



Bank Number	VREF	PinName/Function (2)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F672	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DDR3/DDR2 hard memory PHY (3)
		DNU					C26				
		DNU					D25				
		RREF TL					D26				
GXB_L1		GXB_TX_L8n					E23				
GXB_L1		GXB_TX_L8p					E24				
GXB_L1		GXB_RX_L8p.GXB_REFCLK_L8p					F26				
GXB_L1		GXB_RX_L8n.GXB_REFCLK_L8n					F25				
GXB_L1		GXB_TX_L7n					G23				
GXB_L1		GXB_TX_L7p					G24				
GXB_L1		GXB_RX_L7p.GXB_REFCLK_L7p					H26				
GXB_L1		GXB_RX_L7n.GXB_REFCLK_L7n					H25				
GXB_L1		GXB_TX_L6n					J23				
GXB_L1		GXB_TX_L6p					J24				
GXB_L1		GXB_RX_L6p.GXB_REFCLK_L6p					K26				
GXB_L1		GXB_RX_L6n.GXB_REFCLK_L6n					K25				
GXB_L1		REFCLK2n					N19				
GXB_L1		REFCLK2p					N18				
GXB_L0		REFCLK1n					R19				
GXB_L0		REFCLK1p					R18				
GXB_L0		GXB_TX_L5n					L23				
GXB_L0		GXB_TX_L5p					L24				
GXB_L0		GXB_RX_L5p.GXB_REFCLK_L5p					M26				
GXB_L0		GXB_RX_L5n.GXB_REFCLK_L5n					M25				
GXB_L0		GXB_TX_L4n					N23				
GXB_L0		GXB_TX_L4p					N24				
GXB_L0		GXB_RX_L4p.GXB_REFCLK_L4p					P26				
GXB_L0		GXB_RX_L4n.GXB_REFCLK_L4n					P25				
GXB_L0		GXB_TX_L3n					R23				
GXB_L0		GXB_TX_L3p					R24				
GXB_L0		GXB_RX_L3p.GXB_REFCLK_L3p					T26				
GXB_L0		GXB_RX_L3n.GXB_REFCLK_L3n					T25				
GXB_L0		GXB_TX_L2n					U23				
GXB_L0		GXB_TX_L2p					U24				
GXB_L0		GXB_RX_L2p.GXB_REFCLK_L2p					V26				
GXB_L0		GXB_RX_L2n.GXB_REFCLK_L2n					V25				
GXB_L0		GXB_TX_L1n					W23				
GXB_L0		GXB_TX_L1p					W24				
GXB_L0		GXB_RX_L1p.GXB_REFCLK_L1p					Y26				
GXB_L0		GXB_RX_L1n.GXB_REFCLK_L1n					Y25				
GXB_L0		GXB_TX_L0n					AA23				
GXB_L0		GXB_TX_L0p					AA24				
GXB_L0		GXB_RX_L0p.GXB_REFCLK_L0p					AB26				
GXB_L0		GXB_RX_L0n.GXB_REFCLK_L0n					AB25				
GXB_L0		REFCLK0n					U19				
GXB_L0		REFCLK0p					U18				
3A		DNU					Y22				
3A		TDO		TDO			AE26				
3A		TMS		TMS			AB22				
3A		TCK		TCK			AD24				
3A		TDI		TDI			AC23				
3A		DCLK		DCLK			AE24				
3A		ICSGO		DATA4			AD26				
3A		AS_DATA3		DATA3			AD25				
3A		AS_DATA2		DATA2			AF26				
3A		AS_DATA1		DATA1			AE26				
3A		AS_DATA0.ASD0		DATA0			AF24				
3A	VREFB3AN0	IO	RZQ_0			DIFFIO_TX_B1n	DIFFOUT_B1n		AB21		
3A	VREFB3AN0	IO				DIFFIO_TX_B1p	DIFFOUT_B1p	AC21	DD1B		
3A	VREFB3AN0	IO	CLK0n			DIFFIO_RX_B2n	DIFFOUT_B2n	AC22	DD1B		
3A	VREFB3AN0	IO	CLK0p			DIFFIO_RX_B2p	DIFFOUT_B2p	AD22	DD1B		
3A	VREFB3AN0	IO				DIFFIO_TX_B3n	DIFFOUT_B3n	Y21			
3A	VREFB3AN0	IO				DIFFIO_TX_B3p	DIFFOUT_B3p	AA21	DD1B		
3A	VREFB3AN0	IO	CLK1n			DIFFIO_RX_B4n	DIFFOUT_B4n	W20	DQS1B/QK1B		
3A	VREFB3AN0	IO	CLK1p			DIFFIO_RX_B4p	DIFFOUT_B4p	W21	DQS1B/CQ1B/CO1B/QKn1B		
3A	VREFB3AN0	IO	FPLL_BL_CLKOUT1.FPLL_BL_CLKOUTn			DIFFIO_TX_B5n	DIFFOUT_B5n	AD23			
3A	VREFB3AN0	IO	FPLL_BL_CLKOUT0.FPLL_BL_CLKOUTp.FPLL_BL_FB0			DIFFIO_TX_B5p	DIFFOUT_B5p	AE23	DD1B		
3A	VREFB3AN0	IO	FPLL_BL_CLKOUT3.FPLL_BL_FBn			DIFFIO_RX_B6n	DIFFOUT_B6n	AE21	DD1B		
3A	VREFB3AN0	IO	FPLL_BL_CLKOUT2.FPLL_BL_FBp.FPLL_BL_FB1			DIFFIO_RX_B6p	DIFFOUT_B6p	AF22	DD1B		
3A	VREFB3AN0	IO	VREFB3AN0					Y20			
3A	VREFB3AN0	IO						Y19	DD1B		
3A	VREFB3AN0	IO	CLK2n			DIFFIO_RX_B7n	DIFFOUT_B7n	AC20	DD1B		
3A	VREFB3AN0	IO	CLK2p			DIFFIO_RX_B7p	DIFFOUT_B7p	AD20	DD1B		
3A	VREFB3AN0	IO				DIFFIO_TX_B8n	DIFFOUT_B8n	AE21			
3A	VREFB3AN0	IO				DIFFIO_TX_B8p	DIFFOUT_B8p	AF20			
3A	VREFB3AN0	IO	CLK3n			DIFFIO_RX_B9n	DIFFOUT_B9n	AE19			
3A	VREFB3AN0	IO	CLK3p			DIFFIO_RX_B9p	DIFFOUT_B9p	AF19			
3A	VREFB3AN0	IO				DIFFIO_TX_B10n	DIFFOUT_B10n	AA19			
3A	VREFB3AN0	IO				DIFFIO_TX_B10p	DIFFOUT_B10p	AA19			
3A	VREFB3AN0	IO				DIFFIO_RX_B11n	DIFFOUT_B11n	AC19			
3A	VREFB3AN0	IO				DIFFIO_RX_B11p	DIFFOUT_B11p	AD19			
3D	VREFB3DN0	IO				DIFFIO_TX_B58n	DIFFOUT_B58n	AA18			
3D	VREFB3DN0	IO				DIFFIO_TX_B58p	DIFFOUT_B58p	AB18			
3D	VREFB3DN0	IO				DIFFIO_RX_B59n	DIFFOUT_B59n	W18			
3D	VREFB3DN0	IO				DIFFIO_RX_B59p	DIFFOUT_B59p	Y18			
3D	VREFB3DN0	IO	VREFB3DN0					Y17			
3D	VREFB3DN0	IO						AA17			
3D	VREFB3DN0	IO	CLK4n			DIFFIO_RX_B60n	DIFFOUT_B60n	AD18			
3D	VREFB3DN0	IO	CLK4p			DIFFIO_RX_B60p	DIFFOUT_B60p	AE18			
3D	VREFB3DN0	IO				DIFFIO_TX_B61n	DIFFOUT_B61n	AA16			
3D	VREFB3DN0	IO				DIFFIO_TX_B61p	DIFFOUT_B61p	AB16			
3D	VREFB3DN0	IO	CLK5n			DIFFIO_RX_B62n	DIFFOUT_B62n	AC17			
3D	VREFB3DN0	IO	CLK5p			DIFFIO_RX_B62p	DIFFOUT_B62p	AD17			
3D	VREFB3DN0	IO	FPLL_BC_CLKOUT1.FPLL_BC_CLKOUTn			DIFFIO_TX_B63n	DIFFOUT_B63n	U16			
3D	VREFB3DN0	IO	FPLL_BC_CLKOUT0.FPLL_BC_CLKOUTp.FPLL_BC_FB0			DIFFIO_TX_B63p	DIFFOUT_B63p	V16			
3D	VREFB3DN0	IO	FPLL_BC_CLKOUT3.FPLL_BC_FBn			DIFFIO_RX_B64n	DIFFOUT_B64n	W16			
3D	VREFB3DN0	IO	FPLL_BC_CLKOUT2.FPLL_BC_FBp.FPLL_BC_FB1			DIFFIO_RX_B64p	DIFFOUT_B64p	Y16			
3D	VREFB3DN0	IO	CLK6n			DIFFIO_RX_B66n	DIFFOUT_B66n	AF17			
3D	VREFB3DN0	IO	CLK6p			DIFFIO_RX_B66p	DIFFOUT_B66p	AF18			
3D	VREFB3DN0	IO	CLK7n			DIFFIO_RX_B68n	DIFFOUT_B68n	AD16			



Bank Number	VREF	PinName/Function (2)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F672	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DDR3/DDR2 hard memory PHY (3)
BA	VREFBANO	IO	CLK21n		DIFFIO_RX_T125n	DIFFOUT_T125n	J20	DQSx8T/QK8T			
BA	VREFBANO	IO			DIFFIO_TX_T126p	DIFFOUT_T126p	G21	DQ8T			
BA	VREFBANO	IO			DIFFIO_TX_T126n	DIFFOUT_T126n	H21				
BA	VREFBANO	IO	CLK20p		DIFFIO_RX_T127p	DIFFOUT_T127p	B22	DQ8T			
BA	VREFBANO	IO	CLK20n		DIFFIO_RX_T127n	DIFFOUT_T127n	C22	DQ8T			
BA	VREFBANO	IO			DIFFIO_TX_T128p	DIFFOUT_T128p	E21	DQ8T			
BA	VREFBANO	IO	RZQ_6		DIFFIO_TX_T128n	DIFFOUT_T128n	F21				
BA		MSEL0		MSEL0			A25				
BA		MSEL1		MSEL1			C24				
BA		MSEL2		MSEL2			B25				
BA		MSEL3		MSEL3			B26				
BA		MSEL4		MSEL4			J21				
BA		CONF_DONE		CONF_DONE			C23				
BA		nSTATUS		nSTATUS			B24				
BA		rCE		rCE			A24				
BA		rCONFIG		rCONFIG			L18				
BA		GND					K19				
		GND					AA22				
		GND					AA25				
		GND					AA26				
		GND					AB23				
		GND					AB24				
		GND					AC24				
		GND					AC25				
		GND					AC26				
		GND					C26				
		GND					D23				
		GND					D24				
		GND					E22				
		GND					E25				
		GND					E26				
		GND					F23				
		GND					F24				
		GND					G22				
		GND					G25				
		GND					G26				
		GND					H23				
		GND					H24				
		GND					J22				
		GND					J25				
		GND					J26				
		GND					K21				
		GND					K23				
		GND					K24				
		GND					L22				
		GND					L25				
		GND					L26				
		GND					M19				
		GND					M23				
		GND					M24				
		GND					N20				
		GND					N22				
		GND					N25				
		GND					N26				
		GND					P19				
		GND					P23				
		GND					P24				
		GND					R20				
		GND					R22				
		GND					R25				
		GND					R26				
		GND					T19				
		GND					T21				
		GND					T23				
		GND					T24				
		GND					U20				
		GND					U25				
		GND					U26				
		GND					V18				
		GND					V19				
		GND					V22				
		GND					V23				
		GND					V24				
		GND					W22				
		GND					W25				
		GND					W26				
		GND					Y23				
		GND					Y24				
		VCCP					L11				
		VCCP					L15				
		VCCP					L9				
		VCCP					M8				
		VCCP					N17				
		VCCP					R17				
		VCCP					T8				
		VCCP					U11				
		VCCP					U15				
		VCCP					U9				
		VCCA_FPLL					P18				
		VCCA_FPLL					R7				
		VCCA_FPLL					M18				
		VCCA_FPLL					N7				
		VCCBAT					K20				
		VCC_AUX					L16				
		VCC_AUX					M10				
		VCC_AUX					T10				
		VCC_AUX					U17				
		VCCD_FPLL					T18				
		VCCD_FPLL					T7				



