

Puck Software Interface

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Description

The puck is a small persistent memory store that can reside on or very near an instrument. A host platform can query the puck for instrument-specific information that may include an I.D., metadata, etc. and then switch the puck off and communicate directly with the instrument.

Serial Interface

The puck communicates over a standard RS-232 serial interface and always starts at 9600 baud, 8 data bits, no parity, and 1 stop bit upon power up. Using these initial serial port settings facilitates the discovery of the puck by the host computer.

The serial interface uses a simple command-response protocol. When a command is issued the puck will attempt to execute that command. Upon successful execution the puck will return the characters

RDY<CR>

where <CR> is a carriage return. The RDY prompt indicates that the puck is ready for the next command. If the puck is unable to execute the command successfully it will issue the characters

ERR ####<CR>
RDY<CR>

where "####" is a four digit error code. If the command is a request for information then the command will return the information requested followed by the characters

RDY<CR>

In all cases the puck will terminate a transaction with the characters

RDY<CR>

at which point it is ready for another command to be issued.

Puck Command Summary

- RM - Read a specified number of bytes from the puck's persistent storage.
- WM - Write bytes to the puck's persistent storage.
- FL - End a write session to the puck.
- ER - Clear the entire persistent memory store.
- GA - Get the address that the internal address pointer is pointing to.
- SA - Set the address that the internal address pointer is pointing to.
- SZ - Return size in bytes of the puck's persistent storage.
- SM - Put the puck into sensor mode.
- SB - Set the baud rate of the puck.
- VB - Determine if a baud rate is valid for this puck.
- VR - Get the current version of the puck's firmware.

Command Descriptions

RM [number of bytes]

Description

This command reads the number of bytes specified by the 'number of bytes' argument. The command starts returning bytes from the location pointed to by the internal address pointer and increments the address pointer for every byte returned. If the address pointer reaches the end of available memory it will wrap around to the beginning of memory.

Returns

[XXX---total bytes requested---XXX]

WM [number of bytes]

Description

This command writes a specified number of bytes to the puck's nonvolatile memory. The number of bytes that can be written ranges from 1 – 32 bytes. The write starts at the address pointed to by the internal address pointer and increments the pointer for every byte written to memory. After the WM command and the 'number of bytes' parameter have been entered the puck will write the next N bytes to memory. Upon receiving and writing the Nth byte to memory the puck will respond with a RDY<CR>. This command can only be used after an ER command and will not wrap the internal address pointer around as in the RM command.

Returns

None

ER

Description

This command clears all of the puck's persistent storage. After the erase memory command has been entered the contents of the memory can be re-written with the WM command.

Returns

None

GA

Description

This command returns the current value of the internal address pointer.

Returns

#####<CR>

where,

– is a base ten number representing the location pointed to by the internal address pointer.

SA [address]

Description

This command sets the location pointed to by the internal address pointer.

Returns

None

SZ

Description

This command returns the size of the puck's persistent memory store.

Returns

#####<CR>

where,

– is a base ten number indicating the size in bytes of the puck's persistent storage.

SM

Description

This command puts the puck's microprocessor to sleep and switches the communication lines directly to the instrument.

Returns

None

SB [baud rate]

Description

This command sets the baud rate that the puck will use to communicate. Check the supported baud rates using the VB command.

Returns

None

VB [baud rate]

Description

This command determines if a baud rate is valid for the puck

Returns

YES<CR> - if the baud rate is supported by the puck
NO<CR> - if the baud rate is not supported by the puck

VR

Description

This command returns the current puck version. Manufacturers may define the format and content of this string in order to identify the puck version.

Returns

XXXXXXXX<CR>

where,

XXXXXXXX – a string that indicates the firmware version and/or manufacturer of the puck.

Error Code Description

ERR 0001 – General failure.

ERR 0004 – No command match.