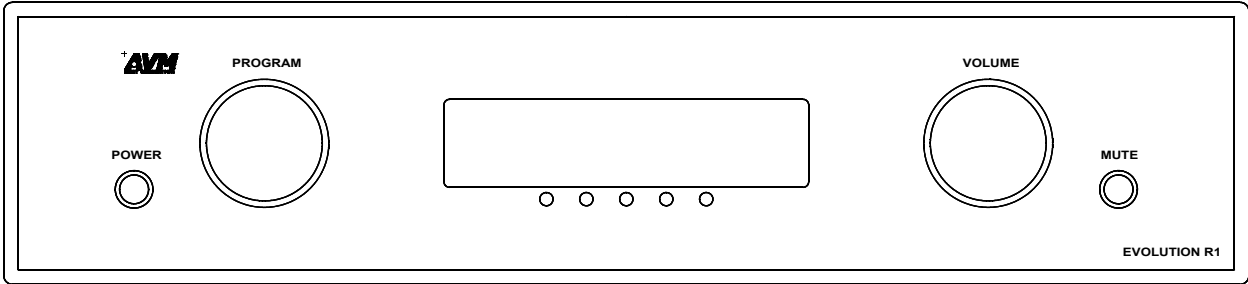
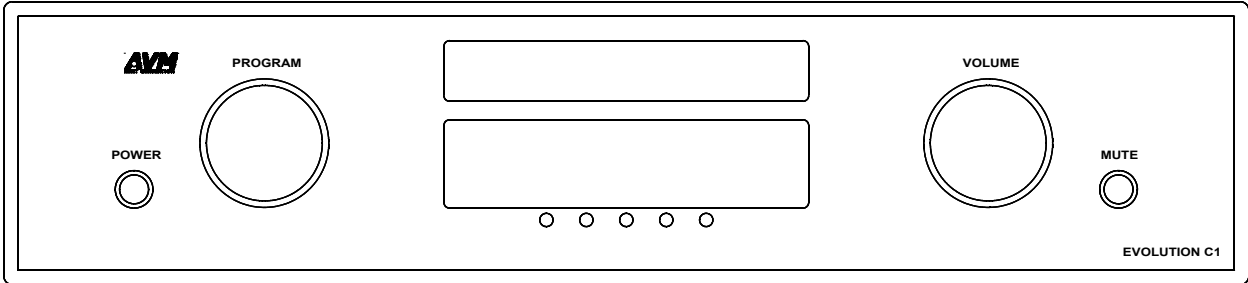


operating instructions

EVOLUTION C1 / R1



Dear customer,

thank You for purchasing this AVM product. You own now a versatile, excellent sounding hifi component. Before enjoying music, please read this manual carefully. After that You will know how to use Your new AVM component in the optimal way.

Sincerely Yours

Your AVM-Team

CAUTION (C1 only): This unit contains a class 1 laser diode. Do not open. Invisible laser radiation can damage Your eyes.

Laser diode	Type	:	Ga-Al-As
	Wavelength	:	755 - 815 nm (@ 25 °C)
	Output power	:	0,7 mW max.

CLASS 1 LASER PRODUCT
LASER KLASSE 1

NOTE: Use only high quality cables for connection between the unit and the other components of Your hifi set. We recommend cable lengths under 50 cm to avoid interference which can affect the reception of radio and TV tuners.

Declaration of conformity (for EC only)

We herewith confirm, that the unit to which this manual belongs fulfills the EC rules necessary to obtain the sign



the necessary measurements were taken with positive results.

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Website: www.avm-audio.com, E-mail: info@avm-audio.com

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1. Basic information about the C1 / R1

1.1 Mechanical construction

The case is made of magnetic shielding steel and aluminum. The audio-connectors are all gold plated to minimize electrical losses and provide long lasting perfect contacts.

1.2 Power supply

A switch mode power supply delivers clean, hum-free electrical energy for the digital and analogue sections of D/A-converter and the preamplifier. All voltages are additionally buffered by large capacitors directly in the circuitry where they are needed.

The power amplifier has a separate power supply with a powerful toroidal transformer. This guarantees that independently of the demanded output power the power amplifier has no influence on the preamp or the D/A-converter.

