

arkhalumen

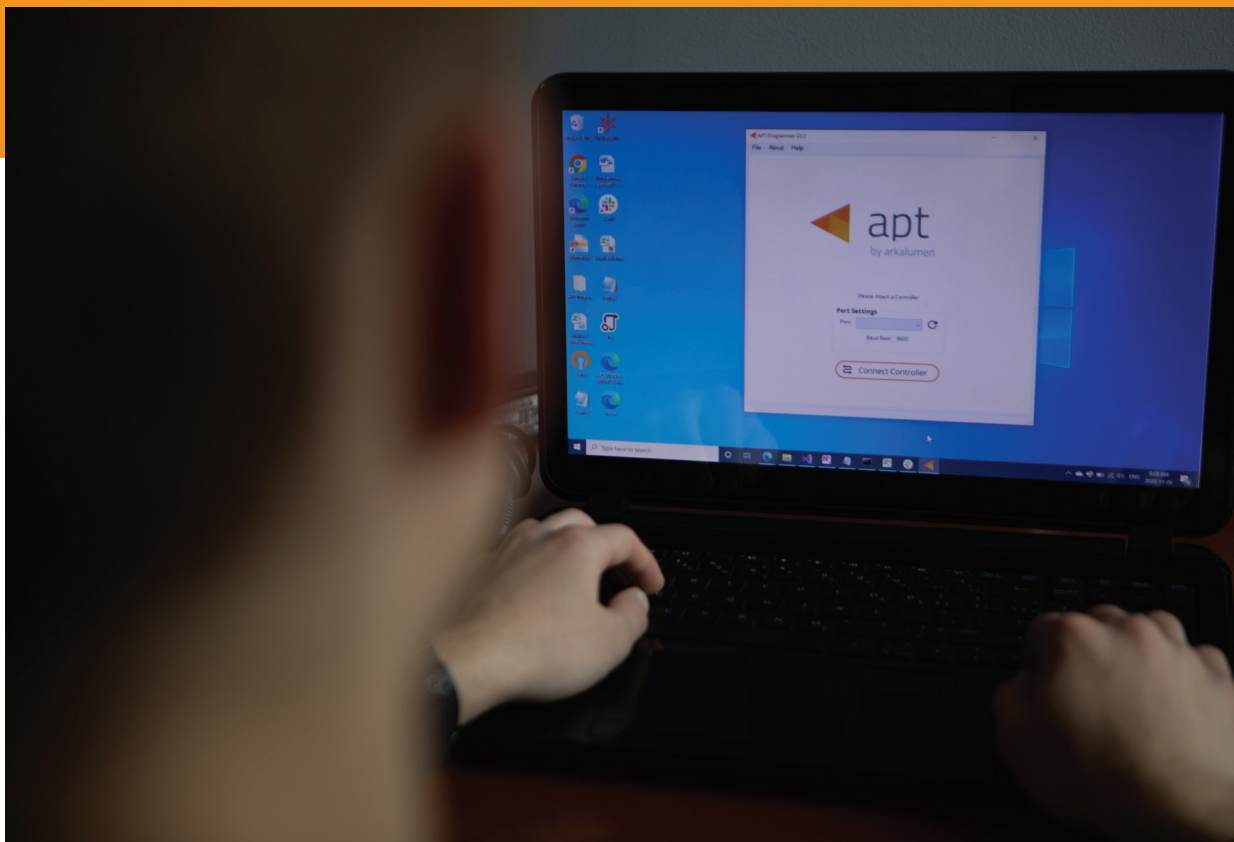


apt

APT Programmer  
Programming Guide - Engineering  
APT-CC-VA

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# Connecting the APT Programmer

- 1 Connect the APT Programmer to the PC and controller as shown in Figure 1.

