



# IOM6 CAN/LIN

## Hardware User Manual

V2.6, February 2024

## **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

CAN/LIN Add-on extends the functionality of the iC5700 BlueBox, enabling the monitoring of CAN, CAN-FD and LIN interfaces synchronous to program execution information. This allows network activity and code execution to be examined side-by-side within our development software winIDEA.



# Package content

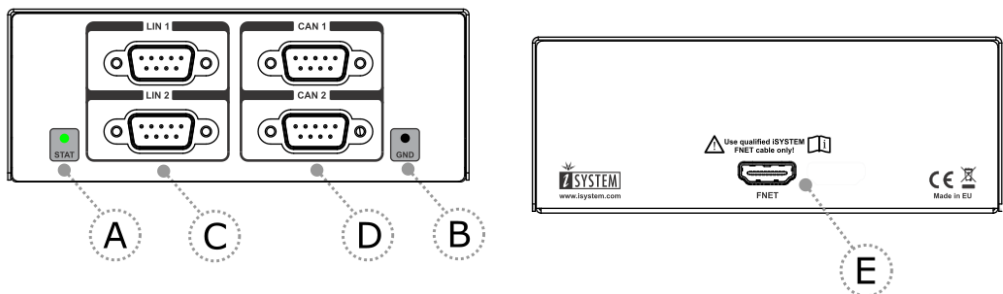
The standard CAN/LIN order is delivered with the following components:

CAN/LIN	1m FNet Cable	Grounding wire
Ordering code: IC57040	Ordering code: BB-FNET-100	Ordering code: BB-WIRE
		

# Specifications

GENERAL	
Operating temperature	10°C to 40°C
Storage temperature	-10°C to 60°C
Humidity	5% to 80% RH
MECHANICAL	
Size	100 x 125 x 55 mm
Weight	ca. 440 g (without cables)
ELECTRICAL	
Supply voltage	Powered through the FNet
CAN Channels	2 x Microchip MCP2562FD (galvanic isolation)
DAP_RESET	2 x NXP TJA1027 (galvanic isolation)

## Device overview



## Device description

The **front** face of the features:

**A** – The indicator light provides the status of the hardware - At power on the LED will blink 5 times with a frequency of 1Hz, then it will stay ON continuously. If LED remains blinking or it doesn't blink on after power ON, please contact support.

**B** – The grounding socket (marked GND). It represents the GND potential of the BlueBox and its usage is optional. By default no connection to this socket is required. The grounding socket is suitable for a 2mm Multi Contact Plug (also known as a Banana Plug).

Note that the grounding connection between the BlueBox and the Target microcontroller development board must be established through the iC5700 grounding socket. Refer to the iC5700 BlueBox User Manual for more details on this grounding.

**C** – LIN1 and LIN2 connector

The two connectors allow up to two target LIN bus networks to be monitored.

Pin	Signal
1	NC
2	NC
3	LIN_GND
4	NC
5	SHIELD
6	NC
7	LIN
8	NC
9	LIN_VBAT*
SHIELD	GND

\* The target must always provide power to the LIN VBAT connection.

**D –CAN1 and CAN2 connectors**

The two connectors allow up to two CAN/CAN-FD bus networks to be monitored.

Pin	Signal
1	NC
2	CAN_L
3	CAN_GND
4	NC
5	SHIELD
6	NC
7	CAN_H
8	NC
9	NC
SHIELD	GND



All CAN and LIN signals are isolated from the GND.

The **rear** face of the features the remaining connector:

**E – The FNet Port**



Although it looks similar to the HDMI interface, the FNet Port is not compatible with HDMI or any HDMI accessories.

Connecting TASKING hardware to the HDMI devices will damage the hardware and will render the TASKING hardware warranty void.



# Connecting the IOM6 CAN/LIN to the iC5700

1. Make sure that the iC5700 BlueBox is powered off.
2. Connect the iC5700 FNet port to the FNet port of the IOM6 CAN/LIN Accessory using the supplied, certified, iSYSTEM FNet cable.

