



Bank Number	VREF	PinName/Function (2), (3)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F1152 (4)	DQS for X8/X9	DQS for X16/X18	DQS for X32/X36	HMC pin assignment for DDR3 (5)	HMC pin assignment for LPDDR2	HPS Pin Mux Select 3	HPS Pin Mux Select 2	HPS Pin Mux Select 1	HPS Pin Mux Select 0
		GND					AB27									
		GND					AB28									
		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									
		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					M30									
		GND					M31									
		GND					M32									
		GND					N28									
		GND					N29									
		GND					N33									
		GND					N34									
		GND					P27									
		GND					P31									
		GND					P32									
		GND					P28									
		GND					R30									
		GND					R33									
		GND					R34									
		GND					T27									
		GND					T29									
		GND					T31									
		GND					T32									
		GND					U28									
		GND					U33									
		GND					U34									
		GND					V27									
		GND					V29									
		GND					V32									
		GND					W28									
		GND					W30									
		GND					W33									
		GND					W34									
		GND					Y27									
		GND					Y29									
		GND					Y31									
		GND					Y32									
		GND					AA1									
		GND					AA2									
		GND					AB3									
		GND					AB4									
		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									
		GND					AH3									
		GND					AH4									
		GND					AJ1									
		GND					AJ2									
		GND					AJ6									
		GND					AK3									
		GND					AK4									
		GND					AL1									
		GND					AL2									
		GND					AL3									
		GND					AN1									
		GND					V3									
		GND					V4									
		GND					V7									
		GND					W1									
		GND					W2									
		GND					W6									
		GND					Y3									
		GND					Y4									
		GND					Y8									
		GND					Y8									
		VCCP					R18									
		VCCP					T21									
		VCCP					U26									
		VCCP					W10									
		VCCP					Y10									
		VCCP					Y12									
		VCCP					Y22									



Bank Number	VREF	PinName/Function (2), (3)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F1152 (4)	DQS for X8/X9	DQS for X16/X18	DQS for X32/X36	HMC pin assignment for DDR3 (5)	HMC pin assignment for LPDDR2	HPS Pin Mux Select 3	HPS Pin Mux Select 2	HPS Pin Mux Select 1	HPS Pin Mux Select 0
		GND					D30									
		GND					E14									
		GND					E25									
		GND					E28									
		GND					E8									
		GND					F19									
		GND					F22									
		GND					F5									
		GND					G11									
		GND					G2									
		GND					H25									
		GND					H28									
		GND					H8									
		GND					J13									
		GND					J19									
		GND					J22									
		GND					J5									
		GND					K16									
		GND					K2									
		GND					L25									
		GND					L28									
		GND					L8									
		GND					M18									
		GND					M22									
		GND					M5									
		GND					N11									
		GND					N15									
		GND					N2									
		GND					N24									
		GND					P13									
		GND					P18									
		GND					P8									
		GND					V18									
		GND					V14									
		GND					V16									
		GND					V8									
		GND					W11									
		GND					W13									
		GND					W15									
		GND					W17									
		GND					W19									
		GND					W21									
		GND					W23									
		GND					W28									
		GND					W9									
		GND					Y18									
		GND					Z20									
		GND					R17									
		GND					R19									
		GND					R21									
		GND					R23									
		GND					R25									
		GND					R5									
		GND					R8									
		GND					T10									
		GND					T12									
		GND					T14									
		GND					T18									
		GND					T2									
		GND					T20									
		GND					T22									
		GND					T24									
		GND					U11									
		GND					U13									
		GND					U17									
		GND					U19									
		GND					U21									
		GND					U23									
		GND					U25									
		GND					U6									
		GND					U9									
		GND					V10									

Notes:

- (1) For more information about pin definitions and pin connection guidelines, refer to the [Altera V Device Family Pin Connection Guidelines](#).
- (2) GND, REFCLK pin is not supported in current Quartus II version, but will be supported in future Quartus II release version.
- (3) Pins with * contains similar name with other pins in the same column. For the selection of the HPS pins, refer to the "HPS Pin Mux Select x" columns.
- (4) Pins with * are the 10 Gbps transceiver channels. For more information about the 10 Gbps transceiver channels clocking recommendation, refer to the [Transceiver Clocking in Arria V Devices chapter](#).
- (5) RESET pin is only applicable for DDR3 device.



