

# Aculab digital network access cards

Aculab configuration tool (ACT) user guide

Revision 1.1.16



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## Revision Record

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1.1.0	17.01.07	DJL	Addition of new security features
1.1.1	28.04.09	DRG	Addition of new License Manager and Prosody S Pages
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1.1.5	20.08.09	DRG	Changes to TiNG Firmware Page, which allow users to reorder the firmware on a module.
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1.1.7	22.10.09	DRG	Updated SS7 Page and Added STUN options to IP Settings Page.
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1.1.9	18.04.11	DRG	DSP Page removed.
1.1.10	21.07.11	DRG	Added section on how to flash a Prosody X card.
1.1.12	16.05.12	RMC	HPI configuration section.
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# 1 The Aculab configuration tool (ACT)

## 1.1 Introduction

This document provides details on how to use the Aculab Configuration Tool (ACT) graphical user interface (GUI) to configure your Aculab hardware.

The ACT is installed to your system via the Aculab Installation Tool (AIT).

You may also configure the hardware via the command line. These options are detailed in the Aculab Telephony Software Installation guide, a copy of which is available from:

- The support area of the company web site at [www.aculab.com](http://www.aculab.com)
- The 'docs' directory of an Aculab installation.

## 1.2 Release Notes

Please read the Aculab Configuration Tool release notes and the driver release notes before using the ACT.

## 1.3 Firmware Issues

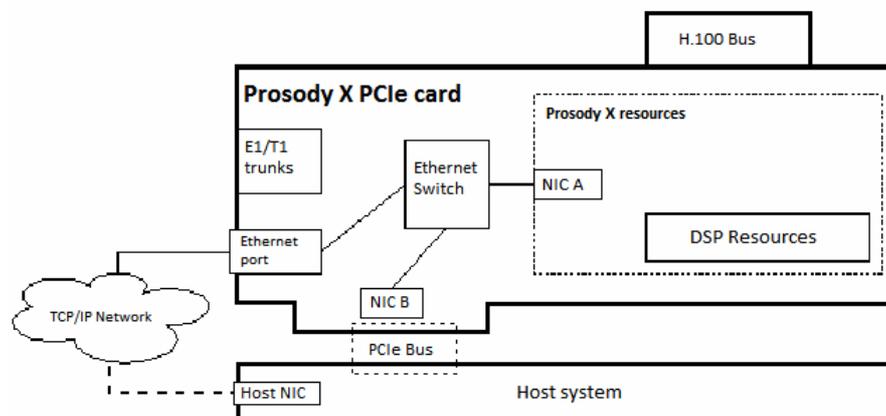
When you install the Aculab Configuration Tool, the telephony software options available will be subject to the telephony software downloaded using the AIT.

## 1.4 Prosody X card issues

A Prosody X PCIe card will be detected by the host system as a network interface card (NIC B in the following diagram). Communication between the Prosody X card and on-card resources is via a second (On-Board) Ethernet connection (shown as NIC A). Both Ethernet connections (NIC A and NIC B) require IP addresses to be configured within the same TCP/IP subnet.

For the Prosody X card Ethernet connection (NICB), Windows defaults to DHCP (obtain an IP address automatically). Aculab strongly recommend that you re-configure the Prosody X card, using the standard Windows connection properties dialogs, to have a static IP address.

The ACT is used to configure the On-Board TCP/IP Ethernet connection IP address (NICB), see the 'Prosody X' dialog options in Section 9.



The 'IP Settings' dialog is used to configure the SIP options for both the Host port (NICB) and On-Board port (NICA).

## 2 The primary dialog

### 2.1 Starting the ACT

#### 2.1.1 Windows

Start the Aculab Configuration Tool by clicking **Start – Programs – Aculab - V6 - ACT**, or by running %ACULAB\_ROOT%\act.exe.

#### 2.1.2 Linux

Start the Aculab Configuration Tool by running \$ACULAB\_ROOT/bin/Act.

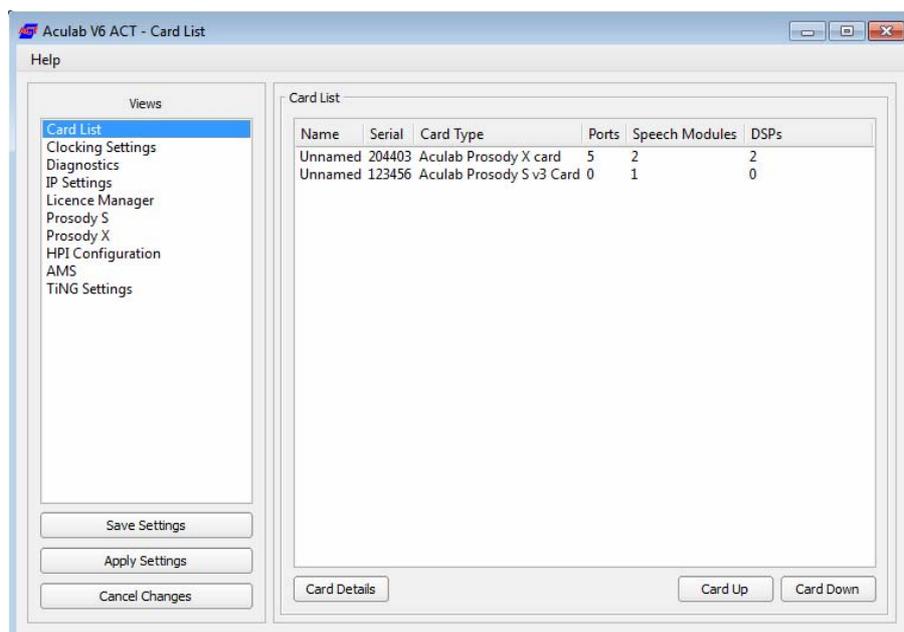
#### 2.1.3 Startup message dialog

When you open the Aculab Configuration Tool (ACT), you will see the following start-up dialog:



## 2.2 Aculab Configuration Tool Initial Startup

Once the configuration tool has initialised successfully, you will be presented with the 'Aculab Configuration Tool' dialog, displaying the 'Card List'



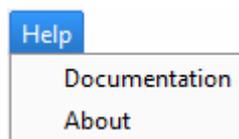
## Views

The 'Views' available will be subject to the telephony software components you have downloaded and may include a selection of the following:

- **Card List** - displays details of each card detected in the system including the number of ports and speech modules. Options in this view enable you to configure the various port protocols.
- **Clocking Settings** - displays the details, and enables the configuration, of each cards clock source, control, and bus terminations.
- **Diagnostics** - Enables you to run a system diagnostic, displaying the results both in the dialog, and through an HTML file saved to a local directory.
- **IP Settings** - Displays only the IP Telephony cards in the system, enabling the configuration of the IP port ipv4 addresses and media defaults.
- **Licence Manager** - Enables you to request and install the Licences required for Prosody S and SIGTRAN.
- **Prosody S** - Displays and enables the edit of existing Prosody S cards, as well as the addition of new Prosody S cards.
- **Prosody X** - Displays and enables the edit of existing Prosody X cards, as well as the addition of new Prosody X cards.
- **HPI Configuration** - This view allows you to view and configure Aculab HPI capable devices.
- **TiNG Settings** - Displays only the cards that contain Prosody DSP resources, and enables the configuration of these resources to handle speech processes such as echo cancellation, conferencing etc.

## Help Menu

The 'Help' Menu contains two entries.

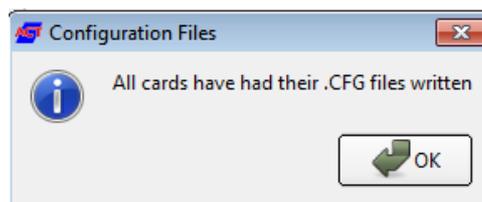


**Documentation** - This Loads the ACT documentation, if installed.

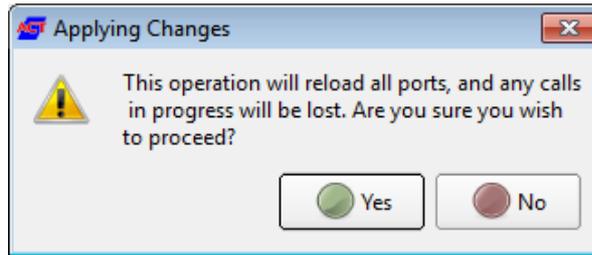
**About** - This displays the 'About' screen, showing you the version number of the ACT.

## Buttons

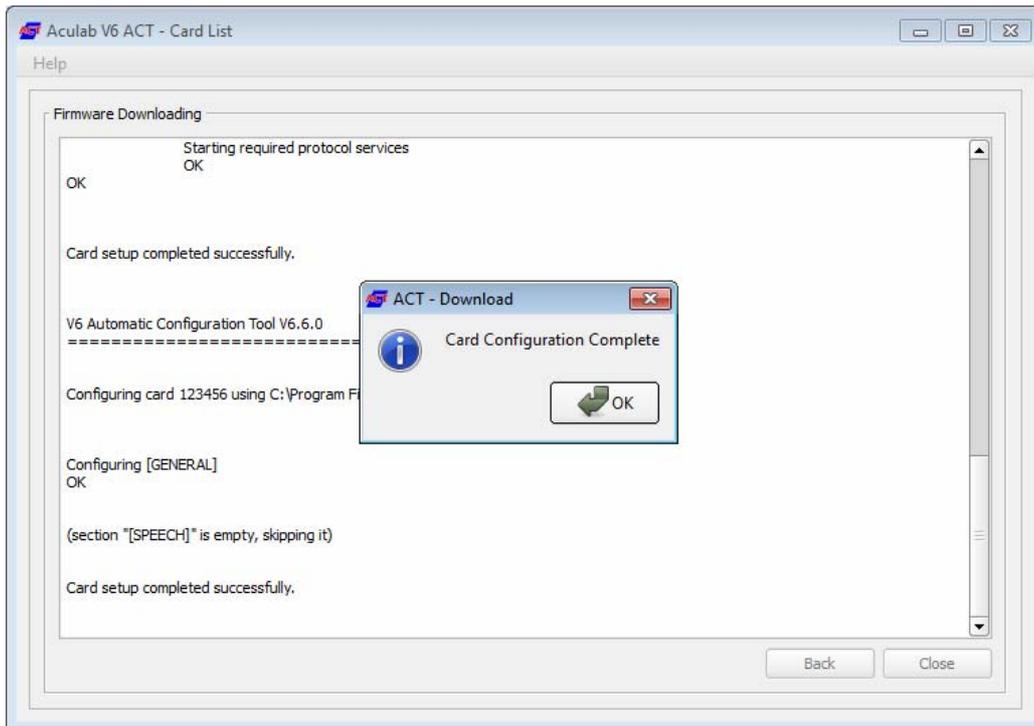
**Save Settings** - Click at any time to save any changes to the configuration file, The following dialog will be displayed you when this has been completed:



**Apply Settings** - Once selected, subject to any changes made, the ACT application updates the telephony software component configurations. You will be prompted to confirm your selection, via the following dialog box.

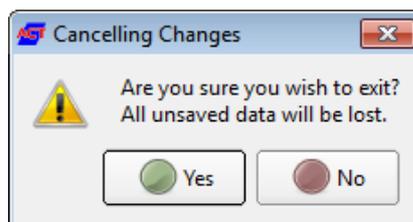


Click 'Yes' to proceed with the configuration changes.



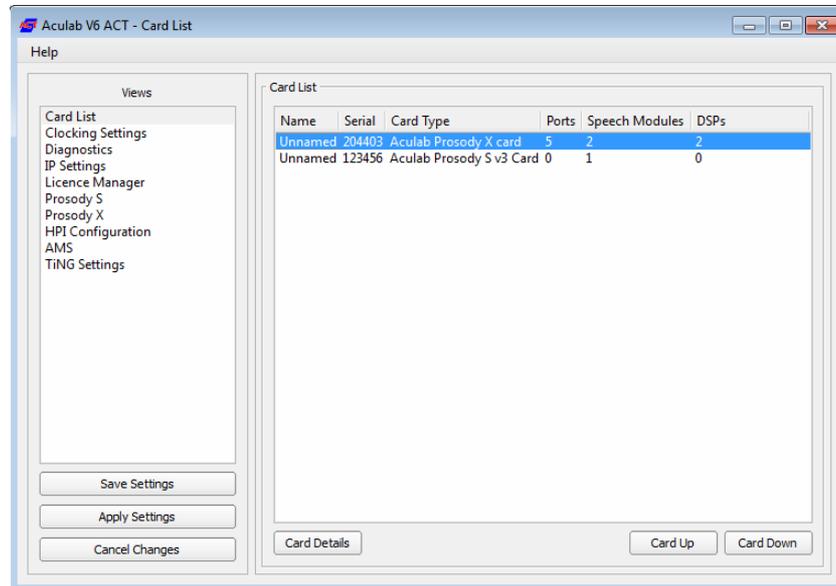
Upon completion, you will be presented with a 'Card Configuration Complete' confirmation dialog. Click 'OK' to confirm the completion dialog, review the report as required, and then select 'Close' to exit the ACT dialog.

**Cancel Changes** - Exits the ACT dialog without keeping any unsaved configuration changes. You will be asked whether you wish to exit the application. Click 'Yes' to exit, and 'No' to keep the ACT open.



### 3 Card List dialog

The 'Card List' dialog displays details of each card detected in the system including the number of ports and speech modules. Options in this view enable you to configure the various port protocols.

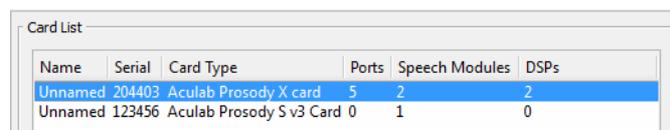


#### NOTE

The OS recognises Prosody X cards as network adapters and not as computer telephony devices. As a result any Prosody X cards will not appear in the Card List automatically, they must be added to the list using this Prosody X dialog, (see Section 10).

