IRC3000 SERIES PEOPLE COUNTER FIRMWARE UPGRADER SOFTWARE USER GUIDE

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

IRC3000 Series Firmware Upgrader Software User Guide

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

1 About

1.1 The Purpose of this Document

This document is intended to be used by Irisys partners and installers to allow them to upgrade the firmware in the Irisys 3000 series people counters to the very latest version.

1.2 Why Should I Upgrade?

Irisys regularly produce updates to their software and firmware in order to fix problems that may come to light as well as to incorporate additional features and improvements requested through our partner programme. These additions commonly increase the accuracy of the counter in some fundamental or subtle way, and/or make possible more diverse counting applications. By upgrading the firmware of your 3000 series counter, you can take advantage of these benefits.

1.3 Do I Need to Upgrade?

Any new units ordered from Irisys will always be on the very latest firmware available at the time of manufacture and will not require updating. But any older units may well need updating see below for details of how to find out what firmware they are running.

1.4 How Do I Upgrade?

Upgrading is done using the dedicated Irisys Firmware Upgrader software ('Firmware Upgrader II') along with the relevant XML file containing the new Firmware. Simply install the Firmware Upgrader II software, connect to your counter, and run the Upgrader. Apart from a few basic steps, everything is automatic, and upgrading each counter only takes a few minutes. If you have a network of counters, you can even set firmware upgrader to do them all at the same time. Always use the very latest version of firmware upgrader.

1.5 Can I Upgrade Remotely?

Yes, there are a number of different connection methods that you can use, for both local and remote upgrading. Connection via serial is for local connection only, and connection via IP is for local or remote connection. Note relay enabled units can only be upgraded locally via serial connection. Also, the vast majority of IP updates can only be upgraded via IP.

1.6 Can I Upgrade When the Counter Connects In to Me?

Yes, if you want to. If a remote IP counter is configured to connect into a server for data collection purposes, you can use the upgrader software on that machine to accept the incoming connection and then perform the upgrade. Simply choose the relevant option within the Firmware Upgrader software and it will wait for the counters to connect in and then perform the update. But you must ensure that certain ports are available, or the upgrade will fail, see pre-requisites below.

1.7 What Do I Need To Do A Firmware Upgrade?

Firstly, the counter must be powered up and connected to the PC running the Firmware Upgrader software, which must be installed correctly prior to use. The connection between counter and PC can be either IP (for IP enabled units) or Serial (for relay enabled units), although most updates to IP enabled units can only be performed over IP. All counters that require updating must be at a minimum release firmware level. All beta units must first be updated to a minimum release firmware version before a newer version can then be applied. Also, see pre-requisites below.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

1.8 What Units can I Upgrade?

Any of the 3000 series units can be upgraded using the Firmware Upgrader software as long as the chosen upgrade file is relevant to that counter variant. Typically, IP enabled units can have their IP firmware and web tools (Setup Tool) upgraded along with their processor (counter 'head') firmware, and relay units can only have their processor firmware upgraded.

1.9 What are the Pre-requisites?

For relay enabled units, upgrading is very simple and, at present, there are no pre-requisites.

For IP enabled units, the pre-requisites depend on the firmware update that you want to perform. If you have an early counter which has never been upgraded, you may have to upgrade from, for example, Beta firmware to the first release firmware, then to the very latest firmware. If you have updated your counter each time an update has been made available, you will not have any problems.

> All relay enabled counters will be running with official release firmware. There were never any relay enabled units running on Beta firmware.

Upgrading the IP enabled counter requires IP access to the target IP counter on port 80 and port 4505. If this access cannot be obtained, the Firmware Upgrader software will display an error message and will not continue.

> For updating of IP enabled counters via IP connection, ports 80 and 4505 must be accessable. Most IP counter updates require an IP connection.

1.10 Will I Have to Re-Configure the Unit Afterwards?

All settings, unless specifically excluded in the particular firmware updates' documentation, will be maintained during the update process. Therefore, you will not have to reconfigure units afterwards. Note that additional features introduced in a firmware update may need to be configured before they function correctly.

In certain circumstances, it is possible that a firmware update overwrites, or loses, a particular setting due to the nature of the update. In these cases, you will be clearly advised before starting that reconfiguring will be required.

1.11 What Else Is Involved?

Once you have updated your firmware that is it, and the counter will begin using the new features immediately.

For IP enabled counters, you may need to also update your API in order to access any new features incorporated in the new firmware. Every API, above the release version API, is backwardly compatible with each other, so you will not need to fundamentally change your software, except to access any new features.

> You can check the version of the win32 API that you are using by running the `GetAPIVersion()` function call. Not available in the .Net or Java API.

> You can check the version of the .Net API by right clicking on one of the API files and selecting the Version tab.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

1.12 How Do I Check my Firmware Versions?

The easiest way to check your current firmware is to click on each individual counters 'cog' symbol to check the processor firmware:

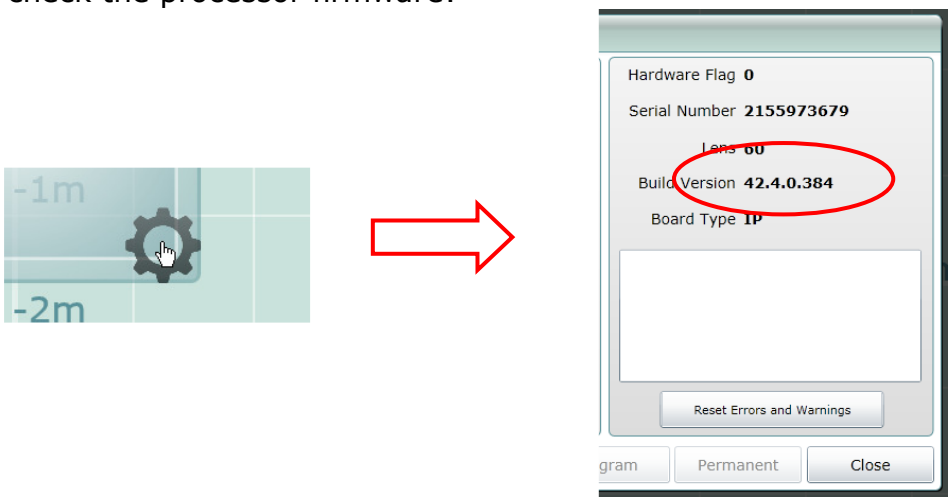

Figure 1.12.1

For IP enabled counters you should also connect to the counters using Internet Explorer or your preferred Internet Browser. On the Welcome page, you will see a firmware version, this is the IP firmware:

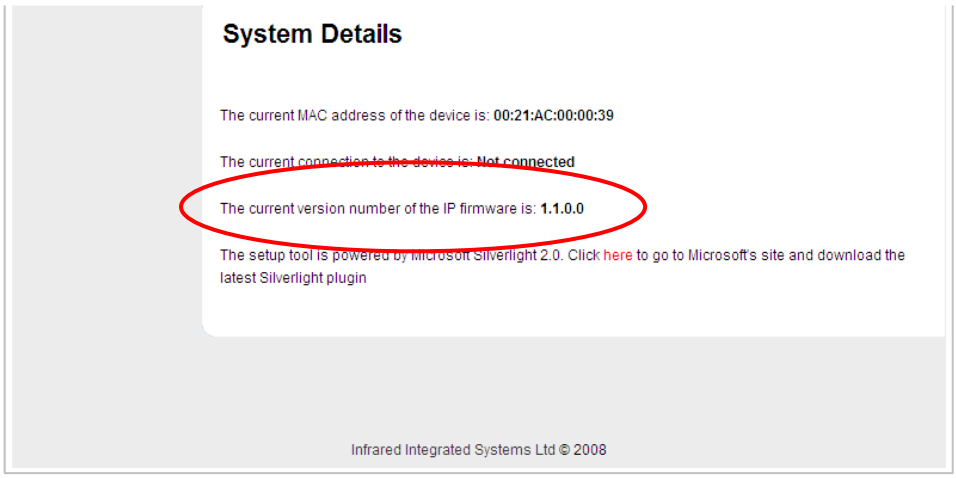

Figure 1.12.2

Also for IP enabled counters, you should go into the Setup Tool via the link on the Welcome page to see the version of the web tools (setup tool) displayed at the bottom:

Figure 1.12.3

If you do not know how to connect to the counter using Internet Explorer, see the document, 'IPU 40183 IP Counter Setup Software Manual'.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

2 Firmware Upgrader Software Installation

The software required for updating the firmware in the IRC3000 variant counters, must be installed on your PC prior to use.

2.1 The Installation Files

There is one installation file and one upgrade file in the form of an XML file (containing the new firmware), there may also be a readme file too:

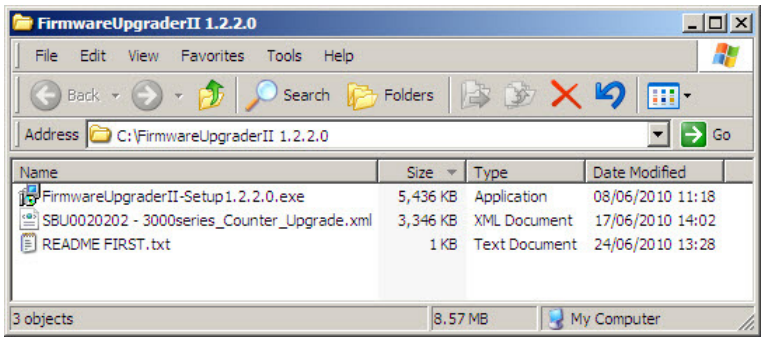

Figure 2.1.1

If you have received one 'zip' file, instead of the two or three files above, this is simply a compressed file which contains the files. Double click the 'zip' file to extract the files to a folder on your hard drive.

2.2 Installation Instructions

To install the Firmware Upgrader simply double click the '.exe' file to begin the installation process, and follow the on screen steps.

Note: You *may* need to reboot your PC once the installation has finished. If you have any open files or unsaved files then save and close them before rebooting your machine.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

3 Using the Firmware Upgrader Quick Start Guide

3.1 About

This section is all about upgrading a counter using the Firmware Upgrader II software.

3.2 Before you Start

Most firmware updates will also update any nodes which are connected to the master unit. Even if the particular update you are performing does not support this, there is no harm in leaving any associated nodes connected to the master during the update process.

All of the counters that you want to upgrade must be connected and powered up. If you have a master and a node counter (such as supplied in the IP counter evaluation kit), you can connect these together using the CAN connections. For IP units, this means using patch leads connected between the black RJ45 connectors on each unit on the wide opening. For relay units this means connecting together units on the wide opening using the correct pins of the terminal block in each base.

All units must also be correctly configured with valid CAN IDs before the upgrade begins. This is especially important when upgrading masters connected to node units. Simply run through the standard setup routine as described in user guide IPU40183 to assign valid CAN IDs.

Once all units are connected together and configured correctly, connect the master unit to the PC that you are going to use for the update, via IP or serial.

Note: Always make sure that the counters' power supply is stable and that there is no chance of it being unplugged or switched off during the update.

Note: Always make sure that the IP connection to an IP enabled master counter is stable and secure, with no possibility of disconnection during the procedure.

Note: Always make sure the serial connection to a relay enabled master counter is stable and secure, with no possibility of disconnection during the procedure, especially if it is hanging from the ceiling with people walking through the area.

Note: If you are performing an update on a master and node at the same time, each must be configured with a valid CAN ID. If neither unit has previously been configured, and has the default ID of 127, then you should setup the counters first before applying the firmware update.

3.3 Running for the First Time

To run the Firmware Upgrader software simply select from the Start Menu:

Start -> All programs -> Irisys -> FirmwareUpgraderII

Note: The first step of the firmware upgrader process is to recognise the attached units and configure acceptable upgrades for each unit. Therefore, never swap units between counter bases, or disconnect units, once the firmware upgrader software has been started, regardless of whether the actual upgrade process has begun.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

3.4 Upgrade Procedure

Start the Firmware Upgrader software and select the type of connection you will be using to perform the upgrade. Select one of the connection buttons to do this; 'Serial connection', 'Direct IP connection' or 'Indirect IP connection'. Any node units which are also connected to the master will be upgraded too, in most cases.

