LABO ⋆ K EFFECTS

MOUNTING INSTRUCTIONS FOR THE PRE 81
REPLICA OF THE NEVE 8108 NEVE 8108
PREAMP IN 500 FORMAT (ISS 4)

OVERVIEW

The PRE 81 is a replica of the preamplifier and sweep filter section of the 34136 console channel of the NEVE 8108 series.
This preamp has a microphone input, a line input and an instrument input.
A gain trim +/- 10dB.
A Micro gain selector (20dB to 80dB in 6dB steps)
A phase inverter and a 48V power supply for condenser microphones.

The filter section has a low-cut filter and a high-cut filter with switchable sweeps.

A potentiometer is used to adjust the output level.

An FET transistor instrument input is switched by a relay when a jack is inserted in the front panel. The signal passes through the Micro input transformer.

It is possible to insert the EQ portion of an adjacent EQ81 module into the preamp path after the filters and before the fader exactly as in the original 8108 channel by pressing the (**CH**) button on the EQ. This feature is available when using a link cable or when the modules are used with a **Labo K Effects K551X format** rack.

The **Pre81** module can be powered in +/-16V (API 500 format) or +/-18V in a 51X or K551X format rack. Regulators on the module convert the +/-24V available on 51X and K551X format to +/-18V.

This module is compatible with API500, 51X, VPR, and K551X formats.

Optional accessories

Labo★K Effects K551X rack Rack system in K551x format with modular backplanes powered by a ribbon cable.	
EQ81 by Labo★K Effects Replica of the Neve 8108 Equalizer	

KIT OVERVIEW

- 2 Double-sided PCBs with metallized holes
- Passive components (resistors, chokes and capacitors).
- Active components (Diodes, Transistors, integrated circuits)
- Controllers and radiators (option +/-18V)
- CI Relays and Sockets
- Switches and potentiometers
- Micro input transformer (BELCLERE TF10015 or CARNHILL VTB9045M)
- IDC connectors and ribbon cable
- Front side
- Buttons

NOTE :

3 Jumpers allow you to configure the preamp according to the desired use.

Jumper Table.

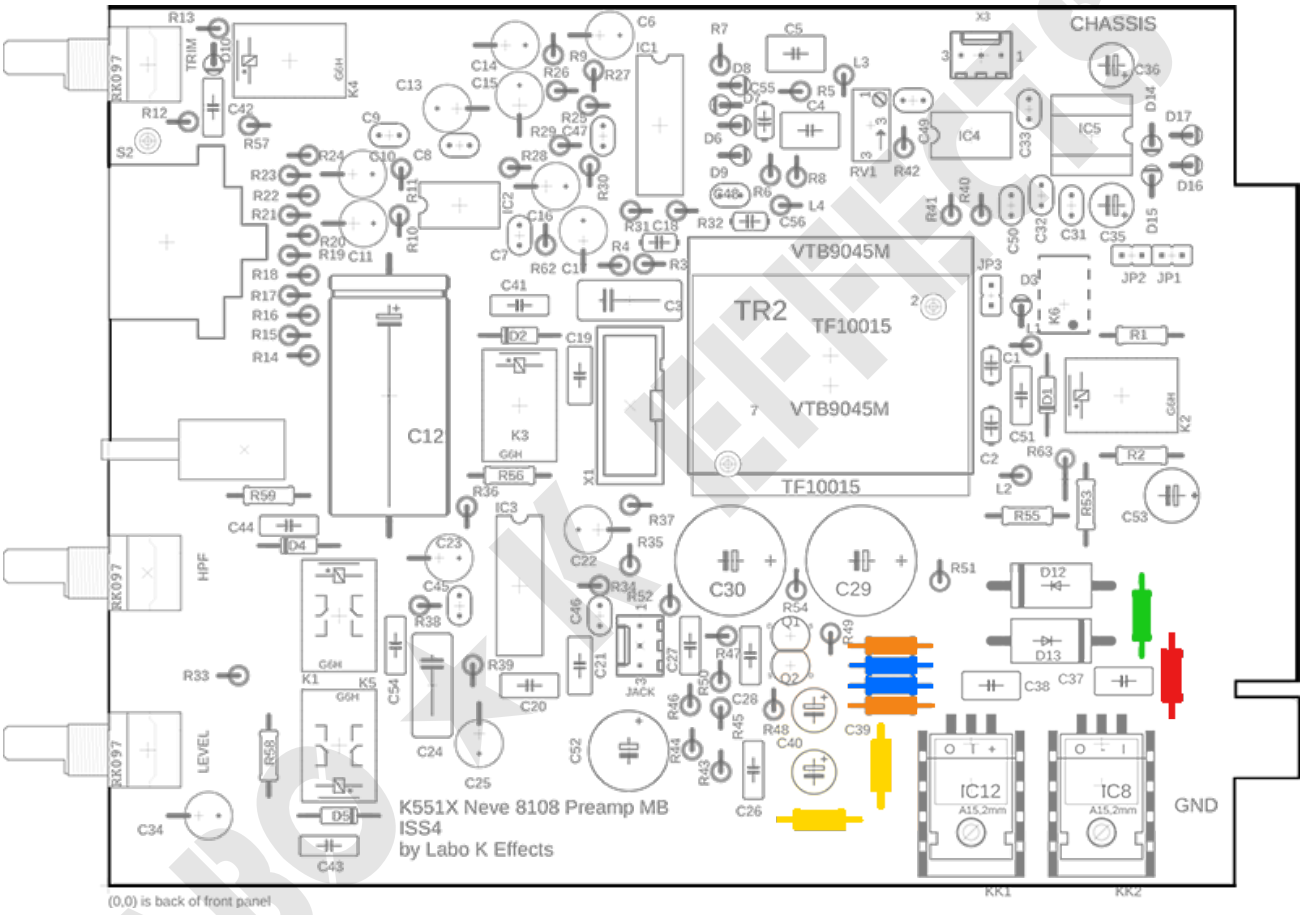
Jumper JP1 in = Stand-alone mode
Jumper JP1 out = enable insert mode to form a channel with EQ81

Jumper JP2 out & JP3 in = 500 format (the input XLR is for MIC and Line)
Jumper JP2 in & JP3 out = K551X format (Both mic and Line have an XLR input)

It is recommended to read the entire manual before starting the construction of the module

MOUNTING INSTRUCTIONS MB 01

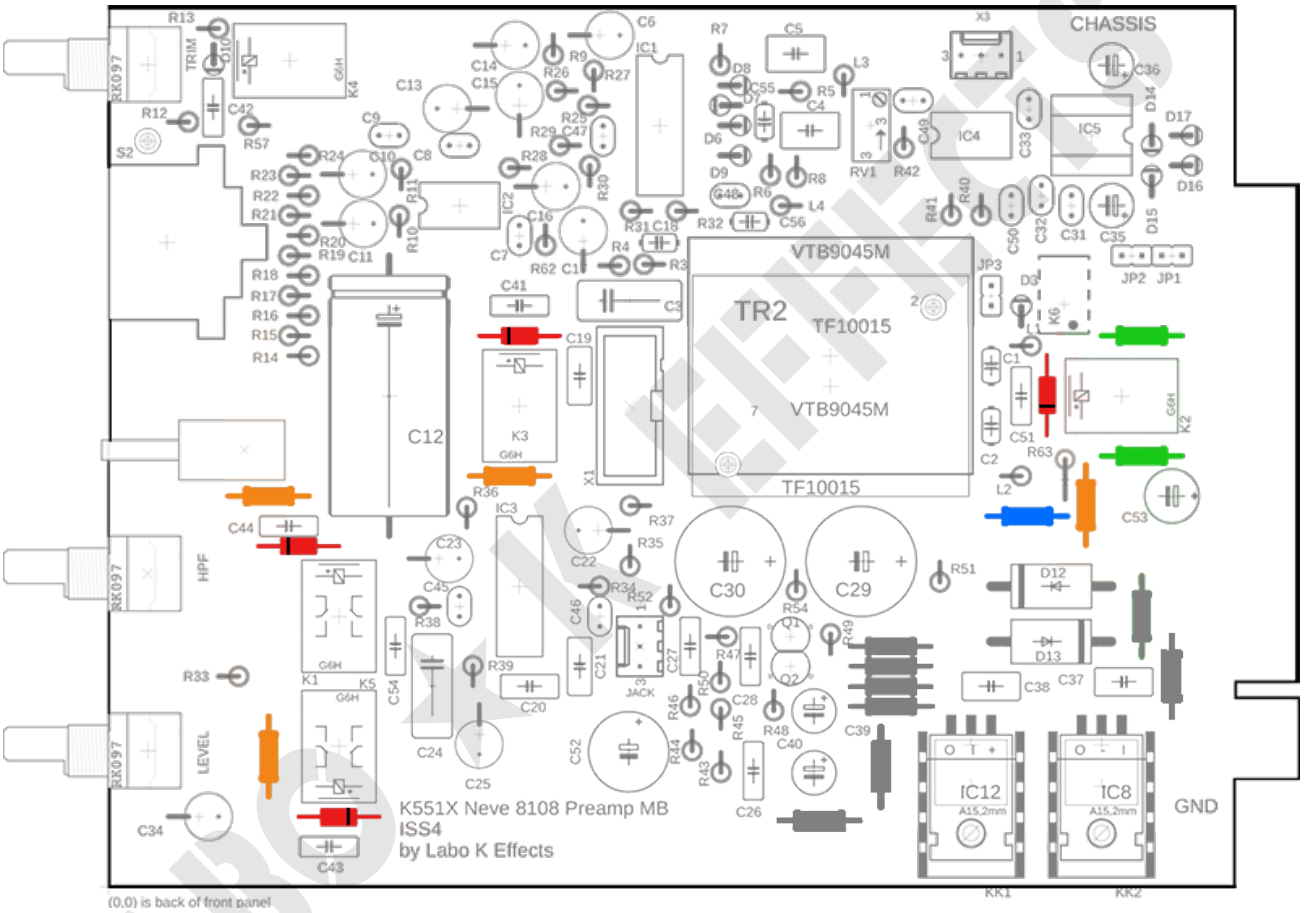
	Resistor 0R	16 (Standard 500)
	Resistor 0R	**24 k551x option**
	Resistors 1R	Module power supply +/-16V (standard 500)
	Resistors 1R	**Module power supply +/-18V**
	Resistors 7K5	**Module power supply +/-18V**



Note	The +/18V power supply is only possible in 51X, K551X, VPR format	
1R		2
7K5		1
0R		1

MOUNTING INSTRUCTIONS MB 02

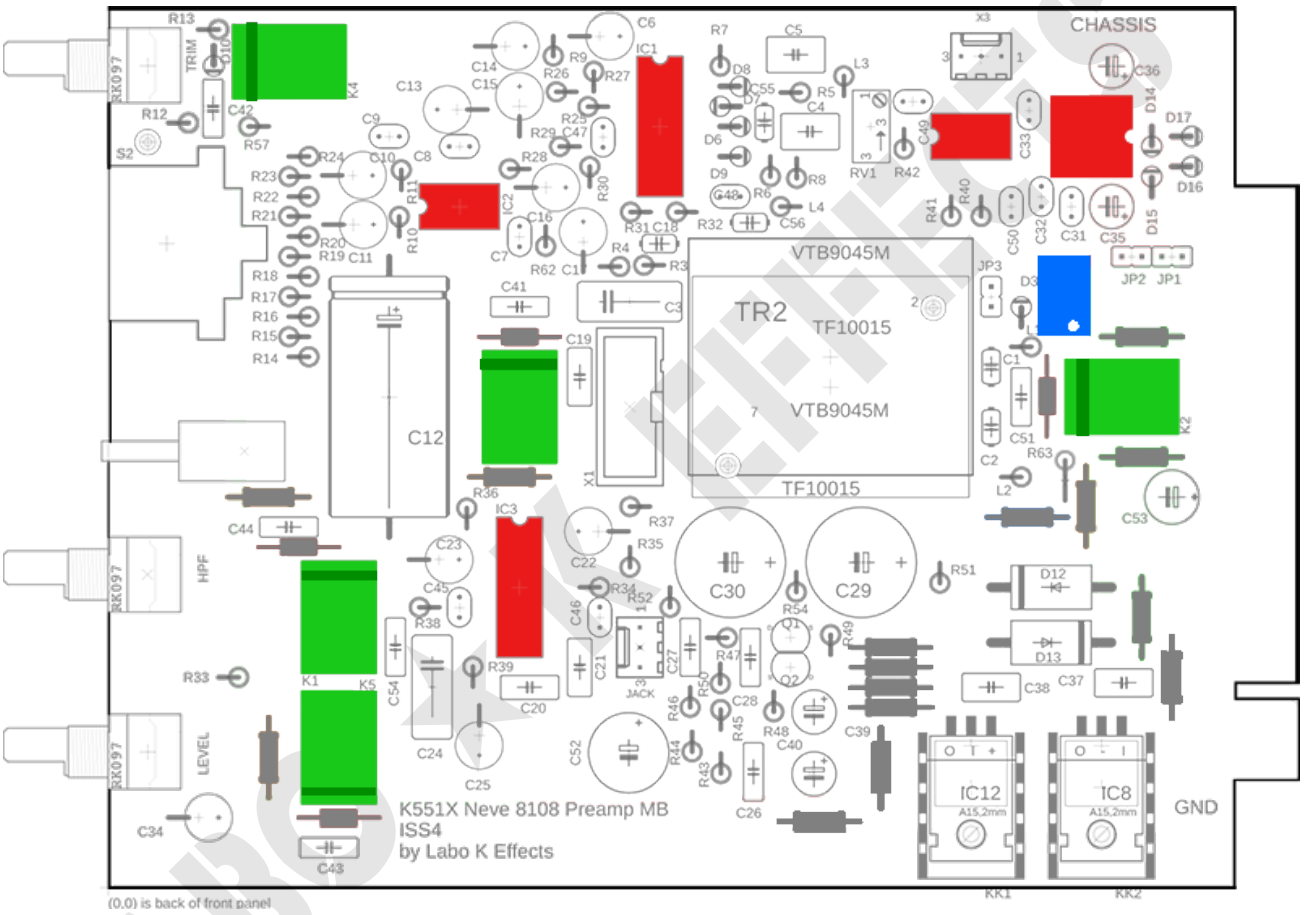
	Diodes 1N4148	D1, D2, D4, D5
	Resistors 18K	R1, R2
	Resistor 470R	R55
	Resistors 360R	R53, R56, R58, R59



