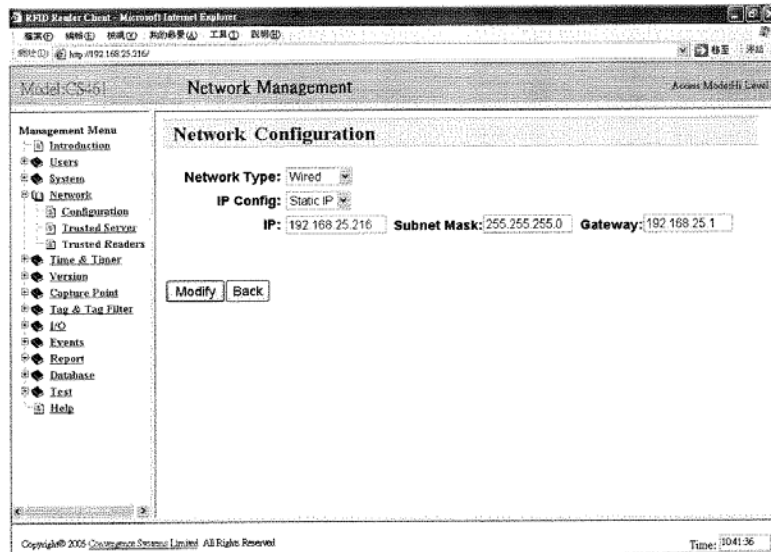


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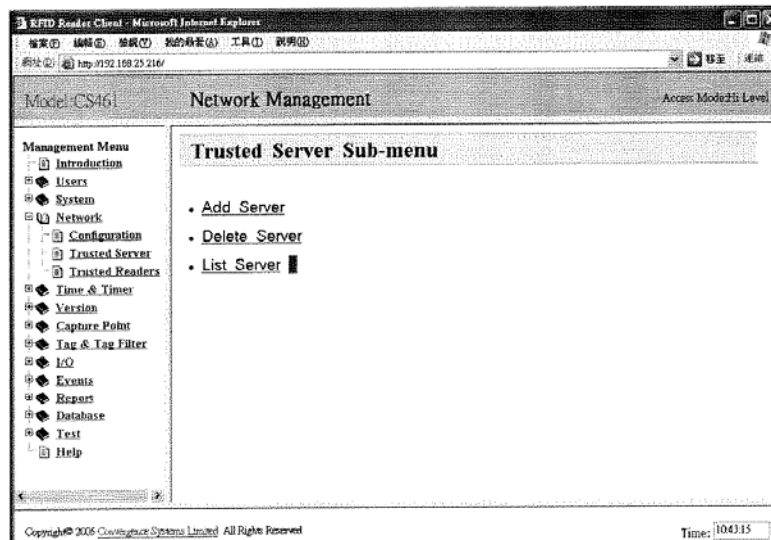
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Here is the network configuration page, it allows the user to set IP settings.



Here is the Trusted Server page that user can configure which server(s) the reader can communicate with.

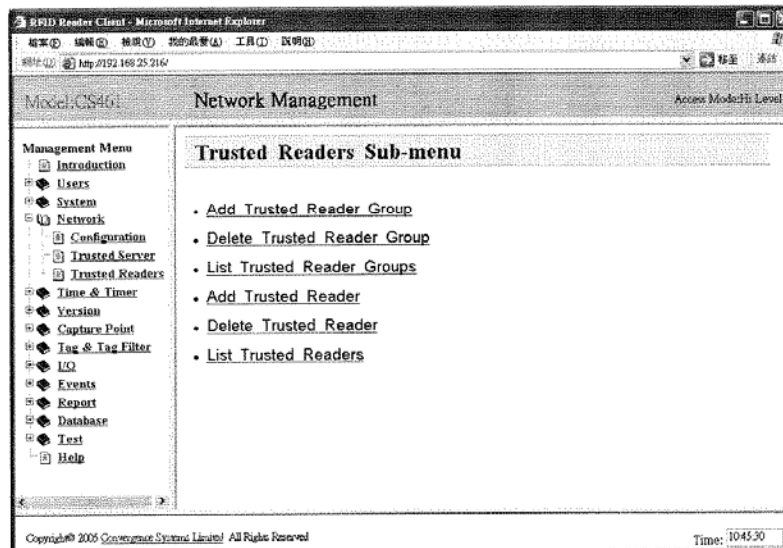


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Here is the Trusted Readers page that the user can configure which reader(s) this reader can communicate with.



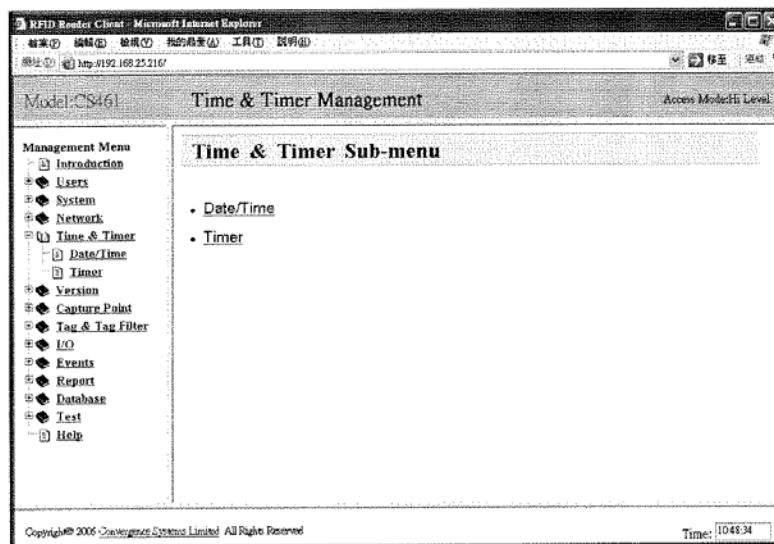
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7.1.5 Time & Timer Management

Time and Timer page allows the user to set the current time for the real time clock inside the reader, plus set schedules for various operations.

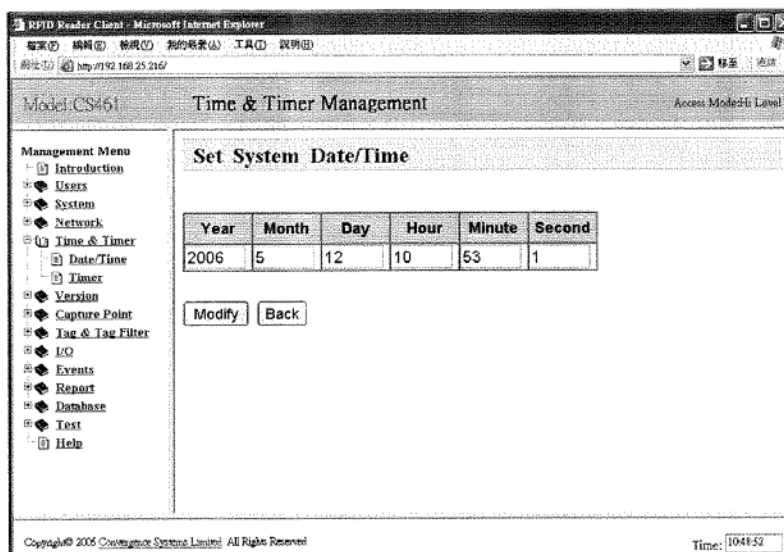


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Here is the page where the user can set the year, month, date, hour, minute and second time:



Year	Month	Day	Hour	Minute	Second
2006	5	12	10	53	1

Modify Back

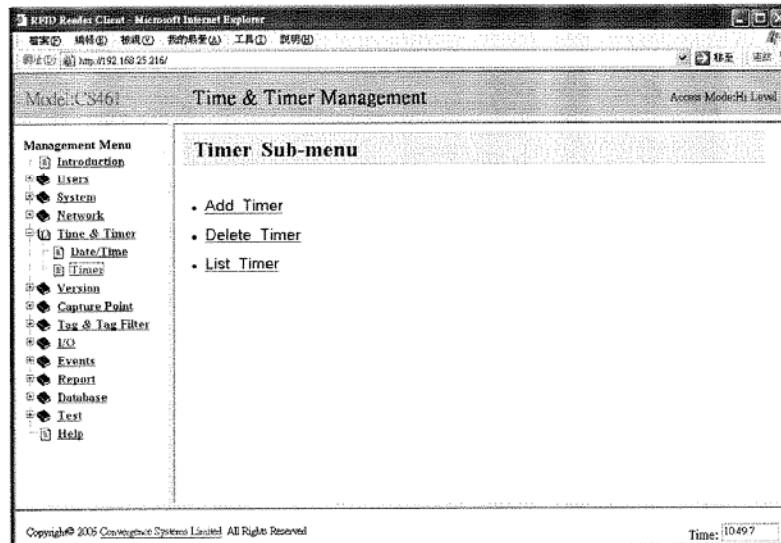
Copyright © 2005 Convergence Systems Limited. All Rights Reserved Time: 1041:52

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Here is the Timer sub-menu, it allows setting of time filter for event use:

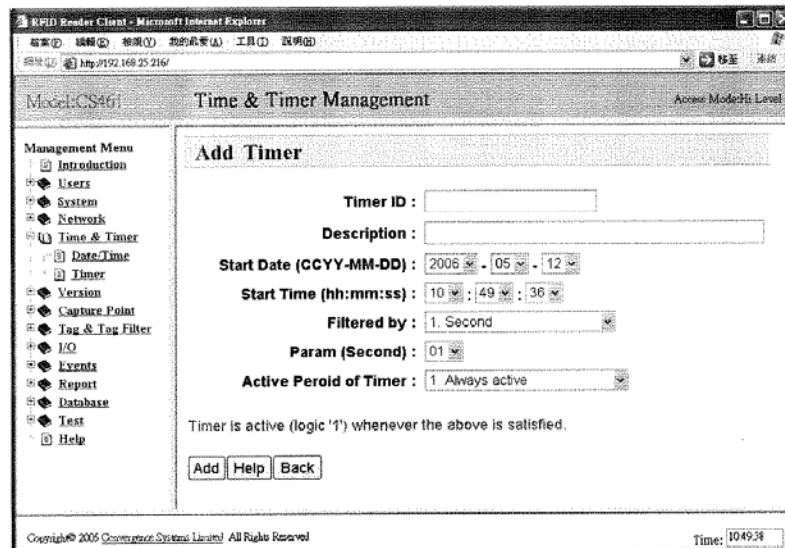


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This is the Add Timer page. It allows many different modes of time filtering.



