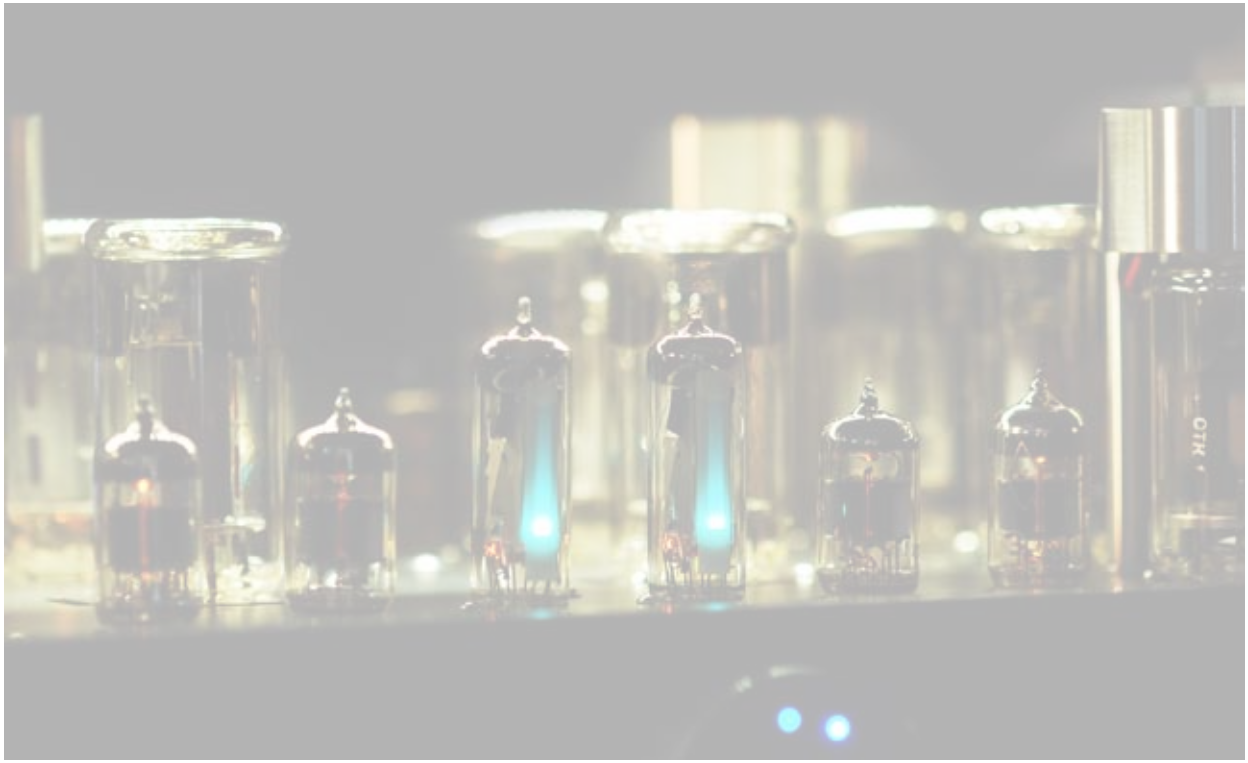
Icon

S.T. Innovators



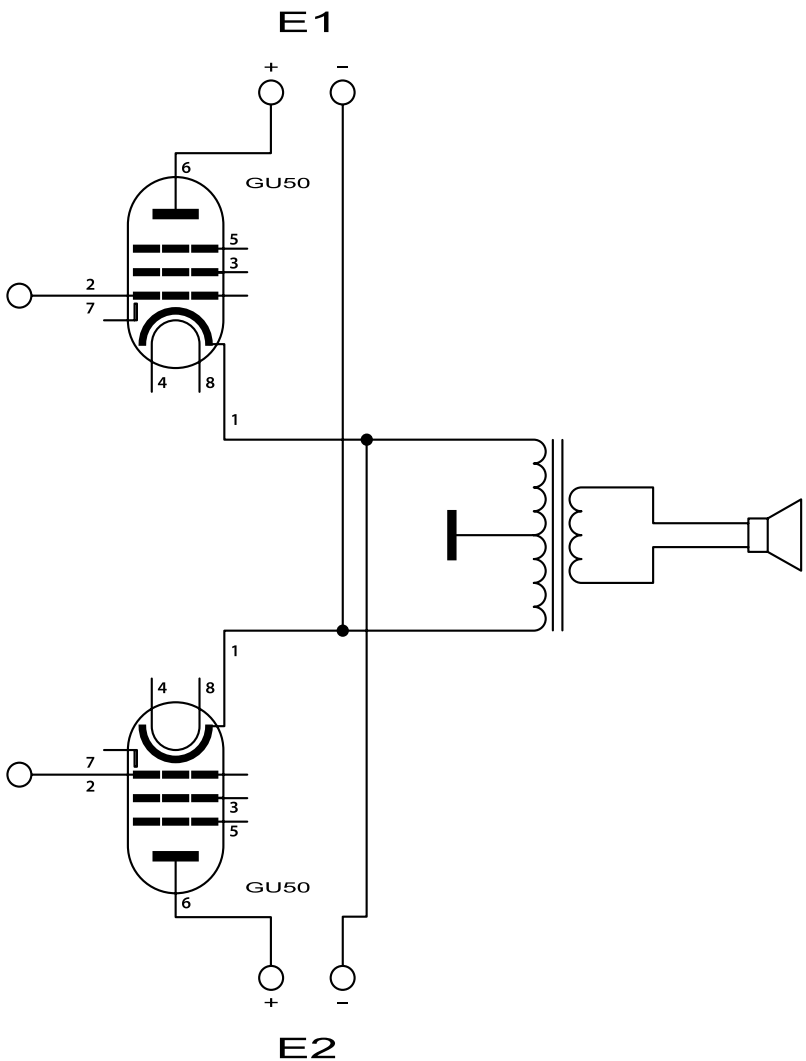
Stereo Tube Power Amplifier

PROJECT

3D CAD model

DESIGN

Stainless steel case with exchangeable front and side panels for best interior matching.


E1
+
–
6
GU50
5
3
2
7
4
8
1
1
4
8
7
2
3
5
GU50
6
+
–
E2

TUBE SCHEMATIC DIAGRAM

Paralel Push-Pull
(PPP)

