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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.



Using the APT Programmer

Installing the APT Programmer Interface

- Click on the provided link to download the APT Programmer Interface folder.
- 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 C button until the correct port is visible.
- Click Connect Controller to establish a connection. Once connected, the APT Programmer Interface window (shown in Figure 3) will open.



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

APT Programmer V2.3 File About Help Feedback APT-CC-VA-LN DMX512 Basic Advanced CCT Ranges CCT Mapping	- • ×	 Exit the APT Programmer Interface by either clicking ×, pressing Ctrl+Q or selecting File > Exit . This will open a window with the option to save the current configuration. <i>Note: Clicking No will discard all unsaved</i> <i>configurations.</i>
Control Features Intensity Control CCT Control DMX Settings Base Address : 1 + DMX Address s Assigned: INT CCT 1 2	Current Settings (mA) Min Current Max Current 7 	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.
Ret ieve Controller Configuration	Program Ready	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 statu	is of the current task.	



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

4 1070 100	
API Programmer V2.3 File About Help Feedback	
APT-CC-VA-LN DMX5	12 / RDM
Basic Advanced CCT Ranges CCT Mapping	
Control Features	Current Settings (mA) Min Current Max Current
DMX Settings Base Address : 1 ÷ DMX Addresses Assigned: INT CCT 1 2	
Retrieve Controller Configuration	
🖸 Open 🕞 Save	1 Program
Status: Programmer Ready APT-CC-VA-LN Connected	Ready
Figure 5: Programmer Interface wind	dow - Basic tab

ntroller Connected:	
APT-CC-VA-LN	DMX512 / RDM
Firmware Version	Basic Configurations
4002	Intensity Control: Yes
	CCT Control: Yes
Current (mA)	Dim-to-Warm: No
	Dim-to-Off: Yes
Min: 100 Max: 1000	Virtual CCT: No
Driver Settings	
Driver Version:	DMX Network Settings
XI054C150V054BST1	Base Address: 1
Driver Configuration Code:	Redundancy Packets: 1
11-5-c-1-2-20-a2-0-e1	Number of DMX Add: 2
Use This Configuration	Cancel

Figure 6: Configurations from Controller window

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.

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

 Click Use This Configurations 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

APTProgrammer V2.3 File About Help Feedback Apt APT-CC-VA	–
Basic Advanced CCT Ranges	CCT Mapping
Dim-to-Off	7 Driver Selection
Enable inear Logarithmic DMX Error Rejection	Advance-Xitanium X054C150V054B5T1 For proper behaviour with the CC-VA-LN controller the minimum current for the selected driver is: 100mA
Error Rejection Level: 1 束	
Dpen 🕞	Save 1 Program
Status: Programmer Ready APT-O Figure 7: Programmer Int	erface 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.
- Click **Check Configuration Code** to validate the entered driver configuration code.
- 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.
- 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

APT Programmer V2.2 − X File About Help Feedback	Setting a virtual (custom) CCI
✓ apt APT-CC-VA-LN DMX512 / RDM	Enter the LED CCT Pange wing the
Basic Advanced CCT Ranges CCT Mapping	Minimum CCT and Maximum CCT values supported by the connected LED module.
LED CCT Range - 7.000K Minimum CCT Maximum CCT Model: Model: Model 2 CCT (K): 2000 + CCT (K): - 6.000K	Note: The current settings will be shown as MIN CCT and MAX CCT in the right-hand column.
- 5.000K ✓ Virtual CCT Range ✓ Enable Virtual CCT CCT High > - 3.000K	2 Enter the LED Model numbers associated with the minimum and maximum CCT to add further information for the generate report.
CCT High (K): 3500 € CCT Low >	3 Click the box to enable Virtual CCT .
	4 Enter CCT low and CCT high values.
🖸 Open 🕞 Save 🗘 Program	Note: CCT low must be greater than or equal to Minimum CCT , while CCT high
atus: Programmer Ready APT-CC-VA-LN Connected Ready	must be less than or equal to Maximum

