

INSTRUCTION MANUAL
Electrophone

27MHz AM/SSB TRANSCEIVER



TX840

**STANDARD COMMUNICATIONS
PTY. LTD.**

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GENERAL DESCRIPTION

Thank you for your confidence in selecting the TX840 Transceiver. We know you will find your transceiver as exciting as it is practical. We have combined superb workmanship and modern styling with the very latest "state of the art" circuitry to bring you the new TX840 AM/SSB Transceiver. It has been especially designed to give you maximum performance and reliability. Your TX840 is completely factory aligned and quality assurance tested. To obtain the maximum benefit and pleasure from your TX840, please read the contents of this manual very carefully before attempting to install or operate the transceiver.

FEATURES:

INSTANT CHANNEL 8 RECALL: By simple push button selection, on the front panel

Note: When Ch. 8 is selected, the Digital Readout goes blank.

LAST CHANNEL MEMORY: Instantly returns to last used channel when channel 8 button released.

FULL 40 CHANNEL OPERATION: PLL frequency synthesised circuitry allows transmission and reception on all 40 channels of the 27MHz Citizens Band Radio Service.

Note: Please see Channel Information Chart for recommended usage (Page 7.)

COMPACT SIZE: The TX840 takes up less space in your vehicle, only 172W x 175L x 52D (mm).

YOUR TX840 TRANSCEIVER comes complete with: P.T.T. hand microphone, D.C. lead, transceiver and microphone mounting brackets and all mounting hardware.

POWER SUPPLY: The transceiver is ready for connection to a 13.8V D.C. negative ground system. DC power is provided to the transceiver by means of a fused power lead.

RECEIVER: The TX840 contains a sensitive and highly selective single-conversion superheterodyne receiver providing crystal-controlled PLL operation on all 40 channels. Incorporated in the circuit are a

number of features designed to provide optimum reception. There is an effective audio stage. A ceramic filter provides sharp selectivity and high adjacent channel rejection. As a result, transmission on adjacent channels causes minimum interference. A variable squelch control "silences" the receiver when no signals are being received.

The squelch circuit is adjustable providing varying degrees of sensitivity to incoming signals.

SIGNAL LEVEL INDICATOR

The signal level indicator consists of 4 LED's which light up according to the signal strength received.

LED 1 lights at approx. 1.5uV

LED 2 lights at approx. 3uV

LED 3 lights at approx. 8uV

LED 4 lights at approx. 50uV

TRANSMITTER: The transmitter offers stable operation delivering a full 4 watts (AM) and 12 watts P.E.P. (SSB) R.F. power output. High efficiency I.C.'s, transistors and low loss components are used for high reliability.

POWER MODULATION INDICATOR

The 4 LED's which double as a signal level indicator also show relative output power when transmitting.

Under normal operation, the first 3 LED's should light, showing relative output power, and the fourth LED should blink when talking into the microphone.

TX840 SPECIFICATIONS

GENERAL

Frequency Range:	26.965 MHz to 27.405 MHz
No. of Channels:	40 A.M., 40 L.S.B., 40 U.S.B.
Channel Spacing:	10 KHz
Frequency Control:	P.L.L. Synthesiser
Frequency Stability:	Better than ± 20 ppm
Temperature Range:	-10°C to + 60°C
Operating Voltage:	13.8V D.C. Negative or Positive Ground System
Dimensions:	172W x 175D x 52H (MM)
Antenna Impedance:	50 ohms
Antenna Connector:	PL259 Plug
Current Protection:	3 Amp In Line Fuse (30mm)
Reverse Polarity and Over Voltage Protection:	Shunt 18 Volt Zener Diode
P.A. Socket:	4 ohms, 4 Watts Maximum
Ext. Speaker Socket:	4 to 8 ohms
Controls:	Channel Selector, Volume On/Off Power, Squelch, Clarifier
Switches:	Mode A.M./U.S.B./ L.S.B., P.A./C.B., Noise Blanker/A.N.L., Local/Distance, Channel 8 Memory, Microphone P.T.T.
Connections:	Microphone Socket, D.C. Power Input, Ext. Speaker Socket, P.A. Socket, Antenna Socket

