



Date: Sept 30, 2011

Maximum Permissible Exposure Evaluation

For the

Sirius XM Lynx Portable Radio

Model: SXi1

FCC ID: RS2SXI1

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Radio Frequency Radiation Exposure Evaluation

The highest RF output power of the unit was measured and recorded. According to §1.1310 of the FCC rules, the power density limit for General Population/Uncontrolled Exposure is $1\text{mW}/\text{cm}^2$. According to §1.1310 of the FCC rules, the power density limit for Occupational/Controlled Exposure is $5\text{mW}/\text{cm}^2$.

The MPE shall be calculated at 20 cm to show compliance with the power density limit. The following formula was used to calculate the Power Density:

$$S = PG/4\pi R^2$$

Where:

S = Power Density, mW/cm^2

P = Output Power at the Antenna Terminals, W

G = Gain of Transmit Antenna (linear gain-isotropic), W

R = Distance from Transmitting Antenna, cm

Transmitter MPE Calculation Summary (Worst Case emissions from Test Reports)

Lynx Radio (802.11 b, 2 Mbps TX only):

Frequency 2437 MHz
Distance (cm), R = 20 cm
Power (dBm), P = 16.64 dBm (Max)
TX Ant Gain (dBi), G = 2.1 dBi

Power Density: 0.015 mW/cm² [Separation<20 cm]

Lynx Radio (802.11 g, 6 Mbps TX only):

Frequency 2437 MHz
Distance (cm), R = 20 cm
Power (dBm), P = 24.13 dBm (Max)
TX Ant Gain (dBi), G = 2.1 dBi

Power Density: 0.084mW/cm² [Separation<20 cm]

Lynx Radio (802.11 n, MCS0 TX only):

Frequency 2437 MHz
Distance (cm), R = 20 cm
Power (dBm), P = 23.96 dBm (Max)
TX Ant Gain (dBi), G = 2.1 dBi

Power Density: 0.080mW/cm² [Separation<20 cm]

Lynx Radio (8DPSK TX only):

Frequency 2441 MHz
Distance (cm), R = 20 cm
Power (dBm), P = 4.63 dBm (Max)
TX Ant Gain (dBi), G = 2.1 dBi

Power Density: <0.001 mW/cm² [Separation<20 cm]

Home Dock (Bluetooth TX) – Separate Modular Antenna with FCC ID: T7V1315:

Frequency 2402 MHz
 Distance (cm), R = 20 cm
 Power (dBm), P = **10.20 dBm (Max)**
 TX Ant Gain (dBi), G = 1.3 dBi

Power Density: 0.003 mW/cm² [**Separation<20 cm**]

Lynx Radio (WLAN TX only) + Home Dock (Bluetooth TX only):

Distance (cm), R = 20 cm

Maximum Total Power Density: (0.084 + 0.003) mW/cm² = 0.087 mW/cm² [**Separation<20 cm**]

Transmitter MPE Calculation Summary Table

	Mode	Data Rate (Mbps)	Channel	Power (dBm)	TX Ant Gain (dBi)	Power Density, (S)	Distance (cm)	Frequency (MHz)
Lynx Radio	802.11 b	2	Mid	16.64	2.1	0.015	20	2437
	802.11 g	6	Mid	24.13	2.1	0.084	20	2437
	802.11 n	MCS0	Mid	23.96	2.1	0.080	20	2437
	8DPSK	1.15	Mid	4.63	2.1	<0.001	20	2441
Home Dock	GFSK	1	Mid	10.20	1.3	0.003	20	2402
Lynx Radio + Home Dock (Max)	-	-	-	-	-	0.087	20	-