

Aculab digital network access cards

Aculab configuration tool (ACT) user guide

Revision 4.0.5



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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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4.0.2	24.10.17	KGB	Added install from/delete to file functionality.
4.0.3	04.12.17	KGB	Added subscription licence information.
4.0.4	08.12.17	KGB	Changes to subscription licence information.
4.0.5	17.09.18	KGB	Added Bare Metal (BM) and Virtual Machine (VM) indication of Licence Manager page. Also server 'Refresh' button.

CONTENTS

1	THE ACULAB CONFIGURATION TOOL (ACT)	6
1.1	Introduction	6
1.2	Release Notes	6
1.3	Firmware Issues	6
1.4	Prosody X card Windows considerations	6
2	THE PRIMARY DIALOG	7
2.1	Starting the ACT	7
2.1.1	Windows	7
2.1.2	Linux	7
2.1.3	Startup message dialog	7
2.2	Aculab Configuration Tool Initial Startup	7
3	CARD LIST DIALOG	11
3.1	Card details dialog	12
3.1.1	Port Details dialog (excluding SS7)	14
3.1.2	Port Details dialog for SS7	17
3.1.3	Port Settings confirmation dialog	21
4	CLOCKING SETTINGS DIALOG	22
4.1	Clocking Details - Card Clocking Details dialog	23
5	DIAGNOSTICS DIALOG	24
5.1	Start Diagnostics dialog	25
6	LICENCE MANAGER DIALOG	26
6.1	Installing Licence Keys On Systems With Internet Connectivity	26
6.1.1	Installing multiple licences from a file	27
6.2	Renewing Licence Keys On Systems With Internet Connectivity	28
6.3	Removing Licence Keys On Systems With Internet Connectivity	29
6.3.1	Removing multiple licences and storing them to a file	30
6.4	Installing, Renewing Removing and Activating Licence Keys On Systems With No Internet Connectivity	31
6.5	Removing Evaluation licences	31
6.6	Subscription licences	31
6.6.1	Installation and activation	32
6.6.2	Renewal	33
6.6.3	Removal	33
6.6.4	Expiration	33
6.7	Licence activity logging	34
7	PROSODY S DIALOG	35
7.1	Adding a Prosody S Card	35
7.2	Editing the Details of a Prosody S Card	36
7.3	Removing a Prosody S Card	36

8	IP SETTINGS DIALOG.....	37
8.1	Card Details - VoIP Card Details dialog.....	38
9	PROSODY X DIALOG.....	40
9.1	Adding Prosody X card dialog	41
9.2	Editing Prosody X cards dialog	45
9.2.1	IPv4 static configuration options.....	46
9.3	Flashing a Prosody X card	47
10	TING SETTINGS DIALOG.....	48
10.1	Card Details - TiNG Firmware Selection dialog	49
10.1.1	Use TRM file dialog	51
10.1.2	Using Layout file dialog	51
11	HPI DIALOG.....	52
11.1	Edit HPI Configuration dialog.....	53
11.1.1	IP stack options IPv4.....	53
11.1.2	IP stack options IPv6.....	53
11.1.3	SNMP	54
11.1.4	HPI Security.....	54
12	COMMAND LINE OPTIONS.....	55

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

To enable full functionality first navigate to the installation directory and run source setV6.sh. Then start the Aculab drivers via Aculab_dacp start.

If the drivers have not been built refer to \$ACULAB_ROOT/driver/readme.install.

Start the Aculab Configuration Tool by running \$ACULAB_ROOT/bin64/Act.

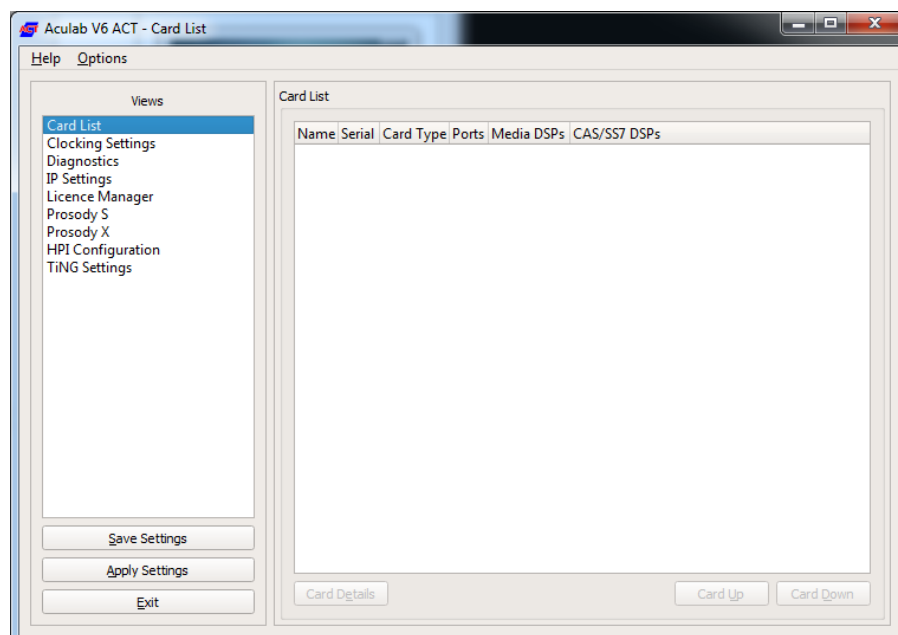
2.1.3 Startup message dialog

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 Licences required for Prosody S, dual redundant SIP (DRSS) 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 three entries.

Documentation - This Loads the ACT documentation, if installed.

About Qt- This displays information on the version ofQt in use.

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

Options Menu

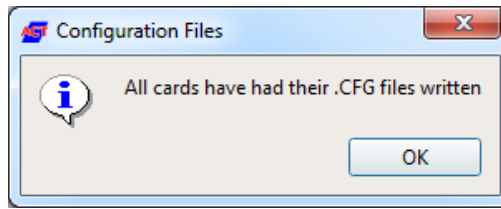
The 'Options' Menu contains two entries.

Enable removal of licences - This enables the 'Remove' button of the licence manager view. It is unticked when moving away from the licence manager view to prevent accidental removal of licences.

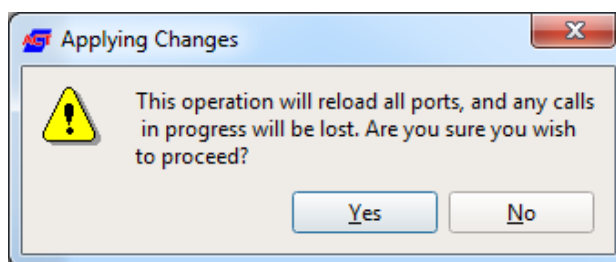
Disable warnings on cancel and exit - This stops asking the user for confirmation when cancelling and exiting dialogs.

Buttons

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



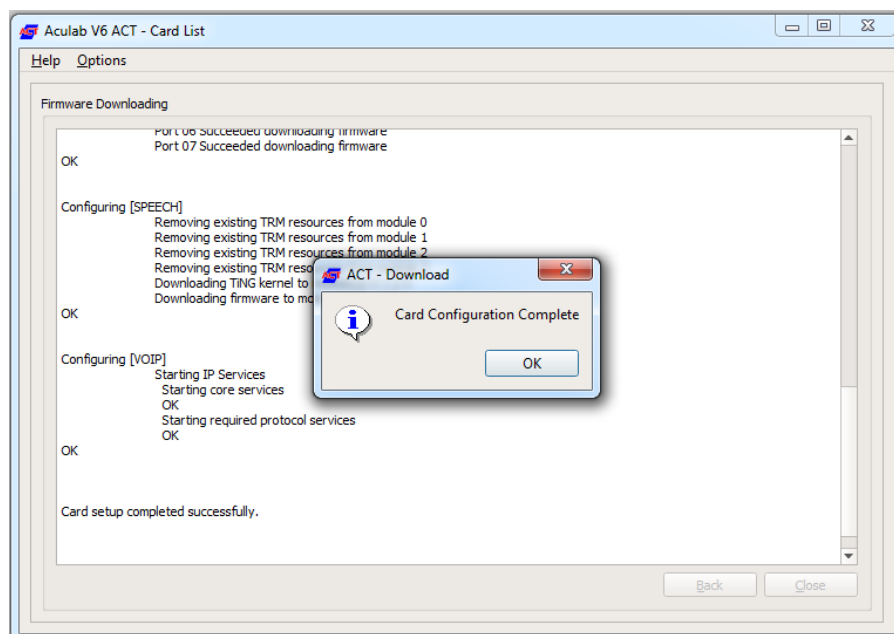
Apply Settings - Once selected, subject to any changes made, the ACT application updates the telephony software component configurations. You will be prompted to confirm your selection, via the following dialog box.



NOTE

Any calls currently in progress will be lost.

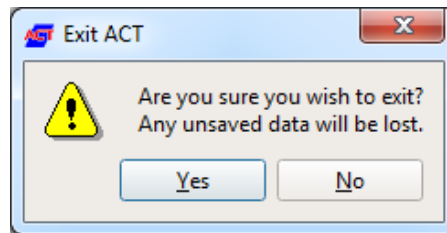
Click 'Yes' to proceed with the configuration changes.



Upon completion, you will be presented with a 'Card Configuration Complete' confirmation dialog. Click 'OK' to confirm the completion dialog, review the report as

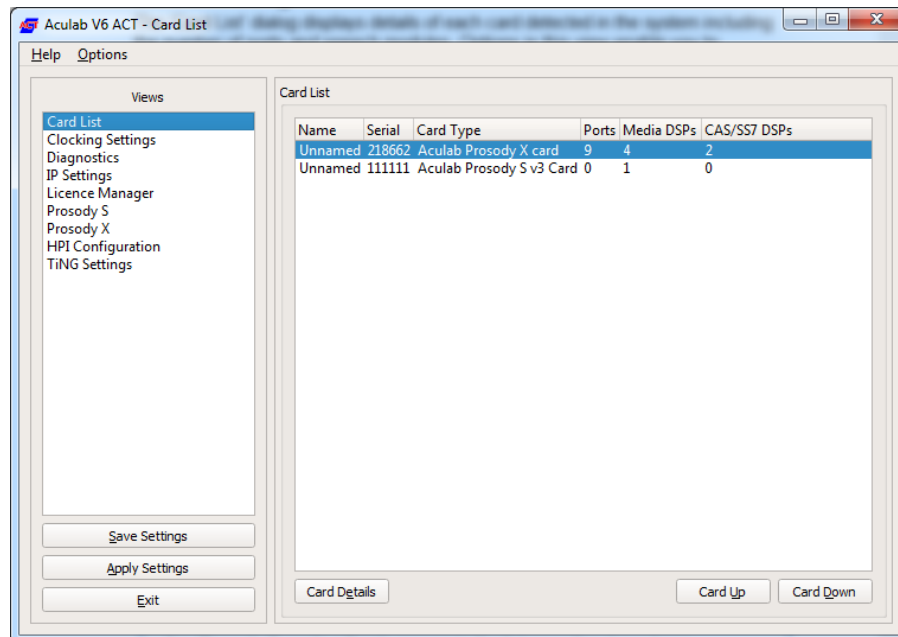
required, and then select 'Close' to exit the ACT dialog or 'Back' to continue configuring the system.

Exit - 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 the 'Prosody X' dialog, (see Section 9).

NOTE

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

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.