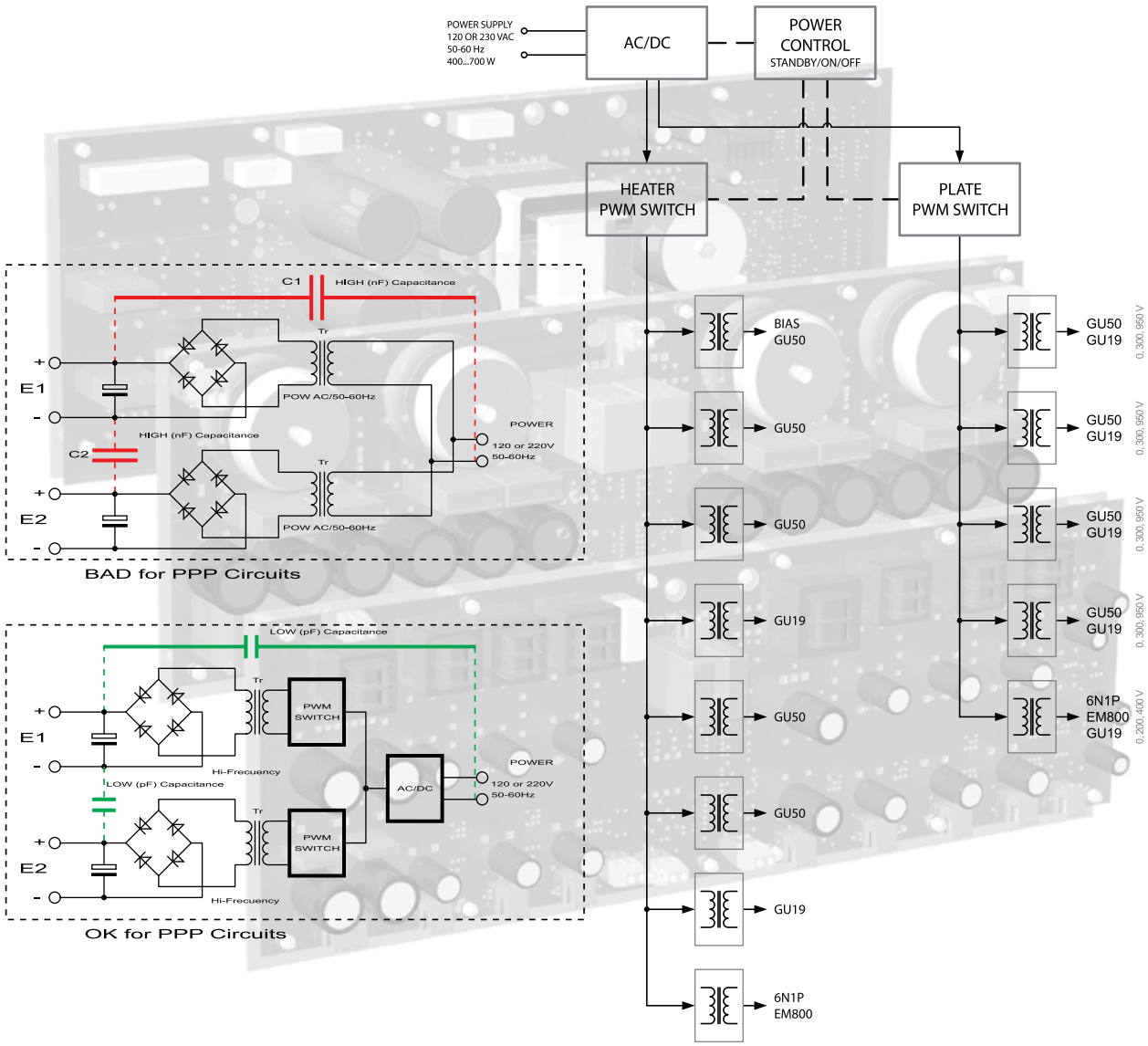
TUBE DECISION

For excellent characteristics, stability, long life and power:
Russian military tubes with ceramic sockets.


LEVEL
OUT
SYMMETRY
V2
V3
BIAS CURRENT
V3
V4
V5

TUBE CARE & TUNNING

To place the tubes in their best working conditions we designed Burr Brown IC based module which provide possibilities for simple precise trimming procedure for bias current, symmetry and level. The result is several times increasing the life of tubes.


