FirePoint

5000

RADIO LAN COMMUNICATION GUIDE

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1. Introduction

This manual describes the installation and programming requirements for a radio network system and should be used in conjunction with the 5000 FirePoint control panel manuals.

Radio LAN Modules are used for radio networking EMS system control panels together. The Radio LAN Module is hardwired to it's allocated control panel via a 2 core screened fireproof cable. This then enables communication between control panels via radio therefore the need to cable between panels is eliminated.
See Figure 1 and 2 for an overview.

The Model 53-5438 is a Radio LAN unit that transmits and receives UHF signals between other Radio LAN units on site.

Having received the UHF signals the commands are passed to the connected panel via the RS485 bus, thus enabling site wide Radio Network Communications.

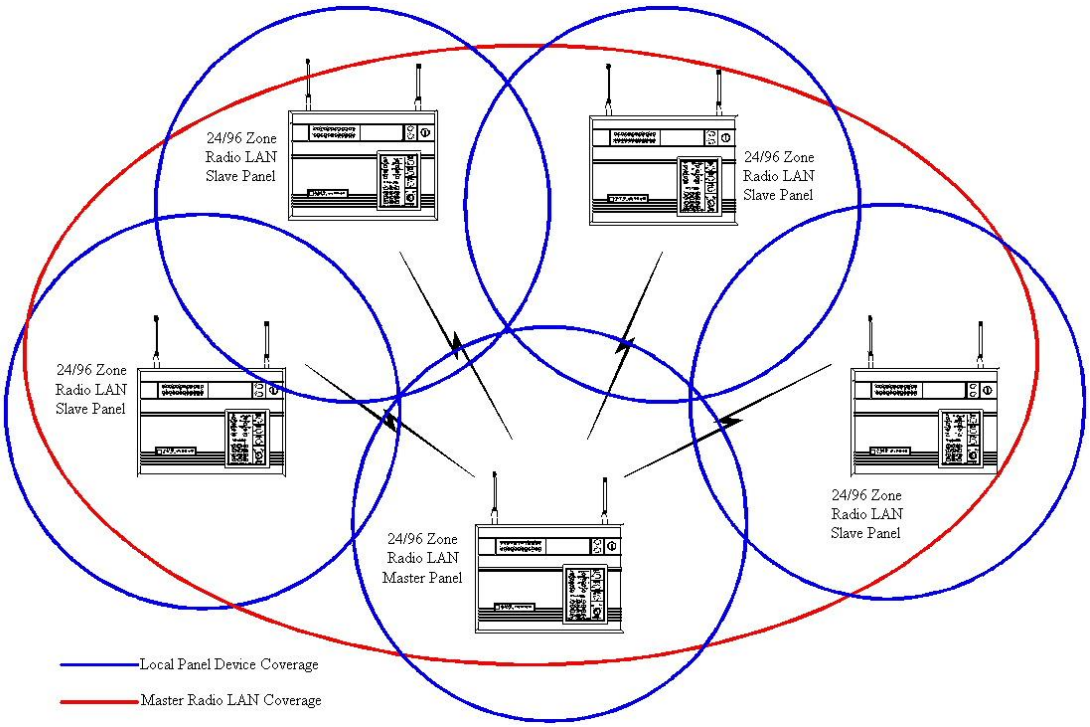

Figure 1

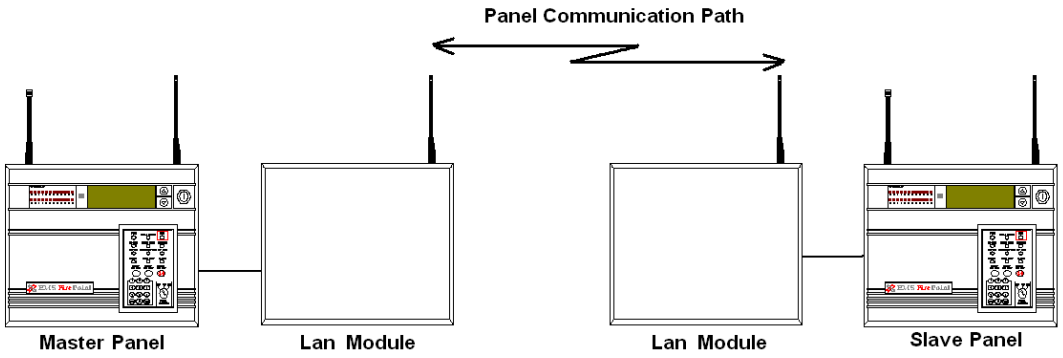

Figure 2

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2. Tools & Equipment

Only Standard hand tools are required to install the Radio LAN Modules. No special test equipment is needed for installation, although signals from modules can be seen if a computer with a terminal programme is connected to the system.

