



Automotive
Energy & Power Analysis
Aerospace & Defense
Transportation
General Test & Measurement

CPAD3 Plugin

Software Reference Manual



Test & Measurement Solutions



DEWETRON

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1 Pre-Adjusts

The Plugin is available four times:

CPAD3_A.dll

CPAD3_B.dll

CPAD3_C.dll

CPAD3_D.dll

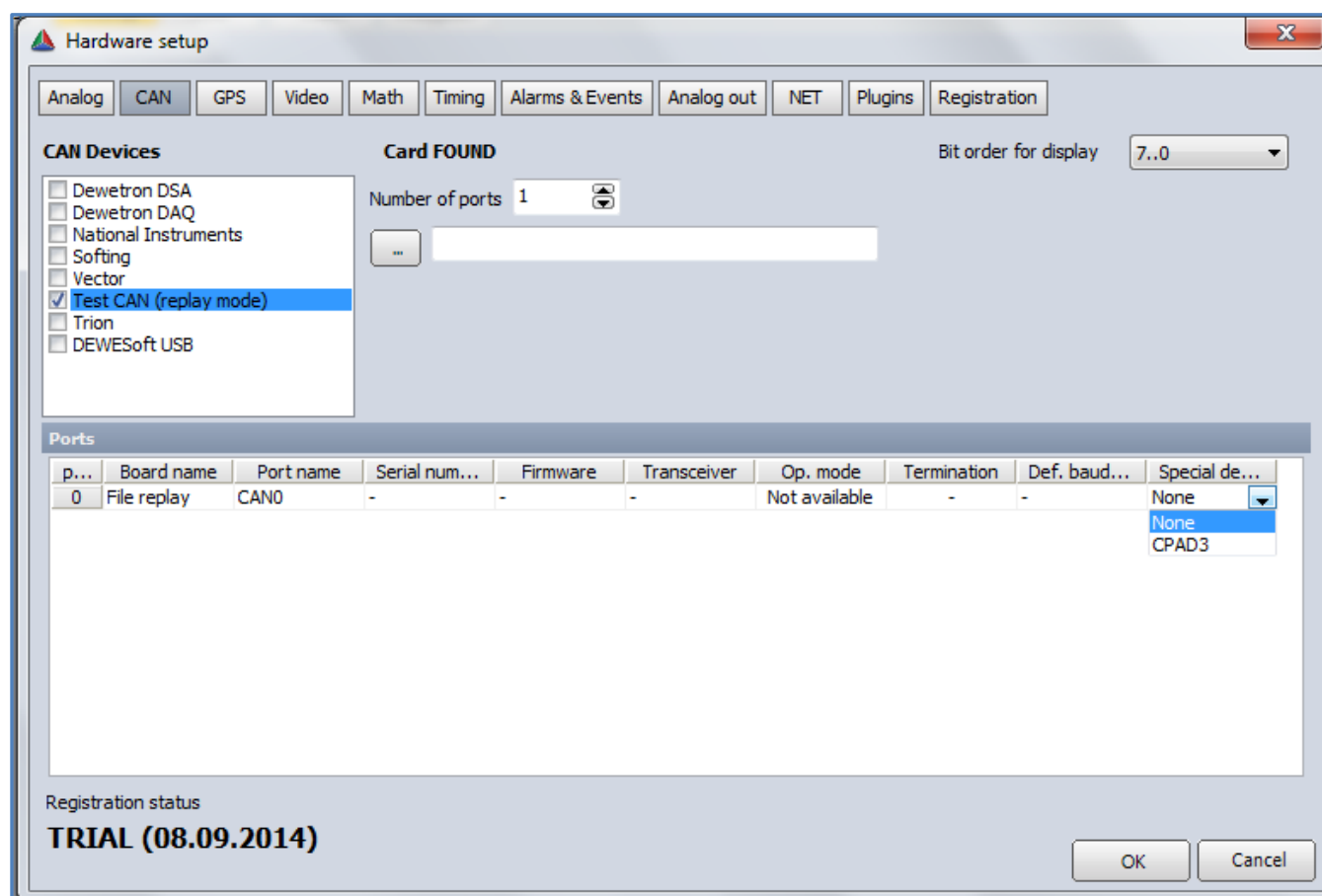
All these Plugins feature the same functionalities, and can be used in parallel on different CAN ports. In case just one Plugin is needed, it doesn't matter which one is applied to the CAN port in use. To use the Plugin, please copy either one of them to DEWESoft's Addons folder.

