

TYPE	BANK	HF35 Package
Transceiver I/O	1C	28
Transceiver I/O	1D	28
Transceiver I/O	1E	28
Transceiver I/O	1F	28
LVDS I/O	2K	48
HPS shared LVDS I/O	2L	48
HPS shared LVDS I/O	2M	48
HPS shared LVDS I/O	2N	48
LVDS I/O	3A	8
LVDS I/O	3B	48
3.3V I/O	3C	48
LVDS I/O	3D	8
3V I/O	6A	8
HPS shared LVDS I/O	HPS	48
SDM shared LVDS I/O	SDM	29

- i. Total LVDS channels per bank supporting SERDES Non-DPA and DPA mode is equivalent to (LVDS I/O per bank)/2, inclusive of clock pair. Please refer to Dedicated Tx/Rx Channel column in the pin-out table for the channel availability.
- ii. Total LVDS channels supporting SERDES Soft-CDR mode is 12 pairs per bank. Please refer to Soft CDR column in the pin out table for the channel availability.

Bank Number	Index within I/O Bank	VREF	Pin Name/Function	Optional Function(s)	Configuration Function	HPS Function	Dedicated Tx/Rx Channel	Soft CDR Support	GT support	HF35	DQS for X4	DQS for X8/A9	DQS for X16/X18	DQS for X32/X36
3C		VREFB3CND	IO	IO33_L55_0						AM1				
3C		VREFB3CND	IO	IO33_L55_1						AM2				
3C		VREFB3CND	IO	IO33_L55_2						YE				
3C		VREFB3CND	IO	IO33_L55_3						AA5				
3C		VREFB3CND	IO	IO33_L55_4						AC4				
3C		VREFB3CND	IO	IO33_L55_5						AB5				
3C		VREFB3CND	IO	IO33_L55_6						AC5				
3C		VREFB3CND	IO	IO33_L55_7						AB6				
3C		VREFB3CND	IO	IO33_L54_0						AE4				
3C		VREFB3CND	IO	IO33_L54_1						AE5				
3C		VREFB3CND	IO	IO33_L54_2						Y4				
3C		VREFB3CND	IO	IO33_L54_3						AA4				
3C		VREFB3CND	IO	IO33_L54_4						AA3				
3C		VREFB3CND	IO	IO33_L54_5						AB3				
3C		VREFB3CND	IO	IO33_L54_6						AC3				
3C		VREFB3CND	IO	IO33_L54_7						AD4				
3C		VREFB3CND	IO	IO33_L53_0						AG1				
3C		VREFB3CND	IO	IO33_L53_1						AH1				
3C		VREFB3CND	IO	IO33_L53_2						AJ1				
3C		VREFB3CND	IO	IO33_L53_3						AK1				
3C		VREFB3CND	IO	IO33_L53_4						AJ2				
3C		VREFB3CND	IO	IO33_L53_5						AJ3				
3C		VREFB3CND	IO	IO33_L53_6						AK2				
3C		VREFB3CND	IO	IO33_L53_7						AL2				
3C		VREFB3CND	IO	IO33_L52_0						AE1				
3C		VREFB3CND	IO	IO33_L52_1						AE2				
3C		VREFB3CND	IO	IO33_L52_2						AD2				
3C		VREFB3CND	IO	IO33_L52_3						AD3				
3C		VREFB3CND	IO	IO33_L52_4						AF3				
3C		VREFB3CND	IO	IO33_L52_5						AF4				
3C		VREFB3CND	IO	IO33_L52_6						AG3				
3C		VREFB3CND	IO	IO33_L52_7						AH3				
3C		VREFB3CND	IO	IO33_L51_0						Y2				
3C		VREFB3CND	IO	IO33_L51_1						AA2				
3C		VREFB3CND	IO	IO33_L51_2						AB1				
3C		VREFB3CND	IO	IO33_L51_3						AB2				
3C		VREFB3CND	IO	IO33_L51_4						AC1				
3C		VREFB3CND	IO	IO33_L51_5						AD1				
3C		VREFB3CND	IO	IO33_L51_6						AF2				
3C		VREFB3CND	IO	IO33_L51_7						AG2				
3C		VREFB3CND	IO	IO33_L50_0						U3				
3C		VREFB3CND	IO	IO33_L50_1						U3				
3C		VREFB3CND	IO	IO33_L50_2						U5				
3C		VREFB3CND	IO	IO33_L50_3						V4				
3C		VREFB3CND	IO	IO33_L50_4						W2				
3C		VREFB3CND	IO	IO33_L50_5						Y1				
3C		VREFB3CND	IO	IO33_L50_6						W3				
3C		VREFB3CND	IO	IO33_L50_7						W4				
1F			REFCLK_GXBLLF_CHTp											L28
1F			REFCLK_GXBLLF_CHTn											L27
1F			GXBLLF_TX_CH5n											A31
1F			GXBLLF_RX_CH5p,GXBLLF_REFCLK5n											A32
1F			GXBLLF_RX_CH5p,GXBLLF_REFCLK5p											B30
1F			GXBLLF_TX_CH4n						Yes					C31
1F			GXBLLF_TX_CH4p						Yes					C32
1F			GXBLLF_RX_CH4n,GXBLLF_REFCLK4n						Yes					D29
1F			GXBLLF_RX_CH4p,GXBLLF_REFCLK4p						Yes					D30
1F			GXBLLF_TX_CH3n						Yes					D33
1F			GXBLLF_TX_CH3p						Yes					D34
1F			GXBLLF_RX_CH3n,GXBLLF_REFCLK3n						Yes					F29
1F			GXBLLF_RX_CH3p,GXBLLF_REFCLK3p						Yes					F30
1F			GXBLLF_TX_CH2n											E31
1F			GXBLLF_TX_CH2p											E32
1F			GXBLLF_RX_CH2n,GXBLLF_REFCLK2n											H29
1F			GXBLLF_RX_CH2p,GXBLLF_REFCLK2p											H30
1F			GXBLLF_TX_CH1n						Yes					F33
1F			GXBLLF_TX_CH1p						Yes					F34
1F			GXBLLF_RX_CH1n,GXBLLF_REFCLK1n						Yes					K29
1F			GXBLLF_RX_CH1p,GXBLLF_REFCLK1p						Yes					K30
1F			GXBLLF_TX_CH0n						Yes					G31
1F			GXBLLF_TX_CH0p						Yes					G32
