

<b>0.0</b>	<b>Table of Contents of this manual</b>	Page 01
<hr/>		
<b>1.0</b>	<b>Receiving the ASR Emitter – First moves</b>	
1.1	Unpacking	Page 02
1.2	Setting up the ASR Emitter	
1.3	Important safety precautions	Page 03
1.4	The ground lift switch	Page 03
<b>2.0</b>	<b>Connecting the ASR Emitter to your system</b>	Page 04
2.1	Standard connections	Page 05
2.1.1	Connecting high-level source components to the ASR Emitter	
2.1.2	Connecting a high-level source component to the direct input of the ASR Emitter	
2.1.3	Connecting a tape deck to the ASR Emitter	Page 06
2.1.4	Connecting an auxiliary source component to the ASR Emitter	
2.1.5	Connecting a pair of speakers to the ASR Emitter	
2.1.6	Connecting the external power supply/supplies	Page 07
2.2	Additional connections (on special order)	Page 08
2.2.1	Connecting a high-levelsource component to the balanced inputs of the ASR Emitter	
2.2.2	Connecting a turntable to the ASR Emitter	
2.2.2.1	Adjusting the ASR Plug-in phonoboard	Page 09
2.2.3	Connecting a headset to the ASR Emitter	Page 10
2.2.4	Connecting a second pair of speakers to the ASR Emitter	
2.2.5	Connecting the ASR Battery Power Supply <i>(available only for the ASR Emitter Exclusive-versions!)</i>	
<b>3.0</b>	<b>Operating the ASR Emitter</b>	Page 11
3.1	General operation of the ASR Emitter	
3.2	Front panel control knobs of the ASR Emitter	Page 12
3.3	Operating the ASR Emitter via remote control	Page 13
3.4	Adjustments of the ASR Emitter	Page 14
<b>4.0</b>	<b>Protection circuits of the ASR Emitter</b>	Page 16
4.1	Impedance-check before the ASR Emitter is switched on	
4.2	Distortion- and overload-protection circuit	
4.3	Over-temperature protection circuit	Page 16
<b>5.0</b>	<b>Maintenance of the ASR Emitter</b>	
5.1	Cleaning the ASR Emitter	
5.2	Touble-shooting	Page 17
<b>6.0</b>	<b>Facts about the ASR Emitter</b>	Page 19
6.1	How the separate battery power supply works	
6.2	How the ASR Emitter works	
6.3	Technical data	Page 20

Dear music lover,

**all of us at ASR would like to offer thanks and congratulations to you for purchasing the ASR Emitter High End Integrated Amplifier. We sincerely believe that your ASR Emitter will bring you many years of musical pleasure and enjoyment.**

All ASR products are handmade with greatest care to details and with high-grade selected parts. Enjoy your music even more with this true High End Integrated Amplifier!

**While every new owner ist anxious to begin listening, we encourage you to take a few minutes to read this manual and familiarize yourself with the full capabilities of the ASR Emitter.**

© 2001 Klaus Henkes (<http://www.hifihenkes.de>) for ASR Audiosystems

## **1.0 Receiving the ASR Emitter – First moves**

---

### **1.1 Unpacking the ASR Emitter**

---

Use care in unpacking your ASR Emitter. Inspect it for any shipping damage and call your dealer immediately if any is found. **Do not plug your ASR Emitter into an AC outlet if you find shipping damage.**

#### **Accessories**

Provided with the ASR Emitter are the following asseccories:

- a) **Integrated amplifier ASR Emitter**  
(main unit with three golden or chromium control knobs)
- b) **Separate power supply (ASR Emitter I = one, ASR Emitter II = two)**  
(no controls) incl. one/two shielded ASR powercord(s)
- c) **Repair-set**  
(consisting of: 1x 3 mm-Inbus-wrench, replacement srews M4 x 16, replacement fuses 1 Amp/slow for the battery power supply)
- d) **Care-set**  
(consisting of: 1x bottle of antistatic plastic-cleaner and a special cloth)
- e) **(available only for the ASR Emitter Exclusive versions)**  
**Battery Power Supply**  
(no controls) incl. one powercord

### **1.2 Setting up the ASR Emitter**

---

**Check to make sure, your ASR Emitter has been manufactured for operation at your AC line voltage. Attempting to use your ASR Emitter at any voltage other than the specificated on the battery power supply´s back side may damage the unit. Damage caused by improper operation is not covered by ASR warranty. If the voltage specified is different from your AC voltage, contact your ASR dealer.**

The heatsinks of the ASR Emitter radiate some heat, so please place the main unit in a place, where air can circulate around the heatsinks. Never put a unit on top of the main unit. The ASR power supplies (including the ASR battery power supply) do not radiate a lot of heat. Do not stack the ASR power supplies or place the ASR power supply unit(s) too close to the main unit. Place the main unit close to your source components and use a cable as short as possible to connect your source components to the main unit. of the ASR Emitter.

### **1.3 Important safety precautions**

To get the best performance from your ASR Emitter, and for your own safety, please read and follow these important safety instructions.

1. Before operating the ASR Emitter Integrated Amplifier, please read ALL operating and safety instructions.
2. Never place the ASR Emitter or the (battery) power supply unit(s) near heat sources such as radiators, fireplaces, stove, or other appliances that produce heat. Avoid placing the ASR Emitter where it will be subject to direct sunlight or low temperatures.
3. This product is equipped with three prong AC powercords which include an earth ground connection. To prevent shock hazard, all three connectors must always be used. If your electrical outlets will not accept this type of plug, an adaptor may be purchased. If an adaptor is necessary, be sure it is an approved type and that it is used properly., supplying an earth ground. If you are not sure of the integrity of your home's electrical system, contact a licensed electrician for assistance.
4. AC extension cords are not recommended for use with this product. If an extension cord must be used, be sure it is an approved type and has sufficient current carrying capacity to power this product.
5. Before cleaning the ASR Emitter, always turn the unit off and disconnect the power supply cord.
6. If you smell smoke, or an abnormal smell, immediately turn the ASR Emitter off and unplug the unit from the power supply and contact your ASR dealer.
7. Unplug unit if it becomes wet.
8. Replace fuse only with the exact type originally included.

external power supplies	ASR Battery Power Supply (only available for the ASR Emitter Exclusive versions)
110 Volt: 10 amps, slow-blo	2 amps, slow-blo
120 Volt: 2 amps, slow-blo	2 amps, slow-blo
220 Volt: 5 amps, slow-blo	1 amp, slow-blo
240 Volt: 1 amp, slow-blo	1 amp, slow-blo
9. THERE ARE NO SERVICEABLE PARTS INSIDE THE ASR EMITTER!
  - Do not attempt to repair or modify your ASR Emitter.
  - All service should be performed by qualified service personnel.
  - Do not open the unit while it is attached to the AC outlet.

