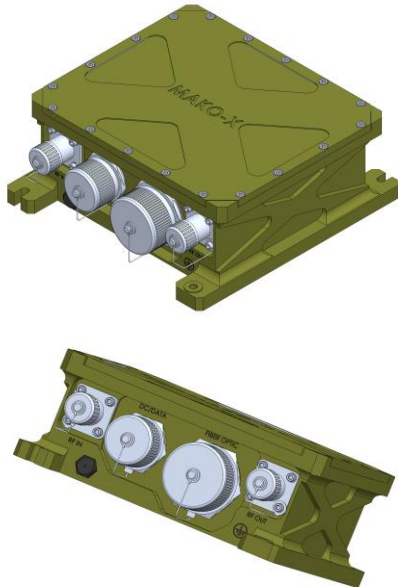


MAKO-X C/X-band RF Over Fiber Transceiver

Transceiver



Key Features

- Frequency range: C-Band and X-Band (3.4GHz – 8.4GHz)
- Full duplex transceiver
- High spur free dynamic range (105dB-Hz)
- Excellent phase noise (-100dBc/Hz at 10KHz)
- 1550nm DWDM laser (1330nm / 1620nm for WDM)
- Transceiver using two fiber cores
- Environmental standard (MIL-STD-810G)
- EMI and EMC (MIL-STD-461F)
- Laser safety standard (IEC 6085-1)
- DC24V operation (Isolated DC power supply)

Performance Highlights

Optical, Electrical, and Environmental

Parameter	Unit	Min	Typ	Max	Remarks
Laser Wavelength	nm	1310	1550	—	DWDM
Receiver PD Optical Wavelength	nm	1260	—	1600	
Tx optical Power output	dBm	9	10	11	
Rx Optical Power Input	dBm	—	—	11	
Operating Temperature	°C	-40	—	+60	Ambient
Storage Temperature	°C	-50	—	+85	Ambient
DC Power Supply	V	14	24	33	Isolated Power
Power Consumption	W	—	—	9	
Waterproof	—	—	IP 67	—	

Link (Tx to Rx)

Parameter	Unit	Min	Typ	Max	Remarks
Frequency Range	GHz		3.4 to 8.4	—	
Gain	dB		20	—	at Max. Gain
Gain Flatness	dBp-p		—	±2dB	
Tx Gain Variable Range	dB		20	—	
RF Input Range	dBm	-20	—	0	
RF Output Range	dBm	-20	—	0	
IIP3	dBm		11	—	at Max. Gain
OIP3	dBm		31	—	at Max. Gain
Noise Figure	dB		27	—	at Max. Gain
SFDR	dB-Hz		105	—	at Max. Gain
Input / Output Impedance	Ohms		50	—	
VSWR Input	—		2:1	—	
VSWR Output	—		2:1	—	
Spurious	dBc		—	-80	
Phase Noise at 10KHz	dBc/Hz		—	-100	

Mechanical

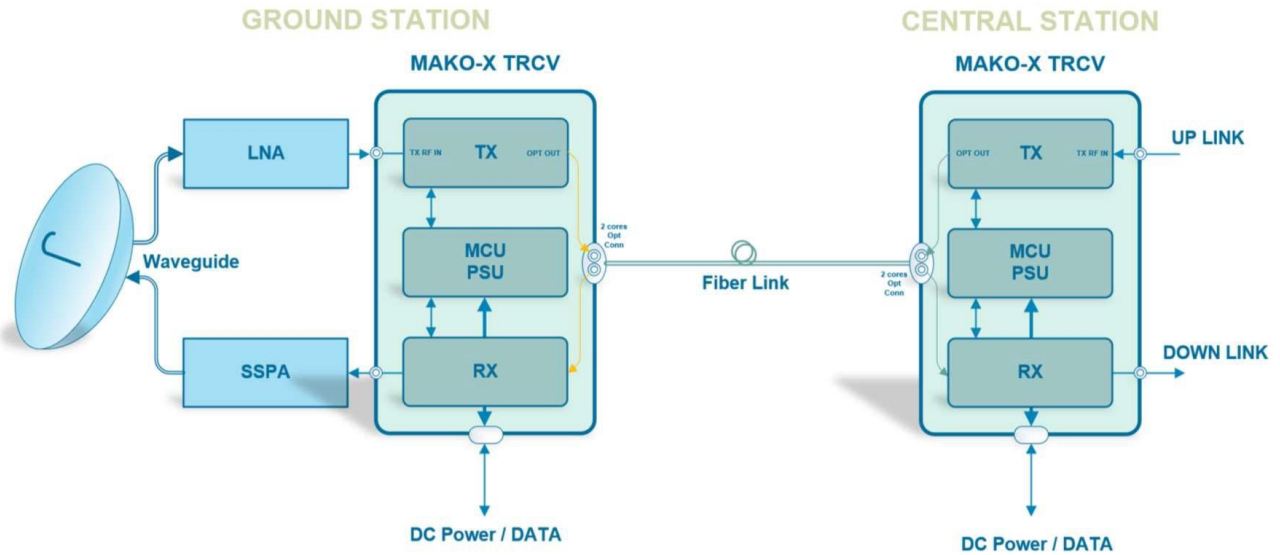
Parameter	Units	Typical	Comments
Dimension	Inch	6.5(W) x 5.5(D) x 2.6 (H)	Mounting flanges excluded
Weight	lbs	5.68	(~2.6 kg)
RF Input / Output RF Connector	—	N-Female	
Optical Connector	—	MIL-DTL-38999	
DC Power and Data	—	MIL-DTL-38999	

