

CRUSB Spartan - command list

(CRUSB Spartan)

History:

v1.06 – add BRPE parameter for Set CAN baudrate command

v1.05 – add link to CAN calculator web page
 hardware and software version description
 added CAN reset - (CAN control (HOST → CRUSB Spartan))

v1.04 – add silent mode for CAN operation

Contents

1. Data structure send via USB.....	2
1.1. Structure of USB packets.....	2
1.1.1. (CRUSB Spartan → HOST).....	2
1.1.2. (HOST → CRUSB Spartan).....	2
1.2. CAN.....	3
1.2.1. Receiving CAN frame (CRUSB Spartan → HOST).....	3
1.2.2. Sending CAN frame (HOST → CRUSB Spartan).....	4
1.2.3. CAN control (HOST → CRUSB Spartan).....	5
1.2.3. CAN status.....	5
1.2.3.1. CAN status ON/OFF (HOST → CRUSB Spartan).....	5
1.2.3.2. CAN status (CRUSB Spartan → HOST).....	6
1.2.4. Set CAN baudrate (HOST → CRUSB Spartan).....	7
1.2.5. CAN generator Start/Stop (HOST → CRUSB Spartan).....	7
1.2.6. Set RTC (HOST → CRUSB Spartan).....	7
1.2.6. Device Info.....	8
1.2.6.1. Get Device Info (HOST → CRUSB Spartan).....	8
1.2.6.2. Get Device Info (CRUSB Spartan → HOST).....	8

1. Data structure send via USB

1.1. Structure of USB packets

1.1.1. (CRUSB Spartan → HOST)

B0	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	Description
START																							END	
0x23																							0x0D	

1.1.2. (HOST → CRUSB Spartan)

B0	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	Description
START															END	
0x23															0x0D	

1.2. CAN

1.2.1. Receiving CAN frame (CRUSB Spartan → HOST)

B0	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	Description			
START		ID				INFO	DATA																		STAMP	END	
0x23	0x01	0x00	0x00	0x01	0x81	0x28	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08										0x0D			

B0	Start of packet	B23	End of packet																								
B1	0x01 – CAN frame for CAN channel 0xFF -command	B6	<table border="1"> <thead> <tr> <th>7</th><th>6</th><th>5</th><th>4</th><th>3</th><th>2</th><th>1</th><th>0</th> </tr> </thead> <tbody> <tr> <td>ECHO</td><td>RTR</td><td>29bit</td><td>DIR</td><td colspan="4">DLC</td> </tr> <tr> <td>0 – OFF 1 – ON</td><td>1 – RTR</td><td>0 – 11bit, 1 – 29bit</td><td>0 – RX, 1 – TX</td><td colspan="4">0 – 8;</td> </tr> </tbody> </table>	7	6	5	4	3	2	1	0	ECHO	RTR	29bit	DIR	DLC				0 – OFF 1 – ON	1 – RTR	0 – 11bit, 1 – 29bit	0 – RX, 1 – TX	0 – 8;			
7	6	5	4	3	2	1	0																				
ECHO	RTR	29bit	DIR	DLC																							
0 – OFF 1 – ON	1 – RTR	0 – 11bit, 1 – 29bit	0 – RX, 1 – TX	0 – 8;																							
B2-B5	0 – 0x1FFFFFFF CAN frame ID	B21,B22	Time stamp for CAN frame (1s in 10us resolution)																								
B7-B14	0 – 8 CAN Data bytes																										
B15-B20	B15 – Year, B16 – Month, B17 – Day, B18 – Hours, B19 – Minutes, B20 - Seconds																										

1.2.2. Sending CAN frame (HOST → CRUSB Spartan)

B0	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	Description
START		ID				INFO	DANE								END	
0x23	0x01														0x0D	