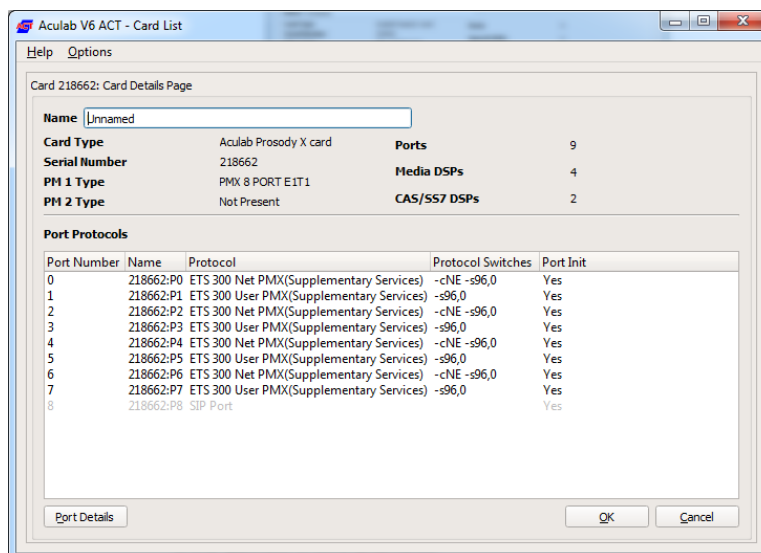
With the exception of Prosody S, the following sections cover the use of the Card List dialog options in more detail.

3.1 Card details dialog

This option is used to configure the TDM protocols downloaded to the ports on 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 ports available on the card, plus the one SIP (Ethernet) port. The SIP port is greyed out as it 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 legacy cPCI cards).

Ports - the total number of E1/T1 ports detected on the card.

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

CAS/SS7 DSPs - The total number of TDM protocol related DSPs 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.

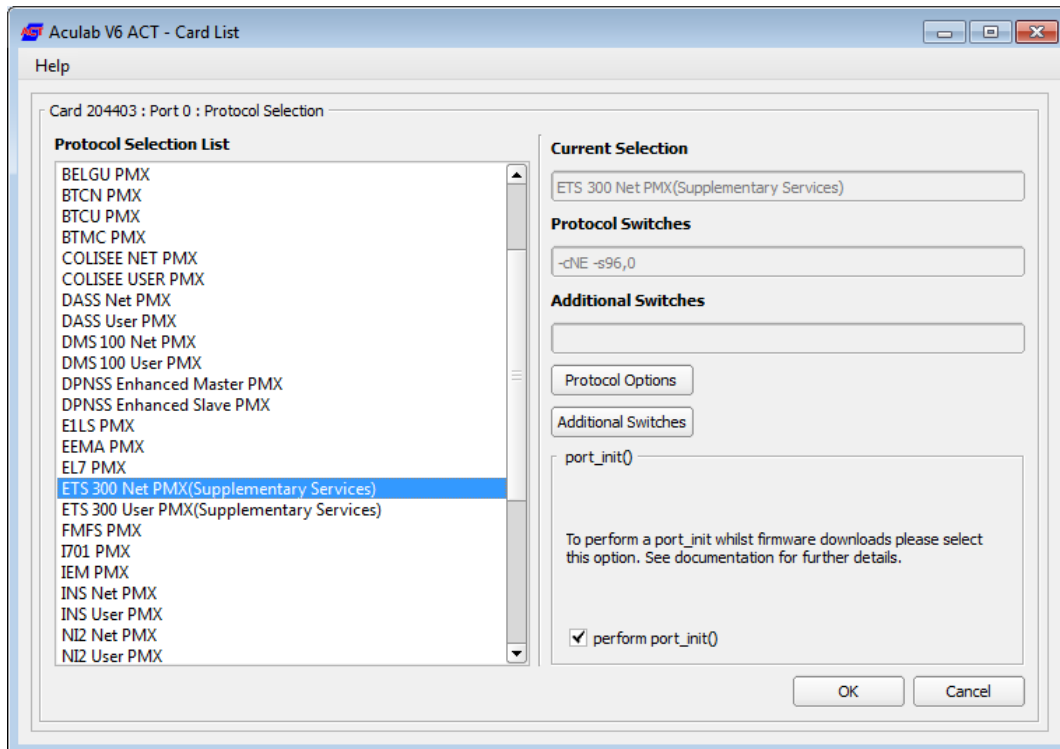
Cancel - select to discard any changes and close the card details dialog.

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

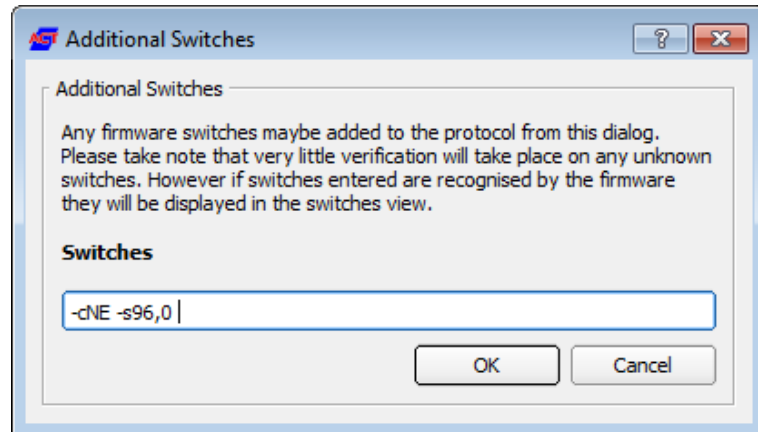
Select the required protocol from the 'Protocol Selection' list; this will be displayed in the 'Current Selection' field. Any default switches will be displayed in the 'Protocol Switches' field.

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

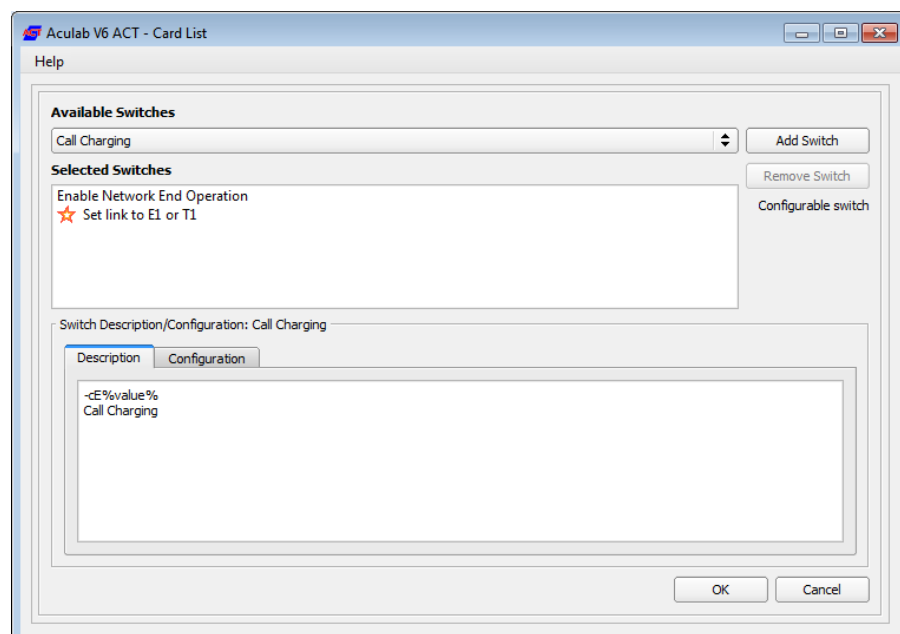
You can manually change the switches by clicking the 'Additional Switches' button, this will open an 'Additional switches' dialog:



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.

The image shows two screenshots of the 'Available Switches' dialog box. The top screenshot shows the 'Description' tab for the 'Set link to E1 or T1' switch. The 'Available Switches' list contains 'Call Charging' and 'Set link to E1 or T1'. The 'Selected Switches' list contains 'Set link to E1 or T1'. The 'Switch Description/Configuration' section shows the 'Description' tab with the text: '-s96, %value%' and 'Set to E1 or T1 variant of protocol, 0:E1, 1:T1'. The bottom screenshot shows the 'Configuration' tab for the same switch. The 'Available Switches' and 'Selected Switches' lists are the same. The 'Switch Description/Configuration' section shows the 'Configuration' tab with a table:

Property	Value
Set link to E1 or T1	0

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

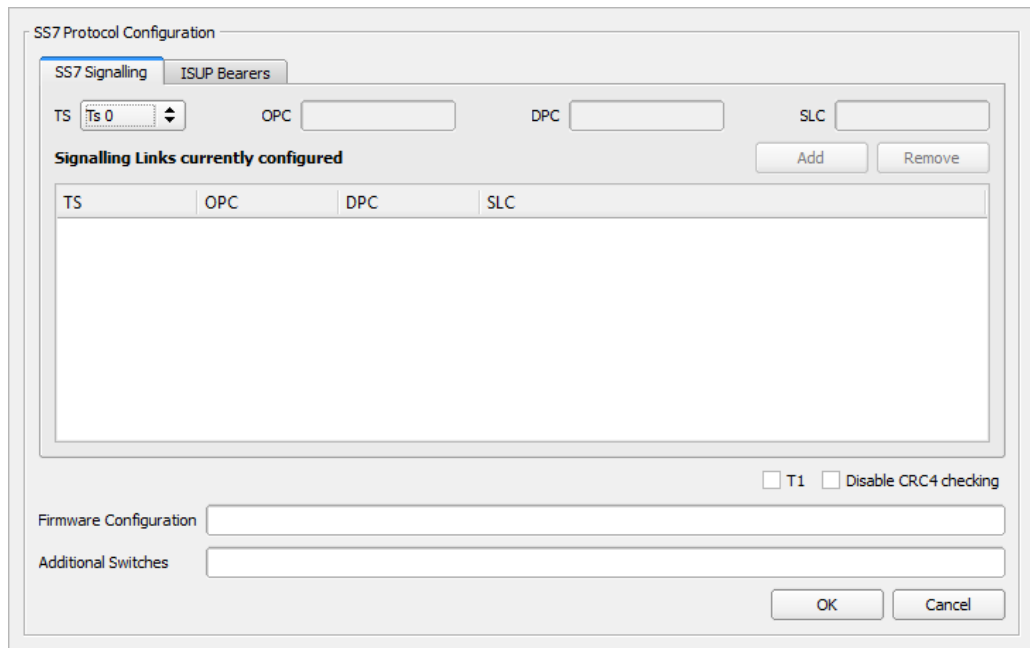
Removing a switch

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 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.



The dialog box is titled 'SS7 Protocol Configuration'. It has two tabs: 'SS7 Signalling' (selected) and 'ISUP Bearers'. Below the tabs, there are four input fields: 'TS' (a dropdown menu showing 'Ts 0'), 'OPC' (a text box), 'DPC' (a text box), and 'SLC' (a text box). Below these fields is a section titled 'Signalling Links currently configured' which contains a table with columns 'TS', 'OPC', 'DPC', and 'SLC'. The table is currently empty. To the right of the table are 'Add' and 'Remove' buttons. Below the table, there are two checkboxes: 'T1' and 'Disable CRC4 checking'. At the bottom, there are two text boxes labeled 'Firmware Configuration' and 'Additional Switches'. At the very bottom right are 'OK' and 'Cancel' buttons.

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 'SS7 Protocol Configuration' dialog box with the 'ISUP Bearers' tab selected. The dialog contains several input fields and checkboxes. At the top, there are fields for 'OPC', 'DPC', and 'CIC Base'. Below these is a 'Map Display Type' section with radio buttons for 'Hexadecimal' (selected) and 'Decimal'. To the right of these are 'CIC Map' and 'Circuit Map' fields. A table titled 'ISUP Bearers currently configured' is present, with columns for 'OPC', 'DPC', 'CIC Base', 'CIC Map', and 'Circuit Map'. Below the table are checkboxes for 'T1' and 'Disable CRC4 checking'. At the bottom are 'Firmware Configuration' and 'Additional Switches' fields. 'Add' and 'Remove' buttons are located to the right of the table. 'OK' and 'Cancel' buttons are 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 used to represent the local point code.

