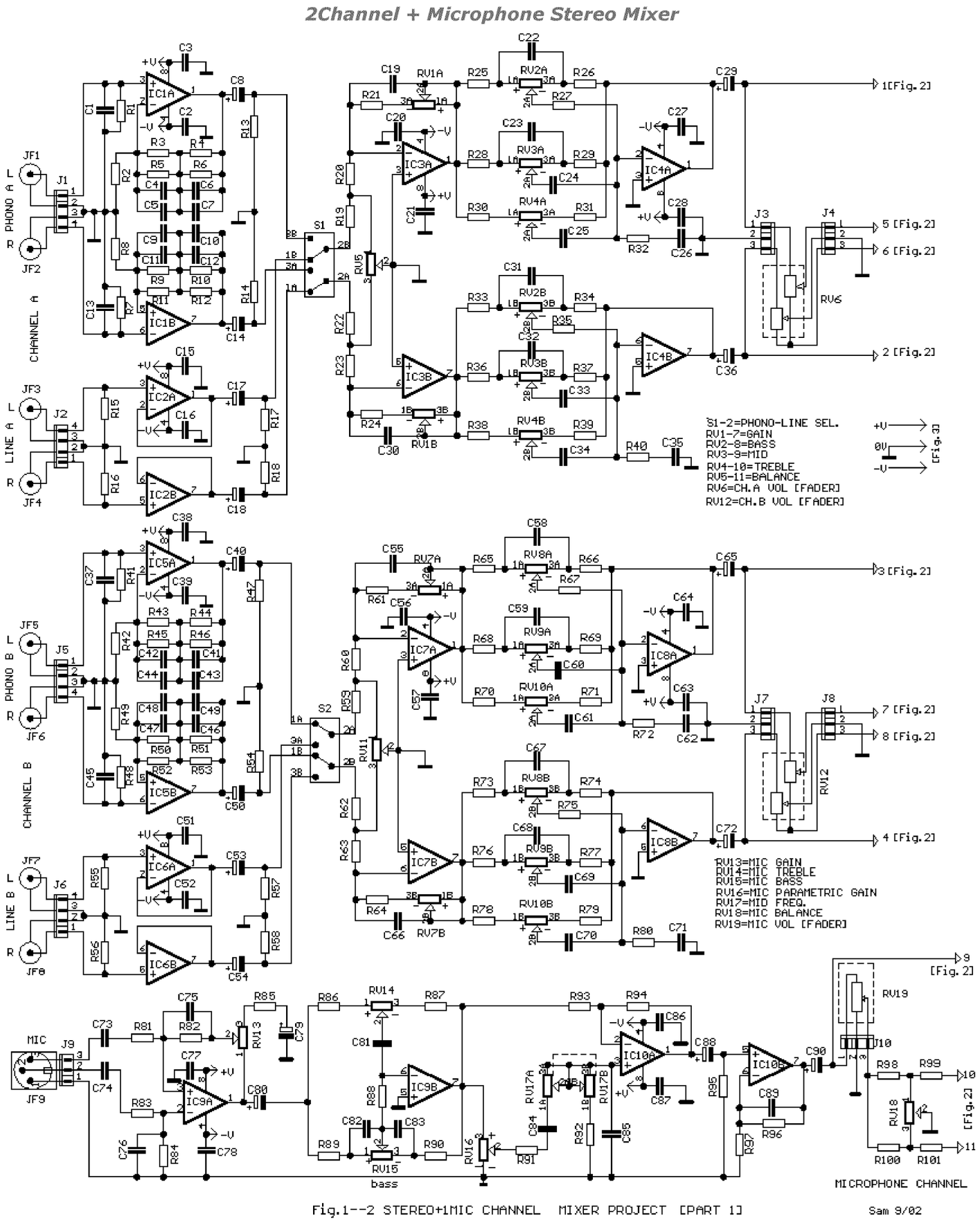

Fig.1--2 STEREO+1MIC CHANNEL MIXER PROJECT [PART 1] Sam 9/02

A lot of friends me asked to draw a more shrunk circuit 2-ch mixer, which will contain also, operation CROSSFADER. The circuits can be modified and added also other channels, repeating basic that I give. It can are added channels stereo PHONO/line or even channels microphone with proportional modification of next stages. In the Fig.1 exist the input circuits of two channels and input of microphone channel. The two basic channels she is same between them. Thus that it□s go for a channel, the he is also go for the other. In each stereo channel exist two inputs, classic stereo input PHONO that is practical a correction filter RIAA and concerns the signal amplification of sound that emanates from the classic reproduction heads of classic disks LP. Exist also a stereo input of LINE □□high level□□ for signals that emanate from CD players, Tuners, DVD, etc. The exits of this two stages are selected with switch S1 or S2 and they are applied in the next stage which is constituted from adder IC3. Here is regulated the BALANCE with the RV5 and GAIN with the RV1. In the next stage round the IC4 exist a classic 3-band regulation of tone circuit, the regulation of which becomes with the RV2-3-4. The exit of IC4 drive the RV6 that is at preference pontesometer [FADER]. By points 1-2-5-6 the signals connected to next stage [Fig.2]. In the Fig.1 exist also the microphone input, which is in electronic Balance connection, round the IC9A. Here exist the regulation of GAIN with the RV13. It follows a stage of tone two-band regulation, round the IC9B and a stage of parametric regulation of mid band with RV16 [Gain] and RV17 [Frequency Band]. With the RV19 we regulate VOLUME [FADER] and with the RV18 we regulate the BALANCE. By points 9-10-11 the signal is connected to the corresponding points that are found in the Fig. 2.

