marantz®

PDxx01

RS-232C Control Specification

Category	**:**	***Plasma Display***
Document Version	**:**	*1.0*
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Table of Contents

1. Application

These specifications are applicable to plasma monitors and communications control from external equipment.
"Please also support the command of VP series and refer to the manual of the conventional model about specification."

2. Connections

Connections should be made as described below.

plasma monitor

External equipment
e.g., Personal computer
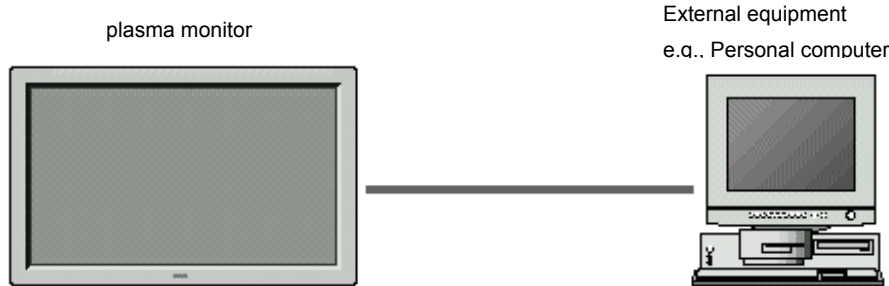
2-1. Connector on the plasma monitor side: EXTERNAL CONTROL connector.
Type of connector: D-Sub 9-pin male

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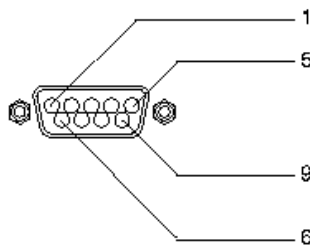
2-2. Connector on the external equipment side: Serial port (RS-232C) connector.
See the specifications of the equipment that is to be connected for the type of connector and pin assignment.

2-3. Wiring
Use a crossed (reverse) cable.
Wire the cable so that each pair of data lines crosses 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).

2-4. Communication Parameters
(1) Communication system   Asynchronous

(2) Interface   RS-232C

(3) Baud rate   9600 bps

(4) Data length   8 bits

(5) Parity   Odd

(6) Stop bit   1 bit

(7) Communication code   Hex

3. Communication Format
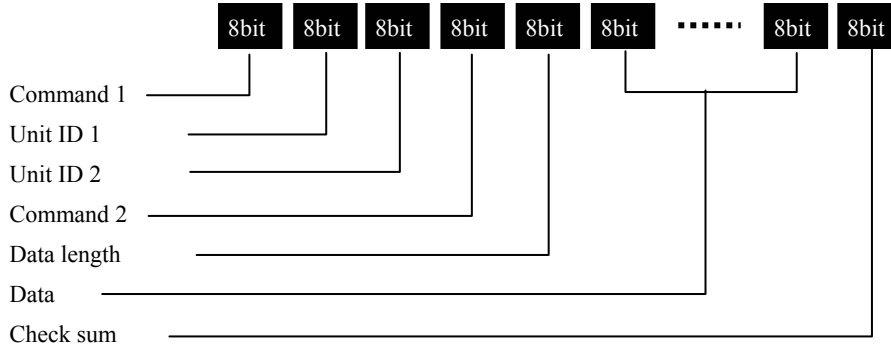
3-1. Command1

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

Bit1, Bit0: 11B or 10B :Usually, a form

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.

3-2. 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.

3-3. Command 2

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

3-4. Check Sum (CKS), Error Processing, and ACK

1) The check sum described below and RS-232C odd 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

DFH	80H	60H	47H	01H	01H	08H
Command1	Unit ID1	Unit ID2	Command2	Data Length	Data	Check Sum

Total 208H
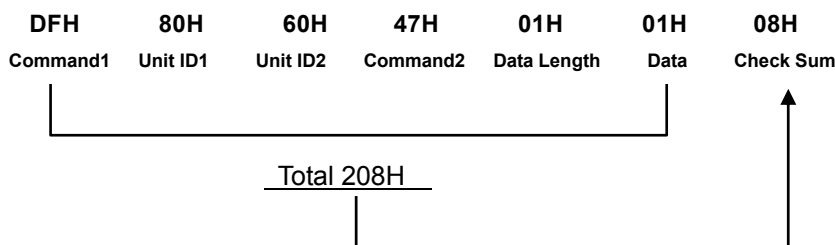
2) Error Processing

- 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.

