TekTone®
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NC385 Tek-MMARS®300

Management Monitoring And Reporting System

for use with the Tek-CARE®NC300 & NC300II Nurse Call Systems

Installation and Operation Manual

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The NC385 Tek-MMARS®300 is a totally integrated real time **M**anagement, **M**onitoring **A**nd **R**eporting **S**ystem that may be added to TekTone's Tek-CARE®NC300 & NC300II microprocessor-controlled nurse call systems. Tek-MMARS®300 provides the nurse call system's interface with a facility's local area network (LAN), plus a port for the radio pocket paging system's paging transmitter. Any networked computer can access reports using an Internet browser. Tek-MMARS®300 also supports up to nine Remote Event Monitors to view system activity across the facility's LAN (one remote event monitor is included).

NC385 Tek-MMARS®300 Installation Manual

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Table of Contents

Table of Contents

Introduction

The NC385 Tek-MMARS®300 is a Management, Monitoring and Reporting System designed to work with the microprocessor-based Tek-CARE®NC300 & NC300II nurse call systems. Tek-MMARS®300 consists of software modules running on TekTone®'s Tek-BRIDGE® hardware.

Events from monitored nurse call systems are fully integrated into Tek-MMARS®300. If a paging transmitter is connected to the Tek-BRIDGE®, events can automatically send pages to selected staff members' pagers. With the optional LS453 Email Output software, events can automatically send email and text messages, and reports can be sent automatically via email.

Up to four Tek-CARE® NC300/II nurse call systems can be connected directly to unused serial ports on the Tek-BRIDGE® using standard null modem serial cables. Additional Tek-CARE® NC300/II nurse call systems can connect to the facility's LAN via a CT601 Serial to IP Converter, and then use the LAN to send events and messages to the Tek-MMARS®300 system.

Tek-MMARS®300 provides the following functions.

Management and Reports:
Tek-MMARS®300 monitors and stores patient and staff activity. All nurse call system activity is saved on the Tek-BRIDGE®, and the information can be retrieved via the included Tek-CARE® Reporting System, as described later in this manual. The Tek-CARE® Reporting System can also be accessed via the facility's LAN by networked computers using a web browser.

Monitoring:
Tek-MMARS®300 provides a real time Event Monitor of all nurse call activity from connected NC350C-series and/or NC351A-series Central Equipment (CE) units (with PCI Card). The event monitor also provides call-type filtering—if the "code calls only" option is selected, only code calls will appear on the Tek-MMARS®300 event monitor.

Up to nine networked computers can run the LS586 Remote Event Monitor software to view all system events and messages as they occur. (Tek-MMARS®300 includes a license to install one remote event monitor; additional licenses may be purchased.)

Radio Pocket Paging:
With the addition of an NC369 Paging Transmitter, pages can be sent automatically or semi-automatically to NC390-series Alphanumeric Pagers. Paging can be centrally located for multiple nurse call systems using Tek-MMARS®300 (requires a separate license for each nurse call system).

Restoring/Backing Up:
Tek-MMARS®300 can back up and restore event files. This gives the user the ability to create a permanent history record on disk, and to later restore that information to create reports from those files.

NOTE: **Tek-MMARS®300 provides ancillary annunciation to life safety systems, and must not be used as the only means of annunciation for any nurse call system or other life safety system.**

Figure 1—Tek-MMARS®300 System Overview

Pagers

Paging Transmitter
(optional)

NC385 Tek-MMARS®300

NC385 includes:
Tek-BRIDGE® hardware,
1 Tek-CARE® NC300/II Connection, Config Tool, Reporting System, Event Monitor & 1 Remote Event Monitor.

Optional Add-ons:
LSMON1–add 1 Remote Event Monitor
LSMON5–add 5 Remote Event Monitors
LS453–Email Output
LS302–Tek-CARE® NC300/II Connection
　(1 per add'l monitored NC300/II system)

NC350-series or NC351-series central equipment

NC350-series or NC351-series central equipment

PC with Remote Event Monitor

PC with Remote Event Monitor

Facility's LAN

CT601 Serial to IP Converters

NC350-series or NC351-series central equipment

NC350-series or NC351-series central equipment

///////// **Ethernet Cable**

━━━ **Serial Cable**—Supplied with nurse call central equipment, serial to IP converter, or paging transmitter.

Tek-BRIDGE® Hardware

The Tek-BRIDGE® includes a built-in speaker, flat screen monitor, keyboard and mouse. It also includes ports for these connections (see *Figure 2*):

- A Tek-PAGING® paging transmitter connects via serial cable to the COM3 serial port.

- A printer may be connected to one of the USB ports (follow the manufacturer's directions for installation).

- The facility's local area network (LAN) connects via ethernet cable to the auxiliary ethernet port.

Tek-MMARS®300 includes a license to connect one Tek-CARE® NC300/II nurse call system. A separate LS302 Tek-CARE® NC300/II connection license is required for each additional nurse call system. Two options are available for connecting Tek-CARE® NC300/II nurse call systems to Tek-MMARS®300:

- Up to four unused serial ports can each be configured to connect a Tek-CARE® NC300/II nurse call system directly to the Tek-BRIDGE® via a standard null modem serial cable. COM3 is reserved for the Tek-PAGING® paging transmitter. COM5 is unavailable.

- Using the Tek-BRIDGE®'s auxiliary ethernet port, connect to the facility's local area network (LAN). Then connect each Tek-CARE® NC300/II to the LAN using a CT601 Serial to IP Converter (sold separately).

Tek-MMARS®300 Software Modules

TekTone® offers several software modules that run on the Tek-BRIDGE® and add features to the Tek-CARE® NC300/II nurse call system. These software modules are included with Tek-MMARS®300:

- *LS450 Config Tool* is used to set up and customize Tek-MMARS®300, and to save the system configuration.

- *LS576 Event Monitor* displays events and messages from the nurse call systems that Tek-MMARS®300 monitors.

- *LS586 Remote Event Monitors* display Tek-MMARS®300 system activity. This software may be installed on up to nine of the facility's personal computers (PCs) running Microsoft® Windows®, and connected to Tek-MMARS®300 via the facility's LAN. Tek-MMARS®300 includes a license to install one remote event monitor; additional licenses may be purchased singly (LSMON1) or in groups of five (LSMON5).

- *The Tek-CARE® Reporting System* records all nurse call system activity on Tek-MMARS®300, and provides custom reports on this activity for followup review and evaluation by management. All reports may be printed to hard copy, as required. When connected to a facility's LAN, the Tek-CARE® Reporting System may be accessed by any networked computer via a web browser.

This software module is not included with the basic Tek-MMARS®300, but may be added:

- *LS453 Email Output* enables email addresses to be treated as devices that can be assigned to individual staff members. The software sends calls and other events via email or text message to the assigned staff members.

Figure 2—Tek-BRIDGE® and Tek-CARE® NC300/II Connections

Tek-BRIDGE®

Power Cord Connector

PS/2 Mouse
PS/2 Keyboard

1   2

VGA Monitor
DVI Video

PM451
(in Tek-CARE®400 Central Equipment)

USB Keyboard & Mouse

NC555
(Tek-CARE®550 Gateway)

Speakers

Facility LAN

4   3
6   5

Tek-CARE®NC300 CE
NC350C-series (rear view)

Tek-CARE®NC300 II CE
NC351(A), NC351(A)/2 (rear view)

PM353 PM352 PM352 PM354 PM355 PM354

Serial Cable (supplied with Central Equipment)

1, 2, 4, 6

NC365A/B
Paging Transmitter

Paging Transmitter
NC369

- OR -

Serial Cable (supplied with Paging Transmitter)

3

Tek-CARE NC300/II CE
DB9 FEMALE CONNECTOR

Tek-BRIDGE®
DB9 MALE CONNECTOR

TRANSMIT DATA	2	2	TRANSMIT DATA
RECEIVE DATA	3	3	RECEIVE DATA
GROUND	5	5	GROUND
RTS	7	7	CTS
CTS	8	8	RTS

Maximum length: 100' per cable

IL953 NC385 Tek-BRIDGE Connections Rev2 031215

Set up the Tek-BRIDGE®

Set up the Tek-BRIDGE®

1. Place the Tek-BRIDGE® where best suited for the facility's requirements. Connect the monitor to the VGA monitor port. Connect the keyboard and mouse to USB ports. (See *Figure 2*).

2. Plug in the Tek-BRIDGE® and its monitor, and then turn them on. The Tek-BRIDGE® power button is on the front, behind the door on the left side (see *Figure 3*).

Connect to the Facility's LAN

The Tek-BRIDGE® must be connected to the facility's local area network (LAN) if the system will use any of these functions:

- Connect a Tek-CARE® NC300/II central equipment to the Tek-BRIDGE® via the facility's LAN with a CT601 Serial to IP Converter.

- Install and use LS586 Remote Event Monitor software on facility PCs.

- View and create custom reports using facility PCs.

- Install and use LS453 Email Output software to send automatic emails or text messages in response to nurse call events.

Without a LAN connection, the Event Monitor and Reporting are available only at the Tek-BRIDGE®, for a maximum of four directly connected Tek-CARE® NC300/II nurse call systems.

LAN Connection Procedure Connect the Tek-BRIDGE® to the facility's LAN using a standard network cable, as shown in *Figure 2*. The maximum wire distance is 150'.

The Tek-BRIDGE® is equipped with three network ports. Configure the Facility LAN network port (see *Figure 2*) to access the facility's LAN. The Facility LAN network port settings must match those of the host LAN. Note the Facility LAN network port's static IP address here: _____ . _____ . _____ . _____

To determine the Facility LAN network port's IP address at a later date, follow this procedure: In Microsoft® Windows® XP, access the network settings via *Start > Control Panel > Network Connections*. Double-click *Local Area Connection 3*, then double-click the *Support* tab to view the Facility LAN network port's IP address.

Figure 3—Tek-BRIDGE® Front Panel

Door

Power Button

Start the Event Monitor Software

The LS576 Event Monitor provides real-time monitoring and recording of all associated nurse call system activity on the Tek-BRIDGE®. This software must be running at all times for proper function of the Tek-MMARS®300 system.

How to Start the LS576 Event Monitor

1. Double-click the **LS576 Event Monitor** icon on the desktop of the PC.

2. In the splash screen, select *This machine is a Stand Alone System* (see *Figure 4*).

3. If the Tek-BRIDGE® is connected to the facility's LAN, select the network connection's IP address. Otherwise, select *No Network* (see *Figure 4*).

4. Click the **CONTINUE** button. The Event Monitor window will open (see *Figure 5*).

Figure 4—LS576 Event Monitor Splash Screen

Figure 5—LS576 Event Monitor Window
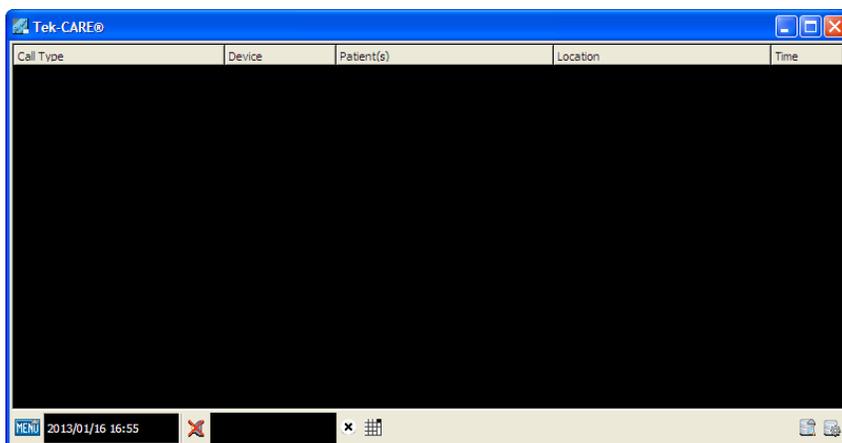
Connect NC300/II Systems to Tek-MMARS®300

Connect the serial data port of the Tek-CARE® NC300/II nurse call system to either (1) any unused serial port on the Tek-BRIDGE® except COM3 or COM5, or (2) the facility's LAN using a CT601 Serial to IP Converter, as described next.

Connect a Tek-CARE® NC300/II Directly to an Unused Serial Port

Use the serial cable supplied with the Tek-CARE® NC300/II central equipment (CE) to connect the CE to one of the available COM ports (1, 2, 4 or 6) on the Tek-BRIDGE®. See *Figure 2* for cable pinouts, Tek-BRIDGE® connections and Tek-CARE® NC300/II connections.

Maximum cable length is 100'; use a PM368K Short Haul Modem Kit to extend the cable distance up to 2000' using Cat5 cable. For more information, see *IL831 PM368K Short Haul Modem Kit Installation Instructions*, supplied with the PM368K.

Connect a Tek-CARE® NC300/II via the Facility's LAN

Configure the CT601 Serial to IP Converter

Follow these steps to set up the CT601 Serial to IP Converter for use with your system:

1. Connect a CT601 Serial to IP Converter to an unused serial (COM) port on the Tek-BRIDGE® or a Windows® computer, using the 9-pin serial cable included with the CT601 (see pinouts in *Figure 6*). Plug in the included AC adapter, but do not apply power to the CT601.

2. Run PuTTY (*Start > All Programs > Accessories > System Tools > PuTTY*). Once the program opens, click **Session** at the top of the **Category** list. Set the **Connection Type** to **Serial**. Type the name of the COM port the CT601 is connected to in the **Serial line** box and set the **Speed** to 9600. (See *Figure 7)*

3. Click **Serial** at the bottom of the **Category** list. In the *Serial line to connect to* box, type the COM port that the CT601 is connected to.

4. Use these settings to configure the serial line: Speed (baud): 9600, Data bits: 8, Stop bits: 1, Parity: None, Flow control: None. Click OPEN. (See *Figure 8*.)

5. Move the switch on the CT601 Serial to IP Converter to the *Console* position (see *Figure 9*) and connect the power. Log in using Username: root and Password: root (see *Figure 10*). The main menu will be displayed.

6. Select **1** (IP configuration) to set up the CT601's IP address and network settings per the requirements of the facility's network administrator (see *Figure 11*). When finished, press ESC to return to the main menu.

7. Select **2** (Serial port configuration), select **7** (Host mode), and then select **7** (Telnet server) to correctly configure the CT601's serial port (see *Figure 12*). When finished, press ESC to return to the main menu.

8. Select **7** (Save and reboot). Move the switch on the CT601 Serial to IP Converter to the *Data* position (see *Figure 9*).

9. Connect the CT601 to the Tek-CARE® NC300/II central equipment's *Event Printing/ MMARS* serial output port using the included serial cable (see *Figure 2*). Then connect the CT601 to the facility's network using an Ethernet cable (not included).

