

## *GS MDS SF9 Limited Modular Approval Requirements*

Limited Modular Approval is being requested for this device and the device will be installed only in host systems manufactured by GE MDS professional installers. Limited Modular Approval is being requested for this device.

There are requirements that the device must meet for Limited modular approval. The following paragraphs detail those requirements and explains, where applicable, how the module meets those requirements. Where requirements are not met a justification for a limited modular approval is presented.

The module meets all of the technical specifications applicable to the frequency band of operation.

1. The module has its own RF shielding (RSS GEN 3.2.2a).

The radio module is fully shielded both top and bottom of the PCB

2. All modulation and data input(s) are buffered (RSS GEN 3.2.2b).

All Data modulation is buffered via U102 a DSP (DSP56F807)

3. The module has its own power supply regulation (RSS GEN 3.2.2c).and local reference oscillator.

This module does not contain on board regulation, the OEM integrator will supply, 3.3vdc to the radio module. OEM Integrators must regulate the DC voltage applied to the SF9 module at +3.3 Vdc, with a tolerance of -.0/+2 Vdc. This can be achieved using a voltage regulator similar to the Texas Instruments PTH0407W, which is a precision DC regulator. This was the regulator used for all certification testing.

The reference oscillator is on the PCB, Y1 a 16MHz TXCO, a 10.7 MHz discriminator in U201 and a onboard VCO based on Q301

4. The modular transmitter must comply with the antenna requirements of Section 15.203 and 15.204(c). The certification submission contains a detailed description of the configuration of all antennas that will be used with the module. (RSS GEN 3.2.2d).

Limited Modular Approval requires the OEM professional installation for this application. A list of allowed antenna's is supplied in the FCC test report.

5. The modular transmitter must be tested in a stand-alone configuration, i.e., the module must not be inside another device during testing (RSS GEN 3.2.2e). This is intended to demonstrate that the module is capable of complying with Part 15 emission limits regardless of the device into which it is eventually installed. Unless the transmitter module will be battery powered, it must comply with the AC line conducted requirements found in Section 15.207.

Test data contained in this application is for the device tested in a stand-alone configuration.

Radiated spurious emissions data and AC conducted emissions data demonstrating compliance with the requirements of Part 15 of the FCC rules for intentional radiators and RSS GEN/RSS 210 has been provided.

6. For the FCC, the modular transmitter must be labeled with its own FCC ID number, and, if the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: “Contains Transmitter Module FCC ID: XYZMODEL1” or “Contains FCC ID: XYZMODEL1.”

The module is appropriately labeled (refer to the label and label location drawings contained within this application). Instructions to the end user regarding the labeling requirements for host devices are included in this application.

7. For Industry Canada, the module shall comply with the Category I equipment labelling requirements. (RSS GEN 3.2.2f).

The module is appropriately labeled (refer to the label and label location drawings contained within this application).

8. The modular transmitter must comply with any applicable RF exposure requirements.

The module meets the requirements for a portable device that may be used at separation distances of less than 2.5cm from the human body because its output power is below the threshold of  $60/f_{\text{GHz}}$  mW (25mW for a 2.4GHz device).

**OR**

The module meets the requirements for a mobile device that may be used at separation distances of more than 20cm from the human body. Refer to the MPE calculation.

9. (RSS GEN 3.2.1) The host device shall be properly labelled to identify the modules within the host device. The Industry Canada certification label of a module shall be clearly visible at all times when installed in the host device, otherwise the host device must be labelled to display the Industry Canada certification number of the module, preceded by the words “Contains transmitter module”, or the word “Contains”, or similar wording expressing the same meaning, as follows:

Contains transmitter module IC: XXXXXX-YYYYYYYYYYYY

where XXXXXX-YYYYYYYYYYYY is the module’s certification number.

The applicant for equipment certification of the module shall provide with each unit of the module either a label such as described above, or an explanation and instructions to the user as to the host device labelling requirements.

Instructions to the end user regarding the labeling requirements for host devices are included in this application..

<b>RSS GEN Checklist</b>		
Modular approval requirement	Yes	No *
(a) The radio elements must have the radio frequency circuitry must be shielded. Physical/discrete and tuning capacitors may be located external to the shield, but must be on the module assembly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) The module shall have buffered modulation/data input(s) (if such inputs are provided) to ensure that the module will comply with the requirements set out in the applicable RSS standard under conditions of excessive data rates or over-modulation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) The module shall have its own power supply regulation on the module. This is to ensure that the module will comply with the requirements set out in the applicable standard regardless of the design of the power supplying circuitry in the host device which houses the module.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) The module shall comply with the provisions for external power amplifiers and antennas detailed in this standard. The equipment certification submission shall contain a detailed description of the configuration of all antennas that will be used with the module.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(e) The module shall be tested for compliance with the applicable standard in a stand-alone configuration, i.e. the module must not be inside another device during testing.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(f) The module shall comply with the Category I equipment labelling requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(g) The module shall comply with applicable RSS-102 exposure requirements, which are based on the intended use/configurations.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(h) Is the modular device for an Industry Canada licensed exempt service?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
* Please refer to the previous sections for a detailed explanation if the answer is “No.”		