

D-ILA[®] PROJECTOR

D L A – S X 2 1 Series

RS-232C CONTROL SPECIFICATIONS

Ver 0.6

Victor Company of Japan, Limited

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1. OUTLINE

This document describes the communication and data formats used to control the projector via its RS-232C port.

2. COMMUNICATION FORMAT

Transfer Rate : 9600, 19200(default) bps
Data Length : 8 bits
Parity Bit : None
Start Bit : 1 bit
Flow Control : None

3. DATA FORMAT

3.1 Command Data Format (External Control to Projector)

Header ID SP Command SP Parameter SP Parameter SP . . CR

Header : Indicates the beginning of data and data type
'!' (21H) : Command for the Projector
'?' (3FH) : Query to the Projector (Request for data)

ID : Identification number of Projector

SP : Indicates the separation between ID and command, command and parameter, parameter and parameter(20H)

CR : Indicates the end of data(0DH)

3.2 Tally (Response) Data Format (Projector to External Control)

3.2.1 Tally (Response) Data when Terminated Normally

Header ID SP Normal Termination Status SP Parameter SP Parameter . . CR

Header : Indicates the beginning of tally (response) data
'@' (40H)

ID : Identification number of the Projector

SP : Indicates the separation between ID and status, status and parameter, parameter and parameter(20H)

Normal Termination Status : '0' (30H)

CR : Indicates the end of data(0DH)

* Parameter is sent when tally (response) data is issued in response to a query (request for data.) There is no parameter for tally (response) data in response to a command.

3.2.2 Tally Data when Error Occurs

Header ID SP Error Status CR

Header : Indicates the beginning of the tally (response) data
'@'(40H)

ID : Identification number of Projector

SP : Indicates the separation between ID and Status(20H)

Error Status : 'A00' (41H 30H 30H)
'A01' (41H 30H 31H)
'A02' (41H 30H 32H)
'A03' (41H 30H 33H)
'A04' (41H 30H 34H)
'A05' (41H 30H 35H)
'A0A' (41H 30H 41H)
'A0B' (41H 30H 42H)

CR : Indicates the end of the data(0DH)

*For details on error status, refer to 8. Tally (Response) Data.

3.3 Internal Error Data Format (Projector to External Control)

Header ID SP Internal Error Status SP Parameter SP Parameter SP . . CR

Header : Indicates the beginning of the internal error data
'&(26H)

ID : Identification of Projector

SP : Indicates the separation between ID and status, status and parameter, parameter and parameter(20H)

Internal Error Status : 'E01' (45H 30H 31H)
'E02' (45H 30H 32H)
'E03' (45H 30H 33H)
'E06' (45H 30H 36H)
'E07' (45H 30H 37H)
'E08' (45H 30H 38H)
'E09' (45H 30H 39H)
'E0B' (45H 30H 42H)
'E0C' (45H 30H 43H)
'E11' (45H 31H 31H)
'E12' (45H 31H 32H)
'E15' (45H 31H 35H)
'E20' (45H 32H 30H)

CR : Indicates the end of the data(0DH)

* For details on internal error status, refer to 9. Internal Errors.

4. HEADER

Indicates the beginning and type of communication data.

4.1 External Control to Projector

Character	HEX	Definition
'!	21	Command to the Projector
'?'	3F	Query (request for information) to the Projector

4.2 Projector to External Control

Character	HEX	Definition
'@'	40	Tally (Response) data
'&'	26	Internal error data

5. ID

Numeric characters are used to identify an individual Projector when two or more Projector units are connected to a single control machine. Setting separate identification numbers for each Projector allows independent control of each Projector unit.

Assignable ID numbers

'0' (30H)	'8' (38H)
'1' (31H)	'9' (39H)
'2' (32H)	'A' (41H)
'3' (33H)	'B' (42H)
'4' (34H)	'C' (43H)
'5' (35H)	'D' (44H)
'6' (36H)	'E' (45H)
'7' (37H)	'F' (46H)

* Factory set ID is '1' (31H).

ID number '0' (30H) should be used when assigning all connected Projector units for batch operations. This means that when assigning independent ID numbers to multiple units, 15 of the 16 assignable numbers (from '1' through 'F') can actually be used for registration.

Please note that tally (response) data is not returned from the projector when the global ID assignment function (0) is used.

6. CR

Indicates the end of each set of data. (0DH)

7. PARAMETERS

There are three types of parameters:

1. Indicates the numeric value.
2. Indicates the ON/OFF status.
3. Special parameter.

7.1 Numeric Value Parameter

Signed 2-byte hexadecimal code represented by 4 (byte) characters.
Assignable range is between '8000' and '7FFF'.

Ex-1) The parameter indicating '20' (decimal):
Since '20' (decimal) is represented as '0014' in signed 2-byte hexadecimal,
its parameter is:

'0014'(30H 30H 31H 34H)

Ex-2) The parameter to indicate '-2' (decimal):
Since '-2' (decimal) is represented as 'FFFE' in signed 2-byte hexadecimal, its parameter is:

'FFFE'(46H 46H 46H 45H)

7.2 ON/OFF Status Parameter

Indicates the ON/OFF status of items such as POWER or HIDE.

Character	HEX	Definition
'0'	30	OFF
'1'	31	ON

7.3 Special Parameters

Parameters other than those described in 7.1 to 7.2.

7.3.1 Menu Display Auto OFF Parameter

Character	HEX	Definition
'0'	30	NO
'1'	31	YES

7.3.2 Transfer Rate Parameter

Character	HEX	Definition
'0'	30	9600bps
'1'	31	19200bps

7.3.3 Decoder Parameter

Character	HEX	Definition
'0'	30	AUTO
'1'	31	NTSC
'2'	32	NTSC4.43
'3'	33	PAL
'4'	34	SECAM

7.3.4 Color Temperature Parameter

Character	HEX	Definition
'0'	30	6500K
'1'	31	STD
'2'	32	USER

7.3.5 Input Select Parameter

Character	HEX	Definition
'0'	30	Y/C
'1'	31	VIDEO
'3'	33	D-SUB
'4'	34	BNC
'5'	35	DVI

7.3.6 Projector Operation Mode Parameter

Character	HEX	Definition
'0000'	30H 30H 30H 30H	Standby Mode
'0001'	30H 30H 30H 31H	Power ON Mode
'0002'	30H 30H 30H 32H	Cool-Down Mode
'0004'	30H 30H 30H 34H	Emergency Mode

7.3.7 Aspect Parameter

Character	HEX	Definition
'0'	30	4 : 3
'1'	31	16 : 9

7.3.8 Resize Parameter

Character	HEX	Definition
'0'	30	1 : 1
'1'	31	Full
'2'	32	Aspect

7.3.9 ID Parameter

Character	HEX	Definition
'0'	30	ID 0(global command for all projectors)
'1'	31	ID 1
'2'	32	ID 2
'3'	33	ID 3
'4'	34	ID 4
'5'	35	ID 5
'6'	36	ID 6
'7'	37	ID 7
'8'	38	ID 8
'9'	39	ID 9
'A'	41	ID 10
'B'	42	ID 11
'C'	43	ID 12
'D'	44	ID 13
'E'	45	ID 14
'F'	46	ID 15

7.3.10 Switcher Number Parameter

Character	HEX	Definition
'0001'	30H 30H 30H 31H	Switcher No.1
'0002'	30H 30H 30H 32H	Switcher No.2
'0003'	30H 30H 30H 33H	Switcher No.3
'0004'	30H 30H 30H 34H	Switcher No.4
'0005'	30H 30H 30H 35H	Switcher No.5
'0006'	30H 30H 30H 36H	Switcher No.6
'0007'	30H 30H 30H 37H	Switcher No.7
'0008'	30H 30H 30H 38H	Switcher No.8
'0009'	30H 30H 30H 39H	Switcher No.9
'000A'	30H 30H 30H 41H	Switcher No.10

7.3.11 Back Color Parameter

Character	HEX	Definition
'0'	30	Blue
'1'	31	Black

7.3.12 Clamp Parameter

Character	HEX	Definition
'0'	30	Back Porch
'2'	32	Sync Tip

7.3.13 HDTV Parameter

Character	HEX	Definition
'0'	30	1080i
'1'	31	1035i
'2'	32	sF

7.3.14 Screen Size Parameter

Character	HEX	Definition
'0'	30	4 : 3
'1'	31	16 : 9

7.3.15 Film Mode Parameter

Character	HEX	Definition
'0'	30	OFF
'2'	32	AUTO

8. TALLY(RESPONSE)DATA

The Projector will only accept and process data when the ID number included with the data coincides with the ID-number registered to the Projector itself. (Except when ID = '0') If the received ID-number matches the Projector's ID, it will return a response to the query from the external control unit. This response data is called "Tally (Response) Data". (However, when ID = '0', tally (response) data is not replied.)

The Tally (Response) Data is normally returned within 3 seconds after the data is received. There are some exceptions, however (e.g. POWER command)

After transmitting data, the external control unit cannot transmit subsequent data until the Tally (Response) Data is received. However, if Tally (Response) Data is not returned within 3 seconds after transmitting the data (there are some exceptions such as the POWER command), data transmission can be retried.

8.1 Tally (Response) Data Status

8.1.1 Normal Termination Status

Character	HEX	Definition
'0'	30	Command received and processing terminated

8.1.2 Status when Error Occurs (Error Status)

Character	HEX	Definition
'A00'	41H 30H 30H	Command not supported
'A01'	41H 30H 31H	Invalid parameter
'A02'	41H 30H 32H	Parameter value exceeds operation range
'A03'	41H 30H 33H	Unclassified error
'A04'	41H 30H 34H	Unacceptable command in current mode or Unacceptable command with current setting
'A05'	41H 30H 35H	Command cannot be accepted if no signal.
'A0A'	41H 30H 41H	Time-out occurred with the communication with sub microcomputer
'A0B'	41H 30H 42H	Error occurred with the communication with sub microcomputer

8.2 Tally (Response) Data Parameter

The Tally (Response) Data Parameter is returned when the Tally (Response) Data is issued in response to a query (request for data). No parameter is returned when Tally (Response) Data issued in response to a command or when an error occurs.

9. INTERNAL ERRORS

Error data is returned to the external control unit when an error has occurred.

9.1 Internal Error Data Status (Internal Error Status)

Character	HEX	Definition
'E01'	45H 30H 31H	Lamp did not light
'E02'	45H 30H 32H	Lamp life exceeds guaranteed time
'E03'	45H 30H 33H	IIC ACK error occurs
'E06'	45H 30H 36H	Lamp suddenly goes out (Lamp Shut Down) while projecting (in Power ON mode)
'E07'	45H 30H 37H	Fan is locked
'E08'	45H 30H 38H	Internal temperature is too high.
'E09'	45H 30H 39H	Temperature around air intake is going up abnormally.
'E0B'	45H 30H 42H	Error occurred with the initialization of decoder.
'E0C'	45H 30H 43H	Initialization of Video Sources (Areas) data was failed.
'E11'	45H 31H 31H	Sub microcomputer is not boost up correctly.
'E12'	45H 31H 32H	Initialization of DDIC/DDCTRL was failed.
'E15'	45H 31H 35H	No lamp unit.
'E20'	45H 32H 30H	Sleep time function works and lamp was lit off.

9.2 Internal Error Data Parameters

There are two parameters for Internal Error Data.

```
Header ID SP Internal Error Status SP Parameter 1 SP Parameter 2 CR
```

Each parameter shows the slave address (Parameter 1) and Sub-Address (Parameter 2) when an IIC ACK error (Error status: 'E03') occurs.

The parameter type is "numeric value".

* Two parameters are also returned when an internal errors other than IIC ACK errors occur. In this case, however, the parameter's numeric value has no meaning.

Ex) Internal error data when IIC ACK error occurs with Slave address 'A0H' and Sub-address of '1F20H':

```
'&' ID SP 'E03' SP '00A0' SP '1F20' CR
```

9.3 Internal Error Data Reply Timing

When returning data, the Projector checks for internal error data. If such data exists, the internal error data is returned before the tally (response) data is transmitted. That is, if an internal error occurs, the Projector retains the internal error data, returning it in order of precedence a request for tally (response) data is received. Once transmitted, internal error data is deleted from the Projector.

10. PROJECTOR OPERATION MODES

This section describes the Projector's four basic operation modes.

10.1 Standby Mode

The Projector enters this mode when it is plugged into an AC outlet. The lamp does not light and the fans do not operate.

10.2 Power ON Mode

This mode is engaged when the POWER ON command is received and processed normally in the Standby mode. The lamp is lighted and the fans start rotating. Images can be projected in this mode.

10.3 Cool-Down Mode

This mode is engaged when the POWER OFF command is received and processed normally in the Power ON mode.

The lamp goes out and the fans are rotated continuously to cool down the lamp.

To avoid the lamp is lighted again in short time, the POWER ON command is not accepted during this mode.

The DLA-SX21 Series, the Cool-Down Mode time is approximate 90 seconds. The lamp goes out and the fans are rotated continuously during this mode to cool down the lamp.