Note		
18K		2
470R		1
360R		4

MOUNTING INSTRUCTIONS MB 03

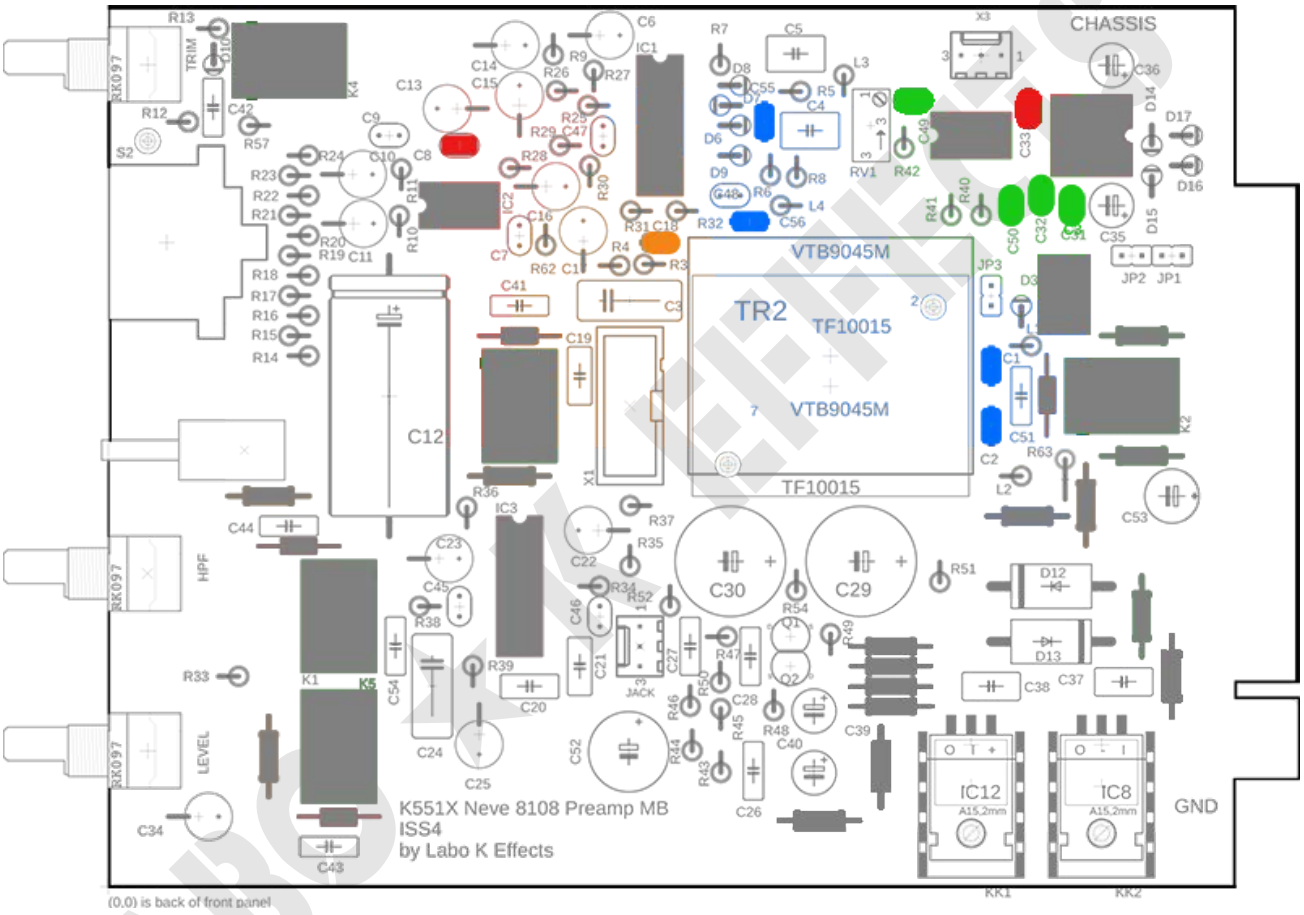
	IC Socket	IC1, IC2, IC3, IC4, IC5
	12V Relays	K1, K2, K3, K4, K5
	12V relay mini	K6



Note	Observe the arrangement of the relays (line and point position)	

MOUNTING INSTRUCTIONS MB 04

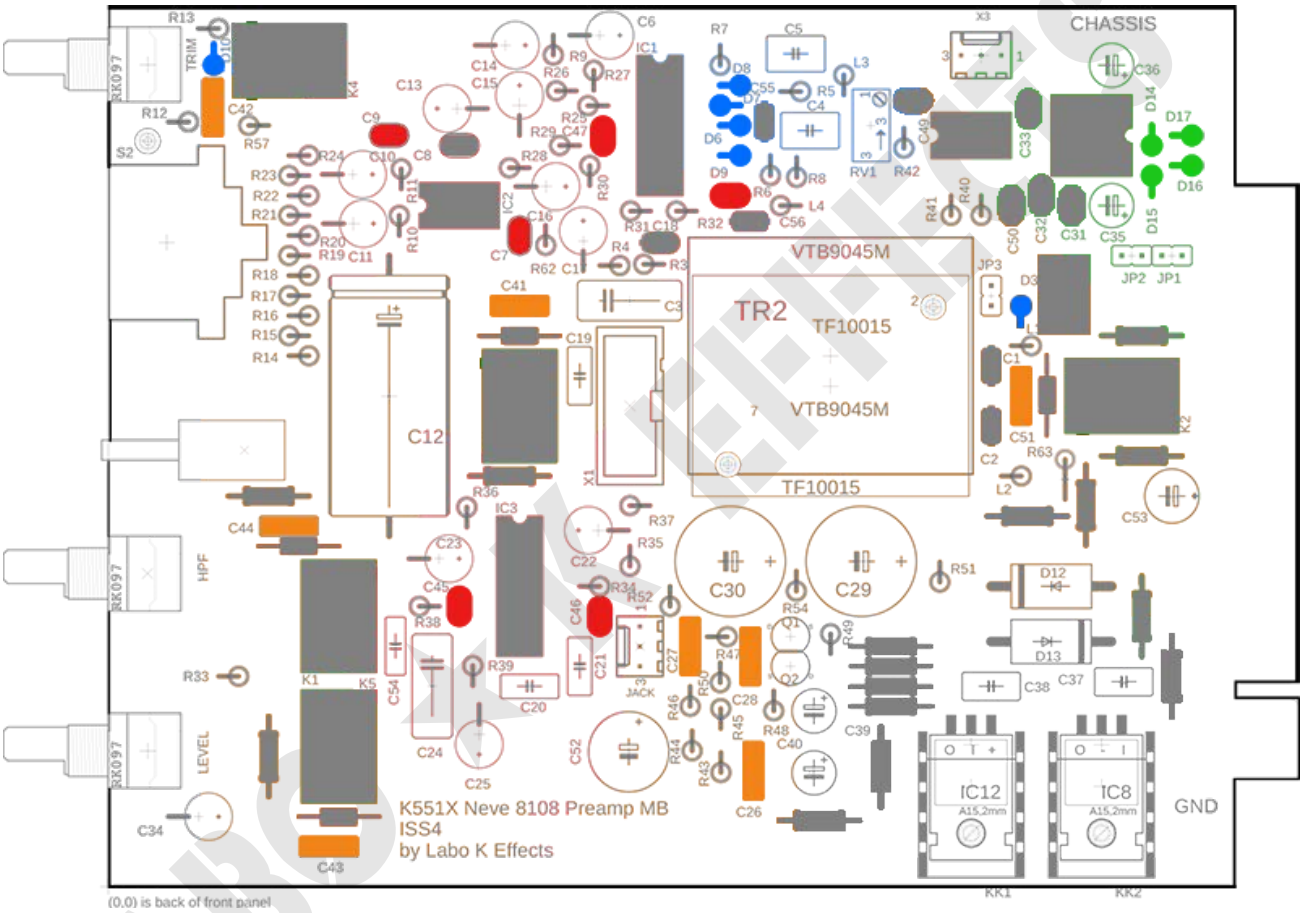
	C Ceramics 22pF	C8, C33
	C Ceramics 100n	C31, C32, C49, C50
	C Ceramics 270pF	C1, C2, C55, C56
	C Ceramics 68pF	C18



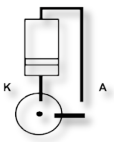
Note		
22p	22	2
100n	104	4
270p	271	4
68p	680	1

MOUNTING INSTRUCTIONS MB 05

	C Ceramics 22n	C7, C9, C45, C46, C47, C48
	Diodes 1N4002	D14, D15, D16, D17
	Diodes 1N4148	D3, D6, D7, D8, D9, D10
	C Film 100n	C26, C27, C28, C41, C42, C43, C44, C51

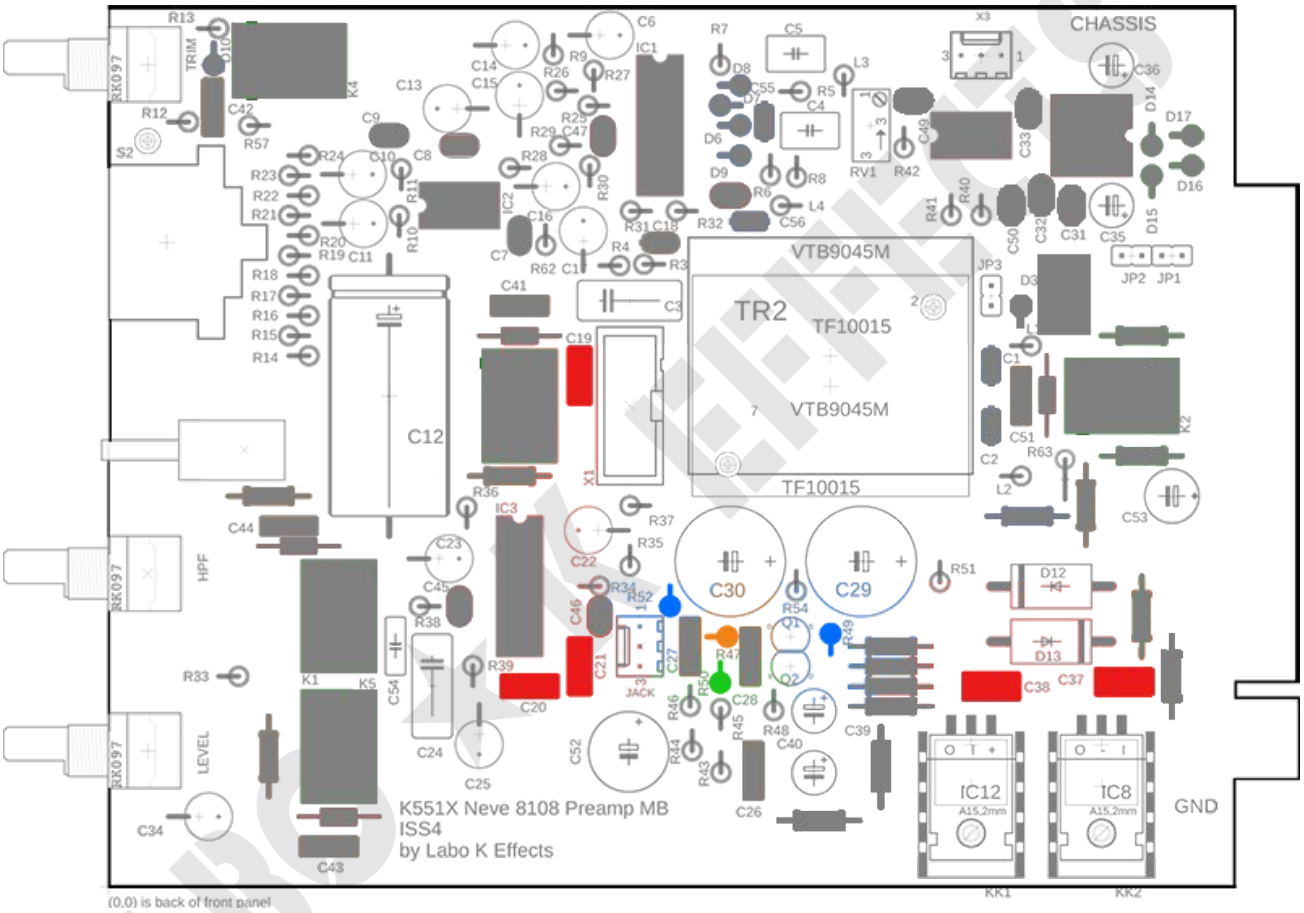


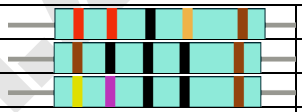
Note	The diodes are installed vertically	
22n	223	6
100n	.1J	8



