

**RS232 Serial Communication Interface for CG Device Control**

**Sample of the frame format for design reference**

Please also refer to the Specification of RS232 Serial Communication Interface for CG Devices Control Version 1.7, hereafter refers as “spec.”.

Example 1:

Turn OFF a switch device which the ID of the switch device is 0xD027 and the EP is 1

RS232 data frame for control in hexadecimal format is:

19 C3 09 00 00 00 01 D0 27 01 01 02 05 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
09	Length	3.2	3
00	Frame Control	3.3	3-4
00	Seq. No.	3.4	4
00	Padding	3.5	4
01 D0 27 01 01 02	Payload	3.6	4
05 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
01	Cmd: CONTROL_REQ	4.1, 4.1.1	7
D0 27 01	DeviceID: Address+EP	4.1.2	8
01	DeviceType: DEVICE_SWITCH	4.1.3	8
02	ControlCmd: DEVICE_OFF	4.2	9

You should receive the response from the RS232 after the control, which the format in hexadecimal format is:

19 C3 0A 00 02 00 02 D0 27 01 01 02 00 09 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
0A	Length	3.2	3
00	Frame Control	3.3	3-4
02	Seq. No.	3.4	4
00	Padding	3.5	4
02 D0 27 01 01 02 00	Payload	3.6	4
09 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
02	Cmd: CONTROL_RESP	4.1, 4.1.1	7
D0 27 01	DeviceID: Address+EP	4.1.2	8
01	DeviceType: DEVICE_SWITCH	4.1.3	8
02	ControlCmd: DEVICE_OFF	4.2	9
00	ControlResult: SUCCESS	4.2	9

Example 2:

Turn ON a switch device which the ID of the switch device is 0xD027 and the EP is 1

RS232 data frame for control in hexadecimal format is:

19 C3 09 00 02 00 01 D0 27 01 01 01 06 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
09	Length	3.2	3
00	Frame Control	3.3	3-4
02	Seq. No.	3.4	4
00	Padding	3.5	4
01 D0 27 01 01 01	Payload	3.6	4
06 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
01	Cmd: CONTROL_REQ	4.1, 4.1.1	7
D0 27 01	DeviceID: Address+EP	4.1.2	8
01	DeviceType: DEVICE_SWITCH	4.1.3	8
01	ControlCmd: DEVICE_ON	4.2	9

You should receive the response from the RS232 after the control, which the format in hexadecimal format is:

19 C3 0A 00 04 00 02 D0 27 01 01 01 00 0A 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
0A	Length	3.2	3
00	Frame Control	3.3	3-4
04	Seq. No.	3.4	4
00	Padding	3.5	4
02 D0 27 01 01 01 00	Payload	3.6	4
0A 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
02	Cmd: CONTROL_RESP	4.1, 4.1.1	7
D0 27 01	DeviceID: Address+EP	4.1.2	8
01	DeviceType: DEVICE_SWITCH	4.1.3	8
01	ControlCmd: DEVICE_ON	4.2	9
00	ControlResult: SUCCESS	4.2	9

Example 3:

Turn ON a dimmer device which the ID of the dimmer device is 0xD066 and the EP is 1

RS232 data frame for control in hexadecimal format is:

19 C3 09 00 39 00 01 D0 66 01 03 01 7E 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
09	Length	3.2	3
00	Frame Control	3.3	3-4
39	Seq. No.	3.4	4
00	Padding	3.5	4
01 D0 66 01 03 01	Payload	3.6	4
7E 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
01	Cmd: CONTROL_REQ	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
01	ControlCmd: DEVICE_ON	4.2	9

You should receive the response from the RS232 after the control, which the format in hexadecimal format is:

19 C3 0A 00 0F 00 02 D0 66 01 03 01 00 56 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
0A	Length	3.2	3
00	Frame Control	3.3	3-4
0F	Seq. No.	3.4	4
00	Padding	3.5	4
02 D0 66 01 03 01 00	Payload	3.6	4
56 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
02	Cmd: CONTROL_RESP	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
01	ControlCmd: DEVICE_OFF	4.2	9
00	ControlResult: SUCCESS	4.2	9

Example 4:

Turn OFF a dimmer device which the ID of the dimmer device is 0xD066 and the EP is 1

RS232 data frame for control in hexadecimal format is:

19 C3 09 00 3A 00 01 D0 66 01 03 02 80 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
09	Length	3.2	3
00	Frame Control	3.3	3-4
3A	Seq. No.	3.4	4
00	Padding	3.5	4
01 D0 66 01 03 02	Payload	3.6	4
80 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
01	Cmd: CONTROL_REQ	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
02	ControlCmd: DEVICE_OFF	4.2	9

You should receive the response from the RS232 after the control, which the format in hexadecimal format is:

19 C3 0A 00 10 00 02 D0 66 01 03 02 00 58 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
0A	Length	3.2	3
00	Frame Control	3.3	3-4
10	Seq. No.	3.4	4
00	Padding	3.5	4
02 D0 66 01 03 02 00	Payload	3.6	4
58 01	Check Sum	3.7	4



And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
02	Cmd: CONTROL_RESP	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
02	ControlCmd: DEVICE_OFF	4.2	9
00	ControlResult: SUCCESS	4.2	9

Example 5:

Send command to the dimmer device for start to dimming up, which the address of the dimmer device is 0xD066 and the EP is 1

RS232 data frame for control in hexadecimal format is:

19 C3 09 00 3B 00 01 D0 66 01 03 11 90 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
09	Length	3.2	3
00	Frame Control	3.3	3-4
3B	Seq. No.	3.4	4
00	Padding	3.5	4
01 D0 66 01 03 11	Payload	3.6	4
90 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
01	Cmd: CONTROL_REQ	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
11	ControlCmd: DIM_UP_START	4.2	9

You should receive the response from the RS232 after the control, which the format in hexadecimal format is:

19 C3 0A 00 11 00 02 D0 66 01 03 11 00 68 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
0A	Length	3.2	3
00	Frame Control	3.3	3-4
11	Seq. No.	3.4	4
00	Padding	3.5	4
02 D0 66 01 03 11 00	Payload	3.6	4
68 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
02	Cmd: CONTROL_RESP	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
11	ControlCmd: DIM_UP_START	4.2	8
00	ControlResult: SUCCESS	4.2	9

Example 6:

Send command to the dimmer device to stop dimming up, which the address of the dimmer device is 0xD066 and the EP is 1

RS232 data frame for control in hexadecimal format is:

19 C3 09 00 3C 00 01 D0 66 01 03 12 92 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
09	Length	3.2	3
00	Frame Control	3.3	3-4
3C	Seq. No.	3.4	4
00	Padding	3.5	4
01 D0 66 01 03 12	Payload	3.6	4
92 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
01	Cmd: CONTROL_REQ	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
12	ControlCmd: DIM_UP_STOP	4.2	9

You should receive the response from the RS232 after the control, which the format in hexadecimal format is:

19 C3 0A 00 12 00 02 D0 66 01 03 12 00 6A 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
0A	Length	3.2	3
00	Frame Control	3.3	3-4
12	Seq. No.	3.4	4
00	Padding	3.5	4
02 D0 66 01 03 12 00	Payload	3.6	4
6A 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
02	Cmd: CONTROL_RESP	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
12	ControlCmd: DIM_UP_STOP	4.2	9
00	ControlResult: SUCCESS	4.2	9

Example 7:

Send command to the dimmer device for start to dimming down, which the address of the dimmer device is 0xD066 and the EP is 1

RS232 data frame for control in hexadecimal format is:

19 C3 09 00 3D 00 01 D0 66 01 03 13 94 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
09	Length	3.2	3
00	Frame Control	3.3	3-4
3D	Seq. No.	3.4	4
00	Padding	3.5	4
01 D0 66 01 03 13	Payload	3.6	4
94 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
01	Cmd: CONTROL_REQ	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
13	ControlCmd: DIM_DOWN_START	4.2	9

You should receive the response from the RS232 after the control, which the format in hexadecimal format is:

19 C3 0A 00 13 00 02 D0 66 01 03 13 00 6C 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
0A	Length	3.2	3
00	Frame Control	3.3	3-4
13	Seq. No.	3.4	4
00	Padding	3.5	4
02 D0 66 01 03 13 00	Payload	3.6	4
6C 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
02	Cmd: CONTROL_RESP	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
13	ControlCmd: DIM_DOWN_START	4.2	9
00	ControlResult: SUCCESS	4.2	9

Example 8:

Send command to the dimmer device to stop dimming down, which the address of the dimmer device is 0xD066 and the EP is 1

RS232 data frame for control in hexadecimal format is:

19 C3 09 00 3E 00 01 D0 66 01 03 14 96 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
09	Length	3.2	3
00	Frame Control	3.3	3-4
3E	Seq. No.	3.4	4
00	Padding	3.5	4
01 D0 66 01 03 14	Payload	3.6	4
96 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
01	Cmd: CONTROL_REQ	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
14	ControlCmd: DIM_DOWN_STOP	4.2	9

You should receive the response from the RS232 after the control, which the format in hexadecimal format is:

19 C3 0A 00 14 00 02 D0 66 01 03 14 00 6E 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
0A	Length	3.2	3
00	Frame Control	3.3	3-4
14	Seq. No.	3.4	4
00	Padding	3.5	4
02 D0 66 01 03 14 00	Payload	3.6	4
6E 01	Check Sum	3.7	4



And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
02	Cmd: CONTROL_RESP	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
14	ControlCmd: DIM_DOWN_STOP	4.2	9
00	ControlResult: SUCCESS	4.2	9

Example 9:

To control the dimmer dim to level of 100%, which the address of the dimmer device is 0xD066 and the EP is 1

RS232 data frame for control in hexadecimal format is:

19 C3 0A 00 3F 00 01 D0 66 01 03 15 64 FD 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
0A	Length	3.2	3
00	Frame Control	3.3	3-4
3F	Seq. No.	3.4	4
00	Padding	3.5	4
01 D0 66 01 03 15 64	Payload	3.6	4
FD 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
01	Cmd: CONTROL_REQ	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
15	ControlCmd: DIM_TO_LEVEL	4.2	9
64	Hex format of 100%	4.2.2	11

You should receive the response from the RS232 after the control, which the format in hexadecimal format is:

19 C3 0B 00 15 00 02 D0 66 01 03 15 64 00 D5 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
0A	Length	3.2	3
00	Frame Control	3.3	3-4
15	Seq. No.	3.4	4
00	Padding	3.5	4
02 D0 66 01 03 15 64 00	Payload	3.6	4
D5 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
02	Cmd: CONTROL_RESP	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
15	ControlCmd: DIM_TO_LEVEL	4.2	9
64	Hex format of 100%	4.2.2	11
00	ControlResult: SUCCESS	4.2	9

Example 10:

To control the dimmer dim to level of 24%, which the address of the dimmer device is 0xD066 and the EP is 1

RS232 data frame for control in hexadecimal format is:

19 C3 0A 00 41 00 01 D0 66 01 03 15 18 B3 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
0A	Length	3.2	3
00	Frame Control	3.3	3-4
41	Seq. No.	3.4	4
00	Padding	3.5	4
01 D0 66 01 03 15 18	Payload	3.6	4
B3 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
01	Cmd: CONTROL_REQ	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
15	ControlCmd: DIM_TO_LEVEL	4.2	9
18	Hex format of 24%	4.2.2	11

You should receive the response from the RS232 after the control, which the format in hexadecimal format is:

19 C3 0B 00 17 00 02 D0 66 01 03 15 18 00 8B 01

Where for the data link layer:

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
19 C3	Sync Code	3.1	3
0A	Length	3.2	3
00	Frame Control	3.3	3-4
17	Seq. No.	3.4	4
00	Padding	3.5	4
02 D0 66 01 03 15 18 00	Payload	3.6	4
8B 01	Check Sum	3.7	4

And for the application layer (which is the Payload)

<b>Data</b>	<b>Description</b>	<b>Section of spec.</b>	<b>Page of spec.</b>
02	Cmd: CONTROL_RESP	4.1, 4.1.1	7
D0 66 01	DeviceID: Address+EP	4.1.2	8
03	DeviceType: DEVICE_DIMMER	4.1.3	8
15	ControlCmd: DIM_TO_LEVEL	4.2	9
18	Hex format of 24%	4.2.2	11
00	ControlResult: SUCCESS	4.2	9