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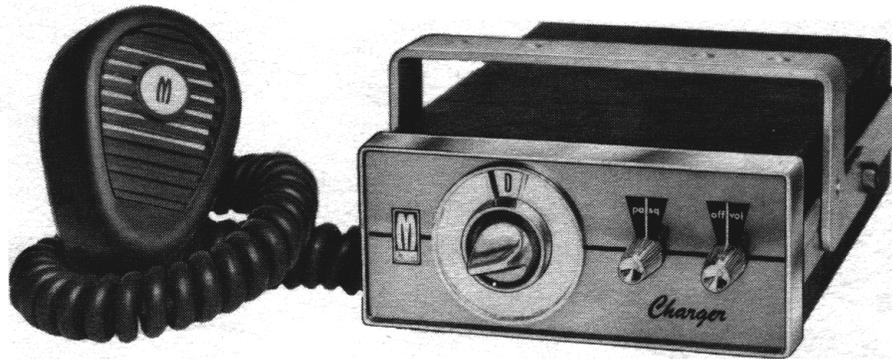
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Charger

CITIZENS BAND TRANSCEIVER



MODEL CB 281

INSTRUCTION MANUAL

Metrotek Electronics, Inc.

NOTICE

Transmitting with this equipment must not be attempted until authorization in the form of a license has been received from the Federal Communications Commission. An FCC License application form (505) is provided for the convenience of the owner.

UNPACKING

- 1 - Charger Transceiver Unit
- 1 - Fuse
- 1 - Mobile Mounting Bracket
- 1 - Dial
- 1 - Channel Number Marker Set
- 1 - Instruction Manual
- 1 - Warranty Card

To be filled out and returned to:
Metrotek Electronics, Inc.
P.O. Box 9591
Raleigh, N. C.

- 1 - FCC License Form 505

MAINTENANCE

It is recommended that the services of a qualified electronic technician be used for troubleshooting.

DO NOT TAMPER WITH INTERNAL ADJUSTMENTS ----
DAMAGE TO THE EQUIPMENT AND/OR ILLEGAL OPERATION MAY RESULT.

DESCRIPTION

The Metrotek Charger is an all-transistor AM Citizens Band transceiver designed for 12 VDC operation. Silicon transistors are used throughout for dependability.

The Charger transmits and receives with crystal controlled reliability on any twelve CB channels. The twelve active channels are selected by inserting the plug-in crystal desired. Some extra features found on the Charger include: connections for external speaker; and provisions for paging or public address system.

SPECIFICATIONS

RECEIVER

Frequency Range	26.6 MHz to 27.5 MHz
Tuning Range	12 channels
Sensitivity	Less than $1\mu\text{v}$ for 10 db S+N/N at 400 cycles, 30% modulated. Tangential sensitivity approx. $0.1\mu\text{v}$.
Selectivity	10 KC at 3 DB, 40 DB at \pm 10 KC, 60 DB at \pm 60 KC
Squelch Limits	Adjustable from $1/2\mu\text{v}$ to approx. $100\mu\text{v}$.
Audio Output	2 watts

TRANSMITTER

Carrier Freq. Range	26.6 MHz to 27.5 MHz
Carrier Freq. Accuracy Within \pm .005% (max.)	
Mic Input Impedance	Carbon

SPECIFICATIONS (Con't.)

TRANSMITTER (Con't.)

Modulation	Class A, 95%
Power Input	Total input under full modulation is approx. 20 watts.
R. F. Output	3 watts (Min.)
Output Impedance	50 Ohms

GENERAL

Power Requirement	12-14 VDC
Power Consumption	20 watts
P. A. Output	2 watts
Accessory Provisions	External Speaker and P. A. Speaker

INSTALLATION

The Charger transceiver may be installed as a mobile station using the mounting bracket provided. The bracket is designed to allow mounting in a variety of positions ~~in most automobiles~~. The mounting position of the unit should be selected to allow easy access by the operator. The transceiver should be securely fastened to some solid surface, such as the underside of the dash, using the mounting bracket supplied.

A standard coaxial connector is provided on the rear panel of the transceiver for antenna connection. The antenna selected must be specifically designed for CB equipment and have an impedance of approximately 50 ohms. The coaxial antenna lead-in should be as short as possible and only types RG-58/U or RG-8U are recommended.

Power connections are made by the power cable on the rear of the chassis. The Charger must be operated from 12 VDC NEGATIVE GROUND electrical systems only.

The Microphone Hanger - This bracket should be installed for the convenience of the operator.

If channel number marking is preferred instead of letters, the following procedure may be used to install the blank dial and channel number markers supplied with the Metrotek Charger.

