SAPIDO

Internet Express

Mini Powerline AV. Ethernet Adapter

PA-1102

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1.1　Instruction of PA-1102 Utility

The Sapido PA-1102 Configuration Utility for Windows OS enables the users to identify PA-1102 devices on the powerline network, measures data rate performance, ensures privacy by setting user defined Network Password for the powerline network. Furthermore, users are allowed to set application priority on the transmission by QoS setting, including utility default mode and advance mode.

1.2   Installation of Utility

Step 1.
Please insert the PA-1102 enclosed CD-ROM into the computer's CD-ROM drive. The Setup Main Page shall run automatically. Please click on **Utility** on the main page to start the Utility installation process.
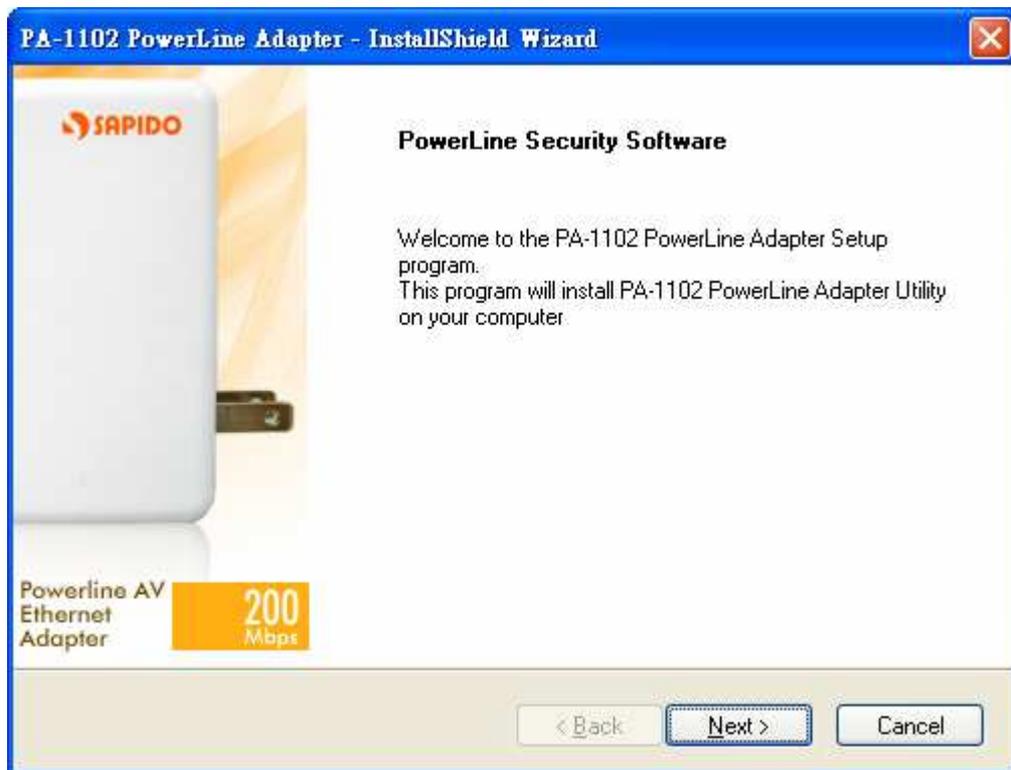

