0.0 Table of Contents of this manual

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 new ASR Emitter will enjoy you for* ***many years*** *with* ***musical pleasure****.*

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

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

1.0 Receiving the ASR Emitter – First moves

1.1 Unpacking the ASR Emitter

Use care in unpacking your ASR Emitter. Please don't cut the tapes of the wrapping and keep the packing for maybe necessary transports. Please inspect the units 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 !

The shipment contains of the following items and accessories :

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)**
   (ground switch at the backside) incl. one/two shielded ASR power cords

c) **ASR** remote control

d) **repair-set** (1x 3 mm-Allen-wrench, replacement screws M4 x 16, fuses)

e) **Care-set** (1x bottle of antistatic plastic-cleaner and a special cloth)

f) **Battery Power Supply** (no controls) inclusive one ASR power cord
   (available only for the ASR Emitter Exclusive versions)

.1.2 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**.

! Damage caused by improper operation is not covered by the ASR warranty !

1. **Never place** the ASR Emitter or the power supply units **near heat sources** such as radiators, fireplaces, stove, or other appliances that produce heat. Avoid also placing the ASR Emitter where it will be subject to direct sunlight or low temperatures.

Check to make sure, that your ASR Emitter has been manufactured for operation at the **AC line voltag**e that is used in **your country**. Attempting to use your ASR Emitter at any voltage other than the specified on the power supply's back side may damage the unit.
If the voltage specified is different from your AC voltage, contact your ASR dealer.

2. The Emitters are equipped with AC power cords which three plugs that include an **earth ground connection**. To prevent shock hazard, the earth ground connection should be used. If your electrical outlets has no separate ground connection please use other ones that have a earth ground connection. If you are not sure of the integrity of your home's electrical system, contact a licensed electrician for assistance.

3. **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.

4. Before cleaning the ASR Emitter, always turn Off the unit and unplug the power supply cords.

5. If you smell smoke, or an abnormal smell, immediately turn Off the ASR Emitter and unplug the unit from the power supply and contact your ASR dealer.

6. Don't expose the Emitter to water or any liquid. Unplug immediately if the unit becomes wet.

7. Replace fuse only with the exact type originally included.

	external power supplies	ASR Battery Power Supply
115 Volt:	16 Amps, Neozed slow-blow	1 Amps, slow-blow
230 Volt:	10 Amps, Neozed slow-blow	0,5 Amp, slow-blow

8. 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 units while it is attached to the AC outlet.

1.3 Placing the Emitter units

The **heat sinks** of the ASR Emitter **radiate** some heat, so please place the main unit in a place, where **air** can **circulate** around the heat sinks. Never put another unit on top of the main unit.

The ASR power supplies do not radiate much heat. For best sonic performance please do not stack the ASR power supplies units nor place the ASR power supply units too close to the main unit.

2.0 Connecting the ASR Emitter to your system

All **standard inputs** of the ASR Emitter are high level inputs with **identical technical characteristics**, just the name is different. For connection of a turntables you may use the ASR plug-in phono board or a separate phono preamplifier.

- The source components should be placed close to the ASR Emitter's main unit.
- To obtain the best performance please use cables as short as possible.
- If your source components are equipped with „fixed" and „variable" outputs always use the „fixed" outputs to connect the component to the ASR Emitter for better performance.

ATTENTION: When you plug cables to the main unit please switch OFF the Emitter !
If you want to be absolutely save unplug the power cords to the AC outlet !

Tipp: please use high quality interconnects, speaker cables and power cords to connect your ASR Emitter. The performance of your system will be increased by using the best affordable cables.

2.1 Standard connections

In the standard version the ASR Emitter is equipped with 6 high-level inputs with RCA sockets plus one direct input, one or two tape outputs and one pair of speaker outputs as direct outputs.

The Exclusive models has 5 RCA inputs and 1 Balanced XLR input.

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

Most ASR Emitter are equipped with the following identical RCA inputs:

„Ph“ = Phono (*if the unit is equipped with the ASR phonoboard this is only for turntables*),
„CD1“ = Unbalanced CD player,
„CD2“ = balanced CD player,
„Tu“ = Tuner,
„DT“ = digital tape,
„Vi“ = for your home cinema system.

"Direct" = when you have only one signal source

The additional RCA sockets (on the back panel, 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 an do the same for the left channel. Please make sure that the RCA connectors fits tight.

2.1 The balanced input

Most ASR Emitters are equipped with a balanced input. This input can easily be chosen by switching the input selector to the „CD2“-position.

You can connect either every high-level source component to the balanced inputs of the ASR Emitter. A balanced cable (with male-/female XLR plugs) can - due to international Studio standards (1= Ground, 2= plus, 3 = Minus) 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.

The **balanced board** has 2 dip switches. They can be used to switch the **input impedance**.

When all switches are Off, the impedance is 10K, when On 1000 Ohms for Studio use.

Please check both positions for optimal sound results.

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

2.3 Connecting a turntable to the ASR Emitter

Every ASR Emitter, that doesn’t have a balanced input can be equipped with the ASR plug-in phono board. The **ASR phono board** can be used for Moving Magnet- or medium and high output Moving Coil cartridges. Please ask for the special instructions for this board.

Better sound quality can be achieved with a separate Phone preamp like the ASR Basis.
The output of the phono preamp should be connected to the Ph inputs at the Emitter.

2.4 Connecting a high-level source to the direct input

The RCA input sockets of the **direct input** are connected directly to the volume control relays via silver wire, 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 at the **direct input** does not have any input relay in signal path so by this the **sound quality** will be **better** than at the other inputs.

