

APPLICATION CERTIFICATION On Behalf of

Nicetex Electronics Limited

Bluetooth Docking Music System with Rotating Lightning Dock for iPhone and iPod Model No.: JiLS-525iB

FCC ID: 2AE3J-JILS-525IB

Prepared for : Nicetex Electronics Limited

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Report Number : ATE20151339 Date of Test : Jun 18-Jul 07,2015

Date of Report : Jul 08,2015



Description

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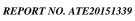
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Test Report Certification

Applicant : Nicetex Electronics Limited

Manufacturer : Nicetex Electronics Limited

EUT Description : Bluetooth Docking Music System with Rotating Lightning Dock for

iPhone and iPod

(A) MODEL NO.: JiLS-525iB

(B) POWER SUPPLY: AC 100-240V(Adapter)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247 ANSI C63.10- 2013

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test :	Apr 22-May 06,2015
Date of Report :	May 07,2015
Prepared by :	2-2 shary
	(Eric Zhang, Engineer)
Approved & Authorized Signer :	Lemil
	(Sean Liu, Manager)



1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT : Bluetooth Docking Music System with Rotating Lightning

Dock for iPhone and iPod

Model Number : JiLS-525iB

Frequency Band : 2402MHz-2480MHz

Number of Channels : 79

Bluetooth Version : 2.0 Modulation type : GFSK Antenna Gain : 0dBi

Antenna type : PCB Antenna

Brand name : Jensen

Rating : AC 100-240V supplied from Adapter Adapter : Model number: BI20-050350-AdU

Input: AC 100-240V; 50/60Hz 0.5A

Output: DC 5V/3.5A

Line: Non-shielded, Non-detachable, 1.5m

Applicant : Nicetex Electronics Limited

Address : RM 20-21, 14/F., BLK A, Hi-Tech Industrial Centre, 5-21

Pak Tin Par St., Tsuen Wan, N.T., Hong Kong.

Manufacturer : Nicetex Electronics Limited

Address : RM 20-21, 14/F., BLK A, Hi-Tech Industrial Centre, 5-21

Pak Tin Par St., Tsuen Wan, N.T., Hong Kong.

Date of sample received: Jun 18,2015

Date of Test : Jun 18-Jul 07,2015



1.2.Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen

Listed by FCC

The Registration Number is 752051

Listed by Industry Canada

The Registration Number is 5077A-2

Accredited by China National Accreditation Committee

for Laboratories

The Certificate Registration Number is L3193

Name of Firm : ACCURATE TECHNOLOGY CO. LTD

Site Location : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.

Science & Industry Park, Nanshan, Shenzhen, Guangdong

P.R. China

1.3. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty = 3.08dB, k=2

(9kHz-30MHz)

Radiated emission expanded uncertainty = 4.42dB, k=2

(30MHz-1000MHz)

Radiated emission expanded uncertainty = 4.06dB, k=2

(Above 1GHz)



2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Туре	S/N	Calibrated dates	Cal. Interval
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 11, 2015	One Year
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 11, 2015	One Year
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 11, 2015	One Year
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 11, 2015	One Year
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 15, 2015	One Year
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 15, 2015	One Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 15, 2015	One Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Jan. 15, 2015	One Year
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 11, 2015	One Year
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 11, 2015	One Year
Highpass Filter	Wainwright Instruments	WHKX3.6/18 G-10SS	N/A	Jan. 11, 2015	One Year
Band Reject Filter	Wainwright Instruments	WRCG2400/2 485-2375/2510 -60/11SS	N/A	Jan. 11, 2015	One Year



3. OPERATION OF EUT DURING TESTING

3.1. Operating Mode

The mode is used: Transmitting mode

Low Channel: 2402MHz Middle Channel: 2441MHz High Channel: 2480MHz

Hopping

3.2. Configuration and peripherals

EUT

(EUT: Bluetooth Docking Music System with Rotating Lightning Dock for iPhone and iPod)



4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.207	Conducted Emission Test	Compliant
Section 15.247(a)(1)	20dB Bandwidth Test	Compliant
Section 15.247(a)(1)	Carrier Frequency Separation Test	Compliant
Section 15.247(a)(1)(iii)	Number Of Hopping Frequency Test	Compliant
Section 15.247(a)(1)(iii)	Dwell Time Test	Compliant
Section 15.247(b)(1)	Maximum Peak Output Power Test	Compliant
Section 15.247(d) Section 15.209	Radiated Emission Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.203	Antenna Requirement	Compliant



5. 20DB BANDWIDTH TEST

5.1.Block Diagram of Test Setup



(EUT: Bluetooth Docking Music System with Rotating Lightning Dock for iPhone and iPod)

5.2. The Requirement For Section 15.247(a)(1)

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

5.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.4. Operating Condition of EUT

- 5.4.1. Setup the EUT and simulator as shown as Section 5.1.
- 5.4.2. Turn on the power of all equipment.
- 5.4.3.Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.



5.5.Test Procedure

- 5.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 5.5.2.Set RBW of spectrum analyzer to 30 kHz and VBW to 100 kHz.
- 5.5.3.The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

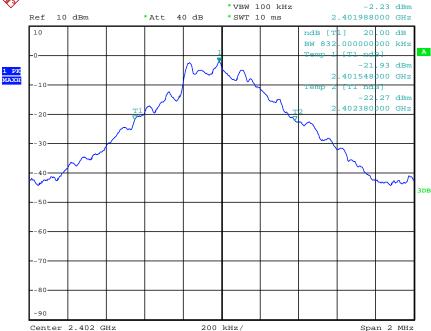
Marker 1 [T1]

5.6.Test Result

Channel	Frequency (MHz)	GFSK 20dB Bandwidth (MHz)	Result	
Low	2402	0.832	Pass	
Middle	2441	0.840	Pass	
High	2480	0.848	Pass	

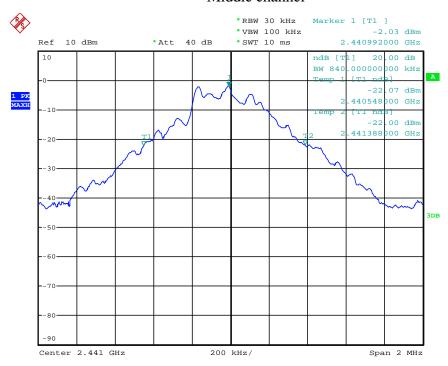
The spectrum analyzer plots are attached as below.

Low channel *RBW 30 kHz *VBW 100 kHz

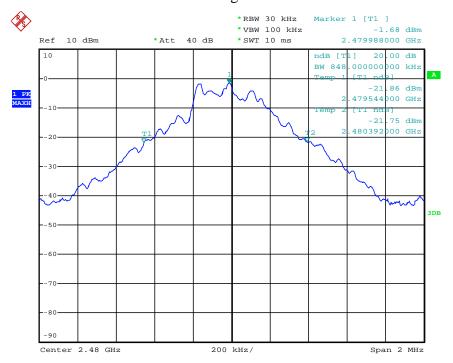




Middle channel



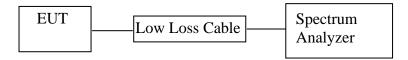
High channel





6. CARRIER FREQUENCY SEPARATION TEST

6.1.Block Diagram of Test Setup



(EUT: Bluetooth Docking Music System with Rotating Lightning Dock for iPhone and iPod)

6.2. The Requirement For Section 15.247(a)(1)

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, 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, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

6.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.4. Operating Condition of EUT

- 6.4.1. Setup the EUT and simulator as shown as Section 6.1.
- 6.4.2. Turn on the power of all equipment.
- 6.4.3.Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.