This gives a visual indication that the LAN(s) are passing data to the main control panel, and allows signal strengths to be seen.

3. Electrical Installation

The Radio LAN unit should be hardwired to the EMS 5000 FirePoint Control Panel, as shown in the supplied drawing PO3265.

The following paragraphs outline the installation in a step-by-step format.

Remove the four lid retaining screws situated on the front lid. The front section of the unit can now be removed.

Check that the front tamper switch operates when the lid is removed. Should the microswitch not operate, carefully adjust the microswitch arm. Once the microswitch operates correctly the unit can be fixed to the wall and the hardwired connection can be made.

In fixing the unit to the wall, the four fixing holes are available for the unit's installation. These are clearly visible on the outside of the casing. Offer the back box up to the wall.

The diagram PO3265 shows the wiring connections required for the Radio LAN unit. A two-core cable is needed to make the connection between the main panel and the Radio LAN unit.

When all connections have been made to the LAN unit, the battery can be connected. The lid can be re-fixed and mains voltage can then be applied.

The unit is now ready for the control panel to be configured for Radio LAN operation.

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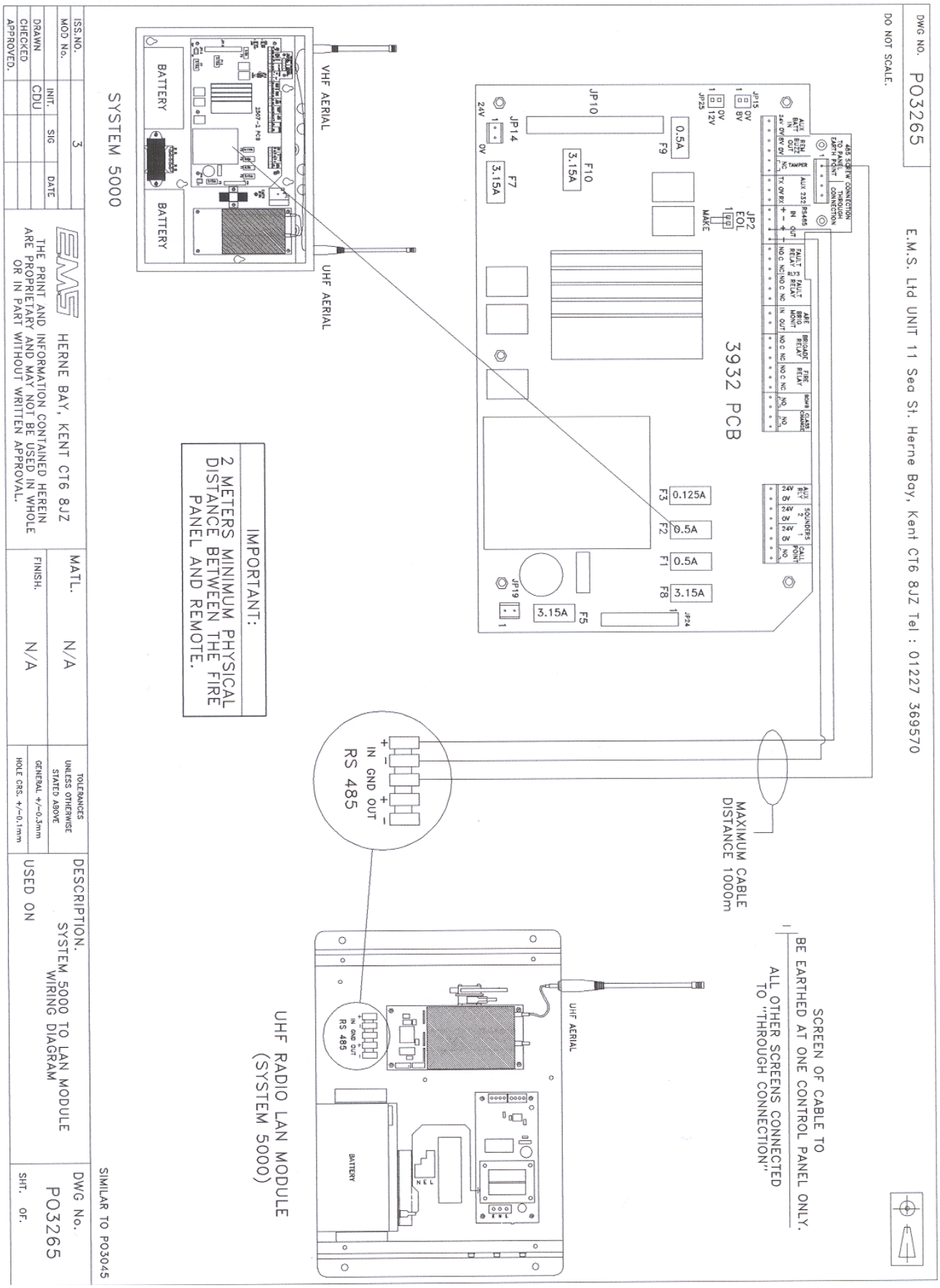

