# BRSC

# Base Radio Status Concentrator

## Network Interface Emulator

## MCN™ Monitoring and Control Network

**Software Reference Manual**

**S2-61952-101**




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*Location*: **CTI Products, Inc.**
1211 West Sharon Road
Cincinnati, OH 45240 USA

*Phone*: +1.513.595.5900

*Fax*: +1.513.595.5983

*Web*: www.ctiproducts.com

*E-mail, Sales*: info@ctiproducts.com

*Technical Support*: support@ctiproducts.com

# TABLE OF CONTENTS

## Revision History

**S2-61952-99** Initial Release

**S2-61952-100** Release Update

**S2-61952-101** Made Format Corrections and Edits
Updated Troubleshooting Guide

# 1. INTRODUCTION

## WHAT IS THE BASE RADIO STATUS CONCENTRATOR?

The Base Radio Status Concentrator (BRSC) is part of the MCN software that emulates a hardware network interface. It virtually performs the functions of a network interface and supports connections for up to 240 GTR 8000 Base Radios.

The BRSC interfaces solely to Motorola GTR 8000 Base Radios. It is not a client to any other application; but rather serves statuses back to the MCN Server 8000 software, which acts as a client to the BRSC Windows OS service.

## WHAT HARDWARE AND SOFTWARE ARE REQUIRED?

The BRSC is a Hardware Based Licensing option. The software must be installed on a separate PC running Windows OS, where it operates as a service. The accompanying diagram shows a setup with a single BR connected to the BRSC PC and the MCN Server 8k.

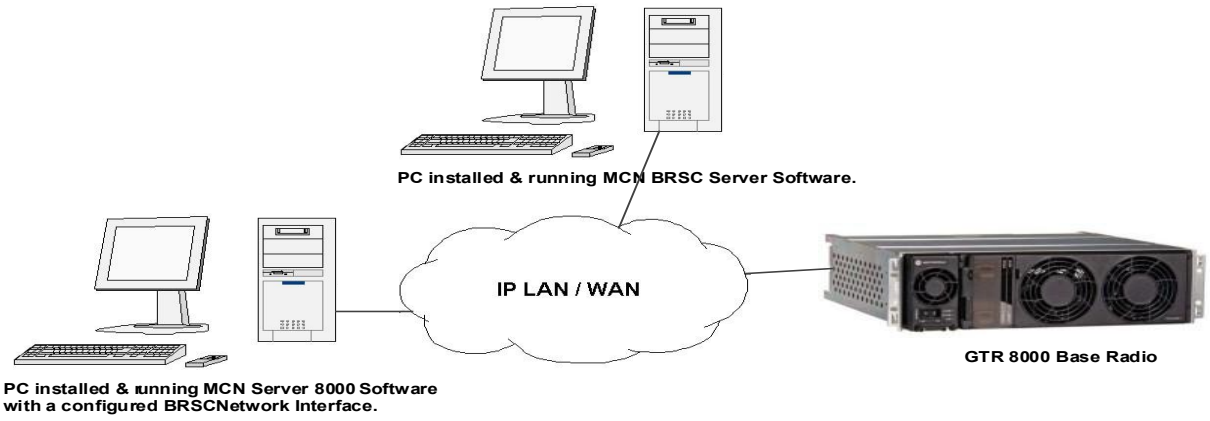



*Figure 1 MCN System using BRSC Network Interface*

When used in this manual, the term MCN Config refers to the versions shipped with the MCN software and could be any of the following:

| Software | MCN Configurator |
|---|---|
| MCN Server 8000 | MCN Config Server.exe |

**NOTE**: The BRSC is not a physical device, but software that functions as an interface to a GTR 8000 Base Radio which is a physical device.

| Part# | Description |
|---|---|
| S2-61950 | MCN BRSC |

# 2. THE BRSC OVERVIEW

Support for the BRSC was introduced in software version 10.02.xx. To use this feature, earlier versions of the MCN software and systems must be upgraded. This section details the parameters and configurations required in the MCN Config program for proper BRSC system integration. Due to variations in system infrastructure and topology, refer to your system's documentation for accurate IP addresses, subnets, gateways, and port numbers.

## PARAMETERS FOR CONFIGURING BRSC

There are configuration parameters i.e., IP addresses and Port Numbers, which must be configured separately, for both the MCN Config software and for the BRSC application.

### *Network Parameters Worksheet*

Gather the following IP information for the system. IP information must be obtained for **each** GTR 8000 Radio whose statuses are to be monitored (See the network administrator responsible for the IP network to which the GTR 8000 Radio are installed):

#### GTR 8000 Radio Parameters:

For each GTR 8000 Radio in the system, gather the following information:

| | |
|---|---|
| *GTR 8000 ALIAS Name* | _____ |
| *GTR 8000 IP Address* | _____.____.____.____ |
| *Subnet Mask* | _____.____.____.____ |
| *Gateway IP Address* | _____.____.____.____ |

The MCN Config software must be used to enter all MCN configurations for each system. After configuring these parameters, manually upload the information from the MCN Server 8000 to the BRSC application. This upload allows the BRSC application to create its local system cache. The MCN Server PC that performs the most recent upload will become the designated controlling server for that BRSC.

The MCN Config program creates, and maintains the list of:

- Address parameters for all BRSC NI's is in the system (including the MCN Group & Module)
- Authorized PC List

Each BRSC NI must be configured with its own:

- Name/ Alias information.
- Unique IP Address UDP Port:

The BRSC System information is based on the MCN Configuration system files and must be generated from the MCN Config software using the steps in **Uploading MCN System Data To the BRSC Server** Page 8.

#### Software compatibility:

| | |
|---|---|
| MCN BRSC Version 10.02.23 & up | Can connect up to 240 GTR 8000 Base Radios. (Requires appropriate licensing.) |

# UPLOADING MCN SYSTEM DATA TO THE BRSC SERVER

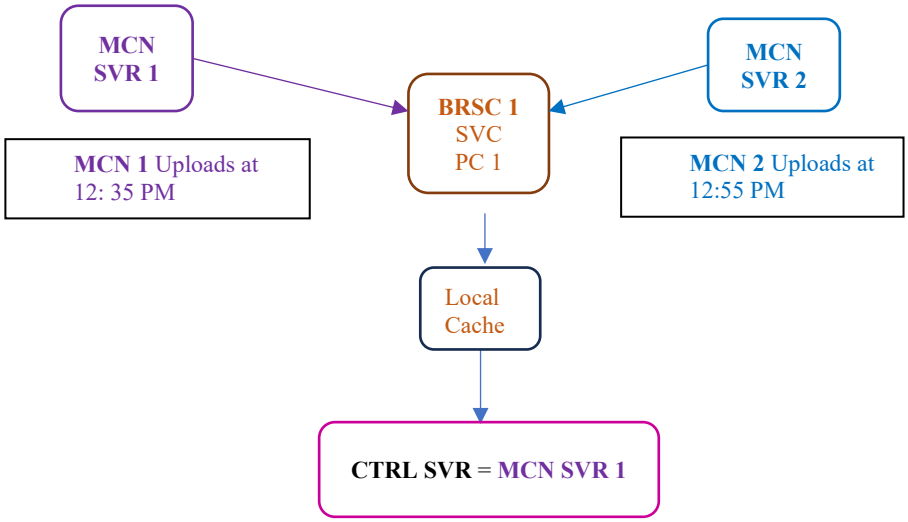
The BRSC is a licensable feature that requires configurations on both it's client and server side. This includes configuring both the MCN Server using MCN Config Server along with configuring the BRSC Server with the BRSC HW Setup Application. Also, a USB Dongle and a license key file are required to authorize its operation.

To generate the BRSC's required system data, the MCN Server application alias (**MCN SVR 1**), must be used to perform an upload to the BRSC Service running on a remote PC alias (**BRSC 1**). After this has been completed, the BRSC will be able to create its system files and MCN Server (**MCN SVR 1)** will become the Controlling Server for the (**BRSC 1)**.