Step 2.
After clicking on Utility to start the installation process, the Install Shield Wizard will be preparing and guide you through the rest of the setup process.
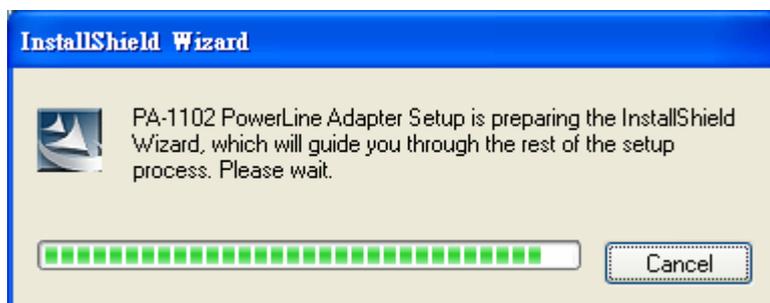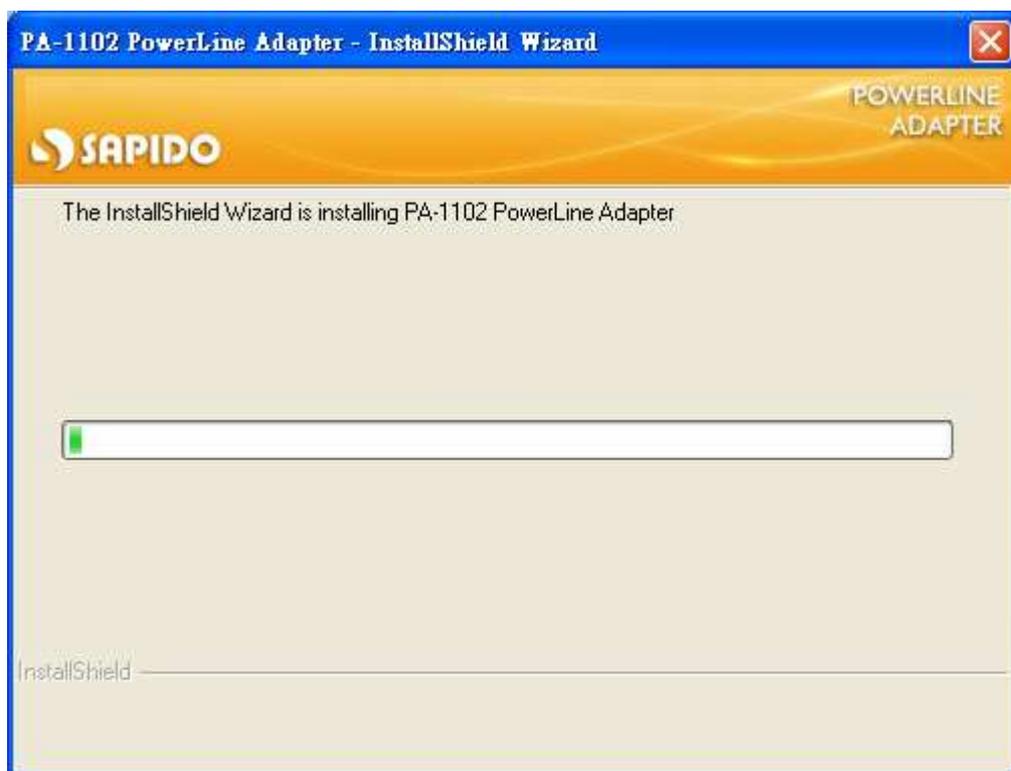
Step 3.

Please Click on **Next** to start installing PA-1102 Utility on your computer.

Step 4.

Please wait for the executing process.

Step 5.

