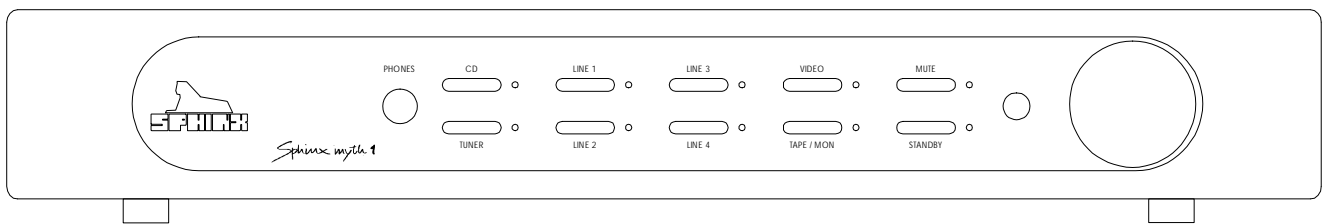


SERVICE MANUAL

MYTH 1

PREAMPLIFIER



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The Sphinx Myth 1 design

This service manual will help you to optimally service and repair the Sphinx Myth 1 Preamplifier.

This pre-amp uses the newest technologies and refined designs and is extremely simple to operate. Designs that successfully have been used in the award winning Project Eight.

Such as the ultra-linear extremely low-noise Class-A audio circuits, built from the finest hand-selected parts.

The signal path is completely balanced from input to output, and left and right are totally separated.

The power supply is of a unique design (fully Class-A!) and consists of three completely separate and independent sections: one for the digital control, plus one each for the left and right channel.

Input selection is done by means of precision relays. The ALPS volume control is motor-driven.

To obtain the maximum quality from this power amp it is necessary to use it with top quality audio components, preferably with other Sphinx components.

Please also refer to the User Manual of the Myth 1 for information about functions not described in this manual. It is important to familiarise yourself with the special functions, operation and possibilities of the Sphinx Myth 1.

1. UNPACKING

Before leaving the factory every Myth 1 is subjected to stringent and extensive technical and exterior quality inspection.

This ensures you will enjoy many years of high quality audio from a perfect-looking product.

After unpacking your Myth 1, we therefore recommend you carefully check it for any transport damage.

In case of damage: please contact your Sphinx dealer immediately and retain all packing materials for possible proof of damage and possible claims.

Even if the component is in perfect condition you should still keep the packing materials. If you need to transport your Myth 1 at a later time it will be best protected by the original packing materials.

2. CONTACTING THE MANUFACTURER

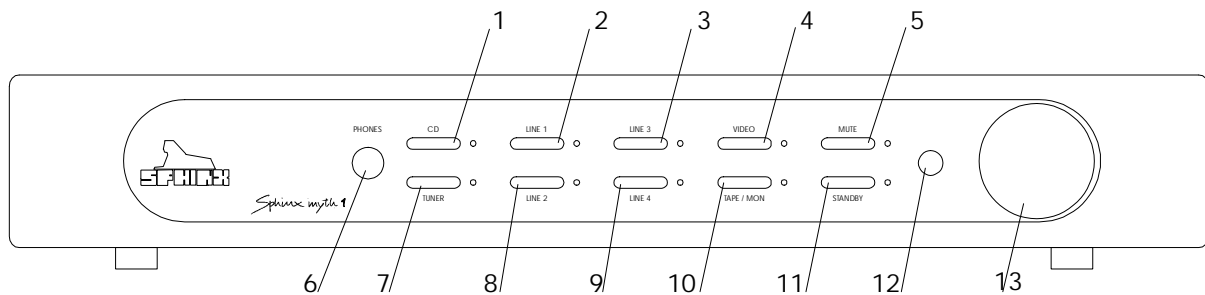
In case of any problem not covered in this manual or if you have other questions you may contact the **Sphinx International Service Department** in The Netherlands (local time: GMT +1h) during office hours at the following numbers:

Phone: (+31) 35 602 0302
Fax: (+31) 35 602 2806
E-mail: audionl@euronet.nl

It is always very helpful and efficient if you have all relevant information about the specific product and the problem ready.

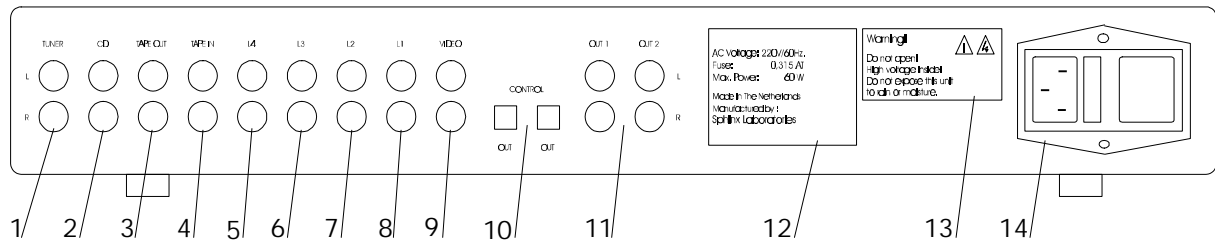
3. THE PRE-AMP AT A GLANCE

Front panel



1. **CD:** To select the CD input. The red LED will light.
2. **LINE 1:** To select the Line 1 input. The red LED will light.
3. **LINE 3:** To select the Line 3 input. The red LED will light.
4. **VIDEO:** To select the Video line input. The red LED will light.
5. **MUTE:** Press this button to temporarily mute the sound. The red LED will light.
6. **PHONES:** To connect dynamic stereo headphones.
7. **TUNER:** To select the Tuner input. The red LED will light.
8. **LINE 2:** To select the Line 2 input. The red LED will light.
9. **LINE 4:** To select the Line 4 input. The red LED will light.
10. **TAPE / MON:** To select the TAPE IN input. The red LED will light.
11. **STANDBY:** To switch the component on and off:
 on LED is off
 off LED is red
12. **Receptor window** for the IR signals from the Remote Control.
13. **VOLUME:** This rotary knob adjusts the volume level.

