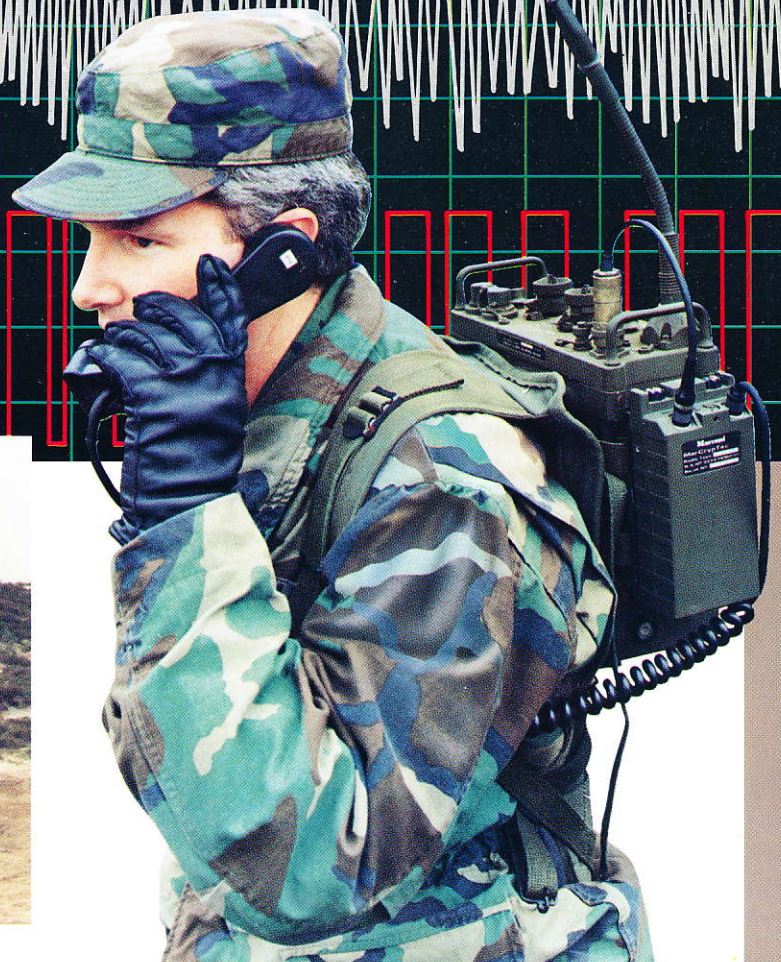


# MarCryptTac

## HIGH GRADE TACTICAL ENCRYPTION

Communications  
Security for  
the Battlefield



**Marconi**  
Secure Radio



# MarCrypTac High grade tactical encryption

In modern tactical scenarios, sophisticated radio communications play an ever-increasing role in the transmission of large amounts of strategic and intelligence information. Absolute security of this vital data is of paramount importance to the modern army. The use of low-grade security devices, such as analogue or digital scramblers, can no longer be considered effective against the advances in analysis techniques. Indeed, the use of such equipment is likely to be worse than employing no security at all since when they are deployed, users tend to speak more freely in the falsely secure environment that is created. High-grade digital encryption is therefore an essential part of any communication network.

MarCrypTac is a miniature secure speech encryption device, designed specifically as an add-on unit to existing combat radio systems to give full digital cryptographic protection – defying even the most sophisticated computer interception techniques. What's more, MarCrypTac can be easily removed from the radio, thereby ensuring that highly classified encryption equipment need never be left unattended, while still allowing the radio system to be used in the 'unsecure' mode.

Marconi are world leaders in digital encryption technology and MarCrypTac is the result of years of research and development in this vital field of advanced digital electronics – MarCrypTac is a compact, flexible device that will transform any currently unprotected network into a totally secure, state-of-the-art encrypted system.

