



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|-----------------------------|---------------------------------|------------------------|-------------------------|------------------------------|-------|-------------------------|------------------|------------------|-------------------------------|
| | | DNU | | | | | E33 | | | | |
| | | DNU | | | | | F33 | | | | |
| | | RREF TL | | | | | F34 | | | | |
| GXB L1 | | REFCLK3Ln | | | | | R27 | | | | |
| GXB L1 | | REFCLK3Lp | | | | | R26 | | | | |
| GXB L1 | | GXB TX L11n | | | | | G31 | | | | |
| GXB L1 | | GXB TX L11p | | | | | G32 | | | | |
| GXB L1 | | GXB RX L11p,GXB REFCLK L11p | | | | | H34 | | | | |
| GXB L1 | | GXB RX L11n,GXB REFCLK L11n | | | | | H33 | | | | |
| GXB L1 | | GXB TX L10n | | | | | J31 | | | | |
| GXB L1 | | GXB TX L10p | | | | | J32 | | | | |
| GXB L1 | | GXB RX L10p,GXB REFCLK L10p | | | | | K34 | | | | |
| GXB L1 | | GXB RX L10n,GXB REFCLK L10n | | | | | K33 | | | | |
| GXB L1 | | GXB TX L9n | | | | | L31 | | | | |
| GXB L1 | | GXB TX L9p | | | | | L32 | | | | |
| GXB L1 | | GXB RX L9p,GXB REFCLK L9p | | | | | M34 | | | | |
| GXB L1 | | GXB RX L9n,GXB REFCLK L9n | | | | | M33 | | | | |
| GXB L1 | | GXB TX L8n | | | | | N31 | | | | |
| GXB L1 | | GXB TX L8p | | | | | N32 | | | | |
| GXB L1 | | GXB RX L8p,GXB REFCLK L8p | | | | | P34 | | | | |
| GXB L1 | | GXB RX L8n,GXB REFCLK L8n | | | | | P33 | | | | |
| GXB L1 | | GXB TX L7n | | | | | R31 | | | | |
| GXB L1 | | GXB TX L7p | | | | | R32 | | | | |
| GXB L1 | | GXB RX L7p,GXB REFCLK L7p | | | | | T34 | | | | |
| GXB L1 | | GXB RX L7n,GXB REFCLK L7n | | | | | T33 | | | | |
| GXB L1 | | GXB TX L6n | | | | | U31 | | | | |
| GXB L1 | | GXB TX L6p | | | | | U32 | | | | |
| GXB L1 | | GXB RX L6p,GXB REFCLK L6p | | | | | V34 | | | | |
| GXB L1 | | GXB RX L6n,GXB REFCLK L6n | | | | | V33 | | | | |
| GXB L1 | | REFCLK2Ln | | | | | U27 | | | | |
| GXB L1 | | REFCLK2Lp | | | | | U26 | | | | |
| GXB L0 | | REFCLK1Ln | | | | | W27 | | | | |
| GXB L0 | | REFCLK1Lp | | | | | W26 | | | | |
| GXB L0 | | GXB TX L5n | | | | | W31 | | | | |
| GXB L0 | | GXB TX L5p | | | | | W32 | | | | |
| GXB L0 | | GXB RX L5p,GXB REFCLK L5p | | | | | Y34 | | | | |
| GXB L0 | | GXB RX L5n,GXB REFCLK L5n | | | | | Y33 | | | | |
| GXB L0 | | GXB TX L4n | | | | | AA31 | | | | |
| GXB L0 | | GXB TX L4p | | | | | AA32 | | | | |
| GXB L0 | | GXB RX L4p,GXB REFCLK L4p | | | | | AB34 | | | | |
| GXB L0 | | GXB RX L4n,GXB REFCLK L4n | | | | | AB33 | | | | |
| GXB L0 | | GXB TX L3n | | | | | AC31 | | | | |
| GXB L0 | | GXB TX L3p | | | | | AC32 | | | | |
| GXB L0 | | GXB RX L3p,GXB REFCLK L3p | | | | | AD34 | | | | |
| GXB L0 | | GXB RX L3n,GXB REFCLK L3n | | | | | AD33 | | | | |
| GXB L0 | | GXB TX L2n | | | | | AE31 | | | | |
| GXB L0 | | GXB TX L2p | | | | | AE32 | | | | |
| GXB L0 | | GXB RX L2p,GXB REFCLK L2p | | | | | AF34 | | | | |
| GXB L0 | | GXB RX L2n,GXB REFCLK L2n | | | | | AF33 | | | | |
| GXB L0 | | GXB TX L1n | | | | | AG31 | | | | |
| GXB L0 | | GXB TX L1p | | | | | AG32 | | | | |
| GXB L0 | | GXB RX L1p,GXB REFCLK L1p | | | | | AH34 | | | | |
| GXB L0 | | GXB RX L1n,GXB REFCLK L1n | | | | | AH33 | | | | |
| GXB L0 | | GXB TX L0n | | | | | AJ31 | | | | |
| GXB L0 | | GXB TX L0p | | | | | AJ32 | | | | |
| GXB L0 | | GXB RX L0p,GXB REFCLK L0p | | | | | AK34 | | | | |
| GXB L0 | | GXB RX L0n,GXB REFCLK L0n | | | | | AK33 | | | | |
| GXB L0 | | REFCLK0Ln | | | | | AA28 | | | | |
| GXB L0 | | REFCLK0Lp | | | | | AA27 | | | | |
| | | DNU | | | | | AL32 | | | | |
| 3A | | TDO | | TDO | | | AC28 | | | | |
| 3A | | TMS | | TMS | | | AF30 | | | | |
| 3A | | TCK | | TCK | | | AN32 | | | | |
| 3A | | TDI | | TDI | | | AC29 | | | | |
| 3A | | DCLK | | DCLK | | | AM32 | | | | |
| 3A | | nCS0 | | DATA4 | | | AM34 | | | | |
| 3A | | AS_DATA3 | | DATA3 | | | AM33 | | | | |
| 3A | | AS_DATA2 | | DATA2 | | | AP33 | | | | |
| 3A | | AS_DATA1 | | DATA1 | | | AN33 | | | | |
| 3A | | AS_DATA0,ASDO | | DATA0 | | | AN34 | | | | |
| 3A | VREFB3AN0 | IO | RZQ_0 | | DIFFIO_TX_B1n | DIFFOUT_B1n | AL31 | | | | |
| 3A | VREFB3AN0 | IO | | | DIFFIO_TX_B1p | DIFFOUT_B1p | AM31 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | CLK0n | | DIFFIO_RX_B2n | DIFFOUT_B2n | AP31 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | CLK0p | | DIFFIO_RX_B2p | DIFFOUT_B2p | AP32 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | | | DIFFIO_TX_B3n | DIFFOUT_B3n | AD27 | | | | |
| 3A | VREFB3AN0 | IO | | | DIFFIO_TX_B3p | DIFFOUT_B3p | AD26 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | CLK1n | | DIFFIO_RX_B4n | DIFFOUT_B4n | AJ29 | DQSn1B/QK1B | | | |
| 3A | VREFB3AN0 | IO | CLK1p | | DIFFIO_RX_B4p | DIFFOUT_B4p | AK29 | DQSn1B/CQ1B/CQn1B/QKn1B | | | |
| 3A | VREFB3AN0 | IO | FPLL_BL_CLKOUT1,FPLL_BL_CLKOUTn | | DIFFIO_TX_B5n | DIFFOUT_B5n | AL30 | | | | |



Pin Information for the Arria® V 5AGXFB7 Device
Version 1.3
Note (1)

| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|----------|----------------------|---|------------------------|-------------------------|------------------------------|-------|------------------------|------------------------|------------------|-------------------------------|
| 3A | VREFB3A0 | IO | FPLL_BL_CLKOUT0,FPLL_BL_CLKOUTp,FPLL_BL_FB0 | | DIFFIO_TX_B5p | DIFFOUT_B5p | AM30 | DQ1B | | | |
| 3A | VREFB3A0 | IO | FPLL_BL_CLKOUT3,FPLL_BL_FBn | | DIFFIO_RX_B6n | DIFFOUT_B6n | AN30 | DQ1B | | | |
| 3A | VREFB3A0 | IO | FPLL_BL_CLKOUT2,FPLL_BL_FBp,FPLL_BL_FB1 | | DIFFIO_RX_B6p | DIFFOUT_B6p | AP30 | DQ1B | | | |
| 3A | VREFB3A0 | IO | VREFB3A0 | | | | AE27 | | | | |
| 3A | VREFB3A0 | IO | | | | | AF28 | DQ1B | | | |
| 3A | VREFB3A0 | IO | CLK2n | | DIFFIO_RX_B7n | DIFFOUT_B7n | AH28 | DQ1B | | | |
| 3A | VREFB3A0 | IO | CLK2p | | DIFFIO_RX_B7p | DIFFOUT_B7p | AJ28 | DQ1B | | | |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B8n | DIFFOUT_B8n | AL29 | | | | CS# 3A 1 |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B8p | DIFFOUT_B8p | AM29 | DQ2B | DQ1B | | CS# 3A 0 |
| 3A | VREFB3A0 | IO | CLK3n | | DIFFIO_RX_B9n | DIFFOUT_B9n | AN29 | DQ2B | DQ1B | | |
| 3A | VREFB3A0 | IO | CLK3p | | DIFFIO_RX_B9p | DIFFOUT_B9p | AP29 | DQ2B | DQ1B | | |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B10n | DIFFOUT_B10n | AE29 | | | | ODT 3A 1 |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B10p | DIFFOUT_B10p | AF29 | DQ2B | DQ1B | | ODT 3A 0 |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B11n | DIFFOUT_B11n | AG27 | DQSn2B/QK2B | DQ1B | | WE# 3A |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B11p | DIFFOUT_B11p | AH27 | DQs2B/CQ2B/CQn2B/QKn2B | DQ1B | | CAS# 3A |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B12n | DIFFOUT_B12n | AL28 | | | | RAS# 3A |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B12p | DIFFOUT_B12p | AM28 | DQ2B | DQ1B | | BA 3A 2 |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B13n | DIFFOUT_B13n | AP27 | DQ2B | DQ1B | | BA 3A 1 |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B13p | DIFFOUT_B13p | AP28 | DQ2B | DQ1B | | BA 3A 0 |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B14n | DIFFOUT_B14n | AG29 | | | | A 3A 15 |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B14p | DIFFOUT_B14p | AH29 | DQ2B | DQ1B | | A 3A 14 |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B15n | DIFFOUT_B15n | AK27 | DQ2B | DQ1B | | A 3A 13 |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B15p | DIFFOUT_B15p | AL27 | DQ2B | DQ1B | | A 3A 12 |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B16n | DIFFOUT_B16n | AG26 | | | | A 3A 11 |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B16p | DIFFOUT_B16p | AH26 | DQ3B | DQ1B | | A 3A 10 |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B17n | DIFFOUT_B17n | AJ26 | DQ3B | DQ1B | | A 3A 9 |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B17p | DIFFOUT_B17p | AK26 | DQ3B | DQ1B | | A 3A 8 |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B18n | DIFFOUT_B18n | AD29 | | | | A 3A 7 |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B18p | DIFFOUT_B18p | AE28 | DQ3B | DQ1B | | A 3A 6 |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B19n | DIFFOUT_B19n | AL26 | DQSn3B/QK3B | DQSn1B/QK1B | | A 3A 5 |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B19p | DIFFOUT_B19p | AM26 | DQs3B/CQ3B/CQn3B/QKn3B | DQs1B/CQ1B/CQn1B/QKn1B | | A 3A 4 |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B20n | DIFFOUT_B20n | AN27 | | | | A 3A 3 |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B20p | DIFFOUT_B20p | AN26 | DQ3B | DQ1B | | A 3A 2 |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B21n | DIFFOUT_B21n | AP25 | DQ3B | DQ1B | | A 3A 1 |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B21p | DIFFOUT_B21p | AP26 | DQ3B | DQ1B | | A 3A 0 |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B22n | DIFFOUT_B22n | AE26 | | | | CKE 3A 1 |
| 3A | VREFB3A0 | IO | | | DIFFIO_TX_B22p | DIFFOUT_B22p | AF26 | DQ3B | DQ1B | | CKE 3A 0 |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B23n | DIFFOUT_B23n | AL25 | DQ3B | DQ1B | | CK# 3A |
| 3A | VREFB3A0 | IO | | | DIFFIO_RX_B23p | DIFFOUT_B23p | AM25 | DQ3B | DQ1B | | CK 3A |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B24n | DIFFOUT_B24n | AE23 | | | | RESET# 3A |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B24p | DIFFOUT_B24p | AE24 | DQ4B | DQ2B | DQ1B | DQ1 3B 8 |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B25n | DIFFOUT_B25n | AC24 | DQ4B | DQ2B | DQ1B | DQ1 3B 7 |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B25p | DIFFOUT_B25p | AC25 | DQ4B | DQ2B | DQ1B | DQ1 3B 6 |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B26n | DIFFOUT_B26n | AA25 | | | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B26p | DIFFOUT_B26p | AB25 | DQ4B | DQ2B | DQ1B | DM1 3B |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B27n | DIFFOUT_B27n | AD24 | DQSn4B/QK4B | DQ2B | DQ1B | DQS#1 3B |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B27p | DIFFOUT_B27p | AE25 | DQs4B/CQ4B/CQn4B/QKn4B | DQ2B | DQ1B | DQS#1 3B |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B28n | DIFFOUT_B28n | AF25 | | | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B28p | DIFFOUT_B28p | AG24 | DQ4B | DQ2B | DQ1B | DQ1 3B 5 |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B29n | DIFFOUT_B29n | AH24 | DQ4B | DQ2B | DQ1B | DQ1 3B 4 |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B29p | DIFFOUT_B29p | AH25 | DQ4B | DQ2B | DQ1B | DQ1 3B 3 |
| 3B | VREFB3B0 | IO | VREFB3B0 | | | | Y23 | | | | |
| 3B | VREFB3B0 | IO | | | | | AB24 | DQ4B | DQ2B | DQ1B | DQ1 3B 2 |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B30n | DIFFOUT_B30n | AJ25 | DQ4B | DQ2B | DQ1B | DQ1 3B 1 |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B30p | DIFFOUT_B30p | AK24 | DQ4B | DQ2B | DQ1B | DQ1 3B 0 |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B31n | DIFFOUT_B31n | AK23 | | | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B31p | DIFFOUT_B31p | AL24 | DQ5B | DQ2B | DQ1B | DQ2 3B 8 |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B32n | DIFFOUT_B32n | AF23 | DQ5B | DQ2B | DQ1B | DQ2 3B 7 |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B32p | DIFFOUT_B32p | AG23 | DQ5B | DQ2B | DQ1B | DQ2 3B 6 |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B33n | DIFFOUT_B33n | AC23 | | | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B33p | DIFFOUT_B33p | AD23 | DQ5B | DQ2B | DQ1B | DM2 3B |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B34n | DIFFOUT_B34n | AH23 | DQSn5B/QK5B | DQSn2B/QK2B | DQ1B | DQS#2 3B |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B34p | DIFFOUT_B34p | AJ23 | DQs5B/CQ5B/CQn5B/QKn5B | DQs2B/CQ2B/CQn2B/QKn2B | DQ1B | DQS#2 3B |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B35n | DIFFOUT_B35n | AL23 | | | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B35p | DIFFOUT_B35p | AM23 | DQ5B | DQ2B | DQ1B | DQ2 3B 5 |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B36n | DIFFOUT_B36n | AN23 | DQ5B | DQ2B | DQ1B | DQ2 3B 4 |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B36p | DIFFOUT_B36p | AN24 | DQ5B | DQ2B | DQ1B | DQ2 3B 3 |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B37n | DIFFOUT_B37n | AA23 | | | | |
| 3B | VREFB3B0 | IO | | | DIFFIO_TX_B37p | DIFFOUT_B37p | AB23 | DQ5B | DQ2B | DQ1B | DQ2 3B 2 |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B38n | DIFFOUT_B38n | AP22 | DQ5B | DQ2B | DQ1B | DQ2 3B 1 |
| 3B | VREFB3B0 | IO | | | DIFFIO_RX_B38p | DIFFOUT_B38p | AP23 | DQ5B | DQ2B | DQ1B | DQ2 3B 0 |
| 3C | VREFB3C0 | IO | | | DIFFIO_TX_B39n | DIFFOUT_B39n | AE21 | | | | |
| 3C | VREFB3C0 | IO | | | DIFFIO_TX_B39p | DIFFOUT_B39p | AE22 | DQ6B | DQ3B | DQ1B | DQ3 3C 8 |
| 3C | VREFB3C0 | IO | | | DIFFIO_RX_B40n | DIFFOUT_B40n | AL21 | DQ6B | DQ3B | DQ1B | DQ3 3C 7 |
| 3C | VREFB3C0 | IO | | | DIFFIO_RX_B40p | DIFFOUT_B40p | AL22 | DQ6B | DQ3B | DQ1B | DQ3 3C 6 |
| 3C | VREFB3C0 | IO | | | DIFFIO_TX_B41n | DIFFOUT_B41n | AB22 | | | | |
| 3C | VREFB3C0 | IO | | | DIFFIO_TX_B41p | DIFFOUT_B41p | AC22 | DQ6B | DQ3B | DQ1B | DM3 3C |
| 3C | VREFB3C0 | IO | | | DIFFIO_RX_B42n | DIFFOUT_B42n | AH21 | DQSn6B/QK6B | DQ3B | DQ1B | DQS#3 3C |
| 3C | VREFB3C0 | IO | | | DIFFIO_RX_B42p | DIFFOUT_B42p | AH22 | DQs6B/CQ6B/CQn6B/QKn6B | DQ3B | DQ1B | DQS#3 3C |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|----------------------|---|------------------------|-------------------------|------------------------------|-------|-----------------------------|-------------------------|------------------|-------------------------------|
| 3C | VREFB3CNO | IO | | | DIFFIO TX B43n | DIFFOUT B43n | AF22 | | | | |
| 3C | VREFB3CNO | IO | | | DIFFIO TX B43p | DIFFOUT B43p | AG21 | DQ6B | DQ3B | DQ1B | DQ3 3C 5 |
| 3C | VREFB3CNO | IO | | | DIFFIO RX B44n | DIFFOUT B44n | AJ22 | DQ6B | DQ3B | DQ1B | DQ3 3C 4 |
| 3C | VREFB3CNO | IO | | | DIFFIO RX B44p | DIFFOUT B44p | AK21 | DQ6B | DQ3B | DQ1B | DQ3 3C 3 |
| 3C | VREFB3CNO | IO | | | DIFFIO TX B45n | DIFFOUT B45n | AA21 | | | | |
| 3C | VREFB3CNO | IO | | | DIFFIO TX B45p | DIFFOUT B45p | AB21 | DQ6B | DQ3B | DQ1B | DQ3 3C 2 |
| 3C | VREFB3CNO | IO | | | DIFFIO RX B46n | DIFFOUT B46n | AM22 | DQ6B | DQ3B | DQ1B | DQ3 3C 1 |
| 3C | VREFB3CNO | IO | | | DIFFIO RX B46p | DIFFOUT B46p | AN21 | DQ6B | DQ3B | DQ1B | DQ3 3C 0 |
| 3C | VREFB3CNO | IO | | | DIFFIO TX B47n | DIFFOUT B47n | AC21 | | | | |
| 3C | VREFB3CNO | IO | | | DIFFIO TX B47p | DIFFOUT B47p | AD21 | DQ7B | DQ3B | DQ1B | DQ4 3C 8 |
| 3C | VREFB3CNO | IO | | | DIFFIO RX B48n | DIFFOUT B48n | AN20 | DQ7B | DQ3B | DQ1B | DQ4 3C 7 |
| 3C | VREFB3CNO | IO | | | DIFFIO RX B48p | DIFFOUT B48p | AP20 | DQ7B | DQ3B | DQ1B | DQ4 3C 6 |
| 3C | VREFB3CNO | IO | | | DIFFIO TX B49n | DIFFOUT B49n | AA20 | | | | |
| 3C | VREFB3CNO | IO | | | DIFFIO TX B49p | DIFFOUT B49p | AB20 | DQ7B | DQ3B | DQ1B | DM4 3C |
| 3C | VREFB3CNO | IO | | | DIFFIO RX B50n | DIFFOUT B50n | AL20 | DQSn7B/QK7B | DQSn3B/QK3B | DQ1B | DQS#4 3C |
| 3C | VREFB3CNO | IO | | | DIFFIO RX B50p | DIFFOUT B50p | AM20 | DQSn7B/CQ7B/CQn7B/QKn7B | DQSn3B/CQ3B/CQn3B/QKn3B | DQ1B | DQS4 3C |
| 3C | VREFB3CNO | IO | | | DIFFIO TX B51n | DIFFOUT B51n | AJ20 | | | | |
| 3C | VREFB3CNO | IO | | | DIFFIO TX B51p | DIFFOUT B51p | AK20 | DQ7B | DQ3B | DQ1B | DQ4 3C 5 |
| 3C | VREFB3CNO | IO | | | DIFFIO RX B52n | DIFFOUT B52n | AG20 | DQ7B | DQ3B | DQ1B | DQ4 3C 4 |
| 3C | VREFB3CNO | IO | | | DIFFIO RX B52p | DIFFOUT B52p | AH20 | DQ7B | DQ3B | DQ1B | DQ4 3C 3 |
| 3C | VREFB3CNO | IO | VREFB3CNO | | | | AC20 | | | | |
| 3C | VREFB3CNO | IO | | | | | AD20 | DQ7B | DQ3B | DQ1B | DQ4 3C 2 |
| 3C | VREFB3CNO | IO | | | DIFFIO RX B53n | DIFFOUT B53n | AE20 | DQ7B | DQ3B | DQ1B | DQ4 3C 1 |
| 3C | VREFB3CNO | IO | | | DIFFIO RX B53p | DIFFOUT B53p | AF20 | DQ7B | DQ3B | DQ1B | DQ4 3C 0 |
| 3D | VREFB3DNO | IO | | | DIFFIO TX B70n | DIFFOUT B70n | AH19 | | | | |
| 3D | VREFB3DNO | IO | | | DIFFIO TX B70p | DIFFOUT B70p | AJ19 | DQ8B | DQ4B | | |
| 3D | VREFB3DNO | IO | | | DIFFIO RX B71n | DIFFOUT B71n | AL19 | DQ8B | DQ4B | | |
| 3D | VREFB3DNO | IO | | | DIFFIO RX B71p | DIFFOUT B71p | AM19 | DQ8B | DQ4B | | |
| 3D | VREFB3DNO | IO | | | DIFFIO TX B72n | DIFFOUT B72n | AI19 | | | | |
| 3D | VREFB3DNO | IO | | | DIFFIO TX B72p | DIFFOUT B72p | AC19 | DQ8B | DQ4B | | |
| 3D | VREFB3DNO | IO | | | DIFFIO RX B73n | DIFFOUT B73n | AK18 | DQSn8B/QK8B | DQ4B | | |
| 3D | VREFB3DNO | IO | | | DIFFIO RX B73p | DIFFOUT B73p | AP19 | DQSn8B/CQ8B/CQn8B/QKn8B | DQ4B | | |
| 3D | VREFB3DNO | IO | | | DIFFIO TX B74n | DIFFOUT B74n | AE19 | | | | |
| 3D | VREFB3DNO | IO | | | DIFFIO TX B74p | DIFFOUT B74p | AF19 | DQ8B | DQ4B | | |
| 3D | VREFB3DNO | IO | | | DIFFIO RX B75n | DIFFOUT B75n | AK18 | DQ8B | DQ4B | | |
| 3D | VREFB3DNO | IO | | | DIFFIO RX B75p | DIFFOUT B75p | AL18 | DQ8B | DQ4B | | |
| 3D | VREFB3DNO | IO | VREFB3DNO | | | | AB18 | | | | |
| 3D | VREFB3DNO | IO | | | | | AA18 | DQ8B | DQ4B | | |
| 3D | VREFB3DNO | IO | CLK4n | | DIFFIO RX B76n | DIFFOUT B76n | AG18 | DQ8B | DQ4B | | |
| 3D | VREFB3DNO | IO | CLK4p | | DIFFIO RX B76p | DIFFOUT B76p | AH18 | DQ8B | DQ4B | | |
| 3D | VREFB3DNO | IO | | | DIFFIO TX B77n | DIFFOUT B77n | AN17 | | | | |
| 3D | VREFB3DNO | IO | | | DIFFIO TX B77p | DIFFOUT B77p | AP17 | DQ9B | DQ4B | | |
| 3D | VREFB3DNO | IO | CLK5n | | DIFFIO RX B78n | DIFFOUT B78n | AG17 | DQ9B | DQ4B | | |
| 3D | VREFB3DNO | IO | CLK5p | | DIFFIO RX B78p | DIFFOUT B78p | AH17 | DQ9B | DQ4B | | |
| 3D | VREFB3DNO | IO | FPLL BC CLKOUT1,FPLL BC CLKOUTn | | DIFFIO TX B79n | DIFFOUT B79n | AA17 | | | | |
| 3D | VREFB3DNO | IO | FPLL BC CLKOUT0,FPLL BC CLKOUTp,FPLL BC FB0 | | DIFFIO TX B79p | DIFFOUT B79p | AB17 | DQ9B | DQ4B | | |
| 3D | VREFB3DNO | IO | FPLL BC CLKOUT3,FPLL BC FBn | | DIFFIO RX B80n | DIFFOUT B80n | AJ17 | DQSn9B/QK9B | DQSn4B/QK4B | | |
| 3D | VREFB3DNO | IO | FPLL BC CLKOUT2,FPLL BC FBp,FPLL BC FB1 | | DIFFIO RX B80p | DIFFOUT B80p | AK17 | DQSn9B/CQ9B/CQn9B/QKn9B | DQSn4B/CQ4B/CQn4B/QKn4B | | |
| 3D | VREFB3DNO | IO | | | DIFFIO TX B81n | DIFFOUT B81n | AL17 | | | | |
| 3D | VREFB3DNO | IO | | | DIFFIO TX B81p | DIFFOUT B81p | AM17 | DQ9B | DQ4B | | |
| 3D | VREFB3DNO | IO | CLK6n | | DIFFIO RX B82n | DIFFOUT B82n | AE17 | DQ9B | DQ4B | | |
| 3D | VREFB3DNO | IO | CLK6p | | DIFFIO RX B82p | DIFFOUT B82p | AF17 | DQ9B | DQ4B | | |
| 3D | VREFB3DNO | IO | | | DIFFIO TX B83n | DIFFOUT B83n | AC17 | | | | |
| 3D | VREFB3DNO | IO | | | DIFFIO TX B83p | DIFFOUT B83p | AC18 | DQ9B | DQ4B | | |
| 3D | VREFB3DNO | IO | CLK7n | | DIFFIO RX B84n | DIFFOUT B84n | AD17 | DQ9B | DQ4B | | |
| 3D | VREFB3DNO | IO | CLK7p | | DIFFIO RX B84p | DIFFOUT B84p | AE18 | DQ9B | DQ4B | | |
| | | VCCD_FPLL | | | | | Y17 | | | | |
| | | VCCA_FPLL | | | | | Y18 | | | | |
| | | DNU | | | | | AD18 | | | | |
| 4D | VREFB4DNO | IO | | | DIFFIO TX B93n | DIFFOUT B93n | AP16 | | | | CS# 4D 1 |
| 4D | VREFB4DNO | IO | | | DIFFIO TX B93p | DIFFOUT B93p | AN15 | DQ10B | DQ5B | | CS# 4D 0 |
| 4D | VREFB4DNO | IO | | | DIFFIO RX B94n | DIFFOUT B94n | AH16 | DQ10B | DQ5B | | |
| 4D | VREFB4DNO | IO | | | DIFFIO RX B94p | DIFFOUT B94p | AJ16 | DQ10B | DQ5B | | A 4D 15 |
| 4D | VREFB4DNO | IO | | | DIFFIO TX B95n | DIFFOUT B95n | AE16 | | | | ODT 4D 1 |
| 4D | VREFB4DNO | IO | | | DIFFIO TX B95p | DIFFOUT B95p | AF16 | DQ10B | DQ5B | | ODT 4D 0 |
| 4D | VREFB4DNO | IO | | | DIFFIO RX B96n | DIFFOUT B96n | Y15 | DQSn10B/QK10B | DQ5B | | WE# 4D |
| 4D | VREFB4DNO | IO | | | DIFFIO RX B96p | DIFFOUT B96p | AA15 | DQSn10B/CQ10B/CQn10B/QKn10B | DQ5B | | CAS# 4D |
| 4D | VREFB4DNO | IO | | | DIFFIO TX B97n | DIFFOUT B97n | AB16 | | | | RAS# 4D |
| 4D | VREFB4DNO | IO | | | DIFFIO TX B97p | DIFFOUT B97p | AC16 | DQ10B | DQ5B | | BA 4D 2 |
| 4D | VREFB4DNO | IO | | | DIFFIO RX B98n | DIFFOUT B98n | AL16 | DQ10B | DQ5B | | BA 4D 1 |
| 4D | VREFB4DNO | IO | | | DIFFIO RX B98p | DIFFOUT B98p | AM16 | DQ10B | DQ5B | | BA 4D 0 |
| 4D | VREFB4DNO | IO | VREFB4DNO | | | | AJ14 | | | | |
| 4D | VREFB4DNO | IO | | | | | AK14 | DQ10B | DQ5B | | A 4D 14 |
| 4D | VREFB4DNO | IO | | | DIFFIO RX B99n | DIFFOUT B99n | AL14 | DQ10B | DQ5B | | A 4D 13 |
| 4D | VREFB4DNO | IO | | | DIFFIO RX B99p | DIFFOUT B99p | AM14 | DQ10B | DQ5B | | A 4D 12 |
| 4D | VREFB4DNO | IO | | | DIFFIO TX B100n | DIFFOUT B100n | AA14 | | | | A 4D 11 |
| 4D | VREFB4DNO | IO | | | DIFFIO TX B100p | DIFFOUT B100p | AB15 | DQ11B | DQ5B | | A 4D 10 |
| 4D | VREFB4DNO | IO | | | DIFFIO RX B101n | DIFFOUT B101n | AK15 | DQ11B | DQ5B | | A 4D 9 |
| 4D | VREFB4DNO | IO | | | DIFFIO RX B101p | DIFFOUT B101p | AL15 | DQ11B | DQ5B | | A 4D 8 |



Pin Information for the Arria® V 5AGXFB7 Device
Version 1.3
Note (1)

| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|----------------------------|------------------------|------------------|-------------------------------|
| 4D | VREFB4DN0 | IO | | | DIFFIO_TX_B102n | DIFFOUT_B102n | AG14 | | | | A 4D 7 |
| 4D | VREFB4DN0 | IO | | | DIFFIO_TX_B102p | DIFFOUT_B102p | AH14 | DQ11B | DQ5B | | A 4D 6 |
| 4D | VREFB4DN0 | IO | | | DIFFIO_RX_B103n | DIFFOUT_B103n | AG15 | DQSn11B/QK11B | DQS5B/QK5B | | A 4D 5 |
| 4D | VREFB4DN0 | IO | | | DIFFIO_RX_B103p | DIFFOUT_B103p | AH15 | DQS11B/CQ11B/CQn11B/QKn11B | DQS5B/CQ5B/CQn5B/QKn5B | | A 4D 4 |
| 4D | VREFB4DN0 | IO | | | DIFFIO_TX_B104n | DIFFOUT_B104n | AD15 | | | | A 4D 3 |
| 4D | VREFB4DN0 | IO | | | DIFFIO_TX_B104p | DIFFOUT_B104p | AE15 | DQ11B | DQ5B | | A 4D 2 |
| 4D | VREFB4DN0 | IO | | | DIFFIO_RX_B105n | DIFFOUT_B105n | AE14 | DQ11B | DQ5B | | A 4D 1 |
| 4D | VREFB4DN0 | IO | | | DIFFIO_RX_B105p | DIFFOUT_B105p | AF14 | DQ11B | DQ5B | | A 4D 0 |
| 4D | VREFB4DN0 | IO | | | DIFFIO_TX_B106n | DIFFOUT_B106n | AB14 | | | | CKE 4D 1 |
| 4D | VREFB4DN0 | IO | | | DIFFIO_TX_B106p | DIFFOUT_B106p | AC15 | DQ11B | DQ5B | | CKE 4D 0 |
| 4D | VREFB4DN0 | IO | | | DIFFIO_RX_B107n | DIFFOUT_B107n | AC14 | DQ11B | DQ5B | | CK# 4D |
| 4D | VREFB4DN0 | IO | | | DIFFIO_RX_B107p | DIFFOUT_B107p | AD14 | DQ11B | DQ5B | | CK 4D |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B108n | DIFFOUT_B108n | AB13 | | | | RESET# 4D |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B108p | DIFFOUT_B108p | AC13 | DQ12B | DQ6B | DQ2B | DQ1 4C 8 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B109n | DIFFOUT_B109n | AN14 | DQ12B | DQ6B | DQ2B | DQ1 4C 7 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B109p | DIFFOUT_B109p | AP14 | DQ12B | DQ6B | DQ2B | DQ1 4C 6 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B110n | DIFFOUT_B110n | AN12 | | | | |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B110p | DIFFOUT_B110p | AP13 | DQ12B | DQ6B | DQ2B | DM1 4C |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B111n | DIFFOUT_B111n | AL13 | DQSn12B/QK12B | DQ6B | DQ2B | DQS#1 4C |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B111p | DIFFOUT_B111p | AM13 | DQS12B/CQ12B/CQn12B/QKn12B | DQ6B | DQ2B | DQS1 4C |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B112n | DIFFOUT_B112n | Y11 | | | | |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B112p | DIFFOUT_B112p | AA12 | DQ12B | DQ6B | DQ2B | DQ1 4C 5 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B113n | DIFFOUT_B113n | AK12 | DQ12B | DQ6B | DQ2B | DQ1 4C 4 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B113p | DIFFOUT_B113p | AL12 | DQ12B | DQ6B | DQ2B | DQ1 4C 3 |
| 4C | VREFB4CN0 | IO | VREFB4CN0 | | | | AK11 | | | | |
