

MIDLAND®

Special Edition
24-12 Volt
Auto Sensing



USER'S MANUAL

MIDLAND 38 80 PLUS 24-12

80-Channel mobile citizens band transceiver
27MHz F.M. (MPT 1382) United Kingdom System



Congratulations. You've just graduated to the state of the art in mobile CB power, clarity and operating convenience.

In the years ahead, you can expect to realise - time and time again - the real reasons and meaning of the front running position MIDLAND holds among CB users 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 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.

Remember that the same dependability, range and clarity engineered into your CB are also built into a long, versatile line of MIDLAND car stereo receivers, telephones and other electronic and Products.

MIDLAND 38 PLUS 24-12

80-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.

CB Licence No.: _____

Serial No.: _____

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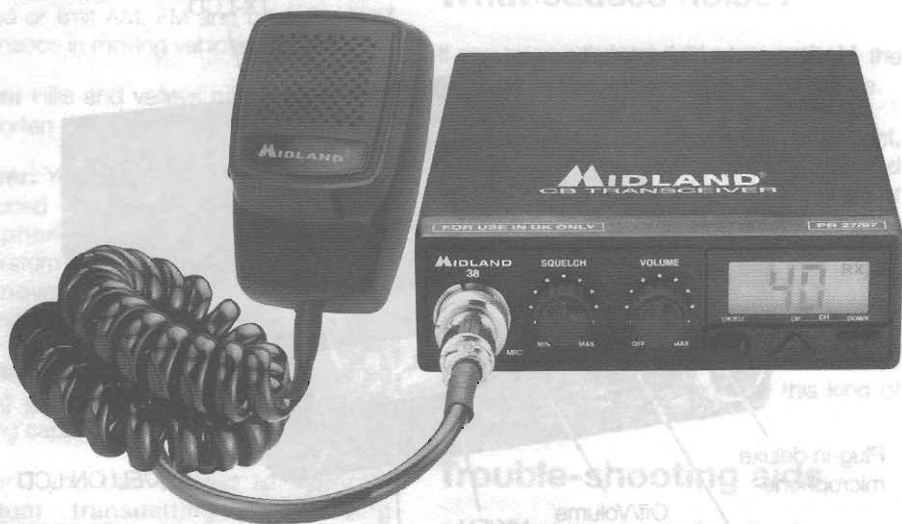
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Component Side



MIDLAND 38 PLUS 24-12

80-channel mobile CB transceiver



Features:

State-of-the-art techniques have been used in the electronics of your new MIDLAND CB

Including MIDLAND Power performance - with a transmitter rated for legal maximum 4-watt output power with high level modulation in accordance with FCC Part 95.

Plus a highly sensitive, selective dual conversion superheterodyne receiver with tuned RF stage and built in, automatic noise limiter.

Outside, it's designed 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. For example:

- 24-12 Volt Auto Sensing.
- Large-scale, easy-reading LCD 80-channel indicator.
- Full-range, variable squelch control.
- Front Mounted deluxe microphone with ergonomic design.
- Precision PLL (Phase Locked Loop) tuner.
- Fresh, attractive styling with satin finish bezel.
- Mounting bracket for easy installation and removal.
- Rugged all metal cabinet.
- New sub miniature size-fits almost anywhere in any car.
- Mounts horizontally or vertically.
- Separate electronic transmit and receive visual indicators.

