

BPM Protocol for MTA

Draft suggestion

Mon, May 7, 2007

BPM data is accessible via UDP for the MuCool project. A simple protocol is planned for accessing the BPM data from the BPM hardware. This note is a suggestion for a simple protocol that could work, resulting from a meeting with Terry Kiper, Mike Sliczniak, and Bob Goodwin. The UDP port to be used by the BPM hardware for this protocol is 5009.

<i>Field</i>	<i>Size</i>	<i>Meaning</i>
<code>type</code>	2	message type in hi byte, subtype / status in lo byte
<code>msgId</code>	2	message id
<code>initial</code>	2	initial BPM index
<code>nBytes</code>	2	#bytes of data in reply (4 per BPM as position, intensity)

A normal request message `type` word is $(0x2000 + \text{subtype})$. A normal reply message `type` word is $(0x0000 + \text{status})$, with the reply data following the header. A subtype of `0x00` could mean echo the entire rest of the message. A subtype of `0x01` could refer to the usual BPM data. A subtype of `0x02` could mean access to memory, for a 16-bit address given as `initial`.

The `msgId` is simply echoed for a reply message, as are the `initial` and `nBytes` words. It is used to match a request with the subsequent reply message.

Although it is not needed yet, one could imagine a message type of $(0x3000 + \text{subtype})$ for a setting message, and $(0x1000 + \text{status})$ for a setting acknowledgment. For the setting message, the setting data would immediately follow the setting message header.