

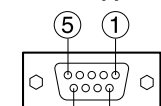
Panasonic Projectors RS-232C Control Specifications

PT-D7700/PT-DW7000 PT-D3500

The main unit is equipped with SERIAL terminals located in its terminal section on the side, and this terminal is compliant with RS-232C.

Pin assignments and signal names

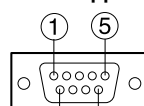
D-Sub 9-pin (female), external appearance



Serial input terminal

Pin No.	Signal name	Description
①		NC
②	TXD	Send data
③	RXD	Receive data
④		Connected internally
⑤	GND	Ground
⑥		NC
⑦	CTS	Connected internally
⑧	RTS	
⑨		NC

D-Sub 9-pin (male), external appearance



Serial output terminal

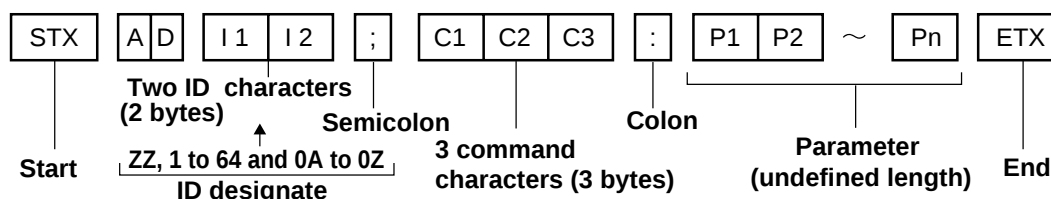
Pin No.	Signal name	Description
①		NC
②	RXD	Receive data
③	TXD	Send data
④		NC
⑤	GND	Ground
⑥		NC
⑦	RTS	Connected internally
⑧	CTS	
⑨		NC

Communication conditions (Factory setting)

Signal level	RS-232C-compliant
Synchronization method	Start-stop synchronization
Baud rate	9 600bps
Parity	None
Character length	8 bits
Stop bit	1 bit
X parameter	None
S parameter	None

Basic format

Transmission from the computer begins with STX, then the ID, command, parameter, and ETX are sent in this order. Add parameters according to the details of control.



- Attention**
- No command can be sent or received for 10 to 60 seconds after the lamp starts lighting. Try sending any command after that period has elapsed.
 - When sending several commands, be sure to wait for more than 0.5 seconds after receiving a response from the projector, and then send the next command.
- When sending commands without parameters, a colon (:) is not necessary.

- Note**
- If a wrong command is received, the projector will send an ER401 or ER402 command to the computer.
 - Projector ID supported on the RS-232C interface is ZZ (ALL) and a group of 1 to 64 and 0A to 0Z.
 - If a command is sent with a projector ID specified, the projector will return answer back only in the following cases:
If it coincides with the projector ID,
ID specification is ALL and VPS-SYSTEM is the master, or
ID specification is group and Group is the master.

