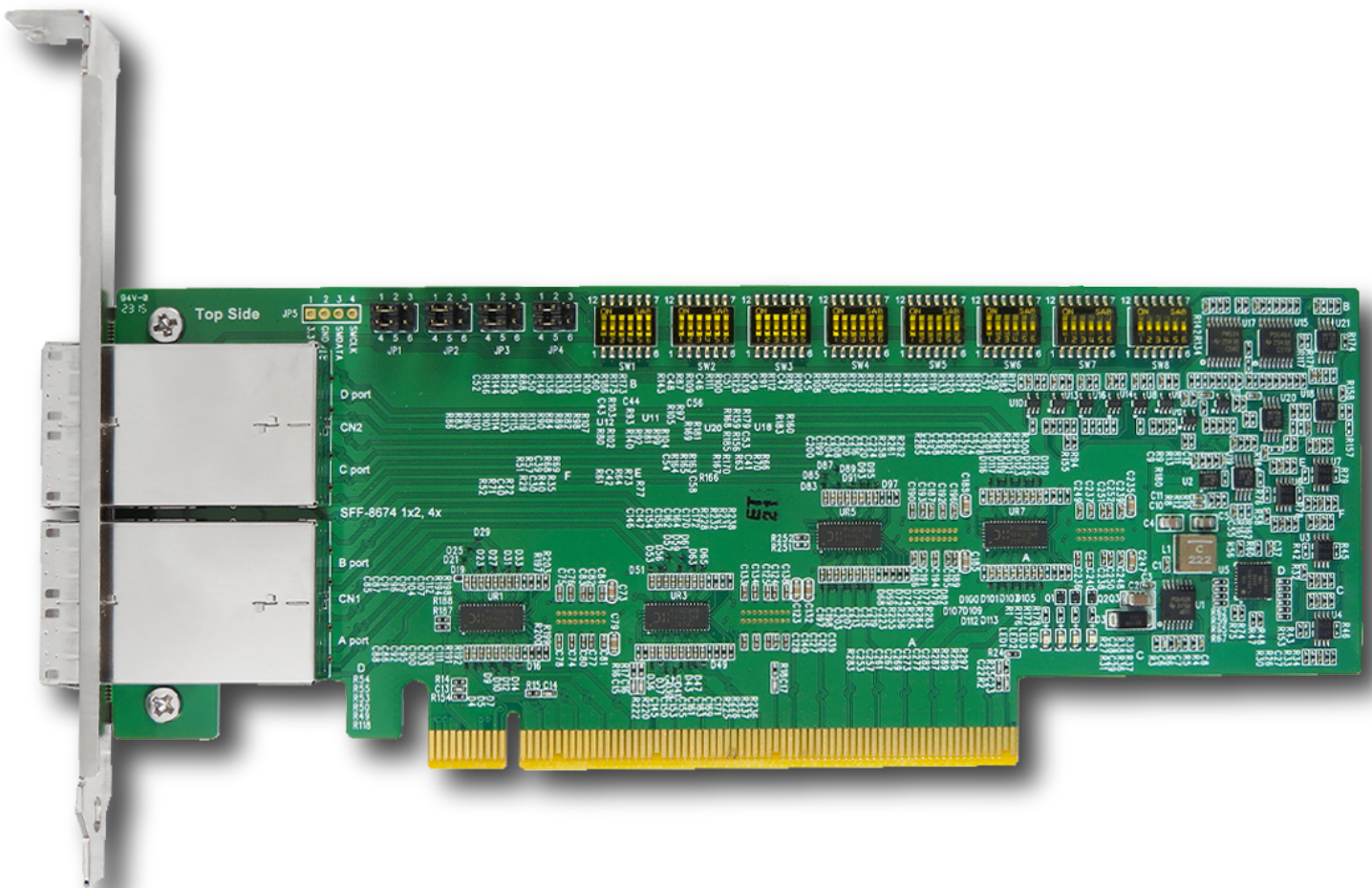


Innocard

Minerva

DP7604

**PCIe x16 Gen4 with ReDriver to
External Mini SAS HD 1x2, 4X (SFF-8674) Dual-port AIC**



PCIe x16 Gen4 with ReDriver to SFF-8674 1x2, 4X Dual-port AIC

Features

- ※ External Mini SAS HD 1x2, 4X(SFF-8674) dual port to PCIe x16 Gen4 convert
- ※ Built-in SFF-8674 1x2, 4X dual port connector with 30u"(0.38um) min Au mating area plating
- ※ Input +12V, +3.3V, 3.3VAUX with TVS protection
- ※ Built-in 12V to 3.3V_IN, 5.5A PWM Power controller
- ※ Built-in 3.3V_IN Power Load Switch for ReDriver controller Power Protection.
- ※ PCIe 4.0 16-lane signals input and output with ESD protection
- ※ Built-in ReDriver to extend PCIe 4.0, 16GT/s 16 lanes differential pair signals and may provides programmable linear equalization, output swing and flat gain
- ※ The PCIe 16 lanes can be bifurcated into four x4 link width to support different system topologies
- ※ Built-in PCIe 100MHz Clock buffer(Address: 0x6C) for SFF-8674 dual port to drive longer cable length. It may be buffered and fanned out to the SFF-8674 dual port clock pin.
- ※ Built-in SMBus Switch(Address: 0x70) with Reset Funtion for SFF-8674 dual port SMBus communication
- ※ Built-in SMBus I/O Expander(Address: 0x20) for OOB(out of band) management to remote SFF-8674 dual port Reset signals.
- ※ Supports PCIe PERST# management to control SFF-8674 dual port Reset signals.
- ※ Built-in PERST# Bus Buffer to be used longer cable length.
- ※ Built-in WAKE# Auto-Bidirectional Bus Buffer to be used longer cable length.
- ※ Built-in CLKREQ# Auto-Bidirectional Bus Buffer to be used longer cable length.
- ※ LED1 Green LED on indicates AIC ready
- ※ LED2 Red OFF indicates WAKE# Normal (Function intentionally inverted)
- ※ LED3 Red OFF indicates PERST# Normal (Function intentionally inverted)
- ※ LED4 Red OFF indicates PERST# Normal (Function intentionally inverted)

