



# StingRay RF over Fibre

## 200 series L-band modules with -20dB monitor ports & 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.

- 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 transition distances up to 10km

### Fibre Modules



**850 - 2450 MHz** operating frequency range



**-20dB Monitor port** to measure input signal levels



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



**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



**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-L1-201-xxxx					SRY-RX-L1-202-xxxx			
Frequency Range	850 to 2450 MHz (Extended L-band)								
Flatness	850-2150MHz	± 1.2 dB				± 1.5 dB			
	850-2450MHz	± 1.7 dB				± 2.0 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	12 dB 75 Ω BNC	12 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	10 dB 75 Ω BNC	10 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								
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, -45 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	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 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, -22dBm tones at 2150 and 2152 MHz)								
IMD3	-65 dBc typical, -60dB minimum (Test condition: 1m fibre, 10 dB gain, -22dBm tones at 2150 and 2152 MHz)								
RF Signal Range	Input: -60 to -10 dBm (total power)					Output: -30 dBm to -10dBm (total power)			
10 MHz level at output	-10 to +5 dBm (User settable range in chassis SRY-C205-2U, SRY-C207-1U, SRY-ODU201 + SRY-OPT16-10M)					-			
10 MHz Isolation	-40 dB		Between adjacent modules in same chassis			-			
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	15W typical (with 18V 500mA LNB power)					4W typical			
LNB Power	13/18V ± 5%, 500mA max					-			
MTBF	>200,000 hours					>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								

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						

