                    |                         |                              | V3   |            |             |
| 3A          |           | nCSO                      |                      | DATA4                  |                         |                              | AB6  |            |             |
| 3A          |           | TMS                       |                      | TMS                    |                         |                              | R4   |            |             |
| 3A          |           | AS_DATA3                  |                      | DATA3                  |                         |                              | AA5  |            |             |
| 3A          |           | TCK                       |                      | TCK                    |                         |                              | V5   |            |             |
| 3A          |           | AS_DATA2                  |                      | DATA2                  |                         |                              | T5   |            |             |
| 3A          |           | TDI                       |                      | TDI                    |                         |                              | P5   |            |             |
| 3A          |           | AS_DATA1                  |                      | DATA1                  |                         |                              | W5   |            |             |
| 3A          |           | DCLK                      |                      | DCLK                   |                         |                              | M5   |            |             |
| 3A          |           | AS_DATA0,ASDO             |                      | DATA0                  |                         |                              | AB4  |            |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA6                  | DIFFIO_RX_B1n           | DIFFOUT_B1n                  | P6   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA5                  | DIFFIO_TX_B2n           | DIFFOUT_B2n                  | U7   |            |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA8                  | DIFFIO_RX_B1p           | DIFFOUT_B1p                  | N6   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA7                  | DIFFIO_TX_B2p           | DIFFOUT_B2p                  | U6   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA10                 | DIFFIO_RX_B3n           | DIFFOUT_B3n                  | M6   | DQS1B      |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA9                  | DIFFIO_TX_B4n           | DIFFOUT_B4n                  | R5   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA12                 | DIFFIO_RX_B3p           | DIFFOUT_B3p                  | M7   | DQS1B      |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA11                 | DIFFIO_TX_B4p           | DIFFOUT_B4p                  | R6   |            |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA14                 | DIFFIO_RX_B5n           | DIFFOUT_B5n                  | R7   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA13                 | DIFFIO_TX_B6n           | DIFFOUT_B6n                  | L7   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | CLKUSR                 | DIFFIO_RX_B5p           | DIFFOUT_B5p                  | T7   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA15                 | DIFFIO_TX_B6p           | DIFFOUT_B6p                  | L8   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | PR_DONE                | DIFFIO_RX_B7n           | DIFFOUT_B7n                  | T8   |            |             |
| 3A          | VREFB3AN0 | IO                        |                      | PR_READY               | DIFFIO_TX_B8n           | DIFFOUT_B8n                  | P7   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | PR_ERROR               | DIFFIO_RX_B7p           | DIFFOUT_B7p                  | T9   |            |             |
| 3A          | VREFB3AN0 | IO                        |                      |                        | DIFFIO_TX_B8p           | DIFFOUT_B8p                  | P8   | DQ1B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B9n           | DIFFOUT_B9n                  | V8   |            |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B10n          | DIFFOUT_B10n                 | N8   | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B9p           | DIFFOUT_B9p                  | W8   | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B10p          | DIFFOUT_B10p                 | M8   | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B11n          | DIFFOUT_B11n                 | N9   | DQS2B      |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B12n          | DIFFOUT_B12n                 | AA7  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B11p          | DIFFOUT_B11p                 | N10  | DQS2B      |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B12p          | DIFFOUT_B12p                 | AB7  |            |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B13n          | DIFFOUT_B13n                 | Y7   | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B14n          | DIFFOUT_B14n                 | U8   | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B13p          | DIFFOUT_B13p                 | W7   | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B14p          | DIFFOUT_B14p                 | V9   | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        | CLK0n,FPLL.BL.FBn    |                        | DIFFIO_RX_B15n          | DIFFOUT_B15n                 | R9   |            |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B16n          | DIFFOUT_B16n                 | AB8  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        | CLK0p,FPLL.BL.FBp    |                        | DIFFIO_RX_B15p          | DIFFOUT_B15p                 | P9   |            |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B16p          | DIFFOUT_B16p                 | AA8  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B17n          | DIFFOUT_B17n                 | Y10  |            |             |





Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF      | Pin Name/Function | Optional Function(s)                  | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | U484 | DQS for X8 | DQS for X16 |
|-------------|-----------|-------------------|---------------------------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_RX_B18n          | DIFFFOUT_B18n                | AA9  | DQ3B       |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_TX_B17p          | DIFFFOUT_B17p                | AA10 | DQ3B       |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_RX_B18p          | DIFFFOUT_B18p                | Y9   | DQ3B       |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_RX_B19n          | DIFFFOUT_B19n                | L9   | DQSn3B     |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_TX_B20n          | DIFFFOUT_B20n                | W11  | DQ3B       |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_RX_B19p          | DIFFFOUT_B19p                | M10  | DQS3B      |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_TX_B20p          | DIFFFOUT_B20p                | Y11  |            |             |
| 3B          | VREFB3BNO | IO                | FPLL_CLKOUT1,FPLL_CLKOUTn             |                        | DIFFIO_TX_B21n          | DIFFFOUT_B21n                | AB10 | DQ3B       |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_RX_B22n          | DIFFFOUT_B22n                | U10  | DQ3B       |             |
| 3B          | VREFB3BNO | IO                | FPLL_CLKOUT0,FPLL_CLKOUTp,FPLL_CLK_FB |                        | DIFFIO_TX_B21p          | DIFFFOUT_B21p                | AB11 | DQ3B       |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_RX_B22p          | DIFFFOUT_B22p                | U11  | DQ3B       |             |
| 3B          | VREFB3BNO | IO                | CLK1n                                 |                        | DIFFIO_RX_B23n          | DIFFFOUT_B23n                | T10  |            |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_TX_B24n          | DIFFFOUT_B24n                | R11  | DQ3B       |             |
| 3B          | VREFB3BNO | IO                | CLK1p                                 |                        | DIFFIO_RX_B23p          | DIFFFOUT_B23p                | R10  |            |             |
| 3B          | VREFB3BNO | IO                |                                       |                        | DIFFIO_TX_B24p          | DIFFFOUT_B24p                | P12  | DQ3B       |             |
| 4A          | VREFB4ANO | IO                | RZQ_0                                 |                        | DIFFIO_TX_B25n          | DIFFFOUT_B25n                | AA13 |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B26n          | DIFFFOUT_B26n                | W12  | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B25p          | DIFFFOUT_B25p                | AB13 | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B26p          | DIFFFOUT_B26p                | Y12  | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B27n          | DIFFFOUT_B27n                | U12  | DQSn4B     |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B28n          | DIFFFOUT_B28n                | R12  | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B27p          | DIFFFOUT_B27p                | T12  | DQS4B      |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B28p          | DIFFFOUT_B28p                | T13  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B29n          | DIFFFOUT_B29n                | AB15 | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B30n          | DIFFFOUT_B30n                | W13  | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B29p          | DIFFFOUT_B29p                | AB16 | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B30p          | DIFFFOUT_B30p                | V13  | DQ4B       |             |
| 4A          | VREFB4ANO | IO                | CLK2n                                 |                        | DIFFIO_RX_B31n          | DIFFFOUT_B31n                | T14  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B32n          | DIFFFOUT_B32n                | AB18 | DQ4B       |             |
| 4A          | VREFB4ANO | IO                | CLK2p                                 |                        | DIFFIO_RX_B31p          | DIFFFOUT_B31p                | U13  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B32p          | DIFFFOUT_B32p                | AA18 | DQ4B       |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B33n          | DIFFFOUT_B33n                | AA19 |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B34n          | DIFFFOUT_B34n                | Y14  | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B33p          | DIFFFOUT_B33p                | Y19  | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B34p          | DIFFFOUT_B34p                | W14  | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B35n          | DIFFFOUT_B35n                | P14  | DQSn6B     | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B36n          | DIFFFOUT_B36n                | AA20 | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B35p          | DIFFFOUT_B35p                | R14  | DQS5B      | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B36p          | DIFFFOUT_B36p                | Y20  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B37n          | DIFFFOUT_B37n                | AA15 | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B38n          | DIFFFOUT_B38n                | U15  | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B37p          | DIFFFOUT_B37p                | Y15  | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B38p          | DIFFFOUT_B38p                | V15  | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                | CLK3n                                 |                        | DIFFIO_RX_B39n          | DIFFFOUT_B39n                | R15  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B40n          | DIFFFOUT_B40n                | AB20 | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                | CLK3p                                 |                        | DIFFIO_RX_B39p          | DIFFFOUT_B39p                | T15  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B40p          | DIFFFOUT_B40p                | AB21 | DQ5B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B41n          | DIFFFOUT_B41n                | AB22 |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B42n          | DIFFFOUT_B42n                | Y16  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B41p          | DIFFFOUT_B41p                | AA22 | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B42p          | DIFFFOUT_B42p                | Y17  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B43n          | DIFFFOUT_B43n                | U16  | DQSn6B     | DQSn1B      |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B44n          | DIFFFOUT_B44n                | AA17 | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B43p          | DIFFFOUT_B43p                | U17  | DQS6B      | DQS1B       |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B44p          | DIFFFOUT_B44p                | AB17 |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B45n          | DIFFFOUT_B45n                | Y22  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B46n          | DIFFFOUT_B46n                | V18  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B45p          | DIFFFOUT_B45p                | Y21  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B46p          | DIFFFOUT_B46p                | W18  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B47n          | DIFFFOUT_B47n                | W16  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B48n          | DIFFFOUT_B48n                | W21  | DQ6B       | DQ1B        |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_RX_B47p          | DIFFFOUT_B47p                | W17  |            |             |
| 4A          | VREFB4ANO | IO                |                                       |                        | DIFFIO_TX_B48p          | DIFFFOUT_B48p                | W22  | DQ6B       | DQ1B        |
| 5A          | VREFB5ANO | IO                | RZQ_1                                 |                        | DIFFIO_TX_R1p           | DIFFFOUT_R1p                 | U22  | DQ1R       |             |
| 5A          | VREFB5ANO | IO                |                                       | INIT_DONE              | DIFFIO_RX_R2p           | DIFFFOUT_R2p                 | V20  |            |             |
| 5A          | VREFB5ANO | IO                |                                       | PR_REQUEST             | DIFFIO_TX_R1n           | DIFFFOUT_R1n                 | U21  | DQ1R       |             |
| 5A          | VREFB5ANO | IO                |                                       | CRC_ERROR              | DIFFIO_RX_R2n           | DIFFFOUT_R2n                 | V19  |            |             |
| 5A          | VREFB5ANO | IO                |                                       | nCEO                   | DIFFIO_TX_R3p           | DIFFFOUT_R3p                 | T19  | DQ1R       |             |
| 5A          | VREFB5ANO | IO                |                                       |                        | DIFFIO_RX_R4p           | DIFFFOUT_R4p                 | T17  | DQ1R       |             |
| 5A          | VREFB5ANO | IO                |                                       | CvP_CONFDONE           | DIFFIO_TX_R3n           | DIFFFOUT_R3n                 | T20  | DQ1R       |             |
| 5A          | VREFB5ANO | IO                |                                       |                        | DIFFIO_RX_R4n           | DIFFFOUT_R4n                 | T18  | DQ1R       |             |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF     | Pin Name/Function | Optional Function(s)                       | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | U484 | DQS for X8 | DQS for X16 |
|-------------|----------|-------------------|--|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 5A          | VREFB5A0 | IO                |  | DEV_OE                 | DIFFIO_TX_R5p           | DIFFOUT_R5p                  | T22  |            |             |
| 5A          | VREFB5A0 | IO                |  |                        | DIFFIO_RX_R6p           | DIFFOUT_R6p                  | R16  | DQS1R      |             |
| 5A          | VREFB5A0 | IO                |  | DEV_CLRn               | DIFFIO_TX_R5n           | DIFFOUT_R5n                  | R22  | DQ1R       |             |
| 5A          | VREFB5A0 | IO                |  |                        | DIFFIO_RX_R6n           | DIFFOUT_R6n                  | R17  | DQSn1R     |             |
| 5A          | VREFB5A0 | IO                |  |                        | DIFFIO_TX_R7p           | DIFFOUT_R7p                  | R20  | DQ1R       |             |
| 5A          | VREFB5A0 | IO                |  |                        | DIFFIO_RX_R8p           | DIFFOUT_R8p                  | R19  | DQ1R       |             |
| 5A          | VREFB5A0 | IO                |  |                        | DIFFIO_TX_R7n           | DIFFOUT_R7n                  | R21  |            |             |
| 5A          | VREFB5A0 | IO                |  |                        | DIFFIO_RX_R8n           | DIFFOUT_R8n                  | P19  | DQ1R       |             |
| 5B          | VREFB5B0 | IO                | CLK7p,FPLL_BR_FBp                          |                        | DIFFIO_RX_R9p           | DIFFOUT_R9p                  | M16  |            |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R10p          | DIFFOUT_R10p                 | E21  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                | CLK7n,FPLL_BR_FBn                          |                        | DIFFIO_RX_R9n           | DIFFOUT_R9n                  | M17  |            |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R10n          | DIFFOUT_R10n                 | D22  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R11p          | DIFFOUT_R11p                 | L19  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R12p          | DIFFOUT_R12p                 | K21  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R11n          | DIFFOUT_R11n                 | L20  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R12n          | DIFFOUT_R12n                 | J21  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R13p          | DIFFOUT_R13p                 | L15  | DQS2R      |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R14p          | DIFFOUT_R14p                 | G22  |            |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R13n          | DIFFOUT_R13n                 | K15  | DQSn2R     |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R14n          | DIFFOUT_R14n                 | G21  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R15p          | DIFFOUT_R15p                 | L18  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R16p          | DIFFOUT_R16p                 | G20  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R15n          | DIFFOUT_R15n                 | K19  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R16n          | DIFFOUT_R16n                 | H21  |            |             |
| 5B          | VREFB5B0 | IO                | CLK6p                                      |                        | DIFFIO_RX_R17p          | DIFFOUT_R17p                 | L17  |            |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R18p          | DIFFOUT_R18p                 | E20  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                | CLK6n                                      |                        | DIFFIO_RX_R17n          | DIFFOUT_R17n                 | K17  |            |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R18n          | DIFFOUT_R18n                 | F20  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R19p          | DIFFOUT_R19p                 | H20  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                | FPLL_BR_CLKOUT0,FPLL_BR_CLKOUTp,FPLL_BR_FB |                        | DIFFIO_TX_R20p          | DIFFOUT_R20p                 | G18  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R19n          | DIFFOUT_R19n                 | H19  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                | FPLL_BR_CLKOUT1,FPLL_BR_CLKOUTn            |                        | DIFFIO_TX_R20n          | DIFFOUT_R20n                 | G17  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R21p          | DIFFOUT_R21p                 | K16  | DQS3R      |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R22p          | DIFFOUT_R22p                 | F19  |            |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R21n          | DIFFOUT_R21n                 | J16  | DQSn3R     |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R22n          | DIFFOUT_R22n                 | F18  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R23p          | DIFFOUT_R23p                 | J17  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R24p          | DIFFOUT_R24p                 | J19  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R23n          | DIFFOUT_R23n                 | J18  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R24n          | DIFFOUT_R24n                 | H18  |            |             |
| 7A          |          | GND               |  |                        |                         |                              | F17  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T17p          | DIFFOUT_T17p                 | H16  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T18p          | DIFFOUT_T18p                 | C21  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T17n          | DIFFOUT_T17n                 | G16  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T18n          | DIFFOUT_T18n                 | C20  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T19p          | DIFFOUT_T19p                 | D18  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T20p          | DIFFOUT_T20p                 | B20  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T19n          | DIFFOUT_T19n                 | E17  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T20n          | DIFFOUT_T20n                 | B21  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T21p          | DIFFOUT_T21p                 | G15  | DQS1T      | DQS1T       |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T22p          | DIFFOUT_T22p                 | B22  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T21n          | DIFFOUT_T21n                 | G14  | DQSn1T     | DQSn1T      |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T22n          | DIFFOUT_T22n                 | A22  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T23p          | DIFFOUT_T23p                 | E16  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T24p          | DIFFOUT_T24p                 | A20  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T23n          | DIFFOUT_T23n                 | D17  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T24n          | DIFFOUT_T24n                 | A19  |            |             |
| 7A          | VREFB7A0 | IO                | CLK11p                                     |                        | DIFFIO_RX_T25p          | DIFFOUT_T25p                 | G13  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T26p          | DIFFOUT_T26p                 | C19  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                | CLK11n                                     |                        | DIFFIO_RX_T25n          | DIFFOUT_T25n                 | F14  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T26n          | DIFFOUT_T26n                 | C18  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T27p          | DIFFOUT_T27p                 | C16  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T28p          | DIFFOUT_T28p                 | B16  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T27n          | DIFFOUT_T27n                 | C15  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T28n          | DIFFOUT_T28n                 | B15  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T29p          | DIFFOUT_T29p                 | G12  | DQS2T      | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T30p          | DIFFOUT_T30p                 | A18  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T29n          | DIFFOUT_T29n                 | H12  | DQSn2T     | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T30n          | DIFFOUT_T30n                 | A17  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T31p          | DIFFOUT_T31p                 | F15  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T32p          | DIFFOUT_T32p                 | B18  | DQ2T       | DQ1T        |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF     | Pin Name/Function | Optional Function(s)                       | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | U484 | DQS for X8 | DQS for X16 |
|-------------|----------|-------------------|--|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T31n          | DIFFOUT_T31n                 | E14  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T32n          | DIFFOUT_T32n                 | B17  |            |             |
| 7A          | VREFB7A0 | IO                | CLK10p                                     |                        | DIFFIO_RX_T33p          | DIFFOUT_T33p                 | H10  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T34p          | DIFFOUT_T34p                 | A15  | DQ3T       |             |
| 7A          | VREFB7A0 | IO                | CLK10n                                     |                        | DIFFIO_RX_T33n          | DIFFOUT_T33n                 | G11  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T34n          | DIFFOUT_T34n                 | A14  | DQ3T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T35p          | DIFFOUT_T35p                 | D13  | DQ3T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T36p          | DIFFOUT_T36p                 | C14  | DQ3T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T35n          | DIFFOUT_T35n                 | C13  | DQ3T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T36n          | DIFFOUT_T36n                 | D14  | DQ3T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T37p          | DIFFOUT_T37p                 | H9   | DQS3T      |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T38p          | DIFFOUT_T38p                 | A13  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T37n          | DIFFOUT_T37n                 | G8   | DQS3T      |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T38n          | DIFFOUT_T38n                 | B13  | DQ3T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T39p          | DIFFOUT_T39p                 | E12  | DQ3T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T40p          | DIFFOUT_T40p                 | B12  | DQ3T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T39n          | DIFFOUT_T39n                 | F12  | DQ3T       |             |
| 7A          | VREFB7A0 | IO                | RZQ_2                                      |                        | DIFFIO_TX_T40n          | DIFFOUT_T40n                 | A12  |            |             |
| 8A          | VREFB8A0 | IO                | CLK9p                                      |                        | DIFFIO_RX_T41p          | DIFFOUT_T41p                 | G10  |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T42p          | DIFFOUT_T42p                 | C11  | DQ4T       |             |
| 8A          | VREFB8A0 | IO                | CLK9n                                      |                        | DIFFIO_RX_T41n          | DIFFOUT_T41n                 | F10  |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T42n          | DIFFOUT_T42n                 | B11  | DQ4T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T43p          | DIFFOUT_T43p                 | D11  | DQ4T       |             |
| 8A          | VREFB8A0 | IO                | FPLL_TL_CLKOUT0,FPLL_TL_CLKOUTp,FPLL_TL_FB |                        | DIFFIO_TX_T44p          | DIFFOUT_T44p                 | A8   | DQ4T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T43n          | DIFFOUT_T43n                 | E11  | DQ4T       |             |
| 8A          | VREFB8A0 | IO                | FPLL_TL_CLKOUT1,FPLL_TL_CLKOUTn            |                        | DIFFIO_TX_T44n          | DIFFOUT_T44n                 | A7   | DQ4T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T45p          | DIFFOUT_T45p                 | J9   | DQS4T      |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T46p          | DIFFOUT_T46p                 | F8   |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T45n          | DIFFOUT_T45n                 | J8   | DQS4T      |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T46n          | DIFFOUT_T46n                 | E7   | DQ4T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T47p          | DIFFOUT_T47p                 | C10  | DQ4T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T48p          | DIFFOUT_T48p                 | C6   | DQ4T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T47n          | DIFFOUT_T47n                 | C9   | DQ4T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T48n          | DIFFOUT_T48n                 | D7   |            |             |
| 8A          | VREFB8A0 | IO                | CLK8p,FPLL_TL_FBp                          |                        | DIFFIO_RX_T49p          | DIFFOUT_T49p                 | K7   |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T50p          | DIFFOUT_T50p                 | A10  | DQ5T       |             |
| 8A          | VREFB8A0 | IO                | CLK8n,FPLL_TL_FBn                          |                        | DIFFIO_RX_T49n          | DIFFOUT_T49n                 | J7   |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T50n          | DIFFOUT_T50n                 | A9   | DQ5T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T51p          | DIFFOUT_T51p                 | D9   | DQ5T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T52p          | DIFFOUT_T52p                 | B6   | DQ5T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T51n          | DIFFOUT_T51n                 | D8   | DQ5T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T52n          | DIFFOUT_T52n                 | B5   | DQ5T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T53p          | DIFFOUT_T53p                 | H8   | DQS5T      |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T54p          | DIFFOUT_T54p                 | C8   |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T53n          | DIFFOUT_T53n                 | G7   | DQS6T      |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T54n          | DIFFOUT_T54n                 | B8   | DQ5T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T55p          | DIFFOUT_T55p                 | H6   | DQ5T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T56p          | DIFFOUT_T56p                 | E6   | DQ5T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T55n          | DIFFOUT_T55n                 | G6   | DQ5T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T56n          | DIFFOUT_T56n                 | F7   |            |             |
| 9A          |          | MSEL0             |  | MSEL0                  |                         |                              | L6   |            |             |
| 9A          |          | CONF_DONE         |  | CONF_DONE              |                         |                              | J6   |            |             |
| 9A          |          | MSEL1             |  | MSEL1                  |                         |                              | K6   |            |             |
| 9A          |          | nSTATUS           |  | nSTATUS                |                         |                              | G5   |            |             |
| 9A          |          | nCE               |  | nCE                    |                         |                              | H5   |            |             |
| 9A          |          | MSEL2             |  | MSEL2                  |                         |                              | A2   |            |             |
| 9A          |          | MSEL3             |  | MSEL3                  |                         |                              | E5   |            |             |
| 9A          |          | nCONFIG           |  | nCONFIG                |                         |                              | A4   |            |             |
| 9A          |          | MSEL4             |  | MSEL4                  |                         |                              | C5   |            |             |
| 9A          |          | GND               |  |                        |                         |                              | F3   |            |             |
|             |          | GND               |  |                        |                         |                              | F21  |            |             |
|             |          | GND               |  |                        |                         |                              | AB19 |            |             |
|             |          | GND               |  |                        |                         |                              | AB2  |            |             |
|             |          | GND               |  |                        |                         |                              | AB1  |            |             |
|             |          | GND               |  |                        |                         |                              | AA16 |            |             |
|             |          | GND               |  |                        |                         |                              | AA11 |            |             |
|             |          | GND               |  |                        |                         |                              | AA4  |            |             |
|             |          | GND               |  |                        |                         |                              | AA3  |            |             |
|             |          | GND               |  |                        |                         |                              | Y13  |            |             |
|             |          | GND               |  |                        |                         |                              | Y8   |            |             |
|             |          | GND               |  |                        |                         |                              | Y5   |            |             |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF | Pin Name/Function | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | U484 | DQS for X8 | DQS for X16 |
|-------------|------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
|             |      | GND               |                      |                        |                         |                              | Y2   |            |             |
|             |      | GND               |                      |                        |                         |                              | Y1   |            |             |
|             |      | GND               |                      |                        |                         |                              | W20  |            |             |
|             |      | GND               |                      |                        |                         |                              | W4   |            |             |
|             |      | GND               |                      |                        |                         |                              | W3   |            |             |
|             |      | GND               |                      |                        |                         |                              | V22  |            |             |
|             |      | GND               |                      |                        |                         |                              | V17  |            |             |
|             |      | GND               |                      |                        |                         |                              | V2   |            |             |
|             |      | GND               |                      |                        |                         |                              | V1   |            |             |
|             |      | GND               |                      |                        |                         |                              | U19  |            |             |
|             |      | GND               |                      |                        |                         |                              | U14  |            |             |
|             |      | GND               |                      |                        |                         |                              | U9   |            |             |
|             |      | GND               |                      |                        |                         |                              | U5   |            |             |
