# *MCN*
# *Monitoring and Control Network*

# *MCN System Watchdog Software*
# *Installation and Operator Manual*

***S2-61017-105***

*ETi Products Inc.*

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# MCN System Watchdog Software

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## Manual Revisions

| | |
|---|---|
| S2-61017-100 | Initial Release |
| S2-61017-105 | Additional Configuration Options for Version 110 of the program<br>Minor text changes. |

# 1. Introduction and Overview

The *MCN System Watchdog* program is an adjunct program to the MCNRCD Remote Comparator Display software. It does the following tasks:

- Detects inactive receivers in an MCN system by watching the channel activity from one or more MCNRCD Server PCs.
- Logs inactive receivers to the screen, printer, and disk
- Creates a Server Activity File with a summary of channel activity. This can be used with the optional MCN Data Miner software to view system activity and extract that data for use with external programs such as Excel for additional system performance analysis.

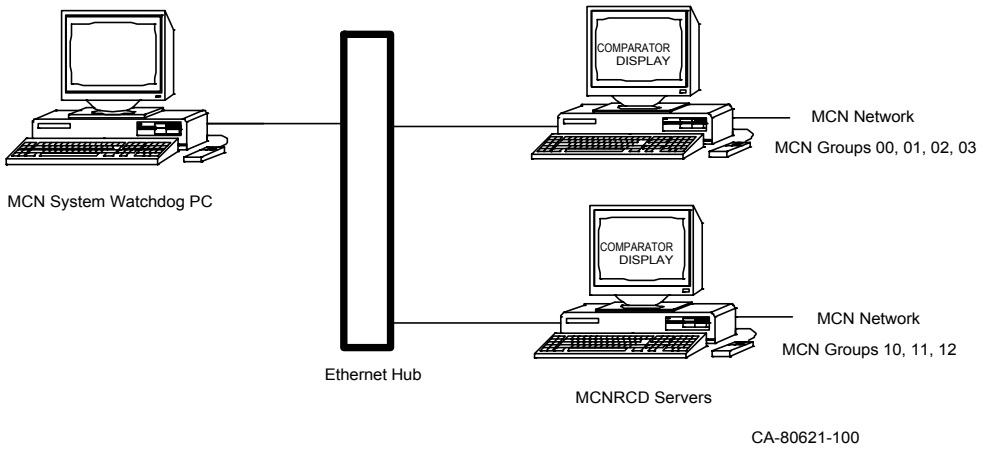



**Figure 1 MCN System Watchdog System with 2 MCNRCD Servers**

The basic MCN Remote Comparator Display system monitors the status of comparators. It reports receiver errors such as Disable and Fail. However, since the comparator provides a limited failure indication, there can be voting system problems that are not detected by the comparator such as:

- Signal Quality Modules (SQMs) (for Motorola comparators) or Receiver Modules (Ericssson/GE/MA-Com) that are removed from the comparator card cage.
- CIB modules that are disconnected from the comparator card cage.
- Comparator Card Cages without power (in some cases)
- Receivers that never receive. (This can be caused by problems in the receivers or the antenna system)
- Receivers that never vote. (This can be caused by very noisy telephone lines, a bad receiver or a bad input module on the comparator.)

The *MCN System Watchdog* program uses the Vote and Receive status from the receivers to report these types of potential receiver or comparator problems. The program works on the assumption that in any system, all receivers should show some Receive (and/or Vote) activity every so often.

**The Rule**
The rule that the *MCN System Watchdog* program uses to report a potential problem is this:

> *If a receiver does not show any Receive activity (or, optionally, Vote activity) over a user-defined time period, there is a potential problem with that receiver.*

The *MCN System Watchdog* program does not directly access the MCN network. It works by checking the Activity Files generated by MCNRCD Server(s) on an hourly basis to check for receiver activity.

The *MCN System Watchdog* program is not all-knowing and all-seeing. It cannot tell you *why* a particular receiver is not receiving or voting, but it can alert you to the fact that it has seen no activity for a time period. It is then up to you or your technician to find and repair the root problem.

## 1.1 Software Provided

Two main programs make up the MCN System Watchdog software package. They are:

- Watchdog Configuration - the configuration program
- MCN System Watchdog - the runtime program

Use the Watchdog Configuration program to configure the operation of the *MCN System Watchdog* program. Options include:

- Selecting the MCNRCD Server(s) to monitor
- Setting some receivers to ignore
- Lookback time
- Printer selection and configuration

The *MCN System Watchdog* program can be installed on a separate PC (separate from the MCNRCD program) or on the same PC.

## 1.2 System Requirements

Two components are required for the *MCN System Watchdog* program

1. A PC to run the *MCN System Watchdog* program with the following minimum system configuration:
    - IBM Compatible PC
    - Pentium III - 500 MHz processor or better
    - 128 MB RAM
    - 40 MB free disk space for program and support files
    - CD-ROM (preferable a CD-R/W drive)
    - 3.5" floppy disk drive
    - SVGA adapter and monitor
    - Mouse
    - Sound Card & Speakers
    - Windows 2000 or XP Pro
    - Ethernet network card (or port) if operating on a PC separate from the MCNRCD server or if a networked printer is used.
2. One or more PCs running the MCNRCD software connected to MCN systems (the MCNRCD Server)
    - Running version 3.7 or higher of MCNRCD.EXE
    - With Activity Logging enabled (in the MCNRCD.CFG file)

Optional items include:

1. A local or networked dot-matrix printer
2. MCN Data Miner Software
3. Data analysis software (such as Microsoft Excel or other program) to work with the Data Miner Software.

## 1.3 Reference Documents

1. Monitoring and Control Network System Manual
   Part Number S2-60425
2. MCN Monitoring and Control Network Comparator Display System
   Remote Comparator Display Software
   Installation and Operator Manual
   (MCNRCD Software Manual)
   Part Number S2-60428

# 2. Installation

This section describes the installation of the *MCN System Watchdog* program in an MCN comparator display system.

## 2.1 Which PC to use?

If you have only one PC running the MCNRCD program (one MCNRCD Server), you will probably want to install and run the *MCN System Watchdog* program on the same PC as the MCNRCD program..

If you have multiple PCs running the MCNRCD program, or if you have a PC with multiple PCLTA interface cards running multiple copies of the MCNRCD program, you should install the program on a separate PC to reduce loading on the MCNRCD servers.

The *MCN System Watchdog* program may be run on the same PC that is running MCN EXB Network Manager software.