Part List [Fig.1]

R1-7-15-16-41-48-55-56=47 Kohms
R2-8-42-49=150 ohms
R3-5-9-11-43-45-50-52=180 Kohms
R4-6-10-12-44-46-51-53=15 Kohms
R13-14-17-18-47-54-57-58-95=100 Kohms
R19-22-59-62-98-100=4.7 Kohms
R20-23-60-63-21-24-61-64=10 Kohms
R25-26-33-34-65-66-70-71=10 Kohms
R27-35-67-73-74-75-78-79-96=10 Kohms
R28-29-36-37-68-69-76-77=3.3 Kohms
R30-31-38-39-70-71-78-79=1.8 Kohms
R32-40-72-80=330 ohms
R81-83=2.2 Kohms
R82-97=6.8 Kohms
R84-88-93-94=22 Kohms
R85=100 ohms
R86-87=2.7 Kohms
R89-90=5.6 Kohms
R91-92=3.9 Kohms
R99-101=10 Kohms

C1-13-37-45=150pF mylar-ceramic
C2-3-15-16-20-21-27-28-38-39=47nF
C4-5-9-11-42-44-47-48=18nF
C6-10-41-46=3.9nF
C7-12-43-49-82-83=5.6nF
C8-14-17-18-40-50-53-54-88=10uF 16V
C19-30-55-66-89=22pF
C22-31-58-67=47nF
C23-32-59-68-25-34-61-70-85=4.7nF
C24-33-60-69=22nF
C26-35-62-71=1.2nF
C29-36-65-72-80-90=10uF 16V
C56-57-63-64=47nF
C73-74=1uF 100V MKT
C75-76=68pF ceramic or mylar
C77-78-86-87=47nF
C79=47uF 16V
C81=2.2nF
C84=10nF
S1-2=2X2 0N/ON SW

IC1-5-9-10=**NE5532-LM833**
IC2-3-4-67-8=**TL072**
RV1-7= 22 Kohms Log. pot.*
RV2-3-8-9=2X100 Kohms Lin. pot.*
RV4-10=2X470 Kohms Lin. pot.*
RV5-11-18=10 Kohms Lin. pot.*
RV6-12=2X22 Kohms Log. pot. 45mm Slider [FADER]
RV13=10 Kohms Log. pot.*
RV14-15-16=47 Kohms Lin. pot.*
RV17=2X100 Kohms Log.pot.*
RV19=10 Kohms Log. pot. 45mm Slider [FADER]
J1-2-5-6=4pin conn. 2.54mm pin step
J3-4-7-8-9-10=3pin conn. 2.54mm pin step
Jf1....8=RCA female Jack
JF9=3pin XLR male

*ALPS or PIHER type Potentiometer
All the Resistors is 1/4W 1% metal film
All the [nF] capacitors is 63-100v 5% MKT

