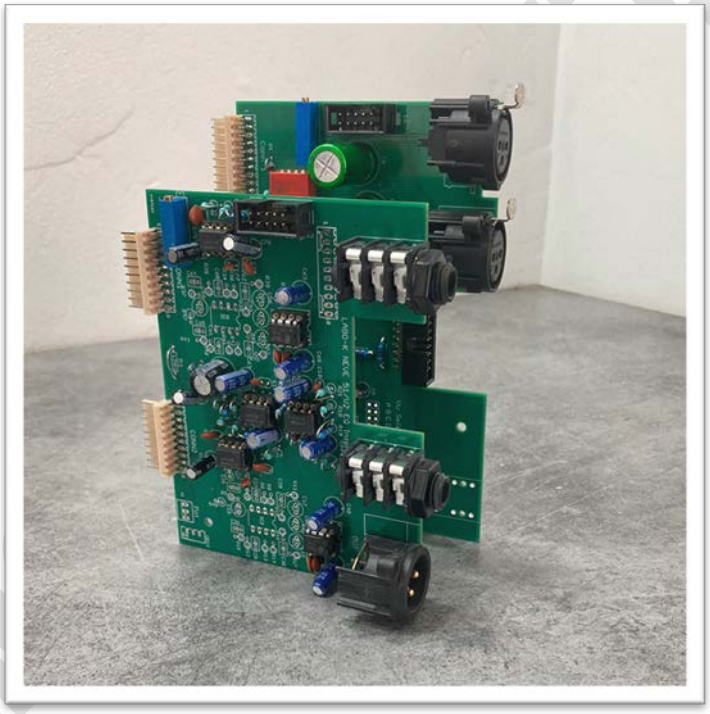
LABO ★ K EFFECTS

CONNECTION KIT FOR NEVE 51 PREAMPLI+EQUALIZER

ISS 3



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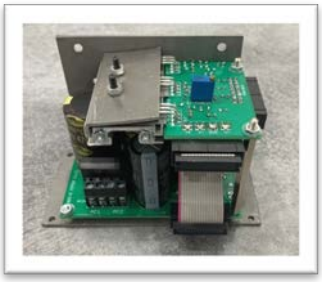
INTRODUCTION

This kit makes it easy to interconnect a Neve 51 Series preamp and equaliser module for rack mounting.
It also allows you to connect the inputs, outputs and power supply needed to use the unit, reducing the amount of wiring required to a minimum.
The power bus system allows you to connect up to 8 modules, i.e. 4 pairs of preamplifiers & equalisers, preferably arranged vertically.
All you need to do is make the appropriate ribbon cable.
This bus can also be used to wire the sidechain function of the limiters/gates and the threshold bus of the signal meter.
The **EV10882** patch interface card on the EQ module, used to connect an insert line to a Neve active patchbay and requiring a +25V / -25V power supply, will be **removed** thanks to the design of the Neve 51 EQ interface card. This will make it possible to eliminate the +/-25v power supply on the one hand and to have a gain control for the output stage on the EQ interface card on the other. (See modification on page 23)
The layout of the Input interface card has been designed to use the 'OD' switch, which is no longer required, to switch the 48V phantom power supply.
The presence of phantom power is indicated by the yellow LED on the preamp module.
The kit includes an optional high-impedance instrument input and LED Vu meter.
The "Plug and Play" design of this kit means you can check that the modules are working properly before moving on to rack installation.

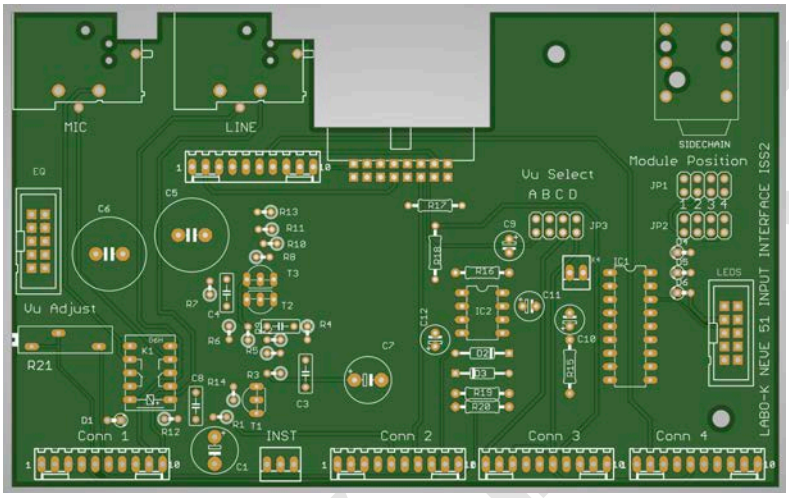
Optional accessories

Labo★K Effects Neve 51 PSU Kit Regulated PSU +48V, +/-16V, -15V (Logic) Signal Threshold bus (Kit or PCB only). *Transformer not supplied*	
Labo★K Effects Mounting clip Matching NEVE 51 and V series Allow to fix module on front plate. Matching with Input & Equaliseur.	

For proper operation of the unit, it is advisable to use modules in good conditions and with coupling capacitors that will have been replaced if necessary.
The poor condition of the capacitors can greatly affect the sound quality or even cut the signal. Similary, one will ensure that the various switches have been cleaned using a contact cleaner spray.

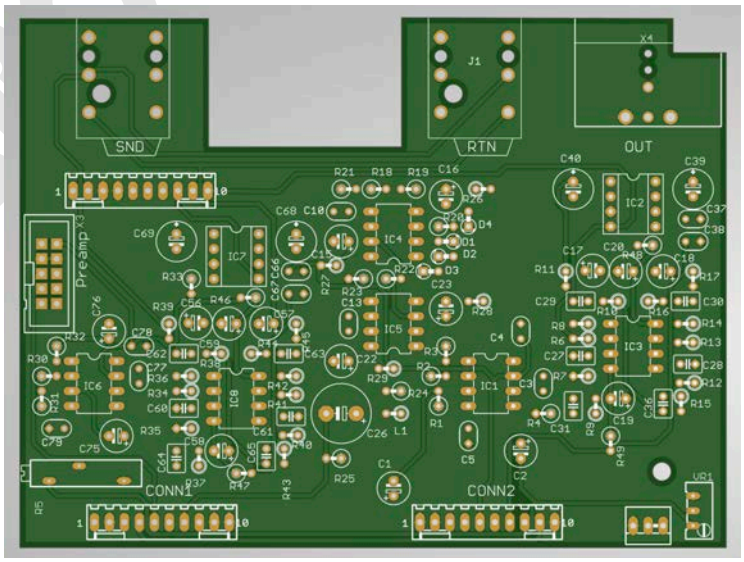
An input interface card for connecting:

- A preamp / dynamics module.
- Mic and line inputs.
- DI input (optional).
- LED meter (optional).
- Signal meter threshold bus.
- Power bus, compressor/gate link.



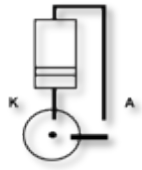
An EQ interface card for connecting:

- An equaliser module.
- Le bus d'alimentation.
- A balanced output (stage located on the card).
- A balanced insertion send.
- A balanced insert return.
- Volume potentiometer (optional).



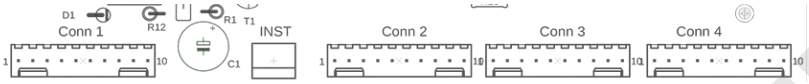
Component layout

Vertical layout of diodes



Straps are made using component legs.

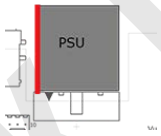
The Molex KK connector tab is located on the edge of the board.



Location

Pin 1 of the Molex KK connectors is on the left.

Pin 1 of the IDC connectors is marked with a triangle.



