

- » NSA Certified Type 1 Layer 2 Ethernet Encryption
- » Conforms with NSA ESS and IEEE Std 802.1AE MACsec (Field Upgradeable to EDE-CIS)\*
- » Proven High-Availability and Near-Zero Latency
- » Flexible data rates 1x10, 2x10G, 4x10G, and 100Gbits/s (20 Gbps, 40 Gbps, 80 Gbps and 200 Gbps aggregate)
- » Single and Multiple Point-to-Point mode options



The Viasat KG-142 is the first and only 100 Gbps (200 Gbps aggregate) Type 1 MACsec Ethernet encryptor. The KG-142 is capable of operating at multiple speeds, 20 Gbps to 200 Gbps (aggregate) and Multiple Point-to-Point connections with VLAN ETT. Designed to protect data up to TS/SCI for very high-bandwidth applications, such as data center interconnect, cloud computing and big data processing. The KG-142 encryptor delivers reliable, network-efficient protection for Layer 2 Ethernet communications. Combining decades of experience protecting classified government data with proven innovation in broadband networking, Viasat designed the KG-142 for high-availability and security that keeps pace with mission demands.

Through a field proven software-upgradeable design, Viasat's network encryption product portfolio, the KG-142 is able to evolve over time without hardware changes to meet the latest cybersecurity standards and interoperability such as Enhanced Traffic Flow Security (E-TFS) and EDE-CIS interoperability specification including KMI Aware/PDE Enabled.

The Viasat KG-142 is tested for high-reliability, supporting 99.999% uptime via N+1 redundancy system architectures. With 20 Gbps - 200 Gbps processing power packaged in a slim 1RU box and full remote management via web interface and SNMP, this encryptor simplifies enterprise-to-enterprise and government private cloud encryption for classified communications.



### VIASAT KG-142 AT-A-GLANCE

#### TS/SCI Ethernet Protection

- » 100 Gbps (200 Gbps aggregate)
- » 1 x 10 Gbps, 2 x 10 Gbps, 4 x 10 Gbps (20 Gbps, 40 Gbps, 80 Gbps aggregate)
- » Multiple Point-to-Point with VLAN ETT
- » Near-zero traffic latency
- » Supports long and short reach optics
- » Software upgradeable to EDE-CIS and E-TFS\*
- » Metro Ethernet Forum (MEF) and IEEE compliant frame forwarding
- » NTP clock sync
- » Syslog support
- » Supports Traffic Flow Security (TRANSEC)
- » Configurable address filtering to work through bridge applications
- » Supports 99.999% reliability via N+1 redundancy system architectures

#### Hassle-Free Setup and Maintenance

- » SNMP and browser-based device management configurations
- » VINE Manager™ software provided at no extra cost; centrally manage Viasat Layer 2 and 3 (HAIPE®) network encryptors
- » Automated key management
- » Supports Link-OAM
- » Dual redundant hot-swappable power supplies
- » Field-replaceable fans

#### Primary Applications

- » Data center interconnectivity
- » Content distribution network
- » Big data processing
- » Network resiliency, load balancing, and synchronization
- » Operational continuity/disaster recovery (data mirroring, remote backup)

\* Capability soon available via software upgrade

## SPECIFICATIONS

### NETWORKING FEATURES AND PROTOCOLS

<b>Security Protocols Supported</b>	ESS/MACsec: both standard MACsec and single-frame Ethernet Transport Tunnel (ETT) Mode as defined by ESS. ETT mode adds Traffic Flow Security (TRANSEC) to standard MACsec, by protecting red network headers. Field upgradeable to E-TFS and EDE-CIS including KMI Aware/PDE Enabled.* Supports EDE-M Single Point-to-Point, and EDE-CC Multiple Point-to-Point modes.
<b>Networking Features</b>	Protects data at Layer 2, supporting any Layer 3 protocol stack (IPv4, IPv6, UDP/TCP/HTTP, etc). Supports Protected tunneling of Red Network VLAN tags. Supports Link-OAM. Supports NTP clock synchronization.
<b>Management</b>	SNMP & HTTPS browser-based management, free VINE Manager® software. Supports Syslog formatted event reporting.

### NETWORK INTERFACES

#### Data Interfaces

- » **Industry standard C Form-Factor Pluggable 2 (CFP2) 100 Gbps transceiver sockets**
  - Supports both Long-Reach (LR4) CFP2 and Short-Reach (SR10) optics modules
  - 100G PT and CT ports can be configured independently (e.g. SR10 for PT port, LR4 for CT port)
- » **Industry standard Quad Small Form-factor Pluggable+ (QSFP+) 4x10 Gbps transceiver sockets**
  - Supports both Long-Reach (LR4) and Short-Reach (SR4) QSFP+ optics modules
  - 10G PT and CT ports can be configured independently (e.g. SR4 for PT port, LR4 for CT port)

#### Management Interface

- » Electrical/Mechanical: IEEE 802.3; HTTPS/SNMP Interface RJ-45 10/100/1000 Mbps; Console interface RJ-45 Serial

### COMSEC CHARACTERISTICS

<b>Algorithms</b>	Type 1 256-bit AES/GCM with 16-byte ICV, ACC*
<b>Key Fill Interface</b>	DS-101
<b>Flexible Keying</b>	Modular, Crypto Ignition Key (removal to unclassified CCI), EKMS, MACsec Key Agreement (MKA) using Dynamic Keying based on pre-placed key (PPK) CAK, Field upgradeable to EDE-CIS including KMI Aware/PDE Enabled*

### RELIABILITY AND MAINTENANCE

<b>Predicted MTBF</b>	150,000 hr; Telcordia® SR-332 for benign ground environment
<b>Predicted MTTR</b>	15 min to remove/replace
<b>Other</b>	Extensive power up and online BIT
<b>Fan Bank</b>	Field replaceable
<b>Power Supply</b>	Dual redundant hot-swappable supplies, field replaceable

### PHYSICAL

<b>Dimensions (W x H x D)</b>	17.11 x 1.72 x 22.5 in.
<b>Mounting</b>	Industry standard 19 in. wide x 1U High x 24 to 31 in. deep, slide rails
<b>Weight</b>	28 lb
<b>Power</b>	141 Watts; 110 to 240 VAC; 50-60 Hz. Redundant hot swap power supplies
<b>Battery</b>	External user replaceable battery, one "AA" lithium cell, 2 year operating life typical

### ENVIRONMENT

<b>Operating Temperature</b>	-5° to 50° C
<b>Storage Temperature</b>	-40° to 70° C
<b>Humidity</b>	5% to 93% non-condensing
<b>Altitude</b>	-200 to 6000 ft at up to 40° C operational

#### Vibration

- » **Transportation—Non Operational**
  - 0.01 g<sup>2</sup>/Hz [10Hz-200Hz]
  - 0.003 g<sup>2</sup>/Hz [200Hz-1100Hz]
- » **Installed—Operational**
  - +12 dB/octave [5-10 Hz]
  - 0.00042 g<sup>2</sup>/Hz [10-50 Hz]
  - -12 dB/octave [50-100 Hz]

<b>Shock</b>	Earthquake, Telcordia GR-63-CORE, Section 5.4.1, Zone 4
<b>EMI/EMC</b>	Telcordia GR-1089-CORE, ID 8, Table 3-1—Radiated emission

### CERTIFICATION

NSA Certified Type 1 Layer 2 Ethernet Encryption R1.1 - NSA Certified Type 1 Layer 2

\* Capability soon available via software upgrade



## CONTACT

#### SALES

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