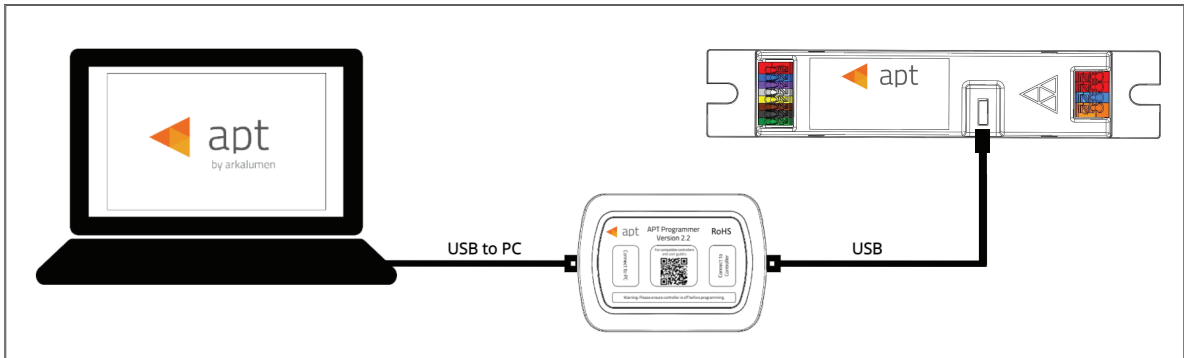



Figure 1: Wiring Diagram

## Using the APT Programmer

### Installing the APT Programmer Interface

- 1 Click on the provided link to download the **APT Programmer Interface** folder.
- 2 Open the folder **APT Programmer Interface** on a Windows-based PC, and select the file **setup.exe**.
- 3 Launch **setup.exe** to install the APT Programmer Interface. The APT Programmer Interface shortcut will be added to the Start Menu.

### Running the APT Programmer Interface

- 1 Launch the APT Programmer Interface software by selecting the application, **APT Programmer Interface**, from the Start Menu. The Programmer Connect window (shown in Figure 2) will open.
- 2 Select the COM port to which the APT Programmer is connected from the **Port** drop-down menu. If a COM port is not visible, click the  button until the correct port is visible.
- 3 Click **Connect Controller** to establish a connection. Once connected, the APT Programmer Interface window (shown in Figure 3) will open.

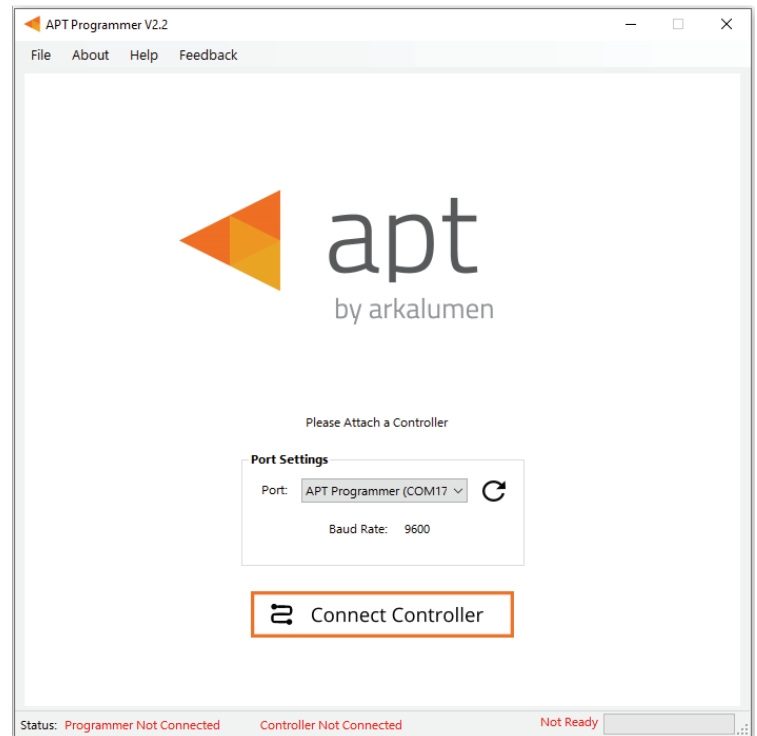


Figure 2: Programmer Connect window

*Note: Once connected, if the APT Programmer is not displayed in the port list, please run the CDM212364\_Setup file sent with the APT Programmer software to install the drivers.*

