APPENDIX 5

OPERATING MANUAL

OPERATING MANUAL (TWENTY-FIVE (25) PAGES) FOLLOWS THIS SHEET

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Revision Notes:

Revision 0	First Issue	Y.O. Leung	1 September 1999

INTRODUCTION

Congratulations on your purchase of the CHEROKEE CBS-2100 Citizen Band Single Side Band Base Station. Your CHEROKEE radio is designed to provide trouble-free service and advanced user features to make it the premier choice in radio communications.

THE CB STORY

The Citizens Band lies between the short-wave broadcast and 10-meter Amateur radio bands, and was established by law in 1949. The Class D two-way communications service was opened in 1959. (CB also includes a Class A citizen band and Class C remote control frequencies.) FCC regulations permit only "transmissions" (One party to another) rather than "broadcast" (to a wide audience). Thus advertising is not allowed on CB Channels because that is "broadcasting".

!! WARNING !!

All transmitter adjustments other than the front panel controls should be performed by or under the immediate supervision and responsibility of a person certified as technically qualified to perform transmitter maintenance and repair duties in the private land mobile services and fixed services by an organization or committee representative of users in those services.

Replacement or substitution of transistors, regular diodes or other parts of a unique nature, with parts other than those recommended by Cherokee Electronics, may cause violation of the technical regulations of Part 95 of the FCC Rules, or violation of Type Acceptance requirements of Part 2 of the Rules.

LICENSING

Citizens Band (CB) Radio operators are no longer required to obtain a FCC license to operate their CB equipment or provide station identification. Nevertheless, an operator of a CB radio station is still required to comply with the communication act and with the rules of CB Radio Operation.

SPECIFICATIONS

GERNERAL

Frequency Range:	26.965MHz to 27.405MHz (40 Channels)
Frequency Control:	Phase Locked Loop (PLL) Synthesizer
Frequency Tolerance:	0.005%
Frequency Stability:	0.001%
Operating Temperature Range:	-20 Degrees F to +120 Degrees F
Microphone:	Plug-in Dynamic; with push to talk switch & coiled cord
Input Voltage DC or AC:	13.8V DC nominal, 15.9V Max., 11.7V Min (DC Power Jack) AC 110-120V or 220-240V 50/60 Hz Selectable (AC Jack)
Current Consumption (AC 115V Only):	0.5 Amps Max Continuous, 3A surge
Current Consumption (DC 13.5V From: the DC Power Jack Only)	Transmit: AM full modulation, 2.4 Amps Max. Transmit: SSB 12-Watts PEP Output, 3 Amps Max. Receive: Squelched, 0.6 Amps Max. Receive: Maximum Audio Output, 1.0 Amps Max
Size:	6-3/8" (Height) x 19" (Width) x 13" (Depth)
Weight:	18.5 lbs
Antenna Connector:	UHF, SO239
Meters:	Received Signal Meter, TX RF Output Power and SWR Meter
Frequency Counter:	5 digit 7 segment LED displays transmit/receive spot frequency

TRANSMITTER

Power Output:	AM: 4 Watts, SSB: 12 Watts PEP Maximum
Modulation (AM/SSB):	High and Low Level Class B, Amplitude Modulation
Intermodulation Distortion:	SSB: 3rd order, more than –25dB SSB: 5th order, more than –35dB
SSB Carrier Suppression:	55dB
Unwanted Sideband:	50dB
Frequency Response:	450-2500Hz
Output Impedance:	50 ohms, unbalanced.
Output Indicators:	Meter shows relative RF output power and SWR Transmit LED glows red when transmitter is in operation

RECEIVER

Sensitivity:	SSB: 0.25uV for 10dB (S+N)/N at greater than 0.5 Watts audio output. AM: 1.0uV for 10dB (S+N)/N at greater than 0.5 Watts audio output.
Selectivity:	6dB at 3KHz, 50dB at 9KHz
Image Rejection:	60dB
IF Frequency:	AM: 10.695MHz first IF, 455KHz 2nd IF SSB: 10.695MHz
Adjacent Channel Rejection:	42dB at 10KHz
RF Gain Control:	45dB adjustable for optimum signal reception
Automatic Gain Control (AGC):	Less than 10dB change in audio output for inputs from 10 to 100,000uV.
Squelch:	Adjustable; threshold 0.5uV
Clarifier Range	Coarse: +/- 5KHz Fine: +/- 1KHz (TX/RX)
ANL:	Switchable
Noise Blanker:	RF Type
Audio Output Power:	4 Watts into 8 ohms Max.
Audio Frequency Response:	300 to 2800 Hz
Built-in Loudspeaker:	8 ohms, 4W round
External Loudspeaker (Not Supplied):	8 ohms; disable internal speaker when connected.

INSTALLATION

LOCATION

Plan the location of the Base Station before starting the installation. In selecting a location, two basis factors shall be considered:

- Easy access to a 120VAC, or 13.8VDC Power Source.
- Convenient for running the antenna cable to a base or mobile antenna.
- Good ventilation. Do not block the ventilation fan at the back of the Base Station.
- Avoid installing the base station or antenna near noise sources (e.g. computer, fluorescent lamp or high voltage power lines...etc)

CONNECTIONS

The CBS-2100 Base Station is designed to be installed for desktop operation.