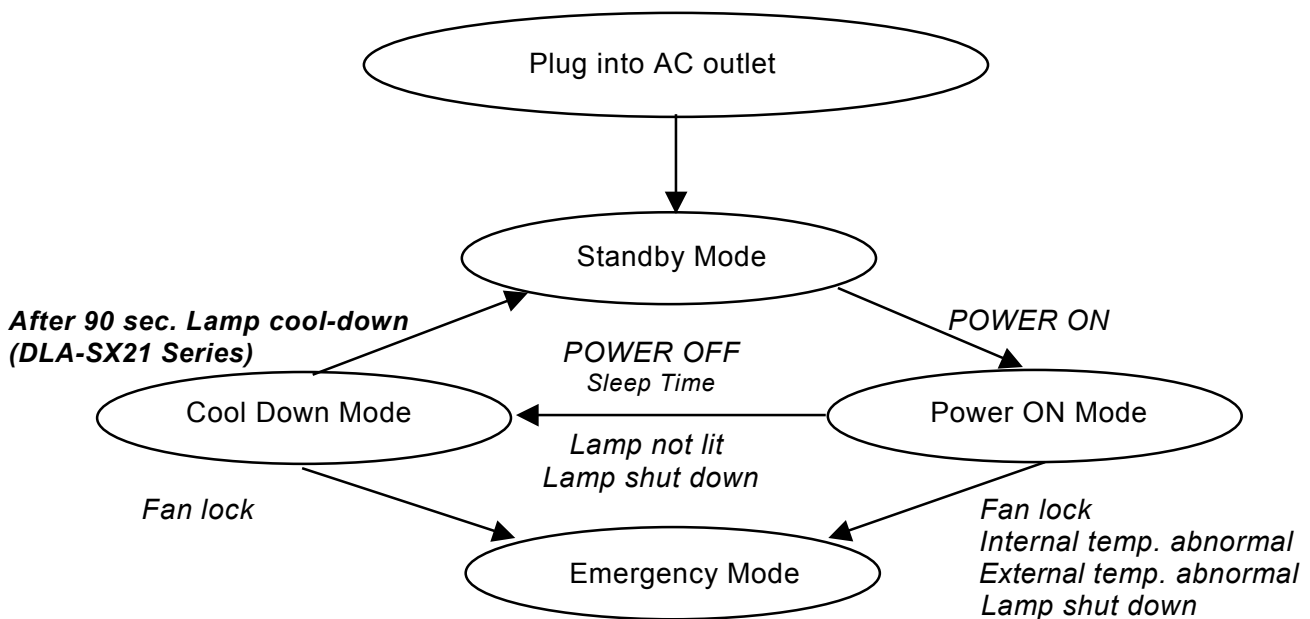
After the mentioned time lapse, the unit automatically enters the Standby mode.

10.4 Emergency Mode

This mode is engaged when the projector malfunctions or is improperly operated.

The lamp and the fans are shut down and the AC outlet is unplugged.

Non-operation status continues until the reset function is activated.



* Note that the acceptance/non-acceptance condition of a command differs depending on the operation mode.

11. SOURCE

The input signals to projectors can be Computer Sources and Video Sources. Although the specific signal names are not given to Computer Sources, these can be specified with the combination of Frequency and Resolution. Video Sources are as follows:

- ◇ NTSC(480i), PAL/SECAM, NTSC(480p), PAL(625p)
- ◇ HDTV(720p), HDTV(1035i), HDTV(1080i), HDTV(24sF), HDTV(1080i@50), HDTV(24P) HDTV(25sF), HDTV(25P), HDTV(30sF), HDTV(30P)

11.1 Sources (Areas) and Source Numbers

When inputs via a composite / S-VIDEO/RGB

Source	Source No. (Character)	Source No. (HEX)
NTSC(480i)	'00'	30H 30H
PAL / SECAM	'02'	30H 32H
NTSC(480p)	'04'	30H 34H
PAL(625p)	'05'	30H 35H
DTV(720p)	'06'	30H 36H
HDTV(1035i)	'07'	30H 37H
HDTV(1080i)	'08'	30H 38H
HDTV(24sF)	'09'	30H 39H
HDTV(1080i@50) HDTV(25sF)	'0A'	30H 41H
HDTV(24P)	'0B'	30H 42H
HDTV(25P)	'0D'	30H 44H
HDTV(30sF)	'0E'	30H 45H
HDTV(30P)	'0F'	30H 46H
Computer Sources	'F0'	46H 30H
No Signal	'FF'	46H 46H

When inputs via a YPbPr

Source	Source No. (Character)	Source No. (HEX)
NTSC(480i)	'80'	38H 30H
PAL / SECAM	'82'	38H 32H
NTSC(480p)	'84'	38H 34H
PAL(625p)	'85'	38H 35H
DTV(720p)	'86'	38H 36H
HDTV(1035i)	'87'	38H 37H
HDTV(1080i)	'88'	38H 38H
HDTV(24sF)	'89'	38H 39H
HDTV(1080i@50) HDTV(25sF)	'8A'	38H 41H
HDTV(24P)	'8B'	38H 42H
HDTV(25P)	'8D'	38H 44H
HDTV(30sF)	'8E'	38H 45H
HDTV(30P)	'8F'	38H 46H
No Signal	'FF'	46H 46H

RGB signals or YPbPr signal is fed to BNC input terminal, the different Source No is given even if the same type of Source.

※ Note that the acceptance / non-acceptance of a command is differ depending on the Source (Area) actually registered on the Projector.

12. COMMANDS

This section describes the commands that can be used with the Projector.

- ◇ In the Communication Examples, the ID number registered on the Projector is represented as '1' (31H). This is the default setting.
- ◇ "CTRL" refers to transmissions from the external control unit and "DLA" refers to transmissions (Tally (Response) Data) from the Projector.
- ◇ "Reply Time" refers to the maximum time required between command reception and return of Tally (Response) Data. In other words, it refers to the maximum time that the external control unit must wait for the Tally (Response) Data.
- ◇ For details on the different parameters, refer to 7. Parameters.
- ◇ Acceptance or non-acceptance of a command in each operation mode is indicated by "O" (accept) or "X" (does not accept).

12.1 HIDE

: 'U00'(55H 30H 30H)

Definition : Controls video signal muting

Command : 'U00'(55H 30H 30H)

Parameter type : ON/OFF

Reply time : 3seconds

Conditions :

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ To turn HIDE ON

```
CTLR  '!' '1' SP 'U00' SP '1' CR
DLA    '@' '1' SP '0' CR
```

◇ When requesting current HIDE status (if HIDE status is ON)

```
CTLR  '?' '1' SP 'U00' CR
DLA    '@' '1' SP '0' SP '1' CR
```

◇ When trying to change HIDE status in emergency mode (turn ON)

```
CTLR  '!' '1' SP 'U00' SP '1' CR
DLA    '@' '1' SP 'A04' CR
```

12.2 Back Color

: 'U01'(55H 30H 31H)

Definition : Controls back color

Command : 'U01'(55H 30H 31H)

Parameter type : Special parameter(Refer to 7.3.12 Back Color Parameter.)

