# Quick Set-Up Instructions – RC1000

The RC1000 can be configured via either USB or via the RJ45 Ethernet connection with WinDiscovery for use with either TCDS (SMPTE) time code displays, NTDS (Network Time Displays) from Masterclock.

## Quick-Start Instructions

Keep the power disconnected until the last step.
Make any desired input and output connections to the DB25 connector labeled CONTROL using either your own cable or an optional DB25 to terminal block breakout adapter (included with your RC1000).  See the "Connections" section of your user manual for additional details and pinout for the DB25 connector.



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Connect the RC1000 device to your LAN (Local Area Network) hub/router/switch using Cat5 cable making the connection to the RJ45 connector labeled ETHERNET.

Apply power: insert the supplied AC/DC power supply module into an appropriate AC power source and the DC power connector into the male Switchcraft-style locking power socket on the rear of the unit labeled DC IN +8 to28 VDC.

**Status LEDs**
Monitor the front panel display for power up status. When power is first applied the initial sequence of the front panel LEDs are:
• Chan A and Chan B, 6-digit LEDs will show all 8s, then will display time and/or date according to the settings the user has made.

# Configuration

The RC1000 is configured over the network via software control using either Telnet, SSH or WinDiscovery.
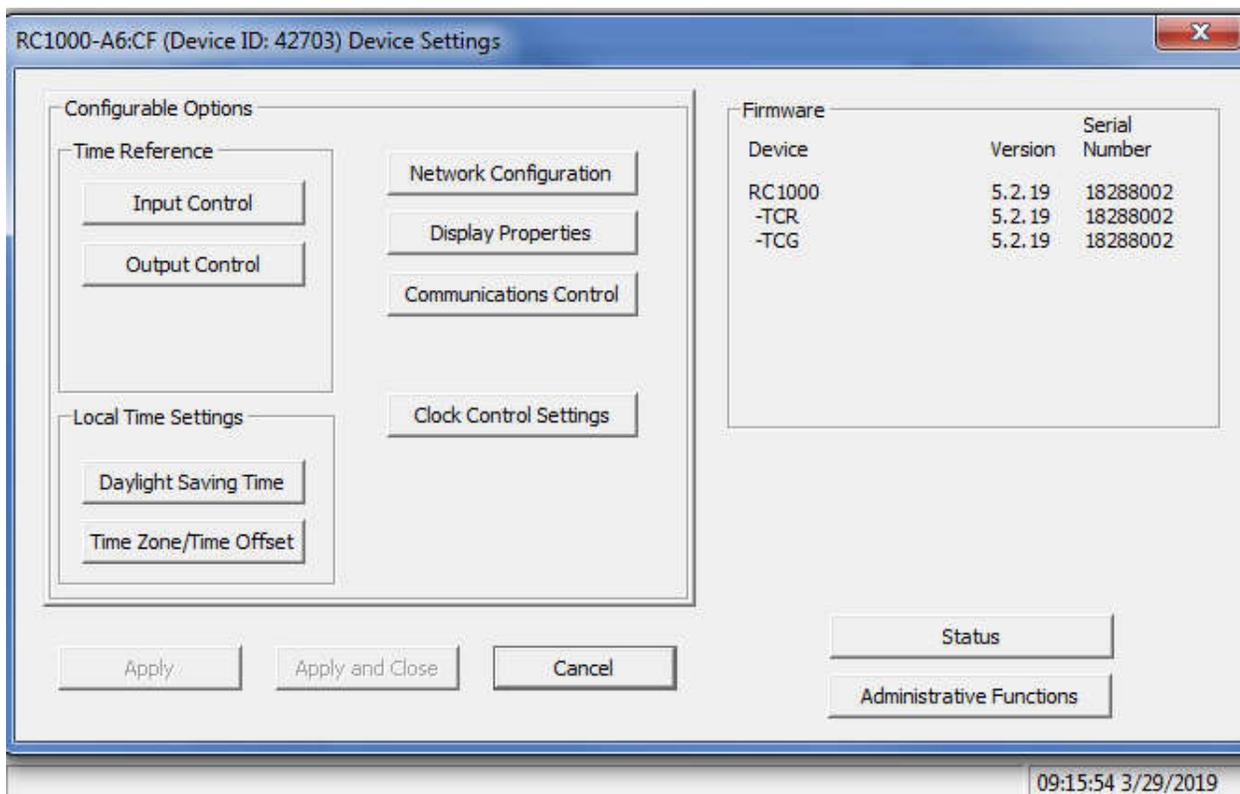
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The device may be configured via USB if using WinDiscovery. (Note: If configuring via USB, first install the included driver.)

Use the WinDiscovery application provided to set initial configurations for these devices.

**To configure your RC1000 via WinDiscovery:**

1. Install and open included WinDiscovery software.
2. Click [Discover]. A list of device groups will be displayed in the left pane of the WinDiscovery window. RC1000 devices are listed under 'RC1000 Controller".



To configure and manage a device,
right-click the device name and the drop-down menu appears. Click on a menu choice to open the window for that function. Use the [Save] and [OK] buttons to accept changes that you have made. Use the [Exit] button to exit the screen without applying changes.
3. Devices are password protected. You may enter a password for each device, or click on [Global Password] to only enter a password once.

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NOTE: If you are having issues running WinDiscovery using Windows 7 or Windows 8, you may need to run the software in Compatability Mode.
• Right-click on WinDiscovery program in the Windows Start Menu, then click on [Properties].
• Select the Compatiblity tab. Check the box for compatiblity mode. Select WINXP SP3

Factory-default password: public

# WinDiscovery Tips



**Network Configuration**
• Click on **[Network Configuration]** from the Device Settings window.
• Network settings must be established for the clock to operate on the network.
• To use a static IP address, de-select the checkbox for "Automatically obtain network configuration from DHCP/BOOTP". You must enter the IP address, netmask, gateway, primary DNS and also a secondary DNS.

