BLUETECHNIX
Embedding Ideas

Argos3D - P100

Quick Start Guide

Version 1.5

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Argos[3D] - P100 - Quick Start Guide

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Applicable to: SDK release ≥ 2.2

Subject to change without notice. Errors excepted.

Table of Contents

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Information

For further information on technology, delivery terms and conditions and prices please contact Bluetechnix (http://www.bluetechnix.com).

Warning

Due to technical requirements components may contain dangerous substances.

1 Unboxing

1.1 In the box

- Argos3D - P100
- Micro USB Cable
- $5V_{DC}$/3A Power Supply
- Tripod
- Quick Start Guide
- Argos3D - P100 Support CD including SDK, Visualizer, manuals etc.
- Argos3D - P100 ADAF Basic CD

1.2 Connecting your Argos3D-P100

1.2.1 Connector Overview

The Argos3D - P100 features three connectors. A $5V_{DC}$@2,5A connection, Micro USB2.0 and an external sync interface.

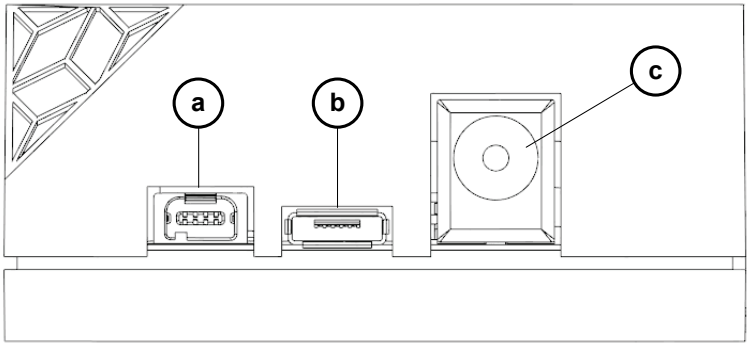

Figure 1-1: Connector Overview

a. Modulation Light Interface
b. Micro USB 2.0 Interface
c. Power Connector

NOTE: Please follow the next steps in the right order to get your 'P100' up and running correctly.

1.2.2 Connecting the power supply

To ensure, that your Argos[3D] - P100 works correctly, plug in the power supply and wait for approximately 10 seconds until the camera boots up.

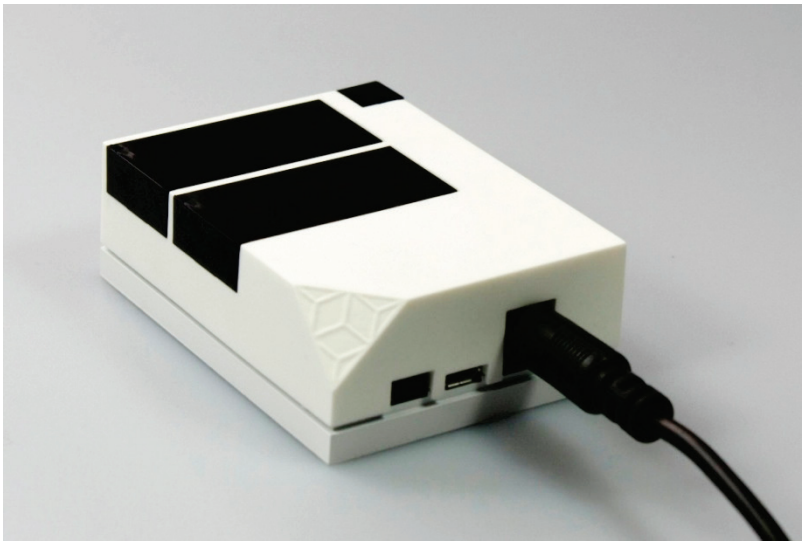

Figure 1-2: Connecting Power Supply

1.2.3 Connecting USB2.0 cable

After boot up, plug in the micro USB2.0 cable and connect your Argos[3D] - P100 to a free USB port of your PC.

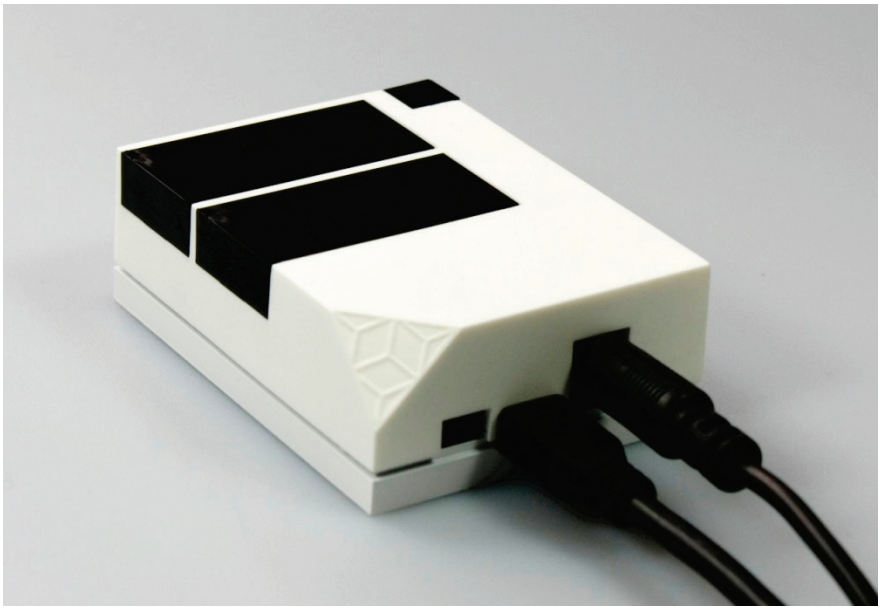

Figure 1-3: Connecting USB2.0 cable

2 Evaluation Package

The Argos[3D] - P100 Evaluation Package containing of the SDK, Visualizer, documentation etc. can be found on the enclosed **Support CD**. For updates register on our support website at https://support.bluetechnix.com/ and download the latest version of the Evaluation Package for your Argos[3D] – P100.

"ADAF Basic" is included on a separate CD.