| 4C | VREFB4CN0 | IO | | | | | AL11 | DQ12B | DQ6B | DQ2B | DQ1 4C 2 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B114n | DIFFOUT_B114n | AH13 | DQ12B | DQ6B | DQ2B | DQ1 4C 1 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B114p | DIFFOUT_B114p | AJ13 | DQ12B | DQ6B | DQ2B | DQ1 4C 0 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B115n | DIFFOUT_B115n | AH11 | | | | |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B115p | DIFFOUT_B115p | AB12 | DQ13B | DQ6B | DQ2B | DQ2 4C 8 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B116n | DIFFOUT_B116n | AG12 | DQ13B | DQ6B | DQ2B | DQ2 4C 7 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B116p | DIFFOUT_B116p | AH12 | DQ13B | DQ6B | DQ2B | DQ2 4C 6 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B117n | DIFFOUT_B117n | AH11 | | | | |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B117p | DIFFOUT_B117p | AJ11 | DQ13B | DQ6B | DQ2B | DM2 4C |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B118n | DIFFOUT_B118n | AE13 | DQSn13B/QK13B | DQ6B/QK6B | DQ2B | DQS#2 4C |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B118p | DIFFOUT_B118p | AF13 | DQS13B/CQ13B/CQn13B/QKn13B | DQ6B/CQ6B/CQn6B/QKn6B | DQ2B | DQS2 4C |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B119n | DIFFOUT_B119n | AC11 | | | | |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B119p | DIFFOUT_B119p | AC12 | DQ13B | DQ6B | DQ2B | DQ2 4C 5 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B120n | DIFFOUT_B120n | AD12 | DQ13B | DQ6B | DQ2B | DQ2 4C 4 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B120p | DIFFOUT_B120p | AE12 | DQ13B | DQ6B | DQ2B | DQ2 4C 3 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B121n | DIFFOUT_B121n | AD11 | | | | |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B121p | DIFFOUT_B121p | AE11 | DQ13B | DQ6B | DQ2B | DQ2 4C 2 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B122n | DIFFOUT_B122n | AF11 | DQ13B | DQ6B | DQ2B | DQ2 4C 1 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B122p | DIFFOUT_B122p | AG11 | DQ13B | DQ6B | DQ2B | DQ2 4C 0 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B123n | DIFFOUT_B123n | AD9 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B123p | DIFFOUT_B123p | AE9 | DQ14B | DQ7B | DQ2B | DQ3 4B 8 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B124n | DIFFOUT_B124n | AM11 | DQ14B | DQ7B | DQ2B | DQ3 4B 7 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B124p | DIFFOUT_B124p | AN11 | DQ14B | DQ7B | DQ2B | DQ3 4B 6 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B125n | DIFFOUT_B125n | AL10 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B125p | DIFFOUT_B125p | AM10 | DQ14B | DQ7B | DQ2B | DM3 4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B126n | DIFFOUT_B126n | AP10 | DQSn14B/QK14B | DQ7B | DQ2B | DQS#3 4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B126p | DIFFOUT_B126p | AP11 | DQS14B/CQ14B/CQn14B/QKn14B | DQ7B | DQ2B | DQS3 4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B127n | DIFFOUT_B127n | AA10 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B127p | DIFFOUT_B127p | AB10 | DQ14B | DQ7B | DQ2B | DQ3 4B 5 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B128n | DIFFOUT_B128n | AH10 | DQ14B | DQ7B | DQ2B | DQ3 4B 4 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B128p | DIFFOUT_B128p | AJ10 | DQ14B | DQ7B | DQ2B | DQ3 4B 3 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B129n | DIFFOUT_B129n | AK9 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B129p | DIFFOUT_B129p | AL9 | DQ14B | DQ7B | DQ2B | DQ3 4B 2 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B130n | DIFFOUT_B130n | AN9 | DQ14B | DQ7B | DQ2B | DQ3 4B 1 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B130p | DIFFOUT_B130p | AN8 | DQ14B | DQ7B | DQ2B | DQ3 4B 0 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B131n | DIFFOUT_B131n | AC9 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B131p | DIFFOUT_B131p | AC10 | DQ15B | DQ7B | DQ2B | DQ4 4B 8 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B132n | DIFFOUT_B132n | AG9 | DQ15B | DQ7B | DQ2B | DQ4 4B 7 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B132p | DIFFOUT_B132p | AH9 | DQ15B | DQ7B | DQ2B | DQ4 4B 6 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B133n | DIFFOUT_B133n | AE10 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B133p | DIFFOUT_B133p | AF10 | DQ15B | DQ7B | DQ2B | DM4 4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B134n | DIFFOUT_B134n | AL8 | DQSn15B/QK15B | DQ7B/QK7B | DQ2B | DQS#4 4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B134p | DIFFOUT_B134p | AM8 | DQS15B/CQ15B/CQn15B/QKn15B | DQ7B/CQ7B/CQn7B/QKn7B | DQ2B | DQS4 4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B135n | DIFFOUT_B135n | AC8 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B135p | DIFFOUT_B135p | AD8 | DQ15B | DQ7B | DQ2B | DQ4 4B 5 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B136n | DIFFOUT_B136n | AJ8 | DQ15B | DQ7B | DQ2B | DQ4 4B 4 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B136p | DIFFOUT_B136p | AK8 | DQ15B | DQ7B | DQ2B | DQ4 4B 3 |
| 4B | VREFB4BN0 | IO | VREFB4BN0 | | | | AE8 | | | | |
| 4B | VREFB4BN0 | IO | | | | | AF8 | DQ15B | DQ7B | DQ2B | DQ4 4B 2 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B137n | DIFFOUT_B137n | AG8 | DQ15B | DQ7B | DQ2B | DQ4 4B 1 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B137p | DIFFOUT_B137p | AH8 | DQ15B | DQ7B | DQ2B | DQ4 4B 0 |
| 4A | VREFB4AN0 | IO | | DATA10 | DIFFIO_TX_B154n | DIFFOUT_B154n | AP8 | | | | |
| 4A | VREFB4AN0 | IO | | DATA11 | DIFFIO_TX_B154p | DIFFOUT_B154p | AP7 | DQ16B | DQ8B | | |
| 4A | VREFB4AN0 | IO | | DATA5 | DIFFIO_RX_B155n | DIFFOUT_B155n | AL7 | DQ16B | DQ8B | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|-----------------------------|---|------------------------|-------------------------|------------------------------|-------|----------------------------|------------------|------------------|-------------------------------|
| 4A | VREFB4AN0 | IO | | DATA6 | DIFFIO_RX_B155p | DIFFOUT_B155p | AM7 | DQ16B | | DQ8B | |
| 4A | VREFB4AN0 | IO | | DATA12 | DIFFIO_TX_B156n | DIFFOUT_B156n | AM6 | | | | |
| 4A | VREFB4AN0 | IO | | DATA13 | DIFFIO_TX_B156p | DIFFOUT_B156p | AN6 | DQ16B | | DQ8B | |
| 4A | VREFB4AN0 | IO | | DATA7 | DIFFIO_RX_B157n | DIFFOUT_B157n | AP6 | DQS16B/QK16B | | DQ8B | |
| 4A | VREFB4AN0 | IO | | DATA8 | DIFFIO_RX_B157p | DIFFOUT_B157p | AP5 | DQS16B/CQ16B/CQn16B/QKn16B | | DQ8B | |
| 4A | VREFB4AN0 | IO | | DATA14 | DIFFIO_TX_B158n | DIFFOUT_B158n | AE7 | | | | |
| 4A | VREFB4AN0 | IO | | DATA15 | DIFFIO_TX_B158p | DIFFOUT_B158p | AF7 | DQ16B | | DQ8B | |
| 4A | VREFB4AN0 | IO | | DATA9 | DIFFIO_RX_B159n | DIFFOUT_B159n | AM5 | DQ16B | | DQ8B | |
| 4A | VREFB4AN0 | IO | | CLKUSR | DIFFIO_RX_B159p | DIFFOUT_B159p | AN5 | DQ16B | | DQ8B | |
| 4A | VREFB4AN0 | IO | VREFB4AN0 | | | | AK6 | | | | |
| 4A | VREFB4AN0 | IO | | | | | AL6 | DQ16B | | DQ8B | |
| 4A | VREFB4AN0 | IO | CLK11n | | DIFFIO_RX_B160n | DIFFOUT_B160n | AH7 | DQ16B | | DQ8B | |
| 4A | VREFB4AN0 | IO | CLK11p | | DIFFIO_RX_B160p | DIFFOUT_B160p | AJ7 | DQ16B | | DQ8B | |
| 4A | VREFB4AN0 | IO | FPLL_BR_CLKOUT1,FPLL_BR_CLKOUTn | | DIFFIO_TX_B161n | DIFFOUT_B161n | AD6 | | | | |
| 4A | VREFB4AN0 | IO | FPLL_BR_CLKOUT0,FPLL_BR_CLKOUTp,FPLL_BR_FB0 | | DIFFIO_TX_B161p | DIFFOUT_B161p | AE6 | DQ17B | | DQ8B | |
| 4A | VREFB4AN0 | IO | FPLL_BR_CLKOUT3,FPLL_BR_FBn | | DIFFIO_RX_B162n | DIFFOUT_B162n | AP3 | DQ17B | | DQ8B | |
| 4A | VREFB4AN0 | IO | FPLL_BR_CLKOUT2,FPLL_BR_FBp,FPLL_BR_FB1 | | DIFFIO_RX_B162p | DIFFOUT_B162p | AP4 | DQ17B | | DQ8B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO_TX_B163n | DIFFOUT_B163n | AH6 | | | | |
| 4A | VREFB4AN0 | IO | | | DIFFIO_TX_B163p | DIFFOUT_B163p | AJ6 | DQ17B | | DQ8B | |
| 4A | VREFB4AN0 | IO | CLK10n | | DIFFIO_RX_B164n | DIFFOUT_B164n | AP2 | DQS17B/QK17B | | DQ8B | |
| 4A | VREFB4AN0 | IO | CLK10p | | DIFFIO_RX_B164p | DIFFOUT_B164p | AN3 | DQS17B/CQ17B/CQn17B/QKn17B | | DQ8B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO_TX_B165n | DIFFOUT_B165n | AC7 | | | | |
| 4A | VREFB4AN0 | IO | | | DIFFIO_TX_B165p | DIFFOUT_B165p | AC6 | DQ17B | | DQ8B | |
| 4A | VREFB4AN0 | IO | CLK9n | | DIFFIO_RX_B166n | DIFFOUT_B166n | AL4 | DQ17B | | DQ8B | |
| 4A | VREFB4AN0 | IO | CLK9p | | DIFFIO_RX_B166p | DIFFOUT_B166p | AL5 | DQ17B | | DQ8B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO_TX_B167n | DIFFOUT_B167n | AM3 | | | | |
| 4A | VREFB4AN0 | IO | RZQ_1 | | DIFFIO_TX_B167p | DIFFOUT_B167p | AM4 | DQ17B | | DQ8B | |
| 4A | VREFB4AN0 | IO | CLK8n | | DIFFIO_RX_B168n | DIFFOUT_B168n | AF6 | DQ17B | | DQ8B | |
| 4A | VREFB4AN0 | IO | CLK8p | | DIFFIO_RX_B168p | DIFFOUT_B168p | AG6 | DQ17B | | DQ8B | |
| | | RREF_BR | | | | | AM1 | | | | |
| | | DN1U | | | | | AM2 | | | | |
| | | DN1U | | | | | AN2 | | | | |
| | | DN1U | | | | | AA8 | | | | |
| GXB_R0 | | REFCLK0Rp | | | | | AA7 | | | | |
| GXB_R0 | | REFCLK0Rn | | | | | AK2 | | | | |
| GXB_R0 | | GXB_RX_R0n,GXB_REFCLK_R0n | | | | | AK1 | | | | |
| GXB_R0 | | GXB_RX_R0p,GXB_REFCLK_R0p | | | | | AJ3 | | | | |
| GXB_R0 | | GXB_TX_R0p | | | | | AJ4 | | | | |
| GXB_R0 | | GXB_TX_R0n | | | | | AH2 | | | | |
| GXB_R0 | | GXB_RX_R1n,GXB_REFCLK_R1n | | | | | AH1 | | | | |
| GXB_R0 | | GXB_RX_R1p,GXB_REFCLK_R1p | | | | | AG3 | | | | |
| GXB_R0 | | GXB_TX_R1p | | | | | AG4 | | | | |
| GXB_R0 | | GXB_TX_R1n | | | | | AF2 | | | | |
| GXB_R0 | | GXB_RX_R2n,GXB_REFCLK_R2n | | | | | AF1 | | | | |
| GXB_R0 | | GXB_RX_R2p,GXB_REFCLK_R2p | | | | | AE3 | | | | |
| GXB_R0 | | GXB_TX_R2p | | | | | AE4 | | | | |
| GXB_R0 | | GXB_TX_R2n | | | | | AD2 | | | | |
| GXB_R0 | | GXB_RX_R3n,GXB_REFCLK_R3n | | | | | AD1 | | | | |
| GXB_R0 | | GXB_RX_R3p,GXB_REFCLK_R3p | | | | | AC3 | | | | |
| GXB_R0 | | GXB_TX_R3p | | | | | AC4 | | | | |
| GXB_R0 | | GXB_TX_R3n | | | | | AB2 | | | | |
| GXB_R0 | | GXB_RX_R4n,GXB_REFCLK_R4n | | | | | AB1 | | | | |
| GXB_R0 | | GXB_RX_R4p,GXB_REFCLK_R4p | | | | | AA3 | | | | |
| GXB_R0 | | GXB_TX_R4p | | | | | AA4 | | | | |
| GXB_R0 | | GXB_TX_R4n | | | | | Y2 | | | | |
| GXB_R0 | | GXB_RX_R5n,GXB_REFCLK_R5n | | | | | Y1 | | | | |
| GXB_R0 | | GXB_RX_R5p,GXB_REFCLK_R5p | | | | | W3 | | | | |
| GXB_R0 | | GXB_TX_R5p | | | | | W4 | | | | |
| GXB_R0 | | GXB_TX_R5n | | | | | W9 | | | | |
| GXB_R0 | | REFCLK1Rp | | | | | W8 | | | | |
| GXB_R0 | | REFCLK1Rn | | | | | U9 | | | | |
| GXB_R1 | | REFCLK2Rp | | | | | U8 | | | | |
| GXB_R1 | | REFCLK2Rn | | | | | V2 | | | | |
| GXB_R1 | | GXB_RX_R6n,GXB_REFCLK_R6n | | | | | V1 | | | | |
| GXB_R1 | | GXB_RX_R6p,GXB_REFCLK_R6p | | | | | U3 | | | | |
| GXB_R1 | | GXB_TX_R6p | | | | | U4 | | | | |
| GXB_R1 | | GXB_TX_R6n | | | | | T2 | | | | |
| GXB_R1 | | GXB_RX_R7n,GXB_REFCLK_R7n | | | | | T1 | | | | |
| GXB_R1 | | GXB_RX_R7p,GXB_REFCLK_R7p | | | | | R3 | | | | |
| GXB_R1 | | GXB_TX_R7p | | | | | R4 | | | | |
| GXB_R1 | | GXB_TX_R7n | | | | | P2 | | | | |
| GXB_R1 | | GXB_RX_R8n,GXB_REFCLK_R8n | | | | | P1 | | | | |
| GXB_R1 | | GXB_RX_R8p,GXB_REFCLK_R8p | | | | | N3 | | | | |
| GXB_R1 | | GXB_TX_R8p | | | | | N4 | | | | |
| GXB_R1 | | GXB_TX_R8n | | | | | M2 | | | | |
| GXB_R1 | | GXB_RX_R9n,GXB_REFCLK_R9n | | | | | M1 | | | | |
| GXB_R1 | | GXB_RX_R9p,GXB_REFCLK_R9p | | | | | L3 | | | | |
| GXB_R1 | | GXB_TX_R9p | | | | | L4 | | | | |
| GXB_R1 | | GXB_TX_R9n | | | | | K2 | | | | |
| GXB_R1 | | GXB_RX_R10n,GXB_REFCLK_R10n | | | | | | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|----------|-----------------------------|---|------------------------|-------------------------|------------------------------|-------|------------------------|------------------------|------------------------|-------------------------------|
| GXB R1 | | GXB_RX_R10p.GXB_REFCLK_R10p | | | | | K1 | | | | |
| GXB R1 | | GXB_TX_R10p | | | | | J3 | | | | |
| GXB R1 | | GXB_TX_R10n | | | | | J4 | | | | |
| GXB R1 | | GXB_RX_R11n.GXB_REFCLK_R11n | | | | | H2 | | | | |
| GXB R1 | | GXB_RX_R11p.GXB_REFCLK_R11p | | | | | H1 | | | | |
| GXB R1 | | GXB_TX_R11p | | | | | G3 | | | | |
| GXB R1 | | GXB_TX_R11n | | | | | G4 | | | | |
| GXB R1 | | REFCLK3Rp | | | | | R9 | | | | |
| GXB R1 | | REFCLK3Rn | | | | | R8 | | | | |
| | | DNU | | | | | K5 | | | | |
| 7A | | GND | | | | | H5 | | | | |
| 7A | VREFB7A0 | IO | CLK12p | | DIFFIO_RX_T1p | DIFFOUT_T1p | E3 | DQ1T | DQ1T | | |
| 7A | VREFB7A0 | IO | CLK12n | | DIFFIO_RX_T1n | DIFFOUT_T1n | E4 | DQ1T | DQ1T | | |
| 7A | VREFB7A0 | IO | RZQ_5 | | DIFFIO_TX_T2p | DIFFOUT_T2p | E1 | DQ1T | DQ1T | | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T2n | DIFFOUT_T2n | F1 | | | | |
| 7A | VREFB7A0 | IO | CLK13p | | DIFFIO_RX_T3p | DIFFOUT_T3p | D1 | DQ1T | DQ1T | | |
| 7A | VREFB7A0 | IO | CLK13n | | DIFFIO_RX_T3n | DIFFOUT_T3n | E2 | DQ1T | DQ1T | | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T4p | DIFFOUT_T4p | G6 | DQ1T | DQ1T | | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T4n | DIFFOUT_T4n | H6 | | | | |
| 7A | VREFB7A0 | IO | CLK14p | | DIFFIO_RX_T5p | DIFFOUT_T5p | C1 | DQS1T/CQ1T/CQn1T/QKn1T | DQS1T/CQ1T/CQn1T/QKn1T | | |
| 7A | VREFB7A0 | IO | CLK14n | | DIFFIO_RX_T5n | DIFFOUT_T5n | C2 | DQSn1T/QK1T | DQSn1T/QK1T | | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T6p | DIFFOUT_T6p | E5 | DQ1T | DQ1T | | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T6n | DIFFOUT_T6n | F6 | | | | |
| 7A | VREFB7A0 | IO | FPLL_TR_CLKOUT2.FPLL_TR_FBp.FPLL_TR_FB1 | | DIFFIO_RX_T7p | DIFFOUT_T7p | C3 | DQ1T | DQ1T | | |
| 7A | VREFB7A0 | IO | FPLL_TR_CLKOUT3.FPLL_TR_FBn | | DIFFIO_RX_T7n | DIFFOUT_T7n | D3 | DQ1T | DQ1T | | |
| 7A | VREFB7A0 | IO | FPLL_TR_CLKOUT0.FPLL_TR_CLKOUTp.FPLL_TR_FB0 | | DIFFIO_TX_T8p | DIFFOUT_T8p | J6 | DQ1T | DQ1T | | |
| 7A | VREFB7A0 | IO | FPLL_TR_CLKOUT1.FPLL_TR_CLKOUTn | | DIFFIO_TX_T8n | DIFFOUT_T8n | K6 | | | | |
| 7A | VREFB7A0 | IO | CLK15p | | DIFFIO_RX_T9p | DIFFOUT_T9p | A3 | DQ2T | DQ1T | | |
| 7A | VREFB7A0 | IO | CLK15n | | DIFFIO_RX_T9n | DIFFOUT_T9n | B3 | DQ2T | DQ1T | | |
| 7A | VREFB7A0 | IO | | | | | L6 | DQ2T | DQ1T | | |
| 7A | VREFB7A0 | IO | VREFB7A0 | | | | M7 | | | | |
| 7A | VREFB7A0 | IO | | DEV OE | DIFFIO_RX_T10p | DIFFOUT_T10p | C6 | DQ2T | DQ1T | | |
| 7A | VREFB7A0 | IO | | DEV CLRn | DIFFIO_RX_T10n | DIFFOUT_T10n | D6 | DQ2T | DQ1T | | |
| 7A | VREFB7A0 | IO | | nPERSTR0 | DIFFIO_TX_T11p | DIFFOUT_T11p | A2 | DQ2T | DQ1T | | |
| 7A | VREFB7A0 | IO | | nPERSTL0 | DIFFIO_TX_T11n | DIFFOUT_T11n | B2 | | | | |
| 7A | VREFB7A0 | IO | | C/P CONFDONE | DIFFIO_RX_T12p | DIFFOUT_T12p | B5 | DQS2T/CQ2T/CQn2T/QKn2T | DQ1T | | |
| 7A | VREFB7A0 | IO | | CRC ERROR | DIFFIO_RX_T12n | DIFFOUT_T12n | C4 | DQSn2T/QK2T | DQ1T | | |
| 7A | VREFB7A0 | IO | | PR_DONE | DIFFIO_TX_T13p | DIFFOUT_T13p | A5 | DQ2T | DQ1T | | |
| 7A | VREFB7A0 | IO | | PR_REQUEST | DIFFIO_TX_T13n | DIFFOUT_T13n | A4 | | | | |
| 7A | VREFB7A0 | IO | | INIT_DONE | DIFFIO_RX_T14p | DIFFOUT_T14p | D6 | DQ2T | DQ1T | | |
| 7A | VREFB7A0 | IO | | nCEO | DIFFIO_RX_T14n | DIFFOUT_T14n | E6 | DQ2T | DQ1T | | |
| 7A | VREFB7A0 | IO | | PR_ERROR | DIFFIO_TX_T15p | DIFFOUT_T15p | J7 | DQ2T | DQ1T | | |
| 7A | VREFB7A0 | IO | | PR_READY | DIFFIO_TX_T15n | DIFFOUT_T15n | K7 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T32p | DIFFOUT_T32p | K9 | DQ3T | DQ2T | DQ1T | DO4 7B_0 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T32n | DIFFOUT_T32n | K8 | DQ3T | DQ2T | DQ1T | DO4 7B_1 |
| 7B | VREFB7B0 | IO | | | | | M10 | DQ3T | DQ2T | DQ1T | DO4 7B_2 |
| 7B | VREFB7B0 | IO | VREFB7B0 | | | | P11 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T33p | DIFFOUT_T33p | C8 | DQ3T | DQ2T | DQ1T | DO4 7B_3 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T33n | DIFFOUT_T33n | D7 | DQ3T | DQ2T | DQ1T | DO4 7B_4 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T34p | DIFFOUT_T34p | E8 | DQ3T | DQ2T | DQ1T | DO4 7B_5 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T34n | DIFFOUT_T34n | F7 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T35p | DIFFOUT_T35p | N10 | DQS3T/CQ3T/CQn3T/QKn3T | DQS2T/CQ2T/CQn2T/QKn2T | DQ1T | DQS4 7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T35n | DIFFOUT_T35n | N11 | DQSn3T/QK3T | DQSn2T/QK2T | DQ1T | DQS#4 7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T36p | DIFFOUT_T36p | G8 | DQ3T | DQ2T | DQ1T | DM4 7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T36n | DIFFOUT_T36n | G7 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T37p | DIFFOUT_T37p | H8 | DQ3T | DQ2T | DQ1T | DO4 7B_6 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T37n | DIFFOUT_T37n | J8 | DQ3T | DQ2T | DQ1T | DO4 7B_7 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T38p | DIFFOUT_T38p | L9 | DQ3T | DQ2T | DQ1T | DO4 7B_8 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T38n | DIFFOUT_T38n | M8 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T39p | DIFFOUT_T39p | B6 | DQ4T | DQ2T | DQ1T | DQ3 7B_0 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T39n | DIFFOUT_T39n | C7 | DQ4T | DQ2T | DQ1T | DQ3 7B_1 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T40p | DIFFOUT_T40p | E9 | DQ4T | DQ2T | DQ1T | DQ3 7B_2 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T40n | DIFFOUT_T40n | F8 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T41p | DIFFOUT_T41p | A7 | DQ4T | DQ2T | DQ1T | DQ3 7B_3 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T41n | DIFFOUT_T41n | A6 | DQ4T | DQ2T | DQ1T | DQ3 7B_4 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T42p | DIFFOUT_T42p | G9 | DQ4T | DQ2T | DQ1T | DQ3 7B_5 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T42n | DIFFOUT_T42n | H9 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T43p | DIFFOUT_T43p | D8 | DQS4T/CQ4T/CQn4T/QKn4T | DQ2T | DQS1T/CQ1T/CQn1T/QKn1T | DQS3 7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T43n | DIFFOUT_T43n | D9 | DQSn4T/QK4T | DQ2T | DQSn1T/QK1T | DQS#3 7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T44p | DIFFOUT_T44p | A8 | DQ4T | DQ2T | DQ1T | DM3 7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T44n | DIFFOUT_T44n | B8 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T45p | DIFFOUT_T45p | A10 | DQ4T | DQ2T | DQ1T | DQ3 7B_6 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T45n | DIFFOUT_T45n | B9 | DQ4T | DQ2T | DQ1T | DQ3 7B_7 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T46p | DIFFOUT_T46p | J10 | DQ4T | DQ2T | DQ1T | DQ3 7B_8 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T46n | DIFFOUT_T46n | K10 | | | | |
| 7C | VREFB7C0 | IO | | | DIFFIO_RX_T47p | DIFFOUT_T47p | F10 | DQ5T | DQ3T | DQ1T | DO2 7C_0 |
| 7C | VREFB7C0 | IO | | | DIFFIO_RX_T47n | DIFFOUT_T47n | G10 | DQ5T | DQ3T | DQ1T | DO2 7C_1 |
| 7C | VREFB7C0 | IO | | | DIFFIO_TX_T48p | DIFFOUT_T48p | J11 | DQ5T | DQ3T | DQ1T | DO2 7C_2 |
| 7C | VREFB7C0 | IO | | | DIFFIO_TX_T48n | DIFFOUT_T48n | K11 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|----------------------|---|------------------------|-------------------------|------------------------------|-------|------------------------|------------------------|------------------|-------------------------------|
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T49p | DIFFOUT_T49p | G11 | DQ5T | DQ3T | DQ1T | DQ2 7C 3 |
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T49n | DIFFOUT_T49n | H11 | DQ5T | DQ3T | DQ1T | DQ2 7C 4 |
| 7C | VREFB7CNO | IO | | | DIFFIO_TX_T50p | DIFFOUT_T50p | K12 | DQ5T | DQ3T | DQ1T | DQ2 7C 5 |
| 7C | VREFB7CNO | IO | | | DIFFIO_TX_T50n | DIFFOUT_T50n | L11 | | | | |
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T51p | DIFFOUT_T51p | E11 | DQS5T/CQ5T/CQn5T/QKn5T | DQS3T/CQ3T/CQn3T/QKn3T | DQ1T | DQS2 7C |
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T51n | DIFFOUT_T51n | F11 | DQSn5T/QK5T | DQSn3T/QK3T | DQ1T | DQS#2 7C |
| 7C | VREFB7CNO | IO | | | DIFFIO_TX_T52p | DIFFOUT_T52p | C10 | DQ5T | DQ3T | DQ1T | DM2 7C |
| 7C | VREFB7CNO | IO | | | DIFFIO_TX_T52n | DIFFOUT_T52n | D10 | | | | |
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T53p | DIFFOUT_T53p | G12 | DQ5T | DQ3T | DQ1T | DQ2 7C 6 |
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T53n | DIFFOUT_T53n | H12 | DQ5T | DQ3T | DQ1T | DQ2 7C 7 |
| 7C | VREFB7CNO | IO | | | DIFFIO_TX_T54p | DIFFOUT_T54p | L12 | DQ5T | DQ3T | DQ1T | DQ2 7C 8 |
| 7C | VREFB7CNO | IO | | | DIFFIO_TX_T54n | DIFFOUT_T54n | M12 | | | | |
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T55p | DIFFOUT_T55p | A11 | DQ6T | DQ3T | DQ1T | DQ1 7C 0 |
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T55n | DIFFOUT_T55n | B11 | DQ6T | DQ3T | DQ1T | DQ1 7C 1 |
| 7C | VREFB7CNO | IO | | | | | N13 | DQ6T | DQ3T | DQ1T | DQ1 7C 2 |
| 7C | VREFB7CNO | IO | VREFB7CNO | | | | M13 | | | | |
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T56p | DIFFOUT_T56p | C11 | DQ6T | DQ3T | DQ1T | DQ1 7C 3 |
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T56n | DIFFOUT_T56n | D11 | DQ6T | DQ3T | DQ1T | DQ1 7C 4 |
| 7C | VREFB7CNO | IO | | | DIFFIO_TX_T57p | DIFFOUT_T57p | J13 | DQ6T | DQ3T | DQ1T | DQ1 7C 5 |
| 7C | VREFB7CNO | IO | | | DIFFIO_TX_T57n | DIFFOUT_T57n | K13 | | | | |
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T58p | DIFFOUT_T58p | A13 | DQS6T/CQ6T/CQn6T/QKn6T | DQ3T | DQ1T | DQS1 7C |
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T58n | DIFFOUT_T58n | B12 | DQSn6T/QK6T | DQ3T | DQ1T | DQS#1 7C |
| 7C | VREFB7CNO | IO | | | DIFFIO_TX_T59p | DIFFOUT_T59p | D12 | DQ6T | DQ3T | DQ1T | DM1 7C |
| 7C | VREFB7CNO | IO | | | DIFFIO_TX_T59n | DIFFOUT_T59n | E12 | | | | |
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T60p | DIFFOUT_T60p | F13 | DQ6T | DQ3T | DQ1T | DQ1 7C 6 |
| 7C | VREFB7CNO | IO | | | DIFFIO_RX_T60n | DIFFOUT_T60n | G13 | DQ6T | DQ3T | DQ1T | DQ1 7C 7 |
| 7C | VREFB7CNO | IO | | | DIFFIO_TX_T61p | DIFFOUT_T61p | M11 | DQ6T | DQ3T | DQ1T | DQ1 7C 8 |
| 7C | VREFB7CNO | IO | | | DIFFIO_TX_T61n | DIFFOUT_T61n | N12 | | | | RESET# 7D |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T62p | DIFFOUT_T62p | H14 | DQ7T | DQ4T | | CK 7D |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T62n | DIFFOUT_T62n | J14 | DQ7T | DQ4T | | CK# 7D |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T63p | DIFFOUT_T63p | K14 | DQ7T | DQ4T | | CKE 7D 0 |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T63n | DIFFOUT_T63n | L14 | | | | CKE 7D 1 |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T64p | DIFFOUT_T64p | F14 | DQ7T | DQ4T | | A 7D 0 |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T64n | DIFFOUT_T64n | G14 | DQ7T | DQ4T | | A 7D 1 |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T65p | DIFFOUT_T65p | M14 | DQ7T | DQ4T | | A 7D 2 |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T65n | DIFFOUT_T65n | N15 | | | | A 7D 3 |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T66p | DIFFOUT_T66p | C15 | DQS7T/CQ7T/CQn7T/QKn7T | DQS4T/CQ4T/CQn4T/QKn4T | | A 7D 4 |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T66n | DIFFOUT_T66n | H15 | DQSn7T/QK7T | DQSn4T/QK4T | | A 7D 5 |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T67p | DIFFOUT_T67p | C13 | DQ7T | DQ4T | | A 7D 6 |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T67n | DIFFOUT_T67n | D13 | | | | A 7D 7 |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T68p | DIFFOUT_T68p | D14 | DQ7T | DQ4T | | A 7D 8 |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T68n | DIFFOUT_T68n | E14 | DQ7T | DQ4T | | A 7D 9 |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T69p | DIFFOUT_T69p | K15 | DQ7T | DQ4T | | A 7D 10 |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T69n | DIFFOUT_T69n | L15 | | | | A 7D 11 |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T70p | DIFFOUT_T70p | B14 | DQ8T | DQ4T | | A 7D 12 |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T70n | DIFFOUT_T70n | C14 | DQ8T | DQ4T | | A 7D 13 |
