

From
RBE/EEF

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Koramangala
06 May 2015

Requirements specification

Recipient

Cc

Topic **API definition of Soft_T15.dll – Rev1.0**

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1 Scope

The following API is intended to be used by the Integration Test Framework to interact with some I/O test devices. The Test Cases for the Integration Test Framework must be able to call this API functions from their code. Therefore the functions should be in vb.net, so that they can be provided as a dynamic link library, which should be accessible from other standard scripts.

2 API Description

2.1 Function for T15 Relay Control

2.1.1 ControlT15

Service name:	ControlT15
Syntax:	byte ControlT15 (byte status)
Parameters (in):	status T15 Relay On-Off (0-Off, 1- On)
Parameters (in-out):	none
Parameters (out):	none
Return value:	byte 0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function sets the Relay channel channelled ON or OFF.

2.2 Function for Reset Hardware

2.2.1 ResetHardware

Service name:	ResetHardware
Syntax:	byte ResetHardware ()
Parameters (in):	none
Parameters (in-out):	none
Parameters (out):	none
Return value:	byte 0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function resets the CATS Hardware.

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2.3 Function for Handshake

2.3.1 Handshake

Service name:	Handshake	
Syntax:	byte Handshake ()	
Parameters (in):	none	
Parameters (in-out):	none	
Parameters (out):	none	
Return value:	byte	0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function checks for a Hand shake with the CATS Hardware.	

2.4 Functions for Engine Speed Module

2.4.1 ChangeESMRPM

Service name:	ChangeESMRPM	
Syntax:	byte ChangeESMRPM (ushort RPMValue)	
Parameters (in):	RPMValue	ESM RPM Value (0-7500 RPM)
Parameters (in/out):	none	
Parameters (out):	none	
Return value:	byte	0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function changes the Engine speed RPM.	

2.4.2 ChangeCAMPhase

Service name:	ChangeCAMPhase	
Syntax:	byte ChangeCAMPhase (double PhaseValue)	
Parameters (in):	PhaseValue	ESM CAM-Crank Phase shift (-180 to +180)
Parameters (in/out):	none	
Parameters (out):	none	
Return value:	byte	0x00 if everything was OK. 0x00 in case of some error.
Description:	The function adds a phase shift to CAM1 with respect to Crank.	

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2.4.3 setCAMPhase

Service name:	setCAMPhase
Syntax:	byte setCAMPhase (byte CamNo, double PhaseValue)
Parameters (in):	PhaseValue ESM CAM-Crank Phase shift (-180 to +180) CamNo CAM Channel based on connector panel label (1-4)
Parameters (in/out):	none
Parameters (out):	none
Return value:	byte 0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function changes the selected CAM Phase with respect to Crank.

2.4.4 selectESMPattern

Service name:	selectESMPattern
Syntax:	byte selectESMPattern (byte PatternNo, *string PatternName)
Parameters (in):	PatternNo Pattern to be selected (1-6)
Parameters (inout):	none
Parameters (out):	PatternName Selected ESM Pattern Name.
Return value:	byte 0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function selects the ESM patterns stored in CATS.

2.4.5 SetCrankType

Service name:	SetCrankType
Syntax:	byte SetCrankType (byte CrankMode)
Parameters (in):	CrankMode Mode: 1 – Differential, 0 - TTL.
Parameters (in-out):	none
Parameters (out):	none
Return value:	byte 0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function sets the Crank Type to TTL/Differential.

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2.4.6 SetDG23iMode

Service name:	SetDG23iMode
Syntax:	byte SetDG23iMode(byte DG23iMode, byte Direction)
Parameters (in):	DG23iMode Mode: 0 – Off, 1- On. Direction Direction: 0- Forward, 1-Backward.
Parameters (inout):	none
Parameters (out):	none
Return value:	byte 0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function sets the Crank to DG23i Mode.

2.4.7 SetCAMType

Service name:	SetCAMType
Syntax:	byte SetCAMType (byte CamNo, byte CamMode)
Parameters (in):	CamNo CAM No: 1 to 4. CamMode Mode: 0 - Differential, 1 – TTL.
Parameters (inout):	none
Parameters (out):	none
Return value:	byte 0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function sets the CAM Type to TTL/Differential.

2.5 Function to Read Version Number

2.5.1 GetFirmwareVersion

Service name:	GetFirmwareVersion
Syntax:	byte GetFirmwareVersion (*string FirmwareID)
Parameters (in):	none
Parameters (in-out):	none
Parameters (out):	FirmwareID Firmware Version Number.
Return value:	byte 0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function reads the Firmware version number stored in CATS.

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2.6 Function for ESM RAMP

2.6.1 StartESMRamp

Service name:	StartESMRamp	
Syntax:	byte StartESMRamp (ushort StartRPM, ushort EndRPM, ushort duration)	
Parameters (in):	StartRPM	Ramp mode ESM Start RPM
	EndRPM	Ramp mode ESM End RPM
	duration	Ramping Time Duration
Parameters (in-out):	none	
Parameters (out):	none	
Return value:	byte	0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function starts Engine Speed Signal Ramping.	

2.6.2 PingRPM

Service name:	PingRPM	
Syntax:	byte PingRPM (*ushort ESMRPMvalue)	
Parameters (in):	none	
Parameters (inout):	none	
Parameters (out):	ESMRPMvalue	Crank RPM Value.
Return value:	byte	0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function reads the RPM value from CATS Hardware.	

2.6.3 StopRPMRamp

Service name:	StopRPMRamp	
Syntax:	byte StopRPMRamp (*ushort StopRPMvalue)	
Parameters (in):	none	
Parameters (in-out):	none	
Parameters (out):	StopRPMvalue	ESM RPM final value after Ramp Stop
Return value:	byte	0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function stops ESM RPM Ramping and returns RPM Value.	

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2.7 Functions for Device Connect/Disconnect

2.7.1 DeviceConnect

Service name:	DeviceConnect	
Syntax:	byte DeviceConnect ()	
Parameters (in):	none	
Parameters (in-out):	none	
Parameters (out):	none	
Return value:	byte	0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function Connects The Device.	

2.7.2 DeviceDisconnect

Service name:	DeviceDisconnect	
Syntax:	byte DeviceDisconnect ()	
Parameters (in):	none	
Parameters (in-out):	none	
Parameters (out):	none	
Return value:	byte	0x00 if everything was OK. Not 0x00 in case of some error.
Description:	The function Terminates The Device Connection.	

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