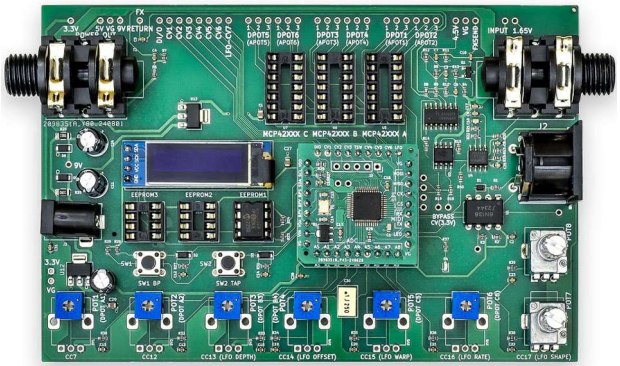
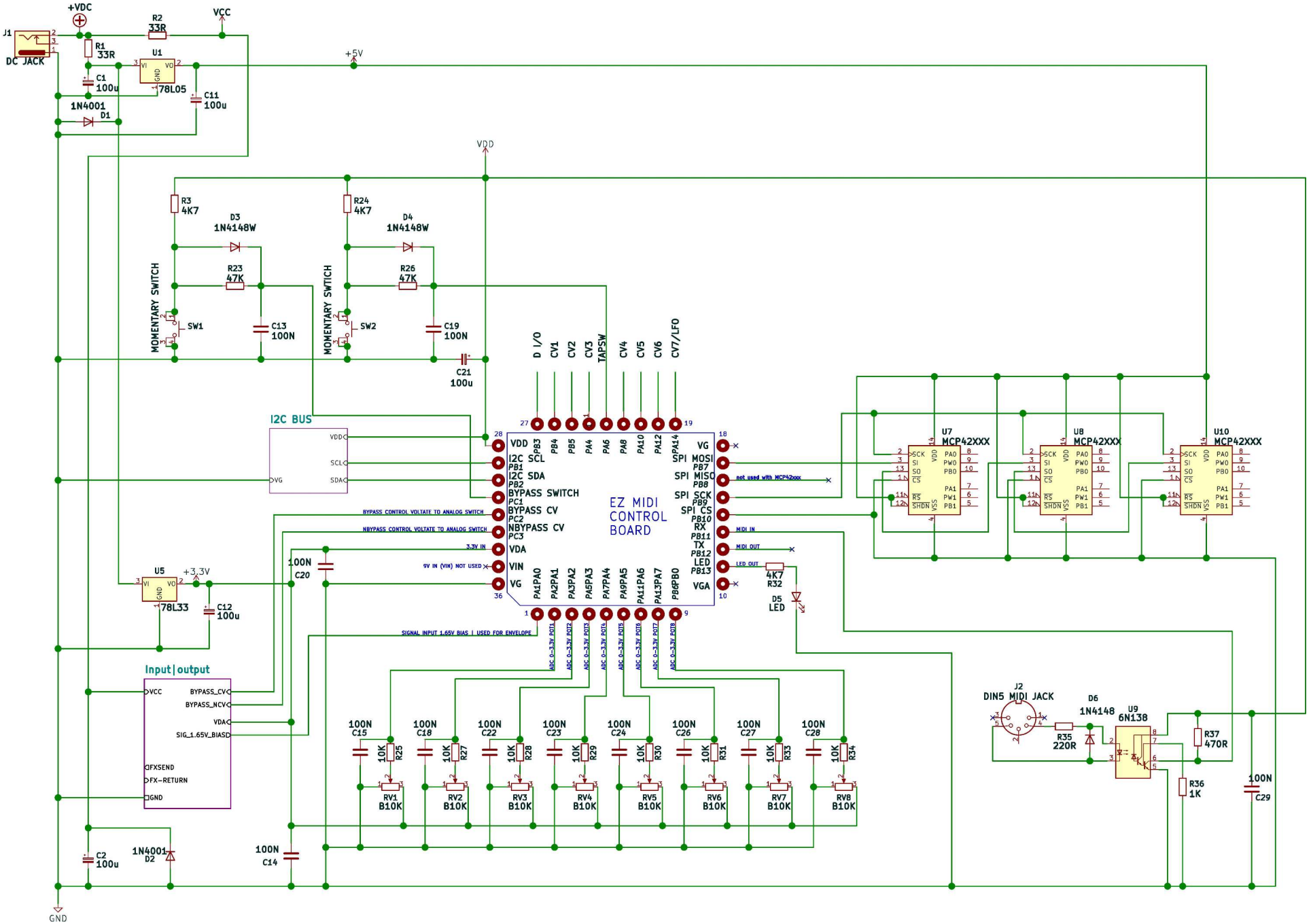
EZ MIDI PROGRAMMER SCHEMATIC



