

XCELLA WIRELESS DEVICE PAIRING GUIDE

**IMPORTANT SAFEGUARDS
READ AND FOLLOW ALL SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS**

WARNINGS

1. All servicing should be performed by qualified service personnel.
2. "WARNING, Battery may explode if mistreated. Do not recharge, disassemble or dispose of in fire."
3. "CAUTION - This equipment provides more than one power supply output source. To reduce the risk of electric shock disconnect both normal and emergency sources within this unit before servicing any equipment connected to this unit"
4. When using electrical equipment, basic safety precautions should always be followed including the following:
 - a. READ AND FOLLOW ALL SAFETY INSTRUCTIONS.
 - b. Do not use outdoors.
 - c. Do not mount near gas or electric heaters.
 - d. Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
 - e. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
 - f. Do not use this equipment for other than intended use.
 - g. SAVE THESE INSTRUCTIONS.
5. If any Emergency Circuits are fed or controlled from this panel, it must be located electrically where fed from a UPS, generator, or other guaranteed source of power during emergency and power outage situations.

INTRODUCTION TO XCELLA WIRELESS

xCella Wireless products are scalable room-based lighting controls that dramatically reduce installation and commissioning costs with quick-configure control of lighting, HVAC & plug load. xCella deploys quickly for simple room control that can be networked for a floor or building wide solution.

Featuring innovative Pair & Play technology, xCella switches, sensors, and load controls are operational in minutes & can be delivered pre-paired & packaged by room for even faster installation & reduced commissioning costs.

Utilizing battery-free, power harvesting technology, xCella switches & sensors eliminate costly high-voltage wiring & installation labor in new construction and minimizes modification of existing circuits & wall boxes.



No Wires. No Batteries. No Boundaries.

PAIR & PLAY TECHNOLOGY

DEVICE PAIRING STEPS

STEP 1: Enter pairing mode (double tap the xCella Module user button twice)



Normal
LED: 1 second blink



Override
LED: 2 second blink



Pairing
LED: 1/4 second blink

Notes:

- The relay blinks once after each pairing and twice after unpairing.
- The Module stays in pairing mode for 30 seconds after each pairing is complete.

STEP 2: Actuate devices to be paired by pressing the user button according to the instructions below. Actuating devices a second time will unpair the devices.



Wireless Rocker Switch
Press Up/Down/Up



Wireless KeyCard Switch
Insert and remove card 3 times within 5 seconds



Wireless Occupancy Sensor
Press user button (non-indented) once



Wireless Photocell
Push and hold user button for 10 seconds



Wireless Window/Door Sensor
Press user button once



Wireless Occ Sensor
Press user button once¹



Wireless Switch
Press ON/OFF/ON

STEP 3: Return to normal mode (double tap xCella Module button once)

NOTES:

1. Multiple sensors can be added while the xCella Module is in pairing mode. Time delay is set by the factory and is modified via xCella Module Utility Software and cannot be adjusted via the CM PDT 9WR.

PAIRING DEVICES TO XCELLA MODULE

Before normal use, ensure all desired wireless devices are paired into the xCella Remote Module. This is the process of defining what devices will have control over a particular xCella Module.

1. Ensure the xCella Module is powered up.
2. Switch the Module to Pairing mode.
3. Consult the table below for details on the learning procedures for all supported devices.

Wireless Device	Learning Procedure	Comment
Single rocker pad	<ol style="list-style-type: none"> 1. Press TOP rocker position 2. Press bottom rocker position 3. Press TOP rocker position 	There is a TOP engraving inside the rocker pad front face plate.
Dual rocker pad	<ol style="list-style-type: none"> 1. Press TOP left rocker position 2. Press bottom left rocker position 3. Press TOP left rocker position 	There is a TOP engraving inside the rocker pad front face plate.
Hand held programmer	<ol style="list-style-type: none"> 1. Press TOP left button 2. Press bottom left button 3. Press TOP left button 	There is an indentation on the hand held programmer which is taken as the TOP side.
Wall mount occupancy sensor	Push non-indented button once	<p>There are non-indented and indented buttons at the bottom of the sensor.</p> <p>A small green LED should flash briefly when either button is pressed. If there is no flash, the sensor does not have enough solar power stored to operate.</p>
Ceiling mount occupancy sensor	Push non-indented button once	<p>There are non-indented and indented buttons at the bottom of the sensor.</p> <p>A small green LED should flash briefly when either button is pressed. If there is no flash, the sensor does not have enough solar power stored to operate.</p>
Photocell	Press and hold button for at least 10 seconds.	Make sure the photocell has been pre-charged with light before attempting to have it learned into the RF Node.
Wireless Gateway	<ol style="list-style-type: none"> 1. Switch the Gateway to Learning mode 2. Use the Clock MANUAL OVERRIDE screen to turn on the desired LOAD. 3. Turn off the desired LOAD while in MANUAL OVERRIDE 4. Wait at least 8 seconds 5. Switch the Gateway to Normal mode 	

4. To erase programming in the Module - put the Module in Pairing mode and press and hold the button for about 5 seconds.

