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## Antenna Sharing Configuration Builder Tool

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## 1 Overview

### 1.1 Introduction

The antenna sharing features allows the assigning of frequency bands to the different AISG input ports on the antenna. The latest CommScope antennas support this ability. This tool can be used to generate antenna sharing configuration data, which then can be applied to the antenna device through RET Controller systems like ATC Lite software or RETMaster mobile device application or Base Station systems. Following sections highlight the features to use for the creation of antenna sharing data files on a PC.

### 1.2 Acronyms & abbreviations

|            |                                                  |
|------------|--------------------------------------------------|
| 3GPP       | Third Generation Partnership Project             |
| AISG       | Antenna Interface Standards Group                |
| ALD        | Antenna Line Device                              |
| API        | Application Programming Interface                |
| cRET       | CommScope RET                                    |
| IOT        | Interoperability Test                            |
| RET        | Remote Electrical Tilt                           |
| Single-RET | Single-Antenna Remote Electrical Tilt Actuator   |
| Multi-RET  | Multiple-Antenna Remote Electrical Tilt Actuator |
| ATC Lite   | Antenna Tilt Controller Lite software            |
| UI         | User Interface                                   |

## 2 Antenna Sharing Configuration Builder Tool on PC

NOTE: Antenna specific support files are required to create antenna sharing configuration using this tool. The support files are available as a part of the ATC Lite or RET Master applications. To add the support files other than the bundled ones, follow the instructions provided in the user guide document for antenna sharing configuration for RET Control systems.

The Antenna Share Configuration Builder Tool can be launched through ATC Lite software in the following two ways as described below:

### 2.1 Launching the tool with a connected antenna device (online)

1. From the ATC Lite program, after the antenna devices are found select the device from the display list. Use the menu "Tools" à "Antenna Sharing Configuration" à "Open Antenna Sharing Configuration Builder..." as shown in the Figure 2-1. This launches the Antenna Share Configuration Builder tool loaded with the image and showing the selected antenna's current antenna sharing configuration mapping with the colored shapes as shown in the Figure 2-2.