1. After you have determined the most convenient location, connect the end of the antenna cable to the receptacle of antenna connector on the rear panel. Make sire the antenna connector has the proper type PL-259 plug to connect to the radio. Ensure that the antenna plug is screwed in tightly.

2. For AC operation, connect the supplied AC cord to between the AC connector of the base station and the wall outlet in a household or an office. Make sure that the DC jumper cable at the back of the radio is connected properly.

   For DC operation, connect the supplied DC cord, with the fused red wire to +13.8V DC source (a car battery or a DC Power Supply), and the black wire to 0V (Ground) respectively. If a longer DC cable is required for the installation, use heavy gauge cable and keep the cable length to the minimum to avoid excessive voltage drop during operation.

ELECTRICAL NOISE INTERFERENCE

Use of a mobile receiver at low signal level is limited by the presence of electrical noise. The primary source of noise in base station installation is from the fluorescent lamps, TV, Computer and other digital devices in the household or in the office. Under most operating conditions, when signal level is adequate, the background noise does not present a serious problem.

Even though the transceiver has ANL and NB controls, in some cases the electrical noise interference may be high enough to significantly effect the performance of the radio communications. The electrical noise may come from several sources. Many possibility exits and it require different solutions to reduce the noise level.

ANTENNA

The base station will have peak performance when an effective antenna system is used.

The radio would use any type of 27MHz base station antenna at 50 Ohms impedance. A ground plane vertical antenna will provide the most uniform coverage to all directions. For point to point operation where the location of both base stations are fixed, a directional bean will usually increase the communication range since this type if antenna concentrates transmitter power in a single direction.

Antenna height is an important factor when maximum range is desired. The higher the antenna height, the longer is the talk range. Keep the antenna clear of surrounding structures, power lines or foliage. FCC regulates base station antenna height to 60 feet above the ground when using a tower, mast or pole, and no higher than 20 feet above an existing structure.

There are also local laws limiting the antenna height or even operation of the radio near airports and military installations. Please contact your nearest Federal Communications Commission office for rules affecting your operating area.

When installed in a boat, the base station will not operate at maximum efficiency without a ground plane, unless the vessel has a steel hull.

Before installing the transceiver in a boat, consult your dealer for information regarding an adequate grounding system and prevention of electrolysis between fittings in the hull and water.

CAUTION: Protect your property from lightning strike. Always connect the ground shield of the antenna cable and the metal case of the equipment to an effective ground point using heavy gauge grounding cables. Use lightning rods to protect the antenna from direct strike and arrester devices along the antenna cable to protect the base station.

TUNING THE ANTENNA FOR OPTIMUM SWR

Since there is such a wide vanity of base and mobile antennas, this section will strictly concern itself to the various types of mobile adjustable antennas. However, the same concept could be applied in tuning base station antenna.

Because the antenna length is directly related to the channel frequency, it must be tuned to resonate optimally on all 40 channels of the transceiver. CH1 requires a longer antenna than CH40, because it is lower in frequency.

Due to the various methods of adjusting antennas for proper SWR, we have chosen what we think is the optimum method.

!! WARNING !!

CONTINUOUS OPERATION OF THIS TRANSMITTER WITH GREATER THAN 4:1 VSWR ANTENNA MISMATCH MAY RESULT IN RF AMPLIFIER DAMAGE

A. Antenna with adjustment screws (set screws)

1. Starts with the antenna extended and tighten the set screw tight enough so that the antenna can be lightly tapped with your finger for easy adjustment.

2. Set your transceiver to CH20. Press PTT (push-to-talk) switch, and tap the antenna shorter.

   The SWR meter will show a lower reading each time the antenna is tapped. By continuing to shorten the antenna you will notice the SWR reading will reach a lowest point and than start to rise again, this means the optimum tuning being pressed for center operating frequency of your transceiver.

B. Antennas which must be cut to proper length

   1. Follow the same procedure as above, but adjust the length by cutting in 1/8 inch increments until a good match is obtained.

   2. Be very careful not to cut too much at one time, as once it is cut, it can no longer be lengthen.

   3. The whip is easily cut by filing a notch all the way around and breaking the piece off with pliers.

TIPS FOR ANTENNA ADJUSTMENT – If you have difficulties in adjusting your antenna, check the following:

A. Make sure all the antenna cables and connectors are properly connected
B. Make sure the antenna base is grounded.
C. Check your coaxial cable routing to make sure it is not pinched or damaged.
D. Try a different location to install. Stay away from large metal objects when adjusting. Such as metal telephone or light poles, and fences, etc.

EXTERNAL SPEAKER

The external speaker jack "EXT. SPK" on the rear panel, is used for remote receiver monitoring. The external speaker should have 8 ohms impedance and be able to handle at least 4 watts. When the external speaker is plugged in, the internal speaker is disconnected.

