

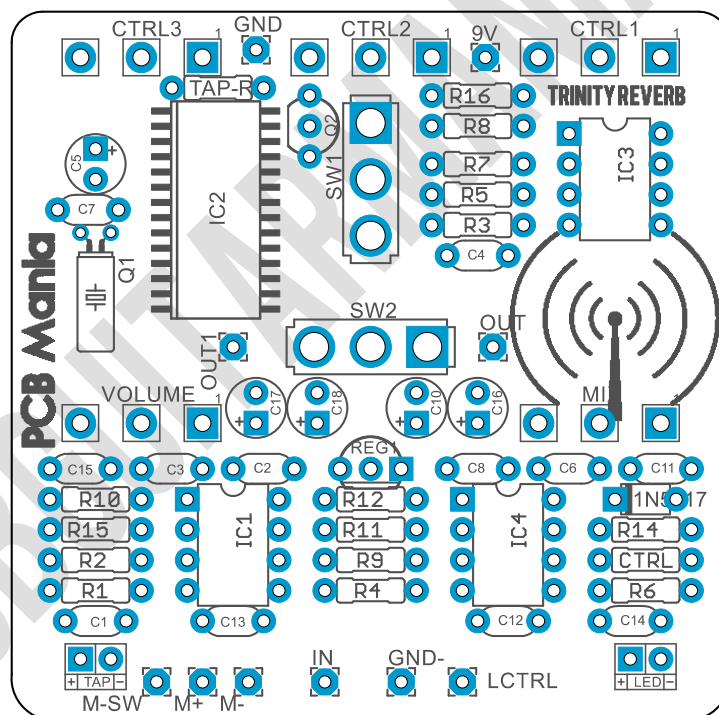
Trinity FV-1 Platform

Based on: Spin FV-1	Amount of parts: Medium, total 52 components	Enclosure type: 125B
Effect type: Multi-platform	Technology: Spin FV-1	Get your board at: Trinity Platform
Build difficult: Advanced	Power consumption: 50mA (9v)	Get your kit at: Das Musikding (Europe)

Project overview:

PCB Guitar Mania Trinity Platform is a powerful device to run different modulation patches (Reverbs, delays, octavers, phasers, pitch shifters, etc) through the powerful Spin FV-1 IC, just by replacing the provided Eeprom memory ICs.

This technology is the responsible of feeding crazy projects such as the Earthquaker devices Rainbow Machine, Avalanche Run, and more.



Real measures are:

59mm width x 59mm height

2.35" width x 2.35" height

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Introduction

The Trinity Platform is much more than just another simple board to build a single effect, is analogue platform based around the digital Spin FV-1, that allows you to run multiple different effects with the same box.

This circuit has been developed to be the ultimate p Spin FV-1 platform, integrating this digital IC as any other analog component of the signal path.

The Trinity platform can read up to three different programs by using the provided EEPROM memory IC. You can select in between 3 totally different programs just by the flip of the toggle **SW1**.

But the magic of this platform is that just by replacing the memory IC you can change totally the effects on the pedal. Let's say for example, you have two EEPROMS, **EEPROM-A** (Shimmer, spring reverb, modulated reverb) and **EEPROM-B** (Flanger, pitch shifter, octaver), just by removing the first one and placing the second one instead of you'd a completely different set of effects out of it.

With 3 potentiometer inputs, programs may have real time variable parameters such as decay time in a reverb, rate and depth in a chorus or frequency in a filter. These inputs are available as coefficients to your program and may be used independently of each other.

We have Schedule the release of more and more patches to take out all the juice out of this powerful platform.

Controls

The controls of the Trinity varies according to the program running on. However it has some common controls from the analogue path that applies to any patch running on.

- Ctrl1, Ctrl, 2, Ctrl3: Control different parameters according to the patch running on, like decay, delay time, repeats, feedback, and more.
- Mix: Regulates the mix of the dry signal and the wet.
- Level: Output level of the effect.
- Sw1: This is the program selector toggle, just by flipping it you'll access to a totally different patch.
- Sw2: Tails on/off selector.

