

BASE STATION

OWNER'S MANUAL



**4 WATT 40 CHANNELS
CITIZEN'S BAND
BASE STATION TRANSCEIVER**

SECTION 1

GENERAL INFORMATION

DESCRIPTION

The Grandstand Base Station is the most up to date CB Transceiver available for your enjoyment. It operates on all the 40 channels available in the 27 MHz FM system.

Your Grandstand Base Station Transceiver features a frequency synthesized circuit with PHASE LOCK LOOP to ensure precise frequency control.

SPECIFICATIONS

GENERAL

Channels	: 40
Frequency range	: 27.60125 MHz to 27.99125 MHz
Frequency control	: PLL Synthesized
Antenna impedance	: 50 ohm
Power supply	: 240 volts 50 Hz ~
Accessories	: Detachable dynamic microphone
Dimension	: 440 (W) X 235 (D) X 140 (H) mm

TRANSMITTER

Output power	: Max. 4 watts
Modulation type	: FM
Modulation percentage	: Max. \pm 2.5 KHz deviation
Frequency tolerance	: 0.002%

RECEIVER

Sensitivity at 12dB SINAD	: 0.2 μ V
Squelch threshold	: Less than 0.1 μ V
Squelch deepest set	: \pm 6dB
"S" meter S-9	: 50 μ V
Maximum AF output power	: 2 watts
Selectivity (2 signal)	: -50dB at \pm 10 KHz
Speaker impedance	: 8 ohm

INTRODUCTION

This Transceiver has been designed to provide high level performance in the UK Citizen's Radio Service, which is comprised of the following frequency allocations:

channel	Frequency (MHz)	channel	Frequency (MHz)
1	27.60125	21	27.80125
2	27.61125	22	27.81125
3	27.62125	23	27.82125
4	27.63125	24	27.83125
5	27.64125	25	27.84125
6	27.65125	26	27.85125
7	27.66125	27	27.86125
8	27.67125	28	27.87125
9	27.68125	29	27.88125
10	27.69125	30	27.89125
11	27.70125	31	27.90125
12	27.71125	32	27.91125
13	27.72125	33	27.92125
14	27.73125	34	27.93125
15	27.74125	35	27.94125
16	27.75125	36	27.95125
17	27.76125	37	27.96125
18	27.77125	38	27.97125
19	27.78125	39	27.98125
20	27.79125	40	27.99125

TO ENSURE THAT YOU REALISE THE MAXIMUM PERFORMANCE FROM THIS TRANSCEIVER, PLEASE READ THIS OWNER'S MANUAL CAREFULLY.

SECTION 2 INSTALLATION

BASE STATION ANTENNA

Since the maximum allowable power output of the transmitter is limited by the Performance Specification MPT 1320, the antenna is a very important factor affecting transmission distance. It is for this reason that we strongly recommend that you install a quality antenna in your citizen's band system. You have just purchased a superior transceiver. Do not reduce its performance by installing an inferior antenna system.

Only a proper matched antenna system will allow maximum power transfer from the 50 ohm coaxial cable to the radiating element. Your supplier will assist you in the selection of the proper antenna to meet your requirements.

ANTENNA CABLE

To connect an antenna to the unit, a 50 ohm coaxial cable is required. Most CB antennas are pre-tuned at the factory and designed for 50 ohm cable. The recommended coaxial type cable is RG-58 U if the length required is 10 metres or less. For cable lengths over 10 metres, RG-8/U is recommended. The coaxial cable must be terminated in a PL-259 type connector at the transceiver.

CONNECTING THE POWER SUPPLY

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

BLUE	—	NEUTRAL	('N')
BROWN	—	LIVE	('L')
YELLOW/GREEN	—	EARTH	('E')

As the colours of the wire in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug PROCEED AS FOLLOWS:

The wire which is coloured BROWN must be connected to the LIVE terminal

which is marked L or coloured RED.

The wire which is coloured BLUE must be connected to the NEUTRAL terminal which is marked N or coloured BLACK.

The wire which is coloured YELLOW/GREEN must be connected to the EARTH terminal which is marked E or coloured YELLOW/GREEN.

If a 13A plug is used, fit a 3A Fuse. If any other plug is used protect with a 3A fuse in the plug adaptor, or at the distribution board.

CAUTION

To prevent electric shock — DO NOT remove cover. NO user serviceable parts inside. Refer servicing to qualified service Personnel.

WARNING

To prevent fire or shock hazard—DO NOT expose this appliance to rain or moisture.

