Getting started with the XDPL8210 reference board using .dp Vision software

XDP™ digital power

Ordering code: REF-XDPL8210-U35W

About this document

Scope and purpose

The purpose of this document is to give a quick guide to operation of the XDPL8210 reference board for all power classes of LED lighting applications, and how to use the .dp Vision software to program the operating parameters of the digital controller XDPL8210.

Intended audience

This document is intended for anyone who wants to evaluate the XDPL8210 reference design for LED lighting and become familiar with the XDP™ platform.

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1 Tools

1.1 Required hardware and software tools

The required hardware and software tools are listed in **Table 1**. Please order all the hardware tools and download and install all the software tools.

Table 1 Required hardware and software tools for getting started

Name	Order link	Description	Order content
Please order all the hardware tools. Click on the links below:			
 **XDPL8210 reference board**	Click on the link: **35W reference board**	XDPL8210 reference board for LED lighting	XDPL8210 reference board Driver for LED lighting Programming cable To connect the XDPL8210 reference board with the .dp Interface Gen2
.dp Interface Gen2 	Click on the link: **IF-BOARD.DP-GEN2**	Interface board to control XDPL8210 from PC/notebook	.dp Interface Gen2 Interface for programming the XDPL8210 digital controller USB cable To connect the .dp Interface Gen2 with a PC
Please download and install all the software tools. Click on the links below:			
Graphical User Interface (GUI) for read and write access to the parameters in the OTP	Click on the link and follow the instructions in the right-hand column: **.dp Vision**	Accept the mentioned terms and conditions Click “Run” Install “dp.vision”	.dp Vision installer (*.msi)
dpVision_folder_set-up Copies auxiliary files including the parameter .csv file to the respective directory structure	Click on the link and follow the instructions in the next column: **REF-XDPL8210-U35W**	On the website of the respective product, choose the section “Tools & Software” Click on “Development Tools” Choose and open the .zip-file, choose “**REF-XDPL8210-U35W_dpvision_folder_set-up.zip**” Double-click the unpacked *msi file to install	XDP™ digital power – dp Vision set-up with the following documents: XDPL8210 parameters .csv file XDPL images file XDPL8210 documentation files XDPL system simulation and design creation tool .dp Interface Gen2 firmware

2 Getting started

Attention: The instructions in this manual work without V AC connection.

Attention: Before you connect the reference board to the mains, pay careful attention to the safety hints in the recent "REF-XDPL8210-U35W Engineering report Vx.x". Incorrect use of the reference board could be dangerous, possibly life-threatening.

2.1 Hardware connection

Connect the .dp Interface Gen2 to a notebook/PC with the USB cable.

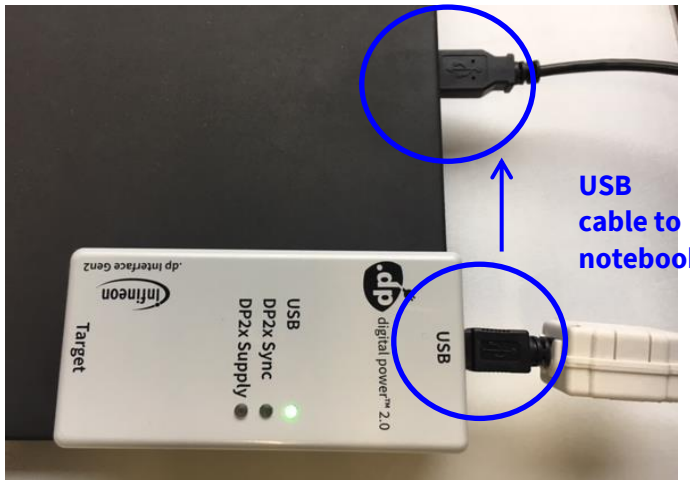

Figure 1 Connection between .dp Interface Gen2 and notebook

Note: Sometimes the detection of the .dp Interface Gen2 fails on USB3.0 ports. Therefore the use of a USB2.0 port might be necessary (which can be provided by an external USB2.0 hub if the machine only offers USB3.0 ports).

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Connect the .dp Interface Gen2 to the XDPL8210 reference board with the programming cable.