1F			GXBLLF_RX_CH0n,GXBLLF_REFCLK0n						Yes					L31
1F			GXBLLF_RX_CH0p,GXBLLF_REFCLK0p						Yes					L32
1F			REFCLK_GXBLLF_CHBp											N28
1F			REFCLK_GXBLLF_CHBn											N27
1E			REFCLK_GXBLL1E_CHTp											R28
1E			REFCLK_GXBLL1E_CHTn											R27
1E			GXBLL1E_TX_CH5n											H33
1E			GXBLL1E_TX_CH5p											H34
1E			GXBLL1E_RX_CH5n,GXBLL1E_REFCLK5n											M29
1E			GXBLL1E_RX_CH5p,GXBLL1E_REFCLK5p											M30
1E			GXBLL1E_TX_CH4n						Yes					J31
1E			GXBLL1E_TX_CH4p						Yes					J32
1E			GXBLL1E_RX_CH4n,GXBLL1E_REFCLK4n						Yes					N31
1E			GXBLL1E_RX_CH4p,GXBLL1E_REFCLK4p						Yes					N32
1E			GXBLL1E_TX_CH3n						Yes					K33
1E			GXBLL1E_TX_CH3p						Yes					K34
1E			GXBLL1E_RX_CH3n,GXBLL1E_REFCLK3n						Yes					P29
1E			GXBLL1E_RX_CH3p,GXBLL1E_REFCLK3p						Yes					P30
1E			GXBLL1E_TX_CH2n											M33
1E			GXBLL1E_TX_CH2p											M34
1E			GXBLL1E_RX_CH2n,GXBLL1E_REFCLK2n											R31
1E			GXBLL1E_RX_CH2p,GXBLL1E_REFCLK2p											R32
1E			GXBLL1E_TX_CH1n						Yes					P33
1E			GXBLL1E_TX_CH1p						Yes					P34
1E			GXBLL1E_RX_CH1n,GXBLL1E_REFCLK1n						Yes					T29

Bank Number	Index within I/O Bank	VREF	Pin Name/Function	Optional Function(s)	Configuration Function	HPS Function	Dedicated Tx/Rx Channel	Soft CDR Support	GT support	HF35	DQS for X4	DQS for X8/A9	DQS for X16/X18	DQS for X32/A36
1E			GXBL1E_RX_CH1p,GXBL1E_REFCLK1p						Yes	T30				
1E			GXBL1E_TX_CH0n						Yes	T33				
1E			GXBL1E_TX_CH0p						Yes	T34				
1E			GXBL1E_RX_CH0n,GXBL1E_REFCLK0n						Yes	L31				
1E			GXBL1E_RX_CH0p,GXBL1E_REFCLK0p						Yes	U32				
1E			REFCLK_GXBL1E_CH8p							U28				
1E			REFCLK_GXBL1E_CH8n							U27				
1D			REFCLK_GXBL1D_CH1p							W38				
1D			REFCLK_GXBL1D_CH1n							W37				
1D			GXBL1D_TX_CH5n							V33				
1D			GXBL1D_TX_CH5p							V34				
1D			GXBL1D_RX_CH5n,GXBL1D_REFCLK5n							V29				
1D			GXBL1D_RX_CH5p,GXBL1D_REFCLK5p							V30				
1D			GXBL1D_TX_CH4n						Yes	T33				
1D			GXBL1D_TX_CH4p						Yes	Y34				
1D			GXBL1D_RX_CH4n,GXBL1D_REFCLK4n						Yes	W31				
1D			GXBL1D_RX_CH4p,GXBL1D_REFCLK4p						Yes	W32				
1D			GXBL1D_TX_CH3n						Yes	AB33				
1D			GXBL1D_TX_CH3p						Yes	AB34				
1D			GXBL1D_RX_CH3n,GXBL1D_REFCLK3n						Yes	Y29				
1D			GXBL1D_RX_CH3p,GXBL1D_REFCLK3p						Yes	Y30				
1D			GXBL1D_TX_CH2n							AD33				
1D			GXBL1D_TX_CH2p							AD34				
1D			GXBL1D_RX_CH2n,GXBL1D_REFCLK2n							AA31				
1D			GXBL1D_RX_CH2p,GXBL1D_REFCLK2p							AA32				
1D			GXBL1D_TX_CH1n						Yes	AF33				
1D			GXBL1D_TX_CH1p						Yes	AF34				
1D			GXBL1D_RX_CH1n,GXBL1D_REFCLK1n						Yes	AB29				
1D			GXBL1D_RX_CH1p,GXBL1D_REFCLK1p						Yes	AB30				
1D			GXBL1D_TX_CH0n						Yes	AG31				
1D			GXBL1D_TX_CH0p						Yes	AG32				
1D			GXBL1D_RX_CH0n,GXBL1D_REFCLK0n						Yes	AC31				
1D			GXBL1D_RX_CH0p,GXBL1D_REFCLK0p						Yes	AC32				
1D			REFCLK_GXBL1D_CH8p							AA28				
1D			REFCLK_GXBL1D_CH8n							AA27				
1C			REFCLK_GXBL1C_CH1p							AC28				
1C			REFCLK_GXBL1C_CH1n							AC27				
1C			GXBL1C_TX_CH5n							AH33				
1C			GXBL1C_TX_CH5p							AH34				
1C			GXBL1C_RX_CH5n,GXBL1C_REFCLK5n							AD29				
1C			GXBL1C_RX_CH5p,GXBL1C_REFCLK5p							AD30				
1C			GXBL1C_TX_CH4n						Yes	AJ31				
1C			GXBL1C_TX_CH4p						Yes	AJ32				
1C			GXBL1C_RX_CH4n,GXBL1C_REFCLK4n						Yes	AE31				
1C			GXBL1C_RX_CH4p,GXBL1C_REFCLK4p						Yes	AE32				
1C			GXBL1C_TX_CH3n						Yes	AK33				
1C			GXBL1C_TX_CH3p						Yes	AK34				
1C			GXBL1C_RX_CH3n,GXBL1C_REFCLK3n						Yes	AF29				
1C			GXBL1C_RX_CH3p,GXBL1C_REFCLK3p						Yes	AF30				
1C			GXBL1C_TX_CH2n							AL31				
1C			GXBL1C_TX_CH2p							AL32				
1C			GXBL1C_RX_CH2n,GXBL1C_REFCLK2n							AH29				
1C			GXBL1C_RX_CH2p,GXBL1C_REFCLK2p							AH30				
1C			GXBL1C_TX_CH1n						Yes	AM33				
1C			GXBL1C_TX_CH1p						Yes	AM34				
1C			GXBL1C_RX_CH1n,GXBL1C_REFCLK1n						Yes	AK29				
1C			GXBL1C_RX_CH1p,GXBL1C_REFCLK1p						Yes	AK30				
1C			GXBL1C_TX_CH0n						Yes	AK31				
1C			GXBL1C_TX_CH0p						Yes	AK32				
1C			GXBL1C_RX_CH0n,GXBL1C_REFCLK0n						Yes	AM29				
