

MODBUS/JBUS IMPLEMENTATION TABLE

Applied to the following products:

EVK412

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1 INTRODUCTION

This document describes the resources of the device that can be accessed via the serial port. The protocol is MODBUS RTU/JBUS.

2 LIST OF DEVICES

This document applies to :

Device Name/Family	Notes
EVK412	

3 ADDRESSING CONVENTIONS

Please note that according to MODBUS specs:

- the first register is called register 1
- register x must be read at address x-1

According to JBUS:

- the first register is called register 0
- register x must be read at address x

The JBUS convention has been used in this document, addresses are shown in hexadecimal with the leading symbol \$.

4 IMPLEMENTED MODBUS FUNCTION CODES

Command	Function Code	Notes
READ HOLDING REGISTERS	\$03	Maximum 8 registers at once
WRITE SINGLE REGISTER	\$06	
WRITE MULTIPLE HR	\$10	Maximum 8 registers at once

5 DATA EXCHANGE EXAMPLES

Example 1:

Reading Holding Register at address \$0601 (the set point value). Note that according to MODBUS that is register 1538, while according to JBUS that is register 1537.

	Slave Address	Function Code	High Starting Address	Low Starting Address	High Quantity of Register	Low Quantity of Register	Low CRC	High CRC
TX	\$F7	\$03	\$06	\$01	\$00	\$01	\$C1	\$D4

	Slave Address	Function Code	Byte Count	High Register value	Low Register value	Low CRC	High CRC	
RX	\$F7	\$03	\$02	\$00	\$0A	\$F0	\$56	

the value is 1.0 (because Setpoint is represented in fixed point with 1 decimal digit).

Example 2:

Reading Holding Register at address \$FF08, representing the FW.ID field (FirmWare IDentifier).

	Slave Address	Function Code	High Starting Address	Low Starting Address	High Quantity of Register	Low Quantity of Register	Low CRC	High CRC
TX	\$F7	\$03	\$FF	\$08	\$00	\$01	\$21	\$4A

	Slave Address	Function Code	Byte Count	High Register value	Low Register value	Low CRC	High CRC	
RX	\$F7	\$03	\$02	\$01	\$31	\$B0	\$15	

The value is \$0131 = 305

Example 3:

Writing two Holding Registers starting at address \$060F (parameters C2 and C3) with values 10 and 15.

	Slave Address	Function Code	High Starting Address	Low Starting Address	High Num HR	Low Num HR	Byte cnt	Data1 High	Data1 Low	Data2 High	Data2 Low	CRC High	CRC High
T x	\$F7	\$10	\$00	\$81	\$00	\$02	\$04	\$00	\$32	\$00	\$0A	\$06	\$40

	Slave Address	Function Code	High Starting Address	Low Starting Address	High Num HR	Low Num HR	CRC High	CRC High
R x	\$F7	\$10	\$00	\$81	\$00	\$02	\$05	\$76

Holding register addresses table:

Description	Index	Access	Notes
SET POINTS			
Working setpoint	\$0081	R/W	
DIGITAL OUTPUTS			
Relay status	\$0181	R	Bit0 = Load 1 Output Bit1 = Load 2 Output
PROBES			
Probe	\$0201	R	1 decimal digit
ALARMS			
Alarms (²)	\$0301	R	
APPLICATION COMMANDS			
Buzzer mute	\$0402	W	1= mute

Description		Index	Access	Notes
PARAMETERS				
	Number of parameters = 38	\$0600	R	39 parameters
	Working set point 1	\$0601	R/W	Also available at \$0081
	Working set point 2	\$0602	R/W	Also available at \$0082
	reserved	\$0603	R/W	Never write
	CA1	\$0604	R/W	
	P0	\$0605	R/W	
	P1	\$0606	R/W	
	P2	\$0607	R/W	
	P5	\$0608	R/W	
	R0	\$0609	R/W	
	R1	\$060A	R/W	
	R2	\$060B	R/W	
	R3	\$060C	R/W	
	R5	\$060D	R/W	
	R6	\$060E	R/W	
	R7	\$060F	R/W	
	R8	\$0610	R/W	
	R9	\$0611	R/W	
	R10	\$0612	R/W	
	R11	\$0613	R/W	
	C1	\$0614	R/W	
	C2	\$0615	R/W	
	C3	\$0616	R/W	
	C6	\$0617	R/W	
	C7	\$0618	R/W	
	C8	\$0619	R/W	
	C9	\$061A	R/W	
	C10	\$061B	R/W	
	A1	\$061C	R/W	
	A2	\$061D	R/W	

	A3	\$061E	R/W	
	A4	\$061F	R/W	
	A5	\$0620	R/W	
	A6	\$0621	R/W	
	A7	\$0622	R/W	
	LA (address)	\$0623	R/W	
	LB (Baud Rate)	\$0624	R/W	
	LP (parity)	\$0625	R/W	
	E9 (reserved)	\$0626	R/W	
	CFG	\$0627	R/W	
	Kbd lock	\$e030	R/W	1= keyboard locked
INFO				
	Driver Identifier A: same as \$FF08 (305)	\$ff02	R	
	Driver Identifier B: same as \$FF09	\$ff03	R	
	Firmware ID	\$ff08	R	
	Firmware Variation/revision	\$ff09	R	

(²) **Alarms:** at address 0x0301 :

Alarms	Mask value	
<i>Pr1</i>	0x0100	
<i>PrG</i>	0x0800	reserved
<i>AL1</i>	0x1000	Temperature alarm 1
<i>AL2</i>	0x2000	Temperature alarm 2
<i>Est</i>	0x0001	Reserved
<i>Erd</i>	0x0002	Reserved

PAY ATTENTION:

ALL THE ADDRESSES NOT MENTIONED EXPRESSLY IN THIS DOCUMENT MUST BE CONSIDERED RESERVED. **ALL THE ADDRESSES INDICATED AS RESERVED MUST NOT BE READ OR WRITTEN;** IF YOU DO NOT RESPECT THIS CONDITION, YOU COULD ALTER THE OPERATION OF THE INSTRUMENT.