## MCN Server 8000 Upload to BRSC Server

Use the following steps to complete the data upload for **BRSC 1**:

1. Verify the correct IP Address of the GTR 8000 Base Radio.
2. Verify that the GTR 8000 Base Radio is Powered on and connected on the proper Subnet.
3. Start the MCN Server and Load the system that was configured for the BRSC Network Interface.




4. The MCN Server PC **(MCN SVR 1)** would use the MCN Config software to prepare the system data.
5. In the previous diagram note that the Data was uploaded at 12:35PM from **MCN SVR 1** to the **BRSC 1 Service** running on the remote **BRSC PC 1**.( This is the most recent upload)
6. The **BRSC 1** would receive the uploaded data and use it to create local system data files.
7. **BRSC 1** will create and maintain a local cache based on the uploaded data.
8. After the upload, **MCN SVR 1** becomes the controlling server for the **BRSC1** because it was the most recent initiator of the data that was uploaded.

### *Switching The Controlling Server*

If at any later time the **MCN SVR 2** needed to be assigned as the controlling server for **BRSC 1** then this would be the process:

1. The MCN Server PC **MCN SVR 2** would use it's MCN Config software to prepare the system data.
2. The Data is uploaded at 12:55 PM from **MCN SVR 2** to the **BRSC 1** Service running on the remote **BRSC PC 1**. (This will then be the most recent upload.)
3. The **BRSC 1** receives the uploaded data and uses it to create new system data files.
4. The **BRSC 1** creates and maintains a local cache based on the uploaded data.
5. After completing the upload, **MCN SVR 2** becomes the new controlling server for **BRSC 1** because it was the most recent server to upload data.

# 3. BRSC SERVER INSTALLATION

## ABOUT THE BRSC SERVER

BRSC's core software installs and runs as an independent service that exclusively connects to GTR 8000 Base Radios. It operates on a dedicated Windows PC and does not rely on other applications. Its main functions include gathering transmitter statuses from GTR 8000 Base Radios and sending this data to MCN Server 8000, which acts as a client to the BRSC Service.

### *Key Attributes of the BRSC Server:*

- **Network Interface**: Acts as a bridge within the MSI network.
- **Exclusive Connection**: Interfaces only with GTR 8000 Base Radios.
- **Status Display**: Locally shows transmitter statuses from connected radios.
- **Client Communication**: Forwards transmitter statuses to designated client remote applications.
- **Standalone Operation**: Does not interact with or rely on other applications.

### *Requirements:*

1. **License Authorization**:
   - USB Dongle required.
   - License key file needed.
2. **Configuration Setup**:
   - **BRSC HW Setup**: Install and configure both the BRSC Server and an exclusive BRSC Client.
   - **MCN Config Server**: Configure the MCN Server as a client for the BRSC.

## INSTALLING BRSC SERVER ON A DEDICATED PC

### *1. Begin the installation.*

Run ***Base Radio Status Concentrator install x64 V10.xx.xx.exe*** on a separate host PC to install the BRSC software. And follow the prompts to complete the installation.

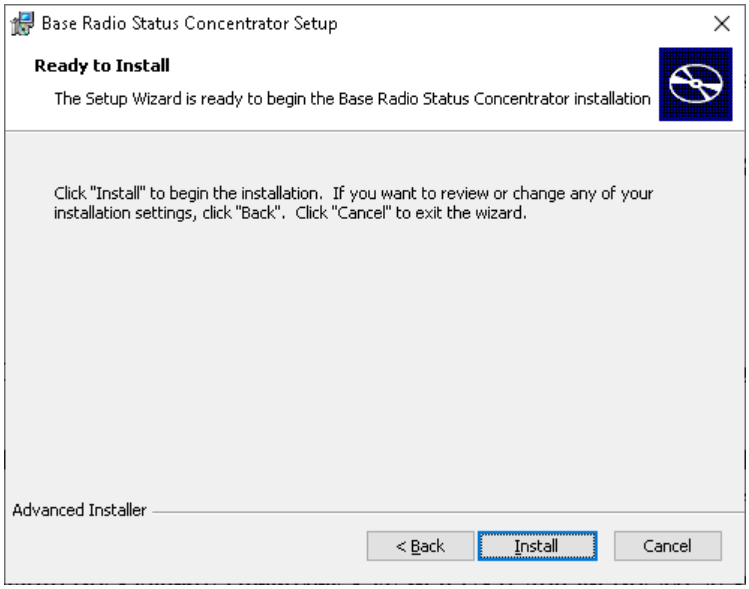
Click '***Next***' to Load the Installer for the BRSC software:

### 2. *Accept License Agreement*

Select the '***I accept …'*** and, then Click '***Next***;' If you agree to the Software License Agreement:


### 3. *Install The Software.*

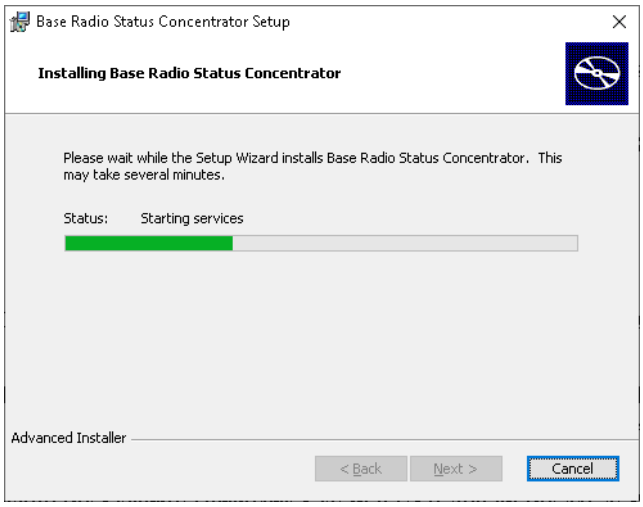
Click '***Install***' to begin the Software Installation:



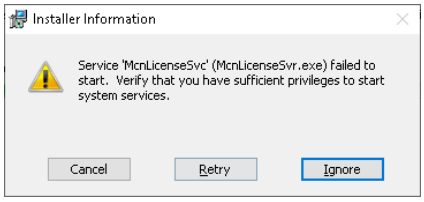
### 4. *Install USB Drivers.*

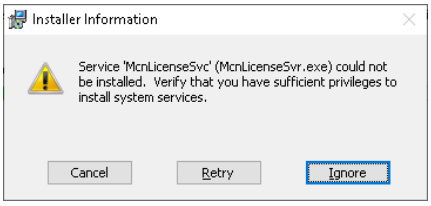
The Advanced Installer will proceed to install the following components:
BRSC software :

- MCN License Server.
- Safenet USB Device Drivers



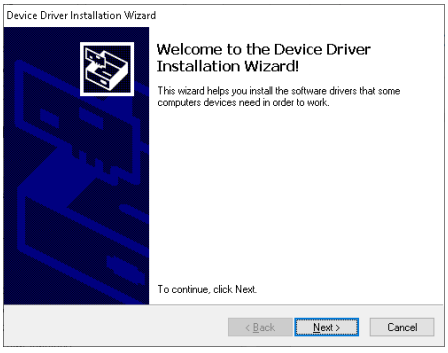

It is imperative that the BRSC **not** be installed to cohab on the same PC as the MCN Server application. However, if there is an existing MCN product which uses the MCN License Server, either of the following errors could be presented.



