BARCO

BARCO PROJECTION SYSTEMS

SERIAL COMMUNICATION
LCD PROJECTOR

USER'S MANUAL

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Contents

Chapter 1 : Communication basics.

Chapter 2 : Elementary commands

Chapter 3 : Advanced commands

Chapter 1:
Communication basics

Communication protocol summary

Start byte	\xfe
Projector address	
Command byte(s)	
Data bytes(OPTIONAL)	
Checksum byte	
Stop byte	\xff

Start byte

The "start byte" informs the projector (in case of transmission) or the computer (in case of reception) that a new data transfer will take place.

Projector address

The "projector address" defines the address of the projector the computer wants to talk to (in case of transmission) or the address of the projector that answers (in case of reception).
The maximum number of projectors that can be addressed by one computer is 256.

Command byte(s)

There is at least one command byte to define the action to be performed. Commands that are not often used or complex commands can take more than one byte.
All command bytes that are sent by the computer to get information out of the projector are repeated in the answer-data-transfer of the projector.

Data bytes(OPTIONAL)

Wheather the command bytes are followed by one or more data bytes depends on the contents of the command bytes.
(Some commands are not followed by data bytes at all !)

Checksum byte

The "checksum byte" is used to detect errors during transmission or reception.
Formula :
Checksum byte
= (Projector address + Command bytes + Data bytes) modulo 256

Stop byte

The "stop byte" informs the projector (in case of transmission) or the computer (in case of reception) that the data transfer is complete and that the interpretation of the command and data bytes can start.

Any command byte, data byte or checksum byte that equals \x80, \xfe or \xff has to be converted !
Transmission :
- Instead of \x80, send \x80 followed by \x00.
- Instead of \xfe, send \x80 followed by \x7e.
- Instead of \xff, send \x80 followed by \x7f.

Reception :
- Replace \x80 followed by \x00 with \x80.
- Replace \x80 followed by \x7e with \xfe.
- Replace \x80 followed by \x7f with \xff..

Communication settings summary

Baud rate	see baudrate table
Data bits	8
Parity	no
Stop bits	1

Baud Rate

Defines the speed of the data transfer.
The baud rate can be set using the dip switches on the processor board of the projector. Before opening the projector*, insure the projector is powered down !!!
Check the baud rate table to set up the communication speed.
Consult the owners manual of the projector to change the baud rate setting.
**In some projectors, the Baud Rate must be set using the menu structure (see Owner's manual of the projector).*

Data Bits

Eight data bits are used for each character of the data transfer.

Parity

There is NO parity bit used to perform error checking.

Stop Bits

One stop bit is used to define the end of a character.

Baud rate table
BD5000, BD5000LC, BD8000

S1:4	S1:3	S1:2	S1:1	Baud rate (baud)
off	off	off	off	50
off	off	off	on	75
off	off	on	off	100
off	off	on	on	110
off	on	off	off	150
off	on	off	on	200
off	on	on	off	300
off	on	on	on	600
on	off	off	off	1200
on	off	off	on	2400
on	off	on	off	4800
on	off	on	on	9600
on	on	off	off	19200
on	on	off	on	9600
on	on	on	off	9600
on	on	on	on	9600

Baud rate table
BD3000, BD3000LC, BD3100, BD3100LC, BD5100, BD5100LC, BD8100, BD8100LC

S2:3	S2:2	S2:1	Baud rate (baud)
off	off	off	9600
off	off	on	4800
off	on	off	2400
off	on	on	1200
on	off	off	600
on	off	on	300
on	on	off	150
on	on	on	75

Connector labelled "RS232 IN"

This female D9-pin connector is used to connect the projector with the computer.

Connector labelled "RS232 OUT"

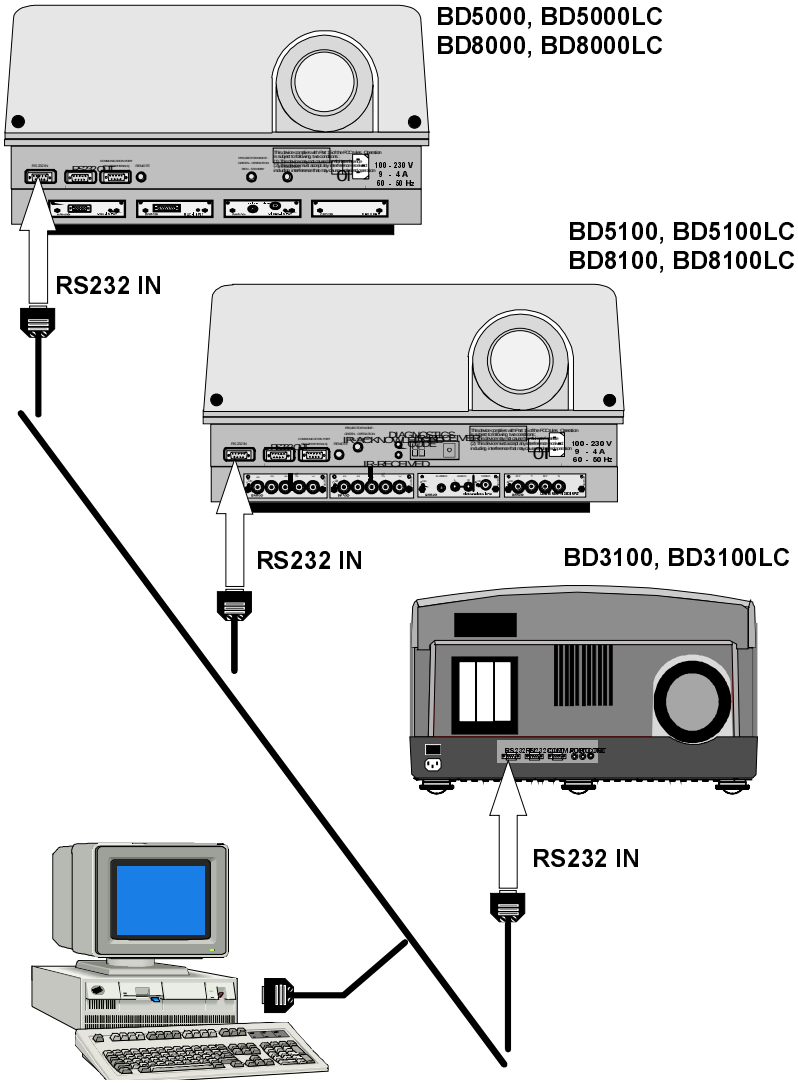
This male D9-pin connector is used to drive the next projector in a chain.

Pin-out

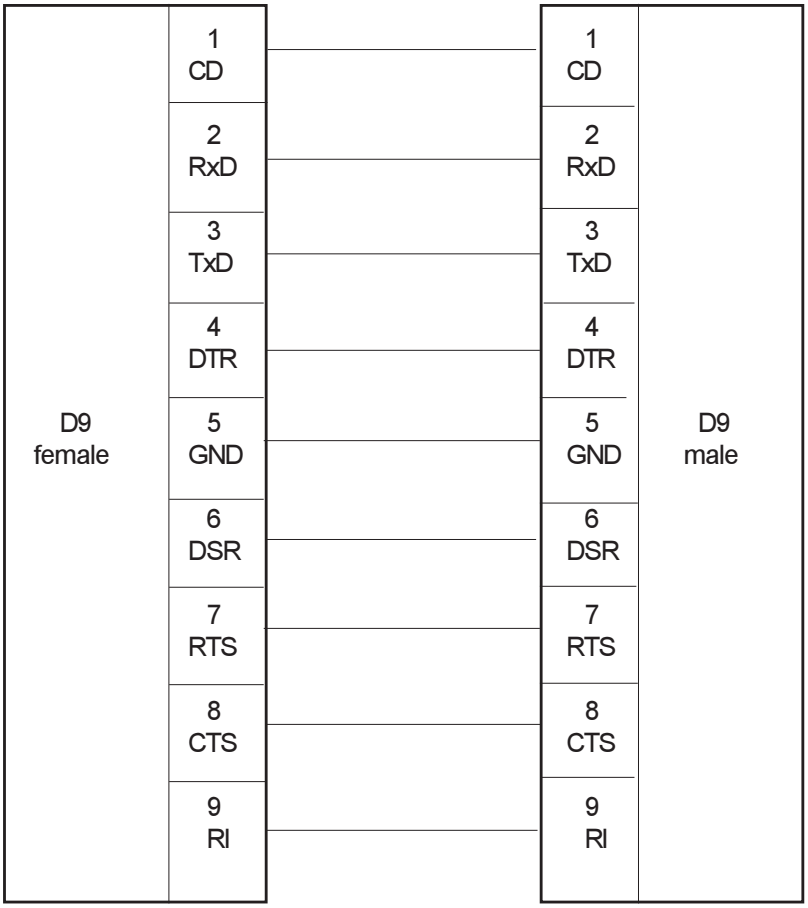
The pin-out is the 'standard' PC-AT convention, which is :

Pin #	Name	Full name
1	CD	Carrier Detect
2	RxD	Received Data
3	TxD	Transmitted Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicator

Cable (IBM PC or compatible ⟺ projector):

