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Operation Manual

ST25T

Suntech International Ltd.

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Warning

Our customers are required to be aware that connecting the wire inputs can be hazardous to both of the installer and your vehicle's electrical system(s) if not done by an experienced installer. This document assumes you are aware of the inherent dangers of working in installing the device on the vehicle(s) and the machinery.

Document Amendments

When it comes to the firmware version column with specific firmware number, any amendment(s) on the comments column should be made on this relevant firmware version (and the versions thereafter). Before applying any changes made in this protocol, you are required to make sure that you have upgraded the firmware suitable for the specified version.

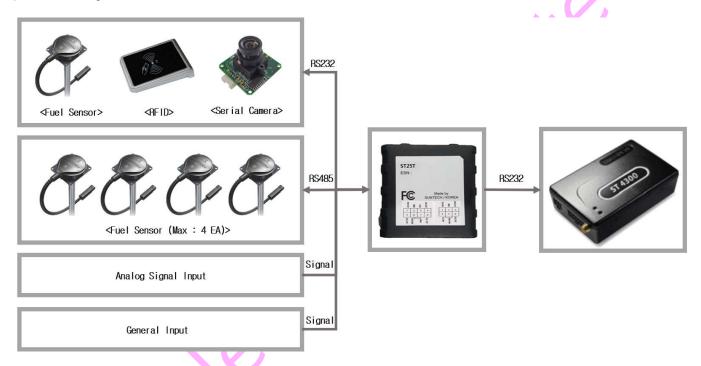
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1. Introduction

The ST25T is highly featured multi-functional telematics box sending values of external sensors a tracking device such as ST600M/ST600MD or ST4300. By being connected with a tracking device such as ST600M/ST600MD or ST4300, it provides to the tracking device any information of fuel level values and the tracking device reports which can be sent to the server via the tracking device.

2. Overview

The ST25T device from Suntech supports two RS232 and one RS485 interface ports as well as two ADC or INPUT ports. The diagram below shows how the Suntech ST25T device is connected to external sensors and device:



2-1. Parameter change

Parameters which have already been set on the device can be changed via RS232 connected with PC if a user needs to do so. Some controlling functions can also be implemented in the same way.

Please refer to the Commands Sections 4 below for details on the commands required to change these parameters.

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2-2. Features

Key features of the ST25T device are as follows:

- Power Saving Modes (Power Down Mode)

The device will go to sleep when host go to sleep or deepsleep to prevent draining the vehicle battery.

- LED Indicators

Red LED:

Main mcu data transmitting & receiving operation indication.

Blue LED:

Sub mcu data transmitting & receiving operation indication.

- RS232 interface

It handles RS232 sensor and device data communication.

- RS485 interface

It handles RS485 fuel sensor data communication.

The maximum number of RS485 fuel sensors supported by the ST25T device is four.

- ADC or INPUT ports

Device has:

- 2 ADC ports
- 2 INPUT ports

- Upgrading Firmware

Device firmware can be upgraded to provide the user with newly implemented services through the host RS232 connection. (Refer to Section 7)

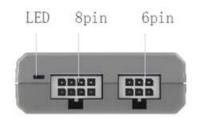
Host RS232 baud rate is 115200 bps for upgrading firmware.

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Sur	ntech 💳

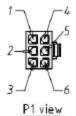
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3. Event Cables

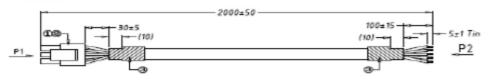
Event cable has 14 wires.



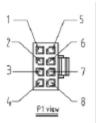
ST25T Event line Description



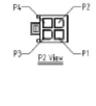
6 pin	Event	line	
BLK	PIN1	RS485 RX	Tin
PURP	PIN2	GND	Tin
Orange/Red	PIN3	RS232 RX3	Tin
NC	PIN4	RS485 TX	Tin
GRAY	PIN5	ADC/Input2	Tin
		Parada Maria	

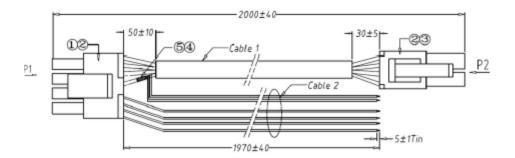


8pin Event line



WHT	PIN1	RS 232 RX2	
BLK	PIN2	GND	P3
Brown/White	PIN3	OUT	
Blue/Red	PIN4	RS232 RX1	P2
Ligth Orange	PIN5	RS232 TX2	
Blue/Black	PIN6	ADC/INPUT1	
RED	PIN7	Power 5V	P4
Orange/Red	PIN8	RS232 Tx1	P1





