



Pin Information for the Cyclone® V 5CEBA5 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 |
|-------------|----------|-------------------|--|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 3A | | TDO | | TDO | | | M5 | | |
| 3A | | nCS0 | | 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 | VREFB3A0 | IO | | DATA6 | DIFFIO_RX_B1n | DIFFOUT_B1n | R6 | DQ1B | |
| 3A | VREFB3A0 | IO | | DATA5 | DIFFIO_TX_B2n | DIFFOUT_B2n | U7 | | |
| 3A | VREFB3A0 | IO | | DATA8 | DIFFIO_RX_B1p | DIFFOUT_B1p | R5 | DQ1B | |
| 3A | VREFB3A0 | IO | | DATA7 | DIFFIO_TX_B2p | DIFFOUT_B2p | U8 | DQ1B | |
| 3A | VREFB3A0 | IO | | DATA10 | DIFFIO_RX_B3n | DIFFOUT_B3n | P6 | DQS1B | |
| 3A | VREFB3A0 | IO | | DATA9 | DIFFIO_TX_B4n | DIFFOUT_B4n | W8 | DQ1B | |
| 3A | VREFB3A0 | IO | | DATA12 | DIFFIO_RX_B3p | DIFFOUT_B3p | N6 | DQS1B | |
| 3A | VREFB3A0 | IO | | DATA11 | DIFFIO_TX_B4p | DIFFOUT_B4p | W9 | | |
| 3A | VREFB3A0 | IO | | DATA14 | DIFFIO_RX_B5n | DIFFOUT_B5n | T7 | DQ1B | |
| 3A | VREFB3A0 | IO | | DATA13 | DIFFIO_TX_B6n | DIFFOUT_B6n | U6 | DQ1B | |
| 3A | VREFB3A0 | IO | | CLKUSR | DIFFIO_RX_B5p | DIFFOUT_B5p | T8 | DQ1B | |
| 3A | VREFB3A0 | IO | | DATA15 | DIFFIO_TX_B6p | DIFFOUT_B6p | V6 | DQ1B | |
| 3A | VREFB3A0 | IO | | PR_DONE | DIFFIO_RX_B7n | DIFFOUT_B7n | M6 | | |
| 3A | VREFB3A0 | IO | | PR_READY | DIFFIO_TX_B8n | DIFFOUT_B8n | R7 | DQ1B | |
| 3A | VREFB3A0 | IO | | PR_ERROR | DIFFIO_RX_B7p | DIFFOUT_B7p | M7 | | |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B8p | DIFFOUT_B8p | P7 | DQ1B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B9n | DIFFOUT_B9n | AB6 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B10n | DIFFOUT_B10n | V9 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B9p | DIFFOUT_B9p | AB5 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B10p | DIFFOUT_B10p | V10 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B11n | DIFFOUT_B11n | P8 | DQS2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B12n | DIFFOUT_B12n | AA7 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B11p | DIFFOUT_B11p | N8 | DQS2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B12p | DIFFOUT_B12p | AB7 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B13n | DIFFOUT_B13n | AA8 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B14n | DIFFOUT_B14n | T9 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B13p | DIFFOUT_B13p | AB8 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B14p | DIFFOUT_B14p | U10 | DQ2B | |
| 3B | VREFB3B0 | IO | CLK0n,FPLL_B1n | | DIFFIO_RX_B15n | DIFFOUT_B15n | M8 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B16n | DIFFOUT_B16n | AA10 | DQ2B | |
| 3B | VREFB3B0 | IO | CLK0p,FPLL_B1p | | DIFFIO_RX_B15p | DIFFOUT_B15p | M9 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B16p | DIFFOUT_B16p | AA9 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B17n | DIFFOUT_B17n | Y10 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B18n | DIFFOUT_B18n | T10 | DQ3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B17p | DIFFOUT_B17p | Y9 | DQ3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B18p | DIFFOUT_B18p | R9 | DQ3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B19n | DIFFOUT_B19n | U11 | DQS3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B20n | DIFFOUT_B20n | R12 | DQ3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B19p | DIFFOUT_B19p | U12 | DQS3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B20p | DIFFOUT_B20p | P12 | | |
| 3B | VREFB3B0 | IO | FPLL_B1n,CLKOUT1,FPLL_B1n | | DIFFIO_TX_B21n | DIFFOUT_B21n | AB10 | DQ3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B22n | DIFFOUT_B22n | R10 | DQ3B | |
| 3B | VREFB3B0 | IO | FPLL_B1p,CLKOUT0,FPLL_B1p,CLKOUTp,FPLL_B1p | | DIFFIO_TX_B21p | DIFFOUT_B21p | AB11 | DQ3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B22p | DIFFOUT_B22p | R11 | DQ3B | |
| 3B | VREFB3B0 | IO | CLK1n | | DIFFIO_RX_B23n | DIFFOUT_B23n | P9 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B24n | DIFFOUT_B24n | Y11 | DQ3B | |
| 3B | VREFB3B0 | IO | CLK1p | | DIFFIO_RX_B23p | DIFFOUT_B23p | N9 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B24p | DIFFOUT_B24p | AA12 | DQ3B | |
| 4A | VREFB4A0 | IO | RZQ_0 | | DIFFIO_TX_B25n | DIFFOUT_B25n | AB13 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B26n | DIFFOUT_B26n | V13 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B25p | DIFFOUT_B25p | AB12 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B26p | DIFFOUT_B26p | U13 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B27n | DIFFOUT_B27n | T12 | DQS4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B28n | DIFFOUT_B28n | AA14 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B27p | DIFFOUT_B27p | T13 | DQS4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B28p | DIFFOUT_B28p | AA13 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B29n | DIFFOUT_B29n | AB15 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B30n | DIFFOUT_B30n | Y14 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B29p | DIFFOUT_B29p | AA15 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B30p | DIFFOUT_B30p | Y15 | DQ4B | |
| 4A | VREFB4A0 | IO | CLK2n | | DIFFIO_RX_B31n | DIFFOUT_B31n | V14 | | |



