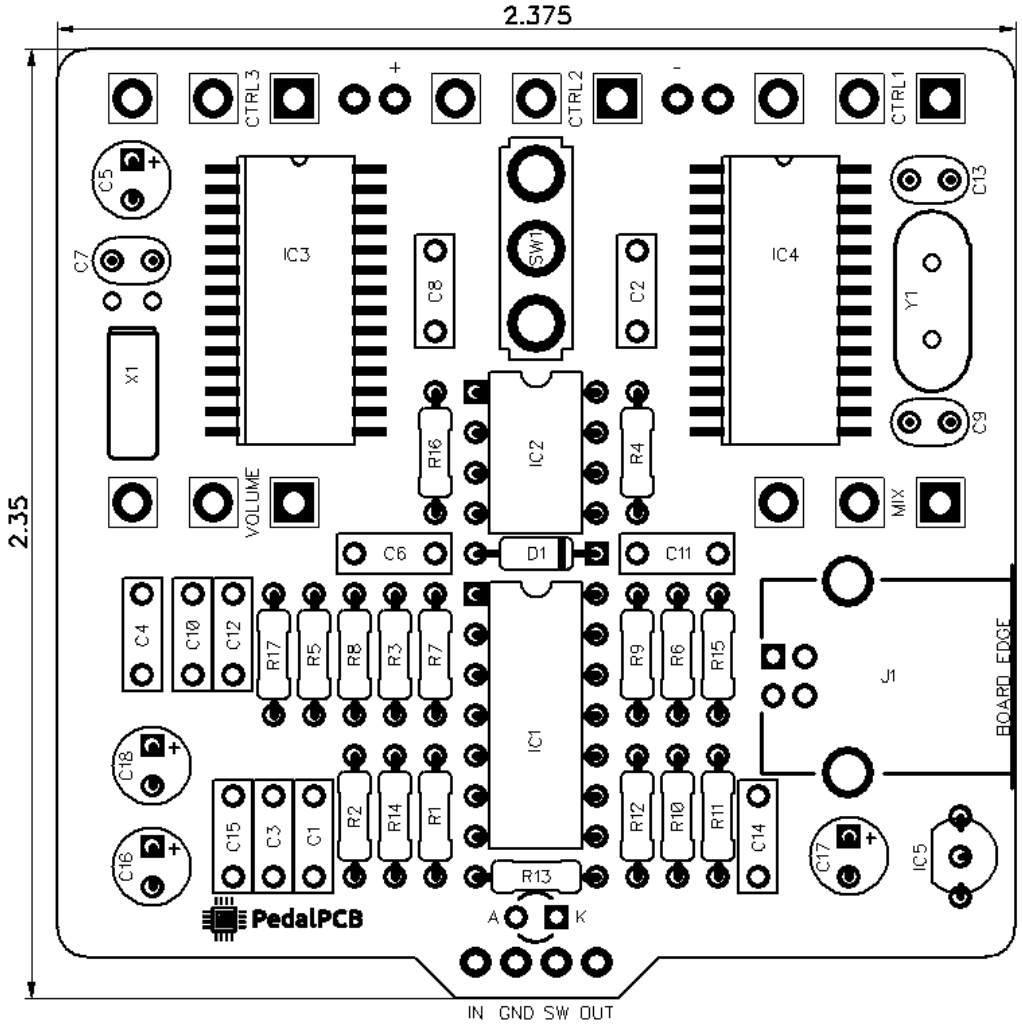
FV-1 Development Board

Revision 01.11.20



Controls

- **Control 1**
- **Control 2**
- **Control 3**
- **Volume**
- **Mix**
- **Mode (Toggle Switch)**

FV-1 Development Board

Parts List

RESISTORS (1/4W)

R1	1M
R2	100K
R3	1K
R4	2K2
R5	10K
R6	100K
R7	10K
R8	100R
R9	100K
R10	22K
R11	10K
R12	100R
R13	4K7
R14	10K
R15	10K
R16	10K
R17	1K

CAPACITORS

C1	100n
C2	100n
C3	1u
C4	1n
C5	10u
C6	1u
C7	15p
C8	1u
C9	20p
C10	1u
C11	1u
C12	2n2
C13	20p
C14	120p
C15	1u
C16	100u
C17	47u
C18	47u

