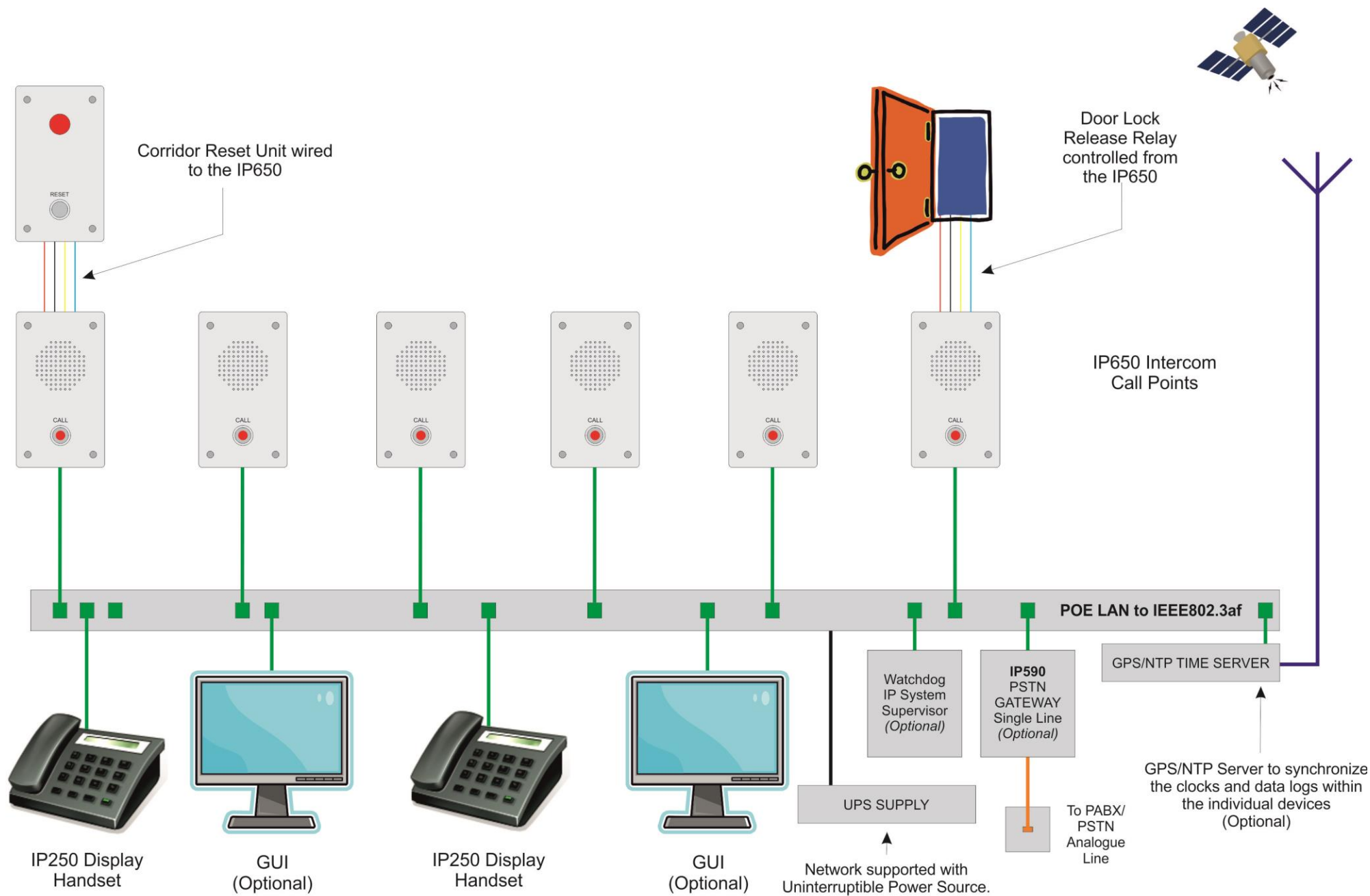




IP250 VOIP  
TELEPHONE  
QUICK START GUIDE

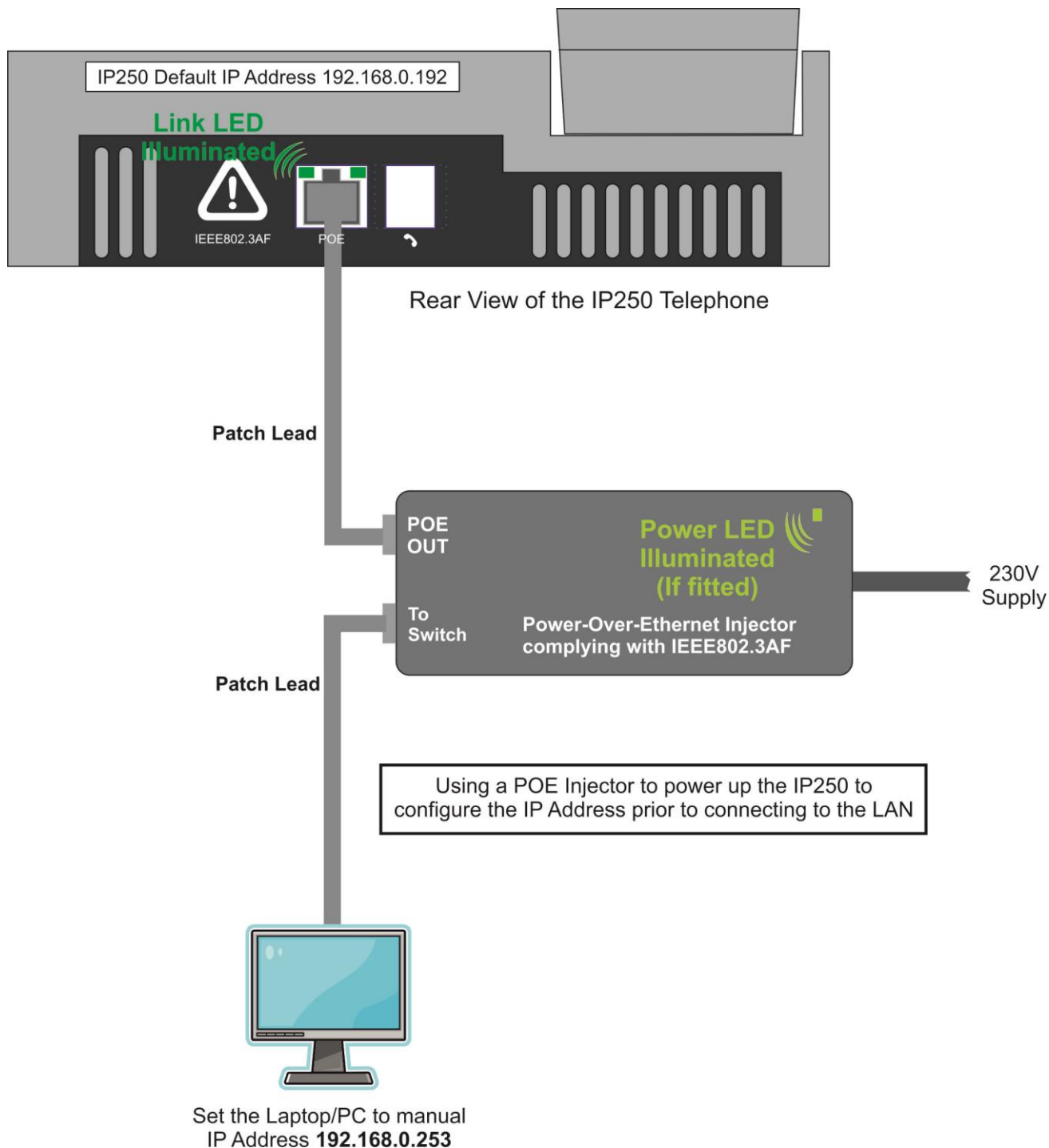
Documentation Version 08-08-2014



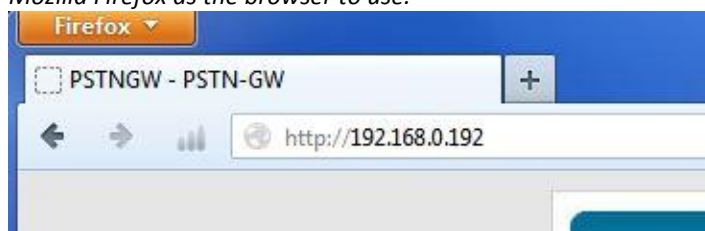
Notes: All connections shown in green comprise dedicated LAN with POE installed & Certified by others to IEEE802.3af

## IP250 VOIP TELEPHONE

The IP250 VOIP Telephone allows duplex speech calls to be made and answered to the call point devices. The IP250 requires a unique IP Address and separate configuration using a POE injector and laptop BEFORE you connect it to the Cell Call Local Area Network. **UNDER NO CIRCUMSTANCES SIMPLY CONNECT THIS DEVICE TO THE NETWORK WITHOUT CONFIGURING THE IP ADDRESS.**



Enter the IP Address into the address bar. We recommend Mozilla Firefox as the browser to use.