MarCrypTac offers a host of advanced features that make it highly suitable for deployment in any modern military radio network namely;

- High-grade speech encryption
- Defies any known sophisticated analysis technique
- Maximum long-term voice security
- Compact, rugged and reliable
- Cost-effective and easy to install
- 16 Kbit/sec data rate for high quality speech reproduction
- Storage for 10 different key variables
- Fully automatic synchronisation
- Zero error extension and negligible range degradation
- Selective call facility
- Advanced key management system
- Small enough to be carried in a pocket



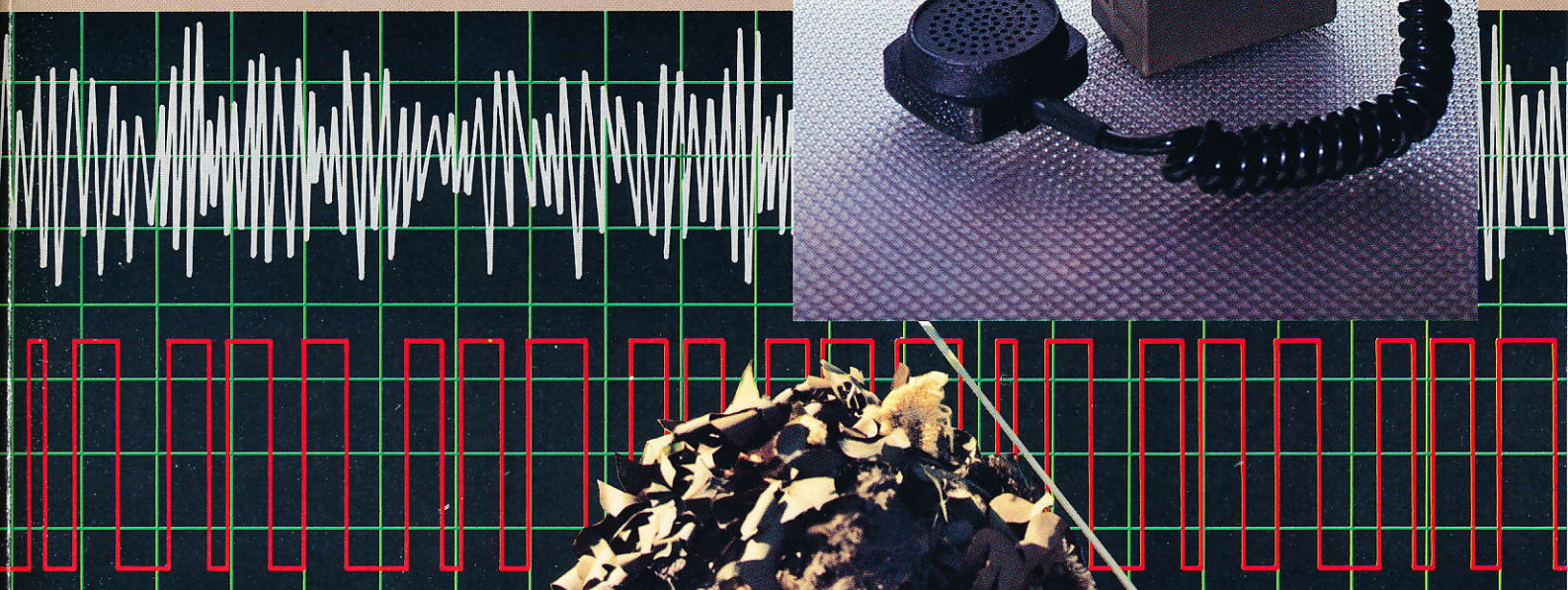
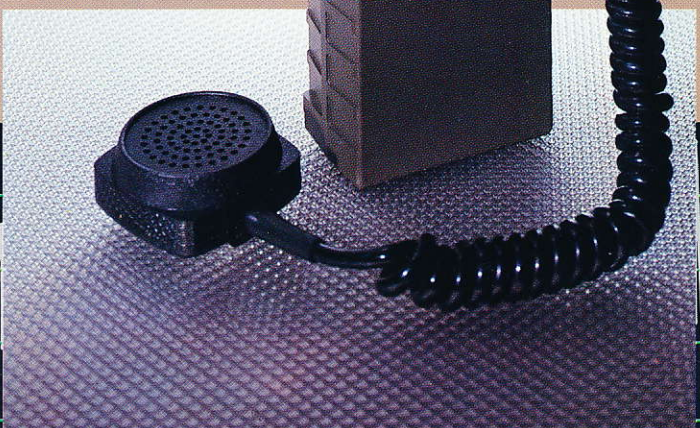
**TYPICAL APPLICATIONS**

- Fully secure battlefield communications
- Integration of new generation Scimitar and Minstrel radios into existing net
- Personal communications security
- Link encryption
- Digital telephone encryption

**UNIVERSALLY COMPATIBLE**

Whilst MarCrypTac was designed to operate with the PRC77 and VRC353 tactical radio systems, it will interface with any radio or system having a 16 Kbit/sec data rate. MarCrypTac's modular construction enables easy tailoring to individual requirements.

MarCrypTac is especially suitable for combining with the latest generation of Marconi military radios, namely SCIMITAR V and M, for integration into modern networks. Thus the secure capabilities of Scimitar and the Minstrel system (handheld radio, base station, rebroadcast) become available to MarCrypTac users.



# MarCrypTac

## UNIQUE FILL MANAGEMENT SYSTEM

For a high grade cryptographic system high security key management is as important as the strength of the encryption algorithms. Marconi therefore offers a versatile and secure key management system to support MarCrypTac.

The Fill Management Unit (FMU) is used for automatic or manual generation of key variables. It also provides facilities for storage, recovery and checking of key variables together with other control functions.

Key variables are transferred from the Fill Management Unit to MarCrypTac by means of a Fill Gun. The Fill Gun is a pocket-sized device which can be carried to the operating site of MarCrypTac. It is also possible to load key variables directly from the FMU into MarCrypTac.

Transfer of key variables between FMU, Fill Gun and MarCrypTac is by means of an optical interface, therefore avoiding the problems associated with electrical connection such as contact wear, dirt and corrosion, EMI, etc.

## Specifications

### CRYPTOGRAPHIC

#### MODES OF OPERATION

Clear and secure voice. Half duplex operation.

#### CONTROL FUNCTIONS

On/Off Volume, Transmit, key variable select, Mode Select.

#### ENCRYPTION PROCESS

Digital bit-by-bit encryption using linear and non-linear logic.

#### KEY VARIABLE LENGTH

128 bits. This gives  $2^{128}$  keys available to the user.

#### NO. OF KEY VARIABLES STORED

Simultaneous storage of up to 10 key variables.

#### METHOD OF KEY VARIABLE ENTRY

Optical coupling from a MSRS Fill Management Unit or Fill Gun.

#### SYNCHRONISATION

Automatic by means of redundantly coded preamble at the start of a transmission.

Optional resynchronisation bursts during message.

### ELECTRICAL

#### INTERFACES – AUDIO

Output: 0.4 Watts into a 40 ohm load.

Input: AGC circuit allows the use of a wide variety of microphones, handsets and headsets.

#### INTERFACES – RADIO

Interfaces are provided for either the PRC77 or the VRC 353 radio. Other interfaces are available on request.

#### POWER SUPPLY

10 volts to 32 volts DC

100 ma.

3.7 volt lithium battery provides key variable retention in the absence of main power for 1 year.

### PHYSICAL

#### SIZE

Height 170mm

Depth 50mm

Width 88mm

#### WEIGHT

800 grammes

### ENVIRONMENTAL

Relevant sections of DEF STAN 07-55

#### OPERATING TEMPERATURE RANGE

-30° to 65°C

## MAINTENANCE & SUPPORT

Marconi is able to offer maintenance and support facilities to match any customer requirement ranging from factory repair of faulty units to base repair to component level. Full technical and maintenance manuals are available and Marconi will provide training for customer personnel. A range of support test equipment is also available, including special manual test equipment or fully automatic test equipment.

MarCrypTac itself has been designed specifically to permit rapid maintenance of units in the field if necessary.



# Marconi

## Secure Radio

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