

Sanyo
DLP Projector
PDG-DSU21N / DSU21E / DSU21B

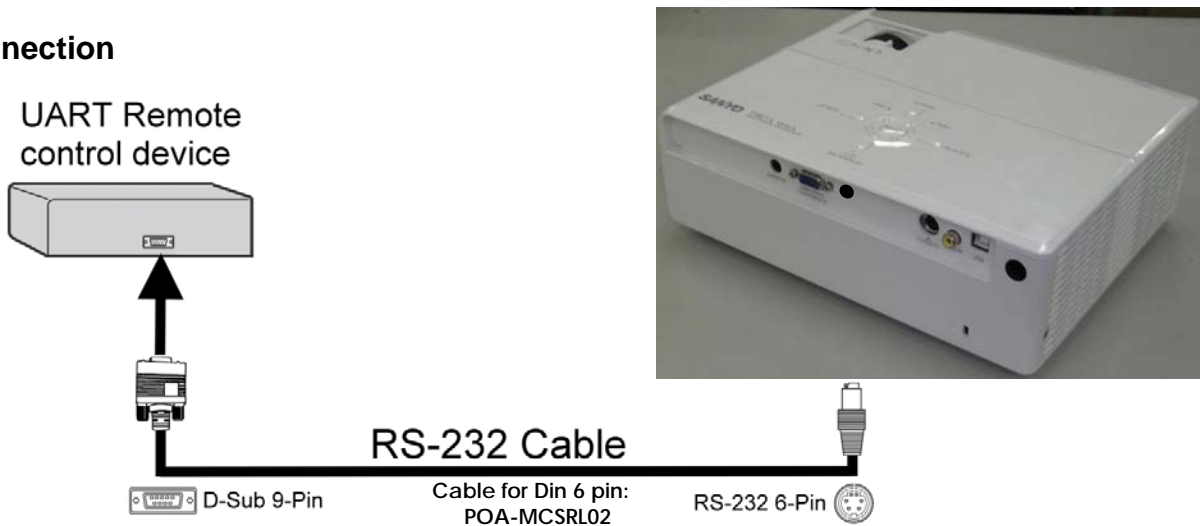
Controlling the projector using a UART Remote Control Device

This projector can be controlled by connecting a remote control device with RS-232C.

Controllable function

- Turning the power ON or OFF
- Changing input signals
- Inputting commands by pressing the buttons on the control panel and remote control
- Menu setting

Connection



1. Interface

Item	Description
Protocol	RS-232
Baud Rate	19200
Parity Bit	none
Data Bit	8
Stop Bit	1
Assign Port	COM1
Flow control	none

This projector uses RXD, TXD and GND lines for RS-232C control.

2. Control sequence

- (1) Send the command from the UART remote control device.
 - (2) The projector will send an ACK code after it receives the command. If the command is not received correctly, the projector will not send the ACK code.
- During signal switching, the command may not take effect even when the projector sends the return code. After signal switching completes, wait for the mode indication to disappear before sending the next command.
 - When sending commands successively, wait to receive the return code of the current command before sending a next command.

[Example]

		Send String (HEX)
Host ⇒ Projector	Power on	BE,EF,10,05,00,C6,FF,11,11,01,00,01,00
Projector return	ACK	06

3. Power ON / OFF command

These commands are used to POWER-ON/OFF projector directly.

Command	Send String (HEX)												
Power on	BE	EF	10	05	00	C6	FF	11	11	01	00	01	00
Power off	BE	EF	03	06	00	DC	DB	69	00	00	00	00	00

[Example]

Host ⇒ Projector (HEX)	Projector return	Description
BE,EF,10,05,00,C6,FF,11,11,01,00,01,00		Power on the projector.
	06	Command receipt confirmation (ACK).

4. Keypad command

The operation commands are used for the basic operation setting of this projector. When there has no OSD on the display screen, 『◀ Left』 command is equal to the 『Input』 command, 『▶ Right』 command is equal to the 『Auto PC』 command.

Command	Send String (HEX)												
Menu	BE	EF	02	06	00	E9	D3	30	00	00	00	00	00
▲ Up	BE	EF	02	06	00	6D	D2	34	00	00	00	00	00
▼ Down	BE	EF	02	06	00	0B	D2	32	00	00	00	00	00
◀ Left	BE	EF	02	06	00	DA	D3	33	00	00	00	00	00
▶ Right	BE	EF	02	06	00	38	D2	31	00	00	00	00	00
Input	BE	EF	02	06	00	57	D0	2E	00	00	00	00	00
Auto PC	BE	EF	02	06	00	86	D1	2F	00	00	00	00	00

[Example]

Host ⇨ Projector (HEX)	Projector return	Description
BE,EF,02,06,00,E9,D3,30,00,00,00,00,00		Command operating the same as the MENU button.
	06	Command receipt confirmation (ACK).

5. IR remote command

Some remote control operations may not work according to the current display source.

For example, 『Auto PC』 command is only work when current source is COMPUTER. When there has no OSD on the display screen, 『◀ Left』 command is equal to the 『Input』 command, 『▶ Right』 command is equal to the 『Auto PC』 command.

Command	Send String (HEX)												
Menu	BE	EF	02	06	00	E9	D3	30	00	00	00	00	00
Image	BE	EF	03	06	00	F2	DA	67	00	00	00	00	00
▲ Up	BE	EF	02	06	00	6D	D2	34	00	00	00	00	00
▼ Down	BE	EF	02	06	00	0B	D2	32	00	00	00	00	00
◀ Left	BE	EF	02	06	00	DA	D3	33	00	00	00	00	00
▶ Right	BE	EF	02	06	00	38	D2	31	00	00	00	00	00
Mute	BE	EF	02	06	00	0E	DE	67	00	00	00	00	00
Keystone Inc	BE	EF	03	06	00	10	DB	65	00	00	00	00	00
Keystone Dec	BE	EF	03	06	00	23	DB	66	00	00	00	00	00
Volume Inc	BE	EF	02	06	00	F1	DE	68	00	00	00	00	00
Volume Dec	BE	EF	02	06	00	20	DF	69	00	00	00	00	00
Eco on	BE	EF	03	06	00	EF	DB	6A	00	00	00	00	00
Eco off	BE	EF	03	06	00	3E	DA	6B	00	00	00	00	00
Auto PC Adj.	BE	EF	02	06	00	86	D1	2F	00	00	00	00	00
Input	BE	EF	02	06	00	57	D0	2E	00	00	00	00	00
No Show	BE	EF	02	06	00	DF	DF	66	00	00	00	00	00
Aspect	BE	EF	03	06	00	0D	DA	68	00	00	00	00	00
Freeze	BE	EF	02	06	00	CB	DC	72	00	00	00	00	00
D.zoom +	BE	EF	02	06	00	1A	DD	73	00	00	00	00	00
D.zoom -	BE	EF	02	06	00	AD	DC	74	00	00	00	00	00
Page up	BE	EF	02	06	00	7C	DD	75	00	00	00	00	00
Page down	BE	EF	02	06	00	4F	DD	76	00	00	00	00	00
Enter	BE	EF	02	06	00	9E	DC	77	00	00	00	00	00
Esc	BE	EF	02	06	00	61	DC	78	00	00	00	00	00

[Example]

Host ⇔ Projector (HEX)	Projector return	Description
BE,EF,03,06,00,0D,DA,68,00,00,00,00,00		Switch aspect ratio.
	06	Command receipt confirmation (ACK).

6. Source switch command

These commands are used to switch the input source directly.

Computer (Analog RGB)													
Send String (HEX)	BE	EF	03	19	00	19	29	01	47	02	CC	CC	00
Component													
Send String (HEX)	BE	EF	03	19	00	89	E8	01	47	02	CC	CC	00
S-Video													
Send String (HEX)	BE	EF	03	19	00	E8	69	01	47	02	CC	CC	00
Composite Video													
Send String (HEX)	BE	EF	03	19	00	78	A8	01	47	02	CC	CC	00

[Example]

Host ⇒ Projector (HEX)	Projector return	Description
BE,EF,03,19,00,19,29,01,47,02,CC,CC,00		Command for setting the input signal to COMPUTER.
	06	Command receipt confirmation (ACK).

7. Special command

These commands are special commands not list on keypad and IR remote.

Command	Send String (HEX)												
Input Search on	BE	EF	03	06	00	89	DB	6C	00	00	00	00	00
Input Search off	BE	EF	03	06	00	58	DA	6D	00	00	00	00	00
Keystone	BE	EF	02	06	00	3D	DE	64	00	00	00	00	00
Volume	BE	EF	02	06	00	F8	DC	71	00	00	00	00	00
Factory Default	BE	EF	03	06	00	6B	DA	6E	00	00	00	00	00
Lamp Counter	BE	EF	03	06	00	BA	DB	6F	00	00	00	00	00
Firmware Version	BE	EF	03	06	00	D5	D9	70	00	00	00	00	00
System Status	BE	EF	03	06	00	04	D8	71	00	00	00	00	00

[Example]

Host ⇒ Projector (HEX)	Projector return	Description
BE,EF,03,06,00,89,DB,6C,00,00,00,00,00		Enable Input Search function.
	06	Command receipt confirmation (ACK).

[Example] * When Projector return is not "06".

Host ⇒ Projector (HEX)	Projector return	Description
BE,EF,03,06,00,BA,DB,6F,00,00,00,00,00	Lamp Counter	Get Lamp Counter Value
BE,EF,03,06,00,D5,D9,70,00,00,00,00,00	Version	Get Firmware Version
BE,EF,03,06,00,04,D8,71,00,00,00,00,00	03	Get System Status 03:Projector ON(Normal Mode)