POWER SUPPLY
120 OR 230 VAC
50-60 Hz
400...700 W
AC/DC
POWER
CONTROL
STANDBY/ON/OFF
HEATER
PWM SWITCH
PLATE
PWM SWITCH
C1
HIGH (nF) Capacitance
Tr
E1
POW AC/50-60Hz
POWER
120 or 220V
50-60Hz
HIGH (nF) Capacitance
C2
E2
BAD for PPP Circuits
LOW (pF) Capacitance
PWM
SWITCH
Hi-Frecuency
AC/DC
OK for PPP Circuits
BIAS
GU50
GU19
6N1P
EM800
0, 300, 950 V
0, 200, 400 V

POWER DECISION

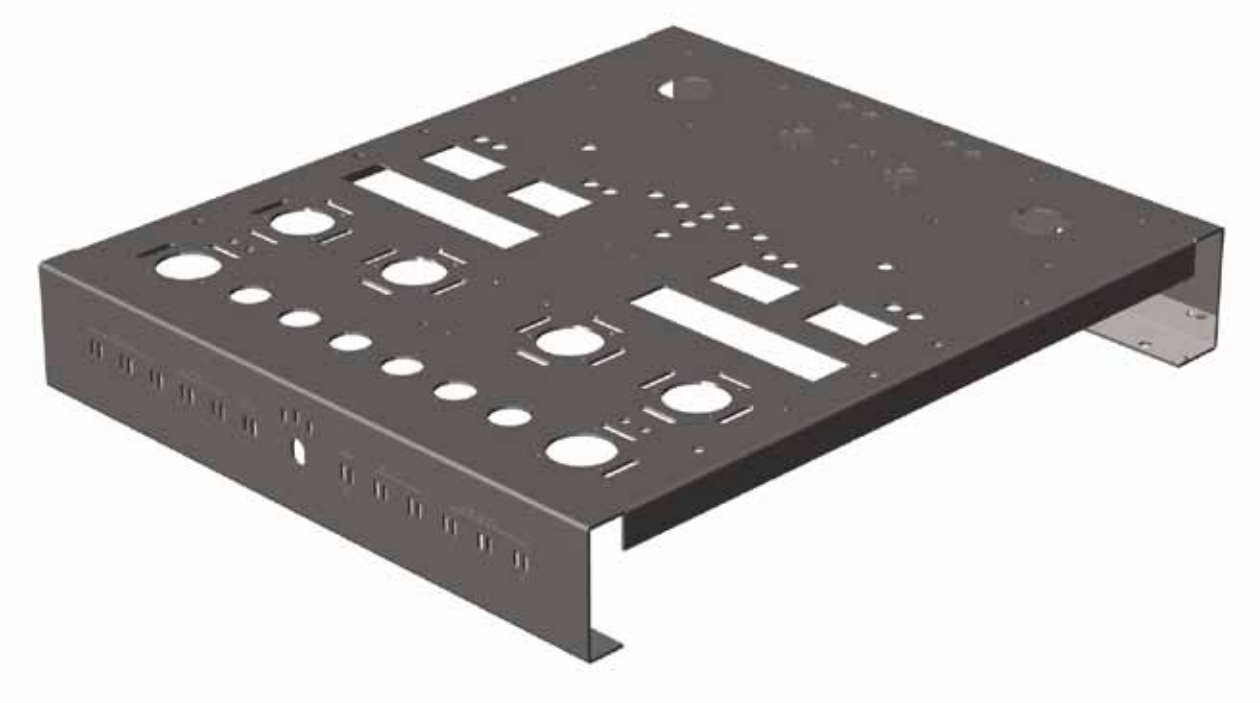
Pulse Power Supply.