Control commands

Item	Command:Parameter	Function	Call Back	D7700/DW7000	D3500	Remarks
POWER	PON	POWER ON	PON	YES	YES	
	POF	STANDBY(POWER OFF)	POF	YES	YES	
FREEZE	OFZ:0	FREEZE OFF	OFZ:0	YES	YES	
	OFZ:1	FREEZE ON	OFZ:1	YES	YES	
AUTO SETUP	OAS	AUTO SETUP	OAS	YES	YES	
SHUTTER	OSH:0	SHUTTER OFF	OSH:0	YES	YES	
	OSH:1	SHUTTER ON	OSH:1	YES	YES	
INPUT SELECT	IIS:RG1	RGB-1	IIS:RG1	YES	YES	
	IIS:RG2	RGB-2	IIS:RG2	YES	YES	
	IIS:VID	VIDEO	IIS:VID	YES	YES	
	IIS:SVD	S-VIDEO	IIS:SVD	YES	YES	
	IIS:DVI	DVI	IIS:DVI	NO	YES	
	IIS:AUX	AUX	IIS:AUX	YES	NO	
	IIS:AUX,AW1	AUX LINE(Only MD95VM2)	IIS:AUX,AW1	YES	NO	
	IIS:AUX,AW2	AUX Y/C (Only MD95VM2)	IIS:AUX,AW2	YES	NO	
TEST	OTS:00	EXIT Test Pattern	OTS:00	YES	YES	
	OTS:01	WHITE	OTS:01	YES	YES	
	OTS:02	BLACK	OTS:02	YES	YES	
	OTS:03	CHECKER1	OTS:03	YES	YES	
	OTS:04	CHECKER2	OTS:04	YES	NO	
	OTS:05	1% WHITE WINDOW	OTS:05	YES	YES	
	OTS:06	1% BLACK WINDOW	OTS:06	YES	YES	
	OTS:07	CROSS HATCH	OTS:07	YES	YES	
	OTS:08	COLOR BAR	OTS:08	YES	YES	
	OTS:09	RAMP	OTS:09	NO	YES	
ON SCREEN	OOS:0	OSD OFF	OOS:0	YES	YES	
	OOS:1	OSD ON	OOS:1	YES	YES	
MUTE	AMT:0	AUDIO MUTE OFF	AMT:0	NO	YES	
	AMT:1	AUDIO MUTE ON	AMT:1	NO	YES	

Adjustment Mode

Item	Command:Parameter	Function	Call Back	D7700/DW7000	D3500	Remarks
PICTURE MODE	VPM:NAT	NATURAL	VPM:NAT	YES	YES	
	VPM:STD	STANDARD	VPM:STD	YES	YES	
	VPM:DYN	DYNAMI	VPM:DYN	YES	YES	
	VPM:CIN	CINEMA	VPM:CIN	YES	YES	
	VPM:GRA	GRAPHIC	VPM:GRA	YES	YES	
COLOR	VCO:p1p2p3	COLOR Value Adjust	VCO:p1p2p3	YES	YES	From0 To 100 *1
TINT	VTN:p1p2p3	TINT Value Adjust	VTN:p1p2p3	YES	YES	From0 To 62 *3
COLOR TEMP.	OTE:0	LOW	OTE:0	YES	NO	
	OTE:1	MIDDLE	OTE:1	YES	YES	
	OTE:2	HIGH	OTE:2	YES	YES	
	OTE:4	USER (USER1)	OTE:4	NO	YES	
	OTE:9	USER2	OTE:9	YES	NO	
	OTE:10	DEFAULT	OTE:10	YES	YES	
CONTRAST	VCN:p1p2p3	CONTARST Value Adjust	VCN:p1p2p3	YES	YES	From0 To 63 *1
BRIGHTNESS	VBR:p1p2p3	BRIGHTNESS Value Adjust	VBR:p1p2p3	YES	YES	From0 To 63 *1
SHARPNESS	VSR:p1p2p3	SHARPNESS Value Adjust	VSR:p1p2p3	YES	YES	<SD> From0 To 15, <HD,RGB>From0 To 7 *1
SET DATE	TSD:y1y2y3y4m1m2d1d2w	Set Date	TSD:y1y2y3y4m1m2d1d2w	YES	YES	y1y2y3y4m1m2d1d2+Date of Week Mon=1,Tue=2,...,Sun=7 *2
SET TIME	TST:h1h2m1m2s1s2	Set Time	TST:h1h2m1m2s1s2	YES	YES	*2
VOLUME	AVL:p1p2p3	AUDIO VOLUME	AVL:p1p2p3	NO	YES	
				NO	YES	

*1: Regarding p1p2p3, +1,+01,+001,1,01,001 are All Accepted *2: Date/Time Should be set on UTC (Coordinate Universal Time)

