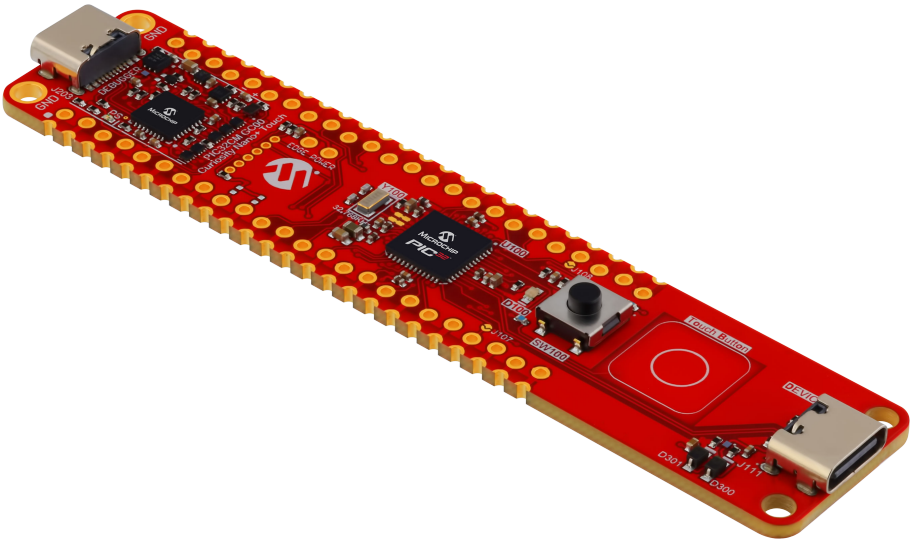
Preface

The PIC32CM GC00 Curiosity Nano + Touch evaluation kit (EV23Z30A) is a hardware platform for evaluating the PIC32CM GC family. This board features the PIC32CM5112GC00048 (referred to as the target device in this document) mounted on the board.

The Curiosity Nano series of evaluation boards include an on-board programmer and debugger. No external tools are necessary to program and debug the PIC32CM5112GC00048.



The following links provide additional information and documentation regarding Curiosity Nano, MPLAB and Microchip design.

- **Kit Website** - Kit information, the latest user guide, and design documentation.
- **Device Website** - Find documentation, data sheets, samples, and purchase devices.
- **Microchip Direct** - Purchase this kit from Microchip Direct.
- **MPLAB® Discover** - Get started with code examples on MPLAB® Discover.
- **Schematics** - Board schematics and revision history.
- **Design Documentation** - Production files for every revision.

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1. Key Features

The 32-bit Arm® Cortex-M23 MCU features Functional Safety (FuSA), CAN-FD, Full-Speed USB, Enhanced Touch and Advanced Analog.

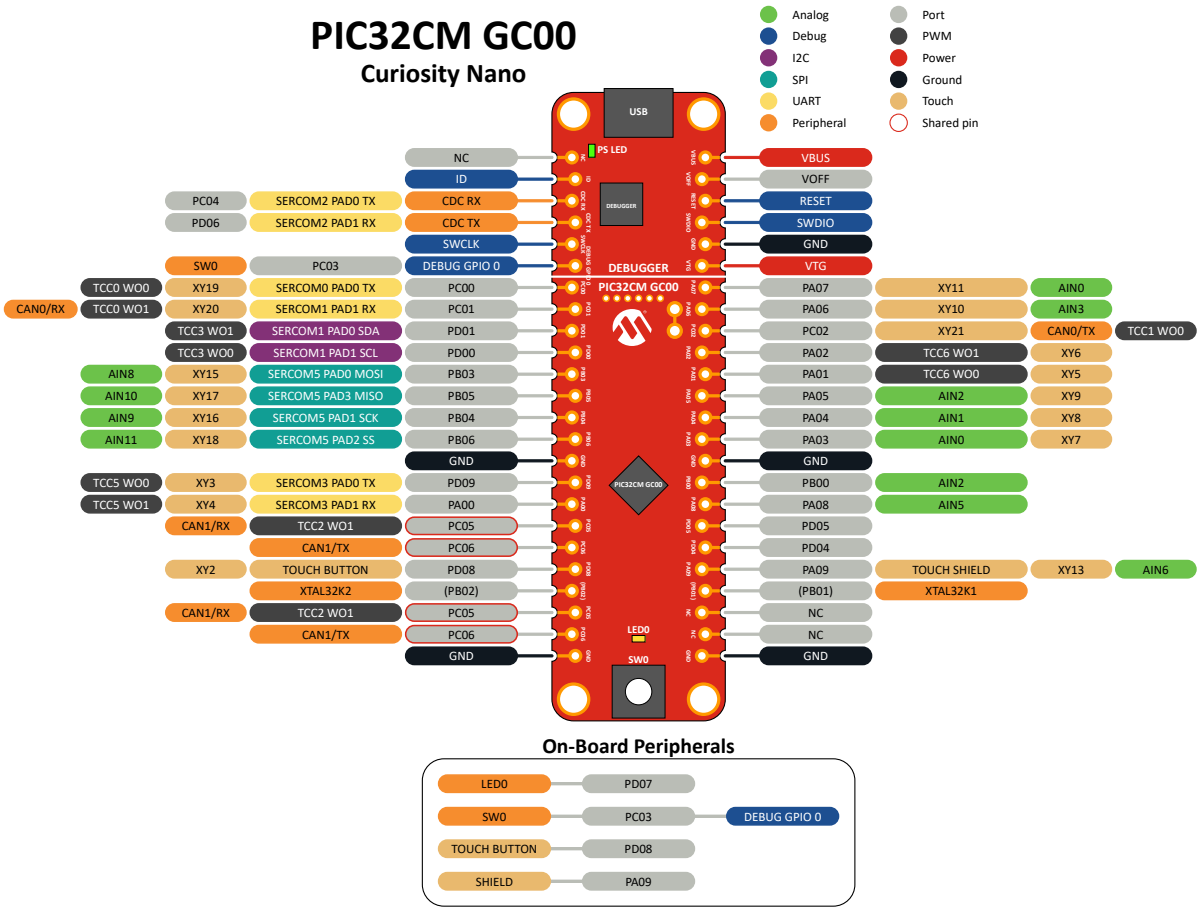
- Arm Cortex-M23 CPU core running at up to 72 MHz.
- Memory:
  - 16 KB of Boot Flash Memory (BFM)
  - 32 KB of Configuration Flash Memory (CFM)
  - Flash supports Error Correction Code (ECC) with fault injection capability, CRC of any contiguous section and Tamper event logging
- Analog and Touch:
  - 12-bit ADC module
  - Two Analog Comparators with programmable voltage references
  - Enhanced Peripheral Touch controller (PTC)
- Power Management:
  - Idle mode for fast wake up time
  - Standby mode, Backup mode, Off mode and Sleepwalking Peripherals
  - Hibernate mode up to full SRAM retention
- Communication:
  - Two CAN-FD modules (ISO 11898-1:2015) supporting CAN 2.0
  - Six Serial Communication Interfaces (SERCOM)
  - One Full-Speed (12 Mbps) Universal Serial Bus (USB) 2.0 interface
- Operating Conditions:
  - 1.71V to 3.63V, -40°C to +125°C, DC to 48 MHz
  - 1.71V to 3.63V, -40°C to +85°C, DC to 72 MHz

2. Pinout

PIC32CM GC00 Curiosity Nano + Touch pinout diagram.

All the PIC32CM5112GC00048 I/O pins are accessible at the edge connectors on the board. The image below shows the board's pinout.

Figure 2-1. PIC32CM GC00 Curiosity Nano + Touch Pinout



Info: Refer to the Pinout and Multiplexing section in the PIC32CM5112GC00048 data sheet for all available functions on each pin.

3. Board Features

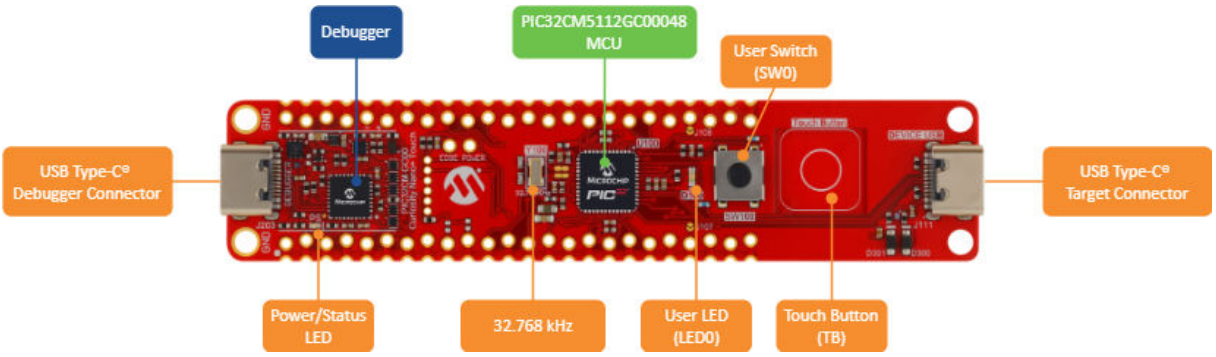
Features of Curiosity Nano, board layout picture, board block diagram, and Curiosity Nano pinout standard.

