

Function	CMD + Data (->RS485)	Feedback (<- RS485)	
WriteI2C	DS +'77'+ SA +' XXYYZZ.... '+ CS +<CR>	'77'+ DS + SA +'01'+ CS +<CR>	Data write OK
		'77'+ DS + SA +'00'+ CS +<CR>	Slave not found
ReadI2C	DS +'72'+ SA + Cnt + CS +<CR>	'72'+ DS + SA +'01'+ CS +<CR>	Slave found
		'64'+ DS + SA + Cnt +' XXYYZZ.... '+ CS +<CR>	Data read OK
		'72'+ DS + SA +'00'+ CS +<CR>	Slave not found
CheckSlvAdr	DS +'63'+ SA + CS +<CR>	'63'+ DS + SA +'01'+ CS +<CR>	Slave found
		'63'+ DS + SA +'00'+ CS +<CR>	Slave not found
SetSCLFreq	DS +'65'+ IH + IL + CS +<CR>	'65'+ DS + IH + IL + CS +<CR>	SCL-Freq. Write OK
GetSCLFreq	DS +'69'+ CS +<CR>	'69'+ DS + IH + IL + CS +<CR>	SCL-Freq. Read OK
ReSetIO1	DS +'6D01'+ CS +<CR>	'6D'+ DS +'01'+ CS +<CR>	IO-Pin 1 HIGH
	DS +'6D00'+ CS +<CR>	'6D'+ DS +'00'+ CS +<CR>	IO-Pin 1 LOW
ReSetIO2	DS +'6E01'+ CS +<CR>	'6E'+ DS +'01'+ CS +<CR>	IO-Pin 2 HIGH
	DS +'6E00'+ CS +<CR>	'6E'+ DS +'00'+ CS +<CR>	IO-Pin 2 LOW
GetIOState	DS +'6F'+ CS +<CR>	'6F'+ DS +00+ CS +<CR>	IO1 LOW – IO2 LOW
		'6F'+ DS +01+ CS +<CR>	IO1 HIGH – IO2 LOW
		'6F'+ DS +02+ CS +<CR>	IO1 LOW – IO2 HIGH
		'6F'+ DS +03+ CS +<CR>	IO1 HIGH – IO2 HIGH

Further Messages	Description
ChkSumERROR	'73'+ DS +'01'+ CS +<CR> CheckSum Error
UnCMD	'FF'+ DS +'00'+ CS +<CR> Unknown command

DS: DIPSwitch, Adapter Address

SA: Slave Address

CS: CheckSum

CS = 0x0100 – (Sum MOD 0x0100); Sum is the sum of all bytes to be send without CS and CR.

Cnt: Count of bytes to read (s. ReadI2C)

IH: SCL-Frequenz - High

IL: SCL-Frequenz - Low

$f_{SCL} = 12.000.000 / (2 * (IL + IH))$; if **IL** and **IH** are equal, then the duty cycle is 50%.

XXYYZZ...: data to be send.

<CR> : CarriageReturn (0x0D). Commands and data are always terminated with a CarriageReturn.

XXYYZZ... data to be send. At least 1 byte and maximally 128 bytes may be transferred

Example: the 5 bytes 0xA1, 0x1F, 0x22, 0x5C, 0xB0 are to be sent to the adapter address 0xFE to the slave address 0xC4. Then the following string (terminated with a carriage return) is sent over the serial interface:

'FE77C4A11F225CB0DB'+<CR>

'FE' → 0xFE; Adapter address, DIP-Switch

'77' → 0x77; Command / WRITE

'C4' → 0xC4; Slave address

'A11F225CB0' → Data: 0xA1, 0x1F, 0x22, 0x5C, 0xB0

'59' → 0x59; Checksum of **'FE77C4A11F225CB0'**

Sum = 0x46+0x45+0x37+0x37+0x43+0x34+0x41+0x31+0x31+0x46+0x32+0x32+0x35+0x43+0x42+0x30 = 0x03A7

(F) (E) (7) (7) (C) (4) (A) (1) (1) (F) (2) (2) (5) (C) (B) (0)

CS = 0x0100 – (Sum MOD 0x0100) = 0x0100 – (0x03A7 MOD 0x0100) = 0x0100 – 0xA7 = 0x59

<CR> → 0x0D; CarriageReturn

The feedback from the adapter may be as follow:

'77FEC4012F'+<CR> or **'77FEC40030'+<CR>**

'77' → 0x77; Command

'FE' → 0xFE; Adapter address ; DIP-Switch

'C4' → 0xC4; Slave address

'01' → 0x01; Slave address found, data written successfully.

'2F' → 0x2F; Checksum of **'FE77C401'**

<CR> → 0x0D; CarriageReturn

or

RS485-I2C-Adapter (MASTER) V1.0

Interface description Rev1.0

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'77' → 0x77; Command
'FE' → 0xFE; Adapter address ; DIP-Switch
'C4' → 0xC4; Slave address
'00' → 0x01; Slave address not found, data write aborted.
'30' → 0x30; Checksum of **'FE77C400'**
<CR> → 0x0D; CarriageReturn

RS485 – settings:

Baud: 19200
DataBits: 8
StopBits: 1
Parity: None