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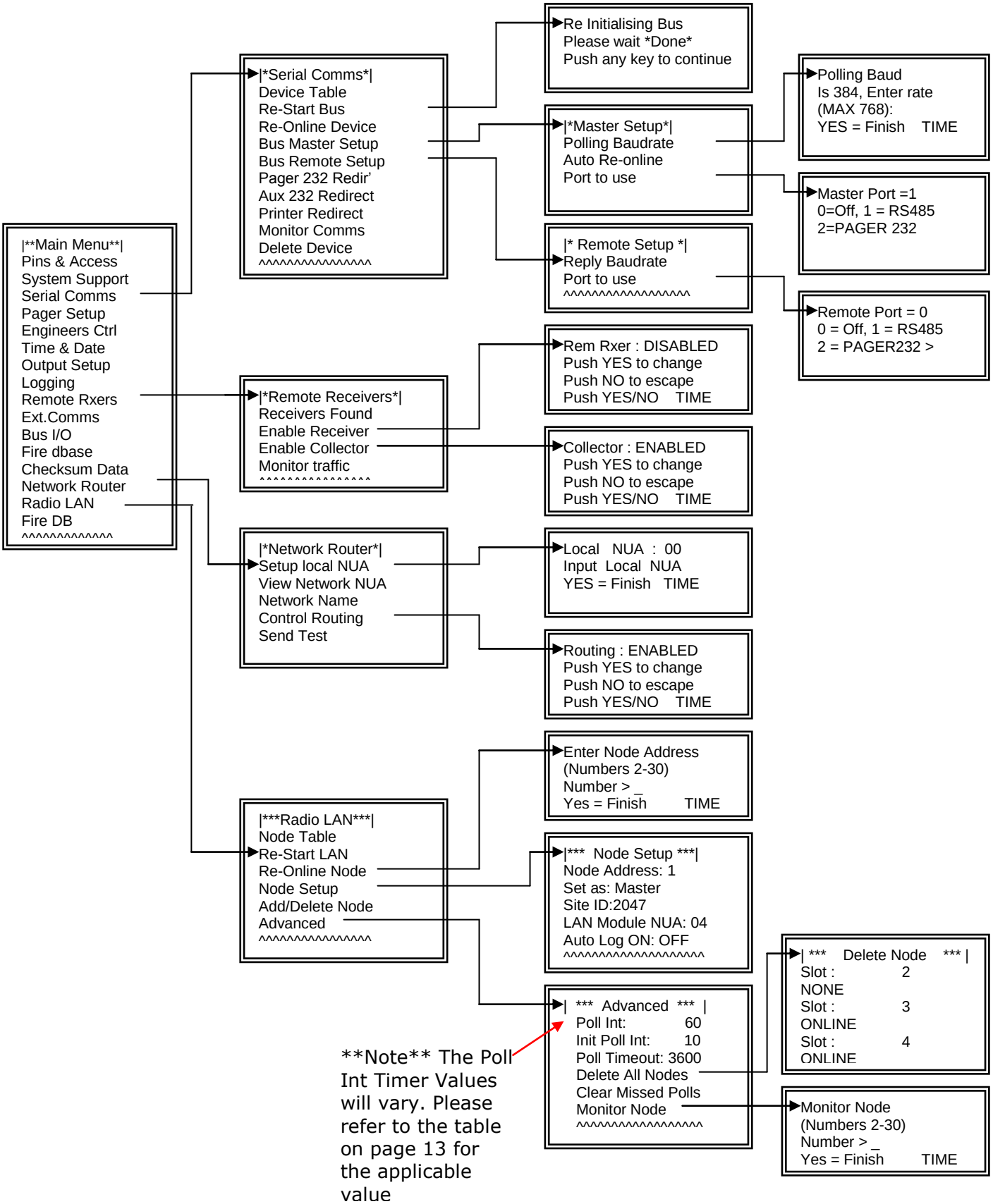
4. Engineers Control Panel Quick Guide for Radio LAN Communication