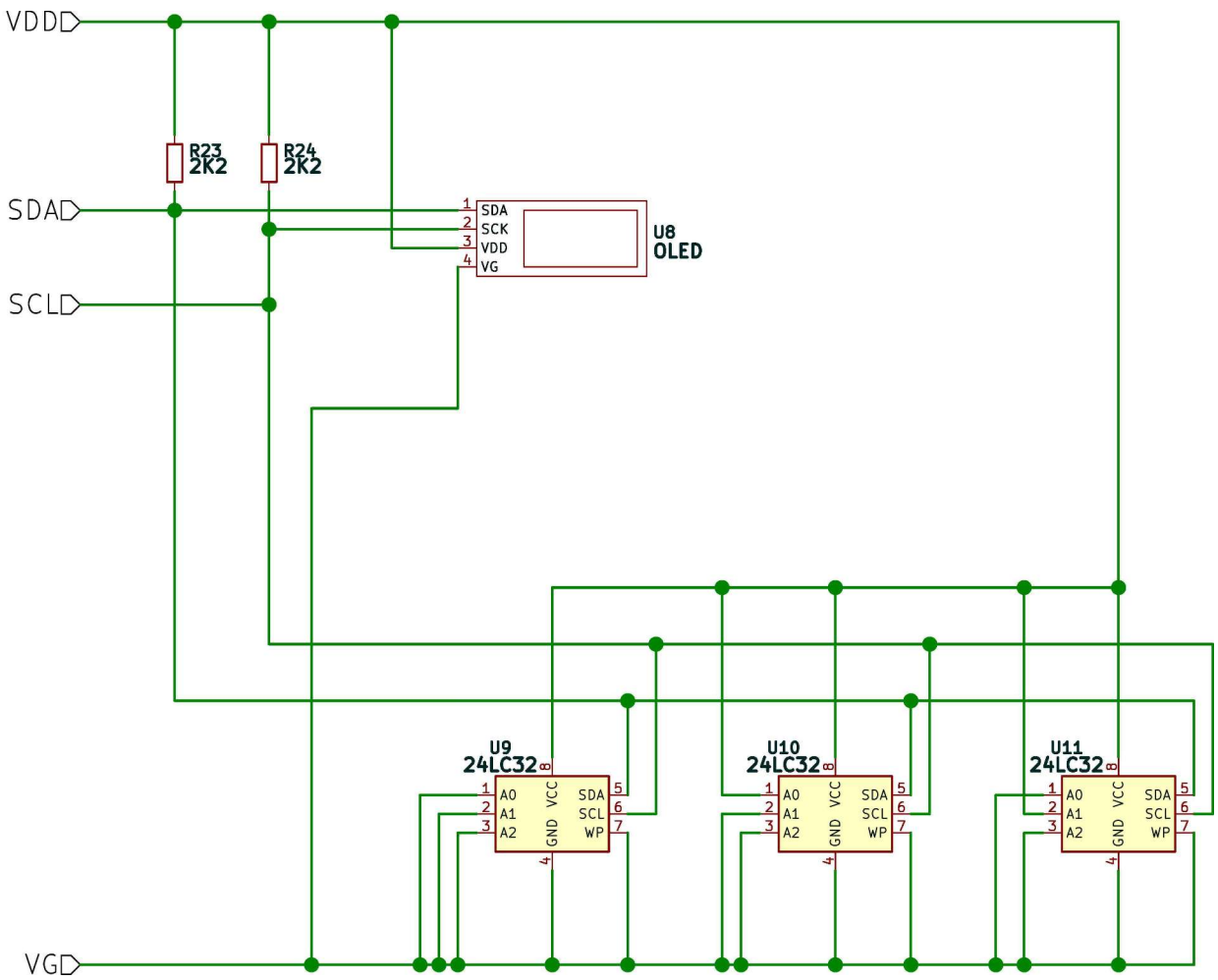
CONTENTS:

This document was believed to be accurate at the time it was created. Specifications are subject to change without notice.



