

Radio Test Report

FCC ID: TQYBSK40IK5BT00

This report concerns (check one) : ⊠ Original Grant ☐ Class II Change

Issued Date : Dec. 03, 2012 Project No. : 1204201A

Equipment : iK5 Amphitheater High Performance

Audio System

Model Name: 40iK5BT

: JAZZ HIPSTER CORPORATION Applicant Address : 2F, 512 Yuan-San Road, Zhonghe

District, New Taipei City, Taiwan

Tested by: Neutron Engineering Inc. EMC Laboratory

Date of Receipt: Oct. 18, 2012

Date of Test: Oct. 18, 2012 ~ Nov. 28, 2012

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REPORT ISSUED HISTORY

Revised Version No.	Description	Issued Date
-	Initial Issue.	Dec. 03, 2012

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1 CERTIFICATION

Equipment: iK5 Amphitheater High Performance Audio System

Brand Name : KICKER Model Name : 40iK5BT

Applicant: JAZZ HIPSTER CORPORATION Date of Test: Oct. 18, 2012 ~ Nov. 28, 2012 Standards: FCC Part 15, Subpart C: 2010

ANSI C63.4: 2009

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-1204201A) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and TAF according to the ISO-17025 quality assessment standard and technical standard(s).

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2. SUMMARY OF TEST RESULTS

Standard Clause	Test Item	Result
15.207	Conducted Emission	PASS
15.247 (c)	Antenna conducted Spurious Emission	PASS
15.247 (a)(1)	Hopping Channel Separation	PASS
15.247 (b)	Maximum Peak Conducted Output Power	PASS
15.247 (c)	Radiated Spurious Emission	PASS
15.247 (b)(1)	Number of Hopping Frequency	PASS
15.247 (a)(1)	Average time of occupancy	PASS
15.205	Restricted Bands	PASS
15.203	Antenna Requirement	PASS
1.1307 1.1310 2.1091 2.1093	RF Exposure Compliance	PASS

NOTE:

- N/A: denotes test is not applicable in this Test Report
 Portable device; SAR report is required.

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2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

Conducted emission Test:

C03: B1, No. 37, Lane 365, YangGuang St., NeiHu District 114, Taipei, Taiwan.

Radiated emission Test (Below 1 GHz):

CB08: (FCC RN: 614388; FCC DN: TW1054; IC Assigned Code: 4428C-1)

1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

Radiated emission Test (Above 1 GHz):

CB08: (VCCI RN: G-91; FCC RN: 614388; FCC DN: TW1054; IC Assigned Code: 4428C-1)

1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty is not specified by FCC rules and for reference only.

The reported uncertainty of measurement $\mathbf{y} \pm \mathbf{U}$, where expended uncertainty \mathbf{U} is based on a standard uncertainty multiplied by a coverage factor of $\mathbf{k=2}$, providing a level of confidence of approximately $\mathbf{95}$ %.

The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2.

A. Conducted emission test:

Test Site	Measurement Frequency Range	U,(dB)	NOTE
C03	150 kHz ~ 30 MHz	1.94	

B. Radiated emission test:

Test Site	Item	Measurement Frequency Range		Uncertainty	NOTE				
			30 - 200MHz	3.35 dB					
		Horizontal	200 - 1000MHz	3.11 dB					
	Radiated emission at 3m	Polarization	1 - 18GHz	3.97 dB					
CB08		08 emission at 18 - 40GHz 30 - 200MHz	emission at				18 - 40GHz	4.01 dB	
CBUO					30 - 200MHz	3.22 dB			
			3.24 dB						
			Polarization	1 - 18GHz	4.05 dB				
			18 - 40GHz	4.04 dB					

Our calculated Measurement Instrumentation Uncertainty is shown in the tables above. These are our U_{lab} values in CISPR 16-4-2 terminology.

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called U_{CISPR} , as follows:

Conducted Disturbance (mains port) - 150 kHz - 30 MHz : 3.6 dB

Radiated Disturbance (electric field strength on an open area test site or alternative test site) – 30 MHz – 1000 MHz : 5.2 dB

It can be seen that our U_{lab} values are smaller than U_{CISPR} .

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3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	iK5 Amphitheater High Performance Audio System			
Brand Name	KICKER			
Model Name	40iK5BT			
OEM Brand/Model Name	N/A			
Model Difference	N/A			
	The EUT is an iK5 Amphithe	eater High Performance Audio System.		
	Operation Frequency	2402 MHz ~ 2480 MHz		
	Modulation Type	FHSS(GFSK;8DPSK)		
	Bit Rate of Transmitter	1/3 Mbps		
	Number Of Channel	Please refer to the Note 2.		
	Antenna Designation	Please refer to the Note 3.		
Product Description	Antenna Gain(Peak)	Please refer to the Note 3.		
	Maximum Peak Conducted	1 Mbps: -12.34 dBm		
	Output Power:	3 Mbps: 2.17 dBm		
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.			
Power Source	DC Voltage supplied from E	xternal Power Supply.		
Power Rating	I/P: AC 100-240V 50/60Hz O/P: DC 24V 2900mA 69.6V			
Connecting I/O Port(s) Please refer to the User's Manual				
Products Covered	1 * SWITCHING MODE POWER SUPPLY: KICKER, GPE060D-240290D			
	1 * Remote Control			
EUT Modification(s)	N/A			

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NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2. Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Printed	N/A	-0.46

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3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test Items	Mode	Data Rate	Tested Channel/Mode	
Conducted Emission	FHSS(GFSK)	1 Mbps	2441 MHz	
Antenna conducted Spurious Emission	FHSS(GFSK)	1 Mbps 3 Mbps	2402 MHz, 2441 MHz, 2480 MHz	
Hopping Channel Separation	FHSS(GFSK)	1 Mbps 3 Mbps	2402 MHz, 2441 MHz, 2480 MHz	
Maximum Peak Conducted Output Power	FHSS(GFSK)	1 Mbps 3 Mbps	2402 MHz, 2441 MHz, 2480 MHz	
Radiated Spurious Emission (30 MHz to 1 GHz)	FHSS(GFSK)	1 Mbps	2441 MHz	
Radiated Spurious Emission (above 1 GHz)	FHSS(GFSK)	1 Mbps 3 Mbps	2402 MHz, 2441 MHz, 2480 MHz	
Number of Hopping Frequency	FHSS(GFSK)	1 Mbps 3 Mbps	2402 MHz, 2441 MHz, 2480 MHz	
Average time of occupancy	FHSS(GFSK)	1 Mbps 3 Mbps	2402 MHz, 2441 MHz, 2480 MHz	
Restricted Bands	FHSS(GFSK)	1 Mbps 3 Mbps	2402 MHz, 2441 MHz, 2480 MHz	
Antenna Requirement	FHSS(GFSK)			
RF Exposure Compliance	FHSS(GFSK)			

NOTE: The measurements are performed at the highest, middle, lowest available channels.

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3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

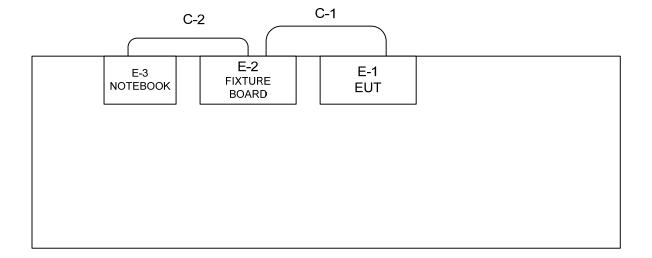
Data Rate	1 Mbps			
Test software Version	Bluetooth test			
Frequency	2402 MHz	2441 MHz	2480 MHz	
Parameter	20	12	12	

Data Rate	3 Mbps				
Test software Version	Bluetooth test				
Frequency	2402 MHz 2441 MHz 2480 MHz				
Parameter	120 120 120				

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3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



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3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	iK5 Amphitheater High Performance Audio System	KICKER	40iK5BT	TQYBSK40IK5BT00	N/A	EUT
E-2	FIXTURE BOARD	N/A	N/A	N/A	N/A	
E-3	Notebook PC	DELL	D600	DOC	7T390 A03	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	0.2M	DATA CABLE
C-2	N/A	N/A	1.8M	RS232 CABLE

NOTE: The support equipment was authorized by Declaration of Conformity (DOC).

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4 CONDUCTED EMISSION

4.1 LIMIT

FREQUENCY	Class A	(dBuV)	Class B (dBuV)		
(MHz)	Quasi-peak	Average	Quasi-peak	Average	
0.15 - 0.5	79.00	66.00	66 - 56 *	56 - 46 *	
0.50 - 5.0	73.00	60.00	56.00	46.00	
5.0 - 30.0	73.00	60.00	60.00	50.00	

NOTE:

- 1. The tighter limit applies at the band edges.
- 2. The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
- The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
 Margin Level = Measurement Value Limit Value

4.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TWO-LINE V-NETWORK	R&S	ENV216	101050	Apr. 24, 2013
2	LISN	EMCO	3816/2	00066528	Mar. 26, 2013
3	Test Cable	TIMES	CFD300-NL	130	Jun. 14, 2013
4	EMI Test Receiver	Agilent	N9038A	MY51210215	Jan. 26, 2013
5	Measurement Software	EZ	EZ_EMC (Version NB-03A)	N/A	N/A

NOTE: N/A: denotes No Model Name, No Serial No. or No Calibration specified.

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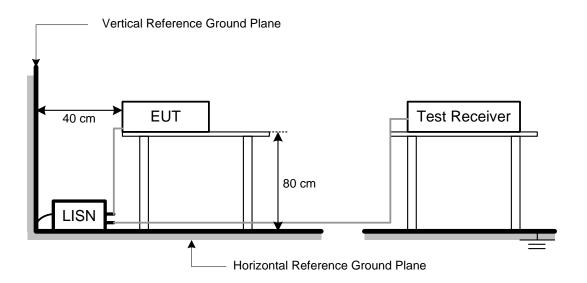
4.3 TEST PROCEDURES

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

NOTE:

- a. Reading in which marked as Peak, QP or AVG means measurements by using are Quasi-Peak or Average Mode with Detector BW=9 kHz (6 dB Bandwidth).
- b. All readings are Peak Mode value unless otherwise stated QP or AVG in column of Note. If the Peak or QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only Peak or QP Mode was measured, but AVG Mode didn't perform.

4.4 TEST SETUP LAYOUT

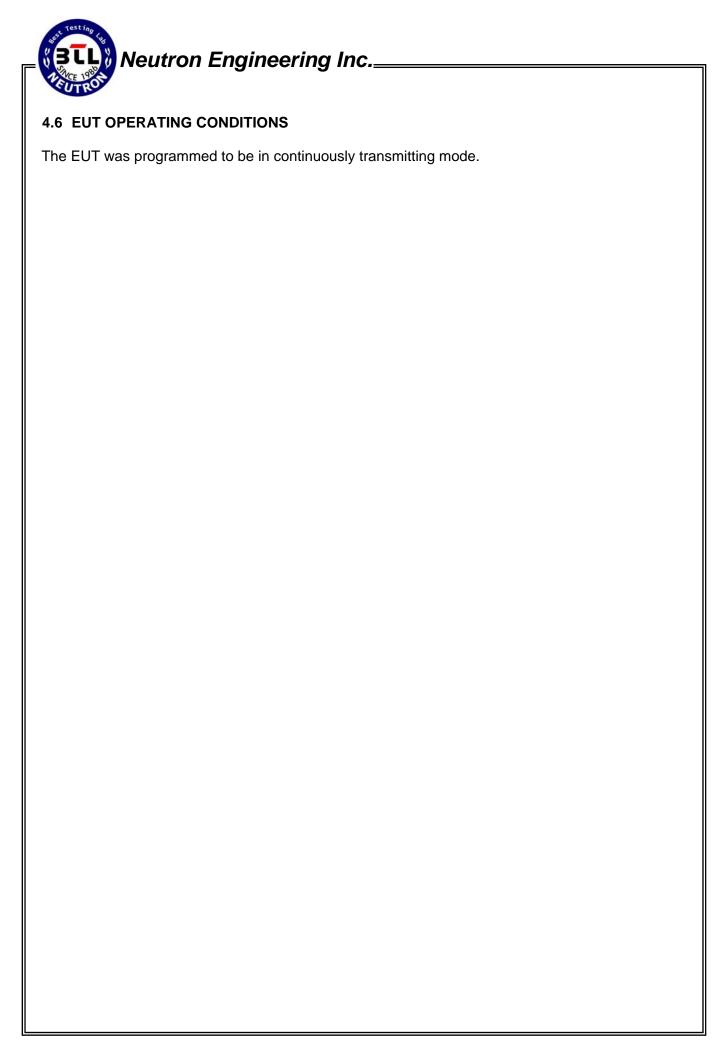


4.5 DEVIATION FROM TEST STANDARD

No deviation

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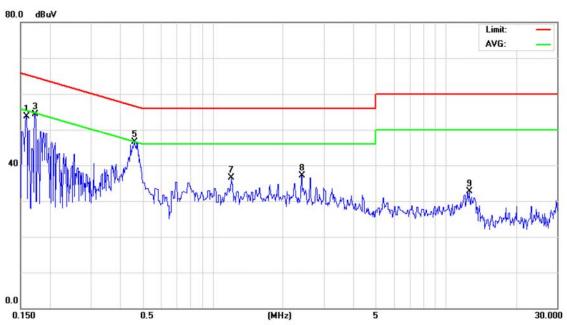
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4.7 TEST RESULTS

	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT			
Temperature	24°C	Relative Humidity	48%			
Test Voltage	AC 120V/60Hz					
Test Mode	Bluetooth/1 Mbps/2441 MHz					

Phase: Line

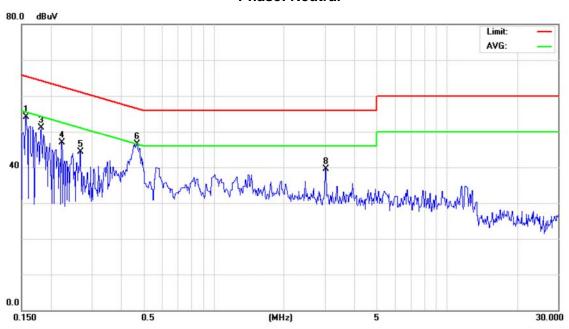


No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1584	44.05	9.69	53.74	65.54	-11.80	peak	
2	0.1584	21.60	9.69	31.29	55.54	-24.25	AVG	
3	0.1724	44.57	9.69	54.26	64.84	-10.58	peak	
4	0.1724	20.80	9.69	30.49	54.84	-24.35	AVG	
5	0.4629	36.62	9.87	46.49	56.64	-10.15	peak	
6 *	0.4629	27.80	9.87	37.67	46.64	-8.97	AVG	
7	1.2020	26.72	9.69	36.41	56.00	-19.59	peak	
8	2.3990	27.49	9.69	37.18	56.00	-18.82	peak	
9	12.6000	22.74	9.90	32.64	60.00	-27.36	peak	

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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	24°C	Relative Humidity	48%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps/2441 MHz		

Phase: Neutral



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1	0.1563	44.37	9.71	54.08	65.65	-11.57	peak		
2	0.1563	21.40	9.71	31.11	55.65	-24.54	AVG		
3	0.1815	41.38	9.71	51.09	64.41	-13.32	peak		
4	0.2221	37.16	9.72	46.88	62.74	-15.86	peak		
5	0.2676	34.61	9.75	44.36	61.19	-16.83	peak		
6	0.4685	36.67	9.87	46.54	56.54	-10.00	peak		
7 *	0.4685	27.20	9.87	37.07	46.54	-9.47	AVG		
8	3.0110	29.81	9.71	39.52	56.00	-16.48	peak		

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5 ANTENNA CONDUCTED SPURIOUS EMISSION

5.1 LIMIT

Test Item	Frequency Range (MHz)	Limit
Antenna conducted Spurious Emission	1 30-75000	20 dB less than the peak value of fundamental frequency

5.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013

NOTE: N/A: denotes No Model Name, No Serial No. or No Calibration specified.