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4. Omnicomm Fuel Sensor Setting

If you use omnicomm fuel sensor, you will have to set to like below:

1. Network address: 0 ~ 6

2. Baud rate: 9600 or 19200 or 38400 or 115200 bps

3. Automatic data Output: Binary

4. Interval of output: 5

To configure the fuel sensor, download the omnicomm configurator program from the URL below.

Downloadable URL:

https://www.omnicomm-world.com/fms-providers/resource-center/?group=386289&field=&type=387330

The ST25T device scans omnicomm fuel sensor network address from 0 to 6 only.

The data output mode and output interval of the omnicomm fuel sensor are set in the ST25T device.





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5. Commands

All command and response string is ended with CR/LF characters.

5-1. From Host to Device

5-1-1. Presence Request

RS232_EXT1_DEV	Field	Value	Format	Description
RS232_EXT1_DEV				·
0 = None 1 = Omnicomm Fuel Sensor 2 = RFID 3 = Serial Camera	RS232 EXT1 DEV			RS232 Ext 1 Device
RS232_EXT2_DEV 0 ~ 3 RS232_EXT2_DEV 0 ~ 3 RS232_EXT2_DEV 0 ~ 3 1 byte int RS232_EXT2_DEV 0 ~ 6 RS232_EXT1_BAUD 0 ~ 6 RS232_EXT1_BAUD 0 ~ 6 1 byte int RS232_EXT1_BAUD 0 ~ 6 1 byte int RS232_EXT2_BAUD 0 ~ 4095 2 bytes int RS232_EXT2_FUEL_ ALT_LEVEL RS232_EXT2_FUEL_ ALT_LEVEL RS232_EXT2_FUEL_ ALT_LEVEL RS485_FUEL1_ ALT_LEVEL RS485_FUEL1_ ALT_LEVEL RS485_FUEL1_ ALT_LEVEL RS485_FUEL1_ ALT_LEVEL RS485_FUEL2_ ALT_LEVEL RS485_FUEL2_ ALT_LEVEL RS485_FUEL2_ ALT_LEVEL RS485_FUEL3_ ALT_LEVEL RS485_FUEL4_ ALT_LEVEL RS485_FUEL5_ ALT_LEVEL ALT_L				
RS232_EXT2_DEV				1 = Omnicomm Fuel Sensor
RS232_EXT2_DEV				2 = RFID
RS232_EXT1_BAUD RS232_EXT1_BAUD O ~ 6 RS232_EXT1_BAUD O ~ 6 Ibyte int RS232_EXT1_Baudrate O = None 1 = 2400 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 6 = 115200 bps RS232_EXT2_BAUD O ~ 6 Ibyte int RS232_EXT2_BAUD O ~ 4095 Zbytes int Value of changing rs232 ext1 fuel level for alert report RS232_EXT2_FUEL ALT_LEVEL RS2485_FUEL_BAUD O ~ 4095 RS2485_FUEL_BAUD O ~ 6 Ibyte int RS485_FUEL_BAUD O ~ 4095 RS485_FUEL_BAUD O ~ 4095 RS485_FUEL_BAUD O ~ 4095 RS485_FUEL_BAUD O ~ 4095 Cbytes int Value of changing rs232 ext2 fuel level for alert report RS485_FUEL_BAUD RS485_FUEL_BAUD O ~ 4095 Cbytes int Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report RS485_FUEL_BAUD RS485_FUEL_BAUD RS485_FUEL_BAUD O ~ 4095 Zbytes int Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel level for alert report Value of changing rs485 fuel lev				3 = Serial Camera
RS232_EXT1_BAUD	RS232_EXT2_DEV	0 ~ 3	1byte int	RS232 Ext 2 Device