# Using the Programmer Interface Window

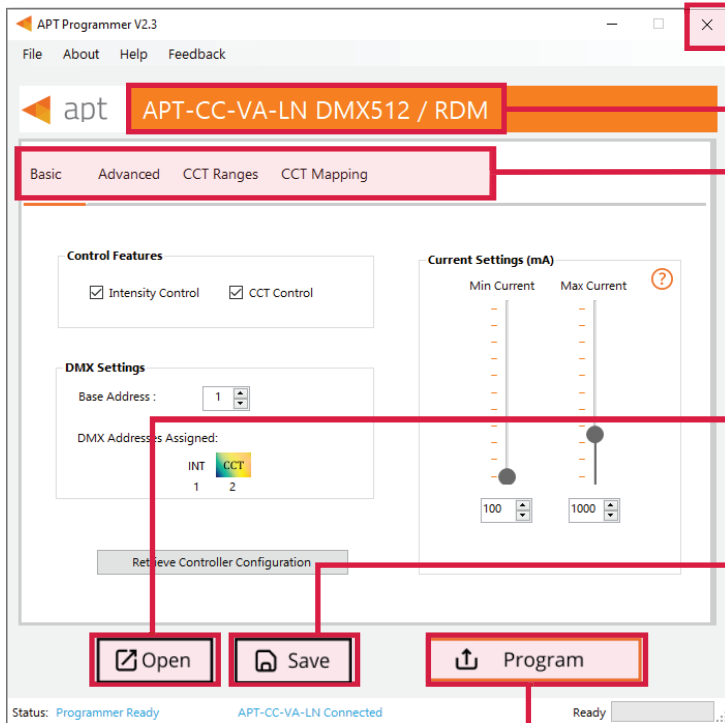


Figure 3: Programmer Interface window

Exit the APT Programmer Interface by either clicking **x**, pressing **Ctrl+Q** or selecting **File > Exit**. This will open a window with the option to save the current configuration.

*Note: Clicking **No** will discard all unsaved configurations.*

Displays the connected APT Controller.

Navigate through settings quickly by clicking on the tabs.

Open a previously saved configuration file (.ARKENC) by either clicking **Open**, pressing **Ctrl+O** or selecting **File > Open** from the menu.

Save the current configuration by either clicking **Save**, pressing **Ctrl+S** or selecting **File > Save** as from the menu. A .txt file is created with a readable summary of the saved configurations and a .ARKENC file which is used to upload the saved configurations to the APT Programmer User Interface or to APT the Production Programmer.

When satisfied with the configuration, click **Program** to program the controller.

The progress bar displays the status of the current task.



Displays **Programmer Ready** if the APT Programmer Interface has successfully connected to the APT Programmer. If no connection has been established, it will read **Programmer Not Connected**.

Displays the currently connected APT Controller and its hardware version. If no connected APT controller is found, it will read **Controller Not Connected**.

The Ready field in the Status Bar displays:

- Ready
- Not Ready
- Successfully Programmed
- Retrieve Successful
- Wrong Controller Connected
- No Controller Identified