3.1. Board Features

- PIC32CM5112GC00048 Microcontroller
- On-Board Nano Debugger
  - Programming and debugging
  - Virtual serial port via USB CDC
  - Green power and status LED
  - One debug GPIO channel (DGI GPIO)
  - Board identification in Microchip development environments
- Power and Connectivity
  - USB Type-C® for power and data
  - Adjustable target voltage (1.8–3.6V, up to 500 mA) controlled by the on-board debugger
- Hardware Peripherals
  - Yellow user LED
  - Mechanical user switch
  - Touch button
  - 32.768 kHz Crystal
- Curiosity Nano Edge Connector
  - Sockets into Curiosity Nano base boards
  - Staggered layout for press fit pin headers
  - Breadboard compatible
  - Castellated edges for surface mounting

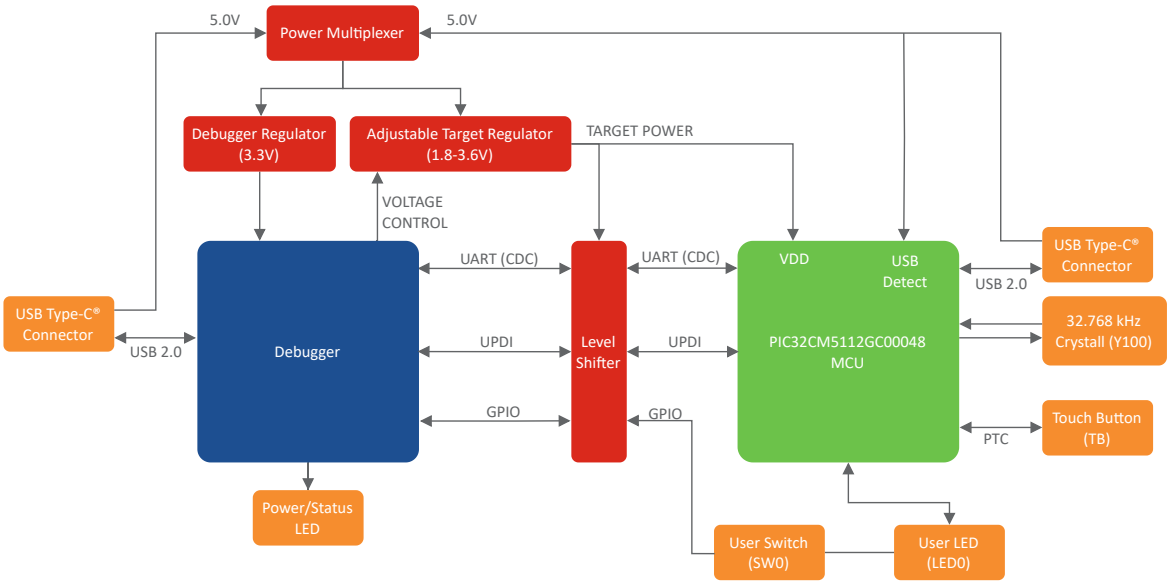
3.2. Board Overview

Figure 3-1. PIC32CM GC00 Curiosity Nano + Touch Board Overview



3.3. Block Diagram

Figure 3-2. PIC32CM GC00 Curiosity Nano + Touch Board Block Diagram



3.4. Curiosity Nano Pinout

All Curiosity Nano boards follow a standardized pinout for key functions, as illustrated in Figure 3-3. Specific pins are reserved for the debugger interface, which supports programming protocols such as UPDI, SWD, or ICSP. Additional dedicated pins are provided for the CDC virtual serial port and the Data Gateway Interface (DGI).

Serial communication interfaces are consistently mapped to designated pins:

- UART
- I2C
- SPI

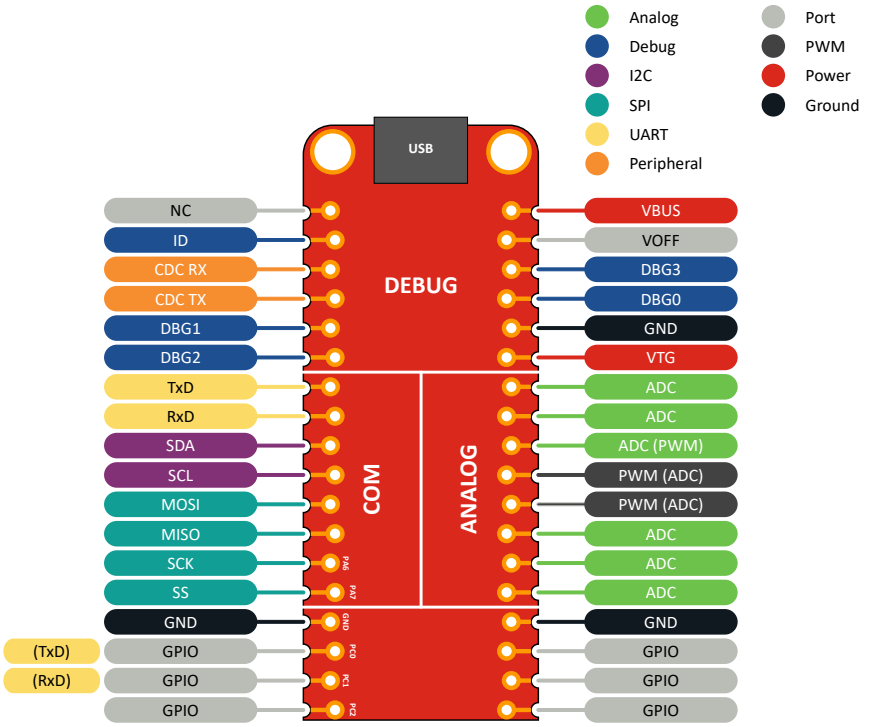
The CDC UART may share pins with the serial communication section, be available on dedicated pins located directly below the serial section, or in some cases, be accessible only through the debugger section.

Analog capability is guaranteed only for pins within the analog section. At least two of these pins support PWM output, and some kits may offer a third optional PWM pin.

The placement and availability of additional features, such as extra serial or analog functions, may vary depending on the specific Curiosity Nano board. For this reason, only GPIO functionality is guaranteed for pins outside the sections mentioned above.

Tip: The location of debugger, serial communication, and analog pins on the edge connector is consistent across all Curiosity Nano boards, ensuring compatibility and ease of use.

Figure 3-3. Curiosity Nano Pinout



Info: Features shown in parentheses are optional and may not be available on all Curiosity Nano boards.

4. Out-of-Box Demo

This is an interactive demo program.

PIC32CM5112GC00048 is pre-programmed with an example application that demonstrates GPIO control, capacitive touch and the mechanical switch input.

The application does the following:

- By default, when plugged in, the yellow user LED (LED0) blinks at a frequency of 2.5 Hz.
- Pressing the touch button holds the LED in the ON position, as long as the touch is active.
- Pressing the user switch (SW0) holds the LED in the ON position, as long as the switch is pressed.

5. Setup Essentials

Step-by-step project setup and pin-header assembly instructions.

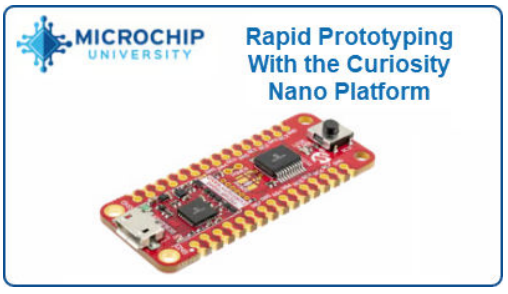
5.1. Quick Start

1. Choose your preferred integrated development environment (IDE):
   - MPLAB® Tools for VS Code®.
   - Partner Toolchains: Microchip supports a range of partner toolchains. For more information and a list of supported tools, visit the Development Tool Partners page.
2. For VS Code follow these steps:
   a. Download and install VS Code for your operating system.
   b. Install MPLAB Tools for VS Code.
   c. Browse and select an example project using MPLAB® Discover.
   d. Download and open the selected example project in VS Code.
   e. Connect the PIC32CM GC00 Curiosity Nano + Touch to your computer using a USB cable.
   f. Program the target device with the example code using MPLAB Tools for VS Code.
   g. Refer to Learn MPLAB® Extensions for Microsoft® Visual Studio Code for tips and tricks on using the extensions.

Next Steps

- Explore additional example projects in MPLAB® Discover and try customizing them for your application.
- Use the PIC32CM GC00 Curiosity Nano + Touch with a Curiosity Nano Base Board:
  - Curiosity Nano Explorer
  - Curiosity Nano Base for Click Boards™
- Monitor data output:
  - Use the integrated terminal in VS Code or your preferred terminal to access the UART interface on your board
  - For advanced data monitoring and visualization, use MPLAB Data Visualizer

Tip: Click the following link for the free Microchip University course - Rapid Prototyping with the Curiosity Nano Platform.



The Curiosity Nano platform enables rapid prototyping and includes built-in debugging for working with new microcontrollers.

5.2. Using Pin Headers

The edge connector footprint on the PIC32CM GC00 Curiosity Nano + Touch has a staggered design, where each hole is shifted 8 mils (~0.2 mm) off-center. This hole shift allows the use of standard 100

mil pin headers without soldering them to the board. The pin headers can be used in applications such as pin sockets and prototyping boards once they are firmly in place.

Figure 5-1. Connecting Curiosity Nano Board to Base Board Using Pin Headers

Tip:

- Start at one end of the pin header and gradually insert the header along the length of the board. Once all the pins are in place, use a flat surface to push them in.
- For applications that permanently use pin headers, it is still recommended to solder them in place.
- Once the pin headers are in place, they are difficult to remove by hand. Use a set of pliers and carefully remove the pin headers to avoid damage to the headers, the PCB, or yourself.

6. On-Board Nano Debugger

This section describes the features and interfaces of the on-board debugger for programming and debugging.

6.1. Overview

The PIC32CM GC00 Curiosity Nano + Touch features an on-board Nano Debugger for programming and debugging. When connected to a host computer, the Nano Debugger appears as a composite USB device offering several interfaces:

- **Debugger:** Enables programming and debugging of the target device.
- **Virtual serial port (CDC):** Provides access to the target device's UART interface.
- **Data Gateway Interface (DGI):** Microchip's proprietary interface for streaming data to the host computer.
- **Mass storage device:** Provides kit information files and supports utility commands.

Tip: For detailed instructions and advanced features, refer to the Nano Debugger Manual.

6.2. Power and Status LED

The on-board debugger controls a Power and Status LED (marked PS) on the PIC32CM GC00 Curiosity Nano + Touch board. The table below shows how the different operation modes control the LED.

