

2008-07 Release Announcement TTC 200/TTC 100

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1. Revision Chart

A revision is a new edition of the document and affects all sections of this document.

Date	Person	Version	Modification
2008-04-28	Jürgen Oberhofer	1.0	Initial Version.
2008-05-05	Jürgen Oberhofer	1.1	Work in of review findings.

2. Overview

Title	Type	Prog.Sys.	Module
RS232/USB Memory Stick Automatic Application Download	New Add-On	All	Bootloader
Reconfigure TTC 200/TTC 100 outputs to act as inputs	New Add-On	CoDeSys	RTS, Library, PLC Config.
EEPROM functions without Busy Waiting	New Add-On	CoDeSys	RTS, Library
PID function	New Add-On	CoDeSys	RTS, Library
TTC-CAN Bootloader Polling function	New Add-On	All	TTC-CAN Downloader SW
CoDeSys Documentation: How to create Visualizations for TTC200/TTC 100	Documentation	CoDeSys	Documentation
C Programming with CodeWarrior IDE	New Add-On	C	BSP
CAN Calibration Protocol (CCP)	New Add-On	C	BSP, IO Driver
TTControl CoDeSys Library: Check_PWM_State	Bug fix	CoDeSys	RTS, Library

3. Introduction

3.1 Purpose and Scope

This document describes all new features, new functions and bug fixes which will be available with the next software release 2008-07 for TTC 200 / TTC 100.

Note:

Downward Compatibility means: existing applications can be downloaded to ECU of 2008-07 release.

4. New Features

4.1 Automatic application download with RS232/USB Memory Stick

Description:

The RS232/USB Memory Stick is equipped with a 512MB MMC Flash Card. This allows the user to copy the CoDeSys application of the vehicle or even any other file from the PC to the RS232/USB Memory Stick (USB connector side).

The RS232/USB Memory Stick can be connected to RS232 of TTC 200/TTC 100. On startup, TTC 200/TTC 100 checks if a RS232/USB memory stick is connected. If so, the automatic download of the application starts. The LEDs encoding indicate the download state and possible error states.

The download of standard s19 Files and CoDeSys boot project files is possible.

Use case:

For an update of TTC 200/TTC 100 application no PC / Notebook is needed anymore. Service personnel can make an update of TTC 200/TTC 100 application without PC / notebook. Only a RS232/USB memory stick with correct application is needed.

New TTC200/TTC100 SW modules:

CAN Bootloader v1.5 (Note: the TTP-Bootloader does not support this feature)

Affected programming system:

All.

Affected variants:

All variants with CAN Bootloader. (Ordering Code: TTC-x00 x x C x xx x, x = don't care)

Downward Compatibility:

Compatibility with older versions is given. If no RS232/USB Memory Stick is found on RS232 interface TTC 200/TTC 100 will process with the boot process.



Fig. 1: RS232-USB Memory Stick

4.2 Reconfigure TTC 200/TTC 100 outputs to act as inputs

Description:

All output stages of TTC200 and TTC 100 can be configured to act as inputs. To achieve this, a new PLC configuration is generated, that allows the user to select whether he wants to use the output stage as output or as input.

PWM output stages can be reconfigured to act as:

- TPU inputs
- Digital inputs

Digital output stages can be reconfigured to act as:

- Digital inputs

Use cases:

Applications which need many inputs (door switches, end switches ...) on the one hand, but have output resources available on the other hand, the system designer can use this new feature to reconfigure not used output stages.

New TTC200/TTC100 SW modules:

CoDeSys RTS V3.1.

TTC200_Basic.lib, TTC100_Basic.lib

TTC200 PLC Configuration, TTC100 PLC Configuration

Affected programming system:

CoDeSys.

Affected variants:

CoDeSys variants using the RTS \geq 3.0. (Ordering Code: TTC-x00 x x C x CD x, x = don't care, RTS \geq 3.0)

Downward Compatibility:

Compatibility with older versions is given.

