



FCC TEST REPORT

REPORT NO.: 070215FIA01

MODEL NO.: BM-148

RECEIVED: Feb. 14, 2007

TESTED: Feb. 14 ~ Mar. 19, 2007

ISSUED: Mar. 20, 2007

APPLICANT: Tsuen Shing Enterprises Ltd

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ADT (Shanghai) Corporation.



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1. CERTIFICATION

PRODUCT: 2.4GHz Digital Baby Phone (with LCD / with LED)

MODEL NO.: BM-148

BRAND NAME: Tsuen Shing

APPLICANT: Tsuen Shing Enterprises Ltd

TESTED: Feb. 14 ~ Mar. 19, 2007

TEST ITEM: Engineering Sample

STANDARDS: FCC Part 15, Subpart C (Section 15.247),

ANSI C63.4-2003

We, **ADT (Shanghai) Corporation**, declare that the equipment above has been tested in our facility and found compliance with the requirement limits of applicable standards. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate under the standards herein specified.

**TECHNICAL
ACCEPTANCE :**

Bright Tong

, **DATE:** Mar. 20, 2007

Bright Tong
Engineering Supervisor

APPROVED BY :

A handwritten signature of Wallace Pan.

, **DATE:** Mar. 20, 2007

Wallace Pan
Director of Operations

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission (Test mode B1 & B3)	PASS	Meet the requirement of limit. Minimum passing margin is -30.19dB at 0.382MHz.
15.247(a)(1) (iii)	Number of Hopping Frequency Used Spec.: At least 15 channels	PASS	Meet the requirement of limit.
15.247(a)(1) (iii)	Dwell Time on Each Channel Spec.: Max. 0.4 second within 31.6 second	PASS	Meet the requirement of limit.
15.247(a)(1)	1. Hopping Channel Separation Spec. : Min. 25 kHz or 20 dB bandwidth, whichever is greater 2. Spectrum Bandwidth of a Frequency Hopping Sequence Spread Spectrum System	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Spec.: max. 1W	PASS	Meet the requirement of limit.
15.247(d)	Transmitter Radiated Emissions Spec.: Table 15.209 (Test mode A1 & A3)	PASS	Meet the requirement of limit. Minimum passing margin is -11.80dB at 107.70MHz.
	Transmitter Radiated Emissions Spec.: Table 15.209 (Test mode B1 & B3)	PASS	Meet the requirement of limit. Minimum passing margin is -13.95dB at 196.62MHz.
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.

Note: If the Frequency Hopping System operating in 2400-2483.5 MHz band and the output power less than 125mW. The hopping channel carrier frequencies separated by a minimum of 25 kHz or two-thirds of the 20dB bandwidth of hopping channel, whichever is greater.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz ~ 30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.73 dB
	200MHz ~1000MHz	3.74 dB
	1GHz ~ 18GHz	2.20 dB
	18GHz ~ 40GHz	1.88 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	2.4GHz Digital Baby Phone (with LCD / with LED)
MODEL NO.	BM-148
BRAND NAME	Tsuen Shing
POWER SUPPLY	For test mode A1 & A3: 4.5Vdc from batteries (3*AAA) For test mode B1 & B3: 120Vac, 60Hz from adapter
POWER ADAPTER SUPPLIED	Cable out: 1.8m, non-shielded
MODULATION TYPE	GFSK
RADIO TECHNOLOGY	FHSS
TRANSFER RATE	558K/m
FREQUENCY RANGE	2404.512 ~ 2478.816 MHz
NUMBER OF CHANNEL	87
OUTPUT POWER	12.48dBm
ANTENNA TYPE	Soldered on PCB
ANTENNA GAIN	0dBi
DATA CABLE	N/A
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	N/A

Note: 1. The whole system [2.4GHz Digital Baby Phone (with LCD / with LED)], with the general model number of BM-148, is composed by two single parts, one is with the model number of BM-148 TRANSMITTER and the other one is with the model number of BM-148 RECEIVER. This test report only contains the test results of model BM-148 TRANSMITTER. For model BM-148 RECEIVER, please refer to 070215FIA02 (FCC ID:PERBM-148RX).

Please take table 1 for the primary description of this product:

Description			
Power supply	Test mode	Component's model number	Component's description
Powered by batteries	A	A1 BM-148 TRANSMITTER	Baby phone with music IC and LED
		A2 BM-148 RECEIVER	Mother phone with music IC and LED
		A3 BM-148 TRANSMITTER	Baby phone with music IC and LCD
		A4 BM-148 RECEIVER	Mother phone with music IC and LCD
Powered by adapter	B	B1 BM-148 TRANSMITTER	Baby phone with music IC and LED
		B2 BM-148 RECEIVER	Mother phone with music IC and LED
		B3 BM-148 TRANSMITTER	Baby phone with music IC and LCD
		B4 BM-148 RECEIVER	Mother phone with music IC and LCD

(This test report only recorded the test data performed under test mode A1, A3 & B1, B3.)

Table 1

2. Please take table 2 for the specifications of power adapter:

Manufactory	Model No.	Input voltage	Output voltage
ktec	KA12D075030024U	120Vac, 60Hz, 65mA	7.5Vdc, 300mA

Table 2

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

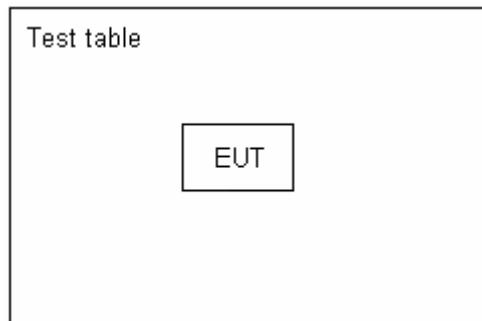
3.2 DESCRIPTION OF TEST MODES

87 channels are provided to this EUT:

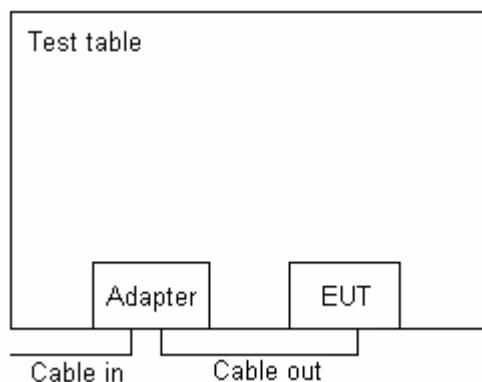
CH	FREQUENCY	CH	FREQUENCY
1	2404.512	45	2442.528
2	2405.376	46	2443.392
3	2406.24	47	2444.256
4	2407.104	48	2445.12
5	2407.968	49	2445.984
6	2408.832	50	2446.848
7	2409.696	51	2447.712
8	2410.56	52	2448.576
9	2411.424	53	2449.44
10	2412.288	54	2450.304
11	2413.152	55	2451.168
12	2414.016	56	2452.032
13	2414.88	57	2452.896
14	2415.744	58	2453.76
15	2416.608	59	2454.624
16	2417.472	60	2455.488
17	2418.336	61	2456.352
18	2419.2	62	2457.216
19	2420.064	63	2458.08
20	2420.928	64	2458.944
21	2421.792	65	2459.808
22	2422.656	66	2460.672
23	2423.52	67	2461.536
24	2424.384	68	2462.4
25	2425.248	69	2463.264
26	2426.112	70	2464.128
27	2426.976	71	2464.992
28	2427.84	72	2465.856
29	2428.704	73	2466.72
30	2429.568	74	2467.584
31	2430.432	75	2468.448
32	2431.296	76	2469.312
33	2432.16	77	2470.176
34	2433.024	78	2471.04
35	2433.888	79	2471.904
36	2434.752	80	2472.768
37	2435.616	81	2473.632
38	2436.48	82	2474.496
39	2437.344	83	2475.36
40	2438.208	84	2476.224
41	2439.072	85	2477.088
42	2439.936	86	2477.952
43	2440.8	87	2478.816
44	2441.664		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Test mode A1 & A3



Test mode B1 & B3



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	Applicable to							Description
	DT	CB	HCS	MPOP	BM	CE	RE	
A1	--	--	--	--	--	--	√	Powered by batteries
A3	--	--	--	--	--	--	√	
B1						√	√	Powered by adapter
B3	√	√	√	√	√	√	√	

Where

DT: Dwell Time on Each Channel**HCS:** Hopping Channel Separation**BM:** Band edge Measurement**RE:** Radiated Emission**CB:** Cannel Bandwidth**MPOP:** Maximum Peak Output Power**CE:** AC Power Conducted Emission

DWELL TIME ON EACH CHANNEL:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types.
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE
B3	1 ~ 87	1, 45, 87	FHSS	GFSK	558K/m

CHANNEL BANDWIDTH:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types.
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE
B3	1 ~ 87	1, 45, 87	FHSS	GFSK	558K/m

HOPPING CHANNEL SEPARATION

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types.
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE
B3	1 ~ 87	1, 45, 87	FHSS	GFSK	558K/m

MAXIMUM PEAK OUTPUT POWER

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types.
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE
B3	1 ~ 87	1, 45, 87	FHSS	GFSK	558K/m

BANDEdge MEASUREMENT:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types.
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE
B3	1 ~ 87	1, 87	FHSS	GFSK	558K/m

AC POWER CONDUCTED EMISSION:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types.
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE
B1 & B3	1 ~ 87	1 ~ 87	FHSS	GFSK	558K/m

RADIATED EMISSION TEST:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types.
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE
A1 & A3	1 ~ 87	1 ~ 87	FHSS	GFSK	558K/m
B1 & B3	1 ~ 87	1 ~ 87	FHSS	GFSK	558K/m

3.2.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a 2.4GHz Digital Baby Phone (with LCD / with LED). 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.

3.2.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit.

Note: 1.8m non-shielded input power cable was used during the tests under test mode 2 which supplied by the lab.

4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

NOTES:

- (1) The lower limit shall apply at the transition frequencies.
- (2) The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
- (3) All emanations from a class A/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 ROHDE & SCHWARZ	ESCS30	E1R1002	Jun. 12, 2007
LISN ROHDE & SCHWARZ	NSLK8127	E1L1001	Apr. 13, 2007
LISN ROHDE & SCHWARZ	NSLK8126	E1L1002	Jul. 12, 2007
Software ADT	ADT_Cond_V7.3.0	N/A	N/A

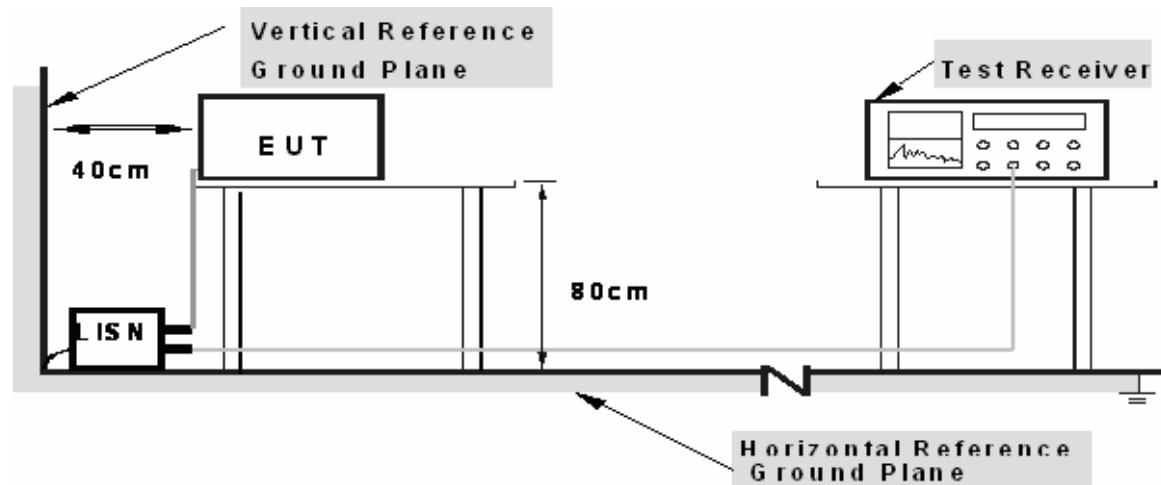
4.1.3 TEST PROCEDURE

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT 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 were checked for maximum conducted interference.
- c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit - 20dB) were not reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 TEST SETUP



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

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

4.1.6 EUT OPERATING CONDITIONS

For Test mode B1 & B3: Normal operation (hopping according to its hoplist).

