

# Getting started with the XDPL8218 reference board using .dp Vision software

## XDP™ digital power

**Ordering code: REF-XDPL8218-U40W**

## About this document

### Scope and purpose

The purpose of this document is to give a quick guide to operation of the XDPL8218 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 XDPL8218 digital controller.

### Intended audience

This document is intended for anyone who wants to evaluate the XDPL8218 reference design for LED lighting and become familiar with the XDP™ platform.

## Table of contents

<b>About this document</b> .....	<b>1</b>
<b>Table of contents</b> .....	<b>1</b>
<b>1 Tools</b> .....	<b>2</b>
1.1 Required hardware and software tools.....	2
<b>2 Getting started</b> .....	<b>3</b>
2.1 Hardware connection.....	3
2.2 Parameter configuration.....	5
Revision history.....	9



## Tools

# 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	Ordering link	Description	Ordering content
Please order all the hardware tools. Click on the links below:			
 <p><b>XDPL8218 reference board</b></p>	Click on the link: <a href="#">40W reference board</a>	XDPL8218 reference board for LED lighting	XDPL8218 reference board Driver for LED lighting Programming cable To connect the XDPL8218 reference board with the .dp Interface Gen2
 <p><b>.dp Interface Gen2</b></p>	Click on the link: <a href="#">IF-BOARD.DP-GEN2</a>	Interface board to control XDPL8218 from PC/notebook	.dp Interface Gen2 Interface for programming the XDPL8218 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:			
<p><b>Graphical User Interface (GUI)</b> for read and write access to the parameters in the OTP</p>	Click on the link and follow the instruction in the right column: <a href="#">.dp Vision</a>	Accept the mentioned terms and conditions Click “Run” Install “dp.vision”	.dp Vision installer (*.msi)
<p><b>dpVision_folder_set-up</b> Copies auxiliary files including the parameter .csv file to the respective directory structure</p>	Click on the link and follow the instruction in the next column: <a href="#">REF-XDPL8218-U40W</a>	On the website of the respective product, choose the section “Tools & Software” Click on “Development Tools” Choose and open the .zip file <b>“REF-XDPL8218-U40W_dpvision_folder_set-up.zip”</b> Double-click the unpacked *.msi file to install	XDP™ digital power – .dp Vision set-up with the following documents: XDPL8218 parameters .csv file XDPL images file XDPL8218 documentation files XDPL system simulation and design creation tool .dp Interface Gen2 firmware

## Getting started

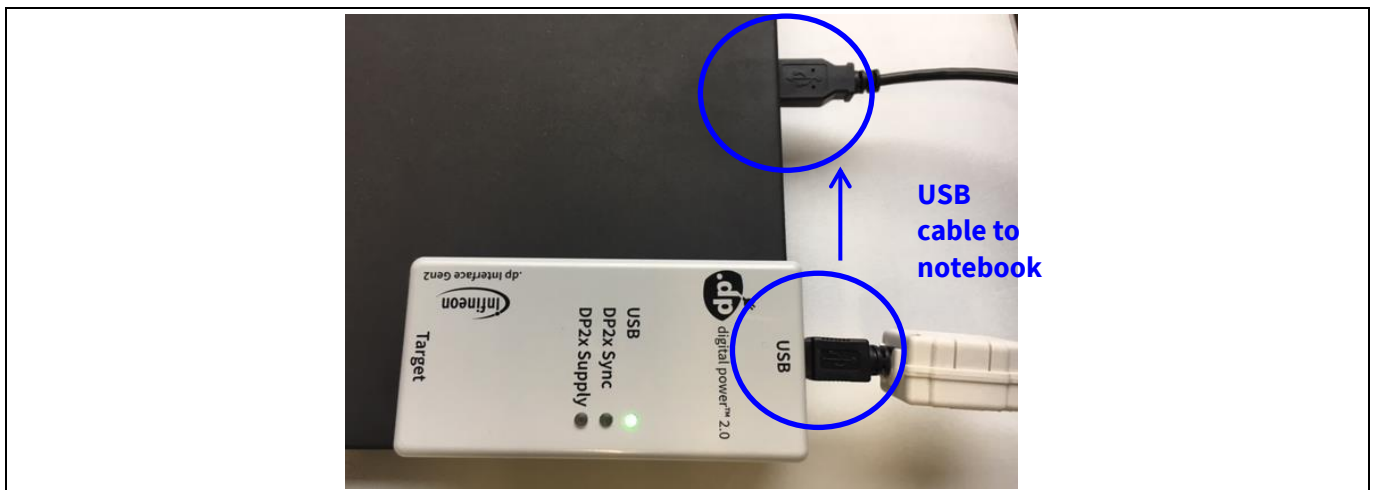
### 2 Getting started

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

**Attention:** Before you connect the reference board to the mains, pay attention to the safety hints in the recent “REF-XDPL8218-U40W Engineering report Vx.x” thoroughly. Incorrect use of the reference board could be dangerous, and even 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).