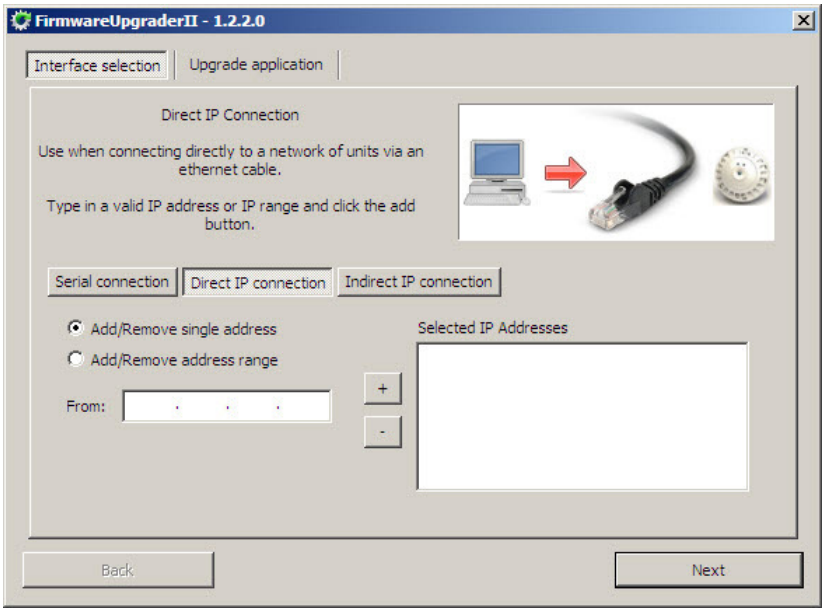

Figure 3.4.1

3.5 Connection Types

There are three types of connection available from within the firmware upgrader software; although some counter variants cannot use all connection types:

The 'Serial connection' - requires an IWC3052 setup module (for relay enabled counter variants) or IWC3062 setup cable (for IP enabled counter variants) connected between the upgrading PC and the master counter. In most cases, the preferred method of upgrading an IP enabled counter will be IP - some updates can only be performed via IP.

'Direct IP connection' - is simply a network connection from your PC to an IP enabled counter over an IP network, either via a simple crossover cable, or via standard 'straight through' patch leads through a switch or hub, or via a network, or via the internet to a remote unit. This is similar to the indirect IP connection, see below:

'Indirect IP connection' - is the same physical connection to an IP enabled counter as the Direct IP connection above, but here the PC waits for a counter to connect 'in' to the PC. This would be required if units are installed in the field and periodically connect into a server via the client connection mode. This functionality is typically utilised where a firewall prevents connection in to the counter, for example. In this connection mode, you must either; use the PC that the counter would ordinarily connect into, and disable the software which would normally 'listen' for the IP connection from the counter. Or, the server should be powered down - or isolated from the network - and the PC to be used for upgrading should then be setup in the servers place, and temporarily configured with the same IP address details as the server, in order to accept the incoming connections.

For relay enabled counters you must use a serial connection with the IWC3052 setup module. For IP enabled units it is recommended that upgrades are performed using the IP connection only - some upgrades can only be performed via IP.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

3.6 Serial Connection

When connecting via serial, you must specify the COM port that the counter is connected to, via the IWC3052 or IWC3062 setup cable, from the list of available COM ports. Note that any available USB to serial port adapters or PCMCIA serial port adapters will also be listed here.

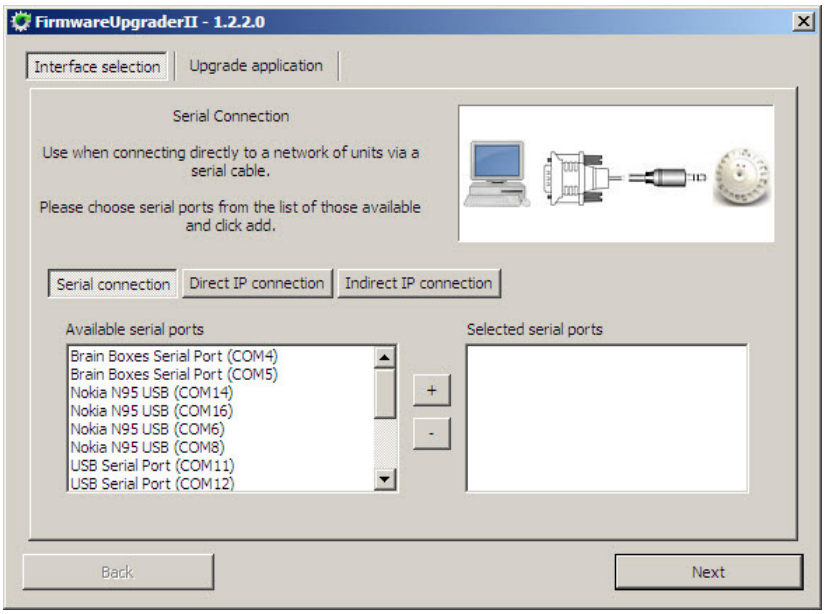

Figure 3.6.1

Simply highlight the required COM port and click the '+' button to add it to the selected serial ports list. Then click 'Next'.

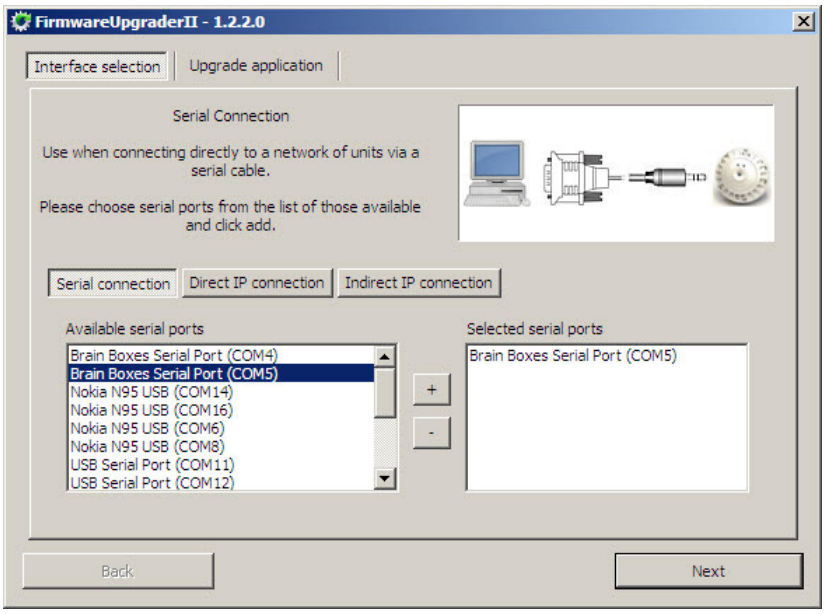

Figure 3.6.2

To remove a COM port from the selected list, highlight it and click the '-' button.

