DSFP56 100G to DSFP56 100G ACC

2.5~5.0M

PVC Black

Key Features
- Support 53.125G PAM4
- 100G to 100G Data Rate
- 3.3V Power Supply
- Hot Pluggable
- BER < 10^{-6} (pre FEC)
- BER < 10^{-15} (post FEC)
- Excellent SI performance
- RoHS Compliance

Applications
- Data center & Networking Equipment
- Servers/Storage Devices
- High Performance Computing (HPC)
- Switches/Routers
- Telecom Central Offices

Supported Standards
- DSFP/NGSFP MSA
- IEEE 802.3cd
- IEEE 802.3by
- I2C for EEPROM
- CMIS 5.0 and SFF-8636

Ordering Information

LFDD-MK1xxxC **DSFP56 100G to DSFP56 100G ACC – 2.5~5.0M**

Ordering P/Ns	Description	Length	AWG	Cable	NOTE
LFDD-MK1x25C	DSFP56 100G to DSFP56 100G ACC	2.5m	30 AWG	PVC Black	
LFDD-MK1x35C	DSFP56 100G to DSFP56 100G ACC	3.5m	28 AWG	PVC Black	
LFDD-MK1x50C	DSFP56 100G to DSFP56 100G ACC	5.0m	26 AWG	PVC Black	

xxx define ACC cable length

Description

The LFDD-MK1xxxC, DSFP56 to DSFP56 100G Active Copper Cable Assembly, meticulously designed for application in the telecommunications and data center sectors. It facilitates bidirectional transmission of 100Gb traffic per cable, accommodating 2 lanes of 50G PAM4. The cable adheres to the standardized DSFP and NGSFP form factor and complies rigorously with MultiSource Agreement (MSA) specifications.

Absolute Maximum Ratings

Parameter	Unit	Min.	Max.	Notes
Supply Voltage	V	-0.3	3.6	
Data Input Voltage	V	-0.3	3.6	
Control Input Voltage	V	-0.3	3.6	
Operating Temperature	°C	0	70	
Storage Temperature	°C	-40	+85	
Relative Humidity (NonCondensing)	%	5	85	

Operational Specification

Parameter	Unit	Min	Typical	Max	Notes
Supply Voltage (Vcc)	V	3.135	3.3	3.465	Per End
Power Consumption	W			1.5	Per End
Operating Case Temperature	°C	0		70	
Operating Relative Humidity	%	0		85	
Modulation Format			56G PAM4		
Bit Rate	Gbps		2*50G to 2*50G		

Electrical Characteristics

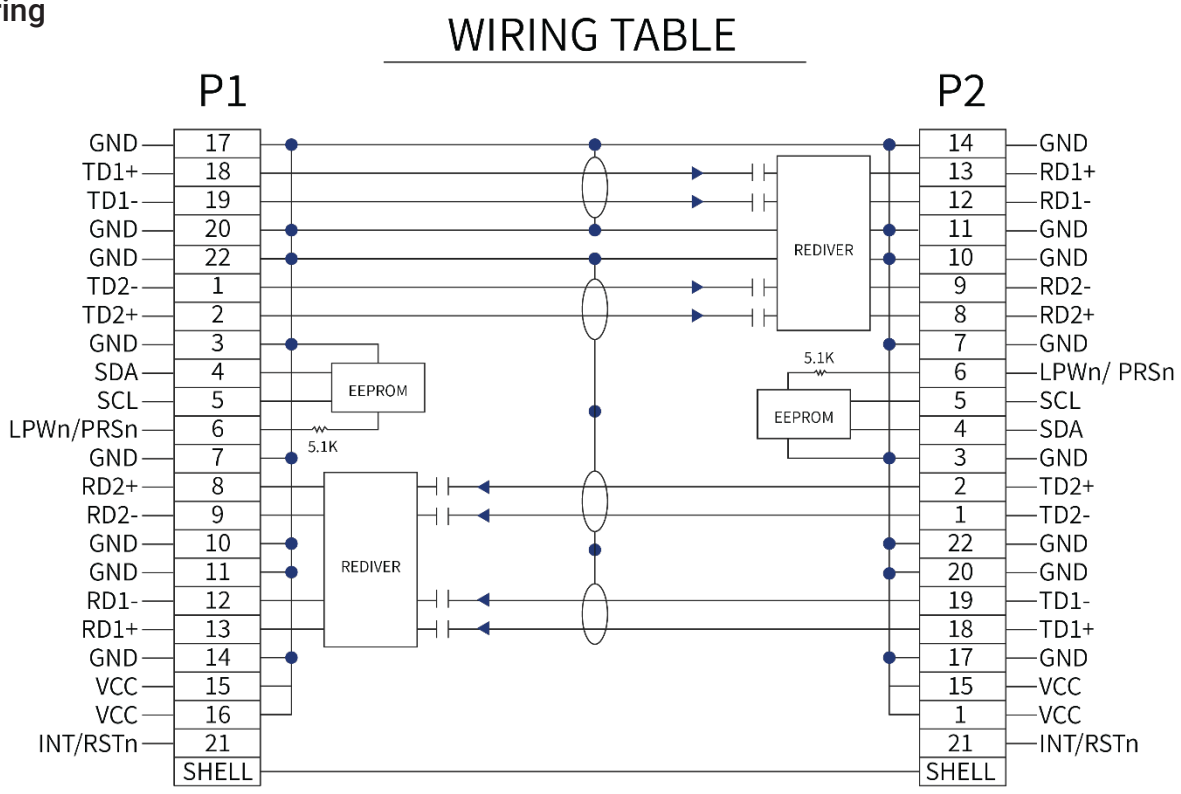
Parameter	Unit	Min	Typical	Max	Notes
Characteristic Impedance	ohm	90	100	110	
Time Propagation Delay (Informative)	ns	.....	.....	4.9	