MIDLAND 38 PLUS 24-12

CB Operating controls

MIDLAND 38 PLUS 24-12
80-channel mobile
CB transceiver



Modern green high intensity
80-channel indicator

RX-LCD
TX-LCD

Plug-in deluxe
microphone

Off/Volume
control

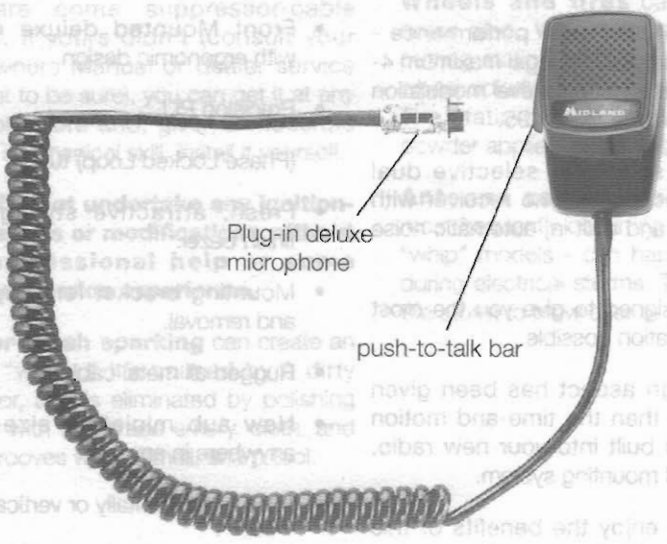
UK/EU

UK/EU ON LCD

Squelch control

ETR Up Control

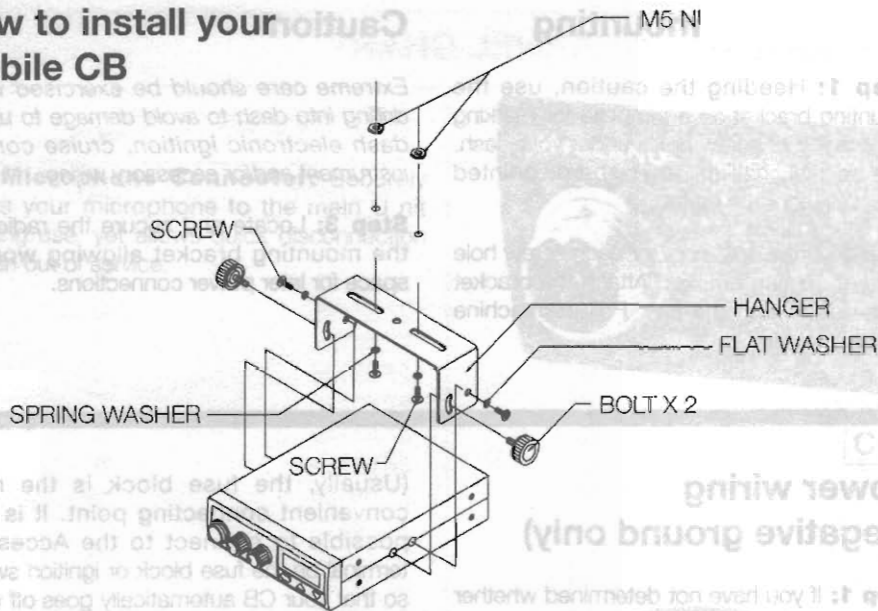
ETR Down Control



Plug-in deluxe
microphone

push-to-talk bar

How to install your mobile CB



This transceiver may be installed in any **24 or 12 volt negative 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 Mobile CB:

1. Easy-removal mounting bracket system.
2. Microphone bracket system.
3. All main-unit and microphone mounting hardware needed for normal installation.

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

Where to locate your CB transceiver

Your new MIDLAND CB is designed to be installed under the dash or vertically on a console 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 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 caution, use the mounting bracket as a template for marking the location of screw holes 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 screw hole in the mounting bracket. Attach the bracket to the dash with the 3/8" Phillips machine screws provided.

Caution

Extreme care should be exercised when drilling into dash to avoid damage to under-dash electronic ignition, cruise control, instrument and/or accessory wiring.

Step 3: Locate and secure the radio into the mounting bracket allowing working space for later power connections.

Power wiring (negative ground only)

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.

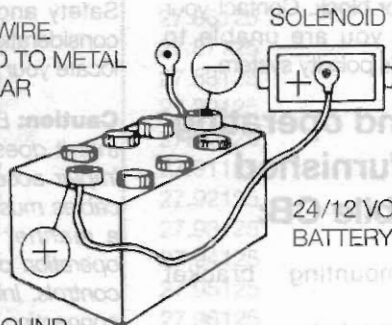
(Usually, the fuse block is the most convenient connecting point. It is also possible to connect to the Accessory terminal on the fuse block or ignition switch, so that your CB automatically goes off when the ignition goes off, preventing accidental battery drainage.)

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

A good direct metal-to-metal ground is essential for optimum performance.

Step 3: Plug-in the power cord to the receptacle provided on the back of the transceiver.

