

SONABEAM™ 155-M from fSONA. Getting Connected was Never Easier.

SONAbeam™'s Free Space Optical (FSO) technology uses invisible light beams to deliver high-speed optical communications that offer fiber-like data rates and availability with the simplicity of a wireless solution.

SONAbeam™ eliminates the substantial costs of digging up streets and sidewalks to install a fiber link. Unlike other wireless solutions, SONAbeam™ is immune to electro-magnetic (EM) or radio-frequency (RF) interference and because it does not radiate RF energy, costly spectrum licenses are not required. Plus, SONAbeam™'s narrow, highly-directional transmission prevents eavesdropping or interception.

Utilizing advanced FSO technology at the eye-safe 1550 nm wavelength, fSONA has created the most powerful FSO technology ever brought to market. Our rugged, reliable and robust SONAbeam™ systems are uniquely able to leverage your legacy architecture investments and create vast new connectivity and revenue opportunities.

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SONABEAM™ 155-M

OC-3, STM-1, FDDI, Fast Ethernet

Free-Space Optical

Transmission rates	155 Mbps (OC-3, STM-1 compliant) or 125 Mbps (Fast-E, FDDI compliant)
Operational range	200 m to 3400 m (650 ft to 2.1 mi)
Laser output power	640 mW peak (4 transmitters at 160 mW)
Free-space wavelength	1550 nm
Transmitter type	Directly modulated laser diode
Receive aperture	20 cm (8 in) diameter

Mechanical / Electrical / Environmental

Operating temperature	-40 to 60°C (-40 to 140°F)
Solar filters	2 spatial, 2 spectral
Pointing stability	120 km/h (75 mp/h) operating > 160 km/h (100 mp/h) survivability
Environmental seal	Water-tight
Dimensions (W*H*D)	Cm: 41 x 41 x 43 (in: 16 x 16 x 17)
Weight	Optical Head: 20 kg (44 lbs); PCA: 8 kg (17 lbs); Yoke: 8 kg (17 lbs)
Input Voltage	-48 V (-40 to -57 VDC)
Optional AC	External AC/DC supply available, 85 - 260 VAC (50/60 Hz)
Power consumption	Transceiver: 55 watts, max Heaters: 200 watts, max

Carrier-Class Reliability and Durability

Interior heating	To 30°C (86°F) prevents optics fogging, snow/sleet accumulation
Laser cooling	Active solid state cooling to 25°C (77°F), even in desert conditions
Adaptive laser power	Adjusts laser power to weather conditions: increased laser life and dynamic range
Redundant transmitters	4 totally independent lasers, drivers, coolers and cooler controllers
Power supply	2 million hour MTBF components, carrier grade
Structure	Cast aluminum housing, yoke & mount
Service life	15 years

Fiber-Optic Interface

Interface type	Single-mode fiber, SC terminated
Fiber xmtr wavelength	1310 nm nominal (1280 nm to 1335 nm)
Fiber rcvr wavelength	1310 nm nominal (1280 nm to 1335 nm)
Fiber xmtr output power	-15 dBm(min), -13 dBm(typical), -8 dBm(max)
Fiber rcvr input power	-34 dBm(min), -3 dBm(max) (Recommend -30 to -6 dBm)

Element Management and Control

Interface	RS-232 serial (DB9 or RJ-45)
SNMP	Yes: includes custom MIBs
GUI control program	SONABeam Terminal Controller - (STC 155-M)
Command line interface	Telnet interface or via STC 155-M
Key parameters monitored	Receive signal strength Adaptive power control settings Laser bias currents Laser modulation currents Laser temperatures Internal temperature and humidity Clock recovery / sync status Network interface signal status
Historical logging	Both SNMP Agent and STC 155-M offer extended term logging capability

Certifications and Classifications

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