



# CB-Radio AE 5090 XL

## User manual

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## Important Note

Congratulations to Your new CB-Radio AE 5090 XL. This CB-Radio corresponds to the latest European CB standards. As a unique feature, it has a country mode setting, which allows selecting the operation mode according to the country, where You intend to use the radio. Please make sure that You program the right country code **before you install and use** it the first time!

- 40 FM** 40 channels FM / 4 Watt (former "CEPT" settings with 40 Channels FM according to EN 300 135-2). This mode is free of charges and licences in nearly all European countries (except Italy, You must have a licence there for any kind of CB radio).
- 80/40** **For Germany only:** 80 channels FM / 4 Watt, 40 channels AM / 1 Watt. Receiving AM-modulated signals on channels 41 to 80 is possible, but the AM-transmitter is disabled for these channels. You need no licence to operate the radio in this mode, but in certain border regions base stations transmitting on channels 41 to 80 in FM is not allowed (or special licence should be applied for).
- 40/40** 40 channels FM / 4 Watt, 40 channels AM / 1 Watt. Latest European Standard EN 300 433-2, not yet applied in all countries. In Belgium, Italy, Spain and Switzerland residents need a licence to operate the radio, while it is already free of charges for travellers and licence free for everybody in France, Finland, Germany, Ireland, the Netherlands, Poland, Slovak Republic, and Portugal.

## Introduction

Your new Albrecht CB Radio AE 5090 XL, developed and manufactured in accordance with the latest CB regulations, offers you:

- 40 channels FM / 4 watt or
- 80 channels FM / 4 watt / 40 channels AM / 1 Watt or
- 40 channels FM / 4 Watts / 40 channels AM / 1 Watt or
- 40 channels FM / 4 Watts / 40 channels AM / 4 Watts (for Poland with 0 KHz offset and Spain with Standard frequency only)
- Channel selection knob on the radio set and UP/DOWN buttons on the microphone
- Scan modes for up and down frequencies, direct channels and Dual watch
- 5 freely programmable memory positions for stored stations

- Multifunction LCD display
- Colour choice and dimmer function (DIM/Light)
- 6-pole microphone socket, suitable for amplifier microphones, selective calling systems, Packet Radio modems/TNC's or sound card access for CB Gateway operation
- Socket for external S-meter
- Socket for external loudspeaker
- Rugged, heavy duty electret microphone
- Conventional Squelch + additional ASC (patent by GPE) noise reduction system

Please read this operating manual through carefully. This will enable You to make use of all the functions your new CB Radio has to offer as soon as possible.

## Accessories included

Your AE 5090 comes operational with the following accessories:

- mobile mount
- 2 knurled screws for the mobile mount
- 2 rubber washers for the mobile mount
- DC plug-in power cable with looped-in fuse
- spare fuse
- noise-reduced hand-held electret microphone with UP/DOWN buttons
- microphone hanger
- various screws to fasten the radio and microphone fixing devices
- User manual with circuit diagram and Radio Passport

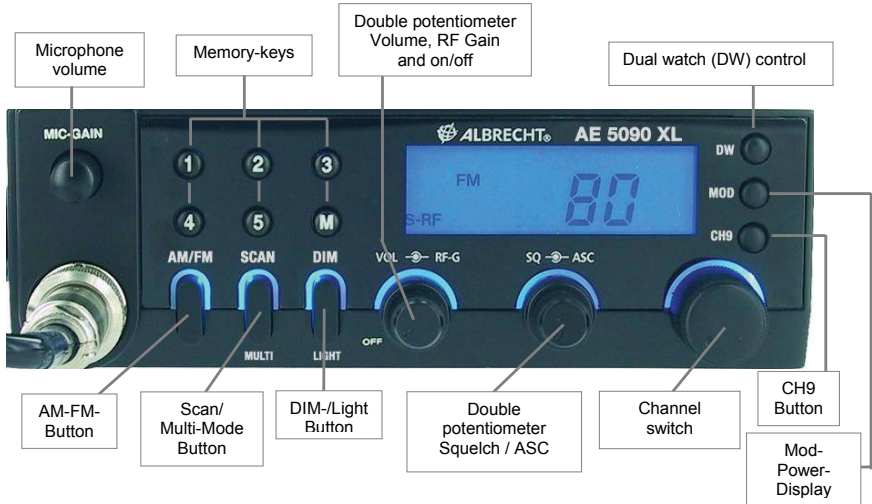
## Safety Precautions

People with pacemakers are recommended as a precaution to consult their doctor before operating the CB radio. Not all types of pacemakers are sufficiently protected from radiation from a nearby transmitter, so do not assume it is safe to start operation without checking! Please remember that You are in the immediate vicinity of a transmitting aerial, particularly when used as a mobile. If Your doctor, or the manufacturer of the pacemaker, has recommended keeping a certain safe distance from the aerial, then please follow their instructions!