6.5.Test Procedure

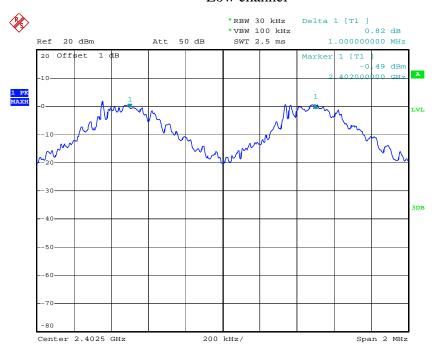
- 6.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 6.5.2. Set RBW of spectrum analyzer to 30 kHz and VBW to 100 kHz. Adjust Span to 3 MHz.
- 6.5.3.Set the adjacent channel of the EUT maxhold another trace.
- 6.5.4. Measurement the channel separation

6.6.Test Result

Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
Low	2402 2403	1.000	25KHz or 20dB bandwidth	PASS
Middle	2440 2441	1.000	25KHz or20dB bandwidth	PASS
High	2479 2480	1.000	25KHz or 20dB bandwidth	PASS

The spectrum analyzer plots are attached as below.

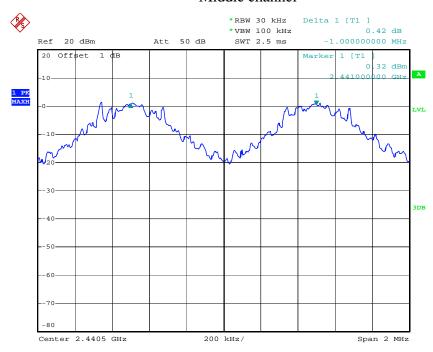
Low channel



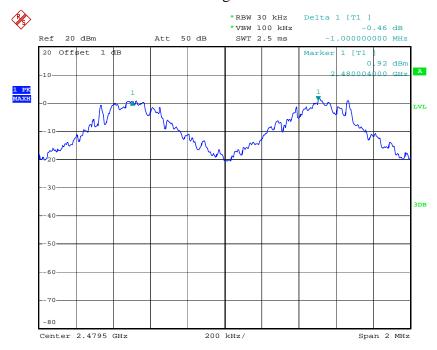
FCC ID: 2AE3J-JILS-525IB



Middle channel



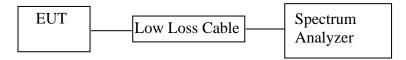
High channel





7. NUMBER OF HOPPING FREQUENCY TEST

7.1.Block Diagram of Test Setup



(EUT: Bluetooth Docking Music System with Rotating Lightning Dock for iPhone and iPod)

7.2. The Requirement For Section 15.247(a)(1)(iii)

Section 15.247(a)(1)(iii): Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

7.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.4. Operating Condition of EUT

- 7.4.1. Setup the EUT and simulator as shown as Section 7.1.
- 7.4.2.Turn on the power of all equipment.
- 7.4.3.Let the EUT work in TX (Hopping on) modes measure it.



7.5.Test Procedure

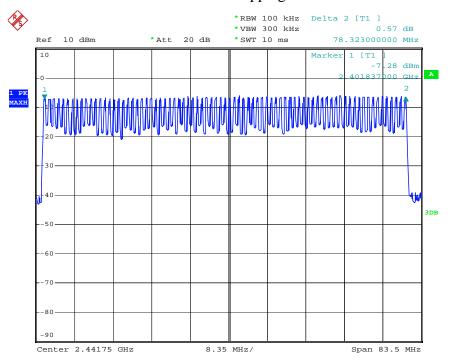
- 7.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 7.5.2.Set the spectrum analyzer as Span=83.5MHz, RBW=100 kHz, VBW=300 kHz.
- 7.5.3.Max hold, view and count how many channel in the band.

7.6.Test Result

Total number of	Measurement result(CH)	Limit(CH)
hopping channel	79	≥15

The spectrum analyzer plots are attached as below.

Number of hopping channels





8. DWELL TIME TEST

8.1.Block Diagram of Test Setup



(EUT: Bluetooth Docking Music System with Rotating Lightning Dock for iPhone and iPod)

8.2. The Requirement For Section 15.247(a)(1)(iii)

Section 15.247(a)(1)(iii): Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

8.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

8.4. Operating Condition of EUT

- 8.4.1. Setup the EUT and simulator as shown as Section 8.1.
- 8.4.2. Turn on the power of all equipment.
- 8.4.3.Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.



8.5.Test Procedure

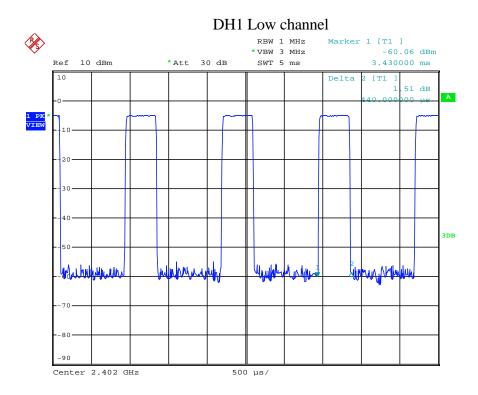
- 8.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 8.5.2.Set center frequency of spectrum analyzer = operating frequency.
- 8.5.3.Set the spectrum analyzer as RBW=1MHz, VBW=3MHz, Span=0Hz.
- 8.5.4.Repeat above procedures until all frequency measured were complete.

8.6.Test Result

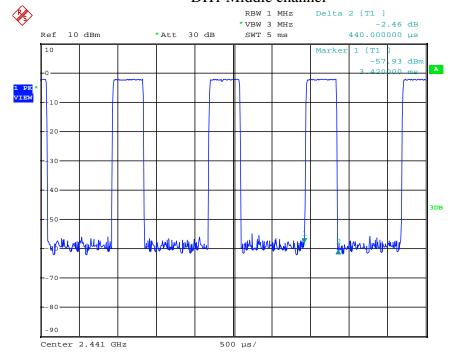
Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)			
	2402	0.440	140.80	400			
DH1	2441	0.440	140.80	400			
	2480	0.440	140.80	400			
A period to	ransmit time = 0.4×79 =	= 31.6 Dwell time = pu	alse time \times (1600/(2*)	79))×31.6			
	2402	1.720	275.20	400			
DH3	2441	1.720 275.20		400			
	2480	1.720	275.20	400			
A period to	ransmit time = 0.4×79 =	= 31.6 Dwell time = pu	ulse time \times (1600/(4*'	79))×31.6			
	2402	3.010	321.07	400			
DH5	2441	3.010	3.010 321.07				
	2480	3.010	321.07	400			
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(6*79)) \times 31.6$							

The spectrum analyzer plots are attached as below.