NEGATIVE
GROUND WIRE
(FASTENED TO METAL
BODY OF CAR

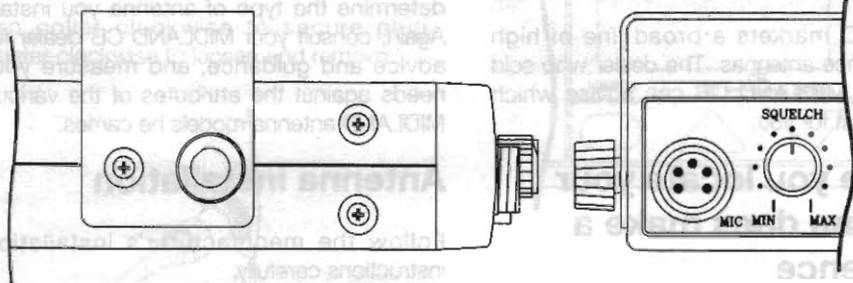


EXAMPLE OF NEG GROUND
24/12V DC CAR BATT CONNECTION ILLUSTRATION
MOST CARS & TRUCKS ARE THIS TYPE

Mounting the main unit

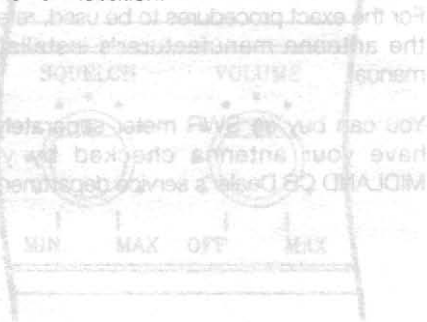
Step 1: Position the main unit between the bracket arms in line with the retention knobs. Set the angle for optimum operating comfort and accessibility.

Step 2: Tighten the retention knobs.



Installation of microphone hanger

Mounting holes are provided on the microphone hanger bracket. The bracket can be attached to the vehicle dash, or other convenient location.



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 centre 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 location 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's service department.

Operating Instructions

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

Step 1: Insert the plug from the microphone into the microphone jack on the front side panel and check for secure fit.

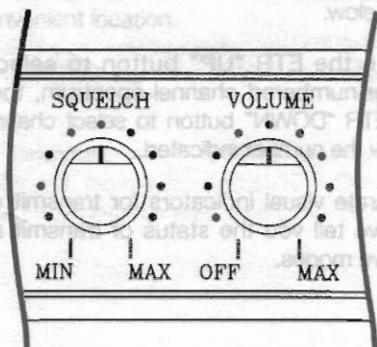
Turn collar clockwise to secure plug, counter-clockwise to loosen and remove.



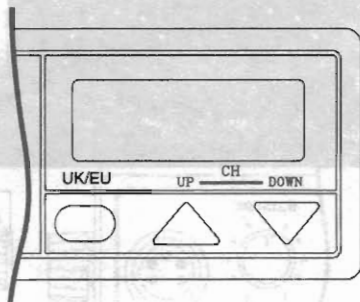
Step 2: Make sure your antenna is securely connected to the antenna connector.

Step 3: Make sure the Squelch control is in the 9 o'clock position.

Step 4: Turn the power on and adjust the "Volume" control for a satisfactory sound level.



Step 5: Select your desired channel by touching the ETR up or down buttons.



Step 6: To transmit, press the Push-to-talk bar on the microphone. To receive, release the bar.



Operating controls, connectors: instructions

Their functions and uses

the right one for you



A

A Off/Volume Control: Turns your CB on and adjusts the sound level for comfortable reception.

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.

B High Intensity Modern LCD Channel Indicator: Clearly displays the channel selected by use of the selector dial just below.

Touch the ETR "UP" button to select a higher-numbered channel spectrum, touch the ETR "DOWN" button to select channels below the number indicated.

Separate visual indicators for transmit and receive tell you the status of transmit and receive modes.



B

C Microphone Connector: Securely links your microphone to the main U nit during use, yet allows quick disconnection when out of service.



C

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



D

E 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, also on the back panel.



EXT 8Ω



DC
13.8V

E

FREQUENCY/CHANNEL CHART

CEPT PR27GB (EU)

MPT 1382 UK FM (UK)

FREQ (MHz)

CH

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

FREQ (MHz)

CH

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 optimise 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.

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 Kt-CB (a noise blanker or an automatic noise limiter, for example) to minimise this kind of distraction.

Trouble-shooting aids

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

Many cars come equipped with a noise suppressor cable. If you have a vehicle without this service, you can get it at your local auto supply store and have it installed.

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

Generator brush sparking can create an annoying whine. This is usually due to a worn commutator and is eliminated by polishing the brush with fine sandpaper. The brush should be replaced with a new one.

- Mount the antenna vertically.
- Lubricate the antenna.

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 also between 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 with suppressor-cable equipped. If yours 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 closed 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

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 heat fan, turn signals, electric-windows and windshield wiper motors can also be silenced with a coaxial capacitor (consult your serviceman).

Wheels and tires can also cause CB noise also. Wheel noise is eliminated by putting static-collector springs between the wheel spindle bolt and grease retainer cup. Tire 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.

