

COMMUNICATION SPECIFICATION

PRODUCT: 42" WIDE PLASMA DISPLAY

MODEL : PDS4207W-H
PDS4207E-H

***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.

November 02, 1998

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1. Range of Application

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

2. Communication Specification

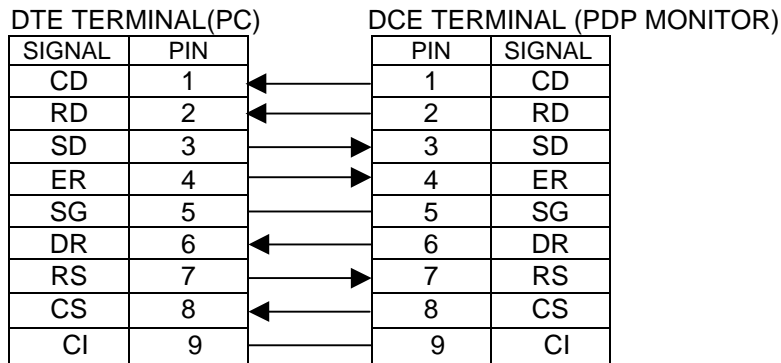
The control command from the Personal Computer is issued through the RS-232C interface by connecting the PDP monitor and the personal computer through the RS-232C cable.

-Communication Parameter

Baud Rate	4800 bps
Data Length	8 bit
Parity	none
Stop Bit	1 bit
Flow control	RTS/CTS Control
Communication Code	ASCII Code

3. PC Connection

The PDP is connected to a IBM compatible PC with a straight cable D-sub9 pin.