SI Performance

Item	Parameter	Require	Reference
1	ILdd Insertion loss at 13.28 GHz	17.16 dB (Max.)	IEEE 802.3cd Section Section 136.11.2
2	ILdd Insertion loss at 13.28 GHz	8 dB (Min.)	IEEE 802.3cd Section Section 136.11.2
3	ERL Minimum cable assembly	>11 dB*.	IEEE 802.3cd Section Section 136.11.3
4	RLcd Differential mode to common mode return loss	0.01GHz – 19GHz Equation (92–28)	IEEE 802.3cd Section 136.11.4
5	ILcd Differential mode to common mode insertion loss	0.01GHz – 19GHz Equation (92–29)	IEEE 802.3cd Section 136.11.5
6	RLcc Common mode to common mode return loss	0.01GHz – 19GHz Equation (92–30)	IEEE 802.3cd Section Section 136.11.6
7	COM	3dB (Min.)	IEEE 802.3cd Section Section 136.11.7

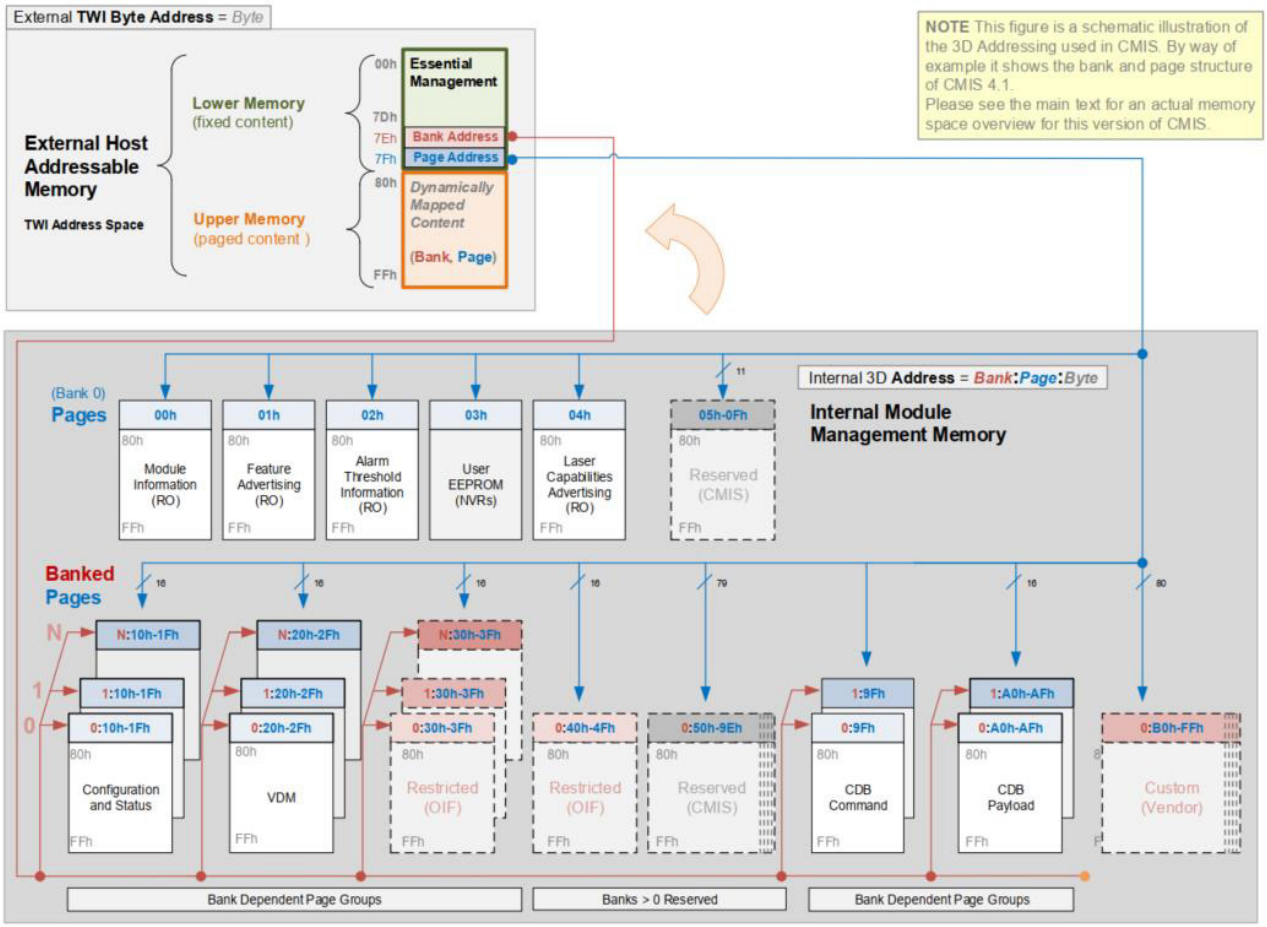
*Cable assemblies with a com greater than 4 dB are not required to meet minimum ERL

