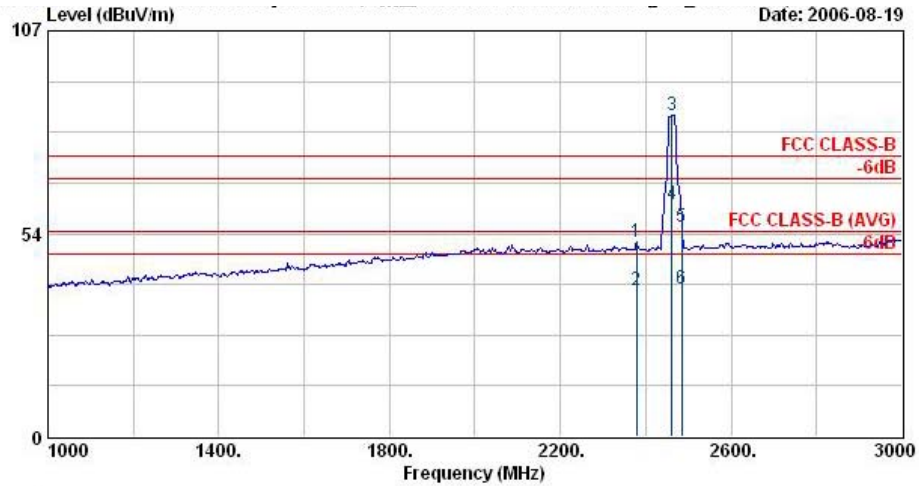




- Polarization : Vertical

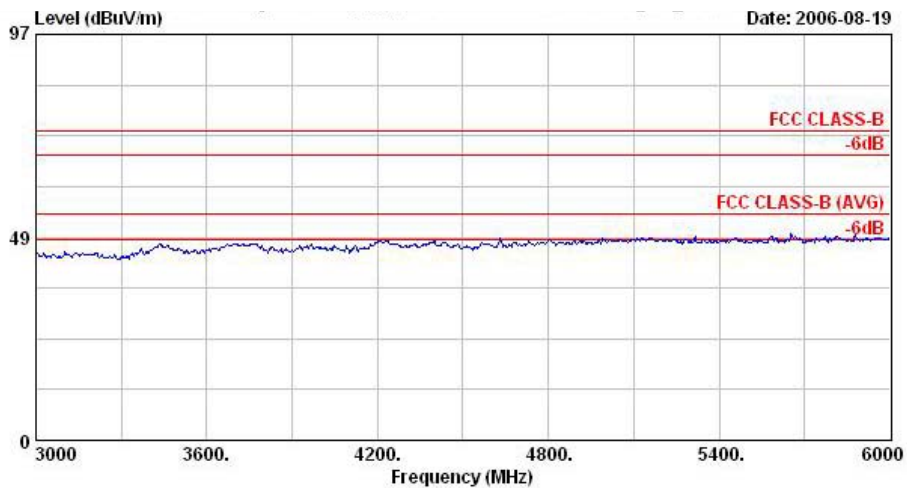
The test that passed at minimum margin was marked by the frame in the following table.



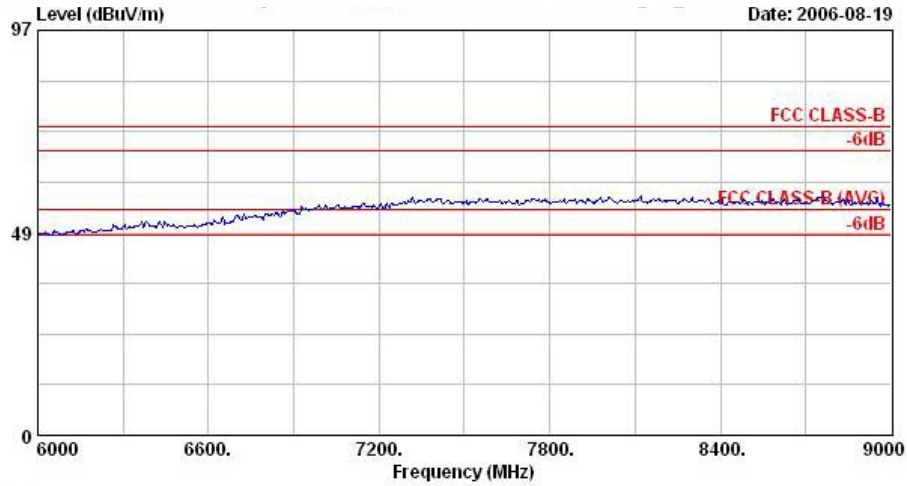
Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : 11g Tx\_CH11,2462MHz  
 Plane : E2  
 Data Rate : 6