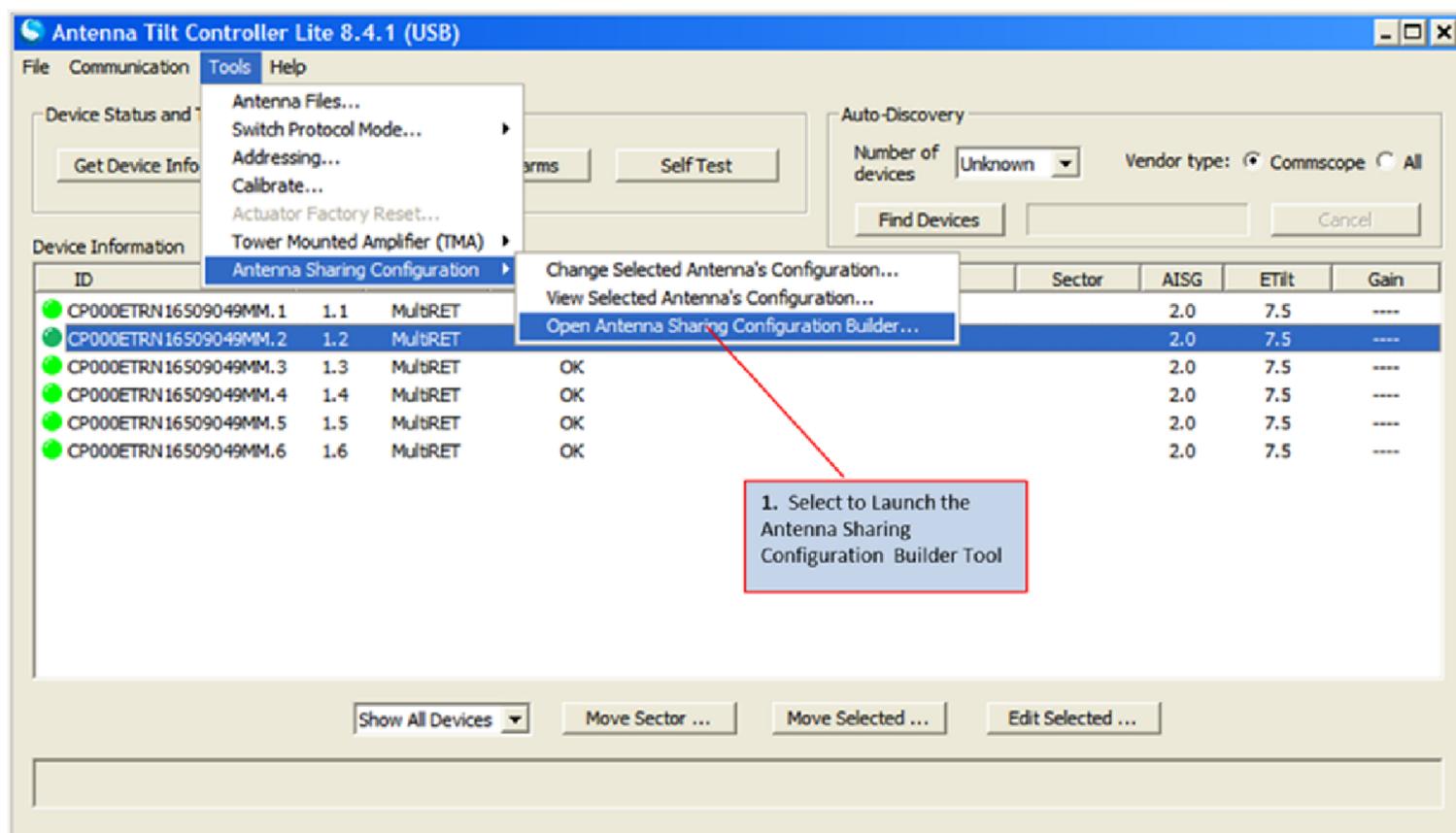


Figure 2-1 Launch builder tool based on a selected device.

