

CDA-RES Residential Cable Modem

User's Guide

Version 1.0 - 05/2013



About This User's Guide

Intended Audience

This manual is intended for people who want to configure the CDA-RES's features via its Graphical User Interface (GUI).

How to Use this User's Guide

This manual contains information on each the CDA-RES's GUI screens, and describes how to use its various features.

- ▶ Use the [CDA-RES Overview](#) on page 10 to see an overview of the topics covered in this manual.
- ▶ Use the [Table of Contents](#) (page 5), [List of Figures](#) (page 8) and [List of Tables](#) (page 9) to quickly find information about a particular GUI screen or topic.
- ▶ Use the [Index](#) (page 77) to find information on a specific keyword.
- ▶ Use the rest of this User's Guide to see in-depth descriptions of the CDA-RES's features.

Related Documentation

- ▶ **Quick Installation Guide:** see this for information on getting your CDA-RES up and running right away. It includes information on system requirements, package contents, the installation procedure, and basic troubleshooting tips.

- ▶ **Online Help:** each screen in the CDA-RES's Graphical User Interface (GUI) contains a **Help** button. Click this button to see additional information about configuring the screen.

Document Conventions

This User's Guide uses various typographic conventions and styles to indicate content type:

- ▶ Bulleted paragraphs are used to list items, and to indicate options.
- 1 Numbered paragraphs indicate procedural steps.

NOTE: Notes provide additional information on a subject.



Warnings provide information about actions that could harm you or your device.

Product labels, field labels, field choices, etc. are in **bold** type. For example:

Select **UDP** to use the User Datagram Protocol.

A mouse click in the Graphical User Interface (GUI) is denoted by a right angle bracket (>). For example:

Click **Settings > Advanced Settings**.

means that you should click **Settings** in the GUI, then **Advanced settings**.

A key stroke is denoted by square brackets and uppercase text. For example:

Press [ENTER] to continue.

Customer Support

For technical assistance or other customer support issues, please consult your Hitron representative.

Default Credentials

The CDA-RES's default login credentials are as follows. For more information, see [Logging in to the CDA-RES](#) on page 19.

Table 1: Default Credentials

| | |
|----------|--------|
| Username | admin |
| Password | hitron |

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1

Introduction

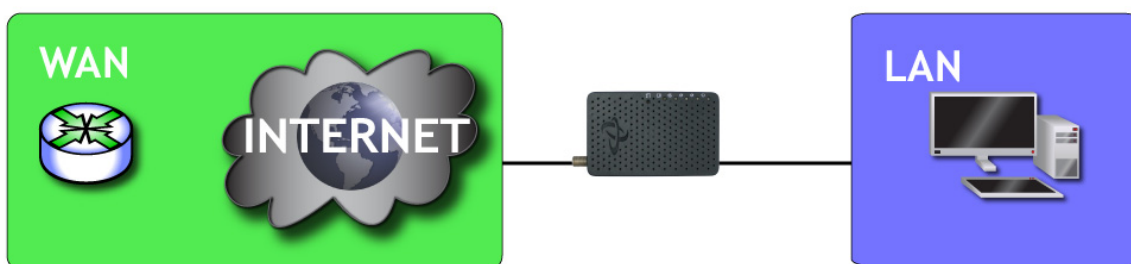
This chapter introduces the CDA-RES and its GUI (Graphical User Interface).

1.1 CDA-RES Overview

Your CDA-RES is a cable modem that allows you to connect your computers and to the Internet via the cable connection.

Computers with a wired connection to the Hitron CDA-RES User's Guide are on the Local Area Network (LAN) and the CDA-RES connects to the service provider over the Wide Area Network (WAN).

Figure 1: Application Overview



1.1.1 Key Features

The CDA-RES provides:

- ▶ Internet connection to cable modem service via **CATV** port (F-type RF connector)
- ▶ IPv4/IPv6 support
- ▶ Local Area Network connection via 10/100/1000 Mbps Ethernet port
- ▶ Dynamic Host Configuration Protocol (DHCP) for devices on the LAN
- ▶ LAN troubleshooting tools (Ping and Traceroute)
- ▶ Secure configuration interface, accessible by Web browser

1.2 Hardware Connections

This section describes the CDA-RES's physical ports and buttons.

