

# GRETACODER<sup>®</sup> 104



## G R E T A C O D E R 104

### Secure Voice System for Radio Communication

The GRETACODER 104 is a militarized secure voice system designed to protect radio channels against interceptors.

Voice control facilitates crypto conversations in "quasi duplex" on duplex channels - similar to intercontinental telephone communications via satellite but with the possibility of reverse signalling and "break-in". A simplex (push-to talk) mode is available for simplex channels.

The GRETACODER 103/104 uses digital signal processing, very long crypto programs and microprocessor control to provide the highest level of "pseudo digital" security. Keys are introduced with the appropriate front panel controls. 9 keys can be stored and subsequently selected. Stored keys are not recallable and remain in an electronic memory for several months without external power. The first digit of a key used also determines the security mode: two dimensional coding or time division only.

Changeover from clear to crypto or vice versa is fully automatic and remote controlled by either station. The automatic gain control compensates for variations in loudness on different channels.

The GRETACODER 104 includes BITE (built-in-test-equipment) to check the principal circuits without the need of external test equipment.

## **GRETACODER 104 Specification**

### **Technique**

- 8 fragment time and frequency division algorithm
- fast non-linear pseudorandom crypto program generator
- supervisor for suppression of non suitable fragment combinations
- digital speech processing at 64 kbit/sec by CVSD delta modulators
- microprocessor master control with 8 kbyte program
- total delay in crypto: 1 sec

### **Keys**

- $10^8$  external keys, entry via front panel selectors
- $10^7$  internal software controlled customer keys (more optional)
- 9 preselected external keys stored in tamper proof memory, externally selected or remote controlled (optional)
- message key (optional)

### **Clear Crypto**

- automatic, initiated by either station
- remote control possibility

### **Sync**

- fully automatic
- no resync or crypto program restart during crypto operation

### **Channel Requirements**

- standard voice grade channels
- radio, including: HF, VHF, UHF and SSB
- duplex or simplex

## Operation

### DPX for duplex channels:

- duplex in clear
- "quasi duplex" in crypto with voice control (VOX), reverse signalling and/or break-in possibility

### SPX for simplex channels:

- push-to-talk control

## Security Modes

- 2 dimensional (time and frequency division)
- time division only

## Radio Interface

- fully programmable with DIL switches

### Transmit mode:

- input sensitivity: 5 mV to 1 V
- input impedance: 600  $\Omega$  to 10 k  $\Omega$
- output: 5 mV to 1 V, low impedance
- bandwidth: 300 to 3000 Hz typ.

### Receive mode:

- input sensitivity: 100 mV to 2 V
- input impedance: 20  $\Omega$  to 10 k  $\Omega$
- output: up to 2 W into 4  $\Omega$   
or 3 V into 600  $\Omega$

## Power

- voltage: 11 to 15V DC, ground negative  
(24 V DC optional)
- built-in rechargeable battery for key memory

### **Dimension and Weight**

- 19 cm wide, 10 cm high without support, 33 cm deep
- 4 kg

### **Environmental**

- storage: -20<sup>0</sup> to +70<sup>0</sup> C
- operation: -10<sup>0</sup> to +55<sup>0</sup> C
- humidity: up to 92 % rel. h. max.

### **Construction**

- dust and splash proof housing
- snap-on mounting
- support plate with shock absorbers

Specification subject to change