



DAP over CAN

Hardware User Manual

V1.5, October 2023

General safety instructions

Please read the following safety precautions carefully before putting this device to use to avoid any personal injuries, damage to the instrument, or to the target system. Use this instrument only for its intended purpose as specified by this manual to prevent potential hazards.

Use included power cord and power supply

The enclosed power supply has been approved for use by iSYSTEM. Please contact iSYSTEM if you need to consider an alternative power.

Use grounding wire

Prior to applying power to either the BlueBox or the target, connect the device and the target system together with the included grounding wire. This is to avoid potential damage caused by any voltage difference between the device and the target system.

Use proper overvoltage protection

Ensure proper protection to avoid exposing the BlueBox device or the operator to overvoltage surges (e.g. caused by thunderstorm, mains power).

Do not operate without cover

Do not operate the device with cover removed.

Avoid circuit and wire exposure

Do not touch exposed components or wires when the device is powered.

Do not operate with suspected damage

If you suspect damage may have occurred, the BlueBox device must be inspected by qualified service personnel before further operation.

Do not operate the device outside its rated supply voltage or environmental range

Consult with iSYSTEM before using equipment outside of the parameters provided in this manual.




This symbol is used within the manual to highlight further safety notices.

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Introduction

DAP over CAN Physical Layer Converter enables debugging via the regular CAN pins of the ECU connector without opening its housing. This connection is electrically robust due to the nature of the CAN bus. The DXCPL Converter translates Infineon AURIX™ SPD (Single Pin DAP) encoded DAP messages to the CAN bus physical layer. Hardware solution supports DXCPL on Infineon AURIX™ TC2xx and TC3xx devices.

 For details about DXCPL operation, refer to [Infineon Application Note AP32264](#).

DAP over CAN Physical Layer Converter can be used with:

- [iC5700 BlueBox](#) via DTM or
- iC5700 BlueBox via [Infineon DAP/DAPE Active Probe](#) or
- iC5700 BlueBox via Infineon DAP/DAPE II Active Probe or
- iC5700 BlueBox via [Infineon AGBT Active Probe](#) and a 10-pin 1.27 mm DAP Converter

 Schematic designer must assure the correct state of TRST signal on cold PORST.

Package content

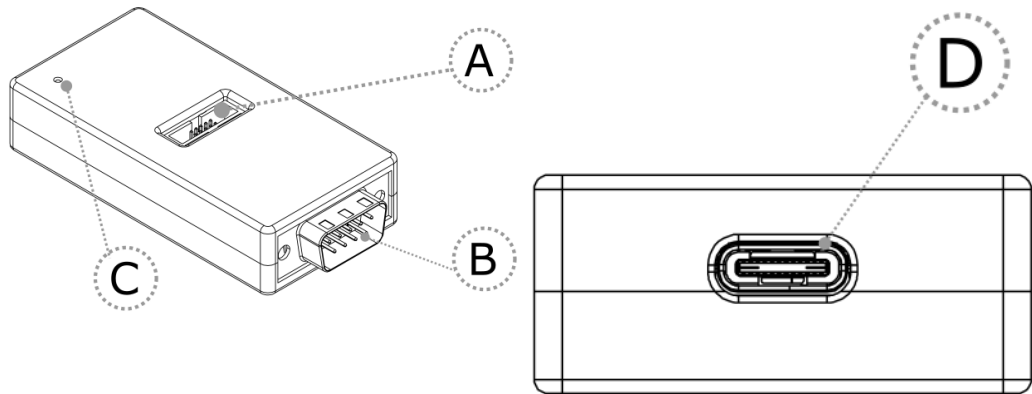
The DAP over CAN Physical Layer Converter is delivered with the following components:

DAP over CAN Physical Layer Converter	USB-C cable
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Ordering code:
IEA-DXCPL



Device overview



Device description

A – DAP connector

Pinout valid on the DAP connector side:

Signal Description	Signal Direction	Signal	Pin	Pin	Signal	Signal Direction	Signal Description
Reference voltage	O	Vref	1	2	TXD	I	Transmitter
Ground		GND	3	4	NC		Not Connected
Ground		GND	5	6	RXD	O	Receiver
Not Connected		NC	7	8	NC		Not Connected
Ground		GND	9	10	NC		Not Connected

DAP connector pinout

Signal Direction is described from the BlueBox perspective.

