ETL Systems
New technologies
in RF distribution

Model Number:
SRY-TxxL1-257-XXXXXX
SRY-RX-L1-242-XXXXXX

StingRay RF over Fibre

DWDM (Dense Wavelength Division Multiplexing), 40 wavelengths, up to 500 km distance, 200 series **extended L-band module** & 13/18V LNB powering (on TX module)

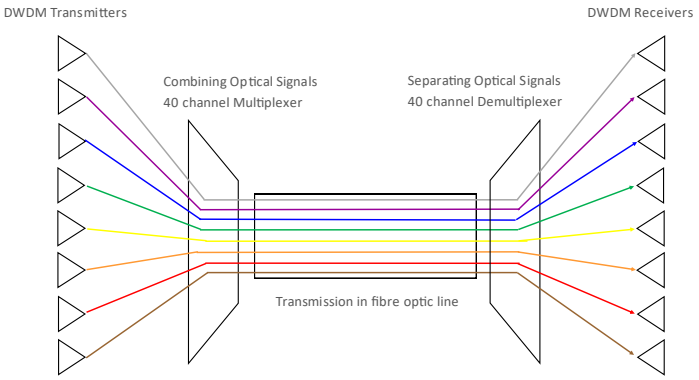
Typical applications:

- Ku-band and Ka-band ready for HTS applications
- Long distance distribution of comms traffic across site with minimal loss - up to 500 km distances
- General satcoms– teleports, video head-ends, TVRO
- Compact solution for small quantity links such as tactical HQ

The StingRay DWDM 200 Series of L-band RF over fibre units are designed to provide compact fibre links, with forty wavelengths on a single fibre cable, and transmission distance of up to 500 km with optical amplifiers. The transmit modules benefit from a high and wide dynamic range with automatic link optimisation ensuring high quality L-band transmission.

The StingRay DWDM system comprises of transmit modules and a multiplexer module to combine up to 40 wavelengths on to a single fibre cable at the transmit end . A demultiplexer module and receive modules are then used at the receive end to split the separate wavelengths.

For more wavelengths and longer distances, please contact us.



Fibre Modules

850 - 2450 MHz operating frequency range

Up to 40 wavelengths on a single fibre cable

Up to 500 km transmission distance with transmit, receive and optical amplifier module options

LNB Powering 13/18V on TX modules only

High isolation between modules for signal quality

Chassis Options

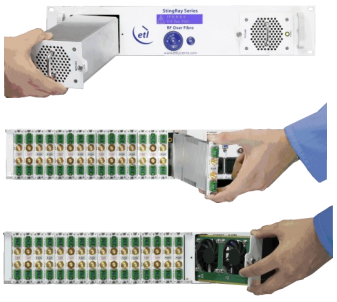
Compact indoor & outdoor chassis options, which can be part populated

Remote control & monitoring via RJ45 Ethernet port with TCP/IP, SNMP & web browser interface

Local control & monitoring via front panel push buttons & display

Resilience from dual redundant hot-swap power supplies, hot-swap fibre modules & fans

10MHz Inject from an external source chassis option



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

Outdoor Unit (ODU)

