Product Data Sheet

CANect® CL-T06-108-10

Cellular 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:	Freescale i.MX6UL - 696MHz
Architecture:	ARM Microprocessor
Operating System:	Linux
Memory (RAM[1], Flash[2]):	128MB DDR3, 4GB eMMC

1. *This module can support up to 512MB of RAM. This requires additional validation.*
2. *This module can support up to 32GB of eMMC. This requires additional validation.*

Environmental

IP Rating:	IP67
Operating Temperature:	-40°C to 70°C [1]
Storage Temperature:	-40°C to 85°C
RoHS Compliant:	Yes

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

Electrical Characteristics[1]

Operating Voltage:	6.5VDC to 32VDC

1. *Please reference the product family specification for power consumption characteristics.*

Controller Area Network (CAN) [1]

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)

1. *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)[4]

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

1. *Application Note: USB Host is software configurable to respond to the OTG pin being asserted.*
2. *Application Note: USB Host can support flash drives, user inputs, and various other devices.*
3. *Application Note: USB Client is a common method to reprogram or serial terminal into the device.*
4. *USB is intended for module configuration and device programming.*

Cellular Communication

UMTS/HSPA:	800/850/900 1700/1900/2100 MHz 3GPP Release 7 5.76Mb/s uplink, 21.1Mb/s downlink or 5.76Mbps uplink, 7.2Mb/s downlink
GSM:	GSM 850/900/1800/1900 Mhz 3GPP Release, PBCCH support
GPRS:	Class 12, CS1-CS4 – up to 86.5 kbps
EDGE:	Class 12, MCS1-9 – up to 236.8 kbps
SMS:	MT/MO PDU/Text mode
Protocols:	TCP/IP UDP/IP HTTP/FTP/SSL
Supported Antenna:	External SMA Connector
Certifications[1]:	Aeris, AT&T, PTCRB (Carrier) US (FCC CFR 47 part 15) Canada (IC RSS)

1. Inquire about additional geographic and governmental certifications as this is updated frequently.

GPS Interface[1]

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 (Beiduo)
Max Navigation Update Rate:	10 Hz (GPS&GLONASS), 18 Hz (GPS), 18 Hz (GLONASS), 18 Hz (Beiduo)
Time-To-First-Fix (Cold):	26 s (GPS&GLONASS), 29 s (GPS), 30 s (GLONASS), 34 s (Beiduo),
Time-To-First-Fix (Hot):	1 s (GPS&GLONASS), 1 s (GPS), 1 s (GLONASS), 1 s (Beiduo)
Sensitivity (Reacquisition):	-160 dBm (GPS&GLONASS), -159 dBm (GPS), -156 dBm (GLONASS), -155 dBm (Beiduo)
Sensitivity (Cold):	-148 dBm (GPS&GLONASS), -147 dBm (GPS), -145 dBm (GLONASS), -143 dBm (Beiduo)
Sensitivity (Hot):	-157 dBm (GPS&GLONASS), -156 dBm (GPS), -155 dBm (GLONASS), -155 dBm (Beiduo)
Supported Antennas:	External SMA Connector
Supported Signals:	Speed Over Ground (SOG) Course Over Ground (COG) Latitude, Longitude, Altitude Number of Satellites

1. GNSS receiver supports Galileo, however, the Galileo positioning system is not entirely operational.

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Accelerometer/Inclinometer

Function:	3-Axis
Sensitivity Range:	2/4/8G (Configurable)
Accuracy[1]:	Inclinometer ±3°

[1] The inclinometer is accurate to ±3° 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-T06 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	Keyswitch(+)
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	GSM (Center)
RP-SMA	Not Populated

For more information, please contact us at:

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