

Packet format

odno. vbus voltage

Req → Fa 83 0d 3f df 41

Req → Fa 03 02 80 04 00 53 5e

Req → Fc 03 02 80 04 00 53 5e

Res → Fc 83 a7 c1 de 41

Response → Fd 83 0d 3f df 41

Request → Fd 03 02 80 04 00 53 5e

Serial number

→ Fe 03 05 80 08 00 53 5e

→ Fe 83 53 57 8d 37 6e 20

→ 81 03 05 80 08 00 53 5e

→ 81 83 53 57 8d 37 6e 20 00 00

Packet
OUTIN

Encoder OPs estimate
1000 008137 00101

8C 03 | 37 81 | 04 00 | 53 5E
8C 83 | 02 78 | 6E 3C

float from
HEX

1. Send the NAME Node COMMANDS
VELOCITIES

2. DECODE THEM → CALIBRATE THEM
WITH ANGLE FUN THEN

3. CALCULATE TORQUE

4. ENCODE TORQUE VALUE

311
317
13D

→ Considerations

↳ 1- Request ID

↳ 2- All the Request commands 2 ch array

↳ BYTE ARRAY

max size = 128

↳ 1. USE WIRE SHARK TO GET THE PACKET
FORMAT

↳ 1- MAKE SURE THE OUTPUT of THE REQUEST
IS VALID → CDC 16 ~~8000~~ !!!
↳ FOR THE PACKET

↳ 2- FILTER THE ENCODER DATA

Axis - state - Idle 136
→ b6 03 | 82 80 | 01 00 | 01 | 53 5E

b6 83 00
vel - estimate

→ d5 03 3d 81 | 04 00 53 5E
* d5 83 00 00 00 00

81 3d

AA 8 3D 870 04 0 40 98 13 85

4410
Object
Request

Stream format (NATIVE)
 0 ← Sync BYTE → 0xAA
 1 ← PACKET LENGTH
 2 ← CRC8 (from the Calculator type 0 & 1)
 & you'll get the CRC8

for example of length is 8

Sequence Number ... MSB → 0 / 1
 For sending request in Response

- 1 4
- 2 5
- 3 6
- 4 7
- 5 8
- 6 9
- 7 10

end Point ID
 (look At the MSB of 165)
 if it is 1 → response is expected
 → LK X
 expected response size (defined in end point)
 for examp 64 bits → 8 bytes
 CRC16 (US) xant
 payload (Based on firmware from end point generator)
 Constant

130
135
closed loop 441

11 } CRC16 of The packet (NOT REVERSED)
 12 } from 3-10

Response

0 → sync
 1 → NUMBER OF BYTES
 2 ← check sum CRC8

Packet

- 3 3 Sequence Number
- 4 4 MSB = 1 (SAME As the request)
- 5 5
- 6 6 response
- 7 7 taken reversed
- 8 8
- 9 9
- 10 10
- 11 11

9 12
 10 13
 11 14
 Check sum for The packet CRC16
 (NOT REVERSED)

BYTE 1 = 03

PACKET

COMMAND	PACKET LENGTH	PACKET
Closed loop Control	9	Request Num 01 11 82 80 01 00 08 53 5e 03
Axis state idle	9	01 11 82 80 01 00 01 53 5e
Torque mode	12	01 11 82 80 01 04 00 00 09 04 00 53 5e
input	12	01 11 82 80 01 04 00 00 09 04 00 53 5e
input torque mode	12	01 11 82 80 01 04 00 00 53 5e
Position (axis 0)	8	01 11 3d 81 04 00 53 5e
Vel (axis 0)	8	01 11 69 82 04 00 53 5e
Pos (axis 1)	8 bytes	01 11 6f 82 04 00 53 5e
Vel (axis 1)	8 bytes	

input Torque = 249 DEC

→ e1 03 | f9 80 | 04 00 | 00 00
00 00 (53 5e)
e1 83 00 00 00 ..

⇒ e5 03 | f9 80 | 04 00 | cd cc | cc 3d
535e

e5 83 cd cc cc 3d

axis 1 (pos)

f0 03 (69 82) (04 00) 53 5e
8 2 69

(well)
f4 03 (bf 82) (04 00) (53 5e)

closed loop

fc 03 | 82 80 01 | 00
08 | 53 5e

fault

11