Rear panel



1. **TUNER:** To connect the signal cable from the tuner.
2. **CD:** To connect the signal cable from the CD player.
3. **TAPE OUT:** Connect this output to the *input* of the recorder.
4. **TAPE IN:** Connect this input to the *output* of the recorder.
5. **LINE 4:** To connect the signal cable from the signal source for LINE 4.
6. **LINE 3:** To connect the signal cable from the signal source for LINE 3.
7. **LINE 2:** To connect the signal cable from the signal source for LINE 2.
8. **LINE 1:** To connect the signal cable from the signal source for LINE 1.
9. **VIDEO:** To connect the signal cable from the audio output of the video source.
10. **Control Out:** To connect the optical cable(s) to other Sphinx component(s).
11. **OUT 1 /2 L+R:** Connect this output with a signal cable to the input of your power amp.
12. **Manufacturer's label:** This shows important data for the component, such as serial number and mains power voltage.
13. **Warning!:** This shows important information about the safety regulations for the Myth 1.
14. **AC Power:** Connect the mains cable to a mains power outlet (100 - 240 VAC). The mains fuse is placed behind the cover. Here you also find the mains power switch **O / I**.

4. OPERATION

Connect the mains cable to a mains outlet.

Once you have finished connecting all components, you can power on the Myth 1 with the mains switch **O/I** (14) .

The volume control will then automatically turn counter-clockwise and for a while the STANDBY LED will blink red, after which it will remain red. The pre-amp is now in standby mode.

From now on you should switch the amp on or off with the STANDBY button (11). That way, all circuits will remain at optimum operating temperatures and the audio quality will be 100% immediately after switching on. Additionally it significantly increases the life span of the component.

The Myth 1 is now in stand-by mode.

Power on

Switch the Myth 1 on with the STANDBY button. The pre-amp will select the CD input after which it un-mutes the output.

Selecting an input

You may select an input with one of the buttons 1. to 9.: the LED will illuminate.

The new input becomes active after you have selected it. You will hear a 'click'. This is caused by the precision relays for the inputs: the 'old' one is released while the new one is energised.

Adjusting the volume level

The large VOLUME control to the right adjusts the volume level from OFF to maximum (fully clockwise). The level change is immediate.

Temporarily set volume to 'zero'

Press the MUTE button (5) temporarily mutes the sound. The red LED will light. Another press on this button un-mutes the output.

Power off


You switch the Myth 1 off (to stand-by) with the STANDBY button (11).



5. SPHINX REMOTE CONTROL

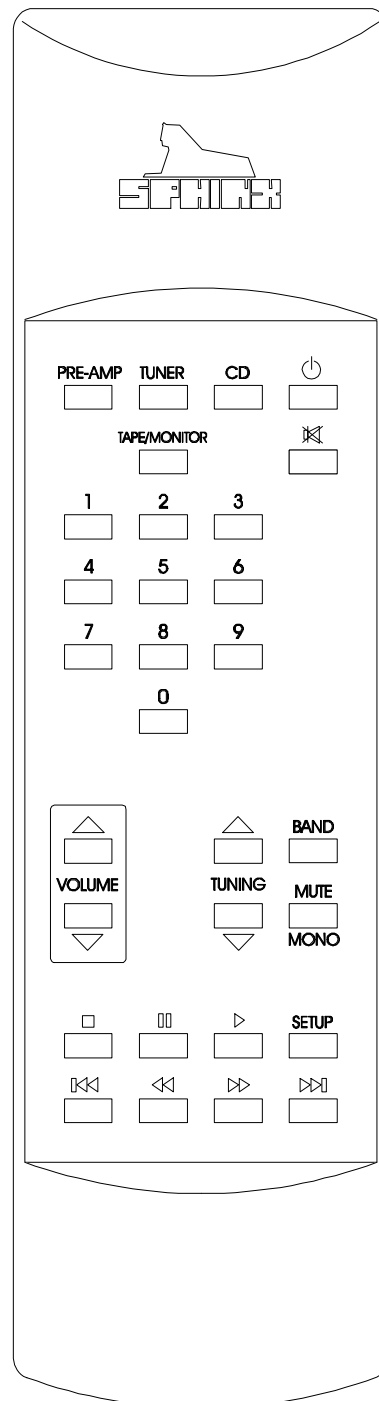
This single Sphinx Remote Control lets you control all functions: not only of the Myth 1, but of all other Sphinx equipment.

