

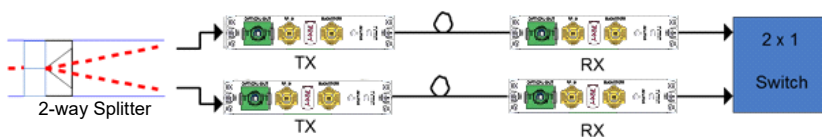


# StingRay RF over Fibre 1+1 Redundancy

The StingRay 200 Series of RF over fibre chassis are designed to give compact fibre links of up to 10 km (Link budget 4 dB). 1+1 redundancy provides additional resilience for uplink and downlink transmissions over fibre. If one fibre link is broken, the signal is automatically switched to the redundant path.

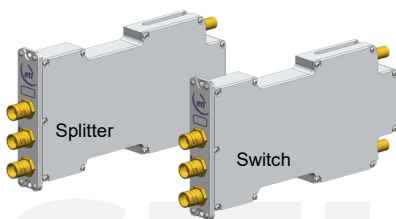
**Typical applications:**

- 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



ETL's 1+1 redundant fibre link comprises an active 2-way splitter module with a pair of Tx modules at the transmit end, and a high reliability 2x1 switch module with a pair of Rx modules at the receive end.

## 1+1 Redundant Fibre Modules



**850 - 2450 MHz** operating frequency range



**Splitter module** with unity gain & DC pass



**Switch module** triggered by RF detection at the input ports if level is outside the predefined range between -10 to -30dBm mean 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 (ODU)*





**Technical specifications and operating parameters**

**RF Parameters (Splitter and Switch Modules)**

Model Number	SRY-DIV-L1-213-xxxx	SRY-SW-L1-214-xxxx
Frequency Range	850 to 2450 MHz (Extended L-band)	
Gain	0 dB ± 1.5 dB	0 dB ± 1 dB
Flatness	850-2150MHz	± 1.0 dB
	850-2450MHz	± 1.5 dB
	Any 36MHz	± 0.25 dB
Return Loss	50 ohm SMA	18 dB typical, 12 dB minimum
	50 ohm BNC	18 dB typical, 12 dB minimum
	75 ohm BNC	16 dB typical, 12 dB minimum
	75 ohm F-type	16 dB typical, 12 dB minimum
Isolation	-	-40 dB (-10dBm tone across operational bandwidth unselected input to output)
1dB Gain Compression Point	+5 dBm minimum (output power)	+7 dBm (output power)
OIP3	-	+20 dBm
Noise Figure	12 dB maximum	12 dB
Group Delay Variation	2ns over full band, 1ns over any 36MHz	
RF Input Signal Range	-33 to -5 dBm (total power)	
Max RF Input	20 dBm total power (Damage level, NOT operational)	16 dBm total power (Damage level, NOT operational)
Switching Threshold	-	2dB to 20dB Differential (Customer Settable)
Switching Delay	-	0 to 10 Seconds (Customer Settable)
Power Consumption	<3W	<3W
MTBF	TBD hours, Module MTBF	>550,000 hours, Module MTBF
RF Connectors	BNC 50 Ω - B5 / SMA 50 Ω - S5 / BNC 75 Ω - B7 / F-type 75 Ω - F7	
Spec Issue	1V0	1v2

**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-ODU-201
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			Ethernet via optical 1000BaseLX SFP module	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	
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 6A, Dual IEC)						
PSU Redundancy	Dual Hot-Swap Modules, Diode OR						
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
Humidity	20 to 90% non-condensing						
Weight	TBD kg		12 kg			21 kg	
Front Panel Colour	RAL9003 White semi-matte						

