FCC TEST REPORT

REPORT NO.: RF960614H02
MODEL NO.: 8550-00026 A
RECEIVED: June 14, 2007
TESTED: June 14 to 25, 2007
ISSUED: June 29, 2007

APPLICANT: Socket Communication Inc.

ADDRESS: 39700 Eureka Drive, Newark, CA, 94560-4808 USA

ISSUED BY: Advance Data Technology Corporation

LAB LOCATION: No. 81-1, Lu Liao Keng, 9 Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien, Taiwan, R.O.C.

0536

No. 2177-01

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1 CERTIFICATION

PRODUCT :	USB Bluetooth 2.0 Adapter
BRAND NAME :	Socket Mobile
MODEL NO. :	8550-00026 A
APPLICANT :	Socket Mobile, Inc.
TESTED DATE:	June 14 to 25, 2007
TEST ITEM :	ENGINEERING SAMPLE
STANDARDS :	47 CFR Part 15, Subpart C (Section 15.247), ANSI C63.4-2003

The above equipment (Model: 8550-00026 A) has been tested by **Advance Data Technology Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Claire Kuan , **DATE:** June 29, 2007
(Claire Kuan, Specialist)

TECHNICAL ACCEPTANCE : Hank Chung , **DATE:** June 29, 2007
Responsible for RF
(Hank Chung, Deputy Manager)

APPROVED BY : , **DATE:** June 29, 2007
(May Chen, Deputy Manager)

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	**Test Type and Limit**	**Result**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is –9.25dB at 3.680MHz
15.247(a)(1)(I)-(ii)	Number of Hopping Frequency Used Spec.: At least 15 channels	PASS	Meet the requirement of limit
15.247(a)(1)(ii)	Dwell Time on Each Channel Spec. : Max. 0.4 second within 31.6 second	PASS	Meet the requirement of limit
15.247(a)(1)(I)-(ii)	Hopping Channel Separation Spec. : Min. 25 kHz or two-thirds of 20 dB bandwidth, which ever is greater	PASS	Meet the requirement of limit
15.247(a)(2)	Spectrum Bandwidth of a Frequency Hopping Sequence Spread Spectrum System	PASS	Report reference
15.247(b)	Maximum Peak Output Power Spec.: max. 125mW	PASS	Meet the requirement of limit
15.247(c)	Transmitter Radiated Emissions Spec.: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is –2.20dB at 4960.00MHz
15.247(c)	Band Edge Measurement	PASS	Meet the requirement of limit

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	USB Bluetooth 2.0 Adapter
MODEL NO.	8550-00026 A
FCC ID	LUBUSB-2I
POWER SUPPLY	DC 5V from host equipment
MODULATION TYPE	GFSK, 8DPSK, π/4-DQPSK
MODULATION TECHNOLOGY	FHSS
FREQUENCY RANGE	2402MHz ~ 2480MHz
NUMBER OF CHANNEL	79
OUTPUT POWER	48.084mW
ANTENNA TYPE	Built-in printing antenna with 0dBi antenna gain
DATA CABLE	NA
INTERFACE	USB
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT was pre-tested under following test mode, and the test data was recorded in this report:

Pre-test Mode	MODULATION TYPE
Mode A	GFSK
Mode B	8DPSK
Mode C	π/4-DQPSK

The worst conducted and radiated test (Above 1 GHz) was found in mode A and mode C. The worst radiation emissions (Below 1 GHz) was found in mode A. Their test data were recorded in this report individually.

2. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

Seventy-nine channels are provided to this EUT.

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2431	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461		

3.3 TEST MODE APPLICABLITY AND TESTED CHANNEL DETAIL:

EUT configure mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
-	√	√	√	√	Modulation Type: GFSK, 8DPSK, π/4-DQPSK

Where PLC: Power Line Conducted Emission RE<1G RE: Radiated Emission below 1GHz
RE≥1G: Radiated Emission above 1GHz APCM: Antenna Port Conducted Measurement

Power Line Conducted Emission Test:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
0 to 78	0	FHSS	GFSK	DH5
0 to 78	0	FHSS	π/4-DQPSK	DH5

Radiated Emission Test (Below 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
0 to 78	0	FHSS	GFSK	DH5

Radiated Emission Test (Above 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
0 to 78	0,39,78	FHSS	GFSK	DH5
0 to 78	0,39,78	FHSS	π/4-DQPSK	DH5

Bandedge Measurement:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
0 to 78	0, 78	FHSS	GFSK	DH5
0 to 78	0, 78	FHSS	π/4-DQPSK	DH5

Antenna Port Conducted Measurement:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
0 to 78	0, 39, 78	FHSS	GFSK	DH5
0 to 78	0, 39, 78	FHSS	8DPSK	DH5
0 to 78	0, 39, 78	FHSS	π/4-DQPSK	DH5

3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a USB Bluetooth 2.0 Adapter. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C. (15.247)
ANSI C63.4 : 2003

All test items have been performed and recorded as per the above standards.

3.5 DESCRIPTION OF SUPPORT UNITS

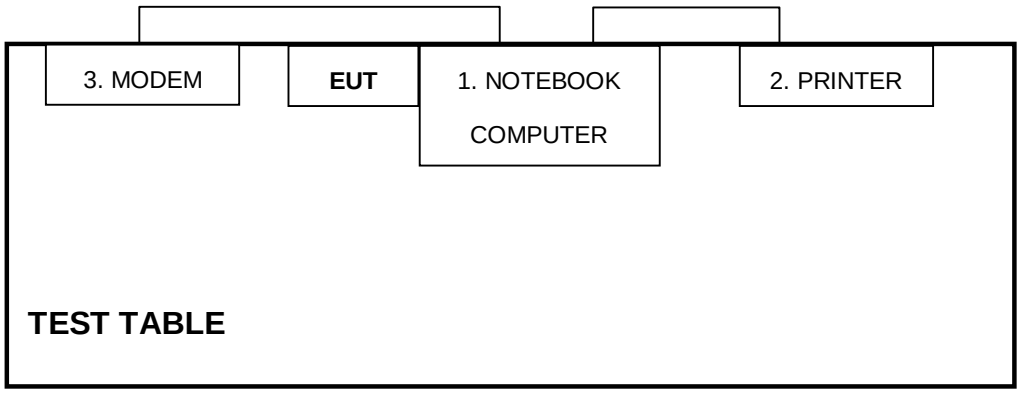
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP18L	6976685584	FCC DoC
2	PRINTER	HP	hp deskjet 3535	TH45P164GT	FCC DoC
3	MODEM	ACEEX	1414	0206026779	IFAXDM1414

No.	Signal cable description
1	NA
2	1.6 m braid shielded wire, terminated with DB25 and Centronics connector via metallic frame, w/o core.
3	1.2 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.

Note: 1. All power cords of the above support units are unshielded (1.8m).

3.6 CONFIGURATION OF SYSTEM UNDER TEST



4 TEST PROCEDURES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15-0.5 0.5-5 5-30	66 to 56 56 60	56 to 46 46 50

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. All emanations from a class B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver	ESCS 30	847124/029	Mar. 28, 2008
Line-Impedance Stabilization Network(for EUT)	ENV-216	100071	Nov. 26, 2007
Line-Impedance Stabilization Network(for Peripheral)	ESH3-Z5	848773/004	Oct. 26, 2007
RF Cable (JETBAO)	RG233/U	Cable_CB_01	Dec. 09, 2007
Terminator	50	2	Oct. 30, 2007
Software	ADT_Cond_V7.3.2	NA	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in ADT Shielded Room No. B.
3. The VCCI Con B Registration No. is C-2193.

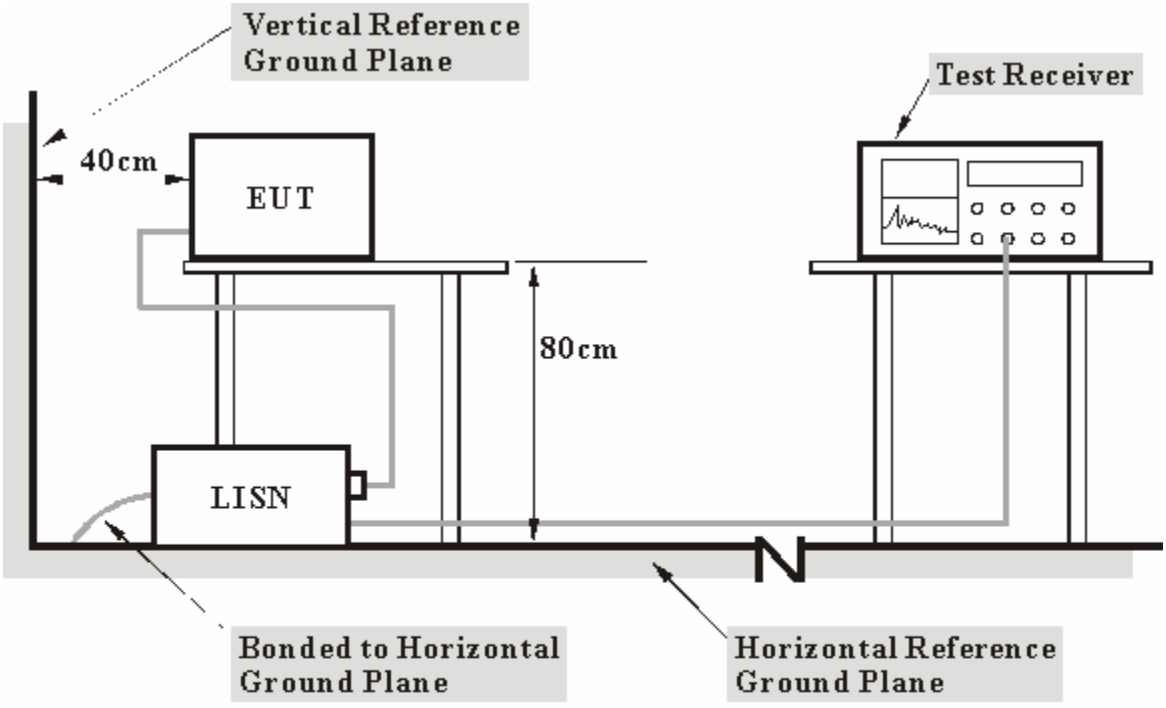
4.1.3 TEST PROCEDURES

a. The EUT/HOST was placed 0.4 meters from the conducting wall of the shielded room with EUT/HOST being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT/HOST were checked for maximum conducted interference.

