ESC/VP21 Command User's Guide for Business Projectors

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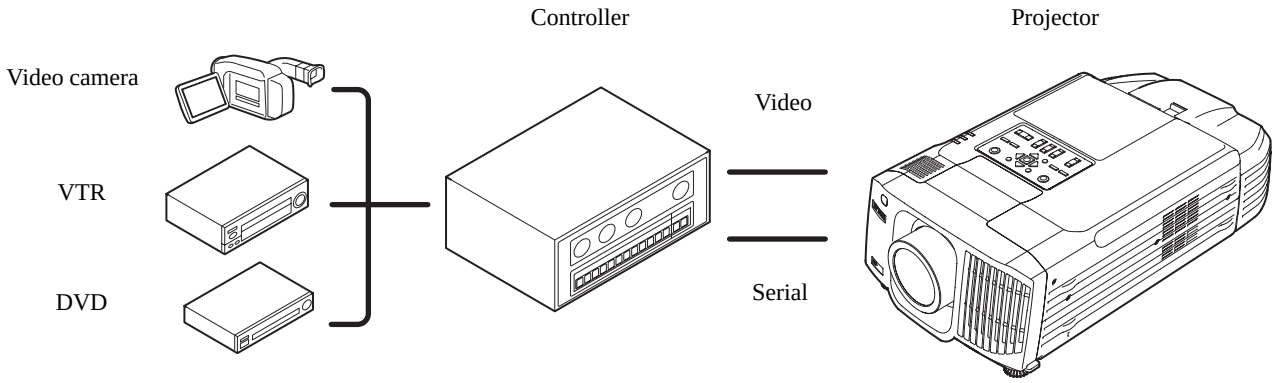
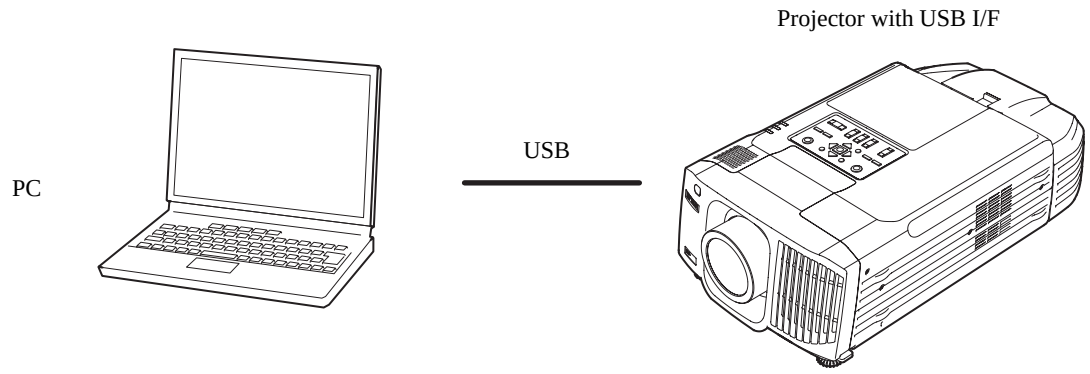
1.Introduction to ESC/VP21

ESC/VP21 is a control command and protocol for Epson projectors, which is used for A/V controller to control and monitor Epson projectors. The command codes are comprised of ASCII codes. Therefore the command codes can be understood very easily and you can easily control projectors using a PC with a terminal emulator such as Microsoft Hyper terminal.
Since ESC/VP21 is independent of communication protocols,Serial, USB or TCP/IP network can be used to transmit the commands to projectors.

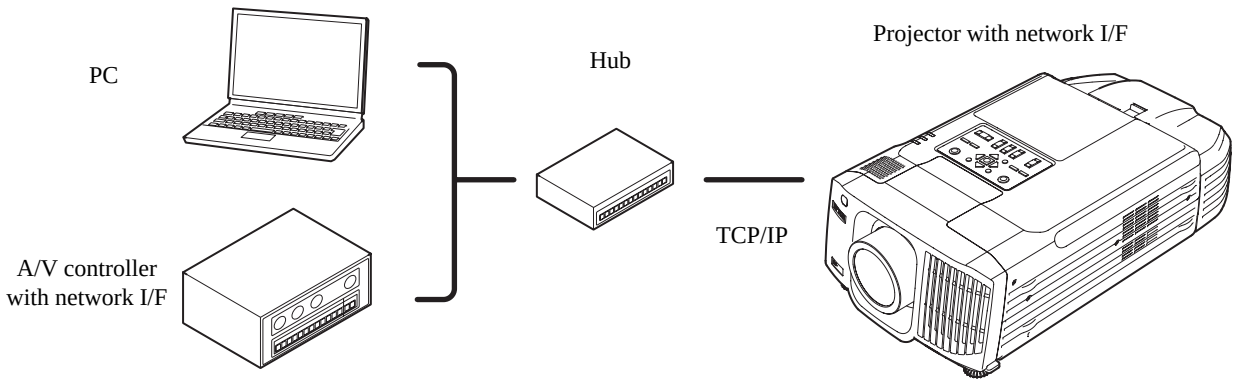
•Serial connection
A/V controllers normally use a serial connection to control projectors. Refer to Appendix for details.



