



Product Name	Mobile Printer	
Model No.	AME-3230B,AME-2230B	
FCC ID.	NBFMP32001	

Applicant	Argox Information Co.,Ltd.
Address	7F,NO.126,Lane 235,Pao-Chiao Rd., Hsin Tien,
	Taipei, Taiwan

Date of Receipt	Oct. 14, 2009
Issued Date	Dec. 21, 2009
Report No.	09A259R-RFUSP43V01
Report Version	V1.0

The Test Results relate only to the samples tested.

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Test Report Certification

Issued Date: Dec. 21, 2009 Report No.: 09A259R-RFUSP43V01



Product Name	Mobile Printer				
Applicant	Argox Information Co.,Ltd.				
Address	7F,NO.126,Lane 235,Pao-Chiao Rd., Hsin Tien , Taipei, Taiwan				
Manufacturer	Argox Information Co.,Ltd.				
Model No.	AME-3230B,AME-2230B				
FCC ID.	NBFMP32001				
EUT Rated Voltage	AC 100-240 V, 50-60 Hz				
EUT Test Voltage	AC 120V/ 60Hz				
Trade Name	ARGOX				
Applicable Standard FCC CFR Title 47 Part 15 Subpart C: 2008					
	ANSI C63.4: 2003				
Test Result	Complied NVLAP Lab Code: 200533-0				

The Test Results relate only to the samples tested.

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Documented By :

Leven Huang

(Adm. Specialist / Leven Huang)

Tested By

NoNo Chang

(Engineer / NoNo Chang)

Approved By

(Manager / Vincent Lin)



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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Mobile Printer	
Trade Name	ARGOX	
Model No.	AME-3230B,AME-2230B	
FCC ID.	NBFMP32001	
Frequency Range	2402 – 2480MHz	
Channel Number	79	
Type of Modulation	FHSS: GFSK(1Mbps) / π /4DQPSK(2Mbps) / 8DPSK(3Mbps)	
Antenna Type	/pe Chip	
Channel Control Auto		
Antenna Gain Refer to the table "Antenna List"		
USB to RS-232 Cable	Shielded,1.5m	
Power Adapter MFR: Sunny ,M/N: SYS1357-1409		
	Input: AC 100-240V,50-60Hz,1.0A	
	Output: DC 9V,1.56A	
	Cable Out: Non-Shielded,1.8m	

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	Yageo	CAN4311115002701K	4.1dBi for 2.4 GHz

1 2							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00:	2402 MHz	Channel 20:	2422 MHz	Channel 40:	2442 MHz	Channel 60:	2462 MHz
Channel 01:	2403 MHz	Channel 21:	2423 MHz	Channel 41:	2443 MHz	Channel 61:	2463 MHz
Channel 02:	2404 MHz	Channel 22:	2424 MHz	Channel 42:	2444 MHz	Channel 62:	2464 MHz
Channel 03:	2405 MHz	Channel 23:	2425 MHz	Channel 43:	2445 MHz	Channel 63:	2465 MHz
Channel 04:	2406 MHz	Channel 24:	2426 MHz	Channel 44:	2446 MHz	Channel 64:	2466 MHz
Channel 05:	2407 MHz	Channel 25:	2427 MHz	Channel 45:	2447 MHz	Channel 65:	2467 MHz
Channel 06:	2408 MHz	Channel 26:	2428 MHz	Channel 46:	2448 MHz	Channel 66:	2468 MHz
Channel 07:	2409 MHz	Channel 27:	2429 MHz	Channel 47:	2449 MHz	Channel 67:	2469 MHz
Channel 08:	2410 MHz	Channel 28:	2430 MHz	Channel 48:	2450 MHz	Channel 68:	2470 MHz
Channel 09:	2411 MHz	Channel 29:	2431 MHz	Channel 49:	2451 MHz	Channel 69:	2471 MHz
Channel 10:	2412 MHz	Channel 30:	2432 MHz	Channel 50:	2452 MHz	Channel 70:	2472 MHz
Channel 11:	2413 MHz	Channel 31:	2433 MHz	Channel 51:	2453 MHz	Channel 71:	2473 MHz
Channel 12:	2414 MHz	Channel 32:	2434 MHz	Channel 52:	2454 MHz	Channel 72:	2474 MHz
Channel 13:	2415 MHz	Channel 33:	2435 MHz	Channel 53:	2455 MHz	Channel 73:	2475 MHz
Channel 14:	2416 MHz	Channel 34:	2436 MHz	Channel 54:	2456 MHz	Channel 74:	2476 MHz
Channel 15:	2417 MHz	Channel 35:	2437 MHz	Channel 55:	2457 MHz	Channel 75:	2477 MHz
Channel 16:	2418 MHz	Channel 36:	2438 MHz	Channel 56:	2458 MHz	Channel 76:	2478 MHz
Channel 17:	2419 MHz	Channel 37:	2439 MHz	Channel 57:	2459 MHz	Channel 77:	2479 MHz
Channel 18:	2420 MHz	Channel 38:	2440 MHz	Channel 58:	2460 MHz	Channel 78:	2480 MHz
Channel 19:	2421 MHz	Channel 39:	2441 MHz	Channel 59:	2461 MHz		

Frequency of Each Channel:

The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals

Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. The transmitter is presented with a continuous data stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its 79 channels and over the minimum number of hopping channels (75 channels).

The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hopsets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

- 1. This device is a Mobile Printer with a built-in 2.4GHz Bluetooth V2.0+EDR transceiver
- 2. The different of the each model is shown as below:

Model Number	Description
AME-3230B 3 inch print head and including BT	
AME-2230B	2 inch print head and including BT

- 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.
- 4. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
- 5. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

1.2. Operational Description

The EUT is a Mobile Printer with built-in 2.4GHz Bluetooth V2.0+EDR transceiver. The number of the channels is 79 in 2402-2480MHz. The device adapts the frequency hopping spread spectrum modulation. The antenna is chip antenna and provides diversity function to improve the receiving function.

This device provides wireless technology that revolutionizes personal connectivity. It is the solution for the seamless integration of Bluetooth technology into personal computer enabling short-range wireless connections between desktop/laptop computers, Bluetooth-enabled peripherals, and portable handheld devices.

Test Mode	Mode 1: Transmit - 1Mbps (GFSK)
	Mode 2: Transmit - 3Mbps (8DPSK)

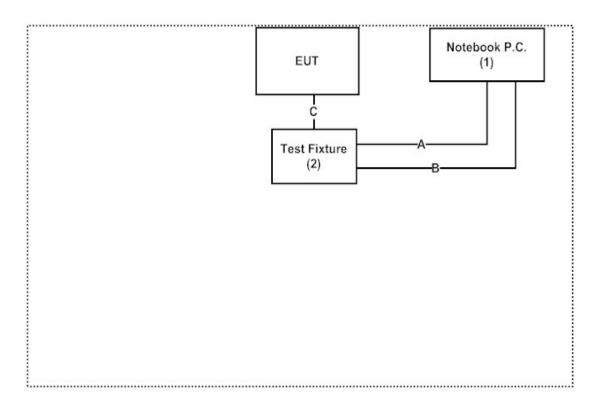
1.3. Tested System Details

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.	FCC ID	Power Cord
1	Notebook P.C.	ASUS	L4000L	37NP067733	DoC	Non-Shielded, 1.2m
2	Test Fixture	Argox	N/A	N/A	N/A	N/A

	Signal Cable Type	Signal cable Description
А	Printer Cable	Shielded,1.8m
В	USB Cable	Shielded,2.7m
С	Control Signal Line	Shielded,0.1m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in section 1.4
- (2) Execute the CSR program (the continuous transmission program) on the EUT
- (3) Setup the test mode, the test channel, and the data rate.
- (4) Press OK to start the transmission.
- (5) Verify that the EUT works correctly.