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| 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 |
|-------------|----------|-------------------|----------------------|--|-------------------------|------------------------------|------|------------|-------------|
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B32n | DIFFOOUT_B32n | AB17 | DQ4B | |
| 4A | VREFB4A0 | IO | CLK2p | | DIFFIO_RX_B31p | DIFFOOUT_B31p | V15 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B32p | DIFFOOUT_B32p | AB18 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B33n | DIFFOOUT_B33n | AB20 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B34n | DIFFOOUT_B34n | Y16 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B33p | DIFFOOUT_B33p | AB21 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B34p | DIFFOOUT_B34p | Y17 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B35n | DIFFOOUT_B35n | T14 | DQSn6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B36n | DIFFOOUT_B36n | AA17 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B35p | DIFFOOUT_B35p | U15 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B36p | DIFFOOUT_B36p | AA18 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B37n | DIFFOOUT_B37n | AA19 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B38n | DIFFOOUT_B38n | V20 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B37p | DIFFOOUT_B37p | AA20 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B38p | DIFFOOUT_B38p | W19 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | CLK3n | | DIFFIO_RX_B39n | DIFFOOUT_B39n | V16 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B40n | DIFFOOUT_B40n | AB22 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | CLK3p | | DIFFIO_RX_B39p | DIFFOOUT_B39p | W16 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B40p | DIFFOOUT_B40p | AA22 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B41n | DIFFOOUT_B41n | Y22 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B42n | DIFFOOUT_B42n | Y20 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B41p | DIFFOOUT_B41p | W22 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B42p | DIFFOOUT_B42p | Y19 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B43n | DIFFOOUT_B43n | P14 | DQSn6B | DQSn1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B44n | DIFFOOUT_B44n | Y21 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B43p | DIFFOOUT_B43p | R14 | DQSn6B | DQSn1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B44p | DIFFOOUT_B44p | W21 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B45n | DIFFOOUT_B45n | U22 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B46n | DIFFOOUT_B46n | V19 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B45p | DIFFOOUT_B45p | V21 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B46p | DIFFOOUT_B46p | V18 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B47n | DIFFOOUT_B47n | U16 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B48n | DIFFOOUT_B48n | U21 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B47p | DIFFOOUT_B47p | U17 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B48p | DIFFOOUT_B48p | U20 | DQ6B | DQ1B |
| 5A | VREFB5A0 | IO | RZQ_1 | | DIFFIO_TX_R1p | DIFFOOUT_R1p | T19 | DQ1R | |
| 5A | VREFB5A0 | IO | | INIT_DONE | DIFFIO_RX_R2p | DIFFOOUT_R2p | T18 | | |
| 5A | VREFB5A0 | IO | | PR_REQUEST | DIFFIO_TX_R1n | DIFFOOUT_R1n | T20 | DQ1R | |
| 5A | VREFB5A0 | IO | | CRC_ERROR | DIFFIO_RX_R2n | DIFFOOUT_R2n | T17 | | |
| 5A | VREFB5A0 | IO | | nCEO | DIFFIO_TX_R3p | DIFFOOUT_R3p | T22 | DQ1R | |
| 5A | VREFB5A0 | IO | | | DIFFIO_RX_R4p | DIFFOOUT_R4p | T15 | DQ1R | |
| 5A | VREFB5A0 | IO | | CvP_CONFDONE | DIFFIO_TX_R3n | DIFFOOUT_R3n | R22 | DQ1R | |
| 5A | VREFB5A0 | IO | | | DIFFIO_RX_R4n | DIFFOOUT_R4n | R15 | DQ1R | |
| 5A | VREFB5A0 | IO | | DEV_OE | DIFFIO_TX_R5p | DIFFOOUT_R5p | R21 | | |
| 5A | VREFB5A0 | IO | | | DIFFIO_RX_R6p | DIFFOOUT_R6p | R16 | DQSn1R | |
| 5A | VREFB5A0 | IO | | DEV_CLRn | DIFFIO_TX_R5n | DIFFOOUT_R5n | P22 | DQ1R | |
| 5A | VREFB5A0 | IO | | | DIFFIO_RX_R6n | DIFFOOUT_R6n | R17 | DQSn1R | |
| 5A | VREFB5A0 | IO | | | DIFFIO_TX_R7p | DIFFOOUT_R7p | P19 | DQ1R | |
| 5A | VREFB5A0 | IO | | | DIFFIO_RX_R8p | DIFFOOUT_R8p | P16 | DQ1R | |
| 5A | VREFB5A0 | IO | | | DIFFIO_TX_R7n | DIFFOOUT_R7n | P18 | | |
| 5A | VREFB5A0 | IO | | | DIFFIO_RX_R8n | DIFFOOUT_R8n | P17 | DQ1R | |
| 5B | VREFB5B0 | IO | CLK6p | | DIFFIO_RX_R17p | DIFFOOUT_R17p | N16 | | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R18p | DIFFOOUT_R18p | N20 | DQ2R | |
| 5B | VREFB5B0 | IO | CLK6n | | DIFFIO_RX_R17n | DIFFOOUT_R17n | M16 | | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R18n | DIFFOOUT_R18n | N21 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_RX_R19p | DIFFOOUT_R19p | N19 | DQ2R | |
| 5B | VREFB5B0 | IO | | FPLL_BR_CLKOUT0,FPLL_BR_CLKOUTp,FPLL_BR_FB | DIFFIO_TX_R20p | DIFFOOUT_R20p | M22 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_RX_R19n | DIFFOOUT_R19n | M18 | DQ2R | |
| 5B | VREFB5B0 | IO | | FPLL_BR_CLKOUT1,FPLL_BR_CLKOUTn | DIFFIO_TX_R20n | DIFFOOUT_R20n | L22 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_RX_R21p | DIFFOOUT_R21p | K17 | DQSn2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R22p | DIFFOOUT_R22p | M20 | | |
| 5B | VREFB5B0 | IO | | | DIFFIO_RX_R21n | DIFFOOUT_R21n | L17 | DQSn2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R22n | DIFFOOUT_R22n | M21 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_RX_R23p | DIFFOOUT_R23p | L19 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R24p | DIFFOOUT_R24p | K21 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_RX_R23n | DIFFOOUT_R23n | L18 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R24n | DIFFOOUT_R24n | K22 | | |
| 7A | | GND | | | | | F17 | | |
| 7A | VREFB7A0 | IO | | | DIFFIO_RX_T1p | DIFFOOUT_T1p | H21 | | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T2p | DIFFOOUT_T2p | E21 | DQ1T | DQ1T |
| 7A | VREFB7A0 | IO | | | DIFFIO_RX_T1n | DIFFOOUT_T1n | G21 | | |



