

DATASHEET

CAPTURE MODULE 10BASE-T1S

General description

The Capture Module 10BASE-T1S is a specialized logging device for capturing and timestamping 10BASE-T1S Ethernet traffic. It offers advanced monitoring capabilities, recording key bus events such as beacon receptions and empty cycles. Designed for minimal interference, it ensures precise traffic capture and provides an accurate representation of network behavior for detailed analysis.

Standardized logging protocol

The Capture Module encapsulates logged frames into an ethernet frame adding valuable information such as the HW timestamp, Interface ID, Counter and more in a standardized logging protocol header.

Scalable setups

Several Capture Modules can be combined and used together in the same measurement network. The built-in time synchronization feature allows to synchronize the whole measurement network with the same time base. This makes the Capture Modules very scalable and allows to add other IVN technologies to the measurement setup.

Application Areas

Capture Modules are designed to be used in different environments such as in the car, on a development desk or in testbenches. In order to cover these areas as best as possible, the devices allow continuous operation and a wide temperature range.

Optimized logging

Startup time is crucial in an in-vehicle-network. Therefore, the Capture Modules are developed to provide an optimized startup time to be ready to log before the ECUs are up and send data. In addition to that, the Capture Module is equipped with an internal buffer to store the first frames (sent from the ECUs), even if the data sink is not yet ready. As soon as the data sink is up and ready to receive data, all the stored data will be sent out. With the packetization and output traffic shaping feature the Capture Module can adjust the size of the logging frames and have the possibility to maintain a consistent data flow (to the logger or the test PC). This way it actively prevents forwarding of bursts. The combination of these features ensures that no frames are lost.

Configuration

The CM offers a flexible and user-friendly configuration through its built-in web server. The device webpage can be easily accessed via a standard web browser. In addition, the possibility to import/export a configuration makes it even more convenient.



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Technical Data

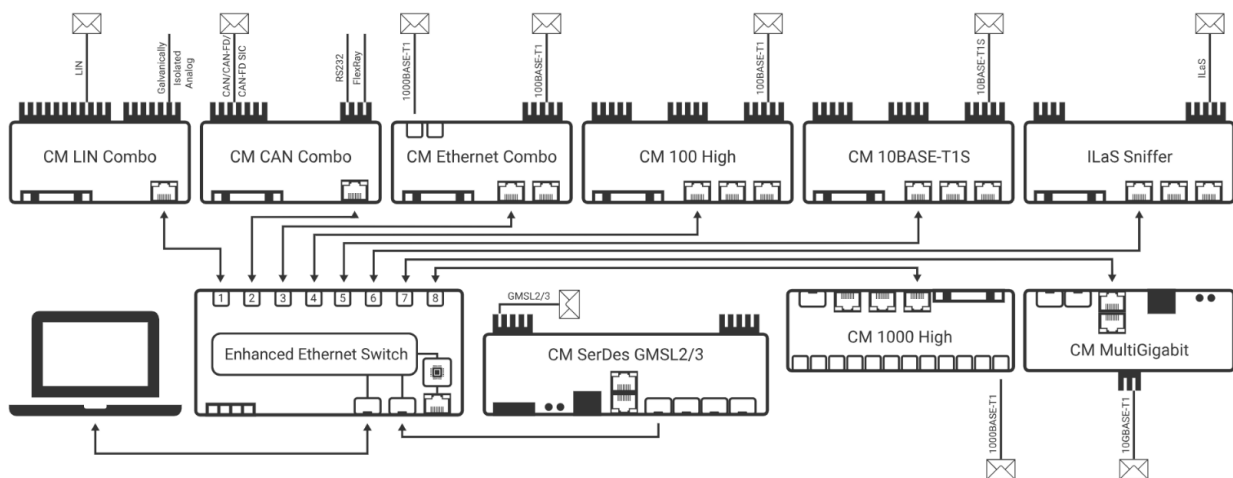
Operating temperature	-40 °C to +85 °C
Supply Voltage	6.5 V to 32 V DC (typ. 12 V)
Power consumption	5 to 7 Watt
IP Protection Class	IP 20
Dimensions (incl. connectors) W x D x H:	167 x 147 x 39 mm
Weight	0.7 kg (approx.)
Interfaces	6x 10BASE-T1S (MQS) 3x 1000BASE-T (RJ-45) for Config, Logging, Sync 1x 100BASE-T1 (MQS) for Config, Logging, Sync 1x 100BASE-T1 (MQS) for Config 2x Wake in/out (MQS)
Phy (vehicle-side)	LAN8670 (Microchip)

Features of Capture Module 10BASE-T1S

Device Features	Configuration Webpage
	Wake-/Sleep
	Import-/Export of Configurations
	Status LEDs
	TECMP
	Status Messages
	Manual IP Configuration via Rotary Switch
	Optimized Startup + Startup Buffer
	Cascading
	Hardware Timestamping
	Time Synchronization (gPTP/802.1AS-2011 AVnu profile or PTPv2 subset)
	Packetization
	Output Traffic Shaping
	Advanced Filtering
	Sync Events
	10BASE-T1S Event Logging (captures and timestamps key network occurrences, including physical layer errors and significant PLCA cycle events).
10BASE-T1S Injection*	10BASE-T1S Injection (Inject 10BASE-T1s traffic filtered by MAC or IP source, enabling extended test scenarios for device validation)

* License needs to be ordered separately

Use case



Order Information

Name	Article Number	Article number cable set*	10BASE-T1S Injection*
Capture Module 10BASE-T1S	TE-1181	KS-1181	FT-1181

* Needs to be ordered separately