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• A momentary press of the reset button will display the current IP address of the unit.
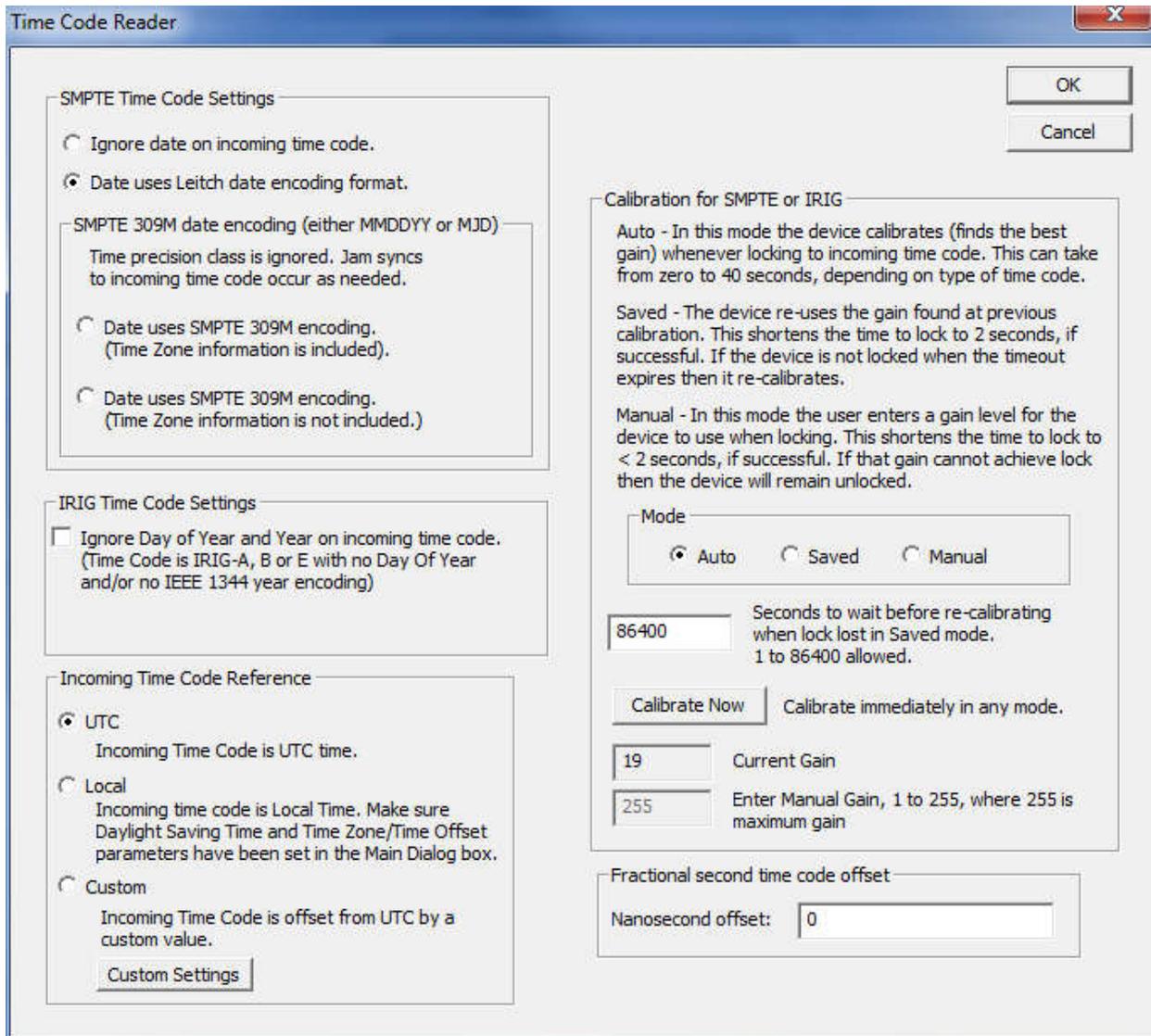
**Network Configuration**