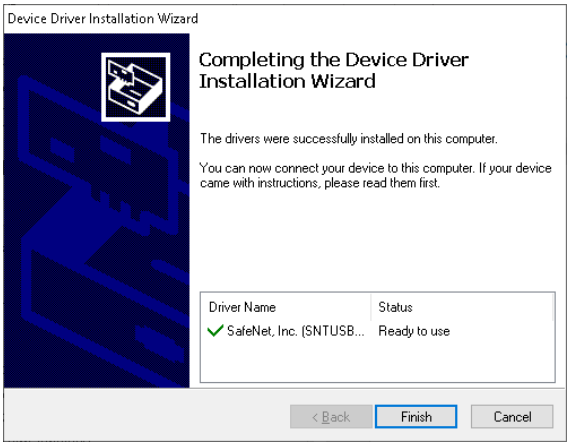

Click '***Ignore***' to continue installing all other software components.

The USB Dongle Drivers will be needed to support the Hardware Key.




Click '***Next***'

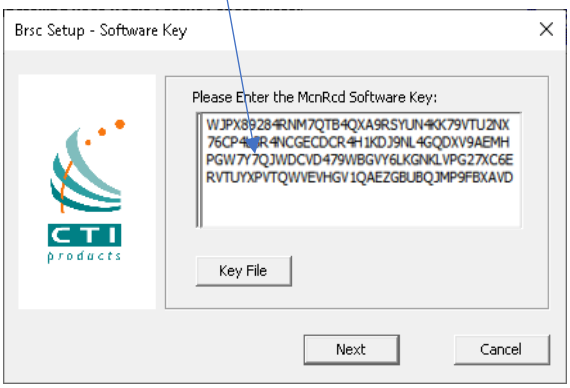
The following screen is presented after the USB driver has been installed.




Click '***Finish***' to complete the installation.

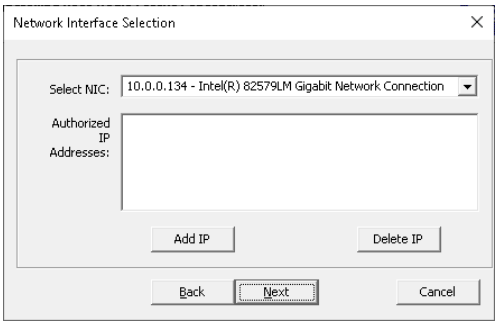
## 5. *Install Software License*

You will need to provide the License Key File on the next screen.



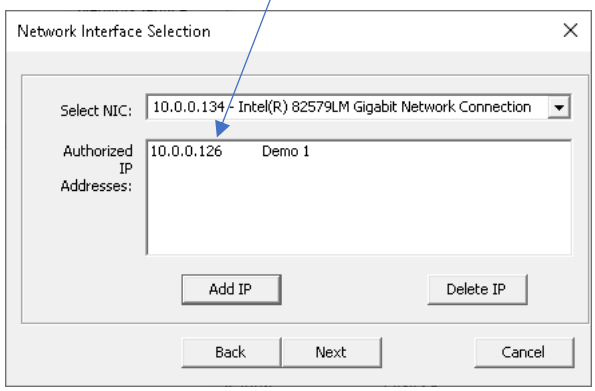

Click the '**Key File**' button, navigate to the location where the License Key File is saved, select it, and then click '**Next**' to proceed.

In the following window(If the PC has Multiple NICs) the **correct** Network Interface **must** be verified or selected.

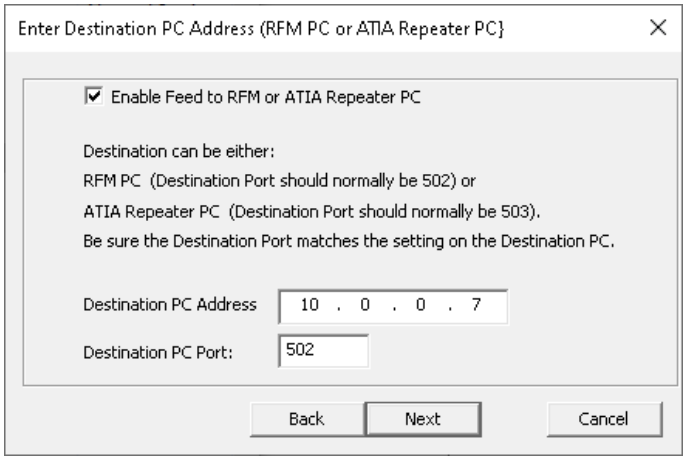


## 6. *Add Authorized PCs*

In the following window, the IP address for each PC that will have the rights to connect and share data with the BRSC must be added.



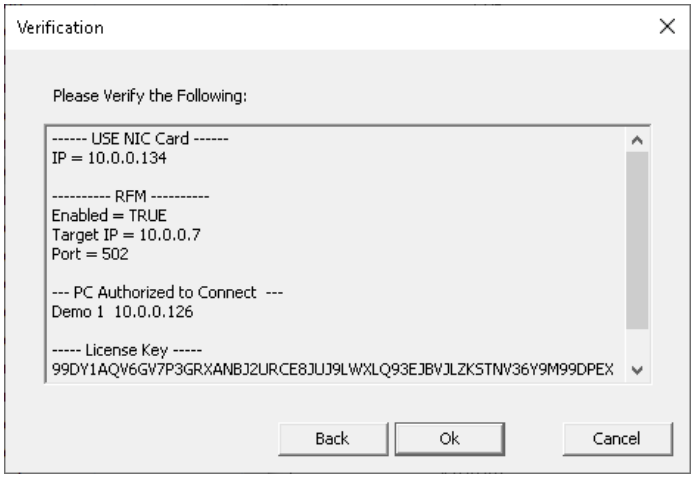

The next window configures the Destination IP address for the RFM PC or ATIA repeater based on the specific system hardware and infrastructure .




Enter the appropriate IP address and Port number of the device that the BRSC will be sending data to.

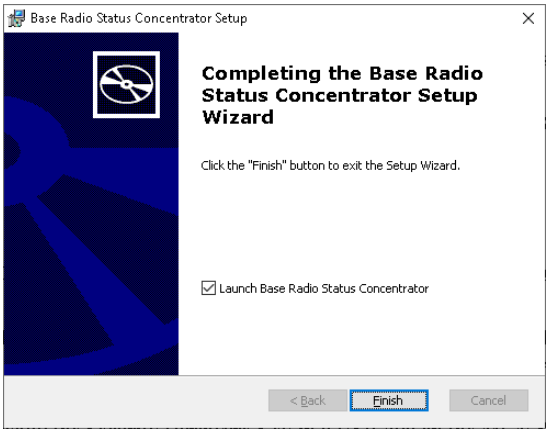
## 7. *Verify License & Configuration Data.*

Verify that all the configuration parameters are correct.



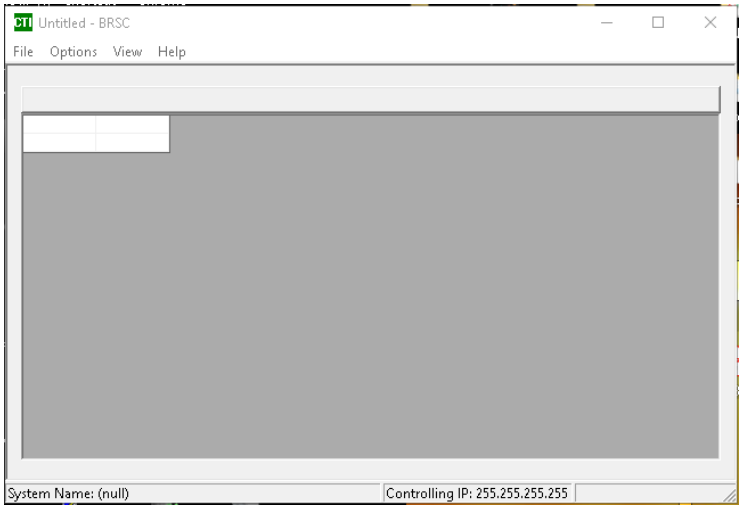

Check that all the information entered previously is compatible for your specific IP network and its devices. Then Click “OK.”

In the following windows, Click ‘Finish’ to complete the installation.



# 4. BRSC SERVICE/APPLICATION

From the desktop of the BRSC PC, Open the CTI Products Folder and '***Click***' the BRSC Desktop icon.