4.1.7 TEST RESULTS

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MODEL NO.	BM-148
TEST MODE	Mode B1	6dB BANDWIDTH	9 kHz
INPUT POWER	120Vac, 60Hz	PHASE	Line (L1)
ENVIRONMENTAL CONDITIONS	21 deg. C, 48 % RH, 1012 hPa	TESTED BY:	Jason

No.	Frequency MHz	Corr. Factor dB	Reading (dBuV)		Emission (dBuV)		Limit (dBuV)		Margins (dB)	
			QP	AV	QP	AV	QP	AV	QP	AV
1	0.150	1.80	32.85	3.13	34.65	4.93	66.00	56.00	-31.35	-51.07
2	0.234	0.80	30.18	1.14	30.98	1.94	62.32	52.32	-31.34	-50.38
3	0.382	0.60	27.46	-1.41	28.06	-0.81	58.24	48.24	-30.19	-49.06
4	0.619	0.44	22.38	-5.34	22.82	-4.90	56.00	46.00	-33.18	-50.90
5	3.183	0.50	-7.54	-12.69	-7.04	-12.19	56.00	46.00	-63.04	-58.19
6	8.986	0.59	-6.19	-11.10	-5.60	-10.51	60.00	50.00	-65.60	-60.51

REMARKS: 1. Margin value = Emission level - Limit value

2 Correction factor = Insertion loss + Cable loss

3. Emission Level = Correction Factor + Reading Value.

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MODEL NO.	BM-148
TEST MODE	Mode B1	6dB BANDWIDTH	9 kHz
INPUT POWER	120Vac, 60Hz	PHASE	N
ENVIRONMENTAL CONDITIONS	21 deg. C, 48 % RH, 1012 hPa	TESTED BY:	Jason

No.	Frequency MHz	Corr. Factor	Reading (dBuV)		Emission (dBuV)		Limit (dBuV)		Margins (dB)	
			dB	QP	AV	QP	AV	QP	AV	QP
1	0.152	1.75	32.73	3.03	34.48	4.78	65.90	55.90	-31.42	-51.12
2	0.235	0.81	29.36	0.65	30.17	1.46	62.29	52.29	-32.12	-50.83
3	0.350	0.66	26.32	-1.64	26.98	-0.98	58.97	48.97	-32.00	-49.96
4	0.614	0.49	20.30	-6.16	20.79	-5.67	56.00	46.00	-35.21	-51.67
5	1.777	0.53	-4.26	-12.90	-3.73	-12.37	56.00	46.00	-59.73	-58.37
6	7.659	0.53	-5.63	-10.74	-5.10	-10.21	60.00	50.00	-65.10	-60.21

REMARKS: 1. Margin value = Emission level - Limit value

2 Correction factor = Insertion loss + Cable loss

3. Emission Level = Correction Factor + Reading Value.



EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MODEL NO.	BM-148
TEST MODE	Mode B3	6dB BANDWIDTH	9 kHz
INPUT POWER	120Vac, 60Hz	PHASE	Line (L1)
ENVIRONMENTAL CONDITIONS	21 deg. C, 48 % RH, 1012 hPa	TESTED BY:	Jason

No.	Frequency MHz	Corr. Factor dB	Reading (dBuV)		Emission (dBuV)		Limit (dBuV)		Margins (dB)	
			QP	AV	QP	AV	QP	AV	QP	AV
1	0.152	1.77	31.47	1.82	33.24	3.59	65.90	55.90	-32.66	-52.31
2	0.220	0.82	29.19	0.45	30.01	1.27	62.82	52.82	-32.81	-51.55
3	0.357	0.63	26.60	-1.92	27.23	-1.29	58.80	48.80	-31.57	-50.09
4	0.607	0.44	21.46	-5.92	21.90	-5.48	56.00	46.00	-34.10	-51.48
5	2.903	0.49	-7.56	-12.59	-7.07	-12.10	56.00	46.00	-63.07	-58.10
6	11.778	0.62	-5.90	-11.02	-5.28	-10.40	60.00	50.00	-65.28	-60.40

REMARKS: 1. Margin value = Emission level - Limit value
 2 Correction factor = Insertion loss + Cable loss
 3. Emission Level = Correction Factor + Reading Value.

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MODEL NO.	BM-148
TEST MODE	Mode B3	6dB BANDWIDTH	9 kHz
INPUT POWER	120Vac, 60Hz	PHASE	N
ENVIRONMENTAL CONDITIONS	21 deg. C, 48 % RH, 1012 hPa	TESTED BY:	Jason

No.	Frequency MHz	Corr. Factor	Reading (dBuV)		Emission (dBuV)		Limit (dBuV)		Margins (dB)	
			QP	AV	QP	AV	QP	AV	QP	AV
1	0.150	1.79	31.43	1.88	33.22	3.67	66.00	56.00	-32.78	-52.33
2	0.270	0.76	26.32	-0.81	27.08	-0.05	61.13	51.13	-34.05	-51.18
3	0.382	0.61	23.97	-3.56	24.58	-2.95	58.24	48.24	-33.66	-51.19
4	0.583	0.48	19.14	-6.84	19.62	-6.36	56.00	46.00	-36.38	-52.36
5	4.142	0.46	-7.39	-12.25	-6.93	-11.79	56.00	46.00	-62.93	-57.79
6	17.142	0.75	-5.58	-10.66	-4.83	-9.91	60.00	50.00	-64.83	-59.91

REMARKS: 1. Margin value = Emission level - Limit value

2 Correction factor = Insertion loss + Cable loss

3. Emission Level = Correction Factor + Reading Value.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dB_uV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	E1R1001	Apr. 19, 2007
BILOG Antenna SCHWARZBECK	VULB9168	E1A1001	Sept. 26, 2007
Preamplifier Agilent	8447D	E1A2001	Jan. 27, 2008
Preamplifier Agilent	8449B	E1A2002	Jan. 27, 2008
Double Ridged Broadband Horn Antenna Schwarzbeck	BBHA 9120D	E1A1002	Feb. 15, 2008
Spectrum Analyzer Agilent	E4403B	E1S1001	Jan. 13, 2008
Signal Analyzer ROHDE & SCHWARZ	FSP	E1S1002	May. 16, 2007
RF signal cable Woken	RG-402	E1CBH01	May. 30, 2007
RF signal cable Woken	RG-402	E1CBH05	May. 30, 2007
RF signal cable Woken	RG-402	E1CBH07	May. 30, 2007
RF signal cable Woken	RG-412	E1CBL02	May. 30, 2007
RF signal cable Woken	RG-412	E1CBL03	May. 30, 2007
RF signal cable Woken	RG-412	E1CBL04	May. 30, 2007
Software ADT	ADT_Radiated_V7.5	N/A	N/A

- NOTE:**
1. The calibration interval of the above test instruments is 12 months.
 2. “*” = These equipment are used for the final measurement.
 3. The horn antenna and Agilent preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The Spectrum Analyzer (model: FSP) and RF signal cable (SERIAL: E1CBH05&E1CBH07) are used only for the measurement of emission frequency above 1GHz if tested.

4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

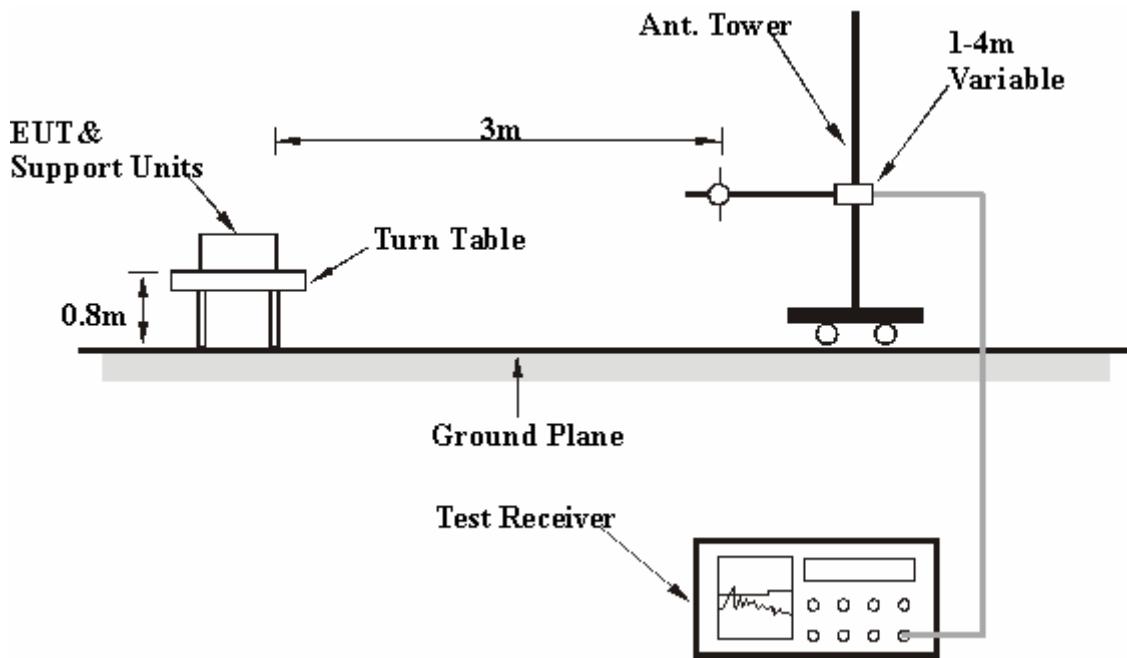
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection (PK) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Below 1 GHz: Normal operation (hopping according to its hoplist).

Above 1 GHz: Continuously transmitting with modulation on a certain channel that can be set by the software (with typical data input as the modulation source).