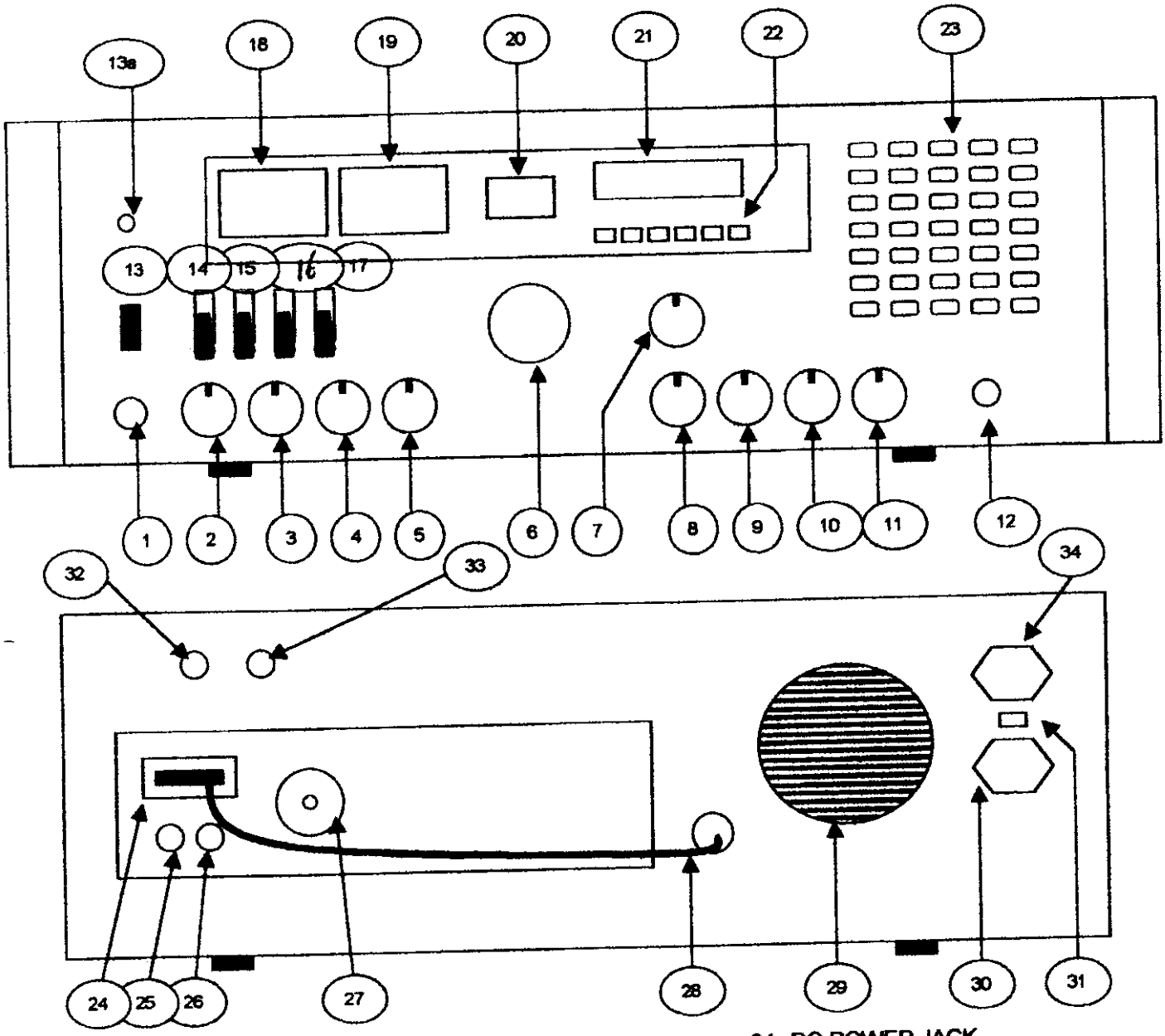
NOTE: THERE WILL BE NO AUDIO OUTPUT FROM THE "EXT SPK" JACK WHILE IN PA MODE OF OPERATION

PA SPEAKER

The PA speaker jack "PA SPK" on the rear panel, is to be connected to a Loudspeaker outside of the vehicle, so that it could be used as a "Loud Hailer" to broadcast your speech to someone nearby when the PA feature is selected on the radio. The PA speaker should have 8 ohms impedance and be able to handle at least 4 watts. Use weatherproof "Horn" type loudspeakers to get best results.

NOTE: THE RADIO WILL NEITHER TRANSMIT NOR RECEIVE WHEN THE "PA" FEATURE IS SELECTED

LOCATION OF CONTROLS



1. MIC CONNECTOR
2. CALIBRATE (SWR)
3. SUPER CDS
4. MIC GAIN
5. RF GAIN
6. CHANNEL SELECTOR
7. MODE SELECTOR
8. VOULUME
9. SQUELCH
10. CLARIFIER (FINE)
11. CLARIFIER (CAORSE)
12. HEADPHONE JACK
13. POWER ON/OFF
13a. POWER INDICATOR
14. SWR/CAL
15. NB/ANL ON/OFF
16. CDS ON/OFF
17. ROGER BEEP ON/OFF
18. RECEIVER S-METER
19. RF POWER/SWR METER
20. CHANNEL DISPLAY
21. FREQUENCY COUNTER
22. MODE INDICATORS
23. BUILT-IN SPEAKER
24. DC POWER JACK
25. EXT SPEAKER JACK
26. PA SPEAKER JACK
27. ANTENNA CONNECTOR
28. DC JUMPER CABLE
29. COOLING FAN
30. AC POWER INPUT
31. AC VOLTAGE SELECT
32. FREQ COUNTER O/P
33. LINE O/P JACK
34. AC POWER JACK

OPERATION

CONTROL FUNCTIONS

FRONT PANEL

1. MICROPHONE JACK
   4-pin, standard screw-on microphone connection. Front panel mounted for easy access. Must be connected to transmit.