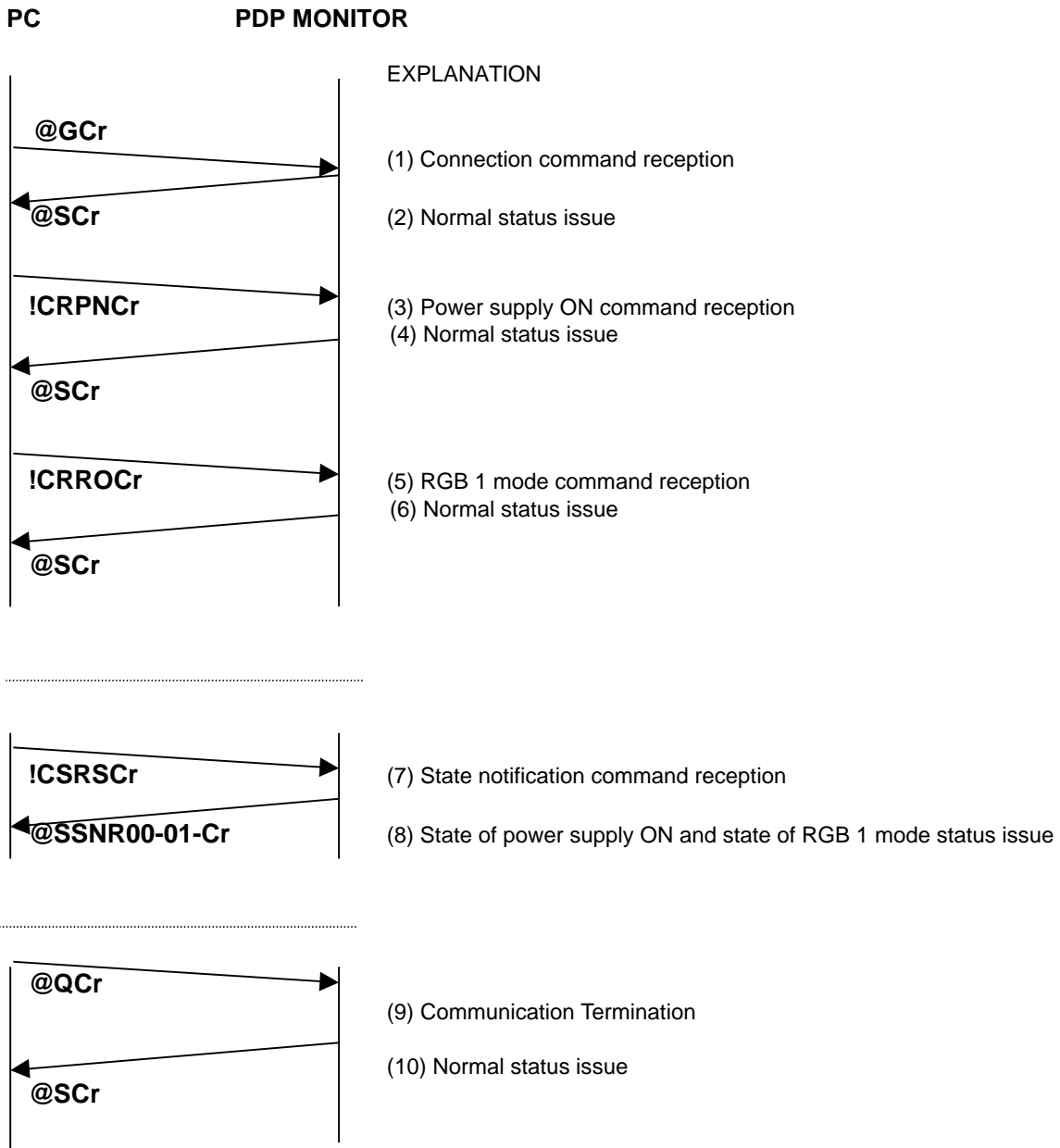


4. Communication Procedure

Easy operation immediately after connecting the PDP monitor and the PC is not possible. Therefore, there is a communication mode in order to have control of the PDP monitor by the PC. This mode is called the TEXT COMMUNICATION MODE. In order to go into the TEXT COMMUNICATION MODE, a connection command needs to be issued. Furthermore, after the connection command is issued, the use of the Remote Controller and Main Body Key control is cut off.

5. Example of Protocol

The example of protocol is as shown below.



6. List of Commands

Command / Status	Contents
@GCr	Connection Command
@SCr	Normal Reception Status 1(no return value)
@SXXXXCr	Normal Reception Status 2(with return value)
@ECr	Abnormal Reception Status
!CRPNCr	Power Supply ON
!CRPFCr	Power Supply OFF
!CRVOCr	Video ON
!CRROCr	RGB 1 ON
!CR2OCr	RGB 2 ON
!CRSOCr	S-Video ON
!CRCOCr	Component Video AUTO input, ON
!CSERCr	Remote Control and Main Body Key USE
!CSDRCr	Remote Control and Main Body Key DISABLE
!CSETRCr	Communicating Remote Control and Main Body Key USE
!CSDTRCr	Communicating Remote Control and Main Body Key DISABLE
!CSRSCr	Current Report Demand
@SSNFVRVMRM-SBAS-Cr	Normal Reception Status and Current Report Demand
!COSDCONCr	To make the OSDC mode EFFECTIVE
!COSDCOFFCr	To make the OSDC mode INVALID
!CLEDD0Cr	LED Compulsory OFF Cancellation
!CLEDD5Cr	LED Compulsory OFF
!CDI01HiLoCr	Aspect
!CDI02HiLoCr	Speaker Volume
!CDI03HiLoCr	Video Mode (NTSC,PAL,SECAM,etc.)
!CSCHKONCr	Transition of Mode (with check sum)
@S93Cr	Transition of Mode (with check sum) Normal Status
!CSCHKOFF68Cr	Transition of Mode (without check sum)
@QCr	Termination of Communication

7. Explanation of Commands

7-1 Communication Control

The communication is done by the handshake method, and the status is returned each time the command is issued. The command and reception status consists of the ASCII code and there are three reception status which is as follows;

NORMAL RECEPTION STATUS 1

@	S	Cr
---	---	----

“Cr” means carriage return which is “ODH” of the ASCII code.
At normal status, this normal reception status is returned unless otherwise mentioned.