5.3 TEST PROCEDURES

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting: RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

5.4 TEST SETUP LAYOUT

EUT	SPECTRUM
	ANALYZER

5.5 DEVIATION FROM TEST STANDARD

No deviation

5.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

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5.7 TEST RESULTS

	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps		

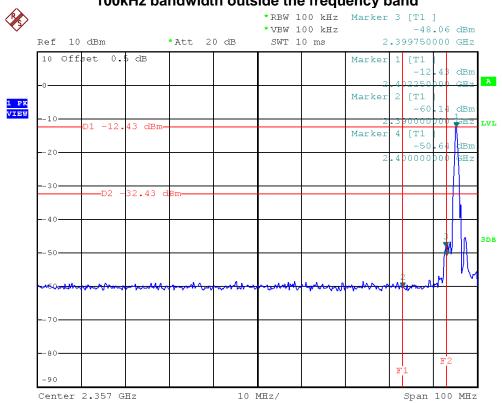
Channel of Worst Data					
The max. radio frequency power in any 100kHz bandwidth outside the frequency band bandwidth within the frequency band.					
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)		
2399.75 -48.06 2484.00 -57.95					

Result

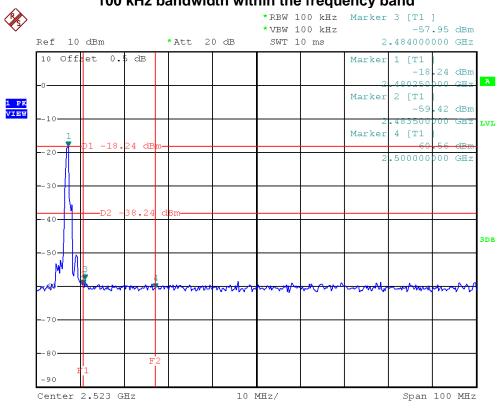
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.

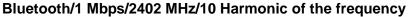
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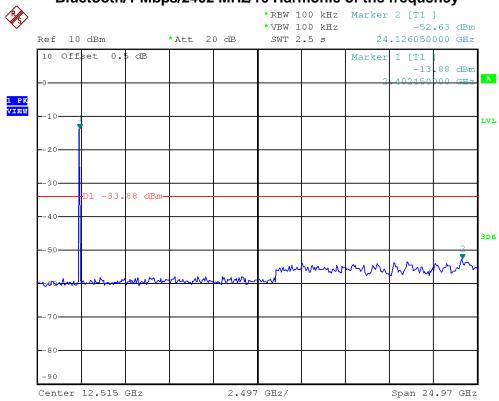
Bluetooth/1 Mbps/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



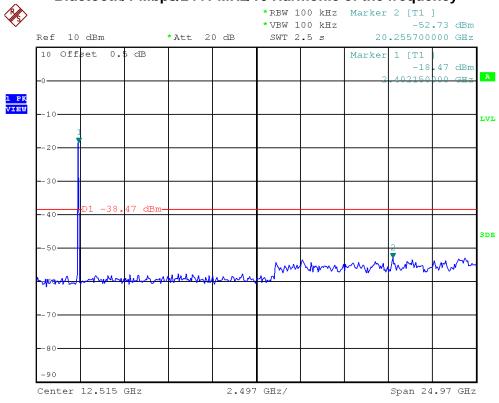
Bluetooth/1 Mbps/The max. radio frequency power in any 100 kHz bandwidth within the frequency band

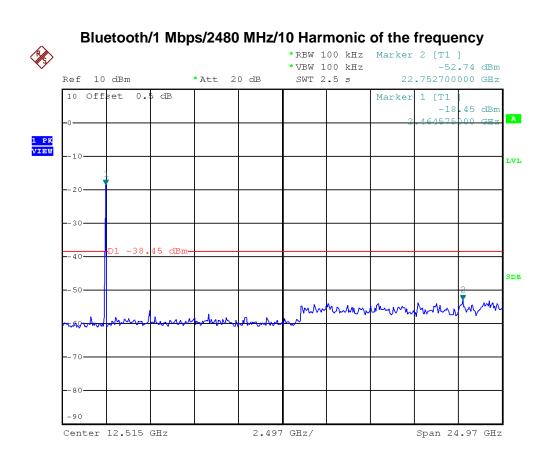






Bluetooth/1 Mbps/2441 MHz/10 Harmonic of the frequency





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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/3 Mbps		

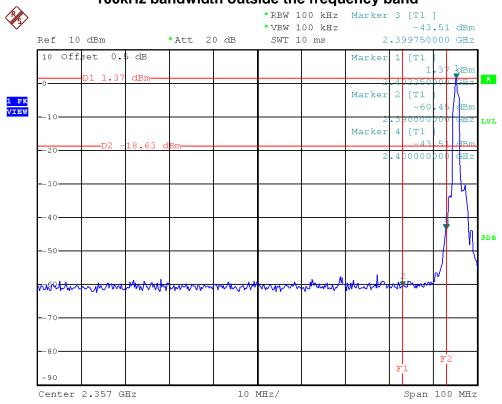
Channel of Worst Data					
The max. radio frequency power in any 100kHz bandwidth outside the frequency band bandwidth within the frequency band.					
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)		
2399.75 -43.51 2483.50 -47.01					

Result

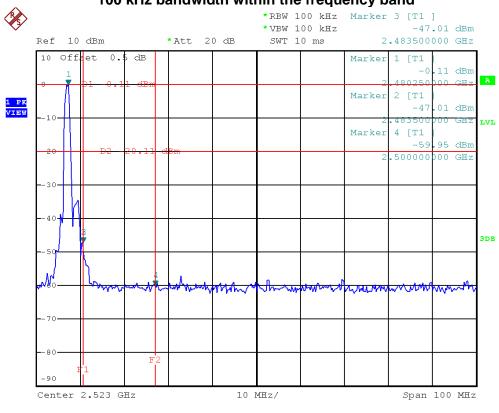
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.

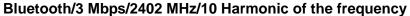
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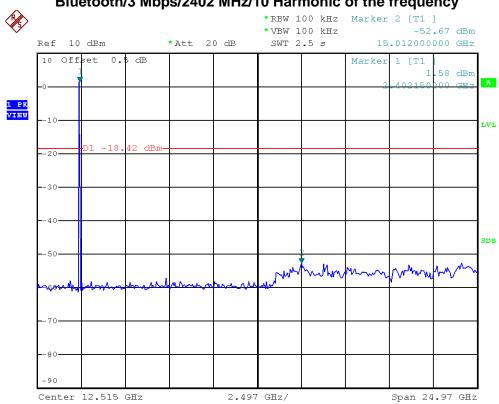
Bluetooth/3 Mbps/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



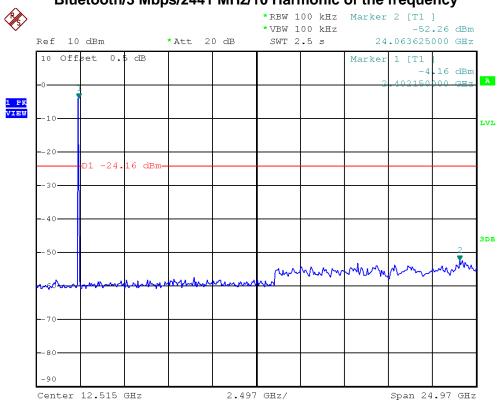
Bluetooth/3 Mbps/The max. radio frequency power in any 100 kHz bandwidth within the frequency band

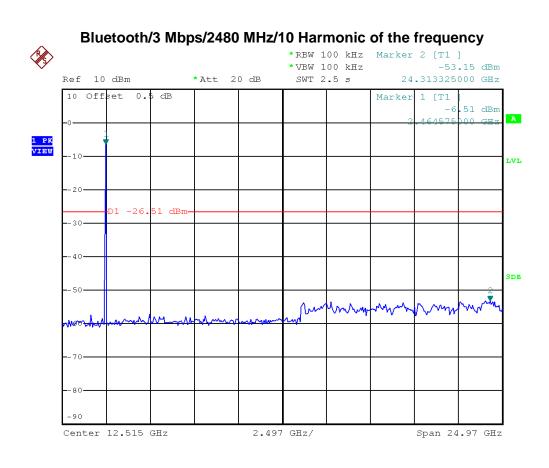






Bluetooth/3 Mbps/2441 MHz/10 Harmonic of the frequency





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6 HOPPING CHANNEL SEPARATION

6.1 LIMIT

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

6.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013

NOTE: N/A: denotes No Model Name, No Serial No. or No Calibration specified.

6.3 MEASURING INSTRUMENTS SETTING

EMI Test Receiver	Parameter Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RB	30 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)
VB	100 kHz (20dB Bandwidth) / 300 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

6.4 TEST PROCEDURES

- a. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode
- b. The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for 20 dB bandwidth measurement.
- c. The resolution bandwidth of 100 kHz and the video bandwidth of 300 kHz were utilised for channel separation measurement.

6.5 TEST SETUP LAYOUT

EUT	SPECTRUM	
	ANALYZER	

6.6 DEVIATION FROM TEST STANDARD

No deviation

6.7 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.

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6.8 TEST RESULTS

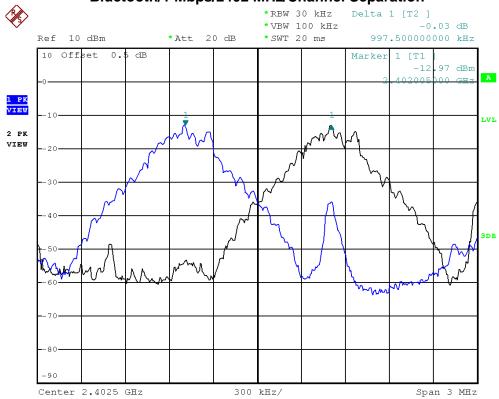
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT		
Temperature	26°C	Relative Humidity	46%		
Test Voltage	AC 120V/60Hz				
Test Mode	Bluetooth/1 Mbps/2402 MHz, 2441 MHz, 2480 MHz				

Frequency	Channel Separation (MHz)	20 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Two-thirds of the 20 dB Bandwidth	Result
2402 MHz	1.00	0.948	0.860	0.632	PASS
2441 MHz	1.01	0.943	0.850	0.628	PASS
2480 MHz	1.00	0.868	0.855	0.579	PASS

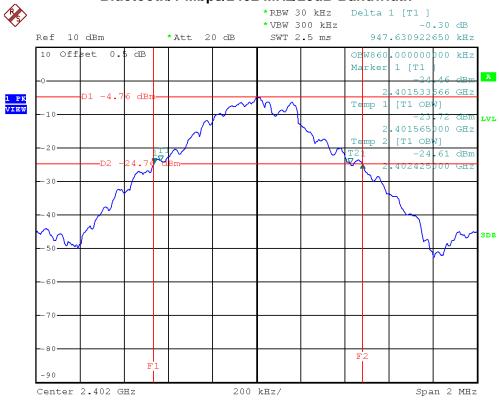
NOTE: Ch. Separation Limits: >25 KHz or >2/3 of 20dB bandwidth

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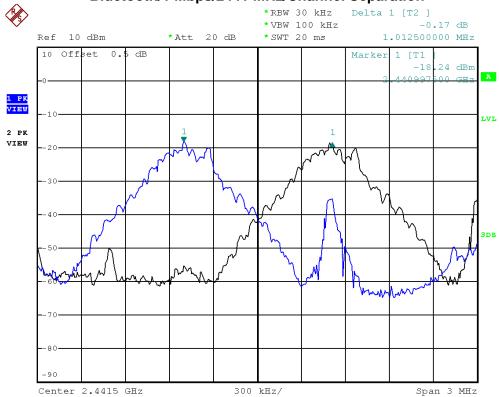




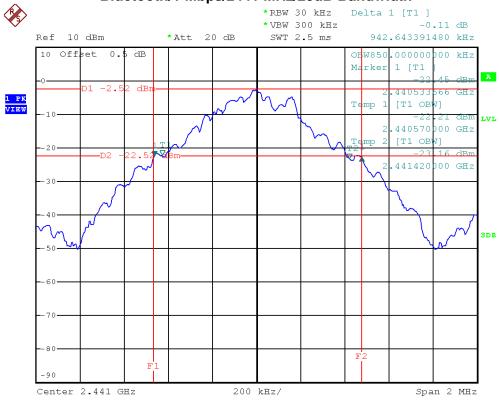
Bluetooth/1 Mbps/2402 MHz/20dB Bandwidth



