GigaBlox Nano PicoConn

PicoBlade Daughterboard for GigaBlox Nano

MPN: BB-GNP-A-1

Datasheet

May 2024

Board revision A

Contents

1 General Information

1.1 Functionality and Features of GigaBlox Nano PicoConn

GigaBlox Nano PicoConn is a passive connector breakout board for the GigaBlox Nano four port ethernet switch. It is designed to stack directly onto GigaBlox Nano to provide access to all four ethernet ports on standard Molex PicoBlade headers.

1.1.1 Features

- 4 x Molex PicoBlade for 10BASE-T/100BASE-TX/1000BASE-T ethernet ports
- 1 x Molex PicoBlade for power
- 26mm x 26mm board size
- Samtec RAZOR BEAM™ for power and ports

1.1.2 General Information

Weight	10 grams
Size	26mm x 26mm x 9.7mm
Operating Temperature	-20°C to +80°C
Storage Temperature	-30°C to +100°C

Table 1: General Information

1.1.3 General Operating Instructions

GigaBlox Nano PicoConn has no functionality by itself because it is purely a connector breakout. It must be used with GigaBlox Nano to provide ethernet port connectivity on Molex PicoBlade headers

To use GigaBlox Nano PicoConn, first mate the board with GigaBlox Nano, then apply an input voltage from 5.1 to 60V. Then connect external devices and GigaBlox Nano will begin functioning as an unmanaged 10/100/1000Mbit/s network switch.

1.1.4 Transformerless Ethernet

GigaBlox Nano PicoConn does not contain any transformers, meaning that it is a transformerless (capacitive) based ethernet system.

1.2 Safety Information

- This device can operate on voltages near and above 60V. Please read this manual before operating.
- This device is provided "as is". In-application testing prior to integration is recommended.
- This device is provided as an electronic circuit board, and requires integration into chassis for full ingress protection.
- Do not use this product in wet environments without integrating into a chassis.
- Do not operate this product beyond the rated temperature and voltages.

1.3 RoHS Certification of Compliance

The BotBlox GigaBlox Nano complies with the RoHS (Restriction of Hazardous Substances Directive) Certificate of Compliance.

2 Hardware Interfaces

2.1 Board Map

Razor Beam connector

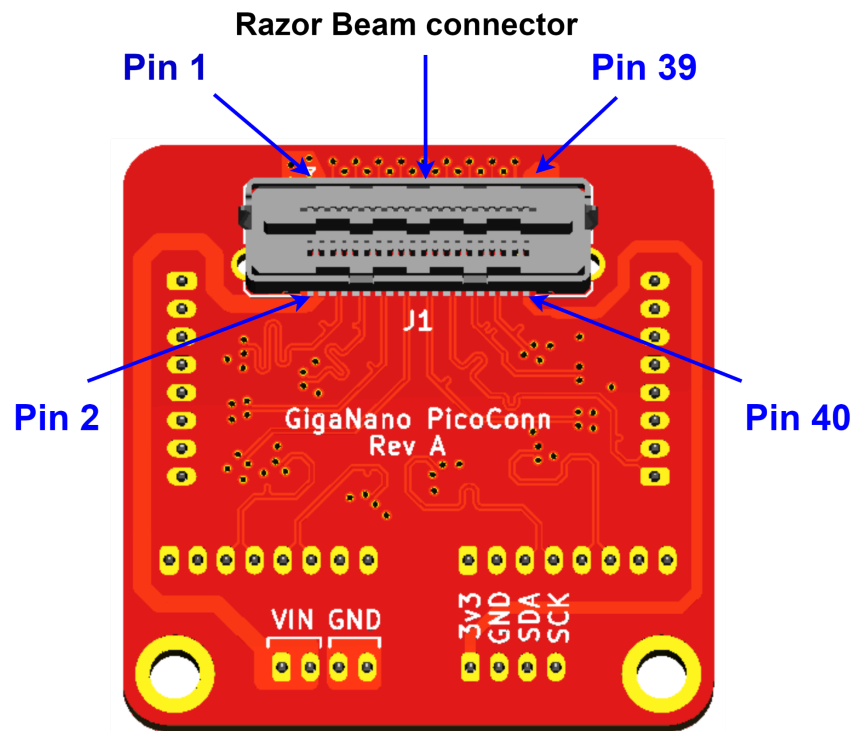**Pin 1**   **Pin 39**

Pin 2   **Pin 40**

Figure 1: GigaBlox Nano PicoConn Board Map (front)

The mapping used on the connectors is shown below in figures 7 and 8.

