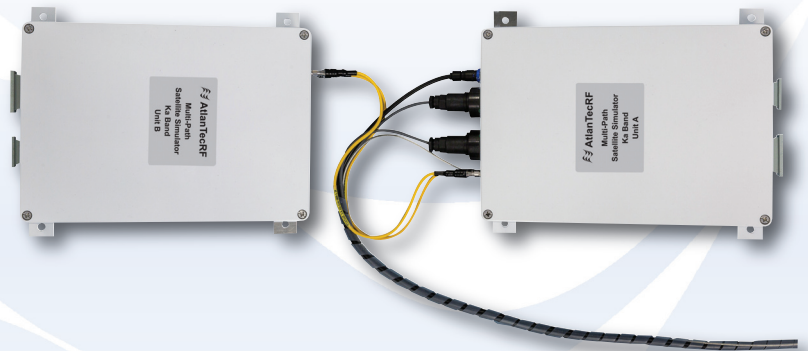


# Multi-Path Satellite Simulator System

- Simultaneously tests two satellite terminals
- Models for X, Ku, DBS, Ka and Q bands
- Linear and circular polarisation options
- Fixed installation or portable
- Ethernet and local controls
- 3 part, base units and terminals
- 2 part option – Ethernet control



General Specifications	
LO Frequency Steps	25MHz
Maximum Input Level	+10dBm
Conversion Gain	-35dB nom. (see options)
Conversion Gain Flatness	+/-2dB typ. +/-0.5dB/40MHz max.
Attenuation Range	60dB min. (see options)
Attenuation Control	1.0dB Steps
Impedance	50 ohms
Input VSWR	1.8:1 typ. (see options)
Output VSWR	1.8:1 typ. (see options)
Signal Related Spurious	-25dBc typ.
LO Related Spurious & Harmonics	-30dBm typ.
Non Signal or LO Related Spurious	-60dBc min.
Input Power	80-240V, 50-60Hz
Input Power Connector	IEC with Fuse
Operating Temperature	0 to +50C (see options)
Storage Temperature	-10 to +70C
Lock Alarm	LED, Front Panel & Ethernet
Input Connector (see options)	2.92mm Female Ka Band SMA Female Ku Band
Output Connector	SMA Female
Reference Input Connector	BNC Female
Ethernet Connector	RJ45
Size exc connectors etc:	
Base Unit - inches (mm)	W10 <sup>(255)</sup> x H5.7 <sup>(145)</sup> x D12.6 <sup>(320)</sup>
Transponder - Inches (mm)	W13 <sup>(330)</sup> x H4.5 <sup>(115)</sup> x D9 <sup>(230)</sup>

The MSS series of Multi-Path Satellite Simulators simultaneously talk to two sets of ground equipment, enabling the user to run extensive and prolonged tests without the need to go 'live' on a satellite.

The system is supplied as a three part solution - a base unit and two terminals.

The base control unit is a convenient portable bench instrument with the capability of both local and remote, Ethernet control. This unit is connected to two mast-mounted transponders via a power and data cable.

The two transponders are inter-connected - each capable of communicating with a fixed or mobile terminal in a choice of either X, Ku, DBS, Ka and Q bands and with the ability to vary the path attenuation, thereby reducing the real-world atmospheric effects.

Taking the uplink or Transmit (Tx) carrier from one ground-based system the MSS transponder re-transmits on the receive (Rx) carrier frequency for the downlink. But, instead of sending the signal back to the same ground station from which it received it, the MSS makes contact with a second ground terminal, thereby completing the satellite link from point A to point B, but without any satellite being involved.

