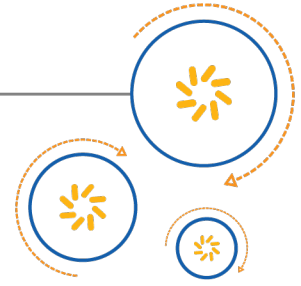




Qualcomm Technologies International, Ltd.



ADK Configuration Tool

User Guide

80-CT554-1 Rev. AG

October 18, 2017

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Revision history

Revision	Date	Description
1	FEB 2017	Original publication of the document Alternative document number CS-00401879-UG
2	FEB 2017	Editorial updates; style only
3	04 APRIL 2017	Editorial updates; style only
4	24 APRIL 2017	Minor editorial update
5	26 APRIL 2017	Updated to QTIL guidelines
AF	2 AUGUST 2017	Updated for ROM based designs and document numbering change
AG	October 2017	Added to the Content Management system. No Change to technical content.

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1 ADK Configuration Tool

The Configuration Tool modifies the QTIL Bluetooth Audio Applications Configuration Set, to enable differentiation of individual audio products.

NOTE For more information on the Configuration Tool context and configuration concepts, see the *ADK Applications Configuration Architecture Overview*.

1.1 Configuration Tool architecture terminology

The ADK ConfigurationTool architecture uses certain words or phrases with specific meaning.

Table 1-1 Tool architecture terminology

Term/ Concept	Description
Configuration Item	Any single item of non-volatile configurable data used by an Application Module.
Configuration Group	A collection of Configuration Items associated with a specific feature of the Application
Configuration Set	The set of all the Configuration Modules used by the Application Modules that are included in a specific build of the Application.

1.2 Configurable audio application items

The Configuration Tool provides a Graphical User Interface (GUI) to configure the Configuration Set of QTIL Bluetooth audio devices, to enable production of differentiated products based on the standard QTIL device.

The Configuration Tool can:

- Read or Write configurable values to:
 - A connected QTIL device, Using a USB-SPI or USB HID interface
 - A Configuration Set Dump file on the host PC
- Configure system-configurable items by function, for example:
 - Define PIO functionality to suit hardware design
 - Associate device control with different button configurations

- ☐ Configure a pre-defined number of unique LED patterns, to indicate specific:
 - User actions
 - System states
 - User and system events
- Map a pre-defined number of user events to specific stimuli, including:
 - ☐ System state
 - ☐ Logical input combinations
 - ☐ Button press timings
- Configure the Voice and Music volume control schemes
- Generate user-configurable audio prompts
- Map different tones to specific user events
- Configure battery and charger settings
- Configure gain, pre-amplifier and drive PIO/bias settings for Microphones or Line inputs
- Adjust connection management settings during Power-on, Pairing or Discovery
- Enable and disable Bluetooth profile-specific features for:
 - ☐ AVRCP
 - ☐ A2DP
 - ☐ PBAP
 - ☐ HFP

2 Graphical User Interface (GUI)

The Graphical User Interface (GUI) is used to navigate and modify the device Configuration Set.

The GUI includes:

- Menu bar
- Toolbar
- Status bar
- Left-hand pane: A tree view showing the Configuration Set definitions hierarchy and all Configuration Groups as nodes
- Right-hand pane: Displays any Configuration Item values found within the selected Configuration Group

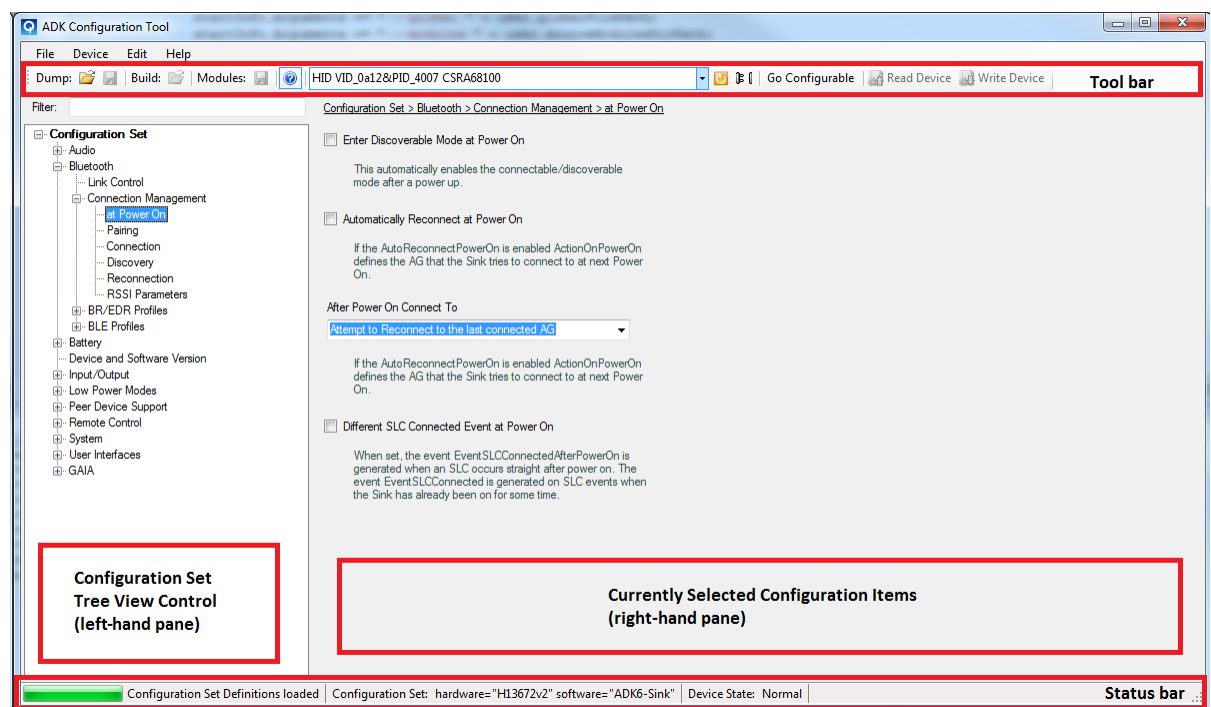


Figure 2-1 The Configuration Tool GUI

2.1 GUI tree view

The tree view provides a hierarchical representation of the Configuration Set, where the Configuration Groups group together Configuration Item values that relate to each functional area.

For example, all Configuration Item values that relate to application audio settings and functions are collected under **Audio**. Each node is subdivided into Child nodes, grouping more specific settings relating to I²S interfaces, **I2S**, **Voice Microphone and Line Input**, audio **Routing** and so on.

Click on the node to display the Configuration Item values associated with that Configuration Group.

A free-text **Filter**: control located above the tree view highlights Configuration Item values associated with a specific keyword, see Chapter .

2.2 Configuration Item values

Figure 2-1 shows the **Bluetooth** node, which contains four Configuration Groups:

- **Link Control**
- **Connection Management**
- **BR/EDR Profiles**
- **BLE Profiles**

The selected Configuration Set Configuration Group address is displayed (Underlined), at the top of the right-hand pane .

For example, if a tree node is clicked:

Configuration Set > Bluetooth > Connection Management > At Power On

All Configuration Item values associated with that Configuration Group, are displayed in the right-hand pane.

3 To modify the Configuration Set

To use the Configuration Tool GUI to modify the default Configuration Set and produce a specific, differentiated product, based on a standard Qualcomm® BlueCore™ device.

To modify a device Configuration Set:

1. Start the ADK Configuration Tool
2. Connect the selected device to a PC running the Configuration Tool
3. Command the device into the Configurable state
4. Read the Configuration Item values into the Configuration Tool
5. Use the Configuration Tool GUI to edit the Configuration Item values, as required
6. Save the Configuration Set back to the device
7. Command the device back into the Normal state

The modified Configuration Set can be saved to a Configuration Set Dump file, see .

Alternatively, the Configuration Set can be modified on the file system of the Host PC, without the need to actually connect to a device.

3.1 Start the Configuration Tool

To start the Configuration Tool, Click the Configuration Tool icon located within the Microsoft Windows **Start** menu with or without a device connected:

Start > ADK > Tools folder

At boot-up, the Configuration Tool scans both the USB HID and all attached Qualcomm® USB to SPI converter transports for any connected AHI enabled devices.

3.1.1 USB HID transport

Before using the Configuration Tool, ensure all USB descriptors required to identify the device are correctly configured.

NOTE USB HID cannot connect to any device that contains an Application built for USB to SPI AHI transport.

HID Device Identifier (DI)

At boot-up, the Configuration Tool scans all USB HID devices enumerated on the host PC and reports all available devices using the HID Device Identifier (DI), which is a fixed-format string.

The HID DI is presented in the Configuration Tool Bar Device List drop-down menu, in the following format:

```
HID VID_<Vendor ID>&PID_<Product ID> <Product String> [<Serial Number String>
<Manufacturer String>]
```

Where:

- HID denotes a USB HID device
- The [square brackets] contain additional information used to differentiate similarly configured devices attached to the same host PC.