When you are using the direct input please switch the input selector to the 7th Position **"Dir".**

The **direct** input **can not** be **switched** with the input selector. 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 from both inputs.

Please don`t switch the input selector to an **input** that is has sources connected; and also **never** to the balanced input **CD2**. Otherwise the two signals will be mixed or the converter of the balanced input with suppress the signal at the direct input, and maybe also damaged from this

If you want to listen to other source components at the normal other inputs you have to unplug the cables at the direct input.

Attention ! When you switch Off the Emitter during you are playing the direct input you may have a loud signal ! In Off the volume control has no more supply and so can`t attenuate the signal. So when you use the direct input please switch first 30 seconds to Standby before OFF.

2.5 Connecting a tape deck to the ASR Emitter

The ASR Emitter I is equipped with one, the ASR Emitter II with two tape outputs.
Connect the „Line out" or „Tape Out"-RCA sockets on your tape deck to the RCA input sockets „DT" 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 heat sinks) 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, position the input selector to the source from which you want to record from. 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 the tape in- and output together – a feedback will be the result. This feedback may cause damages to your connected speakers.

2.6 Connecting speakers to the ASR Emitter

ATTENTION: Put the left control knob to the „Off" position before you connect or disconnect any speaker cables. Check all speaker cables for shortcuts. This will avoid damages to your speakers and the other connected components.
A shortcut is easily detectable and is not covered by the ASR warranty!

To increase the performance of the ASR Emitter, the standard version with a **single speaker outputs** have a **direct connection** to the output transistors **without** a **relay** in signal path.

The **direct output** causes some **differences** to a relay-switched speaker output :

- 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 resistance can not be checked, if a shortcut has occurred on the speakers – this means: all speaker cables **have to be checked** before the ASR Emitter is initially switched to the „On"-position
- if a technical defect occurs, the speaker output can not be disconnected; in case of trouble, the protection circuitry shuts down the whole unit and shorts the speaker outputs.
- to listen to music again, the left control knob on the ASR Emitter has to be switched OFF for some seconds to restart the operation of the amplifier.

The speakers connected to the ASR Emitter should have an impedance that is not lower than 1,5 ohms (20Hz to 20kHz).
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 speaker cables) of the right speaker cables 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 speaker cables 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.

Additionally outputs for the ASR Emitter

The ASR Emitter I can be equipped with one, the Emitter with 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") or together („A" and „B").
The chosen outputs are shown in the display on the front panel.

If the ASR Emitter is equipped with a relay-switched speaker output or with a second pair of speaker outputs, an impedance check will be automatically made, before the unit switches from „Standby" to the „ON" position. When the measured value is under 1,5 ohms, the Emitter does not switch on and a red led bar **"Short circuit"** is flashing**.**

Every ASR Emitter can be equipped with a headset output, either on the front- or the back panel. 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 „C"-position. 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.

2.7 Connecting the separate power supplies to the ASR Emitter

Due to the very high power capability of the ASR Emitters, the external power supplies **have to be** connected direct to wall AC outlets.

Please **connect** the power supplies to the ASR Emitter in the following order:

a) **turn OFF** the ASR Emitter (left control knob to „OFF"-position)

b) **carefully connect** the heavy silver cables (with grey plug featuring 24 contacts) coming from the back panel of the ASR Emitter main unit to the socket on the back panel of the external power supply. The ASR Emitter II features two cables coming from the back panel. Both power supplies of the Emitter II are identical.

c) **connect** the power cords to the AC input of the power supplies

d) **connect** the power cords to the AC outlet

Disconnection of the external ASR power supplies is made in the following order :

a) **turn OFF** the ASR Emitter (left control knob to „OFF"-position)
b) **disconnect** the power cords from the AC outlet,
c) **wait** until the Leds inside the ASR power supplies are not shining anymore
d) **disconnect** the heavy silver cable from the power supplies

If the connection between the ASR Emitter's main unit and the power supplies has been disconnected before the Leds have gone out, please wait at least two hours before you connect the power supplies again. This will avoid damages to the contacts in the plugs.

Tipp: power cords have a big influence on the obtainable sound quality. We recommend the use the ASR Active Power cord on all other components in your audio system.

The **ground lift switch** is located on the back panel of the Power supply 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 „0" disconnects the ground connection as described above.

In any doubt: please switch the ground lift switch to „1".

2.8 Connecting the ASR Battery Power Supply

The input stages of the ASR Emitter Exclusive versions can be supplied with the optional ASR Battery Power Supply. The standard power supplies should be connected before you connect the ASR Battery Power Supply to the ASR Emitter Exclusive (refer 2.7).

The Connecting of the ASR Battery Power Supply is made in the following order:

a) **turn OFF** the ASR Emitter Exclusive (left control knob to „Off"-position) and
b) **carefully connect** the heavy silver cable (with grey plug featuring 16 contacts) coming out of the back panel of the ASR Emitter Exclusive´s main unit to the socket on the back panel of the ASR Battery Power Supply.
c) **connect** the power cord to the AC input of the ASR Battery Power Supply.
d) **connect** the power cords to the AC outlet

Please disconnect the external ASR Battery Power Supply in the following order

a) **turn OFF** the ASR Emitter Exclusive (left control knob to „Off"-position)
b) **Wait** till the blue leds in the battery unit has gone away
c) **disconnect** the heavy silver cable from the ASR Battery Power Supply

2.9 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 used for longer time and so is broken in. Why?