1.6. Test Facility

Ambient conditions in the laboratory:

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

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : <u>http://tw.quietek.com/tw/emc/accreditations/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>

Site Description: File on

Federal Communications Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046 Registration Number: 92195

Accreditation on NVLAP NVLAP Lab Code: 200533-0





Site Name: Site Address: Quietek Corporation No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen, Lin-Kou Shiang, Taipei, Taiwan, R.O.C. TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : <u>service@quietek.com</u>

FCC Accreditation Number: TW1014



2. Conducted Emission

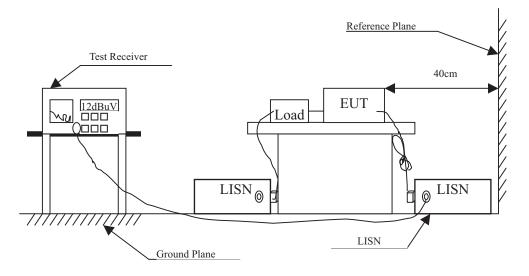
2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/014	Feb., 2009	
2	L.I.S.N.	R & S	ESH3-Z5/825562/002	Feb., 2009	EUT
3	L.I.S.N.	R & S	ENV4200/848411/010	Feb., 2009	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2/100410	July, 2009	
5	No.1 Shielded Roo	m		N/A	

Note: All instruments are calibrated every one year.

2.2. Test Setup



2.3.	Limits
2.3.	Linnus

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

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 C63.4: 2003 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 C63.4, 2003; 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

2.6. Test Result of Conducted Emission

Product	:	Mobile Printer
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK) (2441MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.170	9.790	27.490	37.280	-28.149	65.429
0.353	9.790	32.530	42.320	-17.880	60.200
0.439	9.790	31.160	40.950	-16.793	57.743
1.193	9.800	23.010	32.810	-23.190	56.000
5.920	9.840	27.060	36.900	-23.100	60.000
9.338	9.870	30.010	39.880	-20.120	60.000
Average					
0.170	9.790	12.790	22.580	-32.849	55.429
0.353	9.790	23.210	33.000	-17.200	50.200
0.439	9.790	27.620	37.410	-10.333	47.743
1.193	9.800	14.080	23.880	-22.120	46.000
5.920	9.840	25.650	35.490	-14.510	50.000
9.338	9.870	28.010	37.880	-12.120	50.000

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 Test Item Power Line Test Mode	: Line 2	ted Emission Test	s (GFSK) (2441MHz)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.357	9.790	33.070	42.860	-17.226	60.086
0.455	9.790	28.850	38.640	-18.646	57.286
0.576	9.790	27.830	37.620	-18.380	56.000
1.123	9.790	24.190	33.980	-22.020	56.000
6.244	9.850	26.190	36.040	-23.960	60.000
9.537	9.890	30.250	40.140	-19.860	60.000
Average					
0.357	9.790	21.720	31.510	-18.576	50.086
0.455	9.790	22.640	32.430	-14.856	47.286
0.576	9.790	14.660	24.450	-21.550	46.000
1.123	9.790	15.260	25.050	-20.950	46.000
6.244	9.850	23.040	32.890	-17.110	50.000
9.537	9.890	27.560	37.450	-12.550	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

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

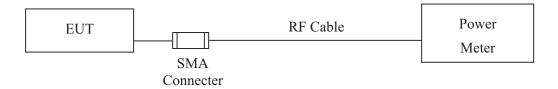
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Х	Power Meter	Anritsu	ML2495A/6K00003357	May, 2009
Х	Power Sensor	Anritsu	MA2491A/034457	May, 2009

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

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product	:	Mobile Printer
Test Item	:	Peak Power Output
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
Channel 00	2402.00	4.42 dBm	1 Watt= 30 dBm	Pass
Channel 39	2441.00	5.17 dBm	1 Watt= 30 dBm	Pass
Channel 78	2480.00	5.38 dBm	1 Watt= 30 dBm	Pass

Product	:	Mobile Printer
Test Item	:	Peak Power Output
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
Channel 00	2402.00	2.47 dBm	1 Watt= 30 dBm	Pass
Channel 39	2441.00	3.13 dBm	1 Watt= 30 dBm	Pass
Channel 78	2480.00	3.31 dBm	1 Watt= 30 dBm	Pass

4. Radiated Emission

4.1. Test Equipment

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

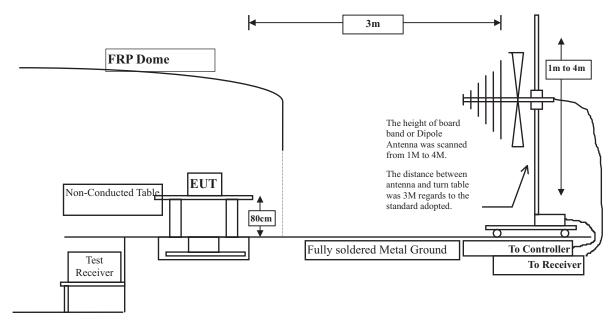
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 3	X Bilog Antenna Se		Schaffner Chase	CBL6112B/2673	Sep., 2009
	Х	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2009
	Х	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2009
	Х	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2009
	Х	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
	Х	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2009
	Х	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2009
	Х	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	Х	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

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

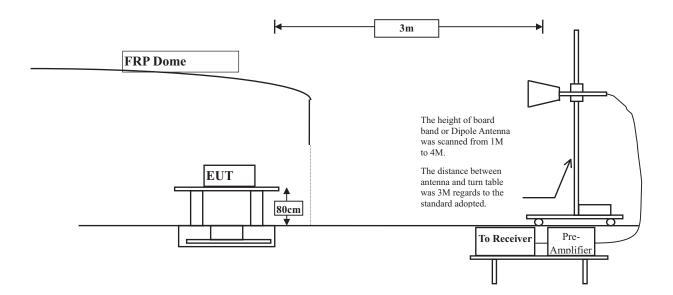
2. The test instruments marked by "X" are used to measure the final test results.

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	uV/m @3m	dBuV/m@3m				
30-88	100	40				
88-216	150	43.5				
216-960	200	46				
Above 960	500	54				

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 C63.4, 2003 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 C63.4:2003 on radiated measurement.

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

Radiated emission measurements below 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 beamwidth of the antenna. The worst radiated emission is measured on the Final Measurement.

The frequency range from 30MHz to 10th harminics is checked.

4.5. Uncertainty

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

Product Test Item Test Site Test Mode	: No.3 OA	ic Radiated Emiss ATS	sion s (GFSK)(2402MHz))	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4804.000	9.582	40.320	49.902	-24.098	74.000
7206.000	14.401	35.790	50.191	-23.809	74.000
9608.000	19.795	33.810	53.605	-20.395	74.000
Average					
Detector:					
Vertical					
Peak Detector:					
4804.000	8.462	41.920	50.382	-23.618	74.000
7206.000	15.412	35.830	51.242	-22.758	74.000
9608.000	19.005	34.680	53.685	-20.315	74.000
Average					
Detector:					

4.6. Test Result of Radiated Emission

- 1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
- 2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz •
- 3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz •
- 4. Emission Level = Reading Level + Correct Factor.
- 5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product Test Item Test Site Test Mode	 Mobile Printer Harmonic Radiated Emission No.3 OATS Mode 1: Transmit - 1Mbps (GFSK)(2441MHz) 				
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4882.000	9.489	39.340	48.829	-25.171	74.000
7323.000	14.568	34.840	49.408	-24.592	74.000
9764.000	20.055	33.640	53.695	-20.305	74.000
Average					
Detector:					
Vertical					
Peak Detector:					
4882.000	8.979	40.790	49.769	-24.231	74.000
7323.000	15.262	35.190	50.452	-23.548	74.000
9764.000	19.255	34.280	53.535	-20.465	74.000
Average					
Detector:					

- 1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
- 2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz °
- 3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz °
- 4. Emission Level = Reading Level + Correct Factor.
- 5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product Test Item Test Site Test Mode	 Mobile Printer Harmonic Radiated Emission No.3 OATS Mode 1: Transmit - 1Mbps (GFSK)(2480MHz) 				
Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor dB	Level dBuV	Level dBuV/m	dB	dBuV/m
	dB	dBuv	dBuv/m	ůВ	dBuv/m
Horizontal Peak Detector:					
4960.000	9.418	39.480	48.897	-25.103	74.000
7440.000	15.012	35.290	50.303	-23.697	74.000
9920.000	19.754	33.410	53.164	-20.836	74.000
Average	17.751	55.110	55.101	20.050	/ 1.000
Detector:					
Vertical					
Peak Detector:					
4960.000	9.717	41.250	50.966	-23.034	74.000
7440.000	15.386	35.520	50.906	-23.094	74.000
9920.000	18.897	34.560	53.457	-20.543	74.000
Average					
Detector:					