c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

4.1.4 TEST SETUP



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.1.5 EUT OPERATING CONDITIONS

a. Plug the EUT into the support unit 1 (Notebook computer) and placed it on the testing table.

b. The support unit 1 (Notebook computer) ran a test program “Blue test” to enable EUT under transmission condition continuously at specific channel frequency.

c. Notebook computer sends "H" messages to printer, and the printer prints them on paper.

d. Notebook computer sends "H" messages to modem.

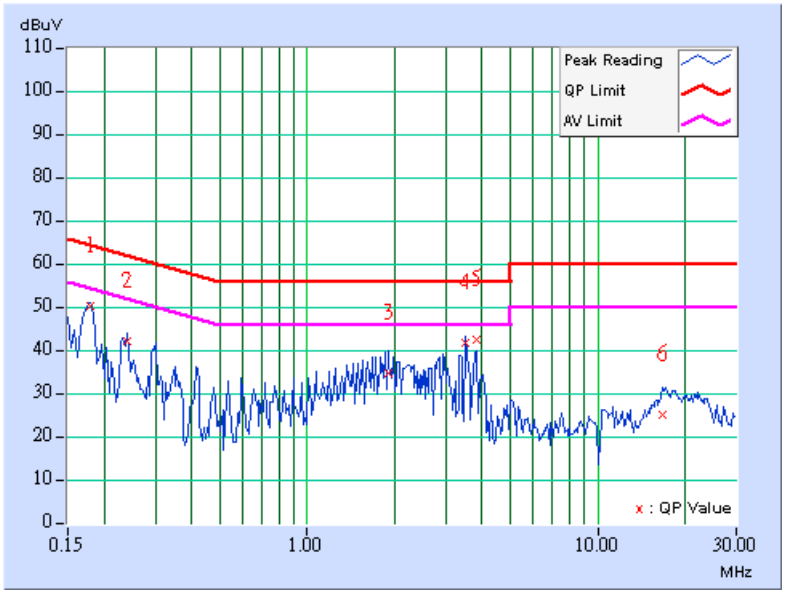
4.1.6 TEST RESULTS

FOR GFSK MODULATION TYPE:

INPUT POWER (SYSTEM)	120Vac, 60 Hz	**6DB BANDWIDTH**	9 kHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 65%RH, 960 hPa	**PHASE**	Line (L)
TESTED BY	Phoenix Huang		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.180	0.40	49.26	-	49.66	-	64.49	54.49	-14.83	-
2	0.240	0.40	41.17	-	41.57	-	62.10	52.10	-20.53	-
3	1.908	0.49	33.71	-	34.20	-	56.00	46.00	-21.80	-
4	3.516	0.58	40.91	-	41.49	-	56.00	46.00	-14.51	-
5	3.815	0.59	41.40	-	41.99	-	56.00	46.00	-14.01	-
6	16.679	1.07	23.98	-	25.05	-	60.00	50.00	-34.95	-

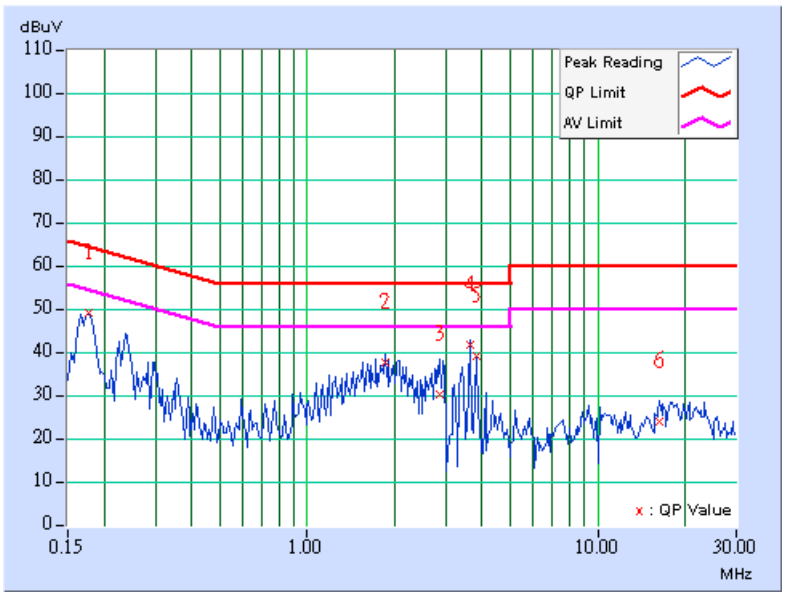
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



INPUT POWER (SYSTEM)	120Vac, 60 Hz	**6dB BANDWIDTH**	9 kHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 65%RH, 960 hPa	**PHASE**	Neutral (N)
TESTED BY	Phoenix Huang		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.177	0.20	48.01	-	48.21	-	64.61	54.61	-16.40	-
2	1.845	0.38	36.73	-	37.11	-	56.00	46.00	-18.89	-
3	2.857	0.44	29.05	-	29.49	-	56.00	46.00	-26.51	-
4	3.633	0.48	40.64	-	41.12	-	56.00	46.00	-14.88	-
5	3.813	0.49	38.08	-	38.57	-	56.00	46.00	-17.43	-
6	16.379	1.23	23.01	-	24.24	-	60.00	50.00	-35.76	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.

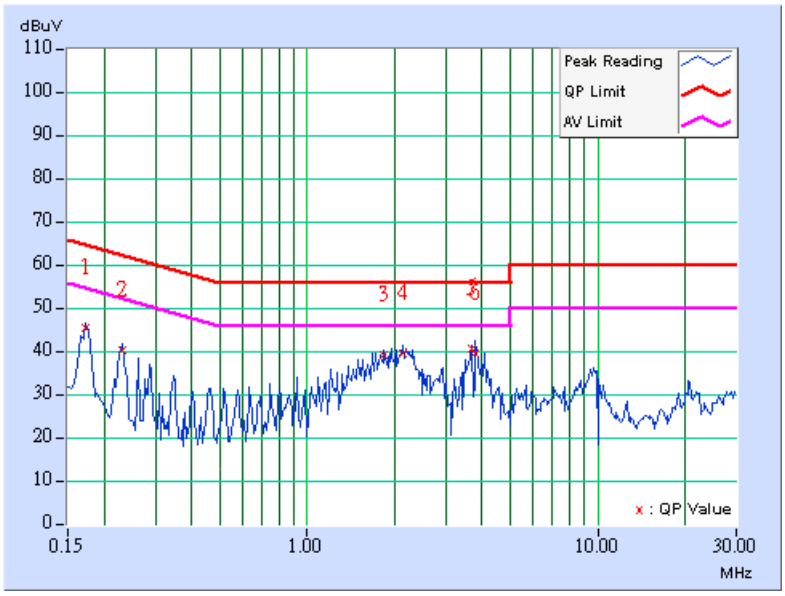


FOR π/4-DQPSK MODULATION TYPE:

INPUT POWER (SYSTEM)	120Vac, 60 Hz	**6DB BANDWIDTH**	9 kHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 60%RH, 960 hPa	**PHASE**	Line (L)
TESTED BY	Max Tseng		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.173	9.77	35.65	-	45.42	-	64.79	54.79	-19.37	-
2	0.232	9.80	30.36	-	40.16	-	62.38	52.38	-22.22	-
3	1.841	9.90	29.45	-	39.35	-	56.00	46.00	-16.65	-
4	2.130	9.90	29.57	-	39.47	-	56.00	46.00	-16.53	-
5	3.684	9.90	31.00	-	40.90	-	56.00	46.00	-15.10	-
6	3.801	9.90	29.55	-	39.45	-	56.00	46.00	-16.55	-