The screenshot above shows the BRSC Main Screen before any system has been loaded. The service will only become operational after a system has been generated.

## *BRSC Operation*

### Acquiring The BRSC System Files

Data from the MCN Server 8000 must be uploaded to the BRSC processing service to generate the necessary system files for its operation. The BRSC will not operate without this critical system parameter information. The system configuration provided by this data is essential for the BRSC to establish a connection with the GTR 8000 Base Radios and to relay Base Radio statuses back to the MCN Server.

After the MCN data is uploaded, the BRSC service may need to be reloaded or restarted to generate its system file from the new data that it receive from the MCN Server.

### BRSC Operating Modes

The BRSC has two possible modes in which it operates:

1. **Service Mode**
2. **Application Mode**

#### *Service Mode (BRSC Viewer)*

- **Activation**: In service mode, the operation starts automatically and runs in the background without any user interface.
- **Primary Purpose**: This mode is designed for continuous, unattended operation.
- **Application**: The BRSC Viewer is used to provide a display of the operational status for the service.

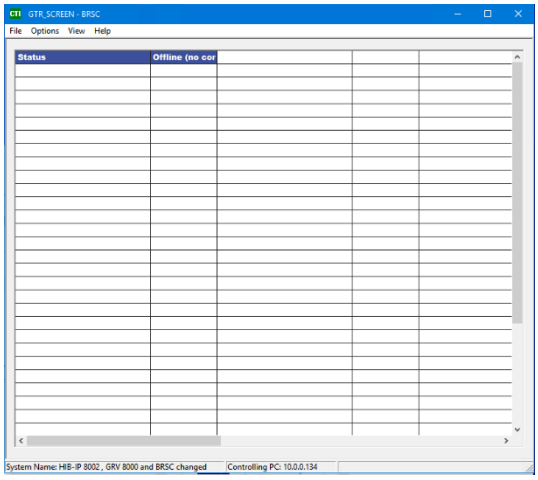
### *Application Mode (BRSC Desktop)*

- **Activation**: BRSC Desktop mode needs to be started manually.
- **Primary Purpose**: It's designed for verifying and troubleshooting the BRSC Process.
- **Application**: The BRSC DeskTop application is used to operate in this mode.

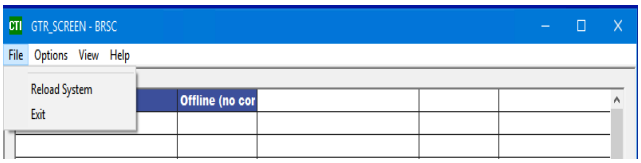
**Note** *It is important to remember that both services can not be run at the same time, as they perform the exact same function*

## BRSC DeskTop

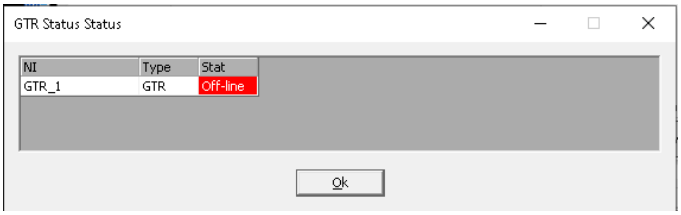
When you run the BRSC Desktop you will be operating in the Application mode, and the following window will pop up.




If the BRSC service fails to connect to the BR while starting up it may be necessary to reload the system by clicking on the "**File**" ⟶ "**Reload System**" as seen in the next screen shot.



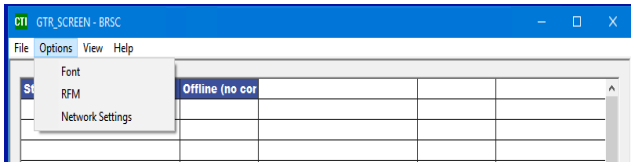

The Reload System action will also check and show the GTR connection status.



### *OPTIONS Menu*

The “Options” menu allows you to configure the BRSC’s display via the following :

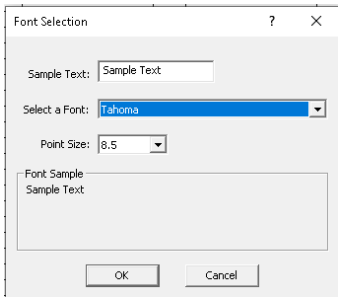
- Font settings,
- RFM client and
- BRSC’s Network settings.




#### *The Font menu*

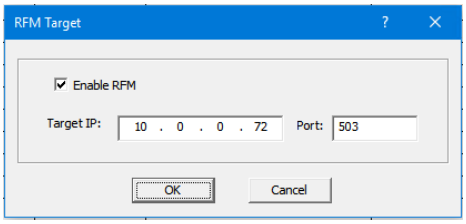
The "Font" menu provides settings where you can adjust the appearance of text in the screen window. The options include the following:

- Font Selection
- Font Point Size




#### *The RFM menu*

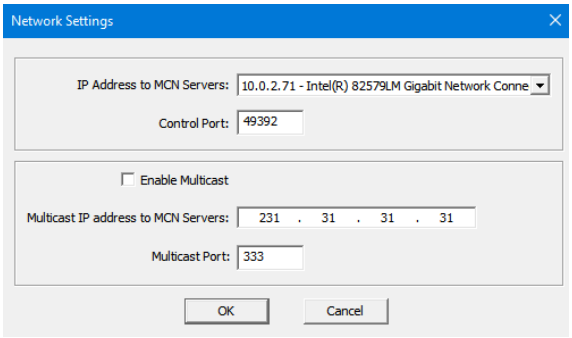
This menu allows RFM client to be enabled or disabled, and its destination address configured as shown in the following “RFM Target” window menu.



*The Network Settings menu*

The "Network Settings" menu is where you configure and manage network-related settings of the BRSC application. The configurable options include the following:

- IP Address to MCN Server
- Control Port
- Enable Multicast
- Multicast IP Address to MCN Server
- Multicast Port




*IP Address To MCN Server*

This is the IP address for the NIC of the PC on which the BRSC is installed and running.

*Control Port*

This is the dedicated port used by the BRSC application to send and receive control commands between the server and client.

*Enable Multicast*

This activates the multicast method used to efficiently transmit data from the server to multiple recipients across the network.

*Multicast IP Address to MCN Server*

The addresses used here must fall within the specified ranges designated for multi-cast traffic.

**Note:** Not all networks or devices fully support multicast traffic. Assistance from an IT network specialist may be required to verify compatibility or configure network devices correctly.

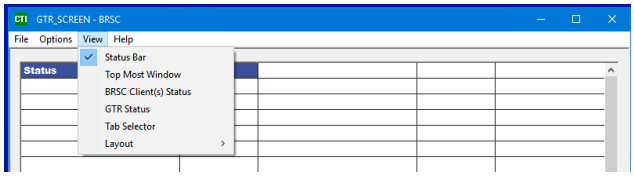
*Multicast Port*

Multicast ports are the specific port numbers used in conjunction with multicast IP addresses to send and receive multicast traffic over the IP network.

## VIEW Menu

The View menu provides options that control how information is displayed on the screen. The View Menu options include the following:

- Status Bar
- Topmost Window
- GTR Status
- Tab Selector
- Layout




### *Status Bar*

The status bar is a user interface element that provides real-time information and feedback about the current state of the application.

### *The "Topmost Window"*

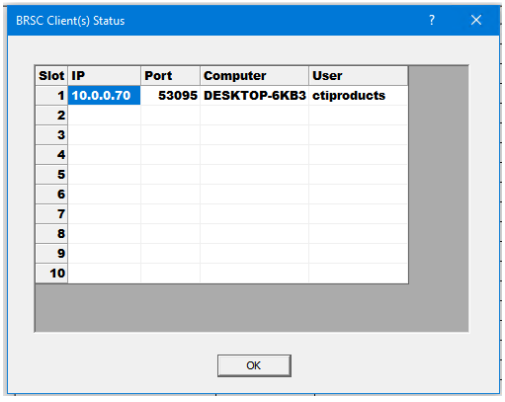
The "Topmost Window" is a feature that allows a window to stay on top of all other windows regardless of which application is currently active.