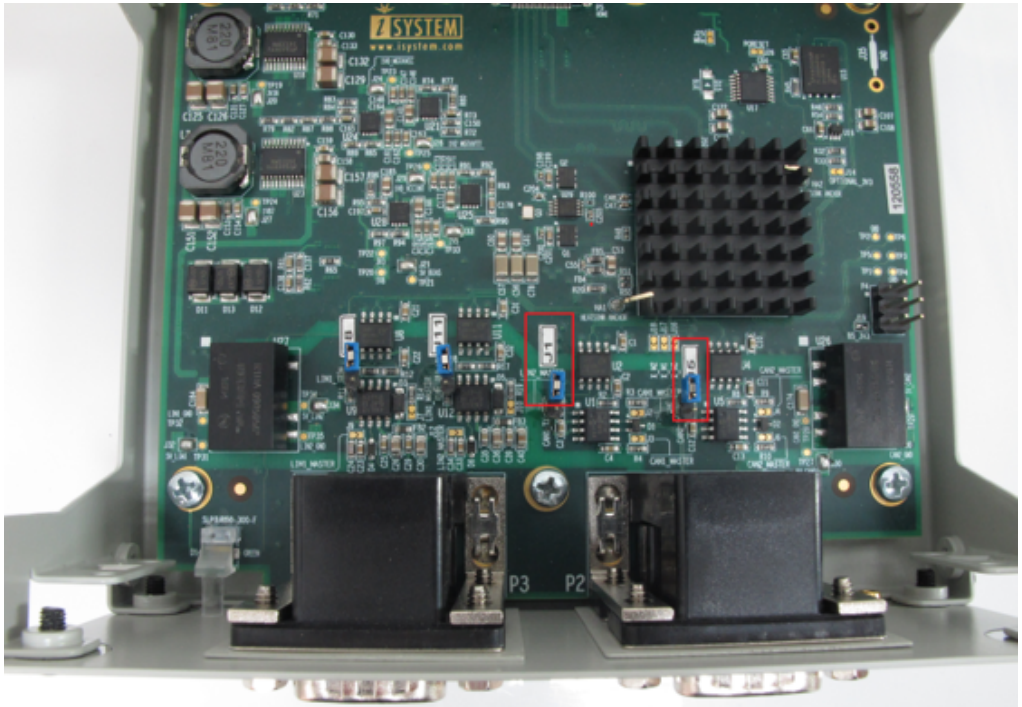
IOM6 CAN/LIN Accessory winIDEA configuration and usage is described in the winIDEA Help. We recommend starting with the [FNet Profiling](#) chapter to get familiar with the configuration options and usage.



# CAN message injection

CAN message injection is physically disabled by default.

To enable injection remove the cover on your powered-down AOM CAN/LIN device and place jumpers\* on J1 for CAN1 and J5 for CAN2.



\* Jumpers:

Revision B1 - Soldered jumpers

Revision B2 - Through hole jumpers

# Cables & Adapters

The following cables and adapters are available for CAN/LIN:

- [CAN cable DB9](#)
- [CAN cable banana jacks & pin wires](#)
- [CAN BUS T adapter](#)
- [LIN cable banana jacks & pin wires](#)

# CAN cable DB9



Ordering code	IC57040-CAN-DB9
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The IC57040-CAN-DB9 is used to connect the IOM6-CAN/LIN to an existing CAN network through the DB9 connector. 120 Ohm termination is selected with the switch located on one of the DB9 connectors. The cable length is 1m.



The DB9 connector with the termination switch must be connected to the IOM6 CAN/LIN Accessory (CAN1 or CAN2).

The pinout of the target side DB9 connector is as follows:

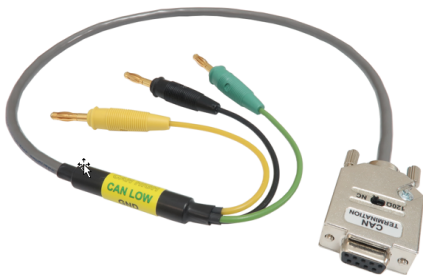
DB9 pin	Signal
1	NC
2	CAN_L
3	CAN_GND
4	NC
5	SHIELD
6	NC
7	CAN_H
8	NC
9	NC
SHIELD	GND

# CAN cable banana jacks & pin wires



The DB9 connector with the termination switch must be connected to the IOM6 CAN/LIN Accessory (CAN1 or CAN2).

## CAN cable banana jack



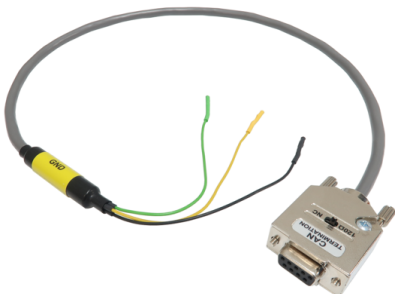
Ordering code

IC57040-CAN-JACK

The IC57040-CAN-JACK is used to connect the IOM6 CAN/LIN Accessory to an existing CAN network through the banana jacks. The 120 Ohm termination impedance is selected using the switch located on the cable DB9 connector. Cable length is 0.65m.

Cable and pin color	Signal
BLACK	CAN_GND
YELLOW	CAN_H
GREEN	CAN_L

## CAN cable pin wires



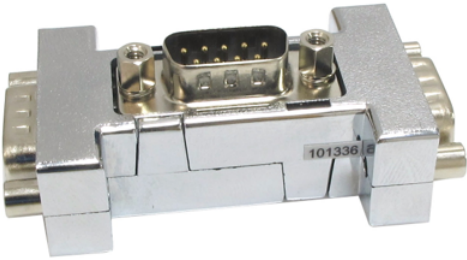
Ordering code

IC57040-CAN-PIN

The IC57040-CAN-PIN is used to connect the IOM6 CAN/LIN Accessory to an existing CAN network to the pins typically found on a 2.54mm pitch header (0.63mm square pins). The 120 Ohm termination impedance is selected using the switch located on the cable DB9 connector. Cable length is 0.65m.