- 1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
- 2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz •
- 3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz •
- 4. Emission Level = Reading Level + Correct Factor.
- 5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product Test Item Test Site Test Mode	 Mobile Printer Harmonic Radiated Emission No.3 OATS Mode 2: Transmit - 3Mbps (8DPSK)(2402MHz) 				
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4804.000	9.612	38.770	48.382	-25.618	74.000
7206.000	14.293	36.810	51.102	-22.898	74.000
9608.000	19.660	33.350	53.010	-20.990	74.000
Average					
Detector:					
Vertical					
Peak Detector:					
4804.000	8.330	37.520	45.850	-28.150	74.000
7206.000	15.409	35.810	51.219	-22.781	74.000
9608.000	18.870	34.190	53.060	-20.940	74.000
Average					
Detector:					

- 1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
- 2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz •
- 3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz \circ
- 4. Emission Level = Reading Level + Correct Factor.
- 5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product Test Item Test Site Test Mode	 Mobile Printer Harmonic Radiated Emission No.3 OATS Mode 2: Transmit - 3Mbps (8DPSK) (2441MHz) 				
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4882.000	9.489	36.810	46.299	-27.701	74.000
7323.000	14.568	34.810	49.378	-24.622	74.000
9764.000	20.055	33.460	53.515	-20.485	74.000
Average					
Detector:					
Vertical					
Peak Detector:					
4882.000	8.979	36.810	45.789	-28.211	74.000
7323.000	15.262	35.670	50.932	-23.068	74.000
9764.000	19.255	34.710	53.965	-20.035	74.000
Average					
Detector:					

- 1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
- 2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz •
- 3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz •
- 4. Emission Level = Reading Level + Correct Factor.
- 5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.



Product	: Mobile Printer					
Test Item	: Harmoni	: Harmonic Radiated Emission				
Test Site	: No.3 OA	TS				
Test Mode	: Mode 2:	Transmit - 3Mbp	os (8DPSK) (2480MH	z)		
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBuV	dBuV/m	dB	dBuV/m	
Horizontal						
Peak Detector:						
4960.000	9.418	36.950	46.367	-27.633	74.000	
7440.000	15.012	35.240	50.253	-23.747	74.000	
9920.000	19.754	33.710	53.464	-20.536	74.000	
Average						
Detector:						
Vertical						
Peak Detector:						
4960.000	9.717	37.050	46.766	-27.234	74.000	
7440.000	15.386	35.300	50.686	-23.314	74.000	
9920.000	18.897	34.810	53.707	-20.293	74.000	
Average						
Detector:						

- 1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
- 2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz \circ
- 3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:10Hz; Span:20MHz °
- 4. Emission Level = Reading Level + Correct Factor.
- 5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	: Mobile Printer				
Test Item	: General Radiated Emission				
Test Site	: No.3 O				
Test Mode	: Mode 1	: Transmit - 1Mbp	os (GFSK) (2441MHz	2)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
363.680	0.844	29.345	30.189	-15.811	46.000
458.740	4.032	27.584	31.616	-14.384	46.000
598.420	4.233	29.473	33.706	-12.294	46.000
782.720	6.271	32.563	38.835	-7.165	46.000
846.740	7.404	27.110	34.514	-11.486	46.000
885.540	7.430	26.369	33.799	-12.201	46.000
Vertical					
363.680	0.734	28.961	29.695	-16.305	46.000
458.740	-1.828	32.100	30.272	-15.728	46.000
604.240	2.920	25.941	28.862	-17.138	46.000
683.780	2.862	26.153	29.015	-16.985	46.000
782.720	3.641	29.585	33.227	-12.773	46.000
846.740	2.704	28.173	30.877	-15.123	46.000

- 1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
- 2. "means the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor.
- 4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product	: Mobile Printer				
Test Item	: General Radiated Emission				
Test Site	: No.3 O	ATS			
Test Mode	: Mode 2	: Transmit - 3Mbp	s (8DPSK) (2441MH	[z)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
456.800	3.169	27.500	30.669	-15.331	46.000
598.420	4.233	28.102	32.335	-13.665	46.000
716.760	4.646	26.914	31.560	-14.440	46.000
782.720	6.271	31.980	38.252	-7.748	46.000
846.740	7.404	28.275	35.679	-10.321	46.000
912.700	7.341	28.087	35.428	-10.572	46.000
Vertical					
363.680	0.734	28.444	29.178	-16.822	46.000
458.740	-1.828	32.832	31.004	-14.996	46.000
623.640	1.116	27.868	28.984	-17.016	46.000
687.660	3.137	26.121	29.258	-16.742	46.000
782.720	3.641	30.561	34.203	-11.797	46.000
846.740	2.704	26.202	28.906	-17.094	46.000

- 1. The reading levels below 1GHz are quasi-peak values.
- 2. " " means the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor.
- 4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

5. **RF Antenna Conducted Test**

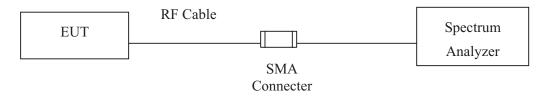
5.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40/ 100339	Jun, 2009
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Jun, 2009
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009

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 setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

5.5. Uncertainty

± 150Hz

5.6. Test Result of RF Antenna Conducted Test

Product	:	Mobile Printer
Test Item	:	RF Antenna Conducted Test
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

Figure Channel 00: 30MHz-25GHz

50 Ω	AC SE	NSE:INT	ALIGN AUTO	03:55:29 PM Dec 16, 2009	Frequency				
art Freq 30.000000 MHz Input: RF	PNO: Fast Trig: Free FGain:Low #Atten: 3	e Run Avg H	Type: Log-Pwr Iold: 82/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N N	Frequency Auto Tune				
dB/div Ref 20.00 dBm	Mkr1 2.402 GHz iv Ref 20.00 dBm 3.337 dBm								
0 1					Center Fre 12.515000000 GH				
0					Start Fre 30.000000 M				
0				-16.66 dBm	Stop Fr 25.00000000 G				
					CF Ste 2.497000000 G <u>Auto</u> M				
o Aughern level him have rever bernance	newww.liket.ch.shahahahana	g.Algerman ingen or soft	hall and a second a se	and a start and the second sta	Freq Offs 01				
art 30 MHz	#VBW 1.0 MHz		Sweep	Stop 25.00 GHz 2.30 s (1001 pts)					
	#VBW 1.0 MHz		Sweep						

Product	:	Mobile Printer
Test Item	:	RF Antenna Conducted Test
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

Figure Channel 39: 30MHz-25GHz

		20		19.	-2.5		r - Swept SA		🛙 Agilent Spec
Display Annotation►	PMDec 16, 2009 CE 1 2 3 4 5 6 PE MWWWWWW ET P N N N N N	TRAC	ALIGN AUTO e: Log-Pwr d: 50/100	Avg un Avg	SEN: Trig: Free #Atten: 30	AI PNO: Fast C FGain:Low	Input: RF	50 Ω ine -15.8	u Display Li
	152 GHz 13 dBm		М	-		Gam.Low		Ref 20.00	10 dB/div
Title								1	10.0
Graticul <u>On</u> O									-10.0
Display Line -15.89 dBm On Off	-15.89 dBm								-20.0
									40.0
System Display Settings	HULPHAR -	get to use of the start and	H. Marriel Hugarow	ghraden of Long White days	hand half man that the	n Manson Mark	yer the start of t	and have any	-50.0
County	25.00 GHz	Stop 2					<u>,</u>	Hz	-70.0
	(1001 pts)	2.30 s (Sweep status		1.0 MHz	#VBW		100 kHz	#Res BW 1

Product	:	Mobile Printer
Test Item	:	RF Antenna Conducted Test
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

Figure Channel 78: 30MHz-25GHz

				- 22		zer - Swept SA	ipectrum Analy			
Display Annotation►	04:00:39 PM Dec 16, 2009 TRACE 1 2 3 4 5 6 TYPE MWWWWW	ALIGN AUTO ype: Log-Pwr old: 45/100		Trig: Free	PNO: Fast	Input: RF	50 Ω Line -15	× Display		
		IFGain:Low #Atten: 30 dB DETPONING Mkr1 2.477 GHz								
Title							1-	10.0		
Graticu <u>n</u> C	-15.17 dBm							0.00		
Display Lir -15.17 dB <u>n</u> C								20.0		
								40.0		
System Display Settings	where and a where and a set	Way where and the second second	waynhelsi min	ndeen hour for sone b	n-alkarloginutert ^a nd	nul alangovaldaria	world haven	50.0 50.0 Am		
	Stop 25.00 GHz 2.30 s (1001 pts)	Sweep		1.0 MHz	#VBW		MHz N 100 kHz	70.0 Start 30 #Res B1		
		STATUS						ISG		

Product	:	Mobile Printer
Test Item	:	RF Antenna Conducted Test
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

Figure Channel 00: 30MHz-25GHz

								- Swept SA	ctrum Analyze	
Display	MDec 16, 2009	TRAC	ALIGNAUTO		SENSE:INT]	A	1 dBm	50 Ω ine -20.7	isplay L
Annotation	02 GHz 14 dBm	kr1 2.4		Avg Hol	ree Run : 30 dB	#Atten:	PNO: Fast 😱 FGain:Low		Ref 20.0	0 dB/div
Title									.1	. og 10.0
Graticu On (• -	0.00
Display Lii -20.71 dB On (-20.71 dBm									20.0
		97.82							ľ	
Systen Display Settings	Martin Color	as when the service of the service o	dh-a-partify-a _{nd} aha-	and and a set of the s	M. The state of the second	itus:r _{ta} nilus	Maddelingers/www.ghip.f	har to an	med multinities	
	5.00 GHz 1001 pts)		Sweep		łz	1.0 MH	#VBW			tart 30 N Res BW
			STATUS							SG

Product	:	Mobile Printer
Test Item	:	RF Antenna Conducted Test
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

Figure Channel 39: 30MHz-25GHz

		<u></u>		E	nalyzer - Swept SA	gilent Spectrum Anal			
Display Annotation	04:13:03 PM Dec 16, 2009 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 7/100	SENSE:INT Trig: Free Run #Atten: 30 dB	PNO: Fast C	-20.43 dBm Input: RF	splay Line -2			
	Mkr1 2.452 GHz dB/div Ref 20.00 dBm -0.426 dBm								
Title									
Graticu On									
Display Li -20.43 dE On	-20.43 dBm					0			
						0			
Syster Displa	way and the second states an	store, physical as provide the laster	when the first for the second second	monthingener	with the state of	O Hunder			
Setting						0			
	Stop 25.00 GHz 2.30 s (1001 pts)	Sweep	1.0 MHz	#VBW	Hz	art 30 MHz es BW 100 kH:			
		STATUS							

Product	:	Mobile Printer
Test Item	:	RF Antenna Conducted Test
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

Figure Channel 78: 30MHz-25GHz

	-	201 201					wept SA	n Analyzer -		
Display	04:23:37 PM Dec 16, 2009 TRACE 1 2 3 4 5 6		ALIGN AUTO		SENSE:INT	AC)Ω [KI .
Annotation	PE MWWWWW PE NNNNN	TY	: Log-Pwr 61/100	Avg Ty Avg Hol	g: Free Run tten: 30 dB		ut: RF PN	e -15.36	olay Line	Disp
	177 GHz 38 dBm		М				IBm	ef 20.00 (B/div R (
Titl								1		og 10.0
Gratic										.00 0.0
	-15.36 dBm									-
Display Li -15.36 di On										0.0 - 0.0 -
										D.O -
Syster	Withdate	U ^{LALA} U ^{UNDIN} BAR	wahilina un person	and a decade to a second	www.walkan	wondthat working	halthetherape	hypological and	Internet	0.0 - 0.0 -
Displa Setting										0.0
	25.00 GHz (1001 pts)		Sweep		MHz	#VBW 1.			t 30 MHz s BW 100	
2	1		STATUS							G

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	Agilent	N9010A / MY48030495	Jun, 2009

RF Radiated Measurement:

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

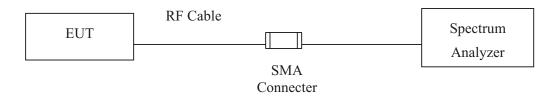
Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2009
	Х	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2009
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2009
	Х	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2009
	Х	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2009
	Х	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2009
	Х	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	Х	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

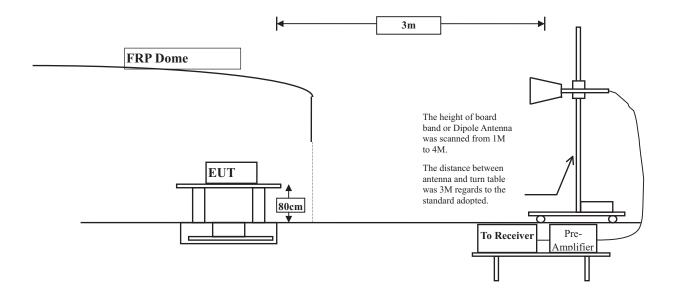
RF Conducted Measurement





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 C63.4:2003 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 C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

6.5. Uncertainty

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

6.6. Test Result of Band Edge

Product	:	Mobile Printer
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2402	36.599	47.400	83.998	Peak
Vertical	2402	35.588	47.320	82.907	Peak

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	∆ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2375.8	83.998	41.788	42.21	Peak
Vertical	2375.8	82.907	41.788	41.119	Peak

Note:

The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements

per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

F = Fundamental field Strength (Peak or Average)

 Δ = Conducted Band Edge Delta (Peak or Average)



nter Freg 2.390		AC SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	04:15:01 PM Oct 21, 2009 TRACE 1 2 3 4 5 6	Frequency
nier Fred 2.390	Input: RF PNO: Fast C IFGain:Low	➡ Trig: Free Run #Atten: 20 dB	Avg Hold:>100/100	DET P N N N N	Auto Tune
dB/div Ref 10.0	0 dBm		Mk	r3 2.375 8 GHz -37.611 dBm	Auto Tui
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				ween hand	2.340000000 G
0 have been here as	white here and have have a second				Stop Fr
0					2.440000000 G
nter 2.39000 GHz es BW 1.0 MHz		W 1.0 MHz	#Sweep	Span 100.0 MHz 500 ms (1001 pts)	CF St
MODE TRC SCL	×		JNCTION FUNCTION WIDTH		10.000000 M <u>Auto</u> M
N 1 f N 1 f N 1 f	2.401 8 GHz 2.400 0 GHz 2.375 8 GHz	4.177 dBm -27.998 dBm -37.611 dBm			a and a constant
	2.375 8 GH2	-57.011 dBm			Freq Offs
	0				

Peak Detector of conducted Band Edge Delta

Product	:	Mobile Printer
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dB(uV/m)]	Detector
Horizontal	2480	36.706	48.160	84.866	Peak
Vertical	2480	36.162	49.650	85.812	Peak

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	∆ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2483.5	84.866	84.866 42.689		Peak
Vertical	2483.5	85.812	42.689	43.123	Peak

Note:

The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements

per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

F = Fundamental field Strength (Peak or Average)

 Δ = Conducted Band Edge Delta (Peak or Average)



	09:07:18 AM Dec 25, 2009	ALIGN AUTO		INSE:INT	AC S		- Swept SA		50 S		12.1
Marker Select Marke	TYPE MWWWWW DET P NNNNN	e: Log-Pwr ≫100/100		e Run	Trig: Fre #Atten: 2	Gain:Low	nput: RF IF				
1	3 2.500 0 GHz -53.275 dBm	Mkr					dBm	f 10.0	Ref	/div	dB
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	Span 100.0 MHz 500 ms (1001 pts)	#Sweep :			1.0 MH	#VB۱		0 GHz VIHz	4835 1.0 N		
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Peak Detector of conducted Band Edge Delta

Product	:	Mobile Printer
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Factor Reading Level		Detector
Horizontal	2402	36.599	45.390	81.988	Peak
Vertical	2402	35.588	44.950	80.537	Peak

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	∆ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2375.8	81.988	39.16	42.828	Peak
Vertical	2375.8	80.537	39.16	41.377	Peak

