

//Sidus F1Q/B/E - Commands

```
#define CMD_GETTIMERS      'a'          // request timers
#define RSP_GETTIMERS      'b'          // reply to request timers
#define CMD_SETSERVO       'c'          // send triplet servo/function/position
#define RSP_SETSERVO       'd'          // acknowledge
#define CMD_SETTIMERS      'e'          // send new timers
#define RSP_SETTIMERS      'f'          // reply to send new timers
#define CMD_GETSERVOPOS     'g'          // request position of all servos for all functions
#define RSP_GETSERVOPOS     'h'          // reply position of all servos for all functions
#define CMD_MOVETOFUNC      'i'          // move servos to function
#define RSP_MOVETOFUNC      'j'          // acknowledge
#define CMD_GETSWVER        'k'          // request timer firmware version
#define RSP_GETSWVER        'l'          // reply to request timer firmware version
#define CMD_UNLOCK         'm'          // request enable motor
#define RSP_UNLOCK         'n'          // acknowledge enable motor
#define CMD_JUMP2           'o'          // request jump to function after early DT
#define RSP_JUMP2          'p'          // acknowledge
#define CMD_GETMEMORY       'q'          // request current memory index
#define RSP_GETMEMORY       'r'          // reply current memory index
#define CMD_SETMEMORY       's'          // set memory index
#define RSP_SETMEMORY       't'          // acknowledge
#define CMD_GETLOWRPM       'u'          // request idlethrottle
#define RSP_GETLOWRPM       'v'          // reply idlethrottle
#define CMD_SETLOWRPM       'w'          // send idlethrottle
#define RSP_SETLOWRPM       'x'          // acknowledge
```

General format

PREAMBLE (0x00)	SYNC (0x00 0x00 0x00 0x00)	LENGTH (1 byte)	COMMAND (1 byte)	DATA (variable length)	CHECKSUM (1 byte)	TERMINATOR (0x45)
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Length: total number of bytes except the PREAMBLE, SYNC and TERMINATOR fields

Checksum: Sum MODULO 256 of all the bytes including COMMAND, DATA

CMD_GETSWVER - get software version

00 00 00 00 03 6B 6B 45

```
0      1      2      3      4      5      6      7
0123456789012345678901234567890123456789012345678901234567890
SSSSLCCT
YYYYEHE
NNNNKKK
00000664
00003BB5
```

RSP_GETSWVER - reply to get software version

(example B536 0A 04 03) where B=class (B,Q,E), 536=fw version, 0A=10 functions, 04 = 4 memories, 03 = 3 servos

00 00 00 00 0C 6C 42 35 33 36 20 0A 04 03 20 9D 45

```
0      1      2      3      4      5      6      7
0123456789012345678901234567890123456789012345678901234567890
SSSSLCCT
YYYYEHE 9byte
NNNNKKK
000006 4
0000CC 5
```

CMD_GETTIMERS - request timers

00 00 00 00 03 61 61 45

```
0      1      2      3      4      5      6      7
0123456789012345678901234567890123456789012345678901234567890
SSSSLCCT
YYYYEHE
NNNNKKK
00000664
00003115
```

RSP_GETTIMERS - reply to request_timers

00 00 00 00 19 66 dddd dddd dddd dddd dddd dddd dddd dddd dddd CK 45

```
0      1      2      3      4      5      6      7
0123456789012345678901234567890123456789012345678901234567890
SSSSLCCT
YYYYEHE 11x16bit timers !note: timers are 16bit values and express hundredths of seconds
NNNNKKK
000016 4
000092 5
```

CMD_SETTIMERS - send new timers

00 00 00 00 19 65 dddd dddd dddd dddd dddd dddd dddd dddd CK 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE	11 16bit timers					
NNNN	KE						
000016			4				
000095			5				

RSP_SETTIMERS - reply to send new_timers

00 00 00 00 19 66 dddd dddd dddd dddd dddd dddd dddd dddd CK 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE	11 16bit timers					
NNNN	KE						
000016			4				
000096			5				