## 2.2 Ethernet Network

If you are running more than one PC, or if you need to use a networked printer, be sure you have an appropriate LAN installed.

## 2.3 Network Users and Access Rights

The users on the *MCN System Watchdog* PC must have full access rights to the directory on each MCNRCD Server that contains the MCNRCD software and the subdirectories.

To prevent problems with access rights, it is highly recommended that all users that will be using the *MCN System Watchdog* program are set up with appropriate access rights (Full Control) for the CTI directories, and matching passwords on all computers (MCNRCD Servers, printer servers, and the *MCN System Watchdog* PC).

## 2.4 MCNRCD Server(s)

### 2.4.1 Definition of MCNRCD Server

An MCNRCD Server is defined as one instance of the MCNRCD software running on a PC with Activity Logging enabled. Normally there will be only one PCLTA board or HIB module connected to a particular PC and one copy of MCNRCD.EXE running on that PC. Each PC in the system could then be considered an MCNRCD Server.

In larger systems, there may be multiple PCLTAs installed in a single PC, along with the same number of copies of MCNRCD.EXE running on that PC. In those systems, each set of PCLTA/MCNRCD.EXE could be considered an MCNRCD Server.

### 2.4.2 Mow many MNCRCD Servers are required?

How many servers do you need to use? You should set up as many servers as is required to monitor all the MCN Groups in your system.

The MCN network is divided into groups of up to 16 Comparator Interface modules (CIBs or AIBs). Each MCNRCD Server can monitor up to 4 MCN groups.

If you system has 4 or fewer MCN groups, you need only one MCNRCD Server. If you have more MCN groups, you will need more MCNRCD Servers. The exact number will depend upon how your system is configured and how many MCN groups each PC is actually monitoring.

In systems with a large number of PCs all monitoring the same MCN Groups, you should enable Activity Logging on only one of them. That PC would then be designated the MCNRCD Server.

You also need to make sure that all screens on the MCNRCD Servers are monitoring the 4 MCN groups dedicated to that PC. (The MCN Groups are configured in the MCNCFG program.) The System Watchdog Configuration program can verify that all the screens provide the proper coverage of the groups.

If a activity from a particular MCN Group is logged on more than one PC, the *MCN System Watchdog* program will generate multiple error messages for inactive receivers as it analyzes the log files on each of the MCNRCD Servers. (However, there is a way to get around this with the Ignore Receivers option in the System Watchdog Configuration program.)

### 2.4.3 MCNRCD Software Version

The *MCN System Watchdog* program requires that your MCNRCD Servers are running MCNRCD.EXE Version 3.7 or higher. (Activity logging was enabled in that version.) You can check the program version number from the MCNRCD program and selecting File \ Information from the menu.

If you need to copy a new version of MCNRCD.EXE to your system, see Appendix A -- Installing a new version of MCNRCD.EXE

### 2.4.4 Enabling Activity Logging in MCNRCD

Activity Logging in MCNRCD is configured in the MCNRCD.CFG file. see Appendix A -- Installing a new version of MCNRCD.EXE for details about enabling and verifying Activity Logging.

## 2.5 Installing the *MCN System Watchdog* software

The *MCN System Watchdog* program includes an InstallShield program on the CD.

Before you install this software, it is recommended that you verify that you have the proper version of the MCNRCD software running on the MCNRCD Servers and that they have Activity Logging enabled. (See the instructions above.)

If you are installing a new version of the program, you must remove the old version first. Follow the steps outlined in Appendix B -- Re-Installing *MCN System Watchdog* Program.

To install the software:

1. Make sure you have Administrator privileges on the PC.
2. Insert the CD in the CD drive.
   If AutoRun is enabled, the installation will start automatically.
3. If AutoRun is not enabled:
   From the Start menu, select Run and type in:
   d:\setup.exe
   (where d is your CD-ROM drive letter).
4. Follow the instructions in the InstallShield install program.
5. After the files are copied, the PC must be re-started.
6. The Setup program installs the *MCN System Watchdog* program in the system tray so that it automatically runs on start-up.
7. When you first re-start your PC after installation, the *MCN System Watchdog* program will try to run. It will fail to run since the System Watchdog Configuration program has not yet been run.
8. Run the System Watchdog Configuration program to configure the operation of the *MCN System Watchdog* program .
9. The *MCN System Watchdog* program requires that its clock and the clocks in all the MCNRCD be synchronized. The Install program will set up the PC running the *MCN System Watchdog* program as a Time Server.

   Set up each of the MCNRCD Servers to use Windows Time Service.
   From the command prompt, enter the following (less the c:>):
   c:> net time /setsntp:*servername*

   The *servername* will be the name that is assigned in Windows to the *MCN System Watchdog* PC. It will typically start with a double backslash
   (ex: \\PC-1.)

10. More details on the time synchronization are available in the document *win2000xp.pdf* available from the NIST at:
    http://tf.nist.gov/service/pdf/win2000xp.pdf.

    (This paper talks about using the NIST time servers over the internet, but it provides a good overview of the Windows Time Server function.)

    Additional information on the Windows Time Service is available from Microsoft at:
    http://www.microsoft.com/windows2000/techinfo/howitworks/security/wintimeserv.asp
11. Re-start the *MCN System Watchdog* program.
12. The *MCN System Watchdog* program will automatically run the next time that your PC is restarted.

# 3. System Watchdog Configuration Program

The Configuration program opens with the following screen:

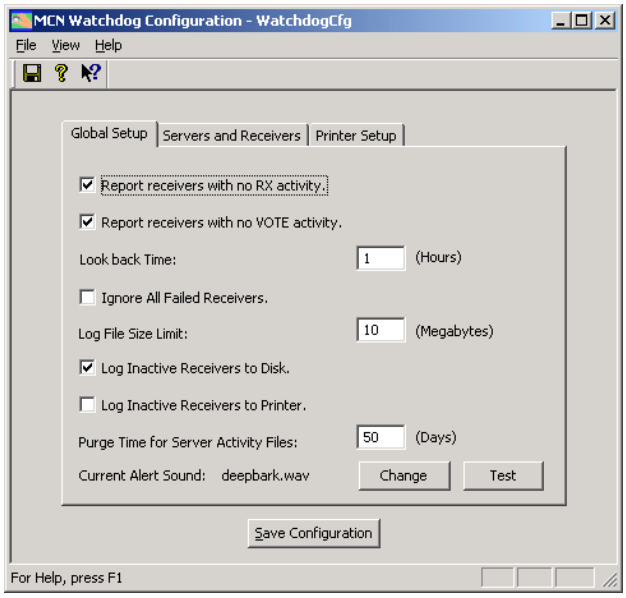



**Figure 2 Global Setup Tab**

The ***Save Configuration*** button is visible on all three configuration tabs. Pressing this button saves the current configuration to disk. Exiting the program without saving the configuration will cause your changes to be lost.