MOUNTING INSTRUCTIONS MB 06

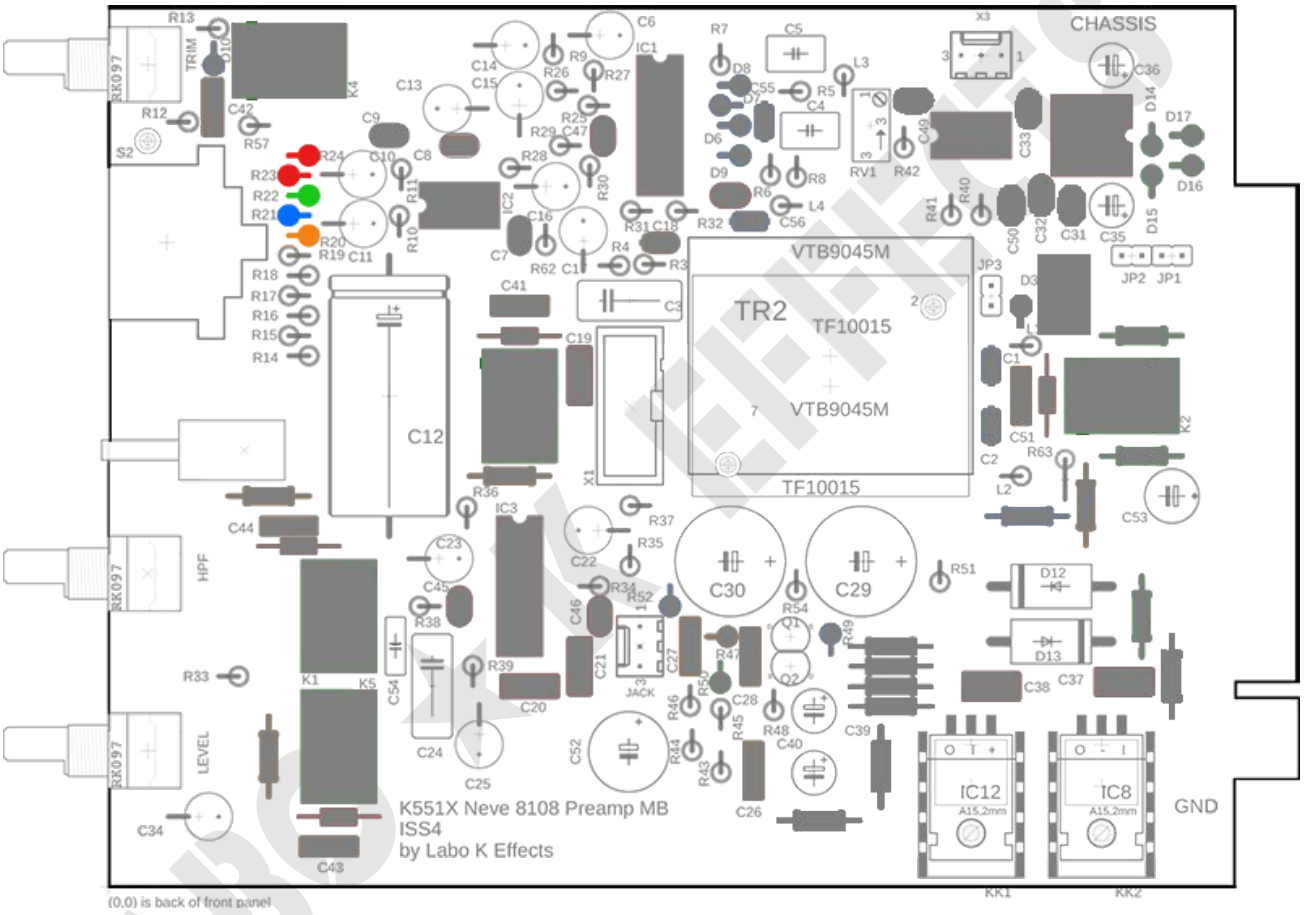
	C Film 220n	C19, C20, C21, **(C37, C38 18V version)**
	Resistor 22R	R50
	Resistors 100R	R49, R52
	Resistor 470R	R47



Note	The Resistors are installed vertically	
22R		1
100R		2
470R		1
220n	.22K	3**(5)**

MOUNTING INSTRUCTIONS MB 07

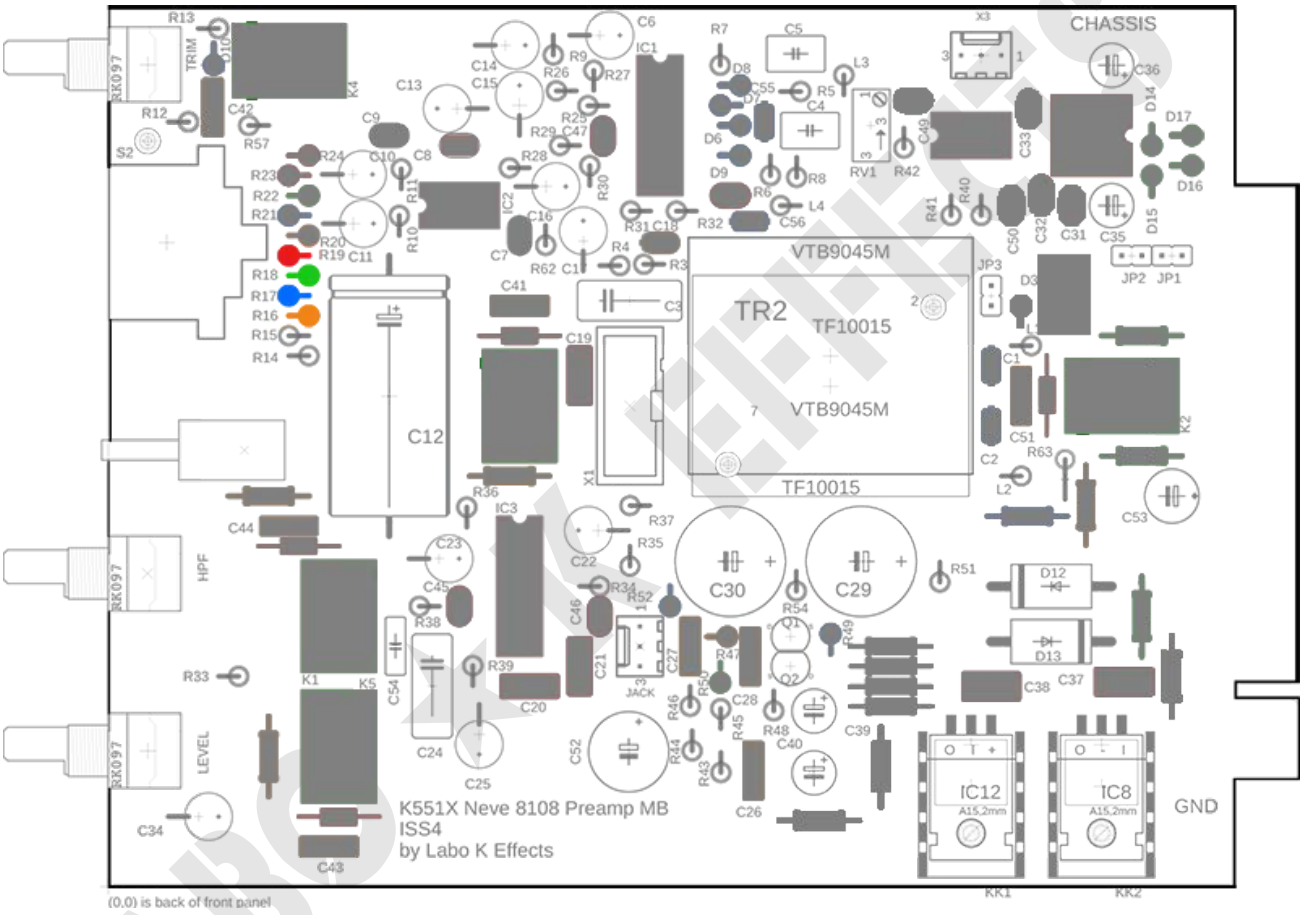
	Resistors 19R6	R23, R24
	Resistor 38R3	R22
	Resistor 78R7	R21
	Resistor 158R	R20

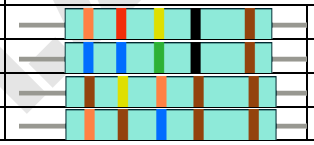


Note	The Resistors are installed vertically	
19R6		2
38R3		1
78R7		1
158R		1

MOUNTING INSTRUCTIONS MB 08

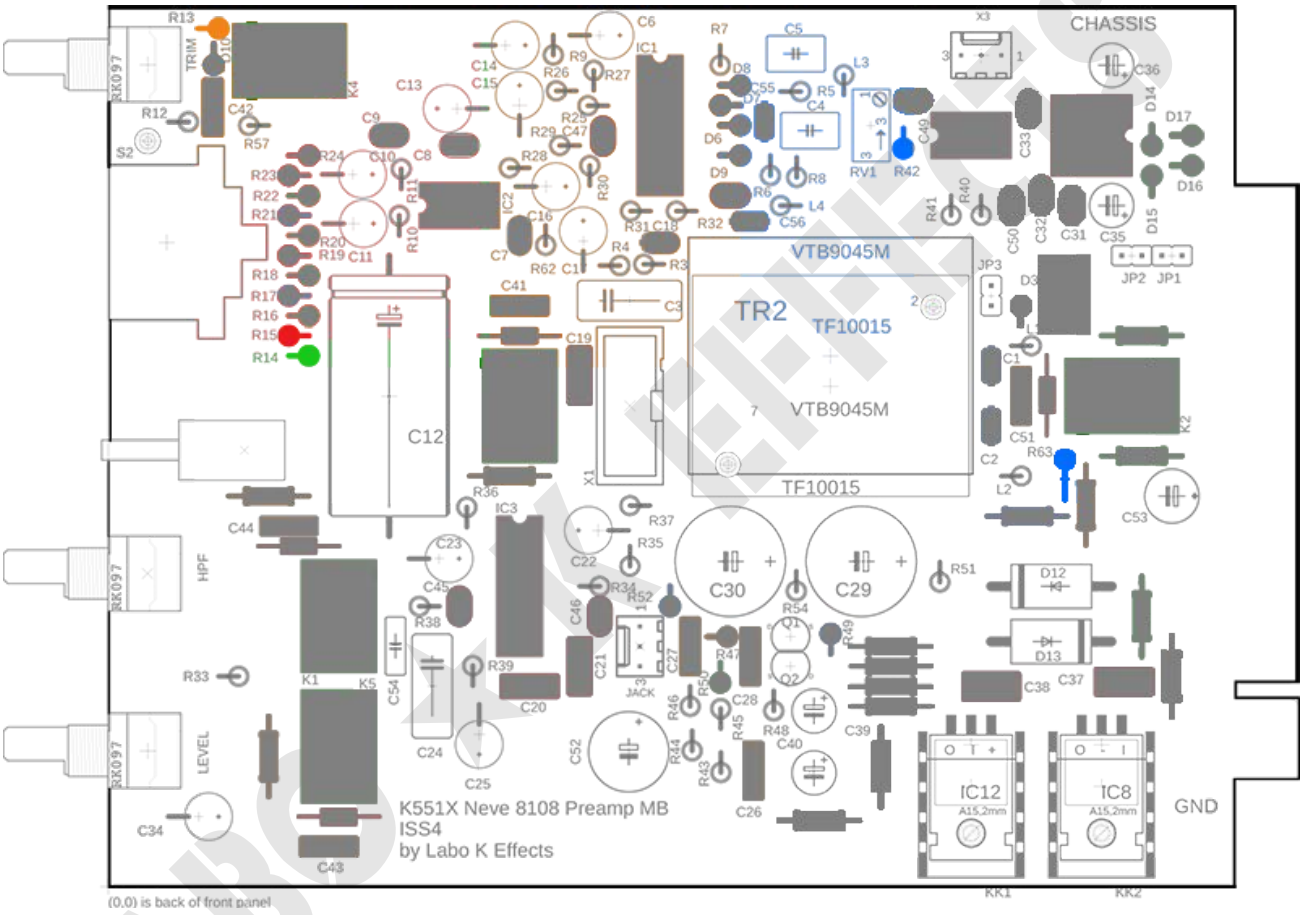
	Resistor 324R	R19
	Resistor 665R	R18
	Resistor 1K43	R17
	Resistor 3K16	R16



Note	The Resistors are installed vertically	
324R		1
665R		1
1K43		1
3K16		1

MOUNTING INSTRUCTIONS MB 09

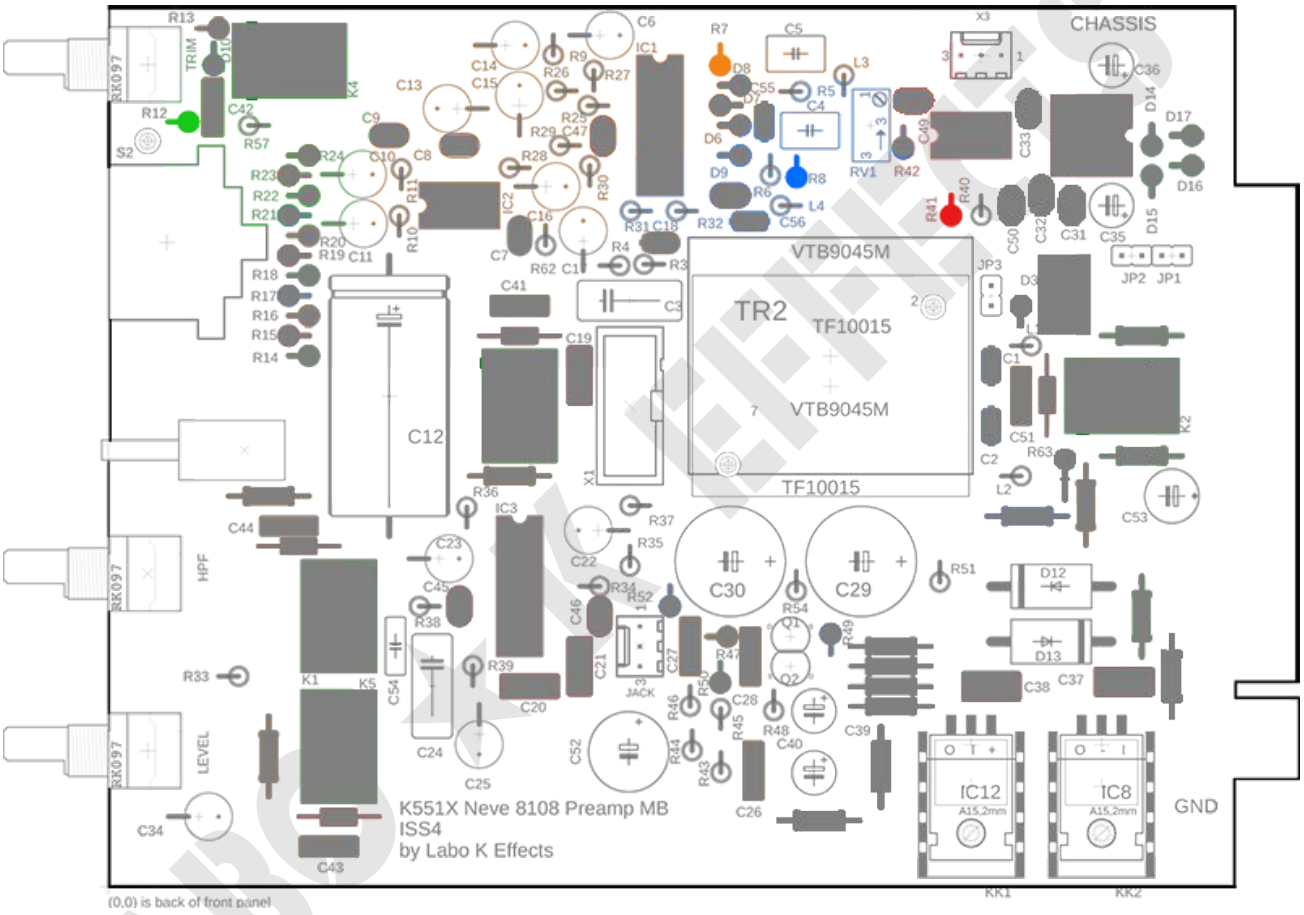
	Resistor 6K19	R15
	Resistor 6K98	R14
	Resistor 680R	R42, R63
	Resistor 1K1	R13

