



MOTOROLA

Exhibit 11 – RF Exposure Information

IRIDIUM SUBSCRIBER UNIT (ISU) - MOBILE

FCC ID: IHDT6NJ1

Model No. 9522 (Sebring)

11.0 RF Exposure Information

The Iridium Satellite Series 9522 qualifies for the exclusion called out in the FCC Section 47 CFR Section 2.1091, “Radiofrequency radiation exposure evaluation: mobile devices” due to the design and its intended installation. The product will generally be used in such a way that a separation distance of at least 20 cm will be normally maintained between the transmitter’s radiating antenna and the body of the user or nearby persons.

The Iridium Subscriber Unit (ISU) Model 9522 operates at a frequency of 1616 to 1626 MHz. It has a conducted transmit power level of approximately 0.6 Watts. The maximum EIRP is produced with the mobile patch antenna which has a maximum gain of 0.37 dBi resulting in a worst-case maximum EIRP of approximately 0.653 Watts. Since the transmitters operating frequency is above 1.5 GHz and estimated ERP is below 3 Watts, the 9522 is “categorically excluded from routine environmental evaluation” per paragraph (c) of Section 1091.

Although this equipment is categorically excluded from RF exposure measurements, internal company policy requires that all transmitters be measured. The 2nd Generation mobile ISU, aka Sebring, does comply with human radiation emission requirements. These requirements are based on the Maximum Permissible Exposure (MPE) levels of IEEE C95.1-1999 and 47 CFR 1.1310, Table 1 for an uncontrolled environment. The Sebring is a satellite transceiver intended to be used in either a mobile or fixed installation and with the specified antennas. The MPE measurement data is included in the following pages.

Product/Equipment
Sponsor: Mark Miller Phone: (480) 441-0816
Sector/Group/Division: GDDS/CSD M/D: H2205
Location of
Product/Equipment: Hayden

1. RF Emitting Product or Equipment Description

Manufacturer: Motorola
Model: 9522 P1 Serial Number: CTX1147A 4D#2
Antenna Bar Code: N/A

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 Quad-Helix antenna is to be mounted at a minimum of 24 inches above any surface.

The patch antenna is to be used on the exterior of a vehicle and will be used with a minimum 40 sq. inch ground plane.

Frequencies of Operation (MHz): 1616 – 1626.5 MHz
Maximum Output Power Level
(Watts): 0.6 W (avg); 7 W (peak)
Modulation Characteristics: DEQPSK
If pulsed; Pulse duration: 8.2 ms Pulse repetition frequency (PRF): 11.1 pps
Duty cycle: Approx. 9%
Antenna description: Quad-Helix (mast mount); Patch vehicular antenna
Antenna gain: 0 dBi

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 Levels

Levels based on ANSI/IEEE C95.1-1999 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)	Induced Current (mA) Both Feet/ One Foot	Contact Current (mA)	SAR (W/kg)
1621.0208						
Controlled Environment:	<u>N/A</u>	<u>N/A</u>	<u>5.0</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Uncontrolled Environment:	<u>N/A</u>	<u>N/A</u>	<u>1.0</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Testing Required: S.A.R. _____ M.P.E. X (Check all that apply.)
 If S.A.R. is required indicate: E.M.C. to perform test _____ Outside Lab to perform test _____

3. Measurement Results

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

Frequency (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Plane Wave Equiv. Power Density (S) (mW/cm ²)	Induced Current (mA) Both Feet/ One Foot	Contact Current (mA)	SAR (W/kg)
1621.0208						
Measured Levels:	N/A	N/A	0.06 (patch)	N/A	N/A	N/A
			0.21 (mini-patch)			
			0.14 (Quad-Helix)			

Note: Above measurements are the worst-case (highest) levels obtained for each antenna. See attached drawings for detailed measurements for each antenna type. All measurements were taken at a distance of 20 cm.

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

Yes _____ No X If Yes, complete section 5.

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

Yes _____ No X If Yes, complete section 5.

4. RF Energy Measurement Equipment

Manufacturer	Description	Model	Asset No.	Date of Last Cal.	Cal. Due Date
Narda	Electromagnetic Survey Meter	8718	G58802	10-12-01	10-31-02
Narda	Probe, Isotropic, E-Field, 300kHz-40GHz	8741	G52451	08-14-01	08-31-02

Measurements performed by: Steve Gooding Date: 03/22/02

Measurements reviewed by: Dwayne Awerkamp Date: _____

5. Required Hazard Controls

Fully describe all hazard controls to be implemented. Provide drawings and other attachments, as necessary, to describe Restricted Access Areas.

No constraints required for the present configuration and intended state of use.

6. Review & Approval

John Kelly
Product/Equipment Sponsor

Date: _____

Steve Michell
Product/Equipment Manager

Date: _____

Dennis Greeley
Division Safety Manager

Date: _____

John Kelly
Responsible Area Manager

Date: _____

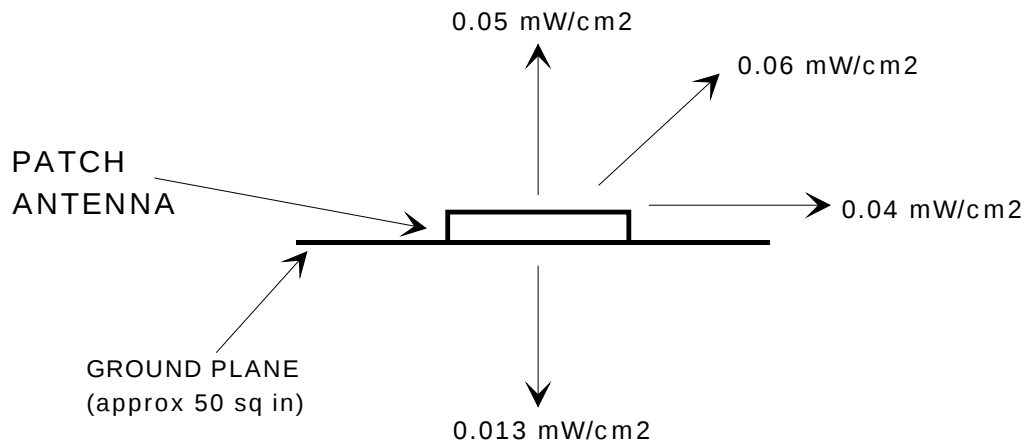
Brent Marking
System Safety Services

Date: _____

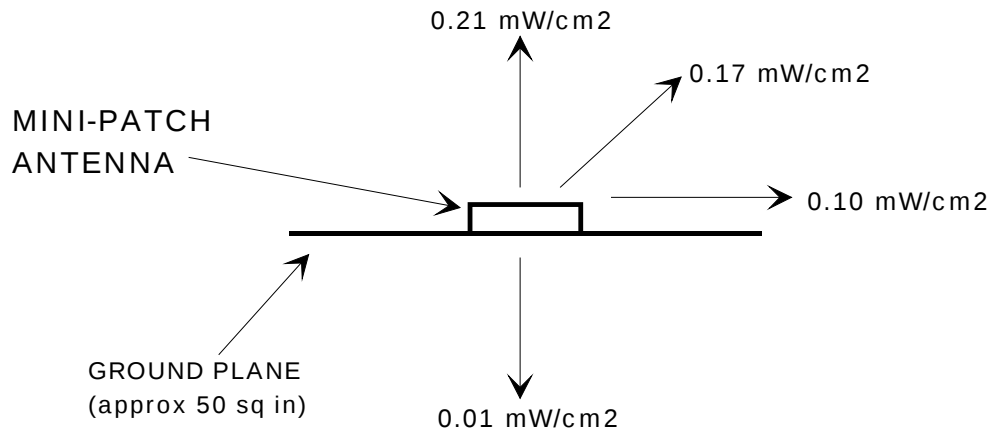
Stacia Johannsson
Radiation Safety Officer

Date: _____

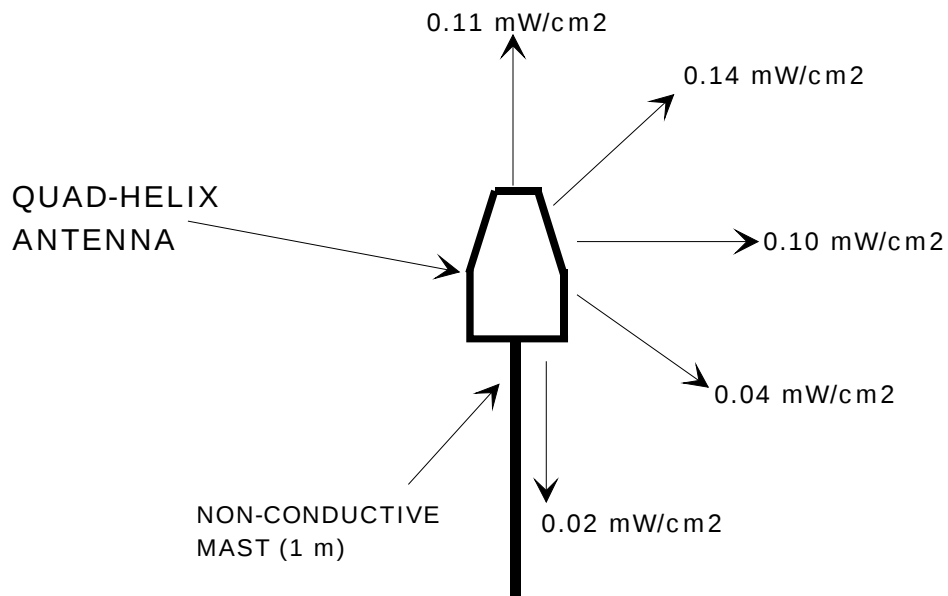
Copy of completed form will be sent to Product/Equipment Sponsor & Manager.



NOTE: All measurements taken at a distance of 20cm.



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