

DXB-8

1 Gang Decora[®] 8 Button Wall Plate Controller



SAFETY INSTRUCTIONS

Please review the following safety precautions. If this is the first time using this model, then read this manual before installing or using the product. If the product is not functioning properly, please contact your local dealer or Aurora for further instructions.



The lightning symbol in the triangle is used to alert you to the presence of dangerous voltage inside the product that may be sufficient to constitute a risk of electric shock to anyone opening the case. It is also used to indicate improper installation or handling of the product that could damage the electrical system in the product or in other equipment attached to the product.



The exclamation point in the triangle is used to alert you to important operating and maintenance instructions. Failure to follow these instructions could result in injury to you or damage to the product.



Be careful with electricity:

- **Power outlet:** To prevent electric shock, be sure the electrical plug used on the product power cord matches the electrical outlet used to supply power to the Aurora product. Use only the power adapter and power connection cables designed for this unit.
- **Power cord:** Be sure the power cord is routed so that it will not be stepped on or pinched by heavy items.
- **Lightning:** For protection from lightning or when the product is left unattended for a long period, disconnect it from the power source.



Also follow these precautions:

- **Ventilation:** Do not block the ventilation slots if applicable on the product or place any heavy object on top of it.
Blocking the air flow could cause damage. Arrange components so that air can flow freely. Ensure that there is adequate ventilation if the product is placed in a stand or cabinet. Put the product in a properly ventilated area, away from direct sunlight or any source of heat.
- **Overheating:** Avoid stacking the Aurora product on top of a hot component such as a power amplifier.
- **Risk of Fire:** Do not place unit on top of any easily combustible material, such as carpet or fabric.
- **Proper Connections:** Be sure all cables and equipment are connected to the unit as described in this manual.
- **Object Entry:** To avoid electric shock, never stick anything in the slots on the case or remove the cover.
- **Water Exposure:** To reduce the risk of fire or electric shock, do not expose to rain or moisture.
- **Cleaning:** Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- **ESD:** Handle this unit with proper ESD care. Failure to do so can result in failure.

FCC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interferences received, including interference that may cause undesired operation.

Trademarks

All trademarks in this document are the properties of their respective owners.

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PACKAGE CONTENTS

Please make sure the following items are included within your package. Contact your dealer if any items are missing or damaged.

- DXB-8 x 1
- 1 Gang Decora® Paintable White Wall Plate

Optional Accessories

- 5v DC power Supply

Note: Go to www.auroramm.com for latest manual and firmware

INTRODUCTION

About

The DXB-8 is a low cost 8 button single gang button panel. Designed to work with just about any RS-232 device on the market, the DXB-8 allows any RS-232 string to be assigned to the press and release of each button. Even repeat on hold is available.

The buttons can individually be lit red, green, or blue so in dimly lit areas it can be seen. Available in Decora[®] white or black, the DXB-8 is designed to match.

Low cost, low power, simplicity, and compatibility with just about any device on the market makes the DXB-8 the simple sweet solution of choice.

Features

- ◆ **8 backlit buttons (Red, Green, Blue)**
- ◆ **Fits in standard 1 gang Decora[®] style outlet**
- ◆ **2 RS-232 ports**
- ◆ **Buttons individually programmable for RS-232 command.**
- ◆ **9600 – 115k Baud Rate Selectable**
- ◆ **Designed to work seamlessly with DXW-2 Series.**
- ◆ **Customizable laser etched buttons**
- ◆ **Daisy Chain up to 8 units for multi-gang button panels.**
- ◆ **Low Power**
- ◆ **5v DC powered**
- ◆ **Low Depth .48" for Floor & Table Boxes**

Front DXB-8



Front

- Buttons – There are 8 backlit buttons, ON, OFF, VGA, HDMI, Up Arrow, Down Arrow, Speaker Mute, and Mic Mute. These laser etched buttons come as a default with the DXB-8. Other customizable buttons are available. The LED backlighting can be set to light red, green, or blue.

The default scheme is to match the DXW-2 wall plate series to remotely select the inputs and to also control the display.

Rear DXB-8



Rear Connections

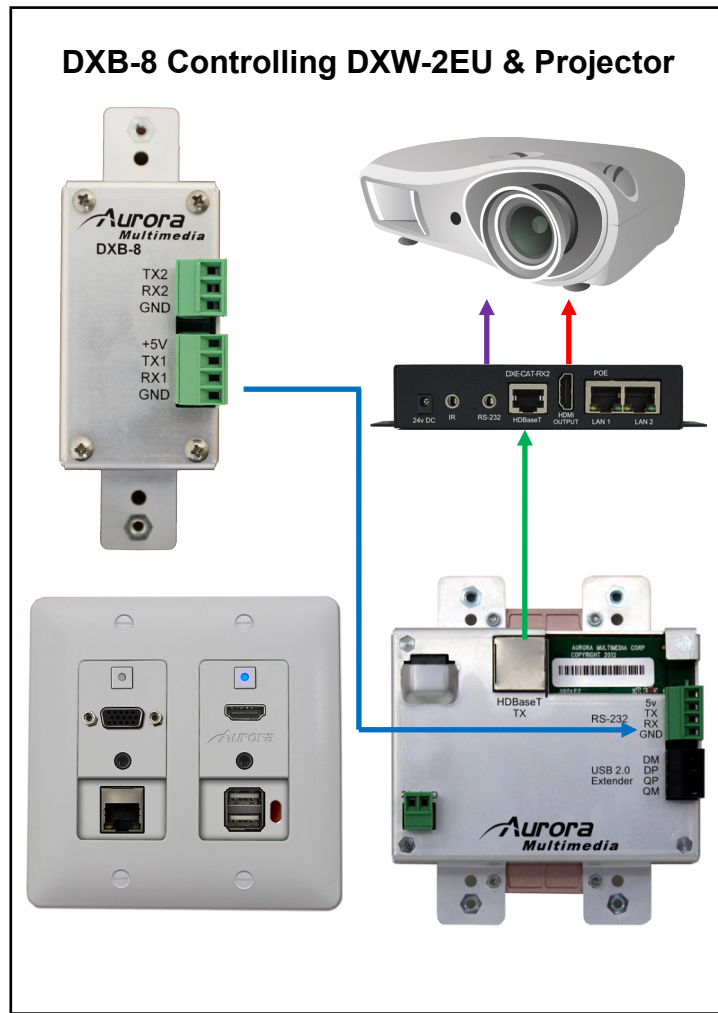
- RS-232 1 – Connect RS-232 device up to 115k baud. Note there is a 5v line as it is designed to power the DXB-8 from the DXW-2 wall plate or a 5v supply.
- RS-232 2 – Connect RS-232 device up to 115k baud.

Units can be linked together to create larger button arrays by feeding port 2 of first unit into port 1 of next unit in line. By repeating this process from unit to unit, the commands can pass through from one the next. The RS-232 protocol is designed to communicate to the address of a specific unit so it is important to make certain each unit has a unique address and the same baud rate.

APPLICATIONS

DXB-8 Controlling DXW-2EU & Projector

The example below demonstrates the DXB controlling a DXW-2 series wall plate which in turn passes the RS-232 to the DXE-CAT series receiver. The DXE-CAT receiver RS-232 port is connected to the projector.



Button Setup Functions

Button Setup

Buttons are referenced 1-8 starting in upper left to lower left for 1-4 and upper right to lower right for 5-8.

1. Holding buttons 1 & 4 down for 5 sec will allow user to press button 1 through 8 to set address accordingly. When the 5 sec is reached current address will show by blinking button relative to address blue. Next user will press any of the 8 buttons to set new address. Once button is pressed a confirmation will happen by flashing new address buttons LED RED then green then off as it exits the mode of operation.
2. Holding buttons 5 & 8 down for 5 sec will do factory test. Factory test is light all buttons Red for 2 sec, Blue for 2 sec, & Green for 2 second. Next it will blink a red LED starting at button 1. When pressed next button in order will blink red and prior button will turn off until all 8 buttons are pressed. After button 8 is pressed unit will finish with RS-232 loop test from port 1 to port 2 to verify back and forth communications. LED 1 & 2 will light blue and pressing button 1 will send string from port 1 to 2 and pressing button 2 will send string from port 2 to 1. During both it checks for proper response. Send string !test<cr> to be responded with ~test<cr>. If it checks ok LED 4 will light Green for ok or Red for bad for port 1. Use LED 5 for port 2 indicator. Once Port 2 test is done light blue LED 8 and when pressed End factory test mode by turning on on all 8 LEDs blue for 1 sec then off.
3. Holding buttons 3 & 4 down for 10 sec will do a factory reset. Factory reset will set RS-232 ports 1 & 2 to 96008N1, Unit address to 1, and assign strings on push for !1B1<cr> for button 1 and increment accordingly for all 8 button. The release will be set to !1R1<cr> for button 1 and increment accordingly for all 8 buttons. Hold will have nothing. All LED will be defaulted to blue for press and release.
4. Holding buttons 1 & 8 will force unit into firmware update mode for port 1.
5. Holding buttons 4 & 5 will force unit into firmware update mode for port 2.

SERIAL COMMANDS

RS-232 Commands

! - Command, ? - Query, ~ Response

<cr> = 0x0D Hex / 13 Decimal

Command	String Format	Information
Button Push String	!xPSy,b,z<cr>	x = Unit address = 0-8 Address Zero is received by all but no response from units. Response only when set to address 1-8. Factory default is address 1. y = Port Number 1 or 2 b = Button Number 1 - 8 z = string is in ASCII and can have non-printable as ASCII characters as well. To send non-printable ASCII (Hexadecimal) use a % in front of the 2 ASCII digits. To send “%” then use %%. Example: Line Feed = 0x0A Hex will be %0A
Button Release String	!xRSy,b,z<cr>	x = Unit address = 0-8 Address Zero is received by all but no response from units. Response only when set to address 1-8. Factory default is address 1. y = Port Number 1 or 2 b = Button Number 1 - 8 z = string is in ASCII and can have non-printable as ASCII characters as well. To send non-printable ASCII (Hexadecimal) use a % in front of the 2 ASCII digits. To send “%” then use %%. Example: Line Feed = 0x0A Hex will be %0A
Hold String	!xHSy,b,tt,z<cr>	x = Unit address = 0-8 Address Zero is received by all but no response from units. Response only when set to address 1-8. Factory default is address 1. y = Port Number 1 or 2 b = Button Number 1 - 8 tt = repeat timing. First digit is seconds, second digit is tenths. z = string is in ASCII and can have non-printable as ASCII characters as well. To send non-printable ASCII (Hexadecimal) use a % in front of the 2 ASCII digits. To send “%” then use %%. Example: Line Feed = 0x0A Hex will be %0A
Baud Rate Setup Command	!xBRy,a,b<cr>	x = Unit address = 0-8 Address Zero is received by all but no response from units. Response only when set to address 1-8. Factory default is address 1. y = port number = 1 or 2. a = baud rate = 2400, 4800, 9600, 19200, 38400 b = bits, parity, stop = 8N1, 8E1, 8O1
Button LED Setup	!xBLy,z1,z2 <cr>	x = Unit address = 0-8 Address Zero is received by all but no response from units. Response only when set to address 1-8. Factory default is address 1. y = Button Number z1 = Release LED State = R, G, B, N (R = Red, G = Green, B = Blue, N = None) z2 = Pushed LED State = R, G, B, N (R = Red, G = Green, B = Blue, N = None)

Set Address	!xADDRy<cr>	x = 0-8. This allows know address to be reassigned or use 0 to force to new address. y = Address 1-8
Query Firmware Revision	?xFM<cr>	x = Address 0-8 Address Zero forces response regardless of unit address.
Query Button Push String	?xPSy,b<cr>	x = Unit address = 0-8 Address Zero is received by all but no response from units. Factory default is address 1. y = Port Number 1 or 2 b = Button Number 1 - 8
Query Button Release String	?xRSy,b<cr>	x = Unit address = 0-8 Address Zero forces response regardless of unit address. Factory default is address 1. y = Port Number 1 or 2 b = Button Number 1 - 8
Query Hold String	?xHSy,b<cr>	x = Unit address = 0-8 Address Zero forces response regardless of unit address. Factory default is address 1. y = Port Number 1 or 2 b = Button Number 1 - 8
Query Baud Rate Setup	?xBRy<cr>	x = Unit address = 0-8 Address Zero forces response regardless of unit address. Factory default is address 1. y = port number = 1 or 2.
Query Button LED Setup	?xBLy<cr>	x = Unit address = 0-8 Address Zero forces response regardless of unit address. Factory default is address 1. y = Button Number

RS-232 commands can be sent to the RS-232 port 1 or 2.

Buttons are referenced 1-8 starting in upper left to lower left for 1-4 and upper right to lower right for 5-8.

RS-232 Command Usage

Example	Example String	Example Response
Send Hello_World on button 2 press on unit address 1 port 1.	!1PS1,2,Hello_World<cr>	~1PS1,2,Hello_World<cr>
Send 0x02 PON 0x03 on button 3 release on unit address 1 port 1.	!1RS1,3,%02PON%03<cr>	~1RS1,3,%02PON%03<cr>
Send Hello%World on button 8 hold every 100ms on unit address 1 port 1.	!1HS1,8,Hello%%World<cr>	~1HS1,8,Hello%%World<cr>
Set Unit Address 1 Port 1 Baud Rate to 96008N1.	!1BR1,9600,8N1<cr>	~1BR1,9600,8N1<cr>
Set Unit Address 2 button 1 Release to green and Push to Red	!2BL1,G,R <CR>	~2BL1,G,R <CR>
Force change to address 5	!0ADDR5<cr>	"No response when 0 is used"
Query address 1 firmware.	?1FM<cr>	~1FM-2.0<cr>
Query the push string state. Unit responds with Hello_World on button 1 press on unit address 4 port 2.	?4PS2,1<cr>	~4PS2,1,Hello_World<cr>
Query the release string state. Unit responds with Hello_There on button 1 press on unit address 3 port 1.	?3RS1,1<cr>	~3RS1,1,Hello_There<cr>
Send Hello_World on button 1 hold every 100ms on unit address 1 port 1.	?1HS1,1<cr>	~1HS1,1,Hello_World<cr>
Query Unit Address 1 Port 1 Baud Rate. Unit responded with 384008N1.	?1BR1<cr>	~1BR1,38400,8N1<cr>
Query Unit Address 2 button 3 LED state. The response for this example will be release Blue and Push Red.	?2BL3<CR>	~2BL3,B,R<CR>

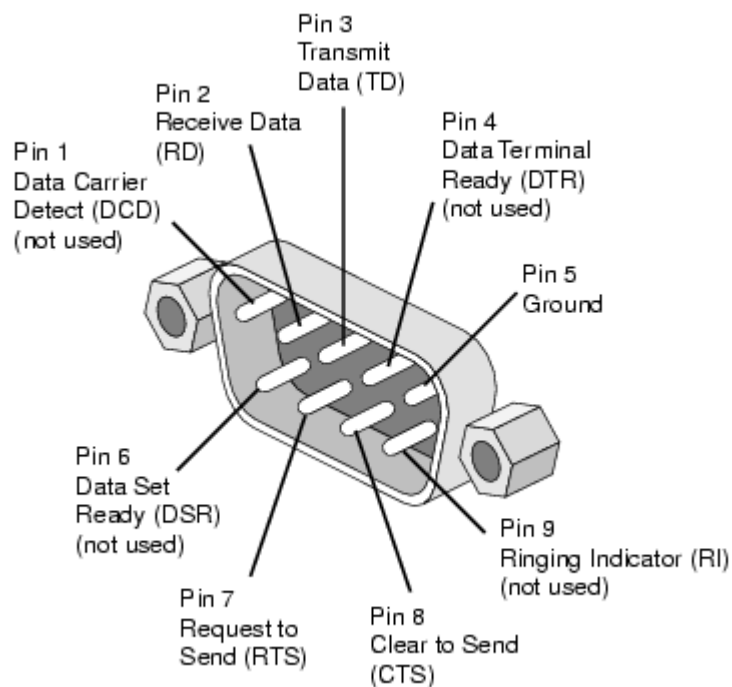
APPENDIX 1 Troubleshooting

Problem	Solution
1. LED is not lit on any buttons	<ul style="list-style-type: none">a. Check 5v power supply is plugged in locally or if connected to DXW-2 make certain the DXW-2 has power.b. Check to see if Wall supply is plugged into wall outlet.c. Make certain wall outlet has power.d. Make certain RS-232 command for LED state is not set to none for the buttons.
2. RS-232 not work	<ul style="list-style-type: none">a. Check connection on RS-232 port. Make certain TX goes to RX and RX goes to TX of the device to be connected. Don't forget about ground.b. Check baud rate.c. Verify commands being sent are correct protocol.d. Each unit must have a unique address.

APPENDIX 2 Firmware Update

DXB-8 Update Utility

DXB-8 Update Software requires a serial cable connected in a null (RX to TX, TX to RX, GND to GND) configuration to a PC. The firmware can be updated directly at either of the DXB-8 rear serial ports. To force update mode holding buttons 1 & 8 will force unit into firmware update mode for port 1 and holding buttons 4 & 5 will force unit into firmware update mode for port 2. Then use utility to transfer file which can be found at www.aurorammm.com



PC DB-9 RS-232 Serial Port

APPENDIX 3 Technical Specifications

Model Name	DXB-8
Technical	DXB-8
RS-232 Baud Rate	Max 115kbps (Factory default is 9600)
Front Selections	8 Backlit Buttons (Red, Green, Blue)
RS-232 Connector Port 1	4 pin 3.81mm Euro
RS-232 Connector Port 2	3 pin 3.81mm Euro
Mechanical	DXB-8
Housing	Plastic front with aluminum rear enclosure
Dimensions [L x W x D]	1.44"x4.331"x.76" Note: Wall box portion depth .48"
Weight	.38lbs
Mounting	Wall-mounting Decora® 1 Gang
Power supply	5v 300mA DC
Power consumption	1 Watts [max]
Operation temperature	0~40°C [32~104°F]
Storage temperature	-20~60°C [-4~140°F]
Relative humidity	20~90% RH [no condensation]
Package Contents	1x DXB-8 1x Paintable White Wall Plate 1x User Manual
Options	

Specifications subject to change without notice.

APPENDIX 4 Warranty

Limited 3 Year Warranty

Aurora Multimedia Corp. ("Manufacturer") warrants that this product is free of defects in both materials and workmanship for a period of 3 years as defined herein for parts and labor from date of purchase. This Limited Warranty covers products purchased in the year of 2009 and after. Motorized mechanical parts (Hard Drives, DVD, etc), mechanical parts (buttons, doors, etc), remotes and cables are covered for a period of 1 year. Touch screen displays are covered for 1 year; touch screen overlay components are covered for 90 days. Supplied batteries are not covered by this warranty. During the warranty period, and upon proof of purchase, the product will be repaired or replaced (with same or similar model) at our option without charge for parts or labor for the specified product lifetime warranty period.

This warranty shall not apply if any of the following:

- A. The product has been damaged by negligence, accident, lightning, water, act-of-God or mishandling; or,
- B. The product has not been operated in accordance with procedures specified in operating instructions; or,
- C. The product has been repaired and or altered by other than manufacturer or authorized service center; or,
- D. The product's original serial number has been modified or removed: or,
- E. External equipment other than supplied by manufacturer, in determination of manufacturer, shall have affected the performance, safety or reliability of the product.
- F. Part(s) are no longer available for product.

In the event that the product needs repair or replacement during the specified warranty period, product should be shipped back to Manufacturer at Purchaser's expense. Repaired or replaced product shall be returned to Purchaser by standard shipping methods at Manufacturer's discretion. Express shipping will be at the expense of the Purchaser. If Purchaser resides outside the contiguous US, return shipping shall be at Purchaser's expense.

No other warranty, express or implied other than Manufacturer's shall apply.

Manufacturer does not assume any responsibility for consequential damages, expenses or loss of revenue or property, inconvenience or interruption in operation experienced by the customer due to a malfunction of the purchased equipment. No warranty service performed on any product shall extend the applicable warranty period. This warranty does not cover damage to the equipment during shipping and Manufacturer assumes no responsibility for such damage.

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