Melexis

INNOVATION WITH HEART

DVK90901

Fingertip Module UI Application Note

Revision 2.0.0 - 06 NOV 2026

Contents

1 Introduction **1**

2 Prerequisites **2**

3 Installation Procedure **3**

3.1 Windows Installation 3

4 Application Description **5**

4.1 Connection Window 5

4.2 Application Overview 5

4.3 Menu Bar 6

5 Revision history **7**

6 Disclaimer **8**

1 Introduction

The Melexis Fingertip Module UI is the PC application for the DVK90901 Tactaxis fingertip module. It connects to the module, visualizes its 3D force and touch-localization output, and logs the measurements.

The Fingertip Module UI communicates with the fingertip module over I2C through a Melexis.IO (USB). It shows the real-time force vector (Fx, Fy, Fz), the force norm, and the touch position on the fingertip surface, and it can record measurements to a CSV log file.

In this document, “Fingertip Module UI” refers to the PC application and “fingertip module” refers to the DVK90901 hardware.

2 Prerequisites

The Fingertip Module UI connects to the fingertip module through a Melexis.IO, which appears on the computer as a USB serial (CDC) port. No additional chip-specific PSF, MMF, or FPGA files are required.

The Fingertip Module UI supports fingertip module firmware v1.0.0 and newer.

3 Installation Procedure

The Fingertip Module UI runs on 64-bit Windows 10 and Windows 11.

3.1 Windows Installation

Double-click on FingertipModuleUI_Installer.exe and follow the installation procedure. Local administrative rights are not required: by default the application is installed for the current user only. When the installer asks, you can choose to install it for all users instead, which needs administrator rights.

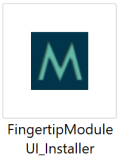


Figure 1: FingertipModuleUI installer



Figure 2: Setup: additional tasks

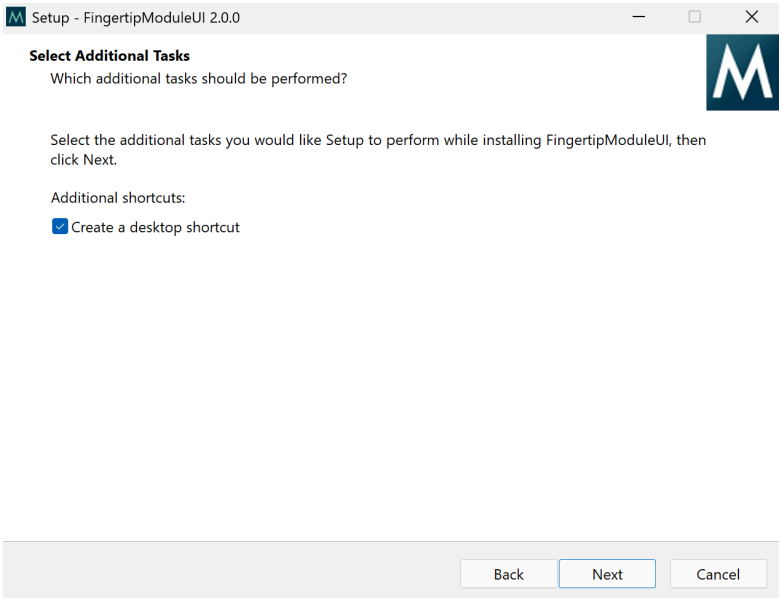


Figure 3: Setup: Ready to install

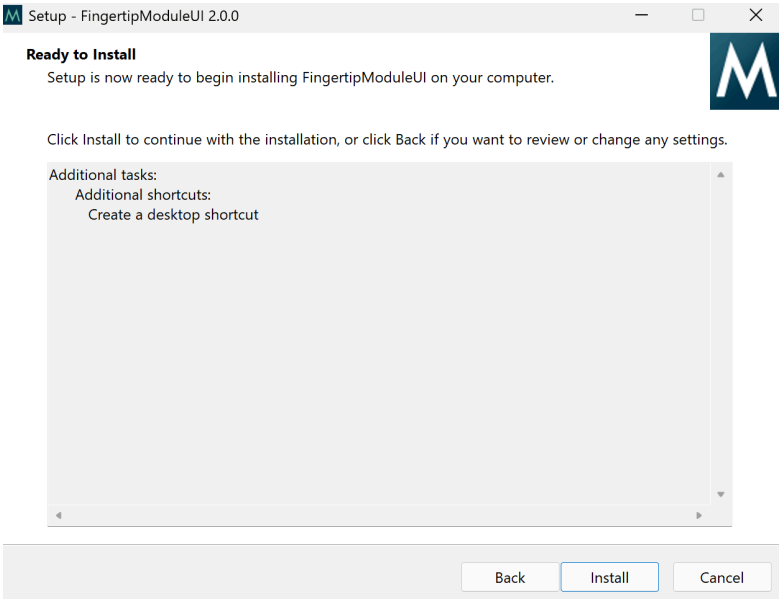


Figure 4: Setup: Installing

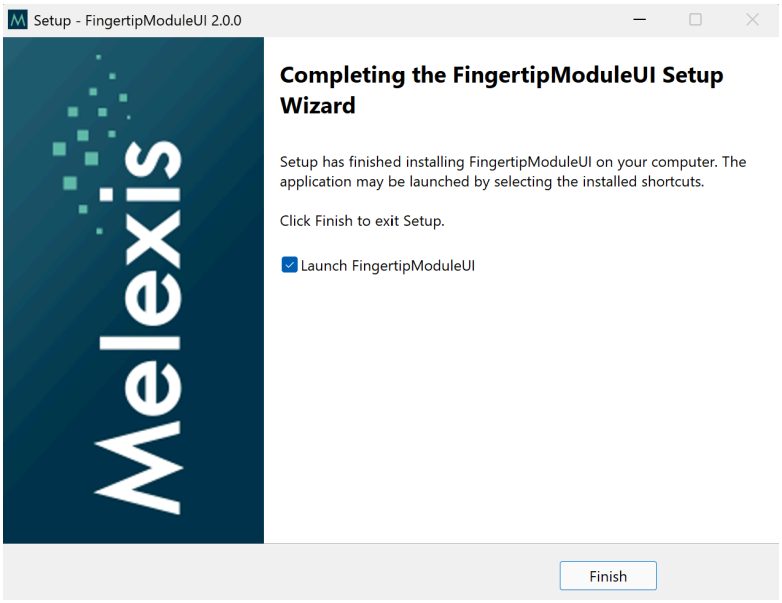


Figure 5: Setup: Complete

After installation, the Fingertip Module UI is available from the Windows Start Menu as FingertipModuleUI. A desktop shortcut is created only if **Create a desktop shortcut** is selected in the additional tasks step. For a current-user installation the default installation path is “C:\Users\<user>\AppData\Local\Programs\Melexis\Fingertip-ModuleUI”.

4 Application Description

This section describes the features of the Fingertip Module UI.

4.1 Connection Window



Figure 6: Connection Window: Connect

After starting, the application opens the connection window:

- **Select Connection Port**: select the USB serial port of the connected Melexis.IO. Click **Refresh** to update the list after plugging in the Melexis.IO.
- **Language**: switch the user interface between English and Chinese.
- **Connect**: opens the main window once the connection to the fingertip module is established.

4.2 Application Overview

The main window shows the real-time output of the fingertip module.

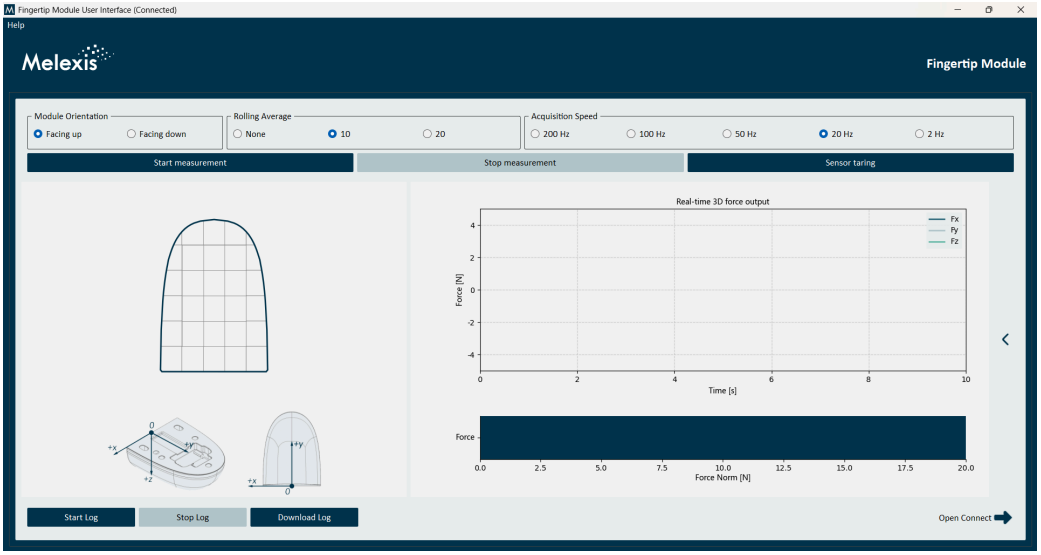


Figure 7: Application Overview

The arrow button at the side of the main window shows or hides an information panel with a description of the application features. **Open Connect** returns to the connection window, for example to select another port.

4.2.1 Measurement Controls

The measurement controls are at the top of the main window (see the figure above):

- **Module Orientation**: select **Facing up** (default) or **Facing down** to match how the module is mounted. Facing down mirrors the X axis of the fingertip map (touch position, shear arrow and highlighted sectors) and shows the matching axis frame-of-reference picture. The force graph and the log file always show the values as the sensor reports them.
- **Start Measurement**: begins reading force and localization data from the module.
- **Stop Measurement**: stops the measurement.
- **Sensor Taring**: zeroes the force output (tare). Do not touch the sensor while the taring message is shown.
- **Rolling Average**: averages the displayed data over the selected number of samples (None, 10, or 20) to smooth the signal. The default is 10.
- **Acquisition Speed**: selects the measurement rate (200, 100, 50, 20, or 2 Hz).

4.2.2 Logging

- **Start Log**: begins recording the measurements to a CSV file. The file contains the columns Timestamp, Fx, Fy, Fz, X and Y. An indicator shows that recording is active.
- **Stop Log**: stops the recording.
- **Download Log**: saves the most recent log file to a chosen location.

Log files are first written to a temporary folder. Use **Download Log** to keep a copy.

4.3 Menu Bar

4.3.1 About Window

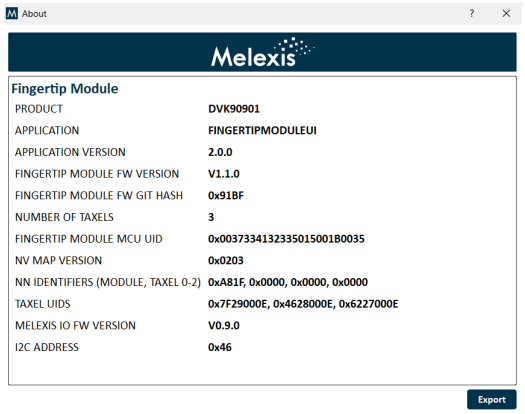


Figure 8: About window

Help > About shows detailed information about the module and the application: the product, the application and its version, the fingertip module FW version and git hash, the number of taxels, the MCU unique ID, the NV map version, the neural network identifiers, the taxel unique IDs, the Melexis.IO FW version, and the I2C address. Values that could not be read from the module are shown as N/A.

The **Export** button saves the About information to an HTML or text file, so it can be sent to Melexis support without taking a screenshot.

5 Revision history

Version	Date	Change History
2.0.0	06 NOV 2026	Initial creation.

Table 1: Revision history

6 Disclaimer

The content of this document is believed to be correct and accurate. However, the content of this document is furnished "as is" for informational use only and no representation, nor warranty is provided by Melexis about its accuracy, nor about the results of its implementation. Melexis assumes no responsibility or liability for any errors or inaccuracies that may appear in this document. Customer will follow the practices contained in this document under its sole responsibility. This documentation is in fact provided without warranty, term, or condition of any kind, either implied or expressed, including but not limited to warranties of merchantability, satisfactory quality, non-infringement, and fitness for purpose. Melexis, its employees and agents and its affiliates' and their employees and agents will not be responsible for any loss, however arising, from the use of, or reliance on this document. Notwithstanding the foregoing, contractual obligations expressly undertaken in writing by Melexis prevail over this disclaimer.

This document is subject to change without notice, and should not be construed as a commitment by Melexis. Therefore, before placing orders or prior to designing the product into a system, users or any third party should obtain the latest version of the relevant information. Users or any third party must determine the suitability of the product described in this document for its application, including the level of reliability required and determine whether it is fit for a particular purpose.

This document as well as the product here described may be subject to export control regulations. Be aware that export might require a prior authorization from competent authorities. The product is not designed, authorized or warranted to be suitable in applications requiring extended temperature range and/or unusual environmental requirements. High reliability applications, such as medical life-support or life-sustaining equipment or avionics application are specifically excluded by Melexis. The product may not be used for the following applications subject to export control regulations: the development, production, processing, operation, maintenance, storage, recognition or proliferation of:

1. *chemical, biological or nuclear weapons, or for the development, production, maintenance or storage of missiles for such weapons; 2. civil firearms, including spare parts or ammunition for such arms; 3. defense related products, or other material for military use or for law enforcement; 4. any applications that, alone or in combination with other goods, substances or organisms could cause serious harm to persons or goods and that can be used as a means of violence in an armed conflict or any similar violent situation.*

No license nor any other right or interest is granted to any of Melexis' or third party's intellectual property rights.

If this document is marked "restricted" or with similar words, or if in any case the content of this document is to be reasonably understood as being confidential, the recipient of this document shall not communicate, nor disclose to any third party, any part of the document without Melexis' express written consent. The recipient shall take all necessary measures to apply and preserve the confidential character of the document. In particular, the recipient shall (i) hold document in confidence with at least the same degree of care by which it maintains the confidentiality of its own proprietary and confidential information, but no less than reasonable care; (ii) restrict the disclosure of the document solely to its employees for the purpose for which this document was received, on a strictly need to know basis and providing that such persons to whom the document is disclosed are bound by confidentiality terms substantially similar to those in this disclaimer; (iii) use the document only in connection with the purpose for which this document was received, and reproduce document only to the extent necessary for such purposes; (iv) not use the document for commercial purposes or to the detriment of Melexis or its customers. The confidentiality obligations set forth in this disclaimer will have indefinite duration and in any case they will be effective for no less than 10 years from the receipt of this document.

This disclaimer will be governed by and construed in accordance with Belgian law and any disputes relating to this disclaimer will be subject to the exclusive jurisdiction of the courts of Brussels, Belgium.

The invalidity or ineffectiveness of any of the provisions of this disclaimer does not affect the validity or effectiveness of the other provisions.

The previous versions of this document are repealed.

Melexis © - No part of this document may be reproduced without the prior written consent of Melexis. (2026)

IATF 16949 and ISO 14001 Certified

Happy to help you! www.melexis.com/technical-inquiry