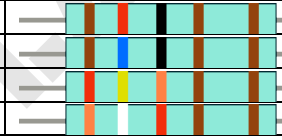


Note	The Resistors are installed vertically	
6K19		1
6K98		1
680R		2
1K1		1

MOUNTING INSTRUCTIONS MB 10

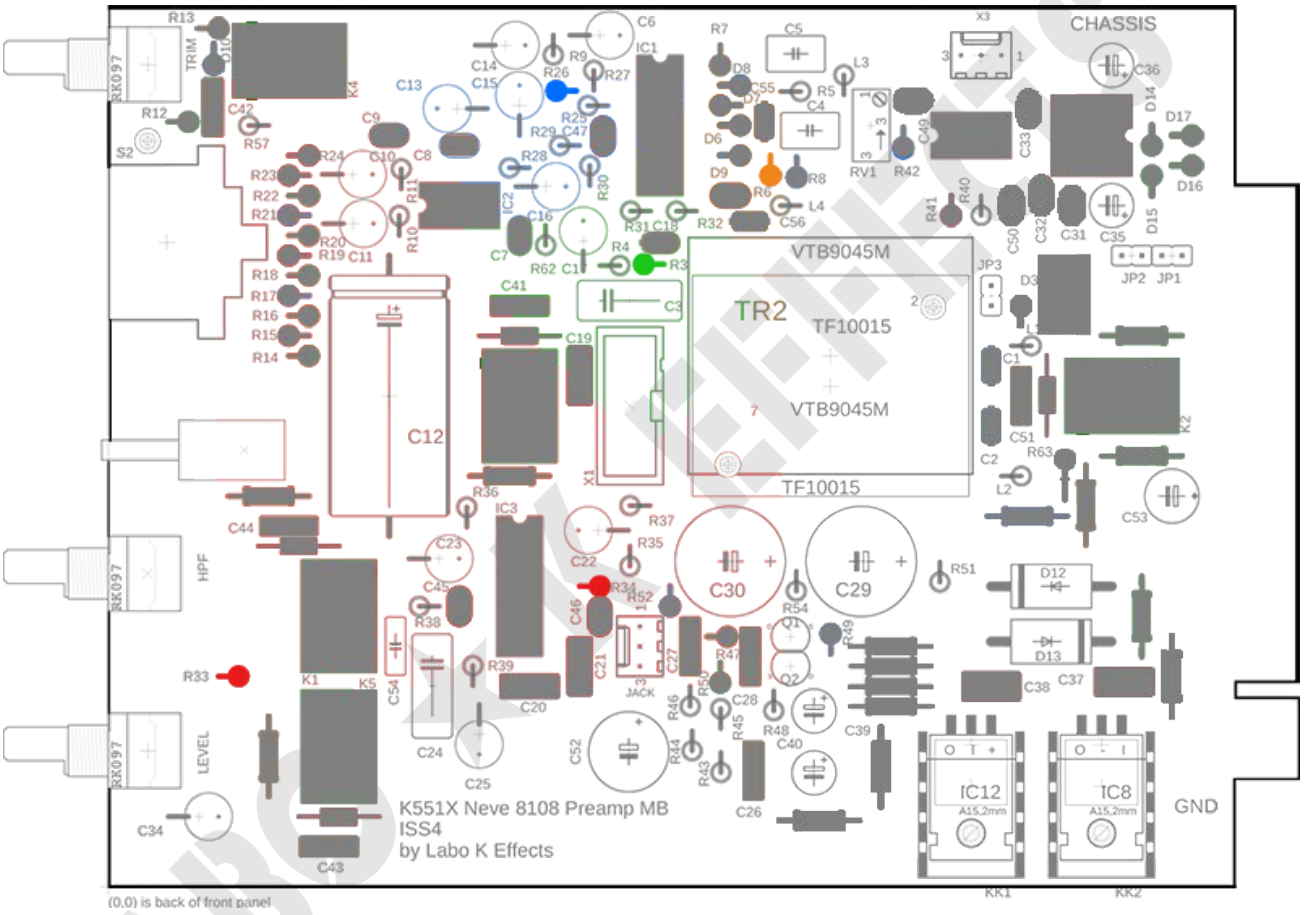
	Resistor 1K2	R41
	Resistor 1K6	R12
	Resistor 2K43	R8
	Resistor 3K92	R7



Note	The Resistors are installed vertically	
1K2		1
1K6		1
2K43		1
3K92		1

MOUNTING INSTRUCTIONS MB 11

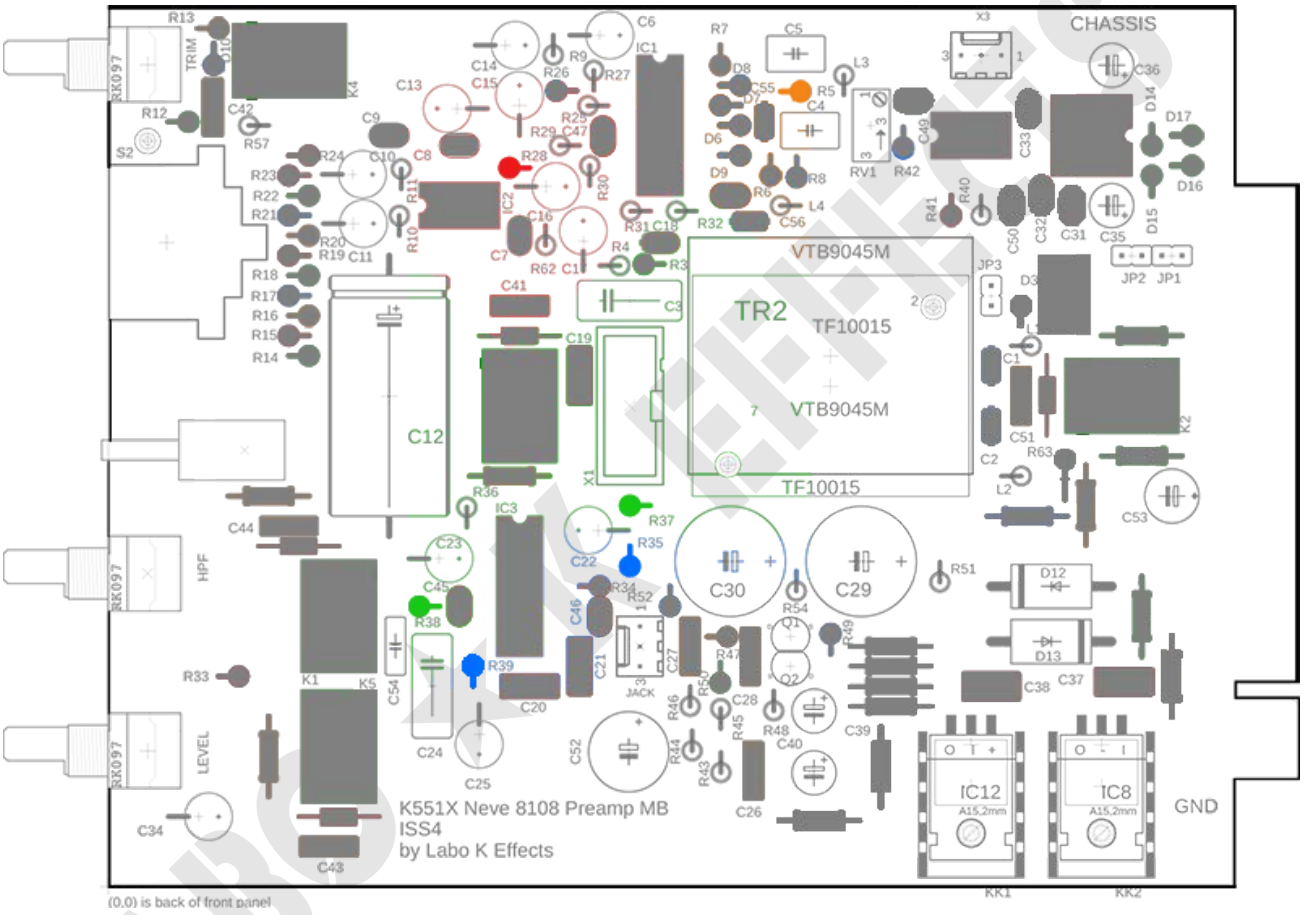
	Resistors 4K3	R33, R34
	Resistor 5K1	R3 (**0R if TB9045 Transformer**)
	Resistor 7K5	R26
	Resistor 7K68	R6



Note	The Resistors are installed vertically	
4K3		2
5K1		1
7K5		1
7K68		1

MOUNTING INSTRUCTIONS MB 12

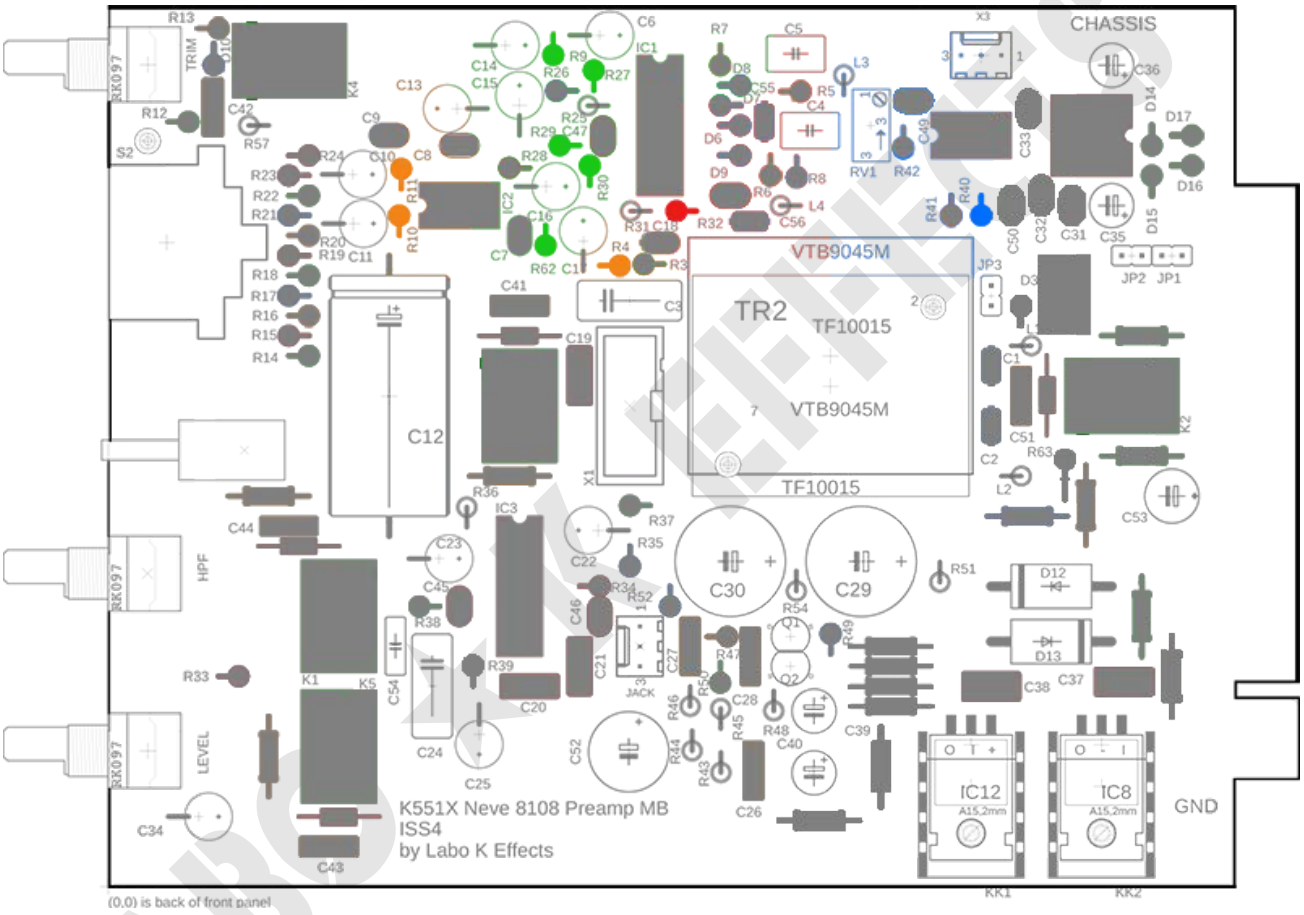
	Resistor 8K06	R28
	Resistors 9K1	R37, R38
	Resistor 12K	R35, R39
	Resistor 12K4	R5