Only the following buttons and indications on the Remote apply to the Myth 1 (the others will not function):

Buttons

1. **PRE-AMP:** To select the amp. All buttons pressed hereafter will control only the pre-amp functions.
The buttons TUNER and CD will have no effect.
2. **STANDBY:** Use this red button to switch the Myth 1 to stand-by.
3. : Pressing this green button mutes the outputs (temporarily) and you will not hear any sound. The red LED will be illuminated. Another press on this button un-mutes the outputs
4. **TAPE/MONITOR:** Use this button to select the Tape IN input. Pressing this button has the same effect as pressing the TAPE/MON button (9) on the front panel.
Note: The LED of the selected input (see 5.) will remain illuminated.
5. **1 - 7:** To select inputs CD to VIDEO (*Note: 8 to 0 do not function*):

1	CD	CD input
2	TUNER	Tuner
3	LINE 1	Line input 1
4	LINE 2	Line input 2
5	LINE 3	Line input 3
6	LINE 4	Line input 3
7	Video	Audio from video source
6.  button: Pressing this button has the same effect as rotating the VOLUME control on the front panel clockwise. You increase the volume.
7.  button: Pressing this button has the same effect as rotating the VOLUME control on the front panel anti-clockwise. You decrease the volume.



Operation

The Sphinx Remote is used with several different models and can therefore transmit different control codes, depending on which model has been selected with the select buttons (1).

Important: Always press the PRE-AMP button before you send a command (even if you only have one Sphinx component).

Otherwise it is possible that, although the Remote sends a signal, nothing happens because the transmitted signal is not 'recognised' by the component.

Indoors the Remote may be used up to a distance of 7 meter, provided there is no strong sunlight in the room and if you aim the Remote at the component.

Always aim the Remote straight at the front panel of the component, the maximum offset angle is 30°.

Selecting without switching

Suppose, for instance, that you would like to select the Tuner to Radio 4 without interrupting CD playback.

In that case you momentarily depress (not longer than 0.5 sec) the TUNER button and the '4' button. The same procedure is used for the other system components.

How to operate the Remote Control with the different Sphinx components will be explained in the corresponding User Manual of each component.

Batteries

The four batteries have a life span of approximately one year during normal use, but shorter when used more intensely.

Replacement batteries: 1.5 V, model *micro* or *penlite* or *LR03* or *AAA* or *AM4* (one of these codes is indicated on the packaging and the batteries).

You may also use rechargeable 1.5 V batteries.

Note: Position the new batteries exactly as shown in the illustration at the bottom of the battery compartment, otherwise the Remote will not function!

Encountering problems...

Remote Control does not work	
Wrong component selected	Select the correct one
Distance to component exceeds 7 m	Use Remote at closer range
Angle between Remote and component exceeds $\pm 30^\circ$	Decrease angle
Sensor window on front dirty	Clean window
Batteries empty or incorrectly placed	Use new batteries or replace the old ones correctly
Strong (sun)light in room	Shade off light source
Component is not switched on (!)	Switch it on

Component reacts differently than expected or not at all	
Wrong component selected	Select the correct one
Component or Remote does not function	Check component with its original remote
Batteries in Remote empty	Use new batteries

6. TECHNICAL SPECIFICATIONS

Bandwidth	0 – 111,000 Hz (+0/-3 dB)
Phase response error	<0.5°
Gain	9.5 dB max.
THD+N (IHF-A)	<0.020 / 0.002% (2 nd harm., 10 - 20,000 Hz)
IMD	<0.003%
S/N ratio (IHF-A)	>84 / 100dB
Channel separation	>98 dB
Slew Rate	> 24 V/μs
Inputs	8x cinch (gold-plated)
Level, nominal (for 1 V output)	0.13 V (-18 dBV)
impedance	47 kohm
Outputs	2x cinch Out 1, Out 2 (gold-plated)
level	1x cinch Tape (gold-plated)
impedance	10.5 V max. (20.42 dBV) (1 - 100,000 Hz, THD <0.002%) <10 ohm
Volume control	ALPS motorised
channel imbalance	less than 2 dB
Sphinx Control	2x optical
Remote control	Full function
Power supply	Internal, completely stabilised
Supply capacitance	16,280 μF total
Power consumption	11 W (9 W stand-by)
Dimensions (h x w x d)	75 x 434 x 350 mm
Weight	7 kg

This unit conforms to the EMC interference regulations issued by the EU and to the CE standards.
This unit complies with safety regulation VDE 0860 and therefore with international safety regulation IEC 65.

Technical specifications may be changed by SPHINX without prior notice if technical developments make this necessary.

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7. ADJUSTMENT PROCEDURES

The Myth 1 only has one parameters for each channel (so two in total) that might need adjustment:

- **Offset:** to set the DC-offset voltage of the output.

These adjustments might be necessary when the amplifier has been used for a period of time (and settings have changed due to ageing) or when parts of the Myth 1 have been replaced.

