

# J-Type Medallion 6000 1550 nm Externally Modulated Transmitter



## Applications

- High Performance Supertrunking Links
- High Power Distribution Networks
- Redundant Ring Architectures
- FTTx Networks
- RFOG Applications
- SAT-IF Transport
- DWDM Node Splitting

## Features

- Single or Dual Optical Outputs
- QAM Loading to 1003 MHz
- Dual Power Supplies, Redundant & Hot Swappable
- Front Panel RF Test Point
- Vacuum Fluorescent Status Display
- OMI / RF Gain Adjustment
- AGC Select: CW, Video, Manual (No AGC)
- Industry Leading Field Adjustable SBS Suppression

## The J-Type Medallion 6000 Series

This product line is a family of state-of-the-art high performance 1550 nm externally modulated CATV fiber optic transmitters optimized for varying network applications. Packaged in convenient 1RU housing, this line of optical transmitters couples high optical output powers, up to 10.0 dBm, with low optical line width resulting in unmatched performance. The optical modulator, combined with proprietary pre-distortion circuitry, provides superior CTB and CSO performance with SBS suppression levels of greater than 17 dBm for SAT-IF applications. Advanced features such as built in field adjustable SBS control allow these transmitters to be quickly optimized in the field for any link or application without the need to procure specifically tuned transmitters. This affords the system designer a level of flexibility previously unknown in the CATV market place.

The J-Type series are designed as a high performance solution for applications where the simultaneous transport of CATV and SAT-IF FM signals is required. The SAT-IF signals can be applied anywhere in the 950 to 2800 MHz band.

J-Type transmitters are specially designed and optimized to support optical fiber links of up to 150kms for the Japanese market place.

# J-Type Medallion 6000 1550 nm Externally Modulated Transmitter



DATASHEET | JULY 2012

FIBER OPTICS

## Optical Characteristics

Property Performance (note 1-8)	Units	Models		Comments
		6000-J01	6000-J02	
Specified Link Length	L (km)	25	25	
Channel Plan		NTSC 80-Ch	PAL 60-Ch	With 36 QPSK carriers from 950 to 2800 MHz
Optical Output Power	Po (dBm)	8.5/8.5	8.5/8.5	Min. 10 dBm version avail. See Chart
Noise Bandwidth	BW (MHz)	4	5	
SBS Suppression	(dBm)	15.0	15.0	Min.
CATV Carrier to Noise Ratio	CNR (dB)	51.0	51.0	Min.
CATV Composite Second Order	CSO (dBc)	-65	-65	Max. Port 1
CATV Composite Triple Beat	CTB (dBc)	-65	-65	Max. @ +25°C
CATV Composite Triple Beat	CTB (dBc)	-64	-64	Max. @ 0°C to 50°C
SAT-IF Carrier to Noise Ratio	CNR (dB)	27	27	Min.
SAT-IF Intermodulation Products	(dBc)	-35	-35	Max. Port 1
SAT-IF Spurious Products	(dBc)	-38	-38	Max.

### Notes:

1. Unless stated otherwise all specifications apply over full temperature range with no digital loading.
2. Unless stated otherwise specifications apply for nominal RF input level as defined below, after a 30 minute stabilization period.
3. Specifications separated by a slash are port1 / port 2.
4. Units are tested per the Test / Link Configuration Table
5. Noise figure for the EDFA = 4.5 ~ 5.5 dB
6. Corning SMF-28 single mode fiber
7. Receiver responsivity is 0.95 mA/mW, Equivalent noise current is 7 pA/(Hz)<sup>1/2</sup>
8. With 36 QPSK modulated SAT-IF signals between 950 ... 2800 MHz. 27 MHz IF bandwidth

## Test/Link Configuration

Property	EDFA	Link	Received Power <sup>2</sup>
J-Type	14 dBm	25 Km	0.0 dBm at the receiver

