

40 CHANNELS FM CB TRANSCEIVER



MIDLAND

ALAN₂₇

OWNER'S MANUAL

ALAN27

SPECIFICATIONS

GENERAL

Channels No	40 CH
Frequency range	26.965 ~ 27.405 MHz
Frequency control	PLL
Frequency stability	0.005%
Temperature range	- 10°C ~ + 55°C
Microphone	500 ohm standard
Power supply	12.6 Vdc (11.3-14 Vdc)
Current	RX 0.5A, TX1A
Unit size	59/165/186.5 mm
Weight	1262.24g
Antenna connector	Standard type
Meter	S/RF-PWR

TRANSMITTER

RF output power	4W
Modulation	FM
Conducted spurious and harmonic emission	Less than 4nW
Audio frequency response	500Hz ~ 3kHz $\pm$ 6dB
Output impedance	50 ohm unbalanced
Mike gain control	0 ~ 1.5 kHz FM

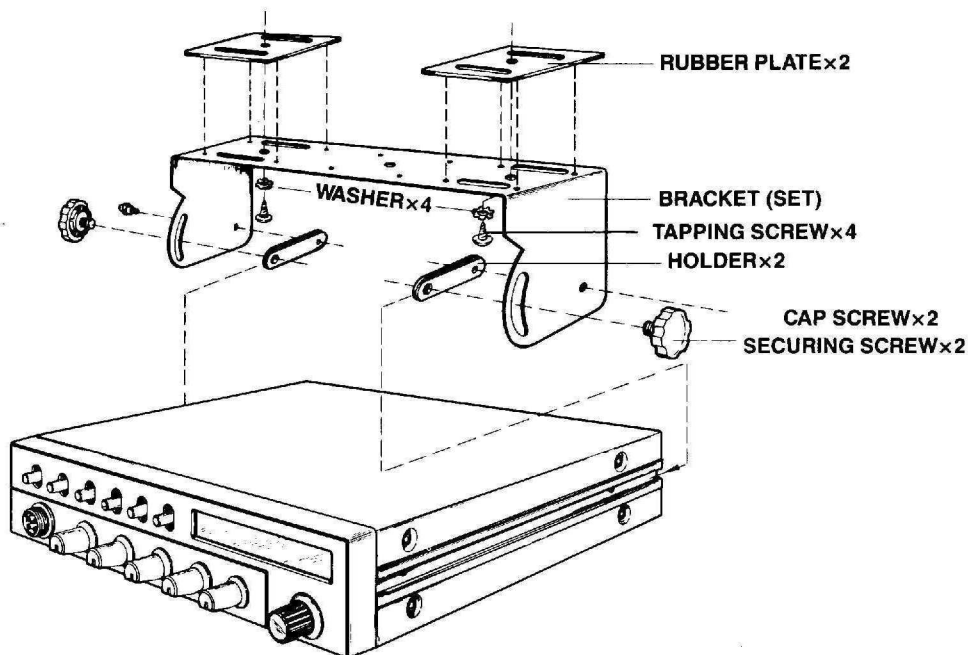
RECEIVER

Sensitivity	0.5 μ V
S/N ratio	0.5 μ V per 20dB SND
Automatic gain control	Audio output variations less than 12dB by 10 μ V to 10mV
Squelch	Suitable threshold 1 μ V
Audio frequency response	300 ~ 3000 Hz
Distortion	10% at 500mW
Adjacent channel selectivity	Better than 60dB
Conversion frequencies	10.7 MHz/455 kHz
AF filter	Tone correction
RF gain control	30dB
Audio output power	Over than 3W on 8 ohm
Internal speaker	8 ohm
External speaker	8 ohm not supplied

P.A. SECTION

Output power	3W
External speaker	8 ohm not supplied

How to install your Midland mobile CB.



This transceiver may be installed in any **12-volt negative or positive ground-system** car or truck. Most current U.S. and foreign vehicles use a negative 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.

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.

The transceiver is designed with most-often-used controls nearest the driver. Still make sure other controls are easily reached.