RPID Reader Client - Microsoft Internet Explorer

Model: CS261 Time & Timer Management Access: ModelHi Level

Management Menu

- Introduction
- Users
- System
- Network
- Time & Timer
 - Date/Time
 - Timer
- Version
- Capture Point
- Tag & Tag Filter
- I/O
- Events
- Report
- Database
- Test
- Help

Add Timer

Timer ID :

Description :

Start Date (CCYY-MM-DD) : 2006 - 05 - 12

Start Time (hh:mm:ss) : 10 : 49 : 36

Filtered by : 1. Second

Param (Second) : 01

Active Period of Timer : 1 Always active

Timer is active (logic '1') whenever the above is satisfied.

Add Help Back

Copyright © 2005 Convergence Systems Limited All Rights Reserved Time: 1049:38

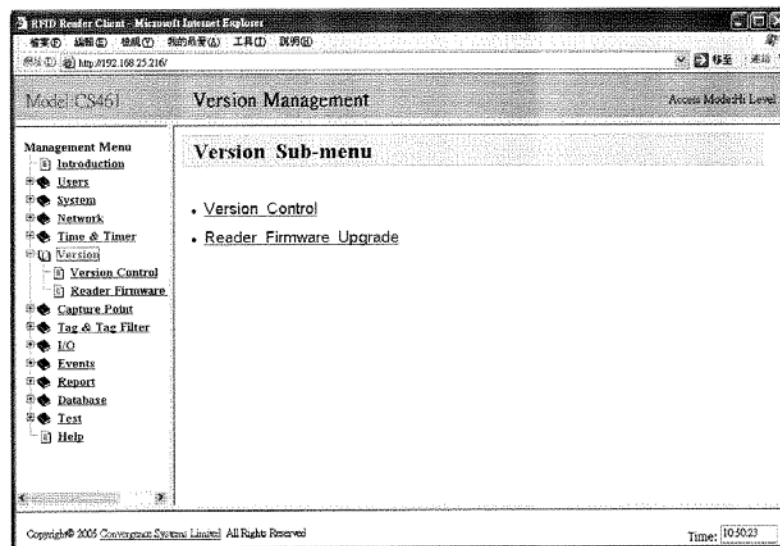
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7.1.6 Version Management

Version management allows you to see the version upgrade history (in the Version Control Submenu), and to do firmware upgrade (in the Firmware Upgrade Submenu).

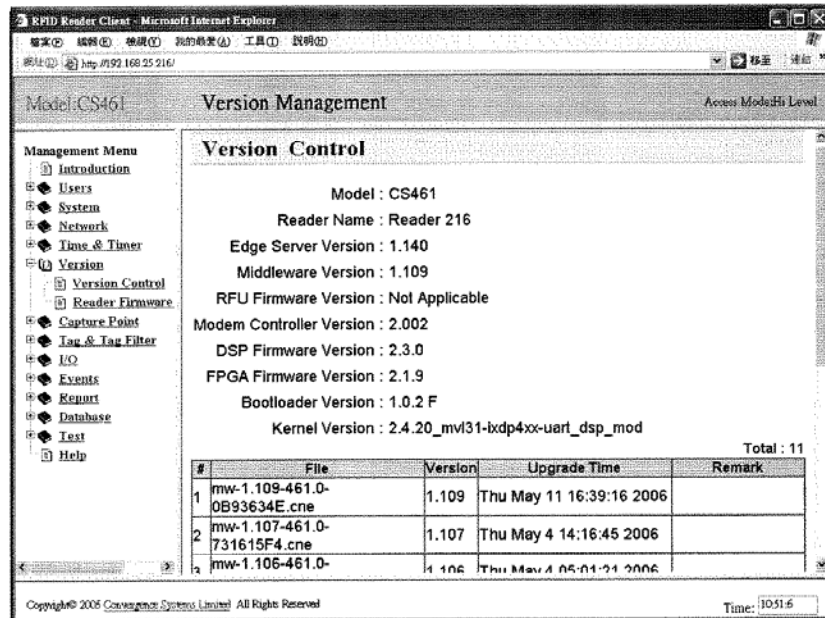


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In the version control sub-menu page, one can see the version number of the software, which consists of the edge server, the firmware, the boot-loader, and the kernel. This is an important page to check if the versions are correct, especially after a firmware upgrade.



Model: CS461

Version Management

Access Mode: Hi Level

Management Menu

- Introduction
- Users
- System
- Network
- Time & Timer
- Version
 - Version Control
 - Reader Firmware
- Capture Point
- Tag & Tag Filter
- I/O
- Events
- Report
- Database
- Test
- Help

Version Control

Model : CS461
Reader Name : Reader 216

Edge Server Version : 1.140
Middleware Version : 1.109
RFU Firmware Version : Not Applicable
Modem Controller Version : 2.002
DSP Firmware Version : 2.3.0
FPGA Firmware Version : 2.1.9
Bootloader Version : 1.0.2 F
Kernel Version : 2.4.20_mvl31-ixdp4xx-uart_dsp_mod

Total : 11

#	File	Version	Upgrade Time	Remark
1	mw-1.109-461.0-0B93634E.cne	1.109	Thu May 11 16:39:16 2006	
2	mw-1.107-461.0-731615F4.cne	1.107	Thu May 4 14:16:45 2006	
3	mw-1.106-461.0-	1.106	Thu May 4 05:01:24 2006	

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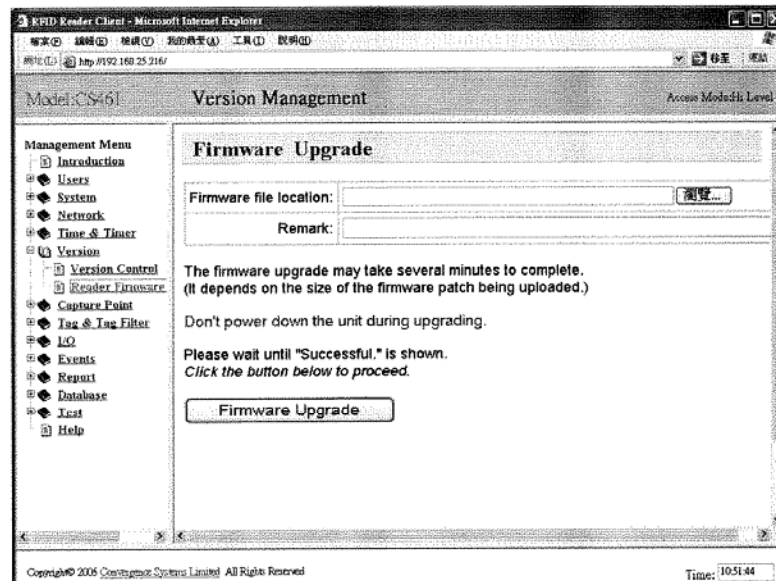
Time: 10:51:6

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In the firmware upgrade submenu, just press the **Browse** button and find the upgrade file (which the user has already downloaded from CSL website before). Just select the upgrade file with the .cne extension, without doing anything to it, and press open. Then press the **Firmware Upgrade** button. The upgrade takes from 3 minutes to 8 minutes, depending on the size of that particular upgrade. Please wait until you see the success message. The reader needs to be rebooted afterward, either physically unplugging the power supply, or by the web interface (Restart page in System menu).



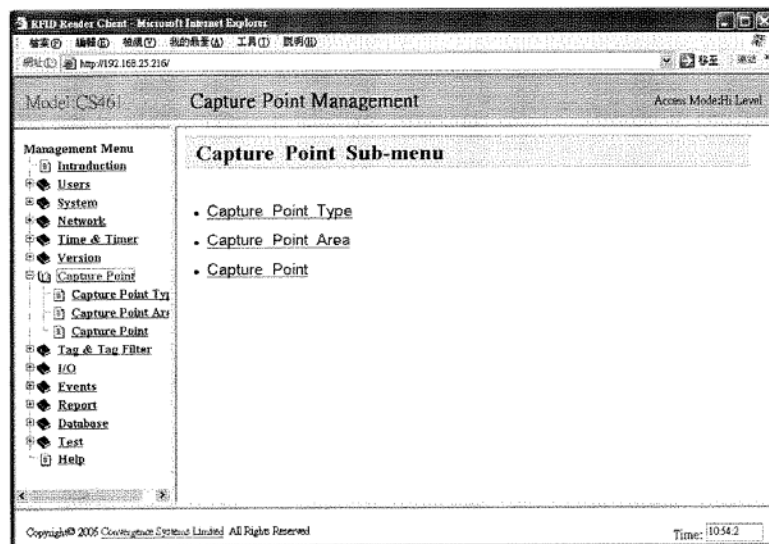
Prüfbericht - Nr.:
Test Report No.

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7.1.7 Capture Point Management

Capture point management page allows the user to set the capture point according to the operation environment.