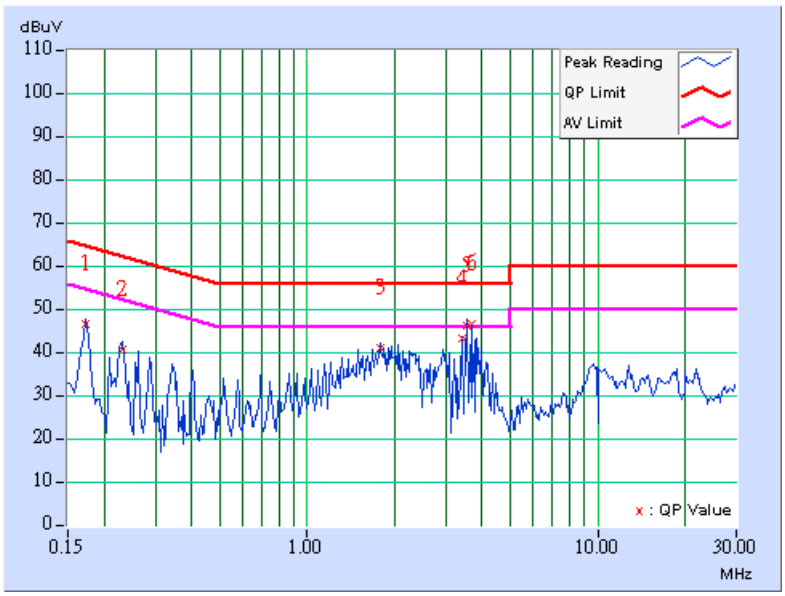
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



INPUT POWER (SYSTEM)	120Vac, 60 Hz	**6dB BANDWIDTH**	9 kHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 60%RH, 960 hPa	**PHASE**	Neutral (N)
TESTED BY	Max Tseng		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.173	9.77	36.61	-	46.38	-	64.79	54.79	-18.41	-
2	0.232	9.80	30.85	-	40.65	-	62.38	52.38	-21.73	-
3	1.783	9.90	31.33	-	41.23	-	56.00	46.00	-14.77	-
4	3.395	9.90	33.42	-	43.32	-	56.00	46.00	-12.68	-
5	3.566	9.90	36.28	22.64	46.18	32.54	56.00	46.00	-9.82	-13.46
6	**3.680**	**9.90**	**36.85**	**24.35**	**46.75**	**34.25**	**56.00**	**46.00**	**-9.25**	**-11.75**

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



4.2 NUMBER OF HOPPING FREQUENCY USED

4.2.1 LIMIT OF HOPPING FREQUENCY USED

At least 15 hopping frequencies, and should be equally spaced.

4.2.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 21, 2007

Note:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

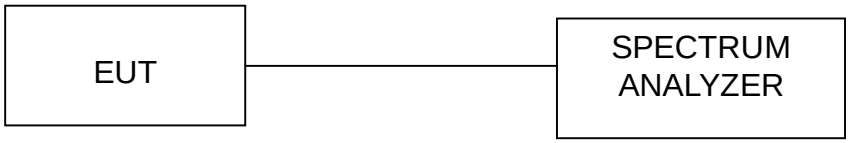
4.2.3 TEST PROCEDURES

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Set the SA on MaxHold Mode, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been recorded.
4. Set the SA on View mode and then plot the result on SA screen.
5. Repeat above procedures until all frequencies measured were complete.

4.2.4 DEVIATION FROM TEST STANDARD

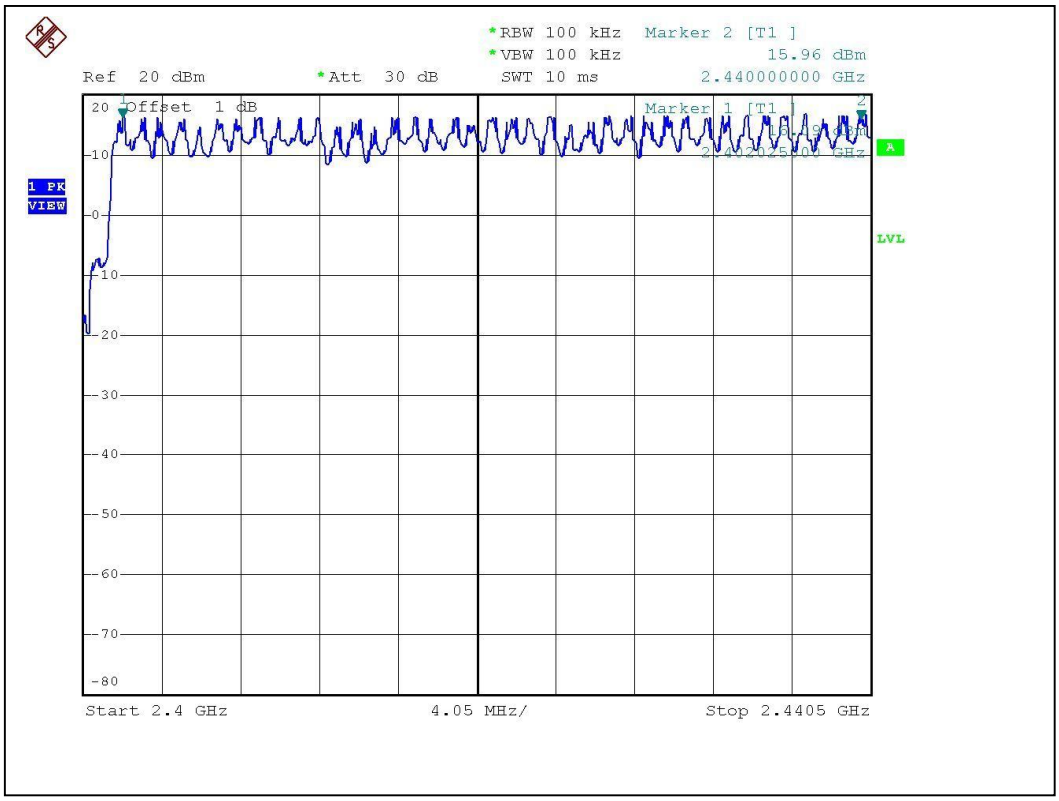
No deviation

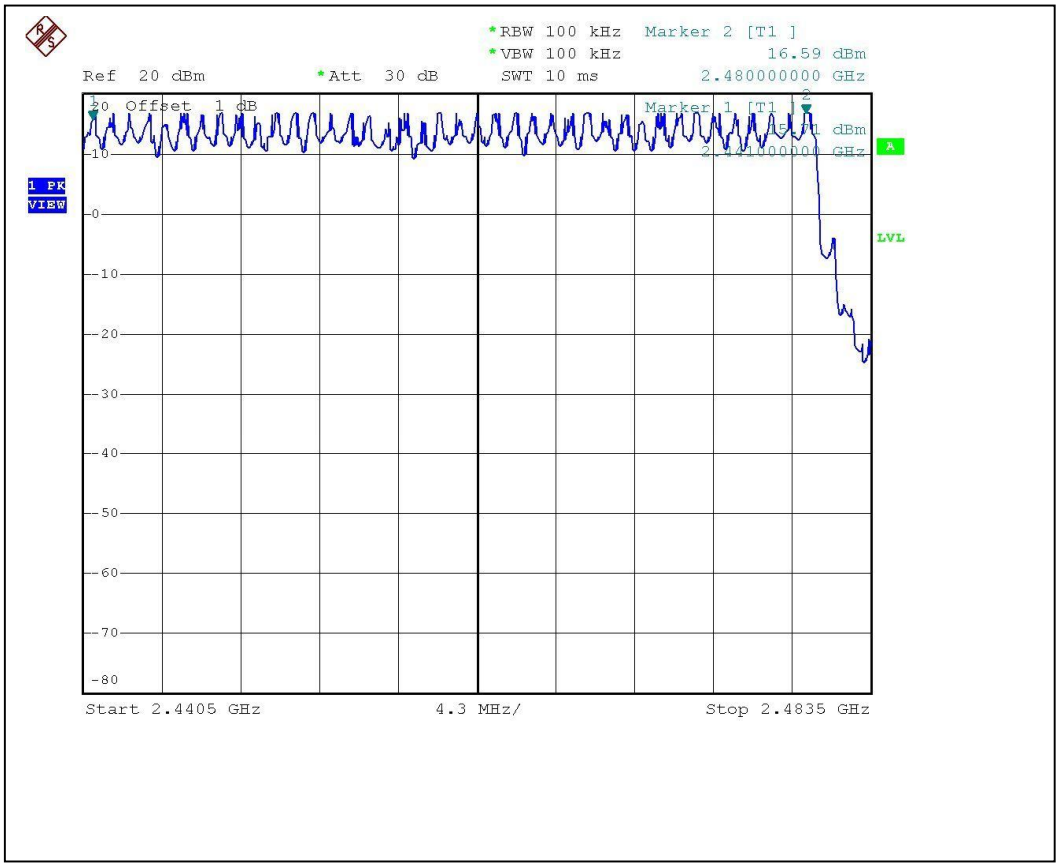
4.2.5 TEST SETUP



4.2.6 TEST RESULTS

There are 79 hopping frequencies in the hopping mode. Please refer to next two pages for the test result. On the plots, it shows that the hopping frequencies are equally spaced.