Wiring

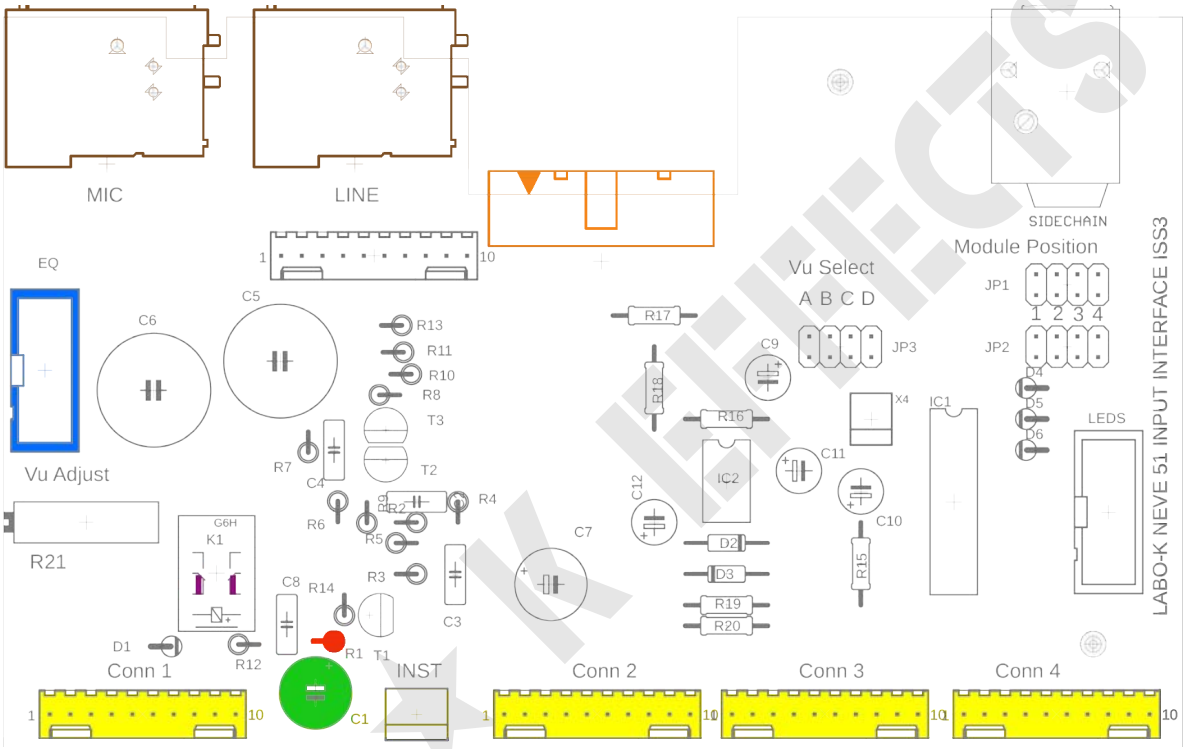
IDC connectors
Only IDC connectors are supplied with the kit.
The ribbon cable to be used is type 28 AWG pitch 1.27 with 16 strands.

Shielded cables

The instrument input and potentiometer are wired using a shielded pair, type 3931-2 Mogami pairs for example. 1 meter is sufficient for 2 channels.

INPUT INTERFACE CARD ASSEMBLY INSTRUCTIONS PART 1

	R 100R	R1
	C 47u/63V	C1
	IDC 10	EQ
	IDC 16	PSU
	Molex KK10	Module
	STRAPS	**Only for version without DI**
	XLR F socket	



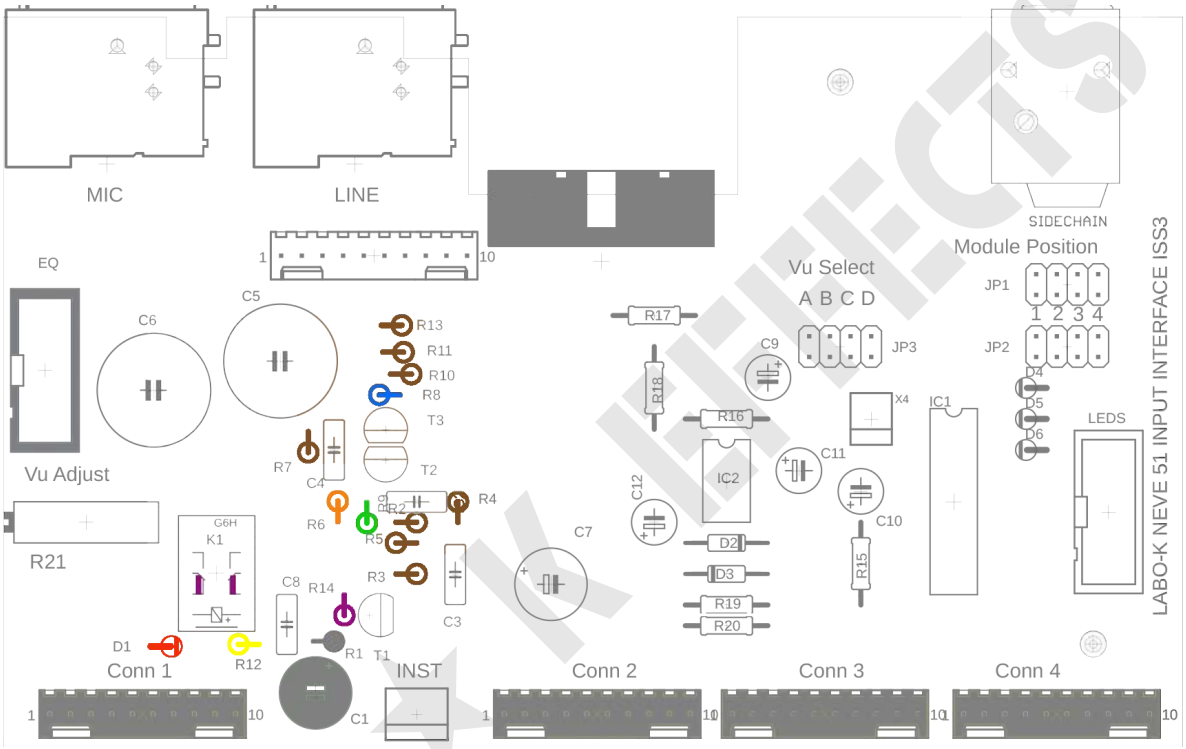
Pay attention to :
The + side of the polarised capacitor (generally the longer leg)
IDC 10 connector notch

If you plan to use the standard version without DI option and without Vu meter, go directly to page 13 (Input interface card assembly instructions part 2)

If you plan to use the standard version without DI option but with Vu meter, go directly to page 9 (VU assembly instructions part 1)

