FCC OET BULLETIN 65 SUPPLEMENT C 01-01
IEEE Std 1528-2003 and 1528a-2005

(Class II Permissive Change)

SAR EVALUATION REPORT

For

Glass

Model: XEB
FCC ID: A4R-X1

Report Number: 13U14955-5A
Issue Date: 4/15/2013

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	4/12/2013	Initial issue	--
A	4/15/2013	Sections 7 and 9 – corrected references to other sections Section 10 – clarified output power tolerances Section 12.3 – corrected system performance result table Section 15 – corrected power level used for test exclusion calculation	Dave Weaver

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1. Attestation of Test Results

Applicant	Google		
DUT description	Glass		
Model	XEB		
Test device is	An identical prototype		
Device category	Portable		
Exposure category	General Population/Uncontrolled Exposure		
Date tested	3/26/2013		
FCC Rule Parts	Freq. Range	Highest 1-g SAR	Limit
15.247	2412-2462 MHz	Head: 1.42 W/kg (Ear Side)	1.6 W/kg
Applicable Standards			Test Results
FCC OET Bulletin 65 Supplement C 01-01, IEEE Std 1528-2003 and 1528a-2005			Pass

UL CCS tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government (NIST Handbook 150, Annex A). This report is written to support regulatory compliance of the applicable standards stated above.

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2. Test Methodology

The tests documented in this report were performed in accordance with FCC OET Bulletin 65 Supplement C Edition 01-01, IEEE STD 1528-2003 and the following KDB Procedures:

- 248227 D01 SAR meas for 802 11abg v01r02
- 447498 D01 General RF Exposure Guidance v05
- 690783 D01 SAR Listings on Grants v01r02
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01
- 865664 D02 SAR Reporting v01

3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

4. Calibration and Uncertainty

4.1. Measuring Instrument Calibration

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations, and is traceable to recognized national standards.

