TRU COMPONENTS 3156515 USB-C CAN Bus Analyzer Instruction Manual

Contents

TRU COMPONENTS 3156515 USB-C CAN Bus Analyzer

Operating Instructions
USB-C® CAN bus Analyzer
Item no: 3156515

Operating Instructions for download

Use the link **www.conrad.com/downloads** (alternatively scan the QR code) to download the complete operating instructions (or new/current versions if available). Follow the instructions on the web page.

Intended use

- The product is a CAN bus analyzer. Use the product to read, send and monitor data in Controller Area Networks (CAN bus) via the supplied analyzer computer software.
- The product is intended for indoor use only. Do not use it outdoors.
- Contact with moisture must be avoided under all circumstances.
- If you use the product for purposes other than those described, the product may be damaged.
- Improper use can result in short circuits, fires, or other hazards.
- The product complies with the statutory national and European requirements.
- For safety and approval purposes, you must not rebuild and/or modify the product.
- Read the operating instructions carefully and store them in a safe place. Make this product available to third parties only together with the operating instructions.
- All company names and product names are trademarks of their respective owners. All rights reserved.
- USB4®, USB Type-C® and USB-C® are registered trademarks of USB Implementers Forum.

Delivery contents

- Converter
- Analyzer software (available from **www.conrad.com/downloads**)

- Operating instructions

Description of symbols

The following symbols are on the product/appliance or are used in the text:

 The symbol warns of hazards that can lead to personal injury.

Safety instructions

Read the operating instructions carefully and especially observe the safety information. If you do not follow the safety instructions and information on proper handling, we assume no liability for any resulting personal injury or damage to property. Such cases will invalidate the warranty/guarantee.

General

- The product is not a toy. Keep it out of the reach of children and pets.
- Do not leave packaging material lying around carelessly. This may become dangerous laying material for children.
- If you have questions which remain unanswered by this information product, contact our technical support service or other technical personnel.
- Maintenance, modifications and repairs must only be completed by a technician or an authorised repair centre.

Handling

Handle the product carefully. Jolts, impacts or a fall even from a low height can damage the product.

Operating environment

- Do not place the product under any mechanical stress.
- Protect the appliance from extreme temperatures, strong jolts, flammable gases, steam and solvents.
- Protect the product from high humidity and moisture.
- Protect the product from direct sunlight.

