



External Control Manual

(for PX-42VM5/42VP5/42XM3/50XM4/61XM3)

This manual shows the communication system and control commands between the plasma monitors and the communications control equipments.

Contents

Applicable models5

Connections.....5

Communication Format7

Command Reference List 11

Command 14

 01. Power ON..... 14

 02. Power OFF..... 14

 03. Input Switch Change 15

 04. VOLUME Gain Data..... 16

 05. AUDIO Mute ON..... 16

 06. AUDIO Mute OFF 16

 07. CONTRAST Gain Data..... 17

 08. BRIGHT Gain Data 17

 09. SHARPNESS Gain Data 18

 10. COLOR Gain Data 19

 11. TINT Gain Data 19

 12. PICTURE MODE Select 20

 13. COLOR TEMP SELECT..... 20

 14. RED Gain Data 21

 15. GREEN Gain Data..... 22

 16. BLUE Gain Data..... 23

 17. NR MODE Set 24

 18. BASS Gain Data..... 24

 19. TREBLE Gain Data 25

 20. BALANCE Gain Data 25

 21. SCREEN MODE Select 26

 22. V.POSITION Gain Data..... 27

23. H.POSITION Gain Data.....	28
24. V-HEIGHT Gain Data.....	28
25. H-WIDTH Gain Data.....	29
26. AUTO PICTURE Select.....	29
27. PHASE Gain Data.....	30
28. CLOCK Gain Data.....	30
29. OSM Select.....	31
30. OSM ADJ. Gain Data.....	31
31. POWER MGT Select.....	32
32. GRAY LEVEL Set.....	32
33. CINEMA MODE Set.....	33
34. LONG LIFE Set.....	33
35. INVERSE Set.....	34
36. SCREEN WIPER Set.....	35
37. ALL RESET.....	36
38. Audio Select Set.....	36
39. BNC INPUT.....	37
40. RGB Select.....	37
41. HD Select.....	38
42. LANGUAGE Select.....	38
43. COLOR SYSTEM Select.....	39
44. FREQUENCY Request.....	40
45. Input MODE Request.....	42
46. VIDEO ADJ. Request.....	42
47. Audio Select Request.....	45
48. Failure Mode Request.....	46
49. MODEL NAME Request.....	47
50. D-SUB INPUT.....	49
51. TIMER SWITCH.....	49
52. LOW TONE.....	50
53. COLOR TUNE.....	51
54. TIMER PROGRAM SETTING.....	52
55. PRESENT TIME SETTING.....	54
56. MULTI MODE Select.....	54
58. AUTO ID SET START.....	60
59. PLE LINK.....	60
60. VIDEO WALL SETTING.....	61

61. POWER DELAY ON(at 4 or 9 multiscreen)	62
62. POWER DELAY ON (at 16 or 25 multi screens)	62
63. GAMMA GAIN Data	63
64. Running Sense.....	63
65. ORBITER SET	64
66. OSM OBITER.....	65
67. OSM ANGLE	65
68. Input Skip	65
69. PICTURE Size.....	66
70. OPTION Select.....	66
71. REPEAT Timer.....	67
72. SERIAL No. Request.....	68
73. S1/S2 SELECT	68
74. SOFT FOCUS.....	69
75. PLUG and PLAY(only HDCP model).....	69
76. DEGITAL SIGNAL LEVEL SELECT(only HDCP model)	70
77. MULTI(SPRIT) SCREEN Select.....	70
78. SUB PICTURE DETECT SELECT	72
79. ZOOM NAVIGATION SELECT	72
80. PICTURE FREEZE SELECT.....	73
81. PICTURE FREEZE Command	73
82. SEAMLESS SWITCH SELECT	74
83. MULTI (SPRIT) SCREEN PROGRAM TIMER SET	75
84. MULTI (SPRIT) SCREEN POWER ON MODE SET	77
85. MULTI (SPRIT) REPEAT TIMER SET.....	78
86. OSM CONTRAST SELECT.....	80
87. CC (Closed caption) SELECT	81
88. CC (Closed caption) CONTRAST SELECT	82

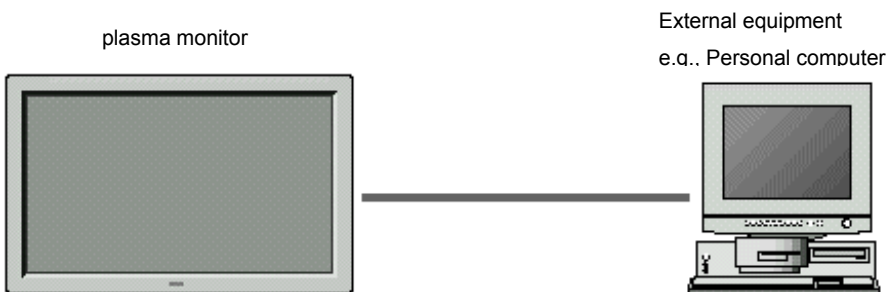
Applicable models

Company : NEC Corporation
Models : PX-42VM5, **PX-42VP5**, PX-42XM3,
PX-50XM4, PX-61XM3

And these models support the communication commands for PD series.

Connections

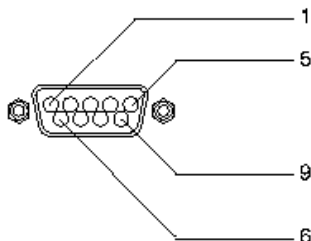
Connections should be made as described below.



1) Connector on the plasma monitor side: EXTERNAL CONTROL connector.

Type of connector: D-Sub 9-pin male

No.	Pin Name
1	No Connection
2	RXD (Receive data)
3	TXD (Transmit data)
4	DTR (DTE side ready)
5	GND
6	DSR (DCE side ready)
7	RTS (Ready to send)
8	CTS (Clear to send)
9	No Connection



2) Connector on the external equipment side: Serial port (RS-232C) connector. See the specifications of the equipment that is to be connected for the type of connector and the pin assignment.

3) Wiring

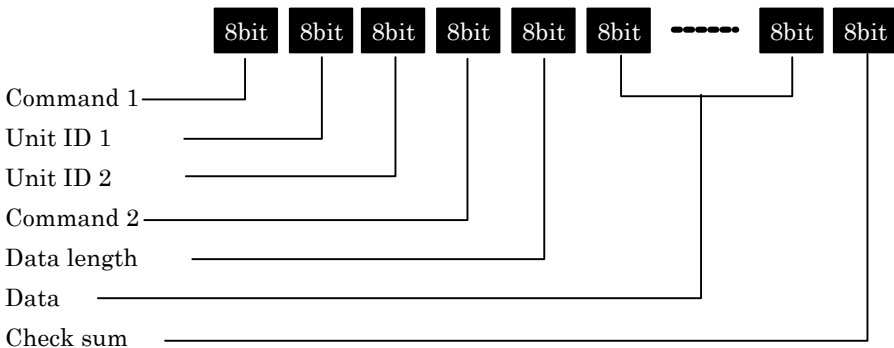
Use a crossed (reverse) cable.

Wire the cable so that each pair of data lines cross between the two devices. These data line pairs are RXD (Receive data) and TXD (Transmit data), DTR (DTE side ready) and DSR (DCE side ready), and RTS (Ready to send) and CTS (Clear to send).

Communication Parameters

(1) Communication system	Asynchronous
(2) Interface	RS-232C
(3) Baud rate	9600 bps
(4) Data length	8 bits
(5) Parity	No
(6) Stop bit	1 bit
(7) Communication code	Hex

Communication Format



Command1

Command 1, along with command 2, is a number used to distinguish each command.

When making it operate using ID, bit1 and bit0 are set up as follows.

Bit1, Bit0 Unit ID distinction bit

11B	:Usually, a form (with no ID)
10B	:Usually, a form (with no ID)
01B	:Set ID
00B	:Video wall ID

In the case of ACK, when the lower order 4 bits is FH (as in 3FH and 7FH), this indicates that the commands and data of the supported equipment have been received. When the lower order 4 bits is BH (as in 3BH and 7BH), this indicates that unsupported commands and data have been received.

Unit ID1,2 (UA1,UA2)

Unit ID 1 and unit ID 2 are numbers used to identify the equipment that is to be connected.

60H is used for the plasma monitor and 80H is used for external control equipment such as a personal computer.

- 1) Unit ID 1: Indicates the equipment sending the signal. When supporting Set ID by the command 1, 4 bits of low ranks of Set ID are set up.
- 2) Unit ID 2: Indicates the equipment receiving the signal. When supporting Set ID by the command 1, 4 bits of higher ranks of Set ID are set up.

* Set ID : it is the apparatus number assigned to each plasma monitor.

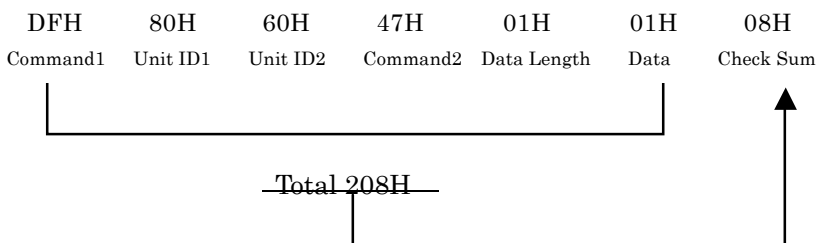
Command 2

Command 2, along with command 1, is a number used to distinguish each command.

Check Sum (CKS), Error Processing, and ACK

- 1) The check sum described below and RS-232C no parity are used together for a check of the received data. The check sum is the lower order 8 bits of one frame of sent or received data comprising the sum total of Command 1, Unit ID 1 and 2, Command 2, Data Length, and Data.

Check Sum Example



2) Error Processing

- When the communication interval is vacant for more than 4 ms, thereafter a

received Command 1 will be recognized. If, at this time, meaningful data cannot be recognized, that data will not be recognized (as valid data).

- An ACK will not be returned unless the receive data error, the check sum error, and the receive data are all taken in.

The control method of the set by Set ID

When controlling two or more sets of plasma monitors, if the command using Set ID is used, it will become controllable individually.

The example of the POWER ON command to the plasma monitor which set ID as "5" is shown below.

It is not based on ID but is the POWER ON command to all sets.

9F 80 60 4E 00 CD

In ID= "5", the value of ID-1=4 is set up.

9D 84 60 4E 00 CF

The example of a change in the single mode of a 4th page multi-system configuration and the multi-mode is shown below.

ID of the set used as a master (etc PC) is set to 50, and it assumes that ID is shaken by AUTO ID to each set. ID shaken at each set is as follows.

Upper left set (master) ID = 50 = 32h

Upper right set ID = 51 = 33h

Lower right set ID = 52 = 34h

Lower left set ID = 53 = 35h

Transmission Data

DD 81 63 03 03 03 01 00 CB

DD 82 63 03 03 03 02 00 CD

DD 83 63 03 03 03 03 00 CF

DD 84 63 03 03 03 04 00 D1

Transmission of the above command performs a 4th page multi SPLIT display.