2. CALIBRATE (SWR)
   In order to achieve maximum radiated power and the longest range, it is important that your antenna be properly adjusted and matches to the receiver. The Built-in SWR (Standing Wave Ratio) meter lets you easily measure the antenna condition. To operate this function, connect the antenna to the transceiver RF output connector. Select a channel near the middle of the band such as CH20 or the channel you plan to use most frequently. Turn the power on, set mode switch to AM, and set the meter function switch to the CAL position. Press and hold the microphone push to talk button and using the SWR CAL control, adjust the meter to read the CAL position indicated on the meter. Then, without releasing the microphone button, switch the meter function switch to SWR position and read the SWR indicated. The lower the figure, the better, with 1 being ideal. Generally speaking, readings up to 3 is acceptable, but over 3 indicate that you are losing radiated power and antenna adjustment is required.

3. SUPER CDS / Auto CDS
   The CBS-2100 is equipped with double stage "Clear Drive" voice compression circuit for transmitter audio to give that punching sound. This control allows you to adjust the "compression ration" of the voice circuit to get optimum effect.

   When turned fully anti-clockwise to Auto CDS. The unit will use a predetermined compression ratio for Clear Drive.

4. MIC GAIN
   Adjust the microphone gain in the transmit and PA modes. This controls the gain to extent that full talk power is available several inches away from the microphone.

5. RF GAIN
   Used to reduce the gain of the RF amplifier under strong signal condition.

6. CHANNEL SELECTOR
   This switch selects any one channel desired. The selected channel appears on the LED readout directly above the Channel Selector Knob.

7. MODE (PA/AM/LSB/USB) SELECTOR

This switch is used to select PA (public address), AM (Amplitude Modulation), LSB (Lower Side Band) and USB (Upper Side Band) operation.

8. VOLUME
To set the desired listening level. During normal operation, the VOLUME control is used to adjust the output level obtained either at the transceiver speaker or the external speaker, if used.

9. SQUELCH
This control is used to cut off or eliminate receiver background noise in the absence of an incoming signal. 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 fully counterclockwise then slowly clockwise until the receiver noise disappears. Any signal to be received must now be slightly stronger than the average received noise. Further clockwise rotation will increase the threshold level, which a signal must overcome in order to be heard. Only strong signals will be heard at a maximum clockwise setting.

10. CLARIFIER (FINE)
Allows variation of the received frequency 2.5KHz above and below the fixed CB channels for Single Side Band operation.

11. CLARIFIER (CAORSE)
Allows variation of the received frequency 5KHz above and below the fixed CB channels . Although this control is intended primarily to tune in SSB signals, it may also be used to optimize AM signals by tuning out interference signals in the adjacent channels.

12. HEADPHONE JACK
Allows the user to use audio headphones to listen to the communications.

13. POWER ON/OFF
Turns the AC Power ON and OFF.

13a. POWER INDICATOR
Glows red when AC Power is ON. There are also illumination on the meters and other LED indicators when Power is turned ON.

14. SWR/CAL SELECTOR
This switch controls the operating mode of the RF/SWR indicator meter. When calibrating the SWR meter, this selector shall be put to CAL position. When reading SWR after calibration, the selector shall be put to SWR position.

15. NB/ANL ON/OFF SWITCH
This switch is used to select NB/ANL noise cancellation circuits for received signals. ANL (Automatic Noise Limiter) turns on the noise reduction circuit to

improve the sound of the incoming transmission, and NB (RF Noise Blanker) is very effective for repetitive impulse noise such as ignition interference.

16. "CLEAR DRIVE" SWITCH (CDS/OFF)
This switch is used to enable the "Clear Drive" audio compander circuit of the radio to provide clear and low noise communications between similarly equipped units
CDS – Switches on the compander on the transmit and receiving sections of the radio to enhance voice clarity. The effect is more prominent in SSB operation.
OFF – Normal CB Operation without using the Compander.

17. ROGER BEEP SWITCH
This allow the user to activate the "Roger Beep" to indicate the end of a transmission, so that others could use the channel immediately.

18. REVEIVED SIGNAL METER
Indicates relative signal strength of the received signals.

19. RF POPWER/SWR METER
Indicates RF output power level and SWR/SWR calibration levels.

20. CHANNEL DISPLAY
Double digit LED display indicates the selected channel you wish to operate on.

21. FREQUENCY COUNTER
Monitors your transmit and receiving frequencies – especially useful in SSB operation.

22. MODE INDICATOR
LED lights indicating the mode of operation selected by the user.

23. BUIL:T-IN SPEAKER
8 Ohms 4 Watts built-in Loudspeaker for comfortable listening.

REAR PANEL

24. DC POWER CONNECTOR

Accepts the DC Jumper cable from the Built-in AC Power supply, or standard DC Power supply cable with built-in fuse (4 Amps) shipped with the radio. Connects to 13.8V DC Power supply.

25. PA SP

Accepts 4 to 8 Ohms, 5 Wafts PA loudspeaker, activates when PA mode is selected.