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2378.00	51.28	-22.72	74.00	52.24	30.25	4.23	35.44	100	0 Peak
2	2378.00	38.69	-15.31	54.00	39.65	30.25	4.23	35.44	100	153 Average
3 @	2462.00	84.83			85.69	30.29	4.36	35.51	100	0 Peak
4 @	2462.00	61.16			62.04	30.29	4.33	35.49	100	153 Average
5	2484.00	55.19	-18.81	74.00	56.05	30.29	4.36	35.51	100	0 Peak
6	2484.00	38.97	-15.03	54.00	39.83	30.29	4.36	35.51	100	153 Average

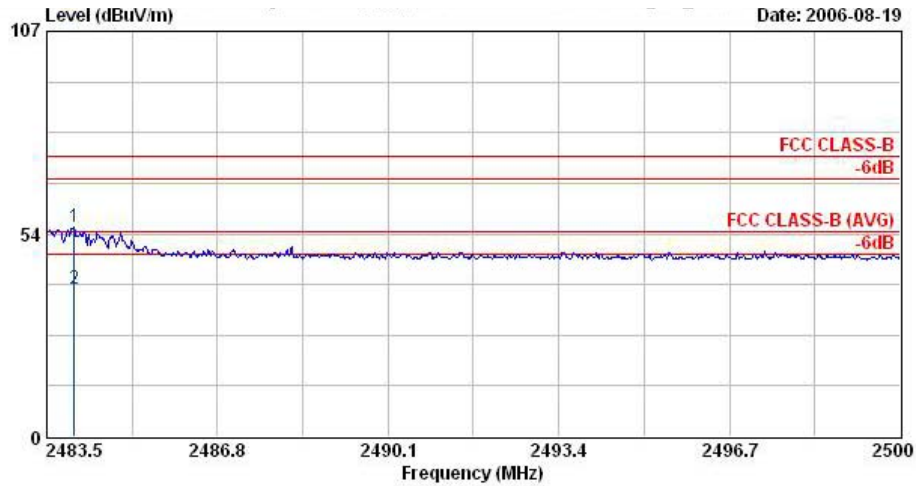
Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : 11g Tx\_CH11,2462MHz  
 Plane : E2  
 Data Rate : 6



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : 11g Tx\_CH11,2462MHz  
 Plane : E2  
 Data Rate : 6



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : 11g Tx\_CH11,2462MHz  
 Plane : E2  
 Data Rate : 6

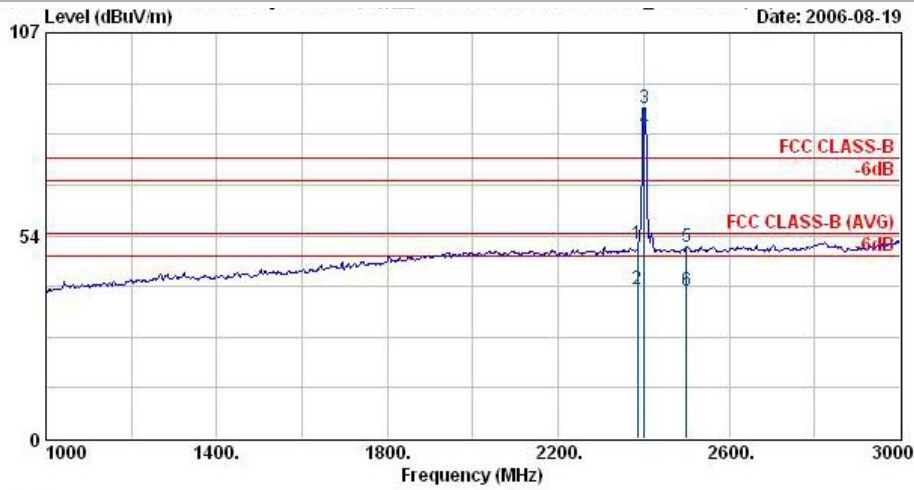
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2484.03	55.19	-18.81	74.00	56.05	30.29	4.36	35.51	100	0 Peak
2 @	2484.03	38.97	-15.03	54.00	39.83	30.29	4.36	35.51	100	153 Average

