



CR-1200R

12 OUTPUT IR ROUTER



Main Office

Manual: CR-1200R Rev1.0

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Chapter 1: Introduction to the CR-1200R

The CR-1200R is a 1 input by 12 output IR router. IR signals can be sent out any individual output or all outputs at the same time. Output selection is accomplished by first sending a “steering” command. This command sets the input/output switch and can be either IR or serial.

1.1 Initial Setup of the CR-1200R

Connect to COM 1 of the CR-1200R using the 5-pin phoenix style connector provided in combination with the CR-1200R Configuration Utility software. Several steps are necessary before you begin programming the unit with the Java-based CR-1200R Configuration Utility.

1.1.1 Build a Serial Programming Cable

Using the 5-pin connector (included), build a serial cable with the 5-pin connector at one end and a standard 9-pin RS-232 connector at the other end, with the following specifications:

- Solder wires to pins 2, 3 and 5 of a female, 9-pin RS-232 connector
- Connect the wire on pin 2 (Rx) to the removable connector pin 2 (TX1)
- Connect the wire on pin 3 (Tx) to the removable connector pin 1 (RX1)
- Connect the wire on pin 5 (Gnd) to the removable connector pin 3 (GND)

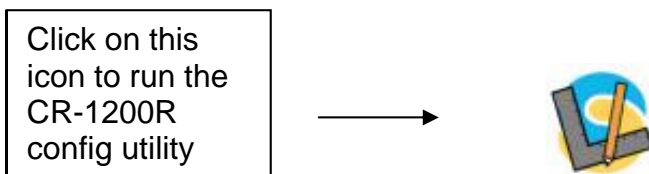
1.1.2 Placing the CR-1200R into Program mode

The CR-1200R needs to be set into Program mode before the configuration utility can communicate. To do this, remove power from the CR-1200R, jumper outputs IR 11+ and IR 12+ together via one of the removable connectors, power up the CR-1200R and remove the jumper. The BLUE power light will flash to indicate that it is now in Program mode. To get out of the program mode simply cycle power to the CR-1200R. The BLUE light will remain on solid to indicate that it is now in Run mode.

1.2 Installing the CR-1200R Configuration Utility

CR-1200R Configuration Utility software is provided on the CD that accompanies the CR-1200R IR router. The software can run on any standard computer with Java installed and which supports the RXTX native serial Java library. Versions of the RXTX library are provided for Windows and MAC OS X. To begin installation:

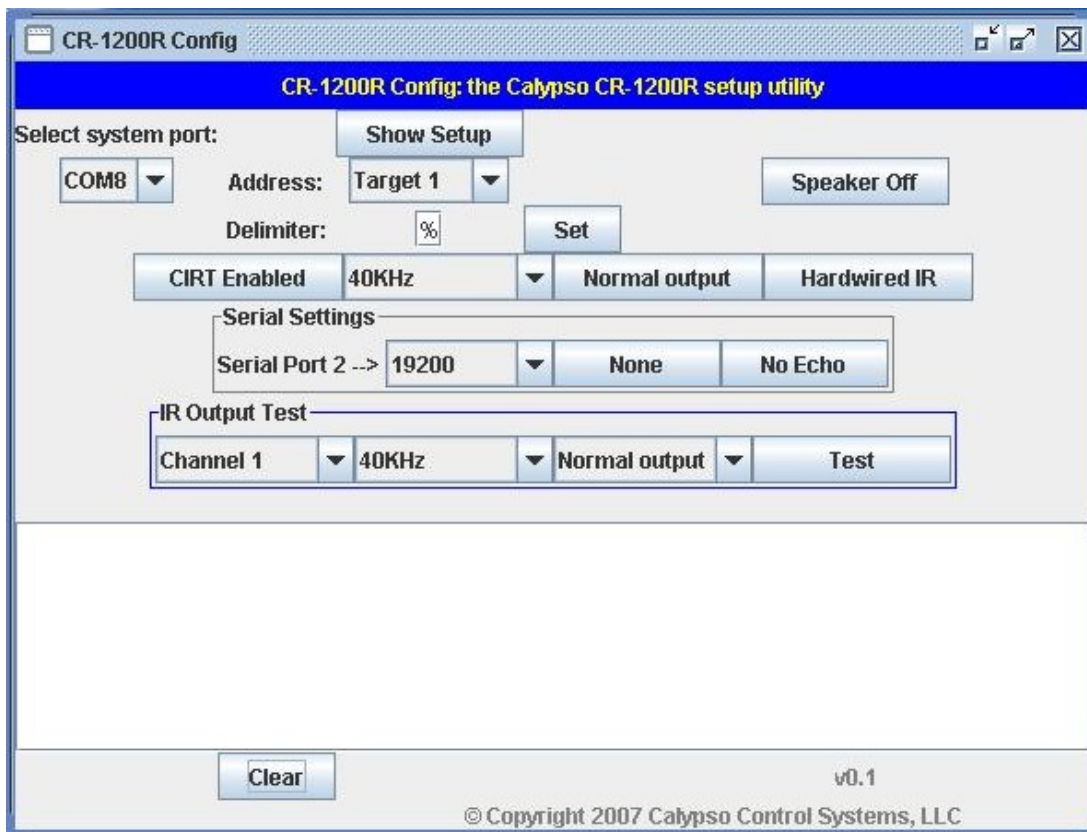
- Insert the CD into your computer's CD drive.
- Create a folder on you computer and place the CR-1200R files into this folder.
- Launch the CR-1200R application. The application automatically detects active serial ports on your computer and attempts to initiate communication with the CR-1200R. For this reason the CR-1200R should be connected with power applied before launching the configuration application.



