



StingRay RF over Fibre

CWDM, up to 50 km distance, 100 series L-band modules with 18V LNB powering (on TX module)

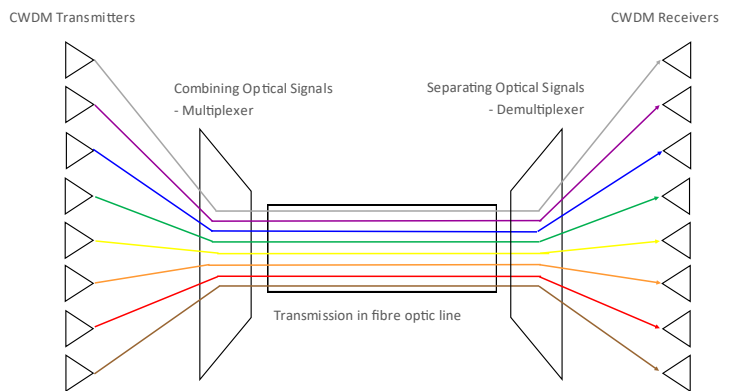
Typical applications:

- Ku-band and Ka-band ready for HTS applications
- Distribution of comms traffic across site with minimal loss
- General satcoms - teleports, video head-ends, TVRO
- Compact solution for small quantity links such as tactical HQ
- A resilient solution for satellite teleports with transmission distances up to 50 km

The StingRay CWDM 100 Series of L-band RF over fibre units are designed to provide compact fibre links, with eight wavelengths on a single fibre cable, and transmission distance of up to 50 km. The transmit modules benefit from a high and wide dynamic range with automatic link optimisation ensuring high quality L-band transmission.

The StingRay CWDM system comprises of transmit modules and a multiplexer module to combine up to 8 wavelengths on to a single fibre cable at the transmit end. A demultiplexer module and receive modules are then used at the receive end to split the separate wavelengths.

For more wavelengths and longer distances, please contact us.



Fibre Modules

- 850 - 2450 MHz** operating frequency range
- Up to 8 wavelengths** on a single fibre cable
- 50 km transmission distance** with transmit and receive module options
- LNB Powering** 18V on TX modules only
- High isolation** between modules for signal quality

Chassis Options

- Compact** indoor chassis options, which can be part populated
- Resilience** from dual redundant hot-swap power supplies, hot-swap fibre modules & fans
- Remote control & monitoring** via RJ45 Ethernet port with SNMP & web browser interface
- Local control & monitoring** via front panel push buttons & display
- 10 MHz Inject** from an external source chassis option



Indoor chassis showing hot-swap power supply modules, fibre modules & fans





PRELIMINARY SPECIFICATIONS

RF Parameters (TX & RX Modules)					
Model Number		SRY-TXyyL1-141 CWDM L-band Transmit Fibre Module		SRY-RX-L1-142 CWDM L-band Receive Fibre Module	
Frequency Range		850 to 2450 MHz (Extended L-band)			
Flatness	850-2150MHz	± 1.0 dB			
	850-2450MHz	± 1.5 dB			
	Any 36MHz i/p >-50dBm	± 0.25 dB			
	Any 36MHz i/p <-50dBm	± 0.5 dB			
Output AGC Flatness		-		± 2 dB over full band Input -10 to -40 dBm	
AGC		AGC: Factory set (once AGC level set, gain can be fixed)		AGC/MSG: Settable output power level (once AGC level set, gain can be fixed)	
Return Loss	Typical	18 dB 50 Ω SMA	18 dB 50 Ω BNC	16 dB 75 Ω BNC	16 dB 75 Ω F-type
	Minimum	12 dB 50 Ω SMA	12 dB 50 Ω BNC	12 dB 75 Ω BNC	12 dB 75 Ω F-type
OIP3		18 dBm typical, 14 dBm minimum (Test condition: 1m fibre 10 dB gain, -22 dBm tones at 2150 & 2152 MHz)			
CNR (in any 36 MHz)		-38 dB typical, -35 dB minimum (Test condition: 1m fibre, -10 dBm RF i/p power, -10 dBm RF o/p total power)			
Noise Figure		10 dB typical, 12 dB maximum (Test condition: 1m fibre, -50 dBm RF i/p power, -10 dBm o/p power)			
Group Delay Variation		2ns over full band, 1ns over any 36MHz			
SFDR		105 dB/Hz ^{2/3} typical, 100 dB/Hz ^{2/3} minimum (Test condition: 1m fibre, 10 dB gain, -22 dBm tones at 2150 & 2152 MHz)			
IMD3		-65 dBc typical, -60 dBc minimum (Test condition: 1m fibre, 10 dB gain, -22 dBm tones at 2150 & 2152 MHz)			
RF Signal Range		Input: -60 to -10 dBm (total power)		Output: -30 to -10 dBm (total power)	
Gain Control: AGC		-		-30 dBm to -10 dBm output levels	
Max RF Input		16 dBm total power (Damage level, NOT operational)		-	
Laser Type		DFB. Optical isolator for improved performance		-	
Optical Wavelength		± 2 nm see centre wavelengths table		1100 to 1650 nm wide range of operating wavelengths	
Optical Power		Output: 4.5 ± 2.5 dBm		Input: -9.5 to -3.5 dBm (Max. 10 dBm)	
Power Consumption		3.5W		2W	
LNB Power		Dependent on chassis - see chassis specifications		-	
MTBF		211,600 hours		292,550 hours	
Connector Options		RF connectors: BNC 50 Ω - B5 / BNC 75 Ω - B7 / SMA 50 Ω - S5 / F-type 75 Ω - F7 Optical connectors: FA - FC/APC or SA - SC/APC			
Environmental Conditions					
Operating Temperature		0°C to 50°C			
Storage Temperature		-20°C to +75°C			
Location		Indoor use only			
Humidity		20 to 90% non-condensing (relative humidity)			
Altitude		10,000 ft AMSL (above mean sea level)			
Mass		0.18kg			
Size		43.5 x 18 x 209.5 mm			

RF Parameters (Multiplexer/Demultiplexer)	
Model Number	SRY-OCM-08-545-47 8 channel CWDM Mux/Demux Module
Operating wavelength	1471 / 1491 / 1511 / 1531 / 1551 / 1571 / 1591 / 1611 nm
Insertion Loss	2.5 dB
Isolation	>30 dB
Return Loss	>45 dB
Maximum optical power	250 mW
Power Consumption	2W
Connector Options	Optical connectors: FA - FC/APC or SA - SC/APC

Centre Wavelengths (SRY-TxxyL1-141)			
Wavelength	Optical Band	Max. Loss dB/km Corning SMF-28e	Typical Loss dB/km Typical single mode fibre
1470	S-band		0.21 dB/km
1490	S-band	0.24 dB/km	0.20 dB/km
1510	S-band		0.20 dB/km
1530	C-band		0.19 dB/km
1550	C-band	0.20 dB/km	0.19 dB/km
1570	L-band		0.19 dB/km
1590	L-band		0.20 dB/km
1610	L-band	0.23 dB/km @ 1623	0.20 dB/km

Note 1: The specification is subject to regular reviews and will be updated from time to time as part of our continuing product development and improved spec accuracy.
Note 2: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage.



TX / RX Fibre Module



Multiplexer / Demultiplexer Module

Please see separate datasheet for 100 series chassis options.