ETL Systems

Excelling in RF Engineering

Model Number:
ALT-S-L1-002 module
ALT-C200-1U / ALT-C201-2U / ALT-C202-2U / ALT-C204-2U chassis

Alto series L-band Amplifier with local & remote control & monitoring, 30 dB variable gain & 0-8 dB variable slope

The Alto series of amplifiers provide excellent RF performance with a wide range of functionality, in a compact chassis. The are designed with hot swap amplifier modules to enhance resilience and flexibility.

Other options in the Alto range: The Alto amplifier range is also available with additional features such as LNB powering, 10MHz and DC pass, Auto Gain Control and Redundancy configurations up to 4+2.

Typical applications:

- Compensation for passive splitters/combiners and cable loss
- General satcoms – teleports, video head-ends, TVRO

Amplifier Module

L-band (850 - 2150MHz) operating frequency range

Variable gain & slope compensation to balance input signals

Chassis Options

Compact chassis options, which can house 4 to16 amplifier modules

Resilience from options with dual redundant hot-swap power supplies, hot-swap amplifier modules

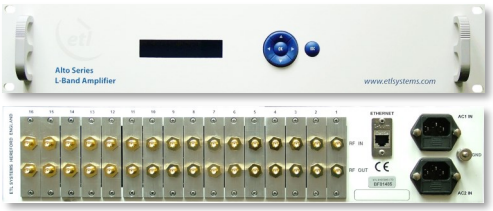
Remote control & monitoring via RJ45 Ethernet port with SNMP & web browser interface & option with RS232 serial port

Local control & monitoring via front panel push buttons & display

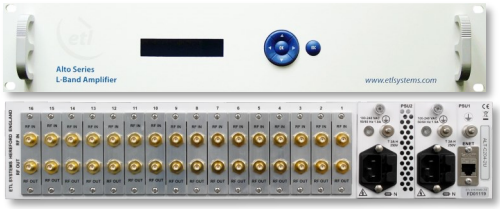
Model ALT-C200-1U

Model ALT-C202-2U

Model ALT-C201-2U



Model ALT-C204-2U



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Amplifier Module - RF Parameters						
Amp Module Model Number		ALT-S-L1-002				
Frequency Range		850-2150 MHz (L-band)				
RF Connectors & impedance		50Ω SMA	50Ω N-type	50Ω BNC	75Ω BNC	75Ω F-type
Flatness	850-2150MHz	±0.75 dB	±0.75 dB	±0.85 dB	±0.85 dB	±1 dB
	Any 36MHz	±0.25 dB	±0.25 dB	±0.25 dB	±0.25 dB	±0.35 dB
Input Return Loss	Typical	18 dB	18 dB	18 dB	14 dB	14 dB
	Minimum	15 dB	15 dB	14 dB	10 dB	8 dB
Output Return Loss	Typical	18 dB	18 dB	18 dB	14 dB	14 dB
	Minimum	15 dB	15 dB	14 dB	10 dB	8 dB
Gain	Maximum	38 ± 1.5 dB	38 ± 1.5 dB	38 ± 1.5 dB	38 ± 1.5 dB	38 ± 2 dB
Gain Control Range		30dB (Nominal 38dB to 8dB gain range)				
Gain Steps		0.5 ± 0.1 dB typical				
1 dB Gain Compression		15 dBm				
Slope Range		Range: 0 to 8 dB / Settings: 1 ± 0.5 dB mean slope				
OIP3		> 25 dBm 3rd order intercept point, output power				
OIP2		40 dBm 2nd order intercept point, output power				
Isolation		> 60 dB With amplifiers set at the same gain level. Worst case isolation is between adjacent amps, isolation degrades dB - to - dB for different gain levels				
Reverse Gain		< - 40 dB typical				
Noise Figure		9 dB				
In band, signal related spurii		< - 85 dBc typical, -70 dBc minimum				
In band, signal independent spurii		- 85 dBm max Very low level spurii from CPU clock, switch mode PSU and other control electronics inside the chassis.				
MTBF		> 250,000 hours MTBF of each amp module. These are hot swap				
Maximum Input Level		+20 dBm For no damage				

Chassis Options - Specification				
Amp Chassis Model Numbers	ALT-C200-1U	ALT-C201-2U	ALT-C202-2U	ALT-C204-2U
Capacity	Up to 8 modules (4 modules with N-type connectors)	Up to 16 modules (8 modules with N-type connectors)	Up to 16 modules (8 modules with N-type connectors)	Up to 16 modules (8 modules with N-type connectors)
Dimensions	1U high x 350mm deep x 19" wide	2U high x 350mm deep x 19" wide	2U high x 450mm deep x 19" wide	2U high x 350mm deep x 19" wide
Local control & monitoring	Via front panel push buttons & display			
Remote control & monitoring	RJ45 Ethernet, 10BaseT/100BaseTx, ETL TCP/IP protocol, SNMP & Web Browser Interface			
	-	-	RS232/485 serial	-
Temperature Monitoring	Each amplifier module, CPU board & equipment chassis. As provided by the module.			
PSU Status	Each PSU individually monitored & reported			
Fan Status	-	-	Taco equipped fans, speed monitored	-
LNB Power	18VDC at 500mA switchable— with suitable module	None	None	None
AC Power	85-264Vac 50/60 Hz, Fused 2A			
PSU	Dual redundant, Diode OR	Dual redundant, Diode OR	Dual redundant, Diode OR	Dual redundant, Diode OR
Hot-swap PSU	No	No	Yes (from front)	Yes
Power Consumption	< 100W all channels, LNB off < 200W all channels LNB on	< 100W all channels, LNB off	< 100W all channels, LNB off	< 100W all channels, LNB off
Weight / Colour	6 kg / RAL9003 – White	10 kg / RAL9003 – White	8 kg / RAL9003 – White	8 kg / RAL9003 – White
Temperature	Operating: 0 to 55 °C / Storage: -20 to +75 °C			
Humidity / Location	20% to 90% non-condensing / Indoor use only			

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