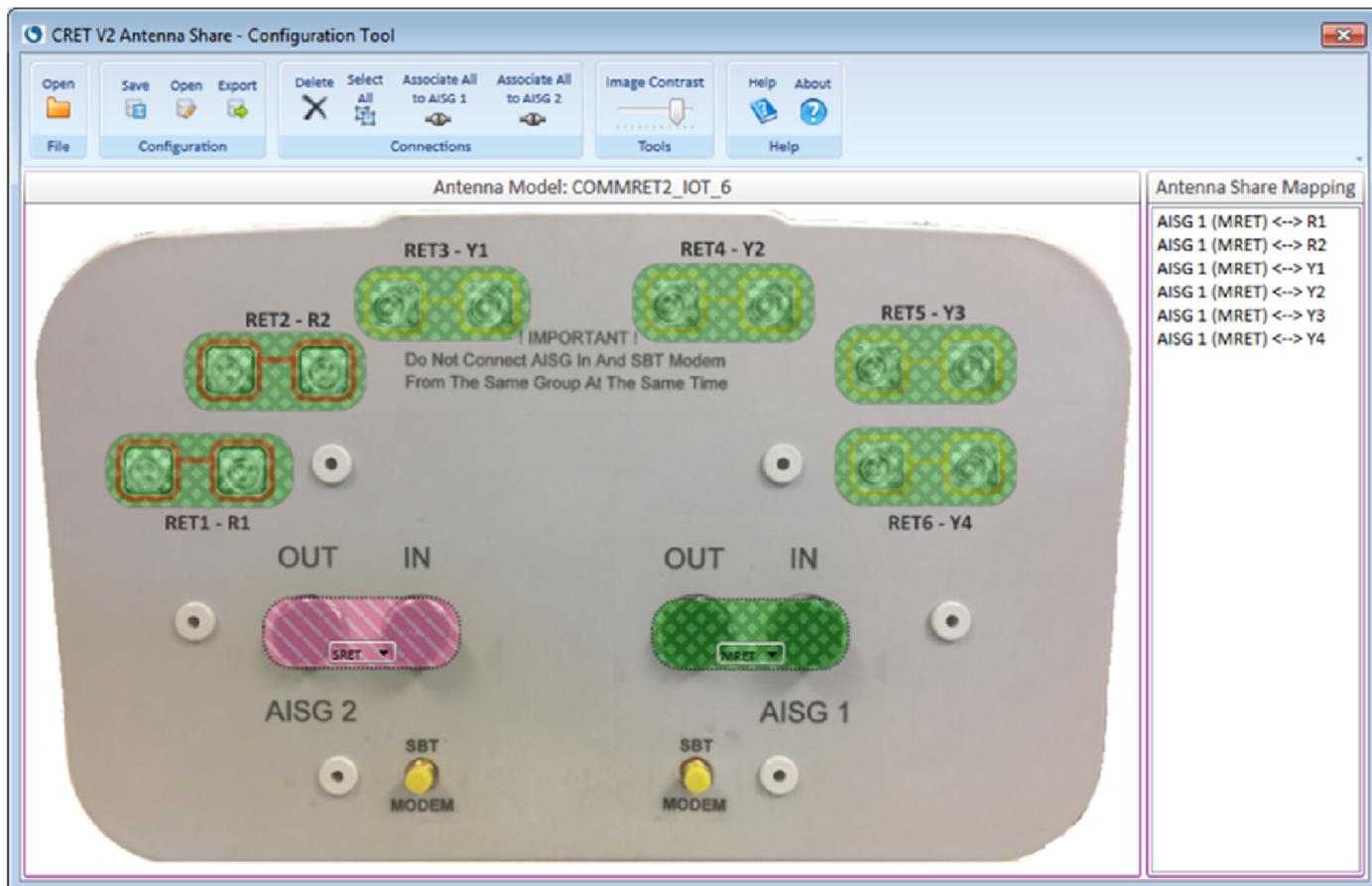


Figure 2-2 Builder tool with current antenna sharing loaded.

## 2.2 Launching the tool without any connected devices (offline)

1. The Builder tool can also be launched through ATC Lite program without being connected to any devices. Launch the ATC Lite program, then use the menu "Tools" à "Antenna Sharing Configuration" à "Open Antenna Sharing configuration Builder..." as shown in the Figure 2-3. This launches the Antenna Share Configuration Builder tool with startup view as shown in the Figure 2-4.