1.3 Preamplifier section

The input circuits act extremely fast and use special semiconductors for exact and nearly noise free sound reproduction. SMD technique allows a very compact circuit layout and thus extremely short signal paths.

The volume control is done by highly precise integrated circuits. They allow setting in 0,5 dB steps and their channel balance is better than 0,05 dB. All this provides an absolutely precise, musical sound reproduction from lowest to highest listening levels.

If You wish to correct the frequency response at low listening levels or to have more or less treble or bass, You can activate the sound processor and set the frequency response. For linear reproduction the whole circuitry is removed out of the signal path by relays and has absolutely no influence.

1.4 Power amplifier

The power amplifier is built on a pc-board with double thick copper coating. The short signal paths allow high damping factors in order to achieve optimal speed and speaker control.

Protection circuitry against overheat and short circuit is on board to protect Your equipment in an optimal way.

The power amplifier of the EVOLUTION C1/ R1 uses two output stages and two power supplies. One output stage is working from a low voltage supply when only low power is demanded. During this time the other output stage is also working, but doesn't deliver current to the speaker (and therefore produces no heat). When the output power increases (for example when a drum is beaten), the second output stage with it's high voltage supply is activated without delay and delivers high peak power to the speakers. In a music signal peak power is only demanded for a short period of time. Thus the power amplifier of the EVOLUTION C1/ R1 works in a very efficient way and produces no unnecessary heat.

Of much more importance is the advantage in musical reproduction: the output stage for small signals acts extremely quick and nearly noise free. So it can unveil the finest details of the music signal. The much more powerful second output stage delivers the current only for dynamic peaks. These are very important for realistic reproduction of music, but make only a very small part of the music signal. So this output stage stays cool and therefore reproduces a fresh and clear dynamic music at any time without ever sounding stressed.

1.5 CD player / D/A- converter

The EVOLUTION C1 is equipped with upsampling circuitry and highly precise a/d converters. The theory of function will be described in the following text. If You are not interested in technical details, skip these chapters and simply listen to the music coming from the C1. You will discover Your CD collection anew! And that is what we want to achieve. Because application of new technologies is not just a gimmick but offers audible and measurable advantages to the listener.

1.5.1 Quantization noise

The quantity of information on a CD is defined by the audio format of 44,1 kHz sampling rate and 16 bits of resolution. Additional information (i.e. higher resolution or bandwidth) cannot be created by any electronic circuitry playing back such a CD. It is a fact that conventional d-/a converter systems do not fully reproduce the given information. This has several reasons: Converting a digital signal to an analogue signal produces analogue noise. This is because the digital (quantized) values which represent the signal are discrete with a very fine – but nevertheless limited - resolution. Therefore exist slight deviations in respect to the analogue original signal which was continuous (means infinite resolution). These deviations are random and cause an additional noise to the original signal when it is converted from the digital domain to the analogue domain. This kind of noise is called quantization noise.

The characteristic of this noise is that it has an energy which depends on the resolution used to quantize the original signal and which is continuously spread over the whole range of the sampling frequency bandwidth. It is obvious that this noise can mask fine details of the originally recorded music.

For physical reasons it is not possible to avoid quantization noise. Also a reduction of the total noise energy is not possible because the noise has been created when the signal was recorded. An elegant solution of this problem is to increase sampling frequency when re-converting the signal from digital to analogue. The upsampling converter installed in the C1 can increase sampling frequency from 44,1 kHz up to 96 kHz.

When re-converting the upsampled signal the upsampling converter produces the same amount of noise energy as a conventional converter.

The difference is that the noise energy is spread over a much broader frequency band. So the part of noise energy which is within the audible spectrum decreases. You can imagine that like if You have a certain volume of fluid in a small glass. If You fill the fluid in a glass which has much more diameter the quantity of fluid doesn't change but height of the fluid surface will be lower than in the small glass. In the same way the increasing of sampling frequency (called upsampling) broadens the noise bandwidth and reduces the noise level. Most of the noise energy now is located in a frequency region beyond the audible range and can easily be filtered out without affecting the music signal.