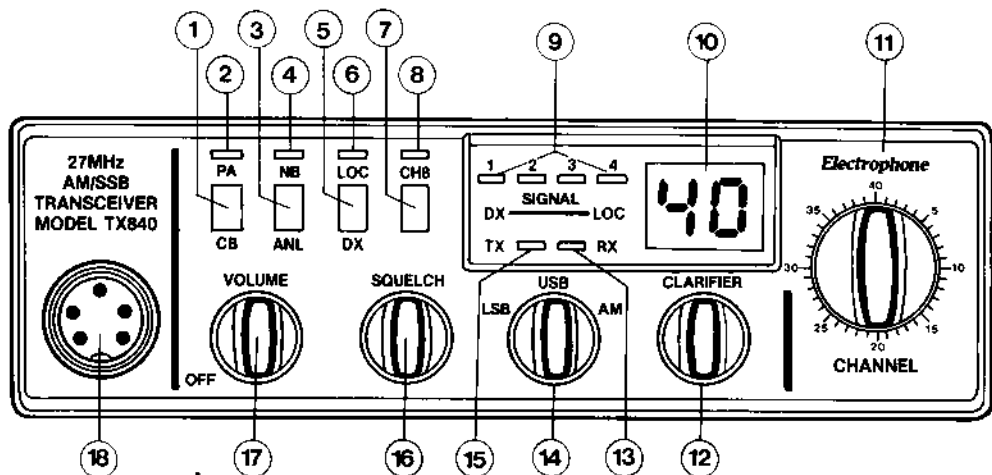
TRANSMITTER:

Power Output:	A.M. — 4 Watts R.M.S. : S.S.B. — 12 Watts P.E.P.
Transmitter Modes:	A.M. — Amplitude Modulated, High Level Class B : S.S.B. — Side Band, Carrier Suppression more than -40dB, Unwanted Side Band Suppression more than -60dB
Harmonic Suppression:	More than -70dB
Power Consumption:	A.M. — Full Modulation 1.6 Amps : S.S.B. — 2.4 Amps

RECEIVER:

Circuit System:	Superheterodyne V.C.O. Direct Injection Method, Single Conversion
IF Circuit:	10.695 MHz AM/SSB High Quality Crystal Filter
Sensitivity:	A.M. — 0.6 μ V 12dB SINAD : S.S.B. — 0.25 μ V 12dB SINAD
Selectivity:	A.M./S.S.B. ± 10 KHz better than -75dB
Squelch Range:	Threshold = 0.3 μ V Tight = 100 μ V
Intermodulation:	Better than - 65dB
Clarifier Range:	± 1100 Hz
Image Rejection:	Better than -90dB
A.G.C. Range:	Less than 10dB change in Audio Out from 1 μ V to 50 μ V
Audio Output:	3.5 Watts into 4 ohms
Current Consumption:	270mA Squelched 560mA Full Volume

OPERATING CONTROLS



OPERATING CONTROLS

1. PA/CB BUTTON

Your transceiver is equipped with a PA (public address) amplifying system which works in conjunction with volume control. Switch to PA ("IN") for PA operation and switch ("OUT") to CB for normal 27MHz transmit and receive operation.

2. PA LED

Lights up when PA Button is pushed "IN".

3. NOISE BLANKER/AUTOMATIC NOISE LIMITER BUTTON

When NB/ANL button is pressed "IN", this activates the noise blanker circuit which considerably reduces the impulse noises such as interference from spark plugs. When button is "OUT", the noise limiter is automatically set for minimum interference.

4. NOISE BLANKER LED

Lights up when NB/ANL button is pressed "IN".

5. LOCAL/DISTANT BUTTON

Select distant position ("OUT" position) for weak signals or normal signals. Select local position ("IN" position) if very strong signals are causing overload or splattering. (See Operating Instructions).

6. LOCAL LED

Lights up when LOC/DX button is pressed "IN".

7. INSTANT CHANNEL 8 BUTTON

Push "IN" to instantly select Channel 8 road channel. (The Channel display will be blanked out in this mode). When button is "OUT", the last used channel is returned.

8. CHANNEL 8 LED

Lights up when Ch. 8 button is pressed "IN".

9. SIGNAL LEDs

Indicates R.F. power output in Transmit Mode or signal strength in Receive Mode.

10. CHANNEL INDICATOR LED

11. CHANNEL SELECTOR
Selects any one of the 40 operating channels in the 27MHz CB band.

12. CLARIFIER

This control is used on the LSB/USB mode to fine tune the signal (on receive only). Adjust this control either way to receive the clearest or most intelligible signal.

13. RECEIVE LED

Lights up when set is switched "ON".

14. MODE SWITCH

Selects mode of operation LSB/USB or AM.

15. TRANSMIT LED

Lights up when transmitting.

