

Crestron **C2N-IRGW-F**

IR Gateway

Operations & Installation Guide



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IR Gateway: C2N-IRGW-F

Introduction

Features and Functions

- 1-way infrared receiver for Crestron® IR wireless handheld remotes and touchpanels
- Compatible with any third-party IR remote utilizing the RC5 command set
- Smoked plastic face provides neutral appearance suitable for use with any color scheme
- Seamless Cresnet® integration
- Compatible with any 2-Series control device
- Easy one-piece mounting (no additional hardware required)

Specifications

Specifications for the C2N-IRGW-F are listed in the following table.

C2N-IRGW-F Specifications

SPECIFICATION	DETAILS
IR Wireless	
IR Frequency	36-38 kHz IR
Formats	Crestron format, RC5

(Continued on following page)

C2N-IRGW-F Specifications (Continued)

SPECIFICATION	DETAILS
IR Wireless (continued) IR Range	Up to 50 ft line of sight (typical), dependent upon angle, obstructions, IR interference and IR remote signal strength
Power Requirements Cresnet Power Usage	1 Watt (0.042 Amps @ 24 Volts DC)
Default Net ID	2D
Minimum 2-Series Control System Update File ^{1, 2}	Version 3.137 or later
Environmental Temperature Humidity	41° to 104°F (5° to 40°C) 10% to 90% RH (non-condensing)
Enclosure	Cylindrical plastic, drywall or ceiling tile mountable in a 1-inch (2.54 cm) diameter round hole.
Dimensions Diameter Depth	1.50 in (3.81 cm) 2.19 in (5.54 cm)
Weight	0.9 oz (25.52 g)
Compatible Remote Controls	Crestron MT-1000C Crestron ST-1700CIR Crestron WPR-48 Crestron CLS-IRHT8 Any universal remote capable of generating RC5 commands

1. The latest software versions can be obtained from the Crestron website. Refer to the NOTE following these footnotes.

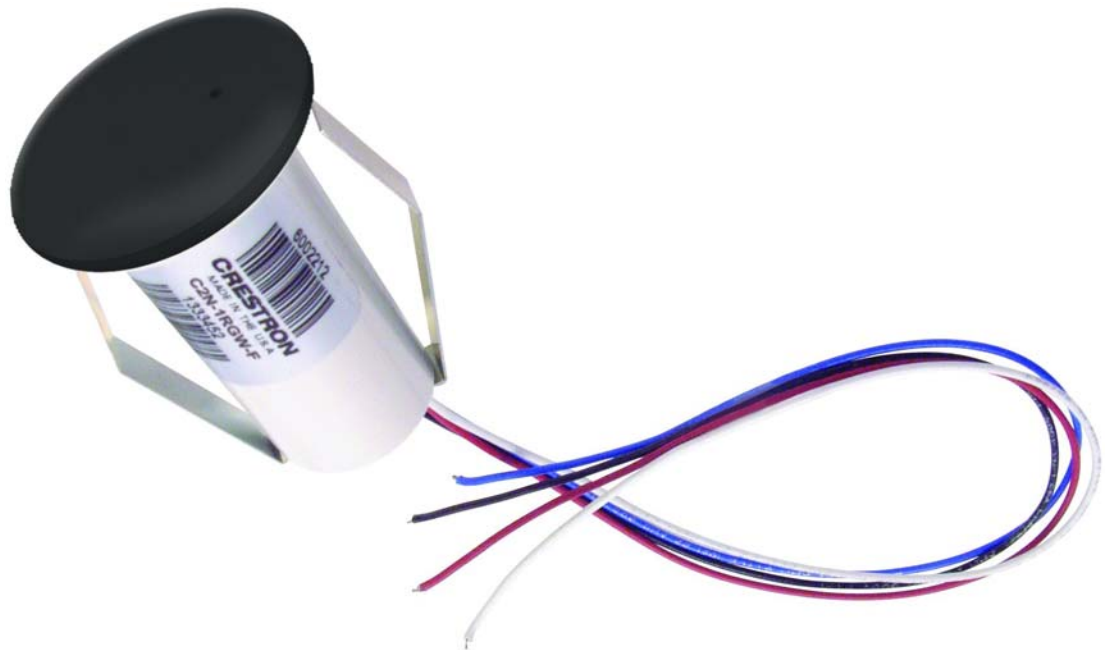
2. Crestron 2-Series control systems include the AV2 and PRO2. Consult the latest Crestron Product Catalog for a complete list of 2-Series control systems.

NOTE: Crestron software and any files on the website are for authorized Crestron dealers and Crestron Authorized Independent Programmers (CAIP) only. New users may be required to register to obtain access to certain areas of the site (including the FTP site).

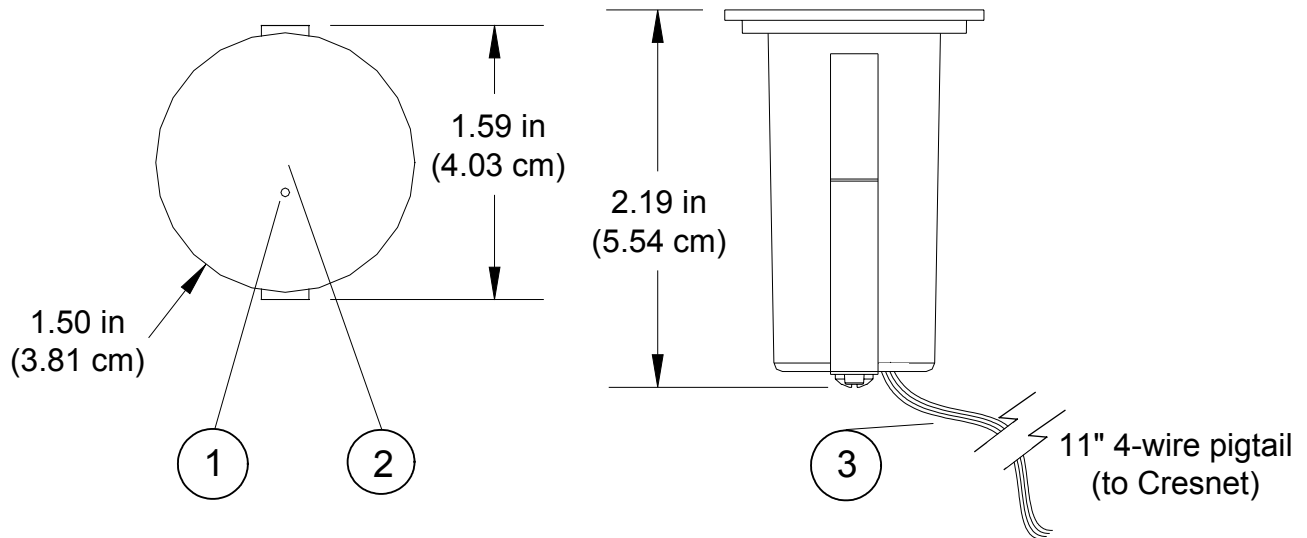
Physical Description

This section provides information on the connections, controls and indicators available on your C2N-IRGW-F.

C2N-IRGW-F Physical View



C2N-IRGW-F Overall Dimensions



Connectors, Controls & Indicators

#	CONNECTORS, CONTROLS & INDICATORS	DESCRIPTION
1	SETUP BUTTON	Recessed miniature pushbutton for setup. (Can be pressed with a paper clip.)
2	LED	(1 red) Indicates IR signal reception, Cresnet network communication and setup/update. LED location shown; not visible unless lit.
3	11" 4-wire pigtail	Red (24) Power White (Y) Data Blue (Z) Data Black (G) Ground

Industry Compliance

As of the date of manufacture the C2N-IRGW-F has been tested and found to comply with specifications for CE marking and standards per EMC and Radiocommunications Compliance Labelling.



NOTE: This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.
-

Setup

Network Wiring

When wiring the network, consider the following:

- Use Crestron Certified Wire.
- Use Crestron power supplies for Crestron equipment.
- Provide sufficient power to the system.

CAUTION: Insufficient power can lead to unpredictable results or damage to the equipment. Please use the Crestron Power Calculator to help calculate how much power is needed for the system (<http://www.crestron.com/calculators>).

- For larger networks, use a Cresnet Hub/Repeater (CNXHUB) to maintain signal quality.

For more details, refer to “Check Network Wiring” on page 21.

Identity Code

The Net ID of the C2N-IRGW-F has been factory set to **2D**. The Net IDs of multiple C2N-IRGW-F devices in the same system must be unique. Net IDs are changed from a personal computer (PC) via the Crestron Toolbox™ (refer to “Establishing Communication” on page 18).

When setting the Net ID, consider the following:

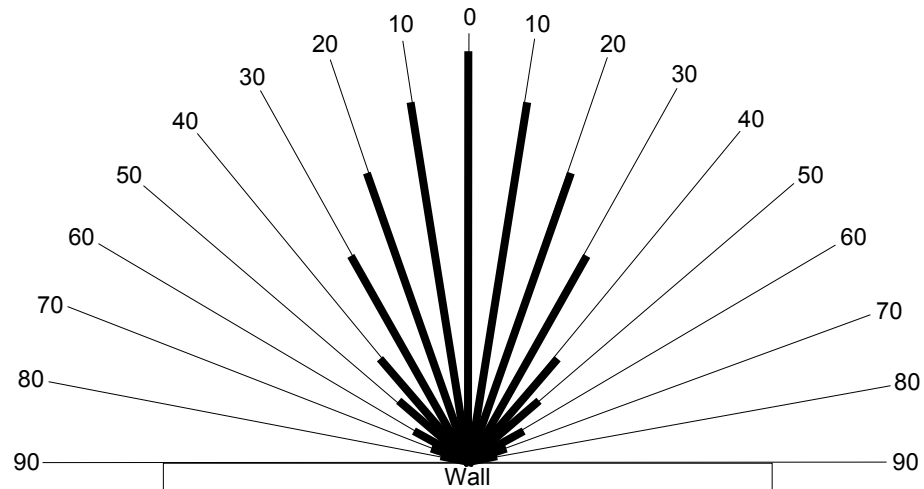
- The Net ID of each unit must match an ID code specified in the SIMPL Windows program.
- Each network device must have a unique Net ID.