| 7D | VREFB7DNO | IO | | | | | N15 | DQ8T | DQ4T | | A 7D 14 |
| 7D | VREFB7DNO | IO | VREFB7DNO | | | | N14 | | | | |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T71p | DIFFOUT_T71p | A14 | DQ8T | DQ4T | | BA 7D 0 |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T71n | DIFFOUT_T71n | B15 | DQ8T | DQ4T | | BA 7D 1 |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T72p | DIFFOUT_T72p | D15 | DQ8T | DQ4T | | BA 7D 2 |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T72n | DIFFOUT_T72n | E15 | | | | RAS# 7D |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T73p | DIFFOUT_T73p | F16 | DQS8T/CQ8T/CQn8T/QKn8T | DQ4T | | CAS# 7D |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T73n | DIFFOUT_T73n | G16 | DQSn8T/QK8T | DQ4T | | WE# 7D |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T74p | DIFFOUT_T74p | J16 | DQ8T | DQ4T | | ODT 7D 0 |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T74n | DIFFOUT_T74n | K16 | | | | ODT 7D 1 |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T75p | DIFFOUT_T75p | C16 | DQ8T | DQ4T | | A 7D 15 |
| 7D | VREFB7DNO | IO | | | DIFFIO_RX_T75n | DIFFOUT_T75n | D16 | DQ8T | DQ4T | | |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T76p | DIFFOUT_T76p | M16 | DQ8T | DQ4T | | CS# 7D 0 |
| 7D | VREFB7DNO | IO | | | DIFFIO_TX_T76n | DIFFOUT_T76n | N16 | | | | CS# 7D 1 |
| | | VCCA_FPLL | | | | | R17 | | | | |
| | | VCCD_FPLL | | | | | R16 | | | | |
| | | DNU | | | | | L18 | | | | |
| 8D | VREFB8DNO | IO | CLK19p | | DIFFIO_RX_T85p | DIFFOUT_T85p | A16 | DQ9T | DQ5T | | |
| 8D | VREFB8DNO | IO | CLK19n | | DIFFIO_RX_T85n | DIFFOUT_T85n | A17 | DQ9T | DQ5T | | |
| 8D | VREFB8DNO | IO | | | DIFFIO_TX_T86p | DIFFOUT_T86p | K17 | DQ9T | DQ5T | | |
| 8D | VREFB8DNO | IO | | | DIFFIO_TX_T86n | DIFFOUT_T86n | L17 | | | | |
| 8D | VREFB8DNO | IO | CLK18p | | DIFFIO_RX_T87p | DIFFOUT_T87p | K18 | DQ9T | DQ5T | | |
| 8D | VREFB8DNO | IO | CLK18n | | DIFFIO_RX_T87n | DIFFOUT_T87n | K19 | DQ9T | DQ5T | | |
| 8D | VREFB8DNO | IO | | | DIFFIO_TX_T88p | DIFFOUT_T88p | D17 | DQ9T | DQ5T | | |
| 8D | VREFB8DNO | IO | | | DIFFIO_TX_T88n | DIFFOUT_T88n | E17 | | | | |
| 8D | VREFB8DNO | IO | FPLL_TC_CLKOUT2_FPLL_TC_FBp_FPLL_TC_FB1 | | DIFFIO_RX_T89p | DIFFOUT_T89p | F17 | DQS9T/CQ9T/CQn9T/QKn9T | DQS5T/CQ5T/CQn5T/QKn5T | | |
| 8D | VREFB8DNO | IO | FPLL_TC_CLKOUT3_FPLL_TC_FBn | | DIFFIO_RX_T89n | DIFFOUT_T89n | G17 | DQSn9T/QK9T | DQSn5T/QK5T | | |
| 8D | VREFB8DNO | IO | FPLL_TC_CLKOUT0_FPLL_TC_CLKOUTp_FPLL_TC_FB0 | | DIFFIO_TX_T90p | DIFFOUT_T90p | M17 | DQ9T | DQ5T | | |
| 8D | VREFB8DNO | IO | FPLL_TC_CLKOUT1_FPLL_TC_CLKOUTn | | DIFFIO_TX_T90n | DIFFOUT_T90n | N17 | | | | |
| 8D | VREFB8DNO | IO | CLK17p | | DIFFIO_RX_T91p | DIFFOUT_T91p | H17 | DQ9T | DQ5T | | |
| 8D | VREFB8DNO | IO | CLK17n | | DIFFIO_RX_T91n | DIFFOUT_T91n | J17 | DQ9T | DQ5T | | |
| 8D | VREFB8DNO | IO | | | DIFFIO_TX_T92p | DIFFOUT_T92p | B17 | DQ9T | DQ5T | | |
| 8D | VREFB8DNO | IO | | | DIFFIO_TX_T92n | DIFFOUT_T92n | C17 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|----------------------------|------------------------|------------------------|-------------------------------|
| 8D | VREFB8DN0 | IO | CLK16p | | DIFFIO_RX_T93p | DIFFOUT_T93p | A19 | DQ10T | DQ5T | | |
| 8D | VREFB8DN0 | IO | CLK16n | | DIFFIO_RX_T93n | DIFFOUT_T93n | A20 | DQ10T | DQ5T | | |
| 8D | VREFB8DN0 | IO | | | | | M18 | DQ10T | DQ5T | | |
| 8D | VREFB8DN0 | IO | VREFB8DN0 | | | | N18 | | | | |
| 8D | VREFB8DN0 | IO | | | DIFFIO_RX_T94p | DIFFOUT_T94p | C19 | DQ10T | DQ5T | | |
| 8D | VREFB8DN0 | IO | | | DIFFIO_RX_T94n | DIFFOUT_T94n | B18 | DQ10T | DQ5T | | |
| 8D | VREFB8DN0 | IO | | | DIFFIO_TX_T95p | DIFFOUT_T95p | G18 | DQ10T | DQ5T | | |
| 8D | VREFB8DN0 | IO | | | DIFFIO_TX_T95n | DIFFOUT_T95n | G19 | | | | |
| 8D | VREFB8DN0 | IO | | | DIFFIO_RX_T96p | DIFFOUT_T96p | H18 | DQS10T/CQ10T/CQn10T/QKn10T | DQ5T | | |
| 8D | VREFB8DN0 | IO | | | DIFFIO_RX_T96n | DIFFOUT_T96n | J19 | DQSn10T/QK10T | DQ5T | | |
| 8D | VREFB8DN0 | IO | | | DIFFIO_TX_T97p | DIFFOUT_T97p | M19 | DQ10T | DQ5T | | |
| 8D | VREFB8DN0 | IO | | | DIFFIO_TX_T97n | DIFFOUT_T97n | N19 | | | | |
| 8D | VREFB8DN0 | IO | | | DIFFIO_RX_T98p | DIFFOUT_T98p | D19 | DQ10T | DQ5T | | |
| 8D | VREFB8DN0 | IO | | | DIFFIO_RX_T98n | DIFFOUT_T98n | D18 | DQ10T | DQ5T | | |
| 8D | VREFB8DN0 | IO | | | DIFFIO_TX_T99p | DIFFOUT_T99p | E18 | DQ10T | DQ5T | | |
| 8D | VREFB8DN0 | IO | | | DIFFIO_TX_T99n | DIFFOUT_T99n | F19 | | | | |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T116p | DIFFOUT_T116p | K20 | DQ11T | DQ6T | DQ2T | DQ4_8C_0 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T116n | DIFFOUT_T116n | L20 | DQ11T | DQ6T | DQ2T | DQ4_8C_1 |
| 8C | VREFB8CN0 | IO | | | | | M20 | DQ11T | DQ6T | DQ2T | DQ4_8C_2 |
| 8C | VREFB8CN0 | IO | VREFB8CN0 | | | | N20 | | | | |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T117p | DIFFOUT_T117p | A22 | DQ11T | DQ6T | DQ2T | DQ4_8C_3 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T117n | DIFFOUT_T117n | B21 | DQ11T | DQ6T | DQ2T | DQ4_8C_4 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T118p | DIFFOUT_T118p | B20 | DQ11T | DQ6T | DQ2T | DQ4_8C_5 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T118n | DIFFOUT_T118n | C20 | | | | |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T119p | DIFFOUT_T119p | D20 | DQS11T/CQ11T/CQn11T/QKn11T | DQS6T/CQ6T/CQn6T/QKn6T | DQ2T | DQS4_8C |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T119n | DIFFOUT_T119n | E20 | DQSn11T/QK11T | DQS6T/CQ6T | DQ2T | DQS#4_8C |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T120p | DIFFOUT_T120p | K21 | DQ11T | DQ6T | DQ2T | DM4_8C |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T120n | DIFFOUT_T120n | L21 | | | | |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T121p | DIFFOUT_T121p | F20 | DQ11T | DQ6T | DQ2T | DQ4_8C_6 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T121n | DIFFOUT_T121n | G20 | DQ11T | DQ6T | DQ2T | DQ4_8C_7 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T122p | DIFFOUT_T122p | H20 | DQ11T | DQ6T | DQ2T | DQ4_8C_8 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T122n | DIFFOUT_T122n | J20 | | | | |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T123p | DIFFOUT_T123p | D21 | DQ12T | DQ6T | DQ2T | DQ3_8C_0 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T123n | DIFFOUT_T123n | E21 | DQ12T | DQ6T | DQ2T | DQ3_8C_1 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T124p | DIFFOUT_T124p | M21 | DQ12T | DQ6T | DQ2T | DQ3_8C_2 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T124n | DIFFOUT_T124n | N21 | | | | |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T125p | DIFFOUT_T125p | C22 | DQ12T | DQ6T | DQ2T | DQ3_8C_3 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T125n | DIFFOUT_T125n | D22 | DQ12T | DQ6T | DQ2T | DQ3_8C_4 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T126p | DIFFOUT_T126p | G21 | DQ12T | DQ6T | DQ2T | DQ3_8C_5 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T126n | DIFFOUT_T126n | H21 | | | | |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T127p | DIFFOUT_T127p | F22 | DQS12T/CQ12T/CQn12T/QKn12T | DQ6T | DQS2T/CQ2T/CQn2T/QKn2T | DQS3_8C |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T127n | DIFFOUT_T127n | G22 | DQSn12T/QK12T | DQ6T | DQS2T/CQ2T | DQS#3_8C |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T128p | DIFFOUT_T128p | M22 | DQ12T | DQ6T | DQ2T | DM3_8C |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T128n | DIFFOUT_T128n | N22 | | | | |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T129p | DIFFOUT_T129p | A23 | DQ12T | DQ6T | DQ2T | DQ3_8C_6 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_RX_T129n | DIFFOUT_T129n | B23 | DQ12T | DQ6T | DQ2T | DQ3_8C_7 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T130p | DIFFOUT_T130p | J22 | DQ12T | DQ6T | DQ2T | DQ3_8C_8 |
| 8C | VREFB8CN0 | IO | | | DIFFIO_TX_T130n | DIFFOUT_T130n | K22 | | | | |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T131p | DIFFOUT_T131p | H23 | DQ13T | DQ7T | DQ2T | DQ2_8B_0 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T131n | DIFFOUT_T131n | J23 | DQ13T | DQ7T | DQ2T | DQ2_8B_1 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_TX_T132p | DIFFOUT_T132p | K24 | DQ13T | DQ7T | DQ2T | DQ2_8B_2 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_TX_T132n | DIFFOUT_T132n | L24 | | | | |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T133p | DIFFOUT_T133p | B24 | DQ13T | DQ7T | DQ2T | DQ2_8B_3 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T133n | DIFFOUT_T133n | C23 | DQ13T | DQ7T | DQ2T | DQ2_8B_4 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_TX_T134p | DIFFOUT_T134p | D23 | DQ13T | DQ7T | DQ2T | DQ2_8B_5 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_TX_T134n | DIFFOUT_T134n | E23 | | | | |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T135p | DIFFOUT_T135p | F23 | DQS13T/CQ13T/CQn13T/QKn13T | DQS7T/CQ7T/CQn7T/QKn7T | DQ2T | DQS2_8B |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T135n | DIFFOUT_T135n | G23 | DQSn13T/QK13T | DQS7T/QK7T | DQ2T | DQS#2_8B |
| 8B | VREFB8BN0 | IO | | | DIFFIO_TX_T136p | DIFFOUT_T136p | M23 | DQ13T | DQ7T | DQ2T | DM2_8B |
| 8B | VREFB8BN0 | IO | | | DIFFIO_TX_T136n | DIFFOUT_T136n | N23 | | | | |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T137p | DIFFOUT_T137p | D24 | DQ13T | DQ7T | DQ2T | DQ2_8B_6 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T137n | DIFFOUT_T137n | E24 | DQ13T | DQ7T | DQ2T | DQ2_8B_7 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_TX_T138p | DIFFOUT_T138p | K23 | DQ13T | DQ7T | DQ2T | DQ2_8B_8 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_TX_T138n | DIFFOUT_T138n | L23 | | | | |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T139p | DIFFOUT_T139p | G24 | DQ14T | DQ7T | DQ2T | DQ1_8B_0 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T139n | DIFFOUT_T139n | H24 | DQ14T | DQ7T | DQ2T | DQ1_8B_1 |
| 8B | VREFB8BN0 | IO | | | | | M24 | DQ14T | DQ7T | DQ2T | DQ1_8B_2 |
| 8B | VREFB8BN0 | IO | VREFB8BN0 | | | | N24 | | | | |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T140p | DIFFOUT_T140p | A26 | DQ14T | DQ7T | DQ2T | DQ1_8B_3 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T140n | DIFFOUT_T140n | A25 | DQ14T | DQ7T | DQ2T | DQ1_8B_4 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_TX_T141p | DIFFOUT_T141p | C25 | DQ14T | DQ7T | DQ2T | DQ1_8B_5 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_TX_T141n | DIFFOUT_T141n | D25 | | | | |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T142p | DIFFOUT_T142p | F25 | DQS14T/CQ14T/CQn14T/QKn14T | DQ7T | DQ2T | DQS1_8B |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T142n | DIFFOUT_T142n | G25 | DQSn14T/QK14T | DQ7T | DQ2T | DQS#1_8B |
| 8B | VREFB8BN0 | IO | | | DIFFIO_TX_T143p | DIFFOUT_T143p | M25 | DQ14T | DQ7T | DQ2T | DM1_8B |
| 8B | VREFB8BN0 | IO | | | DIFFIO_TX_T143n | DIFFOUT_T143n | N25 | | | | |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T144p | DIFFOUT_T144p | B26 | DQ14T | DQ7T | DQ2T | DQ1_8B_6 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_RX_T144n | DIFFOUT_T144n | C26 | DQ14T | DQ7T | DQ2T | DQ1_8B_7 |
| 8B | VREFB8BN0 | IO | | | DIFFIO_TX_T145p | DIFFOUT_T145p | J25 | DQ14T | DQ7T | DQ2T | DQ1_8B_8 |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|----------|----------------------|---|------------------------|-------------------------|------------------------------|-------|----------------------------|------------------------|------------------|-------------------------------|
| BA | VREFB8A0 | IO | | | DIFFIO TX T145n | DIFFOUT T145n | K25 | | | | RESET# 8A |
| BA | VREFB8A0 | IO | | | DIFFIO RX T146p | DIFFOUT T146p | E26 | DQ15T | DQ8T | | CK 8A |
| BA | VREFB8A0 | IO | | | DIFFIO RX T146n | DIFFOUT T146n | F26 | DQ15T | DQ8T | | CK# 8A |
| BA | VREFB8A0 | IO | | | DIFFIO TX T147p | DIFFOUT T147p | K29 | DQ15T | DQ8T | | CKE 8A 0 |
| BA | VREFB8A0 | IO | | | DIFFIO TX T147n | DIFFOUT T147n | L29 | | | | CKE 8A 1 |
| BA | VREFB8A0 | IO | | | DIFFIO RX T148p | DIFFOUT T148p | D26 | DQ15T | DQ8T | | A 8A 0 |
| BA | VREFB8A0 | IO | | | DIFFIO RX T148n | DIFFOUT T148n | E27 | DQ15T | DQ8T | | A 8A 1 |
| BA | VREFB8A0 | IO | | | DIFFIO TX T149p | DIFFOUT T149p | A27 | DQ15T | DQ8T | | A 8A 2 |
| BA | VREFB8A0 | IO | | | DIFFIO TX T149n | DIFFOUT T149n | B27 | | | | A 8A 3 |
| BA | VREFB8A0 | IO | | | DIFFIO RX T150p | DIFFOUT T150p | G26 | DQS15T/CQ15T/CQn15T/QKn15T | DQS8T/CQ8T/CQn8T/QKn8T | | A 8A 4 |
| BA | VREFB8A0 | IO | | | DIFFIO RX T150n | DIFFOUT T150n | H26 | DQSn15T/QK15T | DQSn8T/QK8T | | A 8A 5 |
| BA | VREFB8A0 | IO | | | DIFFIO TX T151p | DIFFOUT T151p | K27 | DQ15T | | | A 8A 6 |
| BA | VREFB8A0 | IO | | | DIFFIO TX T151n | DIFFOUT T151n | L27 | | | | A 8A 7 |
| BA | VREFB8A0 | IO | | | DIFFIO RX T152p | DIFFOUT T152p | D27 | DQ15T | DQ8T | | A 8A 8 |
| BA | VREFB8A0 | IO | | | DIFFIO RX T152n | DIFFOUT T152n | C28 | DQ15T | DQ8T | | A 8A 9 |
| BA | VREFB8A0 | IO | | | DIFFIO TX T153p | DIFFOUT T153p | C29 | DQ15T | DQ8T | | A 8A 10 |
| BA | VREFB8A0 | IO | | | DIFFIO TX T153n | DIFFOUT T153n | D28 | | | | A 8A 11 |
| BA | VREFB8A0 | IO | | | DIFFIO RX T154p | DIFFOUT T154p | G27 | DQ16T | DQ8T | | A 8A 12 |
| BA | VREFB8A0 | IO | | | DIFFIO RX T154n | DIFFOUT T154n | G28 | DQ16T | DQ8T | | A 8A 13 |
| BA | VREFB8A0 | IO | | | DIFFIO TX T155p | DIFFOUT T155p | J26 | DQ16T | DQ8T | | A 8A 14 |
| BA | VREFB8A0 | IO | | | DIFFIO TX T155n | DIFFOUT T155n | K26 | | | | A 8A 15 |
| BA | VREFB8A0 | IO | | | DIFFIO RX T156p | DIFFOUT T156p | A29 | DQ16T | DQ8T | | BA 8A 0 |
| BA | VREFB8A0 | IO | | | DIFFIO RX T156n | DIFFOUT T156n | A28 | DQ16T | DQ8T | | BA 8A 1 |
| BA | VREFB8A0 | IO | | | DIFFIO TX T157p | DIFFOUT T157p | B29 | DQ16T | DQ8T | | BA 8A 2 |
| BA | VREFB8A0 | IO | | | DIFFIO TX T157n | DIFFOUT T157n | B30 | | | | RAS# 8A |
| BA | VREFB8A0 | IO | | | DIFFIO RX T158p | DIFFOUT T158p | F28 | DQS16T/CQ16T/CQn16T/QKn16T | DQ8T | | CAS# 8A |
| BA | VREFB8A0 | IO | | | DIFFIO RX T158n | DIFFOUT T158n | F29 | DQSn16T/QK16T | DQ8T | | WE# 8A |
| BA | VREFB8A0 | IO | | | DIFFIO TX T159p | DIFFOUT T159p | H27 | DQ16T | DQ8T | | ODT 8A 0 |
| BA | VREFB8A0 | IO | | | DIFFIO TX T159n | DIFFOUT T159n | J27 | | | | ODT 8A 1 |
| BA | VREFB8A0 | IO | CLK23p | | DIFFIO RX T160p | DIFFOUT T160p | D29 | DQ16T | DQ8T | | |
| BA | VREFB8A0 | IO | CLK23n | | DIFFIO RX T160n | DIFFOUT T160n | E29 | DQ16T | DQ8T | | |
| BA | VREFB8A0 | IO | | | DIFFIO TX T161p | DIFFOUT T161p | D30 | DQ16T | DQ8T | | |
| BA | VREFB8A0 | IO | | | DIFFIO TX T161n | DIFFOUT T161n | E30 | | | | CS# 8A 0 |
| BA | VREFB8A0 | IO | CLK22p | | DIFFIO RX T162p | DIFFOUT T162p | C29 | DQ17T | | | CS# 8A 1 |
| BA | VREFB8A0 | IO | CLK22n | | DIFFIO RX T162n | DIFFOUT T162n | H29 | DQ17T | | | |
| BA | VREFB8A0 | IO | | | | | L26 | DQ17T | | | |
| BA | VREFB8A0 | IO | VREFB8A0 | | | | M27 | | | | |
| BA | VREFB8A0 | IO | FPLL TL CLKOUT2.FPLL TL FBp.FPLL TL FB1 | | DIFFIO RX T163p | DIFFOUT T163p | A31 | DQ17T | | | |
| BA | VREFB8A0 | IO | FPLL TL CLKOUT3.FPLL TL FBn | | DIFFIO RX T163n | DIFFOUT T163n | A30 | DQ17T | | | |
| BA | VREFB8A0 | IO | FPLL TL CLKOUT0.FPLL TL CLKOUTp.FPLL TL FB0 | | DIFFIO TX T164p | DIFFOUT T164p | C31 | DQ17T | | | |
| BA | VREFB8A0 | IO | FPLL TL CLKOUT1.FPLL TL CLKOUTn | | DIFFIO TX T164n | DIFFOUT T164n | D31 | | | | |
| BA | VREFB8A0 | IO | CLK21p | | DIFFIO RX T165p | DIFFOUT T165p | A32 | DQS17T/CQ17T/CQn17T/QKn17T | | | |
| BA | VREFB8A0 | IO | CLK21n | | DIFFIO RX T165n | DIFFOUT T165n | B32 | DQSn17T/QK17T | | | |
| BA | VREFB8A0 | IO | | | DIFFIO TX T166p | DIFFOUT T166p | J28 | DQ17T | | | |
| BA | VREFB8A0 | IO | | | DIFFIO TX T166n | DIFFOUT T166n | K28 | | | | |
| BA | VREFB8A0 | IO | CLK20p | | DIFFIO RX T167p | DIFFOUT T167p | D33 | DQ17T | | | |
| BA | VREFB8A0 | IO | CLK20n | | DIFFIO RX T167n | DIFFOUT T167n | C32 | DQ17T | | | |
| BA | VREFB8A0 | IO | | | DIFFIO TX T168p | DIFFOUT T168p | D32 | DQ17T | | | |
| BA | VREFB8A0 | IO | RZO 6 | | DIFFIO TX T168n | DIFFOUT T168n | E32 | | | | |
| BA | | MSEL0 | | MSEL0 | | | D34 | | | | |
| BA | | MSEL1 | | MSEL1 | | | H30 | | | | |
| BA | | MSEL2 | | MSEL2 | | | K30 | | | | |
| BA | | MSEL3 | | MSEL3 | | | M29 | | | | |
| BA | | MSEL4 | | MSEL4 | | | M30 | | | | |
| BA | | CONF_DONE | | CONF_DONE | | | C34 | | | | |
| BA | | nSTATUS | | nSTATUS | | | B34 | | | | |
| BA | | nCE | | nCE | | | A33 | | | | |
| BA | | nCONFIG | | nCONFIG | | | C33 | | | | |
| BA | | GND | | | | | B33 | | | | |
| | | GND | | | | | AA26 | | | | |
| | | GND | | | | | AA33 | | | | |
| | | GND | | | | | AA34 | | | | |
| | | GND | | | | | AB27 | | | | |
| | | GND | | | | | AB28 | | | | |
| | | GND | | | | | AB29 | | | | |
| | | GND | | | | | AB30 | | | | |
| | | GND | | | | | AB31 | | | | |
| | | GND | | | | | AB32 | | | | |
| | | GND | | | | | AC30 | | | | |
| | | GND | | | | | AC33 | | | | |
| | | GND | | | | | AC34 | | | | |
| | | GND | | | | | AD31 | | | | |
| | | GND | | | | | AD32 | | | | |
| | | GND | | | | | AE30 | | | | |
| | | GND | | | | | AE33 | | | | |
| | | GND | | | | | AE34 | | | | |
| | | GND | | | | | AF31 | | | | |
| | | GND | | | | | AF32 | | | | |
| | | GND | | | | | AG30 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | GND | | | | | AG33 | | | | |
| | | GND | | | | | AG34 | | | | |
| | | GND | | | | | AH31 | | | | |
| | | GND | | | | | AH32 | | | | |
| | | GND | | | | | AJ30 | | | | |
| | | GND | | | | | AJ33 | | | | |
| | | GND | | | | | AJ34 | | | | |
| | | GND | | | | | AK31 | | | | |
| | | GND | | | | | AK32 | | | | |
| | | GND | | | | | AL33 | | | | |
| | | GND | | | | | AL34 | | | | |
| | | GND | | | | | E34 | | | | |
| | | GND | | | | | F31 | | | | |
| | | GND | | | | | F32 | | | | |
| | | GND | | | | | G30 | | | | |
| | | GND | | | | | G33 | | | | |
| | | GND | | | | | G34 | | | | |
| | | GND | | | | | H31 | | | | |
| | | GND | | | | | H32 | | | | |
| | | GND | | | | | J30 | | | | |
| | | GND | | | | | J33 | | | | |
| | | GND | | | | | J34 | | | | |
| | | GND | | | | | K31 | | | | |
| | | GND | | | | | K32 | | | | |
| | | GND | | | | | L30 | | | | |
| | | GND | | | | | L33 | | | | |
| | | GND | | | | | L34 | | | | |
| | | GND | | | | | M31 | | | | |
| | | GND | | | | | M32 | | | | |
| | | GND | | | | | N28 | | | | |
| | | GND | | | | | N29 | | | | |
| | | GND | | | | | N33 | | | | |
| | | GND | | | | | N34 | | | | |
| | | GND | | | | | P27 | | | | |
| | | GND | | | | | P31 | | | | |
| | | GND | | | | | P32 | | | | |
| | | GND | | | | | R28 | | | | |
| | | GND | | | | | R30 | | | | |
| | | GND | | | | | R33 | | | | |
| | | GND | | | | | R34 | | | | |
| | | GND | | | | | T27 | | | | |
| | | GND | | | | | T29 | | | | |
| | | GND | | | | | T31 | | | | |
| | | GND | | | | | T32 | | | | |
| | | GND | | | | | U28 | | | | |
| | | GND | | | | | U33 | | | | |
| | | GND | | | | | U34 | | | | |
| | | GND | | | | | V27 | | | | |
| | | GND | | | | | V31 | | | | |
| | | GND | | | | | V32 | | | | |
| | | GND | | | | | W28 | | | | |
| | | GND | | | | | W30 | | | | |
| | | GND | | | | | W33 | | | | |
| | | GND | | | | | W34 | | | | |
| | | GND | | | | | Y27 | | | | |
| | | GND | | | | | Y29 | | | | |
| | | GND | | | | | Y31 | | | | |
| | | GND | | | | | Y32 | | | | |
| | | GND | | | | | AA1 | | | | |
| | | GND | | | | | AA2 | | | | |
| | | GND | | | | | AA9 | | | | |
| | | GND | | | | | AB3 | | | | |
| | | GND | | | | | AB4 | | | | |
| | | GND | | | | | AB5 | | | | |
| | | GND | | | | | AB7 | | | | |
| | | GND | | | | | AB8 | | | | |
| | | GND | | | | | AC1 | | | | |
| | | GND | | | | | AC2 | | | | |
| | | GND | | | | | AC5 | | | | |
| | | GND | | | | | AD3 | | | | |
| | | GND | | | | | AD4 | | | | |
| | | GND | | | | | AE1 | | | | |
| | | GND | | | | | AE2 | | | | |
| | | GND | | | | | AE5 | | | | |
| | | GND | | | | | AF3 | | | | |
| | | GND | | | | | AF4 | | | | |
| | | GND | | | | | AG1 | | | | |
| | | GND | | | | | AG2 | | | | |
| | | GND | | | | | AG5 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | GND | | | | | AH3 | | | | |
| | | GND | | | | | AH4 | | | | |
| | | GND | | | | | AJ1 | | | | |
| | | GND | | | | | AJ2 | | | | |
| | | GND | | | | | AJ5 | | | | |
| | | GND | | | | | AK3 | | | | |
| | | GND | | | | | AK4 | | | | |
| | | GND | | | | | AL1 | | | | |
| | | GND | | | | | AL2 | | | | |
| | | GND | | | | | AL3 | | | | |
| | | GND | | | | | AN1 | | | | |
| | | GND | | | | | F3 | | | | |
| | | GND | | | | | F4 | | | | |
| | | GND | | | | | G1 | | | | |
| | | GND | | | | | G2 | | | | |
| | | GND | | | | | G5 | | | | |
| | | GND | | | | | H3 | | | | |
| | | GND | | | | | H4 | | | | |
| | | GND | | | | | J1 | | | | |
| | | GND | | | | | J2 | | | | |
| | | GND | | | | | J5 | | | | |
| | | GND | | | | | K3 | | | | |
| | | GND | | | | | K4 | | | | |
| | | GND | | | | | L1 | | | | |
| | | GND | | | | | L2 | | | | |
| | | GND | | | | | L5 | | | | |
| | | GND | | | | | M3 | | | | |
| | | GND | | | | | M4 | | | | |
| | | GND | | | | | M5 | | | | |
| | | GND | | | | | N1 | | | | |
| | | GND | | | | | N2 | | | | |
| | | GND | | | | | N6 | | | | |
| | | GND | | | | | P3 | | | | |
| | | GND | | | | | P4 | | | | |
| | | GND | | | | | P8 | | | | |
| | | GND | | | | | R1 | | | | |
| | | GND | | | | | R2 | | | | |
| | | GND | | | | | R5 | | | | |
| | | GND | | | | | R7 | | | | |
| | | GND | | | | | T3 | | | | |
| | | GND | | | | | T4 | | | | |
| | | GND | | | | | T6 | | | | |
| | | GND | | | | | T8 | | | | |
| | | GND | | | | | U1 | | | | |
| | | GND | | | | | U2 | | | | |
| | | GND | | | | | U7 | | | | |
| | | GND | | | | | V3 | | | | |
| | | GND | | | | | V4 | | | | |
| | | GND | | | | | V6 | | | | |
| | | GND | | | | | W1 | | | | |
| | | GND | | | | | W2 | | | | |
| | | GND | | | | | W5 | | | | |
| | | GND | | | | | W7 | | | | |
| | | GND | | | | | Y3 | | | | |
| | | GND | | | | | Y4 | | | | |
| | | GND | | | | | Y6 | | | | |
| | | GND | | | | | Y8 | | | | |
| | | VCCP | | | | | P18 | | | | |
| | | VCCP | | | | | R13 | | | | |
| | | VCCP | | | | | R21 | | | | |
| | | VCCP | | | | | T10 | | | | |
| | | VCCP | | | | | U25 | | | | |
| | | VCCP | | | | | V10 | | | | |
| | | VCCP | | | | | W25 | | | | |
| | | VCCP | | | | | Y12 | | | | |
| | | VCCP | | | | | Y19 | | | | |
| | | VCCP | | | | | Y22 | | | | |
| | | VCCA FPLL | | | | | V26 | | | | |
| | | VCCA FPLL | | | | | V9 | | | | |
| | | VCCA FPLL | | | | | T26 | | | | |
| | | VCCA FPLL | | | | | T9 | | | | |
| | | VCCBAT | | | | | M28 | | | | |
| | | VCC_AUX | | | | | P12 | | | | |
| | | VCC_AUX | | | | | P24 | | | | |
| | | VCC_AUX | | | | | W11 | | | | |
| | | VCC_AUX | | | | | Y24 | | | | |
| | | VCCD FPLL | | | | | Y26 | | | | |
| | | VCCD FPLL | | | | | Y9 | | | | |
| | | VCCD FPLL | | | | | P26 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | VCCD FPLL | | | | | P9 | | | | |
| | | VCCA GXBL0 | | | | | Y28 | | | | |
| | | VCCA GXBR0 | | | | | Y7 | | | | |
| | | VCCA GXBL1 | | | | | T28 | | | | |
| | | VCCA GXBR1 | | | | | T7 | | | | |
| | | VCCH GXBL0 | | | | | V28 | | | | |
| | | VCCH GXBR0 | | | | | V7 | | | | |
| | | VCCH GXBL1 | | | | | P28 | | | | |
| | | VCCH GXBR1 | | | | | P7 | | | | |
| | | VCCL GXBL0 | | | | | V29 | | | | |
| | | VCCL GXBL0 | | | | | V30 | | | | |
| | | VCCL GXBR0 | | | | | V5 | | | | |
| | | VCCL GXBR0 | | | | | V6 | | | | |