Note	The Resistors are installed vertically	
8K06		1
9K1		2
12K		2
12K4		1

MOUNTING INSTRUCTIONS MB 13

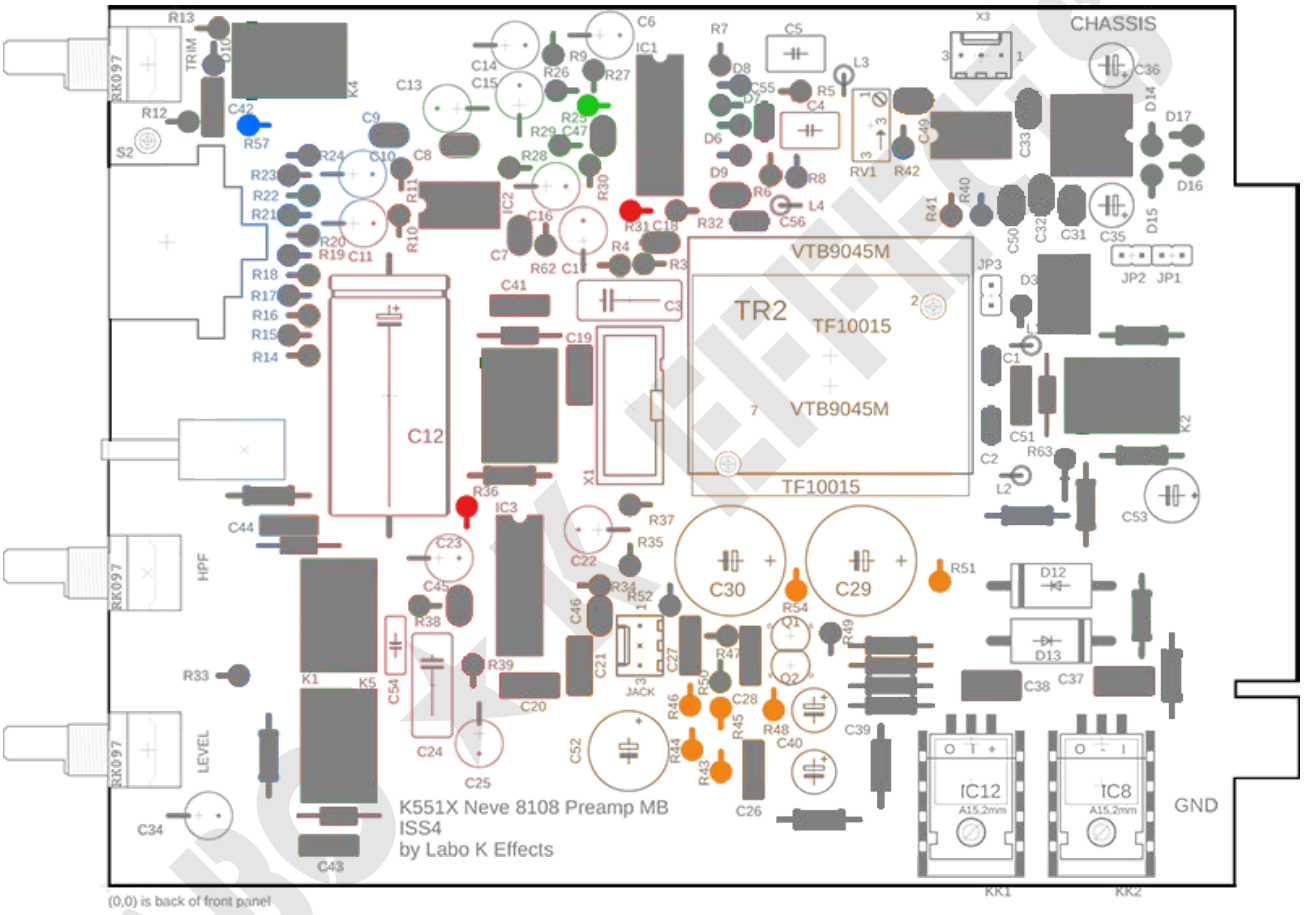
	Resistor 15K	R32
	Resistors 16K	R26, R27, R29, R30, R62
	Resistor 18K	R40
	Resistors 20K	R4, R10, R11



Note	The Resistors are installed vertically	
15K		1
16K		5
18K		1
20K		3

MOUNTING INSTRUCTIONS MB 14

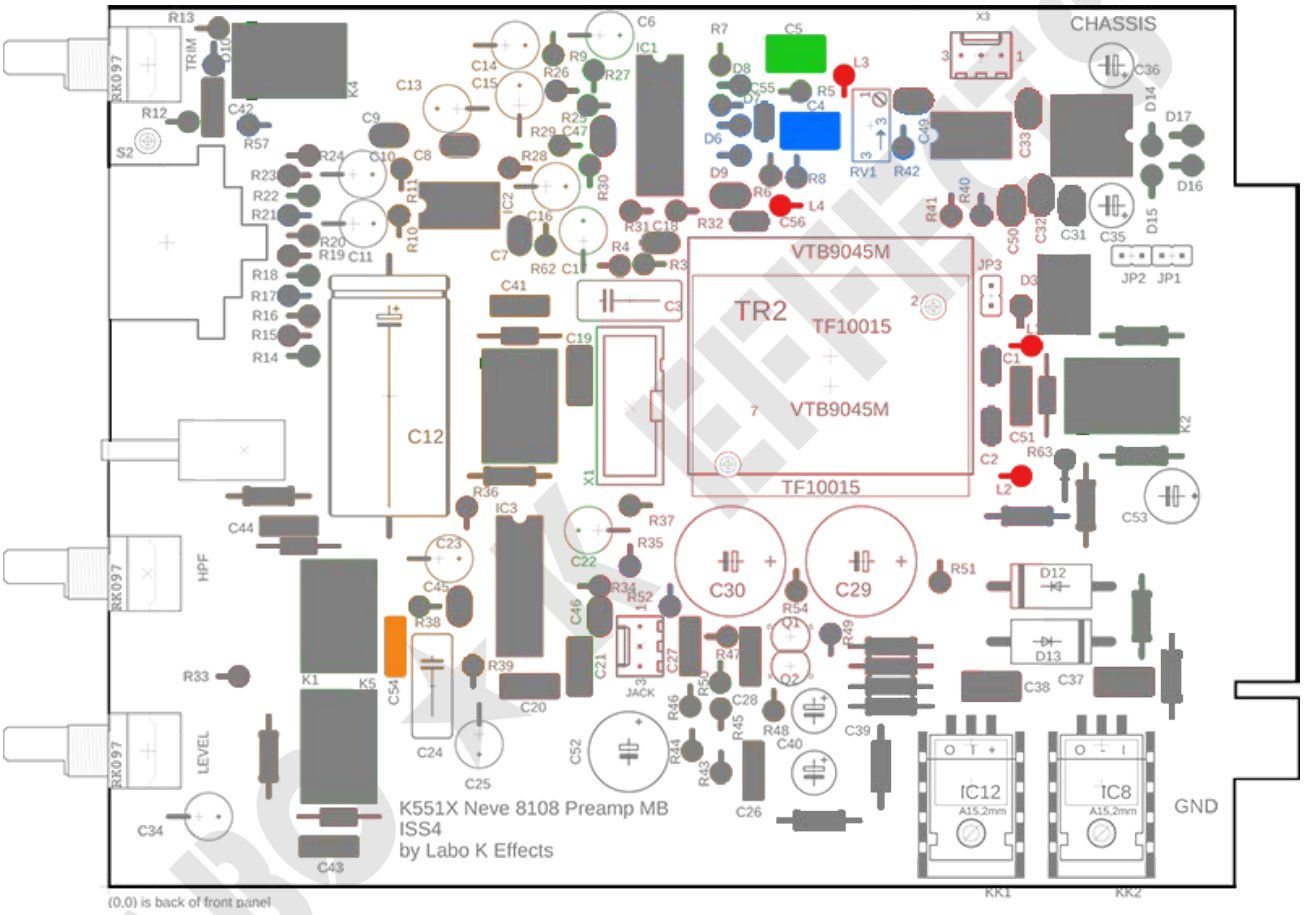
	Resistors 100K	R31, R36
	Resistor 390K	R25
	Resistor 360R	R57 (Rack format 500)
	Resistor 1K1	R57 (Rack format K551X, 51X)
	Resistors 2M2	R43, R44, R45, R46, R48, R51, R54



Note	The Resistors are installed vertically	
100K		2
390K		1
360R		1
2M2		7

MOUNTING INSTRUCTIONS MB 15

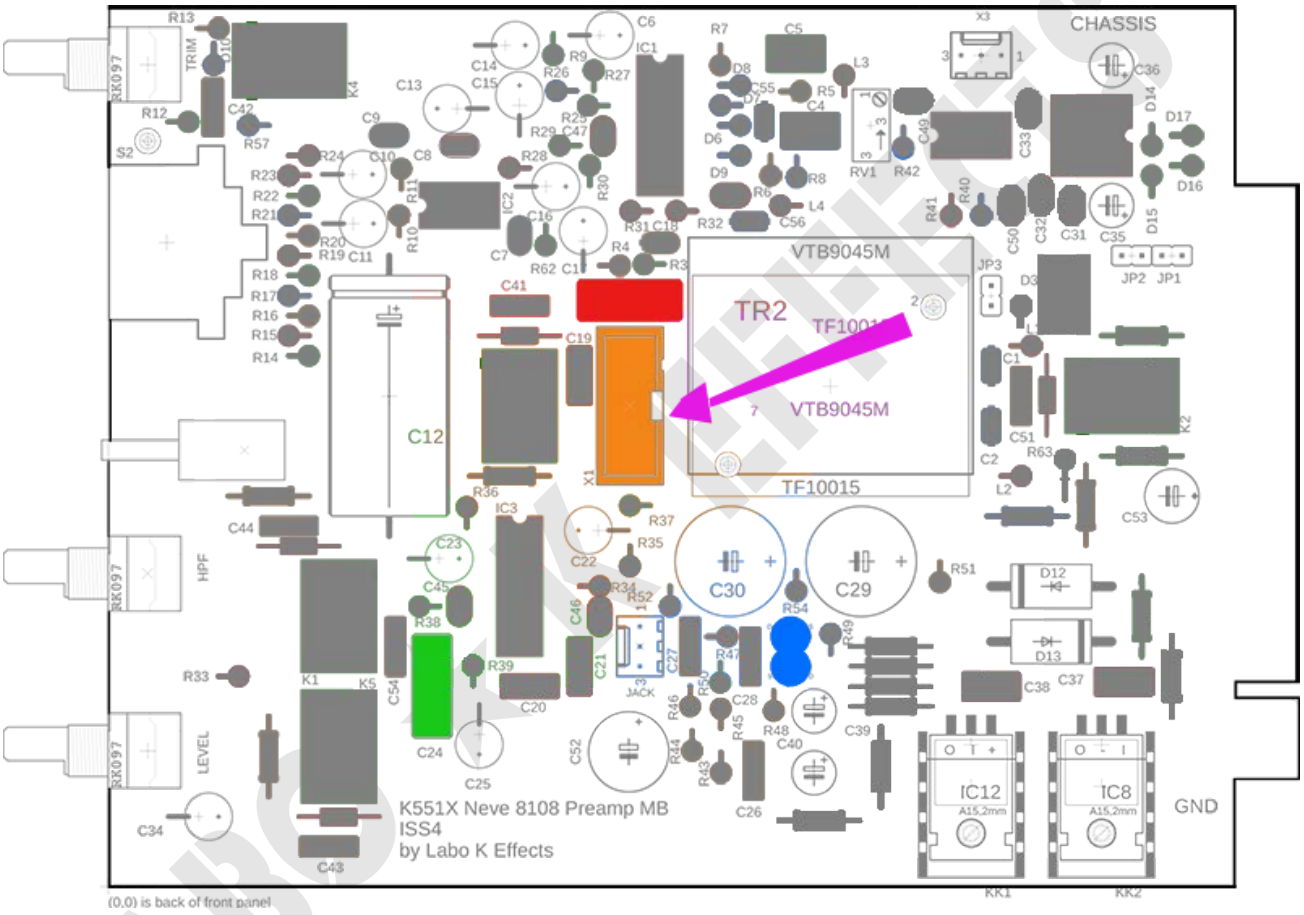
	Chockes 1mH	L1, L2, L3, L4
	C Film 47pF WIMA	C5
	C Film 68pF WIMA	C4
	C Ceramics 750pF	C54



Note	The chokes are located vertically	
1mH		4
47p	Wima	1
68p	Wima	1
750p	751	1

MOUNTING INSTRUCTIONS MB 16

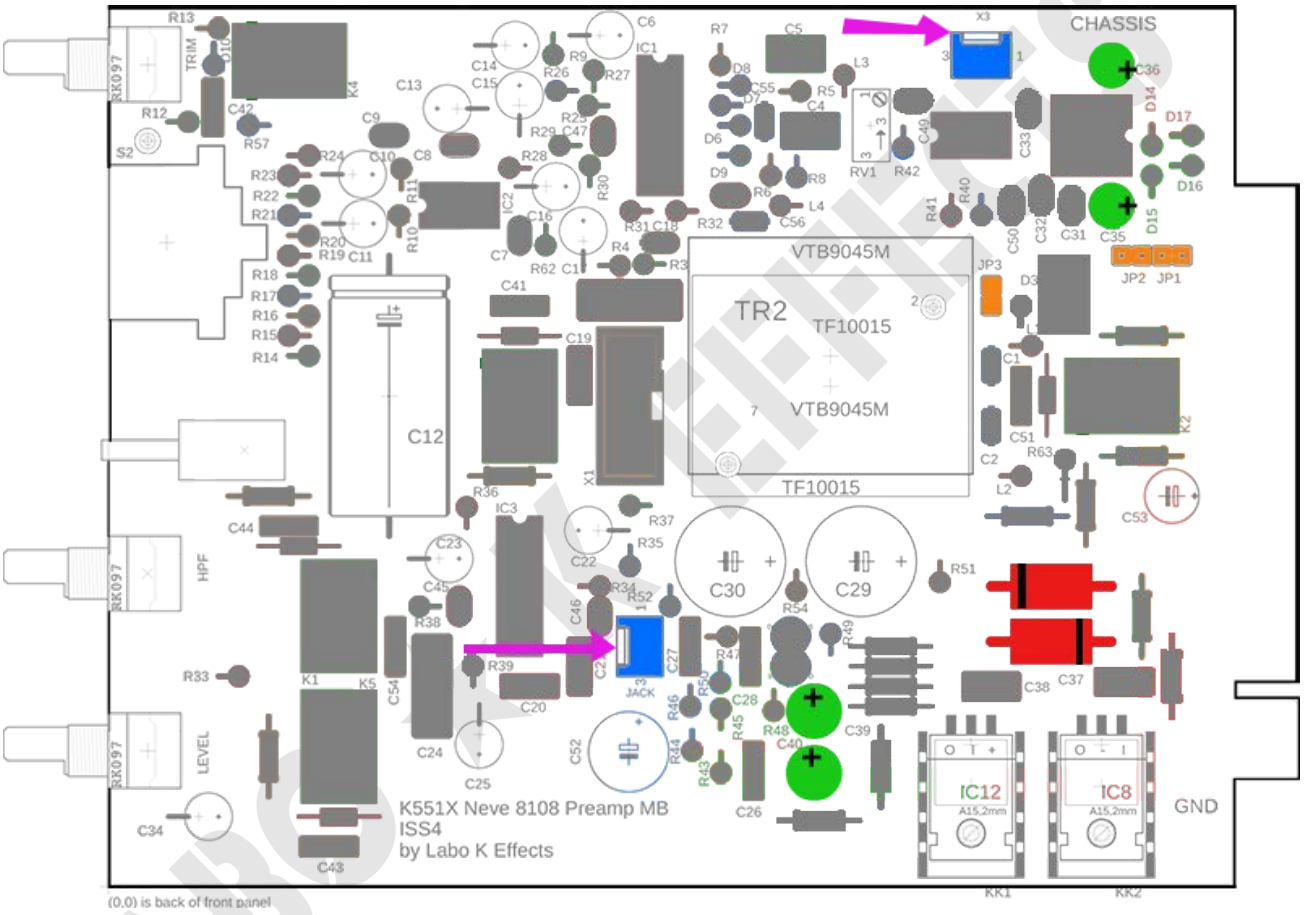
	C Sufflex 390pF	C3
	C Sufflex 1500pF	C24
	FET 2SK170 BL	T1, T2
	IDC 10 connector	X1



