RF EXPOSURE EVALUATION

1. PRODUCT INFORMATION

Product Description	Portable Bluetooth Speaker
Model Name	IQ-3530RGB,X18
FCC ID	2AMPL-IQ-3530RGB

2. EVALUATION METHOD AND LIMIT

Human exposure to RF emissions from mobile devices (47 CFR §2.1091) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density, as appropriate, since exposures are assumed to occur at distances of 20 cm or more from persons.

LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE

Frequency Range (MHz)	E-field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (Minutes)
0.3 -- 1.34	614	1.63	(100)*	30
1.34 -- 30	824/f	2.19/f	$(180/f^2)$*	30
30 -- 300	27.5	0.073	0.2	30
300 -- 1500	--	--	f/1500	30
1500 -- 100,000	--	--	1.0	30

*Note:

1. f= Frequency in MHz * Plane-wave Equivalent Power Density
2. The averaging time for General Population/Uncontrolled exposure to fixed transmitters is not applicable for mobile and portable transmitters. See 47 CFR §§2.1091 and 2.1093 on source-based time-averaging requirement for mobile and portable transmitters.

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

Where:

S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

CALCULATION

Predication of MPE limit at a given distance
Equation from page 18 of OET Bulletin 65, Edition 97-01

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Where: S=power density

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G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

4. Manufacturing Tolerance

[Bluetooth]

GFSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	1	1	1
Tolerance ±(dB)	1.0	1.0	1.0
π/4DQPSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	2	2	2
Tolerance ±(dB)	1.0	1.0	1.0
8DPSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	2	2	2
Tolerance ±(dB)	1.0	1.0	1.0

5. Standalone MPE Result

Mode	Max. output power including tune up		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm^2)	MPE Limits (mW/cm^2)
	dBm	mW				
BT	3	2.00	-0.58	0.875	0.00035	1.0000

Note:

1. Only the worst case recorded.

6. Conclusion :

Compliance the RF exposure requirement