Bill of materials

Resistors

R1	1m
R2	100k
R3	1k
R4	100k
R5	10k
R6	100k
R7	10k
R8	100r
R9	100k
R10	10k
R11	100k
R12	100r
R14	10k
R15	10k
R16	10k
Ctrl	4k7
Tap-r	don't populate

Capacitors

C1	100n
C2	220n
C3	220n
C4	1n
C5	10u electro
C6	220n
C7	15pf
C8	220n
C10	1u electro
C11	220n
C12	2n2
C13	220n
C14	120pf
C15	220n
C16	100u electro
C17	47u electro
C18	47u electro

Semiconductors

IC1	TL072
IC2	FV1
IC3	EEPROM
IC4	TL072
Q1	32.768khz Crystal
Q2	don't populate
REG1	L78L33
1N5817	1N5817
TAP	don't populate

Switches

SW1	ON-OFF-ON
SW2	ON-ON

Potentiometers

VOLUME	100K B
MIX	100K B
CTRL1	100K B
CTRL2	100K B
CTRL3	100K B

Shopping list

Resistors

Qty	Value	Parts
6	10k	R5, R7, R10, R14, R15, R16
1	1k	R3
1	1m	R1
5	100k	R2, R4, R6, R9, R11
1	4k7	CTRL
2	100r	R8, R12

Capacitors

Qty	Value	Parts
7	220n	C2, C3, C6, C8, C11, C13, C15
1	2n2	C12
1	1n	C4
1	120pf	C14
1	15pf	C7
1	100n	C1

Electrolytics

Qty	Value	Parts
1	10u	C5
2	47u	C17, C18
1	1u	C10
1	100u	C16

Semiconductors

Qty	Value	Parts
2	TL072	IC1, IC4
1	FV-1	IC2

1	24LC32	IC3
1	L78L33	REG1
1	3mm led	LED
1	1N5817	
1	32.768KHz Crystal	Q1

Potentiometers

Qty	Value	Parts
5	100K B	CTRL1, CTRL2, CTRL3, MIX, VOLUME

Switches

Qty	Value	Parts
1	SPDT ON-OFF-ON	SW1
1	SPDT ON-ON	SW2

Components Recommendations

For this project is a must to use **FV-1*** from a trusted source such as Das Musikding, Small bear, and many other pedal related suppliers. We sell each individual board including the One **EEPROM** with the algorithms pre-loaded, the **crystal oscillator** and the voltage regulator **L78L33**.

On this document many parts aren't populated due most of it corresponds to a future tap tempo patches that we are going to release in the following weeks.

This board has been tested using Film box capacitors for most of the values over 1nf, and ceramics discs for the ones under 1nf. However, high quality components such as Wima's Capacitors and Panasonic's electrolytics can deliver a better performance.

All the resistors used for testing this project are 1/4W Metal Film.

The BOM and Shopping list are exclusively regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