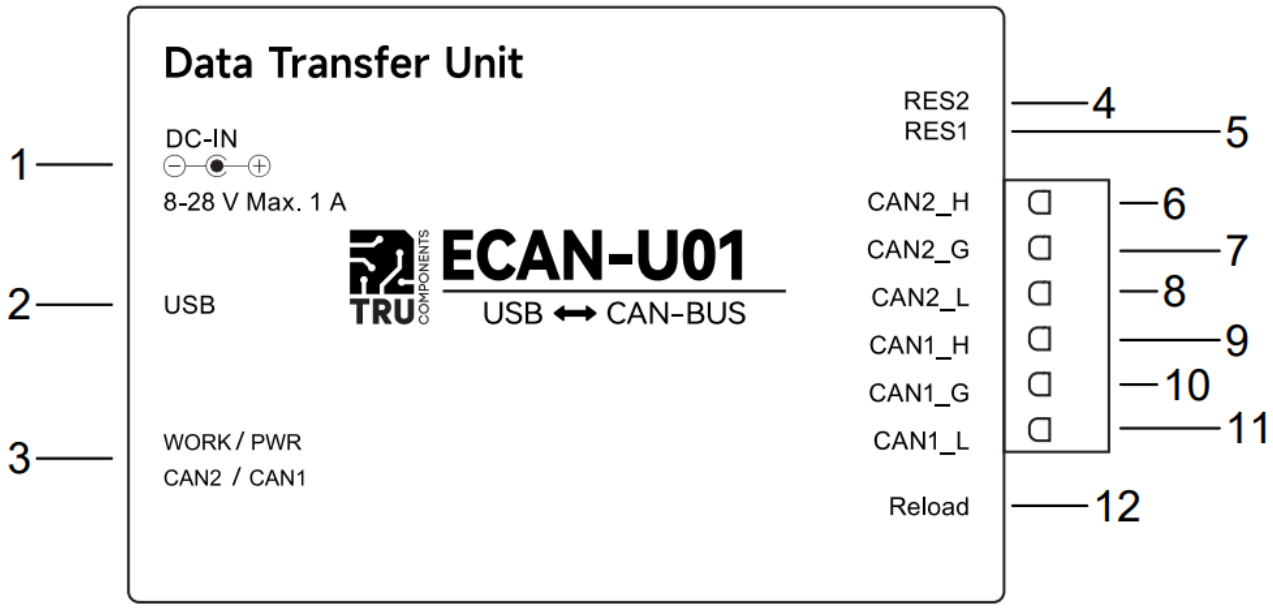
Operation

- Consult an expert when in doubt about the operation, safety or connection of the product.
- If it is no longer possible to operate the product safely, take it out of operation and pro-tect it from any accidental use. DO NOT attempt to repair the product yourself. Safe op-eration can no longer be guaranteed if the product:
    - is visibly damaged,
    - is no longer working properly,
    - has been stored for extended periods in poor ambient conditions or
    - has been subjected to any serious transport-related stresses.

Connected devices
Also observe the safety and operating instructions of any other devices which are con-nected to the product.

Product overview

Components

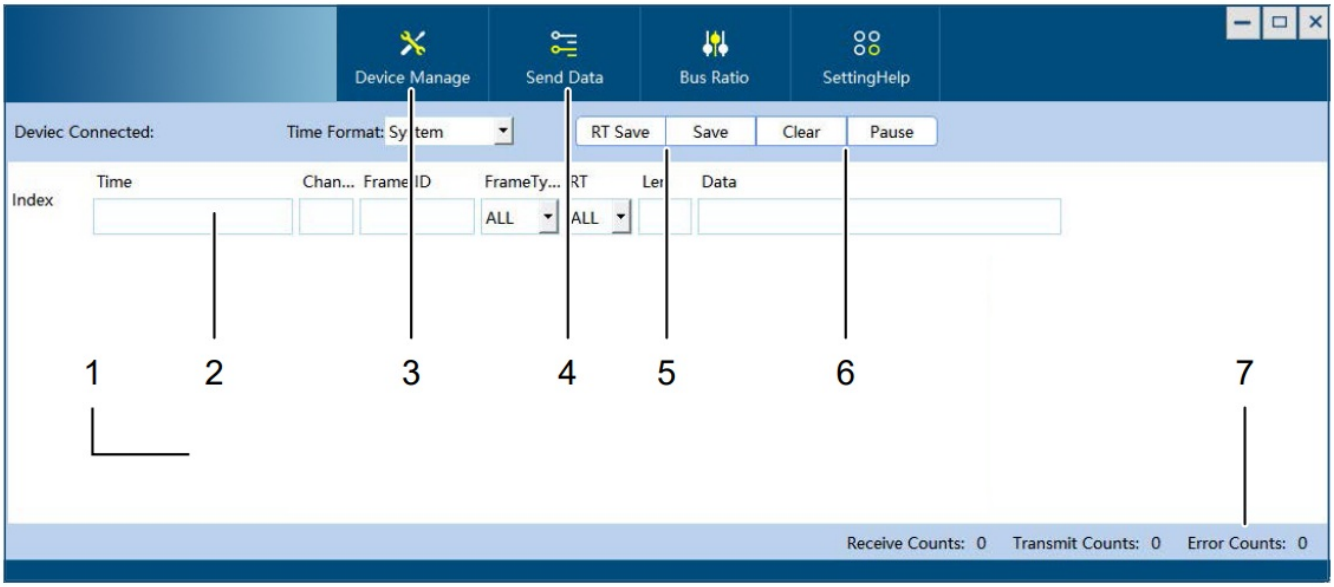


	Component	Description/Function
1	Input port **DC-IN**	Connect an auxiliary 8 – 28 V/DC power supply (if needed) .
2	USB port **USB**	USB data and power supply port (5 V/DC, max.0.5 A)
3	Indicator light **WORK**/**PWR**Indicator light **CAN2**/**CAN1**	Indicator lights
4	Dip switch **RES2**	120 Ω resistance switch of the CAN2 channel
5	Dip switch **RES1**	120 Ω resistance switch of the CAN1 channel
6	CAN port **CAN2_H**	CAN2 high signal line
7	CAN port **CAN2_G**	CAN2 ground
8	CAN port **CAN2_L**	CAN2 low signal line
9	CAN port **CAN1_H**	CAN1 high signal line
10	CAN port **CAN1_G**	CAN1 ground
11	CAN port **CAN1_L**	CAN1 low signal line
12	Reset button **Reload**	Press and hold for approx. 6s to restore default settings.