Device Name: RC1000-A6:CF

MAC Address: 00:21:32:01:A6:CF

☑ Automatically obtain network configuration from DHCP/BOOTP

IPv4 Address: 10 . 0 .101.161

Netmask: 255.255.252. 0

Gateway: 10 . 0 .100. 1

DNS: 10 . 0 .100. 7

OK     Cancel

**Input Configuration**

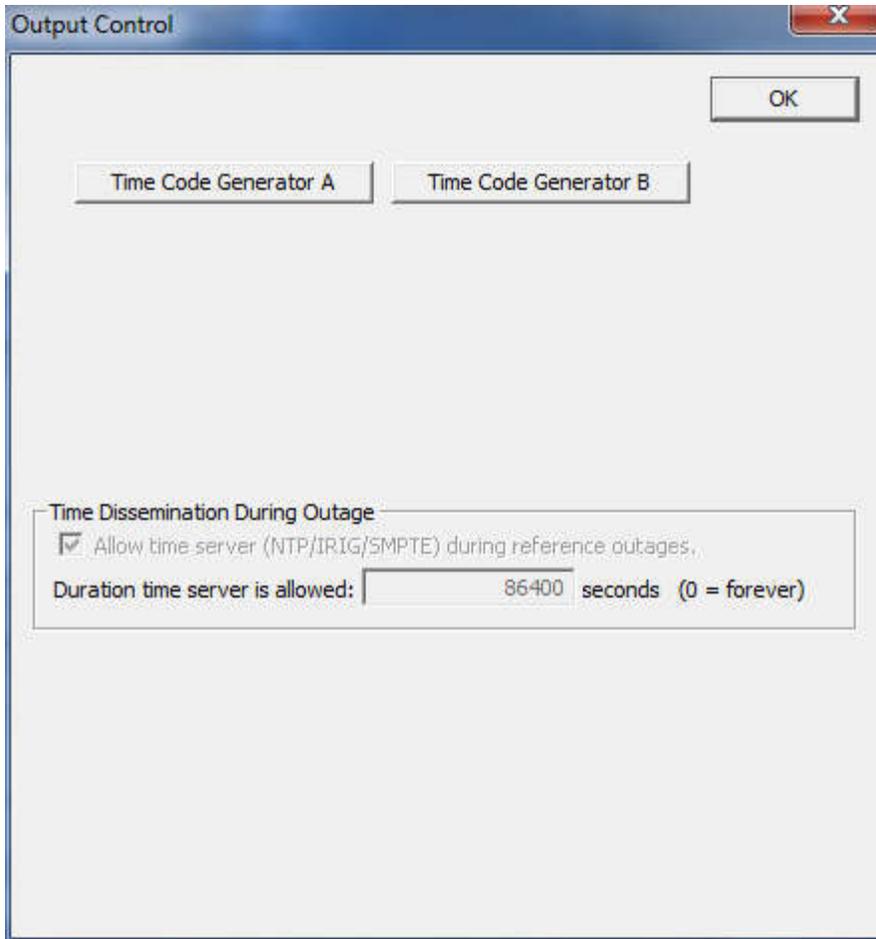• The **[Input Control]** button provides access to the Input Control window, which provides buttons for NTP Client, and Time Code Reader

**Input Control**

OK

NTP Client

Time Code Reader

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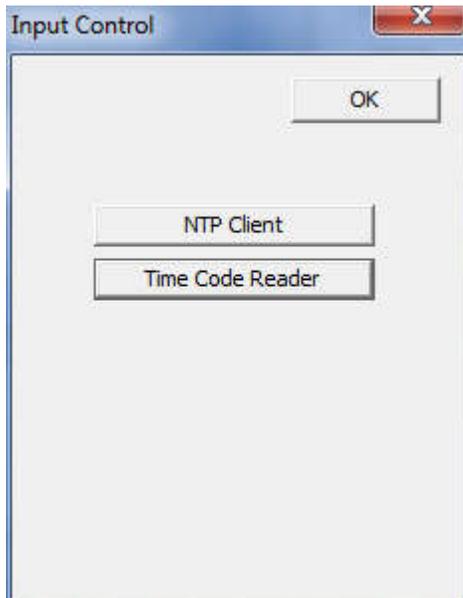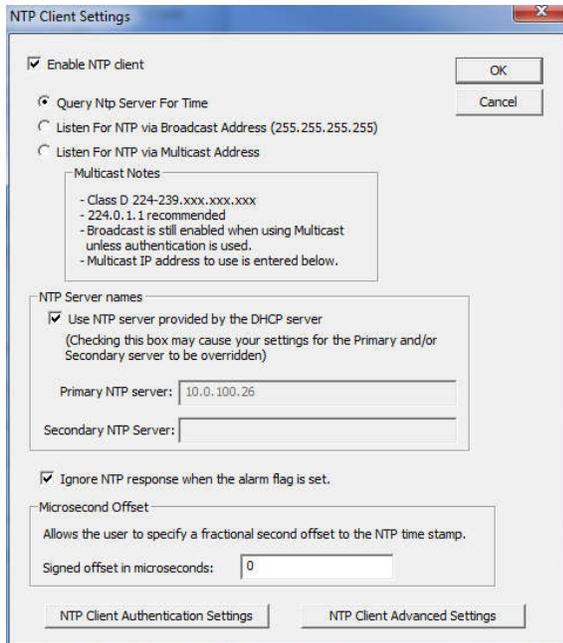
• Note: If the NTP server is not provided by the DHCP server, unclick the box "Use NTP server provided by the DHCP server"

The Time Code Reader will automatically detect and calibrate its automatic gain control circuit to the incoming time code signal, by default.  The circuit is self-adjusting to changes in the input time code; However, you may adjust some of the calibration and detection circuit settings manually.

**Time Code Reader**

OK

Cancel

**SMPTE Time Code Settings**

○ Ignore date on incoming time code.

◉ Date uses Leitch date encoding format.

**SMPTE 309M date encoding (either MMDDYY or MJD)**

Time precision class is ignored. Jam syncs to incoming time code occur as needed.

○ Date uses SMPTE 309M encoding. (Time Zone information is included).

○ Date uses SMPTE 309M encoding. (Time Zone information is not included.)

**IRIG Time Code Settings**

☐ Ignore Day of Year and Year on incoming time code. (Time Code is IRIG-A, B or E with no Day Of Year and/or no IEEE 1344 year encoding)

**Incoming Time Code Reference**

◉ UTC
Incoming Time Code is UTC time.

○ Local
Incoming time code is Local Time. Make sure Daylight Saving Time and Time Zone/Time Offset parameters have been set in the Main Dialog box.

○ Custom
Incoming Time Code is offset from UTC by a custom value.

Custom Settings

**Calibration for SMPTE or IRIG**

Auto - In this mode the device calibrates (finds the best gain) whenever locking to incoming time code. This can take from zero to 40 seconds, depending on type of time code.

Saved - The device re-uses the gain found at previous calibration. This shortens the time to lock to 2 seconds, if successful. If the device is not locked when the timeout expires then it re-calibrates.

Manual - In this mode the user enters a gain level for the device to use when locking. This shortens the time to lock to < 2 seconds, if successful. If that gain cannot achieve lock then the device will remain unlocked.

**Mode**

◉ Auto    ○ Saved    ○ Manual

86400    Seconds to wait before re-calibrating when lock lost in Saved mode. 1 to 86400 allowed.

Calibrate Now    Calibrate immediately in any mode.

