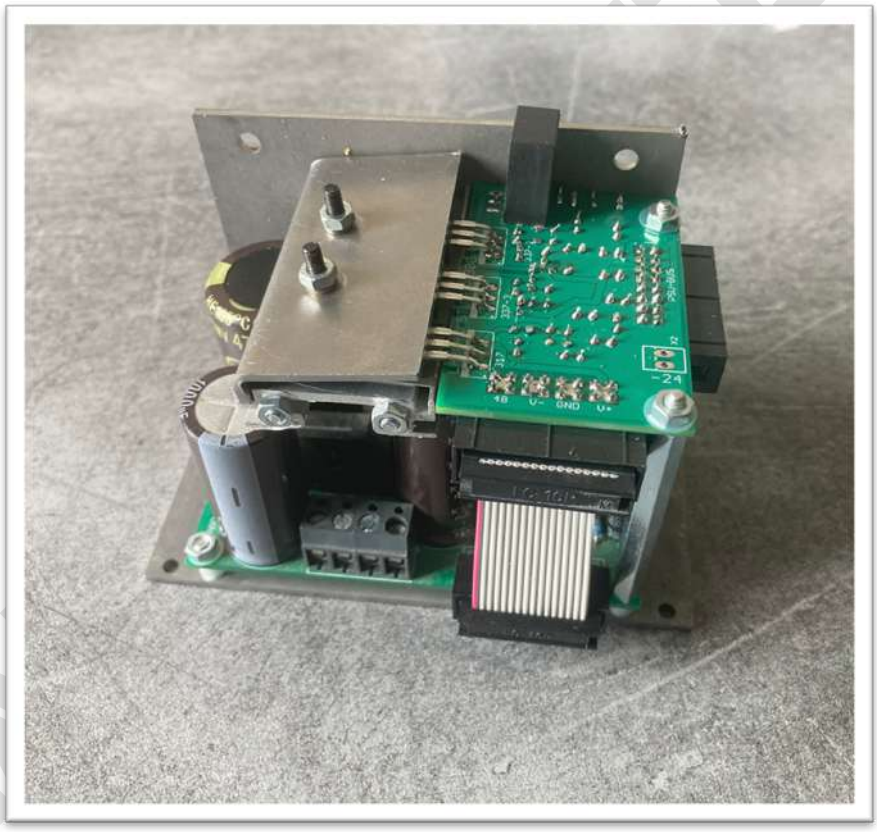
LABO ★ K EFFECTS

POWER SUPPLY KIT FOR STUDER 961-962-963 MODULES

ISS 1



CONTENTS

Introduction 3
informations 3
Kit overview 4
Composition of the assembly kit 5
FPSU board assembly instructions part 1 6
FPSU board assembly instructions part 2 7
FPSU board assembly instructions part 3 8
VREG board assembly instructions part 1 9
VEREG board assembly instructions part 2 10
Fixing FPSU and VEREG boards 11
VREG board assembly instructions part 3 12
FPSU board part list 13
VREG board part list 14
Inter boards ribbon 14
PSU BUS pinout 15
Power transformer wiring 15

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INTRODUCTION

This kit allows to built a power supply specifically designed for Studer 961-962-963 Input channel to put them in a rack.
PSU bus system allows to connect up to 4 channels.
You just have to build the adequate ribbon.
The assembly kit secures the pcbs and radiator of the PSU.
The compact unit can be easily placed in the rack.
The voltages supplied are: +15V / -15V /-6V/+48V
The assembly kit is used to attach the pcbs and the power supply radiator.
The compact assembly can then be easily placed in the rack.

INFORMATIONS

The power supply is the starting point of any audio project.

An average quality power supply can ruin the performance of any audio device, no matter how excellent.

The design and components used in this power supply ensure excellent results.

Consistent filtering has been favoured (capacitors of good quality and size)

Very clean regulation offering a quality noise floor.

