

Model 755MM-U Optical Transmitter



Ortel's Model 755MM-U is a 1550 nm transmitter suitable for link lengths of up to 10 km with 79 channel analog loading. The 755MM-U may also be used up to 20 km with a lower channel load of 11 analog channels and 40 QAM channels. The 75Ω RF video input supports frequencies up to 870 MHz. A 50Ω (75 Ω available) RF input supports frequencies from 950 to 2600 MHz for FTTP, L-Band satellite, and wireless applications.

Applications

- Video signal distribution to HFC CATV and FTTP nodes
- Video overlay in passive optical networks (PON)
- Combines CATV + L Band inputs into a single platform

Features

- Optical Spectrum Reshaping Technology
- Optimized RF integration of predistorter, amplifiers and laser
- Dual redundant power supplies
- Supports SNMP protocol
- Complete, efficient laser bias and TEC control circuitry
- OEM/ODM opportunities available through Ortel
- Wideband Transmitter
- Digital monitoring and control
- ITU Wavelengths

Also integrated into the RF/Optical design are Ortel's low chirp control and noise suppression circuitry. Ortel's patented pre distortion technology provides outstanding performance with any of Ortel's wide range of cooled broadband lasers. These modules have optional dual redundant power supplies and SNMP capability.

The performance specifications indicated below are subject to change.

Performance Highlights

Parameter	Min	Typ	Max	Unit
Operating Temperature Range	0	25	50	°C
Wavelength (Multiple Options)	1530	-	1560	nm
Optical Power	10	-	-	dBm
Frequency Response	47	-	870	MHz
	950	-	2600	MHz
CNR (10 km)	52	-	-	dB
CNR (20 km)	48	-	-	dB
CSO (10 km)	-	-	-56	dBc
CSO (20 km)	-	-	-56	dBc
CTB (10 km)	-	-	-63	dBc
CTB (20 km)	-	-	-63	dBc
SBS (10 km)	-	-	17	dBm
SBS (20 km)	-	-	12	dBm
RF Input Return Loss	16	-	-	dB
Optical Return Loss	40	-	-	dB

See following pages for complete specifications and operating/test conditions.

Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Min.	Max.	Unit
Operating Temperature Range	T _{OP}	0	50	° C
Storage Case Temperature Range	T _{stg}	-20	65	° C
RF Input Level	-	-	3	dBm

RF Characteristics

Parameter	Condition	Min	Typ	Max	Unit
Bandwidth	-	47	-	2600	MHz
Frequency Response	47-870 MHz	-	-	1.5 ¹	dB _{p-p}
	950-2600 MHz	-	-	3.5	dB _{p-p}
RF Input Level	79 channels analog	-2.5	-2	-1.5	dBm
	11 channel analog + 40 QAM	-5.8	-5.3	-4.8	dBm
CNR ³ (10 km)	-	52	-	-	dB
CNR ⁵ (20 km)	-	48	-	-	dB
CSO ² (10 km)	-	-	-	-56	dBc
	-	-	-	-56	dBc
CTB ² (10 km)	-	-	-	-63	dBc
	-	-	-	-63	dBc
Input Impedance	47 – 870 MHz RF Input	-	75	-	Ohms
	950-2600 MHz RF Input	-	50 ⁴	-	Ohms
75Ω Video Input Return Loss	47 to 870 MHz	16	-	-	dB
75Ω Test Port Input Return Loss	47 to 870 MHz	16	-	-	dB
50Ω Input Return Loss ⁴	950 to 2600 MHz	10	-	-	dB

1.Excludes tilt component.

2.CW carriers, 79 channel NTSC channel plan, 4 MHz noise bandwidth, -5 dBm received power, SMF-28 or equivalent.

3. CW carriers, 79 channel NTSC channel plan, 4 MHz noise bandwidth, 0 dBm received power, SMF-28 or equivalent

4. 75Ω option available

5. 11 channel NTSC channel plan with 40 channel QAM, 4 MHz noise bandwidth, 0 dBm received power, SMF-28 or equivalent

Optical Characteristics

Parameter	Condition	Min	Typ	Max	Unit
Optical Output Power	-	-	10	-	dBm
SBS Threshold	10 km SMF-28	-	-	17	dBm
	20 km SMF-28	-	-	12	dBm
Side Mode Suppression Ratio	-	30	-	-	dB
Optical Return Loss ¹	APC style connector	40	-	-	dB

1. In order to prevent reflection-induced distortion, the laser must be connected to an optical cable having a return loss of at least 55 dB for discrete reflections and 30 dB for distributed reflections

Power Requirements

Parameter	Min.	Max.	Unit
AC Input Range	94	245	Vac
	50	60	Hz
DC Input Range	36	60	Vdc
Power	-	50	W

Package Characteristics

Parameter	Dimension	Unit
Height	1.75 (44), 1U	in. (mm.)
Width	19 (483)	in. (mm.)
Depth	17.77(452) with fans	in. (mm.)
Weight	9.0 (4)	lbs. (kg.)

Part Number / Ordering Information

(Note: customization can be made available upon request)

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<i>Channel Plan</i>	<i>L Band Option</i>	<i>Options</i>	<i>Connectors</i>	<i>ITU Wavelengths</i>	<i>AC Power Cord</i>
A = NTSC 80-Ch	50 = 50 ohm	A = Dual PS + SNMP	SC = SC/APC	ee= 21, 1560.61nm	NA = N.AMERICA
	75 = 75 ohm	B = Dual PS, No SNMP	FC = FC/APC	:	UK = U.K. & IRE.
		C = Single PS, No SNMP	EC = E2000/APC	ee= 59, 1530.33 nm	EU = EUROPE
					EC = EC NEMA
					JP = JAPAN

ITU Wavelength Channel Designations

Channel	Wavelength (nm)
21	1560.61
23	1558.98
25	1557.36
27	1555.75
29	1554.13
31	1552.52
33	1550.92

Channel	Wavelength (nm)
35	1549.32
37	1547.72
39	1546.12
41	1544.53
43	1542.94
45	1541.35
47	1539.77

Channel	Wavelength (nm)
49	1538.19
51	1536.61
53	1535.04
55	1533.47
57	1531.90
59	1530.33

Laser Safety Information

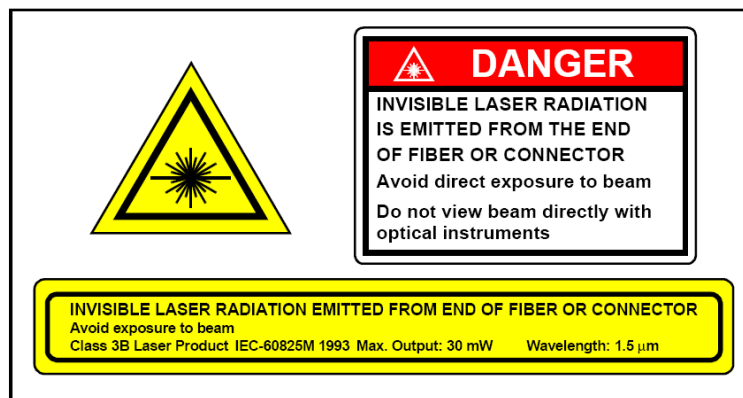
This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class IIIb laser product. This device has been classified with the FDA/CDRH under accession number 0220800.

Single-mode bulkhead receptacles with internal SC/APC connectors (standard).

Wavelength = 1.5 μm . Maximum power = 30 mW.

Product is shipped with internal AC/DC and DC/DC power supply converters.

Caution: Use of controls, adjustments and procedures other than those specified herein may result in hazardous laser radiation exposure.



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