|             |      | GND               |                      |                        |                         |                              | U3   |            |             |
|             |      | GND               |                      |                        |                         |                              | T11  |            |             |
|             |      | GND               |                      |                        |                         |                              | T2   |            |             |
|             |      | GND               |                      |                        |                         |                              | T1   |            |             |
|             |      | GND               |                      |                        |                         |                              | R13  |            |             |
|             |      | GND               |                      |                        |                         |                              | R3   |            |             |
|             |      | GND               |                      |                        |                         |                              | P10  |            |             |
|             |      | GND               |                      |                        |                         |                              | P4   |            |             |
|             |      | GND               |                      |                        |                         |                              | P2   |            |             |
|             |      | GND               |                      |                        |                         |                              | P1   |            |             |
|             |      | GND               |                      |                        |                         |                              | N22  |            |             |
|             |      | GND               |                      |                        |                         |                              | N15  |            |             |
|             |      | GND               |                      |                        |                         |                              | N13  |            |             |
|             |      | GND               |                      |                        |                         |                              | N11  |            |             |
|             |      | GND               |                      |                        |                         |                              | N7   |            |             |
|             |      | GND               |                      |                        |                         |                              | N5   |            |             |
|             |      | GND               |                      |                        |                         |                              | N3   |            |             |
|             |      | GND               |                      |                        |                         |                              | M19  |            |             |
|             |      | GND               |                      |                        |                         |                              | M14  |            |             |
|             |      | GND               |                      |                        |                         |                              | M12  |            |             |
|             |      | GND               |                      |                        |                         |                              | M9   |            |             |
|             |      | GND               |                      |                        |                         |                              | M4   |            |             |
|             |      | GND               |                      |                        |                         |                              | M2   |            |             |
|             |      | GND               |                      |                        |                         |                              | M1   |            |             |
|             |      | GND               |                      |                        |                         |                              | L16  |            |             |
|             |      | GND               |                      |                        |                         |                              | L13  |            |             |
|             |      | GND               |                      |                        |                         |                              | L11  |            |             |
|             |      | GND               |                      |                        |                         |                              | L5   |            |             |
|             |      | GND               |                      |                        |                         |                              | L3   |            |             |
|             |      | GND               |                      |                        |                         |                              | K14  |            |             |
|             |      | GND               |                      |                        |                         |                              | K12  |            |             |
|             |      | GND               |                      |                        |                         |                              | K10  |            |             |
|             |      | GND               |                      |                        |                         |                              | K8   |            |             |
|             |      | GND               |                      |                        |                         |                              | K4   |            |             |
|             |      | GND               |                      |                        |                         |                              | K2   |            |             |
|             |      | GND               |                      |                        |                         |                              | K1   |            |             |
|             |      | GND               |                      |                        |                         |                              | J20  |            |             |
|             |      | GND               |                      |                        |                         |                              | J15  |            |             |
|             |      | GND               |                      |                        |                         |                              | J13  |            |             |
|             |      | GND               |                      |                        |                         |                              | J11  |            |             |
|             |      | GND               |                      |                        |                         |                              | J5   |            |             |
|             |      | GND               |                      |                        |                         |                              | J3   |            |             |
|             |      | GND               |                      |                        |                         |                              | H14  |            |             |
|             |      | GND               |                      |                        |                         |                              | H4   |            |             |
|             |      | GND               |                      |                        |                         |                              | H3   |            |             |
|             |      | GND               |                      |                        |                         |                              | H2   |            |             |
|             |      | GND               |                      |                        |                         |                              | H1   |            |             |
|             |      | GND               |                      |                        |                         |                              | G9   |            |             |
|             |      | GND               |                      |                        |                         |                              | G3   |            |             |
|             |      | GND               |                      |                        |                         |                              | F16  |            |             |
|             |      | GND               |                      |                        |                         |                              | F11  |            |             |
|             |      | GND               |                      |                        |                         |                              | F6   |            |             |
|             |      | GND               |                      |                        |                         |                              | F2   |            |             |
|             |      | GND               |                      |                        |                         |                              | F1   |            |             |
|             |      | GND               |                      |                        |                         |                              | E13  |            |             |
|             |      | GND               |                      |                        |                         |                              | E4   |            |             |
|             |      | GND               |                      |                        |                         |                              | E3   |            |             |
|             |      | GND               |                      |                        |                         |                              | D20  |            |             |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF | Pin Name/Function | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | U484 | DQS for X8 | DQS for X16 |
|-------------|------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
|             |      | GND               |                      |                        |                         |                              | D10  |            |             |
|             |      | GND               |                      |                        |                         |                              | D5   |            |             |
|             |      | GND               |                      |                        |                         |                              | D2   |            |             |
|             |      | GND               |                      |                        |                         |                              | D1   |            |             |
|             |      | GND               |                      |                        |                         |                              | C22  |            |             |
|             |      | GND               |                      |                        |                         |                              | C17  |            |             |
|             |      | GND               |                      |                        |                         |                              | C7   |            |             |
|             |      | GND               |                      |                        |                         |                              | C4   |            |             |
|             |      | GND               |                      |                        |                         |                              | C3   |            |             |
|             |      | GND               |                      |                        |                         |                              | B14  |            |             |
|             |      | GND               |                      |                        |                         |                              | B2   |            |             |
|             |      | GND               |                      |                        |                         |                              | B1   |            |             |
|             |      | GND               |                      |                        |                         |                              | A21  |            |             |
|             |      | GND               |                      |                        |                         |                              | A11  |            |             |
|             |      | GND               |                      |                        |                         |                              | A5   |            |             |
|             |      | VCC               |                      |                        |                         |                              | J14  |            |             |
|             |      | VCC               |                      |                        |                         |                              | P15  |            |             |
|             |      | VCC               |                      |                        |                         |                              | P13  |            |             |
|             |      | VCC               |                      |                        |                         |                              | P11  |            |             |
|             |      | VCC               |                      |                        |                         |                              | N14  |            |             |
|             |      | VCC               |                      |                        |                         |                              | N12  |            |             |
|             |      | VCC               |                      |                        |                         |                              | M15  |            |             |
|             |      | VCC               |                      |                        |                         |                              | M13  |            |             |
|             |      | VCC               |                      |                        |                         |                              | M11  |            |             |
|             |      | VCC               |                      |                        |                         |                              | L14  |            |             |
|             |      | VCC               |                      |                        |                         |                              | L12  |            |             |
|             |      | VCC               |                      |                        |                         |                              | L10  |            |             |
|             |      | VCC               |                      |                        |                         |                              | K13  |            |             |
|             |      | VCC               |                      |                        |                         |                              | K11  |            |             |
|             |      | VCC               |                      |                        |                         |                              | K9   |            |             |
|             |      | VCC               |                      |                        |                         |                              | J12  |            |             |
|             |      | VCC               |                      |                        |                         |                              | J10  |            |             |
|             |      | VCC               |                      |                        |                         |                              | H15  |            |             |
|             |      | VCC               |                      |                        |                         |                              | H13  |            |             |
|             |      | VCC               |                      |                        |                         |                              | H11  |            |             |
|             |      | DNU               |                      |                        |                         |                              | B3   |            |             |
|             |      | DNU               |                      |                        |                         |                              | B4   |            |             |
|             |      | DNU               |                      |                        |                         |                              | D21  |            |             |
|             |      | DNU               |                      |                        |                         |                              | E10  |            |             |
|             |      | VCCPGM            |                      |                        |                         |                              | Y6   |            |             |
|             |      | VCCPGM            |                      |                        |                         |                              | U20  |            |             |
|             |      | VCCPGM            |                      |                        |                         |                              | B7   |            |             |
|             |      | VCCBAT            |                      |                        |                         |                              | A3   |            |             |
|             |      | VCCIO3A           |                      |                        |                         |                              | T6   |            |             |
|             |      | VCCIO3A           |                      |                        |                         |                              | AA6  |            |             |
|             |      | VCCIO3B           |                      |                        |                         |                              | V7   |            |             |
|             |      | VCCIO3B           |                      |                        |                         |                              | AB9  |            |             |
|             |      | VCCIO3B           |                      |                        |                         |                              | W10  |            |             |
|             |      | VCCIO3B           |                      |                        |                         |                              | R8   |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | T16  |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | AB14 |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | AA21 |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | Y18  |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | W15  |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | V12  |            |             |
|             |      | VCCIO5A           |                      |                        |                         |                              | T21  |            |             |
|             |      | VCCIO5A           |                      |                        |                         |                              | R18  |            |             |
|             |      | VCCIO5B           |                      |                        |                         |                              | H22  |            |             |
|             |      | VCCIO5B           |                      |                        |                         |                              | P20  |            |             |
|             |      | VCCIO5B           |                      |                        |                         |                              | N17  |            |             |
|             |      | VCCIO5B           |                      |                        |                         |                              | L21  |            |             |
|             |      | VCCIO5B           |                      |                        |                         |                              | K18  |            |             |
|             |      | VCCIO5B           |                      |                        |                         |                              | G19  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | B19  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | H17  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | E18  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | D15  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | C12  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | A16  |            |             |
|             |      | VCCIO8A           |                      |                        |                         |                              | E8   |            |             |
|             |      | VCCIO8A           |                      |                        |                         |                              | H7   |            |             |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF      | Pin Name/Function | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | U484 | DQS for X8 | DQS for X16 |
|-------------|-----------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
|             |           | VCCIO8A           |                      |                        |                         |                              | B9   |            |             |
|             |           | VCCIO8A           |                      |                        |                         |                              | A6   |            |             |
|             |           | VCCPD3A           |                      |                        |                         |                              | V6   |            |             |
|             |           | VCCPD3B4A         |                      |                        |                         |                              | V16  |            |             |
|             |           | VCCPD3B4A         |                      |                        |                         |                              | W9   |            |             |
|             |           | VCCPD3B4A         |                      |                        |                         |                              | V14  |            |             |
|             |           | VCCPD3B4A         |                      |                        |                         |                              | V10  |            |             |
|             |           | VCCPD5A           |                      |                        |                         |                              | P17  |            |             |
|             |           | VCCPD5B           |                      |                        |                         |                              | N19  |            |             |
|             |           | VCCPD5B           |                      |                        |                         |                              | M18  |            |             |
|             |           | VCCPD7A8A         |                      |                        |                         |                              | F13  |            |             |
|             |           | VCCPD7A8A         |                      |                        |                         |                              | F9   |            |             |
|             |           | VCCPD7A8A         |                      |                        |                         |                              | E15  |            |             |
|             |           | VCCPD7A8A         |                      |                        |                         |                              | E9   |            |             |
| 3A          | VREFB3AN0 | VREFB3AN0         |                      |                        |                         |                              | W6   |            |             |
| 3B          | VREFB3BN0 | VREFB3BN0         |                      |                        |                         |                              | AB12 |            |             |
| 4A          | VREFB4AN0 | VREFB4AN0         |                      |                        |                         |                              | AA14 |            |             |
| 5A          | VREFB5AN0 | VREFB5AN0         |                      |                        |                         |                              | V21  |            |             |
| 5B          | VREFB5BN0 | VREFB5BN0         |                      |                        |                         |                              | K20  |            |             |
| 7A          | VREFB7AN0 | VREFB7AN0         |                      |                        |                         |                              | D16  |            |             |
| 8A          | VREFB8AN0 | VREFB8AN0         |                      |                        |                         |                              | B10  |            |             |
|             |           | NC                |                      |                        |                         |                              | AB3  |            |             |
|             |           | NC                |                      |                        |                         |                              | V11  |            |             |
|             |           | NC                |                      |                        |                         |                              | P22  |            |             |
|             |           | NC                |                      |                        |                         |                              | P21  |            |             |
|             |           | NC                |                      |                        |                         |                              | P18  |            |             |
|             |           | NC                |                      |                        |                         |                              | P16  |            |             |
|             |           | NC                |                      |                        |                         |                              | N21  |            |             |
|             |           | NC                |                      |                        |                         |                              | N20  |            |             |
|             |           | NC                |                      |                        |                         |                              | N18  |            |             |
|             |           | NC                |                      |                        |                         |                              | N16  |            |             |
|             |           | NC                |                      |                        |                         |                              | M22  |            |             |
|             |           | NC                |                      |                        |                         |                              | M21  |            |             |
|             |           | NC                |                      |                        |                         |                              | M20  |            |             |
|             |           | NC                |                      |                        |                         |                              | L22  |            |             |
|             |           | NC                |                      |                        |                         |                              | K22  |            |             |
|             |           | NC                |                      |                        |                         |                              | J22  |            |             |
|             |           | NC                |                      |                        |                         |                              | F22  |            |             |
|             |           | NC                |                      |                        |                         |                              | E22  |            |             |
|             |           | VCCH_GXBL         |                      |                        |                         |                              | T3   |            |             |
|             |           | VCCH_GXBL         |                      |                        |                         |                              | M3   |            |             |
|             |           | VCCL_GXBL         |                      |                        |                         |                              | P3   |            |             |
|             |           | VCCL_GXBL         |                      |                        |                         |                              | K3   |            |             |
|             |           | RREF_TL           |                      |                        |                         |                              | A1   |            |             |
|             |           | VCCA_FPLL         |                      |                        |                         |                              | T4   |            |             |
|             |           | VCCA_FPLL         |                      |                        |                         |                              | F4   |            |             |
|             |           | VCCA_FPLL         |                      |                        |                         |                              | U18  |            |             |
|             |           | VCCA_FPLL         |                      |                        |                         |                              | E19  |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | D6   |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | D12  |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | D19  |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | W19  |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | AA12 |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | AB5  |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | L4   |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | N4   |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | K5   |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | J4   |            |             |

