



# StingRay RF Over Fibre

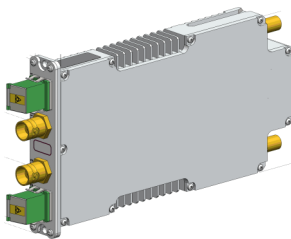
## 200 Series L-band Dual modules with 13/18V LNB powering & 22kHz tone (on TX module)

The StingRay 200 Series of L-band 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 L-band transmission. Resilience is provided by a full hot-swap, modular design.

### 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

### Fibre Modules



**850 - 2450 MHz**  
operating frequency range



**LNB Powering** 13/18V & 22 KHz tone on TX modules only



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



**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



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



**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-L1-205-xxxx		SRY-RX-L1-206-xxxx
Frequency Range		850 to 2450 MHz (Extended L-band)		
Flatness	850-2150MHz	± 1.5 dB		
	850-2450MHz	± 2.4 dB		
	Any 36MHz i/p >-50dBm	± 0.25 dB		
	Any 36MHz i/p <-50dBm	± 0.5 dB		
Output AGC Flatness		-		± 2.0 dB 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
Isolation		Typical: -40dB, worst case -35 dB (between 2 links from single SRY-RX-L1-205-TX)		
OIP3		17 dBm typical, 14 dBm worst case (Test condition: 1m fibre, 10 dB gain, -22 dBm tones at 2150 and 2152 MHz)		
CNR (in any 36 MHz)		-50 dB typical, -40 dB worst case (Test condition: 1m fibre, -10 dBm RF i/p power, -10 dBm RF o/p total power)		-38 dB typical, -35 dB worst case (Test condition: 1m fibre, -10 dBm RF i/p power, -10 dBm RF o/p total power)
Noise Figure		10 dB typical, 12 dB worst case (Test condition: 0 dB optical link loss, -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 <sup>2/3</sup> typical, 100 dB/Hz <sup>2/3</sup> minimum (Test condition: 1m fibre, 10 dB gain, -22 dBm tones at 2150 and 2152 MHz)		
IMD3		-65 dBc typical, -60 dBc minimum (Test condition: 1m fibre, 10 dB gain, -22 dBm tones at 2150 and 2152 MHz)		
RF Signal Range		Input: -60 to -10 dBm (total power)		Output: -30 dBm to -10dBm (total power)
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 ± 1650 nm (optimised for 1310 nm & 1550 nm)
Optical Power		Output: 4.5 ± 2.5 dBm		In: 0 to 4.5 dBm (Max. 10 dBm)
Power Consumption		30W typical (with 2x 18V 500mA LNB power)		7W typical
LNB Power		18/13V ± 5%, 500mA max (short circuit current 750 mA max. per channel)		-
MTBF		>120,000 hours		>150,000 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		

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	
10MHz Injection	-	+9 dBm, input level (27 dBm max. level)	-	-	+15 dBm input level (27 dBm max. level)	-	With SRY-OPT16-10M
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						

