Electrophone

Model TX-560

40-Channel 27MHz AM/SSB Deluxe Mobile 2-way CB radio

Instruction Manual

General description

Thank you for your confidence in selecting an Electrophone CB radio. 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-art circuitry to bring you the new TX560 AM/SSB Citizens Band Slimline Transceiver. It has been especially designed to give you maximum performance and reliability. Your TX560 AM/SSB is completely factory aligned and quality assurance tested. To obtain the maximum benefit and pleasure from your TX560 AM/SSB, please read the contents of this manual very carefully before attempting to install or operate the transceiver.

Features.

Compact size, smaller than most other AM/SSB transceivers, takes up less space in yaur vehicle.

Full 40 channel operation: PLL frequency synthesizer circuitry allows transmission and reception on all 40 channels of the 27MHz Citizens Band Radio Service.

Large L. E. D. function indicator: Indicates with bright easy to read L.E.D.'s the:

(i) Selected channel,
(ii) Received signal strength,
(iii) Transmit indicator,
(iv) Receive indicator,
(v) Public address operation.

Clean signal: Transmitter audio processing circuitry produces a clean signal with maximum legal modulation, for best range.

Quiet reception: Effective squelch and automatic noise limiting for superior quieting.

Effective AGC: Receiver amplified automatic gain control (AGC) reduces the effect of differences in received signal strengths. No distracting "blasting" or "fading" of signals.

An efficient transmitter: Provides maximum power to the antenna. 4 watts on A.M., 12 watts P.E.P. on S.S.B.

Public address function: Useful for paging and announcements.

contents

Specifications TX560

General.

Frequency range:	26.965 MHz - 27.405MHz
No. of channels:	40
Power supply:	13.8 volts D.C. negative ~~or positive ground.~~
Power consumption:	Receive: 1.3 Amps full audio. Transmit: 2.2 Amps full modulation.

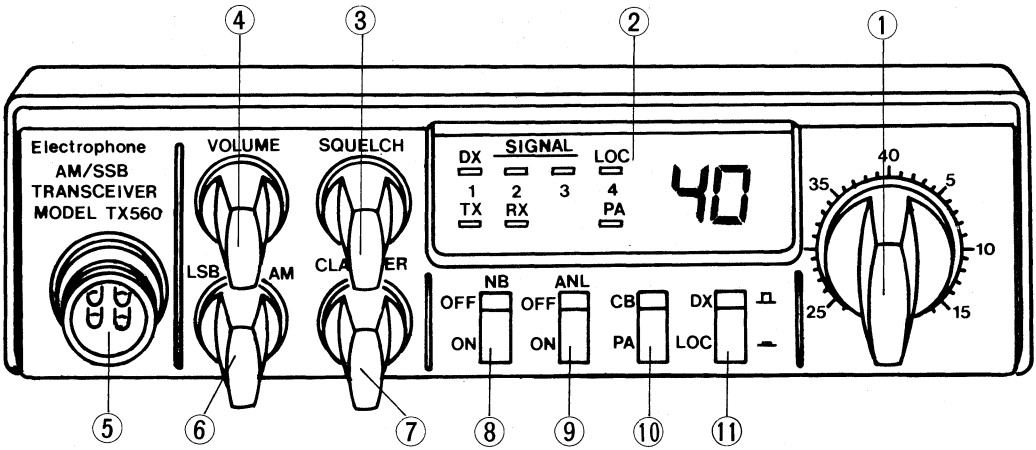
Transmitter.

Power output:	AM: 4 watts R.M.S. SSB: 12 watts P.E.P.
Transmitter modes:	AM: Amplitude modulation, high level class B. SSB: Sideband, carrier suppression more than 40dB. Unwanted sideband suppression more than 58dB down.
Harmonic suppression:	More than 70dB down.

Receiver.

System:	AM/SSB: Single conversion superheterodyne.
IF:	AM/SSB: 10.695 MHz (separate crystal filters for AM and SSB)
Sensitivity:	SSB: 0.25 microvolts for 12dB SINAD. A.M.: 0.6 microvolts for 12dB SINAD.
Selectivity:	SSB: 2kHz -6dB 10kHz -60dB. AM: 5kHz -6dB; ±10kHz -60dB.
Clarifier:	±800Hz range.
Audio output:	2.5 watts at 8 ohms.
Squelch range:	SSB: 0.7 to 500 microvolts. AM: 1 to 500 microvolts.
Controls:	Channel selector, Volume/Power ON/OFF, Squelch, Clarifer.
Switches:	Noise blanker, CB-public address, automatic noise limiter, AM/LSB/USB, local/distant.
Connections:	Microphone socket, D.C. power Input socket, Public address speaker socket, external loudspeaker socket.