INSTALLATION AND ADJUSTMENT

CAUTION

THE TRANSMITTER VOLTAGE STANDING WAVE RATIO (VSWR) MEASUREMENT MUST BE PERFORMED PRIOR TO THE USE OF THE TRANSMITTER. A VSWR (or SWR) RATIO IN EXCESS OF 2:1 MAY DAMAGE THE TRANSMITTER.

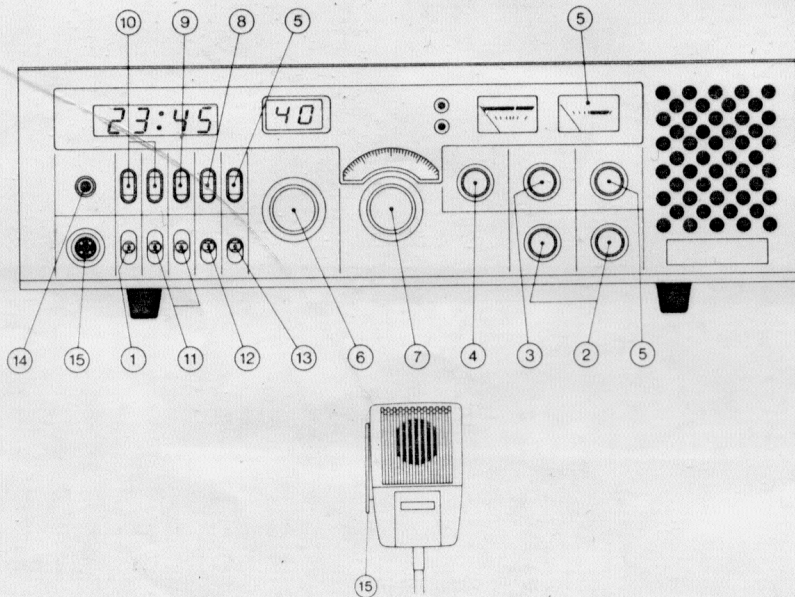
The RF (Radio Frequency) output circuit of the transmitter has been adjusted at the factory to operate in any 50 ohm antenna system. Therefore, you do not have to tune the Transceiver. However, you may have to adjust your antenna to obtain the lowest possible standing Wave Ratio. The lowest SWR means that the antenna is operating at maximum efficiency. The ideal is 1:1. ((SWR) of 1.5:1 or less is highly recommended.)

The recommended method of antenna tuning is to use an in-line watt-meter or VSWR meter to adjust the antenna for minimum reflected power on channel 20.

SECTION 3

OPERATING INSTRUCTIONS

CONTROLS, INDICATORS, CONNECTORS AND FUNCTIONS



FUNCTIONS

(FRONT PANEL)

1. **ON/OFF AUTO SWITCH.** To switch ON power put switch to the ON position. The AUTO position allows the Digital Clock to switch ON the Base Station automatically at a pre-set time. See 11.
2. **VOLUME TONE.** Both TONE and VOLUME controls are provided.
3. **SQUELCH.** This control is used to cut off or eliminate receiver background noise in the absence of incoming signals. For maximum receiver sensitivity, it is desired that the control be adjusted only to the point where the receiver background noise or ambient background noise is eliminated. Turn the control fully anti-clockwise, then slowly rotate clockwise until the receiver noise disappears. Any signal to be received must now be slightly stronger than the average received noise.

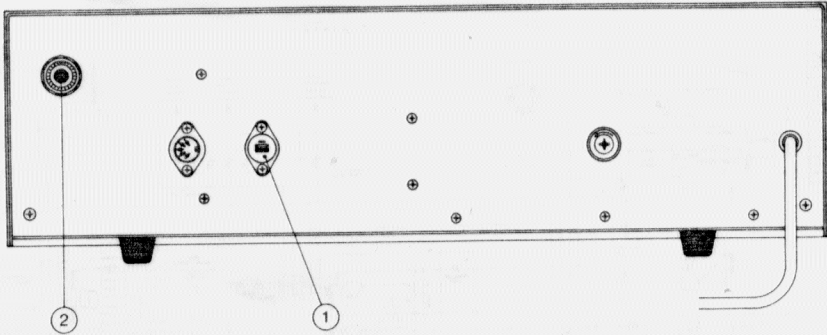
4. **RF-GAIN.** This control effects the strength of the incoming signal. Turn this control fully clockwise at the start of operation. If signal is too strong and distorted turn anti-clockwise to desired level.
5. **SWR.** To check Standing Wave Ratio (SWR). Depress SWR F Button. Press the Microphone transmit switch but do not speak. Rotate SWR control to adjust needle of SWR METER to SET ∞ . Release microphone transmit switch. Release SWR F Button. Press transmit switch on microphone and read the SWR meter setting. This should be between 1 and 1.5. If the reading is above 2 the Antenna will require adjustment to achieve an SWR of 1.5 or less. The lower the SWR figure the better the power output from the transmitter. The output can be read on the POWER meter to the left of the SWR meter.