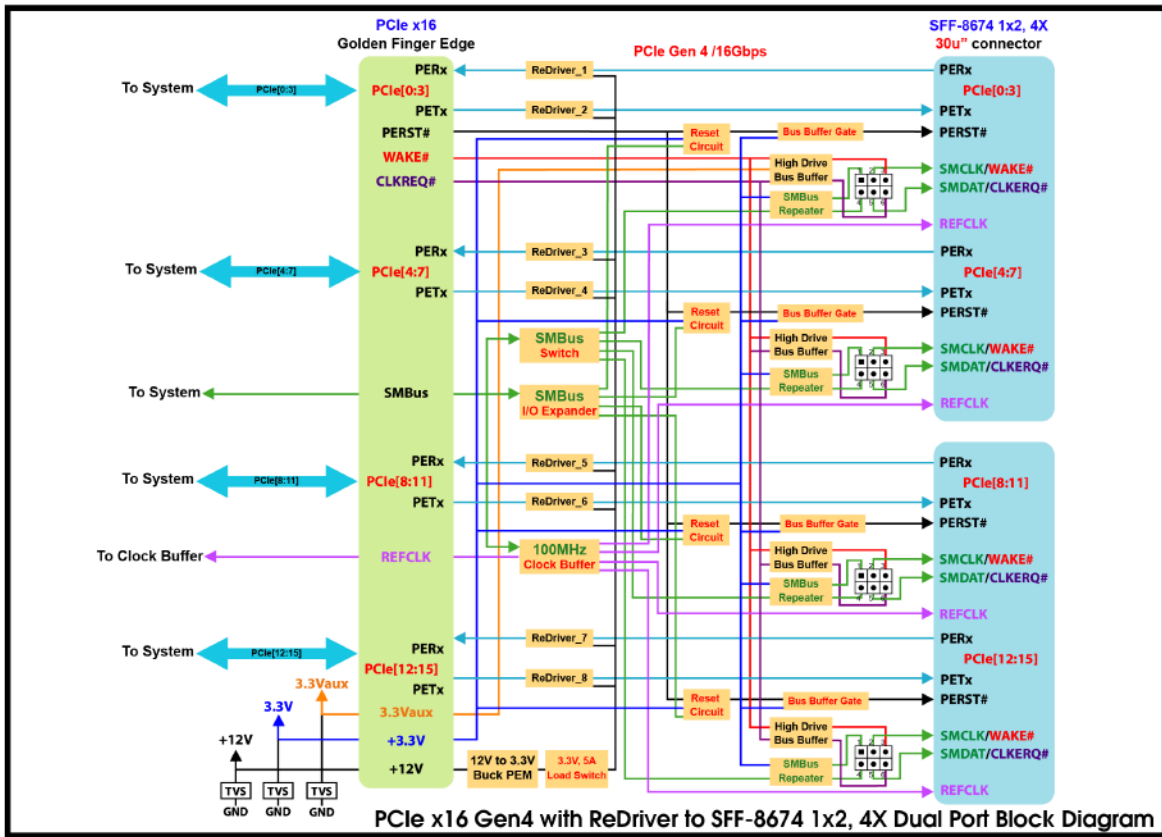
Specifications

- ※ PCI Express Base Specification Rev 4.0
- ※ PCIe_CEM_SPEC_R4_V1_0_08072019_NCB
- ※ Compliant with Support SFF-9402 Rev1.1
- ※ Compliant PCI_Express_External_Cabling_R3.0a_06042020_NCB

Applications

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

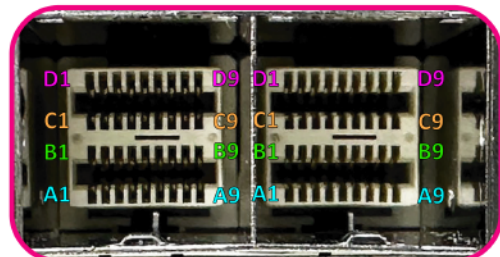
PCIe x16 Gen4 with ReDriver to SFF-8674 1x2, 4X Dual-port AIC



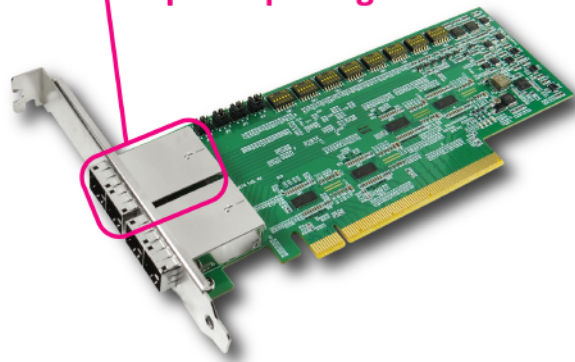
The following figure shows SFF-8674 1x2, 4X pin out

SFF-8674 1x1, 4X pin define

Pin#	Net	Pin#	Net
A1	REFCLKp	B1	PERST#
A2	REFCLKn	B2	NC
A3	GND	B3	GND
A4	PERp0	B4	PERp1
A5	PERn0	B5	PERn1
A6	GND	B6	GND
A7	PERp3	B7	PERp2