Once below window appearing, PA-1102 Utility has installed successfully, please click on **Finish** to close the setup wizard.
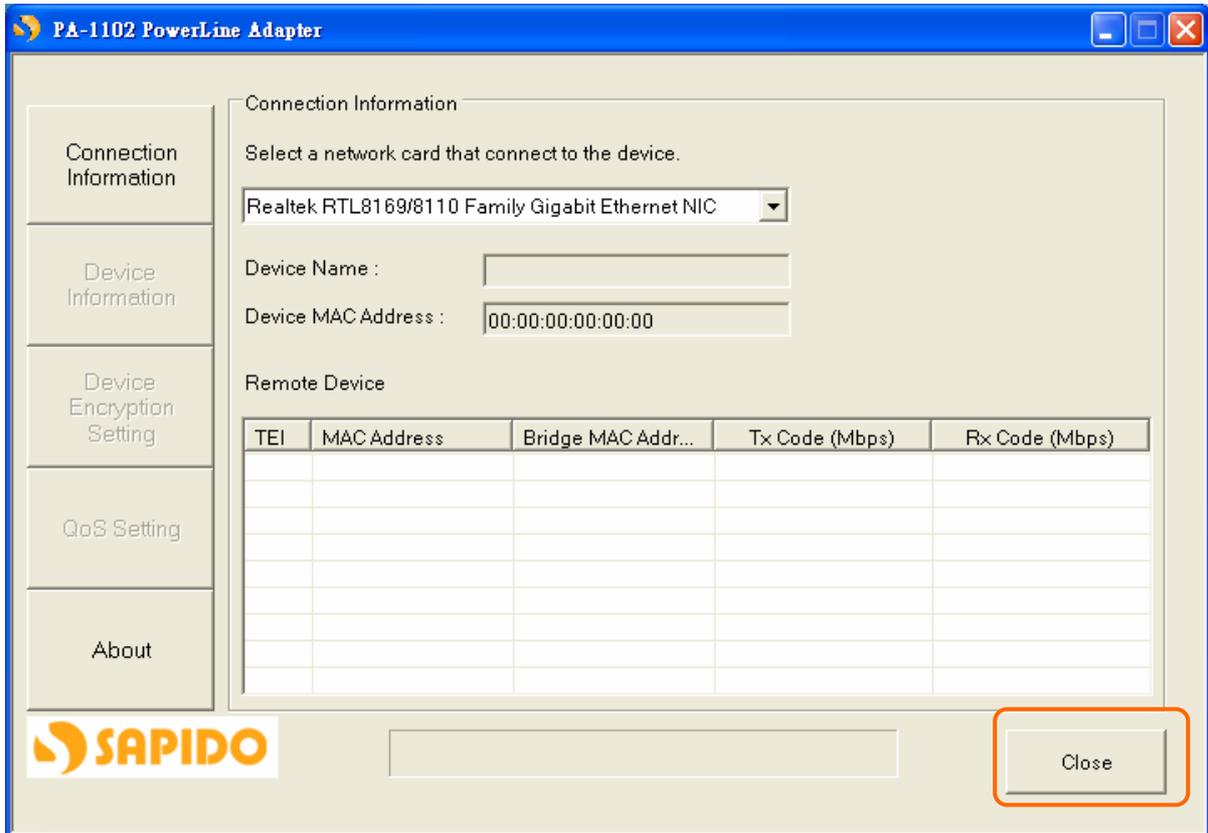

Step 6.

PA-1102 Utility icon will be created on your desktop automatically. Please click on **PA-1102** icon to start the Utility.

1.3   Main Page

The Main page provides a list of all PA-1102 devices which connected to the computer.

Utility could be closed by clicking on **Close** button at the bottom of any page.

1.4   Connection Information Page

This page shows PA-1102 powerline network connection information. Please select the network card which connects to the local PA-1102 device, and then all remote PA-1102 devices with same network password will be listed on below area of the window. (Network password setting will be explained in Chapter 1.6)
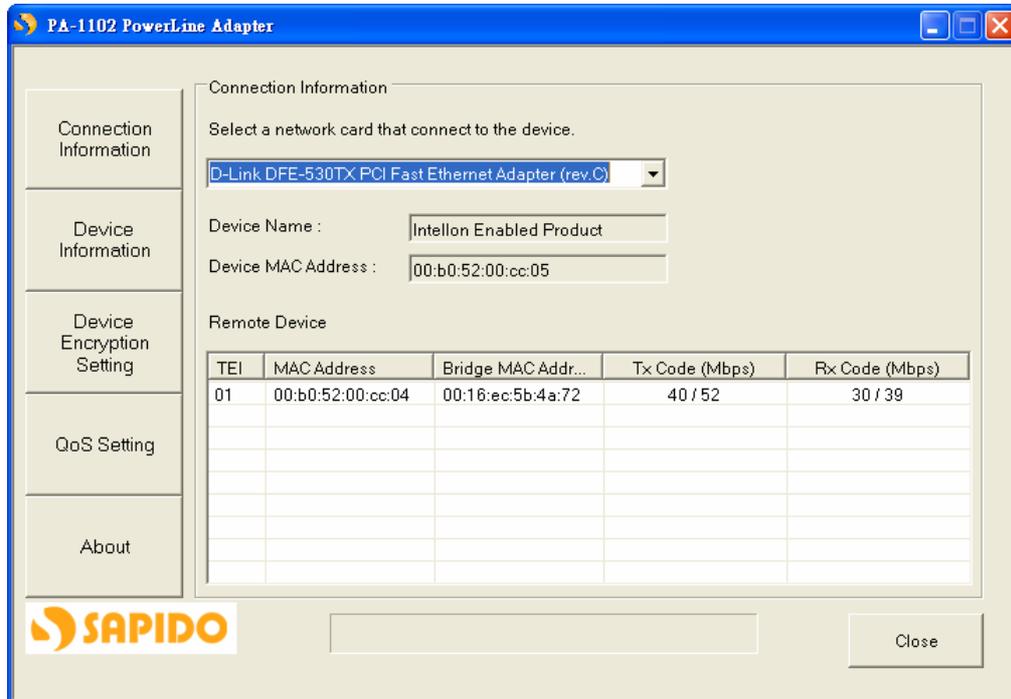
The information of remote PA-1102 devices includes:

"Device Name" column shows the name of device, which may be default or customer re-defined.

"Device MAC Address" column shows the MAC address of device.

"Remote Devices" group column shows the TEI, MAC Address, Bridged MAC Address and the transmit (Tx) and receive (Rx) Coded and Raw PHY rates for all nodes on the network.

1.5   Device Information Page

The Device Information page allows the user to define the device name. Please input the name in the column of "**Device Name**"; then click on "**Write**" button, and it will be recorded.
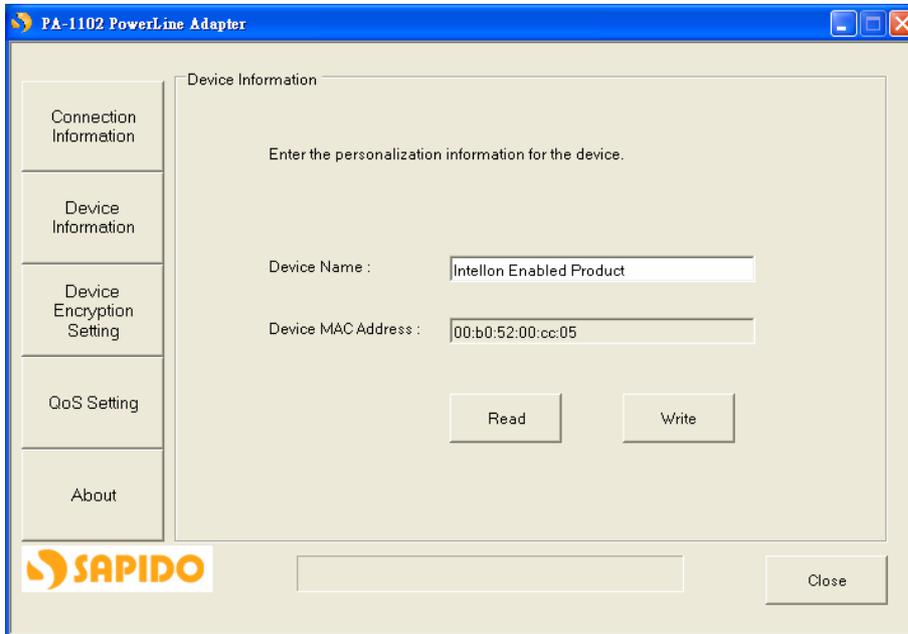
After clicking on **Write** button, new device name will be applied and shown on Device Name column. And click on "**Read**" button to see the recorded name in the column.
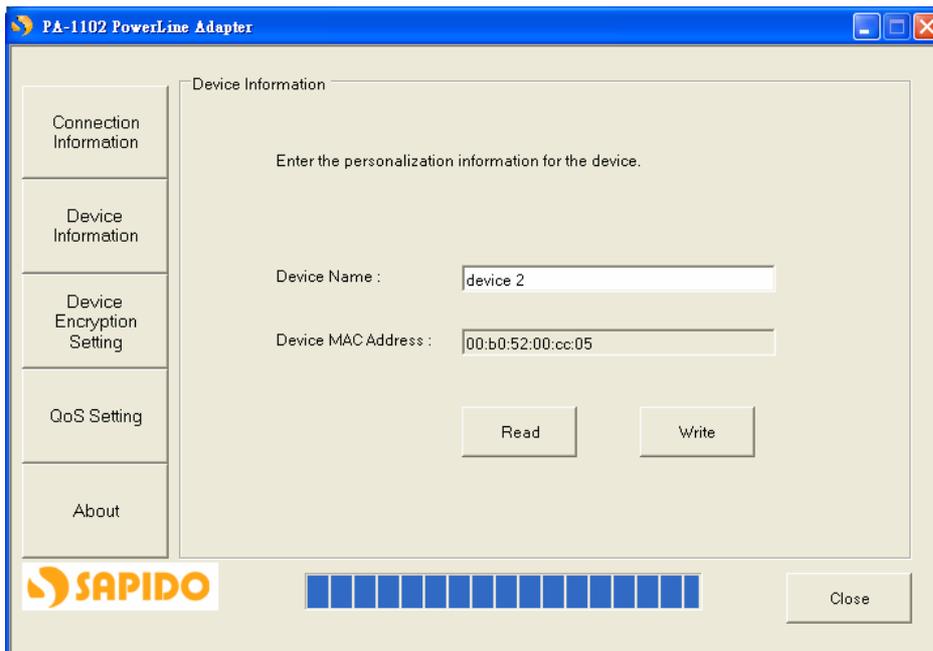
1.6   Device Encryption Setting Page