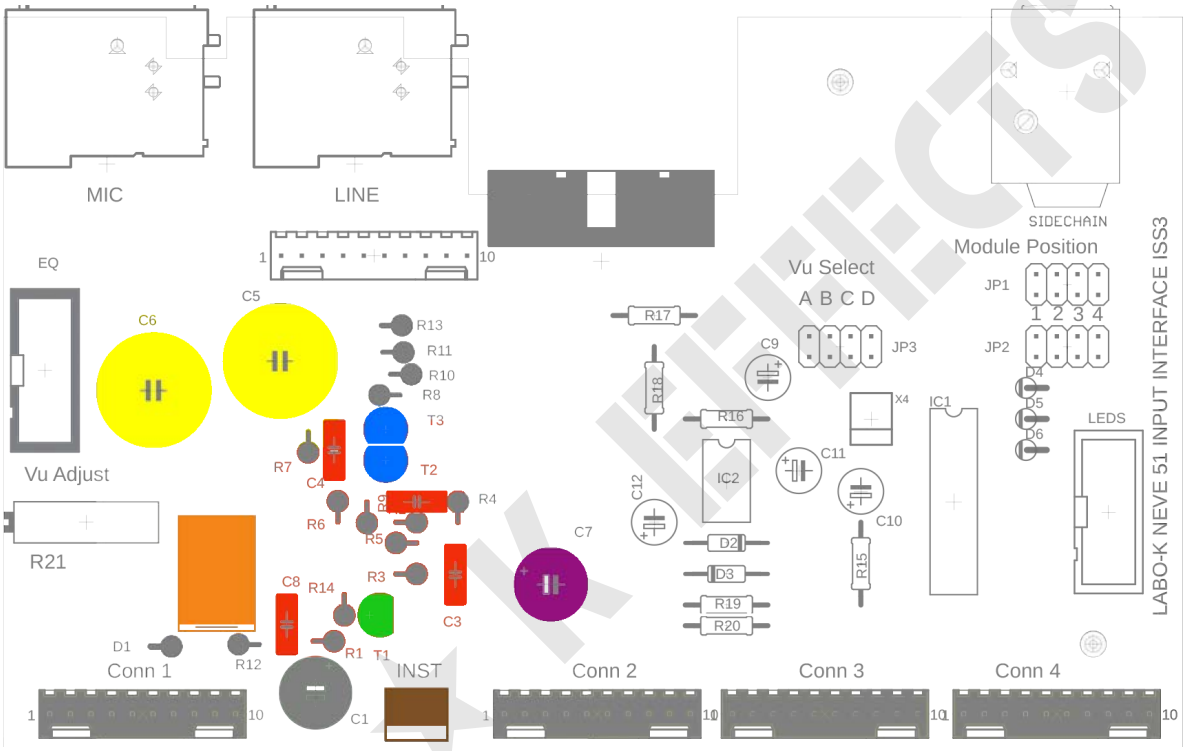
ASSEMBLY INSTRUCTIONS DI INPUT OPTION PART 1

	1N 4148	D1
	R 22R	R9
	R 100R	R8, R11
	R 470R	R6
	R 3K	R12
	R 10K	R14
	R 2M2	R2, 3, 4, 5, 7, 10, 13



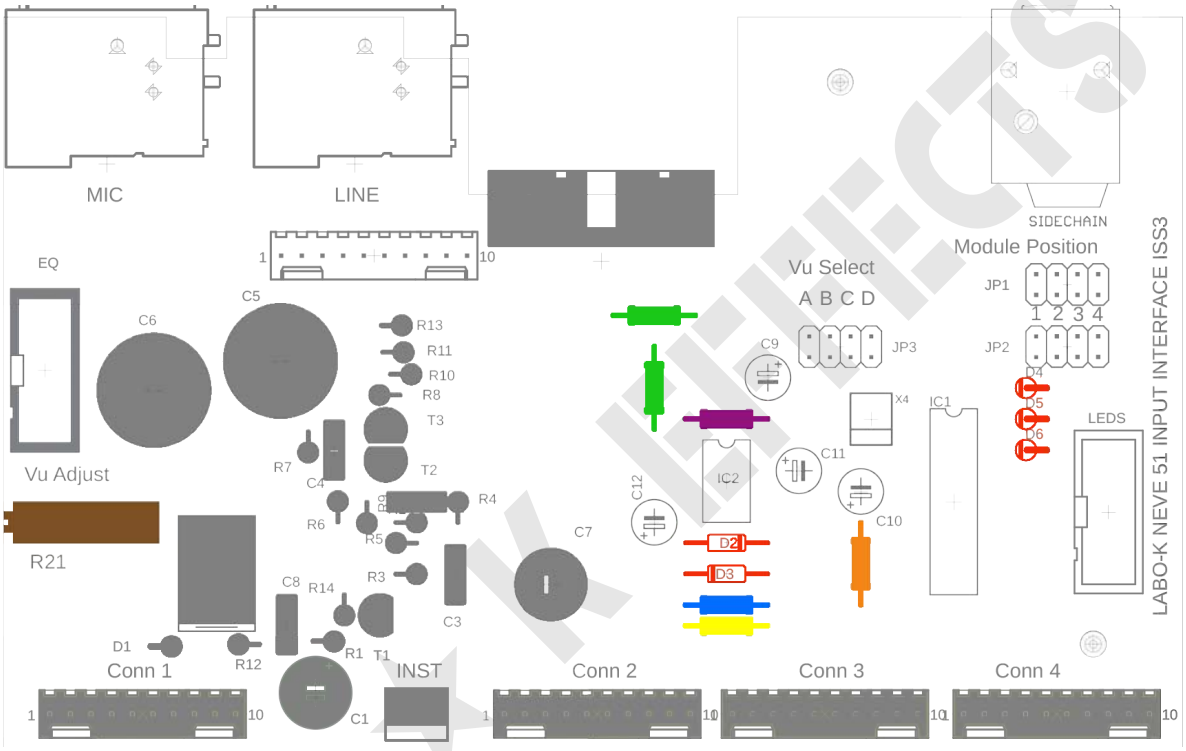
Pay attention to :
Layout of diode D1

	100n Film	C2, 3, 4, 8
	2N 3904	T1
	2SK 170BL	T2, T3
	Relay	K1
	C 100u NP	C5, C6
	100u 63V	C7
	Molex KK3	INST



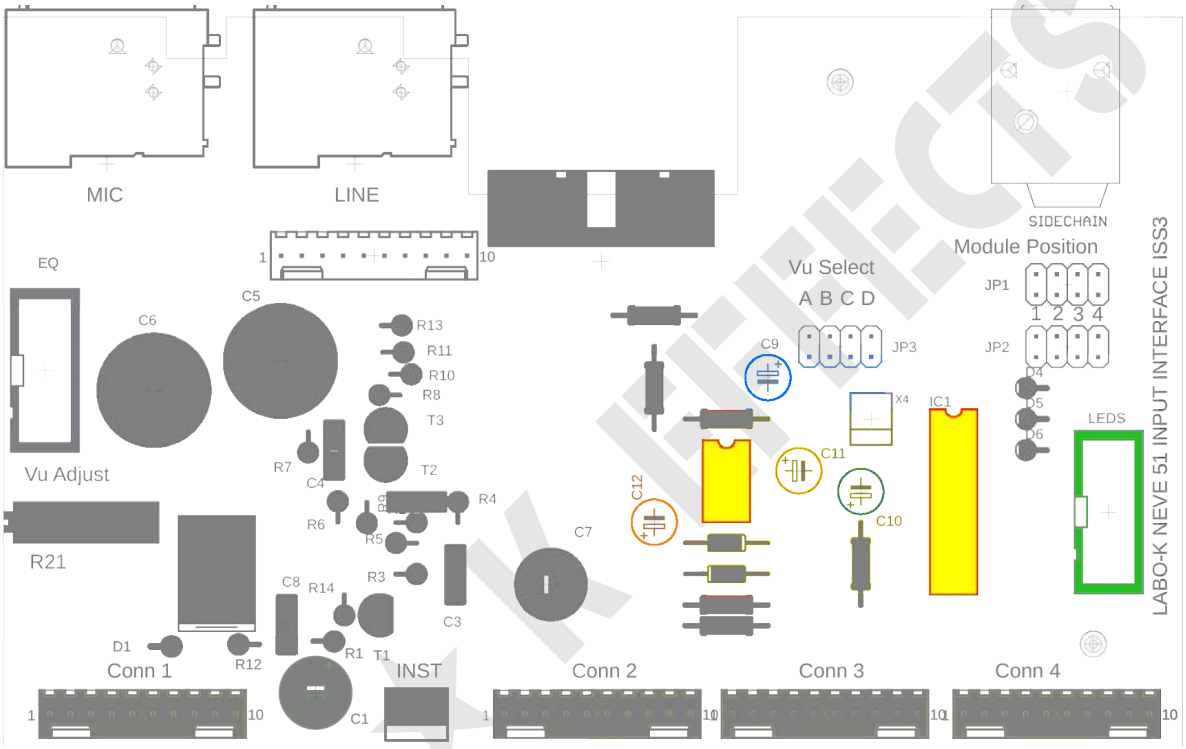
Pay attention to :
The + side of the polarised capacitor (generally the longer leg)
Relay positioning
Transistor orientation

	1N 4148	D2, 3, 4, 5, 6
	R 100R	R17, R18
	R 180R	R19
	R 1K	R15
	R 3K3	R20
	R 47K	R16
	RV1 220K	Vu Adjust



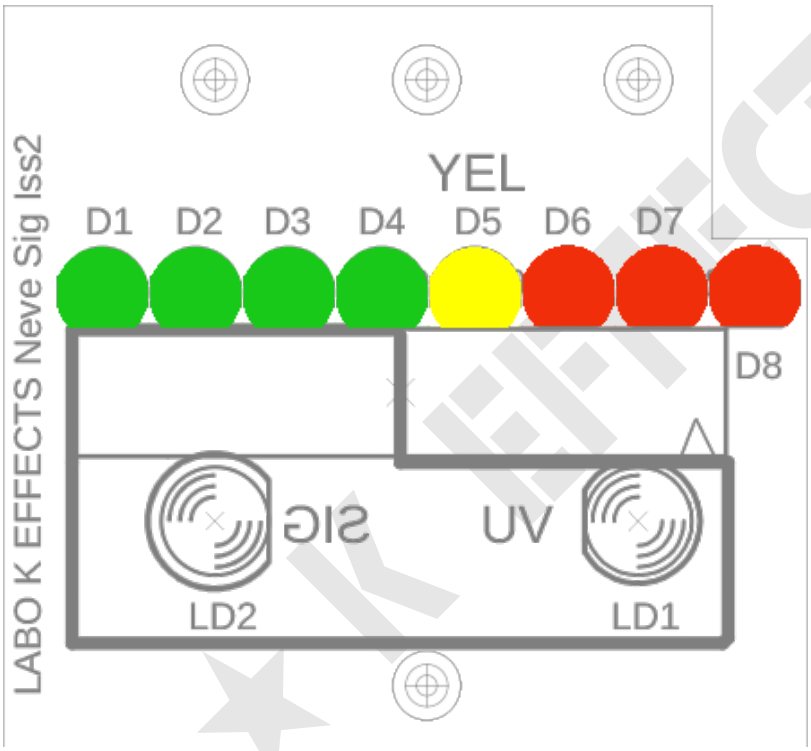
Pay attention to :
Diode layout

	IC Socket	IC1, IC2
	IDC 10	LEDS
	C 1u 63V	C9, C10
	C 22u 25V	C11, C12
	IC	TL071, LM3915



