ETL Systems

Excelling in RF Engineering

Model Number:
SRY-TX-S4-293 & SRY-RX-S4-294

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

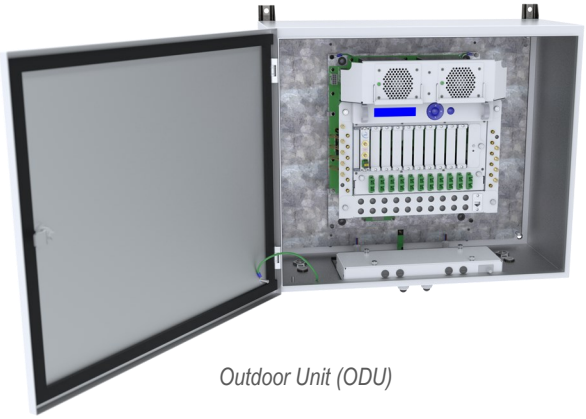
Compact indoor & outdoor chassis options - within ETL's 200 series chassis'

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)

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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$^{2/3}$ typical , 100 dB/Hz$^{2/3}$ 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.

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