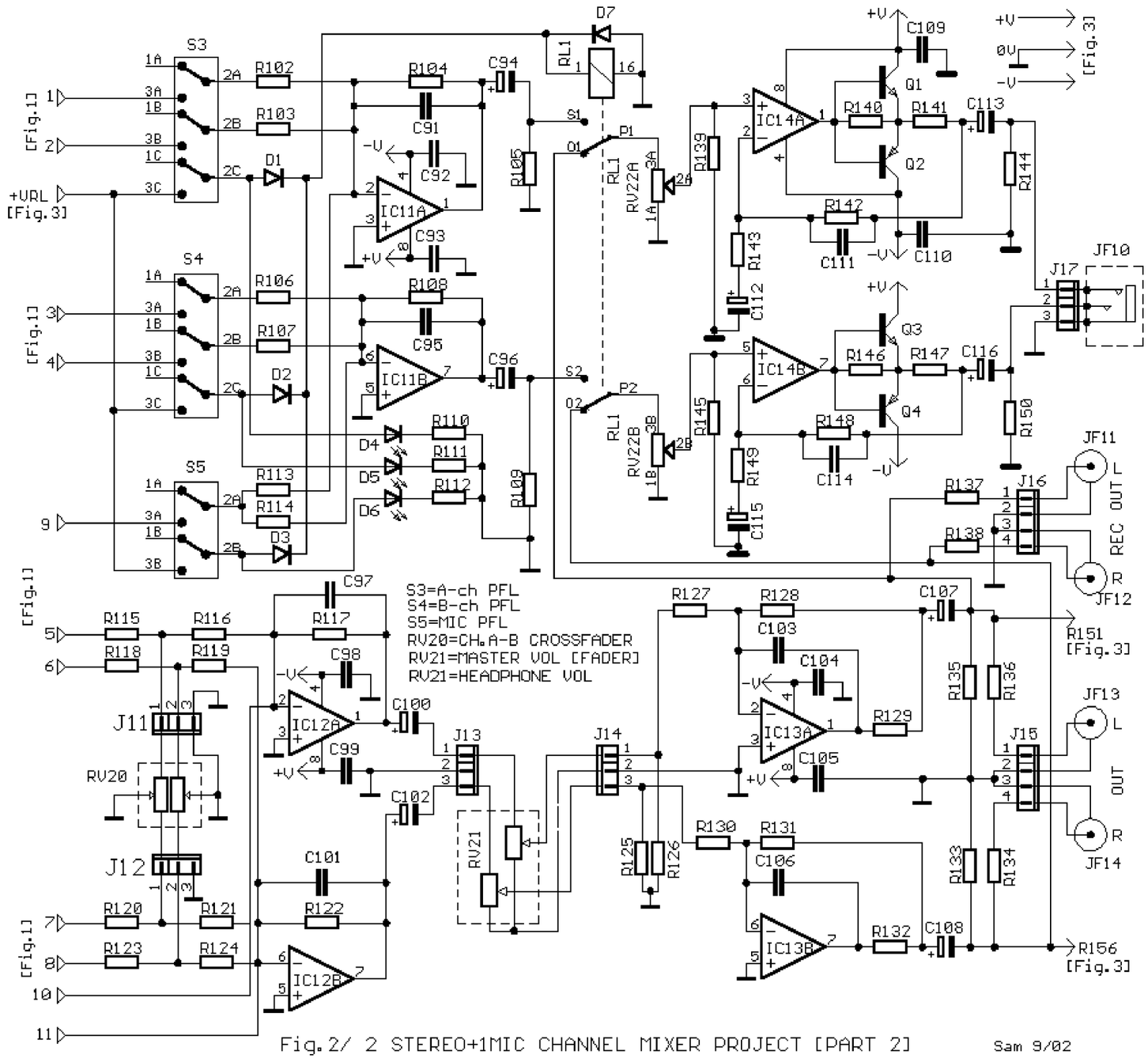

Fig.2/ 2 STEREO+1MIC CHANNEL MIXER PROJECT [PART 2] Sam 9/02

In the Fig.2 abut the various signals that emanate from the Fig.1. Switches S3-4-5 execute the operation of pre-Fader-listen [PFL] of proportional channels. If some switch functions then turns on corresponding diode led D4-5-6. Simultaneous turn-on the relay RL1 disconnect the program in the headphone and supply with the PFL signal. Round the IC14 exist the amplifier circuits of headphone drive. Round the IC12 exist the addition circuit of the signals from the two channels and the mic channel, as well the RV20 which function as CROSSFADER between the two stereo channels. The RV21 is final MASTER VOLUME [FADER] and adjust the final percentage of signal to the output. This role undertake the IC13 that has the leading possibility via the outputs Jf13-14 a power amplifier, simultaneously from the exits Jf11-12 we can take signal for recording.