NORMAL RECEPTION STATUS 2

@	S	-----	Cr
---	---	-------	----

This is returned when the Current Status Command/Post figures Read Command is issued.

ABNORMAL RECEPTION STATUS

@	E	Cr
---	---	----

7-1-1 Connection Commands

START OF COMMUNICATION

@	G	Cr
---	---	----

By issuing this command, the mode is changed to text mode which makes the command mentioned in 7-2 onwards active.

After this command is issued, wait for the Normal Reception Status (@SCr).
Retry this command when there is no response within 4 seconds.

After the command “@G” is issued, garbage or garbage + “@S” may return.
Retry until only “@S” returns.

7-2 System Control

7-2-1 Power Supply ON

The power supply is turned ON.

!	C	R	P	N	Cr
---	---	---	---	---	----

After this command is issued, wait for 7 seconds before issuing the Power Supply OFF command.
If there is no 7 second interval, the power will not be turned off and “@S” will return.
Issuing this command when the Power Supply is OFF, it will take 10 seconds before the system starts.
Do not issue further commands during this time. If issued, the normal status “@S” may not return.

7-2-2 Power Supply OFF

The power supply is turned OFF.

!	C	R	P	F	Cr
---	---	---	---	---	----

After this command is issued, wait for 5 seconds before issuing the commands: !CPRN, !CRVO, !CRRO, !CRSO, !CR2O, !CRCO.
If there is no 5 second interval, the power will not be turned ON, and “@S” will return.

7-2-3 Video (Composite) ON

The mode is changed to Video.

!	C	R	V	O	Cr
---	---	---	---	---	----

*1 After this command is issued, wait for 7 seconds before issuing the Power Supply OFF command. If there is no 7 second interval, the power will not be turned off and "@S" will return. Issuing this command when the Power Supply is OFF, it will take 10 seconds before the system starts. Do not issue further commands during this time. If issued, the normal status "@S" may not return.

7-2-4 RGB 1 ON

The mode is changed to RGB 1 mode.

!	C	R	R	O	Cr
---	---	---	---	---	----

*1 As above.

7-2-5 RGB 2 ON

The mode is changed to RGB 2 mode.

!	C	R	2	O	Cr
---	---	---	---	---	----

*1 As above.

7-2-6 S-Video ON

The mode is changed to S-Video input.

!	C	R	S	O	Cr
---	---	---	---	---	----

*1 As above.

7-2-7 Component Video AUTO input ON

The mode is changed to Component Video AUTO.

!	C	R	C	O	Cr
---	---	---	---	---	----

*1 As above.

7-2-8 Remote Control and Main Body Key Use

**Caution! When using these commands other than adjustments and evaluation at the factory.*

1) Use of the Remote Control and Main Body Keys are permitted. (Default)

This command is permanent, and will be in effect even after the communication is terminated.

!	C	S	E	R	Cr
---	---	---	---	---	----

2) Use of the Remote Control and Main Body Keys are prohibited.

This command is permanent, and will be in effect even after the communication is terminated.

Then this command is issued, Remote Control and the Main Body Key cannot be used until the command "!CSERCr" is issued.

!	C	S	D	R	Cr
---	---	---	---	---	----

3) Communicating Remote Control and Main Body Keys are permitted.

!	C	S	E	T	R	Cr
---	---	---	---	---	---	----

4) Communicating Remote Control and Main Body Keys are prohibited.(Default)

!	C	S	D	T	R	Cr
---	---	---	---	---	---	----

After termination of communication, 3), 4), will return to default.

After the main Power Supply is turned off, 1), 2), 3), 4) will return to default.

7-2-9 *Current Status Report*

The current status is reported.

!	C	S	R	S	Cr
---	---	---	---	---	----

At normal status, the following is returned.