Offset

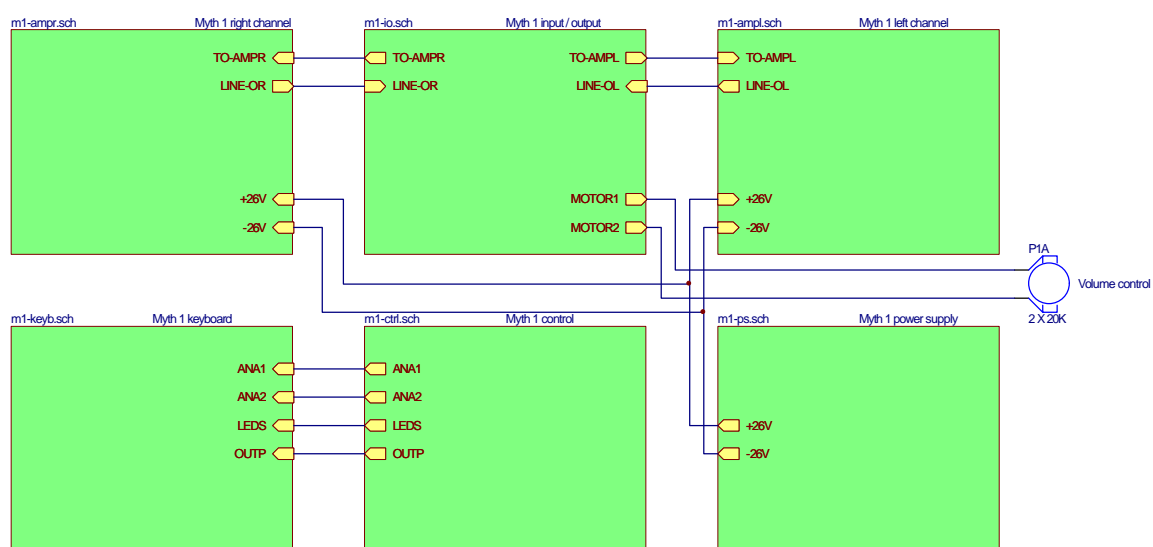
The Offset adjustment procedure minimises the DC offset value of the amplifier output.

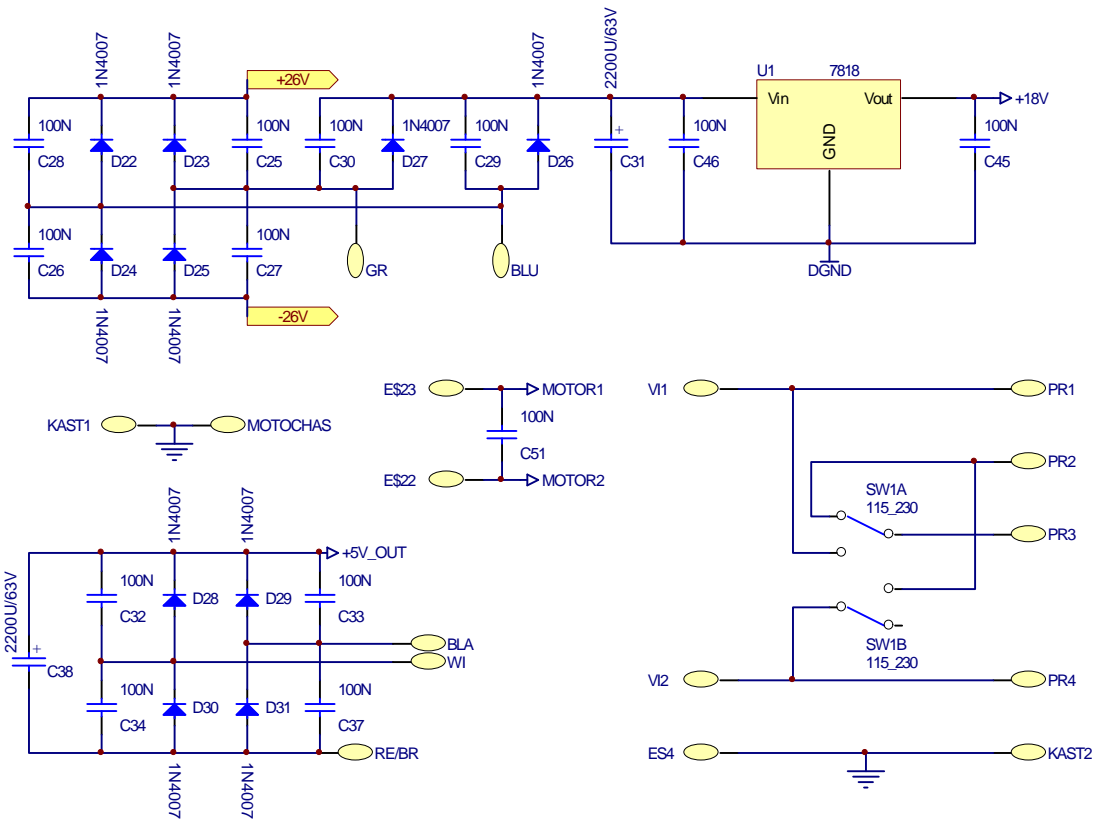
- Switch the amplifier ON and wait until it has reached the proper working temperature.
- Set the millivolt-meter to the DC-range.
- Place the measurement clips of the meter over the output.
- The level should not exceed +1 or -1 mV DC. If it does: adjust potmeter P2L (Left) or P2R (Right) until the level is within this range.
- Repeat this procedure after 20 minutes to finalise the adjustment.
- Switch the oscillator on and set it to 1 kHz and a level of 0 dBV (1 V).
- Check the distortion with a THD analyser: it should be conform to the specified value (0.002% IHF-A @ 1 – 20 kHz). If this is correct the procedure is finished.
- You may now switch off the amplifier