Figure 4: Programmer Interface window - Status Bar at bottom of window of Fig 3

# Basic Tab

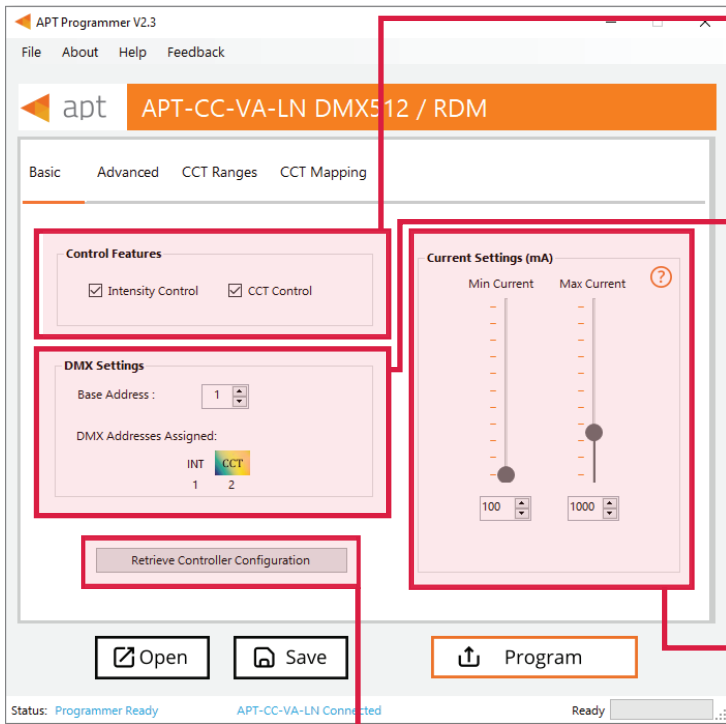


Figure 5: Programmer Interface window - Basic tab

Click the boxes to enable/disable a control feature.

- CCT Control enables calibrated color temperature control (warm or cool light) and reserves a single DMX address.
- Intensity Control enables output current control (brightness) and reserves a single DMX address.

The DMX base address, ranging from 1 to 512, is the first address used by the APT Controller.

*Example: If addresses 1 through 6 are reserved for controllers in other zones, a base address of 7 can be selected; addresses 7 and 8 will then be reserved for the controller's intensity and CCT control respectively.*

With the slider, or by entering a numerical value, adjust the minimum and maximum current delivered to the LED module.

*Note: Minimum and maximum currents are capped by the connected controller or driver selected in the **Advanced** tab.*

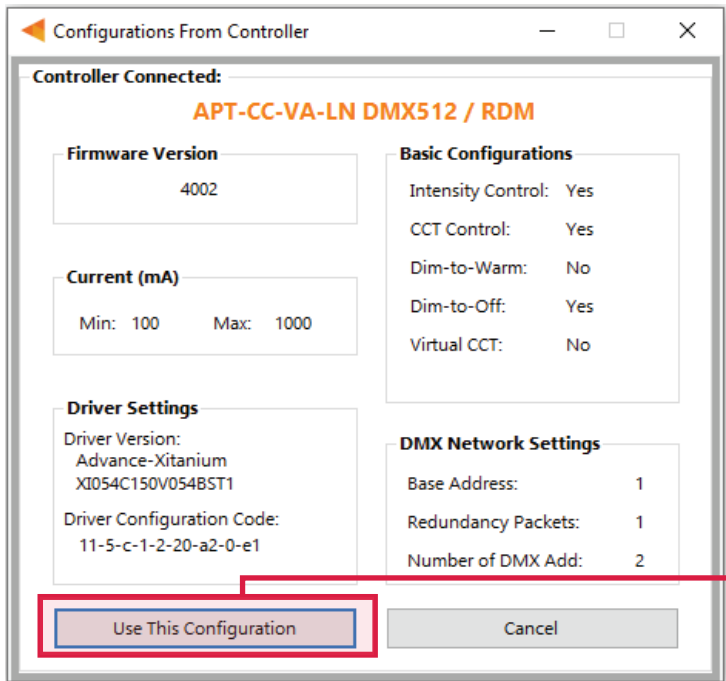


Figure 6: Configurations from Controller window

Click **Retrieve Controller Configuration** to view the currently programmed configurations of the connected controller. A separate window will open with the controller's configuration (shown in Figure 7).

Click **Use This Configuration** to import the controller's current configuration into the APT Programmer Interface.

*Note: All APT Programmer Interface settings will be changed to the controller's current configuration.*