Note: Changes take place in the *MCN System Watchdog* program only when it is restarted. If you change the configuration while the *MCN System Watchdog* program is running, you must close System Watchdog and re-start it for the changes to take effect.

## 3.1 Global Setup Tab

This tab contains Global Configuration Parameters that control the overall operation of the MCNRCD System Watchdog program.

### 3.1.1 Report Receivers with no RX activity

When this box is checked, the *MCN System Watchdog* program reports receivers that have not had Receive activity for the defined look back time.

### 3.1.2 Report Non-Voting Receivers

When this box is checked, the *MCN System Watchdog* program reports receivers that have not had Vote activity for the defined look back time.

Even if a receiver shows Receive activity, there still could be a problem if the comparator never votes that receiver. It is a good idea to keep this feature enabled.

### 3.1.3 Look Back Time

This field sets the global time that the MCNRCD System Watchdog program looks back to find receiver activity. If a receiver has had no activity (Receive or Vote, depending upon options selected) for that period of time, the program will report that receiver as inactive.

Setting this time too short will result in false alarms. Set this time long enough that all the receivers in your system will normally have Receive and Vote activity. Take into account any channels that may have limited activity. Setting this time too high will delay the reporting of an inactive receiver.

The *MCN System Watchdog* program uses the hourly Activity Files (MCNxxxxx.act) from the MCNRCD servers. It will analyze the channel traffic for the previous hour and work back to the number of hours specified in the Look Back Time. If Activity Files are not present for any of those hours, the program will consider the receivers as inactive for those hours. This could result in error messages being printed for inactive receivers during the first few hours of operation of the *MCN System Watchdog* program until all the receivers have had activity.

Range: 1 to 100 Hours.

### 3.1.4 Ignore All Failed Receivers

This option prevents error reports for receivers that that have Fail indicators (from MCNRCD). Check this box if you already report Failed receivers in your main MCNRCD program. This prevents multiple hourly error reports for failed receivers.

### 3.1.5 Log File Size (MB)

This sets the limit for the file size of the error log file: EventLog.txt file. When this file gets full, the *MCN System Watchdog* program automatically deletes the first half of the file and continues adding error messages to the end of the file.
Range: 1 to 1000 MB

### 3.1.6 Log Inactive Receivers to disk.

Enables error logging to disk for inactive receivers detected by the *MCN System Watchdog* program.

### 3.1.7 Log Inactive Receivers to Printer

Enables error logging to printer for inactive receivers detected by the *MCN System Watchdog* program.

### 3.1.8 Purge Time for Server Activity Files

The MCNRCD System Watchdog program can automatically delete old Activity Files (MCNxxxxx.act) from the MCNRCD servers. Set the Purge Time (in days) in this field. Set this time appropriately to keep from filling up the disk on the MCNRCD servers.

Range: 1 to 1000 days.

### 3.1.9 Change Sound File

This lets you change the sound (.WAV) file that the MCN System Watchdog program plays when it detects an inactive receiver. A number of WAV files are supplied with the program. You may select other WAV files in your system or you may record your own custom WAV file with an external recorder program and use it.

### 3.1.10 Test Sound File

Plays the assigned sound file.

## 3.2 Servers and Receivers Tab

This tab contains the list of the MCNRCD servers that are to be monitored by the *MCN System Watchdog* program.

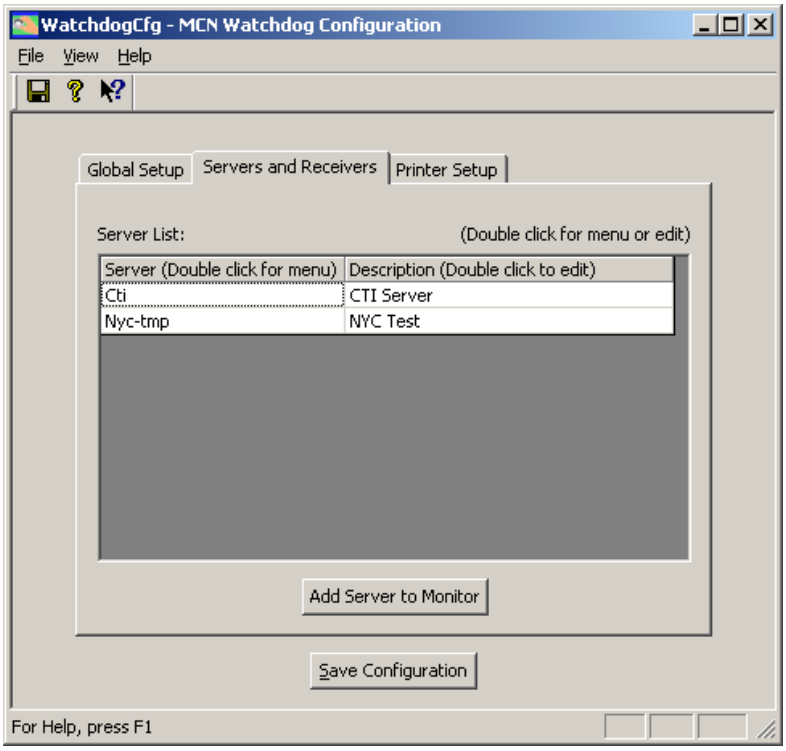



**Figure 3Servers and Receivers Tab**

The "**Add Server to Monitor**" button provides a navigator that allows you to add an MCNRCD server to monitor.

**Editing Servers, Groups, and Receivers:**
For each server, you must configure the following:

- MCN Groups to monitor
- Receivers to ignore

You may also move the server up or down in the list of servers.
(This changes the order in which the *MCN System Watchdog* program analyzes the servers.)

To edit Server information, **Right Click** on a server in the list to bring up the **Server Menu**.

The **Server Menu** contains the following choices:

- Select Groups to Monitor
  (This allows you to configure Groups & Receivers)
- Move Server Up
- Move Server Down
- Delete Server

**Editing Server Description**
Since the Server Name can be a bit cryptic (since it can include a network path), the Description field is provided to give a better description. To edit the Server Description, **Left Double Click** on the description.

