

MIDLAND
precision series 
keeping you way out front.



3001

OWNER'S MANUAL

40-Channel mobile citizens band transceiver.
27MHz F.M. (MPT 1320) UNITED KINGDOM SYSTEM

Midland 3001

Precision Series™ 40-channel mobile citizens band transceiver.

For your protection, the spaces below are provided for you to record the CB Radio Licence Number and Serial Number of this product. The latter is located on the identification plate attached to the rear cabinet panel. After recording these numbers, keep this record for future reference. *When contacting Plustronics Ltd. for service or parts information, the Serial Number must be referred to in order to expedite your request.*

CB Licence No.: _____

Serial No.: 8046920

Welcome to the world of Midland electronics.

Congratulations. You're about to experience the state of the art in mobile CB power, clarity and operating convenience.

In the years ahead, you can expect to realize—time and time again—the real reasons and meaning of the front-running position Midland holds among CBers everywhere.

And you'll come to know that Midland Power is more than just a slogan, but the heading of a long list of hearable, seeable benefits.

Like controls designed and located for maximum convenience and ease of operation.

And like the assurance that comes from knowing the nationwide Midland service network goes with you everywhere you take and use your Midland CB.

As your Midland CB experience unfolds and grows, we hope you'll remember that CB is only one kind of electronic excellence available under the Midland nameplate.

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Midland 3001

Precision Series™ 40-channel
CB transceiver.



Features:

Your new Midland mobile CB is engineered to give you the most convenient operation possible.

No other design aspect has been given more attention than the time- and motion-saving features built into your new radio, microphone and mounting system.

You'll find and enjoy the benefits of this attention to detail all across the control panel—including the panel itself. For example:

All corners, knobs and other protuberances are machine-radiused to cushion impacts and prevent snags.

Not the cheapest way to finish a hardworking piece of equipment, but we think it's the best.

Green-COLOUR LED digital channel readout. Green is the most easily seen and readable colour an electronic display can have. Gentle on your eyes, it focuses instantly to the eye, as traditional red-color readouts can't.

For added ease and convenience, your Midland LED readout is coupled with an analog numbered dial to tell you which way is "up" and which way is "down" the channel spectrum.

High-visibility, black-on-light green meters. Think about it. If white letters on a black background were easiest to read, all newspapers, magazines and books would be printed that way—as are many other CB meters on the market.

Midland meters are meant to be seen and read. Instantly. So your new Midland CB has a high-visibility black-on-light green meter that won't have you squinting as you drive down a sun-glaring or darkened highway.

Exclusive beveled touch-control knobs. Your Squelch and Volume (AF Gain) RF Gain knobs are angled and notched. This way you can control exact settings at a finger touch.

In other words, you don't have to take your eyes off the road to make corrections. You can do it quickly, just by "feel."

You'll also note that all your most frequently-used controls are located on the driver's side of the panel, for quick, convenient access.

And that the panel itself is designed to prevent glare.

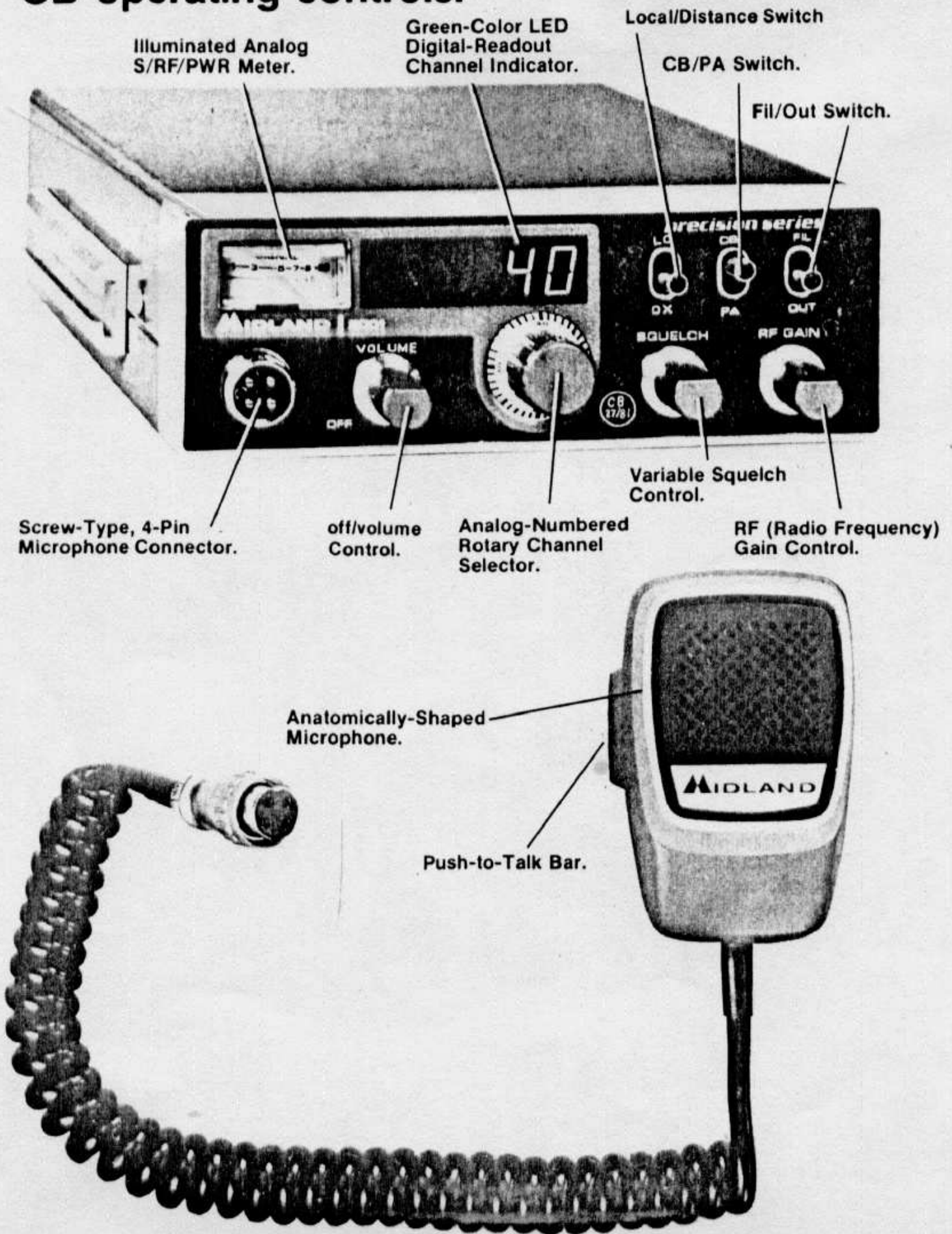
Anatomically-designed microphone. The product of a long, costly design program, your new Midland CB mike is shaped to specifically and precisely fit the configuration of your hand.

Comfortable to hold, this design makes Midland microphone operation a natural, motion-saving convenience.