Cable Wiring



DSFP56 to DSFP56 Active Redriver Cable Assembly Wiring

CMIS Memory Map



Lower Memory Overview

Address	Size	Subject Area	Description
0-3	4	ID and Status Area	Module ID from SFF8024 list, version number, Type and status
			Flat mem indication, CLEI present indicator, Maximum TWI speed, Current state of Module, Current state of the Interrupt signal
4-7	4	Lane Flag Summary	Flag summary of all lane flags on pages 10h1Fh
8-13	6	ModuleLevel Flags	All flags that are not lane or data path specific
14-25	12	ModuleLevel Monitors	Monitors that are not lane or data path spedific
26-30	5	Module Global Controls	Controls applicable to the module as a whole

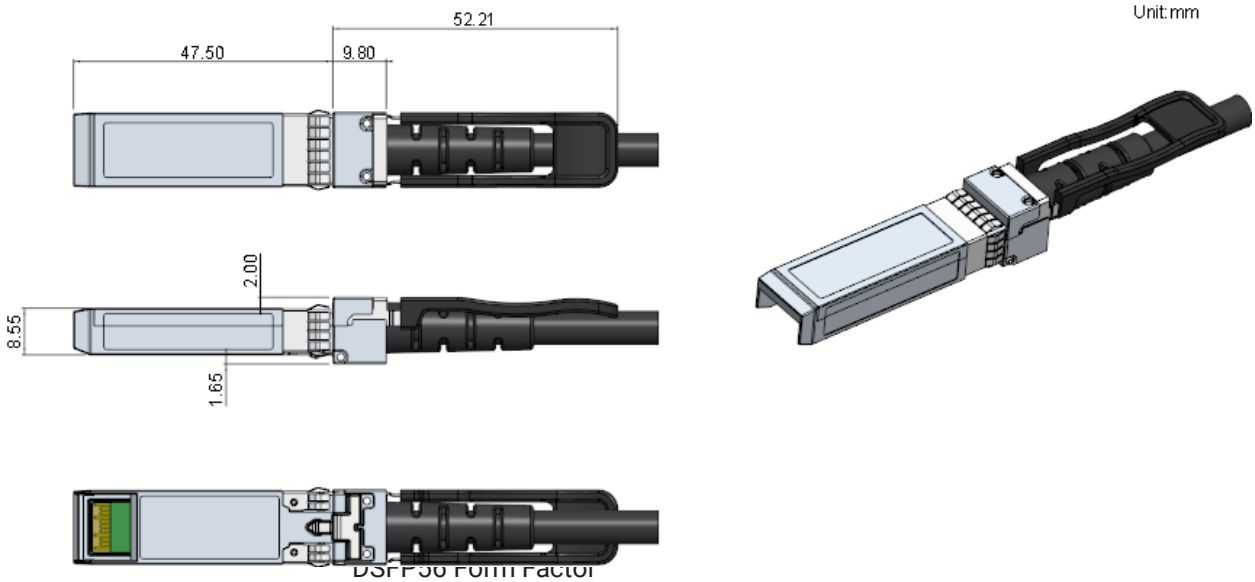
31-36	6	ModuleLevel Flag Masks	Masking bits for the ModuleLevel flags
37-38	2	CDB Status Area	Status of most recent CDB command
39-40	2	Module Firmware Version	Module Firmware Version
41-63	23	Reserved Area	Reserved for future standardization
64-82	19	Custom Area	Vendor or module type specific use
83-84	2	Inactive Firmware Version	Version Number of Inactive Firmware. Values of 00h indicates module supports only a single image.
85-117	33	Application Advertising	Combinations of host and media interfaces that are supported by module data path(s
118-125	8	Password Entry and Change	
126	1	Bank Select Byte	Bank address of currently visible Page
127	1	Page Select Byte	Page address of currently visible Page

