



**CB RADIO
AE 4200 ASQ**

**AM
4 Watt
New
EU-Standard**



OPERATING MANUAL

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Important Note

Your Albrecht AE 4200 ASQ corresponds to the latest European CB standards. As a unique feature, our standard version has a software country switching which allows selecting the operation mode according to the country, where you intend to use the radio. Please make sure that you use only the country switching which is allowed in your country and according to your CB licence! **You may risk a penalty if authority members will find that you are operating in not allowed modes!**

During first use of this radio, the radio will start in this factory preselected 40 FM / 40 AM mode:

- 40/40** 40 channels FM / 4 Watt, 40 channels AM 4 W according to latest European Standard EN 300 433-2, but not yet applied in all countries. Only In Italy and Spain you still need a licence to operate the radio, while it is already free of charges and licence in Belgium, Bulgaria, Croatia, Cyprus, Germany, Estonia, Finland, France, Greece, Ireland, Hungary, Latvia, Lithuania, Luxembourg, Monaco, the Netherlands, Poland, Portugal, Romania, Slovenia, Switzerland (starting with 2013) and Liechtenstein. The radio comes ready for the new AM output power of 4 Watts. Depending on the date when your country will adopt the new European power levels, it may happen that AM is not yet allowed to use officially in certain countries.
- 80/40** 80 channels FM / 4 Watt, 40 channels AM / 4 W for Germany, also for CZ (only FM) and SK (only FM 1-40 & 70-80) allowed to use. You need no more any licence to operate the radio in this mode, but in certain German border regions transmitting from base stations on channels 41 to 80 in FM is not allowed (or only with a special license).
- 40 FM** 40 channels FM / 4 Watt (former "CEPT" settings with 40 Channels FM according to EN 300 135-2). This mode can be used in all European countries (please see our latest issue of the "Radio Passport").

Please note that some countries may not allow the country switching to German 80 channels. In October 2012, only Austria still published restrictions to use radios with country switches within Austria.

Introduction

Your new Albrecht CB Radio AE 4200 ASQ, 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 / 4 Watt or
- 40 channels FM / 4 Watts / 40 channels AM /4 Watt
- Channel selection UP/ Down buttons on the radio
- Red LED channel number display
- Control LED's for switch position (FM) and TX
- 4-pin standard microphone socket, suitable also for amplifier microphones or Packet Radio modems/TNC's
- Socket for external loudspeaker
- Switch to select between standard 8Squelch) and automatic Squelch ASQ

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 4200 ASQ comes operational with the following accessories:

- mobile mount
- 2 knurled screws for the mobile mount
- 2 rubber washers for the mobile mount
- fixed connected DC power cable with looped-in fuse
- spare fuse
- Electret hand-held microphone with pre-amplifier and PTT
- Microphone hanger
- various screws to fasten the radio and microphone fixing devices
- User manual with Radio Passport

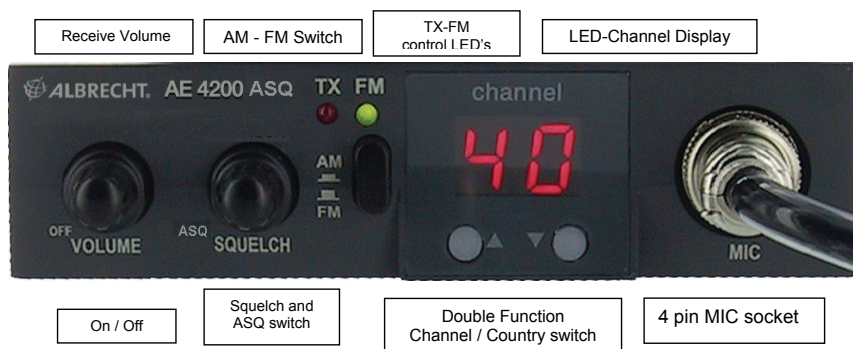
Safety Precautions

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!

