

IPITEK's AST-RXD-RFS forward optical receiver is a high performance broadband unit, designed for forward path and secondary hub operations. Advanced engineering design exceeds the requirements for operation in current and future broadband systems. The compact module provides operational bandwidth beyond 1GHz and accepts both 1310 nm and 1550 nm wavelengths and provides a wide optical power range from -7 to +3 dBm. This allows the same receiver package to provide a variety of high density solutions. The AST-RXD supports full bandwidth with very low distortions. It also supports both NTSC and PAL formats. The unit provides an adjustable output level with a total adjustment range of 15 dB. Engineered with the newest low power components, AST-RXD is both energy efficient and completely hot swappable.

The receiver is housed in a single module and can operate either as a stand-alone unit or can be configured as a redundant receiver, using the integrated RF switch in conjunction with a second module and a control cable between the two modules. In the dual mode, both optical path resiliency and hardware redundancy is provided. In the event of an optical path or hardware failure, uninterrupted service is maintained through automatic switch over to the second receiver in less than 50 ms. The two receivers, located at the same site, can be placed in a common chassis or in separate chassis.

## **Features and Benefits**

- **Full 1 GHz technology**
- **Automatic backup switching in case of an optical path or equipment failure**
- **User defined alarm and switching threshold**
- **Wide optical range**
- **Adjustable high level output**
- **Full HMS-SNMP Monitoring**

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 Signal Present and a summed fault alarm indicating a loss of input signal or output power in the unit. The unit offers the flexibility of setting both optical input level as well as RF output level for automatic switching to the redundant receiver. Moreover, an alarm is generated if the optical in/out power or RF output power level drops below a user defined low limit that can be different from the switching threshold. This allows the network user to be alerted to potential issues before a major fault causes protection system switching occurs.

### **CONTROL FUNCTIONS**

Optical Input Level  
RF Output Adjustment

# SPECIFICATIONS

## Optical:

Optical Input Wavelength: 1200 - 1600 nm  
 Optical Input Power: -7 dBm to +3 dBm

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

## RF:

Bandwidth: 45 MHz to 1003 MHz  
 Typical Operating Range: 45 MHz to 870 MHz;  
 RF Output: up to +40 dBmV/ch(\*)  
 Attenuation Control Range: >15 dB, 1 dB steps  
 Response Flatness (typ/max):  $\pm 0.75/\pm 1.0$  dB up to 1 GHz  
 Output Return Loss: >16 dB  
 Output Impedance: 75 ohms

## Performance:

Noise Equivalent Power: <6pA/ $\sqrt{\text{Hz}}$

Power Consumption: 7.5 W Max

## System Specifications

Capacity: Up to 21 modules in 1 AST Chassis

## Mechanical/Electrical:

RF Connector

RF Connector: Module - Type G connector  
 Chassis Rear Panel - Type F

RF Test Point: -20,  $\pm 1$  dB Max, relative to RF output

## Environmental:

Operating Temperature: 0° to 50° C  
 Storage Temperature: -40° to 85° C, 24 hours  
 Relative Humidity: 10 to 95%, non-condensing

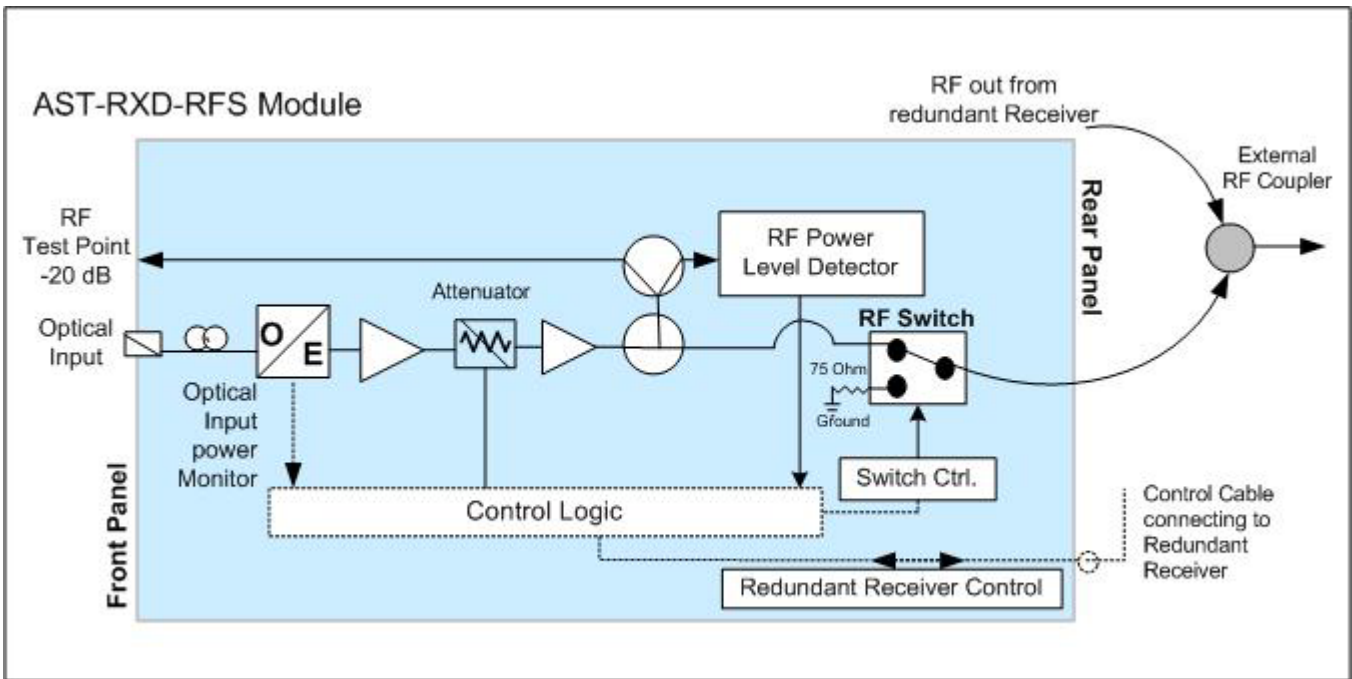
## Physical Dimensions:

(Excluding Handles and connectors)

1.2" (W) x 15.4" (D) x 3.2" (H)

2.9 cm x 39.0 cm x 8.2 cm

Notes: (\*) dBm optical power & 3.8% OMI/Ch NTSC or  
 4.2% OMI/CH for PAL



## ORDERING INFORMATION

AST-RXD-RFS	-	XX	AST-RXD-CTRL-CBL	-	XX
Optical Receiver		Optical Connector	Length of Control Cable in ft.		01
		E2 = E2000/APC			05
		SC = SC/APC			10
					20