Table 6-1. On-Board Debugger LED Control

Operation Mode	Power and Status LED
Boot Loader mode	The LED blinks slowly during power-up
Power-up	The LED is ON
Normal operation	The LED is ON
Programming	Activity indicator: The LED blinks slowly during programming or debugging
Drag-and-drop programming	**Success:** The LED blinks slowly for 2 sec. **Failure:** The LED blinks rapidly for 2 sec.
Fault	The LED blinks rapidly if a power fault is detected
Off	When the on-board debugger is powered down, the LED is OFF

Info: Slow blinking is approximately 1 Hz, while rapid blinking is about 5 Hz.

6.3. Connections

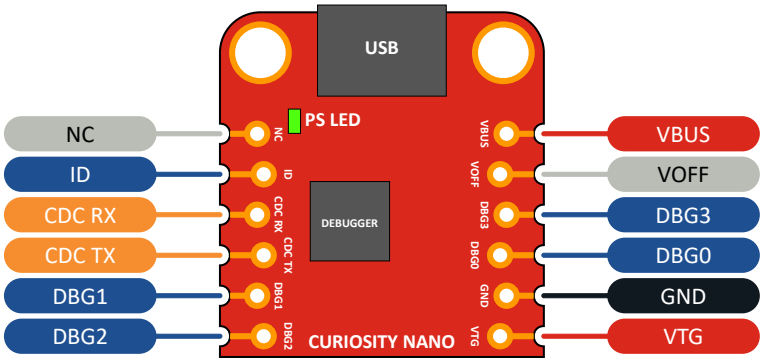
The table below lists the connections between the target device and the debugger. When the debugger is inactive, these connections are set to high-impedance (tri-state) mode. This allows users to use these pins for any function without interference from the debugger.

Info: The 12 edge connections closest to the debugger USB connector have a standardized pinout, but the function of the programming and debugging pins varies depending on the programming interface used.

Table 6-2. On-Board Debugger Connections

Debugger Pin	PIC32CM5112GC00048 Pin		Description
CDC **TX**	PD06	UART **RX**	USB CDC TX line
CDC **RX**	PC04	UART **TX**	USB CDC RX line
DBG0	SWDIO	ICSPDAT	Debug data line
DBG1	SWCLK	ICSPCLK	Debug clock line
DBG2	PC03	SW0/GPIO0	Debug GPIO0/SW0
DBG3	nRESET	MCLR	Reset line
VOFF	—		Pull VOFF low to disable the on-board regulator and allow external power on VTG; VOFF is monitored by the debugger
ID	—		Identification of supported base boards and extensions at power-up

Figure 6-1. Curiosity Nano Debugger Pinout



Tip: For the complete PIC32CM GC00 Curiosity Nano + Touch pinout, see the PIC32CM GC00 Curiosity Nano + Touch Pinout.

6.4. Disconnecting the On-Board Debugger

All signals between the on-board debugger and the target device are routed through cut straps on the bottom of the board. These cut straps can be used to disconnect the debugger from the target for various purposes, such as:

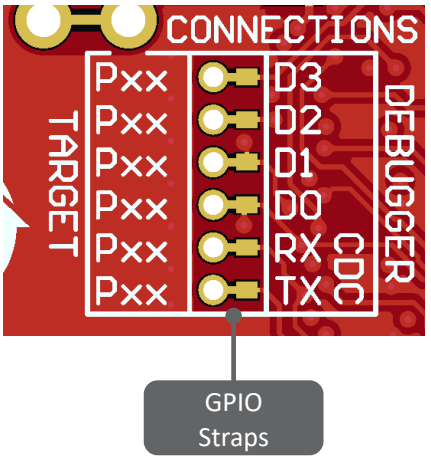
- Evaluating the target device's power consumption in isolation removes the on-board debugger's influence on current measurements
- Using the target device with an external programmer/debugger
- Using the on-board debugger as a standalone programmer/debugger for other devices

The following cut straps are available to separate the debugger from the target:

- Debugger Pins (J101, J102, J103, J104, J105, J106)
- Power Supply Cut Straps

Attention: Cutting the GPIO straps to the on-board debugger disables the virtual serial port, programming, debugging, and data streaming functions.

Figure 6-2. Curiosity Nano Debugger Cut Straps

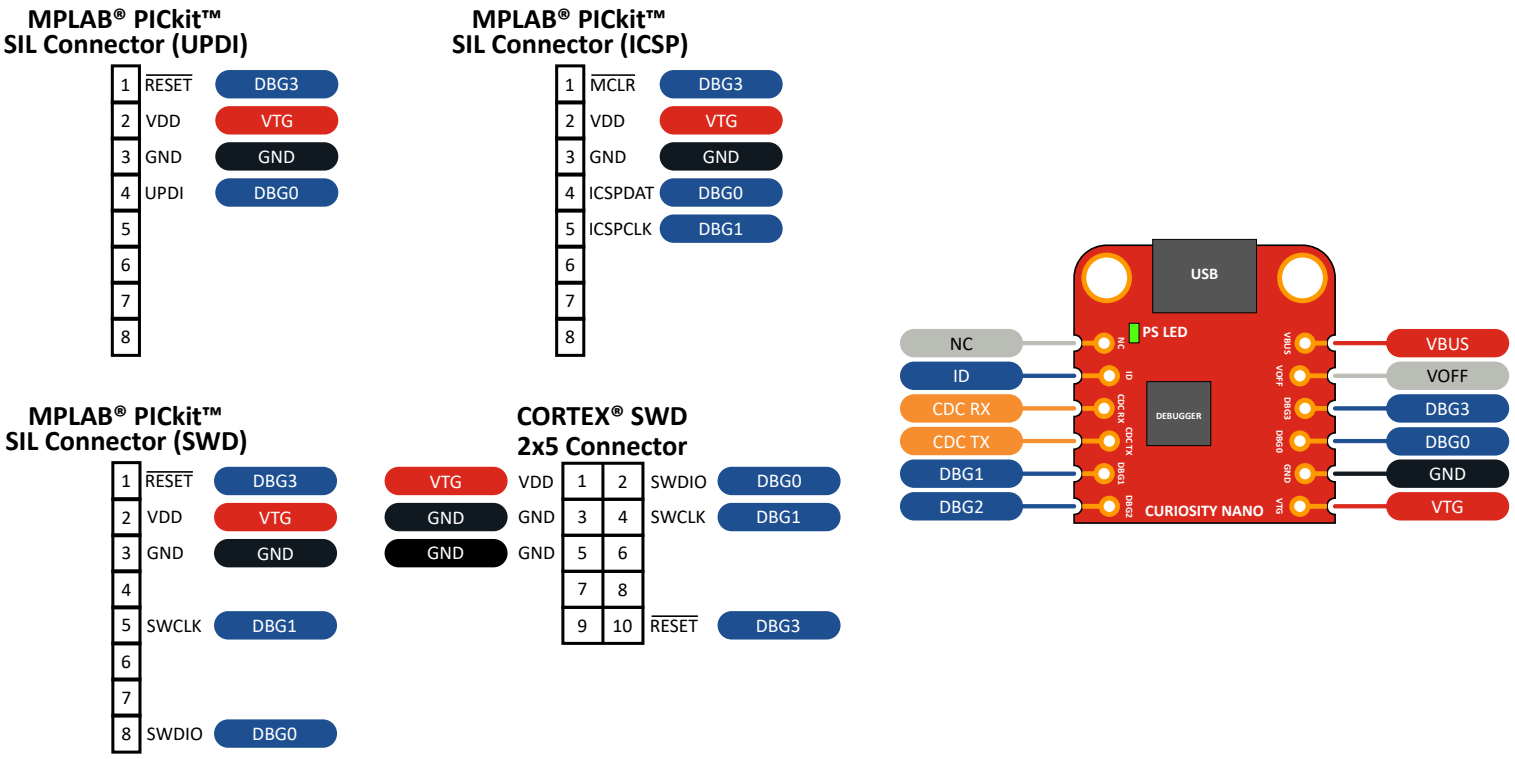


Tip: To reconnect any cut connections, use solder or mount a 0 Ω 0402-size resistor across the cut strap.

6.5. Connecting External Debuggers

Although the board includes an on-board debugger, external debuggers can also be connected directly to the target device for programming and debugging. When the on-board debugger is not actively in use, it keeps all pins connected to the board edge and the target device in a tri-state condition. This ensures that the on-board debugger does not interfere with any external debug tools.

Figure 6-3. Connecting an External Debugger/Programmer to a Curiosity Nano Board



⚠ CAUTION To prevent contention, do not use the on-board debugger for programming or debugging while the external debugger is connected.

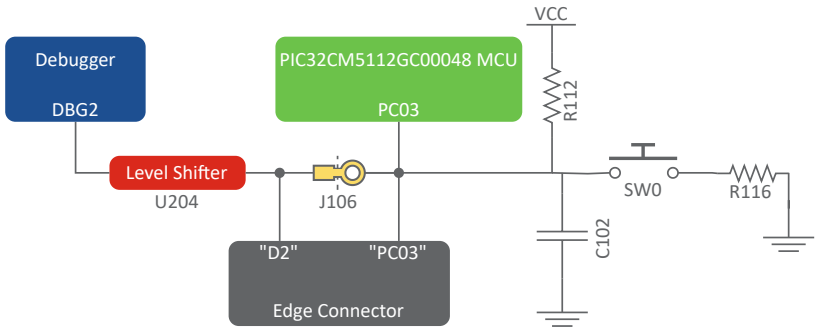
7. Hardware Peripherals

Kit hardware peripherals overview.

7.1. Mechanical Switch

The PIC32CM GC00 Curiosity Nano + Touch board has one mechanical switch - a generic, user-configurable switch. Pressing it connects the I/O pin to ground (GND).

Figure 7-1. PIC32CM GC00 Curiosity Nano + Touch SW0 Block Diagram



Tip: There is already an externally connected pull-up resistor R112 on the switch. Enabling the internal pull-up on the pin PC03 is optional and not required for correct operation.