Figure 6—CT601 Serial Cable Pinout

DB9 Pin		DB9 Pin
3	———————	2
2	———————	3
7	———————	8
8	———————	7
5	———————	5
6	———————	4
4	———————	6

Figure 7—PuTTY: Session Settings
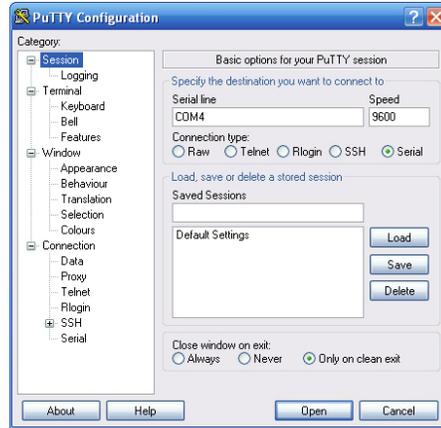
Figure 8—PuTTY: Serial Settings
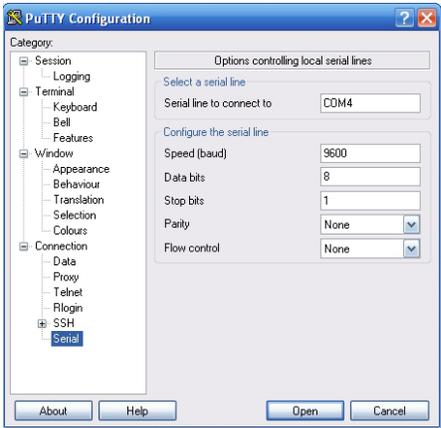
Figure 9—CT601 Data/Console Switch

Data ⇄ Console

Figure 10—CT601 Login & Main Menu


```
LS110 login : root
password : *****

Welcome to LS110 Configuration Page
Serial No. : LS110-101200132      MAC Address : 00:01:95:0C:DF:7D
F/W REV. : v1.0.0
IP Mode : Static IP              IP Address : 192.168.161.5

Console#1 (Serial) : Connected
Console#2 (Telnet) : Available
Console#3 (Telnet) : Available

1. IP configuration
2. Serial port configuration
3. System information
4. System administration
5. Save changes
6. Exit without reboot
7. Save and reboot
<ESC> Back, <ENTER> Refresh
---> _
```

} Main Menu

Figure 11—CT601 IP Configuration


```
IP configuration

1. IP mode : Static IP
2. IP address : 192.168.161.5
3. Subnet mask : 255.255.0.0
4. Default gateway : 192.168.1.1
5. Primary DNS : 168.126.63.1
6. Secondary DNS : 168.126.63.2
<ESC> Back, <ENTER> Refresh
--->
```
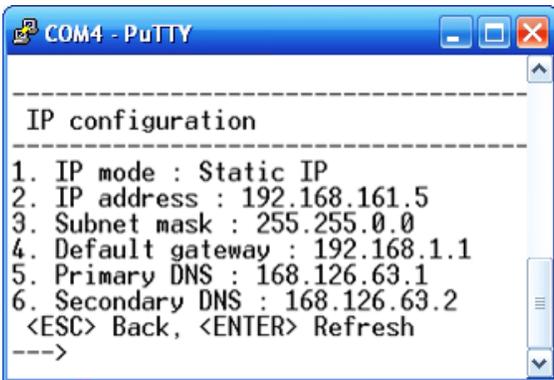
Figure 12—CT601 Serial Port Configuration


```
Serial port configuration

1. Baud rate : 9600
2. Data bits : 8
3. Parity : None
4. Stop bit(s) : 1
5. Flow control : None
6. Inter-character timeout : 0
7. Host mode : Telnet Server
8. Local port : 6001
9. Inactivity timeout : 0
10. DTR behavior : Always HIGH
11. DSR behavior : None
12. Allowed IP : 0.0.0.0
13. Allowed subnet : 0.0.0.0
<ESC> Back, <ENTER> Refresh
---> 7

Select host mode
        1 = TCP server, 2 = TCP client, 3 = TCP server / client
        4 = UDP tunneling, 5 = UDP server, 6 = Modem emulation
        7 = Telnet server

---> 7
```

Configure Tek-CARE® NC300/II Nurse Call Systems as Virtual COM Ports on the Tek-BRIDGE®

Follow these steps to create a virtual COM port for each nurse call system that is connected to the Tek-MMARS®300 using a CT601 Serial to IP Converter:

1. Click the **Start>Computer** on the Tek-BRIDGE®. Navigate to the **C:\Program Files\TekTone\Software\CT601 Installation**\folder.

2. Double-click the installation, **setup_sena_serialip-v4.8.8.exe**. Follow the onscreen instructions to install the software.

3. Select which COM ports to assign to CT601s (see *Figure 13*), and click **OK**. TekTone® recommends starting with COM10, since the Tek-BRIDGE® uses COM ports 1–6.

4. Click on the first COM port in the list (see *Figure 14*). Check the **Connect to server** checkbox, and enter the **IP Address** and **Port Number** that you assigned to the first CT601 in *Configure the CT601 Serial to IP Converter*. Select *Telnet* as the **Connection Protocol**. Repeat this step to assign each COM port to a CT601. Click **CLOSE** when finished.

When installation is complete, this icon will appear in the PC's system tray: 🔌. To change COM port assignments at a later date, right-click the icon and select **Configure...**.

(You can download a ZIP file of setup_sena_serialip-v4.8.8.exe from TekTone®'s website. Just type this in the address bar of a web browser, such as Internet Explorer: **www.tektone.com/downloads/sena488.zip**.)

Figure 13—Select COM Ports
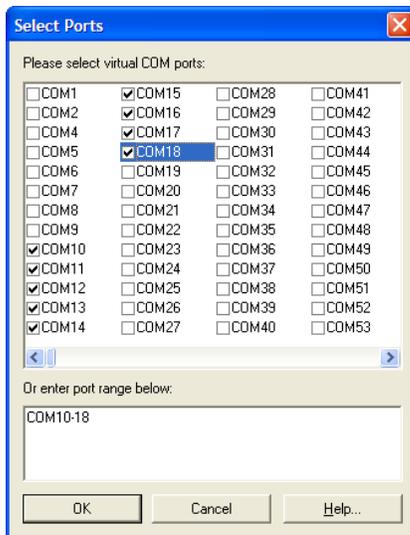
Figure 14—Assign IP Address to COM Port
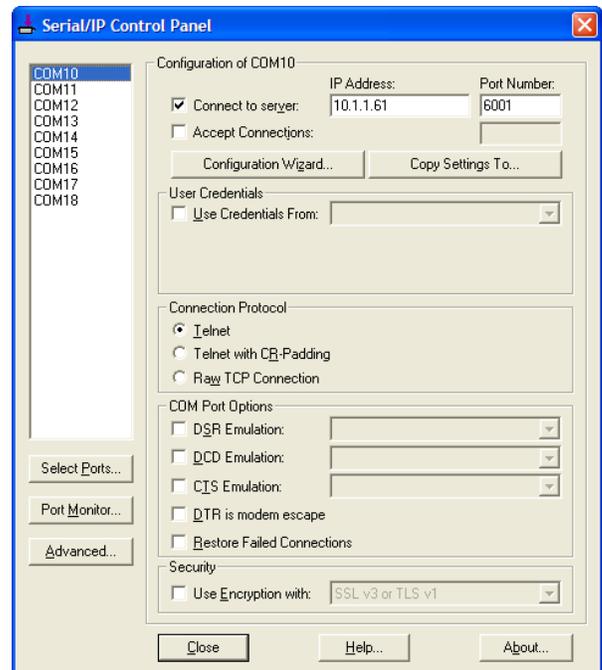
Configure NC300/II Systems on Tek-MMARS®300

The Tek-MMARS®300 imports events and messages from connected Tek-CARE® NC300/II nurse call systems and displays them on event monitors, pagers and email. In order to have nurse call events and messages work with the Tek-MMARS®300 system, we use **Foreign Device Rules** to convert nurse call data into Tek-MMARS®300 events and messages. You will customize this **Rules Set** for your specific configuration.

Summary of the Configuration Process

You will use the included Config Tool programming software to create a custom configuration using the NC300/NC300II rules set as follows:

1. Import the *NC300 or NC300II* set of **Foreign Device Rules**. This **Rule Set** provides everything needed to translate Tek-CARE®NC300/II events and messages into Tek-MMARS®300 calls.

2. Create an **Interface** to indicate which Tek-BRIDGE® COM port each Tek-CARE® NC300/II central equipment (CE) is connected to.

3. Add the room stations for each Tek-CARE® NC300/II system to the COM port/interface for that system. The software calls these stations **Foreign Devices**. Each foreign device acts as a virtual station in the Tek-MMARS®300 system.

4. If the system includes radio pocket paging or the LS453 Email Output, add **Staff**, create **Staff Groups** and create **Staff Assignments** to receive automatic text messages.

5. Save the new configuration. Then commit the configuration to transfer it to the Tek-MMARS®300's LS576 Event Monitor.

Start the LS450 Config Tool Software

The Config Tool is used to set up and customize Tek-MMARS®300, and to save the system configuration for back up.

1. With the LS576 Event Monitor running, double-click the **LS450 Config Tool** icon on the Tek-BRIDGE®.

2. In the Tek-CARE® Config Tool splash screen that appears (see *Figure 15*), select *This Machine is a Stand Alone System*, and then click *New Default Configuration With NC470*.

3. The Config Tool window will open (see *Figure 17*).

The Menu Bar is at the top of the Config Tool window, and includes File, Tools, Utilities and Help menus. The left side of the window is a list of links to the Config Tool's individual programming **Pages** (such as Modules and Foreign Devices). The right side of the window displays the contents of the selected programming page.

Figure 15—Tek-CARE® Config Tool Splash Screen

Figure 16—Import Foreign Device Rules
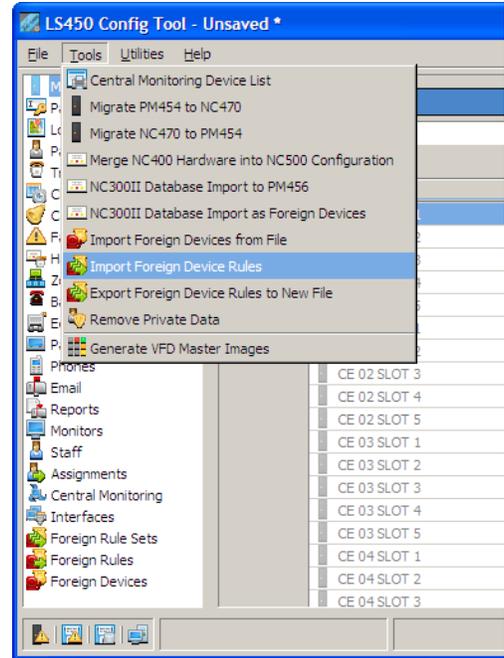
Figure 17—LS450 Config Tool Window

Menu Bar

Page Seletion Pane(Modules Page is Selected)

Modules Page
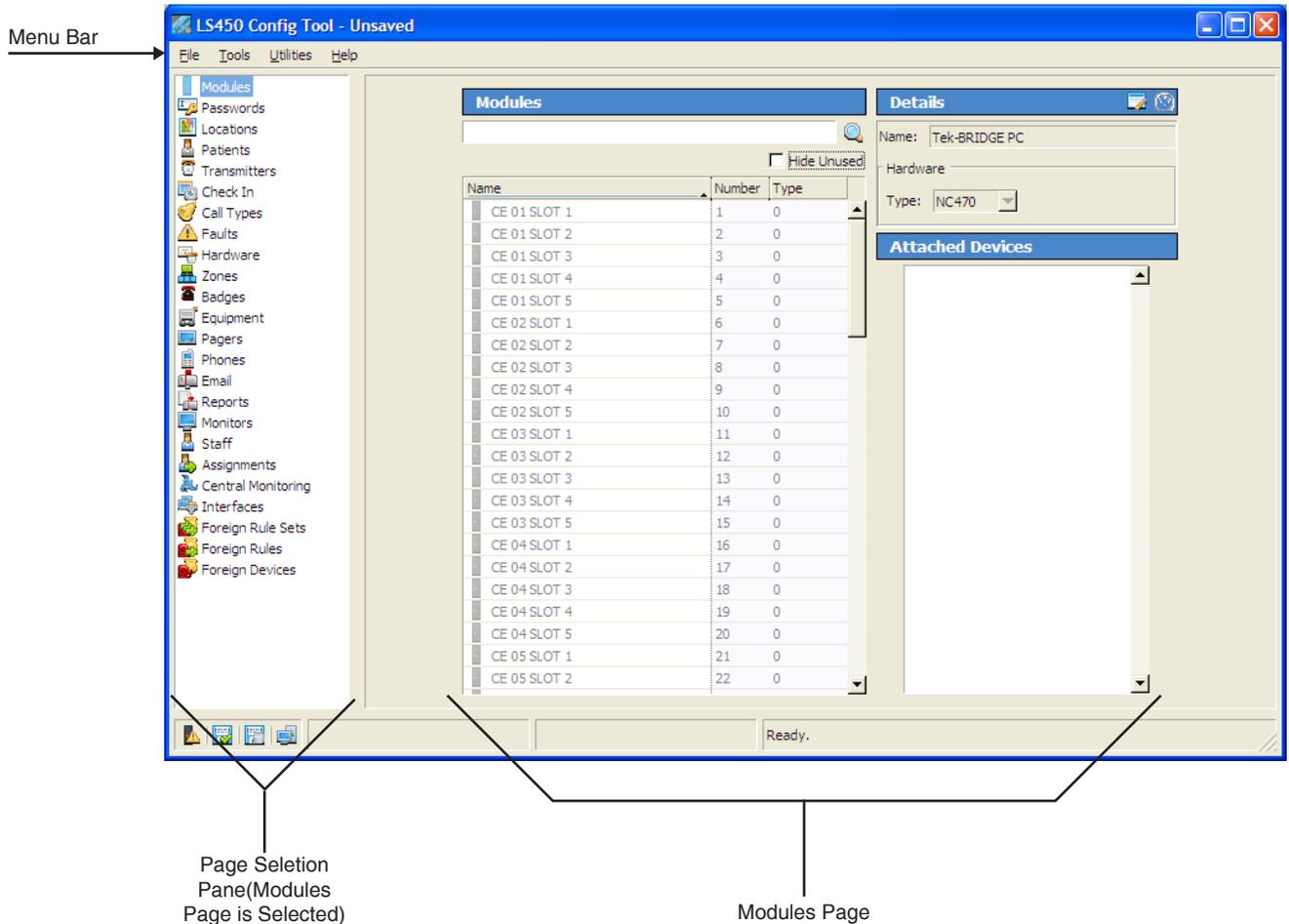
Import the *NC300 or NC300II* Foreign Device Rules

The *NC300 or NC300II* foreign device rule set is a set of definitions that translate Tek-CARE®NC300/II events and messages into Tek-MMARS®300 calls.

1. Select *Tools menu > Import Foreign Device Rules* (see *Figure 16*).

2. Navigate up to the *C:\Program Files\TekTone\LS450\Examples* directory, click *NC300 or NC300II* to select the file, and then click the **OPEN** button (see *Figure 18*).

3. Check the box next to *NC300 or NC300II*, and click **OK** (see *Figure 19*).

4. Using the **Foreign Rule Sets** page in the Config Tool (see *Figure 17*), verify that the *NC300 or NC300II* Foreign Rule Set is listed on that page (see *Figure 20*).

Create an Interface for each Tek-CARE®NC300/II CE

The interface defines which port is connected to the nurse call system. The interface also defines the rule set that the Tek-MMARS®300 uses to translate each message.