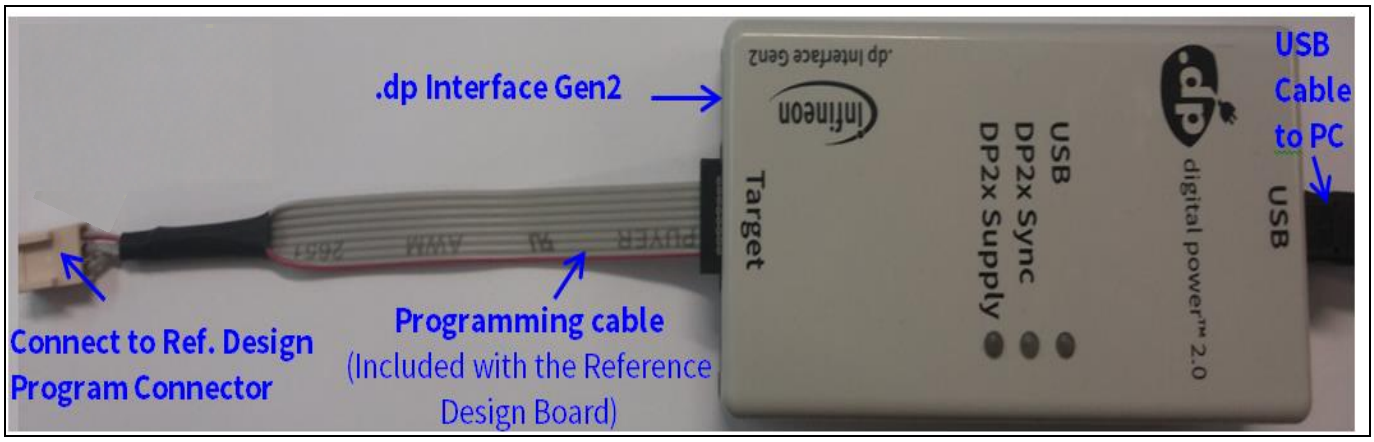


Figure 2 .dp Interface Gen2 connection

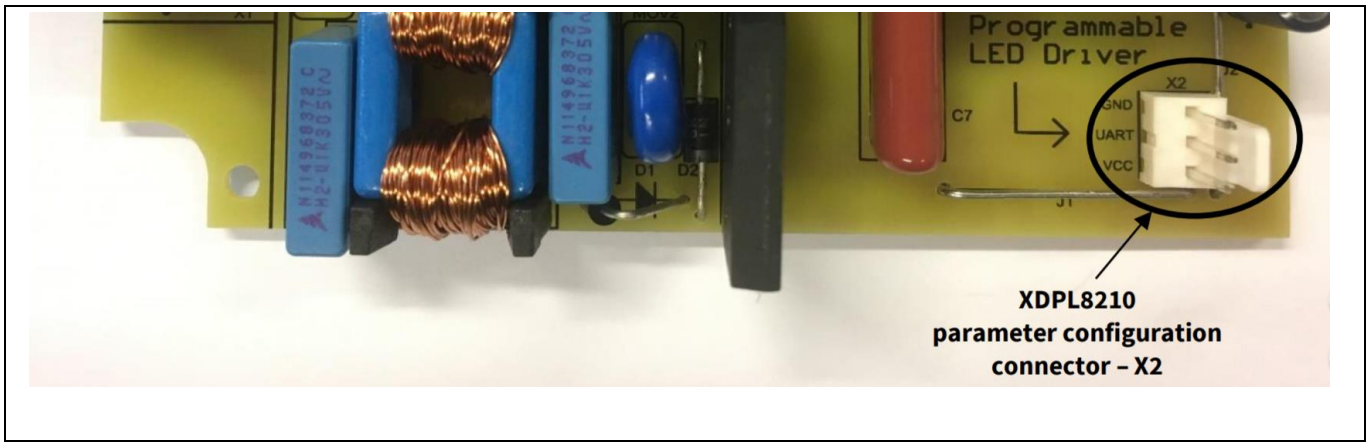


Figure 3 Connection between the .dp Interface Gen2 and the XDPL8210 reference board

Note: Please ensure that the connector of the programming cable is plugged in correctly: the colored wire indicates Pin 1 and should be connected to the V_{cc} pin on the XDPL8210 reference board.