Part List [Fig.2]

R102-103-106-107-113-114=10 Kohms
R104-108-117-122-125-126=22 Kohms
R105-109=1 Mohms
R110-111-112=1 Kohms
R115-118-120-123-127=10 Kohms
R116-119-121-124-130=10 Kohms
R128-131=27 Kohms
R129-132-137-138-140-146=100 ohms
R133-135-139-145=100 Kohms
R134-136=47 ohms
R141-147=10 ohms
R142-148=4.7 Kohms
R143-149=820 ohms
R144-150=47 Kohms

RV20=2X22 Kohms Log. pot. 45mm Slider [FADER]
RV21=2X10 Kohms Log. pot. 45mm Slider [FADER]
RV22=2X10 Kohms Log. pot.*
C91-95-97-101-103-106-111-114=22pF
C92-93-98-99-104-105-109-110=47nF
C94-96-100-102=10uF 16V
C107-108-113-116=470uF 25V
C112-115=47uF 16V
IC11-12=**TL072**
IC13-14=**NE5532** - **LM833**
D1-2-3=1N4002
D4-5-6=LED 3 or 5mm RED
D7=1N4148
Q1-3=**BD139**

Q2-4=**BD140**
S3-4=3X2 PDT 0N/ON SW
S5=2X2 PDT ON/ON SW
RL1=12V Relay 2X2 SW
JF10=Jack female stereo 6.3mm
JF11....14=RCA female Jack
J11....14-17=3pin conn. 2.54mm pin ste
J16-17=4pin conn. 2.54mm pin step
RV20=2X47 Kohms Lin. Slider [FADER]*
RV21=2X10 Kohms Log. Slider [FADER]*

*ALPS or PIHER type Potentiometer
All the Resistors is 1/4W 1% metal film
All the [nF] capacitors is 63-100v 5% MKT