For more details, refer to the Crestron Toolbox help file.

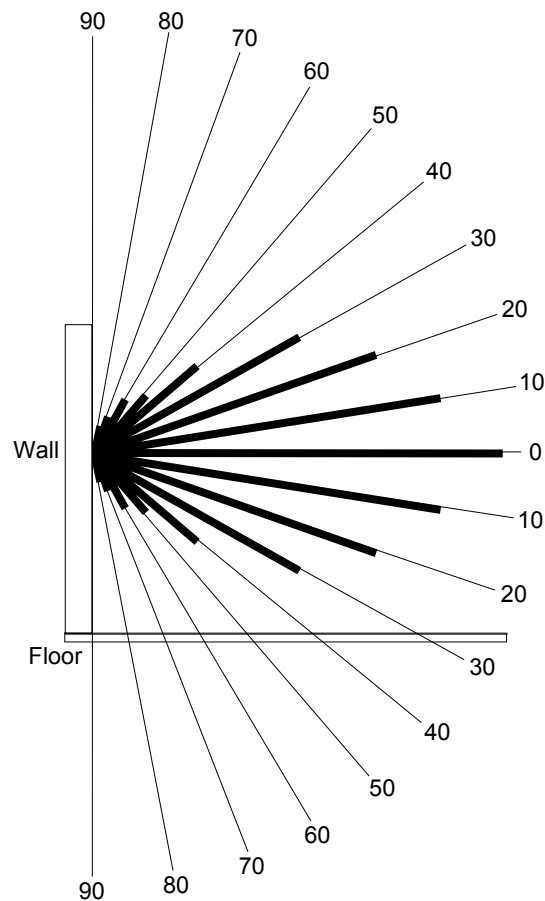
Installation

When choosing a location for the C2N-IRGW-F, consider how reception varies with the angle of incidence of the signal from the transmitter (refer to illustrations on the next page).

C2N-IRGW-F Horizontal Reception Angle
(Distance will depend on the remote/transmitter)



C2N-IRGW-F Vertical Reception Angle
(Distance will depend on the remote/transmitter)



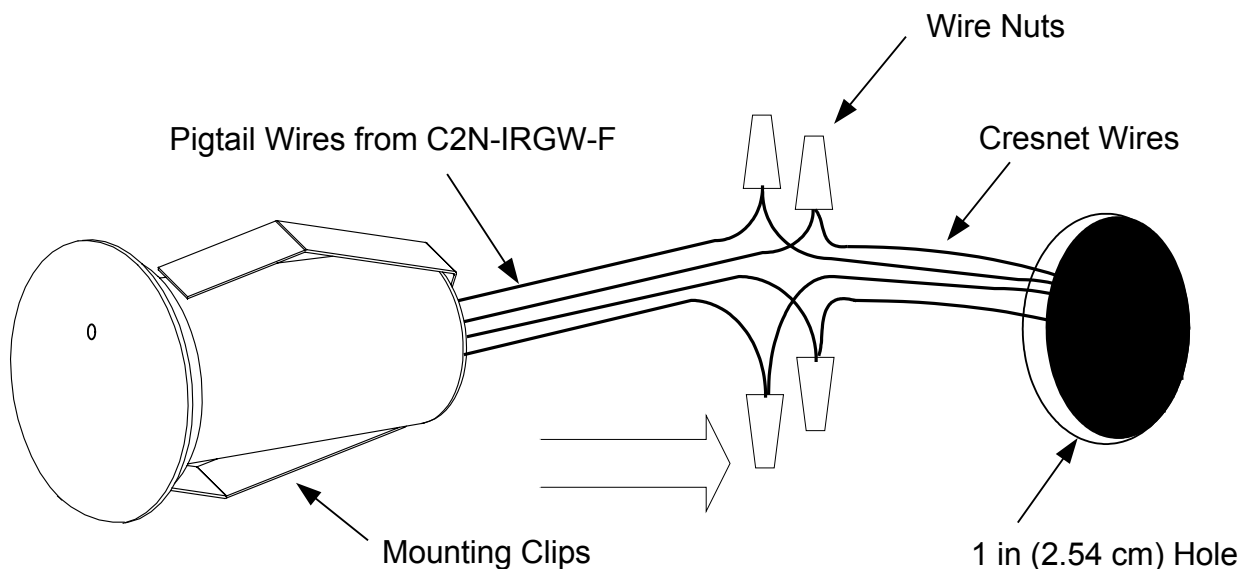
The following tools/hardware are required for installation of a C2N-IRGW-F.

- Cresnet network cable (not supplied)
- Four wire nuts to connect Cresnet wires (supplied)
- Drill, hole saw or other means to cut hole in wall or ceiling tile

After the Cresnet network wiring has been installed and verified, use the following procedure to install the C2N-IRGW-F (refer to illustration that follows this paragraph):

1. Turn Cresnet system power **OFF**.
2. Locate an area on the wall or ceiling that is free of miscellaneous wiring and studs. Make a small hole near the center of the designated mounting location to verify that the location is suitable.
3. Drill or cut a 1-inch (2.54 cm) diameter circular hole in the wall or ceiling at the desired location.
4. Route the Cresnet wires from the control system to the C2N-IRGW-F location.
5. Use the four supplied wire nuts to connect the wires (red to red, white to white, blue to blue and black to black) to the C2N-IRGW-F's pigtail wires.
6. Press fit the C2N-IRGW-F into the hole; the mounting clips on either side of the C2N-IRGW-F hold it in place.

