FCC Test Report

Product Name	Nexus Player
Model No.	TV500I
FCC ID.	MSQ-TV500I

Applicant	ASUSTeK COMPUTER INC.
Address	4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan

Date of Receipt	Aug. 20, 2014
Issued Date	Oct. 06, 2014
Report No.	1480461R-RFUSP01V00-A
Report Version	V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

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Test Report

Issued Date: Oct. 06, 2014 Report No.: 1480461R-RFUSP01V00-A



Product Name	Nexus Player
Applicant	ASUSTeK COMPUTER INC.
Address	4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan
Manufacturer	Digitek (Chongqing) Limited
Model No.	TV500I
FCC ID.	MSQ-TV500I
EUT Rated Voltage	AC 100-240V, 50/60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	nexus; ASUS
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2013
	ANSI C63.10: 2009, KDB 558074 D01 DTS Meas Guidance v03r02
Test Result	Complied

Documented By :

:

:

Rita Fluang

(Senior Adm. Specialist / Rita Huang)

Tested By

Isu

(Engineer / Jack Hsu)

Approved By

(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Nexus Player
Trade Name	nexus; ASUS
Model No.	TV500I
FCC ID.	MSQ-TV500I
Frequency Range	2402 – 2480MHz
Channel Number	V4.0: 40CH
Type of Modulation	V4.0: GFSK(1Mbps)
Antenna Type	Printed on PCB Antenna
Channel Control	Auto
Antenna Gain	Refer to the table "Antenna List"
Power Adapter	MFR: PIE, M/N: AD2036321
	Input: 100-240V, 50/60Hz 0.5A
	Output: 12V==1.5A
	Cable out: Shielded, 1.8m
Contain Module	Broadcom / BCM4354XKUBG

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Digitek	N/A (Main).	Printed on PCB	3.73 dBi for 2.4 GHz
		N/A (Aux)		

Note:

1. The antenna of EUT is conforming to FCC 15.203.

Center Frequency of Each Channel: (For V4.0)

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00:	2402 MHz	Channel 01:	2404 MHz	Channel 02:	2406 MHz	Channel 03:	2408 MHz
Channel 04:	2410 MHz	Channel 05:	2412 MHz	Channel 06:	2414 MHz	Channel 07:	2416 MHz
Channel 08:	2418 MHz	Channel 09:	2420 MHz	Channel 10:	2422 MHz	Channel 11:	2424 MHz
Channel 12:	2426 MHz	Channel 13:	2428 MHz	Channel 14:	2430 MHz	Channel 15:	2432 MHz
Channel 16:	2434 MHz	Channel 17:	2436 MHz	Channel 18:	2438 MHz	Channel 19:	2440 MHz
Channel 20:	2442 MHz	Channel 21:	2444 MHz	Channel 22:	2446 MHz	Channel 23:	2448 MHz
Channel 24:	2450 MHz	Channel 25:	2452 MHz	Channel 26:	2454 MHz	Channel 27:	2456 MHz
Channel 28:	2458 MHz	Channel 29:	2460 MHz	Channel 30:	2462 MHz	Channel 31:	2464 MHz
Channel 32:	2466 MHz	Channel 33:	2468 MHz	Channel 34:	2470 MHz	Channel 35:	2472 MHz
Channel 36:	2474 MHz	Channel 37:	2476 MHz	Channel 38:	2478 MHz	Channel 39:	2480 MHz

Note:

- 1. The EUT is a Nexus Player with a built-in WLAN and Bluetooth transceiver, this report for Bluetooth V4.0.
- 2. These tests were conducted on a sample for the purpose of demonstrating compliance of Bluetooth transmitter with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
- 3. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
- 4. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode 1: Transmit - BLE (GFSK)

1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Monitor	DELL	ST2320LF	N/A	Non-Shielded, 1.8m
2	USB Mouse	Logitech	M-BE58	LZE11405266	N/A

Signal Cable Type		Signal cable Description
Α	HDMI Cable	Shielded, 1.8m
В	Mouse Cable	Shielded, 1.8m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown on 1.4
- (2) Execute "BT Test" program on the EUT.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Start the continuous transmission.
- (5) Verify that the EUT works properly.