Note:

The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

F = Fundamental field Strength (Peak or Average)

 Δ = Conducted Band Edge Delta (Peak or Average)



	ze Dena	and Eu	cieu	Jonuu	ctor of c	Dete	ТСак		-	
							Swept SA	Analyzer - S		gilent S
Peak Search	04:21:10 PM Oct 21, 2009 TRACE 1 2 3 4 5 6	ALIGNAUTO e: Log-Pwr	Avg Typ		AC SEM	Hz	00000 G		50 s	rker
	DET P N N N N N	1:>100/100	Avg H		Trig: Free #Atten: 20	NO: Fast C Gain:Low	put: RF P IF(Inj		
NextPe	1 2.402 0 GHz 1.587 dBm	Mkr					dBm	f 10.00 c	/ Re	B/div
			•1							
Next Rig			\bigwedge							
201			2) <u> </u>
NESE ASABA			\downarrow	-						-
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Mkr→0	00 ms (1001 pts)				W 1.0 MHz	#VB			W 1.0 I	
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	[3m 3m	-25.957 dE -37.573 dE	0 GHz 8 GHz	2.400		1 f 1 f	N
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Мо										
1 0										
		STATUS								

Peak Detector of conducted Band Edge Delta

Product	:	Mobile Printer
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dB(uV/m)]	Detector
Horizontal	2480	36.706	44.550	81.256	Peak
Vertical	2480	36.162	46.620	82.782	Peak

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	∆ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2483.5	81.256	35.17	46.086	Peak
Vertical	2483.5	82.782	35.17	47.612	Peak

Note:

The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

F = Fundamental field Strength (Peak or Average)

 Δ = Conducted Band Edge Delta (Peak or Average)

Peak Search	09:09:40 AM Dec 25, 2009	ALIGN AUTO		AC SENSE:IN			50 9	
	TRACE 1 2 3 4 5 6 TYPE M WAWAWAW DET P N N N N N	e: Log-Pwr I: 59/100		Trig: Free Run #Atten: 20 dB	put: RF (IFGain:Low		1 2.4	ker
NextPea	r1 2.480 0 GHz -3.759 dBm	Mkı			dBm	f 10.00 (Re	B/div
Next Rig				Å				
	I [¯]			2				
Next Le		A						\vdash
	um eseres were and	and more the	manner	und have	hermon	monul	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	mile
					2. ²²⁰ .			
Marker De								
								_
	Span 100.0 MHz					0 GHz		
	500 ms (1001 pts)			W 1.0 MHz		MHz	N 1.0 I	s BV
Mkr→C	500 ms (1001 pts)	#Sweep :	FUNCTION	≺3.759 dBm	× 2.480 0 GHz	MHz	V 1.0 I	SBV MODE
	500 ms (1001 pts)		FUNCTION	-3.759 dBm -38.929 dBm	× 2.480 0 GHz 2.483 5 GHz	MHz	V 1.0 I	s BV
	500 ms (1001 pts)		FUNCTION	≺3.759 dBm	× 2.480 0 GHz	MHz	N 1.0 TRE SE 1 f 1 f	N N
Mkr→(500 ms (1001 pts)		FUNCTION	-3.759 dBm -38.929 dBm	× 2.480 0 GHz 2.483 5 GHz	MHz	N 1.0 TRE SE 1 f 1 f	N N
Mkr→(Mkr→RefL	500 ms (1001 pts)		FUNCTION	-3.759 dBm -38.929 dBm	× 2.480 0 GHz 2.483 5 GHz	MHz	N 1.0 TRE SE 1 f 1 f	N N
Mkr→(500 ms (1001 pts)		FUNCTION	-3.759 dBm -38.929 dBm	× 2.480 0 GHz 2.483 5 GHz	MHz	N 1.0 TRE SE 1 f 1 f	N N

Peak Detector of conducted Band Edge Delta

7. Channel Number

7.1. Test Equipment

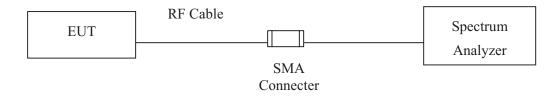
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40/ 100339	Jun, 2009
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Jun, 2009
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009

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

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

7.2. Test Setup



7.3. Limit

Frequency hopping systems operating in the 2400-2483.5 MHz bands shall use at least 75 hopping frequencies.

7.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

7.5. Uncertainty

N/A

7.6. Test Result of Channel Number

Product	:	Mobile Printer
Test Item	:	Channel Number
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

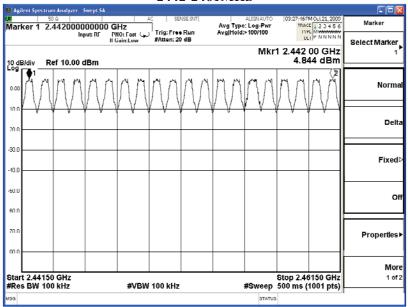
Frequency Range	Measurement	Required Limit	Result
(MHz)	(Hopping Channel)	(Hopping Channel)	ixesuit
2402 ~ 2480	79	>75	Pass

Agilent Spectrum Analyzer - Swept SA				
50 Ω larker 2 2.421000000000 GH		Aug Type: Log-Pwr Avg Hold>100/100	03:14:20 PM Oct 21, 2009	Marker
Input: RF PN0: IFGal 0 dB/div Ref 10.00 dBm	:Fast () Trig:Free Run in:Inw #Atten:20 dB		2 2.421 00 GHz 4.479 dBm	Select Marker 2
	nanar	MMAA	MAM	Norma
nn nn AAAAAA		1 7 4 7	v v v v 1	Delt
nn nn				Fixed
າກກ				o
0.0				Properties
tart 2.40150 GHz Res BW 100 kHz	#VBW 100 kHz	#Sweep	Stop 2.42150 GHz 500 ms (1001 pts)	Mor 1 of
5G		SIAIU		

2402-2421MHz

2422-2441MHz

🕼 Aglient Spectrum Analyzer - Swept SA		
Marker 1 2.422000000000 GHz	ALIGNAUTO 03:22:02PM Oct 21, 2009 Avg Type: Log-Pwr IKACE 1 2 3 4 : 1	Marker
Input: RF PNO: Fast () Trig: Free Run IFGain:Low #Atten: 20 dB	Avg Hold>100/100	Select Marker
	Mkr1 2.422 00 GHz 3.666 dBm	1
10 dB/div Ref 10.00 dBm	3.666 dBiii	
	AnnanaA	Normal
-100 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	<u> </u>	Delte
-20.0		Delta
300		
		Fixed⊳
40.0		
		on
-60.0		0"
-/U.U		Properties▶
-80.0		
		More
Start 2.42150 GHz #Res BW 100 kHz #VBW 100 kHz	8top 2.44150 GHz #Sweep 500 ms (1001 pts)	1 of 2
	sinus	



2442-2461MHz

2462-2480MHz

Agilent Spectrum Anal	yzer Swept SA					
Marker 2 2.4800			enseunt	ALIGNAUTO Avg Type: Log-Pwr Avg Hold>100/100	03:35:521 M OLI 21, 2000 TRACE 1 2 0 4 5 6 TYPE M WWWWW DET P N N N N N	Marker
	Inpucia in	Sain:Low #Atten:	20 dB		ULI P NNNN	Select Marker
0 dB/dlv Ref 10	.00 dBm			Mki	2 2.480 00 GHz 5.167 dBm	2
	MM	nn				Norma
20.0						Delta
40.0					V.	Fixed
50.0						o
50 N						
nn						Properties
Start 2.46150 GH Res BW 100 kHz		#VBW 100 KH		#Sweep	Stop 2.48150 GHz 500 ms (1001 pts)	Mor 1 of
50				STATU	5	

Product	:	Mobile Printer
Test Item	:	Channel Number
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

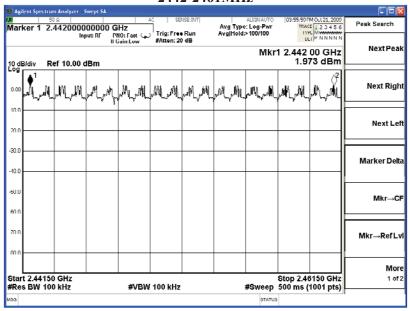
Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
(IVITIZ)	(Hopping Channel)	(Hopping Channel)	
$2402 \sim 2480$	79	>75	Pass

