



Controls

Brian Daley
Director, Product Management
Controls & Canopy

A topographic map of the West Coast of the United States, showing the coastline and inland terrain. The map is rendered in shades of brown and tan, with a textured, embossed appearance. It is positioned on the right side of the slide, partially overlapping the teal background.

**LSI WEST
COAST
SUMMIT
2023**



Welcome to Controls

- Expectations
 - Better understanding & knowledge of the LSI Scalable Lighting Controls Solutions
 - Better understanding knowledge of LSI's AirLink Blue Bluetooth, wireless, lighting control system
 - Increased confidence to **Lead With AirLink Blue** during customer engagements
 - You use LSI lighting and lighting controls on your projects moving forward



Welcome to Controls

- Controls
 - Have no fear
 - They are all around us, we use them everyday
 - You are doing yourself and your company a disservice if lighting controls are not part of your standard pitch

Welcome to Controls



Welcome to Controls



Remote Control for TV

Fig. 1. The Emerson model 1158 remote-control unit shown here is capable of duplicating all of the TV set's front panel adjustments for picture and sound.

By
WALTER H. BUCHSBAUM
Television Consultant
RADIO & TELEVISION NEWS

In many cases these units are furnished with the set, but, they can be installed by any service technician.



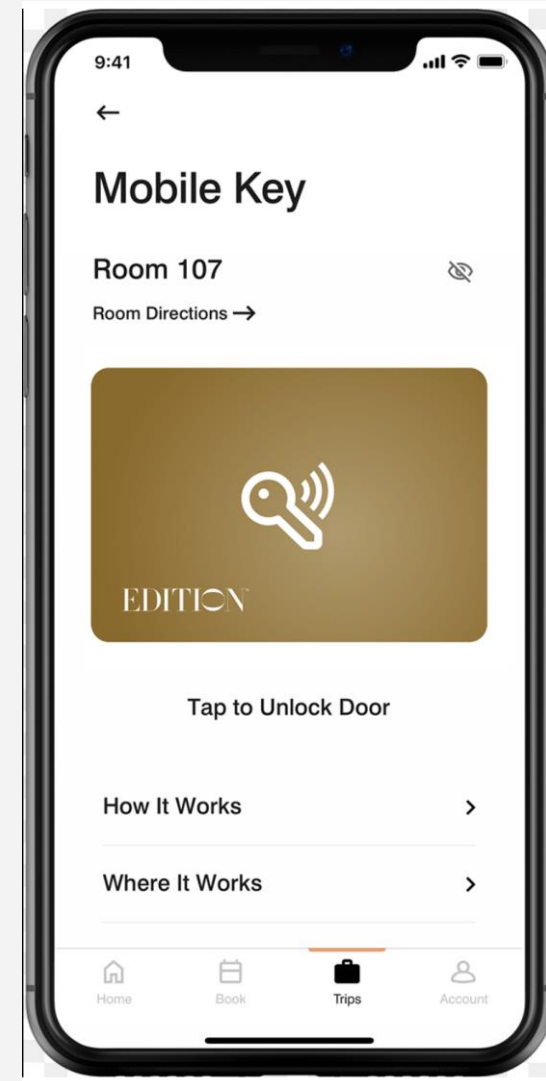
Fig. 2. Front view of a Zenith TV receiver with the "Flash-Matic" remote control, showing the various components.



Left: Apple Remote. Right: Remote control for a 1950s Dumont television console. Photo used by permission of Steve McVoy and the [Early Television Museum](#).



Welcome to Controls



Welcome to Controls

Gas Lamp

Early Light Fixture



Switch

On / Off Electric Light



3-way Dimmer

Advanced Residential Control





Welcome to Controls





Welcome to Controls

- Paradigm Shifts (a standard, perspective, set of ideas – our expectation)
 - Our expectations change
 - New ideas and new technology instigate / accelerate the paradigms
 - New product, process or pitch
 - Don't be caught on the wrong side of the paradigm!



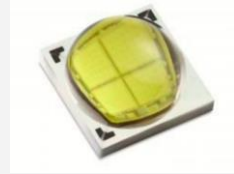
Welcome to Controls

- Paradigm Shifts
 - Digital photography
 - Kodak invented in 1974, shifted to digital in the late 90's
 - Netflix – DVD by mail service
 - Netflix offered to sell to Blockbuster for \$50M in 2000 (BB worth \$5.9B)
 - Netflix valued = \$194B; Blockbuster filed for Bankruptcy in 2010
 - The Telephone
 - Alexander Graham Bell offered up his patent to Western Union for \$100K in 1876
 - Telephone takes over telecommunications for the next 100 years