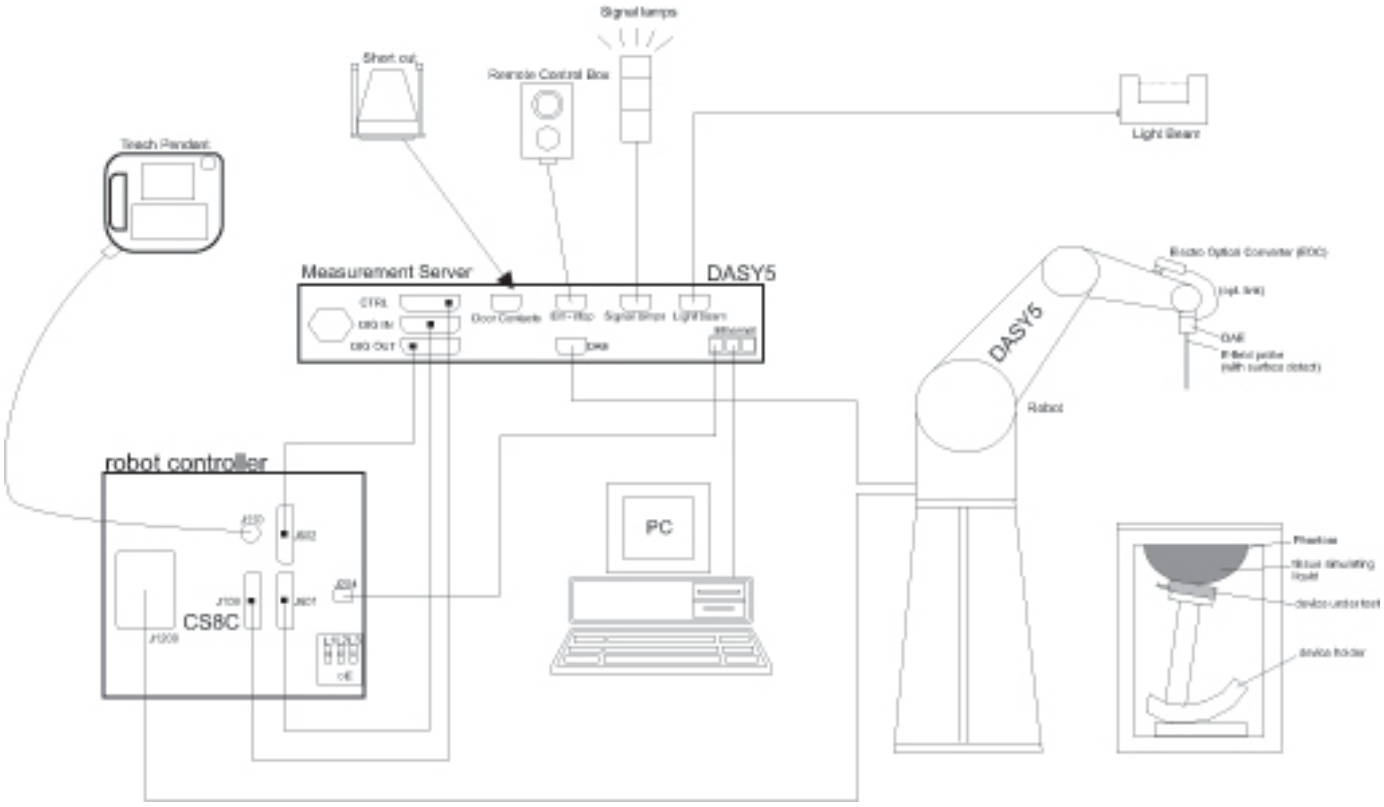
Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due date		
				MM	DD	Year
Dielectronic Probe kit	HP	85070C	N/A	N/A		
S-Parameter Network Analyzer	Agilent	8753ES	MY40001647	6	27	2013
Synthesized Signal Generator	HP	8665B	3744A01084	5	3	2013
Data Acquisition Electronics	SPEAG	DAE3	427	1	9	2014
E-Field Probe	SPEAG	EX3DV4	3751	11	15	2013
Thermometer	ERTCO	639-1S	8350	7	30	2013
System Validation Dipole	SPEAG	D2450V2	899	10	5	2013
Power Meter	Agilent	N1912A	MY52310061	7	5	2013
Power Sensor Ch A	Agilent	N1921A	MY52260009	7	5	2013
Power Sensor Ch B	Agilent	N1921A	MY52270022	7	21	2013
Power Meter	HP	438A	2822A05684	10	7	2013
Power Sensor A	HP	8481A	2702A66876	8	1	2013
Power Sensor B	HP	8482A	2349A08568	4	14	2013
Amplifier	MITEQ	4D00400600-50-30P	1620606	N/A		
Directional coupler	Werlatone	C8060-102	2141	N/A		

4.2. Measurement Uncertainty

Per KDB 865664, when no measured SAR values exceed 1.5 W/kg, measurement uncertainty analysis does not need to be provided in the test report.

5. Measurement System Description and Setup

The DASY5 system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

6. SAR Measurement Procedure

6.1. Normal SAR Measurement Procedure

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE Standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan). If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

Area Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

Step 3: Zoom Scan

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1 g and 10 g and displays these values next to the job's label.

Zoom Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01 (Draft)

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the area scan based *1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

Step 4: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

Step 5: Z-Scan (FCC only)

The Z Scan measures points along a vertical straight line. The line runs along the Z-axis of a one-dimensional grid. In order to get a reasonable extrapolation the extrapolated distance should not be larger than the step size in Z-direction.

6.2. Volume Scan Procedures

Step 1: Repeat Step 1-4 in Section 6.1

Step 2: Volume Scan
Volume Scans are used to assess peak SAR and averaged SAR measurements in largely extended 3-dimensional volumes within any phantom. This measurement does not need any previous area scan. The grid can be anchored to a user specific point or to the current probe location.

Step 3: Power drift measurement
The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

7. Device Under Test

7.1. General Information

Glass: Heads- UP Devices (HUD) with 802.11 b/g (HT20) 2.4GHz WLAN + BT.	
Normal operation	Head worn
Accessory	N/A

7.2. Band and Air Interfaces

Tx Frequency Bands	802.11b/g: 2412 - 2462 MHz Bluetooth: 2402 - 2480 MHz
Modulation	WiFi 802.11b/g Bluetooth Ver. 4.0
Duty Cycle	802.11b/g: 100%

7.3. Test Rationale

The DUT resembles a pair of spectacles and is worn in the same manner. The antenna is located behind the ear (see section 17 and 18). A KDB enquiry was made to the FCC to determine how to perform SAR testing. Due to the shape of the DUT it was not possible to effectively test it using the head phantom. The DUT was tested against the flat phantom to ensure the closest antenna to user separation distance was assessed. Testing was performed to assess SAR upon the head and the ear. See section 19 for the test setup photos.

