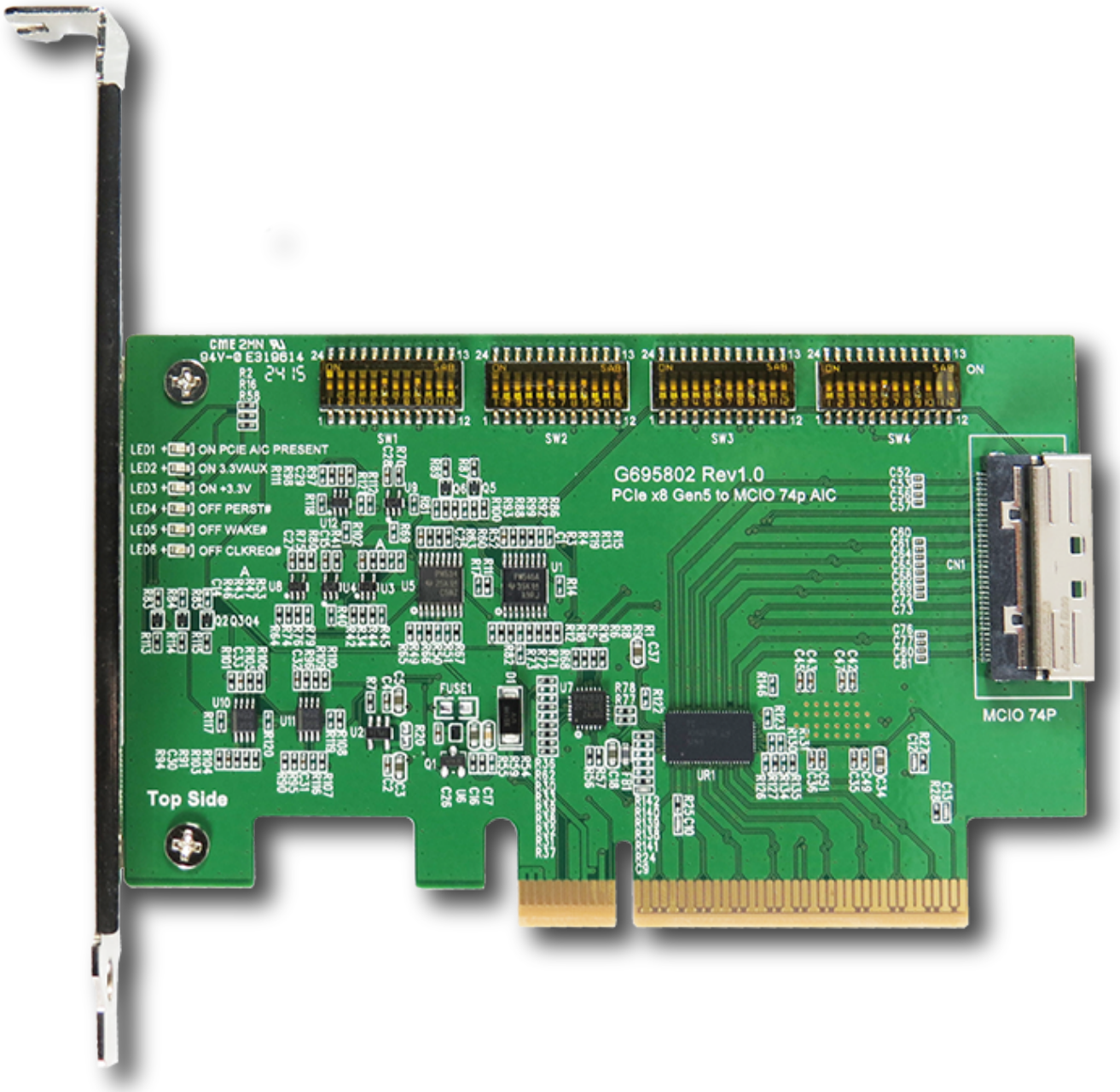
Innocard

Minerva

EP8174

PCIe x8 Gen5 with ReDriver to MCIO 74P AIC



PCIe x8 Gen5 with ReDriver to MCIO 74P AIC

Features

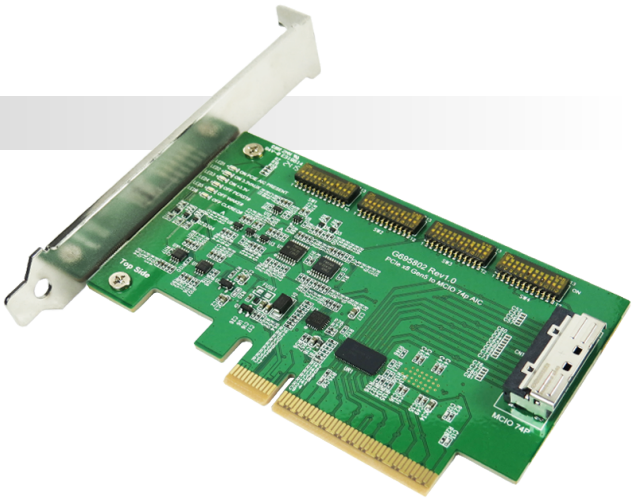
※ MCIO 74P to PCIe x8 Gen5 convert
※ Built-in MCIO 74P connector with 30u"(0.38um) min Au mating area plating
※ Input PCIe CEM power +3.3V with Load Switch protection for ReDriver controller, SMBus switch and SMBus expander
※ Input PCIe CEM power 3.3Vaux with Load Switch protection for Bus Buffer IC.
※ Built-in ReDriver controller to extend PCIe 5.0, 32GT/s 8 lanes signals and may provides programmable linear equalization, flat gain.
※ CTLE boosts up to 22 dB at 16 GHz
※ The PCIe 8 lanes can be bifurcated into two x4 link width to support different system topologies
※ Built-in PCIe 100MHz clock buffer(Address: 0x6C) for MCIO 74P to drive PCB more trace reach and longer cable length.
※ Built-in SMBus Switch(Address: 0x70) with Reset funtion for MCIO 74P SMBus communication
※ Built-in SMBus I/O Expander(Address: 0x20) for OOB(out of band) management to remote MCIO 74P Reset signals
※ Built-in PERST# Bus Buffer Gate to be used in PCB more trace reach and longer cable length.
※ Supports PCIe PERST# for OOB(out of band) management to remote MCIO 74P Reset signals.
