ETL Systems

Excelling in RF Engineering

Model Number: ALT-C304-2U-x5x5 chassis
ALT-R-L1-006 / ALT-R-L1-008 /
ALT-R-L1-012 / ALT-R-L1-019 /
ALT-R-L1-020 / ALT-R-L1-021 /
ALT-R-L1-023 /

Alto series L-band 4+2 Redundant Amplifier with variable gain (50Ω system)

The Alto series of amplifiers provide excellent RF performance with a wide range of functionality, in a compact chassis. They 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 other redundancy configurations.

Typical applications:

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

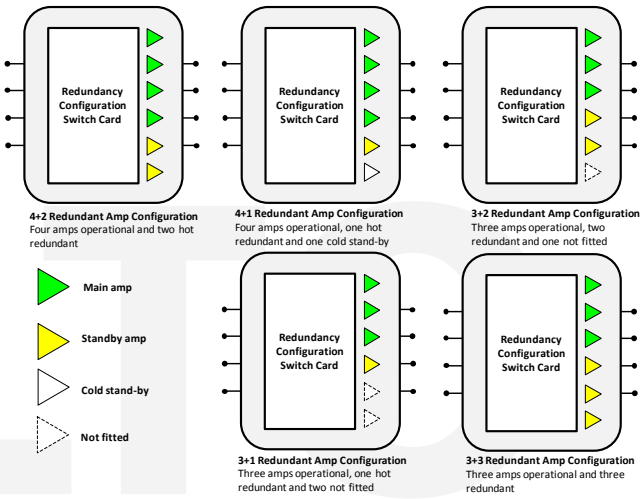
Chassis

Redundancy configuration 4+2 Redundancy

Resilience from dual redundant hot-swap power supplies & hot-swap amplifier modules

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

Local control & monitoring via front panel push buttons & display



Amplifier Module Options

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

Variable gain & slope compensation to balance input signals

Low Noise options for prime signal quality

High Linearity options ensures overall RF gain signal performance is optimised

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Chassis - Specification		
Model Numbers	ALT-C304-2U-x5x5	
Dimensions	2U high x 450mm deep x 19" wide	
Capacity	6 modules: 4+2 redundancy	
Impedance & RF Connectors	50 Ω BNC / SMA / N-type	
Weight	7.5 kg	
Colour	White 00-E-55 semi-gloss	
AC Power	85-264Vac 50/60 Hz, Fused 2A	
PSU	Hot-swap, dual redundant, Diode OR	
Power Consumption	< 100W steady state, all modules fitted. Total AC input.	
Local control & monitoring	Via front panel LCD and keypad	
Remote control & monitoring	Ethernet via RJ45, 10BaseT/100BaseTx, ETL TCP/IP protocol, SNMP & web browser interface	
Monitoring	Amplifier bias voltages, amplifier supply voltages, temperature monitoring & PSU status	
Operating Modes	Amplifier Tracking ON - Amplifier gain & slope control is common to all modules in the chassis Amplifier Tracking OFF: Each amplifier can be independently set by operator selected slope & gain setting Redundancy: Redundant amplifier can be set as hot or cold standby amplifier	
MTBF	TBA	
Temperature	Operating: 0 to 55 °C	Storage: -20 to +75 °C Indoor use only
Humidity	20% to 90% non-condensing	Relative humidity

Amplifier Module Options - RF Parameters									
Amp Module Model Numbers		ALT-R-L1-006	ALT-R-L1-008	ALT-R-L1-012	ALT-R-L1-019	ALT-R-L1-021	ALT-R-L1-023	ALT-R-L1-028	ALT-R-L1-032
Frequency Range		850-2150 MHz (L-band)							
Gain	Maximum	30 ±1.5 dB	22 ±1.5 dB	34 ± 2 dB	40 ± 2 dB	31 ± 1.5 dB	42 ± 2 dB	36 ± 2 dB	40 ± 2 dB
	Minimum	0 ± 1.5 dB	-1 ± 1.5 dB	4 ± 2 dB	10 ± 2 dB	4 ± 1.5 dB	12 ± 2 dB	6 ± 2 dB	10 ± 2 dB
Flatness	850-2150MHz	± 1 dB	± 1.25 dB	± 1.25 dB	± 1.75 dB	± 1 dB	± 1.5 dB	± 1.75 dB	± 1.25 dB
	Over 36MHz	± 0.25 dB	± 0.25 dB	± 0.25 dB	± 0.35 dB	± 0.2 dB	± 0.25 dB	± 0.25 dB	± 0.35 dB
Gain Steps		0.5 ± 0.1 dB	0.5 ± 0.1 dB	1 ± 0.15 dB	1 ± 0.15 dB	0.5 ± 0.1 dB	0.2 ± 0.1 dB	1 ± 0.2 dB	1 ± 0.15 dB
Input Return Loss	Typical	13 dB	16 dB	16 dB	16 dB	18 dB	16 dB	16 dB	16 dB
	Minimum	9 dB	11 dB	10 dB	10 dB	15 dB	12 dB	12 dB	10 dB
Output Return Loss	Typical	13 dB	13 dB	16 dB	13 dB	16 dB	16 dB	16 dB	13 dB
	Minimum	9 dB	9 dB	10 dB	10 dB	10 dB	12 dB	12 dB	10 dB
Slope Control Range		Range: 0 to 5 dB Steps: 1 ± 0.5 dB				Range - 3.00 dB	Range: 0 to 5 dB Steps: 1 ± 0.5 dB		
Noise Figure	Typical	12.5 dB	13.5 dB	12.5 dB	8 dB	11.5 dB	5.3 dB	7.5 dB	8 dB
	Maximum	14.5 dB	15.5 dB	14.5 dB	10 dB	13.5 dB	7.3 dB	9.5 dB	10 dB
1dB GCP	Typical	13 dBm	20 dBm	16 dBm	23 dBm	23 dBm	23 dBm	23 dBm	23 dBm
	Minimum	11 dBm	18 dBm	14 dBm	21 dBm	21 dBm	21 dBm	21 dBm	21 dBm
OIP3	Typical	25 dBm	33 dBm	36 dBm	37 dBm	37 dBm	37 dBm	37 dBm	37 dBm
	Minimum	22 dBm	30 dBm	33 dBm	34 dBm	34 dBm	34 dBm	34 dBm	34 dBm
OIP2	Typical	41 dBm	43 dBm	47 dBm	49 dBm	57 dBm	44 dBm	45 dBm	45 dBm
	Minimum	37 dBm	39 dBm	43 dBm	45 dBm	53 dBm	40 dBm	41 dBm	41 dBm
Isolation	Typical	60 dB							
	Minimum	50 dB							
Max total RF i/p power		20 dBm Damage level, not operational							

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