Operating controls



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

2. L.E.D. FUNCTION INDICATOR.
This serves several functions:
(a) Gives a bright L.E.D. indication of the actual channel number.
(b) Signal strength meter. 1-4 red L.E.D.'s light up according to signal strength. Weak signal indication by DX - (1) .5uV, (2) 1.5uV, (3) 8uV, (4) 30uV. Strong signal (marked L.O.C.).
(c) Indicates when transmitting (TX) red or receiving (RX) green.
(d) Indicates when switched to public address.

3. 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.

4. VOLUME CONTROL/POWER SWITCH.
This turns power ON or OFF and controls the sound output level from the speaker.

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

6. MODE SWITCH.
Selects mode of operation LSB/USB or AM.

7. 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.

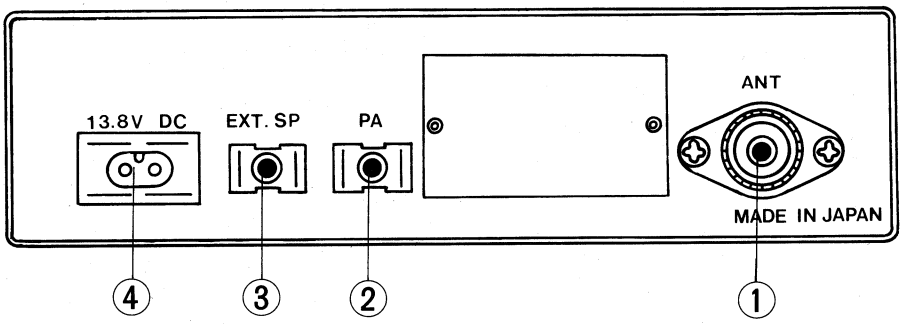
8. N.B. SWITCH.
This switch pushed "IN", actuates the noise blanker circuit which considerably reduces impulse type noises such as interference from spark plugs.

9. ANL SWITCH.
Push "IN" to actuate ANL (automatic noise limiter) circuit to reduce atmospheric noise interference.

10. PA/CB
Your tranceiver is equipped with a PA (public address) amplifying system which works in conjunction with volum control. Switch to P.A. ("IN") for PA operation & switch ("OUT") to CB for normal 27MHz transmit and receive operation.

11. LOCAL/DISTANT SWITCH.
Select distant position ("OUT" position) for weak signals or normal signals. Select local position ("IN" position) if very strong signals are causing overload and spluttering.

Rear panel connections



1. ANTENNA CONNECTOR.
Used for connecting the antenna and matches PL-259 type coaxial plug.

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

3. EXT SP SOCKET.
Used for connecting an external speaker (impedance: 8 to 16 Ohm). Matches 3.5mm Standard mini-type phone plug. Insertion of an external speaker into this jack will automatically silence the built in speaker.

4. DC POWER SOCKET.
The DC power cord supplied plugs into this socket and connects to the 12V battery system. Do not force the power plug into the pins. Align the key in the plug to the keyway in the socket.

Installation

Location

Plan the location of the transceiver and microphone bracket before starting the installation. Select a location that is convenient for operation and does not interfere with the driver or passenger in the vehicle.

In automobiles, the transceiver is usually mounted to the dash panel with the microphone bracket beside it.

Mounting and connection

This radio is supplied with a universal mounting bracket. The transceiver is held in the bracket by the two thumb screws (supplied), permitting adjustment to the most convenient angle. The bracket must be mounted with the machine screws (supplied). The mounting surface must be mechanically strong. Proceed as follows to mount the transceiver:

After you have determinined the most convenient location in your vehicle, hold the radio with mounting bracket in the exact location desired. If nothing interferes with mounting it in the position, remove the mounting bracket thumb screws and mark the mounting holes using the bracket as a template. Before drilling the holes, make sure nothing will interfere with the installation of the mounting bolts. Drill the holes and mount the bracket and then install the transceiver.

Connect the antenna cable plug to the standard receptacle on the rear panel. Most CB antennas are terminated with a type PL-259 plug which mates with the receptacle on the rear panel.

Battery connection

This radio may be installed and used in any 12V DC negative ~~or positive~~ ground system vehicle. Most new cars or small trucks use a negative ground system while some older cars and some newer large trucks may use a positive ground system.

