



PO-5502

Control Command

1、Purpose

The purpose of this document is to explain in detail the commands and steps that can be used to control a display via serial RS232C

2、Communication Standard

Baud Rate: 4800

Data Bit: 8

Parity Bit: None

Stop Bit: 1

Flow Control: None

3、Communication Points

- (1) There is no way for a field device to "report by exception".
- (2) The master node must routinely poll each field device and look for changes in the data.
- (3) Time interval of packages sending from control center and polling cycle must be fixed.
- (4) When PD SET receive a "set parameters" command will first perform the action and then respond.
- (5) When PD SET receive CheckSum error will not reply any message.

4、Set parameter

[Start Byte][Monitor ID][][Function code][Command code][][Command Value 4 Byte][][Checksum][Cr]

Start	Monitor ID		Space 0x20	Function Code	Command code		Space 0x20	Command Value				Space 0x20	Checksum		Cr
	Hi	Lo			Hi	Lo		MSB			LSB		Hi	Lo	
1 st	2 nd -3 rd		4 th	5 th	6 th -7 th		8 th	9 th -12 th				13 th	14 th -15 th		16 th

4.1 Start Byte

----- ASCII 'f' (66h).

4.2. Monitor ID

----- Monitor ID can be assigned to each set ranging from 01h to 64h.

----- The byte data 01h is encoded to ASCII character '0' and '1' (30h and 31h).

----- Monitor ID '00' is used in broadcast mode and does not require any response.

4.3. Function code

----- ASCII 'S' (53h), as shown in <Table 1>.

4.4. Command code

----- Command code, as shown in <Table 3>.

4.5. Command Value

----- Command Value, as shown in <Table 3>.

4.6. Spac : 0x20

4.7. Checksum

----- Checksum = 1st xor 2nd xor 3rd xor 0x20 xor ... xor 9th xor 10th xor 0x20 (fake checksum = "FF")

--- example :

0x66 xor 0x30 xor 0x31 xor **0x20** xor 0x53 xor 0x30 xor 0x31 xor **0x20** xor 0x30 xor 0x30 xor 0x30 xor 0x31 **0x20**
= 0x14 , 0x14 to Decimal = 20 , 20/16 = 1 , remainder 4 , Checksum → 1(0x31), 4 (0x34)

4.8. Cr

----- Carriage Return (0Dh).

5 ․ Set parameter Reply

[Start Byte][Monitor ID][][Function code][Command code][][Command Value 4 Byte][][Checksum][Cr]

Start	Monitor ID		Space 0x20	Function Code	Command code		Space 0x20	Command Value			Space 0x20	Checksum		Cr
	Hi	Lo			Hi	Lo		MSB		LSB		Hi	Lo	
1 st	2 nd -3 rd		4 th	5 th	6 th - 7 th		8 th	9 th -12 th			13 th	14 th -15 th		16 th

5.1 Start Byte

----- ASCII 'f' (66h).

5.2. Monitor ID

----- Monitor ID can be assigned to each set ranging from 01h to 64h.

----- The byte data 01h is encoded to ASCII character '0' and '1' (30h and 31h).

5.3. Function code

----- ASCII 'A' (41h), as shown in <Table 1>.

5.4. Command code

----- Command code, as shown in <Table 3>.

5.5. Command Value

----- Command Value, as shown in <Table 3>.

5.6. Space : 0x20

5.7. Checksum

----- Checksum = 1st xor 2nd xor 3rd xor 0x20 xor ... xor 9th xor 10th xor 0x20 (fake checksum = "FF")

--- example :

0x66 xor 0x30 xor 0x31 xor **0x20** xor 0x53 xor 0x30 xor 0x31 xor **0x20** xor 0x30 xor 0x30 xor 0x30 xor 0x31 **0x20**
 = 0x14 , 0x14 to Decimal = 20 , 20/16 = 1 , remainder 4 , Checksum → 1(0x31), 4 (0x34)

5.8. Cr

----- Carriage Return (0Dh).

