

Lutron

integration protocol

revision AH 31 May 2022

Lutron integration protocol

Updates new to this release of the Lutron Integration Protocol

Revision Update: **AH**

Integrator's Reference

- Added new row for Energi Savr Node DALI® Universal to the Compatibility Matrix 4

Athena

- Added Energi Savr Node DALI Universal models to the Athena System Device Compatibility Index list 47

Revisions to previous releases of the Lutron Integration Protocol

Revision Update: **AG**

Integrator's Reference

- Added Athena to the Compatibility Matrix 4
- Added new row for Ketra Devices to the Compatibility Matrix 4
- Added Athena footnote to DEVICE: Command Summary 5
- Added Athena footnote to DEVICE: Command Summary 6
- Added Athena footnote to OUTPUT: Command Summary 8
- Added Athena footnote to MONITORING: Command Summary 12
- Added Athena footnote to SYSTEM: Command Summary 15

Athena

- Added the entirety of the new Athena section 47-56

Revision Update: **AF**

QS Standalone

- Added note to monitoring type 11 in the chart 33
- Removed the line detailing the option to set the component to area in the Component Numbers table 86

Revision Update: **AE**

QS Standalone

- Changed sentence “E” in table 24

Quantum

- Removed the original note 2, also removed delay information from table since shades are not capable of delay programming 43
- Updated note end of note 2 to indicate that delay has no effect 44
- Updated note end of note 1 to indicate that delay has no effect 45

HomeWorks

- Updated note end of note 2 to indicate that delay has no effect 51
- Updated note end of note 1 to indicate that delay has no effect 52
- Removed Delay note in table, also removed original note 1 & 2 about Fade & Delay and renumbered accordingly 53

myRoom Plus

- Updated note end of note 2 to indicate that delay has no effect 65
- Updated note end of note 1 to indicate that delay has no effect 66
- Removed Delay note in table, also removed original note 1 & 2 about Fade & Delay and renumbered accordingly 67

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- Updated note end of note 3 to indicate that delay has no effect 90
- Updated note end of note 4 to indicate that delay has no effect 126
- Removed Delay note in table, also removed original note 2 & 3 about Fade & Delay and renumbered accordingly 127
- Updated note end of note 4 to indicate that delay has no effect 139

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- Added new subscript for Get (?) Action to note the load level for raise/lower configuration First On, Last Off. 8

Quantum

- Added new bullets under Telnet Server section. 37

Revision Update: AC

Integration Access Points

- Added new bullet about passphrases 18

System Commands

- Added new page for #PASSWORD command. 20

Revision Update: AB

Integration Access Points

- Changed "Login" bullet to "Logins: Defined in the RadioRA 2 software application" 29

Revision Update: AA

myRoom Plus System Overview

- Remove Sivoia QS Venetian Blind and Sivoia QS Wireless Venetian Blind from myRoom plus System Device Compatability Index 60

Revision Update: Z

Wireless Temperature Sensor

- Remove parameters for "Get (?) battery status" action 149
- Add "Battery status response (~)" line to Action Numbers and Parameters table 149
- In "Example DEVICE Messages" table, replace "Temperatre Sensor's Battery is Low" line with "Status Report" line. 149

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Lutron integration protocol

About Integration

Integration Operations

The Lutron integration protocol will allow third-party equipment, such as touch-screens, universal remote controls, and software applications, to control and monitor devices in a Lutron lighting control system.

The protocol supports three basic types of integration operations:

- Execute an action in the Lutron system
- Query the status of the Lutron system and Lutron devices
- Monitor responses from the Lutron system

Operation Characters

To help create and manage the different integration operations, three distinct operation characters have been selected to begin each command. All protocol messages will start with one of the following operation characters:

- # Execute an action (e.g., turn a dimmer on/off)
- ? Query system information (e.g., determine on/off status of a dimmer)
- ~ Monitor responses from the system when requested or after a change has occurred (e.g., if someone turns on a dimmer locally, a response command is sent out to indicate the change)

Note to Integrator: *Operation characters are not used in any other location in the protocol command string. Therefore, the driver can search for these characters to determine the start of a new command string.*

Command Types

Operation characters will be followed by command types. The two most common commands are: OUTPUT and DEVICE. Other command types are available; see the Integrator's Reference for a summary.

- OUTPUT allows control and monitoring of device outputs such as dimmers and contact closure outputs.
- DEVICE allows control and monitoring of device inputs such as button presses, releases, and contact closure inputs.

Command Structure

The protocol command structure is made up of three parts:

Command	Integration ID	Command-specific fields
---------	----------------	-------------------------

1. The **Command** is made up of the operation character (#, ?, or ~) and the command type.
2. The **Integration ID** is assigned to each device in the system during system setup, providing a unique user-assigned address for each system device.
3. The **Command-specific fields** contain additional information relevant to the type of command. Details about what command-specific field data is supported can be found in the appropriate device specific section of this integration protocol guide.

Command Termination

Each command is made up of fields, separated by commas, and terminated with a carriage return (ASCII dec 13/hex 0D) and a line feed (ASCII dec 10/hex 0A). Throughout this document, carriage return is shown as **<CR>** and line feed is shown as **<LF>**.

Lutron integration protocol

About Integration *(continued)*

Command and Control Examples

- 1) This command sets a dimmer (1) level to 75% with a 1 minute and 30 second fade time.

#OUTPUT,1,1,75,01:30<CR><LF>

Command	Integration ID	Command-specific fields		
		Action Number	Level	Fade Time
#OUTPUT	1	1	75	01:30

- 2) This command presses button number 1 of a keypad (2).

#DEVICE,2,4,3<CR><LF>

Command	Integration ID	Command-specific fields	
		Component Number	Action Number
#DEVICE	2	4	3

Query Examples

- 3) This command requests the output level for a dimmer (3).

?OUTPUT,3,1<CR><LF>

Command	Integration ID	Command-specific fields	
		Action	
?OUTPUT	3	1	

Monitoring Examples

- 4) When a user makes a change to a dimmer locally, the following command response would be sent out from the system or when requested by the command in Example 3 above. This command response example shows the local dimmer (3) level was changed to 90%.

~OUTPUT,3,1,90.00<CR><LF>

Command	Integration ID	Command-specific fields	
		Action	Level
~OUTPUT	3	1	90.00

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About Integration *(continued)*

Integration Access Points

- Integration Access Points communicate with external systems using RS232, Ethernet or both. The Lutron integration protocol will allow third-party equipment, such as touch-screens, keypads, and software applications, to control and monitor devices in the Lutron lighting control system through an Integration Access Point. For more information, check the page specific to the Integration Access Point being used. An example of an Integration Access Point is the QS Network Interface (QSE-CI-NWK-E). For a listing of all the available Integration Access Points supported by a particular system, see the Integration Access Points section for that system in the table of contents.

Command Rules and Formatting

- All commands are in ASCII characters
- Each command is made up of fields, separated by commas, and terminated with a carriage return (<CR>, ASCII 13) and a new line (<LF>, ASCII 10)
- Letter case is ignored
- Spaces are ignored
- Leading zeros are ignored

Inter-Message Delays

Inbound and outbound messages with the Integration Protocol will experience system delays during normal operation. The following shows the minimum delays expected:

Command Type	Minimum Inter-Message Delay
Command and Control : These commands start with “#”	100 ms
Query : These commands start with “?” ¹	1500 ms

NOTE

1. Integration systems should be designed to utilize Monitoring commands to maintain an up-to-date view of the current system state.

Integration Best Practices

- Be sure to use the #MONITORING command to enable only the monitoring you require for your application. On large systems, unnecessary monitoring information may lead to extra traffic that causes delay or malfunctioning of the third party integration systems.
- When creating a scene involving several lights, it is better to create the scene in the Lutron system and activate that scene via a single #DEVICE command rather than several #OUTPUT commands for each light.
- Create separate logins for each third party device which will be integrating to the Lutron system.

Integrator's Reference

Compatibility Matrix

Integration Access Point Compatibility Matrix

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus	Athena
QS Network Interface	✓	✓				✓
RadioRA 2 Main Repeater			✓			
HomeWorks QS Processor				✓		
myRoom (GCU-HOSP) Processor					✓	

Device Compatibility Matrix

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus	Athena
GRAFIK Eye QS	✓	✓	✓	✓	✓	
Energi Savr Node DALI® Universal						✓
Energi Savr Node QS/DALI®	✓	✓		✓	✓	✓
Energi Savr Node QS/ EcoSystem	✓	✓				✓
Energi Savr Node QS/ EcoSystem (Int'l)	✓	✓		✓	✓	✓
Energi Savr Node QS/0-10 V/ Softswitch (Int'l)	✓	✓		✓	✓	✓
Energi Savr Node QS/ Phase-Adaptive (Int'l)	✓	✓		✓	✓	✓
Energi Savr Node QS/0-10 V/ Softswitch	✓	✓				✓
Energi Savr Node QS/ Motor Module (Int'l)	✓			✓	✓	✓
Remote Power Module		✓		✓		
Low-Capacity Switching DIN Power Module (1A/output)				✓	✓	
Low-Capacity Phase-Adaptive DIN Power Module (1A/output)				✓	✓	
Palladiom Keypad		✓		✓	✓	✓
Palladiom Thermostat					✓	
Architrave Keypad	✓	✓		✓	✓	✓
Signature Series Keypad	✓	✓		✓	✓	✓
seeTouch Keypad	✓	✓	✓	✓	✓	✓
seeTouch QS Keypad (Int'l)	✓	✓		✓	✓	✓
Tabletop seeTouch Keypad			✓	✓	✓	
Pico Wireless Control	✓	✓	✓	✓	✓	✓
Hybrid Keypad			✓	✓	✓	
Dynamic Keypad				✓	✓	
Wallbox Input Closure Interface	✓	✓		✓	✓	✓
Sivoia QS Shade	✓	✓	✓	✓	✓	✓
Sivoia QS Wireless Shade					✓	
Sivoia QS Venetian Blind	✓		✓	✓	✓	
Sivoia QS Wireless Venetian Blind				✓	✓	
Maestro Dimmer and Plug-In Module			✓	✓	✓	
Maestro Fan Speed Control			✓	✓	✓	
Visor Control Receiver			✓	✓	✓	
Radio Powr Savr Sensor			✓	✓	✓	
HVAC Controller			✓	✓	✓	
Wireless Temperature Sensor			✓	✓		
QS Input/Output Control Interface	✓	✓		✓	✓	✓
QS Sensor Module	✓	✓		✓	✓	✓
Ketra Devices						✓

Lutron integration protocol

Integrator's Reference *(continued)*

DEVICE: Command Summary

Device integration commands allow the user to access components of the system such as a physical device. The user can activate programming via button presses, releases, etc., as well as monitor those same events as they occur in the system.

DEVICE Command Formats

Operation *Integration ID (example)*
#DEVICE, 5, Component Number, Action Number, Parameters
Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Refer to device specific tables for lists of Component Numbers.

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Enable ¹	1	None
Set (#) Disable ¹	2	None
Set (#) Press, Close, or Occupied	3	None
Set (#) Release, Open, or Unoccupied	4	None
Set (#) Hold ²	5	None
Set (#) Double-tap ²	6	None
Set (#) or Get (?) Current Scene ^{1,2,4}	7	Scene
Set (#) or Get (?) LED State	9	0 = Off 1 = On 2 = Normal Flash ² 3 = Rapid Flash ²
Set (#) or Get (?) Light Level ^{3,4}	14	0–100 or 0.00–100.00 SS.ss, SS, MM:SS, or HH:MM:SS SS.ss, SS, MM:SS, or HH:MM:SS

NOTES

1. Quantum 2.7 and higher.
2. Not supported in RadioRA 2.
3. Not supported by Quantum.
4. Not Supported by Athena.

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Integrator's Reference *(continued)*

DEVICE: Command Summary *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Zone Lock ^{1,2,3,12}	15	0 = Off 1 = On
Set (#) or Get (?) Scene Lock ^{1,2,3,12}	16	0 = Off 1 = On
Set (#) or Get (?) Sequence State ^{1,2,3,12}	17	0 = Off 1 = Scenes 1–4 2 = Scenes 5–16
Set (#) Start Raising ^{3,4,5,12}	18	None
Set (#) Start Lowering ^{3,4,5,12}	19	None
Set (#) Stop Raising or Lowering ^{3,4,5,12}	20	None
Get (?) battery status	22	1 = Normal, 2 = Low
Set (#) a custom lift and tilt level of venetian blinds programmed to the phantom button ^{4,6,12}	23	Lift level % Tilt level %
Set (#) a custom lift level only of venetian blinds programmed to the phantom button ^{4,6,12}	24	Lift level %
Set (#) a custom tilt level only of venetian blinds programmed to the phantom button ^{4,6,12}	25	Tilt level %
Set (#) Hold or Release ²	32	None
Set (#) GRAFIK Eye QS Timeclock state ¹²	34	0 = Disabled 1 = Enabled
Get (?) Query CCI state ⁸	35	None
Set (#) or Get (?) Active LED Level ⁷	36	0–100%
Set (#) or Get (?) Inactive LED Level ⁷	37	0–100%
Get (?) Sensor Temperature (°F) ^{9,10,11,12}	41	None
Get (?) Sensor Temperature (°C) ^{9,10,11,12}	42	None

NOTES

1. Not supported in HomeWorks QS.
2. Not supported in RadioRA 2.
3. Not supported by Quantum.
4. Use OUTPUT command with equivalent action number in RadioRA 2.
5. Use OUTPUT command with equivalent action number in HomeWorks QS.
6. Use SHADEGRP command with equivalent action number in HomeWorks QS.
7. Applies only to Palladiom keypads.
8. Requires NWK firmware 8.47 or newer for QS Standalone systems.
9. Supported by Palladiom Thermostat only.
10. This function reports "UNKNOWN" if the value is not known.
11. When issuing this command, use the integration ID and component number of the temperature sensor, not the HVAC zone.
12. Not Supported by Athena.

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Lutron integration protocol

Integrator's Reference *(continued)*

DEVICE: Command Summary *(continued)*

HomeWorks/myRoom plus QS Button Types and Integration Requirements:

Refer to Lutron Designer software for setting up programming options.

Programming Options				Required Integration Action Numbers				
Button Type	Double Tap	Hold	Cycle Dim	Press (3)	Release (4)	Double-Tap (6)	Hold (5)	Hold Release (32)
Single-Action and Toggle Buttons	–	–	–	✓	–	–	–	–
	✓	–	–	✓	–	✓	–	–
	–	✓	–	–	✓	–	✓	–
	✓	✓	–	–	✓	✓	✓	–
	–	–	✓	✓	✓	–	✓	✓
	✓	–	✓	✓	✓	✓	✓	✓
Dual Action Buttons	–	–	–	✓	✓	–	–	–
	✓	–	–	✓	✓	✓	–	–
Master and Single Scene Raise/Lower Buttons	–	–	–	✓	✓	–	–	–
Open/Stop/Close/Stop Buttons	–	–	–	✓	–	–	–	–

RadioRA 2 Button Types and Integration Requirements:

Refer to RadioRA 2 Essentials/Inclusive software for setting up programming options.

Programming Options		Required Integration Action Numbers				
Button Type	Scene Save Enabled	Press (3)	Release (4)	Double-Tap (6)	Hold (5)	Hold Release (32)
Single-Action and Toggle Buttons	–	✓	–	–	–	–
	✓	✓	–	–	✓	–
Master and Single Scene Raise/Lower Buttons	–	✓	✓	–	–	–
Shade Toggle Buttons	–	✓	–	–	–	–

Lutron integration protocol

Integrator's Reference *(continued)*

OUTPUT: Command Summary

Outputs are dimmers, CCOs, or other devices in a system that have a controllable output. All of these devices will accept levels from 0% to 100% and 0.00% to 100.00% with a given fade and delay time. These same commands can be monitored as they occur in the system.

OUTPUT Command Format

$\begin{array}{l} \text{Operation} \\ \# \text{OUTPUT, } 6, \text{ Action Number, Parameters} \\ \text{Command} \end{array}$
 $\begin{array}{l} \text{Integration ID (example)} \\ \text{Use "OUTPUT Command-specific fields" tables} \\ \text{to complete these command fields.} \end{array}$

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) ¹⁰ Zone Level	1	0–100 or 0.00–100.00 SS.ss ¹ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising	2	None
Set (#) Start Lowering	3	None
Set (#) Stop Raising or Lowering	4	None
Set (#) Start Flashing ²	5	SS.ss ¹ , SS, MM:SS, or HH:MM:SS
Set (#) Pulse Time	6	SS.ss ¹ , SS, MM:SS, or HH:MM:SS
Set (#) or Get (?) tilt level ^{3,4}	9	Tilt Level ⁵ =0–100 ⁶ or 0.00–100.00 ^{5,6} Fade ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS Delay ³ in: SS.ss ² , SS, MM:SS, or HH:MM:SS
Set (#) or Get (?) lift & tilt level ⁴	10	Lift Level ⁵ =0–100 or 0.00–100.00 ⁵ Tilt Level ⁵ =0–100 ^f or 0.00–100.00 ^{5,6} Fade ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS Delay ³ in: SS.ss ² , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising Tilt ^{4,11}	11	None
Set (#) Start Lowering Tilt ^{4,11}	12	None
Set (#) Stop Raising or Lowering Tilt ^{4,11}	13	None
Set (#) Start Raising Lift ^{4,11}	14	None
Set (#) Start Lowering Lift ^{4,11}	15	None
Set (#) Stop Raising or Lowering Lift ^{4,11}	16	None
Set (#) DMX Color or Level Settings ^{7,8}	17	Color/level index: 0–255/0.00–100.00
Set (#) Motor Jog Raise ^{7,9}	18	None
Set (#) Motor Jog Lower ^{7,9}	19	None
Set (#) Motor 4-Stage Jog Raise ^{7,9}	20	None
Set (#) Motor 4-Stage Jog Lower ^{7,9}	21	None

NOTES

- Fractions are rounded **up** to the closest 1/4 second.
- To stop a dimmer from flashing, send it to a valid level (action 1).
- The Delay time is optional. When not used, the system will use a zero-second delay. The minimum delay time is 0 seconds. The maximum delay time is 4 hours.
- Not supported in Quantum.
- For switched outputs, any non-zero level results in on or closed, 0 results in off or open.
- 50 for Horizontal Sheer Blinds.
- Not supported in RadioRA 2.
- Supported in Quantum version 2.2 and higher.
- Supported in Quantum version 2.5 and higher.
- For switched loads on a power panel link, the load is only ever off when the level is 0. This is only for the raise/lower configuration First On, Last Off. Other raise/lower configurations will not reliably provide the on/off state.
- Not supported in Athena.

Lutron integration protocol

Integrator's Reference *(continued)*

GROUP¹: Command Summary

The GROUP command is used to report the status of a group of occupancy sensors.

GROUP Command Format

Operation *Integration ID (example)*
?GROUP, 6, Action Number
Command *Use "GROUP Command-specific fields" tables to complete these command fields.*

NOTE

1. Not supported in QS Standalone.

GROUP Command-specific fields

Occupancy States:

Description	Value
Occupied	3
Unoccupied	4
Unknown	255

Action Numbers:

Action	Action Number
Get (?) Occupancy Group State	3

Example GROUP Messages

Operation	Command String
Query: ?GROUP, Integration ID, Action Number	
What is Occ GROUP 1's status?	?GROUP,1,3<CR><LF>
Response: ~ GROUP, Integration ID, Action Number, Parameters	
Occ group 1 is occupied	~GROUP,1,3,3<CR><LF>
Occ group 1 is unknown	~GROUP,1,3,255<CR><LF>

Continued on next page...

Integrator's Reference *(continued)*

HVAC: Command Summary

HVAC Integration commands allow the user to access the features and components of HVAC controllers in the system. The user can modify HVAC parameters like the operating mode, fan mode etc., as well as monitor the changes to these parameters as they occur in the system.

HVAC Command Format

Operation Integration ID (example)
#HVAC,21, Action Number, Parameters
 Command Use "HVAC Command-specific fields" tables to complete these command fields.

HVAC Command-specific fields

Action Numbers and Parameters:¹

Action	Action Number	Parameters
Set (#) or Get (?) Current Temperature (°F) ^{5,6}	1	Temperature=32–212 °F
Set (#) or Get (?) Heat and Cool Setpoints (°F) ^{2,4,5}	2	Setpoint Heat (SPH)=32–212 °F Setpoint Cool (SPC)=32–212 °F
Set (#) or Get (?) Operating Mode	3	Mode (1 = Off/Protect, 2 = Heat, 3 = Cool, 4 = Auto, 5 = Em.Heat, 6 ⁷ = Locked out, 7= Fan, 8 = Dry)
Set (#) or Get (?) Fan Mode	4	Mode (1 = Auto, 2 = On, 3 = Cyclor, 4 = No Fan, 5 = High, 6 = Medium, 7 = Low, 8 = Top)
Set (#) or Get (?) Eco (Setback) Mode	5	Mode (1 = Off, 2 = On)
Get (?) Eco Offset	6	Eco Offset = 1–11 °F
Set (#) or Get (?) Schedule Status ³	7	0 = Schedule Unavailable (Get "?" Only) 1 = Following Schedule (Set "#" or Get "?") 2 = Permanent Hold (Set "#" or Get "?") 3 = Temporary Hold (Get "?" only)
Get (?) Temperature Sensor Connection Status	8	1 = All Sensors are Active 2 = Missing Sensor 3 = Wired Sensor Only 4 = No Sensor
Get (?) Schedule Event	9	Schedule # (1–7), Event # (1–4), HH,MM, SPH, SPC
Get (?) Schedule Day Assignment	10	Schedule#(1–7), DD(Bitmap:Sunday(Bit 0)–Saturday(Bit 6) 1–active day, 0–inactive day)
Get (?) System Mode	11	1 = Normal 2 = Away 3 = Green
Get (?) Heat and Cool Setpoints (°F) without Eco Offset if applied ⁵	12	Setpoint Heat (SPH)=32–212 °F Setpoint Cool (SPC)=32–212 °F
Get (?) Emergency Heat Available	13	1 = Not Available 2 = Available

NOTES

- These commands are supported only for HomeWorks QS, RadioRA 2, myRoom Plus.
- Changing the setpoint will turn Eco Mode off if it is currently on.
- Schedule Unavailable → Schedule not programmed or device needs date/time.
Following Schedule → Running programmed schedule; set points from schedule.
Permanent Hold → Schedule is not running; set points as adjusted.
Temporary Hold → Running schedule; set points as adjusted. Returns to following schedule at next schedule event.
- To leave a parameter unchanged, use "255" as the value for that parameter when ending the command.
- Allow for reported temperature values to be zero padded, with up to 3 digits before the decimal point, and 2 digits after.
– Possible reported values of 5 °C: "005", "05", "5", "005.", "005.", "5.", "005.0", "05.0", "5.0", "005.00", "05.00", "5.00"
– Possible reported values of 5.5 °C: "005.5", "05.5", "5.5", "005.50", "05.50", "5.50"
– Possible reported values of 21 °C: "021", "21", "021.0", "21.0", "021.00", "21.00"
– Possible reported values of 21.5 °C: "021.5", "21.5", "021.50", "21.50"
- Setting of current temperature is only possible if the HVAC zone is connected to a 3rd party HVAC controller.
- RCS HVAC controller locked out due to missing wired sensor. This parameter can only be read.

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Integrator's Reference *(continued)*

HVAC: Command Summary *(continued)*

HVAC Command-specific fields *(continued)*

Action Numbers and Parameters *(continued)*:

Action	Action Number	Parameters
Set (#) or Get (?) Call Status	14	0= None, Last was Heat 1= Heat Stage 1 2= Heat Stage 1 and 2 3= Heat Stage 1, 2, and 3 4= Heat Stage 3 5= None, Last was Cool 6= Cool Stage 1 7= Cool Stage 1 and 2 8= Off 9= Emergency Heat 10= Dry
Set (#) or Get (?) Current Temperature (°C) ^{1,4,5}	15	Temperature=0–100 °C
Set (#) or Get (?) Heat and Cool Setpoints (°C) ^{2,3,4}	16	Setpoint Heat (SPH)=0–100 °C Setpoint Cool (SPC)=0–100 °C
Get (?) Heat and Cool Setpoints (°C) without Eco Offset if applied ^{2,4}	17	Setpoint Heat (SPH)=0–100 °C Setpoint Cool (SPC)=0–100 °C
Set (#) or Get (?) Single Setpoint (°F) and Drifts ^{3,4}	18	Single Setpoint = 32–212 °F Negative Drift = 0–15 °F Positive Drift = 0–15 °F
Set (#) or Get (?) Single Setpoint (°C) and Drifts ^{3,4}	19	Single Setpoint = 0–100 °C Negative Drift = 0–8 °C Positive Drift = 0–8 °C

NOTES

1. HomeWorks QS software version 4.1 and higher.
2. Changing the setpoint will turn Eco Mode off if it is currently on.
3. To leave a parameter unchanged, use "255" as the value for that parameter when ending the command.
4. Allow for reported temperature values to be zero padded, with up to 3 digits before the decimal point, and 2 digits after.
 - Possible reported values of 5 °C: "005", "05", "5", "005.", "005.", "5.", "005.0", "05.0", "5.0", "005.00", "05.00", "5.00"
 - Possible reported values of 5.5 °C: "005.5", "05.5", "5.5", "005.50", "05.50", "5.50"
 - Possible reported values of 21 °C: "021", "21", "021.0", "21.0", "021.00", "21.00"
 - Possible reported values of 21.5 °C: "021.5", "21.5", "021.50", "21.50"
5. Setting of current temperature is only possible if the HVAC zone is connected to a 3rd party HVAC controller.

Lutron integration protocol

Integrator's Reference *(continued)*

MONITORING: Command Summary

Monitoring allows the user to configure what types of messages the system will report.

Note to Integrator: *The default values of these are set in the programming database and restored whenever the integration port is logged in. The user can temporarily change those settings to hide or show information as desired.*

MONITORING Command Formats

Operation

#MONITORING, Monitoring Type, Action Number

Command

Use "MONITORING Command-specific fields" tables to complete these command fields.

MONITORING Command-specific fields

Monitoring Type:

Description	Monitoring Type
Set (#) or Get (?) Diagnostic Monitoring ⁸	1
Set (#) or Get (?) Event Monitoring	2
Set (#) or Get (?) Button Monitoring ¹	3
Set (#) or Get (?) LED Monitoring ^{1,2}	4
Set (#) or Get (?) Zone Monitoring ¹	5
Set (#) or Get (?) Occupancy ¹	6
Set (#) or Get (?) Photo Sensor Monitoring	7
Set (#) or Get (?) Scene # ¹	8
Set (#) or Get (?) System Variable	10
Set (#) or Get (?) Reply State (if disabled, all messages FROM the integration access point will cease) ^{1,3}	11
Set (#) or Get (?) Prompt State (if disabled, the prompt will not be printed to the terminal) ^{1,3}	12
Set (#) or Get (?) Occupancy Group Monitoring	13
Set (#) or Get (?) Device Lock State Monitoring	14
Set (#) or Get (?) Sequence Monitoring ²	16
Set (#) or Get (?) HVAC Monitoring ^{1,2,4,8}	17
Set (#) or Get (?) Mode Monitoring ^{1,2,4,8}	18
Set (#) or Get (?) Shade Group Monitoring ^{1,5}	23
Set (#) or Get (?) Partition Wall ^{5,6}	24
Set (#) or Get (?) Temperature Sensor Monitoring ^{1,7,4,8}	27
Set (#) or Get (?) State of All Monitoring (except Reply and Prompt)	255

NOTES

1. The following monitoring types are enabled by default, for user-level Telnet login: 3-Button, 4-LED, 5-Zone, 6-Occupancy, 8-Scene, 11-Reply, 12-Prompt, 17-HVAC, 18-Mode, 23-Shade.
2. Not supported in QS Standalone.
3. The following monitoring types are enabled by default, for admin-level Telnet login: 11-Reply, 12-Prompt.
4. Not compatible with Quantum.
5. Not supported in RadioRA 2 and HomeWorks QS.
6. Not supported via QSE-CI-NWK-E in Quantum.
7. Supported by Palladium Thermostat only.
8. Not Supported by Athena.

Action Numbers:

Action	Action Number
Enable	1
Disable	2

Lutron integration protocol

Integrator's Reference *(continued)*

ERROR: Command Summary

Integration Access Points will respond with an error if an invalid command is received. See the table below for explanations of different errors.

ERROR Command Formats

Operation
|
~ERROR, Error Number
|
Command Refer to "ERROR Command-specific fields" table

ERROR Command-specific fields

Error Numbers:

Description	Error Number
Report (~) Parameter count mismatch	1
Report (~) Object does not exist	2
Report (~) Invalid action number	3
Report (~) Parameter data out of range	4
Report (~) Parameter data malformed	5
Report (~) Unsupported Command	6

Example ERROR Messages

Operation	Command String
Parameter count mismatch: Too many or too few parameters for the specified action	
Too many parameters when activating scene	#AREA,2,6,1,1,1,1,1,1<CR><LF>
Parameter count mismatch.	~ERROR,1<CR><LF>
Object does not exist: The Integration ID or serial number entered does not map to a known part of the system	
Send command to an ID that is not valid	#OUTPUT,1234,1,100.00<CR><LF>
Object does not exist	~ERROR,2<CR><LF>
Invalid Action: The action does not exist for this command	
Send invalid action (4321) to Area 2	#AREA,2,4321<CR><LF>
Invalid action number	~ERROR,3<CR><LF>
Parameter data out of range: The parameter data is out of range for this action	
Send Output 11 to 120%	#OUTPUT,11,1,120.00<CR><LF>
Parameter data out of range	~ERROR,4<CR><LF>
Parameter data malformed: The parameter data given was not formatted properly	
Set Time to 12:23:24:25	#SYSTEM,1,12:23:24:25<CR><LF>
Invalid action number	~ERROR,5<CR><LF>

Lutron integration protocol

Integrator's Reference *(continued)*

HELP¹: Command Summary

HELP Command for a specific Command Name provides command-name specific usage information.

HELP Command Formats

Operation
|
?HELP, Command Name², Action Number³
|
Command

NOTES

1. HELP not supported in QS Standalone.
2. The "Command Name" parameter is optional. If not entered, a list of all the supported Integration Commands will be printed. If a supported command name is entered, the corresponding actions will be listed.
3. The "Action" parameter is optional. When a valid action number is entered (i.e. it is supported by the corresponding "Command Name"), the help information for that particular action will be displayed.

Example HELP Messages

Operation	Command String
Query: ?HELP, Command Name, Action Number	
What are all the supported Integration Commands?	?HELP<CR><LF>
What actions are available for #OUTPUT?	?HELP,#OUTPUT<CR><LF>
How is "Raise" used for #OUTPUT?	?HELP,#OUTPUT,2<CR><LF>
Response: ~HELP, Help Information	
The list of all Integration Commands.	#OUTPUT,?OUTPUT,#DEVICE,?DEVICE,#AREA,?AREA,#TIMECLOCK,?TIMECLOCK,#SYSTEM,?SYSTEM,#MONITORING,?MONITORING,<CR><LF>
The help information for the #OUTPUT command.	~HELP, #OUTPUT requires action<1-6><CR><LF> 1 = Set Level/Position 2 = Start Raising 3 = Start Lowering 4 = Stop Raising/Lowering 6 = Pulse USAGE: #OUTPUT, <ID>, <action>,<CR><LF>
The help information for the "Raise" action (#OUTPUT).	~HELP, #OUTPUT, <action=2> start raising output level<CR><LF> USAGE: #OUTPUT, <ID>, <action=2><CR><LF>

Lutron integration protocol

Integrator's Reference *(continued)*

SYSTEM¹: Command Summary

SYSTEM Command provides support for location, device and system specific information (e.g., Date, Time, Software Version Numbers).

SYSTEM Command Formats

Operation
#SYSTEM, Action Number, Parameters
Command Use "SYSTEM Command-specific fields" tables to complete these command fields.

NOTE

1. Not supported in QS Standalone.

SYSTEM Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Time ^{1,4}	1	Time in: SS.ss, SS, MM:SS, or HH:MM:SS
Set (#) or Get (?) Date ⁴	2	Date in MM/DD/YYYY
Set (#) or Get (?) Latitude and Longitude ⁴	4	Latitude = -90.00 to +90.00 degrees Longitude = -180.00 to +180.00 degrees
Set (#) or Get (?) Time Zone ^{2,4}	5	Hours = -12 to 12 Minutes = 0 to 59
Get (?) Sunset	6	None
Get (?) Sunrise	7	None
Get (?) OS Rev	8	None
Set (#) Load Shed ³	11	0 = Disabled 1 = Enabled

NOTES

1. The system time must be entered in 24 hour format.
2. The Time Zone is referenced to GMT.
3. Load Shed commands available only on Quantum version 2.0 and higher.
4. Not Supported in Athena.

Example SYSTEM Messages

Operation	Command String
Execute: #SYSTEM, Action Number, Parameters	
Set time to 5:45 PM.	#SYSTEM,1,17:45<CR><LF>
Set date to June 1, 2009.	#SYSTEM,2,06/01/2009<CR><LF>
Query: ?SYSTEM, Action Number	
What is the system time?	?SYSTEM,1<CR><LF>
What is the system date?	?SYSTEM,2<CR><LF>
Response: ~SYSTEM, Action Number, Parameters	
The system time is 11:05 AM.	~SYSTEM,1,11:05:00<CR><LF>
The system date is July 3, 2009.	~SYSTEM,2,07/03/2009<CR><LF>

Lutron integration protocol

QS Standalone

System Overview

The QS family of products delivers scalable lighting and shading solutions for residential and commercial applications. At the center of the QS system are the GRAFIK Eye QS control units, Energi Savr Node control units, and Sivoia QS shades and drapes, providing direct control of electric and natural light. QS system devices communicate over the highly flexible QS link; the link allows for daisy-chain or t-tap wiring configurations. All QS system devices communicate without the need for interfaces, and addressing is automatic, eliminating the need to set DIP switches. In addition, QS keypads are configurable in the field to control lights, shades, lights + shades, or third-party devices. The QS system can be easily integrated with other systems through contact-closure input/output, DMX output, or Ethernet/RS232.

QS System Device Compatibility Index

	QS Standalone
GRAFIK Eye QS	✓
Energi Savr Node QS/DALI®	✓
Energi Savr Node QS/EcoSystem	✓
Energi Savr Node QS/EcoSystem (Int'l)	✓
Energi Savr Node QS/0–10 V/Softswitch (Int'l)	✓
Energi Savr Node QS/Phase-Adaptive (Int'l)	✓
Energi Savr Node QS/0–10 V/Softswitch	✓
Energi Savr Node QS/Motor Module (Int'l)	✓
Architrave Keypad	✓
Signature Series Keypad	✓
seeTouch Keypad	✓
seeTouch QS Keypad (Int'l)	✓
Pico Wireless Control	✓
Wallbox Input Closure Interface	✓
Sivoia QS Shade	✓
Sivoia QS Wireless Shade	
Sivoia QS Venetian Blind	✓
Sivoia QS Wireless Venetian Blind	
QS Input/Output Control Interface	✓
QS Sensor Module	✓

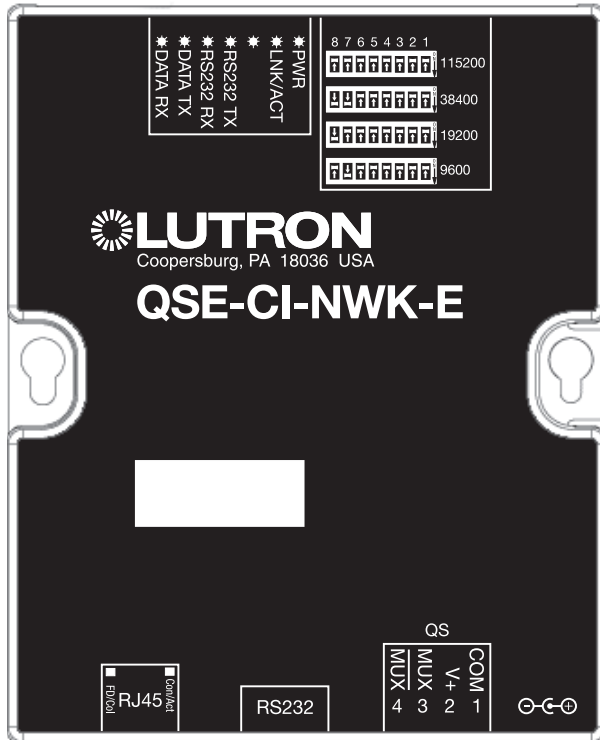
Lutron integration protocol

QS Standalone *(continued)*

Integration Access Points

Network Interface

Model: QSE-CI-NWK-E



Why Integrate with a QSE-CI-NWK-E?

- Integrates a QS lighting control system with a PC or other digital equipment that supports RS232 or Ethernet TCP/IP connection.
- Allows monitor and control of system devices. For example, the QSE-CI-NWK-E can be used to simulate button presses, report button presses, control light levels, and monitor light levels.

Supported Commands

- **MONITORING** specifies what type of messages the system will report
- **ETHERNET** modifies the Ethernet configurations of the QSE-CI-NWK-E
- **RESET** restarts the QSE-CI-NWK-E or restores it to factory defaults
- **INTEGRATION ID** assigns IDs to devices, so that they may be referred to in a more logical fashion
- **DETAILS** returns information about a QS device
- **ERROR** reports syntax errors in an integration string command or query
- **PROGRAMMING** allows user to program Phantom Buttons on the NWK supported in version 8.0 or higher
- **DEVICE** used to activate Phantom Buttons on the NWK
- **OUTPUT** used to control outputs of a Device
- “Programming” and “Device” commands require version 8.0 or higher of the NWK software

Continued on next page...

Lutron integration protocol



QS Standalone *(continued)*

Integration Access Points *(continued)*

Connection Information

Provides an RS232 and Ethernet connection to communicate with external equipment. Communication is through either RS232 or Ethernet, but not both simultaneously.

RS232

The RS232 connection has the following communication settings:

- Baud Rate 9600/19200/38400/115200 (set via dipswitch on unit)
- 8 data bits
- No parity bit
- 1 stop bit
- No flow control

Ethernet

Configuring the control interface to communicate over a network takes not only knowledge of the QS system, but of networking as well. Installers with limited networking knowledge are advised to contact a networking professional before attempting to connect a QSE-CI-NWK-E through a network. The information below will help an installer communicate the QSE-CI-NWK-E configurations to a network professional.

The installer will make any necessary changes to the control interface using the Lutron DeviceIP or PC software tool and the network professional can make any necessary changes to the networking equipment.

Single Ethernet Port

- IEEE® 802.3 Auto-Sensing 10BaseT/100BaseTX
- Supports MDI/MDIX auto-crossover (no crossover cable needed).
- Female 8P8C “Computer RJ-45” socket
- Green “Connect” LED, Amber “Activity” LED
- Use Cat 5 cabling or better

TCP/IP Settings

- IP Address: <static default = 192.168.250.1>
- Subnet Mask: <static default = 255.255.255.0>
- Gateway: <static default = 0.0.0.0>

Protocols Used for Integration

- Telnet

Telnet Server

- Used by third party equipment (i.e. touch screen)
- Limited to transferring ASCII characters
- Telnet Port number is 23
- Login #1: nwk
- Login #2: nwk2
- Logins can be configured to require a passphrase.



QS Standalone *(continued)*

System Commands

ETHERNET Commands

ETHERNET Command Formats

Operation
#ETHERNET, Configuration Number, Parameters
Command Use "ETHERNET Command-specific fields" tables to complete these command fields.

ETHERNET Command-specific fields

Configuration Numbers:

Description	Configuration Number	Parameters
Set (#) or Get (?) IP Address	0	Address (XXX.XXX.XXX.XXX)
Set (#) or Get (?) Gateway Address	1	Address (XXX.XXX.XXX.XXX)
Set (#) or Get (?) Subnet Mask	2	Address (XXX.XXX.XXX.XXX)
Set (#) or Get (?) Login Info	3	User (0=All users; 1=User 1; 2=User 2), Old Login, New Login

Example ETHERNET Commands

Operation	Command String
Execute: #ETHERNET, Configuration Number, Parameters	
Set IP Address to 192.168.250.1	#ETHERNET,0,192.168.250.1<CR><LF>
Set Gateway Address to 10.2.4.1	#ETHERNET,1,10.2.4.1<CR><LF>
Query: ?ETHERNET, Configuration Number, Parameters	
What is the IP Address?	?ETHERNET,0<CR><LF>
What is the Login Information for user 1?	?ETHERNET,3,1<CR><LF>
What is the Login Information for ALL users? (Note: 0=ALL)	?ETHERNET,3,0<CR><LF>
Response: ~DEVICE, Integration ID, Configuration Number, Parameters	
The IP Address is 192.168.250.1	~ETHERNET,0=,192.168.250.1<CR><LF>

Lutron integration protocol



QS Standalone *(continued)*

System Commands *(continued)*

PASSWD Commands

PASSWD Command Formats

Operation
|
#PASSWD¹
|
Command

Example PASSWD Commands

Operation
Execute: #PASSWD
If passphrase feature is enabled: QSE>#passwd Changing passphrase for nwk. Enter current passphrase: currentPassphrase Enter new passphrase: newPassphrase Confirm new passphrase: newPassphrase Passphrase changed successfully QSE>
If passphrase feature is disabled: QSE>#passwd Enable Passphrase (recommended)? (yes no):

Reset a Forgotten Passphrase

Operation
<ol style="list-style-type: none">1. Open a new Telnet session to the device2. Login using the username <code>reset</code>3. Follow the directions on screen. This requires physical access to the device to change a dip switch.

NOTES

1. The #PASSWD command only works in a Telnet session.

Lutron integration protocol



QS Standalone *(continued)*

System Commands *(continued)*

INTEGRATION ID Commands

INTEGRATION ID Command Formats

Operation
#INTEGRATIONID, Action Number, Parameters
Command Use "INTEGRATIONID Command-specific fields" tables to complete these command fields.

INTEGRATION ID Command-specific fields

Action Numbers and Parameters:

Description	Action Number	Parameters
Set (#) or Get (?) Integration ID for a Serial Number	1	Serial Number = 8 character HEX serial number of the device Integration ID = The integration ID to be assigned.
Set (#) Change Integration ID	2	Current Integration ID, New Integration ID Note: An error will be reported if the new Integration ID is the same as an existing Integration ID in the system.
Get (?) Info from ID	3	Integration ID Note: If this field is left blank, all integration IDs will be printed.
Set (#) or Get (?) Output Integration ID	4	Serial Number, Component Number, Integration ID

Example INTEGRATION ID Commands

Operation	Command String
Execute: #INTEGRATIONID, Action Number, Parameters	
Set the Integration ID for a serial number	#INTEGRATIONID,1,1234ABCD,kitchen dimmer<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Set the Integration ID for a serial number	~INTEGRATIONID,1,1234ABCD,kitchen dimmer<CR><LF>
Execute: ?INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	?INTEGRATIONID,1,5678EFEF<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	~INTEGRATIONID,1,5678EFEF,living room keypad<CR><LF>
Execute: #INTEGRATIONID, Action Number, Parameters	
Change the Integration ID	#INTEGRATIONID,2,diningroomlights1,diningroomaccents<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Change the Integration ID	~INTEGRATIONID,2,diningroomlights1,diningroomaccents<CR><LF>
Execute: ?INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	?INTEGRATIONID,3,livingroomkeypad<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	~INTEGRATIONID,3,livingroomkeypad,DEVICE,5678EFEF<CR><LF>



QS Standalone *(continued)*

System Commands *(continued)*

DETAILS String

DETAILS Command Formats

Operation
 |
 ?DETAILS, ID¹
 |
Command

NOTE

1. Device ID may be entered as the serial ID number or the Integration ID. Use ALL_DEVICES or FFFFFFFF to query all devices on the link.

Example DETAILS String

Operation	Command String
Query: ?DETAILS, ID	
Get details of the device with serial ID number 00AC123D	?DETAILS,00AC123D<CR><LF>
Response: ~DETAILS, Serial Number, Name, Family, Model, Software Rev., Boot Software Rev.	
The device with serial ID number 00AC123D has the following information: Name=GRAFIK Eye 1 Product Family=GRAFIK Eye Product Model=QSG Software Revision=1.70 Boot Code Software Revision=2	~DETAILS,SN:00AC123D,IntegrationID:GRAFIKEye1,Family:GRAFIK_Eye(2),Product:QSG(1),CODE:1.70,Boot:2.1,HW:1.1<CR><LF>

Continued on next page...

Lutron integration protocol



QS Standalone *(continued)*

System Commands *(continued)*

RESET Commands

RESET Command Formats

Operation
#RESET, Action Number
Command Use "RESET Command-specific fields" tables to complete these command fields.

RESET Command-specific fields

Action Numbers:

Action	Action Number
Set (#) restart the device	0
Set (#) restore to factory defaults	1
Set (#) restore to factory defaults (does not affect the IP address, Gateway address, subnet mask settings)	2

Example RESET Commands

Operation	Command String
Execute: #RESET, Action Number	
Restart the NWK	#RESET,0<CR><LF>
Restore NWK to factory defaults	#RESET,1<CR><LF>



QS Standalone *(continued)*

System Commands *(continued)*

PROGRAMMING Commands

PROGRAMMING Command Formats

Operation Integration ID or Serial # of
the QSE-CI-NWK being used
#PROGRAMMING, 1, Button Number, Action Number, Parameters
 Command Phantom Button Number Use "PROGRAMMING Command-specific fields" tables
(can be 1-100) to complete these command fields.

PROGRAMMING Command-specific fields

Action Numbers and Parameters:

Description	Action Number	Parameters
Set (#) add programming to a phantom button	1	a) Integration ID – The Integration ID of the device b) Component Number – Always '0' for Shade c) Level – The level to which the shade being programmed will go on activation of this button d) Fade – The time the zone takes to reach the level specified (maximum 4 hours) ¹ e) Delay – The time until the Zone begins to change. ¹
Set (#) add scene programming to a phantom button	2	a) Integration ID b) Component Number (GRAFIK Eye QS Scene controller, Energi Savr Node area ²) c) Scene Number
Set (#) clear programming from a phantom button ³	3	None
Set (#) configure Stop-If-Moving functionality ⁴	4	0 = Stop-If-Moving Off 1 = Stop-If-Moving On
Set (#) add programming to a phantom button (Venetian blind, lift and tilt levels)	5	a) Venetian Integration ID b) Component Number (always 0) c) Lift level d) Tilt level
Set (#) add programming to a phantom button (Venetian blind, tilt only)	6	a) Venetian Integration ID b) Component Number (always 0) c) Tilt level
Set (#) add programming to a phantom button (Venetian blind, lift only)	7	a) Venetian Integration ID b) Component Number (always 0) c) Lift level

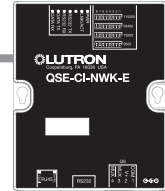
NOTES

A maximum of 500 programming assignments can be made in the QSE-CI-NWK-E.

1. Not available for Shades.
2. If a device's Zone is already assigned to the button, you cannot program a Scene for that button. If a Scene is already programmed for this button for a device, you cannot program another Zone for this button.
3. Use button number 0 to clear programming from all buttons.
4. Use button number 0 to configure Stop-If-Moving functionality on all buttons.

Continued on next page...

Lutron integration protocol



QS Standalone *(continued)*

System Commands *(continued)*

PROGRAMMING Commands *(continued)*

Example PROGRAMMING Commands

For a system of one shade (Integration ID “living room sheer”), one Venetian blind (“kitchen venetian”), and one QSE-CI-NWK (Integration ID “1”), the following examples show how programming can be done.

Operation	Command String
Add shade at 100% to phantom button 1	#PROGRAMMING,1,1,1,living room sheer,0,100<CR><LF>
Response Received	~PROGRAMMING,1,1,1,living room sheer,0,100<CR><LF>
Add Venetian blind at 0% lift and 50% tilt to phantom button 2	#PROGRAMMING,1,2,5,kitchen venetian,0,0,50<CR><LF>
Response Received	~PROGRAMMING,1,2,5,kitchen venetian,0,0,50<CR><LF>
Add Venetian blind at 75% tilt to phantom button 3	#PROGRAMMING,1,3,6,kitchen venetian,0,75<CR><LF>
Response Received	~PROGRAMMING,1,3,6,kitchen venetian,0,75<CR><LF>
Add Venetian blind at 15% lift to phantom button 4	#PROGRAMMING,1,4,7,kitchen venetian,0,15<CR><LF>
Response Received	~PROGRAMMING,1,4,7,kitchen venetian,0,15<CR><LF>
Add shade at 50% to phantom button 2	#PROGRAMMING,1,2,1,dining room blackout,0,50<CR><LF>
Response Received	~PROGRAMMING,1,2,1,dining room blackout,0,50<CR><LF>
Turn On Stop-If-Moving for phantom button 5	#PROGRAMMING,1,5,4,1<CR><LF>
Response Received	~PROGRAMMING,1,5,4,1<CR><LF>
Clear programming from all the phantom buttons	#PROGRAMMING,1,0,3<CR><LF>
Response Received	Repeat command to clear all phantom button programming
Repeat command to clear all phantom button programming	#PROGRAMMING,1,0,3<CR><LF>
Response Received	~PROGRAMMING,1,0,3<CR><LF>
Clear programming from phantom button 6	#PROGRAMMING,1,6,3<CR><LF>
Response Received	~PROGRAMMING,1,6,3<CR><LF>



QS Standalone *(continued)*

System Commands *(continued)*

PROGRAMMING Commands *(continued)*

PROGRAMMING Command Formats

$\begin{matrix} \text{Operation} & & \text{Integration ID or Serial \# of} \\ & & \text{the QSE-CI-NWK being used} \\ \text{?PROGRAMMING, } & \text{1,} & \text{Button Number,} & \text{Action Number} \\ \text{Command} & \text{Phantom Button Number} & \text{Use "PROGRAMMING Command-specific fields" tables} \\ & \text{(can be 1-100)} & \text{to complete these command fields.} \end{matrix}$

PROGRAMMING Command-specific fields

Action Numbers and Parameters:

Description	Action Number	Parameters
Get (?) display programming of a specific phantom button ¹	None	None
Get (?) display Stop-If-Moving configuration of a specific phantom button ²	4	None

Example PROGRAMMING Commands

The following examples show how to verify the programming of the phantom buttons of a QSE-CI-NWK-E with an Integration ID of "1."

Operation	Command String
Display programming of phantom button 1	?PROGRAMMING,1,1<CR><LF>
Display programming of all phantom buttons	?PROGRAMMING,1<CR><LF>
Display Stop-If-Moving configuration of phantom button 5	?PROGRAMMING,1,5,4<CR><LF>
Display Stop-If-Moving configuration of all phantom buttons	?PROGRAMMING,1,0,4<CR><LF>

NOTES

1. To display programming of all phantom buttons, leave the button number field blank.
2. To display Stop-If-Moving configuration of all phantom buttons, use button number 0.

Continued on next page...



QS Standalone *(continued)*

System Commands *(continued)*

DEVICE Commands

DEVICE Command Formats

$\begin{matrix} \text{Operation} \\ \text{Command} \end{matrix}$
 $\begin{matrix} \text{Integration ID or Serial \# of} \\ \text{the QSE-CI-NWK being used} \\ \text{Phantom Button Number} \\ \text{(can be 1-100)} \end{matrix}$
 $\begin{matrix} \text{Button Number,} \\ \text{Action Number,} \\ \text{Parameters} \end{matrix}$

Use "DEVICE Command-specific fields" tables to complete these command fields.

DEVICE Command-specific fields

Action Numbers and Parameters:

Description	Action Number	Parameters
Set (#) activate the phantom button preset	3	None
Set (#) a custom level of the shades, lighting zones programmed to the phantom button ¹	14	Level: The level the shades will go to ¹
Set (#) Start Raising Shades ²	18	None
Set (#) Start Lowering Shades ²	19	None
Set (#) Stop Raising or Lowering Shades	20	None
Set (#) a custom lift and tilt level of venetian blinds programmed to the phantom button ¹	23	Lift level % Tilt level %
Set (#) a custom lift level only of venetian blinds programmed to the phantom button ¹	24	Lift level %
Set (#) a custom tilt level only of venetian blinds programmed to the phantom button ¹	25	Tilt level %

NOTES

1. Specifying a custom level above will not affect the preset level programmed for the phantom button.
2. For Venetian blinds, the Raise & Lower Actions will affect either the lift or the tilt based on how the phantom button was programmed. If #PROGRAMMING Action 5 is used (affecting both lift and tilt levels), then the Raise & Lower Actions will affect the tilt.

Example DEVICE Commands

The following examples show how we can activate phantom buttons on a link with a QSE-CI-NWK-E whose Integration ID is "1."

Operation	Command String
Activate Preset on phantom button 1	#DEVICE,1,1,3<CR> <LF>
Set the level of all shades programmed to phantom button 2 to 50%	#DEVICE,1,2,14,50<CR><LF>
Set all venetian blinds programmed to phantom button 3 to a lift level of 50% and tilt level of 25%	#DEVICE,1,3,23,50,25<CR><LF>
Set all venetian blinds programmed to phantom button 4 to a lift level of 50%	#DEVICE,1,4,24,50<CR><LF>
Set all venetian blinds programmed to phantom button 5 to a tilt level of 25%	#DEVICE,1,5,25,25<CR><LF>
Raise the shades and venetian blinds programmed to phantom button 6	#DEVICE,1,6,18<CR><LF>
Lower shades and venetian blinds programmed to phantom button 7	#DEVICE,1,7,19<CR><LF>
Stop shades and venetian blinds programmed to phantom button 8	#DEVICE,1,8,20<CR><LF>

RadioRA 2

System Overview

RadioRA 2 is a wireless multi-room control system for lights and shades. The system is made up of repeaters, dimmers, keypads, and other devices. The Lutron proven, patented RF technology ensures reliable performance. With the RadioRA 2 system, you can: create the right ambience for varied activities, easily monitor and control your lights, reduce energy usage, and increase safety in and around your home.

RadioRA 2 System Device Compatibility Index

	RadioRA 2
GRAFIK Eye QS	✓
seeTouch Keypad	✓
Tabletop seeTouch Keypad	✓
Pico Wireless Control	✓
Hybrid Keypad	✓
Sivoia QS Shade	✓
Sivoia QS WirelessShade	✓
Sivoia QS Venetian Blind	✓
Sivoia QS Wireless Venetian Blind	✓
Maestro Dimmer and Plug-In Module	✓
Maestro Fan Speed Control	✓
Visor Control Receiver	✓
Radio Powr Savr Sensor	✓
HVAC Controller	✓
Wireless Temperature Sensor	✓

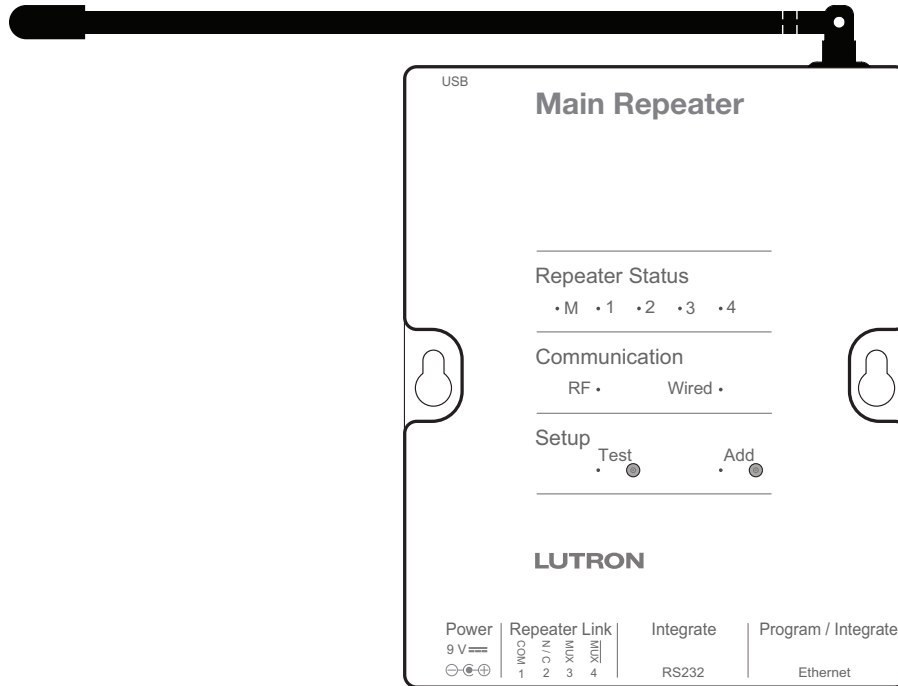
Lutron integration protocol

RadioRA 2 *(continued)*

Integration Access Points

Main Repeater

Model: RR-MAIN-REP-WH, RRK-MAIN-REP-WH



Why Integrate with a RadioRA 2 Main Repeater?

- Integrates a RadioRA 2 lighting control system with a PC or other digital equipment that supports RS232 or Ethernet TCP/IP communication.
- Allows monitoring and control of system devices. For example, the Main Repeater can be used to simulate button presses, report button presses, monitor LEDs, and control light levels of dimmers.

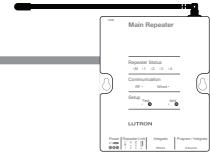
Integration Capabilities

- 100 “virtual” programmable buttons with LEDs (use DEVICE command)
- Monitoring of changes to other system devices (use MONITORING command)

Additional Commands

- **MONITORING** commands are used to program what types of messages the system will report

Continued on next page...



RadioRA 2 *(continued)*

Integration Access Points *(continued)*

Connection Information

Provides an RS232 and Ethernet connection to communicate with external equipment.

RS232

The RS232 connection has the following communication settings:

- Baud Rate 9600
- 8 data bits
- No parity bit
- 1 stop bit
- No flow control

Ethernet

Configuring the control interface to communicate over a network takes not only knowledge of the RadioRA 2 system, but of networking as well. Installers with limited networking knowledge are advised to contact a networking professional before attempting to connect a control interface through a network. The information below will help an installer communicate the control interface configurations to a network professional.

The installer will make any necessary changes to the control interface using the Lutron DeviceIP or RadioRA 2 PC software tool and the network professional can make any necessary changes to the networking equipment.

Single Ethernet Port

- IEEE® 802.3 Auto-Sensing 10BaseT/100BaseTX
- Supports MDI/MDIX auto-crossover (no crossover cable needed).
- Female 8P8C “Computer RJ-45” socket
- Green “Connect” LED, Amber “Activity” LED
- Use Cat 5 cabling or better

TCP/IP Settings

- DHCP (dynamic) or static configuration <factory default = DHCP>
- IP Address: <static default = 192.168.1.50 or dynamic configuration>
- Subnet Mask: <static default = 255.255.255.0 or dynamic configuration>
- Gateway: <static default = 0.0.0.0 or dynamic configuration>

Protocols Used for Integration

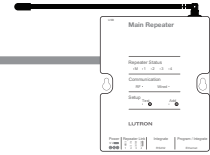
- Telnet

Telnet Server

- Inclusive Software will allow up to a total of 10 additional logins
- Used by software and/or third party equipment (e.g., touch screen)
- Limited to transferring ASCII characters
- Logins: Defined in the RadioRA 2 software application

UDP Multicast Messaging

- Used by the RadioRA 2 PC software during device configuration and system programming
- There are no user modifiable settings for UDP messaging



RadioRA 2 (continued)

System Commands

DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*
#DEVICE, 1, Component Number, Action Number, Parameters
Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

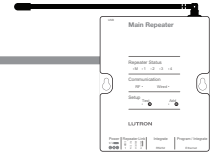
Component	Component Number	Available Actions
Button 1–100	1–100	Press, Release
LED 1–100	101–200	Set or Get LED state

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Press	3	None
Set (#) Release	4	None
Set (#) or Get (?) LED State	9	0 = Off 1 = On

Example DEVICE Commands

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	#DEVICE,4,1,3<CR><LF>
Release Button 1	#DEVICE,4,1,4<CR><LF>
Turn On LED 1.	#DEVICE,4,101,9<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	?DEVICE,4,101,9<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	~DEVICE,4,101,9,1<CR><LF>



RadioRA 2 (continued)

System Commands (continued)

GROUP Commands

GROUP Command Format

Operation *Integration ID (example)*
?GROUP, 6, Action Number
Command Use "GROUP Command-specific fields" tables
 to complete these command fields.

GROUP Command-specific fields

Occupancy States:

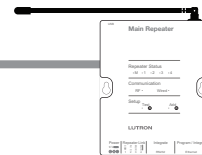
Description	Value
Occupied	3
Unoccupied	4
Unknown	255

Action Numbers:

Action	Action Number
Get (?) Occupancy Group State	3

Example GROUP Messages

Operation	Command String
Query: ?GROUP, Integration ID, Action Number	
What is Occ GROUP 1's status?	?GROUP,1,3<CR><LF>
Response: ~ GROUP, Integration ID, Action Number, Parameters	
Occ group 1 is occupied	~GROUP,1,3,3<CR><LF>
Occ group 1 is unknown	~GROUP,1,3,255<CR><LF>



RadioRA 2 *(continued)*

System Commands *(continued)*

MONITORING Commands

MONITORING Command Formats

Operation
#MONITORING, Monitoring Type, Action Number
Command *Use "MONITORING Command-specific fields" tables to complete these command fields.*

MONITORING Command-specific fields

Monitoring Type:

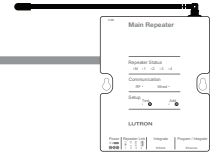
Description	Monitoring Type
Set (#) or Get (?) Diagnostic Monitoring	1
Set (#) or Get (?) Button Monitoring (if enabled, button actions will be reported)	3
Set (#) or Get (?) LED Monitoring (if enabled, LED states will be reported)	4
Set (#) or Get (?) Zone Monitoring (if enabled, zone levels will be reported, i.e. dimmer, shade, contact closure output level)	5
Set (#) or Get (?) Reply State (if disabled, all messages FROM the integration access point will cease) Note: Although the Reply State is disabled, specific queries to the device will still work.	11
Set (#) or Get (?) Prompt State (if disabled, the prompt will not be printed to the terminal)	12
Set (#) or Get (?) Temperature Sensor Monitoring	27
Set (#) or Get (?) State of All Monitoring (except Reply and Prompt)	255

Action Numbers:

Action	Action Number
Enable	1
Disable	2

Example MONITORING Commands

Operation	Command String
Execute: #MONITORING, Monitoring Type, Action Number	
Disable Diagnostic Monitoring.	#MONITORING,1,2<CR><LF>
Enable Event Monitoring.	#MONITORING,2,1<CR><LF>
Query: ?MONITORING, Monitoring Type	
Is Diagnostic Monitoring disabled?	?MONITORING,1<CR><LF>
Response: ~MONITORING, Monitoring Type, Action Number	
Diagnostic Monitoring is disabled.	~MONITORING,1,2<CR><LF>



RadioRA 2 (continued)

System Commands (continued)

TIMECLOCK Commands

TIMECLOCK Command Formats

Operation | *Integration ID (example)*
#TIMECLOCK, 4, Action Number, Parameters
Command | Use "TIMECLOCK Command-specific fields" tables to complete these command fields.

TIMECLOCK Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Current Timeclock Mode ¹	1	Mode Index Number
Get (?) Current Timeclock Mode ¹	1	None
Get (?) Sunrise Time	2	None
Get (?) Sunset Time	3	None
Get (?) Day's Schedule	4	None
Set (#) Execute Indexed Event	5	Index of the event to test. The index number of the first event is 1; the second event is 2, and so on.
Set (#) Indexed Event as Enabled or Disabled	6	Event Index, Enable State (1 = Enable, 2 = Disable)

NOTE

- In order to set the Timeclock Mode, the "Mode Index" must be determined using the (?) help, (#) timeclock,1 command. Mode Indexes are project dependent and may change with each new project.

Example TIMECLOCK Messages

Operation	Command String
Execute: #TIMECLOCK, Integration ID, Action Number, Parameters	
Execute the 3rd event of the time clock.	#TIMECLOCK,4,5,3<CR><LF>
Query: ?TIMECLOCK, Integration ID, Action Number	
What is the sunrise time?	?TIMECLOCK,4,2<CR><LF>
Response: ~TIMECLOCK, Integration ID, Action Number, Parameters	
The time the sun rises.	~TIMECLOCK,4,2,05:32<CR><LF>

Lutron integration protocol

Quantum

System Overview

The Quantum system is the Lutron premier commercial lighting control system. It allows the control and monitoring of individual devices and outputs as well as allowing control of entire areas, shade groups or other portions of the system. The Quantum system includes QS devices such as the GRAFIK Eye QS and Sivoia QS shades as well as Lutron EcoSystem ballasts and GRAFIK dimming panels. When integrating with a Quantum system the integrator gets additional access to portions of a the system not available when using products in stand-alone mode, particularly the ability to activate scenes on an area-by-area basis and to control the position of and activate presets on entire groups of shades at once.

Quantum System Device Compatibility Index

	Quantum
GRAFIK Eye QS	✓
Energi Savr Node QS/DALI®	✓
Energi Savr Node QS/EcoSystem	✓
Energi Savr Node QS/EcoSystem (Int'l)	✓
Energi Savr Node QS/0–10 V/Softswitch (Int'l)	✓
Energi Savr Node QS/Phase-Adaptive (Int'l)	✓
Energi Savr Node QS/0–10 V/Softswitch	✓
Remote Power Module	✓
Palladiom Keypad	✓
Architrave Keypad	✓
Signature Series Keypad	✓
seeTouch Keypad	✓
seeTouch QS Keypad (Int'l)	✓
Pico Wireless Control	✓
Wallbox Input Closure Interface	✓
Sivoia QS Shade	✓
Sivoia QS Wireless Shade	
QS Input/Output Control Interface	✓

Why Integrate with a Quantum System

- Compatible with Quantum system version 1.7 or higher
- Gain access to system-only information
- Activate System Area scenes
- Set levels for System Outputs
- Activate System Shade Group presets
- View and modify parameters of a Quantum system, such as time, date, time zone, etc.

Command Types

Operation characters will be followed by command types:

- **AREA** allows control of an area in the Quantum system. Scenes can be activated, occupancy monitored etc.
 - **SHADEGRP** allows control of shade groups in the Quantum system. Shade Groups are collections of shades that operate in unison
 - **OUTPUT** allows control and monitoring of a Quantum system output group such as a lighting zone or closure output.
 - **SYSTEM** allows setting and controlling system parameters and variables*
 - **HELP** displays usage information for the supported commands and their corresponding actions
 - **INTEGRATION ID** allows querying integration IDs of devices in the system
- * Load Shed commands available only on Quantum version 2.0 and higher.

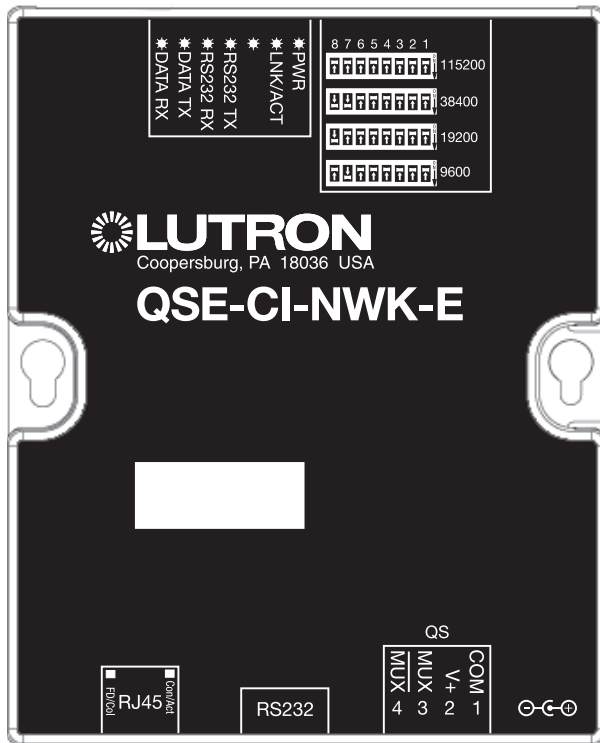
Lutron integration protocol

Quantum *(continued)*

Integration Access Points

Network Interface

Model: QSE-CI-NWK-E



Why Integrate with a QSE-CI-NWK-E?

- Integrates a QS lighting control system with a PC or other digital equipment that supports RS232 or Ethernet TCP/IP connection.
- Allows monitor and control of system devices. For example, the QSE-CI-NWK-E can be used to simulate button presses, report button presses, monitor LEDs, and control light levels.

Additional Commands

- **MONITORING** specifies what type of messages the system will report
- **ETHERNET** modifies the Ethernet configurations of the QSE-CI-NWK-E
- **RESET** restarts the QSE-CI-NWK-E or restores it to factory defaults
- **INTEGRATION ID** assigns IDs to devices, so that they may be referred to in a more logical fashion
- **DETAILS** returns information about a QS device
- **ERROR** reports syntax errors in an integration string command or query

Continued on next page...

Lutron integration protocol



Quantum *(continued)*

Integration Access Points *(continued)*

Connection Information

Provides an RS232 and Ethernet connection to communicate with external equipment.

RS232

The RS232 connection has the following communication settings:

- Baud Rate 9600/19200/38400/115200 (set via dipswitch on unit)
- 8 data bits
- No parity bit
- 1 stop bit
- No flow control

Ethernet

Configuring the control interface to communicate over a network takes not only knowledge of the Quantum system, but of networking as well. Installers with limited networking knowledge are advised to contact a networking professional before attempting to connect a QSE-CI-NWK-E through a network. The information below will help an installer communicate the QSE-CI-NWK-E configurations to a network professional.

The installer will make any necessary changes to the control interface using the Lutron DeviceIP or Quantum PC software tool and the network professional can make any necessary changes to the networking equipment.

Single Ethernet Port

- IEEE® 802.3 Auto-Sensing 10BaseT / 100BaseTX
- Supports MDI/MDIX auto-crossover (no crossover cable needed).
- Female 8P8C “Computer RJ-45” socket
- Green “Connect” LED, Amber “Activity” LED
- Use Cat 5 cabling or better

TCP/IP Settings

- IP Address: <static default = 192.168.250.1>
- Subnet Mask: <static default = 255.255.255.0>
- Gateway: <static default = 0.0.0.0>

Protocols Used for Integration

- Telnet

Telnet Server

- Used by third party equipment (e.g., touch screen)
- Used by Lutron mobile devices (e.g., iPad and iPhone)
- Limited to transferring ASCII characters
- Telnet Port number is 23
- Logins: Defined in the Q-Design software application

Lutron integration protocol



Quantum *(continued)*

System Commands

ETHERNET Commands

ETHERNET Command Formats

Operation
#ETHERNET, Configuration Number, Parameters
Command

Use "ETHERNET Command-specific fields" tables to complete these command fields.

ETHERNET Command-specific fields

Configuration Numbers:

Description	Configuration Number	Parameters
Set (#) or Get (?) IP Address	0	IP Address (XXX.XXX.XXX.XXX)
Set (#) or Get (?) Gateway Address	1	IP Address (XXX.XXX.XXX.XXX)
Set (#) or Get (?) Subnet Mask	2	IP Address (XXX.XXX.XXX.XXX)
Set (#) or Get (?) Login Info	3	User (1 or 2), Old Login, New Login

Example ETHERNET Commands

Operation	Command String
Execute: #ETHERNET, Configuration Number, Parameters	
Set IP Address to 192.168.250.1	#ETHERNET,0,192.168.250.1<CR><LF>
Set Gateway Address to 10.2.4.1	#ETHERNET,1,10.2.4.1<CR><LF>
Query: ?ETHERNET, Configuration Number, Parameters	
What is the IP Address?	?ETHERNET,0<CR><LF>
What is the Login Information for user 1?	?ETHERNET,3,1<CR><LF>
What is the Login Information for ALL users?	?ETHERNET,3,0<CR><LF> (Note: 0=ALL)
Response: ~ETHERNET, Integration ID, Configuration Number, Parameters	
The IP Address is 192.168.250.1	~ETHERNET,0,192.168.250.1<CR><LF>

Lutron integration protocol



Quantum *(continued)*

System Commands *(continued)*

INTEGRATION ID Commands

INTEGRATION ID Command Formats

Operation

?INTEGRATIONID, Action Number, Parameters

Command

Use "INTEGRATIONID Command-specific fields" tables to complete these command fields.

INTEGRATION ID Command-specific fields

Action Numbers and Parameters:

Description	Action Number	Parameters
Get (?) Integration ID for a Serial Number	1	Serial Number: 8 character HEX serial number of the device; Integration ID: The integration ID to be assigned.
Get (?) Info from ID	3	Integration ID= The Integration ID that information is desired for. Note: If this field is left blank, all integration IDs will be printed.

Example INTEGRATION ID Commands

Operation	Command String
Execute: ?INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	?INTEGRATIONID,1,5678EFFF<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	~INTEGRATIONID,1,5678EFFF,1<CR><LF>
Execute: ?INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	?INTEGRATIONID,3,1<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	~INTEGRATIONID,3,1,DEVICE,5678EFFF<CR><LF>

Lutron integration protocol



Quantum *(continued)*

System Commands *(continued)*

RESET Commands

RESET Command Formats

Operation

#RESET, Action Number

Command

Use "RESET Command-specific fields" tables to complete these command fields.

RESET Command-specific fields

Action Numbers:

Action	Action Number
Set (#) restart the device	0
Set (#) restore to factory defaults	1

Example RESET Commands

Operation	Command String
Execute: #RESET, Action Number	
Restart the NWK	#RESET,0<CR><LF>
Restore NWK to factory defaults	#RESET,1<CR><LF>



Quantum *(continued)*

System Commands *(continued)*

AREA Commands

AREA Command Formats

Operation *Integration ID (example)*
#AREA ^{1,2}, **2**, **Action Number**, **Parameters**
Command *Use "AREA Command-specific fields" tables to complete these command fields.*

NOTES

1. AREA can be used to control only those areas of a Quantum system that have been assigned to a particular integration access point. Please refer to the Q-Design software (Integration Tab) or Quantum Integration Report for details of what areas are available for control and monitoring.
2. AREA commands cannot be sent to areas that contain other areas, such as a floor or an entire building.

AREA Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Area Level	1	Level ¹ = 0–100 or 0.00–100.00 Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising ⁴	2	None
Set (#) Start Lowering ⁴	3	None
Set (#) Stop Raising or Lowering	4	None
Set (#) or Get (?) Current Scene	6	Scene Number ⁵ = 0–32 ⁶
Set (#) or Get (?) Daylighting Mode	7	1 = Active 2 = Inactive
Get (?) Occupancy State	8	1 = Unknown 2 = Inactive 3 = Occupied 4 = Unoccupied
Set (#) or Get (?) Occupancy Mode	9	1 = Occupancy and Vacancy ⁷ 2 = Vacancy ⁷ 3 = Not Applicable ⁸ 4 = Inactive
Set (#) or Get (?) Occupied Level or Scene	12	Level = 0–100; 200–232 for Scene Number = 0–32
Set (#) or Get (?) Unoccupied Level or Scene	13	Level = 0–100; 200–232 for Scene Number = 0–32
Set (#) or Get (?) Hyperion Shadow Sensor Override State ⁹	26	0 = Disable 1 = Enable 2 = Mixed (Get Only)
Set (#) or Get (?) Hyperion Brightness Sensor Override State ⁹	27	0 = Disable 1 = Enable 2 = Mixed (Get Only)

NOTES

1. The Level is accepted as a percentage.
2. The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours.
3. Fractional seconds "SS.ss" will be rounded down to the nearest quarter-second. For example, if a fade time is specified as 1.45 seconds a value of 1.25 seconds will be used.
4. When a Raise/Lower command is issued, the area's level will continue to go towards high end/low end until a Stop command is received.
5. Scene 0 is the Off Scene.
6. Scenes 17–32 available only on Slider.
7. If After Hours is used in an area, setting the area's Occupancy Mode to "Occupancy and Vacancy" or "Vacancy" will activate After Hours.
8. The area will report "Not Applicable" as its Occupancy Mode if the area does not have occupancy sensors and if After Hours is not used.
9. Quantum 2.7 and higher.

Continued on next page...

Lutron integration protocol



Quantum *(continued)*

System Commands *(continued)*

AREA Commands *(continued)*

Example AREA Messages

Operation	Command String
Execute: #AREA, Integration ID, Action Number, Parameters	
Set area level to 75% (Fade = 4 sec, Delay = 2 sec)	#AREA,2,1,70,4,2<CR><LF>
Lower Area	#AREA,2,3<CR><LF>
Query: ?AREA, Integration ID, Action Number	
Is the area occupied?	?AREA,2,8<CR><LF>
What is the current active scene?	?AREA,2,6<CR><LF>
Response: ~AREA, Integration ID, Action Number, Parameters	
The area is currently occupied	~AREA,2,8,3<CR><LF>
Area Scene 2 is currently active	~AREA,2,6,2<CR><LF>



Quantum *(continued)*

System Commands *(continued)*

SHADEGRP Commands

SHADEGRP Command Formats

$\begin{matrix} \text{Operation} & \text{Integration ID (example)} \\ \# \text{SHADEGRP } 1, 2, & \text{Action Number, Parameters} \\ \text{Command} & \text{Use "SHADEGRP Command-specific fields" tables} \\ & \text{to complete these command fields.} \end{matrix}$

NOTE

- SHADEGRP can be used to control only those shade groups of a Quantum system that have been assigned to a particular integration access point. Please refer to the Q-Design software (Integration Tab) or Quantum Integration Report for details of what shade groups are available for control and monitoring.

SHADEGRP Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Shade Group Level	1	Level ¹ = 0–100 or 0.00–100.00
Set (#) Start Raising ²	2	None
Set (#) Start Lowering ²	3	None
Set (#) Stop Raising or Lowering	4	None
Set (#) or Get (?) Current Preset	6	Preset Number ³ = 0–30

NOTES

- The Level is accepted as a percentage, where 100% is fully open and 0% is fully closed.
- When a Raise/Lower command is issued, the shade group's level will continue to go towards open/close until a Stop command is received.
- Preset 0 is the Open Preset and Preset 30 is the Closed Preset.

Example SHADEGRP Messages

Operation	Command String
Execute: #SHADEGRP, Integration ID, Action Number, Parameters	
Set shade group to 70% (Delay = 2 sec)	#SHADEGRP,2,1,70,2<CR><LF>
Lower shade group.	#SHADEGRP,2,3<CR><LF>
Query: ?SHADEGRP, Integration ID, Action Number	
What is the current active preset?	?SHADEGRP,2,6<CR><LF>
Response: ~SHADEGRP, Integration ID, Action Number, Parameters	
Shade group Preset 2 is currently active.	~SHADEGRP,2,6,2<CR><LF>



Quantum *(continued)*

System Commands *(continued)*

OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*
#OUTPUT¹, 2, Action Number, Parameters
Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

NOTE

- OUTPUT commands can be used to control system lighting zones, contact closure outputs, and AC Motor Loads.

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Output Level	1	Level ¹ = 0–100 or 0.00–100.00 Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising ⁴	2	None
Set (#) Start Lowering ⁴	3	None
Set (#) Stop Raising or Lowering ⁴	4	None
Set (#) Pulse Time	6	Pulse ⁵ time in: SS.ss ³ , SS, MM:SS, or HH:MM:SS, or Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) DMX Color or Level Settings ⁶	17	Color/level index: 0–255 0.00–100.00 ⁵
Set (#) Motor Jog Raise ^{6, 7}	18	None
Set (#) Motor Jog Lower ^{6, 7}	19	None
Set (#) Motor 4-Stage Jog Raise ^{6, 7}	20	None
Set (#) Motor 4-Stage Jog Lower ^{6, 7}	21	None

NOTES

- The Level is taken as a percentage.
- The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours. For shade outputs, the Fade and Delay parameters have no effect (since shades have fixed speeds).
- Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.45 seconds a value of 1.25 seconds will be used.
- When a Raise/Lower command is issued, the output's level will continue to go towards high end/low end until a Stop command is received.
- The default time is one second.
- Not supported in RadioRA 2.
- Quantum 2.5 and up.

Continued on next page...

Lutron integration protocol



Quantum *(continued)*

System Commands *(continued)*

OUTPUT Commands *(continued)*

Example OUTPUT Messages

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set output level to 70% (Fade=4 sec, Delay=2 sec)	#OUTPUT,2,1,70,4,2<CR><LF>
Raise Output	#OUTPUT,2,2<CR><LF>
Query: ?OUTPUT, Integration ID	
What is the current output level?	?OUTPUT,2<CR><LF>
Response: ~OUTPUT, Integration ID, Action Number, Parameters ¹	
Output level is set to 48%.	~OUTPUT,2,1,48<CR><LF>

NOTE

1. The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours. For shade outputs, the Fade and Delay parameters have no effect (since shades have fixed speeds).



Quantum *(continued)*

System Commands *(continued)*

SYSVAR Commands ¹

SYSVAR Command Formats

Operation
#SYSVAR,2,Action Number, Parameters
Command Use "SYSVAR Command-specific fields" tables
 to complete these command fields.

NOTE

1. SYSVAR Commands available only on Quantum version 2.5 or higher.

SYSVAR Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) the state of a given variable	1	State number

Example SYSVAR Messages

Operation	Command String
Execute: #SYSVAR, Integration ID, Action Number, Parameters	
Set the variable state to the third state	#SYSVAR,2,1,3<CR><LF>
Query: ?SYSVAR, Integration ID, Action Number	
What is the state of the variable?	?SYSVAR,2,1<CR><LF>
Response: ~SYSVAR, Integration ID, Action Number, Parameters	
The variable is in the third state.	~SYSVAR,2,1,3<CR><LF>

Lutron integration protocol

Athena

System Overview

The Athena system is the Lutron premier commercial lighting control system. It allows the control and monitoring of individual devices and outputs as well as allowing control of entire areas, shade groups or other portions of the system. The Athena system includes QS devices, Sivoia QS shades as well as Lutron EcoSystem and Ketra light fixtures. When integrating with an Athena system, the integrator gets additional access to portions of the system not available when using products in a stand-alone mode, particularly the ability to activate scenes on an area-by-area basis and to control the position of and activate presets on entire groups of shades at once.

Athena System Device Compatibility Index

	Athena
Energi Savr Node DALI® Universal	✓
Energi Savr Node QS/EcoSystem	✓
Energi Savr Node QS/EcoSystem (Int'l)	✓
Energi Savr Node QS/0 -10 V/Softswitch (Int'l)	✓
Energi Savr Node QS/Phase-Adaptive	✓
Energi Savr Node QS/0 -10 V/Softswitch	✓
Energi Savr Node QS/DALI®	✓
GRAFIK Eye QS	
Remote Power Module	
Palladiom Keypad	✓
Architrave Keypad	✓
Signature Series Keypad	✓
seeTouch Keypad	✓
seeTouch QS Keypad (Int'l)	✓
Pico Wireless Control	✓
Wallbox Input Closure Interface	✓
Sivoia QS Shade	✓
Sivoia QS Wireless Shade	
QS Input/Output Control Interface	✓
Ketra Devices	✓

Why Integrate with an Athena System

- Gain access to system-only information
- Activate System Area scenes
- Set levels for System Outputs
- Activate System Shade Group presets
- View and modify parameters of an Athena system

Command Types

The following is a list of supported command types. Details on certain device-specific types (e.g., DEVICE, AREA) are located in the individual device section of this manual.

Operation characters will be followed by command types.

- **AREA** allows control of an area in the Athena system. Scenes can be activated, occupancy monitored etc.
- **SHADEGRP** allows control of shade groups in the Athena system. Shade Groups are collections of shades that operate in unison
- **OUTPUT** allows control and monitoring of an Athena system output group such as a lighting zone or closure output.
- **DEVICE** Allows virtual press of a keypad button to simulate button actions within the system.
- **SYSTEM** allows setting and controlling system parameters and variables
- **HELP** displays usage information for the supported commands and their corresponding actions
- **INTEGRATION ID** allows querying integration IDs of devices in the system

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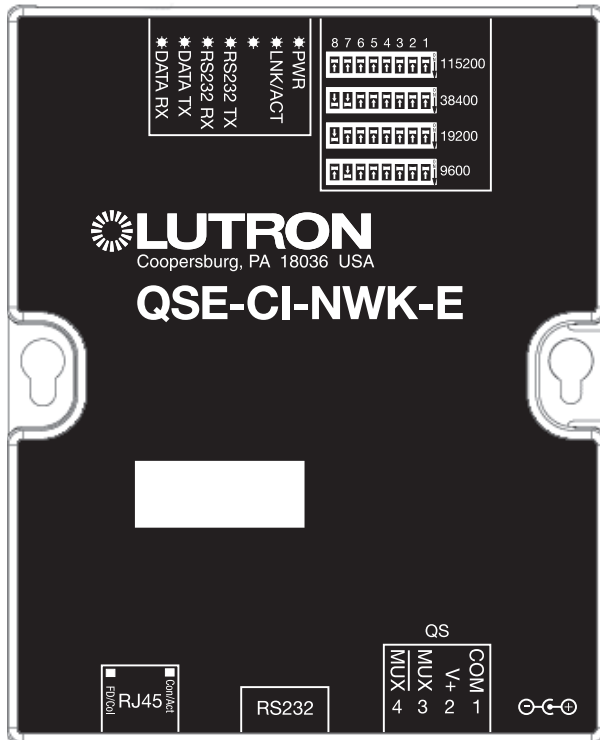
Lutron integration protocol

Athena *(continued)*

Integration Access Points

Network Interface

Model: QSE-CI-NWK-E



Why Integrate with a QSE-CI-NWK-E?

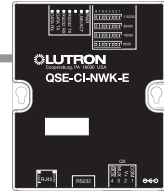
- Integrates a QS lighting control system with a PC or other digital equipment that supports RS232 or Ethernet TCP/IP connection.
- Allows monitor and control of system devices. For example, the QSE-CI-NWK-E can be used to simulate button presses, report button presses, monitor LEDs, and control light levels.

Additional Commands

- **MONITORING** specifies what type of messages the system will report.
- **ETHERNET** modifies the Ethernet configurations of the QSE-CI-NWK-E.
- **RESET** restarts the QSE-CI-NWK-E or restores it to factory defaults.
- **ERROR** reports syntax errors in an integration string command or query.

Continued on next page...

Lutron integration protocol



Athena *(continued)*

Integration Access Points *(continued)*

Connection Information

Provides an RS232 and Ethernet connection to communicate with external equipment.

RS232

The RS232 connection has the following communication settings:

- Baud Rate 9600/19200/38400/115200 (set via dipswitch on unit)
- 8 data bits
- No parity bit
- One stop bit
- No flow control

Ethernet

Configuring the control interface to communicate over a network takes not only knowledge of the Athena system, but of networking as well. Installers with limited networking knowledge are advised to contact a networking professional before attempting to connect a QSE-CI-NWK-E through a network. The information below will help an installer communicate the QSE-CI-NWK-E configurations to a network professional.

The installer will make any necessary changes to the control interface using the Lutron DeviceIP or Athena Lutron Designer PC software tool and the network professional can make any necessary changes to the networking equipment.

Single Ethernet Port

- IEEE® 802.3 Auto-Sensing 10BaseT/100BaseTX
- Supports MDI/MDIX auto-crossover (no crossover cable needed).
- Female 8P8C “Computer RJ-45” socket
- Green “Connect” LED, Amber “activity” LED
- Use Cat 5 cabling or better

TCP/IP Settings

- IP Address: <static default = 192.168.250.1>
- Subnet Mask: <static default = 255.255.255.0>
- Gateway:<static default = 0.0.0.0>

Protocols Used for Integration

- Telnet

Telnet Server

- Used by third-party equipment (e.g., touch screen)
- Limited to transferring ASCII characters
- Telnet Port number is 23
- Logins: Defined in the Lutron Designer software application

Continued on next page...



Athena *(continued)*

System Commands

ETHERNET Commands

ETHERNET Command Format

Operation
#ETHERNET, Configuration Number, Parameters
Command Use "ETHERNET Command-specific fields" tables to complete these command fields.

ETHERNET Command-specific fields

Configuration Numbers:

Description	Configuration Number	Parameters
Set (#) or Get (?) IP Address	0	IP Address (XXX.XXX.XXX.XXX)
Set (#) or Get (?) Gateway Address	1	IP Address (XXX.XXX.XXX.XXX)
Set (#) or Get (?) Subnet Mask	2	IP Address (XXX.XXX.XXX.XXX)
Get (?) Login Info	3	User (1 or 2), Old Login, New Login

Continued on next page...

Lutron integration protocol



Athena (continued)

System Commands (continued)

AREA Commands

AREA Command Formats

Operation *Integration ID (example)*
 ?AREA 1, 2, Action Number, Parameters
Command *Use "AREA Command-specific fields" tables to complete these command fields.*

NOTES

1. AREA can be used to control only those areas of a Athena system that have been assigned to a particular integration access ID. Please refer to the Lutron Designer software (Integration Tab) or Athena Integration Report for details of what areas are available for control and monitoring.
2. AREA commands cannot be sent to areas that contain other areas, such as a floor or an entire building.

AREA Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Area Level	1	Level ¹ = 0–100 or 000–10000 Fade ² in: SSss ³ , SS, MM:SS, or HH:MM:SSDelay ² in: SSss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising ⁴	2	None
Set (#) Start Lowering ⁴	3	None
Set (#) Stop Raising or Lowering	4	None
Set (#) or Get (?) Current Scene	6	Scene Number ⁵ = 0–16
Set (#) or Get (?) Daylighting Mode	7	1 = Active; 2 = Inactive
Get (?) Occupancy State	8	1 = Unknown; 2 = Inactive; 3 = Occupied; 4 = Unoccupied
Set (#) or Get (?) Occupancy Mode	9	1 = Occupancy and Vacancy ⁶ ; 2 = Vacancy ⁶ ; 3 = Not Applicable ⁷ ; 4 = Inactive
Set (#) or Get (?) Occupied Level or Scene	12	Level = 0–100; 200–216 for Scene Number = 0–16
Set (#) or Get (?) Unoccupied Level or Scene	13	Level = 0–100; 200–216 for Scene Number = 0–16

NOTES

1. The Level is accepted as a percentage.
2. The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours.
3. Fractional seconds "SS.ss" will be rounded down to the nearest quarter-second. For example, if a fade time is specified as 1.45 seconds a value of 1.25 seconds will be used.
4. When a Raise/Lower command is issued, the area's level will continue to go towards high end/low end until a Stop command is received.
5. Scene 0 is the Off Scene.
6. If After Hours is used in an area, setting the area's Occupancy Mode to "Occupancy and Vacancy" or "Vacancy" will activate After Hours.
7. The area will report "Not Applicable" as its Occupancy Mode if the area does not have occupancy sensors and if After Hours is not used.

Lutron integration protocol



Athena *(continued)*

System Commands *(continued)*

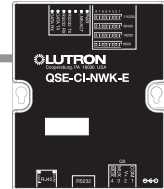
AREA Commands *(continued)*

Example AREA Messages

Operation	Command String
Execute: #AREA, Integration ID, Action Number, Parameters	
Set area level to 75% (Fade= 4 sec, Delay= 2 sec)	#AREA,2,1,70,4,2<CR><LF>
Lower Area.	#AREA,2,3<CR><LF>
Query: ?AREA, Integration ID, Action Number	
Is the area occupied?	?AREA,2,8<CR><LF>
What is the current active scene?	?AREA,2,6<CR><LF>
Response: ~AREA, Integration ID, Action Number, Parameters	
The area is currently occupied.	~AREA,2,8,3<CR><LF>
Area Scene 2 is currently active.	~AREA,2,6,2<CR><LF>

Continued on next page...

Lutron integration protocol



Athena (continued)

System Commands (continued)

SHADEGRP Commands

SHADEGRP Command Formats

^{Operation}
^{Integration ID (example)}
#SHADEGRP, 2, Action Number, Parameters
^{Command}

Use "SHADEGRP Command-specific fields" tables to complete these command fields.

NOTE

- SHADEGRP can be used to control only those shade groups of a Athena system that have been assigned to a particular integration access point. Please refer to the Lutron Designer software (Integration Tab) or Athena Integration Report for details of what shade groups are available for control and monitoring.

SHADEGRP Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Shade Group Level	1	Level ¹ = 0–100 or 0.00–100.00; Delay HH:MM:SS ⁴
Set (#) Start Raising ²	2	None
Set (#) Start Lowering ²	3	None
Set (#) Stop Raising or Lowering	4	None
Set (#) or Get (?) Current Preset	6	Preset Number ³ = 0–30

NOTES

- The Level is accepted as a percentage, where 100% is fully open and 0% is fully closed.
- When a Raise / Lower command is issued, the shade group's level will continue to go towards open/close until a Stop command is received.
- Preset 0 is the Open Preset and Preset 30 is the Closed Preset.
- Delay time is optional. When not used, the system will use a zero-second delay. The minimum delay time is 0 seconds. The maximum delay time is 4 hours.

Example SHADEGRP Messages

Operation	Command String
Execute: #SHADEGRP, Integration ID, Action Number, Parameters	
Set shade group to 70% (Delay = 2 sec).	#SHADEGRP,2,1,70,2<CR><LF>
Lower shade group.	#SHADEGRP,2,3<CR><LF>
Query: ?SHADEGRP, Integration ID, Action Number	
What is the current active preset?	?SHADEGRP,2,6<CR><LF>
Response: ~SHADEGRP, Integration ID, Action Number, Parameters	
Shade group Preset 2 is currently active.	~SHADEGRP,2,6,2<CR><LF>

Continued on next page...



Athena *(continued)*

System Commands *(continued)*

OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*
#OUTPUT^{1, 2}, **Action Number**, **Parameters**
Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

NOTE

- OUTPUT commands can be used to control system lighting zones, contact closure outputs, and AC motor loads.

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Output Level	1	Level ¹ = 0–100 or 0.00–100.00 Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising ⁴	2	None
Set (#) Start Lowering ⁴	3	None
Set (#) Stop Raising or Lowering ⁴	4	None
Set (#) Pulse Time	6	Pulse ⁵ time in: SS.ss ³ , SS, MM:SS, or HH:MM:SS, or Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) DMX Color or Level Settings	17	Color/level index: 0–255/0.00–100.00
Set (#) Motor Jog Raise	18	None
Set (#) Motor Jog Lower	19	None
Set (#) Motor 4-Stage Jog Raise	20	None
Set (#) Motor 4-Stage Jog Lower	21	None

NOTES

- The Level is taken as a percentage.
- The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours. For shade outputs, the Fade and Delay parameters have no effect (since shades have fixed speeds).
- Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.45 seconds a value of 1.25 seconds will be used.
- When a Raise / Lower command is issued, the output's level will continue to go towards high end / low end until a Stop command is received.
- The default time is one second.

Continued on next page...

Lutron integration protocol



Athena *(continued)*

System Commands *(continued)*

OUTPUT Commands *(continued)*

Example OUTPUT Messages

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set output level to 70% (Fade=4 sec, Delay=2 sec)	#OUTPUT,2,1,70,4,2<CR><LF>
Raise Output	#OUTPUT,2,2<CR><LF>
Query: ?OUTPUT, Integration ID	
What is the current output level?	?OUTPUT,2<CR><LF>
Response: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 48%.	~OUTPUT,2,1,48<CR><LF>

Continued on next page...



Athena *(continued)*

System Commands *(continued)*

SYSVAR Commands

SYSVAR Command Formats

Operation

#SYSVAR,2,Action Number, Parameters

Command

Use "SYSVAR Command-specific fields" tables to complete these command fields.

SYSVAR Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) the state of a given variable	1	State number

Continued on next page...

Lutron integration protocol

HomeWorks QS

System Overview

The HomeWorks QS system is Lutron's premier total home control system. It allows control and monitoring of lights, shades, HVAC, sensors, and appliances. The HomeWorks QS system includes QS devices, RF devices, and power panels that provide solutions for new construction and retrofit projects of any size.

HomeWorks QS System Device Compatibility Index

	HomeWorks QS
GRAFIK Eye QS	✓
HomeWorks QS/DALI®	✓
HomeWorks QS/EcoSystem	✓
HomeWorks QS/0–10 V/Softswitch	✓
HomeWorks QS/Phase-Adaptive	✓
HomeWorks QS/Motor Module	✓
Remote Power Module	✓
Low-Capacity Switching DIN Power Module (1A/output)	✓
Low-Capacity Phase-Adaptive DIN Power Module (1A/output)	✓
Palladiom Keypad	✓
Architrave Keypad	✓
Signature Series Keypad	✓
seeTouch Keypad	✓
seeTouch QS Keypad (Int'l)	✓
Tabletop seeTouch Keypad	✓
Pico Wireless Control	✓
Hybrid Keypad	✓
Dynamic Keypad	✓
Wallbox Input Closure Interface	✓
Sivoia QS Shade	✓
Sivoia QS Wireless Shade	✓
Sivoia QS Venetian Blind	✓
Sivoia QS Wireless Venetian Blind	✓
Maestro Dimmer and Plug-In Module	✓
Maestro Fan Speed Control	✓
Visor Control Receiver	✓
Radio Powr Savr Sensor	✓
HVAC Controller	✓
Wireless Temperature Sensor	✓
QS Input/Output Control Interface	✓

Continued on next page...

HomeWorks QS *(continued)*

System Overview *(continued)*

Command Types

The following is a list of supported command types. Details on certain device-specific types (e.g., DEVICE, HVAC) are located in the individual device section of this manual.

Operation characters will be followed by command types.

- **DEVICE** allows control and monitoring of device inputs such as button presses and contact closure inputs
- **OUTPUT** allows control and monitoring of device outputs such as dimmers and contact closure outputs
- **SHADEGRP** allows control of shades in the HomeWorks QS system. Shade groups are collections of shades that operate in unison
- **MONITORING** specifies the type of messages that the system will report
- **HVAC** allows control and monitoring of Lutron HVAC equipment
- **TIMECLOCK** allows control (enable/disable) and monitoring of system timeclocks
- **SYSVAR** allows control and monitoring of system variables
- **AREA** allows control and monitoring of an area (e.g., activating area Scenes, monitoring occupancy)
- **ERROR** displays responses to invalid commands
- **HELP** displays usage information for the supported commands and their corresponding actions
- **SYSTEM** allows setting and controlling system parameters and variables
- **ETHERNET** modifies the Ethernet configuration of the HomeWorks QS processor
- **INTEGRATIONID** gets information of the integration id or serial number of a device
- **RESET** resets the HomeWorks QS processor

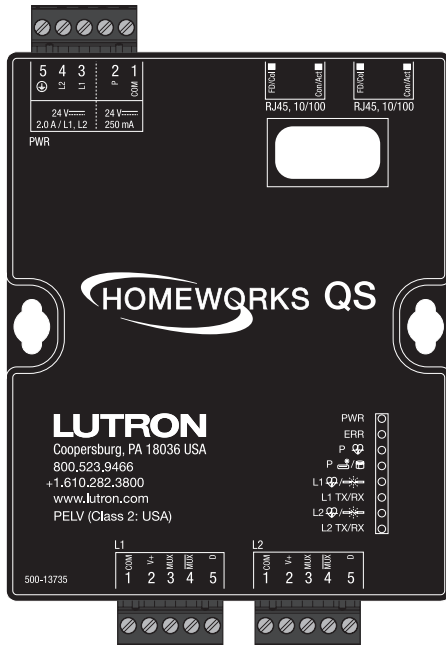
Lutron integration protocol

HomeWorks QS *(continued)*

Integration Access Points

HomeWorks QS Processor

Model: HQP6-2



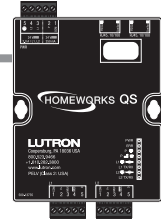
Why Integrate with a HomeWorks QS Processor?

- Integrating with a HomeWorks QS Processor provides integration over Ethernet without the need for additional equipment or interfaces.
- RS-232 integration can also be accomplished using third party Ethernet to RS-232 adapters.
- Integrating directly with the HomeWorks QS Processor also provides the greatest bandwidth port into the HomeWorks QS system.
- Integration IDs are automatically generated by the HomeWorks QS software application (e.g., for devices, outputs, shadegroups, timeclocks). Integration IDs can be removed to reduce processing and traffic of unwanted messages.
- Phantom Keypads allow for integration functionality to be organized on various virtual keypads that have unlimited buttons and do not count towards link device count limits.

Integration Capabilities

- Control and monitoring of output devices such as dimmers, the GRAFIK Eye, shades and contact closure outputs
- Control and monitoring of physical or phantom keypad buttons and button status LEDs
- Control and monitoring of Lutron HVAC equipment
- Control and monitoring of individual timeclocks
- Control and monitoring of state variables
- Monitor sensors states with Monitoring command
- Control and monitoring of areas to activate scenes and monitor occupancy

Continued on next page...



HomeWorks QS *(continued)*

Integration Access Points *(continued)*

Connection Information

Ethernet

Configuring the HomeWorks QS processor to communicate over a network takes not only knowledge of the HomeWorks QS system, but of networking as well. Installers with limited networking knowledge are advised to contact a networking professional before attempting to connect a HomeWorks QS processor through a network.

The installer will make any necessary configuration changes to the HomeWorks QS processor using the HomeWorks QS Design Software Application and the network professional can make any necessary changes to the networking equipment.

Dual Ethernet Port

- IEEE® 802.3 Auto-Sensing 10BaseT/100BaseTX
- Supports MDI/MDIX auto-crossover (no crossover cable needed).
- Female 8P8C “Computer RJ-45” socket
- Green “Connect” LED, Amber “Activity” LED
- Use Cat 5 cabling or better
- 2 Port 10/100 Ethernet Switch

TCP/IP Settings

- IP Address: Address at which the processor can be reached for integration. In most instances when integrating to a processor, DHCP should be disabled and a static IP address should be assigned to prevent the processor from changing IP addresses.
- Subnet Mask: In conjunction with the IP address, it defines the subnet on which the processor communicates. Processors will be able to integrate only with devices on the same subnet.
- Gateway: Used in instances where the processor needs to communicate to the internet. Should be set to the IP address of the device on the network connected directly to the internet—typically, the home router.

Protocols Used for Integration

- Telnet

Telnet Server

- Used by third party equipment (e.g., touch screen)
- Used by Lutron mobile devices (e.g., *iPad* and *iPhone*)
- Limited to transferring ASCII characters
- Telnet Port number is 23
- Logins: Defined in the HomeWorks QS software application

RS232

The HomeWorks QS Processor does not have native support for RS232. An Ethernet to RS232 adapter can be used and configured to provide RS232 integration directly from the Processor if needed.



HomeWorks QS *(continued)*

System Commands

OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*
#OUTPUT¹, **2**, **Action Number**, **Parameters**
Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

NOTE

- OUTPUT commands can be used to control system lighting zones, individual shades, and contact closed outputs.

OUTPUT Command-specific fields

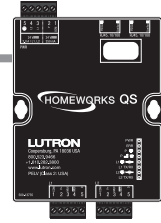
Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Output Level	1	Level ¹ = 0–100 or 0.00–100.00 Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising ⁴	2	None
Set (#) Start Lowering ⁴	3	None
Set (#) Stop Raising or Lowering ⁴	4	None
Set (#) or Get (?) Flash Frequency	5	Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Pulse Time	6	Pulse ⁵ time in: SS.ss ³ , SS, MM:SS, or HH:MM:SS, or Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Tilt Level	9	Tilt level in % = 0.00–100 ⁶ Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Lift and Tilt Levels	10	Lift ¹ = 0–100 or 0.00–100.00 Tilt ¹ = 0–100 ⁶ or 0.00–100.00 ⁶ Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising Tilt	11	None
Set (#) Start Lowering Tilt	12	None
Set (#) Stop Raising or Lowering Tilt	13	None
Set (#) Start Raising Lift	14	None
Set (#) Start Lowering Lift	15	None
Set (#) Stop Raising or Lowering Lift	16	None
Get (?) Horizontal Sheer Shade Region	28	Regions: 0 = Lift, 1 = Tilt

NOTES

- The Level/Lift/Tilt is taken as a percentage.
- The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours. For shade outputs, the Fade and Delay parameters have no effect (since shades have fixed speeds).
- Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.45 seconds a value of 1.25 seconds will be used.
- When a Raise/Lower command is issued, the output's level will continue to go towards high end/low end until a Stop command is received.
- The default time is one second.
- 50 for Horizontal Sheer Blinds.

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HomeWorks QS *(continued)*

System Commands *(continued)*

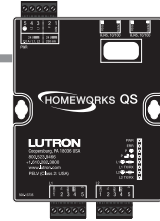
OUTPUT Commands *(continued)*

Example OUTPUT Messages

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set output level to 70% (Fade=4 sec, Delay=2 sec)	#OUTPUT,2,1,70,4,2<CR><LF>
Raise Output	#OUTPUT,2,2<CR><LF>
Query: ?OUTPUT, Integration ID	
What is the current output level?	?OUTPUT,2<CR><LF>
Response 1: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 48%.	~OUTPUT,2,1,48<CR><LF>

NOTE

1. The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours. For shade outputs, the Fade and Delay parameters have no effect (since shades have fixed speeds).



HomeWorks QS *(continued)*

System Commands *(continued)*

SHADEGRP Commands

SHADEGRP Command Formats

Operation *Integration ID (example)*
#SHADEGRP, 2, Action Number, Parameters
Command *Use "SHADEGRP Command-specific fields" tables to complete these command fields.*

SHADEGRP Command-specific fields

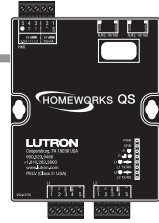
Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Shade Group Level	1	Level = 0–100 or 0.00–100.00
Set (#) Start Raising ¹	2	None
Set (#) Start Lowering ¹	3	None
Set (#) Stop Raising or Lowering	4	None
Set (#) or Get (?) Current Preset	6	Preset Number ² = 0–30
Set (#) Tilt Level	14	Level ³ = 0–100 ⁴ or 0.00–100.00 ⁴
Set (#) Lift and Tilt Levels	15	Lift ³ = 0–100 or 0.00–100.00 Tilt ³ = 0–100 ⁴ or 0.00–100.00 ⁴
Set (#) Start Raising Tilt ¹	16	None
Set (#) Start Lowering Tilt ¹	17	None
Set (#) Stop Raising or Lowering Tilt ¹	18	None
Set (#) Start Raising Lift ¹	19	None
Set (#) Start Lowering Lift ¹	20	None
Set (#) Stop Raising or Lowering Lift ¹	21	None
Get (?) Horizontal Sheer Shade Region	28	Lift = 0 Tilt = 1

NOTES

1. When a Raise/Lower command is issued, the shade group's level will continue to go towards open/close until a Stop command is received.
2. Preset 0 is the Open Preset and Preset 30 is the Closed Preset.
3. The Level is accepted as a percentage, where 100% is fully open and 0% is fully closed.
4. 50 for Horizontal Sheer Blinds.

Continued on next page...



HomeWorks QS *(continued)*

System Commands *(continued)*

SHADEGRP Commands *(continued)*

Example SHADEGRP Messages

Operation	Command String
Execute: #SHADEGRP, Integration ID, Action Number, Parameters	
Set shade group to 70% (Delay=2 sec).	#SHADEGRP,2,1,70,2<CR><LF>
Lower shade group.	#SHADEGRP,2,3<CR><LF>
Query: ?SHADEGRP, Integration ID, Action Number	
What is the current active preset?	?SHADEGRP,2,6<CR><LF>
Response: ~SHADEGRP, Integration ID, Action Number, Parameters	
Shade group Preset 2 is currently active.	~SHADEGRP,2,6,2<CR><LF>



HomeWorks QS *(continued)*

System Commands *(continued)*

TIMECLOCK Commands

TIMECLOCK Command Formats

Operation

#TIMECLOCK,2,Action Number, Parameters

Command

Use "TIMECLOCK Command-specific fields" tables to complete these command fields.

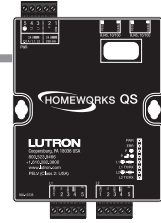
TIMECLOCK Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Get (?) Sunrise Time	2	None
Get (?) Sunset Time	3	None
Get (?) Day's Schedule	4	None
Set (#) Execute Indexed Event	5	Index of the event to execute. The index number of the first event is 1; the second event is 2, and so on.
Set (#) Indexed Event as Enabled or Disabled	6	Event Index, Enable State (1 = Enable, 2 = Disable)

Example TIMECLOCK Messages

Operation	Command String
Execute: #TIMECLOCK, Integration ID, Action Number, Parameters	
Execute the 3rd event of the timeclock.	#TIMECLOCK,2,5,3<CR><LF>
Query: ?TIMECLOCK, Integration ID, Action Number	
What is the sunrise time?	?TIMECLOCK,2,2<CR><LF>
Response: ~TIMECLOCK, Integration ID, Action Number, Parameters	
The time the sun rises.	~TIMECLOCK,2,2,05:32<CR><LF>



HomeWorks QS *(continued)*

System Commands *(continued)*

SYSVAR Commands

SYSVAR Command Formats

Operation

#SYSVAR,2,Action Number, Parameters

Command

Use "SYSVAR Command-specific fields" tables to complete these command fields.

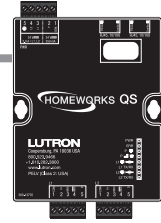
SYSVAR Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) the state of a given variable	1	State number

Example SYSVAR Messages

Operation	Command String
Execute: #SYSVAR, Integration ID, Action Number, Parameters	
Set the variable state to the third state.	#SYSVAR,2,1,3<CR><LF>
Query: ?SYSVAR, Integration ID, Action Number	
What is the state of the variable?	?SYSVAR,2,1<CR><LF>
Response: ~SYSVAR, Integration ID, Action Number, Parameters	
The variable is in the third state.	~SYSVAR,2,1,3<CR><LF>



HomeWorks QS *(continued)*

System Commands *(continued)*

AREA Commands

AREA Command Formats

Operation *Integration ID (example)*
 ?AREA 1, 2, Action Number, Parameters
Command Use "AREA Command-specific fields" tables
 to complete these command fields.

NOTE

1. AREA commands cannot be sent to areas that contain other areas, such as a floor or an entire building.

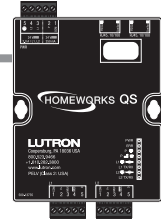
AREA Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Get (?) Occupancy State	8	3 = Occupied 4 = Unoccupied

Example AREA Messages

Operation	Command String
Execute: #AREA, Integration ID, Action Number, Parameters	
Set area level to 75% (Fade = 4 sec, Delay = 2 sec)	#AREA,2,1,70,4,2<CR><LF>
Lower Area.	#AREA,2,3<CR><LF>
Query: ?AREA, Integration ID, Action Number	
Is the area occupied?	?AREA,2,8<CR><LF>
What is the current active scene?	?AREA,2,6<CR><LF>
Response: ~AREA, Integration ID, Action Number, Parameters	
The area is currently occupied.	~AREA,2,8,3<CR><LF>
Area Scene 2 is currently active.	~AREA,2,6,2<CR><LF>



HomeWorks QS *(continued)*

System Commands *(continued)*

ETHERNET Commands

ETHERNET Command Formats

Operation

#ETHERNET, Configuration Number, Parameters

Command

Use "ETHERNET Command-specific fields" tables to complete these command fields.

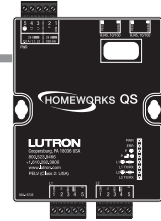
ETHERNET Command-specific fields

Configuration Number and Parameters:

Description	Configuration Number	Parameters
Set (#) or Get (?) IP Address	0	IP Address (XXX.XXX.XXX.XXX)
Set (#) or Get (?) Gateway Address	1	IP Address (XXX.XXX.XXX.XXX)
Set (#) or Get (?) Subnet Mask	2	IP Address (XXX.XXX.XXX.XXX)
Get (?) DHCP	4	None
Set (#) or Get (?) Multicast Address	5	IP Address (XXX.XXX.XXX.XXX)

Example ETHERNET Commands

Operation	Command String
Execute: #ETHERNET, Configuration Number, Parameters	
Set IP Address to 192.168.250.1	#ETHERNET,0,192.168.250.1<CR><LF>
Set Gateway Address to 10.2.4.1	#ETHERNET,1,10.2.4.1<CR><LF>
Query: ?ETHERNET, Configuration Number, Parameters	
What is the IP Address?	?ETHERNET,0<CR><LF>
Response: ~DEVICE, Integration ID, Configuration Number, Parameters	
The IP Address is 192.168.250.1	~ETHERNET,0=,192.168.250.1<CR><LF>



HomeWorks QS *(continued)*

System Commands *(continued)*

INTEGRATION ID Commands

INTEGRATION ID Command Formats

Operation

?INTEGRATIONID, Action Number, Parameters

Command

Use "INTEGRATIONID Command-specific fields" tables to complete these command fields.

INTEGRATION ID Command-specific fields

Action Numbers and Parameters:

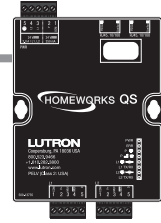
Description	Action Number	Parameters
Get (?) Integration ID for a Serial Number ¹	1	Serial Number = 8 character HEX serial number of the device
Get (?) Info from ID ¹	3	Integration ID Note: If this field is left blank, all integration IDs will be printed.

NOTE

1. Refer to the integration report generated by the Lutron Designer Tool to identify the integration IDs for devices.

Example INTEGRATION ID Commands

Operation	Command String
Query: ?INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	?INTEGRATIONID,1,5678EFEF<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	~INTEGRATIONID,1,5678EFEF,1<CR><LF>
Query: ?INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	?INTEGRATIONID,3,1<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	~INTEGRATIONID,3,1,DEVICE,5678EFEF<CR><LF>



HomeWorks QS *(continued)*

System Commands *(continued)*

RESET Commands

RESET Command Formats

Operation

#RESET, Action Number

Command

Use "RESET Command-specific fields" tables to complete these command fields.

RESET Command-specific fields

Action Numbers:

Action	Action Number
Set (#) reset the HomeWorks QS processor	0

Example RESET Commands

Operation	Command String
Execute: #RESET, Action Number	
Reset the HomeWorks QS processor	#RESET,0<CR><LF>

Lutron integration protocol

myRoom plus

System Overview

The myRoom plus system is a guestroom management system for light, temperature, and shade control that integrates with property management systems (PMS) and building management systems (BMS). The myRoom plus system provides increased energy savings through automatic lighting and HVAC adjustments and enhanced by shade control. The myRoom plus system uses occupied/unoccupied and sold/unsold information for guest presence detection and additional HVAC setbacks. It offers hotel guests privacy or a view; a single button press closes or opens shades and integrates with BMS to control and monitor.

myRoom plus System Device Compatibility Index

	myRoom plus
HomeWorks QS/DALI®	✓
HomeWorks QS/EcoSystem	✓
HomeWorks QS/0–10 V/Softswitch	✓
HomeWorks QS/Phase-Adaptive	✓
HomeWorks QS/Motor Module	✓
Low-Capacity Switching DIN Power Module (1A/output)	✓
Low-Capacity Phase-Adaptive DIN Power Module (1A/output)	✓
Palladiom Keypad	✓
Palladiom Thermostat	✓
Architrave Keypad	✓
Signature Series Keypad	✓
seeTouch Keypad	✓
seeTouch QS Keypad (Int'l)	✓
Tabletop seeTouch Keypad	✓
Pico Wireless Control	✓
Hybrid Keypad	✓
Dynamic Keypad	✓
Wallbox Input Closure Interface	✓
Sivoia QS Shade	✓
Sivoia QS Wireless Shade	✓
Maestro Dimmer and Plug-In Module	✓
Maestro Fan Speed Control	✓
Visor Control Receiver	✓
Radio Powr Savr Sensor	✓
HVAC Controller	✓
QS Input/Output Control Interface	✓
QS Sensor Module	✓

Continued on next page...

Lutron integration protocol

myRoom plus *(continued)*

System Overview *(continued)*

Command Types

The following is a list of supported command types. Details on certain device-specific types (e.g., DEVICE, HVAC) are located in the individual device section of this manual.

Operation characters will be followed by command types.

- **DEVICE** allows control and monitoring of device inputs such as button presses and contact closure inputs
- **OUTPUT** allows control and monitoring of device outputs such as dimmers and contact closure outputs
- **SHADEGRP** allows control of shades in the myRoom plus system. Shade groups are collections of shades that operate in unison
- **MONITORING** specifies the type of messages that the system will report
- **HVAC** allows control and monitoring of Lutron HVAC equipment
- **TIMECLOCK** allows control (enable/disable) and monitoring of system timeclocks
- **SYSVAR** allows control and monitoring of system variables
- **AREA** allows control and monitoring of an area (e.g., activating area Scenes, monitoring occupancy)
- **ERROR** displays responses to invalid commands
- **HELP** displays usage information for the supported commands and their corresponding actions
- **SYSTEM** allows setting and controlling system parameters and variables
- **ETHERNET** modifies the Ethernet configuration of the myRoom plus processor
- **INTEGRATIONID** gets information of the integration id or serial number of a device
- **RESET** resets the myRoom plus processor

Lutron integration protocol

myRoom plus *(continued)*

Integration Access Points

myRoom Processor

Model: GCU-HOSP



Why Integrate with a myRoom Processor?

- Integrating with a myRoom Processor provides integration over Ethernet without the need for additional equipment or interfaces.
- RS-232 integration can also be accomplished using third party Ethernet to RS-232 adapters.
- Integrating directly with the myRoom Processor also provides the greatest bandwidth port into the myRoom plus system.
- Integration IDs are automatically generated by the myRoom plus software application (e.g., for devices, outputs, shade groups, timeclocks). Integration IDs can be removed to reduce processing and traffic of unwanted messages.
- Phantom Keypads allow for integration functionality to be organized on various virtual keypads that have unlimited buttons and do not count towards link device count limits.

Integration Capabilities

- Control and monitoring of output devices such as dimmers, the GRAFIK Eye, shades and contact closure outputs
- Control and monitoring of physical or phantom keypad buttons and button status LEDs
- Control and monitoring of Lutron HVAC equipment
- Control and monitoring of individual timeclocks
- Control and monitoring of state variables
- Monitor sensors states with Monitoring command
- Control and monitoring of areas to activate scenes and monitor occupancy

Continued on next page...

Lutron integration protocol



myRoom plus *(continued)*

Integration Access Points *(continued)*

Connection Information

Ethernet

Configuring the myRoom processor to communicate over a network takes not only knowledge of the myRoom plus system, but of networking as well. Installers with limited networking knowledge are advised to contact a networking professional before attempting to connect a myRoom processor through a network.

The installer will make any necessary configuration changes to the myRoom processor using the myRoom plus Design Software Application and the network professional can make any necessary changes to the networking equipment.

Dual Ethernet Port

- IEEE® 802.3 Auto-Sensing 10BaseT/100BaseTX
- Supports MDI/MDIX auto-crossover (no crossover cable needed).
- Female 8P8C “Computer RJ-45” socket
- Green “Connect” LED, Amber “Activity” LED
- Use Cat 5 cabling or better
- 2 Port 10/100 Ethernet Switch

TCP/IP Settings

- IP Address: Address at which the processor can be reached for integration. In most instances when integrating to a processor, DHCP should be disabled and a static IP address should be assigned to prevent the processor from changing IP addresses.
- Subnet Mask: In conjunction with the IP address, it defines the subnet on which the processor communicates. Processors will be able to integrate only with devices on the same subnet.
- Gateway: Used in instances where the processor needs to communicate to the internet. Should be set to the IP address of the device on the network connected directly to the internet.

Protocols Used for Integration

- Telnet

Telnet Server

- Used by third party equipment (e.g., touch screen)
- Used by Lutron mobile devices (e.g., iPad and iPhone)
- Limited to transferring ASCII characters
- Telnet Port number is 23
- Logins: Defined in the myRoom plus software application

RS232

The myRoom Processor does not have native support for RS232. An Ethernet to RS232 adapter can be used and configured to provide RS232 integration directly from the Processor if needed.



myRoom plus (continued)

System Commands

OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*
#OUTPUT¹, **2**, **Action Number**, **Parameters**
Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

NOTE

- OUTPUT commands can be used to control system lighting zones, individual shades, and contact closure outputs.

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Output Level	1	Level ¹ = 0–100 or 0.00–100.00 Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising ⁴	2	None
Set (#) Start Lowering ⁴	3	None
Set (#) Stop Raising or Lowering ⁴	4	None
Set (#) or Get (?) Flash Frequency	5	Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) CCO Pulse Time	6	Pulse ⁵ time in: SS.ss ³ , SS, MM:SS, or HH:MM:SS, or Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Tilt Level	9	Tilt level in % = 0.00–100 ⁶ Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Lift and Tilt Levels	10	Lift ¹ = 0–100 or 0.00–100.00 Tilt ¹ = 0–100 ⁶ or 0.00–100.00 ⁶ Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising Tilt	11	None
Set (#) Start Lowering Tilt	12	None
Set (#) Stop Raising or Lowering Tilt	13	None
Set (#) Start Raising Lift	14	None
Set (#) Start Lowering Lift	15	None
Set (#) Stop Raising or Lowring Lift	16	None
Get (?) Horizontal Sheer Shade Region	28	Regions: 0 = Lift, 1 = Tilt

NOTES

- The Level/Lift/Tilt is taken as a percentage.
- The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours. For shade outputs, the Fade and Delay parameters have no effect (since shades have fixed speeds).
- Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.45 seconds a value of 1.25 seconds will be used.
- When a Raise/Lower command is issued, the output's level will continue to go towards high end/low end until a Stop command is received.
- The default time is one second.
- 50 for Horizontal Sheer Blinds.

Continued on next page...

Lutron integration protocol



myRoom plus *(continued)*

System Commands *(continued)*

OUTPUT Commands *(continued)*

Example OUTPUT Messages

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set output level to 70% (Fade=4 sec, Delay=2 sec)	#OUTPUT,2,1,70,4,2<CR><LF>
Raise Output	#OUTPUT,2,2<CR><LF>
Query: ?OUTPUT, Integration ID	
What is the current output level?	?OUTPUT,2<CR><LF>
Response 1: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 48%.	~OUTPUT,2,1,48<CR><LF>

NOTE

1. The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours. For shade outputs, the Fade and Delay parameters have no effect (since shades have fixed speeds).

Lutron integration protocol



myRoom plus (continued)

System Commands (continued)

SHADEGRP Commands

SHADEGRP Command Formats

Operation *Integration ID (example)*
#SHADEGRP, 2, Action Number, Parameters
Command *Use "SHADEGRP Command-specific fields" tables to complete these command fields.*

SHADEGRP Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Shade Group Level	1	Level = 0–100 or 0.00–100.00
Set (#) Start Raising ¹	2	None
Set (#) Start Lowering ¹	3	None
Set (#) Stop Raising or Lowering	4	None
Set (#) or Get (?) Current Preset	6	Preset Number ² = 0–30
Set (#) Tilt Level	14	Level ³ = 0–100 ⁴ or 0.00–100.00 ⁴
Set (#) Lift and Tilt Levels	15	Lift ³ = 0–100 or 0.00–100.00 Tilt ³ = 0–100 ⁴ or 0.00–100.00 ⁴
Set (#) Start Raising Tilt ¹	16	None
Set (#) Start Lowering Tilt ¹	17	None
Set (#) Stop Raising or Lowering Tilt ¹	18	None
Set (#) Start Raising Lift ¹	19	None
Set (#) Start Lowering Lift ¹	20	None
Set (#) Stop Raising or Lowering Lift ¹	21	None
Get (?) Horizontal Sheer Shade Region	28	Lift = 0 Tilt = 1

NOTES

1. When a Raise/Lower command is issued, the shade group's level will continue to go towards open/close until a Stop command is received.
2. Preset 0 is the Open Preset and Preset 30 is the Closed Preset.
3. The Level is accepted as a percentage, where 100% is fully open and 0% is fully closed.
4. 50 for Horizontal Sheer Blinds.

Continued on next page...

Lutron integration protocol



myRoom plus *(continued)*

System Commands *(continued)*

SHADEGRP Commands *(continued)*

Example SHADEGRP Messages

Operation	Command String
Execute: #SHADEGRP, Integration ID, Action Number, Parameters	
Set shade group to 70% (Delay=2 sec).	#SHADEGRP,2,1,70,2<CR><LF>
Lower shade group.	#SHADEGRP,2,3<CR><LF>
Query: ?SHADEGRP, Integration ID, Action Number	
What is the current active preset?	?SHADEGRP,2,6<CR><LF>
Response: ~SHADEGRP, Integration ID, Action Number, Parameters	
Shade group Preset 2 is currently active.	~SHADEGRP,2,6,2<CR><LF>

Lutron integration protocol



myRoom plus (continued)

System Commands (continued)

TIMECLOCK Commands

TIMECLOCK Command Formats

Operation *Integration ID (example)*
#TIMECLOCK, 2, Action Number, Parameters
Command *Use "TIMECLOCK Command-specific fields" tables to complete these command fields.*

TIMECLOCK Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Get (?) Sunrise Time	2	None
Get (?) Sunset Time	3	None
Get (?) Day's Schedule	4	None
Set (#) Execute Indexed Event	5	Index of the event to test. The index number of the first event is 1; the second event is 2, and so on.
Set (#) Indexed Event as Enabled or Disabled	6	Event Index, Enable State (1 = Enable, 2 = Disable)

Example TIMECLOCK Messages

Operation	Command String
Execute: #TIMECLOCK, Integration ID, Action Number, Parameters	
Execute the 3rd event of the timeclock.	#TIMECLOCK,2,5,3<CR><LF>
Query: ?TIMECLOCK, Integration ID, Action Number	
What is the sunrise time?	?TIMECLOCK,2,2<CR><LF>
Response: ~TIMECLOCK, Integration ID, Action Number, Parameters	
The time the sun rises.	~TIMECLOCK,2,2,05:32<CR><LF>



myRoom plus (continued)

System Commands (continued)

SYSVAR Commands

SYSVAR Command Formats

$\begin{matrix} \text{Operation} & \text{Integration ID (example)} \\ \# \text{SYSVAR}, 2, & \text{Action Number, Parameters} \\ \text{Command} & \text{Use "SYSVAR Command-specific fields" tables} \\ & \text{to complete these command fields.} \end{matrix}$

SYSVAR Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) the state of a given variable	1	State number

Example SYSVAR Messages

Operation	Command String
Execute: #SYSVAR, Integration ID, Action Number, Parameters	
Set the variable state to the third state.	#SYSVAR,2,1,3<CR><LF>
Query: ?SYSVAR, Integration ID, Action Number	
What is the state of the variable?	?SYSVAR,2,1<CR><LF>
Response: ~SYSVAR, Integration ID, Action Number, Parameters	
The variable is in the third state.	~SYSVAR,2,1,3<CR><LF>

Lutron integration protocol



myRoom plus (continued)

System Commands (continued)

AREA Commands

AREA Command Formats

Operation *Integration ID (example)*
?AREA ¹, ², **Action Number, Parameters**
Command *Use "AREA Command-specific fields" tables to complete these command fields.*

NOTE

1. AREA commands cannot be sent to areas that contain other areas, such as a room that has multiple areas within it (e.g., bedroom, bathroom).

AREA Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Get (?) Occupancy State ¹	8	3 = Occupied 4 = Unoccupied

NOTE

1. This is not for Guest Presence Detection of the room.

Example AREA Messages

Operation	Command String
Execute: #AREA, Integration ID, Action Number, Parameters	
Set area level to 75% (Fade=4 sec, Delay=2 sec)	#AREA,2,1,70,4,2<CR><LF>
Lower Area.	#AREA,2,3<CR><LF>
Query: ?AREA, Integration ID, Action Number	
Is the area occupied?	?AREA,2,8<CR><LF>
What is the current active scene?	?AREA,2,6<CR><LF>
Response: ~AREA, Integration ID, Action Number, Parameters	
The area is currently occupied.	~AREA,2,8,3<CR><LF>
Area Scene 2 is currently active.	~AREA,2,6,2<CR><LF>

Lutron integration protocol



myRoom plus (continued)

System Commands (continued)

ETHERNET Commands

ETHERNET Command Formats

Operation

#ETHERNET, Configuration Number, Parameters

Command

Use "ETHERNET Command-specific fields" tables to complete these command fields.

ETHERNET Command-specific fields

Configuration Number and Parameters:

Description	Configuration Number	Parameters
Set (#) or Get (?) IP Address	0	IP Address (XXX.XXX.XXX.XXX)
Set (#) or Get (?) Gateway Address	1	IP Address (XXX.XXX.XXX.XXX)
Set (#) or Get (?) Subnet Mask	2	IP Address (XXX.XXX.XXX.XXX)
Get (?) DHCP	4	None
Set (#) or Get (?) Multicast Address	5	IP Address (XXX.XXX.XXX.XXX)

Example ETHERNET Commands

Operation	Command String
Execute: #ETHERNET, Configuration Number, Parameters	
Set IP Address to 192.168.250.1	#ETHERNET,0,192.168.250.1<CR><LF>
Set Gateway Address to 10.2.4.1	#ETHERNET,1,10.2.4.1<CR><LF>
Query: ?ETHERNET, Configuration Number, Parameters	
What is the IP Address?	?ETHERNET,0<CR><LF>
Response: ~DEVICE, Integration ID, Configuration Number, Parameters	
The IP Address is 192.168.250.1	~ETHERNET,0=,192.168.250.1<CR><LF>

Lutron integration protocol



myRoom plus (continued)

System Commands (continued)

INTEGRATION ID Commands

INTEGRATION ID Command Formats

Operation

?INTEGRATIONID, Action Number, Parameters

Command

Use "INTEGRATIONID Command-specific fields" tables to complete these command fields.

INTEGRATION ID Command-specific fields

Action Numbers and Parameters:

Description	Action Number	Parameters
Get (?) Integration ID for a Serial Number ¹	1	Serial Number = 8 character HEX serial number of the device
Get (?) Info from ID ¹	3	Integration ID Note: If this field is left blank, all integration IDs will be printed.

NOTE

1. Refer to the integration report generated by the Lutron Designer Tool to identify the integration IDs for devices.

Example INTEGRATION ID Commands

Operation	Command String
Query: ?INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	?INTEGRATIONID,1,5678EFEF<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get the Integration ID for a serial number	~INTEGRATIONID,1,5678EFEF,1<CR><LF>
Query: ?INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	?INTEGRATIONID,3,1<CR><LF>
Response: ~INTEGRATIONID, Action Number, Parameters	
Get information about an Integration ID command	~INTEGRATIONID,3,1,DEVICE,5678EFEF<CR><LF>

Continued on next page...



myRoom plus *(continued)*

System Commands *(continued)*

RESET Commands

RESET Command Formats

Operation

#RESET, Action Number

Command

Use "RESET Command-specific fields" tables to complete these command fields.

RESET Command-specific fields

Action Numbers:

Action	Action Number
Set (#) Resets the GCU-HOSP	0

Example RESET Commands

Operation	Command String
Execute: #RESET, Action Number	
Reset the GCU-HOSP	#RESET,0<CR><LF>

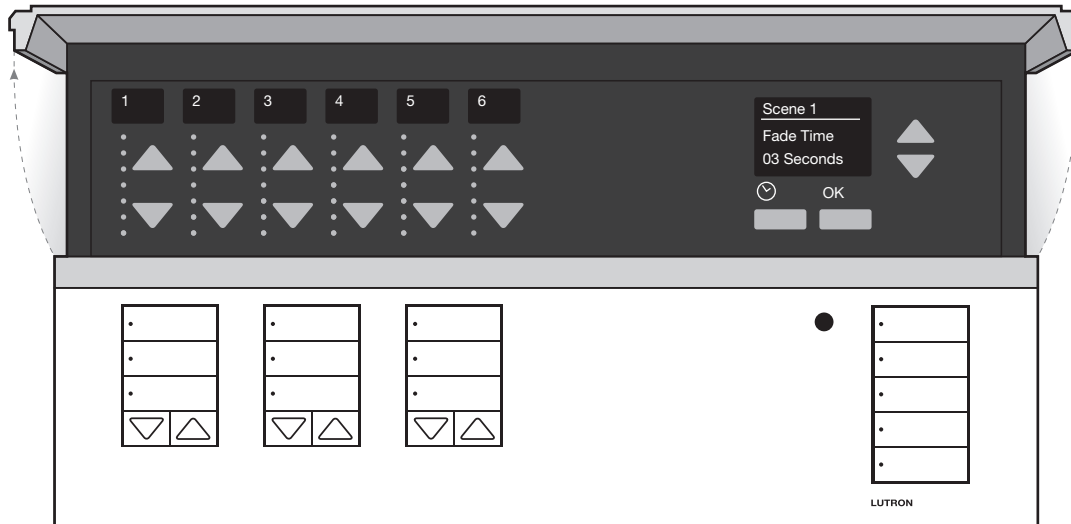
Lutron integration protocol

Devices

GRAFIK Eye QS

Main Unit

Models: QSGR-, QSGRJ-, QSGRK-, QSGRM-, QSGRN-, QSGRQ-



Why Integrate with a GRAFIK Eye QS unit?

- Control individual lights and scenes
- Query current scene and light levels
- Control LEDs of unprogrammed buttons

Integration Capabilities

- 16 scenes and up to 24 controllable outputs (output count depends on model)

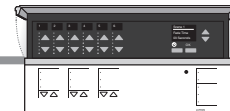
Supported Command Types

- **DEVICE** allows control and monitoring of buttons, LEDs and scenes
- **OUTPUT** allows control and monitoring of the dimmer device output

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
GRAFIK Eye QS Main Unit	✓	✓	✓	✓	✓

Continued on next page...



Devices *(continued)*

GRAFIK Eye QS *(continued)*

DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*
#DEVICE, 5, Component Number, Action Number, Parameters
Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

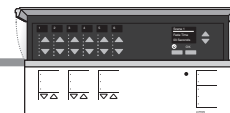
Component Numbers:

Component	Component Number	Available Actions
Zone 1 Controller – Zone 24 Controller	1–24	Raise, Lower, Stop, Set Light Level
Scene 1 Button	70	Press, Release (Scenes Activate on "Press")
Scene 2 Button	71	Press, Release (Scenes Activate on "Press")
Scene 3 Button	76	Press, Release (Scenes Activate on "Press")
Scene 4 Button	77	Press, Release (Scenes Activate on "Press")
Scene Off Button	83	Press, Release
Shade Column 1 Open	38	Press, Release (Shades React on "Release")
Shade Column 1 Preset 1	39	Press, Release (Shades React on "Release")
Shade Column 1 Close	40	Press, Release (Shades React on "Release")
Shade Column 1 Lower	41	Press, Release (Shades React on "Release")
Shade Column 1 Raise	47	Press, Release (Shades React on "Release")
Shade Column 2 Open	44	Press, Release (Shades React on "Release")
Shade Column 2 Preset 1	45	Press, Release (Shades React on "Release")
Shade Column 2 Close	46	Press, Release (Shades React on "Release")
Shade Column 2 Lower	52	Press, Release (Shades React on "Release")
Shade Column 2 Raise	53	Press, Release (Shades React on "Release")
Shade Column 3 Open	50	Press, Release (Shades React on "Release")
Shade Column 3 Preset 1	51	Press, Release (Shades React on "Release")
Shade Column 3 Close	56	Press, Release (Shades React on "Release")
Shade Column 3 Lower	57	Press, Release (Shades React on "Release")
Shade Column 3 Raise	58	Press, Release (Shades React on "Release")
Scene Controller	141	Set Current Scene, Set Zone Lock, Set Scene Lock, Set Sequence State, Raise, Lower, Stop, Scene Save
Scene 1 LED ¹	201	Get (?) LED state
Scene 2 LED ¹	210	Get (?) LED state
Scene 3 LED ¹	219	Get (?) LED state
Scene 4 LED ¹	228	Get (?) LED state
Scene Off LED ¹	237	Get (?) LED state
Local CCI	163	Report (~) Occupied, Report (~) Unoccupied
Timeclock Controller	166	Enable/Disable, Query Status
Wireless Occupancy Sensor 1–30	500–529	Report (~) Occupied, Report (~) Unoccupied
EcoSystem Ballast Occupancy Sensor 1–64	700–763	Report (~) Occupied, Report (~) Unoccupied

NOTE

1. Not supported in QS Standalone.

Continued on next page...



Devices *(continued)*

GRAFIK Eye QS *(continued)*

DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Component Numbers *(continued)*:

Component	Component Number	Available Actions
Shade Column 1 Open LED ¹	174	Get (?) LED state
Shade Column 1 Preset 1 LED ¹	175	Get (?) LED state
Shade Column 1 Close LED ¹	211	Get (?) LED state
Shade Column 2 Open LED ¹	183	Get (?) LED state
Shade Column 2 Preset 1 LED ¹	184	Get (?) LED state
Shade Column 2 Close LED ¹	220	Get (?) LED state
Shade Column 3 Open LED ¹	192	Get (?) LED state
Shade Column 3 Preset 1 LED ¹	193	Get (?) LED state
Shade Column 3 Close LED ¹	229	Get (?) LED state

NOTE

1. Not supported in QS Standalone.

Action Numbers and Parameters:

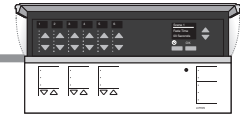
Action	Action Number	Parameters
Set (#) Press or Occupied	3	None
Set (#) Release or Unoccupied	4	None
Set (#) Current Scene ^{1,2}	7	Scene
Set (#) or Get (?) LED State ³	9	0=Off 1=On 2=Normal-Flash: 1 flash every second ² 3=Rapid-Flash: 10 flashes every second ²
Set (#) Scene Save	12	Scene
Set (#) or Get (?) Light Level ^{4,5}	14	Level=0–100 or 0.00–100.00 Fade ⁶ in: SS.ss ⁷ , SS, MM:SS, or HH:MM:SSJ79 (QS Standalone fade: maximum 4 hours) Delay ⁶ in: SS.ss ⁷ , SS, MM:SS, or HH:MM:SS (QS Standalone delay: maximum 4 hours)
Set (#) Zone Lock ⁸	15	0=Off; 1=On
Set (#) Scene Lock ⁸	16	0=Off; 1=On
Set (#) Sequence State ⁸	17	0=Off 1=Sequence through Scenes 1–4 2=Sequence through Scenes 5–16
Set (#) Start Raising ^{4,5}	18	None
Set (#) Start Lowering ^{4,5}	19	None
Set (#) Stop Raising or Lowering ^{4,5}	20	None
Set (#) or Get (?) Timeclock State	34	0=Disabled 1=Enabled

NOTES

The number of zone controllers available matches the number of zones a particular model supports.

1. Not supported in HomeWorks QS/myRoom plus.
2. Not supported in RadioRA 2.
3. Quantum or HomeWorks only. “Set” is for unprogrammed buttons and buttons with LED logic ‘Defined by Integration.’
4. Use OUTPUT command with equivalent command in RadioRA 2.
5. Use OUTPUT command with equivalent command in HomeWorks QS/myRoom plus.
6. The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay.
7. Fractional seconds “SS.ss” will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
8. QS Standalone only.

Continued on next page...



Devices *(continued)*

GRAFIK Eye QS *(continued)*

OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*
#OUTPUT, 1, Action Number, Parameters
Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Zone Level	1	Level = 0–100 or 0.00–100.00 Fade ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS (QS Standalone fade: maximum 4 hours) Delay ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS (QS Standalone delay: maximum 4 hours)
Set (#) Start Raising	2	None
Set (#) Start Lowering	3	None
Set (#) Stop Raising or Lowering	4	None

NOTES

- The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay.
- Fractional seconds "SS.ss" will be rounded down to the nearest quarter sec. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.

Example OUTPUT Commands

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set dimmer to 75% with a 1 min 30 sec fade.	#OUTPUT,1,1,75,01:30<CR><LF>
Start Raising zone level.	#OUTPUT,1,2<CR><LF>
Stop Raising/Lowering zone level.	#OUTPUT,1,4<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	?OUTPUT,1,1<CR><LF>
Response¹: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	~OUTPUT,1,1,90.00<CR><LF>

NOTE

- The system will report the target level of a dimmer while it is fading from one level to another. The actual level is not transmitted while dimming between levels.
Example: If the "Over Sink" (Integration ID-1) dimmer is at 20% and is then commanded to go to 100% by sending #OUTPUT,1,1,100, the response from the system will be ~OUTPUT,1,1,100.00

Lutron integration protocol

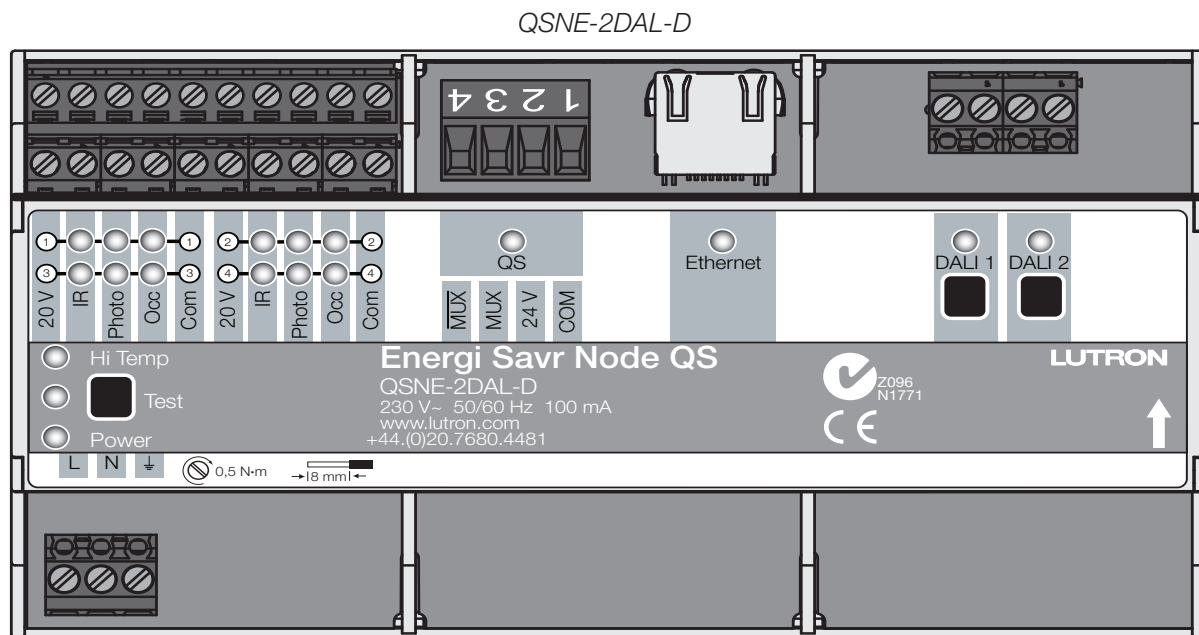
Devices *(continued)*

Energi Savr Node QS for DALI®

Model: QSNE-2DAL-D

HomeWorks QS/myRoom Power Module for DALI®

Model: LQSE-2DAL-D



Why Integrate with an Energi Savr Node (ESN) unit?

- Control individual zones and scenes in an area
- Query current scene and light levels

Integration Capabilities

- Up to 32 areas with 16 scenes per area. Up to 32 zones across the two DALI® buses

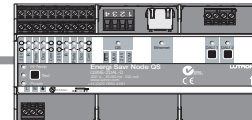
Supported Command Types

- **DEVICE** allows control and monitoring of zone levels and area scenes
- **OUTPUT** allows control and monitoring of the dimmer device output

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Energi Savr Node QS/DALI®	✓	✓			
HomeWorks QS/myRoom Power Module/DALI®				✓	✓

Continued on next page...



Devices *(continued)*

Energi Savr Node QS for DALI®

HomeWorks QS/myRoom Power Module for DALI® *(continued)*

DEVICE Commands

DEVICE Command Formats

Operation
Integration ID (example)
#DEVICE, 5, Component Number, Action Number, Parameters
Command
Use "DEVICE Command-specific fields" tables to complete these command fields.

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Zone 1–Zone 32 ^{1,2,3}	301–332	Set or Get Light Level, Raise, Lower, Stop
Area 1–Area 32 ^{1,3}	401–432	Set or Get Scene, Set Light Level, Raise, Lower, Stop
Occupancy Sensors 1–4	151–154	Report (~) Occupied Report (~) Unoccupied

NOTES

- Zones and areas are created and configured using the Lutron ESN Configuration Tool on an *iPhone* or *iPod Touch* mobile device, the Quantum Q-Design Tool, the HomeWorks QS Lutron Designer, or the myRoom Lutron Designer. Only those areas and zones that have been configured using one of these tools are accessible through integration.
- Assigned zones can be given an individual Integration ID and controlled using the *#OUTPUT* command. For more details on setting the output Integration ID of a zone component, see the Integration Access Point section of the system that contains the ESN.
- When the ESN is part of a Quantum system, then the *#AREA* and *#OUTPUT* commands found in the Quantum “System Commands” section of this integration document should be used.

Action Numbers and Parameters:

Action	Action Number	Parameters
Report (~) Occupied	3	None
Report (~) Unoccupied	4	None
Set (#) or Get (?) Current Scene	7	Scene
Set (#) Scene Save ¹	12	Scene
Set (#) or Get (?) Light Level	14	Level=0–100 or 0.00–100.00 Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS (QS Standalone fade: maximum 90 seconds) Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS (QS Standalone delay: maximum 4 hours)
Set (#) Scene Lock ⁴	16	0=Off; 1=On
Set (#) Sequence State ⁴	17	0=Off; 1=Sequence through Scenes 1–4; 2=Sequence through Scenes 5–16
Set (#) Start Raising	18	None
Set (#) Start Lowering	19	None
Set (#) Stop Raising or Lowering	20	None

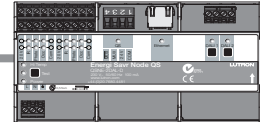
NOTES

- Available only with Energi Savr Node firmware >6.x.
- The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay.
- Fractional seconds “SS.ss” will be rounded down to the nearest quarter-second. For example, if a fade time is specified as 1.31 seconds, a value of 1.25 seconds will be used.
- QS Standalone only.

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Lutron integration protocol



Devices *(continued)*

Energysavr Node QS for DALI®

HomeWorks QS/myRoom Power Module for DALI® *(continued)*

OUTPUT Commands

OUTPUT Command Format

$\begin{matrix} \text{Operation} & \text{Integration ID (example)} \\ \# \text{OUTPUT}, 1, & \text{Action Number, Parameters} \\ \text{Command} & \text{Use "OUTPUT Command-specific fields" tables} \\ & \text{to complete these command fields.} \end{matrix}$

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Zone Level	1	Level=0–100 or 0.00–100.00 Fade ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS (QS Standalone fade: maximum 90 seconds) Delay ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS (QS Standalone delay: maximum 4 hours)
Set (#) Start Raising	2	None
Set (#) Start Lowering	3	None
Set (#) Stop Raising or Lowering	4	None

NOTES

- The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay.
- Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.

Example OUTPUT Commands

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set dimmer to 75% with a 1 min 30 sec fade.	#OUTPUT,1,1,75,01:30<CR><LF>
Start Raising zone level.	#OUTPUT,1,2<CR><LF>
Stop Raising/Lowering zone level.	#OUTPUT,1,4<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	?OUTPUT,1,1<CR><LF>
Response¹: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	~OUTPUT,1,1,90.00<CR><LF>

NOTE

- The system will report the target level of a dimmer while it is fading from one level to another. The actual level is not transmitted while dimming between levels.
Example: If the "Over Sink" (Integration ID -1) dimmer is at 20% and is then commanded to go to 100% by sending #OUTPUT,1,1,100, the response from the system will be ~OUTPUT,1,1,100.00

Lutron integration protocol

Devices *(continued)*

Energi Savr Node QS with EcoSystem

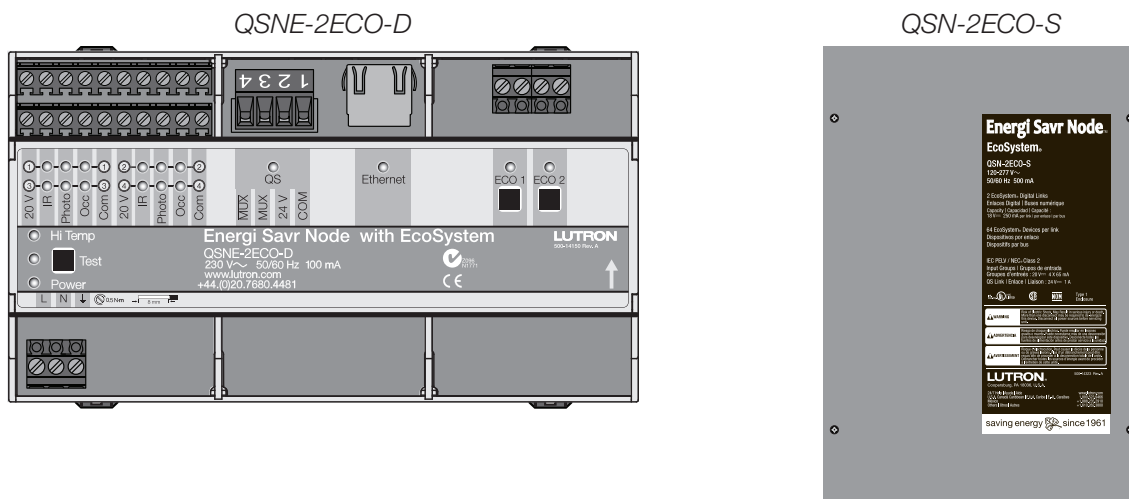
Model: QSN-2ECO-S

Energi Savr Node QS with EcoSystem (International)

Model: QSNE-2ECO-D

HomeWorks QS/myRoom Power Module with EcoSystem

Model: LQSE-2ECO-D



Why Integrate with an Energi Savr Node unit?

- Control individual zones and scenes in an area
- Query current scene and light levels

Integration Capabilities

- Up to 100 areas with 16 scenes per area. Up to 100 zones across the two EcoSystem loops

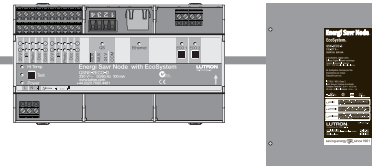
Supported Command Types

- **DEVICE** allows control and monitoring of zone levels and area scenes
- **OUTPUT** allows control and monitoring of the dimmer device output

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Energi Savr Node QS/ EcoSystem	✓	✓			
Energi Savr Node QS/ EcoSystem (Int'l)	✓	✓			
HomeWorks QS/myRoom Power Module/EcoSystem				✓	✓

Continued on next page...



Devices *(continued)*

Energi Savr Node QS with EcoSystem

HomeWorks QS/myRoom Power Module with EcoSystem

(continued)

DEVICE Commands¹

DEVICE Command Formats

^{Operation}
^{Integration ID (example)}
#DEVICE, 5, Component Number, Action Number, Parameters
^{Command} ^{Use "DEVICE Command-specific fields" tables}
 ^{to complete these command fields.}

NOTE

1. Not Supported in HomeWorks QS/myRoom plus.

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Occupancy Sensors 1–4	136–139	Report (~) Occupied, Report (~) Unoccupied
Loop 1 Ballast Occupancy Sensors	140–203	Report (~) Occupied, Report (~) Unoccupied
Loop 2 Ballast Occupancy Sensors	204–267	Report (~) Occupied, Report (~) Unoccupied
Zone 1–Zone 100 ^{1,2,3}	1001–1100	Set or Get Light Level, Raise, Lower, Stop
Area 1–Area 100 ^{1,3}	1201–1300	Set or Get Scene, Set Light Level, Raise, Lower, Stop

NOTES

1. Zones and areas are created and configured using the Lutron ESN Configuration Tool on an *iPhone* or *iPod Touch* mobile device, the Quantum Q-Design Tool, the HomeWorks QS Lutron Designer, or the myRoom Lutron Designer. Only those areas and zones that have been configured using one of these tools are accessible through integration.
2. Assigned zones can be given an individual Integration ID and controlled using the **#OUTPUT** command. For more details on setting the output Integration ID of a zone component, see the Integration Access Point section of the system that contains the ESN.
3. When the ESN is part of a Quantum, HomeWorks QS or myRoom plus system, the **#AREA** and **#OUTPUT** commands found in the Quantum "System Commands" section of this integration document should be used.

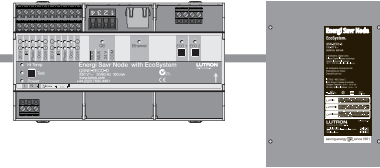
Action Numbers and Parameters:

Action	Action Number	Parameters
Report (~) Occupied	3	None
Report (~) Unoccupied	4	None
Set (#) or Get (?) Current Scene	7	Scene
Set (#) Scene Save ¹	12	Scene
Set (#) or Get (?) Light Level	14	Level=0–100 or 0.00–100.00 Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Scene Lock ⁴	16	0=Off; 1=On
Set (#) Sequence State ⁴	17	0=Off; 1=Sequence through Scenes 1–4; 2=Sequence through Scenes 5–16
Set (#) Start Raising	18	None
Set (#) Start Lowering	19	None
Set (#) Stop Raising or Lowering	20	None

NOTES

1. Available only with Energi Savr Node Firmware >6.x.
2. The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay.
3. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds, a value of 1.25 seconds will be used.
4. QS Standalone only.

Continued on next page...



Devices *(continued)*

Energi Savr Node QS with EcoSystem

HomeWorks QS/myRoom Power Module with EcoSystem

(continued)

OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*
#OUTPUT, 1, Action Number, Parameters
Command *Use "OUTPUT Command-specific fields" tables*
 to complete these command fields.

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Zone Level	1	Level=0–100 or 0.00–100.00 Fade ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS (QS Standalone fade: maximum 2 hours) Delay ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS (QS Standalone delay: maximum 4 hours)
Set (#) Start Raising	2	None
Set (#) Start Lowering	3	None
Set (#) Stop Raising or Lowering	4	None

NOTES

- The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay.
- Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.

Example OUTPUT Commands

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set dimmer to 75% with a 1 min 30 sec fade.	#OUTPUT,1,1,75,01:30<CR><LF>
Start Raising zone level.	#OUTPUT,1,2<CR><LF>
Stop Raising/Lowering zone level.	#OUTPUT,1,4<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	?OUTPUT,1,1<CR><LF>
Response¹: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	~OUTPUT,1,1,90.00<CR><LF>

NOTE

- The system will report the target level of a dimmer while it is fading from one level to another. The actual level is not transmitted while dimming between levels.
Example: If the "Over Sink" (Integration ID-1) dimmer is at 20% and is then commanded to go to 100% by sending #OUTPUT,1,1,100, the response from the system will be ~OUTPUT,1,1,100.00

Lutron integration protocol

Devices *(continued)*

Energi Savr Node QS for 0–10 V/Softswitch (International)

Models (QSNE-): 4T10-D, 4S10-D

Energi Savr Node QS for Phase Adaptive (International)

Model: QSNE-4A-D

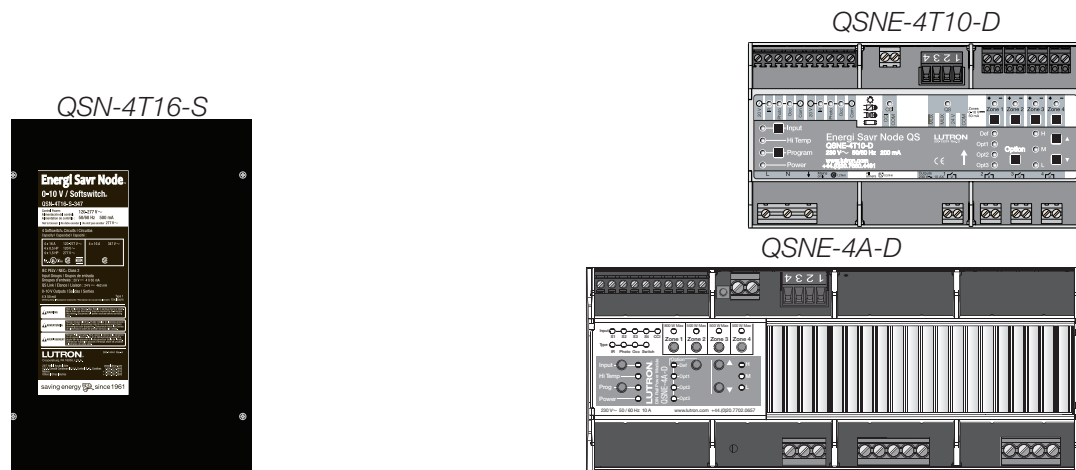
Energi Savr Node QS for 0–10 V/Softswitch

Models (QSN-): 4T16-S, 4S16-S

HomeWorks QS/myRoom Power Module for 0–10 V/ Softswitch/Phase Adaptive

0-10 V/Switching Models (LQSE-): 4T10-D, 4S10-D

Phase Adaptive Model: LQSE-4A-D



Why Integrate with an Energi Savr Node unit?

- Control individual zones and scenes in an area
- Query current scene and light levels

Integration Capabilities

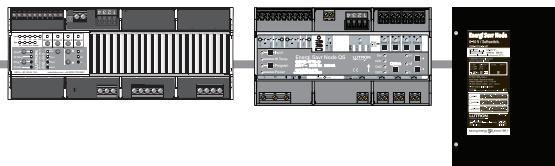
- Four areas with 16 scenes per area. Four zones on four independent outputs

Supported Command Types

- **DEVICE** allows control and monitoring of zone levels and area scenes
- **OUTPUT** allows control and monitoring of the dimmer device output

Compatibility	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Energi Savr Node QS/0–10 V/ Softswitch (Int'l)	✓	✓			
Energi Savr Node QS/ Phase-Adaptive (Int'l)	✓	✓			
Energi Savr Node QS/0–10 V/ Softswitch	✓	✓			
HomeWorks QS Power Module/0–10 V/Softswitch/Phase Adaptive				✓	✓

Continued on next page...



Devices *(continued)*

Energi Savr Node QS for 0–10 V/Softswitch/Phase Adaptive HomeWorks QS/myRoom Power Module for 0–10 V/ Softswitch/Phase Adaptive *(continued)*

DEVICE Commands¹

DEVICE Command Formats

Operation *Integration ID (example)*
 #DEVICE, 5, Component Number, Action Number, Parameters
Command Use “DEVICE Command-specific fields” tables
 to complete these command fields.

NOTE

- Not Supported in HomeWorks QS/myRoom plus.

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Zone 1–Zone 4 ^{1,2,3}	5 – 8	Set or Get Light Level, Raise, Lower, Stop
Occupancy Sensor 1–4	34–37	Report (-) Occupied, Report (-) Unoccupied
Occupancy Sensor 1–2	34–35	Report (-) Occupied, Report (-) Unoccupied

NOTES

- Zones and areas are created and configured using the Lutron ESN Configuration Tool on an *iPhone* or *iPod Touch* mobile device, the Quantum Q-Design Tool, the HomeWorks QS Lutron Designer, or the myRoom Lutron Designer. Only those areas and zones that have been configured using one of these tools are accessible through integration.
- Assigned zones can be given an individual Integration ID and controlled using the #OUTPUT command. For more details on setting the output Integration ID of a zone component, see the Integration Access Point section of the system that contains the ESN.
- When the ESN is part of a Quantum, HomeWorks QS or myRoom plus system, the #AREA and #OUTPUT commands found in the Quantum “System Commands” section of this integration document should be used.

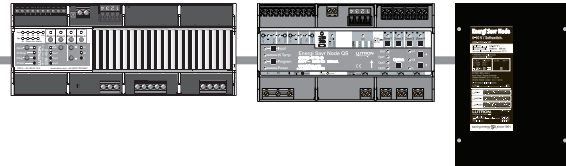
Action Numbers and Parameters:

Action	Action Number	Parameters
Report (-) Occupied	3	None
Report (-) Unoccupied	4	None
Set (#) or Get (?) Current Scene ¹	7	Scene
Set (#) Scene Save ²	12	Scene
Set (#) or Get (?) Light Level	14	Level = 0–100 or 0.00–100.00 Fade ³ in: SS.ss ⁴ , SS, MM:SS, or HH:MM:SS Delay ³ in: SS.ss ⁴ , SS, MM:SS, or HH:MM:SS
Set (#) Scene Lock ¹	16	0 = Off; 1 = On
Set (#) Sequence State ¹	17	0 = Off; 1 = Sequence through Scenes 1–4; 2 = Sequence through Scenes 5–16
Set (#) Start Raising	18	None
Set (#) Start Lowering	19	None
Set (#) Stop Raising or Lowering	20	None

NOTES

- QS Standalone only.
- Available only with Energi Savr Node Firmware > 6.x.
- The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay.
- Fractional seconds “SS.ss” will be rounded down to the nearest quarter-second. For example, if a fade time is specified as 1.31 seconds, a value of 1.25 seconds will be used.

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Devices *(continued)*

Energi Savr Node QS for 0–10 V/Softswitch/Phase Adaptive HomeWorks QS/myRoom Power Module for 0–10 V/ Softswitch/Phase Adaptive *(continued)*

OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*
#OUTPUT, 1, Action Number, Parameters
Command *Use "OUTPUT Command-specific fields" tables*
 to complete these command fields.

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Zone Level	1	Level=0–100 or 0.00–100.00 Fade ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS (QS Standalone fade: maximum 4 hours) Delay ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS (QS Standalone delay: maximum 4 hours)
Set (#) Start Raising	2	None
Set (#) Start Lowering	3	None
Set (#) Stop Raising or Lowering	4	None

NOTES

- The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay.
- Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.

Example OUTPUT Commands

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set dimmer to 75% with a 1 min 30 sec fade.	#OUTPUT,1,1,75,01:30<CR><LF>
Start Raising zone level.	#OUTPUT,1,2<CR><LF>
Stop Raising/Lowering zone level.	#OUTPUT,1,4<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	?OUTPUT,1,1<CR><LF>
Response¹: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	~OUTPUT,1,1,90.00<CR><LF>

NOTE

- The system will report the target level of a dimmer while it is fading from one level to another. The actual level is not transmitted while dimming between levels.
Example: If the "Over Sink" (Integration ID-1) dimmer is at 20% and is then commanded to go to 100% by sending #OUTPUT,1,1,100, the response from the system will be ~OUTPUT,1,1,100.00

Lutron integration protocol

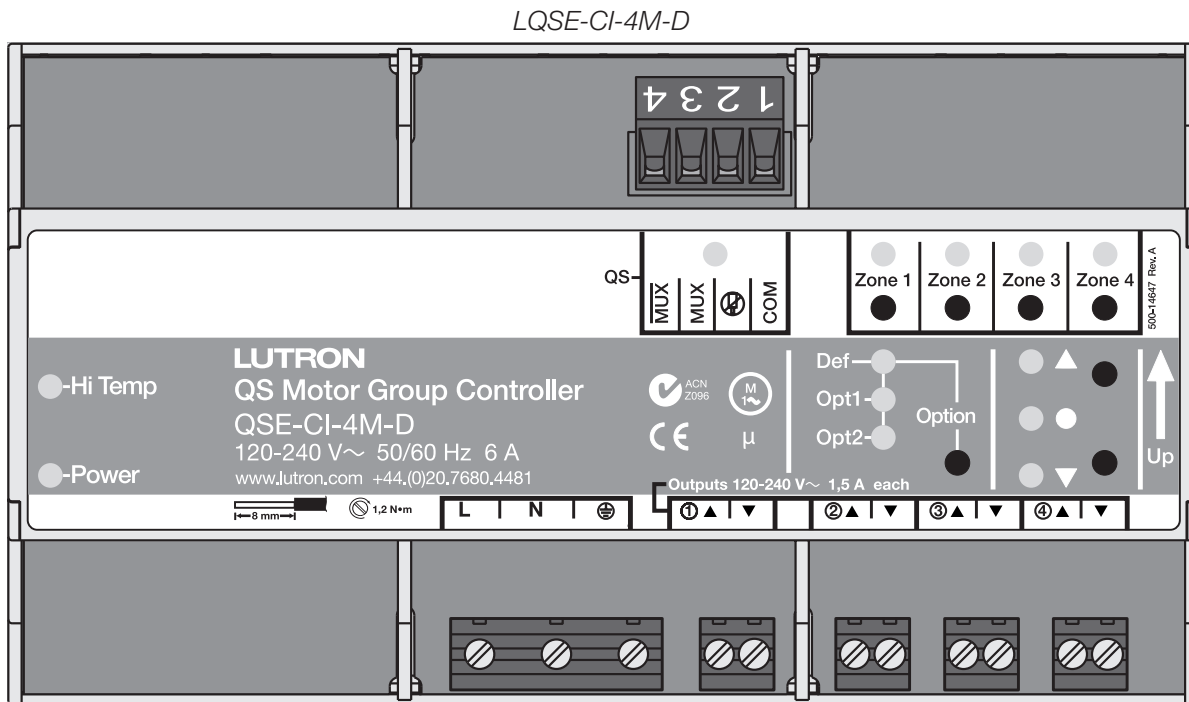
Devices *(continued)*

Energi Savr Node QS for Motor Module (International)

Model: QSE-CI-4M-D

HomeWorks QS/myRoom Power Module for Motor Module

Model: LQSE-4M-D



Why Integrate with an Energi Savr Node?

- Allows control and monitoring of the direction and remaining travel time of the four high-voltage outputs.

Integration Capabilities

- Up to 4 zones

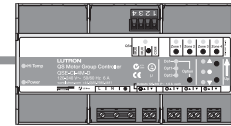
Supported Command Types

- **DEVICE** allows control and monitoring of zone levels
- **OUTPUT** allows control and monitoring of the device outputs

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Energi Savr Node QS/ Motor Module (Int'l)	✓	✓			
HomeWorks QS/myRoom Power Module for Motor Module				✓	✓

Continued on next page...



Devices *(continued)*

Energi Savr Node QS for Motor Module

HomeWorks QS/myRoom Power Module for Motor Module

(continued)

DEVICE Commands

DEVICE Command Format

Operation *Integration ID (example)*
#DEVICE, 5, Component Number, Action Number, Parameters
Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Zone 1 – Zone 4 ^{1,2}	1 – 4	Set or Get Light Level, Raise, Lower, Stop

NOTES

- Assigned zones can be given an individual Integration ID and controlled using the **#OUTPUT** command. For more details on setting the output Integration ID of a zone component, see the Integration Access Point section of the system that contains the QS Motor Module.
- When the QS Motor Module is part of a Quantum system, then the commands found in the Quantum “System Commands” section of this integration document should be used.

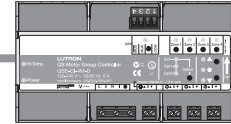
Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Light Level	14	Level=0–100 or 0.00–100.00 ¹ Fade ² in: Always use 0 Delay ³ in: SS.ss ⁴ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising	18	None
Set (#) Start Lowering	19	None
Set (#) Stop Raising or Lowering	20	None

NOTES

- Setting the level to 0% will cause the output to travel in the Closed direction; setting the level to 100% will cause the output to travel in the Open direction; setting any level from 1–99% will be ignored by the output. Querying its level will report 0 or 100%, based on the last direction it moved.
- Fade is not available for Motor Loads because they move at a constant rate. The parameter must be entered, but is ignored.
- The delay time is optional. When not used, the system will use a zero-second delay.
- Fractional seconds “SS.ss” will be rounded down to the nearest quarter-second. For example, if a fade time is specified as 1.31 seconds, a value of 1.25 seconds will be used.

Continued on next page...



Devices *(continued)*

Energi Savr Node QS for Motor Module

HomeWorks QS/myRoom Power Module for Motor Module

(continued)

OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*
 #OUTPUT, 3, Action Number, Parameters
Command Use "OUTPUT Command-specific fields" tables
 to complete these command fields.

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Zone Level	1	Level=0 or 100.00 ¹ Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ⁴ in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising	2	None
Set (#) Start Lowering	3	None
Set (#) Stop Raising or Lowering	4	None
Report (~) Travel Time Remaining ⁵	17	Travel time in seconds: 0– 255
Set (#) Motor Jog Raise ⁶	18	None
Set (#) Motor Jog Lower ⁶	19	None
Set (#) Motor 4-Stage Jog Raise ⁶	20	None
Set (#) Motor 4-Stage Jog Lower ⁶	21	None

NOTES

- Setting the level to 0% will cause the output to travel in the Closed direction; setting the level to 100% will cause the output to travel in the Open direction; setting any level from 1–99% will be ignored by the output. Querying its level will report 0 or 100%, based on the last direction it moved.
- Fade is not available for Shades because they move at a constant rate. The parameter must be entered, but is ignored.
- Fractional seconds "SS.ss" will be rounded down to the nearest quarter-second. Delay parameters have no effect for Shades.
- The delay time is optional. When not used, the system will use a zero-second delay. The minimum delay time is 0.25 seconds; the maximum delay time is 4 hours.
- If the travel time of a motor is greater than 255 seconds, the unit will report 255 until the travel time drops below that value.
- Not supported in QS Standalone.

Lutron integration protocol

Devices *(continued)*

Remote Power Module

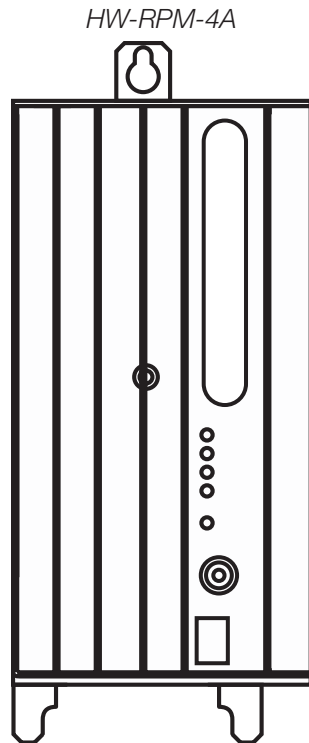
Adaptive Phase Control Model: HW-RPM-4A

Phase Control Model: HW-RPM-4U

Quiet Fan Speed Control Model: HW-RPM-4FSQ

3-Wire Motor Control Model: HW-RPM-4M

Relay Switching Model: HW-RPM-4R



Why Integrate with a Remote Power Module?

- Control individual zones and scenes in an area
- Query current scene and light levels

Integration Capabilities

- Up to four zones on each remote power module

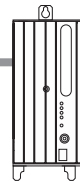
Supported Command Types

- **OUTPUT** allows control and monitoring of the control zone output

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Remote Power Module		✓		✓	

Continued on next page...



Devices *(continued)*

Remote Power Module *(continued)*

OUTPUT Commands

OUTPUT Command Format

$\begin{array}{l} \text{Operation} \\ \text{\#OUTPUT, 6, } \end{array}$
 $\begin{array}{l} \text{Integration ID (example)} \\ \text{Action Number, Parameters} \end{array}$

$\begin{array}{l} \text{Command} \\ \text{Use "OUTPUT Command-specific fields" tables} \\ \text{to complete these command fields.} \end{array}$

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Zone Level	1	0–100 or 0.00–100.00
		SS.ss ¹ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising	2	None
Set (#) Stop Lowering	3	None
Set (#) Stop Raising or Lowering	4	None
Set (#) Flashing ²	5	SS.ss ¹ , SS, MM:SS, or HH:MM:SS
Set (#) Pulse Time	6	SS.ss ¹ , SS, MM:SS, or HH:MM:SS
Set (#) Motor Jog Raise	18	None
Set (#) Motor Jog Lower	19	None
Set (#) Motor 4-Stage Jog Raise	20	None
Set (#) Motor 4-Stage Jog Lower	21	None

NOTES

1. Fractions are rounded **up** to the closest ¼ second.
2. To stop a dimmer from flashing, send it to a valid level (action 1).

Lutron integration protocol

Devices *(continued)*

Low-Capacity Switching DIN Power Module (1 A/output)

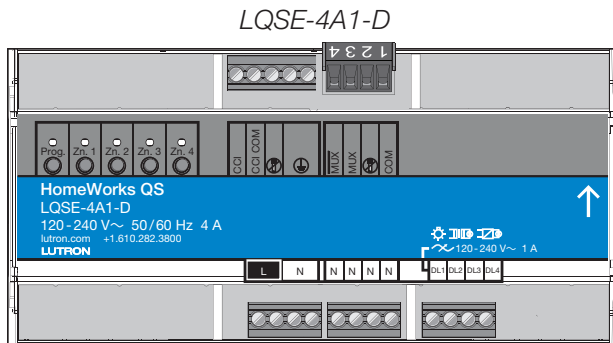
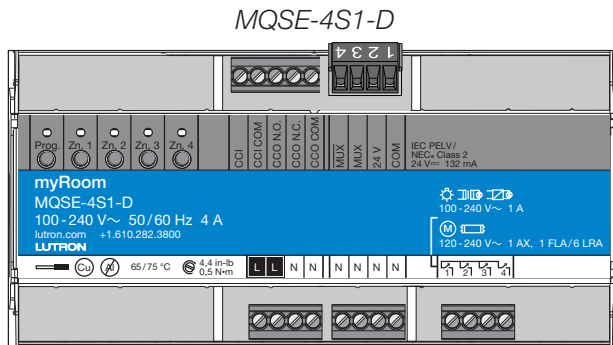
myRoom plus Model: MQSE-4S1-D

HomeWorks QS Model: LQSE-4S1-D

Low-Capacity Phase Adaptive DIN Power Module (1 A/output)

myRoom plus Model: MQSE-4A1-D

HomeWorks QS Model: LQSE-4A1-D



Why Integrate with a Low Capacity DIN Power Module?

- Control individual zones and scenes in an area
- Query current scene and light levels

Integration Capabilities

- Four areas with 16 scenes per area. Four zones on four independent outputs

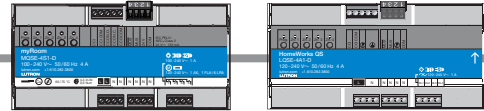
Supported Command Types

- **DEVICE** allows control and monitoring of zone levels and area scenes
- **OUTPUT** allows control and monitoring of the dimmer device output

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Low-Capacity Switching DIN Power Module (1A/output)				✓	✓
Low-Capacity Phase-Adaptive DIN Power Module (1A/output)				✓	✓

Continued on next page...



Devices *(continued)*

Low-Capacity Switching/Phase-Adaptive DIN Power Module (1 A/output) *(continued)*

DEVICE Commands ¹

DEVICE Command Formats

^{Operation}
^{Integration ID (example)}
#DEVICE, 5, Component Number, Action Number, Parameters
^{Command} *Use "DEVICE Command-specific fields" tables to complete these command fields.*

NOTE

1. Not Supported in HomeWorks QS/myRoom plus.

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Zone 1 – Zone 4 ^{1,2,3}	5 – 8	Set or Get Light Level, Raise, Lower, Stop
Area 1 – Area 4 ^{2,3}	10 – 13	Set or Get Scene, Set Light Level, Raise, Lower, Stop
Contact Closure Input	26	Report Open, Report Closed

NOTES

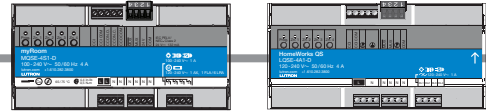
1. Zones and areas are created and configured using the HomeWorks QS Lutron Designer, or the myRoom Lutron Designer. Only those areas and zones that have been configured using one of these tools are accessible through integration.
2. Assigned zones can be given an individual Integration ID and controlled using the *#OUTPUT* command. For more details on setting the output Integration ID of a zone component, see the Integration Access Point section of the system that contains the ESN.
3. When the ESN is part of a HomeWorks or myRoom system, then the *#AREA* and *#OUTPUT* commands found in the Quantum "System Commands" section of this integration document should be used.

Action Numbers and Parameters:

Action	Action Number	Parameters
Report (-) Occupied or Closed ¹	3	None
Report (-) Unoccupied or Open ¹	4	None
Set (#) or Get (?) Current Scene	7	Scene
Set (#) or Get (?) Light Level	14	Level = 0–100 or 0.00–100.00 Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising	18	None
Set (#) Start Lowering	19	None
Set (#) Stop Raising or Lowering	20	None

NOTES

1. MQSE-4S1-D only
2. The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay.
3. Fractional seconds "SS.ss" will be rounded down to the nearest quarter-second. For example, if a fade time is specified as 1.31 seconds, a value of 1.25 seconds will be used.



Devices *(continued)*

Low-Capacity Switching/Phase-Adaptive DIN Power Module (1 A/output) *(continued)*

OUTPUT Commands

OUTPUT Command Format

$\begin{array}{l} \text{Operation} \\ \# \text{OUTPUT}, 1, \text{Action Number, Parameters} \\ \text{Command} \end{array}$
 $\begin{array}{l} \text{Integration ID (example)} \\ \\ \\ \end{array}$

Use "OUTPUT Command-specific fields" tables to complete these command fields.

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Zone Level Set (#) or Get (?) CCO State ¹	1	Level=0–100 or 0.00–100.00 Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS maximum 4 hours Delay ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS maximum 4 hours
Set (#) Start Raising	2	None
Set (#) Start Lowering	3	None
Set (#) Stop Raising or Lowering	4	None
Set (#) Pulse CCO ¹	6	None

NOTES

- Low-capacity switching only.
- The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay.
- Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.

Example OUTPUT Commands

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set dimmer to 75% with a 1 min 30 sec fade.	#OUTPUT,1,1,75,01:30<CR><LF>
Start Raising zone level.	#OUTPUT,1,2<CR><LF>
Stop Raising/Lowering zone level.	#OUTPUT,1,4<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	?OUTPUT,1,1<CR><LF>
Response¹: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	~OUTPUT,1,1,90.00<CR><LF>

NOTE

- The system will report the target level of a dimmer while it is fading from one level to another. The actual level is not transmitted while dimming between levels.
Example: If the "Over Sink" (Integration ID-1) dimmer is at 20% and is then commanded to go to 100% by sending #OUTPUT,1,1,100, the response from the system will be ~OUTPUT,1,1,100.00

Lutron integration protocol

Devices *(continued)*

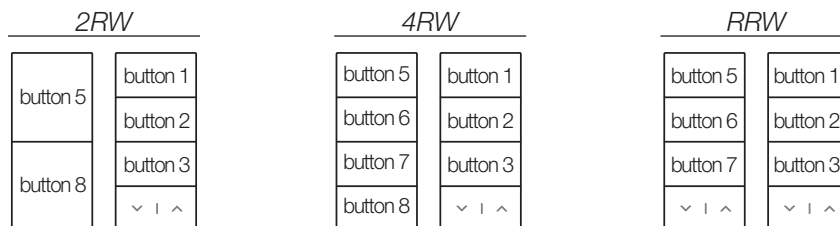
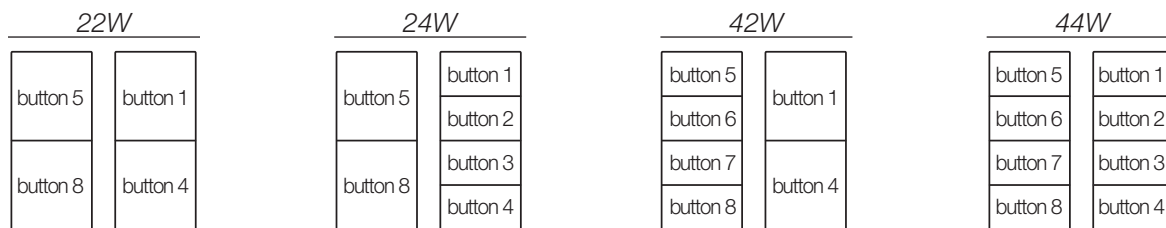
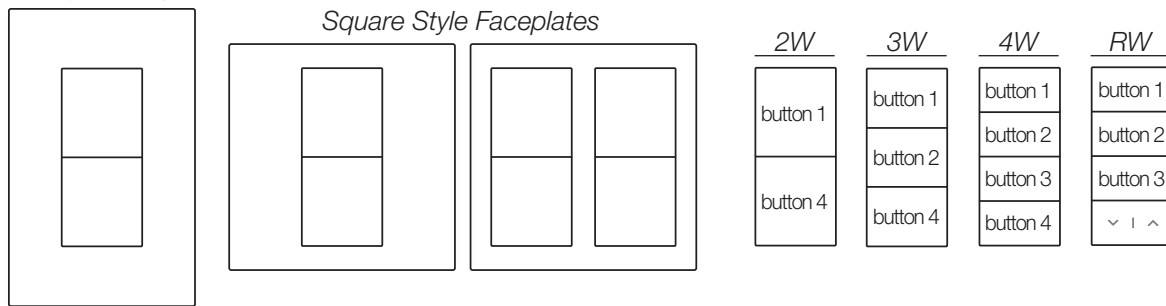
Palladiom Keypad

QS Models (QWP-): U-2W, U-3W, U-4W, U-RW,
S-2W, S-3W, S-4W, S-RW, S-22W, S-24W, S-42W, S-44W, S-2RW, S-4RW, S-RRW,
B-2W, B-3W, B-4W, B-RW, B-22W, B-24W, B-42W, B-44W, B-2RW, B-4RW, B-RRW.

HomeWorks QS Models (HQWT-): U-P2W, U-P3W, U-P4W, U-PRW,
S-P2W, S-P3W, S-P4W, S-PRW, S-P22W, S-P24W, S-P42W, S-P44W, S-P2RW, S-P4RW, S-PRRW,
B-P2W, B-P3W, B-P4W, B-PRW, B-P22W, B-P24W, B-P42W, B-P44W, B-P2RW, B-P4RW, B-PRRW.

myRoom Models (MWP-): U-2W, U-3W, U-4W, U-RW,
S-2W, S-3W, S-4W, S-RW, S-22W, S-24W, S-42W, S-44W, S-2RW, S-4RW, S-RRW,
B-2W, B-3W, B-4W, B-RW, B-22W, B-24W, B-42W, B-44W, B-2RW, B-4RW, B-RRW.

U.S. Style Faceplate



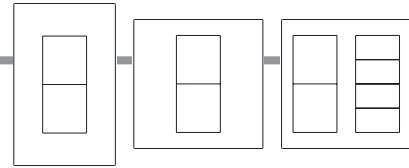
Why Integrate with a Palladiom Keypad?

- Simulate a button press
- Control LEDs of unprogrammed buttons

Compatibility

Palladiom Keypads	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
QS Model		✓			
HomeWorks QS Model				✓	
myRoom Model					✓

Continued on next page...



Devices *(continued)*

Palladiom Keypad *(continued)*

DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*
#DEVICE, 2, Component Number, Action Number, Parameters
Command Use "DEVICE Command-specific fields" tables
 to complete these command fields.

DEVICE Command-specific fields

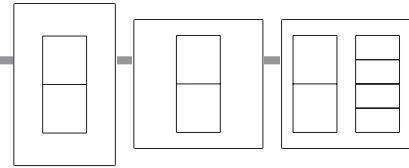
Component Numbers:

Component	Component Number	Available Actions
Column 1, Button 1	1	Press, Release
Column 1, Button 2	2	Press, Release
Column 1, Button 3	3	Press, Release
Column 1, Button 4	4	Press, Release
Column 2, Button 1	5	Press, Release
Column 2, Button 2	6	Press, Release
Column 2, Button 3	7	Press, Release
Column 2, Button 4	8	Press, Release
Column 1, Lower	16	Press, Release
Column 1, Raise	17	Press, Release
Column 2, Lower	18	Press, Release
Column 2, Raise	19	Press, Release
Column 1, LED 1	81	Set or Get LED state
Column 1, LED 2	82	Set or Get LED state
Column 1, LED 3	83	Set or Get LED state
Column 1, LED 4	84	Set or Get LED state
Column 2, LED 1	85	Set or Get LED state
Column 2, LED 2	86	Set or Get LED state
Column 2, LED 3	87	Set or Get LED state
Column 2, LED 4	88	Set or Get LED state
Active LED Intensity ¹	89	Set or Get LED state
Inactive LED Intensity ¹	113	Set or Get LED state

NOTE

- LED intensity can be set only when the DBM sensor is disabled.

Continued on next page...



Devices *(continued)*

Palladiom Keypad *(continued)*

DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Press	3	None
Set (#) Release	4	None
Set (#) Hold	5	None
Set (#) Double-tap	6	None
Set (#) or Get (?) LED State ¹	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every second ¹ 3 = Rapid-Flash: 10 flashes every second ¹
Set (#) or Get (?) Active LED Level ^{1,2}	36	0-100
Set (#) or Get (?) Inactive LED Level ^{1,2}	37	0-100

NOTES

1. "Set" is for unprogrammed buttons and buttons with LED logic 'Defined by Integration.'
2. LED intensity can be set only when the DBM sensor is disabled.

Example DEVICE Commands

Examples presume keypad has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Set Active LED to 50	#DEVICE,2,89,36,50<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the Inactive LED Level?	?DEVICE,2,113,37<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
Inactive LED Level is 75%	~DEVICE,2,113,37,75<CR><LF>

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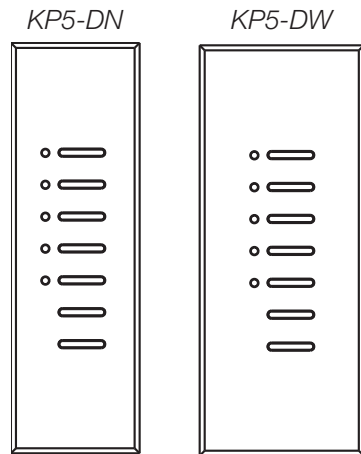
Lutron integration protocol

Devices *(continued)*

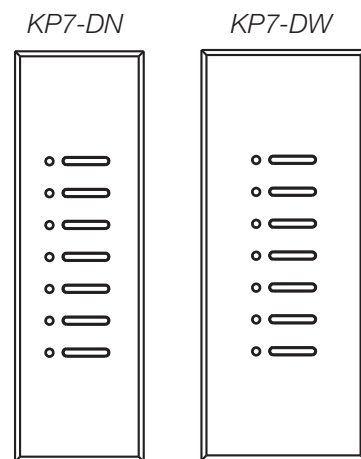
Architrave Keypad

QS Models (QSWAS-) with Faceplate/Button Kit Models (KP5-, KP7-): DN, KP7

HomeWorks QS/myRoom Models (HQWA-) with Faceplate/Button Kit Models (KP5-, KP7-): DN, KP7



QS	HomeWorks QS
Button 1	Button 1
Button 2	Button 2
Button 3	Button 3
Button 4	Button 4
Button 5	Button 5
Raise	Button 6
Lower	Button 7



QS	HomeWorks QS
Button 1	Button 1
Button 2	Button 2
Button 3	Button 3
Button 4	Button 4
Button 5	Button 5
Button 6	Button 6
Button 7	Button 7

Why Integrate with an Architrave Keypad?

- Simulate a button press
- Control LEDs of unprogrammed buttons

Compatibility

Architrave Keypads	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
QS Model	✓	✓			
HomeWorks QS / myRoom Model				✓	✓

Continued on next page...



Devices *(continued)*

Architrave Keypad *(continued)*

DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*
 #DEVICE, 2, Component Number, Action Number, Parameters
Command Use "DEVICE Command-specific fields" tables
 to complete these command fields.

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release, Double-tap, Hold, Hold Release
Button 2	2	Press, Release, Double-tap, Hold, Hold Release
Button 3	3	Press, Release, Double-tap, Hold, Hold Release
Button 4	4	Press, Release, Double-tap, Hold, Hold Release
Button 5	5	Press, Release, Double-tap, Hold, Hold Release
Button 6	6	Press, Release, Double-tap, Hold, Hold Release
Button 7	7	Press, Release, Double-tap, Hold, Hold Release
Lower	18	Press, Release, Double-tap, Hold, Hold Release
Raise	19	Press, Release, Double-tap, Hold, Hold Release
CCI 1	25	Press, Release
CCI 2	26	Press, Release
LED 1 ¹	81	Set or Get LED state
LED 2 ¹	82	Set or Get LED state
LED 3 ¹	83	Set or Get LED state
LED 4 ¹	84	Set or Get LED state
LED 5 ¹	85	Set or Get LED state
LED 6 ¹	86	Set or Get LED state
LED 7 ¹	87	Set or Get LED state

NOTE

1. Available only on units in a Quantum, HomeWorks, or myRoom Plus systems.

Continued on next page...



Devices *(continued)*

Architrave Keypad *(continued)*

DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Press or CCI Close	3	None
Set (#) Release or CCI Open	4	None
Set (#) Hold	5	None
Set (#) Double-tap	6	None
Set (#) or Get (?) LED State ¹	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every second ² 3 = Rapid-Flash: 10 flashes every second ²
Set (#) Hold Release ²	32	None

NOTES

1. Quantum, HomeWorks or myRoom plus only. "Set" is for unprogrammed buttons and buttons with LED logic 'Defined by Integration.'
2. Available only on units in a Quantum or HomeWorks system.

Example DEVICE Commands

Examples presume keypad has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	#DEVICE,2,1,3<CR><LF>
Turn On LED 5.	#DEVICE,2,85,9,1<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	?DEVICE,2,81,9<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	~DEVICE,2,81,9,1<CR><LF>

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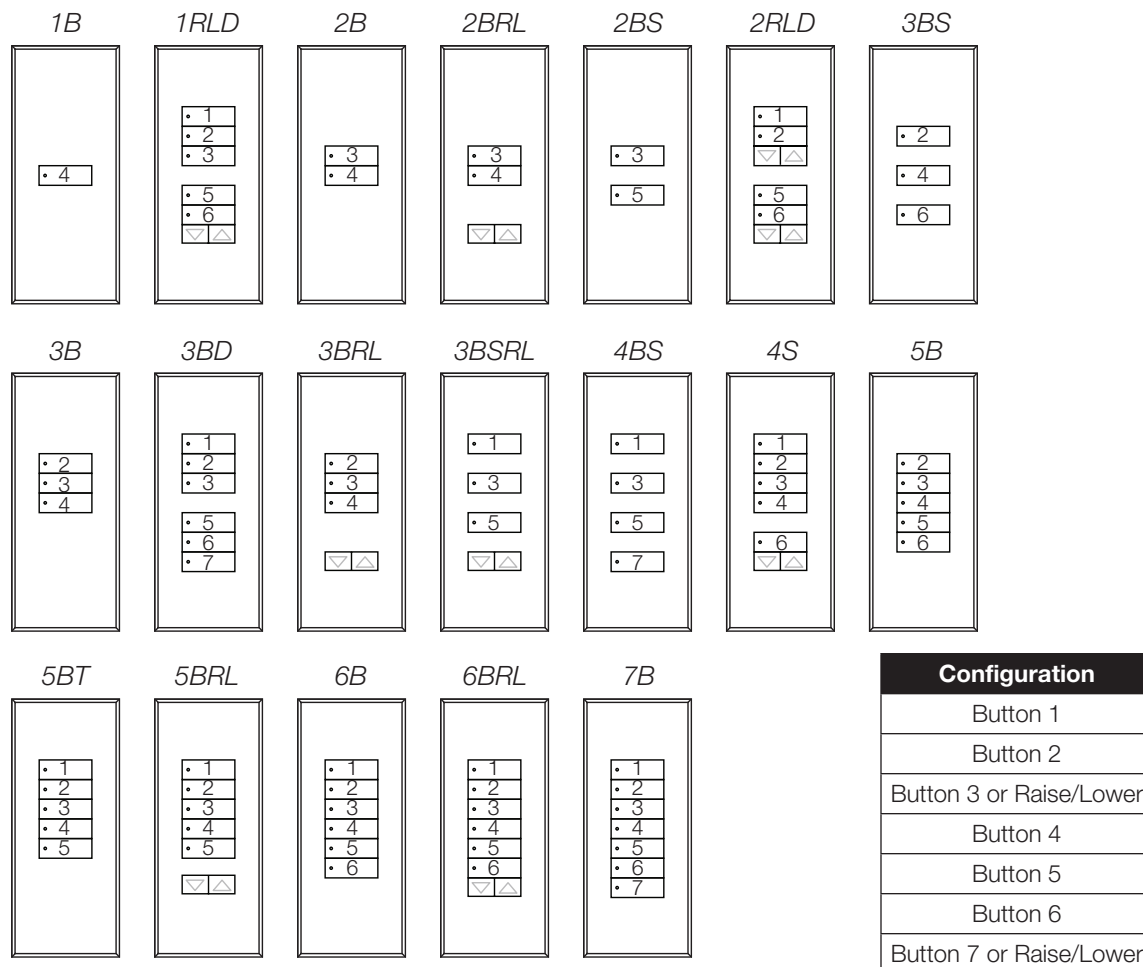
Lutron integration protocol

Devices *(continued)*

Signature Series Keypad

QS Models (QSWAS-): 1B, 1RLD, 2B, 2BRL, 2RLD, 3B, 3BD, 3BRL, 5B, 5BRL, 7B

HomeWorks QS/myRoom Models (HQWAS-B, HQWAS-G) with Faceplate/Button Kit Models (LFS-W): 1B, 1RLD, 2BS, 2RLD, 3BS, 3BD, 3BSRL, 4BS, 4S, 5B, 5BRL, 6B, 6BRL, 7B



Why Integrate with a Signature Series Keypad?

- Simulate a button press
- Control LEDs of unprogrammed buttons

Compatibility

Signature Series Keypads	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
QS Model	✓	✓			
HomeWorks QS/ myRoom Model				✓	✓

Continued on next page...



Devices *(continued)*

Signature Series Keypad *(continued)*

DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*
#DEVICE, 2, Component Number, Action Number, Parameters
Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release, Double-tap, Hold, Hold Release
Button 2	2	Press, Release, Double-tap, Hold, Hold Release
Button 3	3	Press, Release, Double-tap, Hold, Hold Release
Button 4	4	Press, Release, Double-tap, Hold, Hold Release
Button 5	5	Press, Release, Double-tap, Hold, Hold Release
Button 6	6	Press, Release, Double-tap, Hold, Hold Release
Button 7	7	Press, Release, Double-tap, Hold, Hold Release
Button Top Lower	16	Press, Release, Double-tap, Hold, Hold Release
Button Top Raise	17	Press, Release, Double-tap, Hold, Hold Release
Button Bottom Lower	18	Press, Release, Double-tap, Hold, Hold Release
Button Bottom Raise	19	Press, Release, Double-tap, Hold, Hold Release
CCI 1	25	Press, Release
CCI 2	26	Press, Release
LED 1 ¹	81	Set or Get LED state
LED 2 ¹	82	Set or Get LED state
LED 3 ¹	83	Set or Get LED state
LED 4 ¹	84	Set or Get LED state
LED 5 ¹	85	Set or Get LED state
LED 6 ¹	86	Set or Get LED state
LED 7 ¹	87	Set or Get LED state

NOTE

1. Available only on units in a Quantum, HomeWorks, or myRoom systems.

Continued on next page...



Devices *(continued)*

Signature Series Keypad *(continued)*

DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Press	3	None
Set (#) Release	4	None
Set (#) Hold	5	None
Set (#) Double-tap	6	None
Set (#) or Get (?) LED State ¹	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every second 3 = Rapid-Flash: 10 flashes every second
Set (#) Hold Release ²	32	None

NOTES

1. Quantum, HomeWorks or myRoom plus only. "Set" is for unprogrammed buttons and buttons with LED logic 'Defined by Integration.'
2. Available only on units in a Quantum or HomeWorks system.

Example DEVICE Commands

Examples presume keypad has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	#DEVICE,2,1,3<CR><LF>
Turn On LED 5.	#DEVICE,2,85,9,1<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	?DEVICE,2,81,9<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	~DEVICE,2,81,9,1<CR><LF>

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Lutron integration protocol

Devices *(continued)*

seeTouch Keypad

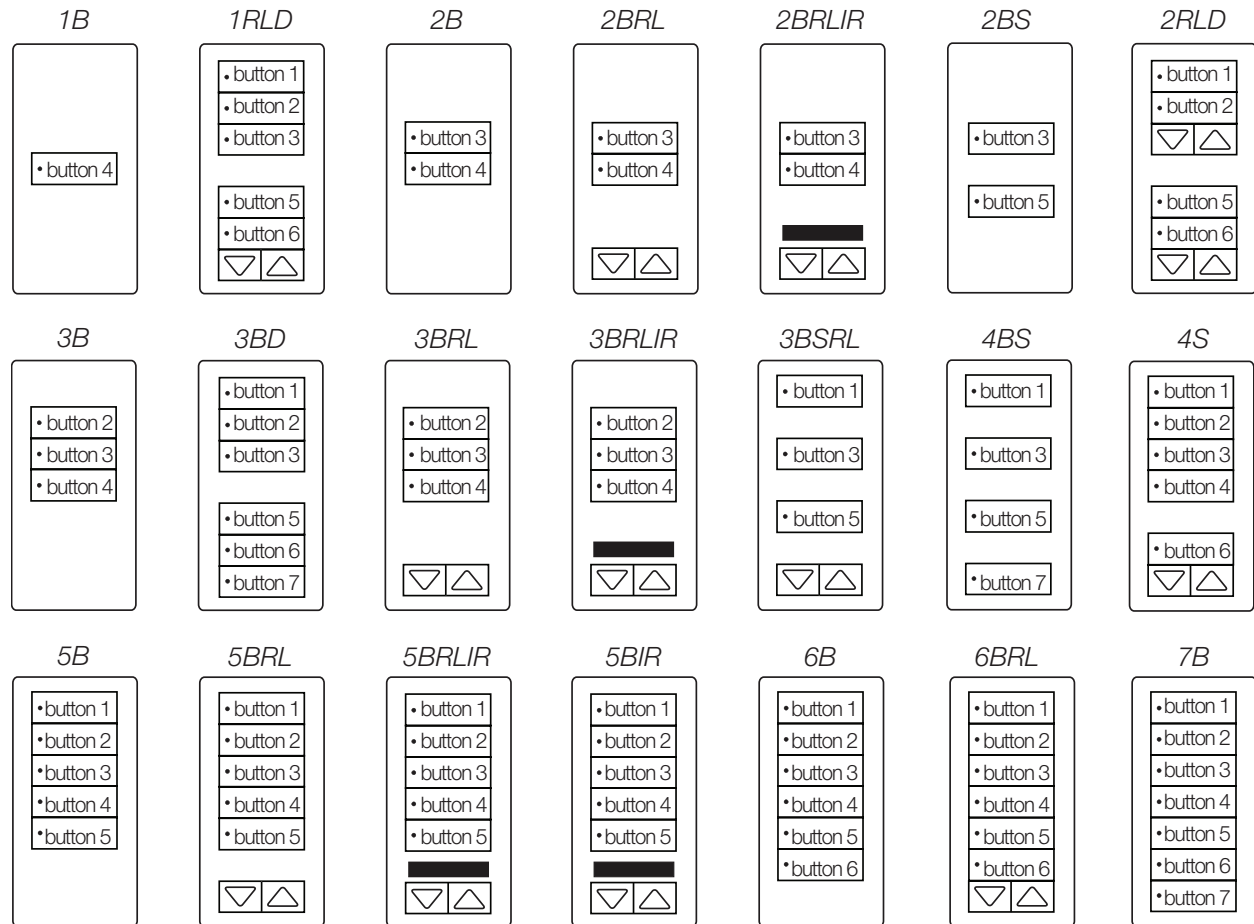
QS Models (QSW2-): 1B, 1RLD, 2B, 2BRL, 2BRLIR, 2RLD, 3B, 3BD, 3BRL, 3BRLIR, 5B, 5BRL, 5BRLIR, 7B

RadioRA 2 Models (RRD-W): 1RLD, 2RLD, 3BD, 3BRL, 3BSRL, 4S, 5BRL, 5BRLIR, 6BRL, 7B

HomeWorks QS/myRoom Models (HQRD-W, HQWD-W, HQWA-W, HQRA-W, HQWAS-W):

1B, 1RLD, 2BS, 2RLD, 3BS, 3BD, 3BSRL, 4BS, 4S, 5B, 5BRL, 5BIR, 6B, 6BRL, 7B

Clear Connect Device Models (CCD-W): 6BRL



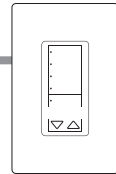
Why Integrate with a seeTouch Keypad?

- Simulate a button press
- Control LEDs of unprogrammed buttons

Compatibility

seeTouch Keypads	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
QS Model	✓	✓			
RadioRA 2 Model			✓		
HomeWorks QS / myRoom Model				✓	✓
Clear Connect Device Model					

Continued on next page...



Devices *(continued)*

see Touch Keypad *(continued)*

DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*
#DEVICE, 2, Component Number, Action Number, Parameters
Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

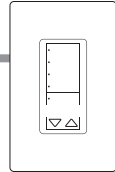
Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release
Button 2	2	Press, Release
Button 3	3	Press, Release
Button 4	4	Press, Release
Button 5	5	Press, Release
Button 6	6	Press, Release
Button 7	7	Press, Release
Button Top Lower	16	Press, Release
Button Top Raise	17	Press, Release
Button Bottom Lower	18	Press, Release
Button Bottom Raise	19	Press, Release
CCI 1	25	Press, Release
CCI 2	26	Press, Release
LED 1 ¹	81	Set or Get LED state
LED 2 ¹	82	Set or Get LED state
LED 3 ¹	83	Set or Get LED state
LED 4 ¹	84	Set or Get LED state
LED 5 ¹	85	Set or Get LED state
LED 6 ¹	86	Set or Get LED state
LED 7 ¹	87	Set or Get LED state

NOTE

1. Available only on units in a Quantum, HomeWorks, or myRoom plus system.

Continued on next page...



Devices *(continued)*

see Touch Keypad *(continued)*

DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Press or CCI Close	3	None
Set (#) Release or CCI Open	4	None
Set (#) Hold	5	None
Set (#) Double-tap	6	None
Set (#) or Get (?) LED State ^{1,2}	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every second ¹ 3 = Rapid-Flash: 10 flashes every second ¹

NOTES

1. Available only on units in a Quantum, HomeWorks, or myRoom plus system.
2. Quantum, HomeWorks, or myRoom only. "Set" is for unprogrammed buttons and buttons with LED logic 'Defined by Integration.'

Example DEVICE Commands

Examples presume keypad has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	#DEVICE,2,1,3<CR><LF>
Turn On LED 5.	#DEVICE,2,85,9,1<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	?DEVICE,2,81,9<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	~DEVICE,2,81,9,1<CR><LF>

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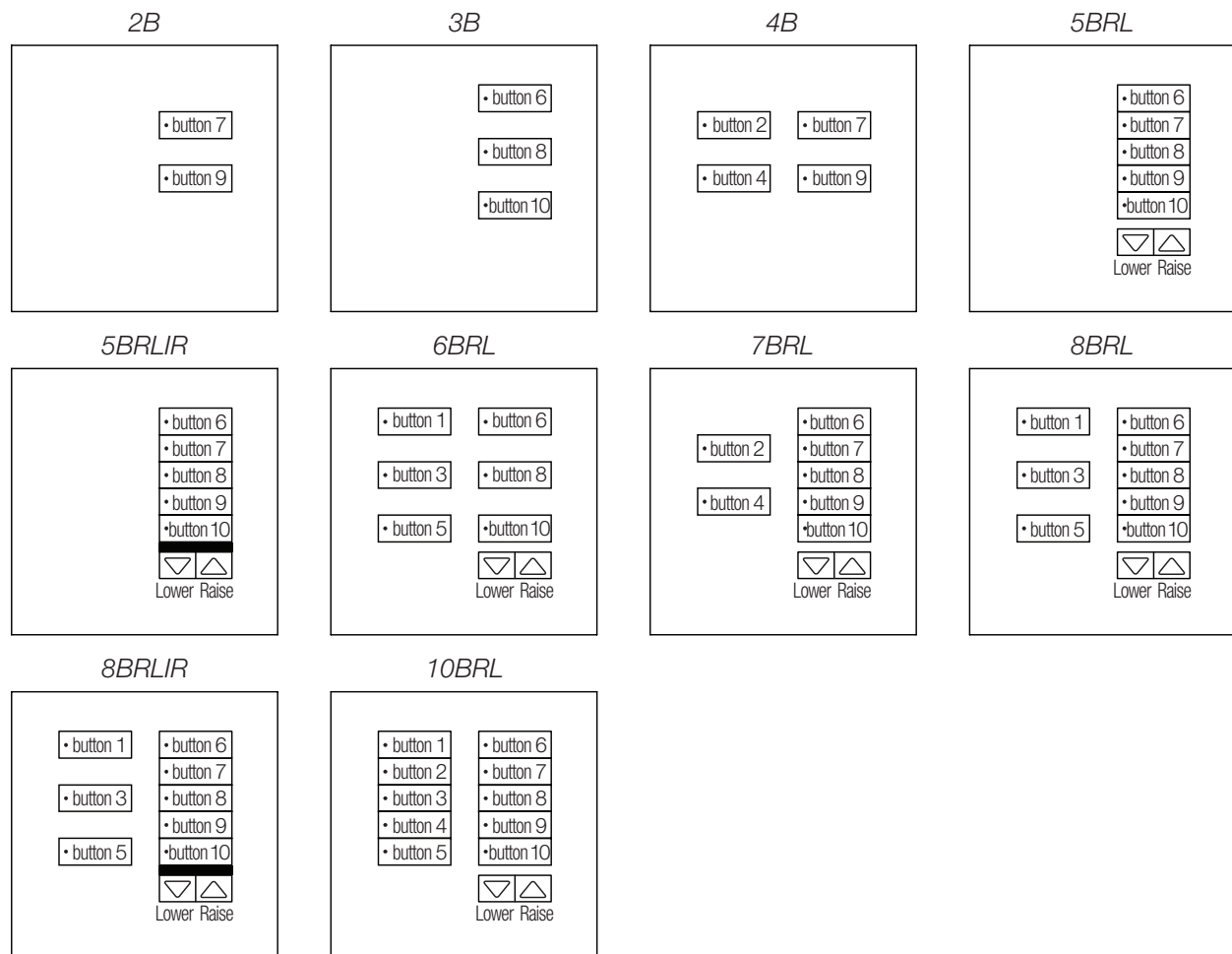
Lutron integration protocol

Devices *(continued)*

seeTouch QS Keypad (International)

QS Models (QSWE-): 2B, 3B, 4B, 5BRL, 5BRLIR, 6BRL, 7BRL, 8BRL, 8BRLIR, 10BRL

HomeWorks QS/myRoom Models (HWQIS-NB-NONE) with Faceplate/Button Kit Models (LFS-W): 2B, 3B, 4B, 5BRL, 5BRLIR, 6BRL, 7BRL, 8BRL, 8BRLIR, 10BRL



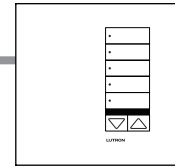
Why Integrate with a seeTouch QS Keypad?

- Simulate a button press
- Control LEDs of unprogrammed buttons

Compatibility

seeTouch QS Keypads (Int'l)	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
QS Model	✓	✓			
HomeWorks QS/ myRoom Model				✓	✓

Continued on next page...



Devices *(continued)*

see Touch QS Keypad (International) *(continued)*

DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*
#DEVICE, 2, Component Number, Action Number, Parameters
Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

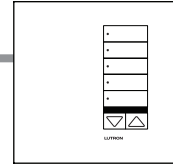
Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release, Double-tap, Hold, Hold Release
Button 2	2	Press, Release, Double-tap, Hold, Hold Release
Button 3	3	Press, Release, Double-tap, Hold, Hold Release
Button 4	4	Press, Release, Double-tap, Hold, Hold Release
Button 5	5	Press, Release, Double-tap, Hold, Hold Release
Button 6	6	Press, Release, Double-tap, Hold, Hold Release
Button 7	7	Press, Release, Double-tap, Hold, Hold Release
Button 8	8	Press, Release, Double-tap, Hold, Hold Release
Button 9	9	Press, Release, Double-tap, Hold, Hold Release
Button 10	10	Press, Release, Double-tap, Hold, Hold Release
Lower	18	Press, Release, Double-tap, Hold, Hold Release
Raise	19	Press, Release, Double-tap, Hold, Hold Release
CCI 1	25	Press, Release
CCI 2	26	Press, Release
LED 1 ¹	81	Set or Get LED state
LED 2 ¹	82	Set or Get LED state
LED 3 ¹	83	Set or Get LED state
LED 4 ¹	84	Set or Get LED state
LED 5 ¹	85	Set or Get LED state
LED 6 ¹	86	Set or Get LED state
LED 7 ¹	87	Set or Get LED state
LED 8 ¹	88	Set or Get LED state
LED 9 ¹	89	Set or Get LED state
LED 10 ¹	90	Set or Get LED state

NOTE

1. Not supported in QS Standalone.

Continued on next page...



Devices *(continued)*

seeTouch QS Keypad (International) *(continued)*

DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Press or CCI Close	3	None
Set (#) Release or CCI Open	4	None
Set (#) Hold	5	None
Set (#) Double-tap	6	None
Set (#) or Get (?) LED State ¹	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every sec 3 = Rapid-Flash: 10 flashes every sec
Set (#) Hold Release ²	32	None

NOTES

1. "Set" is for unprogrammed buttons and buttons with LED logic 'Defined by Integration.'
2. Not supported in QS Standalone.

Example DEVICE Commands

Examples presume keypad has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	#DEVICE,2,1,3<CR><LF>
Turn On LED 5.	#DEVICE,2,85,9,1<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	?DEVICE,2,81,9<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	~DEVICE,2,81,9,1<CR><LF>

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Lutron integration protocol

Devices *(continued)*

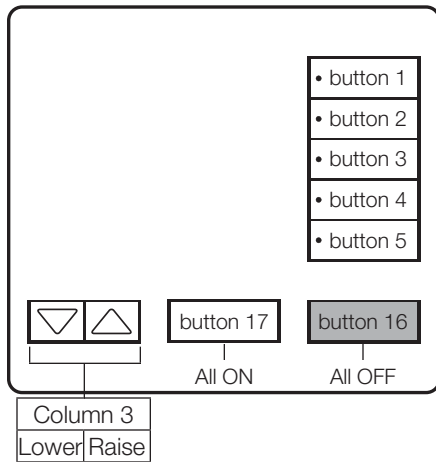
Tabletop seeTouch Keypad

RadioRA 2 Models (RR-): T5RL, T10RL, T15RL

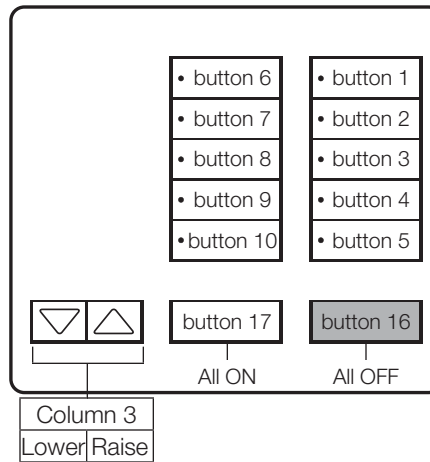
HomeWorks QS Models (HQR-, HQK-, HQT-, HQM-, HQN-):

T5RL, T10RL, T15RL, T5CRL, T10CRL, T15CRL

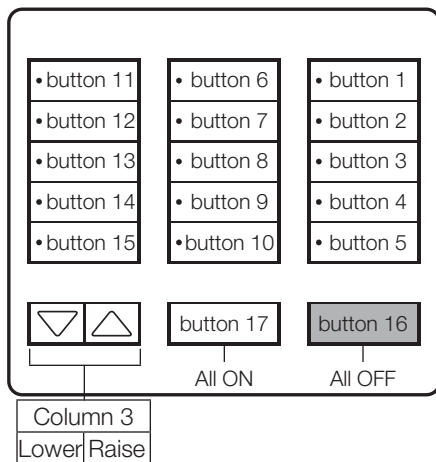
T5-RL



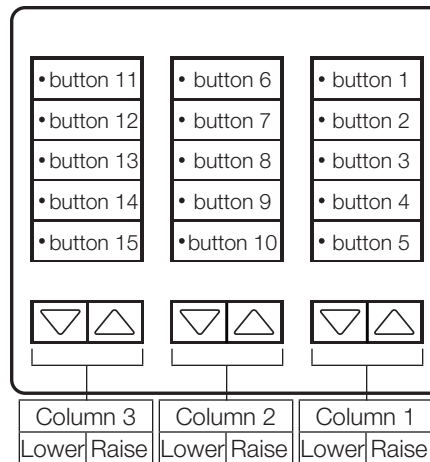
T10-RL



T15-RL



T15-CRL



Why Integrate with a Tabletop seeTouch Keypad?

- Simulate a button press
- Control LEDs of unprogrammed buttons

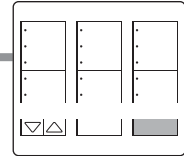
Additional Commands

- None

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Tabletop seeTouch Keypad			✓	✓	✓

Continued on next page...



Devices *(continued)*

Tabletop seeTouch Keypad *(continued)*

DEVICE Commands

DEVICE Command Formats

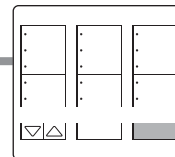
Operation *Integration ID (example)*
#DEVICE, 3, Component Number, Action Number, Parameters
Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release
Button 2	2	Press, Release
Button 3	3	Press, Release
Button 4	4	Press, Release
Button 5	5	Press, Release
Button 6	6	Press, Release
Button 7	7	Press, Release
Button 8	8	Press, Release
Button 9	9	Press, Release
Button 10	10	Press, Release
Button 11	11	Press, Release
Button 12	12	Press, Release
Button 13	13	Press, Release
Button 14	14	Press, Release
Button 15	15	Press, Release
Button 16	16	Press, Release
Button 17	17	Press, Release
Column 1: Lower	20	Press, Release
Column 1: Raise	21	Press, Release
Column 2: Lower	22	Press, Release
Column 2: Raise	23	Press, Release
Column 3: Lower	24	Press, Release
Column 3: Raise	25	Press, Release

Continued on next page...



Devices *(continued)*

Tabletop seeTouch Keypad *(continued)*

DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Component Numbers *(continued)*:

Component	Component Number	Available Actions
LED 1	81	Set or Get LED state
LED 2	82	Set or Get LED state
LED 3	83	Set or Get LED state
LED 4	84	Set or Get LED state
LED 5	85	Set or Get LED state
LED 6	86	Set or Get LED state
LED 7	87	Set or Get LED state
LED 8	88	Set or Get LED state
LED 9	89	Set or Get LED state
LED 10	90	Set or Get LED state
LED 11	91	Set or Get LED state
LED 12	92	Set or Get LED state
LED 13	93	Set or Get LED state
LED 14	94	Set or Get LED state
LED 15	95	Set or Get LED state

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Press	3	None
Set (#) Release	4	None
Set (#) or Get (?) LED State <i>Set is for unprogrammed LEDs only</i>	9	0 = Off 1 = On

Example DEVICE Commands

Examples presume keypad has been assigned Integration ID 3.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	#DEVICE,3,1,3<CR><LF>
Turn On LED 1.	#DEVICE,3,81,9,1<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	?DEVICE,3,81,9<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	~DEVICE,3,81,9,1<CR><LF>

Continued on next page...

Lutron integration protocol

Devices *(continued)*

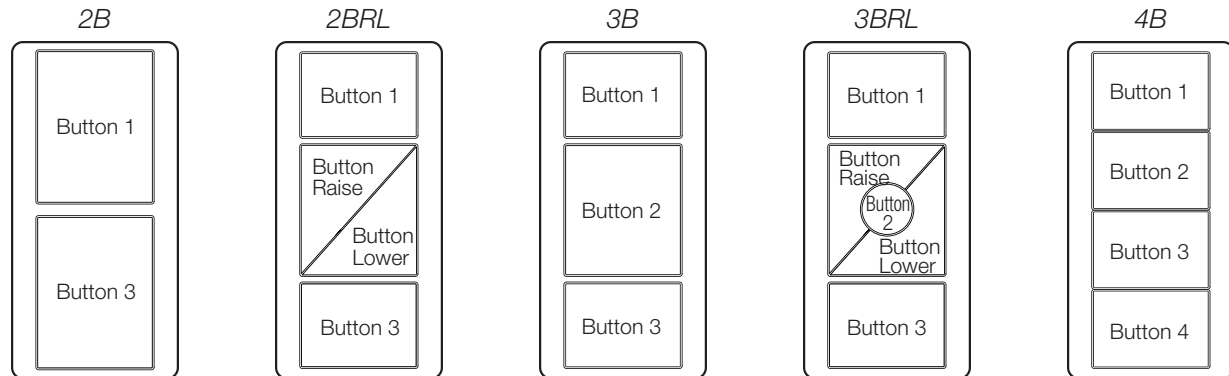
Pico Wireless Control

CURRENT Models: PJ-2B, PJ-2BRL, PJ-3B, PJ-3BRL, PJ2-2B, PJ2-2BRL, PJ2-3B, PJ2-3BRL, PJ2-4B

LEGACY Models:

QS Models (QSR4P-, QSR8P-, QSRKP-, QSRMP-): 2, 2R, 3R

RadioRA 2 Models (RRD- P): 3BRL-L, 3BRL-S



Why Integrate with a Pico Wireless Control?

- Simulate a button press
- Monitor button presses

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
QS Model	1	✓ ²			✓
RadioRA 2 Model			✓		
Pico PJ- Model	1	✓ ^{2,3}	✓	✓	
Pico PJ2- Model	1	✓ ^{2,3}	✓	✓	✓

NOTES

1. In QS Standalone systems, the Pico wireless control is integrated through its associated QSM. Refer to the **QS Sensor Module (QSM)** section.
2. Can be used only when associated to a QSM.
3. PJ2-4B is supported only on QSM software version 7.28 and higher.

Continued on next page...



Devices *(continued)*

Pico Wireless Control *(continued)*

DEVICE Commands

DEVICE Command Formats

^{Operation} ^{Integration ID (example)}
#DEVICE, 2, Component Number, Action Number, Parameters
_{Command} _{Use "DEVICE Command-specific fields" tables to complete these command fields.}

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
For all Legacy models and all Current models except for PJ2-4B		
Button 1	2	Press, Release
Button 2	3	Press, Release
Button 3	4	Press, Release
Button Raise	5	Press, Release
Button Lower	6	Press, Release
For PJ2-4B model only		
Button 1	8	Press, Release
Button 2	9	Press, Release
Button 3	10	Press, Release
Button 4	11	Press, Release

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Press	3	None
Set (#) Release	4	None

Example DEVICE Commands

Examples presume the Pico wireless control has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1 (on a non-4B model).	#DEVICE,2,2,3<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
Button 1 was pressed.	~DEVICE,2,2,3<CR><LF>

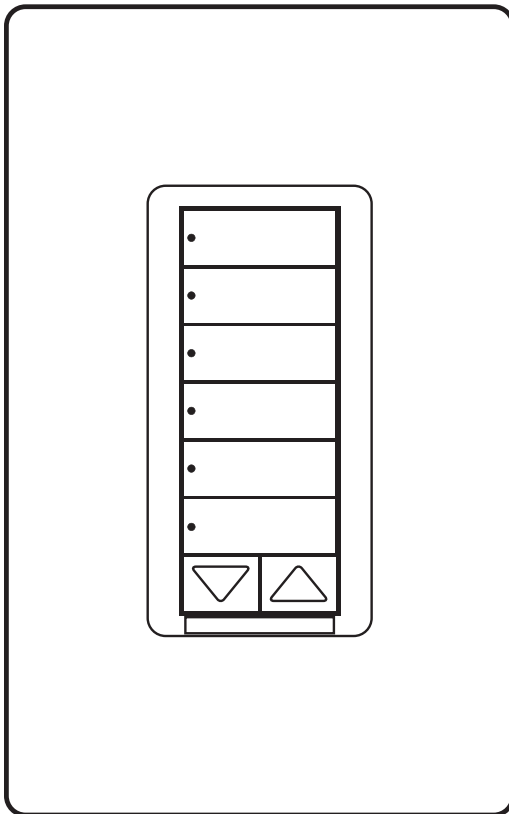
Devices *(continued)*

Hybrid Keypad

RadioRA 2 Models (RRD-H): 1RLD, 2RLD, 3BSRL, 4S, 5BRL, 6BRL

HomeWorks QS Models (HQRD-H): 1RLD, 2RLD, 3BSRL, 4S, 5BRL, 6BRL

H6BRL



Why Integrate with a Hybrid Keypad?

- Turn On to specific light level or Off
- Raise/Lower light level
- Query current light level

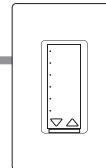
Additional Commands

- None

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Hybrid Keypad			✓	✓	✓

Continued on next page...



Devices *(continued)*

Hybrid Keypad *(continued)*

DEVICE Commands

DEVICE Command Formats

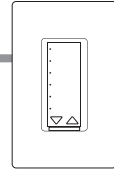
Operation *Integration ID (example)*
 #DEVICE, 2, Component Number, Action Number, Parameters
Command Use "DEVICE Command-specific fields" tables
 to complete these command fields.

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release
Button 2	2	Press, Release
Button 3	3	Press, Release
Button 4	4	Press, Release
Button 5	5	Press, Release
Button 6	6	Press, Release
Button 7	7	Press, Release
Button Top Lower	16	Press, Release
Button Top Raise	17	Press, Release
Button Bottom Lower	18	Press, Release
Button Bottom Raise	19	Press, Release
LED 1	81	Set or Get LED state
LED 2	82	Set or Get LED state
LED 3	83	Set or Get LED state
LED 4	84	Set or Get LED state
LED 5	85	Set or Get LED state
LED 6	86	Set or Get LED state
LED 7	87	Set or Get LED state

Continued on next page...



Devices *(continued)*

Hybrid Keypad *(continued)*

DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Press	3	None
Set (#) Release	4	None
Set (#) or Get (?) LED State	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every second ¹ 3 = Rapid-Flash: 10 flashes every second ¹

NOTE

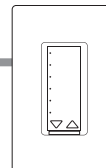
1. "Set" is for LEDs on unprogrammed buttons and buttons with LED logic 'Defined by Integration.'

Example DEVICE Commands

Examples presume the keypad has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	#DEVICE,2,1,3<CR><LF>
Turn On LED 5.	#DEVICE,2,85,9,1<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	?DEVICE,2,81,9<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	~DEVICE,2,81,9,1<CR><LF>

Continued on next page...



Devices *(continued)*

Hybrid Keypad *(continued)*

OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*
#OUTPUT, 1, Action Number, Parameters
Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Zone Level	1	Level=0–100 or 0.00–100.00 Fade ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS Delay ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising	2	None
Set (#) Start Lowering	3	None
Set (#) Stop Raising or Lowering	4	None
Set (#) Start Flashing ^{3,4,5}	5	Fade ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS Delay ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS

NOTES

1. The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay.
2. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
3. The system will not report a level while the output is flashing, it will instead report that it is flashing.
4. Default flash every second, unless fade time is specified (flash period is 2× fade time).
5. To stop a dimmer from flashing, send it to a valid level.

Example OUTPUT Commands

Examples presume dimmer has been assigned Integration ID 1.

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set dimmer to 75% with a 1 min 30 sec fade.	#OUTPUT,1,1,75,01:30<CR><LF>
Start Raising dimmer level.	#OUTPUT,1,2<CR><LF>
Stop Raising/Lowering dimmer level.	#OUTPUT,1,4<CR><LF>
Start Flashing a dimmer.	#OUTPUT,1,5<CR><LF>
Start Flashing a dimmer once every 2 seconds.	#OUTPUT,1,5,1<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	?OUTPUT,1,1<CR><LF>
Response ^{1,2} : ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	~OUTPUT,1,1,90.00<CR><LF>

NOTES

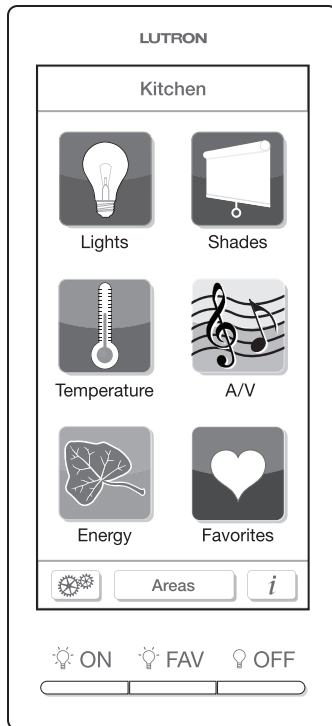
1. The system will report the target level of a dimmer while it is fading from one level to another. The actual level is not transmitted while dimming between levels.
Example: If the "Over Sink" (1) dimmer is at 20% and is then commanded to go to 100% by sending #OUTPUT,1,1,100, the response from the system will be ~OUTPUT,1,1,100.00
2. The system will not report a level while the output is flashing, it will instead report that it is flashing.

Devices *(continued)*

Dynamic Keypad

Model: HQ-J-DK420

HQ-J-DK420



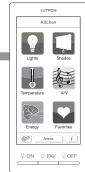
Why Integrate with a Dynamic Keypad?

- Recognize a button press/release in order to control a third party device from the Dynamic Keypad's user interface
- Simulate a button press
- Control LEDs of unprogrammed buttons

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Dynamic Keypad				✓	✓

Continued on next page...



Devices *(continued)*

Dynamic Keypad *(continued)*

DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*
#DEVICE, 2, Component Number, Action Number, Parameters
Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Button 1 (left hard button)	1	Press, Release
Button 2 (middle hard button)	2	Press, Release
Button 3 (right hard button)	3	Press, Release
Button N ¹	N	Press, Release
LED M ¹	M	Set or Get LED state

NOTE

- Component Numbers for the various pages of buttons and LEDs for a Dynamic Keypad are generated by the HomeWorks QS or myRoom Software.

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Press	3	None
Set (#) Release	4	None
Set (#) Hold	5	None
Set (#) Double-tap	6	None
Set (#) or Get (?) LED State	9	0 = Off 1 = On 2 = Normal-Flash 3 = Rapid-Flash

Example DEVICE Commands

Examples presume the Dynamic Keypad has been assigned Integration ID 23.

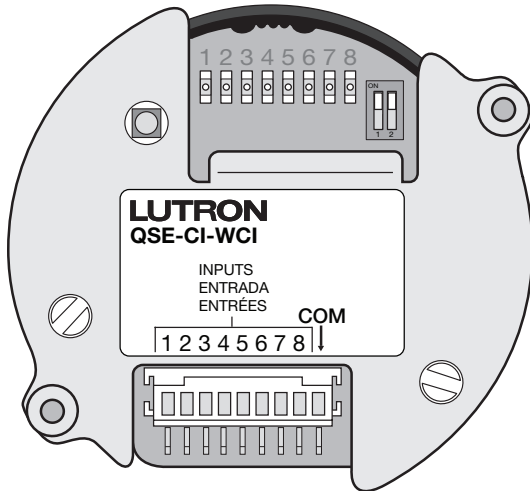
Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 118.	#DEVICE,23,118,3<CR><LF>
Turn On LED 566.	#DEVICE,23,566,9,1<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 566?	?DEVICE,23,566,9<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	~DEVICE,23,566,9,1<CR><LF> Continued on next page...

Lutron integration protocol

Devices *(continued)*

Wallbox Input Closure Interface

Model: QSE-CI-WCI



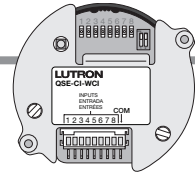
Why Integrate with a Wallbox Input Closure Interface?

- Simulate a button press

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Wallbox Input Closure Interface	✓	✓		✓	✓

Continued on next page...



Devices *(continued)*

Wallbox Input Closure Interface *(continued)*

DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*
#DEVICE, 2, Component Number, Action Number, Parameters
Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

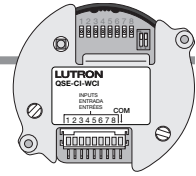
Component Numbers:

Component	Component Number	Available Actions
Button 1	1	Press, Release, Double-tap, Hold, Hold Release
Button 2	2	Press, Release, Double-tap, Hold, Hold Release
Button 3	3	Press, Release, Double-tap, Hold, Hold Release
Button 4	4	Press, Release, Double-tap, Hold, Hold Release
Button 5	5	Press, Release, Double-tap, Hold, Hold Release
Button 6	6	Press, Release, Double-tap, Hold, Hold Release
Button 7	7	Press, Release, Double-tap, Hold, Hold Release
Button 8	8	Press, Release, Double-tap, Hold, Hold Release
LED 1 ¹	81	Set or Get LED state
LED 2 ¹	82	Set or Get LED state
LED 3 ¹	83	Set or Get LED state
LED 4 ¹	84	Set or Get LED state
LED 5 ¹	85	Set or Get LED state
LED 6 ¹	86	Set or Get LED state
LED 7 ¹	87	Set or Get LED state
LED 8 ¹	88	Set or Get LED state

NOTE

1. Available only on units in a Quantum, HomeWorks, or myRoom plus system.

Continued on next page...



Devices *(continued)*

Wallbox Input Closure Interface *(continued)*

DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Press	3	None
Set (#) Release	4	None
Set (#) Hold (only if input mode is Momentary)	5	None
Set (#) Double-tap	6	None
Set (#) or Get (?) LED State ¹	9	0 = Off 1 = On 2 = Normal-Flash: 1 flash every second ² 3 = Rapid-Flash: 10 flashes every second ²
Set (#) Hold Release ²	32	None

NOTES

1. Quantum, HomeWorks, or myRoom plus only. "Set" is for unprogrammed buttons and buttons with LED logic 'Defined by Integration.'
2. Available only on units in a Quantum, HomeWorks, or myRoom plus system.

Example DEVICE Commands

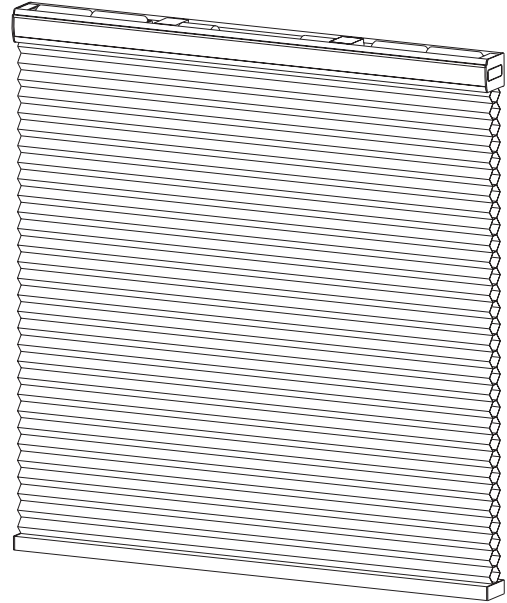
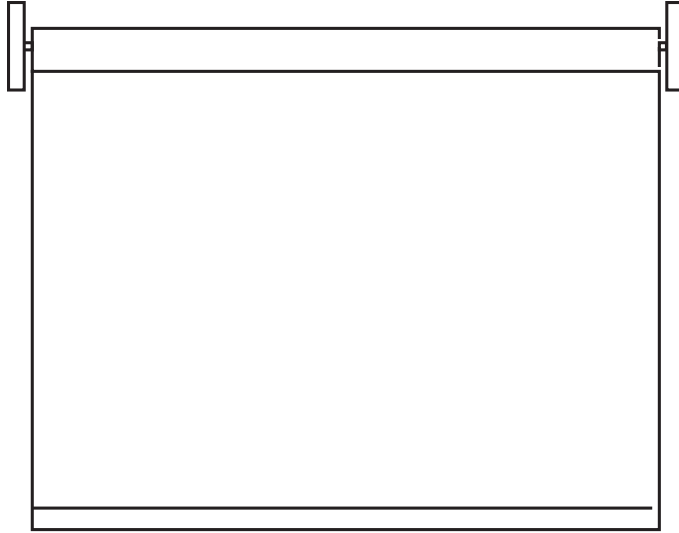
Examples presume keypad has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	#DEVICE,2,1,3<CR><LF>
Turn On LED 5.	#DEVICE,2,85,9,1<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	?DEVICE,2,81,9<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	~DEVICE,2,81,9,1<CR><LF>

Lutron integration protocol

Devices *(continued)*

Sivoia QS Shade/Sivoia QS Wireless Shade



Why Integrate with a Sivoia QS Shade?

- Set shades to a specific level
- Query current level

Integration Capabilities

- One controllable output (use OUTPUT command)

Supported Command Types

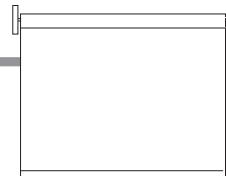
- **OUTPUT** allows control and monitoring of the shade output
- **SHADEGRP** allows control of shade groups in a Quantum or HomeWorks QS system. Shade Groups are collections of shades that operate in unison.

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Sivoia QS Shade	✓	✓		✓	✓
Sivoia QS Wireless Shade			✓	✓	✓

Includes all roller, cellular, and drapery styles

Continued on next page...



Devices *(continued)*

Sivoia QS Shade/Sivoia QS Wireless Shade *(continued)*

OUTPUT Commands

OUTPUT Command Format

$\begin{array}{l} \text{Operation} \\ \# \text{OUTPUT}, 1, \end{array}$
 $\begin{array}{l} \text{Integration ID (example)} \\ \text{Action Number, Parameters} \end{array}$

$\begin{array}{l} \text{Command} \\ \end{array}$
 Use "OUTPUT Command-specific fields" tables to complete these command fields.

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Zone Level	1	Level ¹ = 0–100 or 0.00–100.00 ² Fade ³ in: SS.ss ⁴ , SS, MM:SS, or HH:MM:SS Delay ⁵ in: SS.ss ⁴ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising	2	None
Set (#) Start Lowering	3	None
Set (#) Stop Raising or Lowering	4	None

NOTES

- For shades, a level of 0 (or 0.00) equals closed, and a level of 100 (or 100.00) equals full open.
- 0% = Closed; 100% = Open
- Fade is not available for shades since they move at a constant rate. The parameter must be entered but is ignored.
- Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. Delay parameters have no effect for Shades.
- The Delay time is optional. When not used, the system will use a zero-second delay. The minimum delay time is 0.25 seconds. The maximum delay time is 4 hours. *Not supported in QS Standalone.*

Example OUTPUT Messages

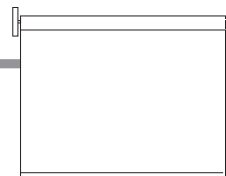
Examples presume shade has been assigned Integration ID 1.

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set shade to 75% with a 1 min 30 sec delay.	#OUTPUT,1,1,75,0,1:30<CR><LF>
Start Raising shade level.	#OUTPUT,1,2<CR><LF>
Stop Raising/Lowering shade level.	#OUTPUT,1,4<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	?OUTPUT,1,1<CR><LF>
Response 1: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	~OUTPUT,1,1,90.00<CR><LF>

NOTE

- The system will report the target level of a shade. The actual level is not transmitted while they are moving.
Example: If the Living Room Blackouts (Integration ID 1) are at 20% and are commanded to go to 100% by sending #OUTPUT,1,1,100, the response from the system will be ~OUTPUT,1,1,100.00

Continued on next page...



Devices *(continued)*

Sivoia QS Shade/Sivoia QS Wireless Shade *(continued)*

OUTPUT Commands *(continued)*

SHADEGRP Command Formats

$\begin{array}{l} \text{Operation} \\ \# \text{SHADEGRP, } 2, \text{ Action Number, Parameters} \\ \text{Command} \end{array}$
 $\begin{array}{l} \text{Integration ID (example)} \\ \text{Use "SHADEGRP Command-specific fields" tables} \\ \text{to complete these command fields.} \end{array}$

SHADEGRP Command-specific fields

Action Numbers and Parameters:

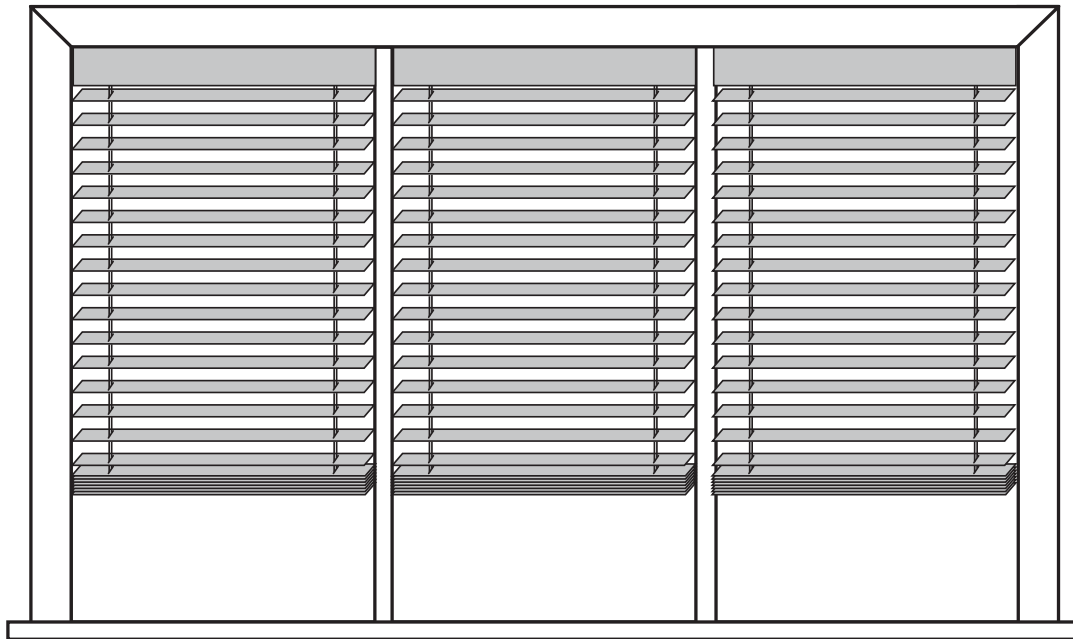
Action	Action Number	Parameters
Set (#) or Get (?) Shade Group Level ¹	1	Level=0–100 or 0.00–100.00
Set (#) Start Raising ²	2	None
Set (#) Start Lowering ²	3	None
Set (#) Stop Raising or Lowering	4	None
Set (#) or Get (?) Current Preset	6	Preset Number ³ =0–30
Set (#) Tilt Level	14	Level ⁴ =0–100 or 0.00–100.00
Set (#) Lift and Tilt Levels	15	Lift ⁴ =0–100 or 0.00–100.00 Tilt ⁴ =0–100 or 0.00–100.00
Set (#) Start Raising Tilt ²	16	None
Set (#) Start Lowering Tilt ²	17	None
Set (#) Stop Raising or Lowering Tilt ²	18	None
Set (#) Start Raising Lift ²	19	None
Set (#) Start Lowering Lift ²	20	None
Set (#) Stop Raising or Lowering Lift ²	21	None

NOTES

1. Get (?) Shade Group Level (action number 1).
2. When a Raise/Lower command is issued, the shade group's level will continue to go towards open/close until a Stop command is received.
3. Preset 0 is the Open Preset and Preset 30 is the Closed Preset.
4. The Level is accepted as a percentage, where 100% is fully open and 0% is fully closed.

Devices *(continued)*

Sivoia QS Venetian Blind / Sivoia QS Wireless Venetian Blind



Why Integrate with a Sivoia QS Venetian Blind?

- Set Venetian blind tilt, lift to specific levels
- Query current tilt, lift levels

Integration Capabilities

- One controllable output (use OUTPUT command)

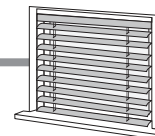
Supported Command Types

- **OUTPUT** allows control and monitoring of the Venetian blind output
- **SHADEGRP** allows control of shade groups in a HomeWorks QS system. Shade Groups are collections of shades that operate in unison

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Sivoia QS Venetian Blind	✓			✓	✓
Sivoia QS Wireless Venetian Blind			✓	✓	✓

Continued on next page...



Devices *(continued)*

Sivoia QS Venetian Blind / Sivoia QS Wireless Venetian Blind

(continued)

OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*
#OUTPUT, 1, Action Number, Parameters
Command Use "OUTPUT Command-specific fields" tables
 to complete these command fields.

OUTPUT Command-specific fields

Action Numbers and Parameters:

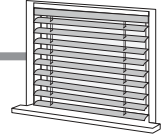
Action	Action Number	Parameters
Set (#) or Get (?) Lift Level	1	Lift Level ¹ =0–100 or 0.00–100.00 Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ⁴ in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) or Get (?) Tilt Level	9	Tilt Level ¹ =0–100 or 0.00–100.00 Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ⁴ in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) or Get (?) Lift and Tilt Levels	10	Lift Level ¹ =0–100 or 0.00–100.00 Tilt Level ¹ =0–100 or 0.00–100.00 Fade ² in: SS.ss ³ , SS, MM:SS, or HH:MM:SS Delay ⁴ in: SS.ss ³ , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising Tilt	11	None
Set (#) Start Lowering Tilt	12	None
Set (#) Stop Raising or Lowering Tilt	13	None
Set (#) Start Raising Lift	14	None
Set (#) Start Lowering Lift	15	None
Set (#) Stop Raising or Lowering Lift	16	None

NOTES

	100%	75%	50%	25%	0%
Lift					
Tilt					

1. Fade is not available for blinds since they move at a constant rate. The parameter must be entered but is ignored.
2. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a delay time is specified as 1.45 seconds, a value of 1.25 seconds will be used.
3. The Delay time is optional. When not used, the system will use a zero-second delay. The minimum delay time is 0.25 seconds. The maximum delay time is 4 hours. *Not supported in QS Standalone.*

Continued on next page...



Devices *(continued)*

Sivoia QS Venetian Blind / Sivoia QS Wireless Venetian Blind

(continued)

OUTPUT Commands *(continued)*

Example OUTPUT Messages

Examples presume shade has been assigned Integration ID 1.

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set Venetian blind to lift 0%, tilt 50%	#OUTPUT,1,10,0,50<CR><LF>
Start raising Venetian tilt.	#OUTPUT,1,11<CR><LF>
Stop raising Venetian tilt.	#OUTPUT,1,13<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the Venetian lift and tilt?	?OUTPUT,1,10<CR><LF>
Response¹: ~OUTPUT, Integration ID, Action Number, Parameters	
Venetian lift level is 0%, tilt level 50%.	~OUTPUT,1,10,0.00,50.00<CR><LF>

NOTE

1. The system will report the target lift level and target tilt level of a Venetian blind. The actual levels are not transmitted while it is moving. Example: If the Kitchen Venetian (Integration ID 1) is set at 25% lift and 75% tilt, and is commanded to go to 100% lift and 50% tilt by sending #OUTPUT,1,10,100,50, the response from the system will be ~OUTPUT,1,10,100.00,50.00

Lutron integration protocol

Devices *(continued)*

Maestro Dimmer and Plug-In Module

RadioRA 2 Models (RRD-): 6D, 6CL, 6NA, 6ND, 8ANS, 8S-DV, 10D, 10ND, F6AN-DV

RadioRA 2 Models (RR-): 3PD, 15APS, 3LD

HomeWorks QS/myRoom plus Models (HQRD-, HQRA): 6D, 6CL, 6ND, 10D, 10ND, 6NA, F6AN-DV, 8ANS, 8S-DV

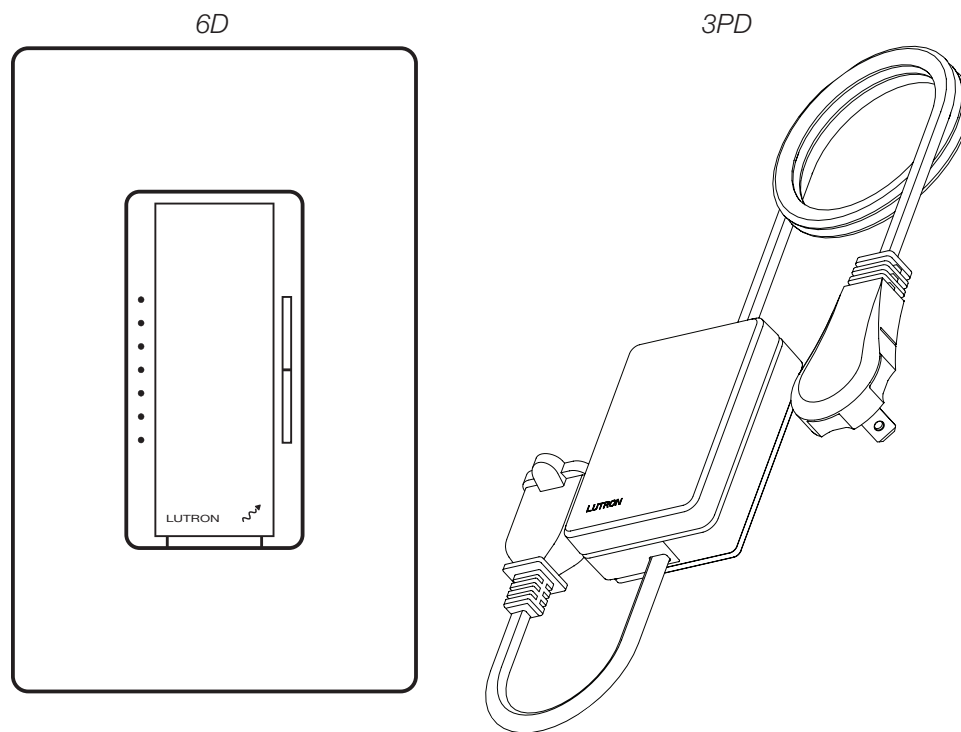
HomeWorks QS/myRoom plus Models (HWD-, HWA-): 6D, 6ND, 10D, 10ND, 5NE¹, 8ANS

HomeWorks QS/myRoom plus Models (HQR-): 3PD-1, 15APS-1, 3LD

Clear Connect Device Models (CCD-W): 6D, 6NA, F6AN-DV, 15APS-1

NOTE

1. 5NE is not available in architectural style



Why Integrate with a Maestro Dimmer or Plug-In Module?

- Turn On to specific light level or Off
- Raise/Lower light level
- Query current light level

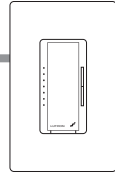
Additional Commands

- None

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
RadioRA 2 Model			✓		
HomeWorks QS / myRoom plus Models				✓	✓
Clear Connect Device Model					

Continued on next page...



Devices *(continued)*

Maestro Dimmer and Plug-In Module *(continued)*

DEVICE Commands

DEVICE Command Format

^{Operation}
^{Integration ID (example)}
#DEVICE^{1, 2,} **Component Number, Action Number, Parameters**

_{Command} _{Use "OUTPUT Command-specific fields" tables to complete these command fields.}

NOTE

- Supported only in HomeWorks QS 4.0 or higher.

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Maestro Tap Switch	6	Press, Release, Double Tap, Hold

Action Numbers and Parameters:

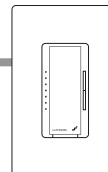
Action	Action Number	Parameters
Set (#) Press	3	None
Set (#) Release	4	None
Set (#) Hold	5	None
Set (#) Double Tap	6	None

Example OUTPUT Commands

Examples presume dimmer has been assigned Integration ID 2.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Button 1.	#DEVICE,2,1,3,<CR><LF>

Continued on next page...



Devices *(continued)*

Maestro Dimmer and Plug-In Module *(continued)*

OUTPUT Commands

OUTPUT Command Format

Operation *Integration ID (example)*
#OUTPUT, 1, Action Number, Parameters
Command Use "OUTPUT Command-specific fields" tables
 to complete these command fields.

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Zone Level	1	Level=0–100 or 0.00–100.00 Fade ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS Delay ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS
Set (#) Start Raising	2	None
Set (#) Start Lowering	3	None
Set (#) Stop Raising or Lowering	4	None
Set (#) Start Flashing ^{3,4,5}	5	Fade ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS Delay ¹ in: SS.ss ² , SS, MM:SS, or HH:MM:SS

NOTES

1. The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay.
2. Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.31 seconds a value of 1.25 seconds will be used.
3. The system will not report a level while the output is flashing, it will instead report that it is flashing.
4. Default flash every second, unless fade time is specified (flash period is 2× fade time).
5. To stop a dimmer from flashing, send it to a valid level.

Example OUTPUT Commands

Examples presume dimmer has been assigned Integration ID 1.

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set dimmer to 75% with a 1 min 30 sec fade.	#OUTPUT,1,1,75,01:30<CR><LF>
Start Raising dimmer level.	#OUTPUT,1,2<CR><LF>
Stop Raising/Lowering dimmer level.	#OUTPUT,1,4<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	?OUTPUT,1,1<CR><LF>
Response¹: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to 90%.	~OUTPUT,1,1,90.00<CR><LF>

NOTE

1. The system will report the target level of a dimmer while it is fading from one level to another. The actual level is not transmitted while dimming between levels.
Example: If the "Over Sink" (1) dimmer is at 20% and is then commanded to go to 100% by sending #OUTPUT,1,1,100, the response from the system will be ~OUTPUT,1,1,100.00

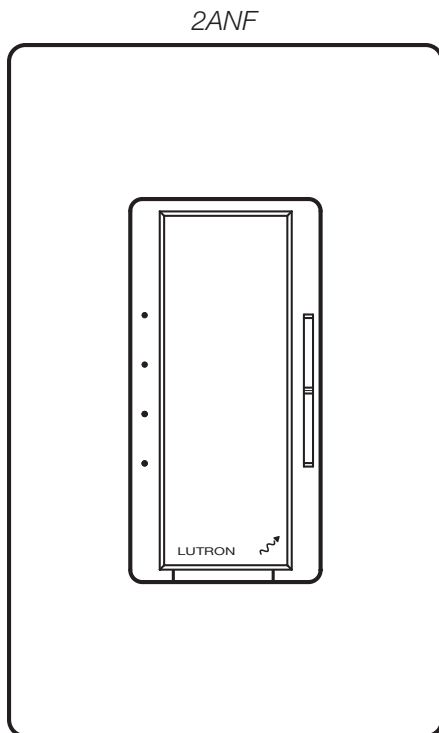
Lutron integration protocol

Devices *(continued)*

Maestro Fan Speed Control

RadioRA 2 Models (RRD-): 2ANF

HomeWorks QS/myRoom Models (HQRD-, HQRA-, HWD-, HWA-): 2ANF



Why Integrate with a Maestro Fan Speed Control?

- Turn On to specific speed (High, Medium-High, Medium, Low, or Off)
- Raise/Lower fan speed
- Query current speed

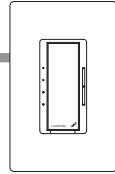
Additional Commands

- None

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
RadioRA 2 Fan Speed Control			✓		
HomeWorks QS/myRoom Fan Speed Control				✓	✓

Continued on next page...



Devices *(continued)*

Maestro Fan Speed Control *(continued)*

OUTPUT Commands

OUTPUT Command Format

^{Operation}
^{Integration ID (example)}
#OUTPUT¹, 1, Action Number, Parameters
_{Command}

Use "OUTPUT Command-specific fields" tables to complete these command fields.

NOTE

- Supported only in HomeWorks QS 4.0 or higher and RadioRA 2 6.0 or higher.

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Zone Level	1	Levels: 0 = Off 1–25% = Low 26–50% = Medium 56–75% = Medium High 76–100% = High

Example OUTPUT Commands

Examples presume dimmer has been assigned Integration ID 1.

Operation	Command String
Execute: #OUTPUT, Integration ID, Action Number, Parameters	
Set fan speed to Medium High.	#OUTPUT,1,1,75<CR><LF>
Query: ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	?OUTPUT,1,1<CR><LF>
Response: ~OUTPUT, Integration ID, Action Number, Parameters	
Output level is set to High.	~OUTPUT,1,1,100.00<CR><LF>

Lutron integration protocol

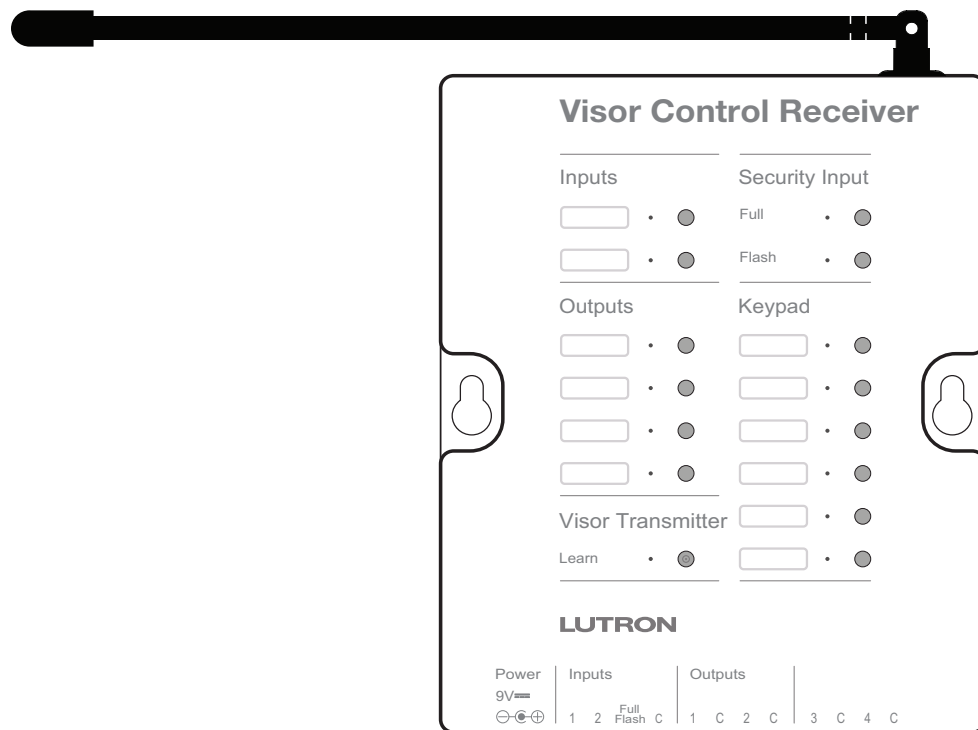
Devices *(continued)*

Visor Control Receiver

RadioRA 2 Model: RR-VCRX

HomeWorks QS/myRoom Model: HQR-VCRX

RR-VCRX



Why Integrate with a Visor Control Receiver?

- Simulate a keypad press or contact closure inputs
- Control LEDs of unprogrammed buttons
- Control contact closure outputs

Additional Commands

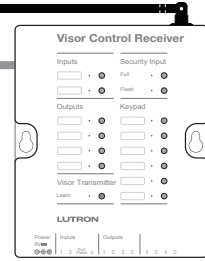
- None

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Visor Control Receiver			✓	✓	✓

Continued on next page...

Lutron integration protocol



Devices (continued)

Visor Control Receiver (continued)

DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*
#DEVICE, 5, Component Number, Action Number, Parameters
Command Use "DEVICE Command-specific fields" tables
 to complete these command fields.

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Scene 1	1	Press, Release
Scene 2	2	Press, Release
Scene 3	3	Press, Release
Scene 4	4	Press, Release
Scene 5	5	Press, Release
Scene 6	6	Press, Release
Full/Security	30	Open Input, Close Input
Security Flash	31	Open Input, Close Input
Input 1	32	Open Input, Close Input
Input 2	33	Open Input, Close Input
LED Scene 1	81	Set or Get LED state
LED Scene 2	82	Set or Get LED state
LED Scene 3	83	Set or Get LED state
LED Scene 4	84	Set or Get LED state
LED Scene 5	85	Set or Get LED state
LED Scene 6	86	Set or Get LED state

Action Numbers and Parameters:

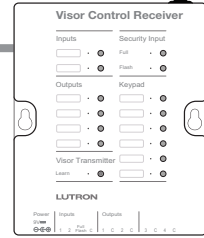
Action	Action Number	Parameters
Set (#) Press or Input Close	3	None
Set (#) Release or Input Open	4	None
Set (#) or Get (?) LED State ¹	9	0 = Off; 1 = On

NOTES

- Valid for Scene LEDs only.

Continued on next page...

Lutron integration protocol



Devices *(continued)*

Visor Control Receiver *(continued)*

DEVICE Commands *(continued)*

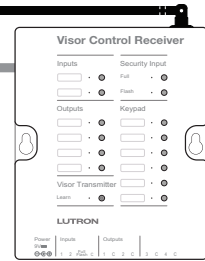
Example DEVICE Commands

Examples presume Visor Control Receiver has been assigned Integration ID 5.

Operation	Command String
Execute: #DEVICE, Integration ID, Component Number, Action Number, Parameters	
Press Scene 1.	#DEVICE,5,1,3<CR><LF>
Turn On Scene 1 LED.	#DEVICE,5,9,81,1<CR><LF>
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the state of LED 1?	?DEVICE,5,9,81<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
LED 1 is On.	~DEVICE,5,9,81,1<CR><LF>

Continued on next page...

Lutron integration protocol



Devices *(continued)*

Visor Control Receiver *(continued)*

OUTPUT Commands

OUTPUT Command Format

$\begin{array}{l} \text{Operation} \\ \text{Integration ID (example)} \end{array}$
#OUTPUT,21, Action Number, Parameters
 $\begin{array}{l} \text{Command} \\ \text{Action number is always} \\ \text{1 for visor control outputs} \end{array}$
 $\begin{array}{l} \text{Use "OUTPUT Command-specific fields"} \\ \text{tables} \\ \text{to complete the parameter field.} \end{array}$

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Output State	1	Level ¹ = 0–100 or 0.00–100.00
Set (#) CCO Pulse Time	6	Pulse ² time in: SS.ss ³ , SS, MM:SS, or HH:MM:SS, or Delay ⁴ in: SS.ss ³ , SS, MM:SS, or HH:MM:SS

NOTES

- Any level greater than 0 will close the output. When level is equal to 0 the output will open.
- The default time is one second.
- Fractional seconds "SS.ss" will be rounded down to the nearest quarter second. For example, if a fade time is specified as 1.45 seconds a value of 1.25 seconds will be used.
- The Fade and Delay time are optional. When not used, the system will use a one-second fade time with zero-second delay. The minimum fade and delay time is 0 seconds. The maximum fade and delay time is 4 hours. For shade outputs, the Fade and Delay parameters have no effect (since shades have fixed speeds).

Example OUTPUT Messages

Examples presume CCO has been assigned Integration ID 21.

Operation	Command String
Set: #OUTPUT, Integration ID, Action Number, Parameters	
Set output to open.	#OUTPUT,21,1,0<CR><LF>
Set output to close.	#OUTPUT,21,1,1<CR><LF>
Query ¹ : ?OUTPUT, Integration ID, Action Number	
What is the state of the output?	?OUTPUT,21,1<CR><LF>
Response ² : ~OUTPUT, Integration ID, Action Number	
Output state is closed.	~OUTPUT,21,1,100.00<CR><LF>

NOTES

- Momentary outputs should not be queried.
- The system will report the target level of outputs. Any level greater than 0 means that the output is closed.

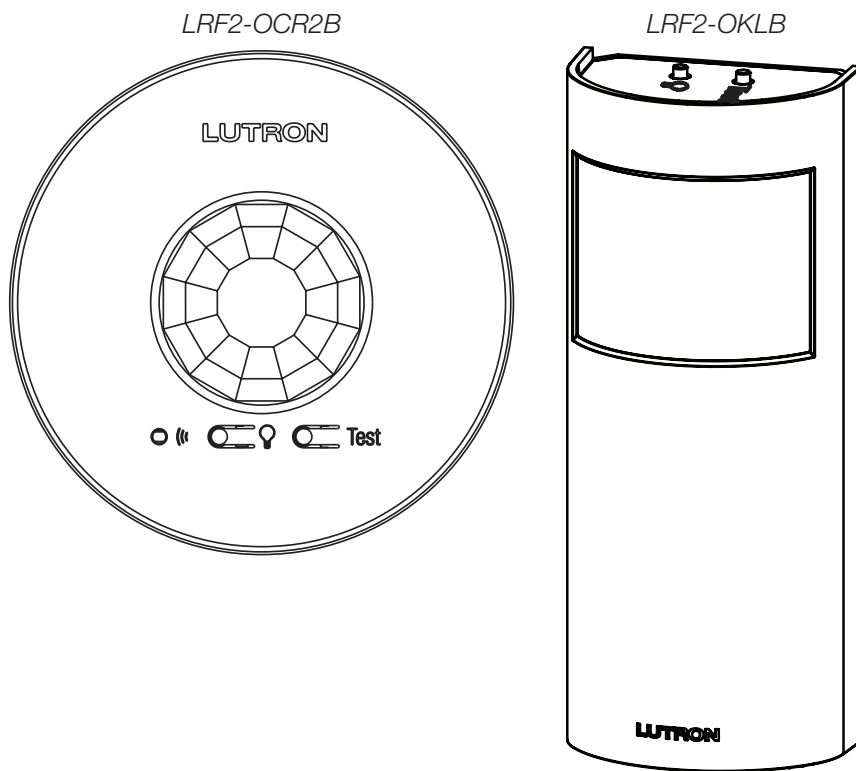
Lutron integration protocol

Devices *(continued)*

Radio Powr Savr Sensor

CURRENT Models (LRF2-, CCD-): OCR2B, VCR2B, OKLB, OHLB, OWLB, VKLB, VHLB, VWLB

LEGACY Models (LRF2-): OCRB, VCRB



Why Integrate with a Radio Powr Savr Sensor?

- Monitor occupied, unoccupied status of a single sensor

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Radio Powr Savr Sensor			✓	✓	✓

Continued on next page...



Devices *(continued)*

Radio Powr Savr Sensor *(continued)*

DEVICE Commands

DEVICE Command Formats

\sim DEVICE, 19, 2, Action Number

Operation *Integration ID (example)*
Command *Occupied state component is always 2 for sensors*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Occupied State	2	Occupied, Unoccupied

Action Numbers:

Action	Action Number
Report (~) Occupied	3
Report (~) Unoccupied	4

Example DEVICE Commands

Examples presume sensor has been assigned Integration ID 19.

Operation	Command String
Response: \sim DEVICE, Integration ID, Component Number, Action Number, Parameters	
Radio Powr Savr 19 went occupied.	\sim DEVICE,19,2,3<CR><LF>
Radio Powr Savr 19 went unoccupied.	\sim DEVICE,19,2,4<CR><LF>

Lutron integration protocol

Devices *(continued)*

Temperature Controls

RadioRA 2 Models: LR-HVAC-1-WH, LR-HWLV-HVAC

HomeWorks QS Models: LR-HVAC-1-WH, LR-HWLV-HVAC, LR-HVAC-230-S, HQWT-T-HW

myRoom Model: LR-HVAC-230-S

LR-HVAC-1-WH



LR-HWLV-HVAC



LR-HVAC-230-S



HQWT-T-HW



Why Integrate with an HVAC Controller?

- Get current temperature
- Set or get heat setpoints and cool setpoints
- Set or get operating mode, fan mode and Eco Mode¹
- Get connection status to the temperature sensor
- Get schedule information and hold schedules

Supported Command Types

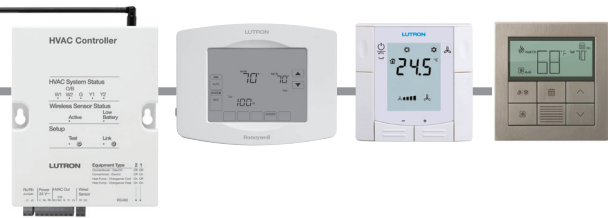
- HVAC allows control and monitoring of the HVAC controller
- DEVICE allows monitoring of temperature sensors

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
LR-HVAC-1-WH; LR-HWLV-HVAC			✓	✓	
LR-HVAC-230-S				✓	✓
HQWT-T-HW				✓	

¹ HQWT-T-HW does not support Eco Mode

Lutron integration protocol



Devices (continued)

Temperature Controls (continued)

HVAC Commands

HVAC Command Format

Operation | *Integration ID (example)*
#HVAC,21, Action Number, Parameters
Command | Use "HVAC Command-specific fields" tables
 to complete these command fields.

HVAC Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Current Temperature (°F) ^{1,2}	1	Temperature=32–212 °F
Set (#) or Get (?) Heat and Cool Setpoints (°F) ^{1,3,4,5}	2	Setpoint Heat (SPH)=32–212 °F Setpoint Cool (SPC)=32–212 °F
Set (#) or Get (?) Operating Mode ⁶	3	Mode (1=Off/Protect, 2=Heat, 3=Cool, 4=Auto, 5=Em. Heat/Auxiliary Only, 6 ⁷ =Locked out, 7=Fan, 8=Dry)
Set (#) or Get (?) Fan Mode ⁶	4	Mode (1 =Auto, 2=On, 3=Cycler, 4=No Fan, 5=High, 6=Medium, 7 =Low, 8=Top)
Set (#) or Get (?) Eco (Setback) Mode ⁸	5	Mode (1 =Off, 2=On)
Get (?) Eco Offset ⁸	6	Eco Offset = 1–11 °F
Set (#) or Get (?) Schedule Status ⁹	7	0=Schedule Unavailable, Get (?) only 1 =Following Schedule, Set (#) or Get (?) 2=Permanent Hold, Set (#) or Get (?) 3=Temporary Hold ⁶ , Get (?) only
Get (?) Temperature Sensor Connection Status ⁶	8	1 =All Sensors are Active 2=Missing Sensor 3=Wired Sensor Only 4=No Sensor
Get (?) Schedule Event	9	Schedule # (1–7), Event # (1–4), HH,MM, SPH, SPC
Get (?) Schedule Day Assignment	10	Schedule#(1–7), DD(Bitmap:Sunday(Bit 0)–Saturday(Bit 6) 1–active day, 0–inactive day)
Get (?) System Mode	11	1 =Normal 2=Away 3=Green
Get (?) Heat and Cool Setpoints (°F) without Eco Offset if applied ^{1,8}	12	Setpoint Heat (SPH)=32–212 °F Setpoint Cool (SPC)=32–212 °F
Get (?) Emergency Heat Available	13	1 =Not Available 2=Available

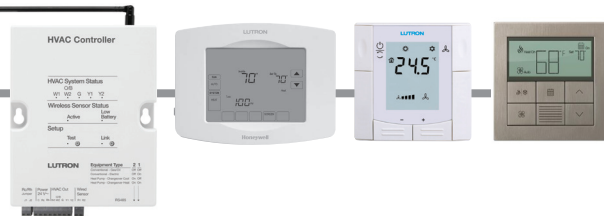
NOTES

- Allow for reported temperature values to be zero padded, with up to 3 digits before the decimal point, and 2 digits after.
 - Possible reported values of 5 °C: "005", "05", "5", "005.", "005.", "5.", "005.0", "05.0", "5.0", "005.00", "05.00", "5.00"
 - Possible reported values of 5.5 °C: "005.5", "05.5", "5.5", "005.50", "05.50", "5.50"
 - Possible reported values of 21 °C: "021", "21", "021.0", "21.0", "021.00", "21.00"
 - Possible reported values of 21.5 °C: "021.5", "21.5", "021.50", "21.50"
- Setting of current temperature is only possible if the HVAC zone is connected to a 3rd party HVAC controller.
- Changing the setpoint will turn Eco Mode off if it is currently on.
- To leave a parameter unchanged, use "255" as the value for that parameter when sending the command.
- For the HQT-T-HW, this range depends on the programming in the database. The setpoint range is 40–113 °F (5–45 °C).
- HQWT-T-HW does not support this integration feature.
 - Following Schedule → Running programmed schedule; set points from schedule.
 - Permanent Hold → Schedule is not running; set points as adjusted.
 - Temporary Hold → Running schedule; set points as adjusted. Returns to following schedule at next schedule event.
- RCS HVAC controller locked out due to missing wired sensor. This parameter can only be read.
- Schedule Unavailable → Schedule not programmed or device needs date/time.
- HQWT-T-HW does not support Eco Mode.

Note: If the thermostat is setup to use Fahrenheit, it is recommended to use Fahrenheit Integration command set. If it is setup to use Celsius, it is recommended to use the Celsius Integration command set.

Continued on next page...

Lutron integration protocol



Devices *(continued)*

Temperature Controls *(continued)*

HVAC Commands *(continued)*

HVAC Command-specific fields *(continued)*

Action Numbers and Parameters *(continued)*:

Action	Action Number	Parameters
Set (#) or Get (?) Call Status	14	0=None, Last was Heat 1=Heat Stage 1 2=Heat Stage 1 and 2 3=Heat Stage 1, 2, and 3 4=Heat Stage 3 5=None, Last was Cool 6=Cool Stage 1 7=Cool Stage 1 and 2 8=Off 9=Emergency Heat/Auxiliary Only 10=Dry
Set (#) or Get (?) Current Temperature (°C) ^{1,2,3}	15	Temperature=0–100 °C
Set (#) or Get (?) Heat and Cool Setpoints (°C) ^{2, 4, 5, 6}	16	Setpoint Heat (SPH)=0–100 °C Setpoint Cool (SPC)=0–100 °C
Get (?) Heat and Cool Setpoints (°C) without Eco Offset if applied ^{2, 4, 7}	17	Setpoint Heat (SPH)=0–100 °C Setpoint Cool (SPC)=0–100 °C

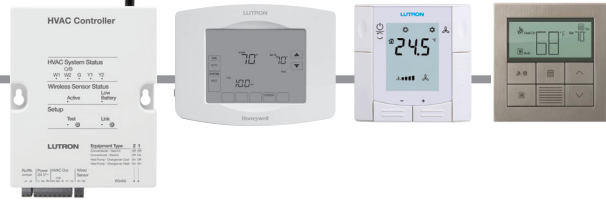
NOTES

- HomeWorks QS software version 4.1 and higher.
- Allow for reported temperature values to be zero padded, with up to 3 digits before the decimal point, and 2 digits after.
 - Possible reported values of 5 °C: “005”, “05”, “5”, “005.”, “005.”, “5.”, “005.0”, “05.0”, “5.0”, “005.00”, “05.00”, “5.00”
 - Possible reported values of 5.5 °C: “005.5”, “05.5”, “5.5”, “005.50”, “05.50”, “5.50”
 - Possible reported values of 21 °C: “021”, “21”, “021.0”, “21.0”, “021.00”, “21.00”
 - Possible reported values of 21.5 °C: “021.5”, “21.5”, “021.50”, “21.50”
- Setting of current temperature is only possible if the HVAC zone is connected to a 3rd party HVAC controller.
- Changing the setpoint will turn Eco Mode off if it is currently on.
- To leave a parameter unchanged, use “255” as the value for that parameter when sending the command.
- For the HQWT-T-HW, this range depends on the programming in the database. The heat/cool setpoints increase or decrease in increments of 0.5 °C.
- HQWT-T-HW does not support Eco Mode.

Note: If the thermostat is setup to use Fahrenheit, it is recommended to use Fahrenheit Integration command set. If it is setup to use Celsius, it is recommended to use the Celsius Integration command set.

Continued on next page...

Lutron integration protocol



Devices (continued)

Temperature Controls (continued)

HVAC Commands (continued)

Example HVAC Commands

Operation	Command String
Execute: #HVAC, Integration ID, Action Number, Parameters	
Set heat setpoint to 68 °F and cool setpoint to 72 °F.	#HVAC,1,2,68,72<CR><LF>
Set system mode to cool.	#HVAC,1,3,3<CR><LF>
Turn Eco mode on.	#HVAC,1,5,2<CR><LF>
Set heat setpoint to 18.5 C and cool setpoint to 21.5 C	#HVAC,21,16,18.5,21.5<CR><LF>
Query: ?HVAC, Integration ID, Action Number	
What is the current temperature?	?HVAC,1,1<CR><LF>
What are the settings for Schedule 1, Event 2?	?HVAC,1,9,1,2<CR><LF>
What days are running Schedule 1?	?HVAC,1,10,1<CR><LF>
What are the current heat and cool setpoints in Celsius?	?HVAC,21,16<CR><LF>
What are the current heat and cool setpoints in Fahrenheit if the Celsius values are 18.5 °C and 21.5 °C respectively?	?HVAC,21,2<CR><LF>
What are the current heat and cool setpoints in Fahrenheit if the Celsius values are 10 °C and 20 °C respectively?	?HVAC,21,2<CR><LF>
Response: ~HVAC, Integration ID, Action Number, Parameters	
Current Temperature is 70 °F.	~HVAC,1,1,70<CR><LF>
Schedule 1, Event 2 starts at 8:00 am with SPH=65,SPC=78	~HVAC,1,9,1,2,08,00,65,78<CR><LF>
Schedule 1 is being run on Monday and Tuesday.	~HVAC,1,10,1,06<CR><LF>
Current heat and cool setpoints in Celsius are 18.5 °C and 21.5 °C respectively.	~HVAC,21,16,18.5,21.5<CR><LF>
Current heat and cool setpoints in Fahrenheit are 65.3 °F and 70.7 °F respectively.	~HVAC,21,2,65.3,70.7<CR><LF>
Current heat and cool setpoints in Fahrenheit are 50 °F and 68 °F respectively.	~HVAC,21,2,50,68<CR><LF>

NOTES

- If the thermostat is setup to use Fahrenheit, it is recommended to use Fahrenheit Integration command set. If it is setup to use Celsius, it is recommended to use the Celsius Integration command set.
- Allow for reported temperature values to be zero padded, with up to 3 digits before the decimal point, and 2 digits after.
 - Possible reported values of 5 °C: "005", "05", "5", "005.", "005.", "5.", "005.0", "05.0", "5.0", "005.00", "05.00", "5.00"
 - Possible reported values of 5.5 °C: "005.5", "05.5", "5.5", "005.50", "05.50", "5.50"
 - Possible reported values of 21 °C: "021", "21", "021.0", "21.0", "021.00", "21.00"
 - Possible reported values of 21.5 °C: "021.5", "21.5", "021.50", "21.50"



Devices *(continued)*

Palladiom Thermostat¹

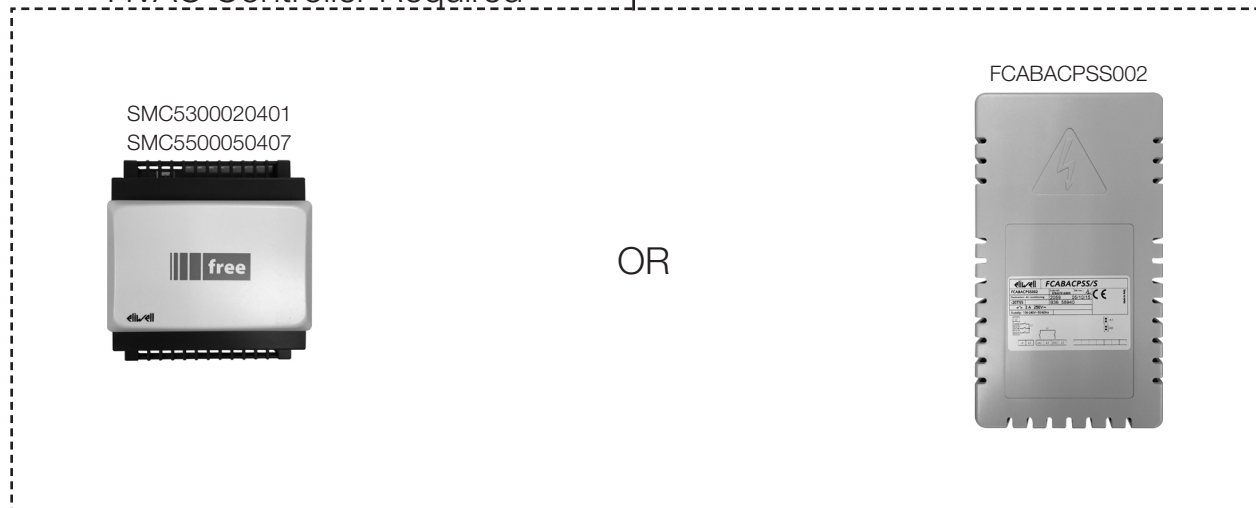
myRoom Model: MWP-T-OHW

MWP-T-OHW



HVAC Controller
Communication Link

HVAC Controller Required



Why Integrate with a Palladiom Thermostat?

- Get current temperature
- Set or get single setpoint
- Set or get operating mode and fan mode
- Set or get positive or negative drifts

Supported Command Types

- HVAC allows control and monitoring of the Palladiom Thermostat and HVAC Controller

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
MWP-T-OHW					✓

¹ Requires myRoom 10.0 or newer

Continued on next page...



Devices *(continued)*

Palladiom Thermostat *(continued)* HVAC Zone Commands

HVAC Command Format

Operation Integration ID (example)

#HVAC,21, Action Number, Parameters

Command Use "HVAC Command-specific fields" tables to complete these command fields.

HVAC Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) or Get (?) Current Temperature (°F) ^{2,3}	1	Temperature=32–104 °F
Set (#) or Get (?) Operating Mode	3	Mode (1=Off, 4=Auto)
Set (#) or Get (?) Fan Mode	4	Mode (1=Auto, 4=No Fan, 5=High, 6=Medium, 7=Low)
Set (#) or Get (?) Call Status	14	0= None, Last was Heat 1= Heat Stage 1 5= None, Last was Cool 6= Cool Stage 1 8= Off
Set (#) or Get (?) Current Temperature (°C) ³	15	Temperature=0–40 °C
Set (#) or Get (?) Single Setpoint (°F) and Drifts ^{1,2}	18	Single Setpoint=50–90 °F Negative Drift=0–15 °F Positive Drift=0–15 °F
Set (#) or Get (?) Single Setpoint (°C) and Drifts ^{1,2}	19	Single Setpoint=10–32 °C Negative Drift=0–8 °C Positive Drift=0–8 °C

Example HVAC Commands

Operation	Command String
Execute: #HVAC, Integration ID, Action Number, Parameters	
Set Single Setpoint to 75 °F, Positive Drift to 2 °F and Negative Drift to 1 °F.	#HVAC,21,18,75,1,2<CR><LF>
Set System Operating Mode to "Auto".	#HVAC,21,3,4<CR><LF>
Set Fan Mode to "Medium".	#HVAC,21,4,6<CR><LF>
Set Single Setpoint to 20 °C and leave the Drifts unaffected	#HVAC,21,19,20,255,255<CR><LF>
Query: ?HVAC, Integration ID, Action Number	
What is the Current Temperature?	?HVAC,21,1<CR><LF>
What is the Current Operating Mode?	?HVAC,21,3<CR><LF>
What is the Current HVAC Call Status?	?HVAC,21,14<CR><LF>
Response: ~HVAC, Integration ID, Action Number, Parameters	
Current Temperature is 70 °F.	~HVAC,21,1,70<CR><LF>
Current Operating Mode is "Off".	~HVAC,21,3,1<CR><LF>

- To leave a parameter unchanged, use "255" as the value for that parameter when sending the command.
- Allow for reported temperature values to be zero padded, with up to 3 digits before the decimal point, and 2 digits after.
 - Possible reported values of 5 °C: "005", "05", "5", "005.", "005.", "5.", "005.0", "05.0", "5.0", "005.00", "05.00", "5.00"
 - Possible reported values of 5.5 °C: "005.5", "05.5", "5.5", "005.50", "05.50", "5.50"
 - Possible reported values of 21 °C: "021", "21", "021.0", "21.0", "021.00", "21.00"
 - Possible reported values of 21.5 °C: "021.5", "21.5", "021.50", "21.50"
- Setting of current temperature is only possible if the HVAC zone is connected to a 3rd party HVAC controller.



Devices *(continued)*

Palladiom Thermostat *(continued)*

DEVICE Commands

DEVICE Command Format

$\begin{array}{l} \text{Operation} \\ \text{Integration ID (example)} \\ \text{Command} \end{array}$
#DEVICE,21,
 $\begin{array}{l} \text{Component Number,} \\ \text{Action Number,} \\ \text{Parameters} \end{array}$

Use "DEVICE Command-specific fields" tables to complete these command fields.

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Internal Sensor	17	Get temperature
Remote Sensor #1	18	Get temperature
Remote Sensor #2 ¹	42	Get temperature

Action Numbers and Parameters:

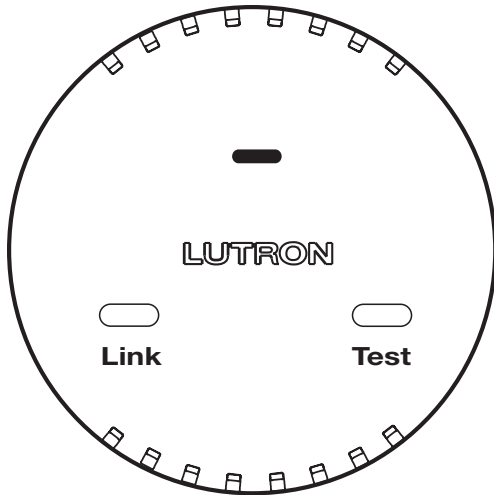
Action	Action Number	Parameters
Get (?) Sensor Temperature (°F) ^{2,3}	41	None
Get (?) Sensor Temperature (°C) ^{2,3}	42	None

- Used only when the Palladiom thermostat controls separate heating and cooling zones.
- This function reports "UNKNOWN" if the value is not known.
- When issuing this command, use the integration ID and component number of the temperature sensor, not the HVAC zone.

Devices *(continued)*

Wireless Temperature Sensor

Model: LRF2-TWRB



Why Integrate with a Wireless Temperature Sensor?

- Get battery status

Note: To get current temperature, see **HVAC Controller** section.

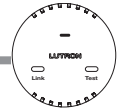
Additional Commands

- None

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
Wireless Temperature Sensor			✓	✓	

Continued on next page...



Devices *(continued)*

Wireless Temperature Sensor *(continued)*

DEVICE Commands

DEVICE Command Formats

^{Operation}
^{Integration ID (example)}
?DEVICE, 1, Component Number, Action Number, Parameters
_{Command}

Use "DEVICE Command-specific fields" tables to complete these command fields.

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Internal Sensor	1	Get battery status

Action Numbers and Parameters:

Action	Action Number	Parameters
Get (?) battery status	22	
Battery status response (~)	22	Serial number, power source, status, latest status update timestamp Power source: 0 = Unknown 1 = Battery powered 2 = Externally powered Status: 0 = Unknown 1 = Good 2 = Low battery 3 = Device missing 4 = Device not activated Status update timestamp: MM/DD/YYYY HH:MM:SS

Example DEVICE Messages

Operation	Command String
Query: ?DEVICE, Integration ID, Component Number, Action Number	
What is the Temperature Sensor's Battery Status?	?DEVICE, 1, 1, 22<CR><LF>
Response: ~DEVICE, Integration ID, Component Number, Action Number, Parameters	
Status Report	~DEVICE, 1, 1, 22, 0x123ABCDE, 1, 1, 03/27/2018 12:55:00 <CR><LF>

Lutron integration protocol

Devices *(continued)*

QSE-IO Control Interface



Why Integrate with a QSE-IO?

- Know the state of the Contact Closure Inputs (CCIs).
- Control the state of the Contact Closure Outputs (CCOs).

Integration Capabilities

5 Contact Closure Inputs (CCIs) and 5 Contact Closure Outputs. The QSE-IO mode of operation is specified by its DIP switch configuration.

- CCI and CCO states can be polled in any DIP configuration.
- CCI events can be monitored through integration in any DIP configuration.
- CCI events (closures or openings of CCIs) can be 'spoofed' (faked) through integration in DIP configurations where momentary CCIs are specified.
- CCO events can be monitored through integration in any DIP configuration.
- The CCO state logic is typically tied to the states of the CCIs or other devices on the QS link and thus, CCO events cannot be generated through integration in most DIP configurations; the exceptions are the output DIP configurations (e.g., Shade Output, Zone Control Output) and the Integration DIP configuration that allows full monitoring of CCIs and control of CCOs through integration.
- Occupancy events can be monitored through integration when the QSE-IO is in an Occupancy DIP configuration.

Supported Command Types

- **DEVICE** allows monitoring of CCI and CCO events and polling of CCI/CCO states and in certain QSE-IO DIP configurations, allows 'spoofing' of CCI events and generation of CCO events.
- **OUTPUT** (in certain output-oriented QSE-IO DIP configurations) allows control and monitoring of the CCOs.

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
QSE-IO	✓	✓		✓	✓

Continued on next page...



Devices *(continued)*

QSE-IO Control Interface *(continued)*

DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*
#DEVICE, 5, Component Number, Action Number, Parameters
Command Use "DEVICE Command-specific fields" tables
 to complete these command fields.

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
CCI 1	1	Report (~) closure/opening ¹ Poll (?) status ² Spoof (#) closure/opening ³
CCI 2	2	Report (~) closure/opening ¹ Poll (?) status ² Spoof (#)closure/opening ³
CCI 3	3	Report (~) closure/opening ¹ Poll (?) status ² Spoof (#)closure/opening ³
CCI 4	4	Report (~) closure/opening ¹ Poll (?) status ² Spoof (#)closure/opening ³
CCI 5	5	Report (~) closure/opening ¹ Poll (?) status ² Spoof (#)closure/opening ³
CCO 1	11	Report (~) closure/opening ⁴ Poll (?) status ² Generate (#) closure/opening ³
CCO 2	12	Report (~) closure/opening ⁴ Poll (?) status ² Generate (#) closure/opening ³
CCO 3	13	Report (~) closure/opening ⁴ Poll (?) status ² Generate (#) closure/opening ³
CCO 4	14	Report (~) closure/opening ⁴ Poll (?) status ² Generate (#) closure/opening ³
CCO 5	15	Report (~) closure/opening ⁴ Poll (?) status ² Generate (#) closure/opening ³
Occupancy Sensor 1	41	Report (~) occupied/unoccupied ^{3,5}
Occupancy Sensor 2	42	Report (~) occupied/unoccupied ^{3,5}
Occupancy Sensor 3	43	Report (~) occupied/unoccupied ^{3,5}
Occupancy Sensor 4	44	Report (~) occupied/unoccupied ^{3,5}
Occupancy Sensor 5	45	Report (~) occupied/unoccupied ^{3,5}

NOTES

1. Monitoring type 2 must be enabled (see QSE-CI-NWK-E #MONITORING section)
2. Not available in Quantum
3. Feature supported in only some QSE-IO DIP configurations
4. Monitoring type 5 must be enabled (see QSE-CI-NWK-E #MONITORING section)
5. Monitoring type 6 must be enabled (see QSE-CI-NWK-E #MONITORING section)

Continued on next page...

Lutron integration protocol



Devices *(continued)*

QSE-IO Control Interface *(continued)*

DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) Closure Report (~) Closure or Occupied ¹	3	None
Set (#) Opening Report (~) Opening or Unoccupied ¹	4	None
Set (#) CCO State ^{1,2}	14	Level (0=Open, 100=Close)
Get (?) CCO State ²		None
Report (~) CCO State		Level (0=Open, 100=Close)
Get (?) CCI State ^{2,3}	35	None

NOTES

1. Feature supported in only some QSE-IO DIP configurations. See QSE-IO installation instructions at www.lutron.com
2. Not available in Quantum
3. Requires NWK firmware 8.47 or newer for QS Standalone systems.

Continued on next page...



Devices *(continued)*

QSE-IO Control Interface *(continued)*

OUTPUT Commands

OUTPUT Command Formats

Operation *Integration ID (example)*
#OUTPUT, 1, Action Number, Parameters
Command *Use "OUTPUT Command-specific fields" tables to complete these command fields.*

OUTPUT Command-specific fields

Action Numbers and Parameters:

Action	Action Number	Parameters
Set (#) CCO state ^{1,2}	1	Level (0 = Open, 100 = Close)
Get (?) CCO state		None
Report (~) CCO state		Level (0 = Open, 100 = Close)

NOTES

1. Feature supported in only some QSE-IO DIP configurations. See QSE-IO installation instructions at www.lutron.com
2. Not available in Quantum

Lutron integration protocol

Devices *(continued)*

QS Sensor Module (QSM)

Models: QSMX-, QSM2-, QSM3-, QSM4-, QSM5-, QSM6-, QSM7-



Why Integrate with a QS Sensor Module?

- View occupancy events that occur.

Integration Capabilities

- Can view occupancy events for up to 14 sensors.
- Can view the Pico wireless control button Press/Release Events.

Compatibility

	QS Standalone	Quantum	RadioRA 2	HomeWorks QS	myRoom plus
QS Sensor Module	✓	✓		✓	✓

Continued on next page...



Devices *(continued)*

QS Sensor Module (QSM) *(continued)*

DEVICE Commands

DEVICE Command Formats

Operation *Integration ID (example)*
#DEVICE, 19, Component Number, Action Number, Parameters
Command *Use "DEVICE Command-specific fields" tables to complete these command fields.*

DEVICE Command-specific fields

Component Numbers:

Component	Component Number	Available Actions
Wired Occupancy sensors	1 – 4	Occupied, Unoccupied
Wireless Occupancy sensors 1 – 10	5 – 14	Occupied, Unoccupied
Pico 1 Buttons ^{1,2}	61 – 65	Press, Release
Pico 2 Buttons ^{1,2}	82 – 86	Press, Release
Pico 3 Buttons ^{1,2}	103 – 107	Press, Release
Pico 4 Buttons ^{1,2}	124 – 128	Press, Release
Pico 5 Buttons ^{1,2}	145 – 149	Press, Release
Pico 6 Buttons ^{1,2}	166 – 170	Press, Release
Pico 7 Buttons ^{1,2}	187 – 191	Press, Release
Pico 8 Buttons ^{1,2}	208 – 212	Press, Release
Pico 9 Buttons ^{1,2}	229 – 233	Press, Release
Pico 10 Buttons ^{1,2}	250 – 254	Press, Release

NOTES

- All models *except* PJ2-4B: Pico wireless control button order (Top, Favorite, Bottom, Raise, Lower) dictates Component Number (see Pico 1 example, below):

Pico 1 Button	Sample Component Number
Top	61
Favorite	62
Bottom	63
Raise	64
Lower	65

- Model PJ2-4B* *only*: Pico wireless control button order is 1, 2, 3, 4 and component mapping will be as below:

Pico 1 Button	Sample Component Number
1	61
2	64
3	65
4	63

* Model PJ2-4B is supported only on QSM software version 7.28 and higher.

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Devices *(continued)*

QS Sensor Module (QSM) *(continued)*

DEVICE Commands *(continued)*

DEVICE Command-specific fields *(continued)*

Action Numbers and Parameters:

Action	Action Number	Parameters
Report (~) Occupied or Button Press	3	None
Report (~) Unoccupied or Button Release	4	None

Example DEVICE Commands

Examples presume QSM has been assigned integration ID QSMID.

Operation	Command String
Response: ~DEVICE, Integration ID, Component Number, Action Number	
Wired Occupancy Sensor 1 transitions to Occupied	~DEVICE,QSMID,1,3<CR><LF>
Wired Occupancy Sensor 1 transitions to Unoccupied	~DEVICE,QSMID,1,4<CR><LF>
Wireless Occupancy Sensor 1 transitions to Occupied	~DEVICE,QSMID,5,3<CR><LF>
Wireless Occupancy Sensor 1 transitions to Unoccupied	~DEVICE,QSMID,5,4<CR><LF>
Pico 1 Favorite button press	~DEVICE,QSMID,62,3<CR><LF>

Customer Assistance

If you have questions concerning the installation or operation of this product, call Lutron Customer Assistance.

Please provide the exact model number when calling.
Model number can be found on the product packaging.
Example: MWP-T-OHW-SN-A

U.S.A., Canada, and the Caribbean:	1.844.LUTRON1 (588.7661)
Europe	+44.(0)20.7680.4481
Asia	+65.6220.4666
Mexico	+1.888.235.2910
Other countries call:	+1.610.282.3800
Fax:	+1.610.282.1243

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