XCELLA MODULE PAIRING SEQUENCE

Inside the xCella Module are slots for wireless devices that are learned in. Each slot holds information for 1 device. There are 16 slots available for wireless devices.

The order of pairing is important for determining how occupancy sensor signals are treated by the xCella Module. There are 2 cases to consider.

Case 1: Only vacancy signals both have effect on a light and occupancy signals are ignored. In this case the sensor is treated as a vacancy sensor that turns off a light when it detects that people are not present and relays on a Wireless switch device to turn lights on. In order to do this, there must be at least one Wireless Switch device in the first slots of the learning table and occupancy sensor in the slots immediately following the last Wireless Switch device learning slot.

Slot #	Wireless Device ID	Device Type
1	00256851	Wireless Switch
2	00256853	Wireless Switch
...
7	00856852	Wireless Occupancy Sensor
8	00856857	Wireless Occupancy Sensor
...
13	01258851	Wireless Photocell
14	01258852	Wireless Photocell

Case 2: The occupancy and vacancy signals both have effect on a light. In this case the sensor is treated as an occupancy sensor that turns on a light upon detecting people and turns off a light when it detects that people are not present. In order to do this, only occupancy sensor device types should

Slot #	Wireless Device ID	Device Type
1	00856862	Occupancy Sensor
2	0085686F	Occupancy Sensor
...

XCELLA MODULE BLINK MODES

The xCella Module has a single button for switching between 3 modes of operation. Double tap the button to switch between operations. LED A indicates the mode of the XCella Module. The tables below give the blink pattern indication for each mode.

Mode	LED A Blink Pattern	Description
Normal	1 second on / 1 second off	Module operates normally.
Pairing	0.25 second on / 0.25 second off	Learning Mode: places the xCella module into programming mode such that the other devices may be paired.
Override	2 seconds on / 2 seconds off	Used for troubleshooting. Allows an operator to turn the 0-10V dimming and relay output ON and OFF by pushing and holding the user button on the xCella Module for 1 second.

Mode	LED B Blink Pattern	Description
Power on	Triple blinks	Indicates the XCella Module has been recently powered on. The next state change will be either single or double blink depending on the status of the lights.
Lights are off	Single blinks	Lights are off
Lights are on	Double blinks	Lights are on

XCELLA GATEWAY MODES OF OPERATION

The xCella Gateway is bus powered. The xCella Gateway will not work if not connected to the GR2400 bus. The MODE button switches between 2 modes of operation. Double tap the button to switch between operations. GWY LED indicates the mode of the xCella Gateway. Table below gives the blink pattern indication for each mode.

Mode	GWY LED Blink Pattern Indication
Normal	0.5 second on / 0.5 second off
Learning	0.25 second on / 0.25 second off

CONFIGURING DEVICES TO XCELLA GATEWAY

The xCella wireless system is a separate system from the wired GR2400 system. Interfacing both systems together requires a translator in between. The xCella Gateway is this translator. The xCella Gateway handles bi-directional communication:

1. From xCella wireless system to GR2400 system
2. From GR2400 system to xCella wireless system

Below are use cases to illustrate the xCella Gateway functions:

Use Case 1: A single Wireless Switch controls a fixture connected to a GR2400 system panel. In this case, the communication is from xCella wireless system to the GR2400 system.

Use Case 2: A Wireless Occupancy Sensor controls a fixture connected to a GR2400 system panel that turns on when the room is occupied and turns off when people leave the room. In this case, the communication is from xCella wireless system to GR2400 system.

Use Case 3: A switch on the GR2400 system is controlling a fixture connected to an xCella Module. In this case, the communication is from GR2400 system to xCella wireless system.

Use Case 4: A fixture connected to an xCella Module is under schedule control. In this case, the communication is from GR2400 system to xCella wireless system.

COMMUNICATION NOTES:

The communications handled by the xCella Gateway is bi-directional. A relay card is emulated on the GR2400 system in order to allow the xCella wireless system to communicate to the GR2400 system. A special type of switching is emulated on the GR2400 system called a Wireless Receiver that allows xCella wireless to GR2400 system communication.

Both emulated devices have Address buttons and Online LEDs associated with them. The GWY indicator LED and MODE button are for GR2400 system to xCella wireless system learning.

IMPLEMENTING USE CASES

FROM XCELLA WIRELESS SYSTEM TO GR2400 SYSTEM

1. Make sure the xCella Gateway is plugged into the GR2400 system.
2. The greater than symbol > means "Press ENTER button on the Clock"
3. Go to [welcome screen] > USER MENU > PROGRAM SWITCH > [highlight desired switch device number] > [highlight clock display text PAGE] > [highlight clock display text SWITCH] > LEARNING ON
4. Refer to the table below for details on the learning procedures for all currently supported devices. The Single Wireless Switch, Dual Wireless Switch, and Hand held Remote device instructions will be used if Use Case 1 is to be implemented. The Wall Mount Occupancy Sensor and Ceiling Mount Occupancy Sensor device instructions will be used if Use Case 2 is to be implemented.