26. EXT. SP

Accepts 4 to 8 Ohms, 5 Wafts external loudspeaker. When external loudspeal(er is connected to this jack, the built-in loudspeaker is disconnected automatically.

27. ANTENNA CONNECTOR

Accepts type PL-259 RF plug. To be connected to a 27MHz 50 Ohms antenna through a 50 Ohms coaxial cable.

28. DC JUMPER CABLE

Connects between the built-in AC Power Supply and the radio for AC operation.

29 COOLING FAN

Ventilation for the AC Power supply, will turn when AC power is supplied.

30. AC POWER INPUT

Connect the supplier AC cable between this input socket and the household or office AC Power Outlets

31 AC VOLTAGE SELECTOR

Select between 11 5VAC and 220V AC - USE 11 5V AC in the USA.

32 FREQUENCY COUNTER OUTPUT (RCA Type)

Allows the user to connect a more precision external frequency counter to read the.operation frequency of the radio (NOTE: Internal Frequency Counter resolution is up to 1 KHz). Please note that the output frequency is 10.695MHz below the actual working frequency.

33 LINE OUTPUT JACK (RCA Type)

Allows the user to connect headphones or speakers in a remote location.

34 AC POWER OUTPUT - Not used

OPERATION PROCEDURE TO RECEIVE

1. Be sure that power supply, microphone and antenna are properly connected before turning on the radio.
2. Turn the radio ON by rotating the Volume control clockwise.
3. Select desire mode of operation (PA-AM-USB-LSB).
4. Select desire channel to operate.
5. Turn the RF gain control fully clockwise for maximum gain.
6. Adjust the squelch control to hear the background noise.
7. Adjust volume control for a comfortable listening level.
8. Re-adjust squelch control clockwise until the background noise JUST disappeared (when there is no activities on the channel). Leave the squelch control at this setting. The receiver will remain quiet until a signal is received. Do not advance the control too far, or some of the weaker signals will not be received.
9. When receiving SSB signals, adjust the clarifier control to clarify the received signals.
10. Re-adjust the RF Gain control to get best received signal to noise performance when operating in Clear Drive (CD).

OPERATING PROCEDURE TO TRANSMIT

!! Caution !!

Be sure a suitable antenna is properly connected to the radio before transmitting. Prolonged transmitting without an antenna or a poorly matched antenna could cause damage to the transmitter.

1. The radio is properly set up for receive as in the previous paragraph.
2. Set the Mic gain control fully clockwise
   Listen on the channel to ensure that it is clear, hold the microphone two inches from the mouth and speak clearly in a normal voice.
3. The RF meter will indicate relative power output while you are transmitting.

FREQUENCY RANGE

The CBS-2100 transceiver represents one of the most advanced mobile radio in the Citizens Radio Service. This unit features advanced Phase Lock Loop (PLL) circuitry providing complete coverage of all 40 channels as shown below.

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

SINGLE SIDE BAND (SSB) RECEPTION

There are three types of signals presently used for communications in the Citizens Band: AM, USB and LSB. When the mode switch on your radio is placed in the AM position, only standard double sideband, full carrier signal will be detected. An SSB signal may be recognized while in the AM mode by its characteristic "Donald Duck" sound and the inability of the AM detector to produce intelligible output. The USB and LSB modes will detect upper sideband and lower sideband respectively, and standard AM signals.

SSB reception differs from standard AM reception in that SSB receiver does not require a carrier or opposite sideband to produce an intelligible signal. A signal sideband transmitted signal consists only of the upper or the lower side band and no carrier is transmitted. The elimination of the carrier from the AM signal helps to

eliminate the biggest cause of whistles and tones heard on channels which make even moderately strong AM signals unreadable. Also, SSB takes only half of an AM channel, therefore two SSB conversations will fit into each channel, expanding the 40 AM channels to 80 SSB channels. The reduction in channel space required also helps in the receiver because only half of the noise and interference can be received with 100% of the SSB signal.

An SSB signal may be received only when the listening receiver is functioning in the same mode. In other words, an upper sideband (USB) may made intelligible only if the receiver is functioning in the USB mode.

If a lower sideband (LSB) signal is heard when the receiver is in the USB mode, the signal will not be intelligible because when a tone signal is applied to modulate the transmitter in the USB mode, the transmitter's output frequency is increased. Whereas in the LSB mode, the transmitter's output frequency is decreased. The result is that when the mode switch is in the proper position (wither USB or LSB), a true reproduction of the tone will result. If the tone is increased in frequency (say, from a low-pitched whistle to a high-pitched whistle), you will hear the increase in the output tone frequency from the receiver. If incorrect mode is selected, an increase in tone will cause a decrease in tone from the receiver.

Thus when a voice is used in place of a whistle or a tone, in the proper receiving mode the voice will be received correctly, whereas in the incorrect mode, the voice will be translated backwards and cannot be made intelligible by the clarifier. AM transmissions can be received correctly by either of the SSB modes since AM transmission contains both upper and lower sideband signals.

Once the desired SSB Mode has been selected, frequency adjustment may be necessary in order to make the incoming signal intelligible. The clarifier control allows the operator to vary the receiving frequency above and below the exact center frequency of the channel. If the pitch of the incoming signal is too high or too low , adjust the clarifier to obtain the correct tone.

