TeLINK

Overview and Configuration Manual

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Manual Revisions

The *TeLINK Overview and Configuration Manual* is catalog number 808-971, Rev. 11/99. It replaces the *TeLINK Overview and Configuration Manual* 808-971, Rev. 6/97.

The revisions are listed below.

Section/Chapter	Changes
Configuration	1. Added a note regarding alarm acknowledgement operation to the Alarm Processing Definition Table's Alarm Acknowledger decision. 2. Also added a note to the Alarm Processing Definition Table's Alarm Threshold, Beeper Threshold decision explanation.
Maintenance	3. Modified the TeLINK Maintenance Table's Alarm Buffer Full decision.
Appendix A, Handling of Outgoing Alarms from Local Network	4. Revised Figure 12, Alarm Handling at a Monitored Site.

Contents

Introduction

Introduction

About this Manual

This manual contains information about the functions of TeLINK and how the user configures the TeLINK control module to perform those functions.

The manual is divided into the following sections:

- Introduction
- Operating Characteristics
- Configuration
- Maintenance
- Configuration Sheets
- Appendixes

The Introduction consists of this description of the manual and an overview of TeLINK.

The Operating Characteristics section contains a description of the TeLINK hardware, a description of how TeLINK operates, and a summary description of its configuration tables.

The Configuration section contains detailed lists of the decisions for each TeLINK configuration table. Each list entry includes the decision's purpose, the range of values that may be used, and the default values that will appear in the decision if it is not configured by the user.

The Maintenance section contains detailed lists of the decisions for each TeLINK maintenance table. Each list entry includes the decision's purpose and the range of values that may be displayed.

The Configuration Sheets section consists of a list of configuration decisions arranged in a table format. These sheets are provided so that they may be photocopied for use as worksheets and hard copy records when configuring TeLINK.

The Appendixes section contains flowcharts that illustrate how TeLINK handles alarms and calls initiated by ComfortWORKS and the Building Supervisor. This section also specifies how to configure TeLINKs at monitored and monitoring sites to transmit or receive alarms. TeLINK-generated alarm and alert messages are also discussed.

TeLINK

The TeLINK control module serves as an interface device between a Carrier Comfort Network (CCN) and a modem. The module and modem enable the CCN to communicate over telephone lines with other similarly equipped CCNs.

In this manual, the terms *monitoring site* and *monitored site* are used to refer to two CCNs linked together as illustrated in Figure 1.

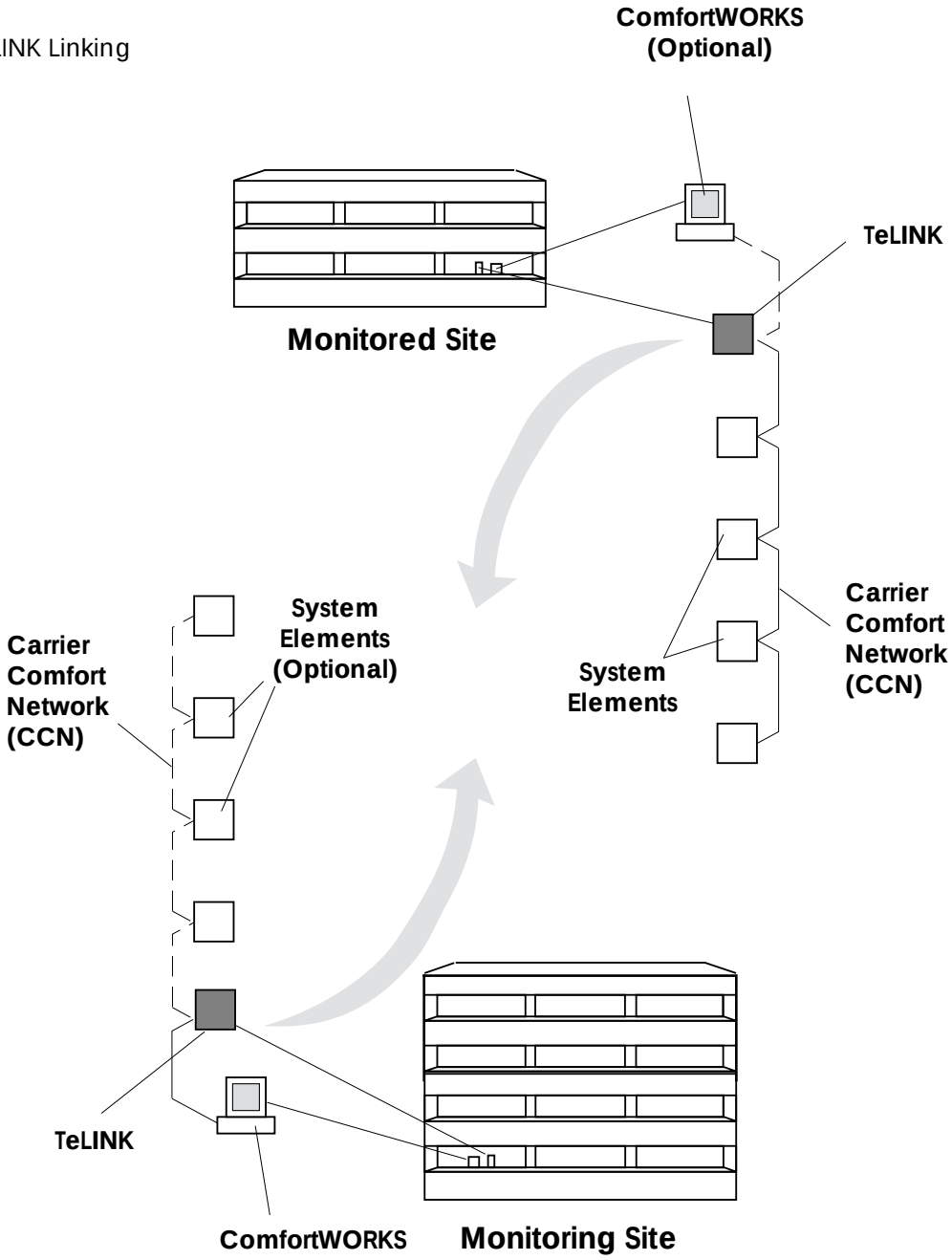
The *monitoring site* is the CCN that can:

- receive alarms and alerts from the monitored site.
- generate ComfortWORKS and Building Supervisor-initiated calls for the purpose of retrieving data, for example, history and runtime reports.
- allow user-initiated calls for the purpose of controlling and/or monitoring remote system elements.
- trigger the self-health diagnostic check once a day.

The *monitored site* is the CCN that can:

- send alarms and alerts to the monitoring site.
- dial a numeric-type beeper service in response to alarms.
- receive ComfortWORKS and Building Supervisor-initiated calls for the purpose of retrieving data.
- receive ComfortWORKS and Building Supervisor-initiated calls for the purpose of controlling and/or monitoring system elements.
- provide Network Directory Services (NDS) functions.

Figure 1
Example of TeLINK Linking Two CCNs



Operating Characteristics

Operating Characteristics

TeLINK is a device similar in appearance to an external modem. It can be placed on a desktop or inside a standard NEMA enclosure. It consists of an electronic control module with a PCMCIA-Type II modem card and power supply. The modem card and power supply can be purchased with the module or separately. The module is equipped with specialized software that enables it to perform its communication tasks.

TeLINK can dial into or receive calls from another TeLINK, Auto-dial Gateways I, II, and III, and it can dial into and connect with a Network Access Module (NAM).

Control Module

The control module is shown in Figure 2 on the following page. It has the following features:

- LED indicators for processor status, CCN communication status, and modem status
- RS-485 serial communication port for CCN connection
- PCMCIA Type II card modem connector
- Network Service Tool connector

The CCN connector must be connected to a primary CCN Communication Bus (Bus 0).