B – DB9 connector

Pinout valid on the DB9 connector side:

Pin	Signal
1	Not Connected
2	CAN_L
3	CAN GND
4	NC
5	SHIELD
6	NC
7	CAN_H
8	NC
9	NC

DB9 connector pinout

C – The LED indicator provides the status of the hardware as follows:

- Green – Powered on
- Red – Power supply issue (e.g., burnt fuse)

D – Power supply connection for the Converter. Use provided USB-C cable to power the converter e.g. from a PC.



CAN 120 Ohm terminating resistor is not implemented on the DAP over CAN Physical Layer Converter.

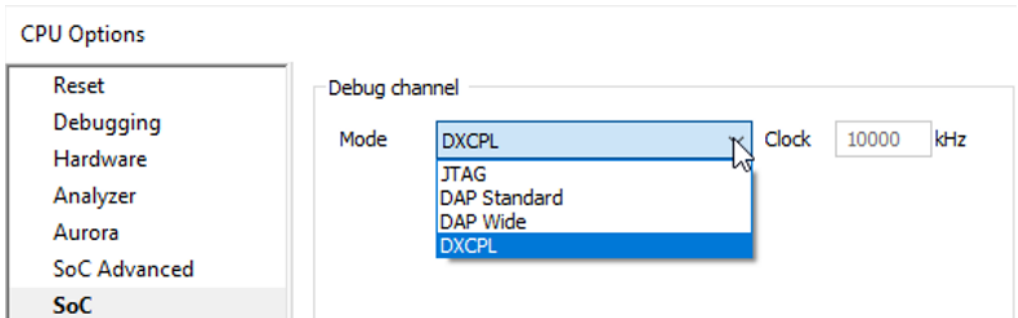


iSYSTEM provides cable solutions on request with build in terminating resistor, which can be easily switched on or off.

winIDEA Configuration

After connecting the hardware follow the steps below to configure the DAP over CAN Physical Layer Converter in winIDEA:

1. Open *Hardware / CPU Options*.
2. Navigate to the *SoC page*.
3. Select **DXCPL** from the *Debug channel Mode* drop-down.
4. Confirm and establish the debug connection.



Refer to [isystem.com/connect](https://www.isystem.com/connect) for more information on how to connect and configure the hardware.

Accessories

DAP over CAN Physical Layer Converter is used together with the following iSYSTEM hardware:

Description	Ordering Code
iC5700 BlueBox	IC57000
Infineon DAP/DAPE II Active Probe	IC57163-1
Infineon AGBT Active Probe	IC57164
10-pin 1.27 mm DAP Adapter (Infineon AGBT Active Probe)	IASAM22TRICOREPIN10
1.0m FNet Cable (Active Probe)	BB-FNET-100
2.0m FNet Cable (Active Probe)	BB-FNET-300
5.0m FNet Cable (Active Probe)	BB-FNET-500
1.0m FNet Micro Cable (Active Probe)	BB-FNETMICRO-100

Please refer to the iC5700 BlueBox for all current iC5700 Accessories.

The functionality of the DAP over CAN Physical Layer Converter can be extended through the use of various accessories.

Ordering Code	Description
IC57040-CAN-DB9	1m CAN cable DB9 plug
IC57040-CAN-PIN	CAN cable pin wires
IC57040-CAN-JACK	CAN cable banana jacks
IC57040-CAN-T	CAN BUS T adapter



More information about our products on www.isystem.com or via sales@isystem.com.

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