

Enhancements

Smallest 4G LTE Device

Industry proven Qualcomm technology

Ultra-Low power consumption

4GLTE CAT1/3G UMTS/HSPA

Bluetooth Low Energy (BT 4.2 BLE)

802.11b/g/n WiFi

GPS/GLONASS/BeiDou/Galileo GNSS

3D accelerometer and gyro

Integrated Security Module (HSM)

1.3 GHz ARM Cortex A7 CPU

LINUX OS for application development

HSCAN, MSCAN, and SWCAN Support

Markets

Insurance (UBI, PAYD, PHYD)

Fleet Tracking and Management

Loyalty Programs

Mobile Resource Management (MRM)

Roadside Assistance

Remote Vehicle Diagnostics

Government and Military

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DataLogger DCM970 - GEN 3 Vehicle Telematics for North America

Danlaw's DCM970 is a unique OBDII telematics device that provides universal wireless data communication via 4G-LTE, 3G, Bluetooth, and WiFi wireless connections. The DCM970's universal communication feature facilitates the wireless transmission of vehicle data via the most efficient means of connectivity. The device also ensures that event data is transmitted even if the device is suddenly disconnected; while the device's trusted on-chip Hardware Security Module will keep your data safe from external threats.

Features

- Universal connectivity
- Enhanced security and anti-tampering
- Real-time event capture and transmission
- SuperCap for real-time disconnect event
- OBDII data collection (1996 - Present)
- Industry leading vehicle compatibility
- Self-installed - plug-n-go via OBDII port
- Supports hybrid and electric vehicles
- Ignition ON/OFF detection
- Cost optimized data transmission
- Self-normalizing accelerometer algorithm
- Over-the-air re-flash (FOTA)
- Certifications - FCC, PTCRB, AT&T, RoHS



Universal Vehicle Connectivity

Danlaw's universal communication approach enables reliable wireless data transmission of vehicle and device sensor data to your backend server. This approach supports an "always connected" vehicle experience between vehicles, Bluetooth-enabled smart phones, WiFi infrastructure, cloud-based servers, and backend servers. The DCM970 establishes flexible and cost-effective data transmission by connecting to the most powerful wireless signal available, or through dedicated and secure connectivity channels.

Embedded Security

Danlaw's DCM970 device integrates a powerful Hardware Security Module (HSM). The HSM is a cybersecurity feature providing industry standard hardware security support for digital certificate storage. You can rely on Danlaw to secure external interfaces and protect your data with the DCM970.

Real-Time Disconnect

The DCM970's built-in SuperCap extends device connectivity by providing highly reliable power to capture and transmit real-time disconnect event data. When vehicle connectivity is imperative to your business, the SuperCap will ensure that event data is not lost if the DCM is unexpectedly disconnected. The SuperCap provides better performance at extreme automotive temperatures and enhanced durability to support over 500k power cycles.

DataLogger DCM970 Series - GEN 3.4 (4G LTE CAT1/3G UMTS/HSPA)

Physical Characteristics

Dimensions	Ultra Compact (L = 43 mm, W = 46 mm, H = 23 mm)
Weight	32.1 g (1.13 oz)
Environment	IP64
Temperature Range	-40°C to +85°C (operating) -40°C to +85°C (storage)
Humidity	0% to 95% (non-condensing) (SAE J1455)
Shock, Vibration, and Heat	SAE J1455, SAE J1211

Certifications

Carrier Certifications	FCC, PTCRB, AT&T Certified
Environmental Certifications	RoHS Compliant

Electrical Characteristics

Supply Voltage	24V (min. 8V to max. 32V)
Current Consumption	<4 mA Average (sleep mode) <100 mA @ 12VDC (data upload)
Voltage Protection	Over and Reverse Voltage, Load Dump (J1113/11), Short Circuit, Transients (ISO 167502), ESD (J1113/13)
Current Protection	Internally protected

Vehicle Communication

Protocol Support	ISO 15765, GMLAN, FNOS, ISO 9141-2, J1850 PMW, J1850 VPW, KWP-2000, ISO 14230-4
Multi-CAN Communication	Simultaneous HSCAN + MSCAN (Ford and others) or Simultaneous HSCAN + SWCAN (GM)
Protocol Detection	Automatic vehicle protocol recognition
Ignition ON/OFF Detect	Automatic wake-up from sleep mode on IGN ON / Automatic sleep mode on IGN OFF