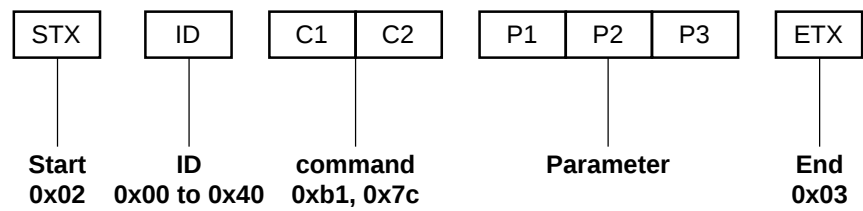
Status Asking Comman

Item	Command:Parameter	Function	Call Back	D7700/DW7000	D3500	Meaning	Remarks
POWER CONDITION	QPW	Main Power Status	000 001	YES YES	YES YES	STANDBY(OFF) ON	
FREEZE	QFZ	Freeze Function Status	0 1	YES YES	YES YES	OFF ON	
SHUTTER	QSH	Shutter Status	0 1	YES YES	YES YES	OFF ON	
INPUT SIGNAL	QIN QIN:AW QIN:AW	Input Signal Status	RG1 RG2 VID SVDYES DVI AUX AUX,AW1 AUX,AW2	YES YES YES YES NO YES YES YES	YES YES YES YES YES NO NO NO	RGB1 RGB2 VIDEO S-VIDEO DVI AUX AUX LINE AUX Y/C	 MD95VM2 MD95VM2
TEST	QTS	Test Pattern Status	00 01 02 03 04 05 06 07 08 09	YES YES YES YES YES YES YES YES YES NO	YES YES YES YES NO YES YES YES YES YES	EXIT Test Pattern WHITE BLACK CHECKER1 CHECKER2 1% WHITE WINDOW 1% BLACK WINDOW CROSS HATCH COLOR BAR RAMP	
ON SCREEN	QOS	ON SCREEN Status	0 1	YES YES	YES YES	off on	
PICTURE MODE	QPM	PICTURE MODE Status	NAT STD DYN CIN GRA	YES YES YES YES YES	YES YES YES YES YES	NATURAL STANDARD DYNAMIC CINEMA GRAPHIC	
COLOR	QVC	COLOR Adjust Value Check	p1p2p3	YES	YES		
TINT	QVT	TINT Adjust Value Check	p1p2p3	YES	YES		
COLOR TEMP.	QTE	COLOR TEMP Status Check	0 1 2 4 9 10	YES YES YES YES YES YES	NO YES YES YES NO YES	LOW MIDDLE HIGH USER (USER1) USER2 DEFAULT	
CONTRAST	QVR	CONTARST Adjust Value Checking	p1p2p3	YES	YES		
BRIGHTNESS	QVB	BRIGHTNES Adjust Value	p1p2p3	YES	YES		
SHARPNESS	QVS	SHARPNESS Adjust Value	p1p2p3	YES	YES		
SET RUNTIME	QST	Set Run Time Check	p1p2p3p4p5	YES	ES	00000h~99999h	
LAMP ON TIME	Q\$!:1 Q\$!:2	LAMP1 Run Time Check LAMP2 Run Time Check	p1p2p3p4 p1p2p3p4	YES YES	YES NO	0000h~9999h	
LAMP SELECT	QSL	Lamp Operation Mode Check	0 1 2 3	YES YES YES YES	NO NO NO NO	DUAL SINGLE LAMP1 LAMP2	
LAMP POWER	QLP	LAMP POWER Mode Check	0 1 2	YES YES TBD	YES YES YES	HIGH LOW (RESERVED)	
VPS SYSTEM	QVY	VPS SYSTEM Check	0 1	YES YES	NO NO	SLAVE MASTER	