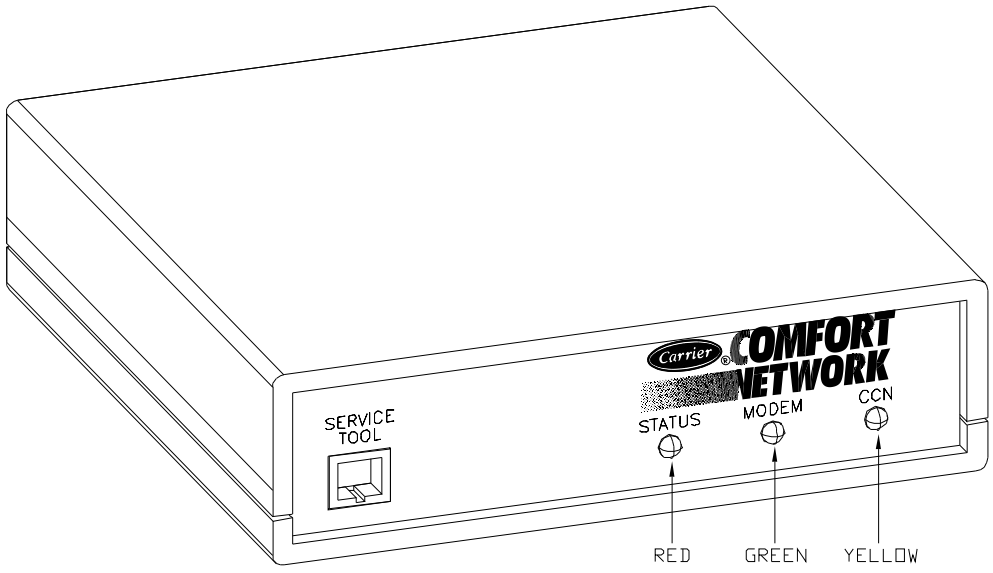
A TeLINK's address on its CCN Communication Bus must have a system element number within the range of 1 to 63. This limitation is imposed by its operating software. The TeLINK's default address is Bus # 0, Element # 50.

LED Indicators

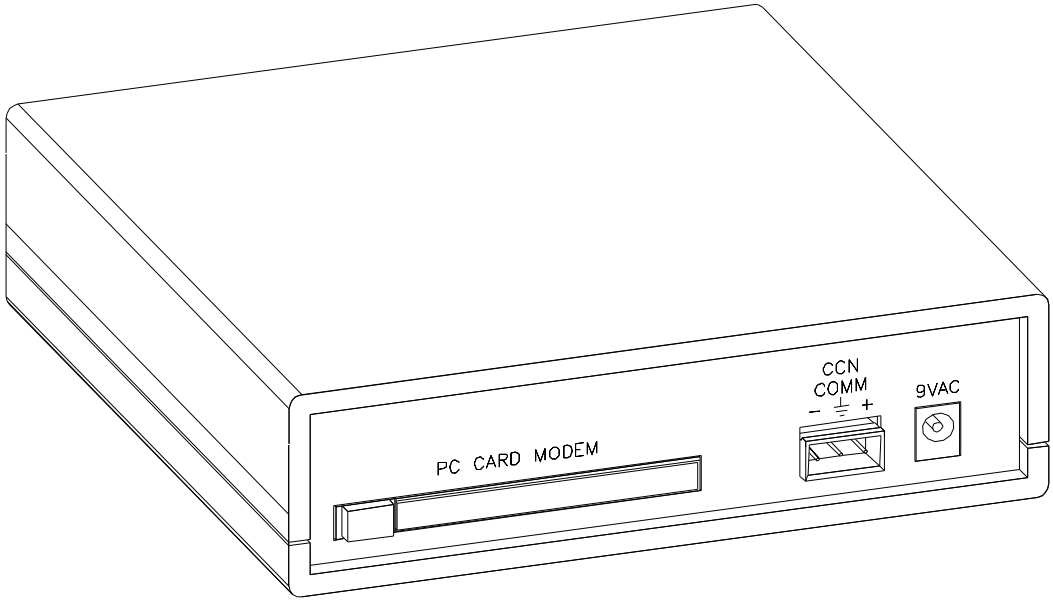
There are three LEDs on the front of the control module that indicate system status. They are described in the following table.

LED	Indicates
Red	Control module status
Green	Modem status
Yellow	Data transmission status

Figure 2
TeLINK (front and back views)



Front



Back

LED functions are described in the table below.

LED	State	Status
Red	blinking	control module functioning properly
	on/off	control module not functioning properly
Green	off	modem not installed
	on	modem installed, configured, on-hook
	blinking (on 1 sec., off 1 sec.)	attempting to connect
	blinking (on 1 sec., off 3 sec.)	connected
	blinking (rapidly)	on whenever transmitting data
Yellow	off	no activity on CCN
	blinking (rapidly)	activity on CCN

Connectors

The TeLINK module features a Network Service Tool connector on the front, and CCN bus, power, and modem connectors on the back. They are described in the table below.

Connector	Type
Service Tool	RJ-11 modular phone jack
Power	0.1 inch (2.5 mm) miniature power jack
CCN Bus	three pin, screw terminal
Modem	PCMCIA Type II

Pin assignments for the Service Tool and the CCN Communication Bus connectors are described below.

Connector	Signal	Pin
Service Tool	Unused	1
	Data (+)	2
	Signal ground	3
	Unused	4
	Data (-)	5
	Unused	6
CCN Bus	Data (+)	1
	Signal ground	2
	Data (-)	3

Modem for Use with TeLINK

TeLINK is designed to use a factory- or user-supplied PCMCIA (Type II) modem, which supports the AT command set and response codes. The default configuration is for the U.S. Robotics® 28800 modem type.

Power Supply for Use with TeLINK

TeLINK requires a factory- or user-supplied external power supply. The power supply should be rated for a minimum of 500 mA at 9 Vac (unregulated).

Note: The U.S. Robotics requirement for the 28800 modem type does not exceed 250 mA, and the module does not draw more than 250 mA from the power supply. Modem types with greater power requirements may need a larger power supply.

TeLINK Configuration Tables

The user configures TeLINK by means of the following tables:

Alarm Processing Definition Table
Controller Identification Table
Modem Configuration Table
Monitoring Center Definition Table
TeLINK Configuration Table
Occupancy Table

The user configures these tables from a ComfortWORKS, the Building Supervisor, or a Network Service Tool.

For descriptions of the decisions in each table, refer to the Configuration section. The purpose of each table is summarized on the following pages.

Alarm Processing Definition Table

The Alarm Processing Definition Table (ALARMDEF) contains decisions used to specify the following:

- Conditions that will enable alarm processing
- Whether automatic diagnostics are enabled
- Building number and customer code

The Automatic Diagnostic Self-Health Check function is triggered by the Diagnostic Alert Target Hour configuration entry. If the value entered is *0* then this function is disabled. Otherwise, the function will run automatically once a day. This function initiates an alarm call to the occupied monitoring center to enable monitoring center personnel to confirm that the remote site is active. The entry in this decision establishes a time range for this alarm to occur, which will happen at a random time up to 255 minutes before the targeted hour.

Example
If the target hour is 9:00 am, the alarm will occur each day between 4:45 am and 9:00 am.

Example
If the hour is 2:00 am, the alarm will occur each day between midnight and 2:00 am.

Controller Identification Table

Each TeLINK contains a Controller Identification Table (Ctlr-ID). This table contains user-configurable product identification information that is input when the software is loaded into memory. By changing the information that appears in this table, you can change the name, description, and location that appears for the TeLINK in the ComfortWORKS Controller List, the Building Supervisor's Carrier Controls List and in NDS Reports.

Modem Configuration Table

The Modem Configuration Table (MODEMCFG) allows custom modem string data to be entered and downloaded, thus overwriting the factory and/or default settings.

Monitoring Center Definition Table

This table (MONTRDEF) contains decisions related to alarm reporting to a monitoring site or beeper service. A TeLINK contains two types of phone numbers. The Occupied phone numbers are those that are to be dialed to transmit alarms during occupied periods (typically during the daytime). The Unoccupied phone numbers are those that are to be dialed during unoccupied periods (typically during the nighttime).

Note: State of occupancy is dictated by the Occupancy Table (OCCPC01S).

For a monitoring site, you can configure a primary phone number and a secondary or backup phone number. For a beeper service, you can configure occupied and unoccupied phone numbers, as well as message transmission delay time to compensate for variations in connect times among beeper services.

TeLINK Configuration Table

Each TeLINK contains a Configuration Table (RCSI_CFG). In this table, you configure the telephone number of the TeLINK's modem, the password, and whether NDS diagnostics is enabled.

Occupancy Table

TeLINK contains a standard CCN occupancy table (OCCPC01S) to provide you with the capability of sending alarms to two different monitoring sites, depending on the state of occupancy. OCCPC01S determines the state of occupancy when reporting alarms to a monitoring site's ComfortWORKS or Building Supervisor.

