



Communication Protocol for the RD3803MMA7660FC

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INTRODUCTION

This document is intended to be used with the RD3803MMA7660FC. All of the commands described below can be used to communicate with the evaluation tool and should be used with the HyperTerminal type of program.

S08MON – PC TO S08 VARIABLES MONITORING COMMUNICATION COMMANDS

To Run: Run HyperTerminal. Configure the device with the settings as shown in [Figure 1](#).



Figure 1. HyperTerminal Settings for Device

All commands sent from PC to S08 start with a space (0x20) and are terminated with CR (0x0D). All bytes are ASCII except for in data log mode.

Table 1. Table of Commands

Please Note: (CR) = Enter; (LF) = Line Feed; _ = SPACE			
Function	PC to S08	S08 to PC	Notes
Handshake	_h(CR)	_H(HWID)(SWID)(CR)(LF)	
Device Read Register	_l(Address)(CR)	_L(Data)(CR)(LF)	
Device Write Register	_m(Address)(Data)(CR)	_M(CR)(LF)	
Start Data Log	_b(1-7)(CR)	Repeated binary data from Device Registers (0x00 - 0x07) and (0x1A - 0x1C)	1-7 sets how often the registers are sampled. 1 = 8 ms, 2 = 32 ms, 3 = 64 ms, 4 = 128 ms, 5 = 256 ms, 6 = 512 ms, and 7 = 1.2 s
Stop Data Log	_b0(CR)	_B(CR)(LF)	
Change Demo Mode	_s(1-7)(CR)	_SAA(CR)	Changes to different device configurations.

1 COMMAND PROTOCOL BASED ON CHARACTER COMMAND STRUCTURE

1.1 Handshake command –

Command sent from PC to S08

Byte 0 : SPACE -command header (0x20)
 Byte 1 : 'h' -character command for handshake
 Byte 2 : CR -terminating command 1 (0x0D)

Command sent from S08 to PC

Byte 0 : SPACE -command header (0x20)
 Byte 1 : 'H' -return character command for handshake
 Byte 2 : HWID -Hardware ID high byte (0x50 – 'T')
 Byte 3 : HWID -Hardware ID low byte – HW version
 Byte 4 : SWID -Software ID high byte (0x53 – 'S')
 Byte 5 : SWID -Software ID low byte – SW version
 Byte 6 : CR -terminating command 1 (0x0D)
 Byte 7 : LF -terminating command 2 (0x0A)

1.2 Device Read Register – Read Device Register:

Command sent from PC to S08

Byte 0 : SPACE -command header (0x20)
 Byte 1 : 'l' -character command for Device Read Reg
 Byte 2 : '0' – 'F' -Device address to read – hi byte hi nibble
 Byte 3 : '0' – 'F' -Device address to read – hi byte lo nibble
 Byte 4 : CR -terminating command 1 (0x0D)

Command sent from S08 to PC

Byte 0 : SPACE -command header (0x20)
 Byte 1 : 'L' -character command for Device Read Reg
 Byte 2 : '0' – 'F' -Data byte – hi nibble
 Byte 3 : '0' – 'F' -Data byte – lo nibble
 Byte 4 : CR -terminating command 1 (0x0D)
 Byte 5 : LF -terminating command 2 (0x0A)

1.3 Device Write Register – Write Device Register:

Command sent from PC to S08

Byte 0 : SPACE -command header (0x20)
Byte 1 : 'm' -character command for Device Write Reg
Byte 2 : '0' – 'F' -Device address to write to – hi byte hi nibble
Byte 3 : '0' – 'F' -Device address to write to – hi byte lo nibble
Byte 4 : '0' – 'F' -Data byte – hi nibble
Byte 5 : '0' – 'F' -Data byte – lo nibble
Byte 4 : CR -terminating command 1 (0x0D)

Command sent from S08 to PC

Byte 0 : SPACE -command header (0x20)
Byte 1 : 'M' -character command for Device Write Reg
Byte 2 : CR -terminating command 1 (0x0D)
Byte 3: LF -terminating command 2 (0x0A)

1.4 Start Data Log Device Registers – Device Registers (0x00 – 0x07) and (0x1A – 0x1C)

Command sent from PC to S08

Byte 0 : SPACE -command header (0x20)
Byte 1 : 'b' -character command for start Device Datalog
Byte 2 : '1' – '7' -Timer Intervals:
1 – 8 ms
2 – 32 ms
3 – 64 ms
4 – 128 ms
5 – 256 ms
6 – 512 ms
7 – 1.2 s

Byte 3 : CR -terminating command 1 (0x0D)

Command sent from S08 to PC

Repeatedly sent when timer interval has elapsed, until stop timer command is sent.

Byte 0-9 : -binary data from Device Register
(0x00 – 0x07) and (0x1A – 0x1C)

1.5 Stop Data Log Device Registers– Device Registers (0x00 – 0x07) and (0x1A – 0x1C)

Command sent from PC to S08

Byte 0 : SPACE -command header (0x20)
Byte 1 : 'b' -character command for Device Datalog
Byte 2 : '0' -character command to stop timer
Byte 3 : CR -terminating command 1 (0x0D)

Command sent from S08 to PC

Byte 0 : SPACE -command header (0x20)
Byte 1 : 'B' -character command for Stop Data Log
Byte 2 : CR -terminating command 1 (0x0D)
Byte 3: LF -terminating command 2 (0x0A)

1.6 Change Device Mode

Command sent from PC to S08

Byte 0 : SPACE -command header (0x20)
Byte 1 : 's' -character command for change device mode
Byte 2 : '1' – '7' - Mode
1 – Low Power Register Configuration (4 SPS)
2 – Medium Power Register Configuration (32 SPS)
3 – High Power Register Configuration (120 SPS)
4 – Scope Register Configuration
Byte 3 : CR -terminating command 1 (0x0D)

Command sent from S08 to PC

Byte 0 : SPACE -command header (0x20)
Byte 1 : 'S' -character command for Successful Change Mode
Byte 2 : CR -terminating command 1 (0x0D)
Byte 3: LF -terminating command 2 (0x0A)

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