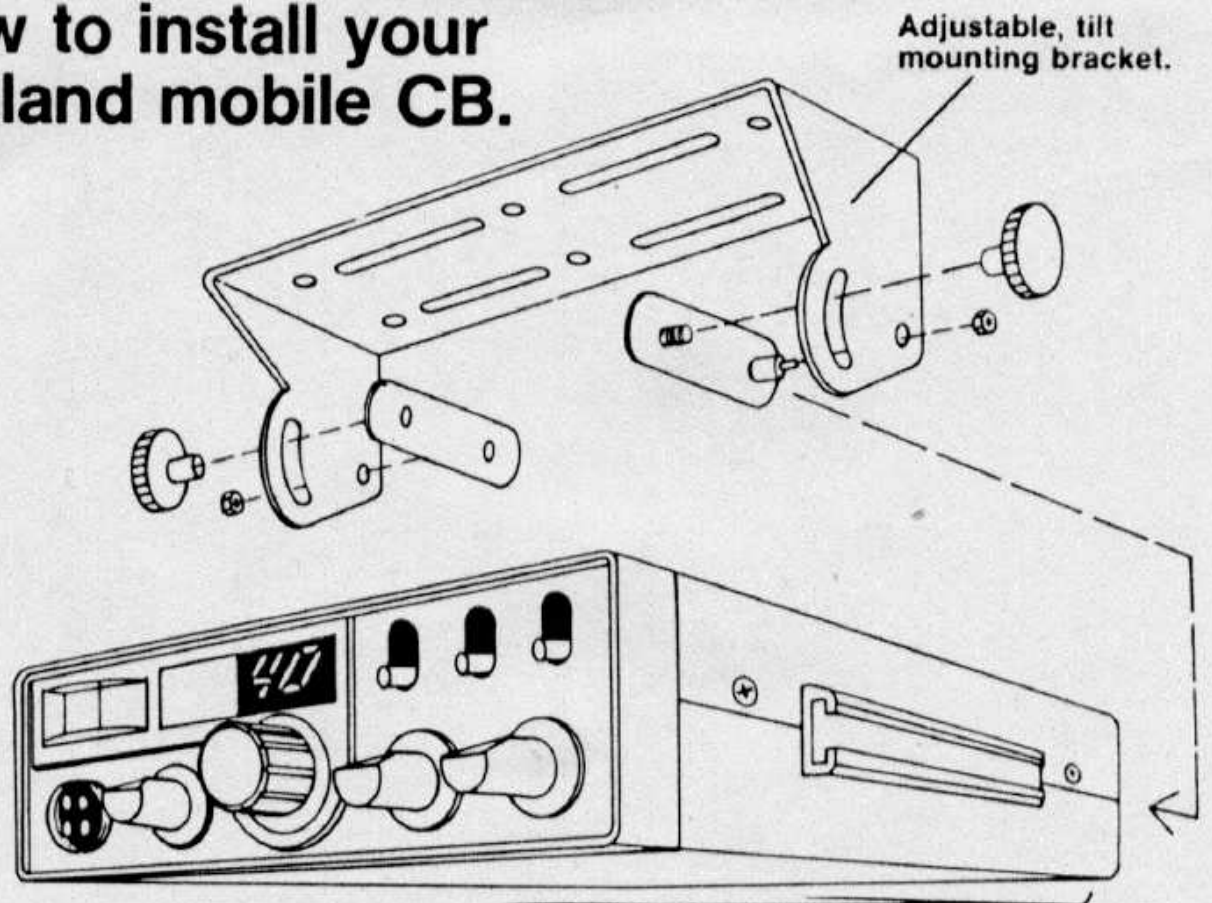
"Take-it-with-you" adjustable mounting bracket. This design makes it easy to mount and remove your new CB for the safety and security of both your car and radio.

The tilt/pivot adjustable feature lets you position your CB at any angle or height that's most convenient and comfortable for you.

Midland 3001 Mobile CB operating controls.



How to install your Midland mobile CB.



This transceiver may be installed in any **12-volt Negative Ground System** car or truck. Most current vehicles use a negative ground system, but some older models and some newer large trucks may have a positive ground.

Check the requirements for your vehicle before you begin installation.

Generally, you have a **negative-ground system** if the minus (-) battery terminal is connected to the motor block. Contact your dealer in the event you are unable to determine your vehicle's polarity system.

Installation and operating accessories furnished with your Midland Mobile CB:

1. "Take-it-with-you" adjustable mounting bracket system.
2. Microphone bracket system.
3. All main-unit and microphone

mounting hardware needed for normal installation.

4. DC power cord with plug.
5. Plug-in microphone with coil cord.
6. Owner's Manual.
7. Customer Registration Card.

Where to locate your CB transceiver.

Your new Midland CB is designed to be installed under the dash of your vehicle.

Safety and convenience are the primary considerations in deciding exactly where to locate your radio

Caution: Be sure that the unit is located so that it does not interfere with the driver or impair access to any controls. Connecting cables must be routed and secured in such a manner as to not interfere with the operation of the brake, accelerator or other controls. Interference from either the unit or connecting cables may contribute to the loss of control of the vehicle.

Mechanical mounting.

Step 1: Heeding the preceding caution, use the mounting bracket as a template for marking the location of screwholes under your dash. Use an awl, nail or other sharp, pointed object to mark the metal.

Step 2: Drill a 1/8" hole for each screwhole in the mounting bracket: Attach the bracket to the dash with the 3/8" Phillips machine screws provided.

Extreme caution should be exer-

cised when drilling into dash to avoid damage to under-dash electronic ignition, cruise control, instrument and/or accessory wiring.

Step 3: Attach removable 3-pin, plug-in DC cord to 3-pin polarized DC jack on the rear of the transceiver.

Step 4: Locate and secure the radio into the mounting bracket, allowing working space for later power connections.

Power Wiring:

Step 1: If you have not determined whether your vehicle has a negative or positive ground, do so now.

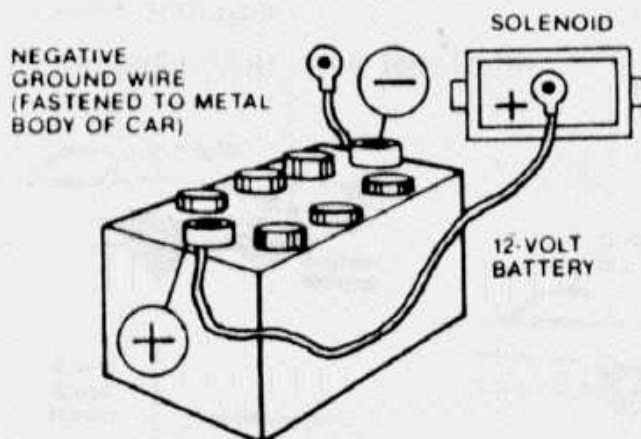
Then disconnect the leads from the battery to prevent short circuits that can occur during wiring.

Step 2: With **negative ground**, connect the red wire—the one with in-line fuse holder—to either the (a) fuse block, (b) cigarette lighter or (c) directly to the positive post on your battery.

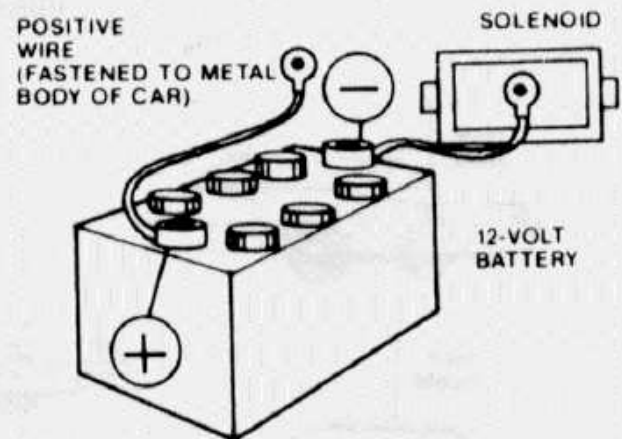
(Usually, the fuse block is the most convenient connecting point. It is also possible to connect to the Accessory terminal on the fuse block or ignition switch, so that your CB automatically goes off when the ignition goes off, preventing accidental battery drainage.)