Create one interface for each Tek-CARE® NC300/II nurse call system

1. Using the **Interfaces** page in the Config Tool, click the ⊕ (add) button. (See *Figure 21*.)

2. In the **Protocol** drop-down box, select *NC300/NC300II*.

3. In the **Port** box, type the number of the COM port or virtual COM port that you previously assigned to this nurse call system. Use the number only; do not include the letters "COM." (See *Connect NC300/II Systems to Tek-MMARS®300*.)

4. In the **Rule Set** drop-down box, select *NC300 or NC300II*.

5. Click the ✓ (apply) button. Your new interface is added to the **Interfaces** list, and an Interface ID# is automatically assigned to it.

6. Repeat this process for each Tek-CARE® NC300/II nurse call system that is connected to Tek-MMARS®300.

Figure 18—Select a Foreign Device Rules File
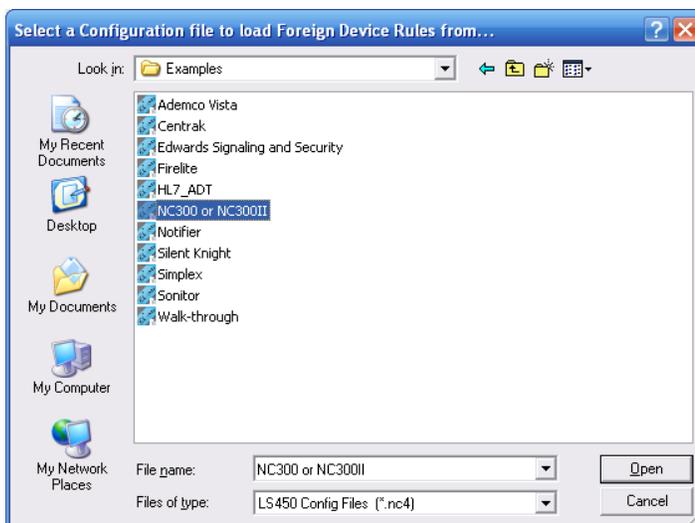
Figure 19—Select a Rules Set
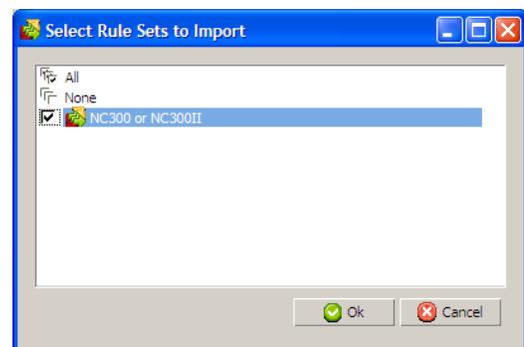
Figure 20—Foreign Rule Sets Page
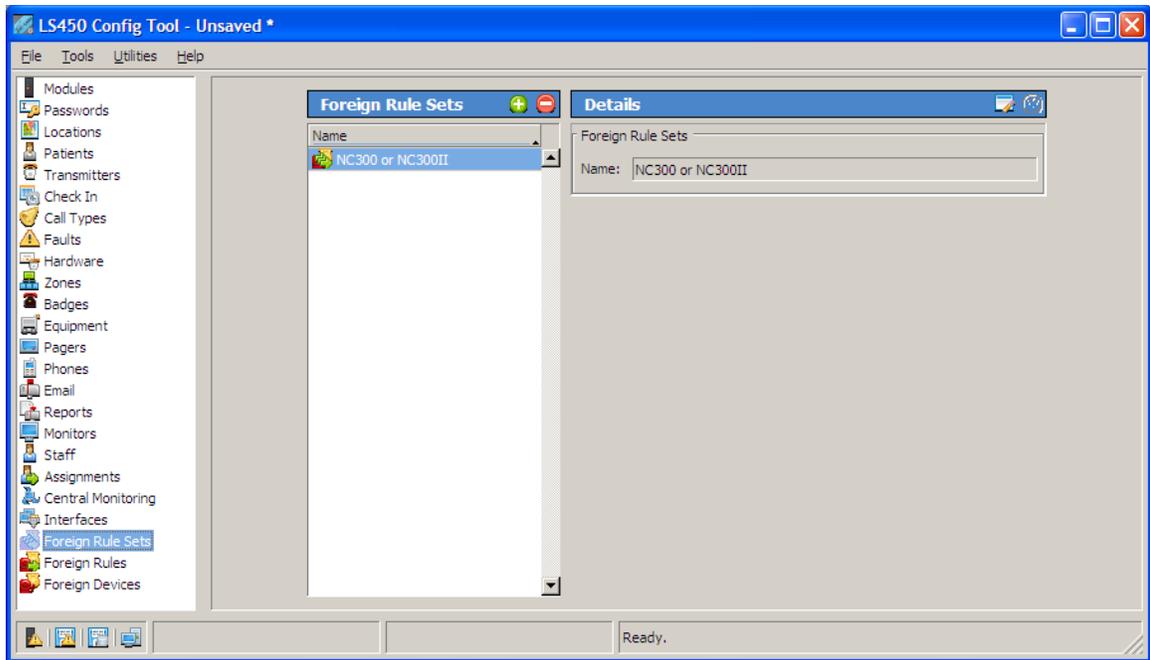
Figure 21—Interfaces
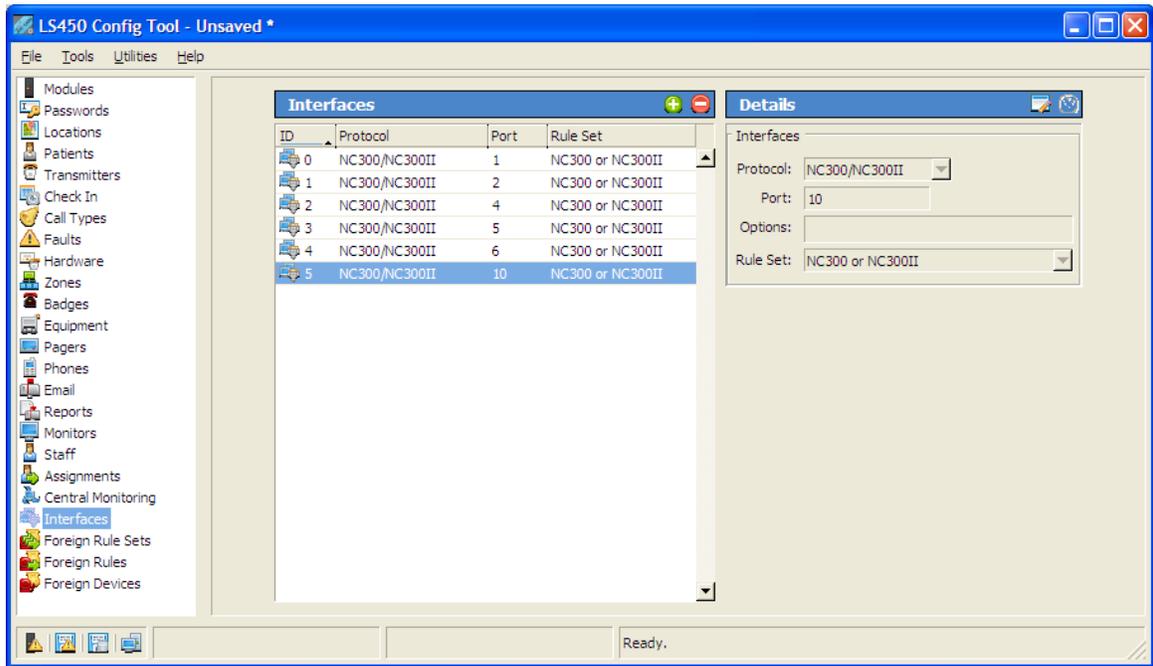
Save the Current Configuration

As you create your configuration, save it periodically

1. In the Config Tool, select *File menu > Save Configuration As* to save a copy of the current configuration.

2. Assign a name to the configuration, and click the **SAVE** button. By default, this file is saved on the Tek-BRIDGE® with a file extension of .nc4 in the *C:\Program Files\TekTone\LS450\Configs* directory. If desired, you may save this file to another location, such as the Desktop.

NOTE: **TekTone® strongly recommends that you save your configuration whenever it is modified, and back up your saved configuration file to a USB flash drive.**

This configuration file can later be used to reload the saved configuration

1. With the LS576 Event Monitor running, start the LS450 Config Tool on the Tek-BRIDGE®. Select *This Machine is a Stand Alone System* in the Tek-CARE® Config Tool splash screen, and then click *Open Configuration*.

2. Select the saved configuration file and then click the **OPEN** button.

Add Tek-CARE® NC300/II Stations to the Tek-MMARS®300 as Foreign Devices

There are three ways to add Tek-CARE® NC300/II stations into a Tek-MMARS®300 system. (Instructions for each of these options are included below.)

1. Use an NC305LCD Master Station to download the NC300II stations database (*stations.db*) to a properly formatted USB drive, copy the file to the Tek-BRIDGE®, and then import the stations using the Config Tool.

2. Use an NC304 or NC304LCD Master Station and a null-modem cable to copy the NC300II stations database (*stations.db*) to the Tek-BRIDGE®, and then import *stations.db* using the Config Tool.

3. Use the Config Tool to manually add each NC300/II station. You must know each station's unique 4-character *Room Number*. Depending on how the Tek-CARE® NC300/II system has been configured, this room number may be the default setting (8 + port number + station address, such as 8101), or it may be the actual room number.

All three options are available for Tek-CARE® NC300II systems. Tek-CARE® NC300 systems do not include a downloadable database, so you must add each NC300 station manually.

Use an NC305LCD Master Station to Import *stations.db*

This process requires a properly formatted USB drive, provided with every NC305LCD.

1. Connect the USB drive to NC305LCD Master #1 (the primary master station).

2. On the same NC305LCD master, press the membrane **MENU** button, and then press **3**, **5**, **#**. The nurse call system will reboot.

3. During the reboot process, the TekTone® splash screen will appear briefly. When it appears a second time, press and hold the membrane **TALK** button until this menu appears:

   ```
      TekTone OS Main Menu
   1) Update Firmware from local
   2) OFFLINE.EXE
   3) DOS Prompt
   4) Set Date/Time
   5) Copy Stations DB to USB
   6) Upgrade from USB
   7) Restart
   8) Copy Stations DB from USB
   ```

4. Press **5** to copy *stations.db* to the USB drive, and press **ENTER**. Then press **7** to restart this master.

5. Remove the USB drive from the NC305LCD master station, and connect it to the Tek-BRIDGE®.

6. In the Config Tool on the Tek-BRIDGE®, select *Tools menu > NC300II Database Import as Foreign Devices* (see *Figure 22*).

7. Select the Tek-BRIDGE® port that this Tek-CARE® NC300II system is connected to, and click **OK** (see *Figure 23*).

8. Navigate to the USB drive, select *stations.db*, and click **OPEN**. Using the **Foreign Devices** page of the Config Tool, verify that the NC300II stations have been added to the Tek-MMARS® system as foreign devices (see *Figure 24*).

9. Select *File menu > Save Configuration* to save the programming changes.

NOTE: The Tek-BRIDGE® always annunciates all calls from all zones, however, stations must be assigned to zones in order to be annunciated at the Tek-BRIDGE®.

10. Once the stations have been added to the Tek-MMARS® system as foreign devices, they must be assigned to a zone in order to annunciate at the Tek-BRIDGE®. NC300/II stations may all be assigned to the same zone, or they may be assigned to different zones. Consult with the facility to determine what zoning option is most appropriate.

11. To add NC300/II stations to zones, see *Rename, Delete and Add Zones* on page 19 and *Add All NC300/II Stations to Zones* on page 20.

Repeat the above procedure for each Tek-CARE® NC300II system that has an NC305LCD Master Station as Master #1. If desired, you may rename the *stations.db* file after import; otherwise it will be replaced with the next *stations.db* file that you copy to the USB drive.

Figure 22—NC300II Database Import
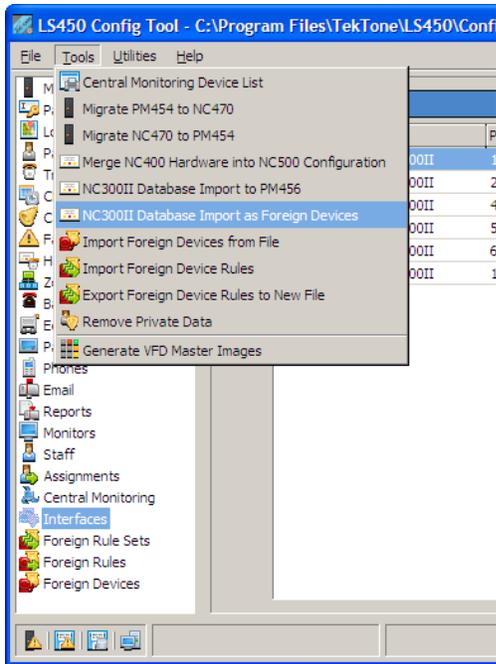
Figure 23—Select Port
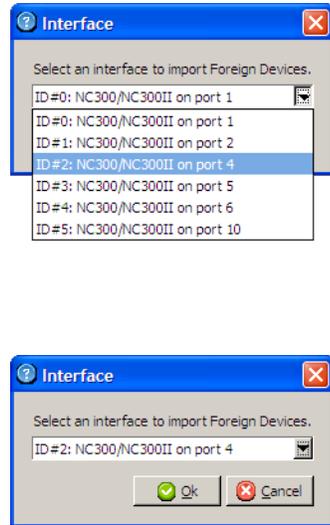
Figure 24—NC300/II Stations Added as Foreign Devices
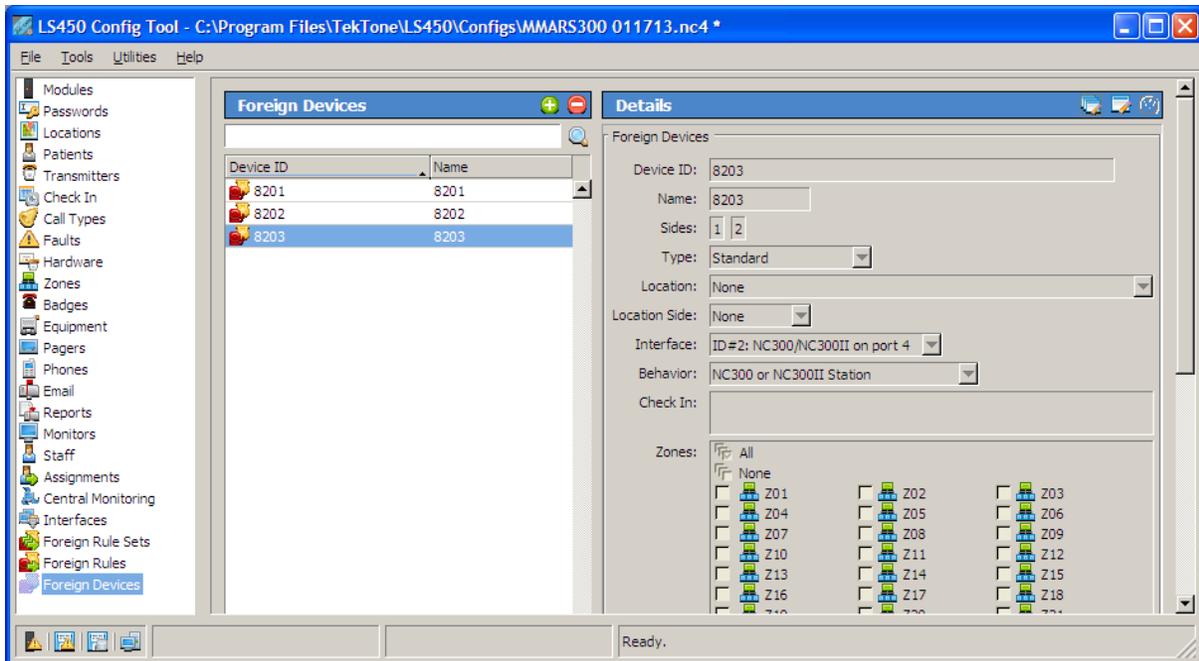
Use an NC304 or NC304LCD Master Station to Import *stations.db*

Have these items on hand before starting:

- Two files from TekTone®: *getdb.bat* and *transfer.exe*. An internet connection is required to download these files from the TekTone® website; instructions for download are included below.
- A computer running MS Windows® that has at least one COM port. You must be able to connect it to the internet and then later place it near the NC304-series Master #1 (the primary master station). You can use your laptop computer, or you may use the Tek-BRIDGE®.
- A PS/2 keyboard.
- A properly configured null-modem cable:

```
DB9 Pin >  3    2    7    8    5    6    4
           |    |    |    |    |    |    |
           |    |    |    |    |    |    |
DB9 Pin >  2    3    8    7    5    4    6
```

1. Connect the computer to the internet. Open a web browser (such as Internet Explorer) and type this in the address bar: **www.tektone.com/downloads/getdb.zip**. When prompted, save *getdb.zip* in the root directory, **C:**.