Table 7-1. Mechanical Switch Connection

PIC32CM5112GC00048 Pin	Description	Default Connection
PC03	User switch (SW0), supports DGI event monitoring.	• SW0 • Edge connector • On-board debugger

7.2. LED

One yellow user LED is available on the PIC32CM GC00 Curiosity Nano + Touch board. It can be controlled by either GPIO or PWM. Driving the connected I/O line to PIC32CM5112GC00048's VDDIO will activate the LED.

Figure 7-2. PIC32CM GC00 Curiosity Nano + Touch LED0 Block Diagram

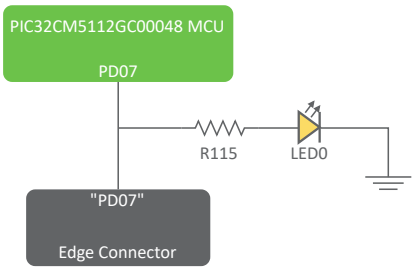


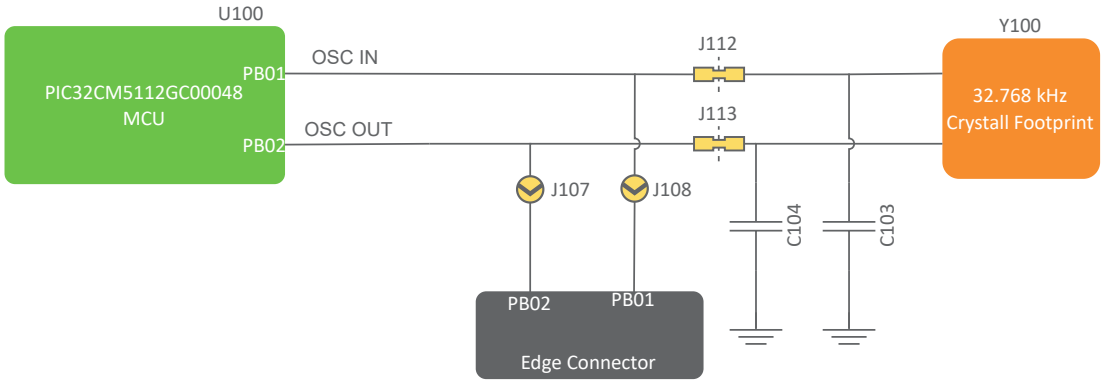
Table 7-2. LED Connection

PIC32CM5112GC00048 Pin	Description	Default Connection
PD07	User LED (yellow), active high.	• LED0 • Edge connector

7.3. Crystal

The PIC32CM GC00 Curiosity Nano + Touch Board has a 32.768 kHz mounted crystal. The crystal is connected to the target device by default. In addition, there is a provision to use the crystal pins as the GPIO pins routed to the edge connector.

Figure 7-3. 32.768 kHz Crystal Block Diagram



Note: The 32.768 kHz crystal on the PIC32CM GC00 Curiosity Nano + Touch is included for use and testing with the PIC32CM5112GC00048 External 32.768 kHz Oscillator (XOSC32K) configured in High-Power mode.

Table 7-3. Crystal Connections

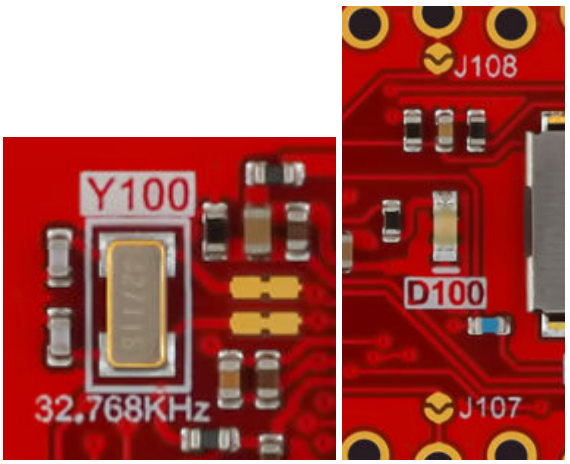
PIC32CM5112GC00048 Pin	Description	Default Connection
PB02	Crystal output, XTAL32K1	32.768kHZ crystal
PB01	Crystal input, XTAL32K2	

WARNING Always disconnect the board from all power sources making any hardware modifications.

How to Connect the Crystal to the Edge Connector

1. Disconnect the two I/O lines routed to the 32.768kHZ crystal by cutting the two cut straps to the right of the crystal, J112 and J113.
2. Connect the two I/O lines to the edge connector by soldering on a blob on each circular solder point, J107 and J108.

Figure 7-4. 32.768 kHz Crystal Overview

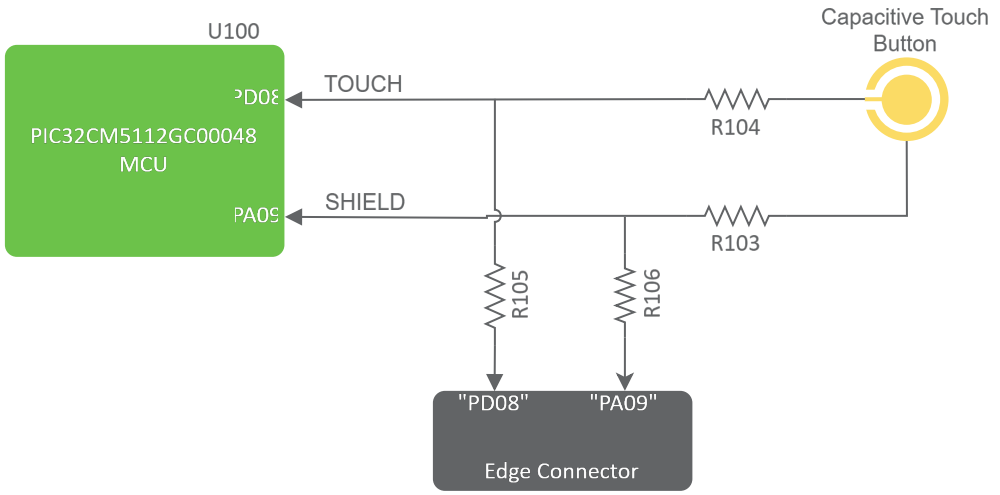


The AN2648 application note from Microchip contains more information about oscillator allowance and safety factors.

7.4. Touch Button

The PIC32CM GC00 Curiosity Nano + Touch board has a single capacitive touch button with an active shield. For details on configuration and usage, refer to the Peripheral Touch Controller (PTC) chapter in the PIC32CM GC00 Family Data Sheet.

Figure 7-5. PIC32CM GC00 Curiosity Nano + Touch Touch Button Block Diagram



Tip: Generate the code with the capacitive touch library in MPLAB® Harmony and visualize touch sensor data in MPLAB® Data Visualizer.

Table 7-4. Capacitive Touch Button Connection

PIC32CM5112GC00048 Pin	Description	Default Connection
PA09	Shield connection for improved noise immunity	• Touch button shield • Edge connector (disconnected by default)

Table 7-4. Capacitive Touch Button Connection (continued)

PIC32CM5112GC00048 Pin	Description	Default Connection
PD08	Capacitive touch connection	• Touch button sensor • Edge connector (disconnected by default)

Connection of the Touch button I/O lines to the Edge Connector

Two 0 Ohm resistors R105 and R106 are soldered onto the board by default. This allows for a shared connection of the touch button pins with the edge connector for other uses as GPIOs.

Figure 7-6. 0 Ohm resistors connections to the Edge Connector

WARNING Always disconnect the board from all power sources before making any hardware modifications.

Important: Using the touch button lines for other purposes via the edge connector will affect the touch button's performance and may cause it to not function as intended.

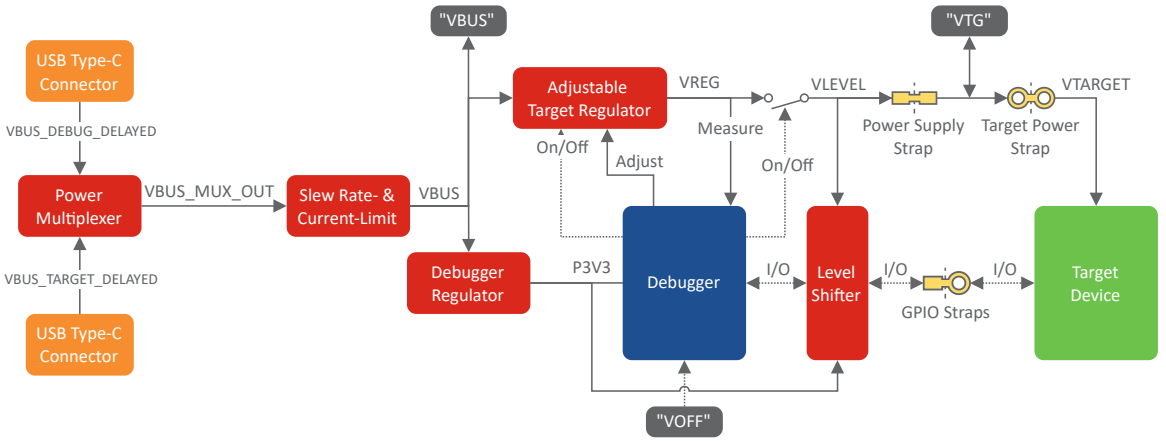
8. Power Supply

The board can be powered through either of its two USB connectors. The power supply uses two LDO regulators: A fixed 3.3V regulator for the on-board debugger and an adjustable regulator for the target device and its peripherals.

When the USB is connected, there is a 1 ms start-up delay before power is applied, and a dedicated current-limiting IC restricts the supply current to approximately 500 mA to protect the board and connected devices. The figure below shows the full power supply design of the PIC32CM GC00 Curiosity Nano + Touch.

The maximum input voltage to the target device depends on both the USB input voltage and the on-board debugger's configuration. While the debugger can be set to allow up to 5.5V, the actual voltage will never exceed the USB input, which typically ranges from 4.4V to 5.25V. The lower of these two values determines the maximum voltage available to the target device.