Note: if you have multiple units connected on different serial COM ports, it is possible to add all the serial ports to the selected serial ports list and then update them all at the same time!

Some specific IP firmware upgrades must be performed over an IP connection. It is recommend that all IP updates are performed via IP.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

3.7 Direct IP Connection

To connect to an IP enabled unit via direct IP connection, choose the 'Direct IP Connection' option, and specify the IP address(es) that you want to connect to.

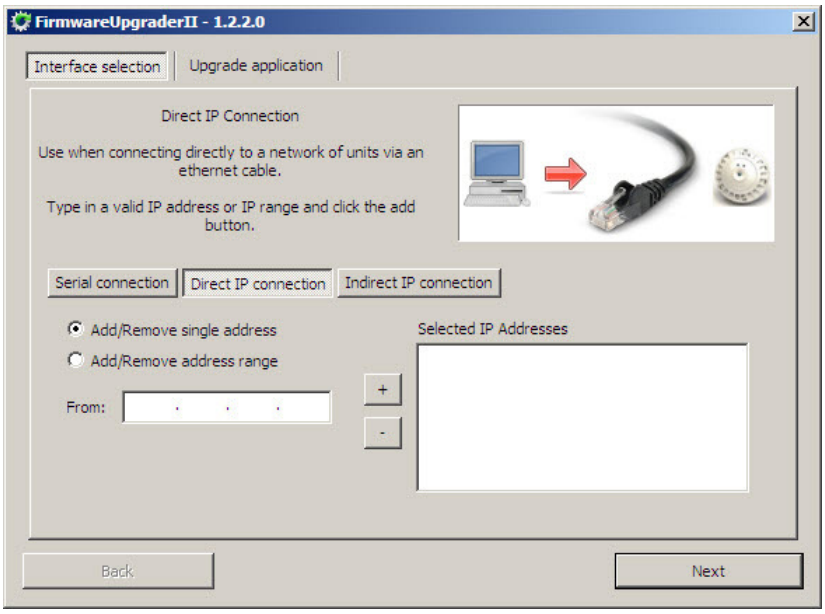

Figure 3.7.1

Just enter the relevant IP address and click the '+' button to add it to the selected IP Addresses list. Then click 'Next':

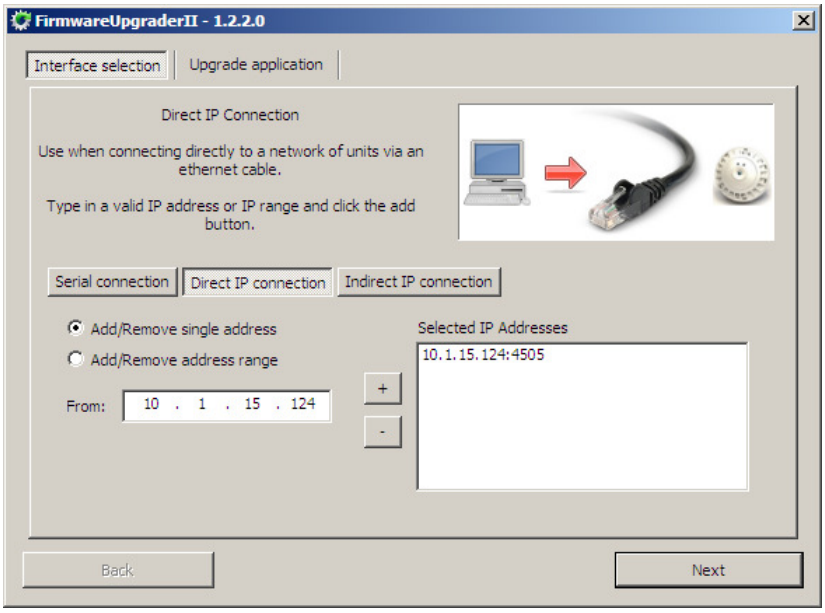

Figure 3.7.2

To remove an IP address from the list, highlight it and click the '-' button.

Note: you can specify a number of IP addresses or even a range of addresses, and the upgrader will upgrade each connected unit on those addresses at the Same time!

Some specific IP firmware upgrades must be performed over an IP connection. It is recommended that all IP updates are performed via IP.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

3.8 Indirect IP Connection

To wait for an incoming connection from an IP enabled unit, choose the Indirect IP connection option.

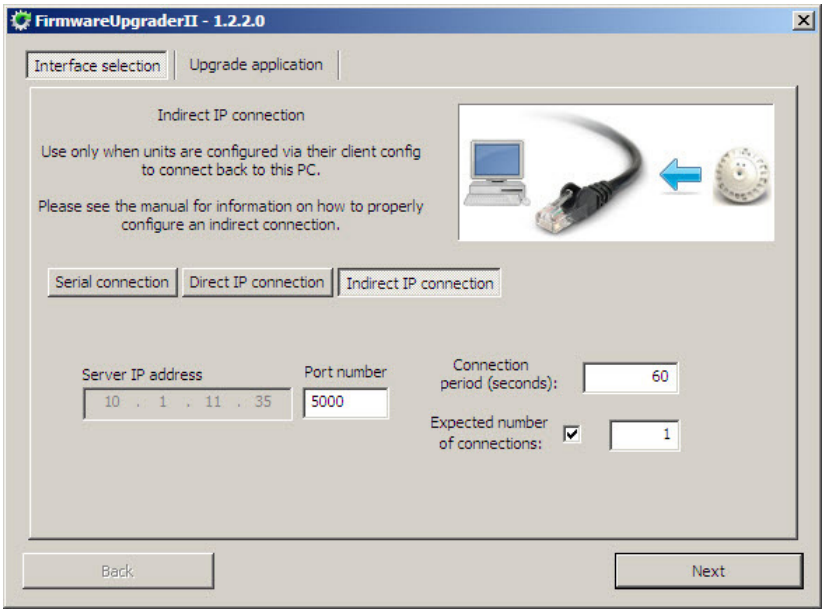

Figure 3.8.1

Here the Server IP address will be fixed to whatever the IP address of the upgrading PC is, i.e. the PC that the upgrader is running on. Therefore, this method of connection should be used on the server/PC that the counters usually connect in to. Note that you will need to shut down the software that the counters usually connect in to in order to proceed with this update. Where it is not possible to install the firmware upgrader software on the server; you must switch off the server or isolate it temporarily from the network; and then configure the PC running firmware upgrader with the same IP details as the server, again temporarily, in order for the counters to connect in to it, instead of the server.

