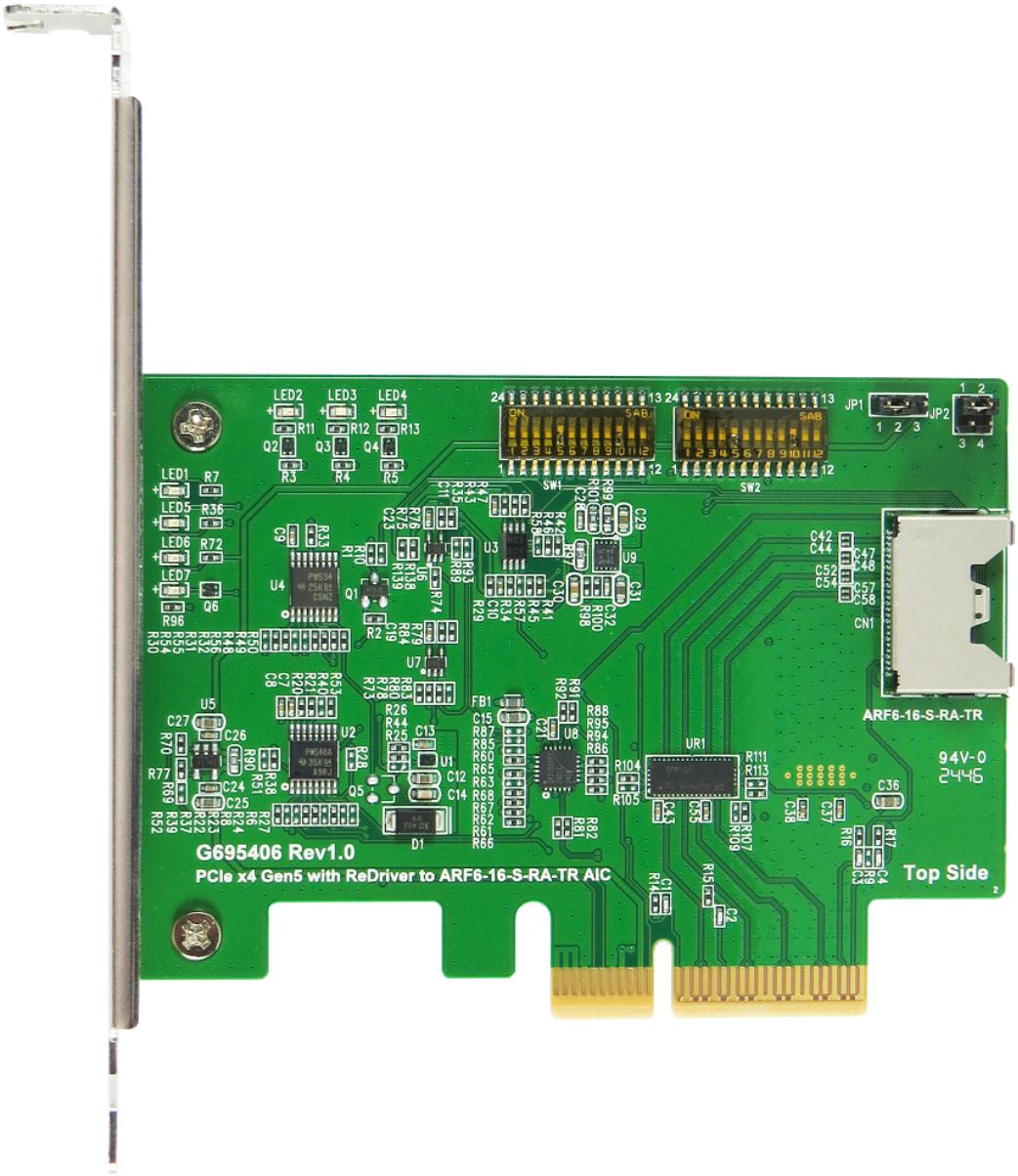
Innocard

Minerva

EP4903

PCIe x4 Gen5 with ReDriver to ARF6-16 AcceleRate Slim Socket



PCIe x4 Gen5 with ReDriver to ARF6-16 AcceleRate Slim Socket

Features

※ Supports Server BMC management through SMBus
※ ARF6-16 to PCI Express x4 Gen 5 convert
※ Built- in ARF6-16, 30u"connector
※ Built-in ReDriver to extend PCIe 5.0, 32GT/s 4 lanes differential pair signals data link width, and may provides equalization up to 24 dB at 16 GHz
※ Built- in PCIe 100MHz Clock buffer to drive longer PCB trace lengths and longer cable, Address: 0x6C(7 bits)
※ Built- in SMBus Switch, Address: 0x71(7 bits)
※ Built- in SMBus I/O Expander, Address: 0x20(7 bits) for Built- in ARF6-16 PWRDIS control
※ Supports PCIe PERST# for OOB(out of band) management to remote ARF6-16 Reset
※ PCIe PERST# signals provides Voltage level switching for 3.3V and 1.2V
※ Built- in WAKE# bidirectional voltage-level translator for Open-Drain output to be used over longer PCB trace lengths and longer cable
※ Built- in CLKREQ# bidirectional voltage-level translator for Open-Drain output to be used over longer PCB trace lengths and longer cable
※ PCIe WAKE#, CLKREQ# signals provide Voltage level switching for 3.3V and 1.2V
※ Input 3.3V with bidirectional TVS protection
※ Input 3.3V provides 3A current Load switch and reverse current protection
※ Input 3.3VAUX provides 500mA current Load switch with Short-Circuit Protection
※ LED1 Green LED on indicates AIC ready
※ LED2 RED LED on to off indicates PCIe WAKE# signals
※ LED3 RED LED on to off indicates PCIe CLKREQ# signals