@	S	S	N	V	V	R	-	S	A	-	Cr
			F	R	M	M		B	S		

NF: Power supply

N: Power Supply ON
 F: Power Supply OFF
 S: Power Supply Stand-by(DPMS is status OFF)

VR: Mode

V: Video
 R: RGB 1
 2: RGB 2
 S: S-Video
 5: Component Video DVD 50Hz
 6: Component Video DVD 60Hz
 H: Component Video HDTV
 E: Component Video ELSE

VM: VIDEO/S mode details

0: Auto
 1: NTSC
 2: PAL
 3: SECAM
 4: NTSC 4.43
 5: M-PAL
 6: N-PAL

RM: RGB mode 1 / 2

0: MODE 1
 ~
 F: MODE 16

AS: Current Aspect

0: Normal
 1: Auto
 2: Wide 1
 3: Wide 2
 4: Zoom 1
 5: Zoom 2

7-2-10 *Display Control Command*

1)OSDC Display is effective. (not effective when power is OFF)

!	C	O	S	D	C	O	N	Cr
---	---	---	---	---	---	---	---	----

2)OSDC Display is invalid. Information such as signal sources will not be displayed on the panel. (not effective when power is OFF)

!	C	O	S	D	C	O	F	F	Cr
---	---	---	---	---	---	---	---	---	----

Caution! Do not terminate the RS communication while the OSDC is invalid. Proper operation cannot be guaranteed when this is done.

7-2-11 LED Control Command

LED Compulsory OFF Cancellation.

!	C	L	E	D	0	0	Cr
---	---	---	---	---	---	---	----

LED Compulsory OFF. When this command is issued, the LED display will be turned off.

!	C	L	E	D	0	5	Cr
---	---	---	---	---	---	---	----

7-2-12 Aspect Command

The display is compulsorily changed to Wide/Zoom. (not effective when power is OFF)

!	C	D	I	0	1	Hi	Lo	Cr
---	---	---	---	---	---	----	----	----

Hi:Lo hexadecimal number value

00: Normal Display

01: Auto (Ineffective at RGB1/RGB2/Component Video mode)

02: WIDE 1 (Ineffective at RGB1/RGB2 mode)

03: WIDE 2

04: ZOOM 1 (Ineffective at RGB1/RGB2 mode)

05: ZOOM 2 (Ineffective at RGB1/RGB2 mode)

7-2-13 Speaker Volume Command

The volume of the built-in speaker is adjusted.

!	C	D	I	0	2	Hi	Lo	Cr
---	---	---	---	---	---	----	----	----

Hi:Lo hexadecimal number value.

00: Minimum Volume

~

3F: Maximum Volume

7-2-14 Video Mode Command

The video mode is compulsorily switched regardless of the state of the signal.

!	C	D	I	0	3	Hi	Lo	Cr
---	---	---	---	---	---	----	----	----

Hi:Lo hexadecimal number value

00: AUTO

01: Compulsory NTSC 3

02: Compulsory PAL

03: Compulsory SECAM

04: Compulsory NTSC 4.43

05: Compulsory M-PAL

06: Compulsory N-PAL

Caution! Turn the power ON and change to video mode before using this command.

7-2-15 Transition of Mode (with check sum)

!	C	S	C	H	K	O	N	Cr
---	---	---	---	---	---	---	---	----

By issuing this command, check sum will be added.

The check sum is to be the added figure of the ASCII code and to have converted the subordinate 8 bits into a 2 figure hexadecimal number. (Carriage return is not included)

At normal status, the following is returned.

@	S	9	3	Cr
---	---	---	---	----

7-2-16 Transition of Mode (without check sum)

Initial status is without check sum.

!	C	S	C	H	K	O	F	F	6	8	Cr
---	---	---	---	---	---	---	---	---	---	---	----

21 + 43 + 53 + 43 + 48 + 4B + 4F + 46 + 46

=268 (hexadecimal number value)

Check sum (subordinate 8 bits of 268 = 68)

At normal status, the following is returned.

@	S	Cr
---	---	----

7-2-17 Termination of Communication

The text mode is terminated.

@	Q	Cr
---	---	----