#### NOTE

Any Prosody S cards will only appear in the list once they have been configured via the Prosody S dialog (see Section 8).



Name	Serial	Card Type	Ports	Speech Modules	DSPs
Unnamed 204403	204403	Aculab Prosody X card	5	2	2
Unnamed 123456	123456	Aculab Prosody S v3 Card	0	1	0

#### Card list dialog components

When you select the 'Card List' view, the card list field will display all the Aculab computer telephony devices (cards) that have been detected in the system. Each entry shows the hardware configuration details and unique serial number of a card.

**Card Details** - This button is used to configure a selected card (see Section 3.1). Subject to the facilities available and the required function of each card, there are a number of options that may need to be set before the card can be fully utilised, these include:

- Changing card names from the system default (Optional)
- Automatically calling port\_init() on a port during startup configuration (optional)
- Configuring port firmware and protocol switches

You may order the cards in the list using the up and down arrow buttons. This feature was primarily for backwards compatibility mode with V5 where contiguous grouping was an important requirement. It is now used with V6 telephony software, as required, to order the cards to reflect the order that the cards have been installed in the system.

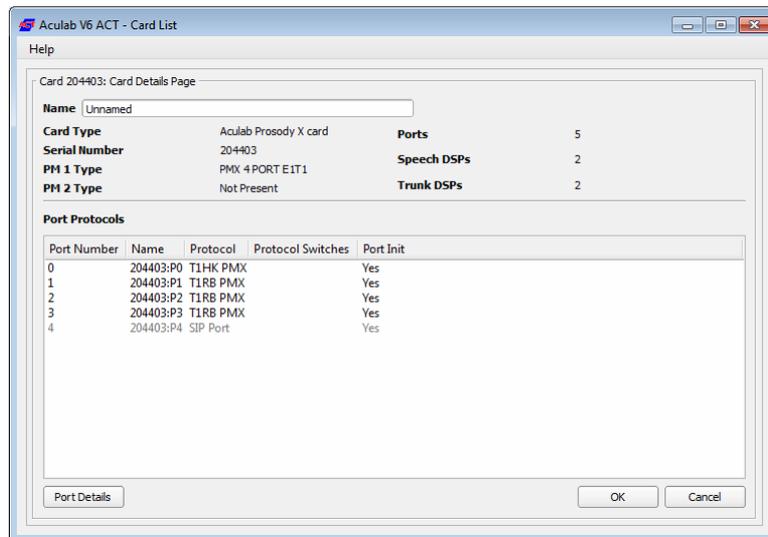
With the exception of Prosody S, the following sections cover the use of the Card List dialog options in more detail.

### 3.1 Card details dialog

This option is used to configure a card. Subject to the facilities available and the required function of each card, there are a number of options that may need to be set before the card can be fully utilised, these include:

- Changing card names from the system default (Optional)
- Automatically calling port\_init() on a port during startup configuration (optional)
- Configuring port firmware and protocol switches

Select a card from the 'Card List', and click the 'Card Details' button, or double click on a card entry from the card list. This will open a 'Card Details' dialog for the selected card. For the following example dialog, we have selected a Prosody X card.



This example of a Prosody X card shows the eight trunks available on the card, plus the two card IP (Ethernet) ports. Both IP ports are greyed out as they cannot be configured through this dialog.

Subject to the facilities available and the required function of each card, there are a number of options that may need to be set before the card can be fully utilised.

#### Card detail fields

**Name** - an optional card details field, which may be used as a customer specified identifier. Enter a new name as required.

**Serial Number** - the unique card identifier hard coded onto the cards firmware as labeled on the physical card.

**Card Type** - the product description hard coded onto the card firmware.

**PM 1 Type** - the type of module fitted to the first position on the card.

**PM 2 Type** - the type of module fitted to the second position on the card (this option is only applicable to some cPCI cards).

**Ports** - the total number of E1/T1 ports detected on the card. This will be subject to the Primary rate Module (PM) that has been fitted to the card.

**Speech DSPs** - the total number of SHARC (rich media) DSPs detected on the card.

**Trunk DSPs** - The total number of DSP32/65 modules that have been detected on the card.

**Port Protocols** - a list of the ports on the card and the current protocol and switch settings of each port. The list can be toggled to display in ascending or descending order by clicking on one of the column titles.

**Port Details** - used to configure port firmware protocols and switches.

**OK** - select to confirm any changes and close the card details dialog.

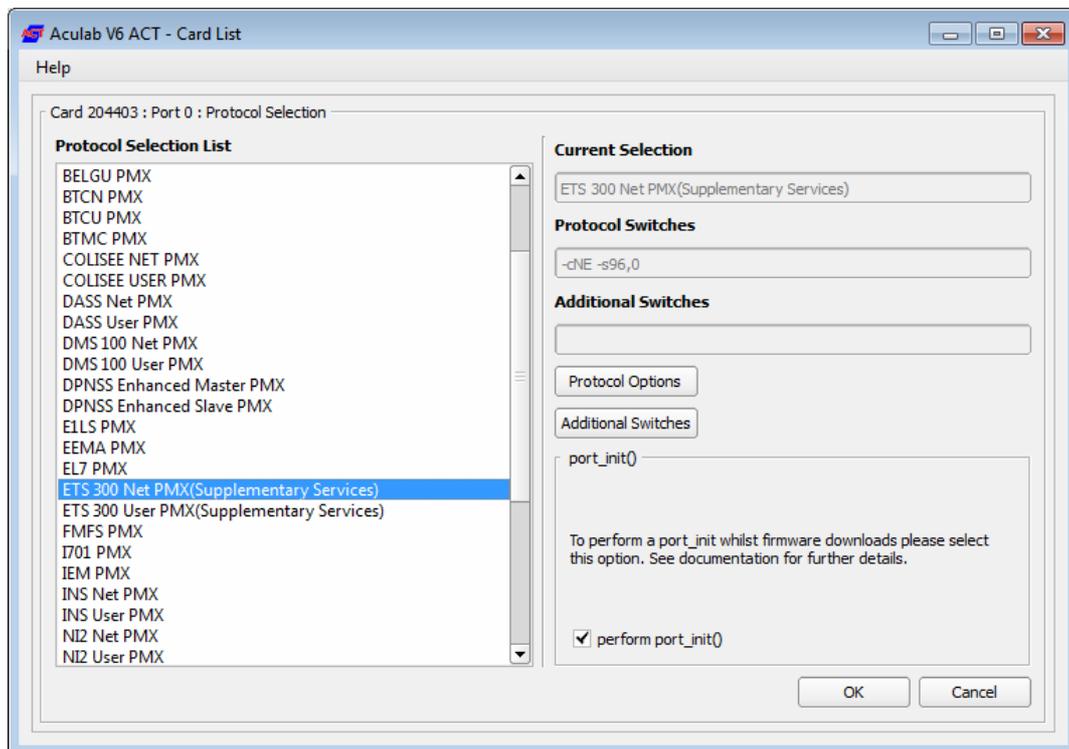
**Cancel** - select to discard any changes and close the card details dialog.

### NOTE

If you are configuring a PMX module and plan to use CAS or SS7 protocols, please ensure you have read section 3.1.4; Using CAS and SS7 ISUP protocols on PMX modules.

### 3.1.1 Port Details dialog (excluding SS7)

Select a port from the 'Port Protocols' list and then click the 'Port Details' button, or double click on a port entry, to open a 'Port Protocol Selection' dialog for the selected port.



#### 3.1.1.1 Selecting a protocol

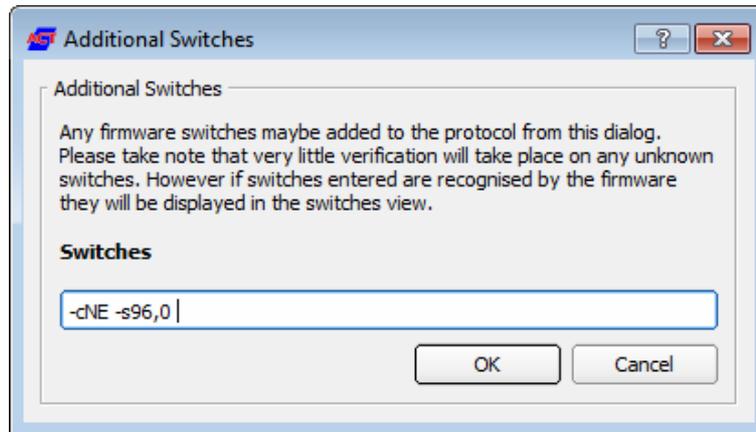
Select the required protocol from the 'Protocol Selection' list; this will be displayed in the 'Current Selection' field. Any default switches will be displayed in the 'Protocol Switches' field.

### NOTE

If you do not wish to download any firmware to a port, select <None>. This will prevent the call section from being written to the configuration file but will ensure that the switch section is still created.

### 3.1.1.2 Additional Switches dialog

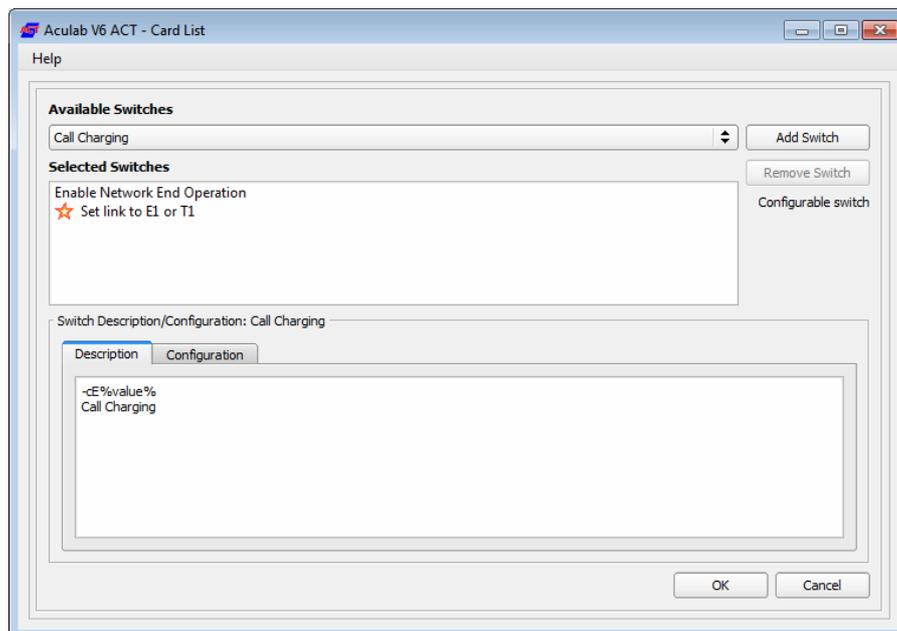
You can manually change the switches by clicking the 'Additional Switches' button, this will open an 'Additional switches' dialog:



Edit the Switches field as required. A list of switches for each protocol can be reviewed in the release note for the specific protocol.

### 3.1.1.3 Switch Options dialog

You can also select and configure switches by clicking 'Protocol Options' to open a 'Switch Options' dialog for the selected protocol. This dialog is the same for all protocols with the exception of SS7, which is detailed in the next section.



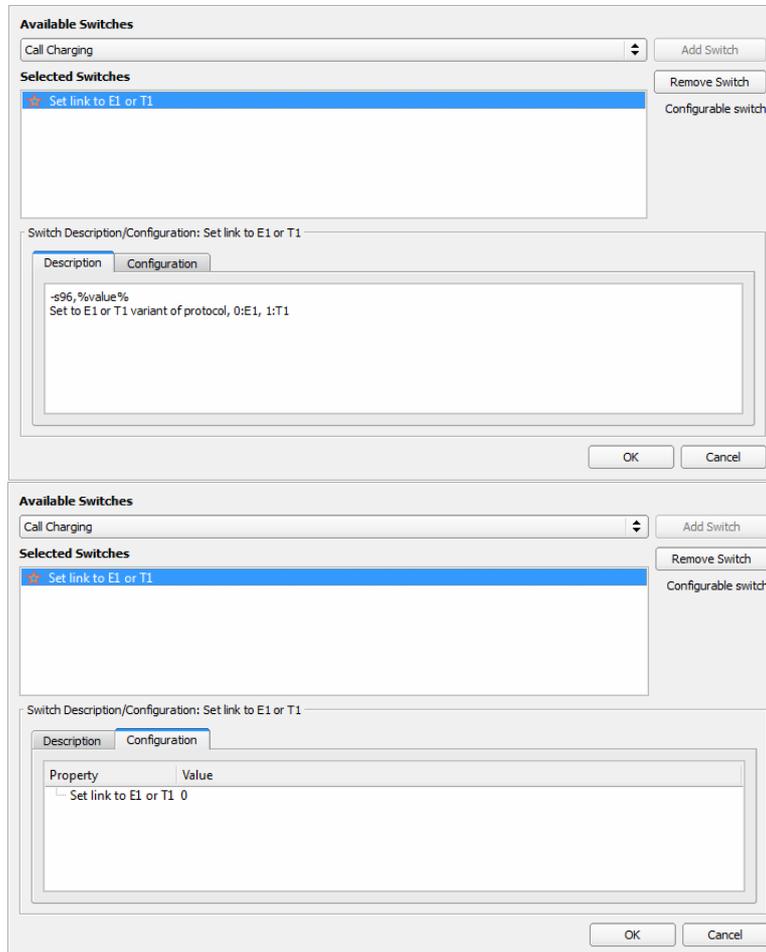
Any switches already selected will be displayed in the 'Selected Switches' field. A description for a selected (highlighted) switch is displayed in the 'Switch Description' tab field.

#### Adding a switch

To add a switch to the protocol, select the switch from the 'Available Switches' pull down list then click 'Add Switch'. The entry will then be moved from Available to Selected switches.

### Editing a switch

Some selected switches contain a value that can be edited; these are indicated by a star next to the entry. For un-configurable switches, there will be no star and the Switch Configuration tab will be greyed out/disabled.