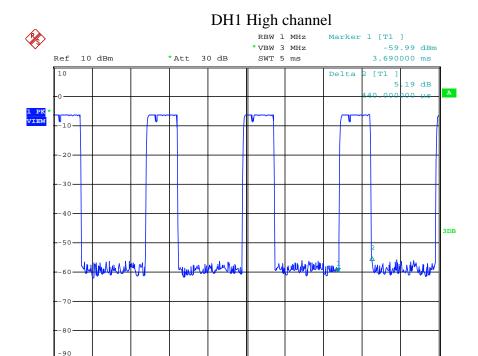




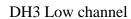




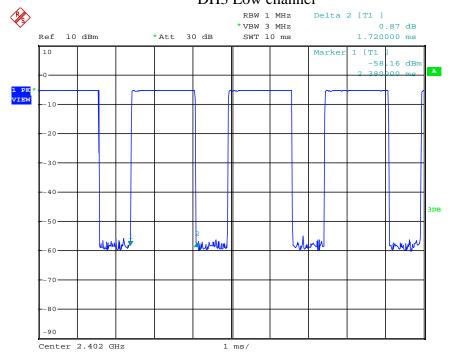




Center 2.48 GHz

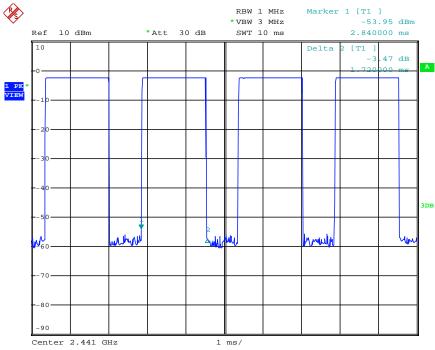


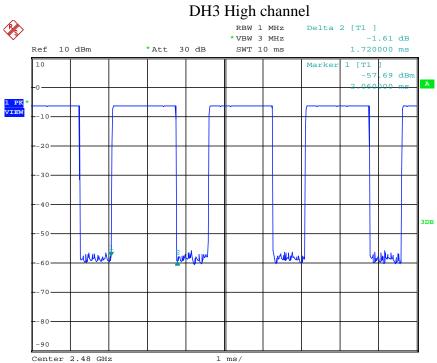
500 μs/



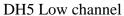


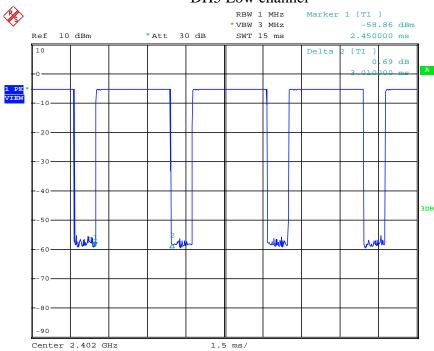
DH3 Middle channel



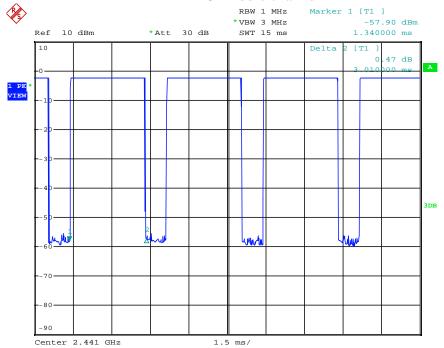




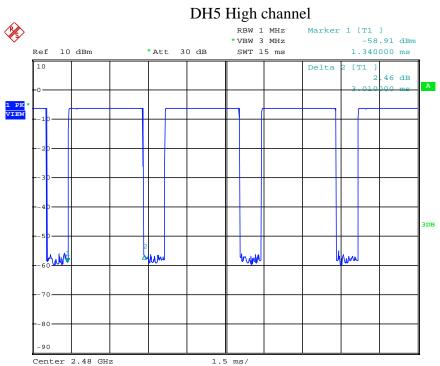




DH5 Middle channel



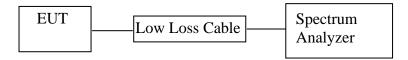






9. MAXIMUM PEAK OUTPUT POWER TEST

9.1.Block Diagram of Test Setup



(EUT: Bluetooth Docking Music System with Rotating Lightning Dock for iPhone and iPod)

9.2. The Requirement For Section 15.247(b)(1)

Section 15.247(b)(1): For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

9.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

9.4. Operating Condition of EUT

- 9.4.1. Setup the EUT and simulator as shown as Section 9.1.
- 9.4.2. Turn on the power of all equipment.
- 9.4.3.Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.



9.5.Test Procedure

- 9.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 9.5.2.Set RBW of spectrum analyzer to 1MHz and VBW to 3MHz for GFSK mode
- 9.5.3.Set RBW of spectrum analyzer to 3MHz and VBW to 3MHz for other mode
- 9.5.4. Measurement the maximum peak output power.

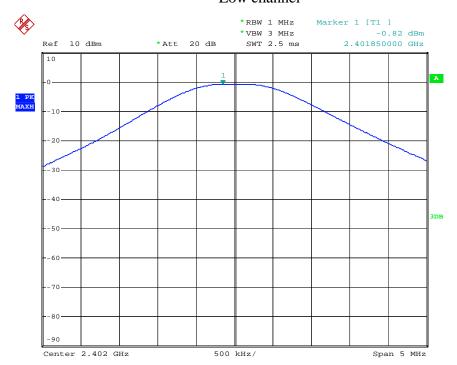
9.6.Test Result

GFSK Mode

Channel	Frequency (MHz)	1 1		Limits dBm / W	
Low	2402	-0.82	0.83	30/1.0	
Middle	2441	-1.15	0.77	30/1.0	
High	2480	-1.28	0.74	30/1.0	

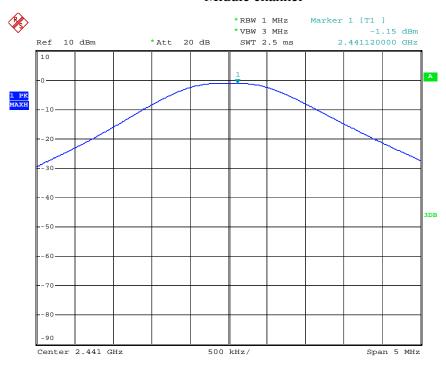
The spectrum analyzer plots are attached as below.

Low channel

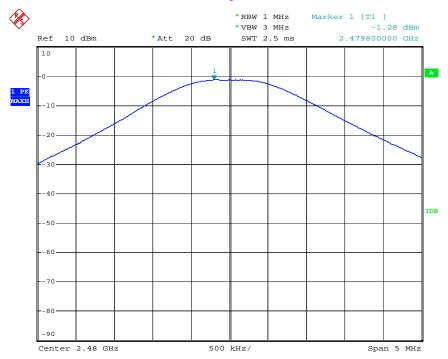




Middle channel



High channel





10. RADIATED EMISSION TEST

10.1.Block Diagram of Test Setup

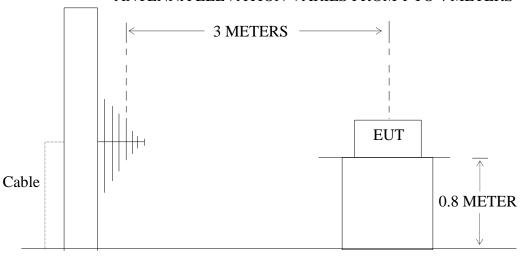
10.1.1.Block diagram of connection between the EUT and simulators



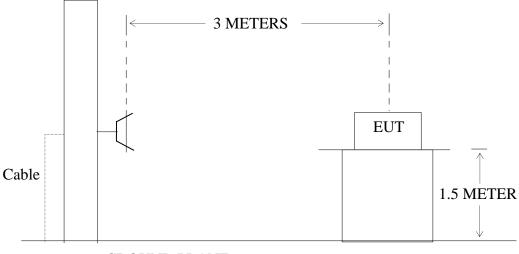
(EUT: Bluetooth Docking Music System with Rotating Lightning Dock for iPhone and iPod)

10.1.2. Anechoic Chamber Test Setup Diagram

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS



GROUND PLANE



GROUND PLANE



10.2. The Limit For Section 15.247(d)

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 a radiated 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, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. 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).

10.3. Restricted bands of operation

10.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	$\binom{2}{}$
13.36-13.41			

¹Until February 1, 1999, this restricted band shall be 0.490-0.510

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section15.209 shall be demonstrated

²Above 38.6



based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

10.4. Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

10.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10- 2013 on radiated emission measurement.

The final measurement in band 9-90 kHz, 110-490 kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

RBW (120 kHz), VBW (300 kHz) for QP detector below 1GHz Peak detector above 1GHz RBW (1 MHz), VBW (3MHz) for Peak measurement RBW (1 MHz), VBW (10Hz) for AV measurement

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

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10.6. The Field Strength of Radiation Emission Measurement Results

Note: 1. The fundamental radiated emissions were reduced by 2.4G Band Reject Filter in the attached plots.