Indicator lights

Indicator light	Colour	Intensity/Pattern	Status description
PWR	Red	Bright	Power supply is normal
		Dim	Power supply failure
WORK	Blue	Always bright	Device initialization passed; on standby
		Dim	Device initialization failed
		Flickering	There is a software calling device on the P C side
CAN1, **CAN2**	Green	Dim	CAN channel no data transmission
		Flashing green	Corresponding CAN channel has data tran smission
		Solid green	Corresponding to CAN channel bus error

Software interface



	Component	Description
1	Data window	
2	Data filter	Filter data by attributes.
3	Device configuration and manageme nt interface	Configure and manage CAN network connections.
4	Data transmission interface	Send data to CAN networks.
5	Data storage controls	Save data to file.
6	Data display controls	• Button **Clear**: Clear displayed data and clear buffer. • Button **Pause**: Pause data scrolling.
7	Error counter	Error counter displays total count of transmitting and receiving errors.

Making connections

Connecting to the CAN network

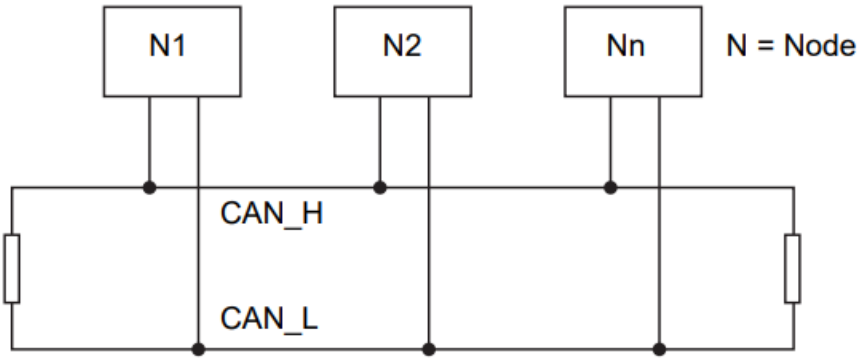
The CAN network adopts a linear topology. After connecting the signal lines to the CAN net-work, terminate the two farthest terminals of the bus with resistors.

Connecting signal lines

Connect the signal lines to the CAN network and the terminal block to establish a communication channel.

Important

For branch connections, keep the branch lengths below 3 **m.**

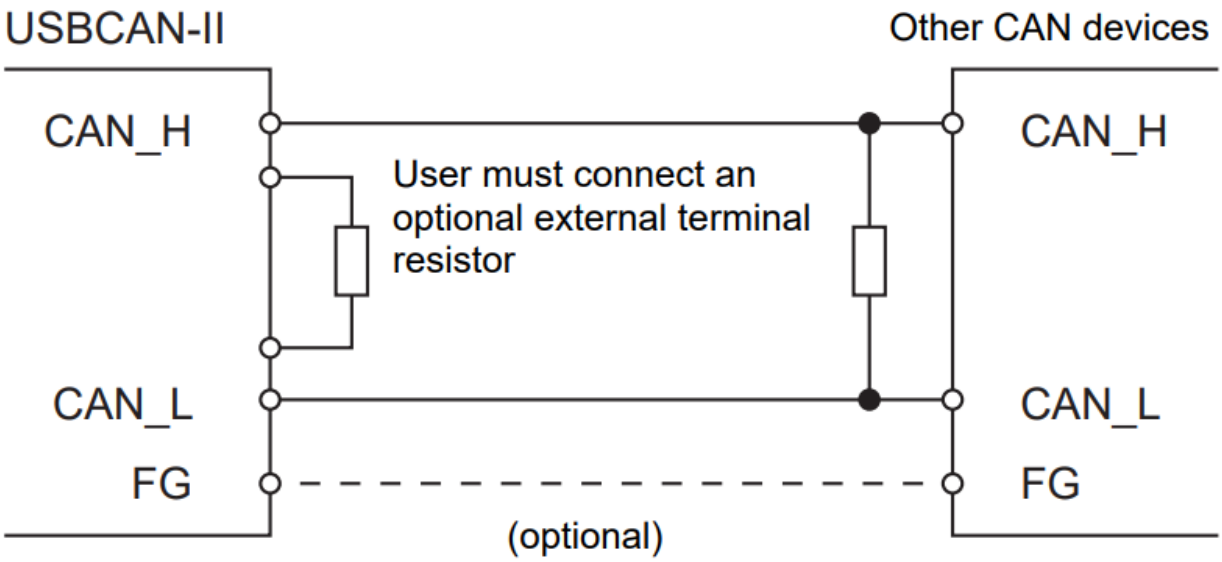


Preconditions:
The CAN converter is disconnected from the computer.

