

Annexure-1

High Speed Lithium niobate (LiNbO₃) Intensity Modulator and Driver

Technical Specifications

Sr. No.	Parameters	Specifications
a) Intensity Modulator		
1.	Modulator Type	Lithium niobate (MZM) Intensity Modulation
2.	Operating Wavelength Range	1530 nm to 1570nm or better
3.	Modulation capability	Up to 20 Gbps/20 GHz
4.	Optical Extinction Ratio at DC	20 dB or higher
5.	Electrical return loss	10 dB or higher
6.	Optical Insertion Loss	5 dB (max.)
7.	Optical Return Loss	40 dB or better
8.	Optical Input Power	15dBm or higher
9.	V π at DC	10V or lower
10.	Internal photodiode	Integrated
11.	Internal PD responsivity	10mA/W or higher
12.	Maximum allowed RF Input Power	26dBm or higher
13.	RF Input port configuration	(a) 2.92 (K) compatible Female connector (b)The vendors should provide compatible adapter if other connector is provided. Cable assembly with connector is not required.
14.	Fiber Type	Input: PANDA Polarization Maintaining Output: Single mode fiber or PANDA Polarization Maintaining
15.	Fiber Length	900um loose tube, ≤ 1.5 m
16.	Fiber Connectors Input & output	FC/APC @ both end
17.	Compatibility	It should be compatible with driver module as per below specification
18.	Operating Temperature	0 to 40 °C
b) Driver Module		
19	Amplifier Type	RF amplifier module for Lithium niobate (MZM) modulator compatible with above modulator
20.	Lower frequency (3 dB)	Less than or equal to 0.1GHz
21.	Higher Frequency (3 dB)	Greater than or equal to 20GHz
22.	Maximum Output voltage	Greater than or equal to 7.5 V _{pp}
23.	Gain	Greater than or equal to 23 dB
24.	Input/output Impedance	50 ohms

25.	Saturated Output power	Greater than or equal to 22 dBm
26.	Supply voltage	Less than or equal to 15 V DC
27.	RF IN	(a) 2.92 (K) compatible Female connector (b)The vendors should provide compatible adapter if other connector is provided. Cable assembly not required.
28.	RF out	(a) 2.92 (K) compatible Male connector (b)The vendors should provide compatible adapter if other connector is provided. cable assembly not required.
29.	Heat sink	Built In or Compatible mounting platform should be provided
30.	Operating Temperature	0 to 40 °C

General Terms and Conditions

1. Vendor should be OEM or should be authorized by the OEM. If the vendor is not an OEM, valid OEM authorization certificate to be provided.
2. All items should be from the same vendor.
3. Vendors must provide point-to-point compliance for specification with the page no. of supporting product datasheet.
4. Vendor shall provide warranty of 1 year against manufacturing defects on all the items.
5. Vendor must provide test report for each of the quoted item at the time of delivery.
6. Vendor must supply only new equipment and not old or refurbished one.
7. All items should be delivered within 6 months from the date of purchase order placement.
8. Vendor shall quote for 1 set of items comprising of **1 Intensity Modulator and 1 Driver module.**