

## ADVANCED SERVICES TRANSPORT CWDM BROADCAST/NARROWCAST TRANSMITTER AST-TXD-CW



IPITEK's AST-TXD-CW, transmitter is a new generation transmitter, designed to meet the growth of subscriber and business services in CWDM networks. It expands the system through higher utilization of existing fiber networks, eliminating the need to add additional optical fiber in the system. The AST-TXD-CW transmitter is specifically engineered for optical transport of analog and digital QAM signals in HFC networks. The transmitter design, coupled with a choice of output powers, allows it to be used for replacement of 1310 nm transmitters in systems where current fiber loading does not allow for the addition of more services or where there is a need for carriage of forward and return CWDM signals over a common fiber. The AST-TXD-CW transmitter can be used in a CWDM network architecture to provide multiple forward transmitters, combined with CWDM return signals. With full bandwidth to 1 GHz, the transmitter is optimized for optical transport of analog and QAM signals directly from the headend to the node.

AST-TXD-CW is provisioned with separate RF inputs for broadcast and Narrowcast signals. The unit's advanced design also provides for a combined broadcast/Narrowcast signal that can be applied to the broadcast input only without signal degradation. This feature eliminates the requirement for two different transmitters, providing the highest level of flexibility in system operations.

### Features and Benefits

- Low Cost alternative for expansion of home delivery and business services
- Provides enhanced fiber utilization
- ITU Compliant CWDM lasers
- Optimized forward bandwidth to 1 GHz
- High isolation dual inputs
- High density - up to 210 transmitters in a single rack

The transmitter includes an RF driver, integrated laser cooling circuitry, advanced dispersion compensation and predistortion circuits. It provides the linear capability of a standard laser combined with the spectral purity of an external modulation system. T

An onboard micro-controller provides complete monitoring and control of the unit. Software design includes both function control and unit monitoring. The controller system also provides alarm processing and status monitoring functions. These signals are routed to the AST chassis Control and Management module (CMU) that provides unit management through a Local Craft Interface as well as remote management. The management system provides an HMS-SNMP compliant interface to a higher level element manager, such as the IPITEK Node Wizard system or to HP OpenView or Castle Rock SNMPc. Front panel indicators also provide immediate visual indication for Laser On and a summed Fault Alarm.

Engineered with the latest low power components, the hot swappable AST Transmitter is energy efficient.

#### CONTROL FUNCTIONS

OMI/AGC/RF Level Adjust  
AGG/Manual Gain Operation

## SPECIFICATIONS

### Optical

Output Power: 6, 8, 10 dBm  
 Wavelength: (Water Peak Fiber) 1271, 1291, 1311, 1331, 1351 nm

### RF:

Bandwidth: 45 MHz - 1003 MHz  
 Typical Operating Range: Analog: 45 - 675 MHz  
 Digital: 675 - 1003 MHz

Broadcast/Narrowcast Input: 79 NTSC/67 PAL Channels  
 +15, ±0.5 dBmV/ch  
 channel with 5 dB  
 equalizer range, + 320  
 MHz Digital @ -6 dBc

### Separate Inputs

Broadcast Input Level: +15, ±0.5 dBmV/ch 79  
 NTSC/67 PAL Channels

Narrowcast Input Level: +15 dBmV ± 0.5 dBm  
 75 QAM Channels

Response Flatness: P to V 1.0 dB typical; 2.0 dB max

Input Impedance: 75 ohms

Return loss: >16 dB

Port to port isolation: >50 dB

### Performance:

*(79 NTSC/67 PAL unmodulated carriers + 320 MHz  
 Digital @ specified link budget, +2 dBm input nominal)*

Composite Second Order -65 dBc  
 Composite Triple Beat -66 dBc  
 Cross Modulation - 65 dBc  
 Carrier-to-Noise 54 dB typical  
 (fiber + passives)

### Mechanical Environmental:

Operating Temperature: 0°C to 50°C

Humidity: to 95%, non-  
 condensing.

Storage Temperature: -40°C to +85°C,  
 24 hours

### Mechanical/Electrical:

RF Connectors: Type F

Optical Connector: SC/APC; E-2000/  
 APC Optional

RF Input Test Points: -20, ±0.5 dB

## ORDERING INFORMATION

**AST-TXD-CW - PXX - XX - XX - X - X - XX**

AST CWDM Broadcast Narrowcast Forward Transmitter	Optical Power in dBm	Optical Wavelength	Channel Plan	Pilot Tone	AGC	Connector
P04 = 4 dBm	(WL ± 4 nm)	NT = NTSC	1= Pilot Tone	1= AGC	E2 = E2000/APC	
P06 = 6 dBm	W1 = 1271	BG = Pal B/G	2= No Pilot Tone	2= No AGC	SC = SC/APC	
P08 = 8 dBm	W2 = 1291	DK = Pal D/K				
P10 = 10 dBm	W3 = 1311	PI = Pal I				
	W4 = 1331					
	W5 = 1351					

