APPLIED TEST LAB INC.

Customer	SMART Technologies Inc.	Project	S002E010
Manufacturer	SMART Technologies Inc.	Prime	Adiseshu Nyshadham
Model	SMART kapp™ 84" capture board		
Standard	FCC 15.247(b)(4), 47 CFR 1.1310, RSS-210		

Maximum Permissible Exposure

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above

Date of Assessment: Apr 06, 2015
Tested By: Hua Yan

Frequency Band (operating)	Bluetooth 2402-2480 MHz
Device Category	☐ Portable < 20 cm separation ☒ Mobile(Indoor/Movable/Wall Mount) >20 cm separation ☐ Others
Exposure Classification	☐ Occupational/Controlled Exposure ☒ General Population/Un-Controlled Exposure
Antenna Diversity	☒ Single Antenna ☐ Multiple Antennas ☐ Tx Diversity ☐ Rx Diversity ☐ Tx/Rx Diversity
Antenna Gain (Max)	1.88 dBi
Evaluation Applied	☒ MPE Evaluation ☐ SAR Evaluation ☐ N/A

Calculation uses the free space transmission formula: $S = (PG)/(4 \pi d2)$

Where: S is power density (W/m2), P is output power (W), G is antenna gain relative to isotropic, d is separation distance from the transmitting antenna (m).

Summary of Results

Device complies with Power Density requirements at 20cm separation:	☒ **Yes** ☐ **No**
Worse Case Power Density (mW/cm^2):	0.0053

Modifications Made During Testing
No modifications were made to the EUT during testing

Deviations From The Standard
No deviations were made from the requirements of the standard.

APPLIED TEST LAB INC.

Customer	SMART Technologies Inc.	Project	S002E010
Manufacturer	SMART Technologies Inc.	Prime	Adiseshu Nyshadham
Model	SMART kapp™ 84" capture board		
Standard	FCC 15.247(b)(4), 47 CFR 1.1310, RSS-210		

Antenna Mode: External Antenna with attached cable

Bluetooth Basic-Max Power

Freq	EUT Power		Cable Loss	Ant Gain	Power at Ant	EIRP	Power Density (S) at 20 cm	MPE Limit at 20cm
MHz	dBm	mW	dB	dBi	dBm	mW	mW/cm²	mW/cm²
2402	12.373	26.63	0	1.88	12.373	26.63	0.0053	1.000
2441	12.191	25.53	0	1.88	12.191	25.53	0.0051	1.000
2480	12.231	25.77	0	1.88	12.231	25.77	0.0051	1.000

Bluetooth LE-Max Power

Freq	EUT Power		Cable Loss	Ant Gain	Power at Ant	EIRP	Power Density (S) at 20 cm	MPE Limit at 20cm
MHz	dBm	mW	dB	dBi	dBm	mW	mW/cm²	mW/cm²
2402	9.070	12.445	0	1.88	9.070	12.445	0.0025	1.000
2440	8.960	12.134	0	1.88	8.960	12.134	0.0024	1.000
2480	8.620	11.220	0	1.88	8.620	11.220	0.0022	1.000

Bluetooth Classic-Normal Power

Freq	EUT Power		Cable Loss	Ant Gain	Power at Ant	EIRP	Power Density (S) at 20 cm	MPE Limit at 20cm
MHz	dBm	mW	dB	dBi	dBm	mW	mW/cm²	mW/cm²
2402	-7.590	0.269	0	1.88	-7.590	0.269	0.0001	1.000
2440	-7.422	0.279	0	1.88	-7.422	0.279	0.0001	1.000
2480	-7.699	0.262	0	1.88	-7.699	0.262	0.0001	1.000

Customer	SMART Technologies Inc.	Project	S002E010
Manufacturer	SMART Technologies Inc.	Prime	Adiseshu Nyshadham
Model	SMART kapp™ 84" capture board		
Standard	FCC 15.247(b)(4), 47 CFR 1.1310, RSS-210		

MPE Calculation

Given $E = SQRT(30xPxG) /d$ and $S = E^2/3770$

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 centimetre

Re-arranging the terms in above equations to express the S as a function of P,G and d variables

$S = 30xPxG/(3770xD^2)$

Changing to units of mW and cm, using

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

Yields

$S = 30x(P/1000)xG/(3770x(d/100)^2)$
$S = 0.0796xPxG/d^2$

Where P = Power in mW
G = Numeric Antenna Gain
d = Distance in cm
S = Power density in mW/cm^2

Maximum Permissible Exposure

EUT Max Output Power = 17.0 mW
Numerical Antenna Gain = 1.54
MPE Safe distance d = 20cm
Power density S = 0.00521 mW/cm^2

(For mobile or fixed location transmitters, the maximum power density is 1.0 mW/cm^2 even if the calculation indicates that the power density would be larger.)