# Misa Cal M

Tutorial

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# Misa Cal M

1.1.0 or higher

## Tutorial

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This documentation has been prepared with great care. However, errors can never be entirely ruled out. Please send comments regarding possible errors to the address above.

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# Table of contents

# 1 Overview

## 1.1 Misa Cal M – Product description

Misa Cal M is a mobile app for Android™ devices.

Misa Cal M is used together with the Metrohm Instant SERS Analyzer (Misa). Misa is connected to the Misa Cal M mobile app via Bluetooth® wireless technology.

Misa Cal M enables you to do the following:

**Analyze samples**

- Set the parameters that are required for your application and acquire samples.
- The acquired spectrum of a substance is compared with existing spectra in a library.

**Manage samples**

- View spectra and results for library identification.
- View sample related information as metadata.
- Edit acquired samples: Overlay spectra or reprocess samples, for example.
- Create and import libraries for sample identification and for reprocessing.
- Share or email data.

## 1.2 Misa Cal M – Product versions

Misa Cal M was developed for Android version 6.0 or higher and Misa firmware version 10.0.1.0 or higher.

The products are available in the following versions:

*Table 1 Product versions*

| Designation | Version feature |
|---|---|
| Misa Cal M mobile app | Version 1.1.0 or higher |

## 1.3    About the documentation

> ### ℹ NOTICE
>
> Please read through this documentation carefully before putting the product into operation.
>
> The documentation contains important information and warnings that must be followed for safe operation of the product.

**Symbols and conventions**

The following icons and formatting may appear in this documentation:

| | |
|---|---|
| *(5-**12**)* | **Cross-reference to figure legend** <br><br> The first number refers to the figure number, the second to the product part in the figure. |
| **1** | **Instruction step** <br><br> Carry out these steps in the sequence shown. |
| **Method** | Designations for names of parameters, menu items, tabs and dialog windows in the software. |
| **File ▶ New** | Menu or menu item |
| **Work area / Properties** | Menu paths in order to arrive at a particular position in the software. |
| **[Continue]** | **Button** or **key** |

## 1.4    Additional information

**Hardware manual**

Refer to the following hardware manual for more information about the instrument.

- Misa product manual (8.950.8001)

**Misa Cal tutorial**

Refer to the following software tutorial for more information about the desktop software for Misa.

- Misa Cal tutorial (8.0105.8024)

# 2 Safety

## 2.1 Product safety

This product exhibited no flaws in terms of technical safety at the time it left the factory. To preserve this status and ensure non-hazardous operation of the product, the following instructions must be observed carefully.

## 2.2 Hazard levels

The following warning messages indicate the severity of the danger and its possible effects.

⚠️ **DANGER**

**Immediate danger of life**

Irreversible injuries that will result in death.

Warns of dangerous situations or unsafe actions that will most certainly cause severe injuries or death.

Lists measures to avoid hazard.

⚠️ **WARNING**

**Severe health hazards**

Serious injuries that could result in death.

Warns of dangerous situations or unsafe actions that could result in serious injuries or death.

Lists measures to avoid hazard.

> ## ⚠ CAUTION
>
> **Health hazards or severe property damage**
>
> Warns of dangerous situations or unsafe actions that could result in moderate injuries or considerable property damage.
>
> Lists measures to avoid hazard.

## 2.3    Warning symbols

Make sure that any additional hazard symbols are marked on the product for your operation of the product.

The following warning symbols in the documentation and at hazard areas of the product point out hazard potentials:

⚠ – Warning of a hazard area

> ## ℹ NOTICE
>
> **Warning symbol on the product**
>
> If this warning symbol is on the product, read the respective documentation prior to installation and initial start-up.

⚡ – Warning of electric shock from electrical potential

🔥 – Warning of danger of fire and explosion from highly flammable substances and gases

☒ – Warning of danger of poisoning and chemical burns from chemical hazardous substances

☣ – Warning of danger of infection and poisoning from biological hazardous substances

♨ – Warning of risk of injury from high temperatures

⚠ – Warning of cut injuries from pieces of broken glass and/or sharp edges

⚠ – Warning of risk of injury by laser radiation

⚠ – Warning of dangerous optical radiation

## 2.4 Intended use

Metrohm products are used for the analysis and handling of chemicals and other materials.

Usage therefore requires the user to have basic knowledge and experience in handling chemicals. Knowledge with respect to the application of the fire prevention measures prescribed for laboratories is also mandatory. Be sure to take proper safety precautions when working with chemicals.

Adherence to this technical documentation and compliance with the maintenance specifications make up an important part of intended use.

Any utilization in excess of or deviating from the intended use is regarded as misuse.

Specifications regarding the operating values and limit values of individual products are contained in the "Technical specifications" section, if relevant.

Exceeding and/or not observing the mentioned limit values puts people and components at risk. The manufacturer assumes no liability for damage due to non-observance of these limit values.

The EU declaration of conformity loses its validity if modifications are carried out on the instruments and/or the components.

## 2.5 Residual risks

### 2.5.1 General dangers at the workplace

Generally, the regulations and provisions of the regulatory institutions and authorities in the field of work apply.

The instructions regarding the following areas have to be followed when using the products:

- Work safety
- Handling mechanical installations
- Handling electricity
- Handling hazardous and environmentally damaging substances
- Handling hazardous and environmentally damaging liquids

- Disposing hazardous and environmentally damaging substances

If they are not followed, this may result in:

- Disturbing, injuring and/or killing of people
- Malfunction and/or damage to instruments and infrastructure
- Damage and/or contamination of the environment

> ⚠️ **WARNING**
>
> **General dangers at workplace**
>
> If the safety measures are not followed, working in a laboratory bears a high risk of injury, which can endanger life and health.
>
> - Only professionally trained and qualified specialist personnel may operate the products.
> - Follow the applicable provisions concerning work safety and all regulations on wearing protective clothing.
> - Use suitable tools to perform your work.
> - Check the fill level of waste bottles or waste canisters and analysis vessels, and make sure they do not overflow.
> - Use protective grounding when working with highly flammable substances and gases.

### 2.5.2 Danger from electrical potential

> ⚡ **WARNING**
>
> **Electric shock from electrical potential**
>
> Risk of injury by touching live components or through moisture on live parts.
>
> - Never open the housing of the instrument.
> - Protect live parts (e.g. power supply unit, power cord, connection sockets) against moisture.
> - If you suspect that moisture has gotten into the instrument, disconnect the instrument from the energy supply. Then notify Metrohm Service.
> - Only personnel who have been issued Metrohm qualification may perform service and repair work on electrical and electronic components.
> - The electrical safety of the instrument is ensured as part of the international standard IEC 61010.

### 2.5.3 Laser safety

⚠ **WARNING**

**Risk of injury by laser radiation**

Misa is a class 1 laser product and is safe under all conditions of normal use. Use of controls or adjustments or performance of procedures other than those specified in the user manual may result in exposure to hazardous levels of laser radiation.

- Follow the safety measures and instructions.
- Do not use the instrument in a manner that is not specified in the user manual.
- Do not open the housing of the instrument.
- Do not disable or circumvent the interlock protection mechanism of the Smart Tips.
- Follow the provisions of the IEC 60825-1 standard "Safety of laser products" and the regulations for the use of laser systems in your country.

**Laser classification depending on Smart Tips**

| Attached Smart Tip | Laser Class 1 |
|---|:---:|
| Calibration Standard | **X** |
| Misa Vial Holder | **X** |
| P-SERS Attachment | **X** |

Calibration Standard, Misa Vial Holder, and P-SERS Attachment have an interlock mechanism for measurement. This mechanism prevents laser radiation from emerging.

The laser stops immediately if:

- The lid of the Smart Tip is opened.
- The attached Smart Tip is disconnected from the instrument.

### 2.5.4 Danger from radiofrequency radiation

> ⚠️ **CAUTION**
>
> **Exposure to radiofrequency radiation**
>
> This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
>
> ▪ This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

## 2.6 Responsibility of the operator

- Eliminate defects or damage which impair operating safety without delay.
- Eliminate malfunctions which could impair safety without delay.
- The rules, regulations and instructions listed in the present document are not the only valid ones. Comply with the applicable statutory rules, government agency directives and regulations.
- Unauthorized modification of the products excludes any and all liability on the part of the manufacturer for any damage resulting from this as well as for any consequential damage. No modifications, attachments or conversions which could impair safety may be carried out on the products without the approval of the manufacturer.
- Spare parts must meet the technical requirements established by the manufacturer. Original spare parts always meet these requirements.
- Personnel must be familiar with this safety-relevant information and it must be available for consultation at all times.

## 2.7 Personnel requirement

Only qualified personnel may operate this product. A qualified person is a user who has thoroughly reviewed this document and has a comprehensive understanding of the operations of the instrument.

The instrument is used for the analysis of chemical compounds, some of which may be hazardous. The user must be capable of recognizing and avoiding possible dangers, and be aware of standards, laws and regulations governing the handling of such chemicals.

# 3 Functional description

## 3.1 Misa Cal M – Overview



*Figure 1 Home screen – Overview*

| 1 | **App settings** | 2 | **DISCOVER** |
|---|---|---|---|
| | Export the database to the Android device and define app settings. | | Click on **DISCOVER** to establish a connection with Misa. |

| **3** | **App version** | **4** | **DEVICE tab** |
|---|---|---|---|
| | Displays the installed app version. | | *DEVICE tab – Overview (see chapter 3.1.1, page 11)* |

| **5** | **SAMPLES tab** | **6** | **LIBRARIES tab** |
|---|---|---|---|
| | *SAMPLES tab – Overview (see chapter 3.1.2, page 12)* | | *LIBRARIES tab – Overview (see chapter 3.1.3, page 13)* |

| **7** | **OPS tab** |
|---|---|
| | *OPS tab – Overview (see chapter 3.1.4, page 15)* |

### 3.1.1 DEVICE tab – Overview
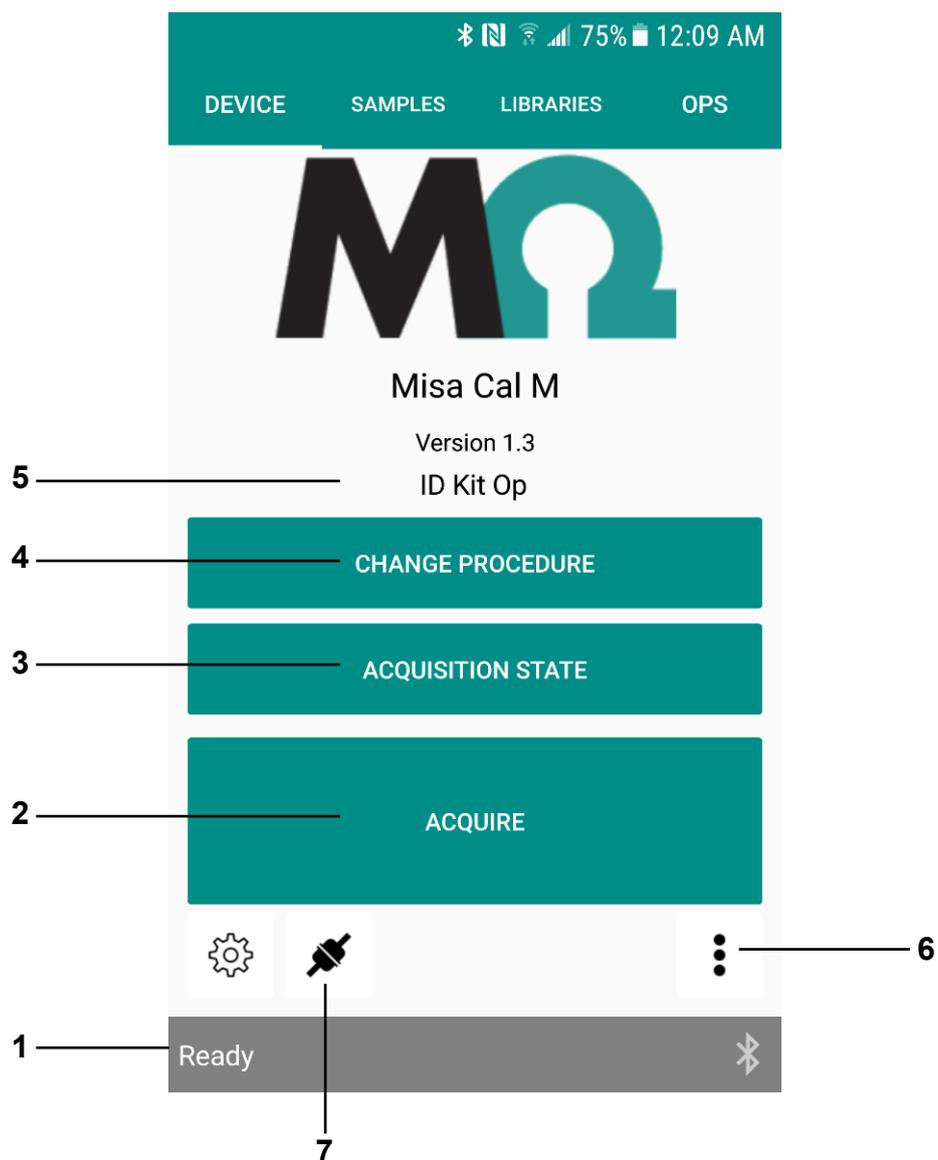


*Figure 2    DEVICE tab – Overview*

| **1** | **Instrument status** | **2** | **ACQUIRE** |
|---|---|---|---|
| | Displays the instrument status. | | Acquire data. *See "Measuring a sample", page 23*. |

| **3** | **ACQUISITION STATE** | **4** | **CHANGE PROCEDURE** |
|---|---|---|---|
| | Define data acquisition settings. *See "ACQUISITION STATE", page 25*. | | Change the operating procedure for data acquisition. *See page 23*. |

**5** **Current operating procedure**
Displays the selected operating procedure
for data acquisition.

**6** **Device menu**
Perform instrument related actions, e.g. view
instrument information, download samples
from Misa to Misa Cal M or calibrate the
instrument.

**7** **Device connected**
Click to disconnect Misa.

### 3.1.2    SAMPLES tab – Overview
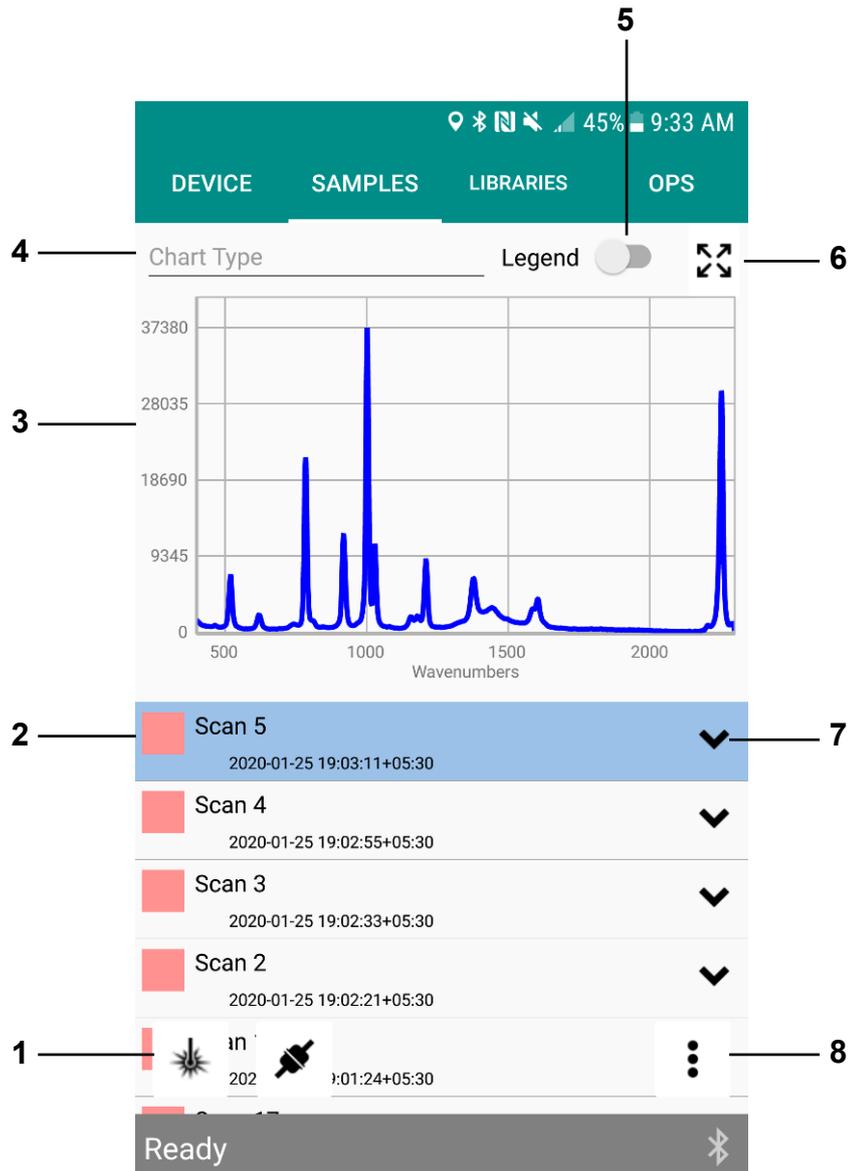


*Figure  3    SAMPLES tab – Overview*

**1** **Acquire data**
Measure a sample.

**2** **Sample**
View an acquired sample.

| | | | |
|---|---|---|---|
| **3** | **Spectrum chart** | **4** | **Chart Type** |
| | The chart displays the spectrum of the selected sample. | | Select a chart type to display spectra. |
| **5** | **Legend** | **6** | **Full screen** |
| | Show or hide a legend with sample names. | | Expand the spectrum to full screen. |
| **7** | **Expand** | **8** | **Sample menu** |
| | Show identification results and mixture results. | | Delete samples, edit samples and export data. *See "Samples", page 26.* |

### 3.1.3    LIBRARIES tab – Overview
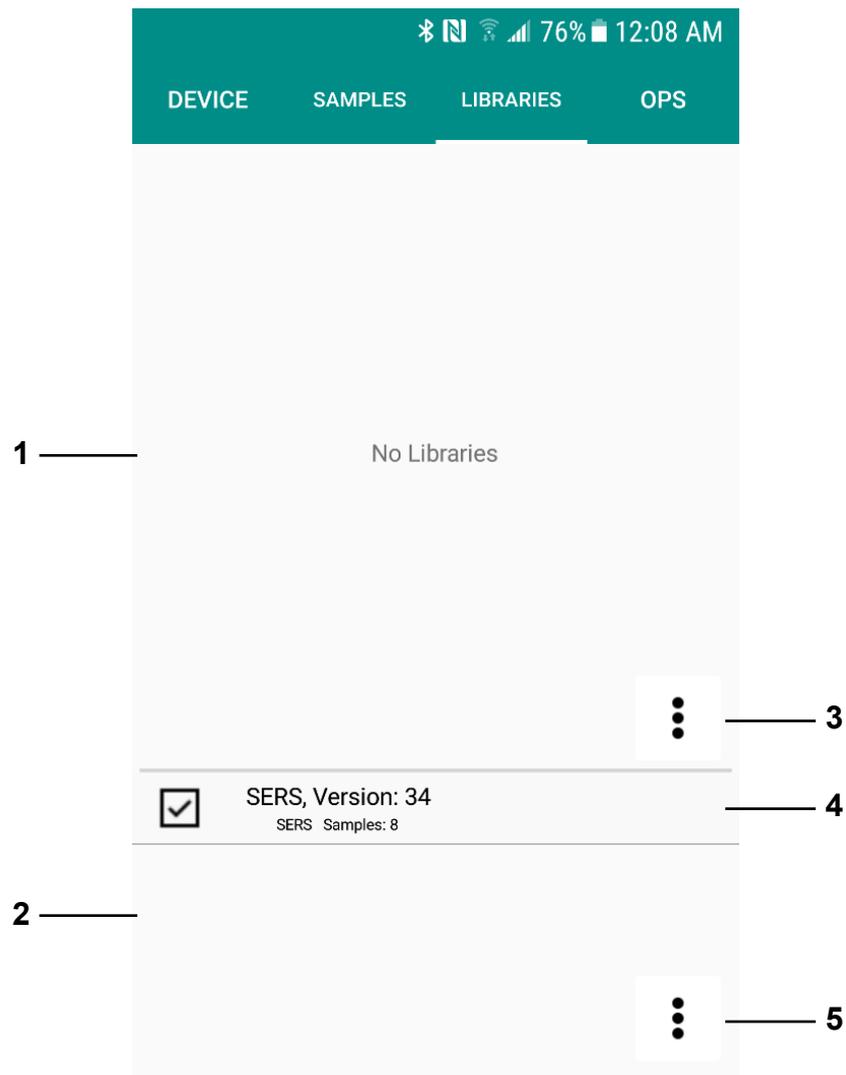


*Figure  4    LIBRARIES tab – Overview*

| | | | |
|---|---|---|---|
| **1** | **User created libraries** | **2** | **Licensed libraries** |
| | List of all available user created libraries. | | List of all available licensed libraries. |

**3**   **Library menu**
Import or create a library. *See "Libraries", page 30*.

**5**   **Licensed library menu**
Import a licensed library. *See "Importing libraries", page 32*.

**4**   **View details**
View or edit a library. *See "Viewing and editing libraries", page 30*.

### 3.1.4 OPS tab – Overview



*Figure 5    OPS tab – Overview*

| **1** | **Operating procedure** | **2** | **View details** |
|---|---|---|---|
| | Lists all available operating procedures. | | View or edit an operating procedure. *See "Viewing and editing operating procedures", page 33.* |

| **3** | **Operating procedure menu** |
|---|---|
| | Import, export, delete or create operating procedures. *See "Operating procedures", page 33.* |

# 4   Installation

## 4.1      Installing Misa Cal M for Android

**Getting Misa Cal M on Google Play™**

Misa Cal M was developed for Android version 6.0 or higher.

**1**   On the Android device, open the Google Play Store app and search for **Misa Cal M** or scan the following QR code:



**2**   Click on **[Install]**.

**3**   Once the download and the installation are completed, open Misa Cal M.

When prompted, grant the requested permissions.
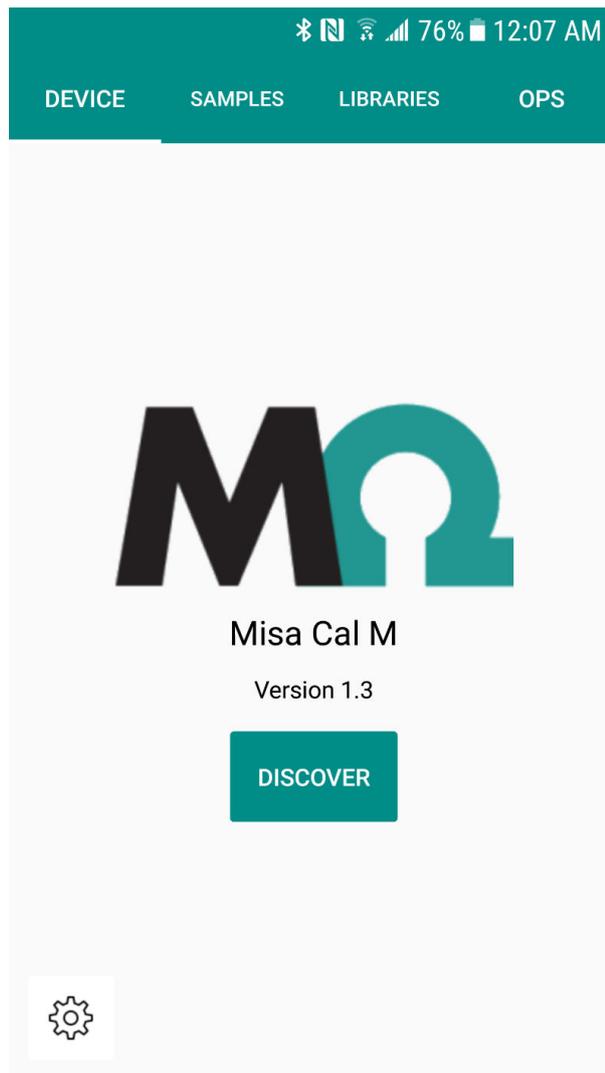
*Figure 6    Misa Cal M – Home screen*

# 5  Initial start-up

## 5.1    Connecting Misa

### Connecting Misa to Misa Cal M via Bluetooth

**Prerequisites:**

- Misa needs to be within 10 m of the Android device, either tablet or smartphone.
- Misa is switched on.

**1  Enabling Bluetooth**

- Enable Bluetooth on the Android device.
- On Misa, a blue flashing Bluetooth indicator on the control panel indicates that Bluetooth is activated and Misa is ready to connect.
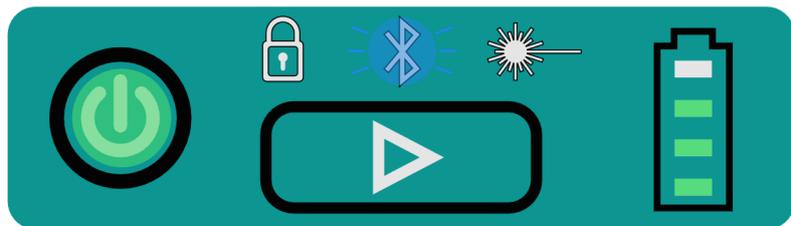


### ℹ NOTICE

Bluetooth connection is activated on Misa by default and only deactivated during connection to Misa Cal via USB. Bluetooth cannot be enabled or disabled manually.

**2** **Pairing and connecting**

- On the Android device, open Misa Cal M.
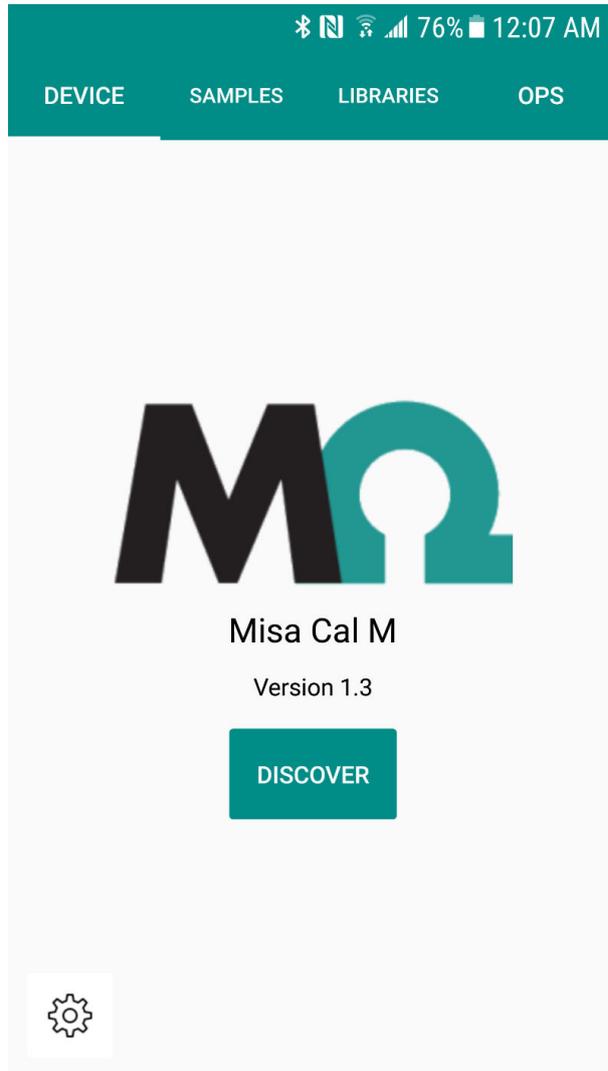
- Click on **[Discover]**.
  Misa will appear in the available devices with the model name followed by the serial number.
  Example: Misa 195000200020300000
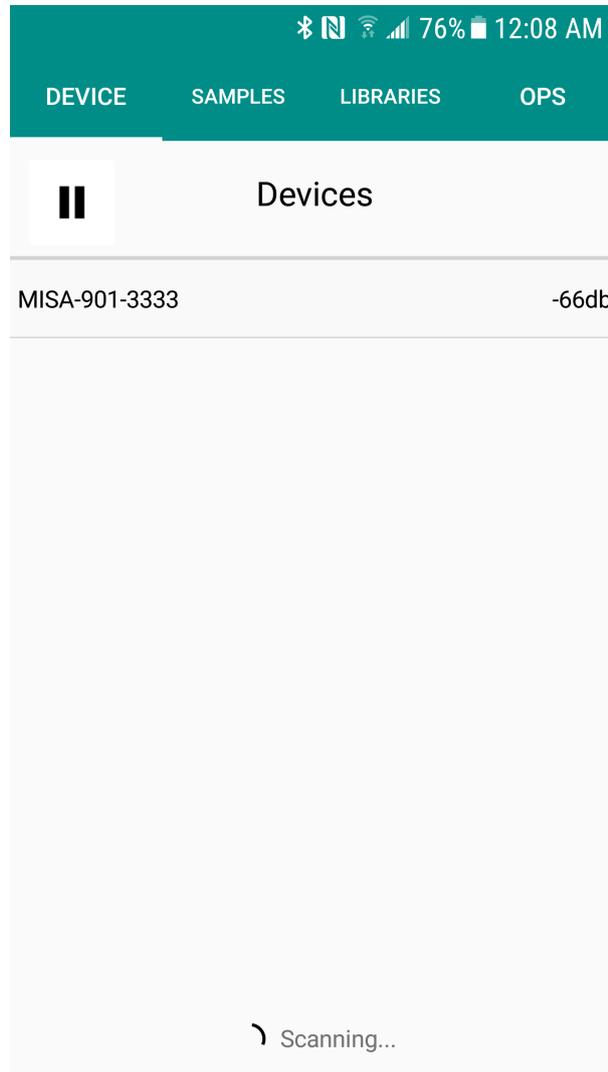


> ℹ **NOTICE**
>
> If no devices are detected, ensure that Misa is turned on and Bluetooth is enabled on the Android device.
>
> Do not attempt to pair Misa to the mobile device using the native Android Bluetooth settings. Only connect through the Misa Cal M app.

- Select the Misa device to be connected.
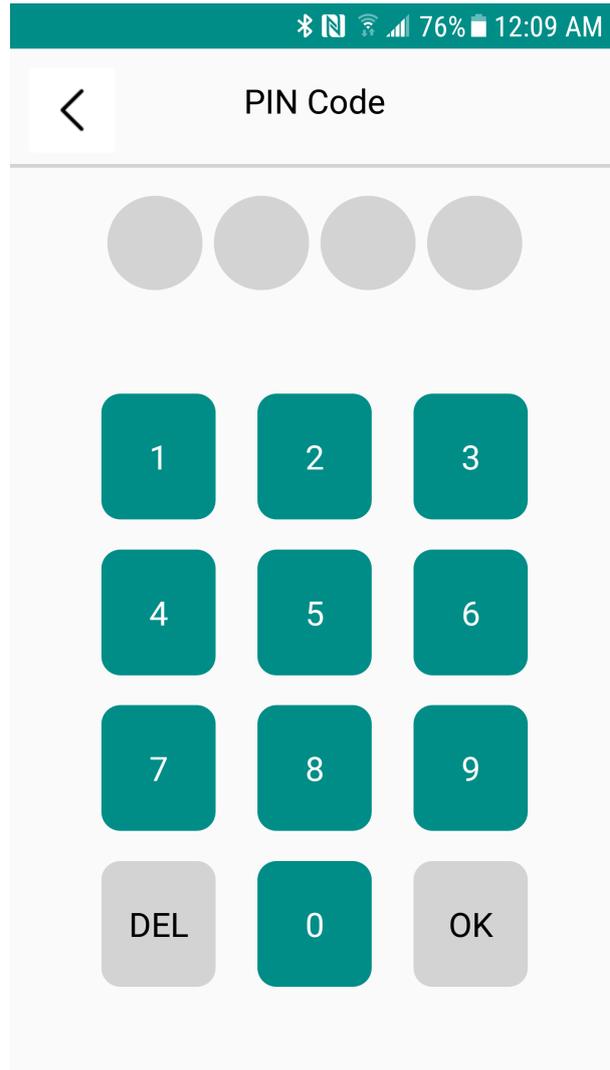


- Enter the PIN code **9999**. Click on **[OK]**.

The Android device is now connected to Misa. Misa is ready to acquire data and the Bluetooth indicator changes to slow flashing.

> ℹ️ **NOTICE**
>
> To change the PIN code, please refer to the Misa Cal tutorial (8.0105.8024).

# 6 Operation and control

## 6.1 Calibrating Misa

A calibration is performed to determine if acquisitions are within an acceptable range of parameters. To apply corrections use the Calibration Standard (6.07501.010). The Calibration Standard contains an ASTM 1840 reference sample for calibration. Calibration is recommended daily and additionally in the following situations:

- on receiving a new instrument
- after a long period of non-usage
- after service
- after extreme environmental changes (e.g. a large change in temperature)
- mechanical shock (e.g. a drop)

> **ℹ NOTICE**
>
> On connection to Misa, Misa Cal M will automatically prompt to calibrate Misa and perform a System Suitability Test (SST). Follow the prompt to calibrate Misa prior to use. The calibration can be canceled by clicking on **[Cancel]**. To calibrate Misa at a later stage, follow the steps below.

**1** In Misa Cal M, go to the **DEVICE** tab.

**2** Expand the **Device** menu with ⋮.

**3** Select **[Calibrate]**.

A popup window prompts you to attach the Calibration Standard.

**4** Attach the Calibration Standard. Click on **[OK]** to proceed.

Misa is calibrated. A popup window confirms the completed calibration.

**5** Click on **[OK]** to close the popup window.

The calibration is completed.

## 6.2 Performing a System Suitability Test

A System Suitability Test is a self-test to demonstrate instrument suitability. Several internal test procedures are performed. For example peak intensity and wavenumber calibration check. The user can run this test independently of calibration. The test can be run on a daily basis to ensure that the instrument runs as expected. After success or failure of the test, a report can be saved. The report shows details of performed tests.

**1**   In Misa Cal M, go to the **DEVICE** tab.

**2**   Expand the **Device** menu with ⋮.

**3**   Select **[System Suitability Test]**.

A popup window prompts you to attach the Calibration Standard.

**4**   Attach the Calibration Standard. Click on **[OK]** to proceed.

The System Suitability Test is performed. A popup window confirms the completed System Suitability Test.

**5**   Click on **[OK]** to close the popup window.

The System Suitability Test is completed.

A report is generated and exported to the Android device automatically. The report is stored in the following folder on the Android device: **MetrohmRaman ▶ MisaCalM ▶ Exports ▶ SST**.

The result is displayed in the **SAMPLES** tab.

## 6.3 Measuring a sample

**Prerequisites:**

- Misa is connected to Misa Cal M.
- Misa Cal M shows the **DEVICE** tab.

**1**   **Attaching the Smart Tip**

Attach the Smart Tip suitable for the intended acquisition to the Misa instrument.

> **NOTICE**
>
> Refer to the Misa product manual (8.950.8001) for detailed information about the Smart Tips.

**2  Selecting an operating procedure**

On Misa Cal M, the display shows the current operating procedure. By default, the **ID Kit Operating Procedure** is selected.

- To change the operating procedure, click on **[CHANGE PROCE-DURE]**.
- Select an operating procedure from the list.
- Go back to the acquisition screen with $\langle$.

The display shows the selected operating procedure.

> **NOTICE**
>
> Additional operating procedures can be imported or created in the OPS tab. *See "Operating procedures", page 33.*

**3  Defining the acquisition settings**

To define options for the data acquisition, click on **[ACQUISITION STATE]**. For the available options, *see menu "ACQUISITION STATE", page 25*.

**4  Acquiring data**

**Option 1:**

- Click on **[ACQUIRE]** in the Misa Cal M app.

**Option 2:**

- Misa One Touch – Click on the acquisition button on the Misa control panel.

The sample is measured with the options defined in Misa Cal M. After the acquisition, the data is transferred from Misa to Misa Cal M for analysis.

---

### NOTICE

The interlock indicator lights up in red when the current state of Misa prevents an acquisition. If the interlock indicator lights up, check the following:

- The Smart Tip is attached correctly.
- The lid of the Smart Tip is closed.
- The Smart Tip matches the acquisition settings (e.g. operating procedure).

Try again to acquire data.

---

| ACQUISITION STATE | |
|---|---|
| **Multi Acquisition ▶** | |
| **Continuous** | If activated, Misa executes scans until **[STOP ACQUISITION]** on the acquisition screen is clicked on. |
| | ▪ **Delay s** <br> Delay time between individual scans in seconds. |
| **Multi** | If activated, Misa executes a defined number of scans. |
| | ▪ **Count** <br> Number of scans that Misa takes. <br> ▪ **Delay s** <br> Delay time between individual scans in seconds. |
| **Matching ▶** | |
| **Identification Match** | Can only be activated if SERS Match is deactivated. |
| | ▪ **Threshold** <br> Threshold for matching. A low number increases the chances of false positives. <br> ▪ **Max Matches** <br> Number of identification results displayed, between 1 and 10. |
| **SERS Match** | Can only be activated if Identification Match is deactivated. |
| | If activated, samples are matched against all enabled SERS libraries using SERS algorithm. |
| **General ▶** | |
| **Result Popup** | If activated, a popup window appears at the end of each scan. This popup window shows the result of the acquisition. |

| | |
|---|---|
| **Name Prompt** | If activated and **[ACQUIRE]** is clicked on, a popup window to enter a sample name appears. |
| **Picture Prompt** | If activated and **[ACQUIRE]** is clicked on, the **Metadata** screen opens. Take a picture of your sample. Click on ✳. After the acquisition, the picture is shown in the metadata of the corresponding sample. *See "Viewing samples", page 26.* |
| **Notify On Acquisition** | There are 2 kinds of notification.<br><br>▪ **Vibrate**<br>Vibration at the end of the acquisition.<br>▪ **Sound**<br>Sound at the end of the acquisition. |

## 6.4     Samples

### 6.4.1     Viewing samples

**Viewing samples**

**1** Go to the **SAMPLES** tab.

**2** Select a sample from the list.

The spectrum of the selected sample is displayed. The following options are available:

- To change the chart type, click on **[Chart Type]**. The **Chart Type** window appears. Select a chart type.
- To reprocess a sample, click and hold the sample name until the **Results** screen appears. To reprocess with local libraries, click on ⟳. *See "Editing samples", page 28.*
- To expand the sample information, click on ⌄.

**Viewing and editing further sample information**

**1** Go to the **SAMPLES** tab and select a sample from the list.

**2** Expand the **Sample** menu with ⋮.

**3** Select **[Metadata]**.

The **Info** screen appears. The following options are available:

- To view geolocation, click on ⊙.
  Google Maps™ is launched.

> ## ℹ NOTICE
>
> Location data is added automatically if the spectrum was acquired using Misa Cal M and the location data was enabled on the Android device during the process.
>
> If the spectrum does not have any location data, only 🌐 displays.

- To update geolocation, click on 🌐.
  The geolocation is updated to the current location of the Android device.

> ## ℹ NOTICE
>
> Ensure location data is enabled on the Android device.

- To add a picture to the sample's metadata, click on 📷. The camera opens. Take a picture. If the picture is satisfactory, confirm with the check mark.
  The picture is added to the metadata.

**4** To save the metadata, click on 💾.

**5** To close the **Info** screen, click on ‹.

## Filtering samples

**1** Go to the **SAMPLES** tab.

**2** Expand the **Sample** menu with ⋮.

**3** Select **[Filter]**.

The **Filter** screen appears.

**4** Select the desired filter criteria.

**5** Click on ▼.

The samples that match the filter criteria are displayed.

**6** To leave the filter, click on ▼×.

## 6.4.2 Editing samples

**Deleting samples**

**1** Go to the **SAMPLES** tab.

**2** Select a sample from the list.

**3** Expand the **Sample** menu with ⋮.

**4** Select **[Delete]**.

The selected sample is deleted.

**Exporting samples**

**1** Go to the **SAMPLES** tab.

**2** Expand the **Sample** menu with ⋮.

**3** Select **[Export]**.

The **Export Type** screen appears.

**4** Select export formats and report type.

**5** Click on ➡.

The **Export Location** window appears.

**6** Select **[External Data]** or **[Email]**.

The **Export** screen appears.

**7** Select the samples that you want to export. To select a sample, tick the box beside the sample name.

**8** Click on ➡.

If the **External Data** export is chosen, the selected samples are exported to the Android device. The samples are stored in the following folder: **MetrohmRaman ▶ MisaCalM ▶ Exports ▶ Samples**. Close the **Export** window with **[OK]**.

If the **Email** export is chosen, Misa Cal M launches the email service selection.

## Overlaying spectra

**1** Go to the **SAMPLES** tab.

**2** Expand the **Sample** menu with ⋮ .

**3** Select **[Overlay]**.

The **Overlay** screen appears.

**4** Select the samples that you want to overlay. To select a sample, tick the box beside the sample name.

The chart shows the overlaid spectra.

**5** To deselect a sample, click on ✕.

**6** Leave the **Overlay** screen with ‹ .

## Reprocessing samples

**1** Click and hold the sample name until the **Results** screen appears or expand the **Sample** menu with ⋮ and select **Results**.

**2** Click on ⟲.

The **Reprocess** screen appears.

**3** Select libraries for reprocessing. To select a library, tick the box beside the library name.

For **Identification** match, also select the values for **Threshold** and **Max Matches**.

**4** Click on ⟲.

## 6.5 Libraries

Libraries can be managed in Misa Cal M. Libraries created in Misa Cal M can be used with Misa Cal desktop software and vice versa, but libraries cannot be transferred to the Misa instrument.

### 6.5.1 Viewing and editing libraries

> **ℹ NOTICE**
>
> Licensed libraries can only be viewed and cannot be edited.

**1** To view or edit existing libraries, go to the **LIBRARIES** tab.

**2** Select a library.

**3** To view a **licensed library**, click on 👁 .

**4** To view or edit a **user library**, click on ✏ . The following options are available:

- To view metadata or to delete a library entry, click on ⋮ next to the library entry.
- To add new library entries, click on ✏ at the bottom right corner of Misa Cal M.

**5** To save any changes to the library, click on 💾 .

**6** To leave library viewing, click on ‹ .

**7** To enable or disable the library, activate or deactivate the check box next to it.

### 6.5.2 Creating libraries

**1** To create a library, go to the **LIBRARIES** tab.

**2** Expand the **Library** menu with the upper ⋮ .

**3** Click on **[New]**.

**4** Name the library.

**5** To add samples to the library and edit the metadata of the samples, click on ✎ .

**6** Select the samples to be added to the library from the list and click on ⊕.

The samples are added to the library.

**7** To edit the metadata of a sample, click on ⋮ next to the sample and select **[Metadata]**.

The following metadata can be edited:

- Name
- CAS number
- Hazard Level
- Sample Type
- Hazard Comment

**8** To save the metadata, click on 💾 .

**9** To save the new library, click on 💾.

The new library is displayed on the **LIBRARIES** tab.

**10** To enable or disable the library, activate or deactivate the check box next to it.

> ℹ️ **NOTICE**
>
> Only standard library types can currently be created on Misa Cal M. To create SERS libraries, please refer to Misa Cal software tutorial (8.0105.8024). SERS libraries created in Misa Cal can be imported into Misa Cal M. *See "Importing libraries", page 32*.

### 6.5.3 Importing libraries

**Importing user created libraries**

**Importing user created libraries from the downloads**

**1** On the Android device, download the library (e.g. from your mail).

**2** In Misa Cal M, go to the **LIBRARIES** tab.

**3** Select ⁝, then **Import ▶ Downloads**.

The imported library is displayed in the list of user libraries.

**4** To enable or disable the library, activate or deactivate the check box next to it.

**Importing user created libraries from the libraries folder**

**1** On the Android device, place the library in the following folder: **Metrohm Raman ▶ MisaCalM ▶ Imports ▶ Libraries**

**2** In Misa Cal M, go to the **LIBRARIES** tab.

**3** Select ⁝, then **Import ▶ External Data**.

The imported library is displayed in the list of user libraries.

**4** To enable or disable the library, activate or deactivate the check box next to it.

**Importing licensed SERS libraries**

Licensed SERS libraries can be purchased from Metrohm and imported into Misa Cal M. The licensed SERS libraries are delivered within a certificate package containing the library database and a license key. The license key is only valid once and activates the licensed library database.

**Importing licensed SERS libraries from the downloads**

**1** On the Android device, download the certificate package (e.g. from your mail).

**2** In Misa Cal M, go to the **LIBRARIES** tab.

**3** Select ⋮, then **Import Certificate Package ▶ Downloads**.

The imported licensed SERS library appears in the list of licensed libraries.

**4** To enable or disable the licensed SERS library, activate or deactivate the check box next to it.

### Importing licensed SERS libraries from the libraries folder

**1** On the Android device, place the certificate package in the following folder: **Metrohm Raman ▶ MisaCalM ▶ Imports ▶ Libraries**

**2** In Misa Cal M, go to the **LIBRARIES** tab.

**3** Select ⋮, then **Import Certificate Package ▶ External Data**.

The imported licensed SERS library appears in the list of licensed libraries.

**4** To enable or disable the licensed SERS library, activate or deactivate the check box next to it.

> **ℹ** **NOTICE**
>
> Once activated, the license is perceptual and will persist through subsequent library updates.

## 6.6 Operating procedures

Operating procedures can be managed in Misa Cal M. Operating procedures created in Misa Cal M can be used with Misa Cal desktop software and vice versa, but operating procedures cannot be transferred to the Misa instrument.

### 6.6.1 Viewing and editing operating procedures

**1** To view or edit existing operating procedures, go to the **OPS** tab.

**2** Select the desired operating procedure.

**3** Click on ✎ to view or edit the settings for the operating procedure.

**4** To leave the operating procedures viewing, click on ‹.

## 6.6.2 Creating operating procedures

**1** To create an operating procedure, go to the **OPS** tab.

**2** Click on ⋮.

**3** Click on **[New]**.

**4** Name the operating procedure.

**5** Select the settings for the operating procedure. For the available options, *see menu "Operating procedures settings", page 34*.

**6** To save the operating procedure, click on 🖫.

The new operating procedure is displayed on the **OPS** tab.

| | |
|---|---|
| **Operating procedures settings** | |
| **Acquisition Parameters ▶** | |
| **SERS** | If activated, the operating procedure acquires and matches data using the SERS algorithm and the SERS library. |
| **Smart Acquire** | Only available if **SERS** is deactivated. |
| | If activated, Misa automatically adjusts the laser power and the integration time to generate an optimal spectrum. |
| **Laser Power** | Defines the laser power of Misa. |
| **Averages** | Defines the number of averages for the acquisition. |
| **Auto int** | If activated, Misa automatically adjusts the integration time to generate an optimal spectrum. |
| **Int time** | Only available if **Auto int** is deactivated. |
| | Defines the integration time for Misa. |
| **Raster** | If activated, the instrument will use ORS (Orbital Raster Scan) during acquisition. |
| **Smart Tip** | Defines the Smart Tip that can be used with the operating procedure. |

| | |
|---|---|
| **Identification ▶** | Defines the libraries the acquired data is matched to. |
| **Threshold** | Only available if **SERS** is deactivated. |
| | Threshold for matching. A low number increases the chances of false positives. |
| **Match to Enabled** | If activated, the acquired data is matched to all enabled libraries. |
| | If deactivated, the libraries the acquired data is matched to can be selected. To select the libraries, click on ✎ in the **Libraries** section. |
| **Libraries** | Only available if **Match To Enabled** is deactivated. |
| | To select the libraries the acquired data is matched to, click on ✎ . |

### 6.6.3 Importing operating procedures

Operating procedures can be imported into Misa Cal M.

#### Importing operating procedures from the downloads

**1** On the Android device, download the operating procedure (e.g. from your mail).

**2** In Misa Cal M, go to the **OPS** tab.

**3** Select ⋮, then **Import ▶ Downloads**.

The imported operating procedure is displayed in the list of operating procedures.

#### Importing operating procedures from the operating procedures folder

**1** On the Android device, place the operating procedure in the following folder: **Metrohm Raman ▶ MisaCalM ▶ Imports ▶ Operating Procedures**.

**2** In Misa Cal M, go to the **OPS** tab.

**3** Select ⋮, then **Import ▶ External Data**.

The imported operating procedure is displayed in the list of operating procedures.

## 6.7    Changing the settings

**1**  To change the settings, go to the **DEVICE** tab.

**2**  Select ⚙, then **Settings**.

**3**  For the available options, *see menu "Settings", page 36*.

**4**  To save the settings, click on 💾.

**5**  Leave the **Settings** menu with ❮ .

| Settings | |
|---|---|
| Image Size | If **Picture Prompt** is activated in the **ACQUISITION STATE** section, Misa Cal M prompts to take a picture before a sample is acquired. *See "ACQUISITION STATE", page 25.* Specify the size of the image according to its intended use. |
| Language | Defines the language of the app. |
| Load Samples Count | Defines the number of displayed samples in the **SAMPLES** tab. This setting allows to limit the memory usage of Misa Cal M on the Android device. |
| Local Time Format | If activated, the time format will be updated after a reboot. |
| Save Location | If activated, the geolocation of the sample is saved in the metadata when the sample is acquired in Misa Cal M. |
| Calibration Prompt | If activated, a popup window prompts to attach the Calibration Standard when connecting to Misa. *See "Calibrating Misa", page 22.* |
| FULL REPORT SETTINGS | The activated parameters are included when a full report is generated during the export of sample data, *see "Editing samples", page 28*. Save the settings with 💾. |
| SUMMARY REPORT SETTINGS | The activated parameters are included when a summary report is generated during the export of sample data *see "Editing samples", page 28*. Save the settings with 💾. |

## 6.8    Exporting the database

The database used by Misa Cal M can be exported.

**1** In the **DEVICE** tab, select ⚙, then **Export Database**.

The **Clear** popup window appears.

**2** Select if all the samples should be cleared from the database once the export is complete.

The database is exported to the Android device. The database is stored in the following folder: **MetrohmRaman ► Misa-CalM ► Exports**.

Once the export is complete, the **Export** window appears. Close the **Export** window with **[OK]**.

# 7  Malfunctions and troubleshooting

## 7.1  Exporting log files

If any device malfunction is observed during instrument operation, please refer to the Misa Cal tutorial (8.0105.8024) for instructions on creating a device log file.

# 8 Accessories

Up-to-date information on the scope of delivery and optional accessories for your product can be found on the Internet. You can download this information using the article number as follows:

**Downloading the accessories list**

**1**    Enter *https://www.metrohm.com/* into your Internet browser.

**2**    Enter the article number of the product (e.g. **2.1001.0010**) into the search field.

The search result is displayed.

**3**    Click on the product.

Detailed information regarding the product is shown on various tabs.

**4**    On the **Included parts** tab, click **Download the PDF**.

The PDF file with the accessories data is created.

> ℹ️ **NOTICE**
>
> When you receive your new product, we recommend downloading the accessories list from the Internet, printing it out and keeping it for reference purposes.