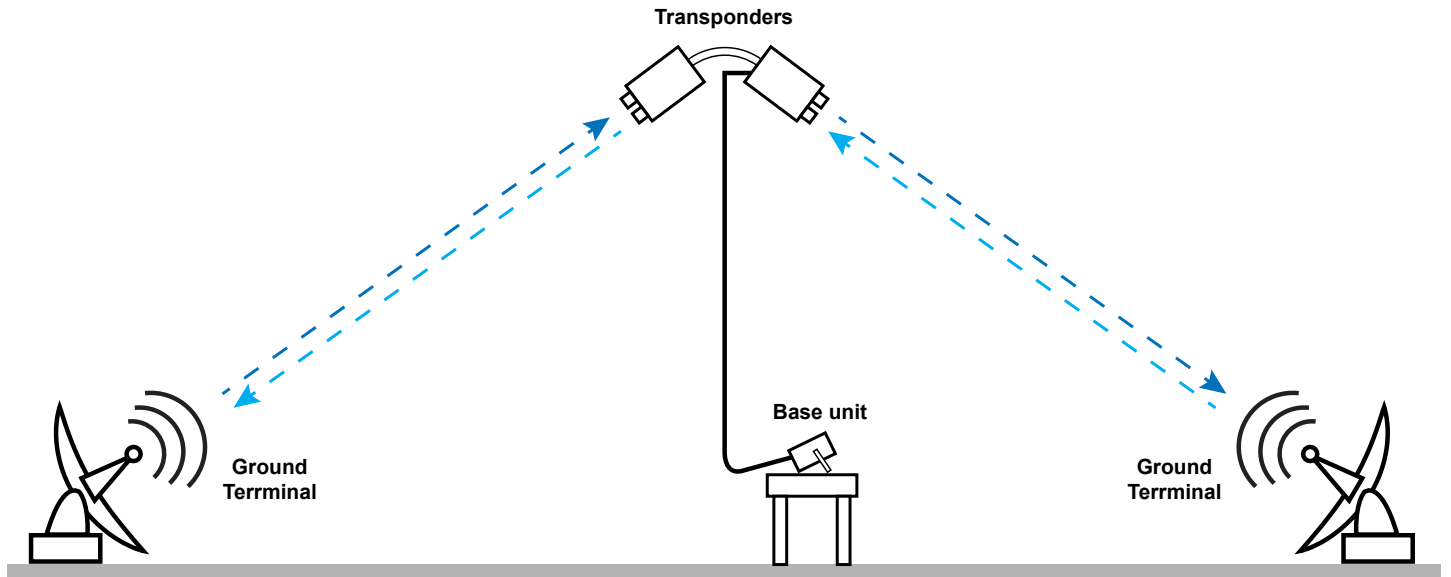
In addition to the transmission of signal to both terminals under test, a sample of the transmissions is fed back via coaxial low loss cable to the base unit and is then made available at the front panel for connection to a spectrum analyser or other test equipment.

Offset Frequency (Hz)	LO Phase Noise (dBc/Hz) typical			
	LO Frequency (GHz)			
	2.0	10.0	12.0	25.0
100	-80	-70	-65	-60
1K	-90	-85	-75	-70
10K	-95	-90	-80	-75
100K	-95	-90	-80	-80
1M	-120	-115	-115	-110

## Options:

- 00 Standard
- 02 Two Part Option - Ethernet Only
- 03 Polarisation Option
- 04 Specific Programmed Frequency Steps
- 05 Switchable Internal 10MHz OCXO Reference  
Frequency Stability +/-0.05ppm over 0 to +50C  
+/-0.1ppm per year
- 06 Switchable Internal 10MHz OCXO Reference  
Frequency Stability +/-0.005ppm over 0 to +50C  
+/-0.02ppm per year  
+/-0.05ppm all causes in 2 years
- 07 Alternative Attenuation Range
- 08 Alternative Conversion Gain
- 09 Special Custom Options

We reserve the right to change standard product specifications without notice but will be pleased to consider control drawings for quotation.



The AtlanTecRF MSS Multi-Path Satellite Simulator simultaneously talks to two sets of ground equipment, enabling the user to run extensive and prolonged tests without the need to go “live” on a satellite.

Model No	Input Frequency Range (GHz)	Output Frequency Range (GHz)	LO Frequency (GHz)
MSS - 00650065 - X	7.9 - 8.4	7.25 - 7.75	0.65
MSS - 01490330 - Ku	27.5 - 31.5	17.7 - 21.2	7.80 - 10.95
MSS - 04500800 - DBS	17.3 - 18.4	10.7 - 12.7	4.5 - 8.0
MSS - 08801095 - Ka	12.75 - 14.5	10.7 - 12.75	1.49 - 3.30
MSS - 23302530 - Q	43.5 - 45.5	20.2 - 21.2	23.3 - 25.3

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