StingRay RF over Fibre Outdoor Unit

The StingRay RF over Fibre Outdoor unit (ODU) is a robust weatherproof (IP65 rated) enclosure which has been designed to be wall or post mounted close to the antenna. It can accommodate up to 10 Transmit or Receive 200 series StingRay Fibre modules.

The transmit modules benefit from a high and wide dynamic range with automatic link optimisation ensuring high quality transmission. Resilience is provided by a full hot-swap, modular design.

Typical applications:
- Designed to be wall or post mounted close to an antenna
- Distribution of comms traffic across site with minimal loss

(O) = Optional Item

IP65 rated Weatherproof enclosure can house up to 10 single or dual RX or TX 200 series modules

Cable Options
- RF patch coax cables (O)
- Optical patch cables (O)
- Optical pigtails (O)
- Ethernet cables (O)
- EMC cable gland (O)

Fibre management tray & patch panel for termination of the incoming fibre cable & slack cable storage (O)

RF patch panel allow incoming RF cables to be connected to the panel & then patch up to modules (O)

LNB powering 13/18V & 22KHz tone (provided on TX modules)

Local control & monitoring via local control unit push buttons & display (O)

Reliability from dual redundant hot-swap fibre modules, power supplies & CPU

Remote control & monitoring via RJ45 Ethernet port with SNMP & web browser interface. Ethernet options:
- Copper Ethernet interface
- Single optical Ethernet interface (O)
- Ethernet switch (O)

Sunshade to protect from direct sunlight / solar loading (O)

Thermostat options for operation below -20°C to -60°C & humidity detection (O)

Alarm to notify if door is left open

ETL Systems
Excelling in RF Engineering

- Outdoor Enclosure Specifications -

Physical

Capacity	Up to 10 2xx series modules of SMA, BNC or F-Type	N-Types not available on modules, may be used on ODU gland plate
RF Connector Options (As defined on the modules)	As defined in the modules	Lightning arrestors should be used where appropriate
Dimensions	407 x 356 x 254 mm	Wall mounting as standard
Weight	21 kg	Fully loaded with modules
Colour	RAL9003 White semi-matte	

Power

LNB Power	Yes, see operating temperatures.	Module must support LNB power (transmit modules only)
PSU Redundancy	Dual Redundancy	Diode OR. Front Mounted
AC Consumption	<260 W all channels occupied	Total AC input
PSU Power	100-240VAC, 50/60Hz	Lightning protection suitable for local installation conditions should be provided
Hot-Swap PSU	Yes	
Heat Load	<145W, 495 BTU/hr	

System Control

Local Control (Optional)	LCD and Keypad	Optional front panel mounted
Remote Control & Monitoring	Ethernet (RJ45) Port, 10BaseT/100BaseTx or optical, including ETL TCP/IP protocol, SNMP & Built in web server	Optional optical Ethernet connection 1310 nm, 10 km reach bidirectional over two single mode optical fibres
Module Features Monitored	Temperature, RF power & optical power	Locally or remotely

Environmental

Operating temperature	-20 to +55˚C 10 feeds no LNB power	-40 and –60˚C operation optional
	-20 to +55˚C 8 feeds with LNB power	LNB power less than 250 mA
	-20 to +50˚C 12 feeds with LNB power	LNB power less than 250 mA
	-20 to +45˚C 20 feeds with LNB power	LNB power less than 250 mA
Location	Outdoor or indoor use	
Storage temperature	-40 to +80˚C	
Humidity	Internally 20-90% RH, non-condensing	Internal humidity sensor
Altitude	10,000 ft / 3,000 m AMSL	

- Fibre Module Options -

Module Model # for chassis above	Type	Capacity	Frequency	LNB Powering	-20dB Monitor Port
SRY-TX-L1-201	Transmit	Single	850-2450 MHz (L-Band)	✓	✓
SRY-RX-L1-202	Receive	Single	850-2450 MHz (L-Band)	✗	✓
SRY-TX-L1-205	Transmit	Dual	850-2450 MHz (L-Band)	✓	✗
SRY-RX-L1-206	Receive	Dual	850-2450 MHz (L-Band)	✗	✗
SRY-TX-B2-207	Transmit	Dual	50-2450 MHz (Broadband)	✓	✗
SRY-RX-B2-208	Receive	Dual	50-2450 MHz (Broadband)	✗	✗
SRY-TX-Y-211	Transmit	Single	10 MHz	✗	✓
SRY-RX-Y-212	Receive	Single	10 MHz	✗	✓
SRY-DIV-L1-213	Splitter	2-way	850-2450 MHz (L-Band)	For 1+1 redundancy system	
SRY-SW-L1-214	Switch	2x1	850-2450 MHz (L-Band)	For 1+1 redundancy system	
SRY-TX-F2-215	Transmit	Single	50-200 MHz (IF)	✓	✓
SRY-RX-F2-216	Receive	Single	50-200 MHz (IF)	✗	✓

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.
Note 3: Any combination StingRay 2xx RX, TX or redundancy modules may be fitted, subject to environmental conditions above.

