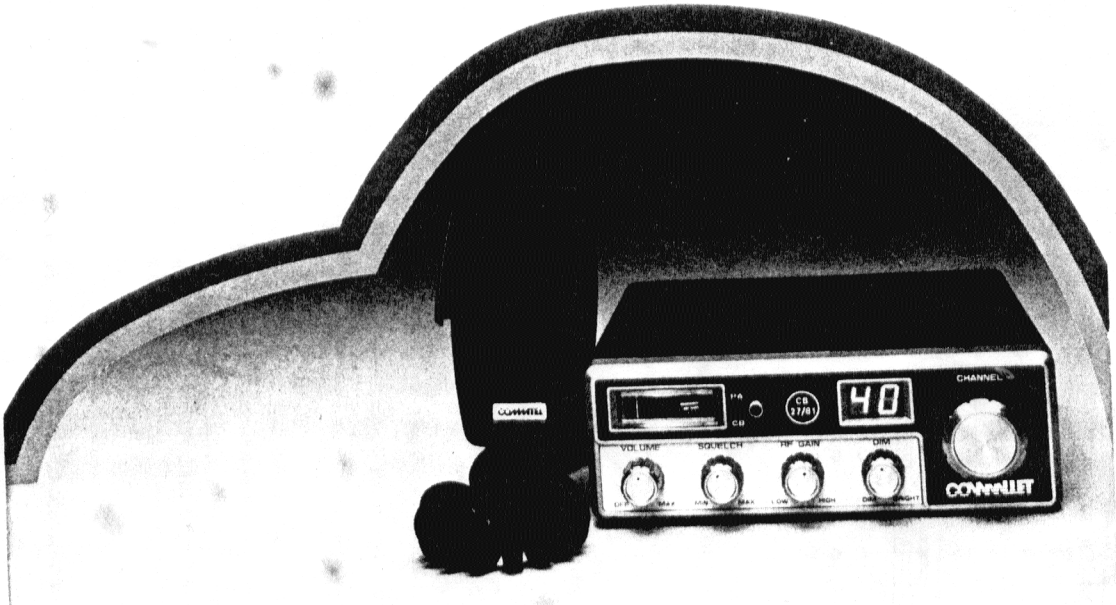
COMMTEL

27 MHz FM CB RADIO



MODEL NO. GT-868

OPERATING INSTRUCTION

GENERAL NOTES

Your new COMMTEL CB transceiver is designed to conform with latest specifications. It offers a personal 2 way communication service and operates in the 27 MHz band.

GENERAL INSTALLATION NOTES

Installation in most circumstances is fairly straight forward. However, please check the following points before proceeding.

POLARITY

The power lead from your transceiver is colour coded black (—) red (+). It is designed to operate on 12v D.C. only. The red lead (with fuse) must be connected to the positive side of your installation. The black lead must be connected to the negative side of your installation.

NOTE— Connecting the power leads the wrong way round, may cause damage to your transceiver.

If in any doubt about your polarity, check which lead from the battery goes to the chassis of your vehicle.

Glass fibre vehicles or boats should be wired directly to the battery.

Do not attempt to transmit on your transceiver before connecting the aerial or dummy load.

Disconnect the battery when carrying out installation, to prevent accidental short circuits.

LOCATION MOBILE

Choose a convenient position, under the dash of your vehicle and allow clearance for aerial, mike, leads etc. Using the mounting bracket as a template, mark position for holes (diameter about 7/32" 4.2mm). Mount the bracket using supplied accessories.
Mount the mike hanger adjacent to the transceiver. Secure the transceiver to the bracket with the 4 small screws and washers provided.

NOTE— Drill no holes until you are certain you will cause no damage to any wiring or pipes etc.

Ensure all wires etc. are safely located and well anchored down to prevent fouling of brake pedal etc. Also, ensure the location does not impair the operation of any controls on the vehicle.