Customer-assigned USB Vendor IDs

QTL recommends that Customer-specific USB Vendor IDs are assigned to each device. The Customer-specific USB Vendor IDs should include an appropriate Product ID and Product String. For example:

- HID VID_0a12&PID_1243 CSR8675
- HID VID_0a12&PID_1243 CSRA681

Table 3-1 HID DI USB descriptors

USB Descriptor	Shown in HID Device Identifier
Vendor ID (VID)	Always
Product ID (PID)	
Product String	
Manufacturer String	Only to differentiate devices with the same VID, PID and Product String
Serial Number String	

3.1.2 USB SPI transport

The USB to SPI AHI transport cannot connect any device that contains Applications built for the USB HID AHI transport.

The Device List identifies all USB to SPI converters attached to the host PC, even if they are not physically connected to a device. Any attempt to connect to a converter not associated with a device causes the AHI connection attempt to timeout and fail, leaving the Configuration Tool in the disconnected state.

USB to SPI converters are reported using the string format:

```
USB SPI (<USB SPI Converter Serial Number>)
```

Where:

- USB SPI denotes a USB SPI interfaced device.
- The number in brackets is the USB to SPI converter serial number.

3.2 Connect a device

After the device is connected to the host PC and selected in the Device List, see [Device List drop-down menu](#).

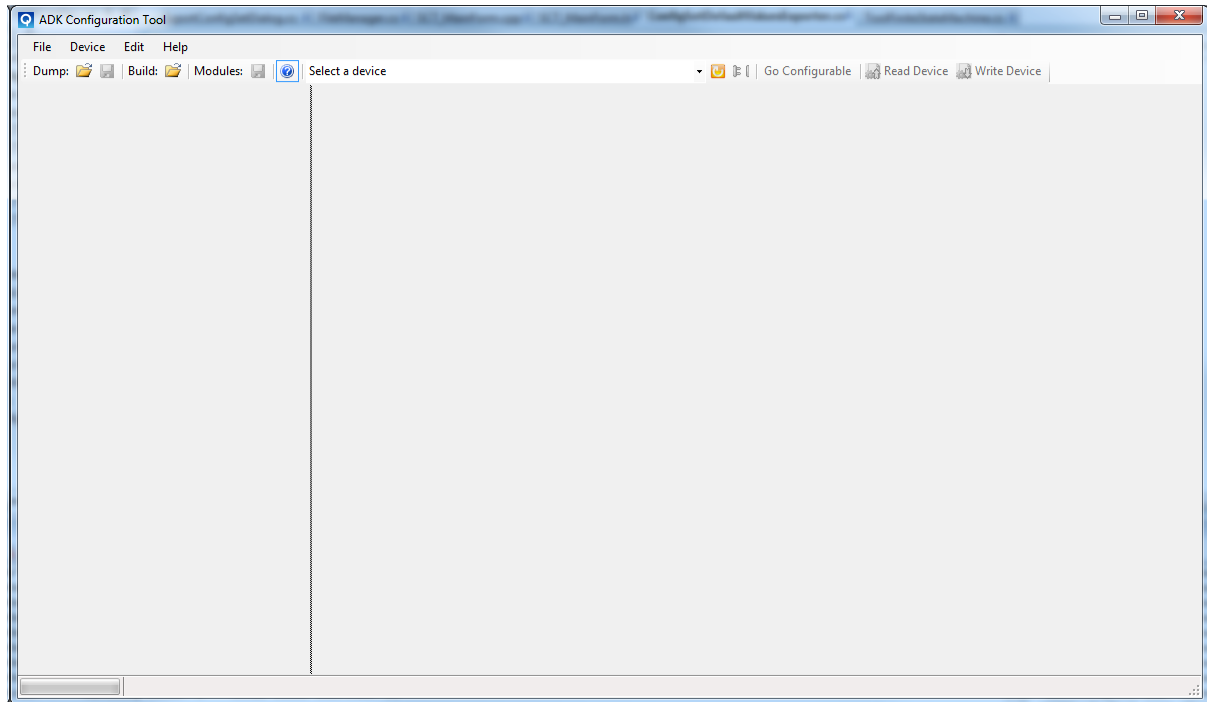


Figure 3-1 Configuration Tool GUI with Device not connected

NOTE To prevent illegal Read or Write events and to maintain Configuration Set integrity, the Toolbar icons are grayed-out before a device is connected, see [Figure 3-1](#).

To connect a known device:

1. Connect the device to the PC, using either USB HID or a Qualcomm USB to SPI converter.
2. If the Configuration Tool is:
 - ☐ Running then Refresh the Device List, see [Device List drop-down menu](#)
 - ☐ Not already running then Start the Configuration Tool, see [Start the Configuration Tool](#)
3. When the Device List is populated:
 - ☐ Select a device from the device drop-down list and Click on the selected device name.

NOTE When the connection process is complete:

- Configuration Set Definitions are loaded into the Configuration Tool and Placeholder Configuration Item values are displayed in the GUI
- Device Configuration Item values only become available when retrieved from the device or uploaded from a compatible Dump file, see [Read a connected device](#) or [Configuration Set Dump files](#).

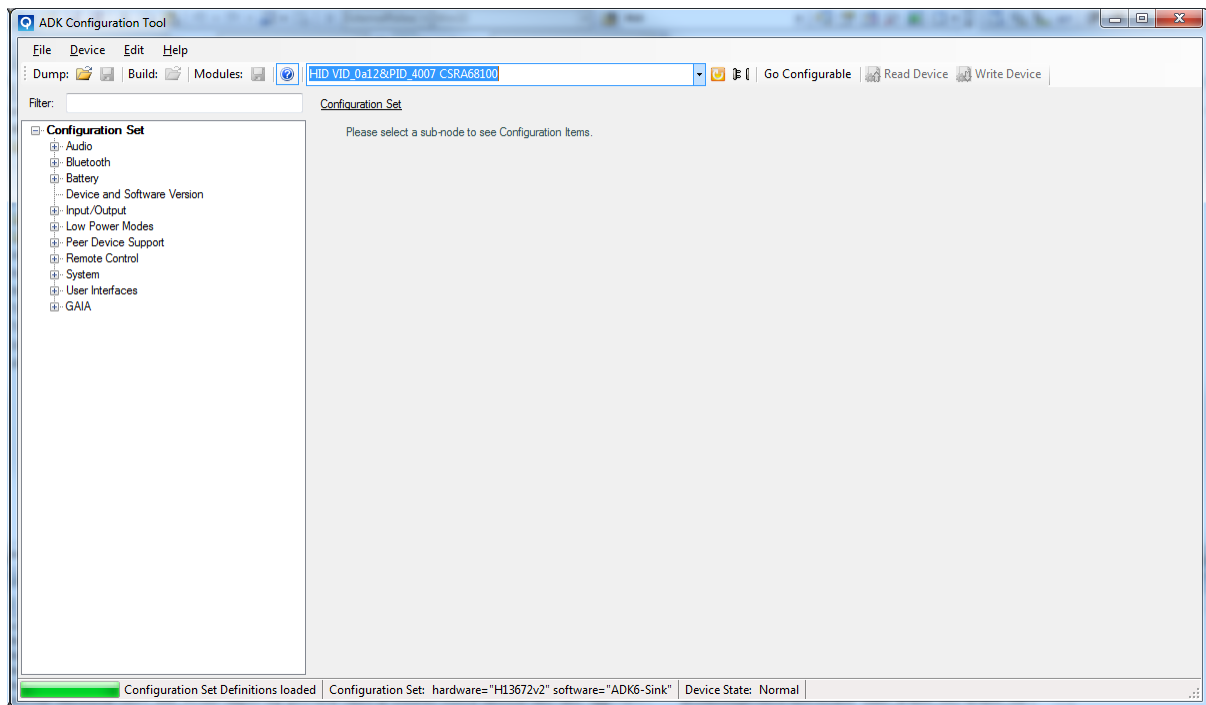


Figure 3-2 The Configuration Tool with Device connected

3.2.1 Device List drop-down menu

To select a device from the Device List drop-down list, Click on the selected device name.

All devices known to the host PC are listed in the Toolbar Device List drop-down. To add a new device to the list or to update the Device List after a new device is connected, click the Toolbar **Refresh Device List**, see [Device connection controls](#).

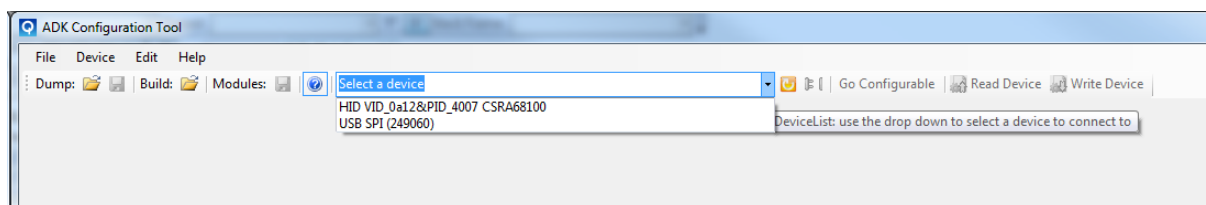


Figure 3-3 Configuration Tool with Device selection

Figure 3-3 shows an example of two possible devices:

- One connected using USB HID
- One connected using a USB SPI converter

3.2.2 Automatic device Configuration Set definition upload

The Configuration Tool initiates a connection to a device selected from the Device List and automatically uploads the device Configuration Set definitions to the Configuration Tool. The progress and status are indicated at the bottom of the GUI.