Moreover, the following commands are published in order to change a 4th page multi-display into a single mode display.

DF 80 60 03 03 01 01 00 C7

All sets become a single mode display by the above-mentioned command.

Since this command does not specify Set ID, all sets execute it.

*: Control by ID may not be able to be performed depending on connection with external control apparatus.

Command Reference List

		CMD1	CMD2	LEN
01	Power ON	9FH	4EH	00H
02	Power OFF	9FH	4FH	00H
03	Input Switch Change	DFH	47H	01H
04	VOLUME Gain Data	DFH	7FH	03H
05	AUDIO Mute ON	9FH	3EH	00H
06	AUDIO Mute OFF	9FH	3FH	00H
07	CONTRAST Gain Data	DFH	7FH	03H
08	BRIGHT Gain Data	DFH	7FH	03H
09	SHARPNESS Gain Data	DFH	7FH	03H
10	Color Gain Data	DFH	7FH	03H
11	TINT Gain Data	DFH	7FH	03H
12	PICTURE MODE Select	DFH	0AH	01H
13	COLOR TEMP SELECT	DFH	00H	01H
14	RED Gain Data	DFH	7FH	04H
15	GREEN Gain Data	DFH	7FH	04H
16	BLUE Gain Data	DFH	7FH	04H
17	NR MODE Set	DFH	C0H	01H
18	BASS Gain Data	DFH	7FH	03H
19	TREBLE Gain Data	DFH	7FH	03H
20	BALANCE Gain Data	DFH	7FH	03H
21	SCREEN MODE Select	DFH	51H	01H
22	V.POSITION Gain Data	DFH	7FH	03H
23	H.POSITION Gain Data	DFH	7FH	03H
24	V-HEIGHT Gain Data	DFH	7FH	03H
25	H-WIDTH Gain Data	DFH	7FH	03H
26	AUTO PICTURE Select	DFH	7FH	03H
27	PHASE Gain Data	DFH	7FH	03H
28	CLOCK Gain Data	DFH	7FH	03H
29	OSM Select	DFH	58H	01H
30	OSM ADJ. Gain Data	DFH	1AH	02H
31	POWER MGT Select	DFH	1AH	02H
32	GRAY LEVEL Set	DFH	C6H	01H
33	CINEMA MODE Set	DFH	C1H	01H
34	LONG LIFE Set	DFH	6BH	03H
35	INVESE Set	DFH	C7H	03H
36	SCREEN WIPER Set	DFH	C8H	04H
37	RESET	1FH	54H	00H
38	Audio Select Set	DFH	70H	02H
39	BNC INPUT	DFH	8CH	01H
40	RGB Select	DFH	8BH	01H
41	HD Select	DFH	8AH	01H
42	LANGUAGE Select	DFH	5BH	01H

43	COLOR SYSTEM Select	DFH	5CH	01H
44	FREQUENCY Request	1FH	26H	00H
45	Input MODE Request	1FH	41H	00H
46	VIDEO ADJ Request	1FH	45H	00H
47	Audio Select Request	1FH	6FH	00H
48	Failure Mode Request	1FH	3FH	00H
49	MODEL NAME Request	1FH	17H	00H
50	D-SUB INPUT	DFH	8DH	01H
51	TIMER SWITCH	DFH	02H	01H
52	LOW TONE	DFH	0CH	01H
53	COLOR TUNE	DFH	0DH	08H
54	TIMER PROGRAM SETTING	DFH	30H	08H
55	PRESENT TIME SETTING	DFH	31H	03H
56	MULTI MODE Select	DFH	03H	03H
57	MULTI MODE Request	1FH	3BH	00H
58	AUTO ID SET START	5FH	F0H	01H
59	PLE LINK	DFH	F1H	03H
60	VIDEO WALL SETTING	DFH	F3H	02H
61	POWER DELAY ON (DIVIDER setting : 1/4/9)	DFH	F2H	01H
62	POWER DELAY ON (DIVIDER setting : 16/25)	DFH	F6H	01H
63	GAMMA Gain Data	DFH	13H	04H
64	Running Sense	1FH	88H	00H
65	ORBITTER SET	DFH	1EH	04H
66	OSM OBITER	DFH	5FH	01H
67	OSM ANGLE	DFH	60H	01H
68	Input Skip	5FH	61H	01H
69*1	PICTURE Size	DFH	2AH	01H
70	OPTION Select	DFH	63H	04H
71	REPEAT Timer	DFH	64H	06H
72	SERIAL No. Request	1FH	15H	00H
73	S1/S2 SELECT	DFH	89H	01H
74	SOFT FOCUS	DFH	65H	01H
75	PLUG and PLAY	DFH	8EH	01H
76	DIGITAL SIGNAL LEVEL SELECT	DFH	8FH	01H
77*1	MULTI (SPRIT) SCREEN Select	DFH	07H	01H
78*1	SUB.P DETECT	DFH	7AH	01H
79*1	ZOOM NAV	DFH	7BH	01H
80*1	PIC FREEZE	DFH	7CH	01H
81*1	PAUSE COMMAND	DFH	7DH	01H
82*1	SEAMLESS SW	DFH	7EH	03H
83*1	MULTI (SPRIT) SCREEN PROGRAM TIMER	DFH	32H	0AH

84* ¹	MULTI (SPRIT) SCREEN POWER ON MODE	DFH	33H	04H
85* ¹	MULTI (SPRIT) SCREEN REPEAT TIMER	DFH	34H	09H
86	OSM CONTRAST	DFH	37H	01H
87* ²	CLOSECAPTION (Closed Caption)	DFH	3CH	01H
88* ²	CAPTION CONT	DFH	3DH	01H

*1:This function is only 50 or 61-inch model

*2:This function is only A version

Command

01. Power ON

Function

The external control equipment switches on the power of the plasma monitor.

Transmission Data

9FH 80H 60H 4EH 00H CKS

ACK

The plasma monitor returns the following ACK when the power is switched on.

3FH 60H 80H 4EH 00H CKS

NOTE: Do not set the Power ON or Power OFF command continuously.

02. Power OFF

Function

The external control equipment switches off the power of the plasma monitor.

Transmission Data

9FH 80H 60H 4FH 00H CKS

ACK

The plasma monitor returns the following ACK when the power is switched off.

3FH 60H 80H 4FH 00H CKS

NOTE: Do not set the Power ON or Power OFF command continuously.

03. Input Switch Change

Function

The external control equipment switches the input of the plasma monitor.

Transmission Data

DFH 80H 60H 47H 01H DATA00 CKS

DATA00 : Input Select

01H : Video1

02H : Video2

03H : Video3

05H : HD (HD1 or DTV or DTV1)

06H : HD2(DTV2 or SCART1/SCART2)

07H : RGB1 / PC1

08H : RGB2 / PC2

0CH : RGB3 / PC3

0DH : HD3(SCART3)

ACK

The plasma monitor returns the following ACK when the input is switched.

3FH 60H 80H 47H 00H CKS

04. VOLUME Gain Data

Function

The external control equipment changes the VOLUME gain data of the plasma monitor.

Transmission Data

DFH 80H 60H 7FH 03H DATA00 DATA01 DATA02 CKS

DATA00: USER SOUND Gain Flag 05H

DATA01: VOLUME Gain Flag 01H

DATA02: VOLUME Gain 00H: Step0

:

0AH: Step10 (Default)

:

2AH: Step42

ACK

7FH 60H 80H 7FH 02H DATA00 DATA01 CKS

DATA00: USER SOUND Gain Flag 05H

DATA01: VOLUME Gain Flag 01H

05. AUDIO Mute ON

Function

The external control equipment switches on AUDIO Mute of the plasma monitor.

Transmission Data

9FH 80H 60H 3EH 00H CKS

ACK

3FH 60H 80H 3EH 00H CKS

06. AUDIO Mute OFF

Function

The external control equipment switches off AUDIO Mute of the plasma monitor.

Transmission Data

9FH 80H 60H 3FH 00H CKS

ACK

3FH 60H 80H 3FH 00H CKS

07. CONTRAST Gain Data

Function

The external control equipment changes the CONTRAST gain data of the plasma c

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
DATA00 : USER PICTURE Gain Flag						01H		
DATA01 : CONTRAST Gain Flag						07H		
DATA02 : CONTRAST Gain						CCH : -52		
						:		
						FFH : -01		
						00H : 0		
						01H : +01		
						:		
						14H : +20		

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
DATA00: USER PICTURE Gain Flag						01H	
DATA01: CONTRAST Gain Flag						07H	

08. BRIGHT Gain Data

Function

The external control equipment changes the BRIGHT gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
DATA00 : USER PICTURE Gain Flag						01H		
DATA01 : BRIGHT Gain Flag						08H		
DATA02 : BRIGHT Gain						E0H : -32		
						:		
						FFH : -01		
						00H : 0		
						01H : +01		
						:		
						20H : +32		

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
-----	-----	-----	-----	-----	--------	--------	-----

DATA00 : USER PICTURE Gain Flag	01H
DATA01 : BRIGHT Gain Flag	08H

09. SHARPNESS Gain Data

Function

The external control equipment changes the SHARPNESS gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
DATA00 : USER PICTURE Gain Flag						01H		
DATA01 : SHARPNESS Gain Flag						06H		
DATA02 : SHARPNESS Gain						F0H : -16		
						:		
						FFH : -01		
						00H : 0		
						01H : +01		
						:		
						10H : +16		
Only when a RGB signal is connected								
DATA02 : SHARPNESS Gain						01H : 1		
						02H : 2		
						03H : 3		
						04H : 4		

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
DATA00 : USER PICTURE Gain Flag						01H	
DATA01 : SHARPNESS Gain Flag						06H	

10. COLOR Gain Data

Function

The external control equipment changes the COLOR gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	01H		
					DATA01 : COLOR Gain Flag	04H		
					DATA02 : COLOR Gain	E0H : -32		
						:		
						FFH : -01		
						00H : 0		
						01H : +01		
						:		
						20H : +32		

* COLOR Gain is from -22 (EAH) to +22 (16H) only during video.

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00 : USER PICTURE Gain Flag	01H	
					DATA01 : COLOR Gain Flag	04H	

11. TINT Gain Data

Function

The external control equipment changes the TINT gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	01H		
					DATA01 : TINT Gain Flag	05H		
					DATA02 : TINT Gain	E0H : -32		
						:		
					* TINT Gain is from -22 (EAH) to	FFH : -01		
					+22 (16H) only during video.	00H : 0		
						01H : +01		
						:		
						20H : +32		

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
DATA00 : USER PICTURE Gain Flag						01H	
DATA01 : TINT Gain Flag						05H	

12. PICTURE MODE Select

Function

The external control equipment sets the picture mode of the plasma monitor.

Transmission Data

DFH	80H	60H	0AH	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00: 01H : NORMAL

02H : THEATER1(It cannot choose in the still picture input of a personal computer.)