## 3.2.1 Select Groups to Monitor Window

This screen allows the selection of up to four MCN groups to monitor for a particular MCNRCD server.

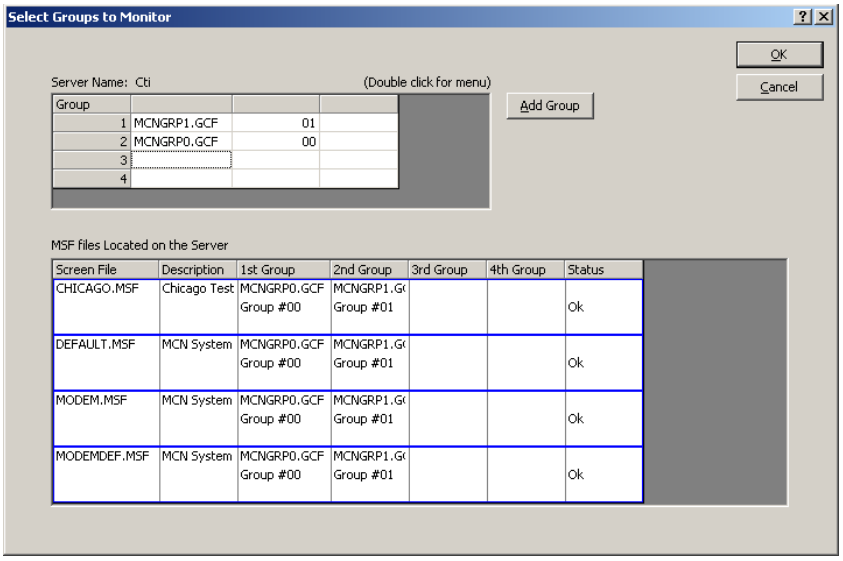



**Figure 4 Select Groups to Monitor Window**

**Groups to Monitor List**
The top **Groups to Monitor** list displays the groups that the *MCN System Watchdog* program will be watch on this MCNRCD server.

Press the **Add Group** button to add a group to monitor on this MCNRCD server. This will bring up the "Select Group Configuration File" navigation window. Select the appropriate Group Configuration File (.GCF) to add. The "MCN Group Number" and "Description" fields will be filled in automatically from the GCF file.

**Group Menu:**
**Right Click** on a "File Name" to bring up the configure or remove a group. The Group Menu has the following choices:

- Set Receivers to Ignore
  (This allows you to disable monitoring of some receivers if they are permanently disconnected.)
- Remove Group

**Re-Sizing Columns**
Move the cursor to the right hand lines of the column you want to resize.
The cursor will change from an arrow to a double-headed arrow.
Click and drag the column separator to the desired location.

Column widths will be saved when you exit the program.

#### 3.2.1.1 Screen File List

The **Screen File List** on the bottom half of the window is an informational grid used to help you verify coverage of the *MCN System Watchdog* program. The MCNRCD system can have many MCN groups on a single network, but one particular MCNRCD program running on one PC can only monitor a maximum of 4 groups at a time. If you have more than 4 MCN groups in your system and want full coverage by the *MCN System Watchdog* program, you must have multiple MCNRCD programs to monitor the groups.

Additionally, each screen file (.MSF) must be configured to monitor all the MCN groups dedicated to that program. Even if a screen file displays receivers from only a single MCN group, all MCN Groups must be selected in the .MSF file. If not, there will be no activity reported for the receivers in the missing groups when that screen is being displayed on the MCNRCD server.

The **Screen File List** shows all the screen files on the selected MCNRCD server. It also lists the following for each screen file:

- Screen File **Description** (from the .MSF file)
- **Groups** (1-4) monitored by this Screen file (from the .MSF file)
- **Status** of the Screen file
  "OK" means all groups in the upper list are covered by this screen file.
  "BAD" means that one or more groups in the upper list are not covered by the screen file.

Figure 4 shows a system in which all MCN groups that are being watched by the *MCN System Watchdog* program are being monitored by all screen files on the MCN Server. All the screen files show a status of "Ok". The MCNRCD Server will provide the appropriate Activity Logging information on all selected MCN groups no matter which screen file is being used.

In Figure 5, we have added a third group to watch in the *MCN System Watchdog* program. None of the screen files on the MCNRCD Server includes that group, so they all show a status of "Bad". The MCNRCD Server will not generate any Activity Logging information for the third group. In a system such as this, you need to use the MCNCFG.EXE program on the selected MCNRCD Server to add the third group to all the Screen (MSF) files.