DPC

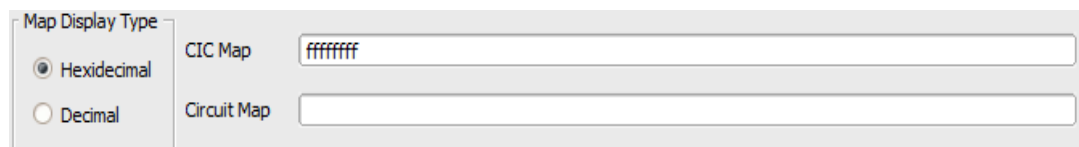
The ISUP Bearers DPC value is the user defined unique numeric Destination Point Code for a distant point code. This may be the same as the adjacent SS7 DPC or another DPC on your network via onward SS7 links.

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.



The image shows a configuration window titled 'Map Display Type'. It contains two radio buttons: 'Hexadecimal' (selected) and 'Decimal'. To the right of these buttons are two text input fields. The top field is labeled 'CIC Map' and contains the value 'ffffff'. The bottom field is labeled 'Circuit Map' and is currently empty.

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 fffffffc (or 2-31) or fffefff (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.

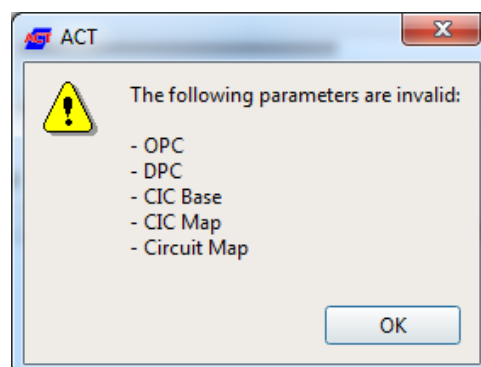
ADD

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

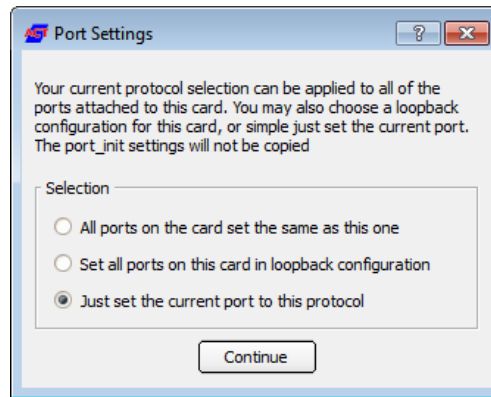
```

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.

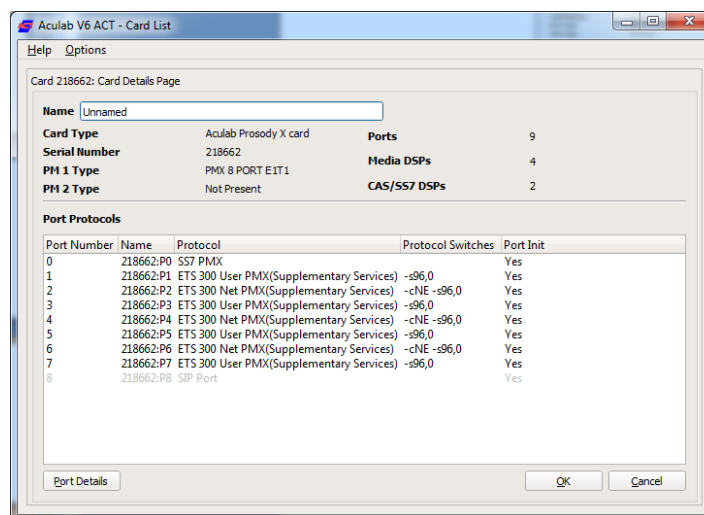
Binary digits	Hexadecimal digit
0000	0
0001	1
0010	2
0011	3
0100	4
0101	5
0110	6
0111	7
1000	8
1001	9
1010	A
1011	B
1100	C
1101	D
1110	E
1111	F

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.



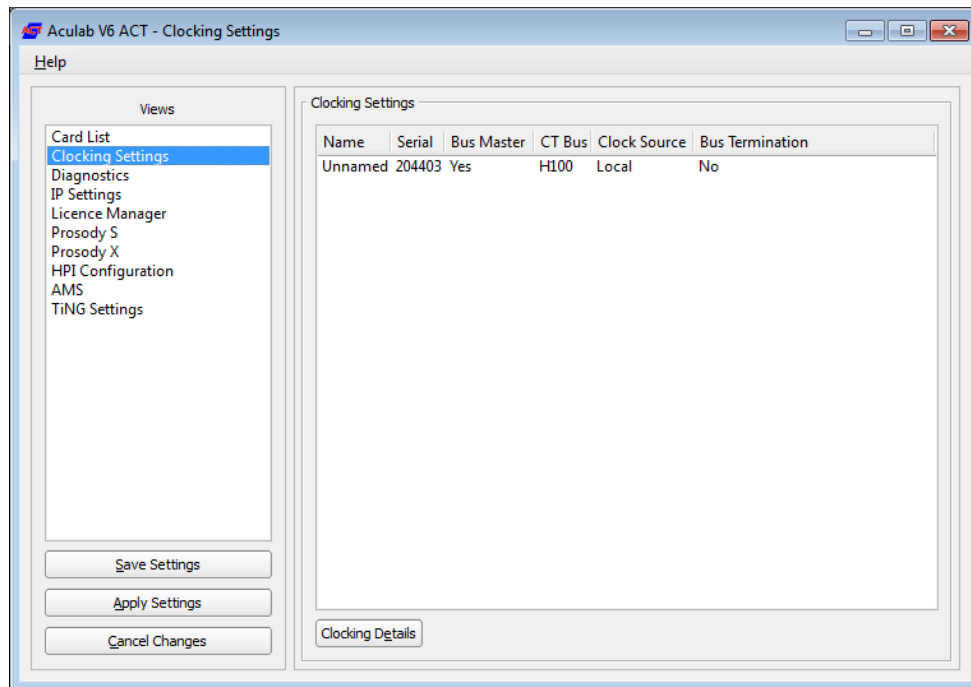
Make your required selection based on the descriptions, and click 'Continue'.



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 its 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.

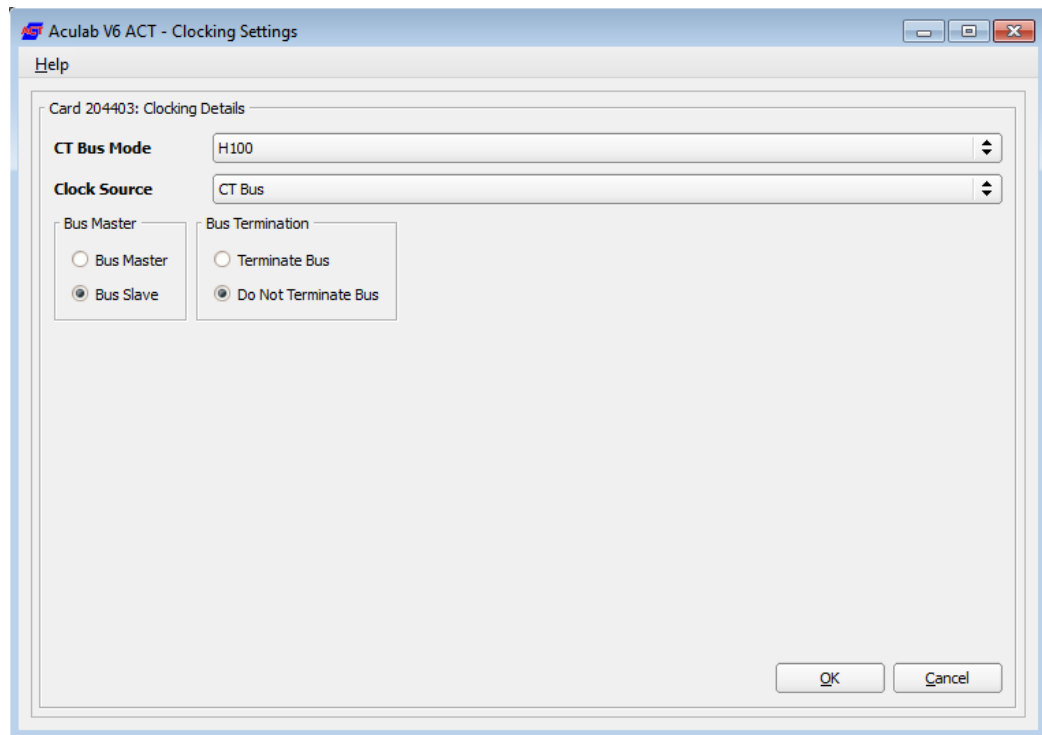
Clocking Settings dialog components

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 - For PCIe cards and dual card HA chassis 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. These options are only available for cards that support them.

Bus Termination - select 'Terminate Bus' or 'Do Not Terminate Bus', as appropriate. . These options are only available for cards that support them.

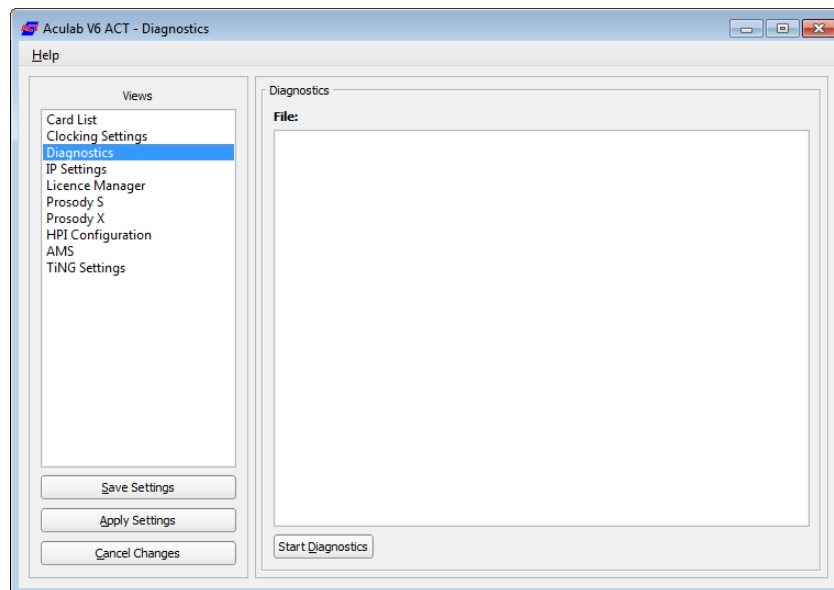
NOTE

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

When you are satisfied with your clocking 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.

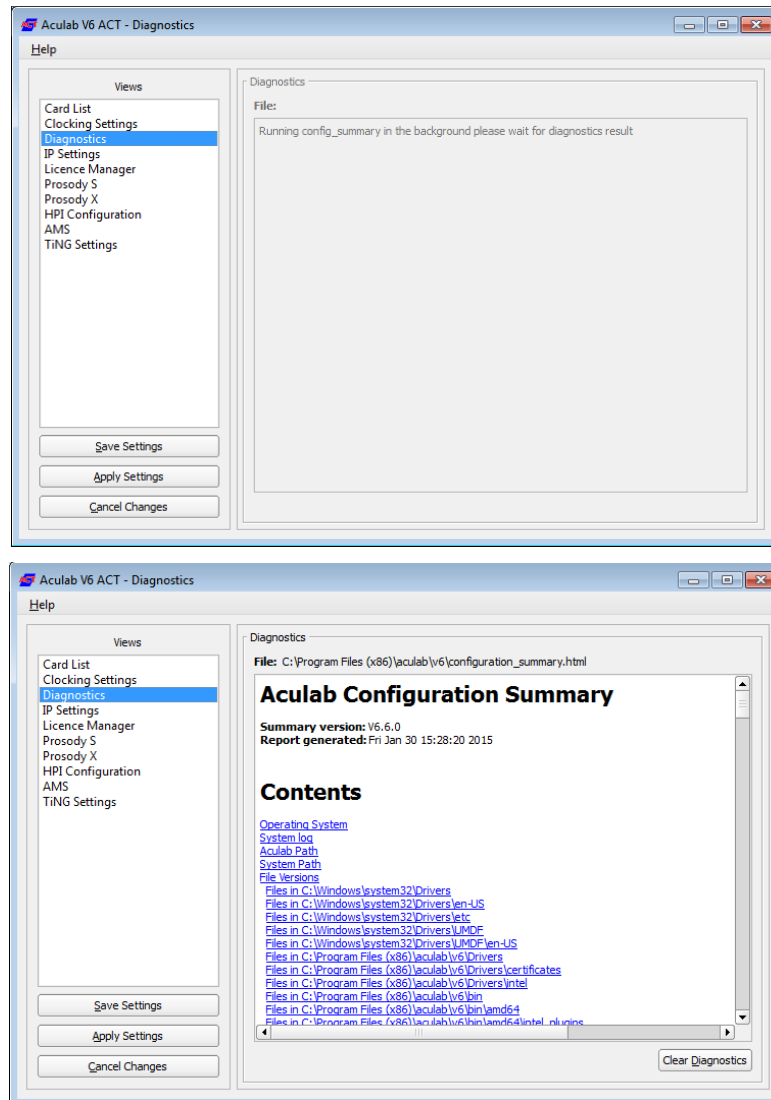
Configuration Files - configuration file details.

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.



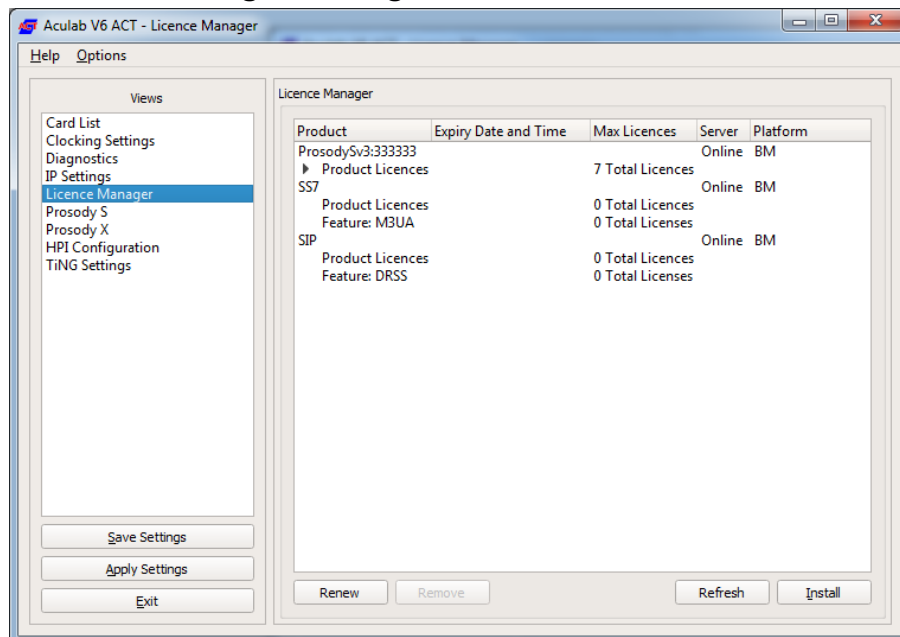
The results of the system diagnostics will be displayed in the dialog display area.

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.

The results of the system diagnostics will remain available should you move from the diagnostics page and return to it.

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.

In addition the server status for products is given along with the platform type.

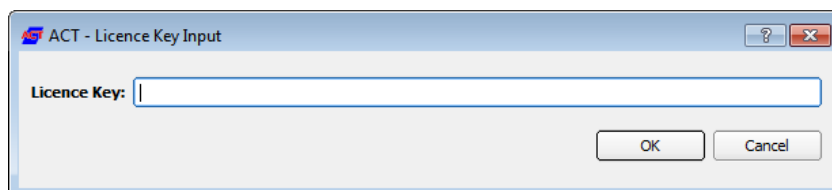
Server status is indicated under the 'Server' column. When the 'Server' status is 'Online' the licence manager has internet connectivity to the corresponding licence server. This is checked when moving to the Licence Manager page or when the 'Refresh' button is pressed.

The 'Platform' type is indicated by 'BM' for Bare Metal and 'VM' for Virtual Machine.

6.1 Installing Licence Keys On Systems With Internet Connectivity

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

1. Select the product you want to install a licence for.
2. Click the 'Install' button. This will bring up the following dialog box :-



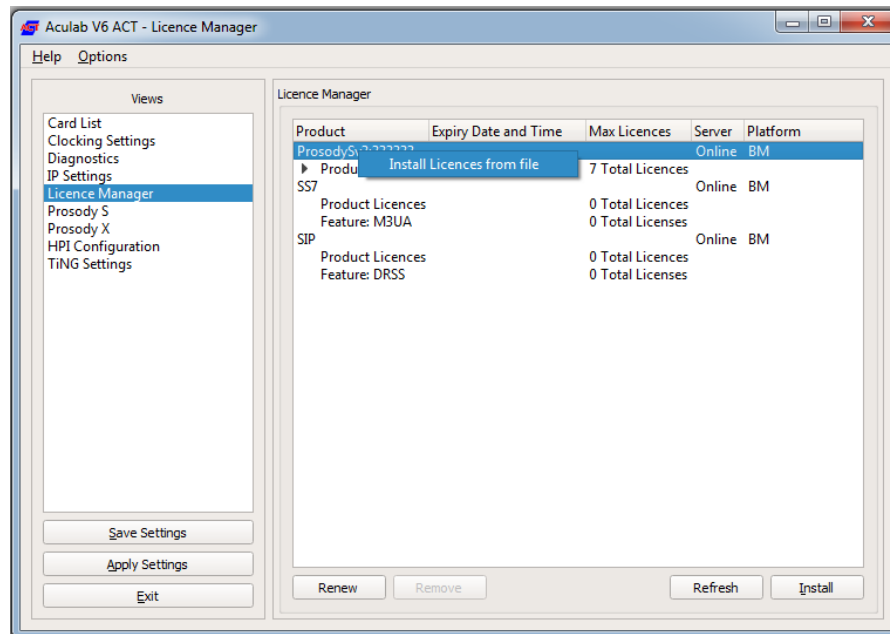
3. Copy the licence key provided in the e-mail from Aculab, or via licensing.aculab.com, into the 'Licence Key' edit box.