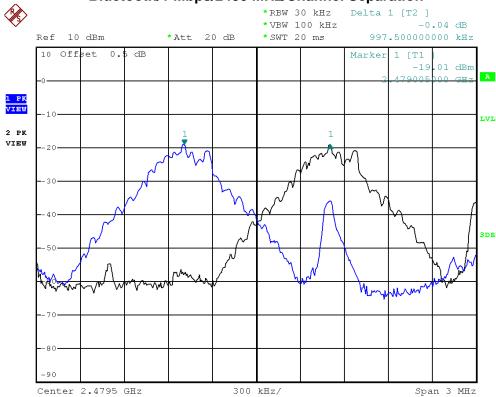




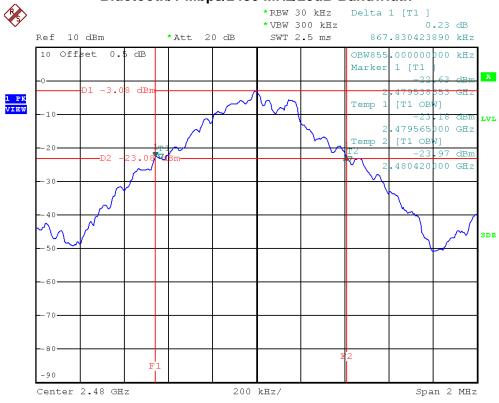
Bluetooth/1 Mbps/2441 MHz/20dB Bandwidth







Bluetooth/1 Mbps/2480 MHz/20dB Bandwidth





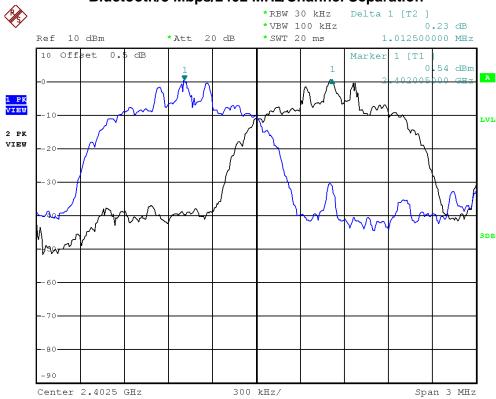
H	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT	
Temperature	26°C	Relative Humidity	46%	
Test Voltage	AC 120V/60Hz			
Test Mode	Bluetooth/3 Mbps/2402 MHz, 2441 MHz, 2480 MHz			

Frequency	Channel Separation (MHz)	20 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Two-thirds of the 20 dB Bandwidth	Result
2402 MHz	1.01	1.282	1.165	0.855	PASS
2441 MHz	1.01	1.257	1.160	0.838	PASS
2480 MHz	1.01	1.257	1.160	0.838	PASS

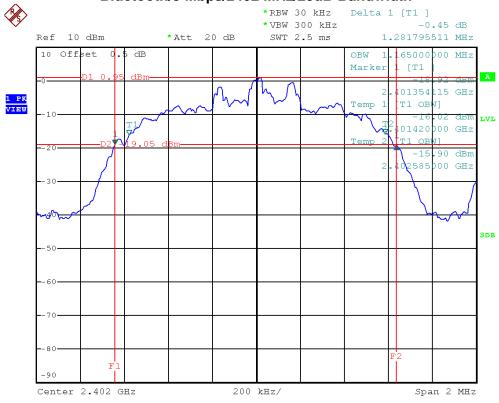
NOTE: Ch. Separation Limits: >25 KHz or >2/3 of 20dB bandwidth

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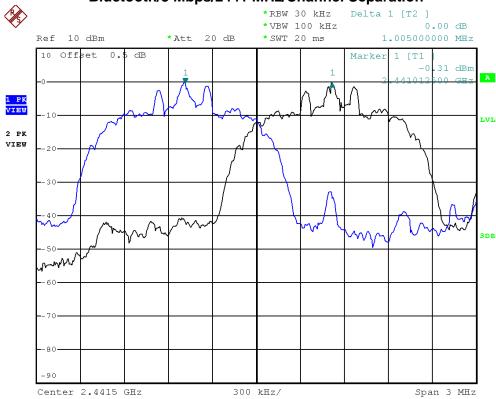


Bluetooth/3 Mbps/2402 MHz/20dB Bandwidth

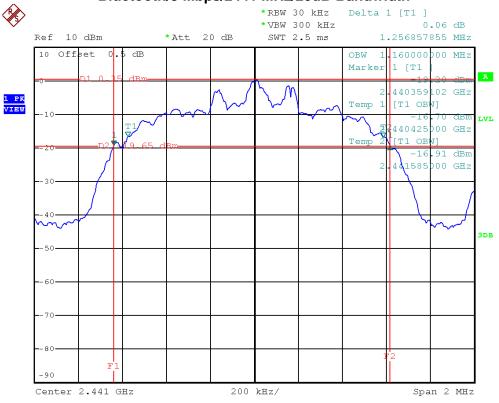


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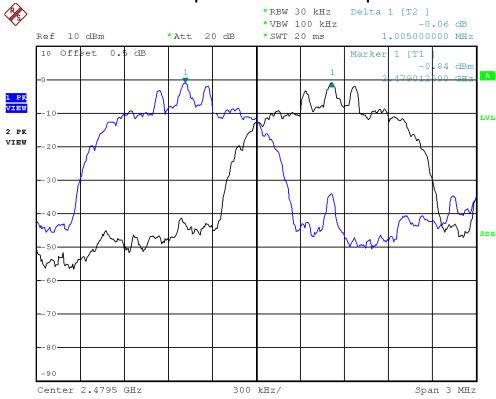


Bluetooth/3 Mbps/2441 MHz/20dB Bandwidth

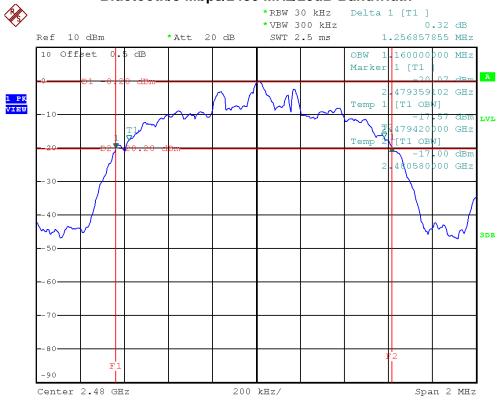


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Bluetooth/3 Mbps/2480 MHz/20dB Bandwidth



7 MAXIMUM PEAK CONDUCTED OUTPUT POWER

7.1 LIMIT

Test Item	Frequency Range (MHz)	Limit
Maximum Peak Conducted Output Power	2400-2483.5	1 watt or 30 dBm

7.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013

NOTE: N/A: denotes No Model Name, No Serial No. or No Calibration specified.

7.3 TEST PROCEDURES

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting: RBW= 3 MHz, VBW= 3 MHz, Sweep time = Auto.

7.4 TEST SETUP LAYOUT

EUT	SPECTRUM
	ANALYZER

7.5 DEVIATION FROM TEST STANDARD

No deviation

7.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.

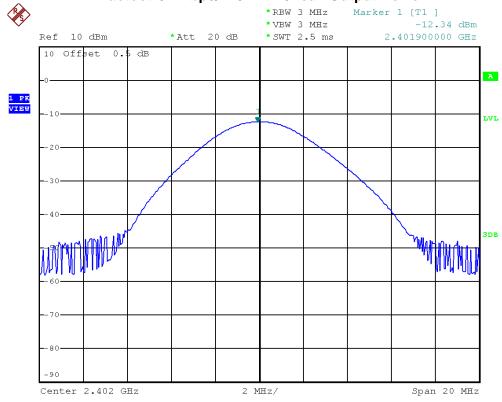
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7.7 TEST RESULTS

H	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT	
Temperature	26°C	Relative Humidity	46%	
Test Voltage	AC 120V/60Hz			
Test Mode	Bluetooth/1 Mbps/2402 MHz, 2441 MHz, 2480 MHz			

Frequency	Peak Output Power (dBm)	LIMIT (dBm)	Result
2402 MHz	-12.34	30	PASS
2441 MHz	-17.02	30	PASS
2480 MHz	-18.25	30	PASS

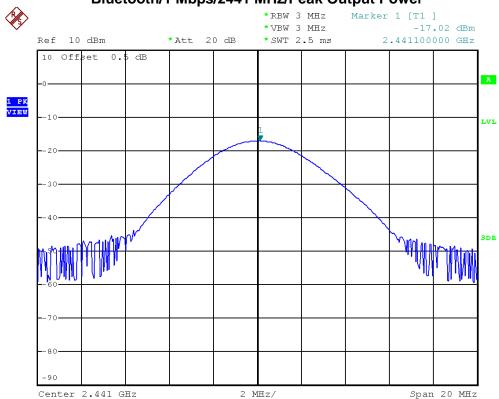
Bluetooth/1 Mbps/2402 MHz/Peak Output Power



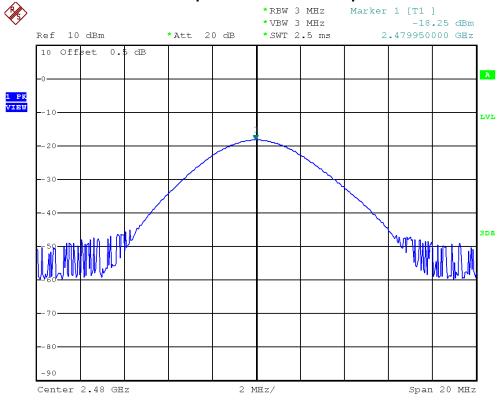
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Neutron Engineering Inc.

Bluetooth/1 Mbps/2441 MHz/Peak Output Power



Bluetooth/1 Mbps/2480 MHz/Peak Output Power

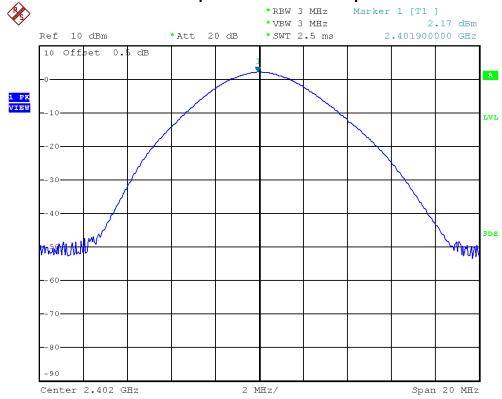


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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT	
Temperature	26°C	Relative Humidity	46%	
Test Voltage	AC 120V/60Hz			
Test Mode	Bluetooth/3 Mbps/2402 MHz, 2441 MHz, 2480 MHz			

Frequency	Peak Output Power (dBm)	LIMIT (dBm)	Result
2402 MHz	2.17	30	PASS
2441 MHz	1.30	30	PASS
2480 MHz	0.91	30	PASS

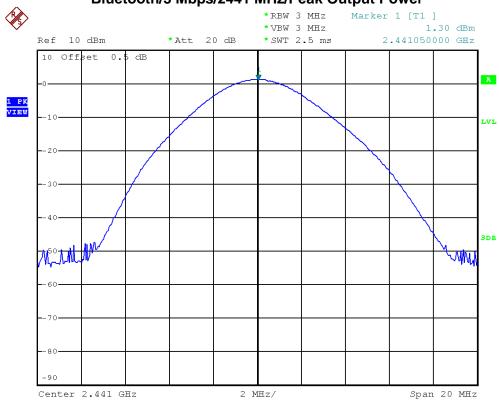
Bluetooth/3 Mbps/2402 MHz/Peak Output Power



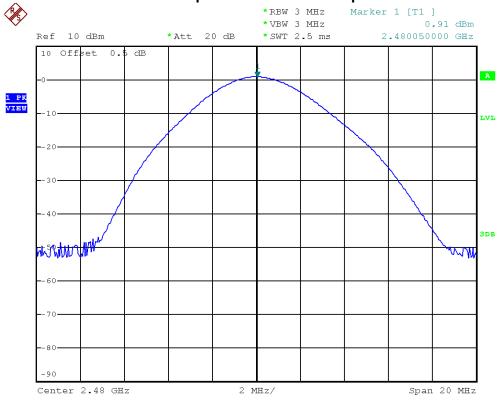
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Bluetooth/3 Mbps/2480 MHz/Peak Output Power



8 RADIATED SPURIOUS EMISSION (9 KHZ TO 1 GHZ)

8.1 LIMIT

20 dB in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency Range: 9 kHz to 1 GHz				
FREQUENCY (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)		
0.009~0.490	2400/F(kHz)	300		
0.490~1.705	24000/F(kHz)	30		
1.705~30.0	30	30		
30~88	100	3		
88~216	150	3		
216~960	200	3		
Above 960	500	3		

Frequency Range: above 1 GHz				
FREQUENCY	Class A (dBuV/m) (at 3m) Class B (dBuV/m)		IV/m) (at 3m)	
(MHz)	PEAK	AVERAGE	PEAK	AVERAGE
above 1 GHz	80	60	74	54

NOTE:

- (1) The limit for radiated test was performed according to FCC PART 15B.
- (2) The tighter limit applies at the band edges.(3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following: Measurement Value = Reading Level + Correct Factor Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use) Margin Level = Measurement Value - Limit Value

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8.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-325	Apr. 16, 2013
3	Microwave Pre_amplifier	Agilent	8449B	3008A01714	Apr. 17, 2013
4	Microflex Cable	N/A	N/A	1m	Apr. 14, 2013
5	Microflex Cable	AISI	S104-SMAP-1	10m	Apr. 14, 2013
6	Microflex Cable	N/A	N/A	3m	Apr. 14, 2013
7	Test Cable	N/A	LMR-400	966_12m	May. 15, 2013
8	Test Cable	N/A	LMR-400	966_3m	May. 15, 2013
9	Pre-Amplifier	EMC	EMC-330	980001	Jun. 07, 2013
10	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jun. 12, 2013
11	Horn Antenna	Schwarzbeck	BBHA 9170	187	Dec. 18, 2012

Remark: "N/A" denotes No Model Name, No Serial No. or No Calibration specified.