RoHS COMPLIANT **Pb Pb-Free** **IMS INTERNATIONAL ISO 9001 certified** **UKAS QUALITY MANAGEMENT 078**

V 1.6 E&OE

ETL Systems — Excelling in RF Engineering

Model Number / Description		ODU201	ODU203	ODU205	ODU206	ODU209
ODU basic features & functionality						
Internal chassis capacity 10 x 200 series modules (Single or dual modules)		✓		✓	✓	✓
Mounting plate capacity 4 x 400 series component modules			✓			
IP65 rated enclosure		✓	✓	✓	✓	✓
1+1 redundancy configuration option		✓	✓	✓	✓	✓
Dual redundant hot swap power supplies		✓		✓	✓	✓
Dual redundant field serviceable power supplies (not hot swap)			✓			
Controller CPU card		✓		✓	✓	✓
RJ45 Ethernet port for remote communications (copper Ethernet interface as standard)		✓		✓	✓	✓
13/18V 22 kHz LNB powering 500mA		✓	✓	✓	✓	
Hot swap fibre modules		✓	✓	✓	✓	✓
Hot swap fan tray		✓		✓	✓	✓
Operating temperature range -20°C to +45°C , 12 feeds with LNB power (higher to +55°C with limited modules)		✓	✓			
Operating temperature range -20°C to +55°C , 10 feeds with LNB power					✓	
Operating temperature range –40°C to +65°C				✓		
Standard cable glands and hole configuration		✓	✓	✓	✓	✓
Status LEDs on gland plate		✓		✓	✓	✓
ODU Additional Options						
Control						
SRY-OPT4-LCU	Local control panel with keypad / display	○	○	○	○	○
SRY-OPT3-OPE-xx	Optical Ethernet converter for remote communications over fibre 10 km	○	○	○	○	○
SRY-OPT10-EC1	Ethernet Copper Interface provides additional surge protection	○	○	○	○	○
SRY-OPT23-CPU	ODU203 CPU card upgrade		○			
Fixing / Mounting / Locks						
SRY-OPT6-BR1	Bolts and spacers for wall mount	○	○	○	○	○
SRY-OPT7-BR2	Pole mounting bracket	○	○	○		
SRY-OPT26-BR2	Pole mounting bracket				○	○
SRY-OPT9-DRL	Key operated door lock, replaces screwdriver operated door lock	○	○			
Environmental						
SRY-OPT1-40C	Thermostat controlled heater for -20°C to -40°C	○	○	○	○	○
SRY-OPT2-60C	Thermostat controlled heater for -20°C to -60°C	○	○	○	○	○
SRY-OPT8-SUN	Sun shade to protect from solar loading / direct sun light	○	○	○		
SRY-OPT127-SUN	Sun shade to protect from solar loading / direct sun light				○	○
Patch Panels / Cables						
SRY-OPT11-TRY-xx	Fibre management tray and optical patch panel (excluding patch leads)	○		○	○	○
SRY-OPT5-PPN-xxxx	F-Type RF patch panel to facilitate easy cabling (excluding patch leads)	○		○	○	○
SRY-OPT12-CCB-xxxx	Coaxial patch lead (to connect RF ports of the fibre modules to the patch panel)	○		○	○	○
SRY-OPT13-FPC-xx	Fibre patch cable (to connect optical ports of the fibre modules to the fibre patch panel)	○		○	○	○
SRY-FPT-xx-1M	1 metre fibre pig tail with FC/APC (or SC/APC) connector to splice onto unconnectorised fibre	○	○	○	○	○
SRY-OPT14-GP1	Fit Roxtec CF 16 EMC Cable gland for up to 28 cables	○		○	○	○
SRY-OPT15-GP2	Custom gland plate to customer design (excluding glands and connectors)	○		○	○	○
Other						
SRY-OPT16-10M	Internal 10 MHz passive splitter for 10 MHz distribution to modules	○		○	○	○

○ = Option   V 1.6 E&OE