Figure 3a

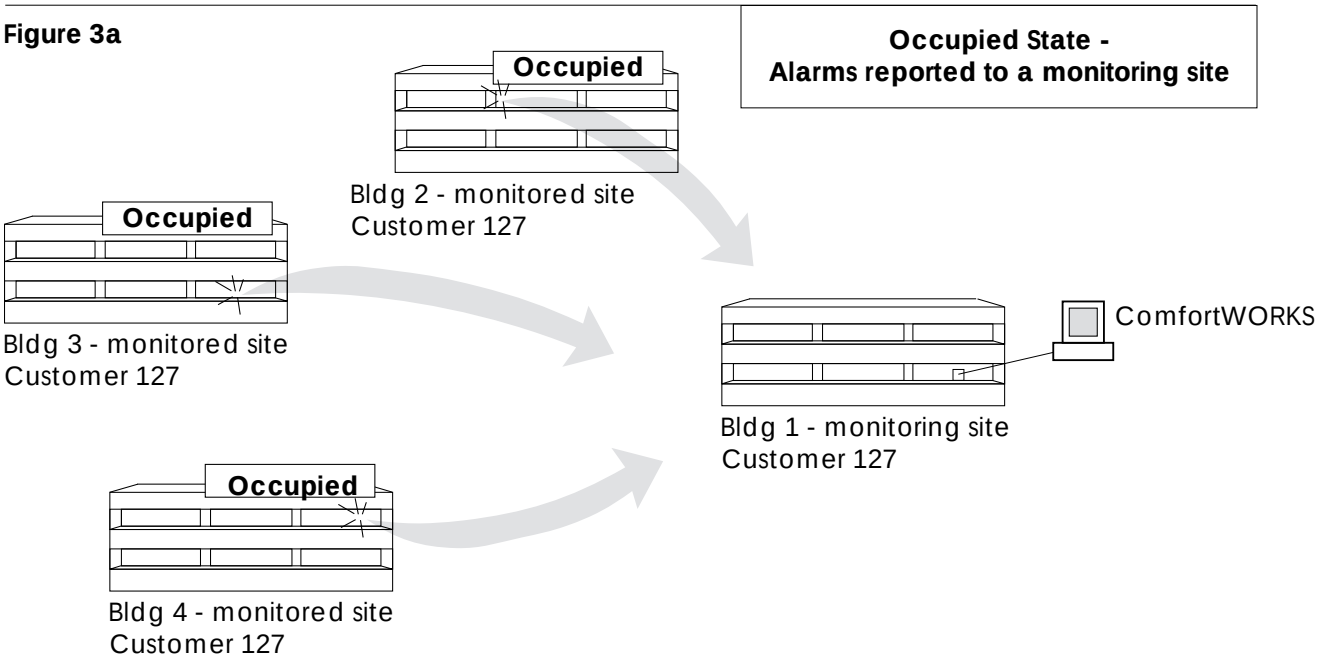
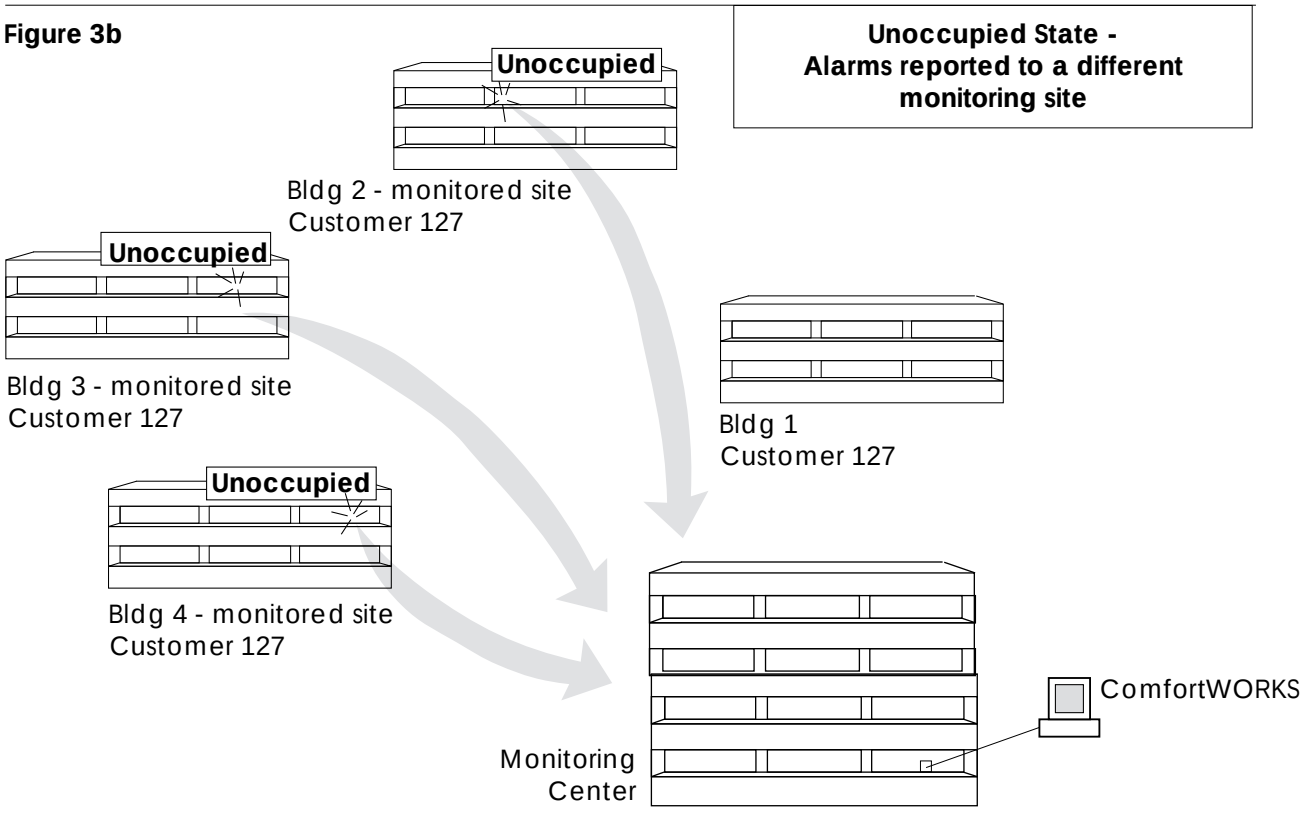


Figure 3b



The time schedule contains eight user-configurable periods that determine the current state of the occupancy table. The state can be either occupied or unoccupied. When the current time in the TeLINK falls within any of the configured periods, the state of occupancy will be occupied, otherwise the state will be unoccupied.

The Alarm Processing Definition Table allows you to decide during which state(s) of occupancy to send alarms. The Monitoring Center Definition Table allows you to configure the occupied and unoccupied telephone numbers to be used by the monitored site's TeLINK when reporting alarms to a remote monitoring site.

Figures 3a and 3b illustrate the use of time schedules for alarm reporting during occupied and unoccupied states. In the example shown, the TeLINKs in Buildings 2, 3, and 4 are configured so that during occupied states (typically during the day when the service person is on duty), alarms are transmitted to Building 1. During unoccupied states (typically during the night when the service person is off duty), the TeLINKs are configured to send alarms to a different monitoring site. The alarms' destination during unoccupied states may be another monitoring site belonging to the same customer with round-the-clock staffing, or it may be a regional monitoring center.

TeLINK Maintenance Tables

The user can display three TeLINK maintenance tables:

- The alarm maintenance (ALARMMNT) table displays data for all the alarms currently stored in the TeLINK (maximum of four).
- The monitoring center maintenance table (MONCTMNT) shows status data for the occupied and unoccupied centers.
- The TeLINK maintenance table (RCSI_MNT) displays modem, connection, and alarm data, along with time and holiday information.

All of the data in these tables is continually changing and being updated on the screen.

The user displays maintenance tables using ComfortWORKS, the Building Supervisor or a Network Service Tool. The values displayed in these tables are read-only displays of dynamic values. You cannot enter data into any maintenance fields except to force a manual diagnostic alert. For instructions on accessing these tables and for descriptions of the fields within each table, refer to the Maintenance section.

Sequence of Operation

When an alarm or alert is generated by a system element at the monitored site and the TeLINK buffer is not full, the monitored site's TeLINK will perform a sequence of operations.

How the Monitored Site Transmits Alarm(s)/ Alert(s) to the Monitoring Site

Refer to the Monitoring Center Definition (MONTRDEF) Table and to the flowchart in Appendix A.