NOTE Device Configuration Item values are not uploaded until read from the device or loaded from a compatible Dump file, see [Modify default Configuration Item values](#) or [Restore a Configuration Set Dump file](#).

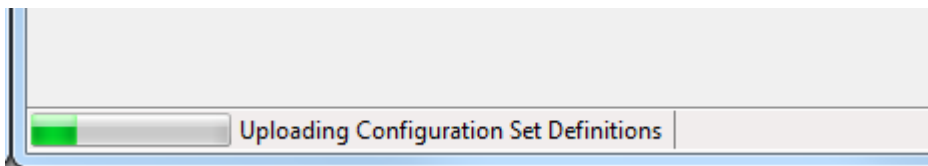


Figure 3-4 The Configuration Tool with Uploading Configuration Set Definitions

When the upload is complete:

1. The device is connected to the Configuration Tool with the device Application executing in the Normal AHI mode
2. The tree view displays a hierarchical representation of the device Configuration Set definitions, where each node represents an individual Configuration Group
3. Placeholder Configuration Item values are loaded and displayed in the GUI.

NOTE Placeholder Configuration Item values are set either to 0, or the initial `enum` symbol defined for that particular item. Real device Configuration Item values are available only when they are read from the device, or loaded from a Configuration Set dump file, see [Modify default Configuration Item values](#) or [Restore a Configuration Set Dump file](#).

3.3 Read real Configuration Item values

Placeholder Configuration Item values are only replaced by real Configuration Item values when a compatible Configuration Set dump file is loaded from the host PC, or the Application is placed into Configurable AHI mode and read.

To load real Configuration Item values into the ADK Configuration Tool, either:

- Open a previously saved Configuration Set Dump file that is compatible with the Application, see [Modify default Configuration Item values](#) and [Table 7-4](#).
or
- Command the connected device into the Configurable AHI mode and read the Configuration Item values from the device, see Section [Make the Application configurable](#).

3.3.1 Make the Application configurable

Click the Toolbar **Go Configurable** toggle button to set the device into the configurable state.

NOTE (1) Configuration Item values can only be read, modified or written when the device is operating in the Configurable AHI Mode.
(2) The button caption changes to **WORKING** during the transition. When the transition is complete, in Configurable AHI mode the button caption changes to **Go Normal**, see [Figure 3-5](#).

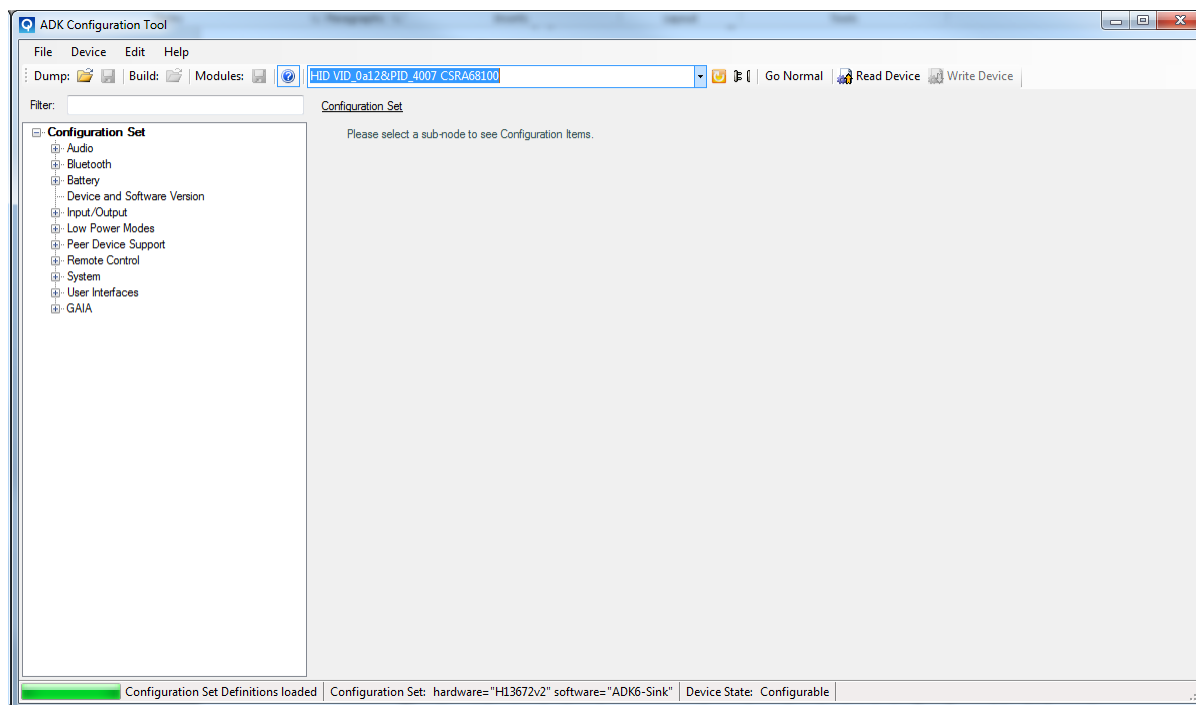


Figure 3-5 The Configuration Tool with AHF Configurable mode

- NOTE**
- (1) The **Read Device** button becomes active when the device is in Configurable AHF mode.
 - (2) The **Write Device** button only becomes active after actual Configuration Item values are loaded in the Configuration Tool GUI.

Figure 3-5 shows an example of the **Write Device** button grayed-out, this is because the device Configuration Item values are not yet loaded.

3.4 Read a connected device

To Read device Configuration Item values from a connected device, set the device into Configurable AHF mode and Click the **Read Device** button. Real device Configuration Item values are uploaded into the Configuration Tool from the device and presented in the GUI.

- NOTE** Figure 3-6 shows a set of User Events configured for the device Application. When a device is connected and Configuration Item values are loaded in the GUI, all device IO Toolbar options become active.

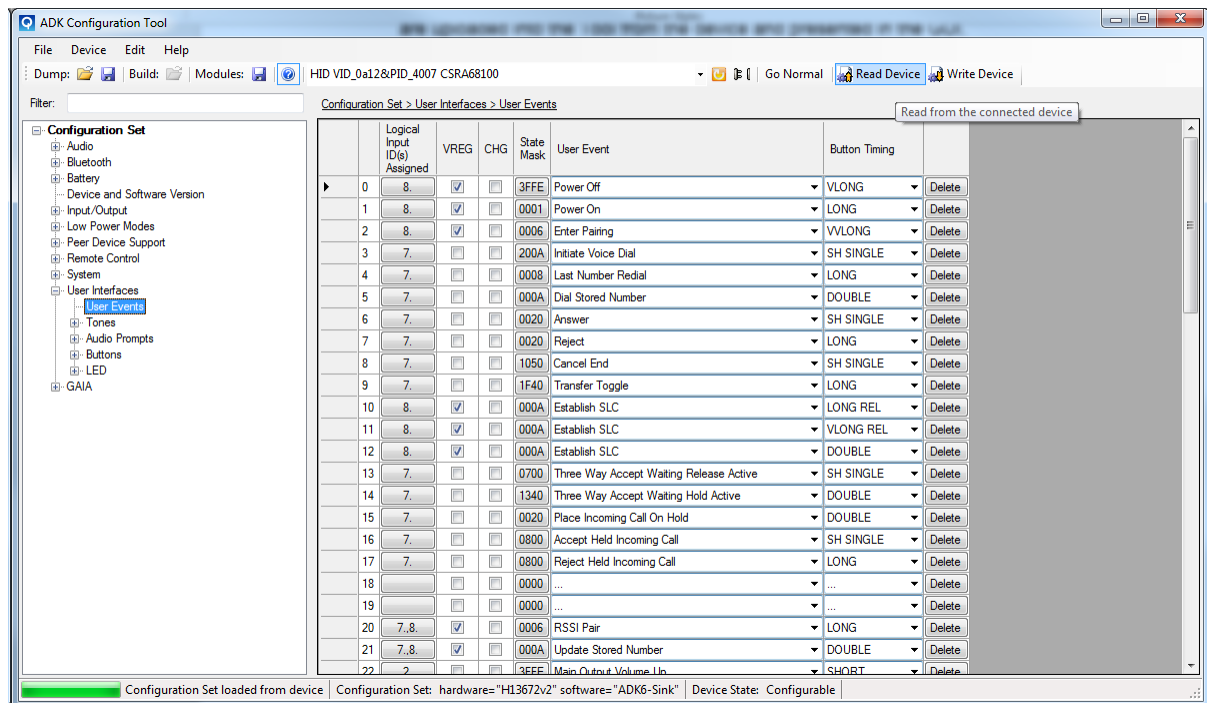


Figure 3-6 The Configuration Tool with Read Device values

3.5 Modify default Configuration Item values

When a device is connected in Configurable AHI mode use the GUI to:

- Inspect or modify actual device Configuration Item values
- Read from the connected device
- Load from a previously-saved dump file

When the Configuration Set is correctly configured, the updated values can be:

- Written directly back to the device, see [Write modified Configuration Item values back to the device](#), then immediately executed, by returning the connected device to Normal AHI Mode, see [Executing modified Configuration Item values](#).
- Saved as an updated Configuration Set Dump file, see [Create a Configuration Set Dump file](#).

