

Description of the project

IntelliSAW manufactures components and subsystems that are integrated into OEM products and retrofit into fixed locations by professional installers in accordance with local regulations. The systems generate RF fields internal to a metal enclosed cabinet for the purpose of continuously monitoring the high voltage contacts of power control equipment in power utilities, industrial controls and so forth.

IntelliSAW seeks to make this process more streamlined based on an approach recommended by the Dutch Telecom Agency and parallel to previously published FCC guidelines for field testing of typical installations of systems comprising unintentional radiators.

The IS485 system is a low power device that is capable of being operated between 425MHz and 442MHz with a conducted power of up to 10dBm. While operation of the system is not intended to be in open air, but rather in a completely enclosed metal cabinet, the open air transmission of the system has been characterized to certain standards for demo units and to ease descriptions to international regulatory agencies.

The system has been characterized to be conformant with EN300-220-1 and capable of operation compliant with the harmonized bands of the R&TTE. However such operation allows only a single sensor while the power grid is three-phase. The system has also capable of operation compliant with Part 15.231(e) transmit power limits and periodic operation limits; however the allowed transmit power levels are inadequate for measurement ranges compliant with the safe spacings required in high voltage switchgear and only suitable for sales demonstration purposes.

Neither regulation is applicable to the intended use of the system, which is operation of the device completely within the shielding enclosure of ANSI and IEC rated medium voltage switchgear.

The purpose of the testing is to install the standard IS485 equipment in multiple “typical” switchgear as defined in the accompanying description of test. It is expected that these systems will all comply with CISPR11 class A cabinet radiation limits based on the anticipated shielding of the typical switchgear and the internally generated RF energy.

The actual tests will be performed at one or more sites – some of which are indicated on the accompanying jpeg map. It is expected that testing at these sites will confirm CISPR11 compliant operation and that the site will then be allowed to operate without license.