Figure 2: Hardware Connections

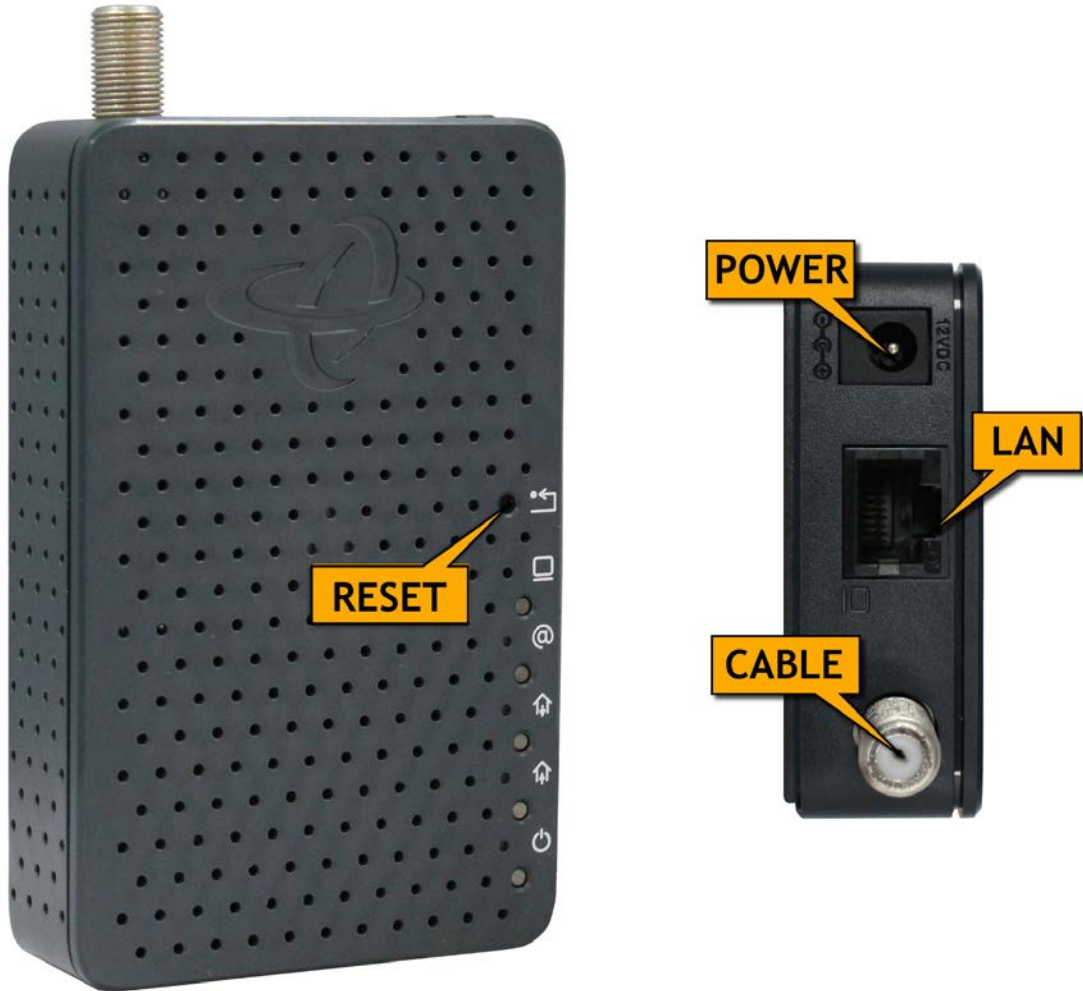




Table 2: Hardware Connections

| | |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reset | <p>Use this button to reboot or reset your CDA-RES.</p> <ul style="list-style-type: none">▶ Press the button and hold it for less than five seconds to reboot the CDA-RES. The CDA-RES restarts, using your existing settings.▶ Press the button and hold it for more than five seconds to delete all user-configured settings and restart the CDA-RES using its factory default settings. See Resetting the CDA-RES on page 21 for more information on resetting the CDA-RES. <p>NOTE: Unless you previously backed-up the CDA-RES's configuration settings prior to resetting the CDA-RES, the settings cannot be recovered.</p> |
| LAN | <p>Use these ports to connect your computers and other network devices, using Category 5 or 6 Ethernet cables with RJ45 connectors.</p> |

Table 2: Hardware Connections

| | |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CABLE | Use this to connect to the Internet via an F-type RF cable. |
| POWER | <p>Use this to connect to the 12v/2A power adapter that came with your CDA-RES.</p> <p> NEVER use another power adapter with your CDA-RES. Doing so could harm your CDA-RES.</p> <p>Figure 3: Power Adapter</p>  |

1.3 LEDs

This section describes the CDA-RES's LEDs (lights).

Figure 4: LEDs



Table 3: LEDs






| LED | STATUS | DESCRIPTION |
|-------------------------------------------------------------------------------------|--------------|-------------------------------------|
|  | Off | The CDA-RES is not receiving power. |
| | Blue, steady | The CDA-RES is receiving power. |

Table 3: LEDs

| | | |
|-----------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------|
| DS  | Green, blinking | The CDA-RES is searching for a downstream frequency on the CABLE connection. |
| | Green, steady | The CDA-RES has successfully located and locked onto a downstream frequency on the CABLE connection. |
| | Blue, steady | The CDA-RES is engaged in channel bonding on the downstream connection. |
| | Off | There is no downstream activity on the CABLE connection. |
| US  | Green, blinking | The CDA-RES is searching for an upstream frequency on the CABLE connection. |
| | Green, steady | The CDA-RES has successfully located and locked onto an upstream frequency on the CABLE connection. |
| | Blue, steady | The CDA-RES is engaged in channel bonding on the upstream connection. |
| | Off | There is no upstream activity on the CABLE connection. |
| Status  | Green, blinking | The CDA-RES's cable modem is registering with the service provider's CMTS. |
| | Green, steady | The CDA-RES's cable modem has successfully registered with the service provider and is ready for data transfer. |
| LAN  | Off | No device is connected to one of the LAN ports. |
| | Green, blinking | A device is connected to the LAN ports via a Fast Ethernet (100Mbps) link, and is transmitting or receiving data. |
| | Green, steady | A device is connected to the LAN ports via a Fast Ethernet (100Mbps) link, but is not transmitting or receiving data. |
| | Blue, blinking | A device is connected to the LAN ports via a Gigabit Ethernet (1000Mbps) link, and is transmitting or receiving data. |
| | Blue, steady | A device is connected to the LAN ports via a Gigabit Ethernet (1000Mbps) link, but is not transmitting or receiving data. |

When you turn on the CDA-RES, the LEDs light up in the following order:

▶ **POWER**

- ▶ **DS**
- ▶ **US**
- ▶ The **Status** LEDs light up as soon as there is activity on the port IP Address Setup

Before you start the CDA-RES's GUI, your computer's IP address must be in the same subnet as the CDA-RES. This allows your computer to communicate with the CDA-RES.

NOTE: See [IP Addresses and Subnets](#) on page 23 for background information.

The CDA-RES has a built-in DHCP server that, when active, assigns IP addresses to computers on the LAN. When the DHCP server is active, you can get an IP address automatically. The DHCP server is active by default.

If your computer is configured to get an IP address automatically, or if you are not sure, try to log in to the CDA-RES (see [GUI Overview](#) on page 20).

- ▶ If the GUI screen displays, your computer is already configured correctly.
- ▶ If the GUI screen does not display, either the CDA-RES's DHCP server is not active or your computer is not configured correctly. Follow the procedure in [Manual IP Address Setup](#) on page 18 and set your computer to get an IP address automatically. Try again. If you cannot see the GUI screen, follow the manual IP address setup procedure again, and set a specific IP address as shown. Try again.