•USB connection
A USB interface can be used to control a projector. Refer to Appendix for details.



•Network connection
After establishing a TCP session, ESC/VP21 commands can be sent to projectors. Refer to ESC/VP.net protocol manual.



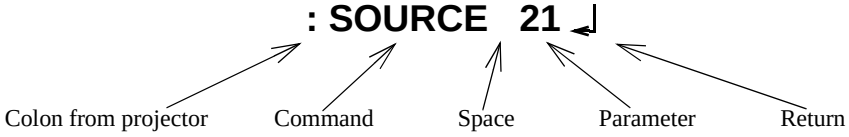
2.ESC/VP21 Command Formats

2.1.Set command format

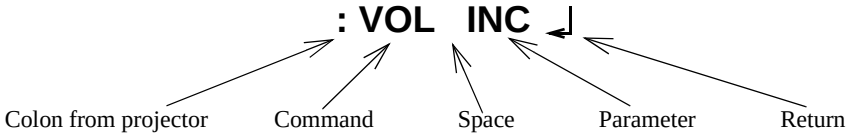
A set command consists of a command and a parameter. Projector returns a colon after executing the command.
There are two types of parameters. One is fixed such as ON, OFF, or 21.Other is a step parameter such as INC, DEC or INIT.

INC increments the parameter by one.
DEC decrements the parameter by one.
INIT initializes the parameter.

Set command example 1



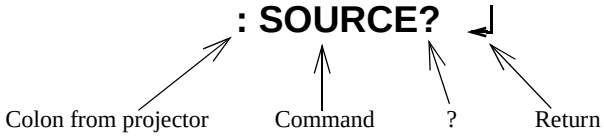
Set command example 2



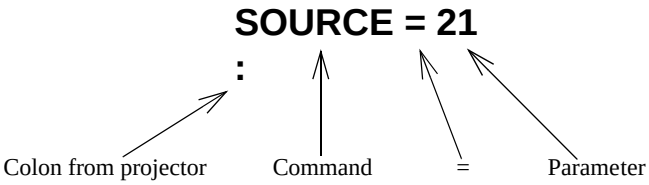
2.2.Get command format

A get command consists of a command and ?. Projector returns a response parameter after executing the command.

Get command example



Response parameter example



2.3.Null command

The null command is a command code of the return key code (Hex 0D). Projector returns a colon. The null command can be used to confirm that the projector is in operation.

2.4.Illegal commands

Projector returns “ERR” and a return key code (Hex 0D) and a colon when it receives invalid commands.

ERR
:

3.Projector state and commands

3.1.Standby state (operation indicator is in orange)

When a projector is in a standby state, executable commands depend on projector models and standby configuration (network on, network off). Refer to the following table.

Models	Configuration	Executable Commands
61/81 830/835 740/745/732/737 821/828 S3/S4 765/760/755/750 62/82/X3(76) 6100/6000 1715/1710/1705/1700	network on/off	PWR ON , PWR? , LAMP?
7800/7850/ 8300/9300 7900/7950 (note3)	network on	PWR ON , PWR? , SOURCE? , Null command (note1)
	network off	PWR ON (note2)
Others	-	

(note1) EMP-61/81/830/835/740/745/821/828 returns "ERR" when it received commands other than PWR ON, PWR? , LAMP? and NULL commands.
(note2) EMP-7800/7850 returns "ERR" when it received commands other than PWR ON, PWR? , SOURCE? and NULL commands.
(note3) EMP-8300/9300 returns "ERR" when it received commands other than PWR ON, SOURCE xx, PWR? , SOURCE? And NULL commands.

