

IOGEAR Inc.  
WUSB VGA adapter  
**User's Guide**

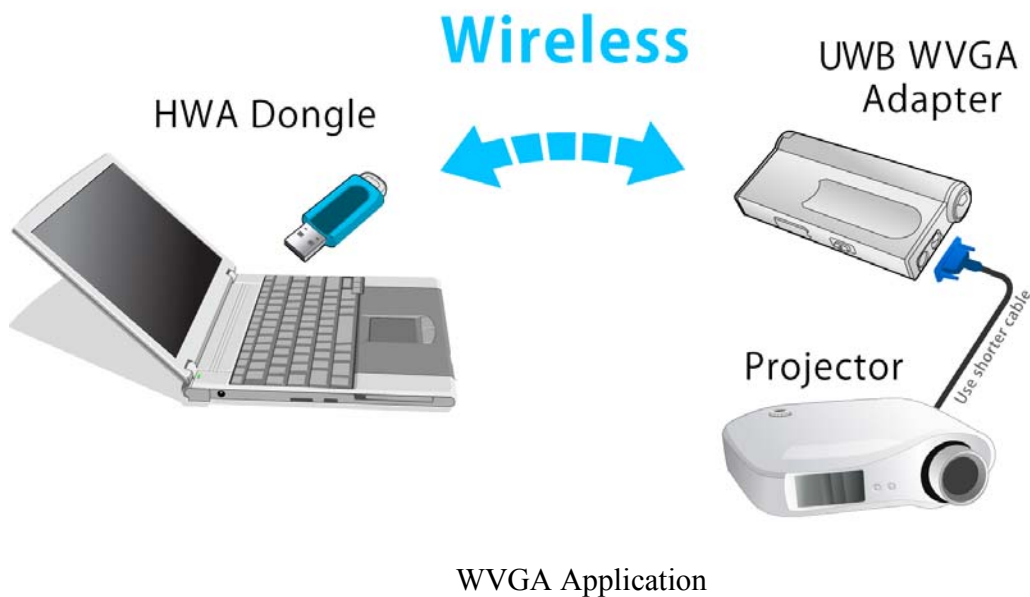
**Revision A**

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## 1. Introduction

This document describes the system, operations, and interfaces of the WUSB VGA adapter Demo Board. For WUSB application, a dongle is used as the host controller, and connect wirelessly to a video device with the WVGA adapter.



## 2. System Description

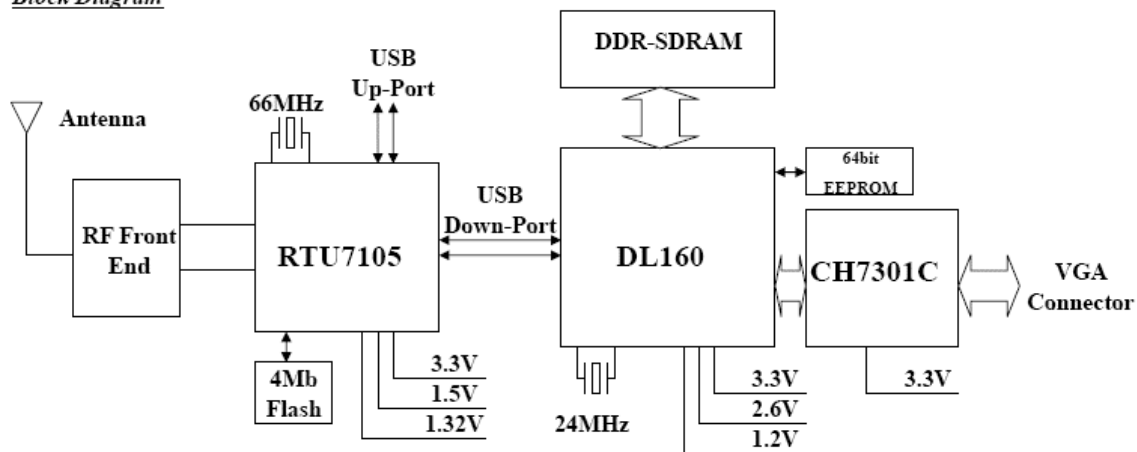
The UWB VGA adapter supports the following functions:

- . Certified WUSB mode
- . Support 53.3M, 80M, 106.7M, 160M, 200M, 320M, 400M, 480Mbps.
- . Support VGA interface.