2. Extract *getdb.zip* to create the **C:\getdb** directory. This directory includes two files: *getdb.bat* and *transfer.exe*. Disconnect the computer from the internet, if desired.

3. Connect one end of the null modem cable to one of the computer's COM ports. Connect the other end of the null modem cable to the serial port on the NC304-series Master #1, which has two asterisks (**) in the upper left corner of the screen.

4. Connect the PS/2 keyboard to the master station's PS/2 keyboard port. On the master station keypad, press **MENU**, **6**, **#** to enable the PS/2 keyboard.

5. Press **F11** on the master station's PS/2 keyboard and enter a valid username and password. (The factory default username is **ADMIN** and the default password is **X**.) This menu will appear:

   ```
   1 Upload Station Database
   2 Download Station Database
   3 Exit to DOS
   ```

6. At the computer, click the **START** button and then click **RUN**. In the box that appears, type the following, where ***n*** is the COM port number that the null modem cable is connected to:

   ```
   C:\getdb\getdb n
   ```

   For most laptop computers, this number is 1. If you are using the Tek-BRIDGE®, see *Figure 2* to determine the COM port number.

   Click **OK**.

7. At the master station keyboard, type **1** (selecting *1 Upload Station Database*) to start the file transfer. When the process is complete, the master station will return to normal operation and a copy of the file (called *stations.db*) will be in the computer's **C:\getdb** directory.

8. In the Config Tool on the Tek-BRIDGE®, select *Tools menu > NC300II Database Import as Foreign Devices* (see *Figure 22*).

9. Select the Tek-BRIDGE® port that this Tek-CARE® NC300II system is connected to, and click **OK** (see *Figure 23*).

10. Navigate to the **C:\getdb** directory, select *stations.db*, and click **OPEN**. Using the **Foreign Devices** page of the Config Tool, verify that the NC300II stations have been added to the Tek-MMARS®300 system as foreign devices (see *Figure 24*).

11. Select *File menu > Save Configuration* to save the programming changes.

NOTE: The Tek-BRIDGE® always annunciates all calls from all zones, however, stations must be assigned to zones in order to be annunciated at the Tek-BRIDGE®.

12. Once the stations have been added to the Tek-MMARS® system as foreign devices, they must be assigned to a zone in order to annunciate at the Tek-BRIDGE®. NC300/II stations may all be assigned to the same zone, or they may be assigned to different zones. Consult with the facility to determine what zoning option is most appropriate.

13. To add NC300/II stations to zones, see *Rename, Delete and Add Zones* on page 19 and *Add All NC300/II Stations to Zones* on page 20.

Repeat the above procedure for each Tek-CARE® NC300II system that has an NC304 or NC304LCD Master Station as Master #1. If desired, you may rename the *stations.db* file after import; otherwise it will be replaced with the next *stations.db* file that you copy to the USB drive.

Add Each Station Manually   To manually add NC300/II stations, you must know each station's unique 4-character **Room Number**. Depending on how the Tek-CARE® NC300/II system has been configured, this room number may be the default setting (8 + port number + station address, such as 8101), or it may be the actual room number.

Refer to the programming worksheets that were completed during installation of the Tek-CARE® NC300/II system, or perform a walk-through of the system to create a list of room numbers. Then add each station:

1. Using the **Foreign Devices** page of the Config Tool, click the ⊕ (add) button in the *Foreign Devices* panel (see *Figure 24*).

2. Type the 4-character room number in both the **Device ID** and **Name** fields.

3. Type *1* and *2* in the **Sides** boxes.

4. Choose *Standard* in the **Type** drop-down box. Choose *None* in the **Location** drop-down and **Location Side** drop-down boxes.

5. In the **Interface** drop-down box, select the Tek-BRIDGE® port that this Tek-CARE® NC300II system is connected to.

6. Choose *NC300 or NC300II Station* in the **Behavior** drop-down box.

7. Click the ✓ (apply) button.

Repeat the above procedure for each station that will be added manually., and then select *File menu > Save Configuration* to save the programming changes.

NOTE: The Tek-BRIDGE® always annunciates all calls from all zones, however, stations must be assigned to zones in order to be annunciated at the Tek-BRIDGE®.

8. Once the stations have been added to the Tek-MMARS® system as foreign devices, they must be assigned to a zone in order to annunciate at the Tek-BRIDGE®. NC300/II stations may all be assigned to the same zone, or they may be assigned to different zones. Consult with the facility to determine what zoning option is most appropriate.

9. To add NC300/II stations to zones, see *Rename, Delete and Add Zones* on page 19 and *Add All NC300/II Stations to Zones* on page 20.

Rename, Delete and Add Zones

Zones are used to determine which calls will display on the Tek-MMARS®300 Event Monitor and as filtering criteria for Tek-CARE® Reporting. Zones also are used to assign a group of stations to send automatic text messages to the pagers and email addresses of selected staff or staff groups.

The system has 75 preset zones, named Z01 through Z75, which can be renamed or deleted. You can also create new zones. Define each zone as a geographical area of the facility. (You will add NC300/II stations to the zones in the next step, *Add All NC300/II Stations to Zones*.)

Figure 25—Rename, Delete and Add Zones
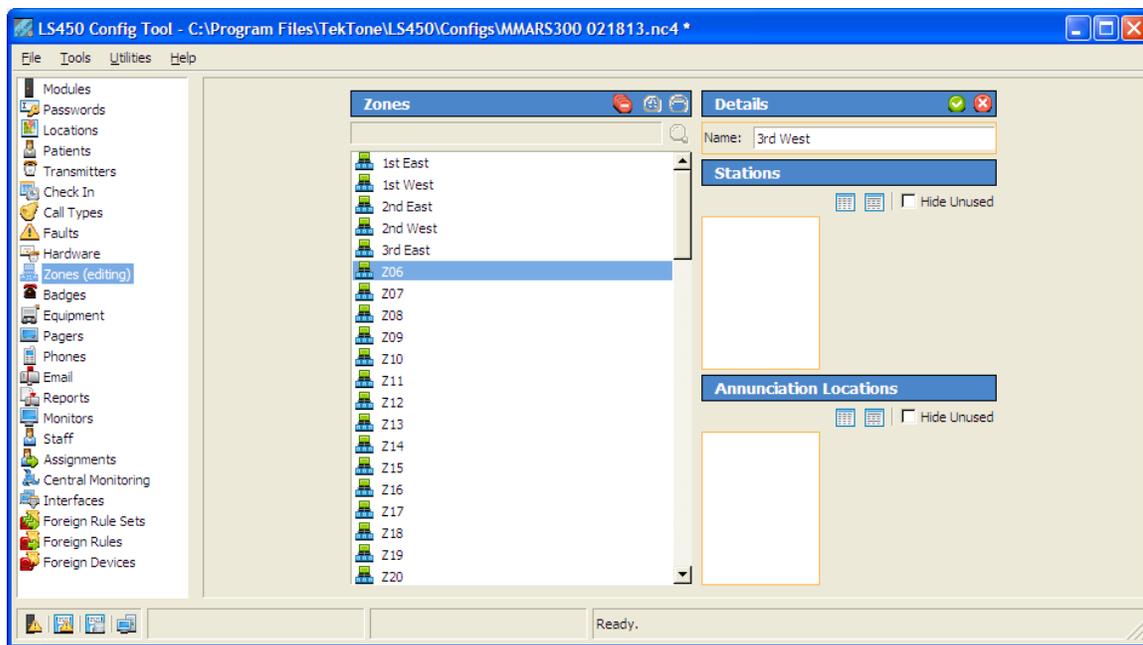
Figure 26—Delete Multiple Zones
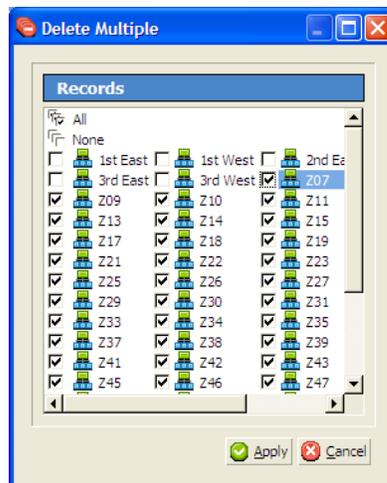
Rename Zones   Rename preset zones to names that have meaning for the facility's staff.

1. Using the **Zones** page of the Config Tool, click a zone in the *Zones* list and then click the 🗒 (edit) button in the *Details* area (see *Figure 25*).

2. Type a new name and click on the ✅ (apply) button.

Delete Zones   *Delete one zone:* Using the **Zones** page of the Config Tool, click a zone in the *Zones* list and then click the ⛔ (delete) button (see *Figure 25*).

Delete multiple zones at once: Using the **Zones** page of the Config Tool, click the 🔴 (delete multiple) button (see *Figure 25*). Check the box next to each zone you wish to delete, and then click the ✅ (apply) button (see *Figure 26*).

Add Zones

1. Using the **Zones** page of the Config Tool, click a zone in the *Zones* list.

2. Click the ➕ (add) button and type a name in the *Details* area (see *Figure 25*).

3. Click the ✅ (apply) button.

Add All NC300/II Stations to Zones

Add NC300/II stations to zones, so that their calls will display on the Tek-BRIDGE®.

NOTE: The Tek-BRIDGE® always annunciates all calls from all zones, however, stations must be assigned to zones in order to be annunciated at the Tek-BRIDGE®.

1. Using the **Foreign Devices** page of the Config Tool, click the 🖥 (edit multiple) button in the *Details* panel (see *Figure 24*).

2. In the *Records* panel, check the box next to each station that belongs to the same set of zones. In the *Details* panel, check the box next to **Zones**. Then check the box next to each corresponding zone and click the ✅ (apply) button (see *Figure 27*).

Figure 27—Add All NC300/II Stations to Zones
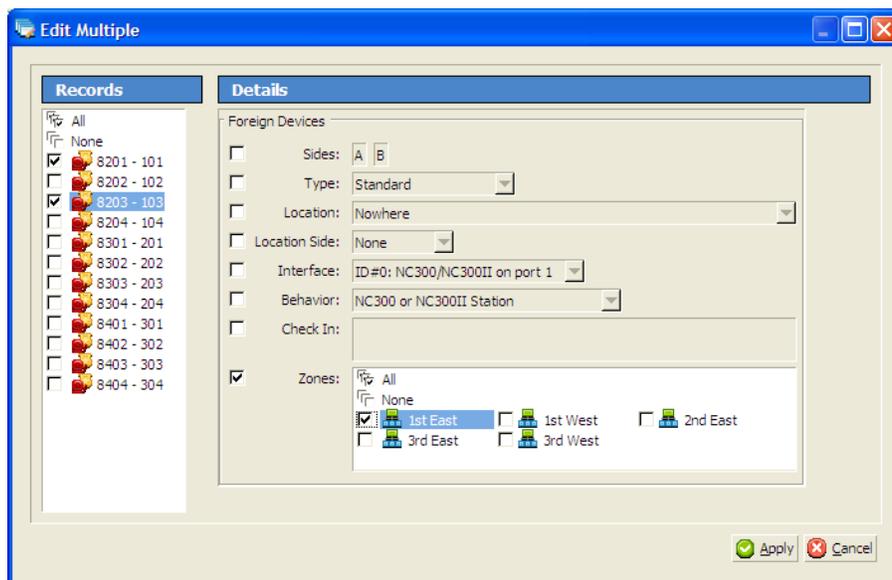
3. Repeat steps 1 and 2 for each group of stations.

4. Select *File menu > Save Configuration* to save the programming changes.

Save and Commit the New Configuration

After you have added all devices to the Config Tool, you must commit the new configuration to the system. This verifies the compatibility of all configuration changes, and then adds the new configuration to the LS576 Event Monitor.

1. Select *File menu > Save Configuration As* to save a copy of the new configuration.

2. Assign a name to the configuration, and click the **SAVE** button. By default, this file is saved on the Tek-BRIDGE® with a file extension of .nc4 in the *C:\Program Files\TekTone\LS450\Configs* directory. If desired, you may save this file to another location, such as the Desktop.

3. Select *File menu > Commit Configuration To System* to apply the new system configuration. The LS576 Event Monitor software will restart. (See the *IL855 Config Tool Manual* for more information.)

NOTE: TekTone® strongly recommends that you save your configuration whenever it is modified, and back up your saved configuration file to a USB flash drive.

Set Up Optional Features

Add Radio Pocket Paging

Radio pocket paging provides an effective means of alerting staff members to events received by Tek-MMARS®300. The system automatically sends text messages to staff in response to patient calls. In addition, the Tek-MMARS®300 Event Monitor can send manual text messages to staff pagers (see *Using the Event Monitor & Remote Event Monitors—Sending a Text Message* for instructions). Follow this procedure to add radio pocket paging to Tek-MMARS®300:

1. Connect the NC365A, NC365AT, NC365B or NC369 Tek-PAGING® Paging Transmitter to the Tek-BRIDGE®'s COM3 serial port, as shown in *Figure 2*, using the null modem serial cable that is included with the paging transmitter.

2. Follow the instructions in the paging transmitter manual to locate, set up and configure the paging transmitter. (See *IL888 NC369 Manual* or *IL671 NC365B Manual*.)

3. With the LS576 Event Monitor running, start the LS450 Config Tool on the Tek-BRIDGE®. Click *Load Configuration From System*.

4. Using the **Pagers** page of the Config Tool, click the ▱ (edit) button in the *RF Paging Settings* panel (see *Figure 28*).