Pay attention to :
LEDS connector notch
Integrated circuit orientation

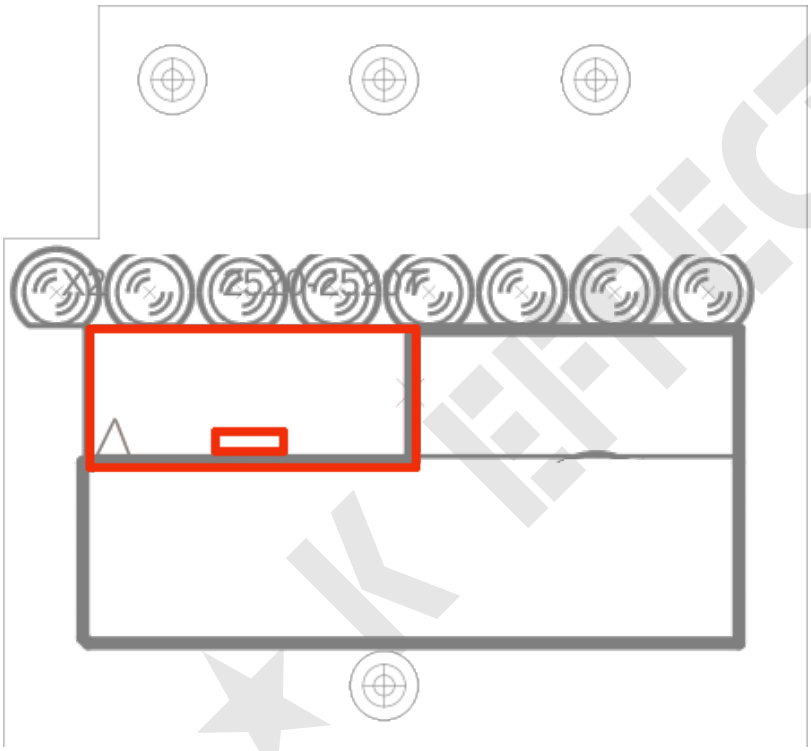
	Red Led 3mm	D6, 7, 8
	Green Led 3mm	D1, 2, 3, 4
	Yellow Led 3mm	D5



Pay attention to :
Polarity of cathode LEDs (flat side) downwards

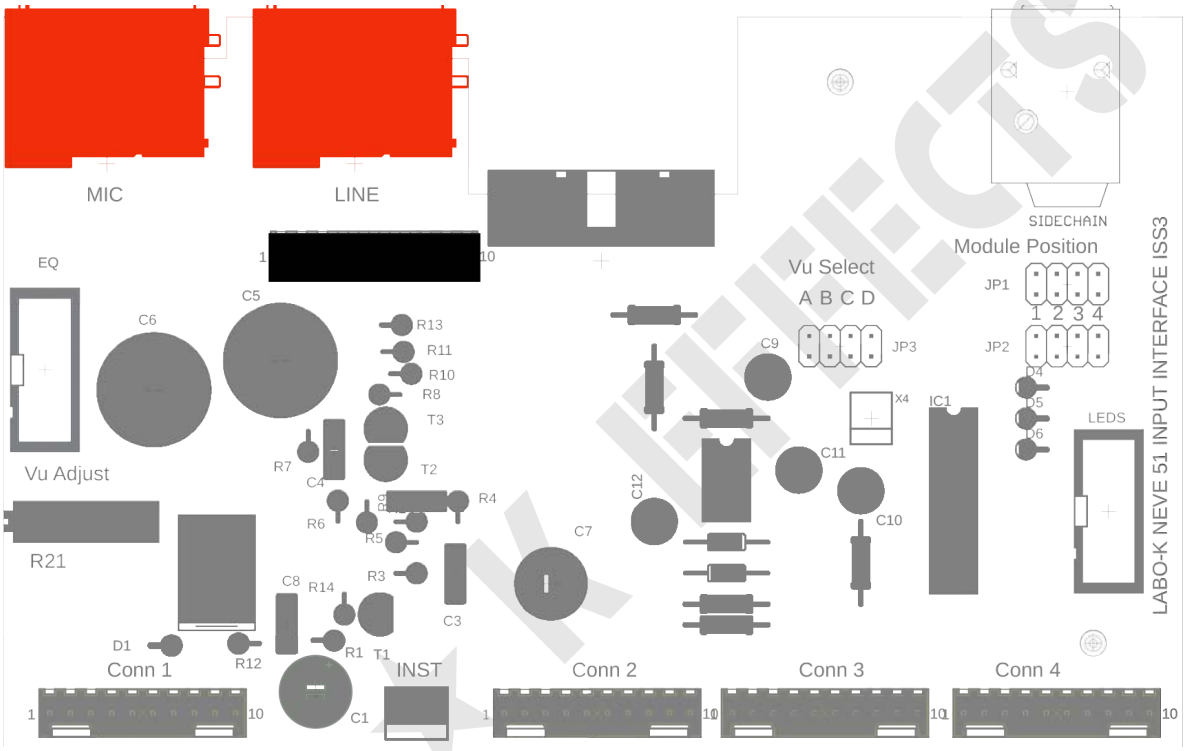
The IDC connector will be located on the other side of the PCB.

	IDC10 10	



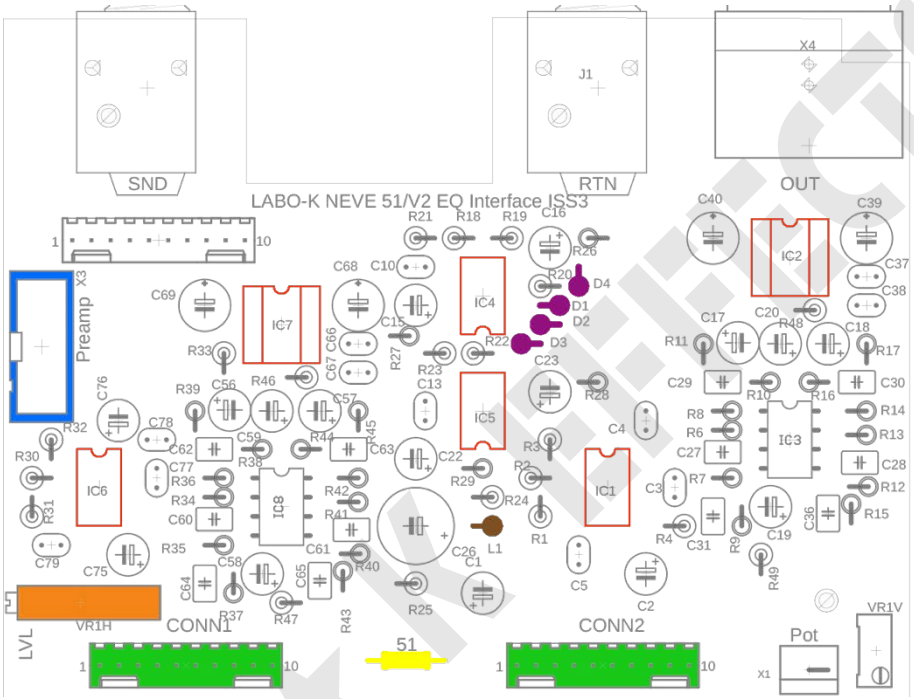
Pay attention to :
Connector orientation

	XLR F	MIC, LINE
	Component not installed	



Note :
The Jack Sidechain chassis is not installed
It is planned to link dynamics from several racks via this connector.
An external vumeter driver can be used via the X4 connector.

