|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Leg\_Index | q\_des\_abad | q\_des\_hip | q\_des\_knee | qd\_des\_abad | qd\_des\_hip | qd\_des\_knee | kp\_abad | kp\_hip | kp\_knee | kd\_abad | kd\_hip | kd\_knee | tau\_abad\_ff | tau\_hip\_ff | tau\_knee\_ff | Control Mode | Checksum | Flags\_raw | Flags |  |
| 0 | -0.110023 | 0.005643 | -0.699701 | -0.000000 | 0.000000 | 0.000000 | 5.000.000 | 5.000.000 | 5.000.000 | 0.100000 | 0.100000 | 0.100000 | -0.000000 | 0.000000 | 0.000000 | 0 | 88552835 | 1 | 1 |  |
| 1 | 0.293105 | -0.045398 | -1.019.152 | 0.000000 | 0.000000 | 0.000000 | 5.000.000 | 5.000.000 | 5.000.000 | 0.100000 | 0.100000 | 0.100000 | 0.000000 | 0.000000 | 0.000000 | 0 | 88552835 | 1 | 1 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

======= STM1 Command =======

Leg 0:

Position: ab=-0.110023, hip=0.005643, knee=-0.699701

Velocity: ab=-0.000000, hip=0.000000, knee=0.000000

Stiffness: ab=5.000000, hip=5.000000, knee=5.000000

Damping: ab=0.100000, hip=0.100000, knee=0.100000

Torque: ab=-0.000000, hip=0.000000, knee=0.000000

Flags: 1 | Checksum: 88552835

Leg 1:

Position: ab=0.293105, hip=-0.045398, knee=-1.019152

Velocity: ab=0.000000, hip=0.000000, knee=0.000000

Stiffness: ab=5.000000, hip=5.000000, knee=5.000000

Damping: ab=0.100000, hip=0.100000, knee=0.100000

Torque: ab=0.000000, hip=0.000000, knee=0.000000

Flags: 1 | Checksum: 88552835

==================================

=== XOR Checksum Calculation ===

Step 1: Data[0] = 0xBDE153BD, Current Checksum = 0x00000000

Step 2: Data[1] = 0x3E9611DC, Current Checksum = 0xBDE153BD

Step 3: Data[2] = 0x3BB8E8EA, Current Checksum = 0x83774261

Step 4: Data[3] = 0xBD39F341, Current Checksum = 0xB8CFAA8B

Step 5: Data[4] = 0xBF331F9B, Current Checksum = 0x05F659CA

Step 6: Data[5] = 0xBF827393, Current Checksum = 0xBAC54651

Step 7: Data[6] = 0x80000000, Current Checksum = 0x054735C2

Step 8: Data[7] = 0x00000000, Current Checksum = 0x854735C2

Step 9: Data[8] = 0x00000000, Current Checksum = 0x854735C2

Step 10: Data[9] = 0x00000000, Current Checksum = 0x854735C2

Step 11: Data[10] = 0x00000000, Current Checksum = 0x854735C2

Step 12: Data[11] = 0x00000000, Current Checksum = 0x854735C2

Step 13: Data[12] = 0x40A00000, Current Checksum = 0x854735C2

Step 14: Data[13] = 0x40A00000, Current Checksum = 0xC5E735C2

Step 15: Data[14] = 0x40A00000, Current Checksum = 0x854735C2

Step 16: Data[15] = 0x40A00000, Current Checksum = 0xC5E735C2

Step 17: Data[16] = 0x40A00000, Current Checksum = 0x854735C2

Step 18: Data[17] = 0x40A00000, Current Checksum = 0xC5E735C2

Step 19: Data[18] = 0x3DCCCCCD, Current Checksum = 0x854735C2

Step 20: Data[19] = 0x3DCCCCCD, Current Checksum = 0xB88BF90F

Step 21: Data[20] = 0x3DCCCCCD, Current Checksum = 0x854735C2

Step 22: Data[21] = 0x3DCCCCCD, Current Checksum = 0xB88BF90F

Step 23: Data[22] = 0x3DCCCCCD, Current Checksum = 0x854735C2

Step 24: Data[23] = 0x3DCCCCCD, Current Checksum = 0xB88BF90F

Step 25: Data[24] = 0x80000000, Current Checksum = 0x854735C2

Step 26: Data[25] = 0x00000000, Current Checksum = 0x054735C2

Step 27: Data[26] = 0x00000000, Current Checksum = 0x054735C2

Step 28: Data[27] = 0x00000000, Current Checksum = 0x054735C2

Step 29: Data[28] = 0x00000000, Current Checksum = 0x054735C2

Step 30: Data[29] = 0x00000000, Current Checksum = 0x054735C2

Step 31: Data[30] = 0x00000001, Current Checksum = 0x054735C2

Step 32: Data[31] = 0x00000001, Current Checksum = 0x054735C3

Final Computed Checksum: 0x054735C2

Calculated checksum 88552898 Received checksum 88552835

(uint32\_t)Calculated checksum 88552898 (uint32\_t)Received checksum 88552835

Checksum or Flag error in SPI. Calculated checksum 0x054735C2 Received checksum 0x05473583