# Advanced Tab

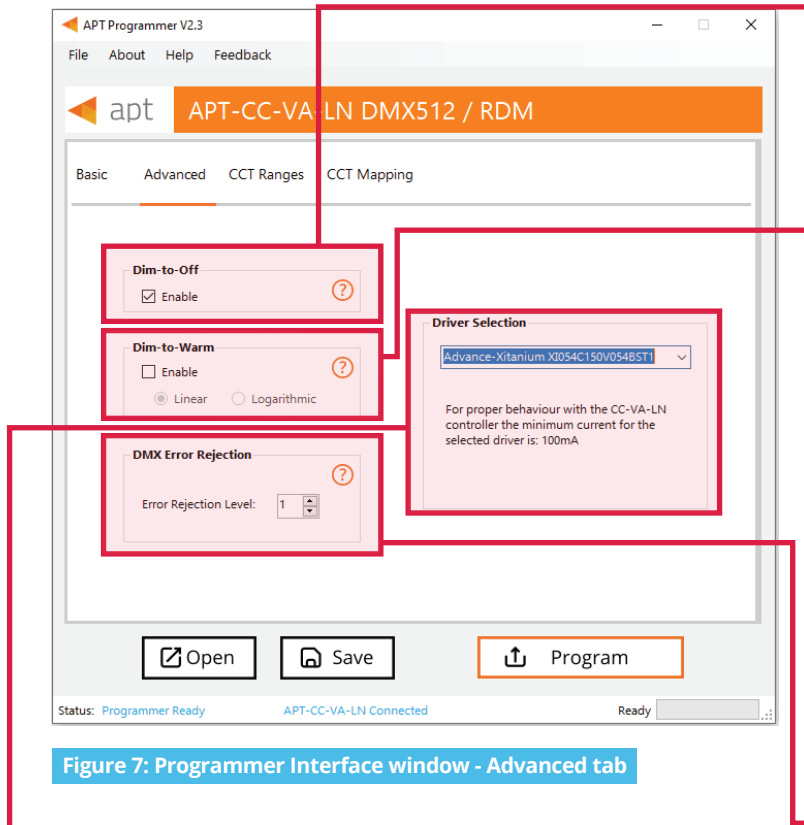


Figure 7: Programmer Interface window - Advanced tab

## Driver Selection

From the drop-down menu, select the driver being used. Arkalumen requires this to ensure that the APT controller and the driver are synchronized.

*Note: If the driver is not on the list, please contact Arkalumen.*

- 1 Select **Custom** from the drop-down list.
- 2 Enter the **Driver Configuration Code** value provided by Arkalumen.
- 3 Click **Check Configuration Code** to validate the entered driver configuration code.
- 4 If code is valid, the proper driver values will be programmed into the controller when clicking the **Program** button.

## Dim-to-Off

Click the box to enable **Dim-to-Off** for the APT Controller to fully turn off the LEDs when the specified minimum current is reached.

## Enabling Dim-to-Warm

- 1 Click the box to enable **Dim-to-Warm**. When dimming LEDs, the calibrated correlated color temperature (CCT) does not change. The Dim-to-Warm feature imitates the effect of halogen lamps, which get warmer when dimmed. Note: Use of a 2 channel is required.
- 2 Select either Linear or Logarithmic transition between cool and warm light.

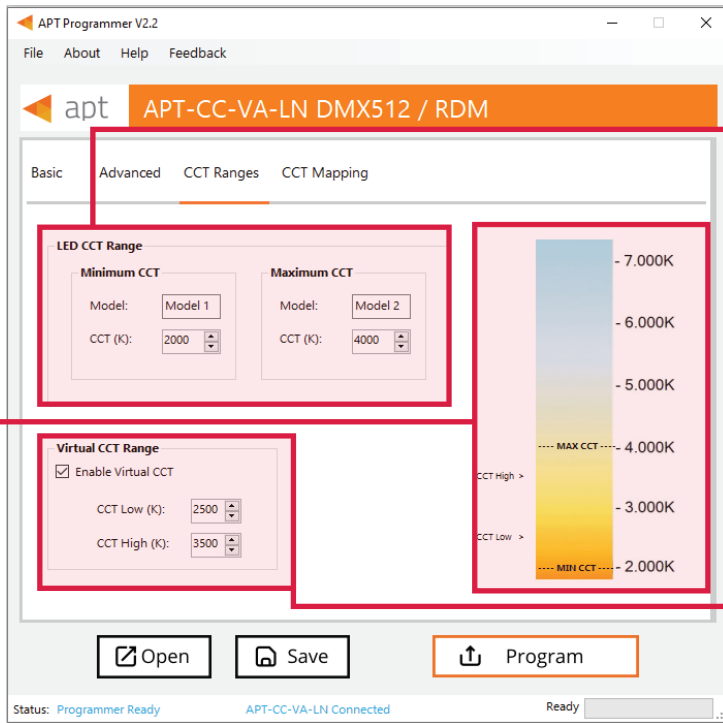
*Note: When enabling **Dim-to-Warm**, 0-10V Trim Adjust and its graph get disabled.*