Select the 'Switch Configuration' tab to configure the switch settings.

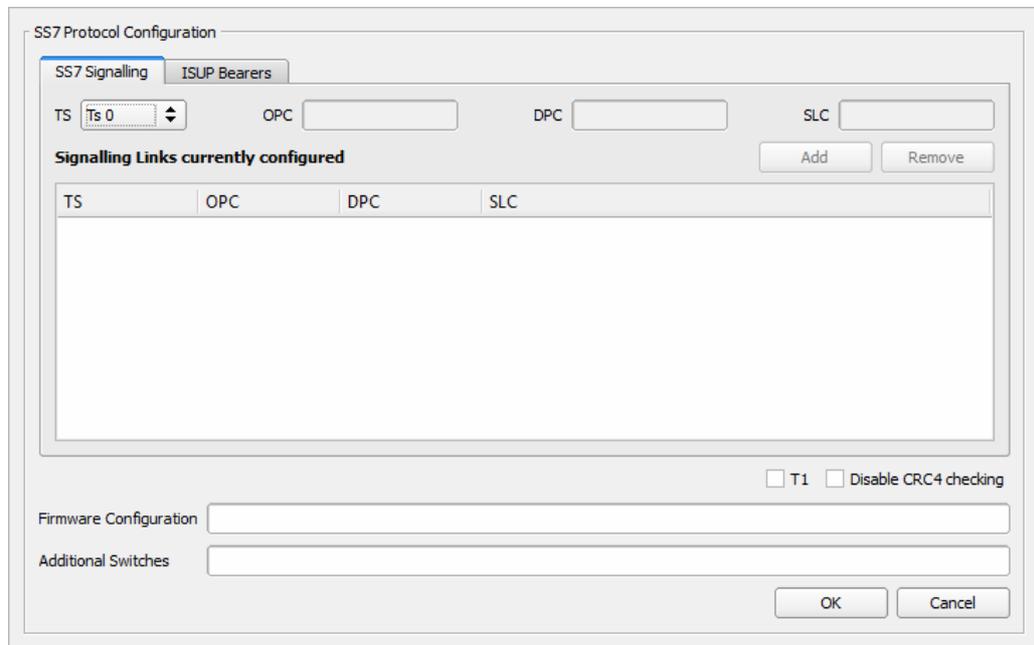
### Removing a switch

To remove an entry from the 'Selected Switches' field, select an entry in the Selected Switches field, then click 'Remove Switch'.

Once you are satisfied with your switch selections, click 'OK' to return to the 'Port Protocol Selection' dialog.

### 3.1.2 Port Details dialog for SS7

In the 'Protocol Selection' dialog, when you to select the SS7 protocol followed by clicking 'Protocol Options...', you will be presented with an 'SS7 Protocol Configuration' dialog. This dialog enables you to configure individual port timeslots either as SS7 signalling links or as ISUP bearers.



An overview of each of the 'SS7 Protocol Configuration' dialog components is detailed below.

#### 3.1.2.1 SS7 Protocol configuration

##### Firmware Configuration:

Each time you add an SS7 Signalling link or ISUP Bearers to the port, the required switch parameters are added to the string of firmware configuration switches displayed in this field.

##### Additional Switches:

Any additional non-standard switches can be added here.

#### 3.1.2.2 SS7 Signalling tab options

Subject to any system constraints, you can assign each of the timeslots (excluding TS 0 on an E1 port) as an SS7 Signalling link. Refer to the SS7 Installation and Configuration guide for further details and examples on configuring SS7 signalling links

##### OPC

The SS7 Signalling OPC value is a user defined unique numeric Originating Point Code (1 - 16383), used to represent this local point code.

##### DPC

The SS7 Signalling DPC value is a user defined unique numeric Destination Point Code (1 - 16383), used to represent the point code that the port is physically linked to.

### SLC

SLC is a user defined unique numeric Signalling Link Code between zero and fifteen (0 - 15), enabling you to define up to sixteen SS7 signalling timeslots per point code.

### TS

These are the individual Time Slots (i.e. 0 –31 for an E1, 0-23 for a T1), on the selected port.

### Disable CRC4 checking

Checking the 'Disable CRC4' check box adds the –cNCRC (no cyclic redundancy check) switch to the firmware configuration field.

### T1

Checking the 'T1' check box add the –cT1 switch to the front of the firmware configuration field. This is for using the port in a T1 configuration.

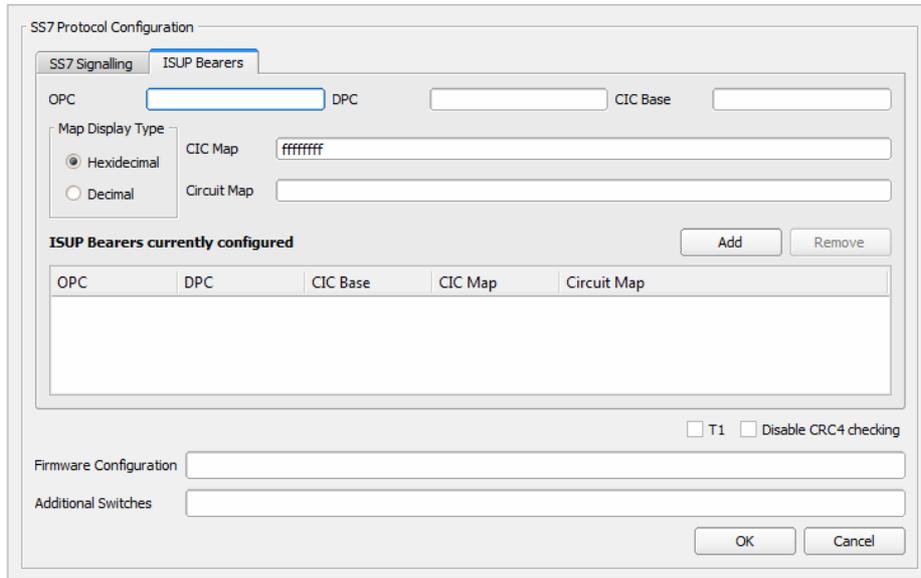
### ADD

Used to add a set of parameters for a selected timeslot to the list of SS7 signalling - Links Currently Configured.

### REMOVE

Used to remove an entry from the list of SS7 signalling - Links Currently Configured.

## 3.1.2.3 ISUP Bearers tab options



The screenshot shows the 'ISUP Bearers' tab in the 'SS7 Protocol Configuration' dialog. It contains the following elements:

- Input fields for OPC, DPC, and CIC Base.
- A 'Map Display Type' section with radio buttons for 'Hexadecimal' (selected) and 'Decimal'.
- Input fields for 'CIC Map' (containing 'fffffff') and 'Circuit Map'.
- An 'ISUP Bearers currently configured' table with columns: OPC, DPC, CIC Base, CIC Map, and Circuit Map. The table is currently empty.
- 'Add' and 'Remove' buttons next to the table.
- Checkboxes for 'T1' and 'Disable CRC4 checking'.
- Input fields for 'Firmware Configuration' and 'Additional Switches'.
- 'OK' and 'Cancel' buttons at the bottom right.

The ISUP Bearers tab option is used to define which timeslots, other than SS7 Signalling links, that you wish to define as ISUP Bearers. Each timeslot must be assigned as having a Circuit Identification Code (CIC) before it can be used as a bearer. SS7 Signalling link timeslots may optionally be assigned a CIC.

### OPC

The ISUP Bearers OPC value is the user defined unique numeric Originating Point Code (1 - 8191), used to represent the local point code.

## DPC

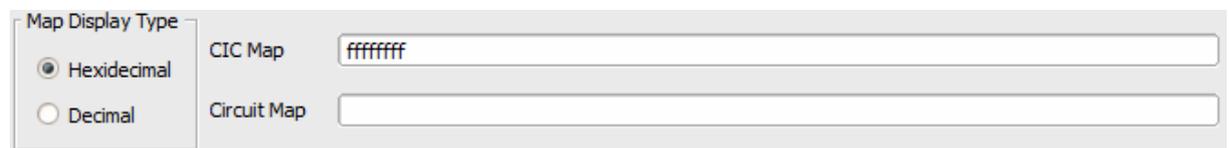
The ISUP Bearers DPC value is the user defined unique numeric Destination Point Code (1 - 8191) for a distant point code. This may be the same as the adjacent SS7 DPC or another DPC on your network via onward SS7 links.

## CIC Base

CIC Base is the number assigned to the first timeslot allocated a CIC on a port/trunk. The CIC number range used on one port/trunk to a given DPC must not overlap with the number range assigned to other ports/trunks to the same DPC. For example, assuming that you are assigning CIC to all timeslots (excluding TS0) to multiple E1 ports/trunks to a single DPC, the CIC Base would typically be 1 for the first port, 32 on the second port and so on in steps of 31.

## Map Display Type

The CIC Map and Circuit Map details can be represented using either a hexadecimal or decimal notation. The required display type can be changed using the 'Map Display Type' radio buttons.



## CIC Map

The CIC Map value represents the timeslots on the link that are to be assigned CIC. This can be represented using a hexadecimal or decimal notation. It is typically fffffffe (or 1-31) for Timeslots 1 to 31. For details of how to calculate the value for this field, see the timeslot-mapping example.

## Circuit Map

The Circuit map value defines which circuits can be used as bearers. For example, if the value were set to either ffffffc (or 2-31) or fffeffc (or 2-15:17-31), you would exclude TS 1 or 1 & 16 respectively. For details of how to calculate the value for this field, see the timeslot-mapping example.

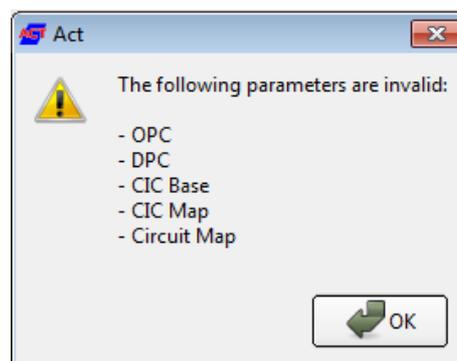
## ADD

Used to add a set of parameters for a selected timeslot to the 'Firmware Configuration' field

## REMOVE

Used to remove a set of parameters from the 'Firmware Configuration' field.

Click 'OK' to apply the firmware configuration and return to the 'Protocol Selection' dialog. The following type of dialog prompt will indicate an invalid configuration:



### 3.1.2.4 Timeslot mapping example

Timeslot mapping is needed to ascertain the values required for the CIC map and Circuit map fields. These can either be represented in a hexadecimal or decimal format.

A 32-bit binary hexadecimal value, or it may be specified as a list of timeslot ranges separated by : (eg: 1-15:17-31). A binary zero represents a port that has **not** been selected; a binary one represents a selected port, the following example shows timeslots 1 to 31 being selected:

```

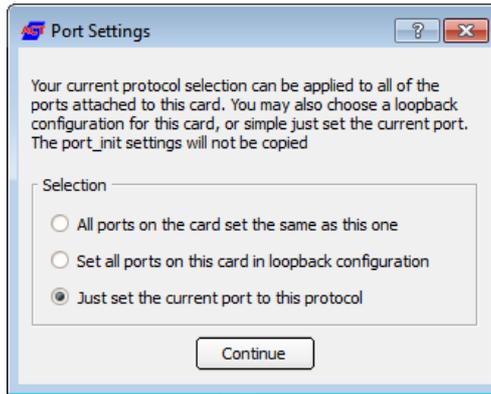
31                                     0    TS/circuit
1111 1111  1111 1111  1111 1111  1111 1110
  f   f    f   f    f   f    f   e
  1 - 31
    
```

A single hexadecimal digit is used to represent 4 timeslots/channels, requiring eight hexadecimal digits (four hexadecimal codes between 00 and ff) per E1 port/link. The following table shows how to translate each 4 bits of binary into its hexadecimal digit equivalent.

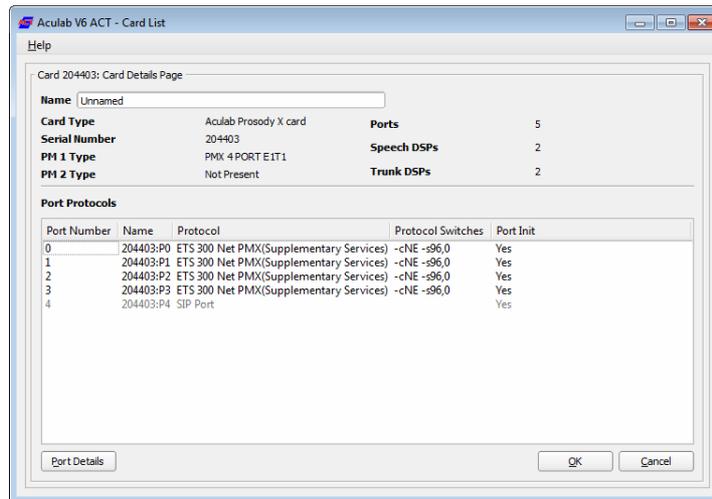
Binary digits	Hexadecimal digit
0000	0
0001	1
0010	2
0011	3
0100	4
0101	5
0110	6
0111	7
1000	8
1001	9
1010	A
1011	B
1100	C
1101	D
1110	E
1111	F

### 3.1.3 Port Settings confirmation dialog

When you are satisfied with your port configuration, click 'OK' to accept, or 'Cancel' to discard, any changes and return to the 'Card Details' dialog. If you are configuring your first port, the following 'Port Settings' Dialog will prompt you to select how the switch settings will be applied.



