

# FUJITSU GENERAL LIMITED

## 42 inch Wide Plasma Display Monitor

**Model :** PDS4221W-H (Class A, Worldwide version, Color:gray)  
PDS4222W-H (Class B, Worldwide version, Color:gray)  
PDS4222W-S (Class B, Worldwide version, Color:silver)  
PDS4221E-H (Class A, European version, Color:gray)

## Communication Specifications (For Standard Users)

### Contents

|   |   |
|---|---|
| 1. APPLICATION RANGE.....                     | 2 |
| 2. COMMUNICATION SPECIFICATION.....           | 2 |
| 3. PC CONNECTION.....                         | 2 |
| 4. COMMUNICATION PROCEDURE.....               | 2 |
| 5. COMMANDS EXPLANATION.....                  | 3 |
| 5-1 COMMUNICATION CONTROL .....               | 3 |
| 5-2 CONNECTION COMMAND .....                  | 3 |
| 5-3 TERMINATION OF COMMUNICATION COMMAND..... | 3 |
| 6. PROTOCOL EXAMPLE.....                      | 4 |
| 7. COMMANDS LIST.....                         | 5 |
| 7-1 STANDARD USER LEVEL .....                 | 5 |
| 8. ADDITIONAL INFORMATION .....               | 7 |

**\*Caution**

Use of functions not mentioned in this Specification may result in damage.  
Please handle with care.

E Version: Video related applications only usable with up-grade kits.

## 1. Application Range

This specification applies to the control of the 42 inch Wide Plasma Display Monitor (Hereafter referred to as PDP display) through PC connection.

## 2. Communication Specification

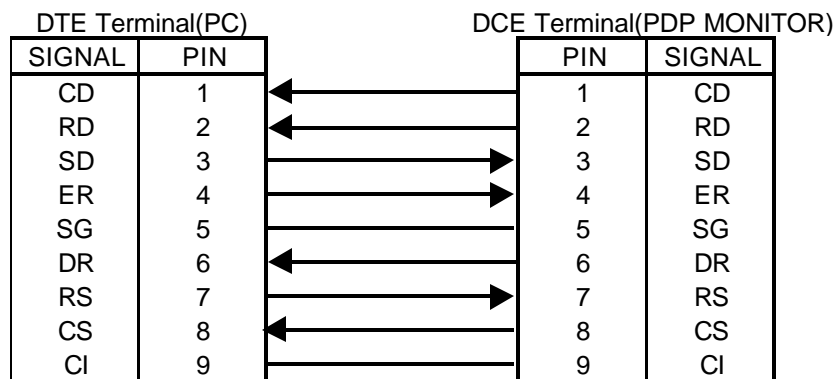
Control of the PDP display from a DTE Terminal(PC) can be made by sending commands from the DTE Terminal(PC) through an RS-232C straight cable using RS-232C interface.

-Communication Parameter

|                    |   |
|--------------------|---|
| Baud Rate          | 4800 bps  |
| Data Length        | 8 bit   |
| Parity             | none  |
| Stop Bit           | 1 bit   |
| Flow control       | RTS/CTS   |
| Communication Code | ASCII Code  |
| Reception Time out | 4 sec.<br>After a command is sent and when the status is not returned , re-send the command after a 4 sec. time out, unless otherwise stated. |

## 3. PC Connection

Connect the PDP display with an IBM compatible DTE Terminal(PC) with a D-sub 9 pin straight cable.



## 4. Communication Procedure

For communication with the PDP display, setting to the text communication mode after turning on the main power supply of the PDP display is necessary. The setting to the text communication mode can be made by sending the communication command to PDP display from the connected DTE terminal (PC).

After sending the connection command, the use of the remote controller and main unit key will be prohibited/ (will not operate).

## 5. Commands Explanation

### 5-1 Communication Control

The communication is done by the handshake method, and a status is returned each time when a command is sent.

