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47 C.F.R. Part 2, Subpart J, Section 2.1091
TEST REPORT**

RF EXPOSURE REPORT

**For
ANALOG PLAYER
Model: TN-280BT
Data Applies To: N/A
Trade Name: TEAC**

Issued to

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Revision History

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1. 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.

2. EUT SPECIFICATION

EUT	ANALOG PLAYER		
Model	TN-280BT		
RF Module	CSR	Model:	BLTTM8670
Frequency band (Operating)	<input type="checkbox"/> 802.11b/g/n HT20: 2.412GHz ~ 2.462GHz <input type="checkbox"/> 802.11n HT40: 2.422GHz ~ 2.452GHz <input type="checkbox"/> 802.11a/n HT20: 5.180GHz ~ 5.240GHz / 5.745 ~ 5.825GHz <input type="checkbox"/> 802.11n HT40: 5.190GHz ~ 5.230GHz / 5.755~ 5.795GHz <input type="checkbox"/> 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	Dipole Antenna / Gain: 2.31 dBi (Numeric gain: 1.70) worst		
Maximum Average output power	Bluetooth 3.0:	7.732 dBm	(5.932 mW)
	Bluetooth 4.0:	7.480 dBm	(5.601 mW)
Evaluation applied	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A		

3. 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:

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

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d (m) / 100

Yields

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

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

4. MAXIMUM PERMISSIBLE EXPOSURE

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

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

Where $P = \text{Power in mW}$

$G = \text{Numeric antenna gain}$

$S = \text{Power density in mW / cm}^2$

Bluetooth 3.0 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)	Result
Mid	2441	5.932	1.7	20	0.0020	1	Pass

Bluetooth 4.0 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)	Result
Mid	2442	5.601	1.7	20	0.0019	1	Pass