4. 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 (FINE PICTURE Set)	DFH	7FH	03H
28	CLOCK Gain Data (PICTURE ADJUST Set)	DFH	7FH	03H
29	OSM ADJ. position Data	DFH	1AH	02H
30	POWER MGT Select	DFH	1AH	02H
31	GRAY LEVEL Set	DFH	C6H	01H
32	CINEMA MODE Set	DFH	C1H	01H
33	LONG LIFE Set (PDP SAVER Set)	DFH	6BH	03H
34	SCREEN WIPER Set	DFH	C8H	04H
35	ALL RESET	1FH	54H	00H
36	Audio Select Set	DFH	70H	02H
37	RGB Select	DFH	8BH	01H
38	HD Select	DFH	8AH	01H
39	LANGUAGE Select	DFH	5BH	01H
40	COLOR SYSTEM Select	DFH	5CH	01H
41	FREQUENCY Request	1FH	26H	00H
42	Input MODE Request	1FH	41H	00H
43	VIDEO ADJ Request	1FH	45H	00H
44	Audio Select Request	1FH	6FH	00H
45	Failure Mode Request	1FH	3FH	00H
46	MODEL NAME Request	1FH	17H	00H
47	LOW TONE	DFH	0CH	01H
48	COLOR TUNE	DFH	0DH	08H
49	GAMMA Gain Data	DFH	13H	04H
50	Running Sense	1FH	88H	00H
51	OSM OBITER	DFH	5FH	01H
52	Input Skip	5FH	61H	01H
53	SERIAL No. Request	1FH	15H	00H
54	S1/S2 SELECT	DFH	89H	01H
55	SOFT FOCUS	DFH	65H	01H
56	BLACK LEVEL (DIGITAL SIGNAL LEVEL)	DFH	8FH	01H
57	MULTI(SPRIT) SCREEN Select	DFH	07H	01H
58	SUB.P DETECT	DFH	7AH	01H
59	ZOOM NAV	DFH	7BH	01H

60	PICTURE FREEZE	DFH	7CH	01H
61	PAUSE COMMAND	DFH	7DH	01H
62	OSM CONTRAST	DFH	37H	01H
63	CLOSED CAPTION	DFH	3CH	01H
64	CAPTION CONTRAST	DFH	3DH	01H
65	PICTURE MEMORY Select	DFH	38H	01H
66	PICTURE MEMORY Set	DFH	25H	02H
67	PICTURE MEMORY NOTE WRITE	DFH	2DH	0CH
68	SET UP LEVEL	DFH	35H	01H
69	BACK GROUND	DFH	36H	01H
70	PDP SAVER AUTO select	DFH	2CH	01H
71	Audio HDMI Request	1FH	3AH	00H
72	POWER ON MODE (INPUT)	DFH	63H	04H
73	POWER ON MODE (VOLUME)	DFH	0FH	01H
74	SUB PICTURE RATE set	DFH	DAH	02H
75	MULTI (SPRIT) SCREEN POWER ON MODE SET	DFH	33H	04H
76	REMOTE ID CODE SETTING	DFH	2BH	01H
77	VOLUME Gain Request	1FH	0EH	00H
78	UNDER SCAN SETTING	DFH	22H	01H

5. Command

5-1. 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.

5-2. 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.