Do not transmit without connecting the aerial and never touch the aerial during transmission!

Please also take road safety into account! CB Radio (even when only receiving, especially if volume is turned to maximum) can divert your attention from the road! Road safety is of course to be given priority! Therefore only use Your ALBRECHT AE 5090 XL when the traffic situation enables it to be used safely.

## Front view



## Country code setting before installation



1

Before You can use Your new CB radio the first time, You should program it to the correct country code. Press the SCAN/Multi-Mode button (1) while the device is still off and switch on your radio while keeping the button pressed. Release the button. Now the multi standard choice 01 to 05 will appear in the display. Select the mode for Your country by turning the channel switch (see the following table and our radio passport). Switch the radio off and on again after selection of the country code.

Mode	Channel	Power	Modulation
01	80 CH	4W/1W	FM/AM
02	40/40	4W/1W	FM/AM
03	40	4W	FM only
04	40/40	4W/4W	FM/AM (only Spain)
05	40/40	4W/4W	FM/AM (only Poland) with 0 kHz offset (Poland Frequencies)

### Re- Programming to another country code

This is possible at any time, even after installation and when the radio is in use. The procedure is the same like Your first setting.

## Installation of the radio

You can either operate Your ALBRECHT AE 5090 XL in the car or at home as a base station. For installation as a mobile station in the car, a mobile mount device is enclosed. Mount the set in such a way that it is not exposed to direct sunlight if possible, as this would lead to an increase in the temperature and can decrease the (set's) working life. The set should also not be installed near a heater. Mount the set in such a way that it is exposed to as little vibration as possible.

The mobile fixing device should be attached to the dashboard, the tunnel slot or to any other suitable place using the enclosed tapping screws. Do not install the set in a place where it could cause injuries in the case of an accident (be particularly careful to ensure free leg movement). Take care not to damage any underlying wires during installation!

Then insert the radio into the mobile mount. Secure the set with the large knurled screws (using the enclosed plastic washers) firmly at the required angle.

Also mount the microphone hanger using the enclosed screws in an easily accessible place. If a safe mounting of the radio is not possible in Your car or truck with the supplied mounting bracket, we recommend to use one of our ***DIN slot mounting kits*** suitable for AE 5090 series! Such mounting kits for a free DIN slots are available as optional accessory items.

In order to prevent interference to the vehicle electronics from transmission in the vehicle, please make sure to take any mounting instructions from the vehicle manufacturer for radios and antennas into account.

## Power supply

Your AE 5090 XL receives power from the 2 pin plug-in cable.

The red and black wires in the cable are for the power supply. The cable has a looped-in fuse.

However, You can choose from two methods when connecting to the power supply (red and black):

### Example 1

The Radio should be able to be switched on and off at any time using the volume / on/off switch.

Connect up the red wire to the positive pole on the vehicle battery (or elsewhere in the vehicle's electrical system with permanent plus) or to a 12 Volt external power supply unit.

## **Example 2**

The set should be automatically switched on and off with the ignition switch.

Attach the red wire to a part of the vehicle electrical system, which is interconnected to the ignition.

Connect up the black wire to the negative pole on the vehicle battery or the power unit or to a well-conductive part of the car body.

An EEPROM memory keeps the channel and country information stored even if the radio is not connected to power.

### **Note for all connecting methods:**

For EMC reasons, the cable used to connect to the power supply should be no longer than 3 metres and have sufficient diameter (at 3 meters length not below 1.5 – 2.5 mm<sup>2</sup>).

If you wish to operate Your set at home from the mains supply then please only use a stabilized power pack with at least 2 amps permanent current-carrying capacity. Under no circumstances should You use a car battery charger, as these are not stabilized and during open circuit reach such high voltage levels that Your radio set could be destroyed.

The stored country code and all memory channels are kept in an EEPROM-memory. The memory settings of the radio will be in the same condition after You plug out and plug in the DC cable.

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Never repair a blown fuse with silver paper or with aluminium foil! If the fuses keep blowing, then please give Your radio set to Your servicing dealer to be repaired or hand it in to Albrecht's service station.

The maximum allowed voltage variation for this radio is up to 15.6 volts. Never exceed this voltage under no circumstances! The transmitting stages for Your AE 5090 XL are electronically stabilized, and therefore it is impossible to increase output by means of excessive supply voltage. Such attempts may lead to serious damage to the radio set but will never increase output power!

In most truck installation a step down DC-DC converter 24 to 12 V is used. Best CB reception quality is only possible with standard linear voltage reducers. Switching step down converters may radiate interference signals due to their technology. Even if such converters have valid approval marks, the CB range is disregarded by the specifications and we cannot assure interference free reception. If such a converter should be installed in Your truck, it is recommended to place the antenna as far away as possible from DC-DC converters and engine management computers.