Bank Number	VREF	PinName/Function (2)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F672	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DDR3/DDR2 hard memory PHY (3)
		VCCD_FPLL					L19				
		VCCD_FPLL					M7				
		VCCA_GXBL0					T20				
		VCCA_GXBL1					M20				
		VCCB_GXBL0					P20				
		VCCB_GXBL1					L20				
		VCCL_GXBL0					P21				
		VCCL_GXBL0					P22				
		VCCL_GXBL1					L21				
		VCCR_GXBL					K22				
		VCCR_GXBL					N21				
		VCCR_GXBL					U21				
		VCCR_GXBL					U22				
		VCCT_GXBL0					R21				
		VCCT_GXBL0					T22				
		VCCT_GXBL1					M21				
		VCCT_GXBL1					M22				
		VCC					M12				
		VCC					M14				
		VCC					M16				
		VCC					N11				
		VCC					N13				
		VCC					N14				
		VCC					N15				
		VCC					N9				
		VCC					P10				
		VCC					P14				
		VCC					P16				
		VCC					P8				
		VCC					R10				
		VCC					R11				
		VCC					R13				
		VCC					R14				
		VCC					R15				
		VCC					R9				
		VCC					T12				
		VCC					T16				
		VCC					P12				
		VCCIO3A					AA20				
		VCCIO3A					AD21				
		VCCIO3A					AF23				
		VCCIO3D					AC16				
		VCCIO3D					AC18				
		VCCIO3D					AF16				
		VCCIO4A					M5				
		VCCIO4A					P4				
		VCCIO4A					U4				
		VCCIO4A					Y1				
		VCCIO4B					AA6				
		VCCIO4B					AD1				
		VCCIO4B					AD4				
		VCCIO4B					Y4				
		VCCIO4C					AC10				
		VCCIO4C					AD7				
		VCCIO4C					AF7				
		VCCIO4C					Y10				
		VCCIO4D					AA12				
		VCCIO4D					AD12				
		VCCIO4D					AF13				
		VCCIO4D					Y15				
		VCCIO7A					F4				
		VCCIO7A					J1				
		VCCIO7A					J4				
		VCCIO7A					L3				
		VCCIO7B					A3				
		VCCIO7B					C4				
		VCCIO7B					C7				
		VCCIO7B					E6				
		VCCIO7C					A10				
		VCCIO7C					C9				
		VCCIO7C					D10				
		VCCIO7C					G10				
		VCCIO7D					A13				
		VCCIO7D					A15				
		VCCIO7D					D13				
		VCCIO7D					D15				
		VCCIO8A					D22				
		VCCIO8A					F22				
		VCCIO8A					H22				
		VCCIO8D					A18				
		VCCIO8D					E18				
		VCCIO8D					H18				
		VCCPD3					V17				
		VCCPD3					V20				
		VCCPD4A					V6				
		VCCPD4A					V7				
		VCCPD4BCD					U8				
		VCCPD4BCD					V13				
		VCCPD4BCD					V9				
		VCCPD7A					K6				
		VCCPD7A					L7				
		VCCPD7BCD					K10				
		VCCPD7BCD					K13				
		VCCPD7BCD					K8				
		VCCPD8					J19				
		VCCPD8					K16				
		VCCPGM					G6				
		VCCPGM					V21				
		GND					AB11				



Bank Number	VREF	PinName/Function (2)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F672	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DDR3/DDR2 hard memory PHY (3)
		GND					AB14				
		GND					AB17				
		GND					AB2				
		GND					AB20				
		GND					AB5				
		GND					AB8				
		GND					AE11				
		GND					AE14				
		GND					AE17				
		GND					AE2				
		GND					AE20				
		GND					AE22				
		GND					AE5				
		GND					AE8				
		GND					B11				
		GND					B14				
		GND					B17				
		GND					B2				
		GND					B20				
		GND					B23				
		GND					B5				
		GND					B8				
		GND					E11				
		GND					E14				
		GND					E17				
		GND					E2				
		GND					E20				
		GND					E5				
		GND					E8				
		GND					H11				
		GND					H14				
		GND					H17				
		GND					H2				
		GND					H20				
		GND					H5				
		GND					H8				
		GND					L10				
		GND					L14				
		GND					L17				
		GND					L2				
		GND					L5				
		GND					L8				
		GND					M11				
		GND					M13				
		GND					M15				
		GND					M17				
		GND					M8				
		GND					N1				
		GND					N10				
		GND					N16				
		GND					N2				
		GND					N5				
		GND					N8				
		GND					P11				
		GND					P13				
		GND					P15				
		GND					P17				
		GND					P9				
		GND					R1				
		GND					R12				
		GND					R16				
		GND					R8				
		GND					T11				
		GND					T13				
		GND					T15				
		GND					T17				
		GND					T2				
		GND					T5				
		GND					T9				
		GND					U7				
		GND					W11				
		GND					W14				
		GND					W17				
		GND					W19				
		GND					W2				
		GND					W5				
		GND					W8				
		GND					W12				

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 5AGXMA5 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	F896	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DDR3/DDR2 hard memory PHY (3)
		DNU					E29				
		DNU					F29				
		RREF_TL					F30				
GXB L1		GXB TX L8n					G27				
GXB L1		GXB TX L8p					G28				
GXB L1		GXB RX L8p,GXB_REFCLK_L8p					H30				
GXB L1		GXB RX L8n,GXB_REFCLK_L8n					H29				
GXB L1		GXB TX L7n					J27				
GXB L1		GXB TX L7p					J28				
GXB L1		GXB RX L7p,GXB_REFCLK_L7p					K30				
GXB L1		GXB RX L7n,GXB_REFCLK_L7n					K29				
GXB L1		GXB TX L6n					L27				
GXB L1		GXB TX L6p					L28				
GXB L1		GXB RX L6p,GXB_REFCLK_L6p					M30				
GXB L1		GXB RX L6n,GXB_REFCLK_L6n					M29				
GXB L1		REFCLK2Ln					R23				
GXB L1		REFCLK2Lp					R22				
GXB L0		REFCLK1Ln					U23				
GXB L0		REFCLK1Lp					U22				
GXB L0		GXB TX L5n					N27				
GXB L0		GXB TX L5p					N28				
GXB L0		GXB RX L5p,GXB_REFCLK_L5p					P30				
GXB L0		GXB RX L5n,GXB_REFCLK_L5n					P29				
GXB L0		GXB TX L4n					R27				
GXB L0		GXB TX L4p					R28				
GXB L0		GXB RX L4p,GXB_REFCLK_L4p					T30				
GXB L0		GXB RX L4n,GXB_REFCLK_L4n					T29				
GXB L0		GXB TX L3n					U27				
GXB L0		GXB TX L3p					U28				
GXB L0		GXB RX L3p,GXB_REFCLK_L3p					V30				
GXB L0		GXB RX L3n,GXB_REFCLK_L3n					V29				
GXB L0		GXB TX L2n					W27				
GXB L0		GXB TX L2p					W28				
GXB L0		GXB RX L2p,GXB_REFCLK_L2p					Y30				
GXB L0		GXB RX L2n,GXB_REFCLK_L2n					Y29				
GXB L0		GXB TX L1n					AA27				
GXB L0		GXB TX L1p					AA28				
GXB L0		GXB RX L1p,GXB_REFCLK_L1p					AB30				
GXB L0		GXB RX L1n,GXB_REFCLK_L1n					AB29				
GXB L0		GXB TX L0n					AC27				
GXB L0		GXB TX L0p					AC28				
GXB L0		GXB RX L0p,GXB_REFCLK_L0p					AD30				
GXB L0		GXB RX L0n,GXB_REFCLK_L0n					AD29				
GXB L0		REFCLK0Ln					W23				
GXB L0		REFCLK0Lp					W22				
3A		DNU		TDO			AF26				
3A		TMS		TMS			AG30				
3A		TCK		TCK			AG29				
3A		TDI		TDI			AF29				
3A		DCLK		DCLK			A26				
3A		DCSD		DATA4			AA25				
3A		AS_DATA3		DATA3			AH30				
3A		AS_DATA2		DATA2			AJ30				
3A		AS_DATA1		DATA1			AK29				
3A		AS_DATA0,ASDO		DATA0			AK28				
3A	VREFB3A0	ID	RZQ_0		DIFFIO_TX_B1n	DIFFOUT_B1n	AF28			DO1B	
3A	VREFB3A0	ID			DIFFIO_TX_B1p	DIFFOUT_B1p	AG28			DO1B	
3A	VREFB3A0	ID	CLK0n		DIFFIO_RX_B2n	DIFFOUT_B2n	AF27			DO1B	
3A	VREFB3A0	ID	CLK0p		DIFFIO_RX_B2p	DIFFOUT_B2p	AG27			DO1B	
3A	VREFB3A0	ID			DIFFIO_TX_B3n	DIFFOUT_B3n	AE27				
3A	VREFB3A0	ID			DIFFIO_TX_B3p	DIFFOUT_B3p	AE26			DO1B	
3A	VREFB3A0	ID	CLK1n		DIFFIO_RX_B4n	DIFFOUT_B4n	AH28			DQS1B/QK1B	
3A	VREFB3A0	ID	CLK1p		DIFFIO_RX_B4p	DIFFOUT_B4p	AJ28			DQS1B/QK1B	
3A	VREFB3A0	ID			DIFFIO_TX_B5n	DIFFOUT_B5n	AJ27				
3A	VREFB3A0	ID	FPLL_B1_CLKOUT0,FPLL_B1_CLKOUT1n		FPLL_B1_CLKOUT0,FPLL_B1_CLKOUT1p						
3A	VREFB3A0	ID	FPLL_B1_CLKOUT0,FPLL_B1_CLKOUT2,FPLL_B1_F80		FPLL_B1_CLKOUT0,FPLL_B1_F80					DO1B	
3A	VREFB3A0	ID	FPLL_B1_CLKOUT0,FPLL_B1_F8n		FPLL_B1_CLKOUT0,FPLL_B1_F8n					DO1B	
3A	VREFB3A0	ID	FPLL_B1_CLKOUT2,FPLL_B1_F8p,FPLL_B1_F81		FPLL_B1_CLKOUT2,FPLL_B1_F8p,FPLL_B1_F81					DO1B	
3A	VREFB3A0	ID	VREFB3A0				AD25				
3A	VREFB3A0	ID					AE25			DO1B	
3A	VREFB3A0	ID	CLK2n		DIFFIO_RX_B7n	DIFFOUT_B7n	AG26			DO1B	
3A	VREFB3A0	ID	CLK2p		DIFFIO_RX_B7p	DIFFOUT_B7p	AH26			DO1B	
3A	VREFB3A0	ID			DIFFIO_TX_B8n	DIFFOUT_B8n	AK26				
3A	VREFB3A0	ID			DIFFIO_TX_B8p	DIFFOUT_B8p	AK25			DO2B	
3A	VREFB3A0	ID	CLK3n		DIFFIO_RX_B9n	DIFFOUT_B9n	AG25			DO2B	
3A	VREFB3A0	ID	CLK3p		DIFFIO_RX_B9p	DIFFOUT_B9p	AG25			DO2B	
3A	VREFB3A0	ID			DIFFIO_TX_B10n	DIFFOUT_B10n	AB23				
3A	VREFB3A0	ID			DIFFIO_TX_B10p	DIFFOUT_B10p	AB24			DO2B	
3A	VREFB3A0	ID			DIFFIO_RX_B11n	DIFFOUT_B11n	AH25			DQS2B/QK2B	
3A	VREFB3A0	ID			DIFFIO_RX_B11p	DIFFOUT_B11p	AJ25			DQS2B/QK2B	
3A	VREFB3A0	ID			DIFFIO_TX_B12n	DIFFOUT_B12n	AC24				
3A	VREFB3A0	ID			DIFFIO_TX_B12p	DIFFOUT_B12p	AD24			DO2B	
3A	VREFB3A0	ID			DIFFIO_TX_B13n	DIFFOUT_B13n	AF24			DO2B	
3A	VREFB3A0	ID			DIFFIO_RX_B13p	DIFFOUT_B13p	AG24			DO2B	
3A	VREFB3A0	ID			DIFFIO_TX_B14n	DIFFOUT_B14n	AD23				
3A	VREFB3A0	ID			DIFFIO_TX_B14p	DIFFOUT_B14p	AE23			DO2B	
3A	VREFB3A0	ID			DIFFIO_RX_B15n	DIFFOUT_B15n	AJ24			DO2B	
3A	VREFB3A0	ID			DIFFIO_RX_B15p	DIFFOUT_B15p	AK24			DO2B	
3D	VREFB3D0	ID			DIFFIO_TX_B54n	DIFFOUT_B54n	AC22				
3D	VREFB3D0	ID			DIFFIO_TX_B54p	DIFFOUT_B54p	AD22			DO3B	
3D	VREFB3D0	ID			DIFFIO_RX_B55n	DIFFOUT_B55n	AA22			DO3B	DO1B
3D	VREFB3D0	ID			DIFFIO_RX_B55p	DIFFOUT_B55p	AA22			DO3B	DO1B
3D	VREFB3D0	ID			DIFFIO_TX_B56n	DIFFOUT_B56n	AB21				
3D	VREFB3D0	ID			DIFFIO_TX_B56p	DIFFOUT_B56p	AC21			DO3B	DO1B
3D	VREFB3D0	ID			DIFFIO_RX_B57n	DIFFOUT_B57n	AG23			DQS3B/QK3B	DO1B
3D	VREFB3D0	ID			DIFFIO_RX_B57p	DIFFOUT_B57p	AH23			DQS3B/QK3B	DO1B
3D	VREFB3D0	ID			DIFFIO_TX_B58n	DIFFOUT_B58n	AD21				
3D	VREFB3D0	ID			DIFFIO_TX_B58p	DIFFOUT_B58p	AE22			DO3B	DO1B
3D	VREFB3D0	ID			DIFFIO_RX_B59n	DIFFOUT_B59n	AF22			DO3B	DO1B
3D	VREFB3D0	ID			DIFFIO_RX_B59p	DIFFOUT_B59p	AG22			DO3B	DO1B
3D	VREFB3D0	ID	VREFB3D0				AA21				
3D	VREFB3D0	ID					Y20			DO3B	DO1B