INTEGRATED CIRCUITS

IC1	TL074
IC2	24LC32A
IC3	FV1
IC4	CH341A
IC5	L78L33

DIODES

D1	1N5817

POTENTIOMETERS

CTRL1	B100K
CTRL2	B100K
CTRL3	B100K
MIX	B100K
VOLUME	B100K

CRYSTAL OSCILLATORS

X1	32.768kHz DT-38
Y1	12MHz

SWITCHES

SW1	SPDT On/Off/On

JACKS

J1	USB Type-B Female

Common offboard components (enclosure, footswitch, jacks, etc) are not listed

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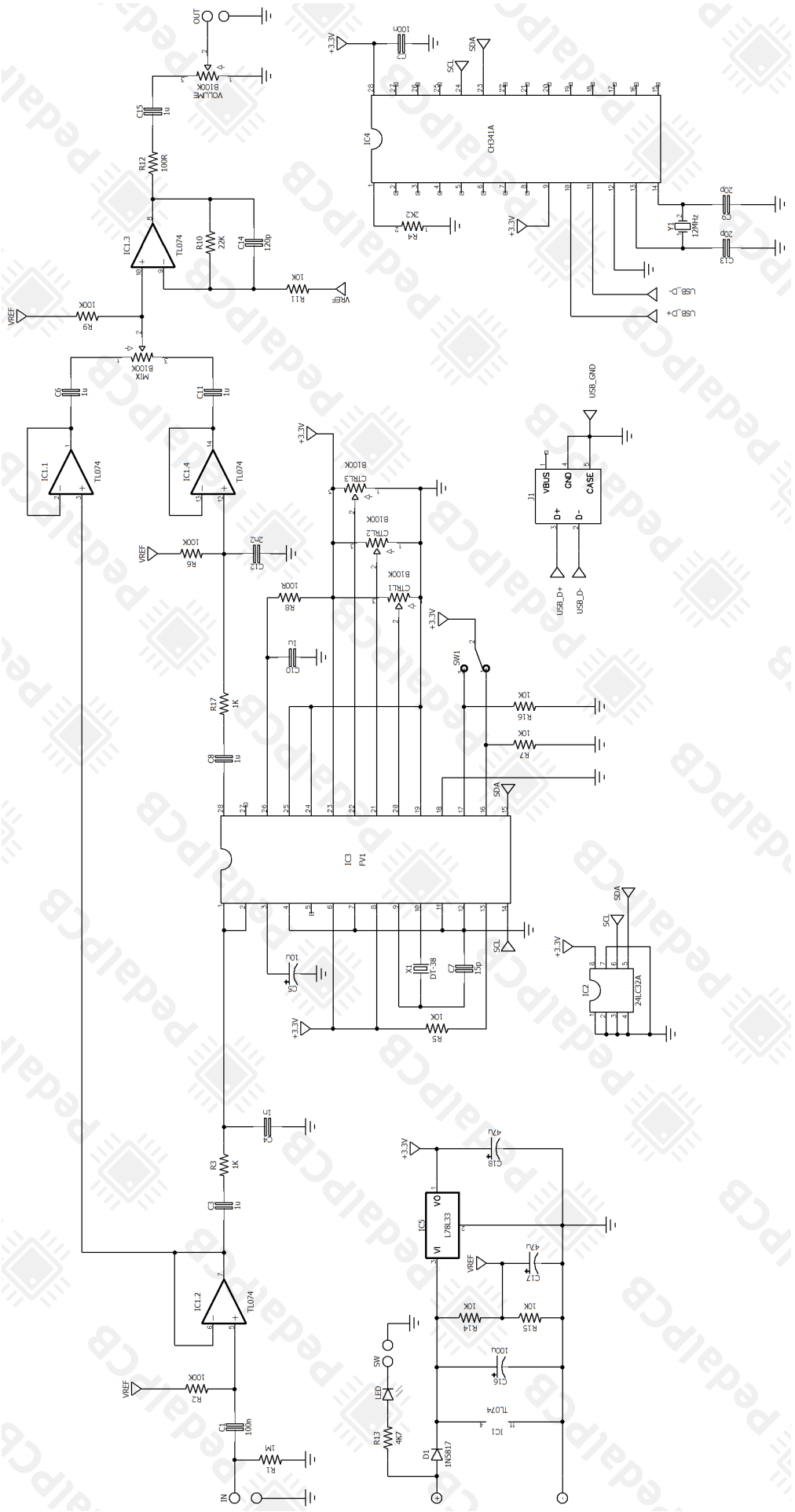
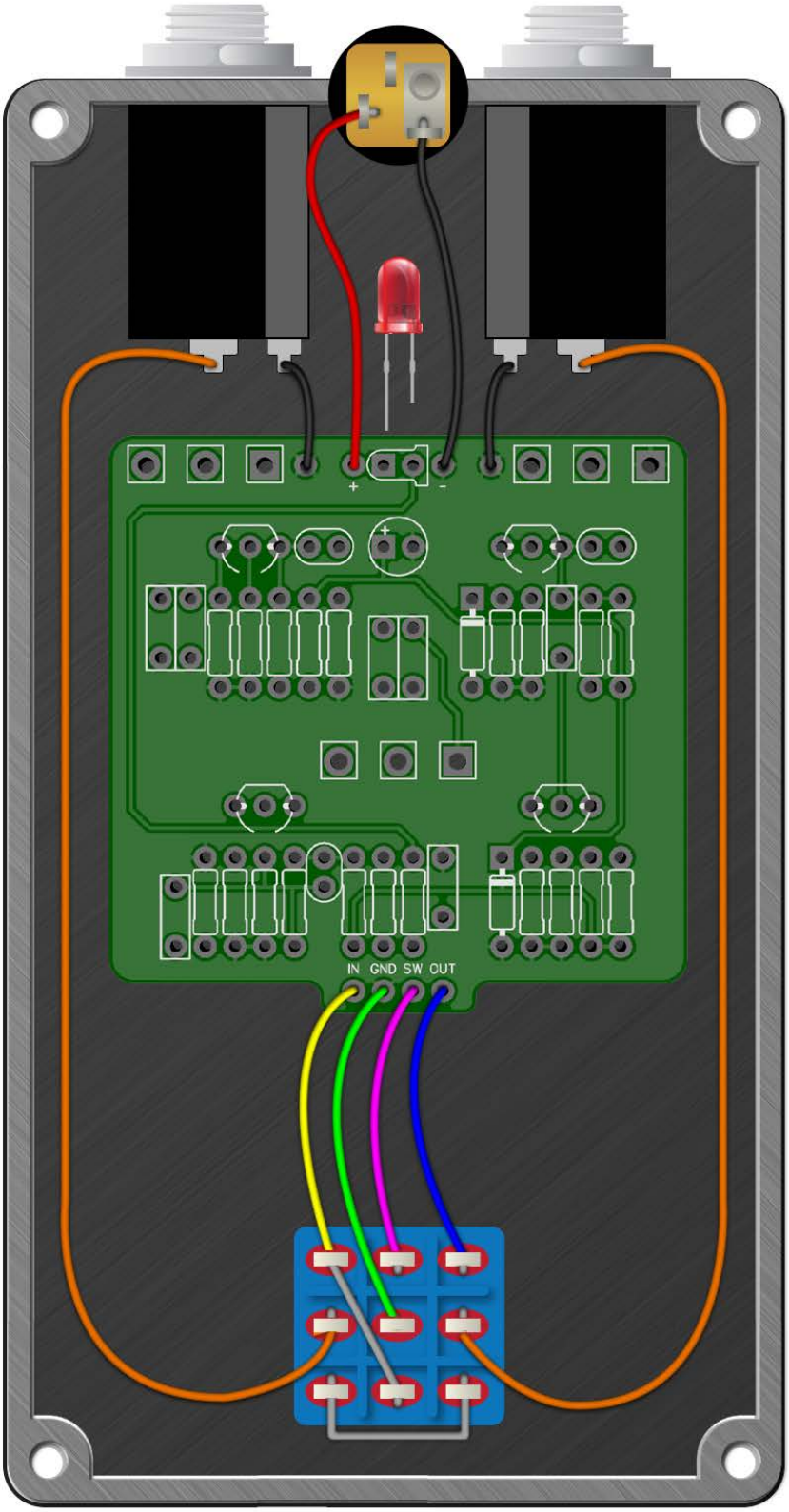
FV-1 Development Board