The TeLINK distinguishes between alarm messages and alert messages that originate on its CCN.

Alarm

1. When an alarm is identified, the TeLINK determines the occupancy state and whether the beeper feature is enabled. If so, and the alarm priority level is equal to or greater than the beeper threshold, the TeLINK dials the configured beeper number.

2. If the TeLINK is configured to report alarms to a monitoring center, the alarm is added to the buffer. The alarm priority level is compared to the Alarm Threshold decision and the TeLINK attempts to transmit the alarm using the primary number.

   If the alarm priority level is lower than the alarm threshold, it is treated as an alert, which is described on the next page.

3. If the connection to the monitoring site is unsuccessful, the TeLINK dials the secondary number (if one is configured). This process continues until a successful connection is made.

   Note: The state of occupancy is checked each time an attempt is made to dial a different phone number.

Dialing a Beeper Service

TeLINK can be configured to respond to alarms by automatically dialing a beeper service. TeLINK can then transmit its telephone number to the beeper service for relay to a beeper-equipped service person. One reason to enable the beeper feature is to make a service person who is away from a ComfortWORKS or Building Supervisor aware of an alarm. You can also specify one beeper service telephone number to be dialed during certain times of day (occupied), and another number to be dialed during other times (unoccupied).

TeLINK makes one attempt to dial the beeper service. If the connection is successful, TeLINK transmits its phone number to the beeper service, waits, and then hangs up. If configured to send alarms off-network, TeLINK then proceeds with the process of transmitting the alarm to the monitoring site.

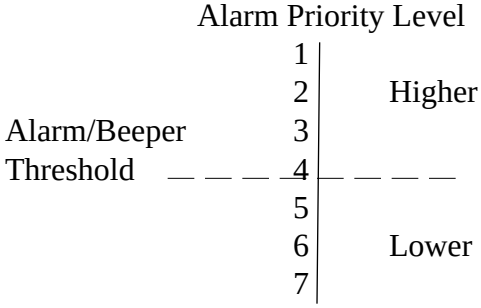
Beeper Threshold

Only alarms with a priority level equal to or higher than the beeper threshold will be reported to the beeper service.

Alarm Threshold

Only alarms with a priority level equal to or higher than the alarm threshold will be immediately transmitted to the network.

Example:



Alert

When an alert is received:

1. The monitored site's TeLINK bypasses the procedure for dialing a beeper service and determines whether it is configured to transmit to a monitoring center, based on occupancy. If so, it adds the alert to the buffer.

2. The alert is transmitted to the monitoring center when the buffer is full. If the buffer is not full, then no transmission occurs.

How the Monitoring Site Transmits Alarm(s)/ Alert(s) on Its Own Network

When the monitoring site's TeLINK receives alarm(s)/alert(s) from a monitored site, it sends a message to the monitored site acknowledging the alarm or alert. It then transmits the alarms/alerts on its CCN Communication Bus to the ComfortWORKS or Building Supervisor. Alarms from a monitored site are identified at the monitoring site's ComfortWORKS or Building Supervisor by a Customer Code and Building Number, if applicable.

Configuration

Configuration

TeLINK operation is controlled by decisions entered in a group of configuration tables. Each TeLINK contains the following configuration tables:

ALARMDEF	Alarm Processing Definition Table
Ctlr-ID	Controller Identification Table
MODEMCFG	Modem Configuration Table
MONTRDEF	Monitoring Center Definition Table
RCSI_CFG	TeLINK Configuration Table
OCCPC01S	Occupancy Configuration Table

Alarm Processing Definition (ALARMDEF) Table

Figure 4 illustrates this table. An explanation of each configuration decision follows.

Figure 4 Alarm Processing Definition (ALARMDEF) Table

ALARMDEF

Alarm Services

Description	Value	Units	Name	Notes
Alarm Services				
Holiday Alarm Reporting	Yes		HOL_ALMS	
Alarm When Occupied?	No		SEND_OCC	
Alarm When Unoccupied?	No		SENDUNOC	
Alarm Threshold	7		ALMTHRSH	
Beeper When Ocucpied?	No		SEND_OCC	
Beeper When Unoccupied?	No		SENDUNOC	
Beeper Threshold	7		ALMTHRSH	
Alarm Acknowledger?	Yes		ALARMACK	
Diag. Alert Target Hour	0		ALRTHOUR	
Building Number	1		BLDG_NUM	
Customer Code	1		CUSTCODE	

Holiday Alarm Reporting

This decision allows you to control whether alarms are processed on days configured as holiday in the time schedule.

Allowable Entries Yes/No

Default Value Yes

Alarm When Occupied?, Alarm When Unoccupied?

These two decisions are used to specify whether this TeLINK transmits alarms to a monitoring site, depending on the occupancy state. The keyboard spacebar is used to toggle between the two allowable entries.

Allowable Entries Yes/No

Default Value No

Alarm Threshold, Beeper Threshold

This decision determines which alarms are reported immediately and which are buffered for later transmission based on their priority level.

If the priority level of the alarm is higher than or equal to the configured alarm or beeper threshold, then the alarm is processed immediately. Otherwise, it is buffered with the alerts. Alerts are not affected by this decision.

Note: For additional information, refer to the Alarm Threshold example that appears under Sequence of Operation in this manual's Operating Characteristics chapter.

Allowable Entries 0 to 7 (priority numbers)

Default Value 7

Beeper When Occupied?, Beeper When Unoccupied?

These two decisions are used to specify whether this TeLINK transmits alarms to a beeper service site, depending on the occupancy state. The keyboard spacebar is used to toggle between the two allowable entries.

Allowable Entries Yes/No

Default Value No

Alarm Acknowledger?

This decision is used to specify whether this TeLINK acts as the alarm acknowledger for its CCN. There can be only one alarm acknowledger per CCN.

Alarm acknowledging and alarm transmitting are two independent functions. Therefore, this decision can be set to *Yes* and Alarm When Occupied?/Alarm When Unoccupied? or Beeper When Occupied?/Beeper When Unoccupied? can be set to *No*.

Note: Alarm acknowledgement will be halted if the alarm buffer is full and either the Alarm When Occupied? or Alarm When Unoccupied? decision is set to *Yes*.

Allowable Entries Yes/No

Default Value Yes

Diag. Alert Target Hour

This decision indicates how many hours after midnight the TeLINK has to perform its automatic self-health check. This function will be scheduled at random up to 255 minutes before the hour specified in this decision.

Note: Entering *0* disables this function.

Allowable Entries 0-24

Default Value 0

Building Number

This decision is used to specify the first identification number for the CCN system that contains this TeLINK. This number is included as part of the alarm message when the TeLINK transmits alarms to a monitoring site's ComfortWORKS or Building Supervisor. The building number decision is used to identify the origin of an alarm for networks that have multiple buildings reporting alarms to a monitoring site.

This decision should match entries in the monitoring site's ComfortWORKS or Building Supervisor.

Allowable Entries 0-255 (building ID numbers)

Default Value 1

Customer Code

This decision is used to specify the second of two identification numbers used to identify the CCN that contains this TeLINK. This number is included as part of the alarm message for the purpose of identifying the alarm origin when the monitored site's TeLINK transmits alarms to a monitoring site's ComfortWORKS or Building Supervisor.

This decision should match the identification number in the monitoring site's ComfortWORKS or Building Supervisor.

Allowable Entries 0-65535 (customer code numbers)

Default Value 1

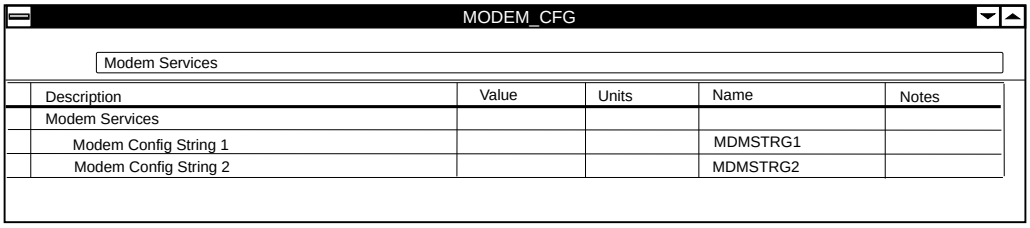
Controller Identification (Ctlr-ID) Table

In TeLINK there is one Controller Identification Table. It contains product identification information that is input when the module is assembled. By changing some of the information that appears in this table, you can change the name, description, and location that appears for a TeLINK in the ComfortWORKS Controller List or the Building Supervisor's Carrier Controls list, and in NDS Reports.