NOTE: If you are using a USB-to-Serial converter, be sure to install the required USB driver onto your computer. Failure to do so may result in the computer not recognizing the connection. Some drivers may require the installer to go through the New Hardware wizard as many as three times to complete the driver installation.

Chapter 2: CR-1200R Configuration Utility

Once the configuration utility is launched and the correct Com port selected, the utility should appear as below:



Configuration Utility Buttons

Show Setup: displays the current configuration settings of the CR-1200R in the viewing window.

Select System Port: displays the current RS232 port selected on the installer's computer. Re-selecting the correct Com port re-establishes the connection between the computer and the CR-1200R.

Address: sets the address (target) of the CR-1200R. Changing the address allows for multiple CR-1200R's to be linked together. Default is 1. Range is 1-15.

Speaker: turn the speaker on and off here. It is recommended to keep the speaker on during initial testing to allow for verification of results. Turn the speaker off before the actual installation is also recommended. The speaker will emit a tone any time a valid steering command or IR code is received when the speaker is set to "on".

Delimiter: defines the beginning and ending of a serial steering command. This setting can be changed if the delimiter characters may cause a conflict with other RS232 devices.

Set: saves the delimiter setting.

CIRT Enable/Disable: turns the IR steering CIRT mode on or off. See "Switching Outputs with IR Commands" below for more detailed information in CIRT codes and IR steering.

Frequency: sets the output IR carrier frequency of the CR-1200R. IR output carrier frequency options are: 28KHz, 32KHz, 36KHz, 38KHz, 40KHz, 56KHz, and 455KHz.

Output: Weak/Normal/Strong - allows for fine tuning adjustment in the output signal strength. IR devices have a wide range of gain settings for IR detection. Adjusting the output strength allows the installer to match the IR device to be controlled.

IR Control: Hardwired/Wireless/Any - sets which IR connection is allowed as the control connection.

1. Hardwired - utilizes the 3-pin Phoenix style wired IR input.
2. Wireless - utilizes over-the-air or "remote" IR codes for steering and device control.
3. Any - allows both connections to be used for steering and device control.

Serial Settings: allows for configuring Com port 2 of the CR-1200R. While Com port 1 is used for adjusting configuration settings Com port 2 is used for receiving commands. Com port 2 can also be set to allow the CR-1200R to pass thru serial commands to another device. By utilizing this mode a single com port from a control system can connect to the CR-1200R and another device. See “Switching Outputs with Serial (RS232) Commands” below for more information.

IR Output Test: enables a test IR command to be sent out to verify output operation. The installer can chose the IR output carrier frequency as well as the signal strength.

Clear: clears the viewing window.

Chapter 3: Serial (RS232) and IR Steering Commands

3.1 Switching Outputs with IR Commands

The CR-1200R can accept IR steering commands using a limited set of Calypso InfraRed Trigger (CIRT) codes. These codes are specialized codes and can only be transmitted by a Calypso Controller and are sent prior to the IR payload intended for the IR device to be controlled.

The format for the CIRT steering code is as follows:

03ca

03 = device ID, in this case an IR router

C = channel in which to route IR signal

0= off

1 thru C are valid (A = 10, B=11, C=12)

a = address (target)

0= all

1 thru F are valid

In the example below the output channel selected is 8 and the address of the CR-1200R for which the code is intended is B (11). This code is sent from IR output 1 of a Calypso controller.

```
#XRO1[F1, "038B"];
```

3.1 Switching Outputs with Serial (RS232) Commands

Serial (RS232) steering commands can be sent to Com 2 of the CR-1200R to switch outputs. These commands can be embedded in a long RS232 string or sent alone. The command consists of 7 ASCII characters and should be formatted as follows:

%ccffa%

% = start of command → user defined delimiter

CC = 2 digit channel through which to route IR signal

00= off

01 thru 12 are valid for individual outputs with 15 = “all outputs”

ff = defines the 2 digit output carrier frequency. Valid frequencies are 28khz thru 56khz, with the addition of 455khz (which is represented by 99)

a = address (target)

0= all

1 thru F are valid

% = end of command → user defined delimiter



Chapter 4: Warranty Information

Calypso Control Systems 3-year Product Warranty Statement

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