03H : THEATER2(It cannot choose in the still picture input of a personal computer.)

04H : Default

05H : Bright

ACK

7FH	60H	80H	0AH	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00: 01H : NORMAL

02H : THEATER1

03H : THEATER2

04H : Default

05H : Bright

13. COLOR TEMP SELECT

Function

The external control equipment changes the COLOR TEMP of the plasma monitor.

Transmission Data

DFH	80H	60H	00H	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00 : 00H: low

01H: middle

02H: high

03H: middle low

ACK

7FH	60H	80H	00H	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00 : 00H: low
 01H: middle
 02H: high
 03H: middle low

14. RED Gain Data

Function

The external control equipment changes the RED Gain Data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	04H	DATA00 to DATA03	CKS
-----	-----	-----	-----	-----	------------------	-----

DATA00 : USER PICTURE Gain Flag	01H
DATA01 : RED Gain Flag	01H
DATA02 : RED Gain1(Bias)	D8H : -40
	:
	FFH : -01
	00H : 0
	01H : +01
	:
	1EH : +30
DATA03: RED Gain2(Drive)	D8H : -40
	:
	FFH : -01
	00H : 0
	01H : +01
	:
	1EH : +30

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
-----	-----	-----	-----	-----	--------	--------	-----

DATA00 : USER PICTURE Gain Flag	01H
DATA01 : RED Gain Flag	01H

15. GREEN Gain Data

Function

The external control equipment changes the GREEN Gain Data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	04H	DATA00 to DATA03	CKS
					DATA00 : USER PICTURE Gain Flag	01H
					DATA01 : GREEN Gain Flag	02H
					DATA02 : GREEN Gain1(Bias)	D8H : -40
						:
						FFH : -01
						00H : 0
						01H : +01
						:
						1EH : +30
					DATA03: GREEN Gain2(Drive)	D8H : -40
						:
						FFH : -01
						00H : 0
						01H : +01
						:
						1EH : +30

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00: USER PICTURE Gain Flag	01H	
					DATA01: GREEN Gain Flag	02H	

16. BLUE Gain Data

Function

The external control equipment changes the BLUE Gain Data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	04H	DATA00 to DATA03	CKS
DATA00	:	USER PICTURE	Gain Flag		01H	
DATA01	:	BLUE	Gain Flag		03H	
DATA02	:	BLUE	Gain1(Bias)		D8H :-40	
					:	
					FFH :-01	
					00H : 0	
					01H : +01	
					:	
					1EH : +30	
DATA03	:	BLUE	Gain2(Drive)		D8H :-40	
					:	
					FFH :-01	
					00H : 0	
					01H : +01	
					:	
					1EH : +30	

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
DATA00	:	USER PICTURE	Gain Flag		01H		
DATA01	:	BLUE	Gain Flag		03H		

17. NR MODE Set

Function

The external control equipment sets the NR (Noise Reduction) mode of the plasma monitor.

Transmission Data

DFH 80H 60H C0H 01H DATA00 CKS

DATA00: 01H : NR OFF

02H : NR-1

03H : NR-2

04H : NR-3

ACK

7FH 60H 80H C0H 01H DATA00 CKS

DATA00: 01H : NR OFF

02H : NR-1

03H : NR-2

04H : NR-3

18. BASS Gain Data

Function

The external control equipment changes the BASS gain data of the plasma monitor.

Transmission Data

DFH 80H 60H 7FH 03H DATA00 DATA01 DATA02 CKS

DATA00 : USER PICTURE Gain Flag 05H

DATA01 : BASS Gain Flag 03H

DATA02 : BASS Gain F3H : -13

:

FFH : -01

00H : 0

01H : +01

:

0DH : +13

ACK

7FH 60H 80H 7FH 02H DATA00 DATA01 CKS

DATA00 : USER PICTURE Gain Flag 05H

DATA01 : BASS Gain Flag 03H

19. TREBLE Gain Data

Function

The external control equipment changes the TREBLE gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
DATA00 : USER PICTURE Gain Flag						05H		
DATA01 : TREBLE Gain Flag						04H		
DATA02 : TREBLE Gain						F3H : -13		
						:		
						FFH : -01		
						00H : 0		
						01H : +01		
						:		
						0DH : +13		

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
DATA00: USER PICTURE Gain Flag						05H	
DATA01: TREBLE Gain Flag						04H	

20. BALANCE Gain Data

Function

The external control equipment changes the BALANCE gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
DATA00 : USER PICTURE Gain Flag						05H		
DATA01 : BALANCE Gain Flag						02H		
DATA02 : BALANCE Gain						EAH : -22		
						:		
						FFH : -01		
						00H : 0		
						01H : +01		
						:		
						16H : +22		

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
DATA00: USER PICTURE Gain Flag						05H	

DATA01: BALANCE Gain Flag

02H

21. SCREEN MODE Select

Function

The external control equipment switches the screen mode of the plasma monitor.

Transmission Data

DFH 80H 60H 51H 01H DATA00 CKS

DATA00 02H : STADIUM

03H : ZOOM

04H : NORMAL

05H : FULL

06H : REAL

08H : UNDERSCAN

09H : 14:9

0AH : 2.35:1

ACK

7FH 60H 80H 51H 01H DATA00 CKS

DATA00 02H : STADIUM

03H : ZOOM

04H : NORMAL

05H : FULL

06H : REAL

08H : UNDERSCAN

09H : 14:9

0AH : 2.35:1

22. V.POSITION Gain Data

Function

The external control equipment changes the V. POSITION gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
-----	-----	-----	-----	-----	--------	--------	--------	-----

DATA00	:	USER PICTURE Gain Flag				03H		
--------	---	------------------------	--	--	--	-----	--	--

DATA01	:	V.POSITION Gain Flag				01H		
--------	---	----------------------	--	--	--	-----	--	--

DATA02	:	V.POSITION Gain				C0H	:	-64
--------	---	-----------------	--	--	--	-----	---	-----

:

FFH : -01

00H : 0

01H : +01

:

40H : +64

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
-----	-----	-----	-----	-----	--------	--------	-----

DATA00	:	USER PICTURE Gain Flag				03H		
--------	---	------------------------	--	--	--	-----	--	--

DATA01	:	V.POSITION Gain Flag				01H		
--------	---	----------------------	--	--	--	-----	--	--

23. H.POSITION Gain Data

Function

The external control equipment changes the H. POSITION gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
DATA00 : USER PICTURE Gain Flag						03H		
DATA01 : H.POSITION Gain Flag						02H		
DATA02 : H.POSITION Gain						80H : -128		
						:		
						FFH : -01		
						00H : 0		
						01H : +01		
						:		
						7FH : +127		

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
DATA00: USER PICTURE Gain Flag						03H	
DATA01: H.POSITION Gain Flag						02H	

24. V-HEIGHT Gain Data

Function

The external control equipment changes the V-HEIGHT gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
DATA00 : USER PICTURE Gain Flag						03H		
DATA01 : V-HEIGHT Gain Flag						07H		
DATA02 : V-HEIGHT Gain						00H : 0		
						:		
						40H : +64		

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
DATA00: USER PICTURE Gain Flag						03H	
DATA01: V-HEIGHT Gain Flag							07H

25. H-WIDTH Gain Data

Function

The external control equipment changes the H-WIDTH gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
DATA00 : USER PICTURE Gain Flag						03H		
DATA01 : H-WIDTH Gain Flag						08H		
DATA02 : H-WIDTH Gain						00H : 0		
						:		
						40H : +64		

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
DATA00: USER PICTURE Gain Flag						03H	
DATA01: H-WIDTH Gain Flag						08H	

26. AUTO PICTURE Select

Function

The external control equipment switches on or off the AUTO PICTURE of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
DATA00 : USER PICTURE Gain Flag						03H		
DATA01 : AUTO PICTURE Select Flag						09H		
DATA02 00H : ON								
01H : OFF								

ACK

7FH	60H	80H	7FH	03H	DATA00	DATA01	DATA02	CKS
DATA00 : USER PICTURE Gain Flag						03H		
DATA01 : AUTO PICTURE Select Flag						09H		
DATA02 00H : ON								
01H : OFF								

27. PHASE Gain Data

Function

The external control equipment changes the PHASE gain data (Phase) of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
DATA00 : USER PICTURE Gain Flag						03H		
DATA01 : PHASE Gain Flag						03H		
DATA02 : PHASE Gain						00H : 0		
						:		
						40H : +64		

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
DATA00: USER PICTURE Gain Flag						03H	
DATA01: PHASE Gain Flag						03H	

28. CLOCK Gain Data

Function

The external control equipment changes the CLOCK gain data (ratio of frequency division) of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
DATA00 : USER PICTURE Gain Flag						03H		
DATA01 : CLOCK Gain Flag						04H		
DATA02 : CLOCK Gain						C0H : -64		
						:		
						FFH : -01		
						00H : 0		
						01H : +01		
						:		
						40H : +64		

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
DATA00: USER PICTURE Gain Flag						03H	
DATA01: CLOCK Gain Flag						04H	

29. OSM Select

Function

The external control equipment switches on or off the on-screen menu (OSM) of the plasma monitor.

Transmission Data

DFH 80H 60H 58H 01H DATA00 CKS

DATA00: 01H: On-Screen menu On

02H: On-Screen menu Off

ACK

7FH 60H 80H 58H 01H DATA00 CKS

DATA00: 01H: On-Screen menu On

02H: On-Screen menu Off

*Operation is as described in the table below.

Operation	On-Screen Menu (OSM)			
	Display of items and adjustments on the menu		Volume display, input display, and screen size display	
	When screen menu is ON	When screen menu is OFF	When screen menu is ON	When screen menu is OFF
Remote control operation	Yes	Yes	Yes	No
Personal computer control operation	No	No	Yes	No

30. OSM ADJ. Gain Data

Function

The external control equipment sets the position of the OSM menu of the plasma monitor.

Transmission Data

DFH 80H 60H 1AH 02H DATA00 DATA01 CKS

DATA00 : OSM ADJ. Gain Flag 02H

DATA01 01H : 1

:

06H : 6

ACK

7FH 60H 80H 1AH 01H DATA00 CKS

DATA00 : OSM ADJ. Gain Flag 02H

31. POWER MGT Select

Function

The external control equipment switches on or off the POWER MANAGEMENT of the plasma monitor.

Transmission Data

DFH	80H	60H	1AH	02H	DATA00	DATA01	CKS
DATA00 : POWER MGT Select					03H		
DATA01					01H : ON		
					02H : OFF		

ACK

7FH	60H	80H	1AH	02H	DATA00	DATA01	CKS
DATA00 : POWER MGT Select					03H		
DATA01					01H : ON		
					02H : OFF		

32. GRAY LEVEL Set

Function

The external control equipment sets the GRAY LEVEL of the plasma monitor.