5. Check the *Enabled* and *Base Supervision* check boxes. Change the *Protocol Settings* to the following:

	NC365A/AT/B	NC369
Base Type	Scope	Scope
CAP Base	10000	10000
Scope Baud	Fast	Normal

   Do not change anything else in the *RF Paging Settings* panel. Click the ✓ (apply) button.

6. To add a consecutive range of pager CAP codes at once, click the ✦ (add multiple) button in the *RF Pagers* panel. Enter the lowest number 3-digit CAP code in the *Lower* field, enter the highest number CAP code in the *Upper* field, and click the **OK** button (see *Figure 29*).

   To add pager CAP codes one at a time, click the ⊕ (add) button in the *RF Pagers* panel. Enter the first pager's 3-digit CAP code in the *CAP Code* field and click the ✓ (apply) button. Repeat for each pager (see *Figure 30*).

7. Next, add staff shifts, staff, groups and staff assignments. (See *Add Shifts*, *Add Staff Members*, *Add Staff Groups*, and *Add Shifts* later in this chapter.)

8. Select *File menu > Save Configuration As* to save a copy of the new configuration.

9. Select *File menu > Commit Configuration To System* to apply the new configuration. The LS576 Event Monitor software will restart. (See the *IL855 Config Tool Manual* for more information.)

Figure 28—RF Paging Settings
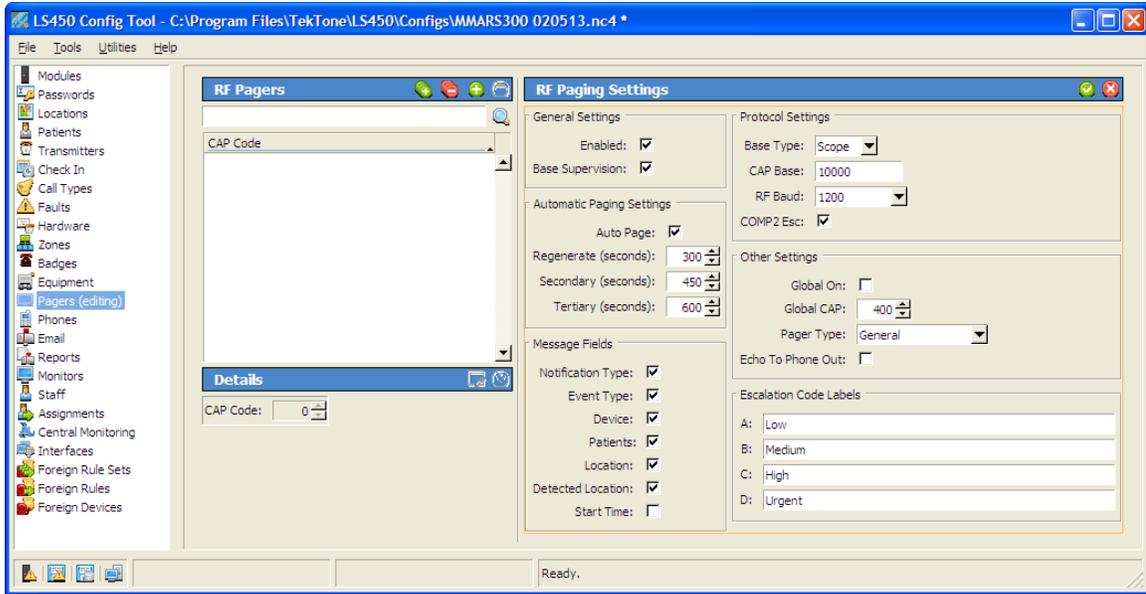
Figure 29—Enter a Range of Pager CAP Codes
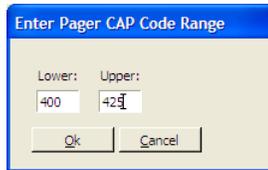
Figure 30—Add a Single Pager CAP Code
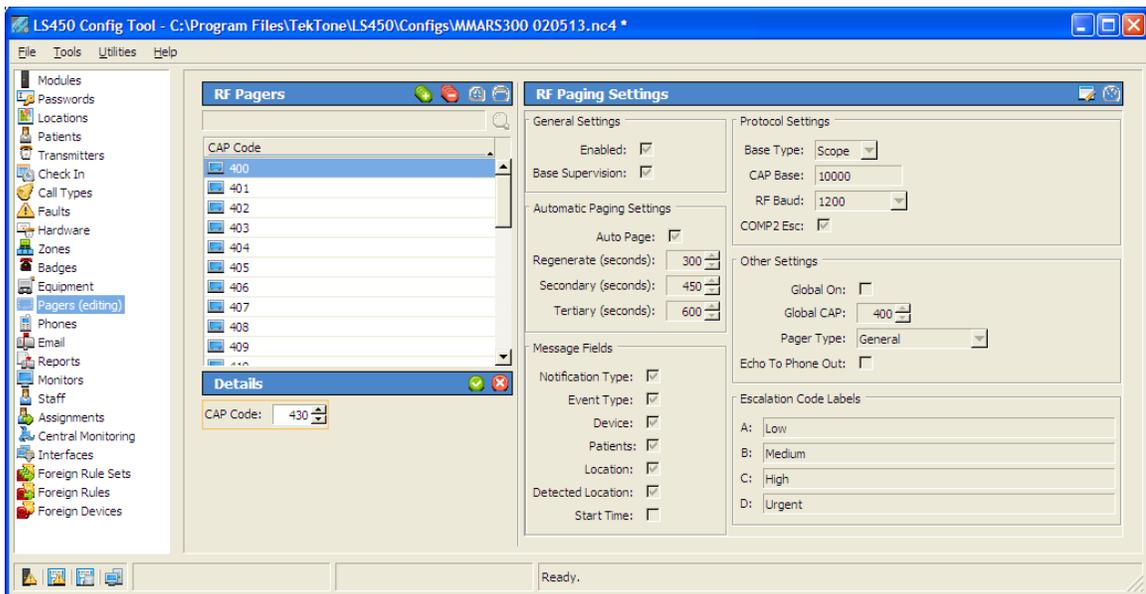
Add the LS453 Email Output Software

The LS453 Email Output software enables email addresses to be added as staff devices. It sends calls and other events via email to the assigned staff members. It also enables the Tek-CARE® Reporting System to send reports automatically via email. Events can be sent to anything that has an email gateway—for example, sending an SMS message to a cellphone.

Requirements

The facility must have a standard non-authenticated SMTP server, configured to accept messages from Tek-MMARS®300. (The LS453 Email Output software does not support SMTP authentication.) The SMTP server may be on the facility's LAN, or through the facility's ISP. The LS453 Email Output software has been successfully tested using Sendmail, Postfix and Microsoft Exchange.

Configure and Enable the Email Output

1. With the LS576 Event Monitor running, start the LS450 Config Tool on the Tek-BRIDGE®. Click *Load Configuration From System*.

2. Using the **Pagers** page of the Config Tool, click the 🖉 (edit) button in the *RF Paging Settings* panel (see *Figure 28*). Check the *Enabled* and *Auto Page* checkboxes, and then click the ✅ (apply) button to enable call notification.

3. Using the **Email** page of the Config Tool, click the 🖉 (edit) button in the *Settings* panel (see *Figure 31*).

4. Check the *Enabled* checkbox, enter the facility's *SMTP Host* address, enter the *SMTP Port* number, and enter an email address in the *From Address* box.

   To automatically send Tek-CARE® Reporting System reports via email, check the *Reports Enabled* checkbox. If you check the *Send Missed Reports* checkbox, the report emailer will send scheduled reports that it missed when it was not running.

   Click the ✅ (apply) button.

5. To add email addresses to receive calls and reports, click the ➕ (add) button in the *Email Addresses* panel (see *Figure 31*).

   Enter the email address in the *Email Address* field. To leave the subject line blank on all emails sent to this address, check the *No Subject* box. (This may be useful if the email address is being used to send text messages to a phone.) Click the ✅ (apply) button.

   Repeat for each email address.

6. Select *File menu > Save Configuration As* to save a copy of the new configuration.

7. Select *File menu > Commit Configuration To System* to enable Email Output on Tek-MMARS®300. The LS576 Event Monitor software will restart. (See the *IL855 Config Tool Manual* for more information.)

Add Staff Members

Staff members may be added now using the Config Tool, or later by facility staff using the Event Monitor. In this step, add staff members to the system and assign them individual pagers and email addresses. (Skip this step if the Tek-MMARS®300 system does not include pagers or LS453 Email Output software.)

1. Using the **Staff** page of the Config Tool, click the ⊕ (add) button in the *Staff* panel (see *Figure 32*).

2. Type a name for the staff member in the **Name** field. For example, this name can be a person, a wing, a zone in the facility, or a pager CAP code. If desired, assign a staff type (L1, L2, L3) or leave the default *None*. Check the **Active** box. (If not active, events will not be sent to the staff member's assigned devices).

3. Select a **Pager** and/or **Email Address** to assign to this staff member. Assigning a device to a staff member automatically unassigns it from any other staff member.

4. Select one or more **Home Zones** to assign to this staff member. When sending a manual text message regarding a specific foreign device, the list of possible recipients is filtered to show only those staff members whose home zones include the zone that the foreign device is in. (All recipients can also be shown.)

5. Click on the ✔ (apply) button.

Repeat for each staff member, and then select *File menu > Save Configuration* to save the programming changes.

Figure 31—Set Up LS453 Email Output Software
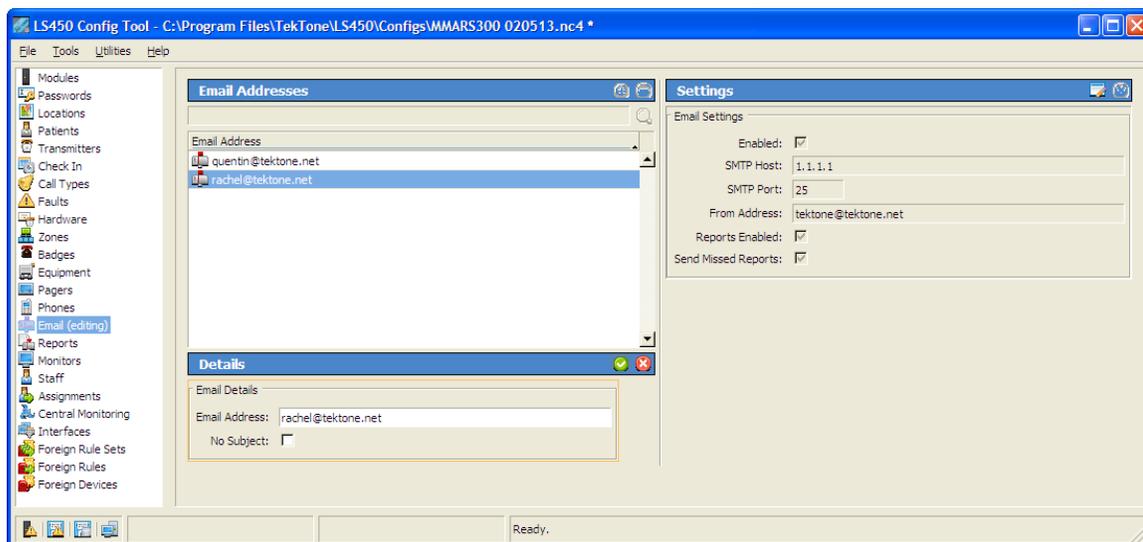
Add Staff Groups

Staff Groups may be added now using the Config Tool, or later by facility staff using the Event Monitor. A staff group is a group of staff members that have similar characteristics, for example, they work the same shift, cover the same zone, are all nurses, or are all aides. A staff member can be added to multiple staff groups.

Staff groups are used to send custom text messages to the pagers and email addresses of a specific group of staff members. They may also be used to create assignments for automatic text messages. (Skip this step if the Tek-MMARS®300 system does not include pagers or LS453 Email Output software.)

Follow these steps to create each staff group:

1. Using the **Staff** page of the Config Tool, click the ⊕ (add) button in the *Staff Groups* panel (see *Figure 32*).

2. Type a name for the group in the **Name** field.

3. Select one or more staff members to add to the group.

4. Click the ✓ (apply) button.

Repeat for each staff group, and then select *File menu > Save Configuration* to save the programming changes.

Figure 32—Staff Page
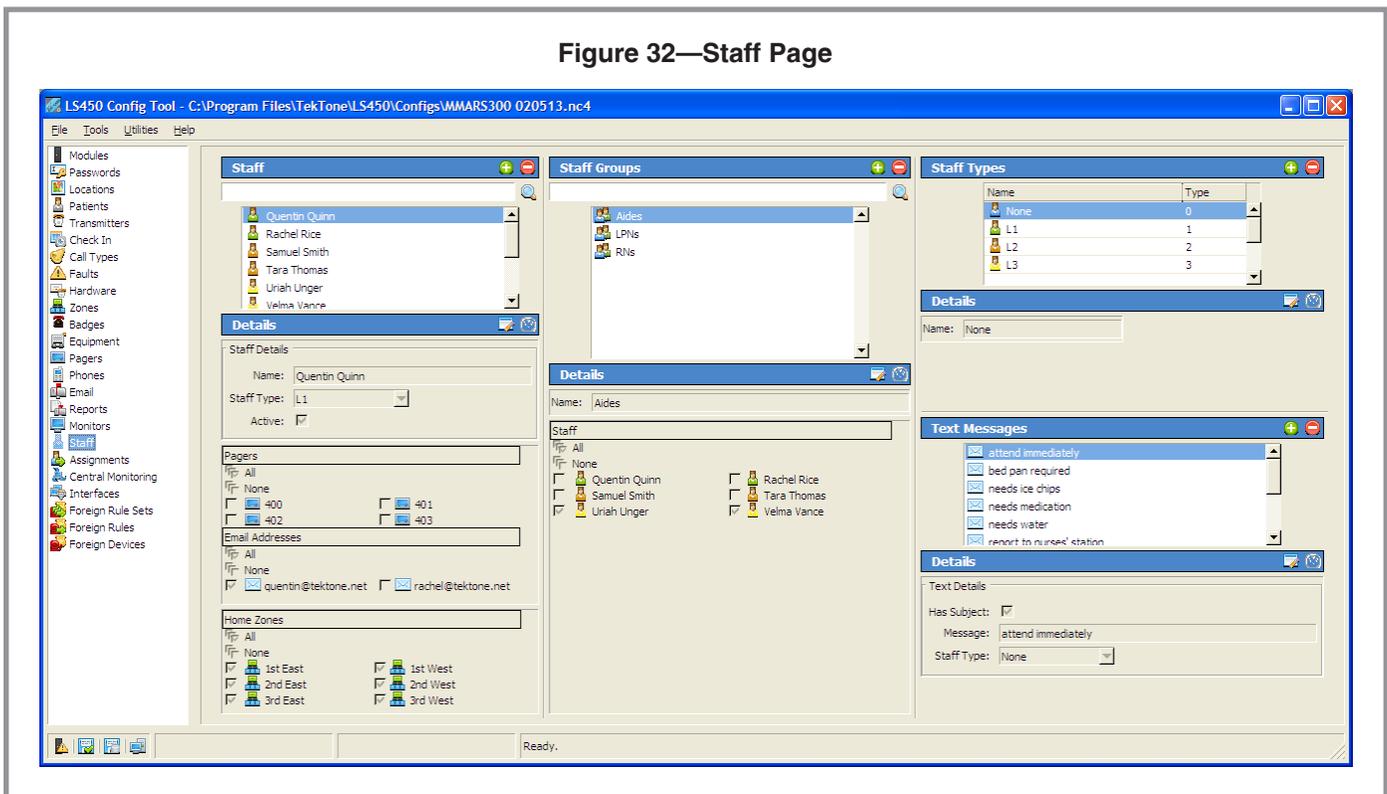
Add, Change or Delete Custom Text Messages

(Skip this step if the Tek-MMARS®300 system does not include pagers.)