1C			GXBL1C_RX_CH0p,GXBL1C_REFCLK0p						Yes	AM30				
1C			REFCLK_GXBL1C_CH8p							AE28				
1C			REFCLK_GXBL1C_CH8n							AE27				
6A			I03V0_10			HPS_TSL0				AP26				
6A			I03V1_10							AN26				
6A			I03V2_10							AM26				
6A			I03V3_10							AM27				
6A			I03V4_10							AL27				
6A			I03V5_10							AK27				
6A			I03V6_10							AK26				
6A			I03V7_10							AJ26				
2N	47	VREFB2NND0	IO			HPS_DDR	LVDS2N_1n	No		A9	DQ0	DQ0	DQ0	DQ0
2N	46	VREFB2NND0	IO			HPS_DDR	LVDS2N_1p	No		A10	DQ0	DQ0	DQ0	DQ0
2N	45	VREFB2NND0	IO			HPS_DDR	LVDS2N_2n	Yes		B15	DQ5n0	DQ0	DQ0	DQ0
2N	44	VREFB2NND0	IO			HPS_DDR	LVDS2N_2p	Yes		C15	DQ5p0	DQ0	DQ0	DQ0
2N	43	VREFB2NND0	IO			HPS_DDR	LVDS2N_3n	No		A8	DQ0	DQ0	DQ0	DQ0
2N	42	VREFB2NND0	IO			HPS_DDR	LVDS2N_3p	No		B8	DQ0	DQ0	DQ0	DQ0
2N	41	VREFB2NND0	IO			HPS_DDR	LVDS2N_4n	Yes		A13	DQ5n1	DQ5n0/CO0	DQ0	DQ0
2N	40	VREFB2NND0	IO			HPS_DDR	LVDS2N_4p	Yes		B13	DQ5p1	DQ5p0/CO0	DQ0	DQ0
2N	39	VREFB2NND0	IO			HPS_DDR	LVDS2N_5n	No		J14	DQ1	DQ0	DQ0	DQ0
2N	38	VREFB2NND0	IO			HPS_DDR	LVDS2N_5p	No		H14	DQ1	DQ0	DQ0	DQ0
2N	37	VREFB2NND0	IO			HPS_DDR	LVDS2N_6n	Yes		B12	DQ1	DQ0	DQ0	DQ0
2N	36	VREFB2NND0	IO			HPS_DDR	LVDS2N_6p	Yes		A12	DQ1	DQ0	DQ0	DQ0
2N	35	VREFB2NND0	IO			HPS_DDR	LVDS2N_7n	No		K15	DQ2	DQ1	DQ0	DQ0
2N	34	VREFB2NND0	IO			HPS_DDR	LVDS2N_7p	No		L15	DQ2	DQ1	DQ0	DQ0
2N	33	VREFB2NND0	IO			HPS_DDR	LVDS2N_8n	Yes		C14	DQ5n2	DQ1	DQ5n0/CO0	DQ0
2N	32	VREFB2NND0	IO			HPS_DDR	LVDS2N_8p	Yes		D14	DQ5p2	DQ1	DQ5p0/CO0	DQ0
2N	31	VREFB2NND0	IO			HPS_DDR	LVDS2N_9n	No		H13	DQ2	DQ1	DQ0	DQ0
2N	30	VREFB2NND0	IO			HPS_DDR	LVDS2N_9p	No		J13	DQ2	DQ1	DQ0	DQ0
2N	29	VREFB2NND0	IO	PLL_2N_CLKOUT1n		HPS_DDR	LVDS2N_10n	Yes		E15	DQ5n3	DQ5n1/CO1	DQ0	DQ0
2N	28	VREFB2NND0	IO	PLL_2N_CLKOUT1p,PLL_2N_CLKOUT1,PLL_2N_FB1		HPS_DDR	LVDS2N_10p	Yes		F15	DQ5p3	DQ5p1/CO1	DQ0	DQ0
2N	27	VREFB2NND0	IO			HPS_DDR	LVDS2N_11n	No		F13	DQ3	DQ1	DQ0	DQ0
2N	26	VREFB2NND0	IO	RZQ_2N		HPS_DDR	LVDS2N_11p	No		G12	DQ3	DQ1	DQ0	DQ0
2N	25	VREFB2NND0	IO	CLK_2N_1n		HPS_DDR	LVDS2N_12n	Yes		E14	DQ3	DQ1	DQ0	DQ0
2N	24	VREFB2NND0	IO	CLK_2N_1p		HPS_DDR	LVDS2N_12p	Yes		F14	DQ3	DQ1	DQ0	DQ0
2N	23	VREFB2NND0	IO	CLK_2N_0n		HPS_DDR	LVDS2N_13n	No		C10	DQ4	DQ2	DQ1	DQ0
2N	22	VREFB2NND0	IO	CLK_2N_0p		HPS_DDR	LVDS2N_13p	No		B10	DQ4	DQ2	DQ1	DQ0

Bank Number	Index within I/O Bank	VREF	Pin Name/Function	Optional Function(s)	Configuration Function	HPS Function	Dedicated Tx/Rx Channel	Soft CDR Support	GT support	HF35	DQS for X4	DQS for X8/X9	DQS for X16/X18	DQS for X32/X36
3A		VREFB3AND	IO	DIFF_3A_24p	AVST_CLK					AJ14				
HPS			HPS_IDA_1	GPIOD_I00.SPIIM0_S51_N.SPI50_CLK_UART0_CTS_N.NAND_ADO0.USB0_CLK.SDMMMC_CCLK		HPS_IDA_1				C5				
HPS			HPS_IDA_2	GPIOD_I01.SPIIM1_S51_N.SPI50_MOSI_UART0_RTS_N.NAND_ADO1.USB0_STP.SDMMMC_CMD		HPS_IDA_2				D4				
HPS			HPS_IDA_3	GPIOD_I02.SPI50_S50_N.UART0_TX.I2C1_SDA.NAND_WE.N_USB0_DIR.SDMMMC_DATA0		HPS_IDA_3				C8				
HPS			HPS_IDA_4	GPIOD_I03.SPI50_MISO_UART0_RX.I2C1_SCL.NAND_RE.N_USB0_DATA0.SDMMMC_DATA1		HPS_IDA_4				C4				
HPS			HPS_IDA_5	GPIOD_I04.SPIIM0_CLK_UART1_CTS_N.I2C0_SDA.NAND_WP.N_USB0_DATA1.SDMMMC_DATA2		HPS_IDA_5				D1				
HPS			HPS_IDA_6	GPIOD_I05.SPIIM0_MOSI_UART1_RTS_N.I2C0_SCL.NAND_ADO2.USB0_NXT.SDMMMC_DATA3		HPS_IDA_6				D3				
HPS			HPS_IDA_7	GPIOD_I06.SPIIM0_MISO_MDI02_MDI0_UART1_TX.I2C_EMAC2_SDA.NAND_ADO3.USB0_DATA2.SDMMMC_DATA4		HPS_IDA_7				C3				
HPS			HPS_IDA_8	GPIOD_I07.SPIIM0_S50_N.MDI02_MDC_UART1_RX.I2C_EMAC2_SCL.NAND_CLE.USB0_DATA3.SDMMMC_DATA5		HPS_IDA_8				B3				
HPS			HPS_IDA_9	GPIOD_I08.SPIIM1_CLK.SPI51_CLK.MDI01_MDI0.I2C_EMAC1_SDA.NAND_ADO4.USB0_DATA4.SDMMMC_DATA6		HPS_IDA_9				C3				
HPS			HPS_IDA_10	GPIOD_I09.SPIIM1_MOSI.MDI01_MDC.I2C_EMAC1_SCL.NAND_ADO5.USB0_DATA5.SDMMMC_DATA7		HPS_IDA_10				B2				
HPS			HPS_IDA_11	GPIOD_I010.SPIIM1_MISO.SPI51_S50_N.MDI00_MDI0.I2C_EMAC0_SDA.NAND_ADO6.USB0_DATA6		HPS_IDA_11				B6				
HPS			HPS_IDA_12	GPIOD_I011.SPIIM1_S50_N.SPI51_MISO.MDI00_MDC.I2C_EMAC0_SCL.NAND_ADO7.USB0_DATA7		HPS_IDA_12				D6				