MOUNTING ILLUSTRATION

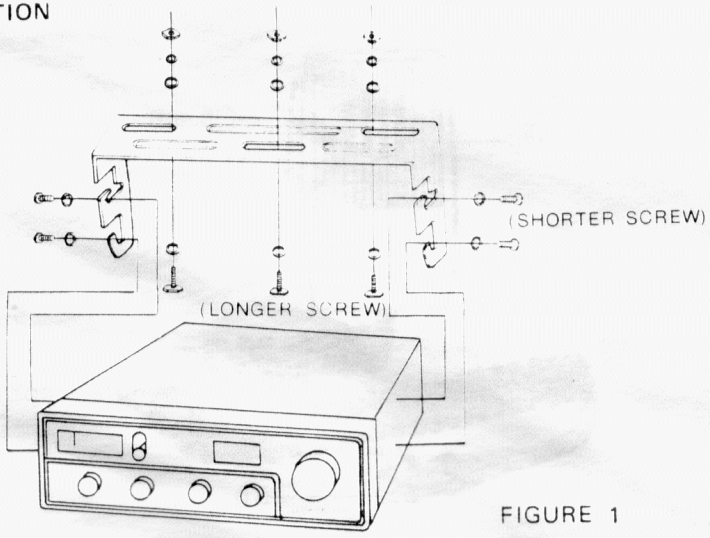


FIGURE 1

D. C. POWER CONNECTIONS

1) Determine the polarity of the vehicle (see general notes) Most British and foreign vehicles use a negative system, but some older models and some newer large trucks, may have a positive ground system.
2) Disconnect Battery
3) (a) Negative earth systems
   Connect the black power lead to a convenient metal chassis ground point, or directly to the negative (−) side of the battery. Connect the red lead to either the accessory terminal of the fuse box or a convenient 'hot' lead of the electrical system (cigarette lighter, radio etc.)

   (b) Positive Earth
   Connect the red power lead to a conveint metal chassis ground point, or directly to the positive(+) side of the battery. Connect the black power lead to either the accessory terminal of the fuse box, or a convenient 'hot' lead of the electrical system (cigarette lighter radio etc.)

AERIAL CONNECTION

BEFORE OPERATING THE TRANSCEIVER, YOU MUST CONNECT A PROPER AERIAL SYSTEM. OPERATING THE TRANSCEIVER WITHOUT AN AERIAL OR A SUITABLE DUMMY LOAD MAY CAUSE DAMAGE TO THE RF POWER TRANSISTORS.

The aerial is one of the most important factors in the operation of the transceiver at its full efficiency. An improperly adjusted antenna will decrease receiving and transmitting distances. A properly installed and adjusted aerial will allow you to get maximum use and enjoyment from your transceiver. We recommend that you consult with your dealer to determine the right aerial for your needs.

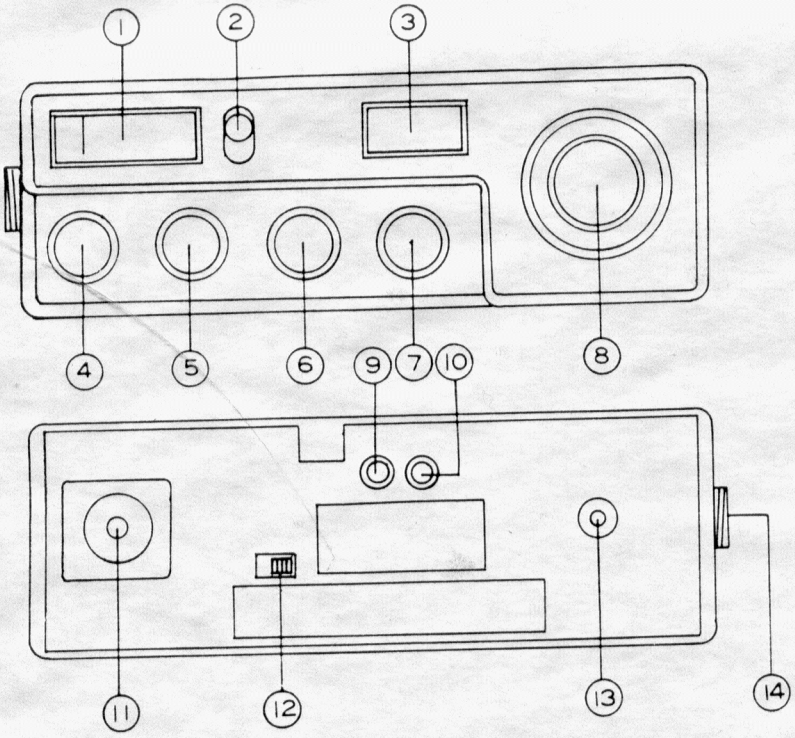
INSTALLATIONS WITH NO EARTH POLARITY

Connect directly to the battery. The black lead to the terminal marked(−) the red lead to the terminal marked(+).
If in doubt, do not connect up, to prevent damage to your installation or transciever.

