


# MIDLAND®



## ALAN 78 PLUS MULTI

 <p><b>Cte international</b> The World in Communication</p>	<p align="center"><b>EC Certificate of Conformity</b> (to EC Directive 99/5-89/336-93/68-73/23)</p>	<p align="right">DO 3/4-3-0-1 Rev 1</p>
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**CE0648**

DECLARATION OF CONFORMITY N° 02061001

Manufacturer **C.T.E. International S.r.l.**  
Address Via Sevardi 7 42010 Mancasale RE Italy  
Products Name **ALAN 78 PLUS MULTI**  
Product Type CB Transceiver

The product described above is in conformity with the following Specifications based on sample testing:

Document N°	Title	Date of issue
EN 301 489-13	ElectroMagnetic compatibility and Radio spectrum Matters (ERM);ElectroMagnetic Compatibility (EMC) standard for radio equipment and services;Part 13: Specific conditions for Citizens' Band (CB) radio and ancillary equipment (speech and non-speech)	09/2000
EN 300 433-2	Electromagnetic compatibility and Radio spectrum Matters (ERM);Land Mobile Service;Double Side Band (DSB) and/or Single Side Band (SSB) amplitude modulated citizen's band radio equipment;Part 2: Harmonized EN covering essential requirements under article 3.2 of R&TTE Directive	12/2000
EN 300 135-2	Electromagnetic compatibility and Radio spectrum Matters (ERM);Angle-modulated Citizens Band radio equipment (CEPT PR 27 Radio Equipment);Part 2: Harmonized EN covering essential requirements under article 3.2 of R&TTE Directive	08/2000
EN 60950	Safety of Information Technology Equipment	2000

**The equipment is also in conformity to following national laws:**

Germany BAPT 222 ZV 104  
Greece: T/R 20-02  
Ireland: S.I. No 436 of 1998. WIRELESS TELEGRAPHY ACT, 1926 (SECTION3) (EXEMPTION OF CITIZENS' BAND (CB) RADIOS) ORDER, 1998  
Italy: D.M. 15-07-77 - D.M. 02-04-85  
Spain: Artículo 57 de la Ley 11/1998 de 24 de Abril  
United Kingdom: UK-RA-MPT 1382/MPT1320; UK-R&TTE -S.I.L. 2000:730

Supplementary information relevant the conformity assessment result:

The tested sample fulfils the requirements specified above, on the basis of the test results and their evaluation, as show in the following Test reports enclosed in the technical construction file. The product herewith complies with the requirements of EC Directive 99/5/EEC 89/336/EEC 92/31/EEC 93/68/EEC 73/23/EEC 93/97/EEC. Reference to any marking or other indication (e.g. on the product) is exhibited in attachment to present declaration.

Reggio Emilia 10/06/02

CTE International  
Quality Assurance Manager  
Peterlini Stefano



**C.T.E. International s.r.l. Via R.Sevardi 7 - 42010 Mancasale - Reggio Emilia Italy**

# INDEX

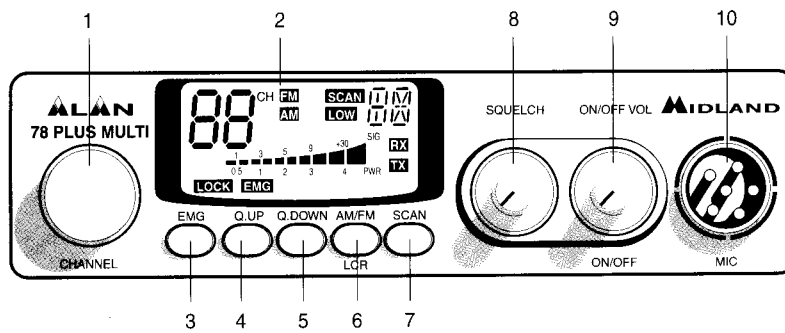
Introduction	Pag.1
Function and location of the controls	Pag. 2
Installation	Pag.4
Power supply	Pag. 4
Installing an antenna	Pag. 4
How to operate with your transceiver	Pag. 5
Frequency band selection	Pag. 5
Frequency band chart	Pag. 5
Technical specifications	Pag. 6

E  
N  
G  
L  
I  
S  
H

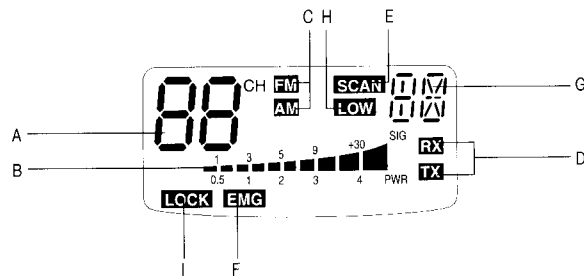
Your ALAN 78 PLUS MULTI represents the state-of-the art in high-tech engineering. Designed for the Citizen Band Mobile operation, this compact package is big in performance. It is a quality piece of electronic equipment, skillfully constructed with the finest components. The circuitry is all a solid-state, mounted on rugged printed circuit boards. It is designed for many years of reliable, trouble-free performance. Your mobile CB has a built Phase-Locked Loop synthesizer circuit.

