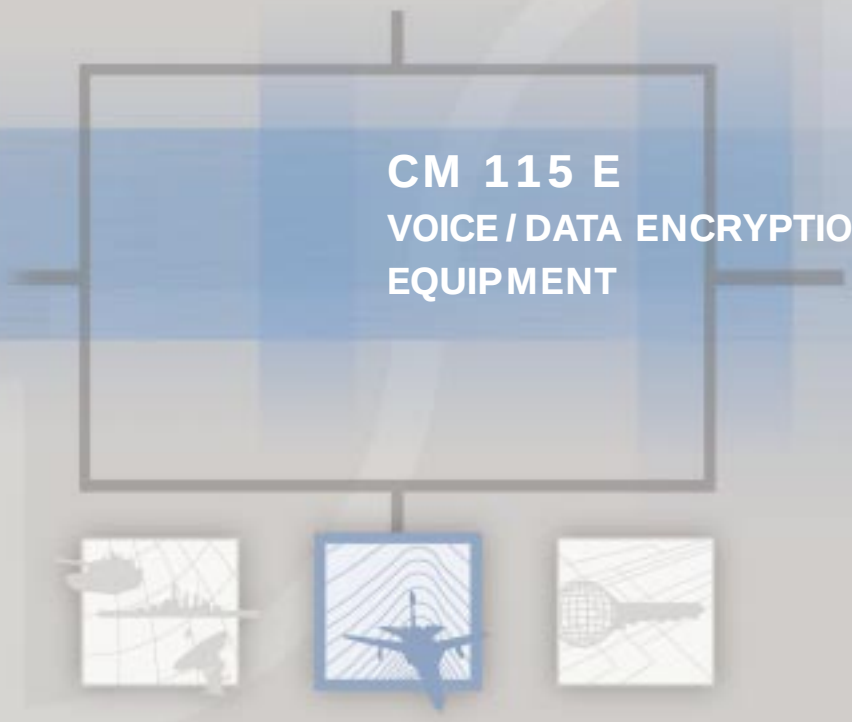
marconi selenia communications



CM 115 E

VOICE / DATA ENCRYPTION EQUIPMENT

A Finmeccanica Company

CM 115 E
VOICE / DATA ENCRYPTION EQUIPMENT

The CM115E equipment is a digital ciphering device that can be configured for voice or data applications. It can be used in conjunction with HF, VHF and UHF radios providing either narrow or wide band channels.

The voice analogue signal is internally converted to a digital signal, encrypted through a high-grade security algorithm, modulated and sent to the external radios for transmission.

The crypto algorithm is a proprietary Marconi Selenia Communications algorithm that can be customised by the end user.

Plain mode is also available. The operator can select the working mode as well as the key variable. Rapid erasure of all keys is possible.

The equipment can store up to 60 key variables. Key loading is performed by means of portable electronic transfer devices (Tape Reader, Fill Gun, etc.)

The CM115E can be provided with the following Ancillary Units:

- CP1144/D, Remote Control Unit
- MT1133/D, mounting slide

The equipment operates in the following modes:

Narrow Band

Voice Mode:

- Headphone interface (Voice in/out (0 dBm/600 Ohm), PTT)
- Analogue-to-Digital Voice conversion (LPC10 Vocoder at 2400 bps)
- Digital Encryption
- Analogue modulation (Modem set in voice mode)
- Radio interface

Data Mode:

- DTE interface (electrical interface V.10)
- Synchronous encryption and transmission at 300, 600, 1200, 2400 bps
- Analogue modulation (Modem set in data mode)
- Radio interface

Wide Band

Voice Mode:

- Headphone interface (Voice in/out (0 dBm/600 Ohm), PTT)
- Analogue-to-Digital Voice conversion (CVSDM 16 kbps)
- Digital Encryption
- Radio interface (BB / Diphase modulation)

Data Mode:

- DTE interface (electrical interface V.10)
- Synchronous encryption and transmission at 8 or 16 kbps)
- Half-duplex/Full-duplex Transmission Mode

The CM115E also incorporates the following features:

- CIK (Crypto Ignition Key)
- Anti-tampering mechanisms
- Battery for key holding
- Crypto alarms
- Local (Keyboard & Display) and remote control (RCU)
- BITE

The chassis is a lightweight aluminium alloy casting composed of three sub-assemblies:

- Front panel
- Main chassis
- Rear panel

The equipment is based on modular assembly allowing easy module substitution and maintenance.