1. Connect the signal lines CAN_H1 and CAN_L1 (or CAN_H2 and CAN_L2) as shown in the diagram.

Terminating terminals
Terminate the two farthest terminals of the CAN network with 120 Ω resistors to improve communication reliability. You can use the two built-in 120 Ω resistance DIP switches RES1 and RES2 to terminate or connect your own resistors.

Notes
You do not need to terminate the two farthest terminals with 120 Ω resistors if the number of nodes is greater than 2.



1. (If you use your own resistors) Connect the resistors as shown in the diagram.
2. (If you use the DIP switches) Set the DIP switches RES1 and RES2 to the position ON.

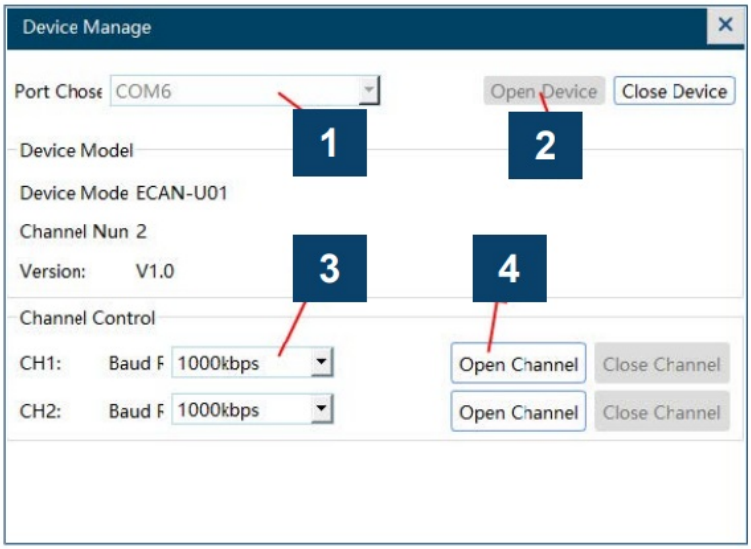
Connecting to computer
Connect the product to a computer via USB to analyze CAN network data. The USB connection serves as a data connection and power supply (5 V/DC, min. 0.5 A).

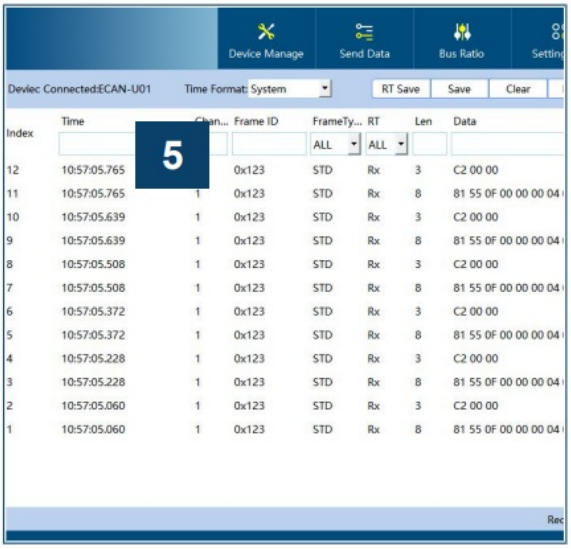
1. (If needed) connect a suitable external power supply to the input power DC-IN (8 – 28 V/DC).
2. Connect the USB cable to the USB port USB and the computer.
    - The indicator lights PWR and WORK light up.

Receiving CAN data

Configuring the interface

Before you can receive and analyze CAN network data, you must configure a communication interface and establish a communication channel.