8.3 MEASURING INSTRUMENTS SETTING

EMI Test Receiver	Parameter Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

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8.4 TEST PROCEDURES

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1 GHz. For frequencies above 1 GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m Semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item -EUT Test Photos.
- g. The testing follows the guidelines in ANSI C63.4 and FCC Public Notice DA 00-705 Measurement Guidelines. In case the emission is fail due to the used RBW/VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

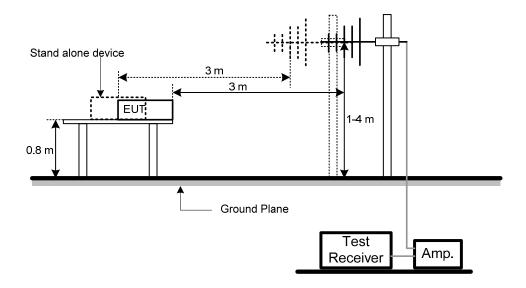
NOTE:

- a. Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode with Detector BW=120 kHz; SPA setting in RBW=100 kHz, VBW =100 kHz, Swp. Time = 0.3 sec./ MHz.
- b. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

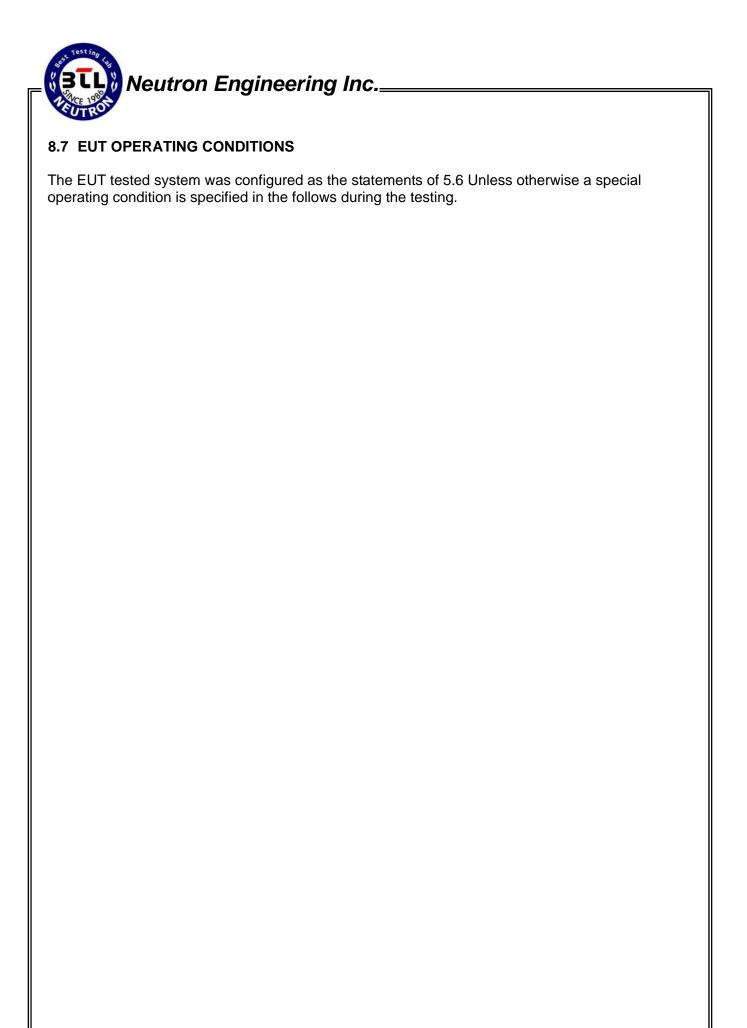
8.5 DEVIATION FROM TEST STANDARD

No deviation

8.6 TEST SETUP LAYOUT



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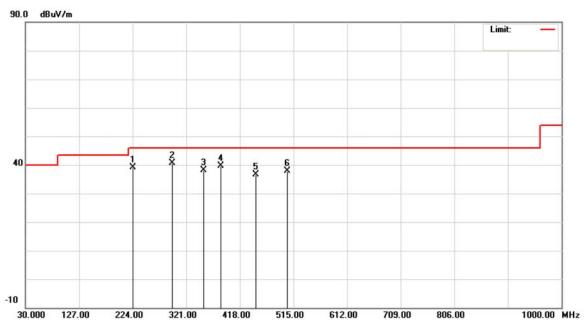
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8.8 TEST RESULTS

	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps/2441 MHz		

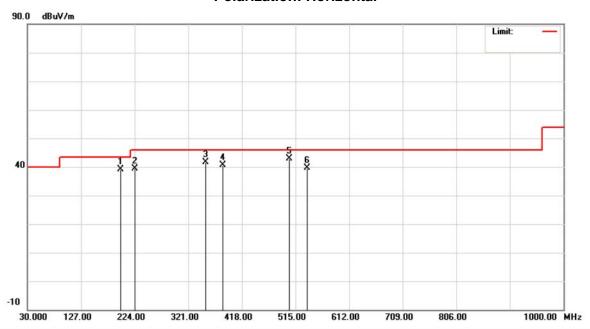
Polarization: Vertical



No.	Mk	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		224.0000	60.27	-21.19	39.08	46.00	-6.92	peak	
2	*	295.7799	58.74	-18.09	40.65	46.00	-5.35	peak	
3		352.0400	54.99	-16.96	38.03	46.00	-7.97	peak	
4		383.0799	55.54	-16.02	39.52	46.00	-6.48	peak	
5		447.1000	50.94	-14.32	36.62	46.00	-9.38	peak	
6		503.3599	51.17	-13.22	37.95	46.00	-8.05	peak	

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I - I I I	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT		
Temperature	26°C	Relative Humidity	60%		
Test Voltage	AC 120V/60Hz				
Test Mode	Bluetooth/1 Mbps/2441 MHz				



Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
3	198.7799	60.94	-21.71	39.23	43.50	-4.27	peak	
	224.0000	60.45	-21.19	39.26	46.00	-6.74	peak	
	352.0400	58.71	-16.96	41.75	46.00	-4.25	peak	
	383.0799	56.76	-16.02	40.74	46.00	-5.26	peak	
*	503.3599	56.13	-13.22	42.91	46.00	-3.09	peak	
	536.3400	52.54	-12.91	39.63	46.00	-6.37	peak	
		MHz 198.7799 224.0000 352.0400 383.0799 * 503.3599	Mk. Freq. Level MHz dBuV 198.7799 60.94 224.0000 60.45 352.0400 58.71 383.0799 56.76 * 503.3599 56.13	Mk. Freq. Level Factor MHz dBuV dB 198.7799 60.94 -21.71 224.0000 60.45 -21.19 352.0400 58.71 -16.96 383.0799 56.76 -16.02 * 503.3599 56.13 -13.22	Mk. Freq. Level Factor ment MHz dBuV dB dBuV/m 198.7799 60.94 -21.71 39.23 224.0000 60.45 -21.19 39.26 352.0400 58.71 -16.96 41.75 383.0799 56.76 -16.02 40.74 * 503.3599 56.13 -13.22 42.91	Mk. Freq. Level Factor ment Limit MHz dBuV dB dBuV/m dBuV/m dBuV/m 198.7799 60.94 -21.71 39.23 43.50 224.0000 60.45 -21.19 39.26 46.00 352.0400 58.71 -16.96 41.75 46.00 383.0799 56.76 -16.02 40.74 46.00 * 503.3599 56.13 -13.22 42.91 46.00	Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB dBuV/m dB 198.7799 60.94 -21.71 39.23 43.50 -4.27 224.0000 60.45 -21.19 39.26 46.00 -6.74 352.0400 58.71 -16.96 41.75 46.00 -4.25 383.0799 56.76 -16.02 40.74 46.00 -5.26 * 503.3599 56.13 -13.22 42.91 46.00 -3.09	Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector 198.7799 60.94 -21.71 39.23 43.50 -4.27 peak 224.0000 60.45 -21.19 39.26 46.00 -6.74 peak 352.0400 58.71 -16.96 41.75 46.00 -4.25 peak 383.0799 56.76 -16.02 40.74 46.00 -5.26 peak * 503.3599 56.13 -13.22 42.91 46.00 -3.09 peak

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9 RADIATED SPURIOUS EMISSION (ABOVE 1 GHZ)

9.1 LIMIT

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency Range: 9 kHz to 1 GHz								
FREQUENCY (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)						
0.009~0.490	2400/F(kHz)	300						
0.490~1.705	24000/F(kHz)	30						
1.705~30.0	30	30						
30~88	100	3						
88~216	150	3						
216~960	200	3						
Above 960	500	3						

Frequency Range: above 1 GHz								
FREQUENCY	Class A (dBu	IV/m) (at 3m)	Class B (dBuV/m) (at 3m)					
(MHz)	PEAK	AVERAGE	PEAK	AVERAGE				
above 1 GHz	80	60	74	54				

NOTE:

- (1) The limit for radiated test was performed according to FCC PART 15B.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following: Measurement Value = Reading Level + Correct Factor Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain(if use) Margin Level = Measurement Value – Limit Value

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9.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-325	Apr. 16, 2013
3	Microwave Pre_amplifier	Agilent	8449B	3008A01714	Apr. 17, 2013
4	Microflex Cable	N/A	N/A	1m	Apr. 14, 2013
5	Microflex Cable AISI		S104-SMAP-1	10m	Apr. 14, 2013
6	Microflex Cable	licroflex Cable N/A		3m	Apr. 14, 2013
7	Test Cable	N/A	LMR-400	966_12m	May. 15, 2013
8	Test Cable	N/A	LMR-400	966_3m	May. 15, 2013
9	Pre-Amplifier	EMC	EMC-330	980001	Jun. 07, 2013
10	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jun. 12, 2013
11	Horn Antenna	Schwarzbeck	BBHA 9170	187	Dec. 18, 2012

Remark: "N/A" denotes No Model Name, No Serial No. or No Calibration specified.

9.3 MEASURING INSTRUMENTS SETTING

Spectrum Analyzer	Parameter Setting			
Attenuation	Auto			
Start Frequency	1000 MHz			
Stop Frequency	10th carrier harmonic			
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average			
RB / VB (other emission)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average			

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9.4 TEST PROCEDURES

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1 GHz. For frequencies above 1 GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m Semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item -EUT Test Photos.
- g. The testing follows the guidelines in ANSI C63.4 and FCC Public Notice DA 00-705 Measurement Guidelines. In case the emission is fail due to the used RBW/VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

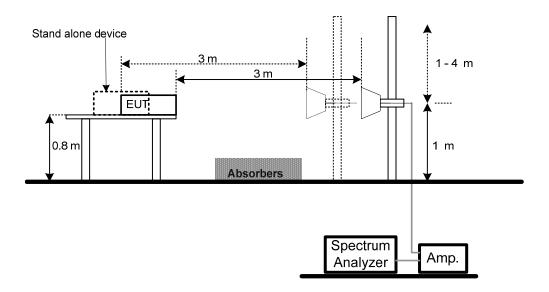
NOTE:

- a. Reading in which marked as Peak means measurements by using are Peak Mode with instrument setting in RBW= 1 MHz, VBW= 1 MHz, Swp. Time = Auto.
 Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW= 1 MHz, VBW= 10 Hz, Swp. Time = Auto.
- b. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform.

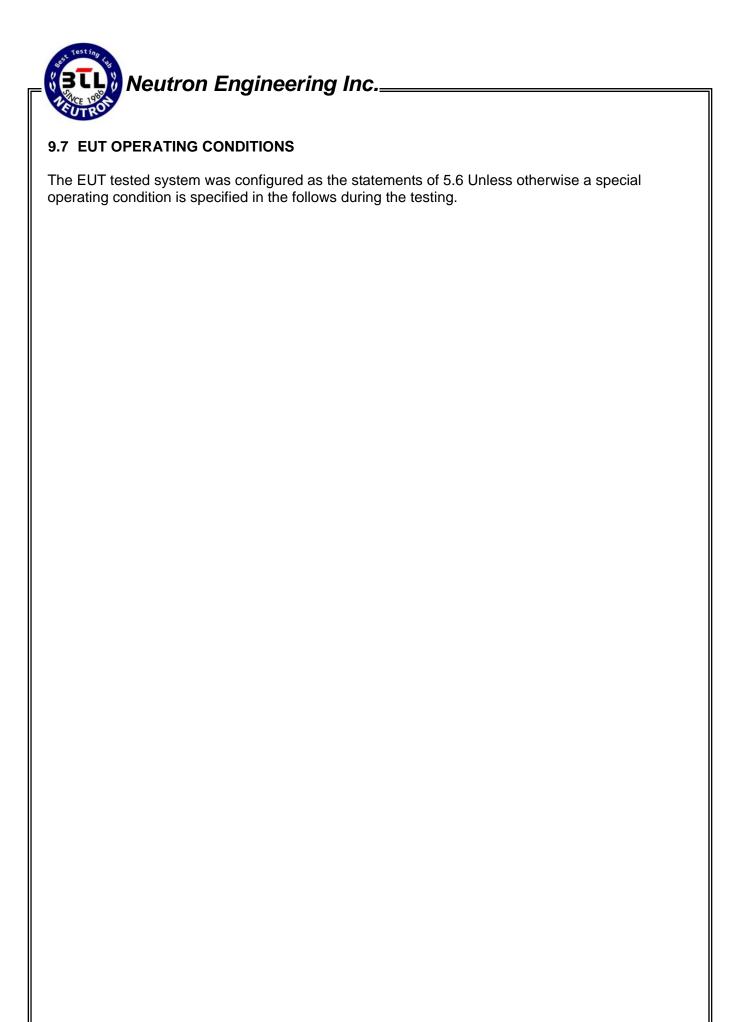
9.5 DEVIATION FROM TEST STANDARD

No deviation

9.6 TEST SETUP LAYOUT



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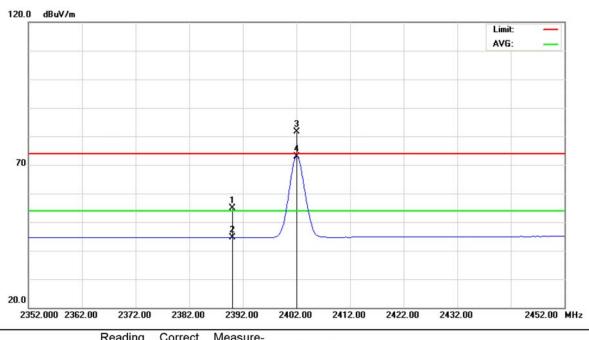