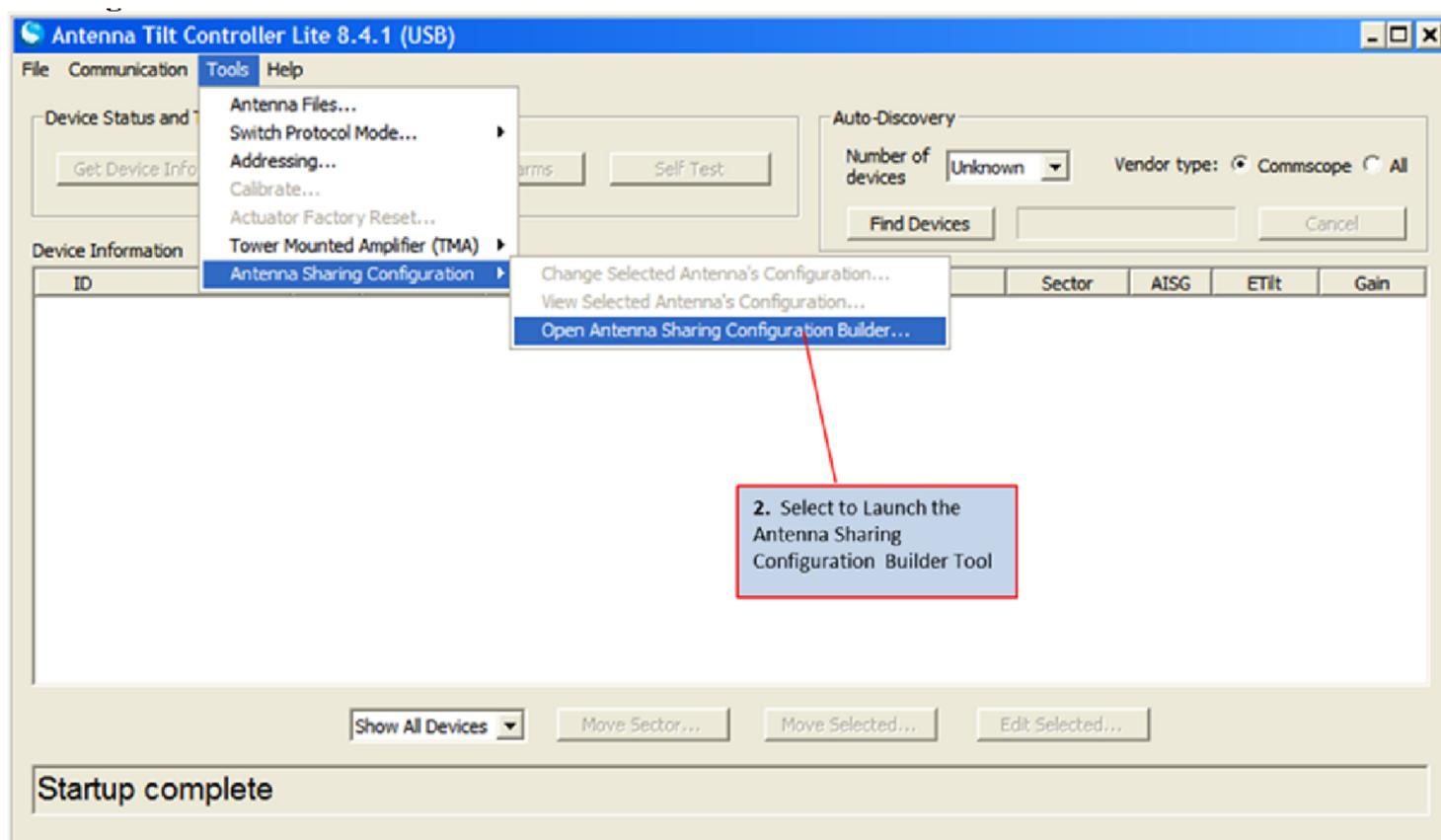


Figure 2-3 Launching builder tool without any connected devices.