NOTE: If you still cannot see the GUI screen, your CDA-RES's IP settings may have been changed from their defaults. If you do not know the CDA-RES's new address, you should return it to its factory defaults. See [Resetting the CDA-RES](#) on page 21. Bear in mind that ALL user-configured settings are lost.

1.4 IP Address Setup

Before you log into the CDA-RES's GUI, your computer's IP address must be in the same subnet as the CDA-RES. This allows your computer to communicate with the CDA-RES.

NOTE: See [IP Addresses and Subnets](#) on page 23 for background information.

The CDA-RES has a built-in DHCP server that, when active, assigns IP addresses to computers on the LAN. When the DHCP server is active, you can get an IP address automatically. The DHCP server is active by default.

If your computer is configured to get an IP address automatically, or if you are not sure, try to log in to the CDA-RES (see [Login to the CDA-RES](#) on page 19).

- ▶ If the login screen displays, your computer is already configured correctly.
- ▶ If the login screen does not display, either the CDA-RES's DHCP server is not active or your computer is not configured correctly. Follow the procedure in [Manual IP Address Setup](#) on page 18 and set your computer to get an IP address automatically. Try to log in again. If you cannot log in, follow the manual IP address setup procedure again, and set a specific IP address as shown. Try to log in again.

NOTE: If you still cannot see the login screen, your CDA-RES's IP settings may have been changed from their defaults. If you do not know the CDA-RES's new address, you should return it to its factory defaults. See [Resetting the CDA-RES](#) on page 21. Bear in mind that ALL user-configured settings are lost.

1.4.1 Manual IP Address Setup

By default, your CDA-RES's local IP address is **192.168.100.1**. If your CDA-RES is using the default IP address, you should set your computer's IP address to be between **192.168.100.2** and **192.168.100.254**.

NOTE: If your CDA-RES DHCP server is active, set your computer to get an IP address automatically in step 5. The CDA-RES assigns an IP address to your computer. The DHCP server is active by default.

Take the following steps to manually set up your computer's IP address to connect to the CDA-RES:

NOTE: This example uses Windows XP; the procedure for your operating system may be different.

- 1 Click **Start**, then click **Control Panel**.
- 2 In the window that displays, double-click **Network Connections**.

- 3 Right-click your network connection (usually **Local Area Connection**) and click **Properties**.
- 4 In the **General** tab's **This connection uses the following items** list, scroll down and select **Internet Protocol (TCP/IP)**. Click **Properties**.
- 5 You can get an IP address automatically, or specify one manually:
 - ▶ If your CDA-RES's DHCP server is active, select **Get an IP address automatically**.
 - ▶ If your CDA-RES's DHCP server is active, select **Use the following IP address**. In the **IP address** field, enter a value between **192.168.100.2** and **192.168.100.254** (default). In the **Subnet mask** field, enter **255.255.255.0** (default).

NOTE: If your CDA-RES is not using the default IP address, enter an IP address and subnet mask that places your computer in the same subnet as the CDA-RES.

- 6 Click **OK**. The **Internet Protocol (TCP/IP)** window closes. In the **Local Area Connection Properties** window, click **OK**.

Your computer now obtains an IP address from the CDA-RES, or uses the IP address that you specified, and can communicate with the CDA-RES.

1.5 Login to the CDA-RES

Take the following steps to login to the CDA-RES's GUI.

- 1 Open a browser window.
- 2 Enter the CDA-RES's IP address (default **192.168.100.1**) in the URL bar. The **Login** screen displays.

Figure 5: Login



- 3 Enter the **Username** and **Password**. The default login username is **admin**, and the default password is **hitron**.

NOTE: The Username and Password are case-sensitive; “hitron” is not the same as “Hitron”.

- 4 Select the **Language**, if required. By default, the CDA-RES's interface displays in English.
- 5 Click **Login**. The **System Information** screen displays (see [The System Info Screen](#) on page 30).

1.6 GUI Overview

This section describes the CDA-RES's GUI.

Select the **Language**, if required. By default, the CDA-RES's interface displays in English.