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## Antenna connection

Connect Your CB antenna to the ANT socket on the rear side of Your ALBRECHT AE 5090 XL. Most CB antennas must be tuned to best radiation during installation to give highest effective communication range. CB specialists do that job with a standing wave meter to check and adjust the aerial. Tune the aerial to the best standing wave ratio (SWR) on an intermediate channel e.g. using Channel 1 (26.965 MHz) in 80ch mode or Channel 20 (27,205MHz) in all other modes.

On this channel You should obtain an SWR of approx. 1.5 or less. If the SWR deteriorates on the highest (Channel 40) and lowest (Channel 41) channels up to a value of 2.5, then your aerial is still acceptable. SWR above 3 is too bad for good communication range. A bad SWR may also indicate that there is perhaps an installation error or missing ground. Problems may be caused through missing ground, especially in boats and motor homes with fiberglass body. For these cases, Albrecht offers a special connecting cable with matching box as "artificial ground" (like AKM 27, order nr. 68440) or use special antennas for groundless installation like GL 27 (order nr. 6351).

*Some antennas, like "Gamma II" are broad banded and do not need any retuning during installations.*

***Even if Your AE 5090 XL has a particularly robust transmitter high-level amplifier stage which can even withstand mismatching of SWR=3, you should still never transmit without an antenna!***

## Operation

### Before switching on

- Turn SQUELCH and ASC control left (counter clockwise) as far as possible

### Switching on and adjusting volume

The on/off switch is combined in the VOLUME control. To switch on:

- Turn VOLUME control (the inner knob) from OFF position slightly clockwise. LC display and buttons are illuminated. Then turn further until desired volume is reached.

### Display and backlight settings

You can chose between two display- and backlight colours red and blue and two dim levels for the display and the backlight.

- Press **DIM/Light** button longer than c. 1,5s to change the colour
- Press **DIM/Light** button less than c. 1,5s to change the dim level

### Selecting the operating channel

*On the radio set:*

- With the rotary channel knob You can continuously select channels. The present channel is displayed.

*On the microphone:*

- Press the  $\wedge$  or  $\vee$  button on the microphone briefly, to switch up or down a channel.



- Press the respective button longer to run up or down through the channels. The present channel is displayed.

### **Field intensity meter (S-meter)**

On the bar graph display You can see approximately how strong the receiving signal is.

The scale under the bar display (S1 to +30) helps with orientation for an input signal in the stages S1 to S9+30dB.

Please note: the field intensity meter only registers a signal when the muting control has opened.

### **RF Gain setting**

You can adjust the overall-sensitivity of Your receiver with the RF gain knob, which is combined with the volume knob (outer ring). Normally, RF gain should be in the full clockwise position. Sometime You may desire to listen only to nearby stations. Or You may receive much interference signals. In such cases You can reduce the sensitivity of Your receiver by turning the knob more counter clockwise.

**Please note:** Squelch and ASC settings may require re-adjusting in low sensitivity position.

### **Adjusting SQUELCH (muting) and ASC**

Particularly in FM, noise can be a nuisance on a free channel. To suppress as much noise as possible, Your radio is equipped not only with an ordinary muting control (**SQUELCH**) like all CB radios have, but has also a preinstalled **ASC** circuit (patented by GPE). Both circuits can be preset and adjusted independent of each other. Please be careful with the squelch circuit: it may suppress noise, but if turned too high, it can also suppress weaker signals.

There is a double potentiometer for both SQUELCH and ASC setting. The inner ring is for SQUELCH; the outer ring is for ASC.

This is how to adjust the signal strength required to switch on the loudspeaker, using the (inner) SQUELCH control knob:

The further the control knob is turned to the right, the **stronger** a signal has to be in order to be audible through the loudspeaker.

In order to adjust the set to be the most sensitive to incoming signals, switch to a free channel:

- Use the rotary switch or the microphone buttons to find a free channel, where no signal is displayed.
- Then turn the SQUELCH control carefully to the right until the noise just about disappears.

Now the loudspeaker stays off when on a free channel but it switches back on when receiving even very faint signals.

*The muting adjustment is particularly important during channel scanning. In this mode the point to which the set is adjusted*

*decides whether scanning is stopped at the signal or not. Therefore You should test the various muting settings for various signal strengths and get to know this function.*

## **ASC Noise and Interference Reduction**

While the Squelch opens and closes statically at a certain preadjusted **signal strength** value of the incoming signal, not taking into account interference signals, the ASC circuit works very smooth and dynamically. It measures the **signal to noise** ratio and if interference signals suddenly appear, ASC automatically varies the threshold point to a safer adjustment and returns to the old adjustment when interferences are disappearing again.