RS232_EXT1_BAUD O ~ 6 Ibyte int RS232_EXT1_BAUD O ~ 6 Ibyte int RS232_EXT1_Baudrate O = None 1 = 2400 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 6 = 115200 bps RS232_EXT2_BAUD O ~ 6 Ibyte int RS232_EXT2_BAUD O ~ 6 Ibyte int RS232_EXT2_Baudrate O = None 1 = 2400 bps 5 = 38400 bps 6 = 115200 bps 8 = 2 = 4800 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 6 = 115200 bps 8 = 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 6 = 115200 bps 6 = 115200 bps 8 = 2 = 4800 bps 5 = 38400 bps 6 = 115200 bps 6 = 115200 bps 7 = 2 = 4800 bps 7 = 2 = 4800 bps 7 = 2 = 4800 bps 8 = 2 = 4800 bps 9 = 2 = 4800 bps 9 = 2 = 4800 bps 9 = 2 = 4800 bps 1 = 2400 bps 1 = 2400 bps 1 = 2400 bps 2 = 2 = 4800 bps 1 = 2400 bps 2 = 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 6 = 115200 bps 6 = 115200 bps 8 = 2 = 4800 bps 1 = 2 = 4800 bps 2 = 4800 bps 1 = 2 = 4800 bps 2 = 4800 bps 2 = 4800 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 1 = 2 = 4800 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 1 = 2 = 4800 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 4 = 19200 bps 2 = 4800 bps 4 = 19200 bps 2 = 4800 bps 4 =				
RS232_EXT1_BAUD 0 ~ 6 RS232_EXT1_BAUD 0 ~ 6 1 byte int RS232_EXT Baudrate 0 = None 1 = 2400 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 6 = 115200 bps 6 = 115200 bps 7 = 24800 bps 8 = 115200 bps 8 = 12400 bps 9 = 12400 bps 1 = 2400 bps 1 = 2400 bps 1 = 2400 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 6 = 115200 bps 7 = 2400 bps 7 =				
RS232_EXT1_BAUD				
0 = None				
1 = 2400 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 5 = 38400 bps 5 = 38400 bps 6 = 115200 bps 7 = 2400 bps 7	RS232_EXT1_BAUD	0 ~ 6	1byte int	
RS232_EXT2_BAUD RS232_EXT2_BAUD O ~ 6 Ibyte int RS232_EXT2_BAUD O ~ 4095 RS232_EXT1_FUEL_ ALT_LEVEL RS232_EXT2_FUEL_ ALT_LEVEL RS485_FUEL_BAUD O ~ 4095 RS485_FUEL_BAUD O ~ 4095 AUSTICE Sensor Baudrate O ~ 4095 AUSTICE Sensor Baudrate O ~ 4095 AUSTICE Sensor Baudrate RS485_FUEL_BAUD O ~ 4095 AUSTICE Sensor Baudrate Value of changing rs485 fuel2 level for alert report RS485_FUEL_BAUD AUT_LEVEL RS485_FUEL_BAUD O ~ 4095 AUT_LEVEL RS485_FUEL_BAUD O ~ 4095 AUT_LEVEL RS485_FUEL_BAUD O ~ 4095 AUT_LEVEL RS485_FUEL_BUEL AUT_LEVEL RS485_FUEL_BUEL AUT_LEVEL RS485_FUEL_BUEL AUT_LEVEL AUT_LEV			-	
RS232_EXT2_BAUD				
RS232_EXT2_BAUD				
S = 38400 bps 6 = 115200 bps RS232_EXT2_BAUD				
RS232_EXT2_BAUD 0 ~ 6 1byte int RS232_EXT2_BAUD 0 ~ 6 1byte int RS232_EXT2_Baudrate 0 = None 1 = 2400 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 6 = 115200 bps 5 = 38400 bps 6 = 115200 bps 7 = 15200 bps 8 = 115200 bps 8 = 115200 bps 7 = 15200 bps 8 = 115200 bps 8 = 115200 bps 9 = 15200 bps 1 = 15200 bps 1 = 15200 bps 1 = 15200 bps 2 = 15200 bps 1 = 15200 bps 2 = 15200 bps 2 = 15200 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 6 = 115200 bps 8 = 15200 bps 1 = 15200 bps				•
RS232_EXT2_BAUD				
0 = None	DOGGO EVEN BALID		41 () (
1 = 2400 bps 2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 5 = 38400 bps 6 = 115200 bp	RS232_EXT2_BAUD	0~6	1byte int	
2 = 4800 bps 3 = 9600 bps 4 = 19200 bps 5 = 38400 bps 5 = 38400 bps 6 = 115200 bps RS232_EXT1_FUEL_				
