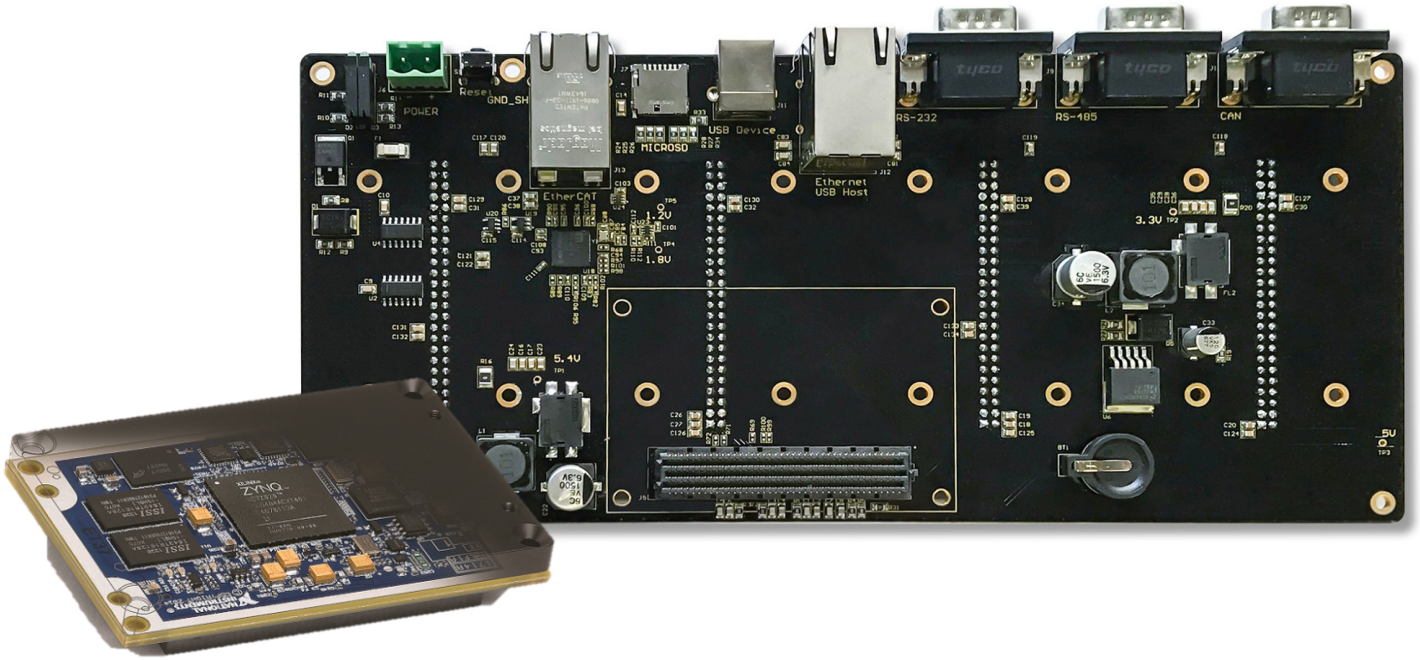
RS-9011D Adapter Board

Universal adapter board for NI sbRIO-9651



Overview

Universal adapter board for NI sbRIO-9651 (from National Instruments) is a multipurpose daughter card device intended for use in various applications.

The board incorporates most of the interfaces available on the NI sbRIO-9651, including Ethernet, USB Host and USB Host/Device interfaces. The board includes also serial interfaces RS-232, RS-485 and CAN, as well as microSD card interface. Having two GB Ethernet ports, board allows to use the primary Ethernet port for the connection to Ethernet networks, while the secondary port can be programmed to work with EtherCat protocol.

The board forms power supply for the NI sbRIO-9651.

The adapter board supports module cards, which are mounting using board-to-board connectors. The modules can be powered from the adapter board.

The control of module cards is accomplished from the NI sbRIO-9651 board, using digital channels, available on the board-to-board connectors.

Features

- *320-pin mezzanine connector for connections of NI sbRIO-9651 embedded device*
- *Supports up to 4 module cards*
- *GB Ethernet interface (2 ports)*
- *USB 2.0 Host interface*
- *USB 2.0 Host/Device interface*
- *microSD card interface*
- *RS-232 serial port*
- *RS-485 serial port*
- *CAN serial port*
- *94 digital bidirectional channels (3.3V)*
- *10 digital output channels (1.8V)*
- *10 digital output channels (3.3V)*

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Hardware Specifications

Ethernet Interface

Network interface ..... 10Base-T, 100Base-TX, 1000Base-T Ethernet
Compatibility ..... IEEE 802.3
Communication rates ..... 10 Mbps, 100 Mbps, 1,000 Mbps; auto-negotiated, half-/full-duplex

USB Host Interface

USB interface ..... USB 2.0, Hi-Speed
Maximum data rate ..... 480 Mb/s per interface