The PLL circuit achieves a new technique for generating all the required frequencies with fewer crystals. The result is much tighter frequency control and superior reliability.

## FUNCTION AND LOCATION OF THE CONTROLS



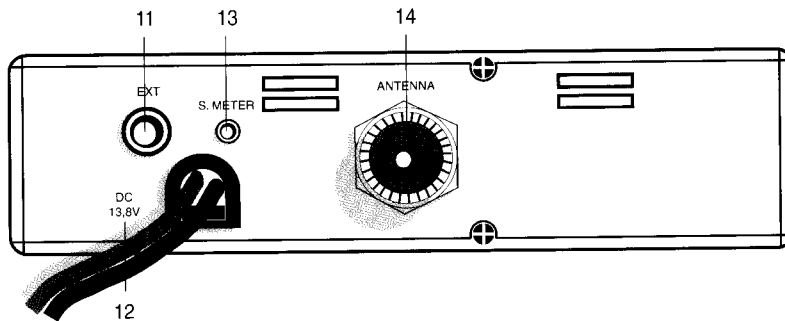
1. **Channel selector**
2. **Multifunction backlitged display.** It shows:



- A. Channel selected number
  - B. The received signal strength and the power of the transmitting signal
  - C. **AM/FM** mode
  - D. **RX/TX**: TX=transmit mode; RX=receive mode
  - E. **SCAN** mode
  - F. **EMG** mode
  - G. Frequency band selected.
  - H. **LOW**: displayed when the radio transmits in low power (this mode is possible with some frequency bands only – see the Frequency band chart).
  - I. **LOCK**: microphone (UP/DOWN buttons) lock enabled.
3. **"EMG" button**: Emergency channel. By pressing it, you will be automatically positioned on CH 9 (emergency channel). The display will show "EMG". It will not be possible to change accidentally the channel.
  4. 5. **"Q.UP/Q.DOWN" buttons**: To skip 10 channels UP (Q. UP) or 10 channels DOWN (Q.DOWN).

6. **"AM/FM"(LCR) button:** To select AM or FM mode. If you switch on the unit and push "AM/FM"(LCR) and "SCAN" at the same time, you will select the operating band, which will be visualised on the displayed.  
If you select a frequency band operating in FM mode only, this button enables the LCR function (Last Channel Recall).
7. **"SCAN" button:** With this control, you can automatically seek for a busy channel.  
Turn the Squelch clockwise until the background noise is no longer heard.  
Press the "SCAN" button: the transceiver will scan automatically all the channels until a carrier is being received. If you switch on the unit and push "SCAN" and "AM/FM"(LCR) at the same time, you will select the operating band, which will be visualised on the displayed.
8. **"Squelch" Control:** For the maximum receiver sensitivity, the control must be regulated exactly where the receiver background noise disappears.
9. **"ON/OFF Volume" Control.** In "OFF" position your transceiver is OFF. Turn this control clockwise to switch on the unit. Turn the knob clockwise a little more to set the audio level, until you get a comfortable reception.
10. **Microphone jack:** Insert the mic connector into this jack.

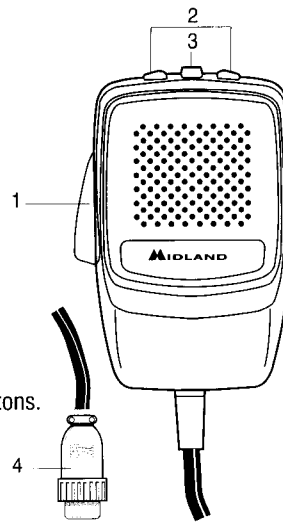
## REAR PANEL



11. **"EXT" jack:** external loudspeaker jack.(the internal loudspeaker is excluded)
12. **Power 13.8V DC:** power supply cable
13. **S.Meter jack:** it allows an external "S. Meter" connection
14. **Antenna connector** (SO239 connector type)

## MICROPHONE

1. **PTT:** transmission button
2. **UP/DOWN buttons:** manual channels selector.
3. **LOCK button:** it allows you to lock the UP/DOWN buttons.
4. **6 pin microphone connector**



## INSTALLATION

Safety and convenience are the primary consideration for mounting any piece of mobile equipment. All controls must readily available to the operator without interfering with the movements necessary for safe operation of the vehicle. Set the proper position in the car to install the transceiver using the supplied supporting bracket or eventually the slide bracket. Tighten the retaining screws. The fixing bracket must be close to metallic parts.