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9.8 TEST RESULTS

	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT				
Temperature	26°C	Relative Humidity	60%				
Test Voltage	AC 120V/60Hz						
Test Mode	Bluetooth/1 Mbps/2402 MHz						

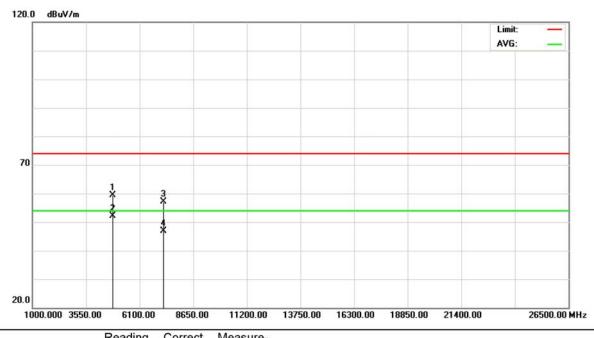
Polarization: Vertical



No.	Mk	. Freq.	Level	Factor	ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	21.50	33.42	54.92	74.00	-19.08	peak	
2		2390.000	11.17	33.42	44.59	54.00	-9.41	AVG	
3	Χ	2402.000	48.07	33.49	81.56	74.00	7.56	peak	
4	*	2402.000	39.42	33.49	72.91	54.00	18.91	AVG	

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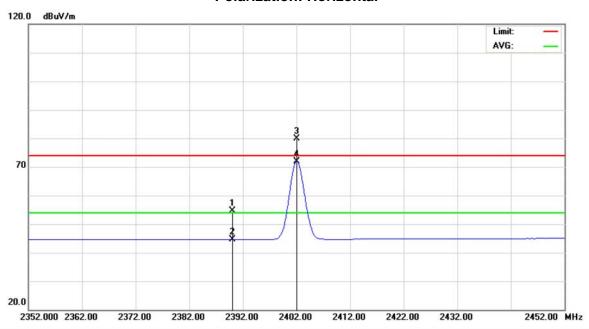
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT	
Temperature	26°C	Relative Humidity	60%	
Test Voltage	AC 120V/60Hz			
Test Mode	Bluetooth/1 Mbps/2402 MHz			



No.	Mk	c. Freq.	Level	Factor	ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4804.050	51.99	7.41	59.40	74.00	-14.60	peak	
2	*	4804.050	44.74	7.41	52.15	54.00	-1.85	AVG	
3		7205.960	42.34	14.79	57.13	74.00	-16.87	peak	
4		7205.960	32.14	14.79	46.93	54.00	-7.07	AVG	

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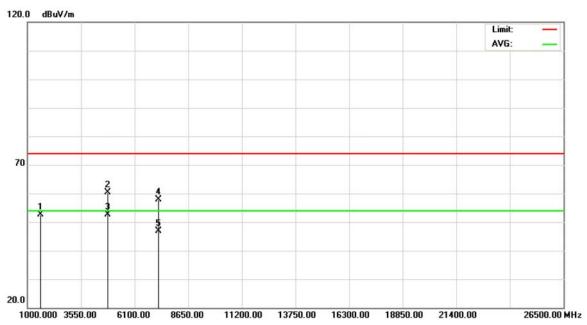
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT	
Temperature	26°C	Relative Humidity	60%	
Test Voltage	AC 120V/60Hz			
Test Mode	Bluetooth/1 Mbps/2402 MHz			



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		2390.000	21.17	33.42	54.59	74.00	-19.41	peak		
2		2390.000	11.17	33.42	44.59	54.00	-9.41	AVG		
3	Χ	2402.000	46.51	33.49	80.00	74.00	6.00	peak		
4	*	2402.000	38.43	33.49	71.92	54.00	17.92	AVG		

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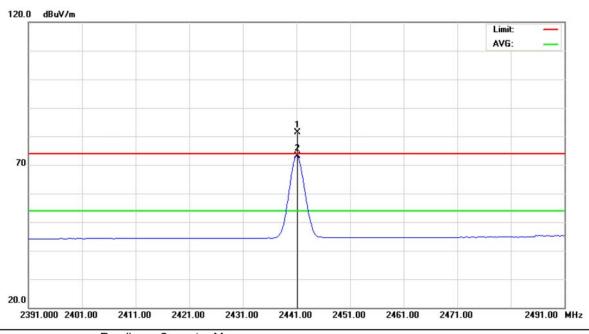
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps/2402 MHz		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	9	1602.000	56.23	-3.63	52.60	54.00	-1.40	AVG		
2		4803.990	52.99	7.41	60.40	74.00	-13.60	peak		
3	*	4803.990	45.22	7.41	52.63	54.00	-1.37	AVG		
4		7206.090	43.12	14.79	57.91	74.00	-16.09	peak		
5		7206.090	32.20	14.79	46.99	54.00	-7.01	AVG		

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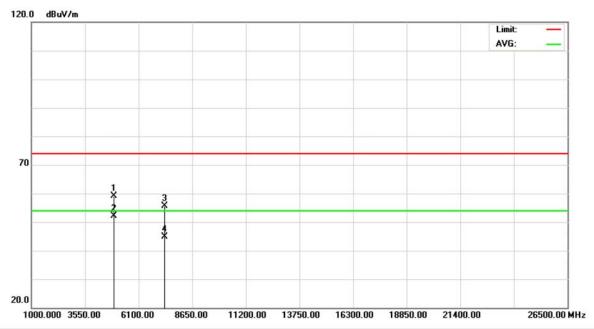
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps/2441 MHz		



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	Χ	2441.020	48.11	33.27	81.38	74.00	7.38	peak	
2	*	2441.020	39.79	33.27	73.06	54.00	19.06	AVG	

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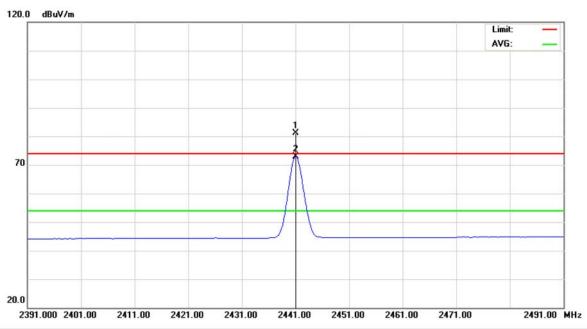
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps/2441 MHz		



No.	M	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4882.030	51.43	7.70	59.13	74.00	-14.87	peak		
2	*	4882.030	44.44	7.70	52.14	54.00	-1.86	AVG		
3		7323.030	40.48	15.10	55.58	74.00	-18.42	peak		
4		7323.030	29.83	15.10	44.93	54.00	-9.07	AVG		

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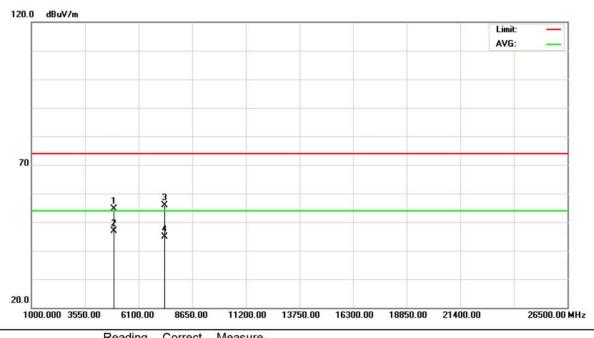
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps/2441 MHz		



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	Χ	2441.000	47.98	33.27	81.25	74.00	7.25	peak	
2	*	2441.000	39.58	33.27	72.85	54.00	18.85	AVG	

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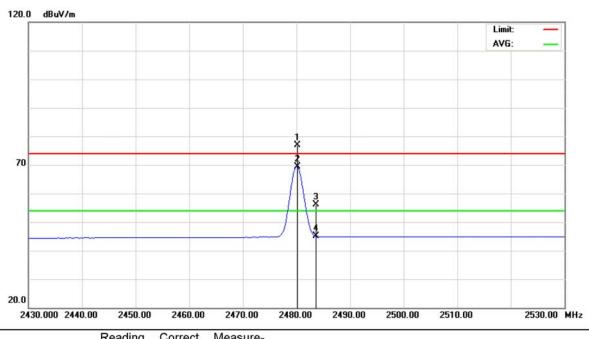
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps/2441 MHz		



No.	Mk	. Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4882.030	46.83	7.70	54.53	74.00	-19.47	peak		
2	*	4882.030	39.11	7.70	46.81	54.00	-7.19	AVG		
3		7322.960	40.74	15.10	55.84	74.00	-18.16	peak		
4		7322.960	29.71	15.10	44.81	54.00	-9.19	AVG		

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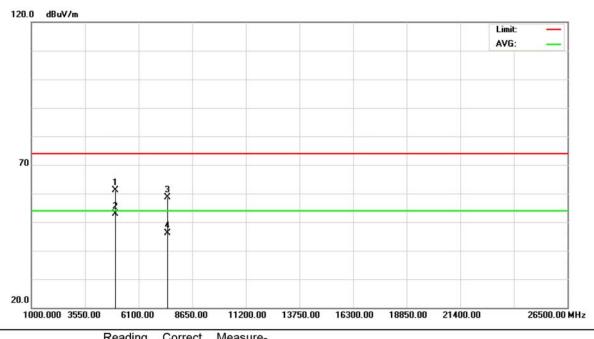
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps/2480 MHz		



No.	Mk	c. Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	Χ	2480.050	43.44	33.48	76.92	74.00	2.92	peak		
2	*	2480.050	35.89	33.48	69.37	54.00	15.37	AVG		
3		2483.500	22.59	33.50	56.09	74.00	-17.91	peak		
4		2483.500	11.55	33.50	45.05	54.00	-8.95	AVG		

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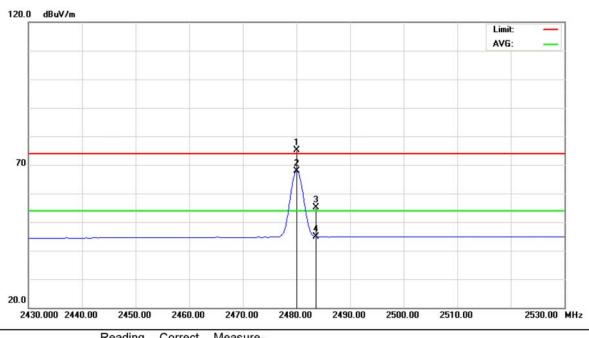
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps/2480 MHz		



No.	M	k. Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4960.030	53.10	7.98	61.08	74.00	-12.92	peak		
2	*	4960.030	44.92	7.98	52.90	54.00	-1.10	AVG		
3		7440.040	43.15	15.40	58.55	74.00	-15.45	peak		
4		7440.040	30.80	15.40	46.20	54.00	-7.80	AVG		

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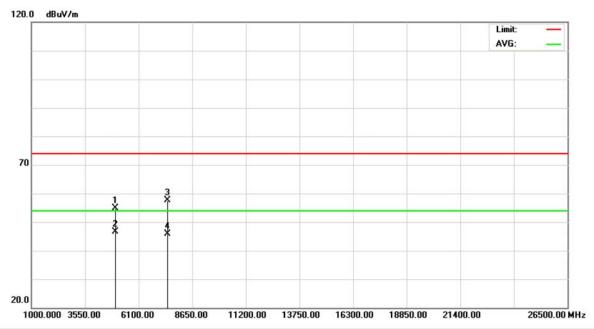
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps/2480 MHz		



No.	Mk	c. Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	Χ	2479.990	41.62	33.48	75.10	74.00	1.10	peak		
2	*	2479.990	34.31	33.48	67.79	54.00	13.79	AVG		
3		2483.500	21.56	33.50	55.06	74.00	-18.94	peak		
4		2483.500	11.43	33.50	44.93	54.00	-9.07	AVG		

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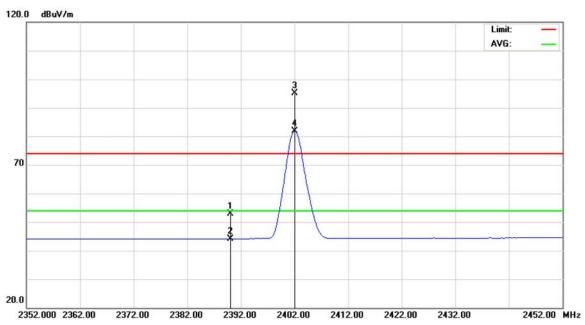
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT					
Temperature	26°C	Relative Humidity	60%					
Test Voltage	AC 120V/60Hz							
Test Mode	Bluetooth/1 Mbps/2480 MHz							



No.	M	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4960.010	46.94	7.98	54.92	74.00	-19.08	peak		
2	*	4960.010	38.65	7.98	46.63	54.00	-7.37	AVG		
3		7439.970	42.13	15.40	57.53	74.00	-16.47	peak		
4		7439.970	30.59	15.40	45.99	54.00	-8.01	AVG		

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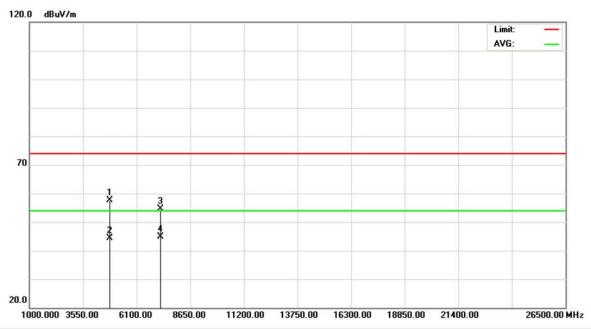
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/3 Mbps/2402 MHz		