Note:

(1) For more information about pin definition and pin connection guidelines, refer to the [Cyclone V Device Family Pin Connection Guidelines](#).



**Pin Information for the Cyclone® V 5CGXBC4 Device**  
**Version 1.0**  
**Note (1)**

| Bank Number | VREF      | Pin Name/Function         | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F672 | DQS for X8 | DQS for X16 |
|-------------|-----------|---------------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| GXB_L1      |           | REFCLK1Ln                 |                      |                        |                         |                              | P6   |            |             |
| GXB_L1      |           | REFCLK1Lp                 |                      |                        |                         |                              | N7   |            |             |
| GXB_L1      |           | GXB_TX_L5n                |                      |                        |                         |                              | K1   |            |             |
| GXB_L1      |           | GXB_TX_L5p                |                      |                        |                         |                              | K2   |            |             |
| GXB_L1      |           | GXB_RX_L5p,GXB_REFCLK_L5p |                      |                        |                         |                              | M2   |            |             |
| GXB_L1      |           | GXB_RX_L5n,GXB_REFCLK_L5n |                      |                        |                         |                              | M1   |            |             |
| GXB_L1      |           | GXB_TX_L4n                |                      |                        |                         |                              | P1   |            |             |
| GXB_L1      |           | GXB_TX_L4p                |                      |                        |                         |                              | P2   |            |             |
| GXB_L1      |           | GXB_RX_L4p,GXB_REFCLK_L4p |                      |                        |                         |                              | T2   |            |             |
| GXB_L1      |           | GXB_RX_L4n,GXB_REFCLK_L4n |                      |                        |                         |                              | T1   |            |             |
| GXB_L1      |           | GXB_TX_L3n                |                      |                        |                         |                              | W3   |            |             |
| GXB_L1      |           | GXB_TX_L3p                |                      |                        |                         |                              | W4   |            |             |
| GXB_L1      |           | GXB_RX_L3p,GXB_REFCLK_L3p |                      |                        |                         |                              | V2   |            |             |
| GXB_L1      |           | GXB_RX_L3n,GXB_REFCLK_L3n |                      |                        |                         |                              | V1   |            |             |
| GXB_L0      |           | GXB_TX_L2n                |                      |                        |                         |                              | AA3  |            |             |
| GXB_L0      |           | GXB_TX_L2p                |                      |                        |                         |                              | AA4  |            |             |
| GXB_L0      |           | GXB_RX_L2p,GXB_REFCLK_L2p |                      |                        |                         |                              | Y2   |            |             |
| GXB_L0      |           | GXB_RX_L2n,GXB_REFCLK_L2n |                      |                        |                         |                              | Y1   |            |             |
| GXB_L0      |           | GXB_TX_L1n                |                      |                        |                         |                              | AC3  |            |             |
| GXB_L0      |           | GXB_TX_L1p                |                      |                        |                         |                              | AC4  |            |             |
| GXB_L0      |           | GXB_RX_L1p,GXB_REFCLK_L1p |                      |                        |                         |                              | AB2  |            |             |
| GXB_L0      |           | GXB_RX_L1n,GXB_REFCLK_L1n |                      |                        |                         |                              | AB1  |            |             |
| GXB_L0      |           | GXB_TX_L0n                |                      |                        |                         |                              | AE3  |            |             |
| GXB_L0      |           | GXB_TX_L0p                |                      |                        |                         |                              | AE4  |            |             |
| GXB_L0      |           | GXB_RX_L0p,GXB_REFCLK_L0p |                      |                        |                         |                              | AD2  |            |             |
| GXB_L0      |           | GXB_RX_L0n,GXB_REFCLK_L0n |                      |                        |                         |                              | AD1  |            |             |
| GXB_L0      |           | REFCLK0Lp                 |                      |                        |                         |                              | V6   |            |             |
| GXB_L0      |           | REFCLK0Ln                 |                      |                        |                         |                              | W6   |            |             |
| 3A          |           | TDO                       |                      | TDO                    |                         |                              | V7   |            |             |
| 3A          |           | nCSO                      |                      | DATA4                  |                         |                              | Y6   |            |             |
| 3A          |           | TMS                       |                      | TMS                    |                         |                              | R6   |            |             |
| 3A          |           | AS_DATA3                  |                      | DATA3                  |                         |                              | U6   |            |             |
| 3A          |           | TCK                       |                      | TCK                    |                         |                              | Y5   |            |             |
| 3A          |           | AS_DATA2                  |                      | DATA2                  |                         |                              | AB5  |            |             |
| 3A          |           | TDI                       |                      | TDI                    |                         |                              | T6   |            |             |
| 3A          |           | AS_DATA1                  |                      | DATA1                  |                         |                              | AD5  |            |             |
| 3A          |           | DCLK                      |                      | DCLK                   |                         |                              | N8   |            |             |
| 3A          |           | AS_DATA0,ASDO             |                      | DATA0                  |                         |                              | AF5  |            |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA6                  | DIFFIO_RX_B1n           | DIFFOUT_B1n                  | T7   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA5                  | DIFFIO_TX_B2n           | DIFFOUT_B2n                  | U7   |            |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA8                  | DIFFIO_RX_B1p           | DIFFOUT_B1p                  | T8   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA7                  | DIFFIO_TX_B2p           | DIFFOUT_B2p                  | V8   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA10                 | DIFFIO_RX_B3n           | DIFFOUT_B3n                  | W8   | DQSn1B     |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA9                  | DIFFIO_TX_B4n           | DIFFOUT_B4n                  | AB6  | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA12                 | DIFFIO_RX_B3p           | DIFFOUT_B3p                  | Y9   | DQS1B      |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA11                 | DIFFIO_TX_B4p           | DIFFOUT_B4p                  | AA6  |            |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA14                 | DIFFIO_RX_B5n           | DIFFOUT_B5n                  | R10  | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA13                 | DIFFIO_TX_B6n           | DIFFOUT_B6n                  | AA7  | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | CLKUSR                 | DIFFIO_RX_B5p           | DIFFOUT_B5p                  | R9   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | DATA15                 | DIFFIO_TX_B6p           | DIFFOUT_B6p                  | Y8   | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | PR_DONE                | DIFFIO_RX_B7n           | DIFFOUT_B7n                  | R8   |            |             |
| 3A          | VREFB3AN0 | IO                        |                      | PR_READY               | DIFFIO_TX_B8n           | DIFFOUT_B8n                  | AD6  | DQ1B       |             |
| 3A          | VREFB3AN0 | IO                        |                      | PR_ERROR               | DIFFIO_RX_B7p           | DIFFOUT_B7p                  | P8   |            |             |
| 3A          | VREFB3AN0 | IO                        |                      |                        | DIFFIO_TX_B8p           | DIFFOUT_B8p                  | AD7  | DQ1B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B9n           | DIFFOUT_B9n                  | U9   |            |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B10n          | DIFFOUT_B10n                 | Y11  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B9p           | DIFFOUT_B9p                  | T9   | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B10p          | DIFFOUT_B10p                 | W11  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B11n          | DIFFOUT_B11n                 | T11  | DQSn2B     |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B12n          | DIFFOUT_B12n                 | AC10 | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_RX_B11p          | DIFFOUT_B11p                 | R11  | DQS2B      |             |
| 3B          | VREFB3BN0 | IO                        |                      |                        | DIFFIO_TX_B12p          | DIFFOUT_B12p                 | AB10 |            |             |



**Pin Information for the Cyclone® V 5CGXBC4 Device**  
**Version 1.0**  
**Note (1)**

| Bank Number | VREF      | Pin Name/Function | Optional Function(s)                       | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F672 | DQS for X8 | DQS for X16 |
|-------------|-----------|-------------------|--|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_TX_B13n          | DIFFOUT_B13n                 | AC8  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_RX_B14n          | DIFFOUT_B14n                 | AB11 | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_TX_B13p          | DIFFOUT_B13p                 | AC9  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_RX_B14p          | DIFFOUT_B14p                 | AB12 | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                | CLK0n,FPLL_BL_FBn                          |                        | DIFFIO_RX_B15n          | DIFFOUT_B15n                 | T12  |            |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_TX_B16n          | DIFFOUT_B16n                 | Y10  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                | CLK0p,FPLL_BL_FBp                          |                        | DIFFIO_RX_B15p          | DIFFOUT_B15p                 | T13  |            |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_TX_B16p          | DIFFOUT_B16p                 | W10  | DQ2B       |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_TX_B17n          | DIFFOUT_B17n                 | V9   |            |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_RX_B18n          | DIFFOUT_B18n                 | AE8  | DQ3B       |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_TX_B17p          | DIFFOUT_B17p                 | V10  | DQ3B       |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_RX_B18p          | DIFFOUT_B18p                 | AD8  | DQ3B       |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_RX_B19n          | DIFFOUT_B19n                 | P10  | DQSn3B     |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_TX_B20n          | DIFFOUT_B20n                 | AF9  | DQ3B       |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_RX_B19p          | DIFFOUT_B19p                 | N10  | DQSn3B     |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_TX_B20p          | DIFFOUT_B20p                 | AE9  |            |             |
| 3B          | VREFB3BN0 | IO                | FPLL_BL_CLKOUT1,FPLL_BL_CLKOUTn            |                        | DIFFIO_TX_B21n          | DIFFOUT_B21n                 | AF8  | DQ3B       |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_RX_B22n          | DIFFOUT_B22n                 | U11  | DQ3B       |             |
| 3B          | VREFB3BN0 | IO                | FPLL_BL_CLKOUT0,FPLL_BL_CLKOUTp,FPLL_BL_FB |                        | DIFFIO_TX_B21p          | DIFFOUT_B21p                 | AF7  | DQ3B       |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_RX_B22p          | DIFFOUT_B22p                 | U10  | DQ3B       |             |
| 3B          | VREFB3BN0 | IO                | CLK1n                                      |                        | DIFFIO_RX_B23n          | DIFFOUT_B23n                 | P12  |            |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_TX_B24n          | DIFFOUT_B24n                 | AF6  | DQ3B       |             |
| 3B          | VREFB3BN0 | IO                | CLK1p                                      |                        | DIFFIO_RX_B23p          | DIFFOUT_B23p                 | P11  |            |             |
| 3B          | VREFB3BN0 | IO                |  |                        | DIFFIO_TX_B24p          | DIFFOUT_B24p                 | AE6  | DQ3B       |             |
| 4A          | VREFB4AN0 | IO                | RZQ_0                                      |                        | DIFFIO_TX_B25n          | DIFFOUT_B25n                 | AE11 |            |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B26n          | DIFFOUT_B26n                 | AA14 | DQ4B       |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B25p          | DIFFOUT_B25p                 | AD11 | DQ4B       |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B26p          | DIFFOUT_B26p                 | Y14  | DQ4B       |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B27n          | DIFFOUT_B27n                 | W13  | DQSn4B     |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B28n          | DIFFOUT_B28n                 | AD12 | DQ4B       |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B27p          | DIFFOUT_B27p                 | V13  | DQSn4B     |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B28p          | DIFFOUT_B28p                 | AD13 |            |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B29n          | DIFFOUT_B29n                 | AE10 | DQ4B       |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B30n          | DIFFOUT_B30n                 | Y13  | DQ4B       |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B29p          | DIFFOUT_B29p                 | AD10 | DQ4B       |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B30p          | DIFFOUT_B30p                 | W12  | DQ4B       |             |
| 4A          | VREFB4AN0 | IO                | CLK2n                                      |                        | DIFFIO_RX_B31n          | DIFFOUT_B31n                 | V12  |            |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B32n          | DIFFOUT_B32n                 | AF12 | DQ4B       |             |
| 4A          | VREFB4AN0 | IO                | CLK2p                                      |                        | DIFFIO_RX_B31p          | DIFFOUT_B31p                 | U12  |            |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B32p          | DIFFOUT_B32p                 | AF11 | DQ4B       |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B33n          | DIFFOUT_B33n                 | AC13 |            |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B34n          | DIFFOUT_B34n                 | AC15 | DQ5B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B33p          | DIFFOUT_B33p                 | AC14 | DQ5B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B34p          | DIFFOUT_B34p                 | AB15 | DQ5B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B35n          | DIFFOUT_B35n                 | V14  | DQSn5B     | DQ1B        |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B36n          | DIFFOUT_B36n                 | AF13 | DQ5B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B35p          | DIFFOUT_B35p                 | U14  | DQSn5B     | DQ1B        |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B36p          | DIFFOUT_B36p                 | AE13 |            |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B37n          | DIFFOUT_B37n                 | AF14 | DQ5B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B38n          | DIFFOUT_B38n                 | AB16 | DQ5B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B37p          | DIFFOUT_B37p                 | AE14 | DQ5B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B38p          | DIFFOUT_B38p                 | AA16 | DQ5B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                | CLK3n                                      |                        | DIFFIO_RX_B39n          | DIFFOUT_B39n                 | Y16  |            |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B40n          | DIFFOUT_B40n                 | AF18 | DQ5B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                | CLK3p                                      |                        | DIFFIO_RX_B39p          | DIFFOUT_B39p                 | Y15  |            |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B40p          | DIFFOUT_B40p                 | AE18 | DQ5B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B41n          | DIFFOUT_B41n                 | AD18 |            |             |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B42n          | DIFFOUT_B42n                 | AD16 | DQ6B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B41p          | DIFFOUT_B41p                 | AC18 | DQ6B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B42p          | DIFFOUT_B42p                 | AD17 | DQ6B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_RX_B43n          | DIFFOUT_B43n                 | W15  | DQSn6B     | DQSn1B      |
| 4A          | VREFB4AN0 | IO                |  |                        | DIFFIO_TX_B44n          | DIFFOUT_B44n                 | AF19 | DQ6B       | DQ1B        |