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

APT Programmer V2.3 - X	Uploading CCT Custom Mapping
<pre>apt APT-CC-VA-LN DMX512 / RDM</pre>	 Select CCT Control feature in the Basic Tab.
Basic Advanced CCT Ranges CCT Mapping	Click the Custom Mapping button in the CCT Mapping tab.
Default Mapping Custom Mapping Custom CCT Mapping: CCT 1 100.0 0.0 CCT 2 99.6 0.4 CCT 3 99.2 0.8 Number of Intervals: 256 CCT 4 98.8 1.2 Function: E Linear CCT 5 98.4 1.6	3 Enter the number of CCT Intervals, ranging from 2 to 256, CH1/CH2 percentage ratios will evenly distribute over the new CCT.
Step CCT 6 98.0 2.0 Export CCT Mapping Table CCT 7 97.6 2.4 Import CCT Mapping Table CCT 9 96.9 3.1 Save CCT Mapping Table CCT 10 96.5 3.5 Lock CCT Mapping Table Lock CCT Mapping Table Unit of the second se	Select either Linear or Step function. Linear will create a CCT mapping with linea 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.
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	Note: Reselecting Default Mapping will open a window with the option to save the current custom mappings.
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. <i>Note: Each CCT value's corresponding CH1/CH2 percentage ratios</i>	 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).
will always sum to 100%.	Click the Upload Locked CCT Mapping To Controller box to upload the mapping table when clicking Program .
Enable Export , Import , or Save of the CCT Mapping	Click Unlock CCT Mapping Table , when the mapping table is locked, to make changes to the table.
Table by selecting button. Detailed steps on page 7.	120 100 80 CH 1 CH 2 CH 2

20

0

 \geq

Figure 10: CCT mapping graph

10 20 30 40 50 60 70 80 90 100 Input %

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 (.xslx) 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

APT-CC-VA-LN Label Generation —		>
RECONFIGURATION LABEL TO BE PRINTED		
CC-VA-LN-0001 DMX2-A001-INCT-H100-L020		
APT-CC-VA-LN Sample Label		
apt		
Place printed reconfiguration label on the area of the sample label outlined in red Controller Information ID Number: 0001	I	
Generate Labels		

				Prev	iew			
full printing page for APT-CC-VA-LN front labels consist of 8 slumns by 20 rows with a total printing of 160 labels per page.	1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8
, , , , , , , , , , , , , , , , , , , ,	2,1	2,2	2,3	2,4	2,5	2,6	2,7	2,8
inting Sheet Label Code: OL1930LP	3,1	3,2	3,3	3,4	3,5	3,6	3,7	3,8
ck on the link below to get the printing sheet:	4,1	4,2	4,3	4,4	4,5	4,6	4,7	4,8
tps://www.onlinelabels.com/products/ol1930/p	5,1	5,2	5,3	5,4	5,5	5,6	5,7	5,8
Custom Printing Range	6,1	6,2	6,3	6,4	6,5	6,6	6,7	6,8
Start :	7,1	7,2	7,3	7,4	7,5	7,6	7,7	7,8
	8,1	8,2	8,3	8,4	8,5	8,6	8,7	8,8
Row: 1 A Column: 1 A	9,1	9,2	9,3	9,4	9,5	9,6	9,7	9,8
	10,1	10,2	10,3	10,4	10,5	10,6	10,7	10,8
Finish :	11,1	11,2	11,3	11,4	11,5	11,6	11,7	11,8
	12,1	12,2	12,3	12,4	12,5	12,6	12,7	12,8
Row: 20 + Column: 8 +	13,1	13,2	13,3	13,4	13,5	13,6	13,7	13,8
	14,1	14,2	14,3	14,4	14,5	14,6	14,7	14,8
	15,1	15,2	15,3	15,4	15,5	15,6	15,7	15,8
Print Full Range	16,1	16,2	16,3	16,4	16,5	16,6	16,7	16,8
	17,1	17,2	17,3	17,4	17,5	17,6	17,7	17,8
umber of Labels to Print: 160	18,1	18,2	18,3	18,4	18,5	18,6	18,7	18,8
	19,1	19,2	19,3	19,4	19,5	19,6	19,7	19,8
Generate Labels	20,1	20,2	20,3	20,4	20,5	20,6	20,7	20,8

window

Figure 11: Programmer Interface window - CCT Mapping tab

- 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 <i>in the printing options.



To obtain blank labels, contact Arkalumen or visit 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

APT-CC-VA-LN F	Report Generation	- 🗆 X
Date:	07/27/21	Add Company Logo (optional)
Customer:		
Company:		
LED Module:		Click Above to Add
	Generate Report	
Eigure 13: P	enort Generation v	vindow

- 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).
- 6 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 <i>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 <u>support@arkalumen.com</u>

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.

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