



# Alto series 2+1 Redundant Amplifier System with variable gain, coaxial switching & RF monitor ports

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** 2+1 Redundancy
- Resilience** from dual redundant hot-swap power supplies & hot-swap amplifier modules (from rear of chassis)
- Remote control & monitoring** via RJ45 Ethernet port with SNMP & web browser interface
- Local control & monitoring** via front panel push buttons & display
- RF monitor ports** for input & output signal levels (available from front of chassis)

## Amplifier Module Options

- IF & L-band** (850 - 2150MHz & 50 - 200MHz) operating frequency range options
- Variable gain & slope compensation** to balance input signals
- High linearity options** ensures overall RF gain signal performance is optimised
- Variable attenuation** to balance output signals
- Low Noise options** for prime signal quality





Chassis - Specification	
Model Numbers	ALT-C315-2U
Dimensions	2U high x 450mm deep x 19" wide
Capacity	3 modules: 2 +1 redundancy
Impedance & RF Connectors	50 Ω BNC / SMA / N-type, 75 Ω BNC, F-type
Weight	5.1 kg
Colour	White 00-E-55 semi-gloss
AC Power	85-264Vac 50/60 Hz, Fused 2A
PSU	Hot-swap, dual redundant, Diode OR
AC Consumption	< 50W 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 & RS422/485
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	20% to 90% non-condensing, Relative humidity
Location	Indoor use only
Altitude	10,000 ft / 3,000 m AMSL (Above Mean Sea Level)

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-L1-020	ALT-R-F2-013	ALT-R-L1-021	ALT-R-L1-032	ALT-R-L1-038	ALT-R-L1-043	
Frequency Range (MHz)	850-2150	850-2150	850-2150	850-2150	850-2150	50-200	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	35.00 ±1.5	37.00 ±2	34.00 ±1.5	43.00 ±2	43.00 ±2	38.00 ±1.5
	Minimum	5.00 ±1.5	2.00 ±1.5	13.00 ±2	13.00 ±2	5.00 ±1.5	7.00 ±2	7.00 ±1.5	13.00 ±2	13.00 ±2	8.00 ±1.5
Gain Flatness (dB) pk-pk	full band	± 1.00	± 1.25	± 1.25	± 1.75	± 1.00	± 1.00	± 1.00	± 1.25	± 1.25	± 1.50
	36 MHz	± 0.25	± 0.25	± 0.25	± 0.35	± 0.25	± 0.35	± 0.20	± 0.35	± 0.20	± 0.35
Gain Steps (dB)	0.50 ±0.1	0.50 ±0.1	1.00 ±0.15	1.00 ±0.15	0.50 ±0.1	1.00 ±0.15	0.50 ±0.1	1.00 ±0.15	0.50 ±0.1	0.50 ±0.15	
Input Return Loss (dB)	Typical	13.00	16.00	16.00	16.00	13.00	16.00	18.00	16.00	18.00	16.00
	Minimum	9.00	11.00	10.00	10.00	9.00	10.00	15.00	12.00	12.00	10.00
Output Return Loss (dB)	Typical	13.00	13.00	16.00	13.00	13.00	16.00	16.00	16.00	18.00	16.00
	Minimum	9.00	9.00	10.00	10.00	9.00	10.00	10.00	12.00	12.00	10.00
Slope Control (dB)	Range	0 to 7.00	0 to 7.00	0 to 7.00	0 to 7.00	0 to 7.00	N/A	N/A	0 to 7.00	0 to 8.00	N/A -1.00
	Steps	1.00 ±0.25	1.00 ±0.25	1.00 ±0.25	1.00 ±0.25	1.00 ±0.25	N/A	N/A	1.00 ±0.25	1.00 ±0.25	N/A 0
Noise Figure (dB) (@ max gain)	Typical	10.50	11.50	10.50	6.00	10.50	5.50	9.50	6.00	5.00	6.00
	Maximum	12.00	13.00	12.00	7.50	12.00	7.00	11.00	7.50	6.50	7.50
1dB GCP (dBm) (@ max gain)	Typical	15.5	21.5	17.5	28.5	15.5	29.5	28.5	25.5	25.5	23.5
	Minimum	13.5	19.5	15.5	26.5	13.5	28.5	27.5	23.5	23.5	21.5
OIP3 (dBm) (@ max gain)	Typical	28.5	34.5	37.5	38.5	28.5	40.5	39.5	37.5	36.5	35.5
	Minimum	25.5	31.5	34.5	35.5	25.5	37.5	36.5	34.5	33.5	32.5
OIP2 (dBm) (@ max gain)	Typical	42.5	44.5	48.5	50.5	42.5	N/A	58.5	46.5	46.5	42.5
	Minimum	38.5	40.5	44.5	46.5	38.5	N/A	54.5	42.5	43.5	38.5
Isolation (dB)	Typical	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00
	Minimum	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Max total RF i/p power (dBm)	20.00	20.00	20.00	21.50	20.00	21.50	21.50	21.50	19.50	21.50	

