



CANopenIA-XA

Product brief

The CANopenIA-XA is a CANopen communication peripheral chip that implements the CANopen protocol compliant to CiA standard DS 301 version 4.01. CANopenIA-XA is based on the Philips XA (eXtended Architecture) 16-bit microcontroller XA-C3 with an extended PeliCAN CAN 2.0B engine optimized for usage with higher-layer protocols such as CANopen.

CANopenIA-XA is available as a chip or as a module which implements clock generation and serial EEPROM to store configuration data. To become familiar with COIA-XA a starter kit is available.

Behaviour of the chip is configured with a straightforward configuration tool, the CANopen-IASetup.

Chip Features

- 44-pin LQFP package
- Industrial temperature (-40 to 85 °C) range
- 24 MHz operating frequency at 4.5 to 5.5 V operation
- Three CANopen protocol related special function pins: SFPO, SFP1, SFP2
- SPI interface to connect the configuration EEPROM
- SPI interface to connect D/A and A/D converters
- Two CANopen operating modes (only binary I/O or binary together with analog I/O)

COIA-XA CAN and CTL Features

- A PeliCAN CAN 2.0B engine which supports all CANopen data rates up to 1 Mbps
- CANopen protocol implemented in mask ROM
- Up to four transmit process data objects (TPDO)
- Up to four receive process data objects (RPDO)
- Transmission types configurable by SDO access to object dictionary
- Hardware triggered transmission using Special Function Pin
- Hardware triggered emergency messages using Special Function Pins
- Fast response times due to architecture optimized CANopen implementation
- 100 ms input scan

CANopen Operating Modes

Mode 1

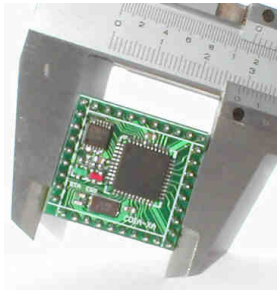
Digital I/O node with 20 channels using P0 (8 bit), P1 (4 bit) and P2 (8 bit); compliant to DS401

Mode 2

Generic I/O node with up to 16 digital and 6 analog channels (4 inputs and 2 outputs). Analog components are connected via the additional SPI port.

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CANopenIA-XA Module



The CANopenIA-XA Module allows integration of the CANopenIA-XA chip functions in user's hardware without taking care about clock generation, EEPROM hardware and the status and error indication. The module can easily be implemented in user's hardware with a 37 pin 2.54 mm grid connector. Components can be placed under the module on the main PCB. The module includes the COIA-XA chip, the clock generator, the EEPROM to store the setup data and two LEDs to signal status and error information according to the CANopen specification.

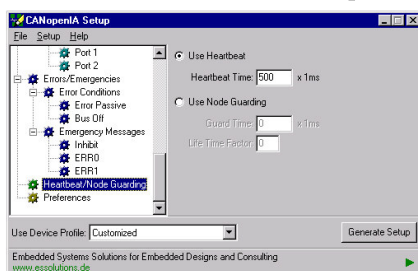
CANopenIA-XA Starter Kit

The evaluation board included in the COIA-XA starter kit provides LEDs, switches and buttons for all the ports of the CANopenIA-XA. Each I/O port pin features both a LED and DIP switch. If used as an input, the switches can be used to stimulate the input. If used as output, the LED displays the current signal state.

Three push buttons are connected to the Special Function Pins (SFP) and DIP switches are provided to allow for hardware configuration of the Node ID and the Baudrate.



COIA-XA Setup Tool



With the CANopenIA-XA Setup Tool all features supported by the CANopenIA-XA chip are configured in a very easy manner.

The tool generates a data set to be downloaded to the chip and a device configuration file which can be read by third party CANopen bus configuration tools.

ESS Embedded Systems Solutions
Industriestr. 15
D-76829 Landau
Telefon: (49) 6341/3487-0
Fax : (49) 6341/3487-29
www.ESSolutions.de

More information regarding
the CANopenIA-XA products are found in

www.CANopenIA.com