Add Custom Text Messages
The system includes these pre-programmed text messages that can be sent to pagers:
- Attend immediately
- Bed pan required
- Needs ice chips
- Needs medication
- Needs water
- Report to nurses' station

You can also create additional custom text messages.

1. Using the **Staff** page of the Config Tool, click the ⊕ (add) button in the *Text Messages* panel (see *Figure 32*).

2. Type a custom message in the *Details* panel, and check the *Has Subject* box to automatically include the calling location with the message.

3. Select a *Staff Type* of L1, L2 or L3 to send this message to just one staff type; select *None* to send it to all staff types.

4. Click the ✓ (apply) button, and then select *File menu > Save Configuration* to save the programming changes.

Change Pre-Programmed Text Messages
The included pre-programmed text messages can be changed to fit the facility's requirements.

1. Click an existing message in the *Text Messages* panel, and then click the 📝 (edit) button in the *Details* panel (see *Figure 32*).

2. Modify the message in the *Details* panel, and check the *Has Subject* box to automatically include the calling location with the message.

3. Select a *Staff Type* of L1, L2 or L3 to send this message to just one staff type; select *None* to send this message to all staff types.

4. Click the ✓ (apply) button, and then select *File menu > Save Configuration* to save the programming changes.

Delete Pre-Programmed Text Messages
To delete an unnecessary text message, highlight the message in the *Text Messages* panel (see *Figure 32*), and then click the ⊖ (delete) button. Select *File menu > Save Configuration* to save the programming changes.

Add Shifts

Shifts are used to schedule time periods when specific pagers and email addresses receive calls. Shift time periods are defined by the facility's staff.

1. Using the **Assignments** page of the Config Tool, click the 🟢 (add) button in the *Shifts* panel (see *Figure 33*). In the *Shift Details* panel, type a *Name* for the shift.

2. Using 24-hour Military time, enter a *Start Time* and an *End Time*. (Midnight is 00:00.) Start and End times must be at least 10 minutes apart.

   Note: A single time period cannot cross midnight into the next day; divide it into two time period entries. For example, create these two entries to create a scheduled time period of 6:00 PM Friday to 10:00 AM Saturday:

Begin—18:00	End—00:00	Day—Friday
Begin—00:00	End—10:00	Day—Saturday

3. Use the check boxes to select which days of the week this shift is scheduled.

4. Click the 🟢 (apply) button, and then select *File menu > Save Configuration* to save the programming changes.

Create Assignments

Assignments may be added now using the Config Tool, or later by facility staff using the Event Monitor. (Skip this step if the Tek-MMARS®300 system does not include pagers or LS453 Email Output software.) Assignments are the final step in customizing the system to send automatic text messages to pagers and/or email addresses. They are used to assign shifts to staff and staff groups, which determines when they will receive automatic text messages. Assignments are also used to assign NC300/II stations and/or zones to staff and staff groups; this determines which transmitters will send them automatic text messages.

An assignment consists of three main parts: the staff members who will receive automatic text messages, the shift when they will receive them, and the NC300/II station or zone that they will receive them from.

1. Using the **Assignments** page of the Config Tool, click the 🟢 (add) button in the *Assignments* panel (see *Figure 33*).

2. Choose the *Staff Type* (staff, group, or all staff) and *Staff Name* (the name of a staff member or a staff group).

3. Choose the *Device Type* (zone, foreign or all devices)—NC300/II stations are foreign devices. Choose the *Device Name* and the *Call Filter* (all calls, no calls, only code, high priority calls, or all but presence).

4. Choose whether to send text messages for system *Faults* (all faults, no faults, missing or maintenance). Also choose whether to send a text message when a call is reset (*Page Resets*).

5. Choose the *Level* (primary, secondary, or tertiary) and the *Shift*. If primary staff does not respond within 450 seconds, secondary staff is texted; tertiary staff is texted after 600 seconds. (These default times can be modified on the **Pagers** page.)

6. Click the 🟢 (apply) button, select *File menu > Save Configuration As* to save a copy of the new system configuration, and select *File menu > Commit Configuration To System* to apply the new system configuration. The LS576 Event Monitor software will restart. (See the *IL855 Config Tool Manual* for more information.)

Configure Emailed Reports

The Tek-CARE® Reporting System can automatically send reports via email using the LS453 Email Output software. Before configuring emailed reports, set up the LS453 Email Output software. If emailed reports will be filtered by shifts, add staff shifts before configuring emailed reports. (See *Add the LS453 Email Output Software* and *Add Shifts* earlier in this chapter.)

1. Using the **Reports** page of the Config Tool, click the ⊕ (add) button in the *Reports* panel (see *Figure 34*).

2. In the *Details* panel, select the *Report Type* (hourly, daily, weekly or daily shift), and type a *Subject* line for the email.

3. Check one or more boxes to select the report format: HTML in the body of the email, an attached HTML file, or an attached CSV file that can be edited in a spreadsheet program.

4. Choose one or more email addresses as *Recipients.*

5. Use the *Filtering Options* to select the calls and faults to include in the report.

6. Use the *Summary Options* and *Detail Options* to determine the report's format.

7. Click the ✓ (apply) button, select *File menu > Save Configuration As* to save a copy of the new system configuration, and select *File menu > Commit Configuration To System* to apply the new system configuration. The LS576 Event Monitor software will restart. (See the *IL855 Config Tool Manual* for more information.)

Figure 33—Assignments Page
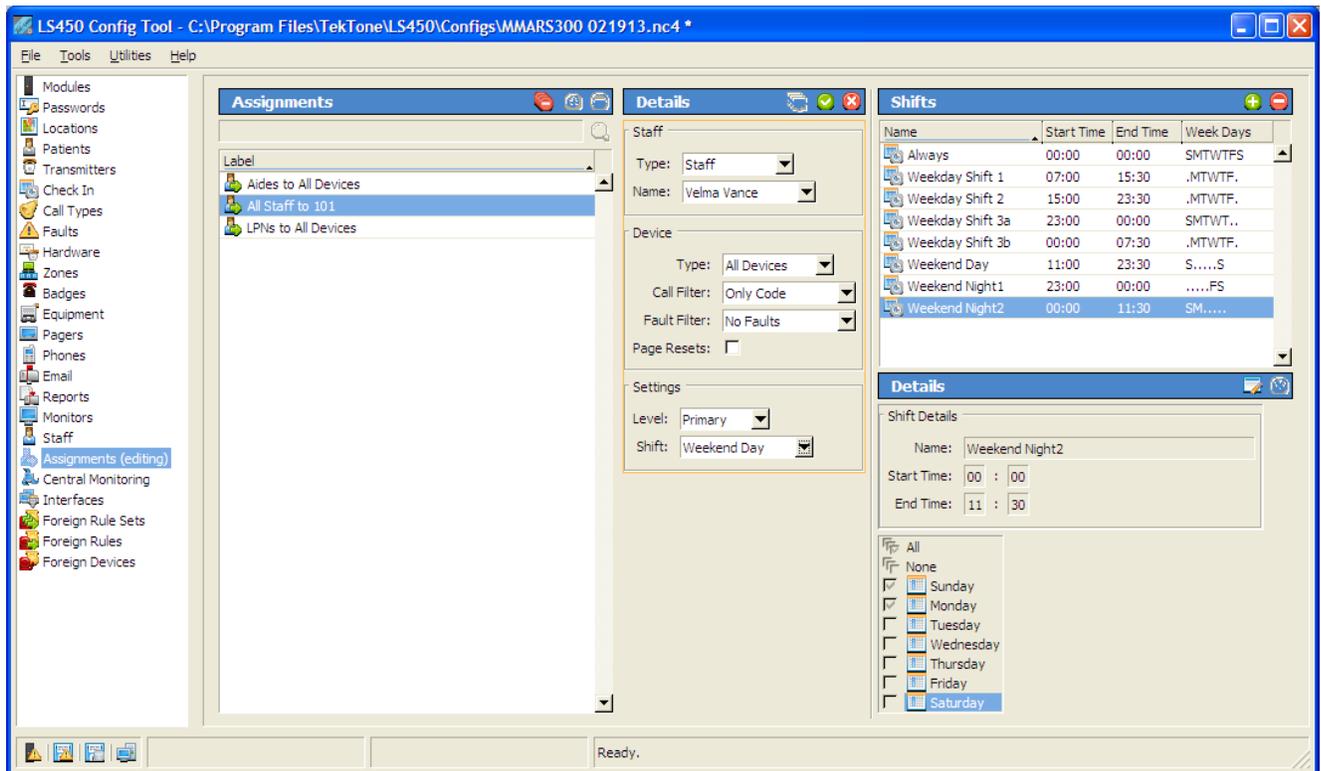
Figure 34—Reports Page
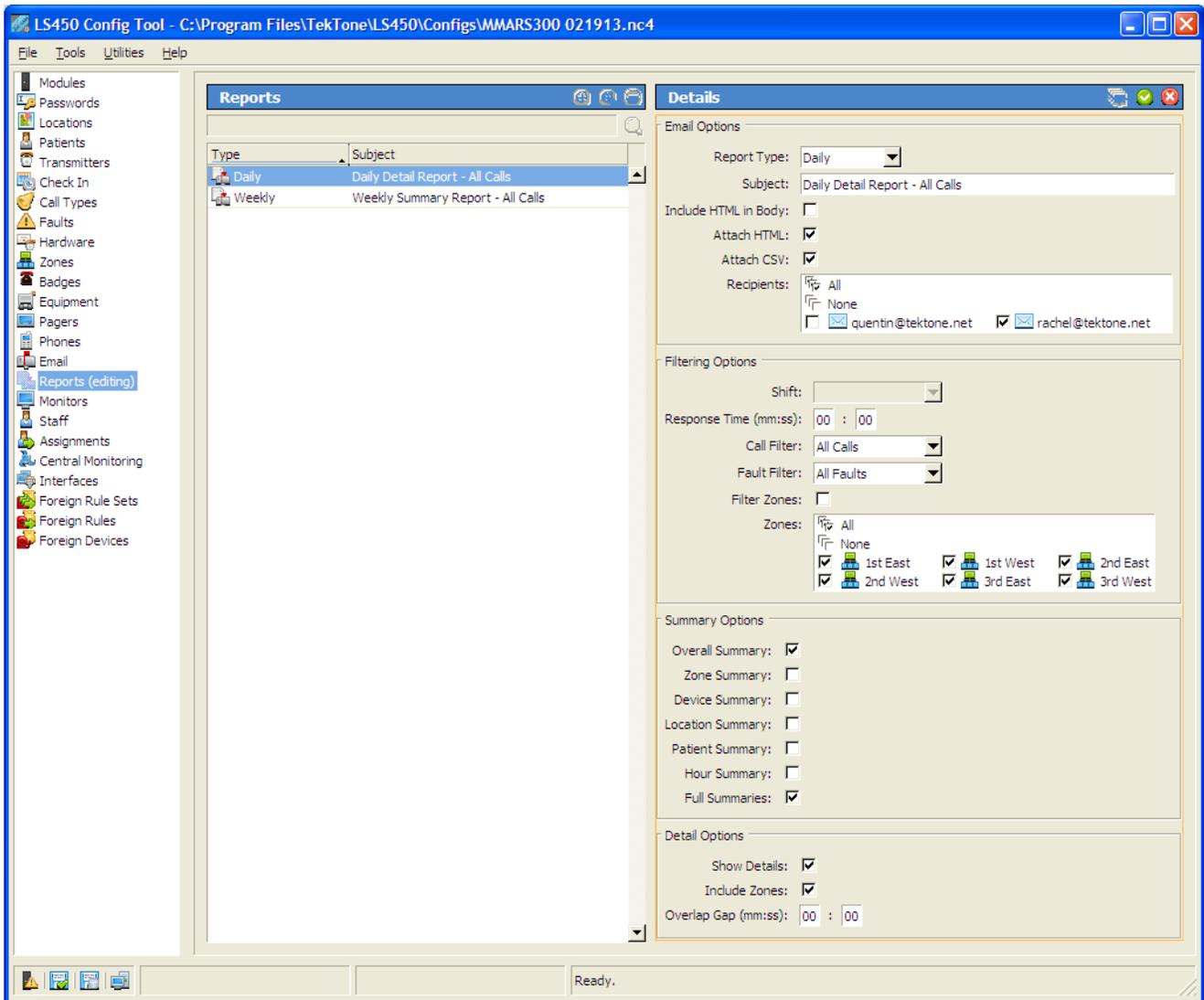
Figure 35—Remote Event Monitor Setup Window
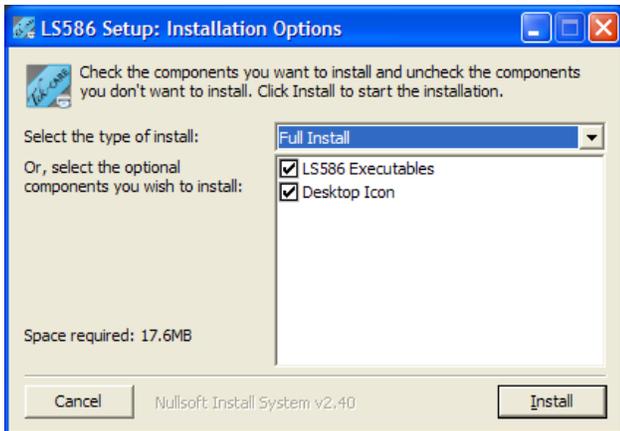
Figure 36—Menu: Connection Settings
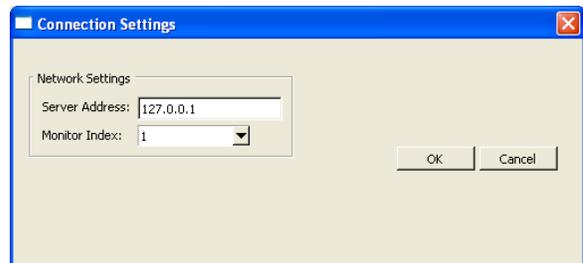
Enable Maintenance Fault

The software-latched Maintenance Fault indicates that one or more other faults have occurred on the system. Use it to reduce paging and email traffic when there are multiple faults, and to diagnose intermittent faults. When the system has one or more faults, each assigned staff member will receive just one page and/or email for the Maintenance fault.

1. Using the **Faults** page of the Config Tool, check the *Enable Maintenance Fault* checkbox.

2. Using the **Assignments** page of the Config Tool, add staff assignments to the Maintenance fault. (Staff assignments may also be created later using the *Assignments* register of the LS576 Event Monitor or LS586 Remote Event Monitor.)