| | | VCCL GXBL1 | | | | | P29 | | | | |
| | | VCCL GXBL1 | | | | | P30 | | | | |
| | | VCCL GXBR1 | | | | | P5 | | | | |
| | | VCCL GXBR1 | | | | | P6 | | | | |
| | | VCCR GXBL | | | | | AA29 | | | | |
| | | VCCR GXBL | | | | | AA30 | | | | |
| | | VCCR GXBL | | | | | N30 | | | | |
| | | VCCR GXBL | | | | | U29 | | | | |
| | | VCCR GXBL | | | | | U30 | | | | |
| | | VCCR GXBR | | | | | AA5 | | | | |
| | | VCCR GXBR | | | | | AA6 | | | | |
| | | VCCR GXBR | | | | | N5 | | | | |
| | | VCCR GXBR | | | | | U5 | | | | |
| | | VCCR GXBR | | | | | U6 | | | | |
| | | VCCT GXBL0 | | | | | W29 | | | | |
| | | VCCT GXBL0 | | | | | Y30 | | | | |
| | | VCCT GXBR0 | | | | | W6 | | | | |
| | | VCCT GXBR0 | | | | | Y5 | | | | |
| | | VCCT GXBL1 | | | | | R29 | | | | |
| | | VCCT GXBL1 | | | | | T30 | | | | |
| | | VCCT GXBR1 | | | | | R6 | | | | |
| | | VCCT GXBR1 | | | | | T5 | | | | |
| | | VCC | | | | | R14 | | | | |
| | | VCC | | | | | R15 | | | | |
| | | VCC | | | | | R19 | | | | |
| | | VCC | | | | | R23 | | | | |
| | | VCC | | | | | R25 | | | | |
| | | VCC | | | | | T12 | | | | |
| | | VCC | | | | | T14 | | | | |
| | | VCC | | | | | T16 | | | | |
| | | VCC | | | | | T18 | | | | |
| | | VCC | | | | | T20 | | | | |
| | | VCC | | | | | T22 | | | | |
| | | VCC | | | | | T24 | | | | |
| | | VCC | | | | | U11 | | | | |
| | | VCC | | | | | U12 | | | | |
| | | VCC | | | | | U13 | | | | |
| | | VCC | | | | | U15 | | | | |
| | | VCC | | | | | U17 | | | | |
| | | VCC | | | | | U19 | | | | |
| | | VCC | | | | | U20 | | | | |
| | | VCC | | | | | U21 | | | | |
| | | VCC | | | | | U22 | | | | |
| | | VCC | | | | | U23 | | | | |
| | | VCC | | | | | V12 | | | | |
| | | VCC | | | | | V14 | | | | |
| | | VCC | | | | | V16 | | | | |
| | | VCC | | | | | V20 | | | | |
| | | VCC | | | | | V22 | | | | |
| | | VCC | | | | | V24 | | | | |
| | | VCC | | | | | W13 | | | | |
| | | VCC | | | | | W15 | | | | |
| | | VCC | | | | | W17 | | | | |
| | | VCC | | | | | W19 | | | | |
| | | VCC | | | | | W21 | | | | |
| | | VCC | | | | | W23 | | | | |
| | | VCC | | | | | Y13 | | | | |
| | | VCC | | | | | Y20 | | | | |
| | | VCC | | | | | V18 | | | | |
| | | VCCI03A | | | | | AD30 | | | | |
| | | VCCI03A | | | | | AF27 | | | | |
| | | VCCI03A | | | | | AH30 | | | | |
| | | VCCI03A | | | | | AJ27 | | | | |
| | | VCCI03A | | | | | AK30 | | | | |
| | | VCCI03A | | | | | AM27 | | | | |
| | | VCCI03B | | | | | AF24 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | VCCIO3B | | | | | AJ24 | | | | |
| | | VCCIO3B | | | | | AM24 | | | | |
| | | VCCIO3B | | | | | AP24 | | | | |
| | | VCCIO3C | | | | | AF21 | | | | |
| | | VCCIO3C | | | | | AJ21 | | | | |
| | | VCCIO3C | | | | | AM21 | | | | |
| | | VCCIO3C | | | | | AP21 | | | | |
| | | VCCIO3D | | | | | AF18 | | | | |
| | | VCCIO3D | | | | | AJ18 | | | | |
| | | VCCIO3D | | | | | AM18 | | | | |
| | | VCCIO3D | | | | | AP18 | | | | |
| | | VCCIO4A | | | | | AD5 | | | | |
| | | VCCIO4A | | | | | AF5 | | | | |
| | | VCCIO4A | | | | | AH5 | | | | |
| | | VCCIO4A | | | | | AK5 | | | | |
| | | VCCIO4B | | | | | AF9 | | | | |
| | | VCCIO4B | | | | | AJ9 | | | | |
| | | VCCIO4B | | | | | AM9 | | | | |
| | | VCCIO4B | | | | | AP9 | | | | |
| | | VCCIO4C | | | | | AF12 | | | | |
| | | VCCIO4C | | | | | AJ12 | | | | |
| | | VCCIO4C | | | | | AM12 | | | | |
| | | VCCIO4C | | | | | AP12 | | | | |
| | | VCCIO4D | | | | | AF15 | | | | |
| | | VCCIO4D | | | | | AJ15 | | | | |
| | | VCCIO4D | | | | | AM15 | | | | |
| | | VCCIO4D | | | | | AP15 | | | | |
| | | VCCIO7A | | | | | C5 | | | | |
| | | VCCIO7A | | | | | F2 | | | | |
| | | VCCIO7A | | | | | F5 | | | | |
| | | VCCIO7A | | | | | L7 | | | | |
| | | VCCIO7B | | | | | A9 | | | | |
| | | VCCIO7B | | | | | C9 | | | | |
| | | VCCIO7B | | | | | F9 | | | | |
| | | VCCIO7B | | | | | J9 | | | | |
| | | VCCIO7C | | | | | A12 | | | | |
| | | VCCIO7C | | | | | C12 | | | | |
| | | VCCIO7C | | | | | F12 | | | | |
| | | VCCIO7C | | | | | J12 | | | | |
| | | VCCIO7D | | | | | A15 | | | | |
| | | VCCIO7D | | | | | C15 | | | | |
| | | VCCIO7D | | | | | F15 | | | | |
| | | VCCIO7D | | | | | J15 | | | | |
| | | VCCIO8A | | | | | C27 | | | | |
| | | VCCIO8A | | | | | C30 | | | | |
| | | VCCIO8A | | | | | F27 | | | | |
| | | VCCIO8A | | | | | F30 | | | | |
| | | VCCIO8A | | | | | J29 | | | | |
| | | VCCIO8A | | | | | M26 | | | | |
| | | VCCIO8B | | | | | A24 | | | | |
| | | VCCIO8B | | | | | C24 | | | | |
| | | VCCIO8B | | | | | F24 | | | | |
| | | VCCIO8B | | | | | J24 | | | | |
| | | VCCIO8C | | | | | A21 | | | | |
| | | VCCIO8C | | | | | C21 | | | | |
| | | VCCIO8C | | | | | F21 | | | | |
| | | VCCIO8C | | | | | J21 | | | | |
| | | VCCIO8D | | | | | A18 | | | | |
| | | VCCIO8D | | | | | C18 | | | | |
| | | VCCIO8D | | | | | F18 | | | | |
| | | VCCIO8D | | | | | J18 | | | | |
| | | VCCPD3 | | | | | AB26 | | | | |
| | | VCCPD3 | | | | | AC27 | | | | |
| | | VCCPD3 | | | | | Y21 | | | | |
| | | VCCPD3 | | | | | Y25 | | | | |
| | | VCCPD4A | | | | | AB6 | | | | |
| | | VCCPD4A | | | | | AB9 | | | | |
| | | VCCPD4BCD | | | | | Y10 | | | | |
| | | VCCPD4BCD | | | | | Y14 | | | | |
| | | VCCPD4BCD | | | | | Y16 | | | | |
| | | VCCPD7A | | | | | N8 | | | | |
| | | VCCPD7A | | | | | N9 | | | | |
| | | VCCPD7BCD | | | | | P14 | | | | |
| | | VCCPD7BCD | | | | | P16 | | | | |
| | | VCCPD7BCD | | | | | R11 | | | | |
| | | VCCPD8 | | | | | N26 | | | | |
| | | VCCPD8 | | | | | N27 | | | | |
| | | VCCPD8 | | | | | P20 | | | | |
| | | VCCPD8 | | | | | P22 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | VCCPGM | | | | | M9 | | | | |
| | | VCCPGM | | | | | AC26 | | | | |
| | | GND | | | | | AA11 | | | | |
| | | GND | | | | | AA13 | | | | |
| | | GND | | | | | AA16 | | | | |
| | | GND | | | | | AA19 | | | | |
| | | GND | | | | | AA22 | | | | |
| | | GND | | | | | AA24 | | | | |
| | | GND | | | | | AD10 | | | | |
| | | GND | | | | | AD13 | | | | |
| | | GND | | | | | AD16 | | | | |
| | | GND | | | | | AD19 | | | | |
| | | GND | | | | | AD22 | | | | |
| | | GND | | | | | AD25 | | | | |
| | | GND | | | | | AD28 | | | | |
| | | GND | | | | | AD7 | | | | |
| | | GND | | | | | AG10 | | | | |
| | | GND | | | | | AG13 | | | | |
| | | GND | | | | | AG16 | | | | |
| | | GND | | | | | AG19 | | | | |
| | | GND | | | | | AG22 | | | | |
| | | GND | | | | | AG25 | | | | |
| | | GND | | | | | AG28 | | | | |
| | | GND | | | | | AG7 | | | | |
| | | GND | | | | | AK10 | | | | |
| | | GND | | | | | AK13 | | | | |
| | | GND | | | | | AK16 | | | | |
| | | GND | | | | | AK19 | | | | |
| | | GND | | | | | AK22 | | | | |
| | | GND | | | | | AK25 | | | | |
| | | GND | | | | | AK28 | | | | |
| | | GND | | | | | AK7 | | | | |
| | | GND | | | | | AN10 | | | | |
| | | GND | | | | | AN13 | | | | |
| | | GND | | | | | AN16 | | | | |
| | | GND | | | | | AN19 | | | | |
| | | GND | | | | | AN22 | | | | |
| | | GND | | | | | AN25 | | | | |
| | | GND | | | | | AN28 | | | | |
| | | GND | | | | | AN31 | | | | |
| | | GND | | | | | AN4 | | | | |
| | | GND | | | | | AN7 | | | | |
| | | GND | | | | | B1 | | | | |
| | | GND | | | | | B10 | | | | |
| | | GND | | | | | B13 | | | | |
| | | GND | | | | | B16 | | | | |
| | | GND | | | | | B19 | | | | |
| | | GND | | | | | B22 | | | | |
| | | GND | | | | | B25 | | | | |
| | | GND | | | | | B28 | | | | |
| | | GND | | | | | B31 | | | | |
| | | GND | | | | | B4 | | | | |
| | | GND | | | | | B7 | | | | |
| | | GND | | | | | D2 | | | | |
| | | GND | | | | | D4 | | | | |
| | | GND | | | | | E10 | | | | |
| | | GND | | | | | E13 | | | | |
| | | GND | | | | | E16 | | | | |
| | | GND | | | | | E19 | | | | |
| | | GND | | | | | E22 | | | | |
| | | GND | | | | | E25 | | | | |
| | | GND | | | | | E28 | | | | |
| | | GND | | | | | E31 | | | | |
| | | GND | | | | | E7 | | | | |
| | | GND | | | | | H10 | | | | |
| | | GND | | | | | H13 | | | | |
| | | GND | | | | | H16 | | | | |
| | | GND | | | | | H19 | | | | |
| | | GND | | | | | H22 | | | | |
| | | GND | | | | | H25 | | | | |
| | | GND | | | | | H28 | | | | |
| | | GND | | | | | H7 | | | | |
| | | GND | | | | | L10 | | | | |
| | | GND | | | | | L13 | | | | |
| | | GND | | | | | L16 | | | | |
| | | GND | | | | | L19 | | | | |
| | | GND | | | | | L22 | | | | |
| | | GND | | | | | L25 | | | | |
| | | GND | | | | | L28 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1152 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | GND | | | | | L8 | | | | |
| | | GND | | | | | M6 | | | | |
| | | GND | | | | | N7 | | | | |
| | | GND | | | | | P10 | | | | |
| | | GND | | | | | P13 | | | | |
| | | GND | | | | | P15 | | | | |
| | | GND | | | | | P17 | | | | |
| | | GND | | | | | P19 | | | | |
| | | GND | | | | | P21 | | | | |
| | | GND | | | | | P23 | | | | |
| | | GND | | | | | P25 | | | | |
| | | GND | | | | | R10 | | | | |
| | | GND | | | | | R12 | | | | |
| | | GND | | | | | R18 | | | | |
| | | GND | | | | | R20 | | | | |
| | | GND | | | | | R22 | | | | |
| | | GND | | | | | R24 | | | | |
| | | GND | | | | | T11 | | | | |
| | | GND | | | | | T13 | | | | |
| | | GND | | | | | T15 | | | | |
| | | GND | | | | | T17 | | | | |
| | | GND | | | | | T19 | | | | |
| | | GND | | | | | T21 | | | | |
| | | GND | | | | | T23 | | | | |
| | | GND | | | | | T25 | | | | |
| | | GND | | | | | U10 | | | | |
| | | GND | | | | | U14 | | | | |
| | | GND | | | | | U16 | | | | |
| | | GND | | | | | U24 | | | | |
| | | GND | | | | | V11 | | | | |
| | | GND | | | | | V13 | | | | |
| | | GND | | | | | V15 | | | | |
| | | GND | | | | | V17 | | | | |
| | | GND | | | | | V19 | | | | |
| | | GND | | | | | V21 | | | | |
| | | GND | | | | | V23 | | | | |
| | | GND | | | | | V25 | | | | |
| | | GND | | | | | W10 | | | | |
| | | GND | | | | | W12 | | | | |
| | | GND | | | | | W14 | | | | |
| | | GND | | | | | W16 | | | | |
| | | GND | | | | | W18 | | | | |
| | | GND | | | | | W20 | | | | |
| | | GND | | | | | W22 | | | | |
| | | GND | | | | | W24 | | | | |
| | | GND | | | | | U18 | | | | |

Notes:

- (1) For more information about pin definitions and pin connection guidelines, refer to the [Arria V Device Family Pin Connection Guidelines](#).
- (2) GXB_REFCLK pin is not supported in current Quartus II version, but will be supported in future Quartus II release version.
- (3) RESET pin is only applicable for DDR3 device.



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|-----------------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | DNU | | | | | A38 | | | | |
| | | DNU | | | | | B38 | | | | |
| | | RREF TL | | | | | B39 | | | | |
| GXB L2 | | REFCLK9Ln | | | | | U32 | | | | |
| GXB L2 | | REFCLK9Lp | | | | | U31 | | | | |
| GXB L2 | | GXB TX L17n | | | | | C36 | | | | |
| GXB L2 | | GXB TX L17p | | | | | G37 | | | | |
| GXB L2 | | GXB RX L17p,GXB_REFCLK L17p | | | | | D39 | | | | |
| GXB L2 | | GXB RX L17n,GXB_REFCLK L17n | | | | | D38 | | | | |
| GXB L2 | | GXB TX L16n | | | | | E36 | | | | |
| GXB L2 | | GXB TX L16p | | | | | E37 | | | | |
| GXB L2 | | GXB RX L16p,GXB_REFCLK L16p | | | | | F39 | | | | |
| GXB L2 | | GXB RX L16n,GXB_REFCLK L16n | | | | | F38 | | | | |
| GXB L2 | | GXB TX L15n | | | | | G36 | | | | |
| GXB L2 | | GXB TX L15p | | | | | G37 | | | | |
| GXB L2 | | GXB RX L15p,GXB_REFCLK L15p | | | | | H39 | | | | |
| GXB L2 | | GXB RX L15n,GXB_REFCLK L15n | | | | | H38 | | | | |
| GXB L2 | | GXB TX L14n | | | | | J36 | | | | |
| GXB L2 | | GXB TX L14p | | | | | J37 | | | | |
| GXB L2 | | GXB RX L14p,GXB_REFCLK L14p | | | | | K39 | | | | |
| GXB L2 | | GXB RX L14n,GXB_REFCLK L14n | | | | | K38 | | | | |
| GXB L2 | | GXB TX L13n | | | | | L36 | | | | |
| GXB L2 | | GXB TX L13p | | | | | L37 | | | | |
| GXB L2 | | GXB RX L13p,GXB_REFCLK L13p | | | | | M39 | | | | |
| GXB L2 | | GXB RX L13n,GXB_REFCLK L13n | | | | | M38 | | | | |
| GXB L2 | | GXB TX L12n | | | | | N36 | | | | |
| GXB L2 | | GXB TX L12p | | | | | N37 | | | | |
| GXB L2 | | GXB RX L12p,GXB_REFCLK L12p | | | | | P39 | | | | |
| GXB L2 | | GXB RX L12n,GXB_REFCLK L12n | | | | | P38 | | | | |
| GXB L2 | | REFCLK4Ln | | | | | W32 | | | | |
| GXB L2 | | REFCLK4Lp | | | | | W31 | | | | |
| GXB L1 | | REFCLK3Ln | | | | | AA32 | | | | |
| GXB L1 | | REFCLK3Lp | | | | | AA31 | | | | |
| GXB L1 | | GXB TX L11n | | | | | R36 | | | | |
| GXB L1 | | GXB TX L11p | | | | | R37 | | | | |
| GXB L1 | | GXB RX L11p,GXB_REFCLK L11p | | | | | T39 | | | | |
| GXB L1 | | GXB RX L11n,GXB_REFCLK L11n | | | | | T38 | | | | |
| GXB L1 | | GXB TX L10n | | | | | U36 | | | | |
| GXB L1 | | GXB TX L10p | | | | | U37 | | | | |
| GXB L1 | | GXB RX L10p,GXB_REFCLK L10p | | | | | V39 | | | | |
| GXB L1 | | GXB RX L10n,GXB_REFCLK L10n | | | | | V38 | | | | |
| GXB L1 | | GXB TX L9n | | | | | W36 | | | | |
| GXB L1 | | GXB TX L9p | | | | | W37 | | | | |
| GXB L1 | | GXB RX L9p,GXB_REFCLK L9p | | | | | Y39 | | | | |
| GXB L1 | | GXB RX L9n,GXB_REFCLK L9n | | | | | Y38 | | | | |
| GXB L1 | | GXB TX L8n | | | | | AA36 | | | | |
| GXB L1 | | GXB TX L8p | | | | | AA37 | | | | |
| GXB L1 | | GXB RX L8p,GXB_REFCLK L8p | | | | | AB39 | | | | |
| GXB L1 | | GXB RX L8n,GXB_REFCLK L8n | | | | | AB38 | | | | |
| GXB L1 | | GXB TX L7n | | | | | AC36 | | | | |
| GXB L1 | | GXB TX L7p | | | | | AC37 | | | | |
| GXB L1 | | GXB RX L7p,GXB_REFCLK L7p | | | | | AD39 | | | | |
| GXB L1 | | GXB RX L7n,GXB_REFCLK L7n | | | | | AD38 | | | | |
| GXB L1 | | GXB TX L6n | | | | | AE36 | | | | |
| GXB L1 | | GXB TX L6p | | | | | AE37 | | | | |
| GXB L1 | | GXB RX L6p,GXB_REFCLK L6p | | | | | AF39 | | | | |
| GXB L1 | | GXB RX L6n,GXB_REFCLK L6n | | | | | AF38 | | | | |
| GXB L1 | | REFCLK2Ln | | | | | AC32 | | | | |
| GXB L1 | | REFCLK2Lp | | | | | AC31 | | | | |
| GXB L0 | | REFCLK1Ln | | | | | AE32 | | | | |
| GXB L0 | | REFCLK1Lp | | | | | AE31 | | | | |
| GXB L0 | | GXB TX L5n | | | | | AG36 | | | | |
| GXB L0 | | GXB TX L5p | | | | | AG37 | | | | |
| GXB L0 | | GXB RX L5p,GXB_REFCLK L5p | | | | | AH39 | | | | |
| GXB L0 | | GXB RX L5n,GXB_REFCLK L5n | | | | | AH38 | | | | |
| GXB L0 | | GXB TX L4n | | | | | AJ36 | | | | |
| GXB L0 | | GXB TX L4p | | | | | AJ37 | | | | |
| GXB L0 | | GXB RX L4p,GXB_REFCLK L4p | | | | | AK39 | | | | |
| GXB L0 | | GXB RX L4n,GXB_REFCLK L4n | | | | | AK38 | | | | |
| GXB L0 | | GXB TX L3n | | | | | AL36 | | | | |
| GXB L0 | | GXB TX L3p | | | | | AL37 | | | | |
| GXB L0 | | GXB RX L3p,GXB_REFCLK L3p | | | | | AM39 | | | | |
| GXB L0 | | GXB RX L3n,GXB_REFCLK L3n | | | | | AM38 | | | | |
| GXB L0 | | GXB TX L2n | | | | | AN36 | | | | |
| GXB L0 | | GXB TX L2p | | | | | AN37 | | | | |
| GXB L0 | | GXB RX L2p,GXB_REFCLK L2p | | | | | AP39 | | | | |
| GXB L0 | | GXB RX L2n,GXB_REFCLK L2n | | | | | AP38 | | | | |
| GXB L0 | | GXB TX L1n | | | | | AR36 | | | | |
| GXB L0 | | GXB TX L1p | | | | | AR37 | | | | |
| GXB L0 | | GXB RX L1p,GXB_REFCLK L1p | | | | | AT39 | | | | |
| GXB L0 | | GXB RX L1n,GXB_REFCLK L1n | | | | | AT38 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|---------------------------|---|------------------------|-------------------------|------------------------------|-------|------------------------|------------------------|------------------|-------------------------------|
| GXB L0 | | GXB TX L0n | | | | | AU36 | | | | |
| GXB L0 | | GXB TX L0p | | | | | AU37 | | | | |
| GXB L0 | | GXB RX L0p,GXB REFCLK L0p | | | | | AW37 | | | | |
| GXB L0 | | GXB RX L0n,GXB REFCLK L0n | | | | | AW36 | | | | |
| GXB L0 | | REFCLK0Ln | | | | | AG33 | | | | |
| GXB L0 | | REFCLK0Lp | | | | | AG32 | | | | |
| 3A | | DN1 | | | | | AH31 | | | | |
| 3A | | TDO | | TDO | | | AT34 | | | | |
| 3A | | TMS | | TMS | | | AM35 | | | | |
| 3A | | TCK | | TCK | | | AV34 | | | | |
| 3A | | TDI | | TDI | | | AT33 | | | | |
| 3A | | DCLK | | DCLK | | | AW34 | | | | |
| 3A | | rCSQ | | DATA4 | | | AR34 | | | | |
| 3A | | AS DATA3 | | DATA3 | | | AU34 | | | | |
| 3A | | AS DATA2 | | DATA2 | | | AR33 | | | | |
| 3A | | AS DATA1 | | DATA1 | | | AU33 | | | | |
| 3A | | AS DATA0,ASDO | | DATA0 | | | AV33 | | | | |
| 3A | VREFB3AN0 | IO | RZQ_0 | | DIFFIO TX B1n | DIFFOUT B1n | AN33 | | | | |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B1p | DIFFOUT B1p | AP33 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | CLK0n | | DIFFIO RX B2n | DIFFOUT B2n | AN34 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | CLK0p | | DIFFIO RX B2p | DIFFOUT B2p | AP34 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B3n | DIFFOUT B3n | AK32 | | | | |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B3p | DIFFOUT B3p | AL32 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | CLK1n | | DIFFIO RX B4n | DIFFOUT B4n | AJ34 | DQS1B/QK1B | | | |
| 3A | VREFB3AN0 | IO | CLK1p | | DIFFIO RX B4p | DIFFOUT B4p | AK34 | DQS1B/CQ1B/CQn1B/QKn1B | | | |
| 3A | VREFB3AN0 | IO | FPLL_BL_CLKOUT1,FPLL_BL_CLKOUTn | | DIFFIO TX B5n | DIFFOUT B5n | AL34 | | | | |
| 3A | VREFB3AN0 | IO | FPLL_BL_CLKOUT0,FPLL_BL_CLKOUTp,FPLL_BL_FB0 | | DIFFIO TX B5p | DIFFOUT B5p | AM34 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | FPLL_BL_CLKOUT3,FPLL_BL_FBn | | DIFFIO RX B6n | DIFFOUT B6n | AJ33 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | FPLL_BL_CLKOUT2,FPLL_BL_FBp,FPLL_BL_FB1 | | DIFFIO RX B6p | DIFFOUT B6p | AK33 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | VREFB3AN0 | | | | AJ31 | | | | |
| 3A | VREFB3AN0 | IO | | | | | AK31 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | CLK2n | | DIFFIO RX B7n | DIFFOUT B7n | AL33 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | CLK2p | | DIFFIO RX B7p | DIFFOUT B7p | AM33 | DQ1B | | | |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B8n | DIFFOUT B8n | AN32 | | | | CS# 3A 1 |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B8p | DIFFOUT B8p | AP32 | DQ2B | DQ1B | | CS# 3A 0 |
| 3A | VREFB3AN0 | IO | CLK3n | | DIFFIO RX B9n | DIFFOUT B9n | AT32 | DQ2B | DQ1B | | |
| 3A | VREFB3AN0 | IO | CLK3p | | DIFFIO RX B9p | DIFFOUT B9p | AU32 | DQ2B | DQ1B | | |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B10n | DIFFOUT B10n | AL31 | | | | |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B10p | DIFFOUT B10p | AM31 | DQ2B | DQ1B | | ODT 3A 1 |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B11n | DIFFOUT B11n | AW33 | DQS2B/QK2B | DQ1B | | ODT 3A 0 |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B11p | DIFFOUT B11p | AW32 | DQS2B/CQ2B/CQn2B/QKn2B | DQ1B | | WE# 3A |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B12n | DIFFOUT B12n | AN31 | | | | CAS# 3A |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B12p | DIFFOUT B12p | AP31 | DQ2B | DQ1B | | RAS# 3A |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B13n | DIFFOUT B13n | AR31 | DQ2B | DQ1B | | BA 3A 2 |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B13p | DIFFOUT B13p | AT31 | DQ2B | DQ1B | | BA 3A 1 |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B14n | DIFFOUT B14n | AD29 | | | | BA 3A 0 |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B14p | DIFFOUT B14p | AE29 | DQ2B | DQ1B | | A 3A 15 |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B15n | DIFFOUT B15n | AG30 | DQ2B | DQ1B | | A 3A 14 |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B15p | DIFFOUT B15p | AH30 | DQ2B | DQ1B | | A 3A 13 |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B16n | DIFFOUT B16n | AU31 | | | | A 3A 12 |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B16p | DIFFOUT B16p | AV31 | DQ3B | DQ1B | | A 3A 11 |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B17n | DIFFOUT B17n | AW30 | DQ3B | DQ1B | | A 3A 10 |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B17p | DIFFOUT B17p | AW31 | DQ3B | DQ1B | | A 3A 9 |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B18n | DIFFOUT B18n | AK30 | | | | A 3A 8 |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B18p | DIFFOUT B18p | AL30 | DQ3B | DQ1B | | A 3A 7 |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B19n | DIFFOUT B19n | AR30 | DQS3B/QK3B | DQS1B/QK1B | | A 3A 6 |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B19p | DIFFOUT B19p | AT30 | DQS3B/CQ3B/CQn3B/QKn3B | DQS1B/CQ1B/CQn1B/QKn1B | | A 3A 5 |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B20n | DIFFOUT B20n | AU30 | | | | A 3A 4 |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B20p | DIFFOUT B20p | AV30 | DQ3B | DQ1B | | A 3A 3 |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B21n | DIFFOUT B21n | AT29 | DQ3B | DQ1B | | A 3A 2 |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B21p | DIFFOUT B21p | AU29 | DQ3B | DQ1B | | A 3A 1 |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B22n | DIFFOUT B22n | AN30 | | | | A 3A 0 |
| 3A | VREFB3AN0 | IO | | | DIFFIO TX B22p | DIFFOUT B22p | AP30 | DQ3B | DQ1B | | CKE 3A 1 |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B23n | DIFFOUT B23n | AN29 | DQ3B | DQ1B | | CKE 3A 0 |
| 3A | VREFB3AN0 | IO | | | DIFFIO RX B23p | DIFFOUT B23p | AP29 | DQ3B | DQ1B | | CK# 3A |
| 3B | VREFB3BN0 | IO | | | DIFFIO TX B24n | DIFFOUT B24n | AB29 | | | | RESET# 3A |
| 3B | VREFB3BN0 | IO | | | DIFFIO TX B24p | DIFFOUT B24p | AC29 | DQ4B | DQ2B | DQ1B | DQ1 3B 8 |
| 3B | VREFB3BN0 | IO | | | DIFFIO RX B25n | DIFFOUT B25n | AF28 | DQ4B | DQ2B | DQ1B | DQ1 3B 7 |
| 3B | VREFB3BN0 | IO | | | DIFFIO RX B25p | DIFFOUT B25p | AG28 | DQ4B | DQ2B | DQ1B | DQ1 3B 6 |
| 3B | VREFB3BN0 | IO | | | DIFFIO TX B26n | DIFFOUT B26n | AK29 | | | | |
| 3B | VREFB3BN0 | IO | | | DIFFIO TX B26p | DIFFOUT B26p | AL29 | DQ4B | DQ2B | DQ1B | DM1 3B |
| 3B | VREFB3BN0 | IO | | | DIFFIO RX B27n | DIFFOUT B27n | AH28 | DQS4B/QK4B | DQ2B | DQ1B | DQS#1 3B |
| 3B | VREFB3BN0 | IO | | | DIFFIO RX B27p | DIFFOUT B27p | AJ28 | DQS4B/CQ4B/CQn4B/QKn4B | DQ2B | DQ1B | DQS#1 3B |
| 3B | VREFB3BN0 | IO | | | DIFFIO TX B28n | DIFFOUT B28n | AD28 | | | | |
| 3B | VREFB3BN0 | IO | | | DIFFIO TX B28p | DIFFOUT B28p | AE28 | DQ4B | DQ2B | DQ1B | DQ1 3B 5 |
| 3B | VREFB3BN0 | IO | | | DIFFIO RX B29n | DIFFOUT B29n | AB27 | DQ4B | DQ2B | DQ1B | DQ1 3B 4 |
| 3B | VREFB3BN0 | IO | | | DIFFIO RX B29p | DIFFOUT B29p | AB28 | DQ4B | DQ2B | DQ1B | DQ1 3B 3 |
| 3B | VREFB3BN0 | IO | VREFB3BN0 | | | | AL28 | | | | |
| 3B | VREFB3BN0 | IO | | | | | AM28 | DQ4B | DQ2B | DQ1B | DQ1 3B 2 |
| 3B | VREFB3BN0 | IO | | | DIFFIO RX B30n | DIFFOUT B30n | AC27 | DQ4B | DQ2B | DQ1B | DQ1 3B 1 |
| 3B | VREFB3BN0 | IO | | | DIFFIO RX B30p | DIFFOUT B30p | AD27 | DQ4B | DQ2B | DQ1B | DQ1 3B 0 |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|----------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|-------------------------|------------------------|-------------------------|-------------------------------|
| 3B | VREFB3N0 | IO | | | DIFFIO TX B31n | DIFFOUT B31n | AP28 | | | | |
| 3B | VREFB3N0 | IO | | | DIFFIO TX B31p | DIFFOUT B31p | AR28 | DQ5B | DO2B | DO1B | DO2_3B_8 |
| 3B | VREFB3N0 | IO | | | DIFFIO RX B32n | DIFFOUT B32n | AU28 | DO5B | DO2B | DO1B | DO2_3B_7 |
| 3B | VREFB3N0 | IO | | | DIFFIO RX B32p | DIFFOUT B32p | AV28 | DO5B | DO2B | DO1B | DO2_3B_6 |
| 3B | VREFB3N0 | IO | | | DIFFIO TX B33n | DIFFOUT B33n | AJ27 | | | | |
| 3B | VREFB3N0 | IO | | | DIFFIO TX B33p | DIFFOUT B33p | AK27 | DO5B | DO2B | DO1B | DO2_3B_5 |
| 3B | VREFB3N0 | IO | | | DIFFIO RX B34n | DIFFOUT B34n | AW29 | DQS#5B/QK5B | DO5n2B/QK2B | DO1B | DO2_3B_4 |
| 3B | VREFB3N0 | IO | | | DIFFIO RX B34p | DIFFOUT B34p | AW28 | DQSSB/CQ5B/CQn5B/QKn5B | DQS2B/CQ2B/CQn2B/QKn2B | DO1B | DO2_3B_3 |
| 3B | VREFB3N0 | IO | | | DIFFIO TX B35n | DIFFOUT B35n | AP27 | | | | |
| 3B | VREFB3N0 | IO | | | DIFFIO TX B35p | DIFFOUT B35p | AR27 | DO5B | DO2B | DO1B | DO2_3B_5 |
| 3B | VREFB3N0 | IO | | | DIFFIO RX B36n | DIFFOUT B36n | AT27 | DO5B | DO2B | DO1B | DO2_3B_4 |