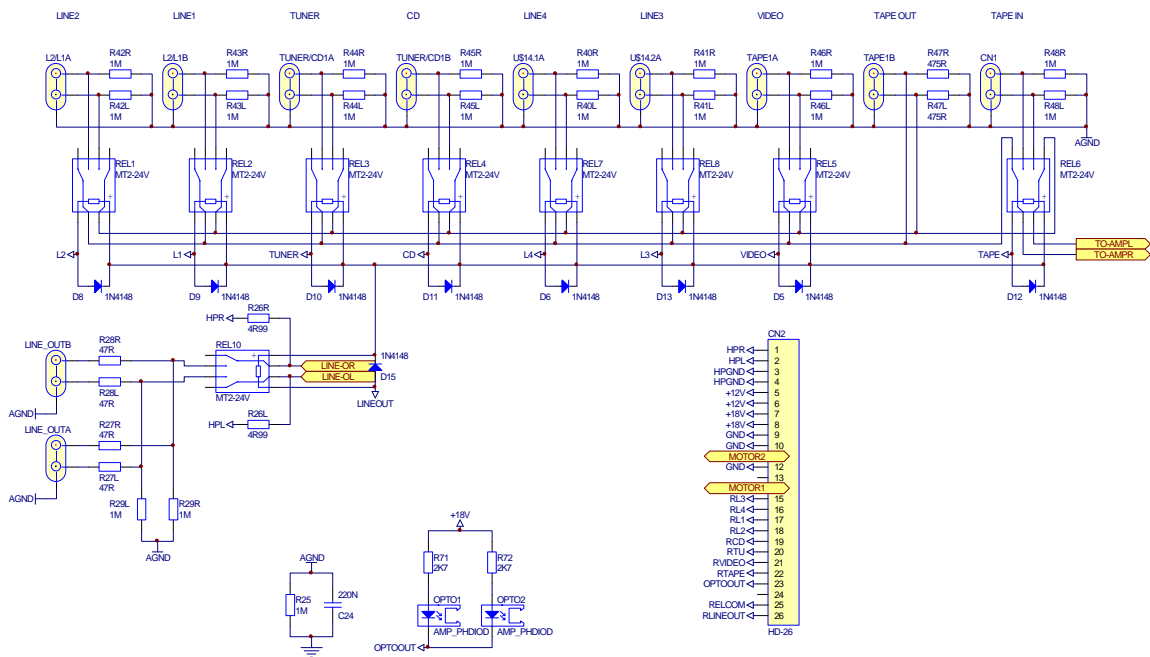
9. DIAGRAMS AND PARTS LISTS

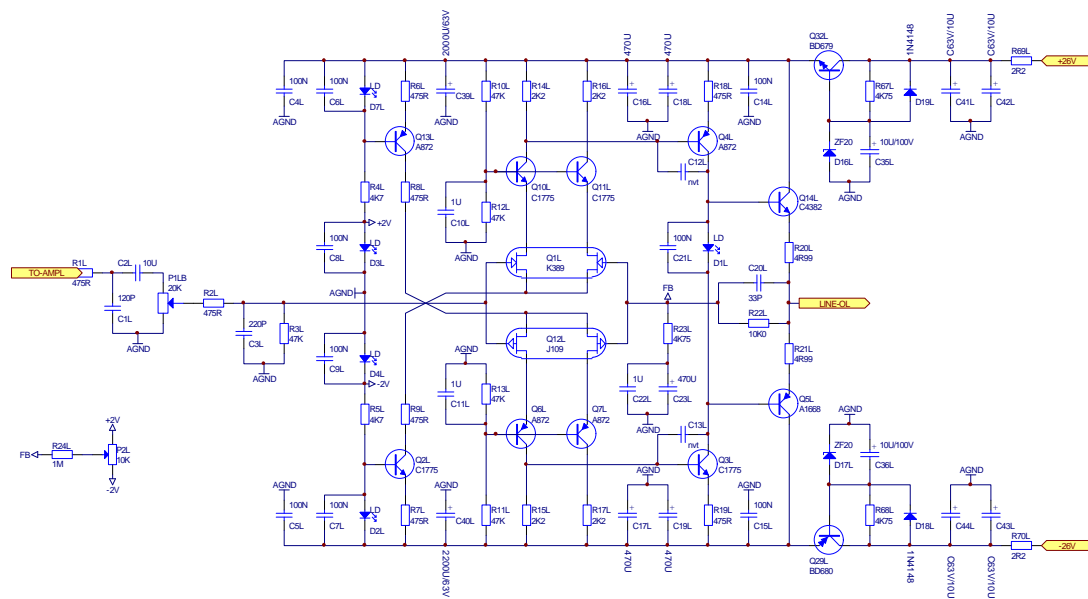
The next pages contain the front and rear panel layout and a complete set of schematic drawings including the associated parts lists (if applicable).