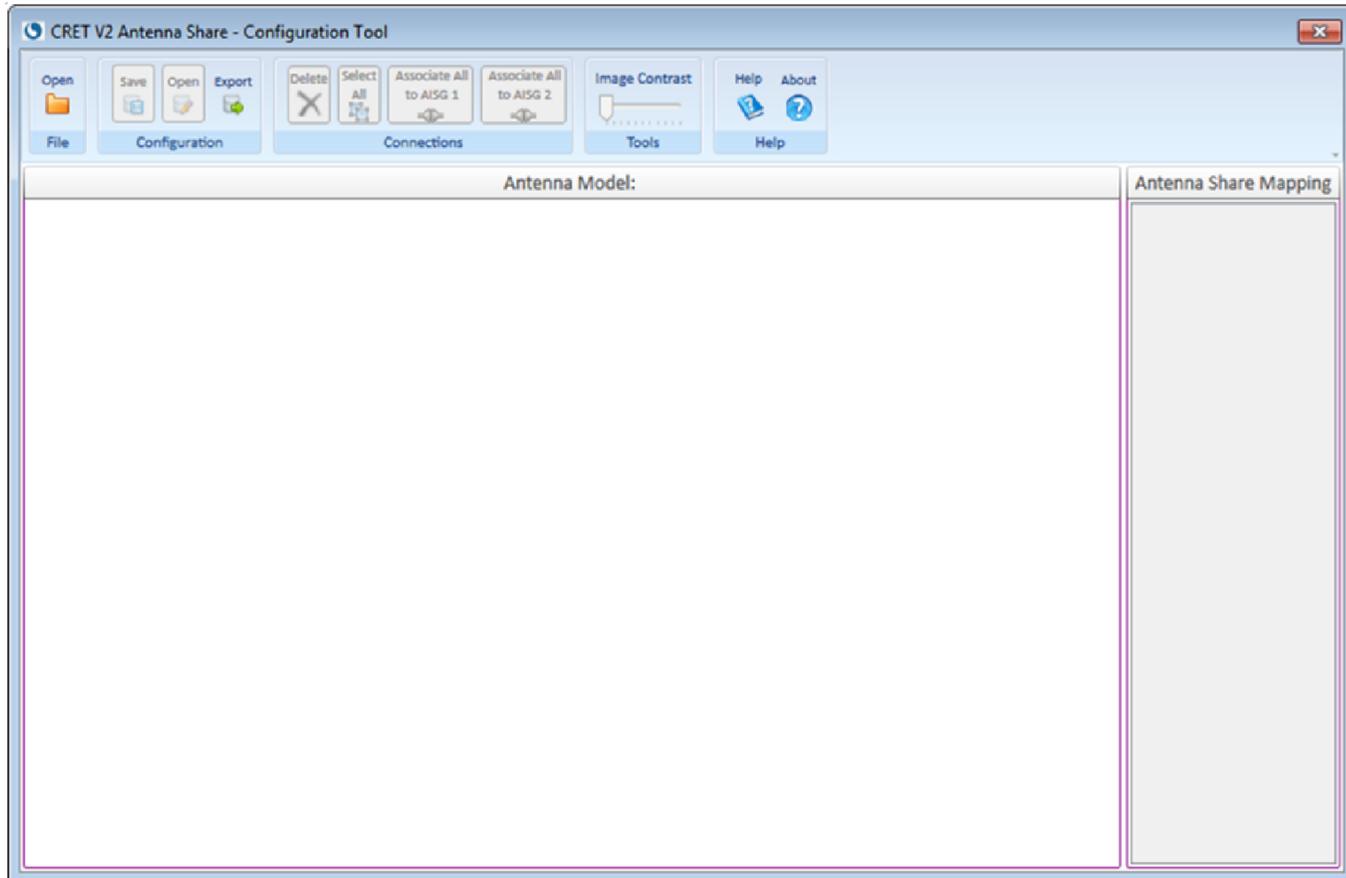


Figure 2-4 Builder tool with no configuration.

## 2.3 Using the Antenna Share Configuration Tool

If the given antenna model annotation is already loaded with configuration go the section “Building Antenna Share Mapping” for instructions to modify the configuration.

### 2.3.1 Opening Antenna Annotation for Antenna Sharing

1. Click on the “Open” toolbar button to display the window titled “Open Annotated File” as shown in the figure 2-5.
2. Select the Antenna model from the list.
3. Click on open to load the selected antenna model annotation data.