4. Click the 'OK' button. This will install your licence key.

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

6.1.1 Installing multiple licences from a file

If the system is online, as indicated in the 'Server' column, additional functionality is enabled for ProsodyS and SS7 products.

Right clicking on the product gives the option to install multiple licences from a file, as below:



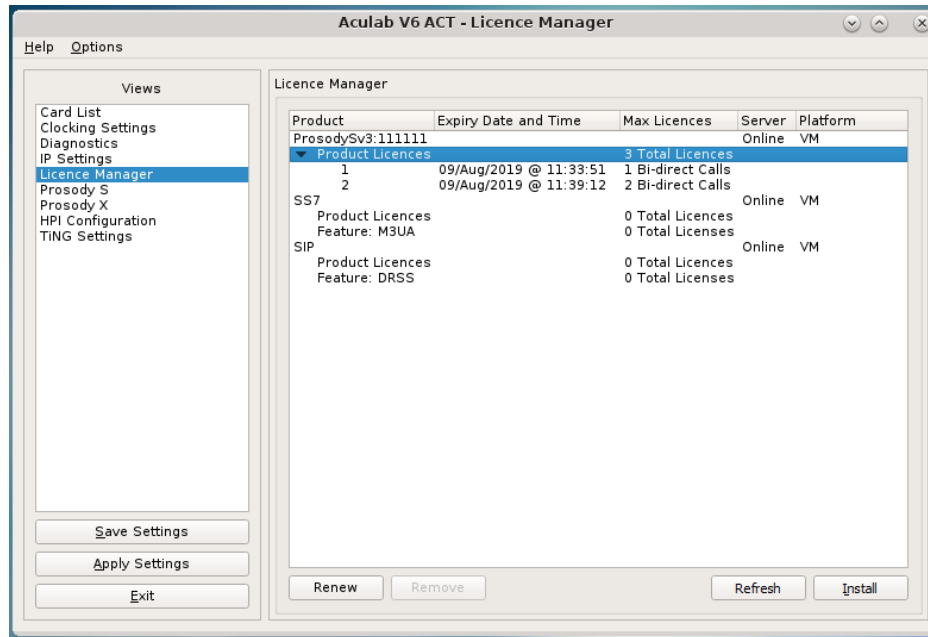
When this option is selected a dialogue is displayed to select the file.

This file, expected to use a .txt extension, should contain one or more licences, each on a separate line. Once selected, press the 'Open' button and all the licences in the file will be installed. Any licences that fail will be indicated, along with the corresponding line number of the file used.

6.2 Renewing Licence Keys On Systems With Internet Connectivity

Licences installed on Virtual Machines (VMs) will need to be renewed yearly.

An indication of the expiry time of any licences can be seen by double clicking on the product.



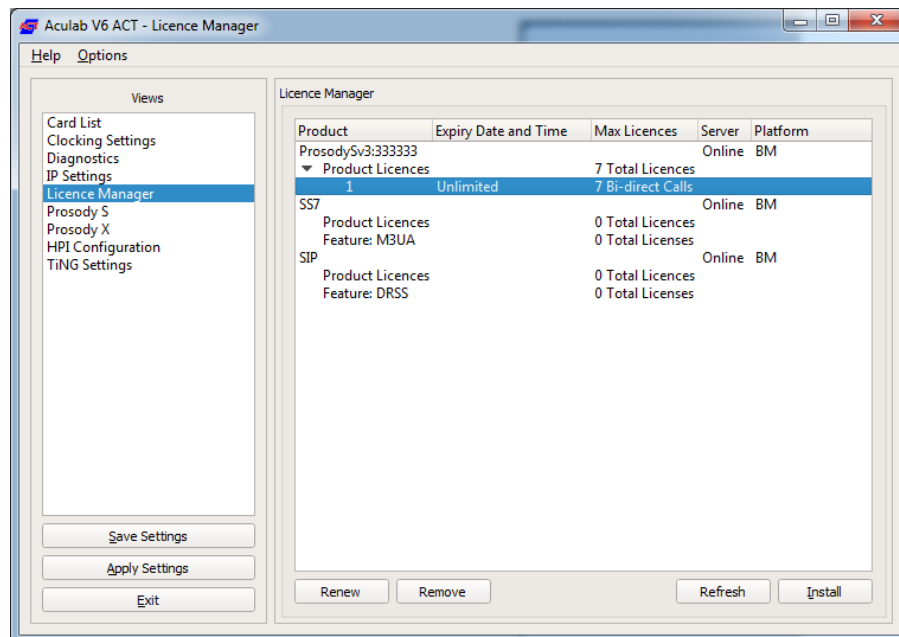
Systems that are online will automatically renew the licence(s).

To manually renew a licence on a system that is normally offline, it is possible to place the system online and press the 'Renew' button. Once the licences have been successfully renewed the system can be placed offline again.

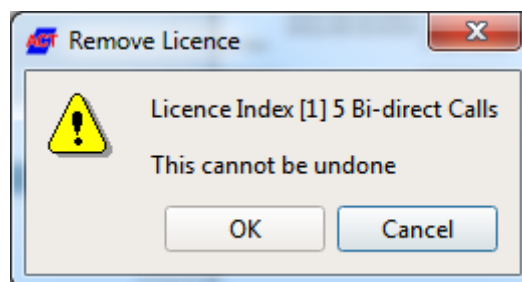
When showing expanded views of licences as above, individual licences that are within 28 days of expiring will show in red. If you are online and see licences in red it may be that the licence manager has not attempted the automatic renewal of licences for the day yet. In this case just highlight the product and press the 'Renew' button.

6.3 Removing Licence Keys On Systems With Internet Connectivity

Ensure the 'Options' menu 'Enable removal of licences' is ticked, which will enable the 'Remove' button.



Select the licence you wish to remove and confirm this action.

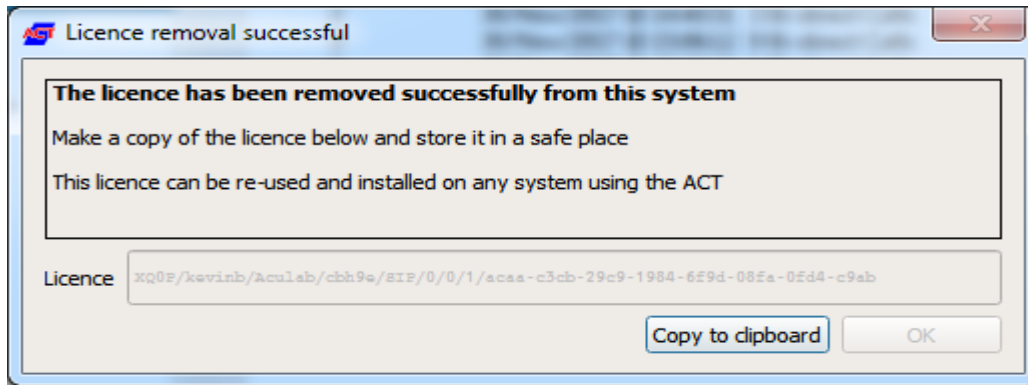


The confirmation is requested even if 'Disable warnings on cancel and exit' is ticked to help prevent accidental removal of licences.

NOTE

Subscription licences can be removed, but this will not result in the licence key being returned.

A dialogue is then shown containing the licence that was removed, which can be installed on another system or re-installed on the same system.

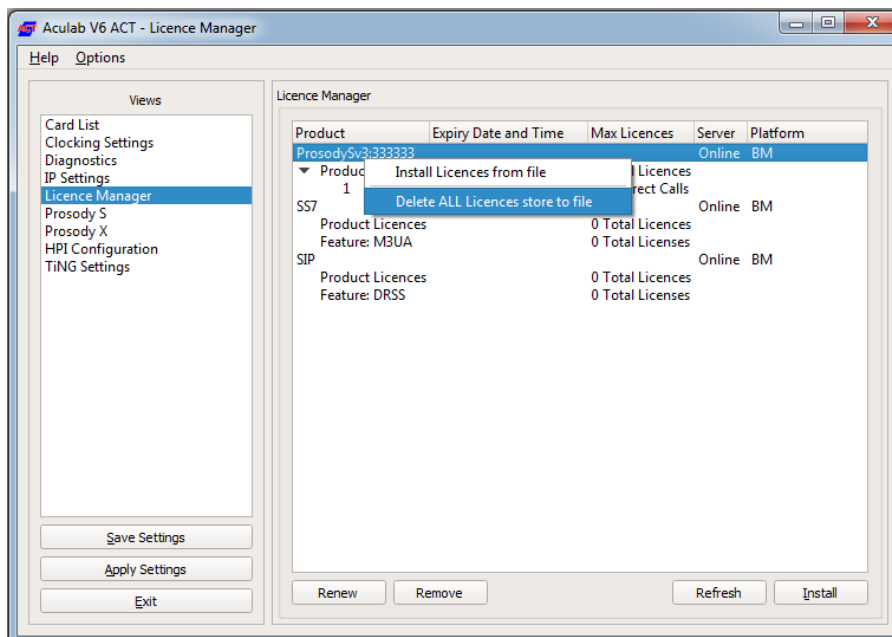


Copy the licence to the clipboard and store the licence information, which enables the 'OK' button.

6.3.1 Removing multiple licences and storing them to a file

If the system is online, as indicated in the 'Server' column, and the menu option 'Enable removal of licences' has been enabled, additional functionality is enabled for ProsodyS and SS7 products with no subscription licences in use.

Right clicking on the product gives the option to delete all licences from a product and store those licences to a file, as below :



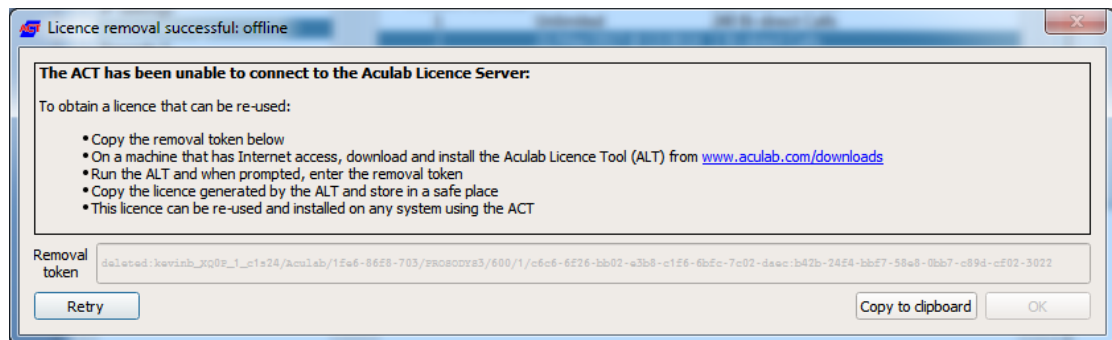
When this option is selected a dialogue is displayed to enter the filename, or select a file.

Once a filename has been entered or selected, press the 'Save to' button and all the licences (both product and features) associated with the selected product will be removed and the licences stored to the file. The file produced is a .txt file with each removed licence on a separate line.

6.4 Installing, Renewing Removing and Activating Licence Keys On Systems With No Internet Connectivity