An AM signal received while listening in one of the SSB mode will produce a steady tone (carrier) in addition to the intelligence, unless the SSB receiver is tuned to exactly the same frequency by the clarifier control. For simplicity it is recommended that AM mode shall be used to listen AM signals.

COMPANDER OPERATION

CBS-2100 radios are equipped with an audio compander circuit called "Clear Drive" to enhance audio performance. The circuit is ON when the "Clear Drive." switch on the front panel is set to "CDS".

The Compander comprised of two circuits, a Compressor for transmit audio and an Expander for received audio. The Compressor reduces the dynamic range of the transmit audio by increasing gain for low-level signals and decreasing gain for the higher level signals. A reversed process is conducted by the Expander, which increases circuit gain for high level signals and reduces gain for low-level signals.

When the Compander is used in both the transmitter and receiver, the dynamic range of the audio signal can be preserved and the noise induced in the transmission path is highly reduced.

When Compressor is only used in the transmitter end, and no Expander is used in the receiver, the receiver will observe a compressed audio signal similar to those from a very high gain microphone but without overload/clipping distortion at high signal levels.

When the Expander is used in the receiver and the compressor is not present in the transmitter end. The Expander reference level is set at around 12dB SINAD output of the receiver such that the noisy signal at marginal reception levels are suppressed, while the strong and clear signals are boosted. The user might find the received voice levels be exaggerated in some cases.

In order to increase the dramatic effects of Clear Drive on transmit, CBS-2100 is equipped with dual stage Clear Drive configuration called Super CDS, The user could activate Super CDS by turning VR102 from OFF position clockwise (Auto-CDS) to adjust the compression ratio of the compander. When VR102 is at OFF position, the Clear Drive internal circuits automatically fix the compression ratio. Super CDS is a transmit audio enhancement circuit and has no effects over CDS for the receiver circuit.

10 CODES .

Citizens Band operators have largely adopted the "10-code" for standard questions and answers. Its use permits faster communications and better understanding in noisy areas. The following table lists some of the more common codes and their meanings.

10 CODES AND THEIR MEANING

10-1	Receiving poorly
10-2	Receiving well
10-3	Stop transmitting
10-4	OK, message received
10-5	Relay message
10-6	Busy, stand by
10-7	Out of service, leaving air
10-8	In service, subject to call
10-9	Repeat message
10-10	Transmission completed standing by
10-11	Talking too rapidly
10-12	Visitors present
10-13	Advise Weather/Road conditions
10-16	Make pick up at
10-17	Urgent business
10-18	Anything for us
10-19	Nothing for you, return to base 1
10-20	My location is
10-21	Call by telephone
10-22	Report in person to
10-23	Stand by
10-24	Completed last assignment
10-25	Can you contact
10-26	Disregard last information
10-27	I am moving to channel
10-28	Identify your station
10-29	Time is up for contact
10-30	Does not conform to FCC rules
10-32	I will give you a radio check
10-33	EMERGENCY TRAFFIC
10-34	Trouble at this station
10-35	Confidential information
10-36	Correct time is
10-37	Wrecker needed at
10-38	Ambulance needed at
10-39	Your messaged delivered
10-41	Please turn to channel
10-42	Traffic accident at
10-43	Traffic tie up at
10-44	I have a message for you
10-45	All units within range please report
10-50	Break channel
10-60	What is the next message number?
10-62	Unable to copy, use phone
10-63	Net directed to
10-64	Net clear
10-65	Awaiting your next message/assignment
10-67	All units comply
10-70	Fire at
10-71	Proceed with transmission in sequence
10-77	Negative contact
10-81	Reserve hotel room for
10-82	Reserve room for
10-84	My telephone number is
10-85	My address
10-91	Talk closer to mike
10-93	Check my frequency on this channel
10-94	Please give me a long count
10-99	Mission completed, all units secure
10-200	Police needed at

A Few Rules That Should Be Obeyed

1. You are not allowed to carry on a conversation with another station for more than five minutes at a time without taking a one-minute break to give others a chance to use the channel.
2. You are not allowed to blast others off the air by overpowering them with illegally amplified transmitter power or illegally high antennas.
3. You can't use CB to promote illegal activities.
4. You are not allowed to use profanity.
5. You may not play music in your CB.
6. You may not use your CB to sell merchandise or professional service.

How Your CB Can Serve You

- Warn of traffic tie ups ahead
- Provide weather and road information
- Provide fast help in the event of emergency or break down
- Suggest good spots to eat or sleep
- Make long trips more interesting and help you keep awake
- Provide direct contact with your office or home
- Make friends for you as you travel
- Provide "local information" to find your destination
- Help law enforcement officers by reporting drunk or reckless drivers

The Highway Patrol has said that drunk drivers, wrong-way drivers and speeders reported by CBers is "amazing." Even the "Smokey Beat" warnings don't shake their beliefs that "the potential benefits of CB radio to law enforcement are so great that they far outweigh the disadvantages" In regard to CB radar warnings to other CBers, the Highway patrol has said, "We've overheard warnings being relayed to truckers long after our operating have! been discontinued...so we actually receive a residual benefit from these warnings."

Use Channel 9 For Emergency Messages Only

The FCC gives the following examples of permitted and prohibited types of communications for use on Channel 9. These are guidelines and are not intended to be all-inclusive.

Permitted: "A tornado sighted six miles of town."

