



STANDARD[®]

OWNER'S MANUAL

C6500

ALL BAND RECEIVER



STANDARD COMMUNICATIONS CORP.

FEATURES

- * A true state-of-the-art communicative receiver covering a continuous 0.5 to 30MHz frequency range.
- * Triple-super-heterodyne circuit with unique Wadley Loop System ensuring highly sensitive reception with exceptional stability over the entire frequency range.
- * Quartz-crystal-controlled oscillator allowing direct frequency reading down to 5KHz divisions.
- * Two independent detectors separately provided for AM and SSB/CW reception. The automatic selectivity-switching function offers interference-free operations — 7KHz (−6dB) band width for AM, and 4KHz (−6dB) band width for SSB/CW.
- * PRE-SELECTOR serving optimum tuning in critical tuning operations.
- * Main dial with the large tuning knob covering 0 to 1,000kHz; each one rotation of the knob covers 200KHz.
- * Antenna attenuator switch allowing to prevent overload by strong local transmissions.
- * Large S-meter.
- * Auxiliary RCA-jack provided on the rear panel enabling unique, additional functions such as digital readout or IF output.
- * PHONE jack helping quiet communications.
- * RECORD jack providing recording output for tape-recorders.
- * Powered by three different power sources — AC220V or internal 8-dry cells, or external DC12V. When the power has gone off, the receiver automatically switches itself to the internal power source without giving any interruption to the stable operations.

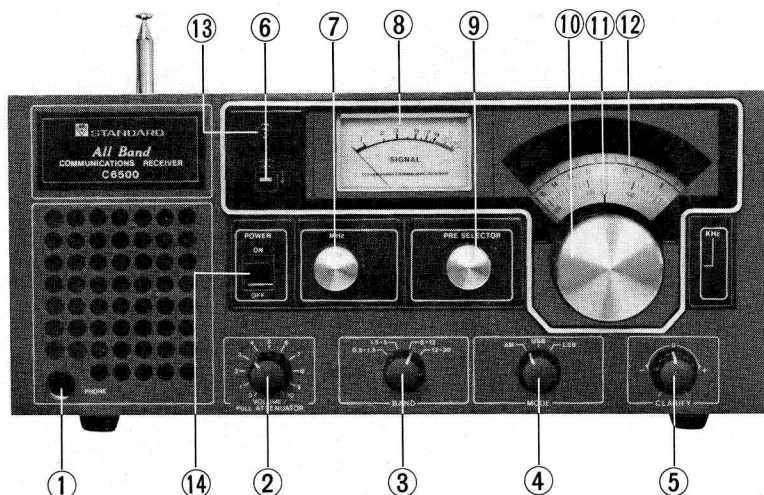


FIG 1

FRONT PANEL FUNCTIONS

1. PHONE JACK

The PHONE JACK provided on the front panel is useful for quiet communications through the headphones or for the external speaker connection.

2. PULL-VOLUME (ANT. ATT.)

When you pull this PULL-VOLUME knob, the antenna attenuator reduces the signal reaching the receiver's input circuits to prevent overload by very strong local transmissions. Normally it should be pushed in the OFF position.

3. BAND SELECTOR

The BAND SELECTOR selects a frequency band desired.

4. MODE SELECTOR

The MODE SELECTOR selects a signal mode to be received: the AM position is for AM broadcasts, the USB for upper side band, and the LSB for lower side band. Both USB and LSB positions accommodate CW (telegraph) signals. With this switch in the AM position the receiver provides itself with the diode-detector circuit, and in the USB and LSB positions the product-detector circuit is switched in with corresponding selectivities provided for each position.

5. CLARIFY CONTROL

When receiving a SSB or CW signal, you can obtain your most favourite tonal quality from the audio output by adjusting this CLARIFY CONTROL. During AM reception, it works as a fine tuning. Set it usually in "O" position.

6. ILLUMINATION SWITCH

Pushing this switch illuminates the signal-strength meter when your receiver is powered by an internal or external DC power source. This function contributes to the reduction of battery consumption. The S-METER illumination and power indicator always light when your equipment is operated by the commercial AC power source.