Page 00h Overview

Address	Size (bytes)	Name	Description
128	1	Identifier	Identifier Type of module
129-144	16	Vendor name	Vendor name(ASCII)
145-147	3	Vendor OUI	Vendor IEEE company ID
148-163	16	Vendor PN	Part number provided by vendor (ASCII)
164-165	2	Vendor rev	Revision level for part number provided by vendor (ASCII
166-181	16	Vendor SN	Vendor Serial Number (ASCII)
182-189	8	Date Code	
190-199	10	CLEI code	Common Language Equipment Identification code
200-201	2	Module power characteristics	
202	1	Cable assembly length	
203	1	Media Connector Type	
204-209	6	Copper Cable Attenuation	
210-211	2	Cable Assembly Lane Information	
212	1	Media Interface Technology	
213-220	8	Reserved	
221	1	Custom	
222	1	Checksum	Includes bytes 128221
223-255	33	Custom Info NV	

Note: For the above, refer to Common Management Interface Specification

Mechanical Specifications



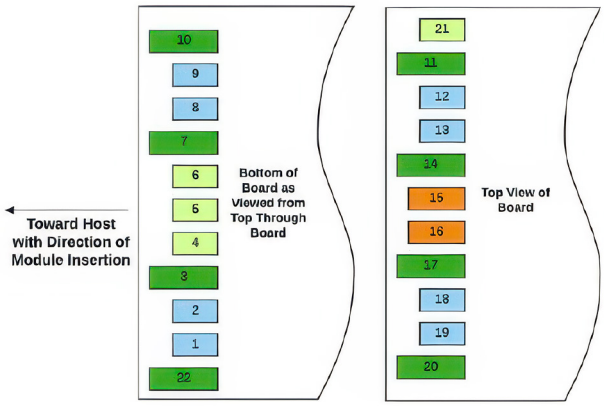
DSFP56 Form Factor

DSFP PIN Function Definitions

Pin	Logic	Symbol	Description
1	CML-I	TD2-	Transmitter Inverted Data Input Lane 2
2	CML-I	TD2+	Transmitter Non-Inverted Data Input Lane 2
3		Gnd	Module Ground
4	LVTTL-I/O	SDA	2-wire Serial Interface Data Line
5	LVTTL-I/O	SCL	2-wire Serial Interface Clock
6	Multi-level-I/O	LPWn/PRSn	Low Power Mode/Module Present (Mod_Abs)
7		Gnd	Module Ground
8	CML-O	RD2+	Receiver Non-Inverted Data Output Lane 2
9	CML-O	RD2-	Receiver Inverted Data Output Lane 2
10		Gnd	Module Ground
11		Gnd	Module Ground
12	CML-O	RD1-	Receiver Inverted Data Output Lane 1
13	CML-O	RD1+	Receiver Non-Inverted Data Output Lane 1
14		Gnd	Module Ground
15		Vcc	Module 3.3 V Supply
16		Vcc	Module 3.3 V Supply
17		Gnd	Module Ground
18	CML-I	TD1+	Transmitter Non-Inverted Data Input Lane 1
19	CML-I	TD1-	Transmitter Inverted Data Input Lane 1
20		Gnd	Module Ground
21	Multi-level-I/O	INT/RSTn	Dual Function Module Interrupt and Reset Pin
22		Gnd	Module Ground

DSFP Electrical pad layout

For detail mechanical information, please refer to the related document of DSFP MSA.



Disclaimer

Images are for illustrative purposes only and may not accurately represent the actual product. Specifications and appearances are subject to change without prior notice.

The information provided in this datasheet is subject to change without notice. Lumulus Technologies assumes no responsibility for any errors or omissions. Performance may vary depending on application and operating conditions. Product specifications are provided for reference only and do not constitute a warranty.

For assistance and more information, please contact your sales representative or write to **sales@lumulus.com**

Lumulus Technologies, Inc. USA

Headquarter

9685 Via Excelencia Suite 106
San Diego, CA 92126
USA

(+1) 858-397-2228
www.lumulus.com
sales@lumulus.com

Lumulus Technologies, Inc. (Thailand Branch)

Production Site

30/30 Moo2, Tambol Wangchula
Amphur, Wagnoi, Phranakorn
Sri Ayutthagya - 13170, Thailand

- **Lumulus Tech offers 24/7 support**,
- with experts ready to assist with all your technical needs and questions.

tech.support@lumulus.com sales@lumulus.com