5-3. 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
                                               05H : DVD/HD1
                                         06H : DVD/HD2
                                         07H : PC/RGB
                                               0EH : DVD/HD3(HDMI)
                                               1AH : DVD/HD4(HDMI)

ACK

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

3FH   60H   80H   47H   00H   CKS

5-4. 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

5-5. 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

5-6. 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

5-7. CONTRAST Gain Data

Function

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

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

5-8. 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

5-9. 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

5-10. 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

ACK

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

DATA00: USER PICTURE Gain Flag   01H

DATA01: COLOR Gain Flag   04H

5-11. 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

5-12. 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

5-13. 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

5-14. 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 Gain 1(Bias)	D8H : -40
	:
	FFH : -01
	00H : 0
	01H : +01
	:
	1EH : +30
DATA03: RED Gain 2(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

5-15. 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

5-16. 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
PDATA01: BLUE Gain Flag   03H

5-17. 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

5-18. 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

5-19. 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	DATA0	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

5-20. 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

5-21. 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: ANAMORHIC (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: ANAMORHIC(FULL)
      06H: REAL
      08H: UNDERSCAN
      09H: 14:9
      0AH: 2.35:1

*If it selects DATA00 "08: UNDERSCAN", it need to set No.78 UNDERSCAN setting ON.

5-22. 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

5-23. 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

5-24. 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

5-25. 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

5-26. 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

5-27. PHASE (FINE PICTURE) 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

5-28. CLOCK (PICTURE ADJUST) 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

5-29. OSM ADJ. POSITION 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(TOP LEFT)

                     02H: 2(TOP CENTER)

                     03H: 3(TOP RIGHT)

                     04H: 4(BOTTOM LEFT)

                     05H: 5(BOTTOM CENTER)

                     06H: 6(BOTTOM RIGHT)

ACK

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

DATA00: OSM ADJ. Gain Flag   02H

5-30. 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

5-31. 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

5-32. 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

5-33. LONG LIFE Set (PDP SAVER Set)

Function

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

Transmission Data

DFH	80H	60H	6BH	03H	DATA00	DATA01	DATA02	CKS

DATA00: PLE   01H: 100% (AUTO)

                                              02H: 75% (LOCK1)

                                              03H: 50% (LOCK2)

                                              04H: 25% (LOCK3)

DATA01: INVERSE/WHITE   01H: INVERSE

                                              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) or WHITE:

3FH	60H	80H	6BH	00H	CKS

5-34. 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:	00H: fixed
DATA02:	FFH: fixed
DATA03:	01H: fixed

ACK

3FH	60H	80H	C8H	00H	CKS

5-35. 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

5-36. 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
	04H: DVD/HD3 INPUT1
	05H: DVD/HD4 INPUT1
DATA01: VISUAL INPUT	01H: VIDEO1
	02H: VIDEO2
	05H: DVD/HD1
	06H: DVD/HD2
	07H: PC/RGB
	0EH: DVD/HD 3
	1AH: DVD/HD 4
	20H: DVD/HD INPUT HDMI
	21H: DVD/HD INPUT AUDIO INPUT1-3

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 VIDEO2 after VIDEO1 has been set to AUDIO1.

* When selected 04H or 05H of Data00,it can be selected 20H or 21H of Data01.

5-37. 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
	11H: type1
	12H: type2
	13H: type3
	14H: type4
	15H: type5
	16H: type6
	17H: type7
	18H: type8
	19H: type9
	1AH: type10

ACK

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

DATA00	01H: AUTO
	11H: type1
	12H: type2
	13H: type3
	14H: type4
	15H: type5
	16H: type6
	17H: type7
	18H: type8
	19H: type9
	1AH: type10

Correspond to Analog RGB.

The type is following as below.