There is a separate document detailing what to do when handling licences on systems with no internet connectivity (Offline). Please refer to the Aculab Licence Tool (ALT) user guide, available from the Aculab website or Aculab support.

When offline and Install, Renew, Removing or Activating a licence is performed, a 'token' is returned by the ACT that needs to be processed via the ALT, e.g. in the below when removing a licence:



Pressing 'Copy to clipboard' enables the 'OK' button.

Pressing 'Retry' attempts to perform the action Install, Renew or Removing again.

The key returned by the ALT is then installed with the ACT, using the 'Install' button.

NOTE

Removing a licence when offline results in the licence being removed from the system. The 'Removal token' then needs to be processed by the ALT to convert it into a licence which can then be installed on a system.

6.5 Removing Evaluation licences

Evaluation licences can be removed, however as they are not transferrable between systems no token is returned when one is removed.

6.6 Subscription licences

These give the user the ability to use an unlimited number of Prosody S channels. Subscription licences can be installed and removed as other licences, with the differences described below.

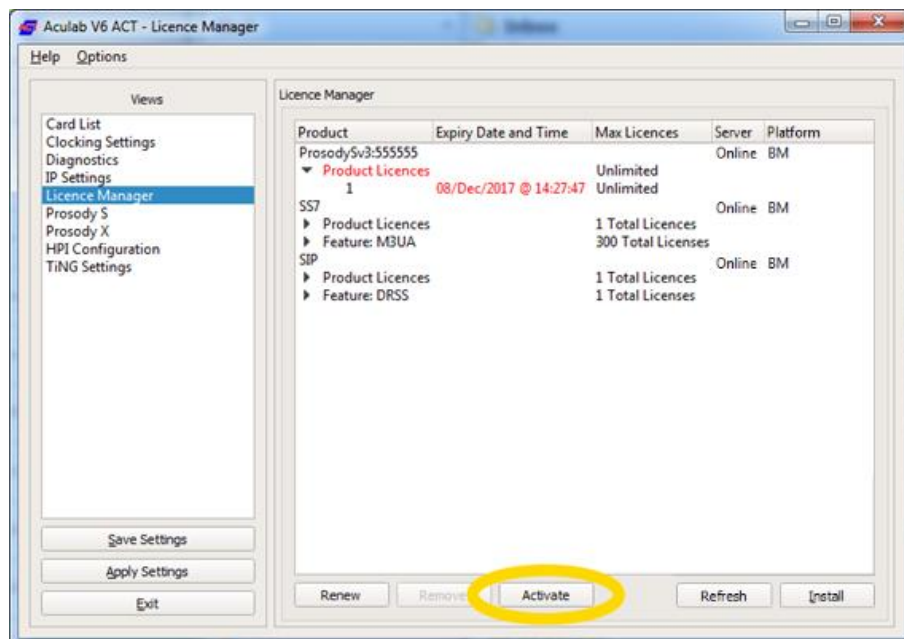
When installed the 'Max Licences' field will show 'Unlimited'

6.6.1 Installation and activation.

Initial installation is performed as above for other licences.

If a subscription licence is being installed for the first time on a system and the system is offline, the licence needs to be activated, otherwise it will expire and no longer be useable. It is possible to activate a licence after the activation date has expired to restore functionality.

If a licence needs to be activated an 'Activate' button will be displayed by the ACT as below. The 'Product Licences' field will be shown in red and the date the licence will expire, if it is not activated, can be seen by double clicking on the 'Product Licences' line.



To activate the licence the system can be made online and the activate button pressed. Alternatively the activation can be performed offline (similar to installing a normal licence offline as above, see section 6.4). To do this press the activate button. The ACT will attempt to contact the licence server, and if that is not possible the offline dialogue below will be shown:



Copy the 'Activate token' and process it with the ALT as you would for an offline 'Install' token. Then install the key returned by the ALT with the ACT. This needs to be performed before the Expiry date or the licence will need to be re-installed.

6.6.2 Renewal

Subscription licences need to be renewed periodically or they will cease to function.

The date and time the licence will expire is shown as the 'Expiry Date and Time', visible after double clicking on the 'Product Licences' line. This, along with 'Product Licences', will be shown in red when the renewal date is within 28 days.

Renewals for online systems happens automatically, where the licence server is checked once a day for renewals of existing licences due to expire within 28 days.

For systems that are offline the new subscription licence (obtained when the subscription renewal is purchased) needs to be installed. If this takes place before the old licence expires there will be no need to re-activate. If the old licence has expired activated as above will need to be performed.