2402-2421MHz

								iwept SA	n Analyzer - S		
Marker	MOLI21,2009 L 1 2 3 4 5 0 C M	IRM	ALIGNAUTO	Avg Type Avg Hold:	NGE:INT	<u> </u>	Hz	00000 G			Mari
Select Marker	PNNNNN	D		Avginoid		#Atten: 20	IO: Fast () Saln:Low		Inp		
1		Mkr1 2.401 98 GHz dB/div Ref 10.00 dBm -0.143 dBm									
Normal	2 M. M.	,ML, ML			,	, ML, , ML	,# Լ .,#Ա	,	,M _r ,M	_1 _1	Log U.UU
Delta											1U.U 20.0
Fixed⊳											-10 0
Off											-50.0
Properties⊁											60.U
More											<u>ສາ</u> ຄ
1 of 2	2150 GHz 1001 pts)					100 kHz	#VBW			t 2.40150 s BW 100	
-			STATUS								MSG

2422-2441MHz

📕 Agi		m Analyzer	Swept SA								
× Mari			000000 G	iHz		NSE:INT		ALIGNAUTO	TRAC	MOLI21,2000	Marker
40.45	Imput: II Intic: Free Run AvgiHeid>100/100 Intic: Free Run II Gaint.ow #Atten: 20 dB Mkr2 2.440 96 GHz dB/div Ref 10.00 dBm 0.901 dBm										
0.00	alv k				بالحرباله	بالديدالم	رانار رانار. سائل	, at which	,Mr.,M.		Norma
10 N 20 N											Deit
30.0 1U.U											Fixed
U.U											c
50 N											Properties
nnn											Mo
	t 2.4215 5 BW 10			#VBW	100 kHz			#Sweep	Stop 2.44 500 ms (4150 GHz 1001 pts)	1 of
5G								STATU	5		



2442-2461MHz

2462-2480MHz

								iwept SA	n Analyzer S		
Marker	MOLI21,2000 []23456 [M	TRA	ALIGNAUTO E: Log-Pwr >100/100	Avg Type Avg Hold		Trig: Free		00000 G	4800200	s: ker 2 2.	Marl
Select Marker 2	dB/div Ref 10.00 dBm 2.193 dBm										
Norma	∳²		, Multhand La		بالاريالا	بالار بالام	" ՠ ես-ԻԿ	,	M.M.	\) ,₩_,,-,,₩	.og 0.00
Delt											10.0 70.0
Fixed											30.0 10.0
c	v										0.0
Properties											nn nn
Mo		0.000							<u></u>	2 40450	sn n
1 of	3150 GHz 1001 pts)	500 ms (#Sweep			100 kHz	#VBW			t 2.46150 s BW 100	
			STATUS								iG

8. Channel Separation

8.1. Test Equipment

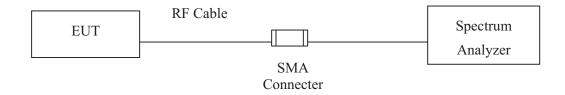
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40/ 100339	Jun, 2009
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Jun, 2009
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009

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

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

8.2. Test Setup



8.3. Limit

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.

8.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

8.5. Uncertainty

± 150Hz

8.6. Test Result of Channel Separation

Product	:	Mobile Printer
Test Item	:	Channel Separation
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

	Fraguanau	Measurement	Limit	Limit of (2/3)*20dB		
Channel No.	Frequency (MHz)	Level	(kHz)	Bandwidth (kHz)	Result	
		(kHz)		, , ,		
00	2402	1000	>25 kHz	753.3	Pass	
39	2441	1000	>25 kHz	753.3	Pass	
78	2480	1000	>25 kHz	753.3	Pass	

Channel 00 2402MHz

Channel 39 2441MHz

🗱 Agilent Spectrum Analyzer - Swept SA		i 🗆 🔀 🔿 🗚	Agilent Spectrum Analyzer - Swept SA				
Marker 2 2.40300000000 GHz Avg Type: Log-Per	10270/30190 00022, 2000 10270/30190 00022, 2000	Marker Ma	arker 1 2.44100000000 GI	4, serverall	Aug Type: Log-Par Avg/Held: \$4/100	TEACT 1 2 3 4 5 6	Marker
If Guind way #Atten: 20 dB	CCT · NNNNN	Select Marker	Input: XI I'N IFG	D: Lood () dircl unar #Atten: 20 dB	-	CCT)" NNNNN	Select Marker
10 dB/div Ref 10.00 dBm	2.403 00 GHz 4.095 dBm		dB/div Ref 10.00 dBm		MKF1	4.798 dBm	1
Log /1 /2 100 200		Normal 10, 20.	n 10				Norma
man man with the second		୍ୟା Deita -୩ -୩		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Munn		Delt
	- and	Fixed >				the second start	Fixed
#Res BW 100 kHz #VBW 100 kHz #Sweep 50	Span 20.00 MHz 00 ms (1001 pts)	Off #R	enter 2.44100 GHz les BW 100 kHz		#Sweep 50	Span 20.00 MHz 10 ms (1001 pts)	0
1 N 1 f 2,402 00 GHz 4,018 uBm 2 N 1 f 2,403 00 GHz 4,095 dBm			N 1 f 2.44100 N 1 f 2.44200	GH4 4.798 dBm GHz 4.822 dBm			
3		Properties + 4 6 6					Properties
7		7 More 9 1 of 2 11 12					Mor 1 of
ISG STATUS		usa usa			STATUS		

Channel 78 2480 MHz

🗊 Agilent Spectrum Analyzer -	Swept SA				L D 🔀
Marker 2 2.480000	mut DEPNO: Fast (,) TE	SENSE DVT Ig: Free Run	ALIGNAUTO Avg Type: Log Pwr Avg[Hold: 72/100	02:48:05PM Oct 21, 2000 TRACE 1 2 3 4 5 6 1 24 M	Peak Search
10 dD/div Rcf 10.00	IFGuin:Low #A	tten: 20 dB	Mk	2 2.480 00 GHz 5.177 dBm	Next Peak
0.00 10.0 20.0		Ň.			Next Right
-40.0 -40.0 -40.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	N.	hundre	<i></i>	Next Lef
			1	"manuture"	Marker Delta
Center 2.48000 GHz Res BW 100 kHz	#VBW 10	Y III	#Sweep	Span 20.00 MHz 500 ms (1001 pts)	Mkr→Cf
2 N 1 F 3 4 6 7	2.479.00 GHz 5 2.480 00 GHz 5	.169 dBm 177 dBm			Mkr→RefLv
8 9 10 11 12					More 1 of 2
/50			STATU	•	

Product	:	Mobile Printer
Test Item	:	Channel Separation
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

	Fraguancy	Measurement	Limit	Limit of (2/3)*20dB		
Channel No.	Frequency (MHz)	Level	(kHz)	Bandwidth (kHz)	Result	
	(WIIIZ)	(kHz)	(KIIZ)	Dandwiddii (KHZ)		
00	2402	1000	>25 kHz	746.7	Pass	
39	2441	1000	>25 kHz	746.7	Pass	
78	2480	1000	>25 kHz	740.0	Pass	

Channel 00 2402MHz

Channel 39 2441MHz

🕼 Aglant Spectrum Anatyzer - Swept SA	(=)n 🔀	D. Aylant Spectrum Anatyzer - Swept SA	12 in 👔
Marker 1 2.40200000000 GH7 Aug Type: Leg-Per Move 12:34	Peak Search	M SOUL ALL COLLONI ALLOCATIO DESCRIPTION (C. 15, 200) Marker 7 7.44700000000 GHz Avg Type: Log-Per More 1, 23456	Merker
Inger R6 WILL Last w Trig: Free Run Aughted to 100 mm (100 mm)	No. of Decide	Mkr2 2.442 00 GHz	elect Marker
1.049 dB	m	10 dB/div Ref 20.00 dBm 1.049 dBm	
am	Next Right	41 42	Norma
and	Next Left	sum	Delta
	Marker Delta	and the second s	Fixed
Center 2.40200 GHz Span 20.00 MI #Res BW 100 kHz #VBW 100 kHz #Sweep 500 ms (1001 pt Unstream to the part of the	Hz ts) MkrCF	Center 2.44100 GHz Span 20.00 MHz #Res BW 100 kHz #VBW 100 kHz #Sweep 500 ms (1001 pts) Use (sweep face) A Other and the sweep face of the	0
2 N 1 f 2.403.00.Glz 1200.dDm 1 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mkr→RefLvi	1 N 1 f 244100.0Hz 1527.0Bm 3 N 1 f 2442.00.0Hz 1049.dDm 4 G 8	Properties
7	More 1 of 2	7	Mon 1 of 2
MEG STATUS		usa status	

Channel 78 2480 MHz

III Agi	lent S	ipect		Analyzor	Swept SA								
Mari	ker	2	2.4	800000	000000 G	Hz NO. Fest	1	er na Run	Avg Iy AvgHo	pe: Log-Pwr Id- 68/100	INS T	PMDar 10,2009 402 1 2014 5 6 97 Mutation	Marker
					POLINE P	Gain:Low	Atten: 30	40		Mkr	2 2.480	00 GHz	SelectMarker 2 [▶]
10 de Log	3/div	,	Re	1 20.00 (dBm						1.8	368 dBm	
1111							مریا ^ش م	2					Normal
20.0 30.0 40.0			+				wł	h	m				Delta
-50.0 60.0 -70.0	dre.		-	ور ماکنو _ن	********	ليهم				A warm	 ,		Fixed
7Re	s Bl	W 1	00			#VE	W 100 KHz				500 ms	20.00 MHz (1001 pts)	on
	NN	1	;		2.479 0		2.000 de 1.858 de	3m	REAR	EUNCTRON WROTH	FUNCT		
3 4 5 6 7					2.000		1.000 00						Properties►
8 9 10 11 12													More 1 of 2
MBG										STATUS	-		

9. Dwell Time

9.1. Test Equipment

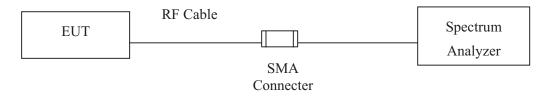
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40/ 100339	Jun, 2009
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Jun, 2009
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009

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

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

9.2. Test Setup



9.3. Limit

The dwell time shall be the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

9.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

9.5. Uncertainty

± 25msec

9.6. Test Result of Dwell Time

nnel 00,39,78 –DH5)

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Duty cycle	Dwell Time (Sec)	Limit (Sec)	Result
2402	2.900	8	50	0.46	0.186	0.4	Pass
2441	2.900	8	50	0.46	0.186	0.4	Pass
2480	2.900	8	50	0.46	0.186	0.4	Pass

Duty cycle =((Time slot length(ms)*Hopping of Number) / Sweep time (ms)

Dwell time = (Duty cycle / 79) * (79*0.4)

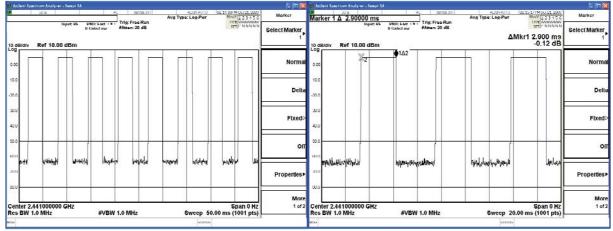
CH 00 Time Interval between hops

CH 00 Transmission Time

Agilant Sys	restrant Analyze									III April	lent Spectrum Analyzes - Swept					E 6 6
Reference	ce Level	10.00 dBm		SBISE 20	Avg T	ALISNAUTO pe: Log-Par	10402	10ct21,2000	Amplitude	Mark	ker 1 Δ 2.90000 ms		Trig: Free Run	Avg Type: Log-Pwr	02:13:31 PM Oct 21, 2000	Marker
	om 11.242 october 12.	Inpul: RI I'	Gaind and	#Atten: 20 dB	-		:07	UNNNN N	RefLevel		Inpul: P	IFGaird ow	#Atten: 20 dB		CCT) · NNNNN	Select Marker
0 dB/div	Ref 10.0	0 dBm							10.00 dBm	10 dB	Bidiv Ref 10.00 dBm	1		Δ	Mkr1 2.900 ms -0.11 dB	1
	1		11	ĨĨ	11	î î	T	1	Attenuation [20 dB]	uuu	×2	€1∆2	Ĩ		Ĩ	Norma
0.0									Scale/Div 10 dB	10.0 20.0						Delt
									Scale Type			-				Fixed
0.0				-					Presel Center	9010 -			1			o
	balgeor	aling and	h h h h h	Retrie ct	الهيلورية	bay-datives	wills!	bethick	Presel Adjust 0 Hz	-ann	boliahan Bulgaphu	landara)	44/and	ny trafferstates	Hellind	Properties
	.402000000	D GHz	#VBW 1	LO MH2		Sweep 5		pan O Hz			ter 2.402000000 GHz BW 1.0 MHz		(1.0 MHz	Swaan 2	Span 0 Hz 0.00 ms (1001 pts)	Mo 1 of
		00.png> saved		NY 11112		STATUS	2	vvi ptsj	1.	MSG	wir ny maiz	#101	r ny mfi2	STATUS		

CH39 Time Interval between hops

CH 39Transmission Time



lent Spectrum Analgaer - Swept SA							- 10 🔛	BA Agriants	Spectrum Analyzer - 1					1216
50.0		SENSE D/T	Avg Type	ALIBNAUTO e: Log-Pwr	02:10:13FM O	23456 NNNNN	Marker	Marker	1 Δ 7.90000	me	2012-2011	Aug Type: Log-Pur	MAL 122450	Merker
Input: 10	1902: Laad Trig: F FGalaci war #Attar	Free Run n: 20 dB			1077)	NNNNN	Select Marker	10 dB/dn		II Louid nor	Trig: Free Run JAtten, 20 dB	1	ΔMkr1 2.900 ms -0.14 dB	Select Marke
							Normal	0.00	*2	• 1A2				Norr
							Delta	10.0 20.0						D
							Fixed>	-80.0						Fix
							оп	-50.0				Ì		
ulay introduct increased	toolstool .	tion vill	lowphanel	logijaji I	analay	epel	Properties •	10.0	9445-ar	alest-philographics	**	sertallution tot	hysichiationama	Properti
ter 2.480000000 GHz BW 1.0 MHz	#VBW 1.0 M			Sweep 50.		in O Hz	More 1 of 2		2.480000000 G	1H7 #VBW 1			Span 0 H7 20.00 ms (1001 pts)	Ņ

CH 78 Time Interval between hops

CH 78 Transmission Time

Note:

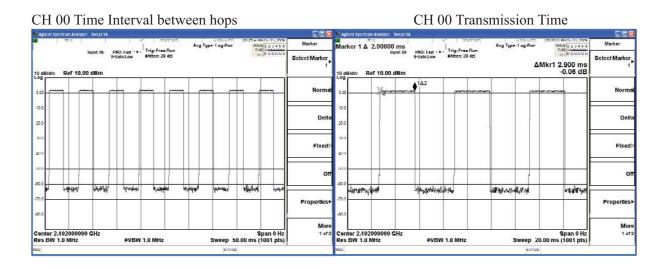
The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

Product	:	Mobile Printer
Test Item	:	Dwell Time
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK) (Channel 00,39,78 –DH5)

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Duty cycle	Dwell Time (Sec)	Limit (Sec)	Result
2402	2.900	8	50	0.46	0.186	0.4	Pass
2441	2.900	8	50	0.46	0.186	0.4	Pass
2480	2.900	8	50	0.46	0.186	0.4	Pass

Duty cycle =((Time slot length(ms)*Hopping of Number) / Sweep time (ms)

Dwell time = (Duty cycle / 79) * (79*0.4)



