	Datasheet	No.	DS10-U001-2
		Initial Date	2017-12-28
OU	OU88M8-Axx	Written Team	R&D Dept.
			GH Zheng

I Preview


PN	OU88M8-Axx
Description	100G QSFP28 AOC xxm

II Contents

1. Features
2. Applications
3. Description
4. Absolute maximum Ratings
5. Operating Environment
6. Electrical Characteristics
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9. Mechanical Dimensions
10. Model Ordering Information

III Revision History

No.	Date	Items	Change Recording	Ver.	Rev.	Customer
1	2017-12-28	All	Initial registration	000	000	Standard
2						
3						
4						
5						
6						

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1. Features

- ◆ Four-channel full-duplex active optical cable transceiver modules
- ◆ Transmission data rate up to 26Gbit/s per channel
- ◆ 4 channels 850nm VCSEL array
- ◆ 4 channels PIN photo detector array
- ◆ Low power consumption <3.5W
- ◆ Operating case temperature 0 °C to +70 °C
- ◆ 3.3V power supply voltage
- ◆ RoHS 6 compliant
- ◆ Hot Pluggable QSFP28 form factor

2. Applications

- ◆ 100G Ethernet
- ◆ Infiniband QDR/FDR/EDR
- ◆ Data center
- ◆ Enterprise storage
- ◆ Fiber channel
- ◆ Other links

3. Description

100G QSFP+ active optical cable Assemblies are high high performance, low power consumption, long reach interconnect solution supporting 100G Ethernet ,or InfiniBand QDR/DDR/SDR, 12.5G/10G/8G/4G/2G fiber channel ,PCIe and SAS. It is compliant with the QSFP MSA and IEEE P802.3ba.OCRECOM's QSFP28 AOC is an assembly of 4 full-duplex lanes, where each lane is capable of transmitting data at rates up to 25.78125Gb/s, providing an aggregated rate of 104Gb/s. OCRECOM's QSFP28 AOC is one kind of parallel transceiver which provides increased port density and total system cost savings.


4. Absolute Maximum Ratings

The operation in excess of any absolute maximum ratings might cause permanent damage to this module.

Parameter	Symbol	Min	Max	Unit	Note
Storage Temperature	TST	-40	85	°C	
Relative Humidity(non-condensing)	RH	0	85	%	
Operating Case Temperature	TOPC	0	70	°C	
Supply Voltage	VCC	-0.5	3.6	V	

5. Operating Environment

Parameter	Symbol	Min	Typical	Max	Unit
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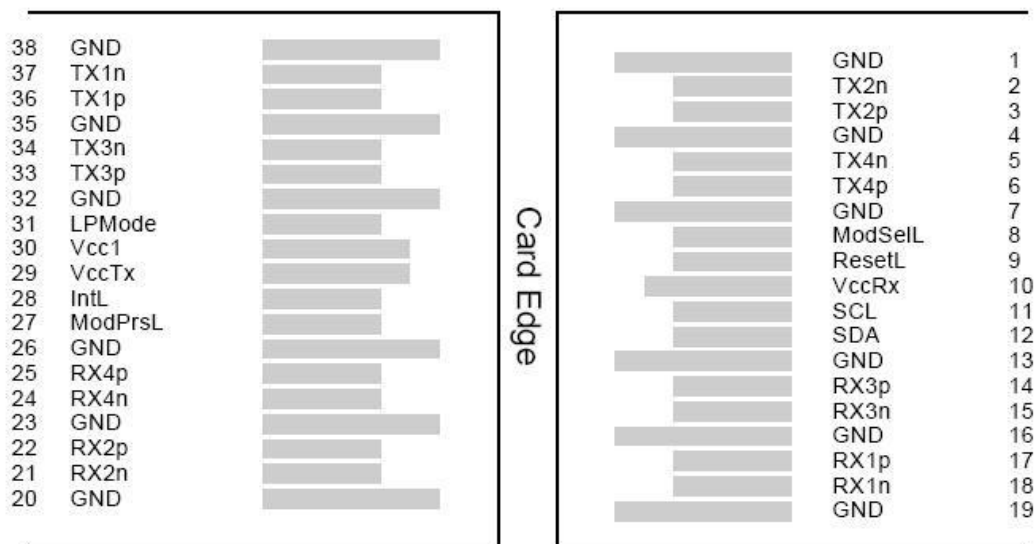
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Operating Case Temperature	TOPC	0		70	°C
Power Supply Voltage	VCC	3.13	3.3	3.47	V
Data Rate	DR		25.78125		Gbps
Data Speed Tolerance	ΔDR	-100		+100	ppm
Link Distance with OM3 fiber	D	0		70	m

6. Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Differential input impedance	Zin	90	100	110	ohm	
Differential Output impedance	Zout	90	100	110	ohm	
Differential input voltage amplitude	ΔVin	300		1100	mVp-p	
Differential output voltage amplitude	ΔVout	500		800	mVp-p	
Bit Error Rate	BR	E-12				
Input Logic Level High	VIH	2.0		VCC	V	
Input Logic Level Low	VIL	0		0.8	V	
Output Logic Level High	VOH	VCC-0.5		VCC	V	
Output Logic Level Low	VOL	0		0.4	V	

7. Pin Descriptions



Top Side
Viewed from Top

Bottom Side
Viewed from Bottom

PIN	Logic	Symbol	Name/Description	Note
1		GND	Ground	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	

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3	CML-I	Tx2p	Transmitter Non-Inverted Data output	
4		GND	Ground	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	
6	CML-I	Tx4p	Transmitter Non-Inverted Data output	
7		GND	Ground	1
8	LVTTLL-I	ModSelL	Module Select	
9	LVTTLL-I	ResetL	Module Reset	
10		VccRx	+ 3.3V Power Supply Receiver	2
11	LVC MOS-I/O	SCL	2-Wire Serial Interface Clock	
12	LVC MOS-I/O	SDA	2-Wire Serial Interface Data	
13		GND	Ground	
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	
15	CML-O	Rx3n	Receiver Inverted Data Output	
16		GND	Ground	1
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	
18	CML-O	Rx1n	Receiver Inverted Data Output	
19		GND	Ground	1
20		GND	Ground	1
21	CML-O	Rx2n	Receiver Inverted Data Output	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	
23		GND	Ground	1
24	CML-O	Rx4n	Receiver Inverted Data Output	1
25	CML-O	Rx4p	Receiver Non-Inverted Data Output	
26		GND	Ground	1
27	LVTTTL-O	ModPrsL	Module Present	
28	LVTTTL-O	IntL	Interrupt	
29		VccTx	+3.3 V Power Supply transmitter	2
30		Vcc1	+3.3 V Power Supply	2
31	LVTTTL-I	LPMode	Low Power Mode	
32		GND	Ground	1
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input	
34	CML-I	Tx3n	Transmitter Inverted Data Output	
35		GND	Ground	1
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	

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37	CML-I	TxIn	Transmitter Inverted Data Output	
38		GND	Ground	1


Notes:

1. Module circuit ground is isolated from module chassis ground within the module. GND is the symbol for signal and supply (power) common for QSFP28 modules.
2. The connector pins are each rated for a maximum current of 500mA.

8. Memory Map

Address	Size (Bytes)	Name	Description of Base ID Field	Optical Module
128	1	Identifier	Identifier Type of serial Module	
129	1	Ext. Identifier	Extended Identifier of Serial Module	
130	1	Connector	Code for connector type	
131-138	8	Specification compliance	Code for electronic compatibility or optical compatibility	
139	1	Encoding	Code for serial encoding algorithm	
140	1	BR, nominal	Nominal bit rate, units of 100 Mbits/s	
141	1	Extended rateselect Compliance	Tags for extended rate select compliance	
142	1	Length(SMF)	Link length supported for SMF fiber in km (note 1)	
143	1	Length(OM3 50 um)	Link length supported for EBW 50/125 um fiber (OM3), units of 2m (note 1)	
144	1	Length(OM2 50 um)	Link length supported for 50/125 um fiber (OM2), units of 1m (note 1)	
145	1	Length(OM1 62.5 um)	Link length supported for 62.5/125 um fiber (OM1), units of 1m (note 1)	


