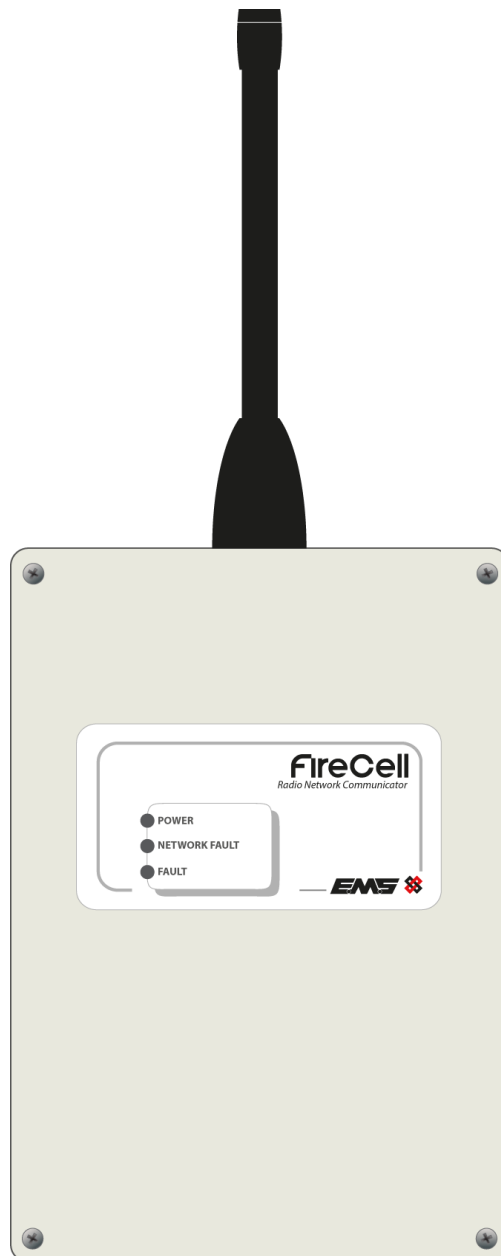




FireCell



RADIO NETWORK COMMUNICATOR PROGRAMMING MANUAL

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1.0 INTRODUCTION

This document explains the Radio Network Communicator Menus and Basic Operation. This document also details steps with screen shots on how the system is programmed. A Radio Network will be supplied un-programmed unless otherwise specified.

2.0 MENU STRUCTURE SCREEN SHOTS AND EXPLANATIONS

2.1 Front Screen Overview

The Radio Network Communicator will show 1 of 5 front screens once powered.

Screen 1

Un-programmed Node front screen:

Un-programmed

Screen 2

Programmed but un-configured Node front screen:

Not Configured

Screen 3

Programmed and configured Node 1 front screen with no faults present:

Node 01 TOT08

Programmed and configured Node 2 front screen with no faults present:

Node 02 TOT08

Screen 4

Programmed and configured Node 1 with no radio comms front screen:

Node 01 Offline

Programmed and configured Node 2 with no radio comms front screen:

Node 02 Offline

Screen 5

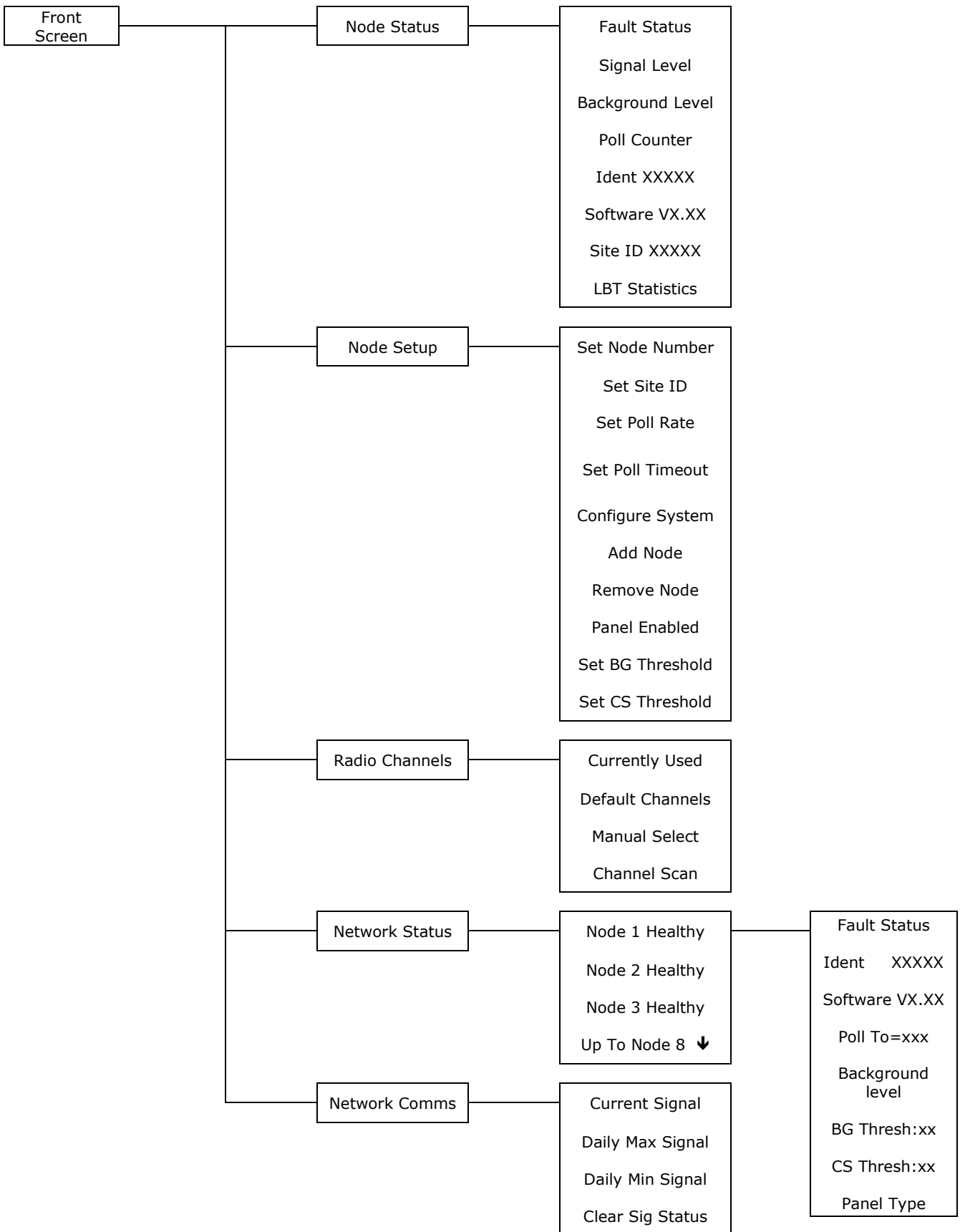
Programmed and configured Node 1 with fault condition front screen:

Node 01 Fault →

Programmed and configured Node 2 with fault condition front screen:

Node 02 Fault →

3.0 MENU OVERVIEW



4.0 NODE STATUS OVERVIEW

The Node Status Menu allows the user to view the current status of the Radio Network Communicator. Faults, Signal and Background Levels, Missed Communication Polls, Identification Number and Software Versions can all be viewed from this menu.

Node Status

The Node Status submenus are:-

1. Fault Status – Shows all Node device faults.

Fault Status

2. Signal Level – Shows the Radio Signal Levels of the best node path in dB.

Signal Level

3. Background Level – Show the Background Interference Levels in dB. Background levels vary between 0dB (most interference) and -120dB (no interference).

Background Level

4. Poll Counter – Shows how many times the Radio Network Communicator has missed Communication Polls within a time period of 24 hours.

Poll Counter

5. Ident – Shows the individual identification number of the Radio Network Communicators.

Ident XXXXX

6. Software – Shows the current Software Version in the Radio Network Communicator.

Software VX.XX

7. Site ID – Shows the systems Site ID.

Site ID XXXXX

8. LBT Statistics – The transmission protocol implements a 'listen before talk' process to minimise the risk of packet loss and maximise network transmission success.