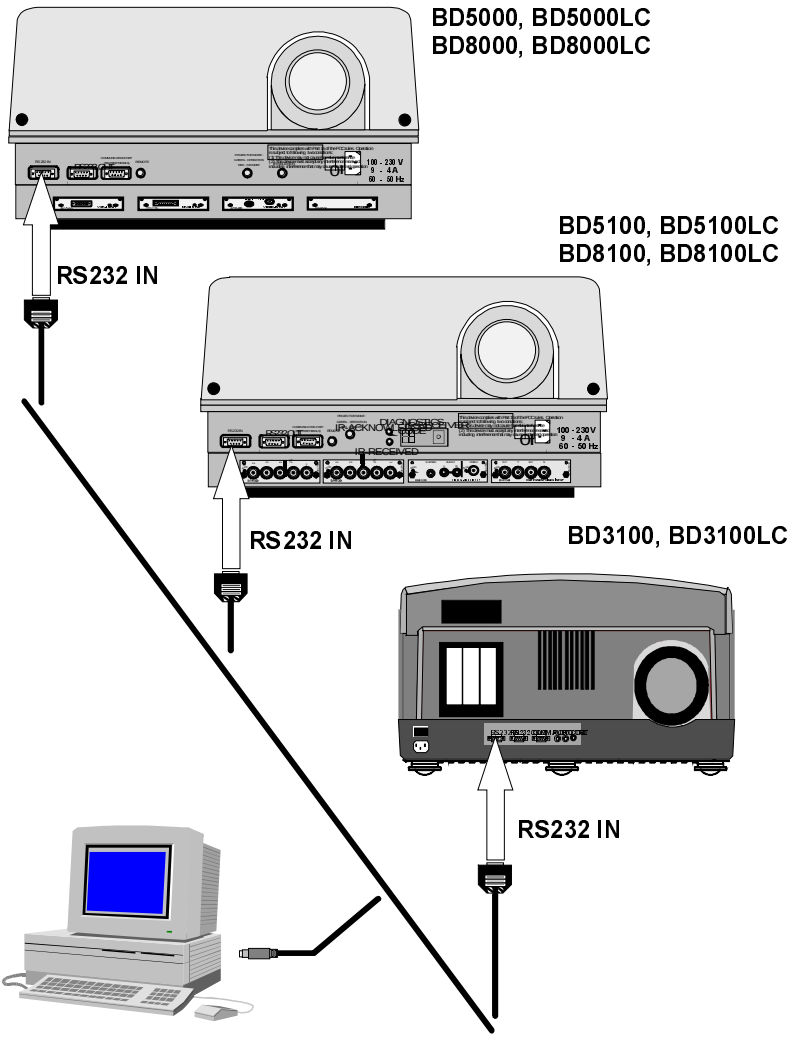


Cable (IBM PC or compatible ⟺ projector) :

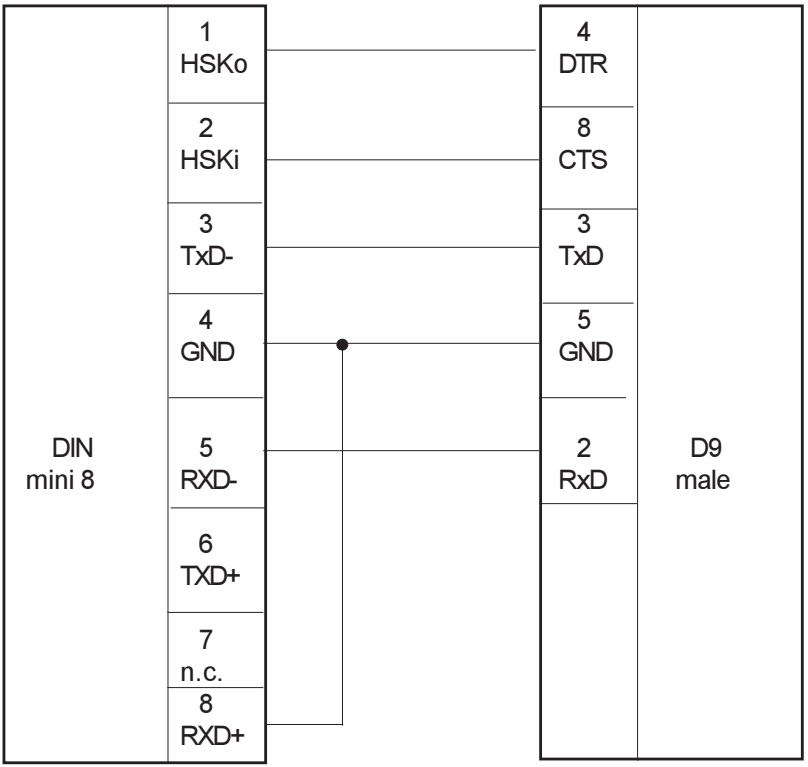


order number R9827560 (cable length = 15m)
order number R9872570 (cable length = 30m)

Cable (MAC ⟺ projector) :



Cable (MAC ⟺ projector) :



order number R9827640 (D9-DIN mini8; cable length = 1m)
order number R9827560 (D9-D9; cable length = 15m)
order number R9872570 (D9-D9; cable length = 30m)

Signal levels

State	Voltage
off = 1 on = 0	-9V +9V

Characters

In this manual, all characters are expressed using the C-language syntax :

decimal values ddd	*ddd = 0..255*
hexadecimal values \xhh	*hh = 00..ff*

Pascal-language string

A pascal-language string consists of one or more characters. The first character of the string contains the length of the string. Therefore, a pascal-language string is limited to 255 characters.
Example : “hello world”

length	\x0b
‘h’	\x68
‘e’	\x65
‘l’	\x6c
‘l’	\x6c
‘o’	\x6f
‘ ‘	\x20
‘w’	\x77
‘o’	\x6f
‘r’	\x72
‘l’	\x6c
‘d’	\x64

C-language string:

A C-language string consists of one or more characters.
The last character of the string is always the NULL (\x00) character. Therefore, the length of a C-language string is determined by the position of the NULL character.
Example : “hello world”

‘h’	\x68
‘e’	\x65
‘l’	\x6c
‘l’	\x6c
‘o’	\x6f
‘ ‘	\x20
‘w’	\x77
‘o’	\x6f
‘r’	\x72
‘l'	\x6c
‘d’	\x64
NULL	\x00

Filename

A filename is specified as a C-language string. This string has to follow some rules:

Filename

0	1	2	3	4	5	6	7	8	9	10	11	12
x	x	x	x	x	x	x	x	.	y	z	z	NULL

length string = 12

x = character of the base name (= 8 characters)

'a'	'b'	'c'	'd'	'e'	'f'	'g'	'h'	'i'	'j'
'k'	'l'	'm'	'n'	'o'	'p'	'q'	'r'	's'	't'
'u'	'v'	'w'	'x'	'y'	'z'	'0'	'1'	'2'	'3'
'4'	'5'	'6'	'7'	'8'	'9'	'_'	'-'	' '	

y = kind of file (= 1 character)

's'	standard file predefined file stored in read-only memory
'c'	custom file file created by the user and stored in non-volatile read-write memory

z = file index (= 2 characters)

'0'	'1'	'2'	'3'	'4'	'5'	'6'	'7'	'8'	'9'

- zz specifies the location in memory where the file is stored
- for standard files : zz = 00..maximum standard files
- for custom files : zz = 00..63 where 00 is reserved for the file 'none .c00' (file loaded when no signal is applied).

yzz is a unique combination. In other words, no two files can exist with the same extension yzz.

To specify more than one file you can use the question mark (?) wildcard character for x, y and z. This wildcard character can represent any possible character on that location.

Examples : "ntsc .c01", "svga_60v.s?7", "????????.???"

Chapter 2:
Elementary commands

Description

Decrement balance.

Command

Command[0]	\x23
Command[1]	\x0a

Data

No data bytes.

Projector type

BD2100., BD2100LC, BD3000, BD300LC, BD3100., BD3100LC.

Example

Decrement balance of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x23
Command[1]	\x0a
Checksum	\x2e
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Increment balance.

Command

Command[0]	\x22
Command[1]	\x0a

Data

No data bytes.

Projector type

BD2100., BD2100LC, BD3000, BD300LC, BD3100., BD3100LC

Example

Increment balance of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x22
Command[1]	\x0a
Checksum	\x2d
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Decrement bass.

Command

Command[0]	\x23
Command[1]	\x08

Data

No data bytes.

Projector type

BD2100., BD2100LC, BD3000, BD300LC, BD3100., BD3100LC

Example

Decrement bass of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x23
Command[1]	\x08
Checksum	\x2c
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Increment bass.

Command

Command[0]	\x22
Command[1]	\x08

Data

No data bytes.

Projector type

BD2100., BD2100LC, BD3000, BD300LC, BD3100., BD3100LC

Example

Increment bass of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x22
Command[1]	\x08
Checksum	\x2b
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Decrement brightness.

Command

Command[0]	\x04

Data

No data bytes.

Projector type

BD2100., BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC,

Example

Decrement the brightness of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x04
Checksum	\x05
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Increment brightness.

Command

Command[0]	\x03

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC,

Example

Increment the brightness of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x03
Checksum	\x04
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Decrement color (saturation).

Command

Command[0]	\x06

Data

No data bytes.

Projector type

BD5000, BD5000LC, BD8000, BD8000LC, BG8100[V1.11], BG8100LC[V1.11]

Example

Decrement the color of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x06
Checksum	\x07
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Increment color (saturation).

Command

Command[0]	\x05

Data

No data bytes.

Projector type

BD5000, BD5000LC, BD8000, BD8000LC, BG8100[V1.11], BG8100LC[V1.11]

Example

Increment the color of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x05
Checksum	\x06
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Decrement contrast.

Command

Command[0]	\x02

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Decrement contrast of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x02
Checksum	\x03
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Increment contrast.

Command

Command[0]	\x01

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Increment contrast of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x01
Checksum	\x02
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Simulation of the infrared remote control unit.
The codes act in the same way as if they were sent by an infrared remote control unit or the local keypad.

Command

Command[0]	\x30

Data

Possible codes used for Data[0] :

Key	Data[0]
0	\x19
1	\x10
2	\x11
3	\x12
4	\x13
5	\x14
6	\x15
7	\x16
8	\x17
9	\x18
ADDR	\x20
ARROW DOWN	\x05
ARROW LEFT	\x07
ARROW RIGHT	\x06
ARROW UP	\x04
BALANCE+	\x3e
BALANCE-	\x3f
BASS+	\x3a
BASS-	\x3b
BRIGHTNESS	\x27
BRIGHTNESS+	\x2a
BRIGHTNESS-	\x2b
COLOR	\x30
COLOR+	\x2c

COLOR-	\x2d
CONTRAST	\x25
CONTRAST+	\x28
CONTRAST-	\x29
ENTER	\x0a
EXIT	\x08
FREEZ	\x1b
HELP	\x09
MUTE	\x1f
PAUSE	\x0f
PHASE	\x32
PHASE+	\x34
PHASE-	\x35
SHARPNESS	\x33
SHARPNESS+	\x36
SHARPNESS-	\x37
STDBY	\x0e
TEXT	\x0d
TINT	\x31
TINT+	\x2e
TINT-	\x2f
TREBLE+	\x3c
TREBLE-	\x3d
VOLUME+	\x38
VOLUME-	\x39

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Select source 3 of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x30
Data[0]	\x12
Checksum	\x43
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Disable audio mute.

Command

Command[0]	\x26
Command[1]	\x3d

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC

Example

Disable audio mute of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x26
Command[1]	\x3d
Checksum	\x64
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Enable audio mute.

Command

Command[0]	\x27
Command[1]	\x3d

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC

Example

Enable audio mute of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x27
Command[1]	\x3d
Checksum	\x65
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Disable video mute.

Command

Command[0]	\x26
Command[1]	\x3e

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5100, BD5100LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Disable video mute of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x26
Command[1]	\x3e
Checksum	\x65
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Enable video mute.
The on-screen-display will be muted too !

Command

Command[0]	\x27
Command[1]	\x3e

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5100, BD5100LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Enable video mute of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x27
Command[1]	\x3e
Checksum	\x66
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Decrement phase.

Command

Command[0]	\x0c

Data

No data bytes.

Projector type

BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC

Example

Decrement phase of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x0c
Checksum	\x0d
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Increment phase.

Command

Command[0]	\x0b

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Increment phase of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x0b
Checksum	\x0c
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Read the projector status.

Command

Command[0]	\x67

Data

No data bytes.

Return data

The return data consists of one data byte containing the projector status. Only bit0 (least significant bit) to bit3/bit4* are significant.

bit#	bit = 0	bit = 1
bit0	projector is off	projector is on
bit1	text is off	text is on
bit2	video mute is off	video mute is on
bit3	picture is not freezed	picture is freezed
bit4*	no 800-peripheral connected	800-peripheral connected

* : bit 4 is only significant for BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, D5100, BD5100LC, BD8100, BD8100LC, BG8100, BG8100LC

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100$^{V1.11}$, BG8100LC$^{V1.11}$

Example

Read the status of a projector with address \x01.
Suppose the status is projector on, text on, video mute off, picture freezed and no 800-peripheral connected.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x67
Checksum	\x68
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x67
Data[0]	\x0b
Checksum	\x73
Stop	\xff

Description

Set the projector off.

Command

Command[0]	\x66

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Set the projector with address \x01 off.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x66
Checksum	\x67
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Set the projector on.

Command

Command[0]	\x65

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Set the projector with address \x01 on.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x65
Checksum	\x66
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Decrement sharpness.

Command

Command[0]	\x0a

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Decrement sharpness of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x0a
Checksum	\x0b
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Increment sharpness.

Command

Command[0]	\x09

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Increment sharpness of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x09
Checksum	\x0a
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Read active source or slot.

Command

Command[0]	\x32

Data

No data bytes.

Return data

Source or slot number (\x01..).

	Data[0]
BD2100	\x01..\x09
BD2100LC	\x01..\x09
BD3000	\x01..\x03
BD3000LC	\x01..\x03
BD3100	\x01..\x03
BD3100LC	\x01..\x03
BD5000	\x01..\x04
BD5000LC	\x01..\x04
BD5100	\x01..\x04
BD5100LC	\x01..\x04
BD8000	\x01..\x04
BD8000LC	\x01..\x04
BD8100	\x01..\x04
BD8100LC	\x01..\x04
BG8100	\x01..\x04
BG8100LC	\x01..\x04
+ 800 peripheral	\x01..\x63

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the active source/slot number of a projector with address \x01. Suppose the answer is \x03.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x32
Checksum	\x33
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x32
Data[0]	\x03
Checksum	\x36
Stop	\xff

Description

Select a source or slot.

Command

Command[0]	\x31

Data

Source or slot number (\x01..).

	Data[0]
BD2100	\x01..\x09
BD2100LC	\x01..\x09
BD3000	\x01..\x03
BD3000LC	\x01..\x03
BD3100	\x01..\x03
BD3100LC	\x01..\x03
BD5000	\x01..\x04
BD5000LC	\x01..\x04
BD5100	\x01..\x04
BD5100LC	\x01..\x04
BD8000	\x01..\x04
BD8000LC	\x01..\x04
BD8100	\x01..\x04
BD8100LC	\x01..\x04
BG8100	\x01..\x04
BG8100LC	\x01..\x04
+ 800 peripheral	\x01..\x63

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Select source 1 of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x31
Data[0]	\x01
Checksum	\x32
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description :

Read active source or slot number and its mode.

Command :

Command[0]	\x34

Data :

No data bytes.

Return data :

Data[0] = source or slot number (\x01..).

	Data[0]
BD3000	\x01..\x03
BD3000LC	\x01..\x03
BD3100	\x01..\x03
BD3100LC	\x01..\x03
BD5100	\x01..\x04
BD5100LC	\x01..\x04
BD8100	\x01..\x04
BG8100LC	\x01..\x04
BG8100	\x01..\x04
BD8100LC	\x01..\x04
+ 800 peripheral	\x01..\x63

Data[1] = source or slot mode (\x00 or \x01)

Video/S-Video Input

Data[1]	Mode
\x00	Video
\x01	S-Video

RGB Analog Input - Separate Sync

Data[1]	Mode
\x00	H/C : Composite Sync or H/C, V : Horizontal, Vertical Sync
\x01	H/C : Composite Video

RGB Analog Input - Sync On Green
RGB3S/RG3SB Input - Separate Sync
RGB3S/RG3SB Input - Sync On Green
Component Input - Separate Sync
Component Input - Sync On Y
Component Input - Tri-Level Separate Sync
Component Input - Tri-Level Sync On Y

Data[1]	Mode
\x00	-
\x01	

Projector type:

BD3000, BD300LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$, BD5100$^{V1.06}$, BD5100LC$^{V1.06}$, BD8100$^{V1.06}$, BD8100LC$^{V1.06}$, BG8100, BG8100LC

Example:

Read the active source/slot number+mode of a projector with address \x01. Suppose the source number equals \x03 and its mode equals \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x34
Checksum	\x35
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x34
Data[0]	\x03
Data[1]	\x01
Checksum	\x39
Stop	\xff

Description:

Select a source or slot and put it in a pre-defined mode (mode selection is optional).

Command:

Command[0]	\x33

Data:

Data[0] = source or slot number (\x01..).

	Data[0]
BD3000	\x01..\x03
BD3000LC	\x01..\x03
BD3100	\x01..\x03
BD3100LC	\x01..\x03
BD5100	\x01..\x04
BD5100LC	\x01..\x04
BD8100	\x01..\x04
BG8100LC	\x01..\x04
BG8100	\x01..\x04
BD8100LC	\x01..\x04
+ 800 peripheral	\x01..\x63

Data[1] = source or slot mode (\x00 or \x01) OPTIONAL

Video/S-Video Input

Data[1]	Mode
\x00	Video
\x01	S-Video

RGB Analog Input - Separate Sync

Data[1]	Mode
\x00	H/C: Composite Sync or H/C, V : Horizontal, Vertical Sync
\x01	H/ : Composite Video

RGB Analog Input - Sync On Green
RGB3S/RG3SB Input - Separate Sync
RGB3S/RG3SB Input - Sync On Green
Component Input - Separate Sync
Component Input - Sync On Y
Component Input - Tri-Level Separate Sync
Component Input - Tri-Level Sync On Y

Data[1]	Mode
\x00	-
\x01	

Remark : If only one data byte has been sent (Data[0]), the slot will be selected in its previous mode.

Projector type :

BD3000, BD300LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$, BD5100$^{V1.06}$, BD5100LC$^{V1.06}$, BD8100$^{V1.06}$, BD8100LC$^{V1.06}$, BG8100, BG8100LC

Example:

Select source 1, mode 1 of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x33
Data[0]	\x01
Data[1]	\x01
Checksum	\x36
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Decrement tint (hue).

Command

Command[0]	\x08

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC,BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100[V1.11], BG8100LC[V1.11]

Example

Decrement tint of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x08
Checksum	\x09
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Increment tint (hue).

Command

Command[0]	\x07

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC,BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100V1.11, BG8100LCV1.11

Example

Increment tint of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x07
Checksum	\x08
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Decrement treble.

Command

Command[0]	\x23
Command[1]	\x09

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC

Example

Decrement treble of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x23
Command[1]	\x09
Checksum	\x2d
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Increment treble.

Command

Command[0]	\x22
Command[1]	\x09

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC

Example

Increment treble of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x22
Command[1]	\x09
Checksum	\x2c
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Decrement volume.

Command

Command[0]	\x23
Command[1]	\x07

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC

Example

Decrement volume of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x23
Command[1]	\x07
Checksum	\x2b
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Increment volume.

Command

Command[0]	\x22
Command[1]	\x07

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD300LC, BD3100, BD3100LC

Example

Increment volume of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x22
Command[1]	\x07
Checksum	\x2a
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Chapter 3:
Advanced commands

Description

Read the actual balance value.

Command

Command[0]	\x21
Command[1]	\x0a

Data

No data bytes.

Return data

Data[0] = balance value.

Data[0]	\xea..\x16

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC

Example

Read the actual balance value of a projector with address \x01. Suppose the balance equals \xeb (= -21).

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x0a
Checksum	\x2c
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x0a
Data[0]	\xeb
Checksum	\x17
Stop	\xff

Description

Write a new balance value.

Command

Command[0]	\x20
Command[1]	\x0a

Data

Data[0] = balance value.

Data[0]	\xea..\16

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC

Example

Set the balance to \xeb (= -21) on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x20
Command[1]	\x0a
Data[0]	\xeb
Checksum	\x16
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Read the actual bass value.

Command

Command[0]	\x21
Command[1]	\x08

Data

No data bytes.

Return data

Data[0] = bass value.

Data[0]	\xfc..\x05

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC

Example

Read the actual bass value of a projector with address \x01. Suppose the bass equals \x01 (= +1).

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x08
Checksum	\x2a
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x08
Data[0]	\x01
Checksum	\x2b
Stop	\xff

Description

Write a new bass value.

Command

Command[0]	\x20
Command[1]	\x08

Data

Data[0] = bass value.

Data[0]	\xfc..\x05

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC

Example

Set the bass to \x01 (= +1) on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x20
Command[1]	\x08
Data[0]	\x01
Checksum	\x2a
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Read the actual brightness value.

Command

Command[0]	\x21
Command[1]	\x02

Data

No data bytes.

Return data

Data[0] = brightness value.

	Data[0]
BG8100 BG8100LC	\x00..\xff
otherwise	\x00..\x3f

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the actual brightness value of a projector with address \x01. Suppose the brightness equals \x20.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x02
Checksum	\x24
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x02
Data[0]	\x20
Checksum	\x44
Stop	\xff

Description

Write a new brightness value.

Command

Command[0]	\x20
Command[1]	\x02

Data

Data[0] = brightness value.

	Data[0]
BG8100 BG8100LC	\x00..\xff
otherwise	\x00..\x3f

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Set the brightness to \x20 on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x20
Command[1]	\x02
Data[0]	\x20
Checksum	\x43
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Read the actual contrast value.

Command

Command[0]	\x21
Command[1]	\x01

Data

No data bytes.

Return data

Data[0] = contrast value.

	Data[0]
BD2100	\x00..\x3f
BD2100LC	\x00..\x3f
BD3000	\x00..\x40
BD3000LC	\x00..\x40
BD3100	\x00..\x40
BD3100LC	\x00..\x40
BD5000	\x00..\x3f
BD5000LC	\x00..\x3f
BD5100	\x00..\x40
BD5100LC	\x00..\x40
BD8000	\x00..\x3f
BD8000LC	\x00..\x3f
BD8100	\x00..\x40
BD8100LC	\x00..\x40
BG8100	\x00..\xff
BG8100LC	\x00..\xff

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the actual contrast value of a projector with address \x01. Suppose the contrast equals \x30.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x01
Checksum	\x23
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x01
Data[0]	\x30
Checksum	\x53
Stop	\xff

Description

Write a new contrast value.

Command

Command[0]	\x20
Command[1]	\x01

Data

Data[0] = contrast value.

	Data[0]
BD2100	\x00..\x3f
BD2100LC	\x00..\x3f
BD3000	\x00..\x40
BD3000LC	\x00..\x40
BD3100	\x00..\x40
BD3100LC	\x00..\x40
BD5000	\x00..\x3f
BD5000LC	\x00..\x3f
BD5100	\x00..\x40
BD5100LC	\x00..\x40
BD8000	\x00..\x3f
BD8000LC	\x00..\x3f
BD8100	\x00..\x40
BD8100LC	\x00..\x40
BG8100	\x00..\xff
BG8100LC	\x00..\xff

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Set the contrast to \x30 on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x20
Command[1]	\x01
Data[0]	\x30
Checksum	\x52
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Decrement dimming.

Command

Command[0]	\x23
Command[1]	\x0d

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100,BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC.

Example

Decrement dimming of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x23
Command[1]	\x0d
Checksum	\x31
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Increment dimming.

Command

Command[0]	\x22
Command[1]	\x0d

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100,BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC. BD3100,BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC.

Example

Increment dimming of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x22
Command[1]	\x0d
Checksum	\x30
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description:

Decrement the fade value of the external speaker(s). The audio volume level of the external speaker(s) will decrease.

Command :

Command[0]	\x23
Command[1]	\x41

Data :

No data bytes.

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$.

Example :

Decrement the fade value of the external speaker(s) of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x23
Command[1]	\x41
Checksum	\x65
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description :

Increment the fade value of the external speaker(s). The audio volume level of the external speaker(s) will increase.

Command :

Command[0]	\x22
Command[1]	\x41

Data :

No data bytes.

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$.

Example :

Increment the fade value of the external speaker of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x22
Command[1]	\x41
Checksum	\x64
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description :

Read the actual fade value of the external speaker(s).

Command :

Command[0]	\x21
Command[1]	\x41

Data :

No data bytes.

Return data :

Data[0] = fade value.

Data[0]	\x00..\x0f

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$.

Example :

Read the actual fade value of the external speaker(s) of a projector with address \x01. Suppose the value equals 15.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x41
Checksum	\x63
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x41
Data[0]	\x0f
Checksum	\x72
Stop	\xff

Description :

Write a new fade value for the extern speaker(s).

Command :

Command[0]	\x20
Command[1]	\x41

Data :

Data[0] = fade value.

Data[0]	\x00..\x0f

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$.

Example :

Set the fade value for the external speaker(s) to \x0f on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x20
Command[1]	\x41
Data[0]	\x0f
Checksum	\x71
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description :

Decrement the fade value of the internal speaker. The audio volume level of the internal speaker will decrease.

Command :

Command[0]	\x23
Command[1]	\x40

Data :

No data bytes.

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$.

Example :

Decrement the fade value of the internal speaker of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x23
Command[1]	\x40
Checksum	\x64
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description :

Increment the fade value of the internal speaker. The audio volume level of the internal speaker will increase.

Command :

Command[0]	\x22
Command[1]	\x40

Data :

No data bytes.

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$.

Example :

Increment the fade value of the internal speaker of a projector with address \x01 by one.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x22
Command[1]	\x40
Checksum	\x63
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description :

Read the actual fade value of the internal speaker.

Command :

Command[0]	\x21
Command[1]	\x40

Data :

No data bytes.

Return data :

Data[0] = fade value.

Data[0]	\x00..\x0f

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$.

Example :

Read the actual fade value of the internal speaker of a projector with address \x01. Suppose the value equals 15.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x40
Checksum	\x62
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x40
Data[0]	\x0f
Checksum	\x71
Stop	\xff

Description :

Write a new fade value for the intern speaker.

Command :

Command[0]	\x20
Command[1]	\x40

Data :

Data[0] = fade value.

Data[0]	\x00..\x0f

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$.

Example :

Set the fade value for the internal speaker to \x0f on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x20
Command[1]	\x40
Data[0]	\x0f
Checksum	\x70
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description :

Copy file1 to file2.
- File2 (destination file) has to be a custom file.
- If the location specified by the “file index” of file2 has already been taken up, file2 will overwrite that contents.
- If file1 and file2 point to the same location, the base name of file1 is replaced by the base name of file2 without affecting other data.

Command :

Command[0]	\xc2

Data :

From filename followed by the to filename (no wildcards allowed).