INPUT BOARD	QIB	Check the type of Input Board	p1p2p3p..... (Voluntary length)	YES	NO	MD95VM2	No board Unknown board Unsupported board
				YES	NO	MD95SD1	
				YES	NO	MD95SD2	
				YES	NO	MD95SD3	
				YES	NO	MD95RGB	
				YES	NO	MD75NT	
				YES	NO	MD75DV	
				YES	NO	MD77SD1	
				YES	NO	MD77SD3	
				YES	NO	MD77DV	
				YES	NO	NONE	
				YES	NO	UNKNOWN	
				YES	NO	NOT SUPPORT	
TEMP CHECK	QTM:0	Check the status of Temperature Sensor	p1p2p3p4/p5p6p7p8 (Celsius/ Fahrenheit)	YES	YES	INPUT AIR	
	QTM:1			YES	NO	OUTPUT AIR	
	QTM:2			YES	YES	OPTICAL MODULE	
GET DATE	QGD	Check the Day	y1y2y3y4m1m2d1d2w	YES	YES	Yyyymmdd (day of the week)	Mon=1,Tur=2,...,Sun=7
GET TIME	QGT	Check the Time	h1h2m1m2s1s2	YES	YES	hhmmss	UTC
MUTE	QAM	Audio Mute Status	0	NO	YES	MUTE OFF	
			1	NO	YES	MUTE ON	
VOLUME	QAV	Volume Status	p1p2p3	NO	YES		

Extended format for lens

Transmission from the computer begins with STX, then the ID, command, parameter, and ETX are sent in this order.



*Lens commands are binary 8byte command. PT-D7600/D7500 ware supported version 2.07

ID: D ALL=0x00, ID1=0x01, ID2=0x02, ID3=0x03, ID4=0x04,... ,ID63=0x3f, ID64=0x40 Projector default setting is ID ALL.
C1 C2: 0xb1 0x7c

P1	P2	P3	Function	D7700/DW7000	D3500
0x00	0x00	0x00	HORIZONTAL SHIFT RIGHT SLOW	YES	NO
0x00	0x01	0x00	HORIZONTAL SHIFT RIGHT NORMAL	YES	NO
0x00	0x02	0x00	HORIZONTAL SHIFT RIGHT FAST	YES	NO
0x00	0x00	0x01	HORIZONTAL SHIFT LEFT SLOW	YES	NO
0x00	0x01	0x01	HORIZONTAL SHIFT LEFT NORMAL	YES	NO
0x00	0x02	0x01	HORIZONTAL SHIFT LEFT FAST	YES	NO
0x01	0x00	0x00	VERTICAL SHIFT UP SLOW	YES	YES
0x01	0x01	0x00	VERTICAL SHIFT UP NORMAL	YES	YES
0x01	0x02	0x00	VERTICAL SHIFT UP FAST	YES	YES
0x01	0x00	0x01	VERTICAL SHIFT DOWN SLOW	YES	YES
0x01	0x01	0x01	VERTICAL SHIFT DOWN NORMAL	YES	YES
0x01	0x02	0x01	VERTICAL SHIFT DOWN FAST	YES	YES
0x02	0x00	0x00	FOCUS +(SHORT) SLOW	YES	YES
0x02	0x01	0x00	FOCUS +(SHORT) NORMAL	YES	YES
0x02	0x02	0x00	FOCUS +(SHORT) FAST	YES	YES
0x02	0x00	0x01	FOCUS -(LONG) SLOW	YES	YES
0x02	0x01	0x01	FOCUS -(LONG) NORM	YES	YES
0x02	0x02	0x01	FOCUS -(LONG) FAS	YES	YES
0x03	0x00	0x00	ZOOM + SLOW	YES	YES
0x03	0x01	0x00	ZOOM + NORMAL	YES	YES
0x03	0x02	0x00	ZOOM + FAST	YES	YES
0x03	0x00	0x01	ZOOM - SLOW	YES	YES
0x03	0x01	0x01	ZOOM - NORMAL	YES	YES
0x03	0x02	0x01	ZOOM - FAST	YES	YES
0x00	0x80	0x01	HORIZONTAL SHIFT HOME POSITION START	NO	NO
0x00	0x80	0x00	HORIZONTAL SHIFT HOME POSITION STOP	NO	NO