16. SQUELCH CONTROL

Turn the knob clockwise until background noise disappears. Now you can hear signals without annoying background noises. Rotating the squelch too far clockwise decreases reception sensitivity and very weak stations would not be received. Therefore, when you are in communication with a distant weak station,

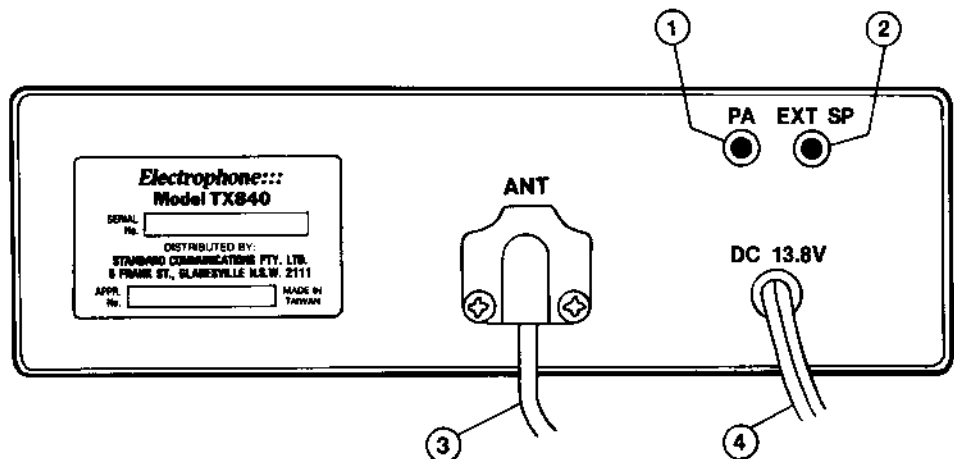
rotate the squelch all the way counterclockwise.

17. VOLUME CONTROL/POWER SWITCH

This turns power ON or OFF and controls the sound output level from the speaker.

18. MICROPHONE SOCKET

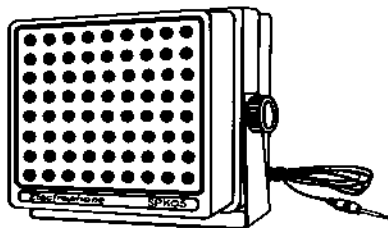
Accepts the microphone plug. A push to talk microphone is supplied with the transceiver.



REAR PANEL CONNECTIONS

1. PA SOCKET

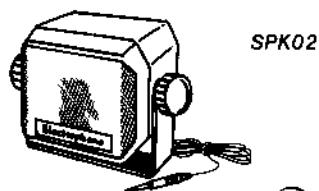
This socket is used to plug in an external 8 ohm horn speaker (SPK03) and the transceiver can then be used as a public address system or loud hailer. Uses a standard 3.5mm mini-type plug.



SPK05

2. EXTENSION SPEAKER SOCKET

Used for connecting an external speaker (impedance: 8 to 16 Ohm) (SPK05 or



SPK02



SPK03

SPK02). Matches 3.5mm mini-type plug. Insertion of an external speaker into this jack will automatically silence the built-in speaker.

3. ANTENNA CONNECTOR

Used for connecting the antenna with matching PL259 type coaxial plug.

4. DC POWER SOCKET

The DC power cord supplied connects to the 12V battery system.

CHANNEL INFORMATION

CHANNEL/FREQUENCY CHART

CH.	FREQUENCY	SUGGESTED USAGE	CH.	FREQUENCY	SUGGESTED USAGE
1	26.965 MHz	General AM	21	27.215 MHz	General SSB
2	26.975 MHz	" "	22	27.225 MHz	" "
3	26.985 MHz	" "	23	27.255 MHz	" "
4	27.005 MHz	" "	24	27.235 MHz	" "
5	27.015 MHz	" "	25	27.245 MHz	" "
6	27.025 MHz	" "	26	27.285 MHz	" "
7	27.035 MHz	" "	27	27.275 MHz	" "
8	27.055 MHz	" (3)	28	27.285 MHz	" "
9	27.065 MHz	Emergency Channel (1)	29	27.295 MHz	" "
10	27.075 MHz	General AM	30	27.305 MHz	" "
11	27.085 MHz	Call Channel AM (1)	31	27.315 MHz	" "
12	27.105 MHz	General AM	32	27.325 MHz	" "
13	27.115 MHz	" "	33	27.335 MHz	" "
14	27.125 MHz	" "	34	27.345 MHz	" "
15	27.135 MHz	" "	35	27.355 MHz	" (2)
16	27.155 MHz	Call Channel SSB (1)	36	27.365 MHz	" "
17	27.165 MHz	General SSB	37	27.375 MHz	" "
18	27.175 MHz	" "	38	27.385 MHz	" "
19	27.185 MHz	" "	39	27.395 MHz	" "
20	27.205 MHz	" "	40	27.405 MHz	" "

(1) Legally Designated. (2) Suggested 2nd SSB Call Channel. (3) Suggested Road Channel.