6 ․ Get parameter

[Start Byte][Monitor ID][][Function code][Command code][][Checksum][Cr]

Start	Monitor ID		Space	Function Code	Command code		Space	Checksum		Cr
	Hi	Lo			Hi	Lo		Hi	Lo	
1 st	2 nd -3 rd		4 th	5 th	6 th - 7 th		8 th	9 th - 10 th		11 th

6.1 Start Byt

----- ASCII 'f' (66h).

6.2. Monitor ID

----- Monitor ID can be assigned to each set ranging from 01h to 64h.

----- The byte data 01h is encoded to ASCII character '0' and '1' (30h and 31h).

----- Monitor ID '00' is used in broadcast mode and does not require any response.

6.3. Function code

----- ASCII 'G' (47h), as shown in <Table 1>.

6.4. Command code

----- Command code, as shown in <Table 3>.

6.5. Space : 0x20

6.6. Checksum

----- Checksum = 1st xor 2nd xor 3rd xor 0x20 xor 4th xor 5th xor 6th xor 0x20 (fake checksum = "FF")

6.7. Cr

----- Carriage Return (0Dh).

7 ․ Get parameter Reply

[Start Byte][Monitor ID][][Function code][Command code][][Command Value 4 Byte][][Checksum][Cr]

Start	Monitor ID		Space	Function code	Command code		Space	Command Value				Space	Checksum		Cr
	Hi	Lo			Hi	Lo		MSB			LSB		Hi	Lo	
1 st	2 nd -3 rd		4 th	5 th	6 th - 7 th		8 th	9 th -12 th				13 th	14 th - 15 th		16 th

7.1 Start Byte

----- ASCII 'f' (66h).

7.2. Monitor ID

----- Monitor ID can be assigned to each set ranging from 01h to 64h.

----- The byte data 01h is encoded to ASCII character '0' and '1' (30h and 31h).

7.3. Function code

----- ASCII 'U' (55h), as shown in <Table 1>.

7.4. Command code

----- Command code, as shown in <Table 3>.

7.5. Command Value

----- Command Value, as shown in <Table 3>.

7.6. Space : 0x20

7.7. Checksum

----- Checksum = 1st xor 2nd xor 3rd xor 0x20 xor ... xor 9th xor 10th xor 0x20 (fake checksum = "FF")

7.8. Cr

----- Carriage Return (0Dh).

8 、 Error Reply

[Start Byte][Monitor ID][][Function code][Error code][][Checksum][Cr]

Start	Monitor ID		Space	Function code	Error code	Space	Checksum		Cr
	Hi	Lo	0x20			0x20	Hi	Lo	
1 st	2 nd -3 rd		4 th	5 th	6 th	7 th	8 th - 9 th		10 th

8.1 Start Byte

----- ASCII 'f' (66h).

8.2. Monitor ID

----- Monitor ID can be assigned to each set ranging from 01h to 64h.

----- The byte data 01h is encoded to ASCII character '0' and '1' (30h and 31h).

8.3. Function code

----- ASCII 'e' (65h), as shown in <Table 1>.

8.4. Error code

----- Error code, as shown in <Table 2>.

8.5. Space : 0x20

8.6. Checksum

----- Checksum = 1st xor 2nd xor 3rd xor 0x20 xor 4th xor 5th xor 0x20 (fake checksum = "FF")

8.7. Cr

----- Carriage Return (0Dh).

<Table 1> : Function Code Table

Function Code	Description
'S'(53h)	Set parameter
'A'(41h)	"Set parameter" reply.
'G'(47h)	Get current parameter.
'U'(55h)	"Get current parameter" reply.
'e'(65h)	Error reply.

