



MOTOROLA

*Integrated Information Systems Group
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Exhibit 11 – RF Exposure Information

DSMODEM/RTC

Wireless - LAN

FCC ID: E9UDSMODEM-RTC

Model No. DSMODEM/RTC

11.0 RF Exposure Information

The DSMODEM/RTC complies with human radiation emission requirements. These requirements are based on the Maximum Permissible Exposure (MPE) levels of ANSI/IEEE C95.1-1992 and 47 CFR 1.1310, Table 1 for an uncontrolled environment.

The DSMODEM/RTC is a low power device intended to be used in a fixed location. The access control reader can arguably fit the definition of a portable device as defined in 47 CFR 2.1093(b) (i.e. "designed to be used so that the radiating structure of the device is within 20 cm of the body of the user", specifically the hand). However, it does not fit any of the equipment classification criteria for portable devices requiring SAR testing as defined in 47 CFR 2.1093(c). All other portable transmitting devices "are categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use" per 2.1093(c) which includes the Access Control Reader.

RF Energy Exposure Assessment Record

Product or Equipment Name: DS Modem Date: 6 Nov 2000

Program/Project Contact Person: Geoff Day Phone: (408) 383-7548

M/D: CA48

Location of Product/Equipment: Fixed locations

1. RF Emitting Product or Equipment Description

Manufacturer: Motorola Indala

Model: RTC Station (DS Modem Station) Serial Number: 69946 (Station)
RTC (DS Modem Mobile) NA (Mobile)

Describe the product or equipment, the environment(s) where it is used, and information about operators and others who might be exposed to its emitted RF energy.

The Mobile DS Modem is a low power Direct Sequence Spread Spectrum (DSSS) device intended for use in public transportation vehicles. It will provide a wireless local area network (WLAN) connection to an associated Station DS Modem. The typical installation of the mobile DS Modem is generally intended to be used in such a way that a separation of at least 20 cm is normally maintained between the antenna and any person as specified in 47 CFR 2.1091(b).

Frequencies of Operation (MHz): 902 – 928 MHz

Maximum Output Power Level
(Watts): 20 ± 2 dBm

Modulation Characteristics: GMSK

If pulsed; Pulse duration: N/A Pulse repetition frequency (PRF): N/A

Duty cycle: N/A

Antenna description: Omni - directional (50 ohms)

Antenna gain: Unknown

Failure Modes

Are there credible failure modes in the product or equipment (hardware, software) or operations (controls, procedures, human error) that could cause the average output power to increase above the normal operating level?

Yes _____ No X If Yes, describe the failure mode, probability of occurrence of the failure, and the expected level of output power.

2. Maximum Permissible Exposure (MPE) Levels

MPE Levels based on ANSI/IEEE C95.1-1992 and 47 CFR 1.1310, Table 1 requirements, unless otherwise specified.

	Frequency (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Plane Wave Equiv. Power Density (S) (mW/cm ²)	Specific Absorption Rate (SAR) (mW/g)
Uncontrolled Environment	902-928	N/A	N/A	0.61	N/A

3. Measurement Results

Applicable Document: Radio Frequency (RF) Energy Exposure Test Procedure, Rev E.

DS Modem Station	Frequency (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Plane Wave Equiv. Power Density (S) (mW/cm ²)	Specific Absorption Rate (SAR) (mW/g)
Uncontrolled Environment	902-928	N/A	N/A	0.12	N/A

DS Modem Mobile	Frequency (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Plane Wave Equiv. Power Density (S) (mW/cm ²)	Specific Absorption Rate (SAR) (mW/g)
Uncontrolled Environment	902-928	N/A	N/A	0.09	N/A

Is the Maximum Permissible Exposure Level for an uncontrolled environment exceeded?

Yes _____ No If Yes, provide drawings to show the boundaries of the Restricted Access Area.

Is the Maximum Permissible Exposure Level for a controlled environment exceeded?

Yes _____ No If Yes, define and implement necessary controls.