Note	Observe the orientation of connectors X1, X2 and Transistors T1 and T2	
390p	390J	1
1500p	1500J	1

MOUNTING INSTRUCTIONS MB 17

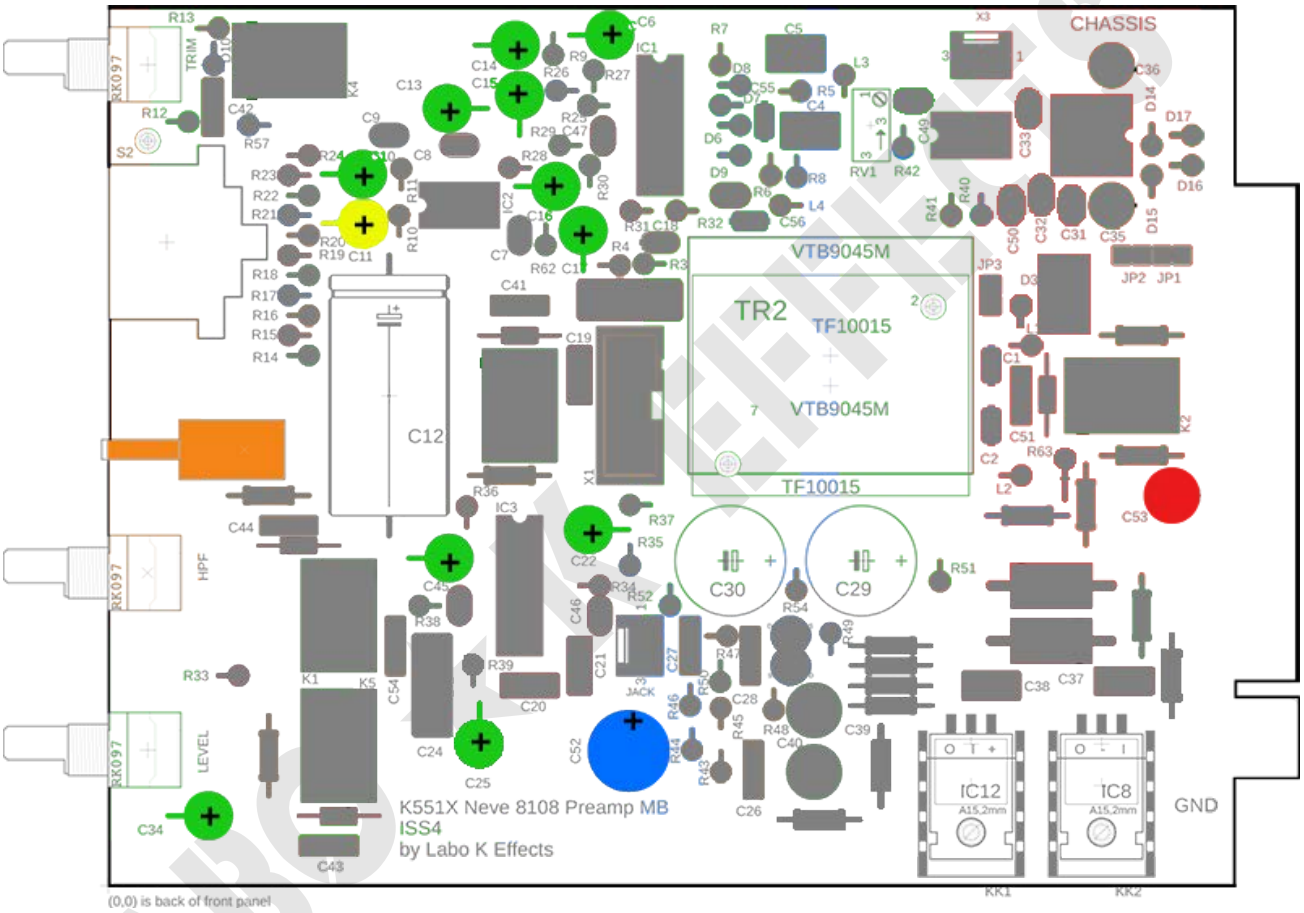
	Diodes 1N5403	**D12, D13 (18V Version)**
	C 22uF 25V	C35, C36, C39, C40
	Molex 3 connector	Jack
	Header 2 pins	JP1, JP2, JP3



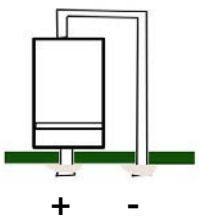
Note	Observe the polarity of capacitors and diodes
	D12, D3 used in 18V version Only
	Observe the position of the tongue of the Jack connector

MOUNTING INSTRUCTIONS MB 18

	C 47uF 63V	C53
	C 10uF 16V	C11
	C 100uF 10V	C6, C10, C13 - C17, C22, C23, C25, C34
	C 100uF 63V	C52
	Switch ALPS	

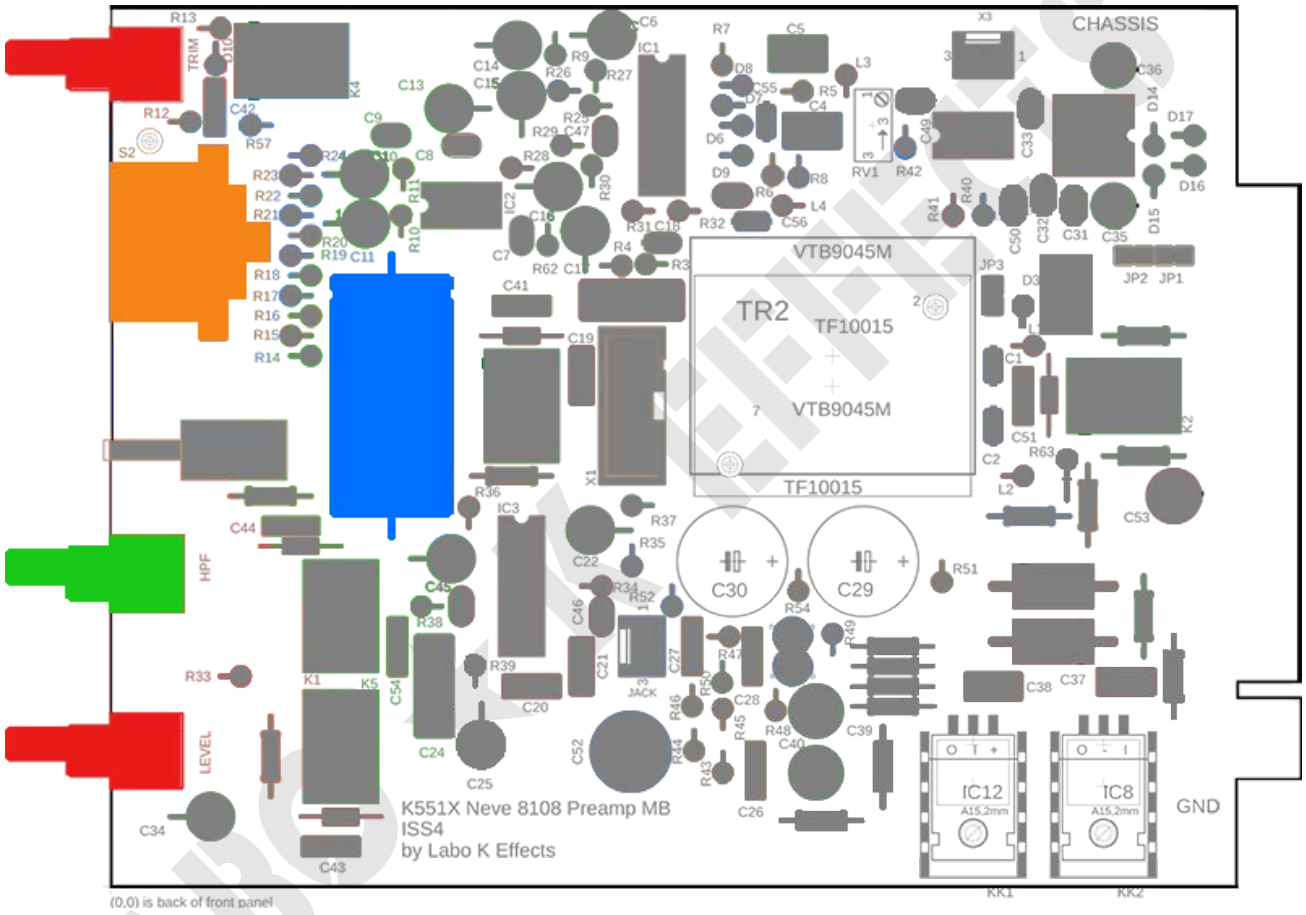


Note	Observe the polarity of the capacitor	
	The 100uF 10V capacitors are installed vertically	



MOUNTING INSTRUCTIONS MB 19

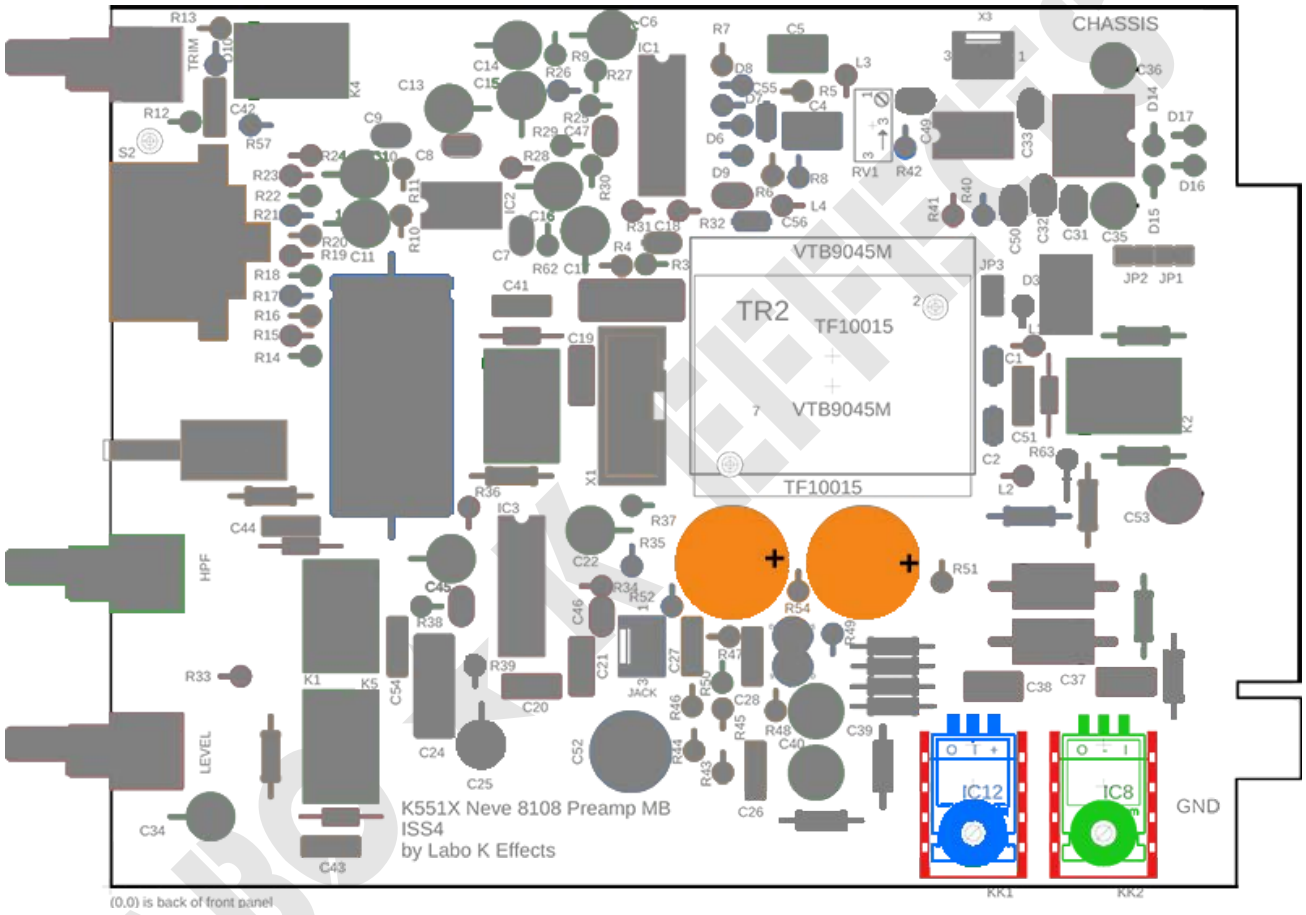
	Pot ALPS 2X10K Lin	Trim, Level
	Pot Alps 2x50K Lin	HPF
	C 2200u/16V	C12
	Switch Grayhill	



Note	Observe the polarity of the C12 capacitor	
	Do not solder all the pins of the pots and switches	
	Place the front panel and weld the pins once the axes are aligned	

