SDM9-1 Radio Module Theory of Operation

Regulatory Information for Limited Modular use

Applicable FCC Rules

This module is designed as a Part 24 or Part 101 device operating in the 928-960MHz band as detailed in Table 1 of this document.

Operational use conditions

This module may only be used with the GE MDS Master Station Chassis. This module is intended for use in fixed installation applications only. The module and chassis of this product are designed for operation from -40 to +60C and is not intended for outdoor use. This device is for professional installation only. Output power is configurable up to +40dBm and must be adjusted to accommodate for antenna gain to conform to the specific ERP limits of the FCC licensee using this product.

Limited Module Host restrictions

The SDM9-1 radio module features a unique edge connector and thermal transfer apparatus that is only presented by the GE MDS Master Station. The GE MDS Master Station provides a fixed 24V power source and data interfaces through the card edge connector to enable module operation. Heatsinking is provided through a thermal connector that engages with the chassis heatsink when the module is installed in the chassis.

Trace antenna designs

The SDM9-1 does not include any trace antenna designs, and therefore there are no applicable considerations for this topic.

RF exposure considerations

The radio equipment described in this operation emits radio frequency energy. The concentrated energy from a directional antenna may pose a health hazard. Persons may not come closer than 1.7 meters to the front of the antenna when the transmitter is operating with a 7dBd (9.15dBi) gain antenna. Use of higher gain antennas means increasing the distance accordingly.

Antennas

The conducted output power of the host chassis is up to +40dBm. This module and the host chassis are intended for professional installation only, and the licensee is responsible antenna selection and associated output power configuration to adhere to applicable limits under the rules or license to which they are operating.

Labeling and Compliance

Figure 15, below, is an example of the label that must be present on the Host: GE MDS Master Station Chassis as shown in Figure 16. This label is installed at the factory during production.

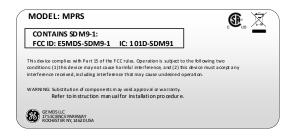


Figure 15, above: MPRS Master Station product label showing "Contains SDM9-1" along with FCC ID.



Figure 16: Location of label detailed in Figure 15, as placed on the Master Station chassis

Test Modes

The Master Station chassis does not externalize module operational test modes to the end user. Test and alignment are performed during production calibration as described in "SDM9-1 Factory Alignment Procedure". Prior to product shipment, GE MDS performs a series of tests in the production environment to ensure that the completed assembly is operating satisfactorily.

Additional testing for Part 15 Subpart B

The GE MDS Master Station Chassis is the only permissible host for the SDM9-1. GE MDS ensures that the Master Station Chassis complies with FCC Part 15 Subpart B when operating with the SDM9 radio module in place.

EMI Considerations

The SDM9-1 Radio Module includes integrated shielding for the RF section, and entire module shielding to cover all components on the PCB. This module conforms to all applicable Part 15, Part 24, and Part 101 requirements without needing to be installed inside of the host enclosure. The Master Station chassis does not allow multiple modules to operate simultaneously,

SDM9-1 Radio Module Theory of Operation



GE MDS does not offer for sale the SDM9-1 as a standalone device for integration with other hosts. As the grantee of the host and this module, GE MDS does not have any additional guidance or technical contacts for third party entities to create such products.