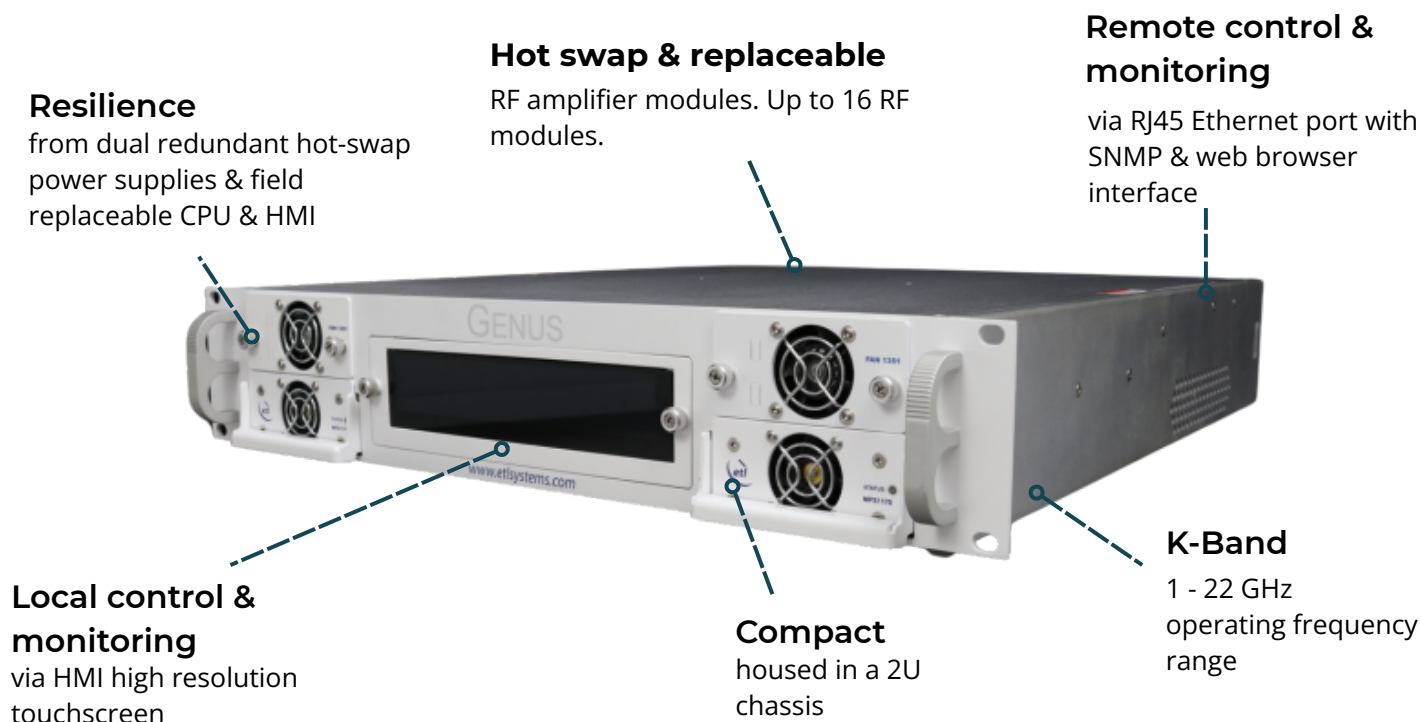


# Alto K-Band Smart Amplifier Module

wideband, low noise, high linearity and variable gain

K-band wide band smart low noise amplifier module. Designed to be housed in GENUS 2U 19" chassis. It operates over 1-22 GHz with a variable gain from 2 to 26dB. The module is hot-swappable.



| Chassis Specification      |                                                                                                                                                                                          |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions/Weight/Colour   | 2U high x 550mm deep x 19" wide / <10kg / RAL9003 - white (semi-matte)                                                                                                                   |
| Capacity                   | 17 module slots.<br><b>Note:</b> Actual modules may require >1 slot. Refer to required module spec table.                                                                                |
| Temperature                | Operating: 0°C to +45°C<br>Storage: -20°C to +75°C                                                                                                                                       |
| Location/Humidity/Altitude | Indoor use only / 20 to 90% non-condensing / 2,000m AMSL (Operational) 8,000m AMSL (Storage)<br>Above Mean Sea Level                                                                     |
| Control & Monitoring       | <b>Local:</b> HMI, capacitive touch screen<br><b>Remote:</b> Ethernet via RJ45, 10BaseT/100 BaseTx. ETL TCP/IP, SNMPv2/3, HTTPS & built-in web server.<br>HMI and CPU field replaceable. |
| MTTR                       | 20 minutes (15 minutes to retrieve spare part and 5 mins to replace). Applies to LRUs only and assumed in-house stock.                                                                   |
| AC Input/Consumption       | 85-264Vac 50/60Hz / 275W max. consumption at steady state                                                                                                                                |
| PSU Redundancy             | Dual redundant and alarmed. Diode OR. Hot swappable.                                                                                                                                     |
| Input & Output Ports       | Dependant upon module fitted                                                                                                                                                             |