Projector type :

BD2100$^{V1.02}$, BD2100LC$^{V1.02}$, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$, BD5100$^{V1.06}$, BD5100LC$^{V1.06}$, BD8100$^{V1.06}$, BD8100LC$^{V1.06}$, BG8100$^{V1.11}$, BG8100LC$^{V1.11}$

Example :

Copy the file “ntsc .c01” to “camera1 .c05” on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\xc2
Data[0]	\x6e (= 'n')
Data[1]	\x74 (= 't')
Data[2]	\x73 (= 's')
Data[3]	\x63 (= 'c')
Data[4]	\x20 (= ' ')
Data[5]	\x20 (= ' ')
Data[6]	\x20 (= ' ')
Data[7]	\x20 (= ' ')
Data[8]	\x2e (= '.')
Data[9]	\x63 (= 'c')
Data[10]	\x30 (= '0')
Data[11]	\x31 (= '1')
Data[12]	\x00
Data[13]	\x63 (= 'c')
Data[14]	\x61 (= 'a')
Data[15]	\x6d (= 'm')
Data[16]	\x65 (= 'e')
Data[17]	\x72 (= 'r')
Data[18]	\x61 (= 'a')
Data[19]	\x31 (= '1')
Data[20]	\x20 (= ' ')
Data[21]	\x2e (= '.')
Data[22]	\x63 (= 'c')
Data[23]	\x30 (= '0')
Data[24]	\x35 (= '5')
Data[25]	\x00
Checksum	\x9d
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description :

Delete one or more files.
- Only custom files (????????.c??) can be deleted.

Command :

Command[0]	\xc1

Data :

One or more filenames (wildcards allowed).

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$, BD5100$^{V1.06}$, BD5100LC$^{V1.06}$, BD8100$^{V1.06}$, BD8100LC$^{V1.06}$, BG8100, BG8100LC

Example :

Delete all files starting with the characters “nt” on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\xc1
Data[0]	\x6e (= ‘n’)
Data[1]	\x74 (= ‘t’)
Data[2]	\x3f (= ‘?’)
Data[3]	\x3f (= ‘?’)
Data[4]	\x3f (= ‘?’)
Data[5]	\x3f (= ‘?’)
Data[6]	\x3f (= ‘?’)
Data[7]	\x3f (= ‘?’)
Data[8]	\x2e (= ‘.’)
Data[9]	\x3f (= ‘?’)
Data[10]	\x3f (= ‘?’)
Data[11]	\x3f (= ‘?’)
Data[12]	\x00
Checksum	\x09
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description :

Get a list of files.

Command :

Command[0]	\xc0

Data :

One or more filenames (wildcards allowed).

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$, BD5100$^{V1.06}$, BD5100LC$^{V1.06}$, BD8100$^{V1.06}$, BD8100LC$^{V1.06}$, BG8100, BG8100LC

Example :

Get a list of all files starting with the characters “nt” on a projector with address \x01. Suppose there are 2 files : “ntsc .s02” and “ntsc_rgb.c01”.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\xc0
Data[0]	\x6e (= ‘n’)
Data[1]	\x74 (= ‘t’)
Data[2]	\x3f (= ‘?’)
Data[3]	\x3f (= ‘?’)
Data[4]	\x3f (= ‘?’)
Data[5]	\x3f (= ‘?’)
Data[6]	\x3f (= ‘?’)
Data[7]	\x3f (= ‘?’)
Data[8]	\x2e (= ‘.’)
Data[9]	\x3f (= ‘?’)
Data[10]	\x3f (= ‘?’)
Data[11]	\x3f (= ‘?’)
Data[12]	\x00
Checksum	\x08
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\xc0
Data[0]	\x6e (= ‘n’)
Data[1]	\x74 (= ‘t’)
Data[2]	\x73 (= ‘s’)
Data[3]	\x63 (= ‘c’)
Data[4]	\x20 (= ‘ ‘)
Data[5]	\x20 (= ‘ ‘)
Data[6]	\x20 (= ‘ ‘)
Data[7]	\x20 (= ‘ ‘)
Data[8]	\x2e (= ‘.’)
Data[9]	\x73 (= ‘s’)
Data[10]	\x30 (= ‘0’)
Data[11]	\x32 (= ‘2’)
Data[12]	\x00
Data[13]	\x6e (= ‘n’)
Data[14]	\x74 (= ‘t’)
Data[15]	\x73 (= ‘s’)
Data[16]	\x63 (= ‘c’)
Data[17]	\x5f (= ‘_’)
Data[18]	\x72 (= ‘r’)
Data[19]	\x67 (= ‘g’)
Data[20]	\x62 (= ‘b’)
Data[21]	\x2e (= ‘.’)
Data[22]	\x63 (= ‘c’)
Data[23]	\x30 (= ‘0’)
Data[24]	\x31 (= ‘1’)
Data[25]	\x00
Checksum	\x40
Stop	\xff

Description :

Get the filename of the active file.

Command :

Command[0]	\xc5

Data :

No data bytes.

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$, BD5100$^{V1.06}$, BD5100LC$^{V1.06}$, BD8100$^{V1.06}$, BD8100LC$^{V1.06}$, BG8100, BG8100LC

Example :

Get the filename of the active file on a projector with address \x01. Suppose the filename is “ntsc .c01”.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\xc5
Checksum	\xc6
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\xc5
Data[0]	\x6e (= 'n')
Data[1]	\x74 (= 't')
Data[2]	\x73 (= 's')
Data[3]	\x63 (= 'c')
Data[4]	\x20 (= ' ')
Data[5]	\x20 (= ' ')
Data[6]	\x20 (= ' ')
Data[7]	\x20 (= ' ')
Data[8]	\x2e (= '.')
Data[9]	\x63 (= 'c')
Data[10]	\x30 (= '0')
Data[11]	\x31 (= '1')
Data[12]	\x00
Checksum	\xf0
Stop	\xff

Description :

Move file1 to file2.
- Only custom files can be moved.
- If the location specified by the “file index” of file2 has already been taken up, file2 will overwrite that contents.
- If file1 and file2 point to the same location, the base name of file1 is replaced by the base name of file2 without affecting other data.

Command :

Command[0]	\xc4

Data :

From filename followed by the to filename (no wildcards allowed).

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$, BD5100$^{V1.06}$, BD5100LC$^{V1.06}$, BD8100$^{V1.06}$, BD8100LC$^{V1.06}$, BG8100, BG8100LC

Example :

Move the file “ntsc .c01” to “camera1 .c05” on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\xc4
Data[0]	\x6e (= 'n')
Data[1]	\x74 (= 't')
Data[2]	\x73 (= 's')
Data[3]	\x63 (= 'c')
Data[4]	\x20 (= ' ')
Data[5]	\x20 (= ' ')
Data[6]	\x20 (= ' ')
Data[7]	\x20 (= ' ')
Data[8]	\x2e (= '.')
Data[9]	\x63 (= 'c')
Data[10]	\x30 (= '0')
Data[11]	\x31 (= '1')
Data[12]	\x00
Data[13]	\x63 (= 'c')
Data[14]	\x61 (= 'a')
Data[15]	\x6d (= 'm')
Data[16]	\x65 (= 'e')
Data[17]	\x72 (= 'r')
Data[18]	\x61 (= 'a')
Data[19]	\x31 (= '1')
Data[20]	\x20 (= ' ')
Data[21]	\x2e (= '.')
Data[22]	\x63 (= 'c')
Data[23]	\x30 (= '0')
Data[24]	\x35 (= '5')
Data[25]	\x00
Checksum	\x9f
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description :

Rename file1 to file2.
- Only custom files can be renamed.
- Only the base name of a file can be renamed. This means that file1 and file2 have to point to the same location (file1 and file2 must have the same “file index”)

Command :

Command[0]	\xc3

Data :

Old filename followed by the new filename (no wildcards allowed).

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$, BD5100$^{V1.06}$, BD5100LC$^{V1.06}$, BD8100$^{V1.06}$, BD8100LC$^{V1.06}$, BG8100, BG8100LC

Example :

Rename the file “ntsc .c01” to “camera1 .c01” on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\xc3
Data[0]	\x6e (= 'n')
Data[1]	\x74 (= 't')
Data[2]	\x73 (= 's')
Data[3]	\x63 (= 'c')
Data[4]	\x20 (= ' ')
Data[5]	\x20 (= ' ')
Data[6]	\x20 (= ' ')
Data[7]	\x20 (= ' ')
Data[8]	\x2e (= '.')
Data[9]	\x63 (= 'c')
Data[10]	\x30 (= '0')
Data[11]	\x31 (= '1')
Data[12]	\x00
Data[13]	\x63 (= 'c')
Data[14]	\x61 (= 'a')
Data[15]	\x6d (= 'm')
Data[16]	\x65 (= 'e')
Data[17]	\x72 (= 'r')
Data[18]	\x61 (= 'a')
Data[19]	\x31 (= '1')
Data[20]	\x20 (= ' ')
Data[21]	\x2e (= '.')
Data[22]	\x63 (= 'c')
Data[23]	\x30 (= '0')
Data[24]	\x31 (= '1')
Data[25]	\x00
Checksum	\x9a
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Disable freeze.

Command

Command[0]	\x26
Command[1]	\x23

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5100, BD5100LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Disable freeze of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x26
Command[1]	\x23
Checksum	\x4a
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Enable freeze.

Command

Command[0]	\x27
Command[1]	\x23

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5100, BD5100LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Enable freeze of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x27
Command[1]	\x23
Checksum	\x4b
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop \xff	

Description

Read installation.

Command

Command[0]	\x21
Command[1]	\x24

Data

No data bytes.

Return data

Data[0] = installation.