※ LED4 RED LED on to off indicates PCIe PERST# signals
※ LED5 Green LED on indicates 3.3V Power normal
※ LED6 Green LED on indicates 3.3VAUX Power normal
※ LED7 Green LED on indicates 1.2V Power normal

Specifications

※ PCIe Base Specification Revision 5.0 Version 1.0
※ PCIe_CEM_R5_V1.0_06092021_NCB

Operating system support

※ Windows 8 & 8.1
※ Windows 10
※ Windows 11
※ UEFI 2.3.1 or later

Applications

※ Rack server
※ Microserver and Tower server
※ High performance computing
※ Hareware accelerator
※ Storage Controller HBA(Host Bus Adapter)
※ Desktop PC/motherboard
※ FPGA Development Kit

PCIe x4 Gen5 with ReDriver to MCIO 38P AIC

EP4903AIC SW1 & SW2 Setting for Equalization, Flat Gain as below:

SW1 & SW2					
Flat Gain Configuration Settings					
				INDEX	Flat Gain
	1-24	on	Flat Gain Settings	L0	−5.6 dB
	2-23	on		L1	−3.8 dB
	3-22	on		L2	−1.2 dB
	4-21	on		L3	+2.6 dB
				L4 (float)	+0.6 dB Default
Equalization Control Settings					
				INDEX	EQ Gain
	5-20	on	EQ0 Settings	L0	
	6-19	on		L1	
	7-18	on		L2	
	8-17	on		L3	
				L4 (float)	
	9-16	on	EQ1 Settings	L0	
	10-15	on		L1	
	11-14	on		L2	
	12-13	on		L3	

Equalization Control Settings				
	EQUALIZATION SETTING		TYPICAL EQ BOOST (dB)	
EQ INDEX	EQ0	EQ1	At 8 GHz	At 16 GHz
0	L0	L0	2.0	4.0
1	L1	L0	4.0	6.0
2	L2	L0	5.0	8.0
3	L3	L0	7.0	10.0
4	L4	L0	8	12
5	L0	L1	7.0	12.0 Default
6	L1	L1	7.5	13.0
7	L2	L1	8.0	14.0
8	L3	L1	9.0	15.0
9	L4	L1	10.0	15.5
10	L0	L2	10.5	16.0
11	L1	L2	11.0	17.0
12	L2	L2	12.0	17.5
13	L3	L2	12.5	18.5
14	L4	L2	13.0	19.0
15	L0	L3	14.0	20.0
16	L1	L3	15.0	21.0
17	L2	L3	16.0	22.0
18	L3	L3	16.5	23.0
19	L4	L3	17.0	24.0