Alternatively, where the subscription has been renewed, offline systems can be made online temporarily for renewal. When the server status shows 'Online' press the 'Renew' button. The licence will be renewed accordingly.

6.6.3 Removal

Subscription licences can be removed, however no removal token is returned, nor can they be deleted to a file.

6.6.4 Expiration

If a subscription licence has expired a new licence will need to be installed as Aculab resources are no longer available to the product the licence was for.

There are two ways a subscription licence can expire.

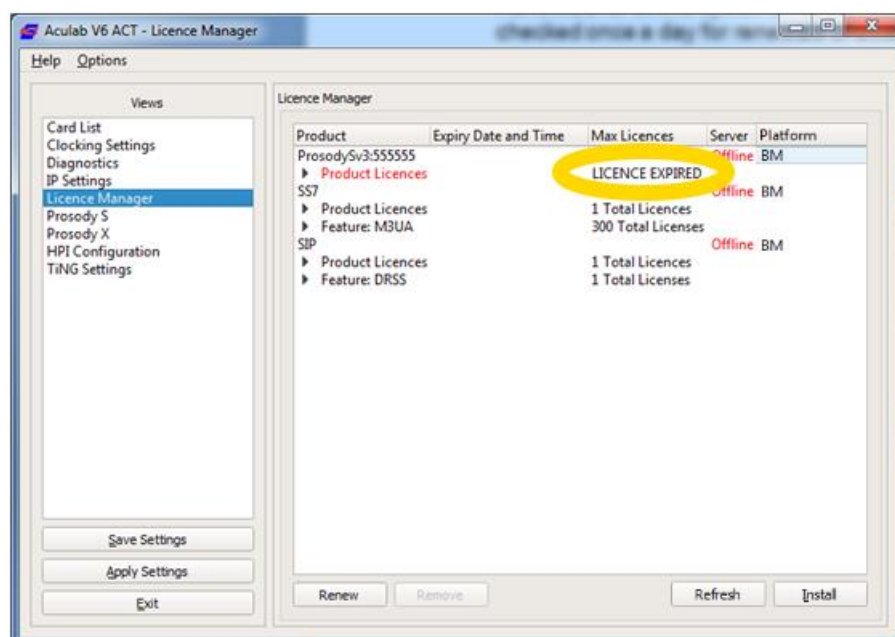
1. Not Activated

If the licence has not been activated within 28 days of it being installed.

This is indicated under 'Max Licences' with the text 'ACTIVATION EXPIRED'

2. Licence not renewed.

If the system is offline this is indicated under 'Max Licences' with the text 'LICENCE EXPIRED', as shown. Systems that are online will no longer have the licence visible.



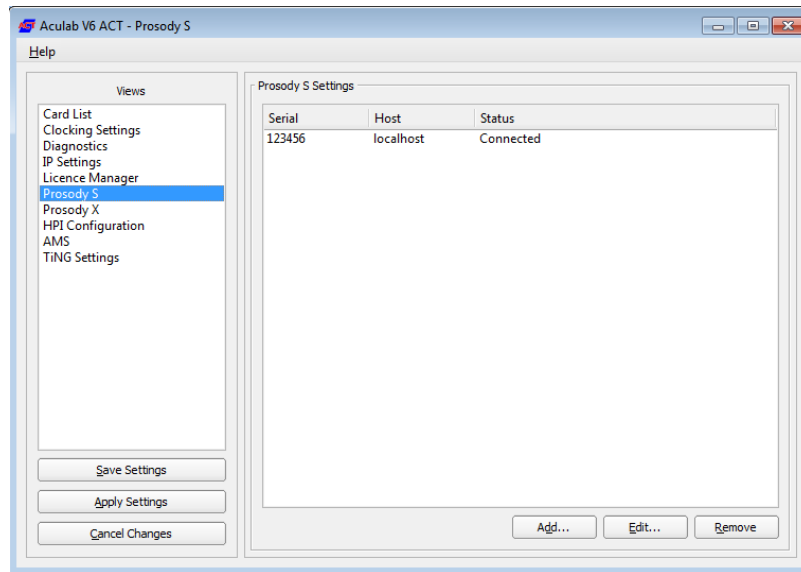
6.7 Licence activity logging

A log of licence activity is kept in

`$(ACULAB_ROOT\log\ACT_ALT_LICENCE_ACTIVITY.log`

Should you lose a returned licence or token while removing or renewing licences with the ACT, the information will be available in the file.

7 Prosody S dialog

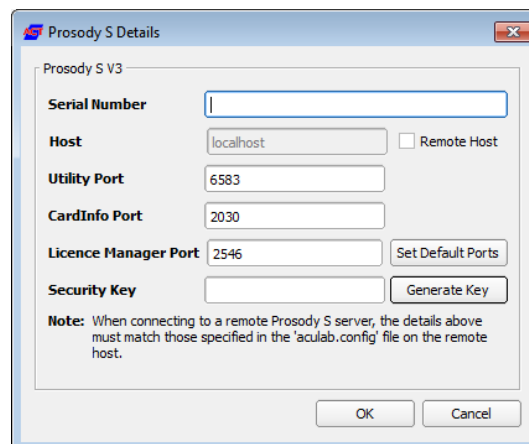


The Prosody S dialog contains a list of all local and remote Prosody S cards available for use by the system. Through this dialog you are able to add, edit or remove Prosody S cards from your system.

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_PROSODY). 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 its 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:-

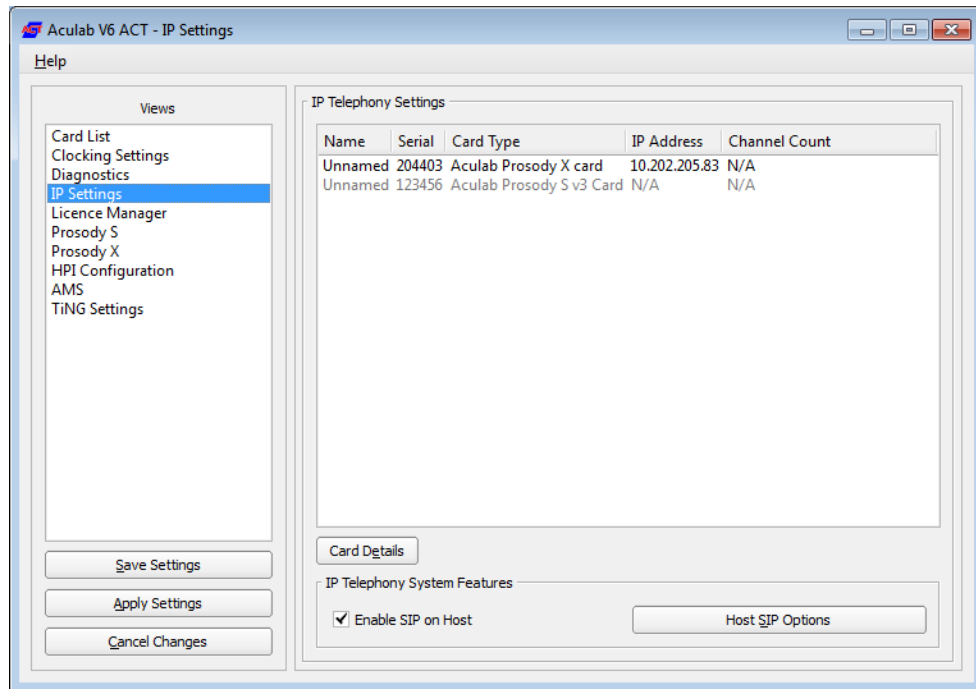
1. Select the card you wish to edit from the 'Prosody S Settings' list.
2. Either double-click the card, or click the 'Edit...' button.
3. A 'Prosody S Details' dialog box, similar to the one above will be displayed.
4. Make the required changes, and click the 'OK' button to apply the changes.

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 also contains a selection box that will take you to the Host SIP Options dialogue box.

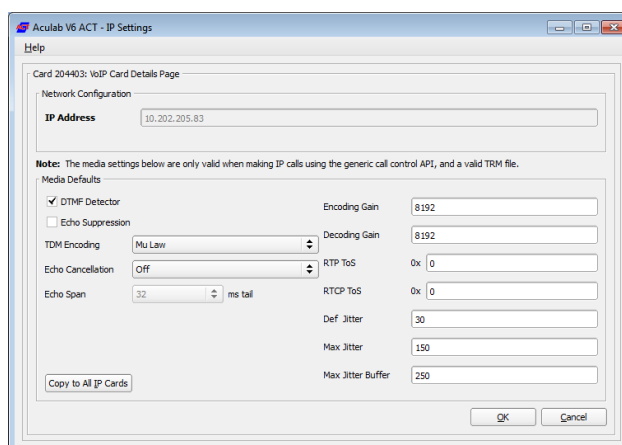
8.1 Card Details - VoIP Card Details dialog

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 μ -law or a-law encoded. Use the pull down menu to set the default encoding to either A_Law or μ _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.

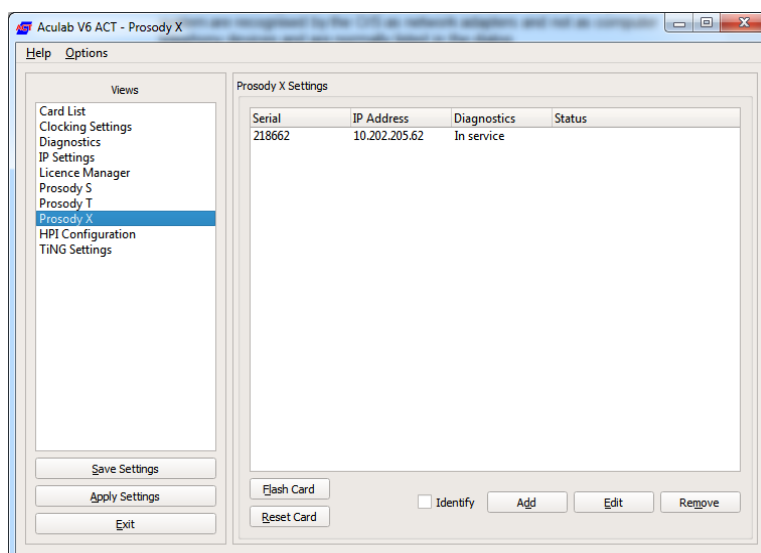
Copy to All IP Cards

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

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. ProsodyX 1U and HA chassis are always classed as "remote" cards. 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.



Dialog components

Reset Card

Resets the selected card.

Add

Adds a ProsodyX card as described below.

Edit

Once added a cards configuration can be modified using the 'Edit' button.

Remove

Once added a card can be removed from the system using the 'Remove' button.

Identify

When ticked cards or chassis that support it will flash a LED to show which ProsodyX card is highlighted.

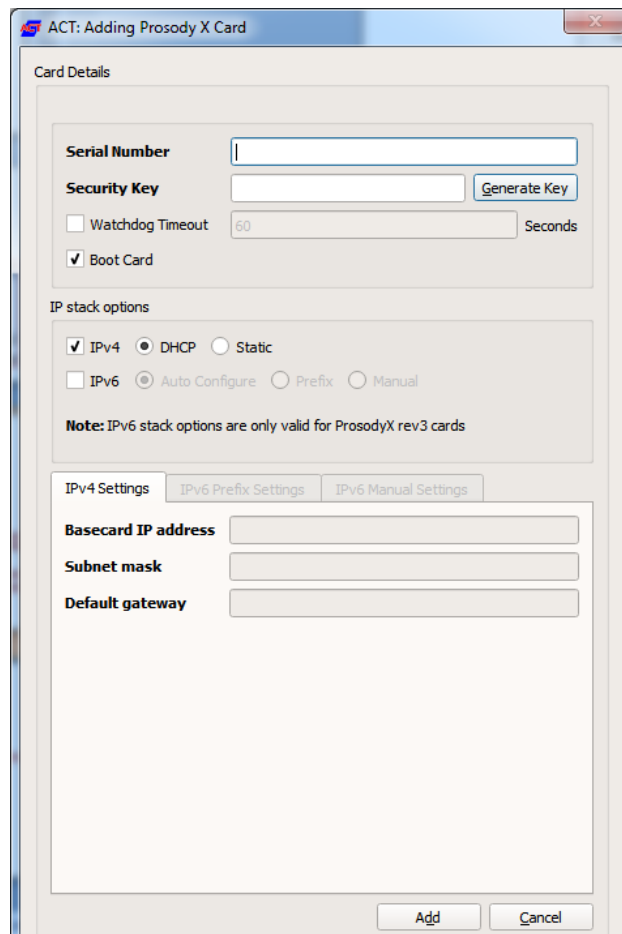
Flash Card

This checks if the firmware running on the card matches the latest available from the Aculab components installed via the AIT, detailed in Flashing a Prosody X card below.

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:



NOTE

DHCP settings below are not supported for live deployments. It is intended for lab testing environments only.