The UWB WVGA system consists of three chips – 1) Integrated UWB PHY and MAC (RTU7105), 2) USB-to-Video chip (DL160), and 3) a display controller IC (CH7301C). A serial flash memory (4Mb) is required to store proper data/commands for RTU7105. To make the system work properly, the

Flash should be loaded with proper content by using the Flash utility provided by IOGEAR. A 64bit EEPROM and a SDRAM are required for DL160. The RF performance can also be tested using the test utility provided by IOGEAR. Two clock frequencies are used in the system – 66MHz for RTU7105 and 24MHz for DL160. Some more details of the components are shown in the following sections. The system block diagram is shown below.

*Block Diagram*



**Figure 1 System Block Diagram**

## Product Specification

Frequency Band	3168MHz ~ 4752MHz
Network Standard	WiMedia PHY 1.1 & MAC 1.0. Support PHY 1.2
Modulation Mode	Multiband OFDM with QPSK, DCM
FEC Coding	Rate 1/3, 1/2, 5/8, 3/4 Convolutional Coding, Reed Solomon Coding
Support Data Rate	8 data rates from 53.3Mbps to 480 Mbps
Interface	VGA interface
Support Applications	Certified WUSB

## 2.1.UWB PHY and MAC

This chip integrates the WiMedia PHY and MAC defined by the standard. This version of chip is packaged in 64-pin QFN form factor. The chip requires 1.5V, 1.32V and 3.3V for operation. High speed USB interface is supported.

## 2.2.USB-to-Video

DL160 provide a video port via USB interface. It is packaged in 256-ball PBGA, and required 3.3V/2.5V IO and 1.2V core voltage.

## 2.3.Display controller

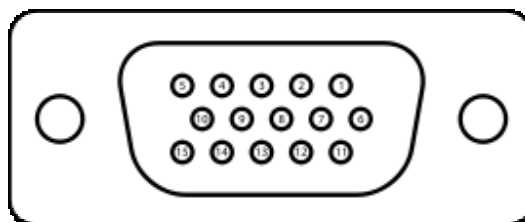
CH7301C is a display controller device which accepts a digital graphics input signal, and encodes and transmits data through a DVI. The package is 64-pin LQFP and only 3.3V is required for operation. It supports RGB and YCrCb data formats.

## 2.4. Memory

4Mb flash memory and 64bit EEPROM are used by the chipset to store the initialization data and command sequence required. SDRAM is used for video frame buffer by DL160.

# 3. Hardware Interfaces

## 3.1. VGA Interface



**Table 1 VGA connector termination assignment**

<b>Pin#</b>	<b>Pin Name</b>	<b>Description</b>
<b>1</b>	<b>RED</b>	<b>Red video</b>
<b>2</b>	<b>GREEN</b>	<b>Green video</b>
<b>3</b>	<b>BLUE</b>	<b>Blue video</b>
<b>4</b>	<b>N/C</b>	<b>Not connected</b>
<b>5</b>	<b>GND</b>	<b>Ground</b>
<b>6</b>	<b>RED_RTN</b>	<b>Red return</b>
<b>7</b>	<b>GREEN_RTN</b>	<b>Green return</b>
<b>8</b>	<b>BLUE_RTN</b>	<b>Blue return</b>
<b>9</b>	<b>+5V</b>	<b>+5V</b>
<b>10</b>	<b>GND</b>	<b>Ground</b>
<b>11</b>	<b>N/C</b>	<b>Not connected</b>
<b>12</b>	<b>SDA</b>	<b>I<sup>2</sup>C data</b>
<b>13</b>	<b>HSync</b>	<b>Horizontal sync</b>
<b>14</b>	<b>VSync</b>	<b>Vertical sync</b>
<b>15</b>	<b>SCL</b>	<b>I<sup>2</sup>C clock</b>

#### **4. Document History**

<b>Date</b>	<b>Revision</b>	<b>Description</b>	<b>Author</b>
11/06/08	A	Initial Release	Binson Tseng

### **Federal Communication Commission Interference Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.