| 3B | VREFB3N0 | IO | | | DIFFIO RX B36p | DIFFOUT B36p | AU27 | DO5B | DO2B | DO1B | DO2_3B_3 |
| 3B | VREFB3N0 | IO | | | DIFFIO TX B37n | DIFFOUT B37n | AM27 | | | | |
| 3B | VREFB3N0 | IO | | | DIFFIO TX B37p | DIFFOUT B37p | AN27 | DO5B | DO2B | DO1B | DO2_3B_2 |
| 3B | VREFB3N0 | IO | | | DIFFIO RX B38n | DIFFOUT B38n | AV27 | DO5B | DO2B | DO1B | DO2_3B_1 |
| 3B | VREFB3N0 | IO | | | DIFFIO RX B38p | DIFFOUT B38p | AW27 | DO5B | DO2B | DO1B | DO2_3B_0 |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B39n | DIFFOUT B39n | AG27 | | | | |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B39p | DIFFOUT B39p | AH27 | DO6B | DO3B | DO1B | DO3_3C_8 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B40n | DIFFOUT B40n | AB25 | DO6B | DO3B | DO1B | DO3_3C_7 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B40p | DIFFOUT B40p | AC25 | DO6B | DO3B | DO1B | DO3_3C_6 |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B41n | DIFFOUT B41n | AE27 | | | | |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B41p | DIFFOUT B41p | AF27 | DO6B | DO3B | DO1B | DM3_3C |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B42n | DIFFOUT B42n | AE25 | DO5n6B/QK6B | DO3n1B/QK1B | DO3B | DQS#3_3C |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B42p | DIFFOUT B42p | AF25 | DO5n6B/CQ6B/CQn6B/QKn6B | DO3B | DO3n1B/CQ1B/CQn1B/QKn1B | DQS3_3C |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B43n | DIFFOUT B43n | AC24 | | | | |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B43p | DIFFOUT B43p | AD25 | DO6B | DO3B | DO1B | DO3_3C_5 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B44n | DIFFOUT B44n | AG26 | DO6B | DO3B | DO1B | DO3_3C_4 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B44p | DIFFOUT B44p | AH26 | DO6B | DO3B | DO1B | DO3_3C_3 |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B45n | DIFFOUT B45n | AD26 | | | | |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B45p | DIFFOUT B45p | AE26 | DO6B | DO3B | DO1B | DO3_3C_2 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B46n | DIFFOUT B46n | AG25 | DO6B | DO3B | DO1B | DO3_3C_1 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B46p | DIFFOUT B46p | AH25 | DO6B | DO3B | DO1B | DO3_3C_0 |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B47n | DIFFOUT B47n | AN26 | | | | |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B47p | DIFFOUT B47p | AP26 | DO7B | DO3B | DO1B | DO4_3C_8 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B48n | DIFFOUT B48n | AM25 | DO7B | DO3B | DO1B | DO4_3C_7 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B48p | DIFFOUT B48p | AN25 | DO7B | DO3B | DO1B | DO4_3C_6 |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B49n | DIFFOUT B49n | AJ25 | | | | |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B49p | DIFFOUT B49p | AK25 | DO7B | DO3B | DO1B | DM4_3C |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B50n | DIFFOUT B50n | AT26 | DQS#7B/QK7B | DO5n3B/QK3B | DO1B | DQS#4_3C |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B50p | DIFFOUT B50p | AJ26 | DQS7B/CQ7B/CQn7B/QKn7B | DQS3B/CQ3B/CQn3B/QKn3B | DO1B | DQS4_3C |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B51n | DIFFOUT B51n | AR25 | | | | |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B51p | DIFFOUT B51p | AT25 | DO7B | DO3B | DO1B | DO4_3C_5 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B52n | DIFFOUT B52n | AW25 | DO7B | DO3B | DO1B | DO4_3C_4 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B52p | DIFFOUT B52p | AW26 | DO7B | DO3B | DO1B | DO4_3C_3 |
| 3C | VREFB3C0 | IO | VREFB3C0 | | | | AK26 | | | | |
| 3C | VREFB3C0 | IO | | | | | AL26 | DO7B | DO3B | DO1B | DO4_3C_2 |
| 3C | VREFB3C0 | IO | | | | | AV25 | DO7B | DO3B | DO1B | DO4_3C_1 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B53n | DIFFOUT B53n | AV25 | DO7B | DO3B | DO1B | DO4_3C_0 |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B54n | DIFFOUT B54n | AD23 | | | | |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B54p | DIFFOUT B54p | AD24 | DO8B | DO4B | DO2B | DO5_3C_8 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B55n | DIFFOUT B55n | AT24 | DO8B | DO4B | DO2B | DO5_3C_7 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B55p | DIFFOUT B55p | AU24 | DO8B | DO4B | DO2B | DO5_3C_6 |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B56n | DIFFOUT B56n | AK24 | | | | |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B56p | DIFFOUT B56p | AL24 | DO8B | DO4B | DO2B | DM5_3C |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B57n | DIFFOUT B57n | AE24 | DO5n8B/QK8B | DO4B | DO2B | DQS#5_3C |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B57p | DIFFOUT B57p | AF24 | DQS8B/CQ8B/CQn8B/QKn8B | DO4B | DO2B | DQS5_3C |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B58n | DIFFOUT B58n | AG24 | | | | |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B58p | DIFFOUT B58p | AH24 | DO8B | DO4B | DO2B | DO5_3C_5 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B59n | DIFFOUT B59n | AW23 | DO8B | DO4B | DO2B | DO5_3C_4 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B59p | DIFFOUT B59p | AW24 | DO8B | DO4B | DO2B | DO5_3C_3 |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B60n | DIFFOUT B60n | AN24 | | | | |
| 3C | VREFB3C0 | IO | | | DIFFIO TX B60p | DIFFOUT B60p | AP24 | DO8B | DO4B | DO2B | DO5_3C_2 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B61n | DIFFOUT B61n | AT23 | DO8B | DO4B | DO2B | DO5_3C_1 |
| 3C | VREFB3C0 | IO | | | DIFFIO RX B61p | DIFFOUT B61p | AU23 | DO8B | DO4B | DO2B | DO5_3C_0 |
| 3D | VREFB3D0 | IO | | | DIFFIO TX B62n | DIFFOUT B62n | AN23 | | | | |
| 3D | VREFB3D0 | IO | | | DIFFIO TX B62p | DIFFOUT B62p | AP23 | DO9B | DO4B | DO2B | |
| 3D | VREFB3D0 | IO | | | DIFFIO RX B63n | DIFFOUT B63n | AD22 | DO9B | DO4B | DO2B | |
| 3D | VREFB3D0 | IO | | | DIFFIO RX B63p | DIFFOUT B63p | AE23 | DO9B | DO4B | DO2B | |
| 3D | VREFB3D0 | IO | | | DIFFIO TX B64n | DIFFOUT B64n | AK23 | | | | |
| 3D | VREFB3D0 | IO | | | DIFFIO TX B64p | DIFFOUT B64p | AL23 | DO9B | DO4B | DO2B | |
| 3D | VREFB3D0 | IO | | | DIFFIO RX B65n | DIFFOUT B65n | AT22 | DO5n9B/QK9B | DO5n4B/QK4B | DO2B | |
| 3D | VREFB3D0 | IO | | | DIFFIO RX B65p | DIFFOUT B65p | AU22 | DQS9B/CQ9B/CQn9B/QKn9B | DQS4B/CQ4B/CQn4B/QKn4B | DO2B | |
| 3D | VREFB3D0 | IO | | | DIFFIO TX B66n | DIFFOUT B66n | AV22 | | | | |
| 3D | VREFB3D0 | IO | | | DIFFIO TX B66p | DIFFOUT B66p | AW22 | DO9B | DO4B | DO2B | |
| 3D | VREFB3D0 | IO | | | DIFFIO RX B67n | DIFFOUT B67n | AV21 | DO9B | DO4B | DO2B | |
| 3D | VREFB3D0 | IO | | | DIFFIO RX B67p | DIFFOUT B67p | AW21 | DO9B | DO4B | DO2B | |
| 3D | VREFB3D0 | IO | | | DIFFIO TX B68n | DIFFOUT B68n | AG23 | | | | |
| 3D | VREFB3D0 | IO | | | DIFFIO TX B68p | DIFFOUT B68p | AH23 | DO9B | DO4B | DO2B | |
| 3D | VREFB3D0 | IO | | | DIFFIO RX B69n | DIFFOUT B69n | AE22 | DO9B | DO4B | DO2B | |
| 3D | VREFB3D0 | IO | | | DIFFIO RX B69p | DIFFOUT B69p | AF22 | DO9B | DO4B | DO2B | |
| 3D | VREFB3D0 | IO | | | DIFFIO TX B70n | DIFFOUT B70n | AN22 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|----------------------|---|------------------------|-------------------------|------------------------------|-------|----------------------------|------------------------|------------------|-------------------------------|
| 3D | VREFB3DN0 | IO | | | DIFFIO TX B70p | DIFFOUT B70p | AP22 | DQ10B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | | | DIFFIO RX B71n | DIFFOUT B71n | AW19 | DQ10B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | | | DIFFIO RX B71p | DIFFOUT B71p | AW20 | DQ10B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | | | DIFFIO TX B72n | DIFFOUT B72n | AK22 | | | | |
| 3D | VREFB3DN0 | IO | | | DIFFIO TX B72p | DIFFOUT B72p | AL22 | DQ10B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | | | DIFFIO RX B73n | DIFFOUT B73n | AR21 | DQS+10B/QK10B | DQ5B | DQ2B | DQ32B/CQ2B |
| 3D | VREFB3DN0 | IO | | | DIFFIO RX B73p | DIFFOUT B73p | AT21 | DQS10B/CQ10B/CQn10B/QKn10B | DQ5B | DQ2B | DQ32B/CQ2B/CQn2B/QKn2B |
| 3D | VREFB3DN0 | IO | | | DIFFIO TX B74n | DIFFOUT B74n | AG22 | | | | |
| 3D | VREFB3DN0 | IO | | | DIFFIO TX B74p | DIFFOUT B74p | AH22 | DQ10B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | | | DIFFIO RX B75n | DIFFOUT B75n | AT20 | DQ10B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | | | DIFFIO RX B75p | DIFFOUT B75p | AU20 | DQ10B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | VREFB3DN0 | | | | AJ21 | | | | |
| 3D | VREFB3DN0 | IO | | | | | AK21 | DQ10B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | CLK4n | | DIFFIO RX B76n | DIFFOUT B76n | AU19 | DQ10B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | CLK4p | | DIFFIO RX B76p | DIFFOUT B76p | AV19 | DQ10B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | | | DIFFIO TX B77n | DIFFOUT B77n | AM21 | | | | |
| 3D | VREFB3DN0 | IO | | | DIFFIO TX B77p | DIFFOUT B77p | AN21 | DQ11B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | CLK5n | | DIFFIO RX B78n | DIFFOUT B78n | AE21 | DQ11B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | CLK5p | | DIFFIO RX B78p | DIFFOUT B78p | AF21 | DQ11B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | FPLL_BC_CLKOUT1,FPLL_BC_CLKOUTn | | DIFFIO TX B79n | DIFFOUT B79n | AD21 | | | | |
| 3D | VREFB3DN0 | IO | FPLL_BC_CLKOUT0,FPLL_BC_CLKOUTp,FPLL_BC_FB0 | | DIFFIO TX B79p | DIFFOUT B79p | AC22 | DQ11B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | FPLL_BC_CLKOUT3,FPLL_BC_FBn | | DIFFIO RX B80n | DIFFOUT B80n | AG21 | DQSn11B/QK11B | DQS5B/QK5B | DQ2B | |
| 3D | VREFB3DN0 | IO | FPLL_BC_CLKOUT2,FPLL_BC_FBp,FPLL_BC_FB1 | | DIFFIO RX B80p | DIFFOUT B80p | AH21 | DQS11B/CQ11B/CQn11B/QKn11B | DQS5B/CQ5B/CQn5B/QKn5B | DQ2B | |
| 3D | VREFB3DN0 | IO | | | DIFFIO TX B81n | DIFFOUT B81n | AN20 | | | | |
| 3D | VREFB3DN0 | IO | | | DIFFIO TX B81p | DIFFOUT B81p | AP20 | DQ11B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | CLK6n | | DIFFIO RX B82n | DIFFOUT B82n | AC21 | DQ11B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | CLK6p | | DIFFIO RX B82p | DIFFOUT B82p | AD20 | DQ11B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | | | DIFFIO TX B83n | DIFFOUT B83n | AG20 | | | | |
| 3D | VREFB3DN0 | IO | | | DIFFIO TX B83p | DIFFOUT B83p | AH20 | DQ11B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | CLK7n | | DIFFIO RX B84n | DIFFOUT B84n | AK20 | DQ11B | DQ5B | DQ2B | |
| 3D | VREFB3DN0 | IO | CLK7p | | DIFFIO RX B84p | DIFFOUT B84p | AL20 | DQ11B | DQ5B | DQ2B | |
| | | VCCD_FPLL | | | | | AB20 | | | | |
| | | VCCA_FPLL | | | | | AB21 | | | | |
| | | DNU | | | | | AE20 | | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B85n | DIFFOUT B85n | AV18 | | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B85p | DIFFOUT B85p | AW18 | DQ12B | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B86n | DIFFOUT B86n | AG19 | DQ12B | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B86p | DIFFOUT B86p | AH19 | DQ12B | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B87n | DIFFOUT B87n | AN19 | | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B87p | DIFFOUT B87p | AP19 | DQ12B | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B88n | DIFFOUT B88n | AK19 | DQSn12B/QK12B | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B88p | DIFFOUT B88p | AL19 | DQS12B/CQ12B/CQn12B/QKn12B | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B89n | DIFFOUT B89n | AH18 | | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B89p | DIFFOUT B89p | AJ18 | DQ12B | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B90n | DIFFOUT B90n | AU18 | DQ12B | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B90p | DIFFOUT B90p | AT19 | DQ12B | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B91n | DIFFOUT B91n | AE19 | | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B91p | DIFFOUT B91p | AF19 | DQ12B | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B92n | DIFFOUT B92n | AW17 | DQ12B | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B92p | DIFFOUT B92p | AW16 | DQ12B | | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B93n | DIFFOUT B93n | AK17 | | | | CS# 4D 1 |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B93p | DIFFOUT B93p | AL17 | DQ13B | DO6B | | CS# 4D 0 |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B94n | DIFFOUT B94n | AT17 | DQ13B | DO6B | | |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B94p | DIFFOUT B94p | AU17 | DQ13B | DO6B | | A 4D 15 |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B95n | DIFFOUT B95n | AC19 | | | | ODT 4D 1 |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B95p | DIFFOUT B95p | AD19 | DQ13B | DO6B | | ODT 4D 0 |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B96n | DIFFOUT B96n | AP18 | DQSn13B/QK13B | DO6B | | WE# 4D |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B96p | DIFFOUT B96p | AR18 | DQS13B/CQ13B/CQn13B/QKn13B | DO6B | | CAS# 4D |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B97n | DIFFOUT B97n | AD17 | | | | RAS# 4D |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B97p | DIFFOUT B97p | AC18 | DQ13B | DO6B | | BA 4D 2 |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B98n | DIFFOUT B98n | AD18 | DQ13B | DO6B | | BA 4D 1 |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B98p | DIFFOUT B98p | AE18 | DQ13B | DO6B | | BA 4D 0 |
| 4D | VREFB4DN0 | IO | VREFB4DN0 | | | | AF18 | | | | |
| 4D | VREFB4DN0 | IO | | | | | AG18 | DQ13B | DO6B | | A 4D 14 |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B99n | DIFFOUT B99n | AL18 | DQ13B | DO6B | | A 4D 13 |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B99p | DIFFOUT B99p | AM18 | DQ13B | DO6B | | A 4D 12 |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B100n | DIFFOUT B100n | AG17 | | | | A 4D 11 |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B100p | DIFFOUT B100p | AH17 | DQ14B | DO6B | | A 4D 10 |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B101n | DIFFOUT B101n | AN17 | DQ14B | DO6B | | A 4D 9 |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B101p | DIFFOUT B101p | AP17 | DQ14B | DO6B | | A 4D 8 |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B102n | DIFFOUT B102n | AR16 | | | | A 4D 7 |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B102p | DIFFOUT B102p | AT16 | DQ14B | DO6B | | A 4D 6 |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B103n | DIFFOUT B103n | AU16 | DQSn14B/QK14B | DO6B/QK6B | | A 4D 5 |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B103p | DIFFOUT B103p | AV16 | DQS14B/CQ14B/CQn14B/QKn14B | DQS6B/CQ6B/CQn6B/QKn6B | | A 4D 4 |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B104n | DIFFOUT B104n | AJ16 | | | | A 4D 3 |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B104p | DIFFOUT B104p | AK16 | DQ14B | DO6B | | A 4D 2 |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B105n | DIFFOUT B105n | AN16 | DQ14B | DO6B | | A 4D 1 |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B105p | DIFFOUT B105p | AP16 | DQ14B | DO6B | | A 4D 0 |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B106n | DIFFOUT B106n | AL16 | | | | CKE 4D 1 |
| 4D | VREFB4DN0 | IO | | | DIFFIO TX B106p | DIFFOUT B106p | AM16 | DQ14B | DO6B | | CKE 4D 0 |
| 4D | VREFB4DN0 | IO | | | DIFFIO RX B107n | DIFFOUT B107n | AE17 | DQ14B | DO6B | | CK# 4D |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|----------------------------|------------------------|------------------|-------------------------------|
| 4D | VREFB4DN0 | IO | | | DIFFIO_RX_B107p | DIFFOUT_B107p | AF16 | DQ14B | DQ6B | | CK_4D |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B108n | DIFFOUT_B108n | AN15 | | | | RESET#_4D |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B108p | DIFFOUT_B108p | AP15 | DQ15B | DQ7B | DQ3B | DQ1_4C_8 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B109n | DIFFOUT_B109n | AW14 | DQ15B | DQ7B | DQ3B | DQ1_4C_7 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B109p | DIFFOUT_B109p | AW15 | DQ15B | DQ7B | DQ3B | DQ1_4C_6 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B110n | DIFFOUT_B110n | AO16 | | | | |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B110p | DIFFOUT_B110p | AO16 | | | | |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B111n | DIFFOUT_B111n | AG16 | DQS#15B/QK15B | DQ7B | DQ3B | DM1_4C |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B111p | DIFFOUT_B111p | AH16 | DQS15B/CQ15B/CQn15B/QKn15B | DQ7B | DQ3B | DQS#1_4C |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B112n | DIFFOUT_B112n | AK15 | | | | |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B112p | DIFFOUT_B112p | AL15 | DQ15B | DQ7B | DQ3B | DQ1_4C_5 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B113n | DIFFOUT_B113n | AV13 | DQ15B | DQ7B | DQ3B | DQ1_4C_4 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B113p | DIFFOUT_B113p | AW13 | DQ15B | DQ7B | DQ3B | DQ1_4C_3 |
| 4C | VREFB4CN0 | IO | VREFB4CN0 | | | | AG15 | | | | |
| 4C | VREFB4CN0 | IO | | | | | AH15 | DQ15B | DQ7B | DQ3B | DQ1_4C_2 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B114n | DIFFOUT_B114n | AT15 | DQ15B | DQ7B | DQ3B | DQ1_4C_1 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B114p | DIFFOUT_B114p | AU15 | DQ15B | DQ7B | DQ3B | DQ1_4C_0 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B115n | DIFFOUT_B115n | AC15 | | | | |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B115p | DIFFOUT_B115p | AD14 | DQ16B | DQ7B | DQ3B | DQ2_4C_8 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B116n | DIFFOUT_B116n | AT14 | DQ16B | DQ7B | DQ3B | DQ2_4C_7 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B116p | DIFFOUT_B116p | AU14 | DQ16B | DQ7B | DQ3B | DQ2_4C_6 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B117n | DIFFOUT_B117n | AT13 | | | | |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B117p | DIFFOUT_B117p | AU13 | DQ16B | DQ7B | DQ3B | DM2_4C |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B118n | DIFFOUT_B118n | AE16 | DQS#16B/QK16B | DQS#7B/QK7B | DQ3B | DQS#2_4C |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B118p | DIFFOUT_B118p | AF15 | DQS16B/CQ16B/CQn16B/QKn16B | DQS7B/CQ7B/CQn7B/QKn7B | DQ3B | DQS2_4C |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B119n | DIFFOUT_B119n | AK14 | | | | |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B119p | DIFFOUT_B119p | AL14 | DQ16B | DQ7B | DQ3B | DQ2_4C_5 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B120n | DIFFOUT_B120n | AN14 | DQ16B | DQ7B | DQ3B | DQ2_4C_4 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B120p | DIFFOUT_B120p | AP14 | DQ16B | DQ7B | DQ3B | DQ2_4C_3 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B121n | DIFFOUT_B121n | AG14 | | | | |
| 4C | VREFB4CN0 | IO | | | DIFFIO_TX_B121p | DIFFOUT_B121p | AH14 | DQ16B | DQ7B | DQ3B | DQ2_4C_2 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B122n | DIFFOUT_B122n | AD15 | DQ16B | DQ7B | DQ3B | DQ2_4C_1 |
| 4C | VREFB4CN0 | IO | | | DIFFIO_RX_B122p | DIFFOUT_B122p | AE15 | DQ16B | DQ7B | DQ3B | DQ2_4C_0 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B123n | DIFFOUT_B123n | AP13 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B123p | DIFFOUT_B123p | AR13 | DQ17B | DQ8B | DQ3B | DQ3_4B_8 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B124n | DIFFOUT_B124n | AE14 | DQ17B | DQ8B | DQ3B | DQ3_4B_7 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B124p | DIFFOUT_B124p | AE13 | DQ17B | DQ8B | DQ3B | DQ3_4B_6 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B125n | DIFFOUT_B125n | AH12 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B125p | DIFFOUT_B125p | AU12 | DQ17B | DQ8B | DQ3B | DM3_4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B126n | DIFFOUT_B126n | AV12 | DQS#17B/QK17B | DQ8B | DQ3B | DQS#3B/QK3B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B126p | DIFFOUT_B126p | AW12 | DQS17B/CQ17B/CQn17B/QKn17B | DQ8B | DQ3B | DQS3_4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B127n | DIFFOUT_B127n | AL13 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B127p | DIFFOUT_B127p | AM13 | DQ17B | DQ8B | DQ3B | DQ3_4B_5 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B128n | DIFFOUT_B128n | AW10 | DQ17B | DQ8B | DQ3B | DQ3_4B_4 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B128p | DIFFOUT_B128p | AW11 | DQ17B | DQ8B | DQ3B | DQ3_4B_3 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B129n | DIFFOUT_B129n | AN12 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B129p | DIFFOUT_B129p | AP12 | DQ17B | DQ8B | DQ3B | DQ3_4B_2 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B130n | DIFFOUT_B130n | AH13 | DQ17B | DQ8B | DQ3B | DQ3_4B_1 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B130p | DIFFOUT_B130p | AJ13 | DQ17B | DQ8B | DQ3B | DQ3_4B_0 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B131n | DIFFOUT_B131n | AH12 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B131p | DIFFOUT_B131p | AJ12 | DQ18B | DQ8B | DQ3B | DQ4_4B_8 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B132n | DIFFOUT_B132n | AF13 | DQ18B | DQ8B | DQ3B | DQ4_4B_7 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B132p | DIFFOUT_B132p | AG13 | DQ18B | DQ8B | DQ3B | DQ4_4B_6 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B133n | DIFFOUT_B133n | AU10 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B133p | DIFFOUT_B133p | AV10 | DQ18B | DQ8B | DQ3B | DM4_4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B134n | DIFFOUT_B134n | AT11 | DQS#18B/QK18B | DQS#8B/QK8B | DQ3B | DQS#4_4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B134p | DIFFOUT_B134p | AU11 | DQS18B/CQ18B/CQn18B/QKn18B | DQS8B/CQ8B/CQn8B/QKn8B | DQ3B | DQS4_4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B135n | DIFFOUT_B135n | AK12 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B135p | DIFFOUT_B135p | AL12 | DQ18B | DQ8B | DQ3B | DQ4_4B_5 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B136n | DIFFOUT_B136n | AC13 | DQ18B | DQ8B | DQ3B | DQ4_4B_4 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B136p | DIFFOUT_B136p | AD13 | DQ18B | DQ8B | DQ3B | DQ4_4B_3 |
| 4B | VREFB4BN0 | IO | VREFB4BN0 | | | | AN11 | | | | |
| 4B | VREFB4BN0 | IO | | | | | AP11 | DQ18B | DQ8B | DQ3B | DQ4_4B_2 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B137n | DIFFOUT_B137n | AV9 | DQ18B | DQ8B | DQ3B | DQ4_4B_1 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B137p | DIFFOUT_B137p | AW9 | DQ18B | DQ8B | DQ3B | DQ4_4B_0 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B138n | DIFFOUT_B138n | AC12 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B138p | DIFFOUT_B138p | AD11 | DQ19B | DQ9B | DQ4B | DQ5_4B_8 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B139n | DIFFOUT_B139n | AF12 | DQ19B | DQ9B | DQ4B | DQ5_4B_7 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B139p | DIFFOUT_B139p | AG12 | DQ19B | DQ9B | DQ4B | DQ5_4B_6 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B140n | DIFFOUT_B140n | AT9 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B140p | DIFFOUT_B140p | AU9 | DQ19B | DQ9B | DQ4B | DM5_4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B141n | DIFFOUT_B141n | AG11 | DQS#19B/QK19B | DQ9B | DQ4B | DQS#5_4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B141p | DIFFOUT_B141p | AH11 | DQS19B/CQ19B/CQn19B/QKn19B | DQ9B | DQ4B | DQS5_4B |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B142n | DIFFOUT_B142n | AD12 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B142p | DIFFOUT_B142p | AE12 | DQ19B | DQ9B | DQ4B | DQ5_4B_5 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B143n | DIFFOUT_B143n | AP10 | DQ19B | DQ9B | DQ4B | DQ5_4B_4 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B143p | DIFFOUT_B143p | AR10 | DQ19B | DQ9B | DQ4B | DQ5_4B_3 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B144n | DIFFOUT_B144n | AK11 | | | | |