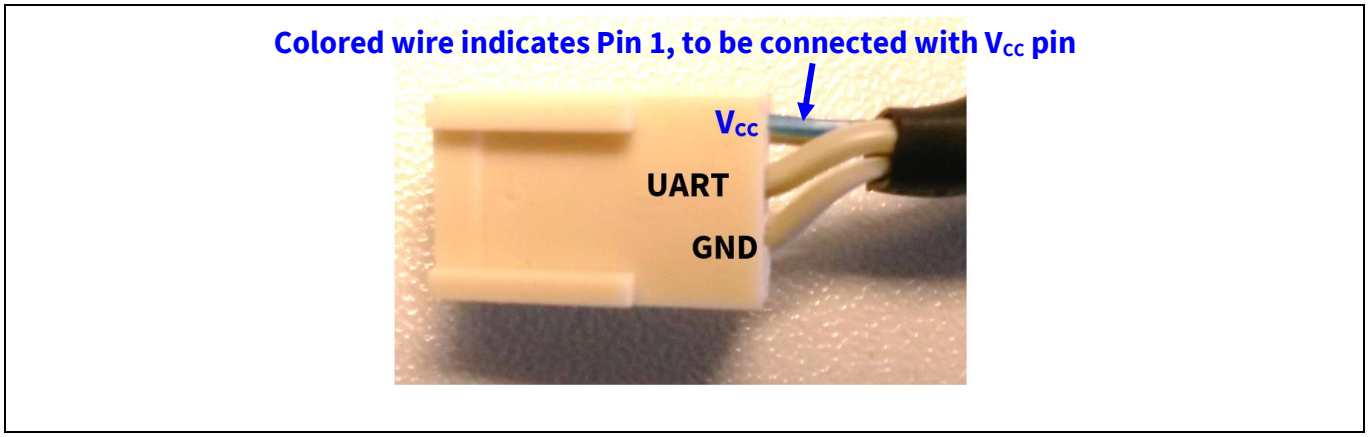


Figure 4 Program connector

2.2 Parameter configuration

Start the .dp Vision program by clicking the ".dp Vision" shortcut on the desktop. The screen shown in **Figure 5** will appear.

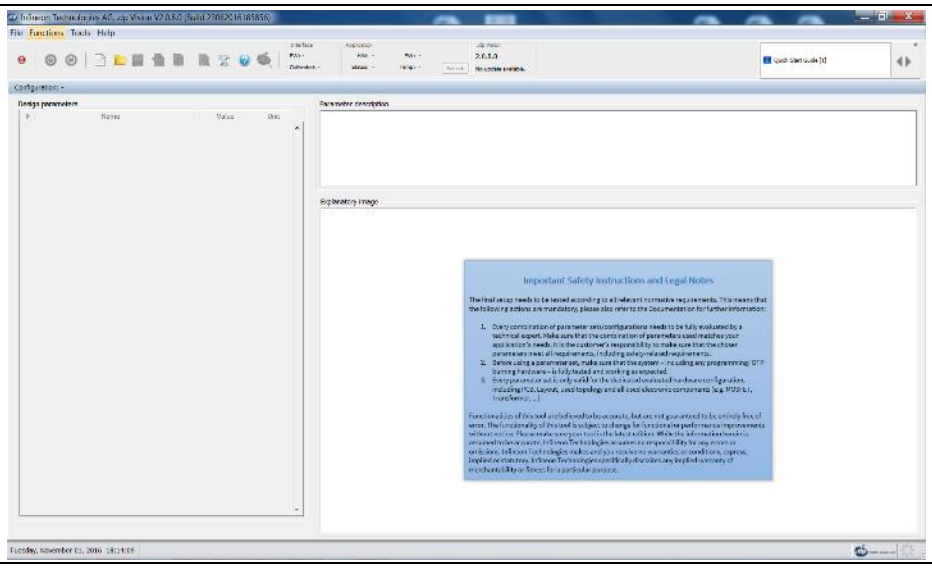


Figure 5 Starting .dp Vision

Load the XDPL8210 parameters configuration file (*.csv) in the folder *(HOME) \Infineon Technologies AG\.dp vision\Parameters* as shown in **Figure 6**. Please select the corresponding file (e.g., for a 35 W board choose the "XDPL8210_FWvx.x.x_35W" file).