For example

1. LENS ZOOM + NORMAL for ID ALL

Send 8 byte command 0x02 0x00 0xb1 0x7c 0x03 0x01 0x00 0x03

Receive 8 byte message from projector 0x02 0x00 0xb3 0x7c 0x03 0x01 0x00 0x03
2. VERTICAL SHIFT DOWN FAST for ID ALL

Send 8 byte command 0x02 0x00 0xb1 0x7c 0x01 0x02 0x01 0x03

Receive 8 byte message from projector 0x02 0x00 0xb3 0x7c 0x01 0x02 0x01 0x03

Cable specifications

<Connecting to a PC>

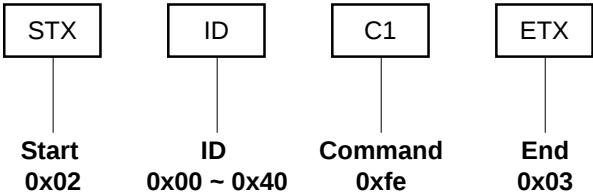
Projector		Computer (DTE specifications)	
1	NC	NC	1
2			2
3			3
4	NC	NC	4
5			5
6	NC	NC	6
7			7
8			8
9	NC	NC	9

Attention

• To connect the computer to the SERIAL terminal, prepare an adequate communication cable that fits to your personal computer.

Transmission from the computer

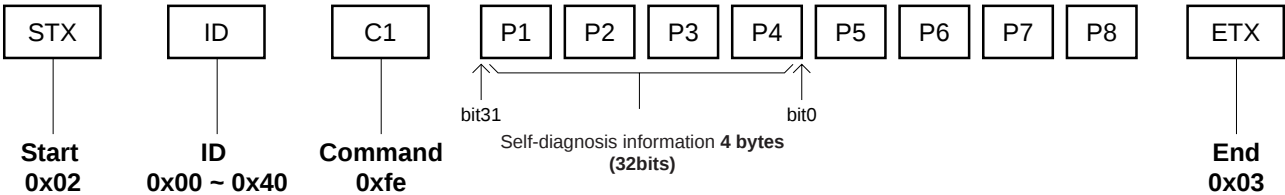
Transmission from the computer begins with STX, then the ID, command, and ETX are sent in this order.



Self-diagnosis result read commands is binary 4 byte command.

ID: ID ALL=0x00, ID1=0x01, ID2=0x02, ID3=0x03, ID4=0x04, ... ,ID63=0x3f, ID64=0x40
Projector default setting is ID ALL.

Responses from the projector



Responses are binary 12 byte command.
Self-diagnosis results are 4 byte (32bit) command.
P5-P8, all 4 bytes are extended bits and the values are undefined.

