BBC
BROWN BOVERI

Speech scrambler Vericrypt® 1100

with adaptor SV 12-1104 for use with portable radios

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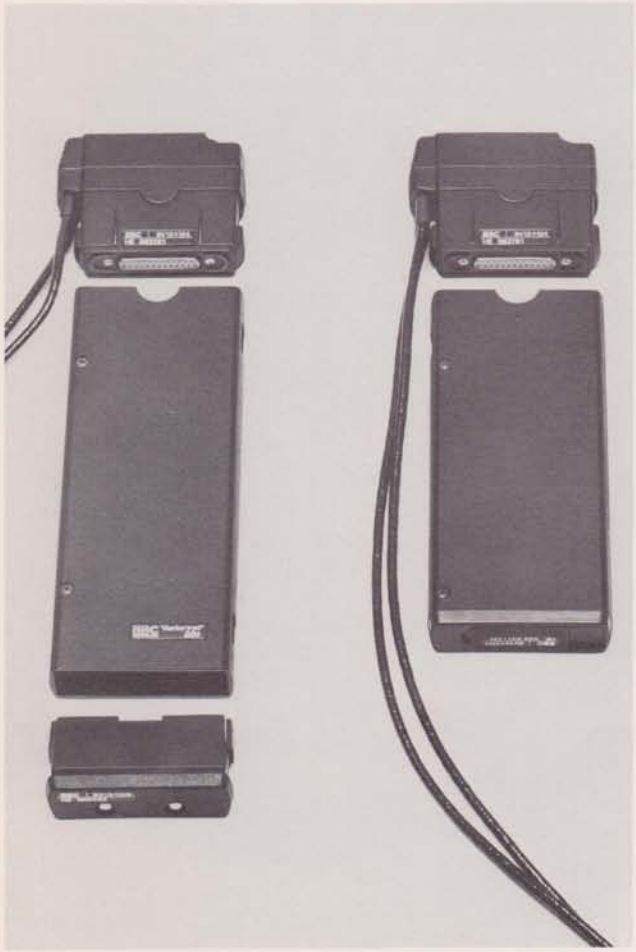


Features

- Compact, portable speech scrambler
- Offers the highest level of security
- Continuous transmission of a pilot tone ensures reliable synchronization
- Clear Voice Override (CVO)
- Compatible with the various transmission media, thanks to the time scrambling technique and modular design
- Easy to handle
- The use of thick and thin film hybrids as well as LSI (large scale integration) circuits results in:
  - very low power consumption
  - small dimensions and low weight
  - high reliability
- Power is supplied, either by a plug-in accumulator (long version) or by an external resource
- Robust mechanical design

The use of modern technologies enabled BBC to develop a small speech scrambler which can be used with a handheld radio.

The Vericrypt 1100 contains the most modern developments in scrambling and electronic technology. Thick and thin film hybrids as well as «large scale integration» have been used.

The equipment is fully compatible with the Cryptophon 1100.

An important part of the security of an encryption system depends on the number of codes and the code input operation. For the Vericrypt 1100 there are 95 040 code families each with 10^6 codes, i.e. a total of approximately 10^{11} codes. The code, once entered into the Vericrypt 1100, cannot be retrieved or read out in any way.

The continuous transmission of a pilot tone guarantees reliable synchronization, even in networks with severe fading.

The plug-in facility of the adaptor SV 12 -1104 enables the Vericrypt 1100 to be used with various types of radio, provided they are equipped with a plug for a hand-monophone or headset.

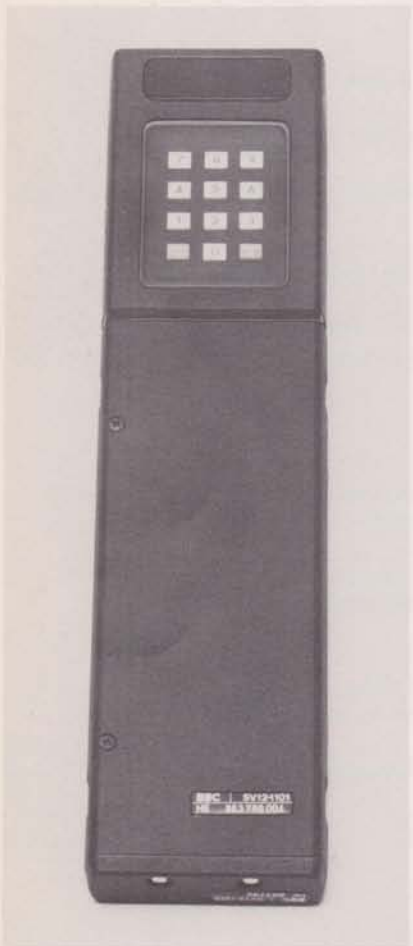
Accessories

Code input device SV 12 -1102

This module is used to enter the code. It contains the code family information (one of 95 040 possibilities) and a keyboard for entering the code. When the 6 digits of the code have been keyed in, the code can be transferred into the Vericrypt 1100 by depressing the transfer key.