### **An example:**

You have adjusted the **SQUELCH** carefully to the most sensitive point while the engine of Your car was still off. Now You start the engine and switch on the windshield wiper the squelch circuit will immediately regard the interference of the engine or wiper as a signal and will open, because the squelch cannot distinguish between a wanted signal and an unwanted interference.

If You would have preset the **ASC** at switched-off engine before, the interference coming from the wiper motor would be detected and the ASC circuit would shift the threshold point so long automatically, until the interference will disappear.

The radio will remain muted, but stay on the highest sensitivity level during the whole procedure studied in this example.

That means: in most cases You only need to adjust the ASC knob to Your needs only once before starting. The setting will be maintained during travelling. The switching point is no sudden on-off point like the squelch, but a more smooth gliding effect between on and off. The best point is, where the background noise is just becoming so weak, that it does no more disturb You. A small background noise may remain.

***Please do not turn the ASC knob too much into full clockwise direction. If You intend to suppress weaker signals, which You do not like to hear, use the inner Squelch knob for this purpose and not the ASC knob. A symptom for too much closed ASC potentiometer is when weak speech still comes through, but louder speech no more.***

## **AM / FM mode switch**

In the two programming modes 40/40 and 80 channels, FM modulation is available on all channels, but AM-transmitting only on the 40 international CB channels. On all channels you can switch between AM and FM using the function button **AM/FM**. The display shows either AM or FM accordingly.

*When You switch on the set the first time it operates on FM.*

Please note that in 80 ch mode, on channels 41-80 the operation is limited on AM. To receive AM-modulated signals on channels 41 to 80 is possible, but the AM-transmitter is disabled for these frequencies. If Your radio is set to AM and You push the PTT-button, the radio will show **Er** (error).

### Special interest channels

There are certain channels, which have established for special purposes:

<b>Channel 1</b>	Call channel on FM
<b>Channel 9</b>	Call and emergency channel, also Trucker channel on AM in Germany
<b>Channel 16</b>	Water sport channel
<b>Channel 19</b>	Trucker channel on AM in France, Spain and Italy
<b>Channel 40</b>	Calling channel in Switzerland

**Channels 11, 29, 34, 39, 61, 71, 80**  
Voice Gateway Radio (Germany only)

**Channels 6, 7, 24, 25, 40, 41, 52, 53, 76, 77**  
Data transmission (Packet Radio, Germany only)

Some more recommendations have been worked out by the CB clubs. To find out which channels are suitable for special purposes, please get in touch with the respective groups or check in CB magazines.

### MEMO Modus

Using the 5 direct channel buttons You can switch at any time from the present channel (normal channel modus) to the 5 programmable stored stations (MEMO modus) and switch back again.

### Recall direct channels

- Press one of the 5 direct channel buttons briefly. The unit will switch to the pre-programmed channel. The channel number and the button number will be displayed.

The manufacturer has pre-programmed Your AE 5090 XL for some commonly used channels:

- |             |   |
|-------------|---|
| • Channel 1 | recommended call channel on FM              |
| • Channel 4 | recommended as call channel for AM          |
| • Channel 9 | international calling and emergency channel |

In Germany particularly this Channel 9 (in AM) is also used by all truck drivers. This means: a large number of stations are listening in. In case of an emergency (e.g. in case of accident etc.) there is a good chance that someone will be listening on Ch 9.

To call other stations, whom You know are listening in on channel 9, you can also use this channel. Call up the desired station on channel 9. As soon as contact has been made, agree on a free channel for Your conversation and then channel 9 will be free again for other calls.

An emergency channel can of course only work if as many stations as possible are listening in. Therefore listen in to this channel as often as possible.

- Channel 19: Trucker channel in France, Spain and Italy (in AM).
- Channel 40 Calling channel in Switzerland- please do not use for data transmission near to the Switzerland border line!

### **Programming one of the 5 direct channel buttons**

You can re-programme each of the 5 numbers of the memory positions to any desired channel (e.g. private channels or club channels):

- Choose when in normal modus the desired channel and the modulation mode AM or FM (where allowed).
- Press the **M** button briefly (ME for Memory Enable appears on the display)
- Within the next 5 seconds press the desired **direct channel button (1 to 5)**

The desired channel is now stored on the direct channel button selected. You will see both channel number (large) and direct button number (small) in the display.

### **Switching back to normal channel selection**

- Simply turn the rotary knob or press up or down on microphone.
- The display of direct button numbers disappears and the channel selection works again via microphone or rotary knob.

### **Channel scan**

Your AE 5090 XL has an automatic channel scan, which can be used for all channels and for the stored direct channel numbers.

First choose the mode of operation (normal channel modus or MEMO modus).

Adjust the muting control to the point at which the receiver should open (see also 'Adjusting squelch').