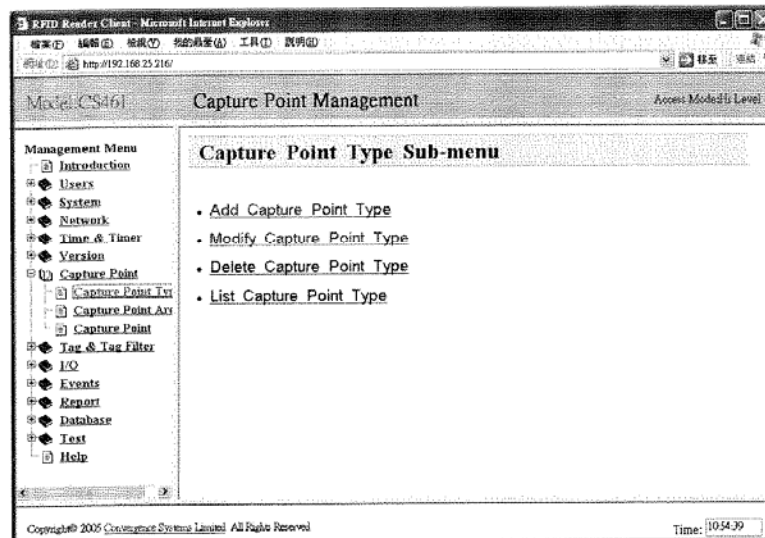


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Here is the capture point type sub-menu:

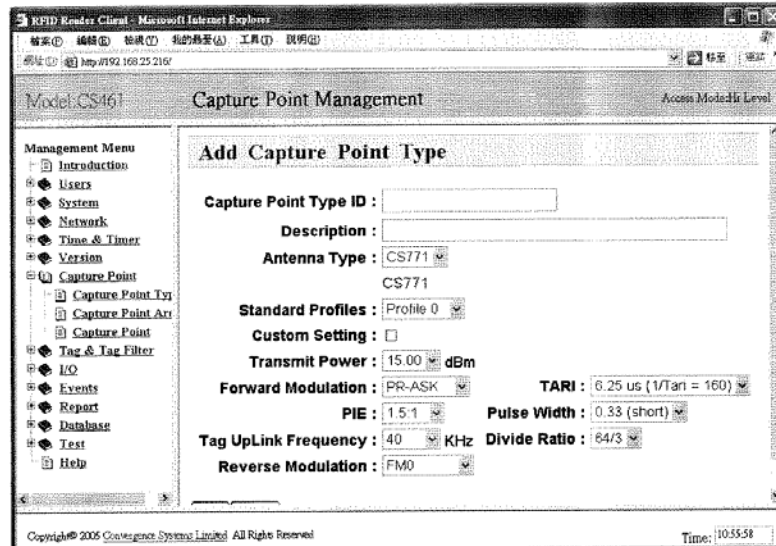


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In this page, each capture point type is defined:



The screenshot shows the 'RFID Reader Client' application window. The title bar indicates it is running in 'Microsoft Internet Explorer'. The address bar shows 'http://192.168.25.216/'. The main content area is titled 'Capture Point Management' and 'Add Capture Point Type'. On the left, there is a 'Management Menu' with a tree view containing: Introduction, Users, System, Network, Time & Timer, Version, Capture Point (expanded), Capture Point Type, Capture Point Area, Capture Point, Tag & Tag Filter, I/O, Events, Report, Database, Test, and Help. The 'Add Capture Point Type' form contains the following fields and values:

- Capture Point Type ID : [Empty text box]
- Description : [Empty text box]
- Antenna Type : CS771 (dropdown menu)
- Standard Profiles : Profile 0 (dropdown menu)
- Custom Setting : ☐
- Transmit Power : 15.00 dBm
- Forward Modulation : PR-ASK (dropdown menu)
- PIE : 1.5:1 (dropdown menu)
- Tag UpLink Frequency : 40 KHz
- Reverse Modulation : FM0 (dropdown menu)
- TARI : 6.25 us (1/Tari = 160) (dropdown menu)
- Pulse Width : 0.33 (short) (dropdown menu)
- Divide Ratio : 64/3 (dropdown menu)

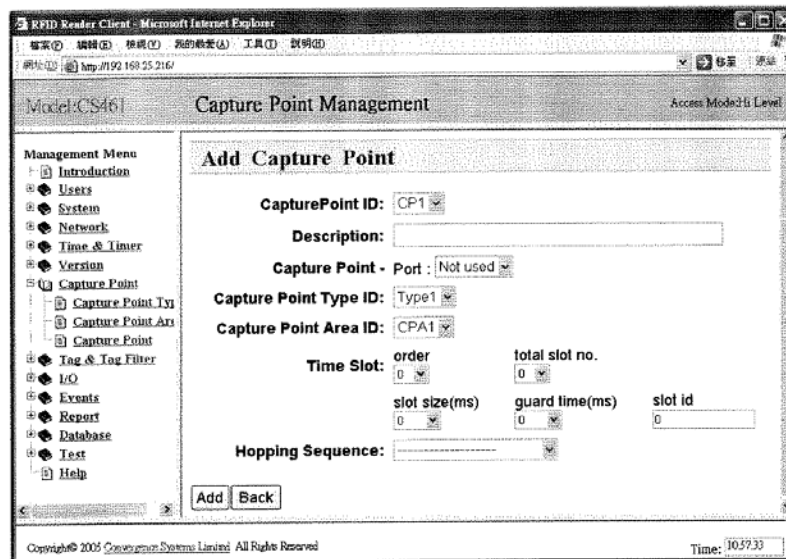
At the bottom of the window, the copyright notice 'Copyright © 2005 Convergence Systems Limited. All Rights Reserved' and the time 'Time: 10:55:58' are visible.

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This is the add capture point page, using a capture point ID to identify the capture point, the relevant antenna port is selected and other parameters are defined.



Model:CS461 Capture Point Management Access Mode:Full Level

Management Menu

- Introduction
- Users
- System
- Network
- Time & Timer
- Version
- Capture Point
 - Capture Point Type
 - Capture Point Area
 - Capture Point
- Tag & Tag Filter
- I/O
- Events
- Report
- Database
- Test
- Help

Add Capture Point

CapturePoint ID: CP1

Description:

Capture Point - Port : Not used

Capture Point Type ID: Type1

Capture Point Area ID: CPA1

order	total slot no.	slot size(ms)	guard time(ms)	slot id
0	0	0	0	0

Hopping Sequence:

Add Back

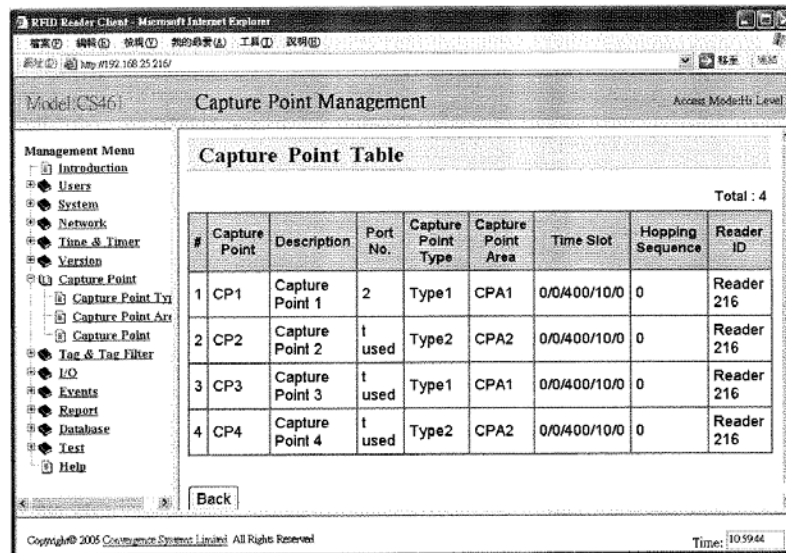
Copyright © 2005 Convergence Systems Limited All Rights Reserved Time: 10:59:33

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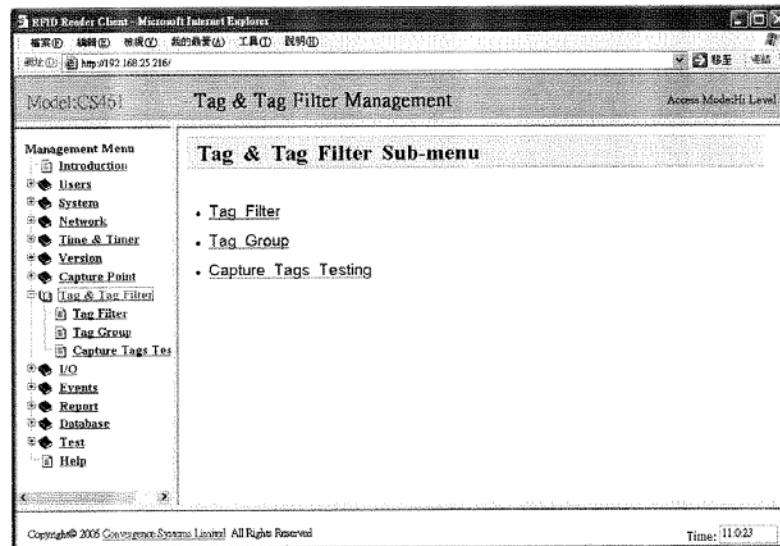
Here is the capture point table where one can look at the capture points he has defined so far:



#	Capture Point	Description	Port No.	Capture Point Type	Capture Point Area	Time Slot	Hopping Sequence	Reader ID
1	CP1	Capture Point 1	2	Type1	CPA1	0/0/400/10/0	0	Reader 216
2	CP2	Capture Point 2	t used	Type2	CPA2	0/0/400/10/0	0	Reader 216
3	CP3	Capture Point 3	t used	Type1	CPA1	0/0/400/10/0	0	Reader 216
4	CP4	Capture Point 4	t used	Type2	CPA2	0/0/400/10/0	0	Reader 216

7.1.8 Tag & Tag Filter Management

Tag and Tag Filter management page allows the user to set tag, add tag to tag group, query tag (look for a certain tag), set tag filter, capture tags in a defined time interval, and do all kinds of operation on tags collected.