Modem Configuration (MODEMCFG) Table

Figure 5 illustrates a Modem Configuration Table. The table consists of two decisions for configuring modem command strings.

Figure 5 Modem Configuration (MODEMCFG) Table



Modem Config String (1-2)

These two strings are used to define the custom configuration of the modem. For a list of your modem's configuration commands, refer to the modem user's guide.

Note: If you enter command strings in these decisions and download, the modem will use these new command strings instead of the default command strings.

Allowable Entries 1-24 characters (per string)

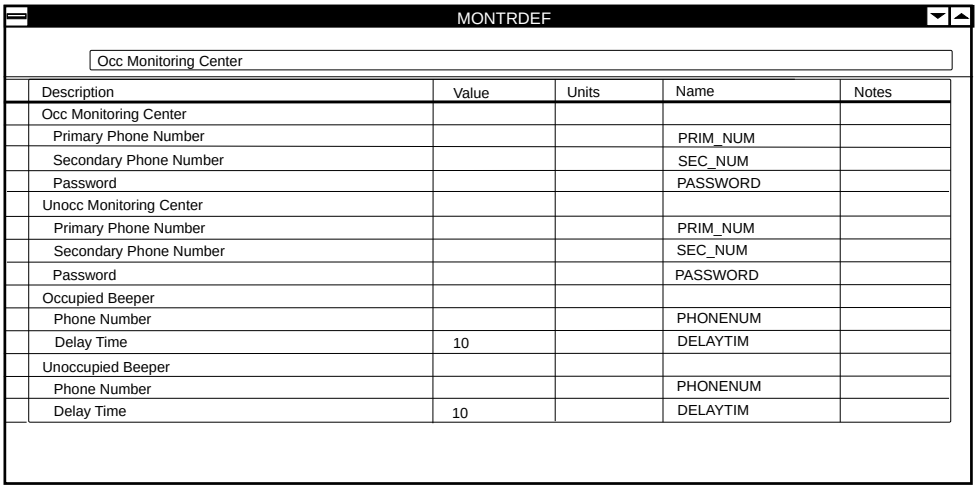
Default Value blank

Monitoring Center Definition (MONTRDEF) Table

Figure 6 below illustrates the Monitoring Center Definition Table. An explanation of each configuration decision in the table follows.

There are two types of phone number decisions. The Occupied Monitoring Center and Beeper decisions are used when dialing for alarm/alert transmission during occupied states. The Unoccupied Monitoring Center and Beeper decisions are used when dialing for alarm/alert transmission during unoccupied states.

Figure 6 Monitoring Center Definition (MONTRDEF) Table



Description	Value	Units	Name	Notes
Occ Monitoring Center				
Primary Phone Number			PRIM_NUM	
Secondary Phone Number			SEC_NUM	
Password			PASSWORD	
Unocc Monitoring Center				
Primary Phone Number			PRIM_NUM	
Secondary Phone Number			SEC_NUM	
Password			PASSWORD	
Occupied Beeper				
Phone Number			PHONENUM	
Delay Time	10		DELAYTIM	
Unoccupied Beeper				
Phone Number			PHONENUM	
Delay Time	10		DELAYTIM	

Occ Monitoring Center/Unocc Monitoring Center, Primary Phone Number

These decisions are used to specify the primary telephone numbers that are dialed when sending alarms to a monitoring site during an occupied or unoccupied state. All digits to be dialed must be specified.

For a listing of the valid characters, refer to your modem user's guide.

Allowable Entries 1-24 characters

Default Value blank

Occ Monitoring Center/Unocc Monitoring Center, Secondary Phone Number

These decisions are used to specify the secondary telephone numbers that are dialed when sending alarms to a monitoring site during an occupied or unoccupied state. All digits to be dialed must be specified.

For a listing of the valid characters, refer to your modem user's guide.

Allowable Entries 1-24 characters

Default Value blank

Occ Monitoring Center/Unocc Monitoring Center, Password

These decisions are used to enter the standard password that will be used to gain access to the monitoring site during an occupied or unoccupied state. The passwords entered in these decisions must be the same as the passwords configured in the monitoring site's TeLINK.

Allowable Entries 1-8 alphanumeric characters

Default Value blank

Occ Beeper/Unocc Beeper, Phone Number

These decisions are used to specify the telephone numbers that are dialed when sending alarms to a beeper service during an occupied or unoccupied state. All digits to be dialed must be specified.

Allowable Entries 1-24 characters

Default Value blank

Occ Beeper/Unocc Beeper Delay Time

These decisions specify the time between establishment of a connection to the beeper service and transmission of the TeLINK phone number. This time is initiated after the dial command is issued, compensating for variations in connect times among beeper services.

Allowable Entries 0-60 seconds

Default Value 10 seconds

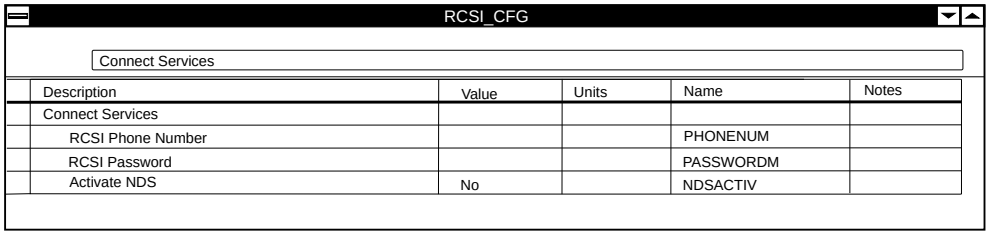
TeLINK Configuration (RCSI_CFG) Table

The TeLINK Configuration Table includes decisions that specify the phone number and password for a TeLINK. It also includes a decision that activates the TeLINK's Network Directory Services (NDS) routine.

The NDS has two main functions. First, it maintains a directory that lists system elements found (up to a maximum of 32), other than ComfortWORKS, Network Service Tool or Building Supervisor, connected to one CCN bus and any options installed in those system elements. Second, an NDS performs diagnostic polling operations that check whether the system elements in its directory are functioning and able to communicate on the CCN bus.

Figure 7 illustrates this table. An explanation of each configuration decision follows.

Figure 7
TeLINK Configuration (RCSI_CFG) Table



RCSI Phone Number

This decision is used to specify the phone number of this TeLINK.

Allowable Entries 1-16 alphanumeric characters

Default Value blank

RCSI Password

This decision is used to specify a password that must be transmitted to TeLINK in order to gain access to its CCN. If no password is entered in this decision, the default password, CARRIER, will be transmitted.

The monitored site's TeLINK completes the connection between the two CCNs in response to this password.

Allowable Entries 1-8 alphanumeric characters

Default Value blank

Activate NDS

This decision is used to enable or disable the operation of the NDS software. There should be only one active NDS on each CCN Communication Bus. In that NDS, this decision must be set to *Yes*. In any other NDS that may be present on the same bus, this decision must be set to *No*.

Allowable Entries Yes/No

Default Value No

Occupancy Configuration (OCCPC01S) Table

Figure 8 below illustrates the Occupancy Configuration Table. An explanation of the configuration decisions in the table follows.

Each time schedule consists of eight periods. You can configure each period's time span and day(s) of the week when the occupancy state will be in effect. Occupancy recognizes seven days of the week: Monday through Sunday, plus Holiday.

On any day that the CCN's Broadcast function transmits a holiday flag, occupancy will follow the time schedule configured for holidays instead of the one configured for the day of the week.