This Device Encryption Setting page is for setting or changing the network password on the local or remote device identified by its **Device Access Key**, which can be found on the device label. Only PA-1102 devices with same Network Password can be grouped and connected together, and be listed on the **Remote Device** area of **Connection Information** window; other PA-1102 with different Network Password would not be able to communicate each other.

1.6.1   Set Network Password to Local PA-1102

When you want to set Network Password to one PA-1102 device only which is connected on this computer, please input the decided password between 8 to 64 characters into the **Network Password** column, and click on **Set Encryption** button. For instance, **sapidosapido** is the password decided for the Network Password, after clicking on **Set Encryption** button, the set of Network Password – **sapidosapido** will be applied for one PA-1102 device only.
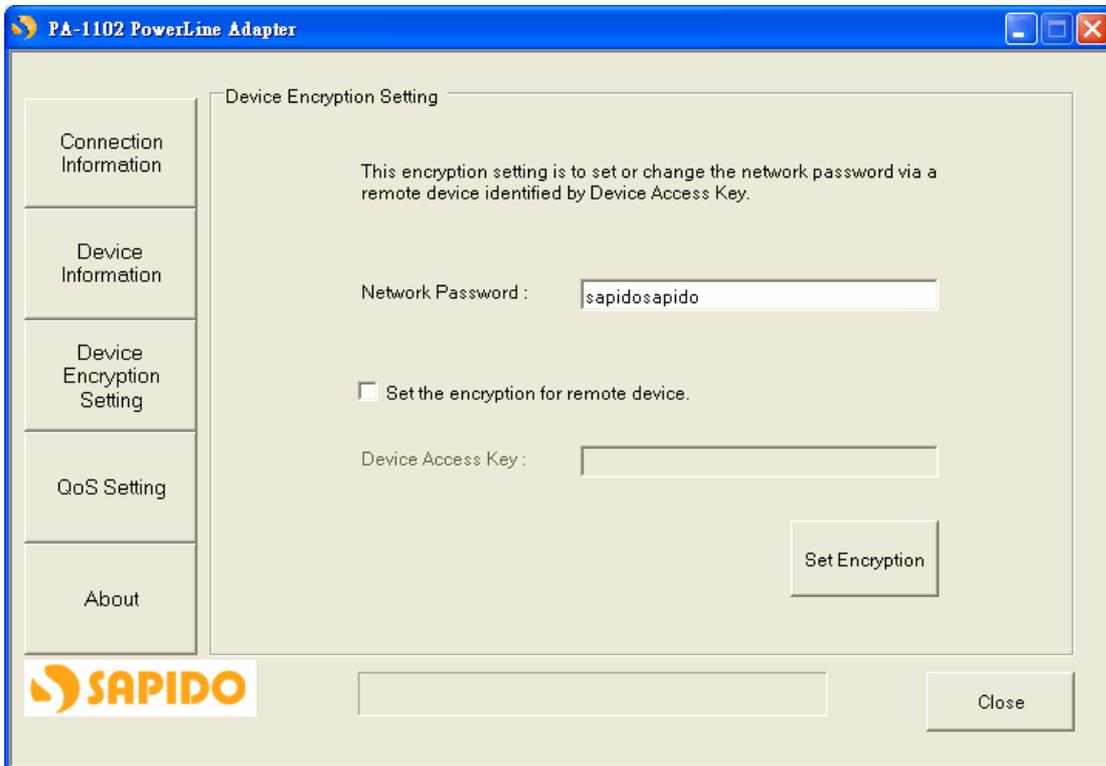
1.6.2 Set Network Password to Remote PA-1102