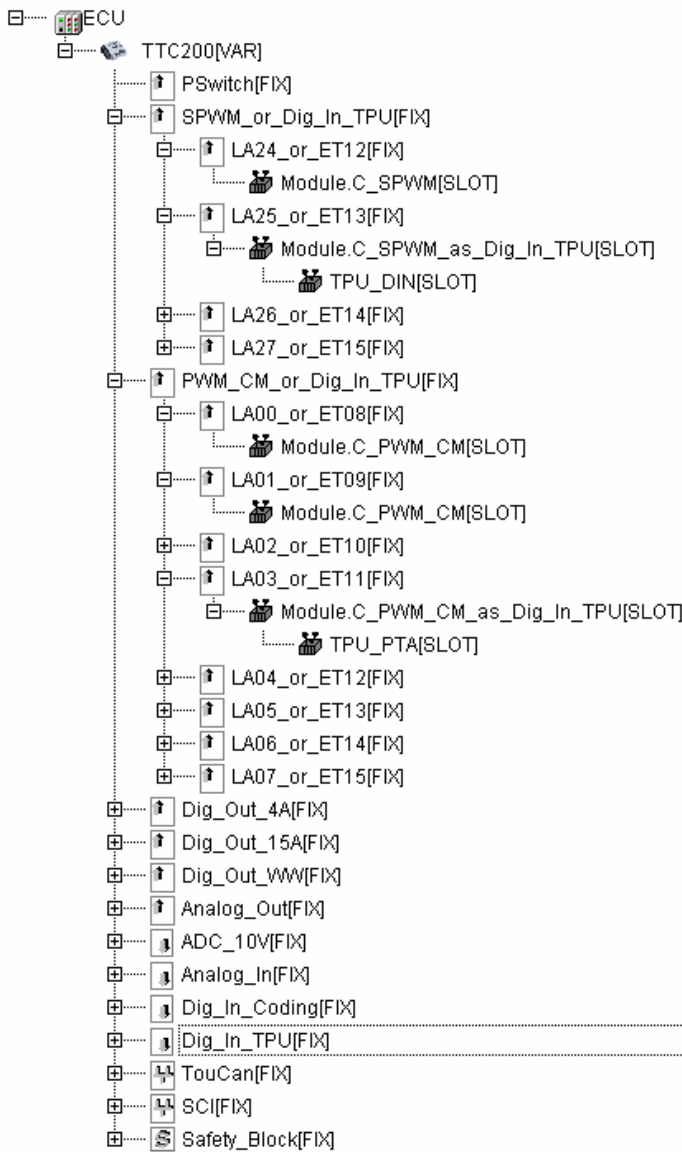


Fig. 2: PLC Configuration as seen in CoDeSys

4.3 EEPROM functions without Busy Waiting

Description:

EEPROM_Load and EEPROM_Save are implemented with busy waiting, i. e. as long as the eeprom call is not finished, the program cycle is blocked. New EEPROM functions will be provided that do not block the program cycle, but execute the read and write task within more than one cycle.

Use cases:

Some applications need to write and read from EEPROM during “normal” working cycle. A blocking read or write operation would block the cycle time causing a not expected time behavior of the vehicle or a conflict with the watchdog of TTC 200 / TTC 100. A non blocking read or write function avoids such problems.

New TTC200/TTC100 SW modules:

CoDeSys RTS V3.1.

TTC200_Basic.lib, TTC100_Basic.lib

Affected programming system:

CoDeSys.

Affected variants:

CoDeSys variants using the RTS ≥ 3.0 . (Ordering Code: TTC-x00 x x C x CD x, x = don't care, RTS ≥ 3.0)

Downward Compatibility:

Compatibility with older versions is given, as the old functions are still available.

4.4 PID control function

Description:

A new PID control function in TTControl.lib is provided with following enhancements:

- A separate output-parameter for the PID output and a simple input parameter for the setpoint offer an easier-to-use interface.
- Internally scaling of FW-gain
- Additional documentation and example project how to use the PID function.

Use cases:

The PID control function can be used for various control problems such as current control, load control, ...

