

01/11/2016

CRUSB_Spartan_1_2_0.dll (Function list)

History:

CRUSB_Spartan_V1_2_0.dll	Fix Tx set on echo message.
CRUSB_Spartan_V1_1_0.dll	New names of function and parameters in functions and results.
CRUSB_Spartan_V1_0_0.dll	first working library

Functions:

CRUSBOpen	Open USB communication with CRUSB device
CRUSBClose	Close USB communication with CRUSB device
CRUSBInfo	Information about CRUSB
DLLInfo	Info about DLL
CAN_Init	Init CAN communication
CAN_Read	Read one CAN frame from Rx buffer
CAN_Write	Write one CAN frame to Tx buffer
CAN_Control	CAN communication control
CAN_Status	Status of CAN
CAN_Status_Ctrl	CAN Status ON or OFF
CAN_Rx_Clear	Clear Rx Buffer in DLL FIFO
CAN_Tx_Clear	Clear Tx Buffer in DLL FIFO

Using these functions, it is possible to make communication on CAN bus for 11bit and 29bit frames.

Service

DELPHI		Borlad C++
DLLInfo(DLL_INFO:DLL_INFO_):smallint;		short DLLInfo(DLL_INFO* DLL_INFO_)
Type	Function	
Parameters	DLL_INFO: pointer to structure	unsigned char
	DLL_INFO.Version :widerstring;	WideString
Result	0	ok
Description	Return version of DLL.	

USB Communication

DELPHI		Borlad C++
CRUSBOpen(Device:Byte):smallint		short CRUSBOpen(unsigned char Device)
Type	Function	
Parameters	Device:Byte	unsigned char
	0	Device number to connect (only one device)
Result	0 255	connected disconnected
Description	Calling this function is necessary to establish the connection via USB.	

DELPHI		Borlad C++
CRUSBClose(Device:Byte):smallint		short CRUSBClose(unsigned char Device)
Type	Function	
Parameters	Device: Byte	unsigned char
	0	Device number to disconnect (only value 0 allowed)
Result	0	ok
Description	Calling this function is necessary to close USB communication with CRUSB.	

DELPHI		Borlad C++
CRUSBInfo(CRUSB_info:pointer):smallint		short CRUSBInfo(CRUSB_INFO* CRUSB_INFO_)
Type	Procedure	
Parameters	CRUSB_info: pointer to structure	
	CRUSB_info.Name: widerstring; CRUSB_info.SN: widerstring; CRUSB_info.HW: widerstring; CRUSB_info.SW: widerstring; CRUSB_info.DLL: widerstring;	'CRUSB Spartan' 'Hardware: x.xx' 'Software: x.xx' 'S/N:xxxxxxx' 'DLL vx.x.x'
Result	0	ok
Description	Basic information about CRUSB (static info from device).	

CAN Communication

DELPHI		Borlad C++
CAN_Init(BTR0_BTR1:word;Par:word):smallint		short CAN_Init(short BTR0_BTR1, unsigned char Par)
Type	Function	
Parameters	BTR0_BTR1: Word (CAN boudrate)	short
	0x1C15 0x1C0A 0x1C1D 0x1C0E 0x1C0B 0x1C05 0x1C02 0x1B01 0x0502	PAR=0x18 10kb/s 20kb/s 50kb/s 100kb/s 125kb/s 250kb/s 500kb/s 800kb/s 1000kb/s
	Par: BYTE	unsigned char
	0x0C 0x18	12 MHz 24 MHz
Result	0 255	connected disconnected
Description	This function connects to CAN bus, Par - parameter of CAN controller frquency (Do not use random values in BTR0_BTR1 because it can makes unexpected operation in CRUSB) For other values than listed above try to calculate according BTR0 and BTR1 for C_CAN Bosch) http://www.bittiming.can-wiki.info/#C_CAN	

DELPHI		Borlad C++
CAN_Control(mode:byte):smallint		int CAN_Control(unsigned char mode)
Type	Function	
Parameters	0 1 2 3	CAN Stop CAN Start CAN Start echo CAN Listen
Result	0	ok
Description	This function disconnect from CAN bus.	