On the other hand, if you want to set Network Password to other remote PA-1102 device, please input the decided password between 8 to 64 characters into the **Network Password** column, for instance, **sapidosapido** is the password decided for the Network Password. And then put a tick on the checkbox of "**Set the encryption for remote device**", input Device Access Key of remote PA-1102 device, which can be found on the device label. Click on **Set Encryption** button to apply the Network Password for remote PA-1102 device.

1.7   QoS Setting Page

QoS requirements are different for various data types such as streaming video or music, voice and raw data. To provide higher QoS for streaming data, priority levels can be set by using tags at the beginning of data frames. You can select the standard mode including **Default**, **Video**, **VoIP** and **Data Transfer**, the priority will be set by the utility according to your selection; or for the advance mode by clicking on "**Advance Mode**" button to enter its setting page.
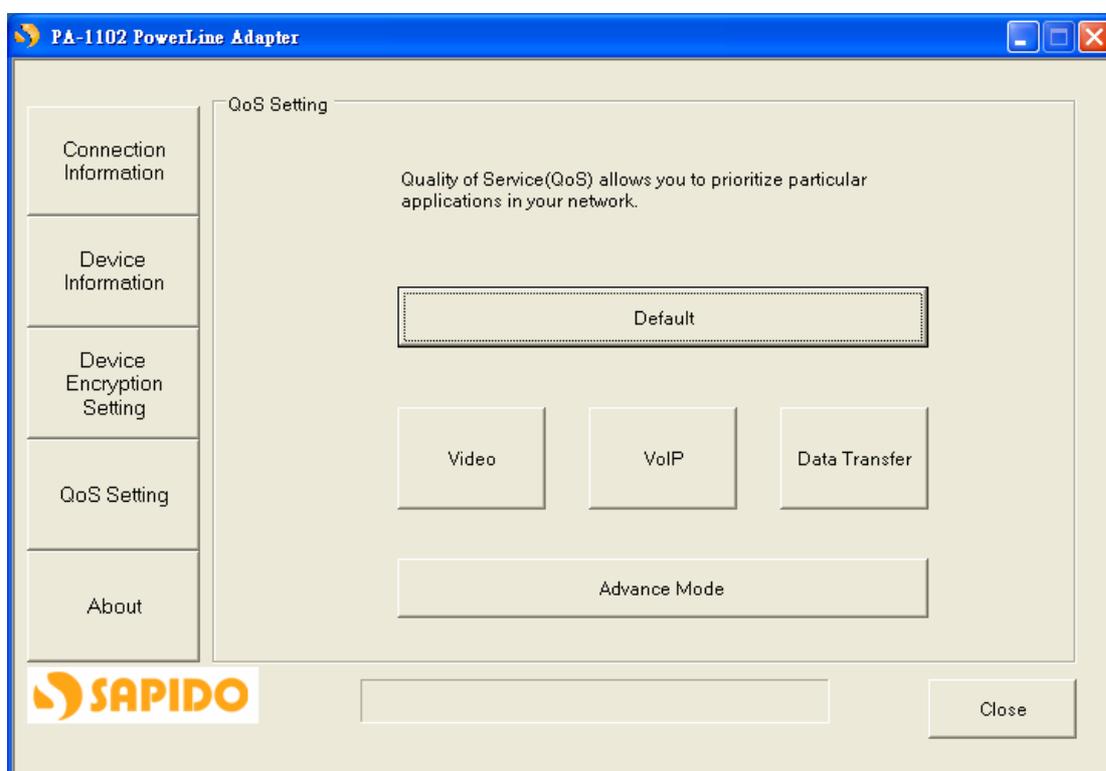
The following window is "Advance Mode". Virtual Local Area Network (VLAN) 802.1p priority tags on Ethernet frames are used to specify 8 (0 – 7) levels of 'user priority'. PA-1102 allows for 4 levels of Channel Access Priority (CAP (0 – 3)). Therefore, the 8 levels of VLAN Ethernet tags must be mapped to the 4 levels of CAP priority, where CAP 3 is the highest priority and CAP 0 is the lowest. CAP 3 priority might be used for voice and network management frames, CAP 2 is used for streaming video and music while CAP 1 and CAP 0 are used for data. Mapping VLAN tags or TOS bits to CAP levels is easily done using the VLAN Priority Mapping function on the QoS window.