LBT Statistics

Each time that the RNC's Background interference level meets or exceeded its 'Carrier Sensor threshold', transmissions will be stopped until the background has sufficiently cleared. Information on the 'Carrier Sensor threshold' can be found within the 'Set BG Threshold' section of the 'Node Setup Overview'.

The LBT Statistics screen will consist of 3 values. For example:

0001 0033 0005

Where the first four digit number represents the number of times the Carrier Sensor threshold has been permanently exceeded for 2 seconds before the message sent.

The middle four digits represent the amount of times the 'Carrier Sensor threshold' has been intermittently exceeded for 3 seconds before the message sent.

The final four digits represent the number of times the CS threshold' was constantly exceeded for 10 seconds before the 'listen before talk' feature was disabled and the message sent. The 'listen before talk' feature will be disabled until the background has sufficiently cleared.

Note; values are recorded over a rolling 72 hour period.

5.0 NODE SETUP OVERVIEW

The Node Setup Menu allows the user to program a Radio Network Communicator to the system. Node Numbers, Site ID, Baud Rate, Communication Poll Rate and Timeout settings can be programmed or changed in this menu.

Node Setup

The Node Setup submenus are:-

1. Set Node Number – Allows the user to setup and chose the Radio Network Communicator Number. There must be a Radio Network Communicator set to node 1 for the system to operate correctly.

Set Node Number

2. Set Site ID – Allows the user to setup a Network Number. Each site will have its own Site ID; this will stop two neighbouring sites from interfering with each other. The Network Number must be the Identification Number taken from Radio Network Communicator 1 (node 1); this can be found on the small barcode label on the unit. Using the Identification Number taken from Radio Network Communicator 1 (node 1) will ensure no two sites have the same ID. NOTE: IF SET AS NODE 1, THE SITE NODE 1 ID WILL BE AUTOMATICALLY SET.

Set Site ID

3. Set Poll Rate – Allows the user to program the Communication Poll Rate. A Communication Poll is a message that's sent around the system to prove the communication paths are operational. The time is set to 2 minutes as standard and can set between 1 and 60 minutes.

Set Poll Rate

4. Poll Timeout – Allows the user to program the Communication Timeout Period. When the Communication Timeout timer expires a No Signal Fault is generated. If a Communication Poll is seen the Poll Timeout Timer is reset. The Poll Timeout is set to 30 minutes as standard and can be set between 5 and 120 minutes.

Set Poll Timeout

5. Configure System – Allows the user to add 1 or all of the Radio Network Communicators to the system. This can be carried from any Radio Network Communicator providing all necessary programming has been carried out.

Configure System

6. Add Node – Allows the user to add an individual Radio Network Communicator to the system.

Add Node

7. Remove Node – Allows the user to remove a Radio Network Communicator from system. This must be carried out from a node that is online and communicating with the system from system.

Remove Node

8. Panel Enabled – Should only be changed when the Radio Network Communicator is not connected to a Control Panel.

Panel Enabled ->

9. Set BG Threshold – Allows the user to alter the Background threshold that will prompt a Background fault when the set level is met. Note; this would normally be set 20dB Higher than the background (background found within the node status menu). For example, with a background level found to be at a level of -110, we would set the BG Threshold to -90.

Set BG Threshold

10. Set CS Threshold – Allows the user to alter the Carrier Sensor threshold that when the ambient background level is met will hold off transmissions until the air has cleared. Note; this would normally be set 3dB Higher than the BG Threshold and 23dB higher than the background. For example, with a background level found to be at a level of -110, and the BG Threshold is set to -90, we would set the CS threshold to -87dB.

Set CS Threshold

Note: The Site ID 1, Poll Rate, Poll Timeout and Baud Rate must be programmed the same on all Radio Network Communicators (Nodes) across the Network.