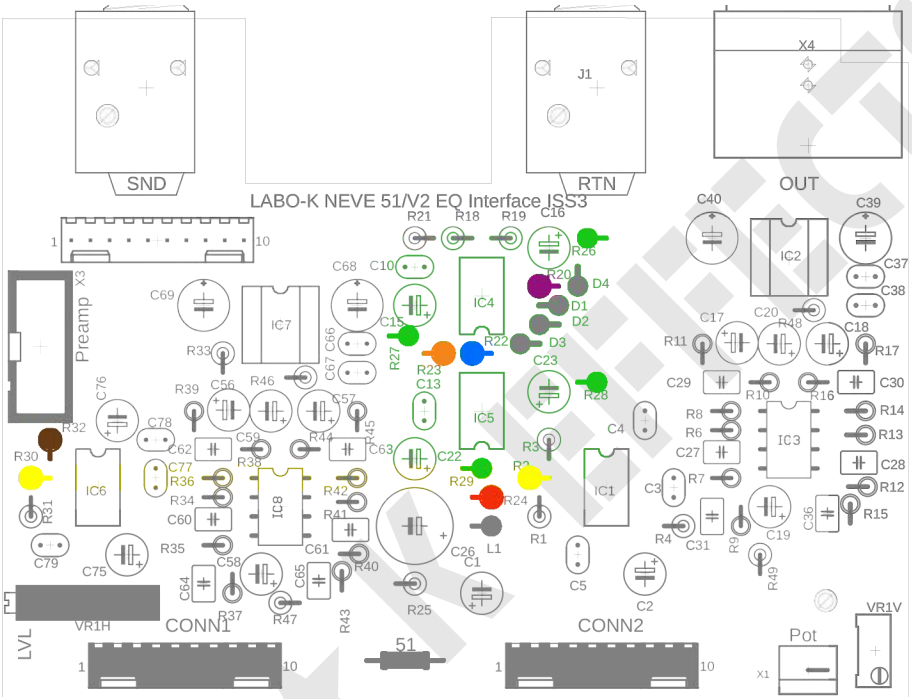
	DIL8 socket	IC1, 2, 4, 5, 6, 7
	Molex KK10	Conn1, 2
	IDC 10	Preamp
	Trimmer 10K	Level
	Strap	Component leg
	1N4148	D1, 2, 3, 4
	10uH	L1



Pay attention to :
KK10 connector orientation
IDC connector notch
Orientation of DIL8 sockets

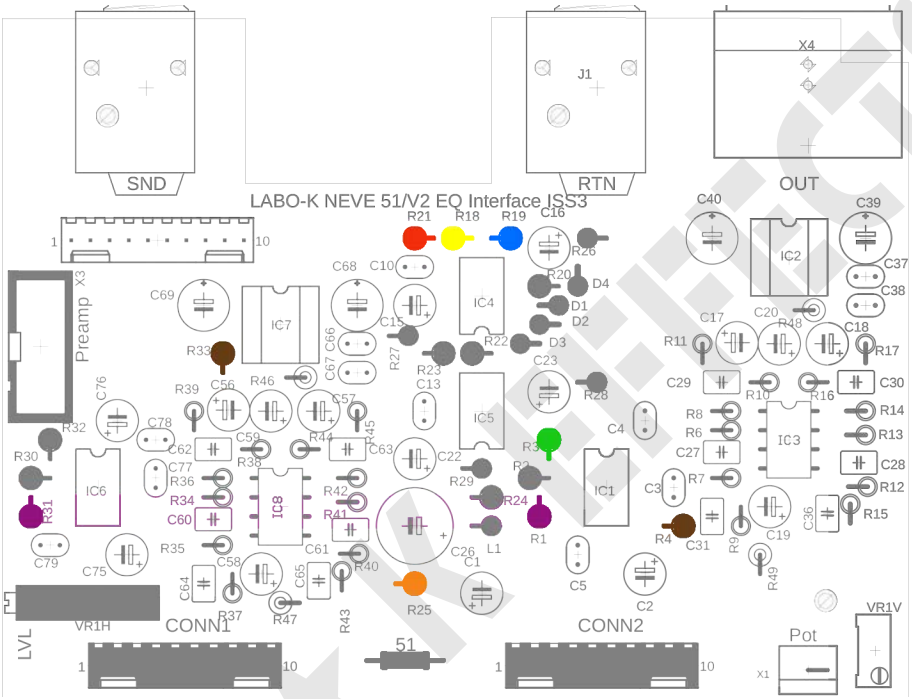
Note: If you wish to position the modules horizontally in a rack, a vertical trimer (VR1V) can be fitted in place of VR1H to facilitate adjustment.

	33R	R24
	51R	R26, 27, 28, 29
	270R	R22
	470R	R23
	1K2	R2, R30
	2K	R20
	2K7	R32



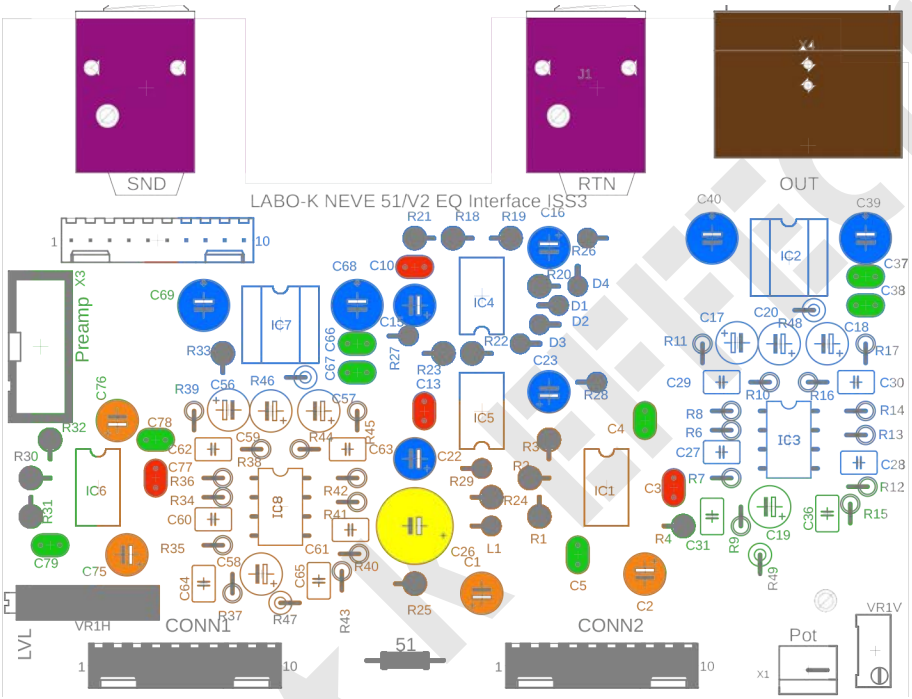
EQ CARD ASSEMBLY INSTRUCTIONS PART 3

	3K	R21
	3K6	R3
	7K68	R19
	10K	R25
	12K	R18
	18K	R1, R31
	100K	R4, 33



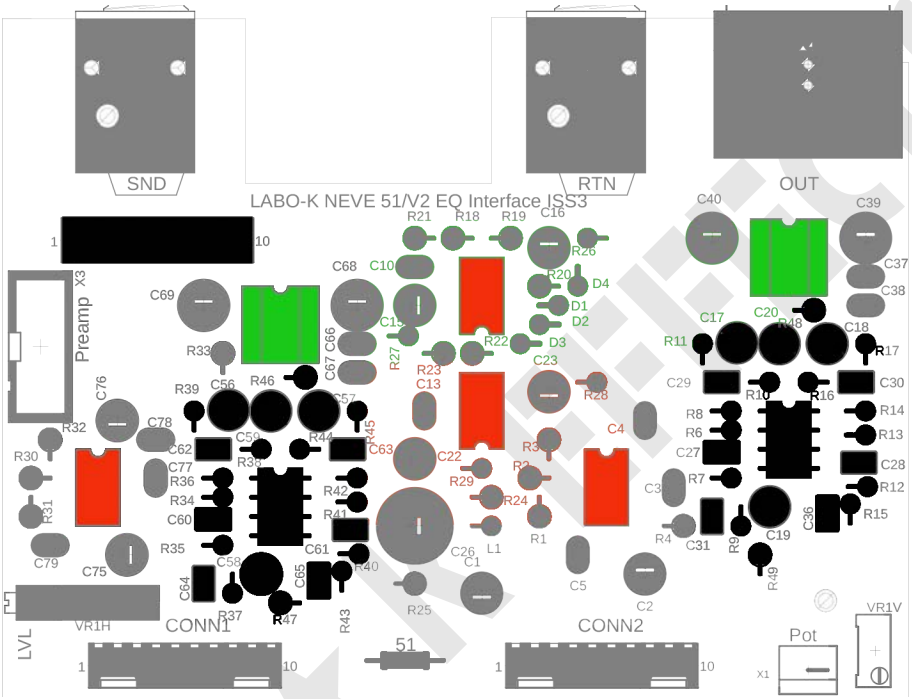
EQ CARD ASSEMBLY INSTRUCTIONS PART 4

	22pF ceramic	C3, 10, 13, 77
	100n ceramic	C4, 5, 37, 38, 66, 67, 78, 79
	22u25V	C15, 16, 22, 23, 39, 40, 68, 69
	100u16V	C1, 2, 75, 76
	330u10V	C26
	Jack TRS	SND, RTN
	XLR M	OUT