<Table 2> : Error Code Table

Error Code	Description
'1'(31h)	Function code isn't within the range of definition
'2'(32h)	StartingAddr isn't within the range of definition
'3'(33h)	No. of Regs isn't within the range of definition or Byte count is not equal to 2 times No. of Regs
'4'(34h)	Write failed or write wrong value

<Table 3> : Command Table

OSD Command				
Command code [6 th - 7 th] (ASCII)	Name	R/W	Default (ASCII)	Command Value description [9 th - 12 th]
00	Monitor ID	R/W	0001	[0000] : set ID to 0, and in broadcast mode and does not require any response [0001] ~ [0064] : set ID to x. Set Auto ID Example : [f00 S00 0000 15] [f00 S00 0001 14] [f00 S00 0002 17] Get Example: [f01 G00 20]
01	Power Status	R/W	-	[0000] : power off. [0001] : power on. Example : Monitor ID = 1 ASCII Set Example :[f01 S01 0000 15] Get Example: [f01 G01 21] Hex Set off : 66 30 31 20 53 30 31 20 30 30 30 30 20 31 35 0D Set on: 66 30 31 20 53 30 31 20 30 30 30 31 20 31 34 0D Get : 66 30 31 20 47 30 31 20 32 31 0D
02	Volume	R/W	001E	[0000] ~ [0064] : audio volume. ASCII : Set Example: [f01 S02 001E 62]

				<p>Get Example:[f01 G02 22]</p> <p>Hex :</p> <p>Set 100(64h) : 66 30 31 20 53 30 32 20 30 30 36 34 20 31 34 0D</p> <p>Set 30(1Eh) : 66 30 31 20 53 30 32 20 30 30 31 45 20 36 32 0D</p> <p>Set 50(32h) : 66 30 31 20 53 30 32 20 30 30 33 32 20 31 37 0D</p> <p>Get : 66 30 31 20 47 30 32 20 32 32 0D</p>
03	MUTE	R/W	0000	<p>[0000] : mute off.</p> <p>[0001] : mute on.</p> <p>ASCII:</p> <p>Set Example: [f01 S03 0000 17]</p> <p>Get Example:[f01 G03 23]</p> <p>Hex :</p> <p>66 30 31 20 53 30 33 20 30 30 30 30 20 31 37 0D</p> <p>66 30 31 20 53 30 33 20 30 30 30 31 20 31 36 0D</p> <p>66 30 31 20 47 30 33 20 32 33 0D</p>
04	Video source	R/W	0000	<p>LOWBYTE [00] : VGA</p> <p>LOWBYTE [04] : HDMI1</p> <p>LOWBYTE [05] : HDMI2</p> <p>LOWBYTE [0B] : DP</p> <p>HIGHBYTE [00] : Signal Good (R only)</p> <p>HIGHBYTE [01] : No Signal (R only)</p> <p>ASCII :</p> <p>Set Example: [f01 S04 0004 14]</p> <p>Get Example:[f01 G04 24]</p> <p>Hex :</p> <p>Set HDMI 1 : 66 30 31 20 53 30 34 20 30 30 30 34 20 31 34 0D</p> <p>Set DP : 66 30 31 20 53 30 34 20 30 30 30 42 20 36 32 0D</p> <p>Get : 66 30 31 20 47 30 34 20 32 34 0D</p>
05	Contrast ratio	R/W	0032	<p>[0000] ~ [0064] : contrast ratio</p> <p>Set Example: [f01 S05 0032 10]</p> <p>Get Example:[f01 G05 25]</p>
06	Brightness	R/W	0064	<p>[0000] ~ [0064] : brightness</p> <p>ASCII :</p> <p>Set Example: [f01 S06 0064 10]</p> <p>Get Example:[f01 G06 26]</p> <p>Hex :</p>