CM 115 E
voice/data encryption equipment

TECHNICAL CHARACTERISTICS

Applications:	Secure voice and data communications over HF/VHF/UHF Radio channels
NARROW BAND MODE (HF)	
Analogue Interface (plain and secure):	0 dBm ± 3 dB
Data Interface (plain and secure):	V.10/V.11 selectable Baud Rate 300, 600, 1200, 2400 bps in synchronous mode
Voice Coding	LPC10 at 2400 bps
Analogue Modem	Modem STANAG 4197
Algorithm	Proprietary (can be customised)
WIDE BAND MODE (UHF/VHF)	
Analogue Interface (plain):	0 dBm ± 3 dB
Data Interface	V.10/V.11 selectable Baud Rate (plain) synchronous mode 300, 600, 1200, 2400 bps, 8, 12, 16 kbps Baud Rate (secure) Synchronous mode: 16 kbps Base Band or Diphase Code (secure side)
Voice Coding	CVSDM at 8, 12, 16 kbps
ENVIRONMENTAL CHARACTERISTICS	
Temperature	
Operating	from -40°C to +55°C
Transport/storage	from -55°C to +70°C
Humidity	95% max between 25 and 55°C non-condensing, MIL-STD-2036 paragraph 5.1.2.7)
Altitude	
Operating	up to 4270 m
Transport/storage	up to 10700 m
ELECTRICAL CHARACTERISTICS	
EMI/EMC	According to MIL-STD-461B part 4 class 3. (Applicable tests: CE03, CS02, CS01, CS02, RE01, RE02, RS01, RS03)
Fill Gun interface	According to EUROCOM D/1
Back-up battery	BA1372/U 6.5V or equivalent lasting 1 year in normal condition, re-placeable from the front panel.
PHYSICAL CHARACTERISTICS	
Dimensions (max)	146x123x136.5 mm (WxHxD)
Weight	approx. ≤ 5.3 Kg
POWER SUPPLY	
DC supply	28 Vcc ±20% 30W;
VOICE ENCRYPTION CM115E	
GENERAL CHARACTERISTICS	
Application	Secure voice and data communications over HF/UHF/VHF Radio channels
NARROWBAND MODE (HF)	
Analogue Interface (plain and secure)	0 dBm ±3 dB
Data Interface (plain and secure)	V.10/V.11 selectable Baud Rate 300, 600, 1200, 2400 bps in synchronous mode
Voice Coding	LPC10 at 2400 bps
Analogue Modem	Modem STANAG 4197
Approved Algorithm	NATO Saville
Interoperability	NATO approved Encryption Equipment ANDVT
WIDEBAND MODE (UHF/VHF)	
Analogue Interface (plain)	0 dBm ±3 dB
Data Interface	V.10/V.11 selectable Baud Rate (plain) synchronous mode 300, 600, 1200, 2400 bps, 8, 12, 16 kbps Baud Rate (secure) synchronous mode: 16 kbps Base Band or Diphase Code in secure side
Voice Coding	CVSDM at 8, 12, 16 kbps
Approved Algorithm	NATO Saville
Interoperability	NATO approved Encryption Equipment KY58-Vinson

OTHER FEATURES

MANAGEMENT

Auto-diagnostics	Power-on self-test On-line BITE
Local Contro	Using front-panel keypad/display
Remote Control Channel (*)	V.10/V.11 selectable Baud Rate: from 150 bps to 19200 bps
General Alarm	Floating relay contact

POWER SUPPLY

Battery	
Voltage	28 VDC nom.
Consumption	Max. 25 W

PHYSICAL

Size	92 x 448 x 395 mm. (H x W x D)
Weight	Max. 5 kg

ENVIRONMENTAL

According to MIL-STD-810D	
Temperature	-40oC to +55oC operating
Humidity	95% non-condensing

EMI/EMC
According to MIL-STD-461/2

TEMPEST

According to AMSG 720B	
Common Features - Installation	COCKPIT

ANCILLARY EQUIPMENT

FG101
The FG101 is a portable storage device for storing up to 8 keys according to EUROCOM D/1 - Crypto Supplement, or up to 4 encrypted keys.
It is internally powered by a battery that allows up to one year storage of the variables.

LINE INTERFACE
According to EUROCOM D/1 - Crypto Supplement

POWER SUPPLY

Internal battery type	BA1372/U 6.75 V
Key storage	up to 1 year.

PHYSICAL

Size	75 x 150 x 45 mm. (H x W x D)
Weight	0.6 kg

TR101
The TR101 is a portable tape reader storage device for transferring a punched tape variable according to EUROCOM D/1 - Crypto Supplement.
It is internally powered by a battery that allows up to one year operation.

LINE INTERFACE
According to EUROCOM D/1 - Crypto Supplement

POWER SUPPLY

Internal battery type	BA1372/U 6.75 V

PHYSICAL

Size	60 x 150 x 45 mm. (H x W x D)
Weight	0.7 kg

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