Command

|          |          |       |           |
|----------|----------|-------|-----------|
| <b>!</b> | <b>C</b> | ----- | <b>Cr</b> |
|----------|----------|-------|-----------|

"Cr" means carriage return which is "ODH" of the ASCII code.

Normal Reception Status 1

|          |          |           |
|----------|----------|-----------|
| <b>@</b> | <b>S</b> | <b>Cr</b> |
|----------|----------|-----------|

"Cr" means carriage return which is "ODH" of the ASCII code.

In normal status, this Normal Reception Status is returned unless otherwise mentioned.

Normal Reception Status 2

|          |          |       |           |
|----------|----------|-------|-----------|
| <b>@</b> | <b>S</b> | ----- | <b>Cr</b> |
|----------|----------|-------|-----------|

This is returned when the Current Status Notification Command / Setting Value Read-out Command is sent.

Abnormal Reception Status

|          |          |           |
|----------|----------|-----------|
| <b>@</b> | <b>E</b> | <b>Cr</b> |
|----------|----------|-----------|

"Cr" means carriage return which is "ODH" of the ASCII code.

### 5-2 Connection Command

Starts communication. (This command is always accepted.)

|          |          |           |
|----------|----------|-----------|
| <b>@</b> | <b>G</b> | <b>Cr</b> |
|----------|----------|-----------|

By sending this command, the mode is changed to TEXT COMMUNICATION MODE and the commands (\*1) mentioned in Section 7 onwards will be accepted. The access level is set at "0 : Normal User Level".

After this command is sent, wait for the Normal Reception Status. However, if no status is returned after 4 sec., resend this command.

After the connection command is sent, Undefined Data or Undefined Data + Reception status may return.

Retry until only the normal status returns.

\*1 : Command for PDS4200 series. [Hereinafter referred to as Standard command]

### 5-3 Termination of Communication Command

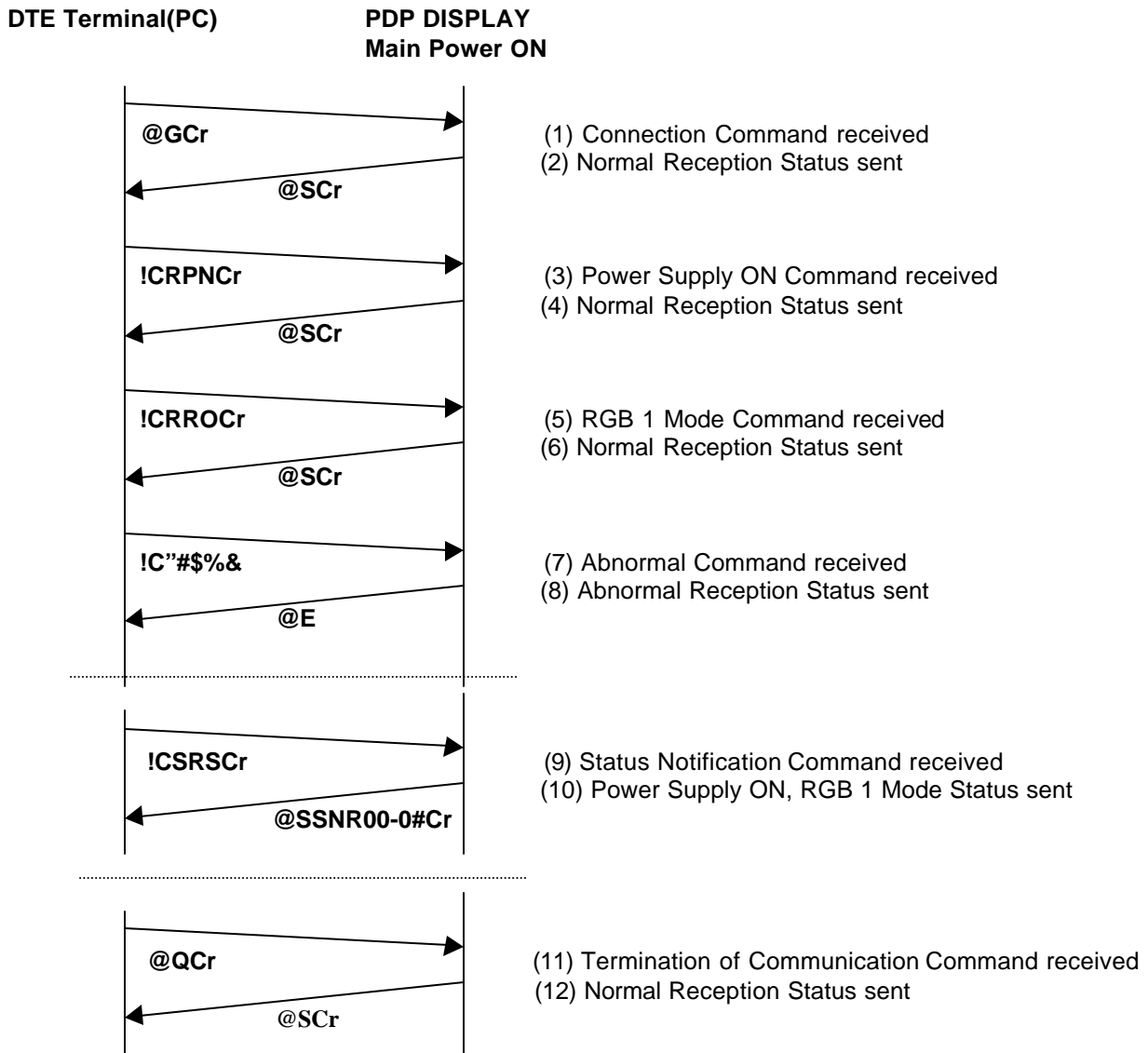
Terminates the text communication mode.