Figure 8-1. Power Supply Block Diagram



Info: The power MUX allows powering the board by either USB port. If both USB power sources are connected, the MUX will select the target USB port as the power source.

8.1. Target Regulator

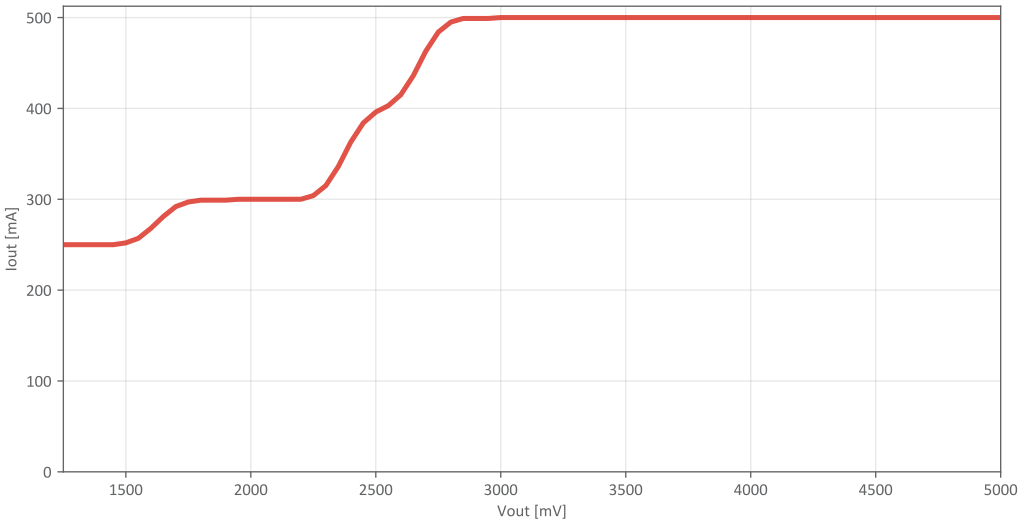
The MIC5353 variable output LDO supplies power to the target section. The on-board debugger controls the regulator's output voltage by adjusting its feedback. The on-board debugger restricts the output voltage to the safe operating range of the PIC32CM5112GC00048 (1.8–3.6V).

By default, the board is configured to run at 3.3V. This setting can be changed in Microchip IDEs, and any changes made will persist through power cycles. The board voltage can be adjusted using one of the following methods:

- **Microchip IDE:** Configure the voltage setting in the IDE. Voltage changes are applied when the debugger is accessed (e.g., during programming, reading memory, or refreshing tool status).
- **Drag-and-drop command files:** Set common voltages quickly using command files. For details, see Nano Debugger Manual.
- **pymcuprog:** Use the pymcuprog tool to set the board voltage.

The MIC5353 can supply up to 500 mA, but the actual maximum current may be lower due to thermal shutdown, which depends on input voltage, output voltage and ambient temperature. The figure below illustrates the maximum output current limits of the regulator at a 5.1V input and 23°C ambient temperature.

Figure 8-2. MIC5353 Maximum Output Current vs. Output Voltage at 5.1V Input, 23°C Ambient



The on-board debugger monitors target voltage. If the voltage deviates by more than ±100 mV from the set target voltage, or if external voltage is applied to VTG without VOFF pulled low, the on-board debugger disables the regulator and blinks the status LED rapidly. See the Nano Debugger Manual for more details.

8.2. External Supply

The PIC32CM GC00 Curiosity Nano + Touch can be powered by an external voltage through the VTG pin, as an alternative to the on-board target regulator.

To safely use external power, follow these steps:

1. Pull the VOFF pin to GND to disable the on-board regulator.
2. Apply external voltage to the VTG pin.

⚠ WARNING

- Never apply voltage to VOFF; leave it floating to enable the on-board supply.
- Only apply external voltage to VTG after pulling VOFF to GND. Failing to do so may cause damage to the board.

The on-board debugger monitors the supplied voltage. If VOFF is not pulled to ground and the external voltage differs by more than ±100 mV from the regulator setting, the debugger disables the regulator and begins blinking the status LED rapidly. When the voltage returns to within ±100 mV, normal operation resumes and the LED stops blinking.

Programming, debugging, and data streaming with external power are only supported when the USB cable is connected, as it supplies power to the debugger and level shifters. With the USB connected, about 100 µA is drawn from the external supply for level shifters and voltage monitoring. If the USB cable is disconnected, the level shifters may draw up to 5 µA (typically as little as 100 nA).

Table 8-1. Voltage Limits

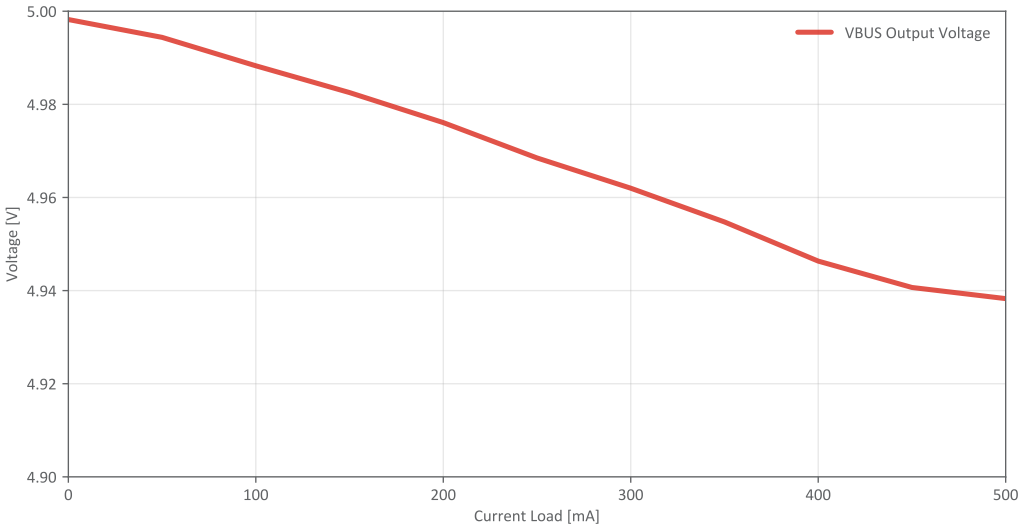
Parameter	Value
PIC32CM5112GC00048 operating range	1.8–3.6V
Absolute maximum external voltage	5.5V

WARNING Exceeding these limits may result in permanent damage to the board.

8.3. VBUS Output Pin

The PIC32CM GC00 Curiosity Nano + Touch provides a VBUS output pin that supplies 5V for powering external components. The VBUS voltage is not regulated and directly follows the USB input voltage, which may vary depending on the USB source. VBUS is protected by the same start-up delay and current limiting described in the Power Supply section. Be aware that as the current load on the VBUS output increases, the output voltage may decrease. The chart below illustrates how the VBUS output voltage varies with different current loads.

Figure 8-3. Load Current Impact on VBUS Output Voltage at 5V USB



8.4. Cut Straps

Curiosity Nano boards feature two cut straps for power measurement and isolation:

J200 - Power Supply Strap:

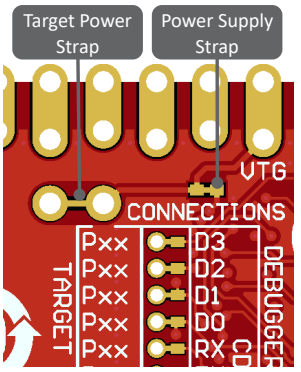
Cutting this strap fully separates the target power from the level shifters and on-board power supply. This allows for accurate current measurements when using an external power supply.

Info: Leakage back through the load switch is in the microampere range.

J201 - Target Power Strap:

For current measurements using the on-board power supply, cut this strap to measure the current drawn by the target. A 100 mil pin header can be mounted to J201 for easier connection of a measuring instrument.

Figure 8-4. Power Supply Cut Straps



8.5. Low-Power Measurement

Power for the target device is supplied via the on-board regulator or the VTG pin, routed through the Target Power Strap J201. To accurately measure the current consumption of the target device and any connected peripherals, cut the Target Power Strap (J201) on the bottom side and connect an ammeter across it.

To measure the minimum power consumption of the target device, follow these steps:

1. Cut the Target Power Strap (J201) with a sharp tool.
2. Solder a 1x2 100 mil pin header into the footprint.
3. Connect an ammeter across the pin header.
4. Write firmware that:
   a. Tri-states any I/O connected to the on-board debugger.
   b. Sets the target device in its lowest power sleep mode.
5. Program the firmware into the target device.
6. Measure the current draw.

The five on-board level shifters can each leak up to 2 µA, totaling up to 10 µA. To reduce leakage, keep the I/O pins to the level shifters tri-stated. For full isolation, disconnect the level shifters as described here. With the USB connected, the level shifters and voltage monitoring draw about 100 µA; with the USB disconnected, leakage drops to 5 µA or less.

8.6. Power Supply Exceptions

This section summarizes most issues that can arise with the power supply.

Target Voltage Shuts Down

If the target draws too much current, the MIC5353 regulator may trigger thermal shutdown. Reduce the load to restore operation.

Target Voltage Setting is Not Reached

The MIC5353 output is limited by the USB input voltage (4.4–5.25V). If the set voltage isn't reached, use a higher-quality USB source or supply external voltage via the VTG pin.

Target Voltage is Different From Setting

Applying external voltage to VTG without pulling VOFF low can cause voltage mismatch. If the voltage deviates by more than ±100 mV, the debugger disables the regulator and the PS LED blinks rapidly. Remove the external voltage to restore normal operation.

No or Very Low Target Voltage and PS LED is Blinking Rapidly

A full or partial short circuit can cause this and is a specific case of the issue above. Remove the short circuit, and the on-board debugger will re-enable the on-board target voltage regulator.