IGNITION NOISE INTERFERENCE

Use of the mobile transceiver at low level signal conditions is normally limited by the presence of electrical noises. The primary source of noise in an automobile installation is from the generator (or alternator) and the ignition system in the vehicle. Under most operating conditions, when signal level is adequate, the background noise does not present a serious problem. Also, when extremely low level signals are being received, the transceiver may be operated with the vehicle engine off.

If you are receiving excessive interference from the electrical system on your vehicle, contact your dealer or an auto electrician for advice.

INSTALLATION

MOUNTING

Always mount where controls are readily accessible. The unit may be mounted to the underside of the dashboard of a car, truck etc. utilising the special bracket included with your transceiver. Attach the bracket to the underside of dashboard using the self-tapping screws supplied. Attach the transceiver to the bracket using the two knurled securing screws at the side.

Tilt the unit to the most convenient angle before tightening securing screws.

DC POWER CONNECTIONS

The transceiver is designed to operate from a battery source of 11.5 to 14.5 volts DC, employing negative ground electrical systems. The fused DC power cable is used to make the necessary power connection to the transceiver. Red (fused) lead is connected to the positive (+) side of the electrical system and the black lead is connected to the negative (-) side of the system.

In a negative ground vehicle, connect the **Red** lead to the "hot" point in the electrical system (battery positive), and the **Black** lead to any point connected to the vehicle chassis (battery negative).

For connection to the "hot" battery side, a suitable post can usually be found on the fuse block. The transceiver draws a maximum of 1.5 ampere of current, therefore you can use a terminal which supplies power to the radio or other accessory. (Use the unfused input side. The DC power cable is equipped with its own fuse.) Connection at this point will ensure DC power is automatically cut off to the transceiver when the ignition is turned off.

IMPORTANT. DC VOLTAGE AT THE TERMINAL SELECTED ON THE FUSE BLOCK MUST BE AT LEAST 11.5 VOLTS FOR PROPER OPERATION.

WARNING: Accidental reversal of the positive and negative connections may cause serious damage to the transceiver which would void the warranty. If the fuse blows, replace it with a 3 Amp 3AG type.

ANTENNA CONNECTION

The lead-in cable from the antenna must be terminated with a PL259 type male connector. Attach to the matching antenna input connector at the rear of the transceiver.

MICROPHONE BRACKET

Attach the microphone bracket provided to any convenient location.

MICROPHONE CONNECTION

Insert the 5 pin plug at the end of the curled cord into the microphone socket.

DO NOT TRANSMIT WITHOUT AN ANTENNA CONNECTED TO THE TRANSCEIVER.

OPERATING INSTRUCTIONS

IMPORTANT

NEVER ATTEMPT TO TRANSMIT WITHOUT AN ANTENNA CONNECTED TO THE TRANSCEIVER OTHERWISE DAMAGE MAY OCCUR TO THE OUTPUT TRANSISTORS WHICH WOULD VOID THE WARRANTY.

AM OPERATION

Receive operating procedure

1. Place the CB-PA switch in CB position.
2. Place the LSB/USB/AM switch in the AM position.
3. Turn the set on by turning the VOLUME CONTROL clockwise, past click.

NOTE: Microphone must be plugged in for receiver to operate.

4. Set the VOLUME CONTROL for a comfortable audio level.
5. Listen to the background noise from the speaker. Turn the SQUELCH CONTROL slowly clockwise, until the noise just disappears. The squelch is now properly adjusted. The receiver will remain quiet until a signal is received. Do not advance the control too far, as some of the weaker signals will not open the squelch.
6. Set the CHANNEL SELECTOR switch to the desired channel.
7. Select the Local/Distant switch to suit the current reception conditions. The attenuation selected by the operation of this switch has been carefully selected to give the best results under a wide range of signal conditions. Selecting this switch under very strong signal conditions will prevent distortion caused by overload and reduce the effects of splatter on adjacent channels. Selection under congested channel conditions will help reduce many of the weaker transmissions allowing greater clarity of the stronger signals. The switch should be left in the "OUT" position when listening to weak or distant signals.