Figure 8 Occupancy Configuration (OCCPC01S) Table

OCCPC01S

Timed Override Hours

Description	Value	Units	Name	Notes
Timed override hours	0		OVR-EXT	
Period 1 DOW (MTWTFSSH)	11111111		DOW1	
Occupied from	00:00		OCCTOD1	
Occupied to	24:00		UNOCCTOD1	
Period 2 DOW (MTWTFSSH)	00000000		DOW2	
Occupied from	00:00		OCCTOD2	
Occupied to	24:00		UNOCCTOD2	
Period 3 DOW (MTWTFSSH)	00000000		DOW3	
Occupied from	00:00		OCCTOD3	
Occupied to	24:00		UNOCCTOD3	
Period 4 DOW (MTWTFSSH)	00000000		DOW4	
Occupied from	00:00		OCCTOD4	
Occupied to	24:00		UNOCCTOD4	
Period 5 DOW (MTWTFSSH)	00000000		DOW5	
Occupied from	00:00		OCCTOD5	
Occupied to	24:00		UNOCCTOD5	
Period 6 DOW (MTWTFSSH)	00000000		DOW6	
Occupied from	00:00		OCCTOD6	
Occupied to	24:00		UNOCCTOD6	
Period 7 DOW (MTWTFSSH)	00000000		DOW7	
Occupied from	00:00		OCCTOD7	
Occupied to	24:00		UNOCCTOD7	
Period 8 DOW (MTWTFSSH)	00000000		DOW8	
Occupied from	00:00		OCCTOD8	
Occupied to	24:00		UNOCCTOD8	

Period 1 - 8 Day Flags (MTWTFSSH)

This decision is used to specify the day(s) that the period's Occupied From and Occupied To values are in effect. From left to right, the first seven positions of the decision's data entry field represent Monday through Sunday. The eighth position represents Holiday. Each position of the data entry field can be set to *1* or *0*. A *1* specifies that the period is in effect on the day that corresponds to that position; a *0* specifies that it is not in effect on that day. A period may be specified to be in effect on more than one day-of-week.

The operator can use the keyboard left and right arrow keys to move among the eight positions of the data entry field. Only the values *1* or *0* should be typed in at each position.

Allowable Entries
0 = period not in effect on corresponding day
1 = period in effect on corresponding day

Default Value
1 = for all Period 1,
0 = for other periods

Occupied From

This decision is used to specify the hour and minute, in military time, that the occupied state begins.

Allowable Entries
00:00 through 24:00
(hour, minute of day)

Default Value
00:00

Occupied To

This decision is used to specify the hour and minute, in military time, that the occupied state ends.

Allowable Entries
00:00 through 24:00
(hour, minute of day)

Default Value
24:00

Note: To specify a 24-hour occupied state, enter *00:00* in the Occupied From decision and *24:00* in the Occupied To decision. To specify a 24-hour unoccupied state, enter *00:00* in both decisions.

Maintenance

Maintenance

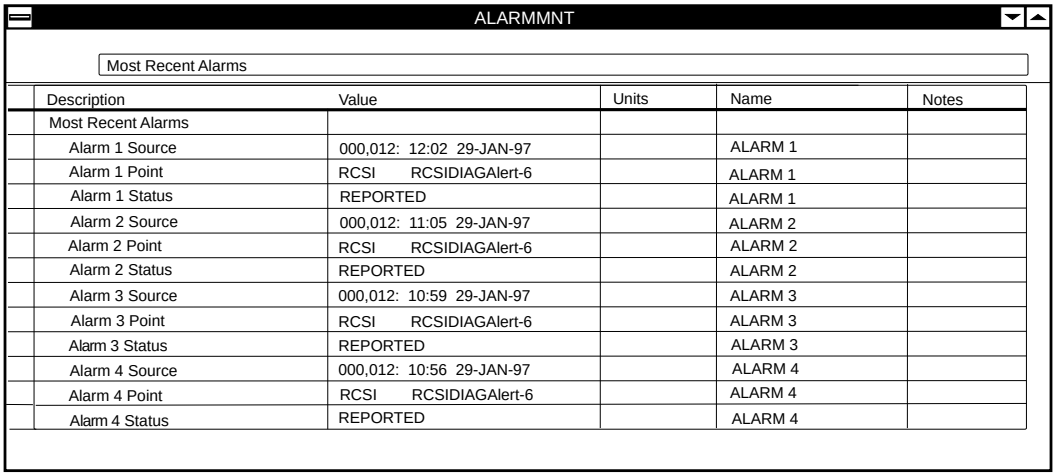
Each TeLINK contains the following maintenance tables:

ALARMMNT	Alarm Maintenance Table
MONCTMNT	Monitoring Center Maintenance Table
RCSI_MNT	TeLINK Maintenance Table

Alarm Maintenance (ALARMMNT) Table

Figure 9 illustrates the Alarm Maintenance Table. This table displays the data for all of the alarms currently stored in the TeLINK. The maintenance values displayed in this table are read-only updated values. An explanation of each value in the table follows.

Figure 9 Alarm Maintenance (ALARMMNT) Table



Description	Value	Units	Name	Notes
Most Recent Alarms				
Alarm 1 Source	000,012: 12:02 29-JAN-97		ALARM 1	
Alarm 1 Point	RCSI RCSIDIAGAlert-6		ALARM 1	
Alarm 1 Status	REPORTED		ALARM 1	
Alarm 2 Source	000,012: 11:05 29-JAN-97		ALARM 2	
Alarm 2 Point	RCSI RCSIDIAGAlert-6		ALARM 2	
Alarm 2 Status	REPORTED		ALARM 2	
Alarm 3 Source	000,012: 10:59 29-JAN-97		ALARM 3	
Alarm 3 Point	RCSI RCSIDIAGAlert-6		ALARM 3	
Alarm 3 Status	REPORTED		ALARM 3	
Alarm 4 Source	000,012: 10:56 29-JAN-97		ALARM 4	
Alarm 4 Point	RCSI RCSIDIAGAlert-6		ALARM 4	
Alarm 4 Status	REPORTED		ALARM 4	

Alarm *x* Source

This value contains the address of the alarming device and the time and date that the alarm was reported.

Valid Display Address: Time, Date

Alarm *x* Point

This value displays the 8-character name of the point, the Alarm or Alert indication and the level number.

Valid Display Name, Alarm/Alert, Priority level

Alarm *x* Status

This value displays REPORTED if the alarm was successfully transmitted through the network, or PENDING if the alarm has yet to be successfully sent.

Valid Display REPORTED/PENDING

Monitoring Center Maintenance (MONCTMNT) Table

Figure 10 illustrates the Monitoring Center Maintenance Table. This table displays the status data for the occupied and unoccupied centers. The maintenance values displayed in this table are read-only updated values. An explanation of each value in the table follows.

Figure 10 Monitoring Center Maintenance (MONCTMNT) Table

MONCTMNT

Occ Monitoring Center

Description	Value	Units	Name	Notes
Occ Monitoring Center				
Primary Enabled	No		PRIMENAB	
Secondary Enabled	No		SECENAB	
Primary Delay Time	0		PRIMDLAY	
Secondary Delay Time	0		SECDLAY	
Pct of Successful Calls	0		PCT_SUCC	
Unocc Monitoring Center				
Primary Enabled	No		PRIMENAB	
Secondary Enabled	No		SECENAB	
Primary Delay Time	0		PRIMDLAY	
Secondary Delay Time	0		SECDLAY	
Pct of Successful Calls	0		PCT_SUCC	

Primary Enabled

This value will indicate whether this monitoring center's primary phone number is presently enabled for use in data transmission to and from the monitoring center.

Valid Display Yes/No

Secondary Enabled

This value will indicate whether this monitoring center's secondary phone number is presently enabled for use in data transmission to and from the monitoring center.

Valid Display Yes/No

Primary Delay Time

This value indicates how long (in seconds) it will be before this monitoring center's primary phone number is re-enabled to accept phone processing. A value of 0 indicates that the number is presently enabled for use.

Valid Display 0-9999 seconds

Secondary Delay Time

This value indicates how long (in seconds) it will be before this monitoring center's secondary phone number is re-enabled to accept phone processing. A value of 0 indicates that the number is presently enabled for use.

Valid Display 0-9999 seconds

Pct of Successful Calls

This value shows what percentage of attempted phone calls to this monitoring center have been successfully processed.

Valid Display 0-100 percent

TeLINK Maintenance (RCSI_MNT) Table

Figure 11 illustrates a TeLINK Maintenance Table. This table displays information regarding the status of the TeLINK. With the exception of the first entry, the maintenance values displayed in this table are read-only displays of updated values. An explanation of each TeLINK maintenance value follows.

Figure 11 TeLINK Maintenance (RCSI_MNT) Table

RCSI_MNT

Cause Diagnostic Alert

Description	Value	Units	Name	Notes
Cause Diagnostic Alert	0		SELFHLTH	
RCSI Connection Status	Idle		DEV_STAT	
Modem Services				
Modem Status	Ready		MODMSTAT	
Modem Description	Megahertz XJ1288/CC1288		MODMSESC	
Alarm Services			PRIM_NUM	
Last Alarm Call Result	Alm-ack		ALM_RSLT	
Number of Alarms Sent	0		ALM_SENT	
Alarm Buffer Full?	No		ALM_FULL	
Alarm Report Pending?	No		ALM_PEND	
Clock Initialized?	No		CLK_INIT	
Time Schedule				
Occupied	No		OCCUPIED	
Holiday Today	No		HOLIDAY	

Cause Diagnostic Alert

Use this field to initiate the self-health check function. When the diagnostic check is complete, it is reset to 0.