Pin Information for the Arria® V 5AGXMA5 Device
Version 1.3
Note (1)

Bank Number	VREF	PinName/Function (2)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Channel	F896	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DDR3/DDR2 hard memory PHY (3)
4B	VREFB4BND	ID			DIFFIO_TX_B107p	DIFFOUT_B107p	AF9	DQ10B	DQ4B	DO1B	DQ4_4B_8
4B	VREFB4BND	ID			DIFFIO_RX_B108n	DIFFOUT_B108n	AJ9	DQ10B	DQ4B	DO1B	DQ4_4B_7
4B	VREFB4BND	ID			DIFFIO_RX_B108p	DIFFOUT_B108p	AK8	DQ10B	DQ4B	DO1B	DQ4_4B_6
4B	VREFB4BND	ID			DIFFIO_TX_B109n	DIFFOUT_B109n	AG9	DO10B			
4B	VREFB4BND	ID			DIFFIO_TX_B109p	DIFFOUT_B109p	AD9	DO10B	DQ4B	DO1B	DM4_4B
4B	VREFB4BND	ID			DIFFIO_RX_B110n	DIFFOUT_B110n	AA9	DQS10B/QK10B	DQS4B/QK4B	DO1B	DQS4_4B
4B	VREFB4BND	ID			DIFFIO_RX_B110p	DIFFOUT_B110p	AB8	DQS10B/CQ10B/CQn10B/QKn10B	DQS4B/CQ4B/CQn4B/QKn4B	DO1B	DQS4_4B
4B	VREFB4BND	ID			DIFFIO_TX_B111n	DIFFOUT_B111n	AG8				
4B	VREFB4BND	ID			DIFFIO_TX_B111p	DIFFOUT_B111p	AH8	DO10B	DQ4B	DO1B	DQ4_4B_5
4B	VREFB4BND	ID			DIFFIO_RX_B112n	DIFFOUT_B112n	AJ7	DO10B	DQ4B	DO1B	DQ4_4B_4
4B	VREFB4BND	ID			DIFFIO_RX_B112p	DIFFOUT_B112p	AK7	DO10B	DQ4B	DO1B	DQ4_4B_3
4B	VREFB4BND	ID	VREFB4BND				AD8				
4B	VREFB4BND	ID					AE8	DO10B	DQ4B	DO1B	DQ4_4B_2
4B	VREFB4BND	ID			DIFFIO_RX_B113n	DIFFOUT_B113n	AG7	DO10B	DQ4B	DO1B	DQ4_4B_1
4B	VREFB4BND	ID			DIFFIO_RX_B113p	DIFFOUT_B113p	AH7	DO10B	DQ4B	DO1B	DQ4_4B_0
4A	VREFB4AND	ID			DATA10	DIFFIO_TX_B114n	AF7				
4A	VREFB4AND	ID			DATA11	DIFFIO_TX_B114p	AG6	DO11B	DQ5B		
4A	VREFB4AND	ID			DATA5	DIFFIO_RX_B115n	AJ6	DO11B	DQ5B		
4A	VREFB4AND	ID			DATA6	DIFFIO_RX_B115p	AK6	DO11B	DQ5B		
4A	VREFB4AND	ID			DATA12	DIFFIO_TX_B116n	AA8				
4A	VREFB4AND	ID			DATA13	DIFFIO_TX_B116p	AB7	DQ11B	DQ5B		
4A	VREFB4AND	ID			DATA7	DIFFIO_RX_B117n	AK5	DQS11B/QK11B	DQ5B		
4A	VREFB4AND	ID			DATA8	DIFFIO_RX_B117p	AK4	DQS11B/CQ11B/CQn11B/QKn11B	DQ5B		
4A	VREFB4AND	ID			DATA14	DIFFIO_TX_B118n	AD7				
4A	VREFB4AND	ID			DATA15	DIFFIO_TX_B118p	AE7	DO11B	DQ5B		
4A	VREFB4AND	ID			DATA9	DIFFIO_RX_B119n	AA6	DO11B	DQ5B		
4A	VREFB4AND	ID	VREFB4AND		CLKUSR	DIFFIO_RX_B119p	AB6	DO11B	DQ5B		
4A	VREFB4AND	ID					AC6				
4A	VREFB4AND	ID					AC7	DO11B	DQ5B		
4A	VREFB4AND	ID	CLK11n		DIFFIO_RX_B120n	DIFFOUT_B120n	AE6	DO11B	DQ5B		
4A	VREFB4AND	ID	CLK11p		DIFFIO_RX_B120p	DIFFOUT_B120p	AF6	DO11B	DQ5B		
4A	VREFB4AND	ID	FPLL_BR_CLKOUT1,FPLL_BR_CLKOUTn		FPLL_BR_CLKOUT1,FPLL_BR_CLKOUTn	DIFFIO_TX_B121n	AG5				
4A	VREFB4AND	ID	FPLL_BR_CLKOUT0,FPLL_BR_CLKOUTp,FPLL_BR_FB0		FPLL_BR_CLKOUT0,FPLL_BR_CLKOUTp,FPLL_BR_FB0	DIFFIO_TX_B121p	AH5	DO12B	DQ5B		
4A	VREFB4AND	ID	FPLL_BR_CLKOUT3,FPLL_BR_FBn		FPLL_BR_CLKOUT3,FPLL_BR_FBn	DIFFIO_RX_B122n	AH4	DO12B	DQ5B		
4A	VREFB4AND	ID	FPLL_BR_CLKOUT2,FPLL_BR_FBp,FPLL_BR_FB1		FPLL_BR_CLKOUT2,FPLL_BR_FBp,FPLL_BR_FB1	DIFFIO_RX_B122p	AJ4	DO12B	DQ5B		
4A	VREFB4AND	ID			DIFFIO_TX_B123n	DIFFOUT_B123n	AD6				
4A	VREFB4AND	ID			DIFFIO_TX_B123p	DIFFOUT_B123p	AE5	DO12B	DQ5B		
4A	VREFB4AND	ID	CLK10n		DIFFIO_RX_B124n	DIFFOUT_B124n	AJ3	DQS12B/QK12B	DQS5B/QK5B		
4A	VREFB4AND	ID	CLK10p		DIFFIO_RX_B124p	DIFFOUT_B124p	AK3	DQS12B/CQ12B/CQn12B/QKn12B	DQS5B/CQ5B/CQn5B/QKn5B		
4A	VREFB4AND	ID			DIFFIO_TX_B125n	DIFFOUT_B125n	AG4				
4A	VREFB4AND	ID			DIFFIO_TX_B125p	DIFFOUT_B125p	AG3	DO12B	DQ5B		
4A	VREFB4AND	ID	CLK9n		DIFFIO_RX_B126n	DIFFOUT_B126n	AJ1	DO12B	DQ5B		
4A	VREFB4AND	ID	CLK9p		DIFFIO_RX_B126p	DIFFOUT_B126p	AK2	DO12B	DQ5B		
4A	VREFB4AND	ID			DIFFIO_TX_B127n	DIFFOUT_B127n	AE4				
4A	VREFB4AND	ID	RZQ_1		DIFFIO_TX_B127p	DIFFOUT_B127p	AF4	DO12B	DQ5B		
4A	VREFB4AND	ID	CLK8n		DIFFIO_RX_B128n	DIFFOUT_B128n	AH2	DO12B	DQ5B		
4A	VREFB4AND	ID	CLK8p		DIFFIO_RX_B128p	DIFFOUT_B128p	AH1	DO12B	DQ5B		
		RREF_BR					AF1				
		DNU					AF2				
		DNU					AG2				
GXB_R0		REFCLK0Rn					W8				
GXB_R0		REFCLK0Rn					W8				
GXB_R0		GXB_RX_R0n,GXB_REFCLK_R0n					AD2				
GXB_R0		GXB_RX_R0p,GXB_REFCLK_R0p					AD1				
GXB_R0		GXB_TX_R0p					AC3				
GXB_R0		GXB_TX_R0n					AC4				
GXB_R0		GXB_RX_R1n,GXB_REFCLK_R1n					AB2				
GXB_R0		GXB_RX_R1p,GXB_REFCLK_R1p					AB1				
GXB_R0		GXB_TX_R1p					AA3				
GXB_R0		GXB_TX_R1n					AA4				
GXB_R0		GXB_RX_R2n,GXB_REFCLK_R2n					Y2				
GXB_R0		GXB_RX_R2p,GXB_REFCLK_R2p					Y1				
GXB_R0		GXB_TX_R2p					W3				
GXB_R0		GXB_TX_R2n					W4				
GXB_R1		REFCLK2Rn					U9				
GXB_R1		REFCLK2Rn					U8				
GXB_R1		GXB_RX_R6n,GXB_REFCLK_R6n					V2				
GXB_R1		GXB_RX_R6p,GXB_REFCLK_R6p					V1				
GXB_R1		GXB_TX_R6p					U3				
GXB_R1		GXB_TX_R6n					U4				
GXB_R1		GXB_RX_R7n,GXB_REFCLK_R7n					T2				
GXB_R1		GXB_RX_R7p,GXB_REFCLK_R7p					T1				
GXB_R1		GXB_TX_R7p					R3				
GXB_R1		GXB_TX_R7n					R4				
GXB_R1		GXB_RX_R8n,GXB_REFCLK_R8n					P2				
GXB_R1		GXB_RX_R8p,GXB_REFCLK_R8p					P1				
GXB_R1		GXB_TX_R8p					N3				
GXB_R1		GXB_TX_R8n					N4				
GXB_R1		GXB_RX_R9n,GXB_REFCLK_R9n					M2				
GXB_R1		GXB_RX_R9p,GXB_REFCLK_R9p					M1				
GXB_R1		GXB_TX_R9p					L3				
GXB_R1		GXB_TX_R9n					L4				
GXB_R1		GXB_RX_R10n,GXB_REFCLK_R10n					K2				
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		REFCLK3Rn					R9				
GXB_R1		REFCLK3Rn					R8				
		DNU					H5				
		DND					F5				
7A	VREFB7AND	ID	CLK12p		DIFFIO_RX_T1p	DIFFOUT_T1p	E1	DQ1T	DQ1T		
7A	VREFB7AND	ID	CLK12n		DIFFIO_RX_T1n	DIFFOUT_T1n	F1	DQ1T	DQ1T		
7A	VREFB7AND	ID	RZQ_5		DIFFIO_TX_T2p	DIFFOUT_T2p	E4	DQ1T	DQ1T		
7A	VREFB7AND	ID			DIFFIO_TX_T2n	DIFFOUT_T2n	E3	DQ1T	DQ1T		
7A	VREFB7AND	ID	CLK13p		DIFFIO_RX_T3p	DIFFOUT_T3p	D2	DQ1T	DQ1T		
7A	VREFB7AND	ID	CLK13n		DIFFIO_RX_T3n	DIFFOUT_T3n	D1	DQ1T	DQ1T		
7A	VREFB7AND	ID			DIFFIO_TX_T4p	DIFFOUT_T4p	D4	DQ1T	DQ1T		
7A	VREFB7AND	ID			DIFFIO_TX_T4n	DIFFOUT_T4n	D3	DQ1T	DQ1T		