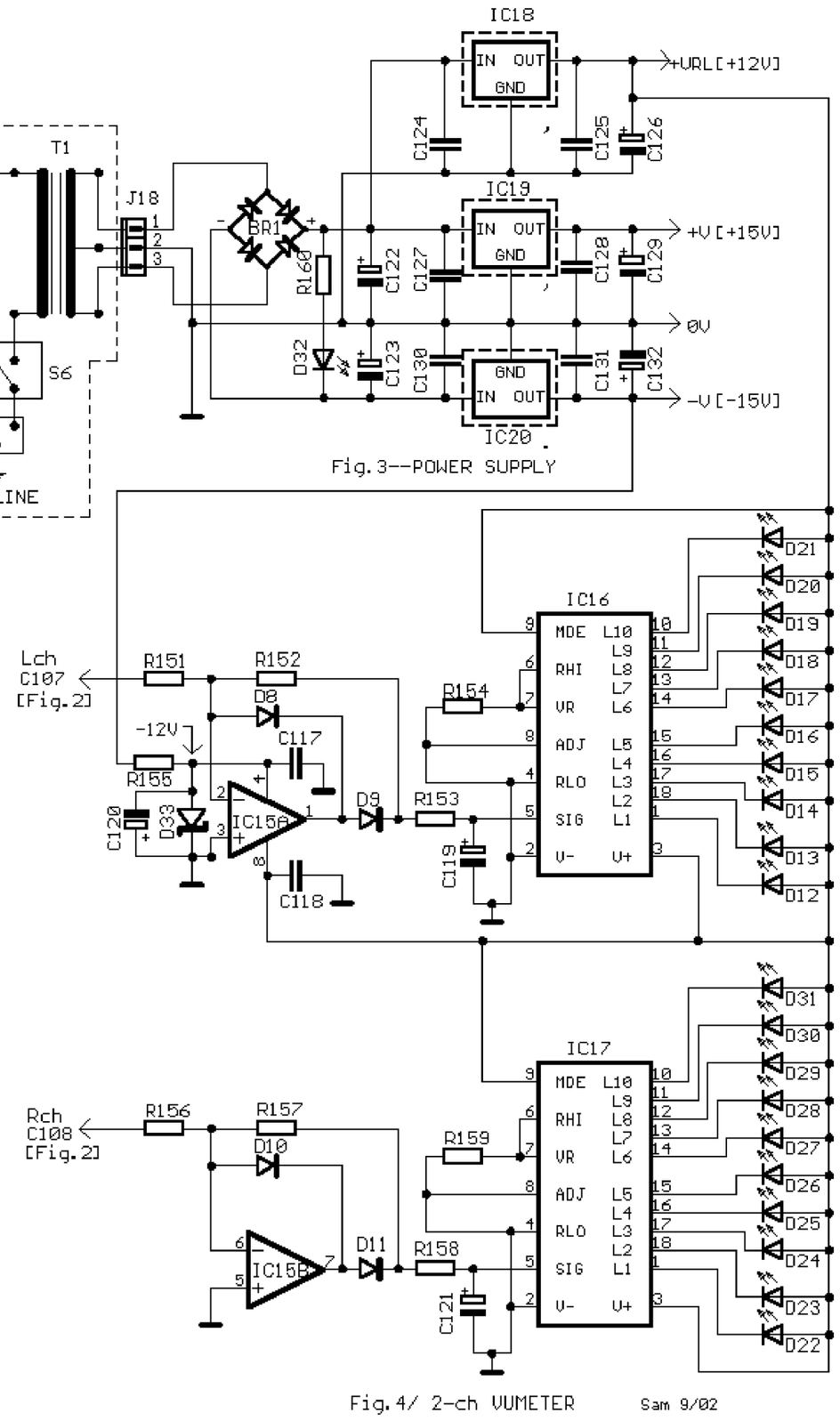

Fig.3--POWER SUPPLY

Fig.4/ 2-ch VUMETER Sam 9/02

In the Fig.3 exist a classic supply circuit and stabilization of various voltages that needs the various circuits of mixer as +/-15V for the Audio department and + 12V for the RL1 and VU meter supplying. The regulators IC18-19-20 good it□s they are placed on small heatsinks. Transformer T1 it□s placed in a separate box, far from the remainder circuit, so that is not created problem of influence of rests circuits, from noise, unless it□s toroidal. In the Fig.4 is found the indication circuit of level. This becomes with two classic circuits round the IC16-17 that drive the diodes Led D12□..D31, that portrays the level in steps of 3dB. The IC15 functions as precision rectifier.

Part List [Fig.3-4]

R151-152-156-157=10 Kohms
R153-154-155-158-159=1 Kohms
R160=2.7 Kohms
C117-118-124-125-127-128-130-131=100nF
C119-121=1uF 25V
C120=10uF 25V
C122-123=4700uF 40V
C126-129-132=19uF 25V

BR1= 80V/3A BRIDGE RECTIFIER
D8-9-10-11=1N4148
D12.....31-32=RED LED
D33=12V 0.5W ZENER
IC15=**TL072**
IC16-17=**LM3516**
IC18=**7812** on Heatsink
IC19=**7815** on Heatsink

IC20=**7915** on Heatsink
T1=230V//2X15Vac >30VA
F1=500mA SLOW BLOW FUSE
S6=2X2 ON-OFF SWITCH
J18=3pin conn. 3.96mm pin step

All the Resistors is 1/4W 1% metal film
All the [nF] capacitors is 63-100v 5% MKT

SPECIFICATIONS

PHONO INPUT [Unbalaced RCA]

Sensitivity	2.5mV rms
Impedance	47K//150pF

LINE INPUT [Unbalaced RCA]

Sensitivity	1V rms
Impedance	47K
Gain	X1 until X3

3-band EQ 50HZ, 1KHZ, 10KHZ [±18dB/oct]

MIC INPUT [Balanced XLR]

Sensitivity	-56dB
Impedance	2K
Gain	36dB

EQ. Section

High	±18db at 20KHZ
Mid. Freq.	200HZ - 6KHZ
Mid. Gain	±15db
Low	±18db at 20HZ

HEADPHONE OUT

impedance	100 ohms min.