MOUNTING INSTRUCTIONS MB 20

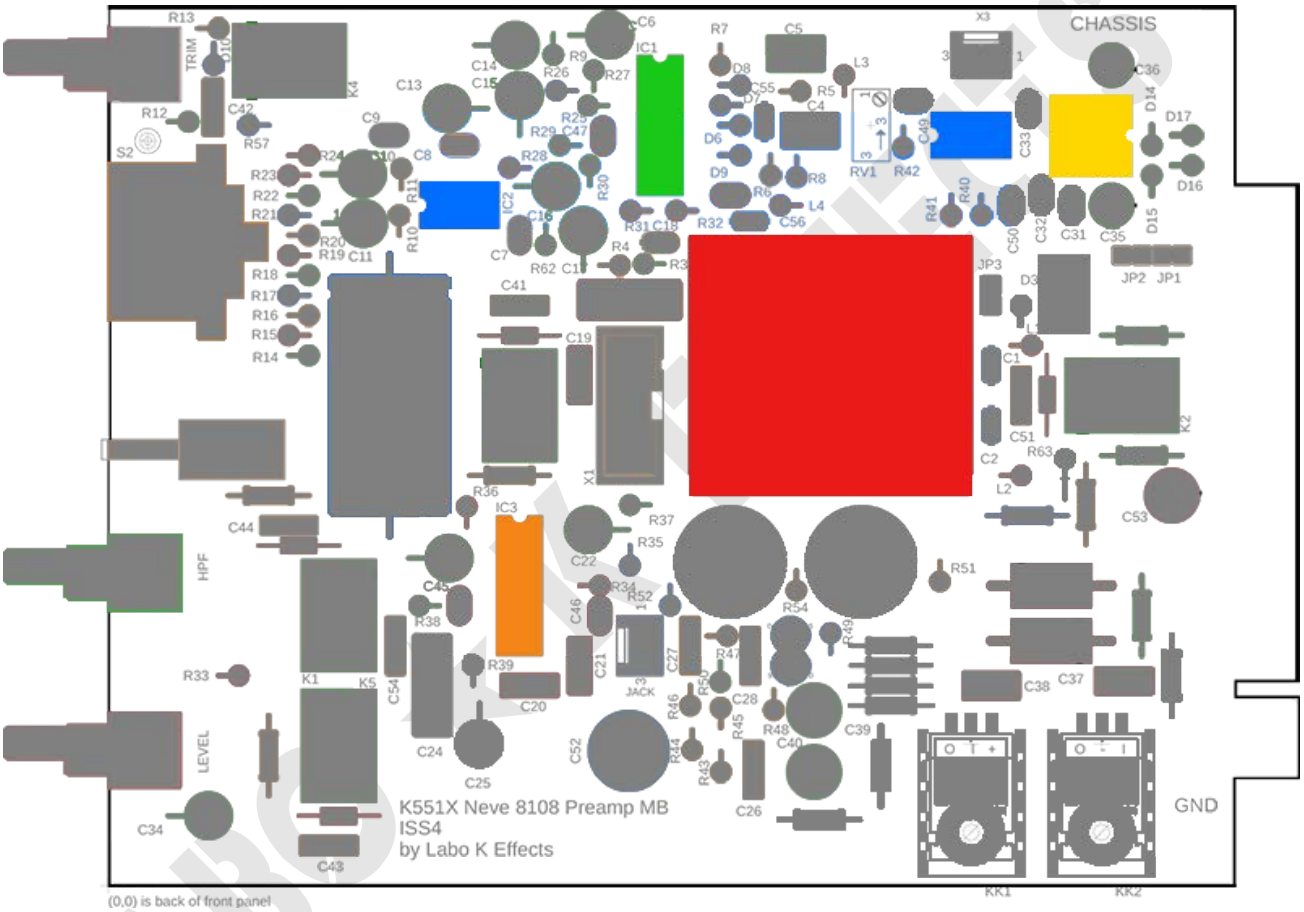
	Radiators To220	**(18V version)**
	Regulator 7818	IC8 **(18V version)**
	Regulator 7918	IC12 **(18V version)**
	C 100uF/50V NP	Unpolarized capacitors



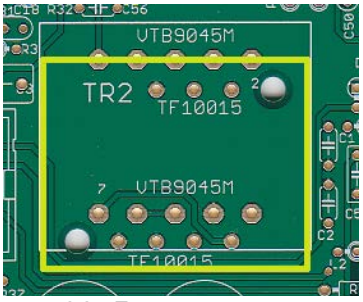
Note	Position the radiators
2	Position the regulators
3	Screw the regulators onto the radiators
4	Welding the legs of the regulators

MOUNTING INSTRUCTIONS MB 21

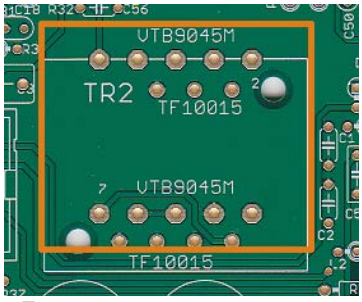
	Transformer	TF10015 or CARNHILL VTB 9045M
	HA1-4741-5	IC1
	NE 5534 N	IC2, IC4
	HA1-4605-5	IC3
	THAT 1646	IC5



Note	Observe the transformer pin numbers
1	Belclere have 3 pins on one side and 4 on the other
2	Observe pin 2 and 7 for the VTB9045B
3	Attach the transformer with the 2 screws Then solder the pins (TF10015)



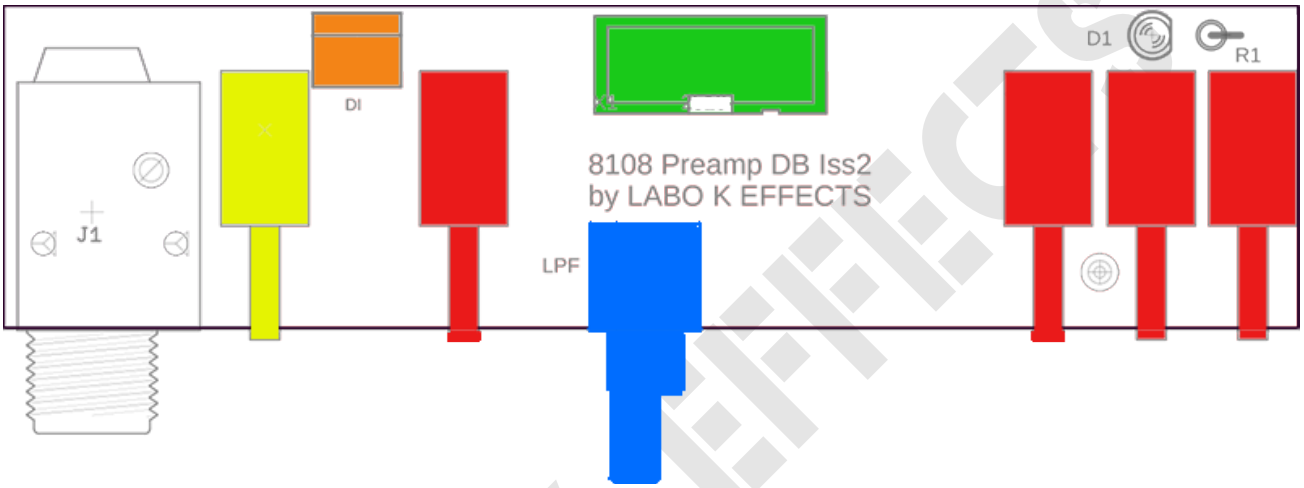
TF 10015



VTB9045M

MOUNTING INSTRUCTIONS DB 01

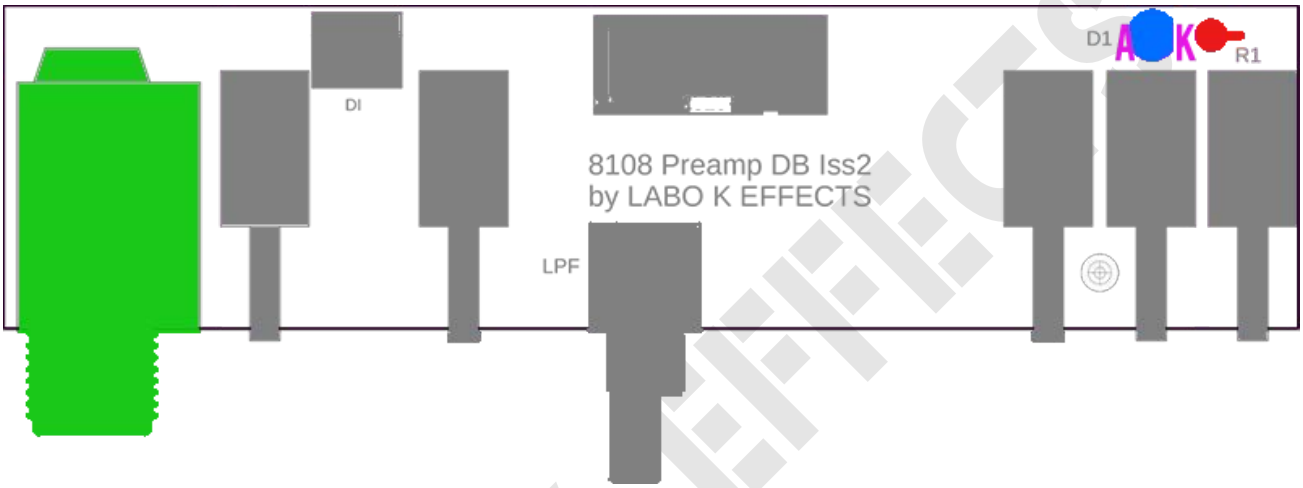
	Switches ALPS	
	Switch ALPS	**(K551X Version)**
	IDC 10 connector	
	Pot Alps 2x50KA	
	Molex connector	



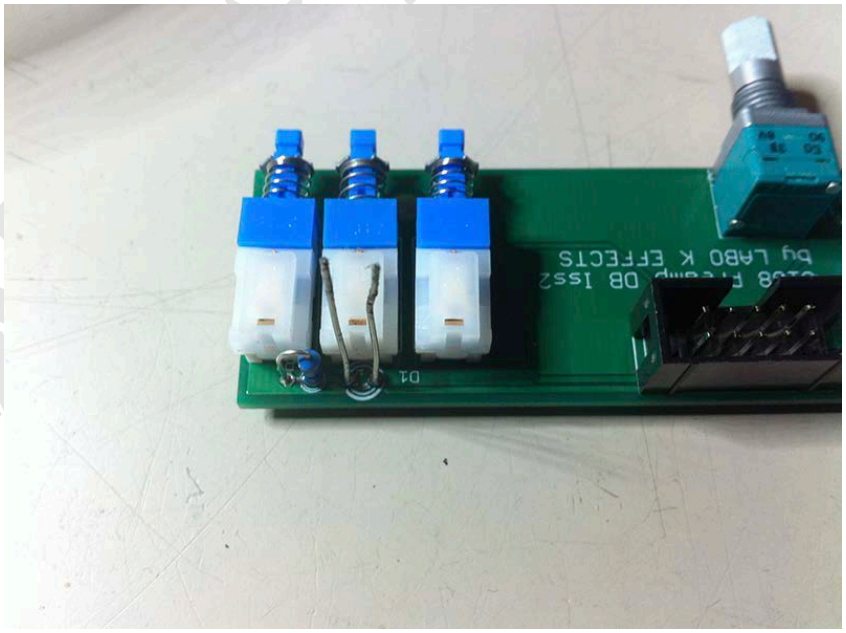
Note	The Resistors are installed vertically	
	Observe the layout of the IDC and Molex connectors	

MOUNTING INSTRUCTIONS DB 02

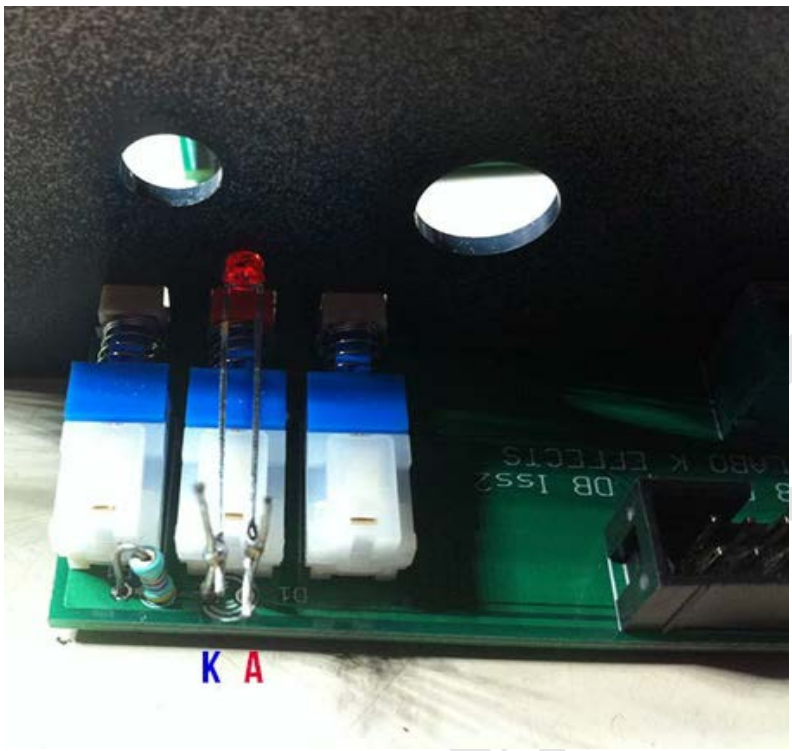
	Resistor 4K7	R1
	Jack socket	
	LED	D1



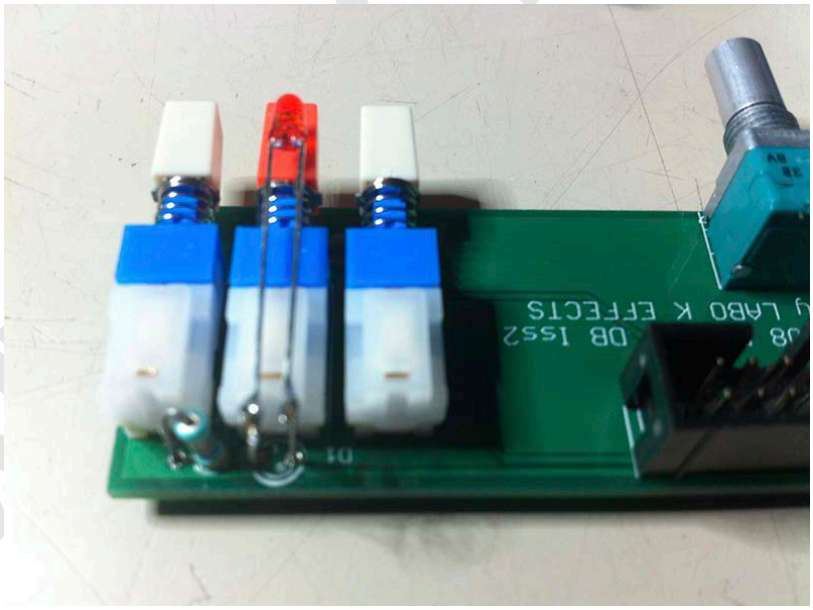
Note	The Resistor is installed vertically
	Observe the polarity of LED A+ K-
4K7	



Solder 2 component legs instead of the LED on the PCB



Position the PCB on the panel and place the led and solder the legs.