MAKO-X C/X-band RF Over Fiber Transceiver



Block Diagram

C/X Band Transceiver System



PRELIMINARY

MAKO-X C/X-band RF Over Fiber Transceiver

emcore[®]

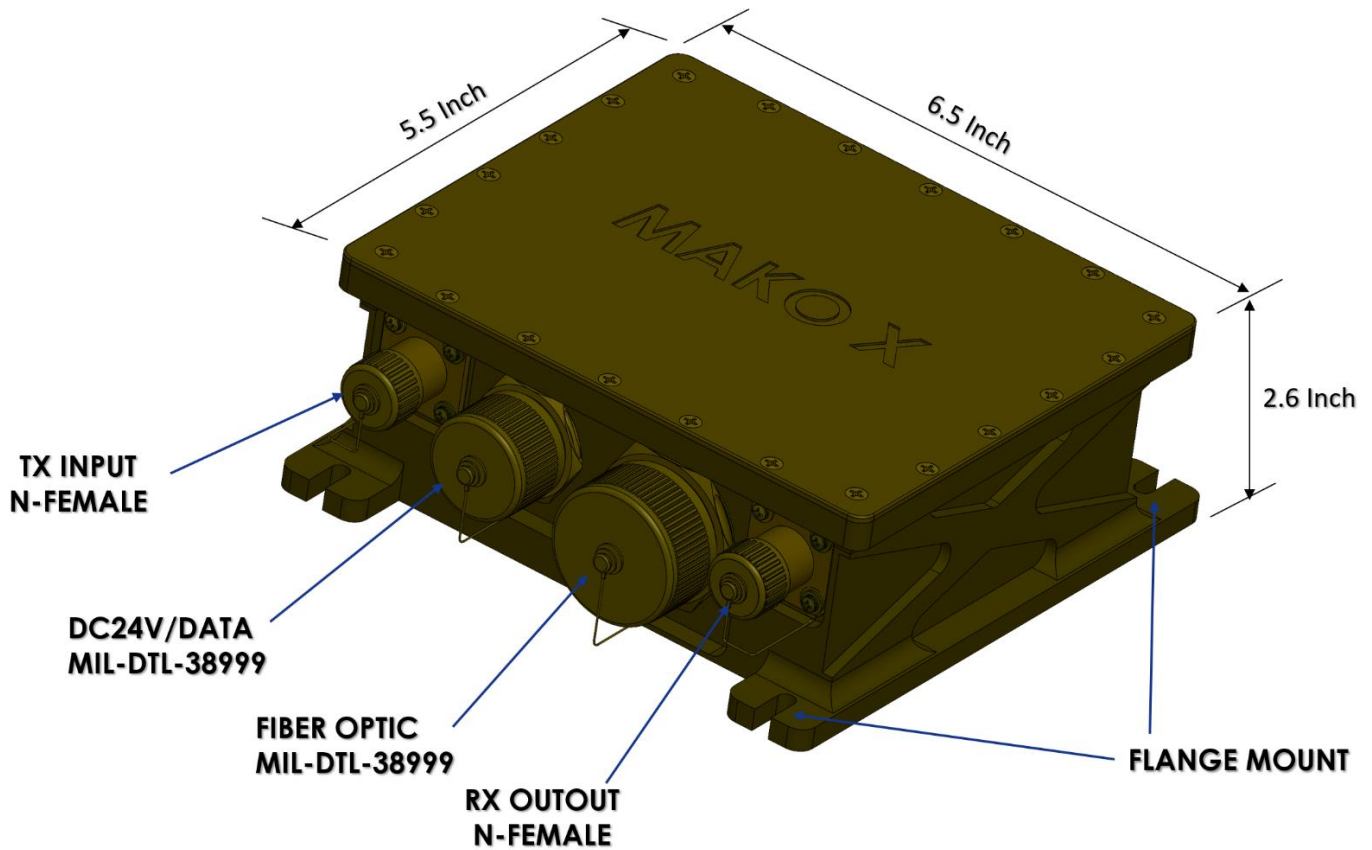


PRELIMINARY DATASHEET | FEBRUARY 2021

MIXED-SIGNAL OPTICS

Mechanical Configuration

Package Outline



Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. All versions of this laser are Class 1M laser product, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example: eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example: telescopes and binoculars) may pose an eye hazard.



*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

*IEC is a registered trademark of the International Electrotechnical Commission.

FCC PART 15
COMPLIANT

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