1.6. Test Facility

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	30-65
Barometric pressure (mbar)	860-1060	950-1000

Ambient conditions in the laboratory:

The related certificate for our laboratories about the test site and management system can be downloaded from

QuieTek Corporation's Web Site: <u>http://www.quietek.com/tw/ctg/cts/accreditations.htm</u> The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site: <u>http://www.quietek.com/</u>

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	E-Mail : <u>service@quietek.com</u>

FCC Accreditation Number: TW1014

2. Conducted Emission

2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
Х	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2014	
Х	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2014	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2014	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2014	EUT
Х	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2014	
	No.1 Shielded Room				

Note:

- 1. All equipments are calibrated every one year.
- 2. The test instruments marked by "X" are used to measure the final test results.

2.2. Test Setup



FCC Part 15 S	FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit					
Frequency	Lir	Limits				
MHz	QP	AV				
0.15 - 0.50	66-56	56-46				
0.50-5.0	56	46				
5.0 - 30	60	50				

2.3. Limits

Remarks: In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

The EUT and Peripherals are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all the interface cables must be changed according to ANSI C63.10: 2009 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

The EUT was setup to ANSI C63.10, 2009; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

2.5. Uncertainty

± 2.26 dB

Product

Test Item

Power Lin	ne : Line 1				
Test Mode	e : Mode 1	: Transmit - BLE	(GFSK) (2440MHz)		
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.158	9.658	31.220	40.878	-24.893	65.771
0.220	9.652	24.190	33.842	-30.158	64.000
0.380	9.660	36.830	46.490	-12.939	59.429
0.634	9.674	25.690	35.364	-20.636	56.000
1.416	9.727	22.660	32.387	-23.613	56.000
10.740	9.998	31.630	41.628	-18.372	60.000
Average					
0.158	9.658	20.720	30.378	-25.393	55.771
0.220	9.652	14.880	24.532	-29.468	54.000
0.380	9.660	30.620	40.280	-9.149	49.429
0.634	9.674	12.250	21.924	-24.076	46.000
1.416	9.727	16.430	26.157	-19.843	46.000
10.740	9.998	24.720	34.718	-15.282	50.000

2.6. Test Result of Conducted Emission

:

:

Nexus Player

Conducted Emission Test

Note:

1. All Reading Levels are Quasi-Peak and average value.

2. " means the worst emission level.

3. Measurement Level = Reading Level + Correct Factor

Product	: Nexus Player						
Test Item	: Conducted Emission Test						
Power Line	: Line 2						
Test Mode	: Mode 1	: Transmit - BLE ((GFSK) (2440MHz)				
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV	dB	dBuV		
LINE 2							
Quasi-Peak							
0.154	9.660	32.070	41.730	-24.156	65.886		
0.173	9.659	27.660	37.319	-28.024	65.343		
0.380	9.660	35.200	44.860	-14.569	59.429		
0.591	9.672	25.230	34.902	-21.098	56.000		
0.752	9.691	20.500	30.191	-25.809	56.000		
10.783	10.018	28.310	38.328	-21.672	60.000		
Average							
0.154	9.660	18.810	28.470	-27.416	55.886		
0.173	9.659	15.880	25.539	-29.804	55.343		
0.380	9.660	29.480	39.140	-10.289	49.429		
0.591	9.672	12.010	21.682	-24.318	46.000		
0.752	9.691	7.070	16.761	-29.239	46.000		
10.783	10.018	20.800	30.818	-19.182	50.000		

- 1. All Reading Levels are Quasi-Peak and average value.
- 2. " means the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor

3. Peak Power Output

3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Х	Power Meter	Anritsu	ML2495A/6K00003357	May, 2014
Х	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2014

Note: 1. All equipments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

3.2. Test Setup



3.3. Limit

The maximum peak power shall be less 1Watt.

3.4. Test Procedure

Tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using KDB 558074 section 9.1.2 PKPM1 Peak power meter method.

