



## 6 Channel 25G Ready Single Fiber Industrial class CWDM MUX/DEMUX SCMD-6AI

### Product Description:

SCMD-6AI is part of our Industrial Passive xWDM filter series and supports 6 CWDM Channel interconnection over single fiber using 1271-1371nm and 1471-1571nm wavelength from ITU-T G.694.2 grid. SCMD-6AI unit is for harsh outdoor environments supporting IP65 water, dust resistance, -40 to 85C industrial temperature, telecom pole or wall installation options and comes with ODVA LC connectors for easy fiber connection. Unit is small in size, light in weight, is simple to install, requires zero configuration or maintenance and is fully passive - no power supply or cooling required. Industrial A side SCMD-6AI is used together with Industrial B Side SCMD-6BI. This solution is designed for scenarios where single fiber passive CWDM connections on both sides of the link are deployed in harsh outdoor environments. SCMD-6AI uses Compact CWDM filter technology and provides  $\leq 1.9$  dB insertion loss.

xWDM filters are data rate or line protocol neutral and are used in combination with colored optical transceivers which ensure desired application and data rate. Typical use case for SCMD-6AI filters are 5G/4G Mobile Fronthaul Network Baseband Unit (BBU) and Remote Radio Head (RRH) interconnection (CPRI/eCPRI protocol), Enterprise Network 25G/10G Ethernet links or Datacenter 32/16/8G Fiber Channel connections where both sides of the single fiber link are deployed under harsh outdoor environments.

### Key Highlights:

- 6 CWDM Data services over Single SMF
- Connect to SCMD-6BI
- IP65 Water, Dust resistant
- Outdoor ODVA LC connectors
- Telecom Pole or Wall installation
- Small size and lightweight
- Low Insertion Loss:  $\leq 1.9$  dB
- Compact CWDM filters
- Industrial Temperature: -45°C – +85°C
- Fully passive (No Power Supply or Cooling)
- Zero configuration or maintenance
- Protocol & Data Rate neutral
- MTBF: 100+ Years
- 5 Year Warranty