## DMX Error Rejection

Enter the **Error Rejection Level**, ranging from 0 to 16, to set the number of consistent DMX packets required to make change.

*Note: Values of 0 or 1 are recommended for general use. Higher values are recommended for high interference situations, or when DMX values change rapidly or often.*

# CCT Ranges Tab



## Setting a virtual (custom) CCT range

- 1 Enter the **LED CCT Range** using the **Minimum CCT** and **Maximum CCT** values supported by the connected LED module.  
*Note: The current settings will be shown as MIN CCT and MAX CCT in the right-hand column.*
- 2 Enter the LED **Model** numbers associated with the minimum and maximum CCT to add further information for the generated report.
- 3 Click the box to enable **Virtual CCT**.
- 4 Enter **CCT low** and **CCT high** values.  
*Note: **CCT low** must be greater than or equal to **Minimum CCT**, while **CCT high** must be less than or equal to **Maximum CCT**.*

Figure 8: Programmer Interface window - Virtual CCT tab

The selection will be shown as **CCT Low** and **CCT High** in the column on the right-hand side of the Programmer Interface window.

*Note: If enabled, the **Virtual CCT Range** takes precedence over the **LED CCT Range**.*

# CCT Mapping Tab

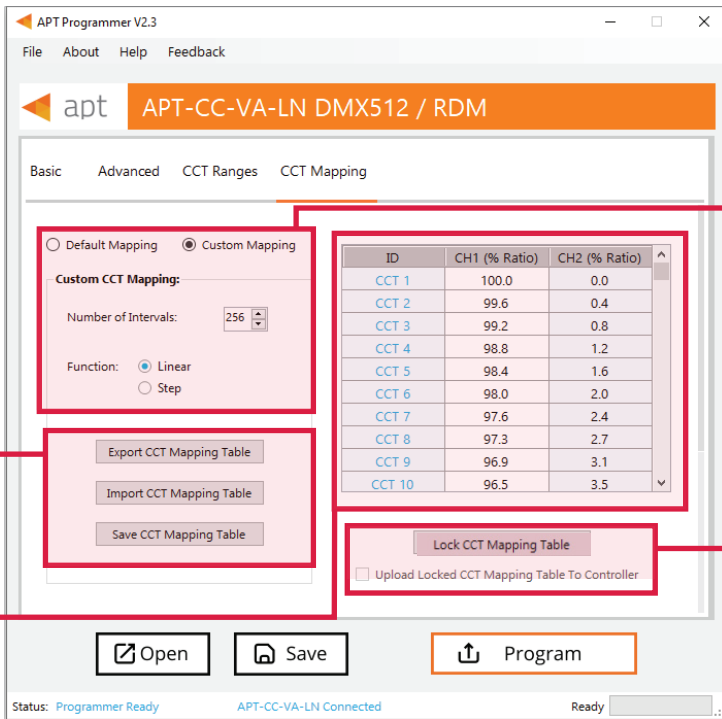


Figure 9: Programmer Interface window - CCT Mapping tab

Displayed in the table, each CCT value is mapped to a mix ratio of LED channels **CH1** and **CH2**, while each channel has a CCT ratio ranging from minimum (0%) to maximum (100%). Default mapping evenly spreads out 256 values along a linear curve. Click the box to enable Default Mapping.

*Note: Each CCT value's corresponding **CH1/CH2** percentage ratios will always sum to 100%.*

Enable **Export**, **Import**, or **Save** of the CCT Mapping Table by selecting button. Detailed steps on page 7.

