CANmod.router: 4 x CAN to 1 x CAN (or USB) Converter/Gateway

GENERAL

• Functionality: The device routes data from four isolated CAN buses (incl. FD) to one primary CAN bus (or USB)

• Included: CANmod.router module and USB dust cover (DB25-to-4x-DB9 adapter and USB adapter not included)

• Firmware: Supports free firmware updates via USB for adding features

• Configuration: Configuration files based on the popular open source JSON schema concept (similar to the CANedge)

• Software: Free open source editor tool for easy device configuration (offline/online version available)

• Software: Free open source SavvyCAN GUI for streaming of raw / DBC decoded data via USB

• Software: Free open source Python API for streaming of raw / DBC decoded data via USB

• Safety: CE, FCC, IC and RoHS certified (see the Docs for certificates)

• Warranty: 1-year warranty

• Support: Free, fast & high quality support

• Origin: Denmark

ROUTER MODES

• Mux-Mode: Traffic from/to secondary CAN buses is muxed and transported through 'tunnels' via primary CAN bus

• Mux-Mode: Demuxing done via software/API tools to restore original CAN frames (channel IDs, CAN IDs, payloads)

• Mux-Mode: CANmod software/API with demuxing: SavvyCAN, USB Python API

• Mux-Mode: CANedge software/API with demuxing: MF4 Python API, mdf2mdf (and hence all CANedge tools)

CAN BUS (CAN-S)

• Channels: 4 x CAN channels (incl. CAN FD support)

• Isolation: Basic galvanic isolation (easily connect CAN buses not subject to high voltage differences)

• Standard: ISO 11898: Compliant with CAN (between 5K and 1 Mbit/s baud rates) and CAN FD (1M, 2M, 4M, 5M)

• Protocols: Receive/transmit raw data from/to CAN based protocols (J1939, CANopen, NMEA 2000, OBD2, UDS, ...)

• Identifiers: Compliant with CAN specifications 2.0A (11-Bit ID) and 2.0B (29-Bit ID)

• Retransmission: Retransmission of frames that have lost arbitration or been disturbed by errors

• Transceiver Protection: Protection: +/- 25kV HBM ESD, +/-12kV IEC ESD, +/-14 V bus fault, short circuit

• Transceiver Protection: Common mode input voltage: +/-12V

• Transceiver Protection: TXD dominant timeout (prevents network blocking in the event of a failure)

CAN BUS (CAN-P)

• Channels: 1 x CAN channel (incl. CAN FD support)

• Modes: The device can either broadcast the data onto the CAN bus - or provide it on-request

• Standard: ISO 11898: Compliant with CAN (between 5K and 1 Mbit/s baud rates) and CAN FD (1M, 2M, 4M, 5M)

• Identifiers: Compliant with CAN specifications 2.0A (11-Bit ID) and 2.0B (29-Bit ID)

• Termination: Termination can be toggled via switch below DB9 connector

• Retransmission: Retransmission of frames that have lost arbitration or been disturbed by errors

• Transceiver Protection: Protection: +/- 25kV HBM ESD, +/-12kV IEC ESD, +/-14 V bus fault, short circuit

• Transceiver Protection: Common mode input voltage: +/-12V

• Transceiver Protection: TXD dominant timeout (prevents network blocking in the event of a failure)

CONFIG (CAN-S)

• Independence: Each secondary CAN channel can be independently configured (router mode is set globally)

• Bit-Rate: Select between standard bit-rates (5K to 1M) or use custom bit-timing (configure per channel)

• Bit-Rate Auto-Detect: Bit-rates can be set manually (auto-detection pending FW)

• Silent Mode: Configurable silent mode: Restricted (acknowledge only) or monitoring (zero transmission)

• Filters: 32 regular/extended ID filters per channel (mask, acceptance, rejection)

• Prescalers: Prescale CAN frames to record e.g. by time (per X ms) or by data (e.g. if byte X or Y changes)

• Transmit: Transmit lists of up to 16 CAN frames per channel (single-shot/periodic)

• Transmit: Transmission can also be directly controlled from the CAN-P interface

• CAN Error Frames: Support for logging CAN error frames (bit-stuffing, form, CRC, bit, acknowledgement)

CONFIG (CAN-P)

• Bit-Rate: Select between standard bit-rates (standard: 5K to 1M, FD: 1M to 4M) or use custom bit-timing

• Identifier Customization: Individually configure each CAN ID (11-bit or 29-bit)

OTHER

• Precision: Cross-channel precision of 1 ms

• Frames/Second: Mux-mode: Route 6,000+ frames/second (Classical CAN) - see FAQ for details

ELECTRICAL

• Input Supply: +5V to +26V DC via the DB9 connector (power via pin 1 or pin 9)

• Input Supply: Alternatively power via USB (for updating firmware/config or for streaming data in real-time)

• Power Consumption: Extremely low (<1W) - no risk of battery drainage

• Protection: Reverse voltage protection on CAN-bus supply

• Protection: Transient voltage event protection on supply lines

MECHANICAL

• Enclosure & Weight: Compact aluminium enclosure: 65 x 48 x 24 mm (W x L x H excl. flanges & connectors). 75 grams

• Connector (Front): 1 x Standard D-sub 9 (DB9) connector

• Connector (Back): 1 x D-sub 25 (DB25) connector

• Pin-Out: See the product manual for the DB9/DB25 connector pin-outs

• USB: Standard mini USB connector for config/FW updates and streaming (USB cable available as option)

• LEDs: Module status via 7 external LEDs: Power, CAN-P, Memory, CAN-S1, CAN-S2, CAN-S3, CAN-S4

• Temperature: Operating temperature: -25°C to +70°C

• IP Rating: IP Rating 40

• Mounting: Module can be mounted via e.g. velcro strips