No Target Voltage and PS LED is Lit (Case 1)

This situation occurs if the target voltage is set to 0.0V. To fix this, set the target voltage to a value within the specified voltage range for the target device.

No Target Voltage and PS LED is Lit (Case 2)

This situation can occur when cutting the Power Supply Strap (J200) and/or the Target Power Strap (J201) and leaving them open. Restore the connection by bridging or adding a jumper.

VBUS Output Voltage is Low or Not Present

Excessive current on VBUS triggers the MIC2009 current limit, cutting off VBUS. Reduce the load to restore output.

9. Hardware Revision History and Known Issues

Provides information about the latest board revision, known issues, and differences from previous versions.

9.1. Identifying Product ID and Revision

There are two ways to find the revision and product identifier of the PIC32CM GC00 Curiosity Nano + Touch: the kit window in your Microchip development environment or the sticker on the bottom of the PCB.

The kit window appears in Microchip development environments when the PIC32CM GC00 Curiosity Nano + Touch is connected to the computer. In the VS Code® environment, the kit window is accessed through the tool window.

The first nine digits of the serial number, listed under kit information, contain the product identifier and revision.

Tip: If closed, the Kit Window can be opened in VS Code® using the Command Palette **(Ctrl + Shift + P)** and typing the command **MPLAB: Show kits view**.

The same information is found on the sticker on the bottom side of the PCB. The data matrix code on the sticker contains a string with the product identifier 02-01517, revision, and serial number.

The product identifier and revision are also printed in plain text as 02-01517/rr, where "rr" represents the revision. The serial number is printed on the following line.

The string in the data matrix code has the following format:

```
nnnnnnnrrfffssssss
```

n = product identifier

r = revision

f = fabrication code

s = serial number

9.2. Revision 1

Initial released revision. PIC32CM5112GC00048 revision A0 is mounted on the board.

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10. Document Revision History

This section lists changes by revision to this document.

Revision A - June 2026

Initial release of document.

11. Appendix

The Appendix contains the product's Schematic, Assembly Drawing, Pinout Mapping and Bill of Materials.

11.1. Schematic

Figure 11-1. PIC32CM GC00 Curiosity Nano + Touch device Schematic

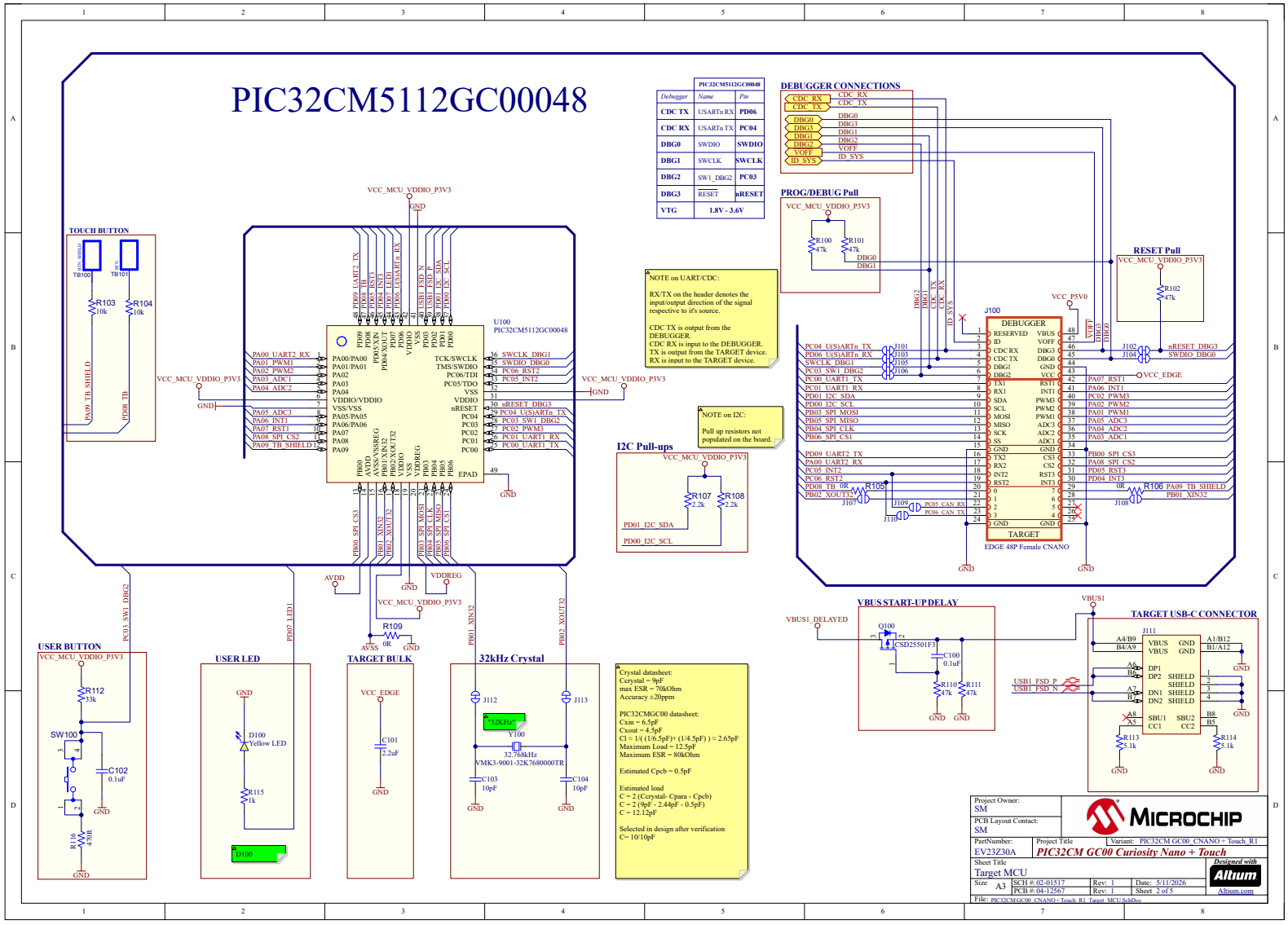


Figure 11-2. PIC32CM GC00 Curiosity Nano + Touch Debugger Schematic

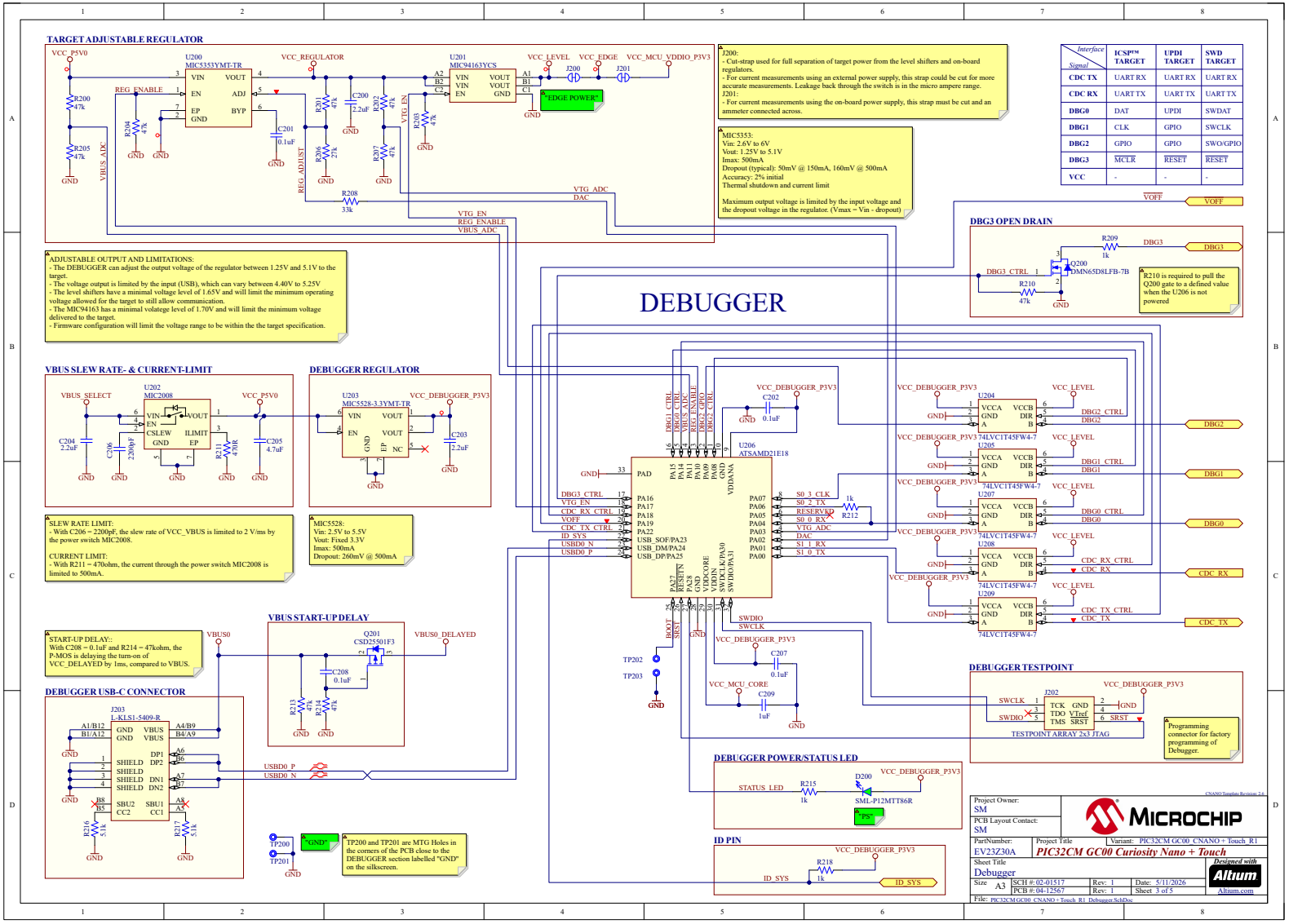
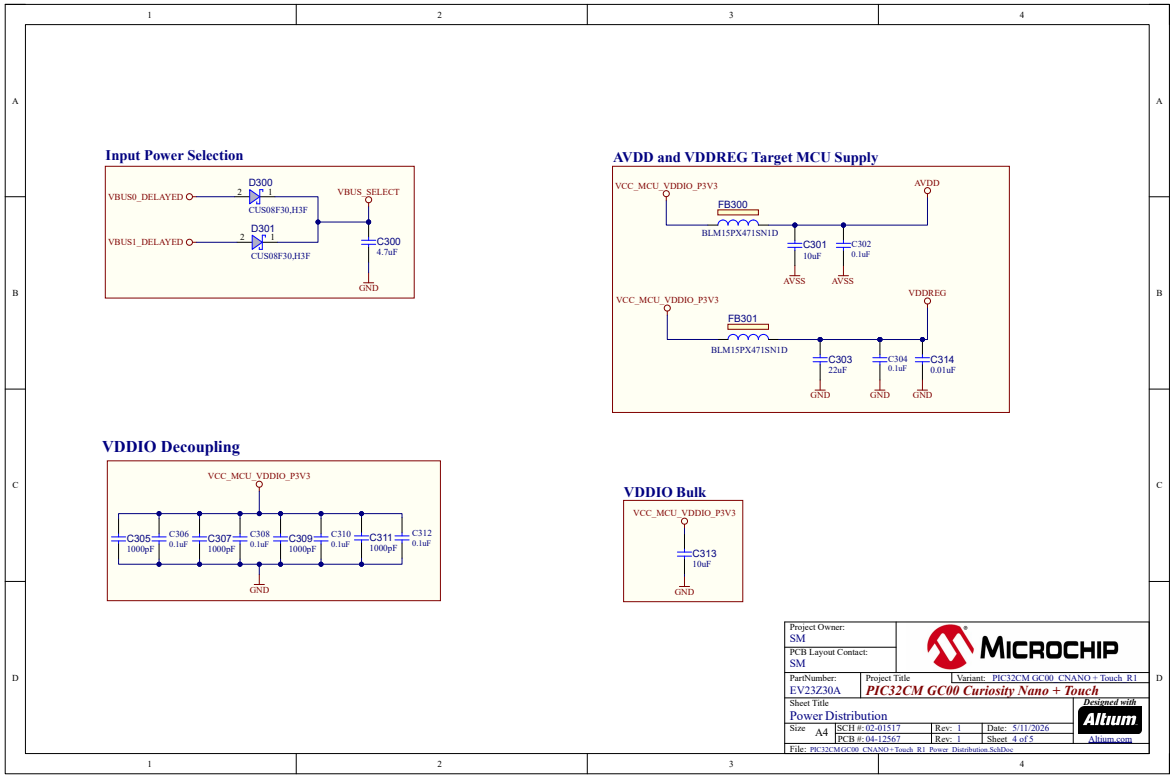