Model No.: EP4903
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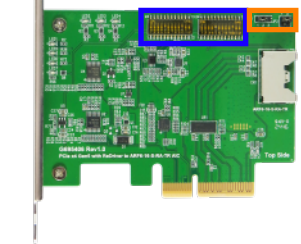
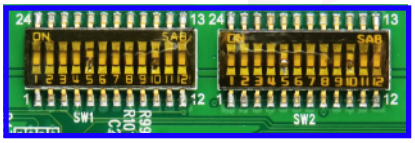
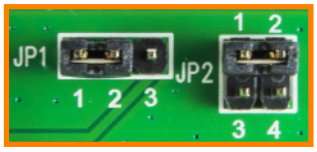


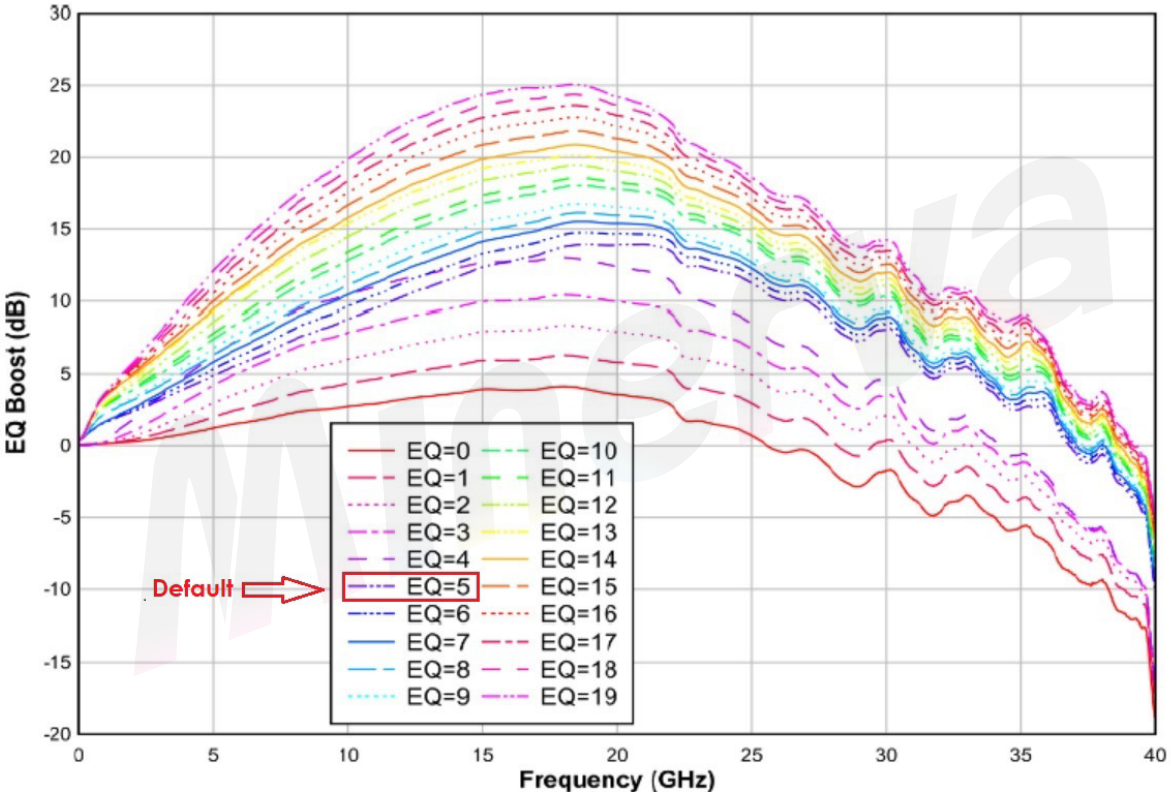


JP1 Setting:
1-2 : From PCIe 3.3V (Default)
