

## Title 24 Demand Response Using OpenADR™ with Lutron Commercial Lighting Control Systems

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Lutron’s commercial lighting control systems, including Quantum, Athena, Ketra for commercial standalone applications, and Vive, can meet the OpenADR™ requirement in California’s 2019 Building Energy Efficiency Standards Title 24, Part 6. The purpose of this document is to describe how these systems meet that requirement.

Demand response, also called “DR” or “load shed”, is a change in the power consumption of an electric utility customer to better match the demand for power with the supply. OpenADR™, which stands for Open Automated Demand Response, is described as “a communications data model designed to facilitate sending and receiving DR signals from a utility or independent system operator to electric customers” according to Berkeley Lab. In the context of lighting control systems, demand response often involves lowering the intensity of lighting when a demand response signal is received.



### Overview

System	Capable of Supporting OpenADR™	Equipment Needed for OpenADR™
Vive	Yes	None <sup>1</sup>
QS Standalone	No	N/A
Quantum	Yes	LUT-Q-OPNADR-CPN8064
Ketra (standalone commercial)	Yes	LUT-Q-OPNADRPRO-CPN8135
Athena	Yes	LUT-Q-OPNADR-CPN8064

<sup>1</sup> OpenADR™ support is built into the Vive hub. No additional equipment is needed.

## Title 24 and OpenADR™

Title 24 requires that buildings larger than 10,000 ft<sup>2</sup> (930 m<sup>2</sup>), excluding spaces with a lighting power density of 0.5 watts per square foot (0.92 sq. m) or less, must be able to automatically reduce lighting power in response to a demand response signal by a minimum of 15 percent below the total installed lighting power. Prior to Title 24 2019, which went into effect on January 1, 2020, a code-compliant system could involve activating demand response manually in several ways, such as contact closure signals, activation via a web interface, or using BACnet™. Title 24 2019 has updated the requirements for demand response for lighting controls in section 110.12 so that OpenADR™ is now required as the method for activating demand response.

## OpenADR™ in the Lutron Vive system

Lutron’s Vive system supports OpenADR™ natively in the Vive hub with software version 1.9.7 or later. For details on how to program the demand response/load shed settings in a Vive system, see the “Load Shed” section of the [Vive Software Programming and User Guide](#).

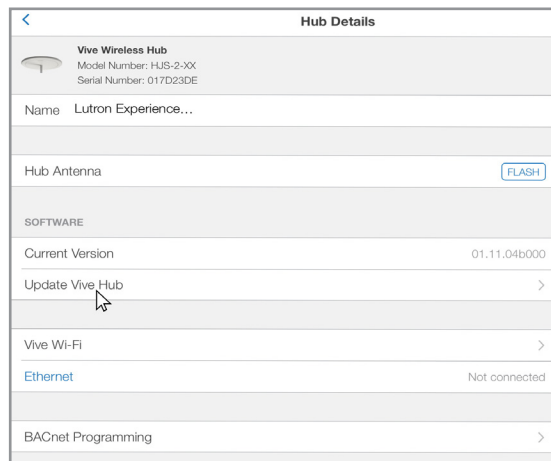
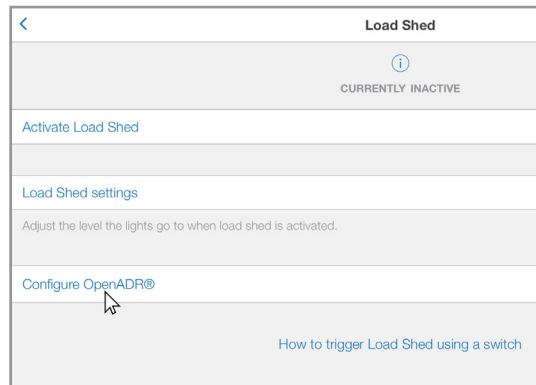
In addition to OpenADR™, there are 3 other methods to activate demand response in the Vive system.

### Additional methods of activating demand response:

1. The Vive app or web browser interface.
2. A contact closure on the Vive hub. The contact closure labeled “CCI1” on the Vive hub is used for initiating load shed only.
3. Via BACnet™. For details see the [Vive BACnet PICS](#) (requires HJS-2-xx or BACnet license).

### What if I have a Vive system with older software that doesn’t currently support OpenADR™?

Vive hub software version 1.9.7 and later natively supports OpenADR™. If you have a hub with an earlier version of software, upgrade the software by following the instructions listed in the “Firmware Update” section of the [Vive Software Programming and User Guide](#).



## OpenADR™ in the Lutron Quantum and Athena systems

The Lutron Quantum and Athena systems support OpenADR™ using the Lutron Automated Demand Response Kit (LUT-Q-OPNADR-CPN8064).

This kit includes 4 parts:

1. Lutron QSE-CI-NWK-E network interface
2. Universal Devices ISY994-Lutron-OADR
3. Universal Devices 3-foot RS-232 cable
4. Universal Devices ISY994 power plug

The Universal Devices ISY994-Lutron-OADR device must be connected to a customer-provided internet-connected network. For more information, refer to the “Lutron Automated Demand Response Kit Install Guide” at [www.lutron.com](http://www.lutron.com).

**QUANTUM**  
Athena

## OpenADR™ in Ketra Commercial Standalone Applications

Ketra systems used in commercial applications support OpenADR™ using the Lutron Automated Demand Response Kit (LUT-Q-OPNADRPRO-CPN8135). This kit is for Ketra commercial standalone applications, and it is different than the one that is used for Quantum and Athena systems. Ketra commercial standalone applications use KetraNet (or KNet) and the Ketra N4, while Quantum and Athena systems do not use KetraNet (or KNet) or the Ketra N4. For info on OpenADR with Ketra lighting used in Athena systems, please see the Quantum/Athena section on the previous page.



This OpenADR kit for Ketra commercial standalone applications includes 3 parts:

1. Universal Devices ISY994r-PRO-ADR kit, which includes the control box and relay box
2. Universal Devices 3-foot RS-232 cable
3. Universal Devices ISY994 power plug

The Universal Devices ISY994r-PRO-ADR control box must be connected to a customer-provided Internet-connected network. For more information, refer to the “Ketra Automated Demand Response Kit Install Guide” at [www.lutron.com](http://www.lutron.com).

### Reference

- [Vive Software Programming and User Guide](#)- This document describes system programming, OpenADR™ setup, configuration of demand response, and the firmware update process.
- [Title 24 of the California Code of Regulations](#)- Section 110.12 discusses demand response.
- Specific utility programs and requirements- for example [PG&E](#).
- [OpenADR™ Alliance](#)- Website of the OpenADR™ Alliance, which includes a “Products” page that lists out all products that are compliant with OpenADR™ including the Lutron Vive and Quantum systems.

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