7. MHz KNOB

The MHz KNOB covers 0.5MHz to 30MHz to allow tuning-in the Mega-Hertz order of a receiving frequency. Set the MHz dial with the larger diameter to the desired frequency by turning this knob.

8. S-METER

The S-METER indicates receiving signal strength.

9. PRE-SELECTOR

The PRE-SELECTOR serves to tune the high-frequency tuning circuit in a receiving frequency. Adjust this knob to obtain the maximum S-meter reading.

10. KHz MAIN KNOB

The KHz MAIN KNOB covers 0 to 1,000KHz to allow tuning-in the Kilo-Hertz order of a receiving frequency. One rotation of this knob covers approximately 200KHz.

11. 12. DIAL

The smaller dial scale provides KHz, the large dial scale provides MHz. Each division of the KHz dial scale represent 10KHz permitting reading down to 5KHz.

13. POWER INDICATOR

This LED POWER INDICATOR lights up when the receiver is "ON".

14. POWER SWITCH

Turn on the SWITCH when you operate C6500.

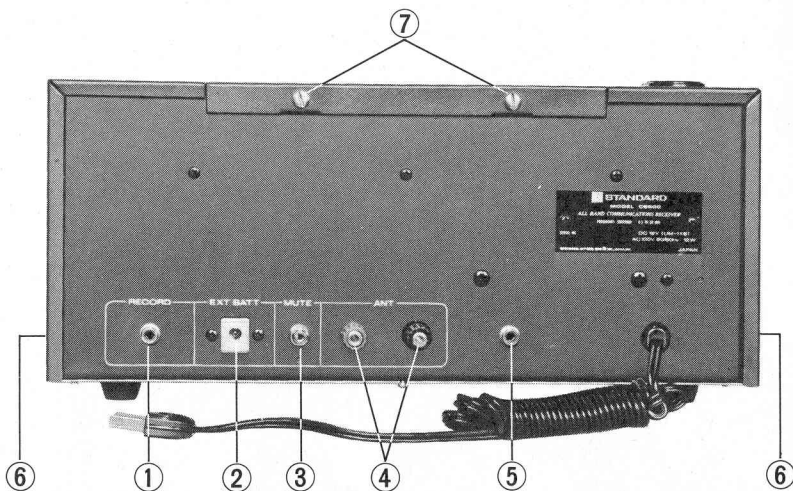


FIG 2

REAR PANEL FUNCTIONS

1. RECORD JACK

The RECORD JACK is useful for recording any audio output of your receiver. It provides a constant output voltage (60mV) with a constant output impedance (5,000 ohms) regardless of the volume control.

2. EXT. BATT JACK

Automatically switched from the internal batteries, this EXT. BATT JACK accepts an external 12V DC power source.

3. MUTE JACK

When you combine your C6500 receiver with a transmitter to obtain transceiver operations, this MUTE JACK serves to shut off the receiver output during transmission. If the shorting plug is removed, the receiver stops functioning.

4. ANT. TERMINALS

The outdoor antenna will be connected to the red terminal of these ANT. TERMINALS. The black terminal is provided for earthing.

5. AUX JACK

The AUX JACK permits you various experiments by using the attached plugs.

6. COVER FIXING SCREWS

You can remove the cover of your receiver by taking off these four screws. Pull backward the cover to remove it.

7. BATTERY CASE MOUNTING SCREWS

The battery case can be removed by taking off these two screws.

OPERATION

The C6500 All-Band Receiver can be operated by either the AC220V commercial power source, or internal 8-dry batteries, or an external DC12V power source.

Power and Mode

The receiver can be turned on by power switch knob (14) in Fig. 1. The MODE selector knob (4) enables selection between AM and CW or SSB.

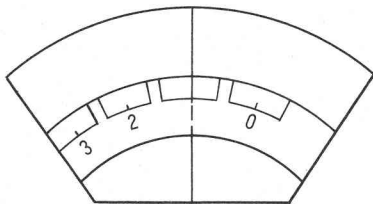
Tuning Operation

Tuning operation is achieved by turning the knobs (3), (5), (7), (9) and (10) in Fig. 1.