19    Current Gain

255    Enter Manual Gain, 1 to 255, where 255 is maximum gain

**Fractional second time code offset**

Nanosecond offset:    0

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**Output Configuration**

• The **[Output Control]** button provides access to the Output Control window,

which provides buttons for Time Code Generator Output.

Select [ Timecode Generation] and select either [Time Code Generator A] or [Time Code Generator B]. You may now select the SMPTE time code to generate from that channel along with any additional encoding you would like to use. The time code may be generated in Local Time, UTC, or with a custom offset.
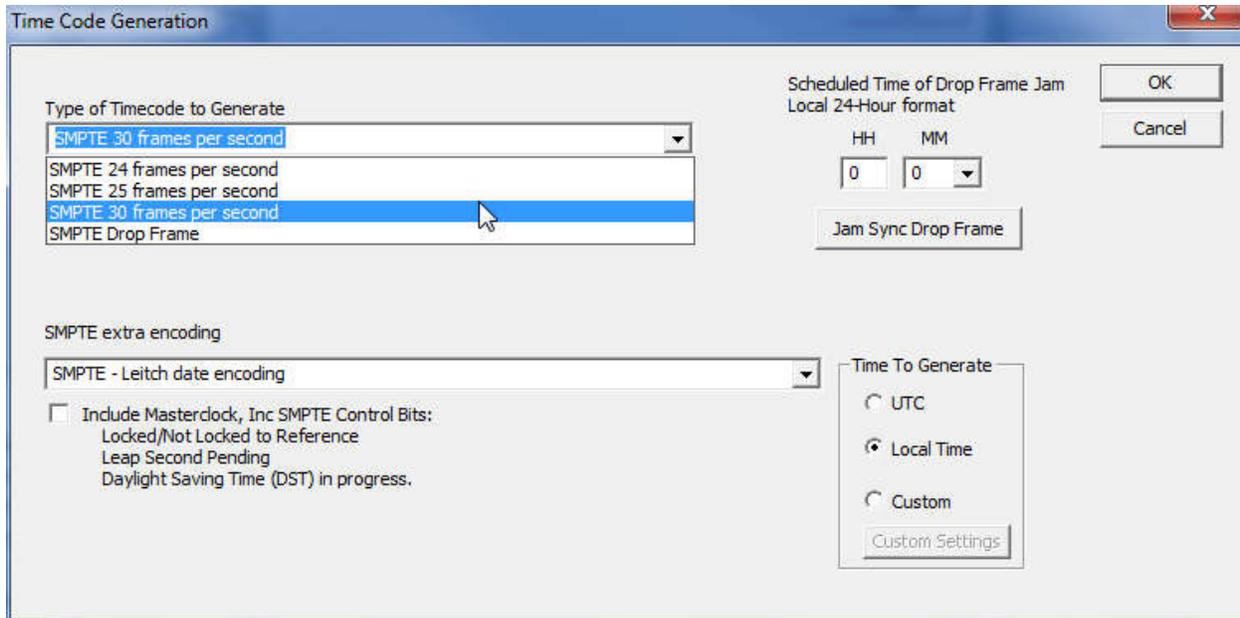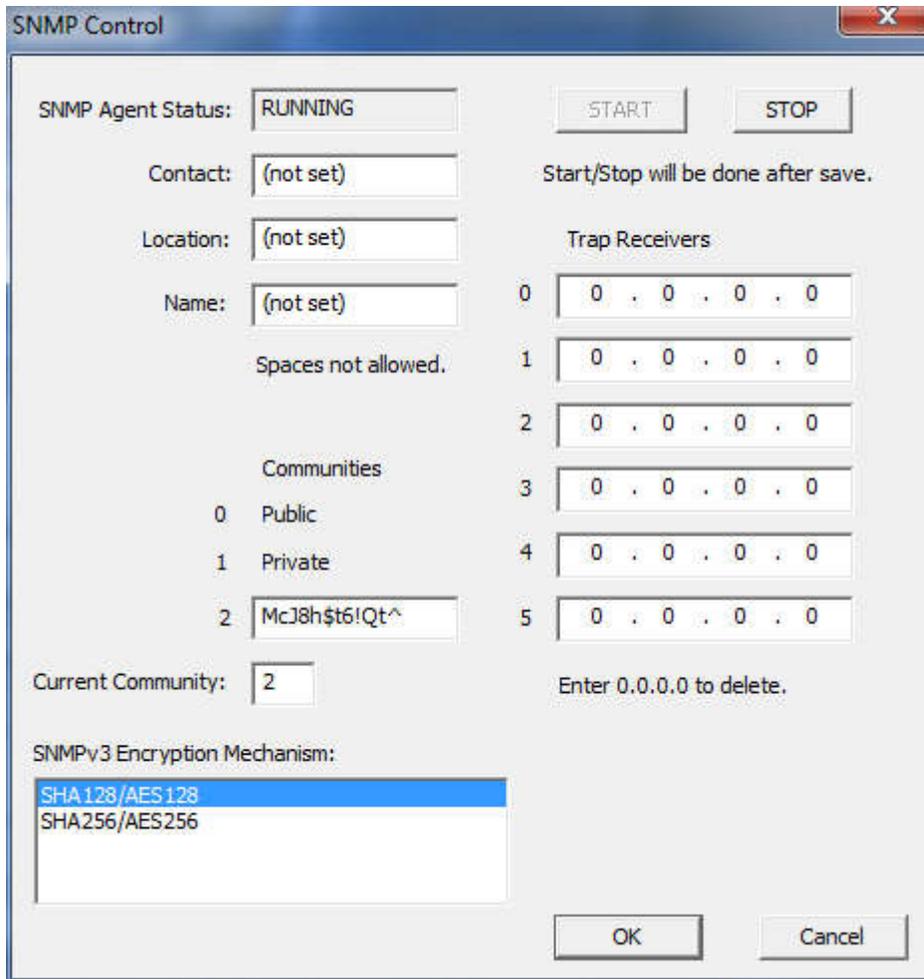
**Telnet and SNMP Configuration**
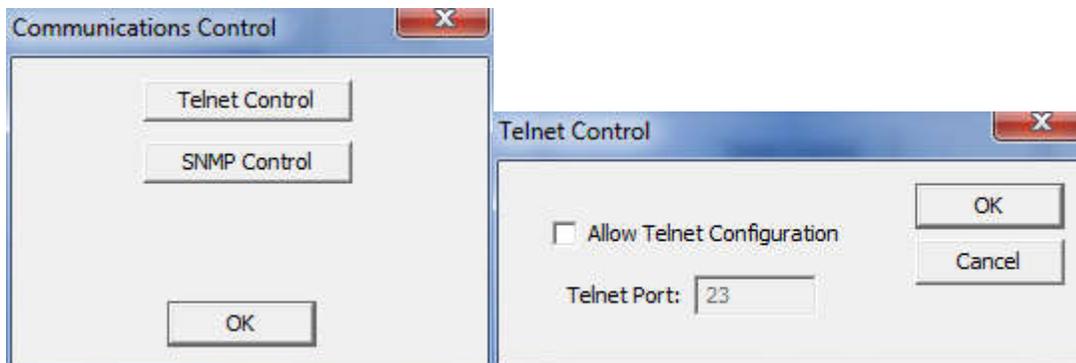
• Telnet is disabled by default.  To enable Telnet,  under Device Setting click on **[Communications Control]**  then click on **[Telnet Control],**and click the checkbox to "**Allow Telnet Configuration**"