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

Tipp: 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 20 and 30).

If you are not playing the ASR Emitter for more than a week, the same effect may 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.

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

To keep the Batteries in good condition please charge the battery unit at least one day a month !

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.

Tipp: about 1 hour 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 three hours.

3.0 Operating the ASR Emitter

3.1 General operation of the ASR Emitter

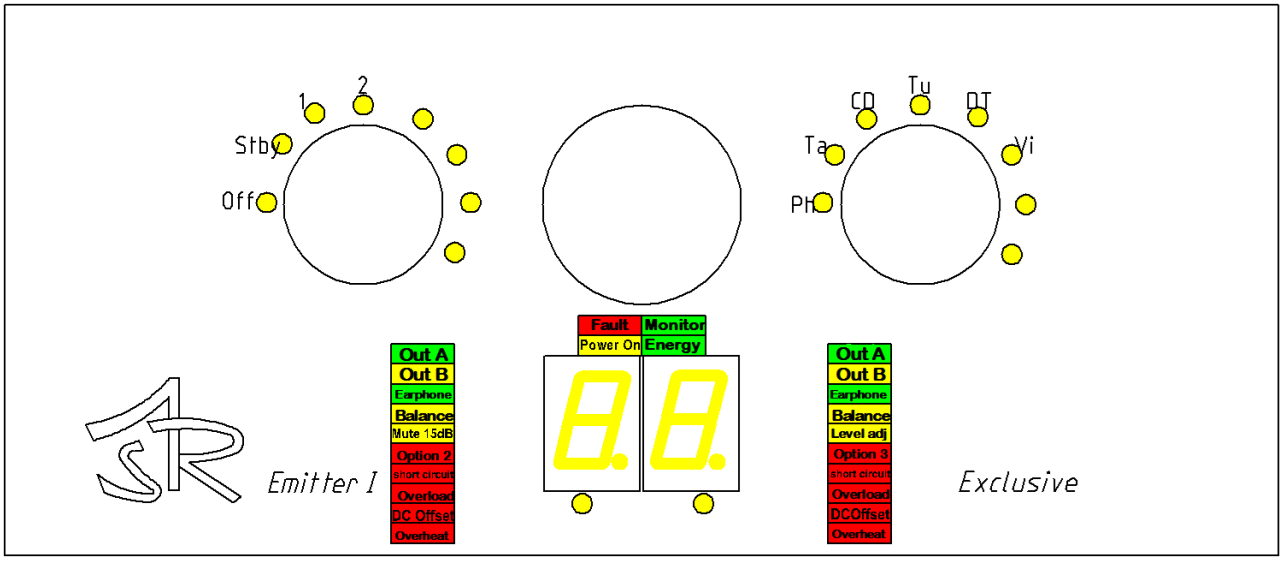
All functions of the ASR Emitter can be controlled by the three golden or chromium knobs on the front panel of the main unit. The operation via remote control is even more convenient. The status of the ASR Emitter is shown in the display on the front panel.

The external power supplies of the ASR Emitter are operating at low levels in energy saving mode: the output and driver voltages of the ASR Emitter are cut in half in this mode.

For a longer life of the built in parts, after switching ON the ASR Emitter is operating in the energy saving mode for one minute.

After connecting the ASR Emitter, 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)

Position	Function
Off	The unit is turned off, the power to the control circuits is disconneted. Before you switch from „Standby“ to „Off“ please wait at least 20 seconds. The ASR Emitter needs this time, to run all functions down.
Standby	In this position - the ASR Emitter can be operated with the remote control - you can record from source to tape
1	volume can be adjusted from 0 to 61dB, normal operating position, energy saving mode is active.
2	volume can be adjusted from 0 to 76dB, energy saving mode is deactivated.

Emitters with additionally outputs :

Additional positions	Function
A1	(speaker-)outputs „A“, normal operating position
B1	(speaker-)outputs „B“, normal operating position.
C	the headset-output is active, the speaker-outputs are muted
A2	(speaker-)outputs „A“, volume control from 0 to 76dB,
B2	(speaker-)outputs „B“, volume control from 0 to 76dB
A+B1	(speaker-)outputs „A“ and „B“ selected to play together

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 relays step control. The middle knob works as an rotary pulse encoder 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 pre selected 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 selector knob to the desired input. The chosen input is indicated by a yellow Led.

Monitor-switch (= if supplied, right beside 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 rear band signal. When the monitor input is activate a green bar in the display is shining. When the ASR Emitter is in the „Standby“-mode, pressing the tape-monitor switch activates the adjustments mode.(See 3.4)

3.3 Operating the ASR Emitter via ASR remote control

All functions of the ASR Emitter can be controlled via the supplied ASR remote control.

To operate the ASR Emitter via ASR remote control, switch to „Standby“.

When you press a key on the ASR remote control, the display lights up and shows the selected function. When using the ASR remote control, the three control knobs on the front panel of the ASR Emitter are not moving. Leds around the knobs are showing the operation mode.

For remote control operation, the ASR Emitter uses the standard RC5 code set – this allows the remote control operation with a wide variety of different programmable remote controls. Philips and Marantz and many other brands uses the RC5 code, too.