4.2.7 TEST RESULTS

Below 1 GHz

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MEASUREMENT DETAIL		
MODEL	BM-148	FREQUENCY RANGE		Below 1000MHz
MODULATION TYPE	GFSK	DETECTOR FUNCTION		Quasi-Peak
TEST MODE	A1	ENVIRONMENTAL CONDITIONS		20deg. C, 60%RH, 1001hPa
TESTED BY	Rebecca	INPUT POWER		4.5Vdc from batteries

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	31.43	15.07	9.71	24.77	40.00	-15.23	100.00	325.00
2	196.61	13.12	8.55	21.67	40.00	-18.33	100.00	338.00
3	434.98	19.74	-2.94	16.80	47.00	-30.20	100.00	298.00
4	585.33	22.83	-2.00	20.83	47.00	-26.17	100.00	230.00
5	728.40	25.12	-2.29	22.83	47.00	-24.17	100.00	260.00
6	837.52	26.24	-2.11	24.13	47.00	-22.87	100.00	117.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	160.95	16.98	-2.35	14.63	40.00	-25.37	100.00	35.00
2	369.27	18.01	6.62	24.63	47.00	-22.37	100.00	60.00
3	454.50	20.19	3.96	24.15	47.00	-22.85	100.00	43.00
4	636.25	23.73	-2.47	21.26	47.00	-25.74	100.00	102.00
5	772.05	25.59	-1.64	23.95	47.00	-23.05	100.00	129.00
6	835.10	26.26	-1.86	24.41	47.00	-22.59	100.00	72.00

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

EUT		2.4GHz Digital Baby Phone (with LCD / with LED)	MEASUREMENT DETAIL			
MODEL		BM-148	FREQUENCY RANGE		Below 1000MHz	
MODULATION TYPE		GFSK	DETECTOR FUNCTION		Quasi-Peak	
TEST MODE		A3	ENVIRONMENTAL CONDITIONS		20deg. C, 60%RH, 1001hPa	
TESTED BY		Rebecca	INPUT POWER		4.5Vdc from batteries	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	87.92	11.73	11.82	23.55	40.00	-16.45	100.00	330.00
2	97.69	12.38	14.24	26.61	40.00	-13.39	100.00	8.00
3	107.70	13.33	14.87	28.20	40.00	-11.80	100.00	18.00
4	164.03	16.68	10.08	26.76	40.00	-13.24	100.00	19.00
5	479.25	20.57	8.91	29.49	47.00	-17.51	100.00	1.00
6	711.26	24.81	6.76	31.57	47.00	-15.43	100.00	331.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	58.85	14.86	-0.51	14.35	40.00	-25.65	100.00	19.00
2	97.70	12.38	14.06	26.43	40.00	-13.57	100.00	19.00
3	164.03	16.68	8.88	25.56	40.00	-14.44	100.00	356.00
4	190.75	13.40	7.85	21.25	40.00	-18.75	100.00	352.00
5	369.28	18.01	6.70	24.71	47.00	-22.29	100.00	358.00
6	479.25	20.57	9.15	29.73	47.00	-17.27	100.00	359.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MEASUREMENT DETAIL		
MODEL	BM-148	FREQUENCY RANGE		Below 1000MHz
MODULATION TYPE	GFSK	DETECTOR FUNCTION		Quasi-Peak
TEST MODE	B1	ENVIRONMENTAL CONDITIONS		20deg. C, 60%RH, 1001hPa
TESTED BY	Rebecca	INPUT POWER		120Vac, 60Hz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	196.62	13.12	9.68	22.80	40.00	-17.20	100.00	319.00
2	294.92	16.38	4.60	20.98	47.00	-26.02	100.00	348.00
3	393.23	18.51	1.99	20.50	47.00	-26.50	100.00	312.00
4	510.15	21.09	-8.37	12.71	47.00	-34.29	100.00	311.00
5	667.77	24.10	-8.26	15.83	47.00	-31.17	100.00	255.00
6	801.15	25.84	-8.45	17.39	47.00	-29.61	100.00	288.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	98.30	12.43	9.78	22.21	40.00	-17.79	100.00	288.00
2	158.27	17.05	4.87	21.93	40.00	-18.07	100.00	258.00
3	196.62	13.12	8.70	21.82	40.00	-18.18	100.00	301.00
4	393.20	18.51	1.56	20.07	47.00	-26.93	100.00	307.00
5	524.70	21.39	-8.02	13.37	47.00	-33.63	100.00	280.00
6	689.60	24.41	-7.70	16.72	47.00	-30.28	100.00	245.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MEASUREMENT DETAIL		
MODEL	BM-148	FREQUENCY RANGE		Below 1000MHz
MODULATION TYPE	GFSK	DETECTOR FUNCTION		Quasi-Peak
TEST MODE	B3	ENVIRONMENTAL CONDITIONS		20deg. C, 60%RH, 1001hPa
TESTED BY	Rebecca	INPUT POWER		120Vac, 60Hz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	196.62	13.12	12.93	26.05	40.00	-13.95	100.00	19.00
2	245.78	14.78	2.09	16.87	47.00	-30.13	100.00	19.00
3	294.93	16.38	5.97	22.35	47.00	-24.65	100.00	19.00
4	483.48	20.63	-8.27	12.36	47.00	-34.64	100.00	352.00
5	638.67	23.76	-8.49	15.27	47.00	-31.73	100.00	308.00
6	759.92	25.45	-8.64	16.81	47.00	-30.19	100.00	265.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	141.55	16.34	-8.20	8.14	40.00	-31.86	100.00	214.00
2	196.64	13.11	10.59	23.71	40.00	-16.29	100.00	240.00
3	350.10	17.47	-7.72	9.75	47.00	-37.25	100.00	351.00
4	481.05	20.60	-7.70	12.90	47.00	-34.10	100.00	256.00
5	612.00	23.36	-8.04	15.32	47.00	-31.68	100.00	324.00
6	772.05	25.59	-8.29	17.30	47.00	-29.70	100.00	283.00

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

Above 1 GHz

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MEASUREMENT DETAIL	
MODEL	BM-148	FREQUENCY RANGE	Above 1GHz
CHANNEL	Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
MODULATION TYPE	GFSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001hPa
TEST MODE	A3	INPUT POWER	4.5Vdc from batteries
TESTED BY	Bright		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	4809.04 PK	38.06	15.14	53.20	74	-20.80	100	168
1	4809.04 AV	38.06	-4.86	33.20	54	-20.80	100	168
2	7213.54 PK	45.19	10.42	55.61	74	-18.39	100	159
2	7213.54 AV	45.19	-9.58	35.61	54	-18.39	100	159
3	9618.05 PK	47.94	9.07	57.01	74	-16.99	100	224
3	9618.05 AV	47.94	-10.93	37.01	54	-16.99	100	224
4	12022.56 PK	49.05	10.07	59.12	74	-14.88	100	34
4	12022.56 AV	49.05	-9.93	39.12	54	-14.88	100	34

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	4809.16 PK	38.07	18.18	56.24	74	-17.76	100	168
1	4809.16 AV	38.07	-1.82	36.24	54	-17.76	100	168
2	7213.54 PK	45.19	10.75	55.95	74	-18.05	100	222
2	7213.54 AV	45.19	-9.25	35.95	54	-18.05	100	222
3	9618.05 PK	47.94	10.03	57.97	74	-16.03	100	36
3	9618.05 AV	47.94	-9.97	37.97	54	-16.03	100	36
4	12022.56 PK	49.05	9.36	58.41	74	-15.59	100	264
4	12022.56 AV	49.05	-10.64	38.41	54	-15.59	100	264

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The duty cycle is equal to: $20\log(\text{Duty cycle}) = 20\log(0.64*3/100) = -34.3\text{dB}$.
But in the actual test report, the duty cycle applied is -20dB if the figure calculated out is less than -20dB.
 6. Average value = peak reading -20dB.
 7. Please take Pg. 33 for the plots.

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MEASUREMENT DETAIL		
MODEL	BM-148		FREQUENCY RANGE	Above 1GHz
CHANNEL	Channel 45		DETECTOR FUNCTION	Peak (PK) Average (AV)
MODULATION TYPE	GFSK		ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001hPa
TEST MODE	A3		INPUT POWER	4.5Vdc from batteries
TESTED BY	Bright			

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	4884.72 PK	38.36	15.75	54.1	74	-19.90	100	135
1	4884.72 AV	38.36	-4.25	34.1	54	-19.90	100	135
2	7327.58 PK	45.26	10.52	55.78	74	-18.22	100	164
2	7327.58 AV	45.26	-9.48	35.78	54	-18.22	100	164
3	9770.11 PK	48.34	9.20	57.54	74	-16.46	100	221
3	9770.11 AV	48.34	-10.80	37.54	54	-16.46	100	221
4	12212.64 PK	49.16	9.28	58.44	74	-15.56	100	39
4	12212.64 AV	49.16	-10.72	38.44	54	-15.56	100	39

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	4885.04 PK	38.36	17.94	56.3	74	-17.70	100	74
1	4885.04 AV	38.36	-2.06	36.3	54	-17.70	100	74
2	7327.58 PK	45.26	10.62	55.88	74	-18.12	100	334
2	7327.58 AV	45.26	-9.38	35.88	54	-18.12	100	334
3	9770.11 PK	48.34	8.43	56.77	74	-17.23	100	264
3	9770.11 AV	48.34	-11.57	36.77	54	-17.23	100	264
4	12212.64 PK	49.16	8.62	57.78	74	-16.22	100	169
4	12212.64 AV	49.16	-11.38	37.78	54	-16.22	100	169

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The duty cycle is equal to: $20\log(\text{Duty cycle}) = 20\log(0.64*3/100) = -34.3\text{dB}$.
But in the actual test report, the duty cycle applied is -20dB if the figure calculated out is less than -20dB.
 6. Average value = peak reading -20dB.
 7. Please take Pg. 33 for the plots.

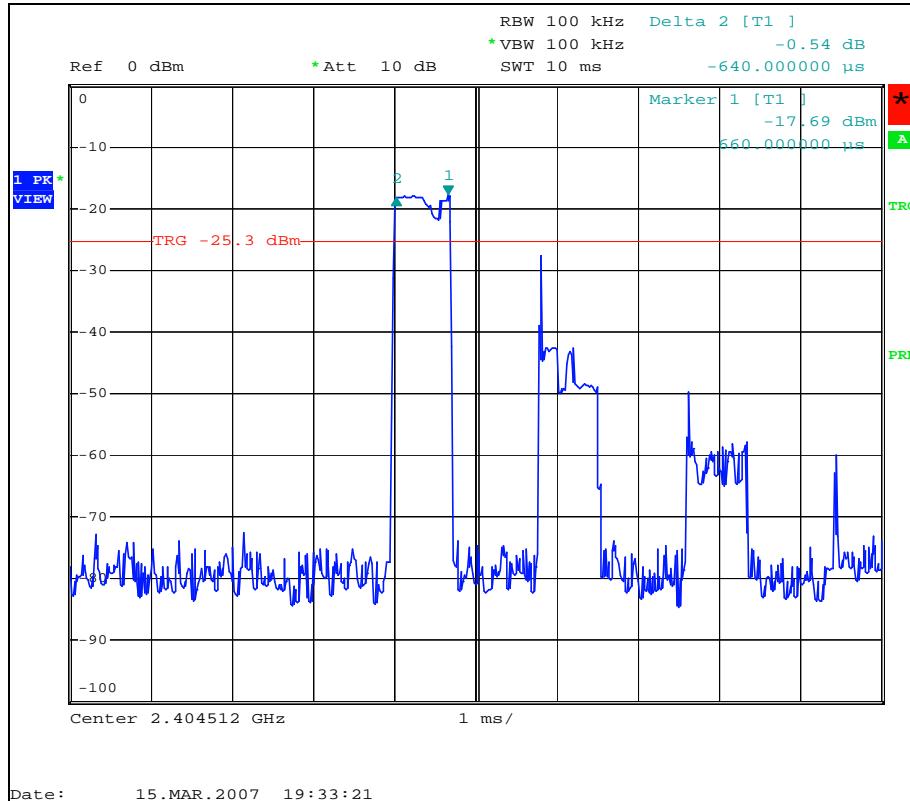
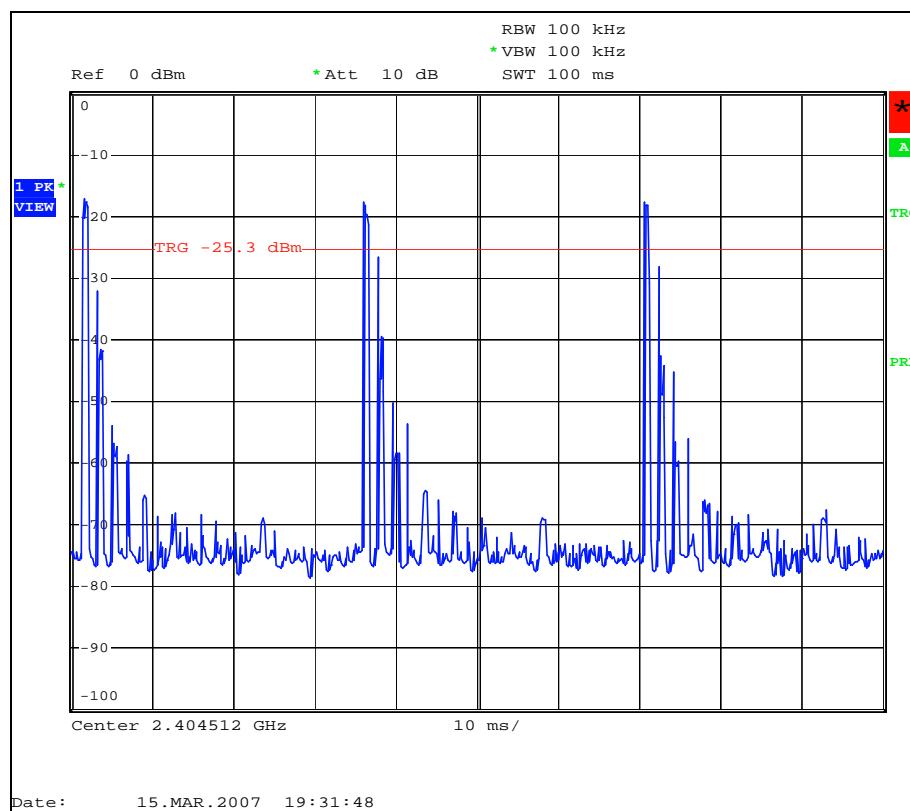
EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MEASUREMENT DETAIL		
MODEL	BM-148		FREQUENCY RANGE	Above 1GHz
CHANNEL	Channel 87		DETECTOR FUNCTION	Peak (PK) Average (AV)
MODULATION TYPE	GFSK		ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001hPa
TEST MODE	A3		INPUT POWER	4.5Vdc from batteries
TESTED BY	Bright			