2. The 18-25GHz emissions are not reported, because the levels are too low against the limit.



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Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 2015/07/04 Time: 18:35:05 Engineer Signature: Distance: 3m

Job No.: STAR2015 #1182

Standard: FCC Class B 3M Radiated

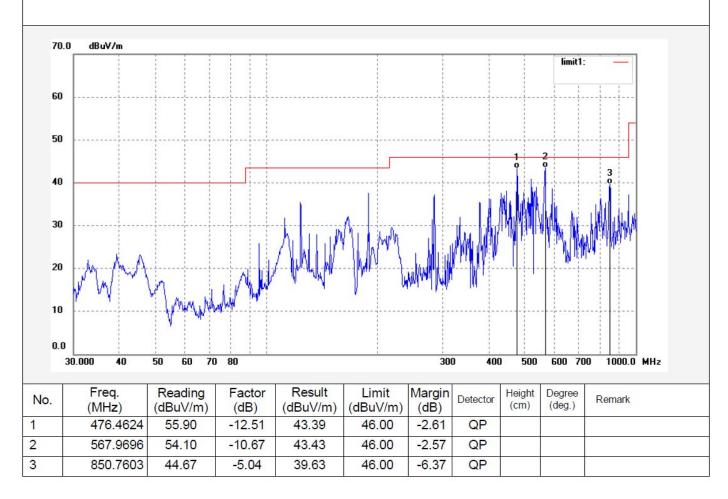
Test item: Radiation Test

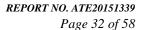
Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Docking Digital Music System

Mode: TX 2402MHz
Model: JiLS-525iB
Manufacturer: NICETEX

Note: Report No.:ATE20151339









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Job No.: STAR2015 #1183

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Docking Digital Music System

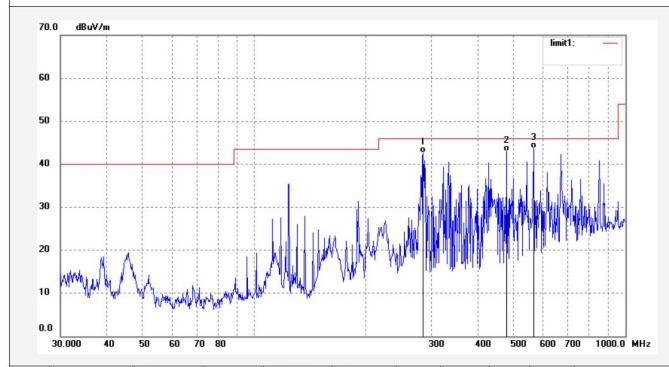
Mode: TX 2402MHz Model: JiLS-525iB Manufacturer: NICETEX

Note: Report No.:ATE20151339

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 2015/07/04 Time: 18:35:43 Engineer Signature: Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	285.2611	59.12	-16.59	42.53	46.00	-3.47	QP			
2	478.1394	55.51	-12.49	43.02	46.00	-2.98	QP			
3	565.9776	54.45	-10.73	43.72	46.00	-2.28	QP			







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Job No.: STAR2015 #1184

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Docking Digital Music System

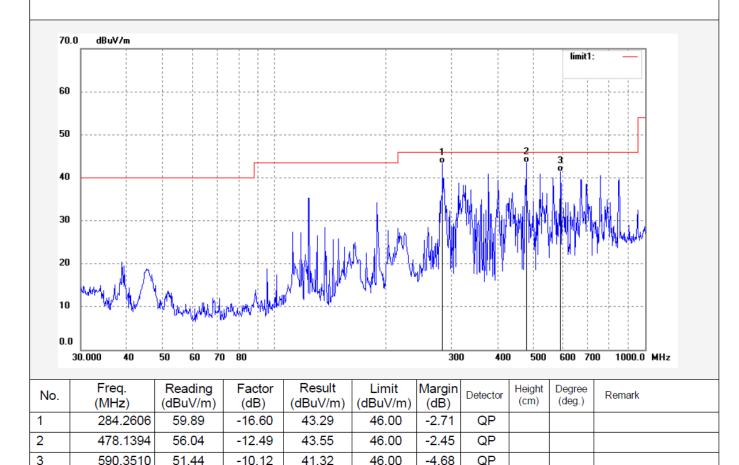
Mode: TX 2441MHz Model: JiLS-525iB Manufacturer: NICETEX

Note: Report No.:ATE20151339

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 2015/07/04 Time: 18:37:44 Engineer Signature: Distance: 3m







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Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: STAR2015 #1185

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Docking Digital Music System

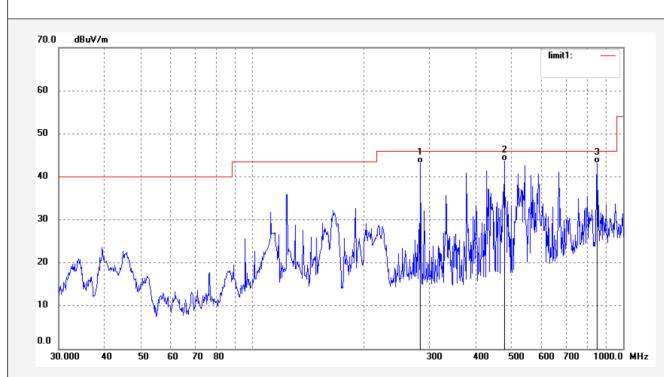
Mode: TX 2441MHz Model: JiLS-525iB Manufacturer: NICETEX

Note: Report No.:ATE20151339

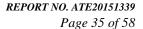
Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 2015/07/04 Time: 18:38:30 Engineer Signature: Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	284.2606	59.80	-16.60	43.20	46.00	-2.80	QP			
2	478.1394	56.20	-12.49	43.71	46.00	-2.29	QP			
3	850.7603	48.26	-5.04	43.22	46.00	-2.78	QP			







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Job No.: STAR2015 #1186

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Docking Digital Music System

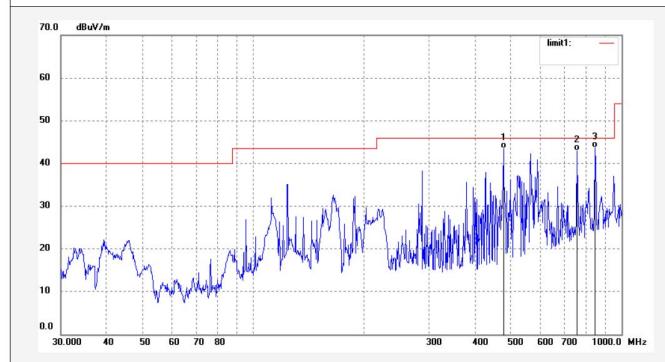
Mode: TX 2480MHz Model: JiLS-525iB Manufacturer: NICETEX

Note: Report No.:ATE20151339

Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 2015/07/04 Time: 18:39:06 Engineer Signature: Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	478.1394	55.91	-12.49	43.42	46.00	-2.58	QP			
2	757.6200	49.59	-6.60	42.99	46.00	-3.01	QP			
3	847.7762	48.67	-5.09	43.58	46.00	-2.42	QP			







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Job No.: STAR2015 #1187

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Docking Digital Music System

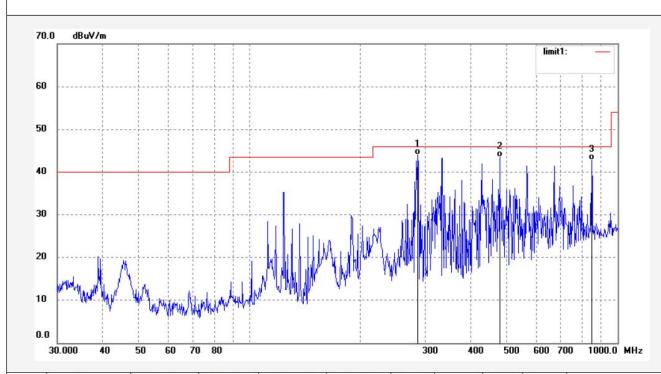
Mode: TX 2480MHz Model: JiLS-525iB Manufacturer: NICETEX