Pin Information for the Cyclone® V 5CEBA5 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_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 |
| 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 | | |



Pin Information for the Cyclone® V 5CEBA5 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_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 | DQSn6T | |
| 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 | | |
| 9A | | MSEL2 | | MSEL2 | | | A2 | | |
| 9A | | MSEL3 | | MSEL3 | | | E5 | | |
| 9A | | nCONFIG | | nCONFIG | | | A4 | | |
| 9A | | MSEL4 | | MSEL4 | | | F3 | | |
| 9A | | GND | | | | | C5 | | |
| | | GND | | | | | F5 | | |
| | | GND | | | | | G4 | | |
| | | GND | | | | | V4 | | |
| | | GND | | | | | U4 | | |
| | | 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 | | |



Pin Information for the Cyclone® V 5CEBA5 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 | | | | | 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 | | |
| | | 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 | | |



Pin Information for the Cyclone® V 5CEBA5 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 | | | | | 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 | | |
| | | VCC | | | | | P3 | | |
| | | VCC | | | | | K3 | | |
| | | VCC | | | | | L4 | | |
| | | VCC | | | | | N4 | | |
| | | VCC | | | | | K5 | | |
| | | VCC | | | | | J4 | | |
| | | 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 | | |
| | | 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 | | |



Pin Information for the Cyclone® V 5CEBA5 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 |
|-------------|-----------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| | | 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 | | |
| | | NC | | | | | C2 | | |
| | | NC | | | | | C1 | | |
| | | NC | | | | | G2 | | |
| | | NC | | | | | G1 | | |
| | | NC | | | | | L2 | | |
| | | NC | | | | | L1 | | |
| | | NC | | | | | R2 | | |
| | | NC | | | | | R1 | | |
| | | NC | | | | | W2 | | |
| | | NC | | | | | W1 | | |
| | | NC | | | | | AA2 | | |
| | | NC | | | | | AA1 | | |
| | | NC | | | | | D3 | | |
| | | NC | | | | | D4 | | |
| | | NC | | | | | E1 | | |
| | | NC | | | | | E2 | | |
| | | NC | | | | | J1 | | |
| | | NC | | | | | J2 | | |
| | | NC | | | | | N1 | | |
| | | NC | | | | | N2 | | |
| | | NC | | | | | U1 | | |
| | | NC | | | | | U2 | | |
| | | NC | | | | | Y3 | | |
| | | NC | | | | | Y4 | | |
| | | RREF TL | | | | | A1 | | |
| | | VCCA_FPLL | | | | | T5 | | |
| | | VCCA_FPLL | | | | | F4 | | |
| | | VCCA_FPLL | | | | | U18 | | |
| | | VCCA_FPLL | | | | | H19 | | |
| | | VCCA_FPLL | | | | | M3 | | |
| | | VCCA_FPLL | | | | | T3 | | |
| | | VCC_AUX | | | | | E6 | | |
| | | VCC_AUX | | | | | D18 | | |
| | | VCC_AUX | | | | | W18 | | |
| | | VCC_AUX | | | | | W13 | | |
| | | VCC_AUX | | | | | W7 | | |
| | | VCC_AUX | | | | | D11 | | |