A8	PERn3	B8	PERn2
A9	GND	B9	GND
C1	SMCLK/WAKE#	D1	NC
C2	SMDAT/CLKREQ#	D2	NC
C3	GND	D3	GND
C4	PETp0	D4	PETp1
C5	PETn0	D5	PETn1
C6	GND	D6	GND
C7	PETp3	D7	PETp2
C8	PETn3	D8	PETn2
C9	GND	D9	GND



PCIe 4.0 SFF-8674 1x2, 4X 30µ" Au plating connector

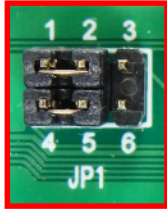


Model No.: **DP7604**

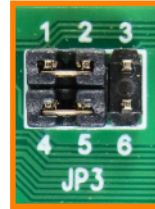
PCIe x16 Gen4 with ReDriver to SFF-8674 1x2, 4X Dual-port AIC

PCIe x16 Gen4 with ReDriver to SFF-8674 1x2, 4X Dual-port AIC

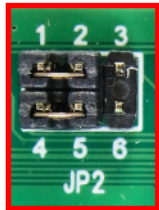
DP7604 Jumper Application



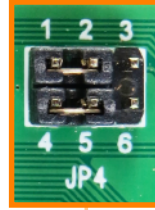
JP1 SETUP			
1-2	ON	SMCLK1	Default setup
4-5	ON	SMDAT1	
2-3	ON	WAKE1#	
5-6	ON	CLKREQ1#	