## Uploading CCT Custom Mapping

- 1 Select **CCT Control** feature in the **Basic Tab**.
- 2 Click the **Custom Mapping** button in the **CCT Mapping** tab.
- 3 Enter the number of CCT Intervals, ranging from 2 to 256, CH1/CH2 percentage ratios will evenly distribute over the new CCT.
- 4 Select either **Linear** or **Step** function. Linear will create a CCT mapping with linear transitions between each interval point. Step will create a CCT mapping with step transitions between each interval point.
- 5 Click the **CH1** column in the table to enter a custom CCT percentage ratio, the corresponding **CH2** value will automatically update.

*Note: Reselecting **Default Mapping** will open a window with the option to save the current custom mappings.*

Click **Lock CCT Mapping Table** to prevent changes from being made to the mapping table, this will also update the graph (shown in Figure 10).

Click the **Upload Locked CCT Mapping To Controller** box to upload the mapping table when clicking **Program**.

Click **Unlock CCT Mapping Table**, when the mapping table is locked, to make changes to the table.

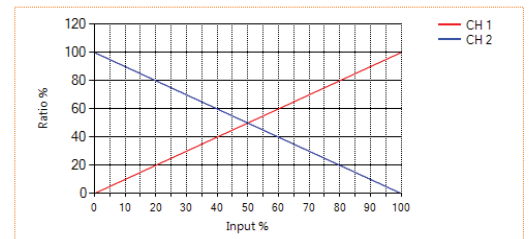


Figure 10: CCT mapping graph



## Using Excel to Customize the CCT mapping table

- 1 Click **Export Mapping Table** to generate a spreadsheet containing the mapping table that is currently open.
- 2 Modify the mapping table directly in the spreadsheet, make sure all editable cells contain a value.
- 3 Save the spreadsheet (.xlsx).

## Saving the CCT mapping table

- 1 Click **Save Mapping Table** to save the current mapping table.
- 2 Find a save location for the generated spreadsheet file (.xlsx) containing the mapping table that is currently open.
- 3 Name and save the file to the desired location.

## Importing a previously saved CCT mapping table

- 1 Click **Import Mapping Table** to open a previously saved mapping table in the APT Programmer Interface.
- 2 Select a previously saved mapping table spreadsheet file (.xlsx) in the file browser.
- 3 Click **Open**, in the file browser, to import the file. If the spreadsheet is formatted correctly, it will be successfully imported otherwise an error message will be displayed and the file will not be imported.

*Tip: scroll to the bottom of the window to see graphs (shown in Figure 10) of the current mapping configuration.*

# Generating Labels



Figure 11: Programmer Interface window - CCT Mapping tab

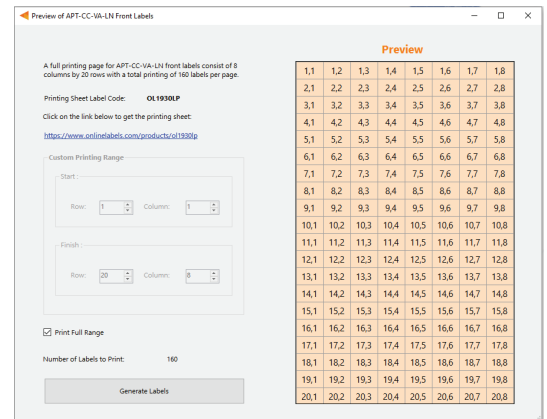


Figure 12: Label generation print preview window

- 1 Select **File > Generate Label** or press **Ctrl +L** to open the Label Generation window (shown in Figure 11).
- 2 Input the 4-digit **ID Number** written on the original label (shown in Figure 17). The ID Number indicates the production build of the APT Controller.
- 3 Click **Generate Labels**.
- 4 Input the starting and finishing rows and columns that will fit on the back or front labels. The selected range is highlighted in blue (Figure 12).
- 5 Select **Print Full Range** to print the whole page.
- 6 Click **Generate Labels**, the default web browser will open and display a preview of the print.