All projectors returns "ERR" when the command format is not good.
All projectors returns "ERR" when the projector is not ready to reply the command.
Null command is command name for "ENTER" or "RETURN" key of the keyboard
The reply is ":"

Models	Power Consumption	
	Network off	Network on
78007850 7900/7950	about 1.5W	about 47W
8300/9300	about 1.5W	about 60W
8300+ELPXP01	about 1.5W	about 60W
830/835	about 1.0W	about 38W
740/745 732/737 760/765 750/755	about 4.0W	about 35W (only 745/737/765/755)
61/81,821/828	about 5.0W	about 35W
62/82 X3(76)	about 4.0W about 5.0W: 230V area	about 25W about 23W: 120V area (only 62/82)
6100/6000	about 0.4W	about 10W
1715/1705	about 3.8W	about 18W

3.2.Power on state (operation indicator is in green)

All commands are executable.

4.Command transmission timing

4.1.Standby state

1) For all model with the standby configuration of "network on"
The first command can be sent anytime and the subsequent commands should be sent after receiving a colon from the projector.
2) Other than 1)
PWR ON can be sent any time.

4.2.Power-on state

A command should be sent after receiving the colon of the previous command from the projector. The following is an exception. When the PWR OFF command is sent to 7800/7850/8300/9300 with the standby configuration of “network off”, the subsequent command should be sent 10 seconds after the colon is received.
In case that you can not wait for the colon and send a command after receiving it, instead send a command after the execution time listed in the following table.

Command	Models	Execution time
PWR ON	-	40 seconds (note 1)
	830/835 (note 5) 7900/7950/740/745	20 seconds
	61/81/821/828/S3/S4	25 seconds
PWR OFF (note 4)	600/800/810/811/820	130 seconds
	All others	50 seconds
	830/835	10 seconds
	740/745 821 732/737	20 seconds
	S3/S4 765/760 755/750 62/82/X3(76) 6100/6000 1715/1710/1705/1700	5 seconds
SOURCE (note3)	-	5 seconds (note 2)
All others	-	3 seconds

(note1) When a projector receives the PWR ON command, it tries to ignite the lamp by activating the ballast unit. In case that the lamp fails to be ignited, it tries to ignite the lamp three times at maximum.
When the lamp fails to be ignited three times, it is a lamp failure.
The projector returns a colon within 40, 70 and 100 seconds when successful in the first, second and third times respectively.
(note2) When the input video sync signal is stable, a colon is returned within 5 seconds. However, it may take more than 5 seconds when the input video sync signal is unstable.
(note3) Projector initiates the process of the input video signal recognition when it receives a SOURCE command. If the signal of the video input is changing (for example, from SVGA to XGA by A/V controller) during the process of the input video signal recognition, the projector returns “ERR”.
(note 4) Projectors execute the PWR OFF command after they start completely.
(note 5) Projectors might return "ERR" when "Quick Setup" and "Auto Focus" functions are set to ON.

4.3.Warning and abnormal cases

Projector executes commands normally while a warning indicator such as a high temperature warning is on.
Projector does not execute commands nor return a colon when the projector is in an abnormal state such as a lamp failure and abnormal high temperature.
As for EMP-6100/6000 and EMP-1715/1710/1705/1700, when an abnormal state is continued for 130 seconds after, PWR ON command becomes possible.

5.Command list and Applicable Models

5.1.Command table 1 (Fixed parameter)

(**O**Supported **-**Not supported)

Function	Command	600/800/ 810/811/ 820	720/730/ 520/735	30/52	73/53 74/54	8300/ 9300	7800/ 7850/ 7900/ 7950	S1/S1H	61/81	830/835
Power control	PWR	O	O	O	O	O	O	O	O	O
Input source	SOURCE	O	O	O	O	O	O	O	O	O
PinP setting	PINP	O	-	-	-	O	O	-	-	O
A/V Mute Screen	MSEL	O	O	O	O	O	O	O	O	O
Auto Keystone	AUTOKEYSTONE	-	O	-	O	-	O	-	O	O
Aspect setting	ASPECT	-	-	-	O	O	O	O	-	O
Color Mode	CMODE	O	O	O	O	O	O	O	O	O
Lamp hour	LAMP?	O	O	O	O	O	O	O	O	O
Brightness level	LUMINANCE	-	-	-	O	O	O	-	O	O
A/V Mute	MUTE	O	O	O	O	O	O	O	O	O
Freeze	FREEZE	-	O	O	O	O	O	O	O	O
Rear Projection	HREVERSE	O	O	O	O	O	O	O	O	O
Ceiling	VREVERSE	O	O	O	O	O	O	O	O	O
Audio Input	AUDIO	O	-	O	O	-	O	-	-	-
Key operation	KEY	O	O	O	O	O	O	O	O	O