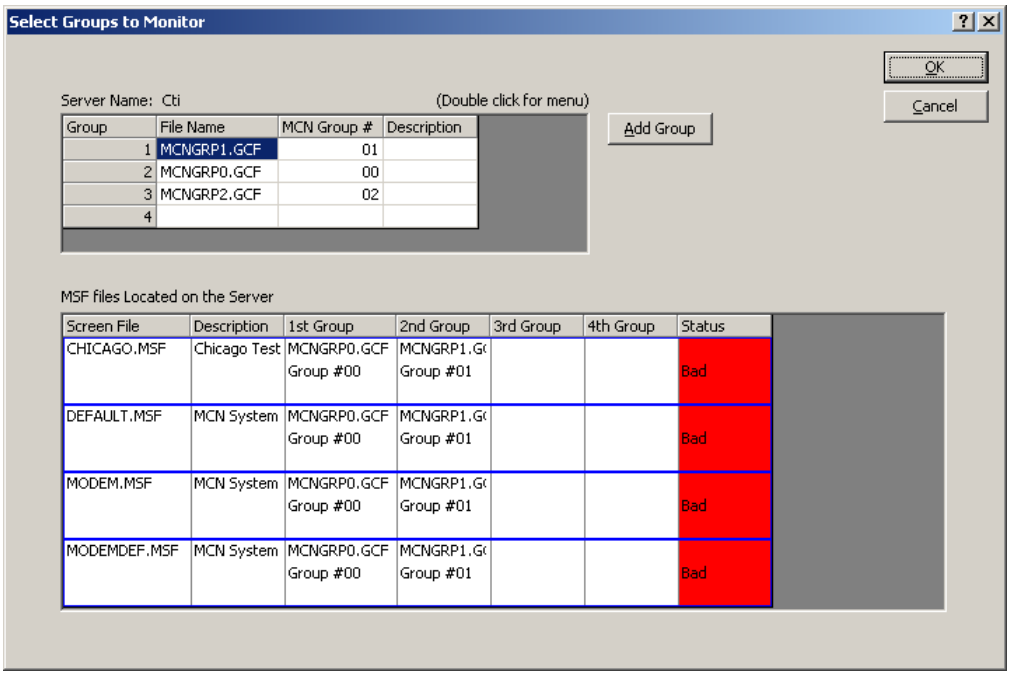
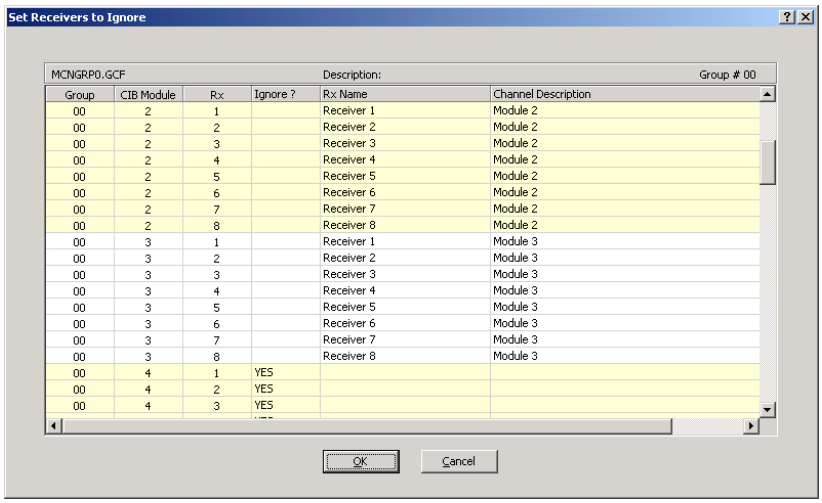



**Figure 5 Screen Files that are missing an MCN Group**

## 3.2.2 Set Receivers to Ignore

In most systems, there are some receivers that are not connected. The *MCN System Watchdog* program can ignore permanently unconnected receivers so that it doesn't report those receivers as inactive every hour.

By default, the *MCN System Watchdog* program will ignore any receivers that do not have a Receiver Name associated with them in the Group Configuration File (.GCF) on the MCNRCD server. This is the normal way to flag a permanently disconnected receiver.




| Group | CIB Module | Rx | Ignore ? | Rx Name | Channel Description |
|---|---|---|---|---|---|
| 00 | 2 | 1 | | Receiver 1 | Module 2 |
| 00 | 2 | 2 | | Receiver 2 | Module 2 |
| 00 | 2 | 3 | | Receiver 3 | Module 2 |
| 00 | 2 | 4 | | Receiver 4 | Module 2 |
| 00 | 2 | 5 | | Receiver 5 | Module 2 |
| 00 | 2 | 6 | | Receiver 6 | Module 2 |
| 00 | 2 | 7 | | Receiver 7 | Module 2 |
| 00 | 2 | 8 | | Receiver 8 | Module 2 |
| 00 | 3 | 1 | | Receiver 1 | Module 3 |
| 00 | 3 | 2 | | Receiver 2 | Module 3 |
| 00 | 3 | 3 | | Receiver 3 | Module 3 |
| 00 | 3 | 4 | | Receiver 4 | Module 3 |
| 00 | 3 | 5 | | Receiver 5 | Module 3 |
| 00 | 3 | 6 | | Receiver 6 | Module 3 |
| 00 | 3 | 7 | | Receiver 7 | Module 3 |
| 00 | 3 | 8 | | Receiver 8 | Module 3 |
| 00 | 4 | 1 | YES | | |
| 00 | 4 | 2 | YES | | |
| 00 | 4 | 3 | YES | | |

**Figure 6 Set Receivers to Ignore Window**

When you first add a group, the Watchdog Configuration program will look through the GCF file. It will flag any receivers that do not have a receiver name to be ignored, as shown for CIB module #4 above.

If you have a system that has receivers that do have receiver names in the .GCF file but are temporarily disconnected, you can use this window to set their status to "Ignore". This is useful when you have entered all the receiver names for your system, but not all of the receivers have been installed.

To set a receiver status to "Ignore", select the "**Ignore ?**" field for that receiver. Hit a "Y" from the keyboard to set the Ignore status to Yes. You can then use the cursor keys to move rapidly through a sequence of receivers. To change the Ignore to blank (No), hit the "N" key.

The *MCN System Watchdog* program will not report inactivity on any receiver with the "**Ignore ?**" flag set to "Yes".

Settings will be saved when you hit "OK" in this window and then hit "Save Configuration" in the main window.

If you delete an MCN Group File in the Select Groups to Monitor window, any special "**Ignore ?**" flags that you have set for that MCN Group will be lost.

## 3.3 Printer Setup Tab

This tab contains the setup strings used to control the printer.

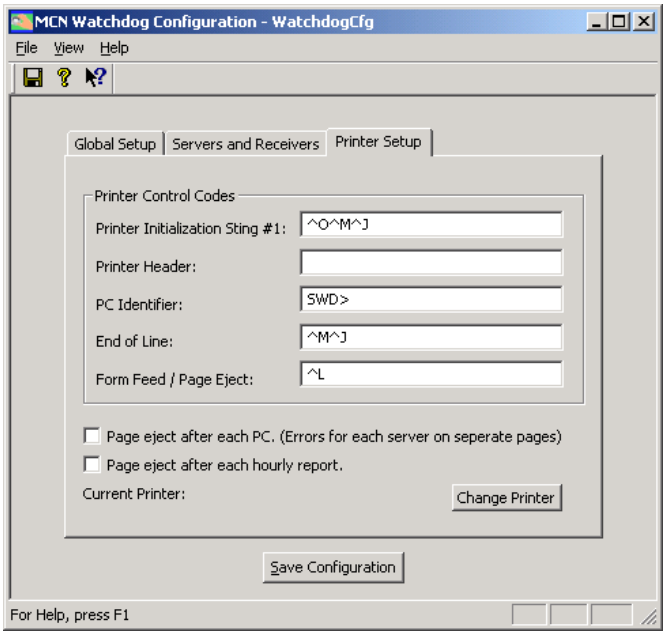



**Figure 7 Printer Setup Tab**

Two **Printer Initialization Strings** are sent to the printer when the program starts.