				Set 100 (64h) : 66 30 31 20 53 30 36 20 30 30 36 34 20 31 30 0D Set 50 (32h) : 66 30 31 20 53 30 36 20 30 30 33 32 20 31 33 0D Get : 66 30 31 20 47 30 36 20 32 36 0D
07	Color temperature	R/W	0000	[0000] : 6500K [0001] : 9300K [0002] : 11500K [0004] : USER Set Example: [f01 S07 0000 13] Get Example:[f01 G07 27]
09	Power saving	R/W	0000	[0000] : closed [0001] : enable Set Example: [f01 S09 0000 1D] Get Example:[f01 G09 29]
0B	Auto Dimming	R/W	0001	[0000] : manual dimming. [0001] : auto dimming by lux table. ASCII : Set Example: [f01 S0B 0001 67] Get Example:[f01 G0B 52] Hex : Set Auto : 66 30 31 20 53 30 42 20 30 30 30 31 20 36 37 0D Set manual :66 30 31 20 53 30 42 20 30 30 30 30 20 36 36 0D Get : 66 30 31 20 47 30 42 20 35 32 0D
0C	Fan Control	R/W	0004	[00] : INIT [01] : LOW speed [02] : MIDDLE speed [03] : HIGH speed [04] : AUTO fan [HIGHBYTE : FAN1、 LOWBYTE : FAN2] ASCII : Set Example: [f01 S0C 0404 67] Get Example:[f01 G0C 53] Hex : Set auto :66 30 31 20 53 30 43 20 30 34 30 34 20 36 37 0D Get : 66 30 31 20 47 30 43 20 35 33 0D
0D	Fan Failure	R only	-	[00] : Fan OKAY [01] : Fan ERROR

				[HIGHBYTE : FAN1、 LOWBYTE : FAN2] ASCII : Get Example:[f01 G0D 54] Hex : Get : 66 30 31 20 47 30 44 20 35 34 0D
0F	Temperature value	R only	-	HIGHBYTE [00] : Positive HIGHBYTE [FF] : Negative LOWBYTE [00] ~ [FF] : temperature value(signed integer) Ex: [FF80] : -128C Ex: [FF81] : -127C Ex: [FFFF] : -1C Ex: [0000] : 0C Ex: [0001] : 1C Ex: [0080] : +128C Get Example:[f01 G0F 56] Get : 66 30 31 20 47 30 46 20 35 36 0D
1C	User R gain	R/W	0046	[0000] ~ [0064] : User red color gain Set Example: [f01 S1C 0046 64] Get Example:[f01 G1C 52]
1D	User G gain	R/W	0046	[0000] ~ [0064] : User green gain Set Example: [f01 S1D 0046 63] Get Example:[f01 G1D 55]
1E	User B gain	R/W	0046	[0000] ~ [0064] : User blue gain Set Example: [f01 S1E 0046 62] Get Example:[f01 G1E 54]
2A	Display Size	R/W	0000	[0000] : Full Screen [0001] : Auto [0002] : 4:3 Set Example: [f01 S2A 0000 67] Get Example:[f01 G2A 53]
2B	Reset	W only	-	[0001] : System reset Set Example: [f01 S2B 0001 65]
2D	IR Lock	R/W	0000	[0000] : IR Unlock [0001] : IR Lock

				<p>ASCII :</p> <p>Set Example: [f01 S2D 0000 62]</p> <p>Get Example:[f01 G2D 56]</p> <p>Hex :</p> <p>Set Unlock : 66 30 31 20 53 32 44 20 30 30 30 30 20 36 32 0D</p> <p>Set lock : 66 30 31 20 53 32 44 20 30 30 30 31 20 36 33 0D</p> <p>Get : 66 30 31 20 47 32 44 20 35 36 0D</p>
2F	Backlight	R/W	0001	<p>[0000] : disabl</p> <p>[0001] : enable</p> <p>ASCII :</p> <p>Set Example: [f01 S2F 0001 61]</p> <p>Get Example:[f01 G2F 54]</p> <p>Hex :</p> <p>Set enable : 66 30 31 20 53 32 46 20 30 30 30 31 20 36 31 0D</p> <p>Set disable : 66 30 31 20 53 32 46 20 30 30 30 30 20 36 30 0D</p> <p>Get :66 30 31 20 47 32 46 20 35 34 0D</p>
4E	Current ALS Value	R only	-	<p>[0000] ~ [FFFF]</p> <p>ASCII :</p> <p>Get Example: [f01 G4E 51]</p> <p>Hex :</p> <p>Get : 66 30 31 20 47 34 45 20 35 31 0D</p>

Revision History

Date	Version	Description
2022/02/18	1.0	<i>preliminary</i>