



ETL Systems

New technologies
in RF distribution

Model Number:

SRY-TX-C6-299

SRY-RX-C6-300

StingRay RF Over Fibre Optical Fibre to C-Band Manual Gain Control Modules

Typical applications:

- Teleports & Earth Stations
- Satellite Operations
- Government & Defence applications
- Telemetry, Tracking & Command
- High Resilience applications

The SRY-RX-C6-300 and SRY-TX-C6-299 are manual gain control optical transmitters and receivers for RF over Fibre, built in a compact EMC sealed housing which converts C-band (3400 to 6725MHz) to 1310nm for transmission over a single mode fibre. It uses a 2-stage optically isolated DFB laser and is suited for transmission up to 10km.

Other options in the StingRay series: The StingRay range is also available with additional features such as RF monitoring ports, high linearity, switchable LNB powering & redundancy systems.

Fibre Modules



Manual gain control
Up to 60dB total



-20dB Monitor port to
measure input signal levels



TX & RX module options to
transmit and receive signals up
to 10 km



Flexibility modules can be
housed in outdoor & indoor
chassis

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



Local control & monitoring via front panel
push buttons & display



*Indoor chassis showing hot-
swap power supply modules,
fibre modules and fans*



Outdoor Unit (ODU)





StingRay TX & RX Module - RF Parameters		
Model Number	SRY-TX-C6-299	SRY-RX-C6-300
Frequency Range	3400 to 6725 MHz	
Flatness (dB)	3400 to 4200 MHz	±1.5 dB, Full TX &RX link with 10km fibre link. Input -10 dBm, output -10 dBm.
	5725 to 6725 MHz	±2.0 dB, Full TX &RX link with 10km fibre link. Input -10 dBm, output -10 dBm.
	3400 to 6725 MHz	±3.0 dB, Full TX &RX link with 10km fibre link. Input -10 dBm, output -10 dBm.
	any 36MHz	±0.30 dB, Full TX &RX link with 10km fibre link. Input -10 dBm, output -10 dBm.
Return Loss (dB)	14 dB typ., 10 dB min	
Monitor Port	-20 dB ±5 dB	
OIP3	Typical 15 dBm, Worst Case 12 dBm Test condition: 1m fibre, 10dB gain, -22 dBm tone levels, Test tones at 4200/4202MHz	
CNR (in any 36 MHz)	Typical -45 dB, Worst Case -40 dB Test condition: 1m fibre, -10 dBm RF i/p power, -10 dBm RF o/p total power.	
Noise Figure (See note 4)	Typical 11 dB, Worst Case 14 dB Test condition: 1m fibre, -50 dBm RF i/p power, -10 dBm o/p power.	
Group Delay Variation	2ns over full band. 1ns over any 36MHz.	3ns over full band. 1.5ns over any 36MHz.
SFDR	100 dB/Hz ^{2/3} typ., 95 dB/Hz ^{2/3} min Test condition: 1m fibre, 10dB gain, -22 dBm tone levels	
Max RF Input	+16 dBm total power	-
Gain Setting Modes	Manual Gain Control (MGC), 60dB gain control range	
RF Signal Range	Input: -60 dBm to -10 dBm (total power) operational i/p range	Output: -50 dBm to -10 dBm (total power) o/p range available under all i/p conditions
Optical Wavelength	1310 ± 10nm	1100 to 1650nm. Optimised for 1310nm and 1550 nm
Optical Power	Output: 4.5 ± 2.5 dBm	Input: 0 to 4.5 dBm
Optical Connectors	FC/APC, SC/APC Single mode fibre. Use angle polish connectors only	
Power Consumption	5W Typical	4W Typical
Module Swap	Hot swap	
Control	Local and Remote	
Location	Indoor Use	
Operating Temperature	-20°C to +60°C	
Storage Temperature	-40°C to +90°C	
Humidity	20 to 90% non-condensing	
Altitude	10,000 ft AMSL operational 30,000 ft AMSL storage/transport	
Mass	0.35kg typical	
Size	87.8 x 18 x 150 mm	87.8 x 18 x 205 mm
Spec Version	0.3	0.3

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: Unless otherwise specified, all RF measurements are given with T299 RF input to the laser 'RF Out Pwr' set to 0dBm. Higher level here will give better P1dB at the expense of Noise.

Note 4: Noise Figure will degrade as RF input level to the TX module increases.