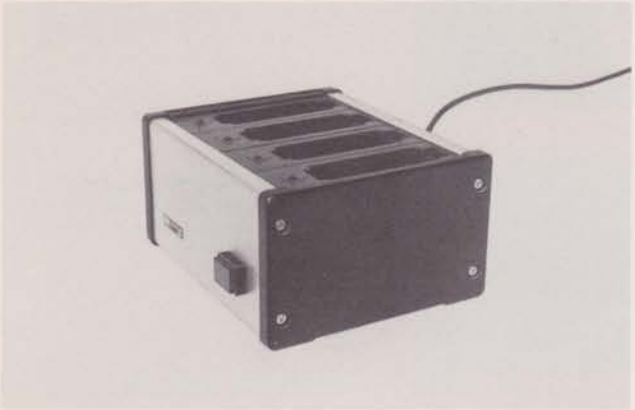
This clears the display and erases the code in the input module. The code which controls the scrambling process is now stored in the Vericrypt 1100, from which it cannot be retrieved or read out in any way.

A code input device with several pre-programmed codes is under development.



Battery
(required for long version only)
NiCd battery SV 12 -1109
with 4 cells with
sintered electrodes 4.8 V/240 mAh

Battery charger
(required for long version only)
Battery charger with 4 independent charging points
SV 12 -1110 K
Battery charger with 4, 8, 12 or 16 independent charging points SV 12 -1110 L



Technical data

Coding

Method	time segment permutation with sliding frame
Duration of speech segments	approx. 30 ms
Programme period	8.5 h
Number of codes	95 040 code families, each with 10^6 codes, i.e. about 10^{11} codes

Storage of the code with internal NiCd cell (fully charged)

	> 1 month

AF-Channel

Bandwidth (–10 dB)	300...3000 Hz
Quantization noise (over complete link)	–26 dB
Transmission delay	420 ms

Transmission channel requirements for high quality speech

Minimum signal-to-noise ratio	10 dB
Frequency drift	± 30 Hz
Group delay	5 ms
Bandwidth	300...2700 Hz

Synchronization

Continuous synchronization with FSK-signal (pilot tone)	1830 ± 100 Hz
Time taken to establish connection	approx. 2.5 s
Time taken to reverse direction	no time required

Power supply

Short version
Power is supplied by the battery of the radio, provided the voltage available at the microphone plug is at least 5 V.

Power consumption	< 0.1 W

Long version (with plug-in accumulator)

Power supply voltage	4.4...6 V
Operating time	> 10 hours

Dimensions and weight

Short version

Dimensions	210 × 78 × 26 mm
Total weight	approx. 640 g

Long version

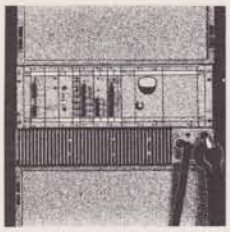
Dimensions	240 × 78 × 26 mm
Total weight with NiCd-battery	approx. 760 g

Subject to modification without notice

The BBC range of radio communication equipment comprises:

501888.I

Transceivers
Portable, mobile and fixed radio-telephones in the bands of 80, 160 and 460 MHz. Civil defence transmitters, car-phones, pocket receivers.


501889.I

Data transmission
Reliable data channels for mobile and stationary radio networks.


501890.I

Broadcast transmitters
Long and medium wave ratings of 300, 600 and 1000 kW. Shortwave units of 100, 250 and 500 kW. Antenna installations, dummy antennas, antenna switching systems.


501027.I

Radio links
Directional radio networks, UHF and microwave link systems, multiplexing equipment and antenna installations.

501891.I

Speech scrambling
Portable, mobile and fixed speech scrambling equipment for military and civil use. High security rating, for all types of transmissions.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Radio control stations
Processor controlled dispatching systems. EDP equipped dispatch centers.

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