RS232_EXT1_FUEL_				
## A # 19200 bps 5 = 38400 bps 6 = 115200 bps 5 = 38400 bps 6 = 115200 bps 6 = 1				
S232_EXT1_FUEL_ O ~ 4095				
RS232_EXT1_FUEL_				
RS232_EXT1_FUEL_				
RS232_EXT2_FUEL O ~ 4095 Zbytes int Value of changing rs232_ext2_fuel level for alert report RS485_FUEL_BAUD O ~ 6 1byte int RS485_FUEL_Sensor Baudrate RS485_FUEL1 O ~ 4095 Zbytes int Value of changing rs485_fuel1 level for alert report RS485_FUEL2 O ~ 4095 Zbytes int Value of changing rs485_fuel1 level for alert report RS485_FUEL2 O ~ 4095 Zbytes int Value of changing rs485_fuel2 level for alert report RS485_FUEL3 O ~ 4095 Zbytes int Value of changing rs485_fuel3_level for alert report RS485_FUEL4 O ~ 4095 Zbytes int Value of changing rs485_fuel3_level for alert report RS485_FUEL4 O ~ 4095 Zbytes int Value of changing rs485_fuel4_level for alert report ALT_LEVEL for alert report ADC1_USING O ~ 1 1byte int Support ADC 1 O = Disable, 1 = Enable ADC2_USING O ~ 1 1byte int Support ADC 2 O = Disable, 1 = Enable Company Com	RS232 EXT1 FUEL	0 ~ 4095	2hvtes int	
RS232_EXT2_FUEL_ ALT_LEVEL RS485_FUEL_BAUD O ~ 6 1byte int RS485_FUEL Sensor Baudrate RS485_FUEL1_ ALT_LEVEL RS485_FUEL2_ ALT_LEVEL RS485_FUEL2_ ALT_LEVEL RS485_FUEL3_ ALT_LEVEL RS485_FUEL4_ ALT_LEVEL ADC1_USING O ~ 1 D ~ 1 D ~ 2 Disable, 1 = Enable ADC2_USING O ~ 1 D ~ 1 D ~ 2 Disable, 1 = Enable		0 4000	Zbytos int	
RS485_FUEL BAUD RS485_FUEL BAUD RS485_FUEL BAUD RS485_FUEL1 ALT_LEVEL RS485_FUEL2 ALT_LEVEL RS485_FUEL2 ALT_LEVEL RS485_FUEL3 ALT_LEVEL RS485_FUEL3 ALT_LEVEL RS485_FUEL4 ALT_LEVEL ADC1_USING ADC2_USING ADC2_USING RS485_FUEL4 ADC4 ADC5 ADC6 ADC7 AD		0 ~ 4095	2bytes int	
RS485_FUEL1			,	
RS485_FUEL1		0 ~ 6	1byte int	
ALT_LEVEL RS485_FUEL2_ ALT_LEVEL RS485_FUEL3_ ALT_LEVEL RS485_FUEL4_ ALT_LEVEL RS485_FUEL4_ ALT_LEVEL RS485_FUEL4_ ALT_LEVEL RS485_FUEL4_ ALT_LEVEL ADC1_USING ADC2_USING O ~ 4095 O ~ 1 D		0 ~ 4095		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	ALT_LEVEL		J	for alert report
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		0 ~ 4095	2bytes int	
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RS485_FUEL4_ 0 ~ 4095 2bytes int Value of changing rs485 fuel4 level for alert report ADC1_USING 0 ~ 1 1byte int Support ADC 1 0 = Disable, 1 = Enable ADC2_USING 0 ~ 1 1byte int Support ADC 2 0 = Disable, 1 = Enable		0 ~ 4095	2bytes int	
ADC1_USING $0 \sim 1$ 1 1byte int Support ADC 1 $0 = \text{Disable}, 1 = \text{Enable}$ ADC2_USING $0 \sim 1$ 1 1byte int Support ADC 2 $0 = \text{Disable}, 1 = \text{Enabl}$		0 ~ 4095	2bytes int	
D = Disable, 1 = Enable ADC2_USING 0 = Disable, 1 = Enable Support ADC 2 0 = Disable, 1 = Enabl				
ADC2_USING 0 ~ 1 1byte int Support ADC 2 0 = Disable, 1 = Enabl	ADC1_USING	0 ~ 1	1byte int	
0 = Disable, 1 = Enabl				
	ADC2_USING	0 ~ 1	1byte int	
INPUT1_TYPE 0 ~ 3 1byte int Support Input 1			41 4 1 1	
	INPUT1_TYPE	0~3	1byte int	Support Input 1



