Current Values:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** |
| **Description** | Temp. Core 1 | Temp. Core 2 | Temp. Core 3 | Temp. Core 4 | Load Core 1 | Load Core 2 | Load Core 3 | Load Core 4 | Load CPU | Load RAM in % | Used RAM in MB (High-Byte) | Used RAM in MB (Low-Byte) | Free RAM in MB (High-Byte) | Free RAM in MB (Low-Byte) |

Plans:  
Add support for up to 8 Cores -> “Settings” send via initial data transfer to set up the MAKERbuino properly for a different byte count or

a fixed byte count with the values for cores 5 to 8 set to 0 (or 255)

Future Values :

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** |
| **Description** | Temp. Core 1 | Temp. Core 2 | Temp. Core 3 | Temp. Core 4 | Temp. Core 5 | Temp. Core 6 | Temp. Core 7 | Temp. Core 8 | Load Core 1 | Load Core 2 | Load Core 3 | Load Core 4 | Load Core 5 | Load Core 6 | Load Core 7 | Load Core 8 |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **16** | **17** | **18** | **19** | **20** | **21** | **22** | **23** | **24** | **25** | **26** |
| **Description** | Temp. CPU | Load CPU | CPU Fan Speed in RPM  (High-Byte) | CPU Fan Speed in RPM  (Low-Byte) | Load RAM in % | Used RAM in MB (High-Byte) | Used RAM in MB (Low-Byte) | Free RAM in MB (High-Byte) | Free RAM in MB (Low-Byte) | Temp. GPU | Load GPU |

|  |  |  |
| --- | --- | --- |
| **Byte** | **27** | **28** |
| **Description** | GPU Fan Speed in RPM  (High-Byte) | GPU Fan Speed in RPM  (Low-Byte) |

There are 29 Bytes to be received if the CPU has 8 Cores -> 29\*10 = 290 Bits per transmission because of 8N1-Mode (Start-Bit, 8 data Bits, no parity Bit and 1 Stop Bit -> 10 Bits per value).

So if 9600 Baud => 9600 Bits per second: = 30 milliseconds are needed for a whole transmission

The MAKERbuino runs at 20 fps. This means a new frame is rendered every 50 milliseconds -> Time between frames should be enough to transmit a full data set of 29 Bytes and process the whole data set since most of it is just copying the value to the corresponding variable.

Of course you could leave the values within the incomingData array to save some time on processing but it would make the programming part much more confusing because you need to refer to this array all the time and you have to keep every index/value pair in mind.

Otherwise just set the Baud rate to 19200. The transmission would take approximately 15 milliseconds, so there are 35 milliseconds left for processing.