### **1.4 The ground lift switch**

The ground lift switch is located on the backpanel of the ASR Emitter above the AC input. Switching to position „1“ will connect the ground of the power supply to the ground of the connected source components (on the RCA inputs). Audio ground should be once

connected to the power supply ground in every audio system. If connected more often hum can occur. Switching to position „2“ disconnects the ground connection as described above. In any doubt: please switch the ground lift switch to „1“.

## **2.0 Connecting the ASR Emitter to your system**

---

**ATTENTION:** Inputs (cables from source components) and outputs (cable to speakers) can be safely connected to the ASR Emitter when the units (left) control knob is set to „0“ (= off). Be sure that the least cable you connect is/are the powercord(s) to the AC outlet.

To obtain the best performance please make sure, that all your cables from and to the ASR Emitter are as short as possible. The ASR Emitter's main unit should be placed close to your source components. If your source components are equipped with „fixed“ and „variable“ outputs always use the „fixed“ outputs to connect the component to the ASR Emitter. All standard inputs of the ASR Emitter are high-level-inputs and are identical, just the marking ist different. Only exception from this rule: if your ASR Emitter is equipped with the ASR plug-in phonoboard (on special order, see 2.2.2), do not use the input „PH“ to connect your high-level source components.

On the backpanel of the main unit the RCA input sockets are located left and right above the speaker outputs. The RCA sockets are named (from left to right) „Ph, Ta, CD, Tu, DT, Vi“. The RCA input sockets for the right channel are marked with a red ring, for the left channel with a black ring.

Tip: please use high quality interconnects, speakercables and powercords to connect your ASR Emitter. The performance of your system will be increased by using the best affordable cables.

### **Burn-in time**

Straight out of the box, the performance of the ASR Emitter is not as impressive as the performance of a unit that has been broken in. Why?

Each ASR Emitter needs at least 100 to 200 hours of playing music to fully break-in. Especially the ASR Emitter Exclusive versions with the large amounts of capacitors inside have to stabilize over the initial 200 hours of playing.

Tip: connect your CD player to the ASR Emitter and play a CD with dynamic music or a dedicated burn-in-CD in repeat mode a few times (ASR Emitter volume level should be set between 20 and 30).

If you are not playing the ASR Emitter for more than a week, the same effect will occur, but not as apparent as when connected for the first time. After one or two days of listening the ASR Emitter sounds as good as the unit did before.

Tip: if you are absent for more than three days, please disconnect all the powercords from the AC outlet. This is the safest and cheapest way to prevent your hifi system from any damages.

The ASR Battery Power Supply should not be disconnected from the AC outlet for more than 10 days. Like any other high-end amplifier, the ASR Emitter sounds best about one hour after you put the left control knob to the „1“ (ON) position.

Tip: about 30 minutes before you want to listen to music, turn the ASR Emitter on. Just turn the ASR Emitter off, if you are not listening to music for more than two hours.

## **2.1 Standard connections**

As a standard version the ASR Emitters are equipped with high-level inputs with RCA sockets (one of the inputs is a direct input), one (two) RCA tape outputs and one pair of speaker outputs as direct outputs.

### **2.1.1 Connecting high-level source components to the ASR Emitter**

High-level source components are all audio components except turntables.

Every ASR Emitter is equipped with the following (identical) RCA inputs: „Ph“ = phono (*if your ASR Emitter is equipped with the ASR plug-in phonoboard, this is NOT a high-level input anymore!*), „Ta“ = tape, „CD“ = CD player, „Tu“ = Tuner, „DT“ = digital tape, „Vi“ = vcr. The additional RCA sockets (on the backpanel, outer left/right side) are tape outputs – the ASR Emitter I is equipped with one, the ASR Emitter II with two tape out RCA sockets. These outputs are named „Out“.

Connect each of your source components to one input. Attention: connect the right outputs of your source components to the right inputs of the ASR Emitter (same for the left channel) and make sure, the RCA connectors fit tight.

### **2.1.2 Connecting a high-level source component to the direct input of the ASR Emitter**

The RCA input sockets of the direct input are directly connected to the relais volume control via silverwire, the grounding is separately routed. The direct input was especially developed for audio systems with just one source component (for example a CD player). The signal of the direct input passes two relais less than the signals of the other inputs.

The RCA sockets of the direct input are located between the „Out“- and the „Vi“ RCA sockets on the backpanel of the ASR Emitter. Connections to the direct input should be made like described in 2.1.1.

The direct input can not be switched via the input selector (right control knob on frontpanel of the ASR Emitter). If you have connected a source component to the direct input and switch the input selector to another input, where a source component is connected and playing, you will hear the signals of both inputs.

Tip: if you are using the direct input, put the input selector to a position, where no other source component is connected. If your ASR Emitter is equipped with a balanced input, do not put the input selector to „CD“ while having a source component connected to the direct input. If you want to listen to another source component than the one, that is connected to the direct input, please turn the direct connected unit off or disconnect its powercord from the AC outlet.

### **2.1.3 Connecting a tape deck to the ASR Emitter**

The ASR Emitter I is equipped with one, the ASR Emitter II with two tape outputs (additional tape output on special order).

Connect the „Line out“ or „Tape Out“-RCA sockets on your tape deck to the RCA input sockets „Ta“ on the ASR Emitter and the „Line In“- or „Tape In“-RCA sockets on your tape deck to the „Out“-RCA sockets (sockets closest to the heatsinks) on the ASR Emitter.