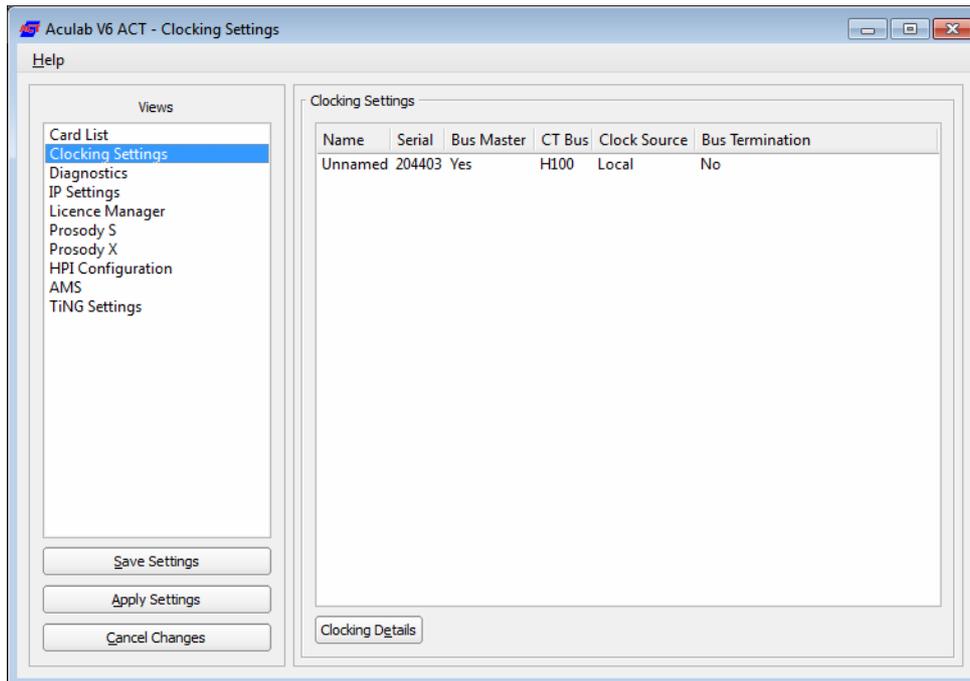
Make your required selection based on the descriptions, and click 'Continue'.



Configure any remaining ports as required.

When you are satisfied with your entire ports configuration, click 'OK' to accept, or 'Cancel' to discard, any changes and return to the 'Card List' dialog.

## 4 Clocking Settings dialog



There are a number of options that may need to be set before the card can be fully utilised, these include:

- CT Bus mode
- Clock Source
- Clock master

The standard configuration is to set one card as Bus Master and for that card to derive it's timing from a local source or one of the ports. All other cards would then derive their timing from that card via the CT Bus. The first and last physical cards connected to the CT Bus should also be terminated.

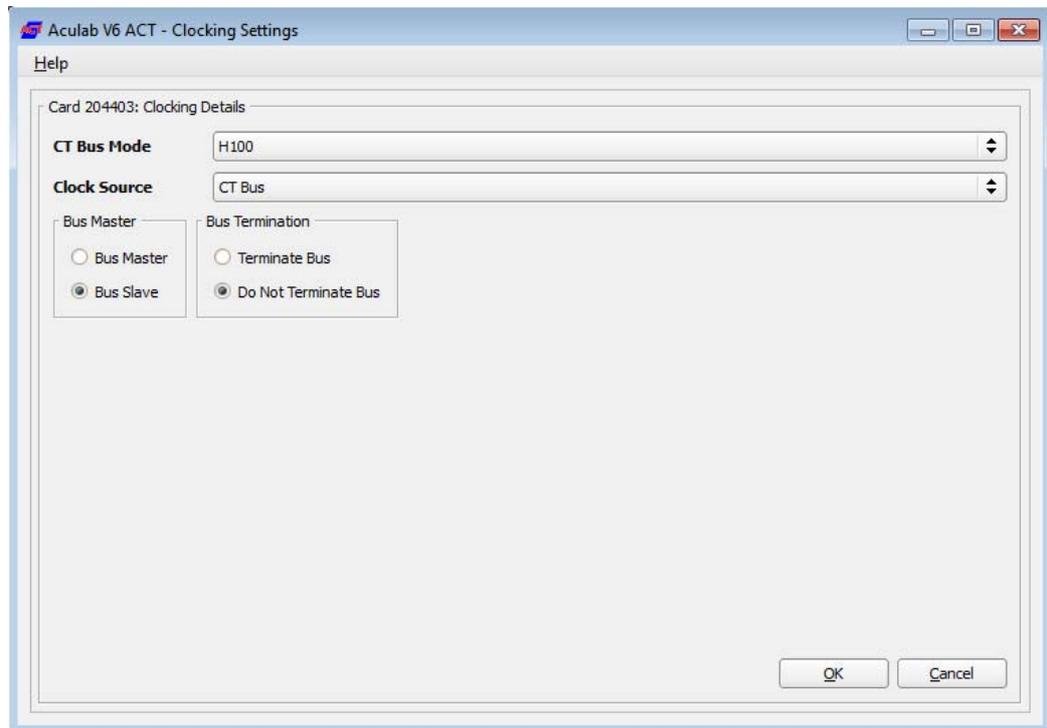
### Clocking Settings dialog components

**Clocking Settings** - This field shows all cards that have been detected in the system that require clocking, each entry will show the clocking configuration details for a specific card.

**Clocking Details** - Used to configure the Clocking Setting parameters.

## 4.1 Clocking Details - Card Clocking Details dialog

Select a card from the list followed by 'Clocking Details,' or double click on a card entry, to open a 'Clocking Settings Selection' dialog for the selected card.



**CT Bus Mode** - set the card CT bus mode to the standard you will be using, this should be the same for all cards in the system. With Prosody X based products the only choice is H.100

**Clock Source** - for a card that is *Not Bus Master*, the only option available is *CT Bus*, a *Bus Master* however can have the following timing sources:

*CT Bus* - derive timing from the CT Bus

*Local* – Derive timing locally from the system or internal clock.

*Port\** - derive timing from port \*. (\* Being a value between 0 and max ports).

**Bus Master** - select to make the card 'Bus Master' or 'Bus Slave' as appropriate. Only one card in the system would normally be bus master.

**Bus Termination** - select 'Terminate Bus' or 'Do Not Terminate Bus', as appropriate.

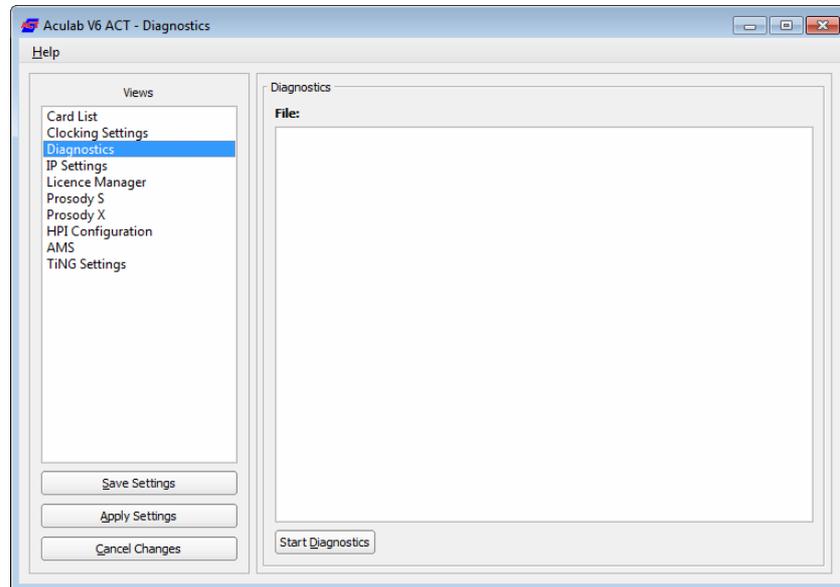
### NOTE

The physical cards on either end of the CT Bus should be terminated.

When you are satisfied with your entire ports configuration, click 'OK' to accept, or 'Cancel' to discard, any changes and return to the 'Clocking Settings' dialog. Repeat the process for all other cards as appropriate.

## 5 Diagnostics dialog

The diagnostics option provides the facility to check your system for the status of services, current configurations, file versions, and system logs.



### Diagnostic dialog components

The dialog area includes:

**File** - Displays the location of the HTML file that is generated after you run diagnostics.

**Start Diagnostics** - select this button to run system diagnostics. A 'Clear Diagnostics' button replaces the 'Start Diagnostics' button once a system diagnostics has been completed.

During diagnostics, the following information is obtained:

**Troubleshooting** - an optional entry that is only completed if a problem be identified.

**Operating System** - operating system version, service pack details etc.

**System log** - log history.

**Aculab Path** - Aculab root directory.

**System Path** - path details for key system and Aculab application files.

**File Versions** - Aculab application files.

**Versions** - hardware details of Aculab cards detected in the system.

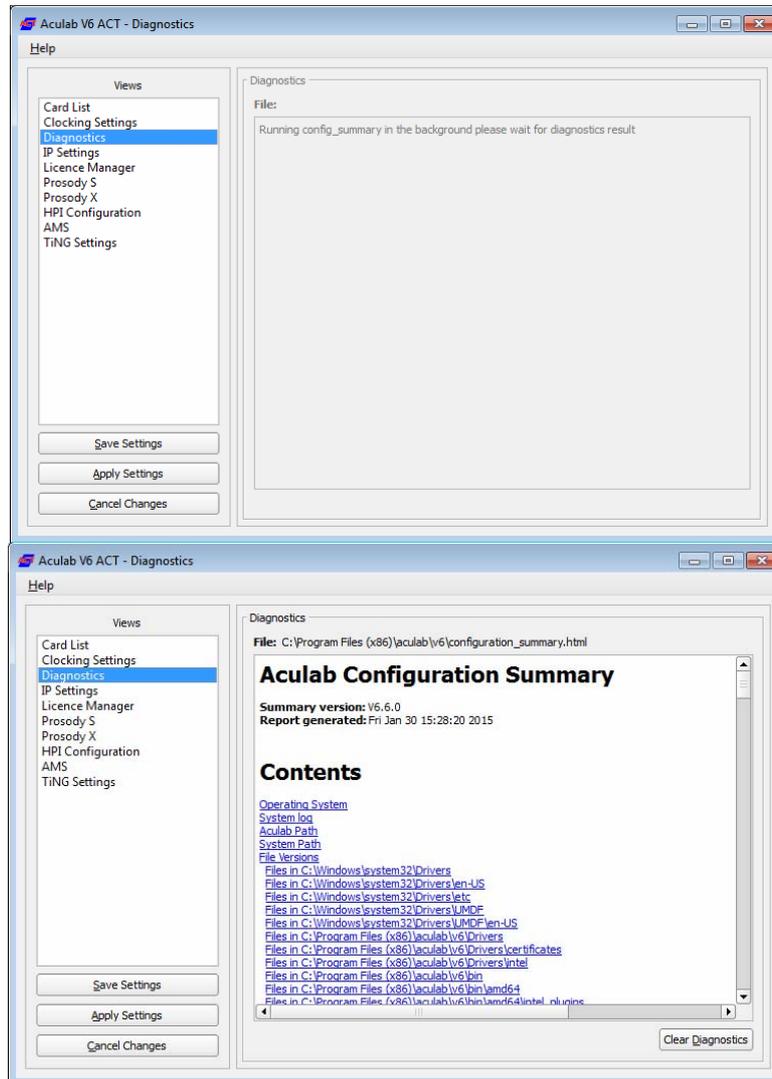
**Configuration Files** - configuration file details.

**PCI Bus Scan** - Aculab cards and other devices.

**IP Telephony** - details of codecs and IP services.

## 5.1 Start Diagnostics dialog

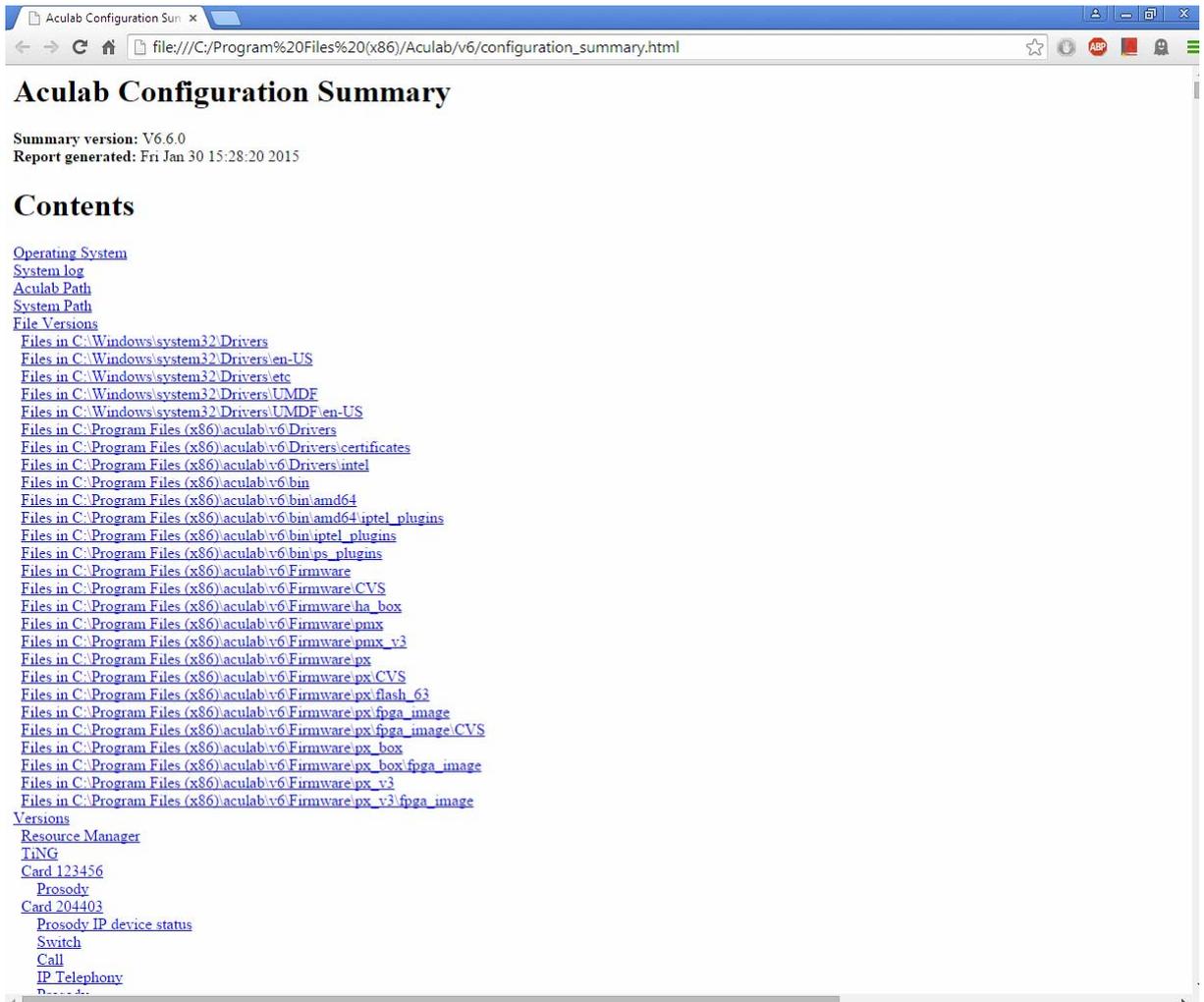
Select 'Start Diagnostics' to run a system diagnostics.