C2N-IRGW-F Installation view



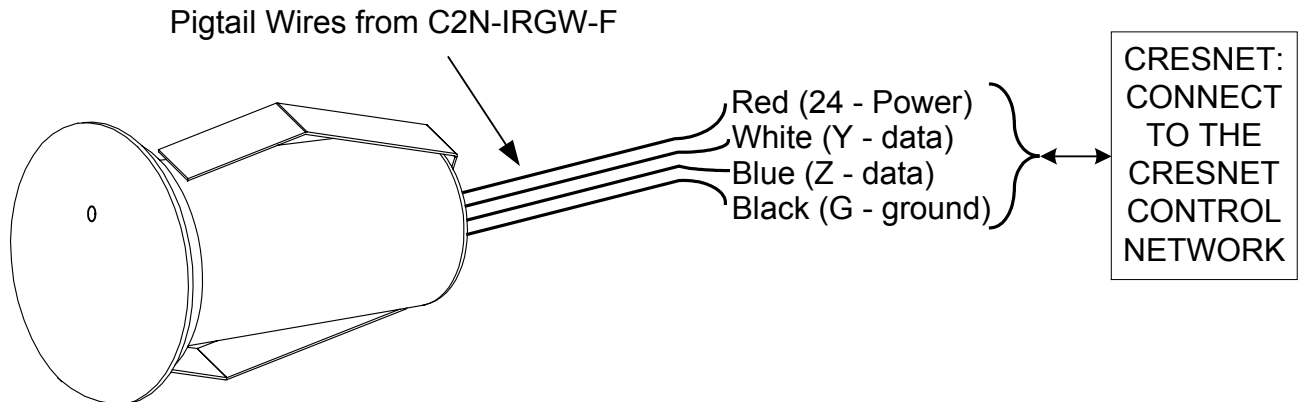
NOTE: To ensure proper operation, the C2N-IRGW-F should not be painted.

Hardware Hookup

Make the necessary connection as called out in the illustrations that follow this paragraph. Refer to “Network Wiring” on page 6 before connecting the pigtail wires from the C2N-IRGW-F. Apply power after the connection has been made.

When making the connection to the C2N-IRGW-F, use Crestron power supplies for Crestron equipment.

Hardware Connection for the C2N-IRGW-F



Universal Remotes

Any universal remote transmitting RC5 code (and some Sharp codes) can communicate with the Crestron control system and allow the user to select and activate any function in the control system. An RC5 code is 14 bits long. Each code includes a 5-bit address (or system) and a 6-bit command. Sharp uses a different IR protocol, but some of their codes are acceptable.

NOTE: The Philips Pronto contains built-in RC5 commands for out-of-the-box use.

Setting up a Philips Pronto is easy!

If using the Philips Pronto, select RC5 code communication. For the Philips Pronto, the RC5 system number is equivalent to Crestron's *Transmitter ID* code, which is a unique identifier assigned to each transmitter. Likewise, RC5 command number is equivalent to Crestron's *Button ID*, which is synonymous with the join number used in SIMPL Windows. There is no need to perform the two multi-step procedures in the subsequent sections.


NOTE: Typically, codes used by Magnavox, Marantz and Philips audio/video equipment utilize RC5 codes for transmission. Some codes used by Sharp Electronics Corporation are also usable.

Universal remotes require two multi-step procedures for setup.

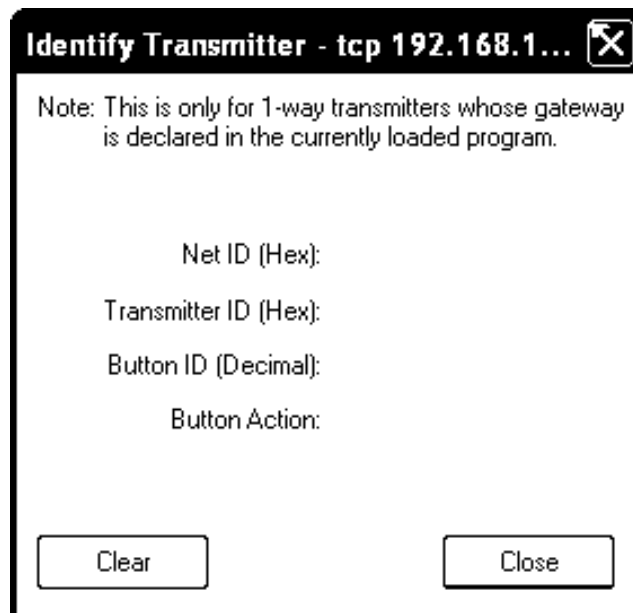
Some devices from Magnavox, Marantz and Philips are designed to understand certain kinds of infrared signals sent by remote controls, specifically, signals belonging to the RC5 code set. Two procedures are required to setup a universal remote. The first procedure verifies that the universal remote chosen does transmit an identifiable code and therefore can communicate with the Crestron control system. The second procedure maps the buttons on the universal remote so that they can be used in the SIMPL Windows program.