8. Simultaneous Transmission

WiFi 2.4 GHz and Bluetooth cannot transmit simultaneously.

9. RF Exposure Conditions

Refer to Section 18 “Antenna Location and Separation Distances” for the specific details of the antenna-to-antenna, antenna-to-edge(s) distances, and device orientation description.

9.1. Exposure Conditions

Test Configurations	SAR Required	Note
Head Side	Yes	
Ear Side	Yes	

10. RF Output Power Measurement

10.1. Wi-Fi (2.4 GHz Band)

Output Power Tolerance	IEEE 802.11 (dBm)	
	b	g
Target	**15.0**	**15.0**

Target powers are absolute maximums

Required Test Channels per KDB 248227 D01

Mode	Band	**GHz**	Channel	"Default Test Channels"	
				802.11b	802.11g
802.11b/g	2.4 GHz	**2.412**	1#	√	∇
		2.437	6	√	∇
		2.462	11#	√	∇

Notes:
√ = "default test channels"
∇ = possible 802.11g channels with maximum average output ¼ dB ≥ the "default test channels"
= when output power is reduced for channel 1 and /or 11 to meet restricted band requirements the highest output channels closest to each of these channels should be tested.

Band (MHz)	Mode	Ch #	Freq. (MHz)	Target Pwr (dBm)	Avg Pwr (dBm)
2.4	802.11b	1	2412	15.0	15.0
		6	2437	15.0	15.0
		11	2462	15.0	15.0
	802.11g	1	2412	15.0	14.7
		6	2437	15.0	15.0
		11	2462	15.0	15.0

10.2. Bluetooth

Output Power Tolerance	GFSK (dBm)	8PSK (dBm)
Target	**9.7**	**7.7**

Mode	Channel #	Freq. (MHz)	Conducted Avg Power	
			(dBm)	(mW)
GFSK	0	2402	7.1	5.1
	39	2441	7.7	5.9
	78	2480	7.6	5.8
8PSK	0	2402	5.0	3.2
	39	2441	5.7	3.7
	78	2480	5.7	3.7

Target powers are absolute maximums

11. Tissue Dielectric Properties

IEEE Std 1528-2003 Table 2

Target Frequency (MHz)	Head	
	ε_r	σ (S/m)
300	45.3	0.87
450	43.5	0.87
835	41.5	0.90
900	41.5	0.97
1450	40.5	1.20
1800 – 2000	40.0	1.40
2450	39.2	1.80
2600	39.0	1.96
3000	38.5	2.40

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Target Frequency (MHz)	Head		Body	
	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 – 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5000	36.2	4.45	49.3	5.07
5100	36.1	4.55	49.1	5.18
5200	36.0	4.66	49.0	5.30
5300	35.9	4.76	48.9	5.42
5400	35.8	4.86	48.7	5.53
5500	35.6	4.96	48.6	5.65
5600	35.5	5.07	48.5	5.77
5700	35.4	5.17	48.3	5.88
5800	35.3	5.27	48.2	6.00

11.1. Composition of Ingredients for the Tissue Material Used in the SAR Tests

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Ingredients (% by weight)	Frequency (MHz)									
	450		835		915		1900		2450	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.45	52.4	41.05	56.0	54.9	40.4	62.7	73.2
Salt (NaCl)	3.95	1.49	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04
Sugar	56.32	46.78	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0
HEC	0.98	0.52	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0
Bactericide	0.19	0.05	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0
DGBE	0.0	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7
Dielectric Constant	43.42	58.0	42.54	56.1	42.0	56.8	39.9	54.0	39.8	52.5
Conductivity (S/m)	0.85	0.83	0.91	0.95	1.0	1.07	1.42	1.45	1.88	1.78