1.5.2 Reduction of jitter

Jitter means slight, varying deviations in the sampling frequency of a digital signal. These deviations come from deviations in speed of the CD when it is played back (a natural effect, which can be reduced by mechanical means, but never fully eliminated). They can additionally come from electronic circuits through which the signal must pass. When such a signal is converted to analogue the samples arrive sometimes a little bit too early, sometimes a little bit too late at the DAC. This leads to modulations in the analogue signal which can affect the quality of the reproduced music. The spatial image is not precise, You cannot exactly locate the instruments, the sound is a bit roughened.

The solution for this problem is upsampling. Upsampling does not only mean multiplying of sampling frequency by a fixed factor like it is done by the oversampling technique used in former times. Upsampling technique is more similar to recording the original digital signal anew with a different sampling frequency (re-clocking). That means that the sampling frequency of the original signal and the upsampled signal are fully independent of each other. Thus if the upsampling converter has a stable jitter free clock the upsampled signal contains less jitter than the original digital signal.

The musical advantages of re-clocking are the second reason why the AVM EVOLUTION C1 is equipped with a brand-new upsampling circuitry and an additional stable oscillator circuit.

1.5.3 Filtering

If a digital signal is converted to analogue the analogue signal contains not only the original signal, but as well it's mirror image which lies in the frequency domain beyond one half of the sampling frequency. This mirror image (aliasing) can cause unwanted interference with the original signal and thus must be filtered out before passing the signal to the amplifier.

If the original sampling rate of 44,1 kHz is used the filter slope must be positioned somewhat above 20 kHz and has to be very sharp in order to let the audio signal pass and to eliminate the aliasing components. Such filters cause a large phase deviation at the end of the pass band and have often also amplitude deviations. This leads to a harsh reproduction of music and can also affect the localization of solo instruments and voices.

Upsampling to higher rates makes it possible to set the filter frequency far out of the audio signal range. For example at 96 kHz sampling rate the filter must take effect at 48 kHz. In this frequency region no music signal is present. Thus the filter can theoretically not affect musical reproduction.

1.5.4 Digital- / analogue conversion

The C1 uses highly precise 24-bit differential converters to reproduce the analogue signal out of the digital data. Two converters on the same chip are used to output balanced signals. These signals are fed into a differential amplifier. The difference between the signals is twice the audio signal (because one of the signals is inverted) and the difference of the inaccuracies of the converters. As the two converters are on the same chip, their inaccuracy is nearly the same and thus also nearly eliminated by the differential amplifier.

The second advantage of this differential technique is that the (very low) individual noise coming from the converters is reduced by 3 dB.

The result is a clearly audible advantage in dynamic of the music signal and an audibly improved reproduction of the finest details.

1.6 FM-Tuner (if installed)

The tuner of the C1/ R1 can be adapted to different reception situations. You can set bandwidth, and sensitivity values in order to achieve optimal sound quality from aerial antenna as well as from cable. With it's high sensitivity the tuner can also work with a simple indoor antenna.

The stereo decoder offers high channel separation as well as very low noise.

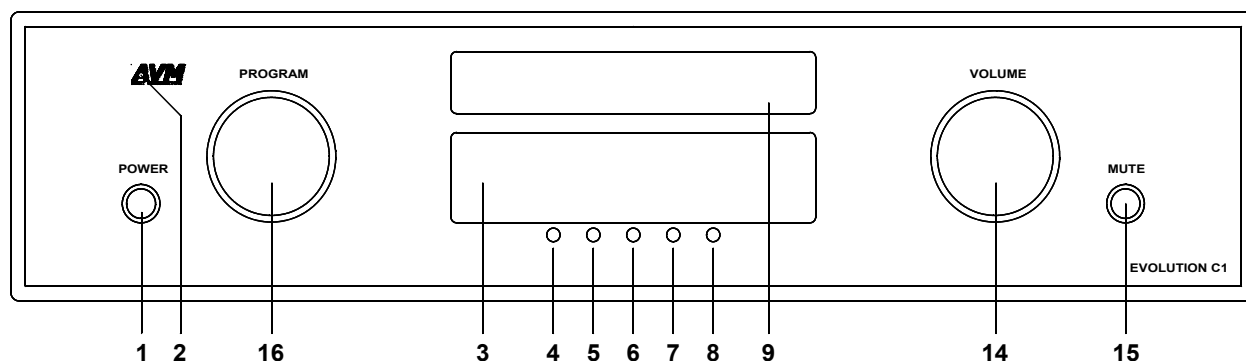
The RDS section (audio data system, not available in all countries) is processor controlled and shows You station names and texts with additional information about the program You are listening to.