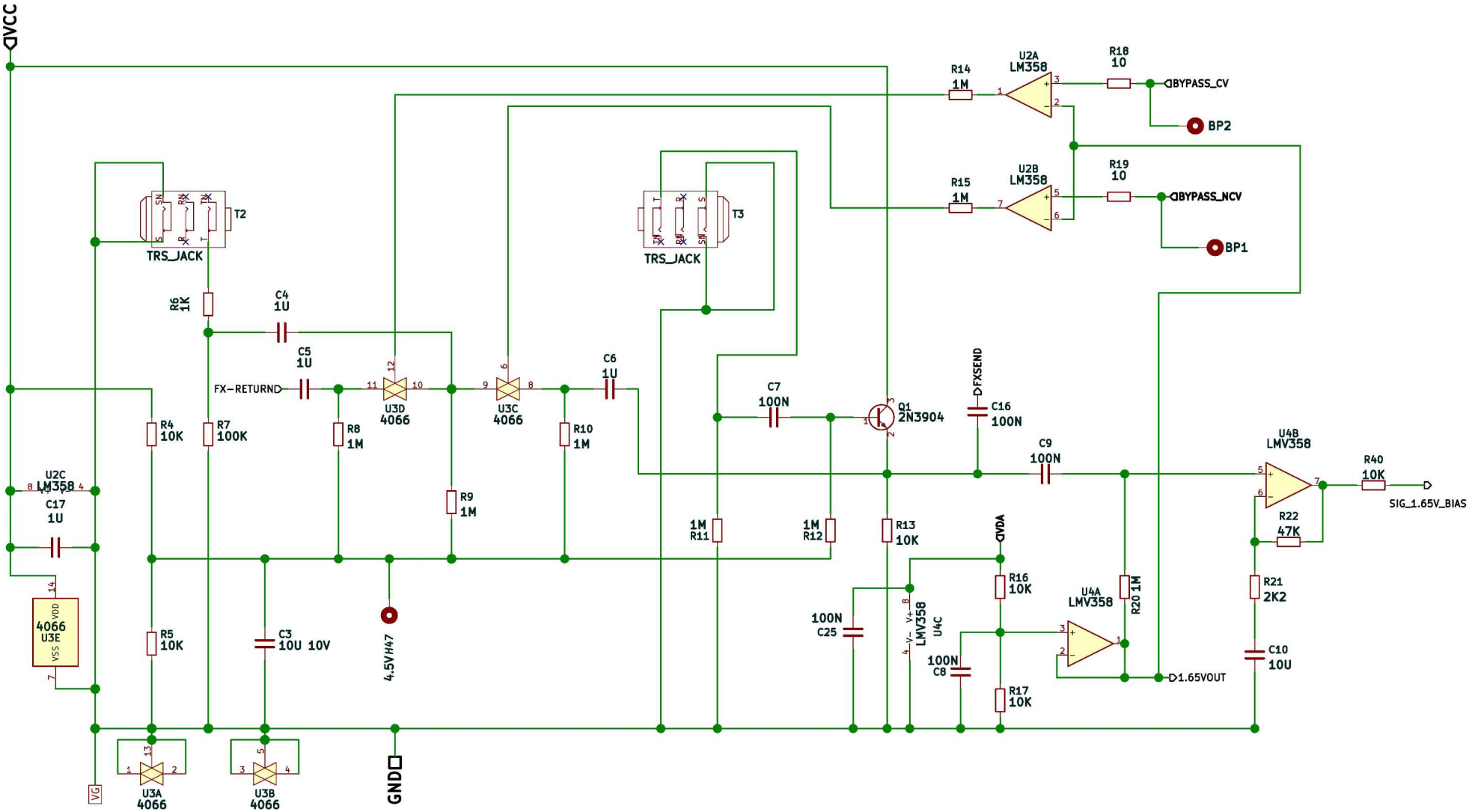
EZ MIDI PROGRAMMER MAIN SCHEMATIC

SUBDECAY



EZ MIDI PROGRAMMER – I2C BUS FOR EEPROMs AND OLED DISPLAY

SUBDECAY

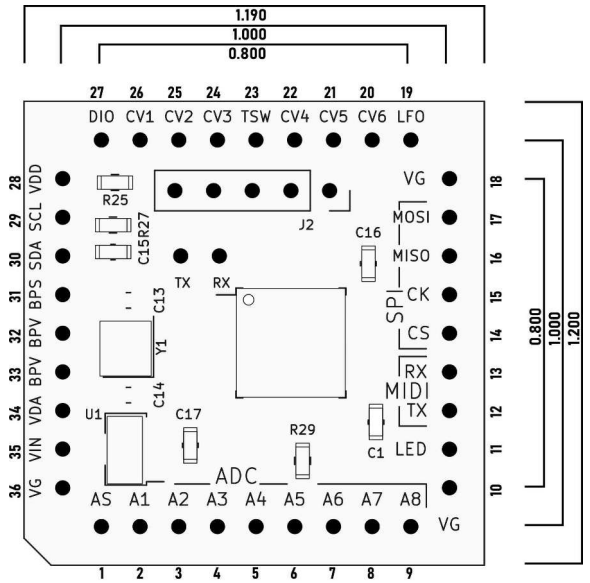


EZ MIDI PROGRAMMER I/O

SUBDECAY

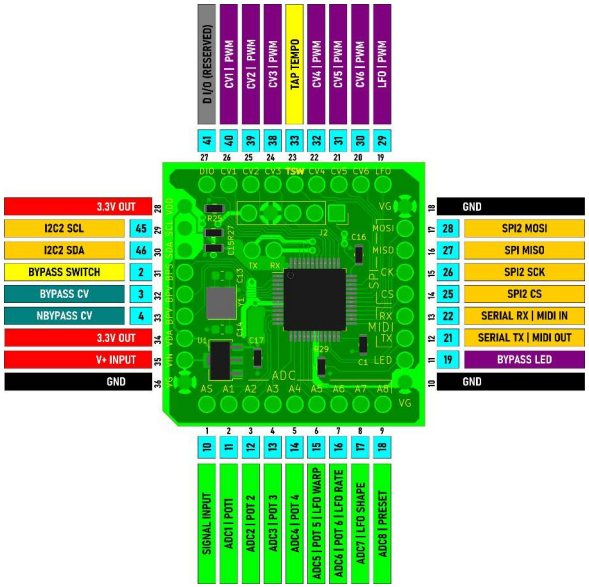
NOTES:

MAIN	3.3 VOLTS is provided to the EZ MIDI Control board by U5. The EZ MIDI Control's on board regulator is not used. RV7, RV8: 11 DETENT POTS RECOMMENDED
I2C BUS	Use 24LC32 EEPROMs or equivalent.
I/O	U2 converts bypass control voltage from 0-3.3v to 0 – 9v. U4 should be a rail to rail opamp like the LM358V, TLV2262 or TLC272.



EZ MIDI DIMENSIONS

EZ MIDI CONTROL PINS:



PINS	DESCRIPTION
	Some input pins can be damaged if the input voltage exceeds 3.3 volts. Some pins are 5 volt tolerant.
1	ANALOG SIGNAL INPUT: Biased to 1.65 volts. Used for envelope LFO/modulators.
2-9	Pot inputs. 0 – 3.3 volt input.
10	Ground
11	Bypass LED PWM output.
12	MIDI out: Not implemented on standard MIDI control board. For MIDI output setup or MIDI SysEx output contact us for options.
13	MIDI in: Should be used with a 6N138 circuit or similar.
14-17	SPI Serial pins. Used with MCP42xxx digital pots.
18	Ground
19-22& 24-26	PWM outputs. These pins output variable duty cycle pulse waves. Convert to control voltage with a simple RC filter. 0-3.3 volts. 62.5kHz.
23	SW2. Used for tap tempo. Voltage is normally high. Pull voltage down to activate.
27	Reserved for custom software.

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23	SW2. Used for tap tempo. Voltage is normally high. Pull voltage down to activate.