Remark: There is no more obvious spurious emission except the listings above.



- Test Mode : Mode 7
- Polarization : Horizontal

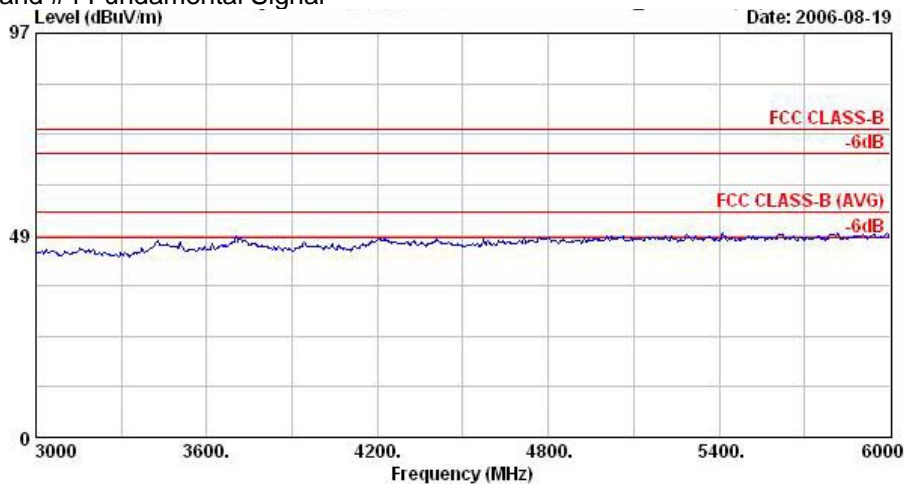
The test that passed at minimum margin was marked by the frame in the following table.



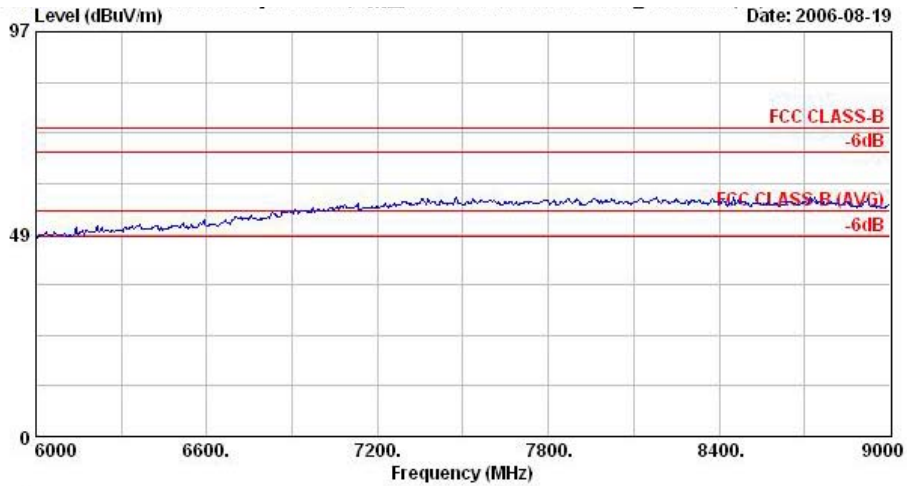
Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH00,2402MHz  
 Plane : E1  
 Data Rate : DHS