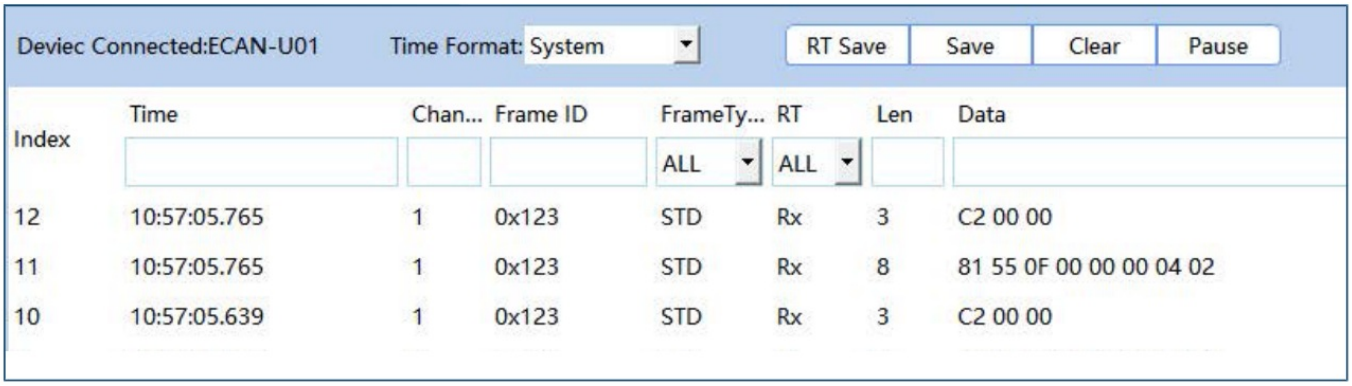
Preconditions:

- The CAN analyzer is connected to the CAN network.
- The CAN analyzer is connected to the computer.

1. Open the software.
2. Click the button Device Manager.
3. Select the COM port through which the analyzer communicates with the computer. See [1].
4. Click the button Open Device to configure a new device. See [2].
5. Set the Baud rate for each channel. The set Baud rate must match the Baud rate of your CAN network. See [3].
6. (If custom Baud rate) Click the button Customize to open the custom Baud rate window. Set a custom Baud rate and click the button Confirm to save.
7. Click the button Open Channel to open the CAN communication channel(s). See [4].
    - CAN data will populate in the data window. See [5].

Controlling the data display

With the display controls you can control how received data is shown.



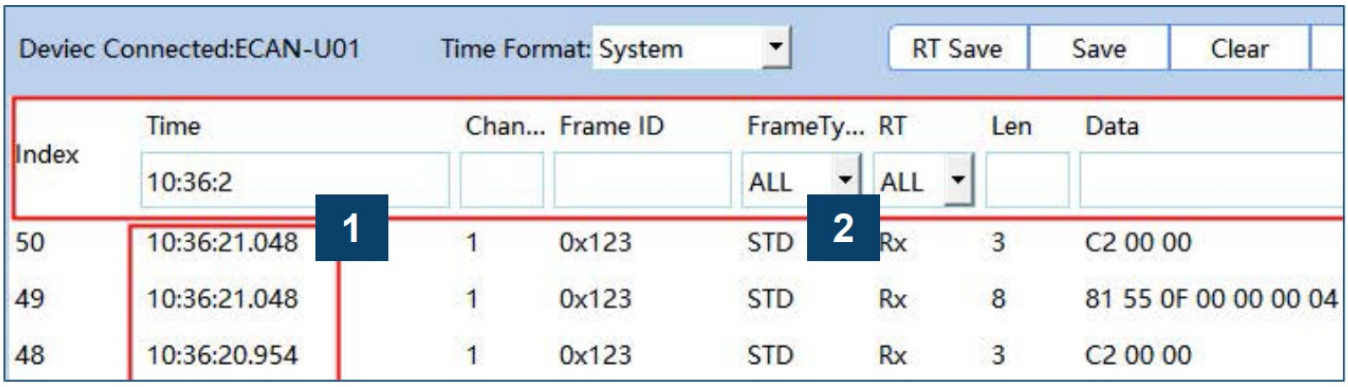
Pause scrolling

1. Click the button Pause to stop the window from scrolling as CAN data is received.
2. Click the button Pause to enable scrolling of received CAN data.