- a. Remove cover from unit (1 large screw each side).
- b. Remove knobs (pull straight forward without twisting).
- c. Remove front panel casting from subpanel-chassis assembly (4 screws).
- d. Remove letter calibrated dial assembly (1 setscrew).
- e. Attach channel number markers to blank dial assembly in sequence to agree with crystal arrangement on the circuit boards.
- f. Install channel number dial assembly.
- g. Remount front panel casting, knobs and cover.

IGNITION NOISE INTERFERENCE

This type of interference can generally be reduced by the use of one or more of the following corrective measures:

1. A resistive suppressor in the high tension lead from the coil to the distributor.
2. Individual suppressors at each spark plug or by the use of "resistor" spark plugs.

3. Coaxial bypass capacitors in the primary, or low voltage, leads to the ignition coil.
4. A coaxial capacitor in the lead to the armature connection of the generator.
5. Appropriate bypass components on the voltage regulator.
6. Electrically ground the tail pipe or tail pipes to the vehicle frame at several points.

Ignition noise comes from many causes and these are but a few. Many other possibilities exist, but variations between vehicles make it impractical to go into greater detail.

Before attempting any of the above remedies, a qualified person experienced in two-way radio service should be consulted.

OPERATING INSTRUCTIONS

NOTE

There are three cautions to be observed in the operation of this transceiver:

DO NOT OPERATE without an antenna or with an excessively mismatched antenna.

DO NOT OPERATE with channel selector switch in a position which is not equipped with a transmit crystal.

DO NOT ATTEMPT TO OPERATE until negative ground power supply is insured.

VOLUME CONTROL - OFF-ON SWITCH

This control varies the audio output level for the internal speaker. It also varies the level of audio present at the external speaker connection. Clockwise rotation of this control turns the Charger on and increases the volume.

SQUELCH CONTROL - P. A. SWITCH

This control eliminates background noise in the absence of a signal. Clockwise rotation reduces the squelch action to a minimum. Full counterclockwise rotation activates a switch which turns off the transmitter and turns on the paging or P. A. facility.

CHANNEL SELECTOR

This is a twelve-position switch which enables the operator to select any one of the twelve crystal-controlled channels for both receiving and transmitting.

ADDITIONAL CRYSTALS

Plug-in crystals for CB channel 11 are supplied with each Charger transceiver. These crystals are installed at the factory.

To install additional crystals on top of the board, remove the mounting bracket screws, slide the wrap to the rear, remove the speaker mounting screws on the side of the unit, and insert the crystals into the desired sockets.

Receive crystals are located in back of the channel selector switch and the Transmit crystals in front.

Additional or replacement crystals may be purchased from:

SHEPHERD INDUSTRIES, INC.
8106 Santa Fe Drive
Overland Park, Kansas 66202

a subsidiary of Regency Electronics, Inc.

CHANNEL	REC. CRYSTAL PART NO.	TRANS. CRYSTAL PART NO.
1	RMI20-1	TMA00-1
2	RMI20-2	TMA00-2
3	RMI20-3	TMA00-3
4	RMI20-4	TMA00-4
5	RMI20-5	TMA00-5
6	RMI20-6	TMA00-6
7	RMI20-7	TMA00-7
8	RMI20-8	TMA00-8
9	RMI20-9	TMA00-9
10	RMI20-10	TMA00-10
11	RMI20-11	TMA00-11
12	RMI20-12	TMA00-12
13	RMI20-13	TMA00-13
14	RMI20-14	TMA00-14
15	RMI20-15	TMA00-15
16	RMI20-16	TMA00-16
17	RMI20-17	TMA00-17
18	RMI20-18	TMA00-18
19	RMI20-19	TMA00-19
20	RMI20-20	TMA00-20
21	RMI20-21	TMA00-21
22	RMI20-22	TMA00-22
23	RMI20-23	TMA00-23

WARRANTY

The transceiver is sold under an exclusive 1-year warranty, which warrants it to be free from defects in material and workmanship. We agree to repair or replace, at the point of manufacture, without charge, all parts showing such defects, provided the unit is delivered to us, intact, for our examination, with all transportation charges prepaid to our factory, within one year from the date of sale to the original purchaser, and provided such examination discloses in our final judgment that it is thus defective. Pilot lights, transistors, fuses and diodes shall be covered by the manufacturer's standard EIA warranty and such items shall be excluded from the provisions of this warranty. This warranty does not apply if the transceiver has been subjected to misuse, neglect, accidents, incorrect wiring, not our own, improper installation, or put to use in violation of instructions furnished by us; nor to transceivers that have been damaged by lightning, excess current, repaired or altered outside our factory; nor to the transceiver that has had its serial number altered or removed.

CHANGES

The Company reserves the right to modify or change the equipment, in whole or in part, at any time prior to delivery in order to include refinements deemed appropriate by the Company, but without incurring any liability to modify or change any equipment previously delivered, or to supply new equipment in accordance with earlier specifications.