3.5.1 Write modified Configuration Item values back to the device

To write the modified Configuration Item values displayed in the GUI back to the connected device, click the Toolbar **Write Device** button, see [Device menu](#).

3.5.2 Executing modified Configuration Item values

Modified Configuration Item values do not execute until the Application is returned to **Normal AHI Mode**.

After writing the Configuration Item values displayed in the Configuration Tool GUI back to the device, see [Write modified Configuration Item values back to the device](#), to return the device to Normal AHJ mode either:

- Click the Toolbar **Go Normal** button
- or
- Click the Toolbar **Disconnect Device** button

Go Normal

The Toolbar **Go Normal** toggle button causes the device to go from Configurable AHJ mode back to Normal AHJ mode and then the Application to execute. The Application executes with the Configuration Item values last written to the device.

NOTE When transition is complete. Configuration Item values remain visible and available for further modification in the GUI, but the **Write Device** button is no longer active. Any further modifications made to these values in the GUI cannot be applied to, or executed by, the device until it is returned to the Configurable AHJ mode, see [Figure 3-2](#).

Disconnect the device

To disconnect the device from the Configuration Tool, click the Toolbar **Disconnect Device** button, see [Device connection controls](#).

Regardless of the active mode, when the Application is disconnected:

- The device executes the modified Configuration Item values in Normal AHJ mode
- The GUI returns to the offline Configuration Set Browsing mode, see [Figure 3-7](#)

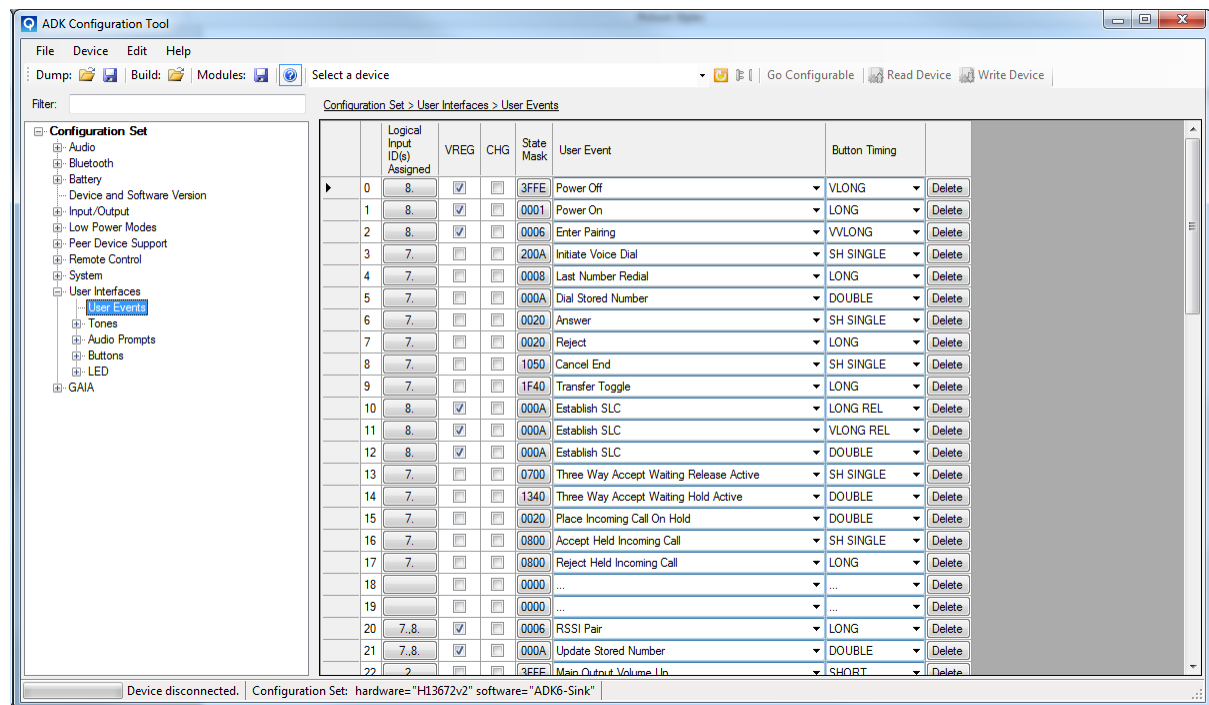


Figure 3-7 The Configuration Tool GUI following disconnection – offline browsing of Configuration Set

4 Configuration Set Dump files

Configuration Set Dump files are located on the host PC and used to store and distribute copies of saved Configuration Sets.

Configuration Set Dump files are useful for:

- Cloning and distributing a Configuration Set for a particular Application Build.
For example, a Configuration Set can be duplicated between two devices running the same version of the Application, when testing a baseline of developed Application source code between devices.
- Restoring a baseline version of the Configuration Set back to a device, on completion of testing a modified Configuration Set.
- Merging Configuration Set versions manually, using a third-party text difference tool.

4.1 Create a Configuration Set Dump file

NOTE Any Configuration Set read from a connected device, Configuration Set Dump file or Application build folder can be saved as a new Dump File.

For example, to create a Configuration Set Dump File from a connected device:

1. Start the Configuration Tool, see [Start the Configuration Tool](#).
2. Connect the device, see [Connect a device](#).
3. Make the device Configurable, see [Make the Application configurable](#).
4. Read the device Configuration Set, see [Read a connected device](#).
5. Click **Save As**, to write the GUI Configuration Item values to a Dump file.
The Configuration Tool prompts for an appropriate file path and filename on the host PC, see [Table 7-4](#).

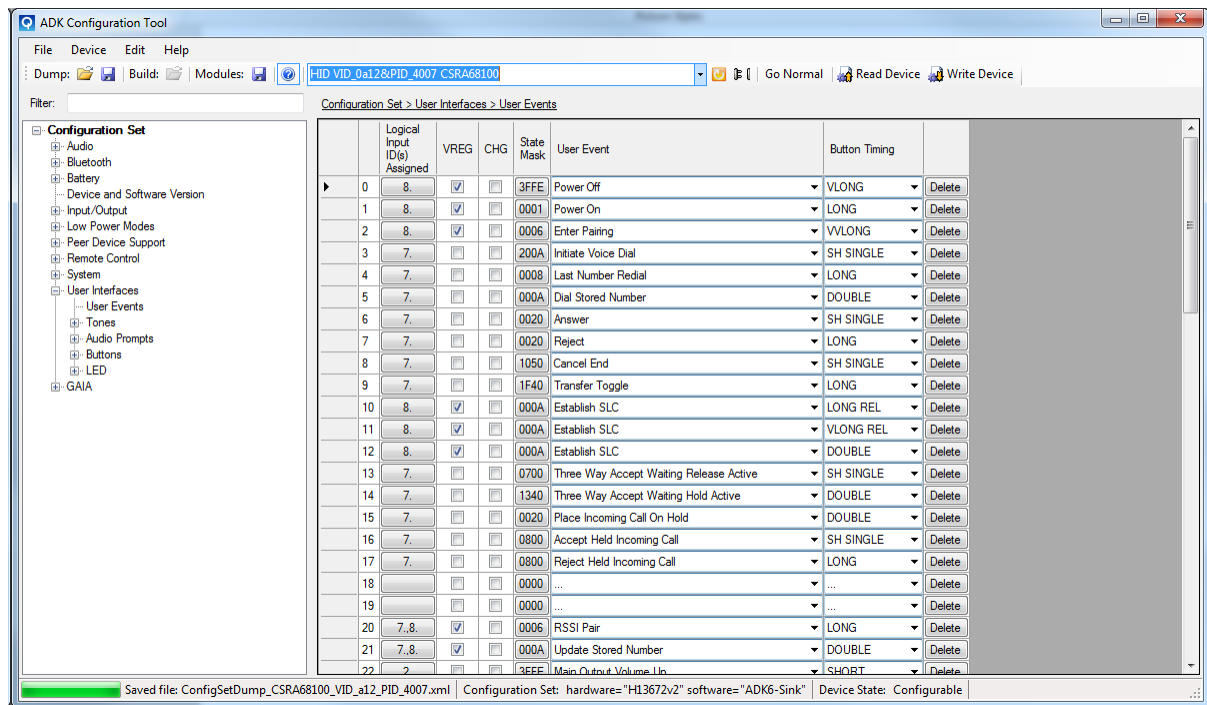


Figure 4-1 Configuration Tool with Save to Dump File

4.2 Restore a Configuration Set Dump file

NOTE A Configuration Set Dump file is compatible when it is created from the same Application binary as that flashed on the connected device. Any attempt to restore an incompatible Configuration Set Dump file to a device will fail, causing the Configuration Tool to issue an **Incompatible Configuration Set** warning.

