Sharvielectronics USB To MCP2551 CAN Isolator Module User Manual

Contents

USB to MCP2551 CAN Isolated Module

USER MANUAL VER: 1.1

1. Overview

This module is designed to convert USB data to CAN bus signals while providing galvanic isolation, ESD protection, and noise immunity. It integrates the FT232RL USB-to-UART bridge, the MCP2551 CAN transceiver, the digital isolator, and the ESD protection diode to ensure robust and reliable CAN communication.

2. Key Features

• FT232RL Features:

- FTDI (Future Technology Devices International Ltd.)
- Full-speed USB (12 Mbps) interface.
- Supports data rates up to 1 Mbps.
- 3.3V or 5V logic levels.
- Integrated EEPROM for configuration.
- Supports FIFO buffers for better data handling
- Interface USB-B
- RX, TX, PWR: Led indication

• CAN Features: Depends on ICs

- MCP2551 IC
- Fully compliant with ISO 11898-2 high-speed CAN specification.
- Supports data rates up to 1 Mbps.
- Low current consumption, especially in standby mode.
- Wide operating voltage range (4.5V to 5.5V).
- Protection against short circuits to ground or battery.
- Low electromagnetic emission (EMI) and high immunity.

• Isolated CAN Interface:

- 2500Vrms isolation voltage.
- Wide operating temperature range (-40°C to +125°C).
- Low power consumption, and low EMI

3. Pinout and Connections

- 5V: DC 5V Power Out
- CANH: CAN High signal
- CANL: CAN Low signal
- GND: Ground

4. Applications

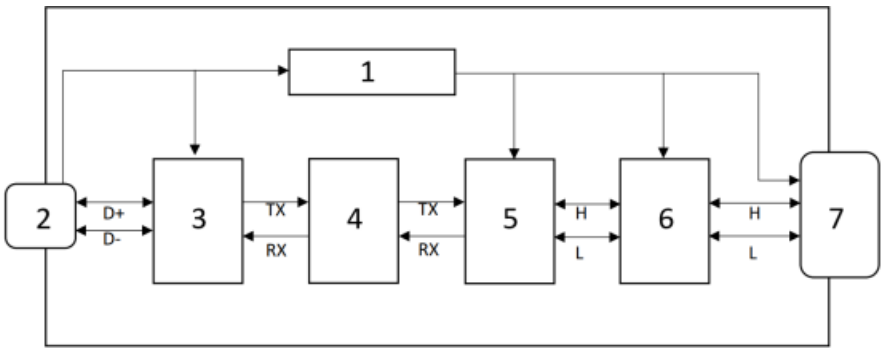
- Industrial Automation and Control Systems
- Automotive Diagnostics
- Embedded Systems and IoT Applications
- Building Automation Systems
- Test and Measurement Equipment
- Robotics
- Power Distribution and Energy Management Systems

- Agriculture and Environmental Monitoring
- Medical Equipment

Electrical Characteristics:

Parameter	Value
Operating Voltage	5.0V
Operating Current	125 mA
ESD Rating	30kV (contact discharge)
Peak Pulse Power (PPP)	200W (8/20µs waveform)
Data Rate	Up to 1 Mbps
CAN Bus	ISO 11898-2 compliant
USB Interface	USB 2.0 compliant (Full Speed)
Temperature Range	-40°C to 85°C
Board Size (LxWxH)	80x19x14 mm

Block Diagram:



1. DC to DC Isolator
2. USB
3. FT232RL
4. Isolator
5. MCP2551
6. 30KV ESD Protection
7. 5V HL GND

USB to CAN Adapter with Multi Port USB Hubs Interface Details:
Remove jumper cap, 120-ohm terminator resistor.

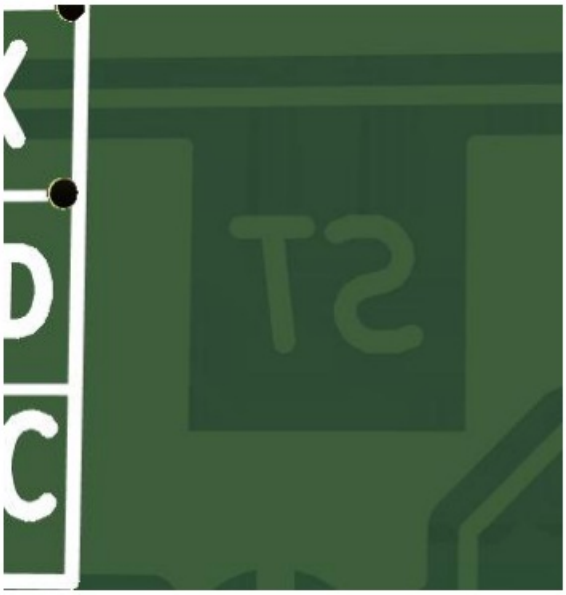
Ordering Information:

ST-X-CAN-ISO-XX-X
(1) (2) (3)

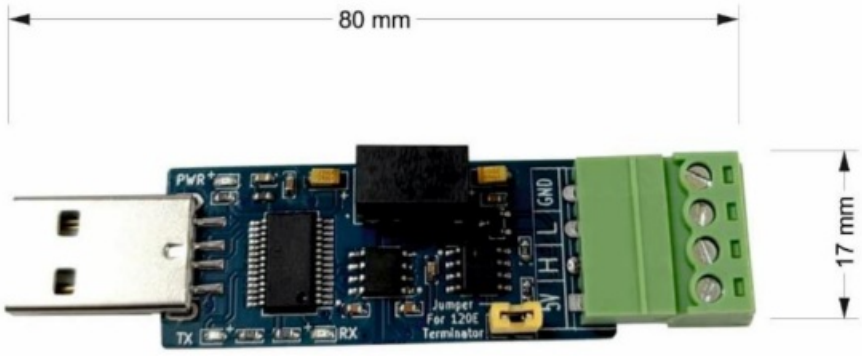
1 X - USB interface Type
2 XX – Data Speed
3 X - Type

Part Number	Description	USB Type	Data Speed	Type
ST-A-CAN-ISO-01-B	Isolated CAN	USB -A	1 Mbps	Open Board
ST-B-CAN-ISO-01-B	Isolated CAN	USB -B	1 Mbps	Open Board
ST-A-CAN-ISO-01-A	Isolated CAN	USB -A	1 Mbps	ABS
ST-A-CAN-ISO-10-B	Isolated CAN	USB -A	10 Mbps	Open Board

Original Board Marking:



Board Dimension:



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Product Identification: ST-X-CAN-ISO-XX-X
Version: Rev1.1

Date: 12-01-2025
Prepared by: R&D Team

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Documents / Resources

	Sharvielectronics USB To MCP2551 CAN Isolator Module [pdf] User Manual ST-A-CAN-ISO-01-B, ST-B-CAN-ISO-01-B, ST-A-CAN-ISO-01-A, ST-A-CAN-ISO-10-B, USB To MCP2551 CAN Isolator Module, MCP2551 CAN Isolator Module, CAN Isolator Module, Isolator Module, Module

References

- User Manual