Additional tape decks or open-reel decks can be connected to each RCA input of the ASR Emitter. To make recordings, put the input selector knob to the position, where the source that you want to record from, is connected. The signal of the chosen source component will be routed to the „Out“-RCA sockets. Tape-to-tape recordings are possible in the same manner too.

**ATTENTION:** during a recording or when your tape deck is ready to record, DO NOT switch the input selector knob to the input, where your (recording) tape deck is connected to. Switching to the „Ta“-input means switching tape in- and output together – a feedback will be the result. This feedback may cause damages to your connected speakers.

### **2.1.3 Connecting an auxiliary source component to the ASR Emitter**

The „Ta“ input of the ASR Emitter may as well be used to connect any auxiliary source components like equalizer. Connect the „Line out“-RCA sockets on your auxiliary component to the RCA input sockets „Ta“ on the ASR Emitter and the „Line In“-RCA sockets on your auxiliary component to the „Out“-RCA sockets (sockets closest to the heatsinks) on the ASR Emitter. Pressing the „monitor“-button on the ASR Emitters frontpanel or on the remote control will bring the signals of the auxiliary component into the signalpath of the chosen input on the ASR Emitter.

### **2.1.5 Connecting a pair of speakers to the ASR Emitter**

#### **ATTENTION:**

Put the left control knob to the „0“ (Off) position before you connect or disconnect any speakercables. check all speakercabels for shortcuts. This will keep your speakers and the other connected components from being damaged. *A shortcut is easily detectable and is not covered by the ASR warranty!*

The standard versions of the ASR Emitter are equipped with a direct (speaker) output. To increase the performance of the ASR Emitter, the speaker outputs are directly connected to the output transistors and named „Direkt“.

An ASR Emitter with direct output differs from an ASR Emitter with a relais-switched speaker output (read 2.2.5):

- while switching the ASR Emitter on or off, there might be a audible sound in your speakers
- before switching the ASR Emitter to the „On“-position, the DC resistor can not check, if a shortcut has occurred on the speakers – this means: all speakercables HAVE TO BE

- checked before the ASR Emitter is initially switched to the „On“-postion
- if a technical defect occurs, the speaker output can not be turned off; in case of trouble, the protection circuitry shuts down the speaker outputs
  - in case of overmodulation the ASR Emitter with direct output will be immediately and completely turned off to protect your speakers; to listen to music again, the left control knob on the ASR Emitter has to be set to the „0“-(Off)-postion and then to the „1“-(On)-position

The speakers connected to the ASR Emitter should have an impedance that is no lower than 1,5 ohms (20Hz to 20kHz). If the ASR Emitter is equipped with a relais-switched speaker output (named „A“) and/or with a second pair of speaker outputs, an impedance check will be automatically made, before the unit switches from „0“ to the „On“ position. The impedance check will not let the ASR Emitter switch to the „On“-position, when the measured value is under 1,5 ohms.

The speaker outputs are located on the back panel of the ASR Emitter below the RCA input sockets. Please connect the „minus“ (black on most speakercables) of the right speakercables to the „minus“ (black) terminal on your speaker, than the other end of the cable to the right black terminal on the ASR Emitter, and the „plus“ (red) of the right speakercables to the „plus“ (red) terminals of your speakers, than the other end of the cable to the right red terminal on the ASR Emitter - same for the left channel. Do not reverse „minus“ (black) and „plus“ (red) – neither on the ASR Emitter nor on your speakers.

If the ASR Emitter is equipped with one speaker output, the output relais for A and B are switched together to improve the output resistance. The display on the frontpanel of the ASR Emitter shows „A+B“.

### **2.1.6 Connecting the separate power supply/supplies to the ASR Emitter**

Every ASR Emitter is equipped with external power supplies. The ASR Emitter I has one external power upply, the ASR Emitter II has two external power supplies. Due to the very high power capability of the ASR Emitters, the power supplies **MUST** be connected directy. to wall AC outlets.

Connecting the power supplies to the ASR Emitter is quite simple, please pay attention to the following order:

- a) **turn off** the ASR Emitter (left control knob to „0“-position) and **disconnect** the powercords from the AC outlet, **disconnect** the powercord(s) from the AC input of the power supply/supplies
- b) **carefully connect** the heavy silver cable (with grey plug featuring 30 contacts) hanging out of the backpanel of the ASR Emitter I’s main unit to the socket on the backpanel of the external power supply. The ASR Emitter II features two cables hanging out of the backpanel. Please connect the two cables (with 30 contacts) to each of the two power supplies; both power supplies are identical.
- c) **connect** the powercords to the AC input of the power supply/supplies
- d) **connect** the powercords to the AC outlet

If you want to disconnect the external ASR power supply/supplies please pay attention to the following order

- a) **turn off** the ASR Emitter (left control knob to „0“-position)
- b) **disconnect** the powercord(s) from the AC outlet, **disconnect** the powercord(s) from the AC input of the power supply/supplies
- c) **wait** until the LEDs inside the ASR power supply/supplies are not shining anymore
- d) **disconnect** the heavy silver cable from the power supply/supplies

If the connection between the ASR Emitter´s main unit and the power supply/supplies has been disconnected before the LEDs have not shone anymore, please wait at least two hours before you connect the power supply/supplies again. This will avoid damage on your audio system.

Tip: powercords have a big influence on the obtainable sound quality. We recommend to use the ASR Active Powercord on all the components in your audio system.

## **2.2 Additional connections (on special order)**

Every ASR Emitter can be equipped with a lot of in- and outputs on special order at additional cost. The most common connections are described here.

### **2.2.1 Connecting a high-level source component to the balanced input of the ASR Emitter**

The ASR Emitters (that is not equipped with the ASR plug-in phonoboard) can be equipped with a balanced input. This input can easily be chosen by switching the input selector (right control knob on the frontpanel) to the „CD“-position. The RCA input sockets on the backpanel named „CD“ are not that sensitive (not so loud) than the balanced inputs.

You can connect either every high-level source component or even a phono pre-amplifier (like the ASR Basis Exclusive) to the balanced inputs of the ASR Emitter. A balanced cable (with male-/female XLR plugs) can - due to international standards – only be connected one way: the male XLR plug is connected to the source component and the female XLR plug is connected to the ASR Emitter.