# Getting started with the XDPL8218 reference board using .dp Vision software

## Getting started

Connect the .dp Interface Gen2 to the XDPL8218 reference board with the programming cable.

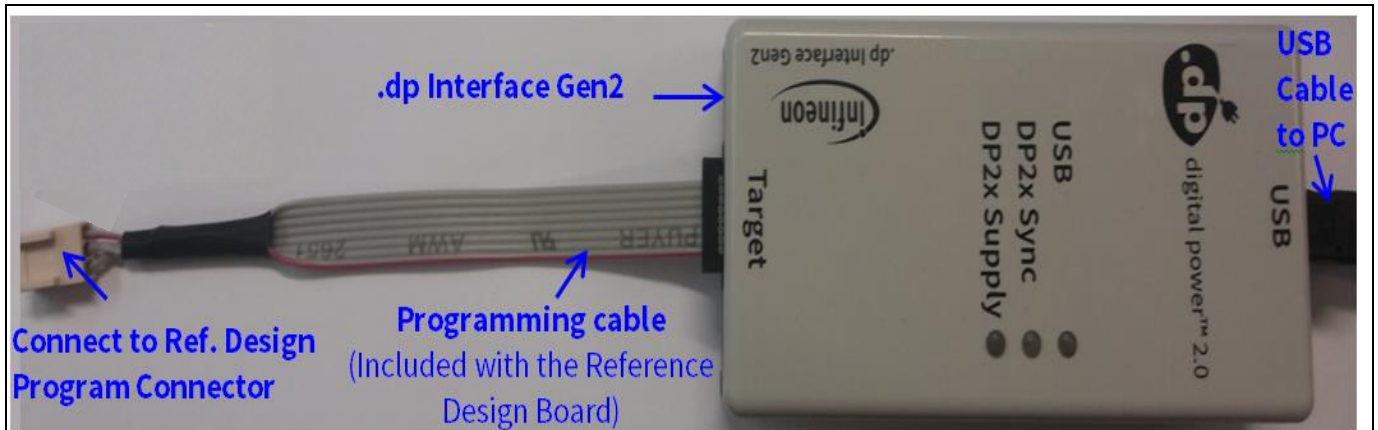


Figure 2 .dp Interface Gen2 connection