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 5CEBA5 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 |
|-------------|----------|-------------------|---|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 3A | | TDO | | TDO | | | V3 | | |
| 3A | | nCS0 | | 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 | VREFB3A0 | IO | | DATA6 | DIFFIO_RX_B1n | DIFFOUT_B1n | P6 | DQ1B | |
| 3A | VREFB3A0 | IO | | DATA5 | DIFFIO_TX_B2n | DIFFOUT_B2n | U7 | | |
| 3A | VREFB3A0 | IO | | DATA8 | DIFFIO_RX_B1p | DIFFOUT_B1p | N6 | DQ1B | |
| 3A | VREFB3A0 | IO | | DATA7 | DIFFIO_TX_B2p | DIFFOUT_B2p | U6 | DQ1B | |
| 3A | VREFB3A0 | IO | | DATA10 | DIFFIO_RX_B3n | DIFFOUT_B3n | M6 | DQSn1B | |
| 3A | VREFB3A0 | IO | | DATA9 | DIFFIO_TX_B4n | DIFFOUT_B4n | R5 | DQ1B | |
| 3A | VREFB3A0 | IO | | DATA12 | DIFFIO_RX_B3p | DIFFOUT_B3p | M7 | DQS1B | |
| 3A | VREFB3A0 | IO | | DATA11 | DIFFIO_TX_B4p | DIFFOUT_B4p | R6 | | |
| 3A | VREFB3A0 | IO | | DATA14 | DIFFIO_RX_B5n | DIFFOUT_B5n | R7 | DQ1B | |
| 3A | VREFB3A0 | IO | | DATA13 | DIFFIO_TX_B6n | DIFFOUT_B6n | L7 | DQ1B | |
| 3A | VREFB3A0 | IO | | CLKUSR | DIFFIO_RX_B5p | DIFFOUT_B5p | T7 | DQ1B | |
| 3A | VREFB3A0 | IO | | DATA15 | DIFFIO_TX_B6p | DIFFOUT_B6p | L8 | DQ1B | |
| 3A | VREFB3A0 | IO | | PR_DONE | DIFFIO_RX_B7n | DIFFOUT_B7n | T8 | | |
| 3A | VREFB3A0 | IO | | PR_READY | DIFFIO_TX_B8n | DIFFOUT_B8n | P7 | DQ1B | |
| 3A | VREFB3A0 | IO | | PR_ERROR | DIFFIO_RX_B7p | DIFFOUT_B7p | T9 | | |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B8p | DIFFOUT_B8p | P8 | DQ1B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B9n | DIFFOUT_B9n | V8 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B10n | DIFFOUT_B10n | N8 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B9p | DIFFOUT_B9p | W8 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B10p | DIFFOUT_B10p | M8 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B11n | DIFFOUT_B11n | N9 | DQSn2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B12n | DIFFOUT_B12n | AA7 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B11p | DIFFOUT_B11p | N10 | DQS2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B12p | DIFFOUT_B12p | AB7 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B13n | DIFFOUT_B13n | Y7 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B14n | DIFFOUT_B14n | U8 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B13p | DIFFOUT_B13p | W7 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B14p | DIFFOUT_B14p | V9 | DQ2B | |
| 3B | VREFB3B0 | IO | CLK0n,FPLL_B1n | | DIFFIO_RX_B15n | DIFFOUT_B15n | R9 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B16n | DIFFOUT_B16n | AB8 | DQ2B | |
| 3B | VREFB3B0 | IO | CLK0p,FPLL_B1p | | DIFFIO_RX_B15p | DIFFOUT_B15p | P9 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B16p | DIFFOUT_B16p | AA8 | DQ2B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B17n | DIFFOUT_B17n | Y10 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B18n | DIFFOUT_B18n | AA9 | DQ3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B17p | DIFFOUT_B17p | AA10 | DQ3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B18p | DIFFOUT_B18p | Y9 | DQ3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B19n | DIFFOUT_B19n | L9 | DQSn3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B20n | DIFFOUT_B20n | W11 | DQ3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B19p | DIFFOUT_B19p | M10 | DQS3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B20p | DIFFOUT_B20p | Y11 | | |
| 3B | VREFB3B0 | IO | FPLL_B1n,CLKOUT1,FPLL_B1n,CLKOUTn | | DIFFIO_TX_B21n | DIFFOUT_B21n | AB10 | DQ3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B22n | DIFFOUT_B22n | U10 | DQ3B | |
| 3B | VREFB3B0 | IO | FPLL_B1p,CLKOUT0,FPLL_B1p,CLKOUTp,FPLL_B1p,FB | | DIFFIO_TX_B21p | DIFFOUT_B21p | AB11 | DQ3B | |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B22p | DIFFOUT_B22p | U11 | DQ3B | |
| 3B | VREFB3B0 | IO | CLK1n | | DIFFIO_RX_B23n | DIFFOUT_B23n | T10 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B24n | DIFFOUT_B24n | R11 | DQ3B | |
| 3B | VREFB3B0 | IO | CLK1p | | DIFFIO_RX_B23p | DIFFOUT_B23p | R10 | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B24p | DIFFOUT_B24p | P12 | DQ3B | |
| 4A | VREFB4A0 | IO | RZQ_0 | | DIFFIO_TX_B25n | DIFFOUT_B25n | AA13 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B26n | DIFFOUT_B26n | W12 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B25p | DIFFOUT_B25p | AB13 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B26p | DIFFOUT_B26p | Y12 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B27n | DIFFOUT_B27n | U12 | DQSn4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B28n | DIFFOUT_B28n | R12 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B27p | DIFFOUT_B27p | T12 | DQS4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B28p | DIFFOUT_B28p | T13 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B29n | DIFFOUT_B29n | AB15 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B30n | DIFFOUT_B30n | W13 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B29p | DIFFOUT_B29p | AB16 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B30p | DIFFOUT_B30p | V13 | DQ4B | |
| 4A | VREFB4A0 | IO | CLK2n | | DIFFIO_RX_B31n | DIFFOUT_B31n | T14 | | |



