TRC1000

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Protocol Description

Overview

The communication between the TRC board and the PC is via Low Speed USB.
All TRC boards are required to have an unique Product ID. These ID's can be altered using the DIP switch on the board.
The Vendor ID for all TRC product is 0x0D59. The Product ID will be in the range from 0x02ac-0x02af depending on the DIP switch settings.

The USB interrupt transfer uses 8 byte packages. The commands and responses (described in the next section) are stored in these packages. Remaining bytes in these packages will be ignored.

The commands and requests from the PC to the TRC board are sent via Endpointer 1
The responses from the TRC board to the PC are retrieved from Endpointer 2

Command / Response Description

05	set relais
41	request input
42	request rotary0
43	request rotary1
c1	respond input
c2	respond rotary0
c3	respond rotary1

Set Relais
Command to select relais. Values 0-7 can be send to select relais.

Direction: from PC to TRC board

Offset	Length	Type	Value	Description
0	1	Command	0x05	Set OkiLCD1
1	1	Parameter	Number	Bit7-5 = Don't care Bit4-2 = unsigned value to select relais 0-7 Bit1-0 = Don't care

Request Input
Request the status of buttons.

Direction: from PC to TRC board

Offset	Length	Type	Value	Description
0	1	Command	0x41	Request Input

Request Rotary0
Request the values of rotary set0.

Direction: from PC to TRC board

Offset	Length	Type	Value	Description
0	1	Command	0x42	Request Rotary0

Request Rotary1
Request the values of rotary set1.

Direction: from PC to TRC board

Offset	Length	Type	Value	Description
0	1	Command	0x43	Request Rotary1

Respond Input
Response to supply the button values.

Direction: from TRC device to PC

Offset	Length	Type	Value	Description
0	1	Command	0xc1	Respond Input
1	1	Parameter	Buttons0	Bit0-7 = S1-S8
2	1	Parameter	Buttons1	Bit0-7 = S9-S16
3	1	Parameter	Buttons2	Bit0-7 = S17-S24
4	1	Parameter	Buttons3	Bit0 = S25 Bit1 = S26 Bit2 = S31 Bit3 = S32 Bit4 = S33 Bit5 = S34 Bit6 = S35 Bit7 = S36
5	1	Parameter	Buttons4	Bit0 = S41 Bit1 = S42 Bit2 = S43 Bit3 = S44 Bit4 = S45 Bit5 = S37 Bit6 = S39 Bit7 = S38
6	1	Parameter	Buttons5	Bit0 = S40 Bit1 = S27 Bit2 = S28 Bit3 = S29 Bit4 = S30

Respond Rotary0
Response to supply the rotary values.

Direction: from TRC board to PC

Offset	Length	Type	Value	Description
0	1	Command	0xc2	Respond Rotary0
1	1	Parameter	RotaryS41A	unsigned value – Number of turns multiplied by two
2	1	Parameter	RotaryS41B	unsigned value – Number of turns multiplied by two
3	1	Parameter	RotaryS42A	unsigned value – Number of turns multiplied by two
4	1	Parameter	RotaryS42B	unsigned value – Number of turns multiplied by two
5	1	Parameter	RotaryS43A	unsigned value – Number of turns multiplied by two
6	1	Parameter	RotaryS43B	unsigned value – Number of turns multiplied by two
7	1	Parameter	RotaryS44A	unsigned value – Number of turns multiplied by two

Respond Rotary1
Response to supply the rotary values.

Direction: from TRC board to PC

Offset	Length	Type	Value	Description
0	1	Command	0xc3	Respond Rotary1
1	1	Parameter	RotaryS44B	unsigned value – Number of turns multiplied by two
2	1	Parameter	RotaryS45A	unsigned value – Number of turns multiplied by two
3	1	Parameter	RotaryS45B	unsigned value – Number of turns multiplied by two
4	1	Parameter	RotaryS37	unsigned value – Number of turns multiplied by two
5	1	Parameter	RotaryS39	unsigned value – Number of turns multiplied by two
6	1	Parameter	RotaryS38	unsigned value – Number of turns multiplied by two
7	1	Parameter	RotaryS40	unsigned value – Number of turns multiplied by two