Table with columns: Bank Number, VREF, PinName/Function (2, (2)), Optional Function(s), Configuration Function, Dedicated Tx/Rx Channel, Emulated LVDS Output Channel, F1517 (4), DQS for X0/X3, DQS for X16/X18, DQS for X32/X36, HMC pin assignment for DQSx (6), HMC pin assignment for PDSEx (6), HPS Pin Mux Select 3, HPS Pin Mux Select 2, HPS Pin Mux Select 1, HPS Pin Mux Select 0.



Bank Number	VREF	PinName/Function (1, 2)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F1517 (4)	DQS for X8/X9	DQS for X16/X18	DQS for X32/X36	HMC pin assignment for DQS3 (0)	HMC pin assignment for LPDDR2	HPS Pin Mux Select 3	HPS Pin Mux Select 2	HPS Pin Mux Select 1	HPS Pin Mux Select 0
BD	VREFBAND0	IO			DIFF0_RX_T00n	DIFFOUT_T00n	E04	DQSnTQK0T	DQSnTQK0T							
BD	VREFBAND0	IO			DIFF0_TX_T01n	DIFFOUT_T01n	J03	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T02n	DIFFOUT_T02n	F04	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T03n	DIFFOUT_T03n	G04	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T03n	DIFFOUT_T03n	H04	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T03n	DIFFOUT_T03n	J04									
BD	VREFBAND0	IO			DIFF0_RX_T04n	DIFFOUT_T04n	L06	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T04n	DIFFOUT_T04n	T05	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T05n	DIFFOUT_T05n	G05	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T05n	DIFFOUT_T05n	H05	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T06n	DIFFOUT_T06n	N04	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T06n	DIFFOUT_T06n	P04	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T07n	DIFFOUT_T07n	K04	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T07n	DIFFOUT_T07n	T04									
BD	VREFBAND0	IO			DIFF0_RX_T08n	DIFFOUT_T08n	A05	DQSnTQK0T	DQSnTQK0T							
BD	VREFBAND0	IO			DIFF0_RX_T08n	DIFFOUT_T08n	B05	DQSnTQK0T	DQSnTQK0T							
BD	VREFBAND0	IO			DIFF0_TX_T09n	DIFFOUT_T09n	K04	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T09n	DIFFOUT_T09n	L04									
BD	VREFBAND0	IO			DIFF0_RX_T09n	DIFFOUT_T09n	D05	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T09n	DIFFOUT_T09n	E05	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T09n	DIFFOUT_T09n	F05	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T09n	DIFFOUT_T09n	G05	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T09n	DIFFOUT_T09n	H05	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T09n	DIFFOUT_T09n	J05	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T10n	DIFFOUT_T10n	C06	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T10n	DIFFOUT_T10n	D06	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T10n	DIFFOUT_T10n	K05	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T10n	DIFFOUT_T10n	L05									
BD	VREFBAND0	IO			DIFF0_RX_T10n	DIFFOUT_T10n	M06	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T10n	DIFFOUT_T10n	N06	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T10n	DIFFOUT_T10n	P06	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T10n	DIFFOUT_T10n	Q06	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T11n	DIFFOUT_T11n	C06	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T11n	DIFFOUT_T11n	D06	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T11n	DIFFOUT_T11n	K06	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T11n	DIFFOUT_T11n	L06									
BD	VREFBAND0	IO			DIFF0_RX_T11n	DIFFOUT_T11n	M07	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T11n	DIFFOUT_T11n	N07	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T11n	DIFFOUT_T11n	P07	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T11n	DIFFOUT_T11n	Q07	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T12n	DIFFOUT_T12n	H07	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T12n	DIFFOUT_T12n	J07	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T12n	DIFFOUT_T12n	K07	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T12n	DIFFOUT_T12n	L07									
BD	VREFBAND0	IO			DIFF0_RX_T13n	DIFFOUT_T13n	M08	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T13n	DIFFOUT_T13n	N08	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T13n	DIFFOUT_T13n	P08	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T13n	DIFFOUT_T13n	Q08	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T14n	DIFFOUT_T14n	C08	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T14n	DIFFOUT_T14n	D08	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T14n	DIFFOUT_T14n	K08	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T14n	DIFFOUT_T14n	L08									
BD	VREFBAND0	IO			DIFF0_RX_T15n	DIFFOUT_T15n	M09	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T15n	DIFFOUT_T15n	N09	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T15n	DIFFOUT_T15n	P09	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T15n	DIFFOUT_T15n	Q09	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T16n	DIFFOUT_T16n	C09	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T16n	DIFFOUT_T16n	D09	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T16n	DIFFOUT_T16n	K09	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T16n	DIFFOUT_T16n	L09									
BD	VREFBAND0	IO			DIFF0_RX_T17n	DIFFOUT_T17n	M10	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T17n	DIFFOUT_T17n	N10	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T17n	DIFFOUT_T17n	P10	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T17n	DIFFOUT_T17n	Q10	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T18n	DIFFOUT_T18n	C10	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T18n	DIFFOUT_T18n	D10	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T18n	DIFFOUT_T18n	K10	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T18n	DIFFOUT_T18n	L10									
BD	VREFBAND0	IO			DIFF0_RX_T19n	DIFFOUT_T19n	M11	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T19n	DIFFOUT_T19n	N11	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T19n	DIFFOUT_T19n	P11	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T19n	DIFFOUT_T19n	Q11	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T20n	DIFFOUT_T20n	C11	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T20n	DIFFOUT_T20n	D11	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T20n	DIFFOUT_T20n	K11	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T20n	DIFFOUT_T20n	L11									
BD	VREFBAND0	IO			DIFF0_RX_T21n	DIFFOUT_T21n	M12	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T21n	DIFFOUT_T21n	N12	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T21n	DIFFOUT_T21n	P12	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T21n	DIFFOUT_T21n	Q12	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T22n	DIFFOUT_T22n	C12	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T22n	DIFFOUT_T22n	D12	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T22n	DIFFOUT_T22n	K12	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T22n	DIFFOUT_T22n	L12									
BD	VREFBAND0	IO			DIFF0_RX_T23n	DIFFOUT_T23n	M13	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T23n	DIFFOUT_T23n	N13	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T23n	DIFFOUT_T23n	P13	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T23n	DIFFOUT_T23n	Q13	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T24n	DIFFOUT_T24n	C13	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T24n	DIFFOUT_T24n	D13	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T24n	DIFFOUT_T24n	K13	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T24n	DIFFOUT_T24n	L13									
BD	VREFBAND0	IO			DIFF0_RX_T25n	DIFFOUT_T25n	M14	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_RX_T25n	DIFFOUT_T25n	N14	DQ0T	DQ0T							
BD	VREFBAND0	IO			DIFF0_TX_T25n	DIFFOUT_T25n	P14	DQ0T	DQ0T							



