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1. Introduction

Welcome to the Cypress West Bridge Astoria – Legend Silicon based storage and DMB-T/H TV Dongle Reference Design. This guide is a good place to get started with the design. Included are the details of the design contents to get you on the way to developing your Storage TV Dongle design.

1.1 Design Introduction

1.1.1 Block Diagram

The Cypress West Bridge Astoria and Legend Silicon based DMB-TH TV Dongle Reference Design consists of almost all files required for the complete design. It has a tuner from ADI, which tunes the RF signal to the Legend Silicon demodulator. This sends the TV signals in MPEG2_TS stream to Cypress West Bridge Astoria, which then sends them to the PC through the USB interface. In the PC, the BDA driver forwards the data from the USB to the Media Player application where it is played. Apart from TV streaming capabilities, the design also has capabilities to interface to removable or embedded media such as SD, MMC, and Managed NAND. The design enumerates as a composite device with two interfaces:

- Mass Storage
- TV Streaming Device

Document Revision History

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<thead>
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<th>Revision</th>
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<tr>
<td>**</td>
<td>July 02, 2009</td>
<td>PRKU</td>
<td>Initial version of Reference Design Guide</td>
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<td>*A</td>
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<td>*B</td>
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<td>RSKV</td>
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2. Reference Design Package Contents

This section provides a detailed description of the structure and contents of the design as it exists on your system after downloading from the website. The following image shows the root level folder structure.

- **Documents**
  - Contains the Reference Design Guide which helps in getting started on this project.

- **Driver**
  - Contains the BDA driver for the design.

- **Firmware**
  - Contains the firmware. For USB Download, the firmware is available in .hex format and for EEPROM Download, it is in .iic format.

- **Hardware**
  - Contains all the files required for hardware design.
    - BOM
    - Layout
      - CY_ASTORIA_LGS_DMB-TH_Storage_TV_Dongle_ASM
      - CY_ASTORIA_LGS_DMB-TH_Storage_TV_Dongle_CAM
      - CY_ASTORIA_LGS_DMB-TH_Storage_TV_Dongle_SMD
    - NetList
    - Schematics

### Sl. No | Section | Description
--- | --- | ---
1 | BOM | Contains the Bill of Materials for the design
2 | Layout | Contains the layout files for PCB manufacturing
3 | NetList | Contains the Netlist files for the design
4 | Schematics | Contains the schematics files of the design in .pdf and .dsn format
2.2 Device Functionality

After the PCB is fabricated and assembled based on the files mentioned earlier, the next step is to check the functionality of the design.

The design has multiple firmware download options. These include:

- USB Download (Manual)
- USB Download (Automatic)
- EEPROM Download (C0 Load, C2 Load)

For EEPROM Download, the .iic file should be programmed to the EEPROM. The current PCB settings support USB Download. This is explained in the following sections.

Contact your local Cypress Sales office for any support related to the demonstration or for queries on designing the PCB.

2.3 Device Connection

Connect the antenna to the TV dongle and plug it into the USB port.

Place the antenna near a window. This helps you get a better signal reception.
2.4 USB Download

This requires installation of the CY Console software. Download the software, which is part of the Suite USB Development Tools, from the following link:

http://www.cypress.com/?rID=34870

When the device is connected, open the CY Console using the path:

Start > All Programs > Cypress > USB > CY Console
Click on **Options** and select **EZ-USB Interface**.

A USB device is now detected. In the Download tab, select the .hex file from the Firmware folder of the Reference Design package.
2.4.1 BDA Driver Installation

The firmware download is now complete. When this is done, the USB device is reset and another device appears. To install the BDA driver, follow these instructions.

Click on the **No, not this time** option and then click **Next**.

Select **Install from a list or specific location (Advanced)** and then click **Next**.
Select **Don't Search, I will choose the driver to install** and then click **Next**. Again click **Next**.

Click **Have Disk** and browse to the location where the *cydmbth.inf* is saved.
Select DMB-TH TV USB 8G75 and click Next.

A pop up window appears as shown in the figure below. Click on Continue Anyway.
When the installation is complete, the new device appears in the Device Manager.

The driver is installed and the hardware is ready to use.
2.5 TV Player Setup

Use the windows media center in Windows Vista to watch HDTV. If this is not possible, TV player software such as Blaze HDTV player 4.0 should be installed.

Click Scan Channels.

Select your country or input the frequency directly; click OK to scan. You are able to watch HDTV if a signal is detected.
3. Appendix

3.1 Sample Board Photos

Sample CY_Astoria_LGS_DMB-TH_Storage_TV Dongle Board Top View

Sample CY_Astoria_LGS_DMB-TH_Storage_TV Dongle Bottom View