Transmit operating procedure

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

S.S.B. OPERATION

You may only use S.S.B. operation when talking to another station which also has a S.S.B. transceiver. Stations which have A.M. mode only will not be able to understand your transmission. The recommended procedure is to initially communicate on A.M. and if the reception in either direction is becoming weak, select in conjunction with the other station, either USB or LSB mode and stronger signals will be received. It will be necessary to adjust the clarifier control for clearest reception.

PUBLIC ADDRESS

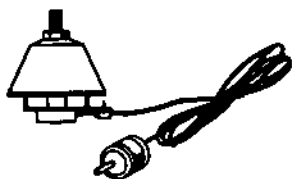
For P.A. (Public Address) operation use an external 8-16 ohm Speaker. (SPK03)

1. Connect PA speaker or Loudhailer using "MINI PLUG" (3.5mm) to the PA socket on the rear of the set.
2. Press in the CB-PA button.
3. Press the microphone button. Speak into the microphone and turn the volume control in a clockwise direction to adjust the volume from the PA speaker. The internal speaker of the transceiver is disconnected when in the PA mode.

OPTIONAL ACCESSORIES



MB402



AB203



AE210
1M WHIP

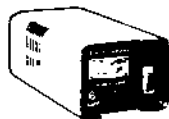


AE230
1.8M WHIP



AE227
BASE ANTENNA

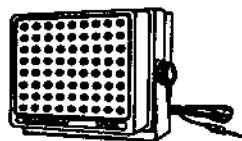
- PSE122 (2 AMP)
- PSE124 (4 AMP)
- PSE126 (6 AMP)
- PSE1210 (10 AMP)



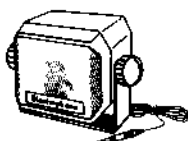
REGULATED POWER SUPPLIES



MC521A AMPLIFIED
DESK MICROPHONE



SPK05 STANDARD
EXTENSION SPEAKER



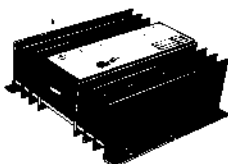
SPK02 MINIATURE
DUST/WATER RESISTANT
EXTENSION SPEAKER



SPK03 ANODISED
PUBLIC ADDRESS
HORN SPEAKER

VOLTAGE REDUCERS

- VR1-3 (3.5 AMP)
- VR2-5 (5 AMP)
- VR3-10 (10 AMP)
- VR4-20 (20 AMP)
- VR5-30 (30 AMP)



WARRANTY

STANDARD COMMUNICATIONS PTY. LTD. limit this Warranty to the original Purchaser of the equipment.

STANDARD COMMUNICATIONS PTY. LTD. warrant this product to be free from defects in material and workmanship for a period of twelve (12) months from the date of purchase from their authorised dealer.

Should the product require servicing during this period, all labour and parts used to effect repairs will be supplied free of charge. **STANDARD COMMUNICATIONS PTY. LTD.** reserve the right to determine whether damage has been occasioned by accident, misuse, or improper installation whereby the Warranty would be void, including:

Transceivers which have been damaged due to:

- (a) Incorrect reverse polarity connection to a battery or power supply;
- (b) Connection to incorrect supply voltage.

- (c) Operation without an antenna or by connection to an antenna which has been incorrectly installed, resulting in damage to the transceivers output transistors.
- (d) Effects of water or moisture penetration.
- (e) Non-factory modifications.
- (f) Use of incorrect replacement fuse.

Procedure to be followed by claimant:

In the event of a defect occurring during the twelve (12) month Warranty period, the original purchaser may return the defective unit along with suitable proof of purchase date (i.e. receipt, docket, credit card slip etc.) and a full description of the defect to the Dealer from whom the unit was purchased.

All freight charges incurred for transportation by the Dealer or **STANDARD COMMUNICATIONS PTY. LTD.** are the Purchaser's responsibility.

The Dealer will forward it to the closest authorised **STANDARD COMMUNICATIONS PTY. LTD.** Service Depot in your particular State.

STANDARD COMMUNICATIONS AFTER SALES SERVICE

Your **ELECTROPHONE** transceiver is especially designed for the environment encountered in vehicle installations. The use of all solid state circuitry and its light weight, result in high reliability. Should failure occur however, **STANDARD COMMUNICATIONS PTY. LTD.** maintain a fully equipped service facility and spare parts stock

to meet the customer's requirements long after expiry of the warranty period.

Your **ELECTROPHONE** transceiver should firstly be returned to your local dealer, who can obtain the correct replacement parts from **STANDARD COMMUNICATIONS PTY. LTD.**, or alternatively return the unit for service.

STANDARD COMMUNICATIONS PTY. LTD.

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