



## SONAbeam™ E Series

At fSONA, we deliver optical wireless connectivity solutions that bridge network gaps with unmatched simplicity and performance. The SONAbeam™ E series is designed to fulfill the needs of carrier, service provider and enterprise customers who require lower-capacity Free Space Optics (FSO) links.

The SONAbeam™ E series is compact and light weight yet incorporates the key quality features of the SONAbeam™ product line - redundant high-power 1550nm lasers, a rugged environmentally-sealed housing and reliable high-quality transmit/receive optics. Available with multiple power supply and interface options, the E series is incredibly versatile. Various data rates are supported through interchangeable cards which offer the added reliability of clock data-rate recovery (CDR). For carrier and service provider customers, the E series also includes comprehensive network management.

By transmitting through the atmosphere, SONAbeam™ dispenses with the substantial costs of digging up streets to install fiber. And unlike RF wireless technologies, SONAbeam™ eliminates the need to obtain costly spectrum licenses. All you need to get connected with SONAbeam™ is direct line of sight. No license. No digging. No problem.

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## FSO Transmission

**SONABEAM 8-e**

**SONABEAM 52-e**

**SONABEAM 155-e**

Transmission Rate Protocols	1.5 to 10.5 Mbps N x T1/E1	1.5 to 52 Mbps N x T1/E1, E3, DS3, OC-1/STM-0	1.5 to 160 Mbps N x T1/E1, E3, DS3, OC-3/STM-1, Ethernet
Range 3 dB/km (clear air) 11 dB/km (extreme rain)	50 to 5300 m (160 ft to 3.3 mi) 50 to 2325 m (160 ft to 1.4 mi)	50 to 4200 m (160 ft to 2.6 mi) 50 to 1925 m (160 ft to 1.2 mi)	50 to 2950 m (160 ft to 1.8 mi) 50 to 1475 m (160 ft to 0.9v mi)
Available Interfaces	Options 1, 2, 3	Options 1, 2, 3, 4	Options 1, 2, 3, 4, 5
Laser Power Wavelength	100 mW (2 x 50 W) 1550 nm	Aperture (Clear Receive) Clock and Data Recovery	10 cm (4 in) Yes, bypass for rate-transparent/mux

## Interface Options

Option 1	Interface Type Data Transmission	MM Fiber, SC terminated, 1310 nm Datarate-transparent, 1.5 - 160 Mbps
Option 2	Interface Type Data Transmission	SM fiber, SC terminated, 1310 nm Datarate-transparent, 1.5 - 160 Mbps
Option 3	Interface Type Data Transmission	Single T1/E1, 100 or 120 ohm, RJ-48 1.544 Mbps (T1) or 2.048 Mbps (E1)
Option 4	Interface Type Data Transmission	75 ohm coax, 75 ohm BNC connector 34.368 Mbps (E3) / 44.736 Mbps (DS3)
Option 5	Interface Type Data Transmission	CAT-5 cable, RJ-45 connector 20 or 125 Mbps (10/100 Ethernet)

## Element Management and Control

Interface	RS-232 serial (DB9) or Ethernet (RJ-45)
Element Management	10/100 Ethernet or IP addressable
SNMP	Embedded agent
GUI Control Program	SONABteam™ Terminal Controller
Historical Logging	Internal logging
Key Parameters Monitored	Receive signal strength, Laser modulation current, Power supply voltage, Power supply current, Internal supply voltage, Internal supply current, Internal temperature, Interface card type, Input signal presence, Clock recovery / sync status

## Mechanical

Operating Temperature	-40 to 50°C (-40 to 122°F)
Wind Load	Operation: 120 km/hr (75 mp/h) Survivability: 160 km/hr (100 mp/h)
Weight	Head / Mount: 7.3 kg (16 lbs) / 4.1 kg (9 lbs)
Environmental Seal	Water tight
Dimensions	Head: cm: 25 x 22 x 45 (in: 10 x 9 x 18) Mount: cm: 20 x 53 x 33 (in: 8 x 4 x 13)

## Carrier-Class Reliability and Durability

Adaptive Laser Power	Adjusts power to weather conditions
Redundant Transmitters	2 independent lasers, laser drivers
Window Heating	Prevents fogging, snow/sleet buildup
Laser Cooling	Cast aluminum heat sink
Structure	Cast aluminum & steel housing
Service Life	15 years

## Electrical

Input Voltage	20 - 57 VDC or 85-260 VAC
Power	Electronics, Heaters: 15 W max, 15 W max
Power Supply	Telco grade, > 2 million hour MTBF

## Certifications and Classifications

	USA/Canada	Europe
Laser	CDRH 21, CFR 1040, including Laser Notice 50, Class 1M ANSI Z136.1 & Z136.6, Class 1	IEC 60825-1, Class 1M
EMC Electrical	FCC - Part 15 ICES - 003v UL 60950/CSA 60950	EN55022 - emissions, EN55024 - immunity EN60950 (CB scheme)