USB Host/Device Interface

USB interface ..... USB 2.0, Hi-Speed
Maximum data rate ..... 480 Mb/s per interface

microSD Card Interface

Supported standards ..... SD, SDHC
Throughput
Read ..... 12 MB/s max
Write ..... 9 MB/s max

CAN Interface

Baud rate
Maximum ..... 1 Mb/s
Minimum ..... 10 kb/s

RS-232 Serial Interface

Maximum data rate ..... 230,400 b/s
High-level output voltage ..... 5.4 V typ
Low-level output voltage ..... -5.4 V typ
Positive-going input threshold voltage ..... 1.6 V typ
Negative-going input threshold voltage ..... 1.1 V typ

RS-485 Serial Interface

Maximum data rate ..... 230,400 b/s
Differential output voltage ..... 2-3.6 V
Differential input threshold voltage ..... -125 mV typ
Line input resistance ..... 96 kOhm

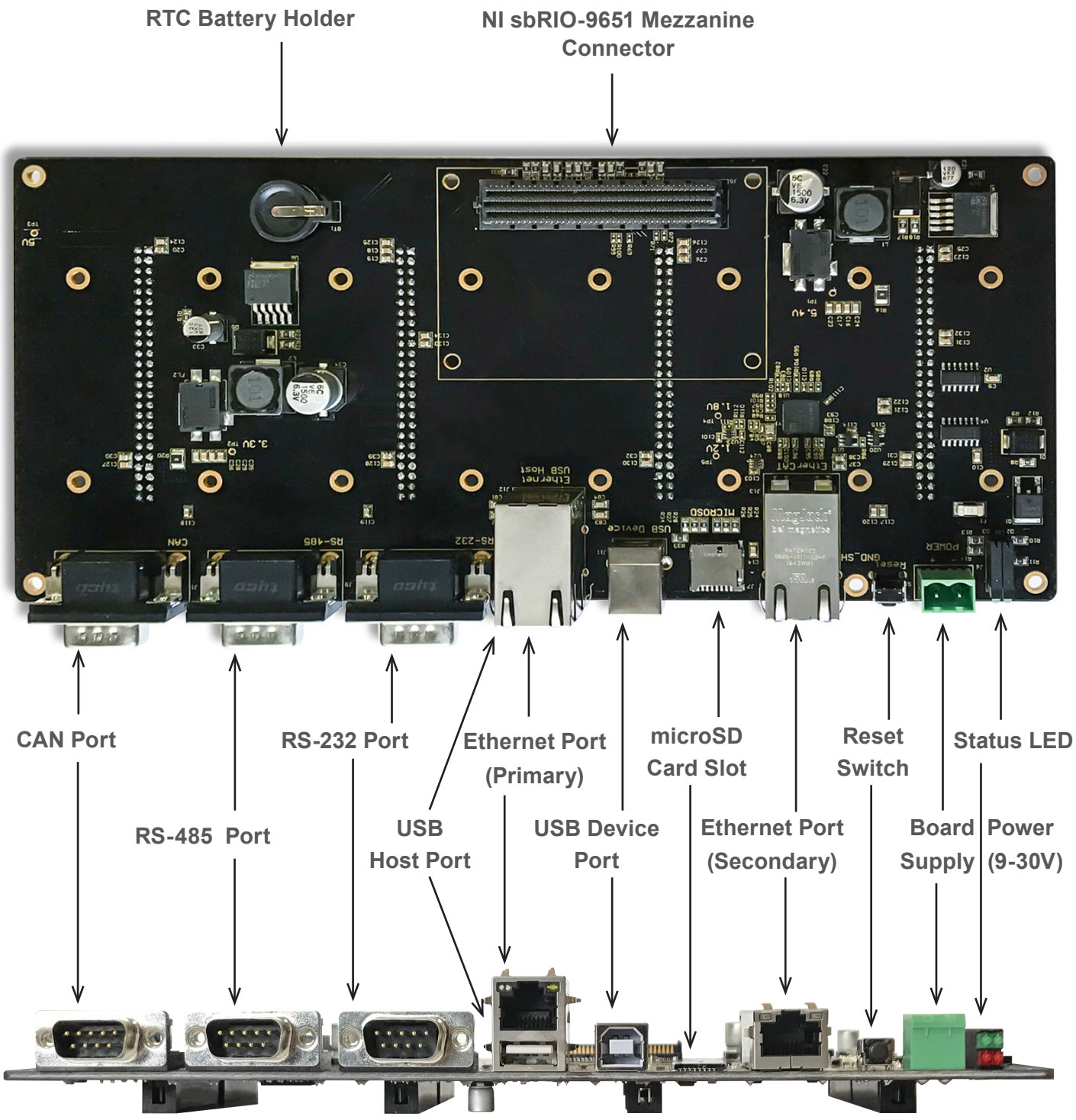
3.3V Bidirectional Digital Channels

Voltage level ..... 3.3 V
Characteristic impedance ..... 50 Ohm

1.8V/3.3V Digital Output Channels

Voltage level ..... 1.8V/3.3 V
Characteristic impedance ..... 50 Ohm

Board Functionality



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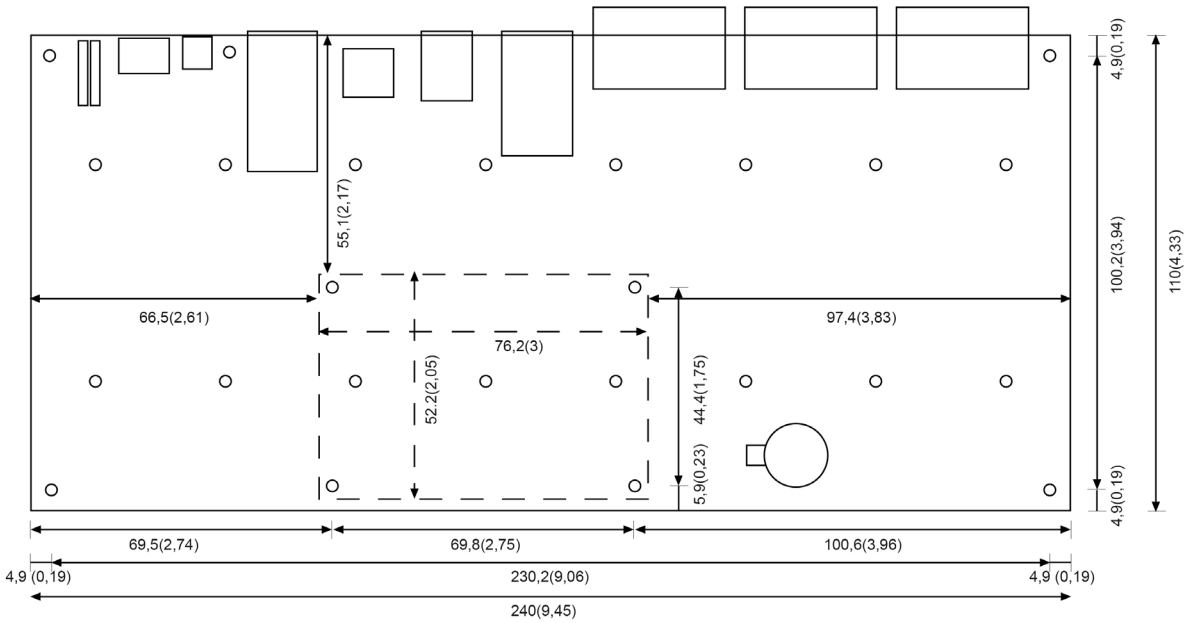
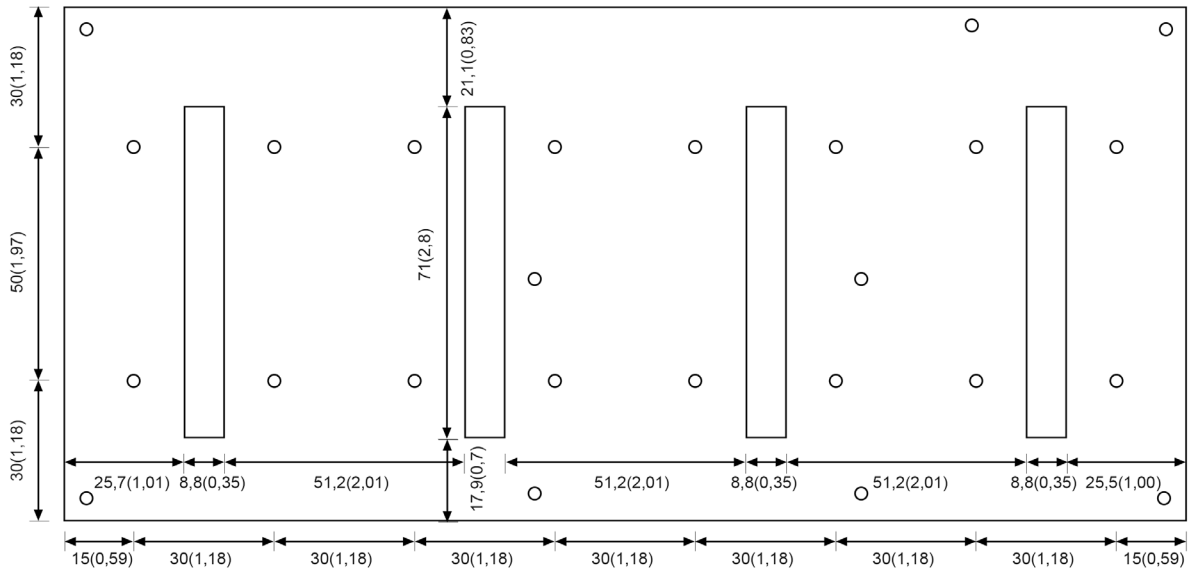
Board Dimensions

Top view.



Bottom view.



Board dimensions are given in millimeters (inches).*

**Note, provided board dimensions are preliminary and can be changed without a notice.*

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