Flight-Proven Satellite Communications

TT&C for Commercial/Government Missions
Information Assurance/ COMSEC
Satellite Command & Control
FLIGHT-PROVEN SATELLITE COMMUNICATIONS TT&C

L3 T&RF offers flight-proven TT&C Transponders, and separate Transmitters and Receivers to support short-term missions as well as industry standard products such as the CXS-2000/C and CXS-810/610 for longer term missions. With flexibility in Bus Voltage, data rates, frequencies and parts level, we can solve virtually any mission requirement.

CXS-1000 - Software defined Transceiver/Transponder
- Radiation tested for GEO environments
- Multi-waveform Receiver supports L or S-Band, with options to Ka-Band
- Transmitter supports 1W to 5W, data rates to 6 Mbps
- Standard pricing/delivery

CXS-610 - STDN/USB/DSN Transponder
- High reliability choice for STDN/DSN/NEN compatible communications
- Utilizes multi-function ASIC for improved performance
- 610/810 Transponder family features well over 5 million operating hours
- Standard Diplexer configuration

CXS-810/C (KI-57) - SGLS Transponder
- High reliability choice for SGLS AFSCN compatible communications
- Utilizes multi-function ASIC for improved performance
- 610/810 Transponder family features well over 5 million operating hours
- Standard configurations available with embedded COMSEC, Diplexer

CXS-2000/C (KG-150) - SGLS/USB Multi Mode Transponder
- High reliability choice for SGLS/USB compatible communications
- Multi-mode PM, FSK/AM, BPSK (QPSK optional)
- Significant flight heritage on numerous national asset programs
- Standard configurations available with embedded COMSEC, Triplexer, etc.
- Optional Ka-Band converters

MSX-765 - L/S-Band Transceiver
- S-Band BPSK Command Receiver data rate capable to 2 Mbps
- L-Band BPSK Telemetry Transmitter data rate capable to 10 Mbps
- Stand-alone Transmitter/Receiver configurations, radiation hardened for long missions
- Flight heritage on national asset weather missions
L3 T&RF offers flight-proven IA/COMSEC products that support a wide variety of mission requirements for both commercial and U.S. DoD customers. With over 30 years of COMSEC design and embedment history, L3 T&RF is a recognized leader in providing Government approved Suite A and Suite B products for DoD and/or CNSSP-12 applications.

**CDU-200 - Command Decryption Unit**
- Available configurations for CNSSP-12 compliance, and SECRET and BELOW (SAB) applications
- 15-year mission life, 1 Mbps uplink
- Uplink command authentication
- Available in single board embeddable solution

**MCU-110C - Miniature COMSEC Unit**
- Stand-alone integrated encryptor/decryptor
- Encrypt rates to 10 Mbps, Decrypt rates to 5 Mbps
- Update to flight-proven MCU-110B, extensive flight heritage (>150 units delivered)

**MCU600 - COMSEC/TRANSEC Processor**
- Modular Government approved encryptor/decryptor/TRANSEC processor
- Flight proven internally redundant architecture, supports 15-year missions
- Encrypt rates capable to 100 Mbps, Decrypt rates 2 Mbps

**MRA-700 - Medium Rate AES**
- Encryptor/decryptor for command authentication, telemetry and crosslinks
- 40 Mbps command authenticate uplink and 640 Mbps downlink
- Supports AES-256 GCM, ECB w/VCC, CFB and Counter modes

**HPI - Hosted Payload Interface**
- Aggregates the HPIU and COMSEC telemetry with the hosted payload data packets and encrypts into a serial data stream
- Provides digital data processing and flexible architecture for connecting payload to host satellite interfaces
- Receives and processes commands from the hosted payload that control the configuration of the HPIU and/or external COMSEC unit
SATELLITE COMMAND & CONTROL SOFTWARE

- Supports large constellation deployments
- Scalable (CubeSat, LEO, MEO, GEO interplanetary launch vehicle)
- Ability to use same software application in satellite test and on-orbit operations
- Fully customizeable using XML

- Ability to use same software application in satellite test and on-orbit operations
- Variable autonomy
- Optional flight dynamics and mission planning support
- Optional scheduling