• To configure SNMP control, under Device Setting click on **[Communications Control]**  then click on **[SNMP Control]**.

**Time Zone**

• To configure Time Zone offset, under Device Settings click on
**[Time Zone]**. The pop-up window displays a list of time zones,
including descriptions to help with the selection.
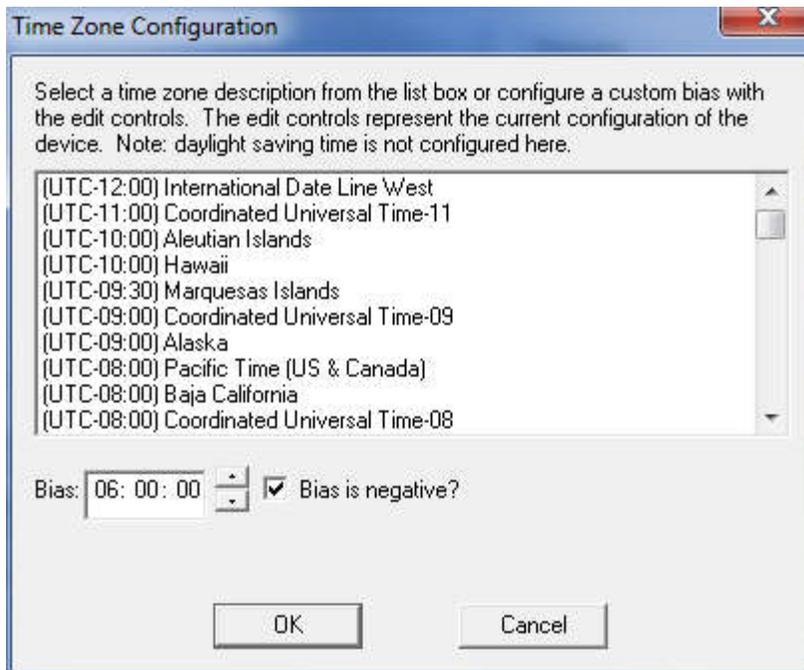
**Daylight Saving Time**

• To configure DST, under Device Settings, click **[Daylight Saving Time].**

Manually enter the daylight saving time rules or select a pre-configured option.
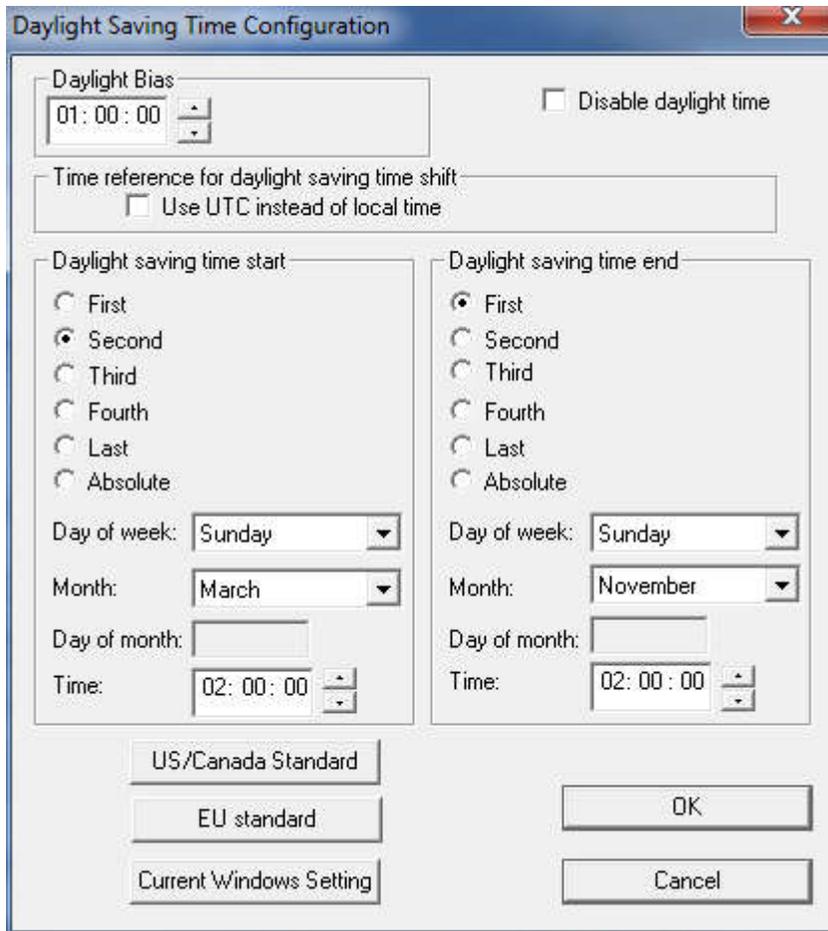
**Email (SMTP) Configuration**

• To set up email alerts, under Device Setting, click on **[Administrative Functions]**, then **[Email Configuration]**.