Then tightly connect the black wire directly to the vehicle's metal frame.

CAR'S MOTOR BLOCK OR FIRE WALL GROUND



EXAMPLE OF
NEG. GROUND 12-V DC CAR BATT
CONNECTION ILLUSTRATION
MOST CARS & TRUCKS ARE
THIS TYPE



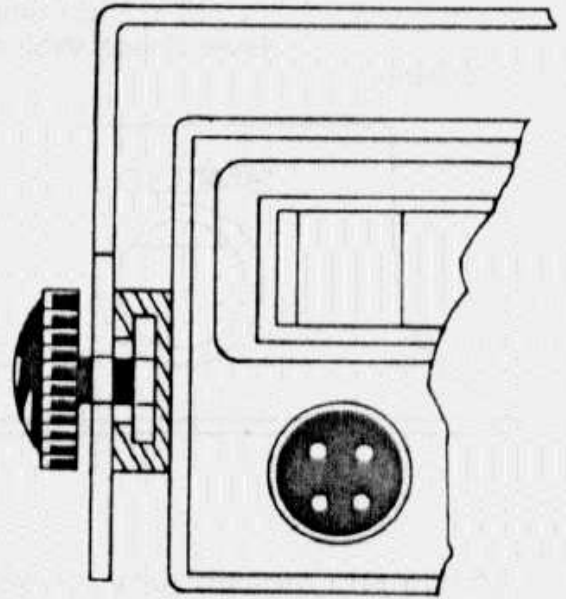
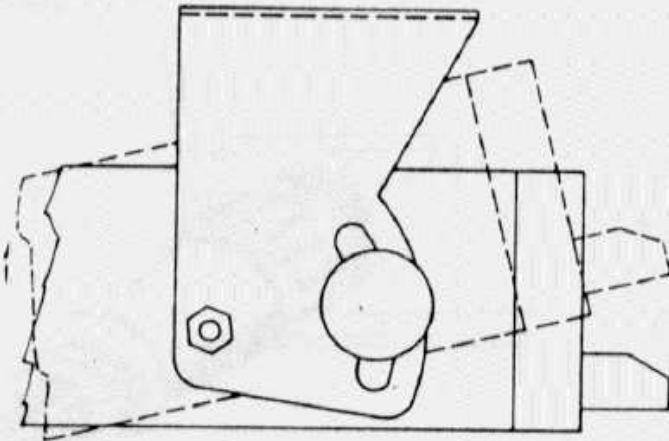
EXAMPLE OF
POS. GROUND 12-V DC CAR BATT
CONNECTION ILLUSTRATION FEW
18-WHEELERS & OLDER CARS

Mounting the main unit.

Step 1: Loosen the retaining knobs on each side of the mounting bracket to give enough space for the unit to slide between the two bracket arms.

Step 2: Position the main unit between the bracket arms in line with the retaining knobs. Set the height and angle for optimum operating comfort and accessibility.

Step 3: Tighten the retaining knobs.



Installation of microphone hanger.

Mounting holes are provided on the side of the transceiver for the microphone hanger bracket. Alternately, the bracket can be attached to the vehicle dash.

Connecting the optional remote speaker.

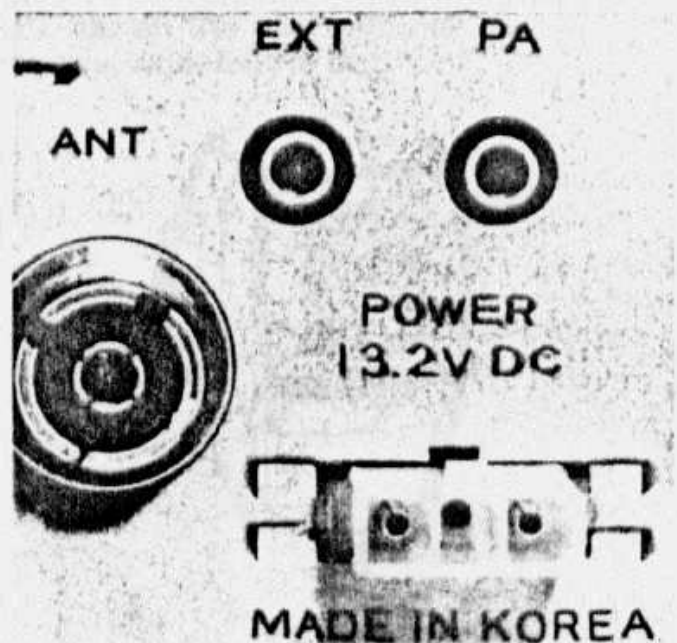
Locate the "EXT" jack on the main unit rear panel. Firmly insert and seat the speaker wire plug into the jack.

When connected, the external speaker will override and "blank out" the in-unit speaker standard with your Midland Mobile CB.

Connecting optional Public Address speaker.

Locate the "PA" jack on the main unit back panel. Firmly insert and seat the speaker wire plug into the jack.

Directions for mounting the optional PA speaker are included, along with mounting hardware, with the speaker.



Antennas: How to select, position, install and tune the right one for you.

Basically, you have two types of mobile CB antennas—full-length whip and loaded whip—and a variety of types of mounts (depending on where you locate your antenna) to choose from.

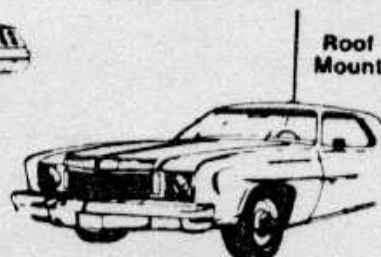
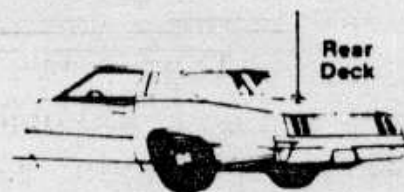
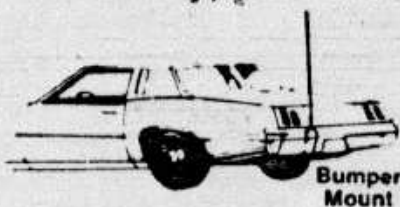
Midland markets a broad line of high-performance antennas. The dealer who sold you your Midland CB can advise which type is best for you.

Where you locate your antenna does make a difference.

Some general rules for antenna location that can aid CB performance:

1. Put your mount as high on the vehicle as possible.
2. The higher the proportion of antenna length that is above the roof, the better.
3. If possible, mount the antenna in the center of whatever surface you choose.
4. Keep antenna cables away from noise sources, such as the ignition system, gauges, etc.
5. Make sure you have a solid metal-to-metal ground.
6. Exercise care to prevent cable damage.

Essentially, you have five loca-



tion choices: the roof, gutter, rear deck, front cowl or rear bumper.

Where you decide to locate your antenna will determine the type of antenna you install. Again, consult your Midland CB Dealer for advice and guidance, and measure your needs against the attributes of the various Midland antenna models he carries.

Antenna installation.

Follow the manufacturer's installation instructions carefully.

Warning: Never operate your CB radio without attaching an antenna or with a broken antenna cable. This can result in damage to transmitter circuitry.

Tuning your antenna.