Code Verification

Each universal remote comes with its own manual, which lists codes by device and manufacturer. The purpose of this procedure is to select and program a code into the universal remote so that it can communicate with the Crestron control system. All that is required to complete this procedure is the C2N-IRGW-F, a PC running the Crestron Toolbox, a Crestron control system connected to the PC and any universal remote (complete with batteries and manufacturer's manual). The control system should be running a valid SIMPL Windows program that includes the C2N-IRGW-F at the proper Net ID so that it can be polled.

1. Using Cresnet cable, connect the pigtail wires from the C2N-IRGW-F to the Crestron control system (**NET** port). Refer to “Network Wiring” on page 6 for details.
2. Open the Crestron Toolbox.
3. Display the “System Info” window (click the  icon).
4. From the Toolbox menu, select **Functions | Identify Transmitter**. The software checks the baud rate and then opens the “Identify Transmitter” window, as shown after this step.

“Identify Transmitter” Window



5. Point the universal remote at the C2N-IRGW-F and program the remote with an RC5 code (some Sharp codes are acceptable as well) as outlined in the manufacturer's manual.

NOTE: Crestron recommends that codes from manufacturers other than the manufacturer of the device being controlled be used to avoid IR transmission conflict. For example, if the controlled device is a Sony DVD player, an acceptable code from any manufacturer (except Sony) should be used to communicate with the Sony DVD player via the Crestron control system.

6. Press one or more function buttons on the remote and observe the “Identify Transmitter” window on the PC.
 - a) If there is no activity while pressing buttons on the remote, the code chosen was not an acceptable code or the code could not be decoded. Repeat steps 5 and 6 with another code.
 - b) If activity is observed with each button press, the code used was an acceptable code and the Crestron control system can accept commands from the universal remote.

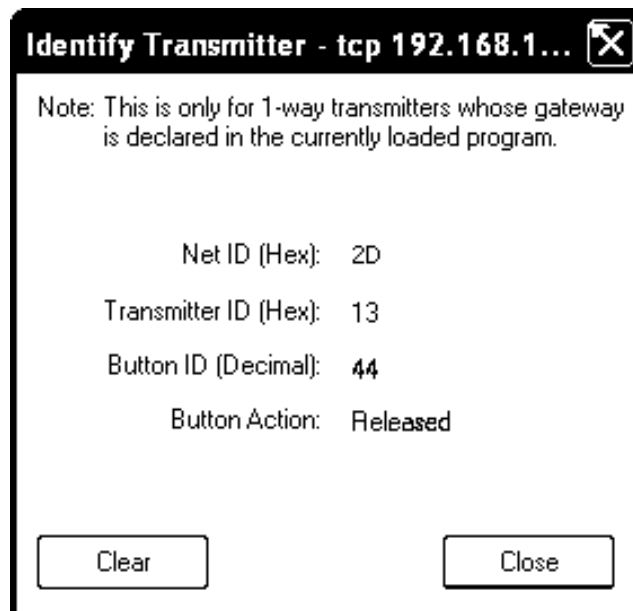
Map the Universal Remote

Once communication between the Crestron control system and the universal remote is achieved, it is necessary to understand what

commands are transmitted and to which devices. *Transmitter ID* codes are revealed in the “Identify Transmitter” window.

Each universal remote has a number of source selection buttons on it (i.e., TV, VCR, DVD, AUX). Typically, those buttons are used when setting up the remote with an acceptable code (refer to “Code Verification” on page 10). If an acceptable code is transmitted during that procedure, Crestron assigns the code with an identifier in the “Identify Transmitter” window. For example, in the window shown below, the *Transmitter ID (Hex)*: field shows the number 13. Since the identifier falls in the range of 00 to 1F, the device communicates using an acceptable RC5 code.

Positive Transmitter Identification



The next logical question is, “What is the *Button ID*?” The purpose of this next procedure is to map the buttons on the universal remote so that a list can be generated and used for reference when creating the SIMPL Windows program. A decimal identification number (or *Button ID (Decimal)* as shown in the “Identify Transmitter” window) corresponds to each physical press on the universal remote. This procedure picks up where the code verification procedure left off.

1. Complete steps 1 through 6 in “Code Verification” on page 10.
2. Wherever convenient (i.e., Notepad on the PC or a piece of scrap paper) create a table for recording the *Button ID (Decimal)* number associated with each button press on the universal remote.

“Appendix: Mapping Table” on page 24 contains a table to record this information. Create as many copies of the table as necessary.

3. Click the **Clear** button in the “Identify Transmitter” window to reset the setup.
4. Press a single button on the universal remote and observe the “Identify Transmitter” window.
5. Record the button title and ID for the action in step 4.
6. Repeat steps 4 and 5 for each button that is to be mapped. Refer to the sample after this step.