2.1 Support website

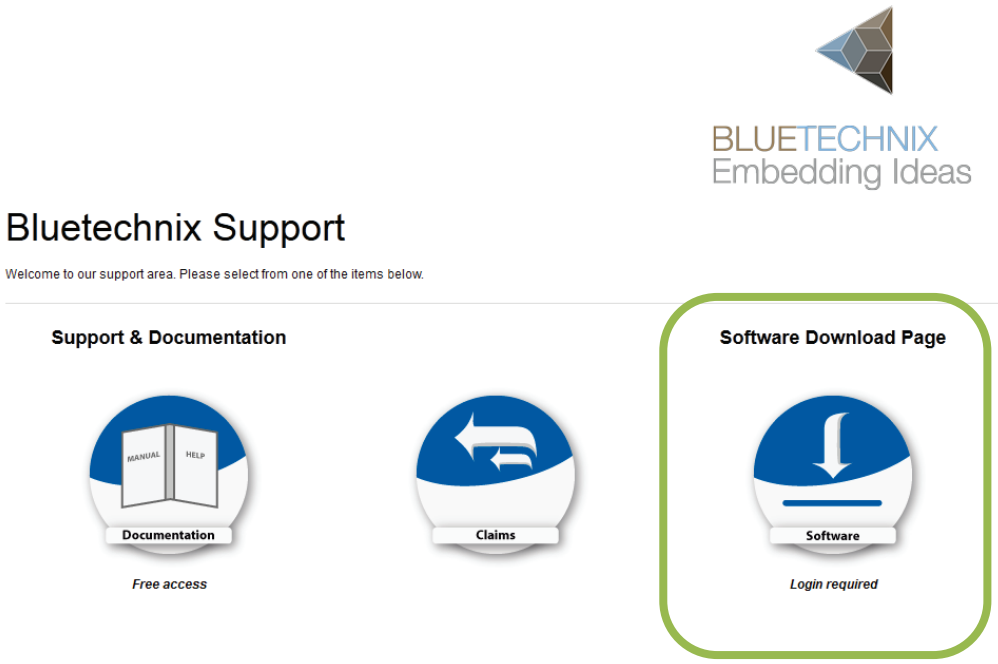

Figure 2-1: Download Evaluation Package

2.2 Login Screen

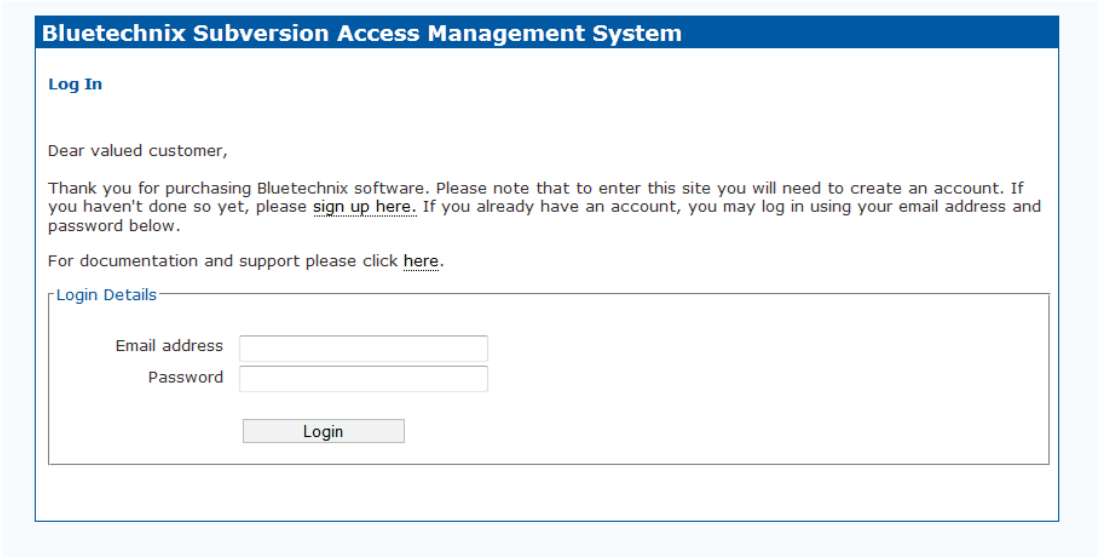

Figure 2: Login screen

2.3 Register as new customer

If you don't have a valid customer login you can create a new account at
https://support.bluetechnix.com/software/CreateUser.aspx