**Printer Initialization String 1** is typically used to put the printer in compressed mode.

**Printer Initialization String 2** is typically used to print a header when the program starts.

The **PC Identifier** is a string (like “PC1->”) that is printed at the beginning of each line of error printout. This is used when a printer is shared by multiple PCs to identify which PC reported the error. This allows the MCN System Watchdog to share a printer with the MCNRCD PCs.

The **End of Line** string is sent at the end of each printed line. This is usually set to ^M^J (Carriage return followed by a Line Feed)

The **Form Feed / Page Eject** is the string that is sent to jump the printer to the next page. This is usually set to ^L (Form Feed character)

**Page eject after each hourly report**
When this box is checked, the *MCN System Watchdog* program will print a page eject after each hourly error report. If there were no errors reported, the program will not generate a page eject.

**Page Eject After Each PC**
When this box is checked, the *MCN System Watchdog* program will print a page eject after errors from each MCNRCD server in the hourly error report.
If there were no errors reported for a server, the program will not generate a page eject.

**Control Characters for Printer**
The following are common Escape Sequences used in the printer strings:

| | | |
|---|---|---|
| ^[ = Escape chr$(27) | ^G = BELL chr$(7) | ^H = Back space chr$(8) |
| ^I = HT chr$(9) | ^J = LF chr$(10) | ^L = Form feed chr$(12) |
| ^M = CR chr$(13) | ^' = SPACE chr$(32) | |

**Change Printer** allows you to select the error logging printer (either local or network printer). It will bring up a Network Printer Navigation window.

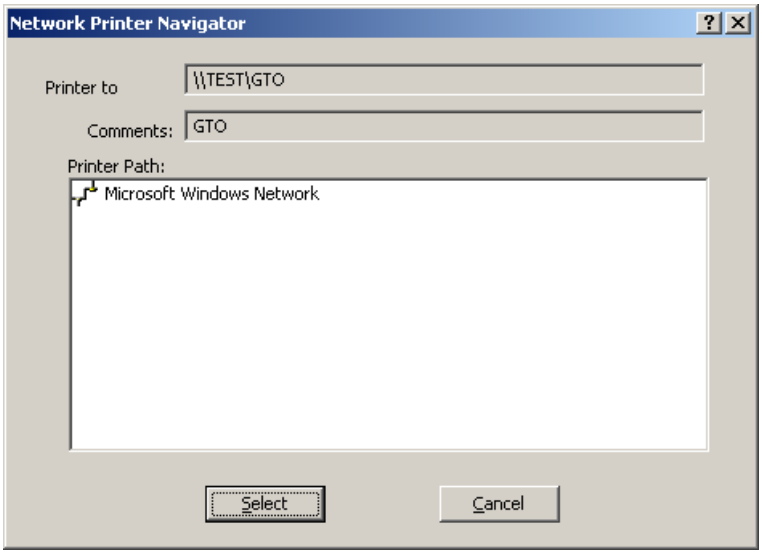



**Figure 8 Network Printer Navigation Window**

Navigate through the network and select the desired printer.

# 4. MCN System Watchdog program Operation

This program is used to monitor the status of multiple MCNRCD Servers.
It generates an hourly report of inactive receivers.

System options and MCNRCD Server selection is done through the Watchdog Configure program.

## 4.1 Main Screen

Figure 9 shows the main screen of the *MCN System Watchdog* program




**Figure 9 MCN System Watchdog Main Screen**

### 4.1.1 System Status Box

This displays the system status for the MCNRCD servers being watched.
Columns:

**Server** PC Name that was assigned to it in Windows under System Identification.

**Description** MCN Server Description assigned in the Watchdog Configure program.

**LAN** Status of the LAN connecting this PC to the MCNRCD Server.

- **OK**: This PC can communicate to the MCNRCD Server.
- **Down**: This PC cannot communicate to the MCNRCD Server. This could be a hardware problem, LAN configuration, or Access Rights problem.

**Status** Status of the MCNRCD Server.

**Unknown:** The MCNRCD Server is currently being evaluated. (This can take up to 2 minutes)

**Running:** This PC can communicate to the MCNRCD Server and the MCNRCD program is running.

**Down:** This can be caused by one of the following conditions:

- The MCNRCD Program is not running on this MCNRCD Server,

- Activity Logging is not enabled on this server,

- The LAN is down, or access rights are not set up properly,

- The MCN *System Watchdog* program cannot access the Activity File, or

– The MCNRCD Server is down.

**System Status Checking**

The MCNRCD program writes status information to the Activity Files (MCNxxxxx.act) every minute, even if there is no receiver activity during that time. The *MCN System Watchdog* program checks the current Activity File on each server every two minutes to see if the file size has changed.

### 4.1.2 Analysis Status

The status of the analysis is shown below the Server Status box. This displays which file that the *MCN System Watchdog* program is currently analyzing as shown in Figure 10. Since the analysis normally runs only once an hour, and the program normally analyzes just one activity file per server per hour, the Analysis Status is normally Idle.

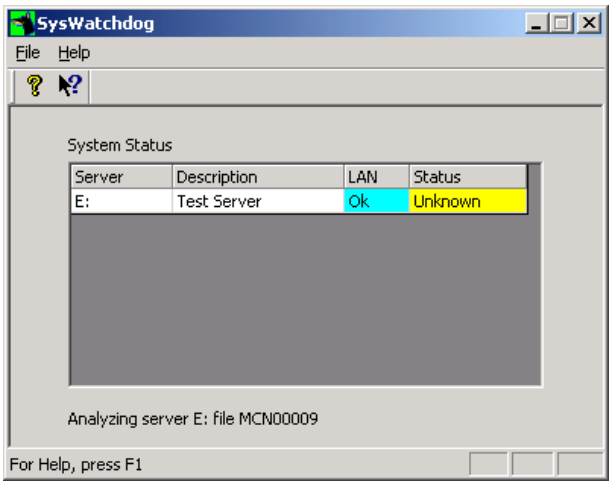



**Figure 10 Analysis Status Example**

The file analysis normally happens quickly, typically only a few seconds per file, depending on activity file size and processor speed. When you first start the program and the MCNRCD Servers have a number of activity files in them, the program will analyze all the activity files on the servers.

### 4.1.3 File Menu

The File menu from the main screen offers the following choices:

**Force Analyze** The *MCN System Watchdog* program normally analyzes channel traffic on all the MCNRCD Servers at 1 minute past the hour. The **Force Analyze** option forces the program to analyze the channel traffic immediately.