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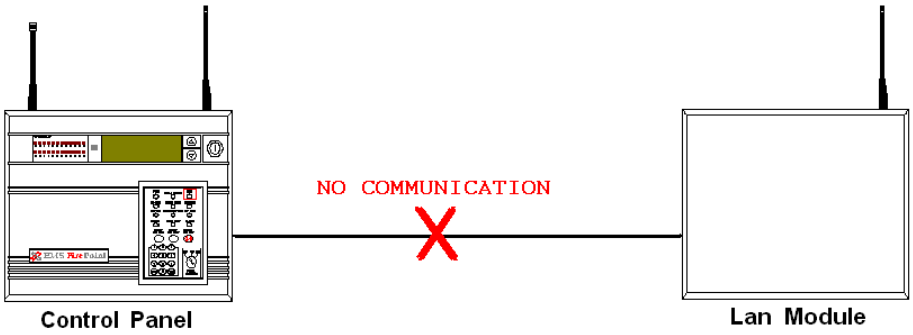
5. Factory Supplied Pre-Programmed Systems

For a factory set pre-programmed system, there will only be a few steps necessary to online the network path.
The installation should be complete with all necessary connections made as shown in diagram number PO3265.
Once the connections have been made, power should be applied to the LAN units and control panels.

On powering up the master panel, the system will automatically be online.
With all the LAN Units and Control Panels powered the master panel will automatically try to re-online the pre-programmed slave panels. This can take up to 5 minutes to complete. With control panels offline an 'OL' fault will be displayed at the master panel. This fault will automatically clear when all panels are online.

6. Should a LAN unit go offline on the 485 BUS



The following type of fault screen should be displayed:

01 FAULT TOT 01
H/W BUS Node Offline
Node : 04 ON H/W BUS

On the offline panel, turn the control key switch to the "ON" position.

Press the "0" key and scroll down to "Engineers Config".

Press the "YES" key, enter 221100 then press the "YES" key.

Scroll down to "Reset System" and press the "YES" key followed by the "0" key.

Scroll down to "Serial Comms" and press the "YES" key.

Scroll down to "Re-start bus and press the "YES" key.

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The BUS will be re-started and the screen will display the following when finished: -

Re-initialising Bus
Please wait....*Done*
Push any key TIME

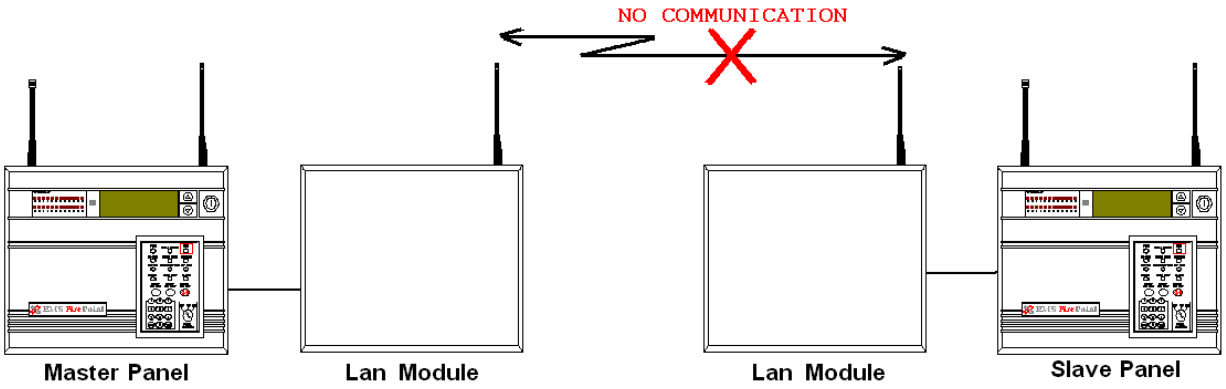
Now press the "NO" key and scroll up to "Device Table" and press the "YES" key.

The node number can now be looked up within the table to check whether it has been onlined to the network.