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. Checking the option allows the user to specify times greater than the minimum value of 60 seconds. Un-checking does not disable the feature, but results in a default 60 second timeout being used. If no host system is controlling the cards for the watchdog time then the card will reboot.

NOTE

This is not the same as the 'ethernet watchdog' which is a firmware related timer and is disabled via firmware download switches.

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

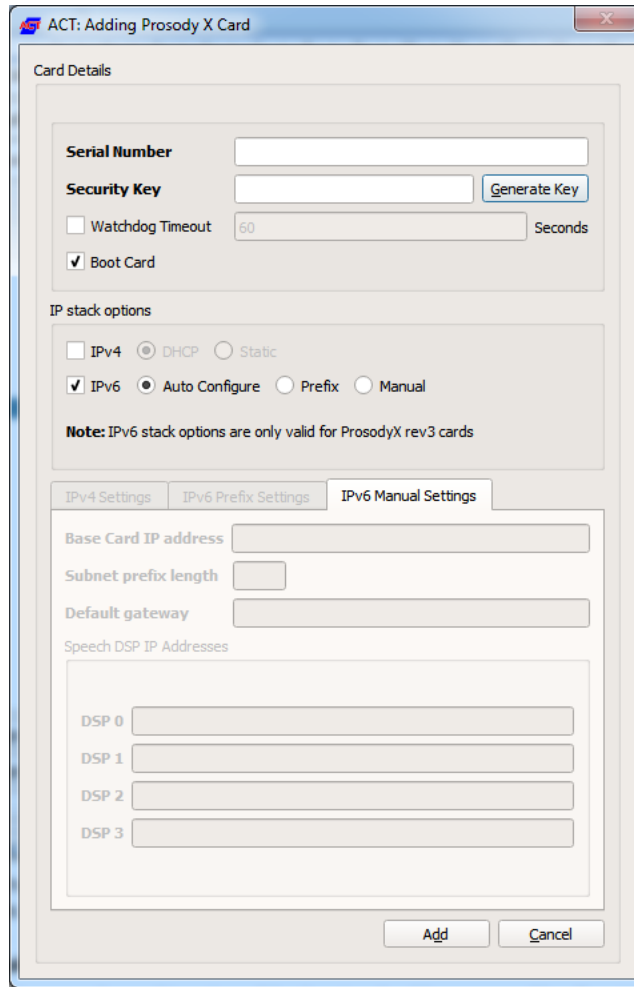
When selecting this option, you get the choice between using DHCP and selecting a static valid IP.

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 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.

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.

The screenshot shows a configuration window titled 'IPv6 Manual Settings'. It has three tabs at the top: 'IPv4 Settings', 'IPv6 Prefix Settings', and 'IPv6 Manual Settings'. The 'IPv6 Manual Settings' tab is active. Inside the window, there are four input fields: 'Base Card IP address', 'Subnet prefix length', 'Default gateway', and a section titled 'Speech DSP IP Addresses' containing four fields labeled 'DSP 0', 'DSP 1', 'DSP 2', and 'DSP 3'. At the bottom right of the window are 'Add' and 'Cancel' buttons.

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

Defines 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.

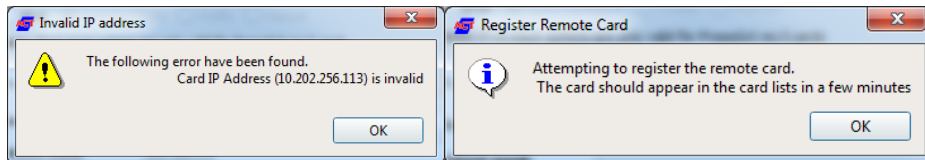
Speech DSP IP Addresses

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.

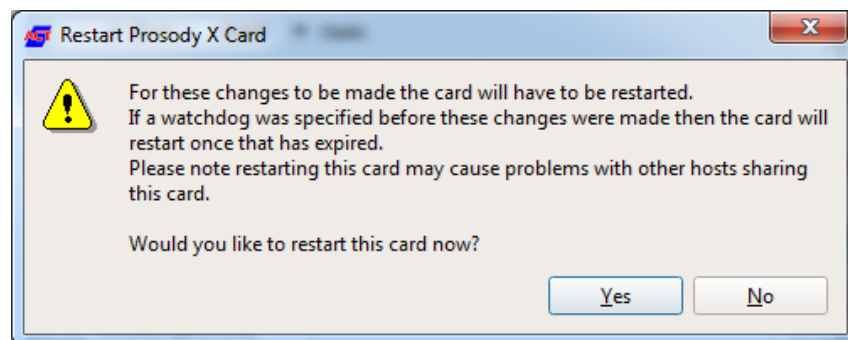


In the failed example, we have tried to apply an invalid IP address.

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 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'.

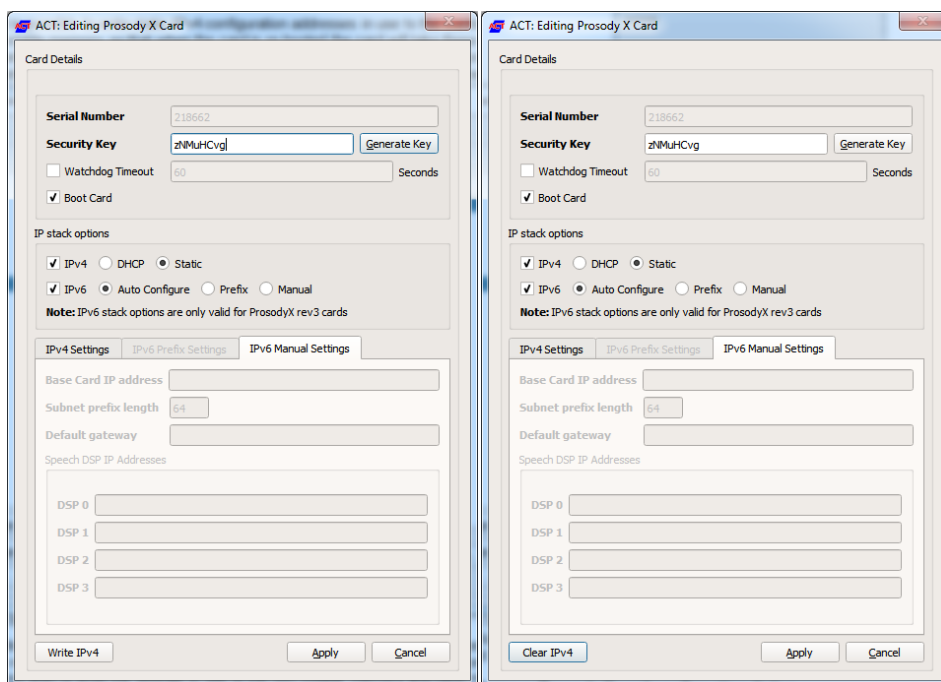
When you select Apply, you will be presented with a 'Restart Prosody X Card' question dialog:



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'.

9.2.1 IPv4 static configuration options

If the card had been configured to use an IPv4 static configuration, additional options are available.



It is possible to write static IPv4 configuration addresses in use to the cards non-volatile memory, so that when the card is re-booted the card will take these IPv4 settings into use, without the need for a host PC on the same network to provide address information. In this mode a host PC, knowing the static IP addresses in use, can configure the card via a gateway.

Write IPv4

This stores the IPv4 address information, used to bring the card into service, to non-volatile memory. On successfully writing the information to non-volatile memory the 'Clear IPv4' button is displayed.

If the settings are changed, i.e. changing to DHCP or modifying the IPv4 addresses, the button is no longer visible and any non-volatile memory settings will be cleared from the card. Should you wish to write the settings in use to the non-volatile memory and have modified the settings by mistake, cancel the dialogue and edit the card again.

Clear IPv4

If the card came into service via address information stored in non-volatile memory this button is shown, enabling the user to clear IPv4 address information stored on the card. On successfully clearing the contents of non-volatile memory the 'Write IPv4' button is then displayed.

NOTE

It is not possible to write IPv6 addresses to non-volatile memory.

It is not possible to write a DHCP configuration to non-volatile memory.