Transmission Data

DFH	80H	60H	C6H	01H	DATA00	CKS
DATA00 : GRAY LEVEL					00H : 0	
					:	
					0FH : 15	

ACK

7FH	60H	80H	C6H	01H	DATA00	CKS
DATA00 : GRAY LEVEL					00H : 0	
					:	
					0FH : 15	

33. CINEMA MODE Set

Function

The external control equipment switches on or off the CINEMA MODE of the plasma monitor.

Transmission Data

DFH	80H	60H	C1H	01H	DATA00	CKS
DATA00 : CINEMA MODE Set					01H : ON	
					02H : OFF	

ACK

7FH	60H	80H	C1H	01H	DATA00	CKS
DATA00 : CINEMA MODE Set					01H : ON	
					02H : OFF	

34. LONG LIFE Set

Function

The external control equipment sets the PLE, ORBITER, and INVERSE (inverse of image brightness) of the plasma monitor.

Transmission Data

DFH	80H	60H	6BH	03H	DATA00	DATA01	DATA02	CKS
DATA00 : PLE					01H : AUTO			
					02H : LOCK1			
					03H : LOCK2			
					04H : LOCK3			
DATA01 : INVERSE					01H : ON			
					02H : OFF			
					03H : WHITE			
DATA02 : ORBITER (PICTURE SHIFT)					01H : AUTO1			
					02H : OFF			
					03H : AUTO2			

ACK

The plasma monitor returns the following ACK when setting the PLE, ORBITER, and INVERSE (inverse of image brightness):

3FH	60H	80H	6BH	00H	CKS
-----	-----	-----	-----	-----	-----

35. INVERSE Set

Function

The external control equipment sets the INVERSE (inverse of image brightness) and the WHITE of the plasma monitor.

Transmission Data

DFH	80H	60H	C7H	03H	DATA00	DATA01	DATA02	CKS
					DATA00: INVERSE/WHITE			
						00H : No operation		
						01H : ON (INVERSE)		
						02H : OFF		
						03H : WHITE		
					DATA01 : WORKING TIME			
						00H : ON		
						01H: 03M (minutes)		
						02H: 06M (minutes)		
						:		
						FFH: 12H (hours) and 45M (minutes)		
					DATA02 : WAITING TIME			
						01H: 03M (minutes)		
						02H: 06M (minutes)		
						:		
						FFH: 12H (hours) and 45M (minutes)		

ACK

3FH 60H 80H C7H 00H CKS

NOTE: The WORKING TIME and the WAITING TIME can be set in units of 3 minutes.

Example: 03H=9 minutes

1EH=1 hour and 30 minutes

36. SCREEN WIPER Set

Function

The external control equipment sets the SCREEN WIPER of the plasma monitor.

Transmission Data

DFH	80H	60H	C8H	04H	DATA00 to DATA03	CKS
					DATA00 : SCREEN WIPER	00H : No operation 01H : ON 02H : OFF
					DATA01 : WORKING TIME	00H : ON 01H: 03M (minutes) 02H: 06M (minutes) : FFH: 12H (hours) and 45M (minutes)
					DATA02 : WAITING TIME	01H: 03M (minutes) 02H: 06M (minutes) : FFH: 12H (hours) and 45M (minutes)
					DATA03 : SPEED	01H : 1 : 05H : 5

ACK

3FH 60H 80H C8H 00H CKS

NOTE: The WORKING TIME and the WAITING TIME can be set in units of 3 minutes.

Example: 03H=9 minutes

1EH=1 hour and 30 minutes

37. ALL RESET

Function

The external control equipment resets the user adjustment of the plasma monitor.

Transmission Data

1FH 80H 60H 54H 00H CKS

ACK

3FH 60H 80H 54H 00H CKS

38. Audio Select Set

Function

The external control equipment sets combinations of audio and video inputs for the plasma monitor.

Transmission Data

DFH 80H 60H 70H 02H DATA00 DATA01 CKS

DATA00 : AUDIO INPUT

01H : AUDIO1

02H : AUDIO2

03H : AUDIO3

DATA01 : VISUAL INPUT

01H : VIDEO1

02H : VIDEO2

03H : VIDEO3

05H : HD(HD1 or DTV or DTV1)

06H : HD2(DTV2)

07H : RGB1/PC1

08H : RGB2/PC2

0CH : RGB3/PC3

0DH : HD3(SCART3)

ACK

The plasma monitor returns the following ACK when the input is switched.

3FH 60H 80H 70H 00H CKS

* The plasma monitor returns “Not Available” when selecting the video input same as the one set at one of the AUDIO 1 to 3.

Example:

The plasma monitor returns “Not Available” when selecting the VIDEO1 for AUDIO2 or VIDEO3 after VIDEO1 has been set to AUDIO1.

39. BNC INPUT

Function

The external control equipment sets the BNC SELECT of the plasma monitor.

Transmission Data

DFH 80H 60H 8CH 01H DATA00 CKS

DATA00 : BNC SELECT 01H : RGB
 02H : Component
 04H : SCART1(*:Only Europe can be chosen.)
 05H : SCART2(*:Only Europe can be chosen.)

ACK

The plasma monitor returns the following ACK when setting the BNC SELECT:

7FH 60H 80H 8CH 01H DATA00 CKS

DATA00 : BNC SELECT 01H : RGB
 02H : Component
 04H : SCART1(*:Only Europe can be chosen.)
 05H : SCART2(*:Only Europe can be chosen.)

40. RGB Select

Function

The external control equipment sets the RGB SELECT of the plasma monitor.

Transmission Data

DFH 80H 60H 8BH 01H DATA00 CKS

DATA00 01H : AUTO
 02H : STILL
 03H : MOTION
 04H : WIDE1
 05H : WIDE2
 06H : DTV
 07H : WIDE3
 08H : WIDE4

ACK

7FH 60H 80H 8BH 01H DATA00 CKS

DATA00 01H : AUTO
 02H : STILL
 03H : MOTION
 04H : WIDE1

05H : WIDE2
 06H : DTV
 07H : WIDE3
 08H : WIDE4

41. HD Select

Function

The external control equipment sets the HD SELECT of the plasma monitor.

Transmission Data

DFH 80H 60H 8AH 01H DATA00 CKS

DATA00 01H : 1035I
 02H : 1080A
 03H : 1080B

ACK

7FH 60H 80H 8AH 01H DATA00 CKS

DATA00 01H : 1035I
 02H : 1080A
 03H : 1080B

42. LANGUAGE Select

Function

The external control equipment sets the LANGUAGE SELECT of the plasma monitor.

Transmission Data

DFH 80H 60H 5BH 01H DATA00 CKS

DATA00: 01H : ENGLISH
 02H : GERMAN
 03H : FRENCH
 04H : SPANISH
 05H : ITALIAN
 06H : SWEDISH
 07H : JAPANESE
 0AH : CHINESE
 0BH : RUSSIAN

ACK

7FH 60H 80H 5BH 01H DATA00 CKS

DATA00: 01H : ENGLISH
02H : GERMAN
03H : FRENCH
04H : SPANISH
05H : ITALIAN
06H : SWEDISH
07H : JAPANESE
0AH : CHINESE
0BH : RUSSIAN

NOTE: As for the change to JAPANESE (07H), SHIP needs to be set as "J." When SHIP is "J", a setup of CHINESE (0AH) cannot be performed.

43. COLOR SYSTEM Select

Function

The external control equipment sets the COLOR SYSTEM of the plasma monitor.

Transmission Data

DFH 80H 60H 5CH 01H DATA00 CKS

DATA00: 01H : 3.58NTSC
02H : 4.43NTSC
03H : PAL
04H : SECAM
0AH : AUTO
0BH : PAL60
0DH : PAL-M
0EH : PAL-N

ACK

7FH 60H 80H 5CH 01H DATA00 CKS

DATA00: 01H : 3.58NTSC
02H : 4.43NTSC
03H : PAL
04H : SECAM
0AH : AUTO

0BH : PAL60
 0DH : PAL-M
 0EH : PAL-N

44. FREQUENCY Request

Function

The external control equipment inquires the Horizontal frequency, Vertical frequency, Horizontal sync polarity, Vertical sync polarity, Mode, and Resolution of the plasma monitor.

Transmission Data

1FH 80H 60H 26H 00H CKS

ACK

7FH 60H 80H 26H 0BH DATA00 to DATA0A CKS

Horizontal frequency

DATA00: Integer part	00H: 0 (No signal: 00H)
	:
	FFH : 255
DATA01: One decimal place	00H: 0 (No signal: 00H)
	:
	09H : 9

Vertical frequency

DATA02: Integer part	00H: 0 (No signal: 00H)
	:
	FFH : 255
DATA03: One decimal place	00H: 0 (No signal: 00H)
	:
	09H : 9

Horizontal sync polarity

DATA04	00H : -
	01H : Positive
	02H : Negative

Vertical sync polarity

DATA05	00H : -
	01H : Positive
	02H : Negative

MODE

DATA06	00H	: No signal	-
mode	01H to 80H	: RGB signal	Identification number of PC
	81H	: Video signal	3.58NTSC
	82H	:	4.43NTSC
	83H	:	PAL
	84H	:	PAL-M
	85H	:	PAL-N
	86H	:	PAL60
	87H	:	SECAM
	88H	:	B/W60
	89H	:	B/W50
	A0H	: HD/DVD/DTV signal	480I
	A1H	:	480P
	A2H	:	576I
	A3H	:	576P
	A4H	:	720P
	A5H	:	1035I
	A6H	:	1080I

RESOLUTION

DATA07: Dots (Low-order byte) 00H: 0 (No signal: 00H)

:

FFH 255

DATA08: Dots (High-order byte) 00H: 257 (No signal: 00H)

:

FFH

DATA09: Lines (Low-order byte) 00H: 0 (No signal: 00H)

:

FFH 255

DATA10: Lines (High-order byte) 00H: 257 (No signal: 00H)

:

FFH

45. Input MODE Request

Function

The display returns the current input information by the external control equipment's request.

Transmission Data

1FH 80H 60H 41H 00H CKS

ACK

7FH 60H 80H 41H 01H DATA00 CKS

DATA00 : Input Select

01H : Video

02H : Video2

03H : Video3

04H : HD (HD1 or DTV or DTV1)

05H : PC1

06H : PC2

0AH : DVD (DVD1)

0CH : HD2 (DTV2)

0DH : DVD2

0EH : PC3

0FH : DVD3(SCART3)

46. VIDEO ADJ. Request

Function

The display returns the video adjustments information by the external control equipment's request.

