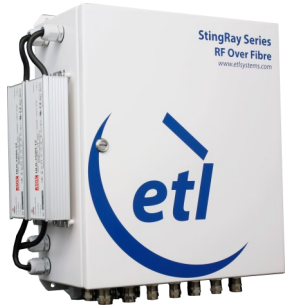# StingRay RF over Fibre Outdoor Unit

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 4 Transmit or Receive 400 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

**Remote control & monitoring**

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

**IP65 rated Weatherproof enclosure** can house up to 4 single RX or TX 400 series modules

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

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

**Reliability** from dual redundant field serviceable power supplies

**Local control & monitoring** Dip switches located under access panel

### - Outdoor Enclosure Specifications -

| Physical | |
|---|---|
| Capacity | Up to 4 4xx series modules |
| RF Connector Options (As defined on the modules) | BNC / SMA / F-type |
| Impedance Options (As defined on the modules) | 50Ω / 75Ω |
| Dimensions | 407 x 154 x 254 mm |
| Weight | TBD |
| Colour | White RAL9003 semi-matte |

| Power | | |
|---|---|---|
| LNB Power | Yes, Module must support LNB power | |
| AC Power | 100-240Vac 50/60Hz | Lightning protection suitable for local installation conditions should be provided |
| AC Consumption | <120 W all channels occupied | Total AC input |
| Heat Load | <60 W, 205 BTU/hr | |
| PSU | Dual Redundant | Diode OR |
| Field Serviceable PSUs | Yes | |

| System Control | | |
|---|---|---|
| Local Control | Local settings selectable via DIP switches in the modules | |
| Remote Control & Monitoring | Ethernet (RJ45) Port, 10BaseT/100BaseTx or optical, including ETL TCP/IP protocol, SNMP & Web Browser Interface | Optical Ethernet connection 1310 nm, 10 km reach bidirectional over two single mode optical fibres |
| Monitoring | Temperature, RF power & optical power | Remotely |

| Environmental | | |
|---|---|---|
| Operating temperature | -20 to +55 4 feeds with no LNB power | |
| | -20 to +50 8 feeds with LNB power | |
| Location | Outdoor or indoor use | |
| Storage temperature | -40 to +80°C | |
| Humidity | Internally 20-90% RH, non-condensing | Internal humidity sensor (option) |
| 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-L1-401 | Transmit | Single | 850-2450 MHz (L-Band) | ✓ | ✓ |
| SRY-RX-L1-402 | Receive | Single | 850-2450 MHz (L-Band) | ✗ | ✓ |
| SRY-TX-B2-403 | Transmit | Single | 50-2450 MHz (Broadband) | ✓ | ✓ |
| SRY-RX-B2-404 | Receive | Single | 50-2450 MHz (Broadband) | ✗ | ✓ |

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.

V 1.0.2 E&OE

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○  = Option

| Model Number / Description | | ODU201 | ODU203 | ODU204 | ODU205 | ODU206 |
|---|---|:---:|:---:|:---:|:---:|:---:|
| **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 | | ✓ | ✓ | | ✓ | ✓ |
| 4+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 | | ✓ | ✓ | | ✓ | ✓ |
| 12V LNB powering | | | | ✓ | | |
| 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 | ○ | | ○ | ○ | ○ |