XORAYA Z7

X2E
embedded system design

XORAYA
high performance automotive platforms

The XORAYA Z7, based on the Xilinx Zynq®-7000 All Programmable SoC, is an automotive data logger capable of taking data records of several automotive bus systems simultaneously. This is currently implemented for LS-CAN, HS-CAN, CAN FD, FlexRay, RS-232, LIN, MOST25, MOST150, Ethernet, BroadR-Reach® (OABR), PSI5 and analog signals; support of further bus systems is possible. In addition, Harman-Becker's GNLog protocol and the DLT protocol can be recorded via Ethernet, OABR and RS-232. All data is logged based on a precise, central time-stamp with 100 ns resolution and either saved on the internal SSD or transferred to an external computer system via Ethernet. Optionally, the log data can also be stored on the additional device *XORAYA external storage unit*.

A built-in supercapacitor unit is able to bridge power fluctuations and to shut the data logger down safely in case of power failures.

The operational control elements are located on the front of the XORAYA Z7: connectors, buttons, SD card slot and several LEDs as visual indicators of logger/bus activity and operation modes. A 4-port Gigabit Ethernet switch is used for configuration and to download the log traces with a speed up to 800 Mbit/s.

The recording interfaces are located on the back of the data logger. Every XORAYA Z7 is already equipped with 20 HS-CAN channels (upgradable to CAN FD), 8 RS-232 channels, 1 Dual-Flex-Ray card and 4 Gigabit Ethernet ports. 3 additional slots for plug-in cards allow flexible interface configurations according to customer requirements. An add-on board is also available to provide the data logger with 12 OABR ports.

Specifications
– Central 100 ns timestamp for all interfaces
– Supercap unit
– Battery-buffered real-time clock
– Download 800 Mbit/s
– Dimensions (H x W x D) 55 x 250 x 205 mm (without impact protection)
– Temperature range -40 °C to +65 °C
– External operating voltage 6 V to 36 V
– Current consumption (standard mode) max. 1 A (at 12 V)
– Current consumption (standby) max. 0.9 mA (at 12 V)
– Automatic sleep mode, wake up by CAN, FlexRay, RS-232, LIN, MOST, PSI5, wakeline or trigger
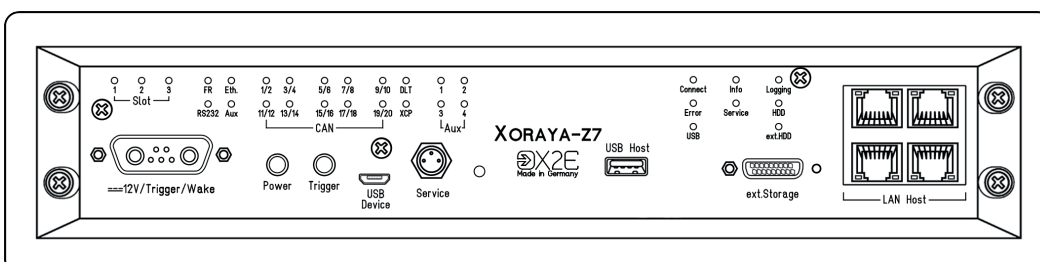
Record Modes
– On internal SSD or on XORAYA external storage unit
– Via Ethernet to PC

Software
– Logger OS: Embedded Linux
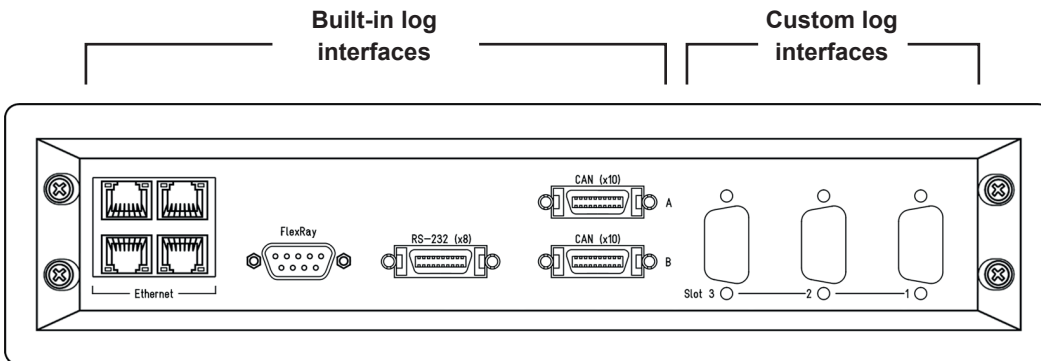– XORAYASuite and XORAYASDK for Microsoft Windows