6.0 RADIO CHANNELS OVERVIEW

The Radio Channels Menu allows the user to program the frequency of the Radio Network. Two of 32 radio channels can be programmed between frequency of 458.5125 and 458.9375. As default the radio channels will be automatically programmed when the Set Site ID is programmed.

Radio Channels

1. Currently Used – Allows the user to view the frequencies the network is programmed with.

Currently Used

2. Default Channels – Allows the user to default the channels, which is dependant on what the Site Node 1 ID is set to.

Default Channels

3. Manual Select – Allows the user to manually select operational frequencies, there are 32 selectable channels.

Manual Select

4. Channel Scan – Allows the user to scan the network and allocate the best frequency for the system to use. NOTE: THIS CAN ONLY BE USED ONCE THE SYSTEM IS RUNNING.

Channel Scan

7.0 NETWORK STATUS OVERVIEW

The Network Status Menu allows the user to view the status of other Radio Network Communicators across the system in a list format.

Network Status

All 8 Radio Network Communicators (nodes) will be listed even if not in use.

Node 1 Healthy

Node 2 Healthy

Node 3 Offline

Node 4 Fault →

Node 5 None

Node 6 None

Node 7 None

Node 8 None

8.0 NETWORK COMMS OVERVIEW

The Network Comms Menu allows the user to view and monitor the Radio Signal strengths being received from all the Network Radio Communicators across the system.

Network Comms

1. Current Signal - Allows the user to view the last signal received from all the Network Radio Communicators (nodes).

Current Signal

2. Daily Max Signal – Allows the user to view the highest Radio Signals received from all the Network Radio Communicators (nodes) over the last 24 hour period.

Daily Max Signals

3. Daily Min Signal – Allows the user to view the lowest Radio Signals received from all the Network Radio Communicators (nodes) over the last 24 hour period.

Daily Min Signals

4. Clear Sig Status – Allows the user to reset all the Signal Levels to 0.

Clear Sig Status

9.0 SYSTEM OPERATION

Before Radio Networked Systems are programmed ensure all Radio Network Communicators are installed correct and as per survey to achieve optimal performance.

See the separate installation documentation for more information.

10.0 SETTING UP AN UNPROGRAMMED RADIO NETWORK

NOTE; if the system has been supplied pre-programmed, go straight to section 12.

A Radio Network must have at least 2 Radio Network Communicators to communicate. Radio Network Communicators connect directly into the Control Panel via their Hardwired Network Cards.

The Control Panel 1's network card must be fitted to the Panel ensuring that binary address 1 is set on board via the DIP switches. For example:



Once the network card is fitted, a panel AUTOLEARN will be required. The panels will also require programming. See Kentec Manuals for more information.

Once the panels are set up we can now program the Radio Network Communicator 1.

10.1 First Radio Network Communicator Programming Steps

Radio Network Communicator 1 (node 1) should be programmed first in the following way:-

Setup Node Number

From the Front Screen:

Un-programmed

Press the **Enter Key** to access the menus:

Node Status

Press the **Down Key** to display:

Node Setup

Press the **Enter Key**:

Set Node Number

Press the **Enter Key** to display:

New Num = 01 Y?

Press the **Enter Key**:

Updated

Keep pressing the **Back Key** to return to the front screen:

Not Configured

The Radio Network Interface has been set to Node 1. When the RNC is set as node address 1, the Site ID is automatically set as the unit's unique identification number. Default Radio Channels will also automatically be selected.

Before leaving The Radio Network Communicator 1 we must record the site ID (or Identification Number). This will need to be programmed in all Radio Network Communicators on the system.

Note: The RNC's identification number can be found on the RNC's PCB on the identification barcode label. For example, ID '0C03B' is shown below:



10.2 All Other Radio Network Communicator Programming Steps

The Control Panel 2's network card must be fitted to the Panel ensuring that binary address 2 is set on board via the dip switches. For example:



Once the network card is fitted, a panel AUTOLEARN will be required. The panels will also require programming. See Kentec Manuals for more information.

Once the panels are set up we can now program the Radio Network Communicator 2.

