



OLT2600

950~2600MHz

L-Band Satellite

Direct Modulated Optical Transmitter

Technical Specifications
and Operating Manual

CONTENTS

1.0	PRODUCT DESCRIPTION.....	2
2.0	PRODUCT FEATURES.....	2
3.0	TECHNICAL SPECIFICATIONS.....	3
4.0	OLT2600 ELECTRICAL SCHEMATIC DIAGRAM	4
5.0	LINK PERFORMANCE.....	4
6.0	OLT2600R OPERATION - REAR PANEL	4

1.0 PRODUCT DESCRIPTION

The QFRF OLT2600 satellite L-Band optical transmitter uses a direct-modulated, highly linear, non-cooled 3 GHz DFB laser diode to transmit 950~2600MHz L-Band signals from a receiving satellite dish to the headend or remote receivers. By utilizing singlemode optical fibers, the link is very transparent, with excellent CNR and distortion performance.

The standard optical operating wavelength of the OLT2600 is 1310nm, but CWDM, or 1550nm, including ITU standard wavelengths, can be selected, making it suitable for DWDM use where fiber is limited. At 1550nm wavelengths, the OLT2600 can be used with an EDFA or YEDFA to amplify the optical power for greater distances or large-area FTTH coverage. The OLT2600 is compatible with any FTTx PON technology, for Cable TV Triple-play (both analog and digital TV), Satellite TV (DVS-S), or highspeed data services.

The OLT2600 is available in multiple configurations, with 1mw DFB, 1310nm, and SC/APC connectors standard:

OLT2600R-SA: 1RU 19" Standard enclosure, 18 VDC wall adapter included
 OLT2600R/AC-SA: 1RU 19" Standard enclosure, 120 VAC Power
 OLT2600D/AC-SA: 1RU 19" Enclosure, Dual Transmitters, 120 VAC Power
 OLT2600-SA: 2.5" X 4" Desktop Case, 12 VDC wall adapter included

2.0 PRODUCT FEATURES

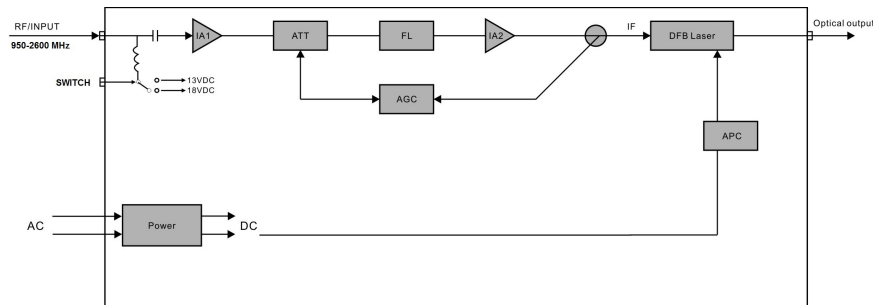
- 950~2600MHz operational bandwidth, transmitting all satellite L-Band analog and digital signals, including frequency stacking applications..
- Wide selection of optical wavelengths: 1310nm (standard), 1550nm, CWDM, and 1550nm ITU Grid.
- Laser type: highly linear, 3 GHz optically isolated DFB laser
- Built-in wideband AGC amplifier.
- Automatic Power Control (APC) circuitry to maintain constant output power as laser ages.
- Can supply 12VDC or 18 VDC to LNB to accommodate DirectTV Polarity switching .

- When used along with the QFRF OS5000 Optical Switch, a self-healing ring architecture can be implemented.
- Use of singlemode fiber resists electromagnetic or radio frequency interference, and is immune from lightning damage.

3.0 TECHNICAL SPECIFICATIONS

Performance			Index			Supplement
			Min.	Typ.	Max.	
Performance	Operating wavelength	(nm)	Non-cooled, isolated DFB			
			1300	1310	1320	
			1530	1550	1563	
				ITU-G		
		1270	CWDM	1610		
	Wavelength adjustable range	(nm)	-1.6		+1.6	
	Wavelength adjustable mode		In steps $\pm 0.01\text{nm}$			
	Wavelength stability	(Pm/ $^{\circ}\text{C}$)	-1		0	TC=20~70 $^{\circ}\text{C}$
	Equivalent noise temperature	(dB/Hz)			-155	
	Side mode suppression ratio	(dB)	35			
	Optical isolation	(dB)	30			
	Extinction ratio	(dB)	8.2			
	SBS	(dBm)	16			1310nm
			18			1550nm
Optical output power	(mW)	1		2		
Return loss	(dB)	50				
Optical connector		SC/APC & FC/APC				
RF feature	RF bandwidth	(MHz)	950		2600	
	Input range	(dBm)	-40		-14	
	Flatness	(dB)	-1.0		+1.0	950~2400MHz
	Return loss	(dB)	12			950~2400MHz
	Channel loading	(CH)		36		QPSK or FM
	IM3	(dB)	-65			
	HUM	(dB)	-60			
	IP1	(dBm)	18			
	Input impedance	(Ω)		75		F-type connector
Power supply	AC	(V)	95	120	130	
	DC			12		
Power consumption	(W)			5	Single PS	
Operating temp	C	-5		-65		
Storage temp	C	-40		+85		
Operating humidity		5		95		
	INCHES	19" 1RU RACK			OLT2600R	
		2.5" X 4.0" BOX			OLT2600	

4.0 OLT2600 ELECTRICAL SCHEMATIC DIAGRAM



5.0 LINK PERFORMANCE

Optical input (dB)	Link loss (dB)	CNR (dB)	Link gain (dB)	RF output level (dBm/Ch.)
-13	14	30.18	-2	-38
-12	13	32.18	0	-36
-11	12	34.13	2	-34
-10	11	38.59	6	-32
-8	9	40.11	8	-30
-7	8	42.18	10	-28
-6	7	44.24	12	-26
-5	6	45.67	14	-24
-4	5	46.53	16	-22
-3	4	46.76	18	-20
-2	3	46.92	20	-18
-1	2	47.01	22	-16
0	1	47.03	24	-14

Typical input level to a digital satellite receiver is -60dBm ~ -30dBm

Link Performance based on TX Output=1dBm, used with OLR2600 Receiver

6.0 OLT2600R OPERATION - REAR PANEL

1. "SIGNAL" LED - On the OLT2600 transmitter, this LED has no function. Please ignore.

2. LNB Power Selection Switch: QFRF uses a locking-style toggle switch for LNB voltage selection. This prevents inadvertent changing of the LNB power. Simply **PULL OUT** on the switch **TO UNLOCK** it, and **RELEASE TO LOCK**.

1. **12 VDC** - Use this position to provide regulated 12 volts DC to the LNB. This is most useful when selecting the ODD polarity of DirectTV feeds, but could also be used to reduce power consumption and heat of most other LNB's.

2. **OFF** - This position sends no power to the LNB. Use this position when using an external matrix switch or power inserter for LNB powering.

3. **18 VDC** - This is the normal position for powering most LNB's. This position also manually selects the EVEN DirectTV polarity.