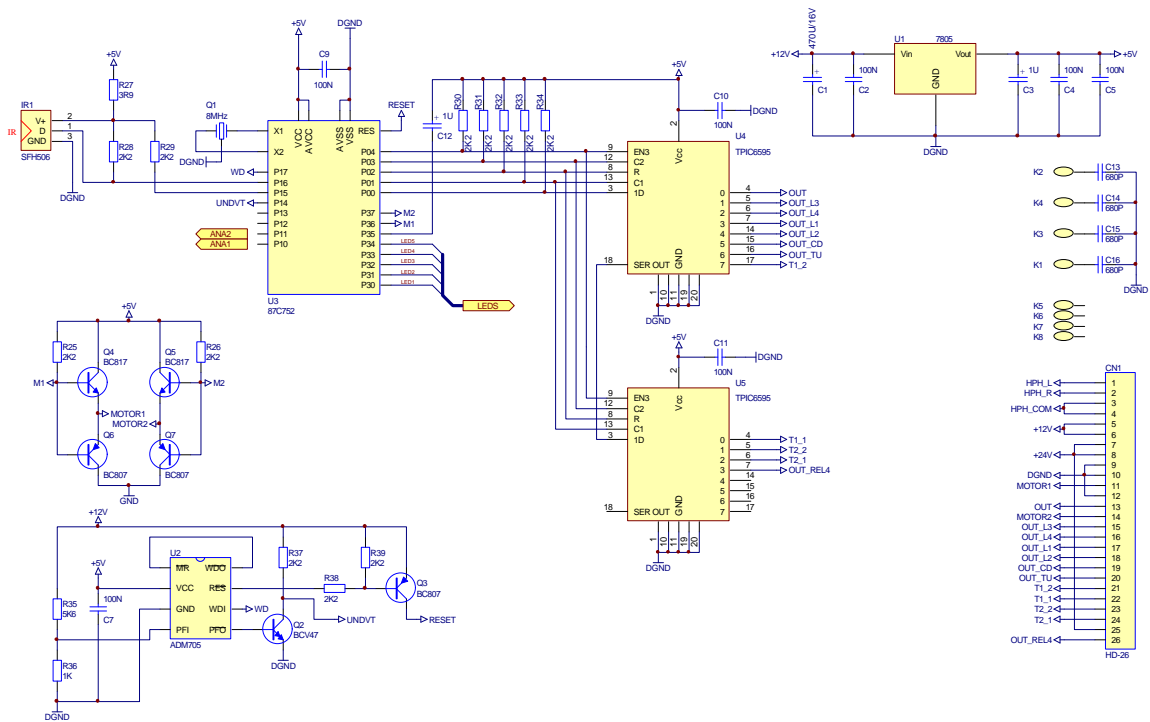
General Overview Myth 1

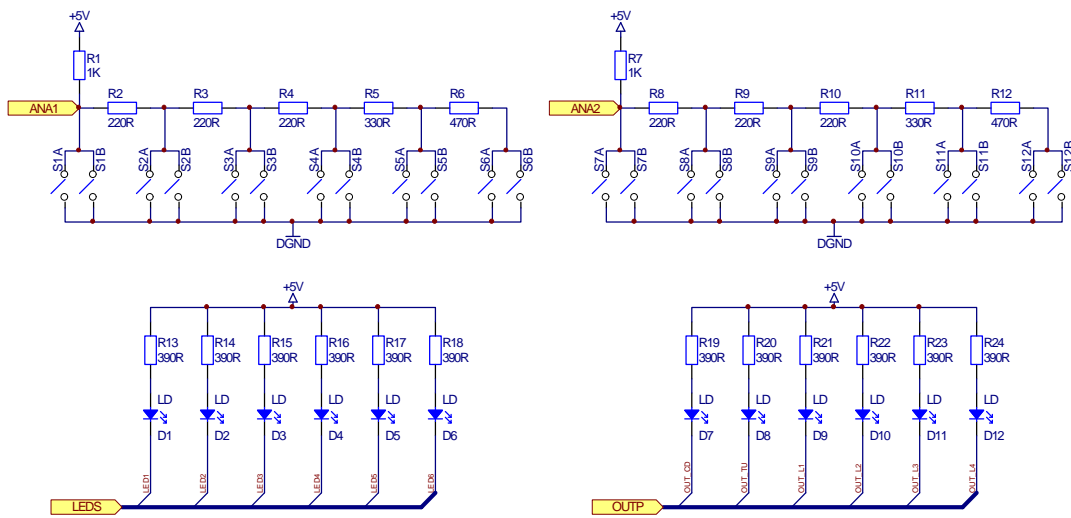












Parts list

Designator	Part Type	Description
C1	470U/16V	Electrolitic capacitor
C10	100N	MKT capacitor
C10L	1U	MKT capacitor
C10R	1U	MKT capacitor
C11	100N	MKT capacitor
C11L	1U	MKT capacitor
C11R	1U	MKT capacitor
C12	1U	Electrolitic capacitor
C12L	nvt	MKT capacitor
C12R	nvt	MKT capacitor
C13	680P	MKT capacitor
C13L	nvt	MKT capacitor
C13R	nvt	MKT capacitor
C14	680P	MKT capacitor
C14L	100N	MKT capacitor
C14R	100N	MKT capacitor
C15	680P	MKT capacitor
C15L	100N	MKT capacitor
C15R	100N	MKT capacitor
C16	680P	MKT capacitor
C16L	470U	Electrolitic capacitor
C16R	470U	Electrolitic capacitor
C17L	470U	Electrolitic capacitor
C17R	470U	Electrolitic capacitor
C18L	470U	Electrolitic capacitor
C18R	470U	Electrolitic capacitor
C19L	470U	Electrolitic capacitor
C19R	470U	Electrolitic capacitor
C1L	120P	MKT capacitor
C1R	120P	MKT capacitor
C2	100N	MKT capacitor
C20L	33P	MKT capacitor
C20R	33P	MKT capacitor
C21L	100N	MKT capacitor
C21R	100N	MKT capacitor
C22L	1U	MKT capacitor
C22R	1U	MKT capacitor
C23L	470U	Electrolitic capacitor
C23R	470U	Electrolitic capacitor
C24	220N	MKT capacitor
C25	100N	MKT capacitor
C26	100N	MKT capacitor
C27	100N	MKT capacitor
C28	100N	MKT capacitor
C29	100N	MKT capacitor
C2L	10U	MKT capacitor
C2R	10U	MKT capacitor
C3	1U	Electrolitic capacitor