The station memory allows You to store up to 50 stations. It stores not only their frequency, but also the individual setting of sensitivity, bandwidth and mode (mono/stereo).

2. EVOLUTION C1/ R1 overview

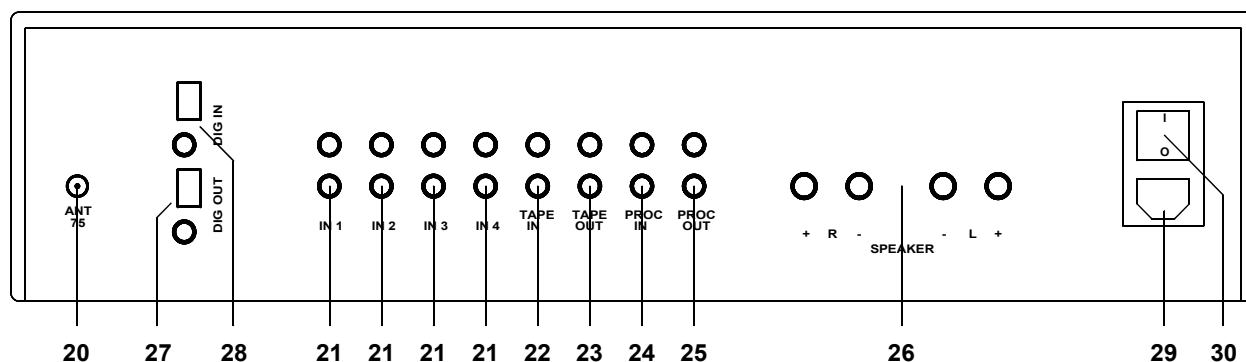
The numbers in the drawings below mark the control elements. They refer to the numbers in the text, where the operation of the unit is described.

Front panel



- | | |
|-------------------------------------|-------------------------------------|
| 1 Power button (on / off) | 8 Multifunctional button (soft key) |
| 2 Control LED | 9 CD-Loader (C1 only) |
| 3 Display | 14 Volume knob |
| 4 Multifunctional button (soft key) | 15 Mute button |
| 5 Multifunctional button (soft key) | 16 Program selector |
| 6 Multifunctional button (soft key) | |
| 7 Multifunctional button (soft key) | |

Rear panel



- | | |
|--|------------------------------|
| 20 Antenna socket
(only when tuner installed) | 25 Processor output |
| 21 Analogue inputs | 26 Speaker terminals |
| 22 Tape input | 27 Digital outputs (C1 only) |
| 23 Record output | 28 Digital inputs (C1 only) |
| 24 Processor input | 29 Mains connector |
| | 30 Mains switch |

2.1 Installation and cooling

The EVOLUTION C1/ R1 can become hot depending on demanded output power and environmental temperature. Therefore it is important, that the cooling air can flow unhindered into the air inlet in the bottom and flow out through the holes in the rear panel.

Additionally direct exposure to sunlight is not recommended because this will heat up the unit.

2.2 Connection to mains

Connect the amplifier to the mains outlet by using the power cord which is (in some countries) delivered together with the unit. Make sure that mains voltage is according to the value printed on the rear panel of the amp (near mains connector).

Let the unit be switched off until all audio connections are made.

2.3 Connecting the analogue signal sources

Connect the outputs of Your additional signal sources to the inputs (21). The upper row is for left channel, the lower row is for right channel. The inputs tape (22) and processor (24) provide special functions, which are described below.

2.4 Connecting a tape recorder

Connect the recorder's output to the inputs tape in (22). The inputs of the recorder must be connected to the outputs tape out (23).

2.5 Connecting processors / equalizers

Connect the processor's output to the inputs proc in (24). The inputs of the processor must be connected to the outputs proc out (25).