B1	0x01 – CAN 1	B2	7	6	5	4	3	2	1	0
			ECHO	RTR	29bit	DIR	DLC			
		DLC: 0 – 8; DIR: 0 – RX, 1 – TX (does not matter) 29bit: 0 – 11bit, 1 – 29bit RTR: 1 – RTR ECHO : 1 – ECHO ON (CAN frame will back to USB)								
B2-B5	0 – 0x1FFFFFFF CAN ID	B7-B14	0 – 8 data bytes							

1.2.3. CAN control (HOST → CRUSB Spartan)

B0	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	Description
START															END	
0x23	0xFF	0x01			0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x0D	

B4	0x00 - CAN Stop 0x01 - CAN Start 0x03 - CAN Listen 0xFF - CAN reset (as stop and start)	B3	0x01 - CAN 1
-----------	--	-----------	--------------

1.2.3. CAN status

1.2.3.1. CAN status ON/OFF (HOST → CRUSB Spartan)

B0	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	Description
START															END	
0x23	0xFF	0x02			0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x0D	

B4	0x00 - Status OFF 0x01 - Status ON	B3	0x01 - CAN 1
-----------	---------------------------------------	-----------	--------------

1.2.3.2. CAN status (CRUSB Spartan → HOST)

B0	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	Description	
START																								END	
0x23	0xFF	0x02																						0x0D	

Packet is send every 1s if it is ON via command from item 1.2.3.1

B3	0x01 – CAN 1	B4	0x00 – CAN Stop 0x01 – CAN Run 0x02 – CAN Listen	B5	<table border="1"> <thead> <tr> <th>7</th><th>6</th><th>5</th><th>4</th><th>3</th><th>2</th><th>1</th><th>0</th> </tr> </thead> <tbody> <tr> <td>BUSOFF</td><td>WARN</td><td>PASSIVE</td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>	7	6	5	4	3	2	1	0	BUSOFF	WARN	PASSIVE					
7	6	5	4	3	2	1	0														
BUSOFF	WARN	PASSIVE																			
B6-B7	CAN Busload	B8-B9	Rx Errors	B10-B11	Tx Errors																
B12-B13	Max CAN Busload	B14-B17	CAN boudrate	B18	CAN LEC																

1.2.4. Set CAN baudrate (HOST → CRUSB Spartan)

B0	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	Description
START															END	
0x23	0xFF	0x03										0x00	0x00	0x00	0x0D	

B4,B5	CAN Register settings (see calculator document)	B3	0x01 – CAN 1	B6	Controller frequency (0x0C, 0x18)
B7-B10	CAN baudrate value (used for busload calculation) http://www.bittiming.can-wiki.info/#C_CAN	B11	0x01 – 0x0F BRPE for extended values of CAN bitrate		

1.2.5. CAN generator Start/Stop (HOST → CRUSB Spartan)

B0	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	Description
START															END	
0x23	0xFF	0x08													0x0D	

B3	0x01 – CAN 1	B4	Selected CAN generator form 1 to 8	B5	0
-----------	--------------	-----------	------------------------------------	-----------	---

1.2.6. Set RTC (HOST → CRUSB Spartan)

B0	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	Description
START															END	
0x23	0xFF	0x10								0x00	0x00	0x00	0x00	0x00	0x0D	

B3	0x01 – CAN 1	B4-B9	Year, Month, Day, Hour, Minutes, Sec
-----------	--------------	--------------	--------------------------------------

1.2.6. Device Info

1.2.6.1. Get Device Info (HOST → CRUSB Spartan)

B0	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	Description
START															END	
0x23	0xFF	0xFF													0x0D	

1.2.6.2. Get Device Info (CRUSB Spartan → HOST)

B0	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	Description
START																							END	
0x23	0xFF	0xFF	0x01									0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x0D	

B4-B5	Hardware version B4 – 0x1 B5 – 0x2 Version: 1.2	B6-B7	Software version B4 – 0x1 B5 – 0x3 Version: 1.3	B8-B11	Serial Number B8 – MSB B11 - LSB
--------------	--	--------------	--	---------------	--