MicroCANopen Plus

Part No.:
MPESA-Embeded-Communi-Plus

Powerful, flexible CANopen compliant source code. Designed for small footprint applications. Contains some high end features such as synchronous PDO transmission, emergency objects and heartbeat consumption.

MicroCANopen Plus is a small footprint, commercial grade CANopen implementation, with some advanced features. Ideal for situations requiring minimal configurability but great performance on 8-bit microcontrollers, MicroCANopen Plus provides the perfect solution.

MicroCANopen Plus is written in 100% standard C code. As a consequence, clients can decide to port the software to processors not yet supported, including microprocessors, microcontrollers and DSPs. Designers familiar with their target processor can easily perform the port themselves.

MicroCANopen Plus offers a low, one-time fee and no royalties on deployed products. And you get the entire source code for with every purchase!

Features

The following is a list of features in MicroCANopen Plus. The list is not exhaustive by any means, but does give a good overview.

- NMT State Machine
- Heartbeat
- Node Guarding
- Object Dictionary (OD)
- Expedited SDO
- Static PDO
- PDO with event time
- PDO with inhibit time
- PDO with SYNC
- Dynamic PDO

- Heartbeat Consumer
- Economical One Time Fee
- Full Source Code Provided
- No Royalties on Deployed Products
- Excellent Documentation and Support
- Emergencies

Suggested Application Usage

MicroCANopen is best suited for minimal CANopen slaves that are pre-configured and do not need to be re-configured during operation. CAN baud rate, the node ID and all PDO parameters are known at implementation and hard-coded into the module. This limits the usage of MicroCANopen to applications where the CANopen node is used over-and-over with the exact same configuration.

MicroCANopen Plus is best suited for CANopen slaves requiring minimal configurability. CAN baud rate, the node ID and PDO communication parameters are configurable. This allows using MicroCANopen Plus for nodes that typically require some setup during installation of the node.

MicroCANopen Classic is best suited for full-featured, highly flexible CANopen slave nodes and for minimal CANopen NMT (Network Management) Master applications. Using a setup file, CMX-CANopen can be completely re-configured. Without re-compilation Object Dictionary entries can be modified, added or removed. This allows one CMX-CANopen implementation to be used for a wide variety of devices.

What's Included

MicroCANopen Plus is delivered with a driver for the PEAK MicroMod and an example DS401 Generic I/O implementation. The implementation demonstrates eight digital inputs, eight digital outputs, four analog inputs and eight analog outputs.

Additional and customized examples are available upon request and can include Device Profile Implementations such as Joysticks,

Encoders (DS406), Batteries (DSP418), Chargers (DSP419) or Elevators/Lifts (DSP417).

All our examples pass the official CANopen Conformance Test!

Full documentation is supplied allowing easy development of drivers for other hardware platforms. We can develop drivers for you, please contact us for details.

Comparison Between CANopen Implementations

Feature	MicroCANopen	MicroCANopen Plus	MicroCANopen Classic
All CANopen baud rates supported	✔	✔	✔
Network Management state machine with autostart option	✔	✔	✔
Heartbeat producer, [1017H]	✔	✔	✔
Heartbeat consumer, [1016H]		✔	✔
Node Guarding responses		✔	✔
Setup via hard-coding in program	✔	✔	✔
Setup via CANopen Task Setup File (read/write to [1F50H])			✔
Object Dictionary support for data types of up to 4 bytes (expedited SDO transfer)	✔	✔	✔

Feature	MicroCANopen	MicroCANopen Plus	MicroCANopen Classic
Object Dictionary support for any data type		Segmented	Segmented and Block
PDO default configuration can be hard-coded	✔	✔	✔
Dynamic PDO Communication Parameters (write to [14xxH] and [18xxH] allowed)		✔	✔
Dynamic PDO Mapping Parameters (write to [16xxH] and [1AxxH] allowed)			✔
Store PDO parameters in non-volatile memory ([1010H], [1011H] and [1020H])		✔	✔
TPDO Trigger by Event Time	✔	✔	✔
TPDO Trigger by COS with Inhibit Time	✔	✔	✔
TPDO Trigger by SYNC		✔	✔
TPDO Trigger by RTR			✔
Emergency Producer, [1014H] and [1015H]		✔	✔
Emergency			✔

Feature	MicroCANopen	MicroCANopen Plus	MicroCANopen Classic
Consumer, [1028H]			
Layer-Setting Services		Regular and FastScan	Regular
SDO Client		With optional Manager Add-On	✔
Implements NMT Master		With optional Manager Add-On	✔
Common CAN driver interface		✔	✔
Flexible integration into RTOS		✔	✔
Maximum number of PDOs	8	1024	1024
Maximum size of process image storing all data that can be mapped to PDOs (in bytes)	254	65,534	65,534
Smallest timer tick resolution available	1ms	1ms	100us
Minimal SDO Manager			✔
DS447 Car Add On Devices Support		With optional DS447 Add-On	
Error and Emergency History, [1003H]		✔	

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