Palomar Scientific Instruments

DPD-3W-05C 3-Wave FIR Demodulator

Programming Guide

July 2014 Version 1.00 Palomar Scientific Instruments Copyright 2014

Document Revisions

Date	Version Number	Document Changes
7/17/2013	1.0	Initial

Table of Contents

1	OVERVIEW4
2	ACQUIRING TOOLS / FILES
3	XILINX IMPACT INSTALLATION
4	FLASHING

1 Overview

This guide provides a basic guide on how to re-flash the firmware on the DPD-3W-05C.

2 Acquiring tools / files

In order to reprogram the DPD-3W-05C please visit <u>http://www.palomarsci.com/Downloads</u> and download the compressed archive (.zip) under **Programming files**. Within this archive, there are two files and a folder: **EAST_DPD_05C_1r1.mcs**, **Xilinx.lic**, and the folder **Xilinx_LabTools_14.5**. Extract these to C: _EAST. Once the archive has been extracted continue with this guide.

3 Xilinx iMPACT Installation

Launch xsetup.exe that is located with the C:_EAST\Xilinx_LabTools_14.5. Once launched, the following screen should appear:



Click **Next** and agree to both License Agreements. After agreeing, an Installation Options window will appear. Set the options to the following screenshot and select **Next**:

📴 ISE 14.5 Installer	
	Select Installation Options Select the desired installation options below. Selection of these options may result in additional programs being run at the conclusion of the installation process.
	✓ Use multiple CPU cores for faster installation
DESIGN SUITE	Enabling this option will speed up installation but may slow down other active applications
	 Acquire or Manage a License Key Enable WebTalk to send software, IP and device usage statistics to Xilinx (Always enabled for V Install Cable Drivers
ISE 14.5 Installer	
Welcome Accept License Agreements	< >
Select Products to Install -> Select Installation Options	Select/Deselect All
Select Destination Directory Installation	Description of Enable WebTalk to send software, IP and
	Note: WebTalk is always enabled for WebPACK users. WebTalk ignores user and install preference when a bitstream is generated using the WebPACK license. If a design is using a device contained in WebPACK and a WebPACK license is available, the WebPACK license will always be used. To change this, please see Answer Record 34746
Copyright (c) 1995-2013 Xilinx, Inc. All rights reserved. XILINX, the Xilinx logo and other designated brands included herein are trademarks of Xilinx, Inc. All other trademarks are the property of their respective owners.	DESCRIPTION: WebTalk provides a means for you, the customer, to provide Xilinx with information about what features of our FPGAs are being used in your designs and what parts of ISE Design Suite software and IP are being used to complete the design. One of the primary purposes of the WebTalk feature is to assist Xilinx in understanding how its customers use FPGAs, software and IP so more effort can be placed on improving the
	< <u>B</u> ack <u>N</u> ext > <u>C</u> ancel

Select **Next** in the Destination Directory dialog and wait until it finishes installing. Once Finish is selected the Xilinx License Configuration Manager dialog should appear. Select **Locate Existing License** and select **Next**.



At the next screen click **Copy License**, browse to and select the provided license file (**Xilinx.lic**). iMPACT will now be accessible in the start menu.



4 Flashing

Using the provided USB to USB-micro cable (JTAG), connect the DPD-3W-05C to the host computer. Launch iMPACT, and hit **Cancel** on the **New iMPACT Project** dialog. Double click the Boundary Scan option in the top upper left corner of iMPACT. This will cause the area of the right to turn white, right click any part of this area and select **Initialize Chain**. If successful, the screen should appear as follows:

🛞 ISE iMPACT (P.58f) - [Boundary Scan]		- 0 %
File Edit View Operations Output	Debug Window Help	_ 8
🗋 🥭 🖬 🗰 🖬 🐻 🔂	P 12	
MPACT Flows ++ C & X	Right click device to select operations	
Boundary Scan SystemACE SystemACE Create PROM File (PROM File Format WebTalk Data	TD	
MPACT Processes ++ 다 중 × Available Operations are:	Auto Assign Configuration Files Query Dialog	
	Boundary Scan	
Console		+□8
'1': : Manufacturer's ID = Xi / INFO:LMTACT:1777 - Reading C/Xilmx/1.5/ISE_DS / INFO:LMTACT:501 - '1': Added done. PROGRESS_END - End Operation. Elapsed Lime = 0 sec. // *** BATCH CHD : identifydP	linx xc2c64a, Version : 0 //ISE/xbr/data/xc2c64a.bsd Device xc2c64a successfully.	
		,
Console 💟 Errors 🧘 Warnings	Configuration Digiter (TAG-SMT) 1	000000

Select **No** and **Cancel** on the next dialogs that appear. Above the chip labeled as "xc7k35t" there is a blue outlined box, right click and select **Add SPI/BPI Flash**.

ĺ	ISE iMPACT (P.58f) - [Boundary Scan]		
l	🐼 File Edit View Operations Output	t Debug Window Help	
	🗋 🏓 🗐 📫 🛍 🛱 👼 🗖	<i>₽</i> k?	
	iMPACT Flows ↔ □ 문 ×	Right click device to select operations	
	 ⊕ ■ Boundary Scan ■ SystemACE ■ Create PROM File (PROM File Format ⊕ ■ WebTalk Data 		
		xc2c64a xc7k325t bypass bypass TDO	

Navigate and select the provided .MCS file. Select **OK** at the next dialog.

₽× nat	
	bypass bypass
	TD0
-	Select Attached SPI/BPI
	Select the PROM attached to FPGA:
	SPI PROM ▼ N25Q128 1.8/3.3V ▼
	Data Width:
₽×	OK Cancel
	🖗 Roundary Scan

Right click the flash chip and select Program.

	Dahug Window Halp			
	Debug window Help			
2	🛱 🖉 📑 📑 🏓 🌾			
×	Right click device to select operatio	ns		
		FLAS	a.	
		100	<u>P</u> rogram	
	TDI Exilinx	£ xii	Verify	
	L	4	Erase	
	xc2c64a	×c7	Blank Check	
	bypass	by	Readback	
	TDO		Get Device Checksum	
			Assign New Configuration File	
			Delete	
			Set Programming Properties	
			Set Erase Properties	
			Edit Attached Flash Properties	
×				
-				

This can take up to 15min to complete. Once completed, you have successfully re-flashed the DPD-3W-05C with new firmware.