Functions of the remote control buttons :

Button	Function
(right side)	
Power	switches the ASR Emitter ON and OFF
Mute	lowers the volume for 15dB, pressing the button again back to the level before
Vol	upper “Vol”-button = increases the volume lower “Vol”-button = decreases the volume
(left side)-	
Mode	selects the adjust mode for balance, energy saving mode, display brightness etc. and input level. press the “Mode”-button as long until the mode you want to adjust is displayed; adjustments can now easily be made using the „Vol“ buttons
Inp	allows direct input selection: Ph, CD1, CD2, Tu, DT, Vi, Dir upper “Inp”-button = switches the inputs clockwise, lower “Inp”-button = switches the inputs counter-clockwise

3.4 Adjustments of the ASR Emitter

The ASR Emitter offers a lot of to adjustment possibilities.

With **remote :** The **adjustment menu** can be easily accessed by pressing the „**Tape**“-button on the Roksan remote control.

At the **main unit** : Please switch the Emitter with the left knob to Standby.
Then push the „Tape Monitor“-button located right from the input selector.
When the ASR Emitter is not equipped with a Tape monitor the button is located at the right side at the back of the display board inside the amp. For access you have to remove the top cover.

To adjust the parameter, please press either the “Vol”-buttons on the ASR remote control or turn 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 switched OFF for at least ten seconds. In this case all adjustments are stored.

Adjusting the channel balance

Please **press** the "Mode"-button on the remote control (or the „Tape Monitor" on the front plate) ***once*** – two yellow LEDs „Balance" are flashing. Now you can either use the "Vol"-buttons (upper "Vol"-button = balance to the left, lower "Vol"-button = balance to the right) on the ASR remote control or the middle knob of the ASR Emitter to adjust the channel balance.
If the balance is adjusted to **one side**, the corresponding yellow led „Balance"-LED is flashing. When the balance is in the **middle** both yellow „Balance"-LEDs are flashing.

Adjusting the energy saving mode

The volume level, where the ASR Emitter switches automatically from energy saving mode to **full power mode** can be adjusted in a wide range from 01 to 51.

If you set the display to „01" the energy saving mode is disabled. The factory setting is „35".

Please press the "Mode"-button on the remote control (or the „Tape Monitor"-button on the front plate) *twice* – the green LED „Energy" is flashing. Now either use the "Vol"-buttons (upper "Vol"-button = ASR Emitter switches into normal operating mode at higher level, lower "Vol"-button = ASR Emitter switches into normal operating mode at lower level) on the ASR 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 is 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.
The display of the A**SR Emitter Blue Version** models is adjust to "37". This means that the number display and the blue Leds around the knobs that are showing the operation mode and the chosen input are illuminated all the time with maximum brightness.

Please press the "Mode"-button on the ASR remote control (or the „Tape Monitor"-button on the front plate) *three times* – the two yellow display numbers are flashing. Now either use the "Vol"-buttons on the ASR remote control or the middle knob of the ASR Emitter to adjust the display.

left display number	**Adjustment of the Leds switch ON Mode**
0	display switches totally off after ten seconds
1	the Leds above the left and right knob are illuminated constantly
2	the two numbers of the display are illuminated constantly
3	equivalent to mode 1 and 2 together
4	mode Leds (Out, Balance etc.) are illuminated constantly
5	equivalent to mode 1 and 4 together
6	equivalent to mode 2 and 4 together
7	the whole display is illuminated constantly

right display number	**Adjustment of brightness**
0 to 7	0 (= off) to 7 (= max. brightness), altering the volume will illuminate just the yellow numbers
8 to F	8 (= off) to 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 analogue 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. Please press the "Mode"-button on the ASR remote control (or the „Tape Monitor"-button on the front plate) *four times* – the yellow „Input level"-LED is flashing. Now either use the "Vol"-buttons (upper "Vol"-button = increases input level, lower "Vol"-button = decreases input level) on the ASR 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. To re-configure your ASR Emitter individually, please contact your authorized ASR Audio Systems dealer. The left and right switches are for separate adjustments and are set different left and right.

High Frequency compensation switch

The **high frequency compensation** of the output stages in the Emitter can be increased with two switches on the mainboard, located in the middle left and right. Pos 2 means higher compensation.

High Compensation increases the **stability** with difficult loads like high-capacitive cables or **impedance critical** loudspeakers. The **sound** becomes at the same time a little bit **smoothe**r.

By the way also the sound in the **burn–in time** can be arranged somewhat more pleasant.

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 „Fault". 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. To restart the operation please put left knob to the „Off"-position for some seconds.

4.1 Impedance-check before the ASR Emitter is switched ON

Normally the ASR Emitter has a direct output without relay. When the Emitter is **equipped** with a **second loudspeaker** output or **headphone** all outputs are switched with **relays**.
In this case the outputs are checked for **short circuit** to avoid damages.
After switching the ASR Emitter ON, the DC impedance is checked during the countdown from „99" to „11". If the impedance is lower than 1,5 ohms the Emitter stops the countdown and a red led bar **"Short circuit"** is flashing. In this case please check the speaker cables for shorts.
When you don't find a fault please detach the speaker cables from the ASR Emitter and try again.
If the red Led is still flashing, please contact your authorized ASR Audio Systems dealer.

4.2 Distortion- and Overload-protection circuit

This protection switches the ASR Emitter OFF in case of **overload** or a **missing** supply **voltage**. When you play so loud that the required output voltage is higher than the operational voltage of the amplifier the signal pulse are cut. This results in **very high distortions** that may **damage** the midrange- and treble drivers of your loudspeakers.

As soon as the protection circuits detects distortion, the distorted channel of the ASR Emitter is switched OFF – the display **indicates** the switch OFF with two flashing red Led bars „Overload“ and „Offset“.
These two Leds are flashing, too, if the loudspeaker-outputs are not free from DC voltage.