Indisputably one of the most important elements in a power amplifier is the power supply. It has to supply enough resources of power and has to react fast to the needs of amplifiers electronic.
What is typical to a tube amplifier's power supplies?
It is the necessity of many high voltage supplies with corresponding power. That is why the power supply transformer is the most whimsical component in a tube amplifier.
Using enough powerful transformers for tubes it will be with giant size and weight and even more it needs high value capacitors for peak powers. Don't mentioning that that capacitance reflect directly to PPP circuit. The problem is resolved using pulse power supply.
We find out the solution and successfully develop pulse power module with 18 totally galvanic separated and synchronized supply voltages.


TANGO
TRANSFORMER

OUTPUT TRANSFORMERS

ICON is built with ISOTANGO, the world's best transformers.



BASE

Titanium - non magnetic, strong enough material
for base with no paint and easy to clean surface.

REAL VIEW

Power Output Stereo Maximum output power per each channel	100 W RMS 4 Ω / 8 Ω load
Rated Frequency Band	20 Hz to 70 kHz
Frequency Response	+0, +0.25 dB from 20Hz to 20,000Hz +0, -3 dB from 15Hz to 70,000Hz
Total Harmonic Distortion Maximum Total Harmonic Distortion at any power level from 250 mW to rated power	0.4% for 4 or 8 Ω load
Sensitivity	1 V unbalanced inputs 1 V balanced inputs
A-Weighted Signal To Noise Ratio	100 dB
Intermodulation Distortion	0.5% for 4 or 8 Ω load
Wide band Damping Factor	Greater than 8
Input Impedance	100 kΩ unbalanced inputs 200 kΩ balanced inputs
Power Supply Impulse power supply	120 V (from 100 to 135 V), 50/60 Hz at 10 A 230 V (from 195 to 260 V), 50/60 Hz at 5 A
Warm up time	3 minutes - smooth increment of heating voltage
Stand-by mode	Available
Circuit type	PPP - push pull parallel scheme class AB
Vacuum Tubes All tubes are military type	Input Tubes: 2 x 6N30P-EV and 2 x 6N1P-EV Driver Tubes: 2 x GU19-1 Output Tubes: 4 x GU50 Indicator Tubes for output power: 2 x EM800
Control	Precise electronic control of Bias mode of the tubes with indication for symmetry and tubes current tuning
Overall Dimensions	(H x W x D) 250 x 475 x 520 mm (H x W x D) including feet and knob 282 x 475 x 547 mm
Weight	38.7 kg

TECHNICAL DATA


PHONO MM

Stereo Tube Preamplifier

PROJECT

3D CAD model

REAL VIEW

Frequency Response	+0, +0.3 dB from 6Hz to 20,000Hz +0, -3 dB from 6Hz to 61,000Hz
Total Harmonic Distortion	0.075% from 20Hz to 20,000Hz
Rated Output (Main)	2.0V Unbalanced
Maximum Voltage Output	8V RMS Unbalanced
Sensitivity (for rated output)	High Level, 500mV unbalanced Phono MM, 3.5mV
Signal To Noise Ratio (A-Weighted)	High Level, 90dB Phono, 82dB
Input Impedance	High Level, 24K ohms unbalanced Phono MM, 47K ohms; 120pF, (Adj 50-680pF)
Maximum Input Signal	High Level, 10V Unbalanced, Phono MM, 50mV
Voltage Gain	High Level to Main Output: -18…+12dB Adj every high level input Phono MM to Main Output: 50dB
Output Impedance	88 ohms
Vacuum Tubes **All tubes are military type**	10 pcs. - 6N1P-EV 2 pcs. - 6N1P-VI
Power Requirements	185-250 Volts, 50/60Hz at 110 watts
Overall Dimensions	(H x W x D) 200 x 475 x 520 mm (H x W x D) including feet and knob 232 x 475 x 547 mm
Weight	18 kg

TECHNICAL DATA

S.T. Innovators team working on ICON project

Chief Designer **Alexander**
Projects **Atanas**
Mechanics **Georgy**

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Sensotech Ltd. **Alexander**
Yankulov Advertising **Peter**

S.T. Innovators Ltd.
1 Tzarichina Str.
1505 Sofia, Bulgaria
Phone +359 2 8702156
Fax +359 2 9733727

office@stinnovators.com
www.stinnovators.com