HD_MODE1 :10KHz 以下	VD_MODE1:15.00~24.50Hz
HD_MODE2 :14.0~20.9KHz	VD_MODE2:24.60~27.50Hz
HD_MODE3 :21.0~26.4KHz	VD_MODE3:27.60~40.00Hz
HD_MODE4 :26.5~32.7KHz	VD_MODE4:40.01~48.50Hz
HD_MODE5 :32.8~36.6KHz	VD_MODE5:48.60~55.00Hz
HD_MODE6 :36.7~38.5KHz	VD_MODE6:55.01~61.76Hz
HD_MODE7 :38.6~45.9KHz	VD_MODE7:61.77~73.50Hz
HD_MODE8 :46.0~49.0KHz	VD_MODE8:73.51~79.50Hz
HD_MODE9 :49.1~55.0KHz	VD_MODE9:79.51~92.50Hz
HD_MODE10:55.1~76.9KHz	VD_MODE10:92.51~110.00Hz
HD_MODE11:77.0~83.5KHz	VD_MODE11:110.01~131.00Hz
HD_MODE12:83.6~115.0KHz	VD_MODE12: other
HD_MODE13: other	

	Type1	Type2	Type3	Type4	Type5	Type6	Type7	Type8	Type9	Type10
H mode:3 V mode:5	848x480 @50	640x480 @50								
H mode:4 V mode:5	768×576 @50	1920×1080 @50								
H mode:4 V mode:6	640×480 @60_1	852×480 @60	848×480 @60	640×480 @60_2	640×480 @60_3					
H mode:4 V mode:7	720×400 @70	720×350 @70								
H mode:5 V mode:6	800×600 @56	1920×1035 @60 (1035I) / 1920×1080 @60 (1080A) / 1920×1080 @60 (1080B)								
H mode:7 V mode:6	1280×768@56.2	1280x768 @60	1280×720 @60							
H mode:8 V mode:6	1024×768 @60_1	1360×765 @60	1376×768 @60	1280×768 @60_1	1280×768 @60_2	1024*768 @60_2 Only DVI(PC)				
H mode:9 V mode:6	1152x864 @60_1 / 1024×768 @60	1280*800 @60	1280*854 @60	1152x864 @60_2						
H mode : 10 V mode : 5	1080P @50	1250P @50	1920×1080 @50							
H mode : 10 V mode : 6	1280×1024 @60	1400×1050 @60_1	1920*1200 @60	1920*1200RB @60	1600×1200 @60	1400×1050 @60_2	1680*1050 @60	1080P @60	1920×1080 @60	1366×768 @60
H mode : 10 Vmode : 7	1024×768 @70	1024x768 @72	1280x768 @70	1280x768 @72				"1920*1200RB@60" is Reduce blanking signal.		
H mode : 10 V mode : 8	1024×768 @75	1152×864								

5-38. 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: 540P (1080A)
                03H: 1080I (1080B)

ACK

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

DATA00   01H: 1035I
                02H: 540P (1080A)
                03H: 1080I (1080B)

5-39. 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
         0BH: RUSSIAN
         0DH: PORTUGUESE

ACK

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

DATA00: 01H: ENGLISH
         02H: GERMAN
         03H: FRENCH
         04H: SPANISH
         05H: ITALIAN
         06H: SWEDISH
         0BH: RUSSIAN
         0DH: PORTUGUESE

5-40. 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

5-41. FREQUENCY Request (SIGNAL INFORMATION)

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	-
	01H to 80H	: RGB signal	Identification number of PC mode
	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

5-42. 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: Video1

02H: Video2

05H: DVD/HD1

06H: DVD/HD2

07H: PC/RGB

0EH: DVD/HD3 (HDMI)

1AH: DVD/HD4 (HDMI)

5-43. 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
:
FFH: -01
00H: 0
01H: +01
:
20H: +32

DATA04: TINT Gain

E0H: -32
:
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

5-44. 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
              05H: DVD/HD1
              06H: DVD/HD2
              07H: PC/RGB
              0EH: DVD/HD3
              1AH: DVD/HD4

5-45.   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)

Note: When 42 inch, "FAN" of DATA00-Bit3 is fixed "1".

5-46. 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

Corresponding character (10H-29H : A-Z)	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-50XR5A", the returned codes would be as follows.