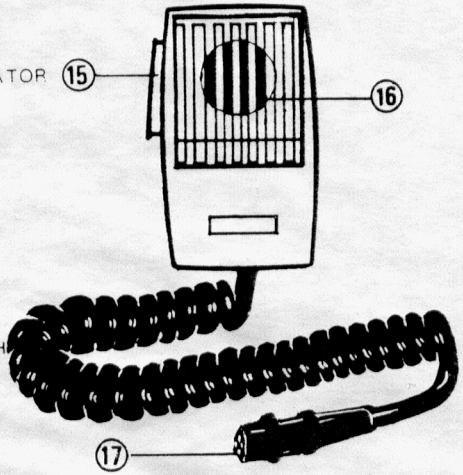
HOME BASE

This transceiver may easily be converted to a home base unit, by the use of a regulated power supply available from your dealer. Requirements are 11-14 Volts D.C. 2.5Amps minimum.

IDENTIFICATION OF CONTROLS



1. SIGNAL STRENGTH/RF POWER INDICATOR
2. CB/PA SWITCH
3. L E D CHANNEL READ OUT
4. VOLUME-ON/OFF SWITCH
5. SQUELCH CONTROL
6. RF GAIN CONTROL
7. DIM CONTROL
8. CHANNEL SELECTOR
9. EXTERNAL SPEAKER JACK
10. PA JACK
11. AERIAL
12. 10 D B POWER ATTENUATOR SWITCH
13. DC POWER SUPPLY
14. MIKE SOCKET
15. PRESS TO TALK BAR (P T T.)
16. MICROPHONE
17. MICROPHONE PLUG



CONTROL FACILITIES

1) SIGNAL STRENGTH/RF POWER INDICATOR
During reception, this meter indicates the strength of the incoming signal in S units on the lower scale.
During transmission, it indicates the relative power going out to the aerial, on the upper scale.

2) CB PA SWITCH
In the CB position your unit operates as a CB transceiver, in the PA position you are able to use your unit as a Public Address amplifier.

3) L.E.D. CHANNEL READ OUT
Displays selected channel.

4) VOLUME—ON/OFF SWITCH
Rotate this control clockwise until a click is heard to switch your transciever on. Further rotation clockwise, increases the volume from the speaker. Counter clockwise rotation, reduces the volume until the switching off click is heard. Note—the volume control has no affect on your transmitted signal.

5) SQUELCH CONTROL
Rotating this control clockwise until just beyond the point that the rushing sound disappears places your receiver in a stand by mode. This cuts out objectional static. Progressive rotation of the control clockwise increases the required strength of incoming calls to activate the receiver. A high setting (clockwise) will prevent the reception of weaker (distant) calls.

6) RF GAIN CONTROL
This control adjusts the RF GAIN of the receiver. This transceiver is equipped with an AGC circuit (Automatic Gain Control) to automatically adjust the gain (receiver sensitivity) of the unit. However, occasionally you may be receiving an excessively strong signal that may sound distorted due to receiver overload. Rotating the knob counterclockwise will decrease the receiver gain and clarify the reception. Rotating the knob clockwise will increase the gain and when a click is heard, the AGC circuit is operating once more.

7) DIM CONTROL
This control is use to control channel LED indicator dark and bright.

8) CHANNEL SELECTOR
Selects the channel you wish to transmit or receive on.

9) EXTERNAL SPEAKER JACK
This jack is used when connecting an earphone or an external speaker to the unit. An 4 ohm impedance earphone or speaker should be used. The internal speaker in the transceiver will be automatically silenced when an external speaker or earphone is plugged in.

10) PA JACK
When you desired to operate the unit as a Public Address amplifier, connect a PA speaker (4 ohms impedance) to this jack.

11) AERIAL
This socket is designed to accept a P.L 259 plug, as will usually be supplied with your aerial.

12) 10 D.B. POWER ATTENUATOR SWITCH

If the base of your aerial is located more than 7 meters above ground level the home office requires a reduction in output of 10 D.B. to approx. 0.4 watts. To enable accomplishment of this regulation without affecting the strength of incoming calls, then this switch should be used, by moving the switch to the on position. Note—Your RF Power Meter (1) will indicate a lower output with switch in the on position during transmission.

13) D.C. POWER SUPPLY

These two leads are identified thus — Black (Negative —)
Red (Positive +)

The in-line fuse supplied on the red lead should only be replaced by another fuse of the same rating: 2A, 12V Max. The use of a fuse greater than 2A may result in overheating and/or fire.

14) MIKE SOCKET

This socket accepts the microphone connector from the push to talk mike supplied.

15 16) P.T.T. BAR/MICROPHONE

This button is located on your microphone (16). When depressed, you are transmitting, when released you are receiving.

17) MICROPHONE PLUG

This plugs into socket 4 of your transceiver. Note—Your transceiver will not function correctly, until it is connected.