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	4957.71 PK	38.63	15.72	54.35	74	-19.65	100	26
1	4957.71 AV	38.63	-4.28	34.35	54	-19.65	100	26
2	7436.45 PK	45.20	10.64	55.85	74	-18.15	100	33
2	7436.45 AV	45.20	-9.36	35.85	54	-18.15	100	33
3	9915.26 PK	48.53	9.91	58.43	74	-15.57	100	189
3	9915.26 AV	48.53	-10.09	38.43	54	-15.57	100	189
4	12394.08 PK	49.26	8.63	57.89	74	-16.11	100	97
4	12394.08 AV	49.26	-11.37	37.89	54	-16.11	100	97

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	4957.55 PK	38.63	19.03	57.66	74	-16.34	100	111
1	4957.55 AV	38.63	-0.97	37.66	54	-16.34	100	111
2	7436.45 PK	45.20	9.95	55.15	74	-18.85	100	19
2	7436.45 AV	45.20	-10.05	35.15	54	-18.85	100	19
3	9915.26 PK	48.53	9.48	58.01	74	-15.99	100	34
3	9915.26 AV	48.53	-10.52	38.01	54	-15.99	100	34
4	12394.08 PK	49.26	9.77	59.04	74	-14.96	100	76
4	12394.08 AV	49.26	-10.23	39.04	54	-14.96	100	76

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The duty cycle is equal to: $20\log(\text{Duty cycle}) = 20\log(0.64*3/100) = -34.3\text{dB}$.
But in the actual test report, the duty cycle applied is -20dB if the figure calculated out is less than -20dB.
 6. Average value = peak reading -20dB.
 7. Please take Pg. 33 for the plots.

FCC ID: PERBM-148TX



EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MEASUREMENT DETAIL	
MODEL	BM-148	FREQUENCY RANGE	Above 1GHz
CHANNEL	Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
MODULATION TYPE	GFSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001hPa
TEST MODE	B3	INPUT POWER	120Vac, 60Hz
TESTED BY	Bright		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	4809.08 PK	38.06	16.89	54.96	74	-19.04	100	121
1	4809.08 AV	38.06	-3.11	34.96	54	-19.04	100	121
2	7213.54 PK	45.19	10.38	55.57	74	-18.43	100	22
2	7213.54 AV	45.19	-9.62	35.57	54	-18.43	100	22
3	9618.05 PK	47.94	9.08	57.02	74	-16.98	100	119
3	9618.05 AV	47.94	-10.92	37.02	54	-16.98	100	119
4	12022.56 PK	49.05	9.78	58.83	74	-15.17	100	234
4	12022.56 AV	49.05	-10.22	38.83	54	-15.17	100	234

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	4809.02 PK	38.06	19.52	57.58	74	-16.42	100	168
1	4809.02 AV	38.06	-0.48	37.58	54	-16.42	100	168
2	7213.54 PK	45.19	10.37	55.56	74	-18.44	100	221
2	7213.54 AV	45.19	-9.63	35.56	54	-18.44	100	221
3	9618.05 PK	47.94	9.09	57.03	74	-16.97	100	196
3	9618.05 AV	47.94	-10.91	37.03	54	-16.97	100	196
4	12022.56 PK	49.05	9.24	58.29	74	-15.71	100	65
4	12022.56 AV	49.05	-10.76	38.29	54	-15.71	100	65

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The duty cycle is equal to: $20\log(\text{Duty cycle}) = 20\log(0.84*3/100) = -32\text{dB}$.
But in the actual test report, the duty cycle applied is -20dB if the figure calculated out is less than -20dB.
 6. Average value = peak reading -20dB.
 7. Please take Pg. 37 for the plots.

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MEASUREMENT DETAIL		
MODEL	BM-148		FREQUENCY RANGE	Above 1GHz
CHANNEL	Channel 45		DETECTOR FUNCTION	Peak (PK) Average (AV)
MODULATION TYPE	GFSK		ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001hPa
TEST MODE	B3		INPUT POWER	120Vac, 60Hz
TESTED BY	Bright			

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	4885.20 PK	38.36	15.73	54.09	74	-19.91	100	162
1	4885.20 AV	38.36	-4.27	34.09	54	-19.91	100	162
2	7327.58 PK	45.26	9.83	55.09	74	-18.91	100	223
2	7327.58 AV	45.26	-10.17	35.09	54	-18.91	100	223
3	9770.11 PK	48.34	7.97	56.31	74	-17.69	100	78
3	9770.11 AV	48.34	-12.03	36.31	54	-17.69	100	78
4	12212.64 PK	49.16	9.12	58.28	74	-15.72	100	98
4	12212.64 AV	49.16	-10.88	38.28	54	-15.72	100	98

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	4885.00 PK	38.36	19.11	57.47	74	-16.53	100	132
1	4885.00 AV	38.36	-0.89	37.47	54	-16.53	100	132
2	7327.58 PK	45.26	9.88	55.14	74	-18.86	100	168
2	7327.58 AV	45.26	-10.12	35.14	54	-18.86	100	168
3	9770.11 PK	48.34	7.86	56.2	74	-17.80	100	68
3	9770.11 AV	48.34	-12.14	36.2	54	-17.80	100	68
4	12212.64 PK	49.16	9.93	59.1	74	-14.90	100	46
4	12212.64 AV	49.16	-10.07	39.1	54	-14.90	100	46

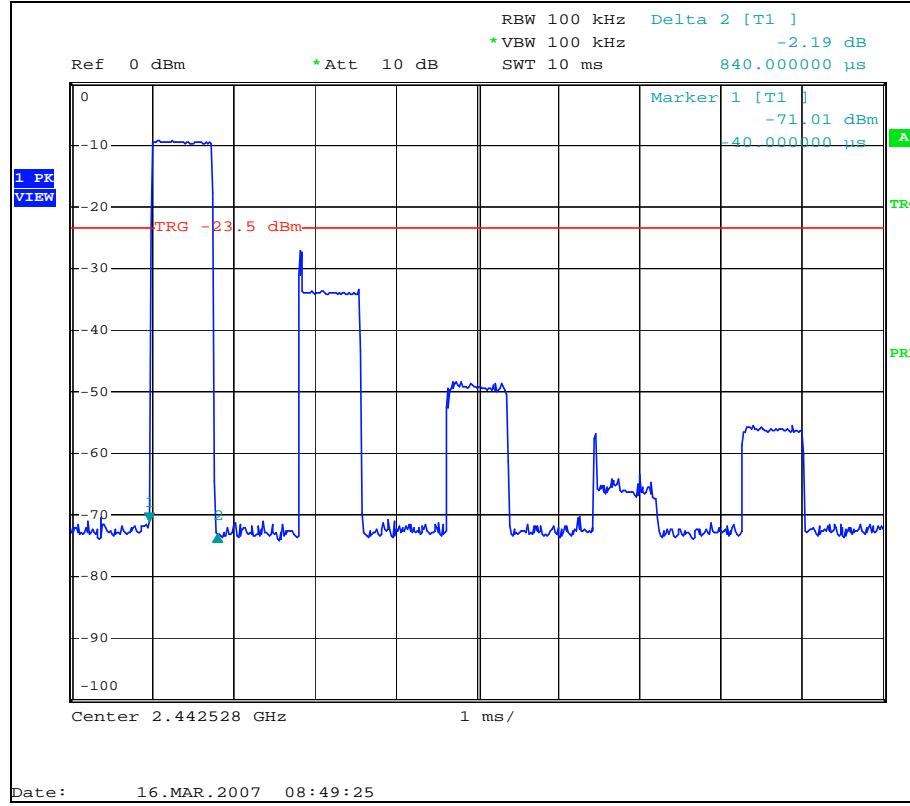
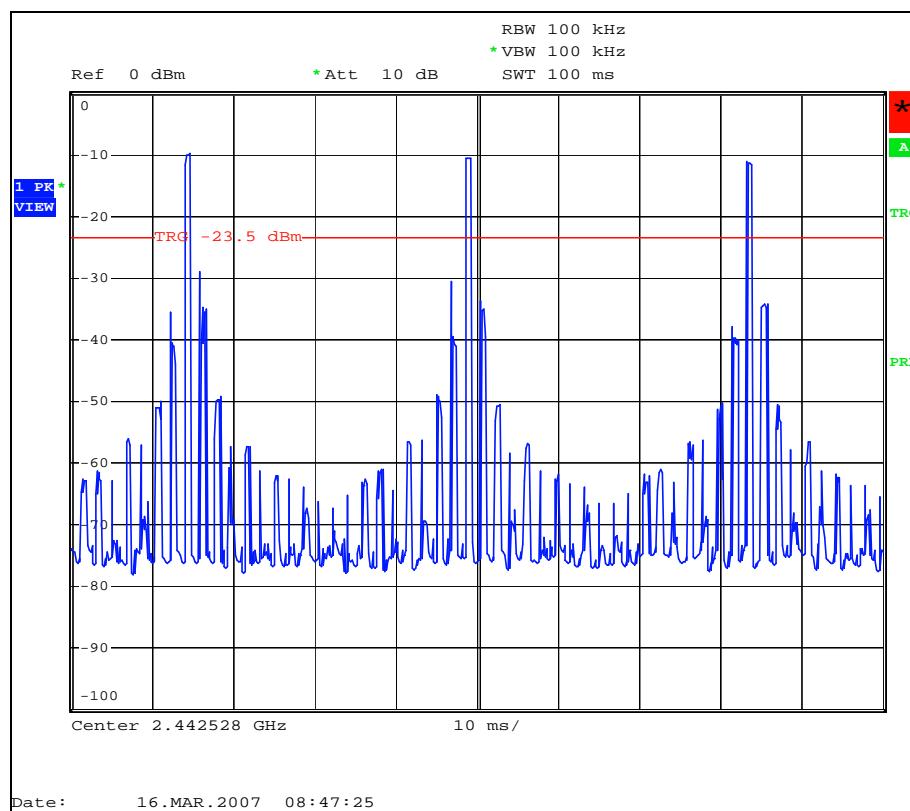
- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The duty cycle is equal to: $20\log(\text{Duty cycle}) = 20\log(0.84*3/100) = -32\text{dB}$.
But in the actual test report, the duty cycle applied is -20dB if the figure calculated out is less than -20dB.
 6. Average value = peak reading -20dB.
 7. Please take Pg. 37 for the plots.

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MEASUREMENT DETAIL		
MODEL	BM-148		FREQUENCY RANGE	Above 1GHz
CHANNEL	Channel 87		DETECTOR FUNCTION	Peak (PK) Average (AV)
MODULATION TYPE	GFSK		ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001hPa
TEST MODE	B3		INPUT POWER	120Vac, 60Hz
TESTED BY	Bright			

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	4957.79 PK	38.63	16.56	55.19	74	-18.81	100	221
1	4957.79 AV	38.63	-3.44	35.19	54	-18.81	100	221
2	7436.45 PK	45.20	9.85	55.05	74	-18.95	100	314
2	7436.45 AV	45.20	-10.15	35.05	54	-18.95	100	314
3	9915.26 PK	48.53	9.55	58.07	74	-15.93	100	89
3	9915.26 AV	48.53	-10.45	38.07	54	-15.93	100	89
4	12394.08 PK	49.26	8.96	58.22	74	-15.78	100	22
4	12394.08 AV	49.26	-11.04	38.22	54	-15.78	100	22

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	4957.75 PK	38.63	21.12	59.75	74	-14.25	100	168
1	4957.75 AV	38.63	1.12	39.75	54	-14.25	100	168
2	7436.45 PK	45.20	9.74	54.95	74	-19.05	100	54
2	7436.45 AV	45.20	-10.26	34.95	54	-19.05	100	54
3	9915.26 PK	48.53	9.64	58.17	74	-15.83	100	332
3	9915.26 AV	48.53	-10.36	38.17	54	-15.83	100	332
4	12394.08 PK	49.26	8.58	57.85	74	-16.15	100	49
4	12394.08 AV	49.26	-11.42	37.85	54	-16.15	100	49

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The duty cycle is equal to: $20\log(\text{Duty cycle}) = 20\log(0.84*3/100) = -32\text{dB}$.
But in the actual test report, the duty cycle applied is -20dB if the figure calculated out is less than -20dB.
 6. Average value = peak reading -20dB.
 7. Please take Pg. 37 for the plots.



4.3 NUMBER OF HOPPING FREQUENCY USED

4.3.1 LIMIT OF HOPPING FREQUENCY USED

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

4.3.2 TEST INSTRUMENTS

DESCRIPTION &	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Spectrum Analyzer ROHDE & SCHWARZ	FSP	E1S1002	May. 15, 2007

NOTE: The calibration interval of the above test instruments is 12 months.

4.3.3 TEST PROCEDURES

- a. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- b. 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.
- c. 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.
- d. Set the SA on View mode and then plot the result on SA screen.
- e. Repeat above procedures until all frequencies measured were complete.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

4.3.5 TEST SETUP



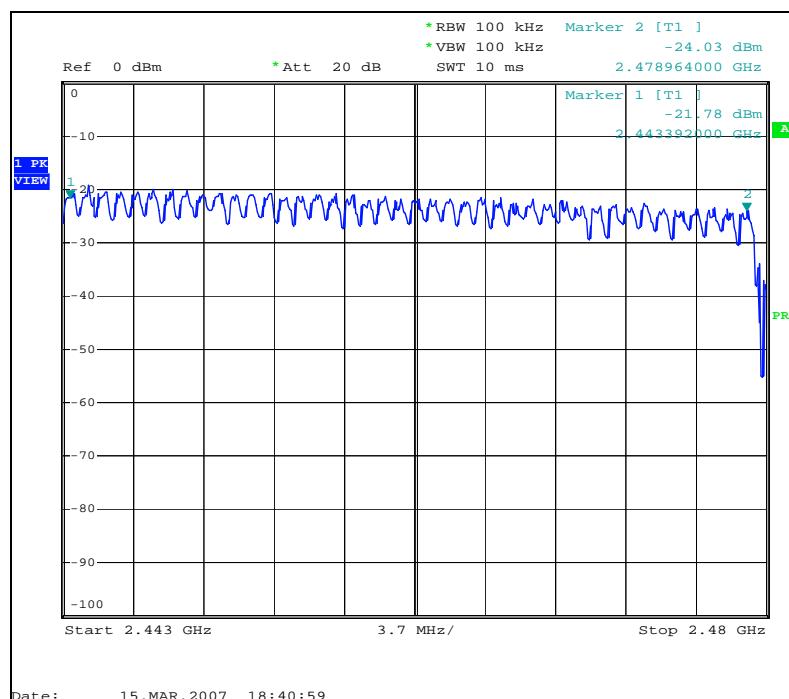
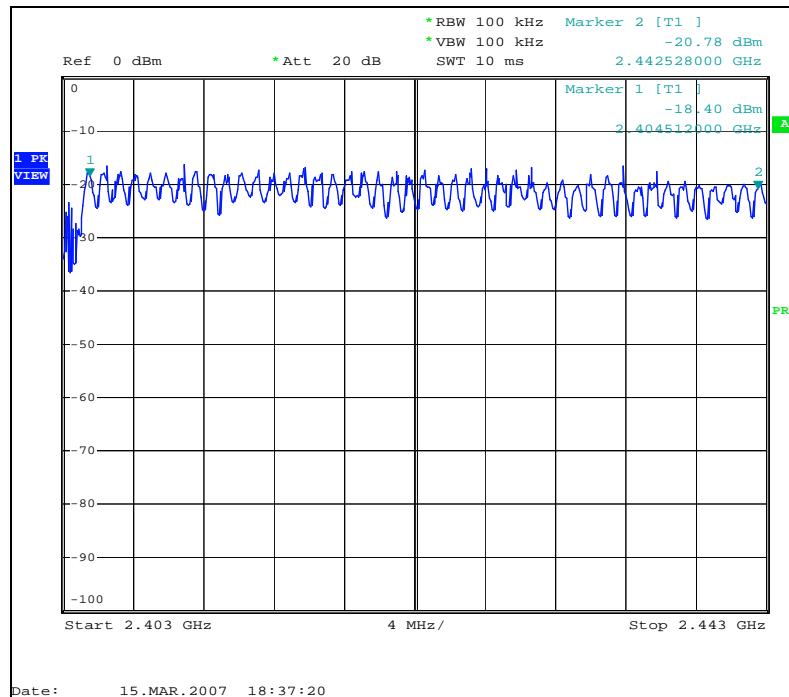
4.3.6 EUT OPERATING CONDITIONS

Normal operation (Hopping according to its hoplist).

4.3.7 TEST RESULTS

There are 87 hopping frequencies in the hopping mode. Please refer to the test results. On the plots, it shows that the hopping frequencies are equally spaced.

Test mode B3



4.4 DWELL TIME ON EACH CHANNEL

4.4.1 LIMIT OF DWELL TIME USED

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
*Spectrum Analyzer ROHDE & SCHWARZ	FSP	E1S1002	May.15, 2007

NOTES: The calibration interval of the above test instruments is 12 months.

4.4.3 TEST PROCEDURES

- a. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- b. 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.
- c. Adjust the center frequency of SA on any frequency to be measured and set SA to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
- d. Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
- e. Repeat above procedures until all different time-slot modes have been completed.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation.

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Normal operation (Hopping according to its hoplist).

4.4.7 TEST RESULTS

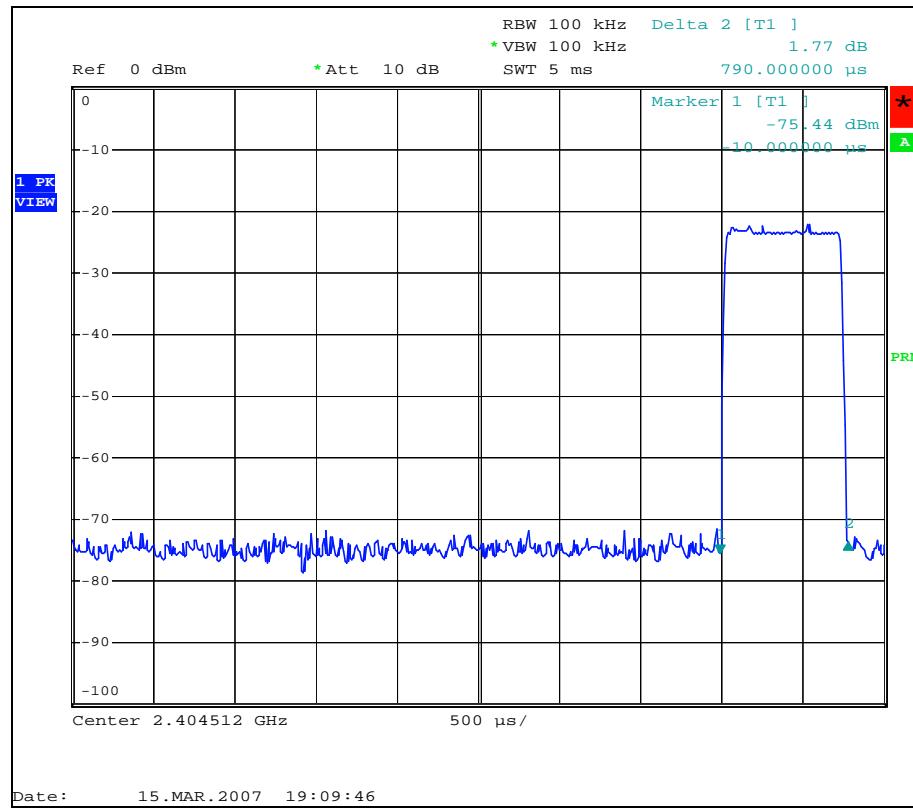
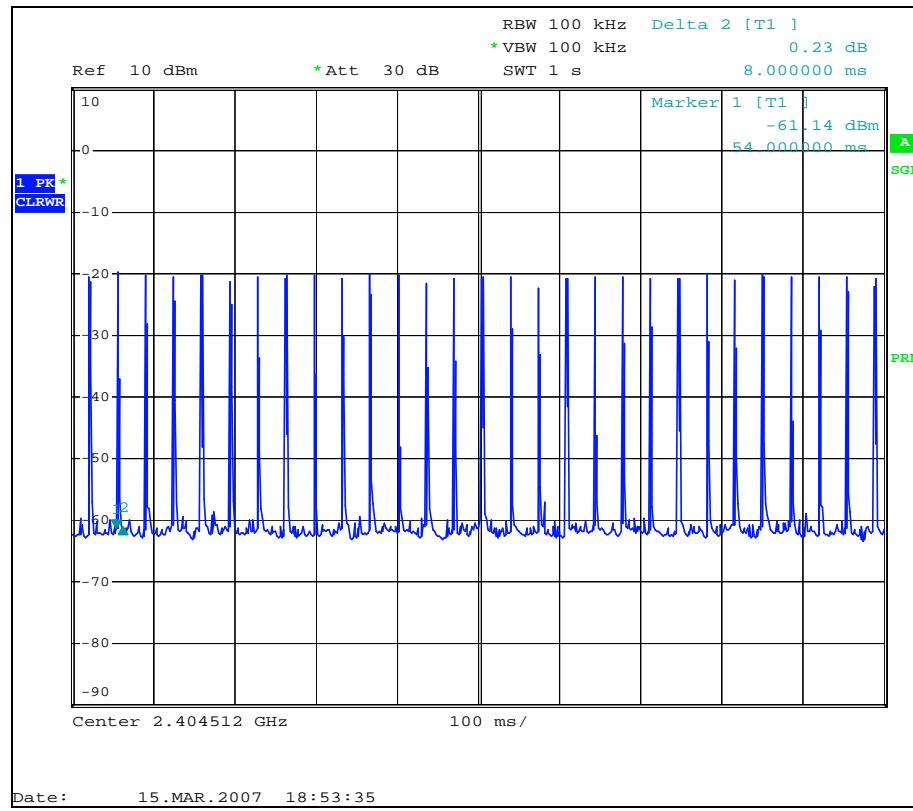
For test mode B3

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MODEL	BM-148
MODULATION TYPE	GFSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001Hpa
INPUT POWER	120Vac, 60Hz	TESTED BY	Bright

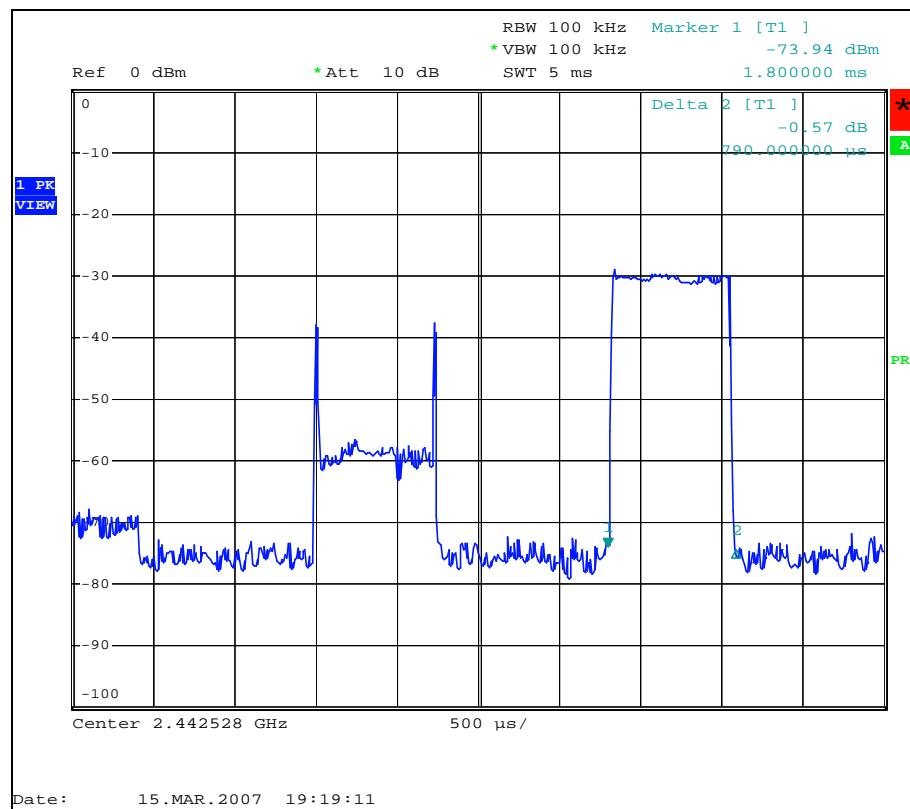
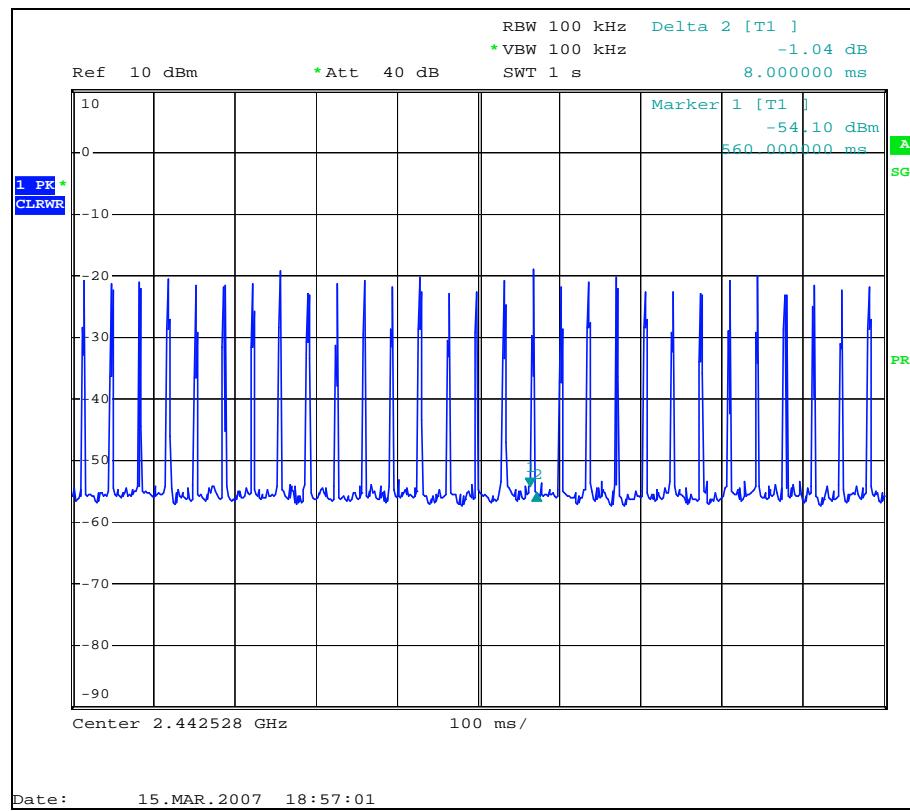
MODE	NUMBER OF TRANSMISSION IN A 30 (75HOPPING * 0.4)	LENGTH OF TRANSMISSION TIME (msec)	RESULT (msec)	LIMIT (msec)
CH1	29(times/1sec)*7.6=220.4 times	0.79	174.116	400
CH45	29(times/1sec)*7.6=220.4 times	0.79	174.116	400
CH87	29(times/1sec)*7.6=220.4 times	0.80	176.320	400

NOTE: Test plots of the transmitting time slot are shown on next 3 pages.

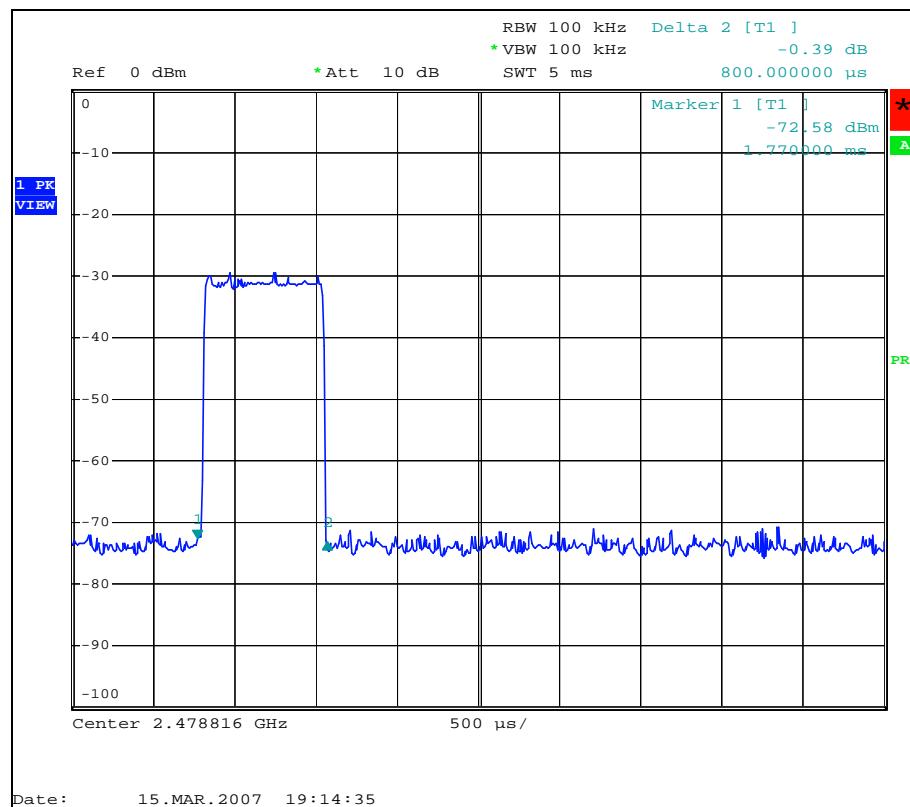
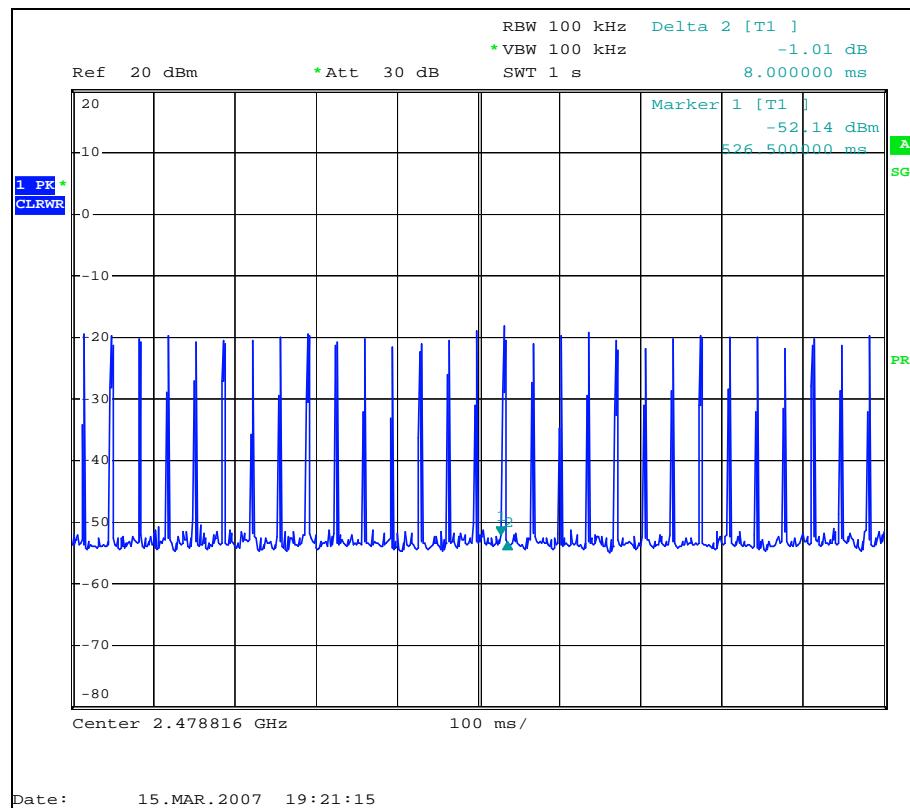
CH1



CH45



CH87



4.5 CHANNEL BANDWIDTH

4.5.1 LIMITS OF CHANNEL BANDWIDTH

For frequency hopping system operating in the 2400-2483.5MHz, If the 20dB bandwidth of hopping channel is greater than 25kHz, two-thirds 20dB bandwidth of hopping channel shall be a minimum limit for the hopping channel separation.

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Spectrum Analyzer ROHDE & SCHWARZ	FSP	E1S1002	May. 15, 2007

NOTE: The calibration interval of the above test instruments is 12 months.

4.5.3 TEST PROCEDURE

- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. 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.
- c. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
- d. 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 EUT OPERATING CONDITION

Continuously transmitting with modulation on a certain channel that can be set by the software (with typical data input as the modulation source).

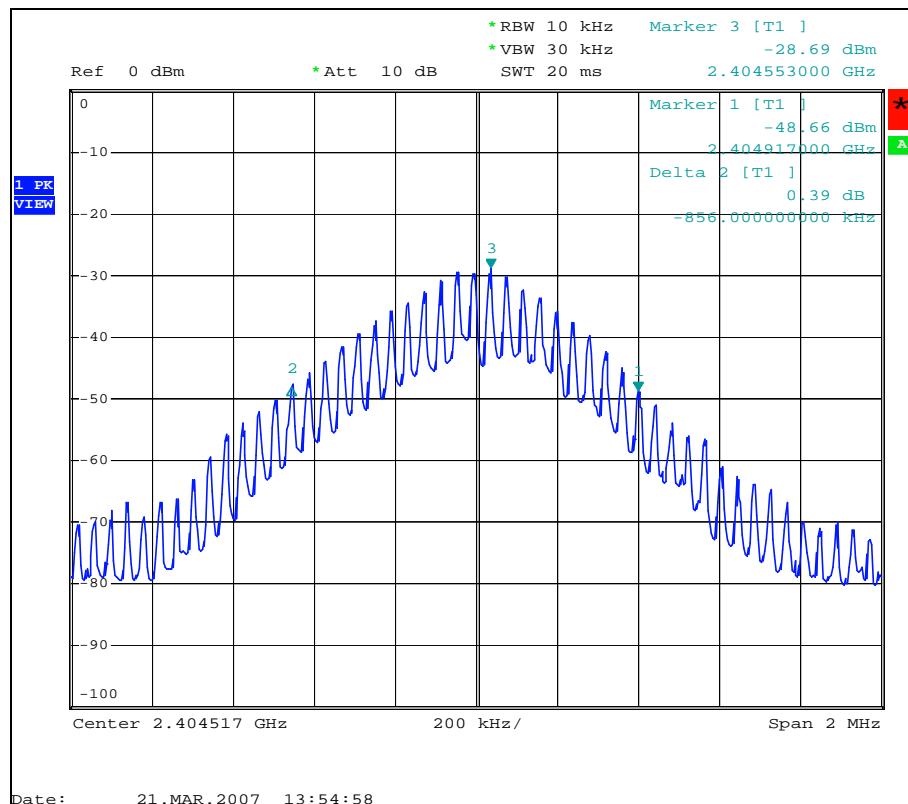
4.5.7 TEST RESULTS

For test mode B3

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MODEL	BM-148 Seires
MODULATION TYPE	GFSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001Hpa
INPUT POWER	120Vac, 60Hz	TESTED BY	Bright

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)
1	2404.512	0.856
45	2442.528	0.844
87	2478.816	0.824

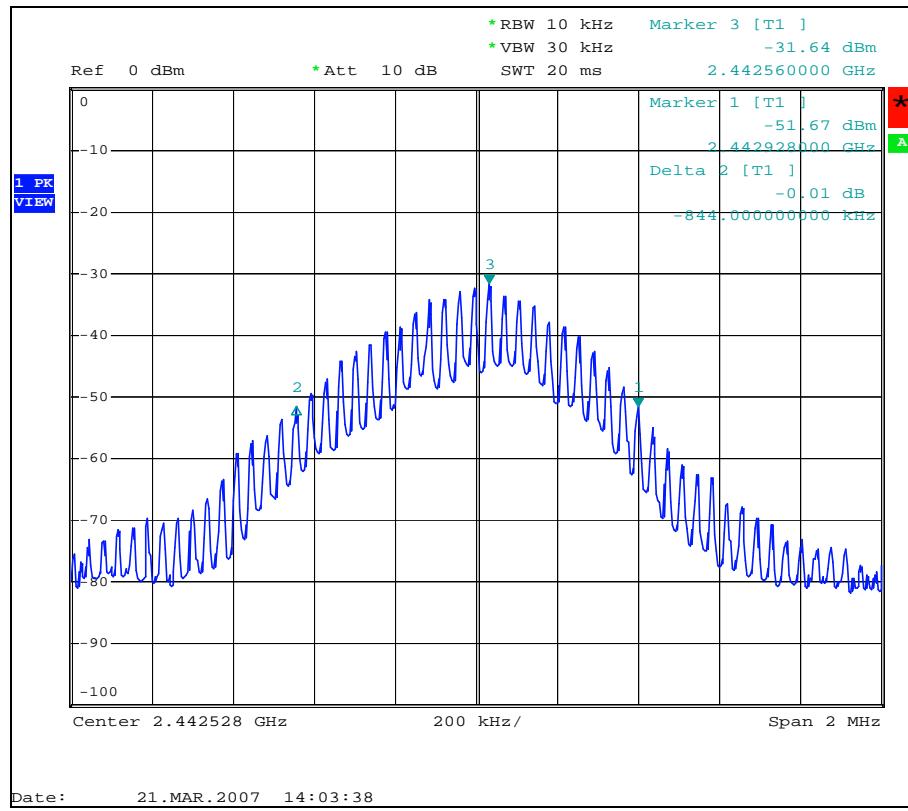
CH1



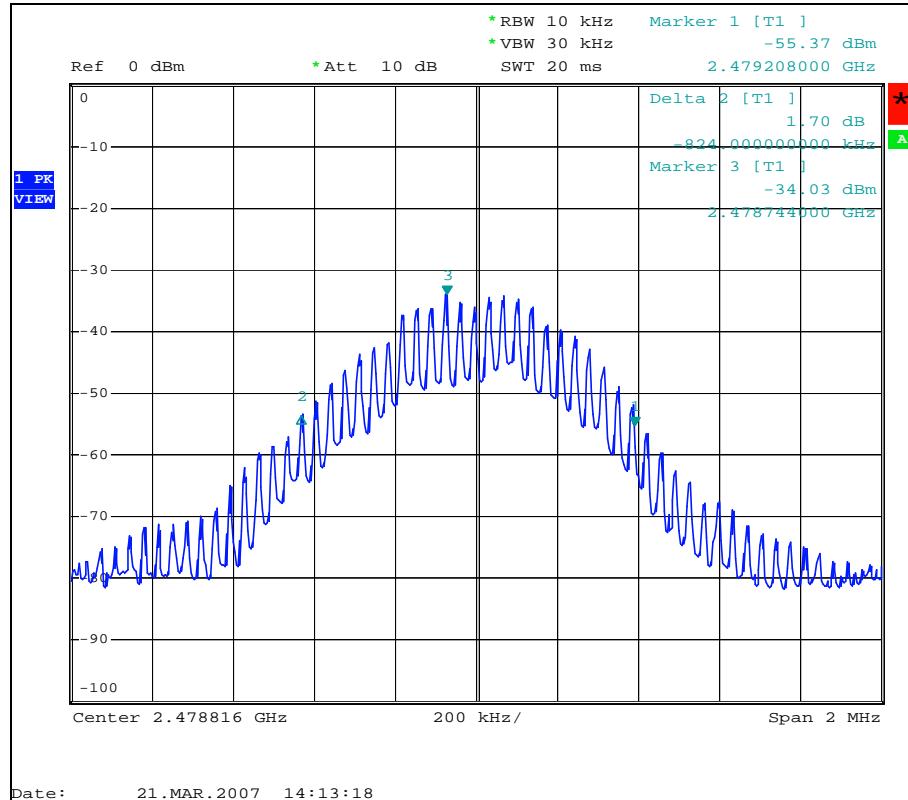
FCC ID: PERBM-148TX



CH45



CH87



4.6 HOPPING CHANNEL SEPARATION

4.6.1 LIMIT OF HOPPING CHANNEL SEPARATION

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

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Spectrum Analyzer ROHDE & SCHWARZ	FSP	E1S1002	May. 15, 2007

NOTES: The calibration interval of the above test instruments is 12 months.

4.6.3 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.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation.

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITIONS

Hopping on a single channel that can be set by the software.

4.6.7 TEST RESULTS

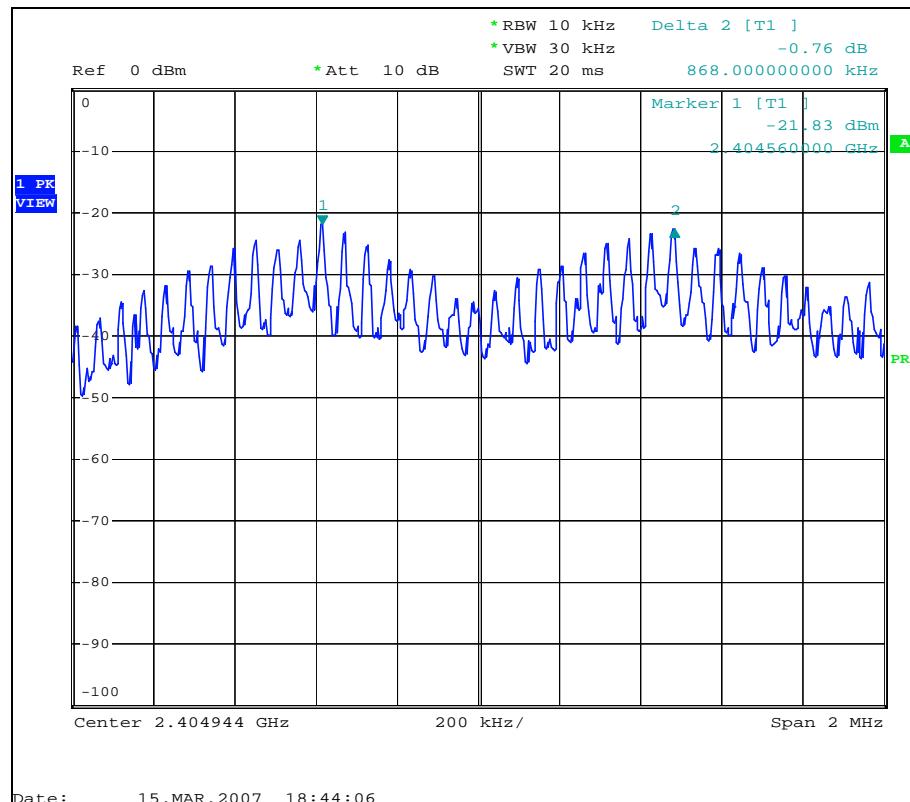
For test mode B3

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MODEL	BM-148 Series
MODULATION TYPE	GFSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001Hpa
INPUT POWER	120Vac, 60Hz	TESTED BY	Bright

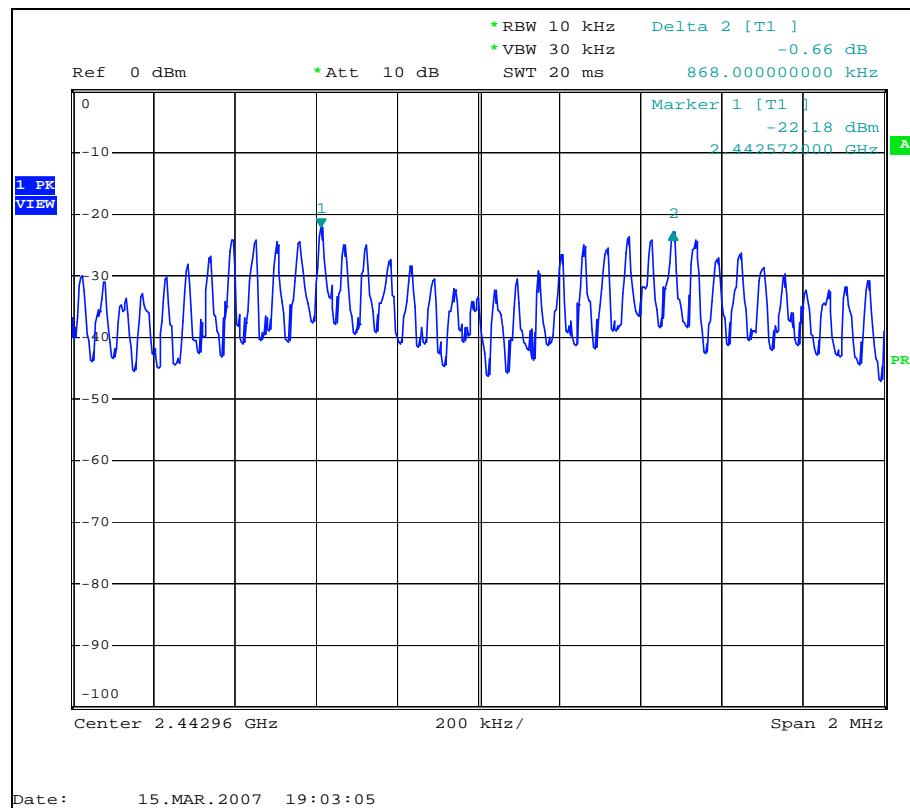
CHANNEL	FREQUENCY (MHz)	ADJACENT CHANNEL SEPARATION (MHz)	20dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2404.512	0.868	0.856	0.856	PASS
45	2442.528	0.868	0.844	0.844	PASS
87	2478.816	0.868	0.824	0.824	PASS

NOTE: The minimum limit is two-third of 20dB bandwidth.

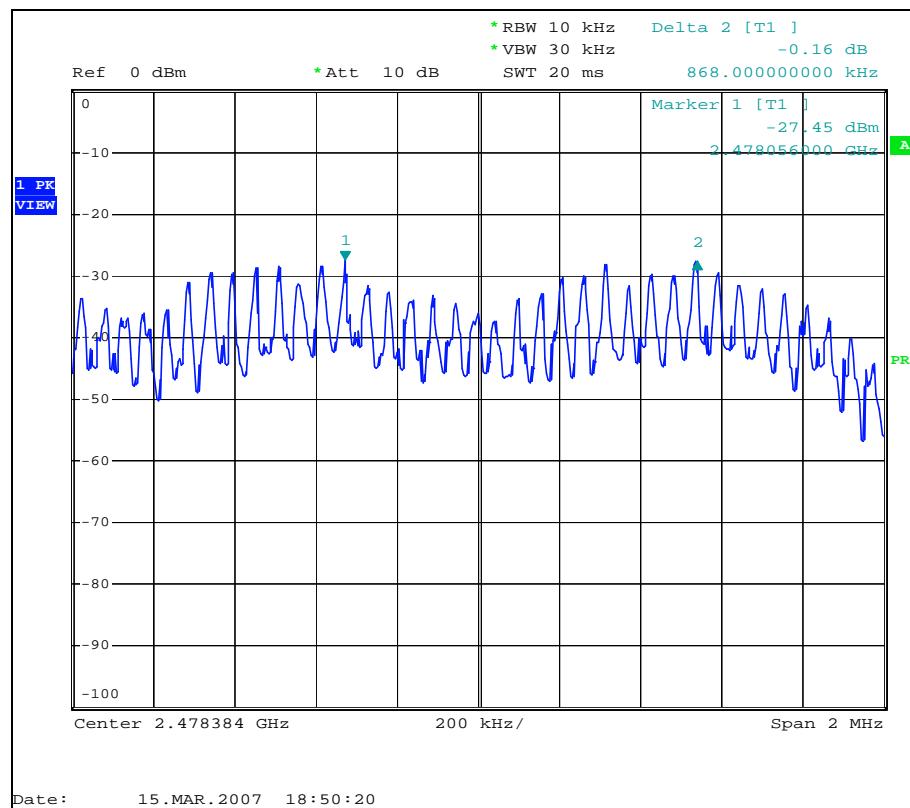
CH1



CH45



CH87



4.7 MAXIMUM PEAK OUTPUT POWER

4.7.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 1W.

4.7.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
*Spectrum Analyzer ROHDE & SCHWARZ	FSP	E1S1002	May. 15, 2007

NOTE: The calibration interval of the above test instruments is 12 months.

4.7.3 TEST PROCEDURES

- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. 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.
- c. The center frequency of the spectrum analyzer is set to the fundamental frequency and using 1 MHz RBW and 3 MHz VBW.
- d. Measure the captured power within the band and recording the plot.
- e. Repeat above procedures until all frequencies required were complete.

4.7.4 DEVIATION FROM TEST STANDARD

No deviation.

4.7.5 TEST SETUP



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

4.7.6 EUT OPERATING CONDITION

Continuously transmitting with modulation on a certain channel that can be set by the software (with typical data input as the modulation source).

4.7.7 TEST RESULTS

For test mode B3

EUT	2.4GHz Digital Baby Phone (with LCD / with LED)	MODEL	BM-148
MODULATION TYPE	GFSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001Hpa
INPUT POWER	120Vac, 60Hz	TESTED BY	Bright

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2404.512	12.48	30	PASS
45	2442.528	9.92	30	PASS
87	2478.816	8.6	30	PASS

4.8 BAND EDGES MEASUREMENT

4.8.1 LIMITS OF BAND EDGES MEASUREMENT

Below –20dB of the highest emission level of operating band.

4.8.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Spectrum Analyzer ROHDE & SCHWARZ	FSP	E1S1002	May.15, 2007

NOTES: The calibration interval of the above test instruments is 12 months.

4.8.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set both RBW and VBW of spectrum analyzer with suitable frequency span including bandwidth from band edge. The band edges was measured and recorded.

4.8.4 DEVIATION FROM TEST STANDARD

No deviation.

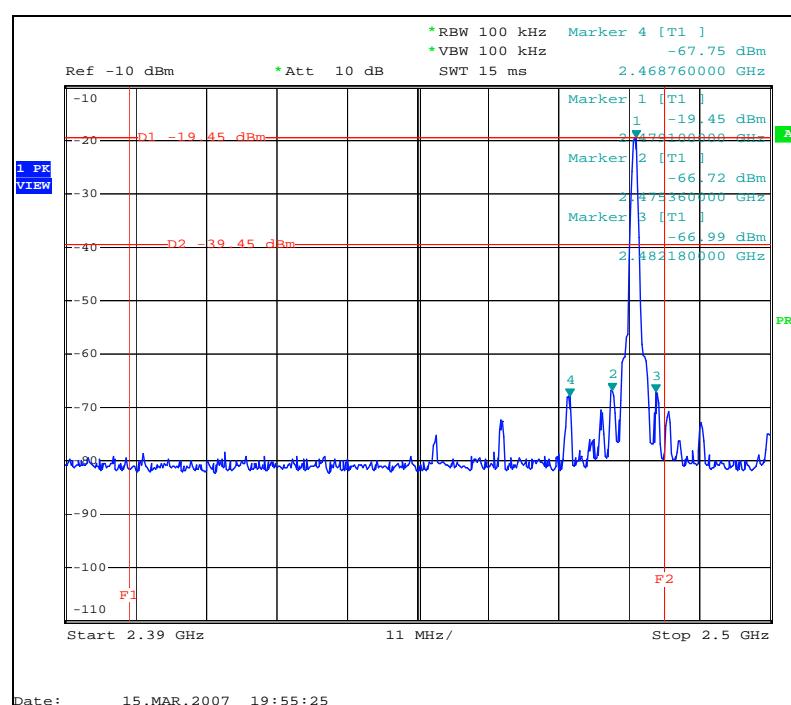
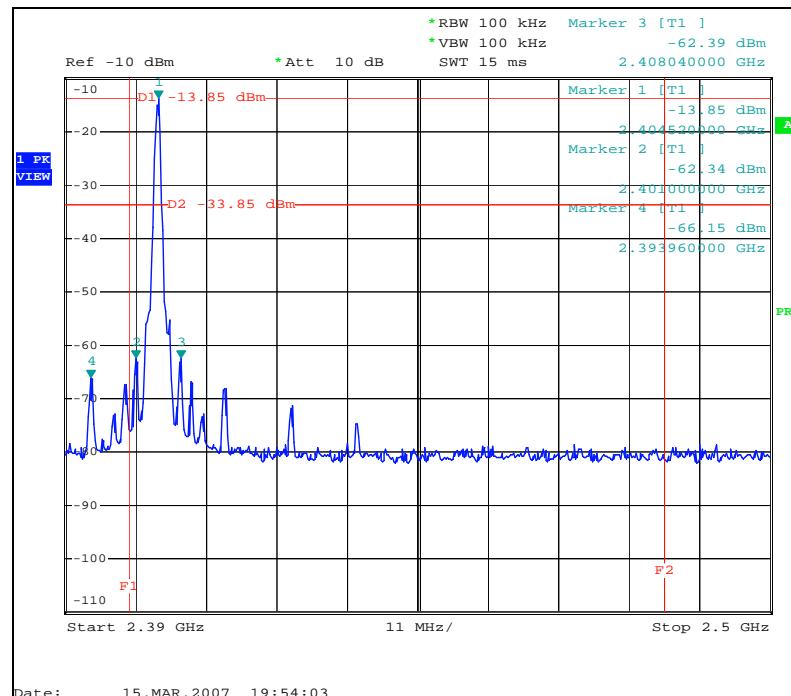
4.8.5 EUT OPERATING CONDITION

Continuously transmitting with modulation on a certain channel that can be set by the software (with typical data input as the modulation source).

4.8.6 TEST RESULTS

The spectrum plots are attached on the following images. D1 line indicates the highest level, D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

For test mode B3



4.9 ANTENNA REQUIREMENT

4.9.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.9.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is soldered on PCB without antenna connector. The maximum gain of this antenna is 0dBi.

5. INFORMATION ON THE TESTING LABORATORY

We, ADT (Shanghai) Corp., was founded in 2003 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratory is accredited and approved by the following approval agencies according to ISO / IEC 17025 (2005).

The client should not use it to claim product endorsement by CNLS, A2LA, or any government agency.

Japan	VCCI
USA	FCC, A2LA
Norway	DNV
China	CNAS



Copies of accreditation certificates of our laboratory obtained from approval agencies can be downloaded from our web site: www.cnadt.com

If you have any comments, please feel free to contact us at the following:

ADT (Shanghai) Corporation

TEL :86-21-6465-9091

Fax : 86-21-6465-9092

Email: service@adt-sh.com

Web Site: www.cnadt.com

APPENDIX-A

MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.