



No. 3456

VOICE CIPHER EQUIPMENT
CRYPTOCOM CRM-008
(PREVIOUSLY CV-008)

SHORT FORM INSTRUCTIONS

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I. INTRODUCTION

The CRM-008 is a voice cipher equipment intended for use over any telephone channel according to CCITT standards, as well as over good SSB radio links with full 3000 Hz capacity. It is used in half-duplex manner.

The CRM-008 is, in telephone service, connected with an adapter switch to the telephone set. Once the communication is established as usual, the two partners switch over to CRM-008. To improve the speech quality, the unit is equipped with its own high-fidelity-voice handset, as in most public telephone systems, microphone as well as earphone cartridges are of a relatively poor grade. Modern handsets with magnetic microphones are however usable, but they should be equipped with a push-to-talk switch.

In radio operation the CRM-008 is hooked up at audio-in/output connections with custom made adapters (i.e. microphone plugs etc.) or at the X-mode connector, depending on the radio system. The radio station is then operated as usual by means of the separate handset or the original audio gear (special operation instructions are supplied for the different radio stations after clarification of the model involved).

2. CONNECTION

2.1 INFORMATION PATH

2.1.1 WIRE CONNECTION (see Fig. 2)

2.1.1.1 LINE SIDE

Connect the data-plug (1) (see Fig. 1) connector poles "3" and "8" together to one wire and the connector "2" to the other one.

These two wires are fed via a insulation transformer to the telephone line (either directly or by means of a switchover box).

2.1.1.2 LOCAL SIDE (separate handset)

Connect the supplied handset to the plug (10). All connections are automatically performed.

2.1.2 RADIO CONNECTION

Follow the separate instructions supplied with the adapter kit for your radio station.

2.1.3 PUBLIC TELEPHONE CONNECTION

Follow the separate instructions supplied with the switch-over-adapter-box.

2.2 POWER

Connect at the rear the power supply cable and its other end to

an appropriate power source.

LOOK AT THE MANUFACTURERS LABEL FOR POWER INFORMATION!

2.2.1 DC-MODELS

DC-Models can be supplied with 10 to 30 V DC either from a battery or from our rectifier PSM-106 supplied on order.

2.2.2 AC-MODELS

AC-Models have a selector switch from either 110 or 220 V AC, 50...60 Hz mains power. Be sure to set the selector first to the voltage of your mains power outlet before connecting the unit.

2.3 AFC

In radio connections standard mode is "0". In telephone connections leave it also on position "0". Details are given in the special instructions relating to your radio system, all along with the adapter kit.

3. KEY SETTING

The key information consists of 32 digits, which will be entered at the push-button keyboard (5). They are subdivided into 8 groups of 4 digits. Each group will be selected by its number from 1 to 8. Each group can individually be entered, without disturbing the rest!

3.1 Turn switch (7) to position "key".

3.2 Set the key as follows:

3.2.1 EXAMPLE

Group 1: 4 5 7 2

Push button 1 (this is the group number).

Push now the buttons 4, 5, 7, 2 (these are the 4 digits).

(If one digit happens to be needed more than once, then push its button so many times as needed.)

The display shows now: 1 , 4 5 7 2.

To enter the group number and the 4 digits, push button # .

Group 2: 1 8 9 1

Push button 2 (this is the group number).

Push now the buttons 1, 8, 9, 1 (these are the 4 digits).

The display shows now: 2 , 1 8 9 1.

To enter the group number and the 4 digits, push button # .

Go ahead up to group 8.

The sequence of filling-in the groups is completely free. Any group can be replaced at any moment. The group is identified only by the digit in front of the four number sequence.

If a wrong push button has been hit, cancel the whole group information with button * and start again with the group number digit.

3.3 Turn switch (7) back to "off" or "P" or "C", depending if the station must immediately be used or will be resting for a certain time.

Note that an internal rechargeable battery keeps the key information stored over a very long period, even if the switch (7) is in off-position.

For security reason it should however be taken care that once the unit is set to key, the power is continuously on.