Bank Number	VREF	PinName/Function (2), (3)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F1517 (4)	DQS for X0/X9	DQS for X16/X18	DQS for X32/X36	HMC pin assignment for DQS3 (5)	HMC pin assignment for PDS22	HPS Pin Mux Select 3	HPS Pin Mux Select 2	HPS Pin Mux Select 1	HPS Pin Mux Select 0
BA	VREFBAND	I0			DIFFIO_TX_T112n	DIFFFOLUT_T112m	G32									
BA	VREFBAND	I0	CL200b		DIFFIO_RX_T113p	DIFFFOLUT_T113n	G34	DQ11T								
BA	VREFBAND	I0	CL200b		DIFFIO_RX_T113p	DIFFFOLUT_T113n	G34	DQ11T								
BA	VREFBAND	I0			DIFFIO_TX_T114p	DIFFFOLUT_T114n	E33	DQ11T								
BA	VREFBAND	I0	RZQ_6		DIFFIO_TX_T114n	DIFFFOLUT_T114m	F33									
BA		MSEL0		MSEL0			H35									
BA		MSEL1		MSEL1			A34									
BA		MSEL2		MSEL2			D35									
BA		MSEL3		MSEL3			A37									
BA		MSEL4		MSEL4			IP34									
BA		CONF_DONE		CONF_DONE			K35									
BA		nSTATUS		nSTATUS			F35									
BA		nCE		nCE			M35									
BA		nCONENFG		nCONENFG			A36									
		GND					P35									
		VCC_IOPS					V16									
		GND					W16									
		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					AD32									
		GND					AD36									
		GND					AD37									
		GND					AE33									
		GND					AE35									
		GND					AE38									
		GND					AE39									
		GND					AF31									
		GND					AF32									
		GND					AF34									
		GND					AF36									
		GND					AG37									
		GND					AG38									
		GND					AG39									
		GND					AH33									
		GND					AH33									
		GND					AH34									
		GND					AH35									
		GND					AH36									
		GND					AM37									
		GND					AL35									
		GND					AJ38									
		GND					AJ39									
		GND					AK36									
		GND					AK37									
		GND					AK38									
		GND					AL38									
		GND					AL39									
		GND					AM38									
		GND					AM37									
		GND					AN35									
		GND					AN38									
		GND					AN39									
		GND					AP38									
		GND					AP39									
		GND					AR35									
		GND					AR38									
		GND					AR39									
		GND					AT36									
		GND					AT37									
		GND					AU35									
		GND					AU38									
		GND					AV39									
		GND					AV35									
		GND					AV38									
		GND					AV37									
		GND					AV38									
		GND					AV39									
		GND					AV35									
		GND					AV38									
		GND					BA36									
		GND					B37									
		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					H35									
		GND					H37									
		GND					J35									
		GND					J38									
		GND					J39									
		GND					K36									
		GND					K37									
		GND					L36									
		GND					L39									
		GND					M35									
		GND					M37									
		GND					N35									
		GND					N38									
		GND					N39									
		GND					P36									
		GND					P37									
		GND					R34									
		GND					R38									
		GND					R39									
		GND					T32									
		GND					T38									
		GND					T37									
		GND					U33									
		GND					U35									
		GND					U36									
		GND					U39									
		GND					V32									
		GND					V34									
		GND					V36									
		GND					V37									
		GND					W33									
		GND					W38									
		GND					W39									
		GND					Y31									
		GND					Y32									