| 4B | VREFB4BN0 | IO | | | DIFFIO_TX_B144p | DIFFOUT_B144p | AL11 | DQ19B | DQ9B | DQ4B | DQ5_4B_2 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B145n | DIFFOUT_B145n | AL10 | DQ19B | DQ9B | DQ4B | DQ5_4B_1 |
| 4B | VREFB4BN0 | IO | | | DIFFIO_RX_B145p | DIFFOUT_B145p | AM10 | DQ19B | DQ9B | DQ4B | DQ5_4B_0 |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|---------------------------|---|------------------------|-------------------------|------------------------------|-------|----------------------------|----------------------------|------------------------|-------------------------------|
| 4A | VREFB4AN0 | IO | | | DIFFIO TX B146n | DIFFOUT B146n | AL9 | | | | |
| 4A | VREFB4AN0 | IO | | | DIFFIO TX B146p | DIFFOUT B146p | AM9 | DQ20B | DQ9B | DQ4B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO RX B147n | DIFFOUT B147n | AW7 | DQ20B | DQ9B | DQ4B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO RX B147p | DIFFOUT B147p | AW8 | DQ20B | DQ9B | DQ4B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO TX B148n | DIFFOUT B148n | AV7 | | | | |
| 4A | VREFB4AN0 | IO | | | DIFFIO TX B148p | DIFFOUT B148p | AV6 | DQ20B | DQ9B | DQ4B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO RX B149n | DIFFOUT B149n | AW6 | DQS20B/CQ20B | DQS9B/CQ9B | DQ4B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO RX B149p | DIFFOUT B149p | AW5 | DQS20B/CQ20B/CQn20B/QKn20B | DQS9B/CQ9B/CQn9B/QKn9B | DQ4B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO TX B150n | DIFFOUT B150n | AK9 | | | | |
| 4A | VREFB4AN0 | IO | | | DIFFIO TX B150p | DIFFOUT B150p | AK10 | DQ20B | DQ9B | DQ4B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO RX B151n | DIFFOUT B151n | AU7 | DQ20B | DQ9B | DQ4B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO RX B151p | DIFFOUT B151p | AU8 | DQ20B | DQ9B | DQ4B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO TX B152n | DIFFOUT B152n | AN9 | | | | |
| 4A | VREFB4AN0 | IO | | | DIFFIO TX B152p | DIFFOUT B152p | AP9 | DQ20B | DQ9B | DQ4B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO RX B153n | DIFFOUT B153n | AT8 | DQ20B | DQ9B | DQ4B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO RX B153p | DIFFOUT B153p | AR9 | DQ20B | DQ9B | DQ4B | |
| 4A | VREFB4AN0 | IO | | DATA10 | DIFFIO TX B154n | DIFFOUT B154n | AH10 | | | | |
| 4A | VREFB4AN0 | IO | | DATA11 | DIFFIO TX B154p | DIFFOUT B154p | AJ10 | DQ21B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | | DATA5 | DIFFIO RX B155n | DIFFOUT B155n | AF10 | DQ21B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | | DATA6 | DIFFIO RX B155p | DIFFOUT B155p | AE11 | DQ21B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | | DATA12 | DIFFIO TX B156n | DIFFOUT B156n | AK6 | | | | |
| 4A | VREFB4AN0 | IO | | DATA13 | DIFFIO TX B156p | DIFFOUT B156p | AL6 | DQ21B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | | DATA7 | DIFFIO RX B157n | DIFFOUT B157n | AH6 | DQSn21B/QK21B | DQ10B | DQS4B/QK4B | |
| 4A | VREFB4AN0 | IO | | DATA8 | DIFFIO RX B157p | DIFFOUT B157p | AJ6 | DQS21B/CQ21B/CQn21B/QKn21B | DQ10B | DQS4B/CQ4B/CQn4B/QKn4B | |
| 4A | VREFB4AN0 | IO | | DATA14 | DIFFIO TX B158n | DIFFOUT B158n | AH9 | | | | |
| 4A | VREFB4AN0 | IO | | DATA15 | DIFFIO TX B158p | DIFFOUT B158p | AJ9 | DQ21B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | | DATA9 | DIFFIO RX B159n | DIFFOUT B159n | AM6 | DQ21B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | | CLKUSR | DIFFIO RX B159p | DIFFOUT B159p | AN6 | DQ21B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | VREFB4AN0 | | | | AH7 | | | | |
| 4A | VREFB4AN0 | IO | | | | | AH8 | DQ21B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | CLK11n | | DIFFIO RX B160n | DIFFOUT B160n | AJ7 | DQ21B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | CLK11p | | DIFFIO RX B160p | DIFFOUT B160p | AK7 | DQ21B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | FPLL_BR_CLKOUT1.FPLL_BR_CLKOUTn | | DIFFIO TX B161n | DIFFOUT B161n | AL7 | | | | |
| 4A | VREFB4AN0 | IO | FPLL_BR_CLKOUT1.FPLL_BR_CLKOUTp.FPLL_BR_FB0 | | DIFFIO TX B161p | DIFFOUT B161p | AM7 | DQ22B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | FPLL_BR_CLKOUT3.FPLL_BR_FBn | | DIFFIO RX B162n | DIFFOUT B162n | AN8 | DQ22B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | FPLL_BR_CLKOUT3.FPLL_BR_FBp | | DIFFIO RX B162p | DIFFOUT B162p | AP8 | DQ22B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | FPLL_BR_CLKOUT2.FPLL_BR_FBp.FPLL_BR_FB1 | | DIFFIO TX B163n | DIFFOUT B163n | AT6 | | | | |
| 4A | VREFB4AN0 | IO | | | DIFFIO TX B163p | DIFFOUT B163p | AV6 | DQ22B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | CLK10n | | DIFFIO RX B164n | DIFFOUT B164n | AR7 | DQSn22B/QK22B | DQS10B/QK10B | DQ4B | |
| 4A | VREFB4AN0 | IO | CLK10p | | DIFFIO RX B164p | DIFFOUT B164p | AT7 | DQS22B/CQ22B/CQn22B/QKn22B | DQS10B/CQ10B/CQn10B/QKn10B | DQ4B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO TX B165n | DIFFOUT B165n | AK8 | | | | |
| 4A | VREFB4AN0 | IO | | | DIFFIO TX B165p | DIFFOUT B165p | AL8 | DQ22B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | CLK9n | | DIFFIO RX B166n | DIFFOUT B166n | AV4 | DQ22B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | CLK9p | | DIFFIO RX B166p | DIFFOUT B166p | AW4 | DQ22B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | | | DIFFIO TX B167n | DIFFOUT B167n | AN7 | | | | |
| 4A | VREFB4AN0 | IO | RZQ_1 | | DIFFIO TX B167p | DIFFOUT B167p | AP7 | DQ22B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | CLK8n | | DIFFIO RX B168n | DIFFOUT B168n | AP6 | DQ22B | DQ10B | DQ4B | |
| 4A | VREFB4AN0 | IO | CLK8p | | DIFFIO RX B168p | DIFFOUT B168p | AR6 | DQ22B | DQ10B | DQ4B | |
| | | RREF_BR | | | | | AW2 | | | | |
| | | DNU | | | | | AV3 | | | | |
| | | DNU | | | | | AW3 | | | | |
| GXB R0 | | REFCLK0Rp | | | | | AF8 | | | | |
| GXB R0 | | REFCLK0Rn | | | | | AF7 | | | | |
| GXB R0 | | GXB_RX_R0n.GXB_REFCLK_R0n | | | | | AU2 | | | | |
| GXB R0 | | GXB_RX_R0p.GXB_REFCLK_R0p | | | | | AU1 | | | | |
| GXB R0 | | GXB_TX_R0p | | | | | AT3 | | | | |
| GXB R0 | | GXB_TX_R0n | | | | | AT4 | | | | |
| GXB R0 | | GXB_RX_R1n.GXB_REFCLK_R1n | | | | | AR2 | | | | |
| GXB R0 | | GXB_RX_R1p.GXB_REFCLK_R1p | | | | | AR1 | | | | |
| GXB R0 | | GXB_TX_R1p | | | | | AP3 | | | | |
| GXB R0 | | GXB_TX_R1n | | | | | AP4 | | | | |
| GXB R0 | | GXB_RX_R2n.GXB_REFCLK_R2n | | | | | AN2 | | | | |
| GXB R0 | | GXB_RX_R2p.GXB_REFCLK_R2p | | | | | AN1 | | | | |
| GXB R0 | | GXB_TX_R2p | | | | | AM3 | | | | |
| GXB R0 | | GXB_TX_R2n | | | | | AM4 | | | | |
| GXB R0 | | GXB_RX_R3n.GXB_REFCLK_R3n | | | | | AL2 | | | | |
| GXB R0 | | GXB_RX_R3p.GXB_REFCLK_R3p | | | | | AL1 | | | | |
| GXB R0 | | GXB_TX_R3p | | | | | AK3 | | | | |
| GXB R0 | | GXB_TX_R3n | | | | | AK4 | | | | |
| GXB R0 | | GXB_RX_R4n.GXB_REFCLK_R4n | | | | | AJ2 | | | | |
| GXB R0 | | GXB_RX_R4p.GXB_REFCLK_R4p | | | | | AJ1 | | | | |
| GXB R0 | | GXB_TX_R4p | | | | | AH3 | | | | |
| GXB R0 | | GXB_TX_R4n | | | | | AH4 | | | | |
| GXB R0 | | GXB_RX_R5n.GXB_REFCLK_R5n | | | | | AG2 | | | | |
| GXB R0 | | GXB_RX_R5p.GXB_REFCLK_R5p | | | | | AG1 | | | | |
| GXB R0 | | GXB_TX_R5p | | | | | AF3 | | | | |
| GXB R0 | | GXB_TX_R5n | | | | | AF4 | | | | |
| GXB R0 | | REFCLK1Rp | | | | | AD9 | | | | |
| GXB R0 | | REFCLK1Rn | | | | | AD8 | | | | |
| GXB R1 | | REFCLK2Rp | | | | | AB9 | | | | |
| GXB R1 | | REFCLK2Rn | | | | | AB8 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|-----------------------------|---|------------------------|-------------------------|------------------------------|-------|------------------------|------------------|------------------------|-------------------------------|
| GXB R1 | | GXB_RX_R6n.GXB_REFCLK_R6n | | | | | AE2 | | | | |
| GXB R1 | | GXB_RX_R6p.GXB_REFCLK_R6p | | | | | AE1 | | | | |
| GXB R1 | | GXB_TX_R6p | | | | | AD3 | | | | |
| GXB R1 | | GXB_TX_R6n | | | | | AD4 | | | | |
| GXB R1 | | GXB_RX_R7n.GXB_REFCLK_R7n | | | | | AC2 | | | | |
| GXB R1 | | GXB_RX_R7p.GXB_REFCLK_R7p | | | | | AC1 | | | | |
| GXB R1 | | GXB_TX_R7p | | | | | AB3 | | | | |
| GXB R1 | | GXB_TX_R7n | | | | | AB4 | | | | |
| GXB R1 | | GXB_RX_R8n.GXB_REFCLK_R8n | | | | | AA2 | | | | |
| GXB R1 | | GXB_RX_R8p.GXB_REFCLK_R8p | | | | | AA1 | | | | |
| GXB R1 | | GXB_TX_R8p | | | | | Y3 | | | | |
| GXB R1 | | GXB_TX_R8n | | | | | Y4 | | | | |
| GXB R1 | | GXB_RX_R9n.GXB_REFCLK_R9n | | | | | W2 | | | | |
| GXB R1 | | GXB_RX_R9p.GXB_REFCLK_R9p | | | | | W1 | | | | |
| GXB R1 | | GXB_TX_R9p | | | | | V3 | | | | |
| GXB R1 | | GXB_TX_R9n | | | | | V4 | | | | |
| GXB R1 | | GXB_RX_R10n.GXB_REFCLK_R10n | | | | | U2 | | | | |
| GXB R1 | | GXB_RX_R10p.GXB_REFCLK_R10p | | | | | U1 | | | | |
| GXB R1 | | GXB_TX_R10p | | | | | T3 | | | | |
| GXB R1 | | GXB_TX_R10n | | | | | T4 | | | | |
| GXB R1 | | GXB_RX_R11n.GXB_REFCLK_R11n | | | | | R2 | | | | |
| GXB R1 | | GXB_RX_R11p.GXB_REFCLK_R11p | | | | | R1 | | | | |
| GXB R1 | | GXB_TX_R11p | | | | | P3 | | | | |
| GXB R1 | | GXB_TX_R11n | | | | | P4 | | | | |
| GXB R1 | | REFCLK3Rp | | | | | Y9 | | | | |
| GXB R1 | | REFCLK3Rn | | | | | Y8 | | | | |
| GXB R2 | | REFCLK4Rp | | | | | V9 | | | | |
| GXB R2 | | REFCLK4Rn | | | | | V8 | | | | |
| GXB R2 | | GXB_RX_R12n.GXB_REFCLK_R12n | | | | | N2 | | | | |
| GXB R2 | | GXB_RX_R12p.GXB_REFCLK_R12p | | | | | N1 | | | | |
| GXB R2 | | GXB_TX_R12p | | | | | M3 | | | | |
| GXB R2 | | GXB_TX_R12n | | | | | M4 | | | | |
| GXB R2 | | GXB_RX_R13n.GXB_REFCLK_R13n | | | | | L2 | | | | |
| GXB R2 | | GXB_RX_R13p.GXB_REFCLK_R13p | | | | | L1 | | | | |
| GXB R2 | | GXB_TX_R13p | | | | | K3 | | | | |
| GXB R2 | | GXB_TX_R13n | | | | | K4 | | | | |
| GXB R2 | | GXB_RX_R14n.GXB_REFCLK_R14n | | | | | J2 | | | | |
| GXB R2 | | GXB_RX_R14p.GXB_REFCLK_R14p | | | | | J1 | | | | |
| GXB R2 | | GXB_TX_R14p | | | | | H3 | | | | |
| GXB R2 | | GXB_TX_R14n | | | | | H4 | | | | |
| GXB R2 | | GXB_RX_R15n.GXB_REFCLK_R15n | | | | | G2 | | | | |
| GXB R2 | | GXB_RX_R15p.GXB_REFCLK_R15p | | | | | G1 | | | | |
| GXB R2 | | GXB_TX_R15p | | | | | F3 | | | | |
| GXB R2 | | GXB_TX_R15n | | | | | F4 | | | | |
| GXB R2 | | GXB_RX_R16n.GXB_REFCLK_R16n | | | | | E2 | | | | |
| GXB R2 | | GXB_RX_R16p.GXB_REFCLK_R16p | | | | | E1 | | | | |
| GXB R2 | | GXB_TX_R16p | | | | | D3 | | | | |
| GXB R2 | | GXB_TX_R16n | | | | | D4 | | | | |
| GXB R2 | | GXB_RX_R17n.GXB_REFCLK_R17n | | | | | C2 | | | | |
| GXB R2 | | GXB_RX_R17p.GXB_REFCLK_R17p | | | | | C1 | | | | |
| GXB R2 | | GXB_TX_R17p | | | | | B3 | | | | |
| GXB R2 | | GXB_TX_R17n | | | | | B4 | | | | |
| GXB R2 | | REFCLK5Rp | | | | | T9 | | | | |
| GXB R2 | | REFCLK5Rn | | | | | T8 | | | | |
| | | DNU | | | | | C5 | | | | |
| | | GND | | | | | N6 | | | | |
| 7A | VREFB7AN0 | IO | CLK12p | | DIFFIO_RX_T1p | DIFFFOUT_T1p | C6 | DQ1T | | DQ1T | |
| 7A | VREFB7AN0 | IO | CLK12n | | DIFFIO_RX_T1n | DIFFFOUT_T1n | D6 | DQ1T | | DQ1T | |
| 7A | VREFB7AN0 | IO | RZQ_5 | | DIFFIO_TX_T2p | DIFFFOUT_T2p | F6 | DQ1T | | DQ1T | |
| 7A | VREFB7AN0 | IO | | | DIFFIO_TX_T2n | DIFFFOUT_T2n | G6 | | | | |
| 7A | VREFB7AN0 | IO | CLK13p | | DIFFIO_RX_T3p | DIFFFOUT_T3p | A6 | DQ1T | | DQ1T | |
| 7A | VREFB7AN0 | IO | CLK13n | | DIFFIO_RX_T3n | DIFFFOUT_T3n | B6 | DQ1T | | DQ1T | |
| 7A | VREFB7AN0 | IO | | | DIFFIO_TX_T4p | DIFFFOUT_T4p | F7 | DQ1T | | DQ1T | |
| 7A | VREFB7AN0 | IO | | | DIFFIO_TX_T4n | DIFFFOUT_T4n | G7 | | | | |
| 7A | VREFB7AN0 | IO | CLK14p | | DIFFIO_RX_T5p | DIFFFOUT_T5p | E6 | DQS1T/CQ1T/CQn1T/QKn1T | | DQS1T/CQ1T/CQn1T/QKn1T | |
| 7A | VREFB7AN0 | IO | CLK14n | | DIFFIO_RX_T5n | DIFFFOUT_T5n | E7 | DQSn1T/QKn1T | | DQSn1T/QKn1T | |
| 7A | VREFB7AN0 | IO | | | DIFFIO_TX_T6p | DIFFFOUT_T6p | C7 | DQ1T | | DQ1T | |
| 7A | VREFB7AN0 | IO | | | DIFFIO_TX_T6n | DIFFFOUT_T6n | D7 | | | | |
| 7A | VREFB7AN0 | IO | FPLL_TR_CLKOUT2.FPLL_TR_FBp.FPLL_TR_FB1 | | DIFFIO_RX_T7n | DIFFFOUT_T7n | F8 | DQ1T | | DQ1T | |
| 7A | VREFB7AN0 | IO | FPLL_TR_CLKOUT3.FPLL_TR_FBn | | DIFFIO_RX_T7p | DIFFFOUT_T7p | G8 | DQ1T | | DQ1T | |
| 7A | VREFB7AN0 | IO | FPLL_TR_CLKOUT0.FPLL_TR_CLKOUTp.FPLL_TR_FB0 | | DIFFIO_TX_T8p | DIFFFOUT_T8p | J9 | DQ1T | | DQ1T | |
| 7A | VREFB7AN0 | IO | FPLL_TR_CLKOUT1.FPLL_TR_CLKOUTn | | DIFFIO_TX_T8n | DIFFFOUT_T8n | K8 | | | | |
| 7A | VREFB7AN0 | IO | CLK15p | | DIFFIO_RX_T9p | DIFFFOUT_T9p | H6 | DQ2T | | DQ1T | |
| 7A | VREFB7AN0 | IO | CLK15n | | DIFFIO_RX_T9n | DIFFFOUT_T9n | J6 | DQ2T | | DQ1T | |
| 7A | VREFB7AN0 | IO | | | | | K7 | DQ2T | | DQ1T | |
| 7A | VREFB7AN0 | IO | VREFB7AN0 | | | | J7 | | | | |
| 7A | VREFB7AN0 | IO | | DEV_OE | DIFFIO_RX_T10p | DIFFFOUT_T10p | K6 | DQ2T | | DQ1T | |
| 7A | VREFB7AN0 | IO | | DEV_CLRn | DIFFIO_RX_T10n | DIFFFOUT_T10n | L6 | DQ2T | | DQ1T | |
| 7A | VREFB7AN0 | IO | | nPERSTR0 | DIFFIO_TX_T11p | DIFFFOUT_T11p | M8 | DQ2T | | DQ1T | |
| 7A | VREFB7AN0 | IO | | nPERSTL0 | DIFFIO_TX_T11n | DIFFFOUT_T11n | N9 | | | | |
| 7A | VREFB7AN0 | IO | | CvP_CONFDONE | DIFFIO_RX_T12p | DIFFFOUT_T12p | P10 | DQS2T/CQ2T/CQn2T/QKn2T | | DQ1T | DQS1T/CQ1T/CQn1T/QKn1T |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|----------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|------------------------|------------------------|------------------------|-------------------------------|
| 7A | VREFB7A0 | IO | | CRC_ERROR | DIFFIO_RX_T12n | DIFFOUT_T12n | P9 | DQS2nT/QK2T | DQ1T | DQS1T/QK1T | |
| 7A | VREFB7A0 | IO | | PR_DONE | DIFFIO_TX_T13p | DIFFOUT_T13p | L7 | DQ2T | DQ1T | | |
| 7A | VREFB7A0 | IO | | PR_REQUEST | DIFFIO_TX_T13n | DIFFOUT_T13n | M6 | | | | |
| 7A | VREFB7A0 | IO | | INIT_DONE | DIFFIO_RX_T14p | DIFFOUT_T14p | M7 | DQ2T | DQ1T | DQ1T | |
| 7A | VREFB7A0 | IO | | nCEO | DIFFIO_RX_T14n | DIFFOUT_T14n | N7 | DQ2T | DQ1T | DQ1T | |
| 7A | VREFB7A0 | IO | | PR_ERROR | DIFFIO_TX_T15p | DIFFOUT_T15p | L10 | DQ2T | DQ1T | DQ1T | |
| 7A | VREFB7A0 | IO | | PR_READY | DIFFIO_TX_T15n | DIFFOUT_T15n | M10 | | | | |
| 7A | VREFB7A0 | IO | | | DIFFIO_RX_T16p | DIFFOUT_T16p | D9 | DQ3T | DQ2T | DQ1T | |
| 7A | VREFB7A0 | IO | | | DIFFIO_RX_T16n | DIFFOUT_T16n | E9 | DQ3T | DQ2T | DQ1T | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T17p | DIFFOUT_T17p | F9 | DQ3T | DQ2T | DQ1T | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T17n | DIFFOUT_T17n | G9 | | | | |
| 7A | VREFB7A0 | IO | | | DIFFIO_RX_T18p | DIFFOUT_T18p | C8 | DQ3T | DQ2T | DQ1T | |
| 7A | VREFB7A0 | IO | | | DIFFIO_RX_T18n | DIFFOUT_T18n | D8 | DQ3T | DQ2T | DQ1T | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T19p | DIFFOUT_T19p | K9 | DQ3T | DQ2T | DQ1T | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T19n | DIFFOUT_T19n | L9 | | | | |
| 7A | VREFB7A0 | IO | | | DIFFIO_RX_T20p | DIFFOUT_T20p | A7 | DQS3T/CQ3T/CQn3T/QKn3T | DQS2T/CQ2T/CQn2T/QKn2T | DQ1T | |
| 7A | VREFB7A0 | IO | | | DIFFIO_RX_T20n | DIFFOUT_T20n | B7 | DQS3T/QK3T | DQS2T/QK2T | DQ1T | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T21p | DIFFOUT_T21p | B9 | DQ3T | DQ2T | DQ1T | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T21n | DIFFOUT_T21n | C9 | | | | |
| 7A | VREFB7A0 | IO | | | DIFFIO_RX_T22p | DIFFOUT_T22p | A9 | DQ3T | DQ2T | DQ1T | |
| 7A | VREFB7A0 | IO | | | DIFFIO_RX_T22n | DIFFOUT_T22n | A8 | DQ3T | DQ2T | DQ1T | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T23p | DIFFOUT_T23p | H9 | DQ3T | DQ2T | DQ1T | |
| 7A | VREFB7A0 | IO | | | DIFFIO_TX_T23n | DIFFOUT_T23n | J9 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T24p | DIFFOUT_T24p | E10 | DQ4T | DQ2T | DQ1T | DQ5_7B_0 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T24n | DIFFOUT_T24n | F10 | DQ4T | DQ2T | DQ1T | DQ5_7B_1 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T25p | DIFFOUT_T25p | N10 | DQ4T | DQ2T | DQ1T | DQ5_7B_2 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T25n | DIFFOUT_T25n | M11 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T26p | DIFFOUT_T26p | B10 | DQ4T | DQ2T | DQ1T | DQ5_7B_3 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T26n | DIFFOUT_T26n | C10 | DQ4T | DQ2T | DQ1T | DQ5_7B_4 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T27p | DIFFOUT_T27p | H10 | DQ4T | DQ2T | DQ1T | DQ5_7B_5 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T27n | DIFFOUT_T27n | J10 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T28p | DIFFOUT_T28p | P12 | DQS4T/CQ4T/CQn4T/QKn4T | DQ2T | DQ1T | DQS5_7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T28n | DIFFOUT_T28n | R12 | DQS4T/QK4T | DQ2T | DQ1T | DQS#5_7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T29p | DIFFOUT_T29p | R11 | DQ4T | DQ2T | DQ1T | DM5_7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T29n | DIFFOUT_T29n | T11 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T30p | DIFFOUT_T30p | A11 | DQ4T | DQ2T | DQ1T | DQ5_7B_6 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T30n | DIFFOUT_T30n | A10 | DQ4T | DQ2T | DQ1T | DQ5_7B_7 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T31p | DIFFOUT_T31p | J11 | DQ4T | DQ2T | DQ1T | DQ5_7B_8 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T31n | DIFFOUT_T31n | K11 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T32p | DIFFOUT_T32p | M12 | DQ5T | DQ3T | DQ2T | DQ4_7B_0 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T32n | DIFFOUT_T32n | N12 | DQ5T | DQ3T | DQ2T | DQ4_7B_1 |
| 7B | VREFB7B0 | IO | | | | | F11 | DQ5T | DQ3T | DQ2T | DQ4_7B_2 |
| 7B | VREFB7B0 | IO | VREFB7B0 | | | | G11 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T33p | DIFFOUT_T33p | C11 | DQ5T | DQ3T | DQ2T | DQ4_7B_3 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T33n | DIFFOUT_T33n | D11 | DQ5T | DQ3T | DQ2T | DQ4_7B_4 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T34p | DIFFOUT_T34p | K12 | DQ5T | DQ3T | DQ2T | DQ4_7B_5 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T34n | DIFFOUT_T34n | L12 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T35p | DIFFOUT_T35p | D12 | DQS5T/CQ5T/CQn5T/QKn5T | DQS3T/CQ3T/CQn3T/QKn3T | DQ2T | DQS4_7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T35n | DIFFOUT_T35n | E12 | DQS5T/QK5T | DQS3T/QK3T | DQ2T | DQS#4_7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T36p | DIFFOUT_T36p | F12 | DQ5T | DQ3T | DQ2T | DM4_7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T36n | DIFFOUT_T36n | G12 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T37p | DIFFOUT_T37p | P13 | DQ5T | DQ3T | DQ2T | DQ4_7B_6 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T37n | DIFFOUT_T37n | R13 | DQ5T | DQ3T | DQ2T | DQ4_7B_7 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T38p | DIFFOUT_T38p | H12 | DQ5T | DQ3T | DQ2T | DQ4_7B_8 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T38n | DIFFOUT_T38n | J12 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T39p | DIFFOUT_T39p | B12 | DQ6T | DQ3T | DQ2T | DQ3_7B_0 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T39n | DIFFOUT_T39n | C12 | DQ6T | DQ3T | DQ2T | DQ3_7B_1 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T40p | DIFFOUT_T40p | M13 | DQ6T | DQ3T | DQ2T | DQ3_7B_2 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T40n | DIFFOUT_T40n | N13 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T41p | DIFFOUT_T41p | A13 | DQ6T | DQ3T | DQ2T | DQ3_7B_3 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T41n | DIFFOUT_T41n | A12 | DQ6T | DQ3T | DQ2T | DQ3_7B_4 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T42p | DIFFOUT_T42p | J13 | DQ6T | DQ3T | DQ2T | DQ3_7B_5 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T42n | DIFFOUT_T42n | K13 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T43p | DIFFOUT_T43p | D13 | DQS6T/CQ6T/CQn6T/QKn6T | DQ3T | DQS2T/CQ2T/CQn2T/QKn2T | DQS3_7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T43n | DIFFOUT_T43n | E13 | DQS6T/QK6T | DQ3T | DQS#3_7B | DQS#3_7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T44p | DIFFOUT_T44p | A14 | DQ6T | DQ3T | DQ2T | DM3_7B |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T44n | DIFFOUT_T44n | B13 | | | | |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T45p | DIFFOUT_T45p | C14 | DQ6T | DQ3T | DQ2T | DQ3_7B_6 |
| 7B | VREFB7B0 | IO | | | DIFFIO_RX_T45n | DIFFOUT_T45n | D14 | DQ6T | DQ3T | DQ2T | DQ3_7B_7 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T46p | DIFFOUT_T46p | G13 | DQ6T | DQ3T | DQ2T | DQ3_7B_8 |
| 7B | VREFB7B0 | IO | | | DIFFIO_TX_T46n | DIFFOUT_T46n | H13 | | | | |
| 7C | VREFB7C0 | IO | | | DIFFIO_RX_T47p | DIFFOUT_T47p | R14 | DQ7T | DQ4T | DQ2T | DQ2_7C_0 |
| 7C | VREFB7C0 | IO | | | DIFFIO_RX_T47n | DIFFOUT_T47n | T14 | DQ7T | DQ4T | DQ2T | DQ2_7C_1 |
| 7C | VREFB7C0 | IO | | | DIFFIO_TX_T48p | DIFFOUT_T48p | M14 | DQ7T | DQ4T | DQ2T | DQ2_7C_2 |
| 7C | VREFB7C0 | IO | | | DIFFIO_TX_T48n | DIFFOUT_T48n | N14 | | | | |
| 7C | VREFB7C0 | IO | | | DIFFIO_RX_T49p | DIFFOUT_T49p | F14 | DQ7T | DQ4T | DQ2T | DQ2_7C_3 |
| 7C | VREFB7C0 | IO | | | DIFFIO_RX_T49n | DIFFOUT_T49n | G14 | DQ7T | DQ4T | DQ2T | DQ2_7C_4 |
| 7C | VREFB7C0 | IO | | | DIFFIO_TX_T50p | DIFFOUT_T50p | L15 | DQ7T | DQ4T | DQ2T | DQ2_7C_5 |
| 7C | VREFB7C0 | IO | | | DIFFIO_TX_T50n | DIFFOUT_T50n | M15 | | | | |
| 7C | VREFB7C0 | IO | | | DIFFIO_RX_T51p | DIFFOUT_T51p | R15 | DQS7T/CQ7T/CQn7T/QKn7T | DQS4T/CQ4T/CQn4T/QKn4T | DQ2T | DQS2_7C |
| 7C | VREFB7C0 | IO | | | DIFFIO_RX_T51n | DIFFOUT_T51n | T15 | DQS7T/QK7T | DQS4T/QK4T | DQ2T | DQS#2_7C |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|----------------------------|------------------------|------------------|-------------------------------|
| 7C | VREFB7CN0 | IO | | | DIFFIO TX T52p | DIFFOUT T52p | N15 | DQ7T | DQ4T | DQ2T | DM2 7C |
| 7C | VREFB7CN0 | IO | | | DIFFIO TX T52n | DIFFOUT T52n | P15 | | | | |
| 7C | VREFB7CN0 | IO | | | DIFFIO RX T53p | DIFFOUT T53p | E15 | DQ7T | DQ4T | DQ2T | DQ2 7C 6 |
| 7C | VREFB7CN0 | IO | | | DIFFIO RX T53n | DIFFOUT T53n | F15 | DQ7T | DQ4T | DQ2T | DQ2 7C 7 |
| 7C | VREFB7CN0 | IO | | | DIFFIO TX T54p | DIFFOUT T54p | J14 | DQ7T | DQ4T | DQ2T | DQ2 7C 8 |
| 7C | VREFB7CN0 | IO | | | DIFFIO TX T54n | DIFFOUT T54n | K14 | | | | |
| 7C | VREFB7CN0 | IO | | | DIFFIO RX T55p | DIFFOUT T55p | P16 | DQ8T | DQ4T | DQ2T | DQ1 7C 0 |
| 7C | VREFB7CN0 | IO | | | DIFFIO RX T55n | DIFFOUT T55n | R16 | DQ8T | DQ4T | DQ2T | DQ1 7C 1 |
| 7C | VREFB7CN0 | IO | | | | | C15 | DQ8T | DQ4T | DQ2T | DQ1 7C 2 |
| 7C | VREFB7CN0 | IO | VREFB7CN0 | | | | D15 | | | | |
| 7C | VREFB7CN0 | IO | | | DIFFIO RX T56p | DIFFOUT T56p | M16 | DQ8T | DQ4T | DQ2T | DQ1 7C 3 |
| 7C | VREFB7CN0 | IO | | | DIFFIO RX T56n | DIFFOUT T56n | N16 | DQ8T | DQ4T | DQ2T | DQ1 7C 4 |
| 7C | VREFB7CN0 | IO | | | DIFFIO TX T57p | DIFFOUT T57p | H15 | DQ8T | DQ4T | DQ2T | DQ1 7C 5 |
| 7C | VREFB7CN0 | IO | | | DIFFIO TX T57n | DIFFOUT T57n | J15 | | | | |
| 7C | VREFB7CN0 | IO | | | DIFFIO RX T58p | DIFFOUT T58p | G16 | DQS8T/CQ8T/CQn8T/QKn8T | DQ4T | DQ2T | DQS1 7C |
| 7C | VREFB7CN0 | IO | | | DIFFIO RX T58n | DIFFOUT T58n | H16 | DQSn8T/QK8T | DQ4T | DQ2T | DQS#1 7C |
| 7C | VREFB7CN0 | IO | | | DIFFIO TX T59p | DIFFOUT T59p | A15 | DQ8T | DQ4T | DQ2T | DM1 7C |
| 7C | VREFB7CN0 | IO | | | DIFFIO TX T59n | DIFFOUT T59n | B15 | | | | |
| 7C | VREFB7CN0 | IO | | | DIFFIO RX T60p | DIFFOUT T60p | D16 | DQ8T | DQ4T | DQ2T | DQ1 7C 6 |
| 7C | VREFB7CN0 | IO | | | DIFFIO RX T60n | DIFFOUT T60n | E16 | DQ8T | DQ4T | DQ2T | DQ1 7C 7 |