3.5. Uncertainty

 \pm 1.27 dB

3.6. Test Result of Peak Power Output

Product	:	Nexus Player
Test Item	:	Peak Power Output
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - BLE (GFSK)

Channel No.	Frequency	Measurement	Required Limit	Result
	(MHz)	(dBm)		
Channel 00	2402.00	3.38	1 Watt= 30 dBm	Pass
Channel 19	2440.00	6.75	1 Watt= 30 dBm	Pass
Channel 39	2480.00	7.91	1 Watt= 30 dBm	Pass

4. Radiated Emission

4.1. Test Equipment

The following test equipments are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 3	Site # 3 X Loop Antenna		Teseq	HLA6120 / 26739	Jul., 2014
	Х	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2014
	Х	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2014
	Х	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	Х	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2014
	Х	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
	Х	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2014
	Х	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	Х	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	Χ	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All equipments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

4.2. Test Setup

Below 1GHz



Above 1GHz



4.3. Limits

➤ General Radiated Emission Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits					
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)			
0.009-0.490	2400/F(kHz)	300			
0.490-1.705	24000/F(kHz)	30			
1.705-30	30	30			
30-88	100	3			
88-216	150	3			
216-960	200	3			
Above 960	500	3			

Remarks: 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

- 2. In the Above Table, the tighter limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2009 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement. The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna. The worst radiated emission is measured on the Final Measurement.

The measurement frequency range form 9kHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

- ± 3.9 dB above 1GHz
- ± 3.8 dB below 1GHz

Product	: Nexus Player							
Test Item	: Harmonic Radiated Emission							
Test Site	: No.3 OATS							
Test Mode	: Mode 1: Transmit - BLE (GFSK)(2402MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
4804.000	3.327	56.330	59.657	-14.343	74.000			
7206.000	10.136	36.870	47.006	-26.994	74.000			
9608.000	13.706	36.980	50.686	-23.314	74.000			
Average								
Detector:								
4804.000	3.327	46.650	49.977	-4.023	54.000			
Vertical								
Peak Detector:								
4804.000	6.638	54.230	60.867	-13.133	74.000			
7206.000	11.005	37.290	48.295	-25.705	74.000			
9608.000	14.103	36.730	50.833	-23.167	74.000			
Average								
Detector:								
4804.000	6.638	44.910	51.547	-2.453	54.000			

4.6. Test Result of Radiated Emission

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: Nexus Player							
Test Item	: Harmonic Radiated Emission							
Test Site	: No.3 OATS							
Test Mode	: Mode 1	: Transmit - BLE	(GFSK) (2440MHz)					
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
4880.000	3.010	55.400	58.410	-15.590	74.000			
7320.000	11.833	36.390	48.224	-25.776	74.000			
9760.000	12.580	35.620	48.201	-25.799	74.000			
Average								
Detector:								
4880.000	3.010	45.820	48.830	-5.170	54.000			
Vertical								
Peak Detector:								
4880.000	5.738	53.630	59.368	-14.632	74.000			
7320.000	12.703	35.810	48.513	-25.487	74.000			
9760.000	13.052	36.170	49.222	-24.778	74.000			
Average								
Detector:								
4880.000	5.738	44.330	50.068	-3.932	54.000			

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: Nexus Player						
Test Item	: Harmonic Radiated Emission						
Test Site	: No.3 O	: No.3 OATS					
Test Mode	: Mode 1	: Transmit - BLE	(GFSK) (2480MHz)				
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector:							
4960.000	2.760	52.630	55.390	-18.610	74.000		
7440.000	12.567	36.990	49.556	-24.444	74.000		
9920.000	13.456	35.730	49.186	-24.814	74.000		
Average							
Detector:							
4960.000	2.760	43.200	45.960	-8.040	54.000		
Vertical							
Peak Detector:							
4960.000	5.557	50.780	56.337	-17.663	74.000		
7440.000	13.426	35.450	48.875	-25.125	74.000		
9920.000	13.958	35.830	49.788	-24.212	74.000		
Average							
Detector:							
4960.000	5.557	41.660	47.217	-6.783	54.000		