Possible locations for Addons folder:

C:\DEWESoft7\Bin\V7_1\Addons

D:\DEWESoft7\Bin\V7_0\Addons

To enable the Plugin within DEWESoft, it has to be assigned to a CAN Port. This could be done at the CAN menu in DEWESoft's hardware menu, like it's shown below.



2 Plugin Description

The Plugin enables communication/data acquisition between Dewetron's CPAD-X modules and DEWESoft. At least one physical CAN port is needed, to interface the CPAD modules. If all pre-adjusts (chapter 1) are done, the plugin is visible in the channel setup of the CAN interface at the assigned port, like it's shown below. All modules in the left list box could be switched to "used" for measurement in the plugins channel setup. All modules in the right list box are not available for a measurement and are not shown in the modules channel setup. To exchange the modules between the list boxes please use the left and right arrows. To change the modules list order in the left list box, just mark a module and use the up and down arrows. To completely remove a module from the plugin, just mark it and press the trash can. The module will be visible again, when a new setup is loaded, or DEWESoft is restarted.

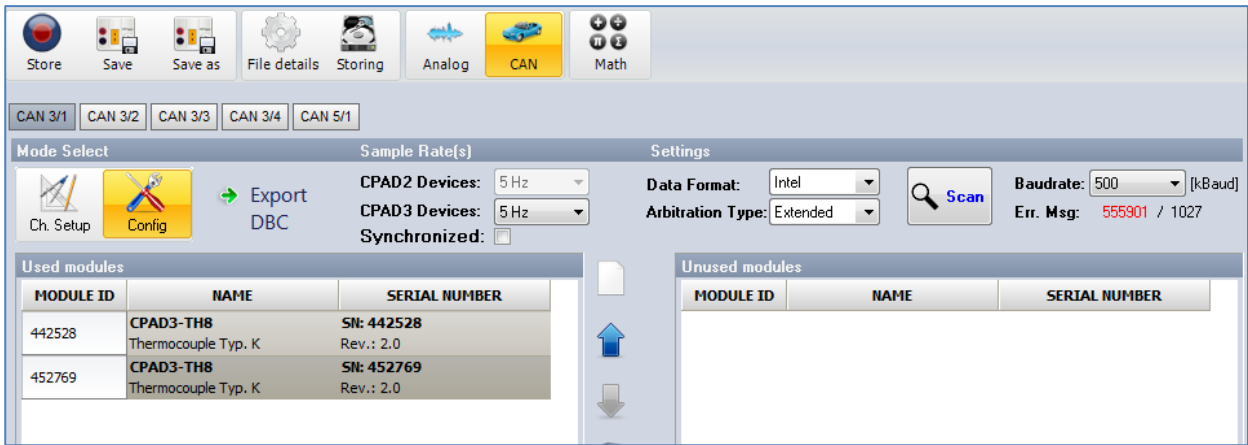


Figure 1: Plugin Config Setup

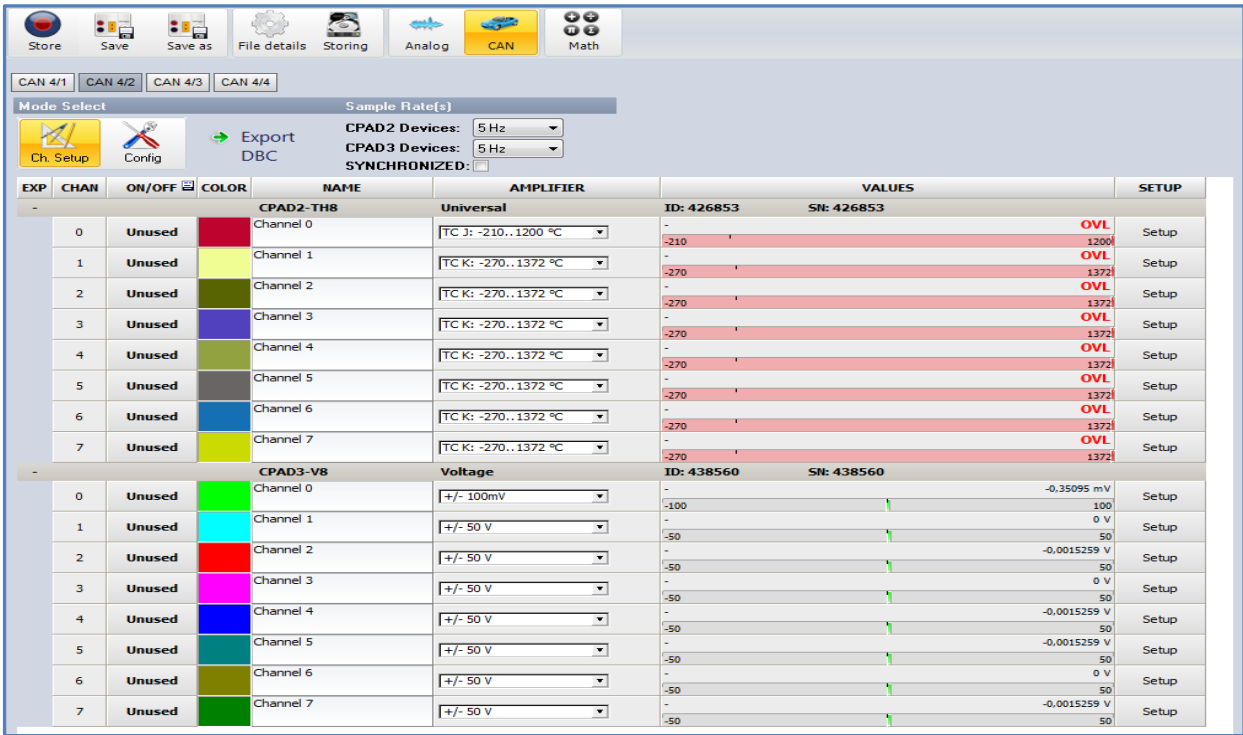


Figure 2: Plugin Channel Setup

If a module is disconnected, the plugin provides the possibility to use the module in offline mode. Whenever a plugin is offline, the listing in the config mode will change like it's shown below:

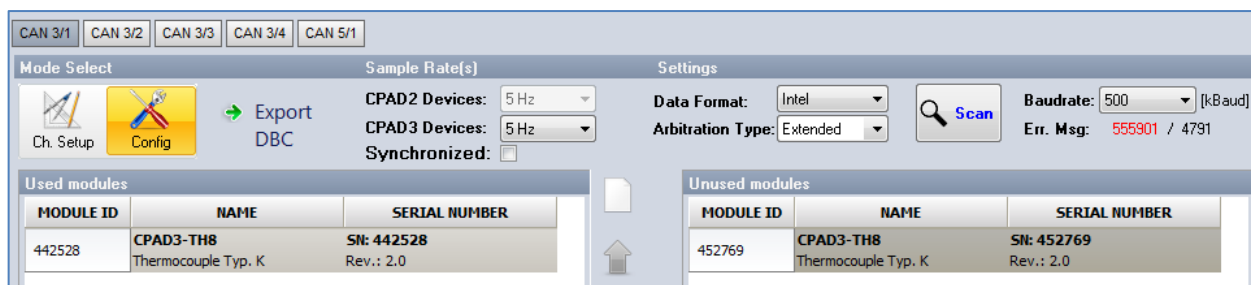


Figure 3: Connected Module (Online Mode)

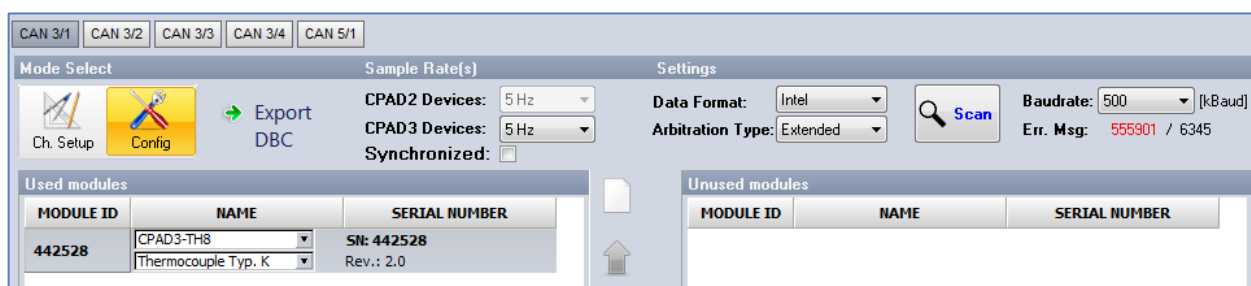


Figure 4: Disconnected Module (Offline Mode)

Note: Modules which were unused before disconnection will disappear in offline mode.