## CONNECTIONS TO THE UNIT

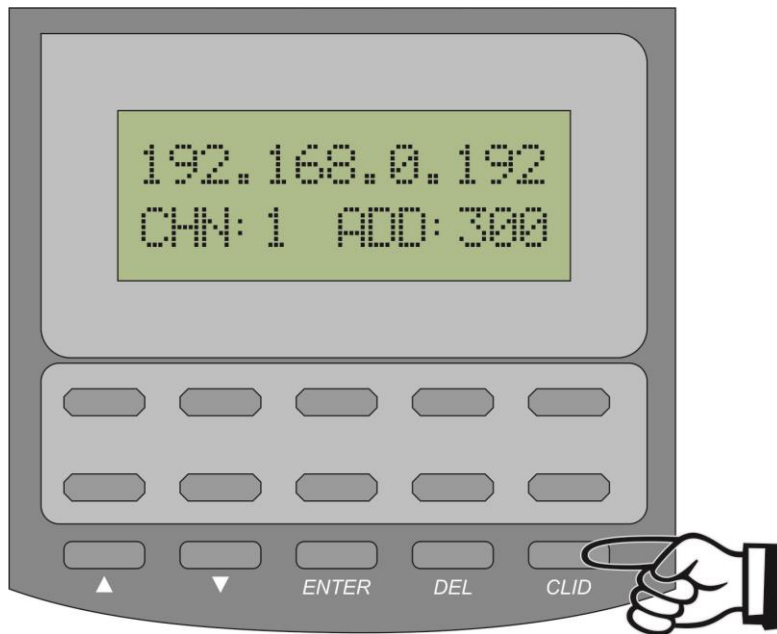
After you have configured the IP Address for the device, it can be connected to the network.

## POWER OVER ETHERNET

The IP250 requires a POE (Power Over Ethernet) source compliant to IEEE802.3af and is a IEEE802.3af Class 0 device representing a load of between 0.43 and 12.95W. The POE (Power Over Ethernet) source must be supported with a suitable un-interruptible power supply as the IP250 Display Telephone does not contain a battery in the event of a POE failure.

## DISPLAYING THE IP ADDRESS

When the unit is in the quiescent condition, it is possible to display the current IP Address, Device Address and Channel Number by pressing the CLID key as shown below.



## DISPLAYING THE FIRMWARE VERSION

While displaying the IP Address as shown above, pressing the upward arrow key will allow the unit to show the firmware version and software build date as shown below.

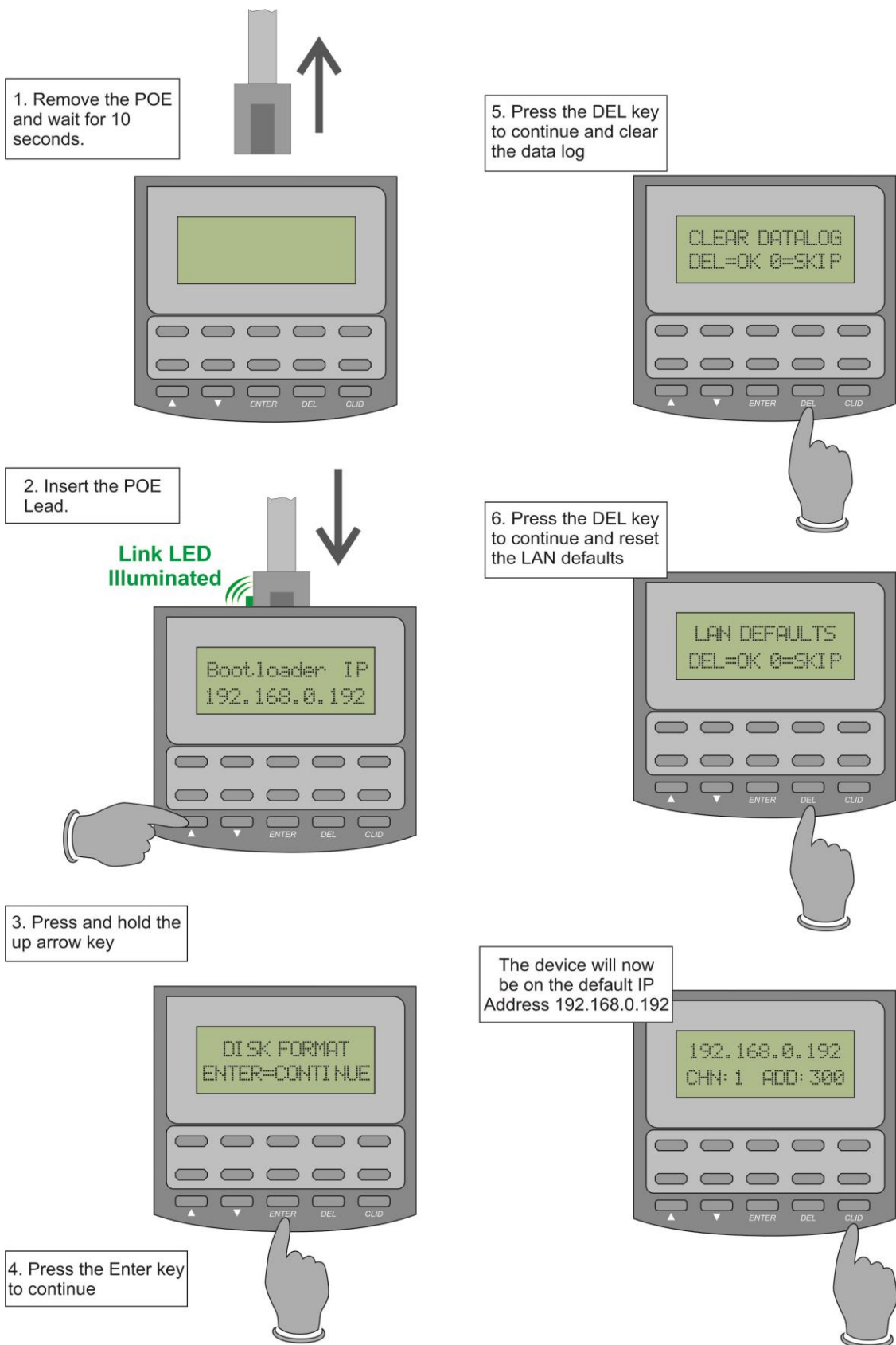


## FACTORY DEFAULT SETTINGS.

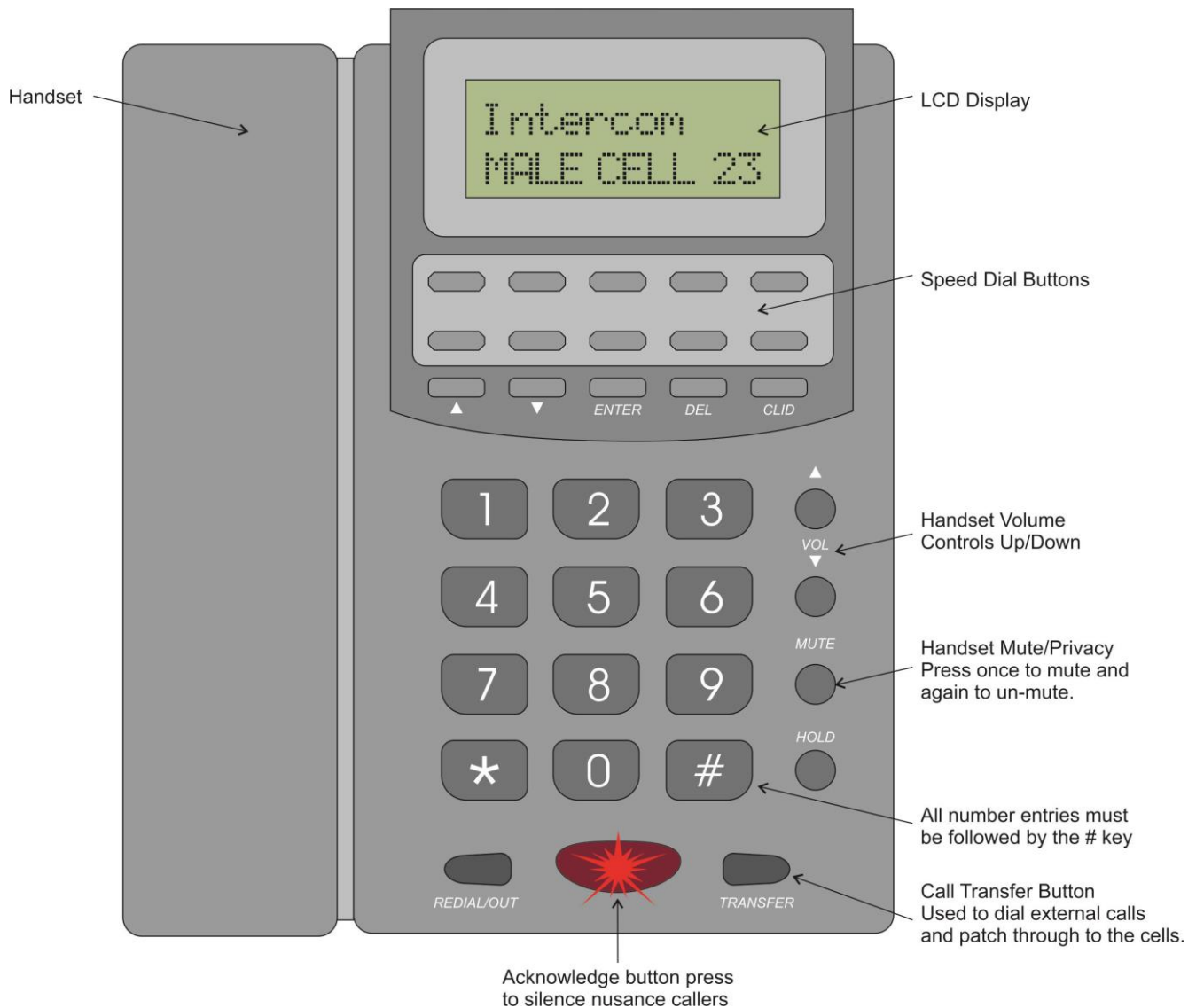
The unit is shipped from the factory with a set of default settings and the following information is provided to return the unit to these default settings should a configuration error occur or the unit has been allocated an unknown IP Address etc. **However, returning the unit to factory default will also erase all configuration settings and this must be considered before proceeding.** Locate the default button on the left side of the circuit board. Near this button is a small LED.

### BEFORE PROCEEDING - VERY IMPORTANT

Ensure no other device on your network is using the IP Address 192.168.0.192 as this will be the address of this device once the LAN default has been completed.



## Using the IP250 Display Telephone



### **ANSWERING CALLS FROM INTERCOM POINTS.**

When a device is calling, the IP250 will ring and the display will show the calling cell. Simply lift the receiver and the speech path will open.

### **TO CALL AN INTERCOM POINT.**

1. Lift the handset and enter the cell four digit number followed by the # (Hash) key.

### **TO FREE DIAL - CALL ANOTHER EXTENSION VIA THE PABX (DECT/EXTERNAL LINE ETC)\***

1. Press the TRANSFER Button and enter the number followed by the # (Hash) key.

### **TO CALL EXTENSION AND TRANSFER TO A INTERCOM POINT\***

1. Press the TRANSFER Button and enter the external number followed by the # (Hash) key.
2. To transfer the call, press the TRANSFER button again and enter the four digit cell number followed by the # (hash) key.
3. Speak to the cell then replace the handset, the external party is now talking to the cell.
4. The call is hung up by the external party or the corridor reset button (*if this feature is enabled*)

### **NUISANCE CALLS\***

Nuisance callers can be removed from the IP250 with a single press of the red flashing button (*if this feature is enabled*). The Mimic Panel, GUI and other indicators will continue to show the calling cell. It is reset with the Corridor Reset button.

\* Function not enabled by factory default or requires additional equipment.



## SETTING UP EACH DEVICE INDIVIDUALLY

See the diagram on the previous page which shows how to connect the **device** to a laptop or computer using a POE Injector.

### VERY IMPORTANT

**UNDER NO CIRCUMSTANCES SIMPLY CONNECT EVERYTHING SIMULTANEOUSLY TO THE NETWORK AND THEN POWER UP – YOU WILL HAVE ALL UNITS ON ONE IP ADDRESS AND NOTHING WILL WORK!**

## INTERSNIFF DIAGNOSTIC SOFTWARE

We strongly recommend the use of INTERSNIFF diagnostic software which is free and can be downloaded from our external FTP site. It provides automatic detection of all Intercall IP devices on the LAN as well as traffic monitoring and a host of other useful functions for fault finding.

## QUICK START GUIDE

Connect the IP250 Telephone to your laptop computer using a POE Injector or POE Switch as shown on page 3. If you are using a switch make certain you have no other devices on the same IP Address. (By default **all units** are on the same IP Address 192.168.0.192)

All settings are adjusted using the embedded website so a laptop with a browser is all that is required. You will need to gain access to the secure section of the embedded website, the user is **admin** and the password is **lismore**.