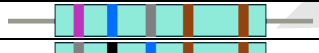
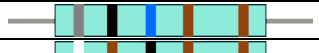
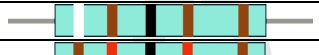


Cut off excess legs

Inter-card wiring

Connect the cards using the supplied ribbon cable. (IDC 10-10)
Connect the DI plug with the supplied cable. (Molex 3-3) shielded.

PRE 81 MOTHER BOARD BOM

RESISTORS 0,6W metallised film 1%				
Valeur	Code	Description	Qnt	
0R			1	
1R		16 or 18V	2	
19R6			2	
22R			1	
38R3			1	
78R7			1	
100R			2	
158R			1	
324R			1	
360R			5	
470R			2	
665R			1	
680R			2	
1K1			1	
1K2			1	
1K43			1	
1K6			1	
2K43			1	
3K16			1	
3K92			1	
4K3			2	
5K1			1	
6K19			1	
6K98			1	
7K5			1	**2 for K551X, 51X, VPR**
7K68			1	
8K06			1	
9K1			2	
12K			2	
12K4			1	
15K			1	
16K			5	
18K			3	
20K			3	
100K			2	
390K			1	
2M2			7	
Chokes				
1mH			4	

PRE 81 MOTHER BOARD BOM

CAPACTORS				
Valeur	TYPE	Description	Qnt	
22p	Ceramics		2	
47p	Ceramics		2	
47p	Film		1	
68p	Ceramics		1	
68p	Film		1	
270p	Ceramics		4	
390p	Sufflex		1	
750p	Ceramics		1	
1n5	Sufflex		1	
22n	Ceramics		6	
100n	Ceramics		4	
100n	Film		8	
220n	Film		3	**(5 for 18v version)**
10u	Pol 16V		1	
22u	Pol 25V		4	
47u	Pol 63V		1	
100u	Pol 10V		12	
100u	Pol 63V		2	
100u	BI Pol 50V		2	
2200u	Pol 16V		1	
Diodes, Transistors, Regulators, Integrated Circuits				
1N4148			10	
1N4002			4	
1N5401			2	**(18v version)**
K170BL	Fet		2	
7818			1	**(18v version)**
7918			1	**(18v version)**
NE5534N			2	
THAT1646			1	
4741	HA3-4741-5		1	
4605	A1-4605-5		1	
OTHER				
Support	DIL 8		3	
Support	DIL 14		2	
Relays			6	
Heat Sink			2	**K551X, 51X, VPR**
Connector	IDC 10 Male		2	
Header	2 pins + jumper		3	
Switch	Grayhill 12 Pos 1		1	
Switch	Alps		1	
Pot 10KA	Alps Double		2	
Pot 47KA	Alps Double		1	
Knobs	Little wonder black		1	
Knobs	Alps		1	

PRE 81 DAUGHTER BOARD BOM

OTHER				
Value	TYPE	Description		
Switch	Alps		5	
Pot 47KA			1	
RESISTOR	4K7		1	
Led			1	
Connector	IDC 10 Male		1	
Jack	Chassis jack		1	
Ribbon			1	
Molex			1	
Caps	Alps		5	
Knob	Little wonder black		1	

Pin assignment of the DI Jack cable

Wires 1 and 3 are crossed

Mother Board		Daughter Board
1	DI input	Remote
2	GND	GND
3	Remote	Jack Tip

Rack use in API500, 551X and VPR format

The preamp **LINE** switch directs the XLR input from the rack to the Line or Microphone input of the preamp.
Jumper **JP1** is placed between pins 2&3 of connector X3 (Figure 1).

Figure 1

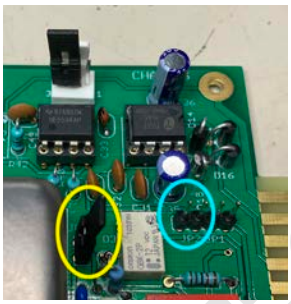


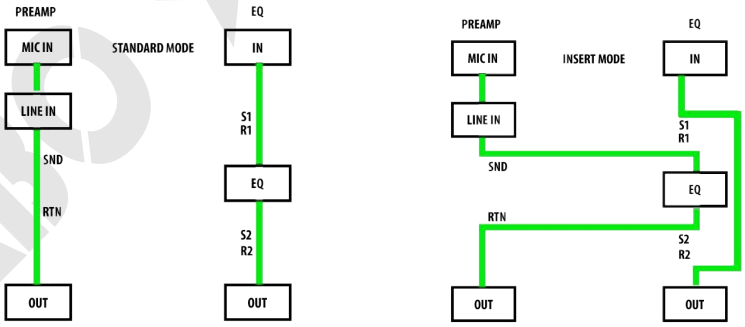
Figure 2

Use in LABO K EFFECTS K551X format rack

In this mode, the Microphone input and Line input each have an XLR connector.
To use this mode, it will be necessary to remove the **JP3** jumper and to place it in **JP2** (Figure 2).
The Microphone input is connected to pins 10(Hi) and 8(Lo)
The line input is connected to pins 9(Hi) and 7 (Lo)

Using the INSERT mode

In this mode the Jumper **JP1** must be removed and the Pre81 must be connected to the EQ81 via an insert link cable.



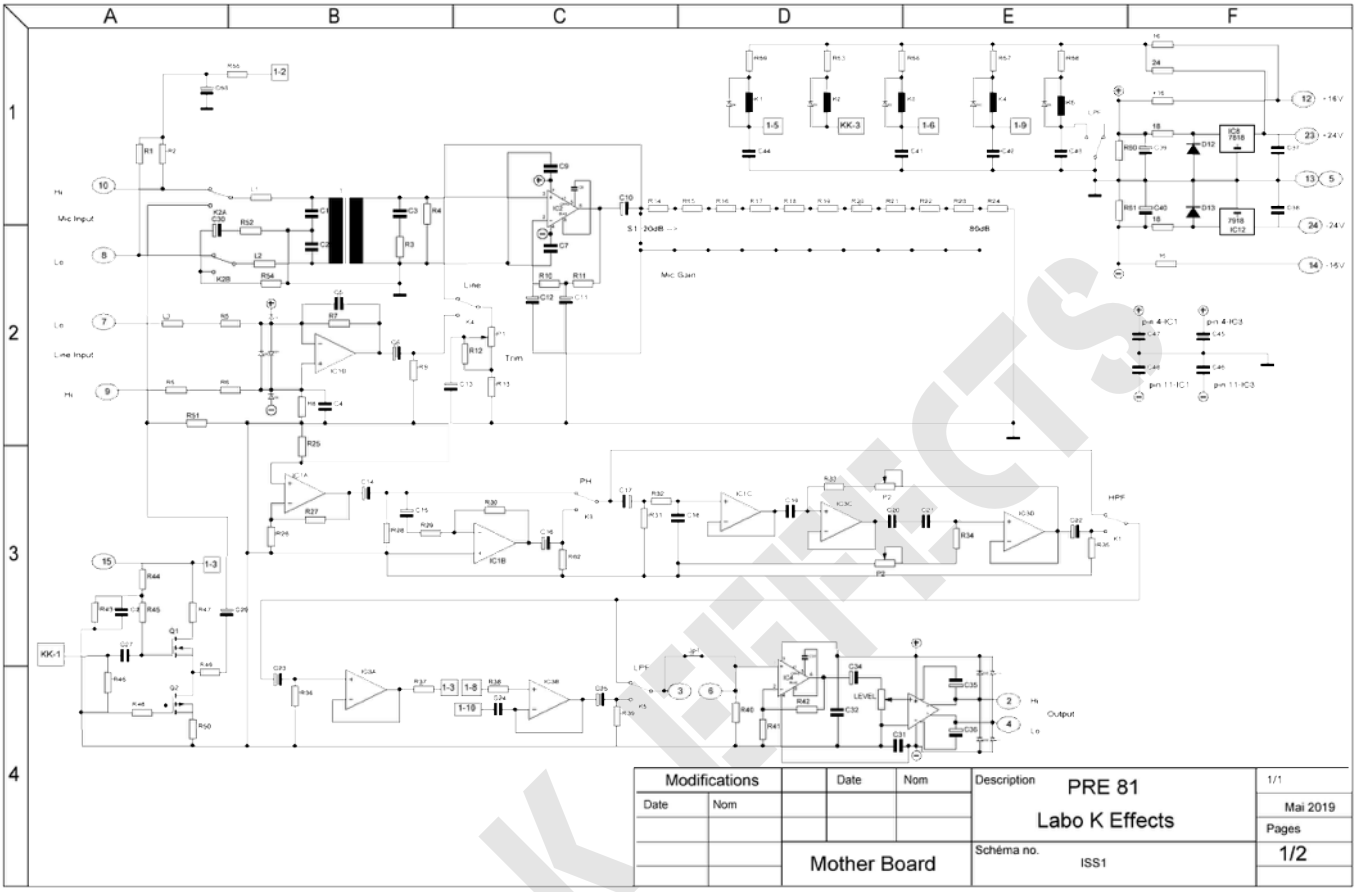
Insert Link Wire

The wires 2 (Send) and 3 (Receive) are crossed

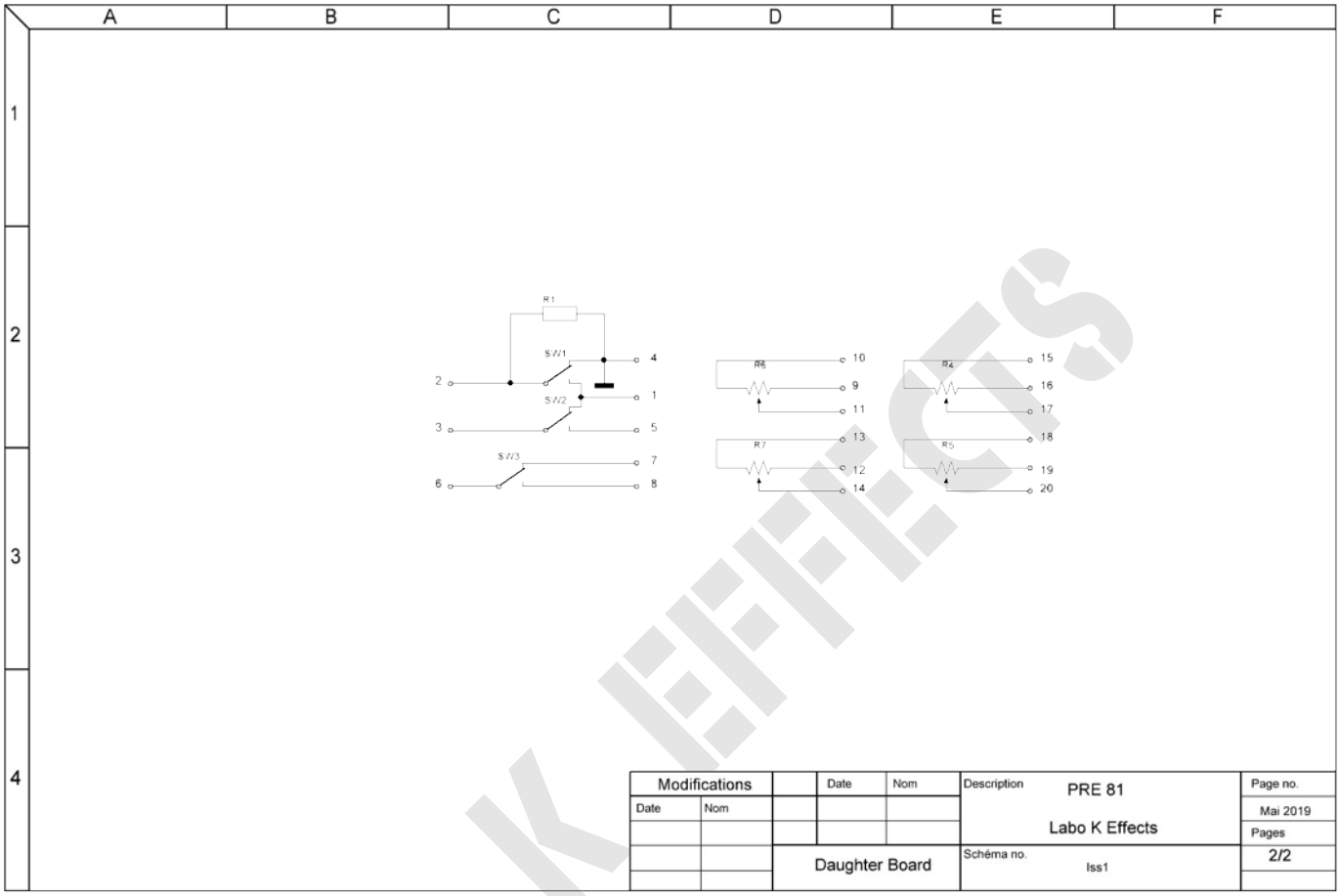
CONNECTOR DETAILS

PIN #	PRE81	
1	Chassis	Chassis
2	OUT +	Module Hi output
3	SND	Output of the Filter section
4	OUT –	Lo output of the module
5	PSU/Audio GND	PSU/Audio GND
6	RECEIVE	Input to module output stage
7	INPUT-(2)	Module Line Lo input
8	INPUT – (+4)	Module MIC Lo input
9	INPUT+(2)	Module Line Hi input
10	INPUT + (+4)	Module MIC Hi input
11	Remote	Activates the Insert Function
12	+ 16V DC	+ 16V DC
13	PSU/Audio GND	PSU/Audio GND
14	–16V DC	–16V DC
15	+48V DC	Phantom power supply
16	NC	NC
17	+ 24V DC	+ 24V DC
18	– 24V DC	–24V DC

PRE 81 MOTHER BOARD SCHEMATICS



81 DAUGHTER BOARD SCHEMATICS



Legal notice:

Labo★ K Effects declines all responsibility for any direct or indirect damage caused by improper use of the kit by the user.