Sample of Completed Mapping Table

PHYSICAL DEVICE BEING CONTROLLED: DVD
 TRANSMITTER ID (HEX): 02

BUTTON TITLE ON UNIVERSAL REMOTE	BUTTON ID (DECIMAL)
<i>power</i>	<i>13</i>
<i>play</i>	<i>54</i>
<i>stop</i>	<i>55</i>
<i>f. fwd</i>	<i>53</i>
<i>rew</i>	<i>51</i>

7. Repeat this entire procedure (steps 2 through 6) for each source selection button on the universal remote that requires programming.

Programming Software

Have a question or comment about Crestron software?

Answers to frequently asked questions (FAQs) can be viewed in the Online Help section of the Crestron website. To post a question or view questions you have submitted to Crestron's True Blue Support, log in at <http://support.crestron.com>. First-time users will need to establish a user account.

Earliest Version Software Requirements for the PC

NOTE: Crestron recommends that you use the latest software to take advantage of the most recently released features. The latest software is available from the Crestron website.

Crestron has developed an assortment of Windows[®]-based software tools to develop a Cresnet system. The following are the minimum recommended software versions for the PC:

Software

TASK	REQUIRED SOFTWARE VERSION
Program control system to operate C2N-IRGW-F.	SIMPL Windows version 2.07.24 or later with SIMPL+ [®] Cross Compiler version 1.1 or later and Library update 454 or later; Also requires Crestron Database version 18.1.4 or later.
Upload program and firmware.	Crestron Toolbox 1.04.16 or later.

(Continued on following page)

Software (Continued)

TASK	REQUIRED SOFTWARE VERSION
Program with simple wizards for systems using a C2N-IRGW-F (optional but recommended).	Crestron D3 Pro™ version 2.1.7 or later with D3 Pro Templates version 2.0.1 or later or SystemBuilder™ version 2.0.6 or later with SystemBuilder Templates version 2.0.3 or later. Refer to software release notes or Crestron website for other required Crestron software packages.

Programming with Crestron D3 Pro or SystemBuilder

Crestron D3 Pro or SystemBuilder is the easiest method of programming, but does not offer as much flexibility as SIMPL Windows. For additional details, download D3 Pro or SystemBuilder from the Crestron website and examine the extensive help files.

Programming with SIMPL Windows

NOTE: While SIMPL Windows can be used to program the C2N-IRGW-F, it is recommended to use Crestron D3 Pro or SystemBuilder for configuring a system.

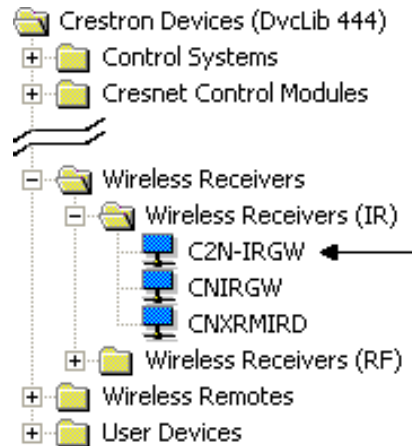
SIMPL Windows is Crestron’s premier software for programming Crestron control systems. It is organized into two separate but equally important “Managers”.

Configuration Manager

Configuration Manager is the view where programmers “build” a Crestron control system by selecting hardware from the *Device Library*.

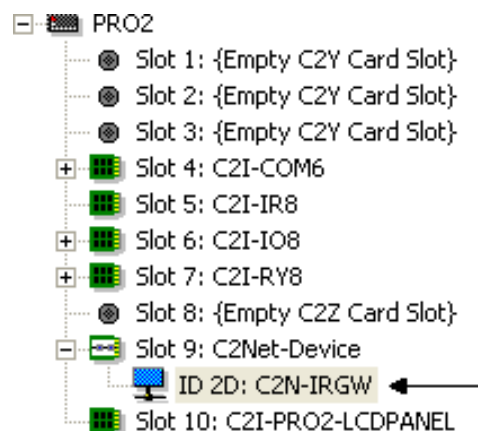
- To incorporate the C2N-IRGW-F into the system, drag the C2N-IRGW from the Wireless Receivers | Wireless Receivers (IR) folder of the *Device Library* and drop it in the *System Views*.

Locating the C2N-IRGW in the Device Library

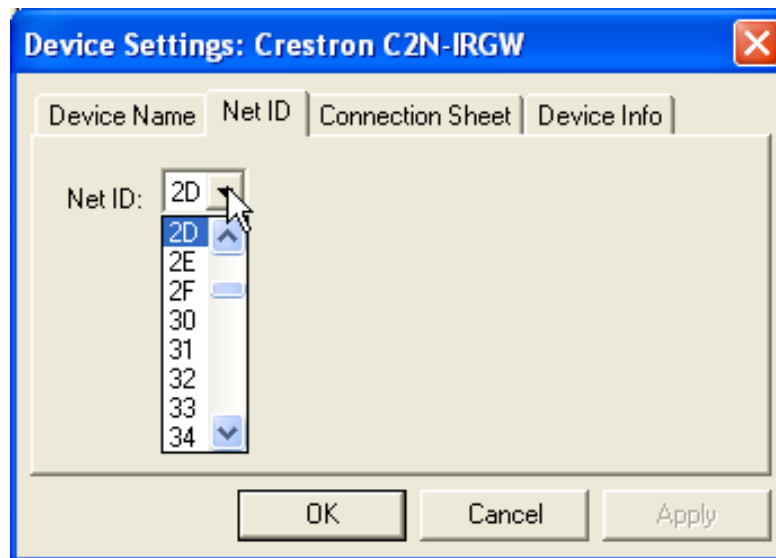


- The system tree of the control system displays the device in the appropriate slot with a default Net ID as shown in the following illustration.