*Benefits:*

**Multitasking**: Keeps important windows visible while you work in other applications.
**Monitoring:** Ensures that a monitoring tool or dashboard remains visible with real-time updates.

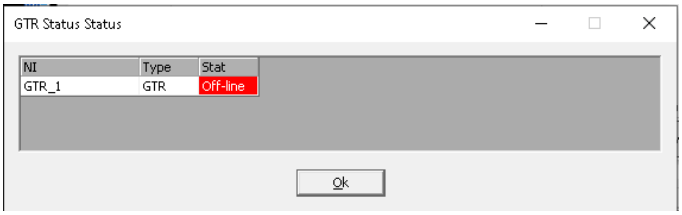
### *BRSC Client Status*

The BRSC Client Status allows for the monitoring and tracking of those clients that are authorized and successfully connected to the BRSC server as seen in the following window.



### *GTR Status*

This will display the connection status of the GTR Base Radios.




### *Tab Selector*

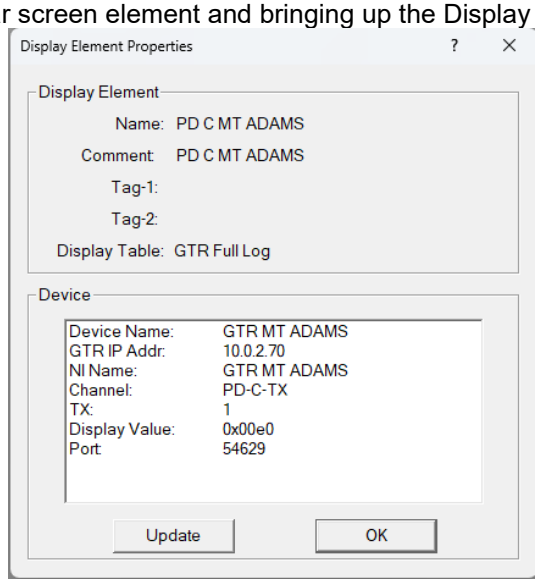
This is a user interface element used to efficiently navigate between different sections or panels within the same window.

### *Layout*

The goal of the layout function is to allow users to configure the screen in a way that is both aesthetically pleasing and functional, making it easier to interpret the displayed information.

### *Display Element Properties*

More information can be obtained about GTR Base Radio by performing a Shift - Left Click over the particular screen element and bringing up the Display Element Window.




**Display Element:**

- **Name** BR / Receiver name from MCN Configuration files.
- **Description** Field from MCN Configuration files.
- **Tag1, Tag2** Fields from MCN Configuration files.
- **Display Table** Field from MCN Configuration files.

**Device:**

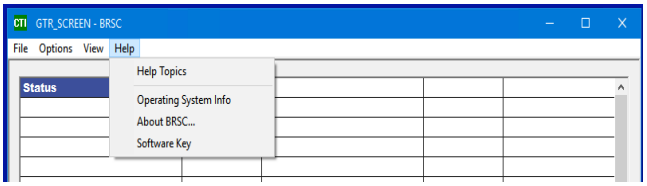
- **Device Name** Device name for this GTR from MCN Configuration files.

- **GTR IP Addr** IP Address of the GTR on the network from MCN Configuration files.
- **NI Name** Network Interface name for the BRSC from MCN Configuration files.
- **Channel** Channel name associated with this GTR from MCN Configuration files.
- **Tx** GTR index\subsite number in the BRSC from MCN Configuration files.
- **Display Value** Raw status value that is processed through the Display Table
- **Port** UDP port assigned to that GTR from the Dynamic Port Range on the BRSC PC.

## HELP Menu

The Help Menu provides access to the following:

- Help Topics
- Operating System Info
- About BRSC
- Software Key




***Help Topics***
This option provides access to PDF documentation that assist users in understanding and effectively using the BRSC software application,

***Operating System Info***
This option provides a summary of information about the computer operating system on which the BRSC Application is running.

***About BRSC***
This option provides details about the BRSC software such as “Version,” “Copyright” and “Licensing” information.

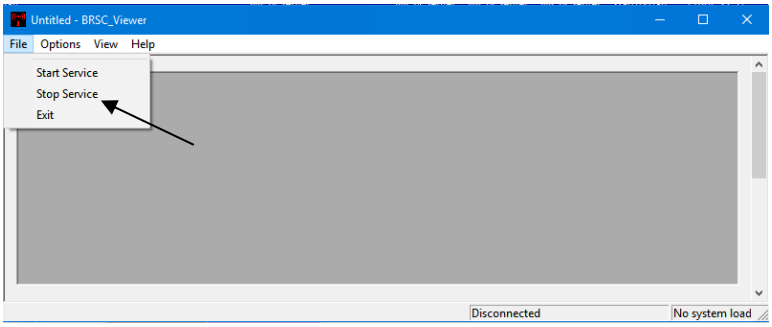
***Software Key***
This provides the option to Verify, or Change the software key, which is a unique code used to activate or validate software.

## BRSC Viewer

The BRSC Viewer is the application used to provide a display with the operational status of the BRSC service.

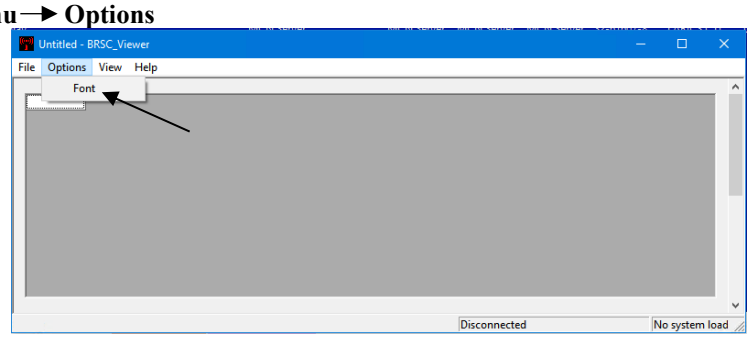
The following are Screen shot of the BRSC Viewers interface.

**Menu → File**




The File menu provides options the option to Start, Stop, or Exit.

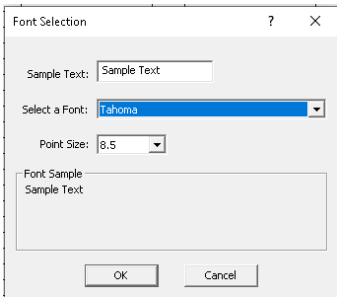
**Menu → Options**



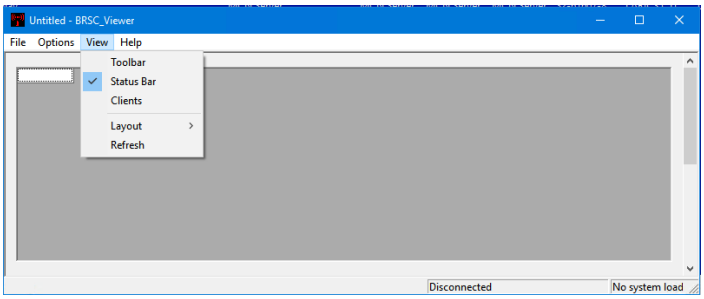

The "Font" menu provides settings where you can adjust the appearance of text in the screen window.