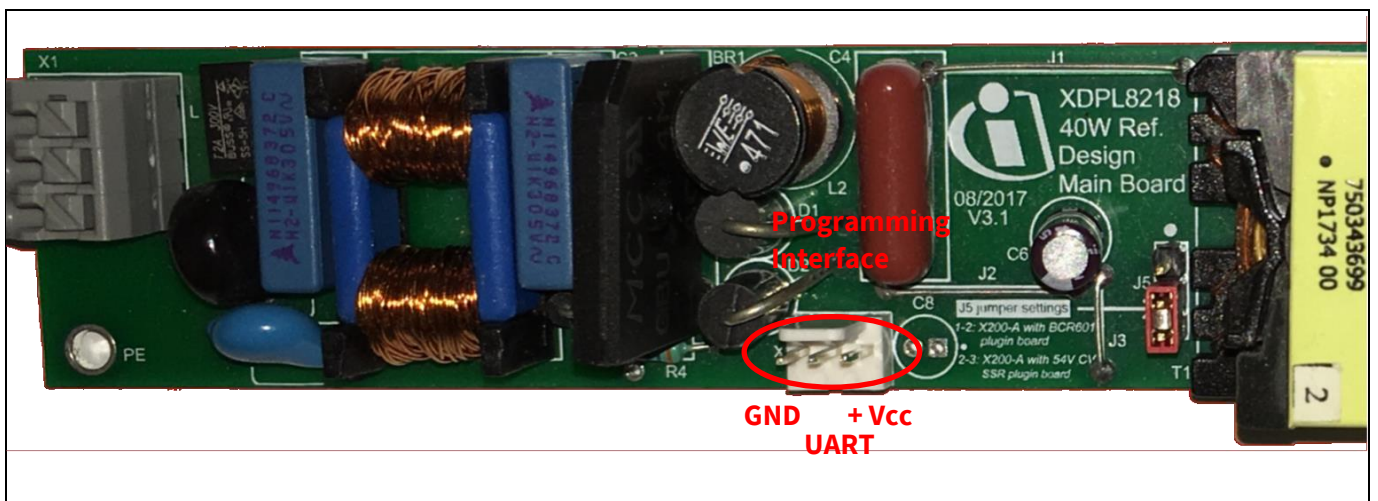


Figure 3 Connection between the .dp Interface Gen2 and the XDPL8218 reference board

**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 XDPL8218 reference board.

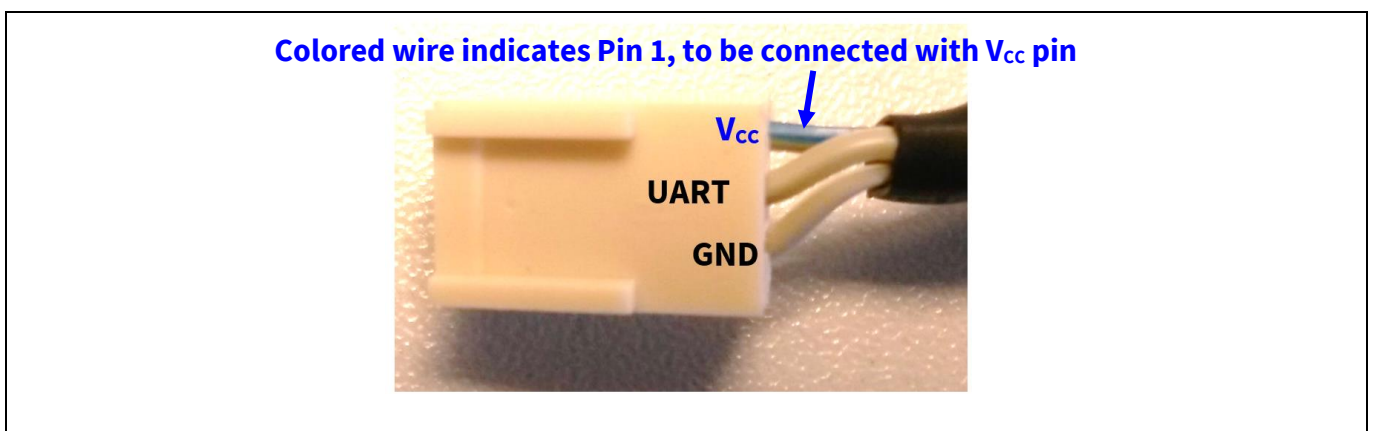
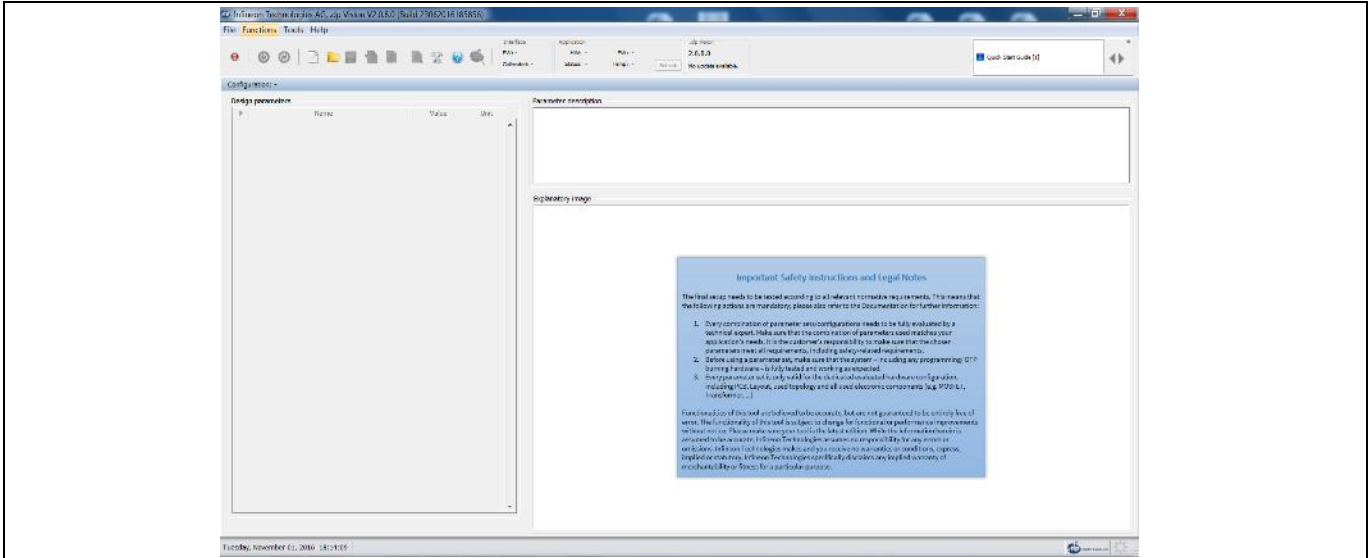


