

# SDI-12 Communication

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If a Manta+ is equipped with a Multi-Protocol Interface Board (MIB), the built-in SDI-12 interface is used to read the parameters from your Manta+ multiprobe.

**NOTE!! SDI-12 communication using the MIB is not compatible with the short, data cables normally provided with a Manta+. An SDI-12 adapter must be used with an under-water cable connected to the MIB-equipped Manta.**

The host computer-to-Manta+ communication adheres to requirements of the SDI-12 Support Group, Version 1.3. Table 1 summarizes the implemented SDI-12 commands. It is assumed that the reader is familiar with the SDI-12 Protocol. If not, visit the SDI-12 Support Group website: [www.sdi-12.org](http://www.sdi-12.org).

a!	Empty command	
aA!	Change address	
aC!	Request a concurrent measurement	Up to 20 values returned
aM!	Request a measurement	Up to 9 values returned
aM1!	Request an additional measurement	Up to 9 additional values returned
aM2!	Request an additional measurement	Up to 2 additional values returned
aCC!	Request a concurrent measurement with CRC	
aMC!	Request a measurement with CRC	
aDn!	Read measurement results data	n = 0..2
aI!	Request device identification string	
a = SDI-12 address		

**Table 1 – Available MIB SDI-12 Commands**

## Special MIB Commands for Modbus

When a Manta+ has the MIB installed, for SDI-12 communications, it can be connected to a host PC or laptop to send commands directly to the Manta+ CPU, as well as special commands to the MIB itself. This mode of communication, in which the Modbus capability is NOT used, is referred to as “transparent mode”.

**NOTE!! When using transparent mode, by connection to a PC or laptop, the +5 Volt USB output voltage normally used to power a Manta is not reliable with the MIB in place, requiring about +5.4 Volts typically. Use the RS-232 Adapter External +12 Volt adapter in this case.**

Using a terminal emulator, such as TeraTerm or Hyperterminal, to talk to the Manta+ in this transparent mode, the MIB recognizes and responds to certain ASCII commands to allow the programming/verifying some parameters, as shown below. The format of these MIB command is “\$ccxxx<cr>”, where:

‘\$’ indicates an MIB command

cc is a two-character MIB command identifier

xxx is a parameter values specific to the command

Command	Description	Parameter(s)	Response
\$ASx<cr>	Set SDI-12 Address	x= 0-9,A-Z,a-z	OK <cr>
\$AS?<cr>	Read SDI-12 Address	None	x<cr> x= 0-9,A-Z,a-z
\$PDxx<cr>	Set power-off delay (extend Manta+ power ON-time from the last measure command)	xxx = 0-60 (seconds) default = 0	OK<cr>
\$PD?<cr>	Read power-off delay	None	xxx<cr> xxx = 0-60 (seconds)
\$FV?<cr>	Read IB firmware revision	None	IB Firmware revision

**Sample SDI-12 command response for a Manta+ with 10 parameters selected.**

Command Response

```

O!    0<CR><LF>

OI!   013EUREKA MANTA 711SN10162469<CR><LF>

OV!   00000<CR><LF>

OM!   00169<CR><LF>

OD0!  0+0+408.6999+4938.999+489.3999<CR><LF>

OD1!  0+4494.399+132.6000+3651.699+131.2000<CR><LF>

OD2!  0+2269.900<CR><LF>

OM1!  00031<CR><LF>

OD0!  0+11.70000<CR><LF>


OC!   000310<CR><LF>

OD0!  0+0+1.800000+2.100000+489.6999<CR><LF>

OD1!  0+4523.299+133.1000+3591.099+132.2000<CR><LF>

OD2!  0+2243.600+11.72000<CR><LF>

```

0MC! 00039<CR><LF>

0D0! 0+0+1.900000+2.100000+488.9999A7D<CR><LF>

0D1! 0+4538.699+133.0000+3557.699+132.4000@Zy<CR><LF>

0D2! 0+2224.000NWS<CR><LF>

0MC1! 00031<CR><LF>

0D0! 0+11.68000BS\_<CR><LF>

0CC! 000310<CR><LF>

0D0! 0+0+1.900000+2.000000+489.0999EHG<CR><LF>

0D1! 0+4546.699+133.1000+3540.199+132.6000O]X<CR><LF>

0D2! 0+2214.500+11.70000CSh<CR><LF>

**NOTE: <CR> denotes an ASCII carriage return**

**<LF> denotes an ASCII Line Feed**

**In the return string of the "OI!" command, "13" is the SDI-12 Version Number (1.3), "711" is the Manta+ CPU Firmware version (7.11), and the string following "SN", "10162469" is the Manta+ Serial Number.**