### **Start channel scan**

- Briefly press the button **SCAN**.
- **SCAN** appears on the display and the channel scan starts almost immediately by scanning all the channels down the frequencies.
- The scan is stopped at each signal worth receiving and you can listen in to the conversation.

If You leave the set alone it will re-start the scan after about 5 seconds and continue to search for channels in use.

### **Stop channel scan**

- You can stop the scan at any time by pressing the **SCAN** button a second time.
- Pressing the transmission button will also automatically stop the scan modus.

### **Change direction of scan**

As a special function of the AE 5090 XL You can also change the direction in which scanning takes place:

- Press the **v** button on microphone during the scan or turn the rotary knob slightly to the left: the scan direction will change, i.e. from higher to lower channel numbers.

### **Channel scan among direct channels**

- Switch Your set to MEMO modus by pressing one of the 5 direct channel keys.

- Press the **SCAN** button - the channel scan is now done among the 5 stored memory positions.

### Dual Watch

The transceiver can also observe two channels. This feature is useful when You like to stay on Your preferred "house" channel, but observe another channel at the same time.

- Select Your house channel with **rotary knob** or **Up/ Down**.
- Press **DW** briefly. **DW** will appear in the display.
- Select the other channel with channel knob or **Up** or **Down**.

You will now hear the selected last channel (see number in display). Your receiver switches now automatically again and again for a short moment to Your preferred house channel. If a signal should be detected there, Dual Watch will stop switching and You will hear the signal, otherwise it will go back to the other channel.

### Emergency Channel CH 9

In the beginning of the CB radio the canal 9 (AM / FM) as an international emergency call channel was fixed. Today truck drivers use the channel 9 AM mainly as a call channel. Your AE 5090 XL has got a CH 9-key. When You push this button, only on this channel transmitting and receiving is possible. When You push the key second time, all the CB-channels are usable again.

### Transmitting and correct use of microphone

With the transmission button (Push To Talk) on the side of the microphone You can switch between receiving and transmitting:

- Press **PTT** button to transmit.  
The display shows TX .
- Release **PTT** button again to switch back to receiving.

Before transmitting the first time, make sure that the MIC gain potentiometer above the mic socket is in the full clockwise position. When the transmission PTT button is pressed, You can speak from a distance of about 5-10 cm into the microphone. The modulation amplifier of Your AE 5090 XL is sensitive enough and enables You in most cases to speak with even more distance, depending on how loud your voice is. An automatic regulator ensures that your partner always hears your signal at the same volume.

It is best to test the best distance from the microphone for Yourself with the help of another station.

### Bar graph switching between POWER and MOD

During transmitting, You will normally see the bar graph of the S-meter in the display as indicator for Your transmitter output power.

- Alternatively You may now switch with the **MOD-PWR** button to Modulation display instead of Power display. The display shows **MOD** now.
- This will show Your modulation volume in the display and will help to check and adjust the microphone.
- You can toggle with the switch between **MOD** and **POWER** display

### **Data transfer**

You can connect an interface for data transfer in the microphone socket instead of the usual provided microphone also other microphones and accessories. In some countries You may also connect additional devices for the data transfer (Packet Radio) there. This kind of data transfer is permitted only on certain channels and only for amateur applications. The following Packet-Radio-Channels are valid only in Germany! (After the newest official gazette Vfg 3/2008):

Data transmission channels:  
**6, 7, 24, 25, 40, 41, 52, 53, 76 and 77**

Please, take in consideration that channel 40 is used as a calling channel in Switzerland. So please show "Ham spirit" and do not use channel 40 for data transmission near to Switzerland!

### **Gateway Radio**

So-called Gateway-Radio is like an automatic relay station, these stations are CB radios, which are provided by engaged radio CB operators and have got an access to the Internet. The speech audio signals which are received by the gateways cross the Internet to other systems (so conversation groups can grow up in a kind of voice over IP chat rooms). One gateway receives a signal and transmits it to the Internet. Other gateways receive it from the Internet and transmit it to other CB stations. This can be done in all directions.

Gateway Radio Channels in Germany are:  
**11, 29, 34, 39, 61, 71 and 80**

Do not be surprised, when You hear CB signals from very far areas on these channels. It is quiet sure, that these signals are transmitted from a gateway in your neighbourhood. You can simply participate in these CB chats by simple pressing Your PTT and talk with them. The only difference to "normal" CB stations is the fact that it may be necessary to allow a longer pause between transmit and receive.

### **MIC Gain setting**

For dynamic microphones, the full clockwise position of the MIC gain knob above the mic socket will be optimised. If You should use the supplied electret or other preamplified microphones, or if You speak with a very loud voice or in high surrounding sound environment, we recommend to readjust the potentiometer more to counter clockwise positions. Start from a medium position and check with another station!