3. Select *File menu > Save Configuration As* to save a copy of the new system configuration, and select *File menu > Commit Configuration To System* to apply the new system configuration. The LS576 Event Monitor software will restart. (See the *IL855 Config Tool Manual* for more information.)

Using the Maintenance Fault

- When the system has one or more faults, each assigned staff member will receive just one page and/or email for the Maintenance fault.

- Even if the system has intermittent faults, the Maintenance fault will latch on and be visible on event monitors. Use the Tek-CARE® Reporting System (see *Using the Tek-CARE® Reporting System*) to determine which intermittent fault occurred.

- When all other faults are resolved, perform a redetect at a nurse call system master station to reset the Maintenance fault.

Set up Remote Event Monitors

Up to nine computers on the LAN can run the LS586 Remote Event Monitor to monitor Tek-MMARS®300 system activity via the facility's LAN. (Tek-MMARS®300 includes a license to install one remote event monitor; additional licenses may be purchased.) The networked computers must be running Microsoft® Windows® XP or Windows® 7.

Install the LS586 Remote Event Monitor software on a networked PC

1. Run a web browser (such as Internet Explorer®) on the networked PC.

2. Type the Tek-BRIDGE®'s auxiliary static IP address into the web browser's address bar (see *Connect to the Facility's LAN* for the IP address).

3. When the Reporting System window appears, click *Download remote monitor (LS586) installer* (see *Figure 41*).

4. Click on the **RUN** button. When the *LS586 Setup: Installation Options* window appears, click the **INSTALL** button (see *Figure 35*).

5. When the *LS586 Setup: Installation Completed* window appears, click the **CLOSE** button. This completes the installation of the Remote Event Monitor (client) software, and places an *LS586 Event Monitor* icon on the computer's desktop.

Start the LS586 Remote Event Monitor on the networked PC and configure it

1. Double-click the *LS586 Event Monitor* icon on the desktop to start the software. When the Remote Event Monitor window appears (as shown in *Figure 37*), continue.

2. Click on the 🔳 *(menu)* button at the bottom left of the Event Monitor window (see *Figure 37*) and then select *Connection Settings*. The Connections Settings window will appear (see *Figure 36*).

3. Type the auxiliary static IP address of the Tek-BRIDGE® in the *Server Address* box (see *Connect to the Facility's LAN* to obtain this IP address).

4. Choose a *Monitor Index* (1–9) to assign to this PC. Each PC that uses the LS586 Remote Event Monitor software must be assigned a unique Monitor Index.

5. Click on the **OK** button to save the settings.

NOTE: To run an LS586 Remote Event Monitor using an unprivileged user account, give the user account full permissions to this folder: *C:\Program Files\TekTone*.

Save and Commit the New Configuration

After you have completed configuration using the Config Tool, you must commit the new configuration to the system.

1. Select *File menu > Save Configuration As* to save a copy of the new configuration.

2. Assign a name to the configuration, and click the **SAVE** button. By default, this file is saved on the Tek-BRIDGE® with a file extension of .nc4 in the *C:\Program Files\TekTone\LS450\Configs* directory. If desired, you may save this file to another location, such as the Desktop.

3. Select *File menu > Commit Configuration To System* to apply the new system configuration. The LS576 Event Monitor software will restart. (See the *IL855 Config Tool Manual* for more information.)

NOTE: **TekTone® strongly recommends that you save your configuration whenever it is modified, and back up your saved configuration file to a USB flash drive.**

Using the Event Monitor & Remote Event Monitors

The Event Monitor and Remote Event Monitors provide real-time monitoring on the Tek-MMARS®300 system of all associated nurse call system activity. Activity displayed on the Event Monitors can be filtered by zones and call types. Event Monitors also play call tones, if this option is selected.

LS576 Event Monitor

The LS576 Event Monitor is a standard component of the Tek-MMARS®300 system. Do not shut down the LS576 Event Monitor running on the Tek-BRIDGE®. It must be running at all times for the proper functioning of the LS586 Remote Event Monitors, the LS453 Email Output software, and the Tek-CARE® Reporting System software.

LS586 Remote Event Monitor

The NC385 Tek-MMARS®300 includes a license for one remote event monitor, which connects to the Tek-BRIDGE® via the facility's LAN (local area network). Tek-MMARS®300 can support up to nine remote event monitors; add licenses using part number LSMON1 (1 Remote Event Monitor license) or LSMON5 (5 Remote Event Monitor licenses). Remote Event Monitors must be personal computers running Microsoft Windows XP or Windows 7. See *Set up Remote Event Monitors* for instructions on setting up Remote Event Monitors.

The Event Monitor and Remote Event Monitors have the same visual display. Double-click the *LS576 Event Monitor* icon or the *LS586 Event Monitor* icon to open the Event Monitor window, as shown in *Figure 37*.

Figure 37—Event Monitor and Remote Event Monitor
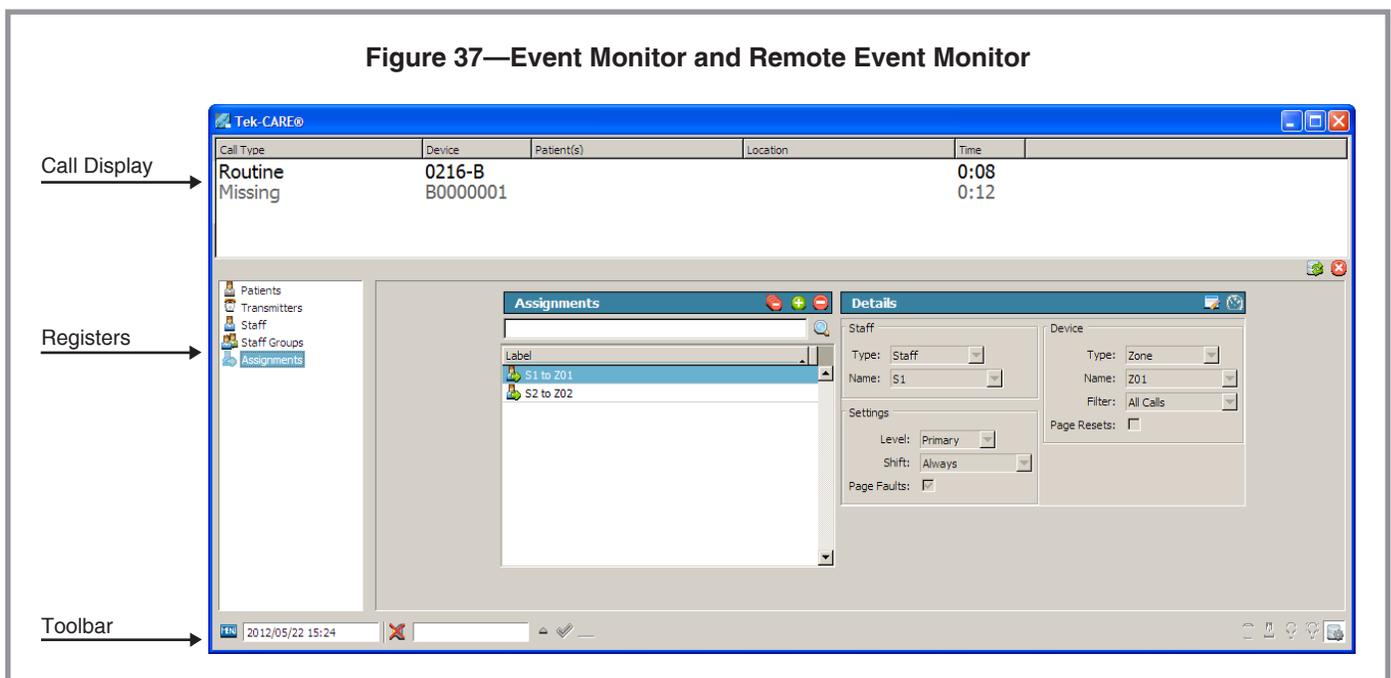
Event Monitor and Remote Event Monitor Window

This is a description of the various parts of the Event Monitor and Remote Event Monitor window. (See *Figure 37*.)

Toolbar The toolbar is at the bottom edge of the window. It displays the current date and time. It also provides buttons for several functions commonly used during normal operation.

MENU *Menu Button*—Click on the Menu button to display the following options:

- *Connection Settings*—(LS586 Remote Event Monitors only.) Used by remote event monitor computers to locate the Tek-BRIDGE®. See *Set up Remote Event Monitors* for usage instructions.

- *Annunciation Settings*—Used to select which calls the Event Monitor will display. See *Filtering Calls Displayed by Zone or Call Type* later in this chapter for usage instructions.

- *Repair*—Restarts and repairs failed software components.

- *Redetect*—Redetects the status of system event monitors, stations and peripherals. Doing so also clears faults caused by removing equipment from the system. *Caution:* If a defective station or other device is not replaced, after performing a Redetect the system will not provide any indication that a device is non-functional.

- *Set Time*—Sets the Tek-MMARS®300 system's time and date. Change the time using 24-hour (military) time. Change the date using a 4-digit year. Click **OK** to save the new time and date.

- *Launch Reporting*—Starts the Reporting System. See *Using the Tek-CARE® Reporting System* for usage instructions.

- *Access*—Click on this selection and enter a valid password to obtain access to password-protected features. Click on *Access* again to disable access to password-protected features.

- *About*—Displays the software version number.

Silence/Unsilence Button—Click (while a call is active) to toggle alarm tones off and on. Some alarm and event tones cannot be silenced. When another call or event is received, alarm tones are automatically turned on again (unsilenced).

Acknowledge Button—Use this button to reset and clear a call from a Start Acknowledge input. To use, click on an event in the call display, then click the ✔ button. (This button is not used for Tek-CARE®NC300/II calls.)

Text Message Button—Click on this button to send a manual text message to one or more staff members, staff groups, or staff types. (The button is disabled unless RF Paging is enabled.) See *Sending a Text Message* later in this chapter for usage instructions.

Registers Button—Click on this button (at the far right of the toolbar) to display registers where staff, staff groups and assignments can be viewed, edited, added or deleted. Click on the button again to hide the registers. This function may be password-protected (see the *IL855 Config Tool Manual* for details).

Find Within Registers Buttons—Select a call in the call display, and then click on one of these buttons (to the left of the Registers button) to quickly find register information related to the selected call. These find buttons are available:

📱 Transmitter   👤 Patient   📍 Location   📍 Detected Location

Call Display This is the main section of the Event Monitor window. It shows a list of currently active calls and faults. The following information is provided for each active event (where applicable): call type, device, patient name, location, and time elapsed since the call was initiated. Each active fault shows the fault type.

Registers The registers are used to view, add, delete and edit some of the system configuration settings. (These settings can also be changed using the Config Tool.) Click on the 🗄️ (registers) button (at the far right of the toolbar) to display or hide the registers. The ability to edit register data may be password-protected. If you make any changes using the registers, save a copy of your new Tek-MMARS®300 system configuration. See *Save the Current Tek-MMARS®300 Configuration* for instructions.

*Staff—*This register displays a list of all staff and their assigned home zones and devices (pagers and email addresses).

*Staff Groups—*This register displays a list of all staff groups. It is also used to add or remove groups and to assign staff members to the groups.

*Assignments—*This register displays a list of staff assignments. It is also used to assign or remove annunciation of individual stations and zones to specific staff members, staff groups, staff shifts or staff levels.

Filtering Calls Displayed by Zone or Call Type

Each event monitor and remote event monitor is individually configured to show all active calls, or to filter calls by zone or by call type. The default is to display all events. If the Tek-BRIDGE® is also being used as a Tek-CARE®500 master station computer, all Tek-CARE®500 calls and faults will be displayed on the Tek-MMARS®300's event monitor as the primary annunciation point, and will not be filtered.

To modify the event monitor's annunciation settings, click the 🟦MENU (menu) button at the bottom of the event monitor window (see *Figure 37*) and select *Annunciation Settings*. The Annunciation Settings window will appear (see *Figure 38*). Then select which calls to display.

Zone Filter—A list of available zones is provided. The monitor displays events from zones with checkmarks next to them.

Call Filter—A list of available call types is provided. The monitor displays events from call types with checkmarks next to them.

Play Sounds—The Event Monitor will tone the highest priority calls when a checkmark appears next to *Play Sounds*. If desired, uncheck the *Play Sounds* box for silent operation of the software on this PC. (The Tek-BRIDGE® includes an internal speaker.)

White Background—The call display's background is white when a checkmark appears next to *White Background.* The call display's background is black when the *White Background* box is unchecked.

Sending a Text Message

When properly customized, the Tek-MMARS®300 system automatically sends a text message to staff pagers and email addresses in response to an event. Staff can also send custom manual text messages to selected staff devices.

To send automatic and manual text messages, your system must have one or both of the following:

- A TekTone® paging transmitter and TekTone® pagers. Paging must also be enabled using the Config Tool (see *Add Radio Pocket Paging)*.

- The LS453 Email Output Software, enabled using the Config Tool (see *Add the LS453 Email Output Software*).

To send a manual text message to one or more staff devices:

1. Click the ✉ (text message) button.

2. In the window that pops up, select the staff members, staff groups, or staff types to send a text message to (see *Figure 39*).

3. Type a custom message in the *Message* box, or select a preconfigured message from the drop-down box, and select a priority. Default priorities are Low, Medium, High and Urgent. High and Urgent override the vibrate setting on pagers. To change the names of priority levels, see the *IL855 LS450 Config Tool manual*.

4. Click the **SEND** button.

Figure 38—Menu: Annunciation Settings
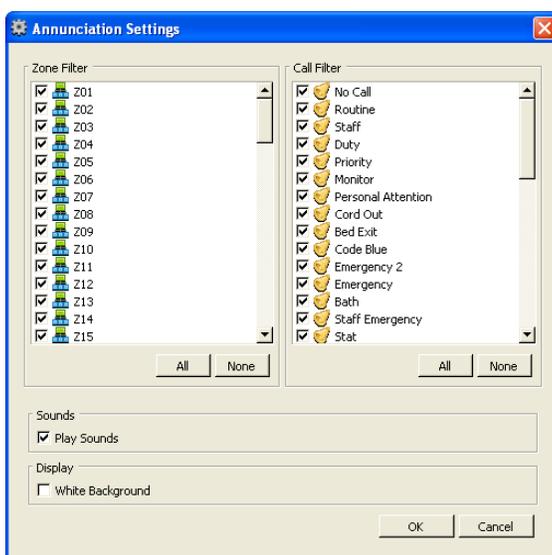
Figure 39—Text Message Window
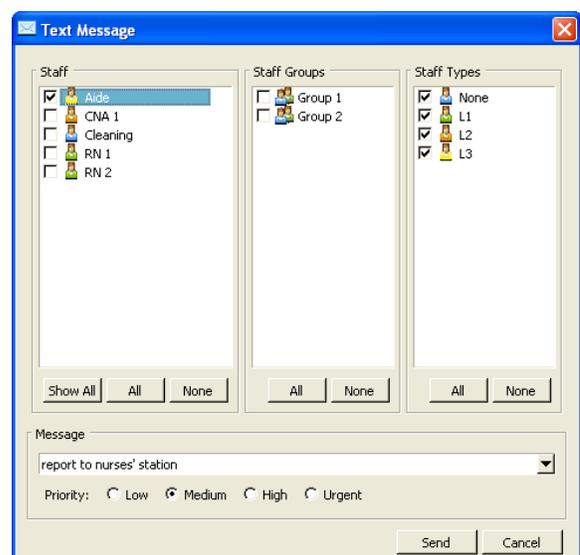
Adding a Staff Member

A staff member can be either an individual or a job description, and can be assigned one or more pagers and email addresses. Each staff member is also assigned a staff type. The three default levels of staff type are L1, L2 and L3. Follow these steps to add a staff member:

1. Using the **Staff** register, click the ⊕ (add) button in the *Staff* panel.

2. Type a name for the staff member in the **Name** field. For example, this name can be a person, a wing, a zone in the facility, or a pager CAP code. If desired, assign a staff type (L1, L2, L3) or leave the default *None*. Check the **Active** box. (If not active, events will not be sent to the staff member's assigned devices).

