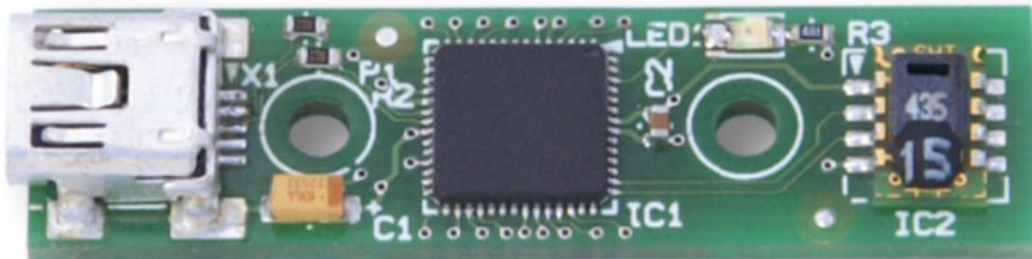


# Oak Sensor RH V1.2a.001 Test Instructions



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## Related Document

- [1] Labeling Concept “Oak\_Sensors\_Labeling\_Concept\_YYYY-MM-DD.pdf”
- [2] Programming Instructions “Oak\_Sensors\_Programming\_Instruction\_YYYY-MM-DD.pdf”



## 2. Oak RH interfaces

### 2.1. Top Side Connectors: Physical Drawing

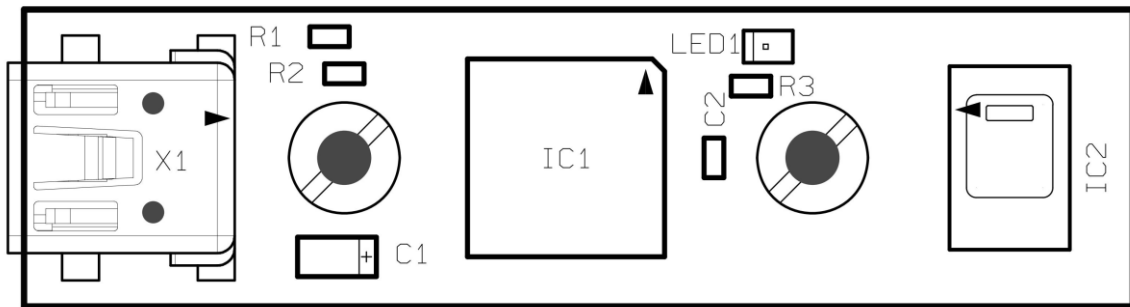




Fig.1 Oak RH connectors – Top Side

## 3. Test Material

To test this Oak Sensor the following Material must be present:

|  |  |
|--|--|
|  | <p>Program “Oak Production Test”<br/>delivered by Toradex</p>          |
|  | <p>2D Barcode scanner with USB Interface:<br/>Required quantity: 1</p> |



|   |   |
|---|---|
|  | <p>USB Cable Type A-Mini B</p> <p>Required quantity: 1</p>  |
|  | <p>PC or Laptop with 2 USB connectors<br/>and installed Windows XP or Windows 7</p> <p>Required quantity: 1</p>   |
| <p>05011200_Oak_RH_V1_2a_001_<br/>Prog_Test_Data_YYYY-MM-DD.zip</p>               | <p>Test Program for Oak RH</p> <p>This Zip file contains the Hex-File to program the<br/>Oak RH Sensor and the Test program with the<br/>settings to test the Oak RH.</p> |



## 4. General workflow for testing

---

All Oak Sensors are tested in a similar way.

- On a Windows, create a directory according the roles of chapter 5.
- Expand the delivered Zip file with the Test program in the chosen directory.
- Configure the test program.
- Run the tests for all sensors (the test program creates a log file for all sensors in the current directory).
- Compress the whole directory structure according the roles of chapter 5 with all files in a Zip file. Use the name of the delivered Zip file and your factory name at the end.
- **Send this Zip files back to Toradex**
- Toradex puts the content of these Zip files in their archive so that Toradex can look up the test log from every Oak sensor

## 5. Install and configure the Test program

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### 5.1. Create the directory

Create the directory somewhere on the PC which is used for the test.

....\2011-11-29\Oak RH\

The **last two subdirectories** of the path must include the current data and the Oak Sensor type like shown above.

### 5.2. Expand the delivered Zip File for the testing

Expand the delivered Zip in temporary directories and copy the files of the subdirectory "Production\_Test" in your directory.

In your directory "....\2011-11-29\Oak RH\" must be the followings files:

|                        |  |
|------------------------|--|
| ini.xml                | Configuration File                     |
| Oak_ProductionTest.exe | Test program with its associated files |
| oak.xml                |  |
| oak.xmt                |  |
| oak.xsl                |  |
| oaka.dll               |  |
| oaka.lib               |  |
| oakw.dll               |  |
| oakw.lib               |  |



**Remark:** Unfortunately, the file "ini.xml" contains the setting for all sensors. In all test cases we use this file and the name is always the same. Therefore it is easily to mix it up. That's the reason to use for every Oak Sensor type a separate directory to do the test and send all files of the directory back. With this way we get the the log file, the used settings and test program back to register in our database

### 5.3. Adjust the configuration

The file ini.xml contains the setting for all Oak sensors.

In the file is a section for the Oak RH:

```
<P0x0001 Name ="Oak RH">
  <tol_hum>
    0.1                                (tolerance of the humidity)
  </tol_hum>
  <hum>
    0.35                              (set point of the humidity 1 = 100% )
  </hum>
  <tol_temp>
    5                                  (tolerance of the temperature)
  </tol_temp>
  <temp>
    300                               (set point of the temperature)
  </temp>
  <PN>
    0501
  </PN>
</P0x0001>
```

We test the sensor with the current room temperature and humidity. Therefore the set point for the temperature and humidity must be set to the current values.

Because the the temperature/humidity sensor on the "Oak RH" is already calibrated by it manufacture we only test if the "Oak RH" measure reasonable values.

If you get error during the test then you can adjust the values again or increase the tolerance.

**Tip:** If you get the sensor from another room or unpack it etc. the sensor need some time (minutes) to adapt the new condition. Therefore it is advisable do unpack the sensors (if necessary) and wait few minutes before you start the test's.

If you touch the sensor on "Oak RH" then the sensor measures your body temperature. After untouching, it takes some time until the sensor measures the right room temperature again.



## 5.4. Additional Files in the Zip File

The directory “Hex-File” contains the file:

**Oak\_RH\_Firmware\_Vx\_x.hex**

This is the Program code for programming the flash (see [2]) and is not used for the testing.

Please note that the version of the program is independent from the version of the product.

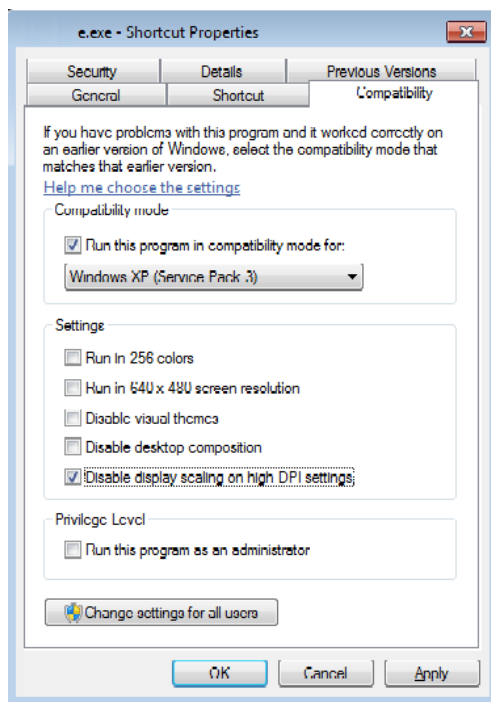
The directory “Instructions” contains this document.

## 5.5. Run the Test program on Windows 7

If the Test program runs on Windows 7, sometime the output of the test results stops scrolling (the test is still running and at the end of the test all buffered outputs are showing at once). Our impression is that this behavior is depending on the graphical setup of the Windows.

The following workaround can help:

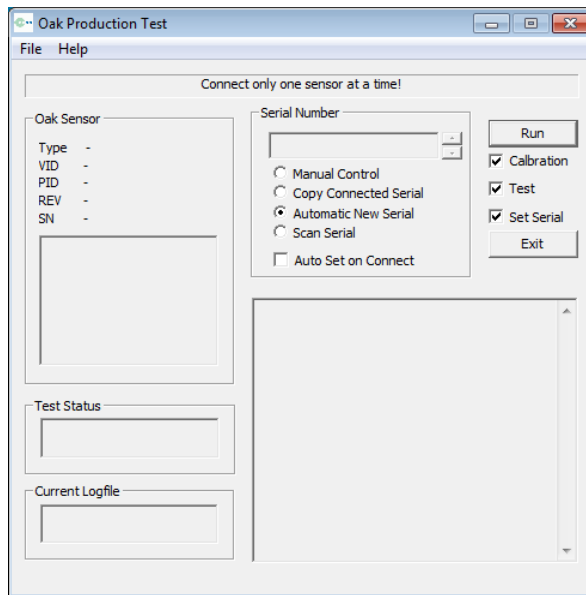
- Create link to start the Test Program
- Open the properties of this link (right mouse click)
- Setup the Compatibility as shown below





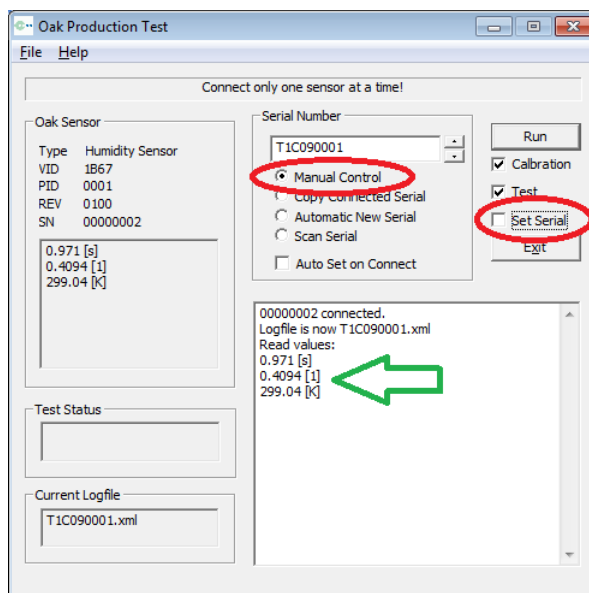
## 6. Start the Test program

For the Test program is no installation needed. It can directly run by starting "Oak\_ProductionTest.exe" (double click on it or the according Link).



### 6.1. First connection of an "Oka RH" sensor

After an „Oka RH“ is connected the Test program shows on the left side Type, Serial number etc. In the log field the Test programm shows the measured values (green arrow). Additional the Led on the "Oak RH" is flashing.

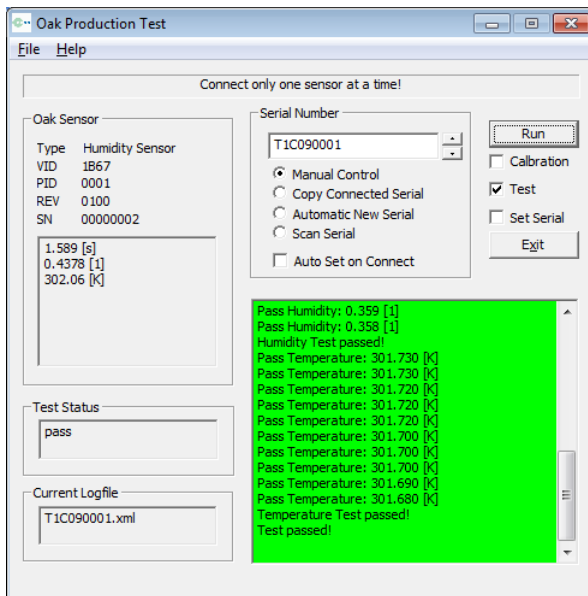






It is possible to run a test without writing the serial number back to the sensor and create a log entry in the log file. To do such tests the “Set Serial” must be unmarked and “Manual Control” must be enabled (see red oval in picture above) before the test starts with the “Run Button”.

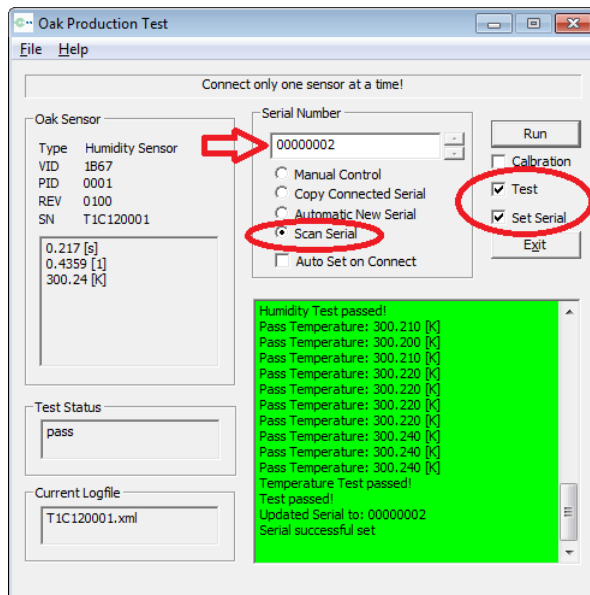
Depending on the test result the log field is green (passed) or red (fault).



**Please note:** the colors of the log screen is changed at the end of every tests. This means during a test the logscreen can stay red because the test before was faulty.



## 7. Test a serie of the “Oka RH” sensors



To test a Oak RH Sensor the option “Test”, “Set Serial” and “Scan Serial” (see red oval) must be set.

- “Test” executes the test cycle
- “Set Serial” writes the the “Serial Number” (see red arrow above) in the Flash of the Sensor at the end of the test sequence. But for that, the Serial Number must fullyfil the specification for this sensor (product name, range of the serial-number etc).
- “Scan Serial” give you the option to scan the barcode with the “2D Barcode scanner” and automatically run the test right after the scan.

**Remark:** The field “Serial Number” (see red arrow) must be empty before a scan starts and the label must following the rules described in [1] otherwise an error message appears at the end of the test cycle.

The field “Serial Number” is cleared by connecting a sensor or by the user.

**Important**      The serial number must be get from the lable with the barcode.

To do that, the folling tow points must be fulfill:

- The label must be printed according to the document  
“Labeling Concept “Oak\_Sensors\_Labeling\_Concept\_YYYY1-MM-DD.pdf” (see [1])  
and **put on the sensor before the test** starts.
  - Option “Scan Serial” **must be used** for testing the production.  
(other option can save a serial number in the flash witch is not in line with the serial number on the barcode)



## 7.1. Logging of the test result

All Test are log in the file "oak.xml" located in the same directory as the Test program is. This file can be shown with a HTML Browser which supports the XML format (nearly all of the current browser).

To show the logs open the File "T1C120001.xml" with the browser (file open instead of putting a URL address).

## 8. Send the test results back to Toradex

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As described in chapter 4 at the end of the test of all Oka RH sensors the test result must be sent back to Toradex.

To do it, pack all files including the two subdirectories above in a zip file and mail it to Toradex.

Example:

The following directory contains the test program with all the files like setup, log etc.

**..\2011-11-29\Oak RH\**

Beside the files the Zip file should include the last two directories of your path. To do it commands the Zip program to zip all files of the directory "**2011-11-29**" including all subdirectories and files below.



#### Revision History

| Date       | File Name  | Initial | Changes   |
|------------|--|---------|---|
| 2011-12-12 | 05011200_Oak_RH_V1_2_<br>Test_Instructions_2011-12-12      | ub      | Initial release   |
| 2011-12-14 | 05011200_Oak_RH_V1_2a_001_<br>Test_Instructions_2011-12-14 | ub      | Add chapter "Run the Test Program on Windows 7",<br>adjust some Filenames, correct some spellings |

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