The port number should be set to whatever port the counters usually connect in on. Note that it is not possible to connect to multiple counters on different ports. In these cases the firmware upgrader would need to be run several times; once for each port number used.

The connection period should be set to no less than whatever the Client Reconnection Interval was previously configured on the unit at time of installation. If you want to upgrade multiple units at once, ensure that the Interval period is set to the largest period if they are different.

When run, the upgrader will wait for the Interval period to timeout before beginning the update, and any counters that have connected at that point will be upgraded. But, if you know how many units will be connecting in, then you can specify this in the 'Expected Number of Connections' box. Once this number of units has connected in, the upgrade process will begin immediately and not wait for the full interval period to time out.

Once the relevant settings are made, click the 'Next' button.

Note: Upgrades over Indirect IP connection will only work when counters are configured to use Client Connect mode, see setup software user guide for details.

Note: Although you must specify the port that the counter is expected to connect in on, there must also be direct access to the counter on port 80. If this access is not obtained, Firmware Upgrader will warn you and the upgrade will not continue.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

3.9 Detecting Units

When you click the 'Next' button, the firmware upgrade software will verify the connections to the counter(s). This will take a few seconds.

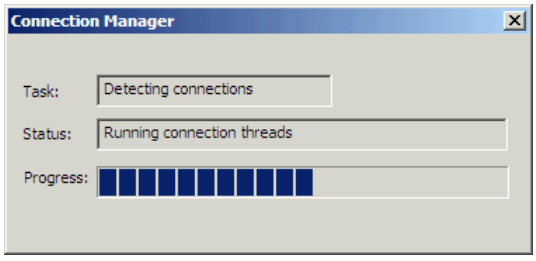

Figure 3.9.1

If connecting using the Indirect IP connection method, the upgrader software will halt at this point and will wait for, either; the Connection Period (specified earlier) to expire, or the 'Expected Number of Connections' to have been established (if enabled), and then it will continue.

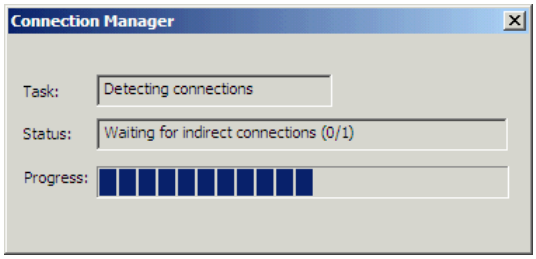

Figure 3.9.2

If a counter cannot be found using the connection details specified an error will be shown. In this case confirm the error by clicking the OK button and then click the Back button on the main window to verify or modify the connections details.

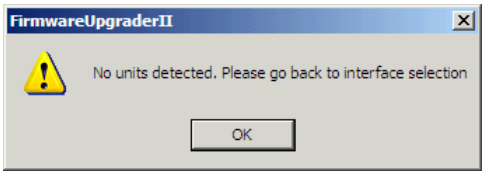

Figure 3.9.3

If at least one counter is found then the update process can proceed. However, if more than one connection was specified it is the user's responsibility to check that all the required counters have been found correctly. Firmware upgrader will not report connections which have not been made.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

3.10 Choose Upgrade Package

Once a unit has been detected and confirmed, a dialog box will open for you to choose the relevant upgrade package. This will be a file with an XML extension. Navigate to the XML file supplied and select it.

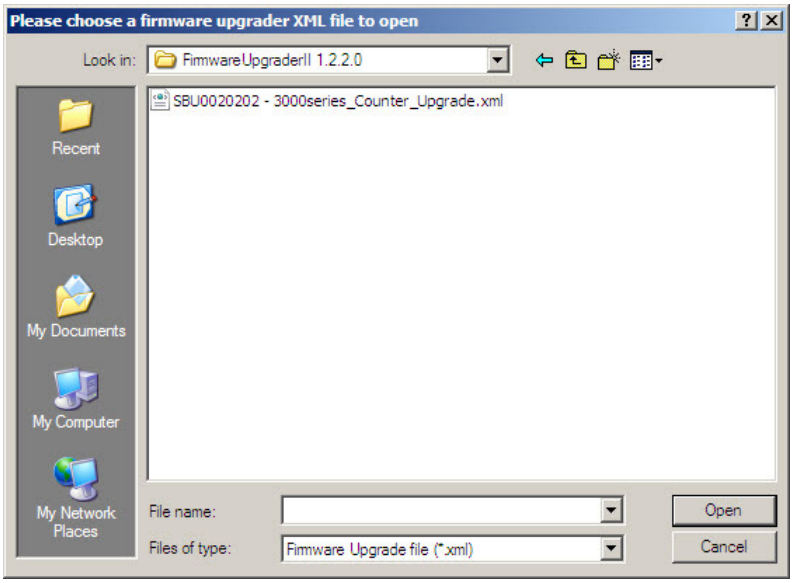

Figure 3.10.1

To select the file, click on it to highlight it and then click Open. The firmware upgrader will perform a few checks on the file and then you can proceed.

Once an upgrade file has been selected the firmware upgrade software will then perform a number of checks to ensure the file is compatible with the connected counter(s).

Some IP counter updates can only be performed via an IP connection. If you are connected via serial and select a package which must be performed over IP then you will be informed at this point.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

3.11 Proceed with the Update

Once all the checks have been done, and everything is ready, you can click the Upgrade button and the upgrade process will begin.

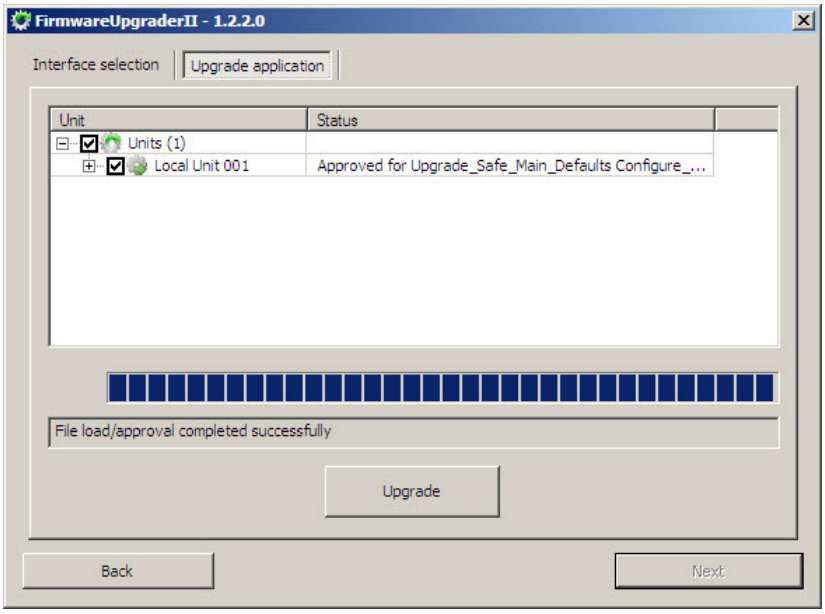

Figure 3.11.1

The process will begin and the progress bar will start to fill. Once it gets to the end, the upgrade is complete.

