



**IEEE C95.1
KDB 447498 D03
47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 2, Subpart J, Section 2.1091
RF EXPOSURE REPORT
For**

APC Clip Controller

Model: APC Live

Data Applies To: N/A

Trade Name: AKAI PROFESSIONAL

Issued to

**inMusic Brands, Inc.
200 Scenic View Drive, Cumberland, RI 02864, U.S.A.**

Issued By

Compliance Certification Services Inc.

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Revision History

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1. TEST RESULT CERTIFICATION

We hereby certify that:

The equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirement of the applicable standards. The test record, data evaluation and Equipment under Test (EUT) configurations represented herein are true and accurate accounts of the measurement of the sample's RF characteristics under the conditions specified in this report.

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
IEEE C95.1 2005 KDB 447498 D03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	No non-compliance noted

Approved by:

A handwritten signature in black ink, appearing to read 'Jeter Wu', is written over a horizontal line.

Jeter Wu
Assistant Manager

Reviewed by:

A handwritten signature in black ink, appearing to read 'Eric Huang', is written over a horizontal line.

Eric Huang
Section Manager

2. LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

3. EUT SPECIFICATION

EUT	APC Clip Controller		
Model	APC Live		
Brand	AKAI PROFESSIONAL		
RF Module	SMSC	Model:	AP6335
Frequency band (Operating)	<input checked="" type="checkbox"/> 802.11b/g/n HT20: 2.412GHz ~ 2.462GHz 802.11n HT40: 2.422GHz ~ 2.452GHz 802.11a/n HT20: 5.180GHz ~ 5.240GHz / 5.745 ~ 5.825GHz 802.11n HT40: 5.190GHz ~ 5.230GHz / 5.755~ 5.795GHz 802.11ac VHT80: 5.210GHz / 5.775GHz <input checked="" type="checkbox"/> Others		
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others		
Exposure classification	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm ²) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm ²)		
Antenna Specification	PCB Antenna / Gain: 4.600 dBi (Numeric gain: 2.88) worst		
Maximum Average output power	IEEE 802.11b Mode :	9.82 dBm	(9.594 mW)
	IEEE 802.11g Mode :	14.35 dBm	(27.227 mW)
	IEEE 802.11n HT20 Mode :	14.43 dBm	(27.733 mW)
	Bluetooth 4.0 Mode :	1.24 dBm	(1.330 mW)
Maximum Tune up Power	IEEE 802.11b Mode :	10.320 dBm	(10.765 mW)
	IEEE 802.11g Mode :	14.850 dBm	(30.549 mW)
	IEEE 802.11n HT20 Mode :	14.930 dBm	(31.117 mW)
	Bluetooth 4.0 Mode :	1.740 dBm	(1.493 mW)
Evaluation applied	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A		

5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using $d = 20$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

IEEE 802.11b Mode :

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)	Result
Mid	2437	10.765	2.88	20	0.0062	1	Pass

IEEE 802.11g Mode :

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)	Result
High	2462	30.549	2.88	20	0.0175	1	Pass

IEEE 802.11n HT 20 Mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)	Result
Low	2012	31.117	2.88	20	0.0179	1	Pass

Bluetooth 4.0 Mode :

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)	Result
Mid	2442	1.493	2.88	20	0.0009	1	Pass

4. TEST RESULTS

No non-compliance noted.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P / 1000) \times G}{377 \times (d / 100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²