| 7C | VREFB7CN0 | IO | | | DIFFIO TX T61p | DIFFOUT T61p | J16 | DQ8T | DQ4T | DQ2T | DQ1 7C 8 |
| 7C | VREFB7CN0 | IO | | | DIFFIO TX T61n | DIFFOUT T61n | K16 | | | | RESET# 7D |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T62p | DIFFOUT T62p | N18 | DQ9T | DQ5T | | CK 7D |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T62n | DIFFOUT T62n | P18 | DQ9T | DQ5T | | CK# 7D |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T63p | DIFFOUT T63p | M17 | DQ9T | DQ5T | | CKE 7D 0 |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T63n | DIFFOUT T63n | N17 | | | | CKE 7D 1 |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T64p | DIFFOUT T64p | B16 | DQ9T | DQ5T | | A 7D 0 |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T64n | DIFFOUT T64n | C16 | DQ9T | DQ5T | | A 7D 1 |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T65p | DIFFOUT T65p | J17 | DQ9T | DQ5T | | A 7D 2 |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T65n | DIFFOUT T65n | K17 | | | | A 7D 3 |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T66p | DIFFOUT T66p | F17 | DQS9T/CQ9T/CQn9T/QKn9T | DQS5T/CQ5T/CQn5T/QKn5T | | A 7D 4 |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T66n | DIFFOUT T66n | G17 | DQS#9T/QK9T | DQS#5T/QK5T | | A 7D 5 |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T67p | DIFFOUT T67p | R17 | DQ9T | DQ5T | | A 7D 6 |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T67n | DIFFOUT T67n | T17 | | | | A 7D 7 |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T68p | DIFFOUT T68p | C17 | DQ9T | DQ5T | | A 7D 8 |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T68n | DIFFOUT T68n | D17 | DQ9T | DQ5T | | A 7D 9 |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T69p | DIFFOUT T69p | K18 | DQ9T | DQ5T | | A 7D 10 |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T69n | DIFFOUT T69n | L18 | | | | A 7D 11 |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T70p | DIFFOUT T70p | R19 | DQ10T | DQ6T | | A 7D 12 |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T70n | DIFFOUT T70n | T19 | DQ10T | DQ6T | | A 7D 13 |
| 7D | VREFB7DN0 | IO | | | | | R18 | DQ10T | DQ6T | | A 7D 14 |
| 7D | VREFB7DN0 | IO | VREFB7DN0 | | | | T18 | | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T71p | DIFFOUT T71p | E18 | DQ10T | DQ6T | | BA 7D 0 |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T71n | DIFFOUT T71n | F18 | DQ10T | DQ6T | | BA 7D 1 |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T72p | DIFFOUT T72p | H18 | DQ10T | DQ6T | | BA 7D 2 |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T72n | DIFFOUT T72n | J18 | | | | RAS# 7D |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T73p | DIFFOUT T73p | N19 | DQS10T/CQ10T/CQn10T/QKn10T | DQ6T | | CAS# 7D |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T73n | DIFFOUT T73n | P19 | DQS#10T/QK10T | DQ6T | | WE# 7D |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T74p | DIFFOUT T74p | B18 | DQ10T | DQ6T | | ODT 7D 0 |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T74n | DIFFOUT T74n | C18 | | | | ODT 7D 1 |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T75p | DIFFOUT T75p | A17 | DQ10T | DQ6T | | A 7D 15 |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T75n | DIFFOUT T75n | A16 | DQ10T | DQ6T | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T76p | DIFFOUT T76p | L19 | DQ10T | DQ6T | | CS# 7D 0 |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T76n | DIFFOUT T76n | M19 | | | | CS# 7D 1 |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T77p | DIFFOUT T77p | F19 | DQ11T | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T77n | DIFFOUT T77n | G19 | DQ11T | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T78p | DIFFOUT T78p | J19 | DQ11T | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T78n | DIFFOUT T78n | K19 | | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T79p | DIFFOUT T79p | C19 | DQ11T | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T79n | DIFFOUT T79n | D19 | DQ11T | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T80p | DIFFOUT T80p | J20 | DQ11T | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T80n | DIFFOUT T80n | K20 | | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T81p | DIFFOUT T81p | A18 | DQS11T/CQ11T/CQn11T/QKn11T | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T81n | DIFFOUT T81n | A19 | DQS#11T/QK11T | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T82p | DIFFOUT T82p | R20 | DQ11T | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T82n | DIFFOUT T82n | T20 | | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T83p | DIFFOUT T83p | F20 | DQ11T | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO RX T83n | DIFFOUT T83n | G20 | DQ11T | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T84p | DIFFOUT T84p | M20 | DQ11T | | | |
| 7D | VREFB7DN0 | IO | | | DIFFIO TX T84n | DIFFOUT T84n | N20 | | | | |
| | | | VCCA FPLL | | | | V20 | | | | |
| | | | VCCD FPLL | | | | V19 | | | | |
| | | | DNU | | | | P21 | | | | |
| 8D | VREFB8DN0 | IO | CLK19p | | DIFFIO RX T85p | DIFFOUT T85p | C20 | DQ12T | DQ6T | DQ3T | |
| 8D | VREFB8DN0 | IO | CLK19n | | DIFFIO RX T85n | DIFFOUT T85n | D20 | DQ12T | DQ6T | DQ3T | |
| 8D | VREFB8DN0 | IO | | | DIFFIO TX T86p | DIFFOUT T86p | M21 | DQ12T | DQ6T | DQ3T | |
| 8D | VREFB8DN0 | IO | | | DIFFIO TX T86n | DIFFOUT T86n | N21 | | | | |
| 8D | VREFB8DN0 | IO | CLK18p | | DIFFIO RX T87p | DIFFOUT T87p | G21 | DQ12T | DQ6T | DQ3T | |
| 8D | VREFB8DN0 | IO | CLK18n | | DIFFIO RX T87n | DIFFOUT T87n | H21 | DQ12T | DQ6T | DQ3T | |
| 8D | VREFB8DN0 | IO | | | DIFFIO TX T88p | DIFFOUT T88p | D21 | DQ12T | DQ6T | DQ3T | |
| 8D | VREFB8DN0 | IO | | | DIFFIO TX T88n | DIFFOUT T88n | E21 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|----------|----------------------|---|------------------------|-------------------------|------------------------------|-------|----------------------------|------------------------|------------------------|-------------------------------|
| 8D | VREFB8D0 | IO | FPLL_TC_CLKOUT2,FPLL_TC_FBp,FPLL_TC_FB1 | | DIFFIO_RX_T89p | DIFFOUT_T89p | A20 | DQS12T/CQ12T/CQn12T/QKn12T | DQS6T/CQ6T/CQn6T/QKn6T | DQ3T | |
| 8D | VREFB8D0 | IO | FPLL_TC_CLKOUT3,FPLL_TC_FBn | | DIFFIO_RX_T89n | DIFFOUT_T89n | B21 | DQSn12T/QKn12T | DQSn6T/QKn6T | DQ3T | |
| 8D | VREFB8D0 | IO | FPLL_TC_CLKOUT0,FPLL_TC_CLKOUTp,FPLL_TC_FB0 | | DIFFIO_TX_T90p | DIFFOUT_T90p | J21 | DQ12T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | FPLL_TC_CLKOUT1,FPLL_TC_CLKOUTn | | DIFFIO_TX_T90n | DIFFOUT_T90n | K21 | | | | |
| 8D | VREFB8D0 | IO | CLK17p | | DIFFIO_RX_T91p | DIFFOUT_T91p | A22 | DQ12T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | CLK17n | | DIFFIO_RX_T91n | DIFFOUT_T91n | A21 | DQ12T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T92p | DIFFOUT_T92p | R21 | DQ12T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T92n | DIFFOUT_T92n | T21 | | | | |
| 8D | VREFB8D0 | IO | CLK16p | | DIFFIO_RX_T93p | DIFFOUT_T93p | B22 | DQ13T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | CLK16n | | DIFFIO_RX_T93n | DIFFOUT_T93n | C22 | DQ13T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | | | | | J22 | DQ13T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | VREFB8D0 | | | | H22 | | | | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T94p | DIFFOUT_T94p | E22 | DQ13T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T94n | DIFFOUT_T94n | F22 | DQ13T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T95p | DIFFOUT_T95p | A23 | DQ13T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T95n | DIFFOUT_T95n | A24 | | | | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T96p | DIFFOUT_T96p | C23 | DQS13T/CQ13T/CQn13T/QKn13T | DQ6T | DQS3T/CQ3T/CQn3T/QKn3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T96n | DIFFOUT_T96n | D23 | DQSn13T/QKn13T | DQ6T | DQSn3T/QKn3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T97p | DIFFOUT_T97p | L22 | DQ13T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T97n | DIFFOUT_T97n | M22 | | | | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T98p | DIFFOUT_T98p | N22 | DQ13T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T98n | DIFFOUT_T98n | P22 | DQ13T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T99p | DIFFOUT_T99p | R22 | DQ13T | DQ6T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T99n | DIFFOUT_T99n | T22 | | | | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T100p | DIFFOUT_T100p | F23 | DQ14T | DQ7T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T100n | DIFFOUT_T100n | G23 | DQ14T | DQ7T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T101p | DIFFOUT_T101p | R23 | DQ14T | DQ7T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T101n | DIFFOUT_T101n | T23 | | | | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T102p | DIFFOUT_T102p | B24 | DQ14T | DQ7T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T102n | DIFFOUT_T102n | C24 | DQ14T | DQ7T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T103p | DIFFOUT_T103p | M23 | DQ14T | DQ7T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T103n | DIFFOUT_T103n | N23 | | | | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T104p | DIFFOUT_T104p | D24 | DQS14T/CQ14T/CQn14T/QKn14T | DQS7T/CQ7T/CQn7T/QKn7T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T104n | DIFFOUT_T104n | E24 | DQSn14T/QKn14T | DQSn7T/QKn7T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T105p | DIFFOUT_T105p | J23 | DQ14T | DQ7T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T105n | DIFFOUT_T105n | K23 | | | | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T106p | DIFFOUT_T106p | F24 | DQ14T | DQ7T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_RX_T106n | DIFFOUT_T106n | G24 | DQ14T | DQ7T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T107p | DIFFOUT_T107p | H24 | DQ14T | DQ7T | DQ3T | |
| 8D | VREFB8D0 | IO | | | DIFFIO_TX_T107n | DIFFOUT_T107n | J24 | | | | |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T108p | DIFFOUT_T108p | T26 | DQ15T | DQ7T | DQ3T | DQ5_8C_0 |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T108n | DIFFOUT_T108n | T25 | DQ15T | DQ7T | DQ3T | DQ5_8C_1 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T109p | DIFFOUT_T109p | G25 | DQ15T | DQ7T | DQ3T | DQ5_8C_2 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T109n | DIFFOUT_T109n | H25 | | | | |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T110p | DIFFOUT_T110p | N24 | DQ15T | DQ7T | DQ3T | DQ5_8C_3 |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T110n | DIFFOUT_T110n | P24 | DQ15T | DQ7T | DQ3T | DQ5_8C_4 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T111p | DIFFOUT_T111p | R24 | DQ15T | DQ7T | DQ3T | DQ5_8C_5 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T111n | DIFFOUT_T111n | T24 | | | | |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T112p | DIFFOUT_T112p | A25 | DQS15T/CQ15T/CQn15T/QKn15T | DQ7T | DQ3T | DQS5_8C |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T112n | DIFFOUT_T112n | B25 | DQSn15T/QKn15T | DQ7T | DQ3T | DQS#5_8C |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T113p | DIFFOUT_T113p | K24 | DQ15T | DQ7T | DQ3T | DM5_8C |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T113n | DIFFOUT_T113n | L24 | | | | |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T114p | DIFFOUT_T114p | D25 | DQ15T | DQ7T | DQ3T | DQ5_8C_6 |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T114n | DIFFOUT_T114n | E25 | DQ15T | DQ7T | DQ3T | DQ5_8C_7 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T115p | DIFFOUT_T115p | P25 | DQ15T | DQ7T | DQ3T | DQ5_8C_8 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T115n | DIFFOUT_T115n | R25 | | | | |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T116p | DIFFOUT_T116p | C26 | DQ16T | DQ8T | DQ4T | DQ4_8C_0 |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T116n | DIFFOUT_T116n | D26 | DQ16T | DQ8T | DQ4T | DQ4_8C_1 |
| 8C | VREFB8C0 | IO | | | | | K25 | DQ16T | DQ8T | DQ4T | DQ4_8C_2 |
| 8C | VREFB8C0 | IO | VREFB8C0 | | | | L25 | | | | |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T117p | DIFFOUT_T117p | R26 | DQ16T | DQ8T | DQ4T | DQ4_8C_3 |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T117n | DIFFOUT_T117n | T27 | DQ16T | DQ8T | DQ4T | DQ4_8C_4 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T118p | DIFFOUT_T118p | A26 | DQ16T | DQ8T | DQ4T | DQ4_8C_5 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T118n | DIFFOUT_T118n | A27 | | | | |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T119p | DIFFOUT_T119p | M26 | DQS16T/CQ16T/CQn16T/QKn16T | DQS8T/CQ8T/CQn8T/QKn8T | DQ4T | DQS4_8C |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T119n | DIFFOUT_T119n | N26 | DQSn16T/QKn16T | DQSn8T/QKn8T | DQ4T | DQS#4_8C |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T120p | DIFFOUT_T120p | J26 | DQ16T | DQ8T | DQ4T | DM4_8C |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T120n | DIFFOUT_T120n | K26 | | | | |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T121p | DIFFOUT_T121p | F26 | DQ16T | DQ8T | DQ4T | DQ4_8C_6 |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T121n | DIFFOUT_T121n | G26 | DQ16T | DQ8T | DQ4T | DQ4_8C_7 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T122p | DIFFOUT_T122p | M26 | DQ16T | DQ8T | DQ4T | DQ4_8C_8 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T122n | DIFFOUT_T122n | N25 | | | | |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T123p | DIFFOUT_T123p | P27 | DQ17T | DQ8T | DQ4T | DQ3_8C_0 |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T123n | DIFFOUT_T123n | R27 | DQ17T | DQ8T | DQ4T | DQ3_8C_1 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T124p | DIFFOUT_T124p | H27 | DQ17T | DQ8T | DQ4T | DQ3_8C_2 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T124n | DIFFOUT_T124n | J27 | | | | |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T125p | DIFFOUT_T125p | B27 | DQ17T | DQ8T | DQ4T | DQ3_8C_3 |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T125n | DIFFOUT_T125n | C27 | DQ17T | DQ8T | DQ4T | DQ3_8C_4 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T126p | DIFFOUT_T126p | E27 | DQ17T | DQ8T | DQ4T | DQ3_8C_5 |
| 8C | VREFB8C0 | IO | | | DIFFIO_TX_T126n | DIFFOUT_T126n | F27 | | | | |
| 8C | VREFB8C0 | IO | | | DIFFIO_RX_T127p | DIFFOUT_T127p | R28 | DQS17T/CQ17T/CQn17T/QKn17T | DQ8T | DQS4T/CQ4T/CQn4T/QKn4T | DQS3_8C |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|----------------------|---|------------------------|-------------------------|------------------------------|-------|-----------------------------|-----------------------------|------------------|-------------------------------|
| 8C | VREFB8CNO | IO | | | DIFFIO RX T127n | DIFFFOUT T127n | T28 | DQSn17T/QK17T | | | DQSn4T/QK4T |
| 8C | VREFB8CNO | IO | | | DIFFIO TX T128p | DIFFFOUT T128p | K27 | DQ17T | | | DQ8T |
| 8C | VREFB8CNO | IO | | | DIFFIO TX T128n | DIFFFOUT T128n | L27 | | | | DQ8T |
| 8C | VREFB8CNO | IO | | | DIFFIO RX T129p | DIFFFOUT T129p | M27 | DQ17T | | | DQ4T |
| 8C | VREFB8CNO | IO | | | DIFFIO RX T129n | DIFFFOUT T129n | N27 | DQ17T | | | DQ8T |
| 8C | VREFB8CNO | IO | | | DIFFIO TX T130p | DIFFFOUT T130p | N28 | | | | DQ4T |
| 8C | VREFB8CNO | IO | | | DIFFIO TX T130n | DIFFFOUT T130n | P28 | | | | DQ8T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T131p | DIFFFOUT T131p | L28 | DQ18T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T131n | DIFFFOUT T131n | M28 | DQ18T | | | DQ8T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T132p | DIFFFOUT T132p | H28 | DQ18T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T132n | DIFFFOUT T132n | J28 | | | | DQ8T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T133p | DIFFFOUT T133p | C28 | DQ18T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T133n | DIFFFOUT T133n | D28 | DQ18T | | | DQ8T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T134p | DIFFFOUT T134p | F28 | DQ18T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T134n | DIFFFOUT T134n | G28 | | | | DQ8T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T135p | DIFFFOUT T135p | R29 | DQSn18T/CQ18T/CQn18T/QKn18T | DQSn9T/CQ9T/CQn9T/QKn9T | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T135n | DIFFFOUT T135n | T29 | DQSn18T/QK18T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T136p | DIFFFOUT T136p | J29 | DQ18T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T136n | DIFFFOUT T136n | K29 | | | | DQ8T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T137p | DIFFFOUT T137p | M29 | DQ18T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T137n | DIFFFOUT T137n | N29 | DQ18T | | | DQ8T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T138p | DIFFFOUT T138p | F29 | DQ18T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T138n | DIFFFOUT T138n | G29 | | | | DQ8T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T139p | DIFFFOUT T139p | B28 | DQ19T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T139n | DIFFFOUT T139n | C29 | DQ19T | | | DQ8T |
| 8B | VREFB8BNO | IO | | | | | R30 | DQ19T | | | DQ4T |
| 8B | VREFB8BNO | IO | VREFB8BNO | | | | R31 | | | | |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T140p | DIFFFOUT T140p | A29 | DQ19T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T140n | DIFFFOUT T140n | A28 | DQ19T | | | DQ8T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T141p | DIFFFOUT T141p | L30 | DQ19T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T141n | DIFFFOUT T141n | M30 | | | | DQ8T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T142p | DIFFFOUT T142p | N30 | DQSn19T/CQ19T/CQn19T/QKn19T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T142n | DIFFFOUT T142n | P30 | DQSn19T/QK19T | | | DQ8T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T143p | DIFFFOUT T143p | J30 | DQ19T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T143n | DIFFFOUT T143n | K30 | | | | DQ8T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T144p | DIFFFOUT T144p | D30 | DQ19T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO RX T144n | DIFFFOUT T144n | D29 | DQ19T | | | DQ8T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T145p | DIFFFOUT T145p | F30 | DQ19T | | | DQ4T |
| 8B | VREFB8BNO | IO | | | DIFFIO TX T145n | DIFFFOUT T145n | G30 | | | | DQ8T |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T146p | DIFFFOUT T146p | B30 | DQ20T | | | CK# 8A |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T146n | DIFFFOUT T146n | C30 | DQ20T | | | CK# 8A |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T147p | DIFFFOUT T147p | E31 | DQ20T | | | CKE 8A 0 |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T147n | DIFFFOUT T147n | F31 | | | | CKE 8A 1 |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T148p | DIFFFOUT T148p | B31 | DQ20T | | | A 8A 0 |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T148n | DIFFFOUT T148n | A30 | DQ20T | | | A 8A 1 |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T149p | DIFFFOUT T149p | A31 | DQ20T | | | A 8A 2 |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T149n | DIFFFOUT T149n | A32 | | | | A 8A 3 |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T150p | DIFFFOUT T150p | A33 | DQSn20T/CQ20T/CQn20T/QKn20T | DQSn10T/CQ10T/CQn10T/QKn10T | | A 8A 4 |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T150n | DIFFFOUT T150n | B33 | DQSn20T/QK20T | | | A 8A 5 |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T151p | DIFFFOUT T151p | H31 | DQ20T | | | A 8A 6 |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T151n | DIFFFOUT T151n | J31 | | | | A 8A 7 |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T152p | DIFFFOUT T152p | C31 | DQ20T | | | A 8A 8 |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T152n | DIFFFOUT T152n | D31 | DQ20T | | | A 8A 9 |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T153p | DIFFFOUT T153p | C32 | DQ20T | | | A 8A 10 |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T153n | DIFFFOUT T153n | D32 | | | | A 8A 11 |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T154p | DIFFFOUT T154p | N31 | DQ21T | | | A 8A 12 |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T154n | DIFFFOUT T154n | P31 | DQ21T | | | A 8A 13 |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T155p | DIFFFOUT T155p | J32 | DQ21T | | | A 8A 14 |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T155n | DIFFFOUT T155n | K32 | | | | A 8A 15 |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T156p | DIFFFOUT T156p | M32 | DQ21T | | | BA 8A 0 |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T156n | DIFFFOUT T156n | N32 | DQ21T | | | BA 8A 1 |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T157p | DIFFFOUT T157p | J34 | DQ21T | | | BA 8A 2 |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T157n | DIFFFOUT T157n | K34 | | | | RAS# 8A |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T158p | DIFFFOUT T158p | L33 | DQSn21T/CQ21T/CQn21T/QKn21T | | | CAS# 8A |
| 8A | VREFB8ANO | IO | | | DIFFIO RX T158n | DIFFFOUT T158n | M33 | DQSn21T/QK21T | | | WE# 8A |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T159p | DIFFFOUT T159p | L31 | DQ21T | | | ODT 8A 0 |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T159n | DIFFFOUT T159n | M31 | | | | ODT 8A 1 |
| 8A | VREFB8ANO | IO | CLK23p | | DIFFIO RX T160p | DIFFFOUT T160p | N33 | DQ21T | | | DQ10T |
| 8A | VREFB8ANO | IO | CLK23n | | DIFFIO RX T160n | DIFFFOUT T160n | N34 | DQ21T | | | DQ10T |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T161p | DIFFFOUT T161p | L34 | DQ21T | | | DQ10T |
| 8A | VREFB8ANO | IO | | | DIFFIO TX T161n | DIFFFOUT T161n | M34 | | | | CS# 8A 0 |
| 8A | VREFB8ANO | IO | CLK22p | | DIFFIO RX T162p | DIFFFOUT T162p | E34 | DQ22T | | | CS# 8A 1 |
| 8A | VREFB8ANO | IO | CLK22n | | DIFFIO RX T162n | DIFFFOUT T162n | F34 | DQ22T | | | |
| 8A | VREFB8ANO | IO | | VREFB8ANO | | | J33 | DQ22T | | | |
| 8A | VREFB8ANO | IO | | | | | H33 | | | | |
| 8A | VREFB8ANO | IO | FPLL_TL_CLKOUT2,FPLL_TL_FBp,FPLL_TL_FB1 | | DIFFIO RX T163p | DIFFFOUT T163p | B34 | DQ22T | | | |
| 8A | VREFB8ANO | IO | FPLL_TL_CLKOUT3,FPLL_TL_FBn | | DIFFIO RX T163n | DIFFFOUT T163n | A35 | DQ22T | | | |
| 8A | VREFB8ANO | IO | FPLL_TL_CLKOUT0,FPLL_TL_CLKOUTp,FPLL_TL_FB0 | | DIFFIO TX T164p | DIFFFOUT T164p | C33 | DQ22T | | | |
| 8A | VREFB8ANO | IO | FPLL_TL_CLKOUT1,FPLL_TL_CLKOUTn | | DIFFIO TX T164n | DIFFFOUT T164n | D33 | | | | |
| 8A | VREFB8ANO | IO | CLK21p | | DIFFIO RX T165p | DIFFFOUT T165p | G34 | DQSn22T/CQ22T/CQn22T/QKn22T | | | |
| 8A | VREFB8ANO | IO | CLK21n | | DIFFIO RX T165n | DIFFFOUT T165n | H34 | DQSn22T/QK22T | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|-----------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| BA | VREFBBAN0 | IO | | | DIFFIO TX_T166p | DIFFOUT_T166p | F32 | DQ22T | | | |
| BA | VREFBBAN0 | IO | | | DIFFIO TX_T166n | DIFFOUT_T166n | G32 | | | | |
| BA | VREFBBAN0 | IO | CLK20p | | DIFFIO RX_T167p | DIFFOUT_T167p | C34 | DQ22T | | | |
| BA | VREFBBAN0 | IO | CLK20n | | DIFFIO RX_T167n | DIFFOUT_T167n | D34 | DQ22T | | | |
| BA | VREFBBAN0 | IO | | | DIFFIO TX_T168p | DIFFOUT_T168p | E33 | DQ22T | | | |
| BA | VREFBBAN0 | IO | RZQ_6 | | DIFFIO TX_T168n | DIFFOUT_T168n | F33 | | | | |
| BA | | MSEL0 | | MSEL0 | | | H35 | | | | |
| BA | | MSEL1 | | MSEL1 | | | A34 | | | | |
| BA | | MSEL2 | | MSEL2 | | | D35 | | | | |
| BA | | MSEL3 | | MSEL3 | | | A37 | | | | |
| BA | | MSEL4 | | MSEL4 | | | P34 | | | | |
| BA | | CONF_DONE | | CONF_DONE | | | K35 | | | | |