Tip: if you have to use a cable longer than approximately ten feet between a source component and the ASR Emitter, you should use a balanced connection. Balanced connections are less susceptible for disturbances.

### **2.2.2 Connecting a turntable to the ASR Emitter**

Every ASR Emitter (that is not equipped with a balanced input!) can be equipped with the ASR plug-in phonoboard. If an ASR Emitter is equipped with the ASR plug-in phonoboard a turntable with Moving Magnet- oder Moving Coil-cartridge can be directly connected to the ASR Emitter. The turntable can be connected to the RCA input sockets named „Ph“ on the backpanel of the ASR Emitter. The groundig cable of the turntable (if there is one) can be connected to one of the black speaker output terminals.

The ASR plug-in phonoboard can be retrofitted. Simply follow the described steps:

- before you put the phonoboard into the ASR Emitter, please adjust it according to the cartridge you are using (see 2.2.2.1)
- turn off the ASR Emitter (left control knob to „0“-position) and **disconnect** the powercords from the AC outlet, **disconnect** the powercord(s) from the AC input of the power supply/supplies
- carefully **release** the bolts of the topplate of the ASR Emitter (inside the heatsinks) and **remove** the topplate
- at the end of the pc-board in the middle (view from the front) there are two black 10fold sockets (right were the word „phono“ is written on the pcb); there are two bridge-wires in this sockets (one for each channel) - carefully **remove** this bridge-wires
- carefully **insert** the ASR plug-in phonoboard into the two black 10fold sockets; the parts on the phonoboard facing the frontpanel of the ASR Emitter)

### **2.2.2.1 Adjusting the ASR plug-in phonoboard**

There is a 6fold DIP switch for each channel in the middle of the phonoboard to adjust the phonoboard according to your cartridge. The input resistance can be adjusted on DIP switches no. 1 and 2, the gain can be adjusted on the DIP switches no. 3 to 6.

- a) the DIP switches have two different settings: „on“ or „off“; be sure, that the switches are correctly set (when set correctly, you will hear a slight „klick“)
- b) please set the DIP switches exactly the same for the right and the left channel (only exception from this rule: your cartridge needs to be balanced because of different output from the right and left channel)
- c) the ASR plug-in phonoboard was not developed to work with very low output MC cartridges

### **Adjusting the input resistance**

We know from experience that if you are using an adjustment with a lower input resistance the ambiance is improved with limited dynamics, with a higher input resistance the overall performance is brighter and more dynamic, but definition and precision are limited. You can easily find out the perfect setting for you: make an adjustment and listen to the system. the best adjustment is the one you like best!

DIP switch no.	1	2	Input resistance
47k $\Omega$	—	—	for MM- und High Output MC cartridges
100k $\Omega$	—	ON	for medium output MC cartridges (Denon/Yamaha)
22 $\Omega$	ON	—	for low output MC cartridges (Ortofon MC 200)
18 $\Omega$	ON	ON	for very low output MC cartridges (limited)

## **Setting the gain**

The gain can easily be adjusted on DIP switches no. 3 to 6. Please put just ONE switch to the „on“-position. Maximum gain is obtained by putting the DIP switches no. 3 to 6 to „on“.

The following chart shows, how the gain can be set:

<b>switch no. „ON“</b>	all four	3	4	5	6	none
<b>Gain:</b>	+34dB	+26dB	+20dB	+14dB	+9dB	minimum
	*1	*2	*3			*4

\*1 = for extreme low output MC cartridges (limited)

\*2 = for very low output MC cartridges

\*3 = for low output MC cartridges (limited)

\*4 = for MM cartridges (minimum gain)

Please set the DIP switches exactly the same for the right and the left channel (only exception from this rule: your cartridge needs to be balanced because of different output from the right and left channel). The gain should be set as low as possible.

### **2.2.3 Connecting a headset to the ASR Emitter**

Every ASR Emitter can be equipped with a headset output, either on the front- or the backpanel. Connection can be made via a gold-plated 6,3mm-socket. The headset output can be easily chosen by switching the left control knob to the „Kh“-position or via remote control. Two yellow LEDs indicate that the headset output is selected. The 6,3mm-plug must not be disconnected, when the headset is not in use.

### **2.2.4 Connecting a second pair of speakers to the ASR Emitter**

Every ASR Emitter I can be equipped with an additional speaker output. The speaker outputs are named „A“ and „B“. Every ASR Emitter II can be equipped with up to two additional speaker outputs. The speaker outputs are named „A“, „B“ and „C“. The additional speaker outputs on the ASR Emitter can be either selected single („A“ or „B“, „A“ or „B“ or „C“) or together („A“ and „B“, „A“ and „B“ and „C“). The chosen mode is shown in the display on the frontpanel. If an ASR Emitter has additional speaker outputs, it has no longer a direct output. The speaker outputs are switched via relais then.

Connect the additional speakers according to 2.1.5.

### **2.2.5 Connecting the ASR Battery Power Supply** **(available only for the ASR Emitter Exclusive versions)**

The input stages of the ASR Emitter Exclusive versions can be supplied with an optional, external ASR Battery Power Supply. The standard power supply/supplies should be connected before you connect the ASR Battery Power Supply to the ASR Emitter Exclusive (refer 2.1.6).

Connecting the ASR Battery Power Supply to an ASR Emitter Exclusive is quite simple, please pay attention to the following order:

- a) **turn off** the ASR Emitter Exclusive (left control knob to „0“-position) and **disconnect** the powercords from the AC outlet, **disconnect** the powercord(s) from the AC input of the power supply/supplies
- b) **carefully connect** the heavy silver cable (with grey plug featuring 20 contacts) hanging out of the backpanel of the ASR Emitter Exclusive´s main unit to the socket on the backpanel of the ASR Battery Power Supply.
- d) **connect** the powercords to the AC input of the power supply/supplies and to the AC input of the ASR Battery Power Supply.
- d) **connect** the powercords to the AC outlet

If you want to disconnect the external ASR Battery Power Supply please pay attention to the following order

- c) **turn off** the ASR Emitter Exclusive (left control knob to „0“-position)
- d) **disconnect** all the powercords from the AC outlet, **disconnect** the powercord(s) from the AC input of the power supply/supplies and the ASR Battery Power Supply.
- c) **wait** until the LEDs inside the ASR Battery Power Supply are not shining anymore
- d) **disconnect** the heavy silver cable from the ASR Battery Power Supply

If the connection between the ASR Emitter Exclusive´s main unit and the ASR Battery Power Supply has been disconnected before the LEDs have not shone anymore, please wait at least two hours before you connect the power supply/supplies again. This will avoid damage on your audio system.