Installation	Data[0]
Front/Table	\x40
Front/Ceiling	\x80
Rear/Table	\x00
Rear/Ceiling	\xc0

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read installation of a projector with address \x01. Suppose the projector is installed in front/ceiling.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x24
Checksum	\x46
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x24
Data[0].0	\x80
Data[0].1	\x00
Checksum	\xc6
Stop	\xff

Description

Write installation (front/table, ...).

Command

Command[0]	\x20
Command[1]	\x24

Data

Data[0] = installation.

Installation	Data[0]
Front/Table	\x40
Front/Ceiling	\x80
Rear/Table	\x00
Rear/Ceiling	\xc0

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Set the installation of a projector with address \x01 to front/ceiling.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x20
Command[1]	\x24
Data[0].0	\x80
Data[0].1	\x00
Checksum	\xc5
Stop	\xff

Description

Read the lamp run time in hours.

Command

Command[0]	\x64

Data

No data bytes.

Return data

The return data-transfer being the lamp run time in hours contains of four data bytes. The first byte is the most significant byte !
Formula :
Lamp run time (hours)
$= Data[0]*256^3 + Data[1]*256^2 + Data[2]*256 + Data[3]$

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the lamp run time of a projector with address \x01.
Suppose the lamp run time is 100 hours.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x64
Checksum	\x65
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x64
Data[0]	\x00
Data[1]	\x00
Data[2]	\x00
Data[3]	\x64
Checksum	\xc9
Stop	\xff

lamp run time =
\x00 * 256^3 + \x00 * 256^2 + \x00 * 256 + \x64

Description

Read the serial number of the lamp.

Command

Command[0]	\x63

Data

No data bytes.

Return data

The return data-transfer being the lamp serial number is a pascal-language string (see syntax).

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the lamp serial number of a projector with address \x01. Suppose the lamp serial number is '0655230'.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x63
Checksum	\x64
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x63
Data[0]	\x07
Data[1]	\x30 (= '0')
Data[2]	\x36 (= '6')
Data[3]	\x35 (= '5')
Data[4]	\x35 (= '5')
Data[5]	\x32 (= '2')
Data[6]	\x33 (= '3')
Data[7]	\x30 (= '0')
Checksum	\xd0
Stop	\xff

Description

Read the lamp status.

Command

Command[0]	\x6c

Data

No data bytes.

Return data

Data[0] = lamp status.
Only bit0 (least significant bit) is significant.

bit#	bit = 0	bit = 1
bit0	nominal power	high power

Projector type

BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the lamp status of a projector with address \x01. Suppose the lamp is configured in high power.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x6c
Checksum	\x6d
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x6c
Data[0]	\x01
Checksum	\x6e
Stop	\xff

Description

Reset the lamp run time (after installation of a new lamp).

Command

Command[0]	\x68

Data

The data being the lamp serial number is a pascal-language string (see syntax) with length 7.

Data[0]	\x07
Data[1]	\x30..\x39
Data[2]	\x30..\x39
Data[3]	\x30..\x39
Data[4]	\x30..\x39
Data[5]	\x30..\x39
Data[6]	\x30..\x39
Data[7]	\x30..\x39

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Description

Read the status of the audio lock.

Command

Command[0]	\x21
Command[1]	\x3f

Data

No data bytes.

Return data

Data[0] = lock specification.

Lock	Data[0]
Off	\x00
Input 1 or A	\x01
Input 2 or B	\x02
Input 3 or C	\x03

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC

Example

Read the audio lock status of a projector with address \x01. Suppose the audio signal is locked on audio input 1.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x3f
Checksum	\x61
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x3f
Data[0]	\x01
Checksum	\x62
Stop	\xff

Description

Lock the audio signal to a specific audio input or set the lock off (audio input follows the video input).

Command

Command[0]	\x20
Command[1]	\x3f

Data

Data[0] = lock specification.

Lock	Data[0]
Off	\x00
Input 1 or A	\x01
Input 2 or B	\x02
Input 3 or C	\x03

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC

Example

Lock the audio signal on audio input 1 of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x20
Command[1]	\x3f
Data[0]	\x01
Checksum	\x61
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Read the actual phase value.

Command

Command[0]	\x21
Command[1]	\x06

Data

No data bytes.

Return data

Data[0] = phase value.

	Data[0]
BD2100	\x00..\xff
BD2100LC	\x00..\xff
BD3000	\x00..\xff
BD3000LC	\x00..\xff
BD3100	\x00..\xff
BD3100LC	\x00..\xff
BD5000	\x00..\x3f
BD5000LC	\x00..\x3f
BD5100	\x00..\xff
BD5100LC	\x00..\xff
BD8000	\x00..\x3f
BD8000LC	\x00..\x3f
BD8100	\x00..\xff
BD8100LC	\x00..\xff

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC

Example

Read the actual phase value of a projector with address \x01. Suppose the phase equals \x03.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x06
Checksum	\x28
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x06
Data[0]	\x03
Checksum	\x2b
Stop	\xff

Description

Write a new phase value.

Command

Command[0]	\x20
Command[1]	\x06

Data

Data[0] = phase value.

	Data[0]
BD2100	\x00..\xff
BD2100LC	\x00..\xff
BD3000	\x00..\xff
BD3000LC	\x00..\xff
BD3100	\x00..\xff
BD3100LC	\x00..\xff
BD5000	\x00..\x3f
BD5000LC	\x00..\x3f
BD5100	\x00..\xff
BD5100LC	\x00..\xff
BD8000	\x00..\x3f
BD8000LC	\x00..\x3f
BD8100	\x00..\xff
BD8100LC	\x00..\xff

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC

Example

Set the phase to \x03 on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x20
Command[1]	\x06
Data[0]	\x03
Checksum	\x2a
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Write blanking shapes (circles and rectangles) (OPTIONAL)

Command

Command[0]	\xel

Data

Data for a solid circle with centre (x, y) and radius r.

	Data
Data[n]	'C'='\x43'
Data[n+1]	x(msb)
Data[n+2]	x(lsb)
Data[n+3]	x(msb)
Data[n+4]	x(lsb)
Data[n+5]	x(msb)
Data[n+6]	x(lsb)

Data for a hole circle with centre (x, y) and radius r.

	Data
Data[n]	'c'='\x63'
Data[n+1]	x(msb)
Data[n+2]	x(lsb)
Data[n+3]	y(msb)
Data[n+4]	y(lsb)
Data[n+5]	r(msb)
Data[n+6]	r(lsb)

Data for a solid rectangle with coordinates (x1, y1)(x2, y2).

	Data
Data[n]	'R'='\x52'
Data[n+1]	x1(msb)
Data[n+2]	x1(lsb)
Data[n+3]	y1(msb)
Data[n+4]	y1(lsb)
Data[n+5]	x2(msb)
Data[n+6]	x2(lsb)
Data[n+7]	y2(msb)
Data[n+8]	y2(lsb)

Data for a hole rectangle with coordinates (x1, y1)(x2, y2).

	Data
Data[n]	'r'='\x72'
Data[n+1]	x1(msb)
Data[n+2]	x1(lsb)
Data[n+3]	y1(msb)
Data[n+4]	y1(lsb)
Data[n+5]	x2(msb)
Data[n+6]	x2(lsb)
Data[n+7]	y2(msb)
Data[n+8]	y2(lsb)

Notes

- The calculations are made starting from an imaginary solid shape as large as the lcd panel.

- The combine several shapes, just put the data of the requested shapes after each other. The order in wich the shapes are drawn is the same as the order in which they are sent to the projector.

- The values of the coordinates have to be checked by the computer !!! Extreme large coordinates can lead to microprocessor reset.

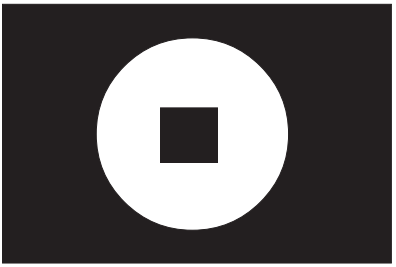
- "Solid shape" means blanked inside the shape.

- "Hole shape" means no blanking inside the shape.

Projector type

BD3100$^{V1.07/V2.07}$, BD3100LC$^{V1.07/V2.07}$, BD5100$^{V1.07/V2.07}$, BD5100LC$^{V1.07/V2.07}$, BD8100$^{V1.07/V2.07}$, BD8100LC$^{V1.07/V2.07}$

Example



Draw following blanking pattern on a projector with address \x01.
- hole circle (x=350, y=250, r=200)
- solid rectangle (x1=300, y1=200, x2=400, y2=300)

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\xe1
Data[0]	\x63
Data[1]	\x01
Data[2]	\x5e
Data[3]	\x00
Data[4]	\xfa
Data[5]	\x00
Data[6]	\xc8
Data[7]	\x52
Data[8]	\x01
Data[9]	\x2c
Data[10]	\x00
Data[11]	\xc8
Data[12]	\x01
Data[13]	\x90
Data[14]	\x01
Data[15]	\x2c
Checksum	\x6b
Stop	\xff

Receive (acknowledge)	
Start	x\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Read the projector run time in seconds.

Command

Command[0]	\x62

Data

No data bytes.

