



## StingRay RF Over Fibre

### 200 series L-band modules with fixed gain & high linearity

**HTS compatible**

#### 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 10 km (up to 300 km)

The StingRay 200 Series broadband RF over fibre chassis are designed to give compact fibre links of up to 10 km (up to 300 km with a DWDM system). The transmit modules benefit from a high and wide dynamic range. Resilience is provided by a full hot-swap, modular design. **L-band operating frequency range, compatible for HTS applications.**

Other options in the StingRay series: The StingRay range is also available with additional features such as RF monitoring ports, high linearity, switchable 13/18V & 22KHz tone LNB powering, redundancy systems and 10 MHz injection.

#### Fibre Modules



**950-1950 MHz** operating frequency range. **HTS compatible**



**Fixed Gain** 0 dBm, 0 dB link



**High Linearity** with high 1dB Gain Compression



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



**High isolation** between modules for signal quality



**Monitoring** optical input power, amplifier status & RF input power

#### 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 (ODU201)





		RF Parameters (TX & RX Fibre Modules)					
Model Number		SRY-T-L1-267B (Transmit / TX)			SRY-R-L1-268A (Receive / RX)		
Frequency Range		950-1950 MHz (L-band) when used as 267B and 268A pair.					
Flatness		950 to 950 MHz: $\pm 1.0$ dB	Any 36 MHz 950 to 1950 MHz: $\pm 0.2$ dB		850 to 1950 MHz: $\pm 1.0$ dB	Any 1MHz 850 to 1950 MHz: $\pm 0.01$ dB	
		Any 1 MHz 950 to 1950 MHz: $\pm 0.01$ dB					
Return Loss	Typical	18 dB 50 $\Omega$ SMA 18 dB 50 $\Omega$ BNC					
	Minimum	12 dB 50 $\Omega$ SMA 12 dB 50 $\Omega$ BNC					
Monitor Port		-20 dB $\pm$ 3 dB					
Link Gain		0 dB $\pm$ 2.5 (Full TX & RX link with SRY-T-L1-267A/B, 1m fibre)					
Gain Stability	20°C to 30°C	$\pm 0.25$ dB (Full TX & RX link, 1m fibre)					
	After warm-up	$\pm 0.15$ dB Over 24H (Full TX & RX link, 1m fibre)					
1dB Gain Compression		+5 dBm typical	+2 dBm minimum	+6 dBm typical	+2 dBm minimum		
OIP3	Typical	18 dBm (Test conditions: 1m fibre, 0 dB gain, -22 dBm tones at 1950 and 1952 MHz)		18 dBm (Test conditions: 1m fibre, 10 dB gain, -22 dBm tones at 2150 and 2152 MHz)			
	Worst Case	15 dBm (Test condition: SRY-T-L1-267A/B, 1m fibre, 10 dB gain, -22 dBm tones at 2150 and 2152 MHz)					
CNR (in any 36 MHz)	Typical	55 dB (Test conditions: 1m fibre, 0 dBm RF i/p power, 0 dBm RF o/p power)					
	Worst case	52 dB (Test conditions: 1m fibre, 0 dBm RF i/p power, 0 dBm RF o/p power)					
Group Delay Variation		$\pm 2$ ns over full band (Test conditions: 1m fibre, 0 dBm RF i/p power, 0 dBm RF o/p total power)					
		$\pm 1$ ns any 36MHz (Test conditions: 1m fibre, 0 dBm RF i/p power, 0 dBm RF o/p total power)					
SFDR		112 dB/Hz <sup>2/3</sup> typical, 108 dB/Hz <sup>2/3</sup> minimum (Test conditions: 1m fibre, 0 dB gain, -22 dBm tones at 2150 and 2152 MHz)					
RF Signal Range		RF input < 0 dBm (total power)		RF output -30 to +10 dBm (total power) This is only RF detector readout range, module can be used at lower levels.			
Max RF Input		16 dBm total power (Damage level, NOT operational)					
AGC/MSG		AGC: None			MSG: 0 to -4 dB		
Noise Figure	Typical	24 dB (Test conditions: 1m fibre, 0 dBm RF i/p power, 0 dBm o/p power)					
	Worst Case	26 dB (Test conditions: 1m fibre, 0 dBm RF i/p power, 0 dBm o/p power)					
Noise Floor	Typical	-150 dBm/Hz typical (Test conditions: 1 m fibre, 0 dBm RF i/p power, 0dBm o/p power. With input Noise of -174 dBm/Hz)					
	Worst Case	-148 dBm/Hz typical (Test conditions: 1 m fibre, 0 dBm RF i/p power, 0dBm o/p power. With input Noise of -174 dBm/Hz)					
Laser Type		DFB (Optical isolator for improved performance)			-		
Additive Phase Noise (950-1950MHz)		100Hz: -120 dBc/Hz	1 kHz: -125 dBc/Hz	10kHz: -135 dBc/Hz	100kHz: -135 dBc/Hz	1MHz: -135 dBc/Hz	
		Single sideband additive phase noise (Test condition: 1m fibre, 0 dBm RF i/p power, 0 dBm o/p power)					
Optical Wavelength		1310 $\pm$ 10 nm		1100 to 1650 nm Optimised for 1310 nm and 1550 nm			
Optical Power		Output: +6 $\pm$ 2.5 dBm			Input: +2 to 6 dBm, Max 10 dBm		
Power Consumption		6W			4W typical		
MTBF		> 200,000 hours			> 250,000 hours		
RF Connectors		BNC 50 $\Omega$ B5 / SMA 50 $\Omega$ - S5					
Optical Connectors		FA - FC/APC or SA - SC/APC					
Module swap		Hot swap					
Specification version		1.5			1.8		

Please see separate datasheet for 200 series chassis options.