## Smart Amplifier Module

Compact form factor allows multiple modules to be housed in the 2U GENUS chassis. Each module occupies 1 slot in the chassis.

| RF Parameters                                                                                       |            |                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model Numbers                                                                                       |            | ALT-G2S-KX-141-XXXX                                                                                                                                                             |
| Frequency Range                                                                                     |            | 1 - 22 GHz                                                                                                                                                                      |
| Size                                                                                                |            | 1 slot wide                                                                                                                                                                     |
| MTBF                                                                                                |            | >150,000 hours                                                                                                                                                                  |
| RF Connectors                                                                                       |            | 50Ω SMA / 50Ω N-type                                                                                                                                                            |
| Gain                                                                                                | Max.       | $26 \pm 2.0$ dB                                                                                                                                                                 |
|                                                                                                     | Min.       | $0 \pm 2.0$ dB                                                                                                                                                                  |
| Gain Flatness<br><small>When set to 0dB slope. In manual gain control mode, <b>not</b> AGC.</small> | Full Band  | $\pm 3.0$ dB                                                                                                                                                                    |
|                                                                                                     | 5 - 20 GHz | $\pm 2.0$ dB                                                                                                                                                                    |
|                                                                                                     | Any 36 MHz | $\pm 0.25$ dB                                                                                                                                                                   |
| Gain Steps                                                                                          |            | $1 \pm 0.5$ dB                                                                                                                                                                  |
| Input Return Loss                                                                                   |            | 14 dB typ. 12 dB min.                                                                                                                                                           |
| Output Return Loss                                                                                  |            | 14 dB typ. 12 dB min.                                                                                                                                                           |
| Isolation                                                                                           |            | 60dB typ.<br>50dB min.<br><br>With amplifiers set at the same gain level. Worst case isolation is between adjacent amps, isolation degrades dB to dB for different gain levels. |
| Reverse Gain                                                                                        |            | < -60 dB typ.                                                                                                                                                                   |
| Noise Figure                                                                                        |            | 5 dB typ. @ max gain setting<br>7 dB max. @ max gain setting                                                                                                                    |
| 1db GCP                                                                                             |            | 17 dBm typ. 15 dBm min.      Output power, over full gain range                                                                                                                 |
| OIP3                                                                                                |            | 30 dBm typ. 28 dBm min.      @ max gain setting                                                                                                                                 |
| OIP2                                                                                                |            | 35 dBm typ. 33 dBm min.      @ max gain setting                                                                                                                                 |
| In band, signal independent spuri                                                                   |            | <-85 dBm max.      Very low level spuri from CPU clock, switch mode PSU and other control electronics inside the chassis.                                                       |
| Maximum Input Level                                                                                 |            | +15 dBm      For no damage. Non-operational.                                                                                                                                    |

| Interface, Monitoring & Alarms   |                                                  |                                |
|----------------------------------|--------------------------------------------------|--------------------------------|
| Control Method                   | Local and remote as provided by selected chassis |                                |
| LNB Power                        | None                                             |                                |
| Environmental                    |                                                  |                                |
| Operating Temperature            | -0°C to +50°C                                    | Up to 8 modules in a chassis.  |
|                                  | -0°C to +45°C                                    | Up to 16 modules in a chassis. |
| Storage Temperature              | -20°C to +75°C                                   |                                |
| Location                         | Indoor use only, within parent GENUS chassis     |                                |
| Humidity                         | 20 to 90% non-condensing, relative humidity      |                                |
| Altitude                         | 10,000ft / 3,000m above mean sea level           |                                |
| Physical Dimensions & Parameters |                                                  |                                |
| Weight                           | <0.35kg typ.                                     |                                |

**The performance quoted above is for a standalone amplifier. For in-chassis performance, see relevant spec. tables.**

Note 1: The specification is subject to regular reviews and will be updated from time to time as part of our continuing product development and improved spec accuracy.

Note 2: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage.