

**BLUETECHNIX**  
Embedding Ideas

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# Bluetechnix ToF Visualizer V3.4.2

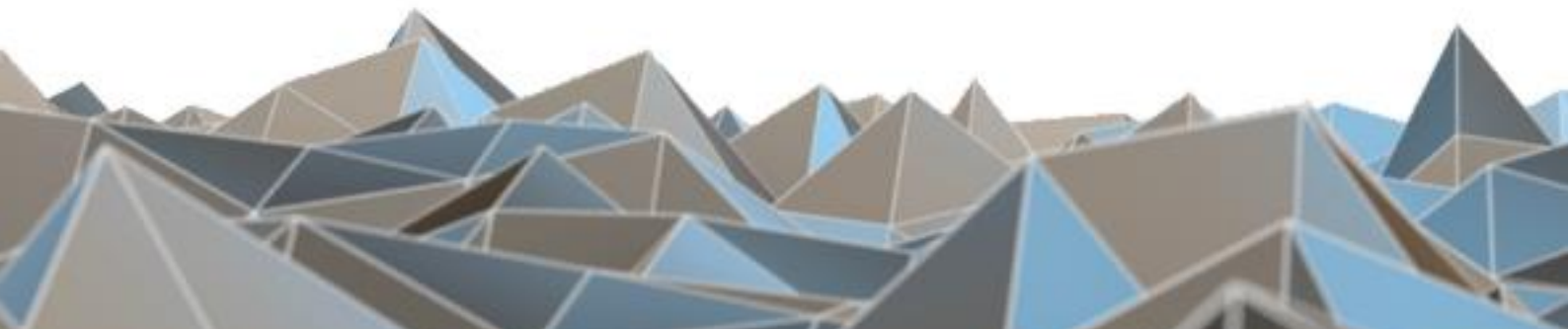
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Quick Start Guide

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Version 1

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Bluetechnix ToF Visualizer – Quick Start Guide

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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 General Information**

This guide applies to the USB based 3D camera products from Bluetechnix GmbH, referred to as 'sensor' throughout this document. Follow this guide chapter by chapter to set up and understand your product.

This document is focused on the Application BltToFSuite. Please refer to the appropriate manuals of your device before installing and powering any device.

This document applies to version 3.4.2 of the software.

## **2 Introduction**

### **2.1 Setting up the device**

For a correct setup of your device please refer to the quick start guide of your product.

### **2.2 Files included**

The software package includes the following files:

- This Quick Start Guide
- BltTofSuite.exe
- BltTofSuite.exe.config
- BltTofApi.dll
- BltTofDownloader.dll
- BltTofModel3d.dll
- BltTofVisualizer.dll
- BtaEth.dll
- OpenTK.dll
- OpenTK.GLControl.dll
- pthreadVC2.dll

## 3 Using the Software

Start the application executing the exe file.

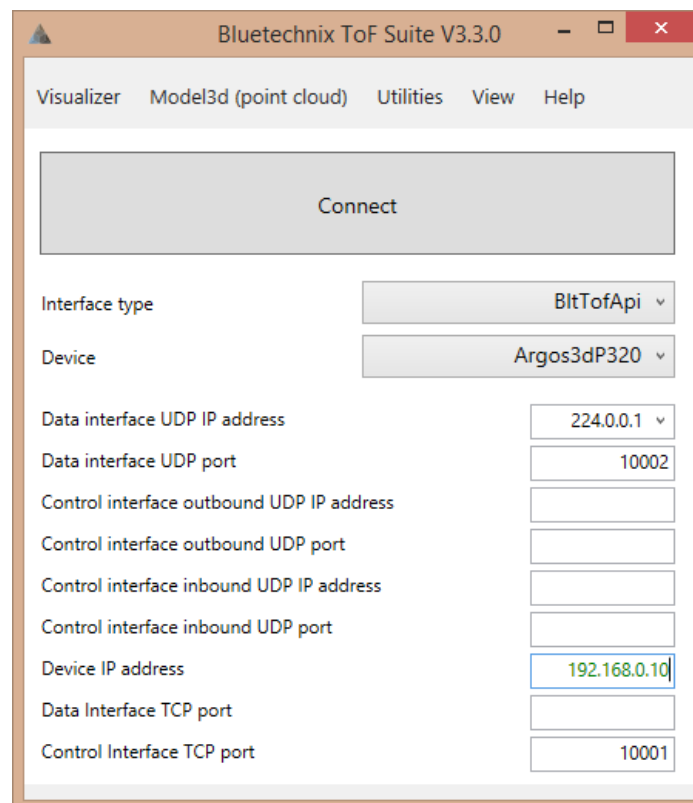
### 3.1 Bluetechnix ToF Suite

This application uses the Bluetechnix ToF API (BtaXXX.dll) in order to open a connection to the sensor and pass the functionality to other tools such as BltTofVisualizer.dll, BltTofModel3d.dll and BltTofDownloader.dll.

#### 3.1.1 Connection Window

The connection window appearance depends on your device. Please refer to the quick start guide of your device for additional information.

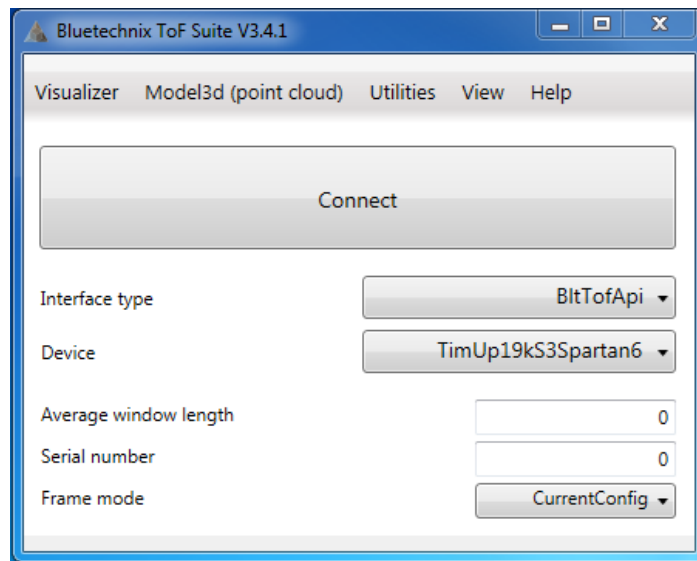
#### 3.1.2 Example connection window for Ethernet based devices



The data stream is read over UDP, the control interface is accessed over TCP

- Enter IP addresses and ports as configured on the sensor
- Press 'Connect'
- The 'Device IP address' is green if pingable and red if not

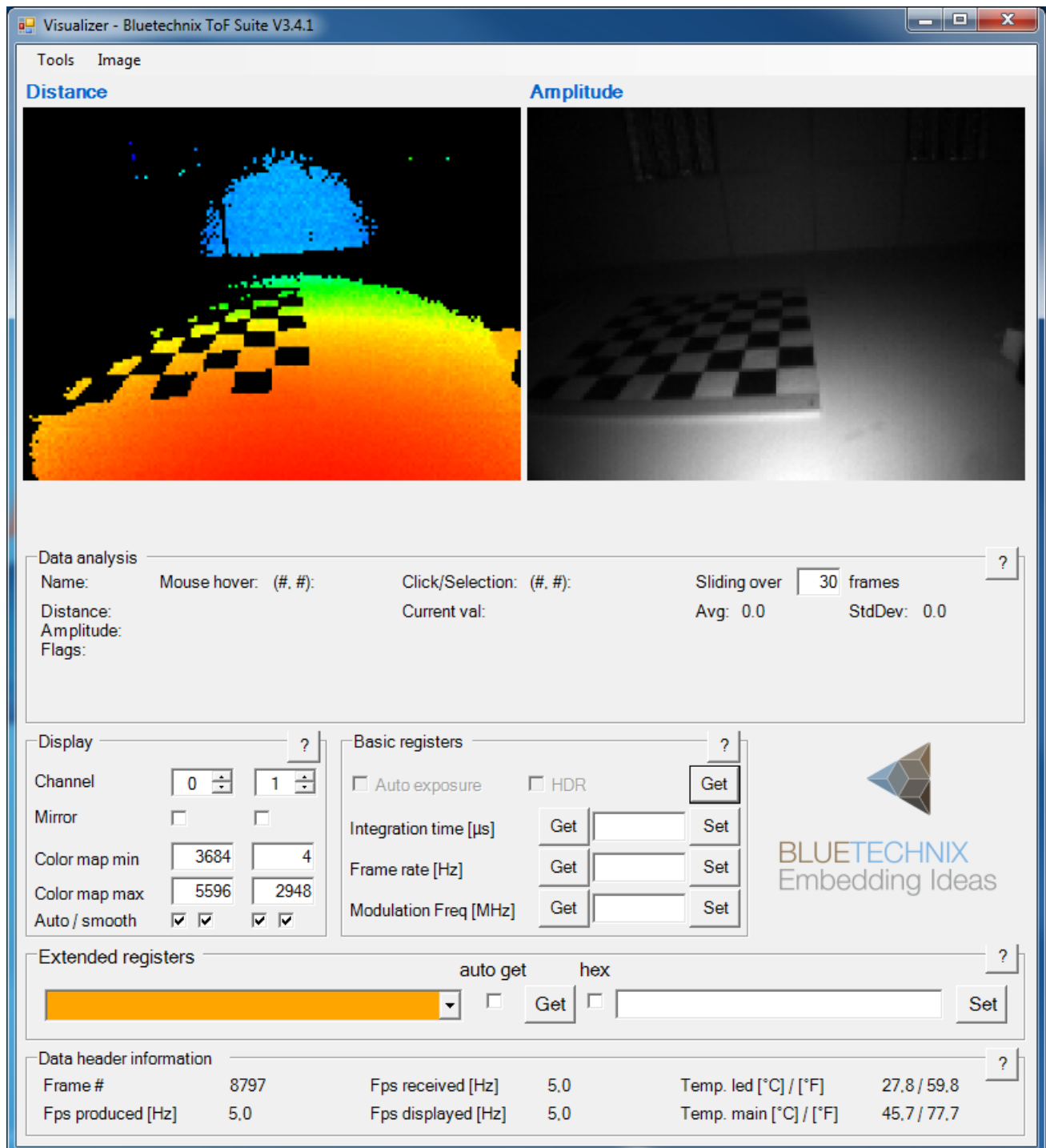
### 3.1.3 Example connection window for USB based devices



- Select your device from the 'Device' drop down menu
- Press the connect button



## 3.2 Visualizer window

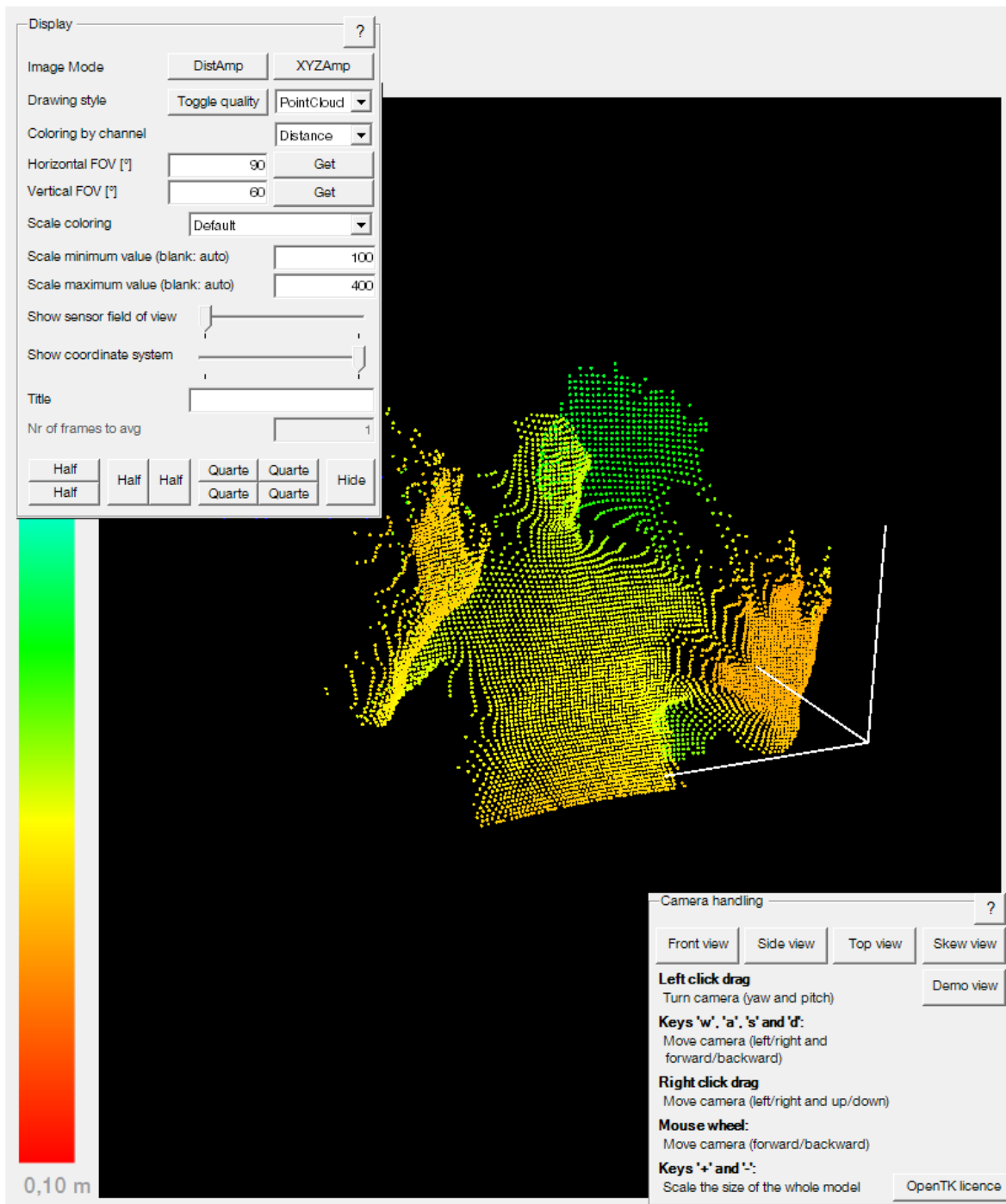


- Sensor data is visualized in 2D. You can change the channel displayed (see "Display"). Distance data is visualized in a red-green-blue scale. Amplitude data is visualized in a monochrome scale. You can adjust the scale (see "Display").

- **Basic registers:** The integration time can be read and written by clicking 'Get' and 'Set'. By increasing the integration time, the depth range of the sensor can be increased. Dark objects can be seen more clearly. A higher integration time can also mean that objects get overexposed (they appear white in Distance and X channel)  
The frame-rate can be read and written by clicking 'Get' and 'Set'. Depending on the integration time, filter configuration or other influences the actual frame rate may not reach the desired value. The modulation frequency is entered in MHz. Be aware that depending on the device only specific values may be set. Setting not supported modulation frequencies may result in unpredictable behaviour. Please refer to the Software User Manual (SUM) of your device for more information about the supported modulation frequencies.
- **Display:** You can choose which channels are being displayed in the above picture boxes. The sensor sends a data stream consisting of various channels. The default configuration is 'Distance & Amplitude', which means that a channel with radial distance data and a channel with amplitude data (brightness) is transmitted. The image mode can be changed by using the "Image" menu or by writing register 'ImageDataFormat' (please consult the Sentis-ToF-M100 Software User Manual) You can adjust the colour- or brightness scale for the above picture boxes. Distance and coordinates are painted in red-green-blue, where 'Colour map min' represents the value which is painted red and 'Colour map max' is the data to be painted in blue. Amplitude data is painted in grey values, where 'Colour map min' is painted in black and 'Colour map max' is painted in white.

For more detailed help, please click on one of the many question mark buttons or contact Bluetechnix support.

### 3.3 Bluetechnix ToF Model3d



- The data from the sensor is displayed as a point cloud. Please note that all interactions manipulate your point of view (denoted by 'camera') instead of turning or moving the point cloud. Use 'w', 'a', 's' and 'd' in order to move the camera (yourself) sideways, forwards and backwards like in a first-person video game. Click somewhere (doesn't matter where) in the frame, hold the mouse button and move the mouse in order to look around you (i.e. change the camera's pitch and yaw). Right-click somewhere and move the mouse up and down in order to elevate and lower the camera (yourself).

- **Image mode:** These buttons are shortcuts for setting frame modes. They best show how different data can be displayed. Note: The image mode also affects the other window 'Bluetechnix ToF Visualizer' -> different channels are being displayed there as well.
- **Show sensor field of view:** The sensor's field of view is indicated by a pyramid, showing the opening angles of the sensor. The opening angles are read from the sensor's corresponding registers.
- **Show coordinate system:** Activating this switch shows three white lines representing the coordinate system.
- You can adjust the colour- or brightness scale for the cloud's points. Distance and coordinates are painted in red-green-blue, where 'Colour map min' represents the value which is painted red and 'Colour map max' is the data to be painted in blue. Amplitude data is painted in grey values, where 'Colour map min' is painted in black and 'Colour map max' is painted in white.
- If you lose track of your point cloud, feel free to safely press "Front view". It will take you home.

For more detailed help, please click on one of the many question mark buttons or contact Bluetechnix support.

### 3.4 Bluetechnix ToF Downloader

The downloader can be used to perform firmware updates or for downloading calibration files if the device supports it.

For flash update instructions, please visit <http://support.bluetechnix.com>



## 4 Recommended Documents

Please visit [https://support.bluetechnix.at/wiki/Main\\_Page](https://support.bluetechnix.at/wiki/Main_Page) and select your product. Read the available documents carefully before starting to operate with the device.

## 5 Appendix

### 5.1 Support

#### 5.1.1 General Support

General support for products can be found at Bluetechnix' support site

##### **Support Link**

 <https://support.bluetechnix.at/wiki>

### 5.2 Software Packages

Software packages and software downloads are for registered customers only

##### **Software Package**

 <https://support.bluetechnix.at/software>

## 6 Document Revision History

Version	Date	Document Revision
1	2015 03 25	First preliminary of the document. Derived from Bluetechnix ToF Suite Quick Start Guide V3.4.1

Table 6-1: Revision history