Function	Command	740/745 732/737	821/828	S3/S4	765/760 755/750	62/82	X3(76)	6100/ 6000	1715/ 1710/ 1705/ 1700
Power control	PWR	O	O	O	O	O	O	O	O
Input source	SOURCE	O	O	O	O	O	O	O	O
PinP setting	PINP	-	-	-	-	-	-	-	-
A/V Mute Screen	MSEL	O	O	O	O	O	O	O	O
Auto Keystone	AUTOKEYSTONE	O	O	-	O	O	-	-	-
Aspect setting	ASPECT	O	-	O	O	O	O	O	O
Color Mode	CMODE	O	O	O	O	O	O	O	O
Lamp hour	LAMP?	O	O	O	O	O	O	O	O
Brightness level	LUMINANCE	O	O	O	O	O	O	O	O
A/V Mute	MUTE	O	O	O	O	O	O	O	O
Freeze	FREEZE	O	O	O	O	O	O	O	O
Rear Projection	HREVERSE	O	O	O	O	O	O	O	O
Ceiling	VREVERSE	O	O	O	O	O	O	O	O
Audio Input	AUDIO	-	-	-	-	-	-	O -	-
Key operation	KEY	O	O	O	O	O	O	O	O
Closed Caption	CCAP	-	-	-	-	-	-	O	-
Air Filter Alarm Timer	FLWARNING	-	-	-	-	-	-	O	-
Air Filter Timer	FILTIME	-	-	-	-	-	-	O	-
Air Filter Usage Time	FILTER	-	-	-	-	-	-	O	-

5.2.Command table 2 (Step parameter)

(**O**Supported **-**Not supported)

Function	Command	600/800/ 810/811/ 820	720/730/ 520/735	30/52	73/53 74/54	8300/ 9300	7800/ 7850/ 7900/ 7950	S1/S1H	61/81	830/835
Adjust the volume	VOL	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**
Adjust the treble setting (Adjust the tone setting)	TONEH	**O**	(**O**)	(**O**)	**-**	**O**	**O**	**-**	**-**	**O**
Adjust the bass setting	TONEL	**O**	**-**	**-**	**-**	**O**	**O**	**-**	**-**	**-**
Set Brightness	BRIGHT	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**
Set Contrast	CONTRAST	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**
Set Tint	TINT	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**
Set vertical keystone value	VKEYSTONE	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**	**O**
Set horizontal keystone value	HKEYSTONE	**O**	**-**	**-**	**-**	**-**	**O**	**-**	**-**	**O**

Function	Command	740/745 732/737	821/828	S3/S4	765/760 755/750	62/82 X3(76)	6100/ 6000	1715/ 1710/ 1705/ 1700
Adjust the volume	VOL	**O**	**O**	**O**	**O**	**O**	**O**	**O**
Adjust the treble setting (Adjust the tone setting)	TONEH	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Adjust the bass setting	TONEL	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Set Brightness	BRIGHT	**O**	**O**	**O**	**O**	**O**	**O**	**O**
Set Contrast	CONTRAST	**O**	**O**	**O**	**O**	**O**	**O**	**O**
Set Tint	TINT	**O**	**O**	**O**	**O**	**O**	**O**	**O**
Set vertical keystone value	VKEYSTONE	**O**	**O**	**O**	**O**	**O**	**O**	**O**
Set horizontal keystone value	HKEYSTONE	**-**	**-**	**-**	**-**	**-**	**-**	**-**

6.Command Details

6.1.Command table 1 (Fixed parameter)

Set commands	Get commands	Parameter for set (Return code for get)	Models	Function
PWR xx	-	ON	All models	Power on
	-	OFF	All models	Power off
	PWR?	00 **:** "Standby" at the time of "Network off"	61/81 830/835 740/745 732/737 821/828 7900/7950 S3/S4 765/760 755/750 62/82 6100/6000 1715/1710/1705/1700	Return the "Standby" at the time of "Network off" status check
		01 **:** Power on	All models	Return the power on status check
		02 **:** Warm up	6100/6000 1715/1710/1705/1700	Return the warm up status check
		03 **:** Cooling down	6100/6000 1715/1710/1705/1700	Return the cooling down status check
		04 **:** "Standby" at the time of "Network on"	7800/7850 8300/9300 61/81 830/835 7900/7950 62/82 6100/6000 1715/1705	Return the "Standby" at the time of "Network on" status check
		05 **:** Abnomal Standby	6100/6000 1715/1710/1705/1700	After the fixed time passes, an abnormal standby is returned after this machine is abnormally generated.