**Pin Information for the Cyclone® V 5CGXBC4 Device**  
**Version 1.0**  
**Note (1)**

| Bank Number | VREF      | Pin Name/Function | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F672 | DQS for X8 | DQS for X16 |
|-------------|-----------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B43p          | DIFFOUT_B43p                 | V15  | DQS6B      | DQS1B       |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B44p          | DIFFOUT_B44p                 | AE19 |            |             |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B45n          | DIFFOUT_B45n                 | AF22 | DQ6B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B46n          | DIFFOUT_B46n                 | AC17 | DQ6B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B45p          | DIFFOUT_B45p                 | AF21 | DQ6B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B46p          | DIFFOUT_B46p                 | AB17 | DQ6B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B47n          | DIFFOUT_B47n                 | U17  |            |             |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B48n          | DIFFOUT_B48n                 | AE21 | DQ6B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B47p          | DIFFOUT_B47p                 | T17  |            |             |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B48p          | DIFFOUT_B48p                 | AE20 | DQ6B       | DQ1B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B49n          | DIFFOUT_B49n                 | AD20 |            |             |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B50n          | DIFFOUT_B50n                 | AE15 | DQ7B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B49p          | DIFFOUT_B49p                 | AC20 | DQ7B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B50p          | DIFFOUT_B50p                 | AE16 | DQ7B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B51n          | DIFFOUT_B51n                 | W17  | DQSn7B     | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B52n          | DIFFOUT_B52n                 | AD21 | DQ7B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B51p          | DIFFOUT_B51p                 | W16  | DQS7B      | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B52p          | DIFFOUT_B52p                 | AD22 |            |             |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B53n          | DIFFOUT_B53n                 | AE23 | DQ7B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B54n          | DIFFOUT_B54n                 | AF16 | DQ7B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B53p          | DIFFOUT_B53p                 | AD23 | DQ7B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B54p          | DIFFOUT_B54p                 | AF17 | DQ7B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B55n          | DIFFOUT_B55n                 | U16  |            |             |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B56n          | DIFFOUT_B56n                 | AF23 | DQ7B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B55p          | DIFFOUT_B55p                 | U15  |            |             |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B56p          | DIFFOUT_B56p                 | AE24 | DQ7B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B57n          | DIFFOUT_B57n                 | AF24 |            |             |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B58n          | DIFFOUT_B58n                 | AA18 | DQ8B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B57p          | DIFFOUT_B57p                 | AE25 | DQ8B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B58p          | DIFFOUT_B58p                 | Y18  | DQ8B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B59n          | DIFFOUT_B59n                 | V17  | DQSn8B     | DQSn2B      |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B60n          | DIFFOUT_B60n                 | AE26 | DQ8B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B59p          | DIFFOUT_B59p                 | V18  | DQS8B      | DQS2B       |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B60p          | DIFFOUT_B60p                 | AD26 |            |             |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B61n          | DIFFOUT_B61n                 | AC19 | DQ8B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B62n          | DIFFOUT_B62n                 | Y19  | DQ8B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B61p          | DIFFOUT_B61p                 | AB19 | DQ8B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B62p          | DIFFOUT_B62p                 | Y20  | DQ8B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B63n          | DIFFOUT_B63n                 | W18  |            |             |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B64n          | DIFFOUT_B64n                 | AA21 | DQ8B       | DQ2B        |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_RX_B63p          | DIFFOUT_B63p                 | V19  |            |             |
| 4A          | VREFB4AN0 | IO                |                      |                        | DIFFIO_TX_B64p          | DIFFOUT_B64p                 | AB22 | DQ8B       | DQ2B        |
| 5A          | VREFB5AN0 | IO                | RZQ_1                |                        | DIFFIO_TX_R1p           | DIFFOUT_R1p                  | AC22 | DQ1R       |             |
| 5A          | VREFB5AN0 | IO                |                      | INIT_DONE              | DIFFIO_RX_R2p           | DIFFOUT_R2p                  | U19  |            |             |
| 5A          | VREFB5AN0 | IO                |                      | PR_REQUEST             | DIFFIO_TX_R1n           | DIFFOUT_R1n                  | AC23 | DQ1R       |             |
| 5A          | VREFB5AN0 | IO                |                      | CRC_ERROR              | DIFFIO_RX_R2n           | DIFFOUT_R2n                  | V20  |            |             |
| 5A          | VREFB5AN0 | IO                |                      | nCEO                   | DIFFIO_TX_R3p           | DIFFOUT_R3p                  | AA22 | DQ1R       |             |
| 5A          | VREFB5AN0 | IO                |                      |                        | DIFFIO_RX_R4p           | DIFFOUT_R4p                  | W20  | DQ1R       |             |
| 5A          | VREFB5AN0 | IO                |                      | CvP_CONFDONE           | DIFFIO_TX_R3n           | DIFFOUT_R3n                  | AA23 | DQ1R       |             |
| 5A          | VREFB5AN0 | IO                |                      |                        | DIFFIO_RX_R4n           | DIFFOUT_R4n                  | W21  | DQ1R       |             |
| 5A          | VREFB5AN0 | IO                |                      | DEV_OE                 | DIFFIO_TX_R5p           | DIFFOUT_R5p                  | AC24 |            |             |
| 5A          | VREFB5AN0 | IO                |                      |                        | DIFFIO_RX_R6p           | DIFFOUT_R6p                  | V22  | DQS1R      |             |
| 5A          | VREFB5AN0 | IO                |                      | DEV_CLRn               | DIFFIO_TX_R5n           | DIFFOUT_R5n                  | AB24 | DQ1R       |             |
| 5A          | VREFB5AN0 | IO                |                      |                        | DIFFIO_RX_R6n           | DIFFOUT_R6n                  | U22  | DQSn1R     |             |
| 5A          | VREFB5AN0 | IO                |                      |                        | DIFFIO_TX_R7p           | DIFFOUT_R7p                  | Y23  | DQ1R       |             |
| 5A          | VREFB5AN0 | IO                |                      |                        | DIFFIO_RX_R8p           | DIFFOUT_R8p                  | T19  | DQ1R       |             |
| 5A          | VREFB5AN0 | IO                |                      |                        | DIFFIO_TX_R7n           | DIFFOUT_R7n                  | Y24  |            |             |
| 5A          | VREFB5AN0 | IO                |                      |                        | DIFFIO_RX_R8n           | DIFFOUT_R8n                  | U20  | DQ1R       |             |
| 5B          | VREFB5BN0 | IO                | CLK7p.FPLL_BR_FBp    |                        | DIFFIO_RX_R9p           | DIFFOUT_R9p                  | T21  |            |             |
| 5B          | VREFB5BN0 | IO                |                      |                        | DIFFIO_TX_R10p          | DIFFOUT_R10p                 | V23  | DQ2R       |             |
| 5B          | VREFB5BN0 | IO                | CLK7n.FPLL_BR_FBn    |                        | DIFFIO_RX_R9n           | DIFFOUT_R9n                  | T22  |            |             |
| 5B          | VREFB5BN0 | IO                |                      |                        | DIFFIO_TX_R10n          | DIFFOUT_R10n                 | V24  | DQ2R       |             |