FREQUENCY RESPONSE	20HZ-20KHZ -2dB
DISTROTION T.H.D	0.01% A 1KHZ
OUTPUT LEVEL	+4db Typ.

Block Diagram

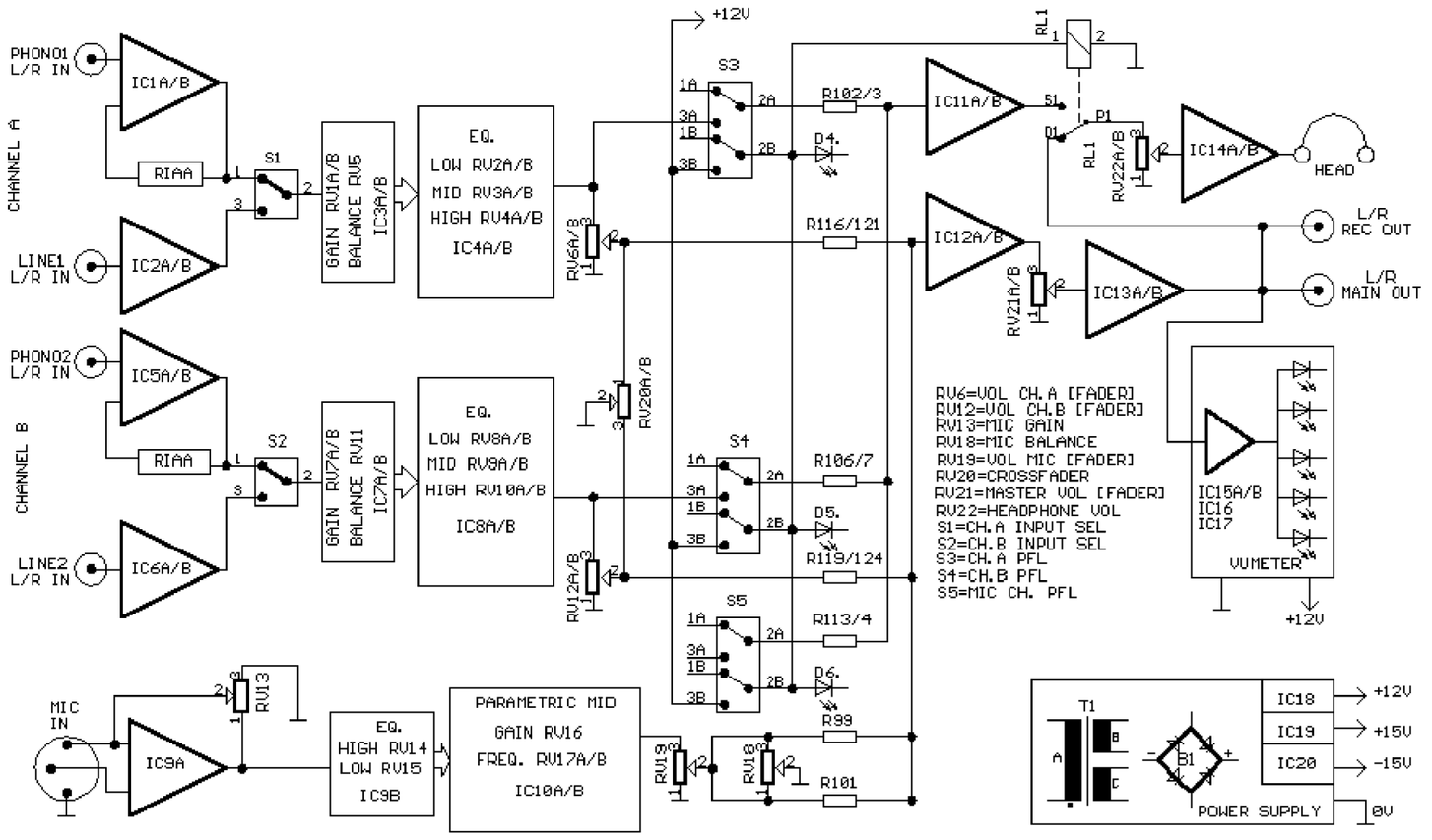

Fig.5-- 2ch+1MIC MIXER BLOCK DIAGRAM Sam 9/02

In the Fig.5 appears the block diagram of circuit, which it will help in the comprehension of logic of circuit.