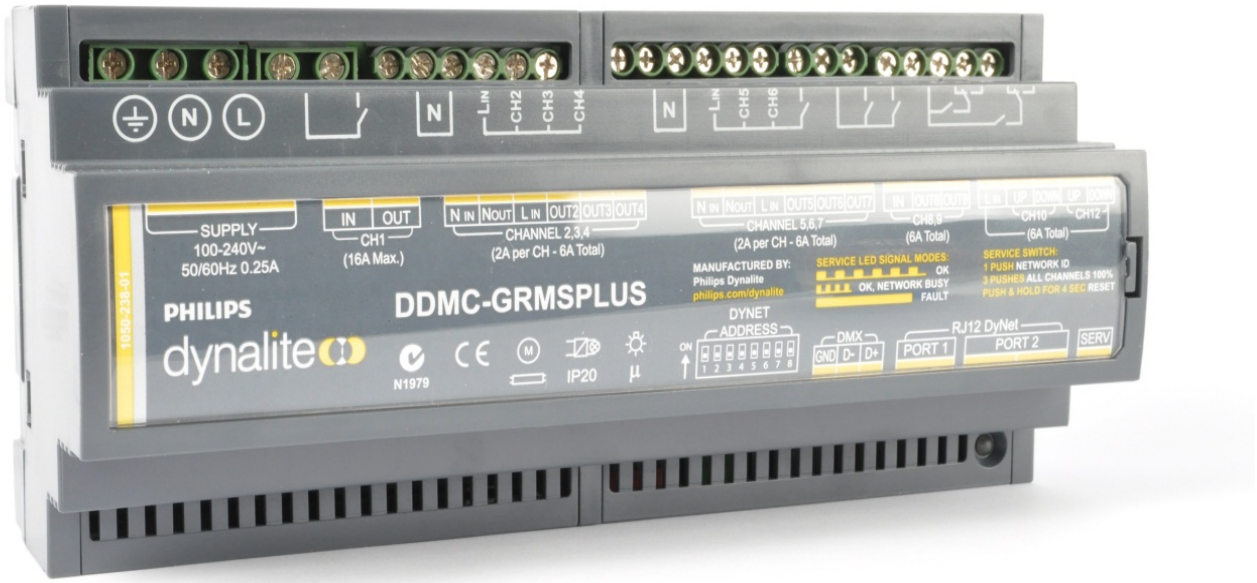

DDMC-GRMSPLUS

User Guide

Version 1.0

PHILIPS

dynalite

Background

Philips Dynalite is a highly specialized company whose principal occupation is to provide 'cutting edge' solutions for lighting control. Our achievements have been recognized worldwide and Philips Dynalite is generally the system of choice for projects involving integration with third-party vendor's equipment and for large-scale applications.

Philips Dynalite's philosophy is to provide the best solution possible for each and every project. This is the key to our success. Our considerable investment in research & development ensures that we remain at the forefront of our industry. Our position as a world leader in lighting management systems for the future is sustained through our total commitment to innovation.

We are represented around the world by distributors and dealers who are handpicked for their ability to provide the highest possible level of service.

From a stock exchange in Shanghai, to a luxury resort in Dubai, a smart home in Sao Paulo to limestone caves in New Zealand, Philips Dynalite's innovative solutions deliver intelligent light.

Ongoing research and development has enabled Philips Dynalite to create secure automated systems that control tens of thousands of individual light fittings in high-rise office buildings from any location anywhere in the world. Our networks are engineered to deliver instant notification of power or system failure, and report via a LAN, internet, or through an SMS gateway to a mobile phone. This provides the assurance necessary in applications where continuous operation is vital, such as road tunnels, computer servers or cold storage units.

Philips Dynalite's modular product design philosophy also improves system flexibility. Through this approach, specific application requirements can be accommodated with greatly reduced lead times. As an industry leader Philips Dynalite is committed to creating superior lighting control and energy management systems, setting new benchmarks in performance and efficiency.

In receiving the International Association of Lighting Designers award for Most Innovative Product, the Philips Dynalite control system has been independently recognized as 'A user friendly and sensible modular approach, which takes it from sophisticated domestic settings to large architectural spaces'.

Contents

About this guide

Overview

This guide is designed to assist in the configuration and installation of DDMC-GRMSPLUS.

A working knowledge of EnvisionProject and Dynalite commissioning processes is required to effectively use this document.

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Document Revision: A

Product Overview

Introduction

Philips Dynalite has enhanced the offer for the Hospitality segment with a newly designed room controller for guest rooms.

The DDMC-GRMSPLUS is an exclusive load controller developed under the Guest Room Management System family. The DDMC-GRMSPLUS is designed to be used in hotel rooms that require both switching and dimming lighting functions.

It is a pre-configured device that can work both as a stand-alone device and also as a part of the network.

The DDMC-GRMSPLUS is a fully networked device capable of integration with Building Management System and multiple devices via the DyNet network.

Features

The DDMC-GRMSPLUS consists of the following main components:

- Five trailing edge dimming channels compatible with most LED loads
- Three relay switched light control channels
- Two blind control channels
- Two non-isolated RS485 DyNet ports
- One DMX Tx port
- Simple DIN rail mount facilitates easy installation. Also all the connection terminals are accessible without disassembly.

Electrical Diagram

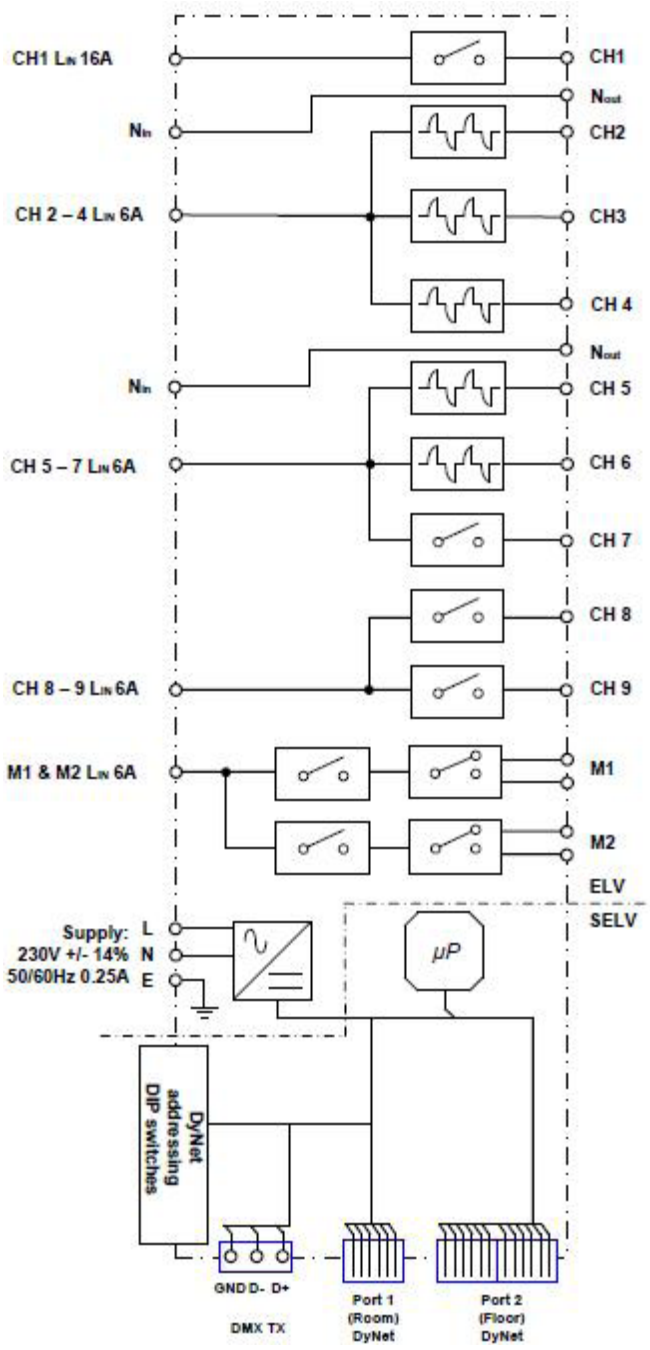


Figure 1 - Electrical diagram of the DDMC-GRMSPLUS

The DDMC- GRMSPLUS is a pre-programmed controller designed for hotel room lighting control and energy management.

The device consists of 11 physical channels and 16 DMX Tx channels.

Channels are designed for the following purposes:

- 1 x 16A relays - For General Purpose switching Output
- 3 x 6A relays - For lighting circuits (bath, balcony and, corridor lighting)
- 5 x 2A Trailing edge dimming channels - For the dimmable lights (bedside left & right, room 1& 2, and bathroom)

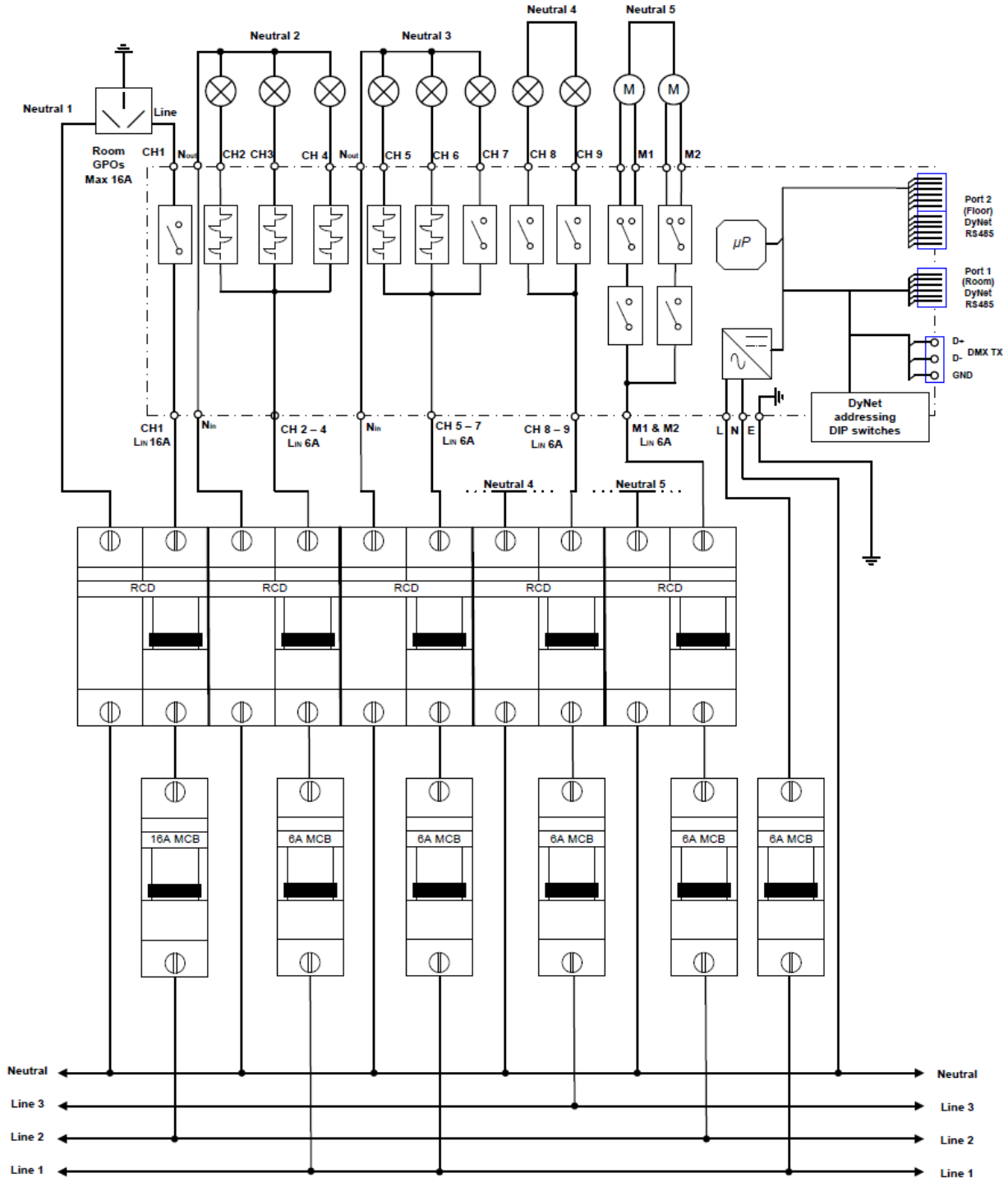
Note: Dimming channels (Line IN for CH 2-CH6) must be supplied from the same phase as the units power supply (L).

- 2 x changeover relay (M1 and M2)- For blind motor control (window blind & bathroom blind)

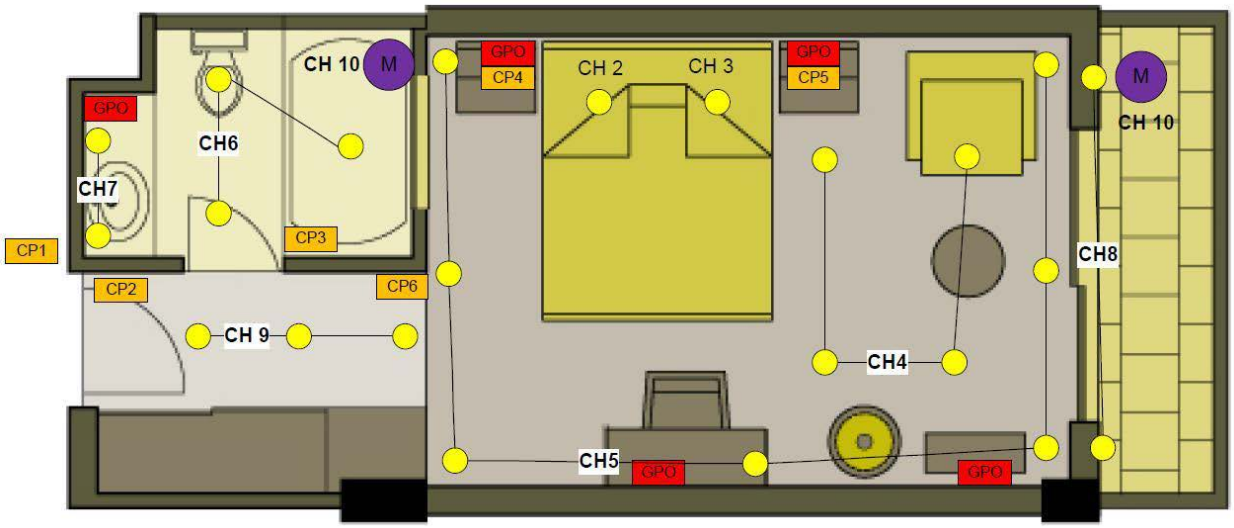
The three communication ports on the controller are used as below:

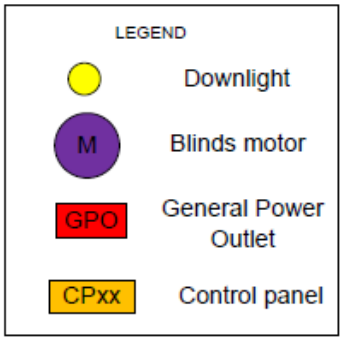
- DyNet Port 1 - Communicates with the network devices in the room such as the fan coil controller, network button panels, thermostat and sensors.
- DyNet Port 2 - Communicates with the Building Management System
- DMX Tx Port -Transmits DMX levels.

Electrical Diagram of DDMC GRMSPLUS with MCB and RCB



Guest Room Example





The above image displays an example a hotel guest room ceiling plan.

In the guest room ceiling plan, Control Panel CP1 is the DND/MUP indicator. Control Panel CP2 is the cardholder. The ceiling plan has channels that are both switching and dimming. A DDMC-GRMSPLUS is the controller used in the above scenario. The DDMC-GRMSPLUS load controller can be used as a stand-alone device and can also be used as a part of the hotel network.

The channels in the load controller are used for the following purposes:

- Channel 1 is for general power output
- Channels 2 to 4 are dimming channels.
- Channel 7 is a relay channel.
- Channel 8 and 9 are switching channels.

- M1 and M2 are for blinds control.

The DDMC-GRMSPLUS load controller consists of two Dynet ports. The DyNet Port 1 on the DDMC-GRMSPLUS controller is used to communicate with the other network devices within room such as fan coil unit controller, network button panels, thermostat and sensors. The Dynet Port 2 is used to communicate with the building management system.

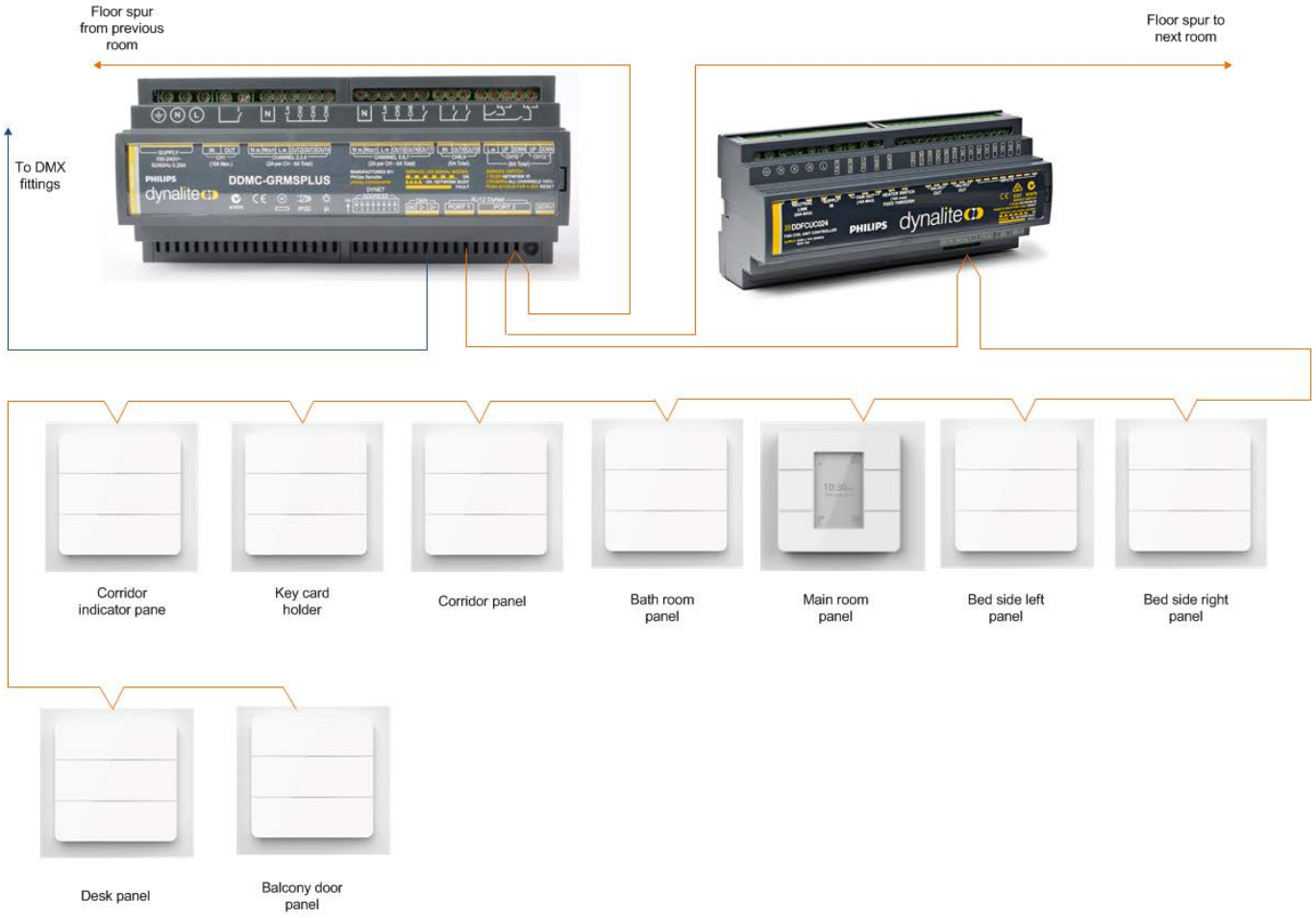


Figure 2 – Network example of DDMC-GRMSPLUS

The devices used in the above Network example of DDMC-GRMSPLUS are used for the following purposes.

DDMC-GRMSPLUS

The DDMC-GRMSPLUS load controller is responsible for all the lighting control functions such as dimming and switching. It controls the GPO power management, directional motor control and DMX Tx port and DyNet Port 1 and DyNet Port 2.

DDFCUC

The DDFCUC is a fan coil unit controller that integrates with the air conditioning system.

Corridor Indicator Panel

The Corridor Indicator Panel is mounted outside the room. The panel will have three labels for Do Not Disturb/ Make Up Room (DND/ MUR) and Doorbell. The button for MUR and DND is for indication only. The Doorbell button will trigger a relay in the DDMC-GRMSPLUS unit.

Key Card Holder

The Key Card Holder is mounted just inside the room's doorway. The guest enters the hotel room and places their room key card into the key cardholder. When a card is placed into the key cardholder the room will enter into an occupied sequence and number of different functions such as triggering the lighting scène, powering the GPO's, setting the air condition to an occupied mode.
When the guest removes the room key card there will be a delay before the system will perform an unoccupied sequence that may include turning off all the lighting, removing power from GPO's, setting the air-conditioning to an un occupied state, closing the blinds.

Corridor Panel

The Corridor panel is used to do the following:

- Select lighting scenes.
- Set the room mode between DND/MUR or neither. Once the guest has selected a room mode the corridor indicator panel will update its indicator status.

Bathroom Panel

The Bathroom Panel is used to perform the following:

- Select lighting scenes.
- Open close blinds or privacy screen.

Main Room Panel

The Main Room Panel is used to perform the following:

- Select lighting scenes.
- Open close blinds or privacy screen.

- Display the current detected temperature within the room and the air conditioner status.

Bedside left Panel

The Bedside left Panel is used to perform the following:

- Select lighting scenes.
- Send Channel level messages.

Bedside right Panel

The Bedside right Panel is used to perform the following:

- Select lighting scenes.
- Send channel level messages.

Desk Panel

The Desk Panel is used to perform the following:

- Select lighting scenes.
- Send channel level messages.

Balcony Door Panel

The Balcony Door Panel is used to perform the following:

- Select lighting scenes
- Send channel level messages
- Open close blinds.

Network Architecture

The network architecture of DDMC-GRMSPLUS supports the following operations.

The DyNet Port 2 can be used to network the individual rooms in a hotel together. The DDMC-GRMSPLUS load controller on a network can be addressed using the Area for the room that is set by DIP switches.

A network gateway is used on each floor and all the load controllers on that specific floor are connected to the network gateway, which in turn is connected to the BMS as shown in the figure below.

Each floor can contain up to 64 DDMC-GRMSPLUS controllers. The information regarding the status of the room can be retrieved by the hotel management system through the floor network gateways.

Also through the floor network gateway the hotel management system can send instructions to DDMC-GRMSPLUS controllers to adjust the thermostat setting depending on the status of the room being occupied/unoccupied, day/night and summer/winter.

The hotel management system can request for an individual room's current temperature and the current user's settings on the thermostat.

DDMC-GRMSPLUS in EnvisionProject

This topic covers configuration of the DDMC-GRMSPLUS controller using EnvisionProject commissioning software.

➤ Add an existing device to the job

1. Run EnvisionProject and open your project
2. Select Network View or Physical View
3. Click Insert Devices  or press Ctrl+L
4. In the Search Devices tab/Search Parameters section, check Search by device code or Search by device type
5. Click the Product dropdown box and select Load Controller
6. Click the Start Search button
7. When the device appears in the list, click the checkbox next to the device. The device appears as D5 Dimmer in the list.
8. Click Add Devices or Add and Load Devices. The controller is now added to the Project and is seen in the Network and Physical view.

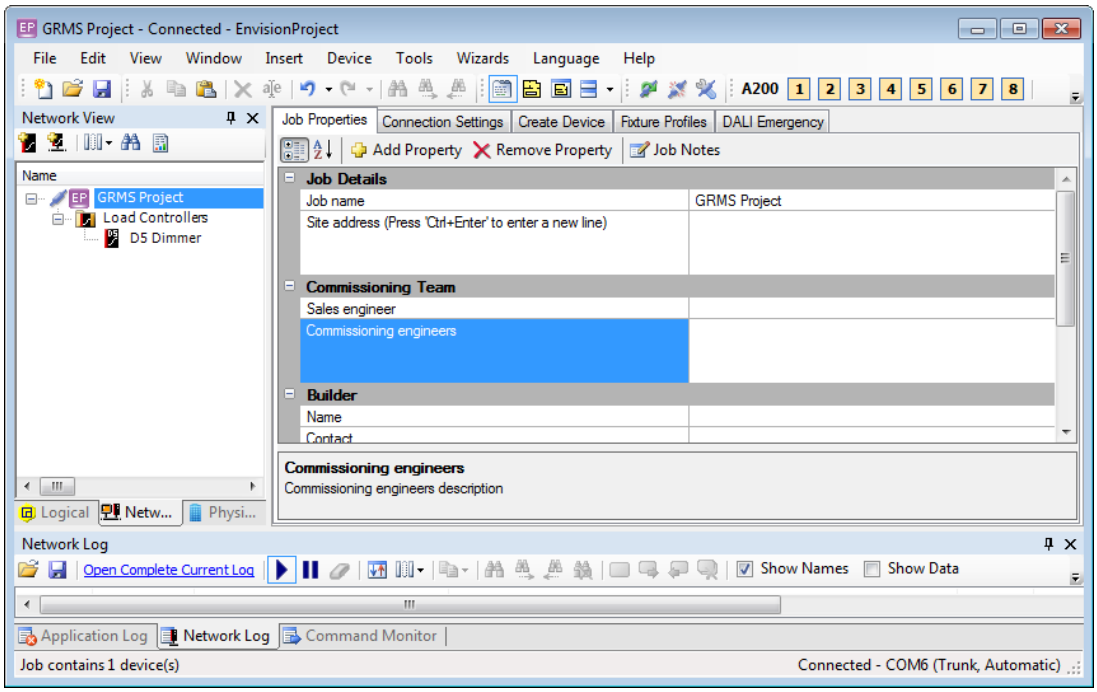


Figure 3 - Network View

➤ Add a new device to the project

1. Run EnvisionProject and open your project
2. Select Network View
3. Click the Insert device from list icon or press Ctrl +D
4. On the Create Device Page select the Load Controllers tab
5. Double click the DDMC-GRMSPLUS load controller
6. The device gets created in the project

The following are the Configuration pages are available for DDMC-GRMSPLUS:

- Device Properties
- Channel Editor
- Preset Editor
- Tasks and Events
- Area Cascading
- Comm Ports
- Product Details.

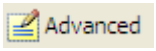
Device Properties

The Device Properties Page displays basic and advanced information about the DDMC-GRMSPLUS load controller device. The following buttons are available on the toolbar.

Displayed fields can be sorted in one of two ways by using the following buttons:

 Categorized

 Alphabetically

Initially only the basic fields are shown. To reveal all fields, click the  button.

The list can be filtered by entering a field name in the  box.

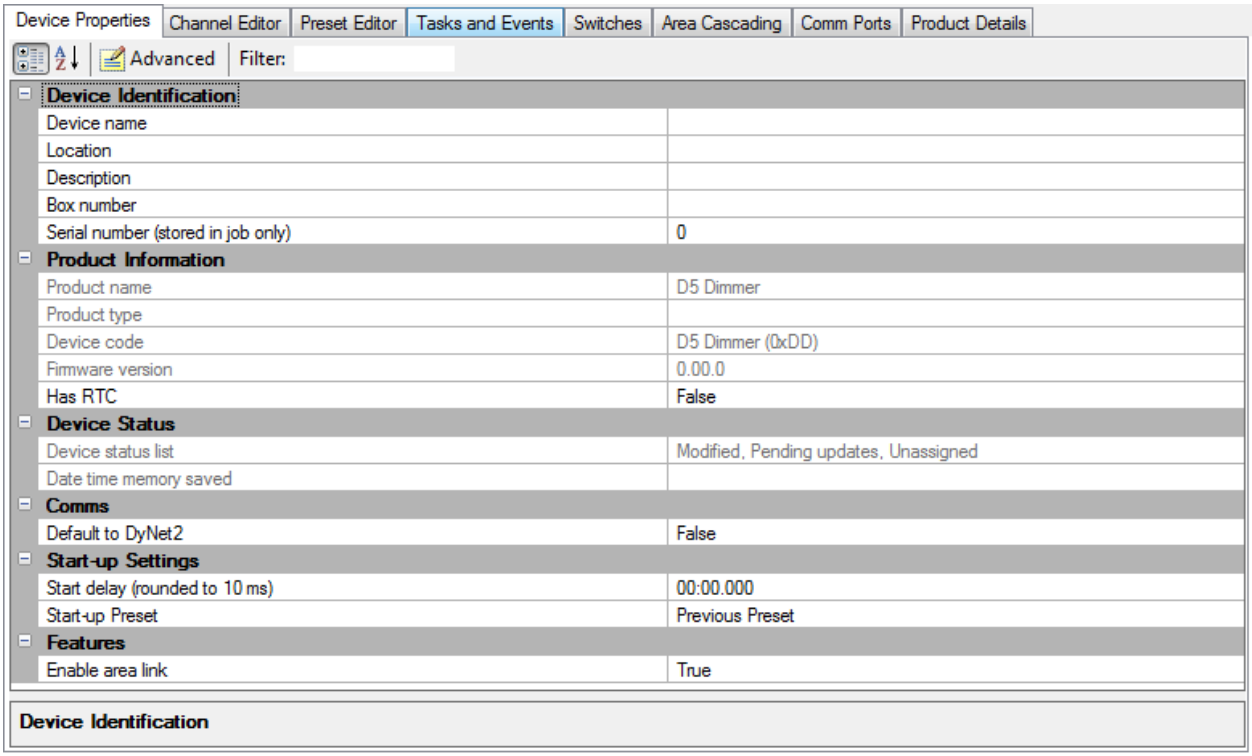
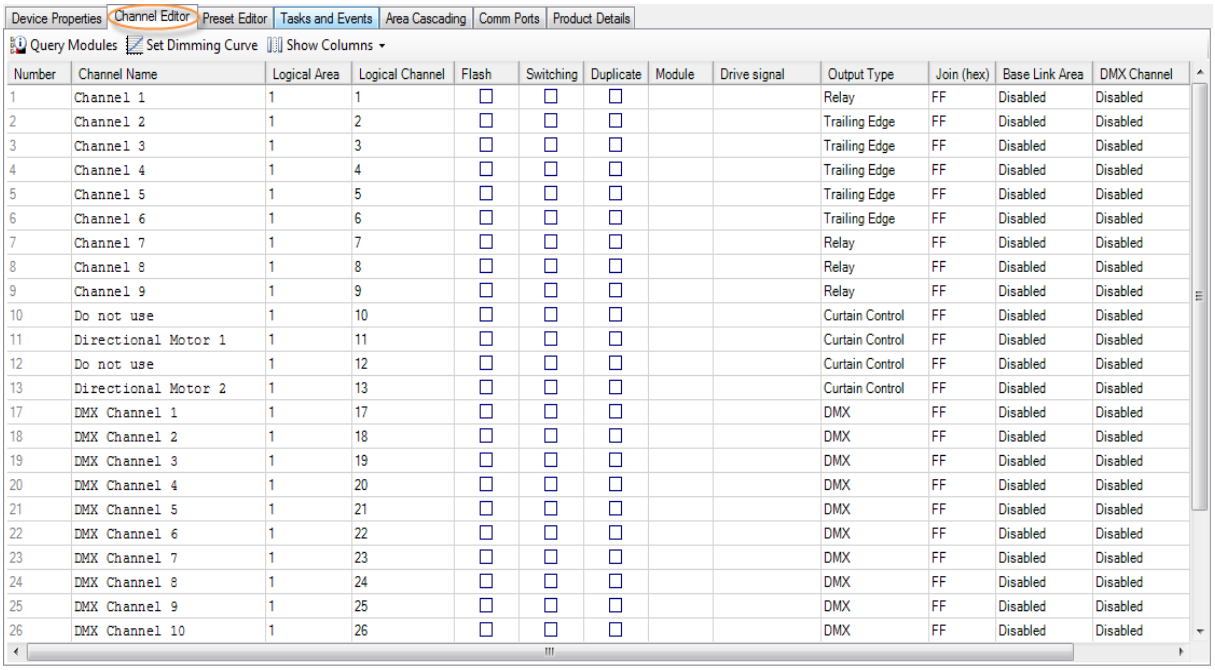


Figure 4 - Device Properties Page for DDMC-GRMSPLUS

Channel Editor

The Channel Editor displays the Load Controller's physical channels and other editable configuration.