Easy to position in a rack thanks to its hanging system.

The choice of transformer voltages optimises the work of the regulators.

Filtering and regulation are spread over two boards, reducing the overall footprint.

The various voltages required to power these modules are:

Audio psu +/-15V

Logical psu -6V

And, of course, +48V phantom power for condenser microphones.

Can supply 1.5 amperes per +/-V rail and 300mA +48vdc

Minimum height of enclosure = 2U

Transformer (not supplied) will supply 2 X 15V AC.

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KIT OVERVIEW

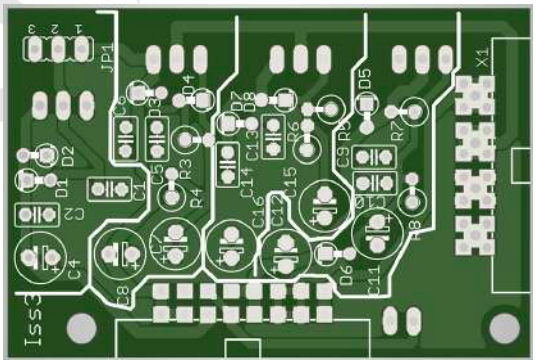
- **One FPSU card for connecting:**
    - 1 power transformer 2x15v 50/80VA (**not supplied**)
    - The +15V / -15V -6V regulation board

This board performs the rectification and filtering of ac power.
It provides the +48V phantom.



- **One VREG card for connecting:**
    - PSU Bus
    - FPSU board

This board provides the regulated voltages



- **Connectors and components**
    - *The 2x15V power transformer is not supplied.*
    - *50VA for 1 or 2 channels*
    - *80VA for 4 channels*

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COMPOSITION OF THE ASSEMBLY KIT

- **1 steel base for fixing:**
  - The FPSU card
  - The +15V / -15V -6V regulation card (VREG)
  - The heat sink
-