The duration of the switch OFF time delay is variable with one two switch Dip switch per channel

Switch 1	OFF	long switch-off time	ON	Switch-off time short
Switch 2	OFF	no influence	ON	No disconnection at distortion or short-circuit

If the protection circuit is switched OFF, the amplifier can no more recognise a short circuit of the loudspeaker outputs during operation!
!! WARNING !! For this reason, this switch position should only be used in exception.
A guarantee can not be undertaken at switched Off protection circuit.

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 heat sinks of the ASR Emitter. If these sensors detect a temperature > 55° Celsius, the ASR Emitter will be switched off. The display indicates the switch off with a flashing Led (red) „Overheat“. Please put the left knob on the ASR Emitter’s front plate to the „Off“-position. After the amplifier has cooled down 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 front plate is sealed and may not be cleaned with anything else than a soft cloth with no liquids or chemicals on it.

Tipp: if your 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 Resetting the ASR Emitter after malfunctions

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

- put the left knob on the ASR Emitter to the „Off"-position and wait a least 20 seconds
- switch the left knob back to the „Standby"-position
- now you can switch the ASR Emitter ON again by either putting the left knob to the „1"-postion or by pressing the „On/Off"-button on the remote control

5.3 Description of Leds shining in operation

In **OFF** in the main unit a red Led near the 8 pole Dip and the green Led +11V should shine. Without battery unit also the 4 red Leds from input should light up.
In the **power supply units** two red Leds for input and two green Leds for Control are shining

In **Standby** the two Leds for +11V and -11V should shine, the Leds from the input selector, the 4 red ones from input and the 4 green ones near the Offset and Overload Leds.

In **ON** position all operation voltages should be present.

In the **main unit** the operation voltage is shown with 4 yellow Leds for the output voltage, 4 green ones for Driver and 4 red ones for input. Check the positions on the plan in section 6.2

In the power units : In **Energy mode** the yellow Led **Energy ON** in the middle and 2 yellow **EGY** and 2 green **Driver** Leds are shining.

In **Full power mode** three blue Leds **Power** are shining.

When the corresponding Leds are shining in the power supplies, but not in the main unit, please check the cable and the plug at the backside of the power supply units.

5.4 Checking fuses in the power supply units

When the Emitter is not working please check at first if the two red Leds for input and two green Leds for Control are shining in the external power supplies. If not please check if the AC cord is plugged in properly at the PSU and the AC wall plug. If yes - please unplug the AC cord, open the PSU units and check the fuses inside. There are two fuses-

- The main fuse - the big one left the PCB board (230V = 10 A slow, 115V = 16 A slow)
- The small fuse in a black tube right on the Pcb Board is a 0,5 A at 230V and 1 A at 115V

When the Leds in the power supply units are shining, please check if the heavy silver connection cables from the main unit are connected properly to the power supply units.

5.5 External battery power supply

After switching on the main unit the blue Batt ON bar should light up in the front plate of the battery unit, and the Emitter main unit is supplied out of the battery.
If that does not occur, and the yellow Charge is lighting up instead the batteries are empty and should be charged. After **recharging** the battery unit switches **automatically back** into battery mode. If the charge led is not shining please check if the AC cord is plugged in properly.
Also check the fuse that can be found in the little drawer in the connector for the AC plug at the backside of the battery unit. Replace the fuse, when necessary with a 0,5A/230V and 1A/115V.

5.6 The Emitter is not reacting on remote control signals

At first please check if the Emitter is switched OFF- in this case the remote will not work.
Then check if the led on the remote controller is flashing green when you push a button.
If not please check the battery.

5.7 Noise from the main unit while warming up/cooling down

The main unit of the ASR Emitter is assembled with acrylic glass and heat sinks of aluminium. These two materials expand differently during the warming up/cooling off-phase of the amplifier. This may result in some crackling noises during warming up or cooling down.

Solution : loosen the screws (located in the heat sinks) of the front- and/or back plate of the ASR Emitter.

5.8 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 Audio Systems dealer. Please pack the units into the original ASR boxes and with the original ASR packing accessories. Your authorized ASR Audio Systems dealer will take care of your unit and will repair it properly.

6.0 Facts about the ASR Emitter

6.1 Function of the ASR Emitter main unit

- Most of the design of the Emitter is totally different from other amplifiers !
- The Emitter is more a main amp with volume Control and input switches.
- It is not necessary to have a additionally preamplifier !
- The internal signal-processing is unbalanced, balanced signals are converted !

The signal is passing the input relays and is routed straight to the relays volume control step switch to be controlled in its level. Till level 50 the signal is attenuated, in 51 the signal goes unchanged through the volume control. From level 52 on the gain is regulated.

The amplifier has three stages :

1) In the input stage is a FET-input-operational amplifier IC.
2) The driver stage is made with very fast Mos Fet transistors.
3) The output stage is made with 2x3 (2x5 at EM II) high power audio Mosfets.

Every stage has a separate supply voltage. Each voltage can be controlled with Leds on the Emitter main board and in the separate power supplies.

A microcontroller controls the operation of the ASR Emitter. The microcontroller is programmed with the control program and can be reprogrammed with newer versions.

In **"Off"** only the green +11V LED in the right front and a red +5V on the additionally board in the front is shining. Without battery also the input is supplied. That can be seen with 4 red Leds

In **"Standby"** the control voltages are switched ON. The yellow -11 V LED at the right side and the 4 green 11V Leds at the protection circuits are shining. Also the Leds at the input relay are shining. With battery PSU the input stage is supplied with low voltage for preheating.