## **External sockets**

### **External loudspeaker**

Depending on the surrounding noise, it can be advisable to hook up an external loudspeaker. Standard commercial radio loudspeakers with 4-8 ohms impedance and 2-4 W minimum output can be plugged in.

The cable can be up to 3 metres long. For car loudspeakers, make sure to use a two-pin 3.5 mm mono type plug and ensure that none of the loudspeaker connections is attached to the vehicle chassis!

### **External S-meter**

Your AE 5090 XL has an S-Meter socket on the rear side, which allows You to connect up an external S-Meter to show the relative signal strength. This gives more exact information than the bar display. Please ask Your authorized dealer about external S-meters. The S-meter should be installed near the radio set using a cable no longer than 3 metres. You need a 2.5 mm mono plug to connect it up. The polarity is positive, i.e. the positive pole of the S-meter is connected to the inner pin, and the negative pole is on the outside.

### **Microphone socket**

The 6-pole microphone socket on the front side is wired according to the well-known Albrecht specifications, which also meet the recommendations issued by the German manufacturers of CB radios.

Apart from the microphone included in the package, You can also hook up other microphones and accessories.

The microphone socket has been tested and is suitable for nearly all kind of microphones, even those with amplifiers or selective calling devices. According to the latest regulations You are also allowed to plug in modems or so-called TNC's for data transfer (Packet Radio). However, this type of data transfer is only permitted on certain channels and only for non-commercial use.

Special regulations apply to data transfer abroad. In Switzerland, for example, Packet Radio is permitted on channels 21-25, but only with a call signal granted by the authorities. In some other European countries Packet Radio is not allowed at all.

## **Service and Warranty information**

### **Troubleshooting**

Check at first the power supply and the fuse. A problem may be caused through power supply, when no light appears after switching on. If the unit works in a strange way, disconnect the power supply cable, while the radio remains switched on, wait some time (minimum 10 seconds), and then reconnect power again.

Check the microphone and antenna connector. We think You cannot do more in case of a problem. Please ask Your dealer or consult our service hints in the Internet. If You should return the radio to Your dealer for repair, do not forget to describe the problem as exactly as possible.

### **European 2 years warranty**

The distributor, dealer or retail shop where You bought the radio warrants to the original retail purchaser of this product that should this product or any part of it, under normal use and conditions, be proven defective in material or workmanship within 2 years from the date of original purchase, such defect(s) will be repaired or replaced with new or reconditioned product without charge for parts and repair laboratory. To obtain repair or replacement within the terms of this warranty, the product is to be delivered with proof of warranty coverage (e.g. a copy of Your bill of sale), specification of defect(s), to the distributor, dealer or his authorized repair centre.

Liability for communications range of this product is disclaimed. The warranty does not apply to any product or part thereof which, has suffered or been damaged through alteration, improper installation, mishandling, misuse, neglect, accident, or by removal or defacement of the factory serial number label(s). The warranty does not

apply to accessory parts or problems caused through not authorized or not recommended accessories like other than the supplied microphone, external antennas, external power supplies and overvoltage caused through external power supplies, lightning or overvoltage defects via antenna or other cables, broken or damaged acrylic glass windows and cabinet parts.

Please contact the dealer or person where You have purchased Your CB radio.

#### **Where to find service hints and service documentation**

The complete technical documentation is updated regularly. You can download the latest versions of user manuals, technical documents and conformity declaration, as well as service hints or FAQ's any time from our technical server under

**<http://www.hobbyradio.de>**

If You should have a problem, please have a look to the service hints or frequently asked questions (FAQ) before You send Your CB radio back to the service centre.

#### **Disposal and Recycling of Electronics Waste**



This CB radio has been produced according to the European **RoHS** directive and does no more contain certain banned hazardous substances. Please dispose defective and no more usable electronic items only via officially allowed collecting points.

The new European WEEE directive does no more allow to dispose items via household trash. Please contribute to the efficient recycling of used electronic items!



## Albrecht Radio Passport AE 5090 XL

*The radio may be used in European Countries according to following information, which we publish as "Radio Passport". Because the number of countries CB is still changing, the latest version of this radio passport is published on our Internet Web server and may be downloaded any time. (<http://www.hobbyradio.de> or [www.alan-germany.de/service](http://www.alan-germany.de/service))*

This CB radio complies to the latest European regulations (R&TTE directive and European harmonised standards) and has been notified in the countries according to following table: (as of February 2008):

