



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



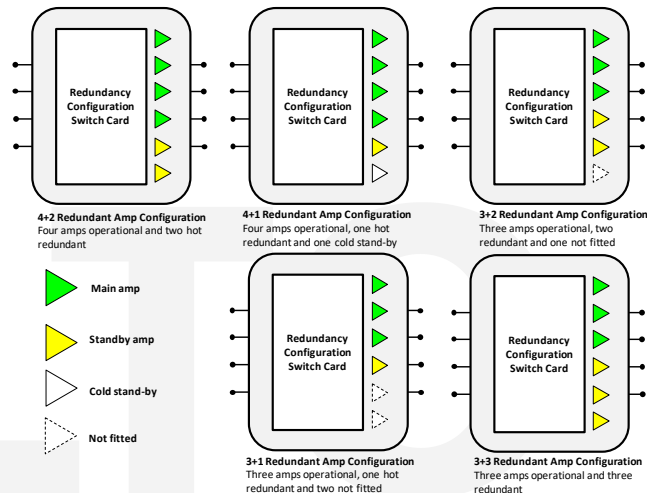
Resilience from dual redundant hot-swap power supplies & hot-swap amplifier modules



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 - 2850MHz) 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



Chassis - Specification	
Model Numbers	ALT-C344-2U-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
RF Isolation	850-2150MHz: 60 dB typical / 50 dB minimum 2150-2450MHz: 55 dB typical / 45 dB minimum
Weight / Colour	7.5 kg White 00-E-55 semi-gloss to RAL9003 White semi-matte
PSU 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
Temperature	Operating: 0 to 55 °C Storage: -20 to +75 °C Indoor use only
Humidity / Altitude	20% to 90% non-condensing. Relative humidity 10,000 ft/3,000 m AMSL (Above mean sea level)
Spec Version	1.1

Amplifier Module Options - RF Parameters (For SMA 50 Ohm connectors)									
Amp Model Numbers		ALT-R-L1-006		ALT-R-L1-008		ALT-R-L1-012		ALT-R-L1-032	
Frequency Range (MHz)		850-2150		850-2150		850-2150		850-2150	
Gain (dB)	Maximum	32.00	±1.5	22.00	±1.5	40.00	±2.00	40.00	±2.00
	Minimum	2.00	±1.5	-1.00	±1.5	10.00	±2.00	10.00	±2.00
Gain Flatness (dB) pk-pk	Full band	±	1.00	±	1.25	±	1.25	±	1.25
	36 MHz	±	0.25	±	0.25	±	0.25	±	0.35
Gain Steps (dB)		0.50	±0.1	0.50	±0.1	1.00	±0.15	1.00	±0.15
Input Return Loss (dB)	Typical	13.00		16.00		16.00		16.00	
	Minimum	9.00		11.00		10.00		10.00	
Output Return Loss (dB)	Typical	13.00		13.00		16.00		13.00	
	Minimum	9.00		9.00		10.00		10.00	
Slope Control (dB)	Range	0 to	5	0 to	5.00	0 to	5.00	0 to	5.00
	Steps	1.00	±0.25	1.00	±0.25	1.00	±0.25	1.00	±0.5
Noise Figure (dB) @ max gain	Typical	12.00		13.00		12.00		7.50	
	Maximum	14.00		15.00		14.00		9.50	
1dB GCP (dBm) @ max gain	Typical	14.0		20.00		16.00		23.00	
	Minimum	12.5		18.50		14.50		21.00	
OIP3 (dBm) @ max gain	Typical	25.0		33.00		36.00		36.00	
	Minimum	22.5		30.50		33.50		32.00	
OIP2 (dBm) @ max gain	Typical	41.0		43.00		47.00		46.00	
	Minimum	37.5		39.50		43.50		40.00	
Isolation (dB)		60.00 Typ. 50.00 Min		60.00 Typ. 50.00 Min		60.00 Typ. 50.00 Min		60.00 Typ. 50.00 Min	
Max total RF i/p power (dBm)		20.00		20.00		20.00		20.00	
Spec Version		1.9		1.2		1.6		1.0	



Amplifier Module Options - RF Parameters (For SMA 50 Ohm connectors)											
Amp Module Model Numbers		ALT-R-L1-038		ALT-R-L1-087		ALT-R-L1-097		ALT-R-S2-076		ALT-R-S3-092	
Frequency Range (MHz)		850-2150		850-2150		850-2150		850-2850		850-2450	
Gain (dB)	Maximum	40.00	±2.00	40.00	±2.00	40.00	±2.00	32.00	±2.00	38.00	±2.00
	Minimum	10.00	±2.00	-10.00	±2.00	10.00	±2.00	-1.00	±2.00	4.00	±2.00
Gain Flatness (dB) pk-pk	full band	±	1.50	±	1.50	±	1.50	±	1.50	±	1.25
	36 MHz	±	0.20	±	0.20	±	0.20	±	0.35	±	0.20
Gain Steps (dB)		0.50	±0.10	0.20	±0.10	0.20	±0.10	0.50	±0.25	0.25	±0.25
Input Return Loss (dB)	Typical	16.00		16.00		16.00		18.00		16.00	
	Minimum	10.00		12.00		12.00		14.00		12.00	
Output Return Loss (dB)	Typical	16.00		16.00		16.00		16.00		16.00	
	Minimum	10.00		12.00		12.00		12.00		12.00	
Slope Control (dB)	Range	0 to 5.00		N/A		N/A		0 to 7.00		0 to 6.00	
	Steps	1.00 ±0.25		N/A		N/A		1.00 ± 0.5		1.00 ± 0.5	
Noise Figure (dB) @ max gain	Typical	8.50		5.50		5.50		6.00		5.50	
	Maximum	10.50		7.50		7.50		8.00		7.50	
1dB GCP (dBm) @ max gain	Typical	23.00		20.0		20.0		20.0		22.0	
	Minimum	21.00		17.5		17.5		17.5		19.5	
OIP3 (dBm) @ max gain	Typical	36.00		32.0		32.0		32.0		35.0	
	Minimum	32.00		29.5		29.5		29.5		30.5	
OIP2 (dBm) @ max gain	Typical	46.00		37.0		37.0		38.0		57.0	
	Minimum	40.00		33.5		33.5		35.5		47.5	
Isolation (dB)		60.00 Typ. 50.00 Min		50.00 Typ. 45.00 Min		50.00 Typ. 45.00 Min		60.00 Typ. 50.00 Min		50.00 Typ. 45.00 Min	
Max total RF i/p power (dBm) damage level, not operational		16.00		20.00		20.00		20.00		20.00	
Spec Version		1.0		1.1		1.1		1.0		1.0	