Figure 6: GUI Overview

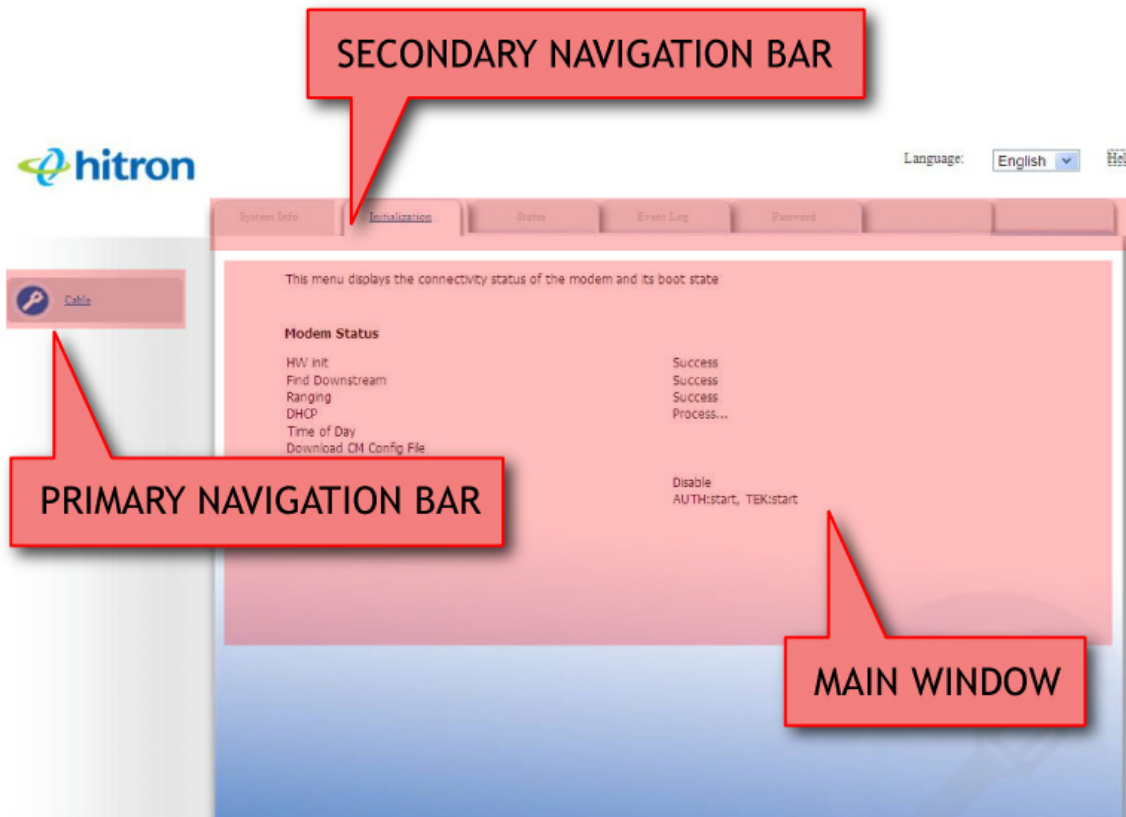


Table 4: GUI Overview

| | |
|--------------------------|----------------------------------------------------------------------------------------------------------|
| Primary Navigation Bar | Use this section to move from one part of the GUI to another. |
| Secondary Navigation Bar | Use this section to move from one related screen to another. |
| Main Window | Use this section to read information about your CDA-RES's configuration, and make configuration changes. |

1.7 Resetting the CDA-RES

When you reset the CDA-RES to its factory defaults, all user-configured settings are lost, and the CDA-RES is returned to its initial configuration state.

Here's the way to reset the CDA-RES:

- ▶ Press the **RESET** button on the CDA-RES, and hold it in for ten seconds or longer.

The CDA-RES turns off and on again, using its factory default settings.

NOTE: Depending on your CDA-RES's previous configuration, you may need to re-configure your computer's IP settings; see [The Status LEDs light up as soon as there is activity on the port IP Address Setup](#) on page 17.

2

Cable Overview

This chapter describes some of the concepts related to the **Cable** screens.

2.1 DOCSIS

The Data Over Cable Service Interface Specification (DOCSIS) is a telecommunications standard that defines the provision of data services (Internet access) over a traditional cable TV (CATV) network.

Your CDA-RES supports DOCSIS version 3.0.

2.2 IP Addresses and Subnets

Every computer on the Internet must have a unique Internet Protocol (IP) address. The IP address works much like a street address, in that it identifies a specific location to which information is transmitted. No two computers on a network can have the same IP address.

2.2.1 IP Address Format

IP addresses consist of four octets (8-bit numerical values) and are usually represented in decimal notation, for example **192.168.100.1**. In decimal notation, this means that each octet has a minimum value of 0 and a maximum value of 255.

An IP address carries two basic pieces of information: the “network number” (the address of the network as a whole, analogous to a street name) and the “host ID” (analogous to a house number) which identifies the specific computer (or other network device).

2.2.2 IP Address Assignment

IP addresses can come from three places:

- ▶ The Internet Assigned Numbers Agency (IANA)
- ▶ Your Internet Service Provider
- ▶ You (or your network devices)

IANA is responsible for IP address allocation on a global scale, and your ISP assigns IP addresses to its customers. You should never attempt to define your own IP addresses on a public network, but you are free to do so on a private network.

In the case of the CDA-RES:

- ▶ The public network (Wide Area Network or WAN) is the link between the cable connector and your Internet Service Provider. Your CDA-RES's IP address on this network is assigned by your service provider.
- ▶ The private network is your Local Area Network (LAN), if enabled. You are free to assign IP addresses to computers on the LAN manually, or to allow the CDA-RES to assign them automatically via DHCP (Dynamic Host Configuration Protocol). IANA has reserved the following blocks of IP addresses to be used for private networks only:

Table 5: [Private IP Address Ranges](#)

| FROM... | ...TO |
|----------------|-----------------|
| 10.0.0.0 | 10.255.255.255 |
| 172.16.0.0 | 172.31.255.255 |
| 192.168.0.0 | 192.168.255.255 |

If you assign addresses manually, they must be within the CDA-RES's LAN subnet.

2.2.3 Subnets

A subnet (short for sub-network) is, as the name suggests, a separate section of a network, distinct from the main network of which it is a part. A subnet may contain all of the computers at one corporate local office, for example, while the main network includes several offices.

In order to define the extent of a subnet, and to differentiate it from the main network, a subnet mask is used. This “masks” the part of the IP address that refers to the main network, leaving the part of the IP address that refers to the sub-network.

Each subnet mask has 32 bits (binary digits), as does each IP address:

- ▶ A binary value of **1** in the subnet mask indicates that the corresponding bit in the IP address is part of the main network.
- ▶ A binary value of **0** in the subnet mask indicates that the corresponding bit in the IP address is part of the sub-network.

For example, the following table shows the IP address of a computer (**192.168.1.1**) expressed in decimal and binary (each cell in the table indicates one octet):

Table 6: [IP Address: Decimal and Binary](#)

| | | | |
|----------|----------|----------|----------|
| 192 | 168 | 0 | 1 |
| 11000000 | 10101000 | 00000000 | 00000001 |

The following table shows a subnet mask that “masks” the first twenty-four bits of the IP address, in both its decimal and binary notation.

Table 7: [Subnet Mask: Decimal and Binary](#)

| | | | |
|----------|----------|----------|----------|
| 255 | 255 | 255 | 0 |
| 11111111 | 11111111 | 11111111 | 00000000 |

This shows that in this subnet, the first three octets (**192.168.100.1**, in the example IP address) define the main network, and the final octet (**1**, in the example IP address) defines the computer's address on the subnet.