DATA00:1FH, DATA01:27H, DATA02:80H, DATA03:05H, DATA04:00H, DATA05:27H, DATA06:21H, DATA07:05H,

DATA08:10H, DATA09:96H, DATA10:96H, DATA11:96H

5-47. LOW TONE (50inch only)

Function

The external control equipment sets the Low toned of the plasma monitor.

Transmission Data

DFH	80H	60H	0CH	01H	DATA00	CKS

DATA00:   01H: Mode1
                02H: Mode2

ACK

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

DATA00:   01H: Mode1
                02H: Mode2

5-48. COLOR TUNE

Function

External control equipment can adjust RGB each color which 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

5-49. 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(GAMMA2.1)

                                     01H: 2(GAMMA2.2)

                                   02H: 3(GAMMA2.3)

                                   03H: 4(GAMMA2.4)

ACK

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

        DATA00: GAMMA FLAG   01H: Gamma change

5-50. 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

5-51. OSM ORBITER

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: ORBITER ON

                02H: ORBITER OFF

ACK

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

DATA00   01H: ORBITER ON

                02H: ORBITER OFF

5-52. 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

5-53. 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

5-54. 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

5-55. 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: LEVEL1
	03H: LEVEL2
	04H: LEVEL3
	05H: LEVEL4

ACK

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

DATA00	01H: OFF
	02H: LEVEL1
	03H: LEVEL2
	04H: LEVEL3
	05H: LEVEL4

5-56. BLACK LEVEL SELECT
Function

External control apparatus sets up the black level (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

5-57. 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: Picturein Picture 2(sub screen Bottom Right) with size1
- 05H: Side by Side 2L (Left Screen Bigger)
- 06H: Picturein Picture 1(sub screen Bottom Left) with size2
- 07H: Picturein Picture 2(sub screen Bottom Right) with size2
- 08H: Picturein Picture 1(sub screen Bottom Left) with size3
- 09H: Picturein Picture 2(sub screen Bottom Righ) with size3
- 0AH: Picturein Picture 1(sub screen Bottom Left) with size4
- 0BH: Picturein Picture 2(sub screen Bottom Right) withsize4
- 41H: Picturein Picture 3(sub screen Top Right) with size1
- 42H: Picturein Picture 3(sub screen Top Right) with size2
- 43H: Picturein Picture 3(sub screen Top Right) with size3
- 44H: Picturein Picture 3(sub screen Top Right) with size4
- 45H: Picturein Picture 4(sub screen Top Left) with size1
- 46H: Picturein Picture 4(sub screen Top Left) with size2
- 47H: Picturein Picture 4(sub screen Top Left) with size3
- 48H: Picturein 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)
- 10H: SWAP
- A0H: PIP OFF
- A1H: PIP ON

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: Picturein Picture 2(sub screen Bottom Right) with size1
- 05H: Side by Side 2L (Left Screen Bigger)
- 06H: Picturein Picture 1(sub screen Bottom Left) with size2
- 07H: Picturein Picture 2(sub screen Bottom Right) with size2
- 08H: Picturein Picture 1(sub screen Bottom Left) with size3
- 09H: Picturein Picture 2(sub screen Bottom Righ) with size3
- 0AH: Picturein Picture 1(sub screen Bottom Left) with size4
- 0BH: Picturein Picture 2(sub screen Bottom Right) withsize4
- 41H: Picturein Picture 3(sub screen Top Right) with size1
- 42H: Picturein Picture 3(sub screen Top Right) with size2
- 43H: Picturein Picture 3(sub screen Top Right) with size3
- 44H: Picturein Picture 3(sub screen Top Right) with size4
- 45H: Picturein Picture 4(sub screen Top Left) with size1
- 46H: Picturein Picture 4(sub screen Top Left) with size2
- 47H: Picturein Picture 4(sub screen Top Left) with size3
- 48H: Picturein 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)
- 10H: SWAP
- A0H: PIP OFF
- A1H: PIP ON

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

5-58. 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

5-59. 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: OFF (single screen)

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: OFF (single screen)

02H: Side By Side2R (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)

5-60. 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 Side 2 (Same Size Screen vertical expand)

ACK

7FH	60H	80H	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)

5-61. PICTURE FREEZE (Pause) 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

5-62. 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

5-63. 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

5-64. 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

5-65. PICTURE MEMORY Select

Function

The external control equipment selects the Picture Memory function of a plasma monitor.