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

: Nexus Player						
: General Radiated Emission						
: No.3 OATS						
: Mode 1:	Transmit - BLE ((GFSK) (2440MHz)				
Correct	Reading	Measurement	Margin	Limit		
Factor	Level	Level				
dB	dBuV	dBuV/m	dB	dBuV/m		
-10.216	38.836	28.620	-14.880	43.500		
-7.806	46.333	38.527	-4.973	43.500		
-0.432	40.180	39.748	-6.252	46.000		
3.492	41.883	45.375	-0.625	46.000		
3.892	33.918	37.810	-8.190	46.000		
6.515	34.339	40.854	-5.146	46.000		
-5.406	44.913	39.507	-3.993	43.500		
-4.521	39.944	35.423	-10.577	46.000		
-1.874	35.522	33.648	-12.352	46.000		
-0.388	38.341	37.953	-8.047	46.000		
1.095	32.942	34.037	-11.963	46.000		
3.480	28.747	32.227	-13.773	46.000		
	 Nexus P General No.3 OA Mode 1: Correct Factor dB -10.216 -7.806 -0.432 3.492 3.892 6.515 -5.406 -4.521 -1.874 -0.388 1.095 3.480 	 Nexus Player General Radiated Emissio No.3 OATS Mode 1: Transmit - BLE (Correct Reading Factor Level dB dBuV -10.216 38.836 -7.806 46.333 -0.432 40.180 3.492 41.883 3.892 33.918 6.515 34.339 -5.406 44.913 -4.521 39.944 -1.874 35.522 -0.388 38.341 1.095 32.942 3.480 28.747 	 Nexus Player General Radiated Emission No.3 OATS Mode 1: Transmit - BLE (GFSK) (2440MHz) Correct Reading Measurement Factor Level Level dB dBuV dBuV/m -10.216 38.836 28.620 -7.806 46.333 38.527 -0.432 40.180 39.748 3.492 41.883 45.375 3.892 33.918 37.810 6.515 34.339 40.854 -5.406 44.913 39.507 -4.521 39.944 35.423 -1.874 35.522 33.648 -0.388 38.341 37.953 1.095 32.942 34.037 3.480 28.747 32.227 	$\begin{array}{c c c c c c c c c c c c c c c c c c c $		

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 8. No emission found between lowest internal used/generated frequency to 30MHz.

5. **RF** Antenna Conducted Test

5.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note: 1. All equipments are calibrated every one year.

2. The test instruments Marked "X" are used to measure the final test results.

5.2. Test Setup



5.3. Limits

According to FCC Section 15.247(d). In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

5.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

5.5. Uncertainty

± 150Hz

5.6. Test Result of RF Antenna Conducted Test

Product	:	Nexus Player
Test Item	:	RF Antenna Conducted Test
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - BLE (GFSK)

Channel 00 (2402MHz) 30MHz-25GHz



Channel 39 (2441MHz) 30MHz-25GHz



Channel 78 (2480MHz) 30MHz-25GHz



Note: The above test pattern is synthesized by multiple of the frequency range.

6. Band Edge

-

6.1. Test Equipment

RF Conducted Measurement

The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 204
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

RF Radiated Measurement:

The following test equipments are used during the band edge tests:

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2014
	Х	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2014
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	Х	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2014
	Х	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2014
	Х	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	Χ	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All equipments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Conducted Measurement



RF Radiated Measurement:

Above 1GHz



6.3. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

6.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2009 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz. The EUT was setup to ANSI C63.10, 2009.

6.5. Uncertainty

- ± 3.9 dB above 1GHz
- ± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

Product	:	Nexus Player
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - BLE (GFSK)

RF Radiated Measurement (Horizontal):

Channal No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Docult
Channel No.	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dBuV/m)	Result
00 (Peak)	2386.600	-1.144	46.570	45.426	74.00	54.00	Pass
00 (Peak)	2390.000	-1.131	45.221	44.090	74.00	54.00	Pass
00 (Peak)	2401.800	-1.074	104.512	103.438			
00 (Average)	2390.000	-1.131	33.436	32.305	74.00	54.00	Pass
00 (Average)	2402.000	-1.073	76.605	75.533			

Figure Channel 00:

Horizontal (Peak)





Note:

0.0 -

2350.000

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

2380.000

2390.000 Frequency (MHz) 2400.000

2410.000

2420,000

2430.000

2440.000

2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.

2370,000

- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.