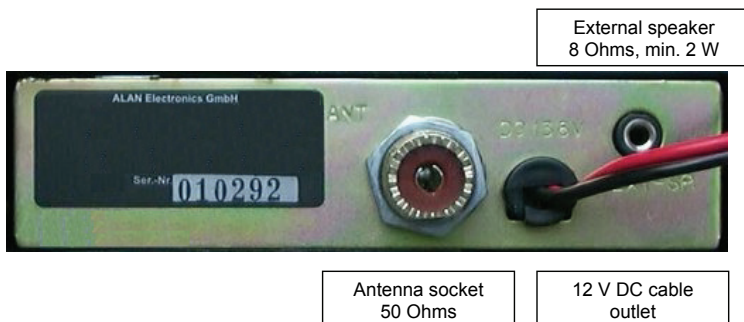
Do not transmit without connecting the aerial and never touch the aerial during transmission!

Please also take road safety into account! CB Radio (even when only receiving, particularly when volume is turned up) can divert your attention from the road! Road safety is of course to be given priority! Therefore only use your AE 4200 R when the traffic situation enables it to be used safely.

Front view



Rear view



Installation of the radio

You can either operate your ALBRECHT AE 4200 ASQ 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 careful to ensure free leg movement). Take care not to damage any underlying wires during installation!

Then insert the radio into the mobile mount device. 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.

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.

Please note: European directives allow the car manufacturers to decide, whether or not private radio transceivers may be operated in cars, this is also valid for antenna installations. Please install your mobile CB station only in accordance to car manufacturer's installation instructions.

Power supply

Your AE 4200 ASQ receives power from the 2 pin fixed power cable.

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

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 to the positive pole on the vehicle battery (or elsewhere in the vehicle's electrical system with permanent plus) or to a 12 volt power unit.

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.

Example 2

The set should be automatically switched on and off with the ignition switch of the car. The radio shall always start in last used mode on the last used channel.

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

Connect the black wire to the negative pole on the battery or the vehicle body.

Note for all connecting methods:

For EMC reasons, the cable used to connect to the power supply should be no longer than 3 metres.

If you wish to operate your set at home from the mains supply then please only use a stabilised 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 stabilised and during open circuit reach such high voltage levels that your radio set could be destroyed.

If in base station use it is important to you that the stored stations are kept even after switching off and on again, then please do not switch the external power supply power unit off when you switch your set off for a short time. Only use the on/off switch on the transceiver itself.

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 4200 ASQ are electronically stabilised, 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!

Antenna connection

Connect your CB antenna to the ANT socket on the rear side of your ALBRECHT AE 4200 ASQ. 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 antenna to the best standing wave ratio (SWR) on an intermediate channel e.g. using Channel 1 in 80/12 mode (26.965 MHz) or Channel 20 in all other modes.

On this channel you should obtain a 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 fiber glass body. For these cases, Albrecht offers a special "ground less" antennas like GL 27.

Some antennas, like "Gamma II" (order No. 6725) are broadbanded and do not need any retuning during installations.

Even if your AE 4200 ASQ has a particularly robust transmitter high-level stage which can even withstand mismatching of SWR=3, you should still never transmit without an antenna!

Operation

Before switching on

- Turn SQUELCH control left as far as possible, without turning "over the click"

Switching on and adjusting volume

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

- Turn VOLUME control from OFF position slightly right. LED display will be illuminated. Then turn further until desired volume is reached.

Selecting the correct country code

Starting with 40 / 40 channel system

When you switch on your new CB radio for the first time, it will start with the latest European channel setting with 40 channels FM and 40 channels in AM.