C2Net Device, Slot 9



- Additional C2N-IRGW-F devices are assigned different Net ID numbers as they are added.
- If necessary, double click a device to open the “Device Settings” window and change the Net ID as shown in the following figure.

“C2N-IRGW Device Settings” Window

- The ID code specified in the SIMPL Windows program must match the Net ID of each unit.

Program Manager

Program Manager is the view where programmers “program” a Crestron control system by assigning signals to symbols. The symbol can be viewed by double clicking on the icon or dragging it into *Detail View*. A description for each signal in the symbol is described in the SIMPL Windows help file (**F1**).

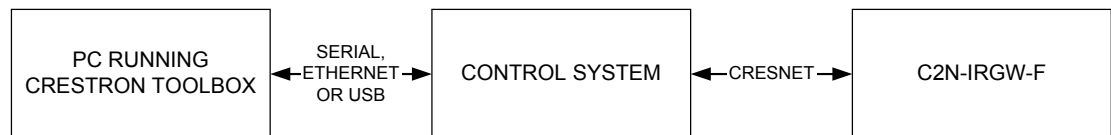
Uploading and Upgrading


Crestron recommends using the latest programming software and that each device contains the latest firmware to take advantage of the most recently released features. However, before attempting to upload or upgrade it is necessary to establish communication. Once communication has been established, files (for example, programs or firmware) can be transferred to the control system (and/or device). Finally, program checks can be performed (such as changing the device ID or creating an IP table) to ensure proper functioning.

Establishing Communication

Use Crestron Toolbox for communicating with the C2N-IRGW-F; refer to the Crestron Toolbox help file for details. There is a single method of communication: indirect communication.

Indirect Communication



- C2N-IRGW-F connects to control system via Cresnet.
- Establish communication between the PC and the control system as described in the latest version of the 2-Series Control Systems Reference Guide (Doc. 6256), which is available from the Crestron website (<http://www.crestron.com/manuals>).
- Use the Address Book in Crestron Toolbox to create an entry for the C2N-IRGW-F using the expected communication protocol (Indirect). Select the Cresnet ID of the C2N-IRGW-F and the address book entry of the control system that is connected to the C2N-IRGW-F.
- Display the C2N-IRGW-F's "System Info" window (click the  icon); communications are confirmed when the device information is displayed.

Programs and Firmware

Program or firmware files may be distributed from programmers to installers or from Crestron to dealers. Firmware upgrades are available from the Crestron website as new features are developed after product releases. One has the option to upload programs via the programming software or to upload and upgrade via the Crestron Toolbox. For details on uploading and upgrading, refer to the SIMPL Windows help file or the Crestron Toolbox help file.

SIMPL Windows

If a SIMPL Windows program is provided, it can be uploaded to the control system using SIMPL Windows or Crestron Toolbox.

Firmware

Check the Crestron website to find the latest firmware. (New users may be required to register to obtain access to certain areas of the site, including the FTP site.)

Upgrade C2N-IRGW-F firmware via Crestron Toolbox.

- Establish communication with the C2N-IRGW-F and display the “System Info” window.
- Select **Functions | Firmware...** to upgrade the C2N-IRGW-F firmware.

Program Checks

Display the network device tree (**Tools | Network Device Tree**) to show all network devices connected to the control system. Right-click on the C2N-IRGW-F to display actions that can be performed on the C2N-IRGW-F.

Problem Solving

Troubleshooting

The following table provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

C2N-IRGW-F Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Device does not function.	Device is not communicating with the network.	Use Crestron Toolbox to poll the network. Verify network connection to the device.
	Device is not receiving power from a Crestron power source.	Use the provided Crestron power source. Verify connections.
	Device is not receiving sufficient power.	Use the Crestron Power Calculator to help calculate how much power is needed for the system.
	Remote control not transmitting properly	Make sure remote control is configured to output RC5 commands.
LED does not illuminate when remote is transmitting.	Remote is out of range of C2N-IRGW-F.	Reposition remote so it is within operating range of C2N-IRGW-F.

(Continued on following page)

C2N-IRGW-F Troubleshooting (Continued)

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
LED does not illuminate when remote is transmitting (continued).	Low batteries in the remote.	Replace/recharge batteries.
Intermittent response when remote is transmitting.	Obstruction blocking communication path.	Avoid large obstructions in communication path.

Check Network Wiring*Use the Right Wire*

In order to ensure optimum performance over the full range of your installation topology, Crestron Certified Wire and only Crestron Certified Wire may be used. Failure to do so may incur additional charges if support is required to identify performance deficiencies because of using improper wire.

Calculate Power

CAUTION: Use only Crestron power supplies for Crestron equipment. Failure to do so could cause equipment damage or void the Crestron warranty.

