

PeakTech 3315

Communication protocol

Connection settings:

USB	
Supported:	Yes
Vendor ID:	0x1A86
Product ID:	0xE008
Mode:	HID
Frame size:	11 Bytes*
Comments:	see USB notes

RS232	
Supported:	Yes
Baud:	2400
Parity:	Odd
Data / Stop:	7 / 1 Bit(s)
Frame size:	11 Bytes
Comments:	Except for the end bytes (CrLf) each byte starts with the upper nibble 0x_011. Each frame will be send twice.

USB Notes:

The USB implementation is a bit complicated.

First of all the USB cable needs to be initialized. For this you need to send this 6 bytes to the device: 0x00 (= Report ID), 0x60, 0x09, 0x00, 0x00, 0x03.

This will initialize the cable with 2400,8,N,1, which is incorrect, but the only way it works. The software needs to clear the MSB of each received byte (it's the parity bit).

After that you can receive data, but it is not the data as you receive using RS232. To get this data we need to extract it out of a USB data frame. After that you got the data as with RS232 (also twice).

Dependent on USB implementation you may receive 9 bytes. First byte (always 0x00) needs to be ignored in this case. Same for sending the init command where you may have to remove the first byte.

USB data frame:

Byte 0	Byte 1	Byte 2..7
Action	Data	Unknown / not used

Action = 0xF0 --> Dummy packet / keep alive. Do nothing.

Action = 0xF1 --> 1 byte received (Data). Remember to set MSB to 0!

Frame content:

Byte 0	Byte 1..4	Byte 5	Byte 6	Byte 7	Byte 8	Byte 9..10
Range	Digit 3..0	Function	Status	Option 1	Option 2	End mark (CrLf) 0x0D 0x0A

Byte 0: (Range)

Value	V	mA	µA	Ω	Frequency	RPM
0110000 (0x30)	xxx.x mV	xx.xx mA	xxx.x µA	xxx.x Ω	x.xxx kHz	xx.xx kRPM
0110001 (0x31)	x.xxx V	xxx.x mA	xxxx µA	x.xxx kΩ	xx.xx kHz	xxx.x kRPM
0110010 (0x32)	xx.xx V			xx.xx kΩ	xxx.x kHz	x.xxx MRPM
0110011 (0x33)	xxx.x V			xxx.x kΩ	x.xxx MHz	xx.xx MRPM
0110100 (0x34)	xxxx V			x.xxx MΩ	xx.xx MHz	xxx.x MRPM
0110101 (0x35)				xx.xx MΩ		

Continuity, Diode and Ampere modes are fixed, so Range Value is always 0110000 (0x30).

Byte 1..4: (Digits)

Upper nibble is always 0x_011, lower nibble is the value (0..9).

Note that this multimeter does not display left-handed zeros.

Byte 5: (Function)

Value	Function
0110001 (0x31)	Diode
0110010 (0x32)	Frequency / RPM *
0110011 (0x33)	Ω
0110100 (0x34)	Temperature *
0110101 (0x35)	Continuity
0111000 (0x38)	ADP2
0111001 (0x39)	Current (mA)

Value	Function
0111010 (0x3A)	ADP3
0111011 (0x3B)	Voltage
0111100 (0x3C)	ADP1
0111101 (0x3D)	Current (μ A)
0111110 (0x3E)	ADP0
0111111 (0x3F)	Current (A)

*) Check Judge bit in Status byte to determinate Frequency / RPM and $^{\circ}$ C / $^{\circ}$ F.

Byte 6: (Status)

7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
n/A	0	1	1	Judge	Sign	Batt	OL

Byte 7: (Option 1)

7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
n/A	0	1	1	0	0	0	V A Hz

V A Hz: See Range byte to determinate the current mode

Byte 8: (Option 2)

7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
n/A	0	1	1	DC	AC	Auto	APO