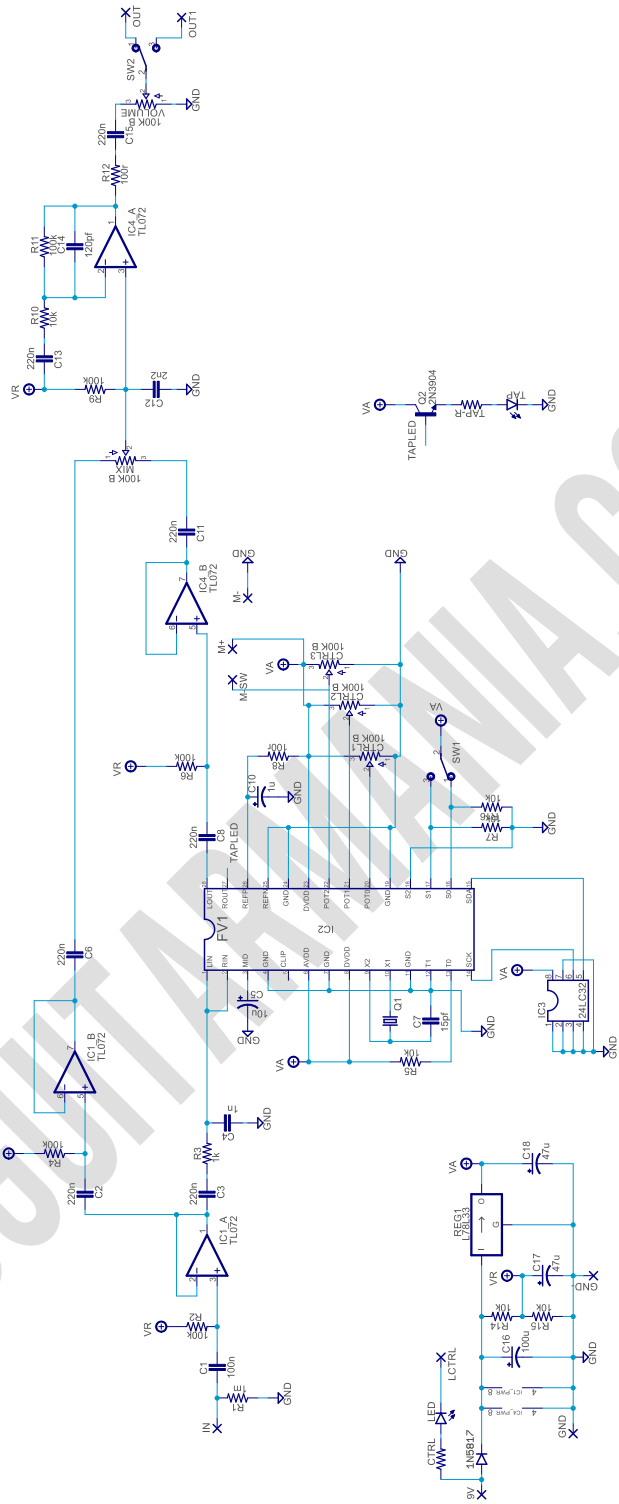
Build Notes

If this is one of your first projects I recommend you to take a look on our [Pedal Building Guide](#)

For a successful and tidy build it's recommended the following order:

1. SMD Transistors
2. Resistors & diodes
3. Capacitors, starting with the smaller ones and the ceramic ones.
4. Electrolytic capacitors (always check the polarity)
5. Transistors
6. Wires
7. Potentiometers and switches
8. Off board wiring
9. Transistor bias