The font options include the following:

- Font Selection
- Font Point Size



**Menu →View**




The View menu provides options that control how information is displayed on the screen. The View Menu options include the following:

- Tool Bar
- Status
- Client
- Layout
- Refresh

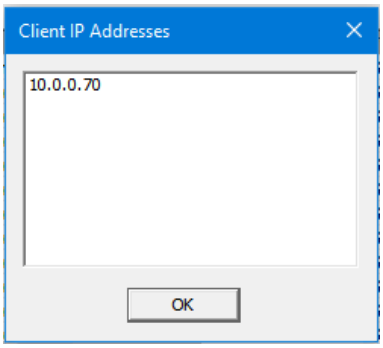
**Menu →View → Tool Bar**

The Tool Bar menu provides access to the file open function.

**Menu →View → Status**

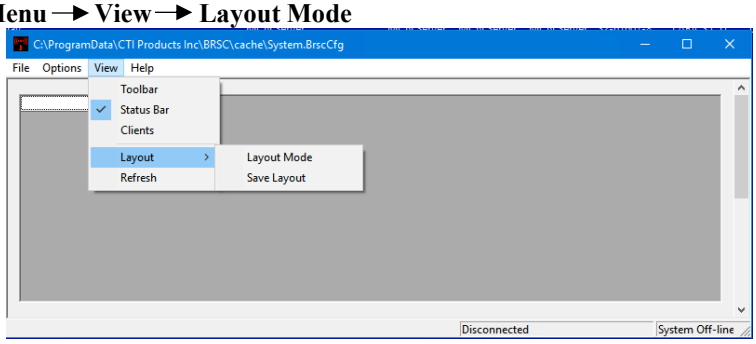
The status displays the current status of the application and its operation.

**Menu →View → Clients**




The Client menu displays the list of the authorized clients.

**Menu → View → Layout Mode**

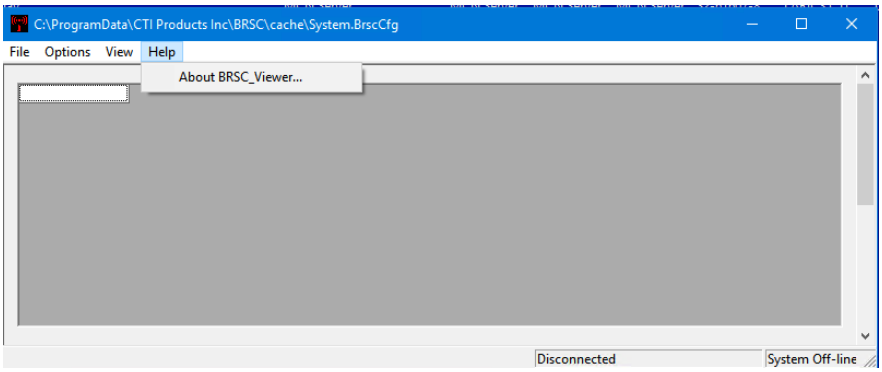



The Layout menu provides options for arranging and organizing the displayed screen.

**Menu → View → Refresh**

The Refresh function updates or reloads information displayed on the screen.

**Menu → Help → About BRSC Viewer**




This option provides details about the BRSC Viewer software such as “Version,” “Copyright” and “Part number” information.

# 5. SETUP FOR BRSC CLIENTS

## CLIENT TYPES

Both the RF Monitor software (RFM)and the MCN Server 8000 software can connect as clients to the BRSC server, where they can receive the base radio status updates from the BRSC server. The following discusses each client's option:

### *RF Monitor as a Client*

The RFM client connects to the BRSC server to retrieve and display the status information of BR transmitters remotely. It allows users to view on a separate dedicated PC, the BR transmitter status updates that are gathered from the BRSC server. It requires the BRSC HW Setup for installation and configuration.

### *MCN Server 8000 as a Client*

The MCN Server 8000 is a standalone server for comparator control but can also function as a client to the BRSC server, where it receives BR transmitter status information, that it then displays as updates on its "Display Window Screen."

The BRSC Network Interface can only be added and configured for the MCN Server 8000 software, using the MCNConfig Server Version 10.xx or later.

### Client Setup:

After installation, you must enter the appropriate IP parameters in both the MCN Server and RFM Applications, for them to connect them as clients to the BRSC Service:

#### *Configuration for RFM*

The BRSC can be configured in the BRSC APP to send BR data directly to the RFM application. Under **Options** → **RFM** you will need to check the "**Enable RFM**" box and enter the appropriate IP Address and Port Number for the RFM PC that the data will be forwarded to.

#### *Configuration for MCN Server 8000*

To configure the MCN Server 8000 as a client for the BRSC, you need to complete configurations in two distinct locations:

*In The MCN Config*

Before the MCN Server can communicate with the BRSC Service, it needs to be configured with a GTR Network Interface. This setup allows the MCN Server to properly connect to the BRSC Service. Check the MCN Server 8000 manual under "**The BRSC Clients**" section for step-by-step instructions on configuring BRSC in the MCN config Server Application.

*In The BRSC APP*

Additional configuration must be made in the BRSC APP to enable Multicast BR:

- **Open the BRSC Application:**
  Launch the BRSC app on your device or system.
- **Navigate to Options:**
  Look for the "Options" menu. This is located in the above main menu or settings area of the app.
- **Go to Network Settings:**
  Within the "Options" menu, find and select "Network Settings."
- **Enable Multicast:**
  In the Network Settings, locate the "Enable Multicast" checkbox. Ensure this box is checked to activate multicast functionality.
- **Enter Multicast IP Address:**
  In the field for the Multicast IP Address. Enter the appropriate multicast IP address for your RFM Multicast group. This address is used to route multicast data to all devices that are subscribed to the Multicast group.
- **Enter Port Number:**
  In the field for the Port Number. Enter the port number that corresponds to the assigned multicast group.
- **Save Changes:**
  After entering the IP address and port number, make sure and Click OK to save or apply the changes. The process will require allowing the MCN Option settings to make changes.
- **Verify Configuration:**
  The New settings will not take effect until the program has been restarted. Click "NOW" when prompted to "End" the BRSC. Then restart the BRSC and check that the settings have been applied correctly.

# 6. COMMON QUESTIONS

Here are some common questions about the Base Radio Status Concentrator (BRSC).
These questions can help you better understand the BRSC's capabilities, setup, and operation:

1. **Functionality**:
    - What is the primary purpose of the BRSC in the MCN system?
      **Answer:** See **Page 6 " What is The Base Radio Status Concentrator?"**
    - How does the BRSC interface with GTR 8000 Base Radios?
      **Answer:** See **Page 6 "What is The Base Radio Status Concentrator?"**

2. **Installation**:
    - What are the steps to install the BRSC software on a dedicated PC?
      **Answer:** See **Pg 10 " Begin the installation."**
    - What hardware and software requirements are needed for BRSC installation?
      **Answer**: See **Pg 6 "What Hardware and Software are required?"**

3. **Configuration**:
    - How do you configure the BRSC to connect with the MCN Server 8000?
      **Answer:** See **Pg 26 "In The MCN Config"**
    - What network parameters need to be set for the BRSC?
      **Answer:** See **Pg 7 " Network Parameters Worksheet"**

4. **Licensing**:
    - What licensing components are required to operate the BRSC?
      **Answer:** See **Pg 22 "Software Key"**
    - How do you verify or update the BRSC license key?
      **Answer:** See **Pg 22 "Software Key"**

5. **Operation**:
    - What are the differences between Service Mode and Application Mode in BRSC?
      **Answer**: See **Pg 16 "BRSC Operating Modes"**
    - How can the BRSC system files be acquired and updated?