Transmission Data

1FH 80H 60H 45H 00H CKS

ACK

7FH 60H 80H 45H 0CH DATA00 to DATA0B CKS

DATA00: RED Gain (Bias)

D8H : -40

:

FFH : -01

00H : 0

01H : +01

:

1EH : +30

DATA01: GREEN Gain (Bias)

D8H : -40

	:
	FFH : -01
	00H : 0
	01H : +01
	:
	1EH : +30
DATA02: BLUE Gain (Bias)	D8H : -40
	:
	FFH : -01
	00H : 0
	01H : +01
	:
	1EH : +30
DATA03: COLOR Gain	E0H : -32
	:
* COLOR Gain is from -22 (EAH) to +22 (16H) only during video.	FFH : -01
	00H : 0
	01H : +01
	:
	20H : +32
DATA04: TINT Gain	E0H : -32
	:
* TINT Gain is from -22 (EAH) to +22 (16H) only during video.	FFH : -01
	00H : 0
	01H : +01
	:
	20H : +32
DATA05: SHARPNESS Gain	F0H : -16
	:
	FFH : -01
	00H : 0
	01H : +01
	:
	10H : +16
DATA06: CONTRAST Gain	CCH : -52

	:
	FFH : -01
	00H : 0
	01H : +01
	:
	14H : +20
DATA07: BRIGHT Gain	E0H : -32
	:
	FFH : -01
	00H : 0
	01H : +01
	:
	20H : +32
DATA08: RED Gain (Drive)	D8H : -40
	:
	FFH : -01
	00H : 0
	01H : +01
	:
	1EH : +30
DATA09: GREEN Gain (Drive)	D8H : -40
	:
	FFH : -01
	00H : 0
	01H : +01
	:
	1EH : +30
DATA0A: BLUE Gain (Drive)	D8H : -40
	:
	FFH : -01
	00H : 0
	01H : +01
	:

1EH : +30

DATA0B: COLOR TEMP SELECT 00H: low
 01H: middle
 02H: high
 03H: middle low

47. Audio Select Request

Function

The external control equipment inquires the current combinations of audio and video inputs for the plasma monitor.

Transmission Data

1FH 80H 60H 6FH 00H CKS

ACK

The plasma monitor returns the following ACK:

7FH 60H 80H 6FH 03H DATA00 DATA01 DATA02 CKS

DATA00 : AUDIO1

01H-0CH : VISUAL INPUT DATA

DATA01 : AUDIO2

01H-0CH : VISUAL INPUT DATA

DATA02 : AUDIO3

01H-0CH : VISUAL INPUT DATA

<VISUAL INPUT DATA>

01H : VIDEO1

02H : VIDEO2

03H : VIDEO3

05H : HD(HD1ORDTVORDTV1)

06H : HD2(DTV2)

07H : RGB1/PC1

08H : RGB2/PC2

0CH : RGB3/PC3

0DH : HD3

48. Failure Mode Request

Function

The external control equipment inquires the detection of failures of the plasma monitor.

Transmission Data

1FH 80H 60H 3FH 00H CKS

ACK

The plasma monitor returns the following ACK:

7FH 60H 80H 3FH 02H DATA00 DATA01 CKS

DATA00: FAILURE MODE 1

Bit 0 : PDP MODULE

0: Abnormal

1: Normal

Bit 1 : 1: fixed (backup)

Bit 2 : TEMPERATURE

0: Abnormal

1: Normal

Bit 3 : FAN

0: Abnormal

1: Normal

Bit 4 : TEMPERATURE SENSOR

0: Abnormal

1: Normal

Bit 5 : 1: fixed (backup)

Bit 6 : 1: fixed (backup)

Bit 7 : 1: fixed (backup)

DATA01: FAILURE MODE 2

Bit 0-7 : 1: fixed (backup)

49. MODEL NAME Request

Function

The external control equipment inquires the product code of the plasma monitor.

Transmission Data

1FH 80H 60H 17H 00H CKS

ACK

The plasma monitor returns the following ACK:

7FH 60H 80H 17H 0CH DATA00 to DATA11 CKS

DATA00 : 1st character of the product code

DATA01 : 2nd character of the product code

:

DATA11 : 12th character of the product code

Received data	00H-09H : 0-9
80H	: - (Hyphen)
81H	: +
82H	: ×
83H	: /
84H	: (
85H	:)
86H	: .
87H	: ‘
96H	: (Blank)
10H-29H	: A-Z

Corresponding character	A	B	C	D	E	F	G	H	I	J
Received data (H)	10	11	12	13	14	15	16	17	18	19

Corresponding character	K	L	M	N	O	P	Q	R	S	T
Received data (H)	1A	1B	1C	1D	1E	1F	20	21	22	23

Corresponding character	U	V	W	X	Y	Z
Received data (H)	24	25	26	27	28	29

If there are fewer than 12 characters in the product code, product code

would be padded right with blanks.

Example: If the product code of your plasma monitor is “PX-42VP4G”, the returned codes would be as follows.

DATA00:1FH, DATA01:27H, DATA02:80H, DATA03:04H, DATA04:02H,
DATA05:25H, DATA06:1FH, DATA07:04H, DATA08:16H, DATA09:96H,
DATA10:96H, DATA11:96H

50. D-SUB INPUT

Function

The external control equipment sets the D-SUB SELECT of the plasma monitor.

Transmission Data

DFH 80H 60H 8DH 01H DATA00 CKS

DATA00 : D-SUB INPUT 01H : RGB

02H : SCART3(*:Only Europe can be chosen.)

ACK

The plasma monitor returns the following ACK when setting the D-SUB SELECT:

7FH 60H 80H 8DH 01H DATA00 CKS

DATA00 : D-SUB INPUT 01H : RGB

02H : SCART3(*:Only Europe can be chosen.)

51. TIMER SWITCH

Function

The external control equipment sets the timer reservation of the plasma monitor.

Transmission Data

DFH 80H 60H 02H 01H DATA00 CKS

DATA00: 00H : Reservation OFF

01H : Reservation ON

ACK

7FH 60H 80H 02H 01H DATA00 CKS

DATA00: 00H : Reservation OFF

01H : Reservation ON

52. LOW TONE

Function

The external control equipment sets the dithering processing or error diffusion processing of the plasma monitor.

Transmission Data

DFH	80H	60H	0CH	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00: 00H:AUTO
 01H: dithering processing(MOTION)
 02H: dithering processing (STILL)
 03H: error diffusion processing

ACK

7FH	60H	80H	0CH	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00: 00H:AUTO
 01H: dithering processing (MOTION)
 02H: dithering processing (STILL)
 03H: error diffusion processing

53. COLOR TUNE

Function

External control equipment can adjust RGB each color that a plasma monitor wants to emphasize.

Transmission Data

DFH	80H	60H	0DH	07H	DATA00 to DATA06	CKS
DATA00:RED			00H : -32			
			:			
			20H : 0			
			:			
			40H : +32			
DATA01:GREEN			00H : -32			
			:			
			20H : 0			
			:			
			40H : +32			
DATA02:BLUE			00H : -32			
			:			
			20H : 0			
			:			
			40H : +32			
DATA03:YELLOW			00H : -32			
			:			
			20H : 0			
			:			
			40H : +32			
DATA04:MAZENTA			00H : -32			
			:			
			20H : 0			
			:			
			40H : +32			
DATA05:CYAN			00H : -32			
			:			
			20H : 0			
			:			
			40H : +32			
DATA06:RESET			00H : OFF			

01H : ON

ACK

7FH 60H 80H 0DH 00H CKS

54. TIMER PROGRAM SETTING

Function

External control apparatus sets up the timer program of a plasma monitor.

Transmission Data

DFH 80H 60H 30H 08H DATA00 to DATA07 CKS

DATA00 PROGRAM No

01H~07H : No1~No7

DATA01 DATE

01H~07H : Sunday - Saturday

08H : Every day

09H~0FH : Every week Sunday - every week Saturday

FFH : - (with No Setup)

DATA02 ON time (HOUR)

00H~09H :00~09

10H~19H :10~19

20H~23H :20~23

FFH : - (with No Setup)

DATA03 ON time (MIN)

00H~09H :00~09

10H~19H :10~19

20H~29H :20~29

30H~39H :30~39

40H~49H :40~49

50H~59H :50~59

FFH : - (with No Setup)

DATA04 OFF time (HOUR)

00H~09H :00~09

10H~19H :10~19

20H~23H :20~23

FFH : - (with No Setup)

DATA05 OFF time(MIN)

00H~09H :00~09

10H~19H :10~19
20H~29H :20~29
30H~39H :30~39
40H~49H :40~49
50H~59H :50~59
FFH : - (with No Setup)

DATA06 INPUT

01H : Video1
02H : Video2
03H : Video3
04H : HD1(HD1 or DTV or DTV1)
05H : HD2(DTV2 or SCART1/SCART2)
06H : RGB1
07H : RGB2
08H : RGB3
09H : HD3(SCART3)
FFH : - (with No Setup)

DATA07 MODE

01H : OBIT
02H : INV
03H : WT
04H : WIPER
FFH : - (with No Setup)

ACK

7FH 60H 80H 30H 00H CKS

55. PRESENT TIME SETTING

Function

External control apparatus sets up the present time of a plasma monitor.

Transmission Data

DFH 80H 60H 31H 03H DATA00 to DATA02 CKS

DATA00 Day of the week 01H-07H : 1-7 (Sunday - Saturday)

DATA01 HOUR	00H-09H:00-09
	10H~19H:10~19
	20H~23H:20~23
DATA02 minute	00H-09H:00-09
	10H~19H:10~19
	20H~29H:20~29
	30H~39H:30~39
	40H~49H:40~49
	50H~59H:50~59

ACK

7FH 60H 80H 31H 00H CKS

56. MULTI MODE Select

Function

External control apparatus changes MULTI MODE of a plasma monitor.