New TTC200/TTC100 SW modules:

CoDeSys RTS V3.1.

TTControl.lib

Affected programming system:

CoDeSys.

Affected variants:

CoDeSys variants using the RTS ≥ 3.0 . (Ordering Code: TTC-x00 x x C x CD x, x = don't care, RTS ≥ 3.0)

Downward Compatibility:

Compatibility with older versions is given.

4.5 TTC-CAN Bootloader Polling function

Description:

A new function within TTC-CAN Bootloader PC Software is provided, that allows the user to poll a TTC 200 or TTC 100 with CoDeSys RTS programmed.

Use cases:

This function allows the user to check the communication settings of CoDeSys (CAN Baudrate, CAN ID), without the need of using pin 114 and standard communication settings.

New TTC200/TTC100 SW modules:

TTC-CAN Bootloader PC SW

Affected programming system:

CoDeSys.

Affected variants:

All variants with CAN Bootloader. (Ordering Code: TTC-x00 x x C x xx x, x = don't care)

Downward Compatibility:

Compatibility with older versions is given.

4.6 CoDeSys Documentation: How to create Visualizations for TTC200/TTC100

Description:

An example showing how the visualization can be used for monitoring or configuring TTC 200/TTC 100 enhances the utility of the CoDeSys tutorial located on the installation CD.

New TTC200/TTC100 SW modules:

Documentation.

Affected programming system:

CoDeSys.

Affected variants:

All CoDeSys variants. (Ordering Code: TTC-x00 x x C x CD x, x = don't care)

Downward Compatibility:

Compatibility with older versions is given.

4.7 C Programming with CodeWarrior IDE

Description:

The certified Board Support Package (BSP) will support CodeWarrior IDE. This embedded software development toolset includes an optimizing compiler (C/C++), needed runtime libraries, a complete source code debugger and simulator environment with flash programmer and debug on-target capabilities.

Features:

- Highly efficient C/C++ compiler with cutting-edge optimization technology for fast, compact code
- Complete control of code and data memory allocation

- Industry-leading debugger with integrated logic analyzer interface
- Faster, more intuitive flash programming

New TTC200/TTC100 SW modules:

BSP and IODriver 1.1.6

Affected programming system:

C.

Affected variants:

All C variants. (Ordering Code: TTC-x00 x x C x NA x, x = don't care)

Downward Compatibility:

Compatibility with older versions is given.

4.8 CAN Calibration Protocol (CCP)

Description:

CAN Calibration Protocol v2.1 will be supported for C programming. CCP is a high-level protocol based on CAN, used for development and test of ECU software in vehicles.

Main functions of CCP are:

- Acquisition of measurement data
- Evaluation of measurement data
- Calibration (parameter setting)

Requirements:

- PC with CCP compliant development tool (e. g. Vector CANape, tools from National Instruments, dSpace, ...)
- Compliant interface PC \leftrightarrow CAN (e. g. Vector CANcaseXL)
- TTC 200 / TTC 100 with CCP support

Use cases:

Field testing of vehicle functions by:

- Acquisition of measurement data
- Evaluation of measurement data
- Calibration (parameter setting)

New TTC200/TTC100 SW modules:

BSP and IODriver 1.1.6, CCP C library

Affected programming system:

C.

Affected variants:

All C variants. (Ordering Code: TTC-x00 x x C x NA x, x = don't care)

Downward Compatibility:

Compatibility with older versions is given.

5. Bug fixes

5.1 TTControl CoDeSys Library: Check_PWM_State

Description:

The detection of short circuit of a PWM output stage will be implemented independent from the open load detection functionality. This allows better and more accurate detection of both errors.

New TTC200/TTC100 SW modules:

CoDeSys RTS V3.1.

TTControl.lib

Affected programming system:

CoDeSys.

Affected variants:

CoDeSys variants using the RTS ≥ 3.0 . (Ordering Code: TTC-x00 x x C x CD x, x = don't care, RTS ≥ 3.0)

Downward Compatibility:

Compatibility with older versions is given.