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146	1	Length (Copper)	Link length of copper or active cable, units of 1 m (note 1) Link length supported for 50/125 um fiber (OM4), units of 2 m) when Byte 147 declares 850nm VCSEL as defined in Table 37
147	1	Device tech	Device technology
148-163	16	Vendor name	QSFP28 vendor name(ASCII)
164	1	Extended Module	Extended Module codes for InfiniBand
165-167	3	Vendor OUI	QSFP28 vendor IEEE company ID
168-183	16	Vendor PN	Part number provided by QSFP28 vendor(ASCII)
184-185	2	Vendor rev	Revision level for part number provided by vendor(ASCII)
186-187	2	Wave length or Copper cable Attenuation	Nominal laser wavelength (wavelength=value/20 in nm) or copper cable attenuation in dB at 2.5GH (Adrs 186) and 5.0GHz (Adrs 187)
188-189	2	Wavelength tolerance	Guaranteed range of laser wavelength(+/- value) from nominal wavelength.(wavelength Tol.=value/200 in nm)
190	1	Max case temp.	Maximum case temperature in degrees C
191	1	CC_BASE	Check code for base ID fields (addresses 128-190)
192-195	4	Options	Rate Select, TX Disable, TX Fault, LOS, Warning indicators for: Temperature, VCC, RX, power, TX Bias
196-211	16	Vendor SN	Serial number provided by vendor (ASCII)
212-219	8	Date Code	Vendor's manufacturing date code
220	1	Diagnostic Monitoring Type	Indicates which types of diagnostic monitoring are implemented (if any) in the Module. Bit 1,0 Reserved
221	1	Enhanced Options	Indicates which optional enhanced features are implemented in the Module.
222	1	Reserved	
223	1	CC_EXT	Check code for the Extended ID Fields (addresses 192-222)

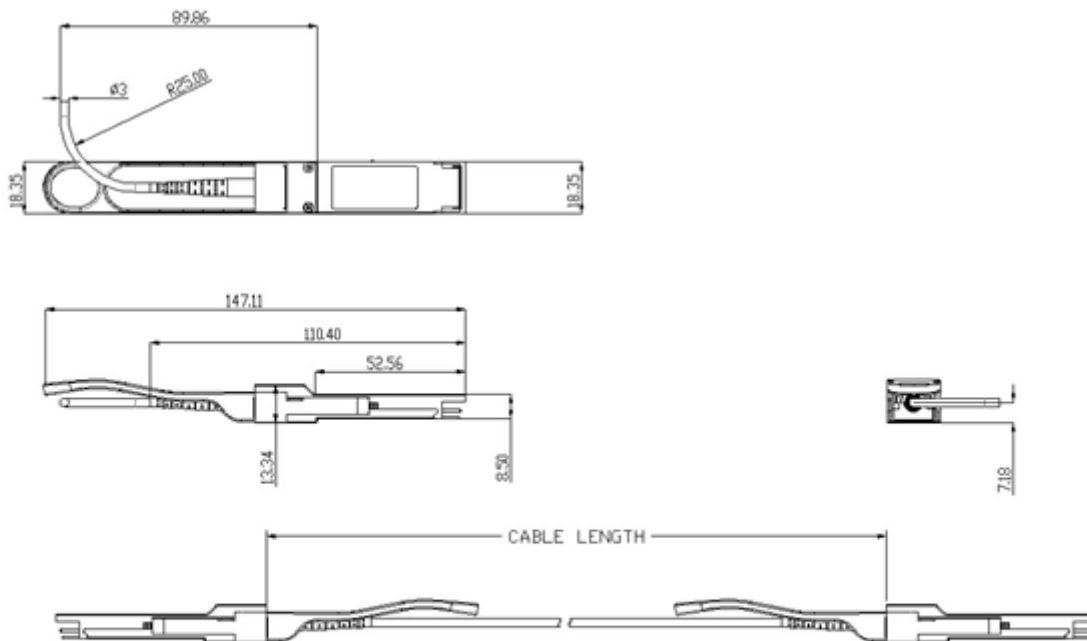
Vendor Specific ID Fields

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224-255 32 Vendor Specific EEPROM

9. Mechanical Dimensions



Dimensions in Millimeters

10. Module Ordering information

PN	Description
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Remark: 01=1M

50=50M

70=70M

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