1. Set up an **Individual IP Address** for the IP250 VOIP Telephone – *the factory default for all units is 192.168.0.192.*
2. Enter the **System Name** (site name) – *the factory default is "IP250"*
3. Configure the unique **Telephone Number** for the IP250 – *the factory default is 300 for all IP250's*
4. Configure the **Acknowledge Button** to silence nuisance callers – *the default is disabled*
5. Configure the **Channel Number** – *the default is channel 0 so the IP250 will ring for intercom points on all channels.*
6. Configure the **Free Dial** Setting – *Allows the IP250 to call other extension numbers on the PABX & external lines.*
7. The IP250 contains an accurate calendar clock supported by a lithium battery and you may use the IP250 as a *Time Master* and configure all other devices as *Time Slave* to synchronize to the IP250 clock. We recommend adding an NTP Time Server to the LAN & entering the IP Address of the NTP Server into the Time page of the IP250.
8. Change how the IP250 LCD displays incoming calls.
9. Change which **Events** ring the IP250 Telephone – *In most applications it is simpler to prevent the IP250 from ringing for a specific event than it is to exclude the event using bridging.*

All settings are adjusted using the embedded website so a laptop with a browser is all that is required.

### VERY IMPORTANT - LOCAL AREA NETWORK

The Backbone of the system is the **Local Area Network (LAN)** & the reliability and performance of the system is entirely reliant on the Local Area Network infrastructure supporting it. **The Local Area Network must be certified & bandwidth qualification tested to IEEE802.3** prior to the connection of the equipment. Simple cable LED testers, tone testers or the ability to ping a device or see a website over the network **do not** indicate the integrity of the network or its bandwidth capacity. A typical low cost network qualifier the Fluke Cable IQ Qualification Tester shown on the right.



### TYPICAL POE SWITCH

This is a **Netgear FS728TP** which provides up to 24 ports of POE output suitable for up to 24 POE Devices and contains management functions with web access.



### TYPICAL NTP TIME SERVER

This is a Galleon NTS6001 which uses a GPS receiver to generate an NTP Clock Server over the LAN which can be received by the devices to synchronize their on-board clocks.



## SETTING UP THE IP ADDRESS FOR THE IP250

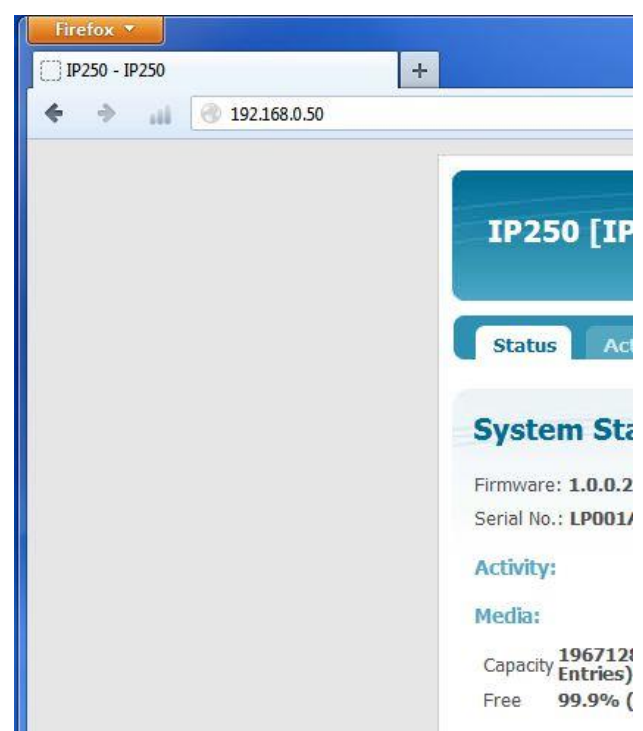
Navigate to the LAN page (shown below) and enter the **unique** IP Address for this device and select Save.

The screenshot shows the IP250 web interface. At the top, there's a header with 'IP250 [IP250]' and 'Home Logout' links. Below the header is a navigation bar with tabs: Status, Activity Monitor, Datalog, Search, and Setup. Under the Setup tab, there's a breadcrumb trail: System > LAN > Time > Communications > Styles > Events > Display > Speeddials > Command. The main content area is divided into two sections. The left section is titled 'LAN Settings' and contains several input fields: 'Enable DHCP' (checkbox), 'IP Address' (192.168.0.192), 'Subnet Mask' (255.255.255.0), 'Gateway Address' (192.168.0.1), 'Primary DNS' (192.168.0.1), 'Secondary DNS' (0.0.0.0), and 'Netbios Name' (MAC\_0\_3\_159). The right section is titled 'Additional Info' and contains a 'WARNING' box. The warning text states: 'Incorrect settings entered here can cause the system to become uncontactable to your PC.' Below the warning, there are three sections: 'Enable DHCP: Automatic allocation of IP settings when a DHCP server is available on the LAN.', 'IP Address, Subnet Mask and DNS: Manual IP settings used when no DHCP server is available on the LAN.', and 'Netbios Name: Unique name for CellCall Datalog-IP discovery on the LAN.'

## USING THE NEW IP ADDRESS

After changing the IP Address, and pressing the save button, the device will reboot and you will need to enter the new IP Address into your browser as shown on the right.

This screenshot shows the 'LAN Settings' page of the IP250 web interface. The 'IP Address' field is now set to 192.168.0.50. All other settings remain the same: 'Enable DHCP' is unchecked, 'Subnet Mask' is 255.255.255.0, 'Gateway Address' is 192.168.0.1, 'Primary DNS' is 192.168.0.1, 'Secondary DNS' is 0.0.0.0, and 'Netbios Name' is MAC\_0\_3\_159.





## SYSTEM NAME

Enter the System (Site) Name into the System Name dialog at the top of this page.

## TELEPHONE (Extension) NUMBER OF THIS IP250

Enter the telephone (extension) number for this handset. **VERY IMPORTANT:** If your system has more than one IP250, they must be set to unique numbers.

## ALLOW ACKNOWLEDGE ANY (Optional)

Tick to allow the staff to silence nuisance callers by pressing the IP250 Red Button.

HomeLogout

IP250 [IP250]

StatusActivity MonitorDatalogSearchSetup

SystemLANTimeCommunicationsStylesEventsDisplaySpeeddialsCommand

### System Settings

System Name  
IP250

Disable Announcements☐

Master Day Volume254

Master Night Volume254

Master Handset Volume245

Announcement Volume245

Call Sample Rate8000

Announce Sample Rate8000

Gain250

Gain Scale0

Jitter Blocks1

VAD Multiplier2000

Blocks Per Packet1

Duplex Port6351

Telephone Number300

Telephone Name

User Number0

User Name

Allow Accept Any☐

Allow Acknowledge Any☒

Enable AEC☐

Use PTT As Default☐

PTT Is Non-Latching☐

No Mute On Connect☐

Setup Passwordlismore

Enable Debug Trace☐

### Other Settings

[System Settings](#)

[Day/Night Alarm Schedule](#)

### Additional Info

**WARNING: Incorrect settings entered here can reduce the performance of this device.**

**System Name:** The name associated with this site (Eg Sunhill Court) this will appear on the data log to identify this system.

**Disable Announcements:** Tick to prevent the IP250 external speaker relaying common PA announcements.

**Master Day Volume:** Loudness of the ringer when the device is in day mode.

**Master Night Volume:** Loudness of the ringer when the device is in night mode.

**Announcement Volume:** Loudness of the announcements from this device.

**Call Sample Rate:** This is the rate at which speech is sampled and affects the overall quality of the telephone conversation, the default being

## COMMUNICATION SETTINGS

The communication settings control how the IP250 Telephone connects to other Intercall devices via the LAN. With the use of Channel numbers, we can identify groups of device. For example, in a system where there are various wards or wings or floors, we can allocate a single channel number to all of the devices in these specific areas or groups.

### Any Channel, Any Address, Any Event.

The factory default is Channel number is 0 (zero)  
The IP250 will ring for all answerable calls from any channel. To restrict the events which ring the IP250 use the **Event Priority** feature - see page 14.

### Specific Addresses or Channels.

To restrict which channel(s) or Addresses ring the IP250, you will need to set the IP250 to a unique channel number and create bridging entries in the IP250.

### Creating a Bridging Entry.

Navigate to the communication page of the IP250 and select Set [Click Here to Add A New Entry](#). This will open the Bridging entry dialog shown below.

## Add/Edit Bridge Entry

### STEP 1: Incoming Events

|                |           |           |
|----------------|-----------|-----------|
| Channel        | Lower: 1  | Upper: 5  |
| Address        | 0         | 0         |
| User           | 0         | 0         |
| Event          | Any Event | Any Event |
| Day/Night Mode | Any       |           |

Except ☐

### STEP 2: Change Events

|         |           |            |
|---------|-----------|------------|
| Address | No Change | 0          |
| User    | No Change | 0          |
| Event   | No Change | 128: Reset |

### STEP 3: Process Events

Log Locally ☐

Single Speech Channel Support ☐

### Step 1 – Incoming Channels.

Enter the range of channel numbers you wish the IP250 to ring for. In our example this is all Channels between 1 and Channel 5. You can also restrict the IP250 to only ring for specific addresses or users, which we have not done in this example as 0 (Zero) is *any address* and *any user*.

### Incoming Events.

For most applications, set the Event Range to Any Event. If you wish to prevent the IP250 ringing for a single event from a specific channel, use the Event dropdown to select the event and tick the *Except* box.

Event 136: Call 136: Call Except ☒

**IMPORTANT** When restricting events, you must ensure that all other events are still allowed to pass through the entry. This may require many additional bridging entries per channel.

### Step 2 Change Events.

In most applications, there is normally no requirement to change events, users or

addresses.

### Step 3 Process Events.

If you are connecting to a single speech channel legacy interface such as L7700 and L7755 then you should tick Single Speech Channel Support. You do not need to enable this tick box if you are connecting to other Intercall full IP equipment.

**Freedial Function.** – only required if you are using a PSTN Gateway or SIP Gateway.

The Freedial function allows the IP250 to transfer and make calls to third party devices via the IP590 PSTN/PABX Gateway. In order to connect to the IP590 PSTN Gateway, you must enter the IP590 Gateway Channel number and Gateway Address into the IP250 Communication settings. You must also tick the *Allow Freedial* dialog highlighted in red below. The Gateway start and end address allows for a range of Gateway devices to be used by the IP250 if the first one is busy.

The screenshot shows the IP250 web interface. At the top, there's a header with 'IP250 [IP250]' and 'Home Logout' links. Below this is a navigation bar with tabs: Status, Activity Monitor, Datalog, Search, and Setup (which is active). Under the Setup tab, there's a breadcrumb trail: System > LAN > Time > Communications > Styles > Events > Display > Speeddials > Command. The main content area is titled 'Communications'. It contains several settings: 'Transmit Broadcasts' (checked), 'Recieve Broadcasts' (checked), 'Broadcast Port' (6345), 'Channel ID' (0), 'Allow Freedial' (checked and highlighted with a red circle), 'Gateway Channel ID' (9), 'Gateway Address Start' (900), 'Gateway Address End' (900), 'Enable Catchup' (unchecked), 'Catchup Port' (0), and 'Enable Single Speech Channel Support' (unchecked). A 'Save' button is at the bottom left. On the right, there's an 'Additional Info' section explaining that the page deals with how the device communicates over the LAN. It also provides details for 'Transmit Broadcasts' and 'Receive Broadcasts'.

| Setting                              | Value                               |
|--------------------------------------|-------------------------------------|
| Transmit Broadcasts                  | <input checked="" type="checkbox"/> |
| Recieve Broadcasts                   | <input checked="" type="checkbox"/> |
| Broadcast Port                       | 6345                                |
| Channel ID                           | 0                                   |
| Allow Freedial                       | <input checked="" type="checkbox"/> |
| Gateway Channel ID                   | 9                                   |
| Gateway Address Start                | 900                                 |
| Gateway Address End                  | 900                                 |
| Enable Catchup                       | <input type="checkbox"/>            |
| Catchup Port                         | 0                                   |
| Enable Single Speech Channel Support | <input type="checkbox"/>            |

**Freedial Matching Entry in IP590 PSTN Gateway.**

The Gateway Channel Number and single Gateway Address are also entered into the corresponding communications page of the IP590 PSTN Gateway. You must also tick the *Allow External Free Dialling* dialog into the IP590 website as shown below.