Transmission Data

DFH 80H 60H 03H 03H DATA00 DATA01 DATA02 CKS

DATA00 (SCREEN DIVIDER SETTING)

01H : Single mode
02H : Multi mode 1 screens
03H : Multi mode 4 screens
04H : Multi mode 9 screens
05H : Multi mode 16 screens
06H : Multi mode 25 screens

DATA01 (POSITION OF DIVIDE)

01H : Upper left selected (4 screens)
02H : Upper right selected (4 screens)
03H : Lower right selected (4 screens)
04H : Lower left selected (4 screens)
07H : Top left selected (9 screens)

08H : Top middle selected (9 screens)
 09H : Top right selected (9 screens)
 0AH : Middle left selected (9 screens)
 0BH : Middle center selected (9 screens)
 0CH : Middle right selected (9 screens)
 0DH : Bottom left selected (9 screens)
 0EH : Bottom middle selected (9 screens)
 0FH : Bottom right selected (9 screens)

10H : position1(16 screens, refer to figure1)
 11H : position2(16 screens, refer to figure1)
 :
 18H : position9(16 screens, refer to figure1)
 19H : position10(16 screens, refer to figure1)
 :
 1FH : position16 (16 screens, refer to figure1)

20H : position1(25 screens, refer to figure2)
 21H : position2(25 screens, refer to figure2)
 :
 29H : position10(25 screens, refer to figure2)
 2AH : position11(25 screens, refer to figure2)
 :
 32H : position19(25 screens, refer to figure2)
 33H : position20(25 screens, refer to figure2)
 :
 38H : position25(25 screens, refer to figure2)

1	2	3	4
6	7	8	9
11	12	13	14
16	17	18	19

Figure1

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

Figure2

DATA02 (DISP MODE)
 00H : SPLIT

01H : BRANKING

ACK

7FH 60H 80H 03H 03H DATA00 DATA01 DATA02 CKS

DATA00 (SCREEN DIVIDER SETTING)

- 01H : Single mode
- 02H : Multi mode 1 screens
- 03H : Multi mode 4 screens
- 04H : Multi mode 9 screens
- 05H : Multi mode 16 screens
- 06H : Multi mode 25 screens

DATA01 (POSITION OF DIVIDE)

- 01H : Upper left selected (4 screens)
- 02H : Upper right selected (4 screens)
- 03H : Lower right selected (4 screens)
- 04H : Lower left selected (4 screens)
- 07H : Top left selected (9 screens)
- 08H : Top middle selected (9 screens)
- 09H : Top right selected (9 screens)
- 0AH : Middle left selected (9 screens)
- 0BH : Middle center selected (9 screens)
- 0CH : Middle right selected (9 screens)
- 0DH : Bottom left selected (9 screens)
- 0EH : Bottom middle selected (9 screens)
- 0FH : Bottom right selected (9 screens)

10H : position1(16 screens, refer to figure1)

11H : position2(16 screens, refer to figure1)

:

18H : position9(16 screens, refer to figure1)

19H : position10(16 screens, refer to figure1)

:

1FH : position16 (16 screens, refer to figure1)

20H : position1(25 screens, refer to figure2)

21H : position2(25 screens, refer to figure2)

:

29H : position10(25 screens, refer to figure2)

2AH : position11(25 screens, refer to figure2)

:

32H : position19(25 screens, refer to figure2)

33H : position20(25 screens, refer to figure2)

:

38H : position25(25 screens, refer to figure2)

1	2	3	4
6	7	8	9
11	12	13	14
16	17	18	19

Figure1

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

Figure2

DATA02 (DISP MODE)

00H : SPLIT

01H : BRANKING

Note) In the case of 4 screens or 9 screens video wall system and connecting each PDP by wired cable, please refer to No.60.”VIDEO WALL SETTING”.

57. MULTI MODE Request

Function

External control apparatus can know the MULTI MODE information on a plasma monitor.

Transmission Data

1FH 80H 60H 3BH 00H CKS

ACK

7FH 80H 60H 3BH 02H DATA00 DATA01 DATA02 CKS

DATA00 (SCREEN DIVIDER SETTING)

- 01H : Single mode
- 02H : Multi mode 1 screens
- 03H : Multi mode 4 screens
- 04H : Multi mode 9 screens
- 05H : Multi mode 16 screens
- 06H : Multi mode 25 screens

DATA01 (POSITION OF DIVIDE)

- 01H : Upper left selected (4 screens)
- 02H : Upper right selected (4 screens)
- 03H : Lower right selected (4 screens)
- 04H : Lower left selected (4 screens)
- 07H : Top left selected (9 screens)
- 08H : Top middle selected (9 screens)
- 09H : Top right selected (9 screens)
- 0AH : Middle left selected (9 screens)
- 0BH : Middle center selected (9 screens)
- 0CH : Middle right selected (9 screens)
- 0DH : Bottom left selected (9 screens)
- 0EH : Bottom middle selected (9 screens)
- 0FH : Bottom right selected (9 screens)

10H : position1(16 screens, refer to figure1)

11H : position2(16 screens, refer to figure1)

:

18H : position9(16 screens, refer to figure1)

19H : position10(16 screens, refer to figure1)

:

1FH : position16 (16 screens, refer to figure1)

20H : position1(25 screens, refer to figure2)
 21H : position2(25 screens, refer to figure2)
 :
 29H : position10(25 screens, refer to figure2)
 2AH : position11(25 screens, refer to figure2)
 :
 32H : position19(25 screens, refer to figure2)
 33H : position20(25 screens, refer to figure2)
 :
 38H : position25(25 screens, refer to figure2)

1	2	3	4
6	7	8	9
11	12	13	14
16	17	18	19

Figure1

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

Figure2

DATA02 (DISP MODE)

00H : SPLIT

01H : BRANKING

58. AUTO ID SET START

Function

External control apparatus sets up ID automatically to two or more plasma monitors.

Transmission Data

5FH 80H 60H F0H 01H DATA00 CKS

DATA00 00H~FFH: ID of a master*1 is set up.

*: When you use it by the multi-system, please remove the link input of a master*1.

*1: “Master” means the 1st set of PDP at the time of cable connection at the time of AUTO ID execution.

59. PLE LINK

Function

External control apparatus sets up equally PLE between two or more plasma monitors.

Transmission Data

DFH 80H 60H F1H 03H DATA00 to DATA02 CKS

DATA00 00H:PLE LINK ON

 01H:PLE LINK OFF

DATA01 FFH

DATA02 FFH

*: This command is premised on the system configuration of two or more plasma monitor being a multi-system. When renewal of the PSC data based on this command is not carried out during a certain fixed period (about 2 seconds) during PLE LINK enforcement, each plasma monitor sets PSC data as FFH. Since this command is one-way traffic, there is no ACK.

*DATA01: Please set up FFH, when you publish this command from external control apparatus. A master*1 sets up its own PSS data. As compared with its own PSS data, the plasma monitor after the master that received this command sets up the data of the larger one, and equips the output of a command with it.

*DATA02: Please set up FFH, when you publish this command from external control apparatus. The 1st round which PSS data has not decided is FFH.

*1: “Master” means the 1st set of PDP at the time of cable connection at

the time of AUTO ID execution.

60. VIDEO WALL SETTING

Function

External control apparatus sets four screens or nine screens as a video wall.

Transmission Data

DFH 80H 60H F3H 03H DATA00 DATA01 DATA02 CKS

DATA00:	01H:1 screen (Matrix display function does not work.) 04H:4 screens (2*2 video wall) 09H:9 screens (3*3 video wall)
DATA 01:	00H-FFH:Master's ID* ¹
DATA 02:	01H : Video1 02H : Video2 03H : Video3 04H : HD (HD1 or DTV or DTV1) 05H : HD2 (DTV2) 06H : HD3 (DTV3) 07H : RGB1 / PC1 08H : RGB2 / PC2 09H : RGB3 / PC3

*: This command is used to following system.

1. The system configuration is video wall system (4screens or 9screens).
Then please connect each PDP by wired cable.

In the case of 16 screens or 25 screens video wall system, please refer to No.56."MULTI MODE Select".

2. The ID number from a master¹ display is set the continuous number.

DATA00: Specify the composition of a multi-system.

DATA01: Set master's ID*¹.

*1: "Master" means the 1st set of PDP at the time of cable connection at the time of AUTO ID execution.

61. POWER DELAY ON(at 4 or 9 multiscreen)

Function

External control apparatus attaches a time lag to two or more plasma monitors, and turns on a power supply.

Transmission Data

DFH 80H 60H F2H 01H DATA00 CKS

DATA00: 00H-FFH: Delay time (second)

*: This command is premised on two or more plasma monitor system composition being multi-systems. In command issue of master¹ OSD operation, the value of DATA00 is 01H (1 second). This command does not have ACK for one-way traffic.

*1: "Master" means the 1st set of PDP at the time of cable connection at the time of AUTO ID execution.

62. POWER DELAY ON (at 16 or 25 multi screens)

Function

External control apparatus attaches a time lag to 10 or more plasma monitors, and turns on a power supply.

Transmission Data

DFH 80H 60H F6H 01H DATA00 CKS

DATA00: 01H mode1

 02H mode2

ACK

7FH 60H 80H F6H 01H DATA00 CKS

DATA00: 01H mode1

 02H mode2

NOTE: When multi mode is 16 or 25, this function is available.
--

63. GAMMA GAIN Data

Function

External control apparatus changes Gamma of a plasma monitor.

Transmission Data

DFH 80H 60H 13H 02H DATA00 DATA01 CKS

DATA00: GAMMA FLAG 01H : Gamma change

DATA01: GAMMA 00H :1

01H :2

02H :3

03H :4

ACK

7FH 60H 80H 13H 01H DATA00 CKS

DATA00: GAMMA FLAG 01H : Gamma change

64. Running Sense

Function

External control apparatus grasps the power supply state of a plasma monitor.

A plasma monitor is made to recognize connection of PC CONTROL.

Transmission Data

1FH 80H 60H 88H 00H CKS

ACK

7FH 60H 80H 88H 01H DATA CKS

DATA: Bit0:Connect Condition

0: No connection

1: Connected

Bit1 0: Fixed

1:-

Bit2:Power Status

0:POWER ON

1:POWER OFF(STANBY)

Bit3 0: Fixed

Bit4 0: Fixed

Bit5 0: Fixed

Bit6 0: Fixed

Bit7 0: Fixed

65. ORBITER SET

Function

A picture shift function is set up. (*1)

Transmission Data

DFH 80H 60H 1EH 04H DATA00 to DATA03 CKS

DATA00: Mode 00H : OFF
 01H : Auto 1 (*2)
 02H : Auto 2 (*3)
 03H : Manual (*4)

DATA01: The horizontal amount of movements

1 dot : 01H
 to : -
20 dot : 14H

DATA02: The vertical amount of movements

One line : 01H
 to : -
20 line : 14H

DATA03: Interval of operation 1 - 5 minutes : 01H - 05H

ACK

7FH 60H 80H 1EH 01H DATA00 CKS

DATA00: Mode 00H : OFF
 01H : Auto 1
 02H : Auto 2
 03H : Manual

- (*1) A picture shift function is a function that is made to carry out rotation movement of the image, and mitigates printing on a screen.
- (*2) At the time of PC input, after reducing an image, a picture shift is performed. Reduction of an image does not carry out at the time of an animation input.
- (*3) At the time of PC input, after expanding an image, a picture shift is performed. Expansion of an image does not carry out at the time of an animation input.
- (*4) It is not concerned with PC input and an animation input, and expansion reduction of an image is not performed. It operates at intervals of the horizontal and vertical amount of movements specified by DATA 01-03, and operation.

66. OSM OBITER

Function

In order to decrease printing of a screen by OSM display, whenever it displays OSM, shift operation of the OSM is carried out.

Transmission Data

```
DFH 80H 60H 5FH 01H DATA00 CKS
DATA00 01H : OBITER ON
          02H : OBITER OFF
```

ACK

```
7FH 60H 80H 5FH 01H DATA00 CKS
DATA00 01H : OBITER ON
          02H : OBITER OFF
```

67. OSM ANGLE

Function

The vertical display of OSM and a horizontal display are chosen.

Transmission Data

```
DFH 80H 60H 60H 01H DATA00 CKS
DATA00      01H : Horizontal display
          02H : Vertical display
```

ACK

```
7FH 60H 80H 60H 01H DATA00 CKS
DATA00      01H : Horizontal display
          02H : Vertical display
```

68. Input Skip

Function

In a monitor's key "an input change", when there is no signal, it flies and shifts to the following channel.

