

**ADVANCED SERVICES TRANSPORT
1550 DWDM BROADCAST/NARROWCAST TRANSMITTER
AST-TXD-DW**



The AST-TXD-DW high performance 1550nm Direct modulation laser transmitter is designed and engineered to meet current and future requirements for Broadband systems operations. The AST-TXD-DW module provides full bandwidth, operation to 1 GHz and laser output power of 10dBm. This allows the same transmitter to meet the requirements for all types of services from 1:1 targeted services delivery systems to more traditional architectures with 1:n feeds to multiple nodes from a single transmitter. The AST-TXD-DW supports full bandwidth for NTSC or PAL formats.

The 4RU AST chassis accommodates up to 21 compact, half height transmitter modules, allowing up to 210 transmitters to fit in one standard 6 foot rack. This highest density enables valuable space savings as additional advanced services are offered.

The AST Transmitter provides superior transport of advanced video, voice and data services. The unit provides the highest performance, utilizing a laser that has very low chirp, advanced predistortion and SBS suppression. The transmitter 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

- Full 1003 MHz bandwidth with ITU channels from 12 to 59
- Separate or combined broadcast and narrowcast RF inputs
- 10 dBm Output Power
- Remote and local management through web interface or SNMP
- Options for manual /AGC mode of operation
- CW/Video Mode for module testing
- Quick disconnect connectors for easy replacement
- High density - up to 21 modules in 4 U Chassis & 210 modules in a standard rack

Engineered with the latest low power components, AST-TXD-DW is both energy efficient and fully hot swappable. Level control is provided through an internal attenuator. Moreover, the AST-TXD-DW includes a user selectable AGC that may be utilized instead of manual gain control. The internal system provides gain adjustments with the integrated software, using the remote or local network management control. AST-TXD-DW also includes a user selectable AGC that may be utilized instead of manual gain control. Additionally, a CW mode is included for ease of testing. An onboard micro-controller provides complete monitoring and control of the unit with software design including 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 web browser interface. The management system also provides an 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.

CONTROL FUNCTIONS

- OMI/AGC/RF Level Adjust
- AGC/Manual Gain Operation
- CW/Video Mode for module testing

Preliminary

SPECIFICATIONS

Optical

Typical performance * is specified below

Center Wavelength: 1550 nm, ±10 nm
Optical Output Power: 10dBm
RIN -155 dB/Hz
Highly Linear, low residual chirp

Bandwidth: 45 to 1003 MHz
Typical Operating Range: Analog 54 - 550 MHz
 Digital 550 -1003 MHz

With Separate Inputs
Broadcast Input Level: +15, ±0.5 dBmV/ch

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

Isolation: port to port >50 dB

Combined Input: +15, ±0.5 dBmV/ch
 broadcast+QAM@ -6 dBc
 ± 0.5/ 0.75 dB (typ./Max)

Response Flatness:

Return Loss: >16 dB
Input Impedance: 75 ohms

Mechanical/Electrical:
RF Connector: Quick Disconnect
RF Input Test Point: -20, ±0.5 dB

Channel Loading #1

Performance @ 30 NTSC with 98 QAM 256 channels
 Fiber Length: 40 Km
 CNR: >50 dB
 CSO: >62 dB
 CTB: >68 dB

Channel Loading #2

Performance @ 79 NTSC with 75 QAM 256 channels
 Fiber Length: 25 Km
 CNR: >52 dB
 CSO: >64 dB
 CTB: >68 dB

Channel Loading #3

Performance @ 64 PAL with 200 MHz digital
 Fiber Length: 25 Km
 CNR: >52 dB
 CSO: >64 dB
 CTB: >68 dB

Cross modulation : -70 dB, max

* **NOTE:** For single wavelength and 0 dBm received power

Power Consumption: 8.5 W typical

ORDERING INFORMATION

AST-TXD-DW CHANNEL PLAN - OPTICAL POWER - DWDM WAVELENGTH - PILOT TONE - CONNECTOR

AST DWDM	N = NTSC	10 = 10 dBm	by ITU Channel Number	NTSC	S = SC/APC
OPTICAL	P = PAL	10 = 10 dBm	ITU 12 to ITU 59	No Option	E = E2000/ APC
TRANSMITTER					

Additional Product Information:

1. All powers of the **AST-TXD-DW** transmitters also include an AGC option. This option is controlled through the AST-CMU, Chassis Management Unit, management system and may be enabled or disabled as desired.
2. The **AST-TXD-DW** is designed for operation with standard HFC only, combined HFC and QAM, or QAM only. No modification is required for the use of any combination..