The screenshot shows the PSTN-GW web interface. At the top, there's a header with 'PSTN-GW [PSTNGW]' and 'Home Logout' links. Below this is a navigation bar with tabs: Status, Activity Monitor, Datalog, Search, and Setup (which is active). Under the Setup tab, there's a breadcrumb trail: System > LAN > Time > Events > Communications > Despatch > Command. The main content area is titled 'Communications'. It contains several settings: 'Transmit Broadcasts' (checked), 'Recieve Broadcasts' (checked), 'Broadcast Port' (6345), 'Channel ID' (7), 'Allow External Free Dialling' (checked and highlighted with a yellow box), 'Gateway Channel ID' (9), and 'Gateway Address ID' (900). A 'Save' button is at the bottom left. On the right, there's an 'Additional Info' section explaining that the page deals with how the device communicates over the Local Area Network. It also provides details for 'Transmit Broadcasts'.

| Setting                      | Value                               |
|------------------------------|-------------------------------------|
| Transmit Broadcasts          | <input checked="" type="checkbox"/> |
| Recieve Broadcasts           | <input checked="" type="checkbox"/> |
| Broadcast Port               | 6345                                |
| Channel ID                   | 7                                   |
| Allow External Free Dialling | <input checked="" type="checkbox"/> |
| Gateway Channel ID           | 9                                   |
| Gateway Address ID           | 900                                 |



## TIME SETTINGS

The IP250 Gateway features an on-board calendar clock which time stamps all events in the datalog. It is supported by a lithium battery and may be used as a Time Master for other devices on the system. Ideally, the IP250 should receive regular synchronization with a reference clock, such as an external **GPS-NTP Server**.

Network Time Protocol (NTP):

Allow Auto BST Correction: ☐

Allow NTP: ☒

NTP Server:

192.168.0.130

NTP Query Interval:

1

Minutes

Save NTP Settings

Master/Slave Syncing:

Sync Mode

I am a Time Master ▼

Save Sync Settings

Setting the **IP250 Display Handset** to a **Time Master** to automatically update the other devices which are configured as a **Time Slave**.

[Home](#) [Logout](#)

# IP250 [IP250]

[Status](#) [Activity Monitor](#) [Datalog](#) [Search](#) [Setup](#)

[System](#) [LAN](#) [Time](#) [Communications](#) [Styles](#) [Events](#) [Display](#) [Speeddials](#) [Command](#)

## System Clock

Current Time:

2012-08-17 15:09:08

*NTP Information*

Last NTP Time:

NEVER

---

Network Time Protocol (NTP):

Allow Auto BST Correction: ☒

Allow NTP: ☐

NTP Server:

NTP Query Interval:  Minutes

Save NTP Settings

---

Master/Slave Syncing:

Sync Mode

Save Sync Settings

---

Enter New Time:

|                                   |                                 |                                 |                                 |                                 |                                 |
|-----------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Year                              | Month                           | Day                             | Hour                            | Mins                            | Secs                            |
| <input type="text" value="2012"/> | <input type="text" value="08"/> | <input type="text" value="17"/> | <input type="text" value="15"/> | <input type="text" value="09"/> | <input type="text" value="05"/> |

*Entry must be in 24hr mode*

Save New Time

### Additional Info

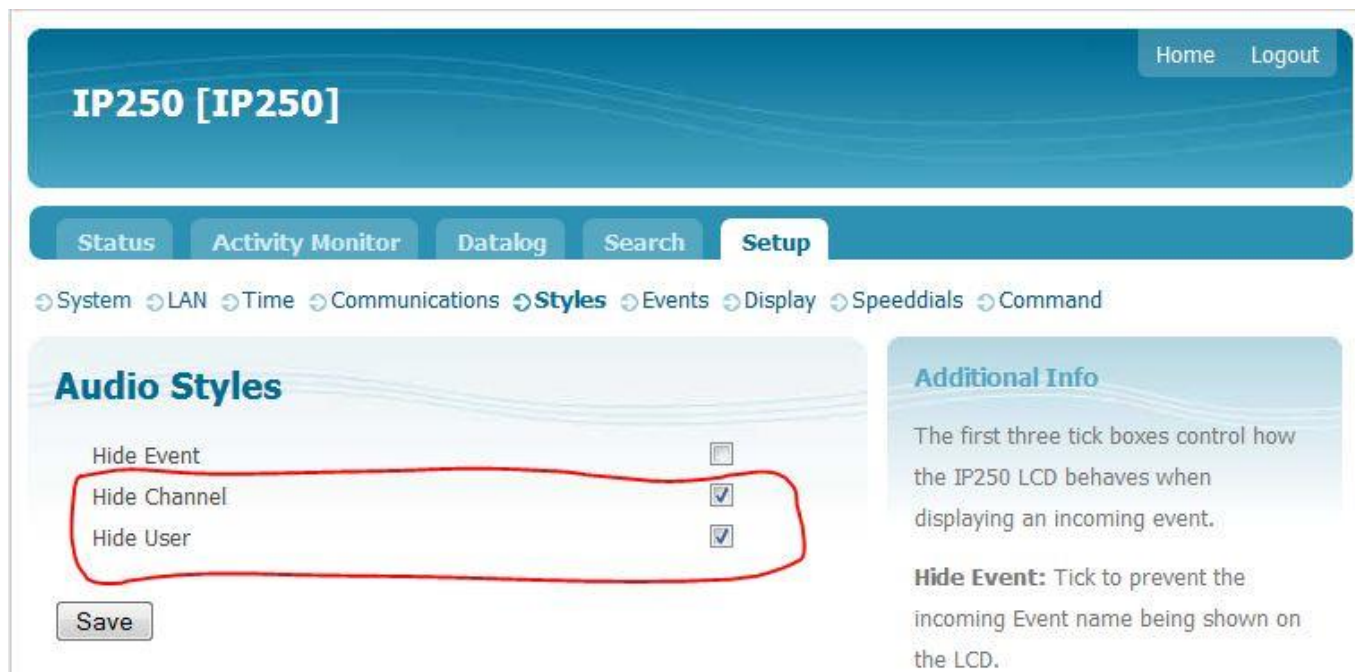
**System Clock:** All datalog events are time stamped using the internal clock which is automatically updated by a NTP server.