The results of the system diagnostics will be displayed in the dialog display area.

**Clear Diagnostics** - select to refresh the display area, or scroll through the file details as required.

You can review the most recent diagnostics report by opening the configuration\_summary.html file, whose full path is indicated in the 'File:' entry above the displayed output.



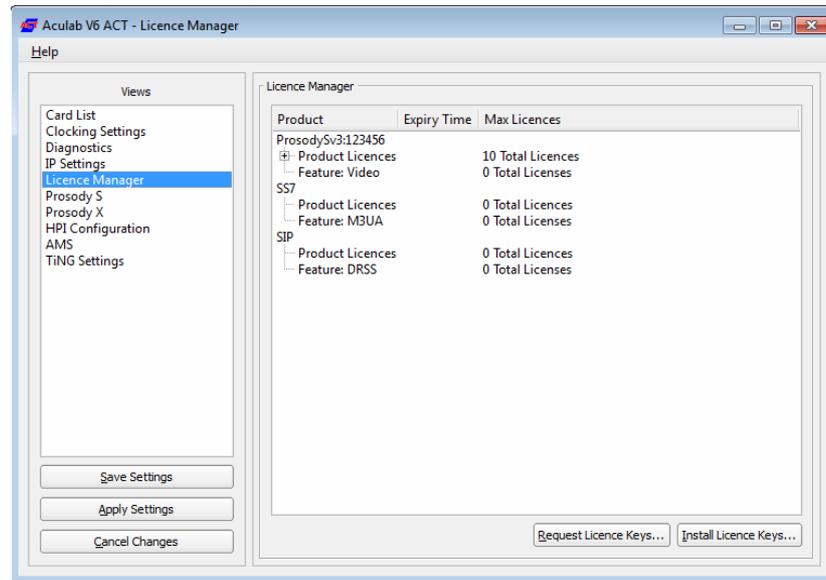
Aculab Configuration Summary

Summary version: V6.6.0  
Report generated: Fri Jan 30 15:28:20 2015

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- [Files in C:\Program Files \(x86\)\aculab\v6\Drivers](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Drivers\certificates](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Drivers\intel](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\bin](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\bin\amd64](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\bin\amd64\iptel\\_plugins](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\bin\iptel\\_plugins](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\bin\ps\\_plugins](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Firmware](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Firmware\CVS](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Firmware\ha\\_box](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Firmware\pmx](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Firmware\pmx\\_v3](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Firmware\px](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Firmware\px\CVS](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Firmware\px\flash\\_63](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Firmware\px\fgga\\_image](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Firmware\px\fgga\\_image\CVS](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Firmware\px\\_box](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Firmware\px\\_box\fgga\\_image](#)
- [Files in C:\Program Files \(x86\)\aculab\v6\Firmware\px\\_v3](#)
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## 6 Licence Manager dialog

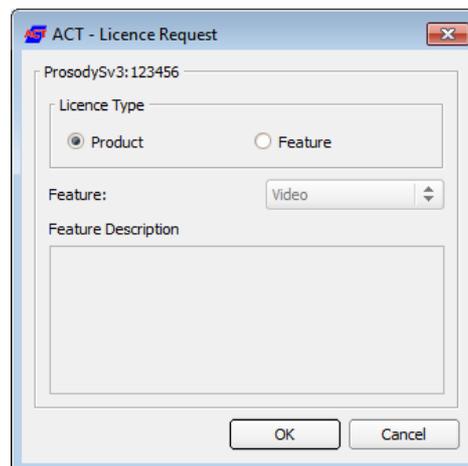


The licence manager dialog contains a list of all products in the system which require licences. It lists the features available for each product, along with the maximum number of licenses available for use, and the Expiry Time for the licence.

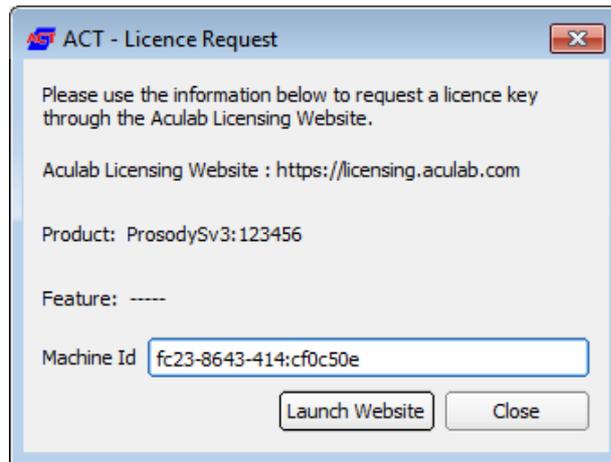
### 6.1 Requesting Licence Keys

To request a licence key, you must do the following:-

1. From the Licence Manager list, select the product for which you wish to request licences.
2. Click the 'Request Licence Keys...' button. This will bring up the following dialog box :-



3. Select the licence type required; Product or Feature. If you are selecting a Feature licence, select the feature from the drop-down list.
4. Click the 'OK' button. This will bring up a dialog box containing the details required to request a licence.



5. Click 'Launch Website', to load the licensing website in your default browser, and follow the onscreen instructions.

## 6.2 Installing Licence Keys

To Install a license key, you should do the following:-

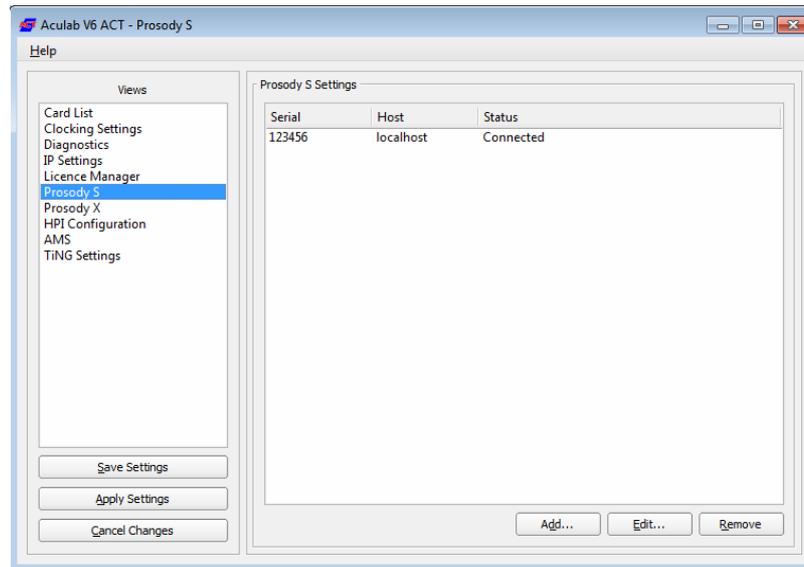
1. Click the 'Install Licence Keys...' button. This will bring up the following dialog box :-



2. Copy the licence key provided in the e-mail from Aculab, into the 'Licence Key' edit box.
3. Click the 'OK' button. This will install your licence key.

If you have any issues installing licence keys, please contact Aculab Support.

## 7 Prosody S dialog

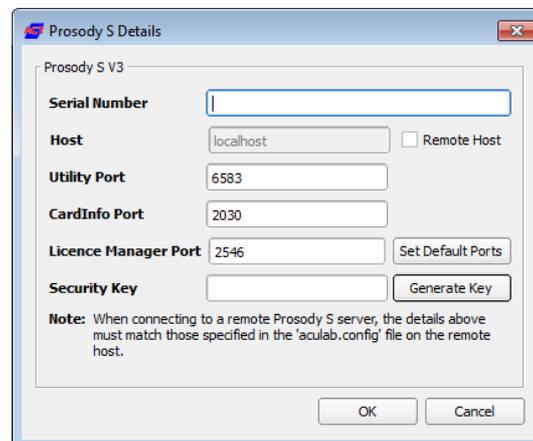


The Prosody S dialog contains a list of all local and remote Prosody S cards available for use by the system. Through this dialog you are able to add, edit or remove Prosody S cards from your system.

### 7.1 Adding a Prosody S Card

To add details of a Prosody S card to the system, you must do the following:-

1. Click the 'Add..' button. This will display the 'Prosody S Details' dialog box:-



2. Enter a unique 'Serial Number' for the Prosody S card being added. This can be whatever you want to use to identify the Prosody S card (For example HS\_PROSODYS). It can be alpha-numeric, including \_ and -.
3. If a local Prosody S card is being added the IP address field remains greyed out and the address will subsequently be reported as 127.0.0.1 via the resource manager APIs.  
If a remote Prosody S card is being added, click the 'Remote Host' check box and enter either the hostname or IP address of the remote machine on which it is running.
4. Use the default port values for the 'Utility Port', 'CardInfo Port' and 'Licence Manager Port' unless there is a conflict with another application on the machine where the selected Prosody S card is running.

**NOTE**

**These values do not actively set the port settings in for the card, but must match those configured locally for that card in its configuration file (Aculab\_config.cfg). Refer to the Prosody S User Guide for further details.**

5. Enter a (security) Key value or press the Generate Key button to create a new one. This property is used to ensure the security of communication between application and server. It can be any alpha-numeric string.

**NOTE**

**For remote Prosody S cards, this key must match the `--securitykey` argument entered when the server was started/installed and that is persisted in the configuration file. For a card local to the ACT this key is configured and the card restarted automatically.**

6. Click the 'OK' button to add the server into the system.
7. The card will be available for use once it's status is 'Connected'.

## 7.2 Editing the Details of a Prosody S Card

To edit the details of a Prosody S card on your system, you must do the following:-

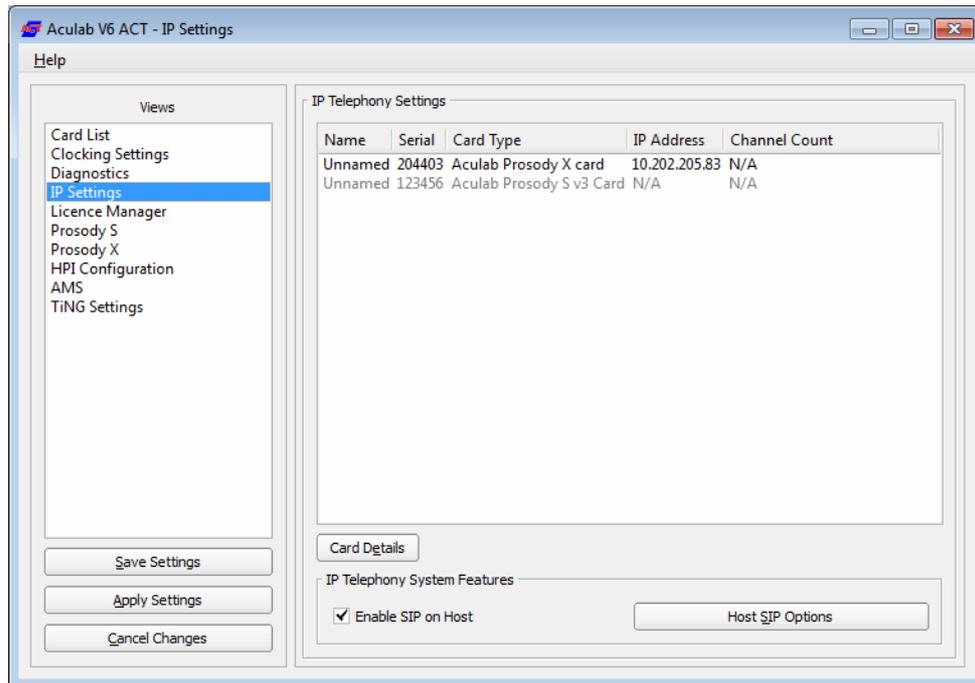
1. Select the card you wish to edit from the 'Prosody S Settings' list.
2. Either double-click the card, or click the 'Edit..' button.
3. A 'Prosody S Details' dialog box, similar to the one above will be displayed.
4. Make the required changes, and click the 'OK' button to apply the changes.

## 7.3 Removing a Prosody S Card

To remove a Prosody S card from your system, you must do the following:-

1. Select the card you wish to remove from the 'Prosody S Settings' List.
2. Click the 'Remove' button.
3. The Prosody S card will now be removed from your system.

## 8 IP Settings dialog



### Dialog components

**IP Telephony settings** - This selection lists all IP cards that have been detected in the system, and details any user defined Name, the unique Serial Number of the card, and any configured IP address for the card.

**IP Telephony System Features** – This area contains a check box on whether you wish to enable SIP on the host you have selected or not. It all contains a selection box that will take you to the Host SIP Options dialogue box.