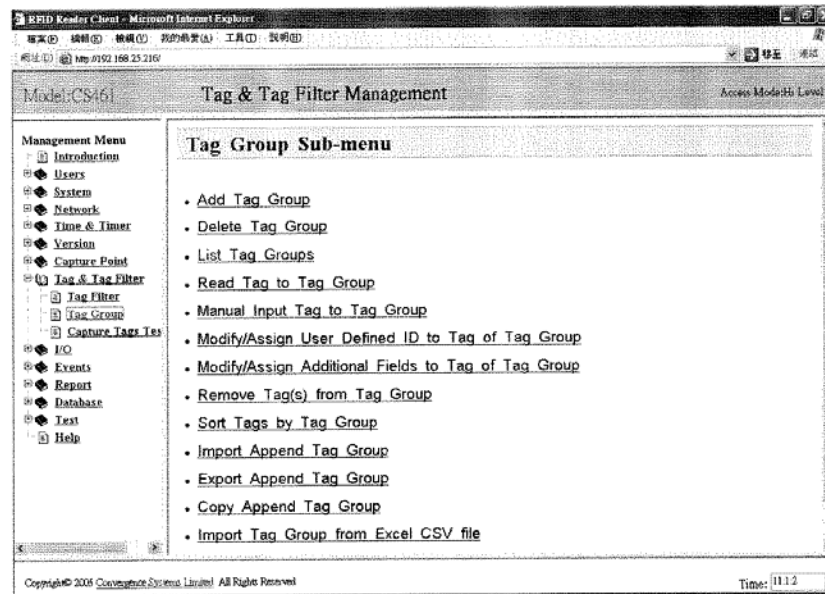


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This is tag group page, it allows input of tag ID and user ID into the system:

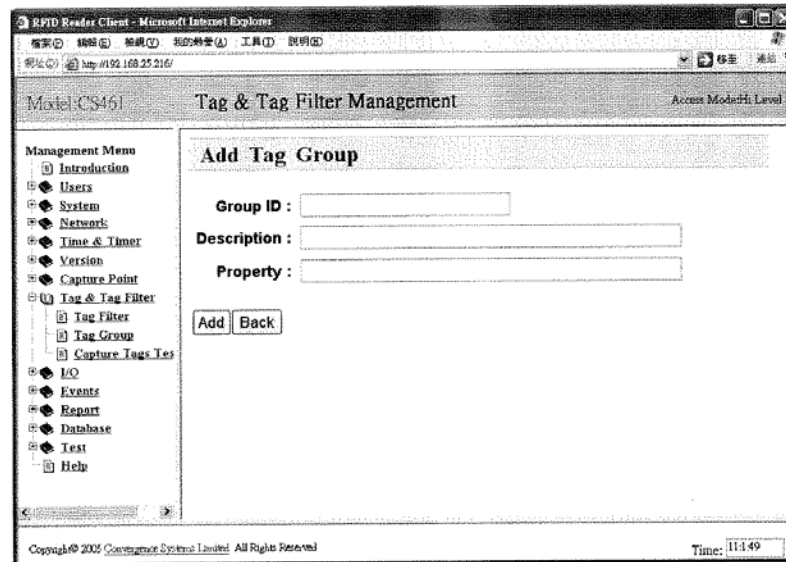


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The following is the add tag group page:

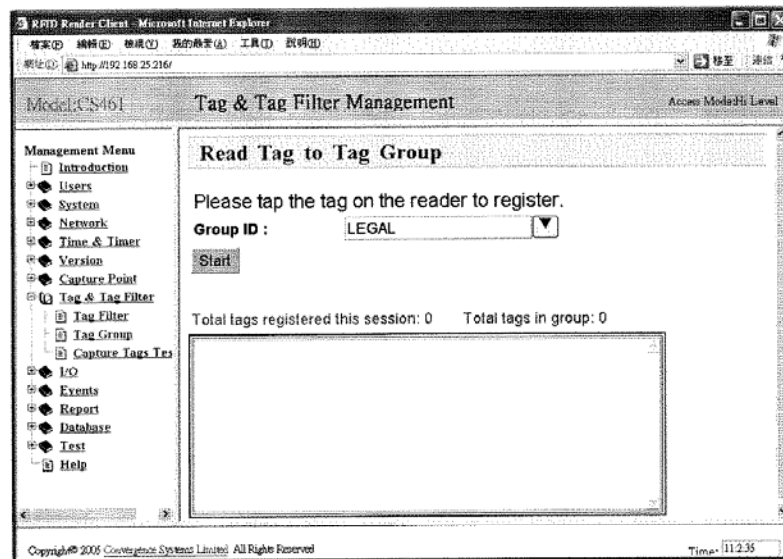
The screenshot shows a web browser window titled 'RFID Reader Client - Microsoft Internet Explorer'. The address bar shows 'http://192.168.25.216/'. The page title is 'Tag & Tag Filter Management'. On the left is a 'Management Menu' with a tree view containing: Introduction, Users, System, Network, Time & Timer, Version, Capture Point, Tag & Tag Filter (selected), Tag Filter, Tag Group, Capture Tags Test, I/O, Events, Report, Database, Test, and Help. The main content area is titled 'Add Tag Group' and contains three input fields: 'Group ID:', 'Description:', and 'Property:'. Below these fields are 'Add' and 'Back' buttons. The footer of the browser window shows 'Copyright © 2002 Convergence Systems Limited. All Rights Reserved' and 'Time: 11:49'.

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The following is the read tag into tag group page, it allows the user to take the card to the antenna and let the reader reads it and then it is then registered into a certain group, as selected by user. Here the user should press the “Start” button and the reader will start picking up tags held to the antenna:



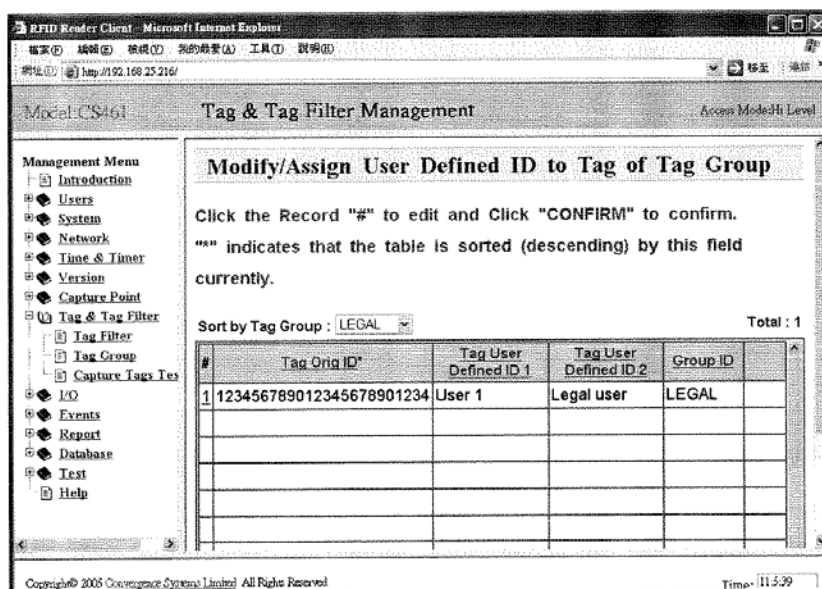
At the end of the operation, press the “stop” button to stop reading tags.

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The tag recorded can then be associated with a user defined ID (usually the actual ID holder name in a company). Press the red item number on the left, then the tag User Defined ID column will become active. Edit the name there. Then press the red "CONFIRM" key on the right to confirm:

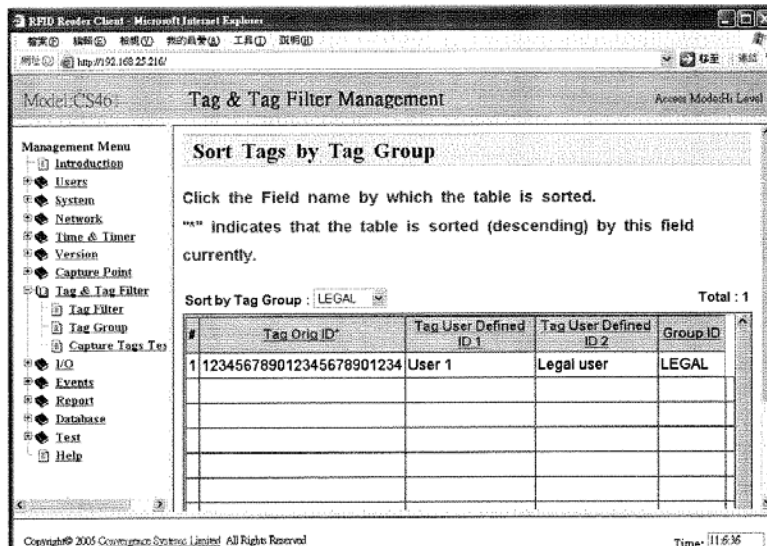


Prüfbericht - Nr.:
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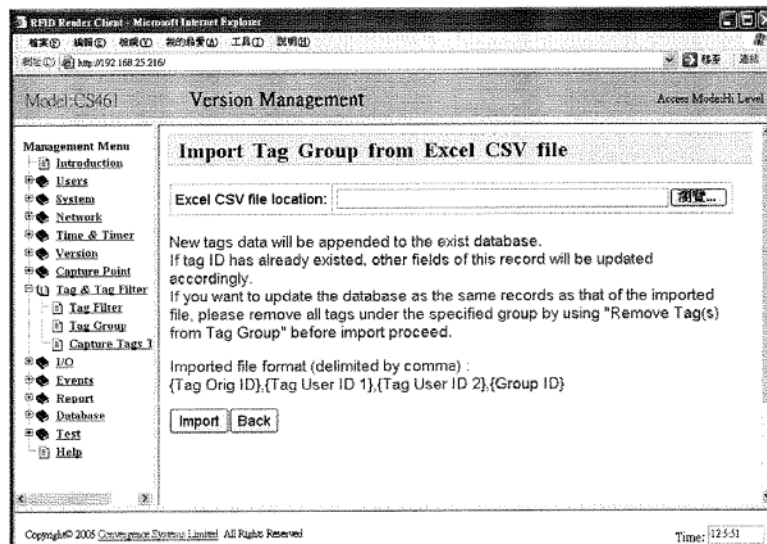
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The end result is listed in sort tag by tag group page:



User can also input the Tag information from CSV file format on the "Import Tag Group from Excel CSV file" page:



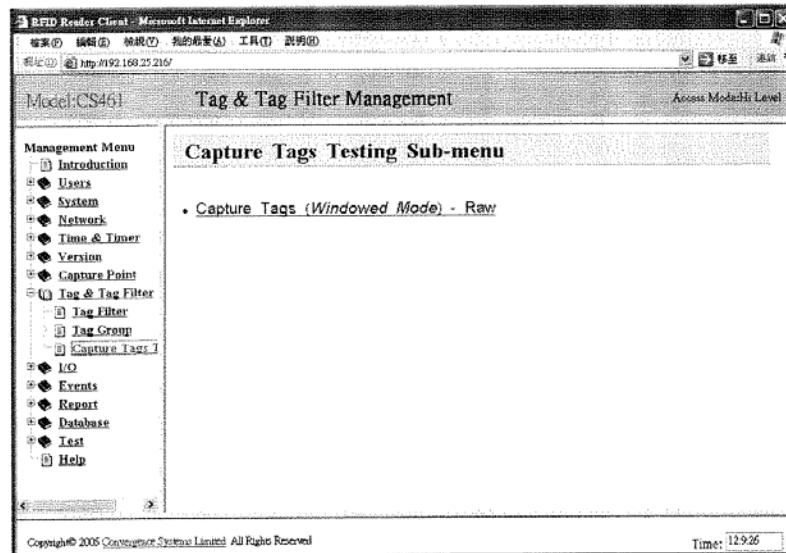
The imported file format should delimited by comma as below:
{Tag ID},{Tag User ID1},{Tag User ID2},{Group ID}

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There is a Capture Tags Testing page. This page allows user to set up tag capturing trial operations to test the capturing process and optimize the local set up (such as antenna placement, capture point arrangement, capture time, etc.) to get best performances.