If unsuccessful, check the connections in PO3265, between the panel and the LAN unit and repeat the above.

The offline fault should clear from the panel.

7. Should the Radio LAN go offline



The following type of fault screen should be displayed:

01 FAULT TOT 01
Radio LAN Node
Offline
Radio NET : 03

Should such a fault be listed as previously shown, the node (panel) will need to be re-onlined. To complete this process:-

On the master panel turn the control key switch to the "ON" position.

Press the "0" key and scroll down to "Engineers Config".

Press the "YES" key, enter 221100 then press the "YES" key.
Scroll down to "Reset System" and press the "YES" key followed by the "0" key.
Scroll down to "RADIO LAN" and press the "YES" key.

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Scroll down to "RE-ONLINE NODE" and press the "YES" key.

Enter the Offline Nodes address number (between 2 and 30), then press the "YES" key.

Once completed, check the slave panel's status within the network and that it has been onlined successfully to the network. Within the Radio LAN Menu scroll to "Node Table" and press the "YES" key. This will display each networked nodes' status and will therefore, highlight whether or not the node in question has now been onlined to the network. The offline fault should clear from the panel.

If unsuccessful, check the connections in P03265, between the panel and the LAN unit.

NOTE 1: the same process can be carried out from the offline slave panel, without the requirement of a node address, a slave panel will only communicate with the onsite master.

NOTE 2: When onlining a node for the first time, you must go into Add/Delete Node on the master panel, and add the node, thus introducing the node into the node table. The node can now be re-onlined if it goes offline as above.

8. Monitoring Nodes (Panels):

Nodes can be checked for the amount of polls missed by checking the individual node's missed poll counter.

This will give an indication of the signalling between panels on the network.

As a guideline, within a period of 8 hours, an acceptable number of missed polls would be 15. However many more could mean there are communication problems and the problem node should be investigated.

NOTE: missed poll lists are automatically reset at midnight.

This can be found by entering the Node Table option within the Radio LAN menu. This also states each nodes status (ONLINE, OFFLINE, MISSING or SEARCHING), where missing identifies an unused slot and searching is where the master panel is looking for a slave panel. Nodes offline are caused by slave nodes failing to communicate with the master node. Any offline nodes can now be re-onlined by following the "Should the Radio LAN go offline" section.

To clear the missed polls list by accessing the "Radio LAN" menu. Scroll down to advanced. Press the "YES" key. Scroll down to "Clear Missed Polls" and press the "YES" key. Viewing of further node information is accessible within the "Node table in the "Advanced" menu, listed above the "Clear Missed Polls" option. By entering the "Node table", each node can be viewed for their ONLINE/OFFLINE status and their number of missed polls.

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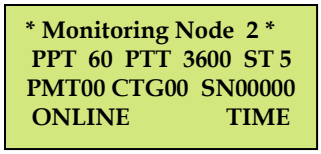
9. Diagnostics/Monitoring Nodes

The Monitor Node menu on the master panel, enables access to information about individual slave nodes in the system. Each node can be viewed and it's polling status viewed in real time. To access the Monitor node menu: -

Enter the Radio LAN menu. Scroll down to Advanced and press the "YES" key. Scroll down the Advanced menu to Monitor Node and press the "YES" key. Now enter the desired node number, (between 2 and 30) and press the "YES" key.

Once a valid node number has been entered, you will see a similar screen to the following:-



The above screenshot shows a monitoring screen for node 2. The second row displays the current value of: -

PPT (Poll Pacing Time),
PTT (Poll Timeout Timer),
ST (Current state number).

The third row details values of information that is currently being sent.

The fourth line gives information of the nodes current status. (Eg, Online or Offline).

With reference to the second line, both the PPT and PTT start counting down, decrementing by one each second. Once the PPT reaches zero a poll is sent to the relevant node, it is reset and starts counting down again.

If a poll message is received during this cycle, the PTT is reset to their starting values and begin to count down again.

Should the PTT count down to zero, the node is considered to be offline and the nodes state (situated in the fourth line), will change to offline.

The node will remain offline until a poll message is received.

NOTE: The PPT and PTT start values can be altered within the Radio LAN/Advanced menu.
PPT being the "Poll Interval" value i.e. time between polls, and the PTT being the "Poll Timeout" value which considers the panel offline when 0 is reached.

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10. To set up Mimics/Repeaters on the system:

Before any slave panels can be changed to mimic panels it is essential that the network is communicating with the slave panels.

