



DATA/VOICE CRYPTO DEVICE

The CM107E is a multiprotocol digital voice/data crypto device for airborne, naval and land tactical applications. It can work in narrowband or wideband modes, interconnected to radio vectors (HF or V/UHF) or wired lines.

For voice applications, signal coming from a headset/handset or from on-board Communication Systems is digitalized by a VOCODER, encrypted and transferred to the transmission channel. Analogue voice plain text Tx/Rx is possible when this mode is selected or when the device is switched off.

MAIN FEATURES

- Data and voice encryption
- NATO and National approved algorithms
- Security: CIK, Anti tampering functionality
- Local or Remote control by CP107E
- Built-in diagnostics (BIT)
- Environmental/EMC/TEMPEST according to military standards
- Guard channel to ensure reception of emergency incoming voice alert
- Ready to support NATO/National crypto modernization

NARROWBAND APPLICATIONS

Voice mode

2400 bps LPC10 VOCODER; ciphertext is modulated in accordance with STANAG 4197 by internal modem (voice mode) and transferred to an analogue interface.

Data mode

Synchronous data traffic at 300, 600, 1200, 2400 bps (red side unbalanced electrical interface i.a.w MIL-STD-188-114). Ciphertext is modulated in accordance with STANAG 4197 by internal modem (data mode) and transferred to an analogue interface.

LOS mode

2400 bps LPC10 voice or 2400 bps data traffic; ciphertext is modulated by internal MODEM and transferred to an analogue interface.

BDM (Black Digital Mode)

2400 bps LPC10 voice or synchronous data traffic at 300, 600, 1200, 2400 bps; ciphertext is transferred to an external MODEM (fixed black side rate 2400 bps) through a digital interface (balanced, MIL-STD-188-114).

CM107E

Low Rate BDM

Synchronous data traffic at 75, 150, 300, 600, 1200, 2400bps, transferred to an external MODEM.

WIDEBAND APPLICATIONS

At black side a digital interface is used; unbalanced electrical interface in accordance with MIL-STD-188-114). Line coding can be selected among Baseband, Diphase or Conditioned Diphase.

Voice mode

8, 12 or 16kbps CVSDM VOCODER; ciphertext is transferred to the digital interface.

Data mode

Synchronous data traffic at 8, 12 or 16kbps (red side unbalanced electrical interface in accordance with MIL-STD-188-114). Ciphertext transferred to the digital interface.

Analogue Data mode

Red data consist in analogue tones (FSK), that are CVSDM encoded, encrypted and transferred to the digital interface.

TECHNICAL SPECIFICATION

GENERAL

Data and voice secure communications on NB and WB transmission channels
Standard Over-the-Air Rekeying functions
Remotely controllable by CP107E RCU
NVIS Compatible display and front panel lighting
Interoperability: KY-100 crypto device

NARROWBAND MODE

VOCODER	2400bps LPC10, i.a.w. STANAG 4198
Synchronous data traffic	300, 600, 1200, 2400bps
MODEM	i.a.w. STANAG 4197
Other modes	LOS, BDM, BDM Low Rate
Interoperability	ANDVT family crypto devices

WIDEBAND MODE

VOCODER	CVSDM 8-12-16Kbps
Synchronous data traffic	8, 12 or 16kbps
Analogue Data mode	
Digital Black Interface line coding baseband, Diphase or conditioned Diphase	
Interoperability	VINSON family crypto devices (e.g. KY-58)

SECURITY

NATO and National (Italy) approved up to NATO SECRET	
Equipment enabling by CIK; declassified to CCI when CIK is removed	
Number of storable key variables	60
Anti-tampering functions	
TEMPEST approved according to SDIP 27 Level A	
Management	
Auto-diagnostics	Power-on self-test, On-line BIT
Local control	Keypad/display use on the front panel
Remote control Unit	CP107E (RS485 bus)

ELECTRICAL FEATURES

Supply voltage	28VDC nominal
Power requirement	25W

PHYSICAL DATA

Dimensions	120.5 x 126.8 x 120mm (H x W x D)
Weight	<3kg
Colour	Matt black (FS 37038) i.a.w. FED-STD-595 (A)

ENVIRONMENTAL DATA

In compliance with MIL-STD-810F	
Operating temperature	40°C to +55°C
Max short term operating temp.	+71°C
Humidity	up to 93%±5%

EMI/EMC

According to MIL-STD-461E

ANCILLARIES

CP107E Remote Control Unit

CP107E acts as a remote Control Panel for up to a maximum of eight CM107E crypto devices; this simplifies avionic installations, since crypto devices can be installed in the bay, saving space on the console.

It allows the operator to manage, control and monitor a single Crypto Device, or to address all of them at the same time, especially for emergency commands. The operational use of the on-board secure radio channels is facilitated by the "PROGRAMS", pre-loaded settings for all the controlled crypto devices, easily recallable at mission time by dedicated switch.

FG101

FG101 is a portable device used to store a maximum of eight red keys or a maximum of four encrypted keys, and to transfer them to crypto device. It is equipped with a battery that allows storage of the keys for up to one year.

Line interface in compliance with EUROCOM D/I Crypto Supplement

Transfer protocol	DS102
Internal battery	BA1372/U 6.75V -BA5372/U 6V
Dimensions	75 x 150 x 45mm (H x L x D)
Weight	0.6kg

TR101

TR101 is a portable punched tape reader for the transfer of the keys on tape. It is endowed with an internal battery that has a duration of one year.

Line interface in compliance with EUROCOM D/I Crypto Supplement

Transfer protocol	DS102
Internal battery	BA1372/U 6.75V-BA5372/U 6V
Dimensions	60 x 150 x 45mm (H x L x D)
Weight	0.7kg