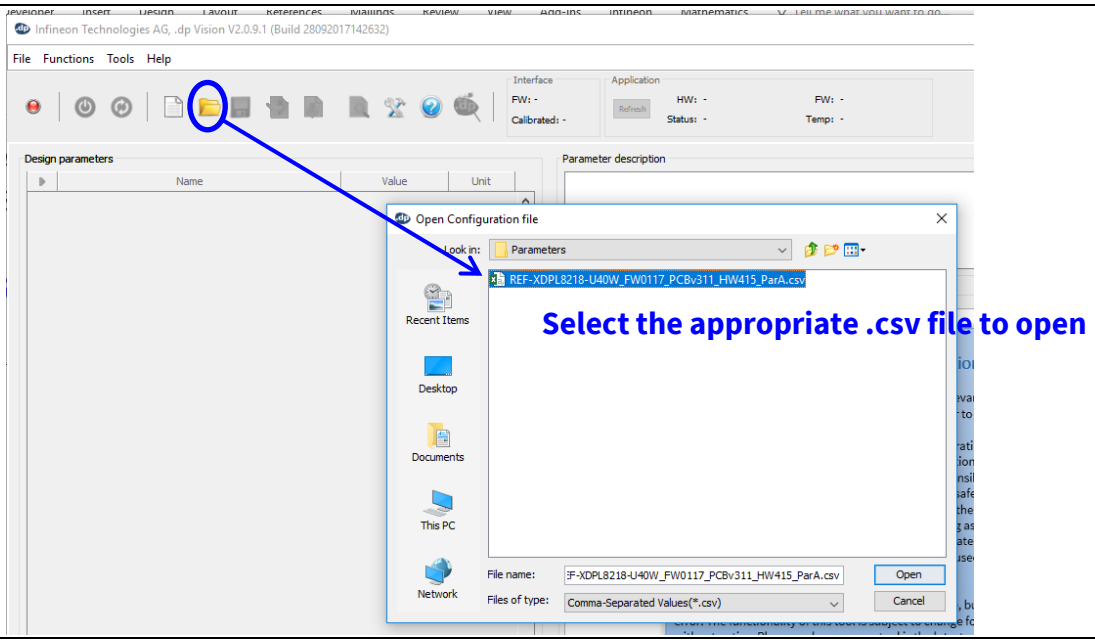


Figure 6 Loading the .csv file

After loading the parameters .csv file, a list of XDPL8210 configurable parameters will show (see the box on the left in **Figure 7**). These values can be modified by users and will turn blue.