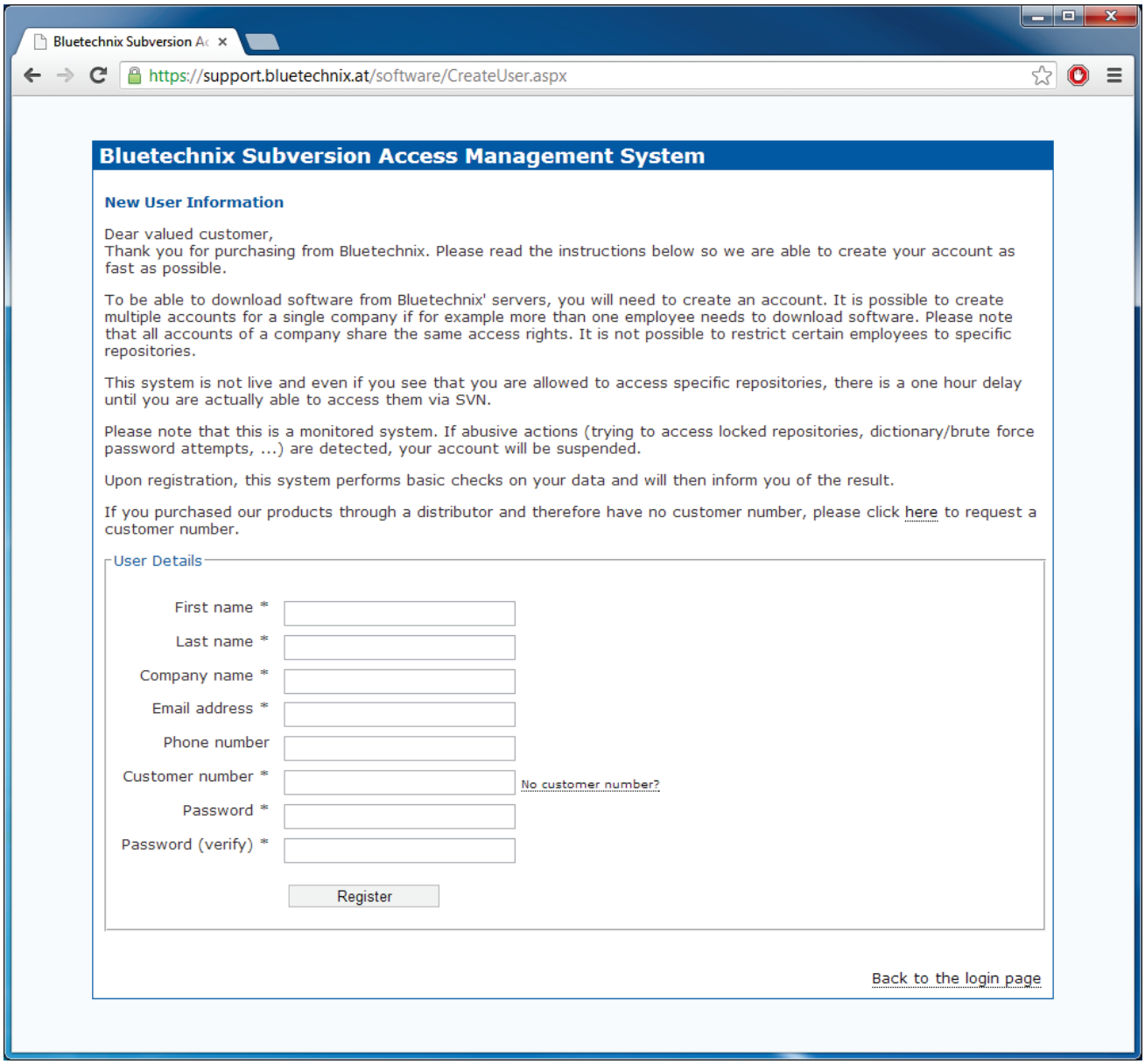

Figure 2-3: Registration form

Once you downloaded the evaluation package extract the .zip file on your hard drive to e.g.

C:\Argos3D-P100 and read the Readme.txt first.

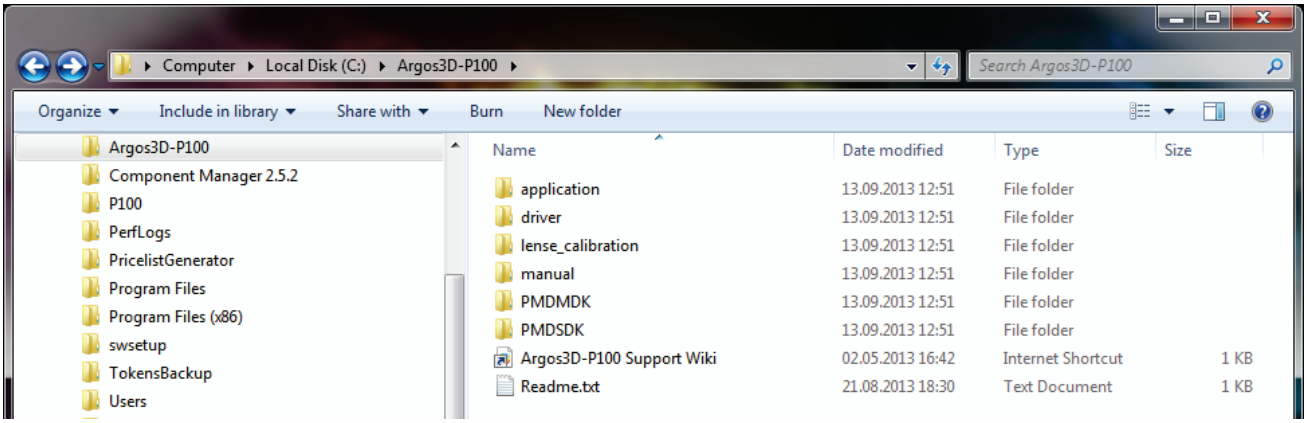

Figure 2-4: Unzipped Evaluation Package

3 Install Argos3D - P100 Drivers

At the first time you have plugged in your Argos3D - P100, you have to install the driver which can be found in the evaluation package.

Open the Windows Device Manager by pressing the *Windows-Button* + *Pause-Button* and choose *Device Manager*as shown in following figure.

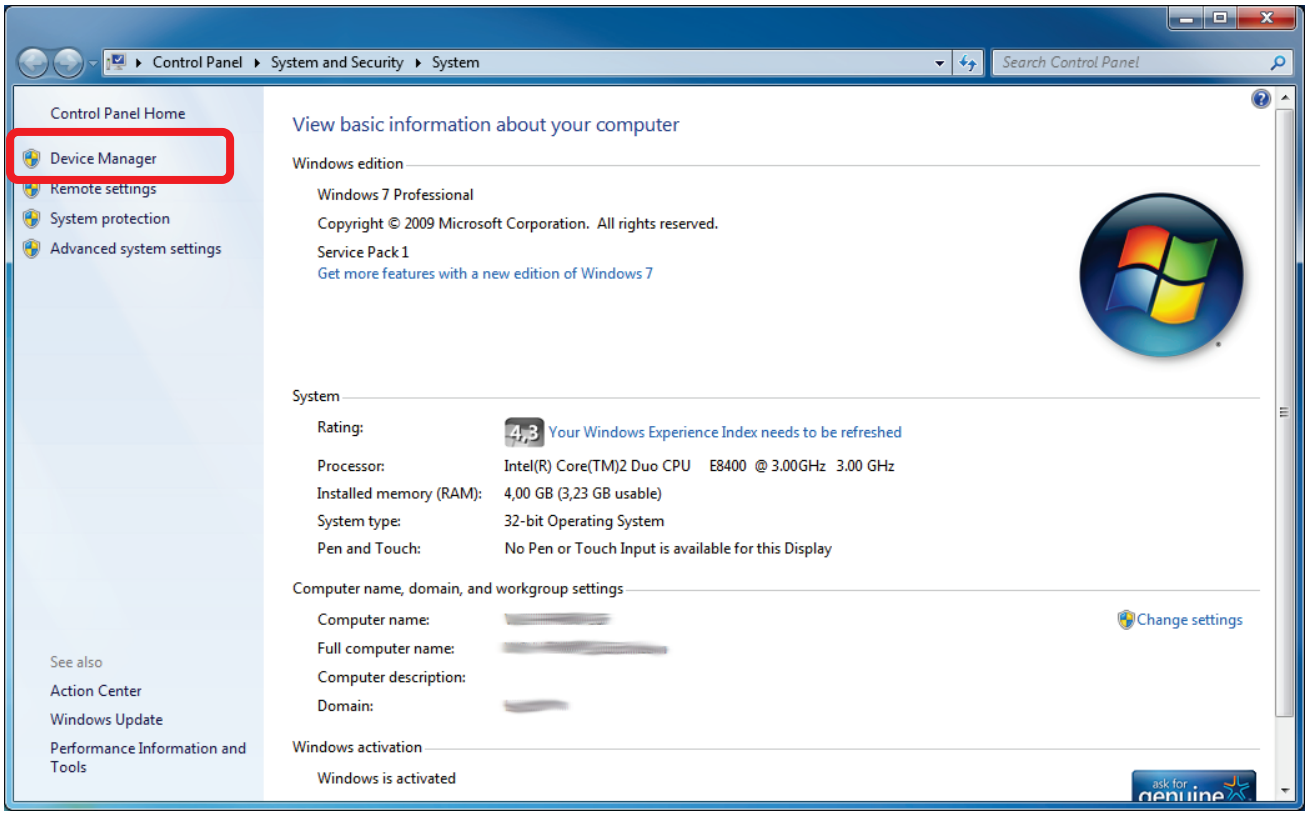

Figure 3-1: Windows Device Manager

Once Device Manager is opened, right click "*Bluetechnix – Argos3D – P100*" in "*Other Devices*" and click "*Update Driver Software*".