To restore a compatible Configuration Set back to a device:

1. Start the Configuration Tool, see [Start the Configuration Tool](#).
2. Connect the device, [Connect a device](#).
3. To load a compatible Configuration Set from a previously-saved Dump File into the Configuration Tool GUI:
 - a. Click **Open**.
 - b. Select the appropriate Dump file.
 - c. The Configuration Tool prompts for an appropriate host PC file system, file path and filename.
4. Make the Application configurable, see [Make the Application configurable](#).
5. Write the Configuration Set from the GUI, back to the device, see [Write modified Configuration Item values back to the device](#).

5 Editing a Configuration Set while offline

NOTE This section only applies for ADK users. For ROM-only users this functionality is not available.

In the ADK the Configuration Tool supports editing of the Configuration Set on the host PC without the need to flash and connect to a device. This is called Offline mode. Using Offline mode the user can import a Configuration Set from the ADK Application build folder, edit this Configuration Set as if it was read from a device or loaded from a Configuration Set Dump file, and finally export it back to the Configuration Module definition files in the Application source code. When the Application is next built and flashed to a device it contains the edited Configuration Set by default.

The ability to import and export a Configuration Set to the host PC file system is useful for:

- Finalizing product development. For example, to create a production image that doesn't contain any dynamic Configuration Store records
 - This means that all the Configuration Item values are stored in the devices const space and not in its persistent store.
- Working with development hardware or products that do not support USB SPI or USB HID interfaces.
- Creating new Configuration Set variants by branching from existing Configuration Sets
 - For example, creating a Speaker product based on the ADK reference Speaker Application and its configuration defaults as a starting point
- Updating the Configuration Module definition files during development
 - For example, when Application Project properties are modified and new functionality enabled in the Application source code.

5.1 Import a Configuration Set from an ADK Application build folder

When there is no device connected the Import from Build folder icon is enabled on the Toolbar, see [Figure 5-1](#). Click this icon to import the Configuration Set.

NOTE If you wish to import a Configuration Set but have a device connected, disconnecting the device enables the icon.

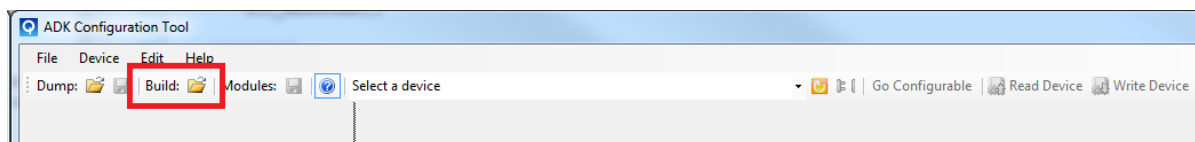


Figure 5-1 Configuration Tool with Import from build folder

A Browse for Folder dialog appears, see [Figure 5-2](#). Use this dialog to navigate to the Host PC folder containing the ADK Application in development.

[Figure 5-2](#) shows the example of the Sink Application.

NOTE The folder selected by the developer must contain a Configuration Set Definitions XML file and a `Config_Definition.c` file for the Configuration Set import to be successful. Both of these files are auto generated during the ADK Application build process.

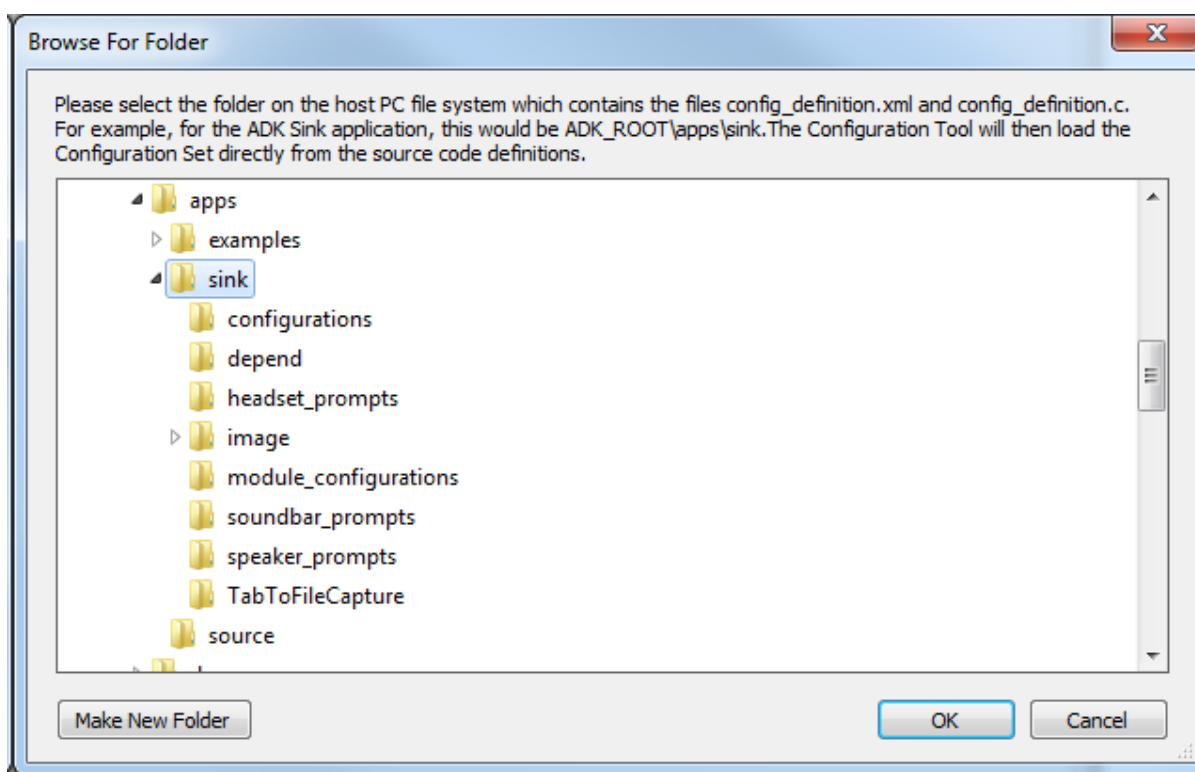


Figure 5-2 Import from build folder – browse for folder dialog

Clicking **OK** imports the Configuration Set from the Application build folder. The GUI is displayed in the same state as when a Configuration Set Dump file has been loaded, see [Figure 5-3](#).

NOTE The Status bar is updated to show the folder from which the Configuration Set was imported.

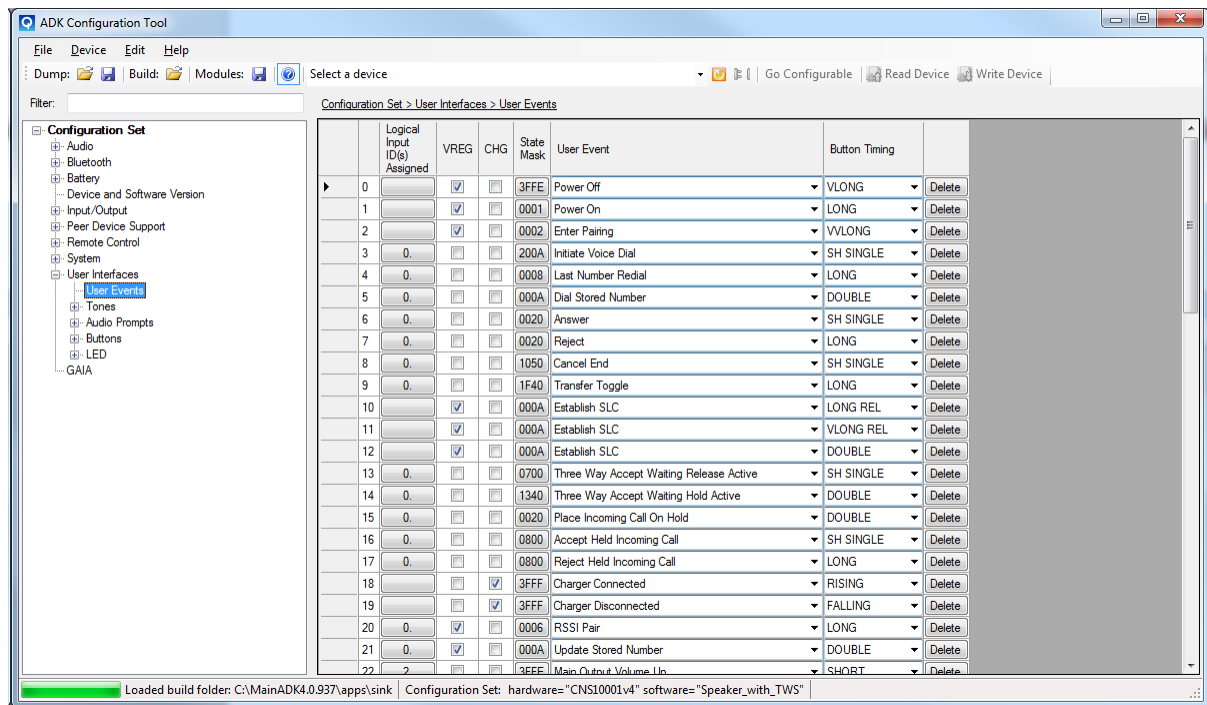


Figure 5-3 The Configuration Tool with Import from build folder completed

5.2 Export a Configuration Set to the Configuration Module definitions files

Any Configuration Set values contained in the Configuration Tool can be exported to a compatible set of Module Configurations in an ADK Applications source folder. This export is achieved by clicking on the **Export to Configuration Modules** icon on the Toolbar, see [Figure 5-4](#).

