

G2-Tag Radig Meter: First Survey Meter Certified by SSDL In Malaysia

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Act 304 delineates the disparities in radiation exposure limits between the public and radiation workers, as established by the Malaysian Ministry of Health and the Malaysian Atomic Energy Department. Notably, the total body radiation exposure limit for the public stands at 1 mSv annually, whereas radiation workers have a limit of 20 mSv per year. These limits vary for specific body parts such as skin, eye lenses, hands, feet and pregnant women.

The repercussions of excessive radiation exposure encompass a range of diseases and harm. Diagnostic gears like x-rays (0.1 mSv) and whole-body tomography scans (10 mSv) play a crucial role in medical decision-making. However, an acute dose of 1 Sv can lead to radiation-related inflammation, manifesting as nausea, blisters and diarrhea, while a 5 Sv exposure is sufficient to cause fatality within a few months. To address these concerns, the deployment of a survey meter becomes imperative. The G2Tag Radig Meter (Gamma GeoTagging Radiation Digital Meter) survey meter serves the diverse needs of industries, hospitals / clinics, universities, schools and regulatory bodies. Moreover, it proves suitable for public use or by organizations concerned about the ambient radiation levels.

Currently in Malaysia, reliance on imported survey meters incurs high costs due to the absence of locally manufactured alternatives. Offering an attractive price point, this product has the potential to stimulate growth in the domestic industry by promoting the adoption of cutting-edge technology. Beyond fostering increased social engagement in Malaysia, the benefits of digital technology are harnessed through the integration of a GPS system and digital storage (SD card), expediting the automated recording of measurement data. Furthermore, the product undergoes rigorous testing and successfully meets the standards set by SSDL laboratory calibration, ensuring its qualification for use in compliance with Act 304.



Figure1. G2 Tag Radig Meter

Typically, the design requirements for survey meter devices are tailored for safety and health purposes in industrial and environmental monitoring. The newly created device has been improved by incorporating a GPS module, enabling automatic location identification and data retention. The data stored in the micro SD card are **1. Time and date, 2. Latitude and longitude and 3. Dose reading**

This recent technological innovation introduces a user-friendly product with several notable features. It is remarkably lightweight, tipping the scales at just 227.3 grams, inclusive of the battery. Its compact dimensions, measuring 13.1cm x 8.1cm x 2.5cm, contribute to its small and portable nature. Designed

with ergonomics in mind, the product aligns seamlessly with the contours of the palm, ensuring user comfort. Additionally, its case is crafted for both comfort and suitability. The utilization of membrane buttons enhances the overall user experience, adding a tactile and responsive element to the product's interface.

The product underwent thorough testing and calibration at the Secondary Standard Dosimetry Lab (SSDL) Nuklear Malaysia laboratory, successfully meeting the calibration standards of the SSDL as a radiation detection device. The SSDL, responsible for certifying the qualification of survey meters, has endorsed this product for use. Furthermore, it promptly satisfies the industrial usage requirements outlined in Act 304. Having secured victories in numerous innovation competitions, this product has attained international acclaim. Alongside clinching the gold prize at the Malaysian Nuclear Agency and International Invention, Innovation and Technology Exhibition (ITEX) competitions, it reached the global stage at the Seoul International Invention Fair (SIIF) competition in 2023, garnering three distinct recognitions. Notably, these recognitions are gold from SIIF, special awards from Korea Fire Institute and special awards from Taiwan Invention Association



Prize giving ceremony at the Seoul International Invention Fair (SIIF) competition 2023.



G2-Tag Radig Meter and Award Medals / Certificates