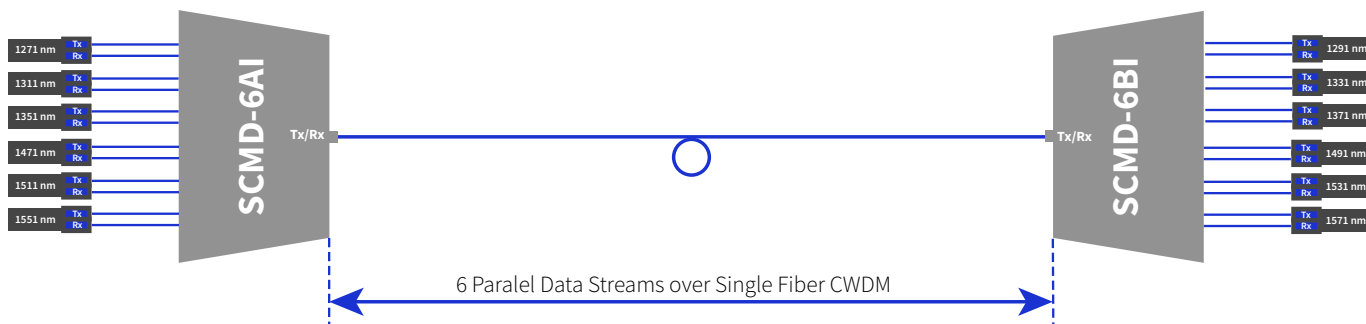


## Product Specification:

Parameter		Unit	Value
Product Type:			Single Fiber CWDM Unit
Number of Data Channels:			6
Number of Wavelength			12 CWDM Channels According ITU-T G.694.2
Transport Media:			One strand of Fiber Single Mode Fiber (SMF)
Operating Wavelengths:	center	nm	<ul style="list-style-type: none"> <li>• Ch1-Tx: 1271nm</li> <li>• Ch1-Rx: 1291nm</li> <li>• Ch2-Tx: 1311nm</li> <li>• Ch2-Rx: 1331nm</li> <li>• Ch3-Tx: 1351nm</li> <li>• Ch3-Rx: 1371nm</li> <li>• Ch4-Tx: 1471nm</li> <li>• Ch4-Rx: 1491nm</li> <li>• Ch5-Tx: 1511nm</li> <li>• Ch5-Rx: 1531nm</li> <li>• Ch6-Tx: 1551nm</li> <li>• Ch6-Rx: 1571nm</li> </ul>
Filter Technology:			CCWDM (Compact CWDM - Free Space Technology)
Passband:	$\lambda_{center}$	nm	$\pm 7.5$ nm
Channel Spacing:		nm	20 nm
Insertion Loss <small>Passband:</small>	Max	dB	$\leq 1.9$ dB
Isolation Adjacent Channels:	Min	dB	30 dB
Isolation Non-Adjacent Channels:	Min	dB	45 dB
Channel Passband Ripple:	Min	dB	0.5 dB
Insertion Loss Temperature:		dB/ (°C)	<0.003
Wavelength Temperature Shifting:		nm/ (°C)	<0.002
Polarization Dependant Los (PDL):	Max	dB	<0.1 dB
Polarization Mode Dispersion (PMD):	Max	ps/nm	< 0.1 ps/nm
Directivity:	Min	dB	>50 dB
Return Loss:	Min	dB	>45 dB
Maximum Power Handling:	Max	mW	500mW = 26.98dBm maximum power pass
Connectors:			ODVA Connectors with LC Adapters for use with ODVA Connectors and TIA/EIA 604-10 compliant LC UPC Connectors
Operating Temperature:		(°C)	-40~+85 (°C)
Storage Temperature:		(°C)	-40~+85 (°C)
Dimensions (W x H x D):		mm	77 x 250 x 72
Protection Class:		%	IP65 - Water, Dust resistant
Compliance:			ITU-T G.694.2, CE, RoHS, IP65

