

03 SEP 04

MEMORANDUM

To: MIDN Sean Jones, USN
From: MIDN Veade
MIDN Heyne

Subj: Communications Protocol for MiDn

Sir,

A. Command

1. Commands: All commands will be given in 8 bit ASCII code. Only the 4 Least Significant Bits will be read.
 - a. a – “Acquire Data” – Hex x1 (xxxx 0001)
 - i. This command zeros counters and then collects data.
 - b. s- “Stop and Reset” – Hex x3 (xxxx 0011)
 - i. This command stops data acquisition and resets logic in circuit.
 - c. r – “Read out” – Hex x2 (xxxx 0010)
 - i. This command stops acquiring data and sends the data out. It then waits for the command “Acquire Data.”

2. Sequence: The sequence will begin with the command “Stop and Reset” to reset the circuit logic. The command “Acquire Data” will then be given. The command “Read out” can be used to read the data. The “Read out” command can be continually sent to repeat a data read out until the user is satisfied. The command “Acquire Data” will zero counters and begin the process again. Thus after start up, the user may alternate between “Acquire Data” and “Read out” without the use of the “Stop and Reset” command.

3. Spacecraft computer is responsible to initiate collection of data and record it on its own initiative at a minimum of once per day and up to 1440 times per day.

4. Spacecraft will time tag data in the following format:
 - Time Stamp
 - Binary Data (98304 bits)
 - Delineator
 - (next record)

5. Connectors
 - a. Data Connector: Data connector will be DB9.
 - i. Pin specifications are as follows:
 - Receive (+): pin # 2
 - Transmit (+): pin # 3
 - Ground: pin # 5
 - Receive (-): pin # 6
 - Transmit (-): pin # 7

b. Power Connector: Power connector will be DB9.

i. Pin specifications are as follows:

+6 V \pm 0.5 V : pin # 1

Ground: pin # 3

-6 V \pm 0.5 V : pin # 5

B. Telemetry

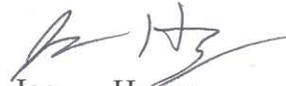
1. Data will originally be in RS232 format. After initial testing it will be switched to RS422 format. There will be three sensors each having 1024 32 bit stored words yielding 12.288 Kbytes per readout. Data will be transmitted at 9600 bits/second. At this rate, each read out will take 10.24 seconds.

2. No commands will be echoed back.

Respectfully,

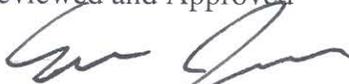


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Reviewed and Approved



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