Figure 2: Mapping of ethernet signals onto PicoBlade connectors.
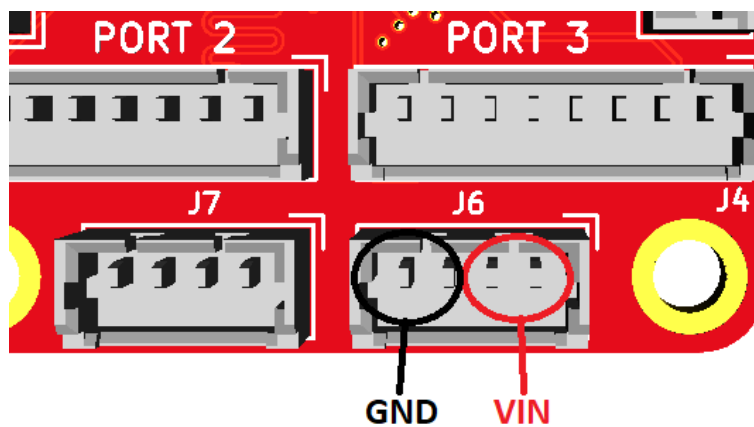

Figure 3: Mapping of power and ground onto PicoBlade connectors.

The mapping of these connectors is identical to the mapping used on our GigaBlox board, thus the cables can be used interchangeably with GigaBlox.

Be careful! RJConn uses J7 for power connections, while PicoConn uses J6 for power connections. Plugging power into the wrong connector will break the GigaBlox Nano.

2.2 Reference design for the Samtec RazorBeam connector on daughterboards

Figure 4 below shows the correct signal mapping to use on any daughterboard for GigaBlox Nano.
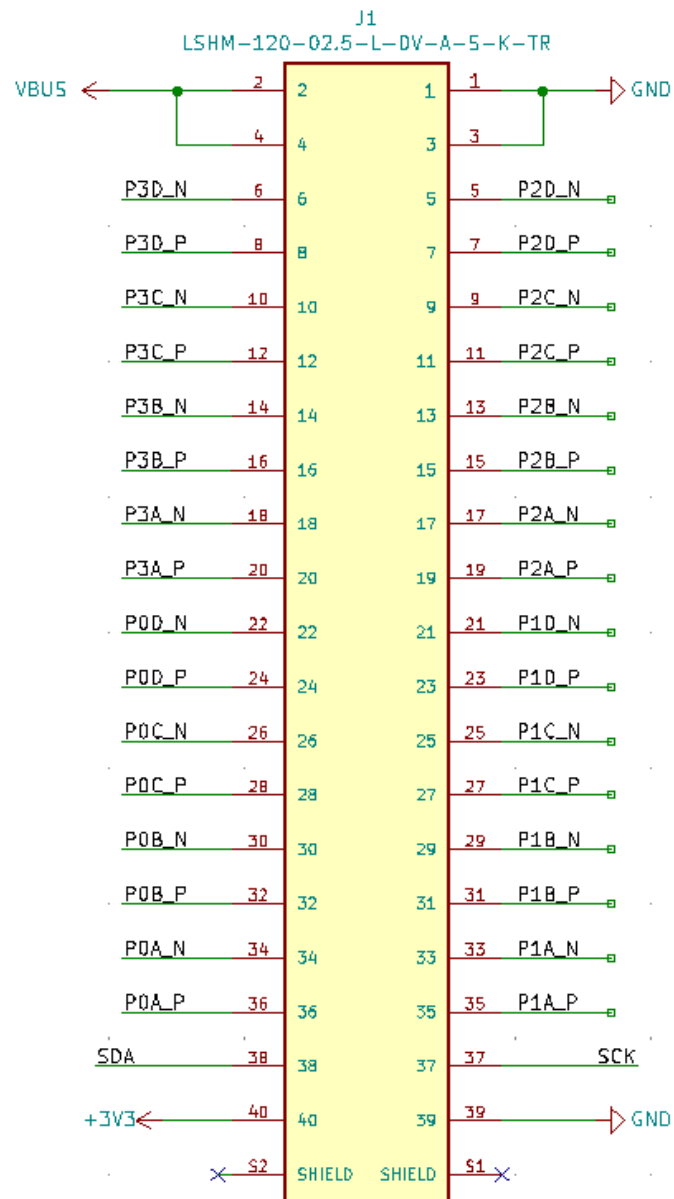

Figure 4: RAZOR BEAM connector on Daughterboards

3 Software Interfaces

GigaBlox Nano PicoConn is a passive board with no active electronics. Thus there is no software interface

4 Device Configuration

The device requires no configuration.

5 Device Characteristics

5.1 Operating Conditions

5.1.1 Absolute Maximum Ratings
Operating in these ranges will reduce the lifetime of the device.

Voltage Input Maximum	65V
Storage Temperature	-30°C +100°C
Operating Temperature	-20°C to +80°C

6 Datasheet Changelog

Date	Datasheet Version	Author	Notes
05/04/2022	A_A	Josh Elijah	Initial release
26/10/2023	A_B	Jaclyn Li	Updated size in Table 1.1.2 General Information and section 8
19/11/2023	A_C	Josh Elijah	Added a note to clarify that the RJConn board uses a different connector for power than PicoConn
01/05/2024	A_D	Jaclyn Li	Updated operating temperature range from "0°C to +70°C" to "-20°C to +80°C"

7 Contact

If you have any questions regarding this product, please contact us:

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8 Certificate of Conformity

The full text of the Certificate of Conformity of this product is available at the following web address. https://botblox.io/documentation/