4. OPERATION (direct connection, without switchover box)

4.1 PLAIN

4.1.1 Turn switch (7) to "P". The unit is switched on and at the display the dash is lit, acting as an indicating signal that the CRYPTOCOM is operative.

4.1.2 Push switch at handset and talk to the opposite station. The red signal (2) will be blinking. Be sure to close your "turn" with the word "over" and release the talk switch.

The other station will reply in the same manner.

In plain operation the unit injects in intervals of about 4 seconds an audible bip of 1200 Hz into the line as warning signal.

Note, that the information processing adds a certain delay into the voice path (this delay is shorter in PLAIN than in CRYPTO mode). Be therefore patient awaiting an answer from opposite station. D O N O T call immediately again after you have said "over" and released the talk switch (in fact, if both stations are sending at the same time, it would never be possible to correspond).

4.2 CRYPTO

For Crypto operation all corresponding stations must be set to the same key. Make sure with the officer in charge of the cipher procedure that you have in fact the right keys stored in your equipment.

- 4.2.1 After agreement with the opposite station, turn switch (7) to position "C".
- 4.2.2 Operate the units exactly as in plain. At the sending station the lamp (2) will be continuously on as long as the talk-switch is pushed. (Be sure to always end your "turn" with the word "over" before releasing the talk switch.)

At the receiving station the lamp (3) is flickering if the sync carrier is detected and will be continuously on after the unit has correctly synchronized into the key sequence. (Note, that the sync signal may also be on if wrong keys had been selected. In fact, the unit has not the capacity to check the correct key selection, but is only able to mesh into a given synchronisation sequence.)

Note, that the selector switch (7) does only affect the send operation, i.e. a station can either receive in plain or crypto, independently of the position of switch (7) (it may be either on "P" or "C"). It is naturally strongly recommended that both stations switch to "C" for Crypto operation in order to ensure that the information is protected in both directions. If for any reason a sending station has been left on "P", then the operator is warned with the 1200 Hz signal bips in his earphones.