In **"Position 1, 2"** and the further positions, the amp switches ON the external PSU.

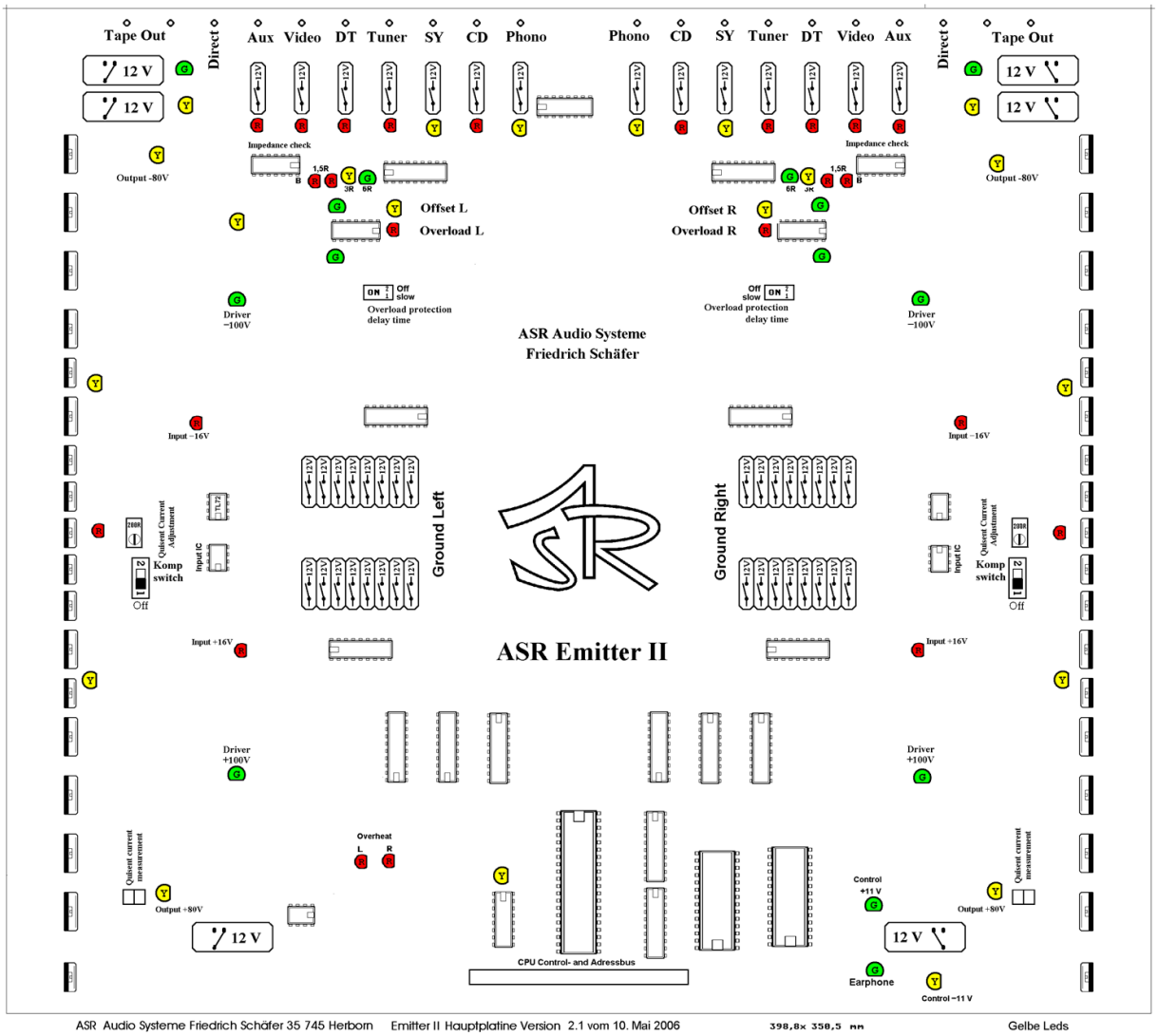
This is shown with the yellow Led Main Power, that is located under the additionally board. After the PSS s have switched, the voltages for the driver and output stages are coming on.