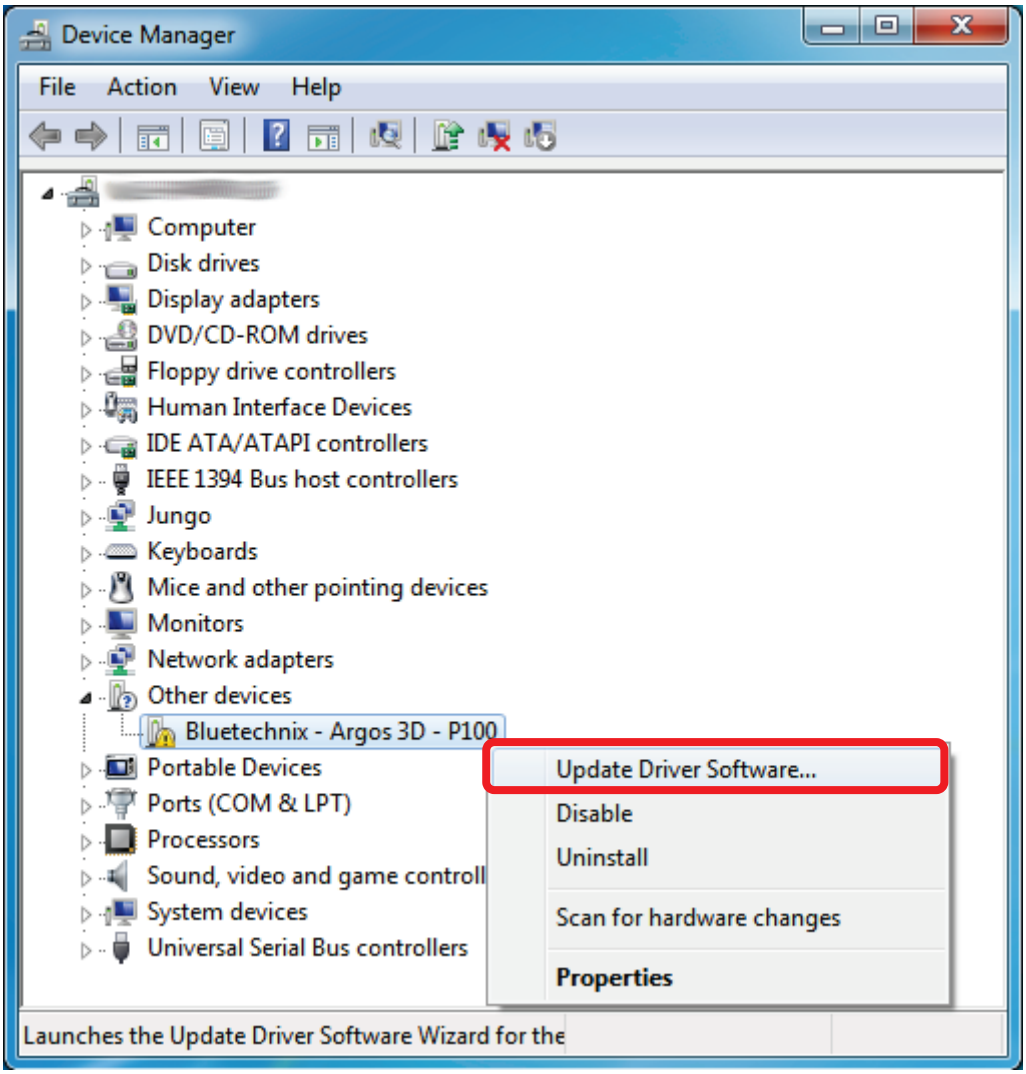

Figure 3-2: Device Manager – Update Driver Software

Then choose "*Browse my computer for driver software*".