CAUTION

DO NOT TRANSMIT FOR MORE THAN A FEW SECONDS IF THE SWR NEEDLE IS IN THE RED SECTION OF THE SWR METER.

6. **CHANNEL SELECTOR SWITCH.** This switch selects the desired channel for transmission and reception. The channel selection is indicated on the display above the channel selector.
7. **CLARIFIER.** This control fine tunes the reception of the selected channel.
8. **HI-LOW SWITCH.** This control allows an attenuation of 10dB's of transmitted power. (Refer to your Licence conditions.)
9. **NOISE BLANKING.** This switch reduces interference from electrical equipment such as Domestic Appliances which may not be adequately suppressed. To activate this control depress the switch NB.
10. **PA/CB SWITCHES.** To use the Base Station for CB depress CB Switch. To use the Base Station as a Public Address system depress PA Switch.

11. **TO SET UP DIGITAL CLOCK.** Put SET switch into CLOCK POSITION. Adjust times with TIME ADJ switch. When approximate time is shown press switch to SLOW position. SLEEP with this switch in ON position the BASE STATION will automatically switch OFF. When the correct time has been set return SET switch to Centre Position. With SET switch is AUTO position the clock can be set to automatically switch on the Base Station at a pre-selected time. To set this time use the TIME ADJ switch as you would when setting the clock to normal time. Return SET switch to Centre Position. Put POWER switch to AUTO to make use of this function.
12. **SLEEP.** This function allows the Base Station to be switched OFF automatically after 59 minutes have elapsed after it has been switched ON.
13. **DIMMER.** The clock display can be dimmed by switching ON this control.
14. **PHONES.** A Headphone socket is provided for personal listening.
15. **PRESS-TO-TALK-MICROPHONE.** The receiver and transmitter are controlled by the press-to-talk switch on the microphone. Press the switch to activate the transmitter; release the switch to receive. When transmitting, hold the microphone 5 CM from the mouth and speak clearly in a normal voice. The microphone provided with your radio is a detachable low impedance dynamic type.



(REAR PANEL)

1. **EXTERNAL SPEAKER.** The external speaker jack enables you to use an extra loudspeaker. The external speaker should have 8 ohm impedance and be rated to handle at least 2 watts. The connector to be used for this external speaker should be a DIN type 2 pin plug, and which will work as follows:—
 - (a) For both built-in and external speakers
 - (b) For external speaker only
2. **ANTENNA CONNECTOR.** ANT 50 OHM. This female connector permits connection of the coaxial cable male connector (PL-259) to the transceiver.

OPERATING PROCEDURE TO RECEIVE

1. Be sure that the power source, antenna and microphone are correctly connected before going to the next step.
2. Turn the Base Station "ON" with the Power Switch.
3. Set the volume control to a comfortable listening level.
4. Listen to the background noise from the speaker. Turn the squelch control slowly clockwise until the noise just disappears. (No signal should be present.) Leave the control at this setting. The SQUELCH is now properly adjusted. The receiver will remain quiet until a signal is actually received. Do not advance the control too far, or some of the weaker signals will not be heard.
5. Set the channel selector switch to the desired channel.

OPERATING PROCEDURE TO TRANSMIT

CAUTION

Be sure the antenna is properly connected to the transceiver before transmitting. Transmitting without an antenna or poorly matched antenna (high SWR over 2) can cause damage to the transmitter.

1. Select the desired channel
2. If the channel is clear, depress the push-to-talk switch on the microphone and speak in a normal voice.