2.6 Connecting digital equipment (C1 only)

Connect the outputs of Your digital sources to the inputs dig in (28). The inputs of digital recorders must be connected to the outputs dig out (27). The signal on the digital outputs depends the selected source (build in CD, dig in 1 or dig in 2).

2.7 Connecting the loudspeakers

Connect the speakers to the speaker terminals (26). Use only good speaker cables with sufficient diameter. Make sure, that the red terminals are connected to the red or " + " terminals of the speakers and the black terminals to the black or " - " terminals of the speakers.

2.8 Tuner antenna

Connect the Antenna cable to the antenna socket (20) of the C1/ R1.

3. Basic operation

In case the C1/ R1 was not connected to mains a self test will be performed when it is switched on by mains switch (30) for the first time. The unit checks it's configuration and if all installed components work properly. The procedure is shown in the display.

3.1 Switching on / standby

Using the button power (1) You can switch between on (operate) and stand by. In the on state the display (3) and the LED (2) light up. In stand by mode the display (3) is off and the LED glows to indicate that the unit is still connected to mains.

CAUTION: When switched to stand by the unit is still connected to mains. In case of thunderstorm or if You leave the house for a longer time we recommend that You switch the amplifier off by using the mains switch (30) or pull the mains plug.

3.2 Selecting the signal source

Use the program selector (16) to select a signal source. The selected source is indicated in the display (3).

3.3 Volume setting / MUTE

Use the rotary encoder (14) to set the desired volume. Depending on rotating speed the volume increases / decreases in 0,5 dB steps (slow) or 3 dB steps (fast). The actual setting is shown in the display (3).

If You want to set the volume directly to MUTE, use the MUTE button (15). If You press it again, the C1 / R1 will return to the former volume setting.

3.4 Setting of input sensitivity

The level of signal sources differs often by several dB. So You recognize a step in volume, when switching between two inputs. It is also possible, that a source which is too loud overdrives the input and causes distortion. With the sensitivity setting menu You can avoid this. The sensitivity of each input can be set between – 12.5 dB and + 12.5 dB.

NOTE: The input levels of internal CD player (C1 only), digital inputs (C1 only) and tuner (if build in) are already set to equal values and cannot be changed.

Select an input with the input selector (16) and chose a convenient volume level. Now press the button MENU (under the display) for more than 2 seconds. The display (3) now shows "level". In the upper line it shows the name of the actual source and on the right side the actual input sensitivity (factory setting: "0,0"). Set the sensitivity using the buttons ◀ **VALUE** ▶ (7, 8). Switching between the several sources allows You to compare and adjust the levels. If You are ready, press EXIT (5) and Your settings are stored.

3.5 Tuner (if built in)

The basic functions of the tuner can be accessed by the buttons right under the display (4 – 8). For more sophisticated functions see chapter 4.4 to 4.8

3.5.1 Tuning

Depending on the selected mode (manual / auto) the most right buttons (7, 8) under the display (3) are named ◀ **AUT** ▶ or ◀ **MAN** ▶. In AUT-mode a tip on one of the buttons lets the tuner automatically seek the next upper or lower station. In MAN mode the frequency changes in 50 kHz-steps as long as the button is pressed. In this case the tuning indicator shown in the display (3) helps You to tune correctly to the desired station. If tuning is correct it will show "tuned".

NOTE: To optimize the sound quality You can use the functions **mode**, **sensitivity** and **bandwidth**, which are described later on in chapter 4.4 to 4.8

3.5.2 Station memory

If You want to store a certain station in the memory, press the button MENU (6) under the display (3) for more than 2 seconds. The display shows now on the left side the number of the actual memory position. It can be changed by pressing the buttons below (4, 5). On the right side You can see the frequency of the station which is actually stored in this memory position (if none: "unused") and below the frequency of the new station to be stored.

Press SAVE to store the actual station, EXIT to cancel the procedure or DELETE if You want to delete the stored station.

NOTE: The station memory allows You to store up to 50 stations. It stores not only their frequency, but also the individual setting of sensitivity, bandwidth and mode (mono/stereo).

◀ **PGM** ▶ (4, 5) selects the stations stored in the memory. A short tip switches to the next / previous station. Holding the button down scans automatically up / down. The number of the actual station is shown in the display.