V 2.1 E&OE

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RF Parameters (TX & RX Modules)			
Model Number		SRY-Txx-L1-257 DWDM L-band Transmit Fibre Module	SRY-RX-L1-242 DWDM L-band Receive Fibre Module
Frequency Range		850 to 2450 MHz (Extended L-band)	
Flatness	850-2150MHz	± 1.0 dB	± 1.0 dB
	850-2450MHz	± 1.8 dB	± 1.8 dB
	Any 36MHz	± 0.25 dB (Full TX&RX link with 1m fibre link using SRY-RX-L1-242. Fixed gain mode)	± 0.25 dB (Full TX&RX link with 1m fibre link using SRY-TxxL1-257. Fixed gain mode)
Output AGC Flatness		-	± 2.5 dB over full band / Input -10 to -40 dBm
Return Loss (typical & minimum)		18 dB typ. 12dB min. 50Ω SMA (All RF Connectors are Female)	18 dB typ. 12 dB min. 50Ω SMA 18 dB typ. 12 dB min. 50Ω BNC 16 dB typ. 12 dB min. 75Ω BNC 16 dB typ. 12 dB min. 75Ω F-Type (All RF Connectors are female. All RF Ports are DC blocked)
Monitor Port		-20 dB ± 3 dB Mounted on module	
OIP3		17 dBm typical, 14 dBm minimum	17 dBm typical, 14 dBm minimum
		(**Test condition:** SRY-RX-L1-242, 1m fibre, 10 dB gain, -22 dBm tones at 2150 & 2152 MHz)	(**Test condition:** SRY-TxxL1-257, 1m fibre, 10 dB gain, -22 dBm tones at 2150 & 2152 MHz)
CNR (in any 36 MHz)		50 dB typical, 45 dB minimum	50 dB typical, 45 dB minimum
		(**Test condition:** SRY-RX-L1-242, 1m fibre, -10 dBm RF i/p power, -10 dBm RF o/p power)	(**Test condition:** SRY-TxxL1-257, 1m fibre, -10 dBm RF i/p power, -10 dBm RF o/p total power)
Noise Figure		12dB Typical, 15dB maximum	12dB Typical, 15dB maximum
		(**Test condition:** SRY-RX-L1-242, 1m fibre, -50 dBm RF i/p power, -10 dBm RF o/p power)	(**Test condition:** SRY-TxxL1-257, 1m fibre, -50 dBm RF i/p power, -10 dBm o/p power)
Group Delay Variation		2ns over Full band, 1ns over any 36MHz	
SFDR		112 dB/Hz$^{2/3}$ typical , 108 dB/Hz$^{2/3}$ minimum	112 dB/Hz$^{2/3}$ typical , 108 dB/Hz$^{2/3}$ minimum
		(**Test condition:** SRY-RX-L1-242, 1m fibre, 10 dB gain, -22 dBm tones at 2150 and 2152 MHz)	(**Test condition:** SRY-TxxL1-257, 1m fibre, 10 dB gain, -22 dBm tones at 2150 and 2152 MHz)
RF Signal Range		Input: -50 to -10 dBm (total power) Operational i/p range	Output: -30 to -15 dBm (total power) o/p range for all i/p at 14 dB optical loss Output: -30 to -10 dBm (total power) o/p range for optical loss <11 dB
Max RF Input		16 dBm total power (Damage level, NOT operational)	-
Laser Type		DFB Optical isolator for improved performance	-
Optical Wavelength		DWDM C-band see centre wavelengths table	1100 to 1650 nm
Optical Power		Output: 8 ± 1 dBm	Input: -8 to +4.5 dBm (Max. 10 dBm)
Power Consumption		20W typical	4W typical
LNB Power		18/13V ±5%, 500 mA max (short circuit current 750 mA max)	-
MTBF		TBC	> 250,000 hours
Connector Options		RF connectors: SMA 50Ω - S5 Optical Connectors: FC/APC or SC/APC (Single Mode Fibre. Angle Polish Connectors Only)	RF connectors: SMA 50Ω - S5 or BNC 50Ω - B5 / F-Type 75Ω - F7 / BNC 75Ω - B7 Optical Connectors: FA - FC/APC or SA - SC/APC (Single Mode Fibre. Angle Polish Connectors Only)
Spec Version		V1.2	V1.6
Environmental Conditions			
Operating Temperature		-20°C to 50°C	-20°C to 60°C
Storage Temperature		-40°C to 85°C	-40°C to 90°C
Humidity		20 to 90 %, non-condensing	
Location		Indoor use only. Outdoor use part of ETL ODU only.	

Centre Wavelengths SRY-Txx-L1-257		
ITU Channel	Wavelength / nm	Frequency / THz
C60	1529.55	196.00
C59	1530.33	195.90
C58	1531.12	195.80
C57	1531.90	195.70
C56	1532.68	195.60
C55	1533.47	195.50
C54	1534.25	195.40
C53	1535.04	195.30
C52	1535.82	195.20
C51	1536.61	195.10
C50	1537.40	195.00
C49	1538.19	194.90
C48	1538.98	194.80
C47	1539.77	194.70
C46	1540.56	194.60
C45	1541.35	194.50
C44	1542.14	194.40
C43	1542.94	194.30
C42	1543.73	194.20
C41	1544.53	194.10
C40	1545.32	194.00
C39	1546.12	193.90
C38	1546.92	193.80
C37	1547.72	193.70
C36	1548.51	193.60
C35	1549.32	193.50
C34	1550.12	193.40
C33	1550.92	193.30
C32	1551.72	193.20
C31	1552.52	193.10
C30	1553.33	193.00
C29	1554.13	192.90
C28	1554.94	192.80
C27	1555.75	192.70
C26	1556.55	192.60
C25	1557.36	192.50
C24	1558.17	192.40
C23	1558.98	192.30
C22	1559.79	192.20
C21	1560.61	192.10
C20	1561.42	192.00

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.

Please see separate datasheet for 200 series chassis options

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