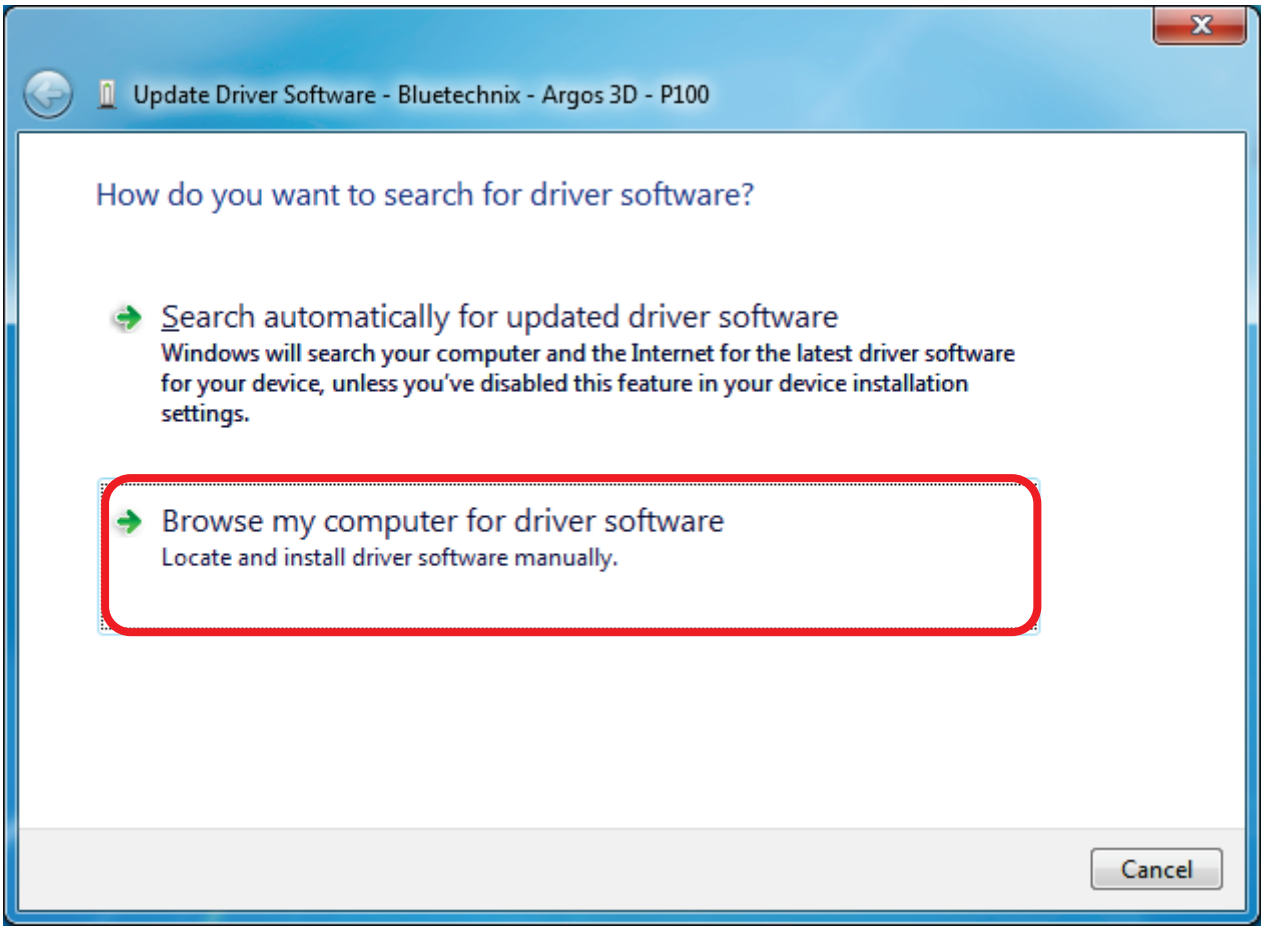

Figure 3-3: Locate and install driver software manually

Point the driver install utility to "*C:\Argos3D-P100\windows\driver*" on your local hard drive. Check "*Include subfolders*" and click "*Next*".

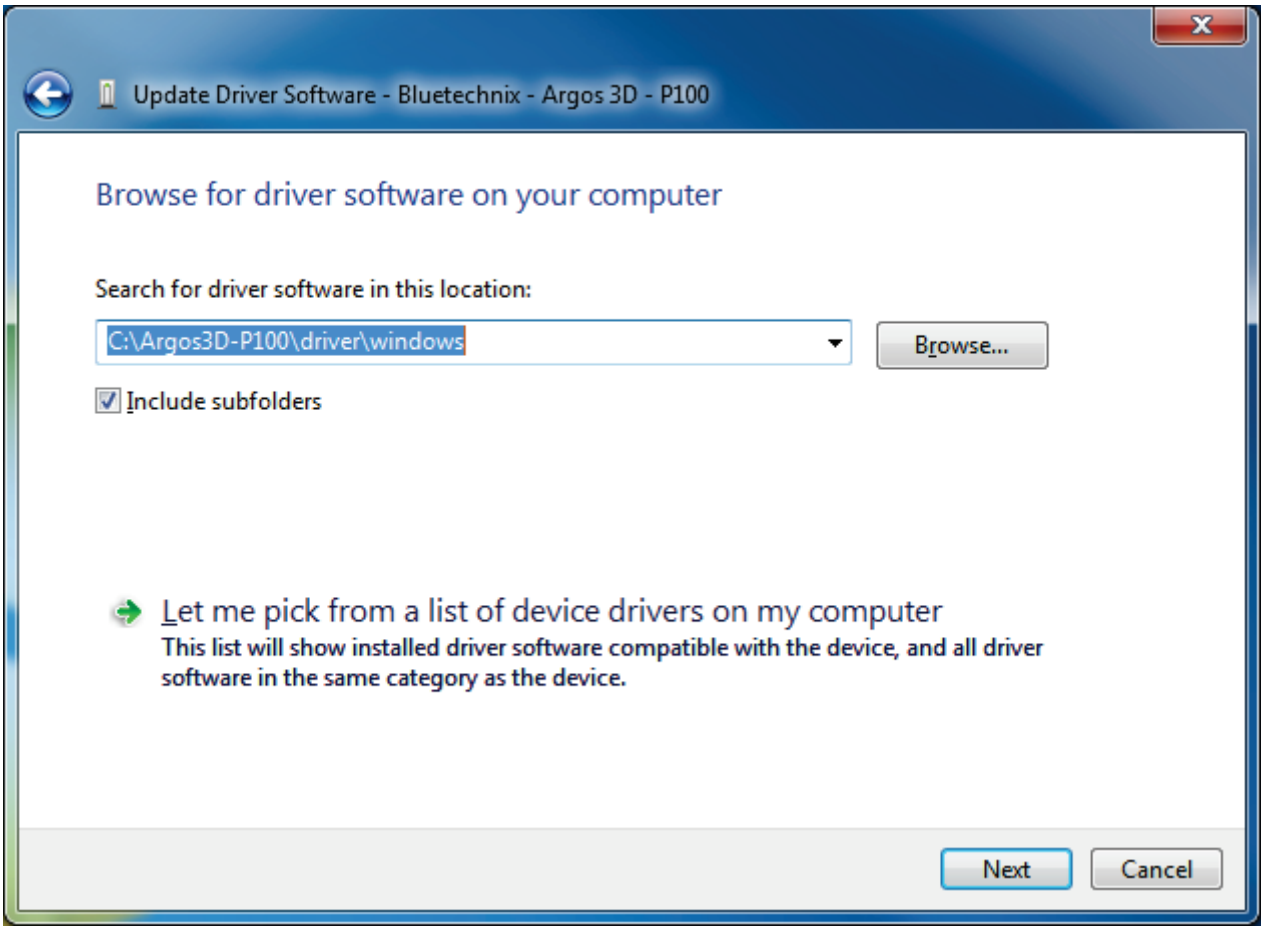

Figure 3-4: Browse for driver software on your computer

If the Windows Security warning appears choose "*Install this driver software anyway*".