Note: Report No.:ATE20151339

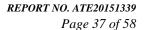
Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 2015/07/04 Time: 18:39:49 Engineer Signature: Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	286.2653	60.59	-16.56	44.03	46.00	-1.97	QP			
2	478.1394	55.95	-12.49	43.46	46.00	-2.54	QP			
3	850.7603	47.88	-5.04	42.84	46.00	-3.16	QP			







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Job No.: STAR2015 #1188

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Docking Digital Music System

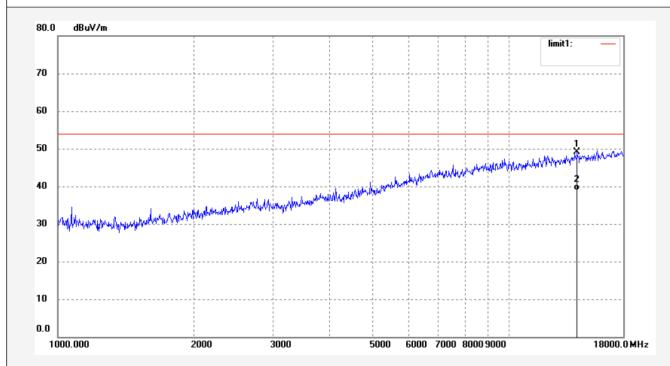
Mode: TX 2402MHz Model: JiLS-525iB Manufacturer: NICETEX

Note: Report No.:ATE20151339

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 2015/07/04 Time: 18:40:58 Engineer Signature: Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	14219.315	36.23	12.84	49.07	54.00	-4.93	peak			
2	14219.315	25.99	12.84	38.83	54.00	-15.17	AVG			





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Job No.: STAR2015 #1189

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 % EUT: Docking Digital Music System

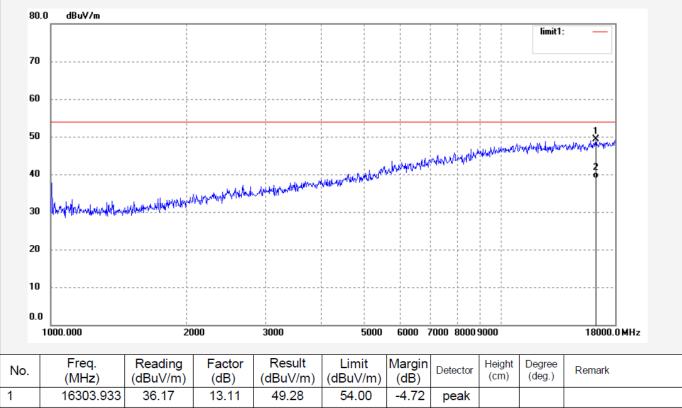
Mode: TX 2402MHz Model: JiLS-525iB Manufacturer: NICETEX

Note: Report No.:ATE20151339

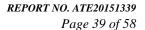
Vertical Polarization:

Power Source: AC 120V/60Hz

Date: 2015/07/04 Time: 18:42:05 Engineer Signature: Distance: 3m



25.76 2 16303.933 13.11 38.87 54.00 -15.13 **AVG**







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Job No.: STAR2015 #1190 Polari

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Docking Digital Music System

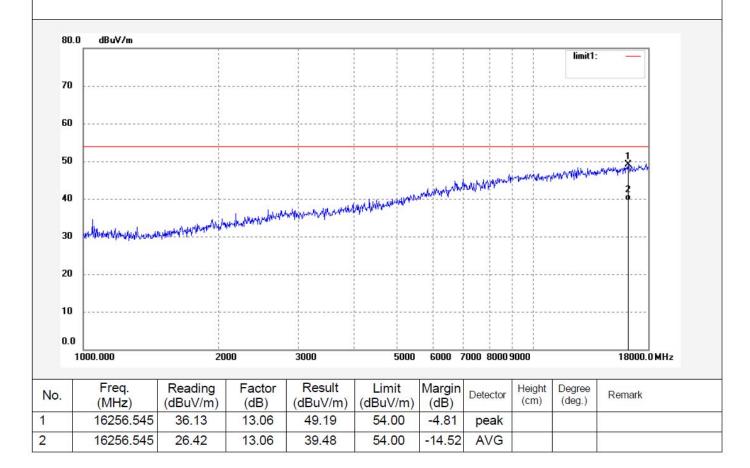
Mode: TX 2441MHz Model: JiLS-525iB Manufacturer: NICETEX

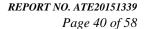
Note: Report No.:ATE20151339

Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 2015/07/04 Time: 18:43:19 Engineer Signature: Distance: 3m









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Job No.: STAR2015 #1191

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Docking Digital Music System

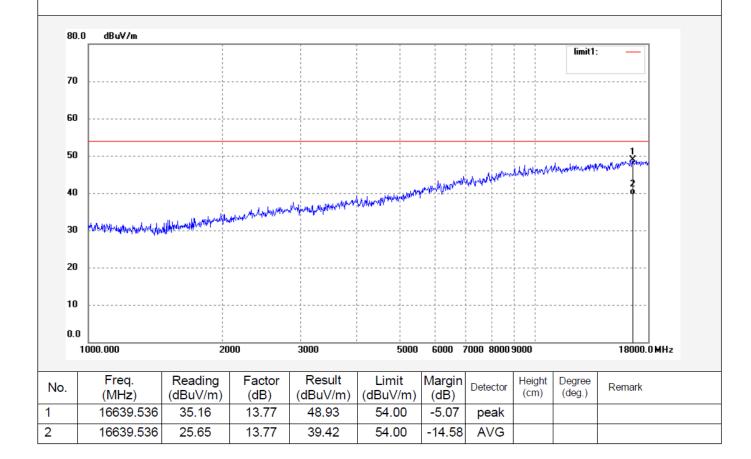
Mode: TX 2441MHz Model: JiLS-525iB Manufacturer: NICETEX

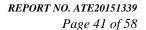
Note: Report No.:ATE20151339

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 2015/07/04 Time: 18:44:28 Engineer Signature: Distance: 3m









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Job No.: STAR2015 #1192

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Docking Digital Music System

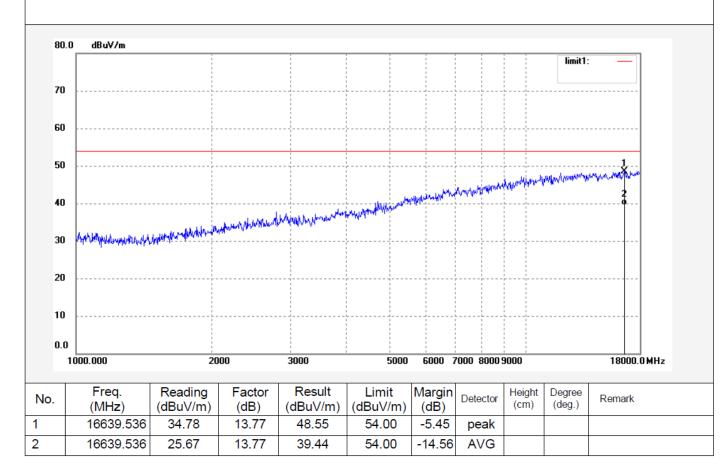
Mode: TX 2480MHz
Model: JiLS-525iB
Manufacturer: NICETEX

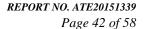
Note: Report No.:ATE20151339

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 2015/07/04 Time: 18:45:25 Engineer Signature: Distance: 3m









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Job No.: STAR2015 #1193

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Docking Digital Music System

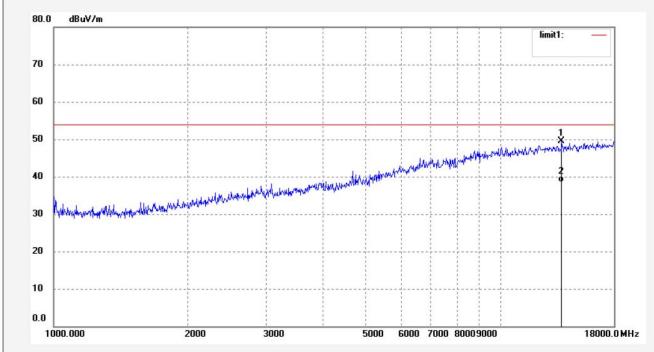
Mode: TX 2480MHz Model: JiLS-525iB Manufacturer: NICETEX

Note: Report No.:ATE20151339

Polarization: Vertical

Power Source: AC 120V/60Hz

Date: 2015/07/04 Time: 18:46:27 Engineer Signature: Distance: 3m

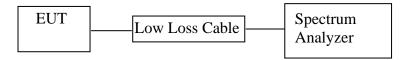


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	13731.223	38.47	10.99	49.46	54.00	-4.54	peak				
2	13731.223	27.44	10.99	38.43	54.00	-15.57	AVG				



11.BAND EDGE COMPLIANCE TEST

11.1.Block Diagram of Test Setup



(EUT: Bluetooth Docking Music System with Rotating Lightning Dock for iPhone and iPod)

11.2. The Requirement For Section 15.247(d)

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 a radiated 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, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. 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).

11.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

11.4. Operating Condition of EUT

- 11.4.1.Setup the EUT and simulator as shown as Section 11.1.
- 11.4.2. Turn on the power of all equipment.
- 11.4.3.Let the EUT work in TX (Hopping off, Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2480MHz TX frequency to transmit.



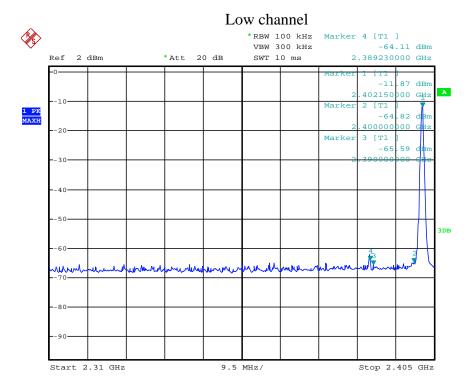
11.5.Test Procedure

- 11.5.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.
- 11.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz with convenient frequency span including 100 kHz bandwidth from band edge.
- 11.5.3. The band edges was measured and recorded.

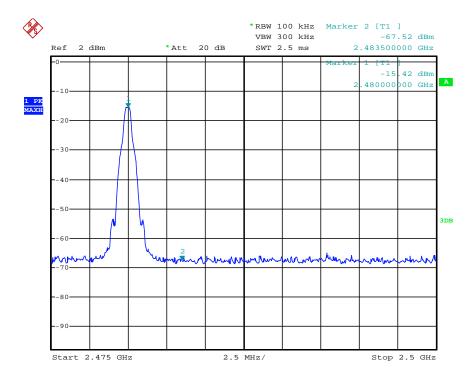
11.6.Test Result

Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)						
GFSK								
2400.00	52.95	> 20dBc						
2484.45	52.10	> 20dBc						





High channel



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Radiated Band Edge Result

Non-hopping mode

Distance: 3m



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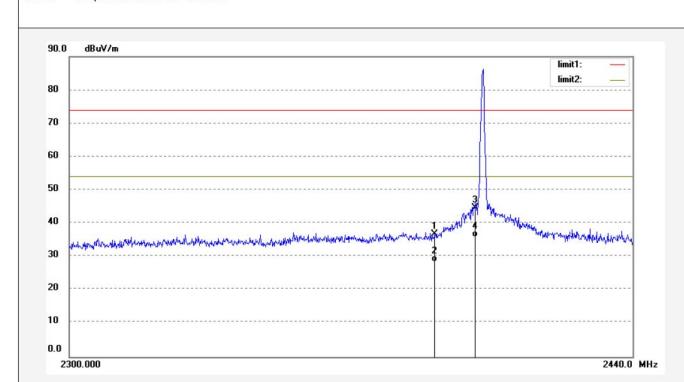
Job No.: STAR #3015 Polarization: Horizontal

Standard: FCC PK Power Source: AC 120V/60Hz

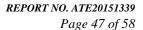
Test item: Radiation Test Date: 15/07/06/
Temp.(C)/Hum.(%) 25 C / 55 % Time: 14/25/37

EUT: Docking Digital Music System Engineer Signature:

Mode: TX 2402MHz
Model: JiLS-525iB
Manufacturer: NICETEX



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	43.53	-6.78	36.75	74.00	-37.25	peak			
2	2390.000	35.14	-6.78	28.36	54.00	-25.64	AVG		×	
3	2400.000	51.48	-6.76	44.72	74.00	-29.28	peak			
4	2400.000	42.67	-6.76	35.91	54.00	-18.09	AVG			







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Distance: 3m

Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: STAR #3016 Polarization: Vertical

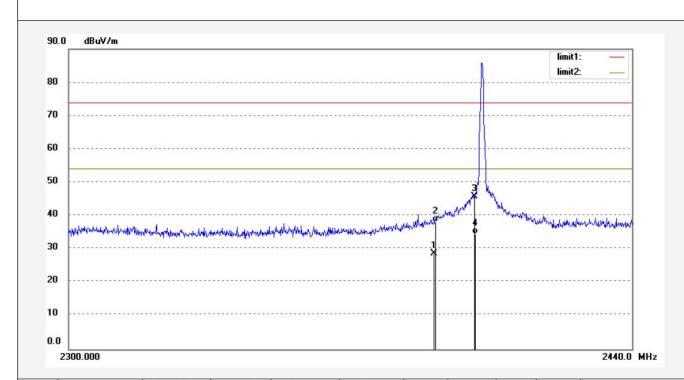
Standard: FCC PK Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 15/07/06/
Temp.(C)/Hum.(%) 25 C / 55 % Time: 14/29/06
EUT: Docking Digital Music System Engineer Signature:

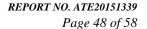
Mode: TX 2402MHz

Model: JiLS-525iB

Manufacturer: NICETEX



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	35.46	-6.78	28.68	74.00	-45.32	peak			
2	2390.000	44.93	-6.78	38.15	54.00	-15.85	AVG			
3	2400.000	52.64	-6.76	45.88	74.00	-28.12	peak			
4	2400.000	41.25	-6.76	34.49	54.00	-19.51	AVG			







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Distance: 3m

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Job No.: STAR #3017 Polarization: Vertical

Standard: FCC PK Power Source: AC 120V/60Hz

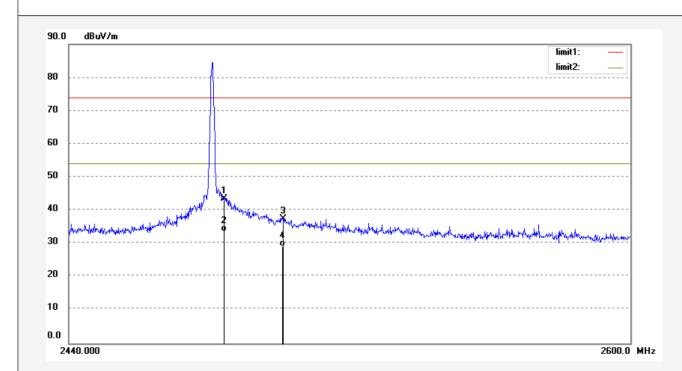
Test item: Radiation Test Date: 15/07/06/
Temp.(C)/Hum.(%) 25 C / 55 % Time: 14/32/02
EUT: Docking Digital Music System Engineer Signature:

Mode: TX 2480MHz

Model: JiLS-525iB

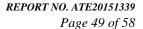
Manufacturer: NICETEX

Note: Report No.:ATE20151339



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	49.98	-6.54	43.44	74.00	-30.56	peak			
2	2483.500	40.25	-6.54	33.71	54.00	-20.29	AVG			
3	2500.000	44.06	-6.50	37.56	74.00	-36.44	peak			
4	2500.000	35.69	-6.50	29.19	54.00	-24.81	AVG			