| BA | | nSTATUS | | nSTATUS | | | F35 | | | | |
| BA | | nCE | | nCE | | | M35 | | | | |
| BA | | nCONFIG | | nCONFIG | | | A36 | | | | |
| BA | | GND | | | | | P35 | | | | |
| | | GND | | | | | AA33 | | | | |
| | | GND | | | | | AA35 | | | | |
| | | GND | | | | | AA38 | | | | |
| | | GND | | | | | AA39 | | | | |
| | | GND | | | | | AB31 | | | | |
| | | GND | | | | | AB32 | | | | |
| | | GND | | | | | AB34 | | | | |
| | | GND | | | | | AB36 | | | | |
| | | GND | | | | | AB37 | | | | |
| | | GND | | | | | AC33 | | | | |
| | | GND | | | | | AC38 | | | | |
| | | GND | | | | | AC39 | | | | |
| | | GND | | | | | AD30 | | | | |
| | | GND | | | | | AD32 | | | | |
| | | GND | | | | | AD36 | | | | |
| | | GND | | | | | AD37 | | | | |
| | | GND | | | | | AE33 | | | | |
| | | GND | | | | | AE35 | | | | |
| | | GND | | | | | AE38 | | | | |
| | | GND | | | | | AE39 | | | | |
| | | GND | | | | | AF31 | | | | |
| | | GND | | | | | AF32 | | | | |
| | | GND | | | | | AF34 | | | | |
| | | GND | | | | | AF36 | | | | |
| | | GND | | | | | AF37 | | | | |
| | | GND | | | | | AG38 | | | | |
| | | GND | | | | | AG39 | | | | |
| | | GND | | | | | AH32 | | | | |
| | | GND | | | | | AH33 | | | | |
| | | GND | | | | | AH34 | | | | |
| | | GND | | | | | AH35 | | | | |
| | | GND | | | | | AH36 | | | | |
| | | GND | | | | | AH37 | | | | |
| | | GND | | | | | AJ35 | | | | |
| | | GND | | | | | AJ38 | | | | |
| | | GND | | | | | AJ39 | | | | |
| | | GND | | | | | AK36 | | | | |
| | | GND | | | | | AK37 | | | | |
| | | GND | | | | | AL35 | | | | |
| | | GND | | | | | AL38 | | | | |
| | | GND | | | | | AL39 | | | | |
| | | GND | | | | | AM36 | | | | |
| | | GND | | | | | AM37 | | | | |
| | | GND | | | | | AN35 | | | | |
| | | GND | | | | | AN38 | | | | |
| | | GND | | | | | AN39 | | | | |
| | | GND | | | | | AP36 | | | | |
| | | GND | | | | | AP37 | | | | |
| | | GND | | | | | AR35 | | | | |
| | | GND | | | | | AR38 | | | | |
| | | GND | | | | | AR39 | | | | |
| | | GND | | | | | AT36 | | | | |
| | | GND | | | | | AT37 | | | | |
| | | GND | | | | | AU35 | | | | |
| | | GND | | | | | AU38 | | | | |
| | | GND | | | | | AU39 | | | | |
| | | GND | | | | | AV35 | | | | |
| | | GND | | | | | AV36 | | | | |
| | | GND | | | | | AV37 | | | | |
| | | GND | | | | | AV38 | | | | |
| | | GND | | | | | AV39 | | | | |
| | | GND | | | | | AW35 | | | | |
| | | GND | | | | | AW38 | | | | |
| | | GND | | | | | B36 | | | | |
| | | GND | | | | | B37 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | GND | | | | | C35 | | | | |
| | | GND | | | | | C38 | | | | |
| | | GND | | | | | C39 | | | | |
| | | GND | | | | | D36 | | | | |
| | | GND | | | | | D37 | | | | |
| | | GND | | | | | E35 | | | | |
| | | GND | | | | | E38 | | | | |
| | | GND | | | | | E39 | | | | |
| | | GND | | | | | F36 | | | | |
| | | GND | | | | | F37 | | | | |
| | | GND | | | | | G35 | | | | |
| | | GND | | | | | G38 | | | | |
| | | GND | | | | | G39 | | | | |
| | | GND | | | | | H36 | | | | |
| | | GND | | | | | H37 | | | | |
| | | GND | | | | | J35 | | | | |
| | | GND | | | | | J38 | | | | |
| | | GND | | | | | J39 | | | | |
| | | GND | | | | | K36 | | | | |
| | | GND | | | | | K37 | | | | |
| | | GND | | | | | L35 | | | | |
| | | GND | | | | | L38 | | | | |
| | | GND | | | | | L39 | | | | |
| | | GND | | | | | M36 | | | | |
| | | GND | | | | | M37 | | | | |
| | | GND | | | | | N35 | | | | |
| | | GND | | | | | N38 | | | | |
| | | GND | | | | | N39 | | | | |
| | | GND | | | | | P36 | | | | |
| | | GND | | | | | P37 | | | | |
| | | GND | | | | | R34 | | | | |
| | | GND | | | | | R38 | | | | |
| | | GND | | | | | R39 | | | | |
| | | GND | | | | | T32 | | | | |
| | | GND | | | | | T36 | | | | |
| | | GND | | | | | T37 | | | | |
| | | GND | | | | | U33 | | | | |
| | | GND | | | | | U35 | | | | |
| | | GND | | | | | U38 | | | | |
| | | GND | | | | | U39 | | | | |
| | | GND | | | | | Y32 | | | | |
| | | GND | | | | | Y34 | | | | |
| | | GND | | | | | Y36 | | | | |
| | | GND | | | | | Y37 | | | | |
| | | GND | | | | | W33 | | | | |
| | | GND | | | | | W38 | | | | |
| | | GND | | | | | W39 | | | | |
| | | GND | | | | | Y31 | | | | |
| | | GND | | | | | Y32 | | | | |
| | | GND | | | | | Y36 | | | | |
| | | GND | | | | | Y37 | | | | |
| | | GND | | | | | A2 | | | | |
| | | GND | | | | | A3 | | | | |
| | | GND | | | | | A4 | | | | |
| | | GND | | | | | A5 | | | | |
| | | GND | | | | | AA3 | | | | |
| | | GND | | | | | AA4 | | | | |
| | | GND | | | | | AA6 | | | | |
| | | GND | | | | | AA8 | | | | |
| | | GND | | | | | AB1 | | | | |
| | | GND | | | | | AB2 | | | | |
| | | GND | | | | | AB7 | | | | |
| | | GND | | | | | AC3 | | | | |
| | | GND | | | | | AC4 | | | | |
| | | GND | | | | | AC8 | | | | |
| | | GND | | | | | AD1 | | | | |
| | | GND | | | | | AD10 | | | | |
| | | GND | | | | | AD2 | | | | |
| | | GND | | | | | AD5 | | | | |
| | | GND | | | | | AD7 | | | | |
| | | GND | | | | | AE3 | | | | |
| | | GND | | | | | AE4 | | | | |
| | | GND | | | | | AE6 | | | | |
| | | GND | | | | | AE8 | | | | |
| | | GND | | | | | AF1 | | | | |
| | | GND | | | | | AF2 | | | | |
| | | GND | | | | | AF9 | | | | |
| | | GND | | | | | AG3 | | | | |
| | | GND | | | | | AG4 | | | | |
| | | GND | | | | | AG5 | | | | |
| | | GND | | | | | AG6 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | GND | | | | | AG7 | | | | |
| | | GND | | | | | AG8 | | | | |
| | | GND | | | | | AH1 | | | | |
| | | GND | | | | | AH2 | | | | |
| | | GND | | | | | AH5 | | | | |
| | | GND | | | | | AJ3 | | | | |
| | | GND | | | | | AJ4 | | | | |
| | | GND | | | | | AK1 | | | | |
| | | GND | | | | | AK2 | | | | |
| | | GND | | | | | AK5 | | | | |
| | | GND | | | | | AL3 | | | | |
| | | GND | | | | | AL4 | | | | |
| | | GND | | | | | AM1 | | | | |
| | | GND | | | | | AM2 | | | | |
| | | GND | | | | | AM5 | | | | |
| | | GND | | | | | AN3 | | | | |
| | | GND | | | | | AN4 | | | | |
| | | GND | | | | | AP1 | | | | |
| | | GND | | | | | AP2 | | | | |
| | | GND | | | | | AP5 | | | | |
| | | GND | | | | | AR3 | | | | |
| | | GND | | | | | AR4 | | | | |
| | | GND | | | | | AT1 | | | | |
| | | GND | | | | | AT2 | | | | |
| | | GND | | | | | AT5 | | | | |
| | | GND | | | | | AU3 | | | | |
| | | GND | | | | | AU4 | | | | |
| | | GND | | | | | AV1 | | | | |
| | | GND | | | | | AV2 | | | | |
| | | GND | | | | | B1 | | | | |
| | | GND | | | | | B2 | | | | |
| | | GND | | | | | B5 | | | | |
| | | GND | | | | | C3 | | | | |
| | | GND | | | | | C4 | | | | |
| | | GND | | | | | D1 | | | | |
| | | GND | | | | | D2 | | | | |
| | | GND | | | | | D5 | | | | |
| | | GND | | | | | E3 | | | | |
| | | GND | | | | | E4 | | | | |
| | | GND | | | | | F1 | | | | |
| | | GND | | | | | F2 | | | | |
| | | GND | | | | | F5 | | | | |
| | | GND | | | | | G3 | | | | |
| | | GND | | | | | G4 | | | | |
| | | GND | | | | | H1 | | | | |
| | | GND | | | | | H2 | | | | |
| | | GND | | | | | H5 | | | | |
| | | GND | | | | | J3 | | | | |
| | | GND | | | | | J4 | | | | |
| | | GND | | | | | K1 | | | | |
| | | GND | | | | | K2 | | | | |
| | | GND | | | | | K5 | | | | |
| | | GND | | | | | L3 | | | | |
| | | GND | | | | | L4 | | | | |
| | | GND | | | | | M1 | | | | |
| | | GND | | | | | M2 | | | | |
| | | GND | | | | | M5 | | | | |
| | | GND | | | | | N3 | | | | |
| | | GND | | | | | N4 | | | | |
| | | GND | | | | | N5 | | | | |
| | | GND | | | | | P1 | | | | |
| | | GND | | | | | P2 | | | | |
| | | GND | | | | | P6 | | | | |
| | | GND | | | | | P7 | | | | |
| | | GND | | | | | R3 | | | | |
| | | GND | | | | | R4 | | | | |
| | | GND | | | | | R8 | | | | |
| | | GND | | | | | T1 | | | | |
| | | GND | | | | | TT0 | | | | |
| | | GND | | | | | T2 | | | | |
| | | GND | | | | | T5 | | | | |
| | | GND | | | | | T7 | | | | |
| | | GND | | | | | U3 | | | | |
| | | GND | | | | | U4 | | | | |
| | | GND | | | | | U6 | | | | |
| | | GND | | | | | U8 | | | | |
| | | GND | | | | | V1 | | | | |
| | | GND | | | | | V2 | | | | |
| | | GND | | | | | V7 | | | | |
| | | GND | | | | | W3 | | | | |
| | | GND | | | | | W4 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | GND | | | | | W8 | | | | |
| | | GND | | | | | Y1 | | | | |
| | | GND | | | | | Y2 | | | | |
| | | GND | | | | | Y5 | | | | |
| | | GND | | | | | Y7 | | | | |
| | | VCCP | | | | | AA21 | | | | |
| | | VCCP | | | | | AA25 | | | | |
| | | VCCP | | | | | AB15 | | | | |
| | | VCCP | | | | | U16 | | | | |
| | | VCCP | | | | | V13 | | | | |
| | | VCCP | | | | | V22 | | | | |
| | | VCCP | | | | | V25 | | | | |
| | | VCCP | | | | | V27 | | | | |
| | | VCCP | | | | | Y13 | | | | |
| | | VCCP | | | | | Y27 | | | | |
| | | VCCA FPLL | | | | | AC30 | | | | |
| | | VCCA FPLL | | | | | AC9 | | | | |
| | | VCCA FPLL | | | | | Y30 | | | | |
| | | VCCA FPLL | | | | | AA9 | | | | |
| | | VCCA FPLL | | | | | V31 | | | | |
| | | VCCA FPLL | | | | | U9 | | | | |
| | | VCCBAT | | | | | R33 | | | | |
| | | VCC AUX | | | | | AB14 | | | | |
| | | VCC AUX | | | | | AB26 | | | | |
| | | VCC AUX | | | | | U14 | | | | |
| | | VCC AUX | | | | | U28 | | | | |
| | | VCCD FPLL | | | | | AD31 | | | | |
| | | VCCD FPLL | | | | | AE9 | | | | |
| | | VCCD FPLL | | | | | W30 | | | | |
| | | VCCD FPLL | | | | | W9 | | | | |
| | | VCCD FPLL | | | | | T31 | | | | |
| | | VCCD FPLL | | | | | R9 | | | | |
| | | VCCA GXBL0 | | | | | AF33 | | | | |
| | | VCCA GXBR0 | | | | | AE7 | | | | |
| | | VCCA GXBL1 | | | | | AB33 | | | | |
| | | VCCA GXBR1 | | | | | AA7 | | | | |
| | | VCCA GXBL2 | | | | | Y33 | | | | |
| | | VCCA GXBR2 | | | | | U7 | | | | |
| | | VCCH GXBL0 | | | | | AD33 | | | | |
| | | VCCH GXBR0 | | | | | AC7 | | | | |
| | | VCCH GXBL1 | | | | | Y33 | | | | |
| | | VCCH GXBR1 | | | | | W7 | | | | |
| | | VCCH GXBL2 | | | | | T33 | | | | |
| | | VCCH GXBR2 | | | | | R7 | | | | |
| | | VCCL GXBL0 | | | | | AD34 | | | | |
| | | VCCL GXBL0 | | | | | AD35 | | | | |
| | | VCCL GXBR0 | | | | | AC5 | | | | |
| | | VCCL GXBR0 | | | | | AC6 | | | | |
| | | VCCL GXBL1 | | | | | Y34 | | | | |
| | | VCCL GXBL1 | | | | | Y35 | | | | |
| | | VCCL GXBR1 | | | | | W5 | | | | |
| | | VCCL GXBR1 | | | | | W6 | | | | |
| | | VCCL GXBL2 | | | | | T34 | | | | |
| | | VCCL GXBL2 | | | | | T35 | | | | |
| | | VCCL GXBR2 | | | | | R5 | | | | |
| | | VCCL GXBR2 | | | | | R6 | | | | |
| | | VCCR GXBL | | | | | AC34 | | | | |
| | | VCCR GXBL | | | | | AC35 | | | | |
| | | VCCR GXBL | | | | | AG34 | | | | |
| | | VCCR GXBL | | | | | AG35 | | | | |
| | | VCCR GXBL | | | | | R35 | | | | |
| | | VCCR GXBL | | | | | W34 | | | | |
| | | VCCR GXBL | | | | | W35 | | | | |
| | | VCCR GXBR | | | | | AB5 | | | | |
| | | VCCR GXBR | | | | | AB6 | | | | |
| | | VCCR GXBR | | | | | AF5 | | | | |
| | | VCCR GXBR | | | | | AF6 | | | | |
| | | VCCR GXBR | | | | | P5 | | | | |
| | | VCCR GXBR | | | | | V5 | | | | |
| | | VCCR GXBR | | | | | V6 | | | | |
| | | VCCT GXBL0 | | | | | AE34 | | | | |
| | | VCCT GXBL0 | | | | | AF35 | | | | |
| | | VCCT GXBR0 | | | | | AD6 | | | | |
| | | VCCT GXBR0 | | | | | AE5 | | | | |
| | | VCCT GXBL1 | | | | | AA34 | | | | |
| | | VCCT GXBL1 | | | | | AB35 | | | | |
| | | VCCT GXBR1 | | | | | AA5 | | | | |
| | | VCCT GXBR1 | | | | | Y6 | | | | |
| | | VCCT GXBL2 | | | | | U34 | | | | |
| | | VCCT GXBL2 | | | | | V35 | | | | |
| | | VCCT GXBR2 | | | | | T6 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | VCCT_GXBR2 | | | | | U5 | | | | |
| | | VCC | | | | | AA10 | | | | |
| | | VCC | | | | | AA12 | | | | |
| | | VCC | | | | | AA14 | | | | |
| | | VCC | | | | | AA16 | | | | |
| | | VCC | | | | | AA18 | | | | |
| | | VCC | | | | | AA20 | | | | |
| | | VCC | | | | | AA22 | | | | |
| | | VCC | | | | | AA24 | | | | |
| | | VCC | | | | | AA26 | | | | |
| | | VCC | | | | | AB11 | | | | |
| | | VCC | | | | | AB17 | | | | |
| | | VCC | | | | | U10 | | | | |
| | | VCC | | | | | U12 | | | | |
| | | VCC | | | | | V11 | | | | |
| | | VCC | | | | | V15 | | | | |
| | | VCC | | | | | V17 | | | | |
| | | VCC | | | | | V23 | | | | |
| | | VCC | | | | | V29 | | | | |
| | | VCC | | | | | W10 | | | | |
| | | VCC | | | | | W12 | | | | |
| | | VCC | | | | | W14 | | | | |
| | | VCC | | | | | W16 | | | | |
| | | VCC | | | | | W18 | | | | |
| | | VCC | | | | | W20 | | | | |
| | | VCC | | | | | W22 | | | | |
| | | VCC | | | | | W24 | | | | |
| | | VCC | | | | | W26 | | | | |
| | | VCC | | | | | W28 | | | | |
| | | VCC | | | | | Y11 | | | | |
| | | VCC | | | | | Y15 | | | | |
| | | VCC | | | | | Y17 | | | | |
| | | VCC | | | | | Y19 | | | | |
| | | VCC | | | | | Y23 | | | | |
| | | VCC | | | | | Y25 | | | | |
| | | VCC | | | | | Y29 | | | | |
| | | VCC | | | | | Y21 | | | | |
| | | VCCIO3A | | | | | AK29 | | | | |
| | | VCCIO3A | | | | | AL30 | | | | |
| | | VCCIO3A | | | | | AK35 | | | | |
| | | VCCIO3A | | | | | AM30 | | | | |
| | | VCCIO3A | | | | | AP35 | | | | |
| | | VCCIO3A | | | | | AT35 | | | | |
| | | VCCIO3B | | | | | AK28 | | | | |
| | | VCCIO3B | | | | | AL27 | | | | |
| | | VCCIO3B | | | | | AN28 | | | | |
| | | VCCIO3B | | | | | AT28 | | | | |
| | | VCCIO3C | | | | | AJ24 | | | | |
| | | VCCIO3C | | | | | AL25 | | | | |
| | | VCCIO3C | | | | | AM24 | | | | |
| | | VCCIO3C | | | | | AP25 | | | | |
| | | VCCIO3C | | | | | AR24 | | | | |
| | | VCCIO3C | | | | | AU25 | | | | |
| | | VCCIO3D | | | | | AJ22 | | | | |
| | | VCCIO3D | | | | | AL21 | | | | |
| | | VCCIO3D | | | | | AM22 | | | | |
| | | VCCIO3D | | | | | AP21 | | | | |
| | | VCCIO3D | | | | | AR22 | | | | |
| | | VCCIO3D | | | | | AU21 | | | | |
| | | VCCIO4A | | | | | AG10 | | | | |
| | | VCCIO4A | | | | | AJ5 | | | | |
| | | VCCIO4A | | | | | AL5 | | | | |
| | | VCCIO4A | | | | | AN5 | | | | |
| | | VCCIO4A | | | | | AR5 | | | | |
| | | VCCIO4A | | | | | AU5 | | | | |
| | | VCCIO4B | | | | | AK13 | | | | |
| | | VCCIO4B | | | | | AM12 | | | | |
| | | VCCIO4B | | | | | AN10 | | | | |
| | | VCCIO4B | | | | | AR13 | | | | |
| | | VCCIO4B | | | | | AT12 | | | | |
| | | VCCIO4B | | | | | AT10 | | | | |
| | | VCCIO4C | | | | | AJ15 | | | | |
| | | VCCIO4C | | | | | AM15 | | | | |
| | | VCCIO4C | | | | | AR15 | | | | |
| | | VCCIO4C | | | | | AV15 | | | | |
| | | VCCIO4D | | | | | AJ19 | | | | |
| | | VCCIO4D | | | | | AK18 | | | | |
| | | VCCIO4D | | | | | AM19 | | | | |
| | | VCCIO4D | | | | | AN18 | | | | |
| | | VCCIO4D | | | | | AR19 | | | | |
| | | VCCIO4D | | | | | AT18 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | VCCIO7A | | | | | E5 | | | | |
| | | VCCIO7A | | | | | G5 | | | | |
| | | VCCIO7A | | | | | H7 | | | | |
| | | VCCIO7A | | | | | J5 | | | | |
| | | VCCIO7A | | | | | L5 | | | | |
| | | VCCIO7A | | | | | M9 | | | | |
| | | VCCIO7B | | | | | C13 | | | | |
| | | VCCIO7B | | | | | D10 | | | | |
| | | VCCIO7B | | | | | F13 | | | | |
| | | VCCIO7B | | | | | G10 | | | | |
| | | VCCIO7B | | | | | K10 | | | | |
| | | VCCIO7B | | | | | L13 | | | | |
| | | VCCIO7C | | | | | F16 | | | | |
| | | VCCIO7C | | | | | G15 | | | | |
| | | VCCIO7C | | | | | K15 | | | | |
| | | VCCIO7C | | | | | L16 | | | | |
| | | VCCIO7D | | | | | B19 | | | | |
| | | VCCIO7D | | | | | D18 | | | | |
| | | VCCIO7D | | | | | E19 | | | | |
| | | VCCIO7D | | | | | G18 | | | | |
| | | VCCIO7D | | | | | H19 | | | | |
| | | VCCIO7D | | | | | M18 | | | | |
| | | VCCIO8A | | | | | B35 | | | | |
| | | VCCIO8A | | | | | G31 | | | | |
| | | VCCIO8A | | | | | G33 | | | | |
| | | VCCIO8A | | | | | K31 | | | | |
| | | VCCIO8A | | | | | K33 | | | | |
| | | VCCIO8A | | | | | P33 | | | | |
| | | VCCIO8B | | | | | E28 | | | | |
| | | VCCIO8B | | | | | E30 | | | | |
| | | VCCIO8B | | | | | H30 | | | | |
| | | VCCIO8B | | | | | K28 | | | | |
| | | VCCIO8C | | | | | C25 | | | | |
| | | VCCIO8C | | | | | D27 | | | | |
| | | VCCIO8C | | | | | F25 | | | | |
| | | VCCIO8C | | | | | G27 | | | | |
| | | VCCIO8C | | | | | J25 | | | | |
| | | VCCIO8C | | | | | M24 | | | | |
| | | VCCIO8D | | | | | C24 | | | | |
| | | VCCIO8D | | | | | D22 | | | | |
| | | VCCIO8D | | | | | F21 | | | | |
| | | VCCIO8D | | | | | G22 | | | | |
| | | VCCIO8D | | | | | K22 | | | | |
| | | VCCIO8D | | | | | L21 | | | | |
| | | VCCPD3 | | | | | AA27 | | | | |
| | | VCCPD3 | | | | | AA28 | | | | |
| | | VCCPD3 | | | | | AA29 | | | | |
| | | VCCPD3 | | | | | AB22 | | | | |
| | | VCCPD3 | | | | | AB23 | | | | |
| | | VCCPD3 | | | | | AB24 | | | | |
| | | VCCPD3 | | | | | AB30 | | | | |
| | | VCCPD4A | | | | | AC10 | | | | |
| | | VCCPD4A | | | | | AE10 | | | | |
| | | VCCPD4BCD | | | | | AB12 | | | | |
| | | VCCPD4BCD | | | | | AB13 | | | | |
| | | VCCPD4BCD | | | | | AB16 | | | | |
| | | VCCPD4BCD | | | | | AB18 | | | | |
| | | VCCPD4BCD | | | | | AB19 | | | | |
| | | VCCPD7A | | | | | P8 | | | | |
| | | VCCPD7A | | | | | R10 | | | | |
| | | VCCPD7BCD | | | | | T12 | | | | |
| | | VCCPD7BCD | | | | | T13 | | | | |
| | | VCCPD7BCD | | | | | T16 | | | | |
| | | VCCPD7BCD | | | | | U18 | | | | |
| | | VCCPD7BCD | | | | | U19 | | | | |
| | | VCCPD8 | | | | | R32 | | | | |
| | | VCCPD8 | | | | | T30 | | | | |
| | | VCCPD8 | | | | | U21 | | | | |
| | | VCCPD8 | | | | | U22 | | | | |
| | | VCCPD8 | | | | | U24 | | | | |
| | | VCCPD8 | | | | | U26 | | | | |
| | | VCCPD8 | | | | | U29 | | | | |
| | | VCCPGM | | | | | N11 | | | | |
| | | VCCPGM | | | | | AG29 | | | | |
| | | GND | | | | | AA11 | | | | |
| | | GND | | | | | AA13 | | | | |
| | | GND | | | | | AA15 | | | | |
| | | GND | | | | | AA17 | | | | |
| | | GND | | | | | AA19 | | | | |
| | | GND | | | | | AA23 | | | | |
| | | GND | | | | | AA30 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | GND | | | | | AB10 | | | | |
| | | GND | | | | | AC11 | | | | |
| | | GND | | | | | AC14 | | | | |
| | | GND | | | | | AC17 | | | | |
| | | GND | | | | | AC20 | | | | |
| | | GND | | | | | AC23 | | | | |
| | | GND | | | | | AC26 | | | | |
| | | GND | | | | | AC28 | | | | |
| | | GND | | | | | AC30 | | | | |
| | | GND | | | | | AF11 | | | | |
| | | GND | | | | | AF14 | | | | |
| | | GND | | | | | AF17 | | | | |
| | | GND | | | | | AF20 | | | | |
| | | GND | | | | | AF23 | | | | |
| | | GND | | | | | AF26 | | | | |
| | | GND | | | | | AF29 | | | | |
| | | GND | | | | | AF30 | | | | |
| | | GND | | | | | AG31 | | | | |
| | | GND | | | | | AG9 | | | | |
| | | GND | | | | | AJ11 | | | | |
| | | GND | | | | | AJ14 | | | | |
| | | GND | | | | | AJ17 | | | | |
| | | GND | | | | | AJ20 | | | | |
| | | GND | | | | | AJ23 | | | | |
| | | GND | | | | | AJ26 | | | | |
| | | GND | | | | | AJ29 | | | | |
| | | GND | | | | | AJ32 | | | | |
| | | GND | | | | | AJ8 | | | | |
| | | GND | | | | | AM11 | | | | |
| | | GND | | | | | AM14 | | | | |
| | | GND | | | | | AM17 | | | | |
| | | GND | | | | | AM20 | | | | |
| | | GND | | | | | AM23 | | | | |
| | | GND | | | | | AM26 | | | | |
| | | GND | | | | | AM29 | | | | |
| | | GND | | | | | AM32 | | | | |
| | | GND | | | | | AM8 | | | | |
| | | GND | | | | | AR11 | | | | |
| | | GND | | | | | AR14 | | | | |
| | | GND | | | | | AR17 | | | | |
| | | GND | | | | | AR20 | | | | |
| | | GND | | | | | AR23 | | | | |
| | | GND | | | | | AR26 | | | | |
| | | GND | | | | | AR29 | | | | |
| | | GND | | | | | AR32 | | | | |
| | | GND | | | | | AR8 | | | | |
| | | GND | | | | | AV11 | | | | |
| | | GND | | | | | AV14 | | | | |
| | | GND | | | | | AV17 | | | | |
| | | GND | | | | | AV20 | | | | |
| | | GND | | | | | AV23 | | | | |
| | | GND | | | | | AV26 | | | | |
| | | GND | | | | | AV29 | | | | |
| | | GND | | | | | AV32 | | | | |
| | | GND | | | | | AV5 | | | | |
| | | GND | | | | | AV8 | | | | |
| | | GND | | | | | B11 | | | | |
| | | GND | | | | | B14 | | | | |
| | | GND | | | | | B17 | | | | |
| | | GND | | | | | B20 | | | | |
| | | GND | | | | | B23 | | | | |
| | | GND | | | | | B26 | | | | |
| | | GND | | | | | B29 | | | | |
| | | GND | | | | | B32 | | | | |
| | | GND | | | | | B8 | | | | |
| | | GND | | | | | E11 | | | | |
| | | GND | | | | | E14 | | | | |
| | | GND | | | | | E17 | | | | |
| | | GND | | | | | E20 | | | | |
| | | GND | | | | | E23 | | | | |
| | | GND | | | | | E26 | | | | |
| | | GND | | | | | E29 | | | | |
| | | GND | | | | | E32 | | | | |
| | | GND | | | | | E8 | | | | |
| | | GND | | | | | H11 | | | | |
| | | GND | | | | | H14 | | | | |
| | | GND | | | | | H17 | | | | |
| | | GND | | | | | H20 | | | | |
| | | GND | | | | | H23 | | | | |
| | | GND | | | | | H26 | | | | |
| | | GND | | | | | H29 | | | | |



| Bank Number | VREF | PinName/Function (2) | Optional Function(s) | Configuration Function | Dedicated Tx/Rx Channel | Emulated LVDS Output Channel | F1517 | DQS for X8/X9 | DQS for X16/ X18 | DQS for X32/ X36 | DDR3/DDR2 hard memory PHY (3) |
|-------------|------|----------------------|----------------------|------------------------|-------------------------|------------------------------|-------|---------------|------------------|------------------|-------------------------------|
| | | GND | | | | | H32 | | | | |
| | | GND | | | | | H8 | | | | |
| | | GND | | | | | L11 | | | | |
| | | GND | | | | | L14 | | | | |
| | | GND | | | | | L17 | | | | |
| | | GND | | | | | L20 | | | | |
| | | GND | | | | | L23 | | | | |
| | | GND | | | | | L26 | | | | |
| | | GND | | | | | L29 | | | | |
| | | GND | | | | | L32 | | | | |
| | | GND | | | | | L8 | | | | |
| | | GND | | | | | N8 | | | | |
| | | GND | | | | | P11 | | | | |
| | | GND | | | | | P14 | | | | |
| | | GND | | | | | P17 | | | | |
| | | GND | | | | | P20 | | | | |
| | | GND | | | | | P23 | | | | |
| | | GND | | | | | P26 | | | | |
| | | GND | | | | | P29 | | | | |
| | | GND | | | | | P32 | | | | |
| | | GND | | | | | U11 | | | | |
| | | GND | | | | | U13 | | | | |
| | | GND | | | | | U15 | | | | |
| | | GND | | | | | U17 | | | | |
| | | GND | | | | | U20 | | | | |
| | | GND | | | | | U23 | | | | |
| | | GND | | | | | U25 | | | | |
| | | GND | | | | | U27 | | | | |
| | | GND | | | | | U30 | | | | |
| | | GND | | | | | V10 | | | | |
| | | GND | | | | | V12 | | | | |
| | | GND | | | | | V14 | | | | |
| | | GND | | | | | V16 | | | | |
| | | GND | | | | | V18 | | | | |
| | | GND | | | | | V21 | | | | |
| | | GND | | | | | V24 | | | | |
| | | GND | | | | | V26 | | | | |
| | | GND | | | | | V28 | | | | |
| | | GND | | | | | V30 | | | | |
| | | GND | | | | | W11 | | | | |
| | | GND | | | | | W13 | | | | |
| | | GND | | | | | W15 | | | | |
| | | GND | | | | | W17 | | | | |
| | | GND | | | | | W19 | | | | |
| | | GND | | | | | W23 | | | | |
| | | GND | | | | | W25 | | | | |
| | | GND | | | | | W27 | | | | |
| | | GND | | | | | W29 | | | | |
| | | GND | | | | | Y10 | | | | |
| | | GND | | | | | Y12 | | | | |
| | | GND | | | | | Y14 | | | | |
| | | GND | | | | | Y16 | | | | |
| | | GND | | | | | Y18 | | | | |
| | | GND | | | | | Y20 | | | | |
| | | GND | | | | | Y22 | | | | |
| | | GND | | | | | Y24 | | | | |
| | | GND | | | | | Y26 | | | | |
| | | GND | | | | | Y28 | | | | |
| | | GND | | | | | W21 | | | | |

Notes:

- (1) For more information about pin definitions and pin connection guidelines, refer to the [Arria V Device Family Pin Connection Guidelines](#).
- (2) GXB_REFCLK pin is not supported in current Quartus II version, but will be supported in future Quartus II release version.
- (3) RESET pin is only applicable for DDR3 device.



**Pin Information for the Arria® V 5AGXFB7 Device
Version 1.3**

| Version Number | Date | Changes Made |
|-----------------------|-------------|--|
| 1.0 | 11/4/2011 | Preliminary release. |
| 1.1 | 1/3/2012 | Split VCC to VCC and VCCP |
| 1.2 | 5/11/2012 | - Removed Preliminary - Rename the CQ pins in DQS and hard memory PHY columns |
| 1.3 | 7/31/2015 | Removed LPDDR2 hard memory PHY, RLDRAMII hard memory PHY, and QDRII hard memory PHY columns. |
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