HPS			HPS_IDA_13	GPIOD_I012.NAND_ALE.USB1_CLK.EMAC0_TX_CLK		HPS_IDA_13				A4				
HPS			HPS_IDA_14	GPIOD_I013.NAND_RB.USB1_STP.EMAC0_TX_CTL		HPS_IDA_14				B5				
HPS			HPS_IDA_15	GPIOD_I014.NAND_CE_N.USB1_DIR.EMAC0_RX_CLK		HPS_IDA_15				D2				
HPS			HPS_IDA_16	GPIOD_I015.USB1_DATA0.EMAC0_RX_CTL		HPS_IDA_16				A5				
HPS			HPS_IDA_17	GPIOD_I016.NAND_ADO8.USB1_DATA1.EMAC0_TXD0		HPS_IDA_17				D7				
HPS			HPS_IDA_18	GPIOD_I017.NAND_ADO9.USB1_NXT.EMAC0_TXD1		HPS_IDA_18				B7				
HPS			HPS_IDA_19	GPIOD_I018.NAND_ADO10.USB1_DATA2.EMAC0_RXD0		HPS_IDA_19				B8				
HPS			HPS_IDA_20	GPIOD_I019.SPIIM1_S51_N.NAND_ADO11.USB1_DATA3.EMAC0_RXD1		HPS_IDA_20				A3				
HPS			HPS_IDA_21	GPIOD_I020.SPIIM1_CLK.SPI50_CLK_UART0_CTS_N.I2C1_SDA.NAND_ADO12.USB1_DATA4.EMAC0_TXD2		HPS_IDA_21				C6				
HPS			HPS_IDA_22	GPIOD_I021.SPIIM1_MOSI.SPI50_MOSI_UART0_RTS_N.I2C1_SCL.NAND_ADO13.USB1_DATA5.EMAC0_TXD3		HPS_IDA_22				G2				
HPS			HPS_IDA_23	GPIOD_I022.SPIIM1_MISO.SPI50_S50_N.UART0_TX.I2C0_SDA.NAND_ADO14.USB1_DATA6.EMAC0_RXD2		HPS_IDA_23				A7				
HPS			HPS_IDA_24	GPIOD_I023.SPIIM1_S50_N.SPI50_MISO_UART0_RX.I2C0_SCL.NAND_ADO15.USB1_DATA7.EMAC0_RXD3		HPS_IDA_24				C8				
HPS			HPS_I0B_1	GPIOD_I00.SPIIM1_CLK_UART0_CTS_N.NAND_ADO0.EMAC1_TX_CLK		HPS_I0B_1				F7				
HPS			HPS_I0B_2	GPIOD_I01.SPIIM1_MOSI_UART0_RTS_N.NAND_ADO1.EMAC1_TX_CTL		HPS_I0B_2				G7				
HPS			HPS_I0B_3	GPIOD_I02.SPIIM1_MISO_UART0_TX.I2C0_SDA.NAND_WE.N.EMAC1_RX_CLK		HPS_I0B_3				E4				
HPS			HPS_I0B_4	GPIOD_I03.SPIIM1_S50_N.UART0_RX.I2C0_SCL.NAND_RE.N.EMAC1_RX_CTL		HPS_I0B_4				F3				
HPS			HPS_I0B_5	GPIOD_I04.SPIIM1_S51_N.SPI51_CLK_UART1_CTS_N.NAND_WP.N.EMAC1_TXD0		HPS_I0B_5				G1				
HPS			HPS_I0B_6	GPIOD_I05.SPI51_MOSI_UART1_RTS_N.NAND_ADO2.EMAC1_TXD1		HPS_I0B_6				F9				
HPS			HPS_I0B_7	GPIOD_I06.SPI51_S50_N.UART1_TX.I2C1_SDA.NAND_ADO3.EMAC1_RXD0		HPS_I0B_7				H6				
HPS			HPS_I0B_8	GPIOD_I07.SPI51_MISO_UART1_RX.I2C1_SCL.NAND_CLE.EMAC1_RXD1		HPS_I0B_8				E1				
HPS			HPS_I0B_9	GPIOD_I08.JTAG_TCK.SPI50_CLK.MDI02_MDI0.I2C_EMAC2_SDA.NAND_ADO4.EMAC1_TXD2		HPS_I0B_9				F8				
HPS			HPS_I0B_10	GPIOD_I09.JTAG_TMS.SPI50_MOSI.MDI02_MDC.I2C_EMAC2_SCL.NAND_ADO5.EMAC1_TXD3		HPS_I0B_10				E7				
HPS			HPS_I0B_11	GPIOD_I010.JTAG_TDO.SPI50_S50_N.MDI00_MDI0.I2C_EMAC0_SDA.NAND_ADO6.EMAC1_RXD2		HPS_I0B_11				H4				
HPS			HPS_I0B_12	GPIOD_I011.JTAG_TDI.SPI50_MISO.MDI00_MDC.I2C_EMAC0_SCL.NAND_ADO7.EMAC1_RXD3		HPS_I0B_12				H5				
HPS			HPS_I0B_13	GPIOD_I012.I2C1_SDA.NAND_ALE.SDMMMC_DATA0.EMAC2_TX_CLK		HPS_I0B_13				D8				
HPS			HPS_I0B_14	GPIOD_I013.I2C1_SCL.NAND_RB.SDMMMC_CMD.EMAC2_TX_CTL		HPS_I0B_14				F2				
HPS			HPS_I0B_15	GPIOD_I014.UART1_TX.NAND_CE_N.SDMMMC_CCLK.EMAC2_RX_CLK		HPS_I0B_15				J9				
HPS			HPS_I0B_16	GPIOD_I015.UART1_RX.SDMMMC_DATA1.EMAC2_RX_CTL		HPS_I0B_16				E2				
HPS			HPS_I0B_17	GPIOD_I016.UART1_CTS_N.NAND_ADO8.SDMMMC_DATA2.EMAC2_TXD0		HPS_I0B_17				F7				
HPS			HPS_I0B_18	GPIOD_I017.SPIIM0_S51_N.UART1_RTS_N.NAND_ADO9.SDMMMC_DATA3.EMAC2_TXD1		HPS_I0B_18				L5				
HPS			HPS_I0B_19	GPIOD_I018.SPIIM0_MISO.MDI01_MDI0.I2C_EMAC1_SDA.NAND_ADO10.SDMMMC_DATA4.EMAC2_RXD0		HPS_I0B_19				J7				
HPS			HPS_I0B_20	GPIOD_I019.SPIIM0_S50_N.MDI01_MDC.I2C_EMAC1_SCL.NAND_ADO11.SDMMMC_DATA5.EMAC2_RXD1		HPS_I0B_20				E6				
HPS			HPS_I0B_21	GPIOD_I020.SPIIM0_CLK.SPI51_CLK.I2C_EMAC2_SDA.NAND_ADO12.SDMMMC_DATA6.EMAC2_TXD2		HPS_I0B_21				G3				
HPS			HPS_I0B_22	GPIOD_I021.SPIIM0_MOSI.SPI51_MOSI_UART0_RTS_N.NAND_ADO13.SDMMMC_DATA7.EMAC2_TXD3		HPS_I0B_22				K9				
HPS			HPS_I0B_23	GPIOD_I022.SPIIM0_MISO.SPI51_S50_N.MDI00_MDI0.I2C_EMAC0_SDA.NAND_ADO14.EMAC2_RXD2		HPS_I0B_23				V9				
HPS			HPS_I0B_24	GPIOD_I023.SPIIM0_S50_N.SPI51_MISO.MDI00_MDC.I2C_EMAC0_SCL.NAND_ADO15.EMAC2_RXD3		HPS_I0B_24				K10				
SDM			TD0							AL18				
SDM			TMS							AL19				
SDM			TCK							AL17				
SDM			TDI							AL15				
SDM			OSC_CLK_1							AE17				
SDM			SDM_I00	PWRMGT_SCL						AE19				
SDM			SDM_I01	AVST8_DATA2_AS_DATA1						AG18				
SDM			SDM_I05	AS_ncS00.MSEL0						AF17				