Nobody wants a touchscreen

LED is a fad



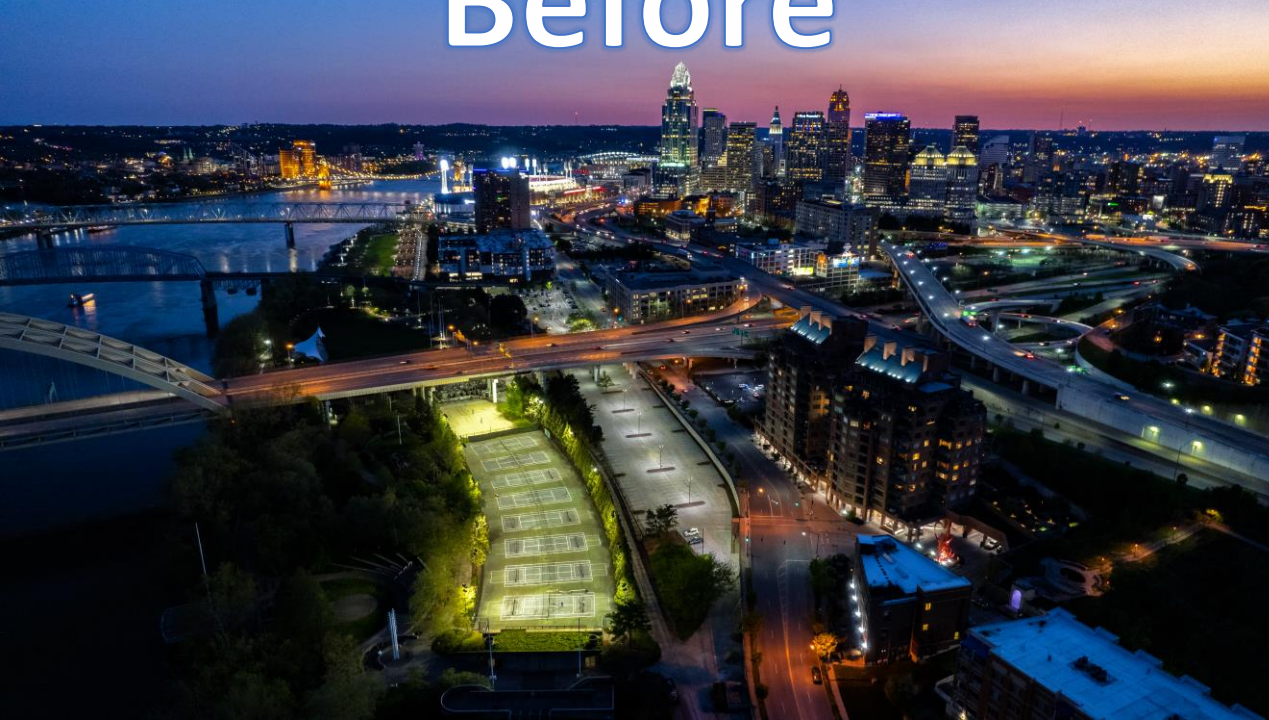
LED



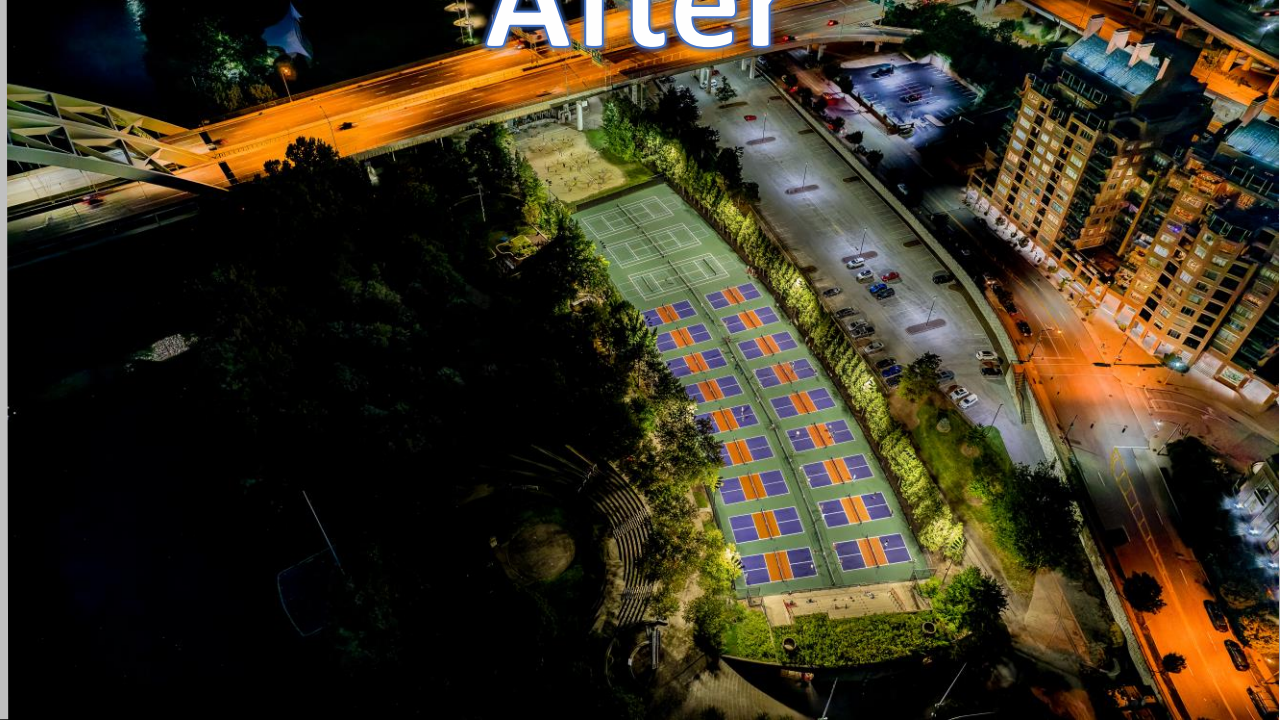
HID



Before



After







Paradigms are Shifting Right Now

- LED lighting will never be preferred
- Motion sensing and daylight harvesting will never be easy enough
- Wireless lighting control will never be dependable
- Bluetooth wireless will never work for lighting control
- Power over the ethernet lighting and control is a gimmick





Paradigms are Shifting

- Controls

- What is the best invention in the history of inventions?

- Mobile Phone
- The Internet
- The lightbulb
- Indoor plumbing
- The wheel
- The car



Paradigms are Shifting

- Controls
 - What is the best invention in the history of inventions?

The THERMOS!

**AUTOMATED TEMPERATURE
REGULATED SEALED CONTAINER**



KEEPS HOT
10 HOURS



KEEPS COLD
24 HOURS





Welcome to Controls

- Controls
 - What is the most efficient light?

The One That is OFF!!!







- Expectations
 - Your new house has AC
 - Your new car has Bluetooth
 - Your favorite restaurant has Door Dash
 - If you're watching a Chiefs game you're going to see this!



LSI Controls

- Expectations
 - Specification
 - Controls Sequence of Operations
 - Controls Narrative
- Controls & Lighting Expectations
 - Grocery store parking lot at night
 - Conference room at work
 - Walking into a hotel room
 - Walking into a dark bathroom
 - Looking for a refueling station



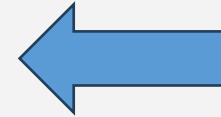
THAT THERE WILL BE LIGHT

LSI Controls

User Expectations



Code Expectations



Lighting Controls + Automation = Expectations Met



LSI Controls

• Lighting Controls – Why?

- Convenience
- Comfort
- Safety
- Savings
- Requirements

• Lighting Controls – What?

- On
- Off
- Dim
- Scene

• Lighting Controls – How?

- Manual
 - Switch / dimmer
 - App / PC
- Automated
 - Timeclock
 - Motion sensor
 - Photo sensor
 - Integrated trigger



LSI Controls

- Lighting Controls
 - Simple
 - Efficient
 - Effective
 - Economic
 - Agnostic



LSI's Scalable Lighting Controls Solutions



LSI Controls

- LSI Lighting Controls
- LSI's Scalable Lighting Controls Solutions

LSI Controls Positioning Guide
Scalable controls solutions

- Simple and cost effective platforms
- Multiple options available to meet project specifications and code requirements
- Feature rich and competitive solutions
- Internal and external system devices
- Automation strategies with motion, daylight and time-clock controls
- Ability to integrate 3rd party sensors and controls

Linear Flat Panel Troffer High Bay Wall Mount Area Garage Canopy

Simple Sensors
IMS, OMS, QCR

- IMS**
 - Integral Motion Sensor
- OMS**
 - Outbound Motion Sensor
- QCR**
 - Quick Control Receptacle

Basic Bluetooth
IMSBTxL

- IMSBTxL**
 - Integral multi sensor, Blue Tooth, x - Height, L - Lite

Advanced Bluetooth
IMSBTxLS

- IMSBTxLS**
 - Integral multi sensor, Blue Tooth, x - Height, L - Lite, S - Scheduling

AirLink Blue
Bluetooth Mesh
ALBCS, QCR

- ALBCS**
 - AirLink Blue Control Sensor
- QCR**
 - Quick Control Receptacle

AirLink Synapse
Wireless Mesh
ALSCS

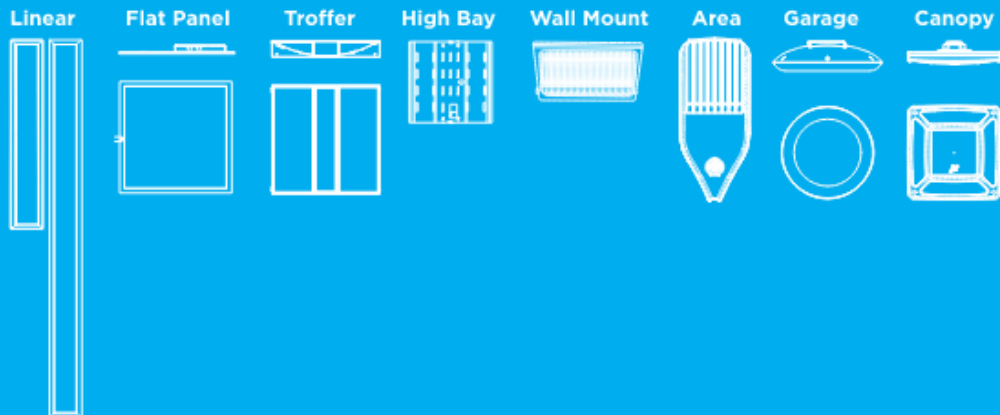
- ALSCS**
 - AirLink Synapse Control Sensor



LSI Controls Positioning Guide

Scalable controls solutions

- Simple and cost effective platforms
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Simple Sensors IMS, OMS, QCR



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Basic Bluetooth IMSBTxL



- IMSBTxL**
- Integral multi sensor, Blue Tooth, x - Height, L - Lite

Advanced Bluetooth IMSBTxLS



- IMSBTxLS**
- Integral multi sensor, Blue Tooth, x - Height, L - Lite, S - Scheduling