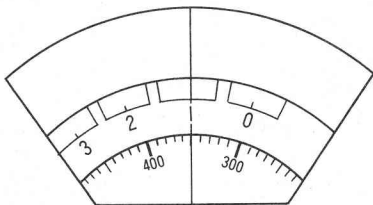
- (A) Set the CLARIFY knob (5) to "O".
- (B) Set the BAND selector switch (3) to the band which involves the frequency desired.
- (C) Set the larger dial scale (12) to the desired mega-Hertz frequency by turning the MHz knob (7).
- (D) Set the smaller dial scale (11) to the desired kiro-Hertz frequency by turning the kHz knob (10).
- (E) Turn the PRE-SELECTOR (9) to obtain the best receiving condition of the signal. When there is no signal at the frequency required, turn this knob for maximum white-noise.
- (F) After catching the signal desired, carry out fine tuning by using the MHz knob (7) and kHz knob (10).
- (G) Turn the CLARIFY knob (5) to achieve more better receiving condition. (This CLARIFY adjustment is chiefly effective in SSB and CW reception, but it is also helpful for AM reception.)

* AM reception (for amplitude modulation signals)

- When receiving a signal with the frequency of 1.350MHz —
- 1) First, turn on the power of your receiver. Set the VOLUME control in an appropriate level.
- 2) Set the MODE selector (4) to the AM position.
- 3) Set the CLARIFY control (5) to "O".
- 4) Set the BAND selector (3) to the 0.5—1.5 position.
- 5) Set the larger dial scale (12) to the center of division "1" by turning the MHz knob (7) as shown in the figure below.



- 6) Set the smaller dial scale (11) to "350" by turning the KHz knob (10) as shown in the following figure.
(0.350MHz stands for 350KHz.)



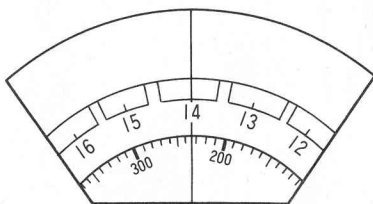
- 7) Adjust the PRE-SELECTOR (9) to obtain maximum signal or white-noise strength.
- 8) Adjust the MHz knob (7) for maximum signal or white-noise strength.
- 9) Adjust the KHz knob (10) to obtain the best receiving condition of the signal desired.
- 10) Adjust the VOLUME control for optimum volume level.

*** SSB (Single Side Band) RECEPTION**

SSB signals are found chiefly in the amateur radio bands (3.5, 7, 14, 21, and 28MHz). LSB waves are assigned for 3.5 and 7MHz bands, and USB waves for 14, 21, and 28 MHz bands. If you receive SSB signals in the AM mode, you can identify them by their meaninglessly mumbling way of communications accompanied by the wiggling indicator of the S-meter.

— When receiving USB 14.235MHz —

- 1) Turn on the power of your receiver. Set the VOLUME control to an appropriate level.
- 2) Set the MODE selector (4) to the USB position.
- 3) Set the CLARIFY control (5) to "O" position.
- 4) Set the BAND selector to the 12–30 position.
- 5) Set the larger dial scale (12) to the center of division "14" by turning the MHz knob (7).
- 6) Set the smaller dial scale to "235" by turning the KHz knob (10).



- 7) Adjust the PRE-SELECTOR (9) to obtain maximum signal or white-noise strength.
- 8) Adjust the MHz knob (7) for maximum signal or white-noise strength.
- 9) Adjust the KHz knob (10) to obtain the best receiving condition of the signal desired.
- 10) Finely adjust the CLARIFY control (5) to obtain the clearest demodulation signals.
- 11) If clear demodulation signals can not be obtained, try again after reversing the MODE selector from USB to LSB.

*** CW (telegraph) reception**

Set the MODE selector to either USB or LSB to receive CW intermittent signals. After performing tuning-in operations from 1) to 9) described in the SSB section presented above, adjust the CLARIFY control (5) to obtain your favourite tonal quality. If interfered by any other transmission, reverse the MODE selector from USB to LSB and vice versa; or adjust the CLARIFY control to obtain "zeor-beat" with the interfering signal.