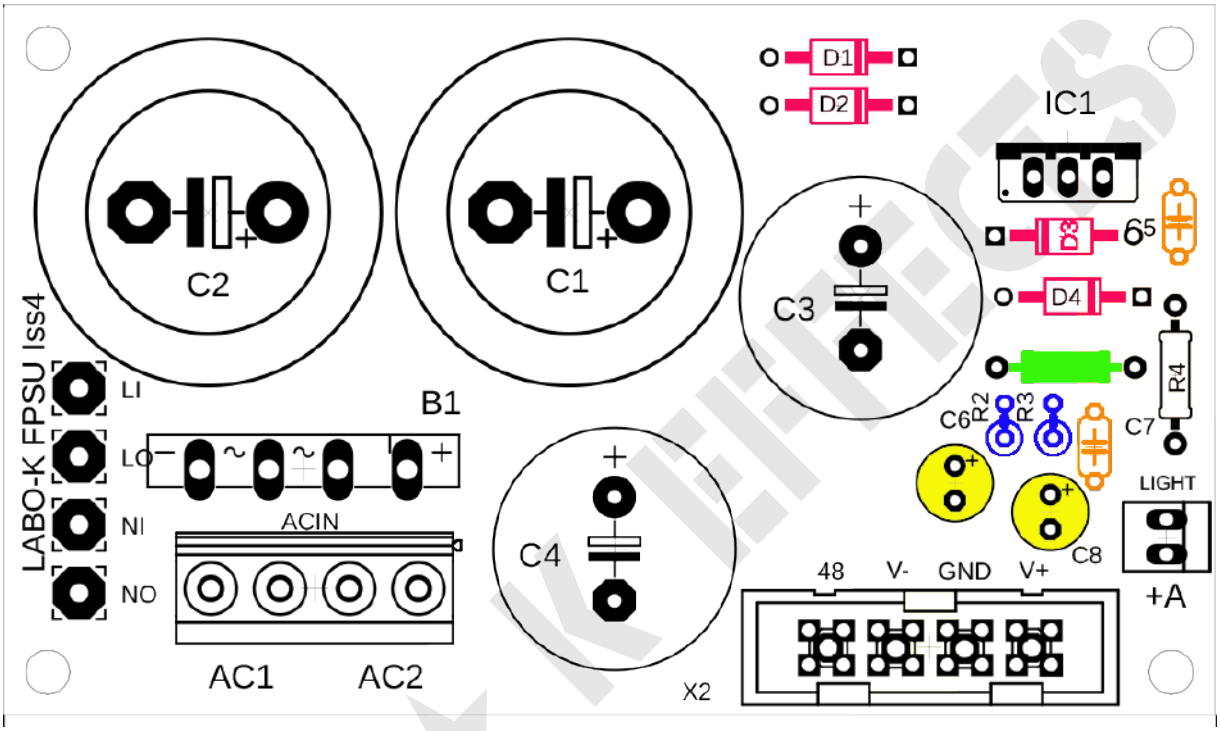


- **The following elements:**
  - 4 M3x15 screws (A)
  - 4 plastic spacers (B)
  - 2 50mm spacers (C)
  - 2 M3x60 screws (D)
  - 1 heat sink (E)
  - 1 clip (F)
  - 2 M3x15 screws (G)
  - 2 washers (H)
  - 4 M3 nuts (I)
  - 2 insulator pads for TO220 (J)
-

A	B	C	D	E	F	G	H	I	J
									

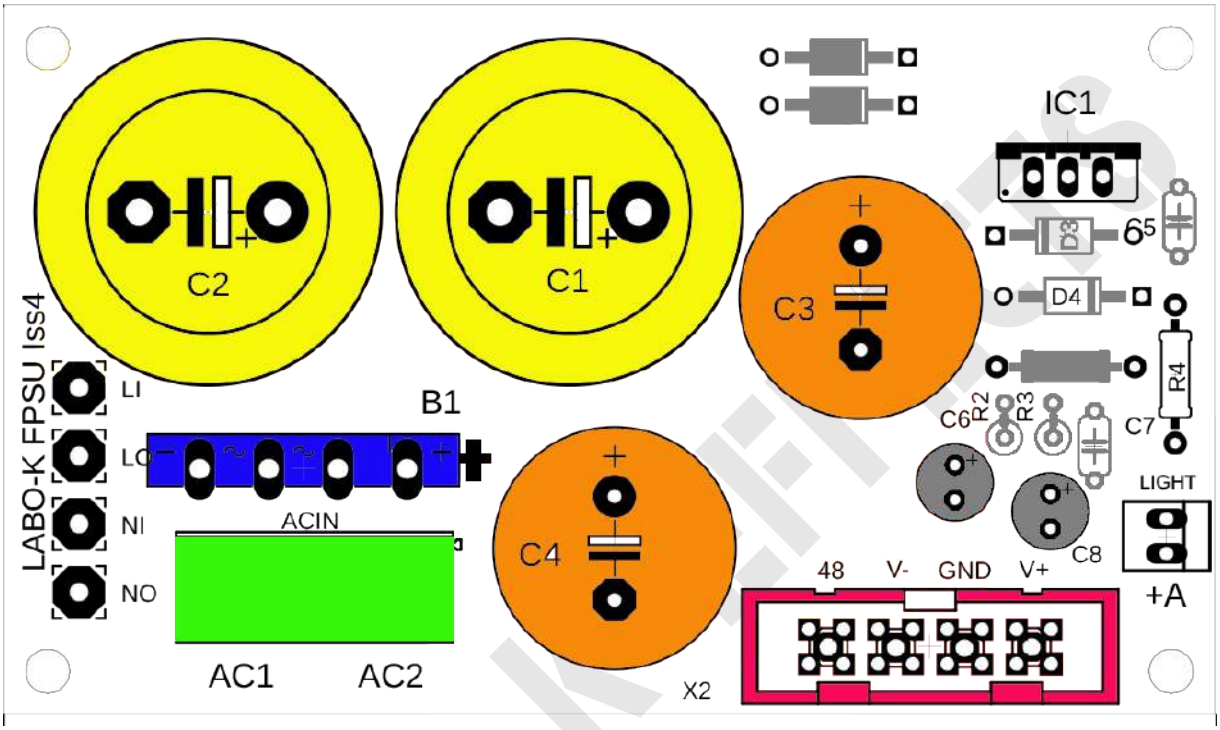
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	1N4002	D1, D2, D3, D4	4
	180R	R1	1
	12K, 15K	R2, R3 (in parallel)	2
	100n 100V	C5, C7	2
	47uF 63V	C6, C8	2