Designator	Part Type	Description
C30	100N	MKT capacitor
C31	2200U/63V	Electrolitic capacitor
C32	100N	MKT capacitor
C33	100N	MKT capacitor
C34	100N	MKT capacitor
C35L	10U/100V	Electrolitic capacitor
C35R	10U/100V	Electrolitic capacitor
C36L	10U/100V	Electrolitic capacitor
C36R	10U/100V	Electrolitic capacitor
C37	100N	MKT capacitor
C38	2200U/63V	Electrolitic capacitor
C39L	2000U/63V	Electrolitic capacitor
C39R	2000U/63V	Electrolitic capacitor
C3L	220P	MKT capacitor
C3R	220P	MKT capacitor
C4	100N	MKT capacitor
C40L	2200U/63V	Electrolitic capacitor
C40R	2200U/63V	Electrolitic capacitor
C41L	C63V/10U	Electrolitic capacitor
C41R	C63V/10U	Electrolitic capacitor
C42L	C63V/10U	Electrolitic capacitor
C42R	C63V/10U	Electrolitic capacitor
C43L	C63V/10U	Electrolitic capacitor
C43R	C63V/10U	Electrolitic capacitor
C44L	C63V/10U	Electrolitic capacitor
C44R	C63V/10U	Electrolitic capacitor
C45	100N	MKT capacitor
C46	100N	MKT capacitor
C4L	100N	MKT capacitor
C4R	100N	MKT capacitor
C5	100N	MKT capacitor
C51	100N	MKT capacitor
C5L	100N	MKT capacitor
C5R	100N	MKT capacitor
C6L	100N	MKT capacitor
C6R	100N	MKT capacitor
C7	100N	MKT capacitor
C7L	100N	MKT capacitor
C7R	100N	MKT capacitor
C8L	100N	MKT capacitor
C8R	100N	MKT capacitor
C9	100N	MKT capacitor
C9L	100N	MKT capacitor
C9R	100N	MKT capacitor
CN1	CINCH-MYTH2P	CINCH+C131
CN1	HD-26	26PIN
CN2	HD-26	26PIN
D1	LD	LED

Designator	Part Type	Description
D10	1N4148	Diode
D10	LD	LED
D11	1N4148	Diode
D11	LD	LED
D12	1N4148	Diode
D12	LD	LED
D13	1N4148	Diode
D15	1N4148	Diode
D16L	ZF20	Zener Diode
D16R	ZF20	Zener Diode
D17L	ZF20	Zener Diode
D17R	ZF20	Zener Diode
D18L	1N4148	Diode
D18R	1N4148	Diode
D19L	1N4148	Diode
D19R	1N4148	Diode
D1L	LD	LED
D1R	LD	LED
D2	LD	LED
D22	1N4007	Diode
D23	1N4007	Diode
D24	1N4007	Diode
D25	1N4007	Diode
D26	1N4007	Diode
D27	1N4007	Diode
D28	1N4007	Diode
D29	1N4007	Diode
D2L	LD	LED
D2R	LD	LED
D3	LD	LED
D30	1N4007	Diode
D31	1N4007	Diode
D3L	LD	LED
D3R	LD	LED
D4	LD	LED
D4L	LD	LED
D4R	LD	LED
D5	1N4148	Diode
D5	LD	LED
D6	1N4148	Diode
D6	LD	LED
D7	LD	LED
D7L	LD	LED
D7R	LD	LED
D8	1N4148	Diode
D8	LD	LED
D9	1N4148	Diode
D9	LD	LED
IR1	SFH506	Infra red receiver

Designator	Part Type	Description
K1	1PIN	PIN
K2	1PIN	PIN
K3	1PIN	PIN
K4	1PIN	PIN
K5	1PIN	PIN
K6	1PIN	PIN
K7	1PIN	PIN
K8	1PIN	PIN
L2/L1	CINCH-MYTH4P	CINCH
LINE_OUT	CINCH-MYTH4P	CINCH
OPTO1	AMP_PHDIOD	Optical output
OPTO2	AMP_PHDIOD	Optical output
P1	2 X 20K	Stereo motor potmeter
P2L	10K	Adj. Potmeter
P2R	10K	Adj. Potmeter
Q1	8MHz	XTAL
Q10L	C1775	Transistor
Q10R	C1775	Transistor
Q11L	C1775	Transistor
Q11R	C1775	Transistor
Q12L	J109	Dual P-JFET
Q12R	J109	Dual P-JFET
Q13L	A872	Transistor
Q13R	A872	Transistor
Q14L	C4382	Transistor
Q14R	C4382	Transistor
Q1L	K389	Dual N-JFET
Q1R	K389	Dual N-JFET
Q2	BCV47	Transistor
Q29L	BD680	Transistor
Q29R	BD680	Transistor
Q2L	C1775	Transistor
Q2R	C1775	Transistor
Q3	BC807	Transistor
Q32L	BD679	Transistor
Q32R	BD679	Transistor
Q3L	C1775	Transistor
Q3R	C1775	Transistor
Q4	BC817	Transistor
Q4L	A872	Transistor
Q4R	A872	Transistor
Q5	BC817	Transistor
Q5L	A1668	Transistor
Q5R	A1668	Transistor
Q6	BC807	Transistor
Q6L	A872	Transistor
Q6R	A872	Transistor