Schematic

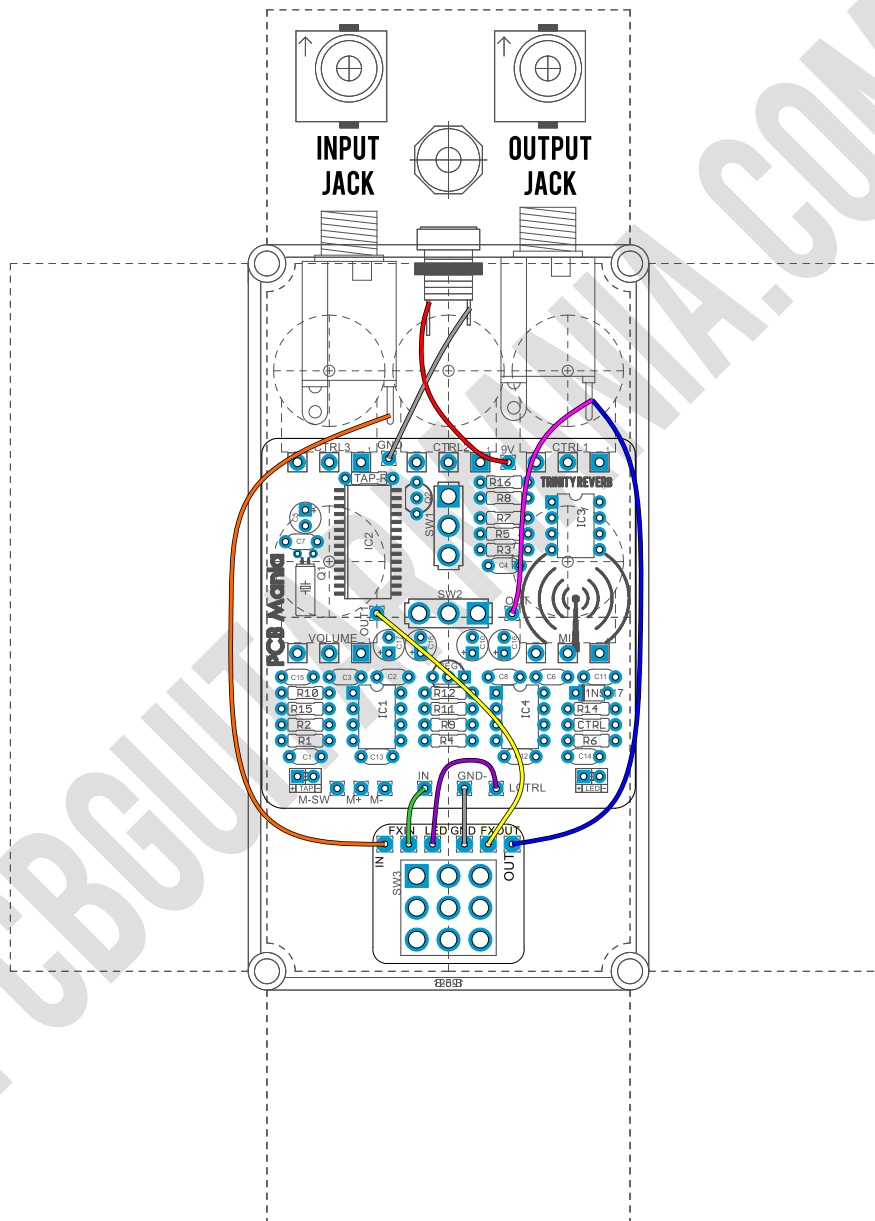


Wiring Diagram

All our projects include a **free 3PDT** Board to make the wiring easier and tidier. Also all of our PCBs feature the status LED on board.

The pad named “Ctrl” or “LED” is the one that controls the status of the led, wire it to the “LED” pad on the 3PDT board, or in control slug of your 3PDT.

You can take a look on the following diagram to understand the general connections. For further information check our [Pedal Wiring guide](#).



Drill Template

This Project has been planned to fit into a 1590BB enclosure type (122mm x 67mm x 35mm.)

Check the Attached “Drilling templates” to drill the box properly. The files are on Scale 1:1, ready to print in a A4 page.

Licensing and Usage

We really appreciate your trust and support buying this PCB, as well as your will to dive into the DIY electronics world. That’s why for us is really important that you can make this project work properly and to enjoy not only the building process, but also to experiment and play with it on your rig.

We try to reply to every question we receive on our email or in our social media, but we try to encourage all our customers to join our [PCB Guitar Mania – Builders Grup](#) on Facebook, in order to post all your doubts, issues, suggestions or request, as well to share your builds and have some feedback from us and other fellow builders!

All of our projects have been tested following this same guide on their standard configurations. Although, not all of the variations and mods have necessarily been tested. These are suggestions based on the schematic analysis, and on the experiences and opinions of others. Feel free to share with us your opinions and suggestions regarding the mods our your own personal experimentation.

These boards may be used for commercial endeavors in any quantity unless specifically noted. No attribution is necessary, though accreditation or a link back is always greatly appreciated.

If you are a builder planning to make your own run of pedals we also offer the service of custom made boards with your brand and logo, design according your specifications.

The only usage restrictions are that, first, you cannot resell the PCB as part of a kit without prior arrangement with us, and second, you cannot scratch off the silk screen, or other way of trying to hide our logos and the source of the PCBs. Like its written above, if you want to have your own designs, with your brand and logo we could certainly reach an agreement.

Follow us on [Instagram](#) and [Facebook](#) to stay in tune with the latest projects!