**Pin Information for the Cyclone® V 5CGXBC4 Device**  
**Version 1.0**  
**Note (1)**

| Bank Number | VREF     | Pin Name/Function | Optional Function(s)                       | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F672 | DQS for X8 | DQS for X16 |
|-------------|----------|-------------------|--|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R11p          | DIFFOUT_R11p                 | T23  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R12p          | DIFFOUT_R12p                 | AA24 | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R11n          | DIFFOUT_R11n                 | T24  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R12n          | DIFFOUT_R12n                 | AB25 | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R13p          | DIFFOUT_R13p                 | R23  | DQS2R      |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R14p          | DIFFOUT_R14p                 | AD25 |            |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R13n          | DIFFOUT_R13n                 | P23  | DQSn2R     |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R14n          | DIFFOUT_R14n                 | AC25 | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R15p          | DIFFOUT_R15p                 | R24  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R16p          | DIFFOUT_R16p                 | U24  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R15n          | DIFFOUT_R15n                 | R25  | DQ2R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R16n          | DIFFOUT_R16n                 | V25  |            |             |
| 5B          | VREFB5B0 | IO                | CLK6p                                      |                        | DIFFIO_RX_R17p          | DIFFOUT_R17p                 | R20  |            |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R18p          | DIFFOUT_R18p                 | AB26 | DQ3R       |             |
| 5B          | VREFB5B0 | IO                | CLK6n                                      |                        | DIFFIO_RX_R17n          | DIFFOUT_R17n                 | P20  |            |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R18n          | DIFFOUT_R18n                 | AA26 | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R19p          | DIFFOUT_R19p                 | T26  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                | FPLL_BR_CLKOUT0,FPLL_BR_CLKOUTp,FPLL_BR_FB |                        | DIFFIO_TX_R20p          | DIFFOUT_R20p                 | Y25  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R19n          | DIFFOUT_R19n                 | R26  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                | FPLL_BR_CLKOUT1,FPLL_BR_CLKOUTn            |                        | DIFFIO_TX_R20n          | DIFFOUT_R20n                 | Y26  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R21p          | DIFFOUT_R21p                 | P21  | DQS3R      |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R22p          | DIFFOUT_R22p                 | W25  |            |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R21n          | DIFFOUT_R21n                 | P22  | DQSn3R     |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R22n          | DIFFOUT_R22n                 | W26  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R23p          | DIFFOUT_R23p                 | N25  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R24p          | DIFFOUT_R24p                 | U25  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_RX_R23n          | DIFFOUT_R23n                 | P26  | DQ3R       |             |
| 5B          | VREFB5B0 | IO                |  |                        | DIFFIO_TX_R24n          | DIFFOUT_R24n                 | U26  |            |             |
| 6A          | VREFB6A0 | IO                | CLK5p                                      |                        | DIFFIO_RX_R25p          | DIFFOUT_R25p                 | N20  |            |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R26p          | DIFFOUT_R26p                 | J25  | DQ4R       |             |
| 6A          | VREFB6A0 | IO                | CLK5n                                      |                        | DIFFIO_RX_R25n          | DIFFOUT_R25n                 | M21  |            |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R26n          | DIFFOUT_R26n                 | J26  | DQ4R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_RX_R27p          | DIFFOUT_R27p                 | N24  | DQ4R       |             |
| 6A          | VREFB6A0 | IO                | FPLL_TR_CLKOUT0,FPLL_TR_CLKOUTp,FPLL_TR_FB |                        | DIFFIO_TX_R28p          | DIFFOUT_R28p                 | F26  | DQ4R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_RX_R27n          | DIFFOUT_R27n                 | M24  | DQ4R       |             |
| 6A          | VREFB6A0 | IO                | FPLL_TR_CLKOUT1,FPLL_TR_CLKOUTn            |                        | DIFFIO_TX_R28n          | DIFFOUT_R28n                 | G26  | DQ4R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_RX_R29p          | DIFFOUT_R29p                 | N23  | DQS4R      |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R30p          | DIFFOUT_R30p                 | G25  |            |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_RX_R29n          | DIFFOUT_R29n                 | M22  | DQSn4R     |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R30n          | DIFFOUT_R30n                 | H25  | DQ4R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_RX_R31p          | DIFFOUT_R31p                 | M25  | DQ4R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R32p          | DIFFOUT_R32p                 | D26  | DQ4R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_RX_R31n          | DIFFOUT_R31n                 | M26  | DQ4R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R32n          | DIFFOUT_R32n                 | E26  |            |             |
| 6A          | VREFB6A0 | IO                | CLK4p,FPLL_TR_FBp                          |                        | DIFFIO_RX_R33p          | DIFFOUT_R33p                 | K25  |            |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R34p          | DIFFOUT_R34p                 | E24  | DQ5R       |             |
| 6A          | VREFB6A0 | IO                | CLK4n,FPLL_TR_FBn                          |                        | DIFFIO_RX_R33n          | DIFFOUT_R33n                 | K26  |            |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R34n          | DIFFOUT_R34n                 | E25  | DQ5R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_RX_R35p          | DIFFOUT_R35p                 | K24  | DQ5R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R36p          | DIFFOUT_R36p                 | F24  | DQ5R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_RX_R35n          | DIFFOUT_R35n                 | K23  | DQ5R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R36n          | DIFFOUT_R36n                 | G24  | DQ5R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_RX_R37p          | DIFFOUT_R37p                 | L23  | DQS5R      |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R38p          | DIFFOUT_R38p                 | H23  |            |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_RX_R37n          | DIFFOUT_R37n                 | L24  | DQSn5R     |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R38n          | DIFFOUT_R38n                 | H24  | DQ5R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_RX_R39p          | DIFFOUT_R39p                 | H22  | DQ5R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R40p          | DIFFOUT_R40p                 | F23  | DQ5R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_RX_R39n          | DIFFOUT_R39n                 | J23  | DQ5R       |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R40n          | DIFFOUT_R40n                 | G22  |            |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_RX_R41p          | DIFFOUT_R41p                 | L22  |            |             |
| 6A          | VREFB6A0 | IO                |  |                        | DIFFIO_TX_R42p          | DIFFOUT_R42p                 | B25  | DQ6R       |             |



**Pin Information for the Cyclone® V 5CGXBC4 Device**  
**Version 1.0**  
**Note (1)**

| Bank Number | VREF     | Pin Name/Function | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F672 | DQS for X8 | DQS for X16 |
|-------------|----------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_RX_R41n          | DIFFOUT_R41n                 | K21  |            |             |
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_TX_R42n          | DIFFOUT_R42n                 | B26  | DQ6R       |             |
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_RX_R43p          | DIFFOUT_R43p                 | H19  | DQ6R       |             |
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_TX_R44p          | DIFFOUT_R44p                 | D25  | DQ6R       |             |
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_RX_R43n          | DIFFOUT_R43n                 | H20  | DQ6R       |             |
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_TX_R44n          | DIFFOUT_R44n                 | C25  | DQ6R       |             |
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_RX_R45p          | DIFFOUT_R45p                 | J20  | DQS6R      |             |
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_TX_R46p          | DIFFOUT_R46p                 | D22  |            |             |
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_RX_R45n          | DIFFOUT_R45n                 | J21  | DQSn6R     |             |
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_TX_R46n          | DIFFOUT_R46n                 | E23  | DQ6R       |             |
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_RX_R47p          | DIFFOUT_R47p                 | G20  | DQ6R       |             |
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_TX_R48p          | DIFFOUT_R48p                 | E21  | DQ6R       |             |
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_RX_R47n          | DIFFOUT_R47n                 | F21  | DQ6R       |             |
| 6A          | VREFB6A0 | IO                |                      |                        | DIFFIO_TX_R48n          | DIFFOUT_R48n                 | F22  |            |             |
| 7A          |          | GND               |                      |                        |                         |                              | D23  |            |             |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T1p           | DIFFOUT_T1p                  | H15  |            |             |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T2p           | DIFFOUT_T2p                  | C23  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T1n           | DIFFOUT_T1n                  | J16  |            |             |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T2n           | DIFFOUT_T2n                  | C22  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T3p           | DIFFOUT_T3p                  | B24  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T4p           | DIFFOUT_T4p                  | A23  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T3n           | DIFFOUT_T3n                  | A24  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T4n           | DIFFOUT_T4n                  | A22  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T5p           | DIFFOUT_T5p                  | H18  | DQS1T      | DQS1T       |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T6p           | DIFFOUT_T6p                  | B22  |            |             |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T5n           | DIFFOUT_T5n                  | H17  | DQSn1T     | DQSn1T      |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T6n           | DIFFOUT_T6n                  | A21  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T7p           | DIFFOUT_T7p                  | D21  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T8p           | DIFFOUT_T8p                  | B21  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T7n           | DIFFOUT_T7n                  | D20  | DQ1T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T8n           | DIFFOUT_T8n                  | B20  |            |             |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T9p           | DIFFOUT_T9p                  | G16  |            |             |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T10p          | DIFFOUT_T10p                 | C20  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T9n           | DIFFOUT_T9n                  | G17  |            |             |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T10n          | DIFFOUT_T10n                 | B19  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T11p          | DIFFOUT_T11p                 | E20  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T12p          | DIFFOUT_T12p                 | C19  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T11n          | DIFFOUT_T11n                 | E19  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T12n          | DIFFOUT_T12n                 | C18  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T13p          | DIFFOUT_T13p                 | J12  | DQS2T      | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T14p          | DIFFOUT_T14p                 | A19  |            |             |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T13n          | DIFFOUT_T13n                 | J11  | DQSn2T     | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T14n          | DIFFOUT_T14n                 | A18  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T15p          | DIFFOUT_T15p                 | D18  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T16p          | DIFFOUT_T16p                 | A17  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T15n          | DIFFOUT_T15n                 | D17  | DQ2T       | DQ1T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T16n          | DIFFOUT_T16n                 | A16  |            |             |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T17p          | DIFFOUT_T17p                 | H14  |            |             |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T18p          | DIFFOUT_T18p                 | C17  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T17n          | DIFFOUT_T17n                 | H13  |            |             |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T18n          | DIFFOUT_T18n                 | B17  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T19p          | DIFFOUT_T19p                 | E18  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T20p          | DIFFOUT_T20p                 | A14  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T19n          | DIFFOUT_T19n                 | F18  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T20n          | DIFFOUT_T20n                 | B14  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T21p          | DIFFOUT_T21p                 | L12  | DQS3T      | DQS2T       |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T22p          | DIFFOUT_T22p                 | B15  |            |             |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T21n          | DIFFOUT_T21n                 | K11  | DQSn3T     | DQSn2T      |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T22n          | DIFFOUT_T22n                 | C15  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T23p          | DIFFOUT_T23p                 | C14  | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_TX_T24p          | DIFFOUT_T24p                 | A8   | DQ3T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |                      |                        | DIFFIO_RX_T23n          | DIFFOUT_T23n                 | D15  | DQ3T       | DQ2T        |



**Pin Information for the Cyclone® V 5CGXBC4 Device**  
**Version 1.0**  
**Note (1)**

| Bank Number | VREF     | Pin Name/Function | Optional Function(s)                       | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F672 | DQS for X8 | DQS for X16 |
|-------------|----------|-------------------|--|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T24n          | DIFFOUT_T24n                 | A9   |            |             |
| 7A          | VREFB7A0 | IO                | CLK11p                                     |                        | DIFFIO_RX_T25p          | DIFFOUT_T25p                 | G15  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T26p          | DIFFOUT_T26p                 | C9   | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                | CLK11n                                     |                        | DIFFIO_RX_T25n          | DIFFOUT_T25n                 | G14  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T26n          | DIFFOUT_T26n                 | B9   | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T27p          | DIFFOUT_T27p                 | E16  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T28p          | DIFFOUT_T28p                 | D10  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T27n          | DIFFOUT_T27n                 | D16  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T28n          | DIFFOUT_T28n                 | C10  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T29p          | DIFFOUT_T29p                 | N12  | DQS4T      | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T30p          | DIFFOUT_T30p                 | B10  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T29n          | DIFFOUT_T29n                 | M12  | DQSn4T     | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T30n          | DIFFOUT_T30n                 | A11  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T31p          | DIFFOUT_T31p                 | F16  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T32p          | DIFFOUT_T32p                 | E10  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T31n          | DIFFOUT_T31n                 | E15  | DQ4T       | DQ2T        |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T32n          | DIFFOUT_T32n                 | E11  |            |             |
| 7A          | VREFB7A0 | IO                | CLK10p                                     |                        | DIFFIO_RX_T33p          | DIFFOUT_T33p                 | H12  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T34p          | DIFFOUT_T34p                 | B12  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                | CLK10n                                     |                        | DIFFIO_RX_T33n          | DIFFOUT_T33n                 | G11  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T34n          | DIFFOUT_T34n                 | A13  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T35p          | DIFFOUT_T35p                 | G12  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T36p          | DIFFOUT_T36p                 | A12  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T35n          | DIFFOUT_T35n                 | F12  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T36n          | DIFFOUT_T36n                 | B11  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T37p          | DIFFOUT_T37p                 | M11  | DQS5T      |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T38p          | DIFFOUT_T38p                 | C13  |            |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T37n          | DIFFOUT_T37n                 | L11  | DQSn5T     |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T38n          | DIFFOUT_T38n                 | C12  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T39p          | DIFFOUT_T39p                 | E13  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_TX_T40p          | DIFFOUT_T40p                 | D11  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                |  |                        | DIFFIO_RX_T39n          | DIFFOUT_T39n                 | D13  | DQ5T       |             |
| 7A          | VREFB7A0 | IO                | RZQ_2                                      |                        | DIFFIO_TX_T40n          | DIFFOUT_T40n                 | D12  |            |             |
| 8A          | VREFB8A0 | IO                | CLK9p                                      |                        | DIFFIO_RX_T41p          | DIFFOUT_T41p                 | N9   |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T42p          | DIFFOUT_T42p                 | A5   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                | CLK9n                                      |                        | DIFFIO_RX_T41n          | DIFFOUT_T41n                 | M10  |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T42n          | DIFFOUT_T42n                 | B6   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T43p          | DIFFOUT_T43p                 | H8   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                | FPLL_TL_CLKOUT0,FPLL_TL_CLKOUTp,FPLL_TL_FB |                        | DIFFIO_TX_T44p          | DIFFOUT_T44p                 | A7   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T43n          | DIFFOUT_T43n                 | H9   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                | FPLL_TL_CLKOUT1,FPLL_TL_CLKOUTn            |                        | DIFFIO_TX_T44n          | DIFFOUT_T44n                 | B7   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T45p          | DIFFOUT_T45p                 | M9   | DQS6T      |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T46p          | DIFFOUT_T46p                 | D6   |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T45n          | DIFFOUT_T45n                 | L9   | DQSn6T     |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T46n          | DIFFOUT_T46n                 | E6   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T47p          | DIFFOUT_T47p                 | H10  | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T48p          | DIFFOUT_T48p                 | D7   | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T47n          | DIFFOUT_T47n                 | G10  | DQ6T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T48n          | DIFFOUT_T48n                 | C7   |            |             |
| 8A          | VREFB8A0 | IO                | CLK8p,FPLL_TL_FBp                          |                        | DIFFIO_RX_T49p          | DIFFOUT_T49p                 | L8   |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T50p          | DIFFOUT_T50p                 | F6   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                | CLK8n,FPLL_TL_FBn                          |                        | DIFFIO_RX_T49n          | DIFFOUT_T49n                 | K9   |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T50n          | DIFFOUT_T50n                 | G6   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T51p          | DIFFOUT_T51p                 | K8   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T52p          | DIFFOUT_T52p                 | G7   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T51n          | DIFFOUT_T51n                 | J8   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T52n          | DIFFOUT_T52n                 | F7   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T53p          | DIFFOUT_T53p                 | K10  | DQS7T      |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T54p          | DIFFOUT_T54p                 | H7   |            |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T53n          | DIFFOUT_T53n                 | J10  | DQSn7T     |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_TX_T54n          | DIFFOUT_T54n                 | J7   | DQ7T       |             |
| 8A          | VREFB8A0 | IO                |  |                        | DIFFIO_RX_T55p          | DIFFOUT_T55p                 | L7   | DQ7T       |             |