The decimal and binary notations give us the two common ways to write a subnet mask:

- ▶ Decimal: the subnet mask is written in the same fashion as the IP address: **255.255.255.0**, for example.
- ▶ Binary: the subnet mask is indicated after the IP address (preceded by a forward slash), specifying the number of binary digits that it masks. The subnet mask **255.255.255.0** masks the first twenty-four bits of the IP address, so it would be written as follows: **192.168.1.1/24**.

2.3 DHCP

The Dynamic Host Configuration Protocol, or DHCP, defines the process by which IP addresses can be assigned to computers and other networking devices automatically, from another device on the network. This device is known as a DHCP server, and provides addresses to all the DHCP client devices.

In order to receive an IP address via DHCP, a computer must first request one from the DHCP server (this is a broadcast request, meaning that it is sent out to the whole network, rather than just one IP address). The DHCP server hears the requests, and responds by assigning an IP address to the computer that requested it.

If a computer is not configured to request an IP address via DHCP, you must configure an IP address manually if you want to access other computers and devices on the network. See [IP Address Setup](#) on page 17 for more information.

By default, the CDA-RES is a DHCP client on the WAN (the CATV connection). It broadcasts an IP address over the cable network, and receives one from the service provider. By default, the CDA-RES is a DHCP server on the LAN; it provides IP addresses to computers on the LAN which request them.

2.4 DHCP Lease

“DHCP lease” refers to the length of time for which a DHCP server allows a DHCP client to use an IP address. Usually, a DHCP client will request a DHCP lease renewal before the lease time is up, and can continue to use the IP address for an additional period. However, if the client does not request a renewal, the DHCP server stops allowing the client to use the IP address.

This is done to prevent IP addresses from being used up by computers that no longer require them, since the pool of available IP addresses is finite.

2.5 MAC Addresses

Every network device possesses a Media Access Control (MAC) address. This is a unique alphanumeric code, given to the device at the factory, which in most cases cannot be changed (although some devices are capable of “MAC spoofing”, where they impersonate another device's MAC address).

MAC addresses are the most reliable way of identifying network devices, since IP addresses tend to change over time (whether manually altered, or updated via DHCP).

Each MAC address displays as six groups of two hexadecimal digits separated by colons (or, occasionally, dashes) for example **00:AA:FF:1A:B5:74**.

NOTE: Each group of two hexadecimal digits is known as an “octet”, since it represents eight bits.

Bear in mind that a MAC address does not precisely represent a computer on your network (or elsewhere), it represents a network device, which may be part of a computer (or other device). In the case of the CDA-RES, each internal module (cable modem module, Ethernet module, etc.) possesses its own MAC address.

2.6 Configuration Files

The CDA-RES's configuration (or config) file is a document that the CDA-RES obtains automatically over the Internet from the service provider's server, which specifies the settings that the CDA-RES should use. It contains a variety of settings that are not present in the user-configurable Graphical User Interface (GUI) and can be specified only by the service provider.

2.7 Downstream and Upstream Transmissions

The terms “downstream” and “upstream” refer to data traffic flows, and indicate the direction in which the traffic is traveling. “Downstream” refers to traffic from the service provider to the CDA-RES, and “upstream” refers to traffic from the CDA-RES to the service provider.

2.8 Cable Frequencies

Just like radio transmissions, data transmissions over the cable network must exist on different frequencies in order to avoid interference between signals.

The data traffic band is separate from the TV band, and each data channel is separate from other data channels.

2.9 Modulation

Transmissions over the cable network are based on a strong, high frequency periodic waveform known as the “carrier wave.” This carrier wave is so called because it “carries” the data signal. The data signal itself is defined by variations in the carrier wave. The process of varying the carrier wave (in order to carry data signal information) is known as “modulation.” The data signal is thus known as the “modulating signal.”

Cable transmissions use a variety of methods to perform modulation (and the “decoding” of the received signal, or “demodulation”). The modulation methods defined in DOCSIS 3 are as follows:

- ▶ **QPSK:** Quadrature Phase-Shift Keying
- ▶ **QAM:** Quadrature Amplitude Modulation
- ▶ **QAM TCM:** Trellis modulated Quadrature Amplitude Modulation

In many cases, a number precedes the modulation type (for example **16 QAM**). This number refers to the complexity of modulation. The higher the number, the more data can be encoded in each symbol.

NOTE: In modulated signals, each distinct modulated character (for example, each audible tone produced by a modem for transmission over telephone lines) is known as a symbol.

Since more information can be represented by a single character, a higher number indicates a higher data transfer rate.

2.10 TDMA, FDMA and SCDDMA

Time Division Multiple Access (TDMA), Frequency Division Multiple Access (FDMA) and Synchronous Code Division Multiple Access (SCDDMA) are channel access methods that allow multiple users to share the same frequency channel.

- ▶ TDMA allows multiple users to share the same frequency channel by splitting transmissions by time. Each user is allocated a number of time slots, and transmits during those time slots.

- ▶ FDMA allows multiple users to share the same frequency channel by assigning a frequency band within the existing channel to each user.
- ▶ SC-DMA allows multiple users to share the same frequency channel by assigning a unique orthogonal code to each user.

3

System Info

This chapter describes the CDA-RES's system information, which displays when you click **System Info** in the toolbar. It contains the following sections:

- ▶ [System Info Overview](#) on page 30
- ▶ [The System Info Screen](#) on page 30

