



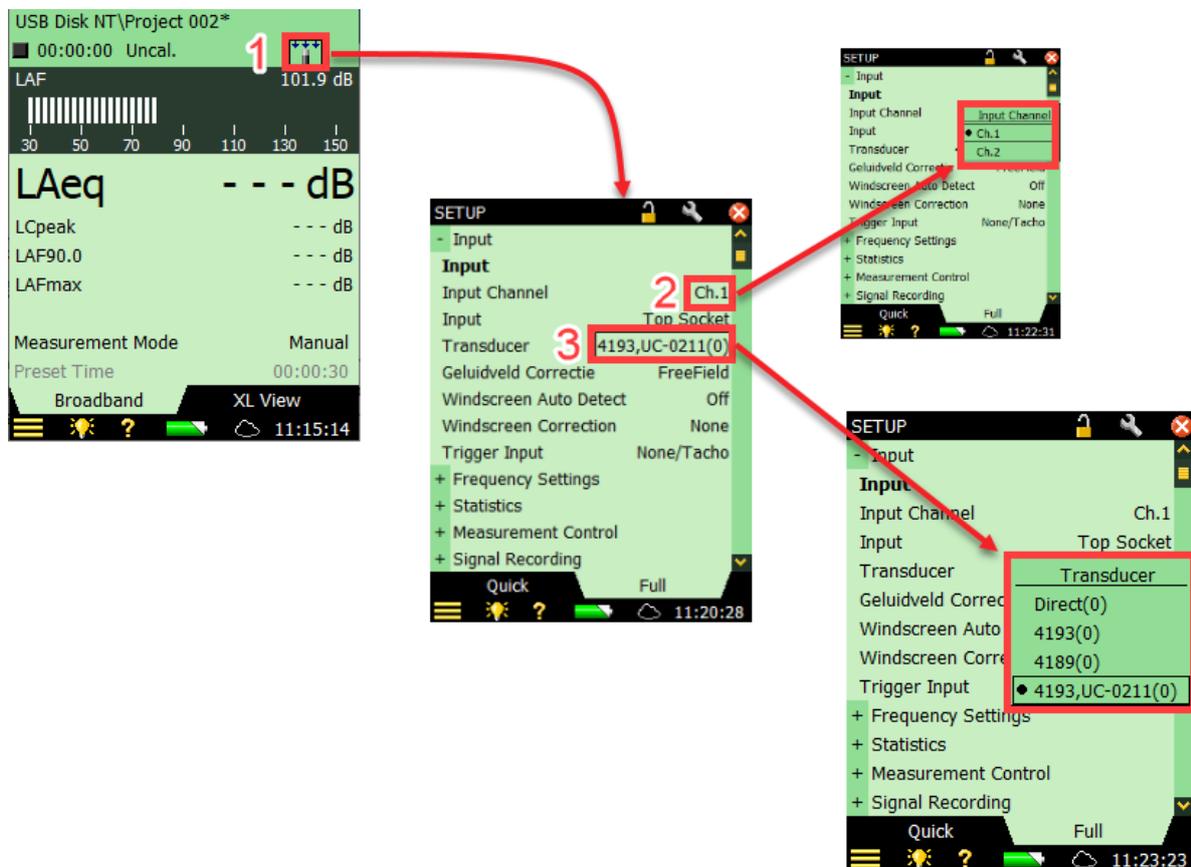
# **Adding and using transducers from B&K 2250/2270.**



# 1 Set microphone

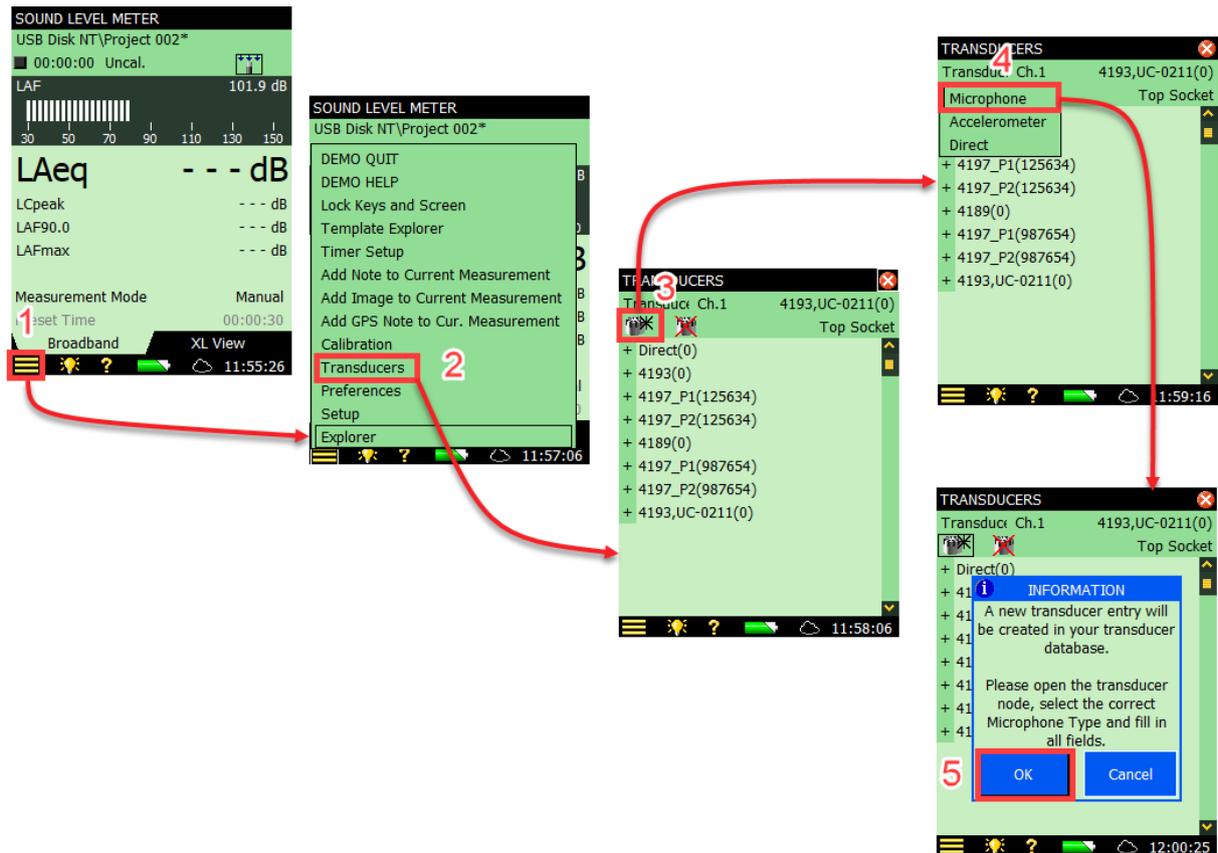
## 1.1 Selecting a microphone

1. Tap the microphone icon at the top right of the screen.
2. If necessary, select the input channel and adjust (only 2270).
3. Tap 'Transducer' and select the microphone mounted on the sound level meter from the list. If the microphone does not appear in the list, you must first add it to the transducer database (see point 1.2).

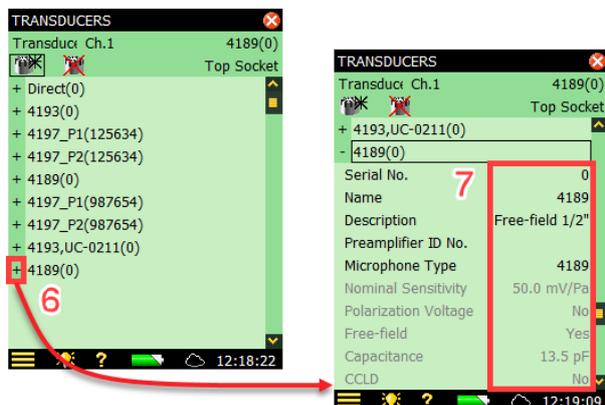


## 1.2 Adding a microphone to the transducer database

1. Tap  for the main menu at the bottom left.
2. Select 'Transducers' from the drop-down list that appears.
3. Tap the add microphone icon.
4. Select microphone as transducer.
5. Select OK to confirm.

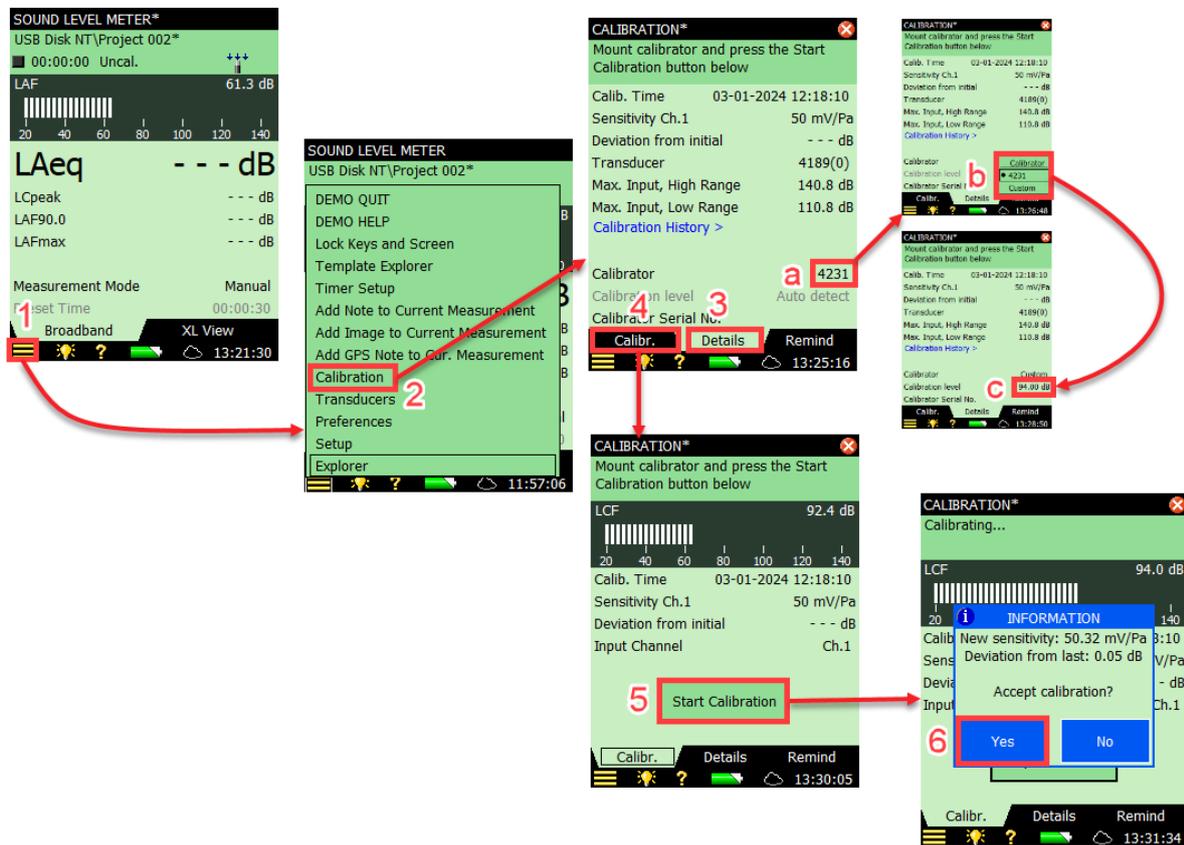


6. Tap the '+' symbol next to the new transducer that was created.
7. Adjust details and microphone type as desired.



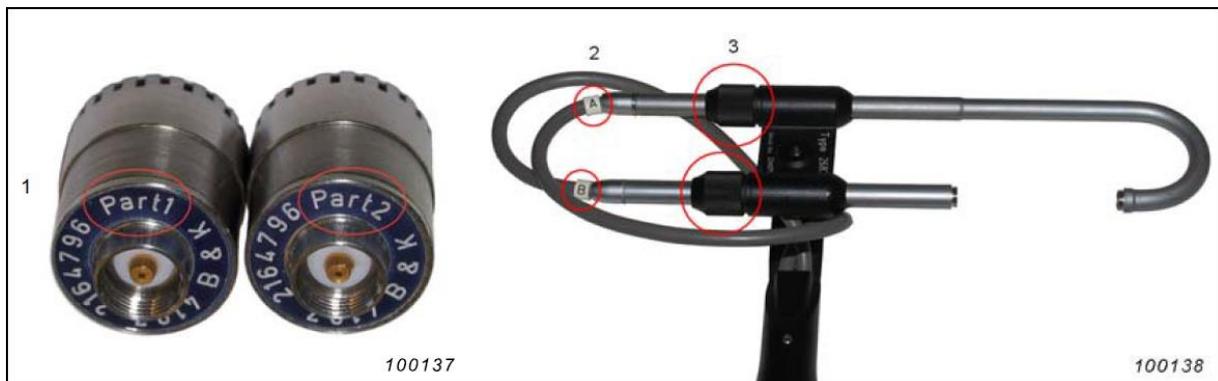
### 1.3 Acoustic calibration of the microphone.

1. Tap  for the main menu at the bottom left.
2. Select 'Calibration' from the drop-down list that appears.
3. Tap the 'Details' tab and check whether your calibrator corresponds to the specified type (a). If not, tap calibrator (b) and then select custom for a non B&K calibrator or 4231 B&K type. If you choose custom, you can adjust the sound pressure level of your calibrator (c).  
(Don't forget to take the free-field correction of your calibrator into account)
4. Tap the 'Calibration' tab.
5. Tap 'Start Calibration'.
6. Tap 'Yes' to accept the calibration.



## 2 Sound intensity.

### 2.1 Mounting the microphones.



1. Microphone part numbers
2. Cables A and B
3. Compression joints

1. Loosen the screw of the lower compression connection and gently pull back the lower tube (connected to the cable marked B).
2. Carefully screw the microphone type 4197 Part2 onto the lower tube.
3. Select the desired spacer and carefully screw the side of the spacer with the metal insert onto the microphone.
4. Carefully screw the microphone type 4197 Part1 onto the top tube (connected to cable A).
5. Loosen the top tube compression joint slightly to allow the tube to rotate.
6. Gently push the lower tube toward the Type 4197 Part1 microphone (rotate the upper tube to align the microphone pair if necessary) until the tip at the end of the Type 4197 Part1 fits into the spacer hole.
7. Tighten both compression connections.

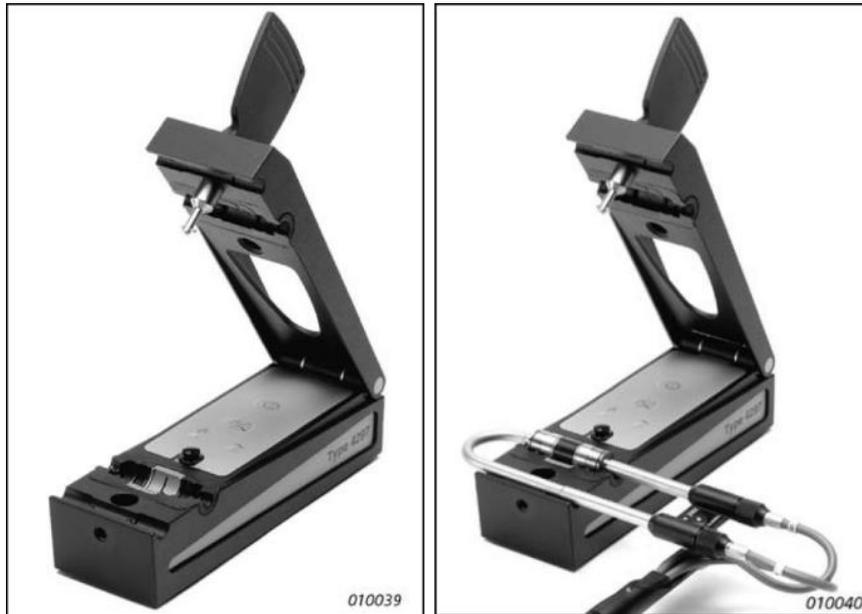
## 2.2 Setting the microphone pair on the sound level meter.

1. Tap  for the main menu at the bottom left.
2. Select 'Setup' from the drop-down list that appears.
3. Now check the input, range and spacer settings and adjust if necessary. For the intensity probe, select the top socket as input.
4. Tap on the 'Transducer' and from the list that appears P1(Part1) of the microphone mounted on the sound level meter. If the microphone pair does not appear in the list, it must first be added to the transducer database. Based on your selection, P2 will automatically be selected as a transducer.

If the microphone pair is not present in the transducer database, read the section: Adding a microphone in the transducer database (point 1.2).



## 2.3 Calibration with Type 4297 calibrator for sound pressure and phase calibration.

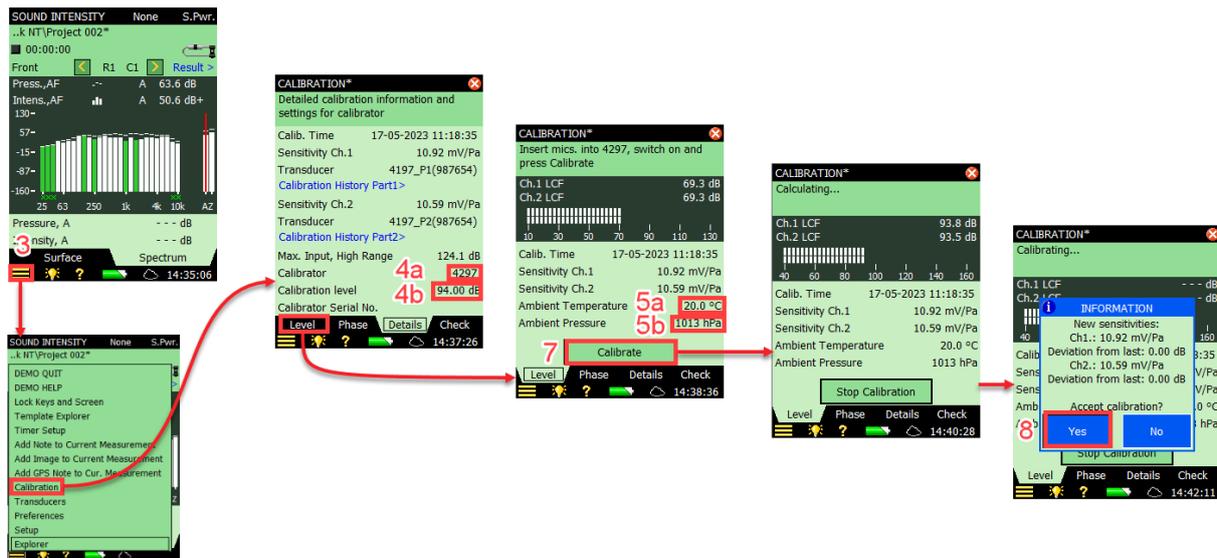


1. Open the calibrator as shown in the photo above and place the intensity probe in the holder.
2. Close the calibrator.

NOTE: For best results, the spacer must be removed. This should then be used to set the correct distance between the microphone pair (see photo below).



3. Tap  and select Calibration. The calibration screen appears.
4. On the 'Details' tab:
  - a) Tap Calibrator, select 4297.
  - b) Tap Calibration Level and enter 94 dB.
5. On the 'Level' tab:
  - a) Tap Ambient temperature and enter the current temperature.
  - b) Tap Pressure and enter the current barometric pressure.
6. Press the on/off button of the 4297 calibrator. The sine wave (251.2 Hz) LED indicator should illuminate.
7. Tap Calibrate.
8. After some time a pop-up screen will appear. Tap yes to accept the calibration.



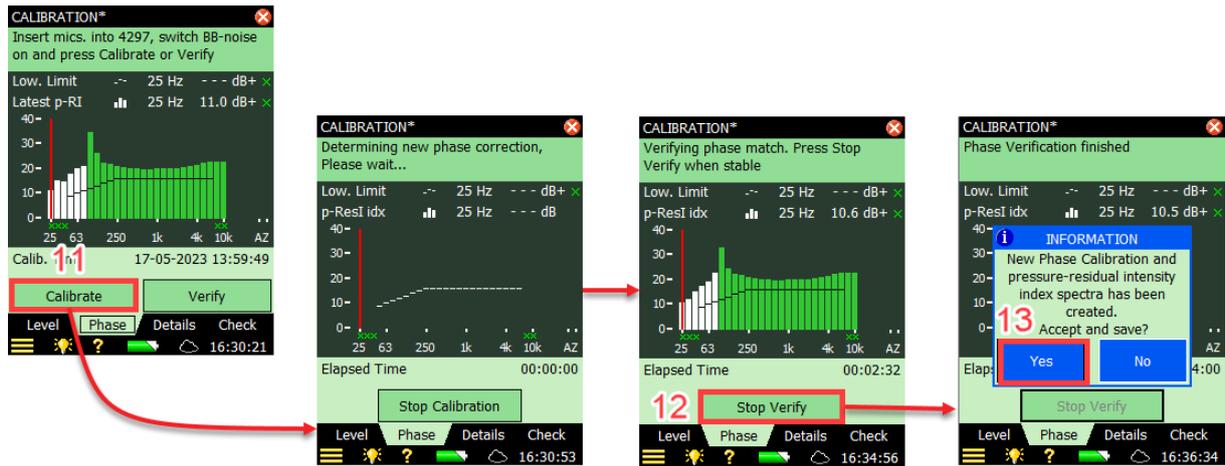
## 2.4 Phase calibration and verification of the PI index.

Phase calibration and verification of the PI index are part of the whole calibration process and must be carried out after the sound pressure level calibration.

Individual implementation is also possible.

9. Tap the 'Phase' tab at the bottom of the screen and the phase calibration screen will appear.
10. Turn on the pink noise signal of the 4297 calibrator.
11. Tap 'Calibrate' and wait for the calibration and verification to complete.  
NOTE: Tapping Calibrate will also perform the verification process. Verification can also be performed separately. To do this, tap Verify and let the verification continue for 2 minutes and press Stop Verify.
12. When it is stable, tap stop verification.
13. Tap 'Yes' to accept the new calibration (and verification).

NOTE: Yellow smileys may not be present.

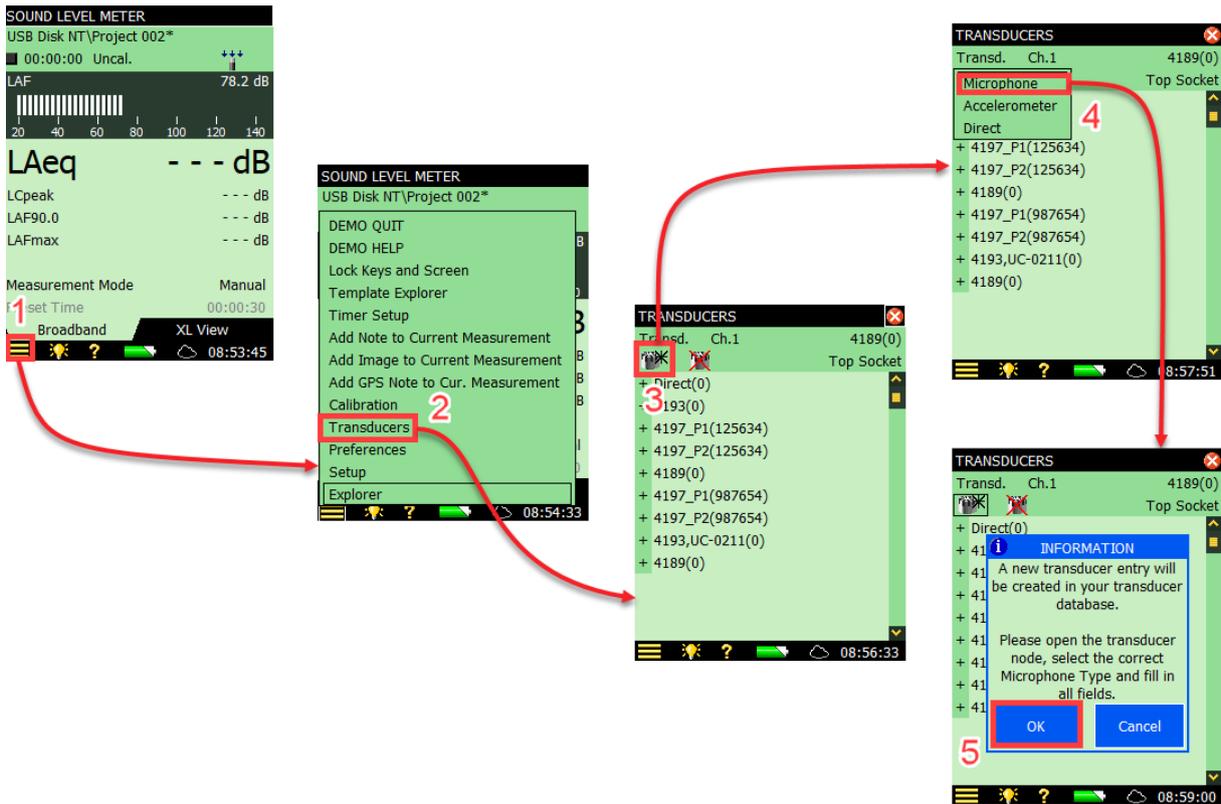


### 3 Audiometry

#### 3.1 Artificial ear 4152

##### 3.1.1 Adding a 4144 microphone to the transducer database.

1. Tap the tab key for the main menu at the bottom left.
2. Select transducers from the drop-down list that appears.
3. Tap the add microphone symbol.
4. Select microphone as transducer.
5. Select OK for confirmation.



6. Tap the + symbol for the new transducer that was created.
7. Change the microphone type to 'Unknown'.
8. Change the name into 4144.
9. Adjust the polarization voltage/free-field and capacitance settings as shown below.



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### 3.1.2 Calibration of the 4144 inside the 4152

- Remove the coupler from the artificial ear. Be very careful to avoid damage to the microphone's membrane, as there is no grid on the microphone for correct functioning of the artificial ear.
- Place the calibrator 4231, without ½ coupler, over the microphone.
- Perform the calibration as described in point 1.3.

## 3.2 Artificial ear 4153

### 3.2.1 Adding a 4192 microphone to the transducer database.

- See point 1.2, adding a microphone to the recorder database.

### 3.2.2 Calibration of the 4192 inside the 4153

- Remove the coupler from the artificial ear.
  - Place the calibrator over the microphone.
  - Perform the calibration as described in point 1.3.
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