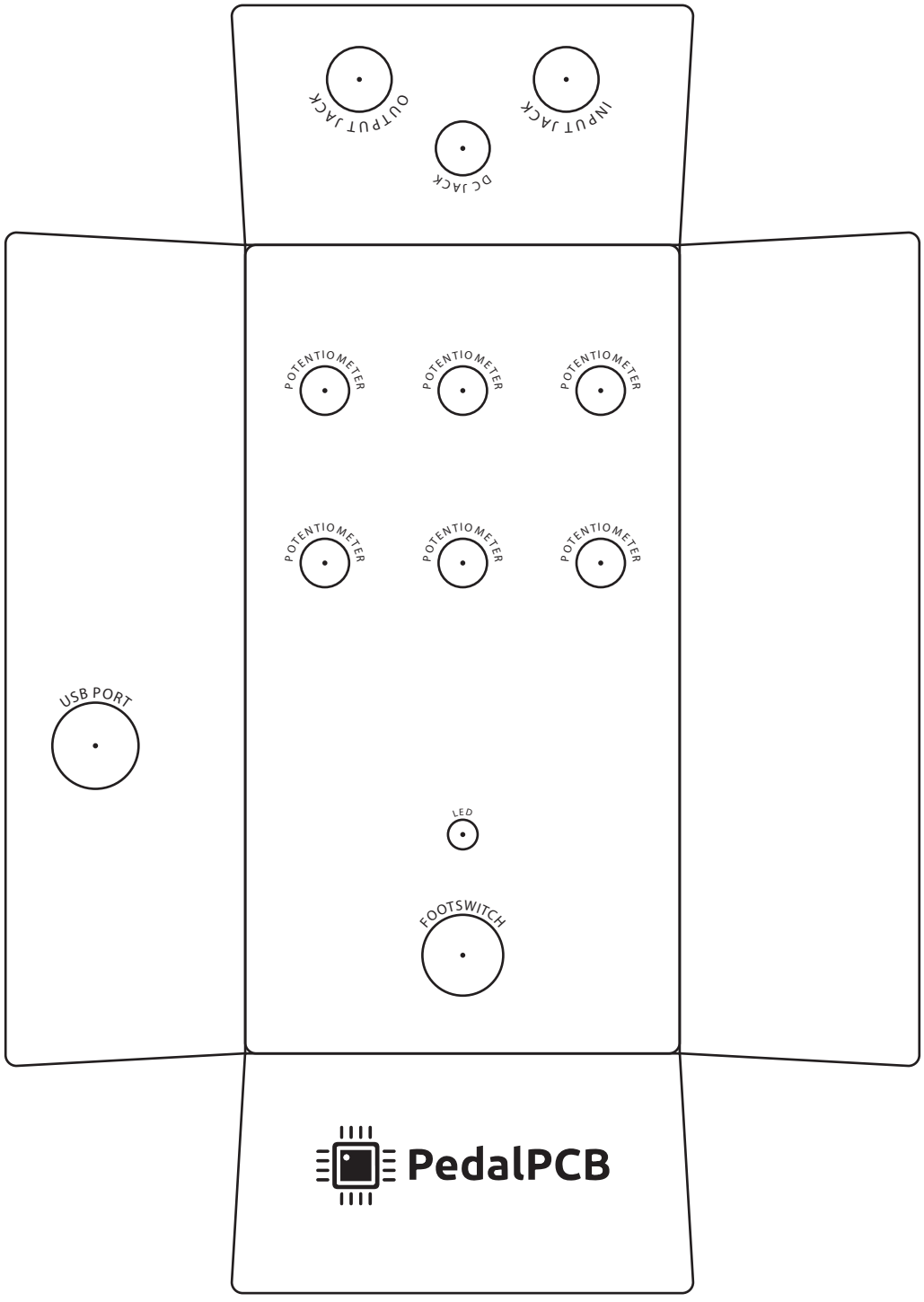
FV-1 Development Board

Wiring Diagram



FV-1 Development Board

Drill Template
125B Enclosure



IMPORTANT NOTE:
Depth of USB port varies depending on installation of PCB
Measure twice before drilling!