**Display Options**

• To adjust brightness levels or to customize date and time display, under

Device Settings click on **[Display Properties]**.
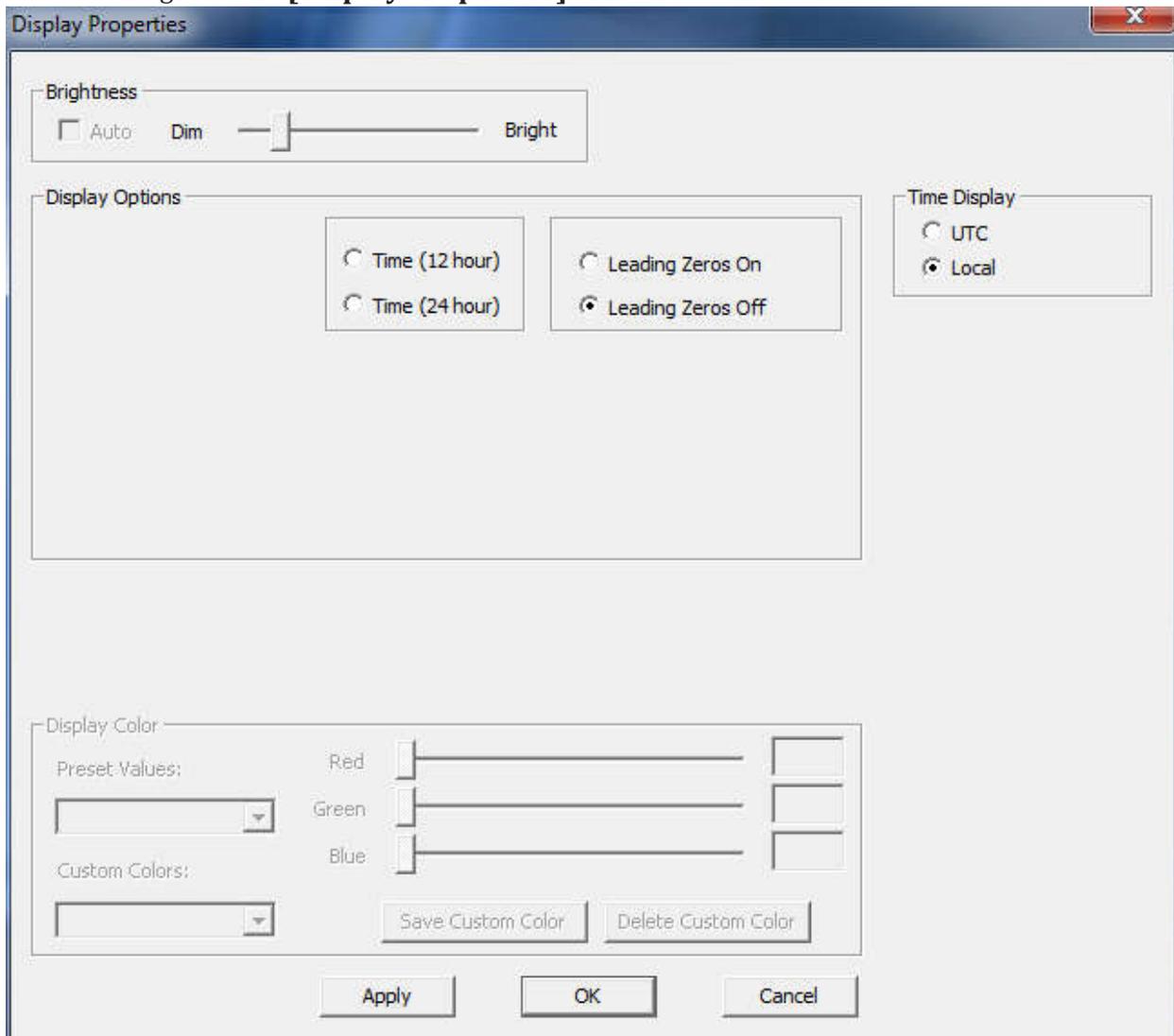
The **[Clock Control Settings]** button allows the configuration of the Multicast IP address to use along with the Port, and whether, or not to use CS-5 Encrypted packets on the network.   Note: when utilizing CS-5 Encrypted packets, the Device ID of the unit is required on the receiver.

# Common Configuration Questions

**Static IP**

• If using a static IP, make sure that under **[Input Control]** - **[NTP Client]**
the following box is unchecked: "Use NTP server provided by the DHCP server"

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## Reset Factory Default Configuration

In some situations (such as a lost password or removal of confidential information prior to sending the unit in for maintenance or repair service) it may be necessary to return the RC1000 to its factory default configuration. A recessed button labeled "RESET", located on the back of the unit performs this function.

To reset configuration to factory default:

1. Press and hold the "RESET" button.
2. Continue to press the "RESET" button until the unit reboots
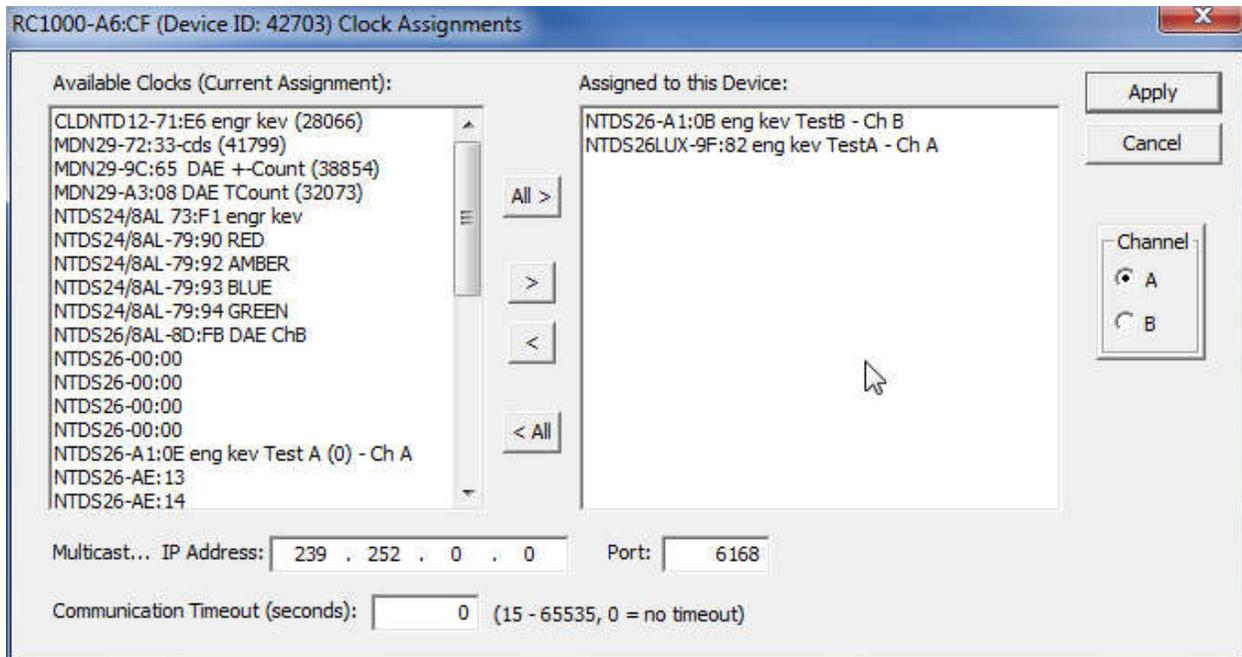
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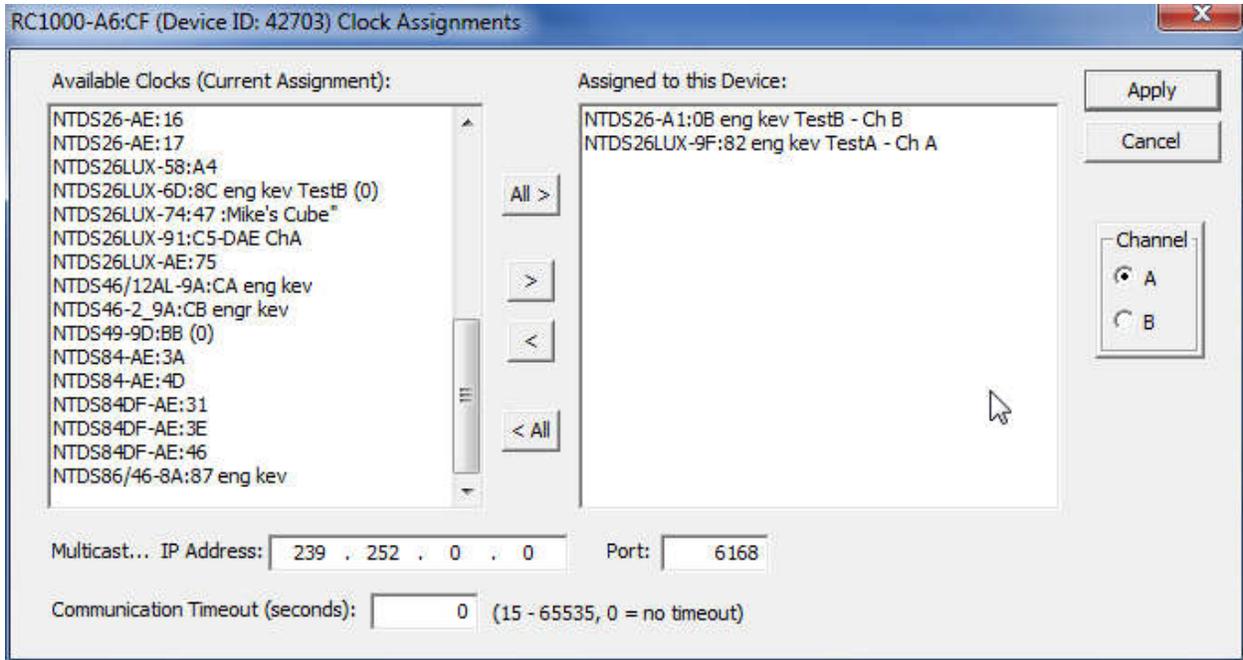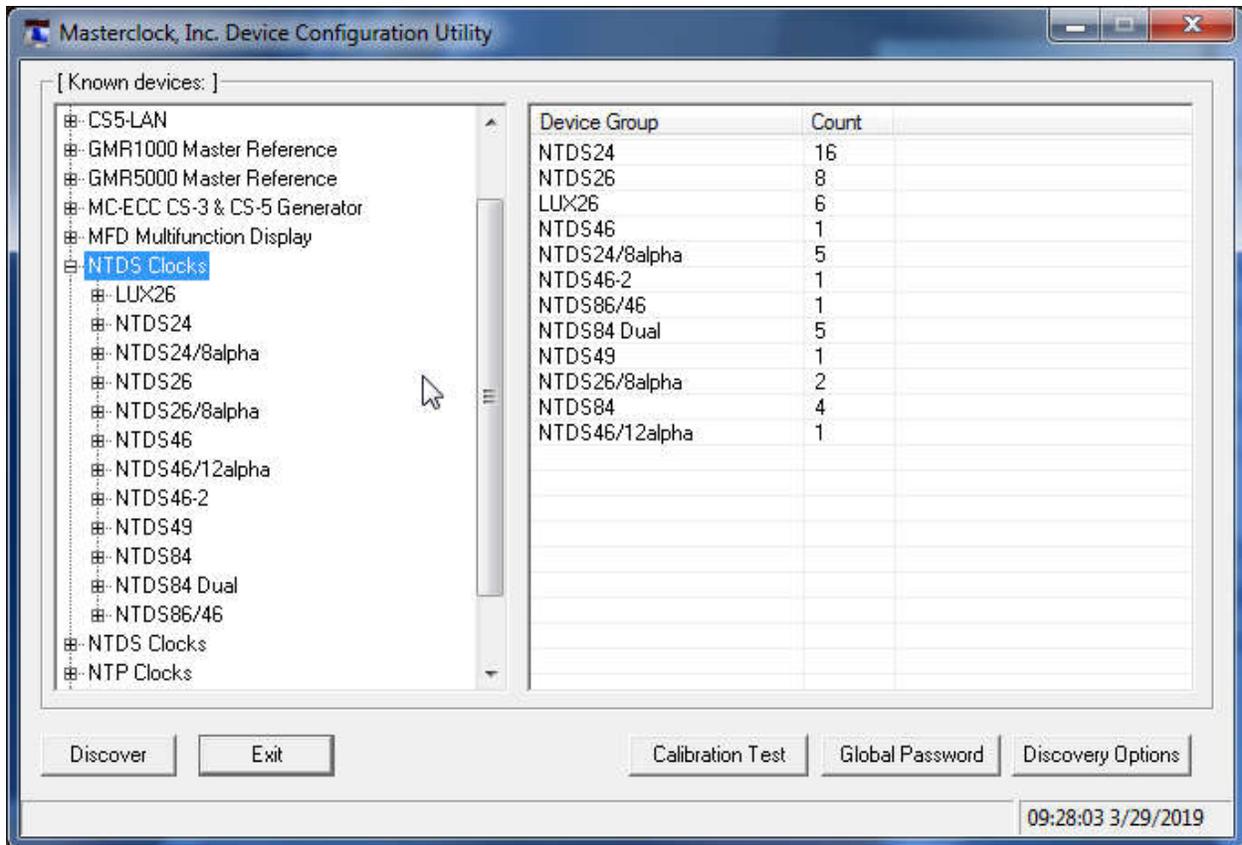
**RC1000-A6:CF Status**

Display snapshot
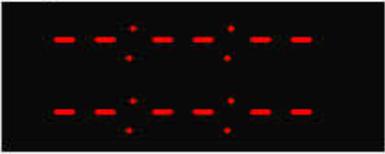
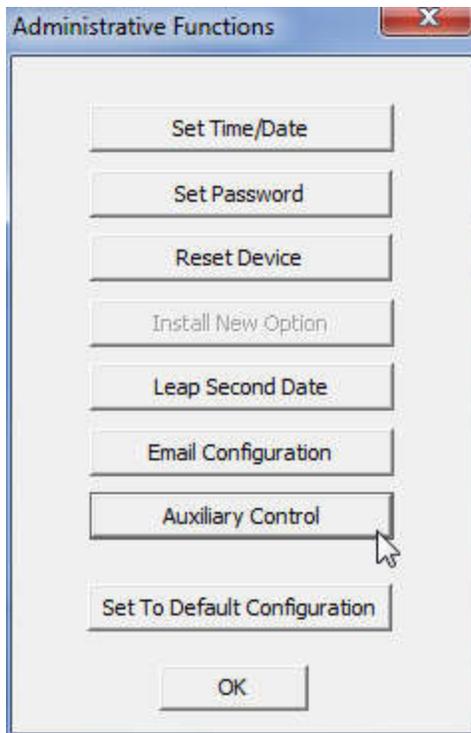| | |
|---|---|
| UTC Time: | 14:27:13 03/29/2019 |
| Local Time: | 09:27:13 03/29/2019 |
| Current Reference: | NTP |
| Reference Status: | Reference Locked |
| Last Time Lock Lost (UTC): | 14:08:52 03/29/2019 |
| Last Time Lock Restored (UTC): | 14:09:38 03/29/2019 |
| PPS/PPM/PPH Input Source: | N/A |
| 10 MHz Source: | N/A |

Network | NTP | TCR | TCG A | TCG B

Type of Time Code Being Generated
SMPTE @30 frames per sec.

Raw Time Code: 20:00:00:08:00:80:00:00

Time To Generate
☐ UTC - No Offset
☒ Local
☐ Custom

Close

## Auxiliary Control

### Network Control

Control Source ID (1-65535, 0 = no auxiliary control):     0

Multicast... IP Address:  239 . 252 . 0 . 0     Port:     6168

Communication Timeout (seconds):     0  (15 - 65535, 0 = no timeout)

### Time Code Control

☑  Under RC-500/600/1000 Control

OK     Cancel

## Auxiliary Control

### Network Control

Control Source ID (1-65535, 0 = no auxiliary control):     42703

Multicast... IP Address:  239 . 252 . 0 . 0     Port:     6168

Communication Timeout (seconds):     0  (15 - 65535, 0 = no timeout)

### Time Code Control

☐  Under RC-500/600/1000 Control

OK     Cancel