

Narda Satellite Networks

SATELLITE SIMULATORS TRI-BAND, QUAD-BAND AND KA-BAND



With the Wideband Global SATCOM (WGS) becoming operational, L-3 Narda Satellite Networks has expanded its Satellite Simulator product line beyond Tri-band, now including both Quad-band and Ka-band capabilities.

Designed for use as a training test-bed, L-3 Narda Satellite Networks satellite simulators can be used by operations personnel to setup and operate satellite earth terminals in the field under realistic operating conditions without the need for an actual satellite.

Use of the L-3 Narda Satellite Networks simulators in lieu of a satellite permits signal acquisition by the earth terminal, antenna pointing, uplink power adjustment, signal reception, link closure and communications systems adjustment to establish acceptable bit error rates with very low satellite terminal transmit power.

Key Features

- Simulates C-, X-, Ku-, Ka-Bands simultaneously
- Permits earth station set-up without actual satellite available
- Ruggedized/ weatherproof enclosures for outdoor deployment
- Typical operation range is 50-1000 ft (actual range is determined by antenna size and power)
- Low-phase noise for digital data
- Wireless remote control (available with Quad-Band Simulator)
- Lightweight
- Easy to operate



SATELLITE SIMULATORS

TRI-BAND, QUAD-BAND AND KA-BAND

| KA-BAND | |
|--|---|
| INPUT CONTROL AND POWER | |
| Power Requirements | 12 VDC or Battery Pack Option |
| RF INPUT SIGNALS | |
| Ka-Band | 30.0 to 31.00 GHz @ nominal -25 to +0 dBm |
| <i>Power levels are dependent on dish size, distance to simulator, and transmitter power</i> | |
| TRANSFER CHARACTERISTICS -- ALL BANDS | |
| Phase Noise | 10 dB (typical) better than IESS 308/309 |
| Midband Gain | -20 dB loss - attenuation setting including antenna gain |
| Gain Ripple Full Band | ±1.5 dB max |
| Gain Ripple per 80 MHz | ±0.75 dB max |
| Phase Linearity per 5 MHz | ±10 deg max |
| Frequency Translation Accuracy | ± 1ppm |
| In-band Signal Related Spurious | -45 dBc |
| Leakage Signals | -45 dBm max |
| Image Rejection | >30 dB |
| 1 dB Compression Point | 0 dBm at 0 dB attenuation |
| Input and Output Antennas | Linear polarized (nominal 5 dBi gain) |
| Input IP3 | >+20 dBm min |
| Group Delay | ±0.5 ns/40 MHz |
| PHYSICAL SPECIFICATIONS | |
| Mechanical Dimensions | Approx. size 6" x 3.5" x 1.5" w/o battery option, or C-, X-, and Ku-Bands, call factory for Ka-Band |
| Weight | < 5 lbs |
| Operating Temperature | 0° to 50° C |

| TRI-BAND | | | |
|--|---|--------------|--|
| RF SIGNALS | C-BAND | X-BAND | KU-BAND |
| RF Input Frequencies (GHz) | 5.850 to 6.425 | 7.90 to 8.40 | 14.00 to 14.50 |
| RF Output Frequencies (GHz) | 3.625 to 4.200 | 7.25 to 7.75 | 10.95 to 11.20 11.45 to 11.70 11.70 to 12.20 12.25 to 12.75 |
| TRANSFER CHARACTERISTICS -- ALL BANDS | | | |
| Type | Non-Inverting | | |
| Gain | -10 dB | | |
| Attenuation Control | 30 dB (60 dB optional) | | |
| Gain Ripple | ±0.25 dB/40 MHz ±1.0 dB/600 MHz | | |
| 1dB Compression Point (Output) | -10 dBm (@ 0 dB attenuation) | | |
| Gain Stability | 0.25 dB/day (25°C) | | |
| Impedance | 50 ohms | | |
| VSWR In/Out | 2.0:1 max | | |
| Spurious and Harmonic Rejection | 50 dB min in-band | | |
| Phase Noise | 10 dB (typical) better than IESS 308/309 | | |
| Frequency Stability | ±5 x 10-8/day (±1 x 10-9/day optional) | | |
| Group Delay | ±0.5 ns/40 MHz | | |
| Input/Output Antennas | Waveguide horns with nominal gains of 10 dB | | |
| PHYSICAL SPECIFICATIONS | | | |
| Dimensions | 19" H x 32" D x 27" W | | |
| Weight | 78 lb | | |

| QUAD-BAND | |
|--|---|
| INPUT CONTROL AND POWER | |
| AC Power | 115 to 230 VAC @ 5 watts nominal |
| DC Power | 12 to 24 Volts DC |
| RF INPUT SIGNALS | |
| C-Band | 5.85 to 6.425 GHz @ nominal -15 dBm |
| X-Band | 7.9 to 8.4 GHz @ nominal -15 dBm |
| Ku-Band | 14.0 to 14.5 GHz @ nominal -15 dBm |
| Ka-Band | 30.0 to 31.0 GHz @ nominal -15 dBm |
| <i>Input levels are dependent on dish size, distance to simulator, and transmitter power</i> | |
| TRANSFER CHARACTERISTICS -- ALL BANDS | |
| Phase Noise | 10 dB (typical) better than IES 308/309 |
| Midband Gain | 30 dB loss + attenuation setting (measured @ input/output antenna interfaces) |
| Gain Adjustment | 35 dB continuously variable |
| Gain Ripple Full Band | ±1.5 dB max |
| Gain Ripple per 80 MHz | ±0.75 dB max |
| Phase Linearity per 5 MHz | ± 10 deg max |
| Frequency Translation Accuracy | ±5kHz nominal, +/-10kHz for Ka-Band |
| In-band Signal Related Spurious | -50 dBc nominal |
| L0 Leakage | -90 dBm max |
| Image Rejection | >50 dB |
| VSWR In and Out | 2.0:1 |
| Input and Output Antennas | With nominal gains of 6 dB |
| 1 dB Compression Point | 0 dBm at 0 dB attenuation |
| Group Delay | +/- 5 ns/40 MHz |
| PHYSICAL SPECIFICATIONS | |
| Mechanical Dimensions | 6" H x 14" D x 12" W |
| Weight | <35 lbs |
| Front Panel Controls | 30 dB attenuation (continuous) per band |
| Front Panel Indicators | Lock alarms |
| Remote Switch Control (50 ft cable) | Band select |



Digisat International Inc.
4195 W. New Haven Ave., Suite 15
Melbourne, FL 32904

USA
+1-321-676-5250

Email: sales@digisat.org
<http://www.digisat.org>



L-3. Headquartered in New York City, L-3 Communications is a prime contractor in aircraft modernization and maintenance, C³ISR (Command, Control, Communications, Intelligence, Surveillance and Reconnaissance) systems and government services. L-3 is also a leading provider of high technology products, subsystems and systems.