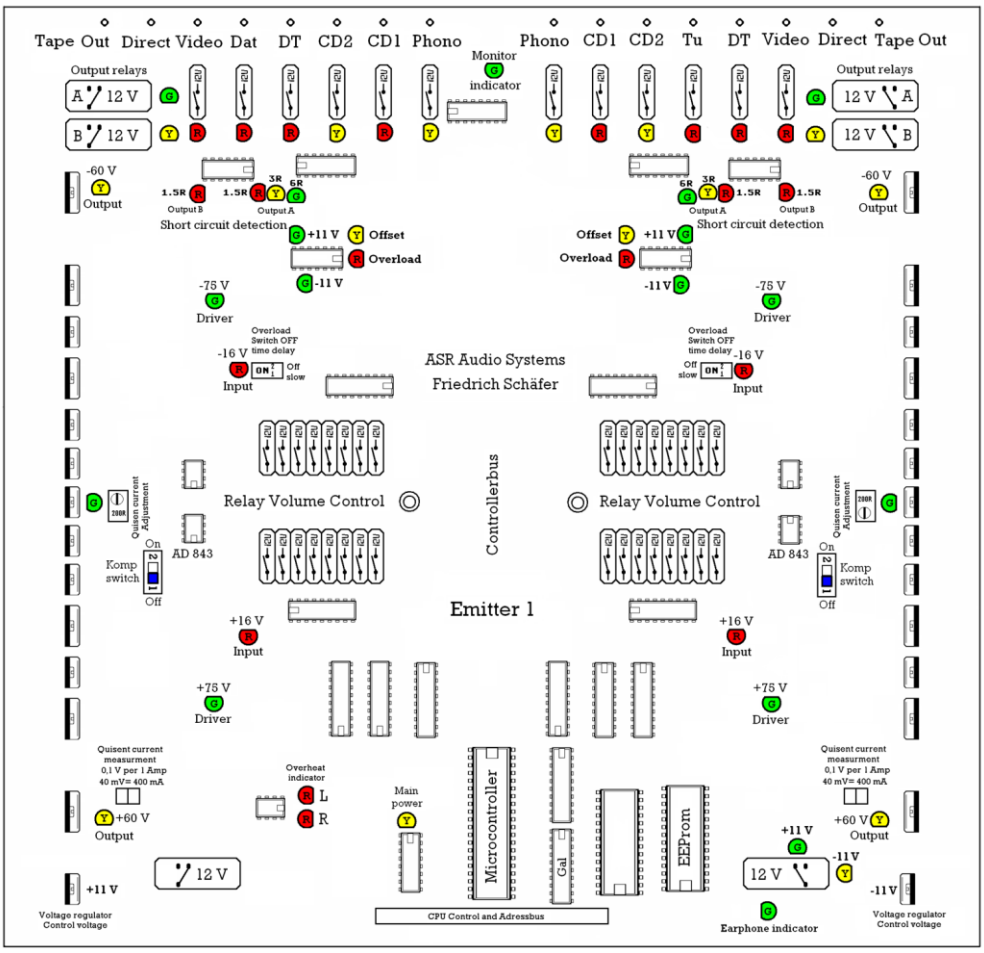
4 green Leds are used to control of the drive voltage (± 75; EM II 96 Volt),
4 yellow ones are showing the output stage supply (± 60; EM II 78 Volt).

In "**Energy mode"** the voltages are half, the 8 Leds are shining low.

In **"Full power mode"** this 8 Leds will shine brighter with the full voltage.

The lock from above onto the main PCB board of Emitter II (Em I next page) :





6.2 Function of the external powersupply :

In the separate power supply units the **operating voltages** are **generated** from the **AC power** network voltage.

The transformers provide **8 separate voltage**s that are rectified and buffered.

The standby trafo is providing the voltages for the input and control and is working all the time.

All the voltages can be **controlled** with **12 Leds** in front of the main PCB board in the PSU.

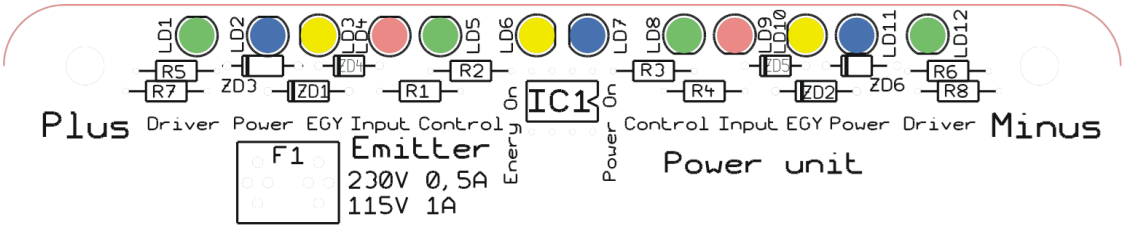
The two yellow an blue **Leds** in the **middle** show that the **Emitter** has given the **signal**, the Leds left and right that the voltages are present.

In Off and Standby two green **Control** and two red Leds **Input** are shining.

After switching ON in **Energy mode** the yellow led **Energy ON** in the middle

shows that the Emitter main unit has switched ON the PSU, then the two relays in the middle RE3, RE4 are switching and then the 2 yellow **EGY** and two green **Driver** Leds are shining.

After switching in F**ull power mode** a blue Led **Power ON** in the middle is shining, then the 4 outer relays RE1,2,5,6 are switching ON and then two blue Leds **Power** will shine, and the green **Driver** Leds will become brighter.



6.3 Function of the external ASR battery power supply

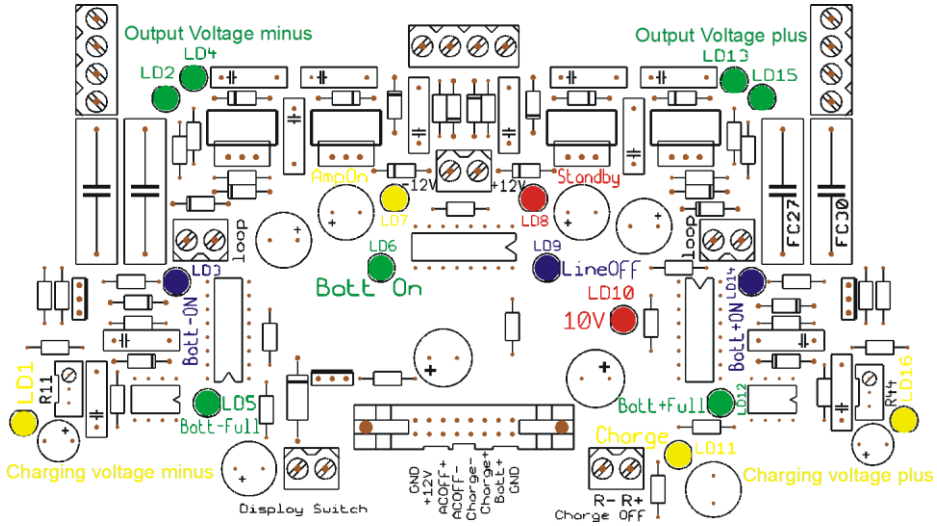
(optional only for the ASR Emitter Exclusive versions)