Figure 11-3. PIC32CM GC00 Curiosity Nano + Touch Power Supply Schematic



11.2. Assembly Drawing

Figure 11-4. PIC32CM GC00 Curiosity Nano + Touch Assembly Drawing Top

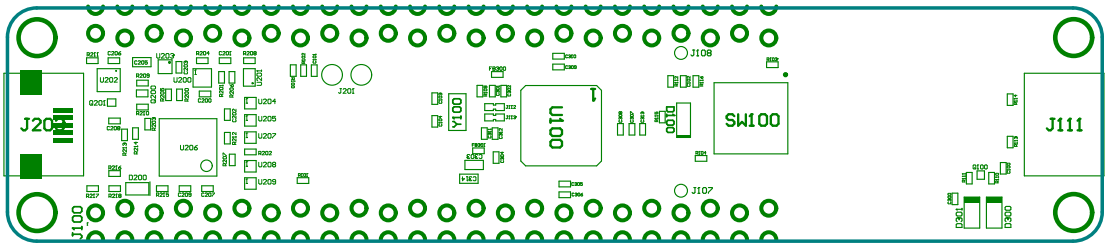
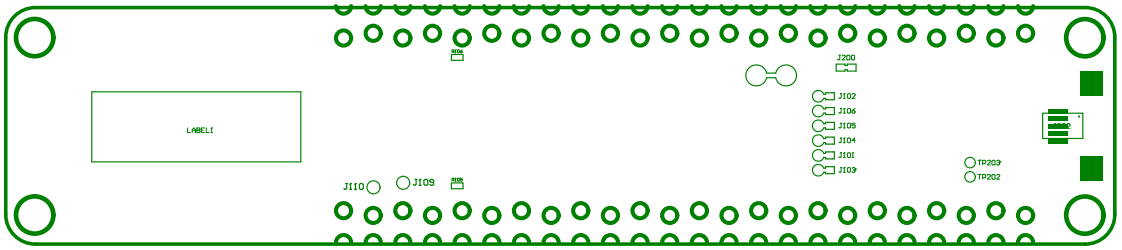
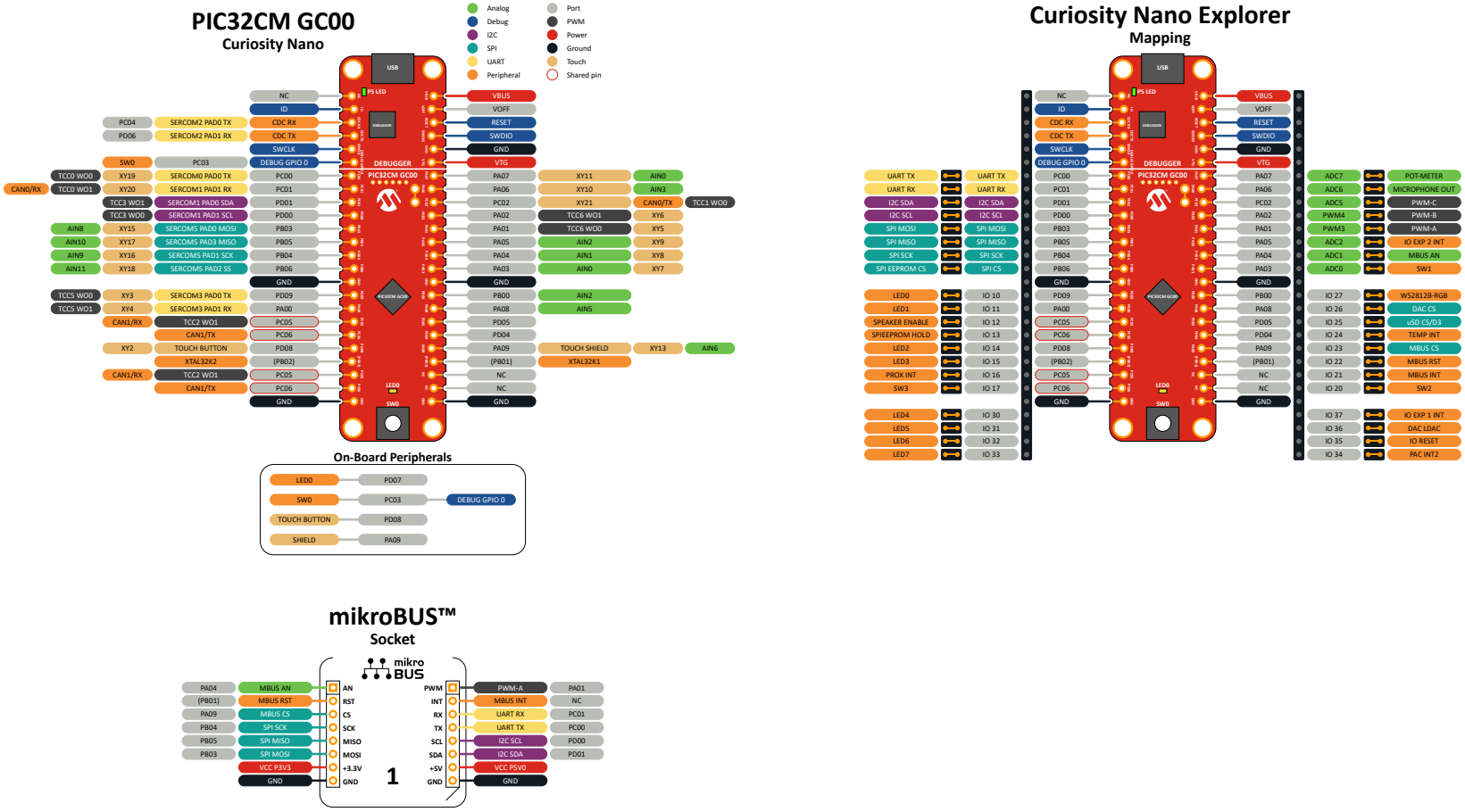