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		2390.000	19.92	32.99	52.91	74.00	-21.09	peak		
2		2390.000	11.19	32.99	44.18	54.00	-9.82	AVG		
3	Χ	2402.000	62.13	33.06	95.19	74.00	21.19	peak		
4	*	2402.000	48.79	33.06	81.85	54.00	27.85	AVG		

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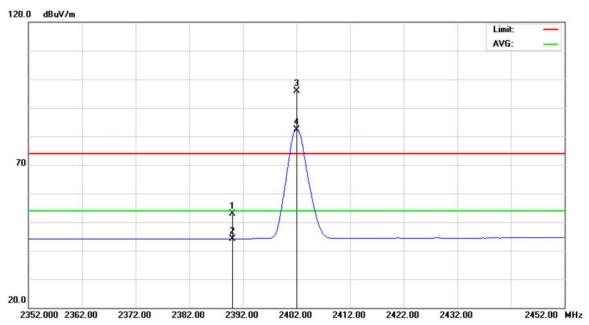
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT					
Temperature	26°C	Relative Humidity	60%					
Test Voltage	AC 120V/60Hz							
Test Mode	Bluetooth/3 Mbps/2402 MHz							



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4804.010	50.29	7.41	57.70	74.00	-16.30	peak		
2		4804.010	36.86	7.41	44.27	54.00	-9.73	AVG		
3		7206.110	39.85	14.79	54.64	74.00	-19.36	peak		
4	*	7206.110	30.15	14.79	44.94	54.00	-9.06	AVG		

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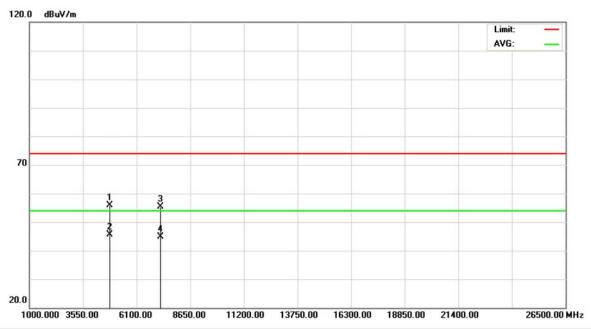
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/3 Mbps/2402 MHz		



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		2390.000	19.77	32.99	52.76	74.00	-21.24	peak		
2		2390.000	11.20	32.99	44.19	54.00	-9.81	AVG		
3	Χ	2402.000	62.90	33.06	95.96	74.00	21.96	peak		
4	*	2402.000	49.44	33.06	82.50	54.00	28.50	AVG		

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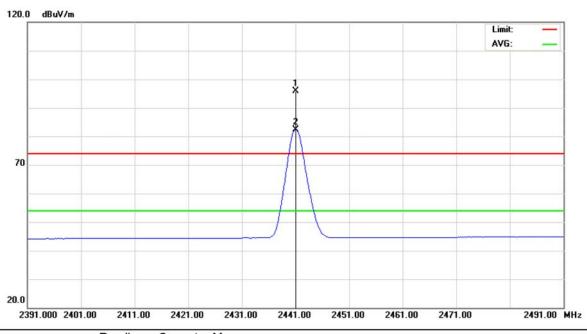
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT		
Temperature	26°C	Relative Humidity	60%		
Test Voltage	AC 120V/60Hz				
Test Mode	Bluetooth/3 Mbps/2402 MHz				



No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4804.050	48.47	7.41	55.88	74.00	-18.12	peak		
2	*	4804.050	38.24	7.41	45.65	54.00	-8.35	AVG		
3		7206.050	40.62	14.79	55.41	74.00	-18.59	peak		
4		7206.050	30.08	14.79	44.87	54.00	-9.13	AVG		

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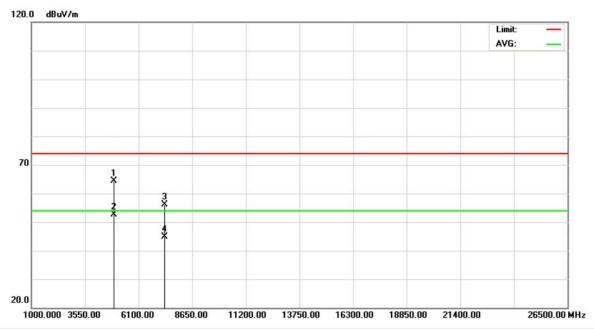
H	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/3 Mbps/2441 MHz		



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	Χ	2441.000	62.53	33.27	95.80	74.00	21.80	peak	
2	*	2441.000	49.09	33.27	82.36	54.00	28.36	AVG	

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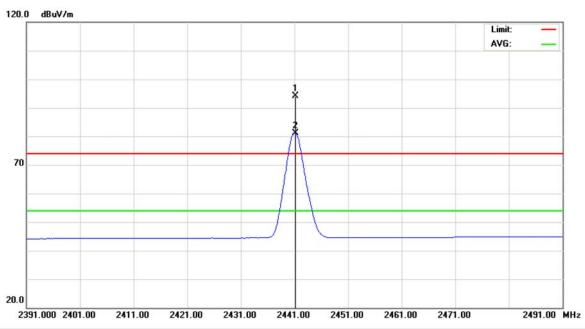
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT		
Temperature	26°C	Relative Humidity	60%		
Test Voltage	AC 120V/60Hz				
Test Mode	Bluetooth/3 Mbps/2441 MHz				



No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4882.020	56.70	7.70	64.40	74.00	-9.60	peak		
2	*	4882.020	44.83	7.70	52.53	54.00	-1.47	AVG		
3		7322.900	41.09	15.10	56.19	74.00	-17.81	peak		
4		7322.900	29.76	15.10	44.86	54.00	-9.14	AVG		

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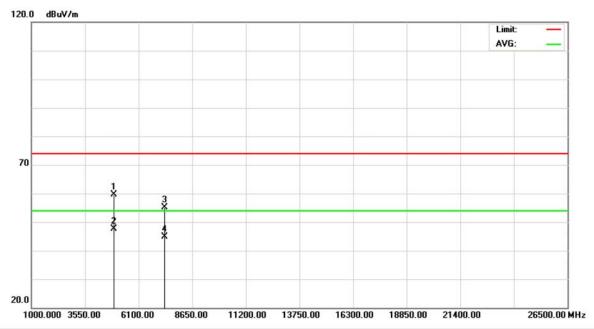
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT		
Temperature	26°C	Relative Humidity	60%		
Test Voltage	AC 120V/60Hz				
Test Mode	Bluetooth/3 Mbps/2441 MHz				



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	Χ	2441.040	60.84	33.27	94.11	74.00	20.11	peak	
2	*	2441.040	47.93	33.27	81.20	54.00	27.20	AVG	

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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/3 Mbps/2441 MHz		

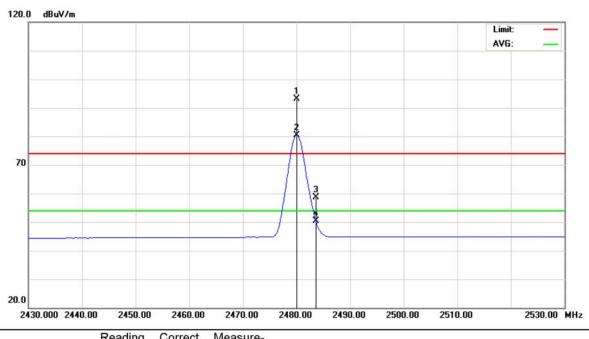


No.	M	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4882.000	52.00	7.70	59.70	74.00	-14.30	peak		
2	*	4882.000	39.85	7.70	47.55	54.00	-6.45	AVG		
3		7323.080	40.09	15.10	55.19	74.00	-18.81	peak		
4		7323.080	29.73	15.10	44.83	54.00	-9.17	AVG		

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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/3 Mbps/2480 MHz		

Polarization: Vertical

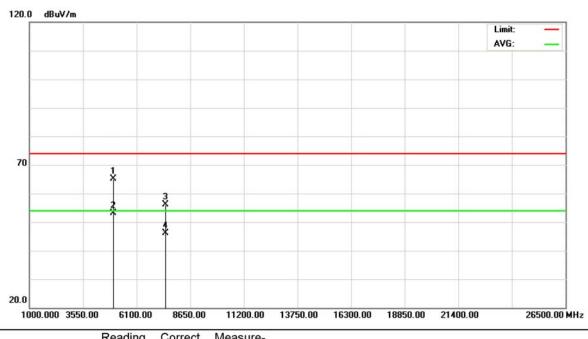


No.	Mk	. Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	Χ	2480.000	59.74	33.48	93.22	74.00	19.22	peak		
2	*	2480.000	46.94	33.48	80.42	54.00	26.42	AVG		
3		2483.500	25.23	33.50	58.73	74.00	-15.27	peak		
4		2483.500	16.95	33.50	50.45	54.00	-3.55	AVG		

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H	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT				
Temperature	26°C	Relative Humidity	60%				
Test Voltage	AC 120V/60Hz						
Test Mode	Bluetooth/3 Mbps/2480 MHz						

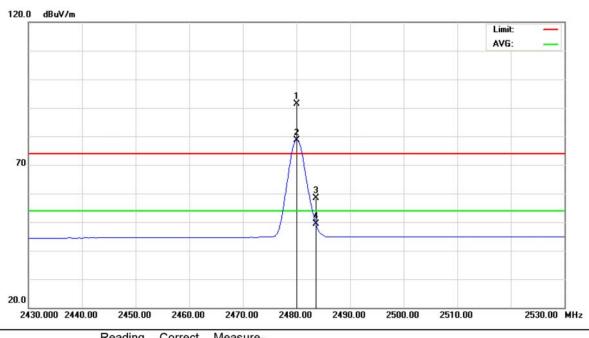
Polarization: Vertical



No.	M	k. Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4960.020	57.05	7.98	65.03	74.00	-8.97	peak		
2	*	4960.020	45.17	7.98	53.15	54.00	-0.85	AVG		
3		7439.880	40.76	15.40	56.16	74.00	-17.84	peak		
4		7439.880	30.71	15.40	46.11	54.00	-7.89	AVG		

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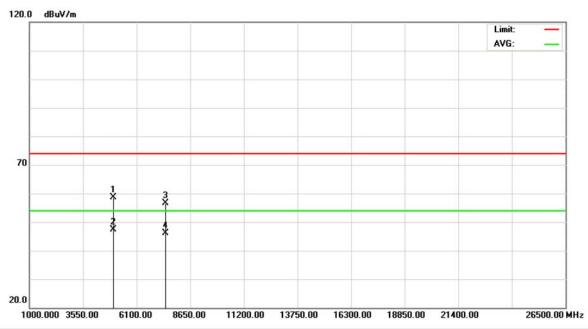
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/3 Mbps/2480 MHz		



No.	Mk	. Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	Χ	2480.000	57.98	33.48	91.46	74.00	17.46	peak		
2	*	2480.000	45.20	33.48	78.68	54.00	24.68	AVG		
3		2483.500	24.96	33.50	58.46	74.00	-15.54	peak		
4		2483.500	15.80	33.50	49.30	54.00	-4.70	AVG		

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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	60%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/3 Mbps/2480 MHz		



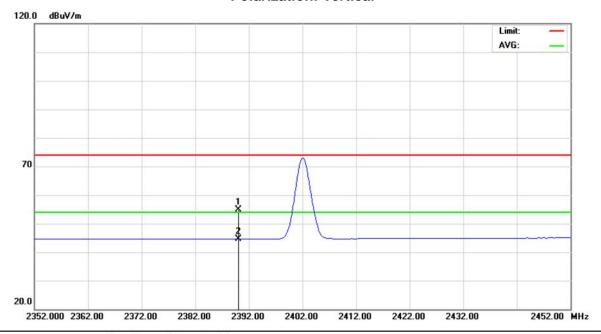
No.	M	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4959.960	50.54	7.98	58.52	74.00	-15.48	peak		
2	*	4959.960	39.32	7.98	47.30	54.00	-6.70	AVG		
3		7439.900	41.34	15.40	56.74	74.00	-17.26	peak		
4		7439.900	30.73	15.40	46.13	54.00	-7.87	AVG		

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9.9 TEST RESULTS (RESTRICTED BANDS)

	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT						
Temperature	24°C Relative Humidity 46%								
Test Voltage	AC 120V/60Hz								
Test Mode	Bluetooth/1 Mbps/2402 MHz								
NOTE	The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz.								

Polarization: Vertical

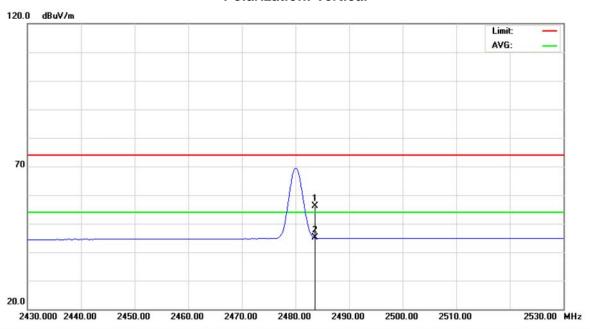


No.	Mk	c. Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	21.50	33.42	54.92	74.00	-19.08	peak	
2	*	2390.000	11.17	33.42	44.59	54.00	-9.41	AVG	

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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT			
Temperature	24°C	Relative Humidity	46%			
Test Voltage	AC 120V/60Hz					
Test Mode	Bluetooth/1 Mbps/2480 MHz					
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.					

