



RC- WIRELESS STACK LIGHTS



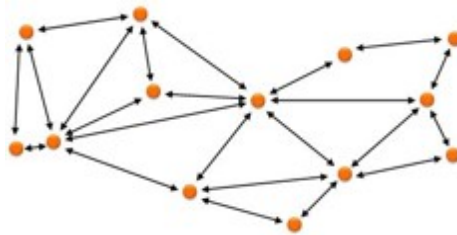
STACK-LIGHT.COM

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Wireless Stack Lights and Controls

Stack-Light.com offers a variety of wireless products. This line is designed to be configurable for your unique application. The wireless units are all built to work together so you can build a system that works for your project. You can start with a simple light and remote and additional devices can be added to your system in the future. In the simplest system would be a light and a remote paired to work together. In a more advanced application, there could be multiple transmitters controlling a single light. Lights can be activated by a PLC or even a piece of industrial machinery using I/O. The Stack-Light Commander program can be added to make it possible to see the status and to control the devices remotely with a windows-based computer.

Stack-Light's wireless products use a 2.4Ghz mesh network. The mesh network extends and strengthens the wireless signal. The Range is 100-125 feet depending on the environment. Repeaters or other wireless devices can be added to the system to reach longer distances. Adding lights or other wireless devices to the network makes the network more robust. The messaging between the wireless devices finds the strongest path and will adapt as signal strength changes. The RC units use their own wireless network and do not require the use of your facilities Wi-Fi. This solves security issues and makes implementation simpler.



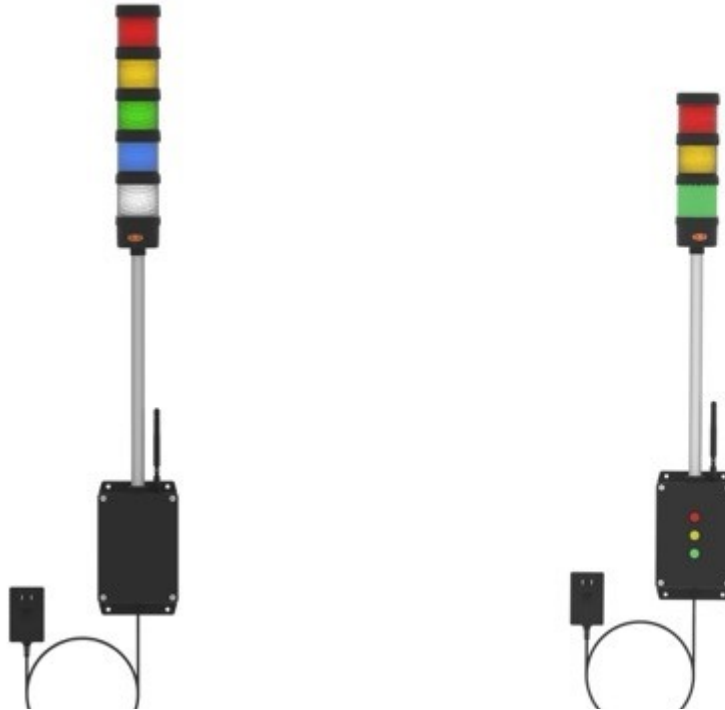
Team / Network Concept

The RC Wireless system is designed around the concept of Networks and Teams.

Up to 30 devices can be on one Network (NI). All of the devices on a single network will belong to the same Mesh. They can work independently while using the mesh to make the system more robust and extending the range of each device. Multiple networks can be used within the same facility.

Teams allow devices to be paired and synchronized. Multiple teams can be on the same mesh network. This lets you have multiple lights and remotes working independently throughout your facility while benefiting from the power of the mesh network.

RC-SL60 Wireless Stack Light



The RC-SL60 Light is the basic building block of the RC Stack-Light system. This light can be configured with 1-5 colors. They can be configured to have the lights flashing or steady. They have a built-in buzzer that can be enabled or not.

These can be ordered with or without built in buttons. The RC-SL60C comes with buttons that can control itself and other devices. For instance, an application could have multiple RC lights controlled by a single push of a button. All the lights that are part of the team would be synchronized to display the same light status. Other Lights could be on the same mesh network and work independently. The ability to have separate teams makes the system flexible.

RC-M Wireless Remotes



The RC-M Wireless Remotes are used to trigger the Wireless lights. The transmitters can be configured in a variety of combinations. Multiple transmitters can be used to turn on/off a single light, or many lights can be controlled by one transmitter. This flexibility allows you to set up a wireless system that works for your specific application. Each transmitter comes with LED's that are synchronized with the wireless lights they control. This feature lets the transmitters act as a 2nd stack light and makes it possible to know the status of a light that may be located out of the line of sight.

The remotes can also be ordered as a battery powered version. The RC-B Remotes are designed for applications where power is not available. These units use AAA batteries for power. The batteries can last a year or more based on use. These units go into a sleep mode when not in use to preserve battery, they awake instantaneously when a button is pushed and send a signal to activate a light. Since these units have a sleep mode, they do not act as a repeater or add to the robustness of the mesh network. They also come without LEDs to preserve battery life. These can be ideal for applications where power is not available, and a powered remote will not work.

RC-IO Wireless Inputs/Outputs

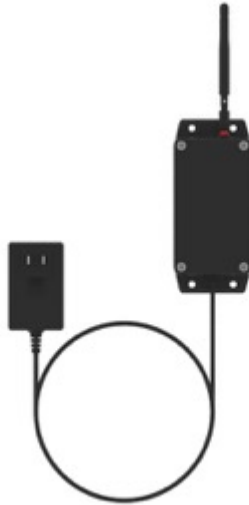


The RC-IO units are used to trigger a light with a PLC, an existing piece of machinery or your own switches. The RC-IO can be ordered in a variety of configurations based on your specific needs. These can have up to 6 inputs and 6 outputs.

These can be used in a variety of ways. RC-IO unit might be attached to an Injection Molding Machine and could trigger a light located in a Maintenance Technicians office.

The RC-IO devices can be used to control other devices not made by Stack-Light. For instance, the inputs from one RC-IO unit could be attached to your own switch and the outputs from another RC-IO unit could be tied to a buzzer in another room. This would allow you to control the buzzer remotely.

RC-R Wireless Repeater



The RC-R unit is used to extend the range and make the wireless system more robust. In a situation where two units are more than 100 feet away a repeater may be necessary to extend the range. These repeaters can also be used to strengthen the signal between units that may be located on the other side of walls or obstacles that can block the signal. All wireless units act as repeaters except for a battery powered units.

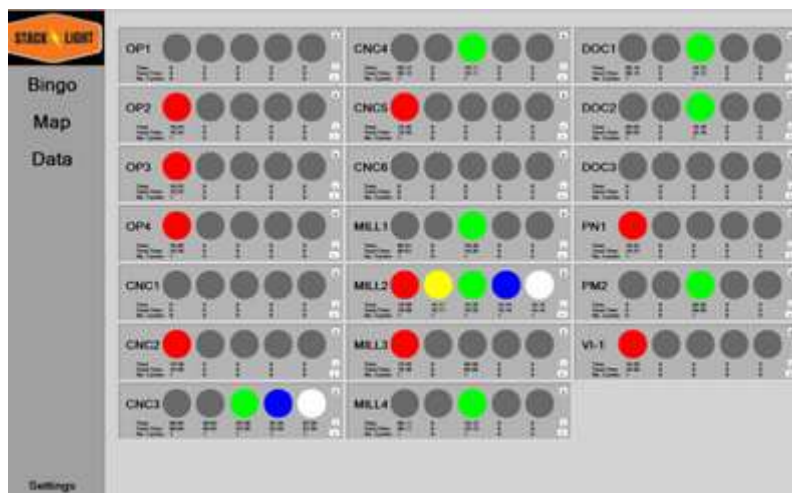
RC-COM

Stack Light Commander Gateway

The RC-COM Commander is a powerful tool that can enable your Wireless system to show the status your devices on a large Bingo Board monitor or in an office. The devices can be setup into teams and can be turned on and off using the Commander program.



The Stack light commander program come installed on a gateway that is connected through a USB port onto windows-based computers. Each Commander can detect and track the status of up to 30 Wireless devices at a time. Multiple Commander programs can be running at the same time.



There are two ways to see the status of the system with the commander program. The Bingo Board is ideal for use with a Large Monitor hanging in a factory or in a control room. It can also be used on a manager's or maintenance person's desktop computer. The Bingo board adjusts for the number of lights in the system and the number of levels on each light.

Example Applications:

Stack-Lights Wireless system is designed to be Flexible and easy to configure. Below you will find several typical arrangements.

One Light One Transmitter



In the simplest application there would be a Remote and a Light that both share a network (NI) and be on the same team. A system might have many sets of these units that share a network but are on different teams. If the units are programmed to be on different teams, they will share the mesh network but operate independently.

One Light Multiple Transmitters



In this application several different transmitters can be programmed to control a single light. All of these units would be on the same network and team. The transmitters have LEDs that are synchronized with the status of the light. Any transmitter can change the status of all the LEDs and the light.

One Transmitter Multiple Lights



In this application a single transmitter would control multiple lights. All these lights and the transmitters would share a network and be on the same team.

RC-IO Transmitter with Multiple Lights



In this application a PLC, machine or external switches could be used to instruct the transmitter to turn on and off multiple lights. This arrangement is often used on automated machinery or CNC machinery where the light needs to be viewed out of the line of sight of the machinery. The RC-IO comes with a cord set with flying leads. These can be wired through dry contacts to activate the lights wirelessly.

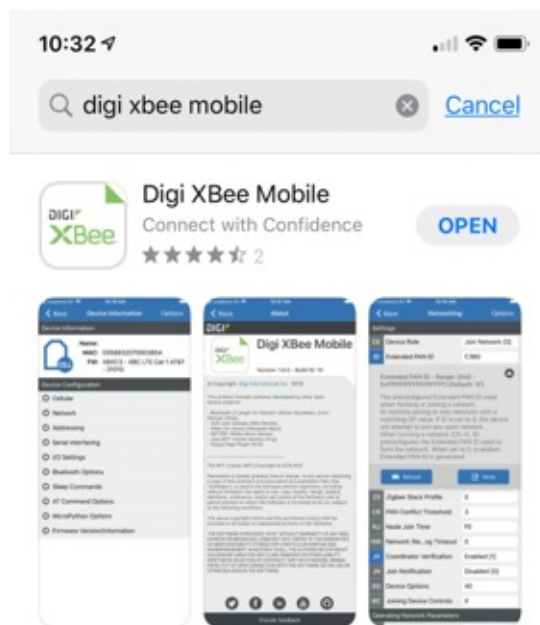
The examples shown are just a few of the ways that Stack-Lights wireless system can be configured. All the wireless units are designed to work together. Extra lights, Remotes or repeaters can be added as needed.

Flexibility for the Future

Every device is assigned to a Team when it is built. This is done by setting the Node (NI) attribute in the wireless module. This setting is programmed into the chip at Stack-Light.com. However, you can change your devices Team at your facility through an IOS, Android app or with the Stack-Light commander program. This gives you the flexibility to add additional devices to your system in the future. It also makes it possible for you to reconfigure your existing systems.

Phone App - Configuration

To switch a device from one Team to another you will need to install the Digi Xbee App to an iPhone or Android phone.



Once you have the App installed on your phone you can see all the Stack-Light wireless devices within Bluetooth in the App. The Bluetooth range is normally about (100-300 ft). Once you open the App you may see a variety of blue tooth devices (Printers – speakers, Computers etc.) that are not associated with the Stack-Light products.



You can filter for the Stack light products using the filter feature located at the bottom of the App. Most Stack-Light products will start with RC or Light. Find the device that you want to change in the list of Bluetooth devices. Select the device to change from the list. The password for Stack-Light devices is set to 49424942 at the factory.

Changing Networks

The Networking settings give you the ability to move devices between Networks and Teams. Adding a device to a network is done in the Networking settings. Each device that is in the network becomes part of that network's Mesh. In some instances, it may be beneficial to have separate networks running in the same building. For instance, if there are two systems of lights that work independent of each other but are on the edge of the network's range, it could be best to establish two networks. This prevents the two systems from looking for each other and wasting bandwidth. We recommend no more than 30 devices per network. If you need more than 30 devices, you can run multiple networks within the same facility.



1:30

Search

Back Networking Options

Settings

CH	Channel	E
ID	Network PAN ID	4942
CE	Device Role	Standard Route...
CS	Compatibility Options	0

Discovery Options

NI	Node Identifier	Light-demo_1
DD	Device Type Identifier	140000
NT	Network Discovery Back-off	82
N?	Network Discovery Timeout	3A06

1. Find the device to be changed in the App.
2. Enter the Password Default (49424942).
3. Select Networking.
4. Change the Network Pan ID (ID) setting to the desired Mesh Network.
5. Save the settings.
6. Reset the device in the App or cycle power to the device.
7. The device should start slowly blinking. Once it has joined the network it will blink quickly and then stop blinking.
8. Test the Unit.

Changing a Device Team

The Node Identifier (NI) variable is used to define the Team number. All the characters located to the left of the underscore are used to identify the device by Bluetooth and are not counted as part of the Team number. For instance, the device shown in the image below has a (NI) equal to Light-demo_1. This unit would be on Team 1. When searching for the device in the app with Bluetooth the device would be displayed as Light-demo.

The screenshot shows the 'Networking' settings screen of the Digi Xbee App. The top status bar shows the time 1:30 and signal icons. The app header includes a 'Search' button, a 'Back' arrow, and the title 'Networking' with an 'Options' link. The 'Settings' section contains four rows: 'CH' Channel (E), 'ID' Network PAN ID (4942), 'CE' Device Role (Standard Route...), and 'C8' Compatibility Options (0). The 'Discovery Options' section contains four rows: 'NI' Node Identifier (Light-demo_1), 'DD' Device Type Identifier (140000), 'NT' Network Discovery Back-off (82), and 'N?' Network Discovery Timeout (3A06).

Settings		
CH	Channel	E
ID	Network PAN ID	4942
CE	Device Role	Standard Route...
C8	Compatibility Options	0

Discovery Options		
NI	Node Identifier	Light-demo_1
DD	Device Type Identifier	140000
NT	Network Discovery Back-off	82
N?	Network Discovery Timeout	3A06

1. Install Digi Xbee App
2. Find the device to be changed in the list.
3. Access the devices with the password 49424942
4. Identify the (NI) of Team you wish to add wireless device to
5. Change (NI) of device to be added to match (NI) of Team to be joined. *only change characters to right of “_” Underscore.
6. Unplug the device or reset it in the App.
7. The device should start slowly blinking. Once it has joined the network it will blink quickly and then stop blinking.
8. Test the Unit.