3.6 CD player (C1 only)

The basic functions of the CD player can be accessed by the buttons right under the display (4 – 8). For more sophisticated functions see chapter 4.1 to 4.3

3.6.1 Open / close

To open the tray press the most right button (8) under the display (3). Closing is done by pressing this button again or slightly pushing the tray (9). After the tray has closed the player reads the directory of the inserted disc. The display shows the actual title / total number of titles, the player status (PLAY / STOP / PAUSE) and the actual playing time. If no disc is inserted it will show “no disc”.

TIP: Using the buttons ◀◀ or ▶▶ (4, 5) You can select a certain title before closing the tray. A short tip on the button ▶ (7) will close the tray and the player starts playing the selected title.

3.6.2 Basic functions (SKIP / SEARCH, PLAY, PAUSE, STOP)

While the player is stopped the buttons ◀◀ or ▶▶ (4, 5) select the title. A short tip switches to the next / previous title. Holding the button down scans automatically up / down. The number of the actual title is shown in the display.

Pressing ▶ (7) starts the player. While playing the button changes its function to || (pause).

When the player is playing a short tip on the buttons ◀◀ or ▶▶ (4, 5) selects the previous / next title. Holding down the buttons starts the rewind / fast forward function. Rewind / fast forward stops automatically when the begin / end of the actual title is reached.

While the player is playing the most right button (8) under the display shows the STOP-symbol. When the player is stopped this button changes its function to OPEN / CLOSE.

3.6.3 Programming an individual playlist

If a disc is inside the player You can program Your individual playing sequence as follows: Hold the button MENU (6) down for more than 2 seconds to enter the playlist-menu. Pressing the buttons ◀ POS ▶ (4, 5) allows You to select the position in the playlist. The display shows above these buttons the actual playlist-position / total number of programmed titles (POS = x/xx) and the total programmed playing time (SUM = xx:xx). The buttons ◀ TRK ▶ (7, 8) select the title which is to be played. The display shows above these buttons the track number (TRCK = x) and below the playing time of the selected title(LEN = xx:xx).

EXAMPLE:

The CD inside the player contains 15 titles. You want to play only titles 7, 3 and 8.

- Press MENU (6) for more than 2 seconds. The display now shows “POS 1/1”. In this moment the position cannot be changed, because nothing is yet programmed.
- Select title 7 using the buttons ◀ TRK ▶ (7, 8). Display shows “TRK = 7”
- Select position 2 using the buttons ◀ POS ▶ (4, 5) “POS = 2/2”
- Select title 3 using the buttons ◀ TRK ▶ (7, 8). Display shows “TRK = 3”
- Select position 3 using the buttons ◀ POS ▶ (4, 5) “POS = 3/3”
- Select title 8 using the buttons ◀ TRK ▶ (7, 8). Display shows “TRK = 8”
- Now press EXIT (6) to finish the programming.

The programmed sequence is stored until You open the tray and insert a new CD. Before playing You can choose if You wish to play the programmed sequence or the CD as it is (see chapter 4.1).

You can also change the programmed sequence later on by pressing the MENU button (6) for more than 2 seconds. After entering the program-menu select the position to be changed using the buttons ◀ POS ▶ (4, 5) and the new title using the buttons ◀ TRK ▶ (7, 8). When the track number below 1 is selected the display shows “--” and You can remove the position completely by pressing the button DEL (4). When the desired changes have been made press EXIT (6).

4. Menu system

The EVOLUTION C1 / R1 offers a lot of custom specific settings in its menu system. To enter the menu just tip on the button MENU (6). The button now changes to EXIT. A second tip on this button leads You to the normal operating mode. When the menu system is active You can select the desired function using the parameter-buttons ◀ **PARM** ▶ (4, 5). The setting is done using the buttons ◀ **VALUE** ▶ (7, 8).

Depending on the actual source the menu system offers the following settings:

4.1 Playmode (C1 only, CD must be selected as source)

In case You have programmed a playlist You can choose if the titles are played according to the playlist ("program") or "as CD".

4.2 Repeat (C1 only, CD must be selected as source)

Choose repeat mode: "one" (actual title), "all" (whole CD or programmed sequence), "off".

4.3 Random (C1 only, CD must be selected as source)

Titles are played in random sequence.