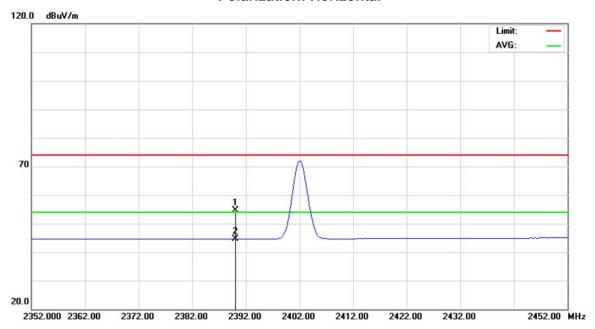
Polarization: Vertical



No.	Mk	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	22.59	33.50	56.09	74.00	-17.91	peak	
2	*	2483.500	11.55	33.50	45.05	54.00	-8.95	AVG	

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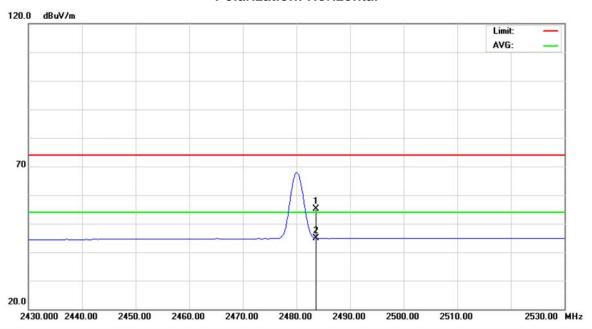
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT				
Temperature	24°C	Relative Humidity	46%				
Test Voltage	AC 120V/60Hz						
Test Mode	Bluetooth/1 Mbps/2402 MHz						
NOTE	The transmitter was setup to transmeasured at 2310-2390 MHz.	nit at the lowest cha	nnel and the field strength was				



	MHz dBu\	dB	-ID \ //	The second second second second second			
1 2390	WILL GOOT	uБ	dBuV/m	dBuV/m	dB	Detector	Comment
	0.000 21.1	7 33.42	54.59	74.00	-19.41	peak	
2 * 2390	0.000 11.1	7 33.42	44.59	54.00	-9.41	AVG	

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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT				
Temperature	24°C	Relative Humidity	46%				
Test Voltage	AC 120V/60Hz						
Test Mode	Bluetooth/1 Mbps/2480 MHz						
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.						

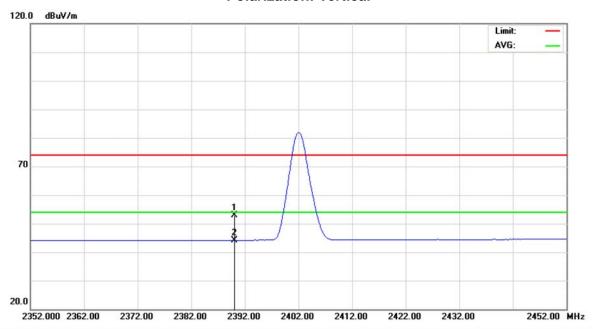


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	21.56	33.50	55.06	74.00	-18.94	peak	
2	*	2483.500	11.43	33.50	44.93	54.00	-9.07	AVG	

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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT				
Temperature	24°C	Relative Humidity	46%				
Test Voltage	AC 120V/60Hz						
Test Mode	Bluetooth/3 Mbps/2402 MHz						
NOTE	The transmitter was setup to transmeasured at 2310-2390 MHz.	The transmitter was setup to transmit at the lowest channel and the field strength was					

Polarization: Vertical

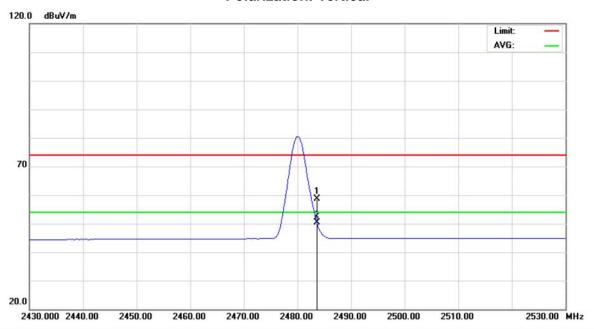


No.	Mk	c. Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	19.92	32.99	52.91	74.00	-21.09	peak	
2	*	2390.000	11.19	32.99	44.18	54.00	-9.82	AVG	

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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT				
Temperature	24°C	Relative Humidity	46%				
Test Voltage	AC 120V/60Hz						
Test Mode	Bluetooth/3 Mbps/2480 MHz						
NOTE	The transmitter was setup to transmits was measured at 2483.5-2500 MHz	9	annel and the field strength				

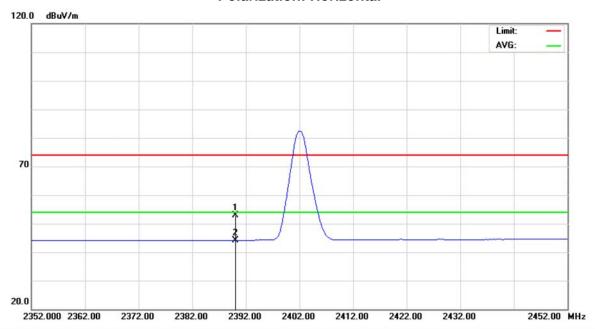
Polarization: Vertical



No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	25.23	33.50	58.73	74.00	-15.27	peak	
2	*	2483.500	16.95	33.50	50.45	54.00	-3.55	AVG	

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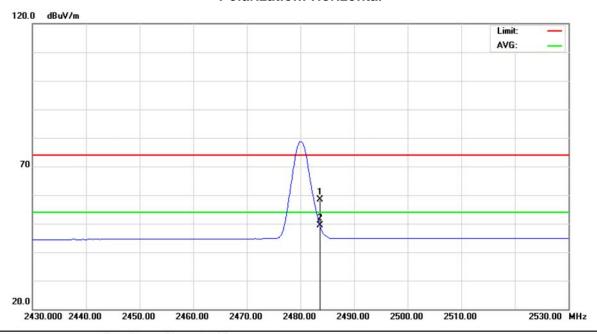
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT				
Temperature	24°C	Relative Humidity	46%				
Test Voltage	AC 120V/60Hz						
Test Mode	Bluetooth/3 Mbps/2402 MHz						
NOTE	The transmitter was setup to transmeasured at 2310-2390 MHz.	The transmitter was setup to transmit at the lowest channel and the field strength was					



No.	M	c. Freq.	Level	Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		2390.000	19.77	32.99	52.76	74.00	-21.24	peak		
2	*	2390.000	11.20	32.99	44.19	54.00	-9.81	AVG		

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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT		
Temperature	24°C	Relative Humidity	46%		
Test Voltage	AC 120V/60Hz				
Test Mode	Bluetooth/3 Mbps/2480 MHz				
NOTE	The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz.				



No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	24.96	33.50	58.46	74.00	-15.54	peak	
2	*	2483.500	15.80	33.50	49.30	54.00	-4.70	AVG	

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10 NUMBER OF HOPPING FREQUENCY

10.1LIMIT

Test Item	Frequency Range (MHz)	Limit
Number of Hopping Channel	2400-2483.5	shall use at least 15 channels

10.2MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013

NOTE: N/A: denotes No Model Name, No Serial No. or No Calibration specified.

10.3MEASURING INSTRUMENTS SETTING

Spectrum Analyzer	Parameter Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RB	100 kHz
VB	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

10.4TEST PROCEDURES

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting: RBW= 100 kHz, VBW=100 kHz, Sweep time = Auto.

10.5TEST SETUP LAYOUT



10.6 DEVIATION FROM TEST STANDARD

No deviation

10.7EUT OPERATING CONDITIONS

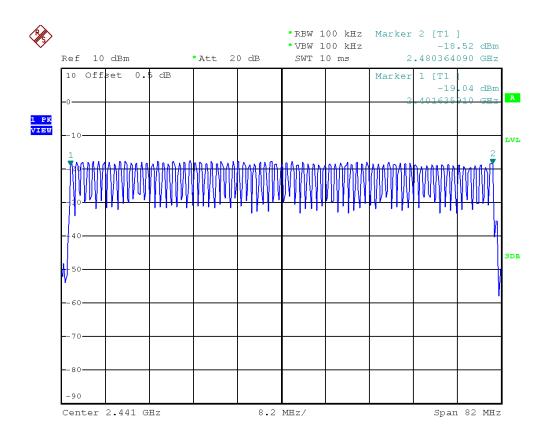
The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.

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10.8TEST RESULTS

	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT	
Temperature	26°C	Relative Humidity	60%	
Test Voltage	AC 120V/60Hz			
Test Mode	Bluetooth/1 Mbps			

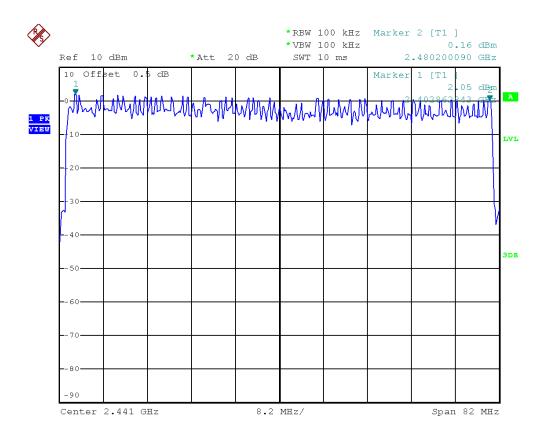
Number of Hopping Channel	Limit	Result
79	15	Pass



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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT	
Temperature	26°C	Relative Humidity	60%	
Test Voltage	AC 120V/60Hz			
Test Mode	Bluetooth/3 Mbps			

Number of Hopping Channel	Limit	Result
79	15	Pass



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11 AVERAGE TIME OF OCCUPANCY

11.1 LIMIT

Test Item	Frequency Range (MHz)	Limit
Average time of occupancy	2400-2483 5	shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

11.2MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Oct. 01, 2013

NOTE: N/A: denotes No Model Name, No Serial No. or No Calibration specified.

11.3TEST PROCEDURES

- a. The transmitter output (antenna port) was connected to the spectrum analyzer
- b. Set RBW of spectrum analyzer to 100 kHz and VBW to 100 kHz.
- c. Use a video trigger with the trigger level set to enable triggering only on full pulses.
- d. Sweep Time is more than once pulse time.
- e. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
- f. Measure the maximum time duration of one single pulse.
- g. Set the EUT for DH5, DH3 and DH1 packet transmitting.
- h. Measure the maximum time duration of one single pulse.
- i. DH5 Packet permit maximum 1600/79/6 = 3.37 hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times $3.37 \times 31.6 = 106.6$ within 31.6 seconds.
- j. DH3 Packet permit maximum 1600 / 79 / 4 = 5.06 hops per second in each channel (3 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times $5.06 \times 31.6 = 160$ within 31.6 seconds.
- k. DH1 Packet permit maximum 1600 / 79 / 2 = 10.12 hops per second in each channel (1 time slot RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times $10.12 \times 31.6 = 320$ within 31.6 seconds.

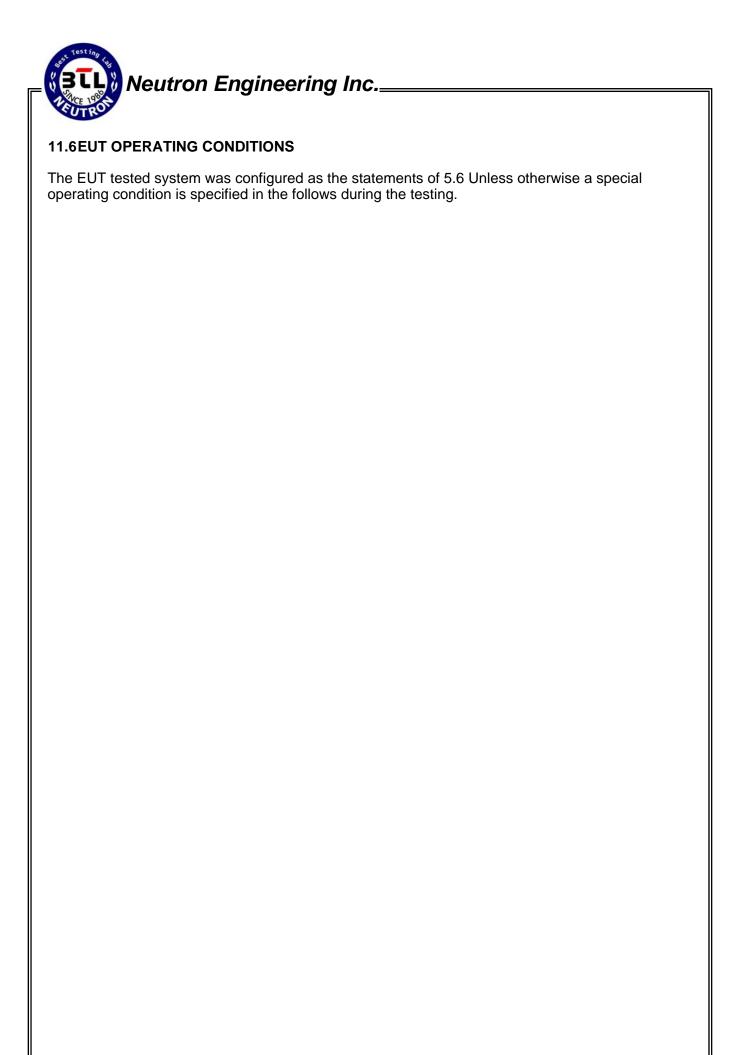
11.4TEST SETUP LAYOUT

EUT	SPECTRUM
	ANALYZER

11.5 DEVIATION FROM TEST STANDARD

No deviation

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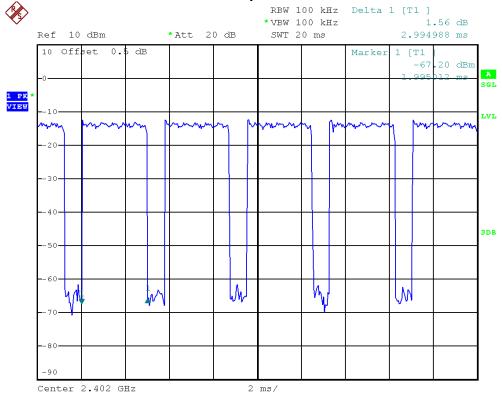
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11.7TEST RESULTS