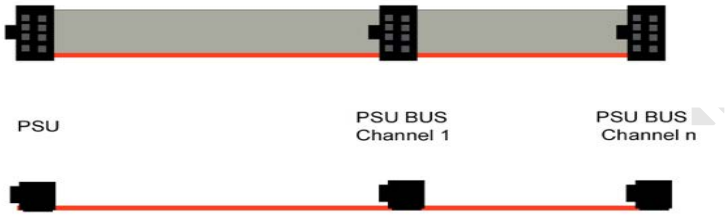
Pay attention to :
Capacitor polarity

	NE5534	IC1, 4, 5, 6
	THAT 1646	IC2, IC7
	These components are not fitted	



Pay attention to :
Integrated circuit orientation

The PSU ribbon connects the 51/V PSU power supply to the Input interface card. This ribbon also carries the dynamics chain loop when several preamps are connected. Once the components have been positioned in the rack, you need to measure the length required to connect the cards and the power supply, then cut a ribbon to the required length. Use a marker to mark the position of the connectors on the tape. Finally, crimp the female connectors to the previously marked positions. It is very important to mark pin 1 (Triangle) and to place the red wire of the ribbon on this side.



The Intercard ribbon links the Input Interface card to the EQ Interface card. It supplies it with signals and power supplies. (Figure 1)

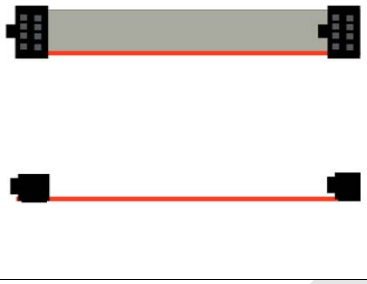


Figure 1

Figure 2

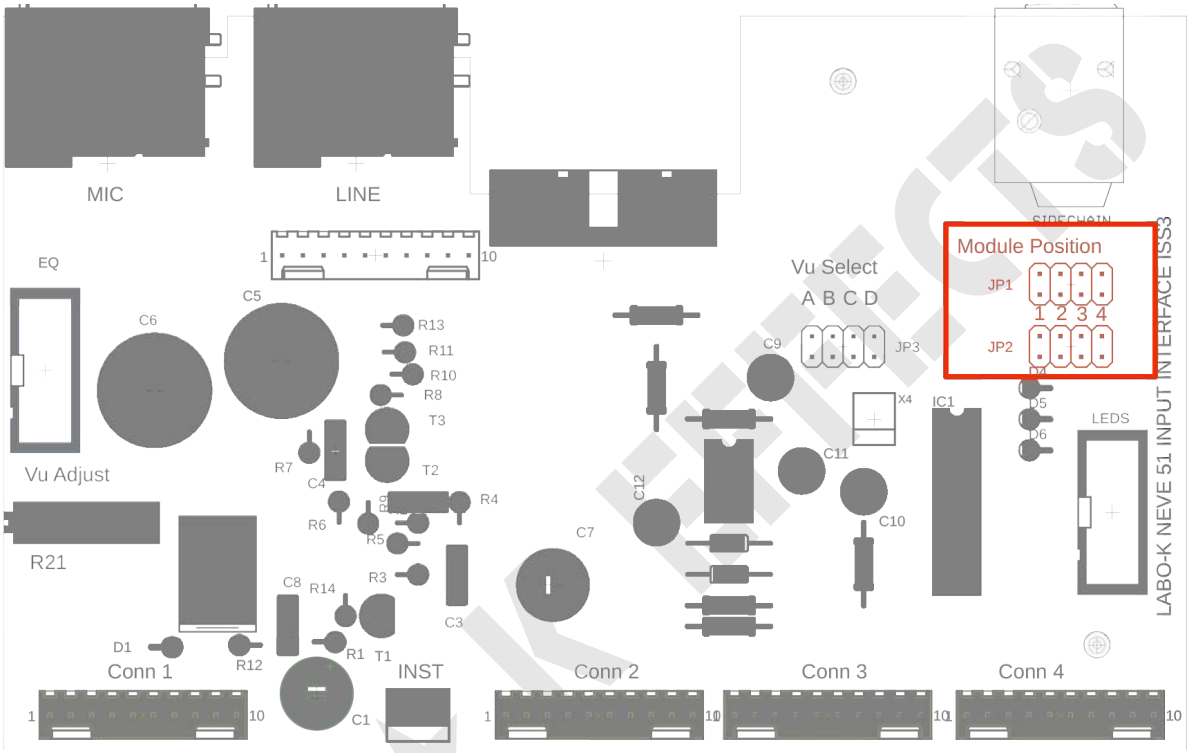
The DI cable links the jack connector to the instrument input on the Input Interface card. A shielded pair must be used. One of the cables carries the signal from the instrument, while the second controls the DI activation relay depending on whether or not a jack is inserted in the connector on the front panel. (Figure 2)

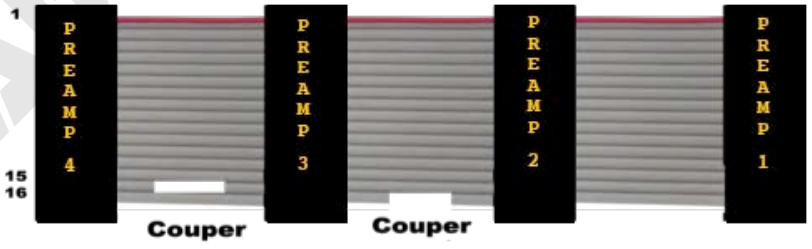
Ribbon from the Vu à Leds section

This ribbon is made from a 10-ways ribbon.

LINKING DYNAMICS

2 jumpers are used to define the position of the module in the chain
2 straps will be placed in JP1 and JP2 facing the position number in the chain

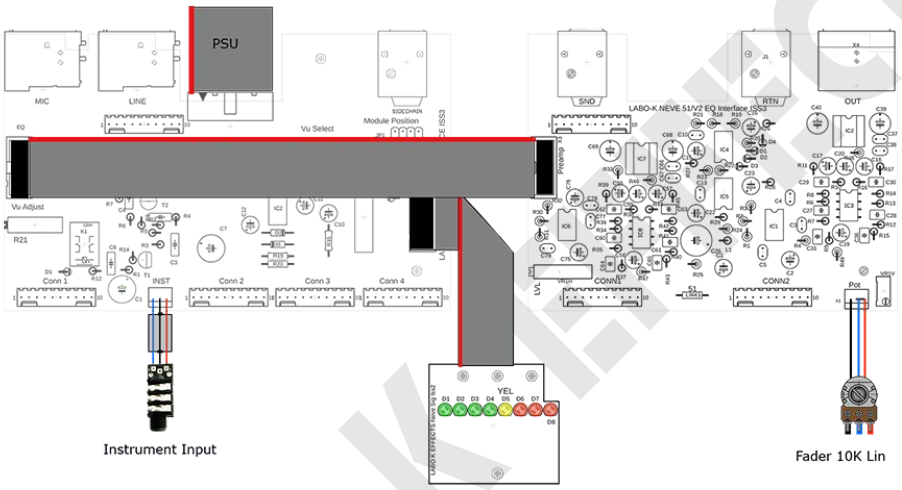


To chain 4 Dynamics :
Il faut couper les brins 15 et 16 du ruban BUS PSU aux endroits indiqués


ASSEMBLING ELEMENTS

For greater clarity, the Input and EQ interfaces are laid out flat on the diagrams.
It is of course possible to arrange these cards vertically, in which case the length of the ribbons will have to be adapted accordingly.

PSU BUS and Intercard ribbons
Instrument input wiring (INST)
Wiring of the LED Vu meter
Wiring of an output volume potentiometer (POT)



The ribbons will be made with AWG28 pitch 1.27 flat cable for the connectors supplied.
Neve modules are wired using their original ribbon cables opposite the interfaces.
The various cables are soldered and sleeved on the corresponding pins of the male KK connectors.
However, it is possible to crimp the corresponding female connectors.
2-pin Molex KK254 connectors
Molex KK254 3-pin connectors
Crimps : 08-50-0032

A 10K linear potentiometer (not supplied) is used for the master volume.