Note: this system is allowed in **B, BG, CH, CY, CZ, D, E, EST, F, FIN, FL, GR, H, HR, I, IRL, L, LT, LV, MC, N, NL, P, PL, RO, S, SK and SLO**

40/40 This position can be used in those countries, where already all 40 international channels are allowed to be used in AM and FM. AM was traditionally used by CB from the beginning in the early 60's in USA, and it is still the preferred mode of all truck drivers in the world. Please use this mode only in countries according to the list in the Radio Passport, and please apply for an individual licence where requested.

If necessary You can return to this system any time later by:

- Switch the radio **off**
- Press **Down** button and keep button pressed
- Switch **on** the radio at the same time
- **Release** the button

Switching to 80/40 channel system (Germany and CZ/SK only)

80/40 This position is only allowed to be used in Germany and CZ / SK, because no other European countries provide the German 80 FM channels. (Note: In Czech Republic you can use all German channels, while in Slovak Republic use only AM (1-40) and FM on CH 1-40 & 70-80). No individual licence is necessary, but restrictions are still in force in certain German border regions, where transmitting on channels 41 – 80 is not allowed or only with a special licence.

- Switch the radio **off**
- Press **Up** button and keep button pressed
- Switch **on** the radio at the same time
- **Release** the button

Switching to 40 Channels FM

Europe-wide used 40 Channels FM mode. If you are not sure what is allowed in your country please ask local authorities before using the radio. In case of any doubt, use this country switching as your setting:

40 FM This is former “CEPT” mode, the programming which is allowed in most countries. Here the radio works on the international 40 Channels in FM mode. The Mode switch AM – FM on the front side allows only receiving in AM and FM, but only transmitting in FM mode (only a few countries like Island, Denmark and Malta allow use of FM only.) In Austria, the radio is not allowed to have any country switching, so authorized distributors must disable the switch before the radio can be used in Austria.

To switch to this system

- Switch **off** the radio
- Press **Up** and **Down** simultaneously and keep pressed
- Switch **on** the radio again
- Release buttons

Please read carefully the “Radio Passport” in the last chapter of this manual before reprogramming the unit. It is useful to take the Radio Passport with you when travelling abroad and using 40/40 or 80/40 mode.

Note: This radio utilises a CPU system especially developed for this radio. Other (illegal) channel systems are not stored in the CPU system and are not available at all.

Selecting the operating channel

- with Up or Down buttons on the radio You can continuously select channels. The present channel is displayed.
- Press the respective button longer to run up or down through the channels. The present channel is displayed.

Adjusting squelch (muting)

Particularly in FM, noise can be a nuisance on a free channel. With the muting control (SQUELCH) you can suppress this noise - but also signals which are too weak to be received properly.

This is how to adjust the signal strength required to switch on the loudspeaker, using the standard 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 **up / down** switches 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 weak signals.

ASQ Auto squelch mode

*The radio provides in the **full counter clockwise position** (you will hear a "click") a kind of automatic squelch, which is suitable in most receiving situations, where you want to hear all signals, incl. distant stations, which can be received. If you should not like to hear distant stations, you should better use the standard squelch where you can suppress any reception below a certain adjustable signal level.*

AM / FM mode switch

In the German channel system 80/40 you can now *receive* on all 80 channels in FM and AM, but You can *transmit* on all these channels only in FM.

In AM the only channels 1-40 are enabled for transmitting. If You should try to transmit in AM on other channels, you will see an error (**Er**) message in the display. Transmission on such channels is technically deactivated. A green control LED is on during FM mode.

Special interest channels

There are a few channels which have been established for certain purposes:

- | | |
|------------------|--|
| Channel 1 | Call channel in FM (Germany only) |
| Channel 9 | Call and emergency channel , in Germany particularly this channel is also used by all truck drivers in AM.
This means: a large number of stations are listening in. If the worst comes to the worst (e.g. in case of accident etc.) there is a good chance that someone will be listening. |

To call other stations, who 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** on AM in France, Spain and Italy
- Channel 24/25** Data transfer (Packet Radio, Germany only)
- Channel 40** **Calling channel in Switzerland**
- Channel 40/41** **CB long distance repeaters** (for example in CZ in high mountain regions)

Some recommendations have been worked out by the CB clubs for the new channels 41 to 80 in Germany. To find out which channels are suitable for special purposes, please get in touch with the respective groups or check in CB magazines.