	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps/2402 MHz		

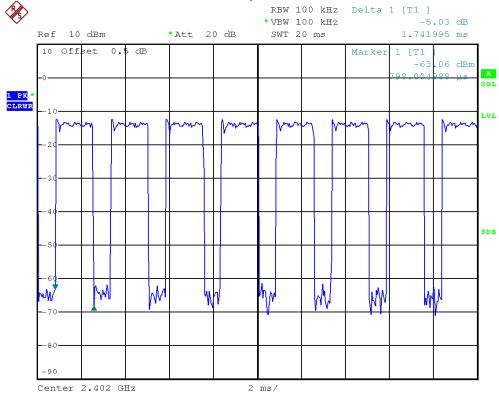
Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limit (s)	Result
DH5	2402 MHz	2.9949	0.3195	0.4	PASS
DH3	2402 MHz	1.7419	0.2787	0.4	PASS
DH1	2402 MHz	0.5102	0.1633	0.4	PASS

Bluetooth/1 Mbps/2402 MHz/DH5

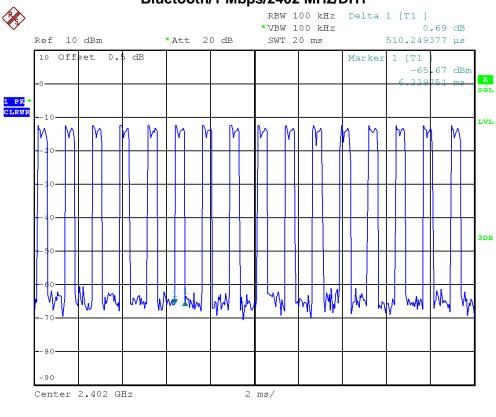


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Bluetooth/1 Mbps/2402 MHz/DH1

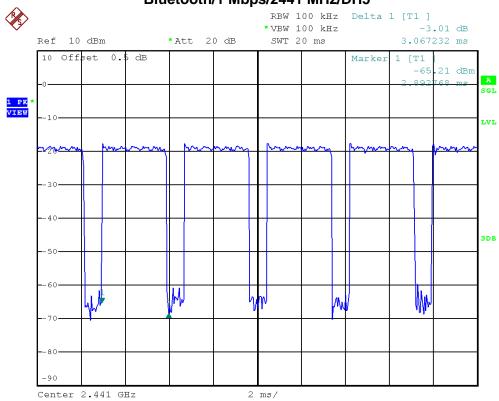


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I – I I I	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps/2441 MHz		

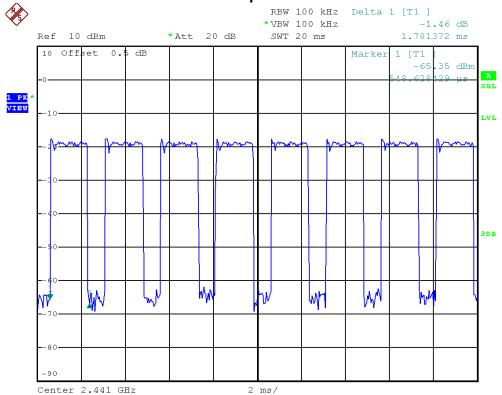
Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limit (s)	Result
DH5	2441 MHz	3.0672	0.3272	0.4	PASS
DH3	2441 MHz	1.7813	0.2850	0.4	PASS
DH1	2441 MHz	0.6719	0.2150	0.4	PASS

Bluetooth/1 Mbps/2441 MHz/DH5

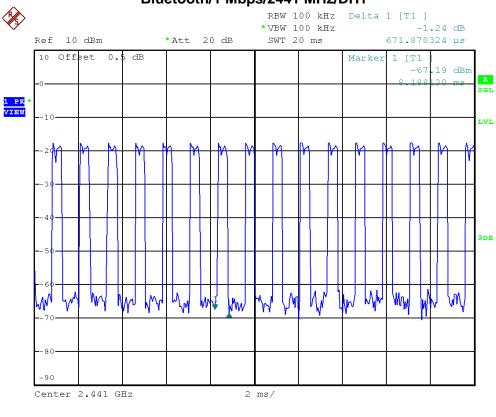


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Bluetooth/1 Mbps/2441 MHz/DH3



Bluetooth/1 Mbps/2441 MHz/DH1

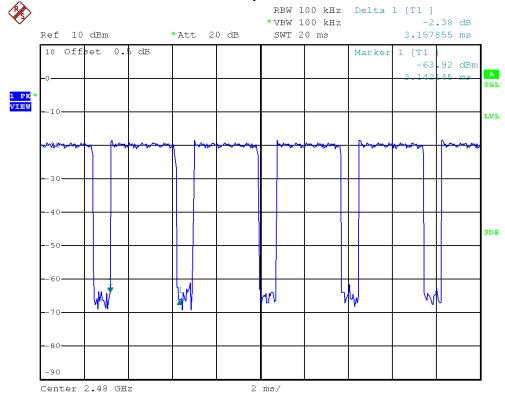


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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/1 Mbps/2480 MHz		

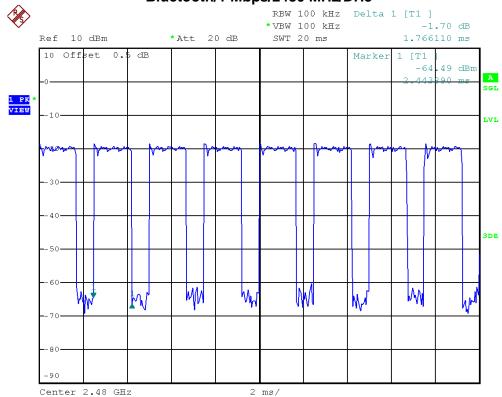
Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limit (s)	Result
DH5	2480 MHz	3.1578	0.3368	0.4	PASS
DH3	2480 MHz	1.7661	0.2826	0.4	PASS
DH1	2480 MHz	0.6923	0.2215	0.4	PASS

Bluetooth/1 Mbps/2480 MHz/DH5

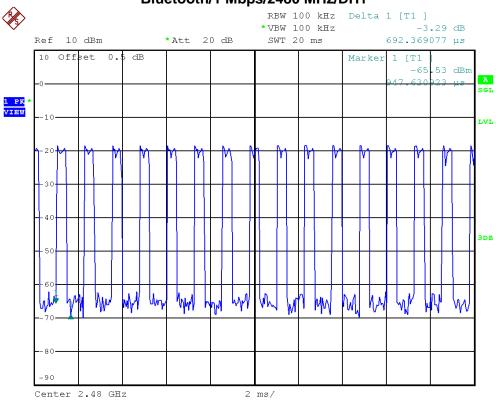


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Bluetooth/1 Mbps/2480 MHz/DH1

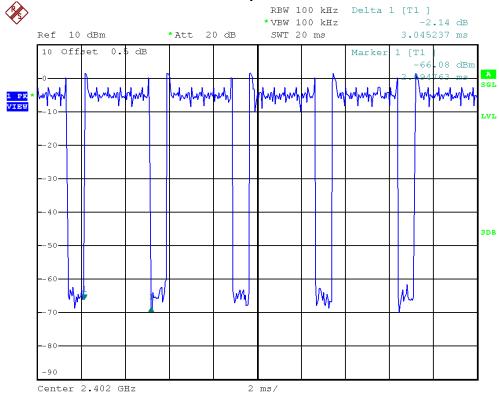


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	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/3 Mbps/2402 MHz		

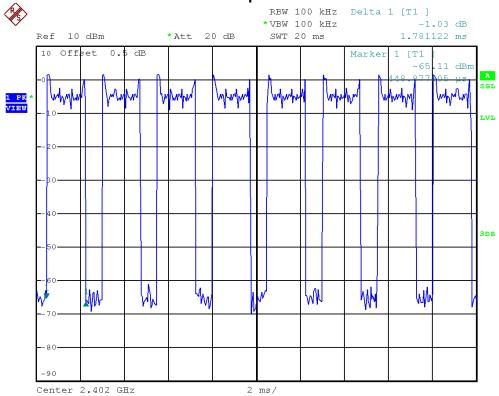
Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limit (s)	Result
DH5	2402 MHz	3.0452	0.3248	0.4	PASS
DH3	2402 MHz	1.7811	0.2850	0.4	PASS
DH1	2402 MHz	0.5614	0.1796	0.4	PASS

Bluetooth/3 Mbps/2402 MHz/DH5

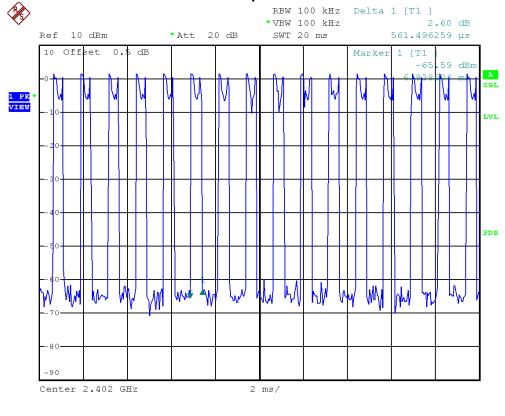


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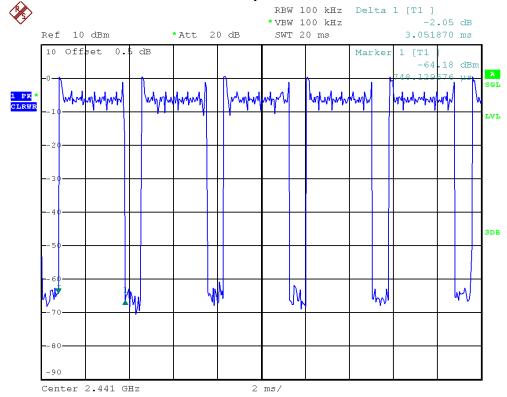
Bluetooth/3 Mbps/2402 MHz/DH1



I – I I I	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/3 Mbps/2441 MHz		

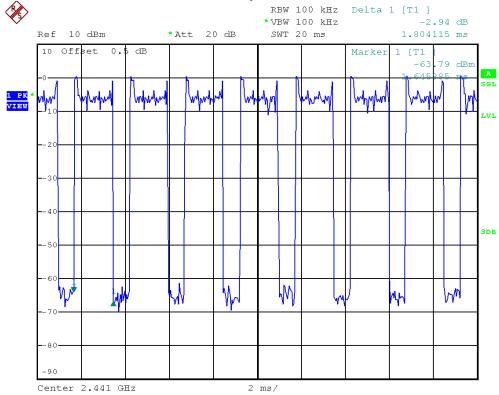
Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limit (s)	Result
DH5	2441 MHz	3.0518	0.3255	0.4	PASS
DH3	2441 MHz	1.8041	0.2887	0.4	PASS
DH1	2441 MHz	0.8225	0.2632	0.4	PASS

Bluetooth/3 Mbps/2441 MHz/DH5

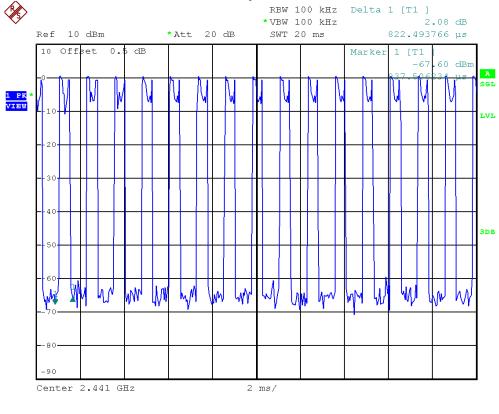


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Bluetooth/3 Mbps/2441 MHz/DH1

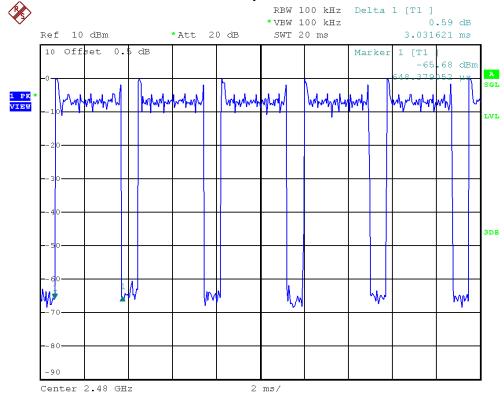


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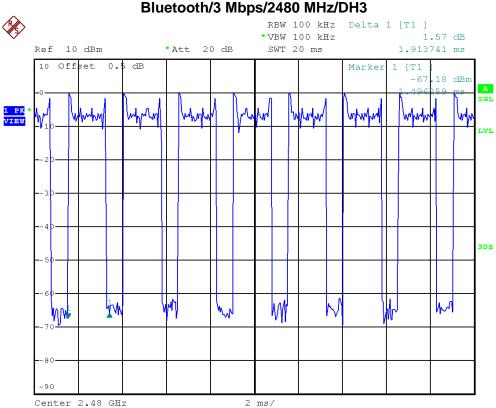
	iK5 Amphitheater High Performance Audio System	Model Name	40iK5BT
Temperature	26°C	Relative Humidity	46%
Test Voltage	AC 120V/60Hz		
Test Mode	Bluetooth/3 Mbps/2480 MHz		

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limit (s)	Result
DH5	2480 MHz	3.0316	0.3234	0.4	PASS
DH3	2480 MHz	1.9137	0.3062	0.4	PASS
DH1	2480 MHz	0.6025	0.1928	0.4	PASS

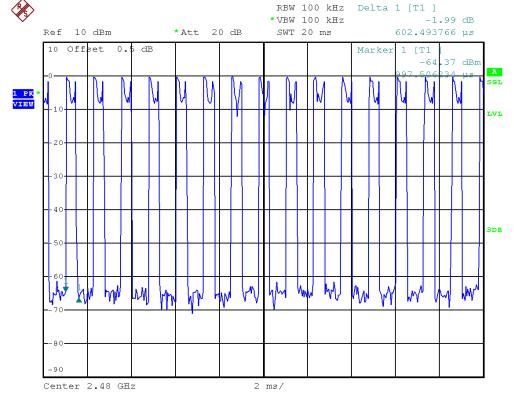
Bluetooth/3 Mbps/2480 MHz/DH5



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Bluetooth/3 Mbps/2480 MHz/DH1



12 RF EXPOSURE COMPLIANCE

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