Figure 4 Program connector

## Getting started

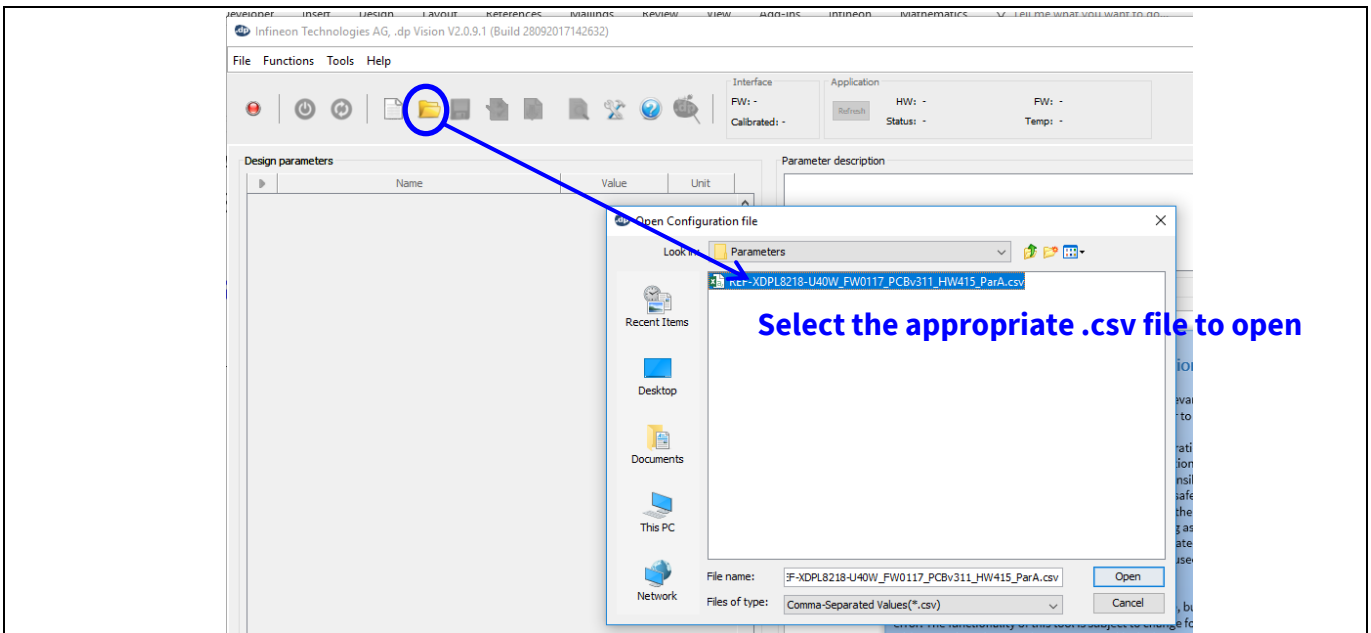
### 2.2 Parameter configuration

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 XDPL8218 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 40 W board choose the “XDPL8218\_FWvx.x.x\_40W” file).