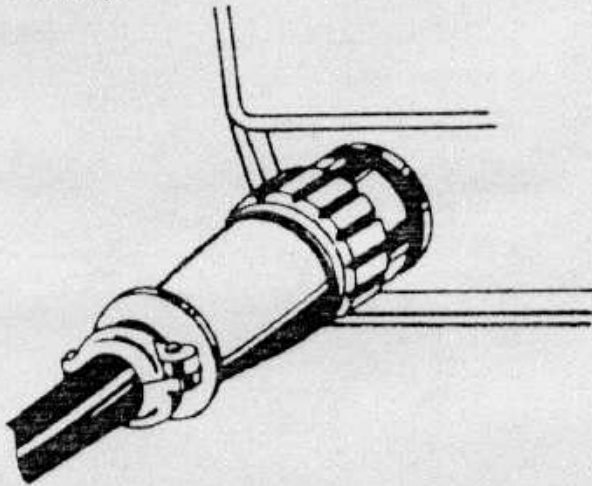
Some antennas are factory tuned. However, performance can usually be improved by slightly lengthening or shortening its length, using a Standing Wave Ratio (SWR) meter. For the exact procedures to be used, refer to the antenna manufacturer's installation manual.

You can buy an SWR meter separately or have your antenna checked by your Midland CB Dealer.

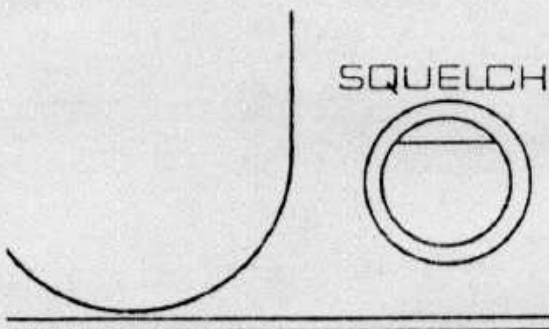
Midland 3001: Operating Instructions.

Having properly installed and wired your CB and antenna, you are now ready for the seven steps designed to get you into effective, satisfactory operation:

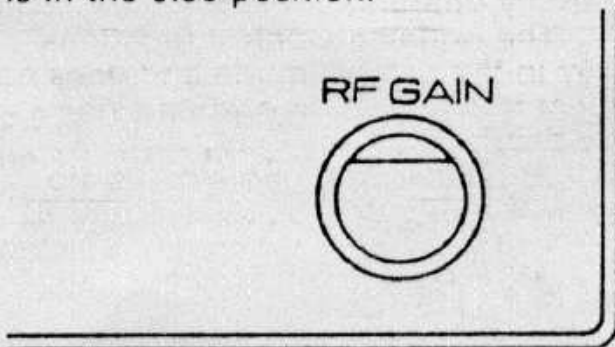
Step 1: Insert the plug from the microphone into the microphone jack on the face panel, and screw on securely.



Step 2: Make sure your antenna is securely connected to the antenna connector.

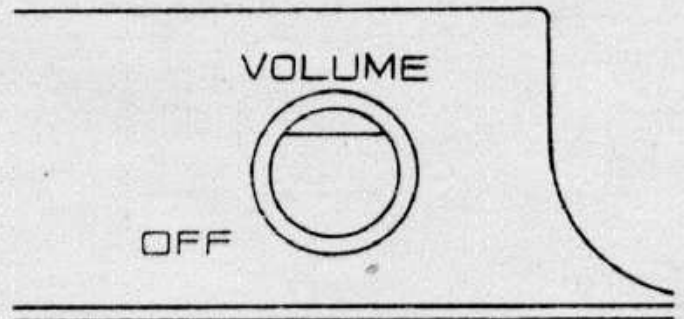


Step 3: Make sure the Squelch control is in the 9:00 position.

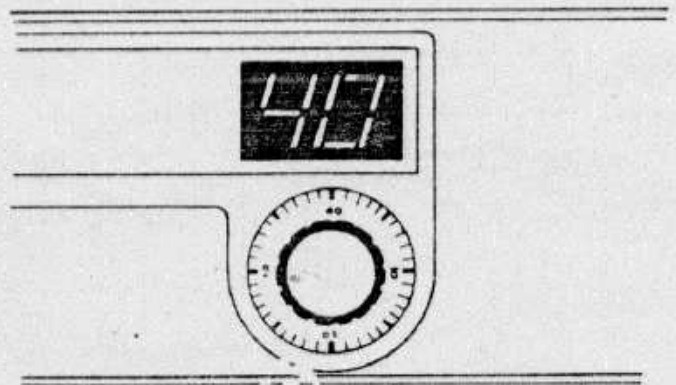


Step 4: Make sure the RF Gain Control is fully clockwise.

Step 5: Turn the power on and adjust the volume control for a satisfactory sound level.



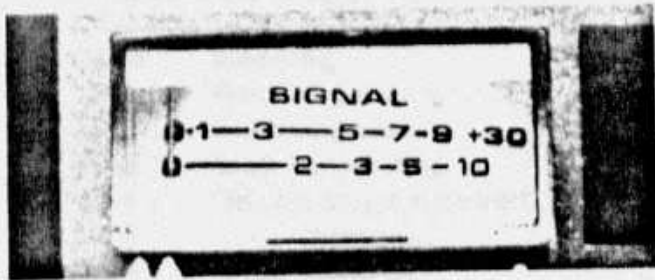
Step 6: Select your desired channel by turning the Channel Selector dial by the LED digital indicator.



Step 7: To transmit, press the push-to-talk bar on the microphone. To receive, release the bar.

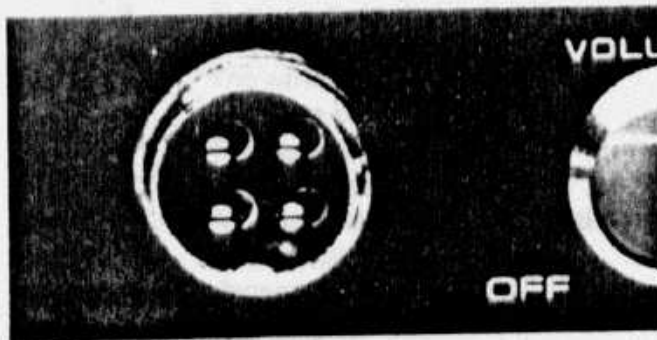


Operating controls, connectors: Their functions and uses.



Starting at the upper left (driver's side) of your Midland 3001 and moving counter-clockwise:

S/RF/PWR Meter. This new high-visibility, black-on-light green meter is used two ways. (1) When receiving, it gives the relative strength of incoming signals. (2) When transmitting, it shows RF (Radio Frequency) power output.



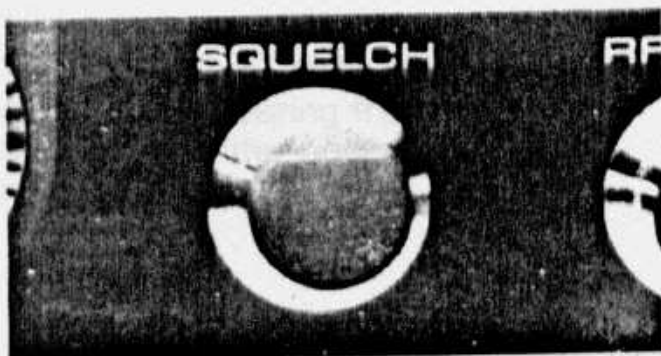
4-pin/Screw-type Microphone Connector. Securely links your microphone to the main unit during use, yet allows quick disconnection when out of service.



Off/Volume Control. Turns your CB on and adjusts the Audio Frequency (volume) level for comfortable reception.