Pin Information for the Arria® V 5AGXMA5 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	F896	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DDR3/DDR2 hard memory PHY (3)
7A	VREFB7ANO	ID	CLK14p		DIFFIO_RX_T5p	DIFFOUT_T5p	A2	DQS1T/CQ1T/CQn1T/QKn1T	DQS1T/CQ1T/CQn1T/QKn1T		
7A	VREFB7ANO	ID	CLK14n		DIFFIO_RX_T5n	DIFFOUT_T5n	B1	DQSn1T/QKn1T			
7A	VREFB7ANO	ID			DIFFIO_TX_T6p	DIFFOUT_T6p	C2	DQ1T			
7A	VREFB7ANO	ID			DIFFIO_TX_T6n	DIFFOUT_T6n	C1				
7A	VREFB7ANO	ID			DIFFIO_RX_T7p	DIFFOUT_T7p	A3	DQ1T			
7A	VREFB7ANO	ID	FPLL_TR_CLKOUT2,FPLL_TR_FBp,FPLL_TR_FB1		DIFFIO_RX_T7n	DIFFOUT_T7n	B3	DQ1T			
7A	VREFB7ANO	ID			DIFFIO_TX_T8p	DIFFOUT_T8p	B4	DQ1T			
7A	VREFB7ANO	ID	FPLL_TR_CLKOUT3,FPLL_TR_CLKOUTp,FPLL_TR_FB0		DIFFIO_TX_T8n	DIFFOUT_T8n	C4				
7A	VREFB7ANO	ID	CLK15p		DIFFIO_RX_T9p	DIFFOUT_T9p	C5	DQ2T			
7A	VREFB7ANO	ID	CLK15n		DIFFIO_RX_T9n	DIFFOUT_T9n	D6	DQ2T			
7A	VREFB7ANO	ID					J6	DQ2T			
7A	VREFB7ANO	ID	VREFB7ANO				K6				
7A	VREFB7ANO	ID		DEV_OE	DIFFIO_RX_T10p	DIFFOUT_T10p	A5	DQ2T			
7A	VREFB7ANO	ID		DEV_CLRn	DIFFIO_RX_T10n	DIFFOUT_T10n	A4	DQ2T			
7A	VREFB7ANO	ID			DIFFIO_TX_T11p	DIFFOUT_T11p	J7	DQ2T			
7A	VREFB7ANO	ID			DIFFIO_TX_T11n	DIFFOUT_T11n	K7				
7A	VREFB7ANO	ID		nPERSTL0	DIFFIO_RX_T12p	DIFFOUT_T12p	D6	DQS2T/CQ2T/CQn2T/QKn2T			
7A	VREFB7ANO	ID		CpP_CONFDONE	DIFFIO_RX_T12n	DIFFOUT_T12n	E6	DQSn2T/QKn2T			
7A	VREFB7ANO	ID		CRG_ERROR	DIFFIO_TX_T13p	DIFFOUT_T13p	G6	DQ2T			
7A	VREFB7ANO	ID		PR_DONE	DIFFIO_TX_T13n	DIFFOUT_T13n	H6				
7A	VREFB7ANO	ID		PR_REQUEST	DIFFIO_TX_T14p	DIFFOUT_T14p	A6	DQ2T			
7A	VREFB7ANO	ID		INIT_DONE	DIFFIO_RX_T14n	DIFFOUT_T14n	B6	DQ2T			
7A	VREFB7ANO	ID		nCEO	DIFFIO_TX_T15p	DIFFOUT_T15p	G7	DQ2T			
7A	VREFB7ANO	ID		PR_ERROR	DIFFIO_TX_T15n	DIFFOUT_T15n	H7				
7A	VREFB7ANO	ID		PR_READY	DIFFIO_RX_T16p	DIFFOUT_T16p	F8	DQ3T			
7B	VREFB7BNO	ID			DIFFIO_RX_T16n	DIFFOUT_T16n	G8	DQ3T			
7B	VREFB7BNO	ID					J8	DQ3T			
7B	VREFB7BNO	ID	VREFB7BNO				K8				
7B	VREFB7BNO	ID			DIFFIO_RX_T17p	DIFFOUT_T17p	E7	DQ3T			
7B	VREFB7BNO	ID			DIFFIO_RX_T17n	DIFFOUT_T17n	F7	DQ3T			
7B	VREFB7BNO	ID			DIFFIO_TX_T18p	DIFFOUT_T18p	G9	DQ3T			
7B	VREFB7BNO	ID			DIFFIO_TX_T18n	DIFFOUT_T18n	H9				
7B	VREFB7BNO	ID			DIFFIO_RX_T19p	DIFFOUT_T19p	A7	DQS3T/CQ3T/CQn3T/QKn3T	DQS2T/CQ2T/CQn2T/QKn2T		
7B	VREFB7BNO	ID			DIFFIO_RX_T19n	DIFFOUT_T19n	A8	DQSn3T/QKn3T	DQS2T/QKn2T		
7B	VREFB7BNO	ID			DIFFIO_TX_T20p	DIFFOUT_T20p	B7	DQ3T			
7B	VREFB7BNO	ID			DIFFIO_TX_T20n	DIFFOUT_T20n	C7				
7B	VREFB7BNO	ID			DIFFIO_RX_T21p	DIFFOUT_T21p	C8	DQ3T			
7B	VREFB7BNO	ID			DIFFIO_RX_T21n	DIFFOUT_T21n	D8	DQ3T			
7B	VREFB7BNO	ID			DIFFIO_TX_T22p	DIFFOUT_T22p	J9	DQ3T			
7B	VREFB7BNO	ID			DIFFIO_TX_T22n	DIFFOUT_T22n	K9				
7B	VREFB7BNO	ID			DIFFIO_RX_T23p	DIFFOUT_T23p	D9	DQ4T			
7B	VREFB7BNO	ID			DIFFIO_RX_T23n	DIFFOUT_T23n	E9	DQ4T			
7B	VREFB7BNO	ID			DIFFIO_TX_T24p	DIFFOUT_T24p	B10	DQ4T			
7B	VREFB7BNO	ID			DIFFIO_TX_T24n	DIFFOUT_T24n	B9				
7B	VREFB7BNO	ID			DIFFIO_RX_T25p	DIFFOUT_T25p	A11	DQ4T			
7B	VREFB7BNO	ID			DIFFIO_RX_T25n	DIFFOUT_T25n	A10	DQ4T			
7B	VREFB7BNO	ID			DIFFIO_TX_T26p	DIFFOUT_T26p	J10	DQ4T			
7B	VREFB7BNO	ID			DIFFIO_TX_T26n	DIFFOUT_T26n	K10				
7B	VREFB7BNO	ID			DIFFIO_RX_T27p	DIFFOUT_T27p	C10	DQS4T/CQ4T/CQn4T/QKn4T	DQ2T		
7B	VREFB7BNO	ID			DIFFIO_RX_T27n	DIFFOUT_T27n	D10	DQSn4T/QKn4T	DQ2T		
7B	VREFB7BNO	ID			DIFFIO_TX_T28p	DIFFOUT_T28p	E10	DQ4T			
7B	VREFB7BNO	ID			DIFFIO_TX_T28n	DIFFOUT_T28n	F10				
7B	VREFB7BNO	ID			DIFFIO_RX_T29p	DIFFOUT_T29p	C11	DQ4T			
7B	VREFB7BNO	ID			DIFFIO_RX_T29n	DIFFOUT_T29n	D11	DQ4T			
7B	VREFB7BNO	ID			DIFFIO_TX_T30p	DIFFOUT_T30p	G10	DQ4T			
7B	VREFB7BNO	ID			DIFFIO_TX_T30n	DIFFOUT_T30n	H10				
7C	VREFB7CNO	ID			DIFFIO_RX_T31p	DIFFOUT_T31p	J11	DQ5T			
7C	VREFB7CNO	ID			DIFFIO_RX_T31n	DIFFOUT_T31n	K11	DQ5T			
7C	VREFB7CNO	ID			DIFFIO_TX_T32p	DIFFOUT_T32p	F11	DQ5T			
7C	VREFB7CNO	ID			DIFFIO_TX_T32n	DIFFOUT_T32n	G11				
7C	VREFB7CNO	ID			DIFFIO_RX_T33p	DIFFOUT_T33p	B13	DQ5T			
7C	VREFB7CNO	ID			DIFFIO_RX_T33n	DIFFOUT_T33n	B12	DQ5T			
7C	VREFB7CNO	ID			DIFFIO_TX_T34p	DIFFOUT_T34p	D12	DQ5T			
7C	VREFB7CNO	ID			DIFFIO_TX_T34n	DIFFOUT_T34n	E12				
7C	VREFB7CNO	ID			DIFFIO_RX_T35p	DIFFOUT_T35p	J12	DQS5T/CQ5T/CQn5T/QKn5T	DQS3T/CQ3T/CQn3T/QKn3T		
7C	VREFB7CNO	ID			DIFFIO_RX_T35n	DIFFOUT_T35n	K12	DQSn5T/QKn5T	DQS3T/QKn3T		
7C	VREFB7CNO	ID			DIFFIO_TX_T36p	DIFFOUT_T36p	G12	DQ5T			
7C	VREFB7CNO	ID			DIFFIO_TX_T36n	DIFFOUT_T36n	H12				
7C	VREFB7CNO	ID			DIFFIO_RX_T37p	DIFFOUT_T37p	C13	DQ5T			
7C	VREFB7CNO	ID			DIFFIO_RX_T37n	DIFFOUT_T37n	D13	DQ5T			
7C	VREFB7CNO	ID			DIFFIO_TX_T38p	DIFFOUT_T38p	E13	DQ5T			
7C	VREFB7CNO	ID			DIFFIO_TX_T38n	DIFFOUT_T38n	F13				
7C	VREFB7CNO	ID			DIFFIO_RX_T39p	DIFFOUT_T39p	J14	DQ6T			
7C	VREFB7CNO	ID			DIFFIO_RX_T39n	DIFFOUT_T39n	K14	DQ6T			
7C	VREFB7CNO	ID					J13	DQ6T			
7C	VREFB7CNO	ID	VREFB7CNO				K13				
7C	VREFB7CNO	ID			DIFFIO_RX_T40p	DIFFOUT_T40p	A14	DQ6T			
7C	VREFB7CNO	ID			DIFFIO_RX_T40n	DIFFOUT_T40n	A13	DQ6T			
7C	VREFB7CNO	ID			DIFFIO_TX_T41p	DIFFOUT_T41p	F14	DQ6T			
7C	VREFB7CNO	ID			DIFFIO_TX_T41n	DIFFOUT_T41n	G14				
7C	VREFB7CNO	ID			DIFFIO_RX_T42p	DIFFOUT_T42p	C14	DQS6T/CQ6T/CQn6T/QKn6T	DQ3T		
7C	VREFB7CNO	ID			DIFFIO_RX_T42n	DIFFOUT_T42n	D14	DQSn6T/QKn6T	DQ3T		
7C	VREFB7CNO	ID			DIFFIO_TX_T43p	DIFFOUT_T43p	G13	DQ6T			
7C	VREFB7CNO	ID			DIFFIO_TX_T43n	DIFFOUT_T43n	H13				
7C	VREFB7CNO	ID			DIFFIO_RX_T44p	DIFFOUT_T44p	A15	DQ6T			
7C	VREFB7CNO	ID			DIFFIO_RX_T44n	DIFFOUT_T44n	B15	DQ6T			
7C	VREFB7CNO	ID			DIFFIO_TX_T45p	DIFFOUT_T45p	D15	DQ6T			
7C	VREFB7CNO	ID			DIFFIO_TX_T45n	DIFFOUT_T45n	E15				
7D	VREFB7DNO	ID			DIFFIO_RX_T46p	DIFFOUT_T46p	F15	DQ7T			
7D	VREFB7DNO	ID			DIFFIO_RX_T46n	DIFFOUT_T46n	G15	DQ7T			
7D	VREFB7DNO	ID			DIFFIO_TX_T47p	DIFFOUT_T47p	J16	DQ7T			
7D	VREFB7DNO	ID			DIFFIO_TX_T47n	DIFFOUT_T47n	K16				
7D	VREFB7DNO	ID			DIFFIO_RX_T48p	DIFFOUT_T48p	H15	DQ7T			
7D	VREFB7DNO	ID			DIFFIO_RX_T48n	DIFFOUT_T48n	J15	DQ7T			
7D	VREFB7DNO	ID			DIFFIO_TX_T49p	DIFFOUT_T49p	D16	DQ7T			
7D	VREFB7DNO	ID			DIFFIO_TX_T49n	DIFFOUT_T49n	E16				
7D	VREFB7DNO	ID			DIFFIO_RX_T50p	DIFFOUT_T50p	B16	DQS7T/CQ7T/CQn7T/QKn7T	DQS4T/CQ4T/CQn4T/QKn4T		
7D	VREFB7DNO	ID			DIFFIO_RX_T50n	DIFFOUT_T50n	C16	DQSn7T/QKn7T	DQS4T/QKn4T		
7D	VREFB7DNO	ID			DIFFIO_TX_T51p	DIFFOUT_T51p	G16	DQ7T			
7D	VREFB7DNO	ID			DIFFIO_TX_T51n	DIFFOUT_T51n	H16				
7D	VREFB7DNO	ID			DIFFIO_RX_T52p	DIFFOUT_T52p	A17	DQ7T			
7D	VREFB7DNO	ID			DIFFIO_RX_T52n	DIFFOUT_T52n	A16	DQ7T			