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 not to 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 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 exercised

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

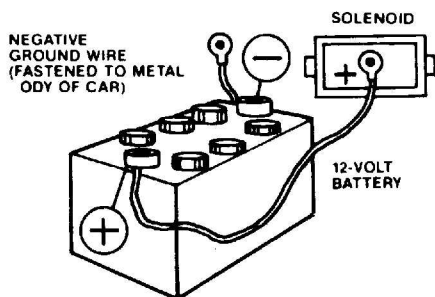
goes off when the ignition goes off, preventing accidental battery drainage.)

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

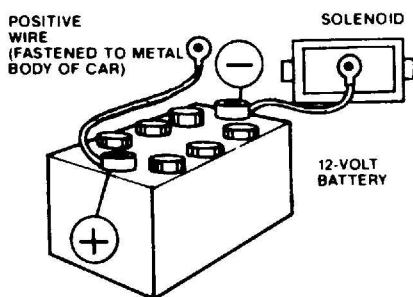
With a **positive ground**, reverse the wires, connecting the red/fuse-holder wire to the frame, the black wire to your DC power source. A light or meter can be a good aid in locating a suitable power source and ground.

In either case, a good, direct metal-to-metal ground is essential for optimum performance.

CAR'S MOTOR BLOCK OR FIRE WALL GROUND



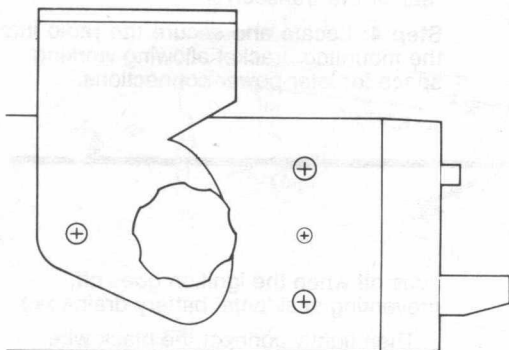
EXAMPLE OF
NEG. GROUND 12-V DC CAR BATT.
CONNECTION ILLUSTRATION
MOST CARS & TRUCKS ARE
THIS TYPE



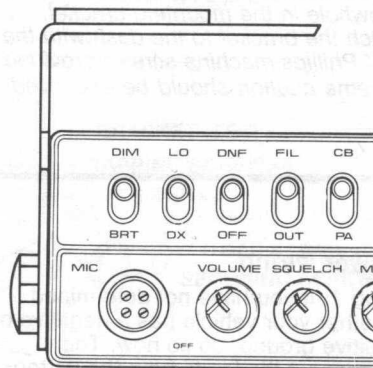
EXAMPLE OF
POS. GROUND 12-V DC CAR BATT.
CONNECTION ILLUSTRATION FEW
"18-WHEELERS" & OLDER CARS

Mounting the main unit.

Step 1: Position the main unit between the bracket arms in line with the retention knobs. Set the angle for optimum operating comfort and accessibility.



Step 2: Tighten the retention knobs.



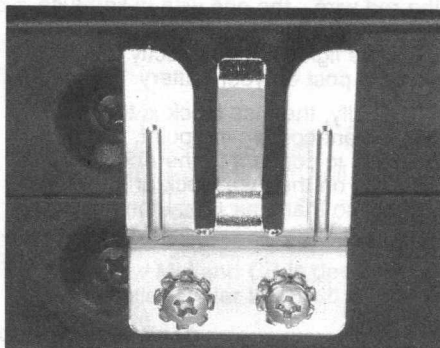
Installation of microphone hanger.

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 optional remote speaker.

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

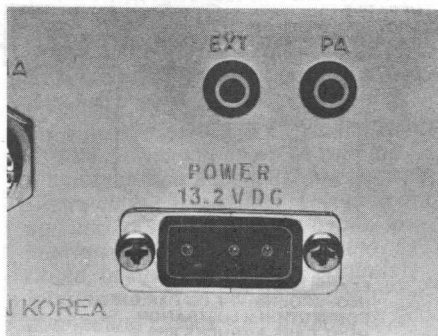
When connected, the external speaker will override and "blank out" the in-unit speaker standard with your Midland Mobile CB.