This is required due to messages being sent across the network to configure the mimic function. It is therefore essential that all nodes are online.

If there are any nodes that are offline, these will be stated on the main screen as a fault. Any offline nodes will need to be re-onlined.

Up to three mimic/repeater panels are allowed on each system. To change panel(s) to have this functionality, at the main panel: -

Access the Main menu. Scroll down to Fire DB and press the "YES" key. Now scroll down the menu until you reach Mimic and press the "YES" key. Now while within the Mimic menu simply scroll down to the "LAN nodes" you want to change to Mimics. ("LAN nodes" are listed after the "BUS nodes").

Once found press the "YES" key to change their status from 'OFF' to 'ON'.

NOTE: Only change the settings of the "LAN nodes" as the "Bus nodes" are for nodes with H/W connections. "LAN nodes" are for Radio LAN nodes, which are used for this mimic application.

This process can be followed for up to three nodes.

The selected nodes will now be set as mimics. You can now exit the menu and return to the main screen.

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11. Step By Step Software Configuration:

Note: it is assumed that all installation procedures are complete.

Firstly, insert the Key into the Panel's Control Keyswitch, located at the right of the Panel. Turn the Key to the "ON" Position.

Step No	Action	Screen Display
1	Press the "0" key followed by the "∇" button until the screen displays:	| Logging | >Fire System Opts < | Remote Access | Yes = select Time
2	Press the "YES" key and the screen will now display:	| ** Fire system ** | >Dev. Disable/Test< | Net. Disable/Test | Yes= Select Time
3	Press the "∇" button until the screen displays:	| System Mode | >Engineers Config < | Printer Options | Yes= Select Time
4	Press the "YES" key and the screen will now display:	Enter Your PIN For Access> Then Press YES Time
5	Enter 221100 then press the "YES" key and the screen will now display:	| ** Eng.; Config ** | > Device Database < | Sounder Options | Yes= Select Time
6	Press the "∇" button until the screen displays:	| Reset Security | > Reset System < | LAN Options | Yes= Select Time
7	Press the "YES" key followed "0" key on the Keypad the screen will now display:	|** Main Menu ** | > Pins & Access < | System Support | Yes= Select Time
8	Press the "∇" button until the screen displays:	| System Support | > Serial Comms < | Pager Setup | Yes= Select Time
9	Press the "YES" key. The screen will now display:	|* Serial Comms *| > Device Table < | Re-start bus | Yes= Select Time

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10 Press the "∇" button until the screen displays:

```
| Re-online Device |
> Bus Master Setup<
| Bus Remote Setup|
Yes= Select Time
```

11 Press the "YES" key. The screen will now display:

```
|* Master Setup *|
> Polling Baudrate <
| Auto Re-online |
Yes= Select Time
```

12 Press the "∇" button until the screen displays:

```
|* Auto Re-online *|
> Port to use <
| ^^^^^^^^^^^^^ |
Yes= Select Time
```

13 Press the "YES" key. The screen will now display:

```
Master Port = 0
0 = Off, 1 = RS485
2 = PAGER 232> _
Yes= Select Time
```

14 Press the "1" key, followed by the "YES" key. The screen will now display:

```
|* Auto Re-online *|
> Port to use <
| ^^^^^^^^^^^^^ |
Yes= Select Time
```

15 Press the "Δ" button until the screen displays:

```
|* Master Setup *|
> Polling Baudrate <
| Auto Re-online |
Yes= Select Time
```

16 Press the "YES" key. The screen will now display:

```
Polling Baud
Is 384, enter rate
(Max 768): _
Yes= Select Time
```

17 Press 384 then press the "YES" key. The screen will now display:

```
|* Master Setup *|
> Polling Baudrate <
| Auto Re-online |
Yes= Select Time
```

18 Press the "NO" key. The screen will now display:

```
| Re-online Device |
> Bus Master Setup<
| Bus Remote Setup|
Yes= Select Time
```

19 Press the "∇" button until the screen displays:

```
| Bus Master Setup |
>Bus Remote Setup<
| Pager232 Redir' |
Yes= Select Time
```

20 Press the "YES" key. The screen will now display:

```
| * Remote Setup * |
> Reply Baudrate <
| Port to use |
Yes= Select Time
```

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21 Press the "▽" button once and the screen will display:

```
|  Reply Baudrate    |
 > Port to use        <
|^^^^^^^^^^^^^^^^|
Yes= Select        Time
```