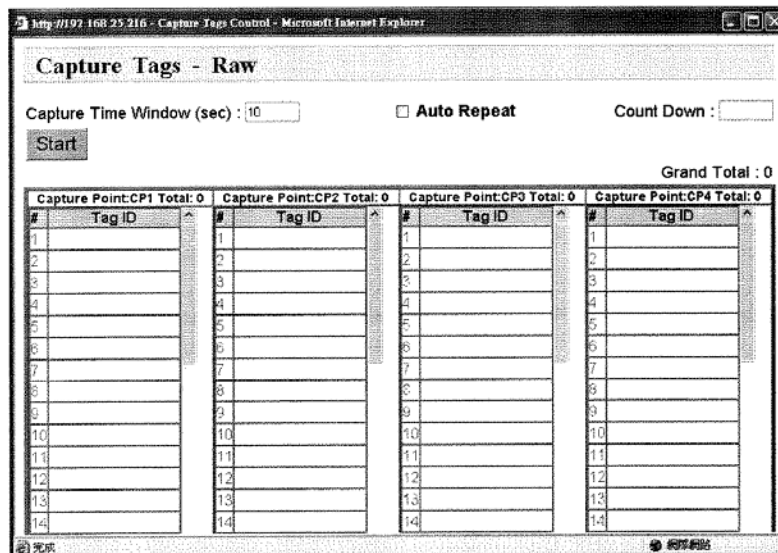


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In the capture tags testing, one can select a combination of capture points and print out the tags collected from them. The capture time window (in seconds) can be set to define how long will the reader be collecting tags. The green "Start" button, once pressed, will start a new measurement. After the time defined by capture time window, the reader will collect all tag IDs and they will be listed in the box below. The "Auto Repeat" selection box allows one to continuously repeat the measurement. The total number of tags collected in each time window is shown on the right hand side in "Grand Total".



Capture Point:CP1 Total: 0		Capture Point:CP2 Total: 0		Capture Point:CP3 Total: 0		Capture Point:CP4 Total: 0	
#	Tag ID	#	Tag ID	#	Tag ID	#	Tag ID
1		1		1		1	
2		2		2		2	
3		3		3		3	
4		4		4		4	
5		5		5		5	
6		6		6		6	
7		7		7		7	
8		8		8		8	
9		9		9		9	
10		10		10		10	
11		11		11		11	
12		12		12		12	
13		13		13		13	
14		14		14		14	

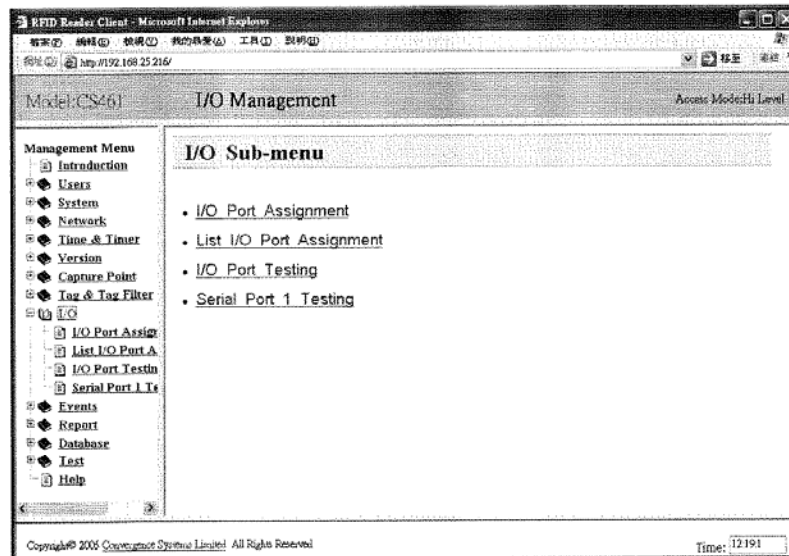
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7.1.9 IO Management

IO management page allows the user to define the various ports of input and output, giving them logical name for subsequent uses in event and other management.

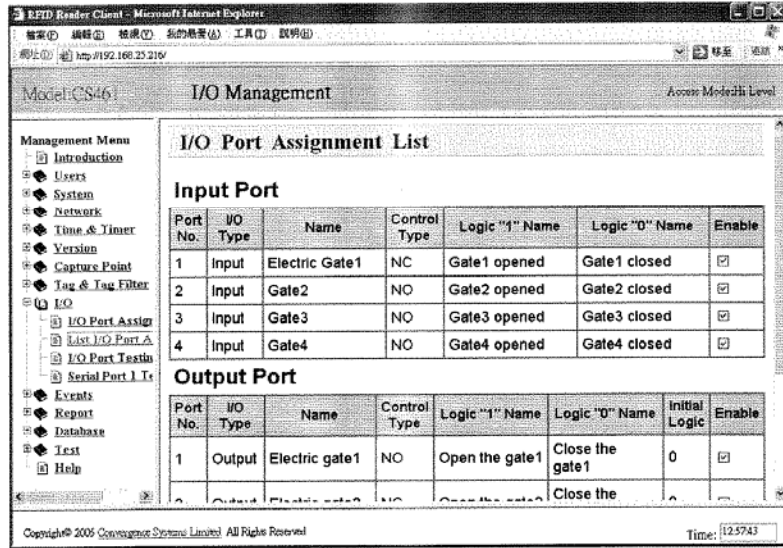


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Here is the port assignment listing page:



The screenshot shows a web browser window titled "RFID Reader Client - Microsoft Internet Explorer" with the address bar displaying "http://192.168.25.216". The page content is titled "I/O Management" and "Model: CS46". A left-hand navigation menu includes options like Introduction, Users, System, Network, Time & Timer, Version, Capture Point, Tag & Tag Filter, I/O, Events, Report, Database, Test, and Help. The "I/O" section is expanded, showing sub-items: I/O Port Assign, List I/O Port A, I/O Port Test, and Serial Port I. T. The main content area is titled "I/O Port Assignment List" and contains two tables: "Input Port" and "Output Port".

I/O Port Assignment List

Input Port

Port No.	I/O Type	Name	Control Type	Logic "1" Name	Logic "0" Name	Enable
1	Input	Electric Gate1	NC	Gate1 opened	Gate1 closed	☒
2	Input	Gate2	NO	Gate2 opened	Gate2 closed	☒
3	Input	Gate3	NO	Gate3 opened	Gate3 closed	☒
4	Input	Gate4	NO	Gate4 opened	Gate4 closed	☒

Output Port

Port No.	I/O Type	Name	Control Type	Logic "1" Name	Logic "0" Name	Initial Logic	Enable
1	Output	Electric gate1	NO	Open the gate1	Close the gate1	0	☒
2	Output	Electric gate2	NO	Open the gate2	Close the gate2	0	☒

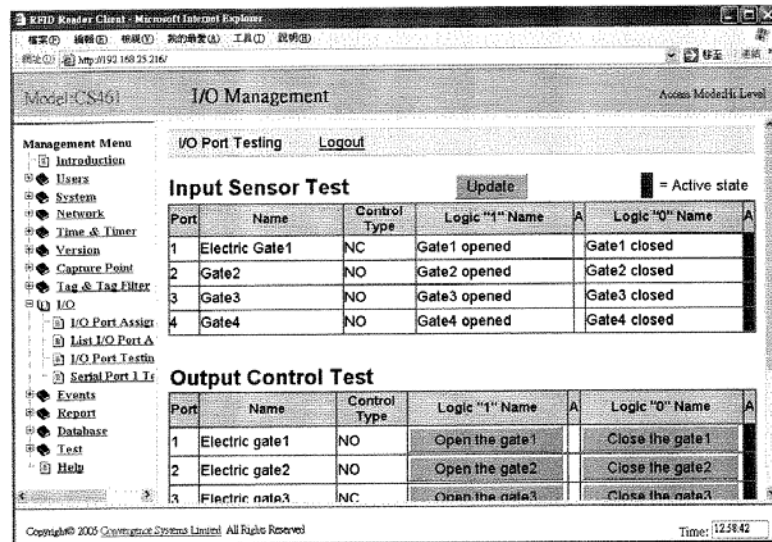
Copyright © 2006 Convergence Systems Limited. All Rights Reserved. Time: 12:57:43

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Here is the IO port testing page, it allows one to look at sensor input (by pressing the update button), and control the outputs for system testing:



I/O Management

Management Menu: Introduction, Users, System, Network, Time & Timer, Version, Capture Point, Tag & Tag Filter, I/O, I/O Port Assign, List I/O Port A, I/O Port Testin, Serial Port 1 Test, Events, Report, Database, Test, Help.