LED Digital Channel Indicator. Illuminated in easy-to-read green, it indicates the channel selected by use of the analog-numbered selector dial just below.



Squelch Control. Turned clockwise, it quiets the receiver when signals are not being received and allows a quiet standby operation.

The Squelch Control functions only in the receive mode and does not affect receiver volume when signals are being received.

To adjust, when no signals are present, rotate the Squelch Control clockwise until the receiver is quieted. Incoming signals will automatically release the squelch action.

Careful adjustment is necessary as a setting too far clockwise will not allow weaker signals to release the squelch action.

RF (Radio Frequency) Gain Control.

Controls the reception sensitivity (range) of your CB. To decrease RF gain — to reduce interference, for example, in congested urban areas — turn the knob counter-clockwise; to increase turn clockwise. The RF gain control affects reception only. It will not affect transmitter output power.



Fil/Out Switch. Controls the tonal quality of received signals in accordance with the user's preference.

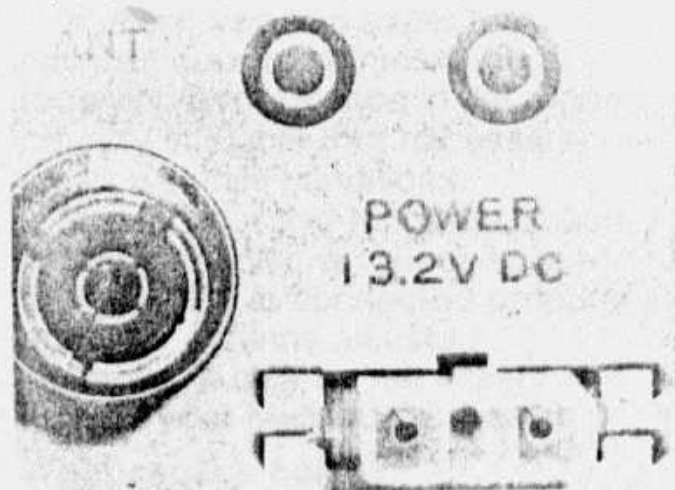
CB/PA Switch. An optional PA speaker may be attached to your transceiver through the PA output jack on the back panel. This allows you to communicate with pedestrians and other vehicles through your CB microphone. The CB/PA switch changes your CB speaker system from a CB function, using the internal main-unit speaker, to a Public Address function.



Local/Distance Switch.

Controls the reception sensitivity (range) of your CB. To decrease — to reduce interference, for example, in congested urban areas — place in "Local" position. For full sensitivity place in "Distance" position. The RF Gain switch affects reception only. It will not affect transmitter output power.

External Speaker Jack. Allows you to attach an external speaker that will override the unit's internal speaker. Connection is made through the External Speaker Jack on the back panel.



PA Jack. An optional PA speaker may be attached to your transceiver through the PA output jack on the back panel. This allows you to communicate with pedestrians or other vehicles through your CB microphone.

Microphone Push-to-Talk Bar. Simply push this bar to transmit; release when receiving.



Why and how to use the "10 Code." Developed over the years by official agencies in order to save

time and provide precise, clear messages, the "10-Code" has become a popular tool for CBers.

The table below lists some of the more common codes and their meanings.

Code	Meaning	Code	Meaning
10-1	Receiving poorly	10-35	Confidential information.
10-2	Receiving well.	10-36	Correct time is.
10-3	Stop transmitting.	10-37	Wrecker needed at.
10-4	OK, message received.	10-38	Ambulance needed at.
10-5	Relay message.	10-39	Your message delivered.
10-6	Busy, stand by.	10-41	Please turn to Channel.
10-7	Out of service; leaving the air.	10-42	Traffic accident at.
10-8	In service, subject to call.	10-43	Traffic tie-up at.
10-9	Repeat message.	10-44	I have a message for you.
10-10	Transmission completed, standing by.	10-45	All units within range report.
10-11	Talking too fast.	10-50	Break channel.
10-12	Visitors present	10-60	What is next message number?
10-13	Advise weather/road conditions.	10-62	Unable to copy; use phone.
10-16	Make pickup at.	10-63	Network directed to.
10-17	Urgent business.	10-64	Network clear.
10-18	Anything for us?	10-65	Awaiting your next message/assignment.
10-19	Nothing for you; return to base.	10-67	All units comply.
10-20	My location is.	10-70	Fire at.
10-21	Call by telephone.	10-71	Proceed with transmission in sequence.
10-22	Report in person to.	10-77	Negative contact.
1023	Stand by.	10-81	Reserve hotel room at.
10-24	Completed last assignment.	10-82	Reserve room for.
10-25	Can you contact?	10-84	My telephone number is.
10-26	Disregard last information.	10-85	My address is.
10-27	I am moving to Channel.	10-91	Talk closer to mike.
10-28	Identify your station.	10-93	Check my frequency on this channel.
10-29	Time is up for contact.	10-94	Please give me a long count.
10-30	Does not conform to FCC rules.	10-99	Mission completed; all units secure.
10-32	I will give you a radio check.	10-200	Police needed at.
10-33	Emergency traffic.		
10-34	Trouble at this station.		

Musts and should nots of CB usage.

You must identify your call sign at the finish of every conversation.

You should not blast others off the air by overpowering them with illegal transmitter power or illegally high antennas.

You should not use CB to promote illegal activities.

You should not use profanity.

You should not play music on your CB.

You should not use your CB for the purpose of advertising or soliciting goods or service of any kind.

Frequency-channel number chart.

Frequency	Channel
27.60125	1
27.61125	2
27.62125	3
27.63125	4
27.64125	5
27.65125	6
27.66125	7
27.67125	8
27.68125	9
27.69125	10
27.70125	11
27.71125	12
27.72125	13
27.73125	14
27.74125	15
27.75125	16
27.76125	17
27.77125	18
27.78125	19
27.79125	20
27.80125	21
27.81125	22
27.82125	23
27.83125	24
27.84125	25
27.85125	26
27.86125	27
27.87125	28
27.88125	29
27.89125	30
27.90125	31
27.91125	32
27.92125	33
27.93125	34
27.94125	35
27.95125	36
27.96125	37
27.97125	38
27.98125	39
27.99125	40

Factors affecting effective CB range.

Essentially, they're the same influences that optimize or limit AM, FM and other kinds of performance in moving vehicles:

Terrain: Hills and valleys naturally interrupt and shorten CB signals.

Weather: You can expect that CB range will be reduced—perhaps drastically—in times of atmospheric disturbance, such as in a thunderstorm or heavy snow. Sunspots, too, are known to adversely affect CB performance.

Obstructions: Inside a tunnel, covered parking garage or viaduct, CB transmitting/receiving capability may be cut off altogether.

In short, you can expect to maintain maximum transmitting/receiving performance in flat, open country in stable (not necessarily clear) weather conditions.

Should effective range be limited in these conditions, check to see that your CB is connected properly and your antenna adjusted correctly. It may be necessary to consult your Midland CB Dealer.

What causes noise?

If you have an abnormal noise problem, the chances are your vehicle itself is the cause.

A CB receiver is a very sensitive instrument, able to pick up small noise signals and amplify them—particularly if the source of these signals is within a few feet of your CB.

Any noise that comes from your CB almost certainly comes from outside the unit itself. Devices have been designed into your Midland CB (a noise blanker or an automatic noise limiter, for example) to minimize this kind of distraction.

Trouble-shooting aids.

Frequently, there are simple, quick actions you can take to eliminate or minimize such problems as interference and noise.