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			0 = None 1 = Falling Edge 2 = Rising Edge 3 = Both Edge
INPUT1_CHAT	0 ~ 9999	2bytes int	Input 1 chattering time Default = 3 sec (unit : 100 ms) If 0, input 1 is not checked.
INPUT2_TYPE	0~3	1byte int	Support Input 2 0 = None 1 = Falling Edge 2 = Rising Edge 3 = Both Edge
INPUT2_CHAT	0 ~ 9999	2bytes int	Input 1 chattering time Default = 3 sec (unit : 100 ms) If 0, input 2 is not checked.
END_OF_LINE	\r\n	String	

[Command] \$REQ_PRESENCE;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0

5-1-2. Handshake Message Acknowledge

Field	Value	Format	Description		
CMD	\$ACK_HANDSHAKE	String	Command		
END OF LINE	\r\ n	String			
FO THE STATE OF TH					

[Command] \$ACK_HANDSHAKE

5-1-3. Version Request

Field	Value	Format	Description
CMD	\$CMD_REQ_VERSION	String	Command
END OF LINE	\r\n	String	

[Command] \$CMD_REQ_VERSION

[Response] \$RES_REQ_VERSION;ST25T;M.01.00.00;M.01.00.00 (Refer to Section <u>5-2-2</u>)

5-1-4. Host Parameter Change

Field	Value	Format	Description
CMD	\$CMD_CHANGE_PARAM	String	Command
RS232_EXT1_DEV	0 ~ 3	1byte int	RS232 Ext 1 Device
			0 = None
			1 = Omnicomm Fuel Sensor
			2 = RFID



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			3 = Serial Camera
DCCCC EVTC DEV	0 0	414	
RS232_EXT2_DEV	0 ~ 3	1byte int	RS232 Ext 2 Device
			0 = None
			1 = Omnicomm Fuel Sensor
			2 = RFID
			3 = Serial Camera
RS232 EXT1 BAUD	0 ~ 6	1byte int	RS232 Ext1 Baudrate
		•	
			0 = None
			1 = 2400 bps
			2 = 4800 bps
			3 = 9600 bps
			4 = 19200 bps
			5 = 38400 bps
			6 = 115200 bps
RS232 EXT2 BAUD	0~6	1byte int	RS232 Ext2 Baudrate
K3232_EXT2_BA0D	0.50	TDyte IIIt	NO232 Exiz baudrate
			0 - None
			0 = None
			1 = 2400 bps
			2 = 4800 bps
			3 = 9600 bps
			4 = 19200 bps
			5 = 38400 bps
			6 = 115200 bps
RS232 EXT1 FUEL	0 ~ 4095	2bytes int	Value of changing rs232 ext1 fuel
ALT_LEVEL		-	level for alert report
RS232 EXT2 FUEL	0 ~ 4095	2bytes int	Value of changing rs232 ext2 fuel
ALT_LEVEL		•	level for alert report
RS485_FUEL_BAUD	0~6	1byte int	RS485 Fuel Sensor Baudrate
RS485 FUEL1	0 ~ 4095	2bytes int	Value of changing rs485 fuel1 level
ALT LEVEL		,	for alert report
RS485 FUEL2	0 ~ 4095	2bytes int	Value of changing rs485 fuel2 level
ALT LEVEL	0 1000	Zbytoo iiit	for alert report
RS485_FUEL3_	0 ~ 4095	2bytes int	Value of changing rs485 fuel3 level
ALT LEVEL	0 4093	Zbytes int	for alert report
	0 - 4005	Obvetoo int	
RS485_FUEL4_	0 ~ 4095	2bytes int	Value of changing rs485 fuel4 level
ALT_LEVEL	2 1	Ab. 4 . 1 . 1	for alert report
ADC1_USING	0 ~ 1	1byte int	Support ADC 1
1000 110000		41 4 4 4	0 = Disable, 1 = Enable
ADC2_USING	0 ~ 1	1byte int	Support ADC 2
			0 = Disable, 1 = Enable
INPUT1_TYPE	0 ~ 3	1byte int	Support Input 1
			0 = None
			1 = Falling Edge
			2 = Rising Edge
			3 = Both Edge
INPUT1 CHAT	0 ~ 9999	2bytes int	Input 1 chattering time
55			Default = 3 sec (unit : 100 ms)
			Doladit 0 000 (dilit : 100 mg)
	ļ .		
			If 0 input 1 is not shocked
INDUTA TVPF	0.2	1h. #= :=+	If 0, input 1 is not checked.
INPUT2_TYPE	0~3	1byte int	If 0, input 1 is not checked. Support Input 2