Return data

The return data-transfer being the projector run time in seconds contains of four data bytes. The first byte is the most significant byte !
Formula :
Projector run time (seconds)
= Data[0]*256^3 + Data[1]*256^2 + Data[2]*256 + Data[3]

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100,BD3100LC, BD5100, BD5100LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the projector run time of a projector with address \x01. Suppose the projector run time is 3000 hours (10800000 seconds).

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x62
Checksum	\x63
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x62
Data[0]	\x00
Data[1]	\xa4
Data[2]	\xcb
Data[3]	\x80
	\x00
Checksum	\x52
Stop	\xff

projector run time =
\x00 * 256^3 + \xa4 * 256^2 + \xcb * 256 + \x80

Description

Read the serial number of the projector.

Command

Command[0]	\x61

Data

No data bytes.

Return data

The return data-transfer being the projector serial number is a pascal-language string (see syntax).

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the serial number of a projector with address \x01. Suppose the projector serial number is '0000001'.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x61
Checksum	\x62
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x61
Data[0]	\x07
Data[1]	\x30 (= '0')
Data[2]	\x30 (= '0')
Data[3]	\x30 (= '0')
Data[4]	\x30 (= '0')
Data[5]	\x30 (= '0')
Data[6]	\x30 (= '0')
Data[7]	\x31 (= '1')
Checksum	\xba
Stop	\xff

Description

Determine the type of projector you are communicating with.

Command

Command[0]	\x6b

Data

No data bytes.

Return data

The return data-transfer being the projector type is a pascal-language string (see syntax).

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5100, BD5100LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the projector type of a projector with address \x01. Suppose the projector is a 'BARCODATA 8100'.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x6b
Checksum	\x6c
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x6b
Data[0]	\x0e
Data[1]	\x42 (= 'B')
Data[2]	\x41 (= 'A')
Data[3]	\x52 (= 'R')
Data[4]	\x43 (= 'C')
Data[5]	\x4f (= 'O')
Data[6]	\x44 (= 'D')
Data[7]	\x41 (= 'A')
Data[8]	\x54 (= 'T')
Data[9]	\x41 (= 'A')
Data[10]	\x20 (= ' ')
Data[11]	\x38 (= '8')
Data[12]	\x31 (= '1')
Data[13]	\x30 (= '0')
Data[14]	\x30 (= '0')
Checksum	\xe4
Stop	\xff

Description

Write the projector address

Command

Command[0]	\x6d

Data

Data[0] = projector address

Data[0]	\x00..\xff

Projector type

BD2100, BD2100LC, BG8100, BG8100LC

Example

Set the address of the projector with address \x01 to \x20.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x6b
Data[0]	\x8e
Checksum	\x8e
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Read the actual sharpness value.

Command

Command[0]	\x21
Command[1]	\x05

Data

No data bytes.

Return data

Data[0] = sharpness value.

Data[0]	\x00..\x03

Data[0]	BD5000	BD3000	BD2100
	BD5000LC	BD3000LC	BD2100LC
BD8000	BD3100	BG8100	
	BD8000LC	BD3100LC	BG8100LC
		BD5100	
		BD5100LC	
		BD8100	
		BD8100LC	
\x00	“-4 db”	“0”	"0"
\x01	“0 db”	“0.25”	"1"
\x02	“3,5 db”	“0.5”	"2"
\x03	“6 db”	“1”	"3"

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the actual sharpness value of a projector with address \x01. Suppose the sharpness equals \x03.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x05
Checksum	\x27
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x05
Data[0]	\x03
Checksum	\x2a
Stop	\xff

Description

Write a new sharpness value.

Command

Command[0]	\x20
Command[1]	\x05

Data

Data[0] = sharpness value.

Data[0]	\x00..\x03

Data[0]	BD5000	BD3000	BD2100
	BD5000LC	BD3000LC	BD2100LC
BD8000	BD3100	BG8100	
	BD8000LC	BD3100LC	BG8100LC
		BD5100	
		BD5100LC	
		BD8100	
		BD8100LC	
\x00	“-4 db”	“0”	"0"
\x01	“0 db”	“0.25”	"1"
\x02	“3,5 db”	“0.5”	"2"
\x03	“6 db”	“1”	"3"

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Set the sharpness to \x03 on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x20
Command[1]	\x05
Data[0]	\x03
Checksum	\x29
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description :

Close the mechanical shutter (OPTIONAL).

Command :

Command[0]	\x23
Command[1]	\x42

Data :

Data[0] = speed.

	Data[0]
Fast	\x00
Slow	\x01

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$, BD5100$^{V1.06}$, BD5100LC$^{V1.06}$, BD8100$^{V1.06}$, BD8100LC$^{V1.06}$, BG8100, BG8100LC

Example :

Close the shutter (full speed) of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x23
Command[1]	\x42
Data[0]	\x00
Checksum	\x66
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description :

Open the mechanical shutter (OPTIONAL).

Command :

Command[0]	\x22
Command[1]	\x42

Data :

Data[0] = speed.

	Data[0]
Fast	\x00
Slow	\x01

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$, BD5100$^{V1.06}$, BD5100LC$^{V1.06}$, BD8100$^{V1.06}$, BD8100LC$^{V1.06}$, BG8100, BG8100LC

Example :

Open the shutter (full speed) of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x22
Command[1]	\x42
Data[0]	\x00
Checksum	\x65
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description :

Read the actual shutter position (OPTIONAL).

Command :

Command[0]	\x21
Command[1]	\x42

Data :

No data bytes.

Return data :

Data[0] = shutter position.

	Data[0]
Closed	\x00
Open	\x01
Undetermined	\x02

Projector type :

BD2100, BD2100LC, BD3000, BD3000LC, BD3100$^{V1.06}$, BD3100LC$^{V1.06}$, BD5100$^{V1.06}$, BD5100LC$^{V1.06}$, BD8100$^{V1.06}$, BD8100LC$^{V1.06}$, BG8100, BG8100LC

Example :

Read the actual shutter position of a projector with address \x01. Suppose the shutter is open.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x42
Checksum	\x64
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x42
Data[0]	\x01
Checksum	\x65
Stop	\xff

Description

Read the language used in the on-screen-display.

Command

Command[0]	\x69

Data

No data bytes.

Return data

The return data-transfer being the software language is a pascal-language string (see syntax).

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the on-screen-display language of a projector with address \x01. Suppose the lanuage is 'ENGLISH'.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x69
Checksum	\x6a
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x69
Data[0]	\x07
Data[1]	\x45 (= 'E')
Data[2]	\x4e (= 'N')
Data[3]	\x47 (= 'G')
Data[4]	\x4c (= 'L')
Data[5]	\x49 (= 'I')
Data[6]	\x53 (= 'S')
Data[7]	\x48 (= 'H')
Checksum	\x7b
Stop	\xff

Description

Read the type of software installed in the projector.

Command

Command[0]	\x6a

Data

No data bytes.

Return data

The return data-transfer being the software type is a pascal-language string (see syntax).

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the software type of a projector with address \x01. Suppose the lanuage is 'STANDARD'.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x6a
Checksum	\x6b
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x6a
Data[0]	\x08
Data[1]	\x53 (= 'S')
Data[2]	\x54 (= 'T')
Data[3]	\x41 (= 'A')
Data[4]	\x4e (= 'N')
Data[5]	\x44 (= 'D')
Data[6]	\x41 (= 'A')
Data[7]	\x52 (= 'R')
Data[8]	\x44 (= 'D')
Checksum	\xc4
Stop	\xff

Description

Read the version of the software.

Command

Command[0]	\x60

Data

No data bytes.

Return data

The return data-transfer being the software version is a pascal-language string (see syntax).

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the software version of a projector with address \x01. Suppose the version number is '1.02'.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x60
Checksum	\x61
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x60
Data[0]	\x04
Data[1]	\x31 (= '1')
Data[2]	\x2e (= '.')
Data[3]	\x30 (= '0')
Data[4]	\x32 (= '2')
Checksum	\x26
Stop	\xff

Description

Read slow/fast sync (only active when the decoder is used).

Command

Command[0]	\x21
Command[1]	\x27

Data

No data bytes.

Return data

Data[0] = sync.

Sync	Data[0]
Slow	\x00
Fast	\x04

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5000, BD5000LC, BD5100, BD5100LC, BD8000, BD8000LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Read the sync status of a projector with address \x01. Suppose the sync status equals fast.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x27
Checksum	\x49
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x27
Data[0]	\x04
Checksum	\x4d
Stop	\xff

Description

Set the sync to fast (only active when the decoder is used).

Command

Command[0]	\x27
Command[1]	\x27

Data

No data bytes.

Projector type

BD2100$^{V1.02}$, BD2100LC$^{V1.02}$, BD3000, BD3000LC, BD3100, BD3100LC, BD5100, BD5100LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Set the sync to fast of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x27
Command[1]	\x27
Checksum	\x4f
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Set the sync to slow (only active when the decoder is used).

Command

Command[0]	\x26
Command[1]	\x27

Data

No data bytes.

Projector type

BD2100$^{V1.02}$, BD2100LC$^{V1.02}$, BD3000, BD3000LC, BD3100, BD3100LC, BD5100, BD5100LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Set the sync to slow of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x26
Command[1]	\x27
Checksum	\x4e
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Set text off (identical to TEXT button on infrared remote control).

Command

Command[0]	\x0e

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5100, BD5100LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Set text off of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x0e
Checksum	\x0f
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Set text on (identical to TEXT button on infrared remote control).

Command

Command[0]	\x0d

Data

No data bytes.

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC, BD5100, BD5100LC, BD8100, BD8100LC, BG8100, BG8100LC

Example

Set text on of a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x0d
Checksum	\x0e
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Read the actual treble value.

Command

Command[0]	\x21
Command[1]	\x09

Data

No data bytes.

Return data

Data[0] = treble value.

Data[0]	\xfc..\x04

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC

Example

Read the actual treble value of a projector with address \x01. Suppose the volume equals \xff.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x09
Checksum	\x2b
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x09
Data[0]	\x80
Data[1]	\x7f
Checksum	\x2a
Stop	\xff

Description

Write a new treble value.

Command

Command[0]	\x20
Command[1]	\x09

Data

Data[0] = treble value.

Data[0]	\xfc..\x04

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC

Example

Set the treble to \xff on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x20
Command[1]	\x09
Data[0]	\x80
Data[1]	\x7f
Checksum	\x29
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Description

Read the actual volume value.

Command

Command[0]	\x21
Command[1]	\x07

Data

No data bytes.

Return data

Data[0] = volume value.

Data[0]	\x00..\x2c

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC

Example

Read the actual volume value of a projector with address \x01. Suppose the volume equals \x10.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x07
Checksum	\x29
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Receive (answer)	
Start	\xfe
Projector address	\x01
Command[0]	\x21
Command[1]	\x07
Data[0]	\x10
Checksum	\x39
Stop	\xff

Description

Write a new volume value.

Command

Command[0]	\x20
Command[1]	\x07

Data

Data[0] = volume value.

Data[0]	\x00..\x2c

Projector type

BD2100, BD2100LC, BD3000, BD3000LC, BD3100, BD3100LC

Example

Set the volume to \x10 on a projector with address \x01.

Transmit	
Start	\xfe
Projector address	\x01
Command[0]	\x20
Command[1]	\x07
Data[0]	\x10
Checksum	\x38
Stop	\xff

Receive (acknowledge)	
Start	\xfe
Projector address	\x01
Command[0]	\x00
Command[1]	\x06
Checksum	\x07
Stop	\xff

Appendix a
Command summary 2

Appendix a: Command summary 2

balance, decrement : ..... \x23\x0a
balance, increment : ..... \x22\x0a

bass, decrement : ..... \x23\x08
bass, increment : ..... \x22\x08

brightness, decrement : ..... \x04
brightness, increment : ..... \x03

color, decrement : ..... \x06
color, increment : ..... \x05

contrast, decrement : ..... \x02
contrast, increment : ..... \x01

infrared control, 0 : ..... \x30\x19
infrared control, 1 : ..... \x30\x10
infrared control, 2 : ..... \x30\x11
infrared control, 3 : ..... \x30\x12
infrared control, 4 : ..... \x30\x13
infrared control, 5 : ..... \x30\x14
infrared control, 6 : ..... \x30\x15
infrared control, 7 : ..... \x30\x16
infrared control, 8 : ..... \x30\x17
infrared control, 9 : ..... \x30\x18
infrared control, ADDR : ..... \x30\x20
infrared control, ARROW DOWN : ..... \x30\x05
infrared control, ADDR : \x20
infrared control, ARROW DOWN : ..... \x30\x05
infrared control, ARROW LEFT : ..... \x30\x07
infrared control, ARROW RIGHT : ..... \x30\x06
infrared control, ARROW UP : ..... \x30\x04
infrared control, BALANCE+ : ..... \x30\x3e
infrared control, BALANCE- : \x30\x3f
infrared control, BASS+ : ..... \x30\x3a
infrared control, BASS- : ..... \x30\x3b
infrared control, BRIGHTNESS : ..... \x30\x27
infrared control, BRIGHTNESS+ : ..... \x30 \x2a
infrared control, BRIGHTNESS- : ..... \x30 \x2b
infrared control, COLOR : ..... \x30\x30

infrared control, COLOR+ : ..... \x30\x2c
infrared control, COLOR- : ..... \x30\x2d
infrared control, CONTRAST : ..... \x30\x25
infrared control, CONTRAST+ : ..... \x30\x28
infrared control, CONTRAST- : ..... \x30\x29
infrared control, ENTER : ..... \x30\x0a
infrared control, EXIT : ..... \x30\x08
infrared control, FREEZ : ..... \x30\x1b
infrared control, HELP : ..... \x30\x09
infrared control, MUTE : ..... \x30\x1f
infrared control, PAUSE : ..... \x30\x0f
infrared control, PHASE : ..... \x30\x32
infrared control, PHASE+ : ..... \x30\x34
infrared control, PHASE- : ..... \x30\x35
infrared control, SHARPNESS : ..... \x30\x33
infrared control, SHARPNESS+ : ..... \x30\x36
infrared control, SHARPNESS- : ..... \x30\x37
infrared control, STDBY : ..... \x30\x0e
infrared control, TEXT : ..... \x30\x0d
infrared control, TINT : ..... \x30\x31
infrared control, TINT+ : ..... \x30\x2e
infrared control, TINT- : ..... \x30\x2f
infrared control, TREBLE+ : ..... \x30\x3c
infrared control, TREBLE- : ..... \x30\x3d
infrared control, VOLUME+ : ..... \x30\x38
infrared control, VOLUME- : ..... \x30\x39

mute audio, write off : ..... \x26\x3d
mute audio, write on : ..... \x27\x3d
mute video, write off : ..... \x26\x3e
mute video, write on : ..... \x27\x3e

phase, decrement : ..... \x0c
phase, increment : ..... \x0b

projector status, read : ..... \x67
projector status, write off : ..... \x66
projector status, write on : ..... \x65

sharpness, decrement : ..... \x0a
sharpness, increment : ..... \x09

source/slot, read number : ..... \x32
source/slot, write number : ..... \x31\xSS (\xSS = ... source/slot number)
source/slot, read number+mode : ..... \x34
source/slot, write number+mode : ..... \x33\xSS\xMM (\xSS = ... source/slot number; \xMM = source/slot ... mode)

tint, decrement : ..... \x08
tint, increment : ..... \x07

treble, decrement : ..... \x23\x09
treble, increment : ..... \x22\x09

volume, decrement : ..... \x23\x07
volume, increment : ..... \x22\x07

Appendix b
Command summary 3

balance, read : ..... \x21\x0a
balance, write : ..... \x20\x0a\xVV (\xVV = value)

bass, read : ..... \x21\x08
bass, write : ..... \x20\x08\xVV (\xVV = value)

brightness, read : ..... \x21\x02
brightness, write : ..... \x20\x02\xVV (\xVV = value)

contrast, read : ..... \x21\x01
contrast, write : ..... \x20\x01\xVV (\xVV = value)

dimming, decrement : ..... \x23\x0d
dimming, increment : ..... \x22\x0d

fade audio extern, decrement : ..... \x23\x41
fade audio extern, increment : ..... \x22\x41
fade audio extern, read : ..... \x21\x41
fade audio extern, write : ..... \x20\x41\xVV (\xVV = value)
fade audio intern, decrement : ..... \x23\x40
fade audio intern, increment : \x22\x40
fade audio intern, read : ..... \x21\x40
fade audio intern, write : ..... \x20\x40\xVV (\xVV = value)

file, copy : ..... \xc2\sFN1\sFN2 (\sFN = filename)
file, delete : ..... \xc1\sFN (\sFN = filename)
file, list : ..... \xc0\sFN (\sFN = filename)
file, list active : ..... \xc5
file, move : ..... \xc4\sFN1\sFN2 (\xFN = filename)
file, rename : ..... \xc3\sFN1\sFN2 (\xFN = filename)

freeze, write off : ..... \x26\x23
freeze, write on : ..... \x27\x23

installation, read : ..... \x21\x24
installation, write : ..... \x20\x24

lamp, read run time : ..... \x64
lamp, read serial number : ..... \x63

lamp, read status : ..... \x6c
lamp, reset run time : ..... \x68

lock audio, read : ..... \x21\x3f
lock audio, write : ..... \x20\x3f

phase, read : ..... \x21\x06
phase, write : ..... \x20\x06\xVV (\xVV = value)

programmable blanking, write: ..... \xe1\xDD (\xDD=shape)

projector, read run time : ..... \x62
projector, read serial number : ..... \x61
projector, read type : ..... \x6b

projector, write address: ..... \x6d\xAA (\xAA=address)

sharpness, read : ..... \x21\x05
sharpness, write : ..... \x20\x05\xVV (\xVV = value)

shutter, close : ..... \x23\x42\xVV (\xVV = \x00 or \x01)
shutter, open : ..... \x22\x42\xVV (\xVV = \x00 or \x01)
shutter, read : ..... \x21\x42

software, read language : ..... \x69
software, read type : ..... \x6a
software, read version : ..... \x60

sync, read : ..... \x21\x27
sync, write fast : ..... \x27\x27
sync, write slow : ..... \x26\x27

text, write off : ..... \x0e
text, write on : ..... \x0d

treble, read : ..... \x21\x09
treble, write : ..... \x20\x09\xVV (\xVV = value)

volume, read : ..... \x21\x07
volume, write : ..... \x20\x07\xVV (\xVV = value)