Wireless Device	Learning Procedure	Comment
Single rocker pad	Press and release the TOP rocker position.	There is a TOP engraving inside the rocker pad front face plate.
Dual rocker pad	<ol style="list-style-type: none"> 1. Press and release the TOP rocker position of the left rocker. 2. Press and release the TOP rocker position of the right rocker. 	There is a TOP engraving inside the rocker pad front face plate.
Hand held programmer	<ol style="list-style-type: none"> 1. Press and release the TOP rocker position of the left rocker. 2. Press and release the TOP rocker position of the right rocker. 	There is an indentation which is taken as the TOP side.
Wall mount occupancy sensor	Press and release either the non-indented button or indented button.	<ul style="list-style-type: none"> • There are non-indented and indented buttons at the bottom of the sensor. • A small green LED should flash briefly when either button is pressed. If there is no flash, the sensor does not have enough solar power stored to operate.
Ceiling mount occupancy sensor	Press and release either the non-indented button or indented button.	<ul style="list-style-type: none"> • There are non-indented and indented buttons at the bottom of the sensor. • A small green LED should flash briefly when either button is pressed. If there is no flash, the sensor does not have enough solar power stored to operate.

5. Press ENTER with LEARNING ON highlighted to take the Wireless Receiver out of learning mode.

6. Refer to the table below for details on how the Wireless Receiver BUTTONS are programmed.

Wireless Device	BUTTON Programming Procedure
Single rocker pad	<ol style="list-style-type: none"> 1. Set BUTTON 1 to OFF MODE. 2. Set the desired LCPs and LOADs to be controlled by the BUTTON. 3. Set BUTTON 2 to ON MODE. 4. Set the same LCPs and LOADs as what was set for BUTTON 1.
Dual rocker pad	<ol style="list-style-type: none"> 1. Set BUTTON 1 to OFF MODE. 2. Set the desired LCPs and LOADs to be controlled by the left rocker. 3. Set BUTTON 2 to ON MODE. 4. Set the same LCPs and LOADs as what was set for BUTTON 1. 5. Set BUTTON 3 to OFF MODE. 6. Set the desired LCPs and LOADs to be controlled by the right rocker. 7. Set BUTTON 4 to ON MODE. 8. Set the same LCPs and LOADs as what was set for BUTTON 3.
Hand held programmer	<ol style="list-style-type: none"> 1. Set BUTTON 1 to OFF MODE. 2. Set the desired LCPs and LOADs to be controlled by the left rocker. 3. Set BUTTON 2 to ON MODE. 4. Set the same LCPs and LOADs as what was set for BUTTON 1. 5. Set BUTTON 3 to OFF MODE. 6. Set the desired LCPs and LOADs to be controlled by the right rocker. 7. Set BUTTON 4 to ON MODE. 8. Set the same LCPs and LOADs as what was set for BUTTON 3.

IMPLEMENTING USE CASES (continued)

Wall mount occupancy sensor	<ol style="list-style-type: none"> 1. Set BUTTON 2 to MAINTAIN. 2. Set the desired LCPs and LOADs to be controlled. 3. BUTTON 1 will have no programming.
Ceiling mount occupancy sensor	<ol style="list-style-type: none"> 1. Set BUTTON 2 to MAINTAIN. 2. Set the desired LCPs and LOADs to be controlled. 3. BUTTON 1 will have no programming.

Repeat the procedure above for other wireless devices to be learned.

FROM GR2400 SYSTEM TO XCELLA WIRELESS SYSTEM

The xCella Module has a single button for switching between 3 modes of operation. Double tap the button to switch between operations. LED A indicates the mode of the xCella Module. The first table below gives the blink pattern indication for each mode.

Mode	LED A Blink Pattern Indication
Normal	1 second on / 1 second off
Learning	0.25 second on / 0.25 second off
Override	2 seconds on / 2 seconds off

The xCella Gateway MODE button switches between 2 modes of operation. Double tap the button to switch between operations. GWY LED indicates the mode of the xCella Gateway. Table below gives the blink pattern indication for each mode.

Mode	GWY LED Blink Pattern Indication
Normal	0.5 second on / 0.5 second off
Learning	0.25 second on / 0.25 second off

LEARNING PROCEDURES:

1. Ensure the Module is powered up.
2. Switch the Module to Learning mode.
3. Switch the Gateway to Learning mode.
4. Use the Clock MANUAL OVERRIDE screen to turn on the desired LOAD.
5. Turn off the desired LOAD while in MANUAL OVERRIDE.
6. Wait at least 8 seconds and switch the Gateway to Normal mode.
7. Go to PROGRAM SWITCH.
8. Program the switch to control the learned in LOAD for the desired behavior.