

SONABeam 52-M from fSONA. Accelerate Your Mobile Network

At fSONA, we deliver optical connectivity solutions for wireless backhaul. Plan for the future with our datarate transparent wireless products. We provide quality solutions that can play a key role in your network build out today yet remain ready for future growth. Our SONABeam™ products multiply capacity as needed so you can migrate existing infrastructure to 2.5 G, GPRS, EDGE, 1XRTT, 3XRTT and UMTS networks.

Today's environment demands a shift in thinking. Evolve your network to include an optical wireless solution and create network agility. Our SONABeam™ systems are uniquely able to leverage your legacy architecture investment and create vast new connectivity and revenue opportunities - without digging, without licensing and without interference.

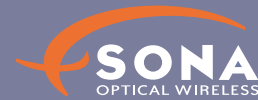
Utilizing a flexible Point-to-Point architecture and protocol transparent design, fSONA has created the most powerful free-space optical (FSO) technology ever brought to market - capable of providing fiber-like availability of up to 99.999%.

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SONABEAM™ 52-M N x T1/E1, E3, DS3, OC-1/STM-0

Free-Space Optical

Transmission rates	1.5 to 52 Mbps (T1 to OC-1/STM-0) (datarate transparent)
Operational range	200 m to 4250 m (820 ft to 2.6 mi)
Laser output power	640 mW (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) tested to -50 to 80°C (-58 to 176°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)
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 independent lasers, drivers, coolers and cooler controllers
Power supply	2 million hour MTBF components, carrier-grade
Construction	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 to 1335 nm)
Fiber rcvr wavelength	1310 nm nominal (1280 to 1335 nm)
Fiber xmtr output power	-15dBm(min), -13dBm(typical), -8dBm(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 52-M)
Command line interface	Telnet interface or via STC 52-M controller
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 52-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)