

ECOM

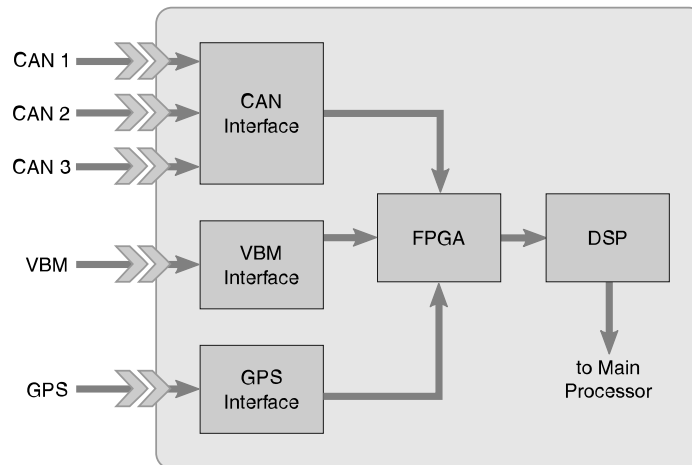
eDAQ Vehicle Network Communications Layer



Special Features

- Three (3) dedicated CAN device interfaces, one (1) vehicle bus module interface and one (1) GPS communications port for Somat GPS devices
- Up to 254 vehicle bus channels available per unit
- Includes a predefined J1939 database
- The eDAQ-PLUS CPU supports the ECOM layer
- The ECOM layer is not compatible with the eDAQXR CPU

Block diagram



NOTE

A double-arrowhead symbol in the diagram represents male and female connectors only, not power polarity or input/output direction.

Detailed Description

The ECOM Vehicle Network Communications Layer offers three (3) dedicated CAN device interfaces, a vehicle bus module (VBM) interface and a GPS communications port designed to work with Somat GPS devices. All interfaces use a M8 female bulkhead connector. The ECOM is an extremely versatile layer, providing a direct correlation between vehicle bus channels with physical data (e.g. analog, thermocouple and frequency) as well as GPS. Up to 254 vehicle bus channels can be recorded per input, allowing total eDAQ system channel counts to be virtually limitless. Unlike other data acquisition products, vehicle bus channels do not consume any analog inputs. In fact, all 254 channels are input directly through a single connector.

The ECOM can be used as a passive eavesdropper on the controller network or, when needed, can become an active participant, making frequent requests for specific information. The ECOM layer utilizes a simple logical masking scheme to identify required frames in an easily managed textual database which identifies where a unique message is within the frame. These methods allow for a short learning curve and easy manipulation using tools such as Microsoft Excel® where parameter group numbers (PGN), parameter identifiers (PID) or even direct address information can be added or modified. The ECOM layer comes with many pre-defined databases, such as J1939, simplifying access to standard information.

The ECOM layer is not compatible with the eDAQXR CPU. The features of the ECOM layer are superseded by the GPS, CAN and Ethernet ports on the eDAQXR CPU.

Ordering Options

Order No.	Description
1-ECOM-2	eDAQ Vehicle Network Communications Layer Includes: (4) 1-SAC-TRAN-MP-2-2 Transducer Cables
1-ECPU-PLUS-COM-2	eDAQ Plus Base Processor with ECOM Layer Includes: (1) 1-SAC-EPWR15-2 Power Cable, (1) 1-SAC-ESR9/XO-2 Communications Cable, (1) 1-SAC-EDIO-2 Digital I/O Transducer Cable and (4) 1-SAC-TRAN-MP-2-2 Transducer Cables

Accessories and Cables (Order Separately)