Wireless

Cellular	4G LTE CAT1 (LTE Band 2, LTE Band 4, LTE Band 5, LTE Band 12) 3G UMTS/HSPA 850, 1700, 1900 MHz
Carrier Support	AT&T Certification, T-Mobile, Rogers, Telus, Bell, Telcel, Movistar
Band Support	LTE Band 2 Uplink 1850-1910 MHz/Downlink 1930-1990 MHz LTE Band 4 Uplink 1710-1755 MHz/Downlink 2110-2155 MHz LTE Band 5 Uplink 824-849 MHz/Downlink 869-894 MHz LTE Band 12 Uplink 699-716 MHz/Downlink 729-746 MHz UMTS Band 2 Uplink 1850-1910 MHz/Downlink 1930-1990 MHz UMTS Band 4 Uplink 1710-1755 MHz/Downlink 2100-2155 MHz UMTS Band 5 Uplink 825-849 MHz/Downlink 869-894 MHz
COMM	TCP/IP, UDP, FTP, SFTP, HTTP, HTTPS
SMS	Point-to-Point MO and MT SMS cell broadcast
Bluetooth	Bluetooth 4.2, BLE, Dual-Mode support, multi-phone, Secure Simple Pairing (SSP), Serial Port Profile (SPP)
WiFi	802.11b/g/n 2.4 GHz (transmit data from device to back-end via WiFi connection)
Antenna	Internal built-in Cellular, WiFi, and Bluetooth
FOTA	Firmware-Over-The-Air update for configuration and device firmware

GNSS

Satellite Channels	Acquisition 118 / Simultaneous Tracking 40
Constellation Support	GPS, GLONASS, Galileo, BeiDou
Antenna	Internal built-in
Cold Start/Hot Start	Cold Start < 32 seconds TTFF Sensitivity -145 dBm Hot Start < 1 second Sensitivity -160 dBm
Data Acquisition Rate	Typical 1 Hz
Accuracy	Position < 2.0 m CEP (open sky 1 Hz tracking)
A GPS	Full A GPS Support

Accelerometer/Gyro

3-Axis Accelerometer	X, Y, Z output
3-Axis Gyrometer/Gyroscope	X, Y, Z output
Output Resolution	+/- 2,4,8,16 g (12-bit resolution)
Auto-Normalization Algorithm	Self-Calibrating, Auto-Normalization of the data to the vehicle's direction-of-motion

Miscellaneous

Microprocessor/OS	Cortex A7/ LINUX OS (platform for customer-specific device level development)
Memory (RAM/Flash)	~250Mbytes / ~500Mbytes
Security (Hardware)	Hardware Security Module
Security (Software)	TLS 1.2 or AES-128 (provides industry standard security for device and transmitted data)
Installation	Self-Installed (10 sec or less)
Data Collection Interval	Configurable (1 Hz Max)
Back-up Power	SuperCap (10 F) (supports real-time disconnect events at extreme automotive temperatures and 500K cycles)

DataLogger DCM970 Series - DL862 (GEN2.5) vs. DCM970 (GEN 3.4)

Product Comparison

Feature	GEN 2.5 DL862	GEN 3.4 DCM970
OBD-II Communication	●	●
Vehicle Support	1996 - Present	1996 - Present
3-Axis Accelerometer	●	●
3-Axis Gyroscope/Gyrometer		●
Device Size	L = 43 mm, W = 46 mm, H = 23 mm	L = 43 mm, W = 46 mm, H = 23
Wireless Communication	3G UMTS/HSPA - 2G GSM/GPRS	4G LTE CAT1 - 3G UMTS/HSPA
4G LTE CAT 1		●
3G UMTS/HSPA	●	●
2G GSM/GPRS	●	
Built-in/Self-Contained Antenna IP64	Proprietary Antenna	Proprietary Antenna
Wireless Carrier Support (US and Canada)		
AT&T, T-Mobile, Rogers, Telus, Telcel, Movistar	●	●
Bluetooth	BT 4.0 + BLE (Dual Mode)	BT 4.2 + BLE (Dual Mode)
Bluetooth Low Energy (BLE)	●	●
Apple iOS	●	●
Android OS	●	●
WiFi		802.11b/g/n
GNSS - Hardware	Ublox - MAX 8	Qualcomm GEN8
GNSS Constellation Support	GPS/GLONASS/Galileo	GPS/GLONASS/Galileo/BeiDou
GNSS Antenna	Proprietary Antenna tuned for MAX 8	Proprietary Antenna tuned for QC
Ring Detect Hardware Support	●	●
Cell Locate	●	●
SIM		
Physical SIM Card	2FF (mini SIM)	3FF (micro SIM)
Solderable Chip SIM	Optional	Optional
Miscellaneous		
SuperCap for Real-Time Disconnect		●
Security	AES-128	TLS1.2 or AES-128
Available Memory	500KB/8MB	250MB/500MB

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