

# Product Data Sheet

## CANect® CL-T05-108-10

### Wi-Fi and GPS Module



#### CANect Product Portfolio

HED's CANect® Telematics portfolio lets you create a complete telematics strategy that suits your customer base, all customized to your application. The CANect® family is a full portfolio of hardware, software, and web portal tools that give you complete control of your assets in the field.

#### Processor and Memory

Processor:	Freescall i.MX6UL - 696MHz
Architecture:	ARM Microprocessor
Operating System:	Linux
Memory (RAM <sup>1</sup> , Flash <sup>2</sup> ):	128MB DDR3, 4GB eMMC

<sup>1</sup> This module can support up to 512MB of RAM. This requires additional validation.

<sup>2</sup> This module can support up to 32GB of eMMC. This requires additional validation.

#### Environmental

IP Rating:	IP67
Operating Temperature:	-40°C to 70°C <sup>1</sup>
Storage Temperature:	-40°C to 85°C
RoHS Compliant:	Yes

<sup>1</sup> Temperature range subject to use case. HED assumes heat dissipation based on general market software and solution use cases.

#### Electrical Characteristics<sup>1</sup>

Operating Voltage:	6.5VDC to 32VDC
--------------------	-----------------

<sup>1</sup> Please reference the product family specification for power consumption characteristics.

#### Controller Area Network (CAN)<sup>1</sup>

Number of Buses:	2
Standard:	ISO 11898
Data Rate:	20K, 50K, 100K, 125K, 250K, 500K, 1M bits/sec
Identifier Support:	11 and 29 bit
Data Length:	0 to 8 byte(s)

<sup>1</sup> Application Note: The device is capable of supporting universal CAN protocols.

#### Ethernet Port

Standard:	IEEE 802.3, 10/100BaseT
Data Rate:	10/100M bits per second

#### Universal Serial Bus (USB)<sup>1</sup>

Interface:	Single, 5 pin USB with OTG
USB Standard:	2.0 with OTG Support
Data Transfer Rate:	480M bits per second
Host	Yes <sup>1,2</sup>
Client	Yes <sup>3</sup>

<sup>1</sup> Application Note: USB Host is software configurable to respond to the OTG pin being asserted.

<sup>2</sup> Application Note: USB Host can support flash drives, user inputs, and various other devices.

<sup>3</sup> Application Note: USB Client is a common method to reprogram or serial terminal into the device.

<sup>4</sup> USB is intended for module configuration and device programming.

#### Wi-Fi Interface

Standard:	802.11 b/g/n (2.4GHz)
Channels:	1-13 <sup>1</sup>
Operational Modes:	APN, Client, Concurrent (two simultaneous instances)
Data Transfer Rate:	b: 11, 5.5, 2, 1 Mbps g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps n: 150, 72Mbps
Max Transmit Power:	18dBm
Security:	WEP64/128 WPA (TKIP, AES) WPA2 (CCMP, AES) WAPI hardware support 64/128 bit AES hardware support
Certifications <sup>2</sup> :	US (FCC CFR 47 part 15) Canada (IC RSS)
Supported Antenna:	External RP-SMA Connector

<sup>1</sup> Certain governments do not permit operating with all available channels.

<sup>2</sup> Inquire about additional geographic and governmental certifications as this is updated frequently.

#### GPS Interface<sup>1</sup>

Receiver:	Concurrent reception of up to 3 GNSS (GPS, Galileo, GLONASS, BeiDou) 72-channel, GPS L1C/A, SBAS L1C/A, QZSS L1C/A, QZSS L1 SAIF, GLONASS L1OF, BeiDou B1I, Galileo E1B/C
Horizontal Accuracy (Position):	2.5 m (GPS&GLONASS), 2.5 m (GPS), 4.0 m (GLONASS), 3.0 m (BeiDou)
Max Navigation Update Rate:	10 Hz (GPS&GLONASS), 18 Hz (GPS), 18 Hz (GLONASS), 18 Hz (BeiDou)
Time-To-First-Fix (Cold):	26 s (GPS&GLONASS), 29 s (GPS), 30 s (GLONASS), 34 s (BeiDou),
Time-To-First-Fix (Hot):	1 s (GPS&GLONASS), 1 s (GPS), 1 s (GLONASS), 1 s (BeiDou)
Sensitivity (Reacquisition):	-160 dBm (GPS&GLONASS), -159 dBm (GPS), -156 dBm (GLONASS), -155 dBm (BeiDou)
Sensitivity (Cold):	-148 dBm (GPS&GLONASS), -147 dBm (GPS), -145 dBm (GLONASS), -143 dBm (BeiDou)
Sensitivity (Hot):	-157 dBm (GPS&GLONASS), -156 dBm (GPS), -155 dBm (GLONASS), -155 dBm (BeiDou)
Supported Antennas:	External SMA Connector
Supported Signals:	Speed Over Ground (SOG) Course Over Ground (COG) Latitude, Longitude, Altitude Number of Satellites

<sup>1</sup> GNSS receiver supports Galileo, however, the Galileo positioning system is not entirely operational.



# Product Data Sheet

## Accelerometer/Inclinometer

Function:	3-Axis
Sensitivity Range:	2/4/8G (Configurable)
Accuracy:	Inclinometer $\pm 3^\circ$

<sup>†</sup>The inclinometer is accurate to  $\pm 3^\circ$  when the accelerometer is configured to 2G under the operating temperatures defined in this document.

## Real Time Clock

The real time clock is powered during device shutdown with 10-year lithium battery.

## LED Indicators

Multiple LEDs are located on the board to provide status indicators such as GPS, GSM, Wi-Fi, and various other module functions. Additionally, the LEDs can be programmed to support alternative module status or functions.

## Physical

Dimensions: 6.3" x 5.25" x 1.28" (H x W x D)

\*STEP files are available upon request.

## Antenna Installation

The antennas need to be installed with their respective SMA connector for proper compliance. The SMA connections need to be torqued from 7 to 10 in-lbf or the Metric equivalent range of 0.8 to 1.1 N-m

## Mounting

The mounting holes in the mounting tabs are compatible with a #10 type bolt (either 10-32 or 10-24). Mounting bolts should be torqued between 25 and 35 in-lbf. The Metric equivalent to the #10 is a M5 bolt with an installation torque range of 2.8 to 4N-m.

## Software Development

Developers can choose between the CANect Software Development Kit (SDK) or the CANect® Composer® solution development utility. Each piece of software is free to customers and requires an NDA.

## CL-T05 Module Pinout

Main Connector - DT16-18SA-K004	
Pin	Function
1	Ethernet TXN
2	Ethernet TXP
3	Ethernet RXN
4	Ethernet RXP
5	Battery(-) Module
6	Unswitched Battery(+) Module
7	CAN1-H
8	CAN1-L
9	CAN2-H
10	CAN2-L
11	Keypress(+)
12	Input STB/STG/VTD (0-5.66V)
13	USB Power
14	USB DM (D-)
15	USB DP (D+)
16	USB ID (OTG)
17	USB Ground
18	150 mA Sinking Output

RF Connections	
SMA	GPS (Left)
SMA	Not Populated
RP-SMA	Wi-Fi (Right)

For more information, please contact us at:

email: [sales@hedonline.com](mailto:sales@hedonline.com)

Or call us at:

phone: +1.800.398.2224

Information contained on this sheet is accurate at the time of printing. HED, Inc. reserves the right to change specifications without notice.

All trademarks in this material are property of HED®.

All rights reserved HED®.