3.1 System Info Overview

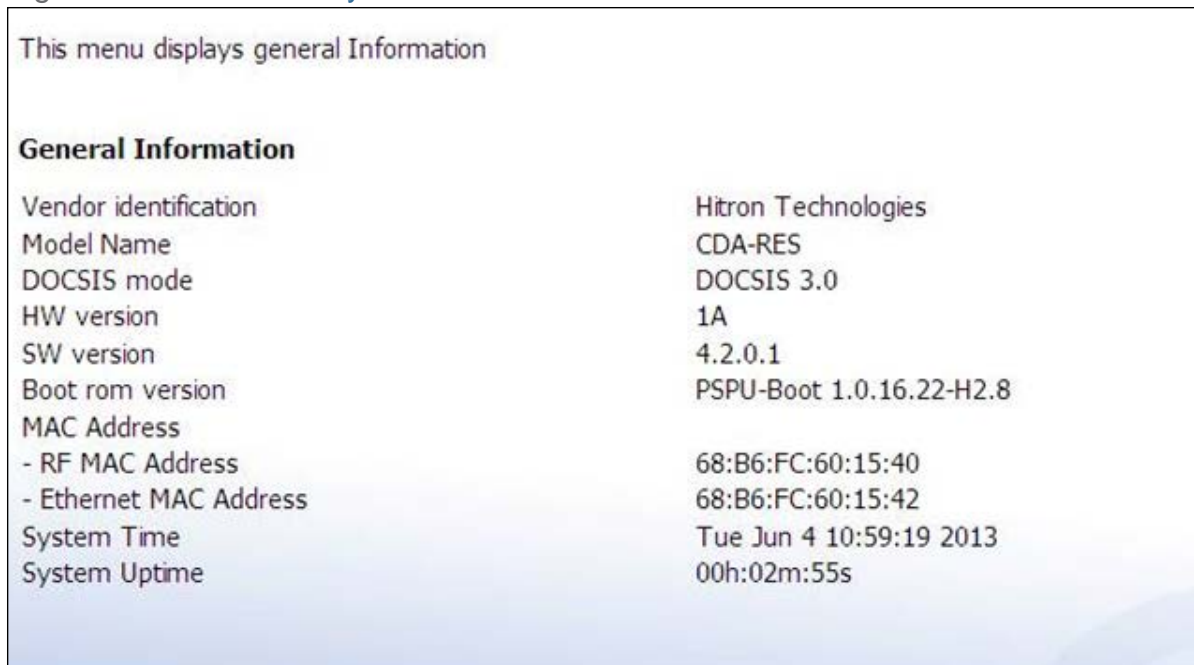
Use the System Info screen to see general information about your CDA-RES's hardware, its software, and its connection to the Internet.

NOTE: Most of the information that displays in this screen is for troubleshooting purposes only. However, you may need to use the MAC Address information when setting up your network.

3.2 The System Info Screen

Click **Cable > System Info**. The following screen displays.

Figure 7: The Cable: System Info Screen



The following table describes the labels in this screen.

Table 8: The Cable: System Info Screen

| | |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vendor Identification | This displays the vendor name of the CDA-RES. |
| Model Name | This displays the device's model name. |
| DOCSIS Mode | This displays the DOCSIS mode of the CDA-RES. |
| HW Version | This displays the version number of the CDA-RES's physical hardware. |
| SW Version | This displays the version number of the software that controls the CDA-RES. |
| Boot rom version | This displays the version number of the CDA-RES's boot rom. |
| MAC Address | |
| RF MAC Address | This displays the Media Access Control (MAC) address of the CDA-RES's RF module. This is the module that connects to the Internet through the Cable connection. |
| Ethernet MAC Address | This displays the Media Access Control (MAC) address of the CDA-RES's Ethernet. |

Table 8: The Cable: System Info Screen (continued)

| | |
|---------------|------------------------------------------------------------------------------------------------------------------|
| System Time | This displays the current date and time. |
| System Uptime | This displays the number of days, hours, minutes and seconds since the CDA-RES was last switched on or rebooted. |

4

Initialization

This chapter describes the screens that display when you click **Initialization** in the toolbar. It contains the following sections:

- ▶ [Initialization Overview](#) on page 33
- ▶ [The Initialization Screen](#) on page 33

4.1 Initialization Overview

Use the Initialization screen for troubleshooting purposes to ensure that the CDA-RES has successfully connected to the Internet; if an error has occurred you can identify the stage at which the failure occurred.

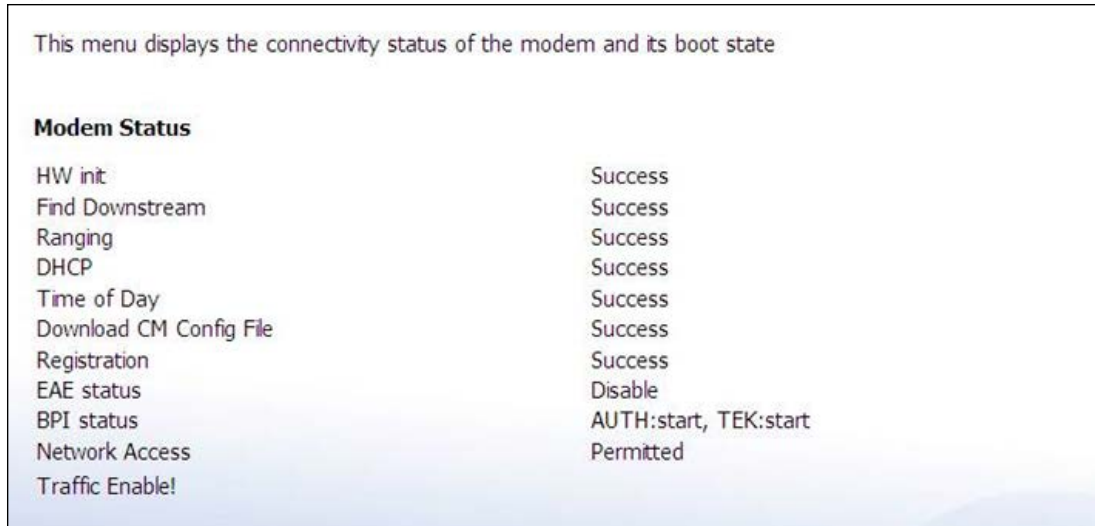
NOTE: [This screen displays when you first log in to the CDA-RES.](#)

4.2 The Initialization Screen

This screen displays the steps successfully taken to connect to the Internet over the **CABLE** connection.

Click **Cable > Initialization**. The following screen displays.

Figure 8: The Cable: Initialization Screen



For each step:

- ▶ **Process** displays when the CDA-RES is attempting to complete a connection step.
- ▶ **Success** displays when the CDA-RES has completed a connection step.

