



# Alto series 1+1 L-band Redundant Amplifier with RF monitor ports, variable gain & slope compensation module options (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 Redundancy configurations up to 4+2.

### Typical applications:

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

## Chassis

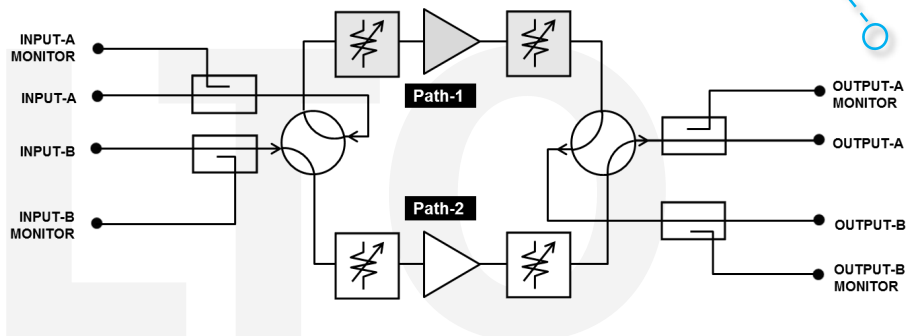
**Redundancy configuration** Dual 1+1 Redundancy

**Monitor ports** for input & output signal levels

**Resilience** from dual redundant hot-swap power supplies, hot-swap amplifier & forced air cooling tray modules

**Remote control & monitoring** via RJ45 Ethernet port and D-type serial port with SNMP & web browser interface

**Local control & monitoring** via front panel push buttons & display



Front Panel - Model ALT-C319-1U



Rear Panel - Model ALT-C319-1U

## Amplifier Module Options

**L-band** operating frequency range options

**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

**RF detection options** on inputs & outputs





Chassis - Specification			
Model Numbers	ALT-C319-1U-x5x5		
Dimensions	1U high x 450mm deep x 19" wide		
Capacity	2 modules: 1+1 redundant with single input & dual output		
Impedance & RF Connectors	50 Ω BNC / SMA / N-type		
Weight / Colour	5 kg	White 00-E-55 semi-gloss	
PSU	Hot-swap, (from front panel) dual redundant, Diode OR		
PSU Power	85-264Vac 50/60 Hz, Fused 2A		
AC Consumption	< 100W steady state, all modules fitted. Total AC input.		
RF monitoring	-20 ± 2.5 dB monitor ports for input and on-line output - via rear panel (SMA female ports)		
Local control & monitoring	LCD and keypad - via front panel		
Remote control & monitoring	Ethernet via RJ45, 10BaseT/100BaseTx, ETL TCP/IP protocol, SNMP & web browser interface / 9 pin D-type port for dry contact alarms , RS232 & RS485		
Monitoring	Amplifier bias voltages - voltage to each amplifier stage within the amplifier modules is continuously monitored	Amplifier supply voltages - supply from PSU to each amplifier module is continuously monitored	Temperature monitoring - each amplifier module, CPU board & equipment chassis
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	150,000 hours		
Temperature / Humidity	Operating: 0 to 45 °C	Storage: -20 to +75 °C Indoor use only	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-L1-032	ALT-R-L1-038	ALT-R-L1-043	ALT-R-L1-075	ALT-R-L1-079	ALT-R-L1-087	ALT-R-L1-097	
Input & output RF detection								✓					
Low Noise											✓	✓	
High Linearity				✓	✓	✓		✓		✓			
Frequency Range (MHz)	850-2150	850-2150	850-2150	850-2150	850-2150	850-2150	850-2150	850-2150	850-2150	850-2150	850-2150	850-2150	
Gain (dB)	Maximum	35.00 ±1.5	25.00 ±1.5	43.00 ±2	43.00 ±2	34.00 ±1.5	43.00 ±2	43.00 ±2	38.00 ±1.5	43.00 ±2	35.00 ±1.5	43.00 ±2	43.00 ±2
	Minimum	5.00 ±1.5	2.00 ±1.5	13.00 ±2	13.00 ±2	7.00 ±1.5	13.00 ±2	13.00 ±2	8.00 ±1.5	13.00 ±2	5.00 ±1.5	-7.00 ±2	13.00 ±2
Gain Flatness (dB) pk-pk	full band	± 1.00	± 1.25	± 1.25	± 1.75	± 1.00	± 1.25	± 1.50	± 1.50	± 1.75	± 1.75	± 1.50	± 1.50
	36 MHz	± 0.25	± 0.25	± 0.25	± 0.35	± 0.20	± 0.35	± 0.20	± 0.35	± 0.35	± 0.20	± 0.20	± 0.20
Gain Steps (dB)	0.50 ±0.1	0.50 ±0.1	1.00 ±0.15	1.00 ±0.15	1.00 ±0.1	1.00 ±0.15	0.50 ±0.1	0.50 ±0.15	0.50 ±0.1	0.50 ±0.1	0.20 ±0.1	0.20 ±0.1	
Input Return Loss (dB)	Typical	13.00	16.00	16.00	16.00	18.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
	Minimum	9.00	11.00	10.00	10.00	15.00	12.00	10.00	10.00	10.00	10.00	12.00	12.00
Output Return Loss (dB)	Typical	13.00	13.00	16.00	13.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
	Minimum	9.00	9.00	10.00	10.00	10.00	12.00	10.00	10.00	10.00	10.00	12.00	12.00
Slope Control (dB)	Range	0 to 7.00	0 to 7.00	0 to 7.00	0 to 7.00	N/A	0 to 7.00	0 to 7.00	N/A	0 to 6.00	0 to 7.00	N/A	N/A
	Steps	1.00 ±0.25	1.00 ±0.25	1.00 ±0.25	1.00 ±0.25	N/A	1.00 ±0.25	1.00 ±0.25	N/A	1.00 ±0.25	1.00 ±0.25	N/A	N/A
Noise Figure (dB) @ max gain	Typical	10.50	11.50	10.50	6.00	9.50	6.00	6.50	6.00	6.00	7.00	4.00	4.00
	Maximum	12.00	13.00	12.00	7.50	11.00	7.50	8.00	7.50	7.50	8.50	4.60	4.60
1dB GCP (dBm) @ max gain	Typical	15.5	21.5	17.5	28.5	28.5	25.5	25.5	23.5	34.50	28.50	21.5	21.5
	Minimum	13.5	19.5	15.5	26.5	27.5	23.5	23.5	21.5	32.50	25.50	18.5	18.5
OIP3 (dBm) @ max gain	Typical	28.5	34.5	37.5	39.5	39.5	37.5	38.5	38.5	45.50	40.50	36.5	36.5
	Minimum	25.5	31.5	34.5	36.5	36.5	34.5	33.5	35.5	42.50	37.50	33.5	33.5
OIP2 (dBm) @ max gain	Typical	42.5	52.5	48.5	48.5	50.5	46.5	46.5	42.5	61.50	44.50	38.5	38.5
	Minimum	38.5	48.5	44.5	44.5	46.5	42.5	43.5	38.5	51.50	41.50	34.5	34.5
Isolation (dB)	Typical	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	61.50	61.50	60.00	60.00
	Minimum	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	51.50	51.50	50.00	50.00
Max total RF i/p power (dBm) damage level, not operational	20.00	20.00	20.00	20.00	21.50	21.50	19.50	21.50	21.50	19.50	21.50	21.50	