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.
Your radio is equipped with a TX control LED, this will light when You are transmitting on an allowed channel in an allowed mode.
- Release PTT button again to switch back to receiving.

When the transmission PTT button is depressed, you can speak from a distance of about 5-10 cm into the microphone. After pressing the PTT button, please wait about ½ second before you start speaking. Please remember- that different from GSM phones- You share one channel common for transmit and receive, and your transmitter and the receiver(s) on the distant side need a certain time to switch on. The modulation amplifier of your AE 4200 ASQ 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.

External sockets

External loudspeaker

Depending on the surrounding noise, it can be advisable to hook up an external loudspeaker. Usual 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 jack plug and ensure that none of the loudspeaker connections is attached to the vehicle chassis.

Microphone socket

Your AE 4200 ASQ has an 4 pin standard microphone socket on the front side.

The wiring corresponds to international standards used by many manufacturers since many years.

Apart from the hand microphone included in the package, you can also hook up other microphones, with or without preamplifier, or with or without data transmitting 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, other type of microphones must be specially soldered to the 4 pin connector.

Please note that data transfer is only permitted on certain channels and only for non-commercial use and not in all countries.

Service and Warranty information

Troubleshooting

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

Please never return any radio to our service partner without consulting the technical Hotline via phone or e-mail.

Many small problems can be cleared already via phone or mail, and in case that a service repair should really be necessary, the Hotline will be able to tell you the nearest and most fast service partner for your radio!

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 labour. 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 authorised repair centre.

Liability for communications range of this product is disclaimed. The warranty does not apply to any product or part there of 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 authorised or not recommended accessories like other than the supplied microphone, external antennas, external power supplies and over voltage caused through external power supplies, lightning or over voltage 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.

If you have bought your radio in Germany, you can also contact our service partner directly in case where you need any support.

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 server under

<http://www.service.alan-electronics.de>

If you should have a problem, please have a look to the service hints or frequently asked questions (FAQ) before you send the CB radio back to the service centre. Please note that the acceptance of AM+FM and 4 W in the different European countries has just started and may be subject to unpredictable changes. Our homepage will provide the latest information about using the radio.

Technical Details

Microphone socket wiring

Pin 1	Mic audio
Pin 2	Ground
Pin 3	PTT-RX (on ground for receiving)
Pin 4	PTT-TX (on ground for transmit)

For Packet Radio & others

Pin 1	Transmit audio
Pin 2	Ground
Pin 3	Receive audio
Pin 4	PTT key

Transmitter

Transmitting power	4 Watt FM 4 Watt AM /CEPT-ECC DEC (11)03
Modulation sensitivity	appr. 10 mV at >1 kOhm
Harmonic and spurious radiations	less than -90 dBc = 4 nW
Max. frequency deviation	less than 2.0 kHz
AM modulation degree	up to 90% under EN 300 433-2 specifications and limits

Receiver

Sensitivity (FM) (SINAD)	better + 3db μ V EMK for 20 dB
Sensitivity (AM) (SINAD)	better + 3db μ V EMK for 12 dB
Adjacent channel selection	better 60 dB (EN 300 135-1)
Image rejection	better 48 dB (EN 300 433-1)
Audio output power	ca. 2 Watt to 8 Ohm load

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www.alan-electronics.de, www.albrecht-online.de, www.service.alan-electronics.de

Technical Hotline (Germany only) **(+49) (0) 1805 012204** (14 cents / minute, mobile networks may charge up to 42 cents/minute)

e-mail: alan-service@ps-tech.de

In other countries please contact your local distributor for any support matters.