Number	Channel Name	Logical Area	Logical Channel	Flash	Switching	Duplicate	Module	Drive signal	Output Type	Join (hex)	Base Link Area	DMX Channel
1	Channel 1	1	1	☐	☐	☐			Relay	FF	Disabled	Disabled
2	Channel 2	1	2	☐	☐	☐			Trailing Edge	FF	Disabled	Disabled
3	Channel 3	1	3	☐	☐	☐			Trailing Edge	FF	Disabled	Disabled
4	Channel 4	1	4	☐	☐	☐			Trailing Edge	FF	Disabled	Disabled
5	Channel 5	1	5	☐	☐	☐			Trailing Edge	FF	Disabled	Disabled
6	Channel 6	1	6	☐	☐	☐			Trailing Edge	FF	Disabled	Disabled
7	Channel 7	1	7	☐	☐	☐			Relay	FF	Disabled	Disabled
8	Channel 8	1	8	☐	☐	☐			Relay	FF	Disabled	Disabled
9	Channel 9	1	9	☐	☐	☐			Relay	FF	Disabled	Disabled
10	Do not use	1	10	☐	☐	☐			Curtain Control	FF	Disabled	Disabled
11	Directional Motor 1	1	11	☐	☐	☐			Curtain Control	FF	Disabled	Disabled
12	Do not use	1	12	☐	☐	☐			Curtain Control	FF	Disabled	Disabled
13	Directional Motor 2	1	13	☐	☐	☐			Curtain Control	FF	Disabled	Disabled
17	DMX Channel 1	1	17	☐	☐	☐			DMX	FF	Disabled	Disabled
18	DMX Channel 2	1	18	☐	☐	☐			DMX	FF	Disabled	Disabled
19	DMX Channel 3	1	19	☐	☐	☐			DMX	FF	Disabled	Disabled
20	DMX Channel 4	1	20	☐	☐	☐			DMX	FF	Disabled	Disabled
21	DMX Channel 5	1	21	☐	☐	☐			DMX	FF	Disabled	Disabled
22	DMX Channel 6	1	22	☐	☐	☐			DMX	FF	Disabled	Disabled
23	DMX Channel 7	1	23	☐	☐	☐			DMX	FF	Disabled	Disabled
24	DMX Channel 8	1	24	☐	☐	☐			DMX	FF	Disabled	Disabled
25	DMX Channel 9	1	25	☐	☐	☐			DMX	FF	Disabled	Disabled
26	DMX Channel 10	1	26	☐	☐	☐			DMX	FF	Disabled	Disabled

Figure 5 - Channel Editor Page for DDMC-GRMSPLUS

The following actions can be performed from the main page of the channel editor:

- Select Channel Name and rename the channel to something more meaningful.
- Enter the logical area and logical channel numbers (Select Logical View for a visual representation of the logical assignments)
- Tick the checkbox in the Flash Column to flash the physical channel
- Tick the checkbox in the Switching column to limit the physical channel to ON or OFF only (not dimmable)
- Tick the checkbox in the Duplicate Column to indicate that a duplicate ballast is assigned to a logical channel.

- The Output Column indicates the type of output on the channel. DDMC-GRMSPLUS can use the following assignment:

  Channel 1 – Relay

  Channel 2 to 6 – Trailing Edge

  Channel 7 to 9 – Relay

  Directional Motor 1 and 2 – Direction motor controls

Query Modules

Click Query Modules to load the current module information into EnvisionProject.

Set Dimming Curve

The dimming curve for the controller can be set by using the Set Dimming Curve on Channel Editor tab of the Network view.

➤ Set User Defined Dimming Curve

1. Select the Channel that you want to modify.
2. Click the Set Dimming Curve icon or click the dropdown in the Dimming Curve column to open the Set User Defined Dimming Curve dialogue box.
3. Select Current Curve from the dropdown list
4. Click the up and down arrows to increase or decrease the output power for each DyNet level. Or
5. Click the unrestricted editing checkbox to edit the Phase angle value directly. Or
6. Load the Manufacturers Dimming Curve .xml file
7. Click the Save To File button if you want to reuse the custom Dimming Curve on other channels.

Note: The DDMC-GRMSPLUS is a pre-programmed device and the device comes with pre-loaded configuration.

The Show column button allows you select the columns to display in the main Channel Editor Page. Selected columns are marked with a tick.

Preset Editor

The Preset Editor displays the available presets on the load controller. Presets can be used to create various lighting scenes. 16 user defined presets per channel are shown in the default configuration. The DDMC-GRMSPLUS can contain up to170 user defined presets.

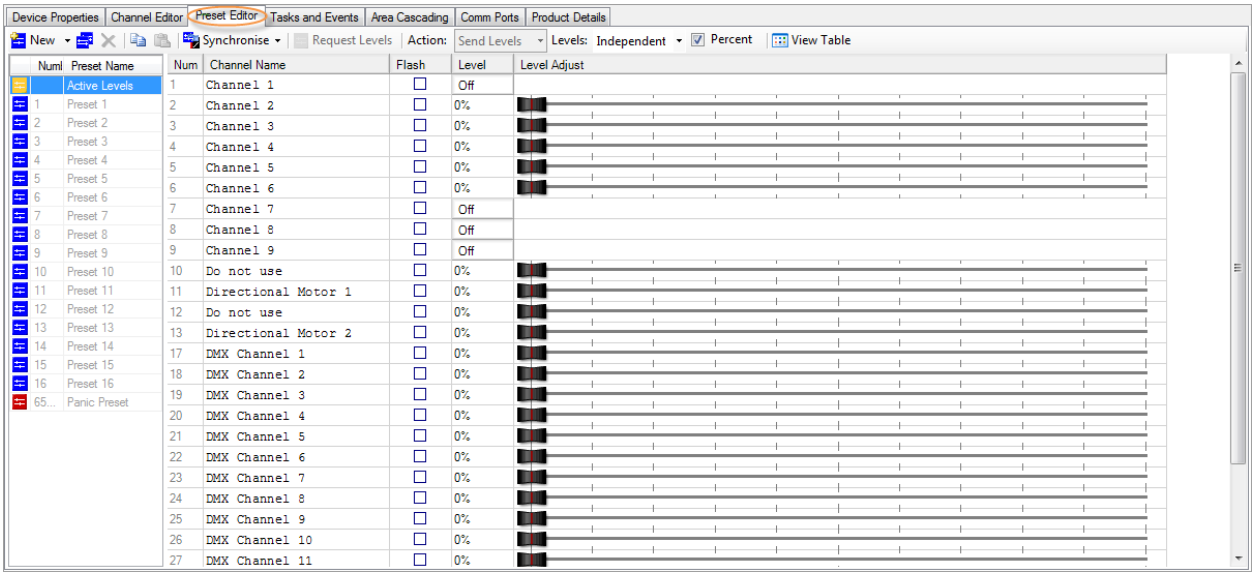


Figure 6 - Preset Editor Page for DDMC-GRMSPLUS

The following actions can be performed on the Preset Editor Page:

- Click New to add a new preset.
- Select Preset Name and rename the Preset to something more meaningful.
- Click Synchronize to synchronise data from the device to EnvisionProject or Synchronize data from EnvisionProject to the device
- Request current levels on various channels
- Flash channels, exclude them from the network
- Set current levels on each of the channels

Tasks and Events

Tasks and Events can be written on the Task Editor. Refer the EnvisionProject Training Guide for more information

Comms Ports

The DDMC-GRMS PLUS has two DyNet ports and one DMX transmit port, For more information refer to the Comms Ports section.

Product Details

The Product Details page displays the name, short description and a snapshot of the physical product.

Dip Switches

DDMC-GRMSPLUS supports 8 dip switches. The dip switch inputs are available via task ports. Dip switches are used to set the area for the device. On a network you can use the area to communicate with the specific device. The area for the DIP switches is set in binary.

For Example if you are setting a area for room 904. The room number indicates that it is the fourth room on the ninth floor. The first two digits in the room number represent the level number in the building. The last two digits represent the actual room number in the level.

For the BMS to communicate with the room the network gateway on the floor should have the area set to 9 and the room controller's DIP switches should be set to 4 in binary.

Note: DIP switch binary code 255 is an invalid code and should not be included.

The binary codes for areas from 1 to 254 are given in the table below:

Area	Switch 8	Switch 7	Switch 6	Switch 5	Switch 4	Switch 3	Switch 2	Switch 1
1	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	1	0
3	0	0	0	0	0	0	1	1
4	0	0	0	0	0	1	0	0
5	0	0	0	0	0	1	0	1
6	0	0	0	0	0	1	1	0
7	0	0	0	0	0	1	1	1
8	0	0	0	0	1	0	0	0
9	0	0	0	0	1	0	0	1
10	0	0	0	0	1	0	1	0
11	0	0	0	0	1	0	1	1
12	0	0	0	0	1	1	0	0
13	0	0	0	0	1	1	0	1
14	0	0	0	0	1	1	1	0
15	0	0	0	0	1	1	1	1
16	0	0	0	1	0	0	0	0
17	0	0	0	1	0	0	0	1
18	0	0	0	1	0	0	1	0
19	0	0	0	1	0	0	1	1
20	0	0	0	1	0	1	0	0

Area	Switch 8	Switch 7	Switch 6	Switch 5	Switch 4	Switch 3	Switch 2	Switch 1
21	0	0	0	1	0	1	0	1
22	0	0	0	1	0	1	1	0
23	0	0	0	1	0	1	1	1
24	0	0	0	1	1	0	0	0
25	0	0	0	1	1	0	0	1
26	0	0	0	1	1	0	1	0
27	0	0	0	1	1	0	1	1
28	0	0	0	1	1	1	0	0
29	0	0	0	1	1	1	0	1
30	0	0	0	1	1	1	1	0
31	0	0	0	1	1	1	1	1
32	0	0	1	0	0	0	0	0
33	0	0	1	0	0	0	0	1
34	0	0	1	0	0	0	1	0
35	0	0	1	0	0	0	1	1
36	0	0	1	0	0	1	0	0
37	0	0	1	0	0	1	0	1
38	0	0	1	0	0	1	1	0
39	0	0	1	0	0	1	1	1
40	0	0	1	0	1	0	0	0
41	0	0	1	0	1	0	0	1
42	0	0	1	0	1	0	1	0
43	0	0	1	0	1	0	1	1
44	0	0	1	0	1	1	0	0
45	0	0	1	0	1	1	0	1
46	0	0	1	0	1	1	1	0
47	0	0	1	0	1	1	1	1
48	0	0	1	1	0	0	0	0
49	0	0	1	1	0	0	0	1
50	0	0	1	1	0	0	1	0
51	0	0	1	1	0	0	1	1
52	0	0	1	1	0	1	0	0
53	0	0	1	1	0	1	0	1
54	0	0	1	1	0	1	1	0
55	0	0	1	1	0	1	1	1
56	0	0	1	1	1	0	0	0

Area	Switch 8	Switch 7	Switch 6	Switch 5	Switch 4	Switch 3	Switch 2	Switch 1
57	0	0	1	1	1	0	0	1
58	0	0	1	1	1	0	1	0
59	0	0	1	1	1	0	1	1
60	0	0	1	1	1	1	0	0
61	0	0	1	1	1	1	0	1
62	0	0	1	1	1	1	1	0
63	0	0	1	1	1	1	1	1
64	0	1	0	0	0	0	0	0
65	0	1	0	0	0	0	0	1
66	0	1	0	0	0	0	1	0
67	0	1	0	0	0	0	1	1
68	0	1	0	0	0	1	0	0
69	0	1	0	0	0	1	0	1
70	0	1	0	0	0	1	1	0
71	0	1	0	0	0	1	1	1
72	0	1	0	0	1	0	0	0
73	0	1	0	0	1	0	0	1
74	0	1	0	0	1	0	1	0
75	0	1	0	0	1	0	1	1
76	0	1	0	0	1	1	0	0
77	0	1	0	0	1	1	0	1
78	0	1	0	0	1	1	1	0
79	0	1	0	0	1	1	1	1
80	0	1	0	1	0	0	0	0
81	0	1	0	1	0	0	0	1
82	0	1	0	1	0	0	1	0
83	0	1	0	1	0	0	1	1
84	0	1	0	1	0	1	0	0
85	0	1	0	1	0	1	0	1
86	0	1	0	1	0	1	1	0
87	0	1	0	1	0	1	1	1
88	0	1	0	1	1	0	0	0
89	0	1	0	1	1	0	0	1
90	0	1	0	1	1	0	1	0
91	0	1	0	1	1	0	1	1
92	0	1	0	1	1	1	0	0

Area	Switch 8	Switch 7	Switch 6	Switch 5	Switch 4	Switch 3	Switch 2	Switch 1
93	0	1	0	1	1	1	0	1
94	0	1	0	1	1	1	1	0
95	0	1	0	1	1	1	1	1
96	0	1	1	0	0	0	0	0
97	0	1	1	0	0	0	0	1
98	0	1	1	0	0	0	1	0
99	0	1	1	0	0	0	1	1
100	0	1	1	0	0	1	0	0
101	0	1	1	0	0	1	0	1
102	0	1	1	0	0	1	1	0
103	0	1	1	0	0	1	1	1
104	0	1	1	0	1	0	0	0
105	0	1	1	0	1	0	0	1
106	0	1	1	0	1	0	1	0
107	0	1	1	0	1	0	1	1
108	0	1	1	0	1	1	0	0
109	0	1	1	0	1	1	0	1
110	0	1	1	0	1	1	1	0
111	0	1	1	0	1	1	1	1
112	0	1	1	1	0	0	0	0
113	0	1	1	1	0	0	0	1
114	0	1	1	1	0	0	1	0
115	0	1	1	1	0	0	1	1
116	0	1	1	1	0	1	0	0
117	0	1	1	1	0	1	0	1
118	0	1	1	1	0	1	1	0
119	0	1	1	1	0	1	1	1
120	0	1	1	1	1	0	0	0
121	0	1	1	1	1	0	0	1
122	0	1	1	1	1	0	1	0
123	0	1	1	1	1	0	1	1
124	0	1	1	1	1	1	0	0
125	0	1	1	1	1	1	0	1
126	0	1	1	1	1	1	1	0
127	0	1	1	1	1	1	1	1
128	1	0	0	0	0	0	0	0

Area	Switch 8	Switch 7	Switch 6	Switch 5	Switch 4	Switch 3	Switch 2	Switch 1
129	1	0	0	0	0	0	0	1
130	1	0	0	0	0	0	1	0
131	1	0	0	0	0	0	1	1
132	1	0	0	0	0	1	0	0
133	1	0	0	0	0	1	0	1
134	1	0	0	0	0	1	1	0
135	1	0	0	0	0	1	1	1
136	1	0	0	0	1	0	0	0
137	1	0	0	0	1	0	0	1
138	1	0	0	0	1	0	1	0
139	1	0	0	0	1	0	1	1
140	1	0	0	0	1	1	0	0
141	1	0	0	0	1	1	0	1
142	1	0	0	0	1	1	1	0
143	1	0	0	0	1	1	1	1
144	1	0	0	1	0	0	0	0
145	1	0	0	1	0	0	0	1
146	1	0	0	1	0	0	1	0
147	1	0	0	1	0	0	1	1
148	1	0	0	1	0	1	0	0
149	1	0	0	1	0	1	0	1
150	1	0	0	1	0	1	1	0
151	1	0	0	1	0	1	1	1
152	1	0	0	1	1	0	0	0
153	1	0	0	1	1	0	0	1
154	1	0	0	1	1	0	1	0
155	1	0	0	1	1	0	1	1
156	1	0	0	1	1	1	0	0
157	1	0	0	1	1	1	0	1
158	1	0	0	1	1	1	1	0
159	1	0	0	1	1	1	1	1
160	1	0	1	0	0	0	0	0
161	1	0	1	0	0	0	0	1
162	1	0	1	0	0	0	1	0
163	1	0	1	0	0	0	1	1
164	1	0	1	0	0	1	0	0

Area	Switch 8	Switch 7	Switch 6	Switch 5	Switch 4	Switch 3	Switch 2	Switch 1
165	1	0	1	0	0	1	0	1
166	1	0	1	0	0	1	1	0
167	1	0	1	0	0	1	1	1
168	1	0	1	0	1	0	0	0
169	1	0	1	0	1	0	0	1
170	1	0	1	0	1	0	1	0
171	1	0	1	0	1	0	1	1
172	1	0	1	0	1	1	0	0
173	1	0	1	0	1	1	0	1
174	1	0	1	0	1	1	1	0
175	1	0	1	0	1	1	1	1
176	1	0	1	1	0	0	0	0
177	1	0	1	1	0	0	0	1
178	1	0	1	1	0	0	1	0
179	1	0	1	1	0	0	1	1
180	1	0	1	1	0	1	0	0
181	1	0	1	1	0	1	0	1
182	1	0	1	1	0	1	1	0
183	1	0	1	1	0	1	1	1
184	1	0	1	1	1	0	0	0
185	1	0	1	1	1	0	0	1
186	1	0	1	1	1	0	1	0
187	1	0	1	1	1	0	1	1
188	1	0	1	1	1	1	0	0
189	1	0	1	1	1	1	0	1
190	1	0	1	1	1	1	1	0
191	1	0	1	1	1	1	1	1
192	1	1	0	0	0	0	0	0
193	1	1	0	0	0	0	0	1
194	1	1	0	0	0	0	1	0
195	1	1	0	0	0	0	1	1
196	1	1	0	0	0	1	0	0
197	1	1	0	0	0	1	0	1
198	1	1	0	0	0	1	1	0
199	1	1	0	0	0	1	1	1
200	1	1	0	0	1	0	0	0

Area	Switch 8	Switch 7	Switch 6	Switch 5	Switch 4	Switch 3	Switch 2	Switch 1
201	1	1	0	0	1	0	0	1
202	1	1	0	0	1	0	1	0
203	1	1	0	0	1	0	1	1
204	1	1	0	0	1	1	0	0
205	1	1	0	0	1	1	0	1
206	1	1	0	0	1	1	1	0
207	1	1	0	0	1	1	1	1
208	1	1	0	1	0	0	0	0
209	1	1	0	1	0	0	0	1
210	1	1	0	1	0	0	1	0
211	1	1	0	1	0	0	1	1
212	1	1	0	1	0	1	0	0
213	1	1	0	1	0	1	0	1
214	1	1	0	1	0	1	1	0
215	1	1	0	1	0	1	1	1
216	1	1	0	1	1	0	0	0
217	1	1	0	1	1	0	0	1
218	1	1	0	1	1	0	1	0
219	1	1	0	1	1	0	1	1
220	1	1	0	1	1	1	0	0
221	1	1	0	1	1	1	0	1
222	1	1	0	1	1	1	1	0
223	1	1	0	1	1	1	1	1
224	1	1	1	0	0	0	0	0
225	1	1	1	0	0	0	0	1
226	1	1	1	0	0	0	1	0
227	1	1	1	0	0	0	1	1
228	1	1	1	0	0	1	0	0
229	1	1	1	0	0	1	0	1
230	1	1	1	0	0	1	1	0
231	1	1	1	0	0	1	1	1
232	1	1	1	0	1	0	0	0
233	1	1	1	0	1	0	0	1
234	1	1	1	0	1	0	1	0
235	1	1	1	0	1	0	1	1
236	1	1	1	0	1	1	0	0

Area	Switch 8	Switch 7	Switch 6	Switch 5	Switch 4	Switch 3	Switch 2	Switch 1
237	1	1	1	0	1	1	0	1
238	1	1	1	0	1	1	1	0
239	1	1	1	0	1	1	1	1
240	1	1	1	1	0	0	0	0
241	1	1	1	1	0	0	0	1
242	1	1	1	1	0	0	1	0
243	1	1	1	1	0	0	1	1
244	1	1	1	1	0	1	0	0
245	1	1	1	1	0	1	0	1
246	1	1	1	1	0	1	1	0
247	1	1	1	1	0	1	1	1
248	1	1	1	1	1	0	0	0
249	1	1	1	1	1	0	0	1
250	1	1	1	1	1	0	1	0
251	1	1	1	1	1	0	1	1
252	1	1	1	1	1	1	0	0
253	1	1	1	1	1	1	0	1
254	1	1	1	1	1	1	1	0

Service Switch

The service switch when

- Pressed once will sign on the device to the DyNet network
- Pressed thrice causes the device to switch all the channels to 100%
- Pressed and held for more than 4 seconds resets the device on release of the button. When a service switch is held down during a device reset or power-up cycle, it will cause DDMC-GRMSPLUS to enter Safe Mode (also known as Bootloader Mode). In Bootloader mode or Safe mode the device allows firmware upgrade over both the DyNet ports.

Service LED

The light on the Service LED of DDMC-GRMSPLUS indicates the following:

Service LED blinks slowly – The device is operating normally

Service LED blinks quickly – The network is busy

Service LED is continuously lit –The device is faulty.

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