Noise suppression.

A very common source of excessive noise is the ignition system of a CB owner's vehicle. If you suspect this is true, simply turn off the ignition and set the key in the accessories (ACC) position.

This way you'll provide power to the transceiver, minus any ignition interference that might exist. If the noise goes away, you know instantly that the ignition system is the culprit.

Still, there are a number of places in the ignition system where noise can originate.

Sparkplugs and sparkplug wires are probably the worst noise producers. To eliminate this kind of noise, you can take any of four simple measures: (1) Install resistive sparkplug suppressors, (2) resistor sparkplugs or (3) resistance-wire cabling, between plugs and the distributor and ignition coil. (4) Replace old plugs and sparkplug wiring and properly tune the engine. This generally cures most noise.

Many cars come suppressorcable equipped. If your didn't (consult your vehicle owners manual or dealer service department to be sure), you can get it at any auto supply store and, given a moderate amount of mechanical skill, install it yourself.

Caution: Do not undertake any ignition-system repairs or modifications without either professional help or some automotive service experience.

Generator-brush sparking can create an annoying "whine." It's caused by a dirty commutator, and is eliminated by polishing its surface with fine-grade emery cloth, and cleaning grooves with a small, sharp tool.

Voltage regulators can cause a "hashy" sound in your CB when relay contacts jitter open and close when the battery is fully charged. To eliminate this noise, mount coaxial feedthrough capacitors at the battery and armature terminals on the regulator box.

Alternator slip rings should also be kept clean and good brush contact maintained to minimize CB noise.

In addition, single-contact alternator regulator boxes need a coaxial capacitor at the ignition terminal. Double-contact units should have a second capacitor at the battery terminal. Shielding between the regulator and alternator may be needed as well. Be sure to ground the shield at both ends.

Infrequent, though real, noise generators like your car's heater fan, turn signals, electric-windows and windshield-wiper motors can also be silenced with a coaxial capacitor (consult your serviceman).

Wheels and tyres can also cause CB noise. Wheel noise is eliminated by putting static-collector springs between the wheel spindle bolt and grease retainer cup. Tyre static can be quieted with antistatic powder applied inside each wheel.

Antenna corona-discharge noise—most frequently occurring with sharp-pointed "whip" models—can happen just before or during electrical storms. The only cure is for the storm to blow over or pass.

COMMON CB PROBLEMS:

	Check CB/PA switch.	Check power cable connection.	Check 2-amp fuse.	Check Squelch adjustment.	Check off/volume switch	Change to active channel.	Check antenna connection.	Fully depress connection and cable.	Check microphone connection.	Check metal-to-metal ground connection.	Check antenna cable and SWR adjustment.
No sound or channel light.		•	•		•				•		
Channel light but no sound.	•			•		•		•	•		
No voice reception.			•		•						
Poor reception.						•			•	•	
Transmission problems.						•	•	•	•	•	
Unclear reception.						•			•	•	
Poor PA Audio Frequency.	•										
Inoperative channel selector.	•	•									

Caution: The 2-amp fuse included with this unit is an important safety feature which must not be circumvented. Removal of this fuse or the use of a fuse greater than 2 amps may result in overheating and/or fire and consequential damage to the unit or vehicle. If a replacement 2-amp fuse burns out, have the unit inspected and repaired by a qualified service technician.

Midland 3001 Mobile CB Transceiver: Technical Specifications.

MPT1320 (UK SYSTEM)

General Construction.

1. Three-pin polarized jack for DC power.
2. Four-pin screw connector for microphone.
3. No mechanical relays. All switching is solid state using diodes and transistors for high reliability.
4. Transmitter output stage is protected from mismatch, no-load or short-circuit conditions.
5. Input power is suitably filtered and bypassed to prevent alternator "whine" on transmit or receive.

Electrical Specifications.

General.

Voltage 13.2V, Negative Ground Operating Range: 10V to 16V.
 Frequency Stability ±1.5 KHz
 Temperature Range -5 to +45°C
 Humidity 5-90%
 Vibration EIA Standard RS-424
 Shock EIA Standard RS-424

Receiver (FM):

Sensitivity.—
 Less than 1.0uV for 20 dB SN + N to N.
 Automatic Gain Control Figure of Merit.—
 70 dB.
 Audio Squelch Sensitivity.—
 Threshold: Less than -12 dB SINAD
 Tight: 500 uV minimum, 1 kuV maximum

Adjacent Channel Selectivity and Desensitization —

50 dB (Two-generator method).
 Spurious Response Attenuation.—
 50 dB.
 Audio Power Output —
 2W @ 10% distortion (load impedance 4 ohms resistive).
 Audio Frequency Response (1 KHz, 0 dB reference) —
 300 Hz @ +6 dB
 1000 Hz @ 0 dB
 3000 Hz @ -10 dB
 Hum and Noise, Squelched —
 -45 dB
 S Meter Sensitivity at "S-9"
 100 uV.
 Antenna Input Impedance —
 50 ohms, unbalanced

Transmitter (FM):

Carrier Power, No Modulation —
 4W maximum, 3.6 minimum.
 Conducted Spurious Emissions —
 72/79 dB
 Radiated Spurious Emissions. —
 (Complies with UK STD MPT-1320)
 Audio Frequency Harmonic Distortion —
 10% maximum 1.5 KHz deviation
 Audio Frequency Response (1 KHz, 0 dB reference) —
 300 Hz @ -10 dB
 1000 Hz @ 0 dB
 3000 Hz @ +6 dB