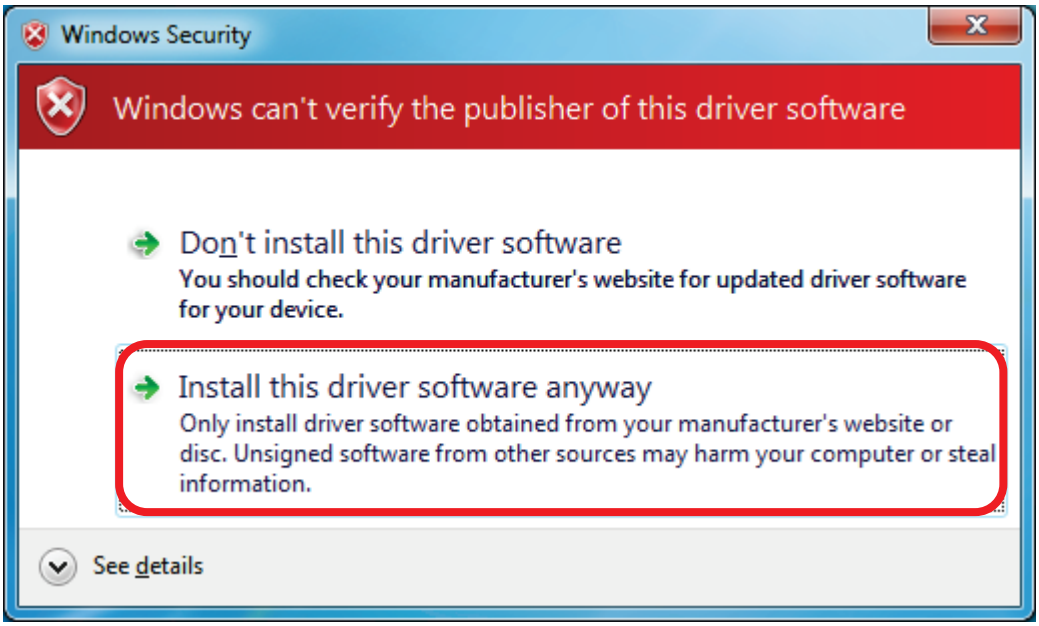

Figure 3-5: Driver security warning

The *Update Driver Software Utility* finishes the driver installation showing following Window.

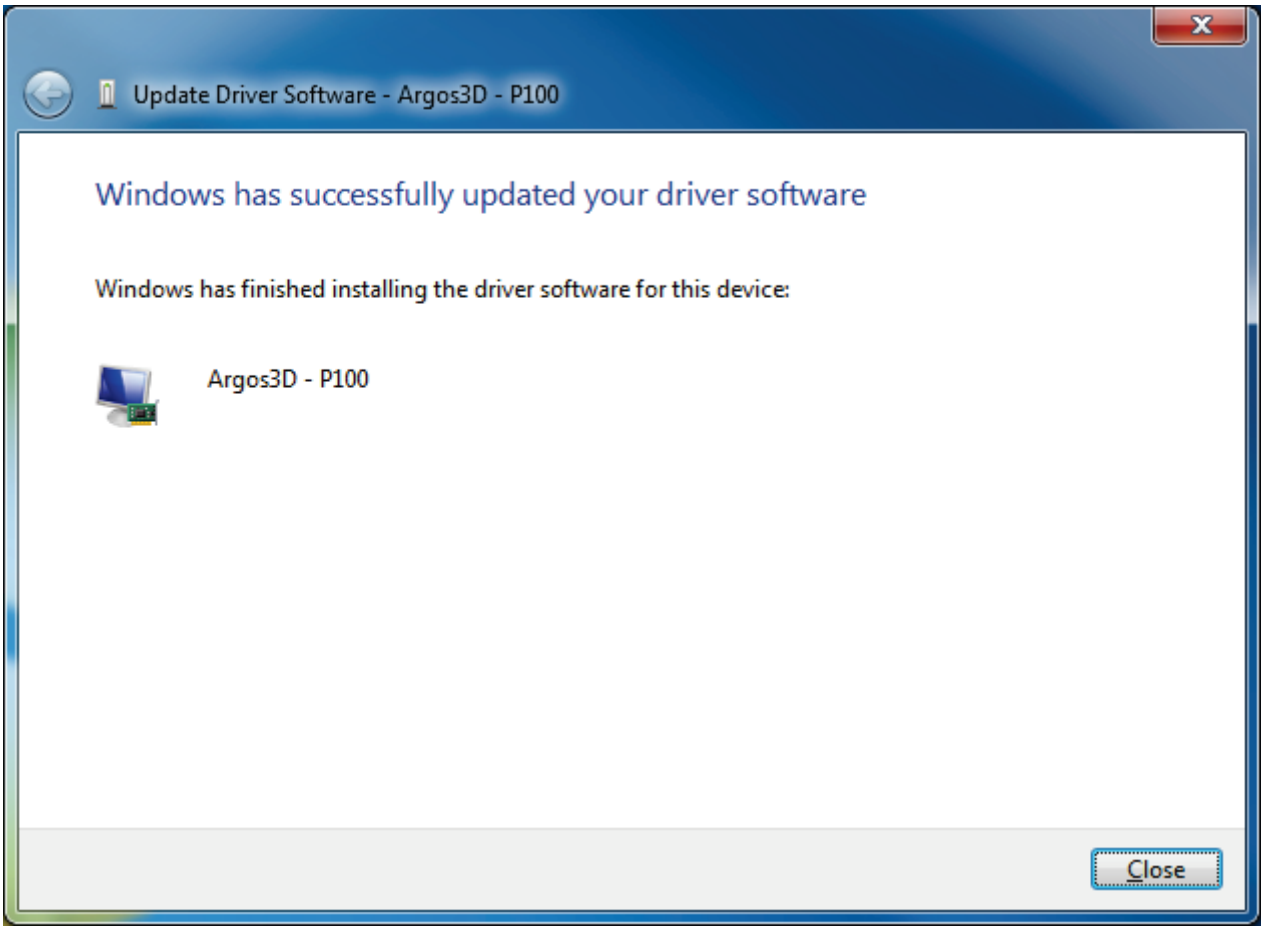

Figure 3-6: Driver Software successfully installed

After successful driver installation there should be a new device in device manager named "*Argos 3D - P100*".

