



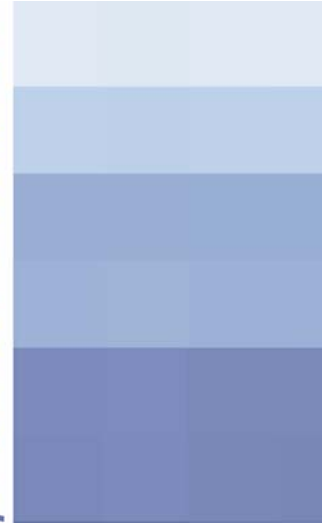
Fibre Optic to L-band Inter Facility Links

ETL's cost effective fibre optic to L-band and L-band to fibre optic Inter Facility Links (IFLs) are housed in a 1U chassis, which can incorporate up to 4 receive (Rx) or transmit (Tx) modules. The system transmits and receives an entire L-band polarisation over single mode fibre from a satellite antenna to reception equipment up to 2km away, while preserving signal quality. All satellite modulations, digital or analogue, are accommodated.

Fibre provides the dual benefits of noise protection and reduced signal attenuation for L-band transmission, particularly over longer distances. At over 100m, most facilities will switch from coaxial cable. The IFL brings this break-even distance down by offering a low cost, market leading quality solution.

The 1U shelf can accommodate single, dual, triple or quad modules which can be either Rx or Tx or a combination of both. All models benefit from integrated dual redundant power supplies with alarms, status indicators, manual and auto gain adjustment.

product overview



Key features

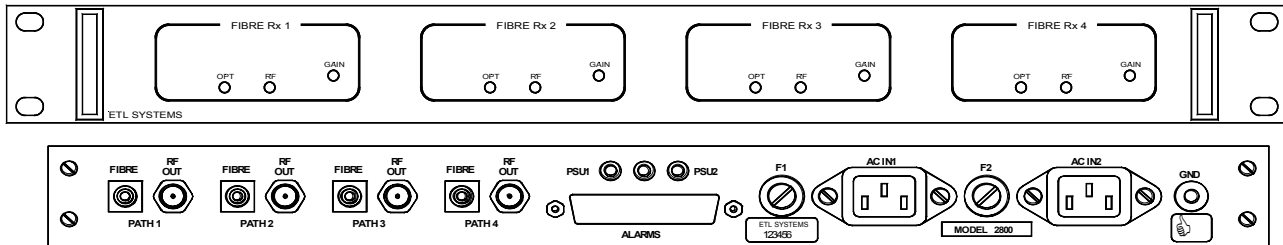
- Compact design, up to 4 receive or transmit modules in 1U chassis
- Broadband transmission, 950 to 2150 MHz (optional 2500 MHz) up to 2km range
- Gain Control, indicators, alarms & monitors
- Dual Redundant, hot swappable PSUs
- Simple protocol for M & C integration



Model 2800 series

satellite systems

Inter Facility Links – technical summary



RF Parameters	
Frequency	950 to 2150 MHz
Flatness	± 1.5 dB full band; ± 0.25 dB @ 36MHz
VSWR into 75Ω	1:1.6
Intermodulation Products (Σ)	-40 dBc
CNR (min) (Ξ)	40 dB @ 36 MHz / 2km
Max Input Signal	-20 dBm total power
Max. Input Signal (no damage)	+5dBm
Max Output Signal	-20 dBm total power
Gain Stability (Φ)	± 0.25 dB @ 24 hrs
Link Gain (Ψ)	20 dB max
Output IP3	0 dBm
SFDR (Ξ)	99 dB Hz 2/3 @ -20dBm (typ)
Noise Figure (at 1 dB) (ρ)	25 dB

Notes: Σ – adjustable; Φ – after 1 hour & within operating range; Ξ – max input power; Ψ – within the operating range; ρ – @ max input, unity gain and 1dB optical loss

Optical Characteristics	
Optical Wavelength	1310 ± 10 nm
Optical Power Output	-3 dBm
Optical Connector	FC/APC
Optical Budget (σ)	3 dB (2 km)

Notes: σ – 1310: 0.4 dB/km



satellite systems

Inter Facility Links – technical summary (cont'd)

Model Numbering Table

Number of Modules	Receive (Rx) : (s)	Transmit (Tx): (s) (n)	Description
Quad	2800	2801	2 km range , L-band, 1U shelf, fixed gain
Triple	2802	2803	2 km range , L-band, 1U shelf, fixed gain
Dual	2804	2805	2 km range , L-band, 1U shelf, fixed gain
Single	2806	2807	2 km range , L-band, 1U shelf, fixed gain

Notes: ζ - We are also able to offer HYBRID units with Receive and Transmit modules in the same housing, in any combination up to 4 modules. Please tell us your specific requirements.;

Π – We also offer LNB powering on Transmit units – please suffix the above model number with “-L” if you require this.

All units are fully tested after assembly to ensure that you get a fully reliable proven fibre optic link.

The units can be used in conjunction with ETL’s L-band redundancy switches, and fibre optic switch matrix to give the ultimate security and flexibility. Outdoor units are also available in a modified format. The shelves can also be supplied incorporating higher performance fibre optic modules to allow for increased range, adjustable gain, RF test points, increased dynamic range and so on. We also offer 70/140 MHz IF and C-band to fibre links.



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ETL Systems develop, design and manufacture specialist equipment for satellite ground stations. For a fuller description of the ETL product range, please see our website on www.etlsystems.com. This range can be used as the basis to meet your specific demands.

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