**Force Clean** The *MCN System Watchdog* program normally deletes old Activity Files (MCNxxxx.act) from all the MCNRCD Servers after it performs its hourly analysis. It will purge files older than the <Purge Time> . The **Force Analyze** option forces the program to delete any older files immediately.

**Exit** Exit the program.

## 4.2 Error Log / System Events Screen

This window displays the current errors for the MCN networks.

The Error Log window appears if the *MCN System Watchdog* program detects any inactive receivers during its hourly check.

The error logging to printer and disk will be similar to what is seen on the Error Log / System Events window. (The Printer output will include the PC Identification string, if configured.)

The errors are stored in the file EventLog.txt in the SysWatchdog directory. You can limit the size of this file in the *MCN System Watchdog* Configuration Program.

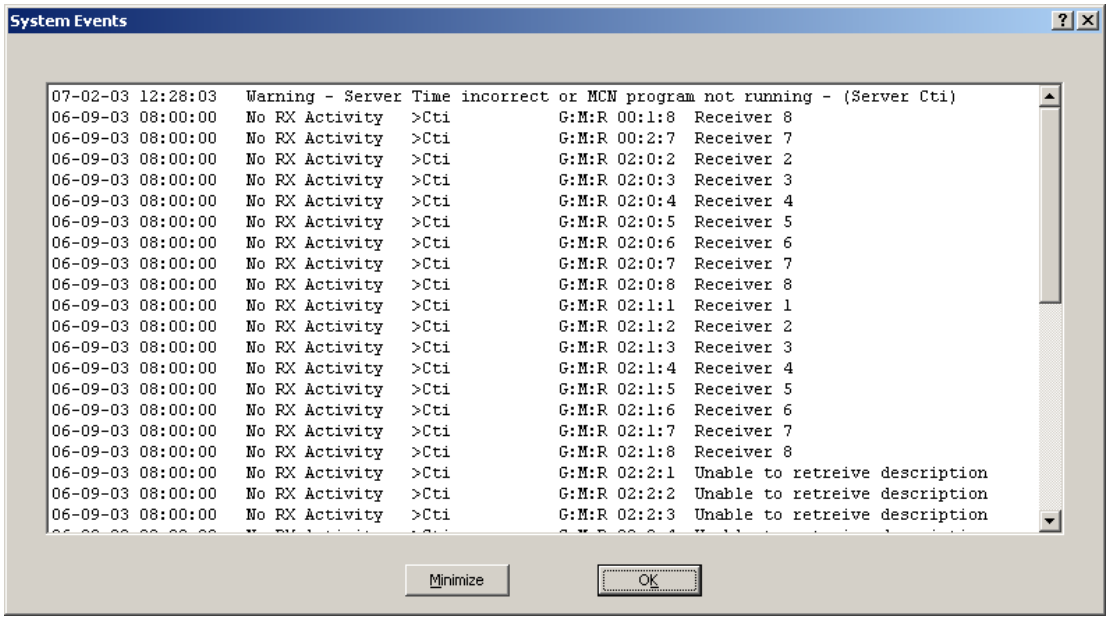



**Figure 11 Error Log Window**

### 4.2.1 Buttons

**Minimize** Minimizes the System Events Window. This keeps the current errors in the window. The next time this window is displayed, it will include the new errors along with the old errors.

**OK** Clears the System Events Window. The next time this window is displayed, only new events will be shown.

### 4.2.2 Common Columns

**Date & Time** Date and time that the error was detected.

**Error** Description of the error

### 4.2.3 Inactive Receiver Errors:

**No RX Activity** Indicates that this receiver has not had any Receive activity within the last <Look Back Time> hours.

**No Vote Activity** Indicates that this receiver has not had any Vote activity within the last <Look Back Time> hours.

**MCNRCD Server** The MCNRCD Server that monitors this receiver

**G:M:R** Group : Module: Receiver numbers for the receiver (See MCNRCD documentation for more information.)

**Receiver Name** Name of receiver site as configured in the Group Configuration (GCF) file.

**Description** Channel Name / Receiver Description as configured in the Group Configuration (GCF) file.

### 4.2.4 Other Error Messages:

**Unable to retrieve description**

*MCN System Watchdog* program cannot access the Group Configuration File (.GCF) on the MCNRCD Server when it is printing this error.

This error would be typically caused by:

- LAN or access rights problem.
- MCNRCD Server is down

**Warning – Server Time incorrect or MCN program not running – (Server xxx)**

This error message serves as a warning that there is no current activity logging on the MCNRCD server. This error message could be caused by a number of problems:

- The MCNRCD program on MCNRCD Server xxx is not running.
- Activity Logging is not enabled on MCNRCD server XXX.
- There is a time synchronization problem between the *MCN System Watchdog* program PC and MCNRCD Server PC xxx.

The MCNRCD program keeps a pointer to its current Activity File (MCNxxxx.act). When the *MCN System Watchdog* program tries to analyze the traffic on an MCNRCD Server, it retrieves the "current" activity file from the MCNRCD server. If the times in that file are for the previous hour, the *MCN System Watchdog* program considers it "current". If the times are older, the *MCN System Watchdog* program generates this error message.

This error could be generated if the time on the MCNRCD server does not match the time on the *MCN System Watchdog* program PC within 1 minute. This can be prevented by running the Windows Time Service and setting the *MCN System*

*Watchdog* program PC as the central time server and all the MCNRCD Servers as the time clients.

**Cannot communicate with server xxx**
This error message is generated if the *MCN System Watchdog* program cannot communicate with MCNRCD Server xxx.
Possible causes include:

- The LAN is down, or access rights are not set up properly on the MCNRCD Server xxx,
- The MCNRCD Server PC xxx is down.
- The CTI Directory does not exist on the MCNRCD Server xxx.

# 5. Activity Files from MCNRCD.EXE

The MCNRCD Server generates hourly detailed activity files in its Activity directory. These files include all state transitions on all receivers.

Activity Files are named MCNxxxxx.act. The xxxxx is a sequential number.

The MCNRCD Server also generates companion files to indicate the original state of all receivers for the beginning of the hour or at the time that the MCNRCD program is started. These are labeled ORGxxxx.act.

# 6. Activity Summary File

Each hour, the *MCN System Watchdog* program analyzes the Activity Files (MCNxxxxx.act) on each of the MCNRCD Servers it watches. It then adds that hour's activity summary to the Channel Activity Summary File for each server. The *MCN System Watchdog* program keeps activity summaries for the last 1000 hours in the Summary File.