Bank Number	VREF	PinName/Function (2), (3)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F1517 (4)	DQS for X8/X9	DQS for X16/X18	DQS for X32/X36	HMC pin assignment for DQS3 (5)	HMC pin assignment for LPDDR2	HPS Pin Mux Select 3	HPS Pin Mux Select 2	HPS Pin Mux Select 1	HPS Pin Mux Select 0
		GND					Y36									
		GND					Y35									
		GND					AA3									
		GND					AA4									
		GND					AA5									
		GND					AA6									
		GND					AB1									
		GND					AB2									
		GND					AB7									
		GND					AC3									
		GND					AC4									
		GND					AC8									
		GND					AD1									
		GND					AD2									
		GND					AD5									
		GND					AD7									
		GND					AE3									
		GND					AE4									
		GND					AE5									
		GND					AE8									
		GND					AF1									
		GND					AF2									
		GND					AP9									
		GND					AG3									
		GND					AG4									
		GND					AG5									
		GND					AG6									
		GND					AG7									
		GND					AG8									
		GND					AH1									
		GND					AH2									
		GND					AH5									
		GND					AL3									
		GND					AL4									
		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					AT3									
		GND					AU4									
		GND					AV1									
		GND					AV2									
		GND					N3									
		GND					N4									
		GND					P1									
		GND					P2									
		GND					PS									
		GND					R3									
		GND					R4									
		GND					RS									
		GND					T1									
		GND					T2									
		GND					TS									
		GND					U3									
		GND					U4									
		GND					U5									
		GND					U6									
		GND					V1									
		GND					V2									
		GND					V7									
		GND					W3									
		GND					W4									
		GND					W8									
		GND					Y1									
		GND					Y2									
		GND					Y8									
		GND					Y7									
		VCCP					AB21									
		VCCP					AB25									
		VCCP					AB15									
		VCCP					U10									
		VCCP					U16									
		VCCP					V25									
		VCCP					V27									
		VCCP					W10									
		VCCP					V27									
		VCCA_FPRL					AC30									
		VCCA_FPRL					AD9									
		VCCA_FPRL					Y30									
		VCCA_FPRL					AA8									
		VCCA_FPRL					V31									
		VCCP_HPS					U8									
		VCCP_HPS					R33									
		VCC_AUX					AB14									
		VCC_AUX					AB8									
		VCC_AUX					U28									
		VCC_AUX_SHARED					U15									
		VCCD_FPRL					AB1									
		VCCD_FPRL					AB9									
		VCCD_FPRL					W30									
		VCCD_FPRL					W9									
		VCCD_FPRL					T31									
		VCCA_GXBL0					AF33									
		VCCA_GXBR0					AE7									
		VCCA_GXBL1					AB33									
		VCCA_GXBR1					AB7									
		VCCA_GXBL2					V33									
		VCCD_GXBL0					AD33									
		VCCD_GXBR0					AE7									
		VCCD_GXBL1					Y33									
		VCCD_GXBR1					W7									
		VCCD_GXBL2					T33									
		VCCD_GXBL0					AD34									
		VCCD_GXBL0					AD35									
		VCCD_GXBR0					AE5									
		VCCD_GXBR0					AE6									
		VCCD_GXBL1					Y34									
		VCCD_GXBL1					Y35									
		VCCD_GXBR1					W5									
		VCCD_GXBR1					W6									
		VCCD_GXBL2					T34									
		VCCD_GXBL2					T35									
		VCCD_GXBL					U34									
		VCCD_GXBL					W34									
		VCCD_GXBL					AA34									
		VCCD_GXBL					AB35									