Transmission Data

```
DFH 80H 60H 61H 01H DATA00 CKS
DATA00 01H : ON
          02H : OFF
```

ACK

```
7FH 60H 80H 61H 01H DATA00 CKS
DATA00 01H : ON
          02H : OFF
```

69. PICTURE Size

Function

Screen mode selection.

Transmission Data

DFH 80H 60H 2AH 01H DATA00 CKS

DATA00 01H : ON

02H : OFF

ACK

7FH 60H 80H 2AH 01H DATA00 CKS

DATA00 01H : ON

02H : OFF

*This function is only 50 or 61-inch model.

70. OPTION Select

Function

Power-on mode, a control lock, and IR remote are set up.

Transmission Data

DFH 80H 60H 63H 04H DATA00 to DATA03 CKS

DATA00 : Power ON mode

00H : LAST

01H : Video1

02H : Video2

03H : Video3

05H : HD (HD1 or DTV or DTV1)

06H : HD2 (DTV2 or SCART1/SCART2)

07H : RGB1 / PC1

08H : RGB2 / PC2

0CH : RGB3 / PC3

0DH : HD3(SCART3)

DATA01 : Control Lock

00H : OFF

01H : ON

DATA02 : IR remote

00H : OFF

01H : ON

DATA03 : Loop Out

00H : OFF

01H : ON

ACK

7FH 60H 80H 63H 00H CKS

71. REPEAT Timer

Function

External control apparatus sets up the repeat timer of a plasma monitor.

Transmission Data

DFH	80H	60H	64H	07H	DATA00 to DATA06	CKS
-----	-----	-----	-----	-----	------------------	-----

DATA00				00H	:REPEAT Timer OFF	
				01H	:REPEAT Timer ON	

DATA01 PROGRAM 1

01H	:DIVIDER 1
02H	:DIVIDER 4
03H	:DIVIDER 9

DATA02 SOURCE	01H	:Video1
	02H	:Video2
	03H	:Video3
	05H	:HD (HD1 or DTV-or-DTV1)
	06H	:HD2 (DTV2 or SCART1/SCART2)
	07H	:RGB1 / PC1
	08H	:RGB2 / PC2
	0CH	:RGB3 / PC3
	0DH	:HD3 (SCART3)

DATA03 WORK TIME

01 H-FFH:1 - 255 minutes (1 minute - 4 hours and 15 minutes)

DATA04 PROGRAM 1

01H	:DIVIDER 1
02H	:DIVIDER 4
03H	:DIVIDER 9

DATA05 SOURCE	01H	:Video1
	02H	:Video2
	03H	:Video3
	05H	:HD (HD1 or DTV-or-DTV1)
	06H	:HD2 (DTV2 or SCART1/SCART2)
	07H	:RGB1 / PC1
	08H	:RGB2 / PC2
	0CH	:RGB3 / PC3
	0DH	:HD3 (SCART3)

DATA06 WORK TIME

01 H-FFH:1 - 255 minutes (1 minute - 4 hours and 15 minutes)

ACK

7FH 60H 80H 64H 00H CKS

72. SERIAL No. Request

Function

External control apparatus read the serial number of the set recorded by EEPROM of a plasma display.

Transmission Data

1FH 80H 60H 15H 00H CKS

ACK

7FH 60H 80H 15H 0CH DATA00 to DATA11 CKS

Even DATA00-DATA11 is set up as follows.

Setting value	00H-09H	:	0 - 9
	96H	:	Blank
	10H-29H	:	A-Z of Alphabet

73. S1/S2 SELECT

Function

External control apparatus sets up the S1/S2 detection of a plasma monitor.

Transmission Data

DFH 80H 60H 89H 01H DATA00 CKS

DATA00 01H : AUTO

02H : OFF

ACK

7FH 60H 80H 89H 01H DATA00 CKS

DATA00 01H : AUTO

02H : OFF

74. SOFT FOCUS

Function

External control apparatus sets up the Soft Focus of a plasma monitor.

Transmission Data

DFH	80H	60H	65H	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00 01H : OFF

02H : 1

03H : 2

04H : 3

05H : 4

ACK

7FH	60H	80H	65H	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00 01H : OFF

02H : 1

03H : 2

04H : 3

05H : 4

75. PLUG and PLAY(only HDCP model)

Function

External control apparatus sets up the Plug and Play of a plasma monitor.

Transmission Data

DFH	80H	60H	8EH	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00 01H : PC

02H : STB/DVD(HDCP signal)

ACK

7FH	60H	80H	8EH	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00 01H : PC

02H : STB/DVD(HDCP signal)

76. DEGTAL SIGNAL LEVEL SELECT(only HDCP model)

Function

External control apparatus sets up the digital signal level of a plasma monitor.

Transmission Data

DFH	80H	60H	8FH	01H	DATA00	CKS
DATA00		01H : LOW				
		02H : HIGH				

ACK

7FH	60H	80H	8FH	01H	DATA00	CKS
DATA00		01H : LOW				
		02H : HIGH				

77. MULTI(SPRIT) SCREEN Select

Function

External control apparatus selects a screen mode from alternatives mentioned below, such as single mode, side-by-side, picture in picture, etc., of Plasma Monitor.

Transmission Data

DFH	80H	60H	07H	01H	DATA00	CKS
DATA00:		00H: Single Screen				
		01H: Side by Side 1 (Same Size Screen)				
		02H: Side-by-Side 2R (Left Screen smaller)				
		03H: Picture in Picture 1 (sub screen Bottom Left) with size1				
		04H: Picture in Picture2(sub screen Bottom Right) with size1				
		05H: Side-by-Side 2L (Left Screen Bigger)				
		06H: Picture in Picture 1(sub screen Bottom Left) with size2				
		07H: Picture in Picture 2(sub screen Bottom Right) with size2				
		08H: Picture in Picture 1(sub screen Bottom Left) with size3				
		09H: Picture in Picture 2(sub screen Bottom Right) with size3				
		0AH: Picture in Picture 1(sub screen Bottom Left) with size4				
		0BH: Picture in Picture 2(sub screen Bottom Right) with size4				
		41H: Picture in Picture 3(sub screen Top Right) with size1				
		42H: Picture in Picture 3(sub screen Top Right) with size2				
		43H: Picture in Picture 3(sub screen Top Right) with size3				

44H: Picture in Picture 3(sub screen Top Right) with size4
 45H: Picture in Picture 4(sub screen Top Left) with size1
 46H: Picture in Picture 4(sub screen Top Left) with size2
 47H: Picture in Picture 4(sub screen Top Left) with size3
 48H: Picture in Picture 4(sub screen Top Left) with size4
 49H: Side by Side 3 (Same Size Screen vertical expand)
 4AH: Side by Side 4 R(Left Screen smaller vertical expand)
 4BH: Side by Side 4 L(Left Screen Bigger vertical expand)

In case of Side by Side mode;

20H: Active Left
 21H: Active Right

In case of Picture in picture mode;

30H: Active Main
 31H: Active Sub

ACK

7FH 60H 80H 07H 01H DATA00 CKS

DATA00: 00H: Single Screen
 01H: Side by Side 1 (Same Size Screen)
 02H: Side-by-Side 2R (Left Screen smaller)
 03H: Picture in Picture 1 (sub screen Bottom Left) with size1
 04H: Picture in Picture2(sub screen Bottom Right) with size1
 05H: Side-by-Side 2L (Left Screen Bigger)
 06H: Picture in Picture 1(sub screen Bottom Left) with size2
 07H: Picture in Picture 2(sub screen Bottom Right) with size2
 08H: Picture in Picture 1(sub screen Bottom Left) with size3
 09H: Picture in Picture 2(sub screen Bottom Right) with size3
 0AH: Picture in Picture 1(sub screen Bottom Left) with size4
 0BH: Picture in Picture 2(sub screen Bottom Right) with size4
 41H: Picture in Picture 3(sub screen Top Right) with size1
 42H: Picture in Picture 3(sub screen Top Right) with size2
 43H: Picture in Picture 3(sub screen Top Right) with size3
 44H: Picture in Picture 3(sub screen Top Right) with size4
 45H: Picture in Picture 4(sub screen Top Left) with size1
 46H: Picture in Picture 4(sub screen Top Left) with size2
 47H: Picture in Picture 4(sub screen Top Left) with size3
 48H: Picture in Picture 4(sub screen Top Left) with size4
 49H: Side by Side 3 (Same Size Screen vertical expand)

4AH: Side-by-Side 4R (Left Screen smaller vertical expand)

4BH: Side-by-Side 4L (Left Screen Bigger vertical expand)

In case of Side by Side mode;

20H: Active Left

21H: Active Right

In case of Picture in picture mode;

30H: Active Main

31H: Active Sub

78. SUB PICTURE DETECT SELECT

Function

External control apparatus selects whether to display the sub picture or not, under picture in picture mode, of plasma monitor.

Transmission Data

DFH 80H 60H 7AH 01H DATA00 CKS

DATA00 01H : OFF

02H : AUTO

ACK

7FH 60H 80H 7AH 01H DATA00 CKS

DATA00 01H : OFF

02H : AUTO

79. ZOOM NAVIGATION SELECT

Function

External control apparatus selects digital zoom display of a plasma monitor, from the alternatives mentioned below;

Transmission Data

DFH 80H 60H 7BH 01H DATA00 CKS

DATA00 01H : NORMAL

02H : Side By Side(Left Screen smaller)

03H : Picture in Picture1(Sub Screen Bottom Left)

04H : Picture in Picture2(Sub Screen Bottom Right)

05H : Picture in Picture3(Sub Screen Top Right)

06H : Picture in Picture4(Sub Screen Top Left)

ACK

7FH 60H 80H 7BH 01H DATA00 CKS

DATA00 01H : NORMAL

02H : Side-By-Side
 03H : Picture in Picture1(Sub Screen Bottom Left)
 04H : Picture in Picture2(Sub Screen Bottom Right)
 05H : Picture in Picture3(Sub Screen Top Right)
 06H : Picture in Picture4(Sub Screen Top Left)

80. PICTURE FREEZE SELECT

Function

External control apparatus selects the picture freeze function of a plasma monitor.

Transmission Data

DFH	80H	60H	7CH	01H	DATA00	CKS
	DATA00	01H : OFF(single screen)				
		02H : Side By Side1(Same Size Screen)				
		03H : Picture in Picture1(Sub Screen Bottom Left)				
		04H : Picture in Picture2(Sub Screen Bottom Right)				
		05H : Picture in Picture3(Sub Screen Top Right)				
		06H : Picture in Picture4(Sub Screen Top Left)				
		07H: Side by Side2 (Same Size Screen vertical expand)				

ACK

7FH	60H	80H	7CH	01H	DATA00	CKS
	DATA00	01H : OFF(single screen)				
		02H : Side By Side1				
		03H : Picture in Picture1(Sub Screen Bottom Left)				
		04H : Picture in Picture2(Sub Screen Bottom Right)				
		05H : Picture in Picture3(Sub Screen Top Right)				
		06H : Picture in Picture4(Sub Screen Top Left)				
		07H : Side by Side2(Same Size Screen vertical expand)				

81. PICTURE FREEZE Command

Function

External control apparatus sets picture freeze or remove picture freeze of a plasma monitor.