The vumeter can display the signal in 4 positions depending on the jumper placed in position JP3

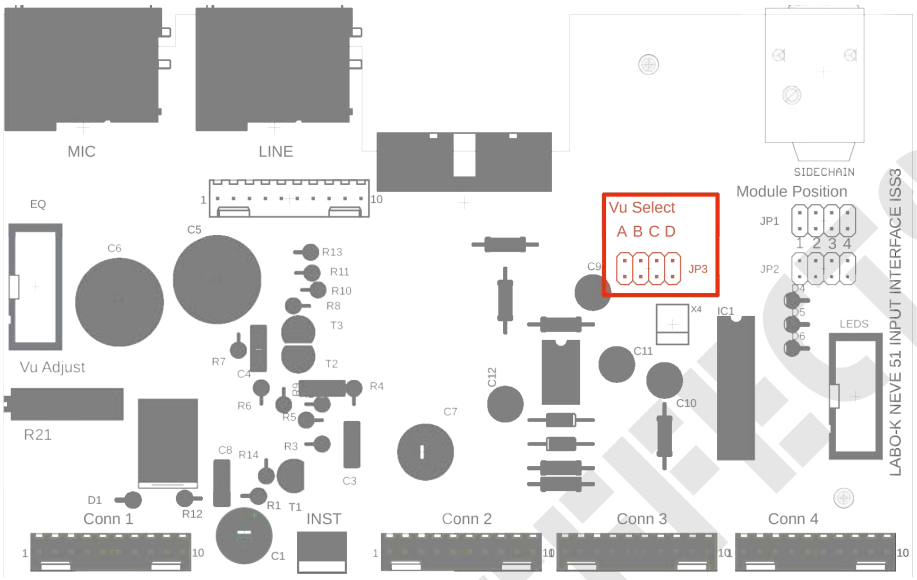
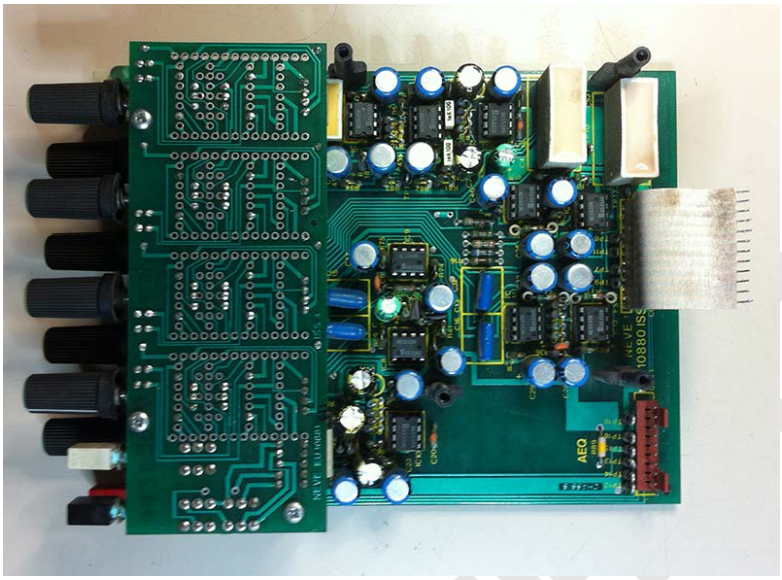


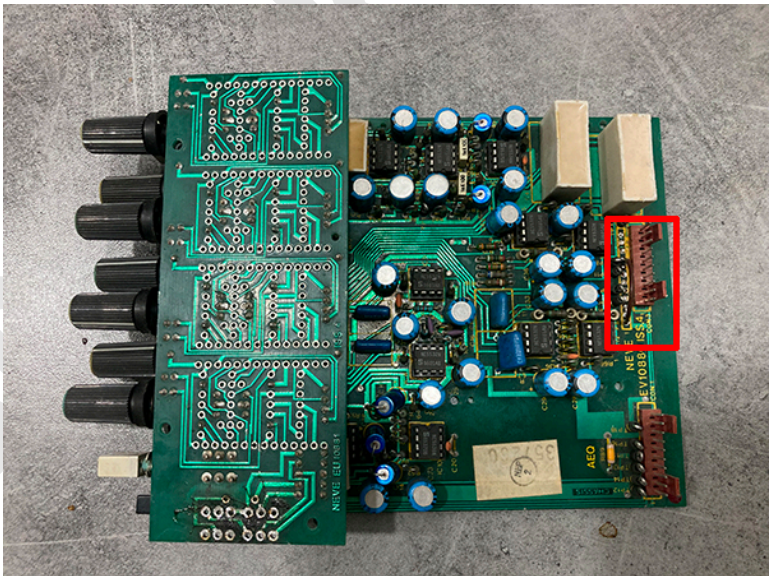
Table of VU Select options

A=Output (output level after fader)
B=Pre Line sense (line input level)
C=Post Line sense (line input level after gain trimmer)
D=Input stage (input level)

The Patch interface 10882 card on the equalizer module must be removed.



A jumper must be fitted between pins 2 & 3 and 1 & 9 of FSP7.



VERIFICATION

It is good practice to test the interface cards before connecting the modules.
Start by testing the power connections before powering up.
Use a beeper to check that the supply voltage rails arrive at the correct points.
Start with the Input card alone.
The 0V should arrive at pin 10 of the CONN3 Molex connector.
The +16V rail must be connected to pin 5 of the CONN3 Molex connector
The -16V rail must be connected to pin 7 of the Molex CONN3 connector
The -15V rail must be connected to pin 7 of the Molex CONN2 connector
The +48V rail must be connected to pin 9 of the CONN2 Molex connector.

Check that there is no short-circuit between these pins.

You can now connect the EQ interface board using a ribbon.
Check that the previous test pins are connected to the following Molex connectors on the EQ interface board.

Rail 0V Pin 10 of CONN3 (Input) Pin 10 of CONN2 (EQ)
Rail +16V Pin 5 of CONN3 (Input) Pin 5 of CONN2 (EQ)
Rail -16V Pin 7 of CONN3 (Input) Pin 7 of CONN2 (EQ)

Check that there is no short-circuit between these pins.

You can now power the boards and measure the voltages.

Switch off the power supply and connect the modules using their connector strips.
The interface connectors are opposite the corresponding module ribbons.
Check that no mismatch has occurred when connecting the ribbon cables.
Switch on the power and check that the module LEDs are lit.

Enter audio into the input module. You should have audio output.

To make the following settings, the following conditions must be met.
Audio input will be via the LINE input.
Set the gain trimmer to 0.
Check that the filters, equaliser and Dynamics are not engaged.
Apply a sinusoidal signal of frequency 1khz and amplitude 0dBm to the line input of the input module.

Output level adjustment

Connect a dB meter to the SND output of the EQ interface card.
The dB meter should indicate 0dBm. If not, it is likely that the link capacitors on the modules are not in optimum condition. (recapping required).
Connect a dB meter to the Out output of the EQ interface card.
Set the volume control to the maximum position if fitted.
Adjust the LEVEL trimmer on the EQ card to read 0dBm at the output.
If you want more headroom, set the master volume knob to the number 7 out of 10 on the scale, for example, and assume that this is 0dB.
Adjust the LEVEL trimmer on the EQ card to read 0dBm at the output.
You should be able to read +4dB or so by turning the knob all the way up.

LED vumeter calibration

Reading the preamp input level (B, C, D) :
Adjust the LED-VU trimmer on the input board to light up the yellow LED on the vumeter.
Reading the output level (A):
Adjust the master volume to read 0dB on the dB meter connected to the output.
Adjust the LED-VU trimmer on the Input card to light up the yellow LED on the vumeter.