Delivery Contents
– XORAYA-Z7
– Power supply cable
– Software
– Manual
– XORAYA external storage unit (optional)
– Cable set (optional)
– Impact protection (optional)

Front view

Xoraya Z7

Built-in log interfaces

Custom log interfaces

Back view

Block diagram

Available Extensions

CAN Interface
– LS-CAN: 1 channel
– HS-CAN: 1, 2 or 4 channels per slot
– CAN FD: 4 channels per slot

FlexRay Interface
– 1 single or 1 dual channel

RS-232 Interface
– 8 channels
– GPS via RS-232

LIN Interface
– 4 or 7 channels

MOST25/150 Interface
– Status and control messages
– MOST data packets
– MOST Ethernet packets
– Streaming data (optional)

OABR Interface
– 12 channels
– Usable as a media converter to standard Ethernet

PSI5 Interface
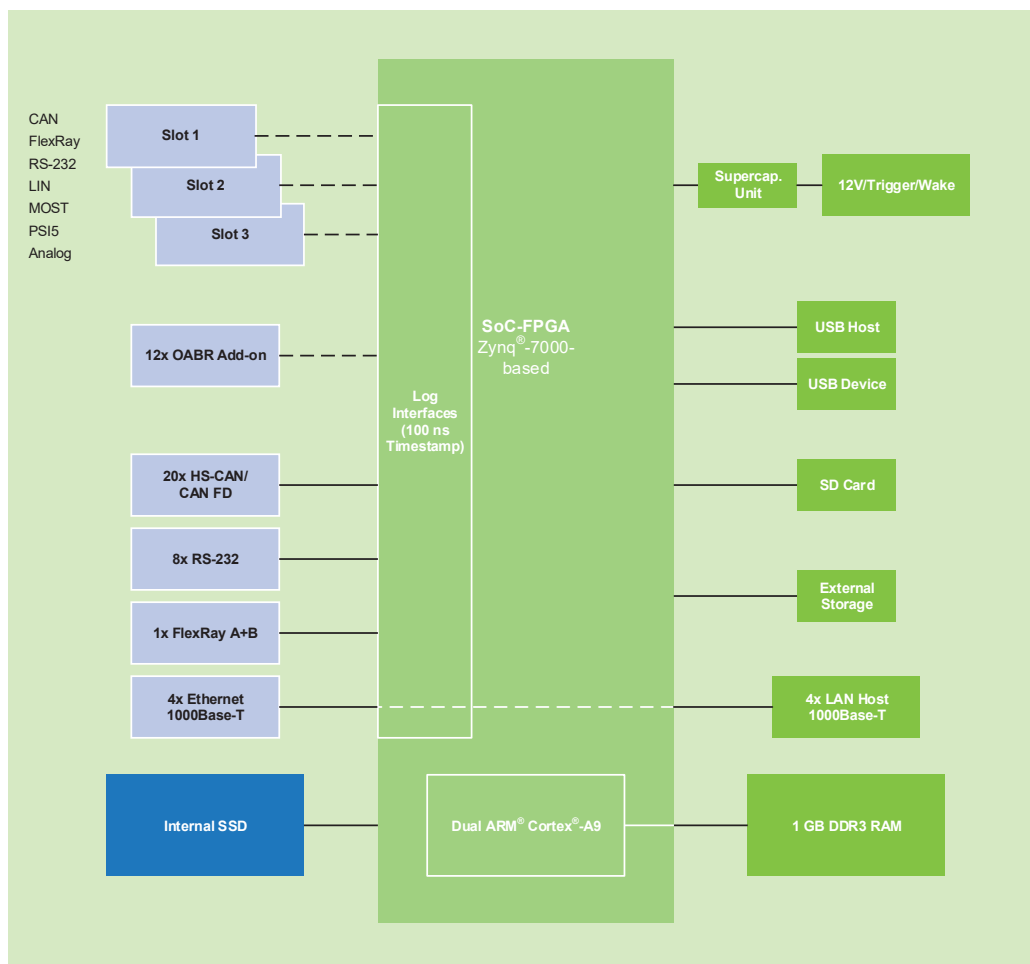– 4 active channels
– 4 passive channels

Analog Interface
– 6 channels
– 100 kHz, 12 bit

Wi-Fi Module
– IEEE 802.11a/b/g/n

GSM/UMTS Module
– Sends status reports

Pictures may differ from actual device.

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