



# Alto series 2+1 Redundant Amplifier

## with variable gain & coaxial switching (50Ω system)

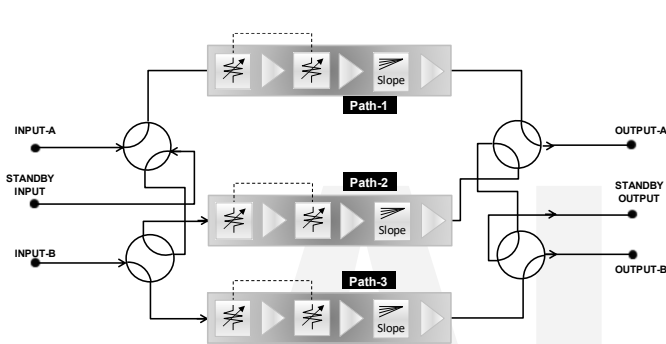
The Alto series of amplifiers provide excellent RF performance with a wide range of functionality, in a compact chassis. They are designed with hot swap amplifier modules to enhance resilience and flexibility.

**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** 2+1 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



**Variable gain & slope compensation** to balance input signals



**High Linearity options** ensures overall RF gain signal performance is optimised



**IF & L-band** (850 - 2150MHz & 50 - 200MHz) operating frequency range options



**Variable attenuation** to balance output signals



**Low Noise options** for prime signal quality



**Chassis - Specification**

Amplifier Chassis Model Number	ALT-C313-2U-x5x5	
Dimensions	2U high x 450mm deep x 19" wide	
Capacity	3 modules: 2 +1 redundancy	
Impedance & RF Connectors	50 Ω SMA (other connector types and impedances are available)	
Weight / Colour	≤10 kg / White 00-E-55 semi-gloss	
AC Power	85-264Vac 50/60 Hz, Fused 2A	
PSU	Hot-swap, dual redundant, Diode OR	
Power 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	
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	119,714 hours	
Temperature	Operating: 0 to 45 °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-F2-013	ALT-R-L1-020	ALT-R-L1-021
Frequency Range (MHz)		850-2150	850-2150	850-2150	850-2150	50-200	850-2150	850-2150
Gain (dB)	Maximum	36.00 ±1.5	26.00 ±1.5	44.00 ±2	44.00 ±2	38.00 ±2	36.00 ±1.5	35.00 ±1.5
	Minimum	6.00 ±1.5	3.00 ±1.5	14.00 ±2	14.00 ±2	8.00 ±2	6.00 ±1.5	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
	36 MHz	± 0.25	± 0.25	± 0.25	± 0.35	± 0.25	± 0.25	± 0.20
Gain Steps (dB)		0.50 ±0.1	0.50 ±0.1	1.00 ±0.15	1.00 ±0.15	1.00 ±0.15	0.50 ±0.1	0.50 ±0.1
Input Return Loss (dB)	Typical	13.00	16.00	16.00	16.00	16.00	13.00	18.00
	Minimum	9.00	11.00	10.00	10.00	10.00	9.00	15.00
Output Return Loss (dB)	Typical	13.00	13.00	16.00	13.00	16.00	13.00	16.00
	Minimum	9.00	9.00	10.00	10.00	10.00	9.00	10.00
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	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	N/A N/A
Noise Figure (dB) @ max gain	Typical	10.00	11.00	10.00	5.50	9.00	10.00	9.00
	Maximum	11.50	12.50	11.50	7.00	11.00	11.50	10.50
1dB GCP (dBm) @ max gain	Typical	16.0	22.0	18.0	29.0	29.5	16.0	29.0
	Minimum	14.0	20.0	16.0	27.0	27.5	14.0	28.0
OIP3 (dBm) @ max gain	Typical	29.0	35.0	38.0	40.0	37.0	29.0	40.0
	Minimum	26.0	32.0	35.0	37.0	34.0	26.0	37.0
OIP2 (dBm) @ max gain	Typical	43.0	53.0	49.0	49.0	N/A	43.0	51.0
	Minimum	39.0	49.0	45.0	45.0	N/A	39.0	47.0
Isolation (dB)	Typical	60.00	60.00	60.00	60.00	80.00	60.00	60.00
	Minimum	50.00	50.00	50.00	50.00	60.00	50.00	50.00
Max total RF i/p power (dBm)		20.00	20.00	20.00	21.00	21.00	20.00	21.00