Clear records

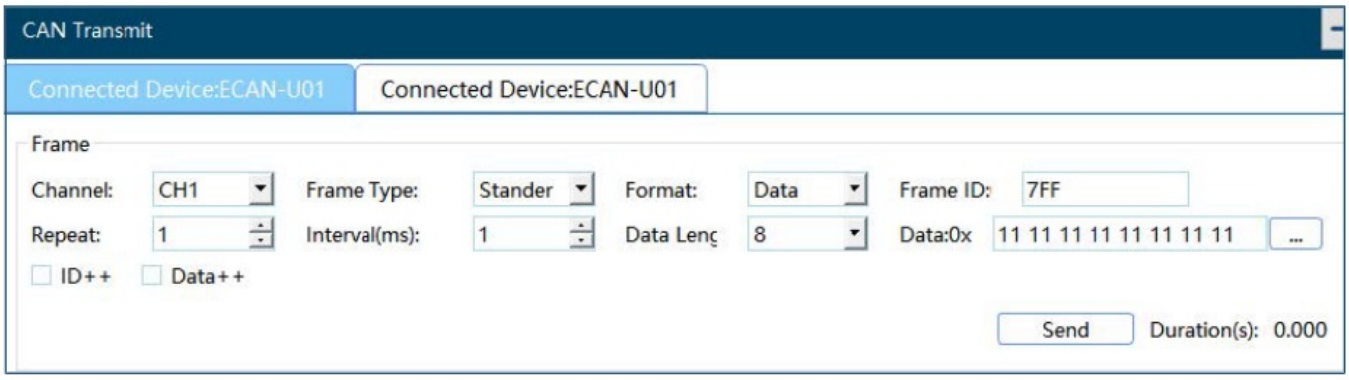
1. Click the button Clear to clear CAN data from the data window and to clear the buffer.

Filtering CAN records
Use the data filters to filter CAN data by attributes.



1. Enter filter criteria into the text boxes. See [1].
2. Select filter criteria from the drop-down lists. See [2].
    - The data window shows data that matches the specified filter criteria.

Sending CAN data
Use the send interface to send CAN data to the CAN network.

