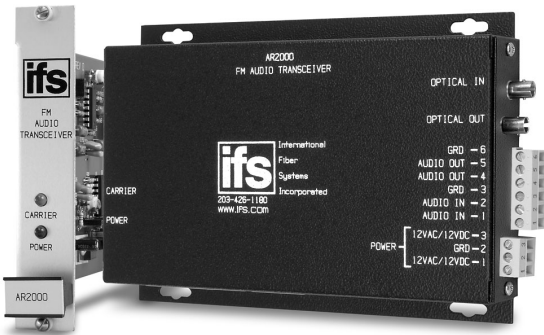




# PRODUCT SPECIFICATION

# AT/AR1000, AR2000 SERIES

# AUDIO TRANSMITTER/RECEIVER AND TRANSCEIVER



## DESCRIPTION

The IFS AT/AR1000 series audio transmitter and receiver provide one-way transmission of an audio signal on one optical fiber. The IFS AR2000 series audio transceiver provides bi-directional transmission of one audio signals on one or two optical fibers. The modules use frequency modulation (FM) for superior transmission of balanced or unbalanced line-level audio (2.2 V peak-to-peak). Models within this series are available for use with multimode or single-mode optical fiber. Plug-and-play design ensures ease of installation requiring no electrical or optical adjustments. The modules incorporate power and carrier detect status indicating LED's for monitoring proper system operation. The modules are available in either stand-alone or rack mount versions.

## APPLICATION EXAMPLES

- Transmission of Stage Mics from Pre-amp to Amplifier
- Recording Studios and Post-Production Facilities
- Transmission of Broadcast Audio Feeds
- Elimination of EMI/RFI Interference in Audio Cables
- Optical Isolation for Elimination of Ground Loop Noise

## FEATURES

- FM Audio Transmission
- 20 Hz – 20kHz Bandwidth
- 600 Ohms Audio Input Impedance
- Transmits Balanced or Unbalanced Line-Level Audio (2.2 Volts Peak-to-Peak)
- No In-field Electrical or Optical Adjustments Required
- Power and Carrier Detect Status Indicating LED to Monitor System Performance
- Hot-Swappable Rack Modules
- Automatic Resettable Fuses on all Power Lines
- Meets NEMA TS-1/TS-2 & Caltrans Specifications (Temperature/Humidity, Shock/Vibration, and Voltage Transient Protection)
- Distances up to 30 miles (49 km) Without Repeaters
- Lifetime Warranty



Available at: [www.ifs.com](http://www.ifs.com)

- A & E Specifications, (CSI)
- AutoCAD Drawings
- Operation Manuals
- Technical Bulletins

## ORDERING INFORMATION

	PART NUMBER	DESCRIPTION	FIBERS REQUIRED	OPTICAL PWR BUDGET	MAX. DISTANCE*
<b>MULTIMODE</b> 62.5/125µm**	AT1000	Audio Transmitter (850 nm)	1		
	AR1000	Audio Receiver (850 nm)	1	16 dB	2.8 miles (4.5 km)
	AR2000	Audio Transceiver (850 nm)	2		
	AR2010WDMA	Audio Transceiver (850/1310 nm)	1	16 dB	2.8 miles (4.5 km)
	AR2010WDMB	Audio Transceiver (1310/ 850 nm)	1		
<b>SINGLE-MODE</b> 9/125µm	AT1020	Audio Transmitter (1310 nm)	1	16 dB	10 miles (16 km)
	AR1030	Audio Receiver (1310 nm)	1		
	AR2025	Audio Transceiver (1310 nm)	2	17 dB	30 miles (49 km)
<b>OPTIONS</b>	PS-24VACCT 24 volt AC Center Tap Power Supply PS-24VACCT-230 24 Volt AC Center Tap Power Supply 230 VAC Input (Included if specified at time of order) Add '-R3' to Model Number for R3 Rack Mount - No Charge (Requires R3 Rack purchased separately) Add '-C' for Conformally Coated Printed Circuit Boards (Extra charge, consult factory)				

\* Optical transmission distance is limited to optical loss of the fiber and any additional loss introduced by connectors, splices and patch panels. Distance can also be limited by fiber bandwidth. \*\* For 50/125 Fiber, subtract 4 dB from Optical Power Budget.

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# TECHNICAL SPECIFICATION AT/AR1000, AR2000 SERIES AUDIO TRANSMITTER/RECEIVER AND TRANSCEIVER

## SPECIFICATIONS

### AUDIO

Audio Input/Output Signal: 2.2 volt pk-pk  
 Input/Output Impedance: 600 ohms (Single ended or differential)  
 Bandwidth: 20 Hz - 20 KHz  
 Total Harmonic Distortion: <1.0%  
 Signal-to-Noise Ratio (SNR): 60 dB min

### WAVELENGTH

850 nm  
 850/1310 nm, Multimode  
 1310 nm, Multimode or Single-mode

### NUMBER OF FIBERS

1 or 2

### CONNECTORS

Optical: ST  
 Power and Audio: Terminal Block with Screw Clamps

### ELECTRICAL & MECHANICAL

Power: 12 VDC @ 150 mA  
 Surface Mount: From Rack  
 Rack: 1  
 Number of Rack Slots: Automatic Resettable Solid-State Current Limiters  
 Current Protection: Meets IPC Standard  
 Circuit Board: 7.0 x 4.9 x 1.0 in., 17.8 x 12.5 x 2.5 cm  
 Size (in./cm.) (LxWxH): 7.7 x 5.0 x 1.0 in., 19.6 x 12.7 x 2.5 cm  
 Surface Mount: < 2 lbs./0.9 kg  
 Rack Mount: Shipping Weight:

### ENVIRONMENTAL

MTBF: > 100,000 hours  
 Operating Temp: -40° C to +74° C  
 Storage Temp: -40° C to +85° C  
 Relative Humidity: 0% to 95% (non-condensing)†

† May be extended to condensation conditions by adding suffix '-C' to model number for conformal coating.



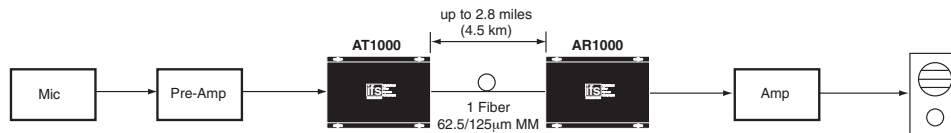
MADE IN THE USA

## OPTICAL POWER BUDGET

FIBER	WAVELENGTH	TRANSMITTER		RECEIVER		OPTICAL PWR BUDGET	MAX. DISTANCE*
		MODEL	OUTPUT	MODEL	SENSITIVITY		
Multimode 62.5/125µm**	850 nm	AT1000 AR2000	20µw (-17 dBm)	AR1000 AR2000	0.5 µw (-33 dBm)	16dB	2.8 miles (4.5 km)
	850/1310 nm	AR2010WDMA		AR2010WDMB			
	1310 nm	AT1020 AR2020		AR1030 AR2020			
Single-mode 9/125µm	1310 nm	AT1025 AR2025	25µw (-16 dBm)	AR1030 AR2025		17 dB	30 miles (49 km)

\* Optical transmission distance is limited to optical loss of the fiber and any additional loss introduced by connectors, splices and patch panels. Distance can also be limited by fiber bandwidth. \*\* For 50/125 Fiber, subtract 4 dB from Optical Power Budget.

## SYSTEM DESIGN



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Due to our continued effort to advance technology, product specifications are subject to change without notice.

05/29/03