Albrecht Radio Passport AE 4200 R

The radio may be used as mobile CB radio in European Countries according to following information, which we publish as "Radio Passport". Because the number of countries which have implemented the new CB standards with 4 Watt AM and 4 Watt FM is changing within the next time, the latest version of this radio passport is published on our Internet Web server and may be downloaded any time. (<http://www.service.alan-electronics.de>) The version printed in this user manual has been issued in October 2012.

Country	Country switch	Licence and operating conditions
Operation only with individual licence or other restrictions		
Austria	40 FM	Austria's legislation does not accept radios with country switches, please do not use in Austria or ask your distributor for a version without country switch.
Italy	40FM and 40 AM (4 Watt)	Licence and regular charges for all CB radios, Foreign travellers may use their radios free of charges & license during travelling in Italy.
Switzerland	40 FM and 40 AM (4 Watt)	Licence and monthly charges for Residents of Switzerland until end of 2012, FL free. Free for travellers.
Spain	40 FM and 40 AM (4 Watt)	Licence and regular charges for Residents, free for travellers.
Operation without licence and charges allowed		
Belgium	40FM and 40 AM (4 Watt)	Free of licence and charges for all users
Czech Republic	80 FM (4W) and 40 AM (4W)	Free of licence and charges for all users
Denmark	40 FM	Free of licence and charges for all users
France, Monaco	40 FM and 40 AM (4 W)	Free of licence and charges for all users
Germany	80 FM (4W) and 40 AM (4W)	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 (AM 4 W in preparation)	Free of licence and charges for all users
Greece	40 FM and 40 AM 4 W	Free of licence and charges for all users
Hungary, Croatia, Estonia, Latvia, Luxembourg, Slovenia, Poland, Portugal	40 FM and 40 AM 4 W	Free of licence and charges for all users
Iceland	40 FM	Free of licence and charges for all users
Malta	40 FM	Free of licence and charges for all users
Norway	40 FM and 40 AM, 4 W	Free of licence and charges for all users
Bulgaria, Finland, Ireland, Netherlands, Lithuania, Romania and Sweden	40 FM and 40 AM 4 Watt ECC / CEPT standard is not yet applied	Free of licence and charges for all users, Please ask before using AM
Spain	40 FM and 40 AM (4 Watt)	Free of licence and charges for travellers
Slovak Republic	80/40 mode, AM 4 Watt	Free of licence and charges for all users, but in FM only use of CH 1-40 and 70-80 allowed
Switzerland and Liechtenstein	40 FM and 40 AM (4 Watt)	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 this Radio passport. The above list is based on public available information, while country specific requirements (especially the 4 W AM implementation) may change without notice during the harmonisation process in Europe, we recommend to ask local authorities before travelling, or use only FM when further information is not available.

Declaration of Conformity - Konformitätserklärung



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

CB-Radio Albrecht AE 4200 ASQ

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, 2004/108/EG and 99/5/EC
EN 300 433-2 V.1.3.1**

EN 301 489-1 V.1.8.1, EN 301 489-13 V.1.2.1, EN 60 950-1: 2006+Amendments 2010/11

All essential radio test suites have been carried out. /
Alle für das Produkt vorgeschriebenen Funktestreihen wurden durchgeführt.

**Alan Electronics GmbH
Daimlerstr. 1 k
D- 63303 Dreieich**

This declaration is issued under our sole responsibility. Basing on not yet fully harmonised frequency applications, the CB radio may be used only in listed countries according to selected channel programming and according to the still existing national restrictions for AM + FM, if such should still apply.

Diese Erklärung wird unter unserer alleinigen Verantwortung abgegeben. Dieses Funkgerät darf wegen der noch nicht überall harmonisierten Frequenzanwendungen in AM + FM in einigen Ländern nur eingeschränkt oder gar nicht betrieben werden, entsprechend den noch geltenden nationalen Regelungen.

Alan Electronics GmbH declare, 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, 12.10. 2012

(Signature)

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