*RBW 100 kHz
Marker 2 [T1]
*VBW 100 kHz
15.96 dBm
Ref 20 dBm
*Att 30 dB
SWT 10 ms
2.440000000 GHz
20 Offset 1 dB
Marker 1 [T1]
1 PK
VIEW
LVL
Start 2.4 GHz
4.05 MHz/
Stop 2.4405 GHz


*RBW 100 kHz
Marker 2 [T1]
*VBW 100 kHz
16.59 dBm
Ref 20 dBm
*Att 30 dB
SWT 10 ms
2.480000000 GHz
20 Offset 1 dB
Marker 1 [T1]
1 PK
VIEW
LVL
Start 2.4405 GHz
4.3 MHz/
Stop 2.4835 GHz

4.3 DWELL TIME ON EACH CHANNEL

4.3.1 LIMIT OF DWELL TIME USED

For FHSS, the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 31.6 second period. For hybrid systems, the average time of occupancy on any frequency should not exceed 0.4 seconds within a time period in seconds equal to the number of hopping frequencies employed multiplied by 0.4.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 21, 2007

Note:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

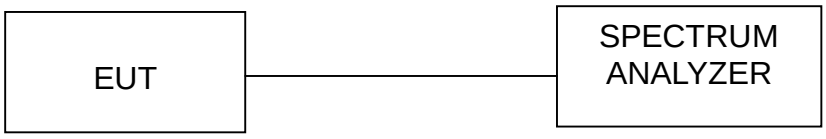
4.3.3 TEST PROCEDURES

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Adjust the center frequency of SA on any frequency be measured and set SA to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
4. Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
5. Repeat above procedures until all frequencies measured were complete.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP

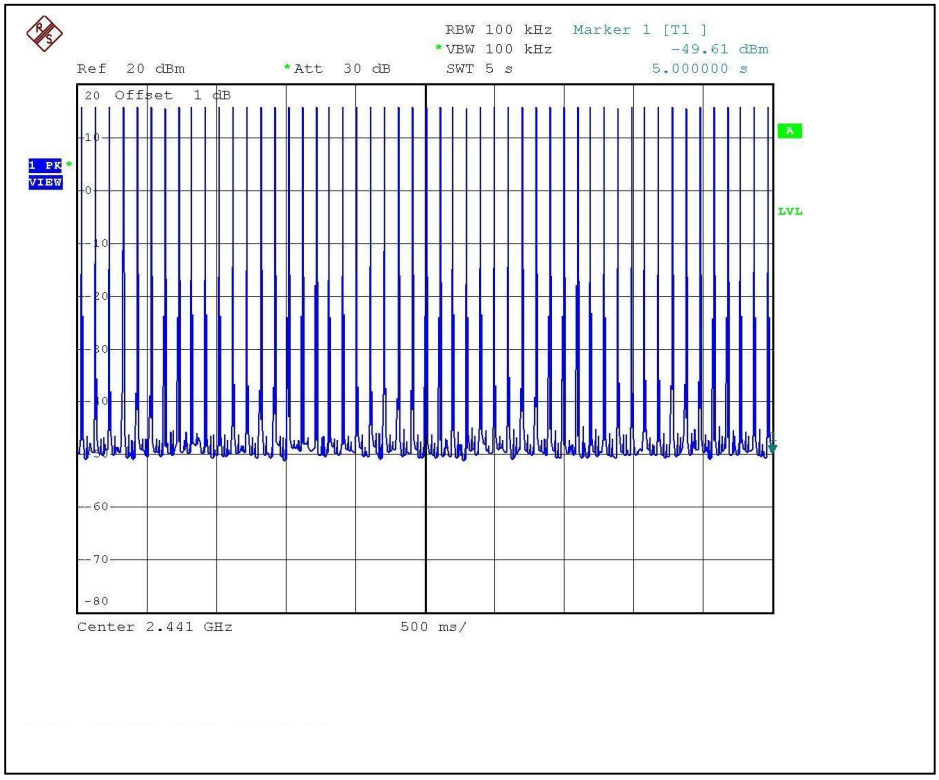


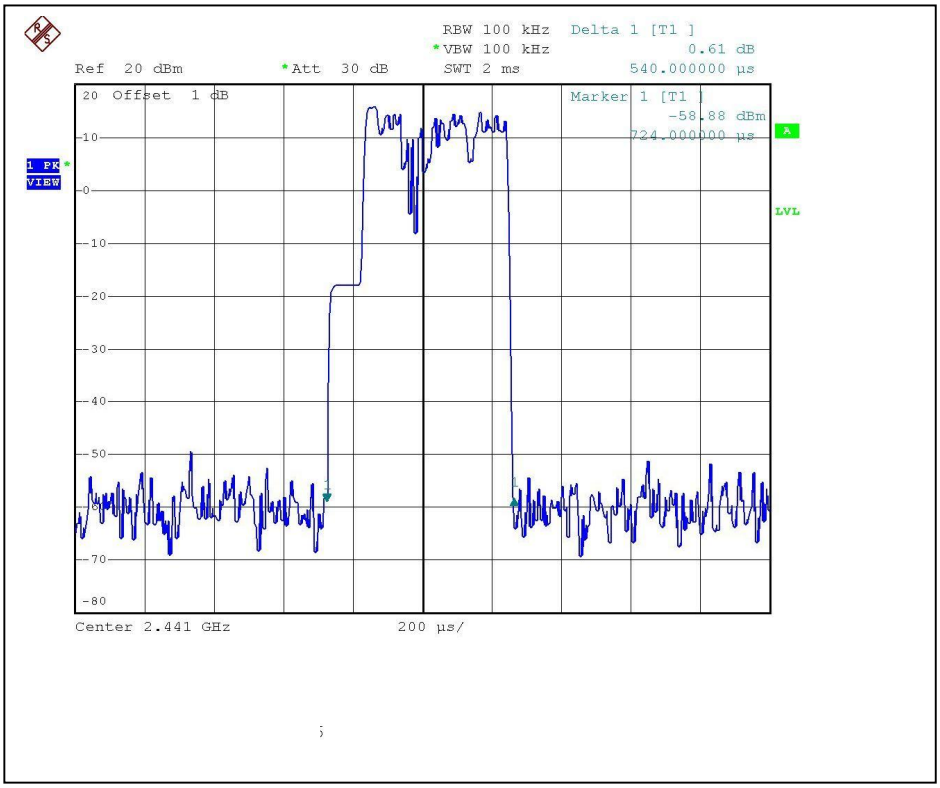
4.3.6 TEST RESULTS

Mode	Number of transmission in a 31.6 (79Hopping*0.4)	Length of transmission time (msec)	Result (msec)	Limit (msec)
DH1	51 (times / 5 sec) *6.32=322.32 times	0.54	174.05	400
DH3	27 (times / 5 sec) *6.32=164.32 times	1.81	308.86	400
DH5	17 (times / 5 sec) *6.32=107.44 times	3.07	329.84	400

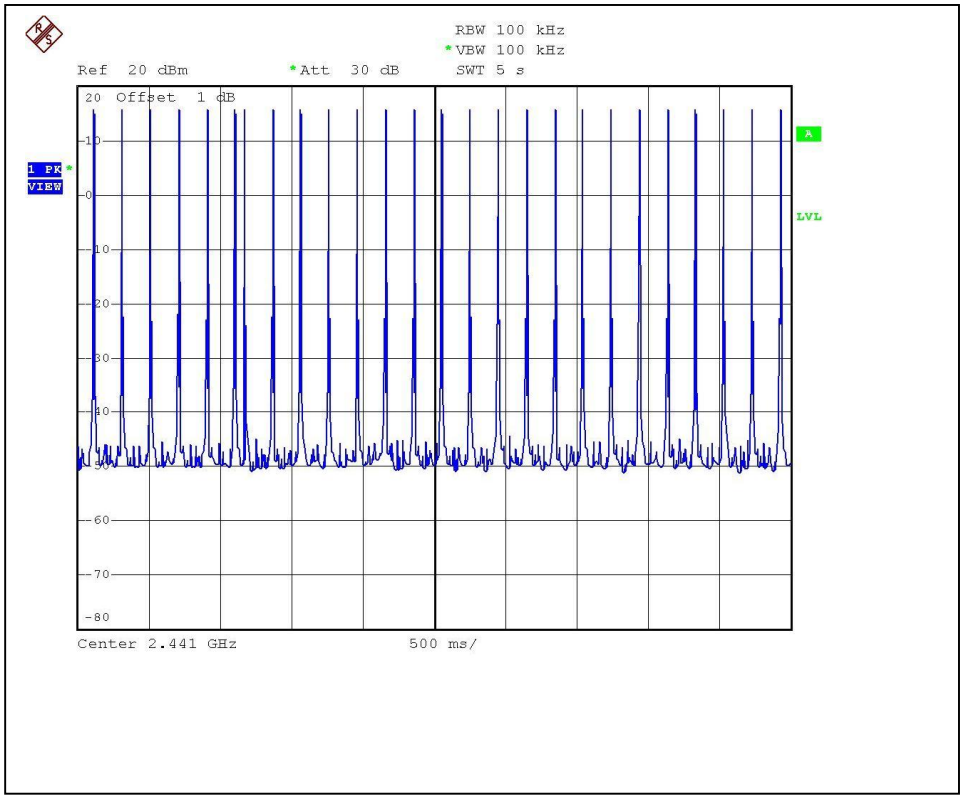
Test plots of the transmitting time slot are shown on next three pages.