※ Built-in WAKE# Bus Buffer Gate to be used in PCB more trace reach and longer cable length.
※ Built-in CLKREQ# Bus Buffer Gate to be used in PCB more trace reach and longer cable length.
※ LED1 Green ON indicates AIC ready
※ LED2 Green ON indicates 3.3Vaux ready
※ LED3 Green ON indicates +3.3V ready
※ LED4 Green OFF indicates PERST# Normal (Function intentionally inverted)
※ LED5 Green OFF indicates WAKE# Normal (Function intentionally inverted)
※ LED6 Green OFF indicates CLKREQ# Normal (Function intentionally inverted)

Specifications

※ PCI Express Base Specification Rev 5.0
※ PCIe_CEM_R5.1_V1.0_08072023_NCB
※ SFF-TA-1016 Rev 1.2

Applications

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



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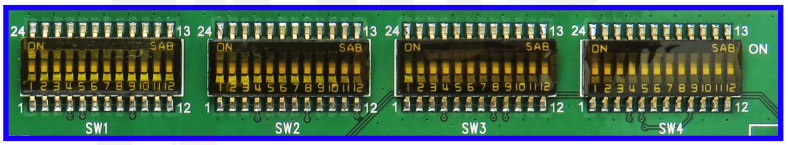
EP8174 AIC SW1 & SW2 Setting for Equalization, Flat Gain as below:

	Flat Gain Configuration Settings				
				INDEX	Flat Gain
SW1	1-24	on	Flat Gain Settings	L0	−6 dB
SW2	2-23	on		L1	−4 dB
SW3	3-22	on		L2	−2 dB
SW4	4-21	on		L3	2 dB
				L4 (float)	0 dB
	Equalization Control Settings				
				INDEX	EQ Gain
	5-20	on	EQ1 Settings	L0	
	6-19	on		L1	
	7-18	on		L2	
	8-17	on		L3	
				L4 (float)	
	9-16	on	EQ0 Settings	L0	
	10-15	on		L1	
	11-14	on		L2	
	12-13	on		L3	