2.1 Export DBC

Generates a CAN .dbc file from the plugins properties. This file could be stored outside DEWESoft for further use.

2.2 Sample Rate(s)

Due to support of multiple CPAD modules, the Plugin features two combo boxes with different sample rates. One combo for CPAD2 modules (Max Value is 10Hz) and one combo for CPAD3 modules (Max Value is 100Hz). If CPAD2 and CPAD3 modules are connected, both combos are enabled. In case either a CPAD2 or a CPAD3 is connected, just the suitable combo is enabled. If the SYNCHRONIZED check box is checked, the acquisition rate of the modules is synchronized to DEWESofts synchron sample rate. Please note, that the maximum sample rate is 5Hz in synchron mode.

2.3 Data Format

Available data format adjusts are either Intel or Motorola. The data format describes how the received data is decoded. In case of multiple connected modules, all modules are adjusted to the same data format. The adjusted data format in the combo box could change when a module with another data format is connected. In this case all already connected modules are adjusted to the "new" data format.

2.4 Arbitration Type

The arbitration type is taken as message ID. Available arbitration types are *Standard* or *Extended*. Suitable IDs for type Standard are all numbers from 0 to 1023 (10Bit). All numbers above are fine for Extended type. For sure the Extended type also supports numbers of the Standard range.

2.5 Scan

When executed it walks through all available baud rates and adjusts all connected modules to the current baud rate.

Note:

Out of some reasons, the baud rate has to be set manually in case the plugin baud rate differs from the CPAD baud rate.

E.g.: Connected modules operate at 10kBaud and a new setup is loaded. The new setup sets the plugin baud rate to 500kBaud. -> Modules are not recognized anymore, because they stay at 10kBaud. Solution: Execute Scan!

2.6 Baudrate

Sets the communication speed for the can bus. DEWESoft (CAN hardware) and all connected CAN modules are set to the adjusted value.

2.7 Err. Messages

Indicates the count of all received can messages. Incorrect messages (error messages) are displayed in red font colour on the left side. Correct messages are displayed in black font colour on the right side.

3 Enhanced Description / Information

3.1 CPAD Module Reset

If a module is not correctly working, or not shown in the modules setup/config screen, the user has the possibility to reset the module(s). After a reset the modules are set to their default values (500kBaud, ..).

Reset Sequence:

1. Disconnect module from power source
2. Press ID button on module's front side
3. Connect module to power source
4. Keep the ID button pressed for 10 seconds.

3.2 Module Behaviour with NON-DEWETRON hardware

In case DEWESoft and CPAD modules are connected over NON-DEWETRON CAN hardware, the module behaviour might be different compared to DEWETRON CAN hardware (ORION-CAN, TRION-CAN).

Description:

Module Setup Screen is opened, no module is connected, and 500kBaud (Modules default baud rate) is adjusted at a DEWETRON CAN hardware (baud rate combo box). When connecting a module by keeping the ID button pressed for at least 10 seconds (reset sequence), the module is immediately shown in the module list box.

When using a 3rd party CAN hardware, the same procedure could lead to error messages, and / or the module is not shown in the plugins list box. In this case please re-set the CAN hardware to 500kBaud to make the module available!

3.3 Maximum Cable Length and Modules per CAN Bus

			theoretical values			recommended maximum	
	Baud Rate	Sample Rate	max. Bus Cable Length with one module	max. Modules with 0m Cable		Bus Cable Length	Modules
	kbaud	S/sec	m	pcs.		m	pcs.
CPAD 3	1000	100	30	24		10	10
	500	100	70	12		50	10
	500	50	70	24		50	20
	250	100	150	6		120	5
	250	50	150	12		120	10
	125	100	400	3		400	3
	50	100	800	1		800	1
CPAD 2	1000	10	30	355		10	10
	500	10	70	177		10	30
	500	10	70	177		50	10
	250	10	150	88		120	30**
	125	10	400	44		400	30**
	50	10	800	17		800	10

* each CPAD module reduces the bus cable length by 2 meter

** 30 CPAD Nodes is the maximum bus load

Comment:

At bus loads over 70% the communication between DEWESoft and CPAD modules could fail. To avoid high bus loads, we recommend using high baud rates.