**Pin Information for the Cyclone® V 5CGXBC4 Device**  
**Version 1.0**  
**Note (1)**

| Bank Number | VREF      | Pin Name/Function | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F672 | DQS for X8 | DQS for X16 |
|-------------|-----------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 8A          | VREFB8AN0 | IO                |                      |                        | DIFFIO_TX_T56p          | DIFFOUT_T56p                 | D8   | DQ7T       |             |
| 8A          | VREFB8AN0 | IO                |                      |                        | DIFFIO_RX_T55n          | DIFFOUT_T55n                 | K6   | DQ7T       |             |
| 8A          | VREFB8AN0 | IO                |                      |                        | DIFFIO_TX_T56n          | DIFFOUT_T56n                 | E9   |            |             |
| 9A          |           | MSEL0             |                      | MSEL0                  |                         |                              | M7   |            |             |
| 9A          |           | CONF_DONE         |                      | CONF_DONE              |                         |                              | A6   |            |             |
| 9A          |           | MSEL1             |                      | MSEL1                  |                         |                              | L6   |            |             |
| 9A          |           | nSTATUS           |                      | nSTATUS                |                         |                              | B5   |            |             |
| 9A          |           | nCE               |                      | nCE                    |                         |                              | D5   |            |             |
| 9A          |           | MSEL2             |                      | MSEL2                  |                         |                              | A2   |            |             |
| 9A          |           | MSEL3             |                      | MSEL3                  |                         |                              | K5   |            |             |
| 9A          |           | nCONFIG           |                      | nCONFIG                |                         |                              | F5   |            |             |
| 9A          |           | MSEL4             |                      | MSEL4                  |                         |                              | J5   |            |             |
| 9A          |           | GND               |                      |                        |                         |                              | H5   |            |             |
|             |           | GND               |                      |                        |                         |                              | V26  |            |             |
|             |           | GND               |                      |                        |                         |                              | A25  |            |             |
|             |           | GND               |                      |                        |                         |                              | D24  |            |             |
|             |           | GND               |                      |                        |                         |                              | H26  |            |             |
|             |           | GND               |                      |                        |                         |                              | L25  |            |             |
|             |           | GND               |                      |                        |                         |                              | P24  |            |             |
|             |           | GND               |                      |                        |                         |                              | AA25 |            |             |
|             |           | GND               |                      |                        |                         |                              | AC26 |            |             |
|             |           | GND               |                      |                        |                         |                              | AF25 |            |             |
|             |           | GND               |                      |                        |                         |                              | G23  |            |             |
|             |           | GND               |                      |                        |                         |                              | K22  |            |             |
|             |           | GND               |                      |                        |                         |                              | U23  |            |             |
|             |           | GND               |                      |                        |                         |                              | Y22  |            |             |
|             |           | GND               |                      |                        |                         |                              | AD24 |            |             |
|             |           | GND               |                      |                        |                         |                              | C21  |            |             |
|             |           | GND               |                      |                        |                         |                              | F20  |            |             |
|             |           | GND               |                      |                        |                         |                              | L20  |            |             |
|             |           | GND               |                      |                        |                         |                              | K19  |            |             |
|             |           | GND               |                      |                        |                         |                              | N21  |            |             |
|             |           | GND               |                      |                        |                         |                              | M19  |            |             |
|             |           | GND               |                      |                        |                         |                              | T20  |            |             |
|             |           | GND               |                      |                        |                         |                              | P19  |            |             |
|             |           | GND               |                      |                        |                         |                              | W19  |            |             |
|             |           | GND               |                      |                        |                         |                              | AC21 |            |             |
|             |           | GND               |                      |                        |                         |                              | AF20 |            |             |
|             |           | GND               |                      |                        |                         |                              | B18  |            |             |
|             |           | GND               |                      |                        |                         |                              | E17  |            |             |
|             |           | GND               |                      |                        |                         |                              | L18  |            |             |
|             |           | GND               |                      |                        |                         |                              | K17  |            |             |
|             |           | GND               |                      |                        |                         |                              | J18  |            |             |
|             |           | GND               |                      |                        |                         |                              | N18  |            |             |
|             |           | GND               |                      |                        |                         |                              | M17  |            |             |
|             |           | GND               |                      |                        |                         |                              | R18  |            |             |
|             |           | GND               |                      |                        |                         |                              | P17  |            |             |
|             |           | GND               |                      |                        |                         |                              | AB18 |            |             |
|             |           | GND               |                      |                        |                         |                              | AE17 |            |             |
|             |           | GND               |                      |                        |                         |                              | A15  |            |             |
|             |           | GND               |                      |                        |                         |                              | D14  |            |             |
|             |           | GND               |                      |                        |                         |                              | H16  |            |             |
|             |           | GND               |                      |                        |                         |                              | L16  |            |             |
|             |           | GND               |                      |                        |                         |                              | L14  |            |             |
|             |           | GND               |                      |                        |                         |                              | K15  |            |             |
|             |           | GND               |                      |                        |                         |                              | J14  |            |             |
|             |           | GND               |                      |                        |                         |                              | N16  |            |             |
|             |           | GND               |                      |                        |                         |                              | N14  |            |             |
|             |           | GND               |                      |                        |                         |                              | M15  |            |             |
|             |           | GND               |                      |                        |                         |                              | T15  |            |             |
|             |           | GND               |                      |                        |                         |                              | R16  |            |             |
|             |           | GND               |                      |                        |                         |                              | R14  |            |             |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF | Pin Name/Function | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F672 | DQS for X8 | DQS for X16 |
|-------------|------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
|             |      | GND               |                      |                        |                         |                              | P15  |            |             |
|             |      | GND               |                      |                        |                         |                              | V16  |            |             |
|             |      | GND               |                      |                        |                         |                              | AA15 |            |             |
|             |      | GND               |                      |                        |                         |                              | AD14 |            |             |
|             |      | GND               |                      |                        |                         |                              | G13  |            |             |
|             |      | GND               |                      |                        |                         |                              | K13  |            |             |
|             |      | GND               |                      |                        |                         |                              | K12  |            |             |
|             |      | GND               |                      |                        |                         |                              | M13  |            |             |
|             |      | GND               |                      |                        |                         |                              | R12  |            |             |
|             |      | GND               |                      |                        |                         |                              | P13  |            |             |
|             |      | GND               |                      |                        |                         |                              | U13  |            |             |
|             |      | GND               |                      |                        |                         |                              | Y12  |            |             |
|             |      | GND               |                      |                        |                         |                              | C11  |            |             |
|             |      | GND               |                      |                        |                         |                              | F10  |            |             |
|             |      | GND               |                      |                        |                         |                              | L10  |            |             |
|             |      | GND               |                      |                        |                         |                              | J9   |            |             |
|             |      | GND               |                      |                        |                         |                              | N11  |            |             |
|             |      | GND               |                      |                        |                         |                              | T10  |            |             |
|             |      | GND               |                      |                        |                         |                              | P9   |            |             |
|             |      | GND               |                      |                        |                         |                              | W9   |            |             |
|             |      | GND               |                      |                        |                         |                              | AC11 |            |             |
|             |      | GND               |                      |                        |                         |                              | AF10 |            |             |
|             |      | GND               |                      |                        |                         |                              | B8   |            |             |
|             |      | GND               |                      |                        |                         |                              | E7   |            |             |
|             |      | GND               |                      |                        |                         |                              | H6   |            |             |
|             |      | GND               |                      |                        |                         |                              | N6   |            |             |
|             |      | GND               |                      |                        |                         |                              | M8   |            |             |
|             |      | GND               |                      |                        |                         |                              | R7   |            |             |
|             |      | GND               |                      |                        |                         |                              | P7   |            |             |
|             |      | GND               |                      |                        |                         |                              | AB8  |            |             |
|             |      | GND               |                      |                        |                         |                              | AE7  |            |             |
|             |      | GND               |                      |                        |                         |                              | C5   |            |             |
|             |      | GND               |                      |                        |                         |                              | B4   |            |             |
|             |      | GND               |                      |                        |                         |                              | F4   |            |             |
|             |      | GND               |                      |                        |                         |                              | E5   |            |             |
|             |      | GND               |                      |                        |                         |                              | D4   |            |             |
|             |      | GND               |                      |                        |                         |                              | H4   |            |             |
|             |      | GND               |                      |                        |                         |                              | G5   |            |             |
|             |      | GND               |                      |                        |                         |                              | L4   |            |             |
|             |      | GND               |                      |                        |                         |                              | J4   |            |             |
|             |      | GND               |                      |                        |                         |                              | N4   |            |             |
|             |      | GND               |                      |                        |                         |                              | M5   |            |             |
|             |      | GND               |                      |                        |                         |                              | T5   |            |             |
|             |      | GND               |                      |                        |                         |                              | R4   |            |             |
|             |      | GND               |                      |                        |                         |                              | P5   |            |             |
|             |      | GND               |                      |                        |                         |                              | V5   |            |             |
|             |      | GND               |                      |                        |                         |                              | V4   |            |             |
|             |      | GND               |                      |                        |                         |                              | U4   |            |             |
|             |      | GND               |                      |                        |                         |                              | AA5  |            |             |
|             |      | GND               |                      |                        |                         |                              | Y4   |            |             |
|             |      | GND               |                      |                        |                         |                              | W5   |            |             |
|             |      | GND               |                      |                        |                         |                              | AC5  |            |             |
|             |      | GND               |                      |                        |                         |                              | AB4  |            |             |
|             |      | GND               |                      |                        |                         |                              | AF4  |            |             |
|             |      | GND               |                      |                        |                         |                              | AE5  |            |             |
|             |      | GND               |                      |                        |                         |                              | AD4  |            |             |
|             |      | GND               |                      |                        |                         |                              | C2   |            |             |
|             |      | GND               |                      |                        |                         |                              | C1   |            |             |
|             |      | GND               |                      |                        |                         |                              | B3   |            |             |
|             |      | GND               |                      |                        |                         |                              | B2   |            |             |
|             |      | GND               |                      |                        |                         |                              | F3   |            |             |
|             |      | GND               |                      |                        |                         |                              | E2   |            |             |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF | Pin Name/Function | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F672 | DQS for X8 | DQS for X16 |
|-------------|------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
|             |      | GND               |                      |                        |                         |                              | E1   |            |             |
|             |      | GND               |                      |                        |                         |                              | D3   |            |             |
|             |      | GND               |                      |                        |                         |                              | H3   |            |             |
|             |      | GND               |                      |                        |                         |                              | G2   |            |             |
|             |      | GND               |                      |                        |                         |                              | G1   |            |             |
|             |      | GND               |                      |                        |                         |                              | L2   |            |             |
|             |      | GND               |                      |                        |                         |                              | L1   |            |             |
|             |      | GND               |                      |                        |                         |                              | K3   |            |             |
|             |      | GND               |                      |                        |                         |                              | J2   |            |             |
|             |      | GND               |                      |                        |                         |                              | J1   |            |             |
|             |      | GND               |                      |                        |                         |                              | N2   |            |             |
|             |      | GND               |                      |                        |                         |                              | N1   |            |             |
|             |      | GND               |                      |                        |                         |                              | M3   |            |             |
|             |      | GND               |                      |                        |                         |                              | T3   |            |             |
|             |      | GND               |                      |                        |                         |                              | R2   |            |             |
|             |      | GND               |                      |                        |                         |                              | R1   |            |             |
|             |      | GND               |                      |                        |                         |                              | P3   |            |             |
|             |      | GND               |                      |                        |                         |                              | V3   |            |             |
|             |      | GND               |                      |                        |                         |                              | U2   |            |             |
|             |      | GND               |                      |                        |                         |                              | U1   |            |             |
|             |      | GND               |                      |                        |                         |                              | AA2  |            |             |
|             |      | GND               |                      |                        |                         |                              | AA1  |            |             |
|             |      | GND               |                      |                        |                         |                              | Y3   |            |             |
|             |      | GND               |                      |                        |                         |                              | W2   |            |             |
|             |      | GND               |                      |                        |                         |                              | W1   |            |             |
|             |      | GND               |                      |                        |                         |                              | AC2  |            |             |
|             |      | GND               |                      |                        |                         |                              | AC1  |            |             |
|             |      | GND               |                      |                        |                         |                              | AB3  |            |             |
|             |      | GND               |                      |                        |                         |                              | AF3  |            |             |
|             |      | GND               |                      |                        |                         |                              | AF2  |            |             |
|             |      | GND               |                      |                        |                         |                              | AE2  |            |             |
|             |      | GND               |                      |                        |                         |                              | AE1  |            |             |
|             |      | GND               |                      |                        |                         |                              | AD3  |            |             |
|             |      | VCC               |                      |                        |                         |                              | K20  |            |             |
|             |      | VCC               |                      |                        |                         |                              | L19  |            |             |
|             |      | VCC               |                      |                        |                         |                              | J19  |            |             |
|             |      | VCC               |                      |                        |                         |                              | N19  |            |             |
|             |      | VCC               |                      |                        |                         |                              | M20  |            |             |
|             |      | VCC               |                      |                        |                         |                              | R19  |            |             |
|             |      | VCC               |                      |                        |                         |                              | L17  |            |             |
|             |      | VCC               |                      |                        |                         |                              | K18  |            |             |
|             |      | VCC               |                      |                        |                         |                              | J17  |            |             |
|             |      | VCC               |                      |                        |                         |                              | N17  |            |             |
|             |      | VCC               |                      |                        |                         |                              | M18  |            |             |
|             |      | VCC               |                      |                        |                         |                              | T18  |            |             |
|             |      | VCC               |                      |                        |                         |                              | R17  |            |             |
|             |      | VCC               |                      |                        |                         |                              | P18  |            |             |
|             |      | VCC               |                      |                        |                         |                              | L15  |            |             |
|             |      | VCC               |                      |                        |                         |                              | K16  |            |             |
|             |      | VCC               |                      |                        |                         |                              | K14  |            |             |
|             |      | VCC               |                      |                        |                         |                              | J15  |            |             |
|             |      | VCC               |                      |                        |                         |                              | N15  |            |             |
|             |      | VCC               |                      |                        |                         |                              | M16  |            |             |
|             |      | VCC               |                      |                        |                         |                              | M14  |            |             |
|             |      | VCC               |                      |                        |                         |                              | T16  |            |             |
|             |      | VCC               |                      |                        |                         |                              | T14  |            |             |
|             |      | VCC               |                      |                        |                         |                              | R15  |            |             |
|             |      | VCC               |                      |                        |                         |                              | P16  |            |             |
|             |      | VCC               |                      |                        |                         |                              | P14  |            |             |
|             |      | VCC               |                      |                        |                         |                              | L13  |            |             |
|             |      | VCC               |                      |                        |                         |                              | J13  |            |             |
|             |      | VCC               |                      |                        |                         |                              | N13  |            |             |



