Pin configuration

Input, internal pullup:
PB1 (nc)
PB2 (nc)
PB3 (icsp)
PB4 (icsp)
PB5 (icsp)
PC2 (nc)
PC3 (nc)

Input, no internal pullup:
PD7
PE0

Output:
PD2
PD3
PD4
PD5
PD6
PE1

TWI/ I2C (management interface):
PC4
PC5

UART 0 (MIDI interface):
PD0
PD1

SPI 1 (External UART interface):
PC0
PC1
PE2
PE3

Fuse configuration:
Low fuse: 0xBF (CLK output on PB0, no divider, external crystal)
High fuse: 0xD9 (SPI programming enable, 2048 boot section size, start address=0x3800)
Extended fuse: 0xFC (Brown out level 4.3V)
Lockbit: 0x00 (no locks)

Place capacitors close to power pins
C3 1u
C4 100n
C5 100n
C6 100n
U1 ATmega328PB-A
ICSP programming
Management interface
UART interface (level shifted)
MIDI data
Module status LED
MIDI selection LED
Crystal
C9 3p3
C10 3p3
Y1

MICROCONTROLLER

Place capacitors close to power pins
C11 100n
C12 100n
U3 LSF0108

LEVEL SHIFTER

Place capacitors close to power pins
C7 1u
C8 100n
U2 SC16IS740
TP6 Previous module
TP7 Next module
R1 tbd
Termination resistor

UART INTERFACE

FRONT PANEL CONNECTION
J5 IDC 2x06
R9 2k
R8 2k
R10 2k
R11 2k
R12 2k

FRONT PANEL BUTTON
R6 10k
D2 1N914
R7 10k
U5A 74LVC2G17
C16 1u

U5C 74LVC2G17
C14 100n

SERIAL RING CONNECTION
J1 IDC 2x04
J2 IDC 2x04
IDC ribbon cable connection to other boards
Polymer capacitors
TP1 +5V
TP2 +3V3
TP5 GND
C1 47u
C2 47u

MIDI output
C15 100n
R5 220R
R4 220R
U6 74LVC1G126
TP3 MIDI out
DIN plug pin 4
DIN plug pin 5

MIDI OUTPUT

R3 220R
D1 1N914
U4 6N138
R2 220R
C13 100n
U5B 74LVC2G17
TP4 MIDI in

MIDI INPUT

J4 IDC 2x05 Horizontal
J3 Conn_01x03_Pin
Jump pin 1 and 2 for normal operation.
Jump pin 2 and 3 to supply the board via programmer.
Programmer power will not power other boards.

AVR ISP PROGRAMMING

Nekai Electronics

Sheet: /
File: midi-din-io-board.kicad_sch

Title: AvachMID DIN MIDI Interface board

Size: A3	Date: 2024-11-11	**Rev: 1**
KiCad E.D.A. 9.0.1		Id: 1/1