1. **Negative ground system:** Connect the red power lead from the radio to the positive or (+) battery terminal or other convenient point, and connect the black power lead to the chassis or vehicle frame or (−) battery terminal.

2. **Positive ground system:** In the case of positive ground system, connect the black power lead from the radio to the negative or (−) battery terminal or other convenient point, and connect the red power lead to the chassis or vehicle frame or (+) battery terminal.

In automobile installation, + 12V DC is usually obtained from the accessory contact on the ignition switch. This prevents the set being left on accidentally when the driver leaves the car and also permits operating the radio without the engine running. You can locate the accessory contact on most ignition switches by tracing the power wire from the broadcast receiver existing in the car.

Channel information

Australian 40/18 channel conversion chart

40 Ch.	Frequency	18 Ch.	Suggested Usage
1	26.965MHz.	—	General AM
2	26.975MHz.	—	" "
3	26.985MHz.	—	" "
4	27.005MHz.	—	" "
5	27.015MHz.	1	" "
6	27.025MHz.	2	" "
7	27.035MHz.	3	" "
8	27.055MHz.	4	" " (3)
9	27.065MHz.	5	Emergency Channel (1)
10	27.075MHz.	—	General AM
11	27.085MHz.	6	Call Channel AM (1)
—	27.095MHz.	7	General AM
12	27.105MHz.	8	" "
13	27.115MHz.	9	" "
14	27.125MHz.	10	" "
15	27.135MHz.	11	" "
16	27.155MHz.	12	Call Channel SSB (1)
17	27.165MHz.	13	General SSB
18	27.175MHz.	14	" "
19	27.185MHz.	15	" "
—	27.195MHz.	16	" "
20	27.205MHz.	17	General SSB
21	27.215MHz.	—	" "
22	27.225MHz.	18	" "
23	27.255MHz.	—	" "
24	27.235MHz.	—	" "
25	27.245MHz.	—	" "
26	27.265MHz.	—	" "
27	27.275MHz.	—	" "
28	27.285MHz.	—	" "
29	27.295MHz.	—	" "
30	27.305MHz.	—	" "
31	27.315MHz.	—	" "
32	27.325MHz.	—	" "
33	27.335MHz.	—	" "
34	27.345MHz.	—	" "
35	27.355MHz.	—	" " (2)
36	27.365MHz.	—	" "
37	27.375MHz.	—	" "
38	27.385MHz.	—	" "
39	27.395MHz.	—	" "
40	27.405MHz.	—	" "

(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.

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

Antenna installation

Antenna selection

This radio is designed to operate into a 52 ohm CITIZENS BAND RADIO antenna. Best results will be obtained from your transceiver if you use a good antenna, properly installed. (Refer to the antenna installation instructions included with your antenna.)

A vertically polarized quarter-wavelength whip antenna provides the most reliable operation and greater range. The shorter loaded-type whip antennas are more attractive, compact and adequate for applications where the maximum possible distance is not required. Also, the loaded whip antennas do not present the problems of height imposed by the full quarter-wavelength whip.

Mobile whip antennas utilize the metal body of the vehicle as a ground plane. When mounted on a corner of the vehicle, they are slightly directional, in the direction of the body of the vehicle. For all practical purposes, however, the radiation pattern is non-directional. A slight directional characteristic will be observed only at extreme distances. A standard antenna connector (Type SO-239) is provided on the transceiver for easy connection to a standard PL-259 cable termination.

There are many types of approved aerials and mounts for the motor vehicle, the most common of which is the 1.5metre fibreglass helical whip (A51C). For the best performance, this type of aerial is fitted to an (ABS) vehicle mount situated in the centre of the vehicle roof. The connection of a (CBL 12) 4 metre lead from the mount to the TX560 completes the ideal aerial system. The aerial is then tuned to maximum performance with the aid of an S.W.R. meter (310). Either your C.B. dealer will do this for you or show you how. If it is not desirable to drill a hole in your vehicle roof, other mounts are available i.e. the (ABGM) gutter mount or the (AB12) roof rack mount. Alternative length helical whip aerials are also available (see "Optional accessories").

For vehicles with non metallic i.e. trucks with fibreglass cabin tops the aerial may be mounted on the cabin roof or on the rear vision mirror bracket.

Because of the absence of a metal ground plane, best performance will be obtained by connecting the aerial to a matcher unit (Matcher 140) which must be adjusted with an S.W.R. meter, or an ATU27 which has its own tuning indicator. The output of either units then connects to the antenna socket on 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.

