NRMC Network Communications Protocol

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Note: The Client Message Format describes how the Message is to be formatted when sent from the Client and the Server Message Format describes how the Message is to be formatted when sent from the Server.

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Command | Opcode (dec) | Opcode (hex) | Client Message Format | Server Message Format | Push/Pull | Handling Layer(s) | Description |
| Ping | 0 | 0x00 | 0x00  (1 byte length) | 0x00  (1 byte length) | Pull | Network | The ping command is used for checking if the receiver is active. When the receiver receives a ping request it simply echoes back a ping to the sender. |
| Move8 | 1 | 0x01 | 0x01+ MoveMask (2bytes)  (3 byte length) | N/A | Pull | MCS | The Move8 command is able to set up to 8 motors to move CW or CCW. Each motor is represented with 2 bits with 00 or 11 being stop, 01 CW, and 10 CCW.  Note: These values may have to be changed based on motor configuration. |
| SetSpeedByte | 2 | 0x02 | 0x02 + MotorNum (2bytes) + Speed(1byte)  (4 bytes) | N/A | Pull | MCS | The Set Speed Byte command sends to the server a motor and the speed to set it to in a single byte range (0-255). |
| Current Mode | 253 | 0xFD | 0xFD | N/A  (Server will send back the Start or Stop Auto Mode command respectively) | Pull | ACS | Current Mode is used to query the server for its current operation mode. The server will send back the Start or Stop Auto Mode command for their respective mode. |
| Start Auto Mode | 254 | 0xFE | 0xFE  (1 byte length) | 0xFE  (1 byte length) | Pull | ACS, MCS | Start Auto Mode starts the autonomous operation mode when sent to the server. This command is also used by the server to report its current operation mode. |
| Stop Auto Mode | 255 | 0xFF | 0xFF  (1 byte length) | 0xFF  (1 byte length) | Pull | ACS, MCS | Stop Auto Mode stops the autonomous operation mode when sent to the server. This command is also used by the server to report its current operation mode. |