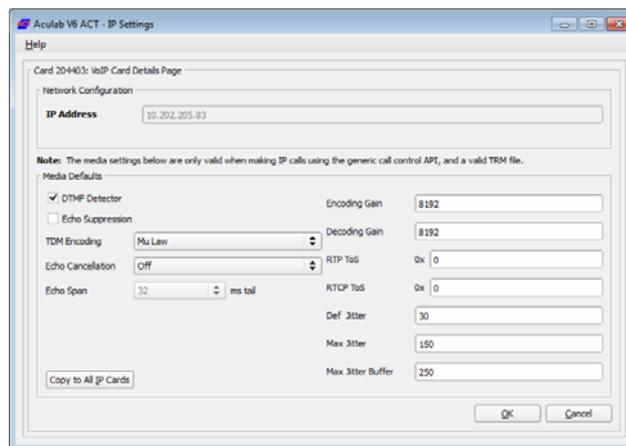
## 8.1 Card Details - VoIP Card Details dialog

Only cards that contain IP telephony resources will appear in the 'IP Settings' list. IP card settings are set for each IP telephony card in the system.

Select a card from the 'IP Settings' list followed by 'Card Details', or double click on a card entry, to open an 'IP Settings' dialog for the selected card.

### NOTE

**Media Defaults on this screen are only valid on a Prosody X card when using the generic call control API with a valid TRM file**



### Network Configuration

The 'IP Address' field should display the Ipv4 configuration for the selected ProsodyX card.

### Media Defaults

The values initially contained in this section are system defaults. You should only change these values if you require the changes to be the default for all calls. You can change these values on a call basis using the Call Control APIs, see the appropriate API guide for further details.

#### DTMF Detector

By default any DTMF tones present on a TDM bus will be detected by the card. The audible DTMF tone is then removed and control packets containing the DTMF information are transmitted onto the IP network. Un-check this option to disable the DTMF detector; any DTMF tones will then be transmitted as audio.

#### Echo Suppression

By default echo suppression is disabled, check this option to change the default to echo suppression enabled.

#### TDM Encoding

The audio presented on the TDM interface by the IP Telephony card can be either  $\mu$ -law or a-law encoded. Use the pull down menu to set the default encoding to either A\_Law or  $\mu$ \_law (Mu Law).

#### Echo Cancellation

The available options are:

- Off – disables echo canceller
- G.165 – enables G.165 echo canceller
- G.165 NLP – enables G.165 echo canceller with non-linear processing

Use the pull down menu to change the system default option.

#### Echo Span

This is the length, in milliseconds, of the echo canceller tail. It may be 4, 6, 8, 10, 12, 14, 16 or 32ms tail length. Use the pull down menu to change the system default value.

#### NOTE

A 32ms tail length should not be used if you are using the G.723.1 codec.

#### encode\_gain/decode\_gain

The 'encode\_gain' parameter enables adjustment of the input signal from the telephony interface to the IP Telephony encoder, while the 'decode\_gain' parameter enables adjustment of the output signal from the IP Telephony decoder to the telephony interface. These parameters may be set to any value between 1 and 65535.

#### rtp\_tos

The byte field 'rtp\_tos' specifies the type of service field that will be used in the IP headers of real time transport protocol (RTP) packets sent by the board on a per call basis for call\_openout() and xcall\_accept() functions.

#### rtcp\_tos

The byte field 'rtcp\_tos' specifies the type of service field that will be used in the IP headers of real time conferencing protocol (RTCP) packets sent by the board on a per call basis for call\_openout() and xcall\_accept() functions.

#### NOTE

For most local area network configurations the default TOS value of 0 should be suitable. Setting a different value would only be required for connection to appropriately configured networks. If you are not sure of the required setting, please consult your network administrator.

#### def\_jitter, max\_jitter and max\_jitter\_buffer

These parameters control the adaptive jitter buffer used by the board to handle incoming audio, specifying durations in milliseconds.

The amount of the jitter buffering used will vary adaptively between 10ms and the 'maximum jitter' with 'default jitter' being the amount at the start of a call.

The value specified by 'max\_jitter\_buffer' limits the maximum depth of the jitter buffer at any one moment and should be greater than 'def\_jitter'.

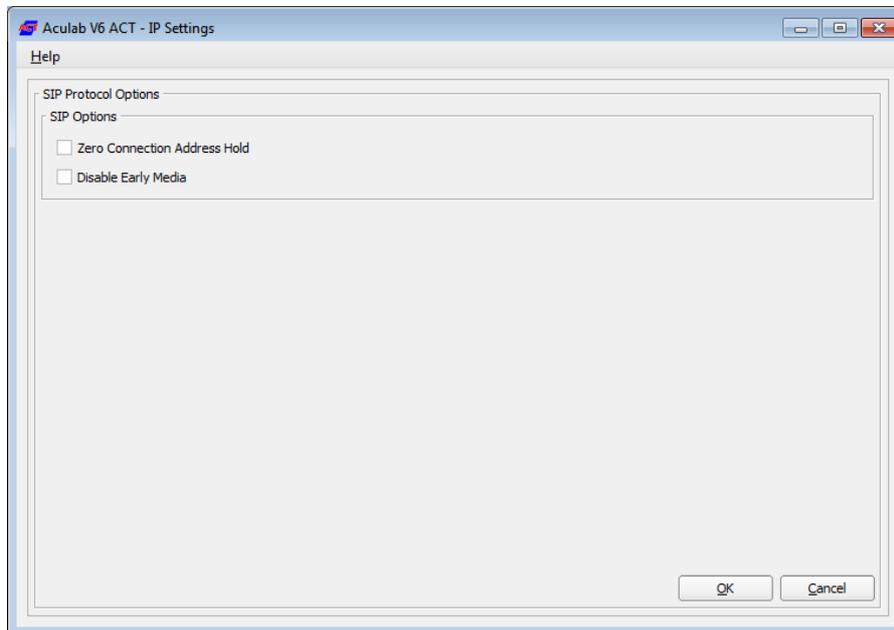
The defaults are 30, 150 and 250 milliseconds respectively.

#### Copy to All IP Cards

With the exception of the IP port address, this option copies the existing default configuration to all IP cards in the system.

## 8.2 Host SIP Protocol dialog

Check the 'Enable SIP' box then select the 'SIP Options' button to open a dialog for the 'SIP Protocol Options'. The following example shows the default SIP Options.



### **Zero Connection Address Hold**

When set, the service assumes that remote party implements call hold to the earlier internet specification, that is c=0.0.0.0 in the SDP body. If un-checked, the service assumes the latest specification (a=sendonly/recvonly).

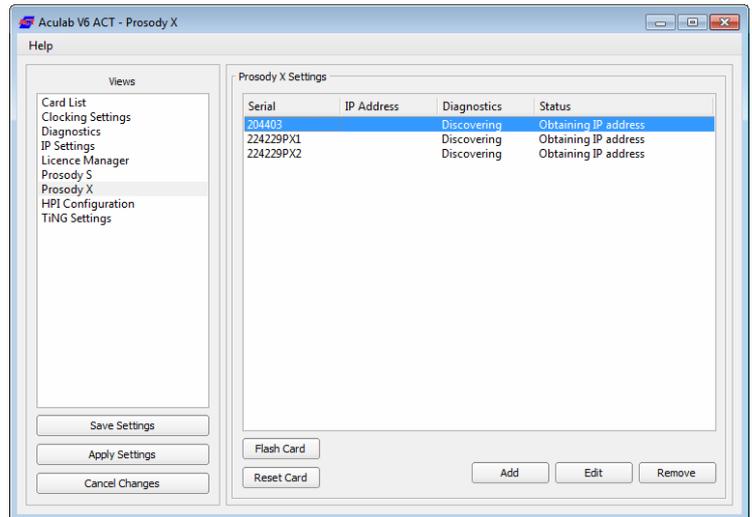
### **Disable Early Media**

When this option is checked, for any outgoing call, the calling party will refuse to participate in any early media sessions offered by the called party. If un-checked, the calling party will participate in any media sessions offered.

## 9 Prosody X dialog

ProsodyX cards may be "local" cards installed in the host system, or "remote" cards installed in other systems attached on the same subnet. Local cards present in host system are recognised by the O/S as network adapters and not as computer telephony devices and are normally listed in the dialog.

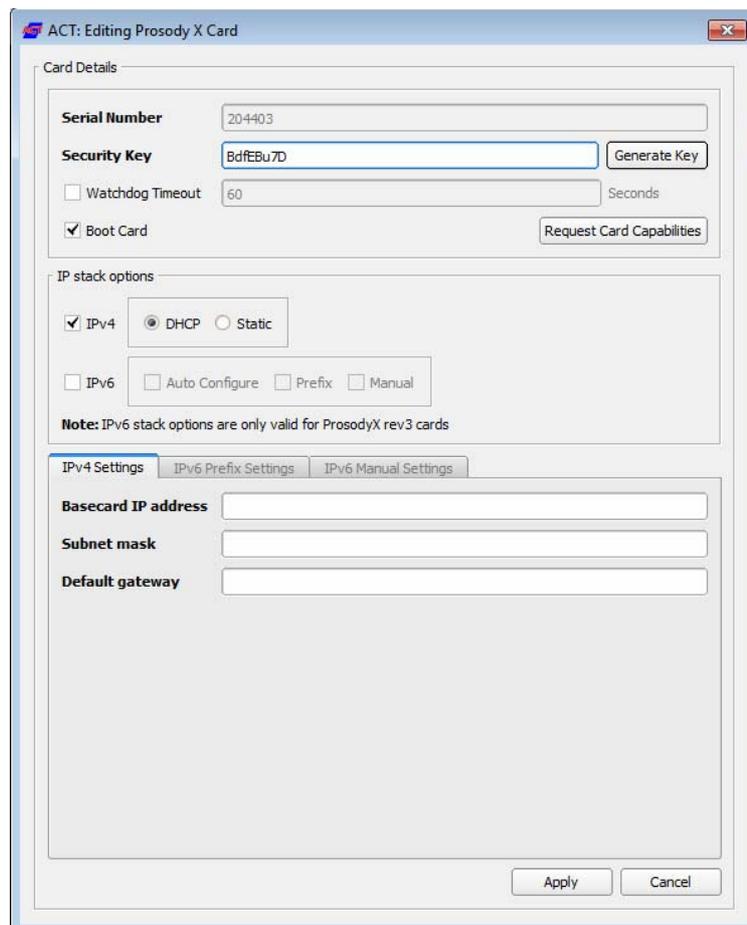
They can be omitted if the network adaptor function is not enabled but may not show an 'IP Address' or active 'Status'. Otherwise select 'Add': to add a Prosody X card, which could be a card located in another system.



### 9.1 Adding Prosody X card dialog

Select 'Add' to open an 'Adding Prosody X Card' dialog:

The 'Adding Prosody X Card' dialog Card Details options are as follows:



## Serial Number

The serial number of the Prosody X base card, as obtained from the card label (see the appropriate hardware installation guide). For some operating systems, the serial number may also be obtained from the system hardware device manager list, or by running the 'ipconfig' command from a system command prompt.

## Security Key

This field is used to define a card access control key, used to restrict access to the card. It is specified as a null terminated string containing any alphanumeric and most punctuation characters (excludes ':' or '>').

## Generate Key

Select this button to auto-generate a security key.

## Watchdog Timeout

This parameter specifies the timeout, which will be used with the card watchdog if this system configures the card. If set to zero, then the card watchdog will be disabled. Otherwise it specifies the watchdog timeout in seconds. If no host system is controlling the cards for the watchdog time then the card will reboot. Timeouts of less than 60 seconds may not be specified.

## Boot Card

If this parameter is selected, then this system will be responsible for configuring the card when booted. Otherwise, the system will rely on another system performing initial configuration of the card. If configuration is enabled (Boot Card selected) then on IPv4 either DHCP or Static must be selected and configured, and on IPv6 either Auto Configure, Prefix, or Manual must be selected and configured.

## IP stack options

This section allows you to pick whether to use IPv4 or IPv6. Selecting just IPv4 will make it so that the card will default to whatever IPv4 configurations are being set. Selecting just IPv6 will have the card boot with just the IPv6 configurations. It is possible to configure the Prosody X with both IPv4 and IPv6 as they can both be configured and used at the same time.

## IPv4

When selecting this option, you get the choice between using DHCP and selecting a static valid IP.

Selecting DHCP tells the Prosody X to use Dynamic Host Configuration Protocol, instead of specifying a fixed IP address. To use the 'Use DHCP' option, you must first select the 'Boot Card' option. The static IP can be used without booting the card first.

## IPv6

This option enables IPv6 on the card, with the options for Auto Configure, Prefix or Manual. Just like DHCP, the card must be enabled before 'Prefix' can be used. The multiple 128

The screenshot shows a configuration window titled "ACI: Editing Prosody X Card". The window is divided into several sections:

- Card Details:** Contains fields for "Serial Number" (204403), "Security Key" (CYCtpR), and "Watchdog Timeout" (60). There are buttons for "Generate Key" and "Request Card Capabilities".
- IP stack options:** Includes checkboxes for "IPv4" (checked) and "IPv6". Under "IPv4", there are radio buttons for "DHCP" (selected) and "Static". Under "IPv6", there are checkboxes for "Auto Configure", "Prefix", and "Manual".
- Note:** "Note: IPv6 stack options are only valid for ProsodyX rev3 cards".
- IPv4 Settings:** A sub-section with tabs for "IPv4 Settings", "IPv6 Prefix Settings", and "IPv6 Manual Settings". It contains fields for "Basecard IP address", "Subnet mask", and "Default gateway".

At the bottom right, there are "Apply" and "Cancel" buttons.

bit IPv6 addresses assigned to the Prosody X card are derived from bits in an address prefix common to all the addresses and other bits usually derived from MAC addresses of card subcomponents. Normally the 'AutoConfigure' setting should be selected in order that your Prosody X card automatically obtains its address prefix (and gateway/router information) using IPv6 Neighbour and Router discovery protocols and generates suitable IPv6 addresses using the default scheme.