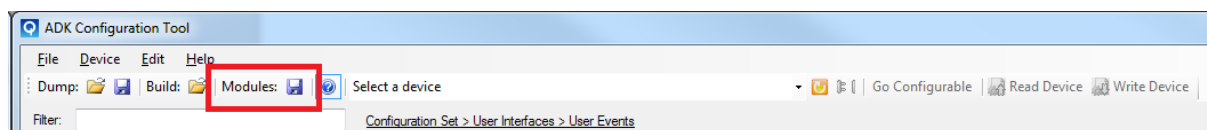


Figure 5-4 The Configuration Tool with Export to Configuration Modules

Clicking on this icon brings up the Export Configuration Set dialog, see [Figure 5-5](#). Exporting to the Configuration Module definition files requires a number of parameters to be provided by the developer,

this dialog is used to enter these parameters. The Configuration Tool stores them for future convenience.

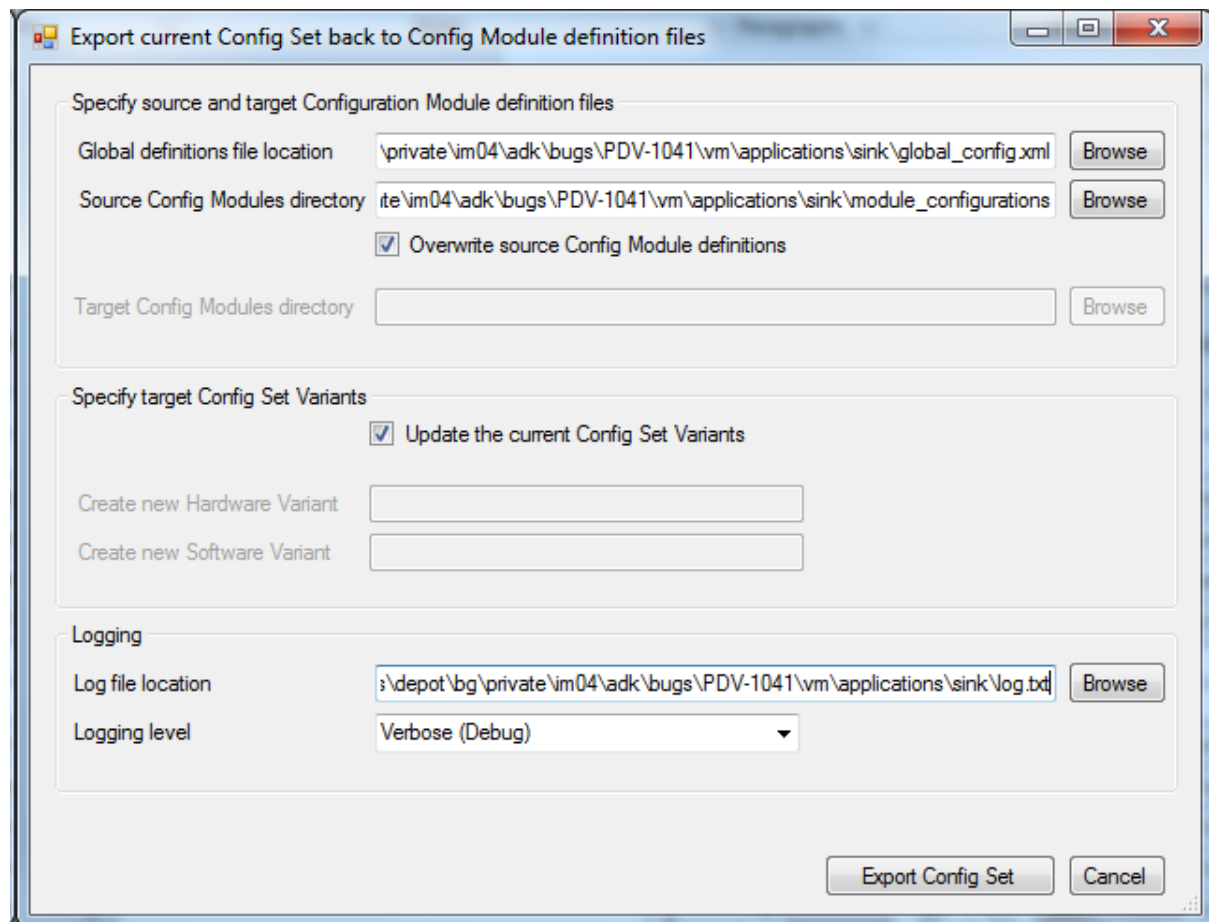


Figure 5-5 The Export Configuration Set Dialog

In the most use cases, where the developer wants to update the Configuration Modules for the same Configuration Set variants as the Configuration Set loaded in the Configuration Tool GUI, the default dialog settings can be populated and those elements of the dialog grayed out by default can be ignored.

To export the Configuration Set, provide the following in the relevant dialog fields:

1. The file path for the `global_config.xml` file for the Application. This is entered in the **Global definitions file location** field.
2. The directory path for the Configuration Module definition files. This is entered where **Source Config Modules directory** field.

NOTE By default, the Configuration Tool overwrites the Configuration Module definition files entered. These are considered source code, and should be subject to version control. However, it is also possible to run the export and set the output Configuration Modules to be targeted at a different folder (for example, to enable a directory diff operation to be conducted,). If this is required, uncheck **Overwrite source Config Modules definitions** option and provide a target directory path in the **Target Config Modules directory** field.

3. The file path for the log file which is created by the Configuration Tool during the export process, is entered in the **Log file location** field.
4. The Logging level. The levels for which, are **Critical**, **Error/Warning**, **Information** and **Debug**.

NOTE It is possible to branch a new Configuration Set from an existing Configuration Set. This is done by unchecking **Update the current Config Set Variants** option and specifying the hardware and software variants required for the new Configuration Set metadata. This is not necessary to develop a product with an ADK, but may be useful for developers maintaining several similar Configuration Sets for slightly different hardware targets, for example:

When the dialog is completed, click **Export Config Set** to complete the export. This operation can take 10 seconds to complete. The host PC cursor changes to busy while this operation completes.

6 Browsing the Configuration Set using the Filter

The Configuration Tool includes a dynamic, free-text, non-case sensitive Filter used to find specific keywords or sub-strings in the Configuration Set, loaded in the GUI.

6.1 Example of a search for ShareMe configuration data

This example demonstrates use of the filter function to search for Configuration Items and Groups relating to the Audio Sink Application ShareMe feature.