FCC ID: 2AE3J-JILS-525IB ACCURATE TECHNOLOGY CO. LTD







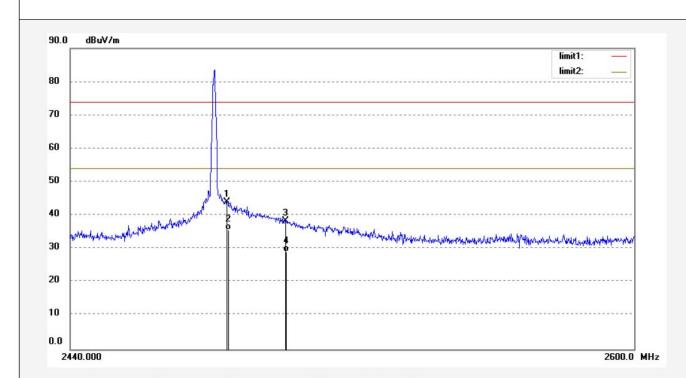
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Job No.: STAR #3018 Polarization: Horizontal

Standard: FCC PK Power Source: AC 120V/60Hz

Test item: Radiation Test Date: 15/07/06/
Temp.(C)/Hum.(%) 25 C / 55 % Time: 14/36/21
EUT: Docking Digital Music System Engineer Signature:
Mode: TX 2480MHz Distance: 3m

Model: JiLS-525iB Manufacturer: NICETEX



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	50.60	-6.54	44.06	74.00	-29.94	peak			
2	2483.500	42.14	-6.54	35.60	54.00	-18.40	AVG			
3	2500.000	44.81	-6.50	38.31	74.00	-35.69	peak			
4	2500.000	35.67	-6.50	29.17	54.00	-24.83	AVG			



Hopping mode



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

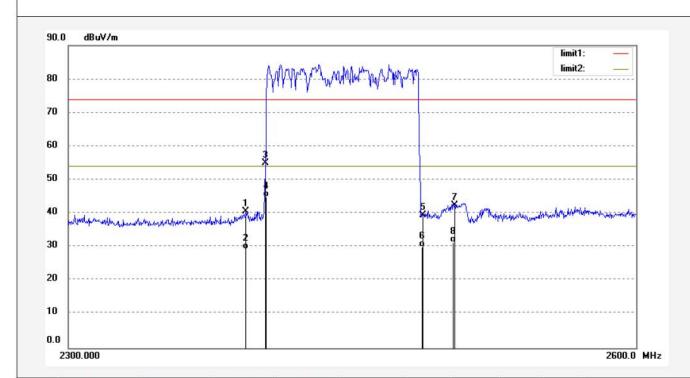
Job No.: STAR #3031 Polarization: Horizontal Standard: FCC PK Power Source: AC 120V

Test item: Radiation Test Date: 15/07/06/
Temp.(C)/Hum.(%) 25 C / 55 % Time: 15/26/34

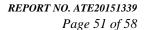
EUT: Docking Digital Music System Engineer Signature:

Mode: HOPPING Distance: 3m

Model: JiLS-525iB Manufacturer: NICETEX



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	47.42	-6.78	40.64	74.00	-33.36	peak			
2	2390.000	36.10	-6.78	29.32	54.00	-24.68	AVG			
3	2400.000	61.78	-6.76	55.02	74.00	-18.98	peak			
4	2400.000	51.64	-6.76	44.88	54.00	-9.12	AVG			
5	2483.500	45.92	-6.54	39.38	74.00	-34.62	peak			
6	2483.500	36.61	-6.54	30.07	54.00	-23.93	AVG			
7	2500.000	48.96	-6.50	42.46	74.00	-31.54	peak			
8	2500.000	37.88	-6.50	31.38	54.00	-22.62	AVG	K.		







Mode:

ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China

Distance: 3m

Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

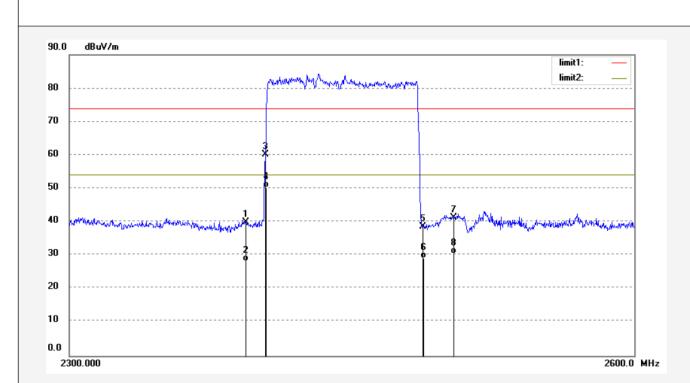
Job No.: STAR #3032 Polarization: Vertical

Standard: FCC PK Power Source: AC 120V Test item: Radiation Test Date: 15/07/06/

Temp.(C)/Hum.(%) 25 C / 55 % Time: 15/30/37 EUT: Docking Digital Music System Engineer Signature:

Model: JiLS-525iB Manufacturer: NICETEX

HOPPING



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	46.74	-6.78	39.96	74.00	-34.04	peak			
2	2390.000	35.10	-6.78	28.32	54.00	-25.68	AVG			
3	2400.000	67.04	-6.76	60.28	74.00	-13.72	peak			
4	2400.000	57.10	-6.76	50.34	54.00	-3.66	AVG			
5	2483.500	45.21	-6.54	38.67	74.00	-35.33	peak			
6	2483.500	35.66	-6.54	29.12	54.00	-24.88	AVG			
7	2500.000	47.76	-6.50	41.26	74.00	-32.74	peak			
8	2500.000	36.91	-6.50	30.41	54.00	-23.59	AVG			



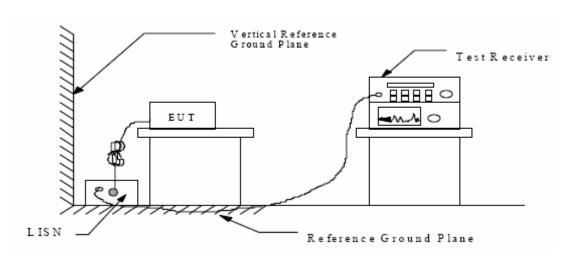
12.AC POWER LINE CONDUCTED EMISSION FOR FCC PART

15 SECTION 15.207(A)

12.1.Block Diagram of Test Setup

12.1.1.Block diagram of connection between the EUT and simulators

12.1.2. Shielding Room Test Setup Diagram



(EUT: Bluetooth Docking Music System with Rotating Lightning Dock for iPhone and iPod)

12.2.The Emission Limit

12.2.1.Conducted Emission Measurement Limits According to Section 15.207(a)

Frequency	Limit dB(μV)						
(MHz)	Quasi-peak Level	Average Level					
0.15 - 0.50	66.0 - 56.0 *	56.0 – 46.0 *					
0.50 - 5.00	56.0	46.0					
5.00 - 30.00	60.0	50.0					

^{*} Decreases with the logarithm of the frequency.



12.3. Configuration of EUT on Measurement

The equipment are installed on the Conducted Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

12.4. Operating Condition of EUT

- 12.4.1. Setup the EUT and simulator as shown as Section 11.1.
- 12.4.2. Turn on the power of all equipment.
- 12.4.3.Let the EUT work in TX (Operation) mode measure it.

12.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 500hm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10- 2013 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9 kHz.

The frequency range from 150 kHz to 30MHz is checked.