*** RTTY (Radio Teletype) reception**

Set the MODE selector to either USB or LSB to receive RTTY signals. You will be one of the first who get world-wide news printed if you have a demodulator/decoder and printer.

*** Spurious signal**

While tuning with the MHz knob, you may receive an interfering beat or another; but this is not responsible for any equipment trouble. Tune finely to avoid this beat and obtain maximum signal strength. You will also hear modulation signals at every "O" division of the KHz dial scale (every 1MHz). Since they are an inherent characteristic of this type of equipment, it is impossible to remove them off. Instead, they may be quite helpful for setting of the PRE-SELECTOR or calibration of the KHz dial serving as markers at every 1MHz.

ANTENNA AND EARTHING

The attached rod-antenna will be helpful enough for the reception of AM broadcasts or strong SW stations; however, a full-scale outdoor antenna would survey prove the merit of your C6500 receiver by intercepting lots of down-under stations that you have never heard. The outdoor antenna may cause overload by local stations with their frequencies of 3MHz or below resulting a generation of inter-modulation (which will cause a station to be heard at several frequencies.). In such case, pull the VOLUME knob on the front panel to reduce the signal reaching the receiver's input circuits. If the inter-modulation still occurs, disconnect the outdoor antenna and receive with the attached rod-antenna.

* You can operate your receiver without earthing it.

However, earthing will largely improve the efficiency and noise rejection ratio of the outdoor antenna. To establish the best earthing, bury the earthing rod in the ground. If no appropriate lot for earthing is available, connect the earth wire to the tap (with a leaden pipe). Never connect it to the gas pipe.

The voltage range of the external power sources for this receiver can be from 12V to 15V including 13.5V of auto-batteries. Make sure the polarities of your external battery when connecting (outside positive).

* Replacement of the internal batteries

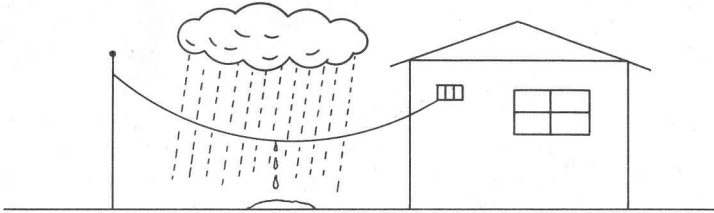
To replace the internal batteries, first remove the 2 screws back side of the receiver case. Pull the case backward, then you will see the white battery case with 8 dry batteries (UM-1) installed. Replace these batteries using care not to reverse their polarities.

* Outdoor antenna

It is desirable to build as high an outdoor antenna as possible to obtain good results — 10 meter or more if possible. You can build your antenna over the roof of your house or apartment building; or you can build it utilizing poles, or trees, or balconies, or brackets. In some cases, you may not be able to stretch it in its full length but, the shortened antenna will not reduce the total performance of your receiver.

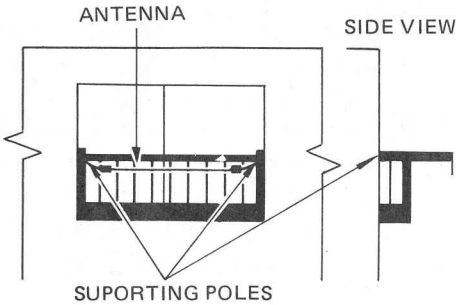
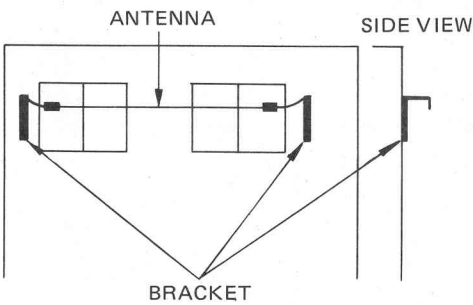
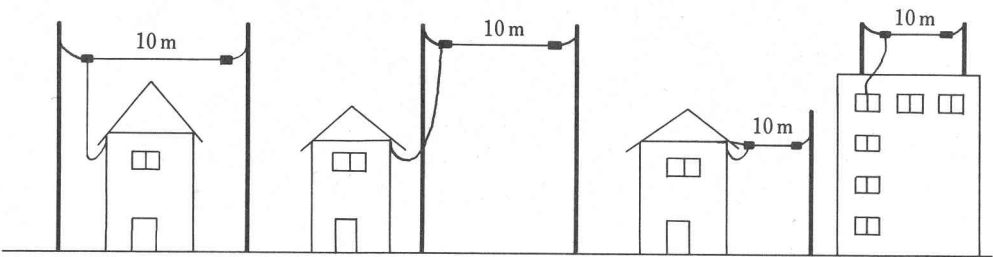
PRECAUTIONS FOR OUTDOOR ANTENNA INSTALLATION