Reply time : 3seconds

Conditions :

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying the back color to "black"

```
CTLR  '?' '1' SP 'U01' SP '1' CR
DLA   '@' '1' SP '0' CR
```

- ◇ When requesting the current back color data(if the back color is set to "blue")

```
CTLR  '! ' '1' SP 'U01' CR
DLA   '@' '1' SP '0' SP '0' CR
```

12.3 Horizontal Position

: 'U02'(55H 30H 32H)

Definition : Adjusts the horizontal position
Command : 'U02'(55H 30H 32H)
Parameter type : Numeric,
Reply time : 3seconds
Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying "30" (decimal) as the horizontal position

```
CTLR  '!' '1' SP 'U02' SP '001E' CR
DLA           '@' '1' SP '0' CR
```

- ◇ When requesting current horizontal position data (if horizontal position is set to "30")

```
CTLR  '?' '1' SP 'U02' CR
DLA           '@' '1' SP '0' SP '001E' CR
```

- ◇ When specifying the horizontal position, but the Source (Area) has no signal input

```
CTLR  '!' '1' SP 'U02' SP '001E' CR
DLA           '@' '1' SP 'A05' CR
```

12.4 Vertical Position

: 'U03'(55H 30H 33H)

Definition : Adjusts the vertical position

Command : 'U03'(55H 30H 33H)

Parameter type : Numeric,

Reply time : 3seconds

Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying "5" (decimal) as the vertical position

```
CTLR  '!' '1' SP 'U03' SP '0005' CR
DLA    '@' '1' SP '0' CR
```

- ◇ When requesting current vertical position data (if vertical position is set to "16" (decimal))

```
CTLR  '?' '1' SP 'U03' CR
DLA    '@' '1' SP '0' SP '0010' CR
```

12.5 Phase

: 'U04'(55H 30H 34H)

Definition : Adjusts the phase
Command : 'U04'(55H 30H 34H)
Parameter type : Numeric
Reply time : 3seconds
Conditions : PC1, PC2 input terminal only

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying "50" (decimal) as the phase adjust level

```
CTLR  '!' '1' SP 'U04' SP '0032' CR
DLA   '@' '1' SP '0' CR
```

- ◇ When requesting the current phase adjust level (if phase adjust level is set to "0" (decimal))

```
CTLR  '?' '1' SP 'U04' CR
DLA   '@' '1' SP '0' SP '0000' CR
```

12.6 Tracking

: 'U05'(55H 30H 35H)

Definition : Adjusts tracking
Command : 'U05'(55H 30H 35H)
Parameter type : Numeric
Reply time : 3seconds
Conditions : Computer Sources (Areas)

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying "50" (decimal) as tracking adjust level

```
CTLR  '!' '1' SP 'U05' SP '0032' CR
DLA    '@' '1' SP '0' CR
```

- ◇ When requesting current tracking adjust level data (if tracking adjust level is set to "0" (decimal))

```
CTLR  '?' '1' SP 'U05' CR
DLA    '@' '1' SP '0' SP '0000' CR
```

12.7 Contrast

: 'U06'(55H 30H 36H)

Definition : Adjusts the contrast
Command : 'U06'(55H 30H 36H)
Parameter type : Numeric,
Reply time : 3seconds
Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying "2" (decimal) as the contrast adjust level

```
CTLR  '!' '1' SP 'U06' SP '0002' CR
DLA    '@' '1' SP '0' CR
```

- ◇ When requesting current contrast adjust level data (if contrast adjust level is set to "0" (decimal))

```
CTLR  '?' '1' SP 'U06' CR
DLA    '@' '1' SP '0' SP '0000' CR
```

12.8 Brightness

: 'U07'(55H 30H 37H)

Definition : Adjusts the brightness
Command : 'U07'(55H 30H 37H)
Parameter type : Numeric,
Reply time : 3seconds
Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When specifying "-2" (decimal) as the brightness adjust level

```
CTLR '!' '1' SP 'U07' SP 'FFFE' CR  
DLA '@' '1' SP '0' CR
```

◇ When requesting current brightness adjust level data (if brightness adjust level is set to "0" (decimal))

```
CTLR '?' '1' SP 'U07' CR  
DLA '@' '1' SP '0' SP '0000' CR
```

12.9 Sharpness

: 'U08'(55H 30H 38H)

Definition : Adjusts the sharpness
Command : 'U08'(55H 30H 38H)
Parameter type : Numeric,
Reply time : 3seconds
Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying "2" (decimal) as the sharpness

```
CTLR  '!' '1' SP 'U08' SP '0002' CR  
DLA   '@' '1' SP '0' CR
```

- ◇ When requesting current sharpness adjust level data (if sharpness adjust level is set to "1" (decimal))

```
CTLR  '?' '1' SP 'U08' CR  
DLA   '@' '1' SP '0' SP '0001' CR
```

12.10 Color

: 'U09'(55H 30H 39H)

Definition : Adjusts the color

Command : 'U09'(55H 30H 39H)

Parameter type : Numeric,

Reply time : 3seconds

Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying "-2" (decimal) as the color adjust level

```
CTLR  '!' '1' SP 'U09' SP 'FFFE' CR
DLA   '@' '1' SP '0' CR
```

- ◇ When requesting current color adjust level (if color adjust level is set to "0" (decimal))

```
CTLR  '?' '1' SP 'U09' CR
DLA   '@' '1' SP '0' SP '0000' CR
```

12.11 Tint**:‘U0A’(55H 30H 41H)**

Definition : Adjusts the tint
 Command : ‘U0A’(55H 30H 41H)
 Parameter type : Numeric,
 Reply time : 3seconds
 Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying "-2" (decimal) as the tint adjust level

```
CTLR  '!' '1' SP 'U0A' SP 'FFFE' CR
DLA   '@' '1' SP '0' CR
```

- ◇ When requesting current tint adjust level data (if tint adjust level is set to "0" (decimal))

```
CTLR  '?' '1' SP 'U0A' CR
DLA   '@' '1' SP '0' SP '0000' CR
```

12.12 Color Temperature Table

: 'U0B'(55H 30H 42H)

Definition : Sets the color temperature table

Command : 'U0B'(55H 30H 42H)

Parameter type : Special parameter (Refer to 7.3.4 Color Temperature Parameter.)