12.6. Power Line Conducted Emission Measurement Results



CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Docking Digital Music System M/N:JiLS-525iB

NICETEX Manufacturer:

Operating Condition: BT

Test Site: 2#Shielding Room

Operator: star

Test Specification: N 120V/60Hz

Report No.:ATE20151339 Comment: Start of Test: 2015-6-22 / 9:57:31

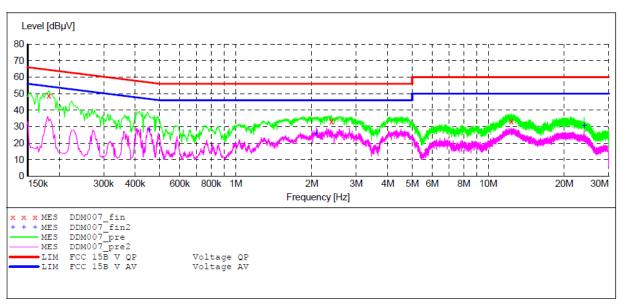
SCAN TABLE: "V 150K-30MHz fin"

__SUB_STD_VTERM2 1.70 Short Description:

Stop Detector Meas. ΙF Start Step Transducer Frequency Frequency Width 150.0 kHz 30.0 MHz 4.5 kH Time Bandw.

4.5 kHz QuasiPeak 1.0 s 9 kHz LISN (ESH3-Z5)

Average



MEASUREMENT RESULT: "DDM007 fin"

2015-6-22 9:5	9						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
MHz	dΒμV	dB	dΒμV	dB			
0.182000	48.70	10.5	64	15.7	QP	N	GND
2.391500	33.20	11.7	56	22.8	QP	N	GND
12.332000	33.40	11.9	60	26.6	QP	N	GND

MEASUREMENT RESULT: "DDM007 fin2"

2015-6-22 9:59							
Frequency	Level	Transd	Limit	Margin	Detector	Line	PΕ
MHz	dΒμV	dB	dΒμV	dB			
0.454000	27.80	11.4	47	19.0	AV	N	GND
2.085500	25.70	11.7	46	20.3	AV	N	GND
24.000500	30.40	12.0	50	19.6	AV	N	GND



CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Docking Digital Music System M/N:JiLS-525iB

Manufacturer: NICETEX

Operating Condition: BT

Test Site: 2#Shielding Room

Operator: star

Test Specification: L 120V/60Hz

Comment: Report No.: ATE20151339 2015-6-22 / 10:00:05 Start of Test:

SCAN TABLE: "V 150K-30MHz fin"

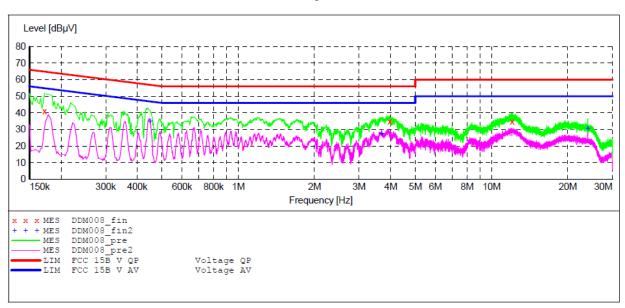
_SUB_STD_VTERM2 1.70 Short Description:

Stop Step Detector Meas. ΙF Transducer

Bandw. Time

Frequency Frequency Width 150.0 kHz 30.0 MHz 4.5 kH 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN (ESH3-Z5)

Average



MEASUREMENT RESULT: "DDM008 fin"

2015-6-22 10:	02						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
MHz	dBuV	dB	dBuV	dB			
	5.2 pt 1		GL [4]				
0.172000	41.10	10.5	65	23.8	OP	L1	GND
3.966500		11.8		21.3	~-	L1	GND
12.062000		11.9		25.0	~-	T.1	GND
12.002000	55.00	11.9	00	23.0	VΓ	111	GMD

MEASUREMENT RESULT: "DDM008 fin2"

2015-6-22 10	0:02						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
MHz	dΒμV	dB	dBµV	dB			
0.448000	34.80	11.4	47	12.1	AV	L1	GND
3.683000	27.50	11.7	46	18.5	AV	L1	GND
24.000500	30.50	12.0	50	19.5	AV	L1	GND



CONDUCTED EMISSION STANDARD FCC PART 15B

Docking Digital Music System M/N:JiLS-525iB EUT:

Manufacturer: NICETEX

Operating Condition: BT

Test Site: 2#Shielding Room

Operator: star

Test Specification: L 240V/60Hz

Report No.:ATE20151339 Comment: Start of Test: 2015-7-6 / 8:40:25

SCAN TABLE: "V 150K-30MHz fin"

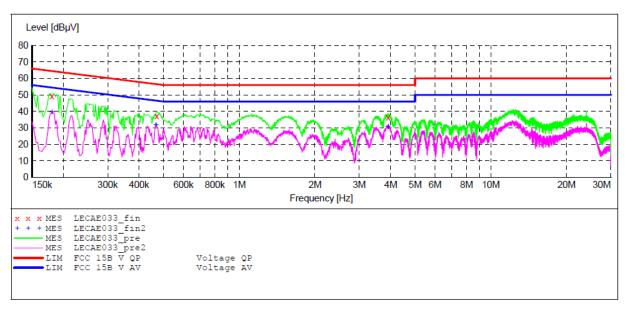
______SUB_STD_VTERM2 1.70 Short Description:

Detector Meas. Start Stop Step IF Transducer

Width Bandw. Time

Frequency Frequency 150.0 kHz 30.0 MHz 9 kHz 4.5 kHz QuasiPeak 1.0 s LISN (ESH3-Z5)

Average



MEASUREMENT RESULT: "LECAE033 fin"

2015-7-6 8:42 Frequency MHz	Level dBµV			Margin dB	Detector	Line	PE
0.180000 0.470000 3.908000	37.00	10.5 11.4 11.7	57		QР	L1 L1 L1	GND GND GND

MEASUREMENT RESULT: "LECAE033 fin2"

2015-7-6 8:42 Frequency MHz	Level dBµV		Limit dBµV	Margin dB	Detector	Line	PE
0.180000 0.466000 3.908000	39.70 31.70 30.60	10.5 11.4 11.7	55 47 46	14.9	AV	L1 L1 L1	GND GND



CONDUCTED EMISSION STANDARD FCC PART 15B

Docking Digital Music System M/N:JiLS-525iB EUT:

Manufacturer: NICETEX

Operating Condition: BT

Test Site: 2#Shielding Room

Operator: star Test Specification: N 240V/60Hz

Report No.:ATE20151339 Comment: Start of Test: 2015-7-6 / 8:43:05

SCAN TABLE: "V 150K-30MHz fin"

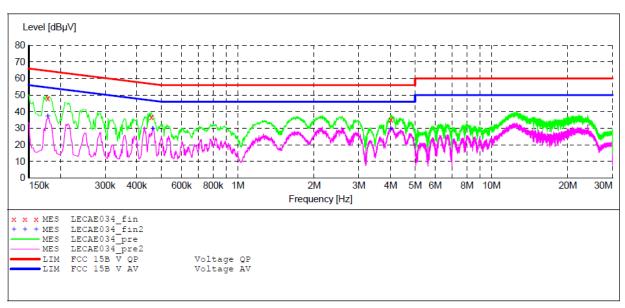
_SUB_STD_VTERM2 1.70 Short Description:

Step ΙF Start Stop Detector Meas. Transducer

Time Bandw.

Frequency Frequency Width 150.0 kHz 30.0 MHz 4.5 kHz 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN (ESH3-Z5)

Average



MEASUREMENT RESULT: "LECAE034 fin"

2015-7-6 8:44 Frequency MHz	Level dBµV		Limit dBµV	Margin dB	Detector	Line	PE
0.178000 0.456000		10.5 11.4			~	N N	GND GND
4.007000	35.00	11.8	56	21.0	QP	N	GND

MEASUREMENT RESULT: "LECAE034 fin2"

2015-7-6 8:44 Frequency MHz	Level dBµV			Margin dB	Detector	Line	PE
0.178000 0.462000	37.10 29.90	10.5 11.4	55 47			N N	GND GND
4.007000	29.60	11.8	46	16.4	AV	N	GND



13.ANTENNA REQUIREMENT

13.1.The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

13.2. Antenna Construction

The antenna is PCB antenna, no consideration of replacement. Therefore, the equipment complies with the antenna requirement of Section 15.203.