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 an 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.

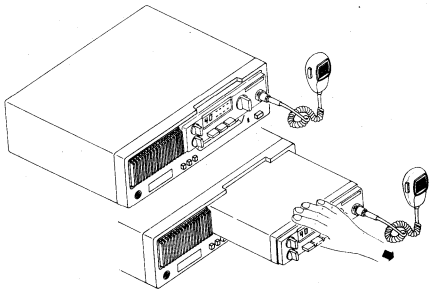
Public address operation

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

1. Connect PA speaker or Loudhailer using "TINI 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.

Base station operation

The TX560 may be operated as a base station by connecting to a 240V A.C. power supply with an output of 13.8 volts D.C. and a continuous current rating of 4Amps.
Alternatively an attractively styled Electrophone Base Station Cabinet Part No.GB590 is available.



The TX560 transceiver slides into this cabinet. It has a built-in power supply which connects to the 240v AC mains and provides an output of 13.8v DC, a good quality front speaker and a built-in digital clock with alarm and reset facilities.

The 13.8v DC output from the power supply and the extension speaker must be plugged into the rear of the transceiver.

A base station antenna should be mounted as high as possible e.g. on a chimney and low loss 50 ohm coaxial cable type RG8/213 used to run from the aerial to the transceiver.

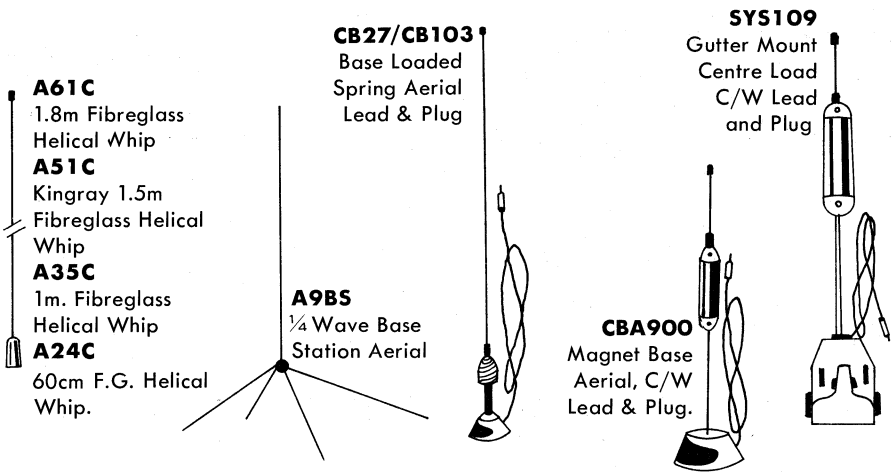
The transceiver can be removed from the cabinet and used in a vehicle if required.

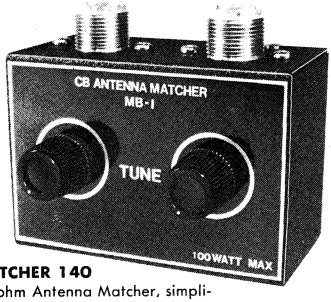
Optional accessories

STANDARD COMPONENTS PTY. LTD. supply a wide range of quality accessories for the C.B. Radio operator which are available from your local dealer:

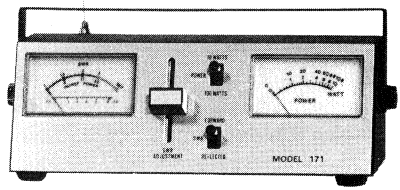
Fibreglass Helical Whips, Base Station Aerials, Aerial Bases, Adaptors, Cable and Connecting Leads, Antenna Matchers, S.W.R. Meters, Plugs and Sockets, Interference Filters, Horns and Speakers, Power Supplies, Microphones. Some Items are Illustrated Here.

Fibreglass helical whips



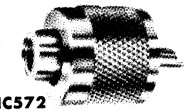


MATCHER 140
50-ohm Antenna Matcher, simplifies SWR setting to ensure 50-ohm Aerial/Transceiver Matching.



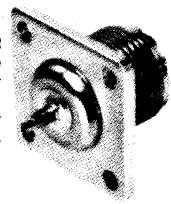
171
Dual Power/SWR/Field Strength Meter (Bench Type) measures power 0-10/0-100W.

PLUGS & SOCKETS



NC572
Solderless cable (PL259 type) plug.