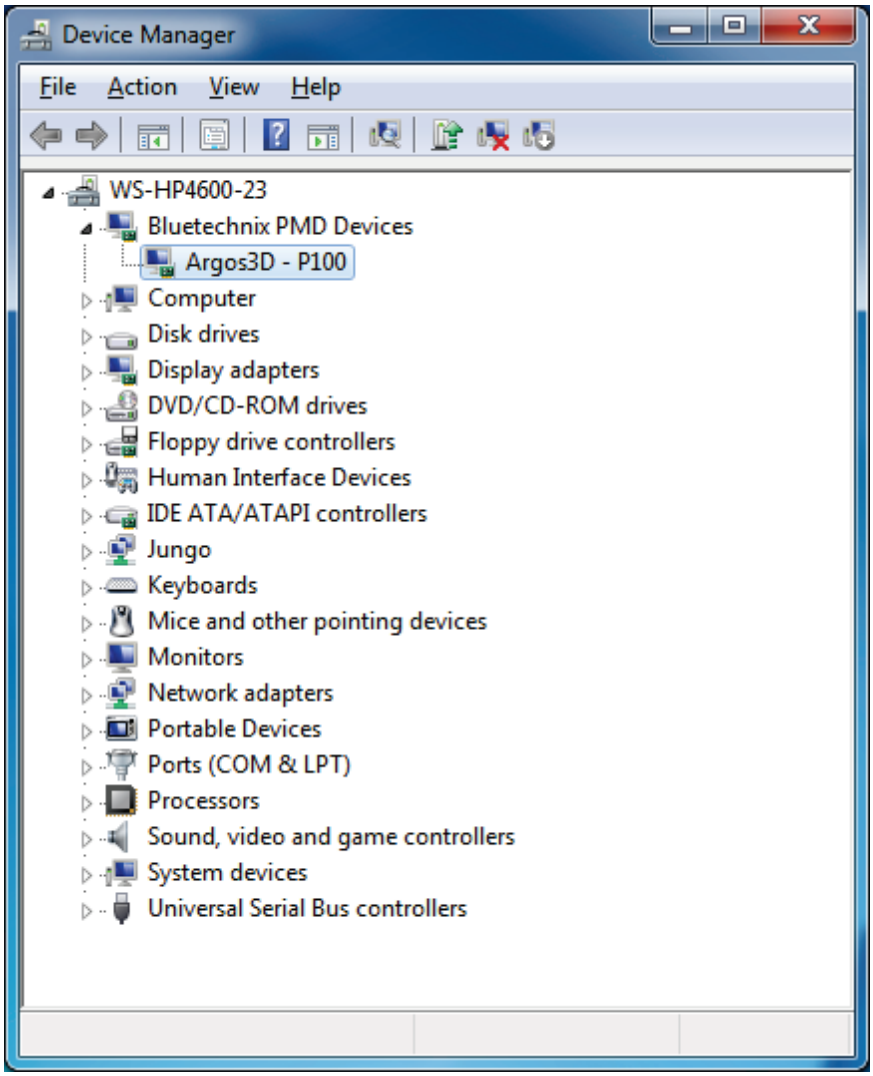

Figure 3-7: Bluetechnix PMD Devices in Device Manager

Congratulations

You now have successfully installed your Argos[3D] - P100 on your PC.

4 Start using your Argos3D - P100 with “Visualizer”

When you browse to

“C:\Argos3D-P100\application\Visualizer\bin\x64” (64Bit Windows) or

“C:\Argos3D-P100\application\Visualizer\bin\x86” (32Bit Windows)

you’ll find **Argos3D - P100 Visualizer.exe**. Using this software you can simply display the depth image and the amplitude image of the Argos3D - P100. Mount the Argos3D - P100 on the provided tripod and place it on your desk in front of you.

Figure 4-1: Sample scenario with Argos3D - P100

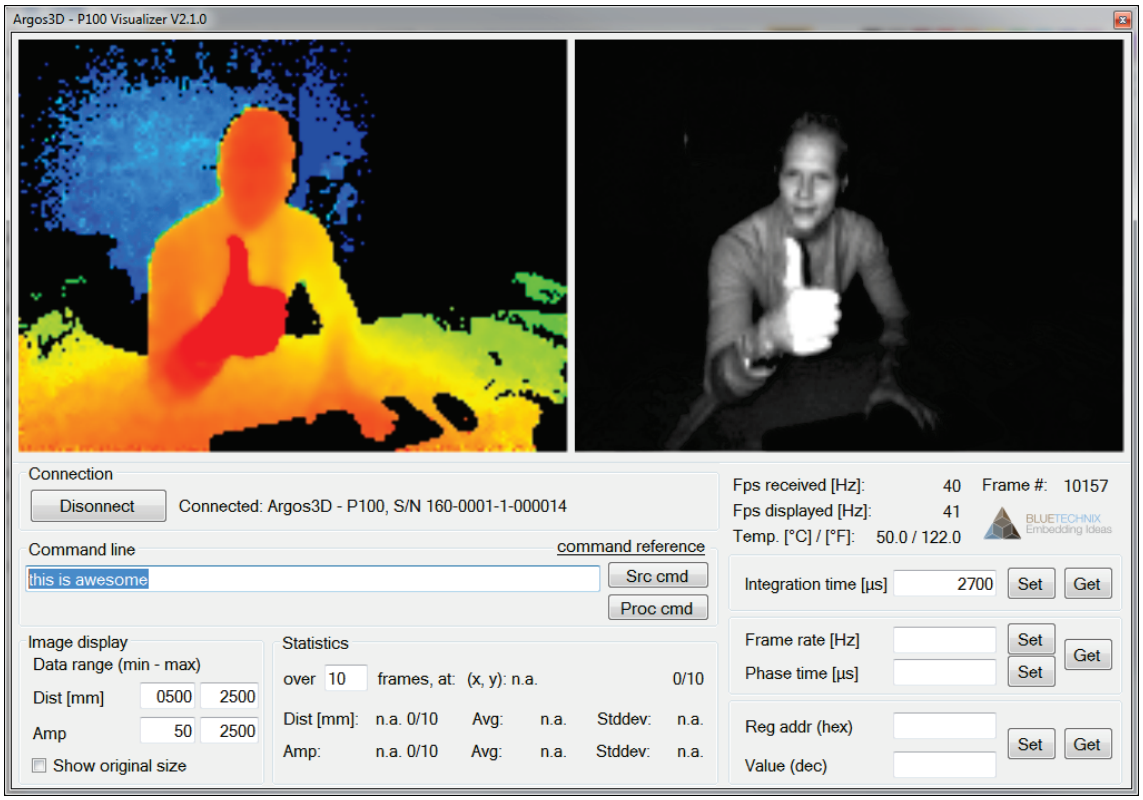

Figure 4-2: Visualizer GUI

Important

The default configuration of your Argos3D - P100 is set to capture scenes in approximately **1.5m** with **40 frames per seconds**. For other configurations refer to the User Manual of Argos3D - P100.

