2. a. For checking a vehicle antenna, mount the radio in the vehicle and connect the radio set power cord to a source of 12 volts DC in the vehicle.

   b. For checking a base station antenna, connect the power cord of the base station to its normal power source (usually 120 volts AC outlet).

3. If the CB ServiceMaster is operating from AC power, turn POWER switch (7) to ON. If operating from DC power, the CB ServiceMaster is on as soon as it is connected to the DC power source. In either case, POWER indicator (8) should light.

4. Connect a coaxial cable from the radio set antenna jack to the TRANSCEIVER jack (23).

5. Connect the cable of the antenna being checked to the EXT RF LOAD jack (22).

6. Set RANGE switch (15) to 10W for transmitters rated at 10 watts or less, 50W for transmitters rated at 10 to 50 watts, and 100W for transmitters rated at 50 to 100 watts. For AM/SSB units, use the AM mode power rating as reference.

7. Set RF LOAD switch (18) to EXT.

8. Set RF POWER switch (19) to AVG. (For SSB only transmitters, select the PEAK position).

9. Set TRANSMITTER FUNCTION switch (16) to FWD.

10. Turn on the radio set.

11. Select a mid-frequency channel. For 23 channel CB transceivers, select channel 12.

12. For AM/SSB transceivers, select the AM mode.

13. Key the transmitter. (For SSB only transmitters, modulate the carrier with a two-tone signal as instructed in the SSB TRANSMITTER POWER CHECK procedure.)

14. Read the transmitter RF power output on RF meter (13). It should approximate the rated RF output of the transmitter being checked.

15. Set the TRANSMITTER FUNCTION switch (16) to the REV position and key the transmitter.

16. Read the reverse (reflected) power on RF meter (13). It is desired that this reading be as low as possible. Adjust the antenna loading coil for minimum meter reading if adjustment is being performed.

17. Set the TRANSMITTER FUNCTION switch (16) to the SET REF position and key the transmitter.

18. Adjust the SET REF control (17) for full scale meter reference on RF meter (13).

19. Set the TRANSMITTER FUNCTION switch (16) to the READ SWR position.

20. With the transmitter still keyed, read the indication on the SWR scale of the RF meter (13). For good performance, reading should be 2 or less. The lowest possible reading is desired.

21. Select each operating channel on the radio and key the transmitter. SWR should be 2 or less on all channels.

NOTE

Compact mobile antennas and high-gain beam type base station antennas are frequency sensitive and will display variations in SWR as the transmitter is keyed on all 23 CB channels. Optimum antenna adjustment is obtained when the SWR is minimum at mid-band (Channel 11 or 12) and remains flat or increases only slightly at the band ends (Channels 1 and 23).

RECEIVER FREQUENCY RESPONSE CHECK (Refer to Fig. 20)

This check measures receiver audio frequency response. An audio frequency response specification of 300 to 3000 Hz usually means that all audio frequencies from 300 to 3000 Hz at a given input level should produce audio outputs that are within 3 dB. Audio frequencies below 300 Hz and above 3000 Hz are attenuated more than 3 dB. A 1000 Hz reference is often used, although the point of reference can be the frequency within the response band at which the maximum output level is developed.

The check can be performed for all transceivers and receivers with a 50-ohm antenna input and a 4-ohm, 8-ohm or 16-ohm speaker. In fact, it can be performed on broadcast band receivers or other transceivers or receivers without 50-ohm antenna input if the RF generator output is coupled directly to the receiver antenna input (rather than through the CB ServiceMaster) through a suitable impedance matching network.

The check is performed by applying a constant amplitude modulated test signal to the receiver input. The modulation percentage is maintained at a constant value and the receiver audio output level is observed as the modulation frequency is varied.

1. a. Connect equipment as shown in the basic set-up of Fig. 5. The frequency counter and oscilloscope are not essential to this check and may be omitted if desired. If the transceiver or receiver being checked is not equipped with an external speaker jack, disconnect the speaker and connect the transceiver speaker leads to the RECEIVER AUDIO jacks (20) using a shielded cable.

   b. Connect a shielded audio cable from the output of an audio signal generator to the external modulation jack of the RF generator.

2. Set LOAD switch (3) to match the normal speaker load of the transceiver or receiver being checked: 4 ohms, 8 ohms or 16 ohms.

3. Set RECEIVER FUNCTION switch (4) to 10 WATTS.

4. Select the desired channel on the transceiver or receiver. The check can be performed on any channel.

5. Unsquelch the receiver.