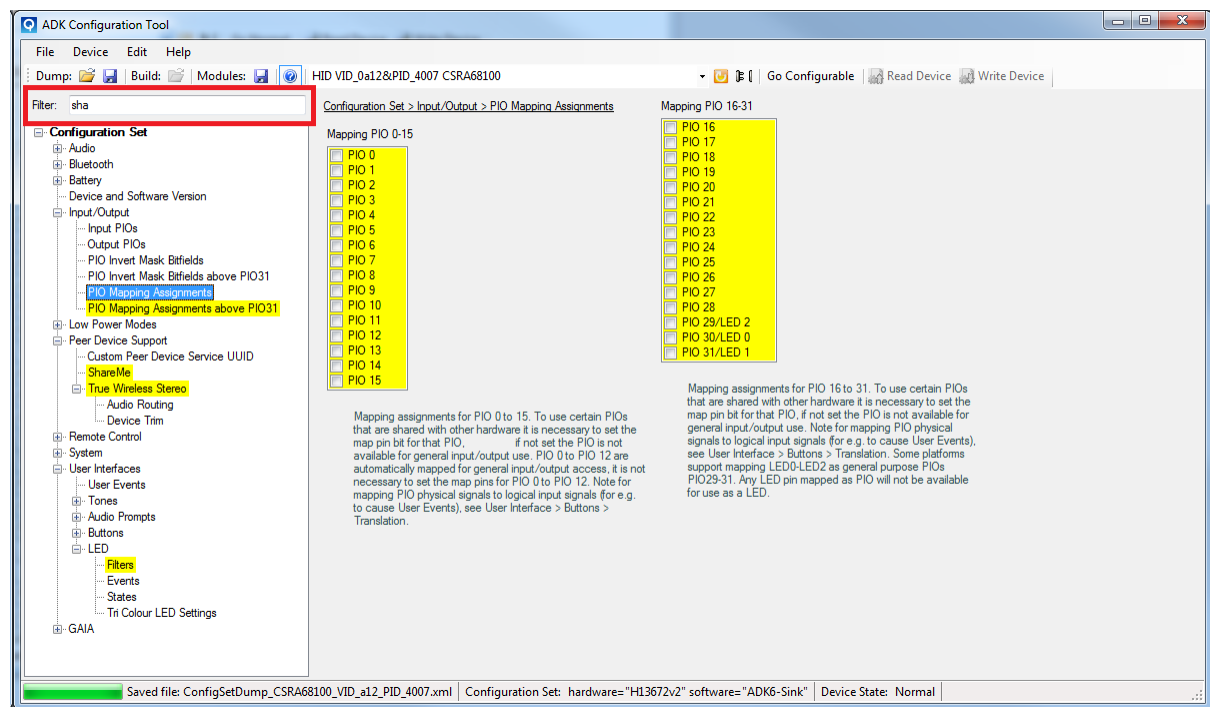


Figure 6-1 The Configuration Tool with dynamic free-text Filter, partial search term

As characters are entered into the Filter control, character by character, see [Figure 6-1](#):

- Any text that contains an occurrence of the current string is highlighted by a yellow background.
- Any Configuration Group with no occurrence of the current Filter String characters in the **Name**, **Symbols** or **Help Text** description (for any of the Configuration Items it contains), is closed.

NOTE Highlighting changes dynamically, as each character is entered and the exact matches change.

With only `sha` entered, see [Figure 6-1](#), both the **ShareMe** and **True Wireless Stereo** Configuration Groups are highlighted. At this stage, the PIO Mapping Assignments in **Configuration Set > Input/Output** match the string `sha`, because the **Help** description contains the word **shared**.

Searches are refined by entering further characters to the Filter string. Continue entering characters until the appropriate information is found or the text string is complete.

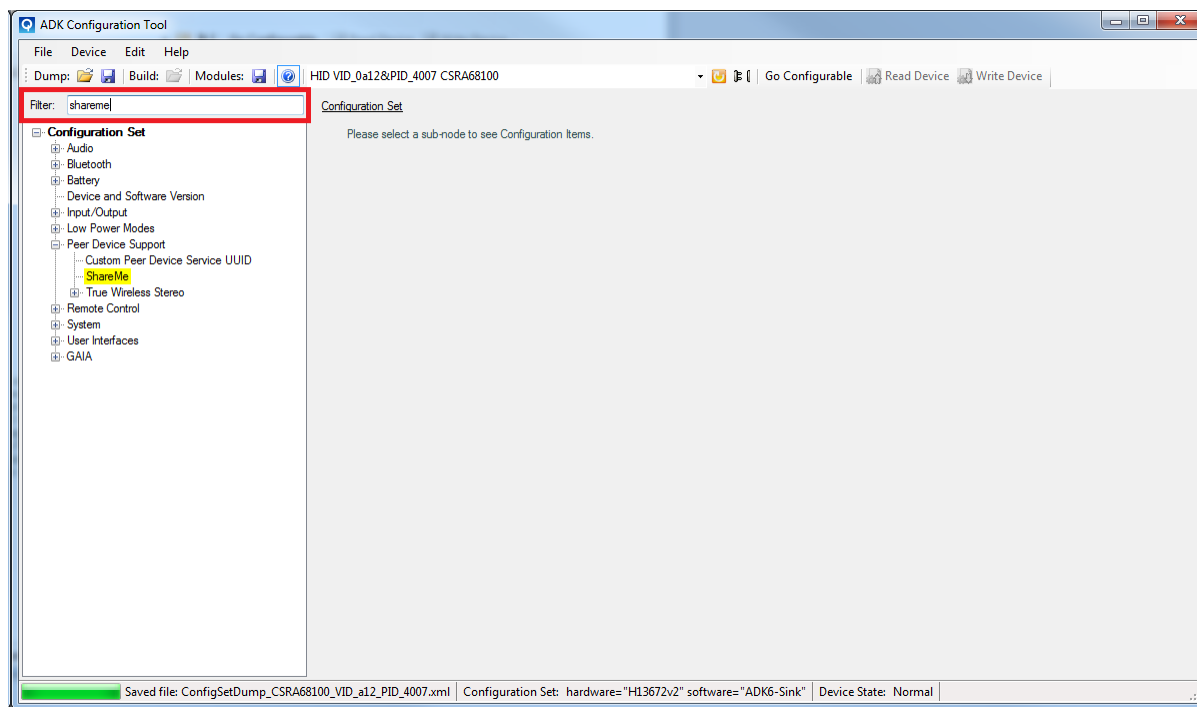


Figure 6-2 The Configuration Tool with fully filtered shareme search

NOTE To display any instances of the Filter String within the Configuration Group, click the selected item.

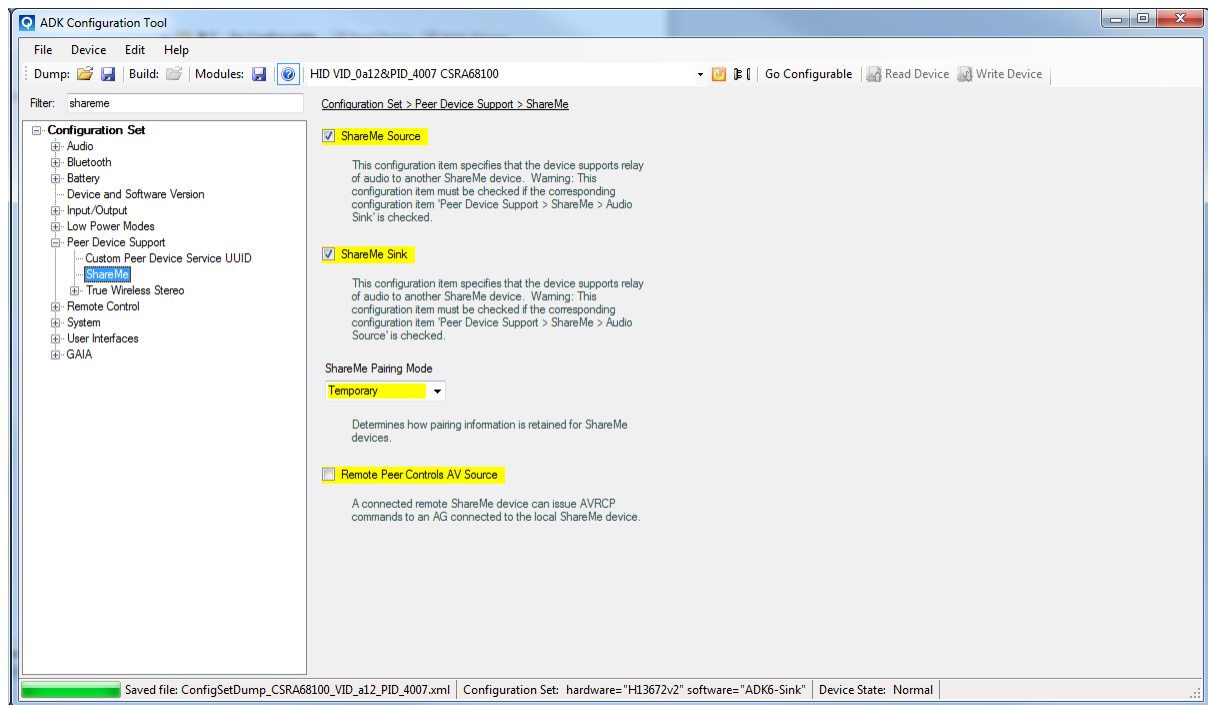


Figure 6-3 The Configuration Tool with filtered Configuration Items

With the **ShareMe** Configuration Group selected in the tree view, the Configuration Tool shows each of the Configuration Items within this group contain the string `shareme`.

7 ADK Configuration Tool controls

The Menu Bar and Toolbar at the top of the GUI window contain all Configuration Tool functionality, while the Status Bar at the bottom of the window is used to confirm the status of the Configuration Set.

7.1 Menu bar

The Menu bar at the top of the GUI includes four control menus:

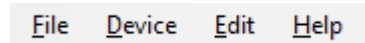


Figure 7-1 The Configuration Tool Menu bar

7.1.1 File

[Table 7-1](#) describes the Configuration Tool **File** menu options.

