

# NEC plasma display

## External Control Manual

(for PX-42VP5/42XM5/42XM3/50XM4/61XM3)

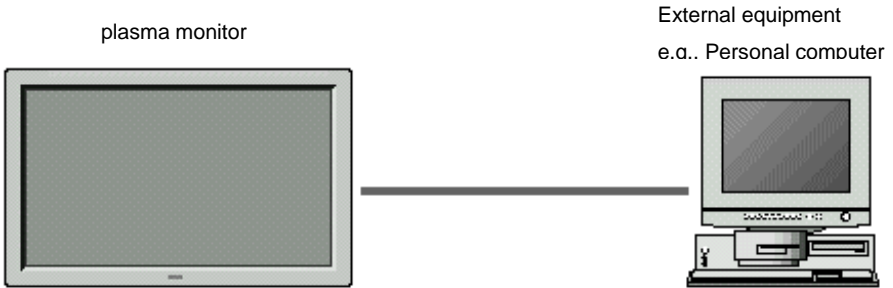
## Application

These specifications are applicable to NEC 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."

## Connections

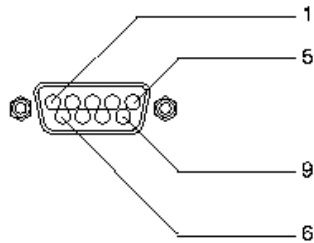
Connections should be made as described below.



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

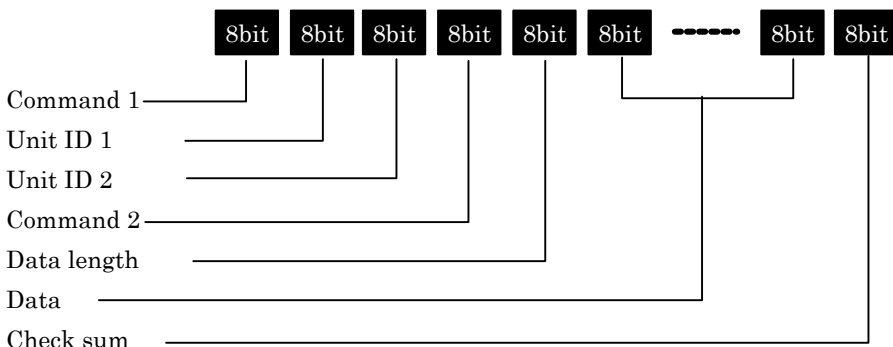
Use a crossed (reverse) cable.

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               | Odd          |
| (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.

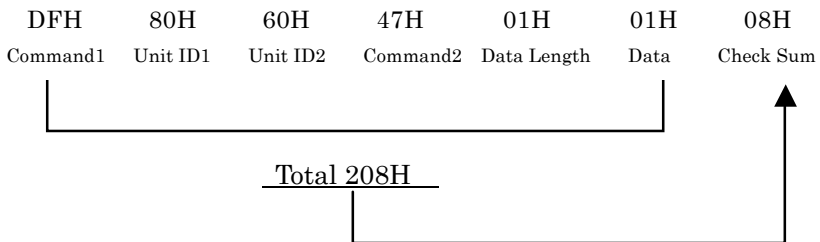
## Command 2

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 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



### 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<br>(DIVIDER setting : 1/4/9) | DFH | F2H | 01H |
| 62   | POWER DELAY ON<br>(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<br>LEVEL SELECT              | DFH | 8FH | 01H |
| 77*1 | MULTI(SPRIT) SCREEN<br>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<br>PROGRAM TIMER        | DFH | 32H | 0AH |

|      |                                      |     |     |     |
|------|--------------------------------------|-----|-----|-----|
| 84*1 | MULTI(SPRIT) SCREEN<br>POWER ON MODE | DFH | 33H | 04H |
| 85*1 | MULTI(SPRIT) SCREEN<br>REPEAT TIMER  | DFH | 34H | 09H |
| 86   | OSM CONTRAST                         | DFH | 37H | 01H |
| 87*2 | CLOSECAPTION<br>(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

## 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(HD1orDTVorDTV1)

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



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                       |

## 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 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

## 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 minutes 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 centerslected (9 screens)  
 0CH : Middle rightselected (9 screens)  
 0DH : Bottom leftselected (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 centerselected (9 screens)
- 0CH : Middle rightselected (9 screens)
- 0DH : Bottom leftselected (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 centerslected (9 screens)
- 0CH : Middle rightselected (9 screens)
- 0DH : Bottom leftselected (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 which 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 4screens or 9screens as a video wall.

Transmission Data

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

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

DATA00: Specify the composition of a multi-system.

DATA01: Set master's ID\*<sup>1</sup>.

\*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 master<sup>1</sup> 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 which 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<br>01H : Video1<br>02H : Video2<br>03H : Video3<br>05H : HD (HD1 or DTV or DTV1)<br>06H : HD2 (DTV2 or SCART1/SCART2)<br>07H : RGB1 / PC1<br>08H : RGB2 / PC2<br>0CH : RGB3 / PC3<br>0DH : HD3(SCART3) |
| DATA01 : Control Lock  | 00H : OFF<br>01H : ON   |
| DATA02 : IR remote     | 00H : OFF<br>01H : ON   |
| DATA03 : Loop Out      | 00H : OFF<br>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.DEGITAL 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: Picturein Picture2(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 Right) 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 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: Picturein Picture2(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)

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 | OFFtime(hour)   |     |     | 00H ~ 09H | 00 ~ 09                            |     |
|        |                 |     |     | 10H ~ 19H | 10 ~ 19                            |     |
|        |                 |     |     | 20H ~ 23H | 20 ~ 23                            |     |
|        |                 |     |     | FFH       | - (no setting)                     |     |
| DATA05 | OFFtime(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 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

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