**NTP:** Connected via the LAN, NTP servers can be local or off-site if external access is available on the LAN.

**Time Setting:** The internal clock can be manually altered in 24 hour clock mode (ie 1pm = 13:00).

## IP250 Display Settings

The communication settings control how the IP250 LCD Display shows the incoming calls from the cells. The best way to present this information is to configure the IP250 as follows so the LCD Display clearly shows the identity of the calling cell.



The screenshot shows the IP250 web interface. At the top, there's a header with 'IP250 [IP250]' and 'Home Logout' links. Below is a navigation bar with tabs: Status, Activity Monitor, Datalog, Search, and Setup (selected). A breadcrumb trail shows: System > LAN > Time > Communications > Styles > Events > Display > Speeddials > Command. The main content area is titled 'Audio Styles'. It contains three settings: 'Hide Event' (unchecked), 'Hide Channel' (checked), and 'Hide User' (checked). The 'Hide Channel' and 'Hide User' options are circled in red. A 'Save' button is at the bottom left. On the right, there's an 'Additional Info' section with text: 'The first three tick boxes control how the IP250 LCD behaves when displaying an incoming event.' and a bolded 'Hide Event' section: 'Hide Event: Tick to prevent the incoming Event name being shown on the LCD.'

When these settings have been changed only the calling cell will be displayed on the LCD screen as shown below.



## Using Event Priority to restrict the events which ring the IP250.

The IP250 Display Telephone can be configured to ignore certain events, although you could achieve the same configuration by bridging, for most applications, it is simpler to use the events dialog. By factory default the IP250 will ring for the following events; Call, Assistance, Intercom & Priority1,2,3,4. All other events will be ignored and this may not be suitable for your application. To change which types of event ring the phone, you need to change the style for that particular event. To prevent the IP250 ringing for Intercom, navigate to the Events page as shown below.

IP250 [IP250]

Home

Logout

Status

Activity Monitor

Datalog

Search

Setup

System

LAN

Time

Communications

Styles

Events

Display

Speeddials

Command

Event Descriptions

Show Event: 0

Jump

<<<<

>>>>

|     |           |                                       |
|-----|-----------|---------------------------------------|
| 000 | No Device | Style: <a href="#">Default (P: 0)</a> |
| 001 | Unknown 1 | Style: <a href="#">Default (P: 0)</a> |
| 002 | Unknown 2 | Style: <a href="#">Default (P: 0)</a> |
| 003 | Unknown 3 | Style: <a href="#">Default (P: 0)</a> |
| 004 | Unknown 4 | Style: <a href="#">Default (P: 0)</a> |
| 005 | Unknown 5 | Style: <a href="#">Default (P: 0)</a> |
| 006 | Unknown 6 | Style: <a href="#">Default (P: 0)</a> |
| 007 | Unknown 7 | Style: <a href="#">Default (P: 0)</a> |

Save

Additional Info

**Event Descriptions:** This allows the name given for each system event in the datalog to be edited if required.

**WARNING**  
Incorrect settings may invalidate the datalog integrity.

Enter 142 in the *Show Event* dialog and press the **Jump** Button, you can now use the arrow controls to navigate through the different types of event. When you get to the desired event (in our example intercom) select the style hyperlink shown in red in our example.

This will open the Event Style dialog for the selected event. To prevent the IP250 ringing for the selected event, simply change the event priority to zero (0) and press the save button as shown in the example below.

IP250 [IP250]

Status

Activity Monitor

Datalog

Search

Setup

System

LAN

Time

Communications

Styles

Events

Display

Speeddials

Command

Event Descriptions

Show Event: 142

Jump

<<<<

>>>>

|     |                |   |
|-----|----------------|---|
| 142 | Intercom       | Style: <a href="#">Call Ring (P: 135)</a> |
| 143 | Intercom Reset | Style: <a href="#">Default (P: 0)</a>     |
| 144 | Catering       | Style: <a href="#">Default (P: 0)</a>     |
| 145 | Low Battery    | Style: <a href="#">Default (P: 0)</a>     |
| 146 | Unknown 146    | Style: <a href="#">Default (P: 0)</a>     |
| 147 | Bed Wet        | Style: <a href="#">Default (P: 0)</a>     |
| 148 | Visit          | Style: <a href="#">Default (P: 0)</a>     |
| 149 | Priority 2     | Style: <a href="#">Call Ring (P: 150)</a> |

Save

### Event Style Settings for: Intercom

Assigned Style 

02: Call Ring

Event Priority 

0

Service Mode 

Answer Remote

Save