Not Permitted: "This is observation post number 10. No tornado sighted."

MAINTENANCE AND ADJUSTMENT

The Cherokee CBS-2100 transceiver is specifically designed for the environment encountered in a mobile installation. Should a failure occur, however, replace parts only with identical parts. Do not substitute. Refer to the schematic diagram and parts list.

If problem occurs when operating your radio, review the operating instruction to ensure that proper procedures were allowed. If the problem persist, refer to WARRANTY SERVICE INSTRUCTION section in this manual.

!! FCC WARNING !!

All transmitter adjustments other than the front panel controls should be performed by or under the immediate supervision and responsibility of a person certified as technically qualified to perform transmitter maintenance and repair duties in the private land mobile services and fixed services by an organization or committee representative of users in those services.

Replacement or substitution of transistors, regular diodes or other parts of a unique nature, with parts other than those recommended by Cherokee Electronics, may cause violation of the technical regulations of Part 95 of the FCC Rules, or violation of Type Acceptance requirements of Part 2 of the Rules.

PRESS-TO-TALK MICROPHONE SHIPPED WITH THE RADIO

A low impedance (500 Ohms) dynamic microphone is shipped with the radio. The Push-To-Talk (PTT) switch on the microphone controls the operation of the transmitter and the receiver. Press the switch and the to transmit and release the PTT switch to receive.

ALTERNATE MICROPHONES AND INSTALLATION

For best results, the user should select a low-impedance dynamic type microphone or a transistorized microphone. Transistorized type microphones have a low output characteristic. The microphones must be provided with a four wires cable. See Figure 1 - microphone wiring schematic for details.

If the microphone to be used is supplied with a pre-cut cable, they must be reconfigured as follows:

1. Cut the wires so that they extend 7/16" beyond the plastic insulating jacket of the microphone cable. See Figure 2 for details.
2. All wires should be cut to the same length. Strip the ends of each wire 1/8" and tin the exposed wires.

Before beginning the actual wiring, read carefully, the circuit and wiring information provide with the microphone you selected. Keep the exposed wire lengths to a minimum to avoid short circuit when the microphone plug is reassembled.

MICROPHONE PLUG REASSEMBLING

1. Remove the retaining screw.
2. Unscrew the housing from the pin receptacle body
3. Loosen the two cable clamp retainer screws
4. Feed the microphone cable through the housing. Knurled ring and washers as shown in Figure 3.
5. The wires must now be soldered to the pins as indicated in Figure 1. Wiring table. If a vise or clamping tool is available, it should be used to hold the pin receptacle during the soldering operation, so that both hands are free to do the soldering job. Alternatively, the pin receptacle can be held in a stationary position by inserting it into the microphone jack on the from panel. The number of the pins of the microphone plug are shown in Figure 2 as viewed from the back of the plug. Before soldering the wires, pre-tin the wire receptacles of each pins on the plug.

Be sure that the housing and the knurling ring of Figure 3 are pushed back onto the microphone cable before starting to solder. If the washer is not captive to the pin receptacle , make sure that it is [placed on the threaded portion of the receptacle before soldering.

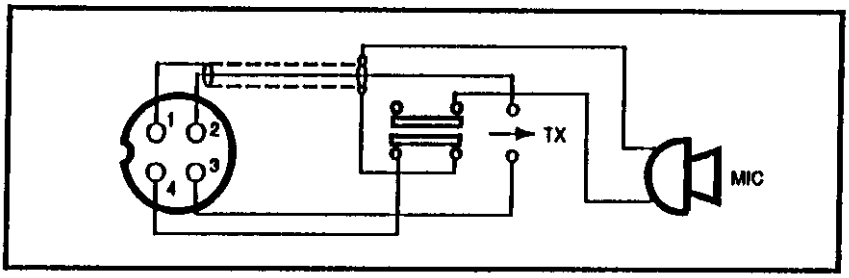
If the microphone jack is used to hold the pin receptacle when soldering, best results are obtained when the connection to pins 1 and 3 are made first and then the connections to pins 2, 4 and 5. Use minimum amount of solder and be careful to prevent excessive solder accumulation on the pins, which could cause a short circuit between pins and the microphone plug housing.

6. When all soldering connection to the pins of the microphone plug are completed, push the knurling ring and the housing forward and screw the housing onto the threaded portion of the pin receptacle. Note the location of the screw clearance hole in the plug housing with respect to the threaded hole in the pin receptacle. When the housing is completely threaded into the pin receptacle, a final fraction of turn either clockwise or counterclockwise may be required to align the screw hole with the threaded hole in the pin receptacle. When these are aligned, the retaining screw is then screwed into place to secure the housing to the pin receptacle.

7. The two cable clamp retainer screws should now be tightened to secure the housing to the microphone cord. If the cutting direction have been carefully followed, the cable clamp should secure to the insulating jacket of the microphone cable. Upon completion of the microphone plug wiring, connect and secure the microphone plug in the transceiver.

ALTERNATE MICROPHONES SCHEMATIC

Fig. 1. Transceiver microphone wiring schematic.



4 Wire Microphone Cable

Pin Number:	1	2	3	4
Mic. Cable Lead:	AF Shield	AF Lead	Tx Control	Rx Control

Fig. 2.
Microphone plug pin number viewed from rear of pin receptacle.

