



MAIN FEATURES

- 14.0 to 14.5 GHz Tx
- 10.95 to 11.70 GHz, 11.70 to 12.20 GHz or 12.25 to 12.75 GHz Rx
- 70 or 140 MHz IF input/output
- Feedhorn-mounted SSPA
- Light weight units (intended for spar mount)
- Modular construction for ease of upgrades

INTRODUCTION

The KST-2000L Ku-Band satellite earth station transceiver is a high performance, full featured transceiver. The converter unit controls external SSPAs, and automatic gain control (AGC) is provided for power output stability.

The KST-2000L is divided into three distinct areas of operation:

- Converter Unit: Convection cooled, up/down converter with an internal power supply and microprocessor-based Monitor and Control (M&C).
- Low Noise Block Converter (LNB): Feed-mounted with or without a Transmit Reject Filter (TRF).
- Power amplifiers: Offered with 2 or 4W power output capabilities.

APPLICATIONS

The KST-2000L is ideally suited for application in:

- Satellite News Gathering (SNG)
- Very Small Aperture Terminals (VSATs)
- Flyaway Terminals
- Rural Telephony
- Network Remote Sites

NEW FEATURES

- External LED indicators for power on/TX RF on and fault indication
- Power-factor-corrected power supplies
- L-band receive monitor output
- High-stability internal frequency reference

STANDARDS AND CERTIFICATIONS

The KST-2000L meets the following industry standards:

- IESS 308 and IESS 309
- FCC Radiated Emissions Requirements

The system is also CE Mark certified for the following:

- EN55022 (Conducted and Radiated Emissions)
- EN50082-1 (Immunity)
- EN60950 (Safety)
- EN61000-3-2 (Harmonic Current Emissions)

INSTALLATION

The KST-2000L can be mounted behind the reflector of small antennas, on the feed boom of offset feed antennas, or within the hub of larger antennas. Two coaxial cables connect the converter unit to the separate SSPA and the LNB assembly.

Additionally, the SSPA connects to the converter unit with a separate M&C cable. The M&C cable supplies power directly from the converter unit.

Connection to indoor equipment, such as modems, is accommodated via two low-cost 70 or 140 MHz coaxial cables. A twisted pair may be used for M&C functions.



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Converter Transmit Characteristics

Output Frequency	14.0 to 14.5 GHz, in 1.0 MHz steps
Input Frequency	50 to 90 MHz
Input Power Level	-25 to -45 dBm operational, -10 dBm survival
Gain	40 dB nominal at mid-range user attenuator setting
User Attenuator Range	0 to 20 dB, in 1 dB steps
Power Output at 1dB Compression	+15 dBm minimum
Transmit Phase Noise	Exceeds requirements of IESS 308/309

Converter Receive Characteristics

Input Frequency	950 to 1700 MHz
Output Frequency	50 to 90 MHz
Gain	45 dB maximum
User Attenuator Range	0 to 20 dB, in 1 dB steps
Gain Variation with Frequency	At a fixed temperature
Any 40 MHz Band	2.0 dB peak-peak
Entire Operating Band	3.0 dB peak-peak
Power Output @ 1 dB Compression	+16 dBm minimum
Power Output Stability over Temperature	4.0 dB at a fixed frequency
Phase Noise	Exceeds requirements of IESS 308/309
Spurious Signals	
Signal Related	-50 dBc at -5 dBm output -35 dBc at <250 kHz from carrier
Non-Signal Related	-126 dBm max. referred to LNB input
Third Order Products	-33 dBc for 2 carriers each at +6 dBm
Auxiliary Output Monitor	
Frequency	950 to 1700 MHz
Gain	20 dB relative to the carrier input
Connector	Type N female, 50Ω
LNB Frequency Option	10.95 to 11.70 GHz 11.70 to 12.20 GHz 12.25 to 12.75 GHz
LNB Noise Figure	1.0 dB max



General Converter Characteristics

Prime Power	85 to 264 VAC, 47 to 63 Hz, <200W
Serial Data Interface, User-selectable	EIA-232 EIA-485, half duplex EIA-422, half duplex
Serial Data Baud Rate, User-selectable	300, 600, 1200, 2400, 9600, 19200
Frequency Stability	± 1.5 x 10 ⁻⁹ over 24 hours at constant temperature ± 1 x 10 ⁻⁸ over temperature
Discrete Alarm Outputs	
Uplink Summary Alarm	Form "C" relay contacts
Downlink Summary Alarm	Form "C" relay contacts
System Summary Alarm	Form "C" relay contacts
LED External Indicators	Prime Power On/Tx RF On Summary fault
IF Input/Output Connectors	Type N female, 50Ω
Tx Output/Rx Input Connectors	Type N female, 50Ω
Size	21.75 H x 8.25 W x 8.0 D inch (55.2 H x 21 W x 20.3 D cm)
Weight	30 lbs (14 kg)
Environmental (Convection Cooled)	
Temperature	-40 to +55° C operational -50 to +75° C storage
Humidity	0% to 100% RH
General SSPA Characteristics	
Frequency Range	14.0 to 14.5 GHz
Power Output at 1 dB Compression, at 25° C	+33 dBm for 2W unit +32 dBm guaranteed +36 dBm for 4W unit +35 dBm guaranteed
Third Order Intercept Point	+41 dBm for 2W unit +44 dBm for 4W unit
Gain	27 dB for 2W unit 30 dB for 4W unit
Gain Variation Over Frequency	2.0 dB p-p at 25° C
Input Connector	Type N female, 50Ω
Output Connector	WR-75 waveguide flange
Input Power	+9.75 VDC from converter
System Transmit Characteristics with Comtech EF Data SSPA	
Gain Stability over Temperature, AGC on, Fixed Frequency	3.0 dB p-p maximum 2.0 dB p-p typical
Gain Variation with Frequency	
± 20 MHz	2.0 dB p-p
Entire Band	3.0 dB p-p
Spurious Signals	
Signal Related	-50 dBc at 6 dB below P1 dB -35 dBc at 6 dB below P1 dB
< 250 kHz	
Non-signal Related	-51 dBm / 4kHz without SSPA -24 dBm / 4kHz for 2W unit -20 dBm / 4kHz for 4W unit



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