2360.000

- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	Nexus Player
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - BLE (GFSK)

RF Radiated Measurement (Vertical):

Channal No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Degult
Channel No.	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dBuV/m)	Result
00 (Peak)	2390.000	-1.725	44.829	43.104	74.00	54.00	Pass
00 (Peak)	2401.800	-1.729	95.060	93.331			
00 (Average)	2390.000	-1.725	32.882	31.157	74.00	54.00	Pass
00 (Average)	2402.000	-1.729	81,196	79.467			

Figure Channel 00:

Vertical (Peak)



Figure Channel 00:

Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



Product	:	Nexus Player
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - BLE (GFSK)

RF Radiated Measurement (Horizontal):

Channal No	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Docult
Channel No.	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dBuV/m)	Result
39 (Peak)	2479.700	-0.581	104.657	104.075			
39 (Peak)	2483.500	-0.558	67.383	66.825	74.00	54.00	Pass
39 (Average)	2480.100	-0.580	80.044	79.464			
39 (Average)	2483.500	-0.558	53.032	52.474	74.00	54.00	Pass

Figure Channel 39:

Horizontal (Peak)





Horizontal (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



Product	:	Nexus Player
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - BLE (GFSK)

RF Radiated Measurement (Vertical):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Decult
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dBuV/m)	Result
39 (Peak)	2480.300	-1.323	91.697	90.374			
39 (Peak)	2483.500	-1.305	54.680	53.375	74.00	54.00	Pass
39 (Average)	2480.100	-1.324	70.977	69.653			
39 (Average)	2483.500	-1.305	44.048	42.743	74.00	54.00	Pass

Figure Channel 39:

Vertical (Peak)



Figure Channel 39:

Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	Nexus Player
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - BLE (GFSK)

Test Frequency	Measurement Level	Limit	Result
(MHz)	Δ (dB)	Δ (dB)	
2402	58.458	>20	PASS

Agiler	nt Spe	ctrun	n An	alyzer	- Swe	pt SA																
Cen	L nter	Fre	RF	2.39	50 Ω 000	AC	0 G	Hz			Tria: F	SENSE	EINT	A	vg Ty	AL pe: L	IGN AUT	TO Vr	01:15:3 Ti	3 PM RACE	Oct 06, 2014	Frequency
10 d	B/div	,	Ref	116	.99	dBj	ıv.	'NO: Gain	Fast (n:Low	ц) —	Atten	20 di	3		gino		N	/ /kr	1 2.4 106.6	DET 02 36	^{₽ NNNNN} 3 GHz 3 dBµV	Auto Tun
Log 107 97.0 87.0															1						86.64 dBµ∨	Center Free 2.390000000 GH
77.0 67.0 57.0					-						2			2	1							Start Free 2.340000000 GH
47.0 37.0 27.0	-	• المعد		4 	******	Annini D	hara ballera			~~~~		a-solano	orthouse hallor a		hora	Unget	vmantu	<u>รรส</u> ไ	ah, ahalim ta	n (^{fler})	n haran	Stop Fre 2.44000000 GH
Cen #Re MXEI	nter sB MODE N	2.39 W 1)00 00 SCI	0 GH kHz	Z	×	2.402	23 G	#VB	SW 1	1.0 M	Hz dBµ\	FL	INCTION		S	weep ION WID	p9	Span .27 ms	10 5 (1 9000	00.0 MHz 001 pts) IVALUE	CF Step 10.000000 MH uto Ma
2 3 4 5 6 7 8 9 10	<u>N</u>	1	f				2.400	0 G	iHz		48.178	dBµ\										Freq Offse 0 H
12 MSG					_	_		_		_						_	STA	TUS		_		

Product	:	Nexus Player
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - BLE (GFSK)

Test Frequency	Measurement Level	Limit	Result
(MHz)	Δ (dB)	Δ (dB)	
2480	65.247	>20	PASS