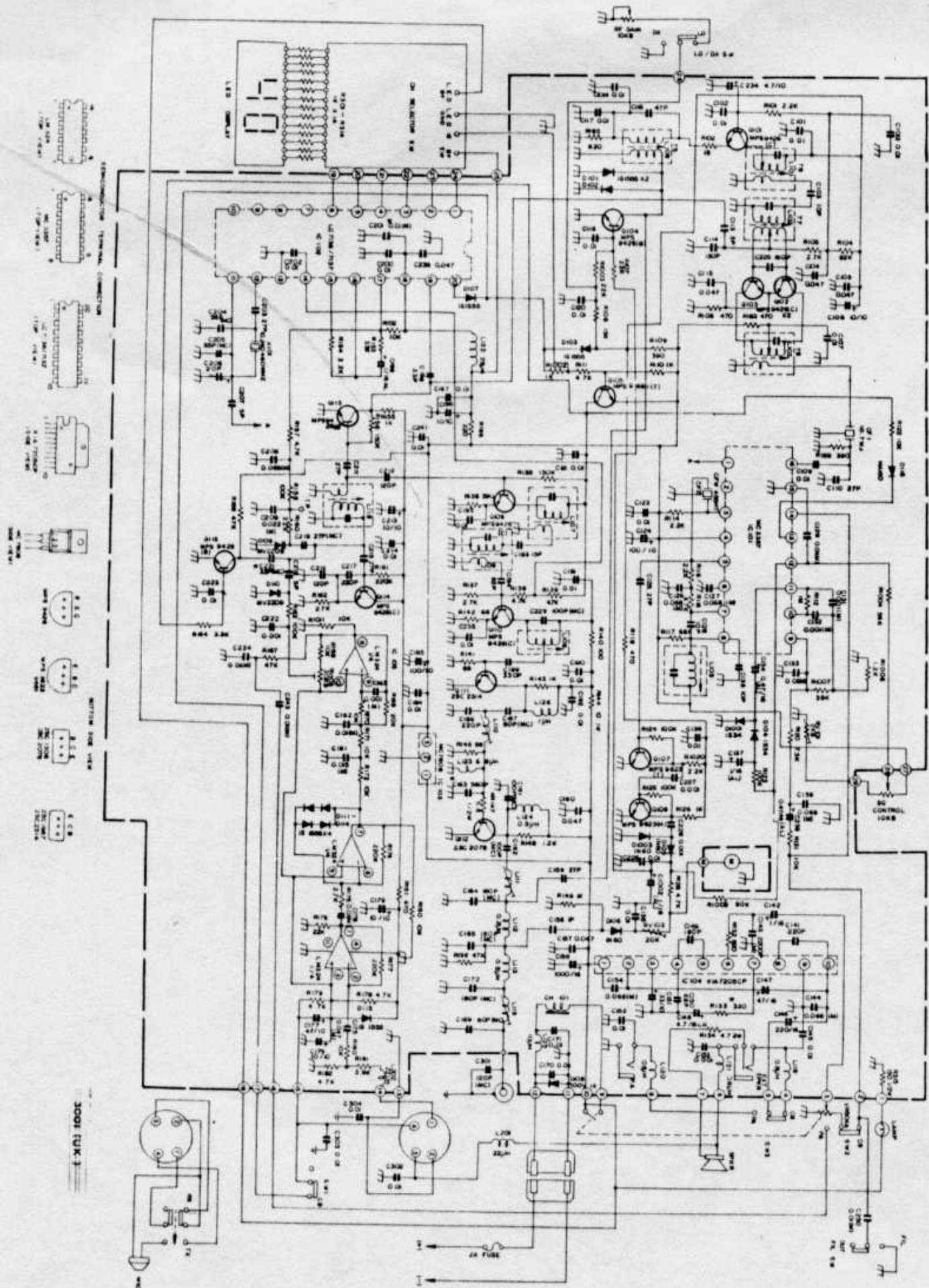
Hum and Noise —

35 dB without de-emphasis.
 Output Impedance—
 50 ohms unbalanced.
 Output Protection —
 Withstands for 5 minutes all VSWR around Smith Chart at 20:1 without damage or failure

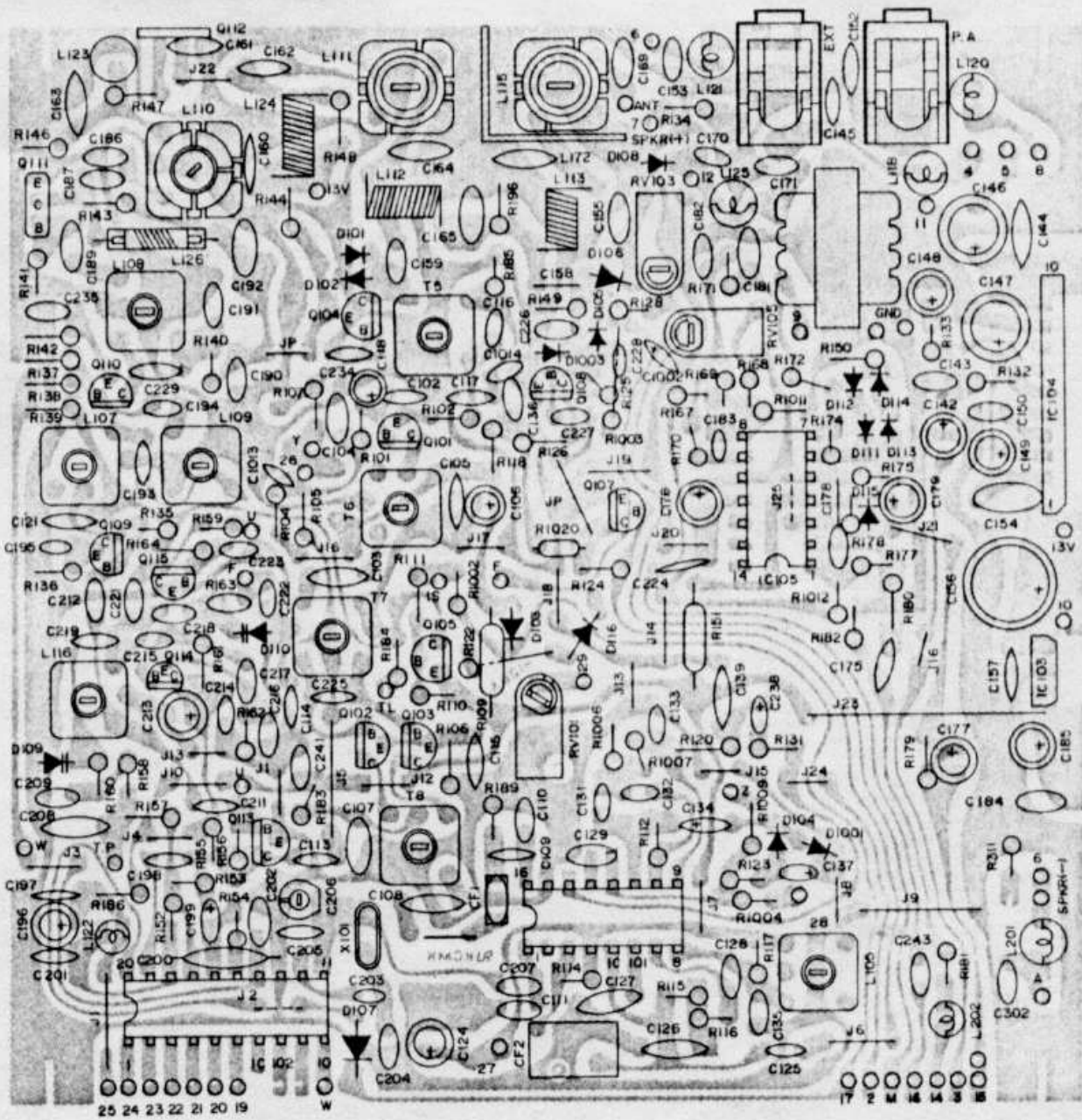
Transceiver Features/Controls:

- Integrated Off/AF (Audio Frequency) Gain volume Control
- Variable Squelch Control
- CB/PA Switch
- Analogue S/R/PWR Meter, Illuminated
- Green colour Numerical LED Channel Indicator
- Rotary Analogue Numerical Channel Selector
- Screw-type 4-Pin Microphone Connector

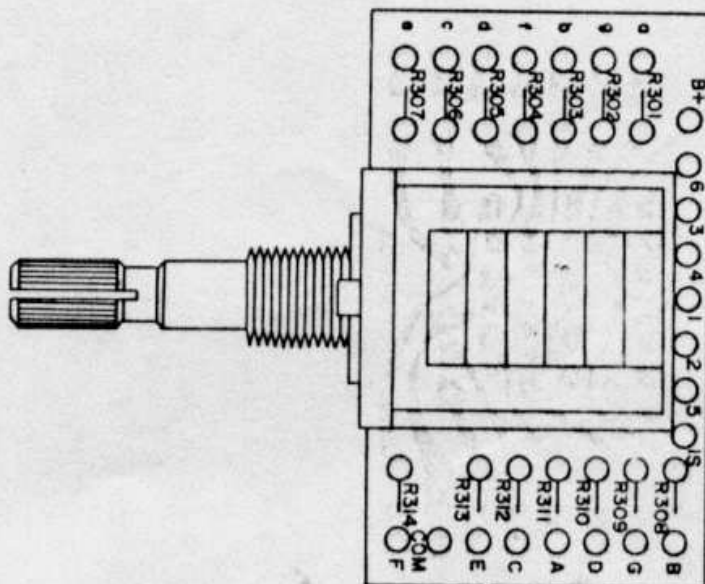
Schematic Diagram.