SDM			SDM_I03	AVST8_DATA3_AS_DATA2						AH18				
SDM			RCNWF6							AK19				
SDM			SDM_I04	AVST8_DATA1_AS_DATA0						AI19				
SDM			SDM_I02	AVST8_DATA0_AS_CLK						AF19				
SDM			SDM_I07	AS_ncS02.MSEL1						AG17				
SDM			SDM_I011	AVST8_VALID.PWRMGT_SDA						AK15				
SDM			HSTATUS							AK15				
SDM			SDM_I016	PWRMGT_SDA						AG15				
SDM			SDM_I013	AVST8_DATAS						AJ16				
SDM			SDM_I09	AS_ncS01.MSEL2						AK16				
SDM			SDM_I06	AVST8_DATA4_AS_DATA3						AF18				
SDM			SDM_I010	AVST8_DATA7						AH16				
SDM			SDM_I08	AVST_READY_AS_ncS03						AJ17				
SDM			SDM_I012	PWRMGT_SDA						AG16				
SDM			SDM_I015	AVST8_DATA6						AH19				
SDM			SDM_I014	AVST8_CLK.PWRMGT_SCL						AK17				
SDM			RREF_SDM							AP19				
SDM			VSIGP_0							AM18				
SDM			VSIGN_0							AM17				
SDM			VSIGP_1							AP17				
SDM			VSIGN_1							AP16				
GND										T4				
GND										T5				
GND										AJ18				
GND										AM16				
GND										Y8				
GND										Y32				
GND										V31				
GND										V9				
GND										V25				
GND										V23				
GND										Y18				
GND										Y13				
GND										W5				
GND										W34				
GND										W33				
GND										W30				
GND										W29				
GND										W28				

Bank Number	Index within I/O Bank	VREF	Pin Name/Function	Optional Function(s)	Configuration Function	HPS Function	Dedicated Tx/Rx Channel	Soft CDR Support	GT support	HF35	DQS for X4	DQS for X8/X9	DQS for X16/X18	DQS for X32/X36
			GND							W25				
			GND							W20				
			GND							W15				
			GND							W10				
			GND							V7				
			GND							V32				
			GND							V31				
			GND							V25				
			GND							V22				
			GND							V2				
			GND							V17				
			GND							V12				
			GND							U9				
			GND							U8				
			GND							U34				
			GND							U33				
			GND							U30				
			GND							U29				
			GND							U26				
			GND							U25				
			GND							U24				
			GND							U19				
			GND							U14				
			GND							T6				
			GND							T32				
			GND							T31				
			GND							T25				
			GND							T21				
			GND							T16				
			GND							T11				
			GND							T1				
			GND							R8				
			GND							R34				
			GND							R33				
			GND							R30				
			GND							R5				
			GND							R29				
			GND							R26				
			GND							R25				
			GND							R23				
			GND							R18				
			GND							R13				
			GND							P5				
			GND							P32				
			GND							P31				
			GND							P25				
			GND							P20				
			GND							P15				
			GND							P10				
			GND							N7				
			GND							N34				
			GND							N33				
			GND							N30				
			GND							N29				
			GND							N26				
			GND							N25				
			GND							N22				
			GND							N2				
			GND							N17				
			GND							N12				
			GND							M9				
			GND							M4				
			GND							M32				
			GND							M31				
			GND							M25				
			GND							M24				
			GND							M19				
			GND							M14				
			GND							L6				
			GND							L34				
			GND							L33				
			GND							L30				
			GND							L29				
			GND							L26				
			GND							L25				
			GND							L21				
			GND							L16				
			GND							L11				
			GND							L1				
			GND							K8				
			GND							K32				
			GND							K31				
			GND							K3				
			GND							K25				
			GND							K23				
			GND							K18				
			GND							K13				
			GND							J5				
			GND							J34				
			GND							J33				
			GND							J30				
			GND							J29				
			GND							J28				
			GND							J27				
			GND							J26				
			GND							J25				
			GND							J20				

Bank Number	Index within I/O Bank	VREF	Pin Name/Function	Optional Function(s)	Configuration Function	HPS Function	Dedicated Tx/Rx Channel	Soft CDR Support	GT support	HF35	DQS for X4	DQS for X8/X9	DQS for X16/X18	DQS for X32/X36
			GND							J15				
			GND							J10				
			GND							H7				
			GND							H32				
			GND							H31				
			GND							H28				
			GND							H27				
			GND							H22				
			GND							H2				
			GND							H17				
			GND							H12				
			GND							G9				