Getting started

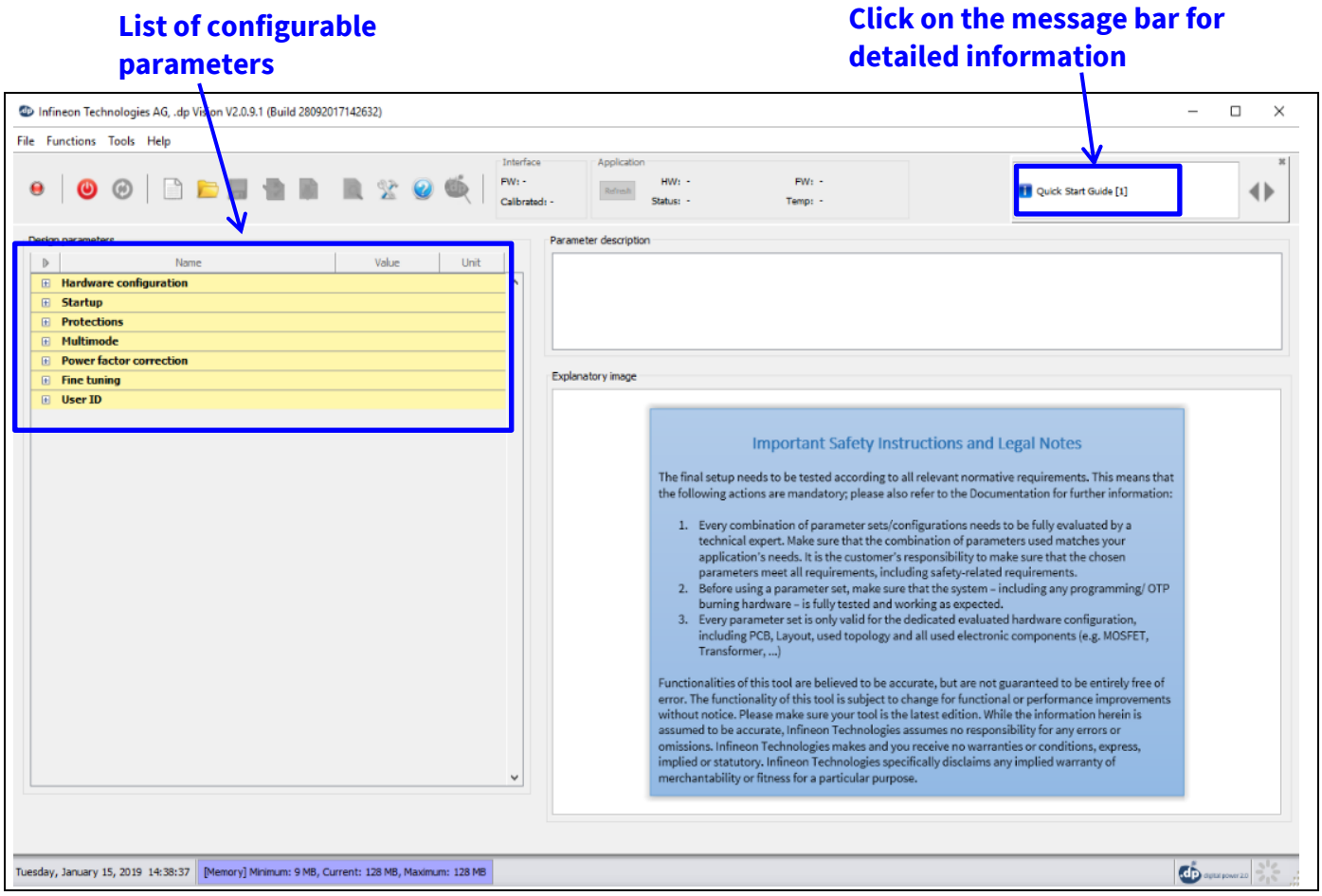


Figure 7 Parameters file loaded in .dp Vision

Note: ***The message bar shown in Figure 7 provides detailed information. For further information, please refer to the "dpvision User manual".***

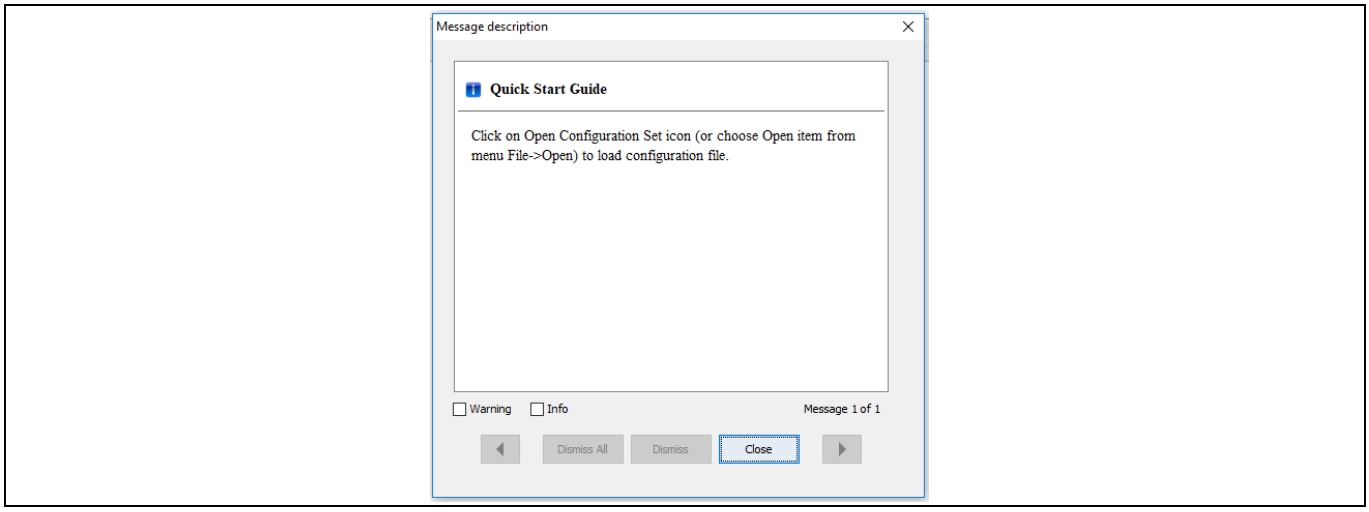


Figure 8 Message description

Getting started

There are two options available to configure the IC based on the parameter values in .dp Vision.
1) Non-permanent for testing
2) Permanent for regular operation

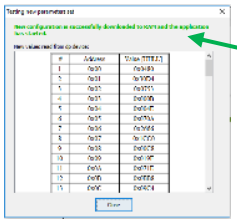
1) Test configuration

This function will download the parameter values from .dp Vision into the XDPL8210 RAM memory space, and it will then be followed by an automatic IC start-up for application testing with the new configuration. As long as the board is activated, the V_{CC} is supplied.