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			0 = None 1 = Falling Edge 2 = Rising Edge 3 = Both Edge		
INPUT2_CHAT	0 ~ 9999	2bytes int	Input 1 chattering time Default = 3 sec (unit : 100 ms)		
			If 0, input 2 is not checked.		
END OF LINE	\r\n	String			
[Command] \$CMD_CHANGE_PARAM;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0					

5-1-5. Reset

Field	Value	Format	Description
CMD	\$CMD_RESET	String	Command
END OF LINE	\r\n	String	
[Command] \$CMD_RESE	Т		

5-1-6. Disconnected Check

Field	Value	Format	Description			
CMD	\$CMD_DISCON_CHECK	String	Command			
END OF LINE	\r\n	String				
[Command] \$CMD_DISCON_CHECK [Response] \$ACK_DISCON_CHECK:ST25T (Refer to Section 5-2-3)						

5-1-7. Uart Fuel Sensor Param Request

Field	Value	Format	Description
CMD	\$REQ_FUEL_PARAM	String	Command
END OF LINE	\r\n	String	

[Command] \$REQ_FUEL_PARAM [Response] \$RES_FUEL_PARAM;ST25T;0;0;0;0;0;0;0;0;0;0;0;0;0;0 (Refer to Section <u>5-2-9</u>)



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5-2. From Device to Host

5-2-1. Handshake Message

Field	Value	Format	Description		
CMD	\$MSG_HANDSHAKE	String	Command		
MODEL	ST25T	String	Model Name		
END OF LINE	\r\n	String			
[Command] \$MSG_HAND	SHAKE;ST25T				

5-2-2. Version Request Response

Value	Format	Description
\$RES_REQ_VERSION	String	Command
ST25T	String	Model name
M.01.00.00	String	
M.01.00.00	String	
\r\n	String	
	\$RES_REQ_VERSION \$T25T M.01.00.00 M.01.00.00	\$RES_REQ_VERSION

 $\textbf{[Command]} \$ RES_REQ_VERSION; ST25T; M.01.00.00; M.01.00.00$

5-2-3. Disconnected Check Acknowledge

Field	Value	Format	Description		
CMD	\$ACK_DISCON_CHECK	String	Command		
MODEL	ST25T	String	Model name		
END OF LINE	\r\n	String			
[Command] \$ACK_DISCON_CHECK;ST25T					

5-2-4. Uart Fuel Sensor Connected Event

Field	Value	Format	Description
CMD	\$EVT_UART_FUEL_CON	String	Command
MODEL	ST25T	String	Model name
FUEL_NUM	0 ~ 5	1byte int	Fuel sensor number
			0 = RS232 Fuel 1
			1 = RS232 Fuel 2
			2 = RS485 Fuel 1
			3 = RS485 Fuel 2
			4 = RS485 Fuel 3
			5 = RS485 Fuel 4
FUEL_LEVEL	0 ~ 4095	2bytes int	Fuel sensor level



END OF LINE	\r\n	String	
[Command] \$EVT_UART_	FUEL_CON;ST25T;0;0		

5-2-5. Uart Fuel Sensor Disconnected Event

Field	Value	Format	Description
CMD	\$EVT_UART_FUEL_DISCON	String	Command
MODEL	ST25T	String	Model name
FUEL_NUM	0 ~ 5	1byte int	Fuel sensor number
			0 = RS232 Fuel 1
			1 = RS232 Fuel 2
			2 = RS485 Fuel 1
			3 = RS485 Fuel 2
			4 = RS485 Fuel 3
			5 = RS485 Fuel 4
FUEL_LEVEL	0	2bytes int	Fuel sensor level
END OF LINE	\r\n	String	
[Command] \$E\/T_UART	FLIEL DISCON-ST25T-0-0	-	

