

Now, full RF power on a small UHF SATCOM terminal, employing a 2.25 ampere, fused BA-5590 lithium battery.

DESCRIPTION

Motorola's LST-5C Lightweight Satellite Terminal is the latest, enhanced, small (209 cu. in., 8.4 lbs.) UHF tactical SATCOM/LOS transceiver.

The LST Series has been in continuous production since 1985. This technically innovative radio, with microprocessor control and EPROM storage, is designed for rugged reliability and user friendly ease of operation.

Relative received signal strength can be displayed on an easy-to-read, lighted LCD. Transmitter output power is adjustable in 2-watt steps. All modes of operation, frequencies, bands, and preselects are chosen through four push-buttons. In SELCALL (select-call) mode, the caller selects and keys any one of 75 designated units through a digitally-coded transmission; a visual and audible hand-shake is received and the caller initiates a message. A similar procedure establishes a conference call to all units.

The transceiver operates wide band (25 kHz) AM/FM voice or data, in either plain or encrypted text; or narrow band (5 kHz) 1200 BPSK and 2400 SBPSK data or digitized voice.

Current applications include portable manpack, vehicular, airborne/rotocraft, shipboard, remote and fixed station.

FLEXIBLE, EFFICIENT DESIGN

- NOW! Full Power on Lithium Batteries
- Forward and backward compatibility with LST-5B
- DoD certified for SATCOM satellite architecture interoperability
- MIL-STD-188C data interface; RS-232 compatible
- Interfaces with most wide and narrow band encryptors



- Front panel-mounted fuse
- Adjustable transmitter output power
- Received signal indicator for easy antenna positioning
- Non-restricted SATCOM frequency offsets
- Bandpass filtering optimized for urban/high RF environments
- 3-year warranty

REDUCED POWER CONSUMPTION

- High Efficiency Transmitter – Typical SATCOM uplinks require less than 2.0 Amps at 24 Vdc
- Extended Battery Life – 20% increase
- Efficient LCD Display
- Solid State T/R switch

GREATER MISSION FLEXIBILITY

- Extended duty cycle – fewer batteries per mission
- Efficient packaging – provides for future COMSEC/DAMA upgrades
- Lighter – 5% weight reduction

REDUCED PARTS COUNT

- Surface mount technology
- High efficiency RF FET final stage
- Improved design eliminates 2 modules
- Increased reliability/4000 hr. MTBF



SPECIFICATIONS

GENERAL CHARACTERISTICS

Frequency Range	225-399.995 MHz
Channel Spacing	5 kHz and 25 kHz
Frequency Accuracy	± 1 ppm over operating temperature and for one year
Modulation	AM and FM, voice, cipher, data and beacon. 1200 BPSK, 2400 SBPSK data, nondifferential or differentially encoded data
Operating Modes	BPSK, SBPSK Plain text: AM, FM Cipher text: AM, FM T-R: Receive and transmit on any of 9 preset channels Scan: Any 2 of 9 preset channels Beacon: Transmit swept tone on selected frequencies SELCALL: 75 selective call codes, 1 conference call code
Remote Control	All radio functions controlled via dedicated hardware or PC based software through X-mode connector

SATELLITE MODEM CHARACTERISTICS (240-325 MHz)

Carrier Acquisition ± 700 Hz offset	150 Msec maximum C/KT = 41 dB at 1200 BPSK and 2400 SBPSK
C/KT at 10^{-3} BER Non-differential	39 dB at 1200 BPSK 43 dB at 2400 SBPSK
Sensitivity for 10^{-3} BER, typical	-131 dBm at 1200 BPSK -127 dBm at 2400 SBPSK
Data Interface Levels	MIL-STD-188C-144 unbalanced
Modulator	Internally generated transmit clock - no transmit clock needed
Demodulator	Data and edge coherent clock supplied
Stability	± 50 ppm

PHYSICAL CHARACTERISTICS

Size	3.75 in. high 6 in. wide, 9.3 in. deep
Weight	8.4 lbs.
Battery Case	2.8 in. high, 5.3 in. wide, 5.4 in. deep, 3.2 lbs. with BA-5590/U

RECEIVER CHARACTERISTICS

Sensitivity	FM, Plain text = -119 dBm FM Cipher text = -117 dBm AM Plain text = -110 dBm AM Cipher text = -112 dBm
$10 \text{ dB} \frac{S+N}{N}$	
Noise Figure	4 dB typical
Spurious Responses	70 dB above sensitivity

TRANSMITTER CHARACTERISTICS

Power Output	FM, PM: adjustable in 2 watt steps from 2 to 18 watts AM: low 2 watts; high 5 watts
Protection	Load short to open, thermal
Spurious Outputs	60 dB below carrier typical
Spectral Containment	95% in a 5 kHz BW at 2400 SBPSK
Transmitter Noise Floor	-110 dBm/Hz Typical at 10 MHz

EQUIPMENT COMPATIBILITY

- AN/CSZ-1, 1a, 1i, Packet
- KY-57/58/65, KG84
- ANDVT/KYV-5
- AM-7175/URC, 200w PA
- PTPE 100/101 Pre-amp
- GRID, DMDG, Most RS232 Devices
- AN/URC-101/104/110
- AN/WSC-3, ARC 171
- HST-4/AN/PSC-3/AN/VSC-7, VGIU
- FAX, still & slow scan video

ENVIRONMENTAL

Operational Temp. Construction	-30 C to +55 C Environmentally tested for humidity, immersion, vibration, shock, drop and crash safety
MTBF	Tested to 4000 hours Calculated 5987 hours

LSSC-300 lightweight, deployable UHF SATCOM suitcase system can be fully equipped with LST-5C, encryptor, and ancillary equipment to provide worldwide wide and narrow band voice and data communication. Shown with GRID computer and TRIVEC AVANT antenna.



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Government Electronics Group

For more information, or to order call

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