(The Remote Control and Operation Key on the unit is reactivated.)

|          |          |           |
|----------|----------|-----------|
| <b>@</b> | <b>Q</b> | <b>Cr</b> |
|----------|----------|-----------|

## 6. Protocol Example

The example of protocol is shown below.



## 7. Commands List

### 7-1 Standard User Level

“Cr” to be added to the end of all commands.

| Function   | Parameter Details  | Standard command   | Note   |
|--|--|--|--|
| 01. Connection Command   |  | @G   |  |
| 02. Nomal Reception Status 1<br>(without return value)               |  | @S   |  |
| 03. Nomal Reception Status 2<br>(with return value)                  | [VVV... ] Return Value   | @Svv...  |  |
| 04. Abnormal<br>Reception Status (Error)                             |  | @E   |  |
| 05. Command Mode Select  | [x] Series Types<br>0 : Standard Series ( default )<br>1 : Extended 4210 Series for maintenance (Please do not use it)                             | !CMCMx   |  |
| 06. With Checksum Mode   |  | !CSCHKON   |  |
| ➔ Status   |  | @S93   |  |
| 07. Without Checksum Mode  | [8D] Checksum  | !CSCHKOFF68  |  |
| 08. Remote Control /<br>Operation Key Select<br>during communication | ON / OFF<br>Permitted<br>Prohibited (default)  | !CSETR<br>!CSDTR   | Remote control<br>function<br>ON /OFF<br>during<br>communication |
| 09. Power Supply ON  |  | !CRPN  | Add. 10-01   |
| 10. Power Supply OFF   |  | !CRPF  | Add. 10-02   |
| 11. Software Reset   |  | !CRST  |  |
| 12. Composite Video Input  |  | !CRVO  | Add. 10-03   |
| 13. RGB Input  | 01 : RGB 1<br>00 : RGB 2   | !CRRO<br>!CR2O   | Add. 10-04   |
| 14. S-Video Input  | fixed  | !CRSO  | Add. 10-05   |
| 15. Component Video Input  | AUTO   | !CRCO  | Add. 10-06   |
| 16. Aspect   | Normal<br>Auto (Cannot select in RGB/C-Video Mode)<br>Wide 1 (Cannot select in RGB Mode)<br>Wide 2<br>Zoom 1<br>Zoom 2 (Cannot select in RGB Mode) | !CDI0100<br>!CDI0101<br>!CDI0102<br>!CDI0103<br>!CDI0104<br>!CDI0105             | Add. 10-07   |
| 17. Video Mode   | [xx] Type<br>00 : Auto<br>01 : NTSC3<br>02 : PAL<br>03 : SECAM<br>04 : NTSC4<br>05 : M-PAL<br>06 : N-PAL   | !CDI0300<br>!CDI0301<br>!CDI0302<br>!CDI0303<br>!CDI0304<br>!CDI0305<br>!CDI0306 | Add. 10-08   |
| 18. Remote Control /<br>Operation Key Select                         | Prohibited / Permitted<br>Permitted ( default )<br>Prohibited  | !CSER<br>!CSDR   | affected even<br>after end of<br>communication                   |
| 19. OSDC Display Control   | ON / OFF<br>On<br>➔ Off  | !COSDCON<br>!COSDCOFF  |  |
| 20. _____<br>➔ _____   |  |  |  |
| 21. Audio Control  | [xx] Value [specified by Hex]<br>( n : 0 ) 0... 40<br>➔ _____  | !CDI02xx<br>(Volume)   | Add. 10-09   |