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.

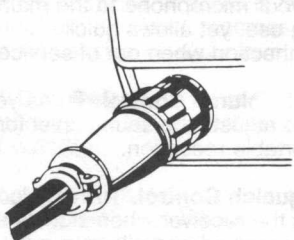
Directions for mounting the optional PA speaker are included along with mounting hardware, with the speaker.



Midland Operating Instructions

Having properly installed and wired your CB and antenna, you are now ready for the ten 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 o'clock position.

SQUELCH



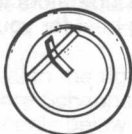
Step 4: Make sure the Mic gain control is fully clockwise.

MIC.GAIN



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

VOLUME



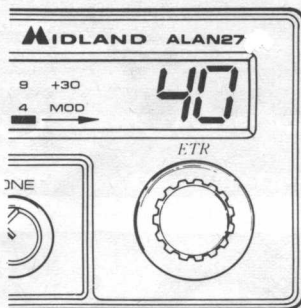
OFF

Step 6: Make sure the RF Gain Control is fully clockwise.

RF.GAIN



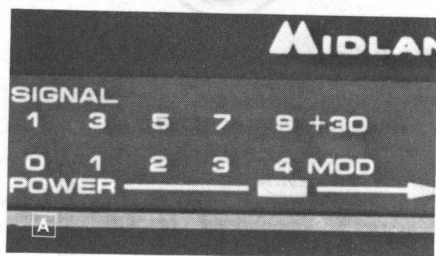
Step 7: Select your desired channel by turning the Channel Selector dial below the LED digital indicator clockwise (up) or counter-clockwise (down).



Step 8: 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 ALAN27 and moving counter-clockwise:

[A] Electronic S/R/Meter. This new high visibility, electronic 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.

[B] Microphone Connector. Securely links your microphone to the main unit during use, yet allows quick disconnection when out of service.

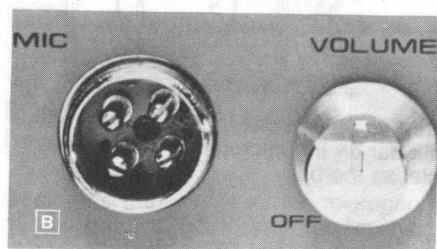
[B] Off/Volume Control. Turns your CB on and adjusts the sound level for comfortable reception.

[C] 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.

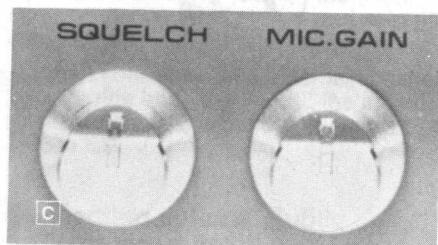


[C] Mic (Microphone) Gain Control. Adjusts the sensitivity of the microphone amplifier circuit to suit individual voice characteristics and ambient noise conditions to provide maximum intelligibility.

Rotating the control counter-clockwise reduces the sensitivity and requires "close talking" into the microphone.

When operating from a noisy vehicle, reducing the Mic Gain setting will usually improve your transmitted voice clarity.

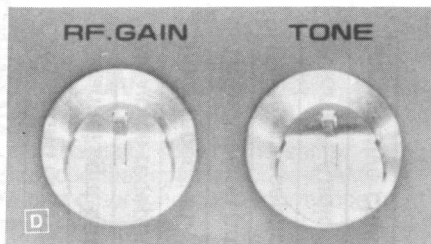
Check with other operators to determine the exact setting best for your voice and car.



[D] RF Gain Control

Controls the reception sensitivity (range) of your CB. To decrease RF Gain—to reduce interference, for example, in congested urban areas—rotate counter clockwise. For full sensitivity position. The RF Gain switch affects reception only.

It will not affect transmitter output power.

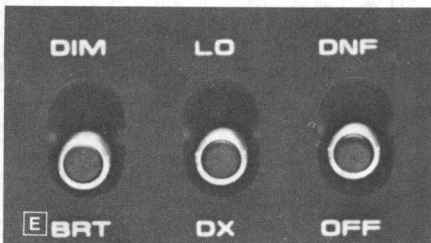


[D] TONE Control.