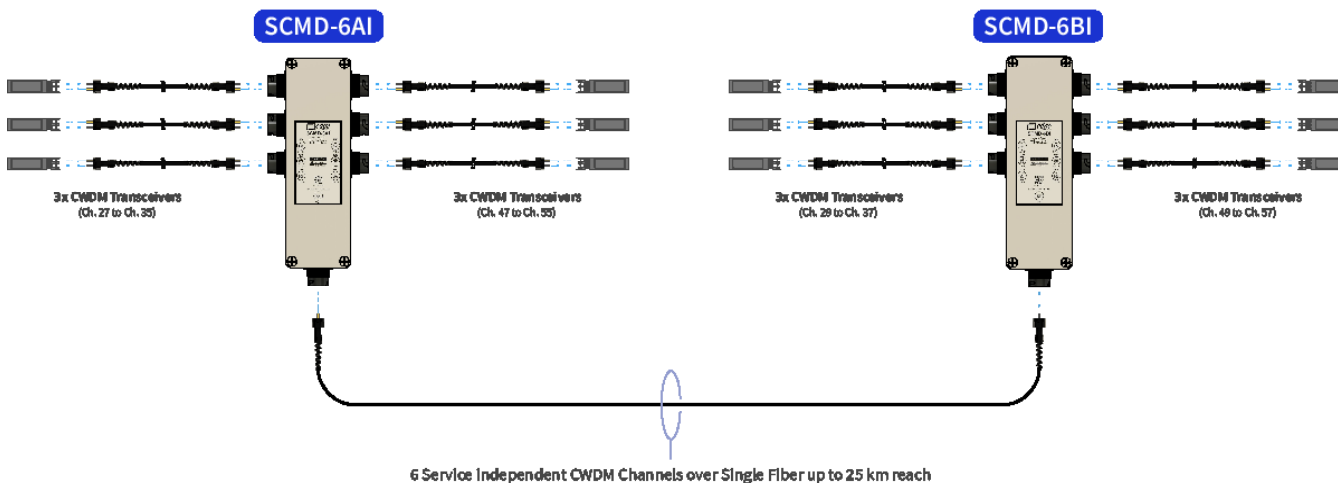


## Functional Diagram:

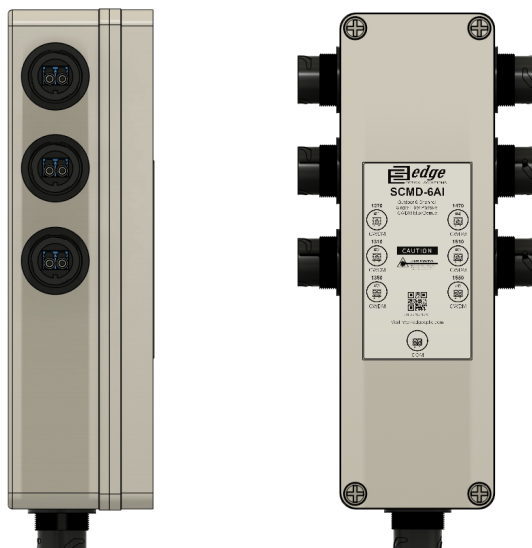


## Network Diagram:

SCMD-6AI is part of our Passive xWDM filter product line, which is designed with primary focus on wireless fronthaul applications - optimized to carry 25G services, however it is compatible with legacy 10G services as well. In order to create 6 x 25G services capacity CWDM line over single fiber, it's possible to use SCMD-6A (Indoor Scenario) or SCMD-6AI (Fully Outdoor Scenario) in one end of line and SCMD-6BI Industrial version fully outdoor mux on other end.

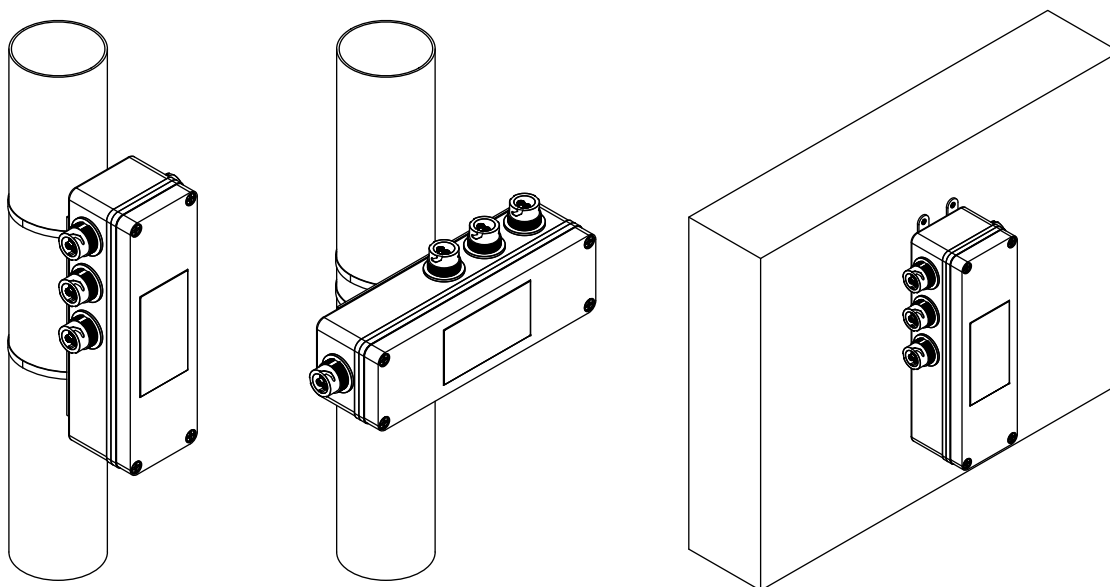


## Front Panel:



**COM:** Line interface for common signal  
**1270 - 1570:** CWDM Channel colored interfaces

## Installation:



SCMD-6AI is available for ordering with included pole mount kit, which allows easy install on any pole with diameter over 50mm vertically (recommended method) or horizontally. If necessary - SCMD-6AI is also available with included wall installation kit.



## Ordering Information:

PN	Description
SCMD-6AI-P	6 Channel Single Fiber 25G Ready IP65-Class Full Outdoor Passive Modular CCWDM A-Side Mux/Demux with ODVA LC/UPC connectors, ITU-T G.694.2 Channels (1271 - 1371 nm & 1471 - 1571nm), IL below 1.7 dB, with Pole Mount kit
SCMD-6AI-W	6 Channel Single Fiber 25G Ready IP65-Class Full Outdoor Passive Modular CCWDM A-Side Mux/Demux with ODVA LC/UPC connectors, ITU-T G.694.2 Channels (1271 - 1371 nm & 1471 - 1571nm), IL below 1.7 dB, with Wall Mount kit

## Warranty:

EDGE Optic's provides a limited warranty for **sixty (60)** months from Purchaser's receipt of the Equipment represented in this data sheet against defective design or workmanship.