Transmission Data

DFH	80H	60H	38H	01H	DATA00	CKS

DATA00: MEMORY select   00H: OFF

                                  01H: MEMORY1

                                  02H: MEMORY2

                                  03H: MEMORY3

                                  04H: MEMORY4

                                  05H: MEMORY5

                                  06H: MEMORY6

ACK

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

7FH	60H	80H	38H	01H	CKS

DATA00:   00H: OFF

                              01H: MEMORY1

                              02H: MEMORY2

                              03H: MEMORY3

                              04H: MEMORY4

                              05H: MEMORY5

                              06H: MEMORY6

5-66. PICTURE MEMORY Set

Function

The external control equipment ser and reset the Picture Memory function of a plasma monitor.

Transmission Data

DFH	80H	60H	25H	02H	DATA00	DATA01	CKS

DATA00:		01H: SET
		02H: RESET
DATA01: MEMORY select		00H: OFF
		01H: MEMORY1
		02H: MEMORY2
		03H: MEMORY3
		04H: MEMORY4
		05H: MEMORY5
		06H: MEMORY6

ACK

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

7FH	60H	80H	25H	01H	CKS

DATA00:		01H: SET
		02H: RESET

NOTE: When "PICTURE MEMORY" selects "OFF", this command is no support.

5-67. PICTURE MEMORY NOTE WRITE Set

Function

External control apparatus writes to NOTE of PICTURE MEMORY of a plasma display.

Transmission Data

DFH	80H	60H	2DH	0FH	DATA00 to DATA14	CKS

Even DATA00-DATA14 is set up as follows.

Setting value	00H-09H : 0 - 9
	80H : - (Hyphen)
	81H : +
	82H : $\times$
	83H : /
	84H : (
	85H :)
	86H : .
	87H : '
	96H : Blank
	10H-29H: A-Z of Alphabet

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				

ACK

3FH	60H	80H	2DH	00H	CKS

NOTE)   Please select the memory you like to write by "68.PICTURE MEMORY Select" before setting "PICTURE MEMORY NOTE WRITE"

5-68. SET UP LEVEL SELECT

Function

External control apparatus selects the Set up level function of a plasma monitor.

Transmission Data

DFH	80H	60H	35H	01H	DATA00	CKS

DATA00   01H: 0%

02H: 3.75%

03H: 7.5%

ACK

7FH	60H	80H	35H	01H	DATA00	CKS

DATA00   01H: 0%

02H: 3.75%

03H: 7.5%

5-69. BACK GROUND SELECT

Function

External control apparatus selects the Back ground function of a plasma monitor.

Transmission Data

DFH	80H	60H	36H	01H	DATA00	CKS

DATA00   01H: Black

02H: Gray

ACK

7FH	60H	80H	36H	01H	DATA00	CKS

DATA00   01H: Black

02H: Gray

5-70. PDP SAVER AUTO Select

Function

External control apparatus selects automatic or manual of the PDP saver function of a plasma monitor.

Transmission Data

DFH	80H	60H	2CH	01H	DATA00	CKS

DATA00   01H: MANUAL
           02H: AUTO

ACK

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

DATA00   01H: MANUAL
           02H: AUTO

5-71. Audio HDMI Request

Function

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

Transmission Data

1FH	80H	60H	3AH	00H	CKS

ACK

The plasma monitor returns the following ACK:

7FH	60H	80H	6FH	02H	DATA00	DATA01	CKS

DATA00: DVD/HD3 INPUT   01H: HDMI
                               02H: AUDIO INPUT1-3

DATA01: DVD/HD4 INPUT   01H: HDMI
                               02H: AUDIO INPUT1-3

5-72. POWER ON MODE (INPUT)

Function

Power-on modes (input) are set up.

