Cogent Technologies

NanoSat 1211Ku

THE ULTRA-PORTABLE AUTO-ACQUISITION FLYAWAY SYSTEM

Key Features

- **Fully DVB compliant**
- **SD/HD video with analog/digital audio**
- **'Auto set up' from switch-on to 'on air' in typically < 3 minutes**
- **Lightweight & portable - IATA compliant**

Highlights

Sets a new standard in SNG flyaway terminals

The NanoSat Series sets a new standard in satellite flyaway (SNG) systems, quite possibly being the most compact and 'fastest-to-air' in its' class, with all of the functionality that a professional broadcaster might expect. The one-button 'Q-TOUCH' automatic acquisition operation makes deployment simple and it is possible for an operator to be ready to uplink in less than three minutes from unpacking the system. The rugged design, coupled with the most advanced light-weight carbon fibre antenna technology, makes the NanoSat suitable for the most demanding of applications. The exceptional technical specifications also allow customers to achieve great results under any operational scenario!

Standard packaging with 2 carrying cases

Optional backpack to replace case #2

Ultra-fast deployment

The NanoSat's one button 'Q TOUCH' auto-acquisition control system enables fully automatic, modem independent, satellite acquisition and tracking capabilities for rapid deployment. Satellites are typically acquired in less than 3 minutes. Thanks to this exclusive technology, the NanoSat can be operated safely and reliably by a non-technical operator without the need for external/additional test equipment such as a spectrum analyser.

Uncompromised video quality

Using state-of-the-art encoding algorithms, the NanoSat aims to provide the best encoding efficiency possible. It provides MPEG-2 (optional H.264) full broadcast quality 4:2:0 / 4:2:2 video encoding with DVB-S (optional DVB-S2) modulation. Using such an approach the satellite bandwidth is minimized to save resources, whilst providing exceptional performance. The NanoSat 1211Ku is equipped with a 40W SSPA to provide an optimum balance between output power and low power consumption/weight. The NanoSat is configurable over a range of encoding profiles and modulation schemes to tackle the numerous uplink scenarios that you may encounter.

Smart packaging and small footprint

The standard NanoSat system is packed in two small size cases, both of which are well within the current IATA size and weight requirements, and thus offering a highly portable solution for dynamic assignments. The transit case for the main unit contains the antenna pedestal, antenna 'centre petal' with feed, plus Encoder/Modulator/Up Converter/HPA electronics. This transit case weighs just 32kg (Model 1211Ku). The second case contains the remaining 5 antenna petals, power/baseband cables plus any other accessories. Typically the second case weighs less than 12kg.

Imagine the possibilities with a feature-rich 'auto-acquisition' flyaway system housed in just two 'IATA compliant' cases and with a total weight of just circa 44kg!

For 'tactical' applications, the second case can be replaced with a backpack option for increased mobility (one-man capable). The total system weight is now reduced to less than 39kg!

Specifications

Antenna Performance

Aperture: 120cm x 110cm, segmented into six pieces
Frequency: Tx: 13.75~14.5GHz
Rx: 10.95~12.75GHz
Polarization: Linear, Tx/Rx 2 ports
Cross-polar isolation >35dB
Gain: Tx: 43.2dBi
Rx: 42.0dBi
Auto positioning accuracy: ≤0.18°(RMS)
Azimuth adjustment: ±90° in 0.1° step, 0.1°/s~5°/s
Elevation adjustment: 0°~90° in 0.1° step, 0.1°/s~5°/s
Polarization adjustment: ±90° in 0.1° step, 1°/s
VSWR: Tx: 1.25:1
Rx: 1.30:1

Encoding Performance

Video

Inputs: SDI or Composite
Line standard: PAL/NTSC
MPEG2 mode: 4:2:0 or 4:2:2
H.264 mode (option): 4:2:0 or 4:2:2
GOP size: User variable 1 to 20 frame GOP
Encoding delay: 1 frame (43ms) minimum, depending upon chosen mode
Bitrate: 1 to 15Mb/s 4:2:0, up to 25Mb/s 4:2:2

Audio

Input (digital): 2x AES-EBU, de-embedded from SDI or separate
Input (analogue): 2x stereo, line or microphone
Sample Rate: 48KHz
Coding: MPEG Audio Layer 1, 2
Bitrate: 64 to 384Kb/s

Data

Input: RS-232

L-band Output

Frequency: 950 to 2000MHz in 1kHz steps
Power: 0 to -25dBm in 0.1dB steps
Accuracy: +/-0.5dB

Modulation Performance

DVB-S QPSK: 1Mbps to 70Mbps
DVB-S2 (option): All standard modes
Roll off: 0.15, 0.20, 0.25, 0.30, and 0.35

Ku-band Performance

Transmit Frequency: 13.75 - 14.5GHz
Small Signal Gain: 70dB nominal
Gain Variation: 0.5dB over 36MHz
3dB over 500MHz
(over frequency at fixed temperature)
Gain Variation: 3dB p-p over operating range
(over temperature at fixed frequency)
Saturated Output Power (nominal): 46.5dBm (>44W)
P1dB Output Power*: >46dBm (39.8W)
Rated Output Power*: 46dBm
Intermodulation*: -25dBc
(with two equal carriers at 3dB total power back-off from rated power)
Spectral Regrowth: -30dBc
(at 2dB below rated power at 1.0x symbol rate offset for OQPSK or QPSK)
Noise Power
Maximum Receive Band: -150dBW/4kHz
Phase Noise: Meets IESS-308
Output Spurious: -55dBc
AM/PM Conversion: 2deg/dB
(up to rated powers -2dB)
*Guaranteed over temperature and frequency

Control Devices

Control: Ethernet Interface, Wi-Fi

Power Supply

85~265VAC or 48VDC （295W@ rated power with 40W SSPA)

Environmental Conditions

Temperature
Operational: -25°C to 55°C, Storage: -55°C to 80°C
Wind speed
Operational: 14m/s, Survival: 25m/s
Humidity: 0 to 100% RH

Mechanics

Net Weight (terminal only) approx.: 29kg
Full Weight (full options with two carrying cases) approx.: 44kg
Full Weight (full options, one carrying case, one backpack) approx.: 39kg
Dimension of terminal (folded): 660mm x 410mm x 220mm
Case Dimensions: 750mm x 500mm x 260mm, well within the IATA weight and size requirement

These specifications are accurate at the time of issue but may be subjected to change without notice.

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