Encl.: Fig. 1 and 2,3

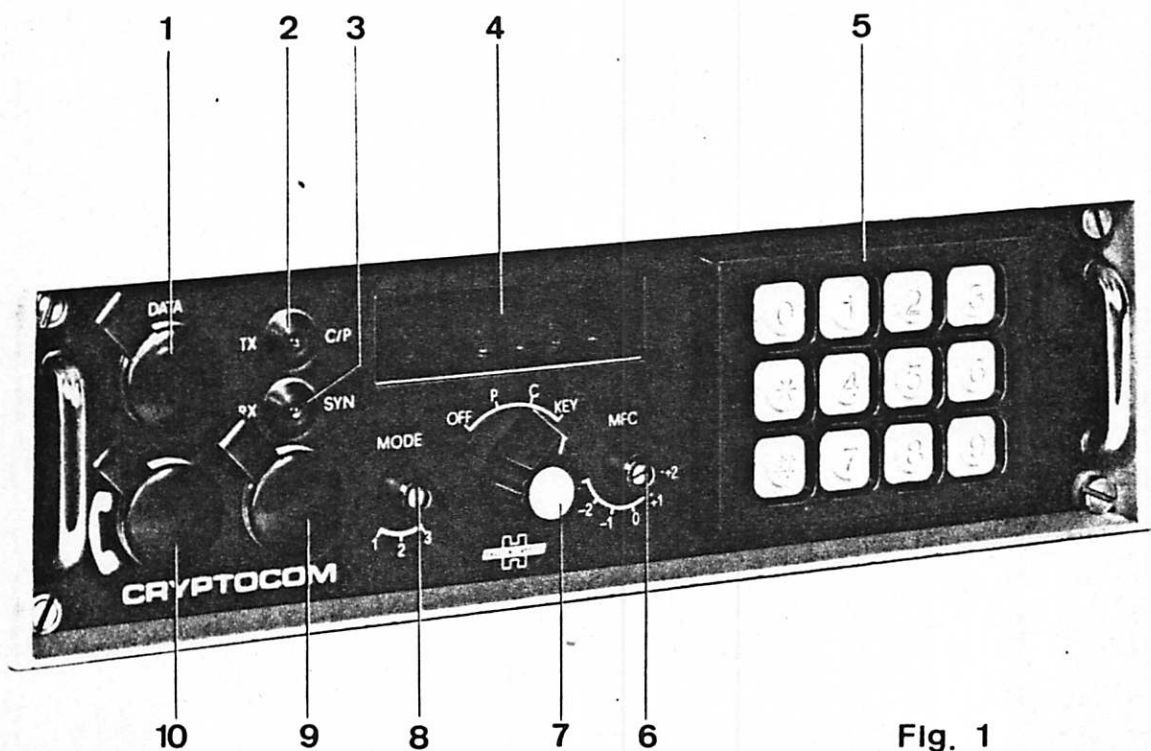


Fig. 1

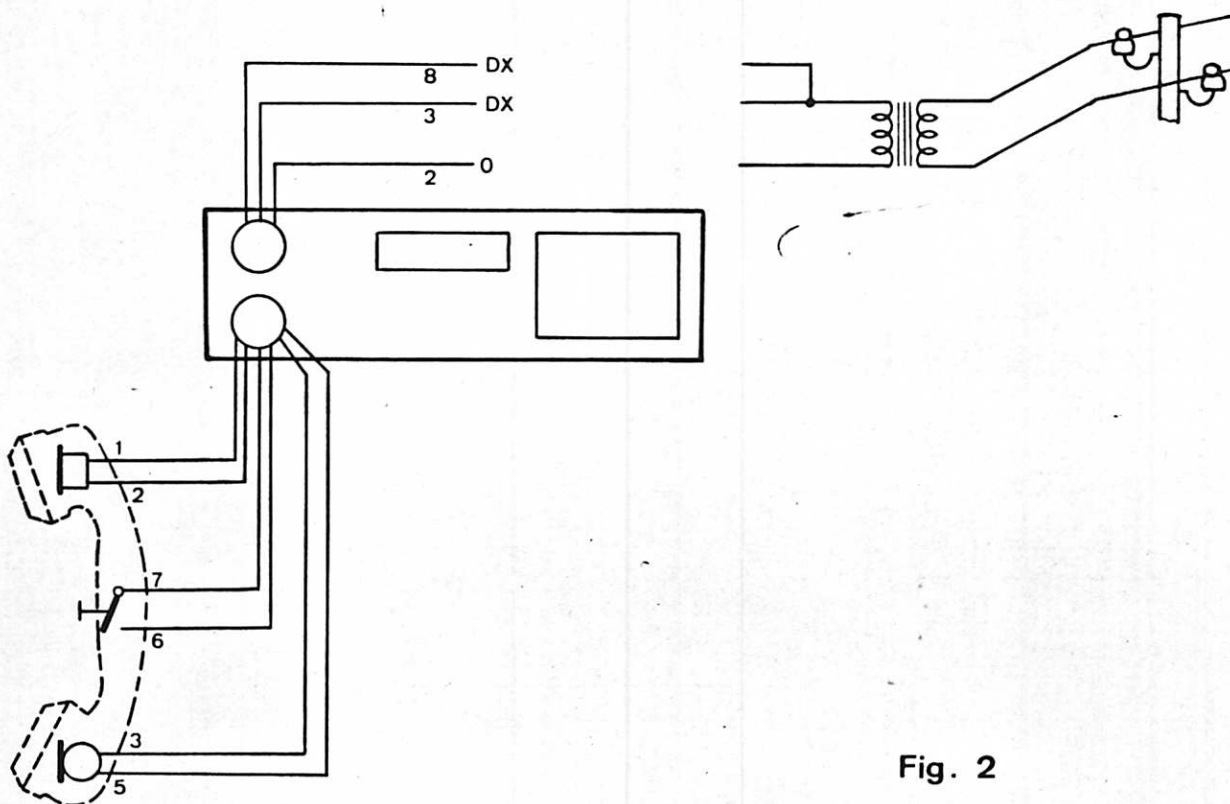


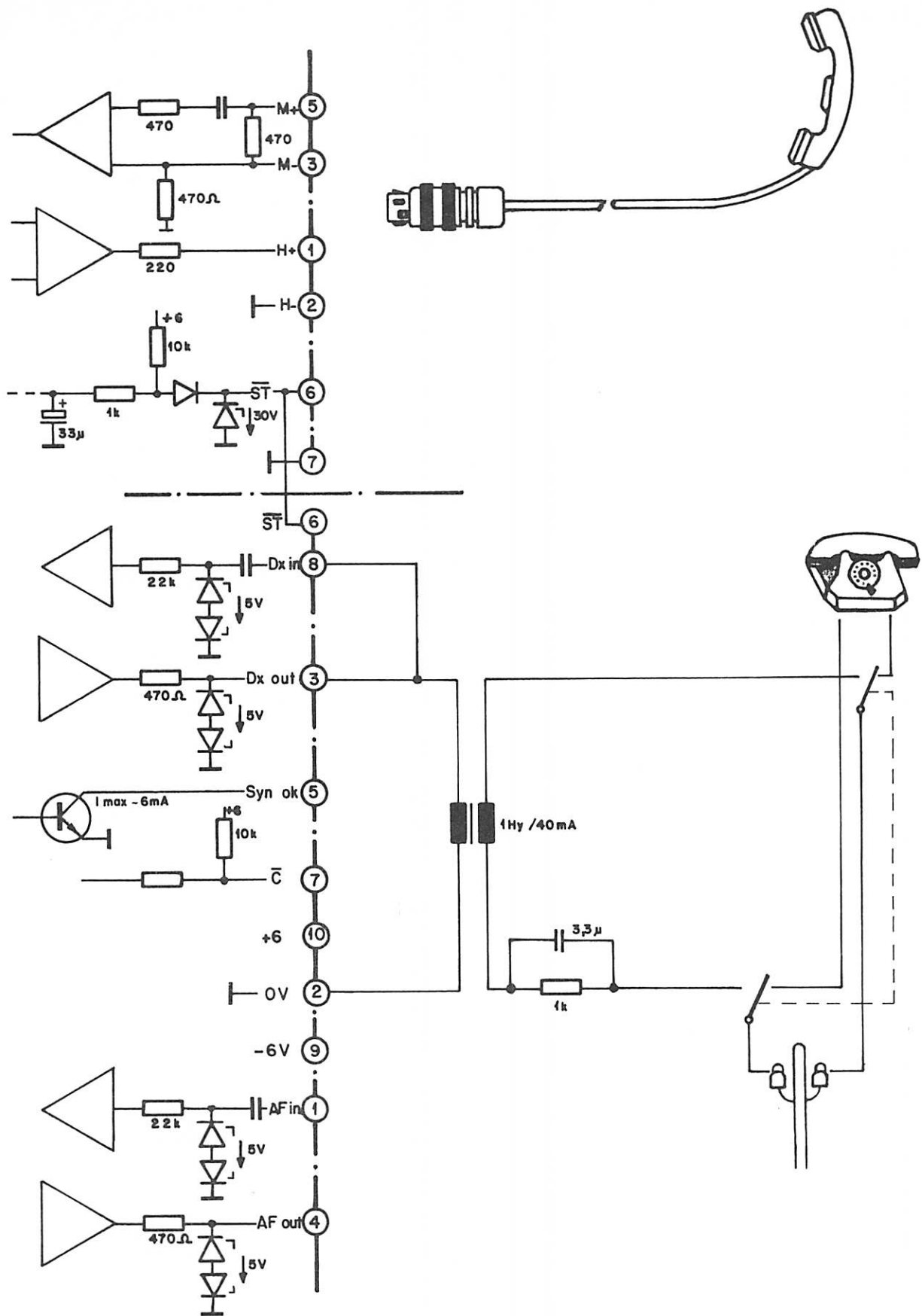
Fig. 2

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Fig. 1,2

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INTERFACE II

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Fig. 3

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