ETL Systems
Excelling in RF Engineering

Model number: SRY-TX-B2-207
& SRY-RX-B2-208

StingRay RF Over Fibre

200 Series Broadband Dual Modules with 13/18V LNB Powering & 22kHz tone (on TX module)

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

The StingRay 200 Series of Broadband 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 . Resilience is provided by a full hot-swap, modular design.

Fibre Modules

50 - 2450 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, which can be part populated

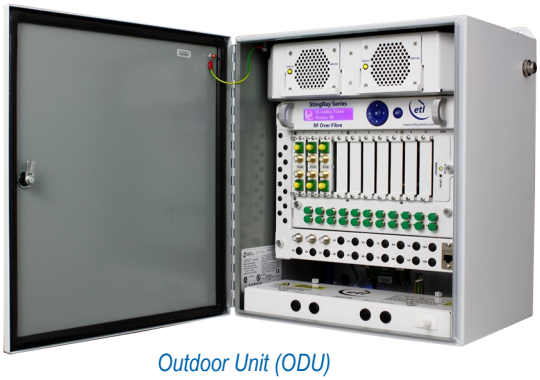
Resilience from dual redundant hot-swap power supplies, hot-swap fibre modules & fans

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)

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RF Parameters (TX and RX)

Model Number		SRY-TX-B2-207-xxxx (Transmit)	SRY-RX-B2-208-xxxx (Receive)
Frequency Range		50 to 2450 MHz (Broadband)	
Flatness	850-2450MHz	± 2.9 dB	
	50-2450MHz	± 2.0 dB	
	Any 36MHz i/p >-50dBm	± 0.25 dB	
	Any 36MHz i/p <-50dBm	± 0.5 dB	
Output AGC Flatness	50 to 200 MHz	± 2.8 dB	
	850 to 2450 MHz	± 2.8 dB (Input -10 to -40 dBm)	
Return Loss	50 ohm SMA / BNC	18 dB typical, 12 dB minimum	
	75 ohm BNC / F-type	16 dB typical, 12 dB minimum	
Isolation		Typical –40dB, -35 worst case (Between 2 links in dual RX & TX modules)	
Noise Figure		10 dB typical, 12 dB worst case (**Test condition:** 1m fibre, -50 dBm RF i/p power,-10 dBm o/p power)	
OIP3		18 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)	
Group Delay Variation		±2 ns over full band (Bands 50 to 200 MHz and 850 to 2450 MHz)	
		±0.5ns any 36 MHz 850 to 2450 MHz (Any 36 MHz applies only 850 to 2450 MHz)	
SFDR		105 dB/Hz$^{2/3}$ typical, 100 dB/Hz$^{2/3}$ worst case (**Test condition:** 1m fibre, 10 dB gain, -22 dBm tones at 2150 and 2152 MHz)	
IMD3		-65 dBc typical, -60 dBc minimum (**Test condition:** 1m fibre, 10 dB gain, -22 dBm tones at 2150 and 2152 MHz)	
Optical Wavelength		1310 ± 10 nm	1100 to 1650 nm (Optimised for 1310 nm and 1550 nm)
Optical Power		Out: 4.5 ± 2.5 dBm (3.8 dBm typical)	In: 0 to 4.5 dBm (Max 10 dBm)
Laser Type		DFB (Optical isolator for improved performance)	-
AGC / MSG		Factory Set Once AGC level set, gain can be fixed	Settable output power level, gain can be fixed
RF Signal Range		Input: -60 dBm to -10 dBm (total power)	Output: -30 dBm to -10 dBm (total power) o/p range available under all i/p conditions
LNB Power		18/13V ± 5%, 500mA max (Short circuit current 750mA max)	-
Maximum RF Input Power		16 dBm total power (NB. Damage level)	-
Power Consumption		28W (with 2x 18V 500 mA LNB power)	7W typical
MTBF		TBD hours	>150,000 hours

Chassis Options - Technical Specifications

Model Numbers	SRY-C200-1U	SRY-C207-1U	SRY-C201-2U	SRY-C206-2U	SRY-C205-2U	SRY-C204-2U	SRY-ODU201
Capacity	Up to 4 2xx series modules		Up to 16 2xx series modules			Up to 10 2xx series modules	
Redundancy options	1+1 redundancy configuration available with modules SRY-L1-DIV213 & SRY-L1-SW214					4+1 redundancy	1+1 redundancy
Dimensions	1U high x 450 mm deep x 19" wide		2U high x 450 mm deep x 19" wide				407 high x 356 deep x 254" wide
Local Control & Monitoring	Front panel LCD and keypad						Optional
Remote Control & Monitoring	Ethernet via RJ45, 10baseT/100BaseTx, ETL protocol over TCP/IP, SNMP, built in web server. Serial port. Dry contact alarm summary.						
Module Features Monitored	Includes: Temperature, RF Power, Optical Power, PSU status & Individual fans						
LNB Power	Up to 0.5A per channel, not exceeding 2.8A total		Up to 500mA per channel, 8A total				Yes Module must support LNB power
10MHz Injection	-	+9 dBm, input level (27 dBm max. level)	-	-	+15 dBm input level (27 dBm max. level)	-	With SRY-OPT16-10M
PSU Power	100-240 VAC 50/60Hz (Fused 2A, Dual IEC)		100-240 VAC 50/60Hz (Fused 4A T, Dual IEC)			100-240 VAC 50/60Hz (Dual IEC)	0-240VAC, 50/60Hz
PSU Redundancy	Dual Hot-Swap Modules, Diode OR Front Mounted						
AC Power Consumption	< 150 W all channels		<405 W all channels			<312 W all channels	< 260 W all channels
Heat Load	< 65 W, 222 BTU/hr		< 220 W, 495 BTU/hr			< 200 W, 450 BTU/hr	<145 W, 495 BTU/hr
Operating/Storage Temperature	Operating: 0 to 50˚C / Storage: -20˚C to +75˚C						See SRY-ODU-201 datasheet for details
Humidity	20 to 90% non-condensing						
Weight	TBD kg		12 kg				21 kg
Front Panel Colour	RAL9003 White semi-matte						

ETL SYSTEMS LIMITED
Coldwell Radio Station
Madley
Hereford
England HR2 9NE

TELEPHONE
+44 (0)1981 259020

EMAIL
info@etlsystems.com

FACSIMILE
+44 (0)1981 259021

WEB
www.etlsystems.com

RoHS COMPLIANT
Pb-Free
ISO 9001 QUALITY MANAGEMENT
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