Allowable Entries Occupied state: force this value to *1*. Unoccupied state: force this value to *2*.

Default 0

Connection Status

This field displays the current status of TeLINK phone network processing. One of the following messages will appear in this field:

Message	Current Status of Phone Network
Idle	No activity.
Calling	Attempting to connect to an enabled beeper service or a monitoring center.
Incoming	Received a call and made a connection to a monitored site.
Outgoing	Connected to a remote network.
Connectd	Connected to a beeper service.

Valid Display 1 to 8 characters (See table above.)

Modem Status

A 16-character field indicating the status of the modem.

Valid Display 1 to 16 characters

Modem Description

A 24-character field displaying the type of installed modem.

Valid Display 1 to 24 characters

Last Alarm Call Result

This field describes the result of the last outgoing alarm report or user-initiated diagnostic alert.

Message	Result of Last Alarm or Diagnostic Alert
Alm Ack	Alarm or alert was transmitted to the site and acknowledged.
Success	Beeper call was sent successfully.
Failure	A failure status was received.
Disabled	Alarm processing is disabled.
Bad PW	Invalid password status returned from the monitoring center.
Busy	Monitoring center is busy.
No Ack	TeLINK received no acknowledgment.
Buf Full	Alarm buffer is full.

Valid Display 1 to 8 characters (See table above.)

Number of Alarms Sent

This field contains the number of alarms or alerts that have been transmitted to the monitoring center or beeper service successfully, determined by the receipt of an acknowledgment.

Valid Display 0-65535

Alarm Buffer Full?

This field indicates that the alarm buffer is currently full of alarms or alerts (contains 4), and TeLINK is in the process of trying to report them.

Note: A full alarm buffer will also affect alarm acknowledgement. Refer to the explanation of the Alarm Acknowledger decision in this manual's Configuration chapter.

Valid Display Yes/No

Alarm Report Pending? This field indicates whether there is a pending alarm or alert in the process of being transmitted to the monitoring center or beeper service.

Display Units Yes/No

Clock Initialized? This field indicates whether the timed broadcast has updated the TeLINK time and date.

Display Units Yes/No

Occupied *Yes* is displayed here if the time schedule is in an occupied mode (state). It displays *No* if the time schedule is in an unoccupied state.

Display Units Yes/No

Holiday Today *Yes* is displayed here if a holiday time schedule is in effect. Otherwise, it displays *No*.

Display Units Yes/No

Configuration Sheets

Carrier COMFORT NETWORK

Controller Name:_____ Bus #_____ Element #_____

Table Description:_____ Table Name: ALARMDEF

ALARM PROCESSING DEFINITION TABLE CONFIGURATION SHEET			
Description	*Limits*	*Units*	*Value*
Alarm Services			
Holiday Alarm Reporting	**Yes/No**		
Alarm When Occupied?	**Yes/No**		
Alarm When Unoccupied?	**Yes/No**		
Alarm Threshold	**0-7**		
Beeper When Occupied?	**Yes/No**		
Beeper When Unoccupied?	**Yes/No**		
Beeper Threshold	**0-7**		
Alarm Acknowledger?	**Yes/No**		
Diag. Alert Target Hour	**0-24**		
Building Number	**0-255**		
Customer Code	**0-65535**		

Carrier COMFORT NETWORK

Controller Name:_____ Bus #_____ Element #_____

Table Description:_____ Table Name: MODEMCFG

MODEM TABLE CONFIGURATION SHEET			
Description	*Limits*	*Units*	*Value*
Modem Services			
Modem Config String 1	**24 characters**	**Text**	
Modem Config String 2	**24 characters**	**Text**	

Carrier COMFORT NETWORK

Controller Name:_____ Bus #_____ Element #_____

Table Description:_____ Table Name: MONTRDEF

MONITORING CENTER DEFINITION TABLE CONFIGURATION SHEET			
Description	*Limits*	*Units*	*Value*
Occ Monitoring Center			
Primary Phone Number	**24 characters**	**Text**	
Secondary Phone Number	**24 characters**	**Text**	
Password	**8 characters**	**Text**	
Unocc Monitoring Center			
Primary Phone Number	**24 characters**	**Text**	
Secondary Phone Number	**24 characters**	**Text**	
Password	**8 characters**	**Text**	
Occupied Beeper			
Phone Number	**24 characters**	**Text**	
Delay Time	**0-60**	**Seconds**	
Unoccupied Beeper			
Phone Number	**24 characters**	**Text**	
Delay Time	**0-60**	**Seconds**	

Carrier COMFORT NETWORK

Controller Name:_____ Bus #_____ Element #_____

Table Description:_____ Table Name: OCCPC01S

OCCUPANCY CONFIGURATION TABLE CONFIGURATION SHEET			
Description	Limits	Units	Value
Timed Override Hours	0		
Period 1 DOW (MTWTFSSH)	11111111		
Occupied from	00:00		
Occupied to	24:00		
Period 2 DOW (MTWTFSSH)	00000000		
Occupied from	00:00		
Occupied to	24:00		
Period 3 DOW (MTWTFSSH)	00000000		
Occupied from	00:00		
Occupied to	24:00		
Period 4 DOW (MTWTFSSH)	00000000		
Occupied from	00:00		
Occupied to	24:00		
Period 5 DOW (MTWTFSSH)	00000000		
Occupied from	00:00		
Occupied to	24:00		
Period 6 DOW MTWTFSSH)	00000000		
Occupied from	00:00		
Occupied to	24:00		
Period 7 DOW (MTWTFSSH)	00000000		
Occupied from	00:00		
Occupied to	24:00		
Period 8 DOW (MTWTFSSH)	00000000		
Occupied from	00:00		
Occupied to	24:00		

Carrier COMFORT NETWORK

Controller Name:_____ Bus #_____ Element #_____

Table Description:_____ Table Name: RCSI_CFG

TeLINK CONFIGURATION TABLE CONFIGURATION SHEET			
Description	*Limits*	*Units*	*Value*
Connect Services			
RCSI Phone Number	**16 characters**	**Text**	
RCSI Password	**8 characters**	**Text**	
Activate NDS	**Yes/No**		