Radio Network Communicator 2 (node 2) can now be programmed in the following way:-

Setup Node Number

From the Front Screen:

Un-programmed

Press the **Enter Key** to access the menus:

Node Status

Press the **Down Key** to display:

Node Setup

Press the **Enter Key** to show:

Set Node Number

Press the **Enter Key** to display:

New Num = 01 Y?

Press the **Up Key** to show:

New Num = 02 Y?

Press the **Enter Key** to display:

Updated

Press the **Back Key** to show:

Set Node Number

Press the **Down Key** to show:

Set Site ID

Press the **Enter Key** to show:

ID = 0000 Chg N?

Press the **Down Key** so **Y** is shown:

ID = 0000 Chg Y?

Press the **Enter Key**:

ID = 0000 Chg N?

Using the **Up, Down** and **Enter Key**, type in the **Site Node 1 ID**:

ID = 0C03B Chg Y?

Note: This number should have been previously noted at Node 1 and from the Barcode on Radio Network Communicator 1.

Press the **Down Key** so **Y** is shown:

ID = 0C03B Chg N?

Press the **Enter Key**:

Updated

Press the **Back Key** until the front screen is shown:

Not Configured

Note: Repeat this on all Radio Network Communicators across the system to ensure all Site IDs match and also Network Card & Node addresses are set accordingly between 3 and 8.

11.0 CONFIGURING ALL RADIO NETWORK COMMUNICATORS TO THE SYSTEM

It is recommended that this feature is only used on an unconfigured system. When adding an RNC to the system, this should be done individually. See

From Node 1s Front Screen:

Not Configured

Press the **Enter Key** to access the menus:

Node Status

Press the **Down Key** to show:

Node Setup

Press the **Enter Key** to show:

Set Node Number

Press the **Down Key** until Configure System:

Configure System

Press the **Enter Key** to show:

Configure N?

Press the **Down Key** so **Y** is shown:

Configure Y?

Press the **Enter Key** to show:

Searching ...01

Waiting for screen to show Done:

Configured 01

Press the **Back Key** until front screen is shown:

Node 01 TOT08

In the above example, we are viewing node 01 on an 8 node network.

12.0 VIEW WHICH RADIO NETWORK COMMUNICATORS ARE ONLINE

From the Front Screen:

Node 01 TOT08

Press the **Enter Key** to access the menus:

Node Status

Press the **Down Key** until the display shows:

Network Status

Press the **Enter Key** to show:

Node 1 Healthy

Using the **Up** and **Down key** scrolls through the Nodes:

Node 2 Healthy

Press the **Back Key** until the front screen is shown:

Node 01 TOT08

13.0 REMOVING A RADIO NETWORK COMMUNICATOR

From the Front Screen:

Node 01 TOT08

Press the **Enter Key** to access the menus:

Node Status

Press the **Down Key** until to show:

Node Setup

Press the **Enter Key** to show:

Set Node Number

Press the **Down Key** until 'Remove Node' is shown:

Remove Node

Press the **Enter Key** to show:

Node 1 Healthy

Using the **Up** and **Down key** scroll through until the desired Node is displayed:

Node 3 Healthy

Press the **Enter Key**:

Remove Node **N?**

Press the **Down Key** so **Y** is shown:

Remove Node **Y?**

Press the **Enter Key** and the screen will display:

Removed

Press the **Back Key** until the front screen is shown:

Node 01 TOT07

14.0 ADDING A RADIO NETWORK COMMUNICATOR

From the Front Screen of the node that you wish to add:

Not Configured

Press the **Enter Key** to access the menus:

Node Status

Press the **Down Key** until to show:

Node Setup

Press the **Enter Key** to show:

Set Node Number

Press the **Down Key** until 'Remove Node' is shown:

Add Node

Press the **Enter Key** to show:

Join Network **N?**

Press the **Down Key** so **Y** is shown:

Join Network **Y?**

Press the **Enter Key** to show:

Searching...

Followed by:

Accepting...

Updating when complete to:

Node Added

Press the **Back Key** until the front screen is shown. e.g.:

Node 02 TOT02



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