Bank Number	VREF	PinName/Function (2), (3)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F15T (4)	DQS for X8/X9	DQS for X16/X18	DQS for X32/X36	HMC pin assignment for DQS3 (5)	HMC pin assignment for LPDDR2	HPS Pin Mux Select 3	HPS Pin Mux Select 2	HPS Pin Mux Select 1	HPS Pin Mux Select 0
		VCCIOBA					G33									
		VCCIOBA					K31									
		VCCIOBA					K31									
		VCCIOBA					P33									
		VCCIOBB					E38									
		VCCIOBB					E30									
		VCCIOBB					H30									
		VCCIOBB					K28									
		VCCIOBC					C25									
		VCCIOBC					D27									
		VCCIOBC					F25									
		VCCIOBC					G27									
		VCCIOBC					J26									
		VCCIOBC					M24									
		VCCIOBD					G21									
		VCCIOBD					D32									
		VCCIOBD					F21									
		VCCIOBD					G22									
		VCCIOBD					K22									
		VCCIOBD					M21									
		VCCPD3					AA27									
		VCCPD3					AA28									
		VCCPD3					AA29									
		VCCPD3					AB22									
		VCCPD3					AB23									
		VCCPD3					AB24									
		VCCPD3					AB25									
		VCCPD4A					AE10									
		VCCPD4A					AE10									
		VCCPD4B					AB12									
		VCCPD4B					AB13									
		VCCPD4B					AB16									
		VCCPD4B					AB18									
		VCCPD4B					AB19									
		VCCPD6AB_HPS					L9									
		VCCPD6AB_HPS					T10									
		VCCPD6AB_HPS					T6									
		VCCPD6AB_HPS					T8									
		VCCPD7A_HPS					R12									
		VCCPD7B_HPS					T14									
		VCCPD7C_HPS					P16									
		VCCPD7D_HPS					T17									
		VCCPD7E_HPS					R18									
		VCCPD7E_C					U21									
		VCCPD8					R32									
		VCCPD8					T30									
		VCCPD8					U22									
		VCCPD8					U24									
		VCCPD8					U26									
		VCCPD8					U29									
		VCCPD8M					J19									
		VCCPD8M					AE29									
		VCCPD8M_CLK_HPS					L10									
		VCC_HPS					T13									
		VCC_LPS					U14									
		VCC_LPS					U9									
		VCC_LPS					V10									
	VREFB7A7B7C7D7END_HPS	VREFB7A7B7C7D7END_HPS					P14									
		GND					AA11									
		GND					AA13									
		GND					AA15									
		GND					AA17									
		GND					AA19									
		GND					AA23									
		GND					AA30									
		GND					AB10									
		GND					AE11									
		GND					AF14									
		GND					AE17									
		GND					AE20									
		GND					AF23									
		GND					AE26									
		GND					AE28									
		GND					AB20									
		GND					AE30									
		GND					AE11									
		GND					AE14									
		GND					AF17									
		GND					AE20									
		GND					AE23									
		GND					AF26									
		GND					AE28									
		GND					AF30									
		GND					AG31									
		GND					AG9									
		GND					AJ11									
		GND					AJ14									
		GND					AJ17									
		GND					AJ20									
		GND					AK23									
		GND					AL26									
		GND					AJ29									
		GND					AL32									
		GND					AL8									
		GND					AM11									
		GND					AM14									
		GND					AM17									
		GND					AM20									
		GND					AM23									
		GND					AM26									
		GND					AM29									
		GND					AM8									
		GND					AM11									
		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					AV8									
		GND					AV8									
		GND					B11									
		GND					B16									
		GND					B2									
		GND					B20									
		GND					B23									
		GND					B26									
		GND					B29									