Pay attention to:
Diode orientation
Capacitor polarity

	ConnectorsIDC16	X2	1
	Bornier 4	AC IN	1
	RS602	Bridge B1	1
	1000uF 100V	C3, C4	2
	4700uF 63V	C1, C2	2



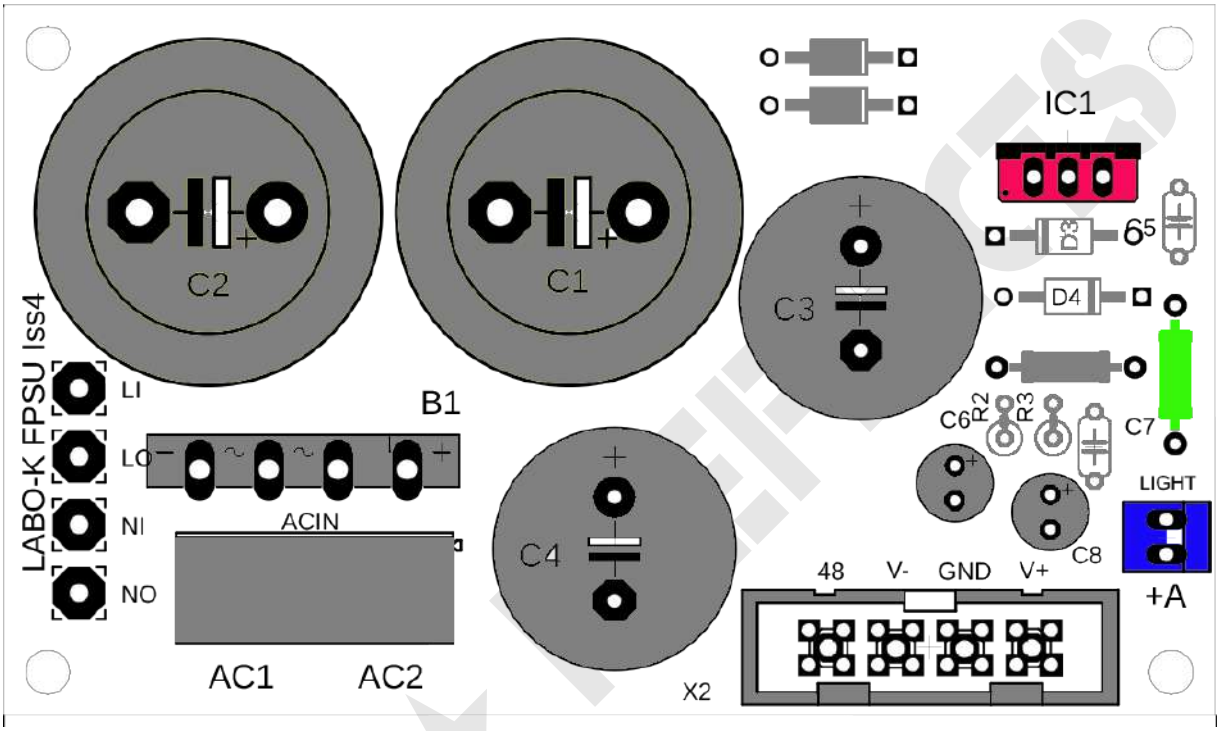
Pay attention to:
Capacitor polarity

Note :
Make sure that the legs of the components are cut as close as possible to the board so that they cannot come into contact with the base.