AirLink™ Blue Bluetooth Mesh ALBCS, QCR



- ALBCS**
- AirLink Blue Control Sensor
- QCR**
- Quick Control Receptacle

AirLink™ synapse Wireless Mesh ALSCS



- ALSCS**
- AirLink Synapse Control Sensor

		Simple Sensors	Basic Bluetooth	Bluetooth Mesh	Wireless Mesh
Photo Sensing (on / off based on ambient light intensity)		✓			
Daylight Harvesting (on / dim / off based on ambient light intensity)				✓	✓
Motion Sensing		✓	✓	✓	✓
Quick Control (LSI plug and play socket and sensor system)		✓		✓	
Scheduling			✓	✓	✓
Bluetooth Programmable			✓	✓	
Bluetooth Programmable & Controllable				✓	
Bluetooth mesh				✓	
Bluetooth direct			✓	✓	
2.4 Ghz mesh					✓
App based accessibility			✓	✓	
Browser based accessibility				✓	✓
Grouping / zoning- limited			✓		
Grouping / zoning unlimited				✓	✓
Manual override control devices				✓	✓
Remote Access				✓	✓
Calculated Energy Reporting				✓	
Actual Energy Reporting					✓
Building Management System integration - BACnet					✓
External Wireless Control Modules				✓	✓



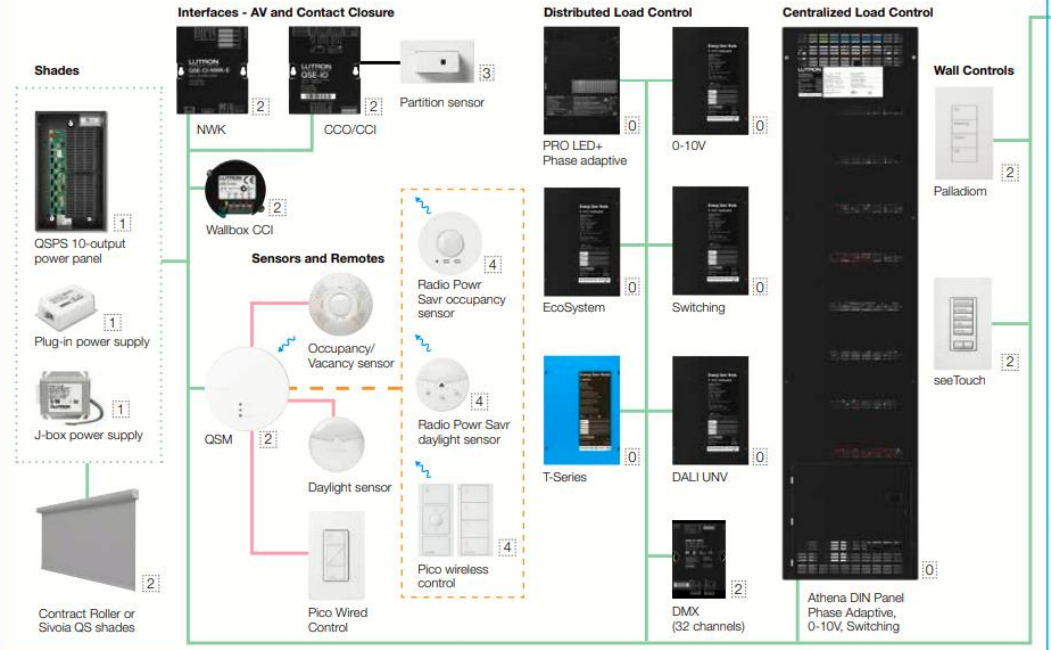
LSI Controls

- Centralized Systems

Athena System Architecture

QS Wired Link

- QP5-2L and QP5-4L: 99 QS devices per link 512 switchlegs per link*
- QP6-1L and QP5-1L: 25 QS devices per link 256 switchlegs per link*
- 2,000 feet maximum wire length (consult technical specs for other applicable rules)
- Free-wire topology (star, daisy chain, home run, etc.)
- Standard Lutron 4 conductor cable*



Software

Athena Dashboard and **Lutron App**

The Athena Dashboard and Lutron App communicate with the Athena processor hub via the cloud.

Clear Connect Wireless - Type X

Ketra Fixtures

- Luminaries:** D3 Downlight
- Lamps:** S30/S38 Lamp, A20 Lamp
- Linears:** N3 Satellite, G2 Linear, L4R/L31 Office Linear

