

Fiber Optical Channel Monitoring System

(up to 260 channels, lossless)

The FCMS series of Fiber Optical Channel Monitor Systems is designed to cost-effectively select and monitor any channel in the multi-channel fiber optic network (up to 260) with minimum interruption of the data stream. It has the option to integrate fiber amplifiers to form a lossless system that taps a significant amount of signal up to 3dBm for special applications. An option to integrate a photodetector with an amplifier for a data rate up to 1GHz is also available.

The order table includes a list of standard control interfaces. Additionally, we provide a list of commands to assist customer engineers in coding. For those who require it, we offer a code-writing service for customer interfaces at an additional charge.



Features

- Cost-Effective
- Lossless
- 500 Channels
- Cost effective

Specifications ^[1]

Parameters	Min	Typical	Max	Unit
Operation wavelength	1260	1550	1650	nm
Switching time	100n		20m	s
Insertion loss in all channels			1.5	dB
Additional loss in monitoring channel		0		dB
Optical power to monitor *	-3		10	dBm
Return loss	50			dB
Power consumption		7		W
Operating temperature	-5	25	65	°C
Interface			Ethernet	

Applications

- Networks
- Instruments



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Mechanical Dimensions (Unit: mm)

Standard 19" case. The height is determined by channel number.

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Electrical Interface

Ethernet RJ45

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Ordering Information

Prefix	Channels	Wavelength	Switching Time	Tap Ratio ^[1]	Detector ^[2]	Fiber Type	Connector
FCMS-	8 = AA8 14 = A14 16 = A16 32 = A32 64 = A64 128 = 128 Special = 000	1230-1630 = 1 Special = 0	100ns = 1 20ms = 3 0 = 0	3% = 1 5% = 2 3dBm = 3 Special = 0	Non = 1 Yes = 2	SMF-28 = 1 MM 50/125 = 2 MM 62.5/125 = 3 Special = 0	Non = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 Duplex LC/PC = 8 Quad LC/PC = 9 LC/UPC = U Special = 0

[1]. 3dBm integrates optical amplifiers (~ \$450 extra for each channel)

[2]. Each channel integrates a detector /amplifier with an SMA electrical output in the front panel (~\$80 extra for each channel)

* Rack Mount Depth ~ 430mm.

Application Notes

Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness

Fibers with smaller core diameters (<5 μm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.

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Questions and Answers

Q: If the device were to fail, would the switch continue to pass the fiber light through the switch as configured before failure? When power is restored, does the IN/OUT configuration before failure remain in place?

A: This depends, if one mirror fails, it only affects the light go through that mirror. Yes, when power back up it will go to the previous points

Q: When power is restored, does the IN/OUT configuration before failure remain in place?

A: Yes, when power back up it will go to the previous flightpath

Q: If power to the device were shutoff, would the device continue to pass the fiber light as configured before failure?

A: This function is call latching. We uniquely offer MEMS latching switch but cost more.

Q: With the Ethernet Control Option, does the switch support SNMPv3

A: Yes. This internet standard protocol allows user to write their own control code

Q: With the Ethernet Control Option, what type of encryption does the SNMPv3 use?

A: MD5/DES

Q: With the Ethernet Control Option, could this device be controlled by multiple users at different locations and all users will also see the configuration updates?

A: Yes

Q: With the Ethernet Control Option, could this switch be controlled by multiple users at different locations and all users will also see the configuration updates?

A: Yes

Q: With the Ethernet Control Option, does the user need to install any software on their computer other than a web browser?

A: No

Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 μ m.

Maximum power = 30 mW.



*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

*IEC is a registered trademark of the International Electrotechnical Commission.