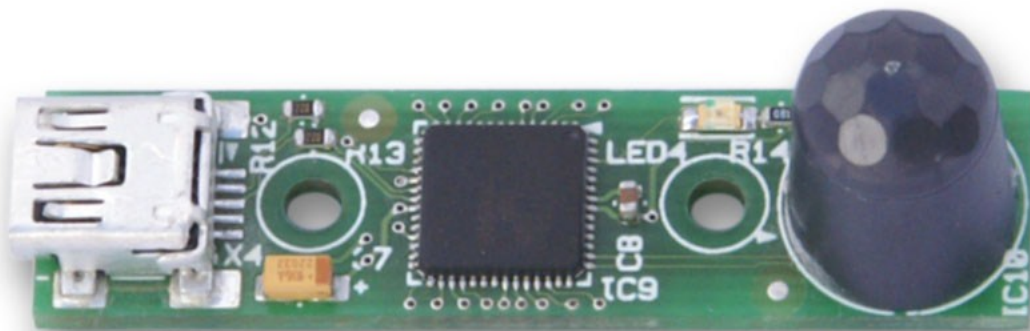


Oak Sensor Move V1.2b.001 Test Instructions



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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 Move interfaces

2.1. Top Side Connectors: Physical Drawing

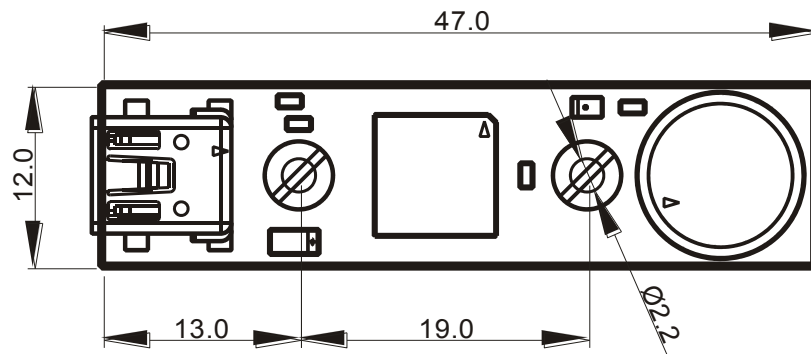
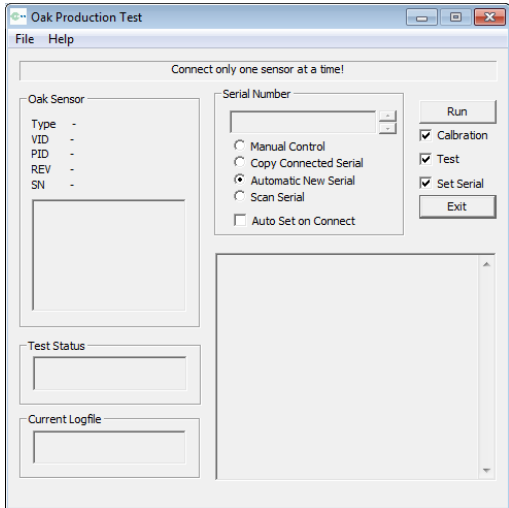





Fig.1 Oak Move connectors – Top Side

3. Test Material

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

	<p>Program “Oak Production Test” delivered by Toradex</p>
	<p>2D Barcode scanner with USB Interface: 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 and installed Windows XP or Windows 7</p> <p>Required quantity: 1</p>
<p>05061201_Oak_Move_V1_2b_001_ Prog_Test_Data_YYYY-MM-DD.zip</p>	<p>Test Program for Oak Move</p> <p>This Zip file contains the Hex-File to program the Oak Move Sensor and the Test program with the settings to test the Oak Move.</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

5.1. Create the directory

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

....\2011-11-29\Oak Move\

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 Move\" 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 Move:

```
..<P0x0006 Name ="Oak Move">
  <move_count>
    20                                (total count of movement)
  </move_count>
  <PN>
    0506
  </PN>
</P0x0006>
```

We test if the sensor detects some movements in his environment. The test program only checks the signal from the motion sensor. The sensitivity, the perspective etc. of motion sensor is not tested.



5.4. Additional Files in the Zip File

The directory “Hex-File” contains the file:

Oak_Move_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.

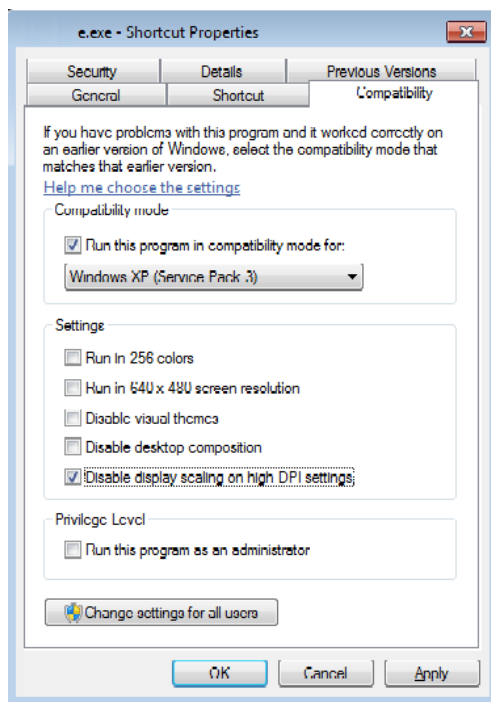
The directory “Instructions” contains this document.

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 show at once). Our impression is that this behavior is depending on the graphical setup of the Windows.

The following workaround can help:

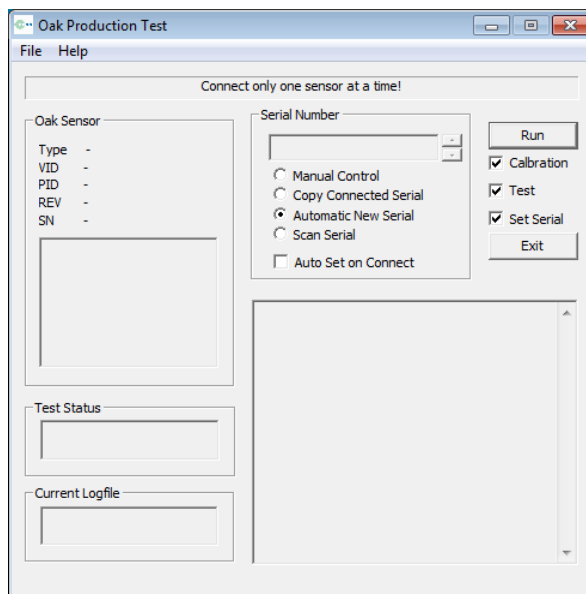
- Create link to start the Test Program
- Open the properties of this link (right mouse click)
- Setup the Compatibility as shown below





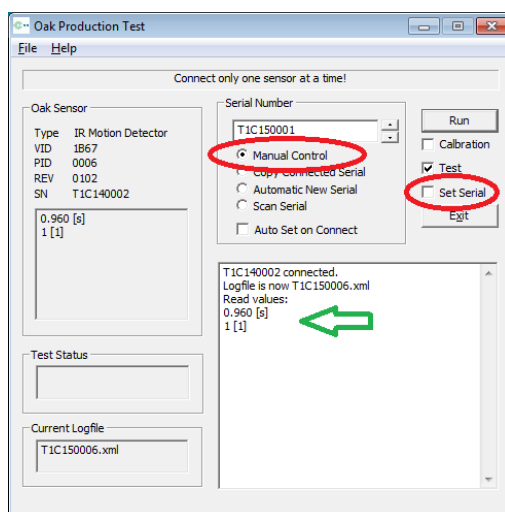
6. Start the Test program

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 Move" sensor

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

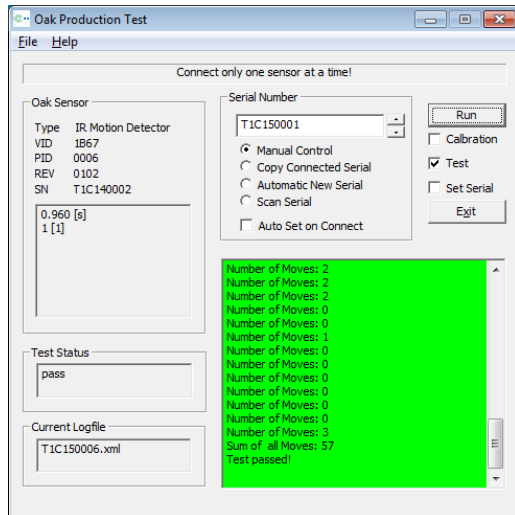


It is possible to run a test without writing the serial number back to the sensor and without creating a log entry in the log file. To do such tests the "Set Serial" must be unmarked and



“Manual Control” must be enabled (see red oval in picture above) bevor the test ist start with the “Run Button”.

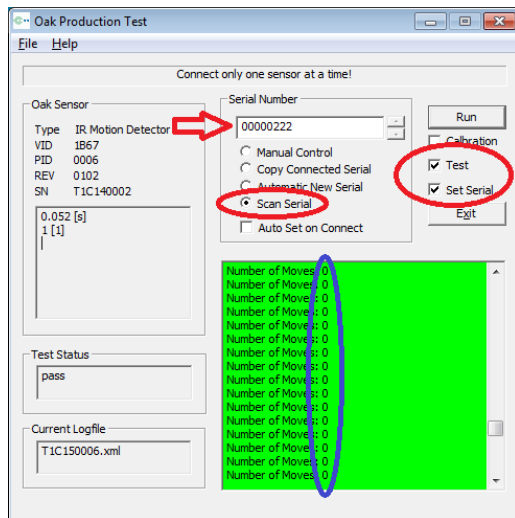
Depend on the test result the log field is green (passed) or red (fault).



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 bevor was faulty.



7. Test a serie of the “Oka Move” sensors



To test a Oak Move 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:

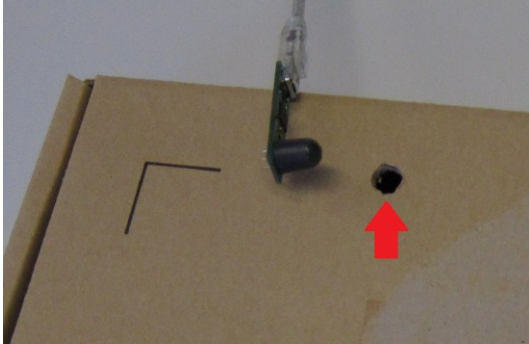
- The label must be printed according to the document
“Labeling Concept “Oak_Sensors_Labeling_Concept_YYYY-MM-DD.pdf” (see [1])
and **put on the sensor before the test** starts.
 - Option “**Scan Serial**” **must be used** for testing the production.
(other option can save a serial number in the flash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



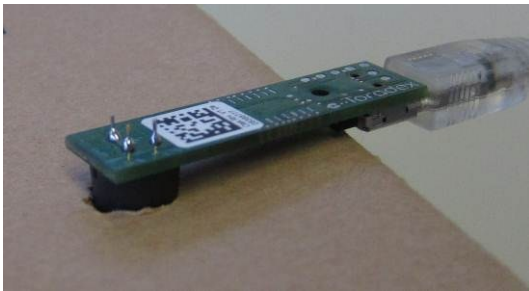
Important Check of “no movement” must be done by the user

We found out, that some faulty sensor can produce movement signal without a real movement happening !!

To test this use a closed and non transparent box with a hole (see red arrow below). The hole should be a little bigger than the movement sensor of the “Oak Move”.



To start the test put the Oak Move in the hole like it is shown in the pictures below.



After scanning the barcode on the back the test starts. Few samples could be greater > 0 (see Remark). But then all the **“Number of Moves” must be zero.**

Let the Test run until the whole scroll area is filled up with **“Number of Moves =0 ”** (see blue oval oval in the picture at the beginning of chapter 7)). It takes about 10 s.

Then take the “Oak Move” out of the box without interrupting the test and move the “Oak Move” around until the test is finished (the whole test takes about 25s). The “Number of Moves” is dependent on the movement but must be several times greater than 0 to pass the test.

The Test program is not checking the “no movement”. This means if a sensor produces **“Number of Moves”** greater 0 in the box it can still pass the test !!.

Therefore it is important to check the “no movement”. Careful by the person.

Remark: It is possible that right after the test is started very few “Number of Moves” are greater than 0. According to the datasheet the motion sensor needs some time before the measurement is stable after power on (typical 7s, max 30s).



7.1. Logging of the test result

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

To show the logs oben the File "T1C150006.xml" with the browser (file open instead of putting a URL address).

8. Send the test results back to Toradex

As described in chapter 4 at the end of the test of all Oka Move sensors the test result must be send 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 Move

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 file of the directory "**2011-11-29**" including all subdirectories and files below.



Revision History

Date	File Name	Initial	Changes
2011-12-14	05061201_Oak_Move_V1_2b_001_ Test_Instructions_2011-12-14	ub	Initial release
2011-12-16	05061201_Oak_Move_V1_2b_001_ Test_Instructions_2011-12-16	ub	Rework parts of chapter 7

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