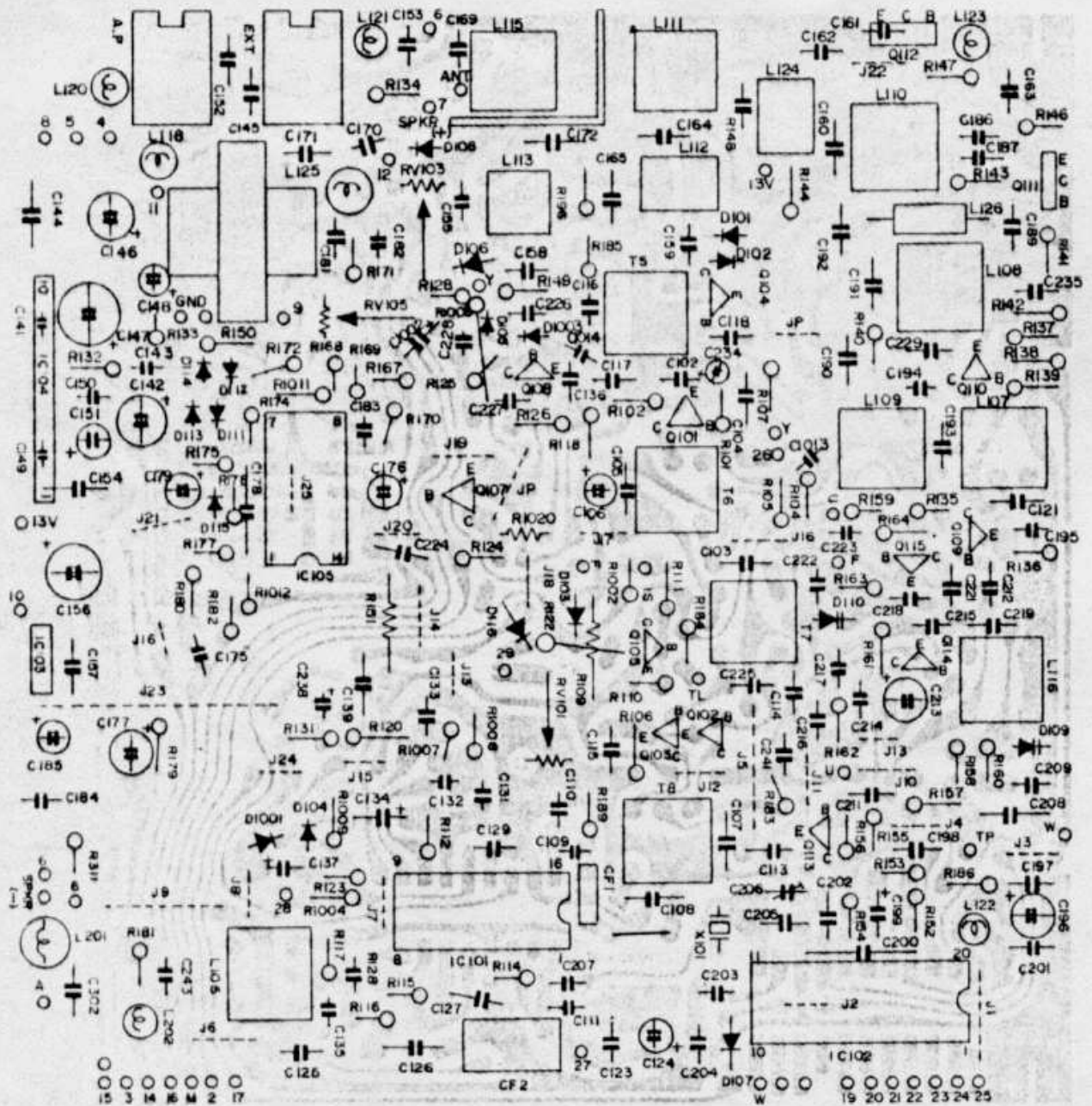
Parts Layout. Main PC Board.



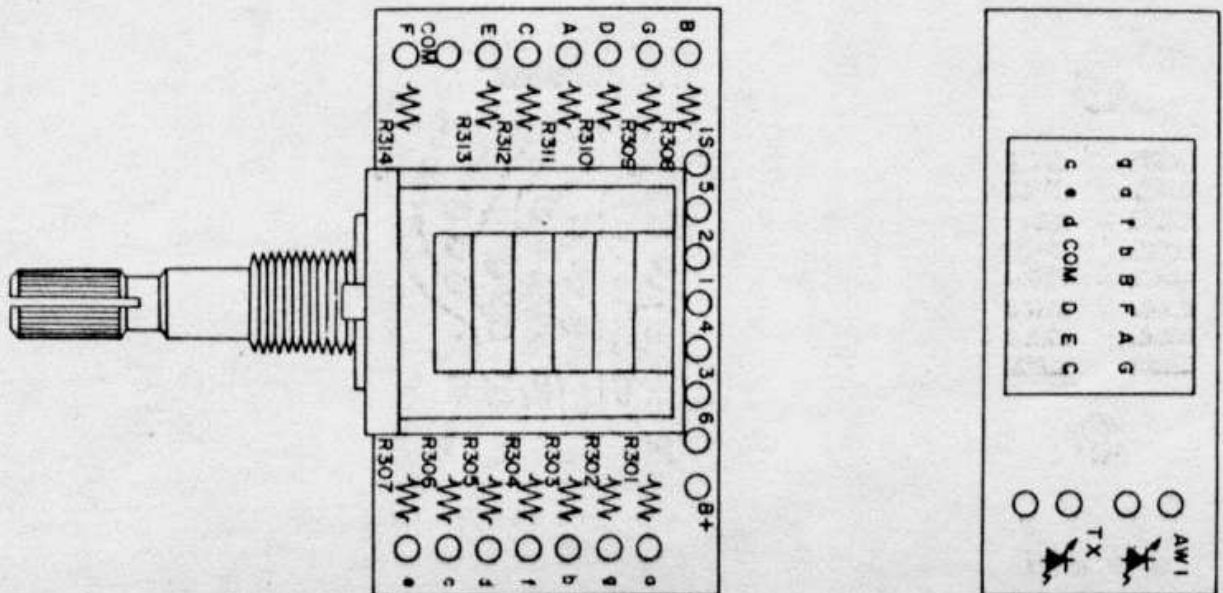
Component side.



Parts Layout. Main PC Board.



Pattern side



Limited Warranty.

Plustronics Ltd., will repair or replace, at its option, without charge, any Midland Precision Series™ Mobile or Base Station Citizen Band Transceiver manufactured to MPT 1320 UK System which fails due to a defect in material or workmanship within one year following the initial consumer purchase.

This warranty does not include any carrying cases, earphones, or telescoping antennas which may be a part of or included with the warranted product, or the cost of labour for removal or reinstallation of the product in a vehicle or other mounting.

Performance of any obligation under this warranty may be obtained by returning the warranted product, freight prepaid, along with proof of the purchase date.

Midland transceivers manufactured to MPT 1320 (UK system) are solely distributed and guaranteed by Plustronics Ltd., Hempstalls Lane, Newcastle-Under-Lyme, Staffordshire, England.

Please be sure to fill out and mail the Customer Registration Card included with this Owners Manual. Failure to return this card will not affect your rights under the above warranty.