| Function  | Parameter Details   | Standard command                   | Note |
|---|---|------------------------------------|------|
| 22. <u>Current Status Notification</u><br>➔ Status<br>Current Status Notification | [ f ] Format<br>A : Power Supply / Mode etc.<br>[Pw] Power Supply<br>N : ON<br>F : OFF<br>S : Standby<br>[Md] Mode<br>R : RGB<br>2 : RGB2<br>V : Video<br>S : S-Video<br>5 : C-Video (DVD50)<br>6 : C-Video (DVD60)<br>H : C-Video ( HDTV )<br>E : C-Video ( ELSE )<br>[In] Maintenance Code<br>[Rm] Maintenance Code<br>[Vm] Maintenance Code<br>[Cm] Maintenance Code<br>[Pm] Maintenance Code<br>[As] Aspect<br>0 : Normal<br>1 : Auto<br>2 : Wide1<br>3 : Wide2<br>4 : Zoom1<br>5 : Zoom2 | !CSRS<br><br>@SSPwMdVmR<br>mPm-As# |      |
| 23. <u>Model ID Acquisition</u><br><br>➔ Status                                   | [mm] Model number      Maintenance Code<br>00H-FFH<br>[v v] Version<br>00H-FFH<br>[l l] Level<br>00H-FFH  | !CVER<br><br>@Svmmvll              |      |
| 24. <u>Termination of Communication</u>   |   | @Q                                 |      |

## 8. Additional Information

- 10-1. After sending this command, if a Power OFF command is to be sent, wait for 7 sec. after the status is returned.
- 10-2. After sending this command, if a Power ON command is to be sent, wait for 5 sec. after the status is returned.
- 10-3. Send only when the Power is ON.  
After sending this command, if a Power OFF command is to be sent, wait for 7 sec. after the status is returned.
- 10-4. Send only when the Power is ON.  
After sending this command, if a Power OFF command is to be sent, wait for 7 sec. after the status is returned.
- 10-5. Send only when the Power is ON.  
After sending this command, if a Power OFF command is to be sent, wait for 7 sec. after the status is returned.
- 10-6. Send only when the Power is ON.  
After sending this command, if a Power OFF command is to be sent, wait for 7 sec. after the status is returned.
- 10-7. Send only when the Power is ON.
- 10-8. Send only when the Power is ON.  
Switch to Video Mode before sending this command.
- 10-9. Send only when the Power is ON.