*Note: Arkalumen recommends using Google Chrome and setting margins to **None** in the printing options.*



To obtain blank labels, contact Arkalumen or visit [onlinelabels.com](https://www.onlinelabels.com)  
 Labels: <https://www.onlinelabels.com/products/ol1930lp>  
 When ordering, Arkalumen recommends selecting Weatherproof Polyester labels in a material suited for your printer.

# Generating a Report

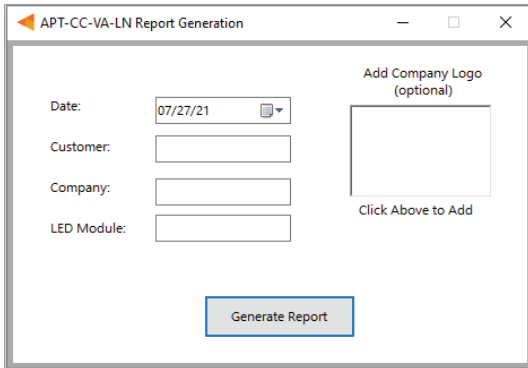


Figure 13: Report Generation window

- 1 Select **File > Generate Report**, or press **Ctrl+R**, to open the Report Generation Window (shown in Figure 13).
- 2 Enter the **Date, Customer, Company, and Light Engine** part number to customize the report.
- 3 Click on the white box under **Add Company Logo** to include a logo in the report (*optional*).
- 4 Select the desired logo (.jpg) in the file browser and click **Open** (*optional*).
- 5 Click **Generate Report**, the default web browser will open and display a preview of the print (shown in Figure 14).

Note : Arkalumen recommends using Google Chrome, and setting margins to **None** in the printing options.

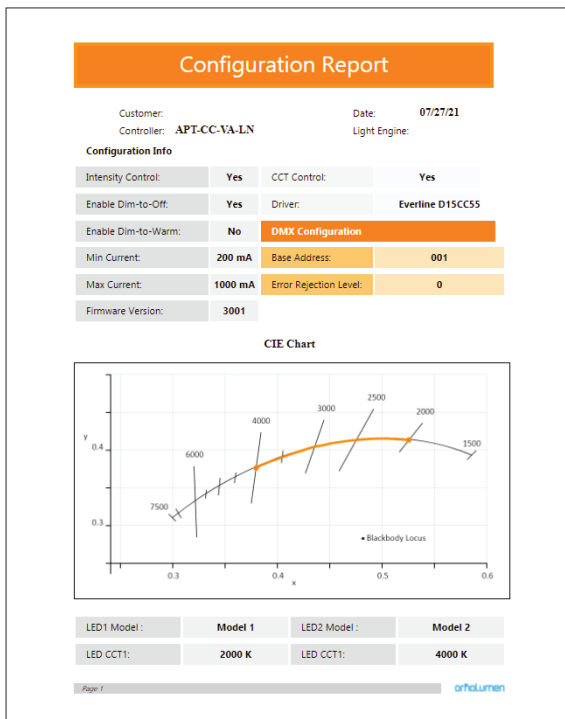


Figure 14: Parts of an Example report



If at any time you have comments or suggestions regarding the APT Programmer or APT Controller, please click on the **Feedback** tab in the top menu bar to submit information to our team. We appreciate all feedback and are committed to continuously improving our products. For immediate support, please contact the Arkalumen team at 1-877-856-5533 or email [support@arkalumen.com](mailto:support@arkalumen.com)

**Arkalumen** designs and manufactures intelligent LED controllers and custom LED modules for light fixture manufacturers in order to enable energy efficient and feature rich lighting solutions. For over 10 years, **Arkalumen** has focused on simple, flexible, cost effective solutions that allow highly differentiated fixtures to be launched in commercial, industrial, and residential markets. With 30+ patents, we have a history of driving innovation within the lighting industry and are proud to push the limits of what lighting in applications in education, healthcare, film and horticulture can be.

Proudly engineered and assembled in North America.

Visit [Arkalumen.com](https://www.arkalumen.com) to see our full product portfolio



For any further support please contact Arkalumen  
[support@arkalumen.com](mailto:support@arkalumen.com)  
toll free at 1.877.865.5533

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