			GND							G4				
			GND							G34				
			GND							G33				
			GND							G30				
			GND							G29				
			GND							G28				
			GND							G24				
			GND							G19				
			GND							G14				
			GND							F6				
			GND							F32				
			GND							F31				
			GND							F28				
			GND							F26				
			GND							F21				
			GND							F16				
			GND							F11				
			GND							F1				
			GND							E8				
			GND							E4				
			GND							E33				
			GND							E30				
			GND							E3				
			GND							E29				
			GND							E28				
			GND							E23				
			GND							E18				
			GND							E13				
			GND							D5				
			GND							D32				
			GND							D31				
			GND							D28				
			GND							D25				
			GND							D20				
			GND							D15				
			GND							D10				
			GND							C7				
			GND							C34				
			GND							C33				
			GND							C30				
			GND							C29				
			GND							C28				
			GND							C27				
			GND							C22				
			GND							C2				
			GND							C17				
			GND							C12				
			GND							B9				
			GND							B4				
			GND							B34				
			GND							B33				
			GND							B32				
			GND							B31				
			GND							B28				
			GND							B24				
			GND							B19				
			GND							B14				
			GND							B1				
			GND							AP5				
			GND							AP33				
			GND							AP32				
			GND							AP31				
			GND							AP30				
			GND							AP25				
			GND							AP20				
			GND							AP2				
			GND							AP15				
			GND							AP10				
			GND							AN7				
			GND							AN34				
			GND							AN33				
			GND							AN30				
			GND							AN29				
			GND							AN28				
			GND							AN27				
			GND							AN22				
			GND							AN2				
			GND							AN17				
			GND							AN12				
			GND							AN1				
			GND							AM9				
			GND							AM4				
			GND							AM32				
			GND							AM31				
			GND							AM28				

Bank Number	Index within I/O Bank	VREF	Pin Name/Function	Optional Function(s)	Configuration Function	HPS Function	Dedicated Tx/Rx Channel	Soft CDR Support	GT support	HF35	DQS for X4	DQS for X8/X9	DQS for X16/X18	DQS for X32/X36
			GND							AM24				
			GND							AM19				
			GND							AM14				
			GND							AL6				
			GND							AL34				
			GND							AL33				
			GND							AL30				
			GND							AL29				
			GND							AL28				
			GND							AL26				
			GND							AL21				
			GND							AL16				
			GND							AL11				
			GND							AL1				
			GND							AK8				
			GND							AK32				
			GND							AK31				
			GND							AK3				
			GND							AK28				
			GND							AK23				
			GND							AK18				
			GND							AK13				
			GND							AJ5				
			GND							AJ34				
			GND							AJ33				
			GND							AJ30				
			GND							AJ29				
			GND							AJ28				
			GND							AJ25				
			GND							AJ20				
			GND							AJ15				
			GND							AJ10				
			GND							AH7				
			GND							AH32				
			GND							AH31				
			GND							AH28				
			GND							AH27				
			GND							AH22				
			GND							AH2				
			GND							AH17				
			GND							AH12				
			GND							AG9				
			GND							AG4				
			GND							AG34				
			GND							AG33				
			GND							AG30				
			GND							AG29				
			GND							AG28				
			GND							AG24				
			GND							AG19				
			GND							AG14				
			GND							AF6				
			GND							AF32				
			GND							AF31				
			GND							AF28				
			GND							AF27				
			GND							AF26				
			GND							AF21				
			GND							AF16				
			GND							AF11				
			GND							AF1				
			GND							AE8				
			GND							AE34				
			GND							AE33				
			GND							AE30				
			GND							AE3				
			GND							AE29				
			GND							AE26				
			GND							AE25				
			GND							AE23				
			GND							AE18				
			GND							AE13				
			GND							AD5				
			GND							AD32				
			GND							AD31				
			GND							AD25				
			GND							AD20				
			GND							AD15				
			GND							AD10				
			GND							AC7				
			GND							AC34				
			GND							AC33				
			GND							AC30				
			GND							AC29				
			GND							AC26				
			GND							AC25				
			GND							AC22				