CAUTION: Provide sufficient power to the system. Insufficient power can lead to unpredictable results or damage to the equipment. Please use the Crestron Power Calculator to help calculate how much power is needed for the system (<http://www.crestron.com/calculators>).

When calculating the length of wire for a particular Cresnet run, the wire gauge and the Cresnet power usage of each network unit to be connected must be taken into consideration. Use Crestron Certified Wire only. If Cresnet units are to be daisy-chained on the run, the Cresnet power usage of each network unit to be daisy-chained must be added together to determine the Cresnet power usage of the entire chain. If the unit is home-run from a Crestron system power supply network port, the Cresnet power usage of that unit is the Cresnet power usage of the entire run. The wire gauge and the Cresnet power usage of the run should be

used in the following equation to calculate the cable length value on the equation's left side.

Cable Length Equation

$$L < \frac{40,000}{R \times P}$$

Where: L = Length of run (or chain) in feet
 R = 6 Ohms (Crestron Certified Wire: 18 AWG (0.75 MM²))
 or 1.6 Ohms (Cresnet HP: 12 AWG (4 MM²))
 P = Cresnet power usage of entire run (or chain)

Make sure the cable length value is less than the value calculated on the right side of the equation. For example, a Cresnet run using 18 AWG Crestron Certified Wire and drawing 20 watts should not have a length of run more than 333 feet. If Cresnet HP is used for the same run, its length could extend to 1250 feet.

NOTE: All Crestron certified Cresnet wiring must consist of two twisted pairs. One twisted pair is the +24V conductor and the GND conductor and the other twisted pair is the Y conductor and the Z conductor.

Strip and Tin Wire

When daisy-chaining Cresnet units, strip the ends of the wires carefully to avoid nicking the conductors. Twist together the ends of the wires that share a pin on the network connector and tin the twisted connection. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. Insert the tinned connection into the Cresnet connector and tighten the retaining screw. Repeat the procedure for the other three conductors.

Add Hubs

For larger networks (i.e., greater than 28 network devices), it may become necessary to add a Cresnet Hub/Repeater (CNXHUB) to maintain signal quality throughout the network. Also, for networks with lengthy cable runs it may be necessary to add a Hub/Repeater after only 20 devices.

Reference Documents

The latest version of all documents mentioned within the guide can be obtained from the Crestron website (<http://www.crestron.com/manuals>). This link will provide a list of product manuals arranged in alphabetical order by model number.

List of Related Reference Documents

DOCUMENT TITLE
2-Series Control Systems Reference Guide

Further Inquiries

If you cannot locate specific information or have questions after reviewing this guide, please take advantage of Crestron's award winning customer service team by calling the Crestron corporate headquarters at 1-888-CRESTRON [1-888-273-7876]. For assistance in your local time zone, refer to the Crestron website (<http://www.crestron.com/>) for a listing of Crestron worldwide offices.

You can also log onto the online help section of the Crestron website to ask questions about Crestron products. First-time users will need to establish a user account to fully benefit from all available features.

Future Updates

As Crestron improves functions, adds new features and extends the capabilities of the C2N-IRGW-F, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron website periodically for manual update availability and its relevance. Updates are identified as an “Addendum” in the Download column.

Appendix: Mapping Table

Use this table when mapping the buttons on the universal remote. The list can then be used as a reference when creating the SIMPL Windows program.

PHYSICAL DEVICE BEING CONTROLLED: _____

TRANSMITTER ID (HEX): _____

BUTTON TITLE ON UNIVERSAL REMOTE	BUTTON ID (DECIMAL)

Sheet _____ of _____

Return and Warranty Policies

Merchandise Returns / Repair Service

1. No merchandise may be returned for credit, exchange or service without prior authorization from CRESTRON. To obtain warranty service for CRESTRON products, contact an authorized CRESTRON dealer. Only authorized CRESTRON dealers may contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number and return address.
2. Products may be returned for credit, exchange or service with a CRESTRON Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to CRESTRON, 6 Volvo Drive, Rockleigh, N.J. or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. CRESTRON reserves the right in its sole and absolute discretion to charge a 15% restocking fee plus shipping costs on any products returned with an RMA.
3. Return freight charges following repair of items under warranty shall be paid by CRESTRON, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

CRESTRON Limited Warranty

CRESTRON ELECTRONICS, Inc. warrants its products to be free from manufacturing defects in materials and workmanship under normal use for a period of three (3) years from the date of purchase from CRESTRON, with the following exceptions: disk drives and any other moving or rotating mechanical parts, pan/tilt heads and power supplies are covered for a period of one (1) year; touchscreen display and overlay components are covered for 90 days; batteries and incandescent lamps are not covered.

This warranty extends to products purchased directly from CRESTRON or an authorized CRESTRON dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

CRESTRON shall not be liable to honor the terms of this warranty if the product has been used in any application other than that for which it was intended or if it has been subjected to misuse, accidental damage, modification or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced or removed.

This warranty shall be the sole and exclusive remedy to the original purchaser. In no event shall CRESTRON be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. CRESTRON is not liable for any claim made by a third party or made by the purchaser for a third party.

CRESTRON shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Except as expressly set forth in this warranty, CRESTRON makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supersedes all previous warranties.

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Specifications subject to
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