Input Sensor Test [Update] [Active state]

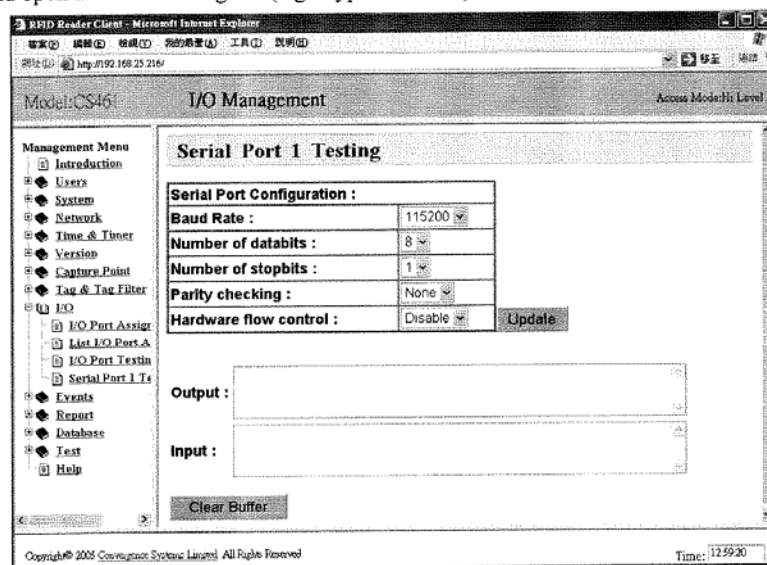
Port	Name	Control Type	Logic "1" Name	A	Logic "0" Name	A
1	Electric Gate1	NC	Gate1 opened		Gate1 closed	
2	Gate2	NO	Gate2 opened		Gate2 closed	
3	Gate3	NO	Gate3 opened		Gate3 closed	
4	Gate4	NO	Gate4 opened		Gate4 closed	

Output Control Test

Port	Name	Control Type	Logic "1" Name	A	Logic "0" Name	A
1	Electric gate1	NO	Open the gate1		Close the gate1	
2	Electric gate2	NO	Open the gate2		Close the gate2	
3	Electric gate3	NC	Open the gate3		Close the gate3	

Copyright © 2005 Convergence Systems Limited. All Rights Reserved. Time: 12:58:42

The Serial Port 1 Testing page allows the user to test the serial port communication through the I/O port. User can simply connect the I/O port to the serial port of a PC and open a Terminal Program (e.g. HyperTerminal) for communications.



Serial Port 1 Testing

Serial Port Configuration :

Baud Rate : 115200

Number of databits : 8

Number of stopbits : 1

Parity checking : None

Hardware flow control : Disable [Update]

Output :

Input :

[Clear Buffer]

Copyright © 2005 Convergence Systems Limited. All Rights Reserved. Time: 12:59:20

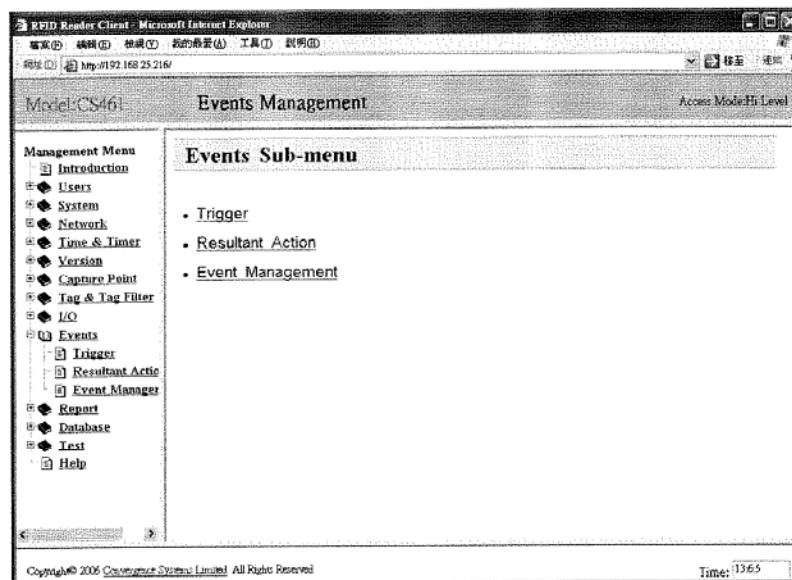
Prüfbericht - Nr.:
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7.1.10 Events Management

Events management page allows the user to define events, triggering logic, resultant actions, event management (sequencing), and check for events that have happened.

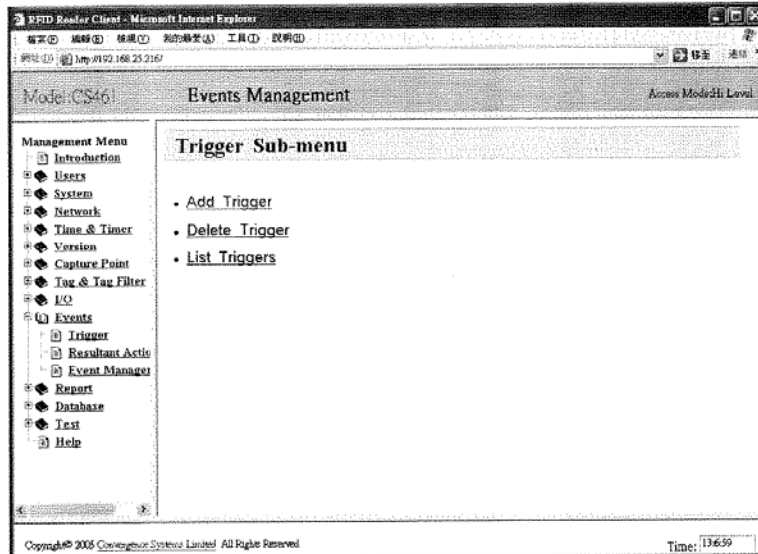


Prüfbericht - Nr.:
Test Report No.

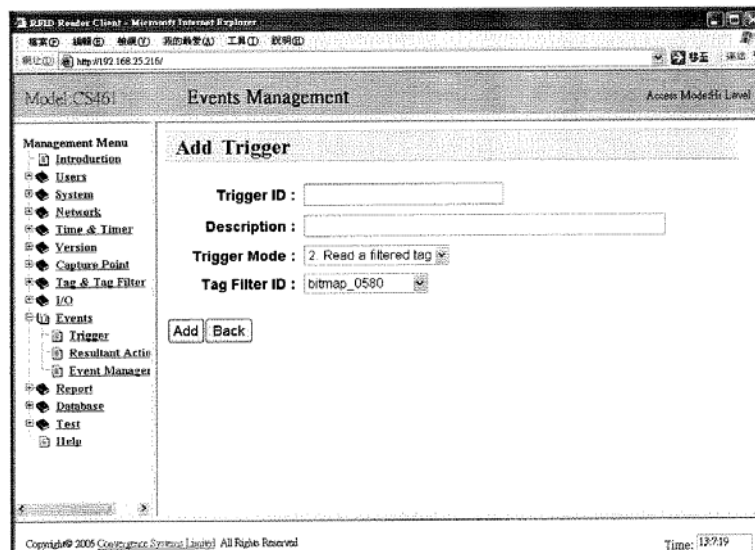
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Here is the trigger logic sub-menu:



This is the triggering logic definition page:

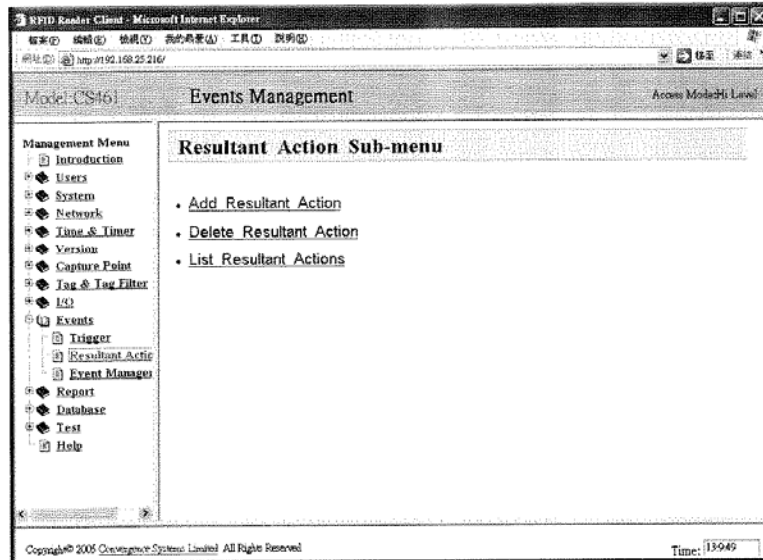


Prüfbericht - Nr.:
Test Report No.

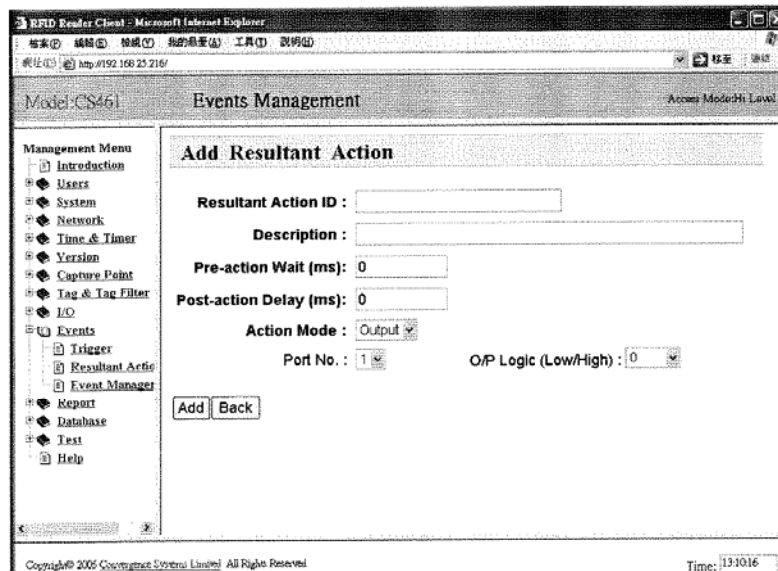
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The is the resultant action sub-menu:



This is the resultant action definition page, note that every action can have a pre-action wait time and a post-action delay time:

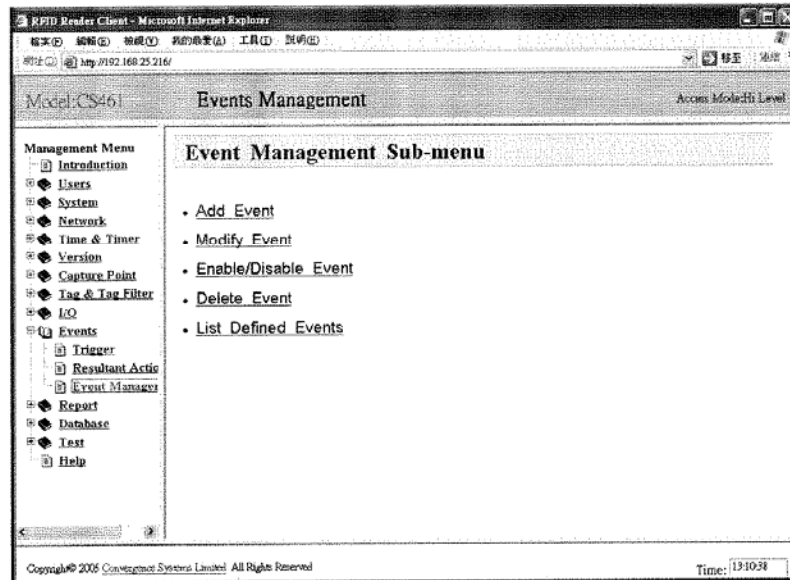


Prüfbericht - Nr.:
Test Report No.