CMD_SETSERVO - send new servo position (function, servo, position)

00 00 00 00 06 63 function servo position CHK 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE	!servo = 0, 1, 2	(0=S1, 1=S2, 2=S3)				
NNNN	KE	!function = 0,...,0A	(0=start, 1=func1,..., 0A=DT)				
000006		4 !position = 0,...,82	(0 to 130 steps)				
000063		5					

RSP_SETSERVO - reply to send new servo position

00 00 00 00 03 64 64 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE						
NNNN	KE						
00000664							
00003445							

CMD_GETSERVOPOS - request servo positions

00 00 00 00 03 67 67 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE						
NNNN	KE						
00000664							
00003775							

RSP_GETSERVOPOS - reply to request servo positions

00 00 00 00 24 68 dd CK 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE						
NNNN	KE						
0000026			4				
000048			5				

(NF+1 positions per servo, here NF = 10 and 3 servos -> total = 11 x 3 = 33 positions)
!note: position varies from 0 to 130 (steps)

CMD_MOVETOFUNC - move servos to function

00 00 00 00 04 69 function CHK 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE						
NNNN	KE						
000006			4				
000049			5				

RSP_MOVETOFUNC - reply to move servos to function

00 00 00 00 03 6A 6A 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE						
NNNN	KE						
00000664							
00003AA5							

CMD_UNLOCK - request enable motor

00 00 00 00 03 6D 6D 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE						
NNNN	KR						
00000664							
00003DD5							

RSP_UNLOCK - reply to request enable motor

00 00 00 00 03 6A 6A 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE						
NNNN	KR						
00000664							
00003EE5							

CMD_JUMP2 - request jump to function after early DT

00 00 00 00 03 6F 6F 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE						
NNNN	KR						
00000664							
00003FF5							

RSP_JUMP2 - reply to jump to function after early DT

00 00 00 00 03 70 70 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE						
NNNN	KR						
00000774							
00003005							

CMD_GETMEMORY - request current memory index

00 00 00 00 03 71 71 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE						
NNNN	KR						
00000774							
00003115							

RSP_GETMEMORY - reply to request current memory index

00 00 00 00 03 72 72 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE						
NNNN	KR						
00000774							
00003225							

CMD_SETMEMORY - set current memory index

00 00 00 00 04 73 memory 73 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE						
NNNN	KR						
000007 74							
000043 35							

RSP_SETMEMORY - reply to set current memory index

00 00 00 00 03 74 74 45

0	1	2	3	4	5	6	7
01234567890123456789012345678901234567890123456789012345678901234567890							
SSSS	CT						
YYYY	HE						
NNNN	KR						
00000774							
00003445							

CMD_GETLOWRPM - request idle throttle
00 00 00 00 03 75 75 45

0	1	2	3	4	5	6	7
0123456789012345678901234567890123456789012345678901234567890							
SSSS	CC						
YYYY	EE						
NNNN	KK						
00000774							
00003555							

RSP_GETLOWRPM - reply to request idle throttle
00 00 00 00 04 76 rpm 76 45

0	1	2	3	4	5	6	7
0123456789012345678901234567890123456789012345678901234567890							
SSSS	CC						
YYYY	EE						
NNNN	KK						
000007 74							
000036 65							

CMD_SETLOWRPM - request idle throttle
00 00 00 00 04 77 rpm 77 45

0	1	2	3	4	5	6	7
0123456789012345678901234567890123456789012345678901234567890							
SSSS	CC						
YYYY	EE						
NNNN	KK						
000007 74							
000047 75							

RSP_SETLOWRPM - reply to request idle throttle
00 00 00 00 03 78 78 45

0	1	2	3	4	5	6	7
0123456789012345678901234567890123456789012345678901234567890							
SSSS	CC						
YYYY	EE						
NNNN	KK						
00000774							
00003885							
