TRC 1000 Audio-Panel

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Version 1.0

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CTO

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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 products is 0x0D59. The Product ID is 0x02B0.

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

01	set led
03	set direct pin access *(not be used for normal operation)*
04	send direct byte *(not be used for normal operation)*
41	request rotary
42	request button
c1	respond rotary
c2	respond button

Set LED
Command to control the LED's.

Direction: from PC to TRC board

Offset	Length	Type	Value	Description
0	1	Command	0x01	Set LED
1	1	Parameter	Code1	Bit7=1 Bit6=0 Bit5=0 Bit4=Led D21 Bit3=Led D1 Bit2=Led D3 Bit1=Led D2 Bit0=Led D4
2	1	Parameter	Code2	Bit7=Led D8 Bit6=Led D7 Bit5=Led D6 Bit4=Led D5 Bit3=Led D12 Bit2=Led D11 Bit1=Led D10 Bit0=Led D9
3	1	Parameter	Code3	Bit7=Led D16 Bit6=Led D14 Bit5=Led D15 Bit4=Led D13 Bit3=Led D20 Bit2=Led D18 Bit1=Led D19 Bit0=Led D17

Set Direct Pin Access
Command to control the MC14489 LED display / lamp driver.
This command should not be used for normal operation.
The Data, Clock and Enable pin can be controlled using this command.
More information can be found in MC14489 Datasheet.

Direction: from PC to TRC board

Offset	Length	Type	Value	Description
0	1	Command	0x03	Set Direct Pin Access
1	1	Parameter	Pin	Bit7..3=0 Bit2=Data Pin Bit1=Clock Pin Bit0=Enable Pin

Send Direct Byte
Command to control the MC14489 LED display / lamp driver.
This command should not be used for normal operation.
A complete byte will be written with this command the the MC14489
More information can be found in MC14489 Datasheet.

Direction: from PC to TRC board

Offset	Length	Type	Value	Description
0	1	Command	0x04	Send Direct Byte
1	1	Parameter	Byte	Byte code for MC14489

Request Rotary
Request the rotary values for S23.

Direction: from PC to TRC board

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

Request Button
Request the state for all buttons.

Direction: from PC to TRC board

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

Respond Rotary
Response to supply the rotary values. Each value will be increased by turning the rotary encoder clockwise, and decreased by turning the rotary encoder counter-clockwise. Increasing the value 255 by one will make the value 0. Decreasing the value 0 by one will make the value 255.

Direction: from TRC board to PC

Offset	Length	Type	Value	Description
0	1	Command	0xc1	Respond Rotary
1	1	Parameter	Rotary a	8 bits unsigned value, Rotary outer value
2	1	Parameter	Rotary b	8 bits unsigned value, Rotary inner value

Respond Button
Response to supply the button values.

Direction: from TRC board to PC

Offset	Length	Type	Value	Description
0	1	Command	0xc2	Respond Button
1	1	Parameter	Buttongroup1	Bit7=Unused Bit6=Unused Bit5=Button S6 Bit4=Button S5 Bit3=Button S4 Bit2=Button S3 Bit1=Button S2 Bit0=Button S1
2	1	Parameter	Buttongroup2	Bit7=Unused Bit6=Unused Bit5=Button S12 Bit4=Button S11 Bit3=Button S10 Bit2=Button S9 Bit1=Button S8 Bit0=Button S7
3	1	Parameter	Buttongroup3	Bit7=Unused Bit6=Unused Bit5=Button S18 Bit4=Button S17 Bit3=Button S16 Bit2=Button S15 Bit1=Button S14 Bit0=Button S13
4	1	Parameter	Buttongroup4	Bit7=Unused Bit6=Unused Bit5=Unused Bit4=Button S23 Bit3=Button S22 Bit2=Button S21 Bit1=Button S20 Bit0=Button S19