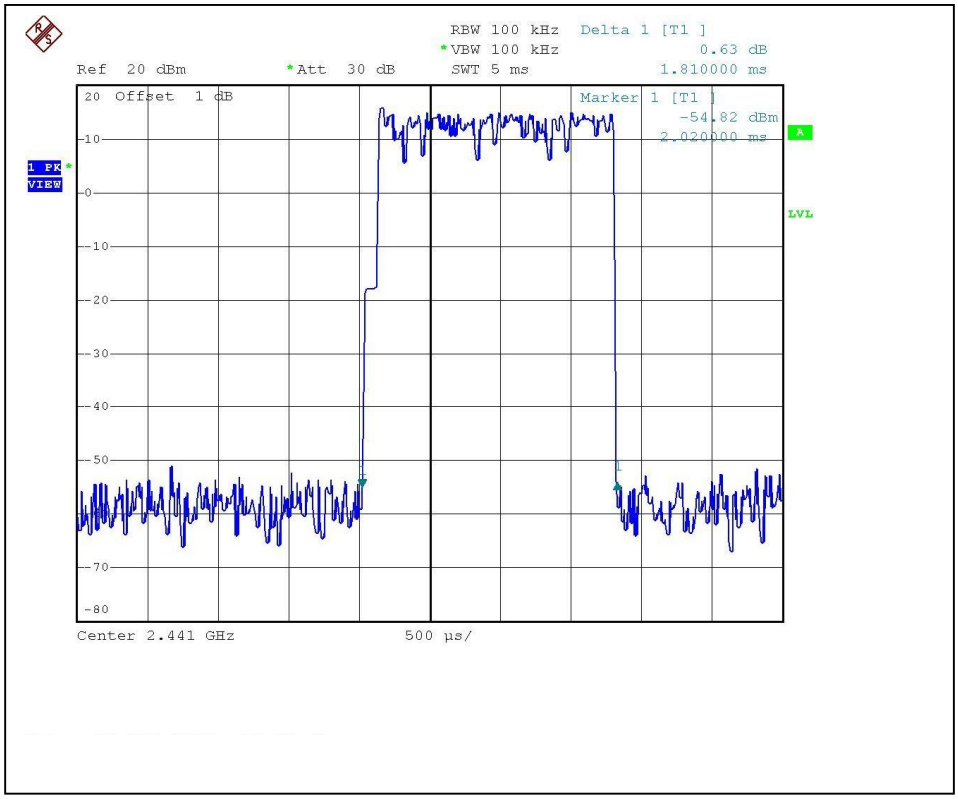
DH1


RBW 100 kHz
*VBW 100 kHz
SWT 5 s
Marker 1 [T1]
-49.61 dBm
5.000000 s
Ref 20 dBm
*Att 30 dB
20 Offset 1 dB
1 PK VIEW
A
LVL
Center 2.441 GHz
500 ms/

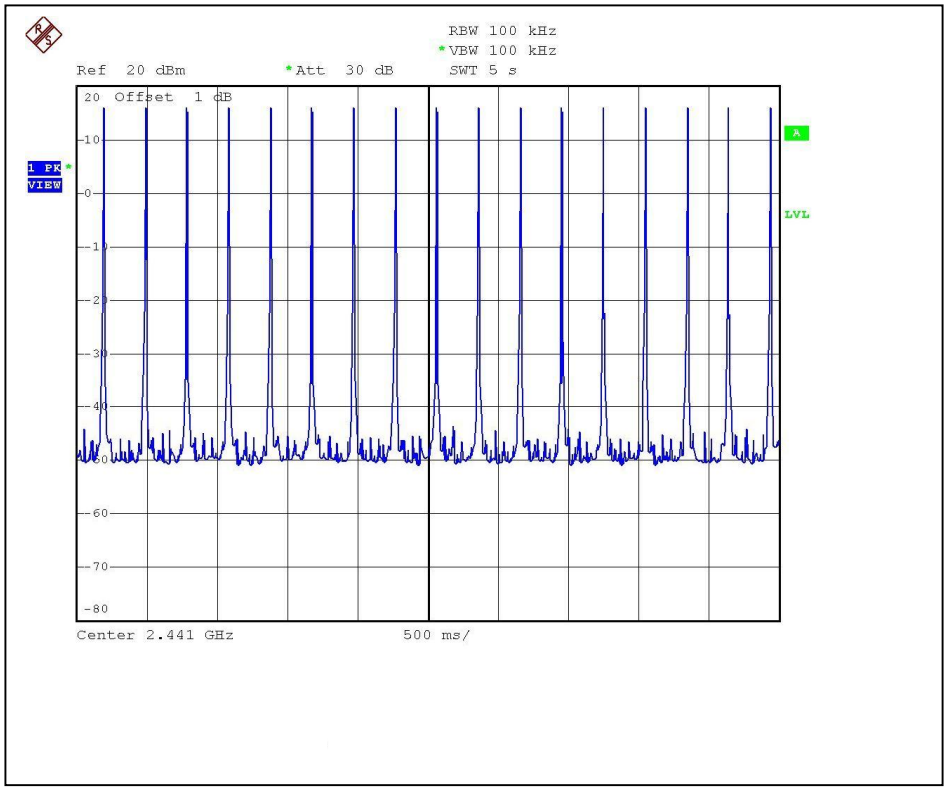

RBW 100 kHz
*VBW 100 kHz
SWT 2 ms
Delta 1 [T1]
0.61 dB
540.000000 µs
Marker 1 [T1]
-58.88 dBm
724.000000 µs
Ref 20 dBm
*Att 30 dB
20 Offset 1 dB
1 PK VIEW
A
LVL
Center 2.441 GHz
200 µs/

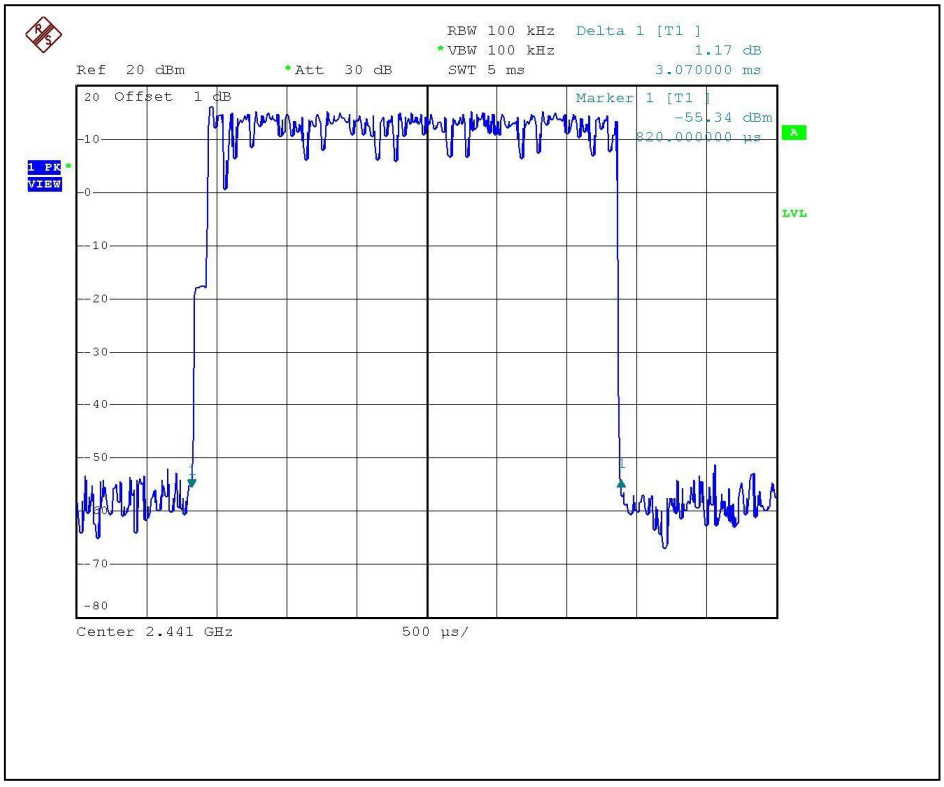
DH3


RBW 100 kHz
*VBW 100 kHz
Ref 20 dBm
*Att 30 dB
SWT 5 s
20 Offset 1 dB
1 PK
VIEW
A
LVL
Center 2.441 GHz
500 ms/


RBW 100 kHz
Delta 1 [T1]
*VBW 100 kHz
0.63 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
1.810000 ms
20 Offset 1 dB
Marker 1 [T1]
-54.82 dBm
2.020000 ms
1 PK
VIEW
A
LVL
Center 2.441 GHz
500 µs/

DH5


RBW 100 kHz
*VBW 100 kHz
Ref 20 dBm
*Att 30 dB
SWT 5 s
20 Offset 1 dB
1 PK VIEW
A
LVL
Center 2.441 GHz
500 ms/


RBW 100 kHz
Delta 1 [T1]
*VBW 100 kHz
1.17 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
3.070000 ms
20 Offset 1 dB
Marker 1 [T1]
-55.34 dBm
820.000000 µs
1 PK VIEW
A
LVL
Center 2.441 GHz
500 µs/