			GND							AC2				
			GND							AC17				
			GND							AC12				
			GND							AB9				
			GND							AB4				
			GND							AB32				
			GND							AB31				
			GND							AB25				
			GND							AB24				
			GND							AB19				

Bank Number	Index within I/O Bank	VREF	Pin Name/Function	Optional Function(s)	Configuration Function	HPS Function	Dedicated Tx/Rx Channel	Soft CDR Support	GT support	HF35	DQS for X4	DQS for X8/X9	DQS for X16/X18	DQS for X32/X36
			GND							AB14				
			GND							AA6				
			GND							AA34				
			GND							AA33				
			GND							AA30				
			GND							AA29				
			GND							AA26				
			GND							AA25				
			GND							AA21				
			GND							AA16				
			GND							AA11				
			GND							AA1				
			GND							A6				
			GND							A3				
			GND							A30				
			GND							A29				
			GND							A28				
			GND							A26				
			GND							A21				
			GND							A2				
			GND							A16				
			GND							A11				
			GNDSENSE							T14				
			VCC							Y9				
			VCC							Y7				
			VCC							Y22				
			VCC							Y21				
			VCC							Y20				
			VCC							Y19				
			VCC							Y17				
			VCC							Y16				
			VCC							Y15				
			VCC							Y14				
			VCC							Y12				
			VCC							Y10				
			VCC							W9				
			VCC							W8				
			VCC							W7				
			VCC							W22				
			VCC							W21				
			VCC							W19				
			VCC							W18				
			VCC							W17				
			VCC							W16				
			VCC							W14				
			VCC							W13				
			VCC							W12				
			VCC							W11				
			VCC							U7				
			VCC							U22				
			VCC							T9				
			VCC							T8				
			VCC							T7				
			VCC							T22				
			VCC							T20				
			VCC							T19				
			VCC							T18				
			VCC							T17				
			VCC							T13				
			VCC							T12				
			VCC							T10				
			VCC							R9				
			VCC							R7				
			VCC							R22				
			VCC							R21				
			VCC							R20				
			VCC							R19				
			VCC							R17				
			VCC							R16				
			VCC							R15				
			VCC							R14				
			VCC							R12				
			VCC							R11				
			VCC							R10				
			VCC							P9				
			VCC							P8				
			VCC							P7				
			VCC							P22				
			VCC							P21				
			VCC							P19				
			VCC							P17				
			VCC							P16				
			VCC							P14				
			VCC							P13				
			VCC							P12				
			VCC							N9				
			VCC							N8				
			VCC							N21				
			VCC							N19				
			VCC							N15				
			VCC							N14				
			VCC							AB8				
			VCC							AB7				
			VCC							AB22				
			VCC							AB21				
			VCC							AB17				
			VCC							AB15				

Bank Number	Index within I/O Bank	VREF	Pin Name/Function	Optional Function(s)	Configuration Function	HPS Function	Dedicated Tx/Rx Channel	Soft CDR Support	GT support	HF35	DQS for X4	DQS for X8/A9	DQS for X16/X18	DQS for X32/X36
			VCC							AB12				
			VCC							AA9				
			VCC							AA8				
			VCC							AA7				
			VCC							AA22				
			VCC							AA20				
			VCC							AA19				
			VCC							AA17				
			VCC							AA15				
			VCC							AA14				
			VCC							AA13				
			VCC							AA12				
			VCC							AA10				
			VCCPT							V9				
			VCCPT							V8				
			VCCPT							V21				
			VCCPT							V20				
			VCCPT							V19				
			VCCPT							V18				
			VCCPT							V16				
			VCCPT							V13				
			VCCPT							V11				
			VCCPT							V10				
			VCCPT							U8				
			VCCPT							U21				
			VCCPT							U20				
			VCCPT							U18				
			VCCPT							U17				
			VCCPT							U16				
			VCCPT							U15				
			VCCPT							U13				
			VCCPT							U12				
			VCCPT							U11				
			VCCPT							U10				
			DNU							AG27				
			DNU							AN25				
			DNU							AN25				
			DNU							J8				
			DNU							H8				
			DNU							AP18				
			DNU							AN19				
			DNU							AN18				
			DNU							AN20				
			DNU							AP28				
			DNU							AP27				
			TEMPDIODE0n							AN15				
			TEMPDIODE0p							AN15				
			TEMPDIODE1n							AJ27				
			TEMPDIODE1p							AH26				
			VCCBAT							AE15				
			VCCA_PLL							V15				
			VCCA_PLL							V14				
			VCCIO2K							AD19				