## POWER SUPPLY

Be sure the transceiver is OFF. In the direct-voltage power supply, is very important to observe the polarity even if the unit is protected against the accidental inversion:

Red = positive pole (+)

Black = negative pole (-)

The same colors are present on the battery and in the fuse box of the car. Correctly connect the cable terminal to the battery.

## INSTALLING AN ANTENNA

1. Place the antenna as high as possible
2. The longer the antenna, the better will be the performance
3. If possible, mount the antenna in the center of whatever surface you choose
4. Keep antenna cable away from noise sources, such as the ignition switch, gauges, etc.
5. Make sure you have a solid metal-to-metal ground connection.
6. Prevent cable damage during antenna installation.

**WARNING:** To avoid damage, never operate your CB radio without connecting a proper antenna. A periodical control of the cable and of the S.W.R. is recommended.

## HOW TO OPERATE WITH YOUR TRANSCEIVER

1. Screw the microphone plug into the microphone jack.
2. Make sure your antenna is securely connected to the antenna connector.
3. Make sure the SQUELCH control is turned fully counterclockwise.
4. Turn on the unit and adjust the volume control.
5. Select your desired channel.
6. To transmit, press the PTT button and speak in a normal tone of voice.
7. To receive, release the PTT button.

## FREQUENCY BAND SELECTION

The frequency bands must be chosen according to the country where you are going to operate.

### Procedure:

Switch off the unit.

Turn it on while pushing the "AM/FM" e "SCAN" buttons at the same time.

Rotate the "CHANNEL" knob and select the desired frequency band (see the chart here below).

To stop your selection, press the "AM/FM" button.

**NOTE<sup>1</sup>:** In the UK frequency band, you can select directly the EC band by pushing the "AM/FM" button for 2 seconds.

**NOTE<sup>2</sup>:** If you select a frequency band which operates in FM mode only, the "AM/FM" control enables the LCR function (last channel recall).

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## FREQUENCY BAND CHART

Digits displayed	Country
I	Italy 40 CH AM/FM 4Watt
I2	Italy 34 CH AM/FM 4Watt
D	Germany 80 CH FM 4Watt / 12 CH AM 1Watt
D2	Germany 40 CH FM 4Watt / 12 CH AM 1Watt
EU	Europe 40 CH FM 4Watt / 40 CH AM 1Watt
EC	CEPT 40 CH FM 4Watt
E	Spain 40 CH AM/FM 4Watt
F	France 40 CH FM 4Watt / 40 CH AM 1Watt
UK	England 40 CH FM 4 Watt English frequencies + EC 40 CH FM 4Watt CEPT frequencies

### ATTENTION!

The frequency band definitely allowed all over Europe is **40 CH FM 4W (EC)**.

# TECHNICAL SPECIFICATIONS

## GENERAL

Channels .....	<b>40 FM (see the frequency band chart)</b>
Frequency Range .....	<b>25.615 to 30.105 MHz</b>
Frequency Control .....	<b>PLL</b>
Operating Temperature Range .....	<b>-10°/+55° C</b>
DC input voltage .....	<b>13.8V DC ±15%</b>
Size .....	<b>180 (L)x35 (H)x140 (P) mm</b>
Weight .....	<b>0,850 kg</b>

## RECEIVER

Receiving system .....	<b>dual conversion superheterodyne</b>
Intermediate frequency .....	<b>I° IF: 10.695 MHz • II° IF: 455 KHz</b>
Sensitivity .....	<b>0.5µV for 20 dB SINAD in FM mode</b>
.....	<b>0.5µV for 20 dB SINAD in AM mode</b>
Audio output power @10% THD .....	<b>2.0 W @ 8 Ohm</b>
Audio distortion .....	<b>less than 8% @ 1 KHz</b>
Image rejection .....	<b>65 dB</b>
Adjacent channel rejection .....	<b>65 dB</b>
Signal/Noise ratio .....	<b>45 dB</b>
Current drain at stand/by .....	<b>250mA</b>

## TRANSMITTER

Output power .....	<b>duty cycle 10% 4W @ 13.8V DC</b>
Modulation.....	<b>AM: from 85% to 95%</b>
.....	<b>FM: 1,8 KHz ± 0,2 KHz</b>
Frequency response.....	<b>from 400 Hz to 2.5 KHz</b>
Output impedance .....	<b>RF 50 Ohm unbalanced</b>
Signal/Noise Ratio.....	<b>40 dB MIN</b>
Current drain.....	<b>1100mA (Power position with no modulation)</b>

All specifications are subject to change without notice.