      **Answer:** See **Pg 16 "Acquiring The BRSC System Files"**

6. **Troubleshooting**:
    - What are common errors encountered during BRSC operation, and how can they be resolved?
      **Answer:** See **Pg 32 "COMMON BRSC ERRORS**
    - 
    - **BRSC *NI Open Rejected Error***
    - **"**

- How can you verify the connection between BRSC and its clients (MCN Server 8000 or RFM)?
  **Answer:** See **Pg 30** " **Client Verification:**"

7. **Security**:
    - What security measures should be implemented when using the BRSC?
      **Answer:** See **Pg 38 "Appendix A.** Security and Information Assurance Recommendations**"**
    - How can access to the BRSC system be restricted to authorized PCs?
      **Answer:** See **Pg 14**, **"Add Authorized PCs "**

8. **Compatibility**:
    - What software **versions are compatible with the BRSC?**
      **Answer: See Pg** 7, **"2. The BRSC** Overview **"**
    - Can the BRSC be used with other base radios besides the GTR 8000?
      **Answer:** NO, See **Pg 6 " What is The Base Radio Status Concentrator?"**

9. **Client Setup**:
    - How do you configure the RFM application as a client for the BRSC?
      **Answer:** See **Pg 8 "Uploading MCN System Data To the BRSC Server"**
    - What steps are required to set up the MCN Server 8000 as a client for the BRSC?
      **Answer:** See **Pg 26**, **"Configuration for MCN Server 8000 "**

10. **Performance**:
    - How does the BRSC handle data from up to 240 GTR 8000 Base Radios?
      **Answer:** See **Pg 8**, **"Uploading MCN System Data To the BRSC Server "**
    - What are the benefits of using multicast functionality in the BRSC?
      **Answer:** See **Pg 19**, **"Enable Multicast "**

# 7. TROUBLESHOOTING & TESTING

## PINGING THE BASE RADIO

The "Ping" function can be run from the PC as a diagnostic tool to determine if a particular IP address can be "reached" when a selected PC is used as the packet source. Also, it will confirm whether or not the local network is configured to pass (ICMP) Ping messages and responses. The Base Radio should respond to any ICMP Ping packets that originate from its Local IP network.

***Note:*** ***Some networks are configured to block the ICMP Ping messages and/or responses between certain network segments of subnets. The Ping function will not work if the ICMP Ping messages or responses are blocked between the networks.***

***If ICMP Pings are blocked from your source network, you may be able to log into a remote router or managed IP switch at the Destination Local Network of the Base Radios and ping the unit from that router or IP switch.***

## VIEWING PARAMETERS OF THE BRSC

The Hardware parameters of the Base Radio can be viewed by opening the existing MCN BRSC system files with MCN config Server program.

If there is not an existing MCN system, then this information must be gathered by:

- reading the Base Station Radio with a compatible version of the Motorola CSS software
- or by making a request to an authorized Systems Technician or Engineer.

## CLIENT VERIFICATION:

It is a good idea to verify the multicast functionality by running the MCN Server and RFM Application clients to see that they connect to BRSC:

- **Evaluate RFM's Connection**:
  Verify the connection between the BRSC's RFM client and the BRSC Service to ensure they connect.
- **Evaluate MCN Server 8000's Connection**:
  Verify the connection between the BRSC's MCN Server 8000 client and the BRSC Service to ensure they connect.
- **Check Status:**
  Verify that both BRSC's MCN and RFM Clients are receiving and processing data correctly.

# TROUBLESHOOTING GUIDE

This troubleshooting guide provides step-by-step solutions for common issues encountered during the installation, configuration, and operation of the Base Radio Status Concentrator (BRSC). Identify the Issue you are experiencing and follow the solution steps to resolve the problem.

## *Common MCN Errors*

### Class Not Registered

**Symptom:** The 'Class not registered' warning error, could pop up while building a system in the MCNConfig Server, and is an indication of a configuration error.


This message offers no clarity by itself but, will typically be accompanied by additional pop ups similar to the next Warning window.

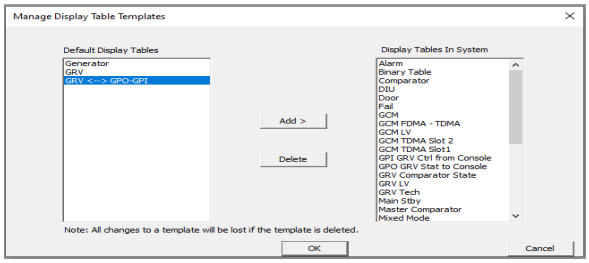
The following Warning screen might pop up in association with the previous one and together provides more insight about the kind of configuration error that exist.


The above warning error indicates that one of the Display Tables that is required within the currently loaded system is not a part of the available set of Display tables.

➢ ***Solution***

To correct this issue, do the following:

- Open the MCN Config Server application.
- Click the View →Display Tables.
- While on the Display window click Edit → Manage Display tables and the following window will open.

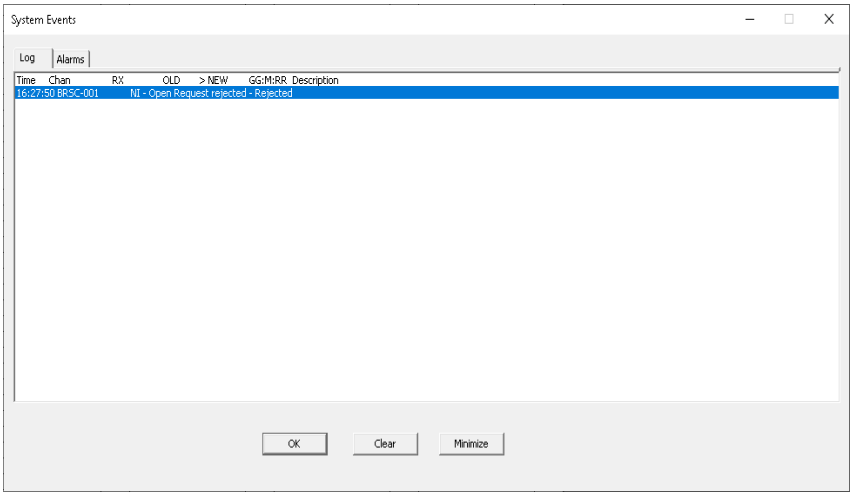



- Select the missing table from the list of default tables on the Left pane and Click Add.

## *COMMON BRSC ERRORS*

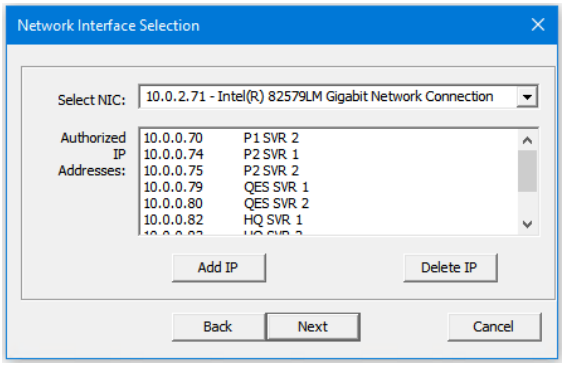
### 1. *BRSC NI Open Rejected Error*

**Symptom:** The BRSC Open Rejected error will occur if the Server PC that is trying to connect to the service is not in the Authorized IP Addresses list.



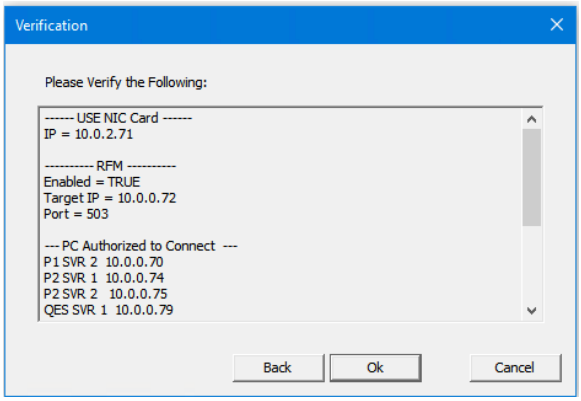

➢ ***Solution***

- From the PC running the BRSC Service, '**Open**' CTI Products Folder and '**Run**' BrscSetup.exe
- Click '**Next**' to navigate to the '**Network Interface Selection**' window,




- Click '**Add IP**' to add the address for the New Server that you wish to be allowed connection.