List Views

The QoS page includes two list views to provide simple channel access priority (CAP) classification for individual MAC addresses and IP Ports. There is a collective limit of eight across both lists. No delimiters, colons, or dashes are allowed in the MAC address format.

Priority Mapping

The 'Priority Mapping' group contains both VLAN and TOS Bit mapping capability. When selected, packets matching the VLAN or TOS Bit priority will be assigned the Powerline contention priority (Channel Access Priority, CAP) as set in the corresponding dropdown box. If a packet has both VLAN and TOS in it, VLAN will override TOS.

Default CAP

The "Default CAP" group allows for default priority mapping of packets that do not have a VLAN or TOS bit (or if these are disabled). Settings are available for Unicast (directed to a host).

- IGMP - (default CAP 3) - sets the channel access priority for IGMP frames - these are the group management frames, not the stream data
- Unicast - (default CAP 1) - sets the default channel access priority for unicast frames not matching any other classification or mapping.
- IGMP managed Multicast Stream (Fixed to CAP 2) - sets the default channel access priority for stream data belonging to a snooped IGMP multicast group.
- Multicast/Broadcast - sets the default CAP for multicast frames not in a snooped group and for broadcast frames.

After making CAP settings, clicking the **Apply** button will commit these, along with the values from the Configuration tab, to NVRAM on the connected device.

IGMP

The "IGMP" group includes controls to disable the query timeouts. Checking the 'Override Defaults' box will enable the other boxes as choices.

Priority TTL Value

The "Priority TTL Value" determines the life span (Time to live) of each packet in the buffer of the AV device that will be sent over the powerline subsequently. This value can be varied from 10 msec to 65000 msec which can be mapped to different levels of Channel access priority traffic. The default values used are stored in the PIB file as shown below:

CA0 traffic: 2000 msec (used for TCP data traffic)

CA1 traffic: 2000 msec (used for TCP data traffic)

CA2 traffic: 300 msec (used for UDP video/music traffic)

CA3 traffic: 300 msec (used for VoIP traffic)

The default settings of 300 msec and 2000 msec are recommended that keeping the same value, because those are optimized for the above stated traffic.

1.8 About Page

The About Page shows the device version and utility version; it also shows the website of Sapido company, which you can check further information and Sapido series products.