Set commands	Get commands	Parameter for set (Return code for get)	Models	Function
SOURCE xx	SOURCE?	11 : PC1(analog-RGB) 12 : PC1(digital-RGB) 13 : PC1(RGB-Video) 21 : PC2(analog-RGB) 22 : PC2(RGB-Video RGsB) 23 : Component Video(YCbCr) 24 : Component Video(YPbPr) 41 : Video (RCA) 42 : Video (S)	600/800/810/811/820	Select the input source
		11 : RGB 14 : Input 1(YCbCr) 15 : Input 1(YPbPr) 40 : VIideo 41 : Video(RCA) 42 : Video(S)	30/52 73/53 720/730 S1/S1H	
		11 : RGB 14 : Input 1(YCbCr) 15 : Input 1(YPbPr) 40 : VIideo 41 : Video(RCA) 42 : Video(S) 50 : EasyMP	735	
		10 : INPUT1(D-Sub) 11 : INPUT1(analog-RGB) 13 : INPUT1(RGB-Video) 20 : INPUT2(D-Sub) 21 : INPUT2(analog-RGB) 23 : INPUT2(RGB-Video) 30 : INPUT3(DVI-D) 31 : INPUT3(D-RGB) 40 : Video 41 : Video(RCA) 42 : Video(S) B0 : INPUT4(BNC) B1 : INPUT4(analog-RGB) B2 : INPUT4(RGB-Video) B3 : INPUT4(YCbCr) B4 : INPUT4(YPbPr)	8300/9300	
		10 : INPUT1(D-Sub) 11 : INPUT1(analog-RGB) 13 : INPUT1(RGB-Video) 30 : INPUT3(DVI-D) 31 : INPUT3(D-RGB) 40 : Video 41 : Video(RCA) 42 : Video(S) B0 : INPUT4(BNC) B1 : INPUT4(analog-RGB) B2 : INPUT4(RGB-Video) B3 : INPUT4(YCbCr) B4 : INPUT4(YPbPr)	7800/7850	
		50 : EasyMP	7850/8300+ELPXP01	
		11 : RGB 14 : Input 1(YCbCr) 15 : Input 1(YPbPr) 20 : Input 2 21 : Input 2(RGB) 24 : Input 2(YCbCr) 25 : Input 2(YPbPr) 40 : VIideo 41 : Video(RCA) 42 : Video(S)	54/74	

Set commands	Get commands	Parameter for set (Return code for get)	Models	Function
SOURCE xx	SOURCE?	10 : Input 1 11 : Input 1(RGB) 14 : Input 1(Compornent) 20 : Input 2 21 : Input 2(RGB) 24 : Input 2(Component) 40 : VIideo 41 : Video(RCA) 42 : Video(S)	61/81 821/828 62/82 6100/6000	Select the input source
		10 : Input 1 11 : Input 1(RGB) 14 : Input 1(Compornent) 20 : Input 2 21 : Input 2(RGB) 24 : Input 2(Component) 40 : VIideo 41 : Video(RCA) 42 : Video(S)	830/835	
		50 : Easy MP	835	
		10 : Input 1 11 : Input 1(RGB) 14 : Input 1(Compornent) 40 : VIideo 41 : Video(RCA) 42 : Video(S)	740/745 732/737 S3/S4 765/760 755/750 X3(76) 1715/1710/1705/1700	
		50 : Easy MP	745	
		10 : INPUT1(D-Sub) 11 : INPUT1(RGB) 14 : INPUT1(Component) 30 : INPUT3(DVI-D) 31 : INPUT3(D-RGB) 40 : Video 41 : Video(RCA) 42 : Video(S) B0 : INPUT4(BNC) B1 : INPUT4(RGB) B4 : INPUT4(Component)	79007950	
PINP [source posX posY size] (Ex) PINP␣42␣1␣2␣1	-	source : Video source of sub-screen (Video or S-video) source code posX : X coordinate (0-15)of sub-screen from left Horizontal is divided into 16 (default value is used when omitted) posY : Y coordinate (0-15)of sub-screen from top Vertical is divided into 16 (default value is used when omitted) size : Size of sub-screen 0-4 incremental zoom (default value is used when 0 or omitted)	600/800/810/811/820 7800/7850 8300/9300 830/835* 7900/7950	Set P in P *"830/835" cannot specify a sub-screen. Size should put in “0”.
PINP xx	-	OFF		End PinP