DELPHI		Borlad C++																	
CAN_Read(CAN_MSG:PCAN_MSG):int32		int CAN_Read(CAN_MSG_RX* CAN_MSG_RX_)																	
Type	Function																		
Parameters	CAN_RxMSG - Pointer to structure																		
	CAN_RxMSG.DATE_YY:BYTE; CAN_RxMSG.DATE_MM:BYTE; CAN_RxMSG.DATE_DD:BYTE; CAN_RxMSG.TIME_HH:BYTE; CAN_RxMSG.TIME_MM:BYTE; CAN_RxMSG.TIME_SS:BYTE; CAN_RxMSG.TIME_us:WORD; CAN_RxMSG.ID_DW:DWORD; CAN_RxMSG.DLC:byte; CAN_RxMSG.DATA:array [0..7] of byte; CAN_RxMSG.RTR:boolean; CAN_RxMSG.EXT:boolean; CAN_RxMSG.RX_TX:boolean; CAN_RxMSG.MSG_TYPE:byte;	unsigned char unsigned char unsigned char unsigned char unsigned char unsigned int unsigned long unsigned char unsigned char[8] bool bool bool unsigned char	Frame ID Number of bytes in CAN frame Data <table border="1" data-bbox="1050 562 1422 651"> <tr> <td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td> </tr> <tr> <td>ECHO</td><td>RTR</td><td>29bit</td><td>DIR</td><td>0</td><td>0</td><td>0</td><td>0</td> </tr> </table> 0 – Rx, 1 - TX	7	6	5	4	3	2	1	0	ECHO	RTR	29bit	DIR	0	0	0	0
7	6	5	4	3	2	1	0												
ECHO	RTR	29bit	DIR	0	0	0	0												
Result	lint32	int	number of frames left in buffer (max 100 000 frames)																
Description	Every call this function returns one CAN frame in structure CAN_MSG, and as a result the number of CAN frames left in buffer. CAN_MSG.RX_TX is set when Echo ON (see CAN_Control).																		

DELPHI		Borlad C++																	
CAN_Write(CAN_MSG:TCAN_MSG):smallint		short CAN_Write(CAN_MSG_TX _CAN_MSG_TX)																	
Type	Function																		
Parameters	CAN_TxMSG - structure																		
	CAN_TxID_DW:dword CAN_TxDLC:byte CAN_TxDATA:array [0..7] of byte CAN_TxMSG_TYPE:byte	unsigned short unsigned char unsigned char unsigned char	CAN frame ID DLC CAN DATA Type of frame <table border="1" data-bbox="1034 1487 1406 1576"> <tr> <td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td> </tr> <tr> <td>ECHO</td><td>RTR</td><td>29bit</td><td>DIR</td><td>0</td><td>0</td><td>0</td><td>0</td> </tr> </table>	7	6	5	4	3	2	1	0	ECHO	RTR	29bit	DIR	0	0	0	0
7	6	5	4	3	2	1	0												
ECHO	RTR	29bit	DIR	0	0	0	0												
Result	0	ok																	
Description	Every call send one can frame to Tx buffer.																		

DELPHI		Borlad C++	
CAN_Status(CAN_INFO:PCAN_INFO):smallint		short CAN_Status(CAN_STAT* CAN_STAT_)	
Type	Function		
Parameters	CAN_INFO - pointer to structure		
	CAN_INFO.w_Boudrate: Word; CAN_INFO.w_Busload: Word; CAN_INFO.b_Listen: Boolean; CAN_INFO.b_Rx_Error: Boolean; CAN_INFO.b_Tx_Error: Boolean; CAN_INFO.b_BusOFF: Boolean; CAN_INFO.b_Passive: Boolean; CAN_INFO.w_RX_Error_cnt: Word; CAN_INFO.w_TX_Error_cnt: Word; CAN_INFO.B_LEC: Byte; CAN_INFO.B_Buffer_Load: Byte;	unsigned short unsigned short bool bool bool bool bool unsigned short unsigned short unsigned char unsigned char	CAN baudrate Current CAN bus load Listen mode Rx Error appear Tx Error appear CAN Bus OFF appear CAN Bus paasive appear Number of Rx error frames Number of Tx error frames LEC error ¹ Not implemented
Result	0	ok	
Description	Returns the information about CAN controller.		

DELPHI		Borlad C++	
CAN_Status_Ctrl(mode:byte):smallint		short CAN_Status_Ctrl(unsigned char mode)	
Type	Function		
Parameters	mode		
	0 1		Status OFF Status ON
Result	0	ok	
Description	Every call send one can frame to Tx buffer.		

DELPHI		Borlad C++	
CAN_Rx_Clear():smallint		short CAN_Rx_Clear(void)	
Type	Function		
Parameters	-		
Result	0	ok	
Description	Function clears DLL Rx CAN messages FIFO		

DELPHI		Borlad C++	
CAN_Tx_Clear():smallint		short CAN_Tx_Clear(void)	
Type	Function		
Parameters	-		
Result	0	ok	
Description	Function clears DLL Tx CAN messages FIFO		