CC2
Misc. Curly Cord.

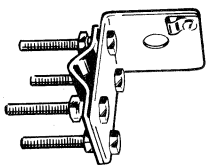


NC552
PL258 type chassis mount socket — surface mount screw fix.

PANTHER CB POWER SUPPLY
13.8V
4Amp
Peak D.C.

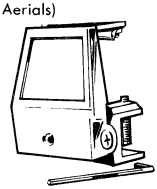
AERIAL BASES & ADAPTORS

AB12
Roof Rack/ Mirror Stem Mount (Suits ABS Base).



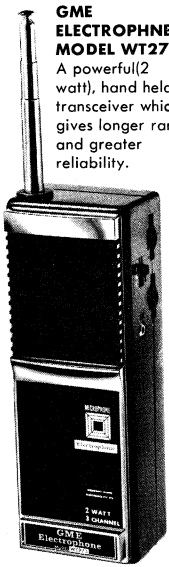
AB-S
Standard Vehicle Mount Base.(Use with A24C/A35C/ A51C/A61C Aerials)

AB-GM
Heavy duty. Adj. Gutter Mount. Suit ABS Base.



CH55-F
P.A. Horn Speaker

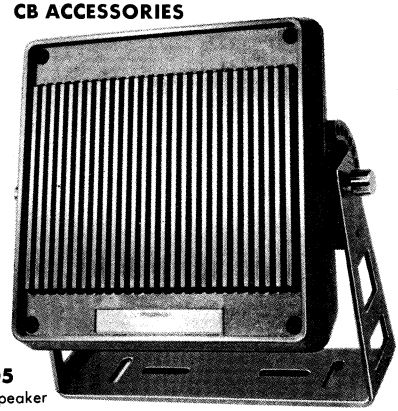
GME ELECTROPHNE MODEL WT273
A powerful(2 watt), hand held transceiver which gives longer range and greater reliability.



CABLES

CBL12
4m 50-ohm connecting lead complete with PL259 plug to open end.

CB ACCESSORIES



8-105
Ext. Speaker

WARRANTY

Your product carries the following warranty (Subject to the conditions stated below):—

90 DAY FREE SERVICE

Any defect in materials or workmanship occurring within ninety (90) days from the date of delivery will be rectified free of charge by STANDARD COMPONENTS PTY. LTD. via your Dealer.

CONDITIONS:—

1 All Claims for warranty service must be made to the Retailer from whom this product was purchased. All transport charges incurred in connection with warranty service or replacement will be paid by the purchaser.

2. This warranty extends only to defects in materials or workmanship occurring under normal use of the product and when operated in accordance with our instructions.

3. The benefits given to the customer by this warranty are in addition to all other rights and remedies which the customer has in law in respect of the product.

4. Reasonable evidence must be supplied that the product was purchased within 90 days prior to the claim.

DISTRIBUTED IN AUSTRALIA BY

STANDARD COMPONENTS PTY. LTD.

10 HILL STREET, LEICHHARDT, NSW 2040
TELEPHONE: (02) 660-6066. TELEX : AA26827 SCGME

ALWAYS INSIST ON ELECTROPHONE FOR RELIABILITY

KTTX560 * XX
Printed in Japan
0625 KM

NOTE:
ALL VOLTAGES MEASURED FROM PC BOARD GROUND WITH D.C VTVM AT NO SIGNAL (AT 13.8V POWER SUPPLY) IF MEASUREMENT VALUES OBTAINED ARE IN EXCESS OF ±20% OF VALUES SHOWN THEN REASON FOR DIFFERENCE SHOULD BE CORRECTED
Δ TX ; □ LSB ; ( ) AM TX
⏚ CHASSIS GND ⏚ PC BOARD GND
* ADJUSTED (TYPICAL VALUE SHOWN)

PTBM146AOX

PTSW180AOX

PTLD098AOX

REAR PANEL

MIC UNIT

PTSW181AOX

FRONT PANEL

PTSW179AOX

TRANSISTOR BASE INFORMATION

E EMITTER S SOURCE
C COLLECTOR G GATE
B BASE D DRAIN

2SC1359 2SA733 2SC1973
2SC945 2SA564 2SC2166
2SC1327 2SC828 2SC1306
2SC1675 2SC1383 2SC1969
JC500 2SA683 2SC2050

2SC2724 2SC2086

2SK34 2SK128

2SD471 2SB564

AN612

AN7140

6532 4558

SCHEMATIC DIAGRAM M

TX - 560

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