			VCCIO2K							AC20				
			VCCIO2K							AC19				
			VCCIO2L							M21				
			VCCIO2L							M20				
			VCCIO2L							L20				
			VCCIO2M							M18				
			VCCIO2M							L19				
			VCCIO2M							L18				
			VCCIO2N							M17				
			VCCIO2N							M16				
			VCCIO2N							L17				
			VCCIO3A							AD12				
			VCCIO3A							AC14				
			VCCIO3A							AC13				
			VCCIO3B							AC9				
			VCCIO3B							AC8				
			VCCIO3B							AC10				
			VCCIO3C							W6				
			VCCIO3C							V6				
			VCCIO3C							V5				
			VCCIO3D							M10				
			VCCIO3B							L8				
			VCCIO3D							L10				
			VCCIO3V							AC24				
			VCCIO3V							AC23				
			VCCIO_HPS							M12				
			VCCIO_HPS							M11				
			VCCIO_S0M4							AD16				
2K		VREFB2KNO	VREFB2KNO							AC21				
2L		VREFB2LNO	VREFB2LNO							K20				
2M		VREFB2MNO	VREFB2MNO							K19				
2N		VREFB2NNO	VREFB2NNO							M15				
3A		VREFB3ANO	VREFB3ANO							AC15				
3B		VREFB3BNO	VREFB3BNO							AC11				
3C		VREFB3CNO	VREFB3CNO							Y6				
3D		VREFB3DNO	VREFB3DNO							M8				
		NC								U6				
		NC								R6				
		NC								P6				
		NC								N6				
		NC								AG26				
		NC								AD18				
		NC								AC6				
		NC								AC18				

Bank Number	Index within I/O Bank	VREF	Pin Name/Function	Optional Function(s)	Configuration Function	HPS Function	Dedicated Tx/Rx Channel	Soft CDR Support	GT support	HF35	DQS for X4	DQS for X8/A9	DQS for X16/X18	DQS for X32/X36
			NC							K1				
			NC							K2				
			NC							M2				
			NC							L2				
			NC							U2				
			NC							U1				
			NC							J2				
			NC							J3				
			NC							L4				
			NC							L3				
			NC							T3				
			NC							T2				
			NC							H1				
			NC							J6				
			NC							V1				
			NC							W1				
			VCCX_GXBLCF							V26				
			VCCX_GXBLCF							P26				
			VCCX_GXBLCF							K26				
			VCCX_GXBLCF							AB26				
			VCCR_GXBLLC							AD28				
			VCCR_GXBLLC							AD27				
			VCCR_GXBLLC							AD26				
			VCCR_GXBLLD							V28				
			VCCR_GXBLLD							V27				
			VCCR_GXBLLD							V26				
			VCCR_GXBLLI							T28				
			VCCR_GXBLLI							T27				
			VCCR_GXBLLI							T26				
			VCCR_GXBLLF							M28				
			VCCR_GXBLLF							M27				
			VCCR_GXBLLF							M26				
			VCCT_GXBLLC							AB28				
			VCCT_GXBLLC							AB27				
			VCCT_GXBLLD							V28				
			VCCT_GXBLLD							V27				
			VCCT_GXBLLI							P28				
			VCCT_GXBLLI							P27				
			VCCT_GXBLLF							K28				
			VCCT_GXBLLF							K27				
			RREF_BI							AP29				
			VCCAOC							AF15				
			VCCERAM							V24				
			VCCERAM							W24				
			VCCERAM							W23				
			VCCERAM							V24				
			VCCERAM							V23				
			VCCERAM							U23				
			VCCERAM							T24				
			VCCERAM							T23				
			VCCERAM							R24				
			VCCERAM							P24				
			VCCERAM							P23				
			VCCERAM							N24				
			VCCERAM							N23				
			VCCERAM							N20				
			VCCERAM							N16				
			VCCERAM							N13				
			VCCERAM							N10				
			VCCERAM							AB23				
			VCCERAM							AB20				
			VCCERAM							AB16				
			VCCERAM							AB13				
			VCCERAM							AB10				
			VCCERAM							AA24				
			VCCERAM							AA23				
			VCCFUSEWR_SDM							AE16				
			VCCLENS							T15				
			VCCL_HPS							M13				
			VCCL_HPS							L14				
			VCCL_HPS							L13				
			VCCL_HPS							L12				
			VCCL_HPS							K14				
			VCCP							Y11				
			VCCP							P18				
			VCCP							P11				
			VCCP							N18				
			VCCP							N11				
			VCCP							AB18				
			VCCP							AB11				
			VCCP							AK18				
			VCCPLLDIG_HPS							J11				
			VCCPLLDIG_SDM							AD17				
			VCCPLL_HPS							K11				
			VCCPLL_SDM							AC16				

January 2020	2020.01.06	Initial release.
October 2020	2020.10.27	Removed SD/MMC configuration mode support from Intel Stratix 10 devices.
December 2020	2020.12.10	Added 3.3V I/O in Bank 3C to the IO resource count file.

(1) For more information about pin definition and pin connection guidelines, refer to the [Intel® Stratix® 10 Device Family Pin Connection Guidelines](#)