

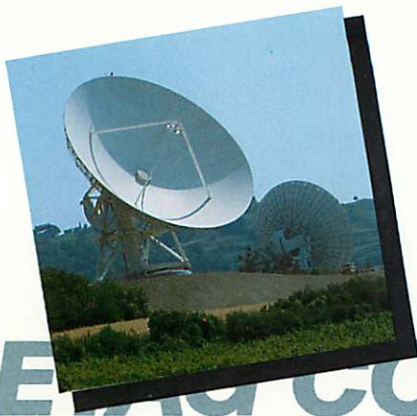
# GRETACODER<sup>®</sup> 103

## Voice Scrambler

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## Secure Voice System for Telephone Communications

In governments, industry and commerce, telephone lines are the "backbone" for transmitting vital, sometimes highly classified information. Unfortunately, such information can be intercepted with very simple tapping devices. This fact and the rising number of radiotelephones in cars, demands an impeccable voice security system.

The GRETACODER 103 features full digital signal processing and is microprocessor-controlled. The time division technique, the pseudorandom generator and many of the auxiliary functions are software-implemented.



## Universal Application

The GRETACODER 103 may be used with virtually any known voice communication system. It operates efficiently with FM and SSB radio systems. The proven GRETAG triple-key principle and the sophisticated cipher algorithm provide an excellent level of tactical security. Nine keys can be stored and subsequently selected. Stored keys are not recallable and remain in an electronic memory for several years without external power. The first digit of the selected key determines the security mode: two dimensional coding or time division only.

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## Userfriendly Operation

Changeover from clear to crypto or vice versa is fully automatic and remote controlled by either station. VOX-control facilitates crypto conversation in "quasi duplex" without the need of a push-to-talk button. A special secure telephone with remote control is available and simplifies interconnection with the telephone line.



## Reliability

The GRETACODER 103 includes BITE (built-in-test-equipment) to check principal circuits without the need of external test equipment.

## The Company

GRETAG has specialized in the development, manufacture, and sale of encryption systems for more than 40 years. Continuing innovation and experience have formed the basis for a complete line of the highest security encryption systems for military and civil applications.

# Specifications

## Technique

- digital speech processing at 64 Kbit/sec by CVSD delta modulators
- microprocessor master control
- 8 segment time and frequency division algorithm
- fast nonlinear pseudorandom cipher program generator
- supervisor for suppression of nonsuitable segment combinations
- total delay in crypto: 480 ms (short segment) or 960 ms (standard segment)

## Clear/Crypto changeover

- automatic, initiated by either station
- remote control possibility

## Synchronization

- fully automatic
- no resynch or cipher program restart during crypto operation

## 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

## Telephone Interconnection

- direct telephone line interconnection with special Remote Control Telephone ST 103

## Channel Requirements

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

## Security Modes

- 2 dimensional (time and frequency division)
- time division only
- standard or short segments
- with/without modifier key

## Cryptology

### Triple key principle

- secret primary key:  
9 keys storable in nonvolatile memory  
key diversity:  $10^8$  each
  - secret secondary key:  
stored in internal ROM  
key diversity:  $5 \times 10^6$
  - Modifier key:  
operation user selectable  
changed with each synchronization
- Period length of cipher program:  $2,5 \times 10^5$  h (short fragment) or  $5 \times 10^5$  hours (standard fragment)

## Power

- voltage: 110/220 V AC, 7 VA  
12 V DC, 0,4 A (24 V optional)
- built-in battery for key memory

## Dimensions and Weight

- 24,5 cm wide, 8,5 cm high, 31 cm deep
- 5 kg

## Environmental

- storage:  $-20^\circ$  to  $+70^\circ$  C
- operation:  $-10^\circ$  to  $+50^\circ$  C
- humidity: up to 92% rel. h. max.

## Auxiliary equipment for GC 103:

- ST 103 MF/PD (Secure telephone with key selector and clear/crypto switch)
- RA 103 (Radio Adapter with Telephone/Radio selector)

Continuous development and improvement is one of our policies, therefore we reserve the right to modify technical specifications without notice.



  
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