PREVENTIVE MAINTENANCE

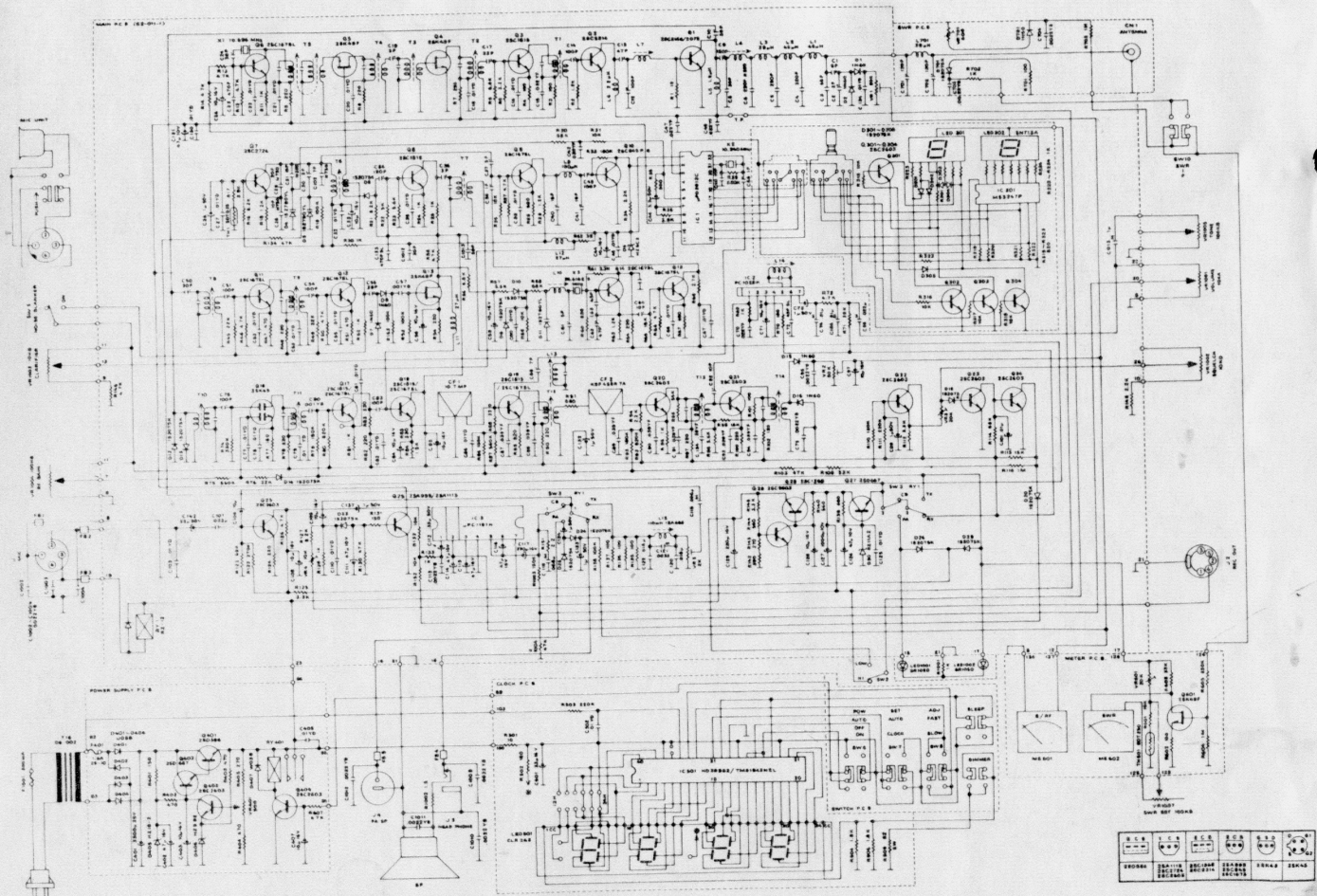
At regular intervals, the following checks should be made:

1. Check Standing Wave Ratio (SWR)
2. Inspect all electrical connections to ensure that they are tight.
3. Inspect antenna coaxial cable for wear or breaks on shielding.

OPERATOR TROUBLE-SHOOTING

1. If the transceiver is completely inoperative.
 - ★ Check the power supply lead and fuse.
2. If trouble is experienced with receiving
 - ★ Check ON/OFF VOLUME CONTROL setting.
 - ★ Be sure SQUELCH is adjusted properly. Is the transceiver over-squelched?
 - ★ Check to see that the transceiver is switched to an operational mode.
3. If trouble is experienced with transmitting
 - ★ Check to see that the coaxial cable is securely connected to the ANTENNA CONNECTOR.
 - ★ Be sure that all coaxial cable connections are secure and free of corrosion.
 - ★ Be sure that you are fully pressing the push-to-talk switch on the microphone.

CIRCUIT DIAGRAM



6X4	6X5	6X6	6X7	6X8	6X9
DET. & AVC	AMP. 1	AMP. 2	AMP. 3	AMP. 4	AMP. 5