4.4 RDS-Display (only if tuner is installed and selected as source)

Choose if station name ("station") or RDS text ("text") is displayed.

4.5 Scanmode (only if tuner is installed and selected as source)

Set tuning mode between "auto" or "manual". (See also 3.5.1 tuning)

4.6 Mode (only if tuner is installed and selected as source)

Set tuner to mono or stereo to obtain best sound.

4.7 Sensitivity (only if tuner is installed and selected as source)

Choose between "local" (in case the tuner operates from a cable) and "distant" (if operated from antenna)

4.8 Bandwidth (only if tuner is installed and selected as source)

Select bandwidth "narrow" / "wide" for best reception.

4.9 Tone

Set tone control to "bypass" (= linear) or "active". In case the tone control is activated a note symbol is shown in the display (3).

4.10 Bass

Set bass level between -12.5 and + 12.5.

4.11 Treble

Set treble level between -12.5 and + 12.5.

4.12 SubBoost

If You use small speakers You can switch bass boost "on" to enhance the reproduction of low frequency range. Subsonic frequencies will be suppressed in order not to damage the speakers.

4.13 Loudness

If You listen to music at low levels, You often recognize that bass and treble reproduction are weak. This is because the human ear is not sensitive to bass and treble at low sound levels. To compensate this You can use the parametric loudness function of the C1 / R1. This function will increase bass and treble levels when You decrease the volume. When the volume is increased the frequency response will be more and more flat and remain linear at high volume levels. In order to obtain best results You have to proceed in the following way:

Set the amplifier to a moderate volume level. Using the buttons ◀ **VALUE** ▶ (7, 8) choose in the loudness menu a curve (0 to 7) which gives best sound impression and exit the menu (button EXIT (6)).

NOTE: The loudness function selects automatically the correct curve depending on actual volume setting. So if You change volume a different curve than previously selected may be shown in the loudness menu. This is not a malfunction.

4.14 Balance

Set the balance between right and left channel for optimal stereo image.

4.15 Name

You can individually set the names (max. 8 characters) of the different sources shown in the display (3). Enter the "NAME" menu and press one of the buttons ◀ **VALUE** ▶ (7, 8). Now You are in the edit mode. The source is selected using the program selector (16). The actual character-position can be selected using the buttons ◀ **POS** ▶ (4, 5). The marked character (underlined) can be changed using the buttons ◀ **VALUE** ▶ (7, 8).

When You are ready, simply press EXIT (6). and the new names are stored.

4.16 Display

Sets the display brightness between 1 and 8.

NOTE: Brightness levels over 5 can lead to a burn in of the display. Therefore we recommend that the unit shall not be operated permanently (more than 2 hours a day) with brightness levels over 5.

4.17 Processor

Switches processor function "on" / "off". If the processor is activated, it influences the signals on the speaker outputs. The signals on record out are not affected.

4.18 Monitor

Switches tape monitor function "on" / "off". If the monitor is activated, the display (3) shows a tape symbol.

NOTE: The C1 / R1 has an "intelligent" monitor function. If the tape input is selected as source the monitor function is cancelled to avoid feedback from the tape recorder.

To access the monitor function quickly, press the MENU button (6) and then the button ◀ **PARM.** (4). Now You can switch the monitor function on and off using the buttons ◀ **VALUE** ▶ (7, 8).

5. Remote control

There are two different models of remote controls available for the C1 / R1: AVM RC1 and the programmable AVM RC2.

All the main functions of the C1 / R1 can be controlled. The following scetch shows the functions of RC1 which are partly different to the printing on the surface of the remote control transmitter:

Amplifier

ON:	Button on
OFF:	Button off
Volume up:	Button volume >
Volume down:	Button < volume
Mute on / off	Button vol/pol >
Internal CD:	Button disc 1
Internal tuner:	Button tuner
Input 1:	Button aux 1
Input 2:	Button aux 2
Input 3:	Button aux 3
Input 4:	Button aux 4
Dig in coax	Button d 1
Dig in opt	Button d 2
Tape:	Button tape 1
Monitor on/off:	Button tape 2

Tuner (if built in)