μα RF 50 Ω AC SENSE:INT ALIGN AUTO 12:30:20 PM Oct 06, 2014 Frequency Center Freq 2.483500000 GHz Trig: Free Run Avg Type: Log-Pwr TRACE 1 2:3 4 5 6 Frequency PN0: Fast Trig: Free Run Avg Hold>100/100 TYPE MWWWWW TYPE	_
PNO: Fast C This ree Run Avginola, 100,100	/
IFGain:Low Atten: 20 dB Mkr1 2.480 0 GHz Mkr1 2.480 0 GHz 10 dP(d)u D(dBu)(106 462 dBu)	une
In debuty Ref 110.99 dBpV Control work Center F 107 97.0 98.46 dBpV 2.483500000 f	F req GHz
77.0 Start F 67.0 57.0 2.433500000	Freq GHz
47.0 37.0 Debrar de construction de construct	Freq GHz
Center 2.48350 GHz #Res BW 100 kHz Span 100.0 MHz #VBW 1.0 MHz Span 100.0 MHz Sweep CF S 9.27 ms (1001 pts) MKR MODE TRE SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE 1 N f 2.480 0 GHz 106.462 dBµV FUNCTION FUNCTION WIDTH FUNCTION VALUE	Step MHz Man
2 N 1 f 2.483 5 GHz 41.215 dBµV 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7 - - - - 8 - - - - 9 - - - - 10 - - - - 12 - - - -	f set 0 Hz

7. Occupied Bandwidth (6dB BW)

7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.10 2009; tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements. Set RBW = 1-5% of the emission bandwidth, VBW \geq 3*RBW

7.5. Uncertainty

 \pm 150Hz

7.6. Test Result of Occupied Bandwidth

Product	:	Nexus Player
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - BLE (GFSK) (2402MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	710	>500	Pass

Figure Channel 00:

Agilent Spect	rum Analyzer - Sw	vept SA						
Center F	RF 50 S	2 AC 00000 GHz	SENSE:I	NT Avg Typ	ALIGNAUTO e: Log-Pwr	04:31:45 PM TRACE TYPE	Aug 05, 2014 1 2 3 4 5 6	Frequency
10 dB/div	Ref 20.00	IFGain:Low	#Atten: 30 dB		Mkr	^{Det} 2 2.401 6 -4.3	^{P NNNNN} 2 GHz 5 dBm	Auto Tune
10.0 0.00 -10.0			2	3			-3.96 dBm	Center Freq 2.40200000 GHz
-20.0 -30.0 -40.0					4			Start Freq 2.397000000 GHz
-60.0	Jon Changel and the	north mar			When	mason	warment	Stop Freq 2.407000000 GHz
Center 2. #Res BW	402000 GHz 100 kHz	/ #VB	W 300 kHz	FUNCTION FL	Sweep	Span 10 1.00 ms (1 FUNCTION	.00 MHz 001 pts) value	CF Step 1.000000 MHz <u>Auto</u> Man
1 N 2 N 3 N 4 5 6	1 f 1 f 1 f	2.401 99 GHz 2.401 62 GHz 2.402 33 GHz	2.04 dBm -4.35 dBm -4.17 dBm					Freq Offset 0 Hz
7 8 9 10 11 12								
MSG					STATUS			

	Nexus Player
•	
:	Occupied Bandwidth Data
:	No.3 OATS
:	Mode 1: Transmit - BLE (GFSK) (2440MHz)
	: : :

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
19	2440	710	>500	Pass

Figure Channel 19:

Agilent Spec	trum Ana	alyzer - Swept Si	١							
Center I	RF Freq 2	50 Ω AC 2.4400000	00 GHz	SE	NSE:INT	Avg Ty	ALIGNAUTO pe: Log-Pwr	04:39:31P TRAC TY	M Aug 05, 2014 E 1 2 3 4 5 6	Frequency
10 dB/div	Ref	20.00 dBn	PNO: Wid IFGain:Lov	w #Atten: 3) dB		Mkr	⊳ 2 2.439 -3.	62 GHz 96 dBm	Auto Tune
10.0 0.00 -10.0				2					-3:53 dBm	Center Freq 2.440000000 GHz
-20.0 -30.0 -40.0										Start Freq 2.435000000 GHz
-50.0 -60.0 + 00 -70.0	ور می می می می می می می م	n	month				Mumming	കുകൾന്നു/~	mmm	Stop Freq 2.445000000 GHz
Center 2 #Res BW	.4400 100	00 GHz kHz	#V × 2 439 99 GHz	/BW 300 kHz	Bm	NCTION	Sweep	Span 1 1.00 ms (0.00 MHz 1001 pts) INVALUE	CF Step 1.000000 MHz <u>Auto</u> Man
2 N 3 N 4 5 6 7 8 9 10	1 f		2.439 62 GHz 2.440 33 GHz	-3.96 d -3.69 d	Bm Bm					Freq Offset 0 Hz
11 12 MSG							STATUS	;		

Product	:	Nexus Player
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - BLE (GFSK) (2480MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
39	2480	710	>500	Pass

Figure Channel 39:

Ult RF SOR AC SERVERINT ALIGNAUTO Del:47:01PM Aug05, 2014 Frequency Center Freq 2.48000000 GHz Trig: Free Run IFGain:Low Avg Type: Log-Pwr Track 12 3 45 Frequency Mkr2 2.479 62 GHz -3.26 dBm -3.26 dBm -3.26 dBm -3.2400 10.0 -3.24 dBm -3.24 dBm -3.24 dBm -3.24 dBm 10.0 -3.24 dBm -3.24 dBm -3.24 dBm -3.24 dBm 10.0 -3.24 dBm -3.24 dBm -3.24 dBm -3.24 dBm 40.0 -3.0 -3.24 dBm -3.24 dBm -3.24 dBm -3.24 dBm -30.0 -3.00 -3.24 dBm -3.24 dBm	Agilent Spectru	m Analyzer - S	wept SA						
PNO: Wide The Run PNO: Wide Auto Tu 10 dB/div Ref 20.00 dBm -3.26 dBm -3.26 dBm 10 dB/div Ref 20.00 dBm -3.26 dBm -3.26 dBm 10 dB/div Ref 20.00 dBm -3.26 dBm Center Fr 10 dB/div 2 3 -324 dbm Center Fr 2.00	Center Fr	RF 50 eq 2.4800	Ω AC 000000 GHz	SENSE	EINT Avg	ALIGNAUTO Type: Log-Pwr	04:47:01P TRAC	M Aug 05, 2014	Frequency
Log 1 1 Center Fr 0.00	10 dB/div	Ref 20.00	PNO: Wide IFGain:Low	#Atten: 30 d	B	Mkr	2 2.479 -3.	62 GHz 26 dBm	Auto Tune
200 3	10.0 0.00 -10.0			2 ¹	3			-3.24 dBm	Center Free 2.480000000 GH
50.0 60.0 60.0 60.0 60.0 60.0 60.0 60.0 60.0 60.0 60.0 60.0 60.0 60.0 70.0	-20.0 -30.0 -40.0				1-				Start Free 2.475000000 GH
Center 2.480000 GHz #Res BW 100 kHz #VBW 300 kHz Span 10.00 MHz Sweep CF St 1.00000 M 1 N 1 f 2.479 99 GHz 2.76 dBm Auto N 2 N 1 f 2.479 62 GHz -3.26 dBm Function Function value Auto N 3 N 1 f 2.480 33 GHz -3.36 dBm Freq Offse 0 6 - - - - - - 0 8 - - - - - - - -	-50.0 -60.0 🏤 🖧 🏎	- contra - statures (LeryMe	My formation			mand	mmm	mmm	Stop Fre 2.485000000 GH
1 N 1 f 2.479.99 GHz 2.76 dBm 2 N 1 f 2.479.62 GHz -3.26 dBm 3 N 1 f 2.479.62 GHz -3.26 dBm 4 1 2.480.33 GHz -3.36 dBm	Center 2.4 #Res BW	80000 GH 100 kHz	z #VE	300 kHz	FUNCTION	Sweep	Span 1 1.00 ms (0.00 MHz 1001 pts)	CF Stej 1.000000 MH <u>Auto</u> Ma
	1 N 1 2 N 1 3 N 1 4 5 6 7	f f f	2.479 99 GHz 2.479 62 GHz 2.480 33 GHz	2.76 dBn -3.26 dBn -3.36 dBn					Freq Offse 0 H
10 11 11 12	8 9 10 11 12								

8. Power Density

8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009, the maximum power spectral density using KDB 558074 section 10.2 PKPSD (peak PSD) method.