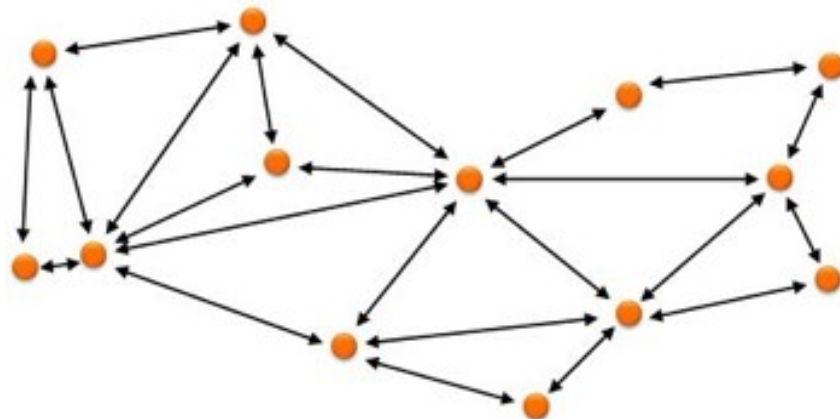
Stack Light Wireless Specifications

Stack-Light's wireless system uses the Zigbee communication protocol and operates in the 2.4GHz band. These modules operate in a self-healing mesh topology (Figure 1).

Radio Specifications	
Specification	Value
Indoor/urban range	Up to 200 feet
Outdoor RF line-of-sight range	Up to 2000 feet
RF Transmit power output (maximum)	6.3 mW (+8 dBm)
BLE power output	6.3 mW (+8 dBm)
RF data rate	250,000 b/s
Receiver sensitivity	-103 dBm
Supported network topologies	Point-to-point, point-to-multipoint, peer-to-peer, and Digi Mesh
Number of channels	16 Direct sequence channels
Interface immunity	Direct Sequence Spread Spectrum (DSSS)
Channels	11 to 26
Addressing options	PAN ID and addresses, cluster IDs and endpoints (optional)
FCC compliance	Part 15 Subpart B

Figure 1

This mesh topology allows a device to send messages a much farther distance than they normally could do on their own. This also allows for a much more reliable network due to the mesh being able to heal when a device fails or reroute a message when a faster route is available.



Interface Module

The interface module is a printed circuit board that provides power and electrical isolation to the Wireless radio chip. There are two versions of the modules: 24V and battery versions. Both modules support the same radio and operate in much the same fashion. However, the battery modules will sleep when not in operation to save battery power.

Each device contains intelligent microprocessor code that maintains a healthy link between all the devices in the network. A device will send a heartbeat message every 20 seconds to ensure that its pairing with other devices remains intact. The code also handles button presses on the push button units that send the button press to the stack light, activating the corresponding light. This is a very low bandwidth network since messages are sent very infrequently. This prevents unwanted interference with other devices on the 2.4GHz band like Wi-Fi routers, cell phones and Bluetooth devices.

Fixture Operating Specifications		
	24V	Battery
Power supply voltage	108-132VAC	3-5.5VDC
Input power	< 1W	< 350mW (active)
		< 15uW (sleep)
Operating Temperature	-20 to 65C	0 to 40C
Interface Board Specs		
Input Specifications		
No. of Inputs	6	5
Input Voltage Range	21-28VDC	3-5.5VDC
Output Specifications		
No. of outputs	6	5
Output Type	NPN/PNP	NPN/PNP
Output voltage range	0-60V	0-60V
Output current max	400mA	400mA
Radio Specification		
Operating Frequency	ISM 2.4 – 2.4835 GHz	
FCC Approval	United States (FCC Part 15.247)	
FCC ID	FCC ID: MCQ-XBEE3	
Range (indoor)	Up to 90m (300 ft)	
Range (outdoor line of site)	Up to 3200m (2 mi)	
RF transmit power max	79 mW (+19 dBm)	
BLE transmit power	6.3 mW (+8 dBm)	

Stack Light Commander

The Stack Light Commander program can be used to view the status of your wireless devices on a windows-based computer. This can be used on a desktop computer or attached to an overhead monitor.

Set up for Stack-Light Commander (SLC)

Download and install Stack-Light Commander

Stack-Light.com <https://stack-light.com/products/stack-light-commander>

See How it works for yourself.

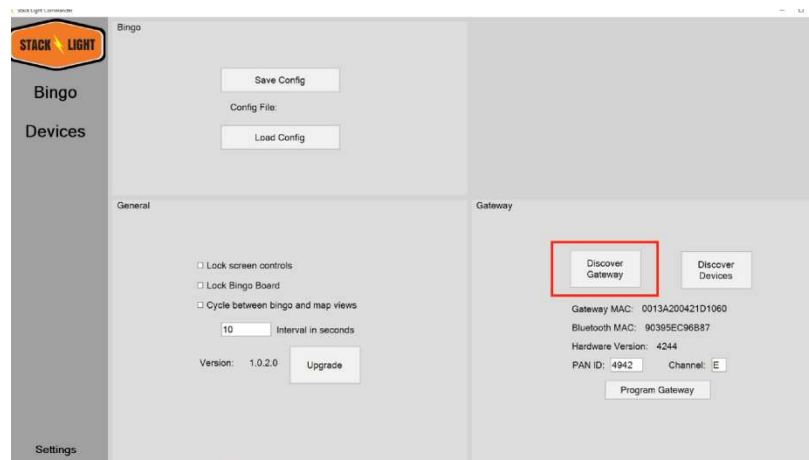


[Download the Free Demo Program for Windows](#)

[Computers here](#)

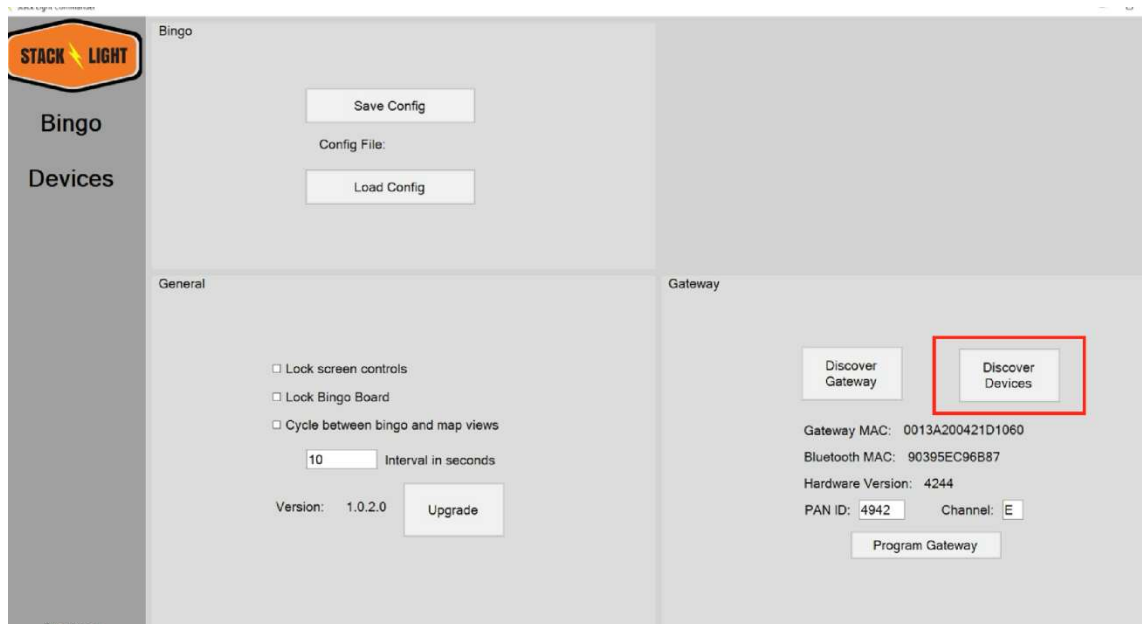
Once the gateway is installed, SLC will convert from a demo version to an operational version.

Once SLC is installed and the gateway is plugged into a USB port. Search for the gate way.

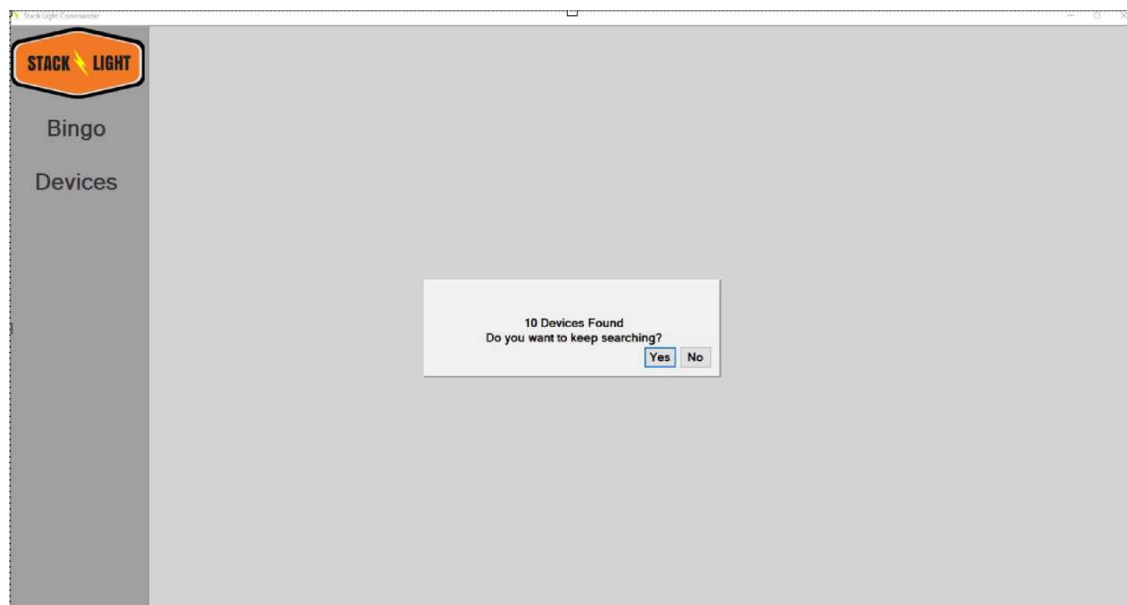


Once the Gateway is found, the gateway's MAC address, Bluetooth Mac address and Pan ID information will be populated.

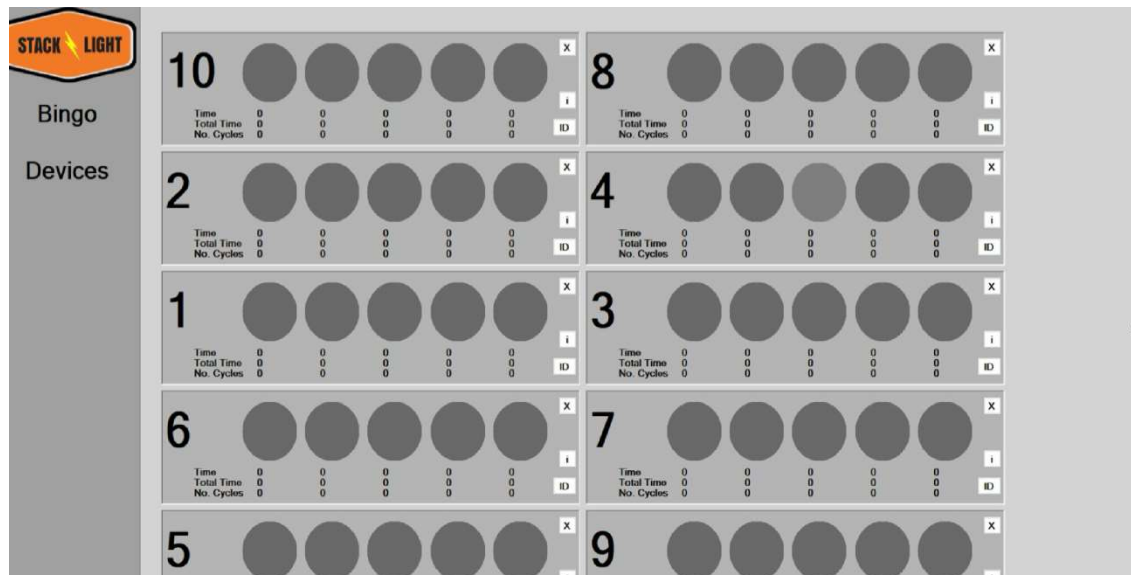
Now find the wireless devices. It important to know how many wireless devices you have. In our case we have 10 wireless devices. Once the discover devices button is clicked, the gateway will search for all the wireless devices that share the same Network (PAN ID)



On the screen below you will see that the commander found all 10 devices. If less than 10 were found, you would click yes when asked to keep searching.



Since all 10 devices were found click no. The gateway will pull in the data for the 10 devices and populate the Bingo Board.

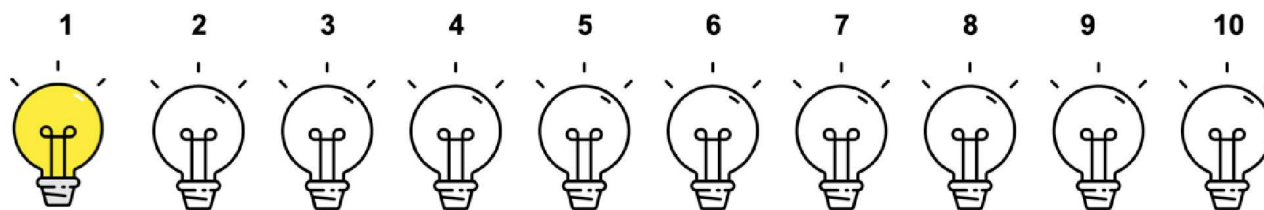


The Bingo Board shows the 10 wireless devices. In this case each device is on a different team. If we click the bingo light, we can turn the corresponding wireless lights on and off using the SLC program. We can also see the lights on the SLC program turn on and off as the wireless device buttons are pushed.

To set the program up to fit our project lets go to the Devices Page.

MAC	Team	Row Name	Device Name	Light Config	Andon Type	Signal Strength	Light Delays	Version	Select	Identity
0013a200420...	10	10	RC-10	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	2	2	RC-2	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a200420...	1	1	RC-1	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fb...	6	6	RC-6	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	5	5	RC-5	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a200421...	8	8	RC-8	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	4	4	RC-4	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	3	3	RC-3	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a200421...	7	7	RC-7	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	9	9	RC-9	999990	PN0		0_0_0_0_0_0	9	☐	ID

We can see that all 10 devices are on a different team. In this configuration all the devices would operate independently of one another. If one light is turned on the other lights are not affected.



Here we can configure set up teams and rename the devices to work for our project. The columns can be sorted by clicking in the column header. Also hovering in the column header will cause a description of what column. This is especially helpful when we get to the light configuration setup.

Stack Light Commander

Bingo

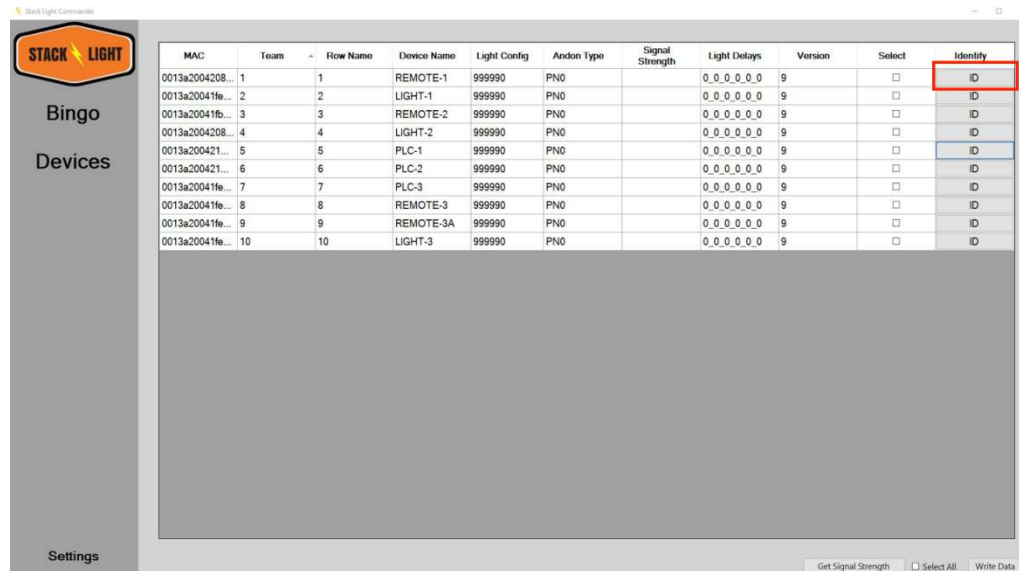
Devices

Settings

MAC	Team	Row Name	Device Name	Light Config	Andon Type	Signal Strength	Light Delays	Version	Select	Identify
0013a2004208...	1	1	REMOTE-1	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	2	2	LIGHT-1	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fb...	3	3	REMOTE-2	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a2004208...	4	4	LIGHT-2	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a200421...	5	5	PLC-1	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a200421...	6	6	PLC-2	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	7	7	PLC-3	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	8	8	REMOTE-3	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	9	9	REMOTE-3A	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	10	10	LIGHT-3	999990	PN0		0_0_0_0_0_0	9	☐	ID

☐ Select All

We will rename the devices and assign them to teams. But first we will Identify the devices using the ID Button. When the ID button is pushed it will cause the device to blink for 15 seconds. Use this feature to identify which device is being changed and to prevent changing the wrong device.



Stack Light Commander

STACK LIGHT

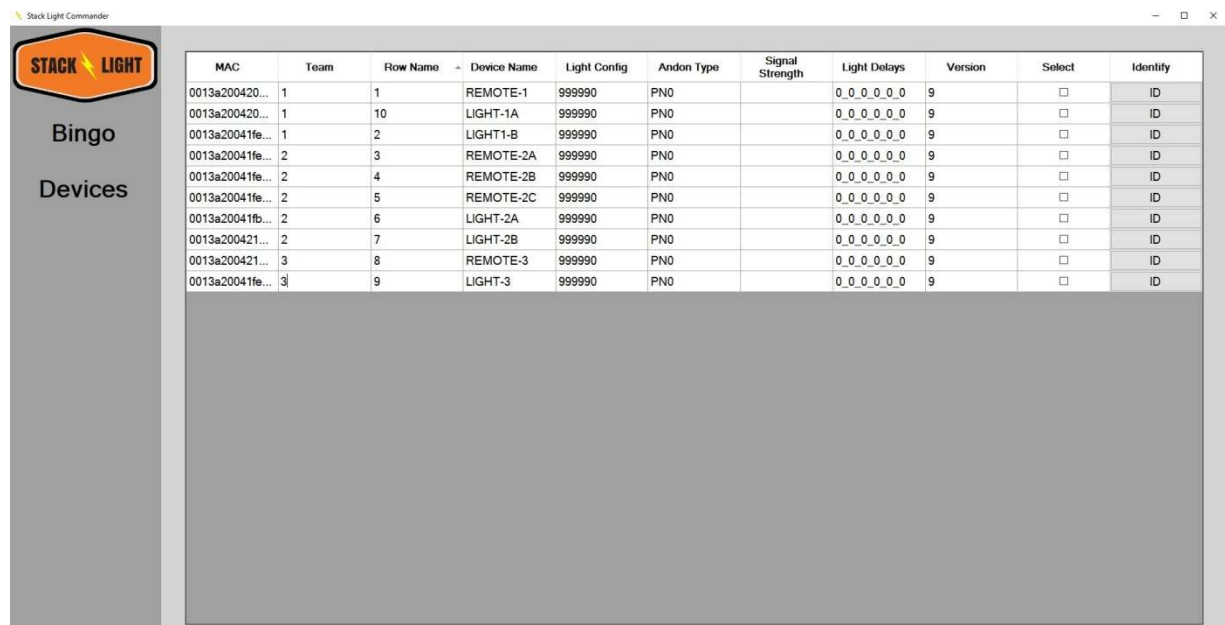
Bingo
Devices

Settings

MAC	Team	Row Name	Device Name	Light Config	Andon Type	Signal Strength	Light Delays	Version	Select	Identify
0013a2004208...	1	1	REMOTE-1	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	2	2	LIGHT-1	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	3	3	REMOTE-2	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a2004208...	4	4	LIGHT-2	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a200421...	5	5	PLC-1	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a200421...	6	6	PLC-2	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	7	7	PLC-3	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	8	8	REMOTE-3A	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	9	9	REMOTE-3A	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	10	10	LIGHT-3	999990	PN0		0_0_0_0_0_0	9	☐	ID

Get Signal Strength ☐ Select All Write Data

In the example below we have renamed the devices and set up three sperate teams.



Stack Light Commander

STACK LIGHT

Bingo
Devices

MAC	Team	Row Name	Device Name	Light Config	Andon Type	Signal Strength	Light Delays	Version	Select	Identify
0013a200420...	1	1	REMOTE-1	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a200420...	1	10	LIGHT-1A	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	1	2	LIGHT1-B	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	2	3	REMOTE-2A	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	2	4	REMOTE-2B	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	2	5	REMOTE-2C	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fb...	2	6	LIGHT-2A	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a200421...	2	7	LIGHT-2B	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a200421...	3	8	REMOTE-3	999990	PN0		0_0_0_0_0_0	9	☐	ID
0013a20041fe...	3	9	LIGHT-3	999990	PN0		0_0_0_0_0_0	9	☐	ID

Once these changes are made in SLC. We will need to write the changes to the wireless devices. Click the Select All check box at the bottom of the page and then click Write Data. You will be prompted for a password. The password is set at 4942 at the factory. You can change it to your own password.

The screenshot shows the 'Stack Light Commander' application window. On the left is a sidebar with the 'STACK LIGHT' logo and the text 'Bingo Devices'. The main area displays a table with columns: MAC, Team, Row Name, Device Name, Light Config, Andon Type, Signal Strength, Light Delays, Version, Select, and Identify. The table contains 10 rows of device data. A modal dialog titled 'Enter Passcode' is centered over the table, with a text input field and 'OK' and 'Cancel' buttons. Below the input field, it says 'Change Passcode'.

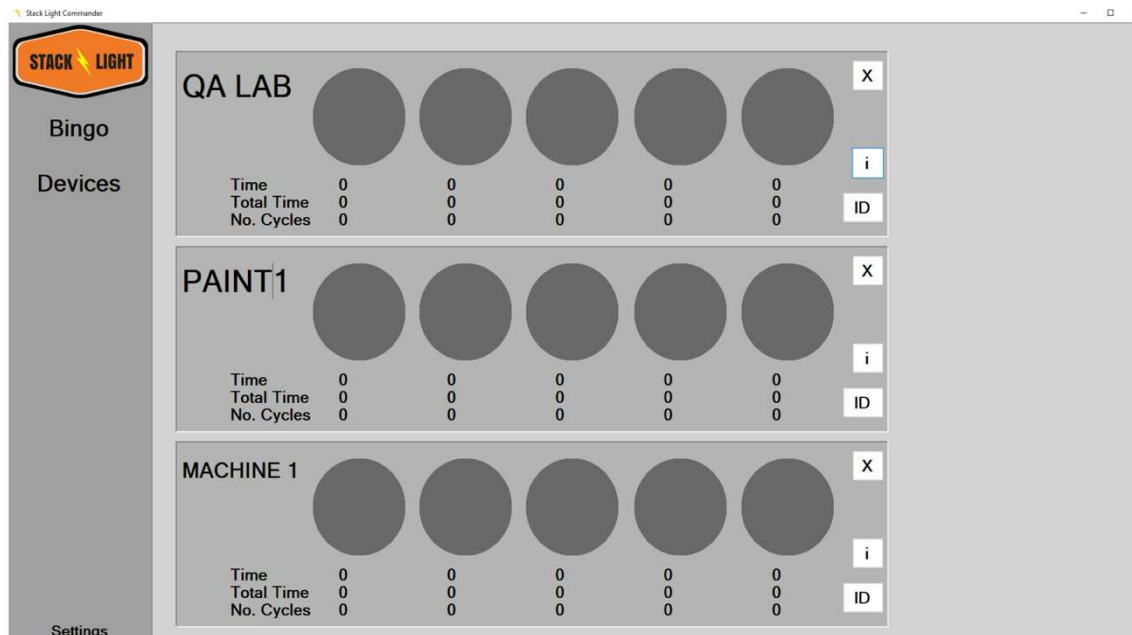
MAC	Team	Row Name	Device Name	Light Config	Andon Type	Signal Strength	Light Delays	Version	Select	Identify
0013a200420...	1	1	REMOTE-1	999990	PN0		0_0_0_0_0_0	9	☒	ID
0013a200420...	1	10	LIGHT-1A	999990	PN0		0_0_0_0_0_0	9	☒	ID
0013a20041fe...	1	2	LIGHT1-B	999990	PN0		0_0_0_0_0_0	9	☒	ID
0013a20041fe...	2	3	REMOTE-2A	999990	PN0		0_0_0_0_0_0	9	☒	ID
0013a20041fe...	2	4	REMOTE-2B	999990	PN0		0_0_0_0_0_0	9	☒	ID
0013a20041fe...	2	5	REMOTE-2C	999990	PN0		0_0_0_0_0_0	9	☒	ID
0013a20041fb...	2	6	LIGHT-2A	999990	PN0		0_0_0_0_0_0	9	☒	ID
0013a200421...	2	7	LIGHT-2B	999990	PN0		0_0_0_0_0_0	9	☒	ID
0013a200421...	3	8	REMOTE-3	999990	PN0		0_0_0_0_0_0	9	☒	ID
0013a20041fe...	3	9	LIGHT-3	999990	PN0		0_0_0_0_0_0	9	☒	ID

The devices will be programmed with the new settings and a prompt to rescan the devices will pop up. Go back to settings and rescan the devices. This will reload the SLC program with the updated configuration. The Bingo Board will now show three teams.

The screenshot shows the 'Stack Light Commander' application window. The sidebar on the left has the 'STACK LIGHT' logo and 'Bingo Devices'. The main area displays the 'Bingo Board' with three teams, numbered 1, 2, and 3. Each team has a large number, five circular light indicators, and a table of statistics (Time, Total Time, No. Cycles) for each light. To the right of each team's lights are three buttons: 'X', 'i', and 'ID'.

Team	Light 1	Light 2	Light 3	Light 4	Light 5
3	Time: 0	Time: 0	Time: 0	Time: 0	Time: 0
3	Total Time: 0	Total Time: 0	Total Time: 0	Total Time: 0	Total Time: 0
3	No. Cycles: 0	No. Cycles: 0	No. Cycles: 0	No. Cycles: 0	No. Cycles: 0
2	Time: 0	Time: 0	Time: 0	Time: 0	Time: 0
2	Total Time: 0	Total Time: 0	Total Time: 0	Total Time: 0	Total Time: 0
2	No. Cycles: 0	No. Cycles: 0	No. Cycles: 0	No. Cycles: 0	No. Cycles: 0
1	Time: 0	Time: 0	Time: 0	Time: 0	Time: 0
1	Total Time: 0	Total Time: 0	Total Time: 0	Total Time: 0	Total Time: 0
1	No. Cycles: 0	No. Cycles: 0	No. Cycles: 0	No. Cycles: 0	No. Cycles: 0

The teams can be renamed and drug into the position that works best for your project. The names on the Bingo Board are only for visual reference. The teams retain their numbers 1,2 &3 on the device page.



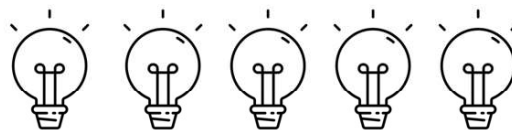
Now the devices in each team will be synchronized. For instance, if we turn on any yellow light in Team 1, All of the yellow light in Team 1 will turn on. Teams 2 and 3 will not be affected.

****Gateways must always be set to Team 0***

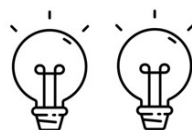
TEAM 1



TEAM 2



TEAM 3



Now let's explore the Light Config Column. This column is for advanced use. It is used to set up how the outputs for each device function. Each device has 6 outputs. In our case we have set 5 of 6 outputs set to active (999990). The 6th output has a zero in its place which means that it has been disabled in the software.

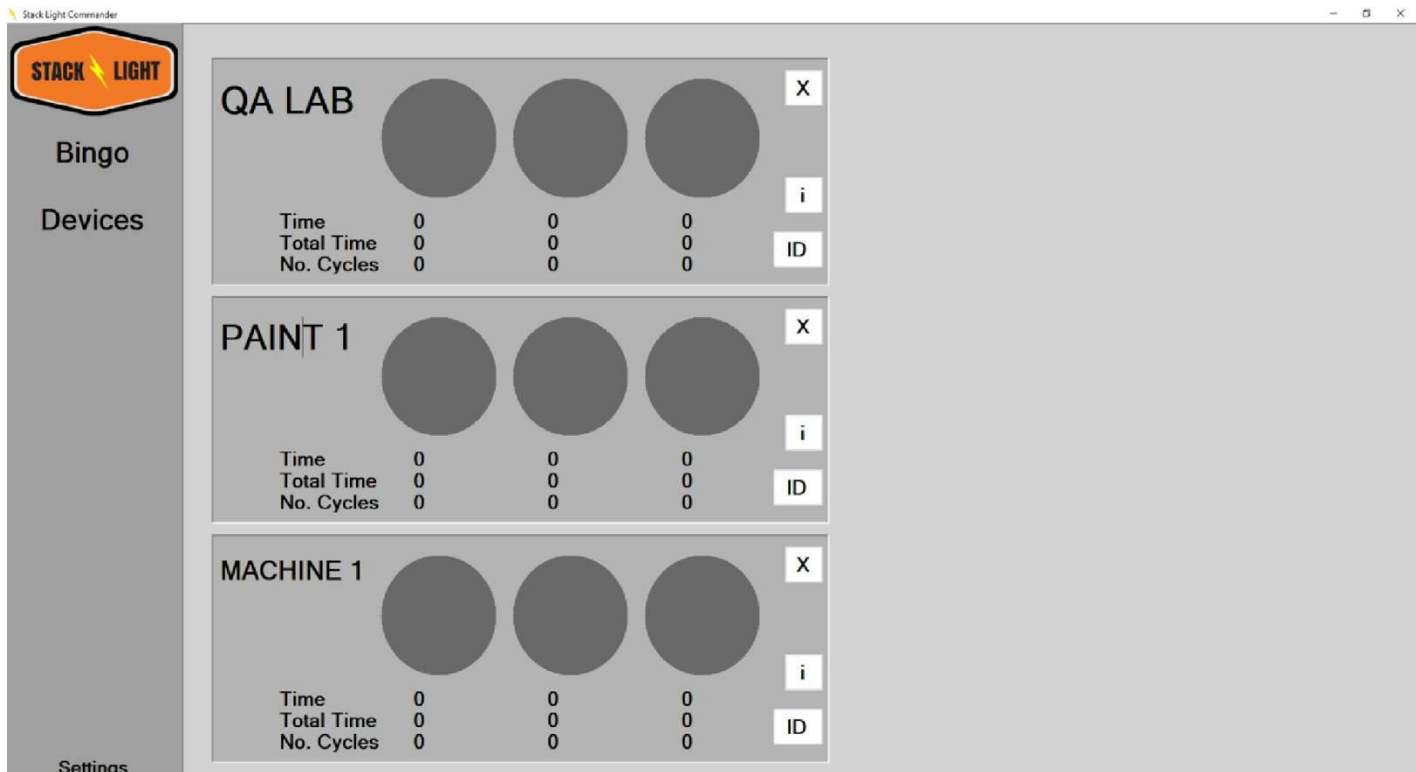
Standard Output Wiring

- 1 - Red light
- 2 - Yellow Light
- 3 - Green Light
- 4 - Blue Light
- 5 - White Light
- 6 - Empty

Output Configuration

LZ	Function	Description
code	0 = inactive output (for outputs not used on Battery Model) 1 = Active Output 2 = Flashing output 8 = Blinks at startup and pairing, becomes active if any input is on. * If Battery Powered - Steady on for first 5 seconds then blinks every 10 ms to conserve power. 9 = Active Output that blinks at startup and pairing B = Flashing Output and blinks at startup and pairing.	
Example: LZ = 12089B Output 1 – Active Output Output 2 – Flashing Output Output 3 - Inactive Output Output 4 - Blinks at startup and pairing, becomes active if any input is on. Output 5 - Active Output that blinks at startup and pairing. Output 6 - Flashing output that also blinks at startup and pairing		

SLC uses the Light Config information to show how many lights are on a device. Since we have five 9's in the light config column the Bingo Board will display 5 lights for each Team. This means we have a Red, Yellow, Green, Blue and White Light. If we were only using a three-level light, we would program the lights to Light Config to be 999000. This would cause the Bingo Board to only show three lights for each team.



The Andon Column is used to identify the device type and to program how the outputs function.

Defining Device Type

LY Parameter

Type	Description	Abbreviation
Gateway	PC connected device that receives all messages from the network. Group must = 0	G
Remote	Remote Control	P
Stack Light	1-5 lights with buzzer	S
Combo	Stack Light with Buttons	C
Andon	Pull chain type Andon device. One input and one output	A
Repeater	Used to bridge a gap in network communications. Only relays messages	R

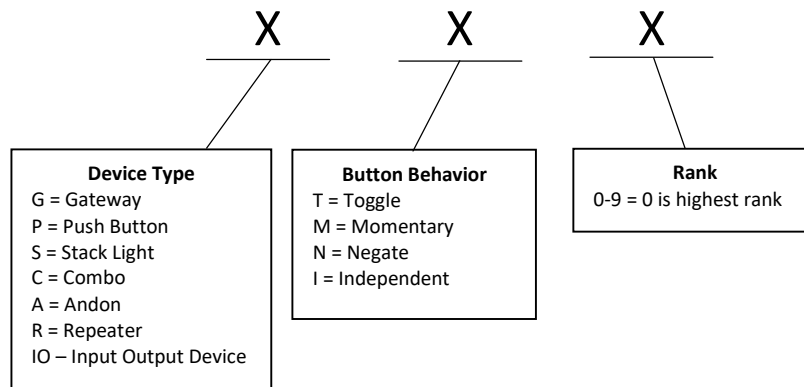
Table 1. – Device Type

Type	Description	Abbreviation
Toggle	Device does not know system light states. Toggles existing state of light	T
Momentary	Device turns the light on while button is held	M
Negate	Device negates the existing state	N
Independent	Only one light (Output) on at a time	I

Table 2. – Button Behavior

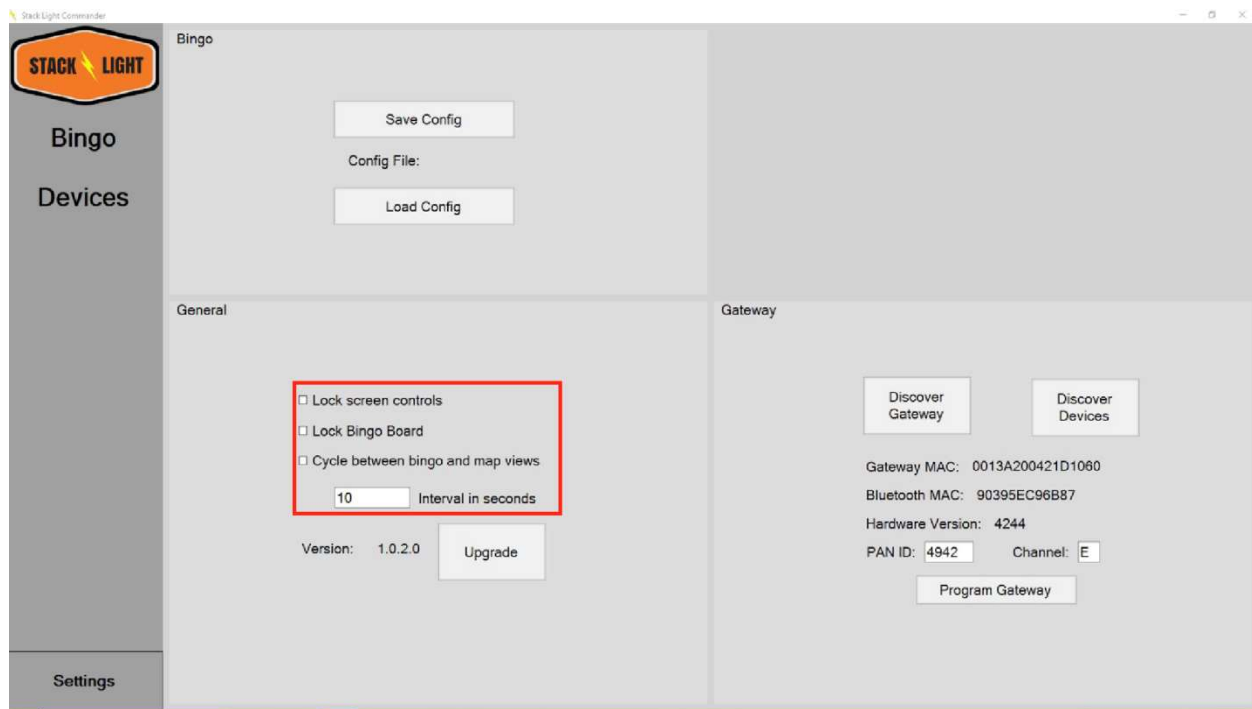
Type	Description	Abbreviation
Rank	Rank of device. 0 = highest rank. Lower rank device cannot turn off higher rank device unless all lower ranked devices are off. Higher ranked devices. Cannot be used in 'Independent' mode.	0-9

Table 3. – Rank



The first position is set at the factory as “P” It is used for special functions and rarely would be changed. The 2nd position controls how the outputs function. The 3rd position sets up a hierarchy for which device can control another device. We advise calling Stack-Light.com before changing these settings.

All the wireless devices use chips made by Digi International. They have been programmed by Stack-Light.com. The Version column shows which revision number for the software.



Lock Bingo Board

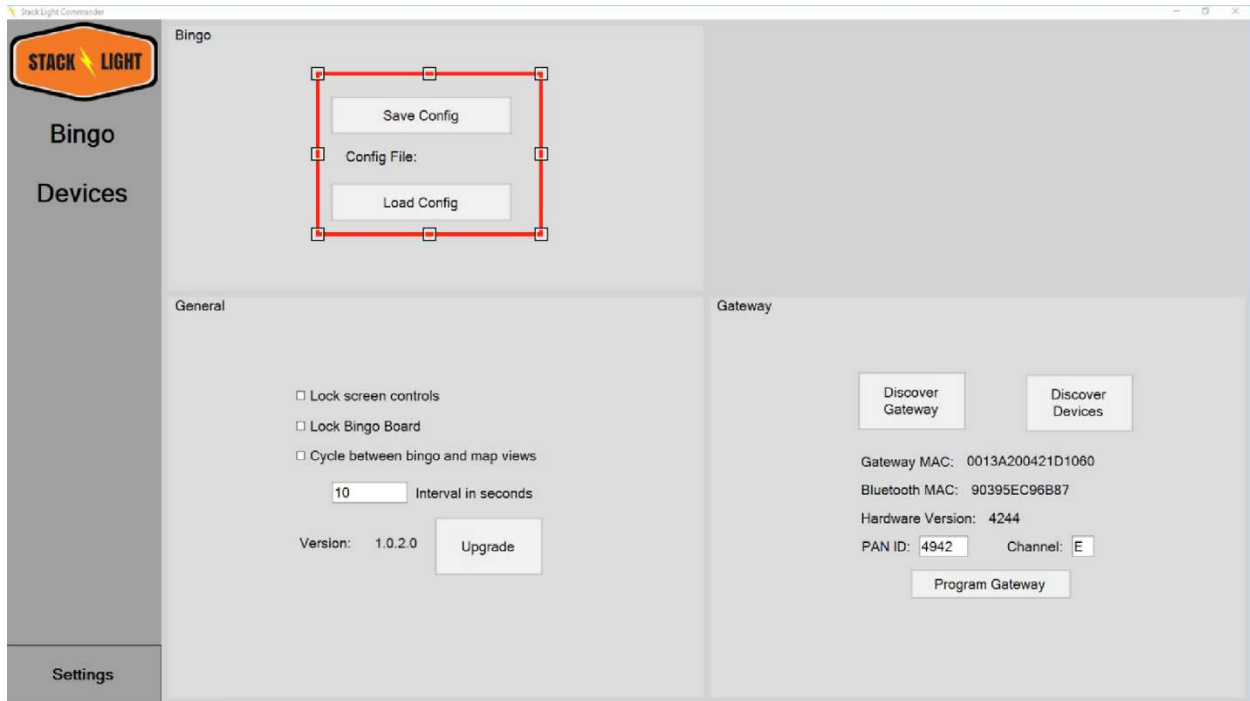
Once the devices are programed and named, you can lock the settings with the Lock Screen Controls check box. This will prevent any changes from being made without using the password.

Lock Bingo Board

The Bingo Board can be used to turn the wireless lights on and off. To disable this feature, check the Lock Bingo Board box.

Cycle between Bingo and Map Views

For SLC programs with the Map feature installed, it is possible to toggle between the Map screen and the Bingo Board screen at a set interval. Clicking the check box will activate this feature and the interval can be set in seconds.

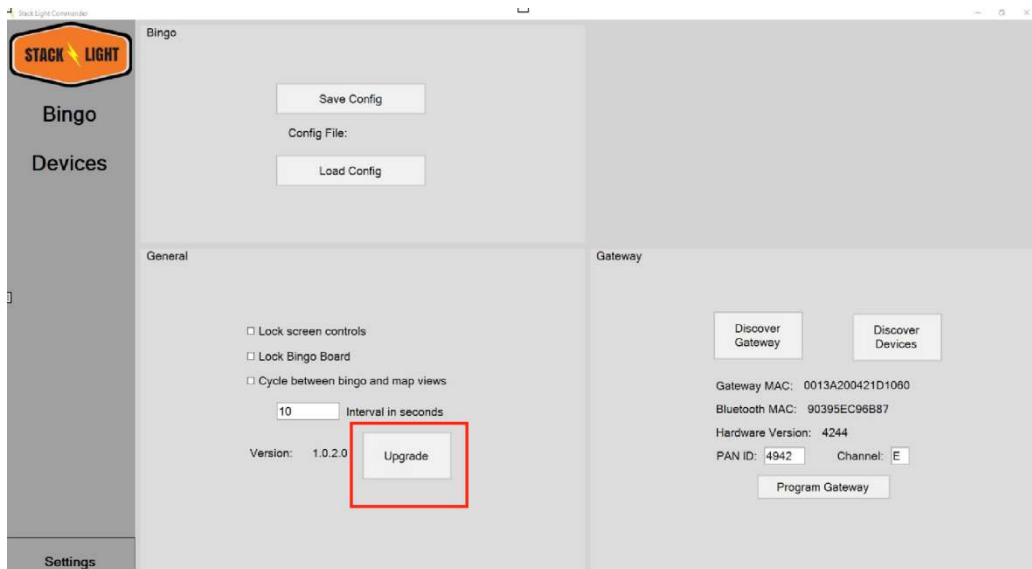


Save Config

Once the SLC program is setup, the Save Config button will retain the settings and automatically reload them when the program is reopened.

Load Config

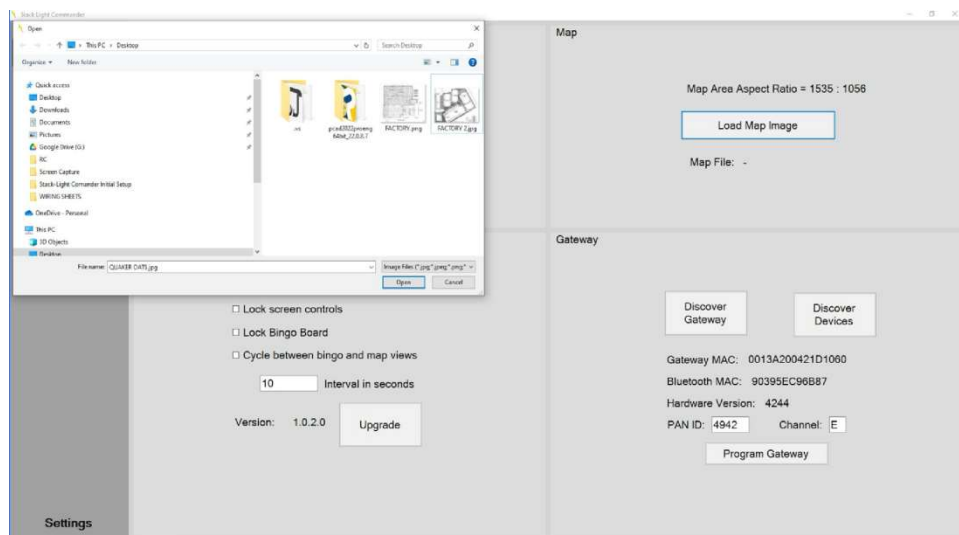
Multiple config files can be saved and reloaded. This config file can be copied to other computers that have a gateway and SLC program installed. This makes it easy to mirror the setup from computer to computer. It also makes it possible to have multiple configurations and to switch between them.



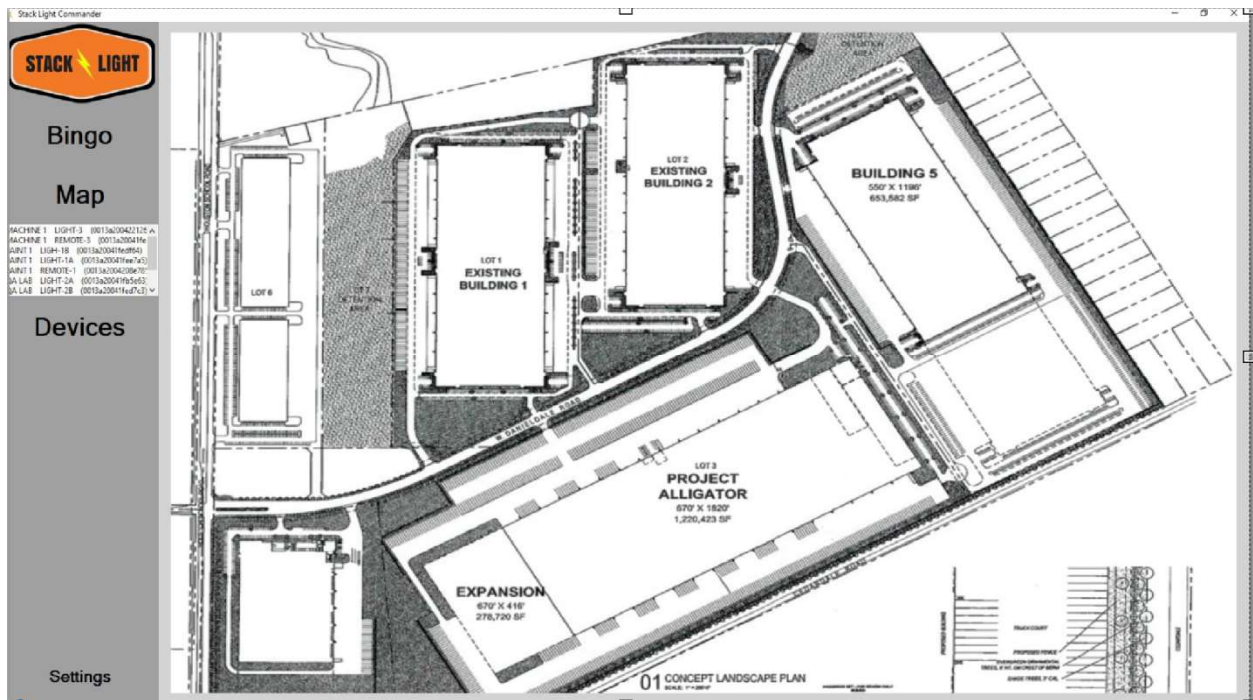
Upgrade

The standard version of the SLC comes with the Bingo Board installed. The Map module can be purchased separately and added later. To add the Map module, click the upgrade button and enter a code that will be emailed to you.

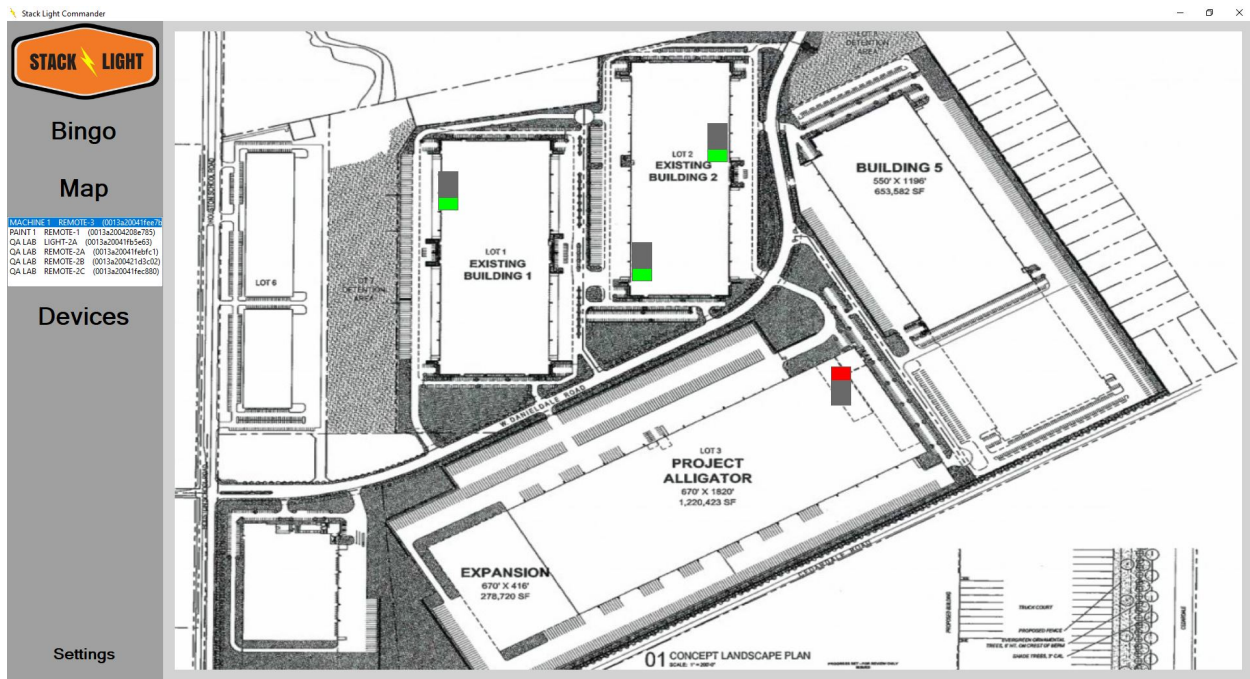
Once the upgrade is complete the Map module will be available. This makes it possible to add a facility map to the commander program. Images can be loaded as pdf, jpg, png, gif, tif and bmp files.



Click the Load Image button and select an image.



The wireless devices will be displayed on the left-hand side of the screen. These can be dragged and dropped to match their location in the facility. You can hover over the lights on the map and see the team's and device's name.



You may not want to move all the devices onto the map. In this case we do not need to move the remotes onto the Map. We will only move the lights. The Map feature is a good way to see the status of a facility quickly.

Once the lights are positioned go back to the settings page, lock the screen controls, and save the configuration. The Map will auto load with these settings in the future.

At Stack-Light.com we are here to help should you need it. Tech Support can be reached at (678) 288-9678

Flashing – Steady – Buzzer Control

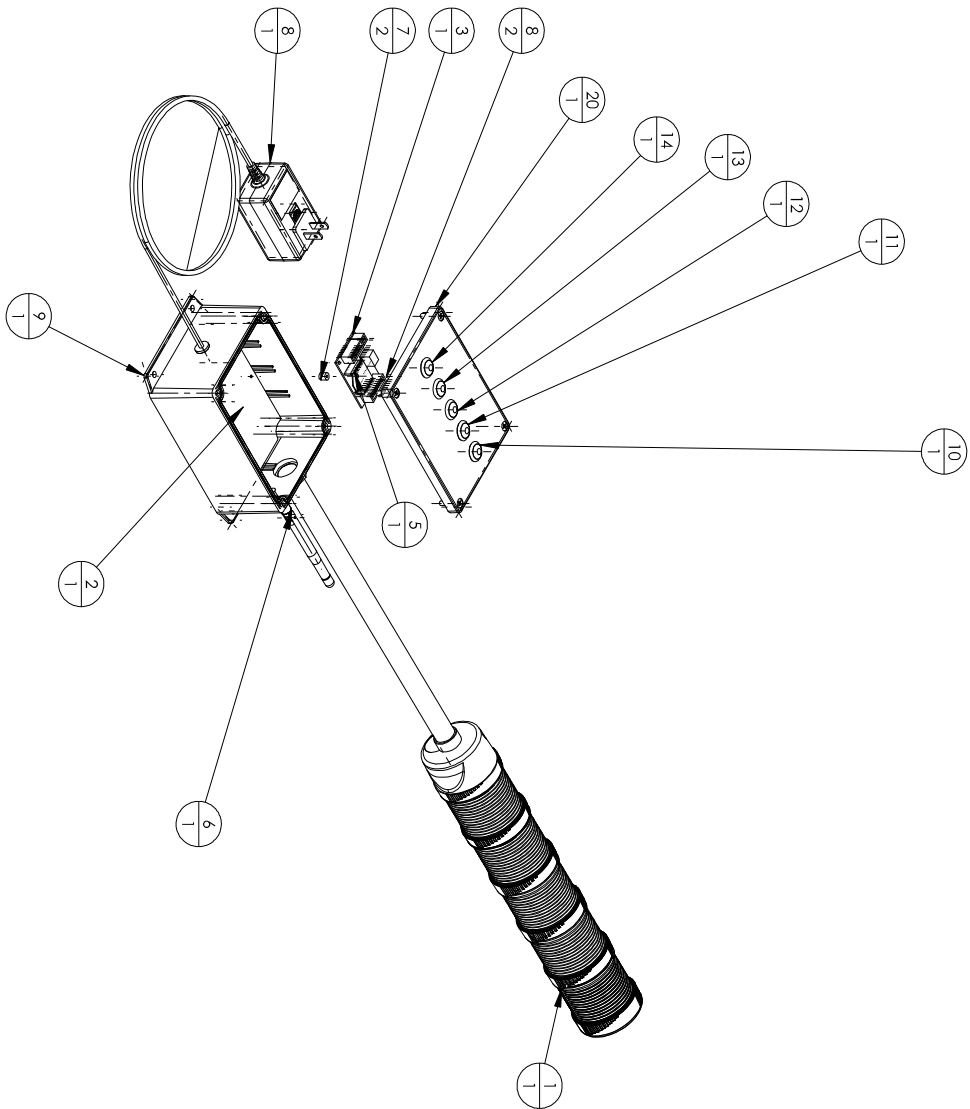
Dip Switch Settings on SL60 Stack-Lights

DipSwitch



ON – Buzz On or Off
INC – Volume Low or High
BU – Buzz Pulse or Solid
W – White Light Flash or Solid
C- Blue Light Flash or Solid
G-GreenLightFlashorSolid
Y–YellowLightFlashorSolid R–
RedLightFlashorSolid

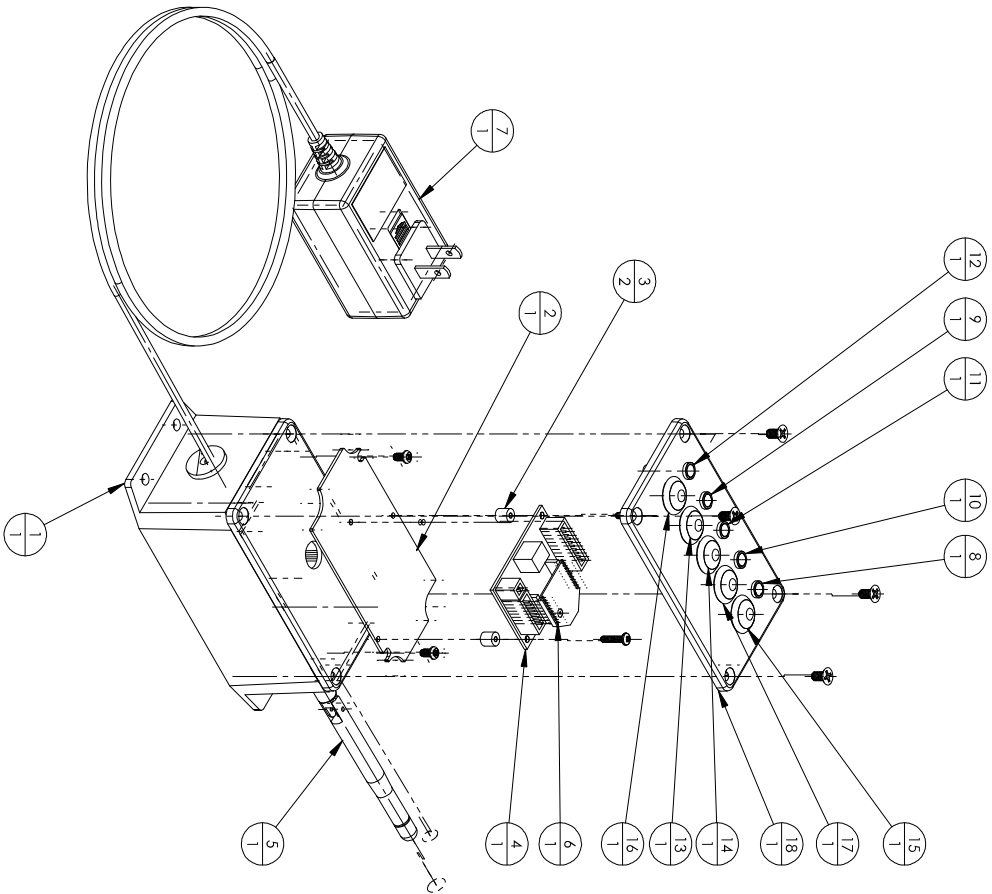
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SL60		1
2	RC-SL60-1010	Backing Plate	1
3	RC-B-1008	CIRCUIT BOARD	1
5	XIGBEE	XIGBEE CHIP	1
6	90 Antenna	ANTENNA	1
7	94639A193	1/4(OD)X1/4TL	2
8	GF-0240500AS	POWER CABLE	1
9	RC-PLCSL60-1002	ENCLOSURE	1
10	MP12P-BJ-R	PUSH BUTTON RED	1
11	MP12P-BJ-Y	PUSH BUTTON YELLOW	1
12	MP12P-BJ-G	PUSH BUTTON GREEN	1
13	MP12P-BJ-B	PUSH BUTTON BLUE	1
14	MP12P-BJ-W	PUSH BUTTON WHITE	1
20	RC-SL60-2005	5 HOLE COVER	1
21	RC-SL60-2001	1 HOLE COVER	1
22	RC-SL60-2002	2 HOLE COVER	1
23	RC-SL60-2003	3 HOLE COVER	1
24	RC-SL60-2004	4 HOLE COVER	1
25	RC-R		1
26	RC-I		1
27	RC-M	WIRELESS REMOTE BOX	1
28	RC-PLC-SL60		1



STACK-LIGHT.COM			
ANALYZED	CONFORMS	TITLE	COMBO STACK LIGHT
UNIT ARE IN mm	1	MATERIAL	
FINISH		DWG. BY	VENDOR#
X.X.X +/- .5		DES. BY	DRAWING NO.
X WHEN INCHES ARE USED		DESIGNED DATE	5/13/2020
X.XX +/- .010		LAST SAVED DATE	2/9/2023
X.XXX +/- .005		DWG. SITE	B
BEPAL ALL SHARP EDGES		WEIGHT	20.325 LBS
RC-SL60C			
REV			

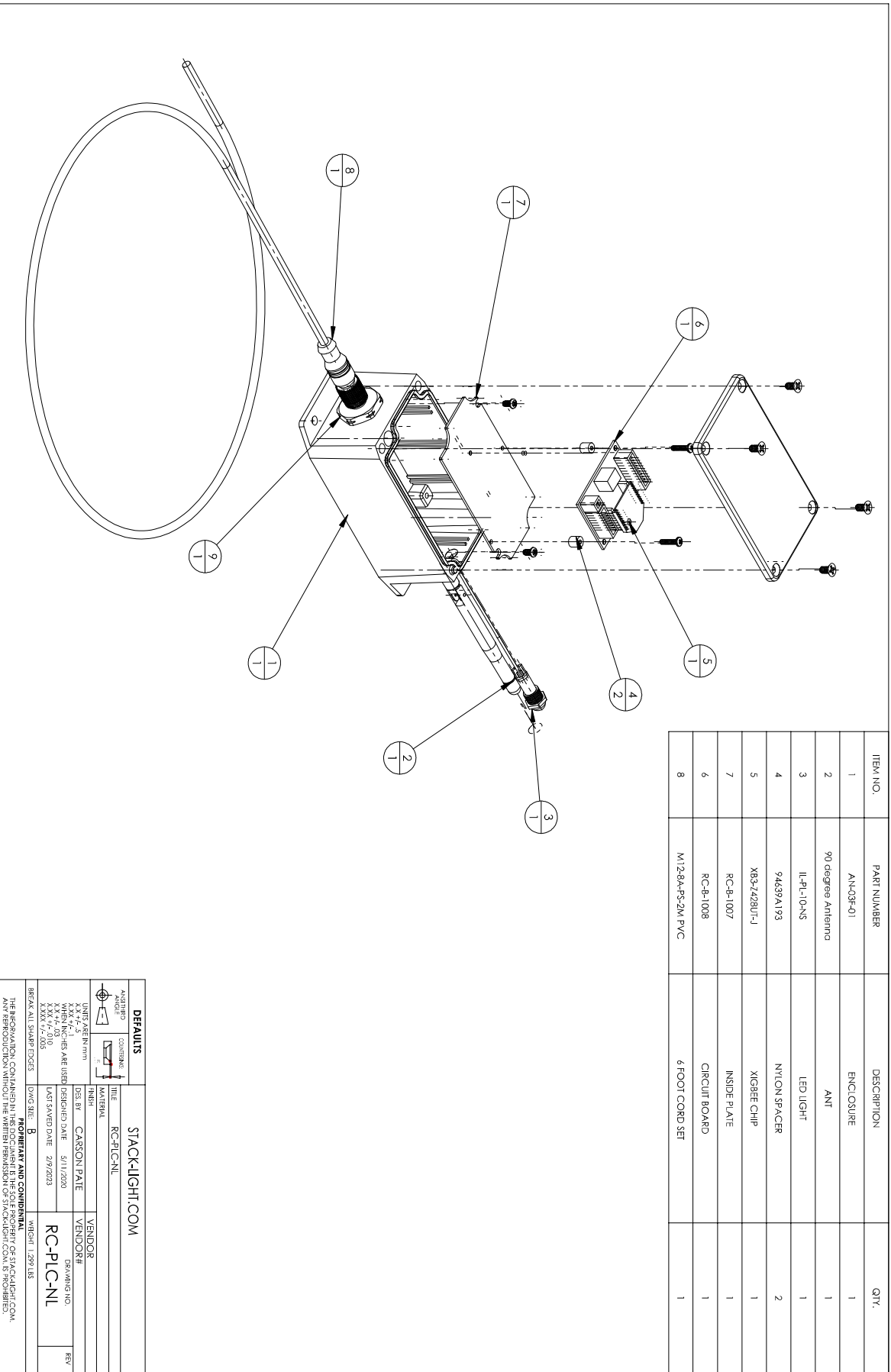
THE INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF STACK-LIGHT.COM. ANY REPRODUCTION WITHOUT THE WRITTEN PERMISSION OF STACK-LIGHT.COM IS PROHIBITED.

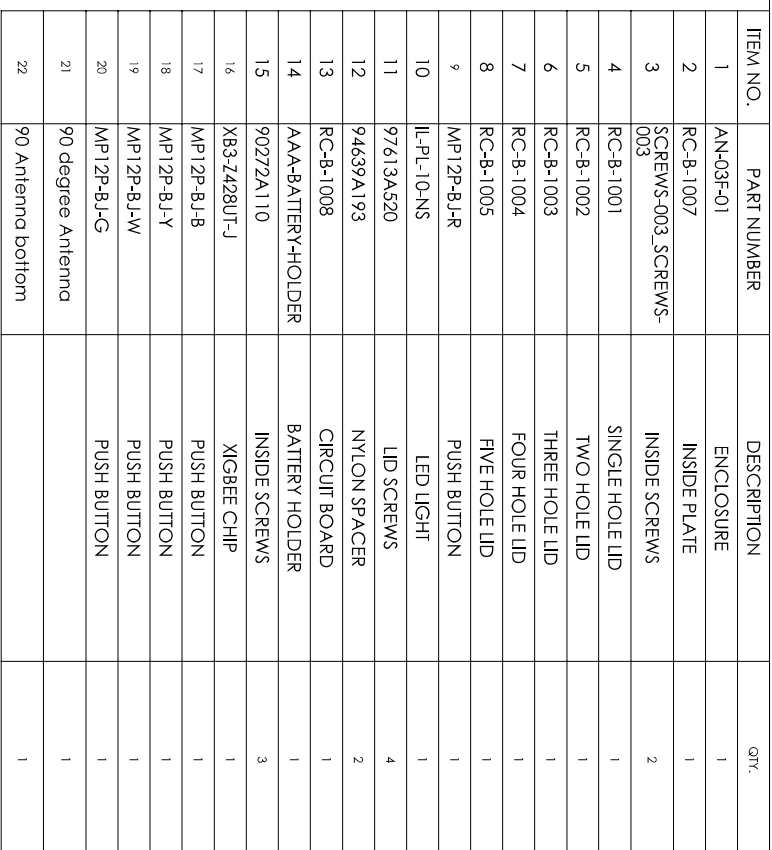
36



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	AN-03F-01	ENCLOSURE	1
2	RC-B-1007	INSIDE PLATE	1
3	94639A193	NYLON SPACER	2
4	RC-B-1008	CIRCUIT BOARD	1
5	90 degree Antenna		1
6	X83-7428UT-J	X83BEE CHIP	1
7	GF-0240500AS	24V POWER SUPPLY	1
8	IL-PL-24V-4-W-F-R	RED LED	1
9	IL-PL-24V-4-W-F-B	BLUE LED	1
10	IL-PL-24V-4-W-F-Y	YELLOW LED	1
11	IL-PL-24V-4-W-F-G	GREEN LED	1
12	IL-PL-24V-4-W-F-W	WHITE LED	1
13	MP12P-BL-B	PUSH BUTTON BLUE	1
14	MP12P-BL-G	PUSH BUTTON GREEN	1
15	MP12P-BL-R	PUSH BUTTON RED	1
16	MP12P-BL-W	PUSH BUTTON WHITE	1
17	MP12P-BL-Y	PUSH BUTTON YELLOW	1
18	RC-I-1007	FIVE HOLE LID	1
25	RC-I-1003	TWO HOLE LID	1
26	RC-I-1004	THREE HOLE LID	1
27	RC-I-1005	FOUR HOLE LID	1
28	RC-I-1002	ONE HOLE LID	1

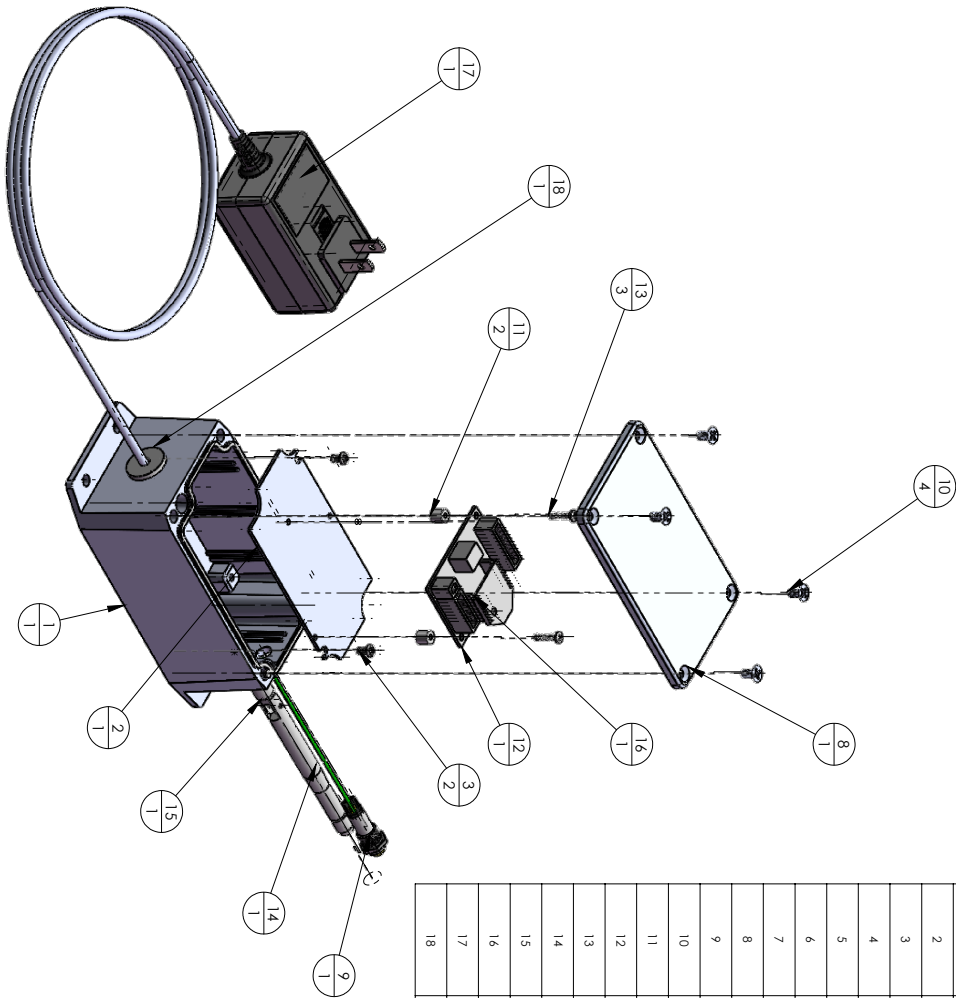
DEFAULTS		STACK-LIGHT.COM	
	ANGLE	TITLE	WIRELESS TRANSMITTER
CONVENTIONAL		MATERIAL	
UNITS ARE IN mm		FINISH	
X.XX ±.5		DES. BY	CARSON PATE
X.XX ±.1		DESIGNED DATE	5/11/2020
X.XX ±.05		LAST SAVED DATE	1/26/2023
X.XX ±.010			
X.XX ±.005		DWG. FILE:	B
BREAK ALL SHAPE EDGES		WEIGHT	1.237 LBS
		RC-I	
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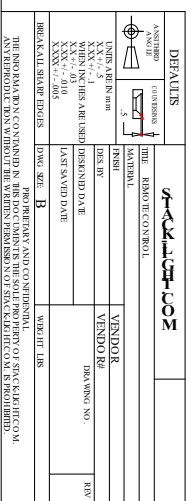


DEFAULTS		Stack Light.com	
 1/2" DIA. HOLE 1/4" DIA. HOLE	COUPLERS  1/2" DIA. HOLE 1/4" DIA. HOLE	TITLE WIRELESS BATTERY BOX	
DES. BY CARSON PAITE		DRAWING NO.	
DATE 12/11/2020		REV.	
CUST. PO. NO. 2797203		RC-B-1000	
BREAK ALL SHARP EDGES		WEIGHT 0.293 LB.	
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	AN-03F-01	ENCLOSURE	1
2	RC-B-1007	INSIDE PLATE	1
3	SCREWS-003, SCREWS-003	INSIDE SCREWS	2
4	RC-B-1001	SINGLE HOLE LID	1
5	RC-B-1002	TWO HOLE LID	1
6	RC-B-1003	THREE HOLE LID	1
7	RC-B-1004	FOUR HOLE LID	1
8	AN-03F-02 TOP	FIVE HOLE LID	1
9	IL-P1-10-MS	LED LIGHT	1
10	97613A520	LID SCREWS	4
11	94439A193	NYLON SPACER	2
12	RC-B-1008	CIRCUIT BOARD	1
13	90272A110	INSIDE SCREWS	3
14	90 degree Antenna		1
15	90 Antenna bottom		1
16	X83 Z428U1-J	XICREE CHIP	1
17	GF-Q240300AS	POWER CABLE	1
18	PS-PORT		1



DEFAULTS		STACK-LIGHT.COM	
ANSI SYMBOL	CONNECTION	TITLE WIRELESS REPEATER	
5	MATERIAL	DWG BY CARSON PALE	VENDOR
UNITS ARE IN mm	FINISH	DESIGNED DATE 5/11/2020	DRAWING NO.
X.XX ± .1 UNITS ARE USED		LAST SAVED DATE 1/24/2023	REV
X.XX ± .05			RC-R
X.XX ± .005			
BREAK ALL SHARP EDGES	DWG SIZE: B	WEIGHT 1.228 LBS	
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PROPRIETARY AND CONFIDENTIAL			



LONG LEG

RED LED
1497-1354-ND

1K RESISTOR

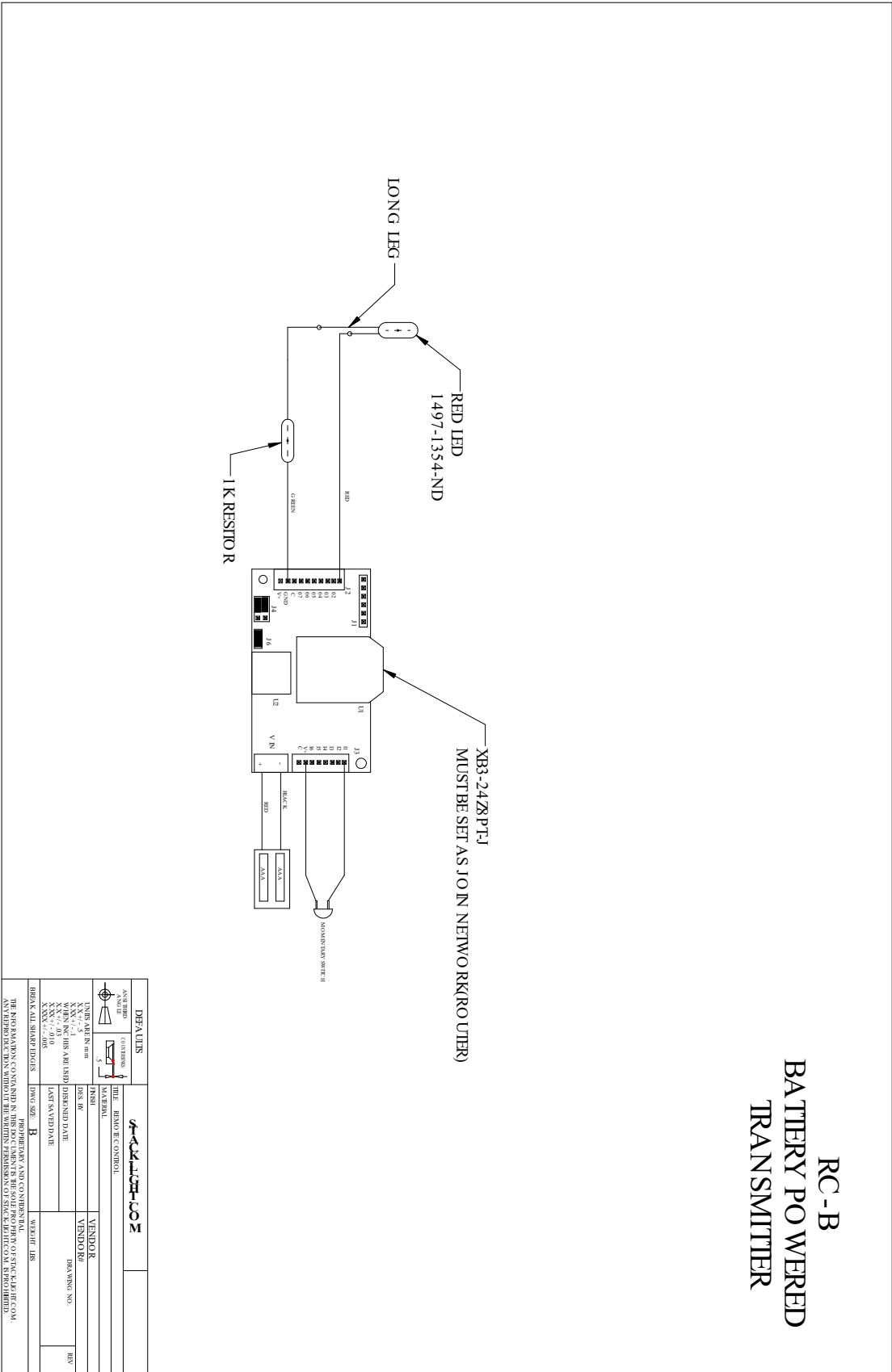
XB3-2428PT-1
MUST BE SET AS IO IN NETWORK (RO UTER)

VCC

GND

SIGNAL

SPEAKER



LONG LEG

RED LED
1497-1354-ND

1K RESISTOR

XB3-2428PT-1
MUST BE SET AS IO IN NETWORK (RO UTER)

VCC

GND

SIGNAL

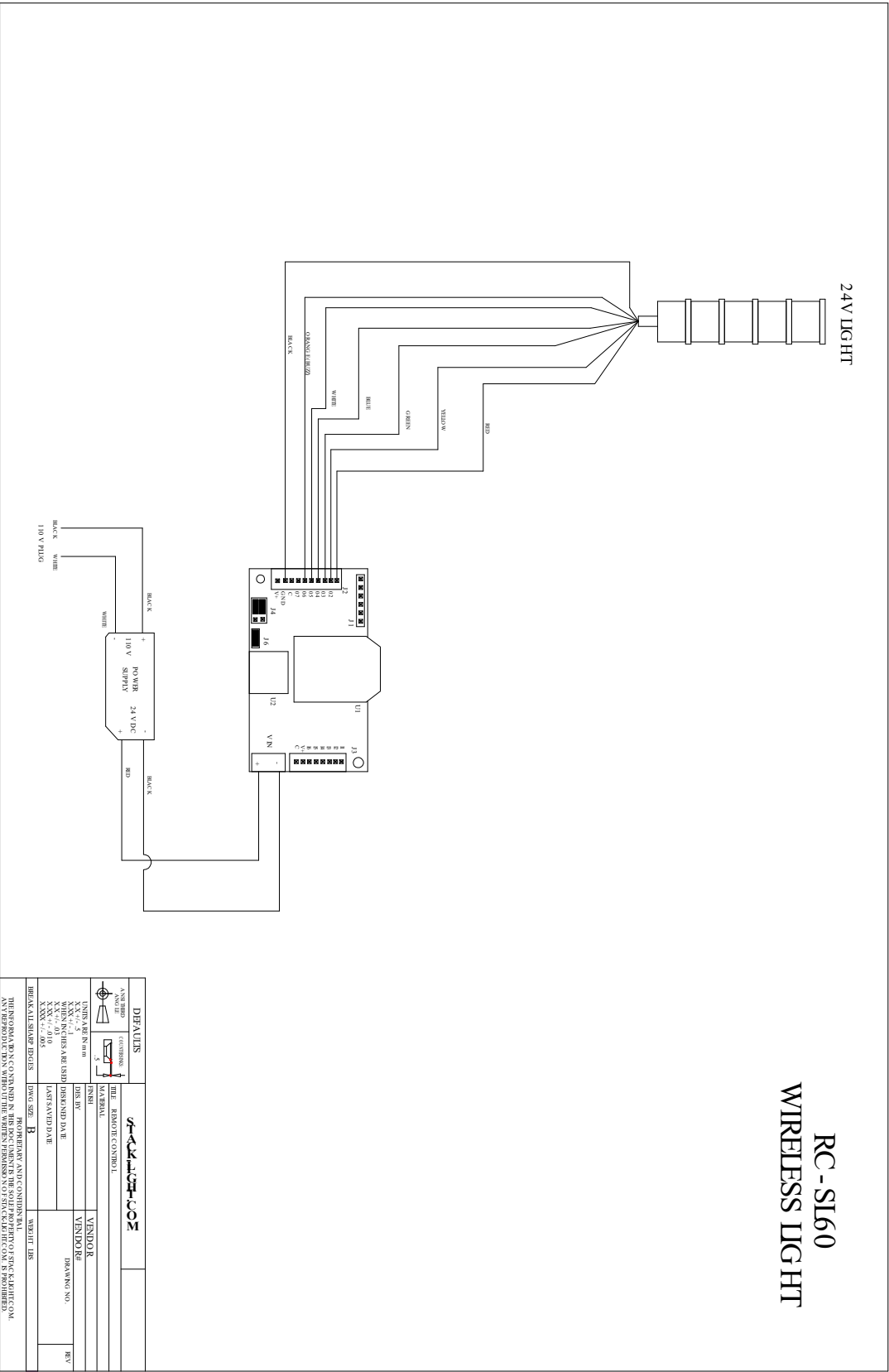
SPEAKER

PUSH BUTTON
24V LEDs



					
DEFULTS		COMMENTS		SCALTEC.COM	
ANGLE		TITLE		REMO E.C. CONTROL	
MATERIAL		PSHRI		VENDOR	
DRS BY		DISK AND DATE		VENDOR#	
LASTED NAME		WELLT.DRS		DRAWING NO.	
BOX		BOX		BOX	

RC-SL60
WIRELESS LIGHT

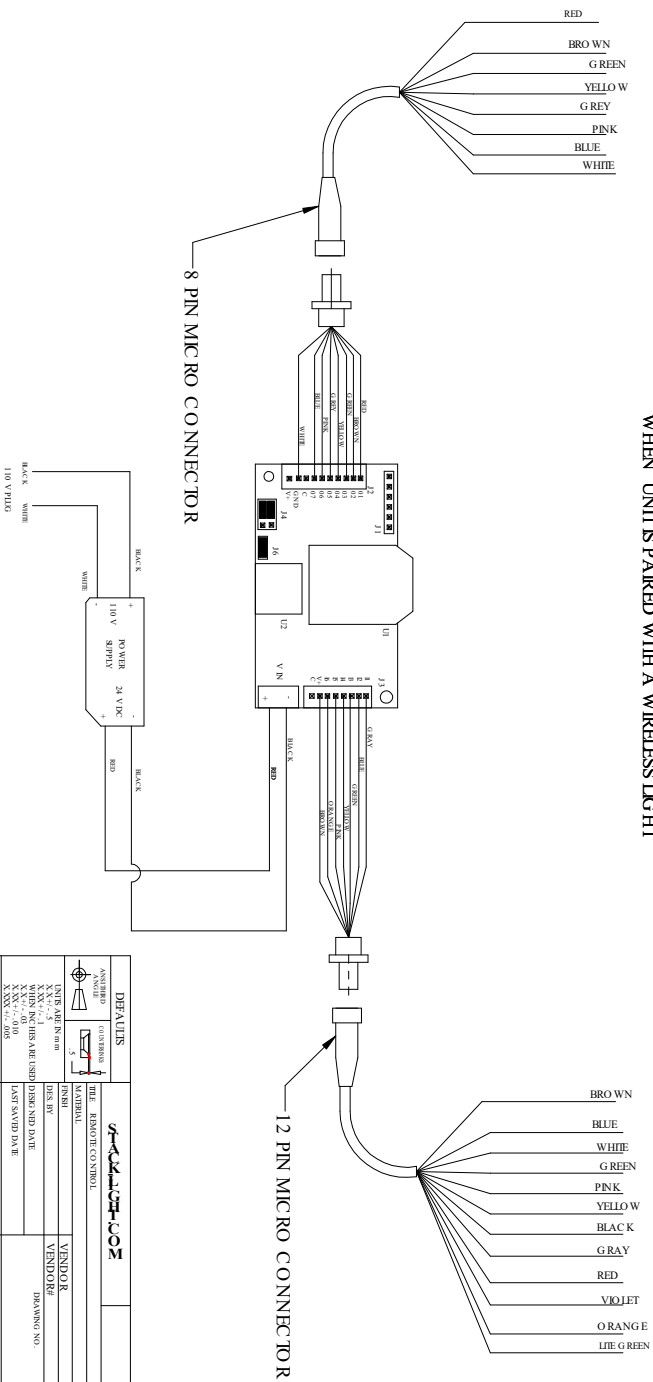


INPUTS

Pin#	Color	Lighting Icon	Output
1	RED	RED	2
2	BROWN	BROWN	3
3	GREEN	GREEN	4
4	YELLOW	YELLOW	5
5	GREY	WHITE	6
6	GREY	WHITE	
7	PINK	WHITE	
8	PINK	WHITE	
9	WHITE	GND	

	OUTPATIENT	INPATIENT
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12

* LGHTFUNC TIONS
SIGNIFIES NORMAL OPERATION
WHEN UNITS PAIRED WITH A WIRELESS LGHT



DETAILS (AMERICAN) (EUROPEAN) 		SCIENTEC.COM	
THE RADIATOR CONTROL 			
UNIT SIZE: 18 in. H x 18 in. W	VENDOR: R	VENDOR: R	
MAX. AIR FLOW: 1000 CFM	DESIGN: R	VENDOR: R	
DESIGN DATE: 11/11/2009	DRAWING NO.	REV.	
XXXX-XXXX-XXXX	LAST SAVED DATE: 11/11/2009		
MODEL AND OTHER NOTES: THE RADIATOR CONTROL IS THE PROPERTY OF SCIENTEC.COM. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF SCIENTEC.COM.		PRINT SIZE: B	

RC-IO-IN-OUT

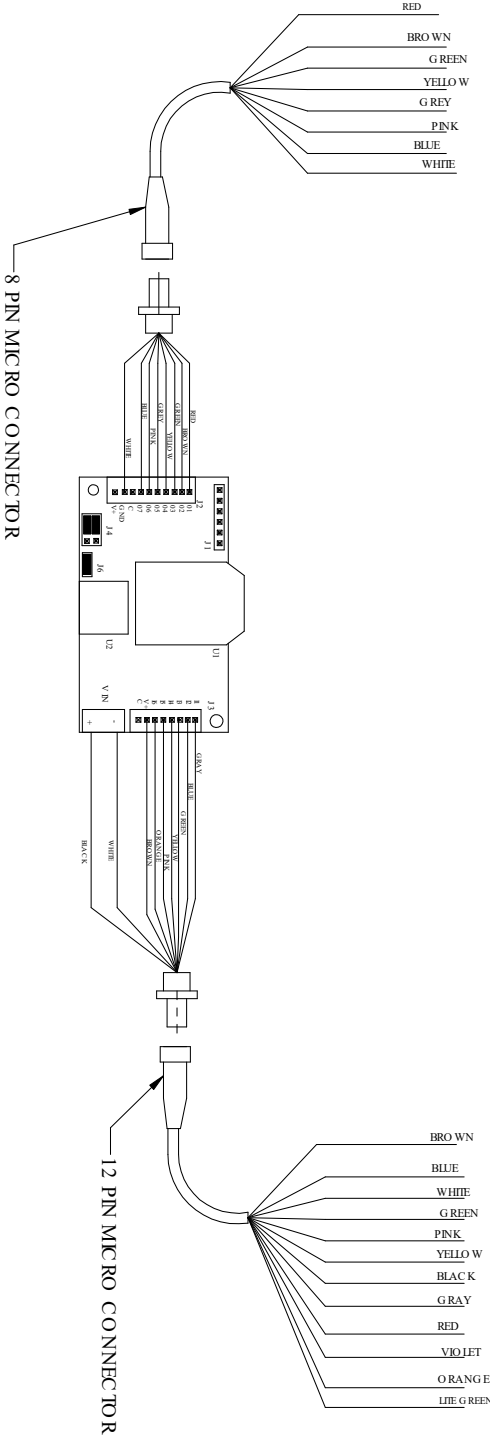
OUTPUTS

PIN#	COLOR	LIGHTFUNCTION	OUTPUT
1	RED	RED	1
2	BROWN	YELLOW	2
3	GREEN	GREEN	3
4	YELLOW	BLUE	4
5	GRAY	WHITE	5
6	PINK	RED/BLUE LED	6
7	BLUE		
8	WHITE	GND	

* LIGHTFUNCTIONS
SIG NIFIES NO RMAL O PERATION
WHEN UNITS PAIRED WITH A WIRELESS LG HT

INPUTS

PIN#	COLOR	OUTPUT(ACTIVATED)	LIGHTFUNCTION
1	BROWN	BLUE	COMMON
2	BLUE	WHITE	BLUE LIGHT
3	WHITE		24V DC
4	GREEN		GREEN LIGHT
5	PINK		RED LIGHT
6	YELLOW		YELLOW LIGHT
7	BLACK		24V DC
8	GRAY		WHITE LIGHT
9	WHITE		
10	ORANGE		RED
11	VIOLET		ORANGE
12	LITE GREEN		BLUE



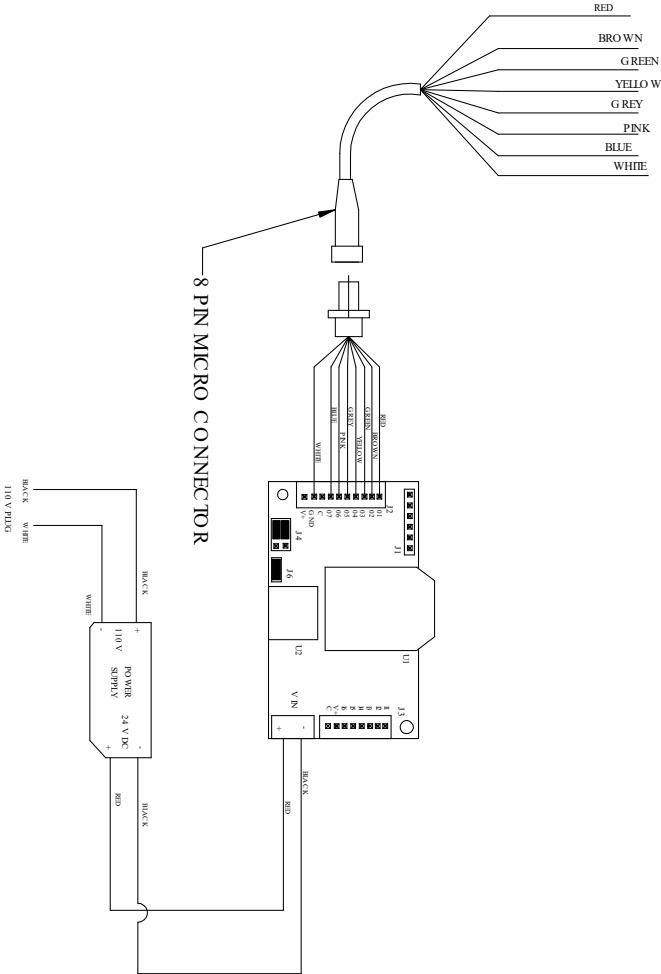
4-AMCUT.COM			
ANSWER	CONTROL	5	
UNITS ARE IN mm	UNITS ARE IN mm	UNITS ARE IN mm	UNITS ARE IN mm
XXXXX-1	XXXXX-1	XXXXX-1	XXXXX-1
XXXXX-2	XXXXX-2	XXXXX-2	XXXXX-2
XXXXX-3	XXXXX-3	XXXXX-3	XXXXX-3
XXXXX-4	XXXXX-4	XXXXX-4	XXXXX-4
XXXXX-5	XXXXX-5	XXXXX-5	XXXXX-5
XXXXX-6	XXXXX-6	XXXXX-6	XXXXX-6
XXXXX-7	XXXXX-7	XXXXX-7	XXXXX-7
XXXXX-8	XXXXX-8	XXXXX-8	XXXXX-8
XXXXX-9	XXXXX-9	XXXXX-9	XXXXX-9
XXXXX-10	XXXXX-10	XXXXX-10	XXXXX-10
XXXXX-11	XXXXX-11	XXXXX-11	XXXXX-11
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XXXXX-13	XXXXX-13	XXXXX-13	XXXXX-13
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XXXXX-71	XXXXX-71	XXXXX-71	XXXXX-71
XXXXX-72	XXXXX-72	XXXXX-72	XXXXX-72
XXXXX-73	XXXXX-73	XXXXX-73	XXXXX-73
XXXXX-74	XXXXX-74	XXXXX-74	XXXXX-74
XXXXX-75	XXXXX-75	XXXXX-75	XXXXX-75
XXXXX-76	XXXXX-76	XXXXX-76	XXXXX-76
XXXXX-77	XXXXX-77	XXXXX-77	XXXXX-77
XXXXX-78	XXXXX-78	XXXXX-78	XXXXX-78
XXXXX-79	XXXXX-79	XXXXX-79	XXXXX-79
XXXXX-80	XXXXX-80	XXXXX-80	XXXXX-80
XXXXX-81	XXXXX-81	XXXXX-81	XXXXX-81
XXXXX-82	XXXXX-82	XXXXX-82	XXXXX-82
XXXXX-83	XXXXX-83	XXXXX-83	XXXXX-83
XXXXX-84	XXXXX-84	XXXXX-84	XXXXX-84
XXXXX-85	XXXXX-85	XXXXX-85	XXXXX-85
XXXXX-86	XXXXX-86	XXXXX-86	XXXXX-86
XXXXX-87	XXXXX-87	XXXXX-87	XXXXX-87
XXXXX-88	XXXXX-88	XXXXX-88	XXXXX-88
XXXXX-89	XXXXX-89	XXXXX-89	XXXXX-89
XXXXX-90	XXXXX-90	XXXXX-90	XXXXX-90
XXXXX-91	XXXXX-91	XXXXX-91	XXXXX-91
XXXXX-92	XXXXX-92	XXXXX-92	XXXXX-92
XXXXX-93	XXXXX-93	XXXXX-93	XXXXX-93
XXXXX-94	XXXXX-94	XXXXX-94	XXXXX-94
XXXXX-95	XXXXX-95	XXXXX-95	XXXXX-95
XXXXX-96	XXXXX-96	XXXXX-96	XXXXX-96
XXXXX-97	XXXXX-97	XXXXX-97	XXXXX-97
XXXXX-98	XXXXX-98	XXXXX-98	XXXXX-98
XXXXX-99	XXXXX-99	XXXXX-99	XXXXX-99
XXXXX-100	XXXXX-100	XXXXX-100	XXXXX-100

RC-IO-OUT-PS

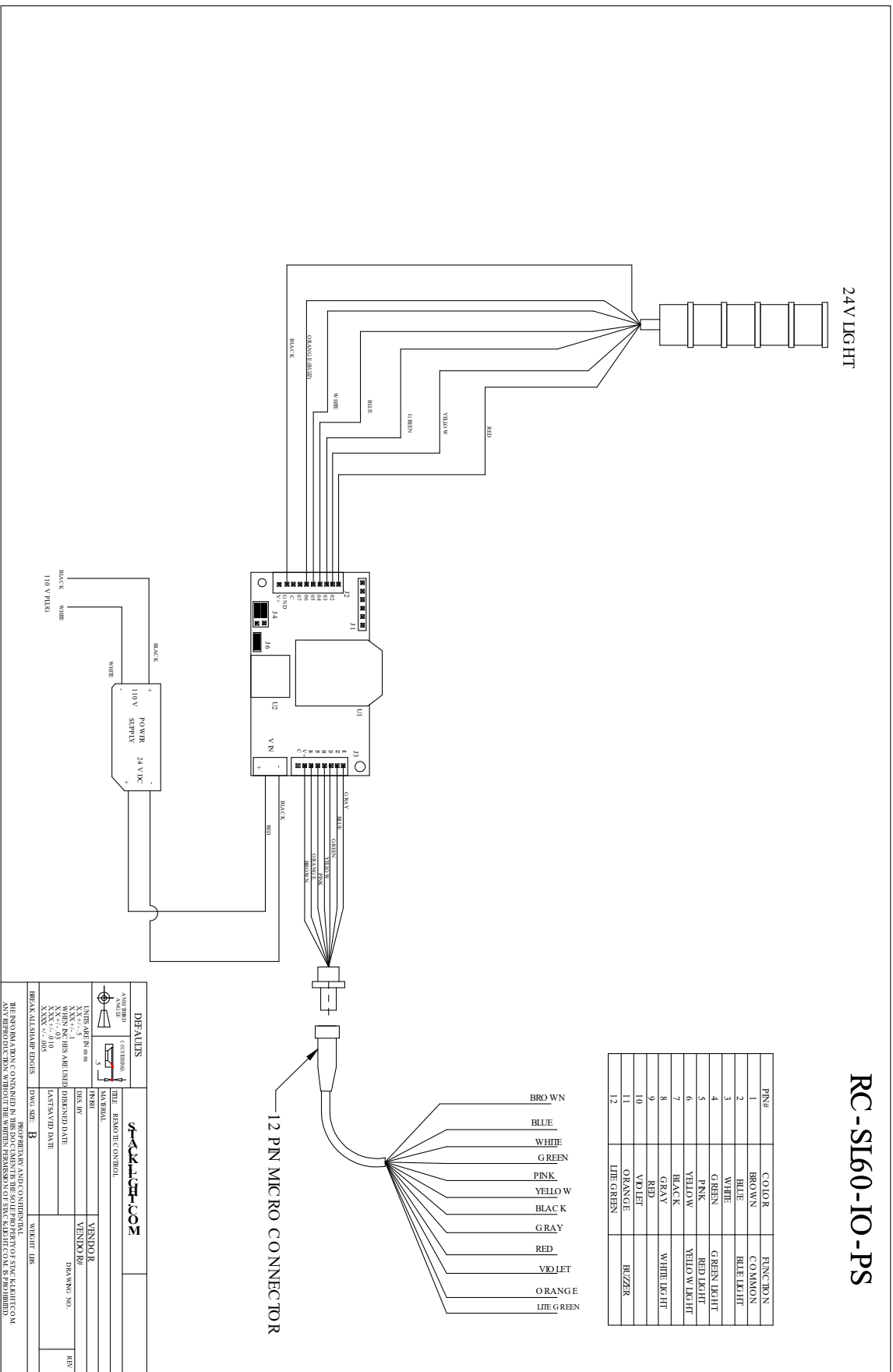
OUTPUTS

PIN#	COLOR	LIGHTFUNCTION	OUTPUT
1	RED	RED	1
2	BROWN	YELLOW	2
3	GREEN	GREEN	3
4	BROWN	WHITE	4
5	YELLOW	WHITE	5
6	PINK	INDICATOR LED	6
7	BLUE		
8	WHITE	GND	

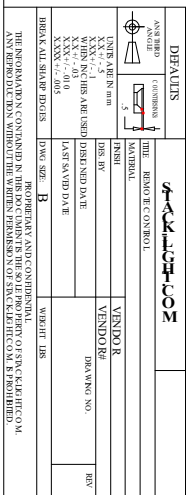
* LIGHTFUNCTIONS
SIGNALINES NO RMAL OPERATION
WHEN UNITS PAIRED WITH A WIRELESS LIGHT



DEFAULTS		SACMUR.COM	
ANSI 8020	5	TITLE: REMOTE CONTROL	
UNITS ARE IN mm	5	REVISION: 1	
XX.XX.XX	XX.XX.XX	VENDOR: VENDOR	
WHEN UNITS ARE USED DISCARD DATE	XX.XX.XX	DRAWING NO.	
XX.XX.XX	XX.XX.XX	REV	
LAST SAVED DATE	XX.XX.XX	WHENIT LBS	
DRWG. QTY: 1	1	WHENIT LBS	
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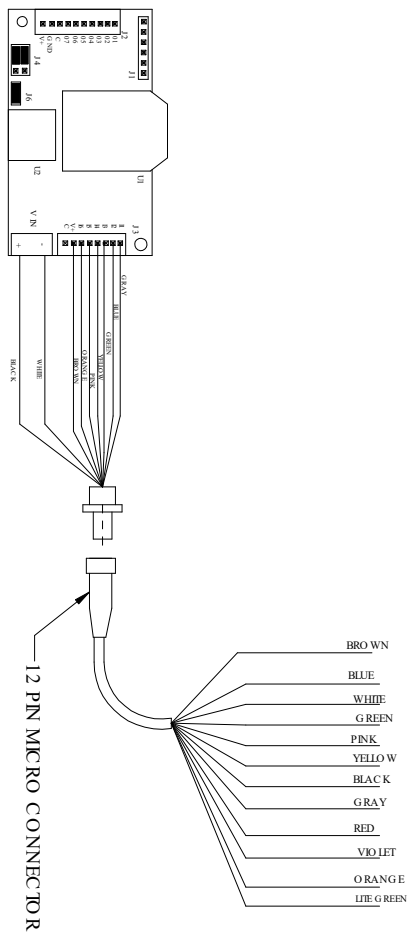


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INPUTS

PR#	COLOR	OUTPUT AC TREATED	LEATH FINE, 30 IN
1	BROWN	0	COMMON
2	BLUE		BLUE LIGHT
3	WHITE		GREEN LIGHT
4	GREEN	3	RED LIGHT
5	PINK	5	RED LIGHT
6	YELLOW	4	YELLOW LIGHT
7	BLACK	2	+34 DC
8	GRAY	1	WHITE LIGHT
9	RED		
10	VIOLET		
11	ORANGE	6	BUZZER
12	LIME GREEN		

[illegible]