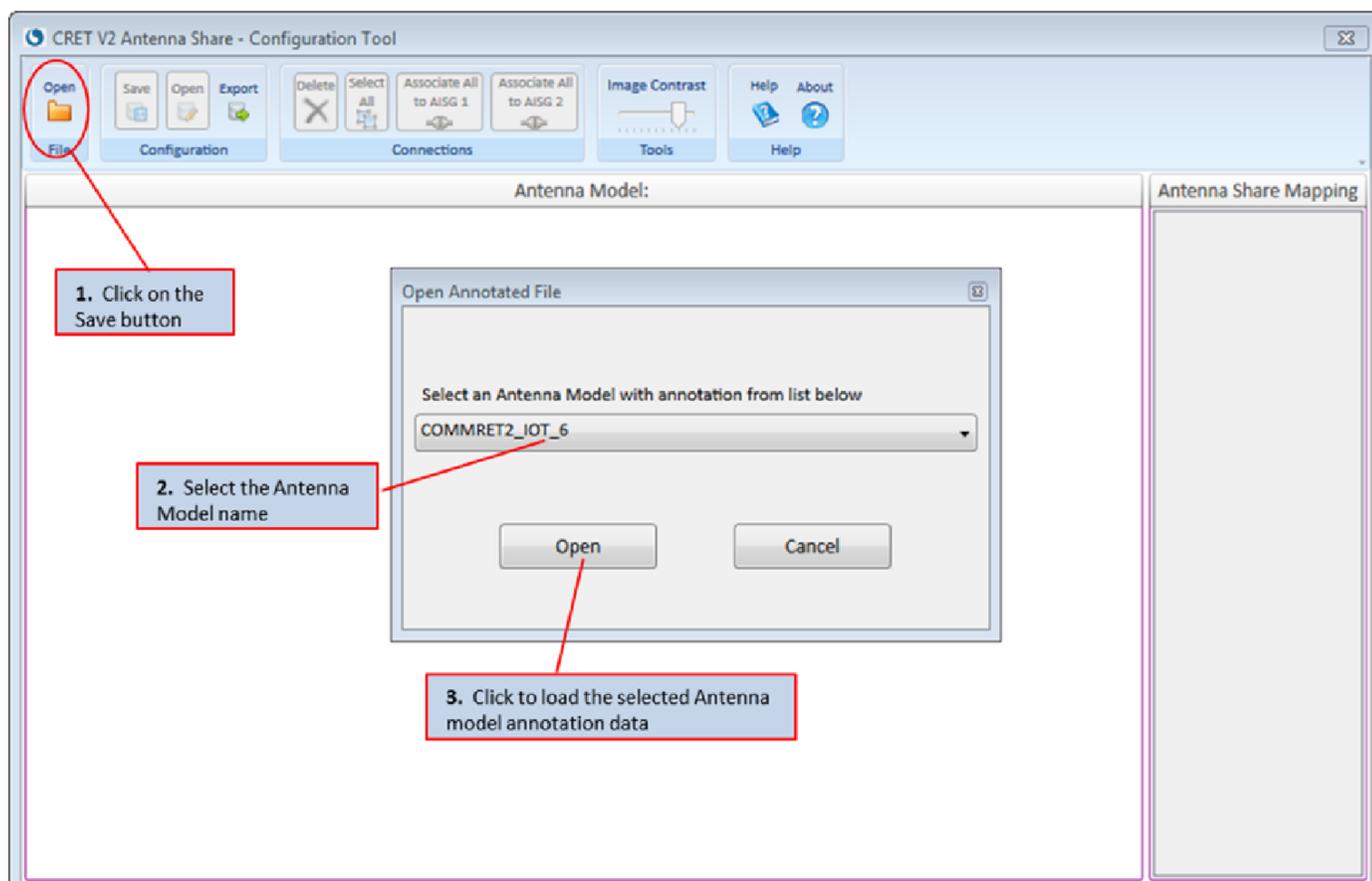


Figure 2-5 Opening antenna annotation file.

4. The annotation data includes the endcap image with shapes indicating the frequency bands and the AISG input ports are shown as in the figure 2-6. Tips popup window displays the instructions to do the antenna sharing. Click on the close to dismiss the popup window.



Figure 2-6 Loaded antenna annotation for antenna sharing.

### 2.3.2 Building Antenna Share Mapping

Antenna Share mapping can be built in the following ways:

1. Selecting shapes.

1a. Select a band shape by clicking. The shape gets highlighted with thick border.

1b. Select a AISG shape, the band shape changes color showing the mapping between the band and AISG. This can be seen in the "Antenna Share Mapping" list on the right-side.

Note: User can either start with band shape or AISG shape.

2. Using right click menus.

2a. Right click on the AISG shape.

2b. In the menu select the "Connect to" menu and select the relevant band name from the popup menu list. Once band name is selected, the band shape changes color to the right clicked AISG shape finalizing the mapping.

Note: User can either start the right click on a band shape or AISG shape.

3. Changing AISG modes.

Click on the drop down list on the AISG shape, and select the relevant AISG mode (SRET or MRET). The changes can be seen in the "Antenna Share Mapping" list on the right-side.

The other features that can be used in the tool are described in the figure 2-7.