Transmission Data

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

DATA00: Power ON mode(INPUT)   00H: LAST
                                      01H: Video1
                                      02H: Video2
                                              05H: DVD/HD1
                                      06H: DVD/HD2
                                      07H: PC/RGB
                                              0EH: DVD/HD3 (HDMI)
                                              1AH: DVD/HD4 (HDMI)
DATA01: FIX   00H
DATA02: FIX   01H
DATA03: FIX   00H

ACK

7FH	60H	80H	63H	00H	CKS

5-73. POWER ON MODE (VOLUME)

Function

Power-on modes (Volume) are set up.

Transmission Data

DFH	80H	60H	0FH	01H	DATA00	CKS

  DATA00: Power ON mode (VOLUME)

                A0H: LAST

                00H: volume0

                :

                2A H: volume42

ACK

7FH	60H	80H	0FH	00H	CKS

5-74. 74. SUB PICTURE RATE set

Function

Sub screen rate of PIP are set up.

Transmission Data

DFH	80H	60H	DAH	02H	DATA00	DATA01	CKS

DATA00: Sub screen rate Gain flag	01H
DATA01: Sub screen rate Gain	00H: 20%
	01H: 30%
	02H: 40%
	03H: 50%
	04H: 60%
	05H: 70%
	06H: 80%
	07H: 90%
	08H: 100%
DATA02: FADE	00H: NORMAL
	01H: FADE

ACK

7FH	60H	80H	DAH	01H	DATA00	CKS

  DATA00: Sub screen rate Gain flag   01H

5-75. MULTI (SPRIT) SCREEN POWER ON MODE SET

Function

Power-on modes (Input) for sprit screen are set up.

Transmission Data

DFH	80H	60H	33H	04H	DATA00 to 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 ScreenBigger)
		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
		05H: DVD/HD1
		06H: DVD/HD2
		07H: PC/RGB
		0EH: DVD/HD3
		1AH: DVD/HD4
DATA03	INPUT2 (Right or Sub)	
		01H: Video1
		01H: Video1
		02H: Video2
		05H: DVD/HD1
		06H: DVD/HD2
		07H: PC/RGB
		0EH: DVD/HD3
		1AH: DVD/HD4

ACK

7FH	0H	80H	33H	00H	CKS

5-76. REMOTE CODE SETTING
Function
Remotecontroler codes are set.

Transmission Data

DFH	80H	60H	2BH	01H	DATA00	CKS
	DATA00		00H: ALL			
			01H: CODE1			
			02H: CODE2			
			03H: CODE3			
			04H: CODE4			

ACK

7FH	60H	80H	2BH	01H	DATA00	CKS
	DATA00		00H: ALL			
			01H: CODE1			
			02H: CODE2			
			03H: CODE3			
			04H: CODE4			

5-77. VOLUME Gain Data REQUEST
Function
The external control equipment inquires the volume gain for Plasma diaplay.

Transmission Data

1FH	80H	60H	0EH	00H	CKS

ACK

DFH	60H	80H	0EH	01H	DATA00	CKS

DATA00: VOLUME Gain　　　　　　　　: 00H~2AH

(00H: 0、0FH:15、10H:16、1FH、31···2AH:42)

: FFH: MUTE

5-78. UNDER SCAN SETTING
Function
Under scan are set up.

Transmission Data

DFH	80H	60H	22H	01H	DATA00	CKS
	DATA00:		00H	OFF		
			01H	ON		

ACK

7FH	60H	80H	22H	01H	DATA00	CKS
	DATA00:		00H	OFF		
			01H	ON		

6. Revision history

Rev.	Date	Owner	Change description
1.0	12/06/06	Marantz America, Inc.	Issued Revision1.0

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