Bend the legs of capacitors C1 and C2 before soldering them


FPSU BOARD ASSEMBLY INSTRUCTIONS PART 3

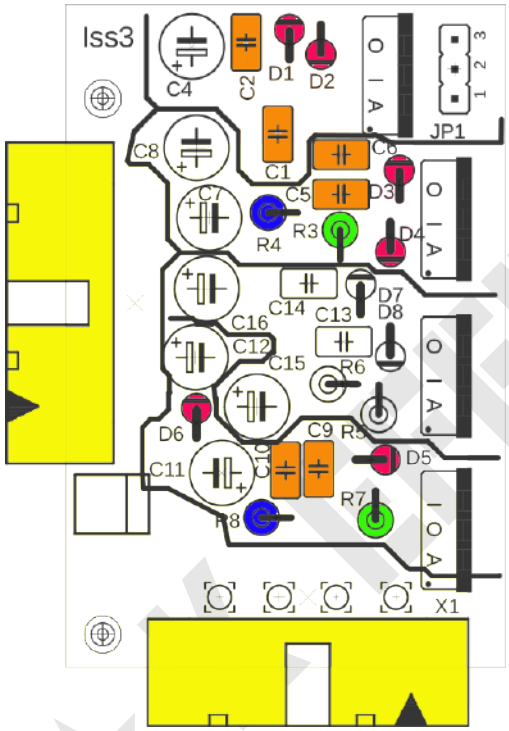
	LM317HVT	IC1	1
	2K7	Optional resistor for LED indicator	1
	KK3	Connection for LED +A = anode	1



Pay attention to:
Orientation of IC1

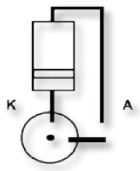
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	1N4002	D1 to D6	6
	243R	R3, R7	2
	2K7	R4, R8	2
	100n 50V	C1, C2, C5, C6 C9, C10	6
	Connector IDC16	X1, X2	2

