



# StingRay RF over Fibre

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

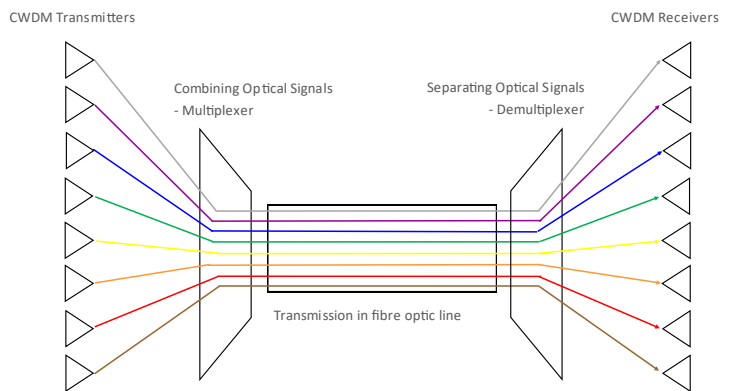
**Typical applications:**

- 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 broadband (50 - 2450MHz) 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 broadband 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 distance options, please contact us.



## Fibre Modules

**50 - 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

**10MHz Inject** from an external source chassis option



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



RF Parameters (TX & RX Modules)			
Model Number		SRY-TxxB2-143 CWDM Broadband Transmit Fibre Module	SRY-RX-B2-144 CWDM Broadband Receive Fibre Module
Frequency Range		50 to 2450 MHz (Broadband)	
Flatness	850-2450 MHz	± 2.0 dB	
	50-200 MHz	± 2.0 dB	
	Any 36 MHz i/p >-50 dBm	± 0.25 dB	
	Any 36 MHz i/p <-50 dBm	± 0.5 dB	
Output AGC Flatness		-	± 2.0 dB over two bands above. Input -10 to -40 dBm.
AGC/MSG		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 ( <b>Test condition:</b> 1m fibre 10 dB gain, -23 dBm tones at 2150 & 2152 MHz)	
CNR (in any 36 MHz)		-38 dB typical, -35 dB minimum ( <b>Test condition:</b> 1m fibre, -10 dBm RF i/p power, -10 dBm RF o/p total power)	
Noise Figure		10 dB typical, 12 dB maximum ( <b>Test condition:</b> 1m fibre, -50 dBm RF i/p power, -10 dBm o/p power)	
Group Delay Variation		± 2ns over full band, ±0.5ns over any 36MHz	± 2ns over full band, ±1ns over any 36MHz
SFDR		105 dB/Hz <sup>2/3</sup> typical, 100 dB/Hz <sup>2/3</sup> minimum ( <b>Test condition:</b> 1m fibre, 10 dB gain, -23 dBm tones at 2150 & 2152 MHz)	
IMD3		-65 dBc typical, -60 dBc minimum ( <b>Test condition:</b> 1m fibre, 10 dB gain, -23 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		± 2nm	1100 to 1650 nm. Optimised for 1310nm & 1550nm
Optical Power		Output: 4.5 ± 2.5 dBm	Input: -10 to -5.5 dBm (Max. 10 dBm)
Power Consumption		3.5 W	2 W
LNB Power		Dependant on chassis	-
MTBF		211,600 hours	292,550 hours
Module Swap		Hot swap	
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	0W
Connector Options	RF connectors: BNC 50 Ω - B5 / SMA 50 Ω - S5 / SMA 50 Ω - S5 / Optical connectors: FA - FC/APC or SA - SC/APC

Centre Wavelengths (SRY-TxxB2-143)			
Wavelength	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 @1623 nm dB/km	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.