

FAST. FORWARD.

# KI-700 MEDIUM RATE ADVANCED ENCRYPTION STANDARD (AES) UNIT

Manages telemetry and mission data within a single encryption unit

The KI-700 is the latest National Security Agency (NSA) certified AES-256 based encryption and decryption unit supporting data rates up to 640 megabits per second (Mbps). The unit provides secure uplink and downlink protection for satellite command, telemetry, crosslink and payload communications links. The KI-700 is certified to protect up to top secret data. The unit can be used to secure the command and telemetry links for foreign and domestic commercial satellites seeking compliance with Committee on National Security Systems (CNSS) Policy No. 12.

direct from L3Harris or through the U.S. Air Force's Material Life Cycle Management Center.

L3Harris has over 25 years of experience embedding a variety of NSA devices into high-reliability airborne and space applications. With a strong spaceflight heritage, L3Harris is a recognized industry leader in NSA certified top secret and below space cryptographic solutions with over 350 units manufactured.

## KEY BENEFITS

- > Lowers risk by using qualified design and family of space-proven parts

## SPECIFICATIONS

| INTEGRATED ENCRYPTOR/DECRYPTOR                   |   |
|--|---|
| Encrypt  | CTR, CFB, GCM<br>AES-256 modes  |
| Decrypt  | GCM, ECB w/VCC, CTR, CFB<br>AES-256 modes (authenticated modes)   |
| Keying capability                                | PROM keys: Decrypt selectable<br>TEKs up to 224, encrypt TEKs<br>selectable up to 256 TEKs, with<br>OTAR capability supported with the<br>use of up to 32 keys KEKs |
| Data rate  | Encrypt 1 kbps to 640 Mbps max,<br>Decrypt 1 kbps to 40 Mbps max  |
| Over the air rekey                               | From ground encryptor in GCM mode via uplink or from CD&H<br>using host interface in ECB mode   |
| INTERFACE  |   |
| Uplink/crosslink downlink                        | Data, clock and gate: LVDS serial<br>Data, clock and gate: LVDS serial to 40 Mbps<br>Parallel 8-bit to 320 Mbps<br>Parallel 16-bit to 640 Mbps                      |
| Telemetry  | LVDS serial   |
| Mode configuration and discrete telemetry status | LVC MOS   |

## SPECIFICATIONS - CONTINUED

| POWER REQUIREMENTS  |  |
|---|--|
| Input voltage   | + 5Vdc, ± 5%   |
| Power (nominal)   | 2.25 W standby (no data/clock), 4.2 W uplink 40 Mbps and downlink 40 Mbps (GCM), 8.9 W full duplex and maximum data rates (ECB) UL 40 Mbps/CTR DL 640 Mbps |
| Inrush current  | < 2 A for < 300 msec (@ highest data range settings)   |
| GENERAL   |  |
| Dimensions  | 5.8 in L x 5.8 in W x 1.07 in H  |
| Weight  | < 1.63 lbs   |
| Temperature   | QUAL: -30 °C to +72 °C;<br>FM: -28 °C to +65 °C  |
| Vibration   | 34 Grms  |
| EMI   | MIL-STD-461C/D   |
| Radiation   | 100 krads (Si) (chassis)   |
| Mission life environments   | Designed for 22 year life, inclusive of 15 years on-orbit mission operation in GEO   |
| NRE OPTIONS   |  |
| DS-101 interface for electronic keying capability and plain text buffering for GCM messages prior to authentication |  |

## KEY FEATURES

- > Possesses NSA certification
- > Is total dose and single effect hardened
- > Supports encryption and decryption in a single unit
- > Designed for commercial GEO hosted payload and small satellite applications
- > Offers encryption and decryption for command authentication, telemetry and crosslinks
- > Offers 40 Mbps command authenticate uplink and 640 Mbps downlink
- > Supports diverse AES-256 modes
- > Supports high data rate applications
- > Provides over-the-air (OTAR) rekeying capability

### KI-700 Medium Rate Advanced Encryption Standard (AES) Unit

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L3Harris Technologies is an agile global aerospace and defense technology innovator, delivering end-to-end solutions that meet customers' mission-critical needs. The company provides advanced defense and commercial technologies across air, land, sea, space and cyber domains.



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