4.1 Working with “Visualizer”

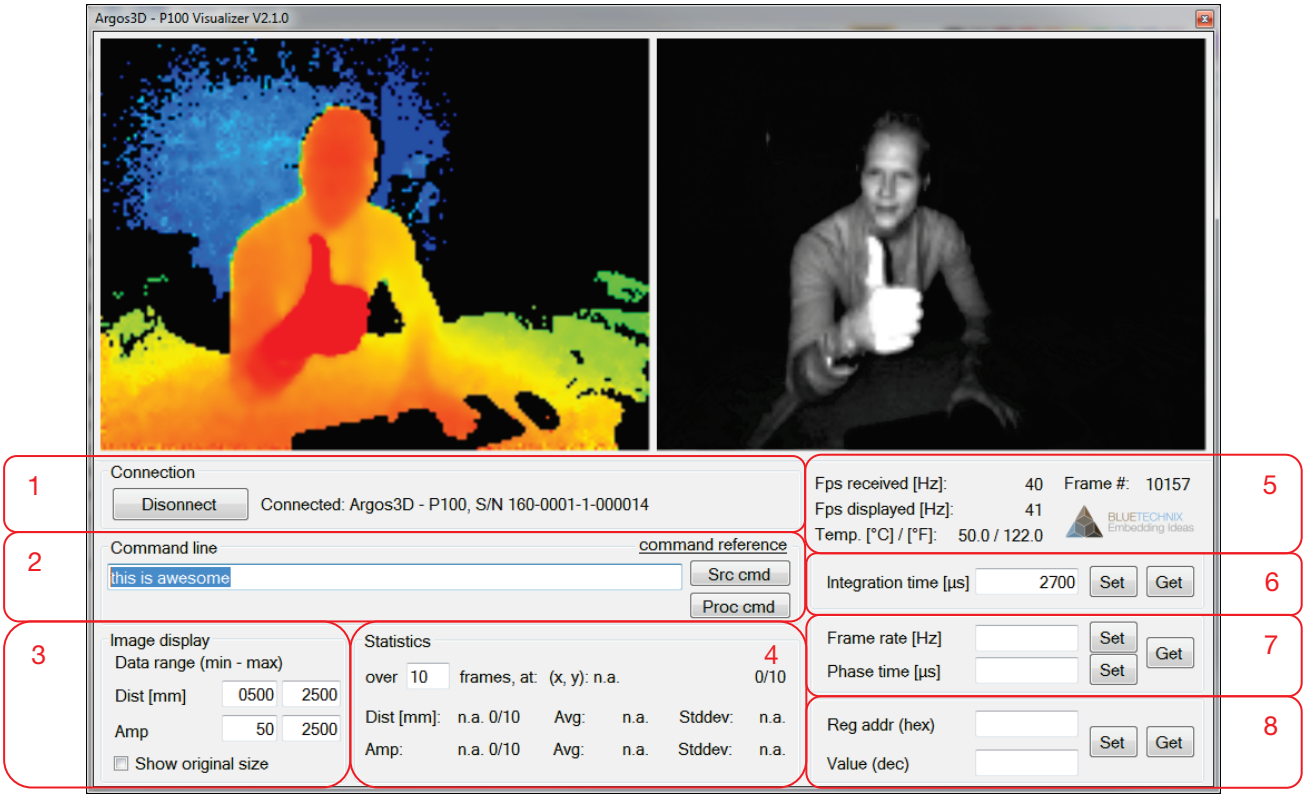

Figure 4-3: Visualizer screenshot with description

4.1.1 Connection (1)

Press the “Connect / Disconnect” button for connecting or disconnecting the sensor.

4.1.2 Applying source- and process-commands (2)

To apply source- or process-commands use the text-field from section 6 (see Figure 4-3). After the command has been entered press the “Src cmd” or the “Proc cmd” button for applying either a source- or a process-command.

For a list of source and process commands please click “command reference” and refer to our support site at https://support.bluetechnix.com/wiki/Argos

4.1.3 Changing the color range (3)

To adjust the color range to a certain setup or scene use the min and max text-fields in the “Image display” section (3) (see Figure 4-3). Type in the minimum distance and amplitude expected and the maximum distance and amplitude expected. The color scheme will then be expanded from red to blue for the distance image and from black to white for the amplitude image, between the selected minimum and maximum.

4.1.4 Statistics (4)

The statistics section shows the average (**Avg**) of the amplitude and the distance over a certain number of frames. In addition the standard deviation (**Stddev**) is shown. To see the statistics of a certain pixel just move the mouse over the pixel of interest (either in the distance or the amplitude window) and wait until the selected number of frames have been received. If you move the mouse the buffer is cleared.

4.1.5 Status Information (5)

The status information shows the current number of received frames per second (**fps received**), the frames drawn per second (**fps drawn**) the current frame number and the temperature of the LED-Board (**Led**).

Be aware that the frames drawn may be significantly lower than the frames received. This because the application is not able to show the frames as fast as they are delivered by the camera. It depends on the PC configuration how many frames can be processed per second.

4.1.6 Changing the integration time (6)

To change the integration time, type the integration time in µs in the text-field and press the "set" button. To control the integration time currently set, press the "get" button.

The text-field becomes green if the operation was successful, red otherwise.

4.1.7 Changing the frame rate (7)

The frame-rate can be changed using section 7 (see Figure 4-3).

You can enter your required fps directly to the associated text field. As an alternative you can enter the required phase time.

Phase Time [µs] = 1 / (4 x fps [Hz])

The text-field becomes green if the operation was successful, red otherwise.

4.1.8 Generic register read/write (8)

To write or read any register from the camera use section 8 (see Figure 4-3). Type in the register address as hexadecimal value and the content as decimal value, then press the "set" button.

To read a register enter the register address as hexadecimal value and press the "get" button. The register content should be shown as decimal value in the "Value" text-field.

The text-field becomes green if the operation was successful, red otherwise.

5 System Requirements & Support

An Argos[3D] - P100 enabled application is required in order to use this Argos[3D] - P100 device.

Connect to a system with:

- Operating System: Microsoft Windows XP/7
- 32 bit (x68) or 64 bit (x64) processor
- Dual-core 2 GHz or faster CPU
- Dedicated USB 2.0 port
- 2 GByte RAM

5.1 Visualizer

Visualizer is available on following operating systems:

- Microsoft Windows XP/7 with .NET 3.5 or higher

5.2 LightVis

Lightvis can be used as first step example for the evaluation on Linux OS. Currently only the Ubuntu 12.04 distribution is supported. You can find LightVis in the directory *"C:\Argos3D-P100\application\LightVis"* of the support package.

5.3 Support

For answers to common questions, troubleshooting steps and further documentation visit our Bluetechnix support website or using the direct link: https://support.bluetechnix.com/wiki/Argos

6 Index