## **3.0 Operating the ASR Emitter**

---

### **3.1 General operation of the ASR Emitter**

All functions of the ASR Emitter can be controlled by the three golden or chromium knobs on the frontpanel of the main unit. The operation via remote control is even more convenient. The status of the ASR Emitter is shown in the display on the frontpanel. If there are any malfunctions inside the ASR Emitter, a red LED will indicate this immediately. How to react in case of malfunctions is referred to in chapter no. 4.0 and 5.2.

The external power supply/supplies of the ASR Emitter can be operated in an energy saving mode: all the internal voltages of the ASR Emitter are cut in half in this mode. After setting the left knob on the frontpanel from „Standby“- to „1“-position, every ASR Emitter is operating in the energy saving mode for one minute.

After connecting the ASR Emitter (see chapter 2.0), please set the left knob to the „Standby“-position. Now you can either set the left knob to the „1“ (On)-position or use the remote control to turn the unit on

### **3.2 Front panel control knobs of the ASR Emitter**

#### **On-/Off-Selector (= left knob)**

<b>Position (referred to standard ASR Emitter)</b>	<b>Function</b>
<b>Off</b>	The unit is turned off. Before you switch from „Standby“ to „Off“ please wait at least 20 seconds. The ASR Emitter needs this time, to run a switch-off-programm.
<b>Standby</b>	In this position - the ASR Emitter can be completely controlled by remote control - you can record from source to tape
<b>1</b>	volume can be adjusted from 0 to 61dB, normal operating position, energy saving mode can be activated
<b>2</b>	volume can be adjusted from 0 to 76dB, energy saving mode can not be activated.

<b>Additional positions (for ASR Emitters with special features)</b>	<b>Function</b>
<b>A1</b>	(speaker-)outputs „A“, normal operating position
<b>B1</b>	(speaker-)outputs „B“, normal operating position.
<b>Kh</b>	the headset-output is active, the speaker-output(s) are muted
<b>A2</b>	(speaker-)outputs „A“, volume control from 0 to 76dB, energy saving mode can not be activated.
<b>B2</b>	(speaker-)outputs „B“, volume control from 0 to 76dB, energy saving mode can not be activated.
<b>A+B1</b>	(speaker-)outputs „A“ and „B“ selected to play together, normal operating position

If the ASR Emitter is controlled via remote control, the position of the left knob may not exactly correspond with the actual operating mode. The chosen input is indicated by an LED above the (right) input selector knob.

#### **Volume control (= middle knob)**

The volume of the ASR Emitter is controlled with a relais step control. The middle knob works as an impulse sender and can be turned around 360°. The chosen volume will be displayed in numbers from 0 to 76. In „Standby“-mode the volume can be preselcted up to 49 – this avoids too high sound pressure levels when turning the ASR Emitter on.

#### **Input selector (= right knob)**

In the standard version of the ASR Emitter, the input selector has six positions: six high level inputs and one tape input. To select an input, please move the input selcetor knob to the desired input. The chosen input is indicated by a yellow LED.

**Monitor-switch (= below the input selector knob)**

As an option, the ASR Emitter can be equipped with a tape monitor switch. When the ASR Emitter is turned on, pressing the tape monitor switch allows you to listen to the source, that you are recording to the tape unit connected to the „Ta“-input. If the ASR Emitter is in the „Standby“-mode, pressing the tape-monitor switch activates the adjustments for the input level adjust, energy saving mode, balance and display brightness (refer chapter no. 3.4).

**3.3 Operating the ASR Emitter via remote control**

All functions of the ASR Emitter can be controlled via remote control. To operate the ASR Emitter via remote control, put the left knob to the „Standby“-position. If you press a key on the remote control, the display lights up and shows the selected function. When using the remote control, the three control knobs on the frontpanel of the ASR Emitter are not moving.

A Philips remote control is supplied with every ASR Emitter. This remote control can learn codes from up to five other components and control these units. Please read the instruction manual of the Philips remote control carefully.

**Functions of the remote control buttons**

Button	Function
<b>TV-VCR-SAT-CD- Audio 1-Audio 2</b> (grey)	selects the unit, that you want to control via remote control, (all functions for operation of the ASR Emitter are saved under „Audio 1“), press the grey button as long until the green LED above the name of the unit, that you want to control, lights up
<b>I/O</b> (red, at the top, right)	ASR Emitter on/off
<b>1 – 6</b>	for direct input selection: 1 = „Ph“, 2 = „Ta“, 3 = „CD“, 4 = „Tu“, 5 = „DT“, 6 = „Vi“
<b>7</b>	switches the tape monitor input equivalent to pressing the tape monitor button (optional) on the frontpanel of the ASR Emitter
<b>8</b>	resets the ASR Emitter to factory settings (volume will be set to „40“)
<b>9 and 0</b>	switches the output(s) of the ASR Emitter, equivalent to turning the left knob one position incl. on/off
<b>Mute</b>	lowers the volume (- 15dB), pressing the button again increases the volume again (+ 15dB)
<b>Vol +</b>	increases the volume the display lights up and indicates the increase
<b>Vol -</b>	lowers the volume the display lights up and indicates the decline
<b>Prog +</b>	switches the inputs clockwise LED above the input selector knob indicates the chosen input
<b>Prog -</b>	switches the inputs anticlockwise LED above the input selector knob indicates the chosen input

<b>-/-- and AV</b>	selects the adjust mode for balance, energy saving mode, display brightness etc. and input level. press the black button as long until the mode you want to adjust is displayed; adjustments can be made with the „Volume +“ and „Volume -“-buttons
<b>light-yellow button</b>	pressing this button illuminates the remote control

On request, the ASR Emitter can be delivered with a (smaller) remote control which only contains the following functions: power on/off, volume up/down, input selection, tape monitor/adjust mode-button.

### **3.4 Adjustments of the ASR Emitter**

The ASR Emitter offers a lot of possibilities to adjust the unit. Most of these adjustments have to be set just once. Put the left knob on the ASR Emitter to the „Standby“-position. The adjustment menu can be easily accessed by pressing either the „Menu“- or the „-/--“-button on the remote control. Alternatively you can access the menu by pressing the „Tape Monitor“-button on the frontplate of the ASR Emitter (if supplied).

Please press the button on the remote control (or the „Tape Monitor“-button on the frontplate) until the parameter, that you want to adjust, appears flashing in the display. To adjust the parameter, please press either the „Volume +/-“-button on the remote control or move the middle knob on the ASR Emitter to the right (+) or left (-). To save your individual adjustments please put the left knob of the ASR Emitter to the „Off“-position and keep the unit off for at least ten seconds. All adjustments are stored now.

#### **Adjusting the channel balance**

Please press the button on the remote control (or the „Tape Monitor“-button on the frontplate) *once* – the orange LED „Balance“ is flashing. Now either use the „<<“- (= increases left channel volume) and „>>“-button (= increases right channel volume) on the remote control or the middle knob of the ASR Emitter to adjust the channel balance. If you use the „<<“-buttons, the left channel will be louder and have a orange „Balance“-LED illuminated and vice versa for the right channel. If both channels play at the same level, each channel has an orange „Balance“-LED illuminated.

#### **Adjusting the energy saving mode**

You can easily adjust the volume level, where the ASR Emitter switches from energy saving mode to normal operating mode in a wide range from 01 to 51 (= display). If you set the display to „01“ the energy saving mode is enabled. The factory setting is „35“.

Please press the button on the remote control (or the „Tape Monitor“-button on the frontplate) *twice* – the green LED „Energie“ is flashing. Now either use the „<<“- (= ASR Emitter switches into normal operating mode at lower level) and „>>“-button (= ASR Emitter switches into normal operating mode at higher level) on the remote control or the middle knob of the ASR Emitter to adjust the energy saving mode.

### Adjusting the display mode and brightness

The display of the ASR Emitter can be adjusted in brightness, parts of the display can be illuminated all the time or not and so on. The actual setting will be displayed numerical. Factory setting is „07“: maximum brightness and the display is switched off 10 seconds after the last turn of the knobs or receiving a signal from the remote control.

Please press the button on the remote control (or the „Tape Monitor“-button on the frontplate) *three times* – the two orange display numbers are flashing. Now either use the „<<“- and „>>“-button on the remote control or the middle knob of the ASR Emitter to adjust the display mode (see chart below).

<b>left orange display number (= mode)</b>	<b>Adjustments</b>
<b>0</b>	display switches totally off after ten seconds
<b>1</b>	the LEDs above the left and right knob on the frontplate of the ASR Emitter are illuminated constantly
<b>2</b>	the two numbers of the display are illuminated constantly
<b>3</b>	aquivalent to mode 1 and 2 together
<b>4</b>	mode LEDs (i. e. Balance etc.) are illuminated constantly
<b>5</b>	aquivalent to mode 1 and 4 together
<b>6</b>	aquivalent to mode 2 and 4 together
<b>7</b>	the whole display is illuminated constantly
<b>right orange number (= brightness)</b>	<b>Adjustments</b>
<b>0 to 7</b>	0 (= off) to 7 (= max. brightness), altering the volume will illuminate just the orange numbers
<b>8 to F</b>	8 (= off) bis F = (= max. brightness) altering the volume will illuminate the whole display

### Adjusting the input level

To avoid difference in volume when switching from one input to another, the input level of each high level input can be adjusted. The input with the lowest level (like a phono preamplifier or an analog tuner) should be left unaltered and work as a reference to adjust the input level for the other high level inputs of the ASR Emitter.

Please choose the input that you want to adjust – either via remote control or with the right knob. Please press the button on the remote control (or the „Tape Monitor“-button on the frontplate) *four times* – the orange „Pegelaus“-LED is flashing. Now either use the „Volume +“- (increases input level) or „Volume -“-button (decreases input level) on the remote control or the middle knob of the ASR Emitter to adjust the input level for the chosen input. For all other inputs do equal.

## **Adjusting the configuration of the ASR Emitter**

The ASR Emitter is equipped with internal DIP switches to configure the unit. Factory setting depends on the features of the individual unit. If you want to re-configure your ASR Emitter individually with these DIP switches, please contact your authorized ASR Audiosystems dealer.

## **4.0 Protection circuits of the ASR Emitter**

---

Every ASR Emitter is equipped with several protection circuits to avoid any damage on the unit itself and on your loudspeakers. Trouble during operation will be indicated by a flashing red LED „Störung“. The ASR Emitter and the voltage supply is switched off, if the protection circuits detect over-temperature, short circuit and/or repeated overloads during operation. If the protection circuits switch the ASR Emitter off, put the left knob to the „Off“-position and press the round „Status“-button on the remote control to cancel the „On“-lock.

### **4.1 Impedance-check before the ASR Emitter is switched on**

If your ASR Emitter is equipped with more than one pair of speaker output-terminals and/or a headphone output, the direct current (DC) impedance of the connected loudspeakers is checked by an automatic circuit during the countdown from „99“ to „11“, when the ASR Emitter is switched on. If the left knob is put to the „Standby“-position, this check will be performed, too. The ASR Emitter will not be switched on and the red LED „Kurzschluß“ will be flashing, if the measured impedance is smaller than 1,5 ohms. If this occurs, the speakercables have to be detached from the ASR Emitter. If the red LED is still flashing, please contact your authorized ASR Audiosystems dealer.

### **4.2 Distortion- and Overload-protection circuit**

This protection switches the ASR Emitter off in case of overload. Overload means, that the required output voltage is higher than the operational voltage of the amplifier. Distortion increases and represents a danger for the midrange- and treble drivers of the connected loudspeakers.