Turn this control on right side to increase the high frequencies of audio level, turn this control on left side to decrease the high frequencies of audio level.

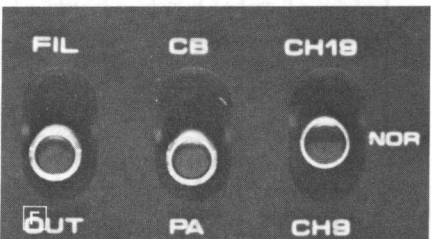
[E] BRT-Dim Switch. Dims or brightens lighted controls for more comfortable day or night visibility.

[E] LOCAL/DX Switch. This switch to lower the highest input signals
LO position attenuator on
DX position attenuator off



[E] DNF-OFF Dynamic noise filter adds heavy duty filtering in car's electrical system to filter out high level noise.

[F] 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.



[F] FIL/OUT Switch. This tone control, to clear the RX signal

FIL: filter on

OUT: filter off

[F] CH9-NOR-CH19 Switch instantly selects channel 9 (highway emergency channel) or channel 19 (highway talk channel)

[G] Lighted LED Digital Channel Indicator. Clearly displays the channel selected by use of the selector dial just below.

Turn the dial to the right to select a higher-numbered channel spectrum, left to select channels below the number indicated.



COMMON CB PROBLEMS:

[illegible]

SOLUTIONS:

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.

Frequency-channel number chart.

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

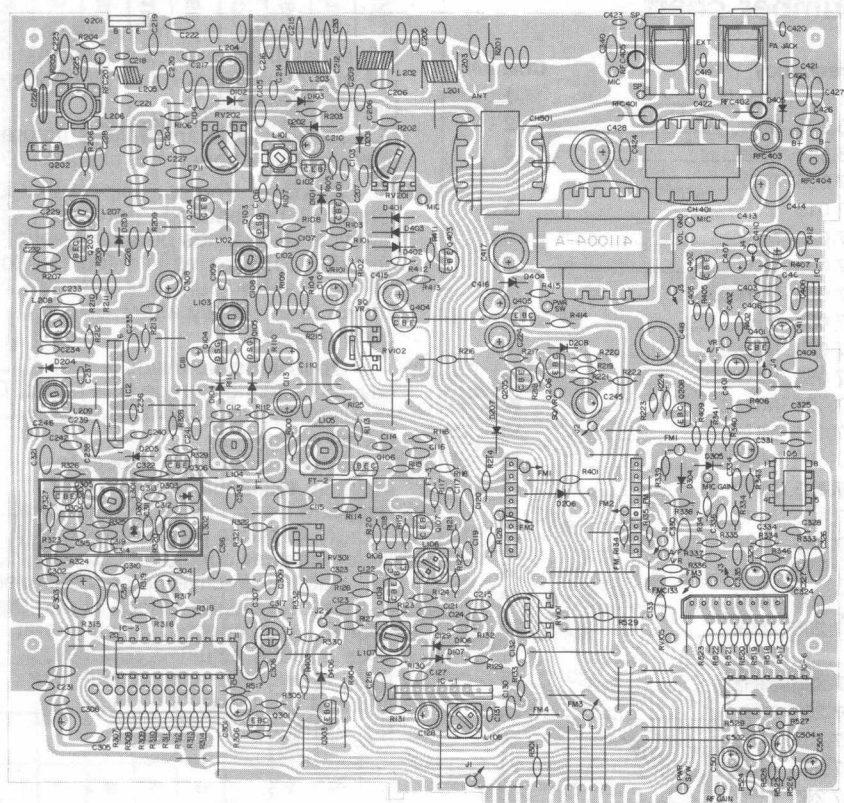
Weather. You can expect that CB range will be reduced—perhaps drastically—in times of atmospheric disturbance, such as in a thunderstorm or heavy snow. Sunspots, too, are known to adversely affect CB performance.

Obstructions. Inside a tunnel, covered parking garage or viaduct, CB sending/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's service department.

Parts Layout. Main PC Board.



Component Side.