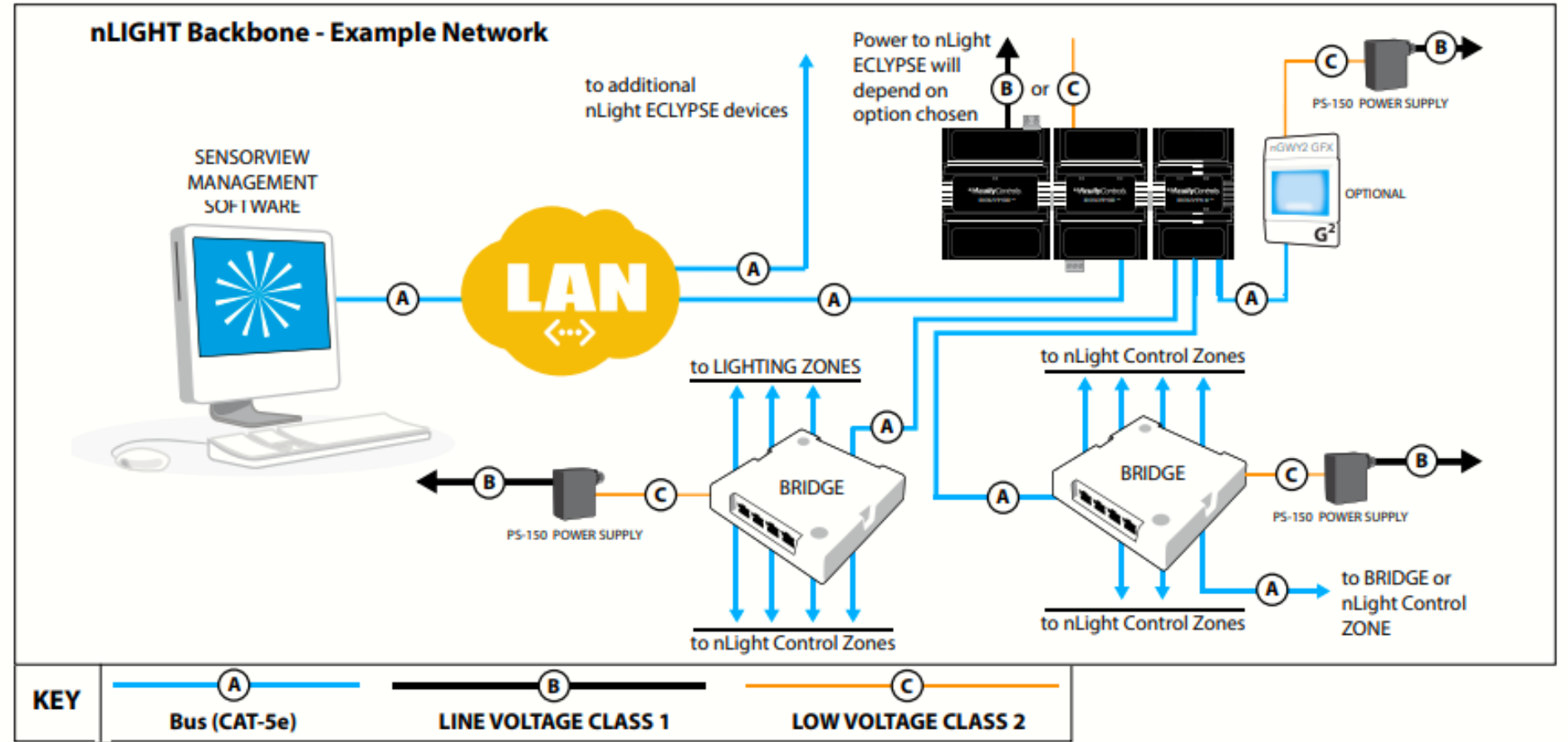
Third-party Fixtures

- Wireless Digital Controller:** Athena Wireless Node

Note: 100 Clear Connect Type X device per gateway

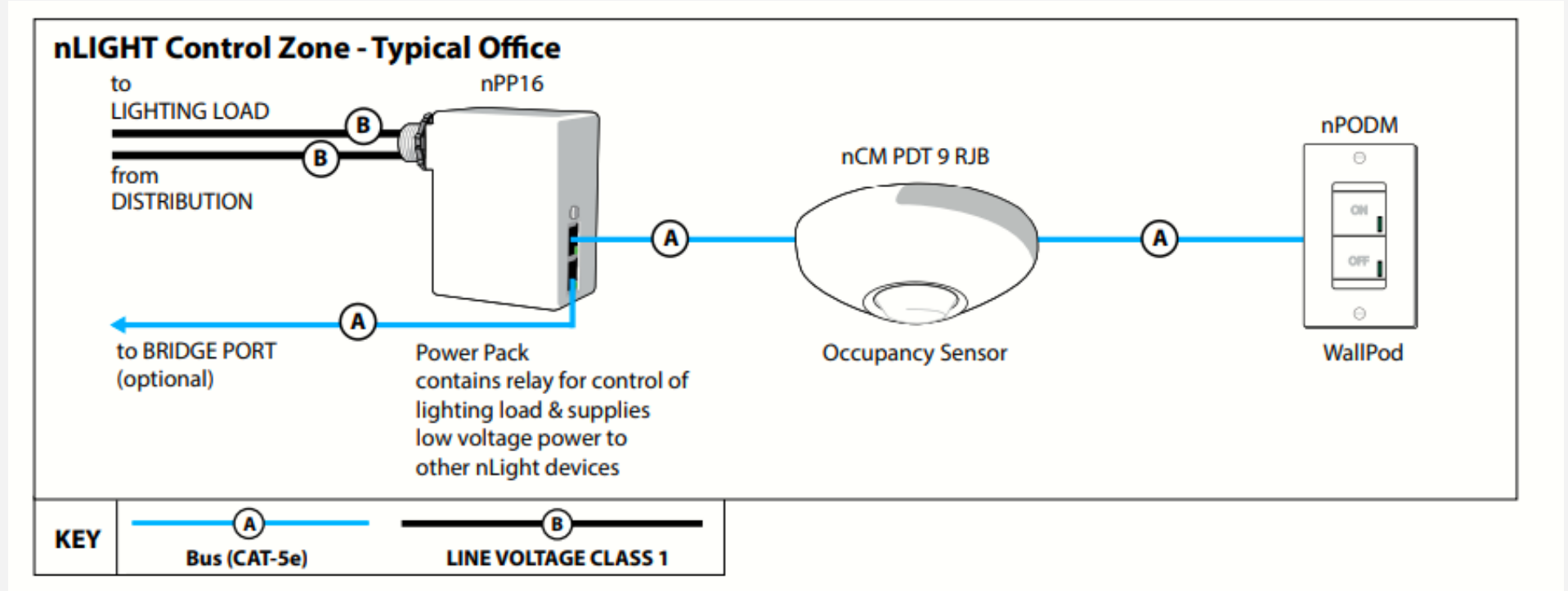
LSI Controls

- Centralized Systems



LSI Controls

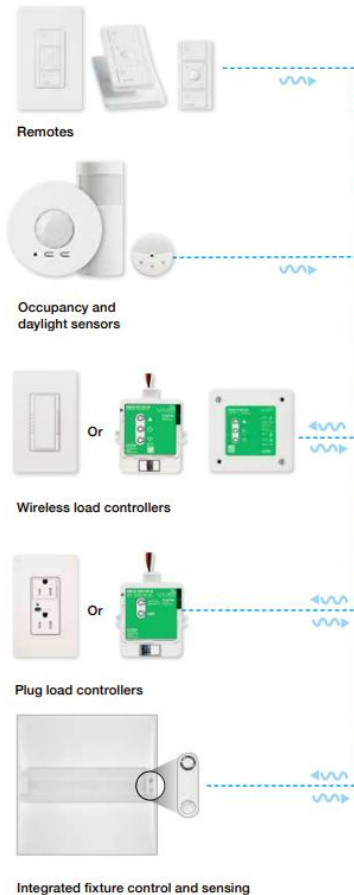
- Distributed Intelligence Systems



LSI Controls

- Distributed Intelligence Systems

Flexible, wireless controls and sensors for simple, code-compliant design



Add wireless hubs for centralized control and integration (optional)



