PIC18F56Q35

PIC18F56Q35		
Debugger	*Name*	*Pin*
CDC TX	USART2 RX	**RB5**
CDC RX	USART2 TX	**RB4**
DBG0	ICSPDAT	**RB7**
DBG1	ICSPCLK	**RB6**
DBG2	GPIO0	**RA6**
DBG3	$\overline{\text{MCLR}}$	**RE3**
VTG	**1.8V - 5.5V**	

DEBUGGER CONNECTIONS

CDC_RX — CDC_RX
CDC_TX — CDC_TX
DBG0 — DBG0
DBG3 — DBG3
DBG1 — DBG1
DBG2 — DBG2
VOFF — VOFF
ID_SYS — ID_SYS

PROG/DEBUG Pull

DBG0, DBG1 — R100 47k, R101 47k — GND

MCLR/RESET Pull

VCC_TARGET — R103 47k — J103, J105 — R106 1k — RE3_MCLR / RB7_ICSPDAT

WARNING: Remove R102 before applying power to J100

VCC_TARGET — 0402 R102 0R — VDDIO2 — J100 HDR-2.54 Male 1x2 (N.M) — GND

J100 : VDDIO2/GND power connector
Voltage Range 1.62V - 5.5V

C100 0.1uF — GND
C102 0.1uF — GND
C101 0.1uF — GND

U100
PIC18F56Q35

1	VDDIO2	RF0	36
2	RD4	RF1	35
3	RD5	RF2	34
4	RD6	RF3	33
5	RD7	RA6	32
6	VSS	RF7	31
7	VDD	RF6	30
8	RB0	RE2	29
9	RB1	RE1	28
10	RB2	RE0	27
11	RB3	RA5	26
12	RF4	RA4	25
13	RF5	RF5	24
14	RF6	RF6	23
15	RF7	RF7	22
16	RB4	RB4	21
17	RB5	RB5	20
18	RB6/ICSPCLK	RB6/ICSPCLK	19
19	RB7/ICSPDAT	RB7/ICSPDAT	18
20	RE3/VPP/MCLR	RE3/VPP/MCLR	17
21	RA0	RA0	16
22	RA1	RA1	15
23	RA2	RA2	14
24	RA3	RA3	13
49	E-PAD		

RD4 SPI_SDI, RD5 SPI_SDO, RD6 SPI_SCK, RD7 SPI_SS
RB0 SPI_SDI, RB1 SPI_SDO, RB2 SPI_SCK, RB3 ANB3, RF4 PWM1_AINF4
RC6, RC5 I2C_SDA, RC4 I2C_SCL, RD3, RD2, RD1, RD0, RC3 I2C_SCL, RC2 USER_LED, RF3, RF2, RF1 ANF1
RF0 ANF0, RC1 OSC_IN, RC0 OSC_OUT, RA6 SW0_DEBUG_GPIO0, RA7 SPI_SS
RE2, RE1, RE0, RA5, RA4
RF5 PWM1_ANF5, RF6 UART1_TX, RF7 UART1_RX, RB4 CDC_RX_UART2_TX, RB5 CDC_TX_UART2_RX, RB6 ICSPCLK, RB7 ICSPDAT, RE3 MCLR, RA0 ANA0, RA1 ANA1, RA2 ANA2, RA3 ANA3

J101 DEBUGGER — EDGE 56P Female CNANO

	RESERVED	VBUS	56
1	ID	VOFF	55
3	CDC RX	DBG3	54
4	CDC TX	DBG0	53
5	DBG1	GND	52
6	DBG2	VCC	51
7	0 TX	ADC 7	50
8	1 RX	ADC 6	49
9	2 SDA	ADC 5	48
10	3 SCL	PWM 4	47
11	4 MOSI	PWM 3	46
12	5 MISO	ADC2	45
13	6 SCK	ADC1	44
14	7 SS	ADC0	43
15	GND	GND	42
16	0 (TX)	7	41
17	1 (RX)	6	40
18	2	5	39
19	3	4	38
20	0	7	37
21	1	6	36
22	2	5	35
23	3	4	34
24	GND	GND	33
25	0	7	32
26	1	6	31
27	2	5	30
28	3	4	29

RB4_CDC_RX_UART2_TX_R104 1k J102
RB5_CDC_TX_UART2_RX_R105 1k J104
RB6_ICSPCLK R107 1k J106
RA6_SW0_DEBUG_GPIO0_R108 1k J107
RF6_UART1_TX
RF7_UART1_RX
RC4_I2C_SDA
RC3_I2C_SCL
RB1_SPI_SDO
RB0_SPI_SDI
RB2_SPI_SCK
RA7_SPI_SS
RB4_CDC_RX_UART2_TX
RB5_CDC_TX_UART2_RX
RA4
RA5
RE0
RC0_OSC_OUT — J108 — RC0
RC1_OSC_IN — J109 — RC1
RD0
RD1
RD2
RD3
RC5

VCC_VBUS, VCC_EDGE, VCC_TARGET, GND

RA3_ANA3, RA2_ANA2, RF0_ANF0, RF5_PWM1_ANF5, RF4_PWM1_AINF4, RA1_ANA1, RA0_ANA0, RB3_ANB3, RF1_ANF1, RE1, RE2, RF2, RF3, RC2_USER_LED, RA6_SW0_DEBUG_GPIO0, RD7, RD6, RD5, RD4, RC6

NOTE on UART/CDC:

RX/TX on the header denotes the input/output direction of the signal respective to it's source.

CDC TX is output from the DEBUGGER.
CDC RX is input to the DEBUGGER.
TX is output from the TARGET device.
RX is input to the TARGET device.

NOTE on I2C:

No pull-ups on board. Pull-ups must be mounted close to client device(s).

USER BUTTON (RA6_SW0_DEBUG_GPIO0)

R109 1k — SW100 TACT SPST — GND
"SW0-RA6"

USER LED (RC2_USER_LED)

VCC_TARGET — D100 Yellow LED — R111 1k
"LED0-RC2"

TARGET BULK

VCC_EDGE — C103 2.2uF — GND

32KHz Crystal (RC1_OSC_IN, RC0_OSC_OUT)

J110 — XIN — "32KHz"
J111 — XOUT — R110 0R
Y100 32.768kHz VMK3-9001-32K7680000TR — J112
C104 10pF — GND
C105 10pF — GND

Crystal datasheet:
Ccrystal = 9pF
max ESR = 70kOhm
Accuracy ±20ppm

Q35 datasheet:
Cxin = 5pF (typical)
Cxout = 5pF (typical)
Cl ≈ 1/((1/5pF)+ (1/5pF)) ≈ 2.5pF
Maximum Load = 18pF (High Power mode)
Maximum ESR = 100kOhm (High Power mode)

Estimated Cpcb = 1pF

Estimated load
C = 2 (Crystal- Cpara - Cpcb)
C = 2 (9pF - 2.5pF - 1pF)
C = 11pF

Selected in design after validation
C= 10/10pF
Designed and validated for High Power mode

CNANO Template Revision: 2.11

Project Owner: SBM			
PCB Layout Contact: SBM			
PartNumber: EV55P36A	Project Title: *PIC18F56Q35 Curiosity Nano*	Variant: Default Assembly	
Sheet Title: Target MCU			
Size: A3	SCH #: 02-01592	Rev: 2	Date: 08.01.2026
	PCB #: 04-12631	Rev: 2	Sheet 2 of 4
File: PIC18F56Q35_Curiosity_Nano_Target_MCU.SchDoc			

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