ETL Systems

*Excelling in RF Engineering*

Model Number SRY-ODU201

*StingRay RF over Fibre Outdoor Unit*

# 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

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

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

**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

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## - 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 Hot Swap modules | 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 |
| 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 | Refer to module spec for monitored features |

| Environmental | | |
|---|---|---|
| Operating temperature (see note 5,6&7) | -20 to +55˚C 10 feeds no LNB power, single TX | -40 and –60˚C operation optional |
| | -20 to +55˚C 8 feeds with LNB power, single TX | LNB power less than 250 mA |
| | -20 to +45˚C 12 feeds with LNB power, single TX | LNB power less than 250 mA |
| | -20 to +40˚C 20 feeds with LNB power, dual TX | 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 (above mean sea level) | |

## - 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.
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.

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# StingRay ODU Options Overview

| Model Number / Description | | ODU201 | ODU203 | ODU204 |
|---|---|---|---|---|
| **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 | | ✓ | ✓ | ✓ |
| Hot swap fibre modules | | ✓ | ✓ | ✓ |
| Hot swap fan tray | | ✓ | | ✓ |
| Operating temperature range -20°C to +45°C (higher to +55°C with limited modules) | | ✓ | ✓ | ✓ |
| 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-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 | ○ | ○ | ○ |
| **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

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