



ETL Systems

Excelling in RF Engineering

Model Number: SRY-TX-L1-201 &
SRY-RX-L1-202

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



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



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



LNB Powering 13/18V on TX



High isolation between modules for signal quality

Chassis Options



Compact indoor & outdoor chassis options, which can be part populated



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



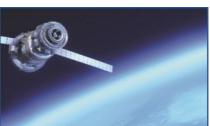
Resilience from dual redundant hot-swap power supplies, hot-swap fibre modules & fans



10MHz Inject from an external source chassis option



Outdoor Unit (ODU)





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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	$\pm 1.2 \text{ dB}$				$\pm 1.2 \text{ dB}$							
	850-2450MHz	$\pm 1.7 \text{ dB}$				$\pm 1.7 \text{ dB}$							
	Any 36MHz i/p >-50dBm	$\pm 0.25 \text{ dB}$				$\pm 0.25 \text{ dB}$							
	Any 36MHz i/p <-50dBm	$\pm 0.5 \text{ dB}$				$\pm 0.5 \text{ dB}$							
Output AGC Flatness	-				$\pm 2.0 \text{ dB}$ 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	$-20 \text{ dB} \pm 3 \text{ dB}$ (Mounted on module)												
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)				-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 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, -22dBm tones at 2150 and 2152 MHz)												
IMD3	-58 dBc typ., -52 dBc min. (Test condition: As SFDR above)												
RF Signal Range	Input: -60 to -10 dBm (total power) - Operational i/p range				Output: -30 dBm to -10dBm (total power) o/p range available under all i/p conditions								
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 Accuracy $\pm 1\text{dB}$)												
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 $\pm 10 \text{ nm}$				1100 $\pm 1650 \text{ nm}$ (optimised for 1310 nm & 1550 nm)								
Optical Power	Output: 4.5 $\pm 2.5 \text{ dBm}$ (3.8dBm typical)				In: 0 to 4.5 dBm (Max. 10 dBm)								
Power Consumption	15W typical (with 18V 500mA LNB power)				4W typical								
LNB Power	13/18V $\pm 5\%$, 500mA max (Short circuit current 750 mA 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												

Please see separate datasheet for 200 series chassis options.