Country	Country switch position	Licence and operating conditions
<b>Operation only with individual licence</b>		
Austria	40 FM	Austria's legislation does not accept radios with country switches, please do not use in Austria or ask Your dealer for a limited 40 CH FM version <b>AE5090FM!</b>
Belgium	40/40 and 40 FM	Residents in Belgium need licence
Italy	40/40 and 40 FM	Licence and regular charges for all CB radios, Truck drivers may use their radios in FM 40 mode during travelling in Italy.
Switzerland and Liechtenstein	40/40 and 40 FM	Licence and monthly charges for Residents
Spain	40/40 and 40 FM	Licence and regular charges for Residents
<b>Operation without licence and charges allowed</b>		
Belgium	40FM 40/40	Free for short-time travellers up to 1 month Home country licence /Circulation Card accepted for travellers
Czech Republic	80/80 mode	Free of licence and charges for all users, but AM channels are not allowed to be used
Denmark / Lithuania	40 FM	Free of licence and charges for all users
Finland	40/40 and 40 FM	Free of licence and charges for all users (travellers with Circulation Card)
France	40/40 and 40 FM	Free of licence and charges for all users
Germany	80/80, 40/40, 40 FM	Free of licence and charges for all users except in some border regions for base stations using channels 41-80 FM
Great Britain (UK)	40 FM UK and 40 FM Europe	Free of licence and charges for all users
Greece	40 FM	Free of licence and charges for all users
Hungary, Cyprus	40 FM	Free of licence and charges for all users
Iceland	40 FM and 40 AM	Free of licence and charges for all users
Ireland	40 FM and 40 AM	Free of licence and charges for all users
Luxembourg, Malta	40 FM	Free of licence and charges for all users
Netherlands	40/40 and 40 FM	Free of licence and charges for all users
Norway	40 FM	Free of licence and charges for all users
Estonia, Latvia, Poland, Slovak Republic and Portugal	40 /40 and 40 FM	Free of licence and charges for all users
Spain	40 FM and 40/40	Free of licence and charges for travellers with Circulation Card
Slovenia, Sweden	40 FM	Free of licence and charges for all users
Switzerland and Liechtenstein	40 FM and 40/40	Free of licence and charges for travellers with Circulation Card
United Kingdom UK	40 FM	Free of licence and charges for travellers

**Important Note:** Please respect the licence conditions in the above listed countries and do not use the radio without licence, where necessary. For travelling with Your radio, we recommend to provide a copy of Your home country licence document and this Radio Passport together with the radio. The above list is based on public available information, while country specific requirements may change without notice during the harmonisation process in Europe, we recommend to ask local authorities before travelling.

## Declaration of Conformity / Konformitätserklärung



We hereby declare that our product: / Wir erklären hiermit, dass unser Produkt

### **CB-Radio Albrecht AE 5090 XL**

satisfies all technical regulations applicable to the product within the scope of EU Council Directives, European Standards and national frequency applications:/ alle technischen Anforderungen im Geltungsbereich der EU Richtlinien, europäischer Normen und nationaler Frequenzanwendungen einhält:

**73/23/EEC, 89/336/EEC / 2004/108/EG and 99/5/EC**

**EN 300 135 - 2 V 1.1.1/ EN 300 433- 2 V1.1.2**

**EN 301 489- 01 V.1.6.1, EN 301 489-13 V1.2.1, EN 60 950-1 :2006**

All essential radio test suites have been carried out. /

Alle für das Produkt vorgeschriebenen Funktestreihen wurden durchgeführt.

This declaration is issued under our sole responsibility. Basing on not harmonized frequency applications, the CB radio may be used only in listed countries according to selected channel programming. An **individual license** for operating this radios in AM+FM on 40/40 channels in **B, CH, FL, E, and I** is requested by residents of these countries.

In **D** (where 80/12, 80/40, 40/12 or 40 / 40 FM/AM channels are allowed, **CZ** (80 FM), **EST, F, FIN, IRL, IS, LV, NL, P, PL, SK** the CB operation on 40 / 40 channels in AM + FM is **free of license** and free of charges. If the radio is programmed to **40 FM** only, it may be used **without license** and free of charge in **CY, CZ, D, DK, EST, F, FIN, GB, GR, H, IRL, IRL, IS, L, LV, M, N, NL, P, PL, S, SK, SLO** except Austria, where radios with country switches are generally not allowed. Residents of Belgium, Italy, Spain, Switzerland /Liechtenstein need a CB license in their home country, while travellers from other European countries may use 40 CH FM during travelling in these countries free of licence and charges. In Belgium use of 40 channels AM is allowed for travellers under the conditions of their home country.

Diese Erklärung wird unter unserer alleinigen Verantwortung abgegeben. Die oben genannten Funkgeräte dürfen wegen der nicht harmonisierten Frequenzanwendungen in AM+FM in den Ländern **B, CH, FL, E, und I** von Bewohnern nur mit gültiger **CB-Funkgenehmigung** benutzt werden. In **D** (max. 80 FM / 40 AM Kanäle), **CZ** (80 FM), **EST, F, FIN, IRL, IS, LV, NL, P, PL, SK** (40 / 40 Kanäle) ist der **CB-Funk anmelde- und gebührenfrei**. Dabei ist in Deutschland mit der Programmierung 80 FM der **ortsfeste** Sendebetrieb auf den Kanälen 41-80 in bestimmten Regionen entlang der Grenzen (außer zu CZ) nicht oder nur mit Sondergenehmigung gestattet.