The ASR Battery Power Supply is housed in massive separate case. The case contains six batteries, each 6Volts/12Ampere-hours and capacitors for buffering summing up to 400,000µF. Fuses: 0,5A slow-blow 230V, 1A for 115V (charging transformer), 5A slow (for the batteries)

In **Standby** the circuits inside the ASR Emitter Exclusive are preheated with +/- 10 Volts. When charging, the unit is supplied from the charging circuitry. During **discharging**, the 72VA-Philbert-Mantelschnitt-transformer is **separated** from the AC line via relays in both phases.

The battery power supply is switched on the buffering capacitors via Mos Fets.

All operations are controlled by an optical digital logic circuitry to avoid RF distortions.



Function and description of the control Leds

- turned OFF (**Pos „Off“**): the batteries are charged. The **yellow** “Charge” Led is shining. When **full**, the **green** Leds **“Batt+Full”** and **“Batt-Full”** are shining.
- turned ON (**Pos “Stby”**): the unit is supplied with current out of the charging transformer, and the batteries are still charged. The **red** “**Standby**” and “**10 V**” Leds are shining.
- turned ON (**Pos 1 or 2**): the main unit is supplied with current out of the external battery power supply. The **yellow** led “**Amp ON**” and the **blue** Led “**Line Off**” is shining. The charging transformer is **separated** from the AC power line. After that the **green** Led “Batt On” and two **blue** Leds “**Batt+On**” and “**Bat-On**” are shining.
- during „**Batt ON**“-mode: the voltage is constantly **monitored**. When the voltage is lower than 17 Volts the batteries are empty, and the “Batt Full” Leds go away. The Battery PSU switches into the charging mode- in this mode the main unit is supplied out of the charging transformer.
- Also during charging the batteries the Emitter is working and you can still listen to music.
- when the batteries are **fully charged** at 19,5 Volts, the charging transformer will be turned Off, and the ASR Emitter Exclusive is **supplied** out of the **batteries**.
- fully charged, the batteries can **supply** the ASR Emitter for approximately **100 hours**.

To lengthen the **lifetime** of the batteries please turn the Emitter to the „Standby” position for **one night** after approximately **2 days** of playing in “1 or 2” position. In this case the batteries are not so much discharged. Lower quantity of discharging is good for the battery life.

One hour of charging is equivalent to about three hours of playing music.

The ASR Battery Power Supply should not be disconnected from the AC outlet for more than 3 weeks, other wise the batteries may be damaged by the self discharging of the batteries.

7.0 Technical Data

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

Input stage with **FET inputs** and separate voltage stabilization, output stage with high internal feedback, output and driver stage built with complementary MOS-FETs, temperature-depended regulation of bias 400/600mA (ASR Emitter I/II), amplifier operates mostly in class A mode, no capacitors in the signal path, full DC operation with offset regulation.

PCB double-sided 2x 108 µ copper gold plated, signal wires made out of pure silver and shielded, separate grounding for each channel and for signal routing and voltage supply, pcb assembly with silver solder, electrolytic and foil capacitors are installed for buffering of the operational voltages in the main unit and the external power supplies.

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 cases per channel for the ASR Emitter II). A built-in 72 VA transformer supplies the input stages and the controls with ± 15 volts.

Six relays for each power supply are used to switch the transformers in energy saving or normal power mode. The supply voltages are shown via 10 Leds in the power supply unit.

The cases 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 1200 watts/1 ohms

ASR Emitter II Exclusive:
2x 290 watts/8 ohms, 2x 500 watts/4 ohms, 2x 900 watts/2 ohms, 2x 1400 watts/1 ohms

Dynamic output power: about 1,5x RMS output

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

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

Frequency response: -0.2Hz to 500kHz (- 3dB)

Input impedance: 10 k ohms

Gain: up to 28 dB in position „1“,up to 43dB in position „2“ depending on volume set

Input sensitivity: level „61“ = 2,0V, level „76“ = 0,4V (for 150 watts into 8 ohms)

Separated supplies for **(Exclusive versions)**
the input stage:

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

the voltage amplification stage:

±76 volts/42.000µF (ASR Emitter I) and ± 96 volts/620.000µF (ASR Emitter II)

the current output stage:

± 60 volts/402.000µF (ASR Emitter I) and ±78 volts/602.000µF (ASR Emitter II)

Dimensions and weights: (W x D x H) of the Exclusive versions

ASR Emitter I :
42,0 x 41,0 x 18,0 cm, 22 kg, power supply 46,0 x 32,0 x 16,0 cm, 32,0 kg
16,5 x 16,1 x 7,1 inches, 48 lbs., power supply 16,9 x 15,6 x 5,9 inches, 71 lbs.

ASR Emitter II :
57,0 x 44,0 x 23,0 cm, 47 kg, two power supplies 46,0 x 32,0 x 16,0 cm/each, 32 kg/each
22,4 x 17,3 x 9,1 in,103 lbs, two power supplies 16,9 x 15,6 x 5,9 inches/each, 70,6 lbs./each

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