4.4 CHANNEL BANDWIDTH

4.4.1 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 21, 2007

Note:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.4.2 TEST PROCEDURE

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

4.4.3 DEVIATION FROM TEST STANDARD

No deviation

4.4.4 TEST SETUP

4.4.5 EUT OPERATING CONDITION

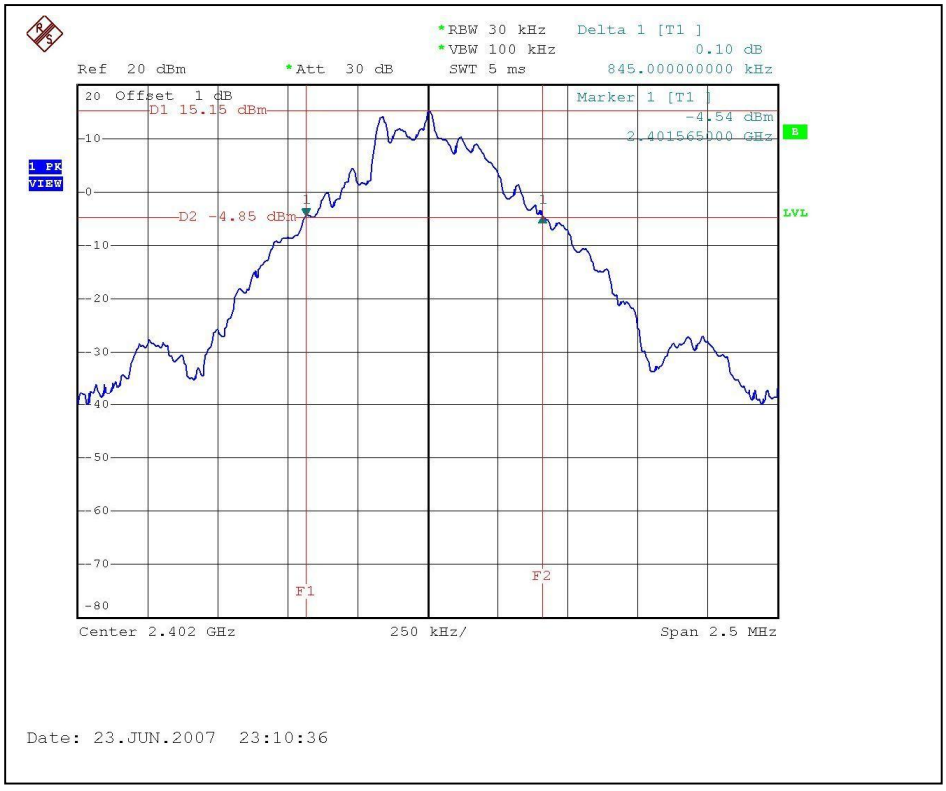
The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

4.4.6 TEST RESULTS

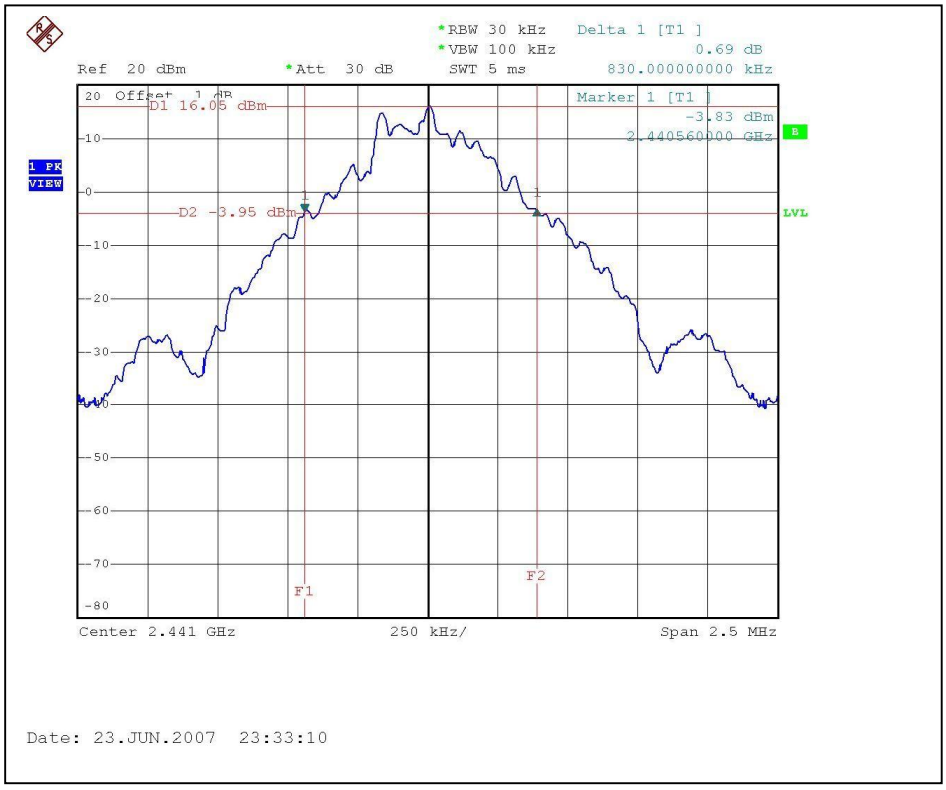
MODULATION TYPE	GFSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 62%RH, 960 hPa	TESTED BY	Tony Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (kHz)
0	2402	845
39	2441	830
78	2480	865