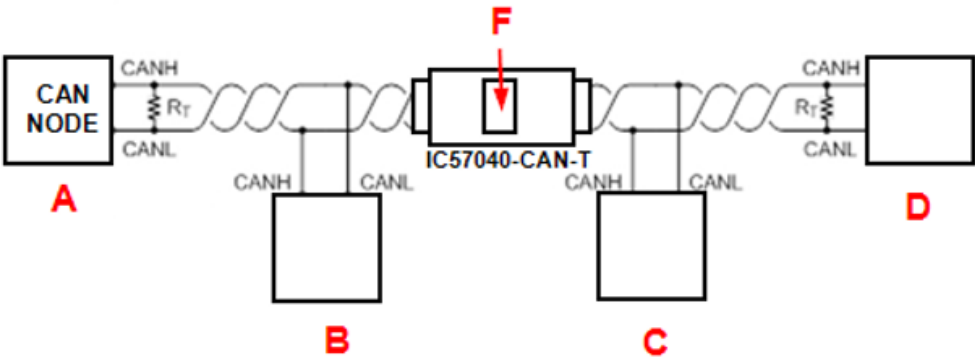
Cable and pin color	Signal
BLACK	CAN
YELLOW	CAN_H
GREEN	CAN_L

# CAN BUS T adapter



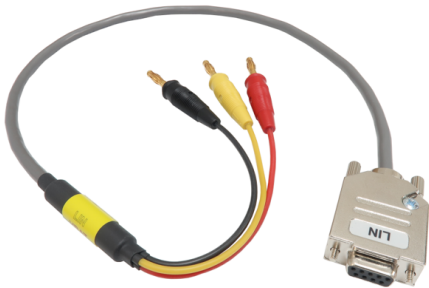
Ordering code	IC57040-CAN-T
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The IC57040-CAN-T is used to connect the IOM6 CAN/LIN Accessory to a CAN bus by splitting the existing bus connection – position F on the diagram below. The existing CAN bus connection is split using the IC57040-CAN-T allowing the IOM6 CAN/LIN Accessory to connect to it using an IC57040-CAN-DB9 cable (no termination required).



# LIN cable banana jacks & pin wires

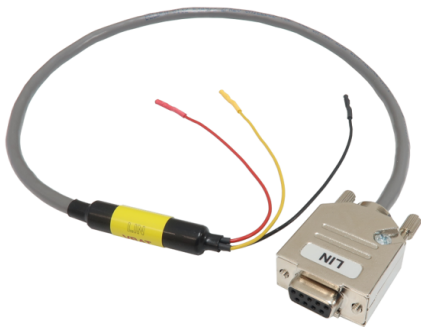
## LIN cable banana jacks



Ordering code	IC57040-LIN-JACK
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The IC57040-LIN-JACK cable is used to connect the IOM6 CAN/LIN Accessory to an existing LIN network via banana jack connectors. The cable length is 0.65m. The cable connects to the LIN1 or LIN2 connector.

## LIN cable banana jacks & pin wires



Ordering code	IC57040-LIN-PIN
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The IC57040-LIN-PIN cable is used to connect the IOM6-CAN/LIN to an existing LIN network to the pins typically found on a 2.54mm pitch header (0.63mm square pins). The cable length is 0.65m. The cable connects to the LIN1 or LIN2.

Cable and pin color	Signal
RED	VBAT
BLACK	GND
YELLOW	LIN

# Accessories

The following accessories are available to connect the CAN/LIN Accessory to the target CAN, CAN-FD or LIN interface(s).

Description	Ordering Code
1m CAN cable DB9	IC57040-CAN-DB9
CAN cable banana jacks	IC57040-CAN-JACK
CAN cable pin wires	IC57040-CAN-PIN
CAN BUS T adapter	IC57040-CAN-T
LIN cable banana jacks	IC57040-LIN-JACK
LIN cable pin wires	IC57040-LIN-PIN
1 m FNet Cable (for use with AOM accessories)	BB-FNET-100
3 m FNet Cable (for use with AOM accessories)	BB-FNET-300
5 m FNet Cable (for use with AOM accessories)	BB-FNET-500

The topology of a CAN network is shown in the [CAN BUS T adapter](#) chapter. The ends of the network require termination using a 120 Ohm impedance, connected between the CAN\_H and CAN\_L signals.

TASKING accessories provide the termination impedance via a switch on the DB9 connector. In the default switch position the termination impedance is not connected.

If the IOM6 CAN/LIN is connected at one of the ends of the network (node A or D in the diagram above) the 120 Ohm termination impedance can be enabled using the switch on the TASKING connector accessories. If connected to the CAN bus at the position of nodes B and C, no termination is required.



More information about our products on [www.isystem.com](http://www.isystem.com) or via [sales@isystem.com](mailto:sales@isystem.com).





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