3. Select a **Pager** and/or **Email Address** to assign to this staff member. Assigning a device to a staff member automatically unassigns it from any other staff member.

4. Select one or more **Home Zones** to assign to this staff member. When sending a manual text message regarding a specific foreign device, the list of possible recipients is filtered to show only those staff members whose home zones include the zone that the foreign device is in. (All recipients can also be shown.)

5. Click the ✓ (apply) button.

Creating a Staff Group

A staff group is a group of staff members that have similar characteristics, for example, they work the same shift, cover the same zone, or have the same job description or job level. A staff member can be added to multiple staff groups. Staff groups are used to send custom text messages to the pagers and email addresses of a specific group of staff members. They may also be used to create assignments for calls and automatic text messages.

Follow these steps to create a staff group:

1. Using the **Staff Groups** register, click the ⊕ (add) button in the *Staff Groups* panel.

2. Type a name for the group in the **Name** field.

3. Select one or more staff members to add to the group.

4. Click the ✓ (apply) button.

Creating Assignments

Tek-MMARS®300 automatically sends calls to pagers and email addresses. Assignments define which calls are sent to each staff device. They are used to assign shifts to staff and staff groups, which determines when they will receive calls. They are also used to assign nurse call stations to staff and staff groups, which determines which nurse call stations will send them calls. If you need additional shifts, use the *Assignments* page of the Config Tool. Follow these steps to create assignments using the Event Monitor:

1. Using the **Assignments** register, click the ⊕ (add) button.

2. Choose the **Staff Type** (staff, group, or all staff) and **Staff Name** (the name of a staff member or a staff group).

3. Choose the **Level** (primary, secondary, or tertiary) and the **Shift**.

4. Choose the **Device Type** (zone, foreign or all devices)—NC300/II stations are foreign devices. Choose the **Device Name** and the **Call Filter** (all calls, no calls, only code, high priority calls, or all but presence).

5. Choose whether to send text messages for system **Faults** (all faults, no faults, missing or maintenance). Also choose whether to send a text message when a call is reset (**Page Resets**).

6. Click on the ✓ (apply) button.

Save the Current Tek-MMARS®300 Configuration

Whenever you use the Registers to modify the Tek-MMARS®300 configuration, save and back up a copy of it on the hard drive of the Tek-BRIDGE®.

1. Run the LS450 Config Tool on the Tek-BRIDGE®. Select *This Machine is a Stand Alone System* in the Tek-CARE® Config Tool splash screen, and then click *Load Configuration From System*.

2. Select *File menu > Save Configuration As* to save a copy of the current system configuration. By default, this file is saved on the Tek-BRIDGE® with a file extension of .nc4 in the *C:\Program Files\TekTone\LS450\Configs* directory. If desired, you may save this file to another location, such as the Desktop.

NOTE: **TekTone® strongly recommends that you save your configuration whenever it is modified, and back up your saved configuration file to a USB flash drive.**

Backing up Reporting Datasets

Dataset files store historic call data, and are used by the Tek-CARE® Reporting System to create reports. They have the extension *.db,* and are stored in the *C:\Program Files\TekTone\NC470\data* subdirectory on the Tek-BRIDGE®.

Back up datasets—Copy the *.db* files to a USB flash drive (not included). Do not copy the newest two datasets while the NC576 Event Monitor is running.

Restore datasets—Copy the *.db* files from the backup USB flash drive to the *C:\Program Files\TekTone\NC470\data* directory on the Tek-BRIDGE®.

Using the Tek-CARE® Reporting System

The Tek-CARE® Reporting System is part of the Tek-MMARS®300 software. The reporting system records nurse call system events and faults. It is also used to create custom summary and detail reports on nurse call system activity.

Accessing the Tek-CARE® Reporting System

The reporting system is accessible by any computer on the facility's local area network (LAN). The reporting system can be password protected using the Config Tool—remove *Reporting* from default access, and then add one or more passwords with access to *Reporting.* See the *IL855 Config Tool Manual* for more information.

There are two ways to start the Tek-CARE® Reporting System:

Using the Event Monitor or Remote Event Monitor:
1. Click on the **MENU** (menu) button and then select *Launch Reporting*.

2. If password protection is enabled, the Tek-CARE® Reporting System password window will appear (see *Figure 40*). Enter an access password and click **LOGIN**.

3. The Tek-CARE® Reporting System window will appear (see *Figure 41*).

Using any computer on the facility's local area network (LAN):
1. Run a web browser, such as Internet Explorer®, on the networked PC.

2. Type the Tek-BRIDGE®'s auxiliary static IP address into the web browser's address bar (see *Connect to the Facility's LAN* for the IP address).

3. If password protection is enabled, the Tek-CARE® Reporting System password window will appear (see *Figure 40*). Enter an access password and click **LOGIN**.

4. The Tek-CARE® Reporting System window will appear (see *Figure 41*).

Figure 40—Password Access Window
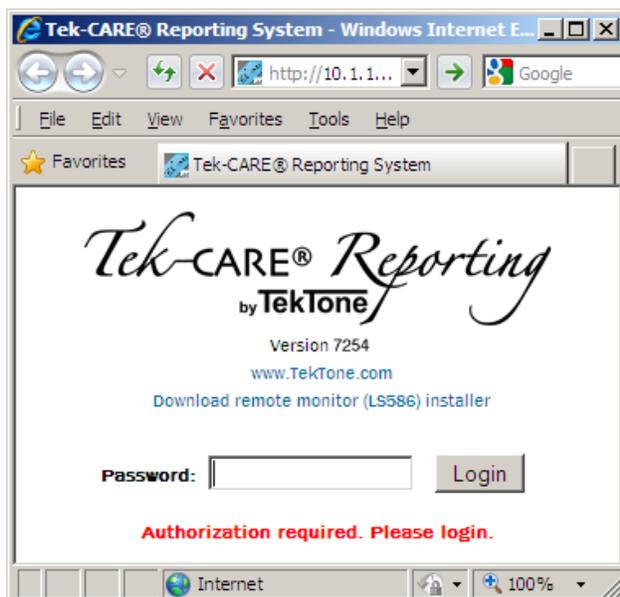
Figure 41—Reporting System Window
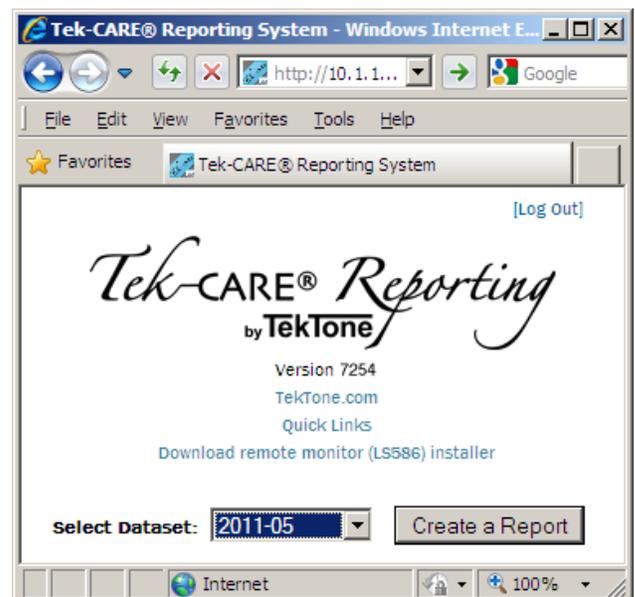
Creating Reports

About Datasets
In order to keep report creation times short while the system collects more and more data, calls are stored in datasets that span one month. A second set of datasets is also maintained that includes calls from the middle of one month to the middle of the next. Reports cannot span datasets. Note that datasets are no longer used in software versions

Create a Report
To create a report, select a dataset from the drop-down list, and then click the **SELECT DATASET** button.

Report Options
This window is used to define the report's parameters, creating a custom report. (See *Figure 42*.) Select or enter the desired reporting *Time Period*, *Shift*, *Filters* (Zones, Devices, Locations, Patients, Event Types), and *Response Time*.

By default, all calls will be included in the report. To make selections to narrow the report parameters:
- Uncheck the **NO FILTER** box before making changes to the selections.
- Hold down the **CTRL** key to make multiple selections or to deselect a single selection from a list.
- Use 24-hour time.

Next, define how you would like the report to look:
- Type a description for your report.
- Select the type(s) of summary report to create.
- Select whether to create detailed reports.

Then, select the file output type:
- Choose *HTML* to view, print and/or save the report using your web browser. Graphs are also available from within HTML reports—click **SHOW ALL GRAPHS**.
- Choose *CSV* to view, print and/or save the report using your spreadsheet software (such as Microsoft Excel).

After choosing the desired report options, click the **CREATE REPORT** button at the bottom of the screen to view the report. Use your web browser or spreadsheet program to print or save the report.

Emailing Reports

The Tek-CARE® Reporting System can automatically send reports via email. (Requires LS453 Email Output software.) Configure and schedule reports using the Config Tool. See *Add the LS453 Email Output Software* for instructions.

Backing up Reporting Datasets

Dataset files store historic call data, and are used by the Tek-CARE® Reporting System to create reports. They have the extension *.db,* and are stored in the *C:\Program Files\ TekTone\NC470\data* subdirectory on the Tek-BRIDGE®.

Back up datasets—Copy the *.db* files to a USB flash drive (not included). Do not copy the newest two datasets while the NC576 Event Monitor is running.

Restore datasets—Copy the *.db* files from the backup USB flash drive to the *C:\Program Files\TekTone\NC470\data* directory on the Tek-BRIDGE®.

Figure 42—Report Options

Quick Links

The Quick Links menu provides shortcuts to the most common reports. To access it, click the *Quick Links* hyperlink at the top of either the Tek-CARE® Reporting System window (see *Figure 41*) or the Report Options window (see *Figure 42*).

Each quick link report type includes separate hyperlinks for two versions: *Summary* and *Summary & Details*. All quick link reports reflect the current information at the time the quick link is clicked. *Figure 43* shows the available quick link reports.

For easy access to your most-used report types, click on the report type. When the report is opened in your web browser, create a *bookmark* (or *favorite)*. The default name of the bookmark is "Tek-CARE® Report." Rename it to describe the report type if you are creating bookmarks for more than one report type. The next time you click on your saved bookmark, the report will be recreated with the latest information.

Figure 43—Quick Link Reports

Quick Links

- Links in Summary and Summary & Details columns can be bookmarked by dragging them to the bookmark bar.
- All links are time relative and reflect the most up-to-date information at the time of clicking them.

Name	Description	Summary	Summary & Details
Last Hour	All events from the last hour.	Tek-CARE® - Last Hour - Summary	Tek-CARE® - Last Hour - Summary & Details
Last 24 Hours	All events from the last 24 hours.	Tek-CARE® - Last 24 Hours - Summary	Tek-CARE® - Last 24 Hours - Summary & Details
Last 7 Days	All events from the last 7 days.	Tek-CARE® - Last 7 Days - Summary	Tek-CARE® - Last 7 Days - Summary & Details
Last Week (Sun)	All events from last week through Sunday.	Tek-CARE® - Last Week (Sun) - Summary	Tek-CARE® - Last Week (Sun) - Summary & Details
Last Week (Mon)	All events from last week through Monday.	Tek-CARE® - Last Week (Mon) - Summary	Tek-CARE® - Last Week (Mon) - Summary & Details
This Week (Sun)	All events from this week from Sunday.	Tek-CARE® - This Week (Sun) - Summary	Tek-CARE® - This Week (Sun) - Summary & Details
This Week (Mon)	All events from this week from Monday.	Tek-CARE® - This Week (Mon) - Summary	Tek-CARE® - This Week (Mon) - Summary & Details
Today	All events from today.	Tek-CARE® - Today - Summary	Tek-CARE® - Today - Summary & Details
Yesterday	All events from yesterday.	Tek-CARE® - Yesterday - Summary	Tek-CARE® - Yesterday - Summary & Details
This Month	All events from this month.	Tek-CARE® - This Month - Summary	Tek-CARE® - This Month - Summary & Details
Last Month	All events from last month.	Tek-CARE® - Last Month - Summary	Tek-CARE® - Last Month - Summary & Details
This Quarter	All events from this quarter.	Tek-CARE® - This Quarter - Summary	Tek-CARE® - This Quarter - Summary & Details
Last Quarter	All events from last quarter.	Tek-CARE® - Last Quarter - Summary	Tek-CARE® - Last Quarter - Summary & Details
This Quarter (Last Year)	All events from this quarter last year.	Tek-CARE® - This Quarter (Last Year) - Summary	Tek-CARE® - This Quarter (Last Year) - Summary & Details
Last Quarter (Last Year)	All events from last quarter last year.	Tek-CARE® - Last Quarter (Last Year) - Summary	Tek-CARE® - Last Quarter (Last Year) - Summary & Details

Troubleshooting

Monitor Fault

A Monitor fault occurs when a Remote Event Monitor PC closes its copy of the LS586 Remote Event Monitor software. Monitor faults are displayed at the LS576 Event Monitor on the Tek-BRIDGE®. Monitor faults can be cleared at an LS586 Remote Event Monitor or an LS576 Event Monitor.

To clear a monitor fault using an Event Monitor or Remote Event Monitor:
1. Click on the **MENU** (menu) button and then select *Redetect.*

2. The Tek-MMARS®300 system will redetect all remote event monitors, and then clear all existing monitor faults.

Network Fault, TekBridge Fault or Gateway Fault

Any of these faults at either the LS576 Event Monitor or the LS586 Remote Event Monitors indicates one of the following:

- the Tek-MMARS®300 LS576 Event Monitor software has been shut down, or
- the Tek-BRIDGE® has been shut down, or
- the Ethernet cable from the Tek-BRIDGE® to the facility's LAN has been disconnected.

Pager Base Fault

A Pager Base fault can occur only if paging has been set up and paging base supervision enabled. It indicates that the paging transmitter cannot be detected.

Maintenance Fault

The software-latched Maintenance Fault indicates that one or more other faults have occurred on the system. It is used to reduce paging and email traffic when there are multiple faults, and to diagnose intermittent faults.

- Use the Tek-CARE® Reporting System (see *Using the Tek-CARE® Reporting System*) to determine which intermittent fault occurred.

- When all other faults are resolved, click the **MENU** (menu) button and then select *Redetect* to reset the Maintenance fault.