Bit allocation for Self-diagnosis information

Bit	Title	Description	Condition to clear bit	D7700/DW7000	D3500
bit31	MAIN CPU BUS ERROR	Trouble has occurred in the microcomputer circuitry. If it does not recover after turning power back on, consult your dealer.	Power on	YES	YES
bit30	FAN ERROR	Trouble has occurred in the fan or its drive circuit. If it does not recover after turning power back on, consult your dealer.	Power on	YES	YES
bit29	OPTICS MODULE TEMPERATURE ERROR	The temperature inside the projector is high and the projector has shut down. • Check if the ventilation port is blocked.	Power on	YES	YES
bit28	INPUT AIR TEMPERATURE ERROR	• Is the room air temperature too high? • Check the air filter for clogging.	Power on	YES	YES
bit27	OUTPUT AIR OR LAMP AMBIENT TEMPERATURE ERROR		Power on	YES	YES
bit26	EXTENSION	Undefined value	-	NO	NO
bit25	LAMP2 REMAIN TIME ERROR (Shutdown)	The lamp runtime has exceeded the prescribed cumulative time, and it is now time to replace the lamp.	LAMP 2 reset	YES	NO
bit24	LAMP1 REMAIN TIME ERROR (Shutdown)		LAMP 1 reset	YES	YES
bit23	LAMP2 FAILED TO LIGHT	The lamp has failed to light.	LAMP 2 illuminates	YES	NO
bit22	LAMP1 FAILED TO LIGHT	Did you turn the power back on immediately after turning it off?	LAMP 1 illuminates	YES	YES
bit21	APERTURE (CONTRAST- SHUTTER) ERROR	Trouble has occurred in the aperture. If it does not recover after turning power back on, consult your dealer.	Power on or normal operation of the aperture	YES	NO
bit20	SHUTTER ERROR	Trouble has occurred in the shutter circuitry. If it does not recover after turning power back on, consult your dealer.	Power on	YES or normal operation of the shutter	YES
bit19	OPTICS MODULE TEMP. SENSOR ERROR	Trouble has occurred in the temperature detection sensor inside the projector. Consult your dealer.	Main power on	YES	YES
bit18	INPUT AIR TEMP. SENSOR ERROR	Trouble has occurred in the sensor used to detect the input air temperature. Consult your dealer.	Main power on	YES	YES
bit17	OUTPUT AIR OR LAMP AMBIENT TEMPERATURE ERROR	Trouble has occurred in the sensor used to detect the output air temperature or lamp ambient temperature. Consult your dealer.	Main power on	YES	YES
bit16	CLOCK BATTERY WARNING	The battery has been run out. consult your dealer.	The battery has been changed.	NO	YES
bit15	OPTICS MODULE SENSOR LOW TEMP. WARNING	It may be that the projector is being used where the ambient temperature is low (approx. 0). If the temperature in the projector does not go up within 5 min., the projector will shut down.	• Higher temperature than the warning level during power on • Power on	YES	YES
bit14	OPTICS MODULE SENSOR HIGH TEMP. WARNING	The temperature inside the projector is high. If the temperature goes up, the projector will shut down.	• Higher temperature than the warning level during power on • Power on	YES	YES
bit13	INPUT AIR HIGH TEMP. WARNING	• Check if the ventilation port is blocked. • Is the room air temperature too high?		YES	YES
bit12	OUTPUT AIR OR LAMP AMBIENT HIGH TEMP. WARNING	• Check the air filter for clogging. Undefined value		YES	YES
bit11	TEST	Undefined value	Main power on	YES	YES
bit07	LAMP2 REMAIN TIME WARNING	It is time to replace the lamp. Prepare the new lamp. The projector will shut down within 200 hours.	LAMP 2 reset	YES	NO
bit06	LAMP1 REMAIN TIME WARNING		LAMP 1 reset	YES	YES
bit03	AIRFLOW SENSOR	Trouble has occurred in the air volume sensor. Consult your dealer.	Main power on	NO	NO
bit02	COLOR WHEEL ERROR	Trouble has occurred in the color wheel or its drive circuit. If it does not recover after turning power back on, consult your dealer.	Power on	NO	YES

*The value of NO is undefined.

■ Example

-When the transmission ID from PC is ID ALL and the projector ID is ALL,

Send (the data sent from the computer)

0x02 0x00 0xfe 0x03

Receive (the data received by the computer)

0x02 0x00 0xfe 0x10 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x03

Self-diagnosis information is x10000000, or bit 28 is one so that it is Input temp. error.

- When the transmission ID from PC is ID ALL and the projector ID is 2

Send (the data sent from the computer)

0x02 0x00 0xfe 0x03

Receive (the data received by the computer)

0x02 0x02 0xfe 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x03

Self-diagnosis information is 0x00000000 and it is normal.

Note

•Values of extension bits are undefined. It is normal even if self-diagnosis information is 0x00000001.