Pin Information for the Arria® V 5AGXMA5 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	F896	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DQS/DDR2 hard memory PHY (3)
7D	VREFB7DNO	ID			DIFFIO_TX_T53p	DIFFOUT_T53p	C17	DQ7T		DQ4T	A_7D_10
7D	VREFB7DNO	ID			DIFFIO_TX_T53n	DIFFOUT_T53n	D17				A_7D_11
7D	VREFB7DNO	ID			DIFFIO_RX_T54p	DIFFOUT_T54p	J17	DQ8T		DQ4T	A_7D_12
7D	VREFB7DNO	ID			DIFFIO_RX_T54n	DIFFOUT_T54n	K17	DQ8T		DQ4T	A_7D_13
7D	VREFB7DNO	ID					J18	DQ8T			A_7D_14
7D	VREFB7DNO	ID	VREFB7DNO				K18				
7D	VREFB7DNO	ID			DIFFIO_RX_T55p	DIFFOUT_T55p	D18	DQ8T		DQ4T	BA_7D_0
7D	VREFB7DNO	ID			DIFFIO_RX_T55n	DIFFOUT_T55n	E18	DQ8T		DQ4T	BA_7D_1
7D	VREFB7DNO	ID			DIFFIO_TX_T56p	DIFFOUT_T56p	F17	DQ8T			BA_7D_2
7D	VREFB7DNO	ID			DIFFIO_TX_T56n	DIFFOUT_T56n	G17				RASA_7D
7D	VREFB7DNO	ID			DIFFIO_RX_T57p	DIFFOUT_T57p	B18	DQS8T/CQ8T/CQn8T/QKn8T		DQ4T	CASA_7D
7D	VREFB7DNO	ID			DIFFIO_RX_T57n	DIFFOUT_T57n	C19	DQS8T/QK8T		DQ4T	WE#_7D
7D	VREFB7DNO	ID			DIFFIO_TX_T58p	DIFFOUT_T58p	G18	DQ8T		DQ4T	ODT_7D_0
7D	VREFB7DNO	ID			DIFFIO_TX_T58n	DIFFOUT_T58n	H18				ODT_7D_1
7D	VREFB7DNO	ID			DIFFIO_RX_T59p	DIFFOUT_T59p	A19	DQ8T		DQ4T	A_7D_15
7D	VREFB7DNO	ID			DIFFIO_RX_T59n	DIFFOUT_T59n	B19	DQ8T		DQ4T	
7D	VREFB7DNO	ID			DIFFIO_TX_T60p	DIFFOUT_T60p	D19	DQ8T		DQ4T	CS#_7D_0
7D	VREFB7DNO	ID			DIFFIO_TX_T60n	DIFFOUT_T60n	E19				CS#_7D_1
		VCCA_FPLL					M16				
		VCCD_FPLL					M15				
		DNU					K15				
8D	VREFB8DNO	ID	CLK19p		DIFFIO_RX_T61p	DIFFOUT_T61p	F19	DQ9T		DQ5T	
8D	VREFB8DNO	ID	CLK19n		DIFFIO_RX_T61n	DIFFOUT_T61n	G20	DQ9T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_TX_T62p	DIFFOUT_T62p	J19	DQ9T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_TX_T62n	DIFFOUT_T62n	K19				
8D	VREFB8DNO	ID	CLK19p		DIFFIO_RX_T63p	DIFFOUT_T63p	J20	DQ9T		DQ5T	
8D	VREFB8DNO	ID	CLK19n		DIFFIO_RX_T63n	DIFFOUT_T63n	K20	DQ9T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_TX_T64p	DIFFOUT_T64p	F20	DQ9T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_TX_T64n	DIFFOUT_T64n	F21				
8D	VREFB8DNO	ID			FPLL_TC_CLKOUT2_FPLL_TC_F8p_FPLL_TC_FB1	DIFFIO_RX_T65p	C20	DQS9T/CQ9T/CQn9T/QKn9T		DQS5T/CQ5T/CQn5T/QKn5T	
8D	VREFB8DNO	ID			FPLL_TC_CLKOUT3_FPLL_TC_FBn	DIFFIO_RX_T65n	D20	DQS9T/QK9T		DQS5T/QK5T	
8D	VREFB8DNO	ID			FPLL_TC_CLKOUT0_FPLL_TC_CLKOUTp_FPLL_TC_FB0	DIFFIO_TX_T66p	G19	DQ9T		DQ5T	
8D	VREFB8DNO	ID			FPLL_TC_CLKOUT1_FPLL_TC_CLKOUTn	DIFFIO_TX_T66n	H19				
8D	VREFB8DNO	ID	CLK17p		DIFFIO_RX_T67p	DIFFOUT_T67p	A21	DQ9T		DQ5T	
8D	VREFB8DNO	ID	CLK17n		DIFFIO_RX_T67n	DIFFOUT_T67n	B21	DQ9T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_TX_T68p	DIFFOUT_T68p	D21	DQ9T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_TX_T68n	DIFFOUT_T68n	E21				
8D	VREFB8DNO	ID	CLK18p		DIFFIO_RX_T69p	DIFFOUT_T69p	D22	DQ10T		DQ5T	
8D	VREFB8DNO	ID	CLK18n		DIFFIO_RX_T69n	DIFFOUT_T69n	E22	DQ10T		DQ5T	
8D	VREFB8DNO	ID					J21	DQ10T		DQ5T	
8D	VREFB8DNO	ID	VREFB8DNO				K21				
8D	VREFB8DNO	ID			DIFFIO_RX_T70p	DIFFOUT_T70p	J22	DQ10T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_RX_T70n	DIFFOUT_T70n	K22	DQ10T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_TX_T71p	DIFFOUT_T71p	G22	DQ10T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_TX_T71n	DIFFOUT_T71n	H22				
8D	VREFB8DNO	ID			DIFFIO_RX_T72p	DIFFOUT_T72p	B22	DQS10T/CQ10T/CQn10T/QKn10T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_RX_T72n	DIFFOUT_T72n	C22	DQS10T/QK10T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_TX_T73p	DIFFOUT_T73p	G21	DQ10T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_TX_T73n	DIFFOUT_T73n	H21				
8D	VREFB8DNO	ID			DIFFIO_RX_T74p	DIFFOUT_T74p	F23	DQ10T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_RX_T74n	DIFFOUT_T74n	G23	DQ10T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_TX_T75p	DIFFOUT_T75p	C23	DQ10T		DQ5T	
8D	VREFB8DNO	ID			DIFFIO_TX_T75n	DIFFOUT_T75n	D23				
8A	VREFB8ANO	ID			DIFFIO_RX_T114p	DIFFOUT_T114p	A23	DQ11T			
8A	VREFB8ANO	ID			DIFFIO_RX_T114n	DIFFOUT_T114n	A24	DQ11T			
8A	VREFB8ANO	ID			DIFFIO_TX_T115p	DIFFOUT_T115p	L22	DQ11T			
8A	VREFB8ANO	ID			DIFFIO_TX_T115n	DIFFOUT_T115n	K23				
8A	VREFB8ANO	ID			DIFFIO_RX_T116p	DIFFOUT_T116p	D24	DQ11T			
8A	VREFB8ANO	ID			DIFFIO_RX_T116n	DIFFOUT_T116n	E24	DQ11T			
8A	VREFB8ANO	ID			DIFFIO_TX_T117p	DIFFOUT_T117p	B24	DQ11T			
8A	VREFB8ANO	ID			DIFFIO_TX_T117n	DIFFOUT_T117n	B25				
8A	VREFB8ANO	ID			DIFFIO_RX_T118p	DIFFOUT_T118p	A26	DQS11T/CQ11T/CQn11T/QKn11T			
8A	VREFB8ANO	ID			DIFFIO_RX_T118n	DIFFOUT_T118n	A27	DQS11T/QK11T			
8A	VREFB8ANO	ID			DIFFIO_TX_T119p	DIFFOUT_T119p	K24	DQ11T			
8A	VREFB8ANO	ID			DIFFIO_TX_T119n	DIFFOUT_T119n	J23				
8A	VREFB8ANO	ID	CLK23p		DIFFIO_RX_T120p	DIFFOUT_T120p	C25	DQ11T			
8A	VREFB8ANO	ID	CLK23n		DIFFIO_RX_T120n	DIFFOUT_T120n	D25	DQ11T			
8A	VREFB8ANO	ID			DIFFIO_TX_T121p	DIFFOUT_T121p	J25	DQ11T			
8A	VREFB8ANO	ID			DIFFIO_TX_T121n	DIFFOUT_T121n	K25				
8A	VREFB8ANO	ID	CLK22p		DIFFIO_RX_T122p	DIFFOUT_T122p	D26	DQ12T			
8A	VREFB8ANO	ID	CLK22n		DIFFIO_RX_T122n	DIFFOUT_T122n	E26	DQ12T			
8A	VREFB8ANO	ID					G24	DQ12T			
8A	VREFB8ANO	ID	VREFB8ANO				H25				
8A	VREFB8ANO	ID			DIFFIO_RX_T123p	DIFFOUT_T123p	C27	DQ12T			
8A	VREFB8ANO	ID			DIFFIO_RX_T123n	DIFFOUT_T123n	C28	DQ12T			
8A	VREFB8ANO	ID			FPLL_TC_CLKOUT0_FPLL_TC_CLKOUTp_FPLL_TC_FB0	DIFFIO_TX_T124p	A28	DQ12T			
8A	VREFB8ANO	ID			FPLL_TC_CLKOUT1_FPLL_TC_CLKOUTn	DIFFIO_TX_T124n	B27				
8A	VREFB8ANO	ID	CLK21p		DIFFIO_RX_T125p	DIFFOUT_T125p	A29	DQS12T/CQ12T/CQn12T/QKn12T			
8A	VREFB8ANO	ID	CLK21n		DIFFIO_RX_T125n	DIFFOUT_T125n	B28	DQS12T/QK12T			
8A	VREFB8ANO	ID			DIFFIO_TX_T126p	DIFFOUT_T126p	H24	DQ12T			
8A	VREFB8ANO	ID			DIFFIO_TX_T126n	DIFFOUT_T126n	J24				
8A	VREFB8ANO	ID	CLK20p		DIFFIO_RX_T127p	DIFFOUT_T127p	C28	DQ12T			
8A	VREFB8ANO	ID	CLK20n		DIFFIO_RX_T127n	DIFFOUT_T127n	D27	DQ12T			
8A	VREFB8ANO	ID			DIFFIO_TX_T128p	DIFFOUT_T128p	F25	DQ12T			
8A	VREFB8ANO	ID	RZQ_6		DIFFIO_TX_T128n	DIFFOUT_T128n	G25				
8A		MSEL0		MSEL0			C30				
8A		MSEL1		MSEL1			D30				
8A		MSEL2		MSEL2			C29				
8A		MSEL3		MSEL3			D29				
8A		MSEL4		MSEL4			F26				
8A		CONF_DONE		CONF_DONE			B30				
8A		nSTATUS		nSTATUS			D28				
8A		nCE		nCE			E28				
8A		nCONFIG		nCONFIG			E27				
		GND					H26				
		GND					AA26				
		GND					AA29				
		GND					AA30				
		GND					AB27				
		GND					AB28				
		GND					AC26				
		GND					AC29				