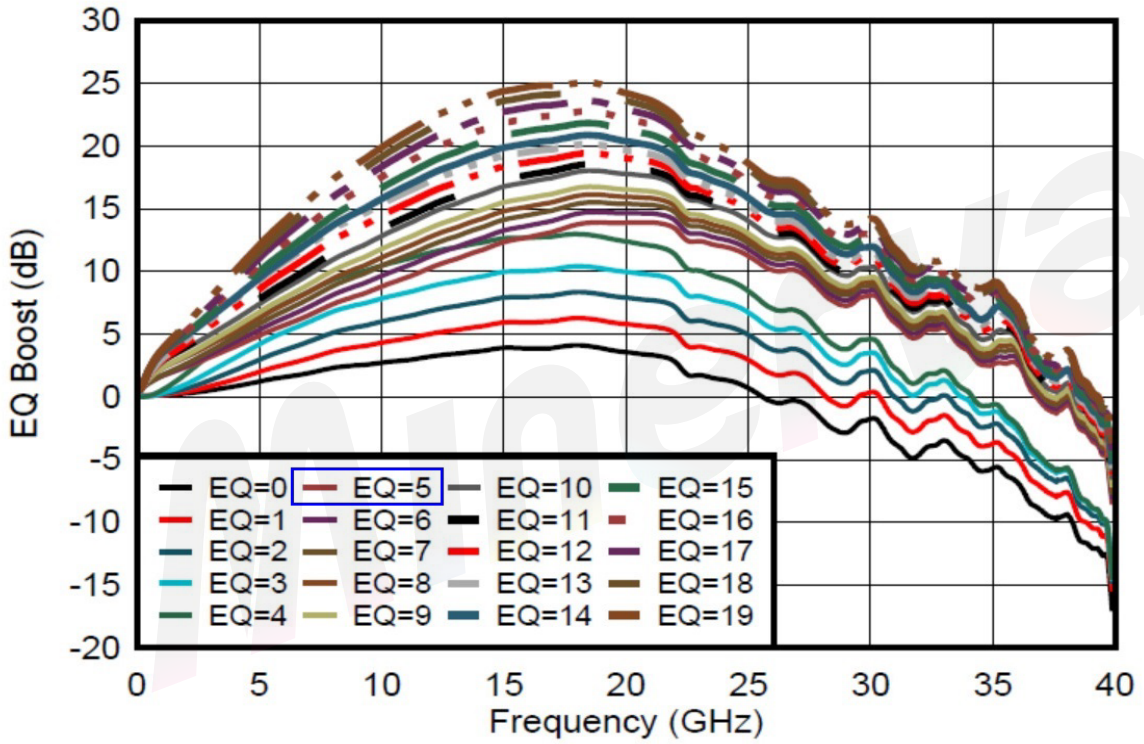
Default

Equalization Control Settings				
	EQUALIZATION SETTING		TYPICAL EQ BOOST (dB)	
EQ INDEX	EQ1	EQ0	At 8 GHz	At 16 GHz
0	L0	L0	3.0	4.0
1	L0	L1	4.0	6.0
2	L0	L2	5.5	8.0
5	L1	L0	6.5	10.5
6	L1	L1	7.0	11.5
7	L1	L2	7.5	12.5
8	L1	L3	8.5	13.0
9	L1	L4	9.0	14.0
10	L2	L0	10.0	15.0
11	L2	L1	10.5	15.5
12	L2	L2	11.0	16.5
13	L2	L3	12.0	17.0
14	L2	L4	12.5	18.0
15	L3	L0	13.0	19.0
16	L3	L1	14.0	19.5
17	L3	L2	14.5	20.5
18	L3	L3	15.5	21.0
19	L3	L4	16.0	22.0

Default



EP8174 AIC built-in ReDriver EQ Boost(dB) vs Frequency as below:



Typical EQ Boost vs Frequency

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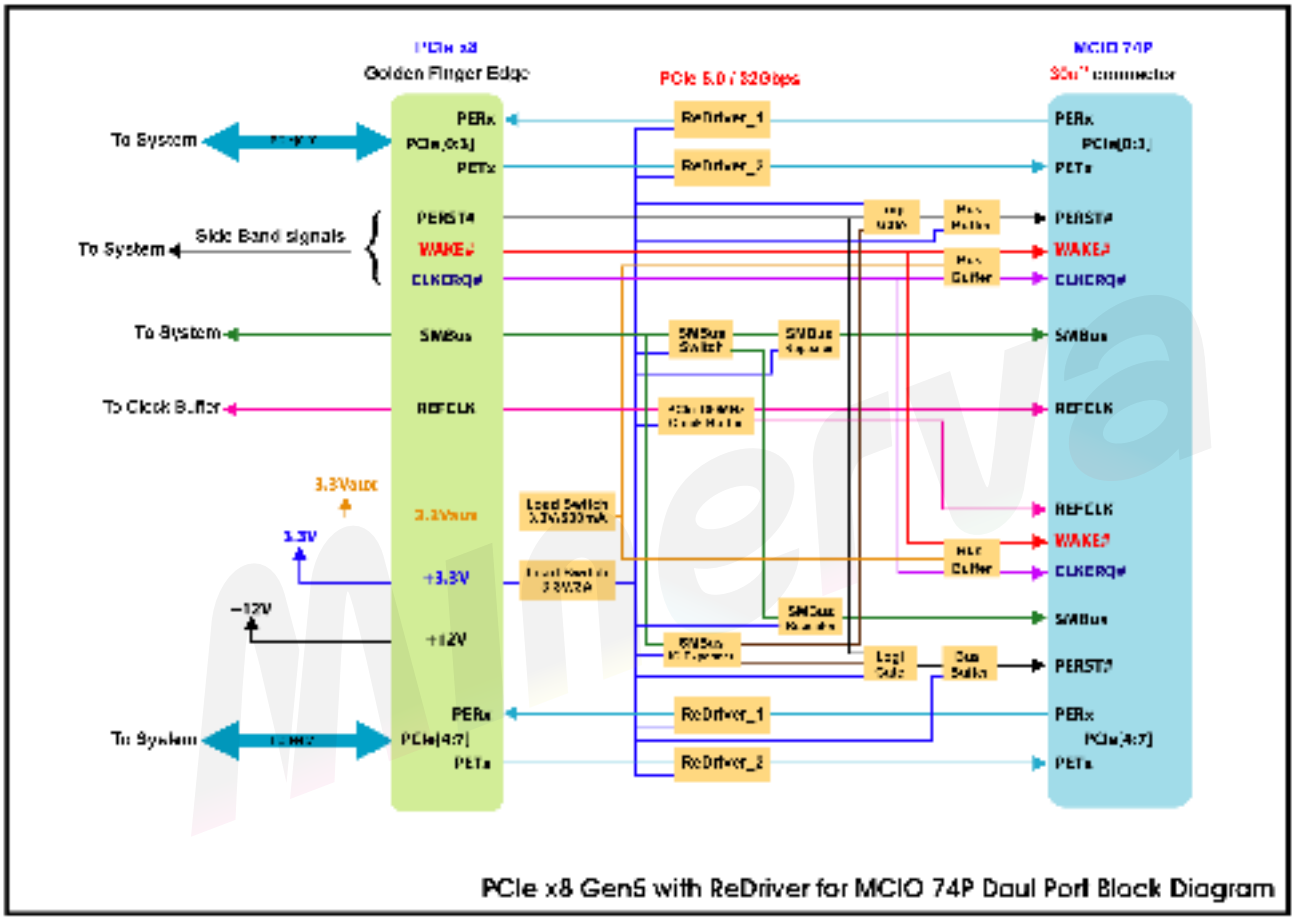

PCIe x8 Gen5 with ReDriver for MCIO 74P Daul Port Block Diagram