

Model 755MM-S Optical Transmitter

1550 nm, 20 km, High SBS Suppression



Applications

- Video signal distribution to HFC CATV and FTTP nodes
- Video overlay in passive optical networks (PON)
- Replacement for Externally Modulated Transmitters

Features

- Enhanced 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
- Digital monitoring and control
- ITU Wavelengths

Ortel's Model 755MM-S is a recently developed 1550 nm transmitter suitable for link lengths of up to 20Km. The 75Ω RF video input supports frequencies up to 870 MHz. Also integrated into the RF/Optical design are Ortel's low chirp control and noise suppression circuitry. Integrated within the design is Ortel's patented pre distortion technology to provide outstanding performance with any of Ortel's wide range of cooled broadband lasers. These modules have dual redundant power supplies with SNMP capability.

It features Ortel's proprietary Enhanced Optical Spectrum Reshaping Technology with extremely high SBS suppression performance, making it ideal for either FTTP or HFC network applications. 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 | 5 | - | - | dBm |
| Frequency Response | 47 | - | 870 | MHz |
| CNR | 47 | 48 | - | dB |
| CSO | - | - | -60 | dBc |
| CTB | - | - | -65 | dBc |
| SBS Suppression Capability | 19 | - | 23 | dBm |
| RF Input Return Loss | 16 | - | - | dB |
| Optical Return Loss | 40 | - | - | dB |

Noise and distortion performance above assume 79 channel NTSC loading with no QAM, -5 dBm received optical power. 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 | - | - | 2 | dBm |

RF Characteristics

| Parameter | Condition | Min | Typ | Max | Unit |
|-----------------------------|-----------------------|-----|-----|------------------|-------------------|
| Bandwidth | - | 47 | - | 870 | MHz |
| Frequency Response | - | - | - | 1.5 ¹ | dB _{p-p} |
| RF Input Level with AGC | - | -10 | -8 | -6 | dBm |
| CNR | - | 47 | 48 | - | dB |
| CSO ² | - | - | - | -60 | dBc |
| CTB ² | - | - | - | -65 | dBc |
| Input Impedance | 45 – 870 MHz RF Input | - | 75 | - | Ohms |
| Video Input Return Loss | 45 to 870 MHz | 16 | - | - | dB |
| Test Port Input Return Loss | 45 to 870 MHz | 16 | - | - | 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.

Optical Characteristics

| Parameter | Condition | Min | Typ | Max | Unit |
|----------------------------------|---------------------|-----|-----|-----|------|
| Optical Output Power | - | - | 5 | - | dBm |
| SBS Threshold | 20 km SMF-28 | 23 | - | - | dBm |
| Side Mode Suppression Ratio | - | 30 | 40 | - | 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 50 | 245 60 | Vac 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)

755MM-S - - - - XX -

| Channel Plan | Output | SBS | Connectors | ITU Wavelengths | AC Power Cord |
|---------------------|------------------|------------------|-------------------|------------------------|----------------------|
| A = NTSC 80-Ch | 05 = 5 dBm (Std) | A = 23 dBm (Std) | SC = SC/APC | ee= 21, 1560.61nm | NA = N.AMERICA |
| | | | FC = FC/APC | : | UK = U.K. & IRE. |
| | | | 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

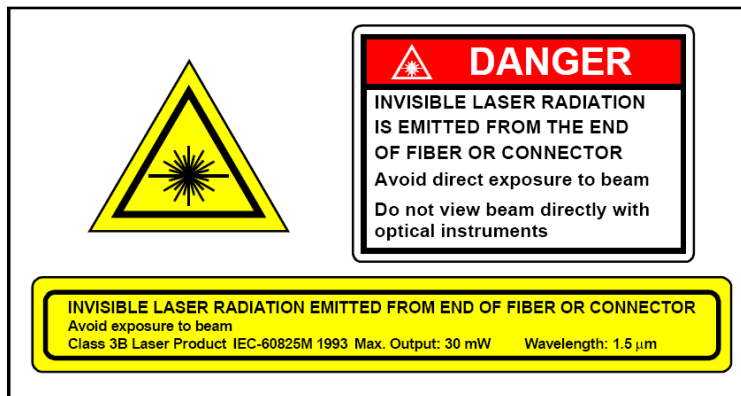
This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class IIIb laser product. This device has been classified with the FDA/CDRH under accession number 0220800.

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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