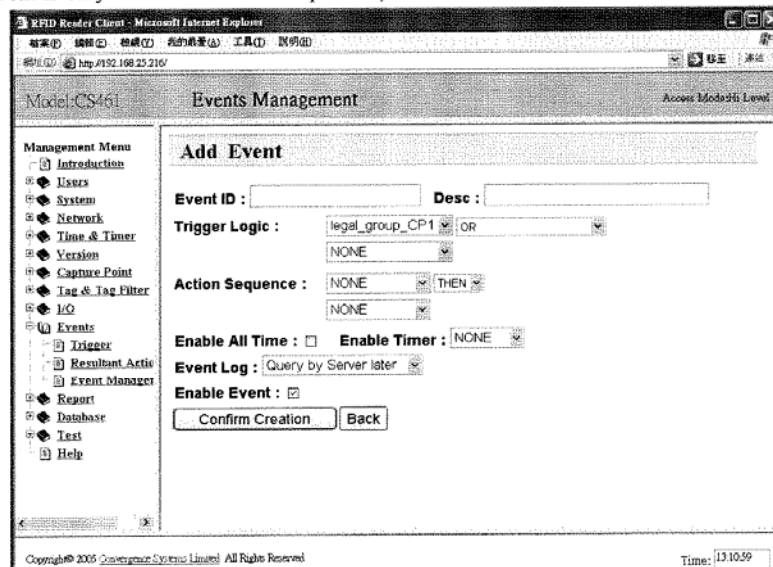
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This is the event management sub-menu:



This is the add event page, it allows time filter specific event sequencing (i.e. the event is only valid in certain time periods):



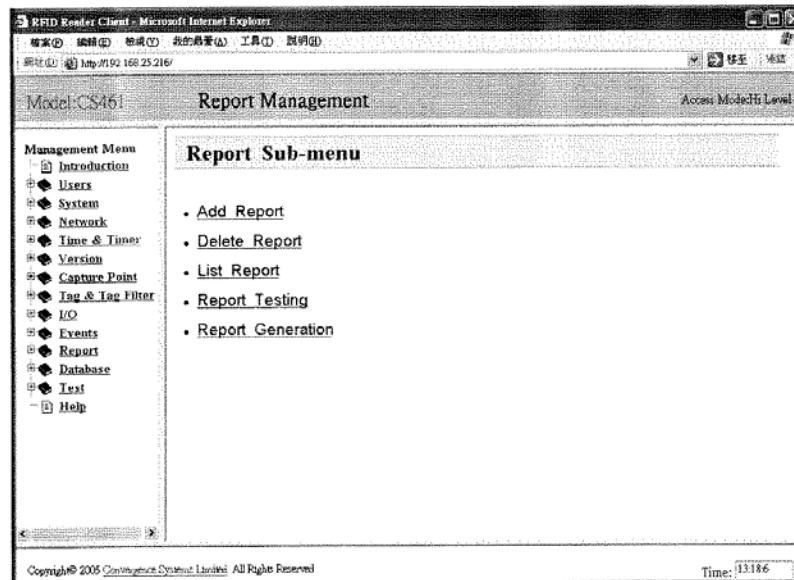
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7.1.11 Report Management

Report management page allows you to define report that can in turn be retrieved by remote users or remote programs from time to time. The report is defined in the pages, and is generated on the fly when the actual request comes. The data used in the generation of the report is the Master Database Record. This master database is stored in non-volatile memory and regularly backed up to remote server.

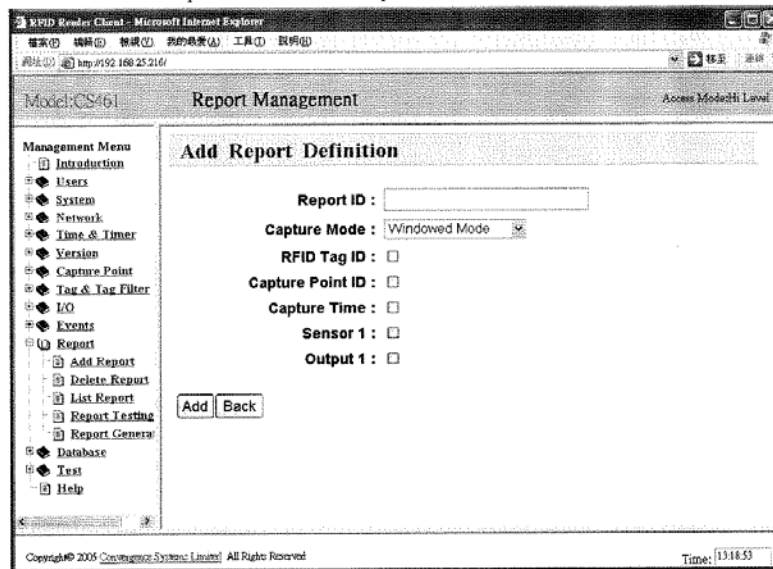


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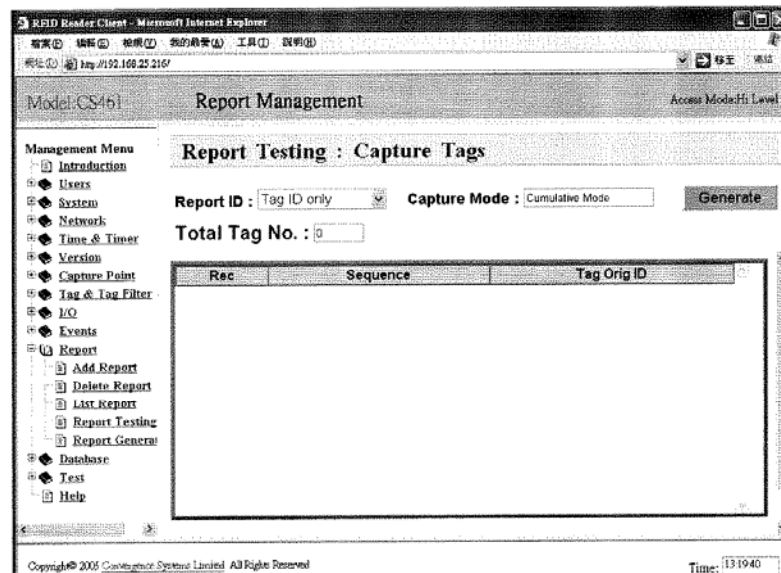
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Here is the add report definition page. It allows the selection of a subset of the database recorded parameters onto a report:



Here is a testing page to look at output from a certain report format:



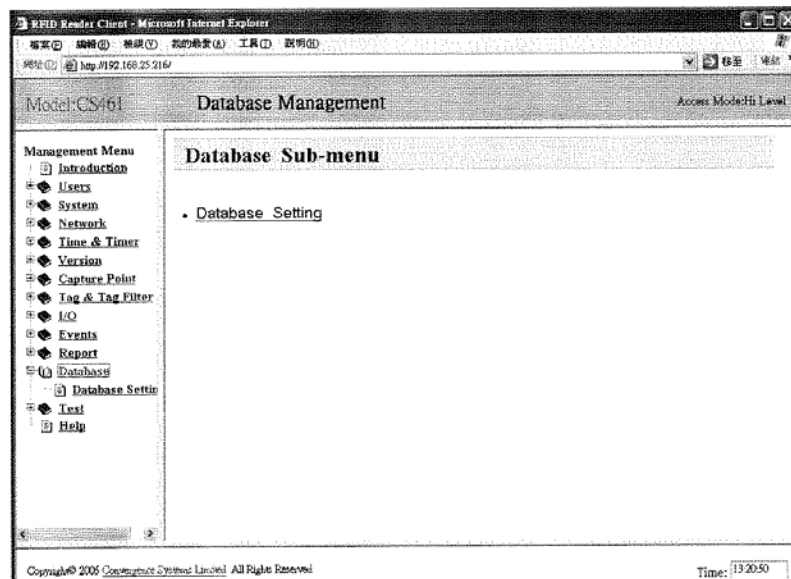
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7.1.12 Database Management

Database management allows the user to manipulate the Master Database Record inside the reader. This master database resides on non-volatile memory inside the reader and is protected even in the event of power failure.