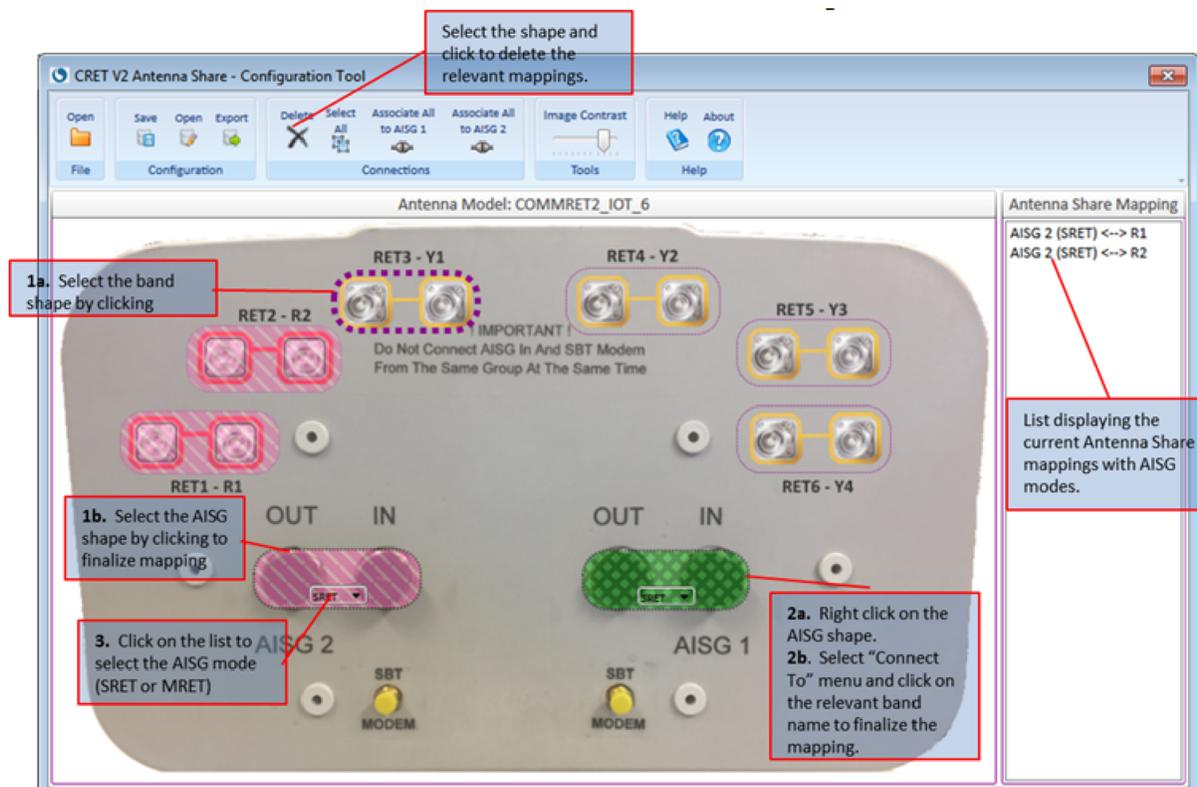


Figure 2-7 Features to build antenna sharing.

### 2.3.3 Saving Antenna Share Configuration Data

1. Click on the "Save" button on the toolbar under group "Configuration".
2. In the "Save Antenna Share Configuration" window use the provided file name or enter the file name of your choice.
3. Click on the "Save" button to store the Antenna configuration to the given file name as shown in the figure 2-8. If the file name does not have extension name, ".dat" is added during the saving.

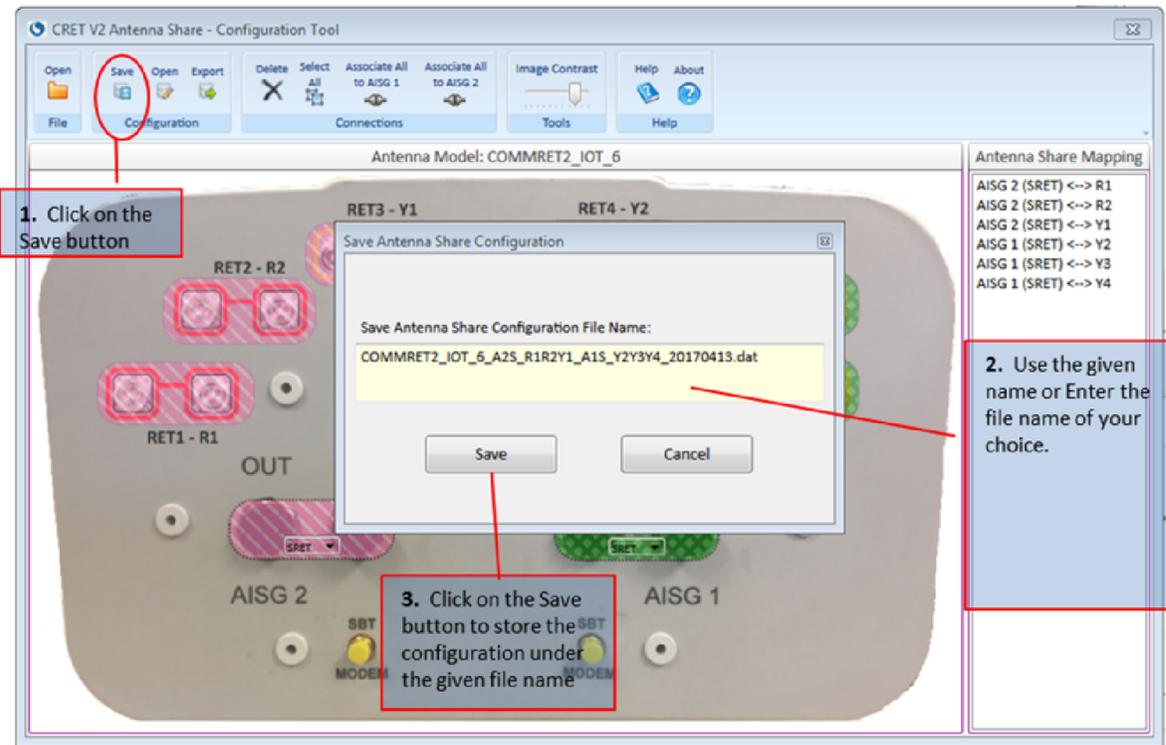


Figure 2-8 Saving antenna sharing data to file.

