



# StingRay RF over Fibre

## 200 series broadband modules with -20dB monitor ports & 13/18V LNB powering & 22kHz tone (on TX module)

**Typical 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 transition distances up to 10km

The StingRay 200 Series of broadband RF over fibre chassis are designed to give compact fibre links of up to 10 km (Link budget 4 dB). The transmit modules benefit from a high and wide dynamic range with automatic link optimisation ensuring high quality broadband transmission.

### Fibre Modules



**50 - 2450 MHz** operating frequency range



**TX & RX** module options to transmit and receive signals up to 10 km



**-20dB Monitor port** to measure input signal levels on TX and output signal levels on RX



**LNB Powering** 13/18V on TX modules only



**High isolation** between modules for signal quality

### Chassis Options



**Compact indoor & outdoor** 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



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



Outdoor Unit (ODU)





RF Parameters (TX & RX Modules)										
Model Number		SRY-TX-B2-203-xxxx				SRY-RX-B2-204-xxxx				
Frequency Range		50 to 2450 MHz (IF/L-band)								
Flatness	850-2450MHz	± 2.0 dB								
	50-200MHz	± 2.0 dB								
	Any 36MHz	± 0.25 dB								
Output AGC Flatness		-				± 2.0 dB over 50-200MHz & 850-2450MHz (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	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	12 dB 50 Ω SMA	12 dB 50 Ω BNC	12 dB 75 Ω BNC	12 dB 75 Ω F-type	
Monitor Port		-20 dB ± 3 dB mounted on module								
OIP3		17 dBm typical, 14 dBm worst case (Test condition: 1m fibre 10 dB gain, -23 dBm tones at 2150 and 2152 MHz)								
CNR (in any 36 MHz)		-50 dB typical, -45 dB worst case (Test condition: 1m fibre, -10 dBm RF i/p power, -10 dBm RF o/p total power)								
Noise Figure		12 dB typical, 15 dB worst case (Test condition: 1m fibre, -50 dBm RF i/p power, -10 dBm o/p power)								
Group Delay Variation		±2ns over each band (50-200MHz & 850-2450MHz), ±0.5ns over any 36MHz (850-2450MHz)								
SFDR		105 dB/Hz <sup>2/3</sup> typical, 100 dB/Hz <sup>2/3</sup> minimum (Test condition: 1m fibre, 10 dB gain, -23 dBm tones at 2150 & 2152 MHz)								
RF Signal Range		Input: -60 to -10 dBm (total power)				Output: -30 dBm to -10dBm (total power)				
Gain Control: AGC		-				-30 dBm to -10 dBm output levels				
Gain Stability		Maximum ±0.25 dB over a 24 hour period (At constant temperature)								
Max RF Input		16 dBm total power (Damage level, NOT operational)								
Laser Type		DFB	Optical isolator for improved performance				-			
Optical Wavelength		1310 ± 10 nm				1100 to 1650 nm (optimised for 1310 nm & 1550 nm)				
Optical Power		Output: 4.5 ± 2.5 dBm (3.8 dBm typical)				In: 0 to 4.5 dBm (Max. 10 dBm)				
Power Consumption		15W typical (with 18V 500 mA LNB power)				2W typical				
LNB Power		13/18V ± 5%, 500 mA max., short circuit current 750 mA max.				-				
MTBF		TBD				>250,000 hours				
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								
Spec Version		1.0				1.0				

Chassis Options - Technical Specifications							
Model Numbers	SRY-C200-1U	SRY-C207-1U	SRY-C201-2U	SRY-C206-2U	SRY-C205-2U	SRY-C204-2U	SRY-ODU-201
Capacity	Up to 4 2xx series modules			Up to 16 2xx series modules		Up to 10 2xx series modules	
Redundancy options	1+1 redundancy configuration available with modules SRY-L1-DIV213 & SRY-L1-SW214					4+1 redundancy	1+1 redundancy
Dimensions	1U high x 450 mm deep x 19" wide			2U high x 450 mm deep x 19" wide			407 high x 356 deep x 254" wide
Local Control & Monitoring	Front panel LCD and keypad						Optional
Remote Control & Monitoring	Ethernet via RJ45, 10baseT/100BaseTx			Ethernet via optical 1000BaseLX SFP module	Ethernet via RJ45, 10baseT/100BaseTx		
	ETL protocol over TCP/IP, SNMP, built in web server. Serial port. Dry contact alarm summary.						
Module Features Monitored	Includes: Temperature, RF Power, Optical Power, PSU status & Individual fans						
LNB Power	Up to 0.5A per channel, not exceeding 2.8A total			Up to 500mA per channel, 8A total			Yes Module must support LNB
PSU Power	100-240 VAC 50/60Hz (Fused 6A, Dual IEC)						
PSU Redundancy	Dual Hot-Swap Modules, Diode OR						
AC Power Consumption	< 150 W all channels			<405 W all channels		<312 W all channels	< 260 W all channels
Heat Load	< 65 W, 222 BTU/hr			< 220 W, 495 BTU/hr		< 200 W, 450 BTU/hr	<145 W, 495 BTU/hr
Operating/Storage Temperature	Operating: 0 to 50°C / Storage: -20°C to +75°C						See SRY-ODU-201 datasheet
Humidity	20 to 90% non-condensing						
Weight	TBD kg			12 kg			21 kg
Front Panel Colour	RAL9003 White semi-matte						