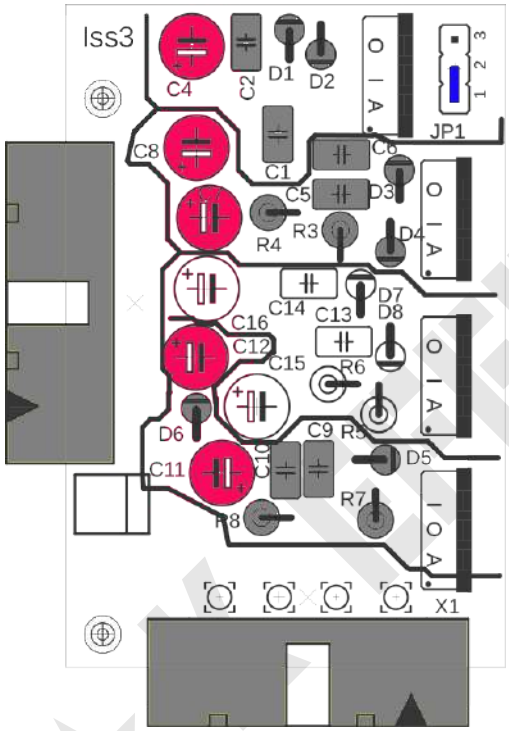


Pay attention to:
Diodes polarity

Vertical layout of diodes



	10uF 63V	C4, C7, C8, C11, C12	5
	Strap	Place a strap between 1 and 2	1



Pay attention to:
Capacitor polarity

Turn the board over and solder the TSN1 2460



FIXING FPSU AND VEREG BOARDS

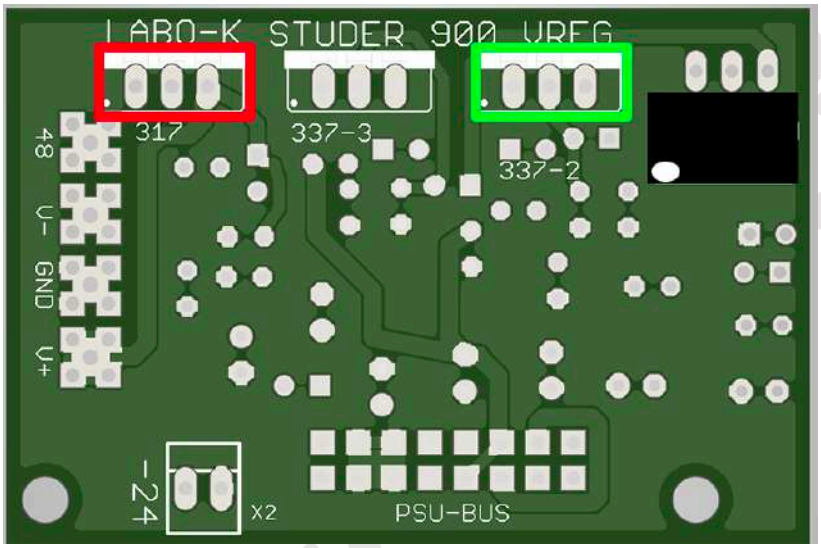
1 : Place the base with the 4 screws (A) and 4 plastic spacers (B)
2 : Place the FPSU card on the base
3 : Fix the FPSU board on the base with 2 washers (H), 2 nuts (I) and 2 spacer (C)
4 : Attach the radiator (E) to the base using screws (D), 2 washers (H) and 2 nuts (I). The screws (G) are located on the left side of the radiator.
5 : Fix the card VREG with components facing down with 2 washers (H) and 2 nuts (I).
6 : Place the insulators pads (J) and the regulators in the good order.
7 : Fix the card VREG with components facing down with 2 washers (H) and 2 nuts (I).
8 : Solder regulators and interconnection wires.
9 : Fix the 5.5V regulator with the spacer (K), a plastic spacer (B) and 2 screws (L)

Important : Check with a tester that the legs of the regulators are well insulated

 1 Place the base	 2 Place the board on the base	 3 Fix the board on the base
 4 Fix the heat sink	 5 Fix the vreg board	 6 Place the regulators
 7 Fix the clip	 8 Solder the regulators	 9 Connect the boards

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	LM317	317	1
	LM337	337-2	1
	TSN 1-2460		1



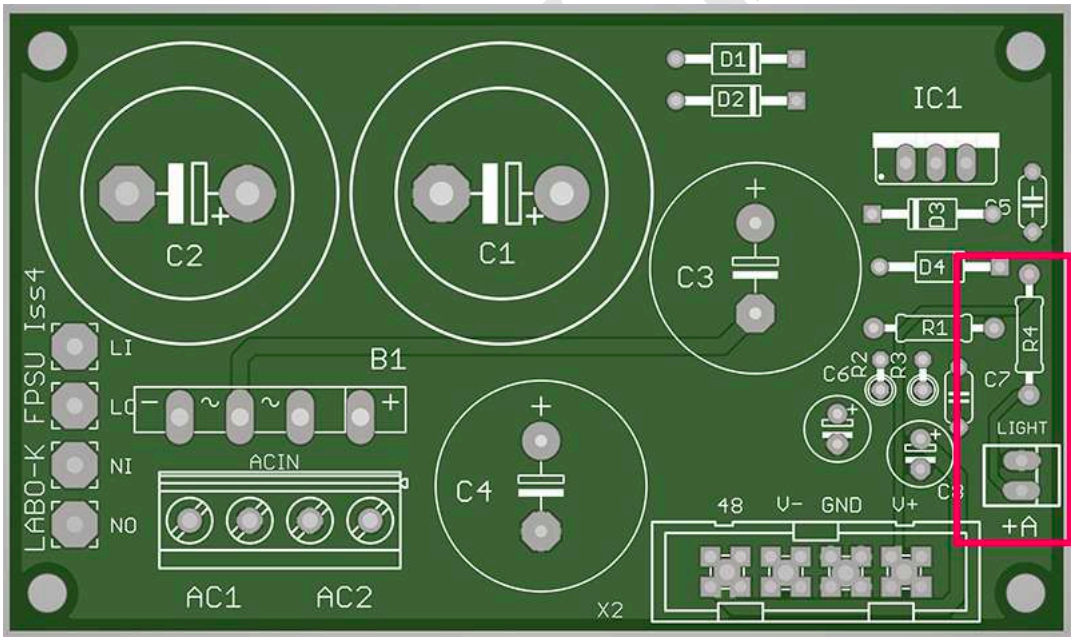
Pay attention to:
Positioning the regulators
Position of the reference mark (white dot) on the TSN 1 2460