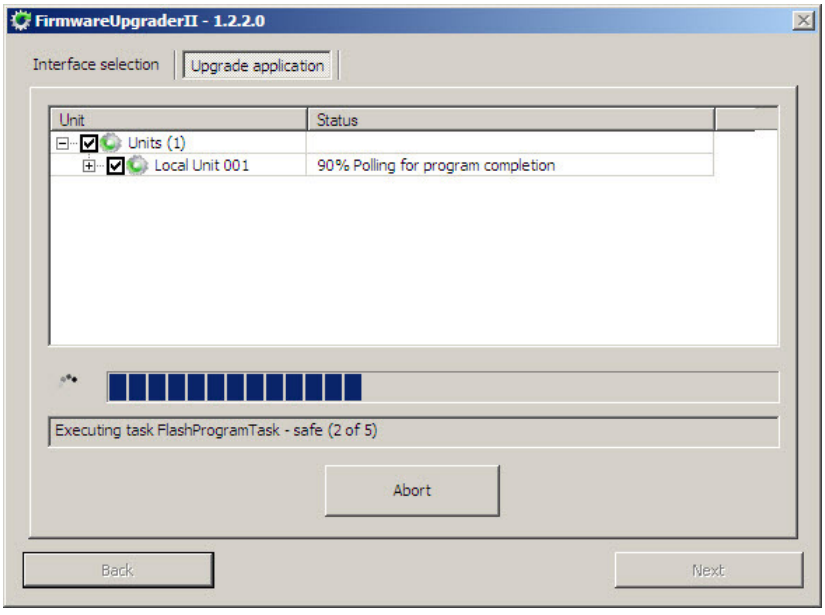

Figure 3.11.2

Note: Once the upgrade has begun, do not power off or disconnect any of the units.

Note: The percentage indicator is for the task in progress. Some updates have more than one task associated with them and the percentage indicator will start again at 0% at the beginning of each one. This is perfectly normal, and you should wait until all tasks are finished before attempting to disconnect or exit the software.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

Once the connected unit(s) is upgraded, an 'All units upgraded successfully' message will be displayed.

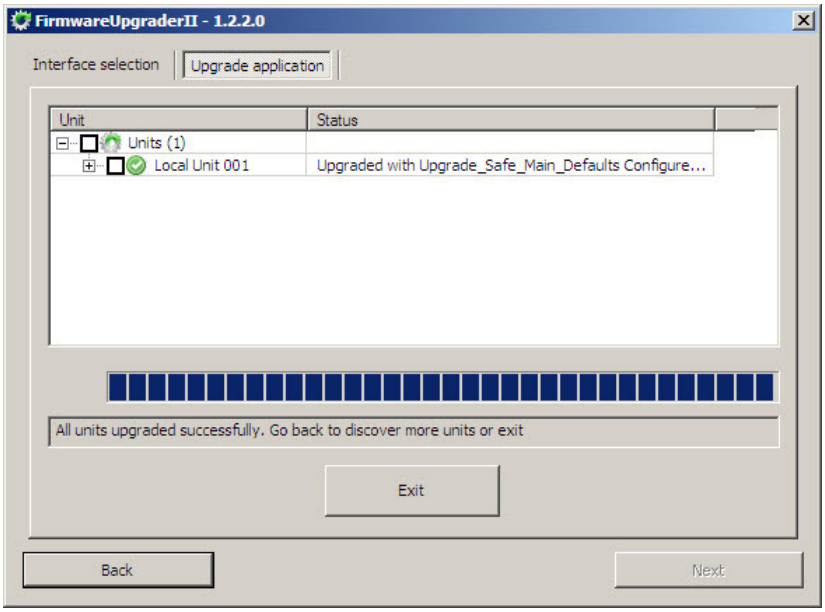

Figure 3.11.3

You can now close the software.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

4 Firmware Versions

4.1 About

This section details the different firmware components and their version numbers.

4.2 Firmware Components

Each counter has tracking and counting firmware. It is always best to have the latest tracking and counting firmware in order to make use of the latest algorithms and therefore have the best counting accuracy.

Each IP master counter additionally has two other components; the IP firmware and the Web Setup Tool firmware. Relay enabled units do not have these components nor do CAN Nodes which are connected to IP masters.

The IP firmware allows additional functionality of the API to be utilised, and the web setup tool firmware allows you to configure the latest additions to both the tracking firmware and the IP firmware, via your Internet browser.

Although the firmware upgrader will allow you to only update certain components, if required, it is always best to update all three firmware components, on an IP master unit, to the latest versions, at the same time, in order to fully benefit from the latest bug fixes, additions and improvements. The majority of the upgrade packages supplied by Irisys will contain all three components of the firmware. When upgrading a CAN node or a Relay enabled unit, only the tracking and counting component will be utilised automatically.

4.3 Firmware Versions

This section will be updated as new firmware versions are released:

Tracking and Counting Firmware	IP Firmware	Web Setup Tool Firmware	Notes
42.4.0.178	1.1.0.0	1.2.0.0	Beta Firmware
42.4.0.207	1.3.0.0	1.5.0.0	Beta Firmware
42.4.0.207	1.3.0.0	1.6.0.0	Beta Firmware
42.4.0.269	1.5.0.0	1.6.0.0	1st Release Level Firmware
42.4.0.315	1.8.0.0	1.7.0.0	
42.4.0.321	1.9.0.0	1.7.0.0	
42.4.0.321	2.0.2.10930	1.7.0.0	
42.4.0.362	2.0.2.10930	1.8.20506.1	First Relay Implementation
42.4.0.384	3.0.2.20429	1.7.20427.1	
42.4.0.389	3.0.2.20510	1.8.20506.01	
42.4.0.389	3.0.2.10930	1.7.0.0	
42.4.0.395	4.0.2.20617	1.9.20614.1	Latest Firmware package

If you have any counters running on any of the Beta firmware then you must update to the latest firmware before Irisys will provide technical support for that unit. Note that any problem with a Beta unit is probably fixed in the latest firmware!