Reply time : 3seconds

Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When specifying "STD" as the color temperature

```
CTLR  '!' '1' SP 'U0B' SP '1' CR
DLA   '@' '1' SP '0' CR
```

◇ When requesting current color temperature data (if color temperature is set to "6500K")

```
CTLR  '?' '1' SP 'U0B' CR
DLA   '@' '1' SP '0' SP '0' CR
```

12.13 Color Temperature(RED)

: 'U0C'(55H 30H 43H)

Definition : Adjusts the color temperature(RED)

Command : 'U0C'(55H 30H 43H)

Parameter type : Numeric,

Reply time : 3seconds

Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying "-2" (decimal) as the color temperature(RED) adjust level

```
CTLR  '!' '1' SP 'U0C' SP 'FFFE' CR
DLA    '@' '1' SP '0' CR
```

- ◇ When requesting current color temperature(RED) adjust level data (if color temperature(RED) adjust level is set to "-128" (decimal))

```
CTLR  '?' '1' SP 'U0C' CR
DLA    '@' '1' SP '0' SP 'FF80' CR
```

12.14 Color Temperature(GREEN)

: 'U0D'(55H 30H 44H)

Definition : Adjusts the color temperature(GREEN)

Command : 'U0D'(55H 30H 44H)

Parameter type : Numeric,

Reply time : 3seconds

Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying "-2" (decimal) as the color temperature(GREEN) adjust level

```
CTLR  '!' '1' SP 'U0D' SP 'FFFE' CR
DLA   '@' '1' SP '0' CR
```

- ◇ When requesting current color temperature(GREEN) adjust level data (if color temperature(GREEN) adjust level is set to "-128" (decimal))

```
CTLR  '?' '1' SP 'U0D' CR
DLA   '@' '1' SP '0' SP 'FF80' CR
```

12.15 Color Temperature(BLUE)

: 'U0E'(55H 30H 45H)

Definition : Adjusts the color temperature(BLUE)

Command : 'U0E'(55H 30H 45H)

Parameter type : Numeric,

Reply time : 3seconds

Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying "-2" (decimal) as the color temperature(BLUE)adjust level

```
CTLR  '!' '1' SP 'U0E' SP 'FFFE' CR
DLA    '@' '1' SP '0' CR
```

- ◇ When requesting current color temperature(BLUE)adjust level data
(if color temperature(BLUE)adjust level is set to "-128" (decimal))

```
CTLR  '?' '1' SP 'U0E' CR
DLA    '@' '1' SP '0' SP 'FF80' CR
```

Definition : Controls the power

Command : ‘U0F’(55H 30H 46H)

Parameter type : ON/OFF

Reply time : POWER ON transmission 100seconds(*1)
POWER OFF transmission 3seconds(*2)

Conditions : No query

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
O	O	X	X

Communication Examples

◇ When turning the Projector’s power ON

```
CTLR  '!' '1' SP 'U0F' SP '1' CR
DLA   '@' '1' SP '0' CR
```

*1

When the POWER ON command is received, the Projector returns the Tally (Response) Data after completing all the POWER ON processing operations (lighting lamp, rotating fans, transmitting data, etc.). In most cases, the Tally (Response) Data should be returned within 35 to 40 seconds.

If it takes more time to light up or re-try is done due to internal error , these operations takes maximum around 100 seconds. (The Tally Data is returned within 100 seconds.)

*2

When the POWER OFF command is received during Power-ON mode, the Projector enters the cool-down mode (DLA-SX21 Series: for about 90 seconds) and continue cooling (DLA-SX21 Series: for about 90 seconds).

After cool-down mode is completed, the Projector automatically enters the stand-by mode. (For operation modes, refer to 10. Projector Operation Modes.)

POWER ON command cannot be accepted in the Cool-Down mode. If POWER ON is requested after POWER OFF command is sent, firstly the current operation mode should be asked and then if Standby Mode is confirmed, POWER ON command should be sent. (For the command to request the current operation mode, refer to 12.41 Operation Mode Query.)

12.17 MENU Auto OFF

: 'U10'(55H 31H 30H)

Definition : Controls the display menu auto-off function

Command : 'U10'(55H 31H 30H)

Parameter type : Special parameter (Refer to 7.3.1 Menu Display Auto OFF Parameter.)

Reply time : 3seconds

Conditions :

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying that the menu display is turned off automatically

```
CTLR  '!' '1' SP 'U10' SP '1' CR
DLA    '@' '1' SP '0' CR
```

- ◇ When requesting the current menu display auto-off setting (if menu display does not turn off automatically)

```
CTLR  '?' '1' SP 'U10' CR
DLA    '@' '1' SP '0' SP '0' CR
```

12.18 Line Display

: 'U11'(55H 31H 31H)

Definition : Sets the line source (area) display after changing input terminals

Command : 'U11'(55H 31H 31H)

Parameter type : ON/OFF

Reply time : 3seconds

Conditions :

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When setting the line display to OFF

```
CTLR  '!' '1' SP 'U11' SP '0' CR
DLA   '@' '1' SP '0' CR
```

◇ When requesting the current line display setting (if the line display is set to ON)

```
CTLR  '?' '1' SP 'U11' CR
DLA   '@' '1' SP '0' SP '1' CR
```

12.19 Sleep Time

: 'U12'(55H 31H 32H)

Definition : Sets the sleep time

Command : 'U12'(55H 31H 32H)

Parameter type : (*)

Reply time : 3seconds

Conditions :

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

The "Sleep time" function automatically turns off the projector power if the no-signal status continues for a specified time.

*Available parameters

Sleep time can be set to any of the following:

15 min., 30 min., 60 min., and 0 min.

When the above times are represented as numerical parameters:

	Character	HEX
15min.	'000F'	30H 30H 30H 46H
30min.	'001E'	30H 30H 31H 45H
60min.	'003C'	30H 30H 33H 43H
0min.	'0000'	30H 30H 30H 30H

The sleep time function is disabled when the time is set to "0 min".

#Tally (Response) data format to current sleep time query

'@' '1' SP Normal Termination Status SP Parameter 1 SP Parameter 2 CR

Parameter 1 : Indicates the sleep time specified
(Refer to "Available parameters")

Parameter 2 : Indicates the remaining sleep time.
Parameter type is numeric.

Communication Examples

◇ When specifying "30 min." as the sleep time

CTLR '!' '1' SP 'U12' SP '001E' CR
DLA '@' '1' SP '0' CR

◇ When requesting the current sleep time setting (if the sleep time is set to "15 min." and the remaining time is 3 min.)

