



Table with 17 columns: Bank Number, VREF, PinName/Function (2, 3), Optional Function(s), Configuration Function, Dedicated Tx/Rx Channel, Emulated LVDS Output Channel, F996 (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. Rows list various pins like DNU, TX, RX, REFCLK, and F996 across different banks (A, V, B, S).



Bank Number	VREF	PinName/Function (2), (3)	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	F996 (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					AJ23									
		GND					AJ26									
		GND					AJ5									
		GND					AJ8									
		GND					B11									
		GND					B2									
		GND					B23									
		GND					B26									
		GND					B29									
		GND					B5									
		GND					B8									
		GND					E17									
		GND					E2									
		GND					E20									
		GND					E23									
		GND					E26									
		GND					E29									
		GND					E5									
		GND					E8									
		GND					G12									
		GND					G14									
		GND					H17									
		GND					H2									
		GND					H20									
		GND					H23									
		GND					H26									
		GND					H29									
		GND					H5									
		GND					H8									
		GND					K11									
		GND					K14									
		GND					L17									
		GND					L2									
		GND					L20									
		GND					L23									
		GND					L26									
		GND					L29									
		GND					L5									
		GND					L8									
		GND					N10									
		GND					N14									
		GND					P11									
		GND					P17									
		GND					V16									
		GND					P2									
		GND					P20									
		GND					P23									
		GND					P26									
		GND					P29									
		GND					P5									
		GND					P8									
		GND					R18									
		GND					T12									
		GND					T14									
		GND					T18									
		GND					T20									
		GND					U11									
		GND					U15									
		GND					U17									
		GND					U19									
		GND					U21									
		GND					U7									
		GND					V10									
		GND					V12									
		GND					V14									
		GND					V18									
		GND					V20									
		GND					Y14									
		GND					W13									
		GND					W15									
		GND					W17									
		GND					W19									
		GND					W21									
		GND					Y10									
		GND					Y12									
		GND					Y18									
		GND					Y20									

Notes:
 (1) For more information about pin definitions and pin connection guidelines, refer to the [Arria 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.



**Pin Information for the Arria® V 5ASTMD3 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.