22 Press the "YES" key. The screen will now display:

```
Remote Port = 0
0 = Off, 1 = RS485
2 = PAGER 232> _
Yes= Select        Time
```

23 Press the "0" key followed by the "YES" key and the screen will display:

```
|  Reply Baudrate    |
 > Port to use        <
|^^^^^^^^^^^^^^^^|
Yes= Select        Time
```

24 Press the "NO" key and the screen will now display:

```
|  Bus Master Setup  |
 >Bus Remote Setup<
|  Pager 232 Redir'  |
Yes= Select        Time
```

25 Press the "NO" key and the screen will now display:

```
|  System Support    |
 >Serial Comms     <
|  Pager Setup       |
Yes= Select        Time
```

26 Press the "▽" button until the screen displays:

```
|  Logging           |
 >Remote Rxers     <
|  Ext. Comms        |
Yes= Select        Time
```

27 Press the "YES" key. The screen will now display:

```
|* Remote Receivers * |
 > Receivers Found     <
|  Enable Receiver     |
Yes= Select        Time
```

28 Press the "▽" button until the screen displays:

```
|    Receivers Found   |
 >  Enable Receiver   <
|    Enable Collector  |
Yes= Select        Time
```

29 Press the "YES" key and the screen will display:

```
Rem Rxer : ENABLED
Push YES to change
Push NO to escape
Yes/No             Time
```

30 The Rem Rxer should be set to "DISABLED", press the "YES" key to change. Otherwise press the "NO" key. The screen will display:

```
|    Receivers Found   |
 >  Enable Receiver   <
|    Enable Collector  |
Yes= Select        Time
```

```
|    Enable Receiver   |
 >  Enable Collector  <
|    Monitor Traffic   |
Yes= Select        Time
```

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31 Press the "∇" button and the screen will display:

32 Press the "YES" key and the screen will display:

```
Collector: ENABLED
Push Yes to change
Push No to escape
Yes= Select        Time
```

33 The collector should be set to "ENABLED", press the "YES" key to change its status. Once set to "ENABLED" press the "NO" key and the screen will display:

```
|  Enable Receiver  |
 > Enable Collector <
|  Monitor Traffic  |
Yes= Select        Time
```

34 Press the "NO" key and the screen will display:

```
 | Logging           |
  >Remote Rxers     <
 | Ext. Comms        |
Yes= Select        Time
```

35 Press the "∇" button until the screen displays:

```
|  Checksum Data    |
 > Network Router <
|  Radio LAN        |
Yes= Select        Time
```

36 Press the "YES" key and the screen will display:

```
|* NETWORK ROUTER* |
 > Setup local NUA   <
|  View network NUA |
Yes= Select        Time
```

37 Press the "YES" key and the screen will display:

```
Local NUA : 00
Input Local NUA

Yes= Finish        Time
```

38 Enter "00" followed by the "YES" key unless the NUA is already set to 00. In which case press the "NO" key. The screen will display:

```
|* NETWORK ROUTER* |
 > Setup local NUA   <
|  View network NUA |
Yes= Select        Time
```

39 Press the "∇" button until the screen displays:

```
|  Network Name     |
 > Control Routing  <
|  Send Test        |
Yes= Select        Time
```

40 Press the "YES" key and the screen will display:

```
Routing : DISABLED
Push YES to change
Push NO to escape
Yes/No             Time
```

41 The Routing should be set to "ENABLED". If already set, press the "NO" key. (If "DISABLED" press the "YES" Key followed by the "NO" key. The screen should now display:

```
|  Network Name     |
 > Control Routing  <
|  Send Test        |
Yes= Select        Time
```

```
|  Network Router   |
 > Radio LAN        <
|  Fire DB          |
Yes= Select        Time
```

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42 Press the "NO" key followed by the "∇" button and the screen will display:

43 Press the "YES" key and the screen will display:

```
| ***  Radio LAN  *** |
 > Node Table        <
|  Re-Start LAN       |
Yes= Select        Time
```

44 Press the "∇" button until the screen displays:

```
|  Re-Online Node    |
 > Node Setup       <
|  Add/Delete Node   |
Yes= Select        Time
```

45 Press the "YES" key and the screen will display:

```
| ***  Node Setup *** |
 > Node Address : 0 <
|  LAN disabled       |
Yes= Select        Time
```

46 Press the "YES" key and the screen will display:

```
| ***  Node Setup *** |
 > Node Address : 1  <
|  Set as : Master    |
Yes= Select        Time
```

Note: Keep pressing the "YES" key until the desired Node Address is selected. E.g: Master panel should have Address: 1. Slave Panels have address 2-30 available.