- 1) Do not stretch your antenna tight. A tight antenna will cause defective insulation of insulators.
- 2) if you draw the one end of the antenna wire through the window or ventilating openings, slack the wire to prevent rain drops from coming in through the wire.

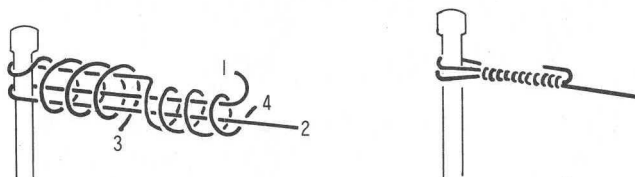
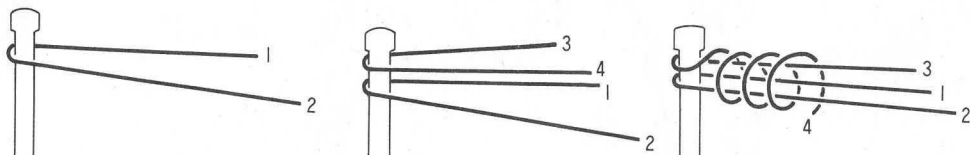


- 3) If there are high-voltage transmission lines or power cables in your vicinity, choose the direction of your antenna to obtain minimum noise.
- 4) When thunder rolls, ground your antenna line.
If the antenna remains on the antenna terminal of the C6500, the thunderbolt may possibly strike it causing serious damage to the equipment or even a fire.