If use of a specific address prefix is required, 'Prefix' should be selected and that prefix specified in 'IPv6 Prefix Settings'. For some environments it may be necessary to avoid using bits from the card MAC address in IPv6 addresses. In this case 'Manual' should be selected and the address information specified in 'IPv6 Manual Settings'.

### IPv4 Settings

This section allows you configure the settings for an IPv4 setup. It will be used if the IPv4 selection is made in the IP stack options.

#### Basecard IP address

This is the IPv4 address that will be used for the card once if the card is booted with a 'Static' IPv4 address. This is the address that the card will respond to when connecting via ACT or commands.

#### Subnet mask

The IPv4 address mask, used to set a valid sub-network address range. Usually set to 255.255.255.0 unless advised otherwise by your network administrator. To use the 'Netmask' option, you must first select the 'Boot Card' option.

#### Default gateway

Used to specify an entrance/exit between networks. Usually left blank (or set to 0.0.0.0) unless advised otherwise by your network administrator. To use the 'Gateway' option, you must first select the 'Boot Card' option.

### IPv6 Prefix Settings

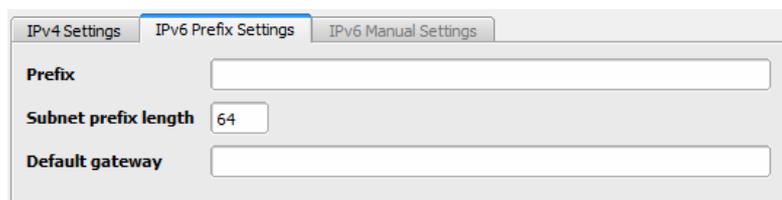
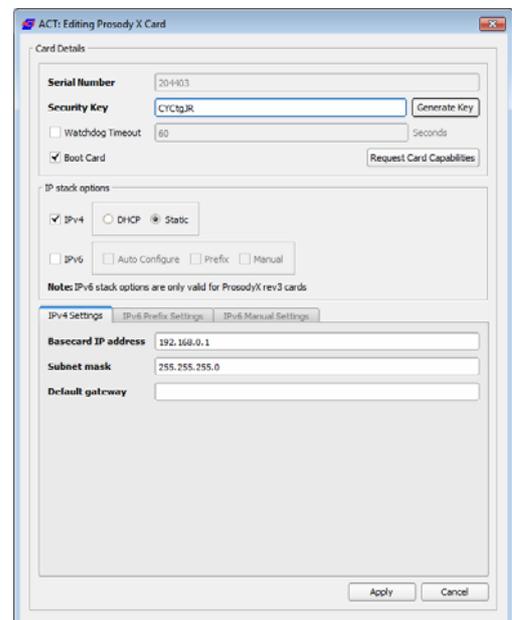
This section contains the configuration settings for the IPv6 Prefix. It cannot be accessed unless IPv6 Prefix has been selected in the 'IP Stack options'.

#### Prefix

In order to use this, you must have Prefix enabled. This is for defining the prefix that will be used as the first few bits of your IPv6 address. This should be in the form `aaaa:bbbb:cccc:dddd::`. Once you boot your card with IPv6 enabled and configured with Prefix, these will be used as your first 64 bits. The remainder of the bits will be generated by the endpoints MAC address.

#### Subnet prefix length

This is where you define how many bits you want defined by the prefix. This is set at 64 for default.

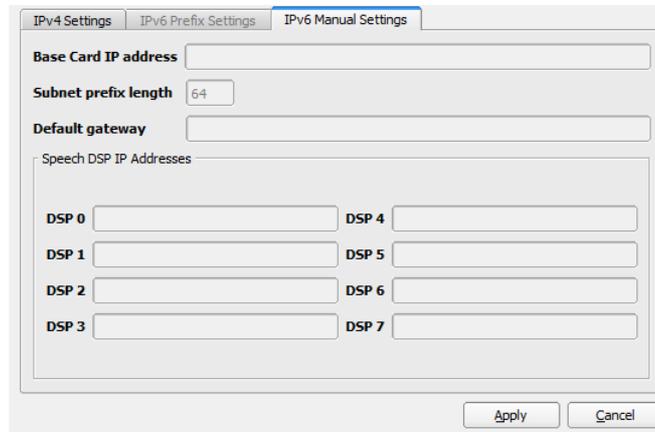


### Default gateway

Used to specify preferred use of a specific IPv6 router on the local link. Usually left blank (or set to ::) unless advised otherwise by your network administrator.

### IPv6 Manual Settings

These settings require for IPv6 to be enabled and configured to use Manual settings. It is used for defining the various IPv6 addresses that the card uses. All these addresses must share a common prefix of subnet prefix length specified.



### Basecard IP address

This is the IPv6 address that will be used for the card once if the card is booted with a 'Manual' IPv6 address. This is the address that the card will respond to when connecting via ACT or commands.

### Subnet prefix length

In this section it is non-usable, as you are defining the length of the prefix common to all the IPv6 addresses for this card.

### Default gateway

Used to specify preferred use of a specific IPv6 router on the local link. Usually left blank (or set to ::) unless advised otherwise by your network administrator.

### Speech DSP IP Addresses

This section allows you to define the IPv6 address for each individual DSP.

### Using the dialog

Enter the Serial Number of the card to be added, followed by the other options as appropriate.

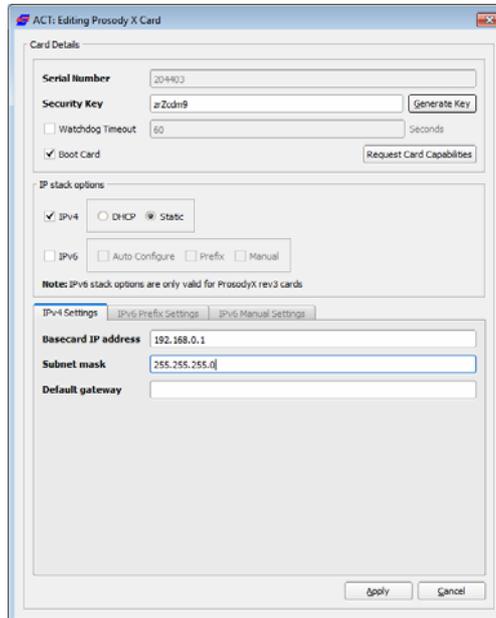
Select 'Add' to apply the changes, or 'Cancel' to ignore the changes, and return to the 'Prosody X Cards' dialog. A confirmation dialog will confirm success or failure of applied changes.



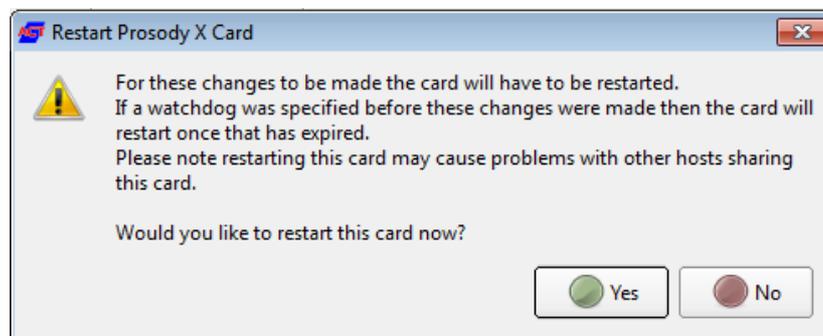
In the failed example, we have tried to apply an invalid IP address.

## 9.2 Editing Prosody X cards dialog

Selecting an existing card followed by clicking the 'Edit' button, will open a similar dialog to the Add option, the only difference being the dialog title will be Editing Prosody X Card, the Serial Number field will be greyed out, and the 'Add' button will be replaced by 'Apply'.



When you select Apply, you will be presented with a 'Restart Prosody X Card' question dialog:



If you are using Edit to configure a Prosody X card for the first time, select 'No'. If you are using the Edit option to change an IP address, the new IP address will not be applied until the Prosody X card has been rebooted, therefore select 'Yes'.

## 9.3 Remove Prosody X card confirmation dialog

To remove a card from the list, select a card in the 'Prosody X Cards' dialog then select 'Remove'.

## 9.4 Flashing a Prosody X card

A flash upgrade can be performed for Prosody X cards.

To perform a flash update, select an existing card, which is 'in service', and click the 'Flash Card' button. This will display the 'Flash Card' dialog box, showing you the components on the card which can be flashed.

To perform the flash update, click the 'Flash Component' button. You will be asked whether you are sure, and after clicking yes, wait for the process to complete.

### NOTE

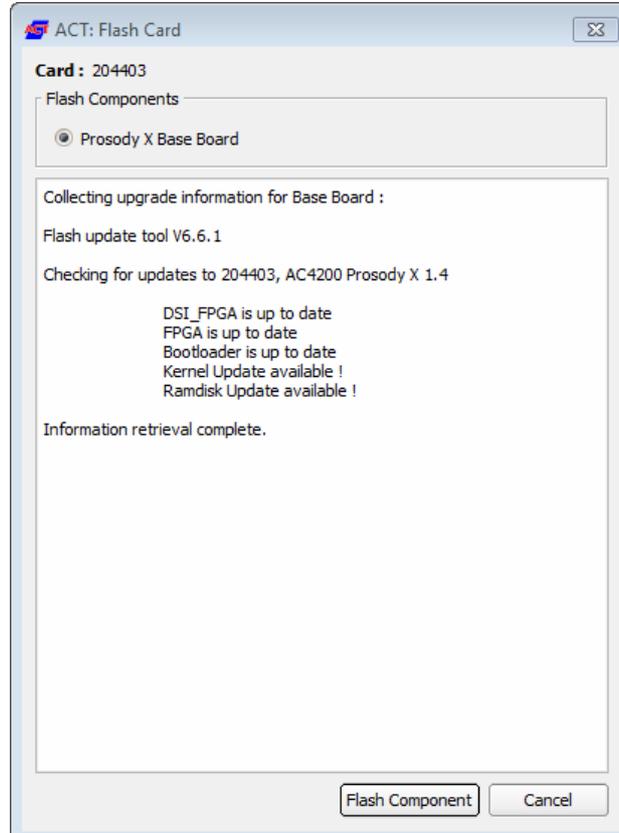
Make sure the Prosody X card is not in use by an application before performing a flash update.

### NOTE

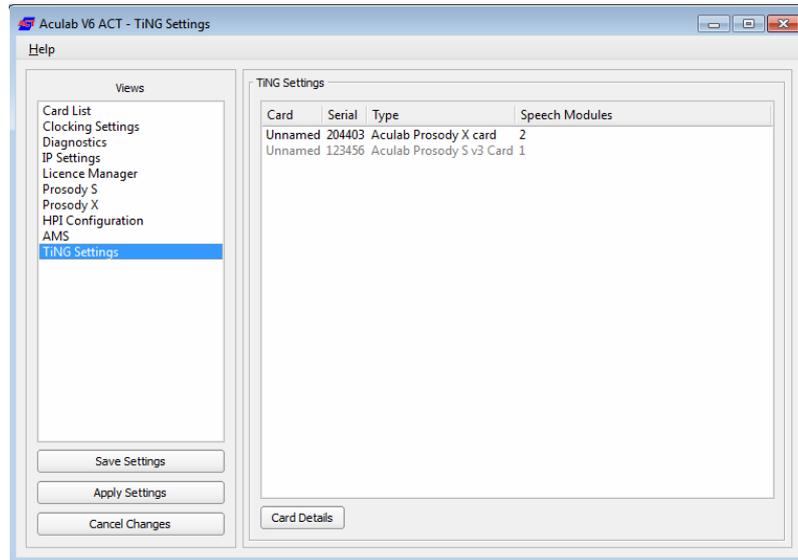
It is advisable to perform a flash update on new cards when they are installing a system, to make sure they have the latest flash updates.

### CAUTION

Once the upgrade is in progress you must not attempt to abort it: doing so may cause the flash upgrade to fail rendering the card uncontactable. Should a flash upgrade fail for any reason, please contact Aculab support for advice.



## 10 TiNG Settings dialog



### Dialog components

**TiNG settings** - shows the cards that have been detected in the system that contain speech-processing DSPs.

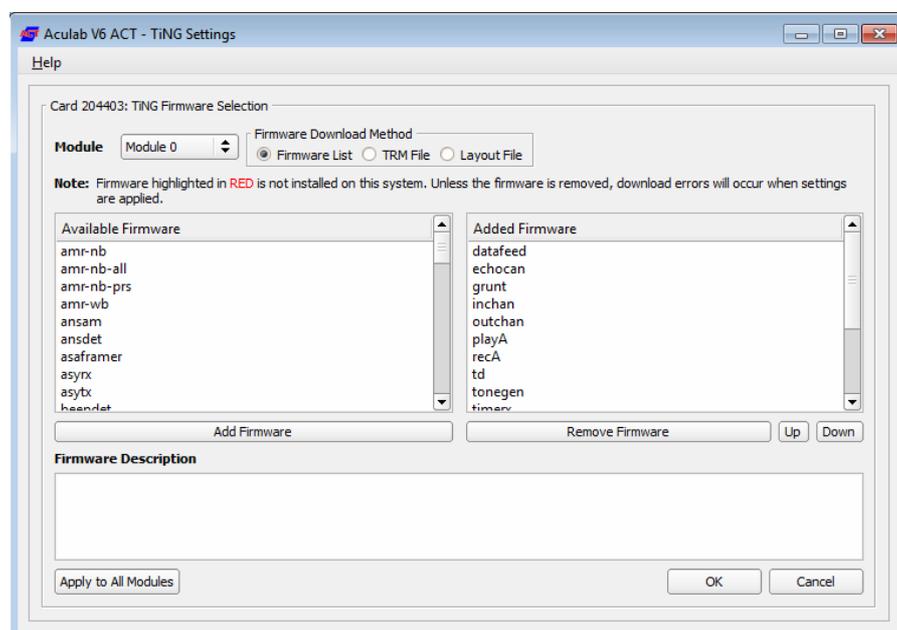
**Card Details** - Used to configure the DSP parameters. Select a card from the list followed by clicking the 'Card Details' button, or double click on a card entry, to open a 'TiNG Settings Selection' dialog for the selected card.

