

Features:

- Dual 850nm PIN receiver
- Rugged D-subminiature (D-sub) DE-9 size housing
- Compliant with 1x/2x/4xFC - ANSI Fibre Channel FC-PI-2, FC-PI, FC-PH-2 and ARINC 818
- Dual 1.25mm OSA receptacles
- 9 pin board-mount electrical interface
- -40 to +85 C operating temperature
- Single +3.3V power supply
- DC-Coupled Receivers
- Low power dissipation
- Conformal coating for harsh environment use



The DSUB-5G-RX2 is ideal for harsh environment connectivity because of its low cost, availability, and wide operating parameters



Commercial
Aerospace



Military
Tactical



Military
Aerospace



Industrial and
Oil & Gas

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Notes
Maximum Supply Voltage	V _{CC}	-0.3	4.0	V	
Storage Temperature	T _{sto}	-55	100	°C	
Case Operating Temperature	T _{OP}	-40	85	°C	
Relative Humidity	RH	0	95	%	Based on conformal coating
Hand Lead Soldering Temperature			260	°C	10 seconds, leads only (2,3)
Conformal Coating		0.8	1.2	mil	See ruggedization notes

General Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	BR	1.0625		5.0	Gb/s	

Electrical Specifications (T_{OP} = -40 to 85°C, V_{CC} = 3.14 to 3.47 Volts)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Voltage	V _{CC}	3.14	3.3	3.47	V	
Supply Current	I _{CC}		160	220	mA	2 Receivers
Total Module Power Dissipation	P _{DISS}			763	mW	
Receiver						
Supply Current	I _{CC}		80	110	mA	
Output differential impedance			100		Ω	
Single-Ended Voltage Swing	V _{DRX}	300		600	mV	CML
Output Rise Time	t _r			200	ps	20%-80%
Output Fall Time	t _f			200	ps	20%-80%
LOS De-assert Voltage	V _{LOSD}	0		0.4	V	Open Collector LVTTTL (4.7kΩ-10kΩ pull-up to V _{CC})
LOS Assert Voltage	V _{LOSA}	V _{CC} -0.5		V _{CC}	V	

Pin Configuration

PIN #	Symbol	Description	Logic/Protocol
1	RD1-	Receiver 1 DATA Out -	CML
2	RD1+	Receiver 1 DATA Out +	CML
3	GND	Signal Ground	N/A
4	RD2-	Receiver 2DATA Out -	CML
5	RD2+	Receiver 2DATA Out +	CML
6	V _{CCR}	Power Supply	N/A
7	LOS _{RX1}	Loss of Signal Indicator, RX1	Open Drain CMOS
8	LOS _{RX2}	Loss of Signal Indicator, RX2	Open Drain CMOS
9	GND	Ground	N/A

Optical Characteristics (T_{OP} = -40 to 85°C, V_{CC} = 3.14 to 3.47 Volts)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Receiver						
Receiver Sensitivity 5.0 Gb/s	P _{IN5}			-13	dBm	PRBS 2 ¹⁵ -1 BER<10 ⁻¹²
Receiver Sensitivity 4.25 Gb/s	P _{IN4}			-14	dBm	
Receiver Sensitivity 3.125/2.125 Gb/s	P _{IN3}			-15	dBm	
Receiver Sensitivity 1.25/1.0625Gbps	P _{IN1}			-17	dBm	
Overload	P _{OL}	0			dBm	
Optical Center Wavelength	λ _C	830		860	nm	
Return Loss	RL	12			dB	
Loss-Of-Signal De-Assert	LOS _D			-15	dBm	
Loss-Of-Signal Assert	LOS _A	-28			dBm	
Loss-Of-Signal Hysteresis	LOS _H	1.5		3.5	dB	

Ruggedization Notes

- Parylene C coating can be used for conformal coating with a 1.0 mil ± 0.2 mil thickness through a deposition process. Parylene Type C has a 5600 VPM rating, withstands high temperatures, and is extremely resistant to oil/dirt, and object impact.
- Contact COTSWORKS for all MSDS and case composition.

Reference Information

- 1) IEEE Standard 802.3, 2002 Edition, 1000BASE-X. IEEE Standards Department, 2002
- 2) "Fibre Channel Draft Physical Interface Specification (FC-PI-2 Rev. 10.0)". American National Standard for Information Systems
- 3) Infiniband 1.2.1 specification, www.infinibandta.org
- 4) 3.125 Gb/s XAUI specification, IEEE 802.3ae, section 47
- 5) ARINC 818 specification at 3.1875Gb/s, <https://www.arinc818.com/>

Warnings:

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended.

Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

Ordering Information

DSUB-5G-RX2	-xx-	x	-x-
D-Subminiature Form Factor	Connector	Ruggedized Coating	Operating Temp. Range
5Gbps Max. Data Rate	1.25mm OSA Receptacles	(): Non-coated R: Parylene	A: -40 to 85°C
Dual Receivers 850nm (MMF)			

Example part number: DSUB-5G-RX2-LC-R-A
 [5G D-Sub Form Factor Dual Receiver, dual 1.25mm OSA receptacles, Parylene-coated, Industrial operating temperature range]

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