Each Channel Activity Summary File includes the following that includes the following hourly activity information for each receiver being monitored:

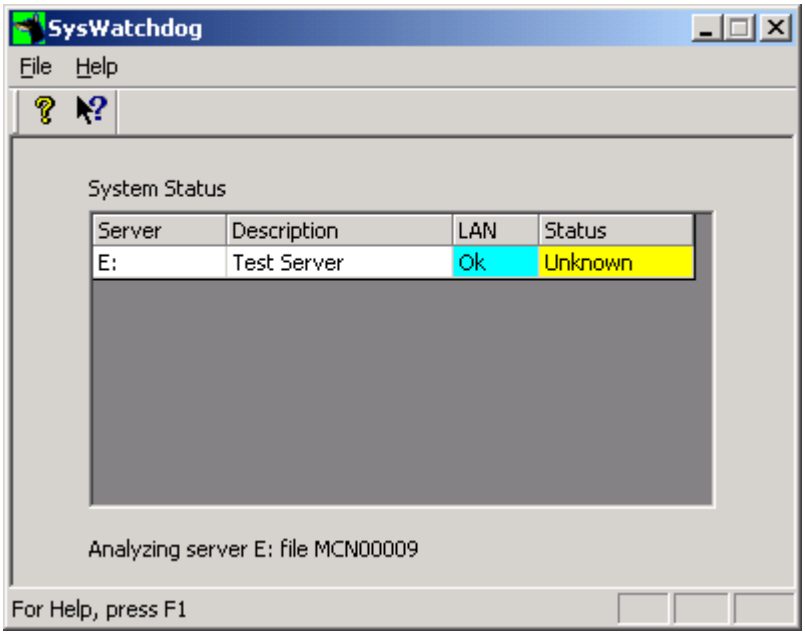
- Vote Time
- Vote Count
- Receive Time
- Receive Count
- Disable Time
- Disable Count
- Fail Time
- Fail Count
- Transmit Time (Only for Transmitter Steering with TIBs)
- Transmit Count (Only for Transmitter Steering with TIBs)

It also logs Unlogged Time, which is time that the MCNRCD Server was not providing Activity Data.

Times are stored in seconds. Counts are the number of times that a particular state (such as Vote or Receive) changes from an inactive to active status in that hour.

When the *MCN System Watchdog* program checks for receiver activity, it looks back over the <Look Back Time> in the Summary file to determine if the receiver has had Receive or Vote activity.

The main window in the *MCN System Watchdog* program shows the status of this analysis.




Typically, the analysis takes only a few seconds.

**MCN Data Miner Program**
This optional program allows you to view the Channel Activity Summary File generated by the *MCN System Watchdog* program.

It also lets you extract data from the Channel Activity Summary File for use with other programs such as Excel.

# 7. Appendix A -- Installing a new version of MCNRCD.EXE

1. Close the MCNRCD program
2. Insert the update disk.
3. Using Windows Explorer, go to the CTI folder that has MCNRCD.exe in it.
4. Make a new folder called "Backup" under the CTI folder (if this folder is not already present).
5. Make a new folder called "Activity" under the CTI folder.
   This is where the MCNRCD program will store the hourly activity files.
5. Move the MCNRCD.EXE file from the CTI directory to the Backup directory.
6. ***Copy*** the MCNRCD.CFG file to the Backup folder.
6. Using Explorer, copy the new MCNRCD.EXE file from this disk to the CTI directory.
7. The new version of the program requires a new version of MCNRCD.CFG.
   If you have not customized your MCNRCD.CFG file, simply copy it from the update disk over the current file in the CTI folder that has MCNRCD.exe in it.

   If you have customized your MCNRCD.CFG file, and it is at Version 105, you can simply make a few changes in your current file.

   Using Notepad, edit the MCNRCD.CFG file in the CTI folder on the hard drive.

   a. Change the first line from "105" to "106" (omit the quotes).

   b. Add the following line below the comment line for Rev 105:
   ; 05/29/03 REV 106 Additional Activity Logging

   c. At the end of the <Logging> section (which should be at the end of the file, cut and paste the following line:
   ActivityLog=1

   d. Save the MCNRCD.CFG file.
8. Restart the MCNRCD program and load a screen.
   If you have done everything correctly, the program should come up and run.
   If not, you may have a problem with the MCNRCD.CFG file or you may not have copied the new version of MCNRCD.EXE to the hard drive.

9. Using Explorer, look in the CTI\Activity folder. Do a View Refresh.
   If everything is running properly, you should see the new activity files that are in use.

   MCN0001.ORG Original State on program start or hour advance
   MCN0001.ACT Activity File

   When the clock on the PC advances to the next hour, the program will close the current files and make new files with the next sequential number

# 8. Appendix B -- Re-Installing *MCN System Watchdog* Program

InstallShield does not always properly install a newer version of the *MCN System Watchdog* program over an old version. If you are installing an update for the *MCN System Watchdog* program , you must remove the old version of the program first. Follow these instructions:

1. Close the *MCN System Watchdog* program.
2. Using Windows Explorer, navigate to the CTI Products Inc \ SysWatchdog directory.
3. Make a Backup directory under the SysWatchdog directory.
4. There will be the following directories under the SysWatchdog directory:

   | | |
   |---|---|
   | Wav | (Contains the WAV sound files) |
   | Server Directories | (One for each server)<br>These will have the server name in them. |

5. ***Move*** all the server directories to the Backup directory by selecting and dragging them to the Backup directory.
6. ***Copy*** (Ctrl - Drag) the NetAnalyze.CFG file to the Backup directory.
7. Remove the old version of the *MCN System Watchdog* program :
   Start → Settings → Control Panel → Add/Remove Programs
   -Select the MCN System Watchdog program.
   -Hit Change/Remove.
   -Select Remove
   -Hit Next.
8. Install the *MCN System Watchdog* program using the steps in section 2.5 , Installing the *MCN System Watchdog* software in this manual.
9. If you need to convert any files, the update instructions in the software update will tell you how to do this.
10. After the program is running properly, you can delete the old server directories that you moved in Step 5.

# 9. Appendix C - Customer Support

If you need help in setting up your system, call one of our engineers at:

(513) 595-5900.

Ask to speak to a CTI Products, Inc. engineer.
Our hours are from 8:30 to 5:00 Eastern time.