Station up	Button station >
Station down	Button < station
Tuning up	Button tuning >
Tuning down	Button < tuning
mono/stereo	Button mode

CD-player (C1 only)

Play	Button play
Pause	Button pause
Stop	Button stop
Open / Close	Button stop
Repeat 1/all	Button repeat
Skip up	Button skip >
Skip down	Button < skip
Fast forward	Button search >
Rewind	Button < search

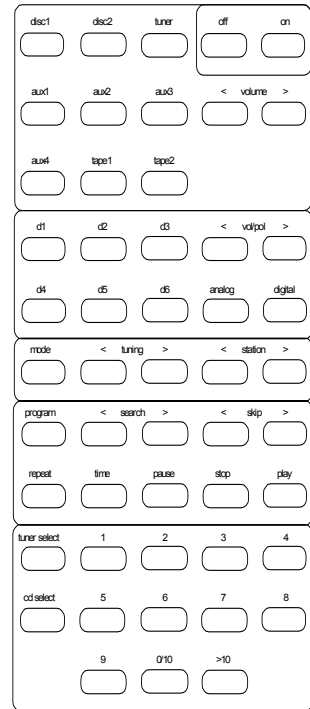
Direct access station / title

Press and hold button **tuner select** or **cd select** and the desired number key.

Example: CD-player title #15:
Hold **cd select**, press button **1**, then **5**.

Tuner station # 48:

Hold **tuner select**, press button **4**, then **8**.



6. Cleaning

Use a soft cloth and normal glass cleansing fluid.

CAUTION: Make sure that no fluid comes into the unit. Do not use scouring cleaners. They may damage the surface.

7. If something doesn't work.....

Some putative defects are often caused by mistakes in operation. Sometimes other units connected to the amplifier can cause problems. Therefore please read the following tips before You consult Your dealer or us.

1. Amplifier is muted

- a) Mute function is active, press button MUTE (15)
- b) MONITOR function is activated. Switch monitor off.
- c) PROCESSOR function is activated. Switch processor off.
- d) Inadvertent switching to standby by remote control. Press power button (1). If the LED indicator and display do not light up a fuse can be blown due to overvoltage (thunderstorm). Please contact Your dealer.

2. Amplifier switches off during normal operation

This can happen if the temperature inside the unit becomes too high. In this case the amplifier switches off and the display shows “**overheat**”. Switch the unit off and let it cool down for five minutes.

If the Display shows “**overload**” please check if there is a short circuit in the speaker cables. Switch the unit off by pressing power button (1) remove the short circuit and switch again on.

3. Hum

- a) Hum while playing records: Make sure that the chassis of Your record player is properly grounded.

4. Infrared remote control doesn't work

- a) Check the batteries of Your remote control transmitter
- b) Point with the remote control transmitter directly to the unit.

8. Technical data EVOLUTION C1 / R1

Amplifier

Sensitivity	0,033 – 0,56 V
Input impedance	10 kOhms
S/N ratio	96 dB(A)
Frequency response	1 Hz - < 100 kHz
Rise time	<2 µs
THD+N @25 W/4 Ohms	<0,015 %
Damping factor	>150
Output power into 8 Ohms	2 x 65 Watts
Output power into 4 Ohms	2 x 90 Watts
Output power into 2 Ohms	2 x 125 Watts

Tuner (if built in)

Frequency range	87,5 – 108,0 MHz
Tuning step	50 kHz
Sensitivity (mono / stereo)	1,5 µV / 50 µV
S/N ratio (mono / stereo)	73 / 68 dB(A)
THD+N mono / stereo)	0,1% / 0,3%
Channel separation	55 dB

CD (C1 only)

Formats	CD-Audio, CDR
Upsampling	96 kHz / 24 Bit
Frequency response	20 Hz – 20 kHz
Deemphasis	automatically
Digital-inputs (S/PDIF, TOSLINK)	33–96 kHz / 16–24 Bit
Digital-outputs (S/PDIF, TOSLINK)	44,1 kHz / 16 Bit or input format

Power consumption

Standby	1 W
max.	220 W

Power supply

(Upon request AC 230V / 50Hz
AC 115 V / 50/60 Hz)

Dimensions (W x H x D) 430 x 109 x 315 mm

Weight 9,5 kg

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