Set commands	Get commands	Parameter for set (Return code for get)	Models	Function
MSEL xx	MSEL?	00 **:** Black screen 01 **:** Blue screen 02 **:** User logo	600/800/810/811/820 730/720/520/735 7800/7850 8300/9300 61/81 830/835 740/745 821 7900/7950 732/737 S3/S4 765/760 755/750 6100/6000 1715/1710/1705/1700	Set A/V Mute Screen
AUTOKEYSTONE xx	AUTOKEY- STONE ?	ON **:** Auto Keystone ON OFF **:** Auto Keystone OFF	73/53/74/54 735 7800/7850 61/81 830/835 740/745/732/737 821/828 7900/7950 765/760 755/750 62/82 1715/1710/1705/1700	Set autokeystone on or off
	-		730/720/520	
ASPECT xx	ASPECT?	10 **:** 4:3 12 **:** zoom 4:3 20 **:** 16:9	74/54 7800/7850 8300/9300 S1/S1H 830/835 7900/7950	Set aspect ratio
		10 **:** 4:3 20 **:** 16:9	73/53 735 740/745 732/737 S3/S4 765/760 755/750 62/82/X3(76) 1715/1710/1705/1700	
		In put signal is PC 10 **:** Nomal 12 **:** 4:3 20 **:** 16:9 In put signal is Video 21 **:** 16:9 (up) 22 **:** 16:9 (down)	6100/6000	

Set commands	Get commands	Parameter for set (Return code for get)	Models	Function
CMODE xx	CMODE?	01 : sRGB 02 : Normal 03 : Meeting 04 : Presentation 05 : Theater 06 : Amusement	30/52 73/53 720/730 735 600/800/810/811/820	Set color Mode
		01 : sRGB 04 : Presentation 05 : Theater 08 : Dynamic	7800/7850 8300/9300	
		01 : sRGB 04 : Presentation 05 : Theater 06 : Living Room 08 : Dynamic	S1/S1H 830/835 7900/7950	
		01 : sRGB 04 : Presentation 05 : Theater 06 : Living Room 08 : Dynamic 11 : Black Board	54/74 61/81 740/745 732/737 821/828 765/760 755/750	
		01 : sRGB 04 : Presentation 05 : Theater 06 : Game 08 : Sports 11 : Black Board 14 : Photo	S3/S4 62/82 X3(76) 6100/6000	
		01 : sRGB 04 : Presentation 05 : Theater 06 : Game 08 : Sports 10 : Customized 11 : Black Board 14 : Photo	1715/1710/1705/1700	
-	LAMP?	0-65535	All models	Return the lamp hour
LUMINANCE xx	LUMINANCE ?	00 : High 01 : Low	73/53/74/54 7800/7850 8300/9300 61/81 830/835 740/745 821/828 7900/7950 732/737 S3/S4 765/760 755/750 62/82 X3(76) 6100/6000 1715/1710/1705/1700	Set brightness level
MUTE xx	MUTE?	ON : A/V Mute ON OFF : A/V Mute OFF	All models	Set A/V Mute
FREEZE xx	FREEZE?	ON : Freeze ON OFF : Freeze OFF	All models except 600/800/ 810/811/820	Set freeze
HREVERSE xx	HREVERSE?	ON : rear ON OFF : rear OFF	All models	Set rear projection
VREVERSE xx	VREVERSE?	ON : ceiling ON OFF : ceiling OFF	All models	Set ceiling projection