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

5 F.A.Q.

Q. Can I update all my counters at the same time?

A. Yes, just enter all the COM ports numbers or IP addresses into the 'selected' box and continue in the usual way. Note that all units, to be upgraded via IP, must be accessible on the network from the PC running the firmware upgrader.

Q. I have just updated my counter firmware but now when I connect to a unit, via Internet Explorer, it still shows the old version number. Did the update fail?

A. Probably not. This is usually to do with the previous web pages being cached on your laptop. Caching means that pages that have already been accessed are served to you quicker but any changes to the page may not be shown until the files are refreshed. See "How do I refresh my cached web pages?" below.

Q. I have just updated my counter firmware but now when I connect to a unit, I get the Welcome page but cannot get a connection through the SetupTool. Why not?

A. Sometimes following an update the first connection request will fail. Simply hit Retry to try again and it should work the second time. If not try the following:

a. Check to see if anyone else is already connected by selecting 'Connections' option from the Welcome screen, if so, exit out of the software that is connected, or you can force the connection to be dropped by selecting the 'Close Connection' button.
b. Check that your laptop's IP address is in the same range as that of the counters. Check with your network administrator or IT department for assistance with this.
c. Delete your 'Browsing History', see "How do I delete my Browsing History?" below.
d. Close down your Internet browser and try again.

Q. How do I refresh my cached web pages?

A. To force a refresh simply hit the 'Refresh' option from within your browser; in Internet Explorer, you can simply hit the function key, 'F5'. ('Ctrl-F5' will force a hard refresh if 'F5' does not do anything).

Q. How do I delete my 'Browsing History'?

A. Sometimes this is required, if caching problems mean that the new pages from the new firmware aren't shown, or the Silverlight component has become corrupt. To do this in Internet Explorer, select 'Delete Browsing History' from the 'Tools' menu. Ensure all of the tick boxes are selected and then click the 'Delete' button. In older versions of Internet Explorer, ensure that 'Temporary Internet Files' including 'Files and settings stored by add-ons' are selected.

Q. I get a message saying that "IP access to port 80 could not be obtained". What does this mean?

A. Although the Firmware Upgrader software supports upgrading over different interfaces there is only one way to upgrade the Web Tools component. This is via direct IP access to port 80 on the IP unit from the host PC. You must ensure that you have the correct physical connection, and correct network settings, in order to achieve this, before you initiate an upgrade containing an updated web tools component. Otherwise the software will display the above message and cease to continue.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

Q. I have changed the IP address of the unit and now can't remember what it is. How do I find it out?

A. You must connect to the counter using the serial cable and serial version of the SetupTool in order to locate the IP address and set it to the required address.

Q. I have updated the firmware and everything loads ok except the Setup Tool reports an RFT error as soon as it starts, why isn't it working?

A. If you have the Firmware Upgrader software still open then you should close it and retry the connection through IE. If it reoccurs then it is probably due to a caching problem similar to the above issue but relating to Silverlight. You should delete your browsing history, as above. If this does not fix this issue, you should check your proxy settings and if possible disable the proxy server temporarily. If this causes complete loss of communication to the counter then you should speak to your Network Administrator for advice. With Proxy server disabled, you can force a page refresh by hitting 'CTRL-F5'. If this doesn't work then you should delete your browsing history and try again (see above for details of this procedure).

Q. What is the default IP address of a new counter?

A. The default address, as set by the factory, is 192.168.0.10, with a subnet mask of 255.255.255.0. Following a firmware update the IP settings should be retained and should not revert back to default settings.

Q. My Internet Browser reports 'Connection Reset' why is this?

A. This usually happens if the unit is disconnected or powered down. Reconnect and try again, note you may need to restart your Internet Browser in order to reconnect.

Q. Argh! I have updated the counter firmware, but the counter setup tool just crashed! What's happened?

A. All software has bugs; if you find a bug please help us by sending the Crash report that is created following a software crash. This will help us improve the product and make it more reliable. Please be assured that no personal information is included in this report. If using an early version of the Silverlight addon, the report will be located in the following folder:

```
C:\Documents and Settings\username\Local Settings\Application Data\IsolatedStorage\X\Y
```

Where X and Y are folder names made up of seemingly random characters. The best way to find crash reports is to search for filenames with an '.iricrash' extension. Alternatively, you should update to the latest version of Silverlight and you can then specify the save location. Please email this file to support@irisys.co.uk with any relevant details of the function you were performing just before the crash occurred.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

Q. When configuring my firewall what ports do I need to unblock to allow the counter to work correctly?

A. The counter needs three ports through your firewall – for configuration via IP you need port 80, for HTTP, and port 943, for the Silverlight add-on, and you also need port 4505 for the API in order to communicate with the counter and retrieve counts etc.

Q. I have changed the password of the unit and now can't remember what it is. How do I find it out?

A. You must connect to the counter using the serial cable and serial version of the SetupTool in order to reset the password.

Q. What is the Username and Password of the counter to allow me access to the Setup Tool?

A. The default username is 'admin' with the password 'installer'. If this does not work then it is possible that someone has changed it, see "I have changed the password of the unit and now can't remember what it is" above.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