Bank Number	VREF	PinName/Function (2)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F896	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DDR3/DDR2 hard memory PHY (3)
		GND					AC30				
		GND					AD27				
		GND					AD28				
		GND					AE28				
		GND					AE29				
		GND					AE30				
		GND					E30				
		GND					F27				
		GND					F28				
		GND					G26				
		GND					G29				
		GND					G30				
		GND					H27				
		GND					H28				
		GND					J26				
		GND					J29				
		GND					J30				
		GND					K27				
		GND					K28				
		GND					L25				
		GND					L26				
		GND					L29				
		GND					L30				
		GND					M24				
		GND					M27				
		GND					M28				
		GND					N23				
		GND					N24				
		GND					N26				
		GND					N29				
		GND					N30				
		GND					P23				
		GND					P26				
		GND					P27				
		GND					P28				
		GND					R24				
		GND					R29				
		GND					R30				
		GND					T23				
		GND					T27				
		GND					T28				
		GND					U24				
		GND					U26				
		GND					U29				
		GND					U30				
		GND					V23				
		GND					V26				
		GND					V27				
		GND					V28				
		GND					W24				
		GND					W29				
		GND					W30				
		GND					Y22				
		GND					Y23				
		GND					Y24				
		GND					Y25				
		GND					Y26				
		GND					Y27				
		GND					Y28				
		GND					AA1				
		GND					AA2				
		GND					AA5				
		GND					AB3				
		GND					AB4				
		GND					AC1				
		GND					AC2				
		GND					AC5				
		GND					AD3				
		GND					AD4				
		GND					AE1				
		GND					AE2				
		GND					AE3				
		GND					AG1				
		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					L6				
		GND					M3				
		GND					M4				
		GND					M7				
		GND					N1				
		GND					N2				
		GND					N5				
		GND					N8				
		GND					N9				
		GND					P3				
		GND					P4				
		GND					P6				
		GND					P8				
		GND					R1				



Bank Number	VREF	PinName/Function (2)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F896	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DDR3/DDR2 hard memory PHY (3)
		GND					R2				
		GND					R5				
		GND					R7				
		GND					T3				
		GND					T4				
		GND					T8				
		GND					U1				
		GND					U2				
		GND					U6				
		GND					U7				
		GND					V3				
		GND					V4				
		GND					V6				
		GND					V8				
		GND					W1				
		GND					W2				
		GND					W7				
		GND					Y3				
		GND					Y4				
		GND					Y5				
		GND					Y6				
		GND					Y7				
		GND					Y8				
		GND					Y9				
		VCCP					L11				
		VCCP					L15				
		VCCP					L19				
		VCCP					L20				
		VCCP					L9				
		VCCP					W11				
		VCCP					W13				
		VCCP					W17				
		VCCP					W19				
		VCCP					W21				
		VCCA_FPLL					T22				
		VCCA_FPLL					T9				
		VCCA_FPLL					P22				
		VCCA_FPLL					P9				
		VCCBAT					K26				
		VCC_AUX					M12				
		VCC_AUX					M18				
		VCC_AUX					W12				
		VCC_AUX					W18				
		VCCD_FPLL					V22				
		VCCD_FPLL					V9				
		VCCD_FPLL					N22				
		VCCD_FPLL					M6				
		VCCA_GXBL0					V24				
		VCCA_GXBR0					V7				
		VCCA_GXBL1					P24				
		VCCA_GXBR1					P7				
		VCCD_GXBL0					T24				
		VCCD_GXBR0					T7				
		VCCD_GXBL1					N25				
		VCCD_GXBR1					N7				
		VCCL_GXBL0					T25				
		VCCL_GXBL0					T26				
		VCCL_GXBR0					U6				
		VCCL_GXBL1					M25				
		VCCL_GXBR1					M6				
		VCCL_GXBR1					N6				
		VCCR_GXBL					M26				
		VCCR_GXBL					R25				
		VCCR_GXBL					R26				
		VCCR_GXBL					W25				
		VCCR_GXBL					W26				
		VCCR_GXBR					M5				
		VCCR_GXBR					T5				
		VCCR_GXBR					T6				
		VCCR_GXBR					W5				
		VCCR_GXBR					W6				
		VCCT_GXBL0					U25				
		VCCT_GXBL0					V26				
		VCCT_GXBR0					V5				
		VCCT_GXBL1					P26				
		VCCT_GXBR1					P5				
		VCCT_GXBR1					R6				
		VCC					M10				
		VCC					M14				
		VCC					M20				
		VCC					N11				
		VCC					N13				
		VCC					N15				
		VCC					N17				
		VCC					N19				
		VCC					N21				
		VCC					P10				
		VCC					P12				
		VCC					P14				
		VCC					P16				
		VCC					P18				
		VCC					P20				
		VCC					R11				
		VCC					R13				
		VCC					R15				
		VCC					R17				
		VCC					R19				
		VCC					R21				
		VCC					T10				
		VCC					T12				
		VCC					T14				
		VCC					T18				



Bank Number	VREF	PinName/Function (2)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F896	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DDR3/DDR2 hard memory PHY (3)
		VCC					T20				
		VCC					U11				
		VCC					U13				
		VCC					U15				
		VCC					U17				
		VCC					U19				
		VCC					U21				
		VCC					V10				
		VCC					V12				
		VCC					V14				
		VCC					V16				
		VCC					V18				
		VCC					V20				
		VCC					T16				
		VCCIO3A					AD26				
		VCCIO3A					AE24				
		VCCIO3A					AH24				
		VCCIO3A					AH27				
		VCCIO3D					AE19				
		VCCIO3D					AE21				
		VCCIO3D					AH21				
		VCCIO3D					AK23				
		VCCIO4A					AB5				
		VCCIO4A					AD5				
		VCCIO4A					AH3				
		VCCIO4A					AH6				
		VCCIO4B					AE10				
		VCCIO4B					AG9				
		VCCIO4B					AH10				
		VCCIO4B					AK9				
		VCCIO4C					AE12				
		VCCIO4C					AG13				
		VCCIO4C					AK13				
		VCCIO4C					AK15				
		VCCIO4D					AE16				
		VCCIO4D					AG18				
		VCCIO4D					AH16				
		VCCIO4D					AK18				
		VCCIO7A					C3				
		VCCIO7A					C6				
		VCCIO7A					F2				
		VCCIO7A					F6				
		VCCIO7B					A9				
		VCCIO7B					C9				
		VCCIO7B					D7				
		VCCIO7B					F9				
		VCCIO7C					AI2				
		VCCIO7C					C12				
		VCCIO7C					C15				
		VCCIO7C					F12				
		VCCIO7D					A16				
		VCCIO7D					C18				
		VCCIO7D					F16				
		VCCIO7D					F18				
		VCCIO8A					A25				
		VCCIO8A					C24				
		VCCIO8A					F24				
		VCCIO8A					L23				
		VCCIO8D					A20				
		VCCIO8D					A22				
		VCCIO8D					C21				
		VCCIO8D					F22				
		VCCPD3					AA23				
		VCCPD3					Y21				
		VCCPD4A					AA7				
		VCCPD4BCD					Y10				
		VCCPD4BCD					Y15				
		VCCPD4BCD					Y18				
		VCCPD7A					L8				
		VCCPD7BCD					L13				
		VCCPD7BCD					L17				
		VCCPD7BCD					M9				
		VCCPD8					M22				
		VCCPD8					M23				
		VCCPGM					K5				
		VCCPGM					AA24				
		GND					AC11				
		GND					AC14				
		GND					AC17				
		GND					AC20				
		GND					AC23				
		GND					AC8				
		GND					AF11				
		GND					AF14				
		GND					AF17				
		GND					AF20				
		GND					AF23				
		GND					AF26				
		GND					AF3				
		GND					AF5				
		GND					AF8				
		GND					AH29				
		GND					AJ11				
		GND					AJ14				
		GND					AJ17				
		GND					AJ2				
		GND					AJ20				
		GND					AJ23				
		GND					AJ26				
		GND					AJ5				
		GND					AJ8				
		GND					BJ1				



Bank Number	VREF	PinName/Function (2)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F896	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DDR3/DDR2 hard memory PHY (3)
		GND					B14				
		GND					B17				
		GND					B2				
		GND					B20				
		GND					B23				
		GND					B26				
		GND					B29				
		GND					B5				
		GND					B8				
		GND					E11				
		GND					E14				
		GND					E17				
		GND					E2				
		GND					E20				
		GND					E23				
		GND					E26				
		GND					E5				
		GND					E8				
		GND					H11				
		GND					H14				
		GND					H17				
		GND					H20				
		GND					H23				
		GND					H5				
		GND					L10				
		GND					L12				
		GND					L14				
		GND					L16				
		GND					L18				
		GND					L21				
		GND					L24				
		GND					L7				
		GND					M11				
		GND					M13				
		GND					M17				
		GND					M19				
		GND					M21				
		GND					N10				
		GND					N12				
		GND					N14				
		GND					N16				
		GND					N18				
		GND					N20				
		GND					P11				
		GND					P13				
		GND					P15				
		GND					P17				
		GND					P19				
		GND					P21				
		GND					R10				
		GND					R12				
		GND					R14				
		GND					R18				
		GND					R20				
		GND					T11				
		GND					T13				
		GND					T15				
		GND					T17				
		GND					T19				
		GND					T21				
		GND					U10				
		GND					U12				
		GND					U14				
		GND					U16				
		GND					U18				
		GND					U20				
		GND					V11				
		GND					V13				
		GND					V15				
		GND					V17				
		GND					V19				
		GND					V21				
		GND					W10				
		GND					W14				
		GND					W20				
		GND					Y11				
		GND					Y14				
		GND					Y17				
		GND					Y19				
		GND					R16				

Notes:

- (1) For more information about pin definitions and pin connection guidelines, refer to the [Arria V Device Family Pin Connection Guidelines](#).
- (2) DVB, 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	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				
		GND					R27				
		GND					R26				
		DNU					G31				
		DNU					G32				
		GND					H34				
		GND					H33				
		DNU					J31				
		DNU					J32				
		GND					K34				
		GND					K33				
		DNU					L31				
		DNU					L32				
		GND					M34				
		GND					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				
		TD0		TD0			AC28				
		TMS		TMS			AF30				
		TCK		TCK			AN32				
		TDI		TDI			AC29				
		DCLK		DCLK			AM32				
		nCS0		DATA4			AM34				
		AS_DATA3		DATA3			AM33				
		AS_DATA2		DATA2			AP33				
		AS_DATA1		DATA1			AN33				
		AS_DATA0.ASDO		DATA0			AN34				
		VREFB3A0N0 IO	RZ0_0				DIFFIO_TX_B1n	DIFFOUT_B1n	AL31		
		VREFB3A0N0 IO					DIFFIO_TX_B1p	DIFFOUT_B1p	AM31	DO1B	
		VREFB3A0N0 IO	CLK0n				DIFFIO_RX_B2n	DIFFOUT_B2n	AP31	DO1B	
		VREFB3A0N0 IO	CLK0p				DIFFIO_RX_B2p	DIFFOUT_B2p	AP32	DO1B	
		VREFB3A0N0 IO					DIFFIO_TX_B3n	DIFFOUT_B3n	AD27		
		VREFB3A0N0 IO					DIFFIO_TX_B3p	DIFFOUT_B3p	AD26	DO1B	
		VREFB3A0N0 IO	CLK1n				DIFFIO_RX_B4n	DIFFOUT_B4n	AJ29	DQ3n1B/QK1B	
		VREFB3A0N0 IO	CLK1p				DIFFIO_RX_B4p	DIFFOUT_B4p	AJ28	DQ3n1B/CQ2B/CQn2B/QKn2B	
		VREFB3A0N0 IO	FPLL_BL_CLKOUT1.FPLL_BL_CLKOUTn				DIFFIO_TX_B5n	DIFFOUT_B5n	AL30		
		VREFB3A0N0 IO	FPLL_BL_CLKOUT0.FPLL_BL_CLKOUTp.FPLL_BL_FB0				DIFFIO_TX_B5p	DIFFOUT_B5p	AM30	DO1B	
		VREFB3A0N0 IO	FPLL_BL_CLKOUT3.FPLL_BL_FBn				DIFFIO_RX_B6n	DIFFOUT_B6n	AN30	DO1B	
		VREFB3A0N0 IO	FPLL_BL_CLKOUT2.FPLL_BL_FBp.FPLL_BL_FB1				DIFFIO_RX_B6p	DIFFOUT_B6p	AP30	DO1B	
		VREFB3A0N0 IO	VREFB3A0N0						AE27		
		VREFB3A0N0 IO							AF28	DO1B	
		VREFB3A0N0 IO	CLK2n				DIFFIO_RX_B7n	DIFFOUT_B7n	AH28	DO1B	
		VREFB3A0N0 IO	CLK2p				DIFFIO_RX_B7p	DIFFOUT_B7p	AJ28	DO1B	
		VREFB3A0N0 IO					DIFFIO_TX_B8n	DIFFOUT_B8n	AL29		
		VREFB3A0N0 IO					DIFFIO_TX_B8p	DIFFOUT_B8p	AM29	DO2B	DO1B
		VREFB3A0N0 IO	CLK3n				DIFFIO_RX_B9n	DIFFOUT_B9n	AN29	DO2B	DO1B
		VREFB3A0N0 IO	CLK3p				DIFFIO_RX_B9p	DIFFOUT_B9p	AP29	DO2B	DO1B
		VREFB3A0N0 IO					DIFFIO_TX_B10n	DIFFOUT_B10n	AE29		
		VREFB3A0N0 IO					DIFFIO_TX_B10p	DIFFOUT_B10p	AF29	DO2B	DO1B
		VREFB3A0N0 IO					DIFFIO_RX_B11n	DIFFOUT_B11n	AG27	DQ3n2B/QK2B	DO1B
		VREFB3A0N0 IO					DIFFIO_RX_B11p	DIFFOUT_B11p	AH27	DQ3n2B/CQ2B/CQn2B/QKn2B	DO1B
		VREFB3A0N0 IO					DIFFIO_TX_B12n	DIFFOUT_B12n	AL28		
		VREFB3A0N0 IO					DIFFIO_TX_B12p	DIFFOUT_B12p	AM28	DO2B	DO1B
		VREFB3A0N0 IO					DIFFIO_RX_B13n	DIFFOUT_B13n	AP27	DO2B	DO1B
		VREFB3A0N0 IO					DIFFIO_RX_B13p	DIFFOUT_B13p	AP28	DO2B	DO1B
		VREFB3A0N0 IO					DIFFIO_TX_B14n	DIFFOUT_B14n	AG29		



Bank Number	VREF	PinName/Function (2)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F152	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DDR3/DDR2 hard memory PHY (3)
3A	VREFB3A0	IO			DIFFIO_TX_B14p	DIFFOUT_B14p	AH29	DQ2B		DQ1B	
3A	VREFB3A0	IO			DIFFIO_RX_B15n	DIFFOUT_B15n	AK27	DQ2B		DQ1B	
3A	VREFB3A0	IO			DIFFIO_RX_B15p	DIFFOUT_B15p	AL27	DQ2B		DQ1B	
3A	VREFB3A0	IO			DIFFIO_TX_B16n	DIFFOUT_B16n	AG26				
3A	VREFB3A0	IO			DIFFIO_TX_B16p	DIFFOUT_B16p	AH26				
3A	VREFB3A0	IO			DIFFIO_RX_B17n	DIFFOUT_B17n	AJ26	DQ3B		DQ1B	
3A	VREFB3A0	IO			DIFFIO_RX_B17p	DIFFOUT_B17p	AK26	DQ3B		DQ1B	
3A	VREFB3A0	IO			DIFFIO_TX_B18n	DIFFOUT_B18n	AD29				
3A	VREFB3A0	IO			DIFFIO_TX_B18p	DIFFOUT_B18p	AE28	DQ3B		DQ1B	
3A	VREFB3A0	IO			DIFFIO_RX_B19n	DIFFOUT_B19n	AL26	DQ3n3B/QK3B		DQ3n1B/QK1B	
3A	VREFB3A0	IO			DIFFIO_RX_B19p	DIFFOUT_B19p	AM25	DQ33B/CQ3B/CQn3B/QKn3B		DQ31B/CQ1B/CQn1B/QKn1B	
3A	VREFB3A0	IO			DIFFIO_TX_B20n	DIFFOUT_B20n	AN27				
3A	VREFB3A0	IO			DIFFIO_TX_B20p	DIFFOUT_B20p	AN26	DQ3B		DQ1B	
3A	VREFB3A0	IO			DIFFIO_RX_B21n	DIFFOUT_B21n	AP25	DQ3B		DQ1B	
3A	VREFB3A0	IO			DIFFIO_RX_B21p	DIFFOUT_B21p	AP26	DQ3B		DQ1B	
3A	VREFB3A0	IO			DIFFIO_TX_B22n	DIFFOUT_B22n	AC28				
3A	VREFB3A0	IO			DIFFIO_TX_B22p	DIFFOUT_B22p	AF28	DQ3B		DQ1B	
3A	VREFB3A0	IO			DIFFIO_RX_B23n	DIFFOUT_B23n	AL25	DQ3B		DQ1B	
3A	VREFB3A0	IO			DIFFIO_RX_B23p	DIFFOUT_B23p	AM25	DQ3B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_TX_B24n	DIFFOUT_B24n	AE23				
3B	VREFB3B0	IO			DIFFIO_TX_B24p	DIFFOUT_B24p	AE24	DQ4B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B25n	DIFFOUT_B25n	AC24	DQ4B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B25p	DIFFOUT_B25p	AC25	DQ4B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_TX_B26n	DIFFOUT_B26n	AA25				
3B	VREFB3B0	IO			DIFFIO_TX_B26p	DIFFOUT_B26p	AB25	DQ4B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B27n	DIFFOUT_B27n	AD24	DQ3n4B/QK4B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B27p	DIFFOUT_B27p	AE25	DQ54B/CQ4B/CQn4B/QKn4B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_TX_B28n	DIFFOUT_B28n	AF25				
3B	VREFB3B0	IO			DIFFIO_TX_B28p	DIFFOUT_B28p	AG24	DQ4B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B29n	DIFFOUT_B29n	AH24	DQ4B		DQ1B	
3B	VREFB3B0	IO	VREFB3B0		DIFFIO_RX_B29p	DIFFOUT_B29p	AH25	DQ4B		DQ1B	
3B	VREFB3B0	IO					Y23				
3B	VREFB3B0	IO					AB24	DQ4B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B30n	DIFFOUT_B30n	AJ25	DQ4B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B30p	DIFFOUT_B30p	AK24	DQ4B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_TX_B31n	DIFFOUT_B31n	AK23				
3B	VREFB3B0	IO			DIFFIO_TX_B31p	DIFFOUT_B31p	AL24	DQ5B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B32n	DIFFOUT_B32n	AF23	DQ5B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B32p	DIFFOUT_B32p	AG23	DQ5B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_TX_B33n	DIFFOUT_B33n	AC23				
3B	VREFB3B0	IO			DIFFIO_TX_B33p	DIFFOUT_B33p	AD23	DQ5B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B34n	DIFFOUT_B34n	AH23	DQ5n4B/QK5B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B34p	DIFFOUT_B34p	AJ23	DQ55B/CQ5B/CQn5B/QKn5B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_TX_B35n	DIFFOUT_B35n	AL23				
3B	VREFB3B0	IO			DIFFIO_TX_B35p	DIFFOUT_B35p	AM23	DQ5B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B36n	DIFFOUT_B36n	AN23	DQ5B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B36p	DIFFOUT_B36p	AP24	DQ5B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_TX_B37n	DIFFOUT_B37n	AA23				
3B	VREFB3B0	IO			DIFFIO_TX_B37p	DIFFOUT_B37p	AB23	DQ5B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B38n	DIFFOUT_B38n	AD22	DQ5B		DQ1B	
3B	VREFB3B0	IO			DIFFIO_RX_B38p	DIFFOUT_B38p	AE23	DQ5B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_TX_B39n	DIFFOUT_B39n	AE21				
3C	VREFB3C0	IO			DIFFIO_TX_B39p	DIFFOUT_B39p	AE22	DQ6B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B40n	DIFFOUT_B40n	AL21	DQ6B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B40p	DIFFOUT_B40p	AL22	DQ6B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_TX_B41n	DIFFOUT_B41n	AB22				
3C	VREFB3C0	IO			DIFFIO_TX_B41p	DIFFOUT_B41p	AC22	DQ6B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B42n	DIFFOUT_B42n	AH21	DQ5n6B/QK6B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B42p	DIFFOUT_B42p	AH22	DQ58B/CQ6B/CQn6B/QKn6B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_TX_B43n	DIFFOUT_B43n	AF22				
3C	VREFB3C0	IO			DIFFIO_TX_B43p	DIFFOUT_B43p	AG21	DQ6B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B44n	DIFFOUT_B44n	AJ22	DQ6B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B44p	DIFFOUT_B44p	AK21	DQ6B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_TX_B45n	DIFFOUT_B45n	AA21				
3C	VREFB3C0	IO			DIFFIO_TX_B45p	DIFFOUT_B45p	AB21	DQ6B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B46n	DIFFOUT_B46n	AM22	DQ6B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B46p	DIFFOUT_B46p	AN21	DQ6B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_TX_B47n	DIFFOUT_B47n	AD21	DQ7B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_TX_B47p	DIFFOUT_B47p	AD21	DQ7B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B48n	DIFFOUT_B48n	AN20	DQ7B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B48p	DIFFOUT_B48p	AP20	DQ7B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_TX_B49n	DIFFOUT_B49n	AA20				
3C	VREFB3C0	IO			DIFFIO_TX_B49p	DIFFOUT_B49p	AB20	DQ7B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B50n	DIFFOUT_B50n	AL20	DQ5n7B/QK7B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B50p	DIFFOUT_B50p	AM20	DQ57B/CQ7B/CQn7B/QKn7B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_TX_B51n	DIFFOUT_B51n	AJ20				
3C	VREFB3C0	IO			DIFFIO_TX_B51p	DIFFOUT_B51p	AK20	DQ7B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B52n	DIFFOUT_B52n	AF20	DQ7B		DQ1B	
3C	VREFB3C0	IO	VREFB3C0		DIFFIO_RX_B52p	DIFFOUT_B52p	AH20	DQ7B		DQ1B	
3C	VREFB3C0	IO					AC20				
3C	VREFB3C0	IO					AD20	DQ7B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B53n	DIFFOUT_B53n	AE20	DQ7B		DQ1B	
3C	VREFB3C0	IO			DIFFIO_RX_B53p	DIFFOUT_B53p	AE20	DQ7B		DQ1B	
3D	VREFB3D0	IO			DIFFIO_TX_B54n	DIFFOUT_B54n	AH19				
3D	VREFB3D0	IO			DIFFIO_TX_B54p	DIFFOUT_B54p	AJ19	DQ8B		DQ1B	
3D	VREFB3D0	IO			DIFFIO_RX_B55n	DIFFOUT_B55n	AL19	DQ8B		DQ1B	
3D	VREFB3D0	IO			DIFFIO_RX_B55p	DIFFOUT_B55p	AM19	DQ8B		DQ1B	
3D	VREFB3D0	IO			DIFFIO_TX_B56n	DIFFOUT_B56n	AB19				
3D	VREFB3D0	IO			DIFFIO_TX_B56p	DIFFOUT_B56p	AC19	DQ8B		DQ1B	
3D	VREFB3D0	IO			DIFFIO_RX_B57n	DIFFOUT_B57n	AN18	DQ5n8B/QK8B		DQ1B	
3D	VREFB3D0	IO			DIFFIO_RX_B57p	DIFFOUT_B57p	AP19	DQ58B/CQ8B/CQn8B/QKn8B		DQ1B	
3D	VREFB3D0	IO			DIFFIO_TX_B58n	DIFFOUT_B58n	AE19				
3D	VREFB3D0	IO			DIFFIO_TX_B58p	DIFFOUT_B58p	AF19	DQ8B		DQ1B	
3D	VREFB3D0	IO			DIFFIO_RX_B59n	DIFFOUT_B59n	AK18	DQ8B		DQ1B	
3D	VREFB3D0	IO	VREFB3D0		DIFFIO_RX_B59p	DIFFOUT_B59p	AL18	DQ8B		DQ1B	
3D	VREFB3D0	IO					AB18				
3D	VREFB3D0	IO					AA18	DQ8B		DQ1B	
3D	VREFB3D0	IO	CLK4n		DIFFIO_RX_B60n	DIFFOUT_B60n	AG18	DQ8B		DQ1B	
3D	VREFB3D0	IO	CLK4p		DIFFIO_RX_B60p	DIFFOUT_B60p	AH18	DQ8B		DQ1B	