Table 7-1 File menu options

Option	Action
Open File	Loads the Configuration Item settings contained in a previously generated Configuration Set Dump file and displays them in the GUI.
Save File As	Prompts the user to specify a filename and generates a new Configuration Set Dump file using the given name and the Configuration Set values displayed in the GUI. This button is grayed out if the GUI contains the Placeholder Configuration Set definitions. The Save File As button is only available if the ADK Configuration Tool contains valid Configuration Item values in memory.
Exit	Closes the ADK Configuration Tool program. NOTE Exit does not automatically save changes made to values in the Configuration Tool but, before exit is confirmed the Configuration Tool prompts to save the modified Configuration Set, if changes have been made. Unsaved changes are permanently lost.

7.1.2 Device menu

The **Device** menu only permits read or write of configuration values to a device, when it is operating in Configurable AHI mode.

Table 7-2 Device menu options

Option	Action
Read	Loads the current Configuration Set into the Configuration Tool GUI from the connected device.
Write	Writes the [modified] Configuration Set displayed in the Configuration Tool GUI back to the connected device.

7.1.3 Edit menu

[Table 7-3](#) describes the **Edit** menu options.

Table 7-3 Edit menu options

Option	Action
Copy	Copies the selected string from a control onto the Clipboard.
Paste	Pastes the Copied string from the Clipboard into the selected control.

7.1.4 Help menu

The **Help** menu displays the Version and Build Date/Time for the ADK Configuration Tool program.

7.2 Toolbar

The Configuration Toolbar includes five controls:

- Dump File data input/output
- Import/Export Configuration Set from host PC file system
- Help Access
- Device Access
- Device State and input/output functionality for the connected device





Figure 7-2 The Configuration Toolbar

7.2.1 File Input Output buttons



The **File IO** buttons are active only when a device is connected and the Configuration Set is initialized. This prevents the accidental creation of invalid Configuration Set values, see [Section Read real Configuration Item values](#).

Table The Configuration Tool File IO

Button	Action
	Open Configuration Set Dump file Loads the Configuration Item values contained within the selected Configuration Set Dump file into memory and displays them in the GUI.
	Save As Configuration Set Dump Only available if the ADK Configuration Tool contains actual Configuration Item values in memory, otherwise the button is grayed-out. The Configuration Tool prompts for a filename and generates a Configuration Set Dump file, using the chosen name. If the name exists, the Configuration Tool prompts before over-writing existing file data with the new Configuration Item values, displayed in the GUI.

7.2.2 Import/export Configuration Set


The Configuration Tool import/export

Button	Action
Build: 	Import Configuration Set from ADK Application build folder Loads the Configuration Set from the specified ADK build folder on the host PC file system and displays them in the GUI. This item is grayed-out if a device is connected to the Configuration Tool.
Modules: 	Export Configuration Set to Configuration Module definition files Only available if the ADK Configuration Tool contains actual Configuration Item values in memory, otherwise the button is grayed-out. The Configuration Tool presents the Export Config Set dialog. When this is completed the Configuration Tool shall save the Configuration Set contained in the GUI to the Host PC file system as directed by the user.

7.2.3 Help button

Click the **Help** button to toggle Help text on and off. When displayed, Help text is presented in the **Selected Configuration Items** pane, on the right-hand side of the GUI window.

Table 7-4 The Configuration Tool Help button

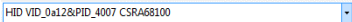


Button	Action
	Help Alternately displays or hides Help information on the GUI screen. Help text is displayed in: <ul style="list-style-type: none"> ■ Basic View: Alongside each individual Configuration Item control ■ As Tool Tip: With Configuration Items displayed in a table (Array View)

7.2.4 Device connection controls

The Device connection controls include:

- **Device List** drop-down menu
- **Refresh Device List** button
- **Disconnect Device** button.

Table 7-5 The Configuration Tool device connection controls

Control	Action
	<p>Device List</p> <p>Displays a list of all connections recognized by the host PC.</p> <p>Click a device name to connect. The selected device name remains in the Device List drop-down control.</p> <p>NOTE The Device List includes all USB to SPI converters attached to the host PC, even if not connected to a device. Any attempt to connect to a converter not connected to a device causes the AHI connection to fail and the Configuration Tool to remain in the disconnected state.</p>
	<p>Refresh Device List</p> <p>Provokes the ADK Configuration Tool to re-scan the host PC, to identify all attached AHI compatible devices.</p> <p>NOTE The ADK Configuration Tool only performs an automatic Device List scan at initial boot-up. Always refresh the Device List immediately after devices are attached or detached from the host PC.</p>
	<p>Disconnect Device</p> <p>Disconnects the attached device from the ADK Configuration Tool.</p> <p>All Configuration Item values are removed and the GUI, which reverts to its initial blank, 'Device Disconnected' screen.</p>

7.2.5 Device AHI mode connected state

Use the **AHI Mode State** button to toggle the selected device between Normal AHI mode and Configurable AHI mode, to modify Configuration Item values.

The **AHI Mode State** button is only active when a device is connected. The button caption changes, depending on the current device mode, see [Table 7-6](#).

Table 7-6 The Configuration Tool Device state button

Caption	Action
Go Configurable	Default: Grayed-out when no device is attached
Go Configurable	<p>The Device is connected and working in Normal AHI Mode with the current default Configuration Item values loaded.</p> <p>Able to modify any Configuration Item values loaded in the GUI, locally within the Configuration Tool, but not possible to Read or Write device data.</p> <p>NOTE A Configuration Set loaded in the Configuration Tool can still be modified, but any changes cannot be written either to a Configuration Set Dump File or a connected Application, until the connected Application is operating in Configurable AHI Mode, see Executing modified Configuration Item values.</p>
Working	<p>The device is transitioning between modes.</p> <p>No input is possible, the Spinning Wheel (busy) cursor is displayed until transition is complete.</p>
Go Normal	<p>The Device is connected and working in Configurable AHI Mode with the current default Configuration Item values loaded.</p> <p>It is possible to Read, modify or Write actual device Configuration Item values directly back to the device, see Executing modified Configuration Item values, or to an appropriate Dump file, see Configuration Set Dump files.</p>



7.2.6 Connected Device IO buttons

The connected device **Read** or **Write** IO buttons operate on real device configuration values.

It is only possible to read or write real Configuration Item values when the device is operating in Configurable AHI Mode, the buttons are grayed-out and unavailable if:

- No device is connected
- The connected device is operating in Normal AHI Mode

Table 7-7 The Configuration Tool Connected Device I/O buttons

Control	Action
 Read Device	<p>Read Device</p> <p>Loads the current Configuration Item values from the connected device into the Configuration Tool memory and displays the values in the GUI.</p>
 Write Device	<p>Write Device</p> <p>Writes the current (modified) Configuration Item values held in the Configuration Tool memory and GUI directly back to the connected device.</p> <p>NOTE This button is only available if the ADK Configuration Tool contains valid Configuration Item values in memory and is initialized.</p>

7.3 Status bar

The Status bar at the bottom of the GUI displays the current Configuration Tool status. The Status bar includes a Progress bar and the current Status of both the Configuration Set Definition and any connected Device.

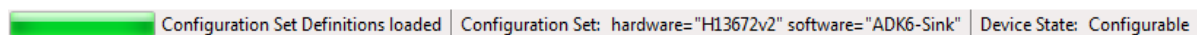

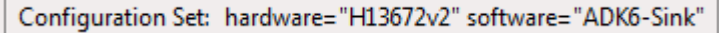
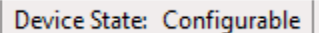


Table 7-8 The Configuration Tool Status bar

Element	Displays
	<p>Configuration Set Definitions loaded</p> <p>Progress bar and status report</p> <p>A full Progress Bar indicates that a device is connected and its Configuration Set Definitions are available.</p> <p>The adjacent text provides context and is updated to indicate significant process events.</p>
	<p>Loaded Configuration Set variant</p> <p>The Configuration Set Definition Variant information shows the hardware and software variants applicable to the connected device and Configuration Set Definition.</p>
	<p>Device State</p> <p>Confirms the current device Application AHI operating mode:</p> <p>Normal: The Application is executing in Normal AHI mode.</p> <p>Configurable: The Application is not executing and the Config Store is accessible for Read or Write operations.</p>

Document references

Document	Reference
<i>ADK Applications Configuration Architecture Overview</i>	80-CU111-1/CS-00400589-TO

Terms and definitions

Term	Definition
A2DP	Advanced Audio Distribution Profile
ADK	Audio or Application Development Kit
AVRCP	Audio/Video Remote Control Profile
Bluetooth	Set of technologies providing audio and data transfer over short-range radio connections
GUI	Graphical User Interface
HFP	Hands-free Profile
I ² S	Inter- Integrated Circuit Sound
IC	Integrated Circuit
ID	Identifier
PBAP	Phone book Access Profile
PIO	Programmable input/output
PS	Persistent Store
QTI	Qualcomm Technologies International, Ltd.
SPI	Serial Peripheral Interface
UI	User Interface
USB	Universal Serial Bus
XML	Extensible Markup Language, a general-purpose specification for creating custom markup