SOLUTIONS:

COMMON CB PROBLEMS

	Check power cable connection	Check fuse	Check squelch adjustment	Check on/off switch	Change to active channel	Check antenna connection and cables	Fully depress push-to-talk bar	Check microphone connection	Check metal-to-metal ground connection
No sound or channel light	●	●	●					●	
Channel light but no sound			●		●		●	●	
No voice reception			●	●					
Poor reception					●		●		
Transmission problems					●	●	●	●	
Unclear reception					●			●	

Caution: The 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 rated greater than supplied may result in overheating and/or fire and consequential damage to the unit or vehicle. If a replacement fuse burns out, have the unit inspected and repaired by a qualified service technician.

MIDLAND 38 PLUS 24-12 Mobile CB Transceiver: Technical Specifications

General Construction

1. Unit size: 4-7/8"(W) x 6-11/2" (D) x 1-1/2" (H)
2. Unit weight: 1 lb. 10 oz.
3. Shipping weight: 2 lb. 8 oz.
4. Six-pin SCREW-ON connector for microphone.
5. No mechanical relays. All switching is solid state using diodes and transistors for high reliability.
6. Transmitter output stage is protected from mismatch, no-load or short-circuit conditions.
7. Input power is suitably filtered and bypassed to prevent alternator "whine" on transmit or receive.

Electrical Specifications:

All test conditions and methods are in accordance with EIA standards RS382 and RS-424 or applicable government regulations.

Frequency Control: PLL

Receiver Sensitivity: 0.7 μ V for 10 dB (S+N)/N.

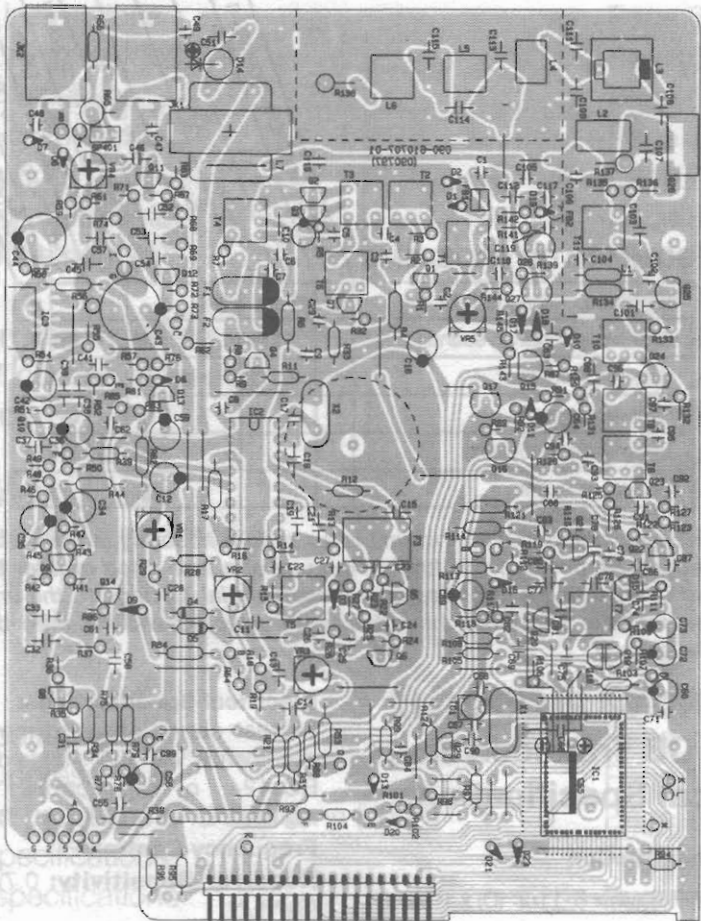
Receiver Selectivity: More than 45dB \pm 10KHz.

Controls: On/Off/volume. Variable squelch, Channel selector. RX/TX indicator. LCD channel indicator. Push-to-talk bar (on microphone).

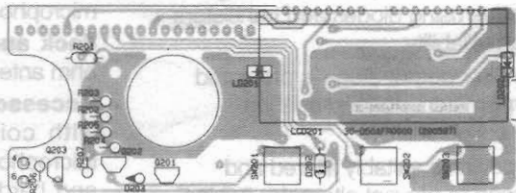
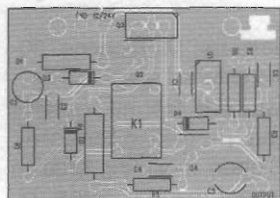
Jack and Connections: Microphone. 50-ohm antenna. 8-ohm external speaker.

Accessories Included: Talk microphone with coil cord and plug-in connector. Microphone clip. Slotted mounting bracket and hardware. Owners manual. Parts 38, Subpart D.