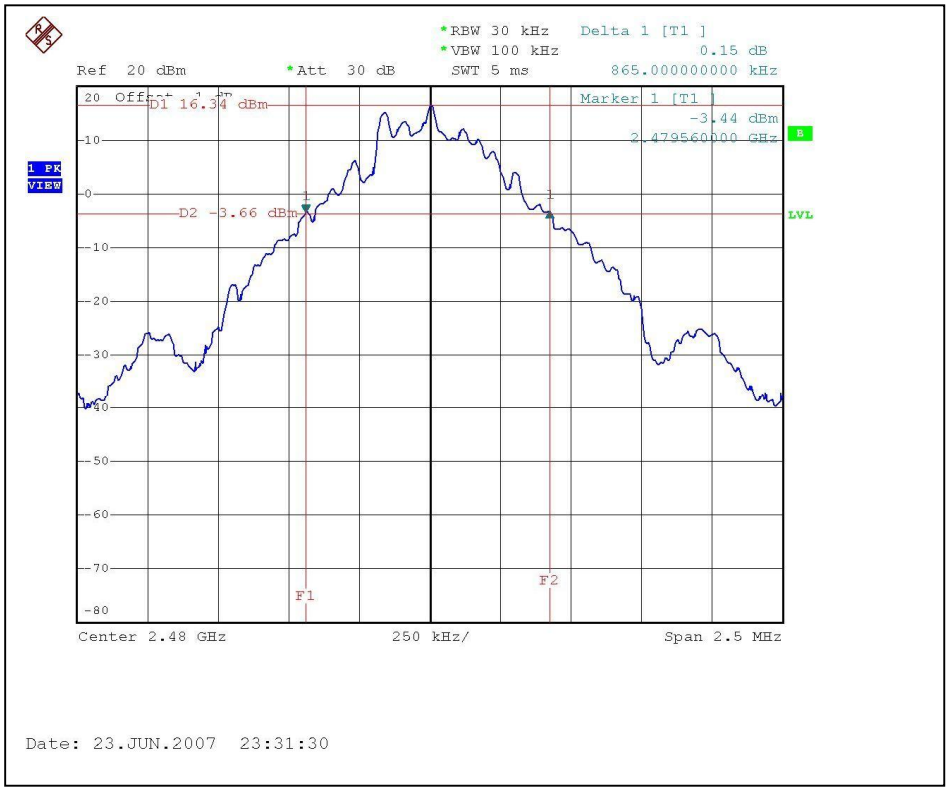
Channel 0



Channel 39



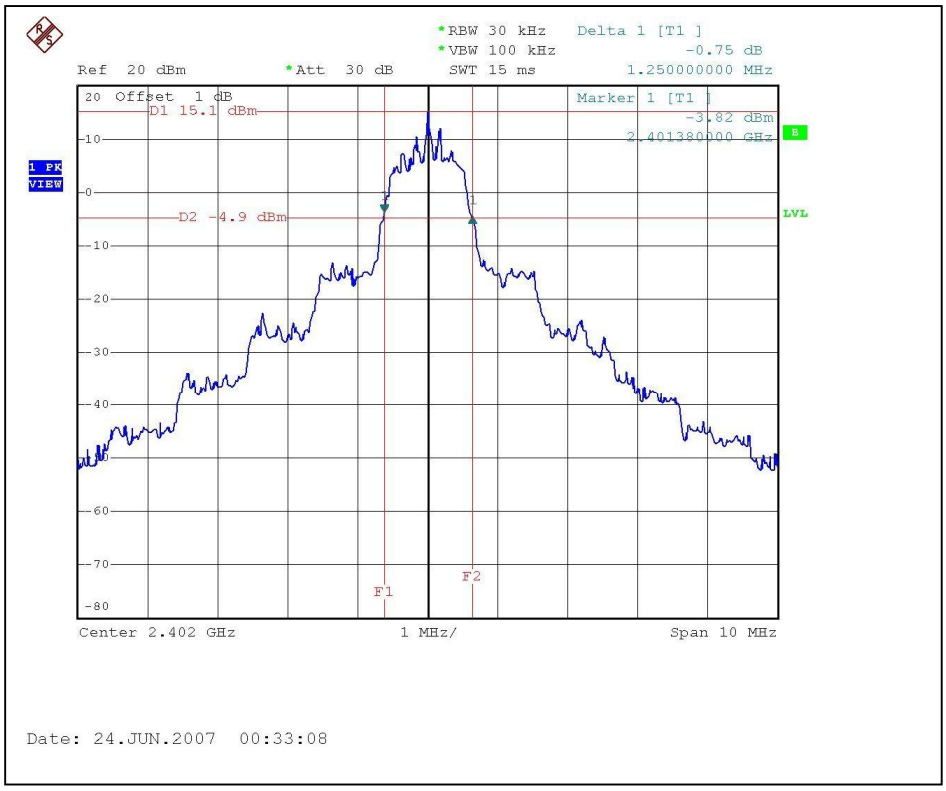
Channel 78



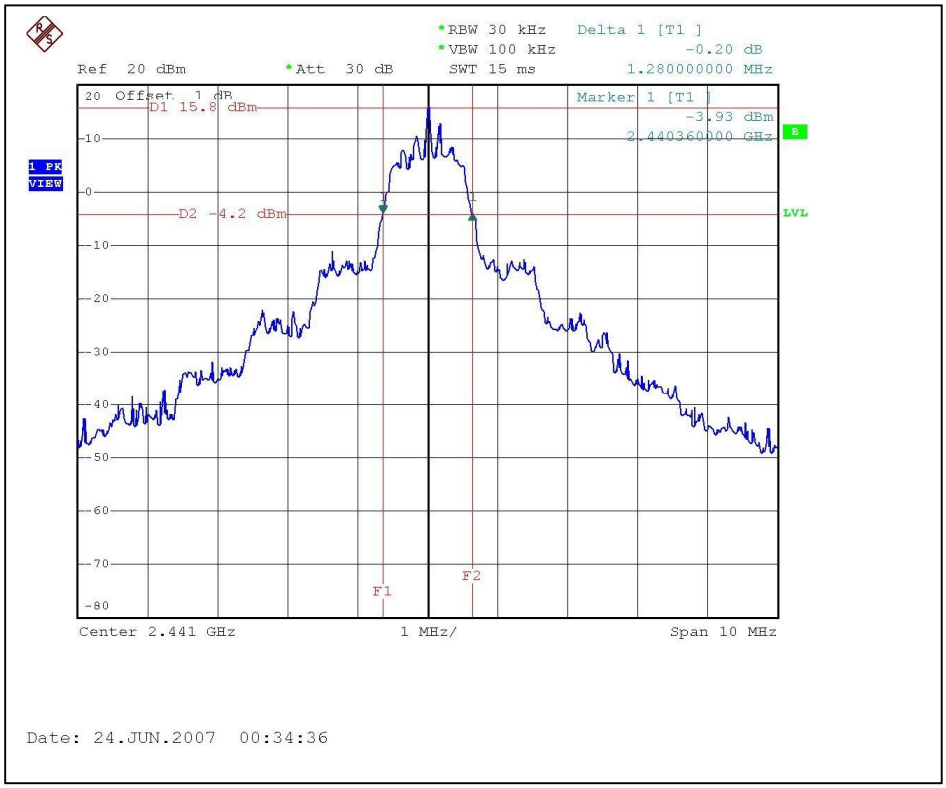
MODULATION TYPE	8DPSK	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 62%RH, 960 hPa	**TESTED BY**	Tony Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (kHz)
0	2402	1250
39	2441	1280
78	2480	1280

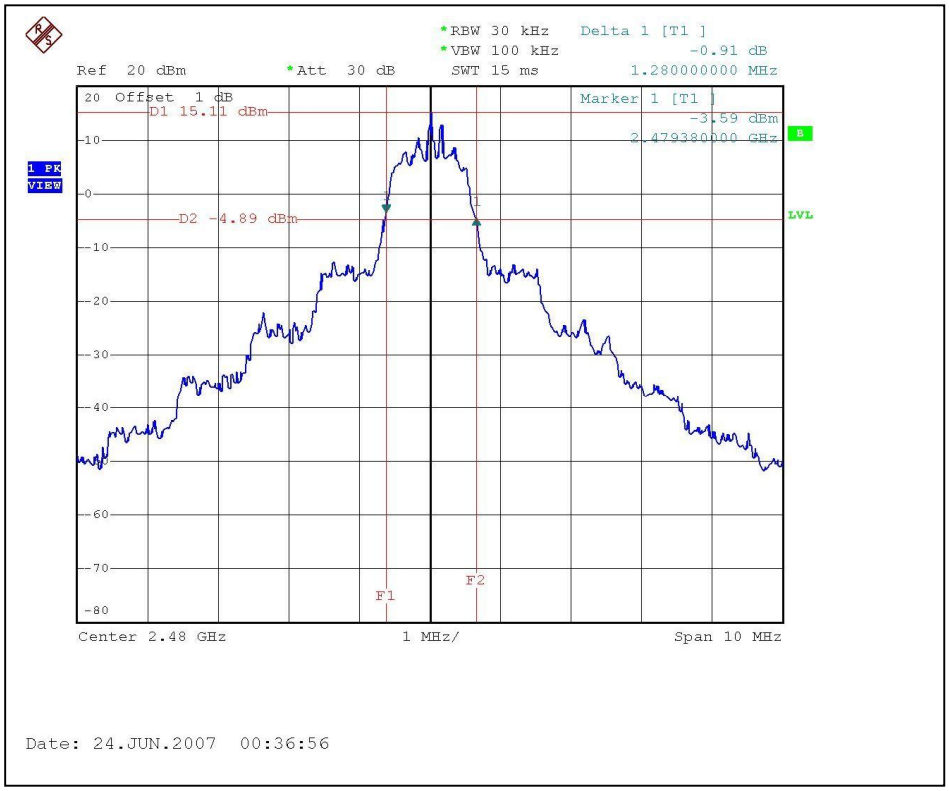
Channel 0



Channel 39



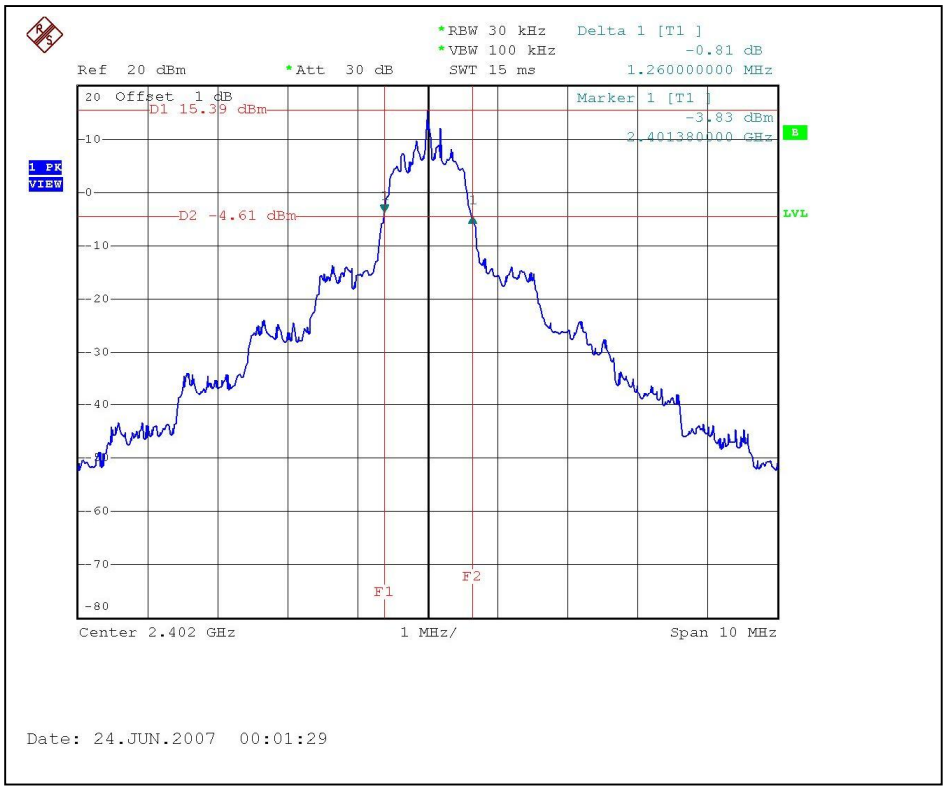
Channel 78



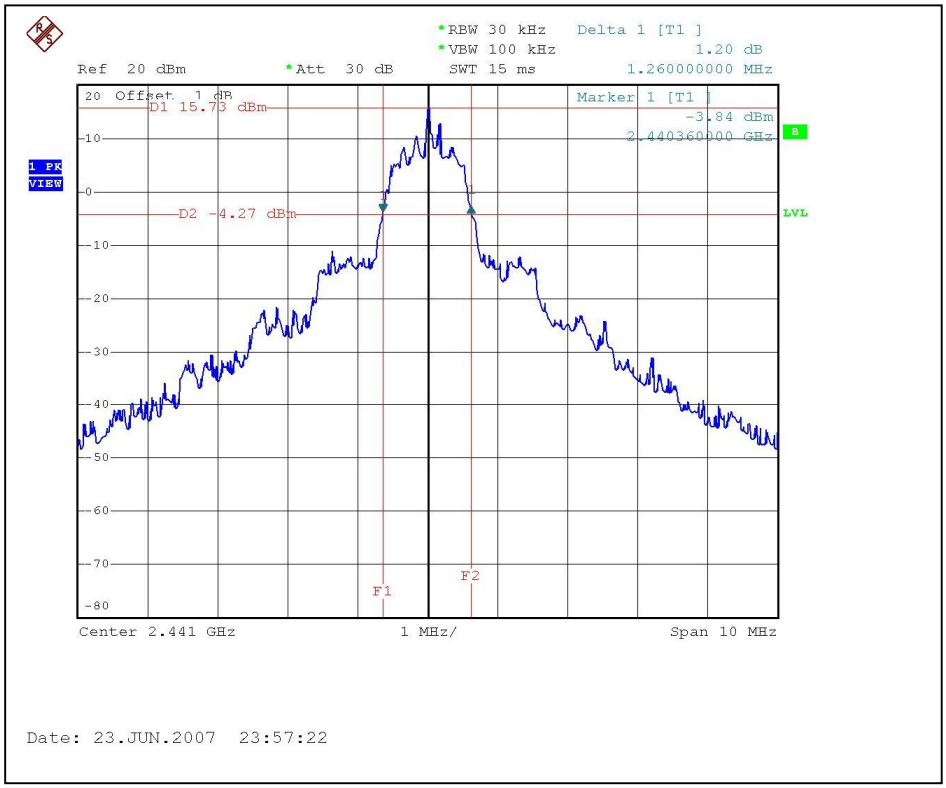
MODULATION TYPE	π/4-DQPSK	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 62%RH, 960 hPa	**TESTED BY**	Tony Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (kHz)
0	2402	1260
39	2441	1260
78	2480	1260

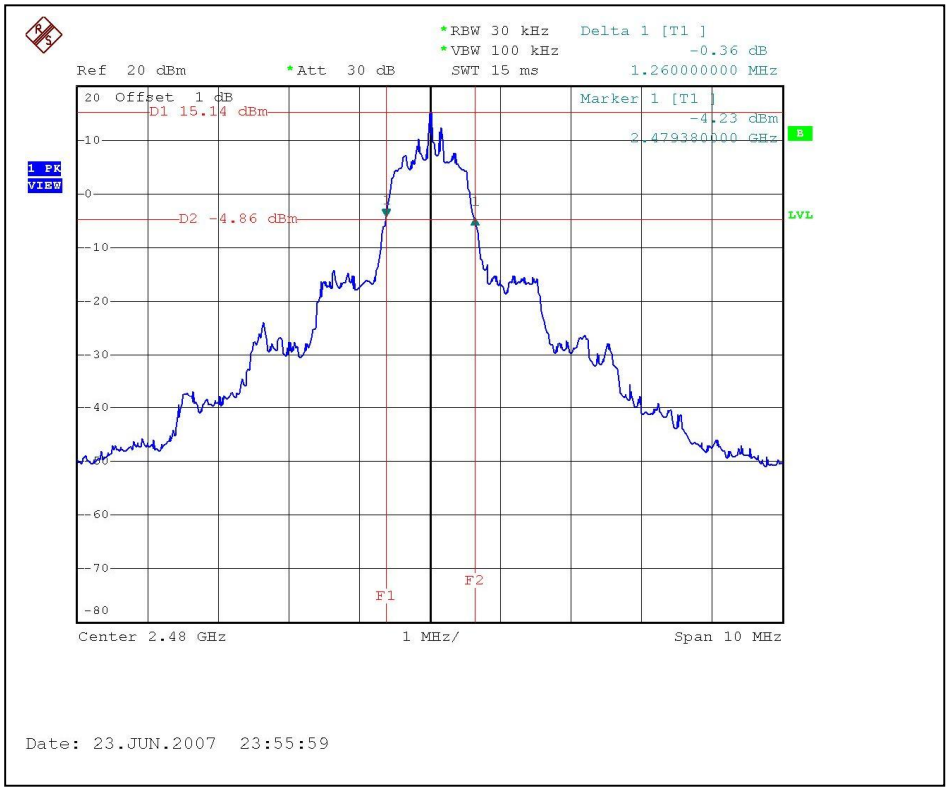
Channel 0



Channel 39



Channel 78



4.5 HOPPING CHANNEL SEPARATION

4.5.1 LIMIT OF HOPPING CHANNEL SEPARATION

At least 25 kHz or two-thirds of 20dB hopping channel bandwidth (whichever is greater).

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 21, 2007

Note:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

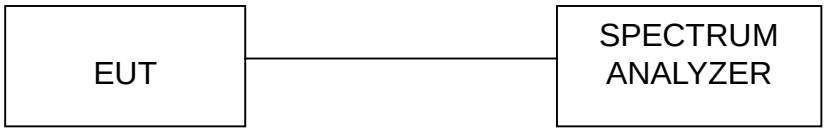
4.5.3 TEST PROCEDURES

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range.
3. By using the MaxHold function record the separation of two adjacent channels.
4. Measure the frequency difference of these two adjacent channels by SA MARK function. And then plot the result on SA screen.
5. Repeat above procedures until all frequencies measured were complete.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



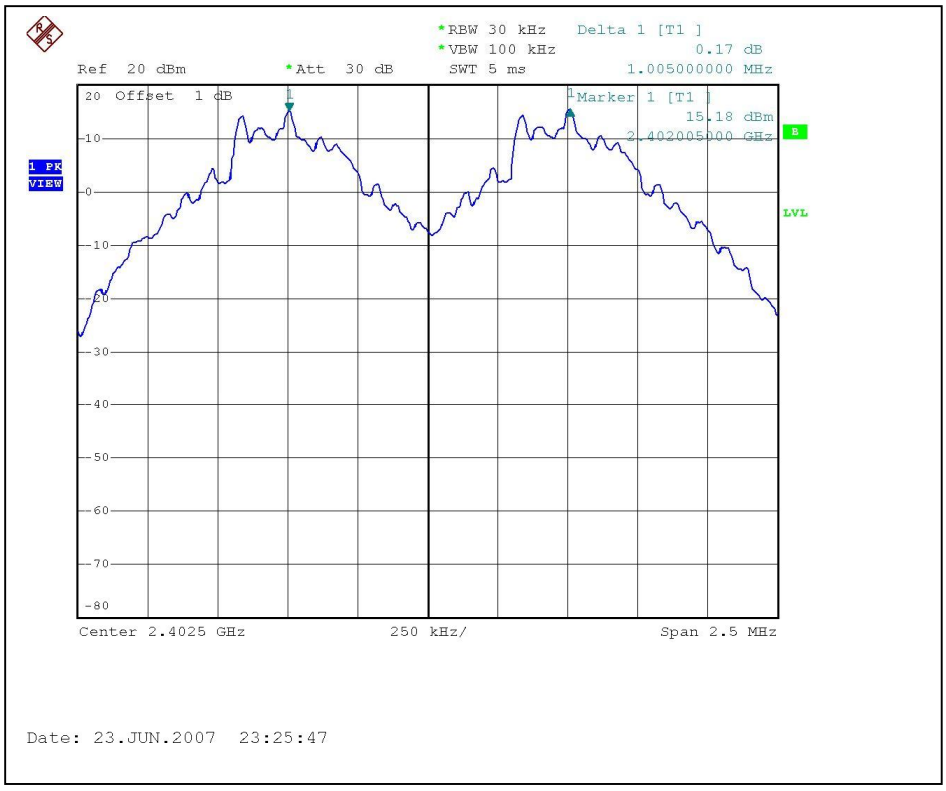
4.5.6 TEST RESULTS

MODULATION TYPE	GFSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 963 hPa	TESTED BY	Tony Chen

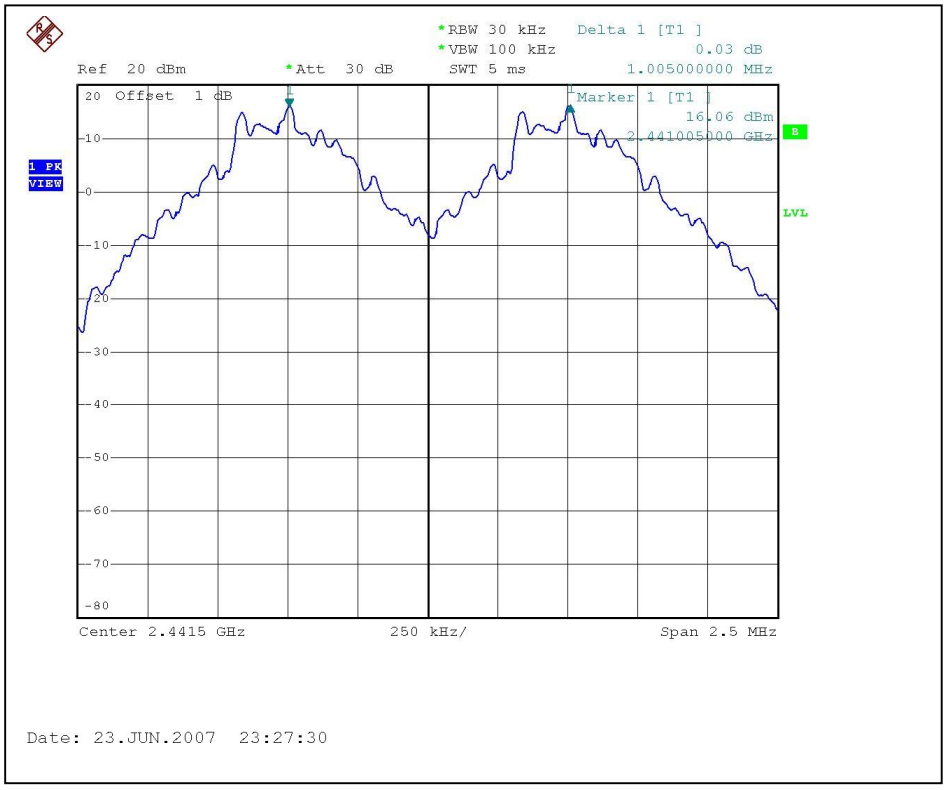
Channel	Frequency (MHz)	Adjacent Channel Separation	Minimum Limit (kHz)	Pass / Fail
0	2402	1.005MHz	563	PASS
39	2441	1.005MHz	553	PASS
78	2480	1.005MHz	577	PASS

The minimum limit is two-thirds of 20dB bandwidth. Test results please refer to next three pages.

Channel 0



Channel 39



Channel 78