Set commands	Get commands	Parameter for set (Return code for get)	Models	Function
AUDIO xx	AUDIO?	01 **:** Audio1 02 **:** Audio2 03 **:** USB	600/800/810/811/820	Select audio input
		01 **:** Audio (Computer) 02 **:** Audio (Video)	30/52 73/53/74/54	
		00 **:** Audio 1 (Computer/DVI) 01 **:** Audio 2 (Computer) 02 **:** Audio 3 (DVI)	7800/7850 7900/7950	
		01 **:** Audio1 (When the S-Video is RCA. When the Video is mini) 02 **:** Audio2 (When the S-Video is mini. When the Video is RCA)	6100/6000	
		01 **:** Audio 1 (Internal speaker) 02 **:** Audio 2 (External output)	1715/1705	
KEY xx	-	4A	All models except 600/800/ 810/811/820	Perfrom"Auto-sync" of a remote control button
		47		Perfrom"Freeze" of a remote control button
CCAP xx	CCAP?	00 **:** OFF 11 **:** CC1 12 **:** CC2 13 **:** CC3 14 **:** CC4 21 **:** TEXT1 22 **:** TEXT2 23 **:** TEXT3 24 **:** TEXT4	6100	Select Closed Caption
FLWARNING xx	FLWARNING?	00 **:** ON 01 **:** OFF	6100	Display setting of warning time of Air filter
FLTIME x1 x2		x1 Object of setting 00 **:** All objects 01 **:** Object 1 02 **:** Object 2 03 **:** Object 3 x2 Set time 0 **: 1-100 (100H)** 1 **: 101-200 (200H)** I 14 **: 1401-1500 (1500H)***	6100	Setting of use time of air filter *The maximum value depends on the kind of the air filter and the upper bound value is different.
	FILTER?	0-65535	6100	Acquisition of use time of air filter

6.2.Command table 2 (Step parameter)

Set commands	Initial value	Steps	Models	Function
VOL xx	15	0 - 31	600/800/810/811/820	Set the volume level
	10	0 - 20	720/730/735	
	10	0 - 20	30/52	
	10	0 - 20	73/53/74/54	
	15	0 - 31	8300/9300	
	15	0 - 31	7800/7850/7900/7950	
	10	0 - 20	S1/S1H	
	10	0 - 20	61/81	
	15	0 - 30	830/835	
	10	0 - 20	740/745/732/737765/760/755/750	
	10	0 - 20	821/828	
	10	0 - 20	S3/S4	
	10	0 - 20	62/82/X3(76)	
	10	0 - 20	6100/6000	
	10	0 - 20	1715/1710/1705/1700	
TONEH xx	0	-6 - 6	600/800/810/811/820	Set bass level
	0	-8 - 8	720/730/735	
	0	-8 - 8	30/52	
	0	-6 - 6	8300/9300	
	0	-6 - 6	7800/7850/7900/7950	
	0	-6 - 6	830/835	
TONEL xx	0	-6 - 6	600/800/810/811/820	Set bass level
	0	-6 - 6	8300/9300	
	0	-6 - 6	7800/7850/7900/7950	
BRIGHT xx	0	-30 - 30	600/800/810/811/820	Set brightness
	0	-64 - 64	720/730/735	
	0	-64 - 64	30/52	
	0	-64 - 64	73/53/74/54	
	0	-30 - 30	8300/9300	
	0	-30 - 30	7800/7850/7900/7950	
	0	-20 - 20	S1/S1H	
	0	-32 - 32	61/81	
	0	-30 - 30	830/835	
	0	-12 - 12	740/745/732/737/765/760/755/750	
	0	-32 - 32	821/828	
	0	-12 - 12	S3	
	0	-12 - 12	62/82/X3(76)	
	0	-24 - 24	S4	
	0	-24 - 24	6100/6000	
	0	-24 - 24	1715/1710/1705/1700	