The protection circuits of the ASR Emitter detect distortion effectively. As soon as the protection circuits detect distortion, the distorted channel of the ASR Emitter is switched off – the display indicates the switch off with two flashing LEDs (red) „Overload“ and „Offset“. These two LEDs are flashing, too, if the (loudspeaker-)output(s) are not free of direct current (DC).

### **4.3 Over-temperature protection circuit**

The ASR Emitter is equipped with a sensitive over-temperature protection circuit. Temperature sensors are located at the large heatsinks of the ASR Emitter. If this sensors detect a temperature > 110°F, the ASR Emitter will be switched off. The display indicates the switch off with a flashing LED (red) „Übertemp“. Please put the left knob on the ASR Emitter's frontplate to the „Off/0“-position. After the the amplifier is cooled off you can switch the amplifier on again.

## **5.0 Maintenance of the ASR Emitter**

---

### **5.1 Cleaning of the ASR Emitter**

The standard cleaning set includes everything you need to take care of the finish of the ASR Emitter: antistatic plastic cleaner and a special cloth. Please do not use any other cloths than the supplied one to clean the acrylic glass of the ASR Emitter.

The use of the plastic cleaner is quite simple: spray some of the liquid on the acrylic glass and spread it with the cloth. Clean the acrylic glass, wipe off the liquid and polish it with the cloth. The knob on the frontplate is sealed and may not be cleaned with anything else than a soft cloth with no liquids or chemicals on it.

Tip: if you are not using your equipment for a certain time cover it with a soft, fluff-free cloth – you avoid most of the soiling on your equipment.

#### **Removal of scratches**

Most of all scratches can easily be removed by using acrylic polishing paste. Please use as specified by manufacturer. After the use of acrylic polishing paste you should use the plastic cleaner. The ASR warranty does not cover any damage caused by using any other cleaner than the supplied one.

### **5.2 Trouble-shooting**

#### **Malfunction during operation**

The ASR Emitter is equipped with a digital controller to control all functions of the amplifier. If any malfunction occurs, please follow these steps:

- please put the left knob on the ASR Emitter's frontplate to the „Off/0“-position and wait a least 20 seconds
- put the left knob to the „Standby“-position
- now you can switch the ASR Emitter on by either putting the left knob to the „1“-position or by pressing the „On/Off“-button on the remote control

#### **5.2.1 No LED lits when the unit is turned on**

##### **!! First of all switch off the ASR Emitter !!**

- a) In position „Off“ (left knob): is a red LED shining in the external power supply/supplies?  
**No** → go on with b)  
**Yes** → Please contact your authorized ASR Audiosystems dealer
- b) Is/Are the heavy silver connection cable(s) from the main unit properly connected to the external power supply/supplies?  
**No** → please connect the silver cable(s) properly  
**Yes** → go on with c)
- c) Is/Are the powercord(s) properly connected to the external power supply and/or the AC outlet?  
**No** → please connect the powercord(s) properly

- Yes** → go on with d)
- d) Detach the powercord(s) from the AC outlet. Check the fuse at the power input on the external power supply/supplies – is it/are they OK?
- No** → please replace fuse(s) (110V version = 10 amps, slow, 120V version = 2 amps, slow)
- Yes** → please contact your authorized ASR Audiosystems dealer!

### **5.3.2 External battery power supply: no LED lits when the unit is switched on (only for the ASR Emitter Exclusive versions with optional external battery power supply)**

#### **!! First of all switch off the ASR Emitter !!**

- a) Is the heavy silver connection cable from the main unit properly connected to the external battery power supply?
- No** → please connect the silver cable properly
- Yes** → go on with b)
- b) Is the powercord properly connected to the external power supply and/or the AC outlet?
- No** → please connect the powercord properly
- Yes** → go on with c)
- c) In position „Off“: are three yellow LEDs shining in the external battery power supply?
- No** → Charge the batteries in the external battery supply. Are the LEDs still not shining?
- Yes** → please contact your authorized ASR Audiosystems dealer!
- Yes** → the batteries are charged, go on with d)
- d) Check the fuse at the power input on the external battery power supply – is it OK?
- No** → please replace fuse (2 amps, slow)
- Yes** → please contact your authorized ASR Audiosystems dealer!

### **5.3.3 The ASR Emitter is not reacting on signals from the remote control**

- a) Is the left knob on the frontplate of the ASR Emitter in the „1“- or „2“-postion?
- No** → please put the knob to the „1“-position.
- Yes** → go on with b)
- b) Is the Philips remote control set to the „**Audio 2**“ –position (below the red „On/Off-button“)?
- No** → please choose the „**Audio 2**“-position
- Yes** → go on with c)
- c) Is the LED below the „**Audio 2**“-postion flashing green when pushing a button on the remote control?
- No, the LED is flashing red or not at all** → please insert fully charged new batteries!
- Yes** → please contact your authorized ASR Audiosystems dealer!

**The acrylic glass parts of the main unit are „cracking“ while warming up/cooling off**

The main unit of the ASR Emitter is assembled with acrylic glass and heatsinks of aluminium. These two materials expand differently during the warming up/cooling off-phase of the amplifier. Remedy: loosen the screws (located in the heatsinks) of the front-and/or backplate of the ASR Emitter.

**Different channel volumes during phono playback**

Please check if all DIP switches are set the same for both channels and are clicked into place properly.

**Just in case: repair**

If all the help we provided in this trouble-shooting-section of the manual did not help to make the ASR Emitter operate properly, please contact your authorized ASR Audiosystems dealer. Please pack the units into the original ASR boxes and with the original ASR packing accessories. Your authorized ASR Audiosystems dealer will take care of your unit and will repair it properly.