5-2-6. Uart Fuel Sensor Upper Event

Field	Value	Format	Description		
CMD	\$EVT_UART_FUEL_UPPER	String	Command		
MODEL	ST25T	String	Model name		
FUEL_NUM	0~5	1byte int	Fuel sensor number		
			0 = RS232 Fuel 1		
			1 = RS232 Fuel 2		
,					
			2 = RS485 Fuel 1		
			3 = RS485 Fuel 2		
			4 = RS485 Fuel 3		
			5 = RS485 Fuel 4		
FUEL_LEVEL	0 ~ 4095	2bytes int	Fuel sensor level		
END OF LINE	\r\n	String			
[Command] \$EVT UART FUEL UPPER;ST25T;0;0					

5-2-7. Uart Fuel Sensor Lower Event

Field	Value	Format	Description
CMD	\$EVT_UART_FUEL_LOWER	String	Command
MODEL	ST25T	String	Model name
FUEL_NUM	0 ~ 5	1byte int	Fuel sensor number
_		-	0 = RS232 Fuel 1



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			1 = RS232 Fuel 2	
			2 = RS485 Fuel 1 3 = RS485 Fuel 2 4 = RS485 Fuel 3 5 = RS485 Fuel 4	
FUEL_LEVEL	0 ~ 4095	2bytes int	Fuel sensor level	
END OF LINE	\r\n	String		10
[Command] \$EVT_UART_	FUEL_LOWER;ST25T;0;0			

5-2-8. Uart Fuel Sensor Error Event

Field	Value	Format	Description		
CMD	\$EVT_UART_FUEL_ERROR	String	Command		
MODEL	ST25T	String	Model name		
FUEL_NUM	0 ~ 1	1byte int	Fuel sensor number 0 = RS232 Fuel 1 1 = RS232 Fuel 2		
ERROR_NUM	0 ~ 1	1byte int	Fuel error number 0 = Fuel net address scan fail 1 = Fuel max level excess		
END OF LINE	\r\n	String			
[Command] \$EVT_UART_FUEL_ERROR;ST25T;0;0					

5-2-9. Uart Fuel Sensor Param Request Response

[Command] \$RES_REQ_FUEL_PARAM;ST25T;0;0;0;0;0;0;0;0;0;0;0;0

Field	Value	Format	Description
CMD	\$RES_FUEL_PARAM	String	Command
MODEL	ST25T	String	Model name
RS232_FUEL1_LEVEL	0 ~ 4095	2bytes int	RS232 fuel 1 level
RS232_FUEL2_LEVEL	0 ~ 4095	2bytes int	RS232 fuel 2 level
RS485_FUEL1_LEVEL	0 ~ 4095	2bytes int	RS485 fuel 1 level
RS485_FUEL2_LEVEL	0 ~ 4095	2bytes int	RS485 fuel 2 level
RS485_FUEL3_LEVEL	0 ~ 4095	2bytes int	RS485 fuel 3 level
RS485_FUEL4_LEVEL	0 ~ 4095	2bytes int	RS485 fuel 4 level
RS232_FUEL1_STATUS	0 ~ 1	1byte int	RS232 fuel 1 status
RS232_FUEL2_STATUS	0 ~ 1	1byte int	RS232 fuel 2 status
RS485_FUEL1_STATUS	0 ~ 1	1byte int	RS485 fuel 1 status
RS485_FUEL2_STATUS	0 ~ 1	1byte int	RS485 fuel 2 status
RS485_FUEL3_STATUS	0 ~ 1	1byte int	RS485 fuel 3 status
RS485_FUEL4_STATUS	0 ~ 1	1byte int	RS485 fuel 4 status
END OF LINE	\r\n	String	



5-2-10. Input State Event

Field	Value	Format	Description	
CMD	\$EVT_INPUT_STATE	String	Command	
MODEL	ST25T	String	Model name	
INPUT_NUM	0 ~ 1	1byte int	Fuel sensor number	
			0 = INPUT 1	
			1 = INPUT 2	
STATE	0 ~ 1	1byte int	Input state	
			0 = Falling	
			1 = Rising	
END OF LINE	\r\n	String		
	·	<u>-</u>		

[Command] \$EVT_INPUT_STATE;ST25T;0;0

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Revisions

Rev. No.	Date	Modifications were made on:	Writer
1.00	19-01-15	Construct Protocol.	JH Sim

Information to the user.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

§15.21 Information to user.

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

Caution

Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance Information: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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