### 2.3.4 Opening Antenna Share Configuration Data

1. Click on the "Open" button on the toolbar under the group "Configuration".
2. In the "Open Antenna Share Configuration" window, select the antenna share configuration file name to load.
3. Click on the "Open" button to load the Antenna configuration to the tool as shown in the figure 2-9.

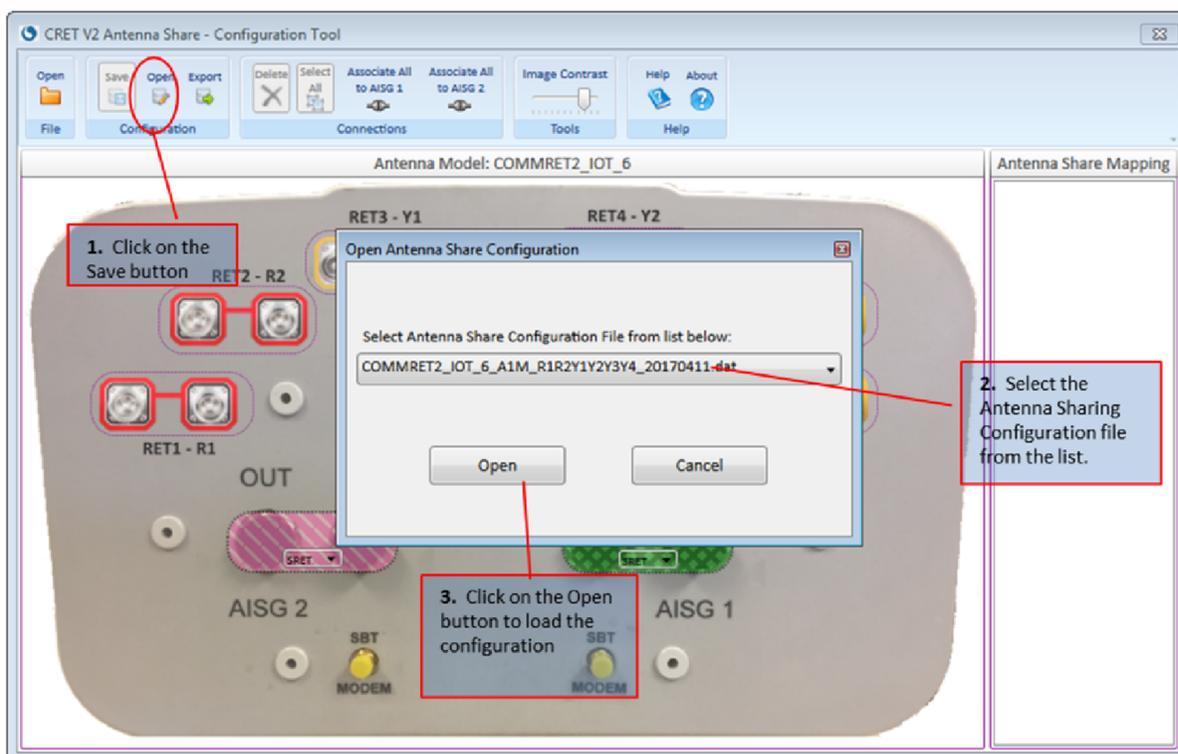


Figure 2-9 Opening antenna sharing configuration data.

NOTE: The Antenna Sharing Configuration file (.dat) file contains the binary data that will be sent by the RET Controllers or Base Station systems to configure antenna sharing on target antenna.

Saved configurations will immediately be available from the ATC Lite software's "Change Selected Antenna's Configuration" menu option, if appropriate for the selected antenna model.

#### IMPORTANT

The Antenna Sharing Configuration data (in .dat file) can be sent to an antenna using the AISG 2.0 'Send Configuration Data' or through AISG 2.0 download commands. The entire contents of the .dat file are sent as the payload of these commands.