Bank Number	VREF	PinName/Function (2), (3)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F1517 (4)	DQS for X8/X9	DQS for X16/X18	DQS for X32/X36	HMC pin assignment for DQS3 (5)	HMC pin assignment for LPDDR2	HPS Pin Mux Select 3	HPS Pin Mux Select 2	HPS Pin Mux Select 1	HPS Pin Mux Select 0
		GND					B02									
		GND					B5									
		GND					B6									
		GND					E11									
		GND					E17									
		GND					E2									
		GND					E20									
		GND					E23									
		GND					E26									
		GND					E29									
		GND					E32									
		GND					E5									
		GND					E6									
		GND					F14									
		GND					H11									
		GND					H17									
		GND					H2									
		GND					H20									
		GND					H23									
		GND					H26									
		GND					H29									
		GND					H32									
		GND					H5									
		GND					H6									
		GND					H6									
		GND					H14									
		GND					K20									
		GND					L1									
		GND					L17									
		GND					L2									
		GND					L23									
		GND					L26									
		GND					L29									
		GND					L32									
		GND					L6									
		GND					L8									
		GND					N14									
		GND					N17									
		GND					N20									
		GND					P11									
		GND					P23									
		GND					P26									
		GND					P29									
		GND					P32									
		GND					P6									
		GND					W21									
		GND					T12									
		GND					T15									
		GND					T16									
		GND					T18									
		GND					T20									
		GND					T9									
		GND					U11									
		GND					U13									
		GND					U17									
		GND					U23									
		GND					U26									
		GND					U27									
		GND					U30									
		GND					U7									
		GND					V14									
		GND					V8									
		GND					V18									
		GND					V21									
		GND					V24									
		GND					V26									
		GND					V28									
		GND					V30									
		GND					V8									
		GND					W27									
		GND					W11									
		GND					W13									
		GND					W15									
		GND					W17									
		GND					W19									
		GND					W23									
		GND					W25									
		GND					W29									
		GND					V10									
		GND					V12									
		GND					V14									
		GND					V16									
		GND					V18									
		GND					V20									
		GND					V22									
		GND					V24									
		GND					V26									
		GND					V28									

Notes:
(1) For more information about pin definitions and pin connection guidelines, refer to the [Arria V Device Family Pin Connection Guidelines](#).
(2) GND_RESET pin is not supported in current Quartus II version, but will be supported in future Quartus II release version.
(3) Pins with * contains similar name with other pins in the same column. For the selection of the "HPS Pin Mux Select x" columns.
(4) Pins with # are the 10 Gbps transceiver channels. For more information about the 10 Gbps transceiver channels clocking recommendation, refer to the [Transceiver Clocking in Arria V Devices chapter](#).
(5) RESET pin is only applicable for DDR3 device.



**Pin Information for the Arria® V 5ASXFB5 Device
Version 1.3**

Version Number	Date	Changes Made
1.0	4/19/2013	Initial release.
1.1	9/30/2014	Remove corresponding bank number from VCCRSTCLK_HPS pin.
1.2	7/31/2015	Renamed the following columns: - Renamed "DDR3/DDR2 hard memory PHY" to "HMC pin assignment for DDR3". - Renamed "LPDDR2 hard memory PHY" to "HMC pin assignment for LPDDR2".
1.3	12/23/2016	-Renamed SDMMC_FB_CLK_IN to HPS_GPIO44.