Transmission Data

DFH	80H	60H	7DH	01H	DATA00	CKS
	DATA00	01H : FREEZE				
		02H : FREEZE OFF				

ACK

7FH	60H	80H	7DH	01H	DATA00	CKS
DATA00		01H : FREEZE				
		02H : FREEZE OFF				

82. SEAMLESS SWITCH SELECT

Function

External control apparatus selects the seamless switch function of a plasma monitor.

Transmission Data

DFH	80H	60H	7EH	01H	DATA00	DATA01	DATA02	CKS
DATA00: SEAMLESS SWITCH								
				01H	:OFF			
				02H	:ON			
DATA01 : SELECT1		01H		:Video1				
		02H		:Video2				
		03H		:Video3				
		05H		:HD (HD1 or DTV or DTV1)				
		06H		:HD2 (DTV2 or SCART1/SCART2)				
		07H		:RGB1 / PC1				
		08H		:RGB2 / PC2				
		0CH		:RGB3 / PC3				
		0DH		:HD3(SCART3)				
DATA02 : SELECT2		01H		:Video1				
		02H		:Video2				
		03H		:Video3				
		05H		:HD (HD1 or DTV or DTV1)				
		06H		:HD2 (DTV2 or SCART1/SCART2)				
		07H		:RGB1 / PC1				
		08H		:RGB2 / PC2				
		0CH		:RGB3 / PC3				
		0DH		:HD3(SCART3)				

ACK

7FH	60H	80H	7EH	01H	DATA00	CKS
DATA00		01H : OFF				
		02H : ON				

83. MULTI (SPRIT) SCREEN PROGRAM TIMER SET

Function

External control apparatus sets multi (sprit) screen program timer of a plasma monitor.

Transmission Data

DFH	80H	60H	32H	0AH	DATA00 ~ DATA09 CKS
DATA00	PROGRAM No			01H ~ 07H	No1 ~ No7
DATA01	DATE			01H ~ 07H	Sunday~Saturday
				08H	Everyday
				09H ~ 0FH	Every Sunday~Every Saturday
				FFH	:(no setting)
DATA02	ON time(hour)			00H ~ 09H	00 ~ 09
				10H ~ 19H	10 ~ 19
				20H ~ 23H	20 ~ 23
				FFH	:(no setting)
DATA03	ON time(minute)			00H ~ 09H	00 ~ 09
				10H ~ 19H	10 ~ 19
				20H ~ 29H	20 ~ 29
				30H ~ 39H	30 ~ 39
				40H ~ 49H	40 ~ 49
				50H ~ 59H	50 ~ 59
				FFH	:(no setting)
DATA04	OFF time(hour)			00H ~ 09H	00 ~ 09
				10H ~ 19H	10 ~ 19
				20H ~ 23H	20 ~ 23
				FFH	:(no setting)
DATA05	OFF time(minute)			00H ~ 09H	00 ~ 09
				10H ~ 19H	10 ~ 19
				20H ~ 29H	20 ~ 29
				30H ~ 39H	30 ~ 39
				40H ~ 49H	40 ~ 49
				50H ~ 59H	50 ~ 59
				FFH	:(no setting)
DATA06	MULTI MODE			01H	Side By Side1(Same Size Screen)
				02H	Side By Side2(Left Screen Smaller)
				03H	Side By Side2(Left Screen Bigger)

04H : Picture in Picture1(Sub Screen Bottom Left)
 05H : Picture in Picture2(Sub Screen Bottom Right)
 06H : Picture in Picture3(Sub Screen Top Right)
 07H : Picture in Picture4(Sub Screen Top Left)

DATA07 INPUT1 (Left or main)

01H : Video1
 02H : Video2
 03H : Video3
 05H : HD (HD1 or DTV or DTV1)
 06H : HD2 (DTV2 or SCART1/SCART2)
 07H : RGB1 / PC1
 08H : RGB2 / PC2
 0CH : RGB3 / PC3
 0DH : HD3(SCART3)

DATA08 INPUT2(Right or Sub)

01H : Video1
 02H : Video2
 03H : Video3
 05H : HD (HD1 or DTV or DTV1)
 06H : HD2 (DTV2 or SCART1/SCART2)
 07H : RGB1 / PC1
 08H : RGB2 / PC2
 0CH : RGB3 / PC3
 0DH : HD3(SCART3)

DATA09 MODE

01H : ORBITER
 02H : INVERSE
 03H : WHITE
 04H : WIPER
 FFH : - (no setting)

ACK

7FH 60H 80H 30H 00H CKS

84. MULTI (SPRIT) SCREEN POWER ON MODE SET

Function

External control apparatus sets “multi (sprit) screen power on mode” of a plasma monitor.

Transmission Data

DFH 80H 60H 33H 04H DATA00 ~ DATA03 CKS

DATA00 POWER ON MODE

01H:LAST

02H:MULTI

DATA01 MULTI MODE

01H : Side By Side1(Same Size Screen)

02H : Side By Side2(Left Screen Smaller)

03H : Side By Side2(Left Screen Bigger)

04H : Picture in Picture1(Sub Screen Bottom Left)

05H : Picture in Picture2(Sub Screen Bottom Right)

06H : Picture in Picture3(Sub Screen Top Right)

07H : Picture in Picture4(Sub Screen Top Left)

DATA02 INPUT1 (Left or main)

01H : Video1

02H : Video2

03H : Video3

05H : HD (HD1 or DTV or DTV1)

06H : HD2 (DTV2 or SCART1/SCART2)

07H : RGB1 / PC1

08H : RGB2 / PC2

0CH : RGB3 / PC3

0DH : HD3(SCART3)

DATA03 INPUT2(Right or Sub)

01H : Video1

02H : Video2

03H : Video3

05H : HD (HD1 or DTV or DTV1)

06H : HD2 (DTV2 or SCART1/SCART2)

07H : RGB1 / PC1

08H : RGB2 / PC2

0CH : RGB3 / PC3

0DH : HD3(SCART3)

ACK

7FH	60H	80H	33H	00H	CKS
-----	-----	-----	-----	-----	-----

85. MULTI (SPRIT) REPEAT TIMER SET

Function

External control apparatus sets “multi (sprit) screen repeat timer” of a plasma monitor.

Transmission Data

DFH	80H	60H	34H	09H	DATA00 ~ DATA03	CKS
-----	-----	-----	-----	-----	-----------------	-----

DATA00 REPEAT TIMER 00H:OFF
01H:ON

REPEAT1

DATA01 MULTI MODE

00H : SINGLE
01H : Side By Side1(Same Size Screen)
02H : Side By Side2(Left Screen Smaller)
03H : Side By Side2(Left Screen Bigger)
04H : Picture in Picture1(Sub Screen Bottom Left)
05H : Picture in Picture2(Sub Screen Bottom Right)
06H : Picture in Picture3(Sub Screen Top Right)
07H : Picture in Picture4(Sub Screen Top Left)

DATA02 INPUT1 (Left or main)

01H : Video1
02H : Video2
03H : Video3
05H : HD (HD1 or DTV or DTV1)
06H : HD2 (DTV2 or SCART1/SCART2)
07H : RGB1 / PC1
08H : RGB2 / PC2
0CH : RGB3 / PC3
0DH : HD3(SCART3)

DATA03 INPUT2(Right or Sub)

01H : Video1
02H : Video2
03H : Video3
05H : HD (HD1 or DTV or DTV1)

06H : HD2 (DTV2 or SCART1/SCART2)

07H : RGB1 / PC1

08H : RGB2 / PC2

0CH : RGB3 / PC3

0DH : HD3(SCART3)

DATA04 WORK TIME 01H ~ FFH : 1 ~ 255 minutes

(1 minutes ~ 4 hour 15 minutes)

REPEAT2

DATA05 MULTI MODE

00H : SINGLE

01H : Side By Side1(Same Size Screen)

02H : Side By Side2(Left Screen Smaller)

03H : Side By Side2(Left Screen Bigger)

04H : Picture in Picture1(Sub Screen Bottom Left)

05H : Picture in Picture2(Sub Screen Bottom Right)

06H : Picture in Picture3(Sub Screen Top Right)

07H : Picture in Picture4(Sub Screen Top Left)

DATA06 INPUT1 (Left or main)

01H : Video1

02H : Video2

03H : Video3

05H : HD (HD1 or DTV or DTV1)

06H : HD2 (DTV2 or SCART1/SCART2)

07H : RGB1 / PC1

08H : RGB2 / PC2

0CH : RGB3 / PC3

0DH : HD3(SCART3)

DATA07 INPUT2(Right or Sub)

01H : Video1

02H : Video2

03H : Video3

05H : HD (HD1 or DTV or DTV1)

06H : HD2 (DTV2 or SCART1/SCART2)

07H : RGB1 / PC1

08H : RGB2 / PC2

0CH : RGB3 / PC3

0DH : HD3(SCART3)

DATA08 WORK TIME

01H ~ FFH : 1 ~ 255 minutes

(1 minutes ~ 4 hour 15 minutes)

NOTE: When “SINGLE” is selected at DATA01 or DATA04,
”INPUT MODE 1” will be repeated.

ACK

7FH	60H	80H	34H	00H	CKS
-----	-----	-----	-----	-----	-----

86. OSM CONTRAST SELECT

Function

External control apparatus selects the OSM contrast function of a plasma monitor.

Transmission Data

DFH	80H	60H	37H	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00 01H : NORMAL

02H : LOW

ACK

7FH	60H	80H	37H	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00 01H : NORMAL

02H : LOW

87. CC (Closed caption) SELECT

Function

External control apparatus selects the Closed Caption function of a plasma monitor.

Transmission Data

DFH	80H	60H	3CH	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00 00H : OFF

01H : CC1(closed caption1)

02H : CC2(closed caption2)

03H : CC3(closed caption3)

04H : CC4(closed caption4)

05H : TEXT1

06H : TEXT2

07H : TEXT3

08H : TEXT4

ACK

7FH	60H	80H	3CH	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00 00H : OFF

01H : CC1(closed caption1)

02H : CC2(closed caption2)

03H : CC3(closed caption3)

04H : CC4(closed caption4)

05H : TEXT1

06H : TEXT2

07H : TEXT3

08H : TEXT4

88. CC (Closed caption) CONTRAST SELECT

Function

External control apparatus selects the Closed Caption Contrast function of a plasma monitor.

Transmission Data

DFH	80H	60H	3DH	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00 01H : NORMAL

02H : LOW

ACK

7FH	60H	80H	3DH	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00 01H : NORMAL

02H : LOW