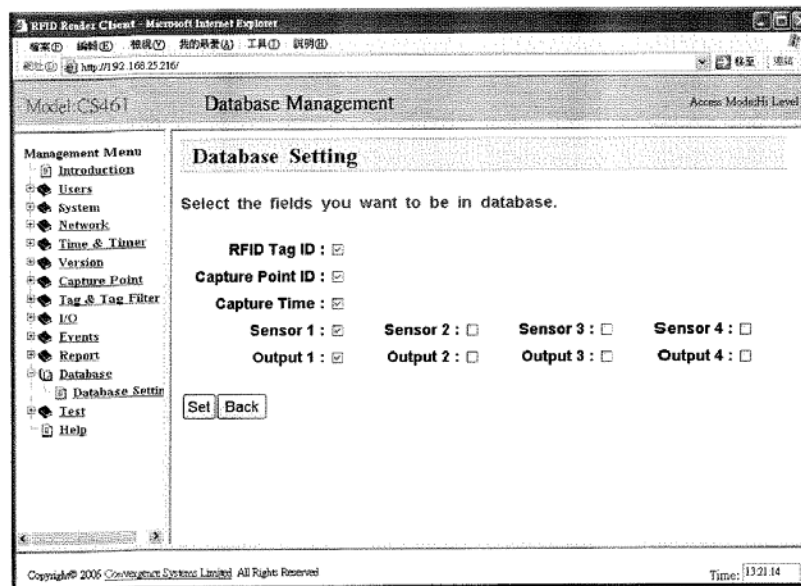


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Here is the database setting page, it lists all the possible parameters for storage and allow the user to select:



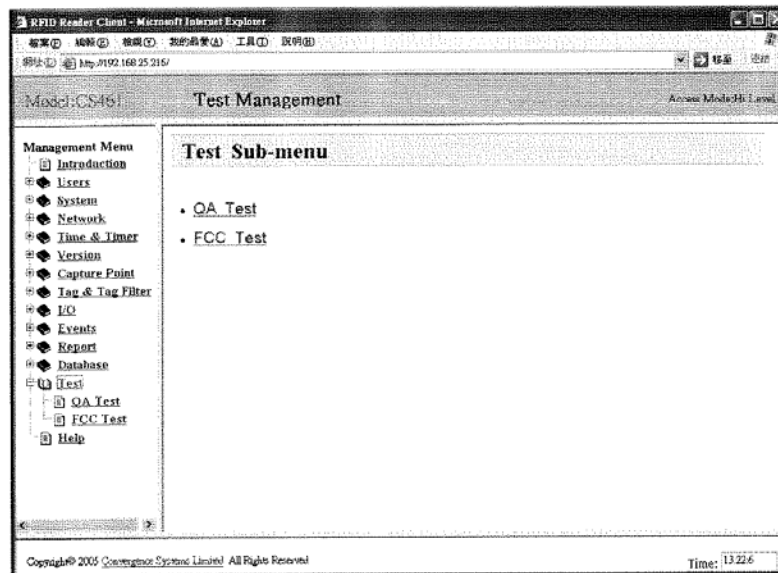
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7.1.13 Test Page

Test Page allows user to perform QA test on the reader.



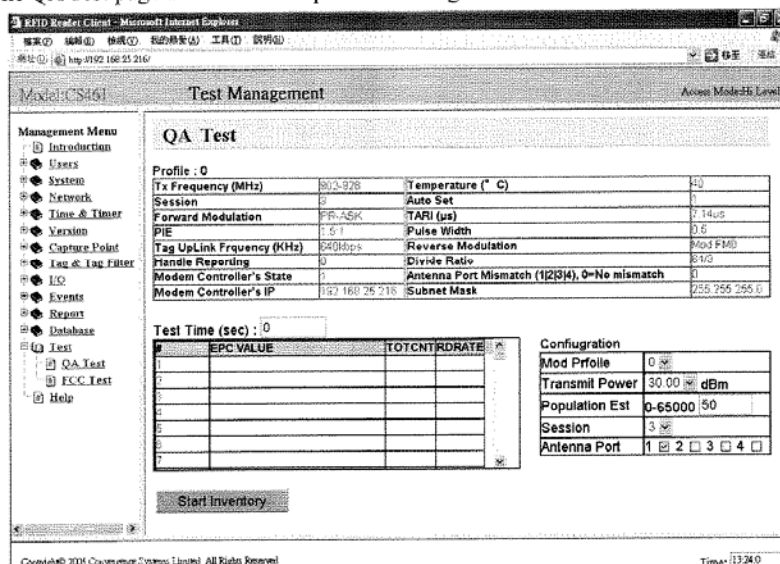
Note: FCC Test page is reserved for factory's use only.

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The QA Test page allows users to perform testing on the reader.



User can select the profile used for configuring the reader's parameters. There are four preset profiles come with the reader:

Profiles	Reader Parameters
Profile 0: (Max Throughput)	Tari 7.14 us / PIE 1.5:1 / Fwd Modulation PR-ASK / PW 0.5 (long) / LF 640kbps / Rev Mod FM0
Profile 1:	Tari 12.5 us / PIE 1.5:1 / Fwd Modulation PR-ASK / PW 0.33 (short) / LF 160kbps / Rev Mod FM0
Profile 2: (Dense Reader)	Tari 25.0 us / PIE 2.0:1 / Fwd Modulation PR-ASK / PW 0.5 (long) / LF 256kbps / Rev Mod Miller M=4
Profile 3:	Tari 25.0 us / PIE 2.0:1 / Fwd Modulation PR-ASK / PW 0.5 (long) / LF 256kbps / Rev Mod Miller M=8

Other parameters:

Antenna	Select the antenna ports you will use by ticking the appropriate boxes.
Session	The session number that the reader connect to the control program. It must be different for different readers.
Tx Power	The transmit power on the reader (from 15dBm to 30dBm)

After configuration, click "Start Inventory" to test the read tag performance.

7.2 CSL Demo Program

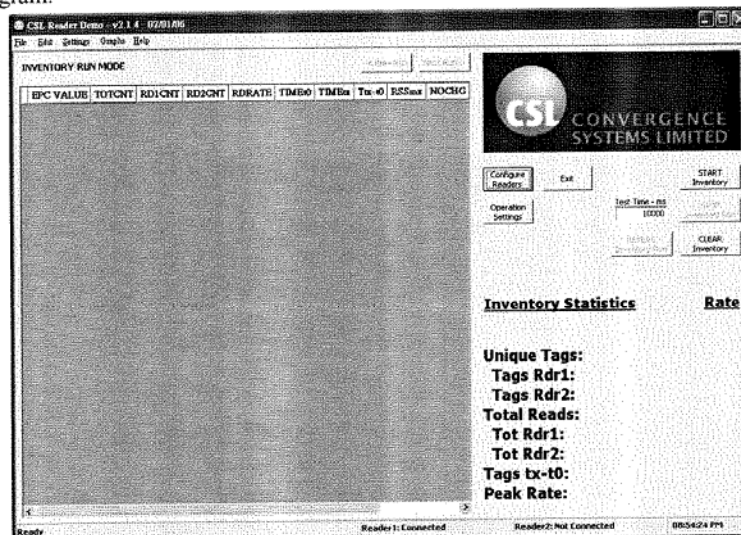
7.2.1 Installing the Demo Program

In addition to the web-based interface, a Windows-based program also comes with the reader for users' quick testing (reader must be set in "Low-level API Access Mode"). Moreover, this program allows users to control up to 2 readers simultaneously to demonstrate the Multi-Reader mode (or Dense-Reader mode). The demo program can be found in the manual CDROM disk and it should be installed onto a PC before using:

- 1) Double-click the file "CSLReaderDemo214.msi" on the manual CD.
- 2) Follow the instructions to install the program on your PC
- 3) After installation, an icon "ReaderDemo v2.1.4" appears on your PC.
Double-click on it to run the demo program.

7.2.2 Using Multi-Reader Application

Click the icon "CSLReaderDemo v2.1.4" to run the program. When the program opens, the first (and if connected, a second) reader's IP address must be entered in the program.

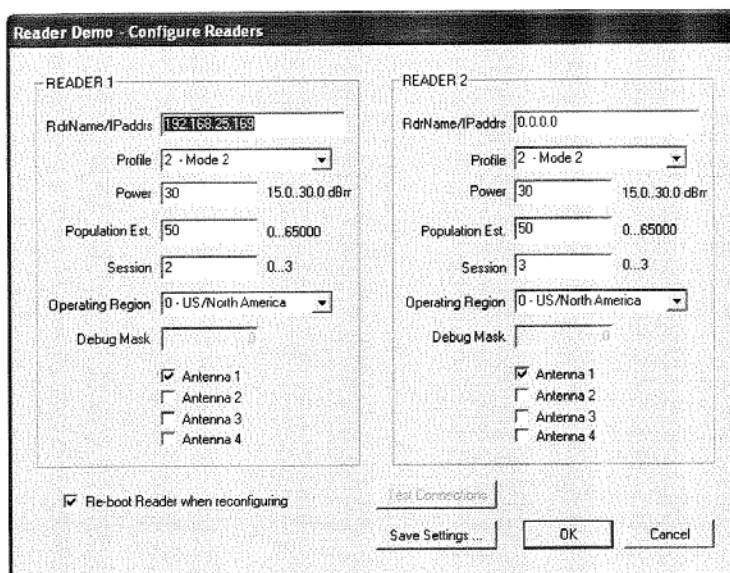


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This is done by clicking the “Configure Readers” button. The screen shown below should open. Enter the reader’s IP address in the appropriate window.



At this point, the reader operating mode can be selected. Presently, 4 modes are supported by the reader as shown in the table below.

Operating Mode	Reader Parameters
Mode 0: (Max Throughput)	Tari 7.14 us / PIE 1.5:1 / Fwd Modulation PR-ASK / PW 0.5 (long) / LF 640kbps / Rev Mod FM0
Mode 1:	Tari 12.5 us / PIE 1.5:1 / Fwd Modulation PR-ASK / PW 0.33 (short) / LF 160kbps / Rev Mod FM0
Mode 2: (Dense Reader)	Tari 25.0 us / PIE 2.0:1 / Fwd Modulation PR-ASK / PW 0.5 (long) / LF 256kbps / Rev Mod Miller M=4
Mode 3:	Tari 25.0 us / PIE 2.0:1 / Fwd Modulation PR-ASK / PW 0.5 (long) / LF 256kbps / Rev Mod Miller M=8

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Select the desired mode. For dock door applications where two readers are used, Mode 2, (Dense Reader) must be selected. **It is also very important to select, by checking the appropriate box, the antennas that are currently connected to the reader. The program will not operate if an antenna box is checked and no antenna is connected to that port. However no damage to the reader will result.**

Other reader parameters can also be selected in this window.

Power	Transmit power of the reader (from 15dBm to 30dBm)
Population Est.	The estimated maximum number of tags to be read by the reader at the same time Please input a value as accurate as possible because it can optimize the performance of tag read
Session	Session number that the program connect with the reader. It should be unique for each reader
Operating Region	The region that the application is in operation

After configuring the reader(s), press the “Save Settings ...” button and then “OK” button to close this window. It will return to the main screen and attempt to communicate with the reader and setup the selected parameters. If successful, the bottom of the screen will indicate **Reader 1: Connected.** (or “Reader 2: Connected” also if multi-reader is set).

At this point, the readers will read tags placed in the field of the reader. The figure below shows a successful read operation.