Mit der Programmierung **40 FM** können die Geräte in **CY, CZ, D, DK, EST, F, FIN, GB, GR, H, IRL, IRL, IS, L, LV, M, N, NL, P, PL, S, SK, SLO** (außer Österreich, dort sind Funkgeräte mit Länderumschaltung generell nicht erlaubt, anmelde- und gebührenfrei benutzt werden. Bewohner von Belgien, Großbritannien, Italien, Spanien und der Schweiz /Liechtenstein benötigen in Ihrem Heimatland eine Genehmigung (CB Lizenz). Die vorübergehende Benutzung von 40 Kanälen FM durch Reisende aus anderen europäischen Ländern ist in diesen Ländern jedoch auch anmelde- und gebührenfrei erlaubt. 40 AM ist in Belgien für Reisende erlaubt, wenn die Heimatbestimmungen dies gestatten (z.B. für Reisende aus Deutschland)

**ALAN Electronics GmbH declara, bajo su responsabilidad, que este aparato cumple con lo dispuesto en la Directiva 99/05/CE, del Parlamento Europeo y del Consejo de 9 de marzo de 1999, transpuesta a la legislación española mediante el Real Decreto 1890/2000, de 20 de noviembre"**

**Point of contact/Ansprechpartner:** Dipl.-Phys. Wolfgang Schnorrenberg

**Place and date of issue:**

Lütjensee, 12. 02. 2008

**(Signature)**

Dipl.-Phys. Wolfgang Schnorrenberg  
ALAN Electronics GmbH

This Declaration of Conformity and the Albrecht Radio Passport will be re-issued when necessary and can be downloaded any time from [www.hobbyradio.de](http://www.hobbyradio.de)

## Technical Details

### Microphone socket wiring

Pin 1	Low frequency microphone
Pin 2	PTT-RX (on ground for reception)
Pin 3	PTT-TX (on ground for transmitting)
Pin 4	up/down
Pin 5	Ground
Pin 6	12 volt for pre-amplifier etc.

### Packet Radio / Sound Card

Pin 1	Audio input transmitter
Pin 2	Audio output reception
Pin 3	PTT
Pin 5	Ground

### Transmitter

Transmitting power	max. 4 Watt FM Max. 1 Watt AM / 4 Watt AM
Modulation sensitivity	1.5 mV at 600 Ohms
Harmonic and spurious radiations	-90 dBc = 4 nW
Max. frequency deviation	less than 2.0 kHz
AM modulation degree	less than 90%

### Receiver

Sensitivity (FM) (SINAD)	better + 3db $\mu$ V EMK for 20 dB
Sensitivity (AM) (SINAD)	better + 3db $\mu$ V EMK for 12 dB
Adjacent channel selection	better 66 dB $\mu$ V EMK
Intermodulation rejection	better 60 dB $\mu$ V EMK
Image rejection	better 48 dB (EN 300 433-1)
Audio output power	2 Watt to 8 Ohm load

## Service contacts

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Service-Download:	<a href="http://www.hobbyradio.de">www.hobbyradio.de</a>

## Short manual AE 5090 XL – Fast to the point

The most important functions at a glance

Programming of the corresponding country settings (before first use)

**Programming:** hold **SCAN/Multi-mode** key and turn on the radio. Select the desired mode for Your country by turning the channel switch (see the following table and radio passport). Switch off and on radio for storing.

Multi Mode	Channel	Power	Modulation
01	80 CH	4W/1W	FM/AM
02	40/40	4W/1W	FM/AM
03	40	4W	FM only
04	40/40	4W/4W	FM/AM (only Spain)
05	40/40	4W/4W	FM/AM (only Poland)

**VOL/ OFF** turn radio on, set desired volume (counter clockwise = off-position)

**DIM/Light** Colour: push longer than 1,5s, Dim level: push less than 1 second

**SQ - ASC** Squelch SQ- and ASC-knob (first settings: completely counter clockwise)

**Mic-Gain** first setting: middle to completely clockwise

**RF-G** completely clockwise for the best receiving results

**AM/FM** chose the desired modulation , no function in FM only

**Channel-Switch** select the desired channel (rotary switch or UP/ DOWN at microphone)

**ASC** turn clockwise till the noise will just start to mute

**SQ** turn clockwise till the lower Signals will disappears

**Microphone** hold the PTT-button on the side until you finished transmitting (distance 5cm to 10cm)

**Memory 1- 5** select Memory: 1 - 5

**M** Change memory: select channel, press **M** (Display shows ME) and afterwards press **1 - 5**