9.3 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

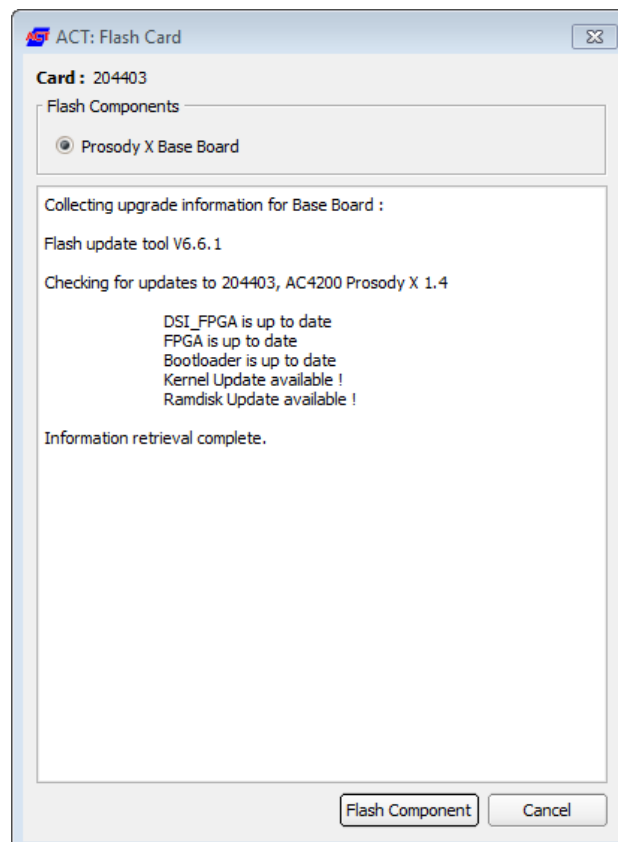
Make sure the Prosody X card is not in use by an application before performing a flash update.

NOTE

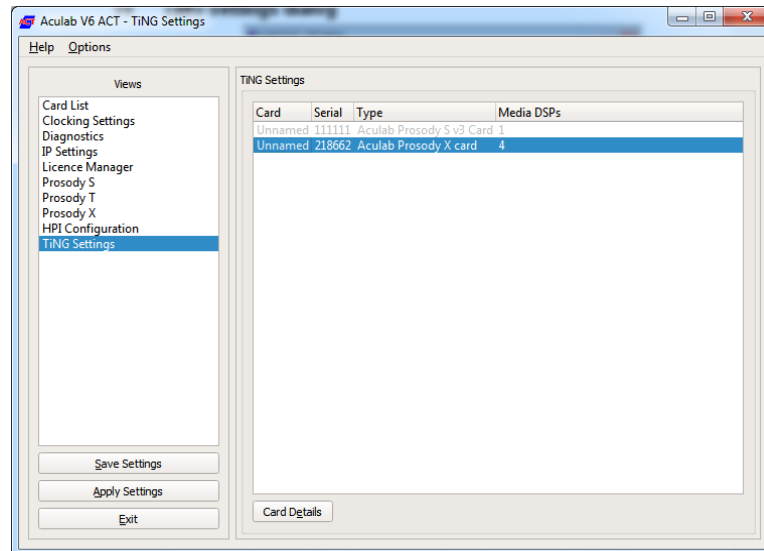
It is advisable to perform a flash update on new cards when they are installing a system, to make sure they have the latest flash updates.

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.

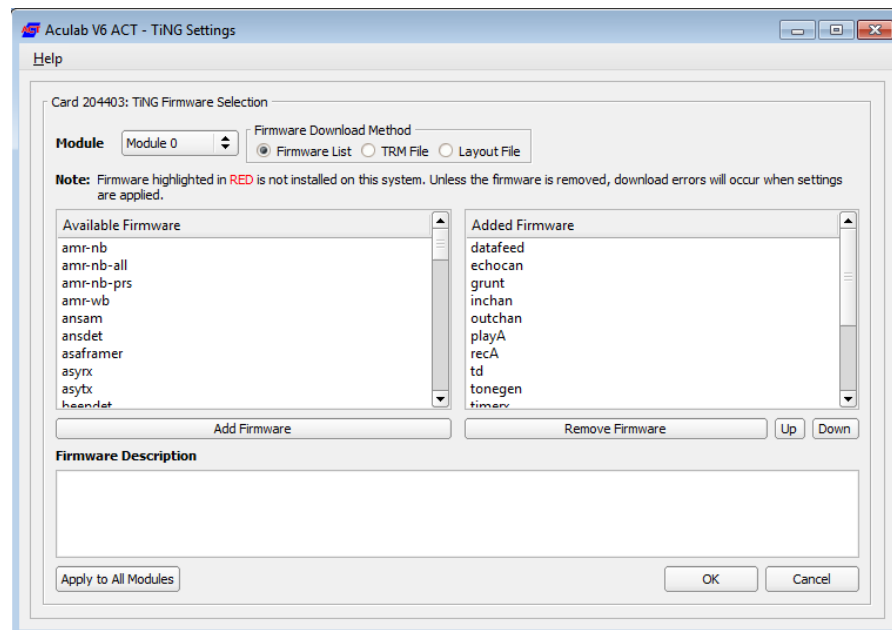
Card Details - Used to configure the DSP parameters. Select a card from the list followed by clicking the 'Card Details' button, or double click on a card entry, to open a 'TiNG Settings Selection' dialog for the selected card.

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.

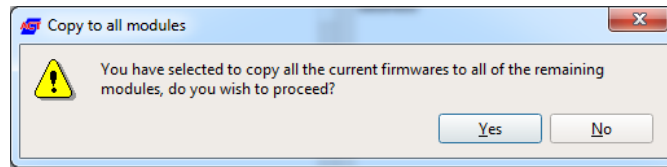
Added Firmware - A list of all the TiNG firmware to be downloaded to the module, selecting an entry in this list will display a description in the 'Firmware Description' field for the selection.

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.



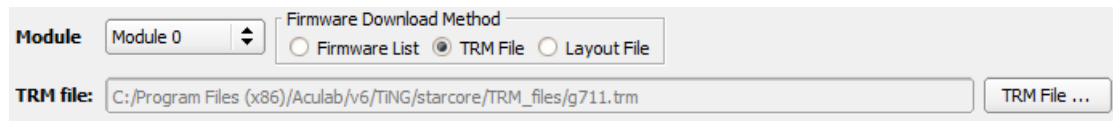
NOTE

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

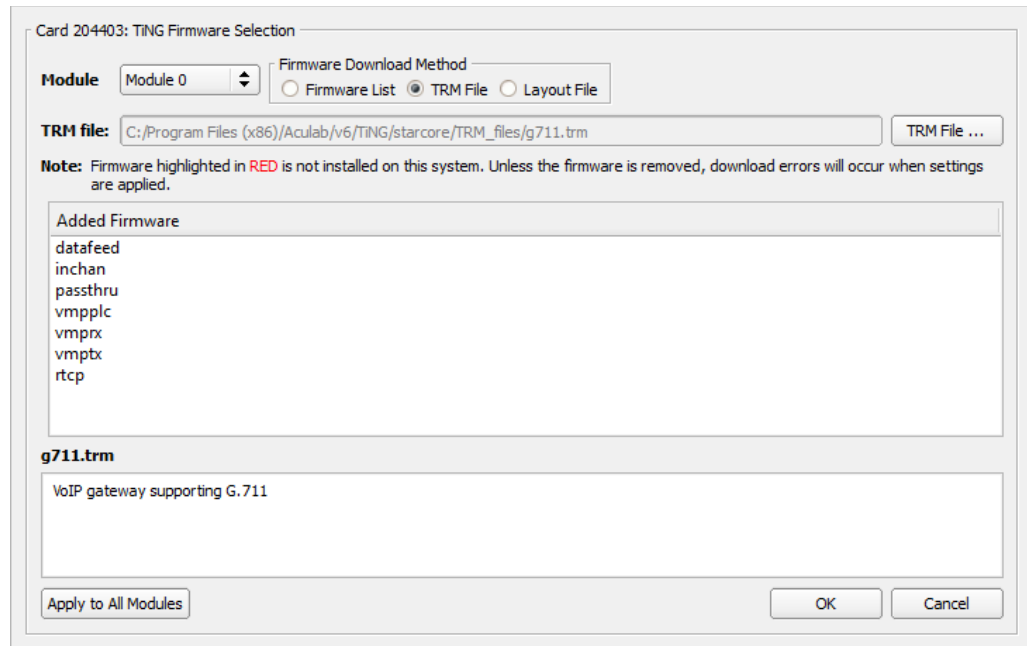
Once you have completed your selections for each module as required, select 'OK' to accept, or 'Cancel' to discard, any changes and return to the 'TING Settings' dialog.

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.

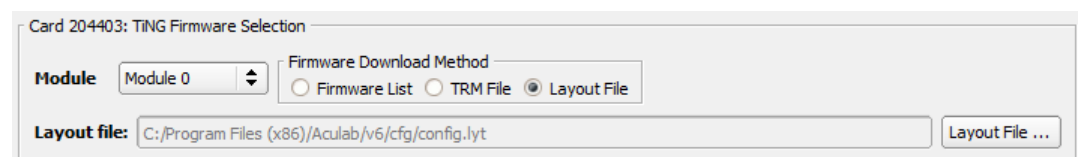


Select the 'TRM File' radio button to use a TiNG resource manager file (*.trm) for firmware download. You may initially be prompted to use a previous file, or select a new file using a standard file browser dialog. After you have made your selection, the dialog will change to display the 'Added Firmwares'.



10.1.2 Using Layout file dialog

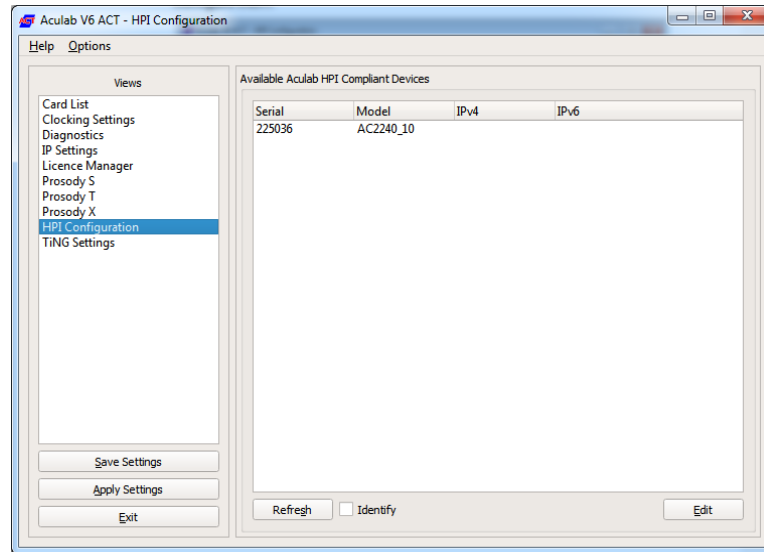
Prosody X cards have an option to load the TiNG DSP resource configuration from a Layout text file (Layout File). This method enables you to specify the placement of firmware on the TiNG DSP, in order to optimise TiNG DSP usage. See the TiNG API guide for details on creating a Layout file.



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 contain 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.

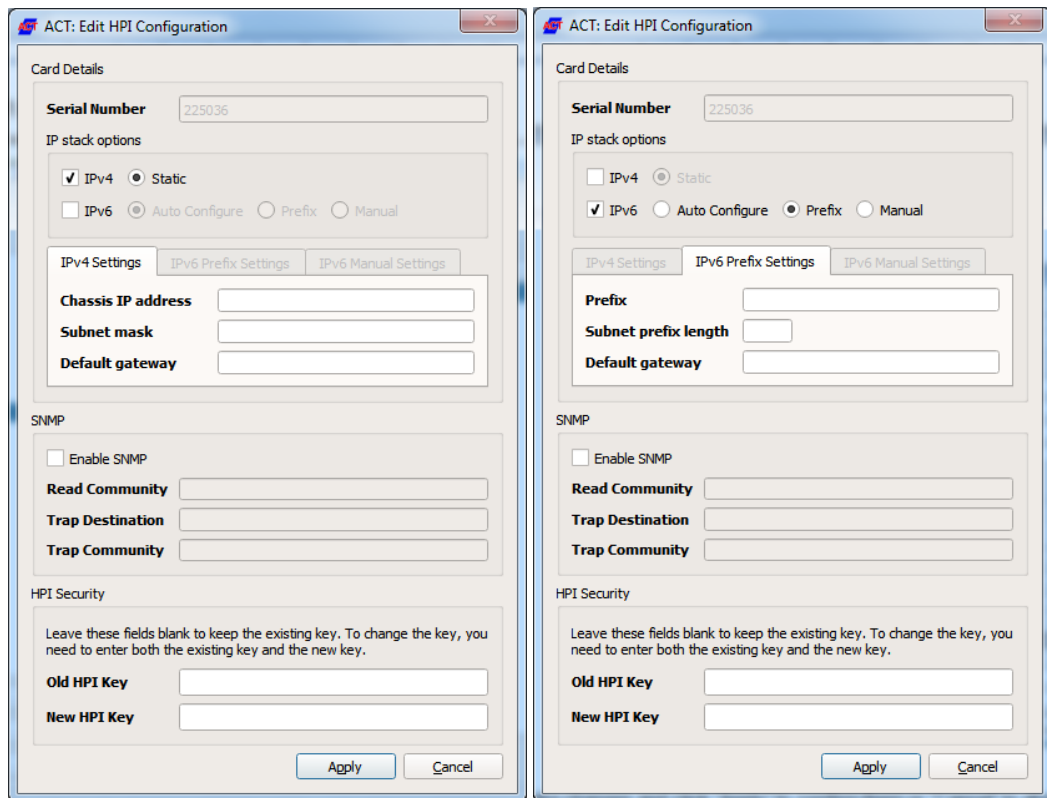
The configuration is stored on the device itself.

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

To identify which chassis is highlighted, enable the 'Identify' tick box. This is useful on systems comprising many HPI High Availability (HA) chassis. When ticked HA chassis will flash a LED to show which chassis is highlighted.

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 IP stack options IPv4

Chassis 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.

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

Default 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 IP stack options IPv6

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.

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 chassis uses. All these addresses must share a common prefix of subnet prefix length specified.

Chassis IP address

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

Subnet prefix length

Defines the length of the prefix common to all the IPv6 addresses for this chassis.

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.

11.1.3 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 is 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.

11.1.4 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.