



StingRay RF over Fibre

200 series Optical Fibre to S-band Modules with LNB power at 13/18V, 22kHz at up to 500mA

The SRY-TX-S4-287 and SRY-RX-S4-288 are optical transmitter and receiver modules for RF over Fibre, built in a compact EMC sealed housing which converts S-band (500-3150MHz) to 1310nm for transmission over single mode fibre. It uses optically isolated DFB laser and is suited up to 10km.

Other options in the StingRay series: The StingRay range is also available with additional features such as RF monitoring ports, high linearity, switchable LNB powering & redundancy systems.

Typical applications:

- Used in conjunction with L-band & Broadband fibre modules
- 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 S-band operating frequency range



-20dB Monitor port to measure input signal levels



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



Flexibility 10 MHz modules can be housed in same chassis as fibre modules

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 and RX)			
Model Number	SRY-TX-S4-287-xxxx		SRY-RX-S4-288-xxxx
Frequency Range	500-3150 MHz		
Flatness in Fixed Gain Mode (Full TX &RX link with 10km fibre link using SRY-RX-S4-288. Fixed gain mode.)	±1.5dB 850 to 2150 MHz		
	±2.5dB 850 to 2450 MHz		
	±3.0dB 500 to 3150 MHz		
	±0.25dB, any 36MHz i/p > -50dBm		
	±0.5dB, any 36MHz i/p < -50dBm		
Flatness in AGC Mode (Full TX &RX link with 10km fibre link using SRY-RX-S4-288 in AGC mode. NOTE - In AGC mode the gain at higher frequencies is not as well controlled, resulting in sharp increase in gain above 2.5GHz.)	±1.5dB 850 to 2150 MHz		
	±2.5dB 850 to 2450 MHz		
	±5.5dB 500 to 3150 MHz		
	±0.25dB, any 36MHz i/p > -50dBm		
	±0.5 dB, any 36MHz i/p < -50dBm		
Return Loss	50 ohm SMA	18 dB typical, 10 dB minimum	
Monitor Port	-20dB ±3dB		
OIP3	Typical 17dBm Worst Case 14dBm (Test condition: SRY-RX-S4-288, 1m fibre, 10 dB gain, -22 dBm tones at 2150 and 2152 MHz)		
CNR (in any 36MHz)	Typical -50dB Worst Case -45dB (Test condition: SRY-RX-S4-288, 1m fibre, -10 dBm RF i/p power, -10 dBm RF o/p total power)		
Noise Figure	Typical 10dB Worst Case 12dB (Test condition: SRY-RX-S4-288, 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/Hz2/3typ., 100 dB/Hz2/3 min (Test condition: SRY-RX-S4-288, 1m fibre, 10 dB gain, -22 dBm tones 2150 and 2152 MHz)		
IMD3	-65 dBc typ., -60 dBc min. (Test condition: SRY-RX-S4-288, 1m fibre, 10 dB gain, -22 dBm tones 2150 and 2152 MHz)		
RF Input/ Output Signal Range	Input: -60 to -10dBm (total power) Operational i/p range		Output: -30 to -10dBm (total power) o/p range available under all i/p conditions
Optical Wavelength	1310 ± 10 nm		1100 to 1650 nm (Optimised for 1310 nm and 1550 nm)
Max RF Input	+16 dBm total power (Damage level, NOT operational)		
10MHz level at output	-4.5 dB typical, -6 dB max (Below backplane level on chassis SRY-C205-2U, SRY-C207-1U, SRY-ODU201+SRY-OPT16-10M only)		
Laser Type	DFB (Two stage optical isolator for improved performance)		N/A
Optical Power output	4.5 ± 2.5 dBm		N/A
Optical Power in	N/A		0 to 4.5 dBm (Max 10 dBm)
Power Consumption	15W (with 18V 500mA LNB power)		4W
AGC	Factory Set	Maintains optimum level of laser modulation	Factory Set Maintains set output level
LNB Power	18/13V ±5 %, 500 mA max. per channel. Short circuit current 750 mA max.		N/A
MTBF	>120,000		>250,000
RF Connectors	SMA 50 Ω (S5)		
Optical Connectors	FC/APC (FA) or SC/APC (SA) Single mode fibre, Use angle polish connectors only		
Operating Temperature	-20 to +60 °C		
Storage Temperature	-40 to +90 °C		
Location	Indoor use		
Humidity	20 to 90% non-condensing. Relative Humidity		
Altitude	10,000 feet AMSL (Above Mean Sea Level)		
Dimensions	87.8 x 18 x 150 mm		
Weight	0.35 kg		

Please see separate datasheet for 200 series chassis options.

