

This document describes the basic usage of LRF\_Tester software. The software is available for customers and can be downloaded from the company's website: [http://www.noptel.fi/eng2/LongDistance/index.php?doc=6\\_downloads/7\\_software](http://www.noptel.fi/eng2/LongDistance/index.php?doc=6_downloads/7_software).

The software is intended for demonstration and / or testing purposes and is compatible with the following devices:

- LRX -series
- LRF127-M4
- LRF2XX-M4
- LRF421-M4
- LRF125

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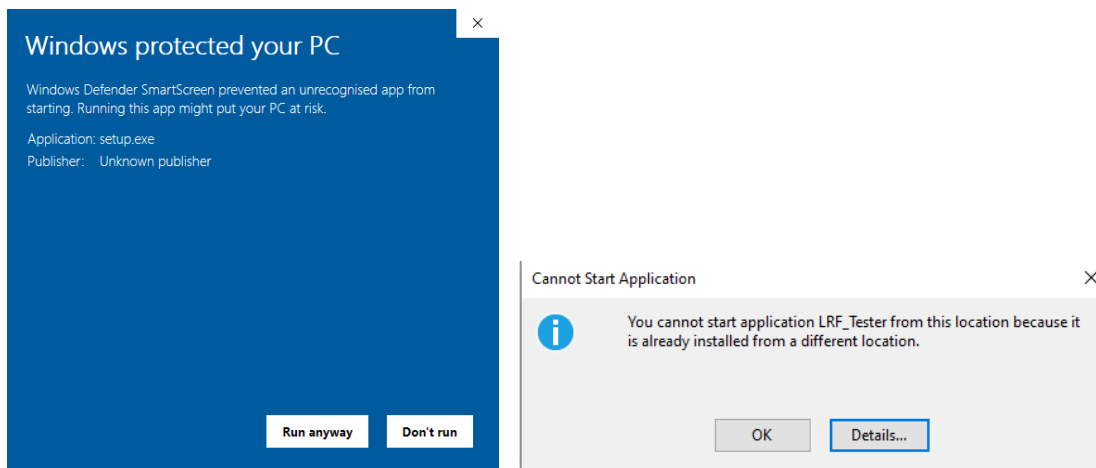
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## Installation

After downloading the file extract the zip-package into desired location. In the extracted folder, double-click the setup.exe<sup>1</sup> to start the installation process (picture 1).

Name	Date modified	Type	Size
Application Files	27.12.2019 14.48	File folder	
autorun.inf	27.12.2019 14.48	Setup Information	1 KB
LRF_Tester.application	27.12.2019 14.48	Application Manif...	2 KB
setup.exe	27.12.2019 14.48	Application	764 KB

Picture 1. List of files in the extracted directory.



Picture 2a. Windows defender warning.

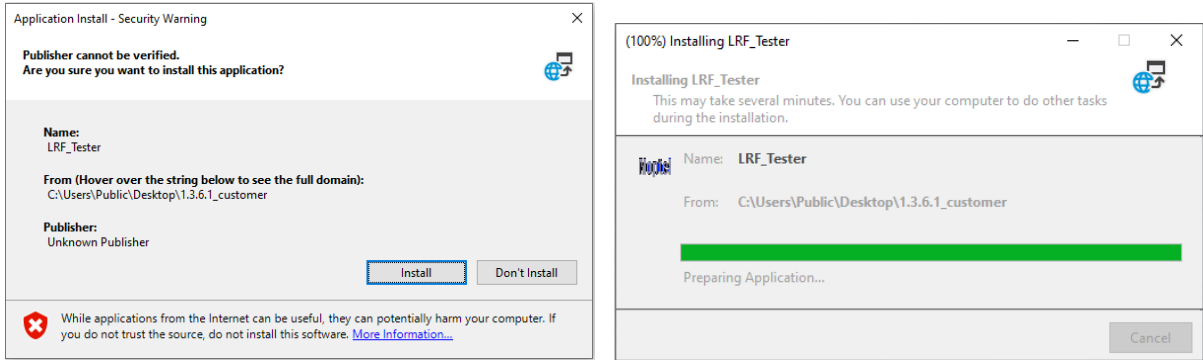
Picture 2b. Message if software is already installed.

If a newer version of the software is needed to install, the previous version must be uninstalled from **'Control Panel->Programs and Features->Uninstall/Change'** before installation.

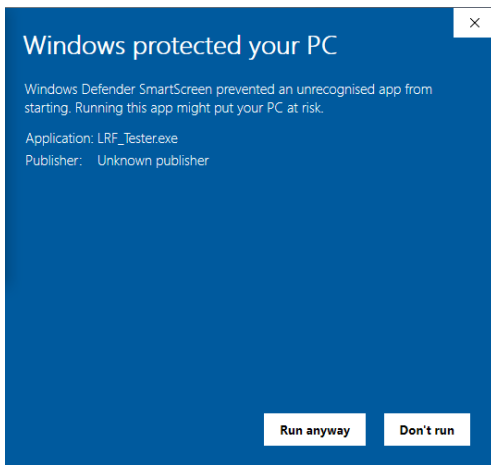
Follow through the installation process (picture 3). If Windows Defender gives a warning, click **'More Info'** and **'Run anyway'** (picture 4).

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<sup>1</sup> Windows Defender might prevent the setup to start but user can bypass this by clicking "Run anyway" (picture 2a). If the software is already installed on the PC, a message is shown (picture 2b).

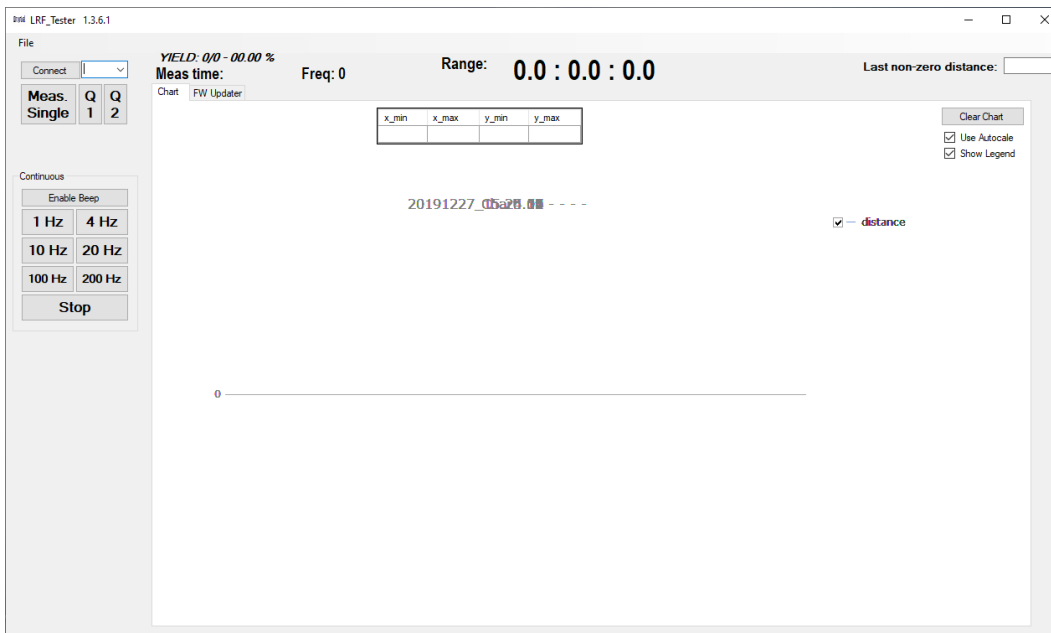


Picture 3. Installation phases.



Picture 4. Windows defender warning.

After the installation is finished, LRF\_Tester will automatically launch (picture 5).

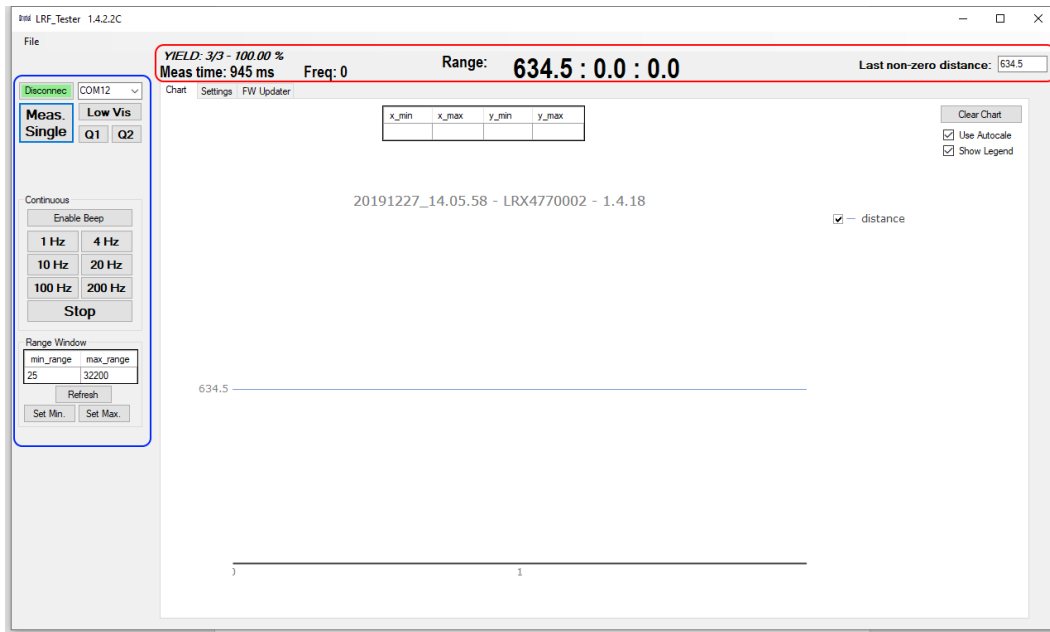


Picture 5. Program window.

## Using LRF\_Tester software

As previously noted, the software is intended for demonstrations and testing purposes thus only basic operation of compatible devices is possible.

The operations are divided into three different tabs, named **“Chart”**, **“Settings”** and **“FW Updater”**. The measurement controls are on the left side panel and measurement information on the upper panel of the GUI window (picture 6).

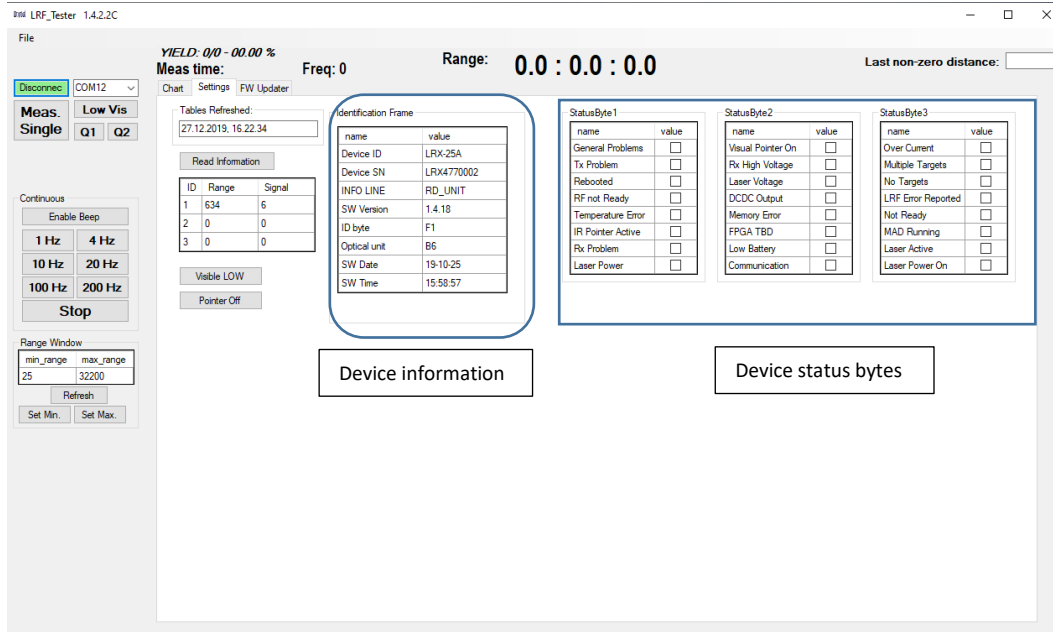


Picture 6. Device control and measurement information on the GUI window. Controls highlighted in blue and information in red color.

## Connecting the device

After powering-up the device and connecting it to the PC, select the appropriate COM port from dropdown list and click **‘Connect’**<sup>2</sup>. If the connection is successful, the text in connect-button changes and the button turns into light green color. Moreover, the **“Settings”** tab is automatically opened. The information of the connected device is presented in **‘Identification Frame’** on the tab (picture 7).

<sup>2</sup> The dropdown list covers all the available COM ports thus the user should be familiar with the correct port for the device.



Picture 7. Settings tab after connecting the device.

### SMM range measurements

The Single Measurement Mode (SMM) range measurement is performed by clicking '**Meas. Single**' button. '**Q1**' and '**Q2**' buttons perform Quick SMM measurements using constant durations.<sup>3</sup> '**Low Vis**' will perform low visibility measurement if applicable.

The measured distances (1 - 3) are presented in upper panel together with the measurement time used (in milliseconds). Additional information on the quality of measured distances can be seen on "**Settings**" tab by clicking '**Read Information**' button. The most probable distance is also plotted on the graph. If no target is detected, zero (0) value is returned.

### CMM range measurements

The continuous measurement mode (CMM) is initiated by clicking desired CMM frequency button.<sup>4</sup> The CMM measurement can be running non-stop and is stopped from '**Stop**' button. CMM will also stop if any other command to the device is send, i.e. any button is clicked during the running measurement.

Similarly, as in SMM, the most probable target distance is plotted in the graph and all (1 to 3) distances are shown in the upper panel together with the measurement time used in the measurement. Additionally, the actual measurement rate (frequency) is presented as well.

<sup>3</sup> Refer to device ICD document for additional information.

<sup>4</sup> The available measurement rates are 1 Hz, 4 Hz, 10 Hz, 20 Hz, 100 Hz and 200 Hz.

## Range window

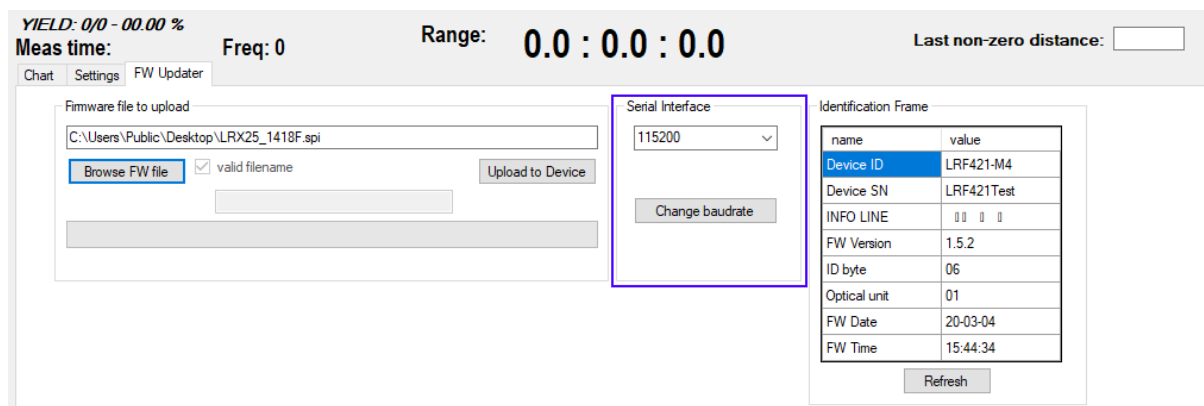
Measurement results can be limited to desired range window, where lowest and highest possible distance values can be set using the **'Set Min'** and **'Set Max'** buttons, respectively. **'Refresh'** button reads the current settings from the device.

## Updating device firmware

The device firmware can be updated on **"FW Updater"** tab (picture 8). At first, browse and select the firmware file. If the selected FW file is valid, the 'Upload to Device' button will become enabled. Now, click the button and wait until FW update is finished. The device may require a restart after the update.

## Changing the baud rate

The baud rate of the serial interface can be changed on the **"FW Updater"** tab (Picture 8). Select the desired baud rate from the dropdown list and click **'Change baudrate'**<sup>5</sup>.



Picture 8. The FW Updater tab.

The baud rate of the LRF\_tester software can be also changed before connection to match the LRF baud rate.

## Controlling the pointer

The visible (red) pointer can be switched ON/OFF on the **"Settings"** tab. Pointer is automatically switched off after range finding.

## Exporting diagnostics data

In case additional diagnostics data is requested by Noptel, it can be easily saved to PC from File menu **'File->Export Diagnostics'**.

<sup>5</sup> The dropdown list covers all the available baud rate values.

NOTE: The baud rate will be saved only into volatile memory thus the baud rate will be reset to original after restarting the device. Read the ICD of the LRF for further instructions to permanently change the baud rate.