2-3 : From PCIe 3.3VAUX

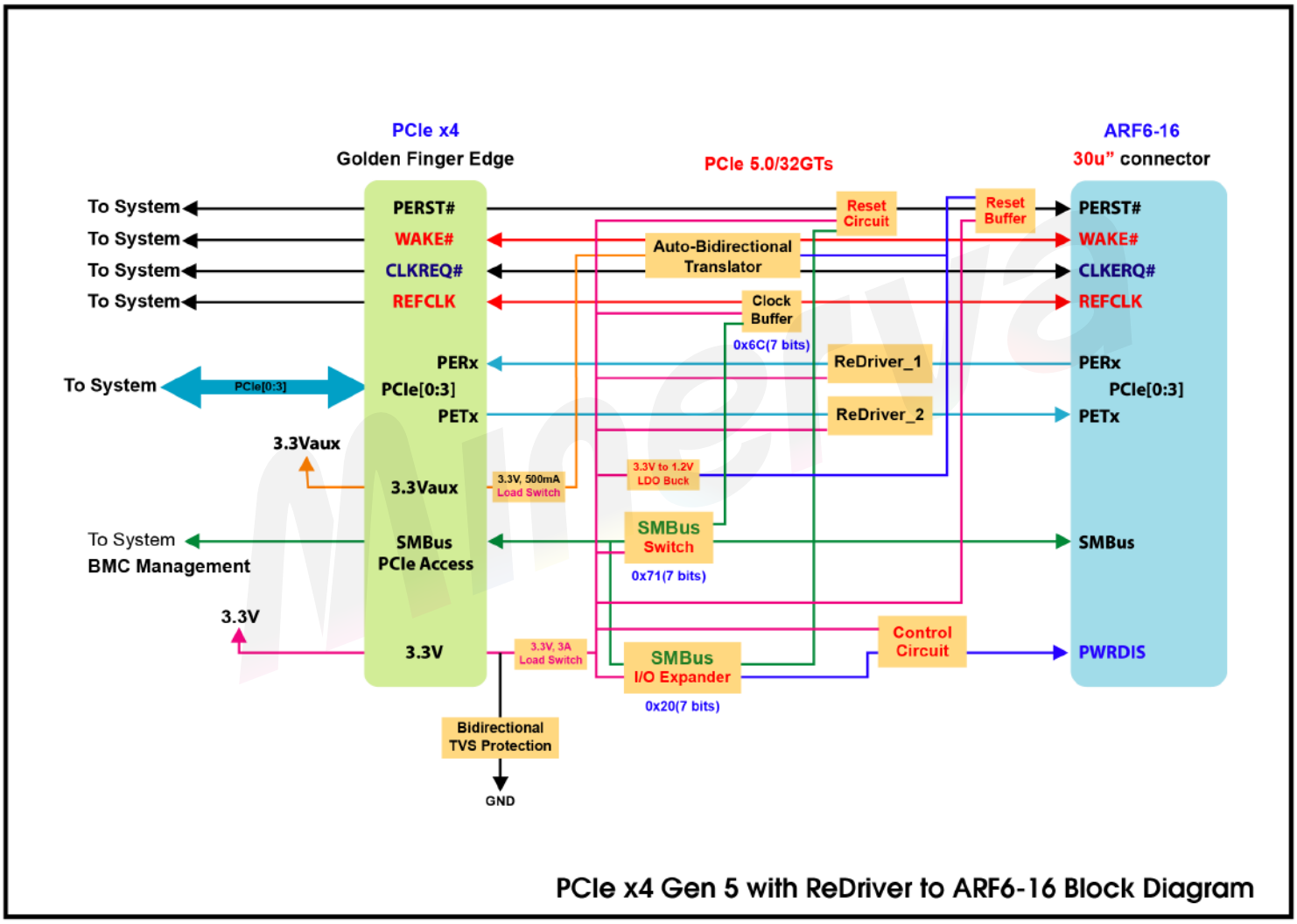
JP2 Setting:
1-2 : Supply 3.3V (Default)
3-4 : Supply 1.2V



EP4903AIC built-in ReDriver EQ Boost(dB) vs Frequency as below:



PCIe x4 Gen5 with ReDriver to MCIO 38P AIC



PCIe x4 Gen 5 with ReDriver to ARF6-16 Block Diagram