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)
4B	VREFB4B0	IO			DIFFIO_TX_B107n	DIFFOUT_B107n	AC9				
4B	VREFB4B0	IO			DIFFIO_TX_B107p	DIFFOUT_B107p	AC10	DO15B	DO7B	DO2B	DO4_4B_8
4B	VREFB4B0	IO			DIFFIO_RX_B108n	DIFFOUT_B108n	AG9	DO15B	DO7B	DO2B	DO4_4B_7
4B	VREFB4B0	IO			DIFFIO_RX_B108p	DIFFOUT_B108p	AH9	DO15B	DO7B	DO2B	DO4_4B_6
4B	VREFB4B0	IO			DIFFIO_TX_B109n	DIFFOUT_B109n	AE10				
4B	VREFB4B0	IO			DIFFIO_TX_B109p	DIFFOUT_B109p	AF10	DO15B	DO7B	DO2B	DM4_4B
4B	VREFB4B0	IO			DIFFIO_RX_B110n	DIFFOUT_B110n	AL8	DQSn15B/QK15B	DQSn7B/QK7B	DO2B	DQSn4_4B
4B	VREFB4B0	IO			DIFFIO_RX_B110p	DIFFOUT_B110p	AM8	DQSn15B/CO15B/Con15B/QKn15B	DQSn7B/CO7B/Con7B/QKn7B	DO2B	DQSn4_4B
4B	VREFB4B0	IO			DIFFIO_TX_B111n	DIFFOUT_B111n	AC8				
4B	VREFB4B0	IO			DIFFIO_TX_B111p	DIFFOUT_B111p	AD8	DO15B	DO7B	DO2B	DO4_4B_5
4B	VREFB4B0	IO			DIFFIO_RX_B112n	DIFFOUT_B112n	AJ8	DO15B	DO7B	DO2B	DO4_4B_4
4B	VREFB4B0	IO			DIFFIO_RX_B112p	DIFFOUT_B112p	AK8	DO15B	DO7B	DO2B	DO4_4B_3
4B	VREFB4B0	IO	VREFB4B0				AE8				
4B	VREFB4B0	IO			DIFFIO_RX_B113n	DIFFOUT_B113n	AF8	DO15B	DO7B	DO2B	DO4_4B_2
4B	VREFB4B0	IO			DIFFIO_RX_B113p	DIFFOUT_B113p	AG8	DO15B	DO7B	DO2B	DO4_4B_1
4A	VREFB4A0	IO			DIFFIO_TX_B114n	DIFFOUT_B114n	AP8	DO15B	DO7B	DO2B	DO4_4B_0
4A	VREFB4A0	IO		DATA10	DIFFIO_TX_B114p	DIFFOUT_B114p	AP7	DO16B			
4A	VREFB4A0	IO		DATA11	DIFFIO_RX_B115n	DIFFOUT_B115n	AL7	DO16B			
4A	VREFB4A0	IO		DATA5	DIFFIO_RX_B115p	DIFFOUT_B115p	AM7	DO16B			
4A	VREFB4A0	IO		DATA6	DIFFIO_TX_B116n	DIFFOUT_B116n	AM6				
4A	VREFB4A0	IO		DATA13	DIFFIO_TX_B116p	DIFFOUT_B116p	AN6	DO16B			
4A	VREFB4A0	IO		DATA7	DIFFIO_RX_B117n	DIFFOUT_B117n	AP6	DQSn16B/QK16B			
4A	VREFB4A0	IO		DATA8	DIFFIO_RX_B117p	DIFFOUT_B117p	AP5	DQSn16B/CO16B/Con16B/QKn16B			
4A	VREFB4A0	IO		DATA14	DIFFIO_TX_B118n	DIFFOUT_B118n	AE7				
4A	VREFB4A0	IO		DATA15	DIFFIO_TX_B118p	DIFFOUT_B118p	AF7	DO16B			
4A	VREFB4A0	IO		DATA9	DIFFIO_RX_B119n	DIFFOUT_B119n	AM6	DO16B			
4A	VREFB4A0	IO		CLKUSR	DIFFIO_RX_B119p	DIFFOUT_B119p	AN5	DO16B			
4A	VREFB4A0	IO	VREFB4A0				AK6				
4A	VREFB4A0	IO					AL6	DO16B			
4A	VREFB4A0	IO	CLK11n		DIFFIO_RX_B120n	DIFFOUT_B120n	AH7	DO16B			
4A	VREFB4A0	IO	CLK11p		DIFFIO_RX_B120p	DIFFOUT_B120p	AJ7	DO16B			
4A	VREFB4A0	IO	FPLL_BR_CLKOUT1,FPLL_BR_CLKOUTn		DIFFIO_TX_B121n	DIFFOUT_B121n	AD6				
4A	VREFB4A0	IO	FPLL_BR_CLKOUT0,FPLL_BR_CLKOUTp,FPLL_BR_FB0		DIFFIO_TX_B121p	DIFFOUT_B121p	AE6	DO17B			
4A	VREFB4A0	IO	FPLL_BR_CLKOUT3,FPLL_BR_FBn		DIFFIO_RX_B122n	DIFFOUT_B122n	AP3	DO17B			
4A	VREFB4A0	IO	FPLL_BR_CLKOUT2,FPLL_BR_FBp,FPLL_BR_FB1		DIFFIO_RX_B122p	DIFFOUT_B122p	AP4	DO17B			
4A	VREFB4A0	IO			DIFFIO_TX_B123n	DIFFOUT_B123n	AH6				
4A	VREFB4A0	IO			DIFFIO_TX_B123p	DIFFOUT_B123p	AJ6	DO17B			
4A	VREFB4A0	IO	CLK10n		DIFFIO_RX_B124n	DIFFOUT_B124n	AP2	DQSn17B/QK17B			
4A	VREFB4A0	IO	CLK10p		DIFFIO_RX_B124p	DIFFOUT_B124p	AN3	DQSn17B/CO17B/Con17B/QKn17B	DQSn8B/CO8B/Con8B/QKn8B		
4A	VREFB4A0	IO			DIFFIO_TX_B125n	DIFFOUT_B125n	AC7				
4A	VREFB4A0	IO			DIFFIO_TX_B125p	DIFFOUT_B125p	AC6	DO17B			
4A	VREFB4A0	IO	CLK9n		DIFFIO_RX_B126n	DIFFOUT_B126n	AL4	DO17B			
4A	VREFB4A0	IO	CLK9p		DIFFIO_RX_B126p	DIFFOUT_B126p	AL5	DO17B			
4A	VREFB4A0	IO			DIFFIO_TX_B127n	DIFFOUT_B127n	AM3				
4A	VREFB4A0	IO	R20_1		DIFFIO_TX_B127p	DIFFOUT_B127p	AM6	DO17B			
4A	VREFB4A0	IO	CLK8n		DIFFIO_RX_B128n	DIFFOUT_B128n	AF5	DO17B			
4A	VREFB4A0	IO	CLK8p		DIFFIO_RX_B128p	DIFFOUT_B128p	AG6	DO17B			
	RREF_BR						AM1				
	DNU						AM2				
	DNU						AM3				
GXB_R0	REFCLK0Rp						AK8				
GXB_R0	REFCLK0Rn						AJ7				
GXB_R0	GXB_RX_R0n,GXB_REFCLK_R0n						AK2				
GXB_R0	GXB_RX_R0p,GXB_REFCLK_R0p						AK1				
GXB_R0	GXB_TX_R0p						AJ3				
GXB_R0	GXB_TX_R0n						AJ4				
GXB_R0	GXB_RX_R1n,GXB_REFCLK_R1n						AH2				
GXB_R0	GXB_RX_R1p,GXB_REFCLK_R1p						AH1				
GXB_R0	GXB_TX_R1p						AG3				
GXB_R0	GXB_TX_R1n						AG4				
GXB_R0	GXB_RX_R2n,GXB_REFCLK_R2n						AF2				
GXB_R0	GXB_RX_R2p,GXB_REFCLK_R2p						AF1				
GXB_R0	GXB_TX_R2p						AE3				
GXB_R0	GXB_TX_R2n						AE4				
	GND						AD2				
	DNU						AD1				
	DNU						AC3				
	DNU						AC4				
	GND						AB2				
	DNU						AB1				
	DNU						AA3				
	DNU						AA4				
	GND						Y2				
	DNU						Y1				
	DNU						W3				
	DNU						W4				
	GND						W9				
	DNU						W8				
GXB_R1	REFCLK2Rp						U9				
GXB_R1	REFCLK2Rn						U8				
GXB_R1	GXB_RX_R6n,GXB_REFCLK_R6n						V2				
GXB_R1	GXB_RX_R6p,GXB_REFCLK_R6p						V1				
GXB_R1	GXB_TX_R6p						U3				
GXB_R1	GXB_TX_R6n						U4				
GXB_R1	GXB_RX_R7n,GXB_REFCLK_R7n						T2				
GXB_R1	GXB_RX_R7p,GXB_REFCLK_R7p						T1				
GXB_R1	GXB_TX_R7p						R3				
GXB_R1	GXB_TX_R7n						R4				
GXB_R1	GXB_RX_R8n,GXB_REFCLK_R8n						P2				
GXB_R1	GXB_RX_R8p,GXB_REFCLK_R8p						P1				
GXB_R1	GXB_TX_R8p						N3				
GXB_R1	GXB_TX_R8n						N4				
GXB_R1	GXB_RX_R9n,GXB_REFCLK_R9n						M2				
GXB_R1	GXB_RX_R9p,GXB_REFCLK_R9p						M1				
GXB_R1	GXB_TX_R9p						L3				
GXB_R1	GXB_TX_R9n						L4				
GXB_R1	GXB_RX_R10n,GXB_REFCLK_R10n						K2				
GXB_R1	GXB_RX_R10p,GXB_REFCLK_R10p						K1				



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)
		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				
		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					Y28				
		GND					Y31				
		GND					Y32				
		GND					AA1				
		GND					AA2				
		GND					AA8				
		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				
		GND					AH3				
		GND					AH4				



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					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				
		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				



Note (1)

Bank Number	VREF	PinName/Function (2)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F152	DQS for X8/X9	DQS for X16/ X18	DQS for X32/ X36	DDR3/DDR2 hard memory PHY (3)
		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				
		VCCIO3A					AD30				
		VCCIO3A					AF27				
		VCCIO3A					AH30				
		VCCIO3A					AJ27				
		VCCIO3A					AK30				
		VCCIO3A					AM27				
		VCCIO3B					AF24				
		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					AM5				
		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				



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)
		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				
		VCCPGM					M9				
		VCCPGM					AC26				
		GND					AA11				
		GND					AA13				
		GND					AA16				
		GND					AA19				
		GND					AA22				
		GND					AA24				
		GND					AD10				
		GND					AD12				
		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				



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)
		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				
		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.



**Pin Information for the Arria® V 5AGXMA5 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	1/23/2013	- Removed Preliminary - Rename the CQ and DQS 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.