© Klaus Henkes for ASR Audiosystems 2000

## **6.0 Facts about the ASR Emitter**

---

### **6.1 How the external ASR power supply works**

(optional only for the ASR Emitter Exclusive versions)

- after switching off the ASR Emitter Exclusive the batteries are charged automatically
- immediately after switching on the ASR Emitter Exclusive, the input stage of the amplifier is supplied with voltage from the charging transformer
- approximately one minute after switching on the ASR Emitter Exclusive, the input stage is supplied with voltage from the external battery power supply, the charging transformer is switched out of the signal path. The batteries' voltage is currently checked during operation.
- when the batteries are discharged, the charging circuit will be activated automatically. The input stage of the ASR Emitter Exclusive is disconnected from the batteries and will be supplied with voltage from the charging circuit. This allows continuous listening to music, even when the batteries will be charged.
- when the batteries are fully charged, the charging transformer will be switched off automatically - the input stage of the ASR Emitter Exclusive now will be supplied with voltage from the batteries again.
- the input stage of the ASR Emitter can be continuously supplied with voltage from the batteries for about 100 hours.
- the charging status of the batteries can be checked at the external ASR battery power supply. Please push the black button on the (right) backside of the ASR battery power supply. When the batteries are fully charged, the display on the frontpanel of the ASR battery power supply shows 10 (green) segments.

To prolong the lifetime of the batteries, please switch of the ASR Emitter HD after approximately 80 hours of playing to fully charge the batteries. One hour of playing equals approximately one hour of charging.

## **6.2 How the ASR Emitter works**

The signal is passing the input and monitor relays and is routed straight to the relais step switch to be controlled in its level. The amplifier consists of a FET-input-amplification-IC, which controls the MOS-FET driver stage. This driver stage drives the MOS-FET output stage.

The loudspeaker and/or headphone outputs are switched via relays. A green/yellow LED each indicate the activation of the output relays for output A/B, a green LED indicates the activation of the headphone output relays.

A micro-controller controls the operation of the ASR Emitter. An EPROM (= programmable chip) contains the control-programm of the micro-controller.

If the left knob on the frontplate of the ASR Emitter is brought to the „Off/0“-postion, a green and yellow LED indicate, that the external power supply/supplies of the ASR Emitter are connected to an AC outlet. If the left knob is brought to the „Standby“-position, the LED above the right (input selector) knob are illuminated and the protection circuits are supplied with voltage. The negative slave voltage of –10 volts is indicated by a yellow LED. In all other postions of the left knob, the transformers in the separate power supply/supplies is/are switched on to supply the amplifier section of the ASR Emitter – this is indicated by a shining yellow LED in the separate power supply/supplies.

## **6.3 Technical Data**

**ASR Emitter:** integrated amplifier with adjustable input sensitivity, relais step switch volume control (75dB), remote control, six highlevel inputs switched via relays.

Input stage with FET inputs and separate voltage stabilization, output stage with high internal feedback, completely assembled with complementary MOS-FETs, temperature-depended regulation of bias 400/600mA (ASR Emitter I/II), amplifier operates mostly in class a mode, DC amplification and offset-regulation is standard in every ASR Emitter.

PCB double-sided 2x 2x 120 $\mu$  copper-lead-pewter, total signal routing on the pcb is shielded, separate grounding for each channel (for signal routing and voltage supply, too), pcb assembly with silver solder, no capacitors in the signal path, electrolytic and foil capacitors are installed for buffering of the operational voltage.

External power supply with 2x 700 VA (ASR Emitter I)/power supplies with 4x 700 VA (ASR Emitter II) rated power, with more than 1000 VA output (impulse) for each Philbert-Mantelschnitt-transformer, separate transformers and rectifiers for positive and negative voltages (two transformers each in separated enclosures per channel for the ASR Emitter II). A built-in 72 VA transformer supplies the input stages and the controls with  $\pm$  15 volts.

Five relays for each power supply are used as a choke circuit when switching on the amplifier. The enclosures of the power supplies are made of heavy-duty metal for a better

shielding, the main unit of the ASR Emitter is made of acrylic glass.

**RMS output power at 20Hz to 20kHz, 0.1 % distortion, both channels driven:**

**ASR Emitter I Basic**

2x 140 watts/8 ohms, 2x 250 watts/4 ohms, 2x 450 watts/2 ohms, 2x 600 watts/1 ohm

**ASR Emitter I Exclusive:**

2x 160 watts/8 ohms, 2x 290 watts/4 ohms, 2x 520 watts/2 ohms, 2x 700 watts/1 ohm

**ASR Emitter II Basic:**

2x 250 watts/8 ohms, 2x 450 watts/4 ohms, 2x 800 watts/2 ohms, 2x 1000 watts/1 ohms

**ASR Emitter II Exclusive:**

2x 250 watts/8 ohms, 2x 500 watts/4 ohms, 2x 900 watts/2 ohms, 2x 1150 watts/1 ohms

**Dynamic output power:** about 1,5x RMS output

**Distortion:** from 50mW to -1dB under RMS output at 1kHz < 0.02%, from 20Hz to 20kHz < 0.1 %.

**Signal-to-noise-ratio:** > 90dB (at 1 watt/8 ohms)

**Frequency response:** -0.1Hz to 500kHz (- 3dB)

**Input impedance:** 10kohms

**Gain:** 17dB (in position „1“), 43dB (in position „2“)

**Input sensitivity:** position „1“ = 2,0V, position „2“ = 0,4V (for 150 watts into 8 ohms)

**Separated supplies for**

**the input stage:**

±16 volts/86.000µF (ASR Emitter I) and 152.000µF (ASR Emitter II)

**the voltage amplification stage:**

±76 volts/40.000µF (ASR Emitter I) and ± 96 volts/60.000µF (ASR Emitter II)

**the current output stage:**

± 60 volts/400.000µF (ASR Emitter I) and. ±78 volts/600.000µF (ASR Emitter II)

**Dimensions and weights:**

(W x D x H)

**ASR Emitter I:**

16,5 x 16,1 x 7,1 inches, 35,3 lbs., Power supply 16,9 x 15,6 x 5,9 inches, 70,6 lbs.  
42,0 x 41,0 x 18,0cm, 16kg, Netzteil 43,0 x 32,0 x 15,0cm, 32,0kg

**ASR Emitter II:**

22,4 x 17,3 x 9,1 inches, two power supplies 16,9 x 15,6 x 5,9 inches/each, 70,6 lbs./each  
57,0 x 44,0 x 23,0cm, 40kg, two power supplies 43,0 x 32,0 x 15,0cm/each, 32 kg/each

**Note: ASR Audiosystems reserves the right to change specifications without notice as design improvements are incorporated.**