Parameter configuration with this option is not permanent, because the loaded RAM content gets lost once the IC supply voltage is turned off or the IC restarts due to certain protections. For detailed information, please refer to the "dpvision User manual" in the "Documents" folder.

Table 2 shows the procedures for using test configuration function in .dp Vision to load the new parameter values in the RAM and test the application with the new configuration.

Table 2 Test configuration procedures

Step	Instruction
1	Open configuration file and change parameter value (see example in **Figure 7**).
2	Ensure that the primary supply voltage (AC input) to the board is not active and the hardware connection for configuration is OK based on **Figure 2** and **Figure 3**.
3	Press  to supply power and establish a connection to the target XDPL8210. After this, XDPL8210 will be in configuration mode and the device status  should change to  .
4 (optional)	Ensure that the LED output is connected to a load, and switch on AC input (e.g. 230 V AC). After this, the board will not start because XDPL8210 is still in configuration mode.
5	Press  to test the configuration with target XDPL8210. After this, the IC will automatically start normal operation with the new configuration and the window below will pop up:  New configuration is successfully downloaded to RAM and the application has started Note: If the parameter configuration is equivalent to to the pre-existing parameters, the XDPL8210 will not download them to RAM.
6	Press "Close" on the pop-up window.
7	To test another configuration, repeat these steps.

Note: If there is any error between steps 1 and 7, refer to the message bar of .dp Vision for the error message. For further information, please refer to the "dpvision User manual".

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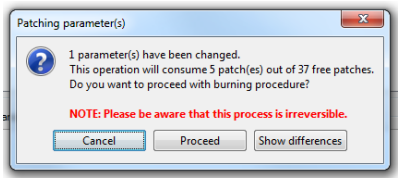
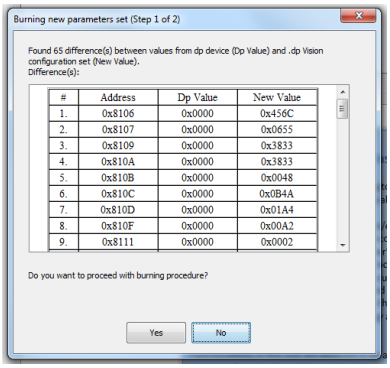
2) Burn configuration

As the XDPL8210 chip on the 35 W reference design PCB has a first full set of parameters in its One-Time Programmable (OTP) memory space, only changed parameters are written in the OTP memory. For detailed information, please refer to the “dpvision User manual” in the “Documents” folder.

Table 3 shows the procedures to burn a parameter update in .dp Vision into the OTP memory.

Table 3 Burn configuration procedures

Step	Instruction
1	Load configuration file (see example in **Figure 7**).
2	Modify the parameter value needed, then press **[File]** >> **[Save]** or **[File]** >> **[Save as]** to save the configuration file. Otherwise, proceed to step 3.
3 (optional)	Disconnect or turn off AC input voltage and check the hardware connection for configuration, see **Figure 2** and **Figure 3**.
4	Press  to supply power and establish connection to the target XDPL8210. After this, XDPL8210 will enter configuration mode and the device status  should change to  .
5	Press  to burn the configuration into target XDPL8210. After this step, a window pops up, like one of these below.   Note: If the parameter configuration is equivalent to to the pre-existing parameters, the XDPL8210 will not burn them in the OTP memory.
6	Press “Proceed” or “Yes” to burn the configuration. After this, a window pops up indicating success.
7	Press “OK” on the pop-up window then disconnect the programming cable from the board connector and test the application, if needed.

Revision history

Major changes since the last revision

Page or reference	Description of change
Table 1	.dp Vision folder setup link and board image corrections
Figure 3	Board image correction
Cover page	Add ordering code of the board

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