FV-1 Development Board

Microsoft Windows usage instructions

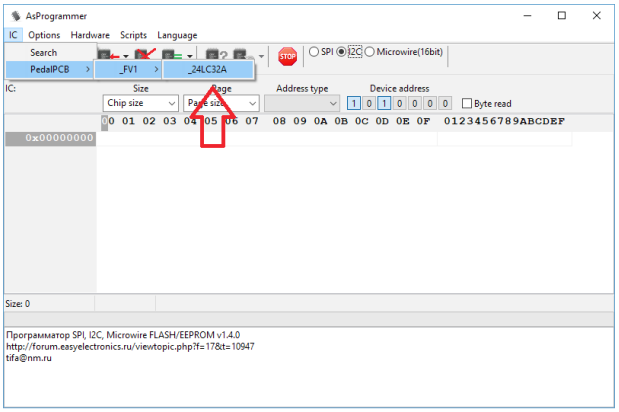
This method has been tested on Microsoft Windows 10. Other versions may be compatible but have not been verified. All links to software downloads are provided for convenience only. PedalPCB provides no guarantee about the fit or function of third party software.

Download

FV-1 Development Board Software Bundle for Microsoft Windows
http://wiki.pedalpcb.com/files/FV1Dev-Windows.zip

Configure AsProgrammer to Read / Write 24LC32A EEPROMs

Choose PedalPCB / _FV1 / _24LC32A from the IC menu in AsProgrammer



Read EEPROM

1) Choose the 24LC23A device from the IC menu (see above)
2) Click the green “Read IC” button to read data from EEPROM
3) Click the “Save file” icon to save the data to a file

Write EEPROM

1) Choose the 24LC23A device from the IC menu (see above)
2) Click the “Open file” icon, choose the file you want to write (must be in .BIN formaT)
3) Click the “Program IC” icon to write data to the EEPROM. All data currently on EEPROM will be lost!

File Formats

AsProgrammer reads and writes EEPROM data as .BIN binary files. SpinAsm and SpinCAD export files in Intel HEX format, so the file will need to be converted before writing to EEPROM. Conversion is possible using the included SRecord executable.

Convert Intel HEX to BIN

srec_cat.exe <filename.hex> -Intel -o <filename.bin> -binary

Convert BIN to Intel HEX

srec_cat.exe <filename.bin> -binary -o <filename.hex> -Intel

FV-1 Development Board

Apple macOS usage instructions

This method has been tested on macOS Sierra and Mojave. Other versions may work, but have not been verified. All links to software downloads are provided for convenience only. PedalPCB provides no guarantee about the fit or function of third party software.

Installation
Open a Terminal window and enter the following commands

Step 1: Install Homebrew
/usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)"

Step 2: Install libusb
brew install libusb

Step 3: Install SRecord
brew install srecord

Download FV1Dev Bundle for macOS
http://wiki.pedalpcb.com/files/FV1Dev-Mac.zip

Read EEPROM data to .bin file
ch341eeprom -s 24c32 -r <filename.bin>

Write .bin file to EEPROM
ch341eeprom -s 24c32 -w <filename.bin>

Convert BIN to HEX
srec_cat <filename.bin> -binary -o <filename.hex> -intel

Convert HEX to BIN
srec_cat <filename.hex> -intel -o <filename.bin> -binary

FV-1 Development Board

Linux usage instructions

This method has been tested on Ubuntu 18.04 LTS. Other versions may work, but have not been verified. All links to software downloads are provided for convenience only. PedalPCB provides no guarantee about the fit or function of third party software.

Installation
Open a Terminal window and enter the following commands

Step 1: Update package information
sudo apt-get update

Step 2: Install libusb
sudo apt-get install libusb-1.0

Step 3: Install SRecord
sudo apt-get install srecord

Download FV1Dev Bundle for Linux
http://wiki.pedalpcb.com/files/FV1Dev-Ubuntu.zip

Read EEPROM data to .bin file
./ch341eeprom -s 24c32 -r <filename.bin>

Write .bin file to EEPROM
./ch341eeprom -s 24c32 -w <filename.bin>

Convert BIN to HEX
srec_cat <filename.bin> -binary -o <filename.hex> -intel

Convert HEX to BIN
srec_cat <filename.hex> -intel -o <filename.bin> -binary