Pin Information for the Cyclone® V 5CEBA5 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 |
|-------------|----------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B32n | DIFFOOUT_B32n | AB18 | DQ4B | |
| 4A | VREFB4A0 | IO | CLK2p | | DIFFIO_RX_B31p | DIFFOOUT_B31p | U13 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B32p | DIFFOOUT_B32p | AA18 | DQ4B | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B33n | DIFFOOUT_B33n | AA19 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B34n | DIFFOOUT_B34n | Y14 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B33p | DIFFOOUT_B33p | Y19 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B34p | DIFFOOUT_B34p | W14 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B35n | DIFFOOUT_B35n | P14 | DQS6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B36n | DIFFOOUT_B36n | AA20 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B35p | DIFFOOUT_B35p | R14 | DQS5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B36p | DIFFOOUT_B36p | Y20 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B37n | DIFFOOUT_B37n | AA15 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B38n | DIFFOOUT_B38n | U15 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B37p | DIFFOOUT_B37p | Y15 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B38p | DIFFOOUT_B38p | V15 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | CLK3n | | DIFFIO_RX_B39n | DIFFOOUT_B39n | R15 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B40n | DIFFOOUT_B40n | AB20 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | CLK3p | | DIFFIO_RX_B39p | DIFFOOUT_B39p | T15 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B40p | DIFFOOUT_B40p | AB21 | DQ5B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B41n | DIFFOOUT_B41n | AB22 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B42n | DIFFOOUT_B42n | Y16 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B41p | DIFFOOUT_B41p | AA22 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B42p | DIFFOOUT_B42p | Y17 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B43n | DIFFOOUT_B43n | U16 | DQS6B | DQS1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B44n | DIFFOOUT_B44n | AA17 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B43p | DIFFOOUT_B43p | U17 | DQS6B | DQS1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B44p | DIFFOOUT_B44p | AB17 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B45n | DIFFOOUT_B45n | Y22 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B46n | DIFFOOUT_B46n | V18 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B45p | DIFFOOUT_B45p | Y21 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B46p | DIFFOOUT_B46p | W18 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B47n | DIFFOOUT_B47n | W16 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B48n | DIFFOOUT_B48n | W21 | DQ6B | DQ1B |
| 4A | VREFB4A0 | IO | | | DIFFIO_RX_B47p | DIFFOOUT_B47p | W17 | | |
| 4A | VREFB4A0 | IO | | | DIFFIO_TX_B48p | DIFFOOUT_B48p | W22 | DQ6B | DQ1B |
| 5A | VREFB5A0 | IO | RZQ_1 | | DIFFIO_TX_R1p | DIFFOOUT_R1p | U22 | DQ1R | |
| 5A | VREFB5A0 | IO | | INIT_DONE | DIFFIO_RX_R2p | DIFFOOUT_R2p | V20 | | |
| 5A | VREFB5A0 | IO | | PR_REQUEST | DIFFIO_TX_R1n | DIFFOOUT_R1n | U21 | DQ1R | |
| 5A | VREFB5A0 | IO | | CRC_ERROR | DIFFIO_RX_R2n | DIFFOOUT_R2n | V19 | | |
| 5A | VREFB5A0 | IO | | nCEO | DIFFIO_TX_R3p | DIFFOOUT_R3p | T19 | DQ1R | |
| 5A | VREFB5A0 | IO | | | DIFFIO_RX_R4p | DIFFOOUT_R4p | T17 | DQ1R | |
| 5A | VREFB5A0 | IO | | CvP_CONFDONE | DIFFIO_TX_R3n | DIFFOOUT_R3n | T20 | DQ1R | |
| 5A | VREFB5A0 | IO | | | DIFFIO_RX_R4n | DIFFOOUT_R4n | T18 | DQ1R | |
| 5A | VREFB5A0 | IO | | DEV_OE | DIFFIO_TX_R5p | DIFFOOUT_R5p | T22 | | |
| 5A | VREFB5A0 | IO | | | DIFFIO_RX_R6p | DIFFOOUT_R6p | R16 | DQS1R | |
| 5A | VREFB5A0 | IO | | DEV_CLRn | DIFFIO_TX_R5n | DIFFOOUT_R5n | R22 | DQ1R | |
| 5A | VREFB5A0 | IO | | | DIFFIO_RX_R6n | DIFFOOUT_R6n | R17 | DQS1R | |
| 5A | VREFB5A0 | IO | | | DIFFIO_TX_R7p | DIFFOOUT_R7p | R20 | DQ1R | |
| 5A | VREFB5A0 | IO | | | DIFFIO_RX_R8p | DIFFOOUT_R8p | R19 | DQ1R | |
| 5A | VREFB5A0 | IO | | | DIFFIO_TX_R7n | DIFFOOUT_R7n | R21 | | |
| 5A | VREFB5A0 | IO | | | DIFFIO_RX_R8n | DIFFOOUT_R8n | P19 | DQ1R | |
| 5B | VREFB5B0 | IO | CLK7p.FPLL_BR_FBp | | DIFFIO_RX_R9p | DIFFOOUT_R9p | M16 | | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R10p | DIFFOOUT_R10p | E21 | DQ2R | |
| 5B | VREFB5B0 | IO | CLK7n.FPLL_BR_FBn | | DIFFIO_RX_R9n | DIFFOOUT_R9n | M17 | | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R10n | DIFFOOUT_R10n | D22 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_RX_R11p | DIFFOOUT_R11p | L19 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R12p | DIFFOOUT_R12p | K21 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_RX_R11n | DIFFOOUT_R11n | L20 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R12n | DIFFOOUT_R12n | J21 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_RX_R13p | DIFFOOUT_R13p | L15 | DQS2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R14p | DIFFOOUT_R14p | G22 | | |
| 5B | VREFB5B0 | IO | | | DIFFIO_RX_R13n | DIFFOOUT_R13n | K15 | DQS2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R14n | DIFFOOUT_R14n | G21 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_RX_R15p | DIFFOOUT_R15p | L18 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R16p | DIFFOOUT_R16p | G20 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_RX_R15n | DIFFOOUT_R15n | K19 | DQ2R | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R16n | DIFFOOUT_R16n | H21 | | |
| 5B | VREFB5B0 | IO | CLK6p | | DIFFIO_RX_R17p | DIFFOOUT_R17p | L17 | | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R18p | DIFFOOUT_R18p | E20 | DQ3R | |
| 5B | VREFB5B0 | IO | CLK6n | | DIFFIO_RX_R17n | DIFFOOUT_R17n | K17 | | |
| 5B | VREFB5B0 | IO | | | DIFFIO_TX_R18n | DIFFOOUT_R18n | F20 | DQ3R | |