Figure 11-5. PIC32CM GC00 Curiosity Nano + Touch Assembly Drawing Bottom



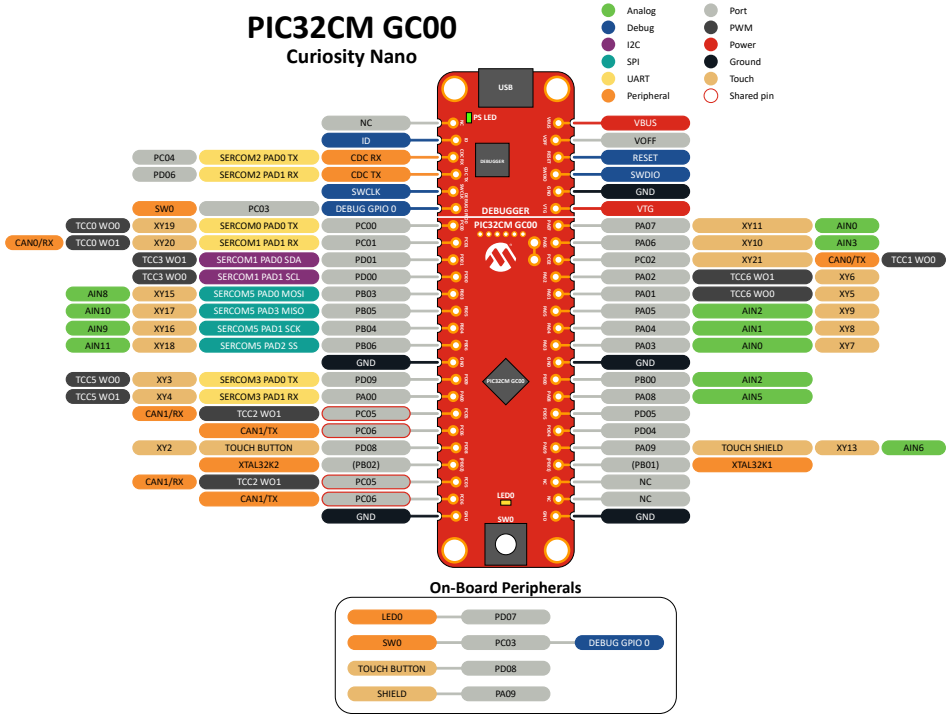
11.3. Curiosity Nano Explorer

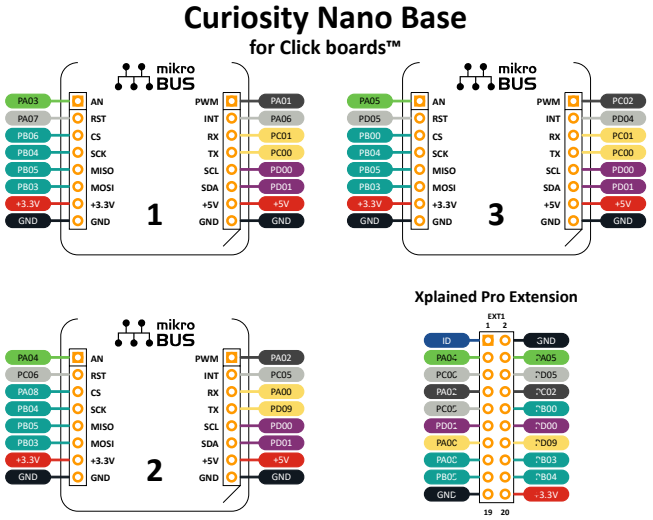
Figure 11-6. Curiosity Nano Explorer Pinout Mapping



11.4. Curiosity Nano Base for Click boards™

Figure 11-7. PIC32CM GC00 Curiosity Nano + Touch Pinout Mapping





11.5. Bill of Materials

Figure 11-8. PIC32CM GC00 Curiosity Nano + Touch Bill of Materials

Component list

PIC32CM GC00 Curiosity Nano + Touch

PCBA Number: 02-01517
PCBA Revision: 1
Variant: PIC32CM GC00_CNANO + Touch_R1

Print Date: 4/15/2026 3:00:10 PM

Fitted	Designator	Quantity	Value	Manufacturer 1	Manufacturer Part Number 1	Description_
Fitted	C100, C102, C201, C202, C207, C208	6	0.1uF	Kemet	C0402C104K4RAC7867	CAP CER 0.1uF 16V 10% X7R SMD 0402
Fitted, Not Fitted	C101, C200, C203, C204	3	2.2uF	Murata	GRM155R61A225KE95D	CAP CER 2.2uF 10V 10% X5R SMD 0402
Fitted	C103, C104	2	10pF	Murata	GJM1555C1H100JB01D	CAP CER 10pF 50V 5% NP0 SMD 0402
Fitted	C205	1	4.7uF	KEMET	C0603C475K8PAC7867	CAP CER 4.7uF 10V 10% X5R SMD 0603
Fitted	C206	1	2200pF	KEMET	C0402C222J3GACTU	CAP CER 2200pF 25V 5% C0G SMD 0402
Fitted	C209	1	1uF	KEMET	C0402C105K9PACTU	CAP CER 1uF 6.3V 10% X5R SMD 0402
Fitted	C300	1	4.7uF	Murata	GRM155R61A475MEAAD	CAP CER 4.7uF 10V 20% X5R SMD 0402
Fitted	C301, C313	2	10uF	Samsung Electro-Mechanics	CL05A106MP8NUB8	CAP CER 10uF 10V X5R SMD 0402
Fitted	C302, C304, C306, C308, C310, C312	6	0.1uF	TDK Corporation	C1005X7R1H104K050BB	CAP CER 0.1uF 50V 10% X7R SMD 0402
Fitted	C303	1	22uF	Samsung Electro-Mechanics	CL10A226MPCNUBE	CAP CER 22uF 10V 20% X5R SMD 0603
Fitted	C305, C307, C309, C311	4	1000pF	TDK Corporation	CGA2B2X7R1H102K050BA	CAP CER 1000pF 50V 10% X7R SMD 0402 AEC-Q200
Fitted	C314	1	0.01uF	KEMET	C0603X103K3RACTU	CAP CER 0.01uF 25V 10% X7R SMD 0603
Fitted	D100	1	Yellow LED	Rohm Semiconductor	SML-D12Y1WT86	LED YELLOW DIFFUSED 1608 SMD
Fitted	D200	1	LED SINGLE SML-P12MTT86R YELLOW-GREEN	Rohm Semiconductor	SML-P12MTT86R	DIO LED YELLOW-GREEN 2.2V 20mA 25mcd Clear SMD 0402
Fitted	D300, D301	2	CUS08F30,H3F	Toshiba Semiconductor and Storage	CUS08F30,H3F	DIO SCTKY CUS08F30,H3F 30V 800mA SOD-323
Fitted	FB300, FB301	2	470R	Murata	BLM15PX471SN1D	FERRITE 470R@100MHz 0.2R 1A SMD 0402
Fitted	J111, J203	2	USB2.0 Type-C FEMALE	KLS Electronic	L-KLS1-5409-R	CON USB2.0 Type-C Female SMD R/A
Fitted	LABEL1	1	PCBA LABEL 18X6mm	ACT Logimark AS	505462	LABEL PCBA 18x6mm Datamatrix Assy# / Rev / Serial / Date
Fitted	Q100, Q201	2	CSD25501F3	Texas Instruments	CSD25501F3	TRANS FET P-CH CSD25501F3 -20V -3.6A 0.076R LGA
Fitted	Q200	1	DMN65D8LFB-7B	Diodes Incorporated	DMN65D8LFB-7	TRANS FET N-CH DMN65D8LFB-7B 260mA 60V 430mW X1_DFN1006-3
Fitted	R100, R101, R102, R110, R111, R200, R201, R202, R203, R204, R205, R207, R210, R213, R214	15	47k	Yageo	RC0402FR-0747KL	RES TKF 47k 1% 1/16W SMD 0402
Fitted	R103, R104	2	10k	Vishay	MCS0402MC1002FE000	RES TF 10k 1% 1/10W SMD 0402 AEC-Q200
Fitted	R105, R106	2	0R	Vishay	CRCW04020000Z0EDHP	RES TKF 0R 1/5W SMD 0402 AEC-Q200
Not Fitted	R107, R108	0	2.2k	Panasonic	ERJ-2RKF2201X	RES TKF 2.2k 1% 1/10W SMD 0402
Fitted	R109	1	0R	Yageo	RC0402JR-070RL	RES TKF 0R 1/16W SMD 0402
Fitted	R112, R208	2	33k	Yageo	AC0402FR-0733KL	RES TKF 33k 1% 1/16W SMD 0402
Fitted	R113, R114, R216, R217	4	5.1k	Panasonic	ERJ-2RKF5101X	RES TKF 5.1k 1% 1/10W SMD 0402
Fitted	R115, R209, R212, R215, R218	5	1k	Panasonic	ERJ-2RKF1001X	RES TKF 1k 1% 1/10W SMD 0402
Fitted	R116, R211	2	470R	Yageo	RC0402FR-07470RL	RES TKF 470R 1% 1/16W MF 0402
Fitted	R206	1	27k	Yageo	RC0402FR-0727KL	RES TKF 27k 1% 1/16W SMD 0402
Fitted	SW100	1	TACT SPST	Dailywell Electronics Co.,Ltd.	TS604VM1-035CR-R	SWITCH TACT SPST 12 50mA TS604VM1-035CR-R SMD
Fitted	U100	1	PIC32CM5112GC00048	Microchip Technology	PIC32CM5112GC00048-I/U5B	MCHP MCU 32-BIT 72MHz 512kB 128kB PIC32CM5112GC00048-I/U5B VQFN-48
Fitted	U200	1	MIC5353YMT-TR	Microchip Technology	MIC5353YMT-TR	MCHP ANALOG LDO ADJ 500mA MIC5353YMT-TR MLF-6
Fitted	U201	1	MIC94163YCS	Microchip Technology	MIC94163YCS-TR	IC LOAD SWITCH HI SIDE 3A 6WLCSP
Fitted	U202	1	MIC2008	Microchip Technology	MIC2008YML-TR	MCHP ANALOG POWER SWITCH 5.5V 2.1A MIC2008YML-TR VDFN-6
Fitted	U203	1	MIC5528 3V3	Microchip Technology	MIC5528-3.3YMT-TR	MCHP ANALOG LDO 3.3V MIC5528-3.3YMT-TR 6-TDFN
Fitted	U204, U205, U207, U208, U209	5	74LVC1T45FW4-7	Diodes Incorporated	74LVC1T45FW4-7	IC VOLTAGE TRANSLATOR BI-DIR 1 CIRCUIT 74LVC1T45FW4-7 X2-DFN1010-6
Fitted	U206	1	ATSAMD21E18	Microchip Technology	ATSAMD21E18A-MUT	MCHP MCU 32-BIT 48MHz 256Kb 32Kb ATSAMD21E18A-MUT QFN-32
Fitted	Y100	1	32.768kHz	Microchip Technology	VMK3-9001-32K7680000TR	MCHP CRYSTAL 32.768kHz 9pF SMD L3.2W1.5XH0.9
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Approved

Notes

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