27	Reserved for custom software.
28	VDD 3.3 volt (digital) power output. For use if using the on board 3.3 volt regulator. This can be useful for prototyping. For builds it is recommended to use an external 3.3 volt regulator.
29-30	I2C serial connection for eeprom and EZ Wizard breakout board's OLED display.
31	SW1 Used for bypass switch. Voltage is normally high. Pull voltage down to activate.
32-33	Bypass pins. 3.3 volt outputs. See documentation.
34	When using the on board 3.3 volt regulator use this pin as the analog 3.3 reference voltage for POT inputs. If using an external regulator (recommended for builds) use this pin as the 3.3 volt power input. Do not exceed 3.3 volts.
35	When using the onboard 3.3 volt regulator use this pin as the power input. 5 to 18 VDC.
36	Analog Ground. Reference voltage for POT inputs.

SUBDECAY

REFERENCES AND LINKS:

24LC32 EEPROM: https://ww1.microchip.com/downloads/en/DeviceDoc/21072G.pdf
MCP42xxx Digital potentiometer: https://ww1.microchip.com/downloads/en/devicedoc/11195c.pdf

11 Detent potentiometer (Used for Pot 7 & 8)
16 mm Alpha: https://mou.sr/4fhTMq9
https://smallbear-electronics.mybigcommerce.com/alpha-single-gang-16mm-solder-lug-11-detents/
9MM: https://smallbear-electronics.mybigcommerce.com/single-gang-9mm-right-angle-pc-mount-11-detents-6-mm-shaft/

OLED Display: https://www.amazon.com/dp/B07FMDB6TR?th=1

MIDI Jack: https://www.adafruit.com/product/1134

6N138 High Speed Optocoupler (used for MIDI in): https://mou.sr/3zZqXi6