CTLR '?' '1' SP 'U12' CR
DLA '@' '1' SP '0' SP '000F' SP '0003' CR

12.20 Right/Left Reverse

: 'U17'(55H 31H 37H)

Definition : Reverses the image horizontally

Command : 'U17'(55H 31H 37H)

Parameter type : ON/OFF

Reply time : 3seconds

Conditions :

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When reversing the image horizontally (Right /Left reverse)

```
CTLR  '!' '1' SP 'U17' SP '1' CR
DLA    '@' '1' SP '0' CR
```

◇ When requesting the current R/L reverse setting (if the image is not reversed horizontally)

```
CTLR  '?' '1' SP 'U17' CR
DLA    '@' '1' SP '0' SP '0' CR
```

12.21 Top/Bottom Invert

: 'U18'(55H 31H 38H)

Definition : Inverts the image vertically

Command : 'U18'(55H 31H 38H)

Parameter type : ON/OFF

Reply time : 3seconds

Conditions :

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When inverting the image vertically (Top/Bottom invert)

```
CTLR  '!' '1' SP 'U18' SP '1' CR
DLA   '@' '1' SP '0' CR
```

◇ When requesting the current Top/Bottom invert setting (if the image is not inverted vertically)

```
CTLR  '?' '1' SP 'U18' CR
DLA   '@' '1' SP '0' SP '0' CR
```

12.22 Decoder**: 'U19'(55H 31H 39H)**

Definition : Selects the color TV broadcast system

Command : 'U19'(55H 31H 39H)

Parameter type : Special parameter (Refer to 7.3.3 Decoder Parameter.)

Reply time : 3seconds

Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When selecting "NTSC" as the broadcast system

```

CTRL  '!' '1' SP 'U19' SP '1' CR
DLA   '@' '1' SP '0' CR

```

◇ When requesting the current broadcast system setting (if the broadcast system is set to PAL)

```

CTRL  '?' '1' SP 'U19' CR
DLA   '@' '1' SP '0' SP '3' CR

```

12.23 Input select

: 'U1A' (55H 31H 41H)

Definition : Selects the video input terminals

Command : 'U1A' (55H 31H 41H)

Parameter type : Special parameter (Refer to 7.3.5 Input Select Parameter.)

Reply time : 3seconds

Conditions :

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When selecting "D-SUB" as the video input

```
CTLR  '!' '1' SP 'U1A' SP '3' CR
DLA   '@' '1' SP '0' CR
```

◇ When requesting the current video input setting (if the video input is selected)

```
CTLR  '?' '1' SP 'U1A' CR
DLA   '@' '1' SP '0' SP '1' CR
```

12.24 Transfer Rate

: 'U1B'(55H 31H 42H)

Definition : Controls the transfer rate for RS-232C

Command : 'U1B'(55H 31H 42H)

Parameter type : Special parameter(Refer to 7.3.2 Transfer Rate Parameter.)

Reply time : 3seconds

Conditions :

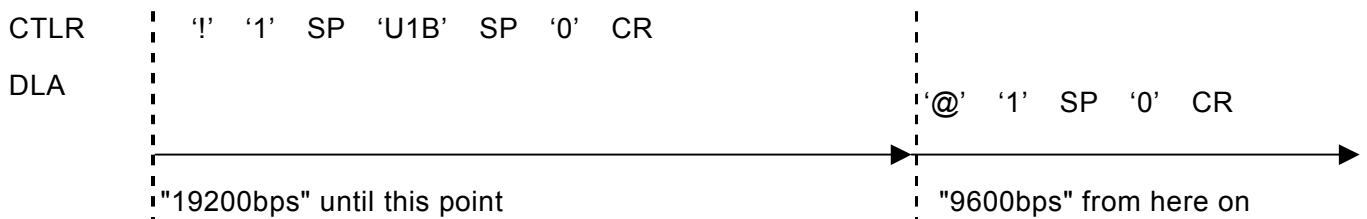
Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
×	○	×	×

* After this command has been received and processed correctly, the Tally (Response) Data is returned at the new transfer rate.

Communication Examples

◇ When changing the transfer rate to "9600 bps" from the current setting of "19200 bps"



* The default transfer rate setting is "19200bps".

12.25 Lamp Time

: 'U1C'(55H 31H 43H)

Definition : Reset/check the lamp operation

Command : 'U1C'(55H 31H 43H)

Parameter type : (*)

Reply time : 3seconds

Conditions :

Operation mode

△ When resetting

Standby mode	Power ON mode	Cool-down mode	Emergency mode
O	X	X	X

△ When requesting current time

Standby mode	Power ON mode	Cool-down mode	Emergency mode
O	O	O	X

Data Format

△ Reset data format

['!] ['1] [SP] ['U1C'] [SP] [Reset Parameter] [CR]

(*)Reset parameter

Character	HEX
' [()] '	5BH 28H 29H 5DH

* Never issue the Reset command unless the lamp has been replaced with a new one.

△ Tally (Response) data format when requesting current time

['@] ['1] [SP] [Normal Termination Status] [SP] [Parameter 1] [SP] [Parameter 2] [CR]

(*)Parameter1

The Projector has an incremental counter which counts Lamp Operation Time at 1 time in every 4 minutes.

Parameter 1 shows this counter value. The parameter type is "numeric".

Actual lamp operating time is obtained by converting the Parameter 1 value into signed2-byte binary hexadecimal and dividing it by 15.

(*)Parameter2

Parameter 2 shows whether the lamp replacement time is close or not, based on the following calculation:

$$(\text{Lamp service life} - 100 \text{ hours}) \leq \text{Lamp operating time} < \text{Lamp service life}$$

	Character	HEX
Lamp replacement time not close	'0'	30H
Lamp replacement time close	'1'	31H
Lamp life exceeded	'2'	32H

Communication Examples

- ◇ When requesting the current lamp operating time (if the lamp operating time is 150 hours)

```
CTLR    '?' '1' SP 'U1C' CR
DLA     '@' '1' SP '0' SP '08CA' SP '0' CR
```

12.26 ID**: 'U1D'(55H 31H 44H)**

Definition : Sets the ID for the Projector

Command : 'U1D'(55H 31H 44H)

Parameter type : Special parameter(Refer to 7.3.10 ID Parameter.)

Reply time : 3seconds

Conditions : No query

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
O	O	O	X

* When this command is received and processed correctly, the Tally (Response) Data is returned with the changed ID number.

Communication Examples

◇ When changing the ID to '7' from the current setting of '1'

```

CTRL  '!' '1' SP 'U1D' SP '7' CR
DLA    '@' '7' SP '0' CR

```

↑
Tally (Response) data is returned with New ID no.

12.28 Resize

: 'U2D'(55H 32H 44H)

Definition : Controls expanded image

Command : 'U2D'(55H 32H 44H)

Parameter type : Special parameter(Refer to 7.3.9 Resize Parameter.)