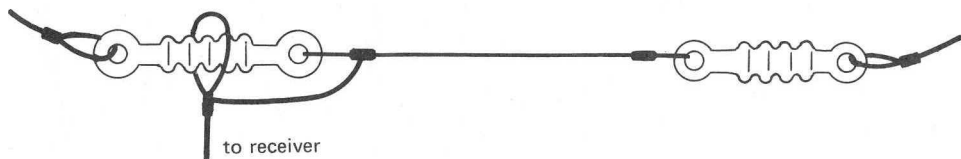
ILLUSTRATED BELOW ARE A NUMBER OF WAYS TO ERECT YOUR ANTENNA



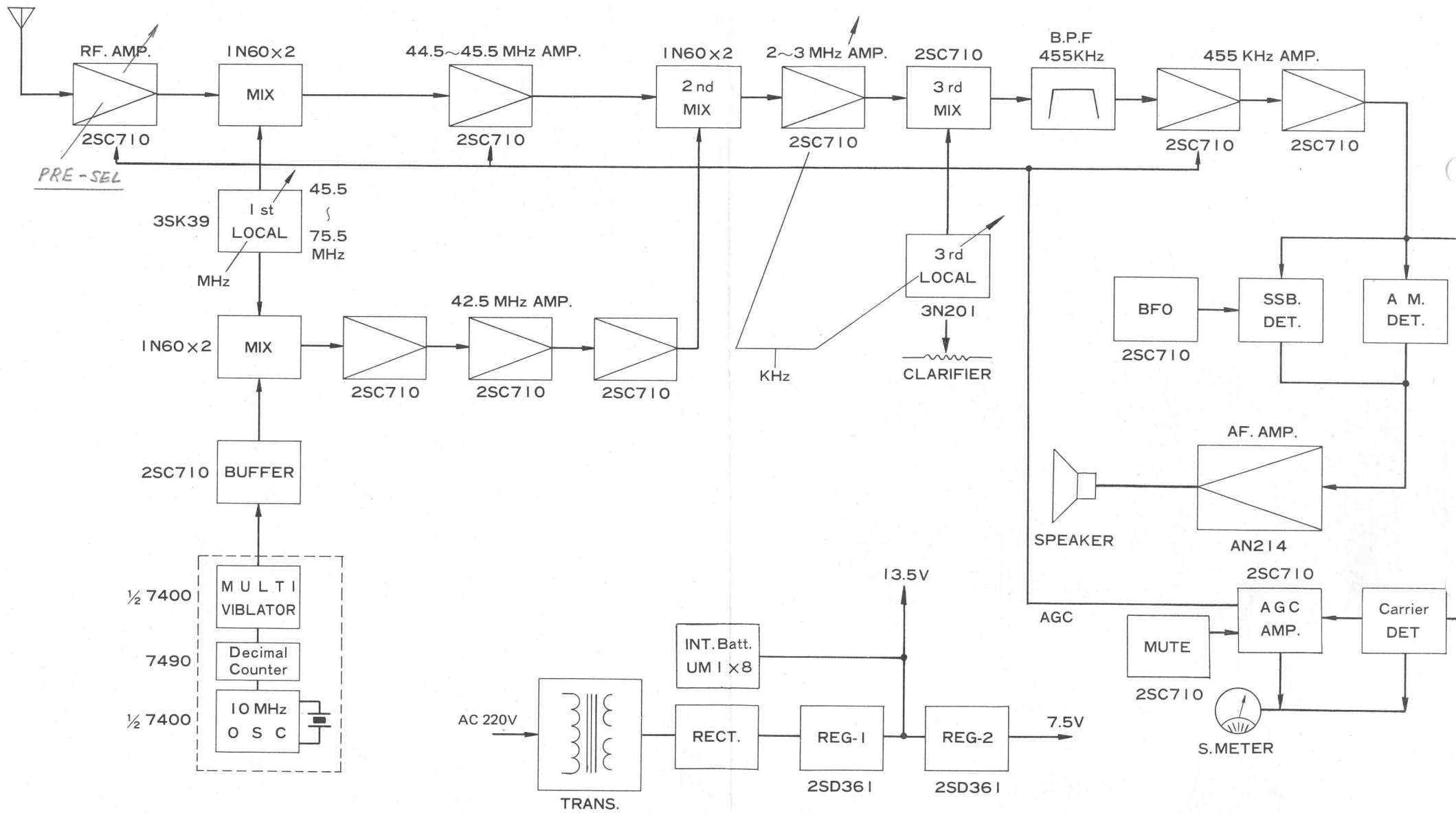
SECURING METHOD FOR THE INSULATORS



METHOD FOR SHORTENING YOUR ANTENNA



C 6500 BLOCKDIAGRAM



SPECIFICATIONS

Frequency range	:	0.5 MHz to 30MHz without omission	
Reception mode	:	AM, SSB, and CW (USB or LSB)	
Sensitivity	:	10 dB S + N/N	
		SSB	0.5 – 1.5 MHz 1.0 μ V
			1.5 – 30 MHz 0.5 μ V
		AM	0.5 – 1.5 MHz 5 μ V
			1.5 – 30 MHz 1.0 μ V
		(AM: 1000Hz 30% modulation)	
Selectivity	:		–6dB – 30dB
		SSB	4KHz 8KHz
		AM	7KHz 13KHz
Stability	:	Within 500Hz after warming-up	
Output power	:	1.5W (with 10% distortion)	
Antenna	:	Attached whip antenna (1) and an external Antenna terminal (<u>75 Ohms</u>)	
Power sources	:	8-dry batteries, external DC 12V, and AC 220V	
Dimensions	:	W290mm x H 156mm x L340mm	
Weight	:	6.4 kg	
Semiconductors	:	16 transistors, 3 ICs, and 30 diodes, 2 F.E.T.	
Accessories	:	A whip antenna, 3 auxiliary RCA-plugs, a phone plug and 2 Extention legs.	