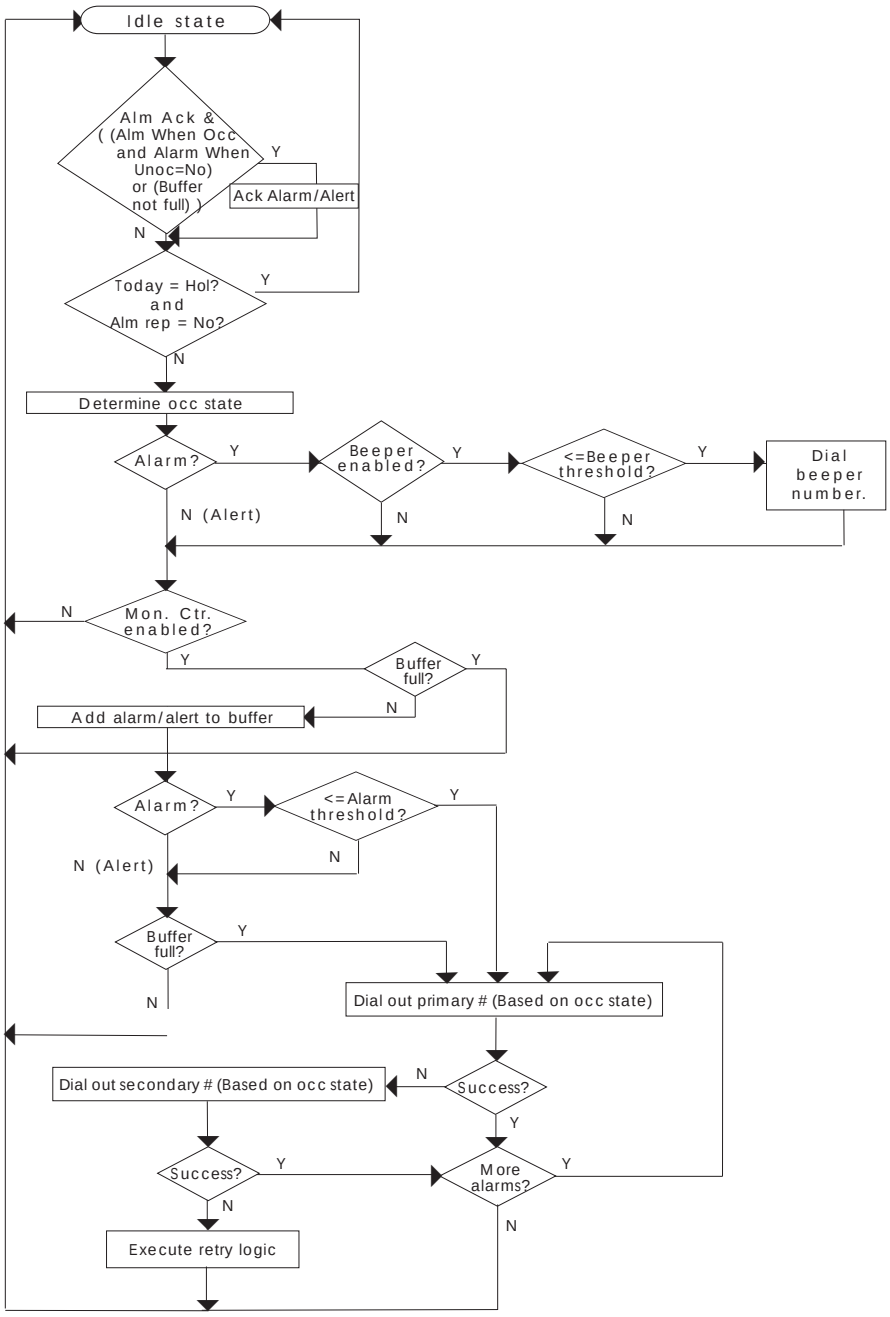
Appendixes

Appendix A

Handling of Outgoing Alarms from Local Network

Figure 12
Alarm Handling at a Monitored Site

The following flowchart depicts how a monitored site's TeLINK handles alarms.



Appendix B

ComfortWORKS or Building Supervisor-Initiated Calls

The following flowchart depicts how a monitoring site's ComfortWORKS or Building Supervisor initiates a call to a monitored site.

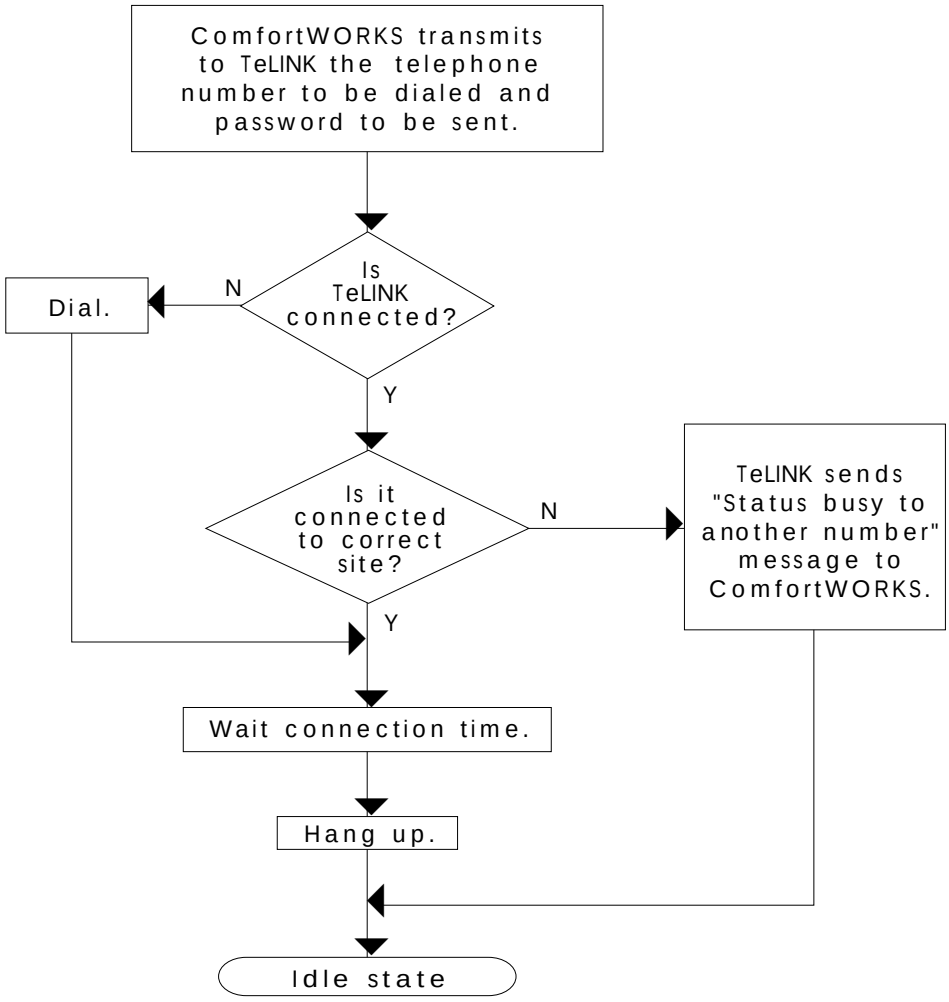


Figure 13
ComfortWORKS or Building Supervisor-Initiated Calls to a Monitored Site

Appendix C

Table Configuration for Transmitting Alarms

These tables indicate the values that must be configured to enable the monitored site's TeLINK to transmit alarms.

Alarm Processing Table

Decision Name	Entry at Monitored Site's TeLINK
Alarm When Occupied/Unoccupied?	Specifies when TeLINK transmits alarms to a monitoring site
Alarm Threshold	Highest practical level
Alarm Acknowledger?	*Yes* if there is no ComfortWORKS or Building Supervisor on the monitored sites's CCN
Building Number	Identification number (0-255) assigned to the TeLINK's CCN
Customer Code	Identification number (0-65535) assigned to the TeLINK's CCN

Monitoring Center Definition

Decision Name	Entry at Monitored Site's TeLINK
Primary Phone Number (Occ/Unocc)	Telephone number of the modem at the monitoring site
Secondary Phone Number (Occ/Unocc)	Telephone number of the backup modem for the monitoring site
Password (Occ/Unocc)	Password of up to eight characters that matches the password configured in a TeLINK Configuration Table at the monitoring site

TeLINK Configuration Table

Decision Name	Entry at Monitored Site's TeLINK
RCSI Phone Number	Phone number of up to 16 characters
RCSI Password	Password of up to eight characters that matches the password configured in a TeLINK Configuration Table at the monitoring site

Occupancy (OCCPC01S) Configuration Table

Decision Name	Entry at Monitored Site's TeLINK
Period 1-8 Day Flags (MTWTFSSH)	Each occupancy period of the day of the week and holiday can be set to *1* (in effect) or *0* (not in effect)
Occupied From	The hour and minute (0000-2400) the occupied state begins
Occupied To	The hour and minute (0000-2400) the occupied state ends

Appendix D

Table Configuration for Receiving Alarms

These tables indicate the values that must be configured for a monitoring site's TeLINK to enable it to receive alarms.

Alarm Processing Table

Decision Name	Entry at Monitoring Site's TeLINK
Building Number	Identification number (0-255) assigned to the TeLINK's CCN
Customer Code	Identification number (0-65535) assigned to the TeLINK's CCN

Monitoring Center Definition Table

Decision Name	Entry at Monitoring Site's TeLINK
None needed	

TeLINK Configuration Table

Decision Name	Entry at Monitoring Site's TeLINK
RCSI Phone Number	Phone number of up to 16 characters
RCSI Password	Password of up to eight characters that matches the password configured in a TeLINK Configuration Table at the monitored site

Appendix E

TeLINK-Generated Alarms and Alerts

This table explains the TeLINK-generated alarm and alert messages.

Alarm/Alert Message Displayed	Reason for Message
Inactivity Timeout	Thirty minutes of inactivity has elapsed. The monitored site's TeLINK sends this alert message to its CCN to indicate that it has disconnected from the monitoring site.
Unexpected hang up	The monitored site's TeLINK had to disconnect from the monitoring site in order to report an alarm or alert to another monitoring site. The monitored site's TeLINK sends this alert to its own CCN to indicate that it has disconnected from the monitoring site in order to send an alarm on its CCN.
NDS alarm	One of the CCN elements previously detected by an NDS poll is no longer responding/communicating.

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