FPSU BOARD PART LIST

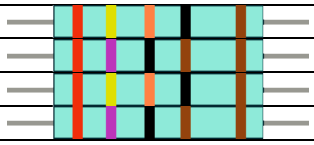
NAME	VALUE	VISUAL	REFERENCE
D1	1N4002		
D2	1N4002		
D3	1N4002		
D4	1N4002		
C1	47000uF 63V		
C2	47000uF 63V		
C3	1000uF 100V		
C4	1000uF 100V		
C5	100n 100V		
C7	100n 100V		
C6	47uF 63V		
C8	47uF 63V		
B1	RS601		
X2	Connectors IDC16 M		
ACIN	Terminal 4		
IC1	LM317HVT		

A LED indicator can be wired as follows

R4 = 2K7.
The letter A indicates the LED anode.



VREG BOARD PART LIST

NAME	VALUE	VISUAL	REFERENCE
R3	243R		
R4	2K7		
R7	243R		
R8	2K7		
C1	100n100V		
C2	100n100V		
C4	10uF63V		
C5	100n50V		
C6	100n50V		
C7	10uF63V		
C8	10uF63V		
C9	100n50V		
C10	100n50V		
C11	10uF63V		
C12	10uF63V		
D1	1N4002		
D2	1N4002		
D3	1N4002		
D4	1N4002		
D5	1N4002		
D6	1N4002		
317	LM317	+TO220 insulator	
317-2	LM337	+TO220 insulator	
REG	TSN 1 2460		
PSU BUS	Connector IDC16		
X1	Connector IDC16		
Cable 1	16-strand ribbon		

INTER BOARDS RIBBON

This 16-wire ribbon cable is used to connect FPSU and Vreg cards.

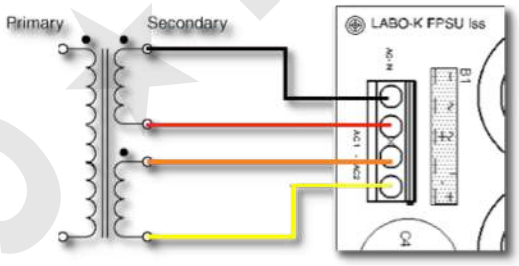


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PSU BUS PINOUT

PSU BUS	
1	+ 4 8 V
2	+ 4 8 V
3	G N D
4	G N D
5	G N D
6	G N D
7	+ 1 5 V
8	+ 1 5 V
9	+ 1 5 V
1 0	N c
1 1	N C
1 2	- 6 V
1 3	- 6 V
1 4	- 1 5 V
1 5	- 1 5 V
1 6	- 1 5 V

POWER TRANSFORMER WIRING



Legal notice:

Labo★K Effects *shall not be responsible and disclaims all liability for any damage (whether direct or consequential) that may result from a wrong use of the kit by the user.*