PIC8-Bit Nano Trainer — Schematic

K1 — MCU 1

Pin	Signal
URX/RC7	RC7/URX
RD4	RD4
RD5	RD5
RD6	RD6
RD7	RD7
VSS	GND
+3V3	+3V3
RB0	RB0
RB1	RB1
RB2	RB2
RB3	RB3
RB4	RB4
RB5	RB5
PGC/RB6	RB6/PGC
PGD/RB7	RB7/PGD
MCLR	MCLR
RA0	RA0
RA1	RA1
RA2	RA2
RA3	RA3

K2 — MCU 2

Pin	Signal
UTX/RC6	RC6/UTX
RC5	RC5
SDA/RC4	RC4/SDA
RD3	RD3
RD2	RD2
RD1	RD1
RD0	RD0
SCL/RC3	RC3/SCL
RC2	RC2
RC1	RC1
RC0	RC0
RA6	RA6
CLKI/RA7	RA7/CLKI
VSS	GND
+3V3	+3V3
RE2	RE2
RE1	RE1
RE0	RE0
RA5	RA5
RA4/VCAP	RA4/VCAP

IC1* — PIC16F/PIC18F

Left pins: RC7, RD4, RD5, RD6, RD7, GND, VDD, RB0, RB1, RB2, RB3
Right pins: NC, RC0, CLKO/RA6, CLKI/RA7, VSS, VDD, RE2, RE1, RE0, RA5, RA4

Signals: RC7/URX, RD4, RD5, RD6, RD7, GND, +3V3, RB0, RB1, RB2, RB3, RA4/VCAP
RC0, RA6, RA7/CLKI, GND, +3V3, RE2, RE1, RE0, RA5, RA4/VCAP

Top: RC6/UTX, RC5, RC4/SDA, RD3, RD2, RD1, RD0, RC3/SCL, RC2, RC1, NC
Bottom: RB4, RB5, RB6/PGC, RB7/PGD, RE3/MCLR, RA0, RA1, RA2, RA3

C5* 10µ

Reset circuit
R1 10K (+3V3), R2 1K, MCLR, S1 Reset, C1 100n

MEMS1*
VDD, OUTSTY, GND — RA7/CLKI — C2 100n — +3V3

K3 ICSP
MCLR, +3V3, RB6/PGC, RB7/PGD

K4 USB-MICRO-B
VBUS, D-, D+, ID, GND
F1 F050

IC2* — MCP2221A
VDD, RESET, D-, D+, VUSB, VSS, URx, UTx, SCL, SDA, GP3, GP2, GP1, GP0
C6* 470n

R3** 4K7, R4** 4K7, R5* 10K, R6* 10K, R7* 4K7, R8* 4K7
LED2* URX, LED3* UTX
JP1** SCL, JP2** SDA
RC6/UTX, RC7/URX, RC3/SCL, RC4/SDA

IC3 — BU33SD5WG
VIN, STBY, GND, VOUT
C7 1µ, C8 1µ
R9 4K7, LED1 Blue
C3 100n, C4 100n

Notes
IC1*: Check the pinout for the desired MCU family.
C5*: Optional check MCU datasheet.
MEMS1*: Optional check MCU datasheet for values.
*: UART Optional components.
**: I2C Optional components.

http://www.tronix.io/
PIC8-Bit Nano Trainer
Sheet : 1/1   01/2021   Rev.A

21 mm

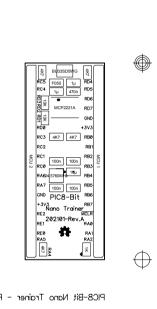52 mm

PIC8-Bit Nano Trainer - Rev.A - (01/2021) - SCALE: 100%

PICB-Bit Nano Trainer - Rev.A - (07/2021) - SCALE: 100%

21 mm

USB-MICRO-B

RD4 | RC5
RD5 | RC4
RD6 Nano Trainer RD3
RD7 www.tronix.io RD2
GND (CC) - BY-SA RD1
+3V3 | SCL | SCL | RD0
RB0 | SDA | SDA | RC3
RB1 | RC2
B2 | C1

PIC8-Bit

PIC16F/PIC18F
JLCJLCJLCJLC

B4 | A6
RB5 | RA7
RB6 | GND
RB7 | +3V3
MCLR | RE2
Reset
RA0 | Reset | RE1
RA1 | RE0
RA2 | ICSP | RA5
10K | ICSP

52 mm

PIC8-Bit Nano Trainer - Rev.A - (01/2021) - SCALE: 100%

PIC8-Bit Nano Trainer – Rev.A – (07/2021) – SCALE: 100%

The PCB silkscreen contains the following labels:

BU33SD5WG

MCU 2 side (left):
4K7
RC5 · F050 · 1µ
RC4 · 1µ · 470n
RD3 RD2 RD1 · 10K · MCP2221A
RD0
RC3 · 4K7 · 4K7
RC2
RC1
RC0 · 100n · 100n
RA6 · 5760MHz · 1µ
RA7 · 100n · 100n
GND · PIC8-Bit
+3V3 · Nano Trainer
RE2 · 202101-Rev.A
RE1
RE0
RA5 · RA4 · 4K7

MCU 1 side (right):
4K7
RD4
RD5
RD6
RD7
GND
+3V3
RB0
RB1
RB2
RB3
RB4
RB5
RB6
RB7
MCLR
RA0
RA1
RA2 · 1K