Designator	Part Type	Description
Q7	BC807	Transistor
Q7L	A872	Transistor
Q7R	A872	Transistor
R1	1K	Resistor
R10	220R	Resistor
R10L	47K	Resistor
R10R	47K	Resistor
R11	330R	Resistor
R11L	47K	Resistor
R11R	47K	Resistor
R12	470R	Resistor
R12L	47K	Resistor
R12R	47K	Resistor
R13	390R	Resistor
R13L	47K	Resistor
R13R	47K	Resistor
R14	390R	Resistor
R14L	2K2	Resistor
R14R	2K2	Resistor
R15	390R	Resistor
R15L	2K2	Resistor
R15R	2K2	Resistor
R16	390R	Resistor
R16L	2K2	Resistor
R16R	2K2	Resistor
R17	390R	Resistor
R17L	2K2	Resistor
R17R	2K2	Resistor
R18	390R	Resistor
R18L	475R	Resistor
R18R	475R	Resistor
R19	390R	Resistor
R19L	475R	Resistor
R19R	475R	Resistor
R1L	475R	Resistor
R1R	475R	Resistor
R2	220R	Resistor
R20	390R	Resistor
R20L	4R99	Resistor
R20R	4R99	Resistor
R21	390R	Resistor
R21L	4R99	Resistor
R21R	4R99	Resistor
R22	390R	Resistor
R22L	10K0	Resistor
R22R	10K0	Resistor
R23	390R	Resistor
R23L	4K75	Resistor
R23R	4K75	Resistor

Designator	Part Type	Description
R24	390R	Resistor
R24L	1M	Resistor
R24R	1M	Resistor
R25	1M	Resistor
R25	2K2	Resistor
R26	2K2	Resistor
R26L	4R99	Resistor
R26R	4R99	Resistor
R27	3R9	Resistor
R27L	47R	Resistor
R27R	47R	Resistor
R28	2K2	Resistor
R28L	47R	Resistor
R28R	47R	Resistor
R29	2K2	Resistor
R29L	1M	Resistor
R29R	1M	Resistor
R2L	475R	Resistor
R2R	475R	Resistor
R3	220R	Resistor
R30	2K2	Resistor
R31	2K2	Resistor
R32	2K2	Resistor
R33	2K2	Resistor
R34	2K2	Resistor
R35	5K6	Resistor
R36	1K	Resistor
R37	2K2	Resistor
R38	2K2	Resistor
R39	2K2	Resistor
R3L	47K	Resistor
R3R	47K	Resistor
R4	220R	Resistor
R40L	1M	Resistor
R40R	1M	Resistor
R41L	1M	Resistor
R41R	1M	Resistor
R42L	1M	Resistor
R42R	1M	Resistor
R43L	1M	Resistor
R43R	1M	Resistor
R44L	1M	Resistor
R44R	1M	Resistor
R45L	1M	Resistor
R45R	1M	Resistor
R46L	1M	Resistor
R46R	1M	Resistor
R47L	475R	Resistor
R47R	475R	Resistor
R48L	1M	Resistor

Designator	Part Type	Description
R48R	1M	Resistor
R4L	4K7	Resistor
R4R	4K7	Resistor
R5	330R	Resistor
R5L	4K7	Resistor
R5R	4K7	Resistor
R6	470R	Resistor
R67L	4K75	Resistor
R67R	4K75	Resistor
R68L	4K75	Resistor
R68R	4K75	Resistor
R69L	2R2	Resistor
R69R	2R2	Resistor
R6L	475R	Resistor
R6R	475R	Resistor
R7	1K	Resistor
R70L	2R2	Resistor
R70R	2R2	Resistor
R71	2K7	Resistor
R72	2K7	Resistor
R7L	475R	Resistor
R7R	475R	Resistor
R8	220R	Resistor
R8L	475R	Resistor
R8R	475R	Resistor
R9	220R	Resistor
R9L	475R	Resistor
R9R	475R	Resistor
REL1	MT2-24V	Relay
REL10	MT2-24V	Relay
REL2	MT2-24V	Relay
REL3	MT2-24V	Relay
REL4	MT2-24V	Relay
REL5	MT2-24V	Relay
REL6	MT2-24V	Relay
REL7	MT2-24V	Relay
REL8	MT2-24V	Relay
S1	SWITCH-DPST	Switch
S10	SWITCH-DPST	Switch
S11	SWITCH-DPST	Switch
S12	SWITCH-DPST	Switch
S2	SWITCH-DPST	Switch
S3	SWITCH-DPST	Switch
S4	SWITCH-DPST	Switch
S5	SWITCH-DPST	Switch
S6	SWITCH-DPST	Switch
S7	SWITCH-DPST	Switch
S8	SWITCH-DPST	Switch

Designator	Part Type	Description
S9	SWITCH-DPST	Switch
SW1	115_230	Switch
TAPE1	CINCH-MYTH4P	CINCH
TUNER/CD1	CINCH-MYTH4P	CINCH
U\$14.1	CINCH-MYTH4P	CINCH
U\$14.2	CINCH-MYTH4P	CINCH
U1	7805	Voltage regulator
U1	7818	Voltage regulator
U2	ADM705	MAX705
U3	87C752	Microprocessor
U4	TPIC6595	Shift register
U5	TPIC6595	Shift register

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