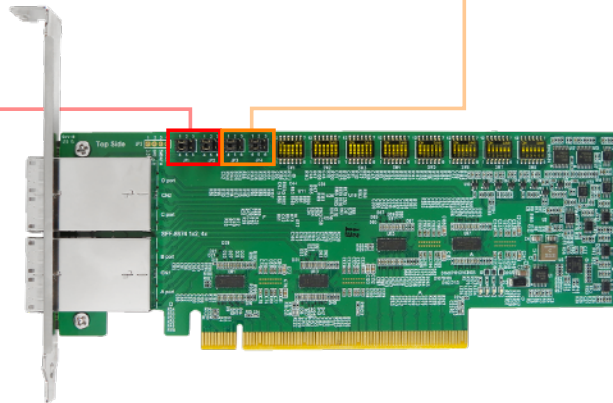
JP3 SETUP			
1-2	ON	SMCLK3	Default setup
4-5	ON	SMDAT3	
2-3	ON	WAKE3#	
5-6	ON	CLKREQ3#	



JP2 SETUP			
1-2	ON	SMCLK2	Default setup
4-5	ON	SMDAT2	
2-3	ON	WAKE2#	
5-6	ON	CLKREQ2#	

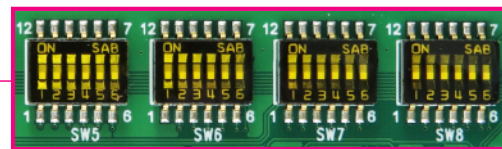
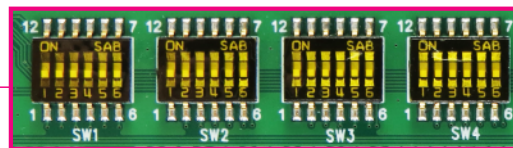
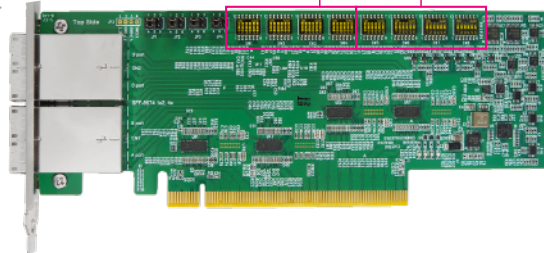


JP4 SETUP			
1-2	ON	SMCLK4	Default setup
4-5	ON	SMDAT4	
2-3	ON	WAKE4#	
5-6	ON	CLKREQ4#	



The switches settings are as noted below

Model No.: DP7604
PCIe x16 Gen 4 with Redriver to
SFF-8674 1x2, 4X Dual-port AIC



SW	Pin	Setting	Value	Unit
SW1	1-12	Output Swing Setting	on	0
			off	1
SW2	2-11	Flat Gain Setting	on	0
			off	1
SW3	3-10	Flat Gain Setting	on	0
			off	1
SW4	4-9	Equalization Setting	on	0
			off	1
SW5	EQ0	Equalization Setting	on	0
			off	1
SW6	5-8	Equalization Setting	on	0
			off	1
SW7	EQ1	Equalization Setting	on	0
			off	1
SW8	6-7	Equalization Setting	on	0
			off	1

Flat Gain Setting		
FG1	FG0	dB
0	0	-3.5
0	1	-2
1	0	-0.5
1	1	1

Default Value : { 1. Swing : High
2. Flat Gain : High
3. Equalization : High

Equalizer Setting (dB)						
EQ2	EQ1	EQ0	@1.25GHz	@2.5GHz	@4GHz	@8GHz
0	0	0	0.2	1.0	2.3	5.6
0	0	1	0.2	1.1	2.6	6.2
0	1	0	1.8	2.7	3.9	7.0
0	1	1	2.1	3.3	4.8	8.5
1	0	0	3.0	4.2	5.8	9.4
1	0	1	3.2	4.6	6.5	10.4
1	1	0	4.3	5.8	7.8	11.7
1	1	1	4.5	6.5	8.8	13.0