Salt: 99+% Pure Sodium Chloride Sugar: 98+% Pure Sucrose
Water: De-ionized, 16 MΩ+ resistivity HEC: Hydroxyethyl Cellulose
DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]
Triton X-100 (ultra pure): Polyethylene glycol mono [4-(1,1, 3, 3-tetramethylbutyl)phenyl]ether

Simulating Liquids for 5 GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	78
Mineral oil	11
Emulsifiers	9
Additives and Salt	2

11.2. Tissue Dielectric Parameter Check Results

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized.
The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.
Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
3/25/2013	Head 2450	e'	37.6800	Relative Permittivity (ϵ_r):	37.68	39.20	-3.88	5
		e''	13.8300	Conductivity (σ):	1.88	1.80	4.67	5
	Head 2410	e'	37.8300	Relative Permittivity (ϵ_r):	37.83	39.28	-3.69	5
		e''	13.7000	Conductivity (σ):	1.84	1.76	4.28	5
	Head 2475	e'	37.5500	Relative Permittivity (ϵ_r):	37.55	39.17	-4.13	5
		e''	13.8500	Conductivity (σ):	1.91	1.83	4.32	5

12. System Performance Check

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are remeasured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

12.1. System Performance Check Measurement Conditions

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ±0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm ± 0.5 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm ± 0.5 cm for measurements > 3 GHz.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm was aligned with the dipole.
  For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- Distance between probe sensors and phantom surface was set to 3 mm.
  For 5 GHz band - Distance between probe sensors and phantom surface was set to 2.5 mm
- The dipole input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

12.2. Reference SAR Values for System Performance Check

The reference SAR values can be obtained from the calibration certificate of system validation dipoles

System Dipole	Serial No.	Cal. Date	Freq. (MHz)	Target SAR Values (mW/g)		
				1g/10g	Head	Body
D2450V2	899	10/05/12	2450	1g	53.6	51.7
				10g	25.0	24.3

12.3. System Performance Check Results

The 1-g and 10-g SAR measured with a reference dipole, using the required tissue-equivalent medium at the test frequency, must be within 10% of the manufacturer calibrated dipole SAR target.

Date Tested	System Dipole		T.S. Liquid		Measured Results			Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Area Scan	Zoom Scan	Normalize to 1 W			
3/26/2013	D2450V2	899	Head	1g	53.10	52.20	52.2	53.6	-2.61	
				10g	23.30	23.80	23.8	25.0	-4.80	

13. SAR Test Results

13.1. Wi-Fi (2.4 GHz Band)

Head SAR

Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Head side of DUT	802.11b	0	1	2412						
			6	2437	15.0	15.0	0.600	0.600		
			11	2462						
Ear side of DUT	802.11b	0	1	2412	15.0	15.0	1.31	1.31		
			6	2437	15.0	15.0	1.31	1.31		
			11	2462	15.0	15.0	1.42	**1.42**	1	

Note(s):

1. According to KDB 447498, Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz.

14. SAR Measurement Variability

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz v01. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

14.1. The Highest Measured SAR Configuration in Each Frequency Band

Head Exposure Condition

Wireless Technologies	Test Configuration		Mode	Ch #.	Freq. (MHz)	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio	Note
	Exposure	Position				Original	Repeated		
WiFi 2.4 GHz	Head	Ear	802.11b 1Mbps	11	2462.0	1.420	1.410	1.01	1

Note(s):

1. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20.

15. Standalone SAR Test Exclusion

Based on the criteria for Standalone SAR test exclusion listed in Section 4.3.1. of KDB 447498 D01 General RF Exposure Guidance v05:

[(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)]·[√f(GHz)] ≤ 3.0, for 1-g SAR

Max. Power of Channel		Min. Test Spearation Distance (mm)	Frequency (GHz)	Result
(dBm)	(mW)			
9.7	9	5	2.441	2.9

Conclusion:

The computed value is < 3; therefore, Bluetooth qualifies for Standalone SAR test exclusion.

15.1. Estimated SAR

As there is no simultaneous transmission the calculation of estimated SAR is not required

16. Appendixes

Refer to separated files for the following appendixes.

16.1. System Performance Check Plots

16.2. SAR Test Plots for WiFi 2.4 GHz Band

16.3. Calibration Certificate for E-Field Probe EX3DV4 - SN 3751

16.4. Calibration Certificate for D2450V2 - SN 899