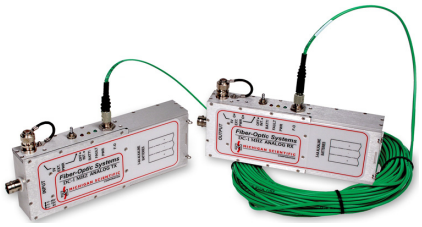
Fiber-Optic Systems - 1 MHz ANALOG LINK

Model FO-HBST/HBSR

- Monitor / Stimulate equipment under test (EUT) at Bandwidths from DC to 1 MHz
- RFI/EMI validated for EMC at 200V/m (46dBVm) from 500 kHz to 18 GHz and 600V/m (pulsed 5% duty-cycle & 5µs rise-time) 1GHz to 2.5 GHz
- Low-Power circuitry for operating >16 hours with 3 alkaline 'AA' batteries
- TX slide-switch provides full-scale input ranges of ±8, ±16, and ±48 VDC
- RX jumpers provides full-scale output ranges of ±4, ±8, and ±16 VDC



Description

The *FO-HBST* and *FO-HBSR* form a versatile Fiber-Optic Analog Signal TX/RX pair. Input signals at pre-selected full-scale input levels and at bandwidths from DC to 1 MHz may be transmitted fiber-optically in either direction by transposing the module .

The tester can externally access a 3-position slide switch to select the transmitter module full-scale input level of ±8, ±16, or ±48 VDC. Internal gain jumpers in the receiver module are factory configured for full-scale output levels of ±4, ±8 or ±16 VDC with ±16 VDC standard. Systems may be configured to other user defined full-scale inputs and outputs on request.

The satellite modules have shielding and special input/output filtering that provides high immunity from electromagnetic interference (EMI), electromagnetic pulse (EMP) or high voltages associated with plasma research. This allows for rigorous electromagnetic compatibility (EMC) testing/engineering. The satellite modules are validated for EMC up to 200 V/m (46 dB V/m) at 500 kHz to 18 GHz and 600 V/m (pulsed 5% duty-cycle &5µs rise-time) 1GHz to 2.5 GHz.

Three 'AA' batteries provide power for up to 25-hours. The supplied AC adapter is used for external power in place of batteries.

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Rev. A

SPECIFICATIONS

PARAMETER	SPECIFICATION
SYSTEM CHARACTERISTICS AND PERFORMANCE	
GENERAL	
TX/RX Signal Type	differential input / single-ended output
TX Full-Scale Ranges	slide-switch selectable for ±8, ±16, ±48 VDC
RX Full-Scale Ranges	jumper configurable for ±4, ±8, ±16 VDC
Bandwidth (±4 / ±8 V Range ONLY)	1 MHz (-3 dB) *typical*
Flatness (±4 / ±8 V Range ONLY)	±1 dB to 500 kHz *typical*
Rise/Fall Times	~ 300 ns (20-80%) *typical*
End to End Delay	<1.8 µs *typical*
Output Noise	<10 mV rms
Resolution (±8, ±16, ±48 V Full-Scale)	>4 mV/ 8 mV/ 24 mV
DC Gain Adjustment (Receiver)	-10% to +25% of scale
DC Offset Adjustment (Receiver)	±1 VDC
DC Offset Drift	<0.5% drift through temp. range
Over-Range Protection	±100 V continuous and ±350 V transient protection
Transmitter Input Impedance	
@ ±8, ±16, ±48 V	> 72.5k / 145k / 435kΩ
Receiver Output Impedance	100 Ω
Maximum Recommended External Load	1 KΩ (16mA)
Power Source	3-AA alkaline batteries or external adapter
Battery Life	
Transmitter	>25 Hours
Receiver (load and frequency dependent)	>16 Hours (use high-impedance load for max run time)
PHYSICAL	
Dimensions (L x W x H)	6.8 x 3.0 x 1.0 in (172 x 76 x 25 mm)
Weight [w/o Batteries]	13 oz (368.5 g) [10 oz (283.5 g)]
Input / Output Connector	BNC
Optical Connectors	ST
Optical Cables	multimode graded-index 62.5/125 µm or 100/140 µm
Optical Cable Length	1640 ft (500 m) max.
ENVIRONMENTAL	
Operating Temperature	-10º F to +185º F (-12º to +85º C)
Operating Humidity	95% R.H. max. non-condensing
EMC	300 V/m at 500 kHz to 1 GHz, 200 V/m at 1 GHz to 18 GHz and 600 V/m (pulsed 5% duty-cycle & 5µs rise-time) 1 GHz to 2.5GHz
QUALITY AND SAFETY	
CE Mark	Declaration of Conformity provided
RoHS & WEEE	Compliant

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