5

Status

This chapter describes the screens that display when you click **Status** in the toolbar. It contains the following sections:

- ▶ [Status Overview](#) on page 35
- ▶ [The Status Screen](#) on page 35

5.1 Status Overview

Use the Status screen to discover information about:

- ▶ The nature of the upstream and downstream connection between the CDA-RES and the device to which it is connected through the **CABLE** interface.
- ▶ IP details of the CDA-RES's WAN connection.

5.2 The Status Screen

Click **Cable** > **Status**. The following screen displays.

Figure 9: The Cable: Status Screen

This menu displays both upstream and downstream signal parameters and Attached Devices

CM Configuration file name Cisco_10k_IPv6_Bundle_1.cfg
 Network Access Permitted

Downstream

Downstream Frequency(MHz)

| Port | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-------------------------|---------|---------|---------|---------|---|---|---|---|
| Frequency (MHz) | 465.000 | 471.000 | 477.000 | 483.000 | | | | |
| Modulation | 256 QAM | 256 QAM | 256 QAM | 256 QAM | | | | |
| Signal strength (dBmV) | -8.79 | -7.47 | -6.96 | -7.82 | | | | |
| Signal noise ratio (dB) | 37.356 | 38.258 | 38.258 | 37.936 | | | | |
| Channel ID | 32 | 33 | 34 | 35 | | | | |

Upstream

Upstream ID

| Port | 1 | 2 | 3 | 4 |
|------------------------|---------|---------|---------|---------|
| Frequency (Hz) | 35 | 37 | 39 | 40 |
| Bandwidth (ksps) | 1600000 | 1600000 | 1600000 | 1600000 |
| SCDMA mode | ATDMA | ATDMA | ATDMA | ATDMA |
| Signal strength (dBmV) | 52.5000 | 52.5000 | 52.5000 | 52.5000 |
| Channel ID | 1 | 2 | 3 | 4 |

Cable Modem IP Information

IPv4 Address 192.168.50.13
 Subnet Mask 255.255.255.0
 Gateway IP 192.168.50.254
 DHCP Lease Time D: 00 H: 02 M: 00 S: 00

IPv6 Address 2001:0:180:0:C47A:E7D7:3B56:415E/128
 Gateway IP fe80::21d:70ff:fecc:1bd9

The following table describes the labels in this screen.

Table 9: The Cable: Status Screen

| DOCSIS Overview | |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CM Configurator file name | This displays the name of the configuration file that the CDA-RES downloaded from your service provider. This file provides the CDA-RES with the service parameter data that it needs to perform its functions correctly. |
| Network Access | This displays whether or not your service provider allows you to access the Internet over the CABLE connection. <ul style="list-style-type: none"> ▶ Permitted displays if you can access the Internet. ▶ Denied displays if you cannot access the Internet. |
| Downstream Overview | |
| NOTE: The downstream signal is the signal transmitted to the CDA-RES. | |

Table 9: The Cable: Status Screen (continued)

| | |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Downstream Frequency | <p>This displays the center frequency in Megahertz (MHz) at which the CDA-RES connects over the CABLE interface.</p> <p>If you want the CDA-RES to use a different center frequency, enter it in the field and click Apply.</p> <p>NOTE: Do not change the frequency unless you have a good reason to do so.</p> |
| Port | This displays the ID number of the downstream connection's port. |
| Frequency (MHz) | This displays the actual frequency in Megahertz (MHz) of each downstream data channel to which the CDA-RES is connected. |
| Modulation | This displays the type of modulation that each downstream channel uses. |
| Signal Strength (dBmV) | This displays the power of the signal of each downstream data channel to which the CDA-RES is connected, in dBmV (decibels above/below 1 millivolt). |
| Signal Noise Ratio (dB) | This displays the Signal to Noise Ratio (SNR) of each downstream data channel to which the CDA-RES is connected, in dB (decibels). |
| Channel ID | This displays the ID number of each channel on which the downstream signal is transmitted. |
| Upstream Overview | |
| NOTE: The upstream signal is the signal transmitted from the CDA-RES. | |
| Upstream ID | <p>This displays the ID number of the channel on which the upstream signal is to be transmitted. When an upstream connection cannot be made on the specified channel, the CDA-RES attempts to connect on the next channel.</p> <p>If you want the CDA-RES to attempt to connect on a different channel, enter it in the field and click Apply.</p> <p>NOTE: Do not change the channel unless you have a good reason to do so.</p> |
| Port ID | This displays the ID number of the upstream connection's port. |

Table 9: The Cable: Status Screen (continued)

| | |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency (MHz) | This displays the actual frequency in Megahertz (MHz) of each upstream data channel to which the CDA-RES is connected. |
| Modulation | This displays the type of modulation that each upstream channel uses. |
| Signal Strength (dBmV) | This displays the power of the signal of each upstream data channel to which the CDA-RES is connected, in dBmV (decibels above/below 1 millivolt). |
| Signal Noise Ratio (dB) | This displays the Signal to Noise Ratio (SNR) of each upstream data channel to which the CDA-RES is connected, in dB (decibels). |
| Channel ID | This displays the ID number of each channel on which the upstream signal is transmitted. |
| Cable Modem IP Information | |
| IP Address | This displays the CDA-RES's WAN IP address. This IP address is automatically assigned to the CDA-RES. |
| Subnet Mask | This displays the CDA-RES's WAN subnet mask. |
| Gateway IP | This displays the IP address of the device to which the CDA-RES is connected over the CABLE interface. |
| DHCP Lease Time | This displays the time that elapses before your device's IP address lease expires, and a new IP address is assigned to it by the DHCP server. |

6

Event Log

This chapter describes the screens that display when you click **Event Log** in the toolbar. It contains the following sections:

- ▶ [Event Log Overview](#) on page 39
- ▶ [The Event Log Screen](#) on page 39

6.1 Event Log Overview

Use the Event Log screen to view information about CDA-RES's events.

6.2 The Event Log Screen

Click **Event Log** in the toolbar. The following screen displays.