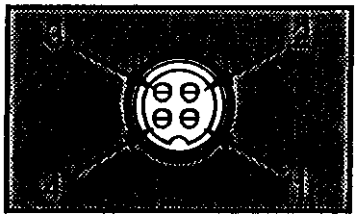
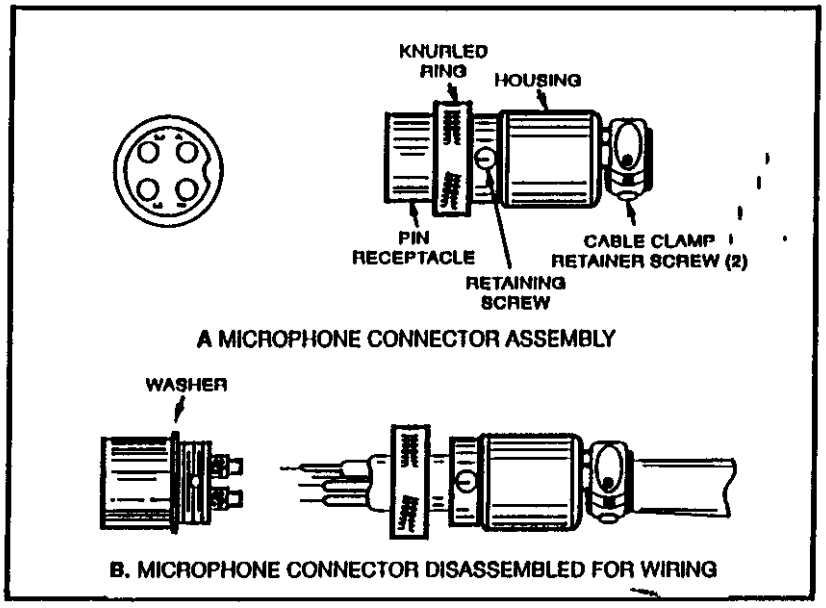


Fig. 3. Microphone plug wiring.



WARRANTY

Limited One Year Warranty

WIRELESS MARKETING CORPORATION warrants that its Cherokee citizens band (CB) radio, and the component parts thereof, will be free of defects in workmanship and materials for period of one (1) year from the date of first consumer purchase. This warranty may be enforced by the first consumer purchaser, provided that the product is utilized within the U.S.A.

Wireless Marketing will, without charge, repair or replace, at it's option, defective citizens band (CB) products or component parts upon delivery to the Wireless Factory Service Department, accompanied by proof of the date of first consumer purchase, such as a duplicated copy of a sales receipt.

You must pay any initial shipping charges required to ship the product for warranty service, but the return charges will be at Cherokee expense, if the product is repaired or replaced under warranty. For further details concerning procedures for obtaining service, see the "If You Need Service" section of the Owner s Manual.

Exclusions: This limited warranty does not apply; 1) to any product damaged by accident; 2) in the event of misuse or abuse of the product in as a result of unauthorized alterations or repairs; 3) if the serial number has been altered, defaced or removed; 4) if the owner of the product resides outside the U.S.A.

All implied warranties, including warranties of merchantability and fitness for a particular purpose are limited in duration to the length of this warranty.

Cherokee shall not be liable for any incidental, consequential or other damages; including, without limitation, damages resulting from loss of use or cost of installation.

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you.

WIRELESS MARKETING CORPORATION
1212 Remington Road
Schaumburg, IL 60173
Ph: 1-800-259-0959
Fax: 1-847-839-0016
E-Mail Address: service@wirelessmarketing.com
Website: http://www.wirelessmarketing.com

For additional information about your new CB radio:
call the toll free Cherokee Consumer Information Hotline,

Monday- Friday, 8:00am- 5:00pm, CST.
(Please have the model and serial number ready)

1-800-259-0959
(In the U.S. and Canada ONLY)

If You Think You Need Service, Call 1-800-259-0959

You may be asked to send your unit to the Cherokee factory. It will be necessary to furnish the following, in order to have the product serviced and returned.

I. For Warranty Repair, include some form of proof-of-purchase, such as a mechanical reproduction or carbon or a sales receipt. If you send the original receipt it cannot be returned.

2. Send the entire product. Must include CB unit and microphone.

3. Enclose a description of what is happening with the unit. Include a typed or clearly printed name and address of where the unit is to be returned.

4. Pack unit securely to prevent damage in transit. If possible, use the original packing material.

5. **Ship prepaid and insured by way of a traceable carrier (to avoid loss in transit) such as United Parcel Service (UPS), Roadway Parcel Service (RPS) or First Class Insured Mail to Cherokee Factory Service, Wireless Marketing Corporation, 1212 Remington Road, Schaumburg, IL 60173. Cherokee is not responsible for units not received if package has not been properly insured.**

6. If the unit is in warranty upon receipt of your unit it will either be repaired or exchanged depending on the model. Please allow approximately 3 to 4 weeks before contacting us for status. If the unit is out of warranty a letter will automatically be sent informing you of the repair charge or replacement charge. If you have any questions, please call 1-800-259-0959 for assistance.

If you received the Cherokee product as a gift and do not have the proof of purchase information necessary for service, include the following information, with the product: Clearly printed or typed name and address. **Date, month and year you received the gift.** Model number, where purchased (if Possible) - store name and location.