Simple-to-use software



Vive software

Communication protocols





AirLink Blue

Bluetooth Mesh

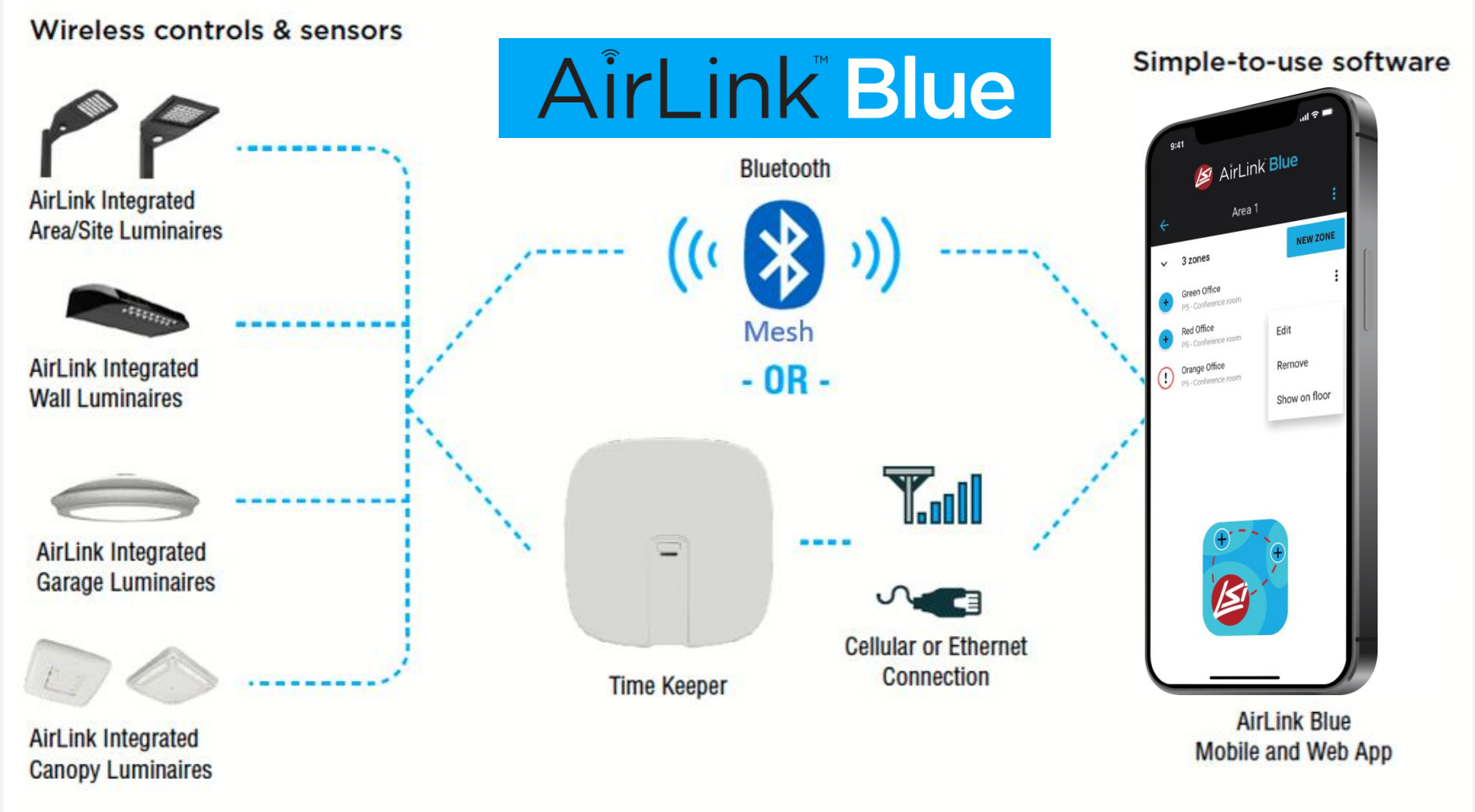
ALBCS, QCR

ALBCS

- AirLink Blue Control Sensor

QCR

- Quick Control Receptacle





AirLink™
synapse
Wireless Mesh
ALSCS

ALSCS
• AirLink Synapse Control Sensor

Wireless controls & sensors



Wireless & Override Switches



Occupancy/Vacancy & Daylight sensors



AirLink-integrated Fixtures



AirLink-compatible Fixtures



Circuit & Zone Controllers

Centralized control & Integration



Site Manager Controller



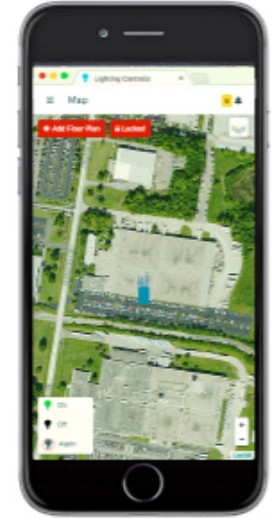
WiFi, Cellular or Ethernet Connection



Gateway Module



Simple-to-use software



AirLink Site Manager:
Lighting control web app

Basic Bluetooth
IMSBT_xL

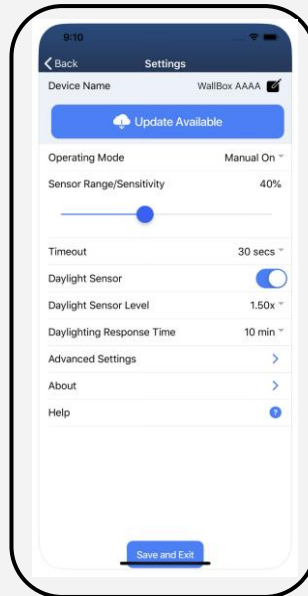
Advanced Bluetooth
IMSBT_xLS

IMSBT_xL

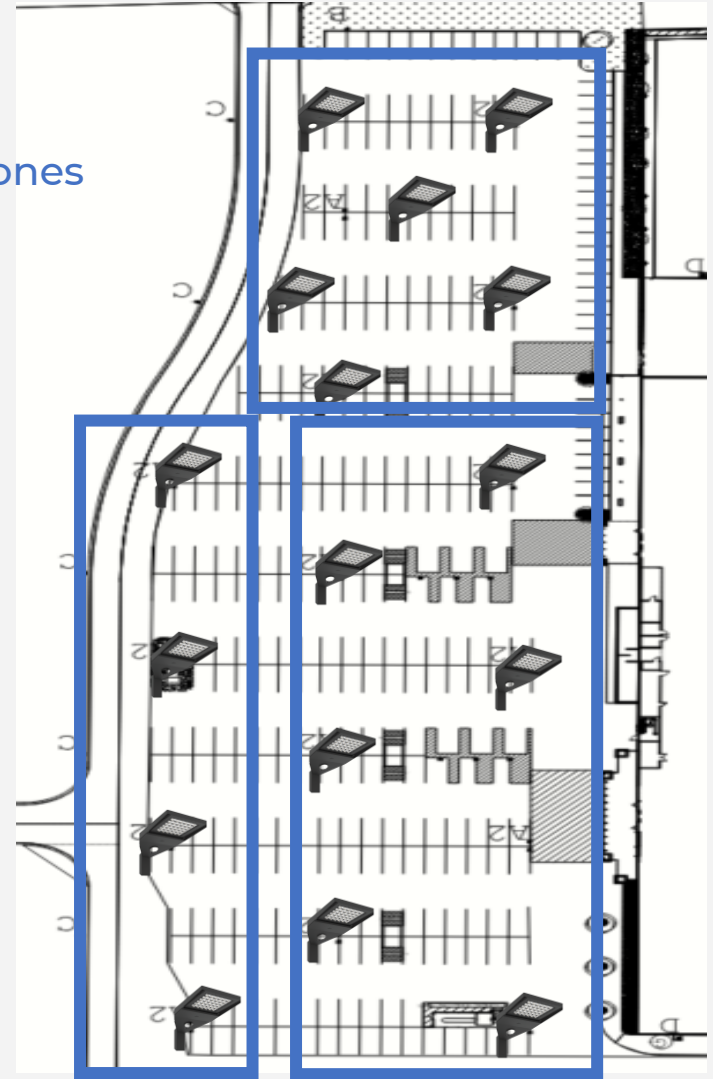
- Integral multi sensor, Blue Tooth, x - Height, L - Lite

IMSBT_xLS

- Integral multi sensor, Blue Tooth, x - Height, L - Lite, S - Scheduling




3 Zones



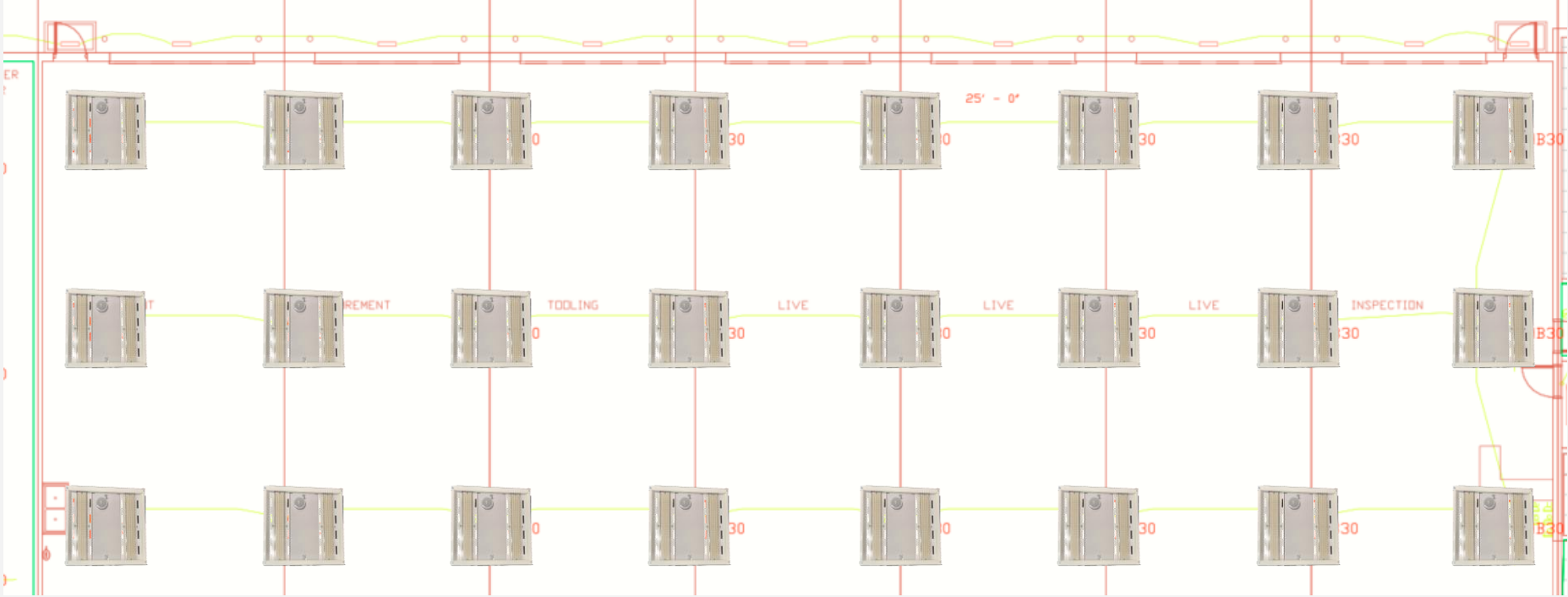


Simple Sensors

IMS, OMS, QCR



- IMS**
 - Integral Motion Sensor
- OMS**
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 - Quick Control Receptacle