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0  
Note (1)

| Bank Number | VREF | Pin Name/Function | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F672 | DQS for X8 | DQS for X16 |
|-------------|------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
|             |      | VCC               |                      |                        |                         |                              | R13  |            |             |
|             |      | DNU               |                      |                        |                         |                              | A4   |            |             |
|             |      | DNU               |                      |                        |                         |                              | A3   |            |             |
|             |      | DNU               |                      |                        |                         |                              | C24  |            |             |
|             |      | DNU               |                      |                        |                         |                              | F14  |            |             |
|             |      | VCCPGM            |                      |                        |                         |                              | AA9  |            |             |
|             |      | VCCPGM            |                      |                        |                         |                              | W22  |            |             |
|             |      | VCCPGM            |                      |                        |                         |                              | F8   |            |             |
|             |      | VCCBAT            |                      |                        |                         |                              | E8   |            |             |
|             |      | VCCIO3A           |                      |                        |                         |                              | Y7   |            |             |
|             |      | VCCIO3A           |                      |                        |                         |                              | AC6  |            |             |
|             |      | VCCIO3B           |                      |                        |                         |                              | U8   |            |             |
|             |      | VCCIO3B           |                      |                        |                         |                              | V11  |            |             |
|             |      | VCCIO3B           |                      |                        |                         |                              | AA10 |            |             |
|             |      | VCCIO3B           |                      |                        |                         |                              | AD9  |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | U18  |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | AE22 |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | AA20 |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | AD19 |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | Y17  |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | W14  |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | AC16 |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | AF15 |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | AB13 |            |             |
|             |      | VCCIO4A           |                      |                        |                         |                              | AE12 |            |             |
|             |      | VCCIO5A           |                      |                        |                         |                              | V21  |            |             |
|             |      | VCCIO5A           |                      |                        |                         |                              | AB23 |            |             |
|             |      | VCCIO5B           |                      |                        |                         |                              | N26  |            |             |
|             |      | VCCIO5B           |                      |                        |                         |                              | T25  |            |             |
|             |      | VCCIO5B           |                      |                        |                         |                              | W24  |            |             |
|             |      | VCCIO5B           |                      |                        |                         |                              | R22  |            |             |
|             |      | VCCIO6A           |                      |                        |                         |                              | C26  |            |             |
|             |      | VCCIO6A           |                      |                        |                         |                              | F25  |            |             |
|             |      | VCCIO6A           |                      |                        |                         |                              | J24  |            |             |
|             |      | VCCIO6A           |                      |                        |                         |                              | E22  |            |             |
|             |      | VCCIO6A           |                      |                        |                         |                              | M23  |            |             |
|             |      | VCCIO6A           |                      |                        |                         |                              | H21  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | A10  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | B23  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | A20  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | D19  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | G18  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | C16  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | F15  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | B13  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | E12  |            |             |
|             |      | VCCIO7A           |                      |                        |                         |                              | H11  |            |             |
|             |      | VCCIO8A           |                      |                        |                         |                              | C6   |            |             |
|             |      | VCCIO8A           |                      |                        |                         |                              | D9   |            |             |
|             |      | VCCIO8A           |                      |                        |                         |                              | G8   |            |             |
|             |      | VCCIO8A           |                      |                        |                         |                              | K7   |            |             |
|             |      | VCCPD3A           |                      |                        |                         |                              | AB9  |            |             |
|             |      | VCCPD3B4A         |                      |                        |                         |                              | AB21 |            |             |
|             |      | VCCPD3B4A         |                      |                        |                         |                              | AA19 |            |             |
|             |      | VCCPD3B4A         |                      |                        |                         |                              | AA17 |            |             |
|             |      | VCCPD3B4A         |                      |                        |                         |                              | AA13 |            |             |
|             |      | VCCPD3B4A         |                      |                        |                         |                              | AA11 |            |             |
|             |      | VCCPD5A           |                      |                        |                         |                              | U21  |            |             |
|             |      | VCCPD5B           |                      |                        |                         |                              | N22  |            |             |
|             |      | VCCPD5B           |                      |                        |                         |                              | R21  |            |             |
|             |      | VCCPD6A           |                      |                        |                         |                              | J22  |            |             |
|             |      | VCCPD6A           |                      |                        |                         |                              | L21  |            |             |





**Pin Information for the Cyclone® V 5CGXBC4 Device**  
**Version 1.0**  
**Note (1)**

| Bank Number | VREF      | Pin Name/Function | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F672 | DQS for X8 | DQS for X16 |
|-------------|-----------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
|             |           | VCCPD7A8A         |                      |                        |                         |                              | F19  |            |             |
|             |           | VCCPD7A8A         |                      |                        |                         |                              | F17  |            |             |
|             |           | VCCPD7A8A         |                      |                        |                         |                              | F13  |            |             |
|             |           | VCCPD7A8A         |                      |                        |                         |                              | F11  |            |             |
|             |           | VCCPD7A8A         |                      |                        |                         |                              | F9   |            |             |
| 3A          | VREFB3AN0 | VREFB3AN0         |                      |                        |                         |                              | AC7  |            |             |
| 3B          | VREFB3BN0 | VREFB3BN0         |                      |                        |                         |                              | AC12 |            |             |
| 4A          | VREFB4AN0 | VREFB4AN0         |                      |                        |                         |                              | AD15 |            |             |
| 5A          | VREFB5AN0 | VREFB5AN0         |                      |                        |                         |                              | W23  |            |             |
| 5B          | VREFB5BN0 | VREFB5BN0         |                      |                        |                         |                              | P25  |            |             |
| 6A          | VREFB6AN0 | VREFB6AN0         |                      |                        |                         |                              | L26  |            |             |
| 7A          | VREFB7AN0 | VREFB7AN0         |                      |                        |                         |                              | B16  |            |             |
| 8A          | VREFB8AN0 | VREFB8AN0         |                      |                        |                         |                              | C8   |            |             |
|             |           | NC                |                      |                        |                         |                              | AA12 |            |             |
|             |           | NC                |                      |                        |                         |                              | M6   |            |             |
|             |           | NC                |                      |                        |                         |                              | AB7  |            |             |
|             |           | NC                |                      |                        |                         |                              | C4   |            |             |
|             |           | NC                |                      |                        |                         |                              | E4   |            |             |
|             |           | NC                |                      |                        |                         |                              | G4   |            |             |
|             |           | NC                |                      |                        |                         |                              | L5   |            |             |
|             |           | NC                |                      |                        |                         |                              | C3   |            |             |
|             |           | NC                |                      |                        |                         |                              | F2   |            |             |
|             |           | NC                |                      |                        |                         |                              | F1   |            |             |
|             |           | NC                |                      |                        |                         |                              | E3   |            |             |
|             |           | NC                |                      |                        |                         |                              | D2   |            |             |
|             |           | NC                |                      |                        |                         |                              | D1   |            |             |
|             |           | NC                |                      |                        |                         |                              | H2   |            |             |
|             |           | NC                |                      |                        |                         |                              | H1   |            |             |
|             |           | NC                |                      |                        |                         |                              | G3   |            |             |
|             |           | VCCH_GXBL         |                      |                        |                         |                              | R3   |            |             |
|             |           | VCCH_GXBL         |                      |                        |                         |                              | T4   |            |             |
|             |           | VCCH_GXBL         |                      |                        |                         |                              | L3   |            |             |
|             |           | VCCL_GXBL         |                      |                        |                         |                              | J3   |            |             |
|             |           | VCCL_GXBL         |                      |                        |                         |                              | N3   |            |             |
|             |           | VCCL_GXBL         |                      |                        |                         |                              | U3   |            |             |
|             |           | RREF_TL           |                      |                        |                         |                              | B1   |            |             |
|             |           | VCCA_FPLL         |                      |                        |                         |                              | W7   |            |             |
|             |           | VCCA_FPLL         |                      |                        |                         |                              | J6   |            |             |
|             |           | VCCA_FPLL         |                      |                        |                         |                              | Y21  |            |             |
|             |           | VCCA_FPLL         |                      |                        |                         |                              | G21  |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | G9   |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | E14  |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | G19  |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | AB20 |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | AB14 |            |             |
|             |           | VCC_AUX           |                      |                        |                         |                              | AA8  |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | K4   |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | N5   |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | M4   |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | R5   |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | P4   |            |             |
|             |           | VCCE_GXBL         |                      |                        |                         |                              | U5   |            |             |

Note:  
(1) For more information about pin definition and pin connection guidelines, refer to the [Cyclone V Device Family Pin Connection Guidelines](#).



Pin Information for the Cyclone® V 5CGXBC4 Device  
Version 1.0

| Version Number | Date       | Changes Made     |
|----------------|------------|------------------|
| 1.0            | 11/29/2012 | Initial release. |
|                |            |                  |
|                |            |                  |
|                |            |                  |