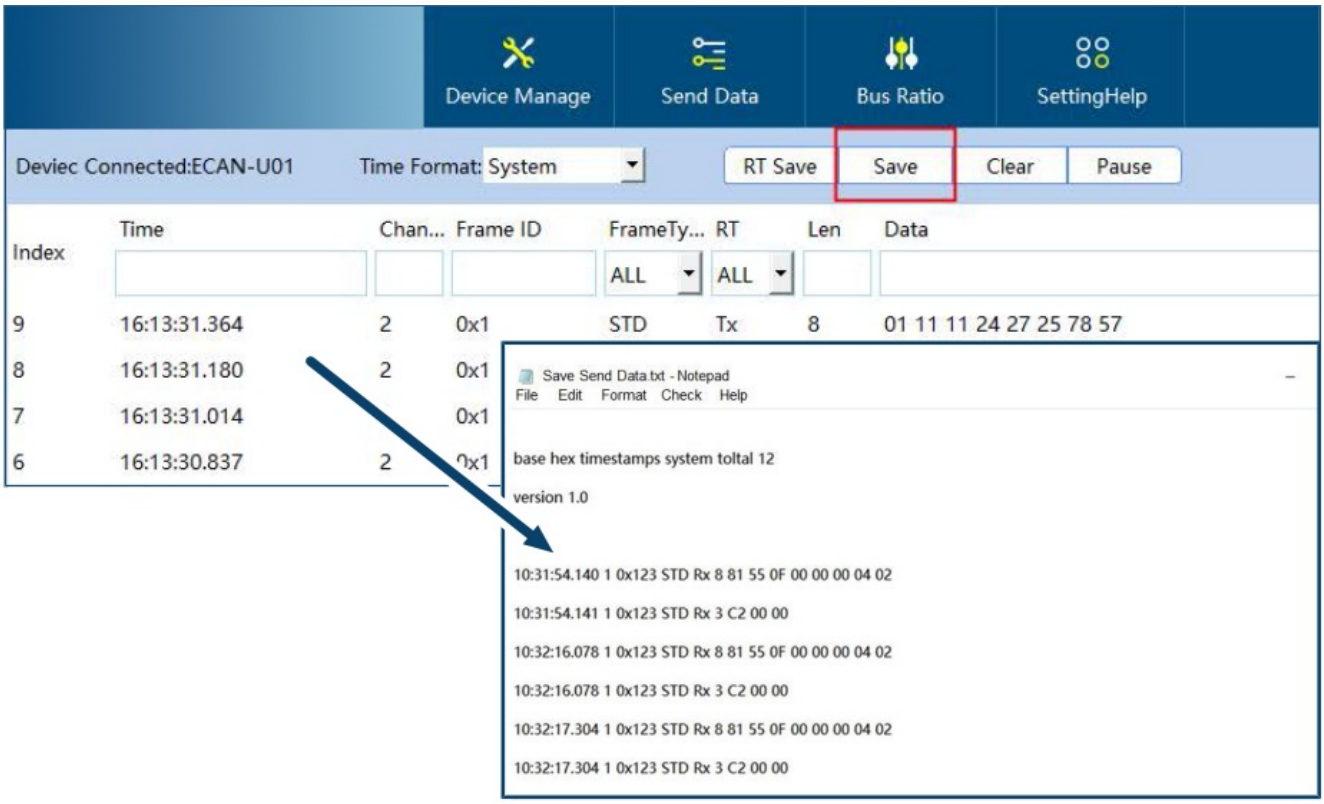


1. Click the button Send Data in the main software interface.
2. Define values for the CAN frame attributes in the CAN Transmit interface. See fig.
3. Click the button Send to send the CAN frame to the CAN network.

(If errors) Sending errors are displayed in the bottom right corner of the main software interface.

Saving CAN data to file

With the data recording function, you can save snapshots of or real-time CAN data to a text file (.txt) for record keeping.



Saving snapshots

1. Click the button Save to save a snapshot of the currently displayed CAN data to a text file on your computer.

Recording real-time data

1. Click the button RT Save to record real-time CAN data on a text file on your computer.
2. Click the button RT Stop to stop recording real-time CAN data.

Important:
Do not open the text file to which you save real-time data until you have stopped recording to prevent file corruption.

Cleaning and care

Important

- Do not use aggressive cleaning agents, rubbing alcohol or other chemical solutions. They damage the housing and can cause the product to malfunction.
- Do not immerse the product in water.

1. Disconnect the product from the power supply.
2. Clean the product with a dry, fibre-free cloth.

Disposal
This symbol must appear on any electrical and electronic equipment placed on the EU market. This symbol indicates that this device should not be disposed of as unsorted municipal waste at the end of its service life. Owners of WEEE (Waste from Electrical and Electronic Equipment) shall dispose of it separately from unsorted municipal waste. Spent batteries and accumulators, which are not enclosed by the WEEE, as well as lamps that can be removed from the WEEE in a non-destructive manner, must be removed by end users from the WEEE in a non-destructive manner before it is handed over to a collection point.

Distributors of electrical and electronic equipment are legally obliged to provide free take-back of waste. Conrad provides the following return options free of charge (more details on our website):

- in our Conrad offices
- at the Conrad collection points
- at the collection points of public waste management authorities or the collection points set up by manufacturers or distributors within the meaning of the ElektroG

End users are responsible for deleting personal data from the WEEE to be disposed of.
It should be noted that different obligations about the return or recycling of WEEE may apply in countries outside of Germany.

Technical data

	Unit	Value
Input voltage (USB)	V/DC	5
Min. input current (USB)	A	0.5
Input voltage (external power supply)	V/DC	8 – 28
Supported USB interfaces		USB2.0, USB1.1
Supported CAN frame formats (ISO/DIS 11898)		CAN2.0A, CAN2.0B
Data flow	fps	17000
Baud rate		5 kbps – 1 Mbps
Built-in resistor	Ω	120
Time stamp accuracy (CAN end)	µs	1
Operating temperature	°C	-40 to +80
Storage temperature	°C	-40 to +80
Operating humidity	% RH	10 – 95
Storage humidity	% RH	10 – 95
Dimensions (L x W x H)	mm	102 x 64 x 24
Weight	g	115

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Frequently Asked Questions

Q: Where can I download the complete operating instructions?
A: You can download the operating instructions from www.conrad.com/downloads or scan the QR code provided.

Documents / Resources

	TRU COMPONENTS 3156515 USB-C CAN Bus Analyzer [pdf] Instruction Manual TC-12626060, TC-ECAN-U01, 3156515 USB-C CAN Bus Analyzer, 3156515, USB-C CAN Bus Analyzer, CAN Bus Analyzer, Bus Analyzer

References

- Conrad Electronic » All parts of success

- Download center
- User Manual

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