



Press Release

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Nominated for “red dot”: Photodiode X100–7 detects radiation of smartphone Pocket Geiger

March 11, 2013 marked the second anniversary of the Fukushima nuclear disaster in Japan. For the people who live in the region, the impact of this disaster is omnipresent. To help them, First Sensor has since November 2011 been working alongside radiation-watch.org.

The result of this partnership is a small and affordable radiation detector called the Pocket Geiger which, when used in combination with an ordinary smartphone, delivers high-precision radioactive contamination measurements on site. But that's not all: The free app adds the measured data from radiation-watch into a digital map and makes it available online, where it is continuously supplemented and updated. And so the knowledge of individuals creates an intelligent community that helps people to live their lives in a country that will feel the effects of its nuclear disaster for years to come.

The voluntary team of scientists, engineers and designers behind this innovation has also received recognition this year for their work from unexpected quarters: The Pocket Geiger Type 4 has been nominated in the category “Communication” of the “red dot” German design prize, which they will be awarded on July 1, 2013. Assessment criteria for this world-renowned prize included social relevance, emotional quality and target-group-appropriate appeal.

First Sensor is proud to have been part of this award-winning work. Following the successful market launch in September 2011 of the X100–7 photo diode used in the Pocket Geiger, the company quickly found new ways of meeting the incredible demand. Elbau® and First Sensor in Berlin collaborated to develop a cost-efficient setup and connection system with which the ambient sensitivity of the crystal, the visual properties of the setup and the high-volume producibility are achieved.



First Sensor

The challenge was to create an affordable and yet highly precise and reliable end device. The X100-7 photo diode from First Sensor fulfills these very requirements. Geiger-Müller counters are generally used for measuring radioactivity, but these were not suitable for radiation-watch because of their high cost. "In order to reduce costs while maintaining accuracy and flexibility, we used a combination of a PIN photodiode detector connected to a smartphone via a microphone cable. The detector circuit design was optimized for simplicity and low cost, while the smartphone software application was tasked with handling the complex processing required. Furthermore, the device also utilized the GPS and networking capabilities of the smartphone for logging and data sharing. The ¹³⁷Cs measuring range for a POKEGA equipped smartphone is approximately from 0.05 µSv/h to 10 mSv/h, which covers most radiation levels measured in Japan." (from IEEE Conference Publication "Sensors", Authors: Ishigaki, Y. Grad. Sch. of Inf. Syst., Univ. of Electro-Commun., Tokyo, Japan/ Matsumoto, Y. / Ichimiya, R. / Tanaka, K.)

About First Sensor AG

First Sensor AG is a leading supplier of custom sensor solutions for highly sophisticated requirements in the Life Science, Industrial, Automotive & Transportation and Safety & Security industries. In 2012, First Sensor achieved annual sales of €112 million, employing 700 people worldwide. Founded 1991 in Berlin, First Sensor has been listed on the Frankfurt Stock Exchange since 1999 [Prime Standard | WKN: 720190 | ISIN DE0007201907 | SIS]. Further information and current key figures on www.first-sensor.com

About radiation-watch.org

Radiation-watch.org is an open and non-profit project to develop inexpensive and smart radiation detectors for everyone, especially in and around Fukushima, Japan. The project was been funded by 167 backers from around the world via Kickstarter.com in the wake of the nuclear accident in Japan, and is now supported by volunteer scientists, engineers and designers. They have shipped over 12,000 Pocket Geiger detectors to Japanese people. Their factory is located in the city of Ishinomaki in Japan, which lived through and survived the Tsunami disaster. For more information please visit www.radiation-watch.co.uk.

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