Order No.	Description
1-EGPS-5HZ-2	GPS Receiver - 5 Hz Update
1-EGPS-200-B-2	Precision GPS receiver, Includes (1) Trigger Cable (1-SAC-GPSTRIG-2) and (1) GPS Antenna (1-EGPS-200-ANT-2)
1-EGPS-200-P-2	Precision GPS receiver PLUS Package - IMU and RTK Measurements, Includes (1) Trigger Cable (1-SAC-GPSTRIG-2), (2) GPS Antennas (1-EGPS-200-ANT-2) and (1) Dual Antenna Template (1-EGPS-200-TEM-2)
1-EVBM-CAN-2	Vehicle Bus Module - CAN Requires: (1) Extension Cable (not included, 1-SAC-EXT-MF-X-2)
1-SAC-TRAN-MP-2-2	Transducer Cable - Male/Pigtail - 2 Meters Length
1-SAC-TRAN-MP-10-2	Transducer Cable - Male/Pigtail - 10 Meters Length
1-SAC-EXT-MF-0.4-2	Extension Cable - Male/Female Connectors - 0.4 Meters Length
1-SAC-EXT-MF-2-2	Extension Cable - Male/Female Connectors - 2 Meters Length
1-SAC-EXT-MF-5-2	Extension Cable - Male/Female Connectors - 5 Meters Length
1-SAC-EXT-MF-10-2	Extension Cable - Male/Female Connectors - 10 Meters Length
1-SAC-EXT-MF-15-2	Extension Cable - Male/Female Connectors - 15 Meters Length

Specifications

Parameters	Units	Description
Layer dimensions, width x length x height	cm	23 x 25 x 3.3
Layer weight	kg	2.0
Temperature range	°C [°F]	-20 ... +65 [-4 ... +149]
Relative humidity range, non-condensing	%	0 ... 90
CAN protocol		ISO 11898, 2.0A and 2.0B
CAN baud rates	bps	1M, 800k, 666.6k, 500k, 400k, 250k, 125k, 100k, 50k, 41.6k, 20k
Transducer power voltage range (200 mA)	V	3 ... 24
Power consumption ¹⁾		
no load	W	1.31
EGPS-5HZ	W	1.64
VBM	W	2.07

¹⁾ Power consumption measurements include the efficiency of the power supply.

Standards

Category	Standard	Description
Shock	MIL-STD-810F	Method 516.5, Section 2.2.2 Functional Shock - ground vehicle
Vibration	MIL-STD-202G	Method 204D, Test condition C (10 g swept sine tested from 5 Hz to 2000 Hz)
EMC requirements	EN 61326-1:2006 EN 61326-1:2012	Before July 2018, CE conformity test per EN 61326-1:2006 After June 2018, CE conformity test per EN 61326-1:2012

Connectors



The diagram shows the M8 connectors for CAN, VBM and GPS connections on an ECOM layer.

Transducer Cable for Dedicated CAN Interface

The dedicated CAN interface on the ECOM layer uses a Somat SAC-TRAN-MP Transducer Cable (1-SAC-TRAN-MP-2-2 or 1-SAC-TRAN-MP-10-2) with an M8 connector and a set of color-coded pigtail wires. The following table lists the pinouts for the SAC-TRAN-MP cable when used with a dedicated CAN interface on the ECOM layer.



NOTE

Connection to both the SWC pin and the CAN pins is allowed, but only one source can be used at any given time.



NOTE

Always provide the +12 volt REF voltage for the SWC interface. For other CAN interfaces, the red power wire can be used to power transducers with a user-configurable range of 3 to 24 volts.

Connector	Pin	Function	Wire color
	1	SWC	Brown
	2	CANH	White
	3	AGND	Bare wire
	4	Not used	Not connected
	5	Power	Red
	5	+12 V REF	Red (SWC)
	6	CANL	Green



© HBM, Inc. All rights reserved. All details describe our products in general form only. They are not to be understood as express warranty and do not constitute any liability whatsoever.

Americas: HBM, Inc. · 19 Bartlett Street · Marlboro · MA 01752 · USA · Tel.: (800) 578 4260 · Email: info@usa.hbm.com

Asia: Hottinger Baldwin Measurement (Suzhou) Co., Ltd. · 106 Heng Shan Road · Suzhou 215009 · Jiangsu · China
Free hotline: 4006217621 (only in China) · Tel.: +86 512 682 47776 · Email: hbmchina@hbm.com.cn

Europe: Hottinger Baldwin Messtechnik GmbH · Im Tiefen See 45 · 64293 Darmstadt · Germany
Tel.: +49 6151 803-0 · Email: info@hbm.com

measure and predict with confidence