AERIAL REQUIREMENTS

Your transceiver will operate with any properly designed, installed aerial. The co-axial feeder cable should be of the correct type i.e. 50 ohms. It should be terminated with a P.L 259 plug, which should be screwed clockwise into the aerial socket (7). Do not use standard T.V. co-ax cable, as this will considerable reduce your output, or may cause damage to your transceiver. Aerials are purchased separately, including their own installation instructions. See your dealer for recommended aerials.

AERIAL SPECIFICATION

At the time of writing, current Home Office aerial specifications for C.B. operation in the U.K. are as follows "The aerial shall be a single element rod or wire antenna not exceeding 1.5, in overall length" Base loading is permitted. The height of the aerial should not exceed 7m above ground, but if it does, a 10 D.B. attenuator should be used.
NOTE— The aerial must Not have any gain.

S.W.R.

The use of an S.W.R. Meter, (not supplied) to fine tune your aerial is strongly recommended this meter may be purchased separately or the SWR can be checked by a local radio serviceman. You should check your SWR (Standing Wave Ratio) immediately after installation. Although your transceiver is of rugged design repeated operation in the transmit mode with an S.W.R. of above 3 or without an aerial connected, may damage the output stages.

INTERFERENCE NOISE, DURING RECEIVING

The hissing or rushing sound heard between transmission of received signals is a normal occurance with F.M. receivers. It may be removed by careful adjustment of the squelch control. Any severe crackling caused by ignition etc. can be overcome by interference suppression suppressors, available from your dealer.

BASIC OPERATING INSTRUCTIONS

a) Connect aerial to aerial socket (11)
b) Connect mike plug and socket (17/14)
c) Turn on power and adjust volume (4).
d) Adjust squelch to just beyond hissing sound (5).
e) Select desired channel (8).
f) Press microphone button (P.T.T. Bar) to transmit (15).

hold mike 3-6" from your mouth and speak in normal voice as shouting or, holding the mike too close to your mouth results in garbled transmissions.

g) To receive, release button (P.T.T. Bar)

Note—Channel 9 is designated by operators as the emergency channel and is monitered in many areas continuously. Please leave this channel clear at all times, unless you require emergency assistance, or are able to assist.

NOTE—IN SOME CASES EXCESSIVE INTERFERENCE CAN BE REDUCED BY CONNECTING THE POWER LEADS OF THE UNIT DIRECTLY TO THE BATTERY.

Before considering your MODEL NO GT-868 Transceiver faulty please check the following points, as many apparant faults may not be the fault of the transceiver.

DEAD (No Dial Lights)

Replace the fuse with one of the same type (2Amp)
Check connections of Power Leads

WEAK RECEPTION/TRANSMISSION

Check S.W.R. with S.W.R. Meter (Not Supplied)
Check P.L 259 co-ax plug is soldered on correctly

Noise—Some noise is to be expected and is normal. There will be a higher level of background noise when the vehicle's engine is running. If excessive static is present after installation, the ignition and/or the electrical system is probably the cause. This type of interference is not uncommon, and may originate from many places in the vehicle's ignition/electrical system.

The efficient installation of noise suppression devices depends upon the make and age of vehicle. Noise suppression devices will be available at your local C.B. Radio/auto service shops.

Note—THE UNIT WILL NOT OPERATE ON EITHER TRANSMIT OR RECEIVE UNLESS THE MICROPHONE SOCKET (14/17) AND PLUG, ARE ENGAGED FIRMLY.

TEN CODE AS USED IN THE UNITED KINGDOM

10—1 Receiving you poorly
10—4 O.K. message received
10—6 Stand by
10—9 Repeat your message
10—10 Transmission completed
10—13 Advice of road conditions
10—20 My location is
10—36 Time Check
10—100 Break for nature call

TECHNICAL SPECIFICATIONS OF THE 27MHZ LEGAL SYSTEM

FREQUENCY	–	27.60125 to 27.99125 MHz
NO. OF CHANNELS	–	40
CHANNEL SPACING	–	10 KHZ
MODULATION	–	F.M.
DEVIATION	–	± 2.5 KHZ MAX.
FREQUENCY ACCURACY	–	± 1.5 KHZ MAX.
POWER OUTPUT (MAX)	–	4 WATTS (0.4 Watts if aerial is over 7m (23') high).
PERMITTED AERIAL	–	Untuned Whip Or Wire not more than 1.5m (59") long (Base loading is permitted)
APPROX. RANGE	–	Depends on Areas and obstructions. 3-4 Miles in Town 8-10 Miles in rural Areas
DIMENSIONS (without knobs or sockets)	–	165mm wide X 215mm deep X 57mm high (6½" x 8½" x 2¼")

PRINTED IN TAIWAN R.O.C.
038-00868-018-1