LIST OF INPUT INTERFACE CARD COMPONENTS PART 1

	Standard		
NAME	VALUE	VISUAL	REFERENCE
R1	100R		
C1	47u63V		
PSU BUS	Connecteur IDC 16		
EQ	Connecteur IDC 10		
Conn1	Connecteur KK10		
Conn2	Connecteur KK10		
Conn3	Connecteur KK10		
Conn4	Connecteur KK10		
MIC	XLR 3 F		NC3FAHR2
LINE	XLR 3 F		NC3FAHR2

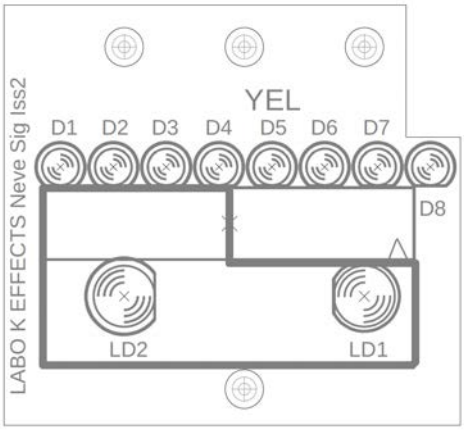
	DI option		
NAME	VALUE	VISUAL	REFERENCE
R2	2M2		
R3	2M2		
R4	2M2		
R5	2M2		
R6	470R		
R7	2M2		
R8	100R		
R9	22R		
R10	2M2		
R11	100R		
R12	3K		
R13	2M2		
R14	10K		
C2	100n Film		
C3	100n Film		
C4	100n Film		
C5	100u BP		
C6	100u BP		
C7	100u63V		
C8	100n Film		
D1	1N4148		
T1	2N3904		
T2	K170 BL		
T3	K170 BL		
K1	EA2-12NJ	Relais 12V	
INST	Connecteur KK 3		
PCB DI			
J1	Jack TRS		

LIST OF INPUT INTERFACE CARD COMPONENTS PART 2

	Led meter option		
NAME	VALUE	VISUAL	REFERENCE
R15	1K		
R16	47K		
R17	100R		
R18	100R		
R19	180R		
R20	3K3		
C9	1u63V		
C10	1u63V		
C11	22u25V		
C12	22u25V		
LED-VU	Trimmer 200K		
D2	1N4148		
D3	1N4148		
D4	1N4148		
D5	1N4148		
D6	1N4148		
IC1	LM3915	+support DIL18	
IC4	TI071	+support DIL8	
LEDS	Connecteur IDC 10		

LIST OF LED BOARD COMPONENTS

NAME	VALUE	VISUAL	REFERENCE
D1	LED 3mm	Green	
D2	LED 3mm	Green	
D3	LED 3mm	Green	
D4	LED 3mm	Green	
D5	LED 3mm	Yellow	
D6	LED 3mm	Red	
D7	LED 3mm	Red	
D8	LED 3mm	Red	
Conn1	IDC 10		



LIST OF COMPONENTS OF THE EQ INTERFACE CARD PART 1

NAME	VALUE	VISUAL	REFERENCE
R1	18K		
R2	1K2		
R3	3K6		
R4	100K		
R18	12K		
R19	7K68		
R20	2K		
R21	3K		
R22	270R		
R23	470R		
R24	33R		
R33	100K		
R25	10K		
R26	51R		
R27	51R		
R28	51R		
R29	51R		
R30	1K2		
R31	18K		
R32	2K7		
R33	100K		
VR1	Trimmer 10K		
L1	10uH		
C1	100u10V		
C2	100u10V		
C3	22p Ceramic	22p	
C4	100n Ceramic	104	
C5	100n Ceramic	104	
C10	22p Ceramic	22p	
C13	22p Ceramic	22p	
C15	22u25V		
C16	22u25V		
C22	22u25V		
C23	22u25V		
C26	330u16V		
C37	100n Ceramic	104	
C38	100n Ceramic	104	
C39	22u25V		
C40	22u25V		
C66	100n Ceramic	104	
C67	100n Ceramic	104	
C68	22u25V		
C69	22u25V		
C75	100u10V		
C76	100u10V		
C77	22p Ceramic	22p	
C78	100n Ceramic	104	
C79	100n Ceramic	104	

LIST OF COMPONENTS OF THE EQ INTERFACE CARD PART 2

NAME	VALUE	VISUAL	REFERENCE
D1	1N4148		
D2	1N4148		
D3	1N4148		
D4	1N4148		
LINK1	Strap		
CONN1	MOLEX KK10		
CONN2	MOLEX KK10		
CONN4	Not fitted		
POT	MOLEX KK3		
Preamp	IDC10		
J1	Jack TRS	RTN	NRJ6HF-1
J2	Jack TRS	SND	NRJ6HF-1
X3	XLR M	Output	NC3MAHR
IC1	NE5534		
IC2	THAT1646		
IC4	NE5534		
IC5	NE5534		
IC6	NE5534		
IC7	THAT1646		

LIST OF CONNECTION COMPONENTS

	Input card		
NAME	VALUE	VISUAL	REFERENCE
PSU	IDC16 Female		
preamp	IDC10 Female		
Leds	IDC10 Female		
	EQ card		
EQ	IDC10 Female		
	LED card		
Vu	IDC10 Female		

PINOUTS

Input Interface

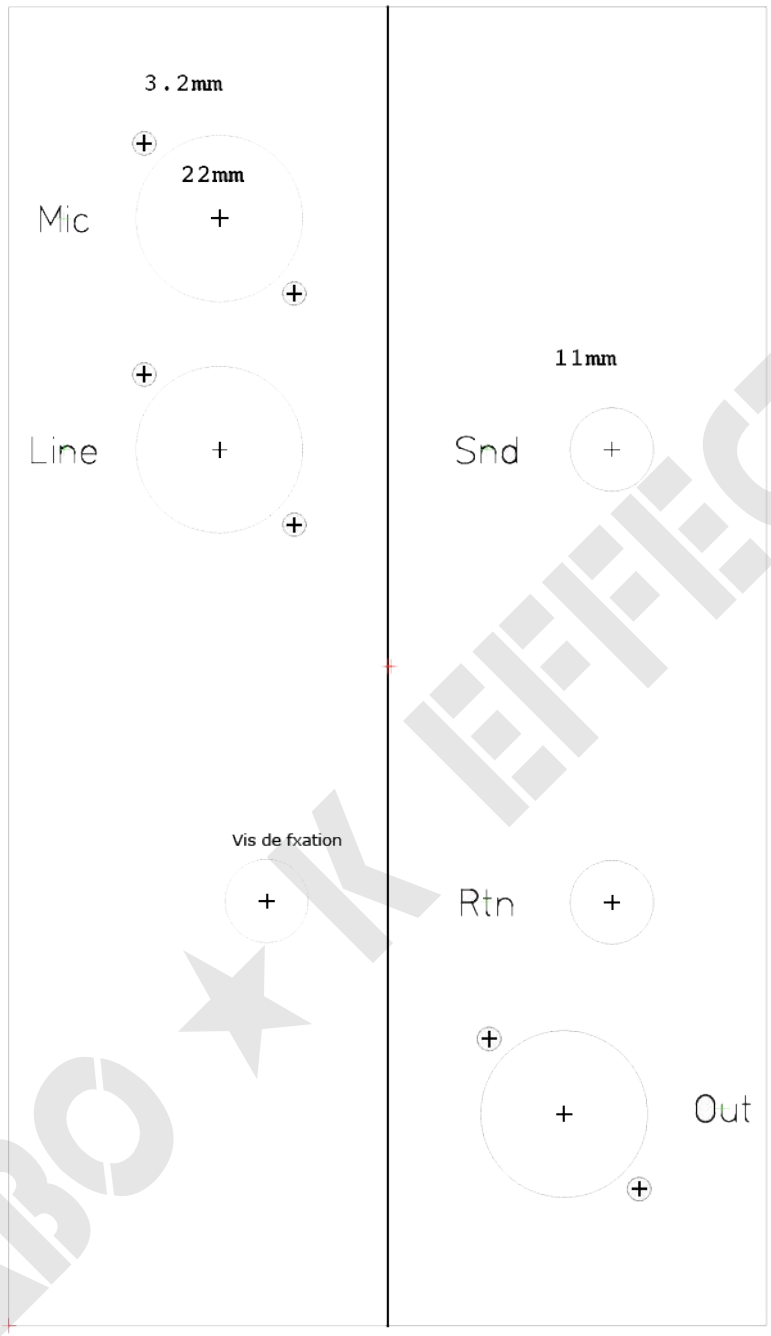
PSU BUS	
1	+48V
2	+48V
3	Sig Threshold
4	GND
5	GND
6	GND
7	+16V
8	+16V
9	+16V
10	+16V
11	-15V
12	-15V
13	-16V
14	-16V
15	Loop Out
16	Loop In

INST	
1	Input
2	GND
3	Remote

EQ Interface

POT	
1	GND
2	Wiper
3	Input

DRILLING TEMPLATE



Legal notice :

Labo★K Effects declines all liability with regard to direct and indirect damage caused by improper use of the kit by the user.