CH39 Time Interval between hops

CH 39Transmission Time

Agliant Spectrum Analyzer Swopt SA	-			
Input KH PND: Fast + F Trig. Fra HAtaliy' me #Atten: 2	Avg Type: Log-Dur we Run 20 dB	Marker Select Marker	Marker 1 & 2.90000 ms	Peak Search Next Peak
20 GB/dfv Ref 10.00 dBm		Normal	10 dislow Ref 10.00 dBm -0.06 dB -0.06 dB	Next Rig
		Delta	100	Next L
in		- Fixed>	8m	Marker De
	เสน ฟละม แปกล เปลงง เบล	оп	emu 600	Mkr -4
hi hjilijadh kaadadu' hayeshi khidu oo oo	feldi hishila) hibisa/ hishila	Properties ►	81/84/84/84 49-44-478-1784 5-14-44-44-44-44-44-44-44-44-44-44-44-44-	Mkr→Refi
conter 2.441000000 CHz les BW 1.0 MHz #VBW 1.0 MHz	8pan 0 H: iz Sweep 50.00 ms (1001 pts	More 1 of 2	Conter 2.441000000 GHz Epan 0 Hz Res BW 1.0 MHz #VBW 1.0 MHz Sweep 20.00 ms (1001 pts)	Mc 1 o
e4	SIARIES		MC44 SIRVIDA	

ct 21, 200 rker 1 ∆ 2.90000 ms Peak Search ALIBIAUTO Avg Type: Log Pwr AUGUA Avg Type: Log P Input: RF PNO: Faid -----¹ Trig: Free Run IFGaind way #Atten: 20 dB PNO: Faid ---- Trig: Free Run If Gainel our #Atten: 20 dB Select Marker NextPea ΔMkr1 2.900 ms 0.56 dB 10 dD/div Ref 10.00 dBm 10 dD/div Ref 10.00 dBm ♦1∆2 Nor Next Rigi Delt Next Left 30. Fixed Marker Delt 01 MR history physiphysion tilles wheth ANKARA BURGENAUSA 44 dist 11 Mkr-RefL Pre More 1 of 2 More 1 of 2 Center 2.4800000 Res BW 1.0 MHz GHz Span 0 Hz Sweep 50.00 ms (1001 pts) Center 2.4800000 Res BW 1.0 MHz Span 0 Hz Sweep 20.00 ms (1001 pts) #VBW 1.0 MHz #VBW 1.0 MHz

CH 78 Time Interval between hops

CH 78 Transmission Time

Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

10. Occupied Bandwidth

10.1. Test Equipment

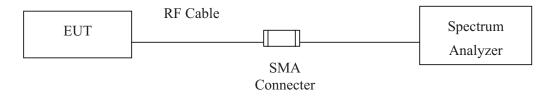
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40/ 100339	Jun, 2009
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Jun, 2009
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009

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

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

10.2. Test Setup



10.3. Limits

N/A

10.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

10.5. Uncertainty

± 150Hz

10.6. Test Result of Occupied Bandwidth

Product	:	Mobile Printer
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)(2402MHz)

(Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
	00	2402	1130		NA

Figure Channel 00:

Peak Search	03:00:51 PM Oct 21, 2009 TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P N N N N N	ALIGN AUTO e: Log-Pwr : 52/100	Avg Typ Avg Hold		Trig: Free #Atten: 20	A HZ NO: Fast 🍙 Gain:Low	out: RF PI	2.4020000	
NextPe	2.402 00 GHz 4.060 dBm	Mkr1	2			10) III III	lBm	Ref 10.00 d	
Next Rig		A		1 vj					24
Next L			0 dB MHz	-20.0	-+				
Marker De	F		Q		N				
Mkr→			your	Ŵ	لم	Mann	And Mr.		Į.
Mkr→Refl	munimum and -						W/ ^	to a to be of the top of top	
M α 1 α	Span 20.00 MHz 500 ms (1001 pts)	#Sweep 5			100 kHz	#VBW		200 GHz 00 kHz	

Product	:	Mobile Printer
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)(2441MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
39	2441	1130		NA

Figure Channel 39:

50 Ω larker 1 2.44100000000 Input: RF			ALIGNAUTO e: Log-Pwr d: 24/100	03:01:29 PM Oct 21, 2009 TRACE 1 2 3 4 5 6 TYPE MWWWW	Trace/Det
D dB/div Ref 10.00 dBm	IFGain:Low #Atten: 2	0 dB		2.441 00 GHz 4.773 dBm	Select Trace Trace 1
		1 			Clear Writ
0.0		-20.00 dB 1.13 MHz			Trace Avera
2.0	N				Max Ho
	www.ww	we have	And Letan		Min Ho
			- Alt	had rad appropriate of the second of the sec	View/Blan Trace O
enter 2.44100 GHz Res BW 100 kHz	#VBW 100 kHz		#Sweep	Span 20.00 MHz 500 ms (1001 pts)	M o 1 o

Product	:	Mobile Printer
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)(2480MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
78	2480	1130		NA

Figure Channel 78:

50 Ω larker 1 2.48000000000 Input: RF	AC SENSE:INT D GHZ PNO: Fast IEGain:Low #Atten: 20 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 43/100	03:01:54 PM Oct 21, 2009 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N N	Peak Search
D dB/div Ref 10.00 dBm		Mkr	1 2.480 00 GHz 5.117 dBm	NextPea
og 				Next Rig
0.0		20.00 dB .13 MHz		Next Le
	M M			Marker De
	VW '	W Amartina was		Mkr→(
).0			Marine and a state of the state	Mkr→RefL
enter 2.48000 GHz Res BW 100 kHz	#VBW 100 kHz	#Sweep	Span 20.00 MHz 500 ms (1001 pts)	Mo 1 o

Product	:	Mobile Printer
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK) (2402MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	1120		NA

Figure Channel 00:

50 Ω	AC SENSE	ALIGN AUTO Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6	System Settings
Input: RF	PNO: Fast Trig: Free R FGain:Low #Atten: 20 d	un Avg Hold:>100/100	DET P N N N N	Annotations
dB/div Ref 10.00 dBm		Mki	1 2.402 00 GHz 4.095 dBm	Local Settings
.00	1 1 1 1 1 1 1			Them Flat Monochrom
0.0		-20.00 dB		Deekligh
0.0		1.12 MHz		Backligh
0.0	M			Backlig
0.0 .	M	Wanth	μ	
h h	J. Mark	- Com	Muneric Manual	
A subscription in the subscription of the subs				
0.0				
enter 2.40200 GHz Res BW 100 kHz	#VBW 100 kHz	#Sweep	Span 20.00 MHz 500 ms (1001 pts)	

Product	:	Mobile Printer
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK) (2441MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
39	2441	1120		NA

Figure Channel 39:

50 Ω arker 1 2.4410000000 Input: RF	00 GHz	E:INT ALIGNA Avg Type: Log-F Run Avg Hold: 34/100	Wr TRACE 1 2 3 4 5 6	Peak Search
	IFGain:Low #Atten: 20	1B	TYPE MWWWWW DET P NNNNN	NextPea
dB/div Ref 10.00 dBm			4.852 dBm	
.00	μ			Next Rig
0.0		-20.00 dB		
0.0		1.12 MHz		Next L
0.0	N			Marker De
1.0 1	.MM	Man March	μ.	
	Jan Wind MM			Mkr→
D.O			most John monor have and	Mkr→Refl
0.0				
enter 2.44100 GHz Res BW 100 kHz	#VBW 100 kHz	#Swe	Span 20.00 MHz ep 500 ms (1001 pts)	М с 1 о

Product	:	Mobile Printer
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)(2480MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
78	2480	1110		NA

Figure Channel 78:

arker 1 2.48000000000 Input: RF	AC SENS D GHZ PN0: Fast IFGain:Low AC SENS Trig: Free F #Atten: 20 c	Avg Type lun Avg Hold	ALIGNAUTO e: Log-Pwr : 49/100	02:59:41 PM Oct 21, 2009 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	Peak Search
dB/div Ref 10.00 dBm			Mkr1	2.480 00 GHz 5.219 dBm	NextPea
.00					Next Rig
0.0		-20.00 dB 1.11 MHz			Next Le
0.0					Marker De
······································	m way way	had handly	1	Marile Most What man	Mkr→C
0.0				"Twee, the week of the second	Mkr→RefL
enter 2.48000 GHz Res BW 100 kHz	#VBW 100 kHz		#Sweep	Span 20.00 MHz 500 ms (1001 pts)	Mo 1 o

11. EMI Reduction Method During Compliance Testing

No modification was made during testing.