8.5. Uncertainty

 \pm 1.27 dB

8.6. Test Result of Power Density

Product	:	Nexus Player
Test Item	:	Power Density Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - BLE (GFSK) (2402MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	1.77	< 8dBm	Pass

Figure Channel 00:

Agilent Spectr	um Analyzer - Swept SA								
Center F	RF 50 Ω AC) GHz	SEI	NSE:INT	Avg Type	ALIGNAUTO : Log-Pwr	04:33:28 Pl TRAC	M Aug 05, 2014 E 1 2 3 4 5 6	Frequency
10 dB/div	Ref 20.00 dBm	PNO: Wide 🖵 IFGain:Low	#Atten: 30	dB		Mkr1 2	.401 984 1.	4 0 GHz 77 dBm	Auto Tune
10.0			•	1					Center Freq 2.402000000 GHz
0.00		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	·						Start Freq 2.401467500 GHz
-20.0									Stop Freq 2.402532500 GHz
-40.0									CF Step 106.500 kHz <u>Auto</u> Man
-60.0									Freq Offset 0 Hz
Center 2.4 #Res BW	4020000 GHz 100 kHz	#VBW	300 kHz			Sweep	Span 1 1.00 ms (.065 MHz 1001 pts)	
MSG						STATUS			

Product	:	Nexus Player
Test Item	:	Power Density Data
Test Site	:	No.3OATS
Test Mode	:	Mode 1: Transmit - BLE (GFSK) (2440MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
19	2440	2.25	< 8dBm	Pass

Figure Channel 19:

Agilent Spectr	um Analyzer - Swept SA					
LXI RL	RF 50 Ω AC		SENSE:INT	ALIGN AUTO	04:40:04 PM Aug 05, 2014	Frequency
Center F	req 2.44000000) GHz PNO: Wide 🆵 IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P N N N N N	Frequency
10 dB/div	Ref 20.00 dBm			Mkr1 2.	439 981 9 GHz 2.25 dBm	Auto Tune
						Center Freq
10.0						2.440000000 GHz
0.00						Start Freq
-10.0					and the second s	2.439467500 GHz
-20.0						Stop Fred
-30.0						2.440532500 GHz
-40.0						CF Step 106.500 kHz
-50.0						<u>Auto</u> Man
-60.0						Freq Offset
-70.0						0 Hz
Center 2.4 #Res BW	4400000 GHz 100 kHz	#VBW	300 kHz	Sweep	Span 1.065 MHz 1.00 ms (1001 pts)	
MSG	on and an an and a second and a s	se renegative (SA-97-37	1997 - 19	STATUS	,	

Product	:	Nexus Player
Test Item	:	Power Density Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - BLE (GFSK) (2480MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
39	2480	2.52	< 8dBm	Pass

Figure Channel 39:

Agilent Spectrum Analyzer - Swept SA							
LXI RL	RF 50Ω AC		SENS	E:INT	ALIGN AUTO	04:48:39 PM Aug 05, 2014	Frequency
Center F	req 2.48000000	PNO: Wide 😱	Trig: Free F	Avg iyp Run	e: Log-Pwr	TYPE MWWWWW	
		IFGain:Low	#Atten: 30 d	IB		DETIPININININ	Auto Turo
					Mkr1 2	.479 983 0 GHz	Auto Tune
10 dB/div	Ref 20.00 dBm					2.52 dBm	
209							Center Fred
10.0							2 48000000 GHz
14.002							2.48000000 0112
0.00		~					
					~		Start Freq
-10.0					-		2.479467500 GHz
-20.0					-		Stop Fred
							2 480532500 GHz
-30.0							
10.00							05.000
-40.0							106 500 kHz
50.0							<u>Auto</u> Man
-50.0							
60.0							Freg Offset
-00.0							0 Hz
-70.0							
1000							
Center 2.4800000 GHz Span 1.065 MHz #Des BM 100 kHz #V/BM 300 kHz Sween 1.00 ms (1001 pts)							
#RCS DW		#4044	JUU KHZ		oweep	1.00 ms (1001 pts)	
MSG					STATUS		

9. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs