

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

MPC with touch display

Model: MPC X

Data Applies To: ACV5

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:

Jeter Wu Assistant Manager

Reviewed by:

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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	MPC with touch display					
Model	MPC X					
Data Applies To	ACV5					
Brand	AKAI PROFESSIONAL					
RF Module	SMSC	Model:	USB5537	7BAKZ4		
Frequency band (Operating)	 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 Others 					
Device category	 Portable (<20cm separation) Mobile (>20cm separation) Others 					
Exposure classification	Occupational/Controlled exposure (S = 5mW/cm^2) General Population/Uncontrolled exposure (S= 1mW/cm^2)					
Antenna Specification	PCB Antenna / Gain: 4.6 dBi (Numeric gain: 2.88) worst					
Maximum Average output power	IEEE 802.11b Mode : IEEE 802.11g Mode : IEEE 802.11n HT20 Mode Bluetooth 4.0 Mode :	11.81 (16.61 (16.57 (2.06 d	dBm dBm dBm Bm	(15.171 mW) (45.814 mW) (45.394 mW) (1.607 mW)		
Maximum Tune up Power IEEE 802.11b Mode : IEEE 802.11g Mode : IEEE 802.11n HT20 Mode : Bluetooth 4.0 Mode :		11.91 (11.71 (: 16.67 (2.16 d	dBm dBm dBm Bm	(15.524 mW) (14.825 mW) (46.452 mW) (1.644 mW)		
Evaluation applied	SAR Evaluation					



4. TEST RESULTS

No non-compliance noted.

Calculation

E =

Given

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

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:

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

Changing to units of mW and cm, using:

P(mW) = P(W) / 1000 and d(cm) = d(m) / 100

Yields

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

Where d = Distance in cm P = Power in mW G = Numeric antenna gain S = Power density in mW / cm²



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

 $S = Power density in mW / cm^2$

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	15.524	2.88	20	0.0089	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
Mld	2437	14.825	2.88	20	0.0085	1	Pass
IEEE 802.11n HT20 Mode :							
Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)	Result
Low	2437	46.452	2.88	20	0.0266	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	1.644	2.88	20	0.0009	1	Pass