Glossary

Active Infrared	Active Infrared devices emit their own infrared signals and then detect the infrared that bounces back. IRISYS people counters do not use active infrared; instead, *passive infrared* is detected.
Array	This is the 16x16 component that is built into each counter, which detects the temperature change. The output from the array is not shown to the user/installer, but the interpreted signals are shown in the form of targets.
Backup	Setup Software Program option. Allows the current set-up to be saved into a file on the PC. All options will be saved. The configuration file can then be loaded at a later date into a replacement counter or a similarly mounted counter. See document IPU40183 for details.
Cache	A web cache is used by Web browsers such as Internet Explorer in order to speed up the display of web pages. The previous copy of the web page is displayed instead of retrieving the same page over and over again. This makes web pages quicker to display but problems can arise when the original page has changed but the older, cached page, is still displayed.
CAN	(Controller Area Network). This is a real-time, serial, broadcast protocol that runs up to 1Mbps - IRISYS People Counters run at 320kbps. The signalling is carried out using differential voltages and it is from this that CAN derives much of its noise immunity and fault tolerance.
CAN Network	A connection of *CAN* enabled *node* counters connected to an IP master counter.
CAN Node	A type of counter that is connected to an IP *master* in order to provide greater coverage than would be provided by the *master* alone. Up to 7 nodes can be connected to a single *master*.
COM Port	Usually a 9 (or 25) pin D-type connector found on most PCs specifically for communicating with external serial devices. Required to communicate locally with IRISYS counters for configuration purposes.
COMMs ID	All devices on a *CAN* network must have a valid *ID* for addressing purposes. Valid IDs for IRISYS counters are between 1 & 120.
Count Line	Two count lines can be configured within each *master* counter. If the *master* has additional *node* counters connected to it then the count lines will usually span across these also. A person is said to have been counted when they cross a count line – usually configured as an IN and an OUT and they conform to the chosen count mode.
Count Mode	Counts are incremented when a count line is crossed and that crossing conforms to the count mode selected. Four count modes are selectable which allow for immediate increment as soon as the count line is crossed and deferred increment which occurs when the target leaves the field of view. Further options to count or ignore U-turns and the enabling or disabling of Dithering monitoring can also be configured.
Data Logger	An external device that interfaces the output of a counter to display/store/record count data.
Daisy Chain	The wiring style used to connect CAN node units to an IP master counter, effectively, along a single terminated cable.
Default	Setup Software Menu option. Select this option to restore all settings back to factory configured settings.
Description	See *Unit Descriptor*.
Field Of View	What the counter sees through its lens; a square area on the ground. A mounting height graph is available which shows the size of the field of view at a given height.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

Firmware	This is the low level software which is involved with very basic operations of the counter. E.g. IP connectivity, the embedded IP connected SetupTool, and the processor firmware which handles the tracking and counting. See Section 4 for more firmware versions.
Flash memory	This is the non-volatile area of the counter's memory that is not lost when the counter is powered down or reset. User configurable settings are stored in flash memory.
Flip Lines	Setup Software Menu option. Select this option to change the direction that a count line must be crossed to trigger a count. See document IPU 40183 for more details.
FOV	See *Field Of View*.
Fragmentation	Fragmentation is observed as a persons target dividing into other seemingly random targets as that person moves through the field of view. This can occur if the counter is mounted too low for example. The fragmentation can be influenced by adjusting the 'Discrimination Sensitivity' slider, see document IPU 40183 for more details.
Ground plane	This is the mapping of each counters field of view on to its relevant position at ground level. The master counter communicates with every connected node unit and plots and tracks each target across the ground plane as it moves from one counters field of view to another's.
Heartbeat	This is the pulsing of the two LEDs on each unit every 5 seconds to show that it is alive and working. If ever the heart beat was to stop and not be seen, then the installer would be alerted to a problem or failure which needs to be addressed, e.g. power switched off.
ID	See *Comms ID.*
Indoor Unit	This is the plastic version of the people counter for indoor mounting only.
Infrared	The region of the electromagnetic spectrum bounded by the long-wavelength extreme of the visible spectrum (approximately 0.7 μm) and the shortest microwaves (approximately 0.1 mm). Irisys people counters detect infrared in the waveband 7-12μm.
IP Master	A type of counter that connects to an Ethernet network and provides count data over the IP protocol. If connected to additional node units then the field of view can be effectively enlarged to cover wider entrances than possible with a single master unit. In these cases, the master counter outputs the total counts from all connected counters as if from a single unit.
LEDs	Light Emitting Diodes. These are the red and green lights that flash on the units under certain conditions.
Master	See *IP Master* or *Relay Master*.
Mounting Height	Distance from the ground that the counter(s) are installed. Valid range for standard unit is 2.2m – 4.8m, although higher mounting versions will be available Q3 2009. Note the optimum height is 3.5m high.
Mounting Height Graph	Used for calculating the coverage of a single unit and also the maximum distance apart that counters can be from each other when installing a *wide opening network*. See document IPU40188.
Node	See *CAN node.*
Outdoor Unit	This is the metal version of the people counter for outdoor and challenging indoor environments where moisture may be a factor. This will be available Q4 2009.
Passive infrared	Passive infrared devices detect the presence of people by detecting the naturally emitted infrared radiation. This is how all Irisys units operate.
Permanent	Setup Software Program option. This fixes the current settings into the *flash memory* of the counter so that they are not lost following a reboot or power cycle.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk

PoE	See *Power over Ethernet.*
Power Injector	Irisys device for sending power to counters over CAT5 cable. Not *Power over Ethernet*.
Power over Ethernet	This is the method of powering network equipment using the spare wires in a CAT5 cable. PoE devices must conform to the IEEE standard 802.3af, which specifies 48V supply. Irisys IP counters do not conform to this standard as they require a maximum of 28V, therefore PoE must not be used with Irisys IP counters.
Relay Master	A type of counter that connects to a logger and provides count data via relay output. If connected to additional node units then the field of view can be effectively enlarged to cover wider entrances than possible with a single master unit. In these cases, the master counter outputs the total counts from all connected counters as if from a single unit.
Relay Output	Type of pulsed output accepted by some logging equipment.
Reset Counters	Setup Software Menu option.
Restore	Setup Software Menu option. Allows previously saved configurations to be loaded straight into a counter.
RS232	Name of standard PC *COM port* serial connection.
Settling Time	The counters detect changes in temperature so must settle into their installed environment upon switch on. Settling time is between 45 seconds and 2 minutes dependant on ambient temperature.
Setup Module	All counters require configuration before they work effectively. The preferred method of configuration is via IP and direct connection to the counters Ethernet connection, however a setup cable is available in order to communicate via USB/Serial.
Target	Every person seen by the counter will be interpreted and displayed as a separate target in the ground plane view.
Tracking	The following of each target through, and around, the ground plane.
Unit Descriptor	Menu option. A description can be stored in each counter which can be read over the IP network via the *IP master* counter.
Unit ID	See *Comms ID*.
Wide Opening Network	When a number of counters are connected and mounted together to form a small network, usually to count across a wide doorway. The units are connected together via RJ45 patch leads running the CAN protocol, with a *master* unit 'controlling' the network and using an IP connection to output the total counts for that network. To the outside world the CAN network functionality is unseen and the counts are the same as if output from a single unit.

Telephone: +44(0)1604 594200 Fax: +44(0)1604 594210 e-mail: support@irisys.co.uk web: www.irisys.co.uk