ETL Systems
New technologies in RF distribution

StingRay RF over Fibre Outdoor Unit
For operation in higher temperatures

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

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

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

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

Allows heat loss from larger housing, for operation from –20°C to +55°C & humidity detection

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

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

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

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)

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

(O) = Optional Item

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 in the modules	Lightning arrestors should be used where appropriate
Dimensions	610 x 508 x 254 mm	Wall mounting as standard
Weight	60 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 Hot Swap modules	Diode OR. Front Mounted
AC Consumption	<400 W all channels occupied	Total AC input. Fitted with dual RF over Fibre modules.
PSU Power	100-240VAC, 50/60Hz	Lightning protection suitable for local installation conditions should be provided
Heat Load	<145W, 495 BTU/hr	

System Control

Local Control (Optional)	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	Refer to module spec for monitored features

Environmental

Operating temperature (see note 5,6&7)	-20 to +44°C 20 feeds 500mA LNB power, Dual Tx	-40 and -60 operation optional
	-20 to +55°C 10 feeds with 500mA LNB power, single TX	LNB power less than 500 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 (above mean sea level)	

Note-1: Typical parameters are guide figures and measured data may deviate from the quoted figures. ETL endeavours to exceed the quoted typical parameters where practically possible.
Note-2: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage. For reliable long term operation do not exceed the parameters given in above.
Note-3: The spec table 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-4: Any combination StingRay 2xx RX, TX or redundancy modules may be fitted, subject to environmental conditions above.
Note-5: The unit should be mounted in free air. When wall mounted a gap of at least 50 mm should be provided between the unit and the wall.
Note-6: The unit should be mounted out of all direct sunlight and away from hot surfaces.
Note-7: Dual transmit modules show an additional 5°C rise in internal temperature over single modules and for this reason the maximum operating temperature of the ODU should be reduced by 5°C if dual transmit modules are used. This reduction has been included in the figures for 12 and 20 feeds as these can only be reached using dual modules.

Please see individual datasheets for 200 series RF over Fibre module options & RF specifications.

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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