Set commands	Initial value	Steps	Models	Function
CONTRAST xx	0	-30 - 30	600/800/810/811/820	Set contrast
	0	-32 - 32	720/730/735	
	0	-32 - 32	30/52	
	0	-32 - 32	73/53/74/54	
	0	-30 - 30	8300/9300	
	0	-30 - 30	7800/7850/7900/7950	
	0	-30 - 30	S1/S1H	
	0	-32 - 32	61/81	
	0	-30 - 30	830/835	
	0	-32 - 32	740/745/732/737/765/760755/750	
	0	-32 - 32	821/828	
	0	-12 - 12	S3	
	0	-12 - 12	62/82/X3(76)	
	0	-24 - 24	S4	
	0	-24 - 24	6100/6000	
	0	-24 - 24	1715/1710/1705/1700	
TINT xx	0	-15 - 15	600/800/810/811/820	Set tint
	0	-15 - 15	720/730/735	
	0	-32 - 32	30/52	
	0	-32 - 32	73/53/74/54	
	0	-15 - 15	8300/9300	
	0	-5 - 5	7800/7850/7900/7950	
	0	-32 - 32	S1/S1H	
	0	-32 - 32	61/81	
	0	-15 - 15	830/835	
	0	-32 - 32	740/745/732/737/765/760/755/750	
	0	-32 - 32	821/828	
	0	-32 - 32	S3/S4	
	0	-32 - 32	62/82/X3(76)	
	0	-32 - 32	6100/6000	
	0	-32 - 32	1715/1710/1705/1700	
VKEYSTONE xx	0	-60 - 59	600/800/810/811/820	Set vertical keystone value
	0	-30 - 30	720/730/735	
	0	-30 - 30	30/52	
	0	-30 - 30	73/53/74/54	
	0	-64 - 64	8300/9300	
	0	-64 - 64	7800/7850/7900/7950	
	0	-30 - 30	S1/S1H	
	0	-30 - 30	61/81	
	0	-64 - 64	830/835	
	0	-30 - 30	740/745/732/737/765/760755/750	
	0	-30 - 30	821/828	
	0	-60 - 60	S3/S4	
	0	-60 - 60	62/82/X3(76)	
	0	-60 - 60	6100/6000	
	0	-60 - 60	1715/1710/1705/1700	
HKEYSTONE xx	0	-29 - 29	600/800/810/811/820	Set horizontal keystone value
	0	-39 - 39	7800/7850/7900/7950	
	0	-64 - 64	830/835	

7.Appendix

7.1.Communication specification.

A projector and a computer can be connected using a serial or USB port. The projector can be remotely controlled by sending commands to the projector.

Serial Connection (600/800/810/811/820,30/52,73/53/74/54,8300/9300,7800/7850,S1/S1H,61/81,830/835/821,828/7900/7950,62/82,6100/6000)

- Select RS-232C at Advanced Setting of the Menu.
- Communication condition
  - Baud rate : 9600 bps
  - Data length : 8 bits
  - Parity : No
  - Stop bit : 1 bit
  - Flow control : No
- Connector : D-sub 9pin
- Projector input : Control(RS-232C)

<Projector> <Computer>

Projector		PC serial cable	Computer	
GND	5	———	5	GND
RD	2	←———	3	TD
TD	3	———→	2	RD

Signal name	Function
GND	Common ground
TD	Transmitted data
RD	Received data

*DTR and DSR are not used.

USB Connection (600/800/810/811/820,720/730/520,73/53/74/54,735,8300/9300,7800/7850/61/81,830/835,740/745/732/737,821/828,7900/7950,S3/S4,765/760,755/750,62/82/X3(76),1715/1710/1705/1700)

- For 600/800/810/811/820, select USB at Advanced Setting of the Menu.
- For 730/720/520/735/740/745/732/737/S3/765/760/755/750/X3(76)/S4,select Link 21L at Advanced Setting of the Menu.
- For 8300/8350/9300,select USB at Advanced2 Setting of the Menu.
- For 61/81/830/835/821,select USB at Extended Setting of the Menu.
- Epson USB COM Driver has to be installed in your computer to use USB for communication. A COM port is added to your computer, when the projector and your computer is connected by a USB cable. The added COM is listed at PORT (COM/LPT) in the device manager tab of System in Control Panel as EPSON COM Emulation port (COMn).

USB COM Driver	Models
EMPUSBSetup.exe	600/800/810/811/820/720/730/520/73/53/74/54/735
EMPUSB2Setup.exe	7800/7850/8300/9300/61/81/830/835/740/745/732/737/821/828/7900/7950/S3/765/760/755/750/62/82/X3(76)S4/1715/1710/1705/1700

- Connector : USB(B type)

<Projector> <Computer>

Revision History

Revision	Issued Date	Page	Description
A	Sep 16,2005	All pages	First release.
B	Oct 19,2005	All pages.	Correction of disclaimer. Model EMP-755/750 addition.
C	Nov 4,2005	All pages.	Model EMP-62/82/X3(76) addition.
D	Apr 17,2006	All pages.	Model EMP-S4 addition.
E	AUg 11,2006	All pages.	Model EMP-6100/6000 and EMP-1715/1710/1705/1700 addition.