Reply time : 3seconds

Conditions : Computer Sources (Areas)

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When setting the resize function to 1:1

```
CTLR    '!' '1' SP 'U2D' SP '0' CR
DLA     '@' '1' SP '0' CR
```

◇ When requesting the current resize function setting (if the resize function is set to Full)

```
CTLR    '?' '1' SP 'U2D' CR
DLA     '@' '1' SP '0' SP '1' CR
```

12.29 Aspect Change

: 'U2E'(55H 32H 45H)

Definition : Controls the aspect ratio of the projected image

Command : 'U2E'(55H 32H 45H)

Parameter type : Special parameter(Refer to 7.3.8 Aspect Parameter.)

Reply time : 3seconds

Conditions : Video Sources (Areas)

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When setting the aspect ratio to "4:3"

```
CTLR  '!' '1' SP 'U2E' SP '0' CR
DLA   '@' '1' SP '0' CR
```

◇ When requesting the current aspect ratio setting(if the aspect ratio is set to "16:9")

```
CTLR  '?' '1' SP 'U2E' CR
DLA   '@' '1' SP '0' SP '1' CR
```

12.30 Clamp

: 'U30'(55H 33H 30H)

Definition : Sets the clamp position

Command : 'U30'(55H 33H 30H)

Parameter type : Special parameter(Refer to 7.3.13 Clamp Parameter.)

Reply time : 3seconds

Conditions : PC1, PC2 input terminal only

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying the clamp position as "back porch"

```
CTLR  '?' '1' SP 'U30' SP '0' CR
DLA   '@' '1' SP '0' CR
```

- ◇ When requesting the clamp position setting(if the clamp position is set to "sink tip")

```
CTLR  '! ' '1' SP 'U30' CR
DLA   '@' '1' SP '0' SP '2' CR
```

12.31 Horizontal Frequency Query

: 'U3C'(55H 33H 43H)

Definition : Requests horizontal frequency of picture that is projected

Command : 'U3C'(55H 33H 43H)

Parameter type : Numeric,

Reply time : 3seconds

Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When requesting horizontal frequency (if horizontal frequency is 64.3kHz)

```
CTLR    '?' '1' SP 'U3C' CR
DLA     '@' '1' SP '0' SP '0283' CR
```

Note) Horizontal Frequency is 10 times of data to be returned from Projector. This example shows 283 in hexadecimal, which is 643 in decimal. Horizontal Frequency of Projected image is $643/10 = 64.3\text{kHz}$.

12.32 Vertical Frequency Query**: 'U3D'(55H 33H 44H)**

Definition : Requests vertical frequency of picture that is projected

Command : 'U3D'(55H 33H 44H)

Parameter type : Numeric,

Reply time : 3seconds

Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When requesting vertical frequency (if vertical frequency is 60Hz)

```

CTLR   '?' '1' SP 'U3D' CR
DLA    '@' '1' SP '0' SP '003C' CR

```

12.33 Horizontal Resolution Query

: 'U3E'(55H 33H 45H)

Definition : Requests horizontal resolution of picture that is projected

Command : 'U3E'(55H 33H 45H)

Parameter type : Numeric,

Reply time : 3seconds

Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When requesting horizontal resolution (if horizontal resolution is 1280)

```
CTLR    '?' '1' SP 'U3E' CR
DLA     '@' '1' SP '0' SP '0500' CR
```

12.34 Vertical Resolution Query

: 'U3F'(55H 33H 46H)

Definition : Requests vertical resolution of picture that is projected

Command : 'U3F'(55H 33H 46H)

Parameter type : Numeric,

Reply time : 3seconds

Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When requesting vertical resolution (if vertical resolution is 1024)

```
CTLR    '?' '1' SP 'U3F' CR
DLA     '@' '1' SP '0' SP '0400' CR
```

12.35 V-Keystone(Correction of trapezoid distortion) :'U40'(55H 34H 30H)

Definition : Correction of vertical Keystone

Command : 'U40'(55H 34H 30H)

Parameter type : Numeric,

Reply time : 3seconds

Conditions :

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When specifying "0" (decimal) as vertical keystone

```

CTRL  '!' '1' SP 'U40' SP '0000' CR
DLA                                     '@' '1' SP '0' CR
    
```

◇ When requesting the vertical keystone (if the vertical keystone is set to "0" (decimal))

```

CTRL  '?' '1' SP 'U40' CR
DLA                                     '@' '1' SP '0' SP '0000' CR
    
```

Definition : Sets the vertical lines of HDTV
 Command : ‘U53’(55H 35H 33H)
 Parameter type : Special parameter(Refer to 7.3.14 HDTV Parameter.)
 Reply time : 3seconds
 Conditions : HDTV Sources(Areas)

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When specifying the HDTV to “1035i”

```

CTLR  '?' '1' SP 'U53' SP '1' CR
DLA   '@' '1' SP '0' CR
    
```

◇ When requesting the HDTV setting(if the HDTV is set to "1080i")

```

CTLR  '! '1' SP 'U53' CR
DLA   '@' '1' SP '0' SP '0' CR
    
```

12.37 Screen Size

: 'U54'(55H 35H 34H)

Definition : Sets the screen size

Command : 'U54'(55H 35H 34H)

Parameter type : Special parameter(Refer to 7.3.15 Screen Size Parameter.)

Reply time : 3seconds

Conditions : Except when there is no Source (Area) signal

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying the screen size to "4 : 3"

```
CTLR  '?' '1' SP 'U54' SP '1' CR
DLA   '@' '1' SP '0' CR
```

- ◇ When requesting the screen size setting(if the screen size is set to "16 : 9")

```
CTLR  '! ' '1' SP 'U54' CR
DLA   '@' '1' SP '0' SP '1' CR
```

12.38 Film Mode**:‘U5B’(55H 35H 42H)**

Definition : Sets the film mode

Command : ‘U5B’(55H 35H 42H)

Parameter type : Special parameter(Refer to 7.3.16 Film Mode Parameter.)

Reply time : 3seconds

Conditions : Video Sources (NTSC, PAL, SECAM, HDTV etc)

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying the film mode to “AUTO”

```

CTRL  '?' '1' SP 'U5B' SP '2' CR
DLA   '@' '1' SP '0' CR

```

- ◇ When requesting the film mode setting(if the film mode is set to "OFF")

```

CTRL  '! ' '1' SP 'U5B' CR
DLA   '@' '1' SP '0' SP '0' CR

```

12.39 H-Keystone(Correction of trapezoid distortion) :'U93'(55H 39H 33H)

Definition : Correction of horizontal Keystone

Command : 'U93'(55H 39H 33H)

Parameter type : Numeric,

Reply time : 3seconds

Conditions :

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

◇ When specifying "0" (decimal) as horizontal keystone

```

CTRL  '!' '1' SP 'U40' SP '0000' CR
DLA   '@' '1' SP '0' CR
    
```

◇ When requesting the horizontal keystone (if the horizontal keystone is set to "0" (decimal))

```

CTRL  '?' '1' SP 'U40' CR
DLA   '@' '1' SP '0' SP '0000' CR
    
```

12.40 Operation Mode Query

: 'Z03'(5AH 30H 33H)

Definition : Requests current operation mode

Command : 'Z03'(5AH 30H 33H)

Parameter type : Special parameter(Refer to 7.3.6 Projector Operation Mode Parameter.)

