



# StingRay RF over Fibre

## 200 series S-band Dual modules with 13/18V LNB powering on TX module

The StingRay 200 Series of S-band RF over fibre chassis are designed to give compact fibre links of up to 10km (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



**500 - 3150 MHz**  
operating frequency range



**LNB Powering** 13/18V 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 - within ETL's 200 series chassis'



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



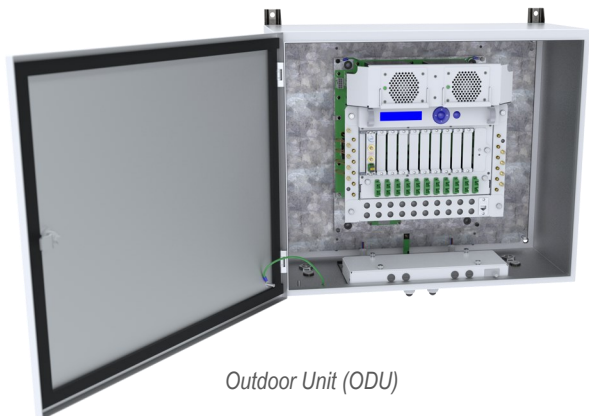
**Remote control & monitoring** via RJ45 Ethernet port with SNMP & web browser interface



**Local control & monitoring** via front panel push buttons & display



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



Outdoor Unit (ODU)



**Technical specifications and operating parameters**

RF Parameters (TX & RX Modules)			
Model Number	SRY-TX-S4-293-xxxx		SRY-RX-S4-294-xxxx
Frequency Range	500 to 3150 MHz (S-band)		
Flatness in fixed gain mode	850-2150 MHz	± 1.5 dB (Test condition: 10km fibre, fixed gain mode)	
	850-2450 MHz	± 2.5 dB (Test condition: as above)	
	500-3150 MHz	± 3.0 dB (Test condition: as above)	
	Any 36 MHz	± 0.25 dB (Test condition: as above)	
Flatness in AGC mode	850-2450 MHz	± 2.0 dB (Test condition: 10km fibre, AGC mode)	
	500-3150 MHz	± 5.5 dB (Test condition: as above)	
	Any 36 MHz	± 0.25 dB (Test condition: as above)	
AGC/MSG	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	
	Minimum	10 dB 50 Ω SMA	
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)		
Noise Figure	10 dB typical, 12 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 , -60 dBc minimum (Test condition: as above )		
RF Input Signal Range	Input: -60 to -10 dBm (total power)		Output: -30 dBm to -10dBm (total power)
10 MHz level at output	-4.5 dBm typical, -6 dBm max (Below backplane level on 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	30W typical		7W typical
LNB Power	18/13V ±5 %, 500 mA max. per channel		-
MTBF (module)	>120,000 hours		>150,000 hours
Connector Options	RF Connector: 50 Ohm Only. Optical connectors: FA - FC/APC or SA - SC/APC		
Operating Temperature	-20°C to +60°C		
Storage Temperature	-40°C to +90°C		
Location	Indoor use—outdoor use as part of ETL ODU only		
Humidity	20 to 90% non-condensing. Relative humidity		
Altitude	10,000 ft Above Mean Sea Level (AMSL) operational, 30,000 ft AMSL storage/transport		
Weight	0.35kg typical		
Dimensions	43.5 x 18 x 205mm		
Spec Version	1.0		1.0

Note 1: The specification is subject to regular reviews and will be updated from time to time as part of our continuing product development and improved spec accuracy.  
 Note 2: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage.



Esatcom Inc  
[www.esatcom.com](http://www.esatcom.com)  
 Tel: 718.276.0800  
 Email: [sales@esatcom.com](mailto:sales@esatcom.com)