**Figure 6 Load the .csv file**

After loading the parameters .csv file, a list of XDPL8218 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

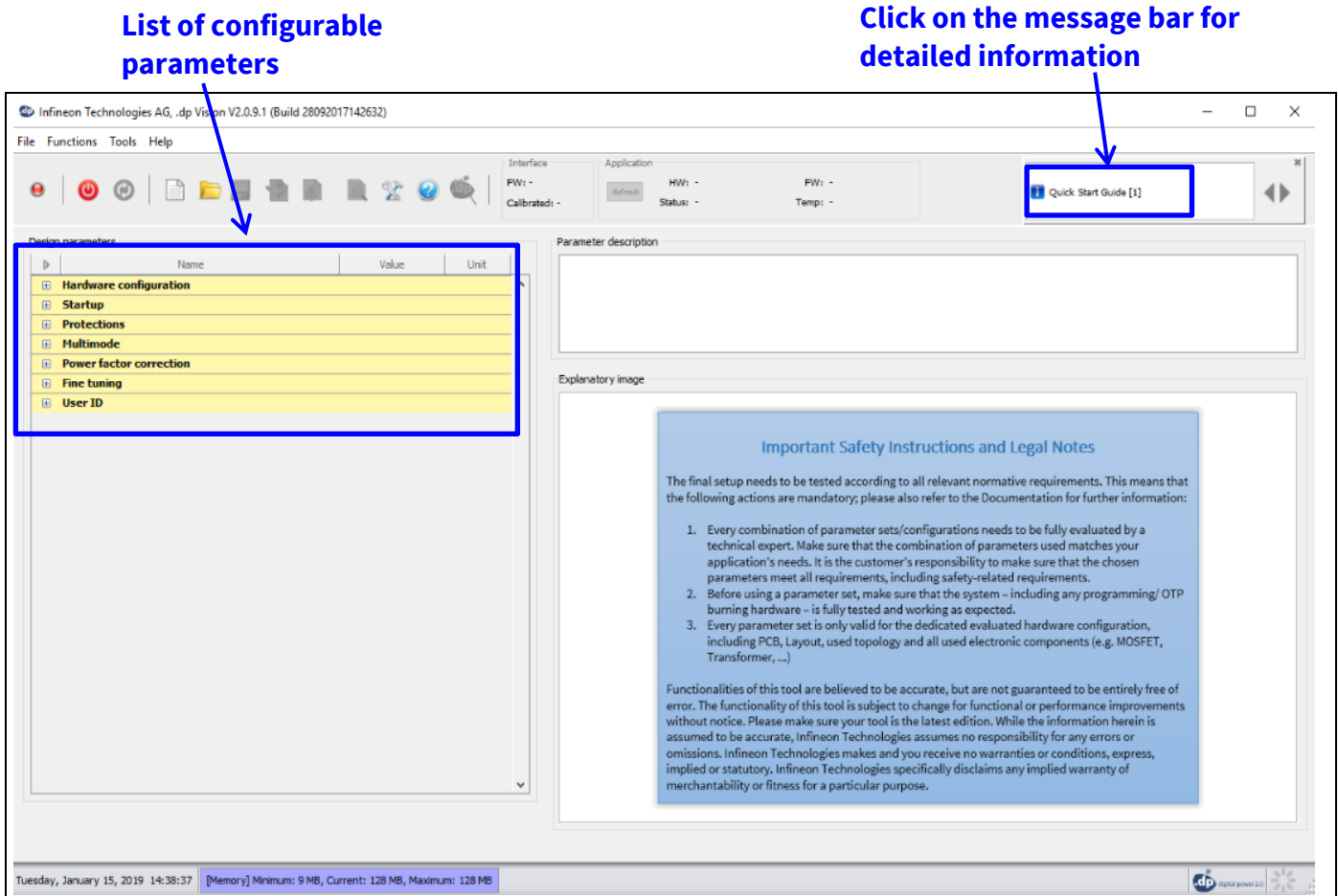


Figure 7 Parameters file loaded in .dp Vision

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

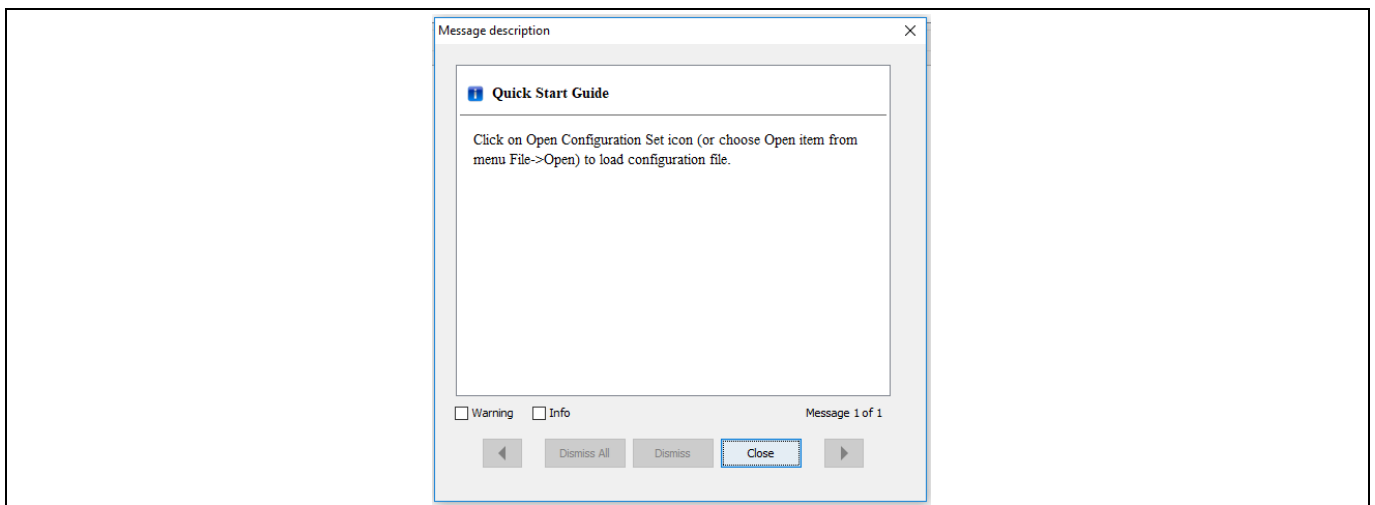


Figure 8 Message description



## 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





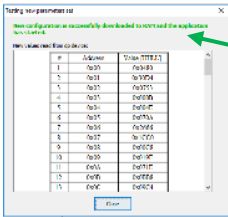
### 1) Test configuration

This function will download the parameter values from .dp Vision into the XDPL8218 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 the 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 <a href="#">Figure 7</a> ).
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 <a href="#">Figure 2</a> and <a href="#">Figure 3</a> .
3	Press  to supply power and establish a connection to the target XDPL8218. After this, XDPL8218 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 XDPL8218 is still in configuration mode.
5	<p>Press  to test the configuration with target XDPL8218. After this, the IC will automatically start normal operation with the new configuration and the window below will pop up:</p>  <p style="color: green; font-weight: bold;">New configuration is successfully downloaded to RAM and the application has started</p> <p>Note: If the parameter configuration is equivalent to the pre-existing parameters, the XDPL8218 will not download them to RAM.</p>