Reply time : 3seconds

Conditions : Query only

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
O	O	O	O

When the POWER OFF command is received in the Power ON mode, the Projector first enters the Cool-Down mode, then automatically enters the Standby mode.

(For information on each operation mode, refer to 10. Projector Operation Modes.)

POWER ON command cannot be accepted in the Cool-Down mode. If POWER ON is requested after POWER OFF command is sent, firstly the current operation mode should be asked and then if Standby Mode is confirmed, POWER ON command should be sent.

Communication Examples

◇ When requesting the current operation mode(if the Projector is in the standby mode)

```
CTLR    '?' '1' SP 'Z03' CR
DLA     '@' '1' SP '0' SP '0000' CR
```

12.41 Source Query

: 'Z05'(5AH 30H 35H)

Definition : Asks for the Source (Area) setting actually assigned on the Projector.

Command : 'Z05'(5AH 30H 35H)

Parameter type : (Refer to 11.1 Projector Sources and Source Numbers.)

Reply time : 3seconds

Conditions : Query only

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Example

- ◇ When requesting the current Source (Area) setting actually assigned on the Projector (if Computer Sources is actually assigned)

```
CTLR  '?' '1' SP 'Z05' CR
DLA   '@' '1' SP '0' SP 'F0' CR
```

12.42 Projection Model Query

: 'Z0A'(5AH 30H 41H)

Definition : Obtains projector model and software version information.

Command : 'Z0A'(5AH 30H 41H)

Parameter type : (*)

Reply time : 3seconds

Conditions : Query only

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
O	O	O	X

* Model status data format

◇ Requesting current projector model status

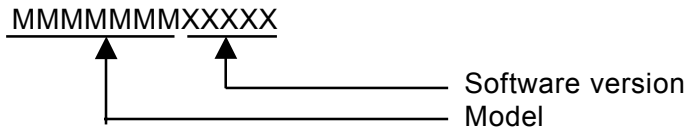
'?' '1' SP 'Z0A' CR

Parameter : None

◇ Tally (response) data format to query

'@' '1' SP Normal Termination Status SP **Parameter** CR

Parameter : 12 byte ASCII characters are used for Model and Software version information.



Model	HEX	Definition
'SX21 - - -'	53H 5AH 32H 31H 2DH 2DH 2DH	DLA-SX21 Series

Communication Example

◇ When the projector is a SX21 Series projector with software version 1.3.4

CTLR '?' '1' SP 'Z0A' CR

DLA '@' '1' SP '0' SP 'SX21---00134' CR

12.43 Switcher Selection

: 'W00'(5AH 30H 30H)

Definition : Changes channels according to commands from the Switcher. When Projector receive the command, Projector switches input terminal to RGB. And Source to be matched to input switching number among presetted Sources is displayed.
When it is not set up or not being matched, the source inputted now is newly set up.

Command : 'W00'(57H 30H 30H)

Parameter type : The Switcher's input switching number. (Refer to 7.3.11 Switcher Number Parameter.)

Reply time : 3seconds

Conditions :

Operation mode

Standby mode	Power ON mode	Cool-down mode	Emergency mode
X	O	X	X

Communication Examples

- ◇ When specifying Switcher 2 (if a channel specifying input switcher 2 exists.)

```
CTLR    '!' '1' SP 'W00' SP '0002' CR
DLA                                '@' '1' SP '0' CR
```

- ◇ When requesting the current Switcher No. (if Switcher does not connected)

```
CTLR    '?' '1' SP 'W00' CR
DLA                                '@' '1' SP '0' SP '0000' CR
```

13. APPENDIX

13.1 External Control Command List

Command	Character	HEX
Hide	'U00'	55H 30H 30H
Back Color	'U01'	55H 30H 31H
Horizontal Position	'U02'	55H 30H 32H
Vertical Position	'U03'	55H 30H 33H
Phase	'U04'	55H 30H 34H
Tracking	'U05'	55H 30H 35H
Contrast	'U06'	55H 30H 36H
Brightness	'U07'	55H 30H 37H
Sharpness	'U08'	55H 30H 38H
Color	'U09'	55H 30H 39H
Tint	'U0A'	55H 30H 41H
Color Temperature Table	'U0B'	55H 30H 42H
Color Temperature (RED)	'U0C'	55H 30H 43H
Color Temperature (GREEN)	'U0D'	55H 30H 44H
Color Temperature (BLUE)	'U0E'	55H 30H 45H
Power	'U0F'	55H 30H 46H
Menu Auto Off	'U10'	55H 31H 30H
Line Display	'U11'	55H 31H 31H
Sleep Time	'U12'	55H 31H 32H
Right/Left Reverse	'U17'	55H 31H 37H
Top/Bottom Invert	'U18'	55H 31H 38H
Decoder	'U19'	55H 31H 39H
Input Select	'U1A'	55H 31H 41H
Transfer Rate	'U1B'	55H 31H 42H
Lamp Time	'U1C'	55H 31H 43H

ID	'U1D'	55H 31H 44H
Quick Alignment	'U2A'	55H 32H 41H
Resize	'U2D'	55H 32H 44H
Aspect Change	'U2E'	55H 32H 45H
Clamp	'U30'	55H 33H 30H
Horizontal Frequency Query	'U3C'	55H 33H 43H
Vertical Frequency Query	'U3D'	55H 33H 44H
Horizontal Resolution Query	'U3E'	55H 33H 45H
Vertical Resolution Query	'U3F'	55H 33H 46H
V-Keystone	'U40'	55H 34H 30H
HDTV	'U53'	55H 35H 33H
Screen Size	'U54'	55H 35H 34H
Film Mode	'U5B'	55H 35H 42H
H-Keystone	'U93'	55H 39H 33H
Operation Mode Query	'Z03'	5AH 30H 33H
Source Query	'Z05'	5AH 30H 35H
Model Status	'Z0A'	5AH 30H 41H
Switcher Selection	'W00'	57H 30H 30H

13.2 RS-232C Port Pin Configuration

RS-232C Control Port			
D-SUB 9-pin (Male)	Pin No.	Signal	Definition
	1	N/A	Not used
	2	RxD(RD)	Receive data
	3	TxD(SD)	Transmit data
	4	N/A	Not used
	5	GND	GND
	6	N/A	Not used
	7	N/A	Not used
	8	N/A	Not used
	9	N/A	Not used