47 Press the "∇" button until the screen displays:

```
|  Set as : Master       |
 >Site ID : 2047        <
|LAN Module Nua:00|
Yes= Select        Time
```

Note: The Site ID is factory set, and can only be altered by entering an EMS engineering password.

Note: This must match on all control panels on the radio board network for communication to take place.

48 Press the "∇" button once and the screen will display:

```
| Site ID : 2047         |
>LAN Module Nua:00<
| Auto Log On : OFF      |
Yes= Select        Time
```

49 Press the "YES" key until the screen displays:

```
| Site ID : 2047         |
>LAN Module Nua:04<
| Auto Log On : OFF      |
Yes= Select        Time
```

```
|  Re-Online Node    |
 > Node Setup       <
|  Add/Delete Node   |
Yes= Select        Time
```

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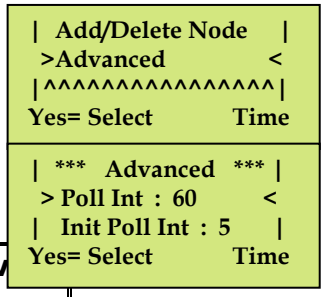
50 Press the "NO" key and the screen should display:

51 Press the "∇" button until the screen displays:



52 Press the "YES" key and the screen will display:

Note: The time to be input to the poll interval timer value varies depending on the number of slaves within the panels time can be system. The using the calculated below: - table

Number of Slaves (including Mimics)	Applicable Poll Interv Timer Values
1	60
2	60
3	60
4	80
5	100
6	120
7	140
8	160
9	180
10	200
11	220
12	240
13	260
14	280
15	300
16	320
17	340
18	360
19	380
20	400
21	420
22	440
23	460
24	480
25	500
26	520
27	540
28	560
29	580

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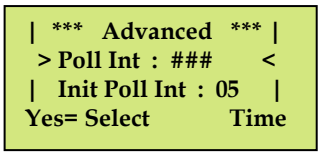
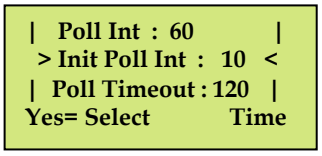
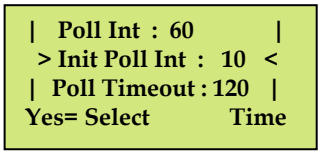
53 Having Calculated the appropriate interval press the "YES" key. Now enter the value then press the "YES" key. The screen should now display:



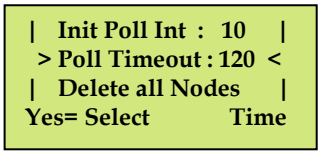
54 Press the "∇" button once and the screen will display:



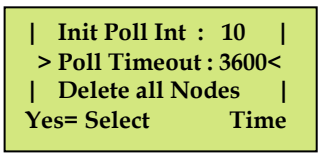
55 Press the "YES" key. Now enter 10 followed by the "YES" key. The screen should now display:



56 Press the "∇" button once and the screen will display:

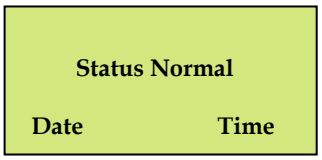


57 Now press the "YES" key followed by entering 3600. Now press the "YES" key and the screen should display:



58 Now press the "NO" key until the screen displays:

59 Turn the control keyswitch to the off position and the screen will display:



Installation and programming of the Radio LAN setup should now be complete.

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12. Controller Information:

TECHNICAL INFORMATION FOR THE LAN MODULE

Dimensions:	**390mm x 320mm x 80mm**
Operating Frequencies:	**UHF 458.5 – 459.5 MHz (Transceiver)**
Operating Temperature:	**-10 to +55 degrees C**
Humidity:	**Up to 75% non-condensing.**
Channel Spacing:	**25 kHz**
Output Transmitter Power:	**0.75W (500 mW) + (27DBH)**
Supply:	**230v ac**
Current Consumption:	**151.33mA in standby**
Battery space:	**1 x 12volt 7Ah batteries (supplied) EMS only recommend: Yucel Model No: NP7-12 or a battery of equivalent specification**
Recommended battery replacement intervals:	**5 years**

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