RF EXPOSURE REPORT

REPORT NO.: SA990114L03

MODEL NO.: RFS-4011

FCC ID: UZ7RFS4011

ACCORDING: FCC Guidelines for Human Exposure
IEEE C95.1

APPLICANT: Motorola, Inc.

ADDRESS: One Motorola Plaza Holtsville NY 11742-1300 USA

ISSUED BY: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang, Taipei Hsien 244, Taiwan, R.O.C.

TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

1. RF EXPOSURE LIMIT

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm^2)	AVERAGE TIME (minutes)
LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

2. MPE CALCULATION FORMULA

Pd = (Pout*G) / (4*pi*r2)

where

Pd = power density in mW/cm2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

3. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this dev1ice is classified as **Mobile Device**.

4. CALCULATION RESULT OF MAXIMUM EIRP

TEST MODE A-Antenna 1 (Model: ML-2452-PTA4M3X3-1)

MODULATION MODE	FREQUENCY BAND (MHz)	MAX CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
802.11b	2412-2462	29.1	6.9	20	0.792	1
802.11g	2412-2462	28.8	6.9	20	0.739	1
802.11n (20MHz)	2412-2462	29.6	2.1	20	0.294	1
802.11n (40MHz)	2422-2452	28.1	2.1	20	0.208	1
802.11a	5180~5240	14.0	8.7	20	0.037	1
802.11n (20MHz)	5180~5240	15.6	3.95	20	0.018	1
802.11n (40MHz)	5190~5230	15.1	3.95	20	0.016	1
802.11a	5745-5825	27.1	8.7	20	0.756	1
802.11n (20MHz)	5745-5825	28.3	3.95	20	0.334	1
802.11n (40MHz)	5755-5795	28.2	3.95	20	0.326	1

NOTE:
For 2.4GHz:
(802.11 b/g): Directional gain =2.1dBi+10log(3)=6.9dBi
For 5.0GHz:
(802.11 a): Directional gain =3.95dBi+10log(3)=8.7dBi

TEST MODE B-Antenna 2 (Model: ML-2452-PTA3M3-036)

MODULATION MODE	FREQUENCY BAND (MHz)	MAX CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
802.11b	2412-2462	27.6	8.3	20	0.774	1
802.11g	2412-2462	27.6	8.3	20	0.774	1
802.11n (20MHz)	2412-2462	29.6	3.5	20	0.406	1
802.11n (40MHz)	2422-2452	28.1	3.5	20	0.288	1
802.11a	5180~5240	12.8	9.8	20	0.036	1
802.11n (20MHz)	5180~5240	15.7	5	20	0.023	1
802.11n (40MHz)	5190~5230	15.5	5	20	0.022	1
802.11a	5745-5825	26.1	9.8	20	0.774	1
802.11n (20MHz)	5745-5825	28.5	5	20	0.445	1
802.11n (40MHz)	5755-5795	27.9	5	20	0.388	1

NOTE:
For 2.4GHz:
(802.11 b/g): Directional gain =3.5dBi+10log(3)=8.3dBi
For 5.0GHz:
(802.11 a): Directional gain =5dBi+10log(3)=9.8dBi

TEST MODE C-Antenna 3 (Model: ML-2452-HPA5-036)

MODULATION MODE	FREQUENCY BAND (MHz)	MAX CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
802.11b	2412-2462	27.8	7.9	20	0.739	1
802.11g	2412-2462	28.0	7.9	20	0.774	1
802.11n (20MHz)	2412-2462	28.5	3.1	20	0.288	1
802.11n (40MHz)	2422-2452	27.8	3.1	20	0.245	1
802.11a	5180~5240	13.5	9.4	20	0.039	1
802.11n (20MHz)	5180~5240	16.7	4.6	20	0.027	1
802.11n (40MHz)	5190~5230	16.5	4.6	20	0.026	1
802.11a	5745-5825	26.5	9.4	20	0.774	1
802.11n (20MHz)	5745-5825	29.6	4.6	20	0.523	1
802.11n (40MHz)	5755-5795	29.0	4.6	20	0.456	1

NOTE:
For 2.4GHz:
(802.11 b/g): Directional gain =3.1dBi+10log(3)=7.9dBi
For 5.0GHz:
(802.11 a): Directional gain =4.6dBi+10log(3)=9.4dBi

TEST MODE D-Antenna 4 (Model: ML-2452-PNA7-01R)

MODULATION MODE	FREQUENCY BAND (MHz)	MAX CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
802.11b	2412-2462	23.5	12.3	20	0.756	1
802.11g	2412-2462	23.6	12.3	20	0.774	1
802.11n (20MHz)	2412-2462	28.1	7.5	20	0.722	1
802.11n (40MHz)	2422-2452	25.8	7.5	20	0.425	1
802.11a	5180~5240	11.8	11.1	20	0.039	1
802.11n (20MHz)	5180~5240	15.7	6.3	20	0.032	1
802.11n (40MHz)	5190~5230	15.5	6.3	20	0.030	1
802.11a	5745-5825	21.1	14.8	20	0.774	1
802.11n (20MHz)	5745-5825	25.6	10	20	0.722	1
802.11n (40MHz)	5755-5795	25.3	10	20	0.674	1

NOTE:
For 2.4GHz:
(802.11 b/g): Directional gain =7.5dBi+10log(3)=12.3dBi
For 5.0GHz:
(802.11 a) for 4900-5250MHz: Directional gain =6.3dBi+10log(3)=11.1dBi
(802.11 a) for 5250~5900MHz: Directional gain =10dBi+10log(3)=14.8dBi