# J-Type Medallion 6000 1550 nm Externally Modulated Transmitter



DATASHEET | JULY 2012

FIBER OPTICS

## Electrical Specifications

Property	Requirement	Comments
CATV Nominal Input Power	19 dBmV/ch (79 dBuV/ch)	80 NTSC channels
CATV Input Range	17 – 27 dBmV/ch (77 – 87 dBuV/ch)	Optimum performance at nominal input
CATV Composite Level	-10.9 dBm	0 dB on FP Display
CATV RF Gain / OMI Adjustment Range	+2 / -8 dB from nominal setting	CATV Performance may vary slightly over range
CATV Frequency Range	45MHz – 1003 MHz	
CATV Flatness	+/- 0.50 dB	45MHz - 550MHz
	+/- 0.75 dB	45MHz – 1003 MHz
CATV Flatness – N-Type	+/- 0.75 dB	45MHz – 1003 MHz N-Type
CATV Input impedance	75Ω	
CATV Input Return Loss	16dB min	45MHz – 1003 MHz
CATV Front Panel RF Tap	-20 +/- 1 dB down from RF input	
CATV Front Panel RF Tap Flatness	+/- 1 dB	45MHz – 1003 MHz
SAT Nominal Input Power	27 dBmV/ch (87 dBuV/ch)	36 QPSK SAT-IF channels
SAT Input Range	22 – 32 dBmV/ch (82 – 92 dBuV/ch)	Optimum performance at nominal input
SAT Composite Level	-6.2 dBm	0 dB on FP Display
SAT-IF RF Gain / OMI Adjustment Range	+5 / -5 dB from nominal setting	CATV Performance can vary slightly
SAT-IF Frequency Range	950MHz – 2800 MHz	
SAT-IF Flatness	+/- 2 dB	
SAT-IF Input impedance	75Ω	
SAT-IF Input Return Loss	10dB min	950MHz – 2800 MHz
SAT-IF Front Panel RF Tap	7 +/- 2.5 dBmV/Ch at Nominal OMI/ch	
SAT-IF Front Panel RF Tap Flatness	+/- 1 dB	950MHz – 2800 MHz

## General and Mechanical Specifications

Property	Requirement	Comments
Wavelength	1550 +/-5 nm	Various Options + ITU-grid available – see Model Number Information
Channel Plan	Various – See Specification Tables	Custom channel plans available
Optical Connector	SC/APC	Other styles available
Monitoring Interfaces	100 Base-T Ethernet (SNMP) Rear Panel RS-232 interface VFD Screen Front Panel Controls	VFD- (Vacuum Fluorescent Display)
Operating Temperature	0°C to 50°C	
Storage Temperature	-20°C to 70°C	
Power Consumption	65W max	

# J-Type Medallion 6000 1550 nm Externally Modulated Transmitter

## General and Mechanical Specifications (continued)

Property	Requirement	Comments
Agency Listings	<b>EMI:</b> EN50083-2:2006 (US CATV) EN55022:2006 (US IT) EN61000-3-2 (Harmonics) EN61000-3-3 (Flicker) FCC: Part 15, Subpart B, class "A" Unintentional Radiators ICES-003 (Canada) AN/NZS 3548, Class A (Australia) VCCI, Class A (Japan)	<b>Safety:</b> FDA/CDRH Laser Safety Governed by Code of Federal Regulations Title 21, Volume 8, Part 1040 IEC 60950-1 IEC 60728-11 Laser IEC 60825-1 CB Certification
Transportation Vibration	GR-2853-CORE	In Shipping package
Transportation Shock	GR-2853-CORE	In Shipping package
Operating Humidity	20% to 85%	Non-condensing
Supply Range	(VAC) 90 to 265 VAC, 50/60 Hz (VDC) +/- (36 – 72) VDC	
Dimensions	19.0"W x 15.0"D x 1.72"H	(width includes 19" front panel ears, depth includes, connectors, fans & front panel) – see drawing

## Laser Safety Information

This product meets the applicable requirements of 21 CFR 1010 & 1040 and is classified as a class 1M laser product. During use as intended, the laser energy is fully contained within the fiber network such that there is no accessible laser radiation. This product has been issued accession number 0820466-001.



# J-Type Medallion 6000 1550 nm Externally Modulated Transmitter

## Model Number Information <sup>Note 3</sup>

**6000** -     -

Logo & Customer Specific	Link type	Pout (dBm min) <sup>Note 1</sup>	Loading Type	Optics	RF	Wavelength (nm)	Power Supply
0 – EMCORE Logo	J – 25 km	D – 10/10 for S and J Type <sup>Note 4</sup>	1 – NTSC (80-ch)	1 – SC/APC, Rear	1 – RF IN Rear, TP Front	00 – 1555 +/- 5.0nm	1 – AC primary, no secondary
1 – no Logo		E – 8.5/8.5 for J Type	2 – PAL (60-ch)	2 – FC/APC, Rear	2 – RF IN Front, TP Front	01 – 1550 +/- 5.0nm	2 – DC primary, no secondary
				3 – E2000/APC, Rear	3 – RF IN Front, TP Rear	xx – ITU Channel +/- 0.1nm <sup>Note 2</sup>	3 – AC primary, AC secondary
				4 – SC/APC, Front	4 – RF IN Rear, TP Rear		4 – AC primary, DC secondary
				5 – FC/APC, Front			5 – DC primary, DC secondary
				6 – E2000/APC, Front			

- Note 1: Options available for Indicated Types only.
- Note 2: ITU grid wavelengths can be specified from channel 18 to 40.
- Note 3: Not all configurations are available, contact factory.
- Note 4: CSO port 2 degraded by 1dB
- Note 5: Contact Factory for Model type availability

### Additional Kits

- G3708-006-001 - Replaceable AC power supply modules
- G3708-005-001 - Replaceable DC power supply modules
- G7914-076-001 - Replaceable Blank power module plate
- G7906-008-001 - Replaceable fans