Parts Layout Main PC Board

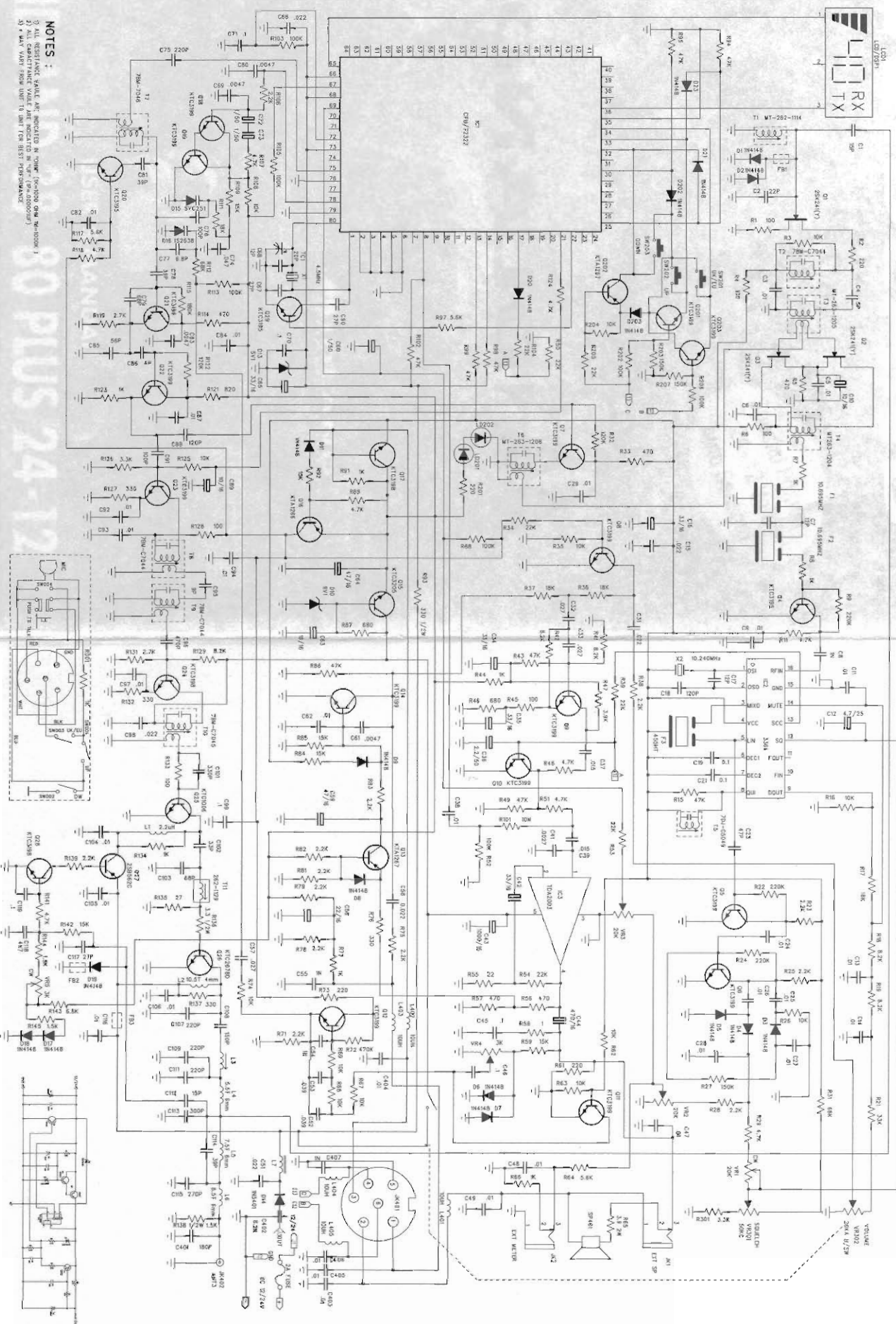


Component Side



Schematic Diagram

(UK/EU FM CB TRANSCEIVER) SCHEMATIC DIAGRAM



NOTES:
1. ALL RESISTANCE VALUES ARE INDICATED IN OHMS UNLESS OTHERWISE SPECIFIED.
2. ALL CAPACITANCE VALUES ARE INDICATED IN PICO FARADS UNLESS OTHERWISE SPECIFIED.
3. A 100K OHM VALUE SHOULD BE USED FOR BEST PERFORMANCE.

 **MIDLAND®**

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Unit 2, Callenders, Paddington Drive, Swindon SN5 7YW, UK