**DRC Head Board Information**

**BNO : 0x22(34)**

**1. Set and Request Board Information (0x01)**

**- Send Data**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **BNO** | **SRBI** | **CANR** |  |  |  |  |  |
| **0x01** | **0x22** | **0x01** | **5 or 10** |  |  |  |  |  |

**- Receive Data**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **CANR** | **return** | **BTY** | **Version** | **Version** | **Version** | **Version** |  |
| **0x190 + BNO** | **5 or 10** | **1** | **3** | **1** | **0** | **0** | **0** |  |

**2. Motor Speed Change (0xA0)**

**- Send Data**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **BNO** | **MSC** | **SPD1a** | **SPD1b** | **SPD2a** | **SPD2b** | **SPD3a** | **SPD3b** |
| **0x01** | **0x22** | **0xA0** | **var** | **var** | **var** | **var** | **var** | **var** |

**goalspd1 = SPD1a | (SPD1b<<8)**

**goalspd2 = SPD2a | (SPD2b<<8)**

**goalspd3 = SPD3a | (SPD3b<<8)**

**goalspd range : 0 ~ 1023(0x3FF)**

**the higher number, the faster (but 0 means max speed)**

**- Receive Data**

**None**

**3. Motor Encoder Request (0x03)**

**- Send Data**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **BNO** | **ENC** |  |  |  |  |  |  |
| **0x01** | **0x22** | **0x03** |  |  |  |  |  |  |

**- Receive Data**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **ENC1a** | **ENC1b** | **ENC2a** | **ENC2b** | **ENC3a** | **ENC3b** |  |  |
| **0x60 + BNO** | **var** | **var** | **var** | **var** | **var** | **Var** |  |  |

**encoder1 = ENC1a | (ENC1b<<8)**

**encoder2 = ENC2a | (ENC2b<<8)**

**encoder3 = ENC3a | (ENC3b<<8)**

**encoder range : 0 ~ 4095(0xFFF), 2048(0x800) is 180 degree point**

**4. Motor Position Control**

**- Send Data**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **POS1a** | **POS1b** | **POS1a** | **POS1b** | **POS1a** | **POS1b** |  |  |
| **0x10 + BNO** | **var** | **var** | **var** | **var** | **var** | **var** |  |  |

**goalpos1 = POS1a | (POS1b<<8)**

**goalpos2 = POS2a | (POS2b<<8)**

**goalpos3 = POS3a | (POS3b<<8)**

**goalpos range : 0 ~ 4095(0xFFF), 2048(0x800) is 180 degree point**

**- Receive Data**

**None**

**5. Motor Enable / Disable (0xB0)**

**- Send Data**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **BNO** | **ENABLE** | **ON/OFF** | **ON/OFF** | **ON/OFF** |  |  |  |
| **0x01** | **0x22** | **0xB0** | **0 or 1** | **0 or 1** | **0 or 1** |  |  |  |

**0: Enable**

**1: Disable**

**order is motor1, motor2, motor3**

**- Receive Data**

**None**

**6. Motor Torque Limit Set (0xC0)**

**- Send Data**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **BNO** | **ENABLE** | **TQ1a** | **TQ1b** | **TQ2a** | **TQ2b** | **TQ3a** | **TQ3b** |
| **0x01** | **0x22** | **0xC0** | **var** | **var** | **var** | **var** | **var** | **Var** |

**torque1 = TQ1a | (TQ1b<<8)**

**torque2 = TQ2a | (TQ2b<<8)**

**torque3 = TQ3a | (TQ3b<<8)**

**torque range : 0 ~ 1023(0x3FF), about 0.1% unit**

**when the alarm shutdown is triggered, dynamixel makes the torque limit as 0**

**so, you should change non 0 value to operate motor.**

**- Receive Data**

**None**