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”.





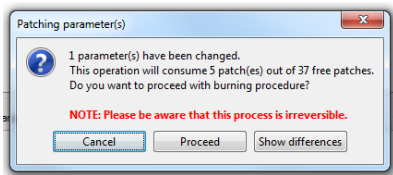
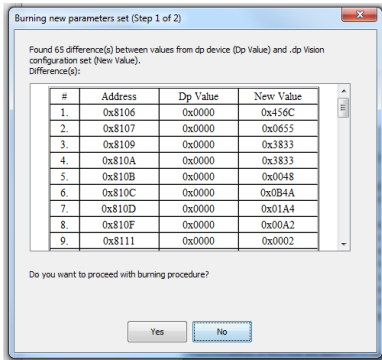
## Getting started

### 2) Burn configuration

As the XDPL8218 chip on the 40 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 <a href="#">Figure 7</a> ).
2	Modify the parameter value needed, then press <b>[File] &gt;&gt; [Save]</b> or <b>[File] &gt;&gt; [Save as]</b> , 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 <a href="#">Figure 2</a> and <a href="#">Figure 3</a> .
4	Press  to supply power and establish connection to the target XDPL8218. After this, XDPL8218 will enter configuration mode and the device status  should change to  .
5	<p>Press  to burn configuration into target XDPL8218.</p> <p>After this step, a window pops up, like one of these below.</p> <div style="display: flex; justify-content: space-around;">   </div> <p>Note: If the parameter configuration is equivalent to the pre-existing parameters, the XDPL8218 will not burn them in the OTP memory.</p>
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.





Getting started

## Revision history

### Major changes since the last revision

Page or reference	Description of change
Table 1	.dp Vision folder setup link correction