

## Connect™ C-band Ground Station

### Overview

Our compact, integrated ground station for C-band operation comprises our **Connect™** modem, a ten watt SSPA and a combined LNA/duplexer filter subassembly. The filters provide 80dB of transmit/receive isolation.

The assembly is suitable for communicating from the ground to smallsats and airborne applications (such as UAVs, High Altitude Pseudo Satellites, smallsats, etc.).

The **Connect™ Ground Station** provides all that is needed, apart from an antenna, for the ground side of a complete bidirectional communications system.

The **Connect™ Ground Station** is compatible with our **Quest™ Software Defined Radio** and **Quest™ Onboard C-band RF Assembly**, which requires only an antenna to be added for a full solution.

The ground station is also available as individual components, suitable for integration with compatible third-party equipment. The modem needs to be located indoors, while the RF can be deployed outdoors, with range of mounting options for fixing to the antenna support arm or reflector.

All TXMission solutions can be customized to meet customer-specific requirements, including different frequency bands and transmit power levels. Please contact us for more details.

### Features

- ▶ Ground-based solution for C-band satellite/airborne communications
- ▶ Comprises DVB-S2/S2X modem, ten watt SSPA, LNA & high-isolation duplexer
- ▶ DVB-S2 & DVB-S2X waveforms
- ▶ Dimensions:
  - LNA/Duplexer: 140 x 500 x 100mm
  - SSPA: 190 x 200 x 100mm
  - Modem: 141 x 133 x 36mm
- ▶ Single port to antenna
- ▶ Transmit passband: 4500 to 4800MHz
- ▶ Receive passband: 4500 to 4800MHz
- ▶ 12V supply voltage
- ▶ -40°C to +50°C operation; -40°C to +85°C storage
- ▶ Compatible with Quest onboard SDR & Quest C-band onboard Transceiver
- ▶ Duplexer/LNA assembly shown below



# Connect™ C-band Ground Station

## RF SSPA Specification

Passband	4500 to 4800MHz
Small Signal Gain	43.5 +/- 2.5dB
Output Power at P1dB	+40.0dBm
Gain Flatness (over passband)	+/- 1.0dB
Gain Stability (over 24 hours)	+/- 0.25dB
Third Order Intermod Distortion	-26dBc
AM to PM Conversion	3.5 %/dB
Spurious @ P1dB	< -65dBc
2nd, 3rd Harmonics @P1-3dB	< -10dBc
Input Return Loss (VSWR)	> 19.0 (1.25) dB
Output Return Loss (VSWR)	> 19.0 (1.25) dB
Control & Monitoring	Transmit mute; Fault indication
Noise Figure	< 10dB
Group Delay	Linear 0.01ns/MHz Parabolic 0.003ns/MHz <sup>2</sup> Ripple 1.0ns peak-peak
Residual AM Noise	
0-10kHz	-45dBc
10 to 500kHz	-20 * (1.25 + log F)dBc
0.5 to 1MHz	-80dBc
RF Interfaces	N-type female
DC Supply Interface	Filtercon / Ground Pin
Supply Voltage & Current	+12.0 ± 0.5 Volts; < 5000mA
Operating Temperature	-40 to +50°C
Storage Temperature	-40 to +85°C

## Modem Specification

See Connect™ Ground Station Modem datasheet & Connect™ UAV Ground Station Modem datasheet

## RF LNA Specification

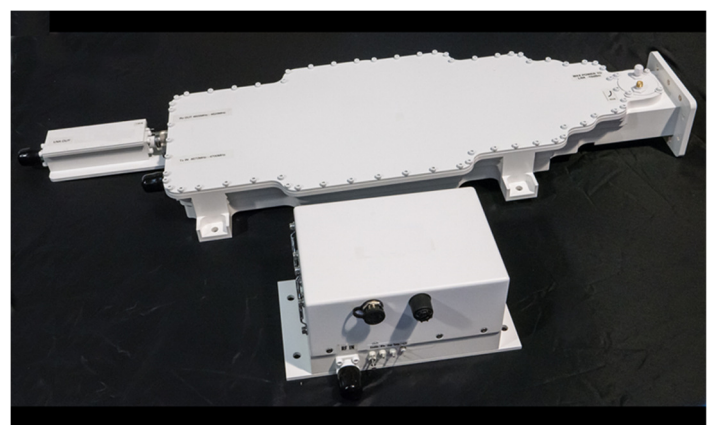
Passband	4500 to 4800MHz
Small Signal Gain	35.0 +/- 2.5dB
Gain Flatness (over passband)	+/- 0.5dB
Gain Variation (over temp)	+/- 2dB
Gain Stability (over 24 hours)	< +/- 0.2dB
Third Order Output Intercept	23dBm typical
AM to PM Conversion	0.05%/dB
Spurious @ P1dB	< -65dBc
2nd, 3rd Harmonics	< -10dBc
Input Return Loss (VSWR)	> 19.0(1.25) dB
Output Return Loss (VSWR)	> 18.0 (1.3) dB
Power Out at P1dB	+10dBm (+13dBm typical)
Noise Figure	< 1.1dB
Group Delay	Linear 0.01ns/MHz Parabolic 0.001ns/MHz <sup>2</sup> Ripple 0.1ns peak-peak
Desen Threshold (at input)	-33dBm
RF Interfaces	N-type female
DC Supply Interface	Filtercon / Ground Pin
Supply Voltage & Current	+12.0 ± 0.5 Volts; < 300mA
Operating Temperature	-40 to +50°C
Storage Temperature	-40 to +85°C

## General Description

C-band SSPA, LNA, duplexer & modem; suitable for communicating with satellite and airborne applications



Connect™ Ground Station Modem



Connect™ Duplexer, LNA & SSPA