Pin Information for the Cyclone® V 5CEBA5 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 |
|-------------|-----------|-------------------|--|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 5B | VREFB5BNO | IO | | | DIFFIO_RX_R19p | DIFFOUT_R19p | H20 | DQ3R | |
| 5B | VREFB5BNO | IO | FPLL_BR_CLKOUT0,FPLL_BR_CLKOUTp,FPLL_BR_FB | | DIFFIO_TX_R20p | DIFFOUT_R20p | G18 | DQ3R | |
| 5B | VREFB5BNO | IO | | | DIFFIO_RX_R19n | DIFFOUT_R19n | H19 | DQ3R | |
| 5B | VREFB5BNO | IO | FPLL_BR_CLKOUT1,FPLL_BR_CLKOUTn | | DIFFIO_TX_R20n | DIFFOUT_R20n | G17 | DQ3R | |
| 5B | VREFB5BNO | IO | | | DIFFIO_RX_R21p | DIFFOUT_R21p | K16 | DQS3R | |
| 5B | VREFB5BNO | IO | | | DIFFIO_TX_R22p | DIFFOUT_R22p | F19 | | |
| 5B | VREFB5BNO | IO | | | DIFFIO_RX_R21n | DIFFOUT_R21n | J16 | DQSn3R | |
| 5B | VREFB5BNO | IO | | | DIFFIO_TX_R22n | DIFFOUT_R22n | F18 | DQ3R | |
| 5B | VREFB5BNO | IO | | | DIFFIO_RX_R23p | DIFFOUT_R23p | J17 | DQ3R | |
| 5B | VREFB5BNO | IO | | | DIFFIO_TX_R24p | DIFFOUT_R24p | J19 | DQ3R | |
| 5B | VREFB5BNO | IO | | | DIFFIO_RX_R23n | DIFFOUT_R23n | J18 | DQ3R | |
| 5B | VREFB5BNO | IO | | | DIFFIO_TX_R24n | DIFFOUT_R24n | H18 | | |
| 7A | | GND | | | | | F17 | | |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T17p | DIFFOUT_T17p | H16 | | |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T18p | DIFFOUT_T18p | C21 | DQ1T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T17n | DIFFOUT_T17n | G16 | | |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T18n | DIFFOUT_T18n | C20 | DQ1T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T19p | DIFFOUT_T19p | D18 | DQ1T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T20p | DIFFOUT_T20p | B20 | DQ1T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T19n | DIFFOUT_T19n | E17 | DQ1T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T20n | DIFFOUT_T20n | B21 | DQ1T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T21p | DIFFOUT_T21p | G15 | DQS1T | DQS1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T22p | DIFFOUT_T22p | B22 | | |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T21n | DIFFOUT_T21n | G14 | DQSn1T | DQSn1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T22n | DIFFOUT_T22n | A22 | DQ1T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T23p | DIFFOUT_T23p | E16 | DQ1T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T24p | DIFFOUT_T24p | A20 | DQ1T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T23n | DIFFOUT_T23n | D17 | DQ1T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T24n | DIFFOUT_T24n | A19 | | |
| 7A | VREFB7ANO | IO | CLK11p | | DIFFIO_RX_T25p | DIFFOUT_T25p | G13 | | |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T26p | DIFFOUT_T26p | C19 | DQ2T | DQ1T |
| 7A | VREFB7ANO | IO | CLK11n | | DIFFIO_RX_T25n | DIFFOUT_T25n | F14 | | |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T26n | DIFFOUT_T26n | C18 | DQ2T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T27p | DIFFOUT_T27p | C16 | DQ2T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T28p | DIFFOUT_T28p | B16 | DQ2T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T27n | DIFFOUT_T27n | C15 | DQ2T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T28n | DIFFOUT_T28n | B15 | DQ2T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T29p | DIFFOUT_T29p | G12 | DQS2T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T30p | DIFFOUT_T30p | A18 | | |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T29n | DIFFOUT_T29n | H12 | DQSn2T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T30n | DIFFOUT_T30n | A17 | DQ2T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T31p | DIFFOUT_T31p | F15 | DQ2T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T32p | DIFFOUT_T32p | B18 | DQ2T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T31n | DIFFOUT_T31n | E14 | DQ2T | DQ1T |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T32n | DIFFOUT_T32n | B17 | | |
| 7A | VREFB7ANO | IO | CLK10p | | DIFFIO_RX_T33p | DIFFOUT_T33p | H10 | | |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T34p | DIFFOUT_T34p | A15 | DQ3T | |
| 7A | VREFB7ANO | IO | CLK10n | | DIFFIO_RX_T33n | DIFFOUT_T33n | G11 | | |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T34n | DIFFOUT_T34n | A14 | DQ3T | |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T35p | DIFFOUT_T35p | D13 | DQ3T | |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T36p | DIFFOUT_T36p | C14 | DQ3T | |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T35n | DIFFOUT_T35n | C13 | DQ3T | |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T36n | DIFFOUT_T36n | D14 | DQ3T | |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T37p | DIFFOUT_T37p | H9 | DQS3T | |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T38p | DIFFOUT_T38p | A13 | | |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T37n | DIFFOUT_T37n | G8 | DQSn3T | |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T38n | DIFFOUT_T38n | B13 | DQ3T | |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T39p | DIFFOUT_T39p | E12 | DQ3T | |
| 7A | VREFB7ANO | IO | | | DIFFIO_TX_T40p | DIFFOUT_T40p | B12 | DQ3T | |
| 7A | VREFB7ANO | IO | | | DIFFIO_RX_T39n | DIFFOUT_T39n | F12 | DQ3T | |
| 7A | VREFB7ANO | IO | RZQ_2 | | DIFFIO_TX_T40n | DIFFOUT_T40n | A12 | | |
| 8A | VREFB8ANO | IO | CLK9p | | DIFFIO_RX_T41p | DIFFOUT_T41p | G10 | | |
| 8A | VREFB8ANO | IO | | | DIFFIO_TX_T42p | DIFFOUT_T42p | C11 | DQ4T | |
| 8A | VREFB8ANO | IO | CLK9n | | DIFFIO_RX_T41n | DIFFOUT_T41n | F10 | | |
| 8A | VREFB8ANO | IO | | | DIFFIO_TX_T42n | DIFFOUT_T42n | B11 | DQ4T | |
| 8A | VREFB8ANO | IO | | | DIFFIO_RX_T43p | DIFFOUT_T43p | D11 | DQ4T | |
| 8A | VREFB8ANO | IO | FPLL_TL_CLKOUT0,FPLL_TL_CLKOUTp,FPLL_TL_FB | | DIFFIO_TX_T44p | DIFFOUT_T44p | A8 | DQ4T | |
| 8A | VREFB8ANO | IO | | | DIFFIO_RX_T43n | DIFFOUT_T43n | E11 | DQ4T | |
| 8A | VREFB8ANO | IO | FPLL_TL_CLKOUT1,FPLL_TL_CLKOUTn | | DIFFIO_TX_T44n | DIFFOUT_T44n | A7 | DQ4T | |
| 8A | VREFB8ANO | IO | | | DIFFIO_RX_T45p | DIFFOUT_T45p | J9 | DQS4T | |
| 8A | VREFB8ANO | IO | | | DIFFIO_TX_T46p | DIFFOUT_T46p | F8 | | |



Pin Information for the Cyclone® V 5CEBA5 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 |
|-------------|----------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 8A | VREFB8A0 | IO | | | DIFFIO_RX_T45n | DIFFOUT_T45n | J8 | DQSn4T | |
| 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 | DQSn5T | |
| 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 | | | | | G4 | | |
| | | GND | | | | | F5 | | |
| | | GND | | | | | V4 | | |
| | | GND | | | | | U4 | | |
| | | GND | | | | | F21 | | |
| | | GND | | | | | AB19 | | |
| | | GND | | | | | AB2 | | |
| | | GND | | | | | AB1 | | |
| | | GND | | | | | AA16 | | |
| | | GND | | | | | AA11 | | |
| | | GND | | | | | AA4 | | |
| | | GND | | | | | AA3 | | |
| | | GND | | | | | Y13 | | |
| | | GND | | | | | Y8 | | |
| | | GND | | | | | Y5 | | |
| | | 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 | | |



Pin Information for the Cyclone® V 5CEBA5 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 | | | | | 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 | | |
| | | 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 | | |



Pin Information for the Cyclone® V 5CEBA5 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 |
|-------------|-----------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| | | VCC | | | | | L14 | | |
| | | VCC | | | | | L12 | | |
| | | VCC | | | | | L10 | | |
| | | VCC | | | | | K13 | | |
| | | VCC | | | | | K11 | | |
| | | VCC | | | | | K9 | | |
| | | VCC | | | | | J12 | | |
| | | VCC | | | | | J10 | | |
| | | VCC | | | | | H15 | | |
| | | VCC | | | | | H13 | | |
| | | VCC | | | | | H11 | | |
| | | VCC | | | | | P3 | | |
| | | VCC | | | | | K3 | | |
| | | VCC | | | | | L4 | | |
| | | VCC | | | | | N4 | | |
| | | VCC | | | | | K5 | | |
| | | VCC | | | | | J4 | | |
| | | 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 | | |
| | | 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 | | |



Pin Information for the Cyclone® V 5CEBA5 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 |
|-------------|-----------|-------------------|----------------------|------------------------|-------------------------|------------------------------|------|------------|-------------|
| 5B | VREFB5BNO | VREFB5BNO | | | | | K20 | | |
| 7A | VREFB7ANO | VREFB7ANO | | | | | D16 | | |
| 8A | VREFB8ANO | VREFB8ANO | | | | | 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 | | |
| | | NC | | | | | C2 | | |
| | | NC | | | | | C1 | | |
| | | NC | | | | | G2 | | |
| | | NC | | | | | G1 | | |
| | | NC | | | | | L2 | | |
| | | NC | | | | | L1 | | |
| | | NC | | | | | R2 | | |
| | | NC | | | | | R1 | | |
| | | NC | | | | | W2 | | |
| | | NC | | | | | W1 | | |
| | | NC | | | | | AA2 | | |
| | | NC | | | | | AA1 | | |
| | | NC | | | | | D3 | | |
| | | NC | | | | | D4 | | |
| | | NC | | | | | E1 | | |
| | | NC | | | | | E2 | | |
| | | NC | | | | | J1 | | |
| | | NC | | | | | J2 | | |
| | | NC | | | | | N1 | | |
| | | NC | | | | | N2 | | |
| | | NC | | | | | U1 | | |
| | | NC | | | | | U2 | | |
| | | NC | | | | | Y3 | | |
| | | NC | | | | | Y4 | | |
| | | RREF TL | | | | | A1 | | |
| | | VCCA_FPLL | | | | | T4 | | |
| | | VCCA_FPLL | | | | | F4 | | |
| | | VCCA_FPLL | | | | | U18 | | |
| | | VCCA_FPLL | | | | | E19 | | |
| | | VCCA_FPLL | | | | | T3 | | |
| | | VCCA_FPLL | | | | | M3 | | |
| | | VCC_AUX | | | | | D6 | | |
| | | VCC_AUX | | | | | D12 | | |
| | | VCC_AUX | | | | | D19 | | |
| | | VCC_AUX | | | | | W19 | | |
| | | VCC_AUX | | | | | AA12 | | |
| | | VCC_AUX | | | | | AB5 | | |

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 5CEBA5 Device
Version 1.0

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