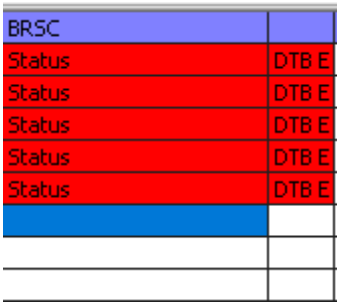
- Click '**Next**' until you see the '**Verification**' Window.




- Click '**OK**'

## 2. *Database Error (DTB Error)*

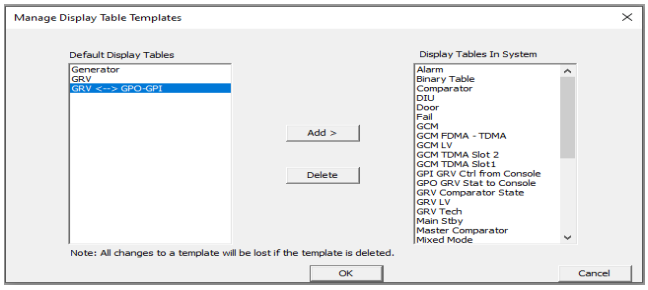
**Symptom** This configuration error will occur if there are problems Linking the Devices in the Display Table Or stated another if you try to add BRSC without the proper Display Table being loaded for the system.




### ➢ *Solution*

To correct this issue, do the following:

- Open the MCN Config Server application.
- Click the View →Display Tables.
- While on the Display window click Edit → Manage Display tables. the following window will open.




- Select the missing table from the list of default tables on the Left pane and Click Add.

## 3. *Installation Problems*

**Issue: USB Driver Installation Error**

**Symptom**: USB driver fails to install, or the USB dongle is not recognized.

➢ **Solution**:

- Ensure the USB dongle is properly connected to the PC.
- Verify that the USB port is functional by testing with another device.
- Reinstall the USB driver using the BRSC installation package.
- Restart the PC after installation to ensure the driver is loaded correctly.

**Issue: License Key File Not Found**

**Symptoms**: The installation process cannot proceed due to a missing license key file.

➢ **Solution**:

- Verify the location of the license key file.
- Ensure the file is accessible and not corrupted.
- If the file is missing, contact CTI Products, Inc. technical support at **support@ctiproducts.com** to request a replacement.

## *4. Configuration Issues*

**Issue: BRSC NI Open Rejected Error**

**Symptom**: The BRSC service rejects the connection request from the server PC.

➢ **Solution**:

- Open the CTI Products folder on the PC running the BRSC service.
- Run BrscSetup.exe.
- Navigate to the "Network Interface Selection" window.
- Click "Add IP" and enter the IP address of the server PC that needs access.
- Click "Next" until the "Verification" window appears.
- Click "OK" to save the changes.

**Issue: Database Error (DTB Error)**

**Symptom**: The BRSC displays "DTB Error" in the status column, indicating issues with the display table configuration.

➢ **Solution**:

- Open the MCN Config Server application.
- Navigate to View → Display Tables.
- Click Edit → Manage Display Tables.
- In the "Manage Display Table Templates" window, select the missing table from the list of default tables in the left pane.
- Click "Add" to include the missing table in the system.
- Save the changes and restart the BRSC service.

**Issue: Missing Display Tables**

**Symptom**: A warning message appears indicating missing display tables.

➢ **Solution**:

- Open the MCN Config Server application.
- Navigate to View → Display Tables.
- Click Edit → Manage Display Tables.
- Select the missing table from the list of default tables in the left pane.
- Click "Add" to include the missing table in the system.
- Save the changes and restart the BRSC service.

## 5. *Connectivity Issues*

**Issue: Unable to Ping Base Radio**

**Symptoms**: The Base Radio does not respond to ICMP ping requests.

➢ **Solution**:

- Verify the IP address of the Base Radio.
- Ensure the Base Radio is powered on and connected to the correct subnet.
- Check the network configuration to ensure ICMP ping messages are not blocked.
- If ICMP ping is blocked, log into a remote router or managed IP switch at the destination network and attempt to ping the Base Radio from there.

**Issue: BRSC Service Fails to Connect to Base Radio**

**Symptom**: The BRSC service cannot establish a connection with the Base Radio.

➢ **Solution**:

- Verify the Base Radio's IP address, subnet mask, and gateway settings.
- Ensure the Base Radio is powered on and connected to the network.
- Restart the BRSC service and reload the system files by selecting File → Reload System in the BRSC Desktop application.

**Issue: Clients Cannot Connect to BRSC**

**Symptom**: The MCN Server 8000 or RFM application fails to connect to the BRSC service.

➢ **Solution**:

- Verify the IP address and port number settings in the BRSC application under Options → Network Settings.
- Ensure the client PC's IP address is added to the authorized list in the BRSC setup (BrscSetup.exe).
- Check the multicast settings in the BRSC application and ensure they match the client configuration.
- Restart the BRSC service and the client applications.

## 6. *Operational Issues*

**Issue: BRSC Service Not Generating System Files**

**Symptom**: The BRSC service fails to generate system files after data upload.

➢ **Solution**:

- Verify that the MCN Server 8000 has successfully uploaded system data to the BRSC service.
- Restart the BRSC service to reload the system files.
- Check the BRSC Desktop application for any error messages or warnings.

**Issue: BRSC Viewer Displays Incorrect Data**

**Symptom**: The BRSC Viewer shows incorrect or incomplete data.

➢ **Solution**:

- Verify the connection between the BRSC service and the Base Radios.
- Check the network parameters and ensure they are correctly configured.
- Reload the system files in the BRSC Desktop application by selecting File → Reload System.

## 7. Performance Issues

**Issue: Slow Data Transmission**

**Symptom**: Data from Base Radios is delayed or not transmitted efficiently.

➢ **Solution**:

- Check the network bandwidth and ensure it is sufficient for the number of connected Base Radios.
- Verify that multicast functionality is enabled and properly configured in the BRSC application.
- Consult your network administrator to ensure the network infrastructure supports multicast traffic.

## 8. Security Issues

**Issue: Unauthorized Access to BRSC**

**Symptom**: Unauthorized PCs are able to connect to the BRSC service.

➢ **Solution**:

- Open the BRSC setup (BrscSetup.exe) and navigate to the "Authorized PCs" section.
- Remove any unauthorized IP addresses from the list.
- Implement strong passwords and restrict physical access to the BRSC PC.

**Contact Technical Support**

If the issue persists after following the troubleshooting steps, contact CTI Products, Inc. Technical support for assistance:

- **Phone**: +1.513.595.5900
- **Email**: support@ctiproducts.com
- **Website**: [www.ctiproduct

# APPENDIX

## APPENDIX A. SECURITY AND INFORMATION ASSURANCE RECOMMENDATIONS

Review these recommendations before installation and follow them during installation and operation:

1. Software Installation Locations
   Install the BRSC software on a Separate PC, and in the default program directory recommended by Installer software.
2. Configure the BRSC software .
3. Do not save user files or system configuration files in the program directory.
4. Save system configuration files to a directory that requires Administrator rights so that users cannot delete or edit the configuration files.
5. Always run the configuration software with the lowest permission set possible.
   Note: The MCN Config Server software must be run with Administrator rights.
6. When configuring a system, do not enter Sensitive or Confidential information into the system configuration files.
7. Follow the applicable Backup & Recovery procedures for your system, PCs, and operating systems as defined by your organization, the hardware and software vendors, and commercially acceptable practices.
8. Limit access to PCs, IP networks, and MCN networks, both physically and through appropriate restrictions on routers and switches
9. Use strong passwords where applicable.
10. Follow your radio system provider's and your organization's recommendations on security and Information Assurance.
11. Use the appropriate Windows Hardening Kits for PCs in your system.
12. Use anti-virus and anti-malware packages on PCs in your system.
13. Install appropriate security patches for installed software and operating system on PCs in your system.

# INDEX

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