Figure 10: The Cable: Event Log Screen

This menu displays the event logs of the modem

System Event Log

| Index | Date/Time | ID | Level | Text |
|-------|-------------------|-------|----------|----------------------------------------------------------------------------------------------------------------------------------|
| 1 | 01/01/00 00:00:53 | R02.0 | critical | No Ranging Response received - T3 time-out;CM-MAC=68:b6:fc:60:15:40;CMTS-MAC=00:1d:70:cc:1b:4f;CM-QOS=1.1;CM-VER=3.0; |
| 2 | 06/04/13 10:57:32 | Z00.0 | warning | MIMO Event MIMO: Stored MIMO=-1 post cfg file MIMO=-1;CM-MAC=68:b6:fc:60:15:40;CMTS-MAC=00:1d:70:cc:1b:4f;CM-QOS=1.1;CM-VER=3.0; |

The following table describes the labels in this screen.

Table 10: The Cable: Event Log Screen

| | |
|-----------|------------------------------------------------------------------------------|
| Index | This displays the arbitrary, incremental index number assigned to the event. |
| Date/Time | This displays the date and time at which the event occurred. |
| ID | This displays the nature of the event. |
| Level | This displays the severity of the event. |
| Text | This displays a description of the event. |
| Clear Log | Click this to clear the fields in this screen. |
| Help | Click this to see information about the fields in this screen. |

7

Password

This chapter describes the screens that display when you click **Password** in the toolbar. It contains the following sections:

- ▶ [Password Overview](#) on page 41
- ▶ [The Password Screen](#) on page 41

7.1 Password Overview

Use the Password screen to make changes to the CDA-RES's username and password.

If you forget your password, you will need to reset the CDA-RES to its factory defaults.

7.2 The Password Screen

Click **Cable > Password**. The following screen displays.

Figure 11: The Cable: Password Screen

This menu displays the password settings

Modify Password

User name **admin**

New User

Enter Current Password

Enter New Password

Re-enter New Password

The following table describes the labels in this screen.

Table 11: The Cable: Password Screen

| | |
|------------------------|--------------------------------------------------------------------------------------------------------|
| Username | This displays the current account's username |
| New User | If you want to modify the account's username, enter the new username in this field. |
| Enter Current Password | Enter the password with which you currently log into the CDA-RES for this account. |
| Enter New Password | Enter and re-enter the password you want to use to log into the CDA-RES for this account. |
| Re-enter New Password | |
| Apply | Click this to save your changes to the fields in this screen. |
| Cancel | Click this to return the fields in this screen to their last-saved values without saving your changes. |
| Help | Click this to see information about the fields in this screen. |

8

Troubleshooting

Use this section to solve common problems with the CDA-RES and your network. It contains the following sections:

- ▶ [None of the LEDs Turn On](#) on page 43
- ▶ [One of the LEDs does not Display as Expected](#) on page 44
- ▶ [I Forgot the CDA-RES's IP Address](#) on page 44
- ▶ [I Forgot the CDA-RES's Username or Password](#) on page 44
- ▶ [I Cannot Access the CDA-RES or the Internet](#) on page 45
- ▶ [I Cannot Access the Internet and the DS and US LEDs Keep Blinking](#) on page 45

Problem: **None of the LEDs Turn On**

The CDA-RES is not receiving power, or there is a fault with the device.

- 1 Ensure that you are using the correct power adaptor.



Using a power adaptor other than the one that came with your CDA-RES can damage the CDA-RES.

- 2 Ensure that the power adaptor is connected to the CDA-RES and the wall socket (or other power source) correctly.
- 3 Ensure that the power source is functioning correctly. Replace any broken fuses or reset any tripped circuit breakers.

- 4 Disconnect and re-connect the power adaptor to the power source and the CDA-RES.
- 5 If none of the above steps solve the problem, consult your vendor.

Problem: **One of the LEDs does not Display as Expected**

- 1 Ensure that you understand the LED's normal behavior (see [LEDs](#) on page 14).
- 2 Ensure that the CDA-RES's hardware is connected correctly; see the Quick Installation Guide.
- 3 Disconnect and re-connect the power adaptor to the CDA-RES.
- 4 If none of the above steps solve the problem, consult your vendor.

Problem: **I Forgot the CDA-RES's IP Address**

- 1 The CDA-RES's default LAN IP address is **192.168.100.1**.
- 2 You can locate the CDA-RES's GUI by entering the LAN domain suffix into your browser's address bar (on a computer connected to the LAN).
- 3 Depending on your operating system and your network, you may be able to find the CDA-RES's IP address by looking up your computer's default gateway. To do this on (most) Windows machines, click **Start > Run**, enter "cmd", and then enter "ipconfig". Get the IP address of the **Default Gateway**, and enter it in your browser's address bar.
- 4 If you still cannot access the CDA-RES, you need to reset the CDA-RES. All user-configured data is lost, and the CDA-RES is returned to its default settings.

Problem: **I Forgot the CDA-RES's Username or Password**

- 1 The default username is **admin**, and the default password is **password**.
- 2 If the default username and password do not work, you need to reset the CDA-RES. All user-configured data is lost, and the CDA-RES is returned to its default settings.

Problem: I Cannot Access the CDA-RES or the Internet

- 1 Ensure that you are using the correct IP address for the CDA-RES.
- 2 Check your network's hardware connections, and that the CDA-RES's LEDs display correctly (see [LEDs](#) on page 14).
- 3 Make sure that your computer is on the same subnet as the CDA-RES; see [The Status LEDs light up as soon as there is activity on the port IP Address Setup](#) on page 17.
- 4 If the above steps do not work, you need to reset the CDA-RES. All user-configured data is lost, and the CDA-RES is returned to its default settings. If the problem persists, contact your vendor.

Problem: I Cannot Access the Internet and the DS and US LEDs Keep Blinking

Your service provider may have disabled your Internet access; check the **Cable > System Info** screen's Network Access field (see [The System Info Screen](#) on page 30).

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