The 'TiNG Settings Selection' dialog is used to assign and/or edit firmware for each DSP on the DSP module.

### 10.1 Card Details - TiNG Firmware Selection dialog

Only cards that contain Prosody DSP modules will appear in the *TiNG Settings* list

Select a card from the 'Ting Settings' list followed by clicking the 'Card Details' button, or double click on a card entry, to open a 'TiNG Firmware Selection' view dialog for the selected card.



**Module** - Contains an entry for each module fitted to the card, select the modules as required.

**Firmware Download Method** - Contains details of the methods by which TiNG firmware may be downloaded to the card.

**Available Firmware** - A list of all the TiNG firmware currently available, selecting an entry in this list will display a description in the 'Firmware Description' field for the selection.

**Add Firmware** - Select to move a selection from the 'Available Firmware' list to the 'Added Firmware' list.

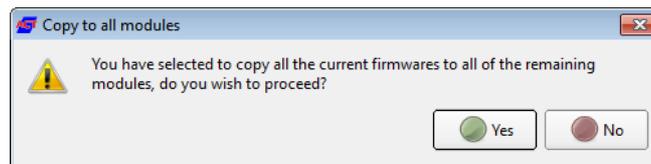
**Added Firmware** - A list of all the TiNG firmware to be downloaded to the module, selecting an entry in this list will display a description in the 'Firmware Description' field for the selection.

**Remove Firmware** - Select to move a selection from the 'Added Firmware' list to the 'Available Firmware' list.

**Up and Down Arrows** – These arrows next to the 'Remove Firmware' button, can be used to change the order in which the firmware is downloaded to the module.

To change the position of a firmware in the list, select the firmware, and click the 'up' or 'down' arrow to move the firmware to a new position in the 'Added Firmware' list.

**Apply to All Modules** - Select to copy all the 'Added Firmware' for the current module to all modules on the card. You will be prompted with a confirmation dialog, select 'Yes' to continue.



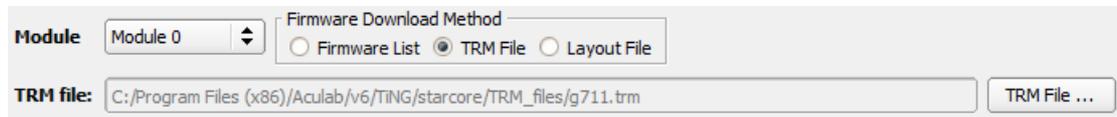
## NOTE

Multiple selections can be made in the lists using the Control (Ctrl) key.

Once you have completed your selections for each module as required, select 'OK' to accept, or 'Cancel' to discard, any changes and return to the 'TiNG Settings' dialog.

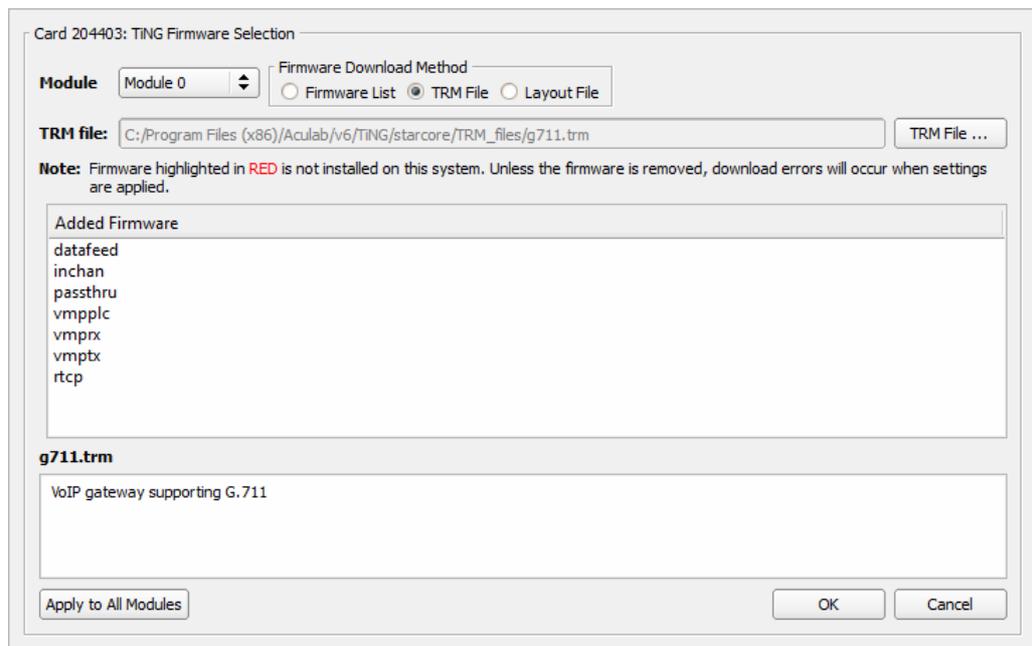
### 10.1.1 Use TRM file dialog

Prosody X cards have an option to load the TiNG DSP resource configuration from a TiNG resource manager configuration text file (TRM file). See the TiNG resource manager API guide for details on creating a TRM file.



The screenshot shows a dialog box titled 'Card 204403: TiNG Firmware Selection'. It features a 'Module' dropdown set to 'Module 0' and a 'Firmware Download Method' section with three radio buttons: 'Firmware List', 'TRM File' (which is selected), and 'Layout File'. Below this is a 'TRM file:' text box containing the path 'C:/Program Files (x86)/Aculab/v6/TiNG/starcore/TRM\_files/g711.trm' and a 'TRM File ...' button.

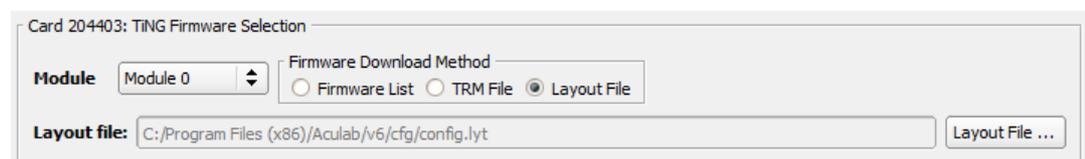
Select the 'TRM File' radio button to use a TiNG resource manager file (\*.trm) for firmware download. You may initially be prompted to use a previous file, or select a new file using a standard file browser dialog. After you have made your selection, the dialog will change to display the 'Added Firmwares'.



This screenshot shows the same dialog box after selection. The 'TRM File' radio button remains selected. The 'TRM file:' text box still shows the same path. A 'Note' is displayed: 'Firmware highlighted in RED is not installed on this system. Unless the firmware is removed, download errors will occur when settings are applied.' Below the note is a list box titled 'Added Firmware' containing the following items: datafeed, inchan, passthru, vmpplc, vmprx, vmptx, and rtcp. Below the list is a section for 'g711.trm' with the text 'VoIP gateway supporting G.711'. At the bottom, there are buttons for 'Apply to All Modules', 'OK', and 'Cancel'.

### 10.1.2 Using Layout file dialog

Prosody X cards have an option to load the TiNG DSP resource configuration from a Layout text file (Layout File). This method enables you to specify the placement of firmware on the TiNG DSP, in order to optimise TiNG DSP usage. See the TiNG API guide for details on creating a Layout file.

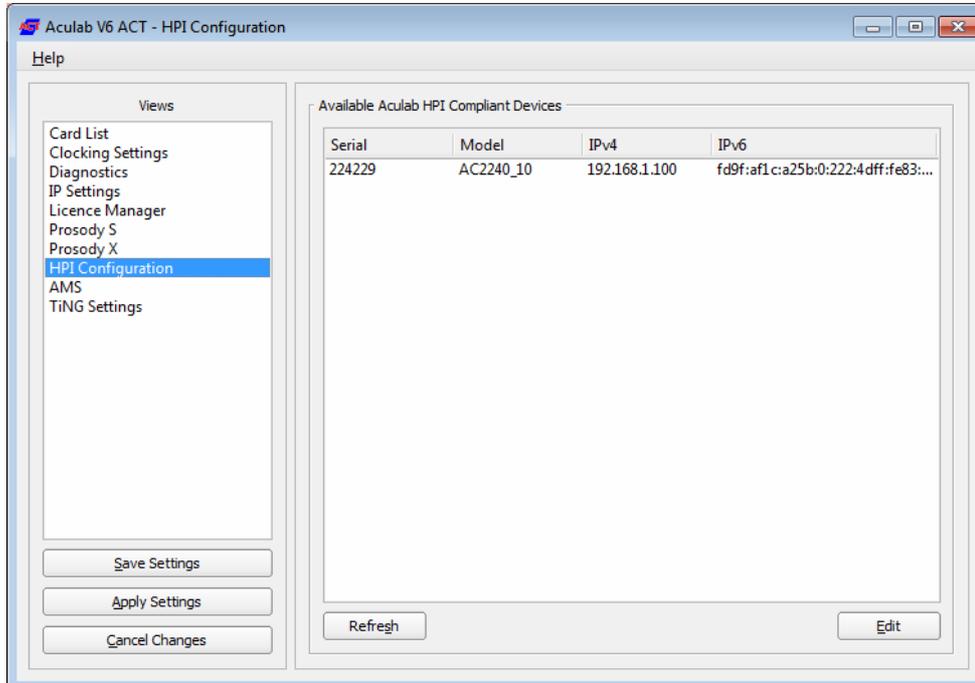


The screenshot shows the dialog box with the 'Layout File' radio button selected in the 'Firmware Download Method' section. The 'Layout file:' text box contains the path 'C:/Program Files (x86)/Aculab/v6/cfg/config.lyt' and a 'Layout File ...' button.

Select the 'Layout File' radio button to use a Layout file (\*.lyt). You may initially be prompted to use a previous file, or select a new file using a standard file browser dialog. After you have made your selection, the dialog will change to display the path to the Layout file, as above.

## 11 HPI dialog

Some Aculab devices have an HPI Compliant monitoring device. This dialog shows the devices that have been detected on your local network and allows you to configure them.



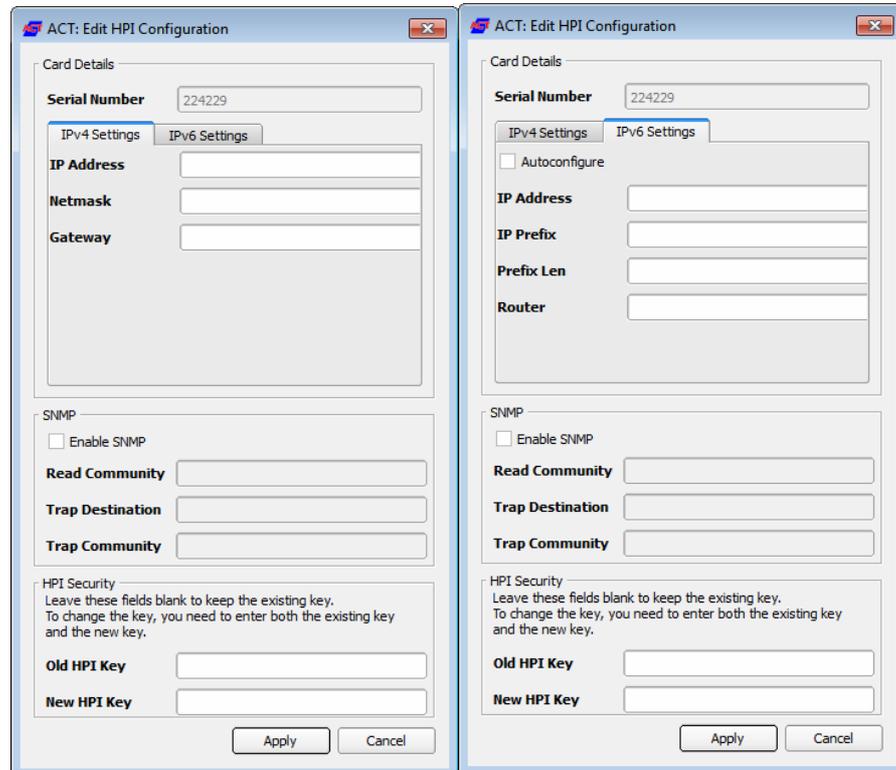
The list is updated periodically. Click 'Refresh' to force an update.

The configuration is stored on the device itself.

To edit the configuration of a device, double click on an entry or select an entry and click 'Edit'.

## 11.1 Edit HPI Configuration dialog

The following configuration options are available:



Make changes and click “Apply” to confirm them or “Cancel” to abandon them.

### 11.1.1 Network Configuration

**IP Address** - This is the address you want to configure on the device. This is the address on which the device will listen for HPI queries. This field is mandatory.

**Netmask** - This is the device’s network mask. This field is mandatory.

**Gateway** - This is the gateway that will be used to communicate with hosts that are not on the same network. This field is optional and, if populated, must be an IP address that is on the same network as the device itself.

### 11.1.2 SNMP

**Enable SNMP** - This option controls whether the device will respond to SNMP requests or generate SNMP traps.

**Read Community** - This is the community used to control read access to the device.

**Trap Destination** - This is the destination to which SNMP traps will be sent. This field is optional.

**Trap Community** - This is the community with which traps will be raised. This should be configured the same as your SNMP monitor. This field is mandatory if the Trap Destination field is populated.

### 11.1.3 HPI Security

This is a password used to control access to the HPI interface on the device. To set a new password you need to enter the current password in the **Old HPI Key** field and the new password in the **New HPI Key** field. By default there is no password.

## 12 Command Line options

Aculab hardware may also be configured via the command line. A number of command line options/tools are available. These are detailed in the Aculab Telephony Software Installation guide.