Wireless controls & sensors



AirLink Integrated Area/Site Luminaires



AirLink Integrated Wall Luminaires



AirLink Integrated Garage Luminaires



AirLink Integrated Canopy Luminaires

AirLink™ Blue

Bluetooth



Mesh

- OR -

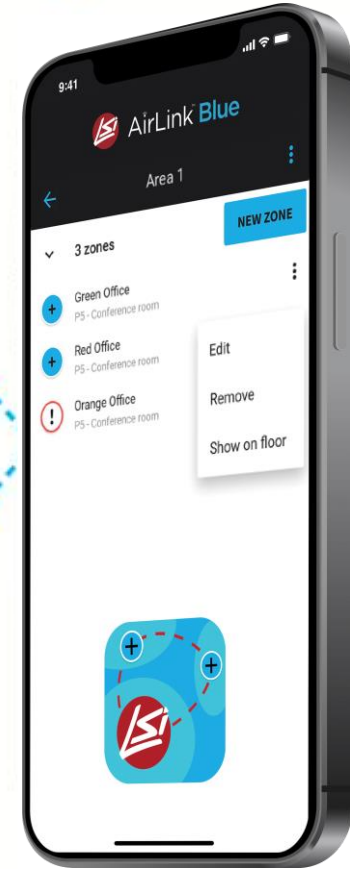


Time Keeper



Cellular or Ethernet Connection

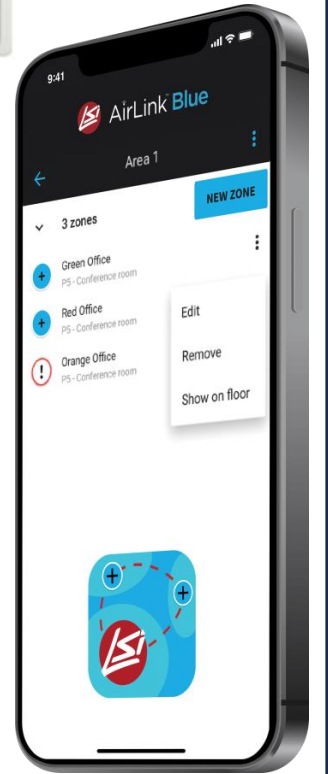
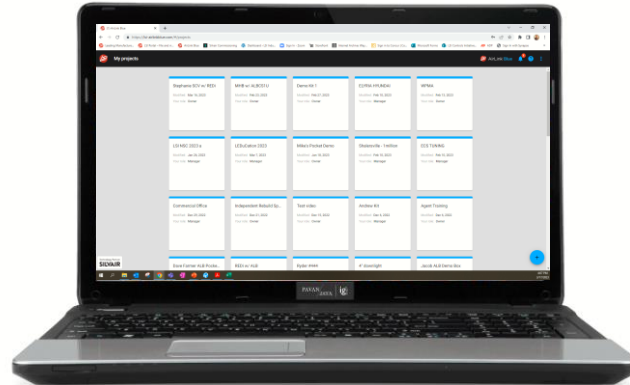
Simple-to-use software



AirLink Blue Mobile and Web App



AirLink™ Blue



- **What is AirLink Blue?**

- AirLink Blue is a qualified Bluetooth Mesh, direct connect wireless lighting control system
- Direct Connect = No gateway or bridge > BT wireless signals transmit directly from device to device
- AirLink Blue components include fixture integrated sensors, fixture integrated control modules, external control modules, wall mounted 120v powered manual and automated devices, kinetic powered manual devices, remotely mounted sensors and an external astro-timekeeper device
- AirLink Blue is programmed and can be controlled via an app from an iPhone
- Web based / cloud-based programming also available online for advanced features programming and commissioning
- AirLink Blue nodes and sensors can be grouped and zoned

Mirada Medium Outdoor LED Area Light

Type :

Have questions? Call us at (800) 436-7800

ORDERING GUIDE

[Back to Quick Links](#)

TYPICAL ORDER EXAMPLE: MRM LED 36L SIL FTA UNV DIM 50 70CRI ALS04 BRZ IL

Prefix	Light Source	Lumen Package	Lens	Distribution	Orientation ²	Voltage	Driver
MRM - Mirada Medium Area Light	LED	9L - 9,000 lms 12L - 12,000 lms 18L - 18,000 lms 24L - 24,000 lms 30L - 30,000 lms 36L - 36,000 lms 42L - 42,000 lms 48L - 48,000 lms 55L - 55,000 lms Custom Lumen Packages ¹	SIL - Silicone	2 - Type 2 3 - Type 3 5W - Type 5 Wide FT - Forward Throw FTA - Forward Throw Automotive AM - Automotive Merchandise	(blank) - standard L - Optics rotated left 90° R - Optics rotated right 90°	UNV - Universal Voltage (120-277V) HV - High Voltage (347-480V)	DIM - 0-10V Dimming (0-10%)
Color Temp		Color Rendering	Finish		Options		
50 - 5,000 CCT 40 - 4,000 CCT 30 - 3,000 CCT AMB - Phosphor Converted Amber ¹²		70CRI - 70 CRI	BLK - Black BRZ - Dark Bronze GMG - Gun Metal Gray GPT - Graphite	MSV - Metallic Silver PLP - Platinum Plus SVG - Satin Verde Green WHT - White	(Blank) - None IH - Integral Half Louver (Moderate Spill Light Cutoff) ² IL - Integral Louver (Sharp Spill Light Cutoff) ²		

Controls (Choose One)

(Blank) - None

Wireless Controls System

ALSC - AirLink Synapse Control System
ALSCS02 - AirLink Synapse Control System with 12-20' Motion Sensor
ALSCS04 - AirLink Synapse Control System with 20-40' Motion Sensor
ALBCS1 - AirLink Blue Wireless Motion & Photo Sensor Controller (8-24' mounting height)⁵
ALBCS2 - AirLink Blue Wireless Motion & Photo Sensor Controller (25-40' mounting height)⁵

Stand-Alone Controls

EXT - 0-10v Dimming leads extended to housing exterior
CR7P - 7 Pin Control Receptacle ANSI C136.41⁶
IMSBTL1 - Integral Bluetooth™ Motion and Photocell Sensor (8-24' MH)⁵
IMSBTL2 - Integral Bluetooth™ Motion and Photocell Sensor (25-40' MH)⁵

Button Type Photocells

PC120 - 120V
PC208-277 - 208-277V
PC347 - 347V

- Ordering Logic



NAME	TITLE	RESPONSIBILITY
Daniel Ortega	Sr. R & D Technician	Lab product testing, system factory programming
Jason Zhang	Controls Engineer & New Product Development	Technical support, programming support, customer support
Marc Therrien	Controls Technologist	Technical support, programming support, customer support
Mark Reed	Engineering Controls Manager	New product engineering, product modification & technical design support
Regan Gougeon	Controls Product Specialist	Sales support, project layouts, bill of materials development
Brian Daley	Director, Product Management - Controls	New product concept & development, product education, market strategy, project design & post sales support

Controls.support@lsicorp.com

1.800.436.7800 option 4

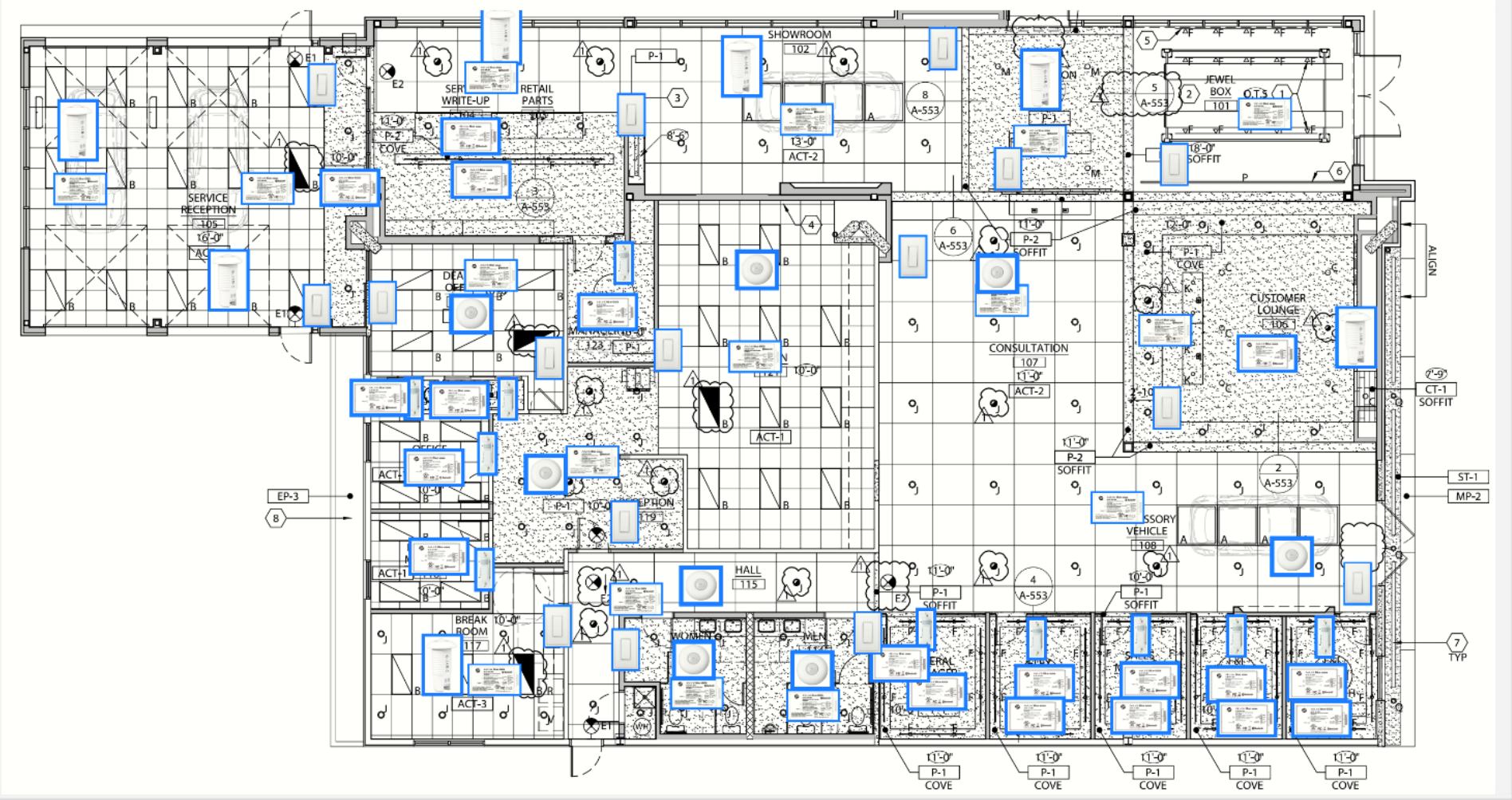
Controls.sales@lsicorp.com

1.800.436.7800 option 4

AirLink™ Blue



- Services



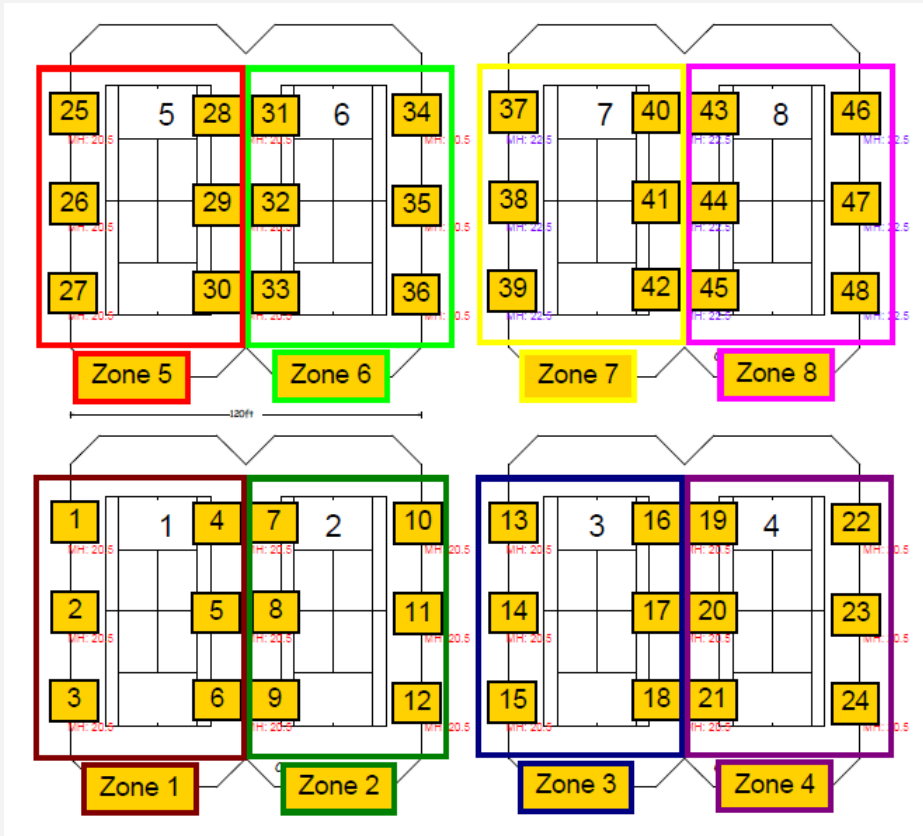
- Services

SO num	Line Num	Job Name	Order Date	Scheduled Pick	FG number	Description 1	Description 2	Quantity
2019112	6	GREEN BROOK CHEVROLET	8/14/2023	9/12/2023	813624	MRL LED 50L SIL FTA HV	DIM 40 70CRI ALBCS2 MSV	7
2019112	9	GREEN BROOK CHEVROLET	8/14/2023	9/12/2023	813626	MRL LED 40L SIL FTA HV	DIM 40 70CRI ALBCS2 MSV	12
2019112	12	GREEN BROOK CHEVROLET	8/14/2023	9/12/2023	813626	MRL LED 40L SIL FTA HV	DIM 40 70CRI ALBCS2 MSV	1
2019112	15	GREEN BROOK CHEVROLET	8/14/2023	9/12/2023	813626	MRL LED 40L SIL FTA HV	DIM 40 70CRI ALBCS2 MSV	12
2019413	6	11900 BISCAYNE BLVD	8/15/2023	9/13/2023	813382	SLM LED 18L SIL 2	UNV DIM 50 70CRI ALBCS2 WHT	6
2019413	7	11900 BISCAYNE BLVD	8/15/2023	9/13/2023	813384	SLM LED 9L SIL 5W UNV	DIM 50 70CRI ALBCS1 WHT	4
2019413	8	11900 BISCAYNE BLVD	8/15/2023	9/13/2023	801685	SLM LED 9L SIL FT UNV	DIM 50 70CRI ALBCS1 WHT	4
2019413	9	11900 BISCAYNE BLVD	8/15/2023	9/13/2023	813378	SLM LED 18L SIL 5W	UNV DIM 50 70CRI ALBCS2 WHT	4
2019456	6	ORGANIC SNACK CO	8/15/2023	10/11/2023	795907	MRS LED 6L SIL FT UNV	DIM 40 70CRI ALBCS1 BRZ	15
2019456	8	ORGANIC SNACK CO	8/15/2023	10/11/2023	813716	XWS LED 3L FTW UNV DIM	40 80CRI ALBCS1 BRZ EH CWBB	4
2019456	9	ORGANIC SNACK CO	8/15/2023	10/11/2023	813368	MRM LED 18L SIL FT	UNV DIM 40 70CRI ALBCS2 BRZ	10
2019110	3	FOUR POINTS	8/14/2023	8/17/2023	760380	ALBCM OS		2
2019110	4	FOUR POINTS	8/14/2023	8/17/2023	797936	ALBC 20A UNV		2
2020522	3		8/18/2023	8/30/2023	754824	ALBWS EO4B WH	ALB WALL SWITCH ENOCEAN DBLWHT	6
2020522	4		8/18/2023	8/23/2023	754823RT	ALBWS EO2B WH	ALB WALL SWITCH ENOCEAN SGLWHT	2
2021645	1	SECKMAN	8/23/2023	9/22/2023	813878	ZNL 78L CT	UNV 40 ALBCS1 BLK	8
2021645	6	SECKMAN	8/23/2023	9/22/2023	754823	ALBWS EO2B WH	ALB WALL SWITCH ENOCEAN SGLWHT	1
2022339	3	PENNINGTON	8/25/2023	9/27/2023	814140	ZNL 65L CT	UNV 40 ALBCS1 BLK	4
2022339	8	PENNINGTON	8/25/2023	9/27/2023	754823	ALBWS EO2B WH	ALB WALL SWITCH ENOCEAN SGLWHT	1
2022507	2	BRANDON TOMES SUBARU	8/28/2023	10/17/2023	801305	MRM LED 48L SIL FT	UNV DIM 50 70CRI ALBCS2 WHT	3
2022507	3	BRANDON TOMES SUBARU	8/28/2023	10/17/2023	801648	MRM LED 24L SIL 5W	UNV DIM 50 70CRI ALBCS2 WHT	42
2022507	14	BRANDON TOMES SUBARU	8/28/2023	10/17/2023	814185	MRM LED 36L SIL FTA	UNV DIM 50 70CRI ALBCS2 WHT IL	11
2022507	15	BRANDON TOMES SUBARU	8/28/2023	10/17/2023	814185	MRM LED 36L SIL FTA	UNV DIM 50 70CRI ALBCS2 WHT IL	10
2022507	16	BRANDON TOMES SUBARU	8/28/2023	10/17/2023	814186	MRM LED 36L SIL 5W	UNV DIM 50 70CRI ALBCS2 WHT	12
2022507	17	BRANDON TOMES SUBARU	8/28/2023	10/17/2023	814187	MRM LED 36L SIL FT	UNV DIM 50 70CRI ALBCS2 WHT IL	6
2022507	18	BRANDON TOMES SUBARU	8/28/2023	10/17/2023	814188	OPS PT 14L 5Q UNV	50K8 BLK ALBCS1	11

AirLink™ Blue



- Services





- Services
 - Project Commissioning
 - Tier 0 – sent to site with no commissioning
 - Tier 1 – one zone, photocell on/off, occupancy sensing
 - Tier 2 – customer provides controls narrative, multiply zones created
 - Tier 3 – on-site commissioning



- Agnostic Partnerships



Full Circle

- Lighting Controls
 - Have no fear – controls are your friend
 - Keep it simple – on, off, dim – why, what, how = AUTOMATION
 - Distributed intelligence – key to simplicity
 - Bluetooth is not just OK – it's GREAT! 
 - LED  CONTROLS



Full Circle

- AirLink Blue Demo Kit

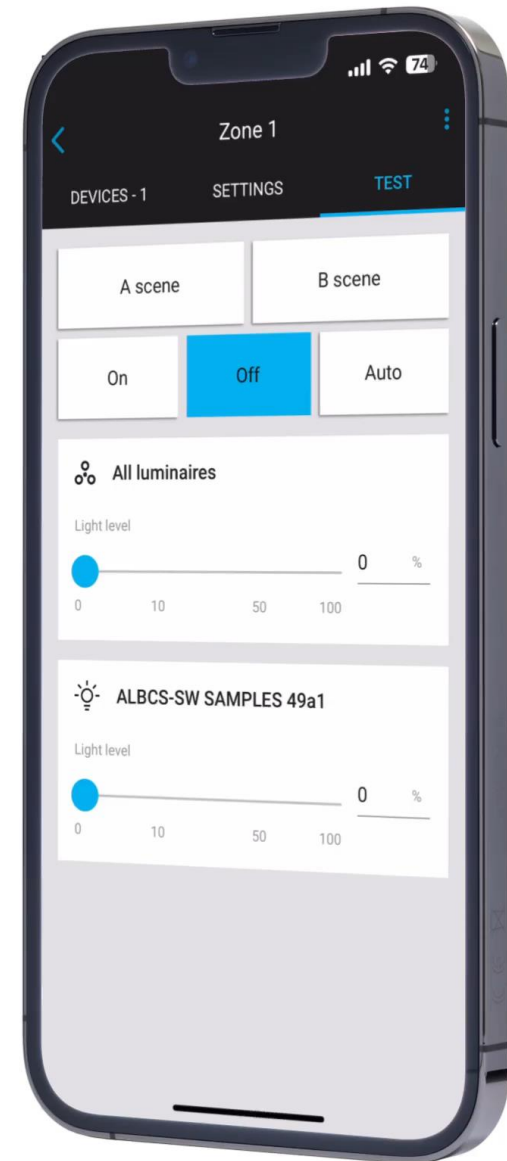


Don't be this guy!



AirLink™ Blue

- Be this guy!!

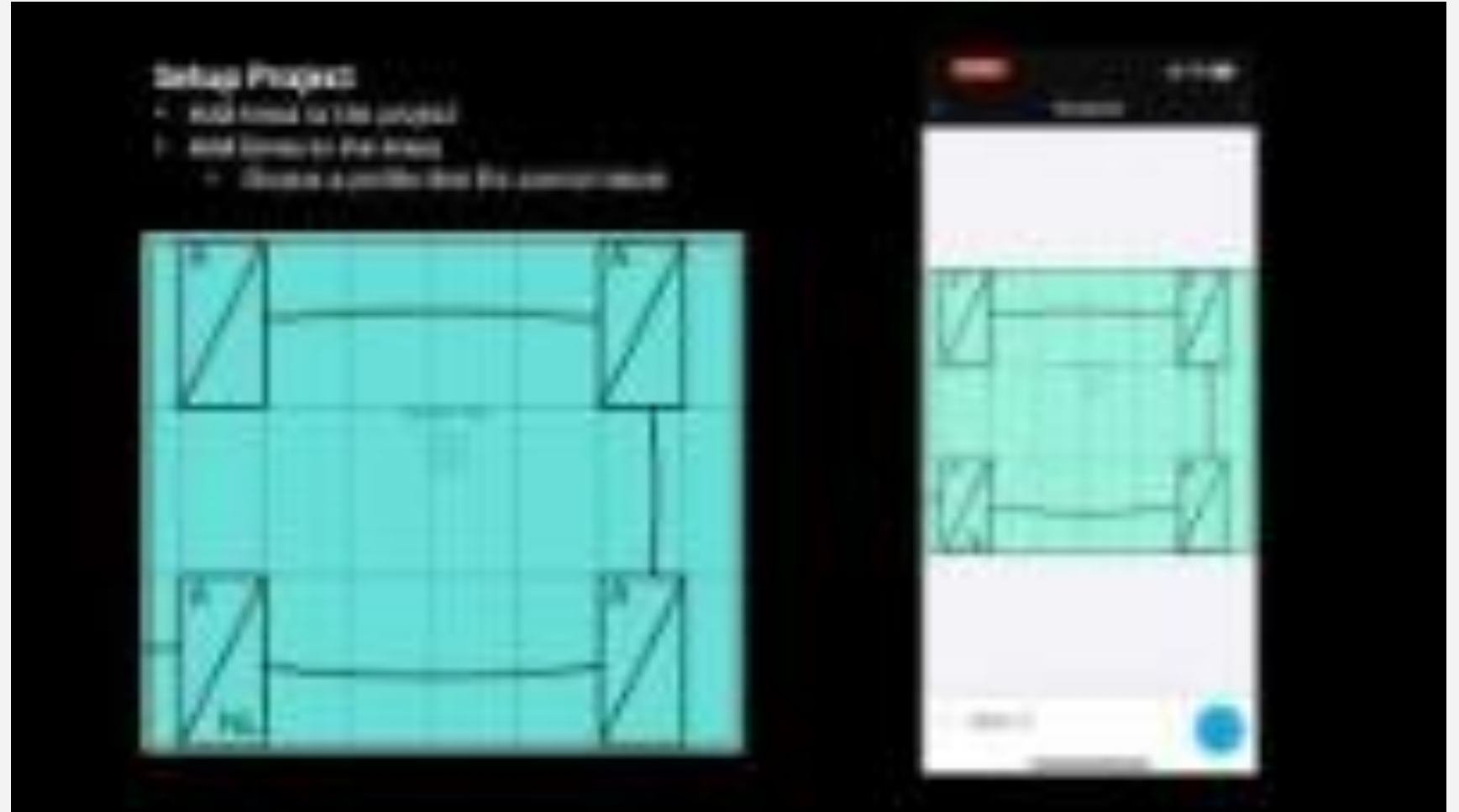


AirLink™ Blue



- Programming

[https://youtu.be/
cccgUMDhy3c](https://youtu.be/cccgUMDhy3c)



Setup Project

- add lines to the project
- add lines to the area
 - choose a profile from the components



AirLink™ Blue





Controls Questions?

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