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	cm	deg		
1	2386.00	51.21	-22.79	74.00	52.16	30.26	4.23	35.44	100	360	Peak
2	2386.00	39.23	-14.77	54.00	40.18	30.26	4.23	35.44	100	348	Average
3 @	2402.00	87.24			88.17	30.27	4.26	35.46	100	360	Peak
4 @	2402.00	81.66			82.60	30.26	4.26	35.46	100	348	Average
5	2500.00	50.44	-23.56	74.00	51.28	30.30	4.39	35.53	100	360	Peak
6	2500.00	39.03	-14.97	54.00	39.87	30.30	4.39	35.53	100	348	Average

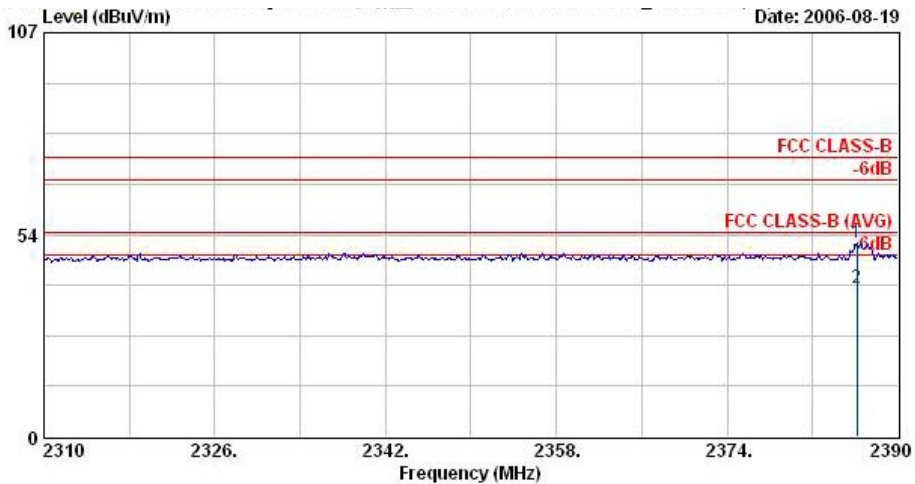
Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH00,2402MHz  
 Plane : E1  
 Data Rate : DHS



Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH00,2402MHz  
 Plane : E1  
 Data Rate : DHS



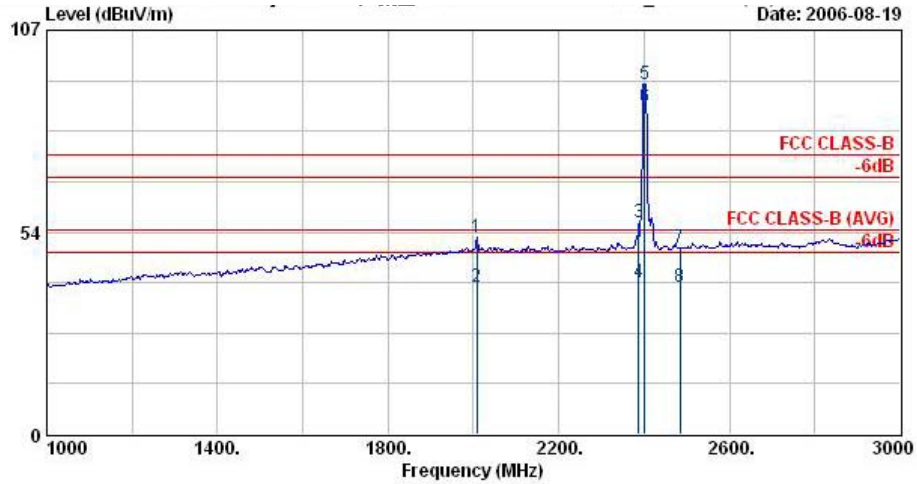
Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH00,2402MHz  
 Plane : E1  
 Data Rate : DHS

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2386.16	51.21	-22.79	74.00	52.16	30.26	4.23	35.44	100	0 Peak
2	2386.16	39.23	-14.77	54.00	40.18	30.26	4.23	35.44	100	348 Average



- Polarization : Vertical

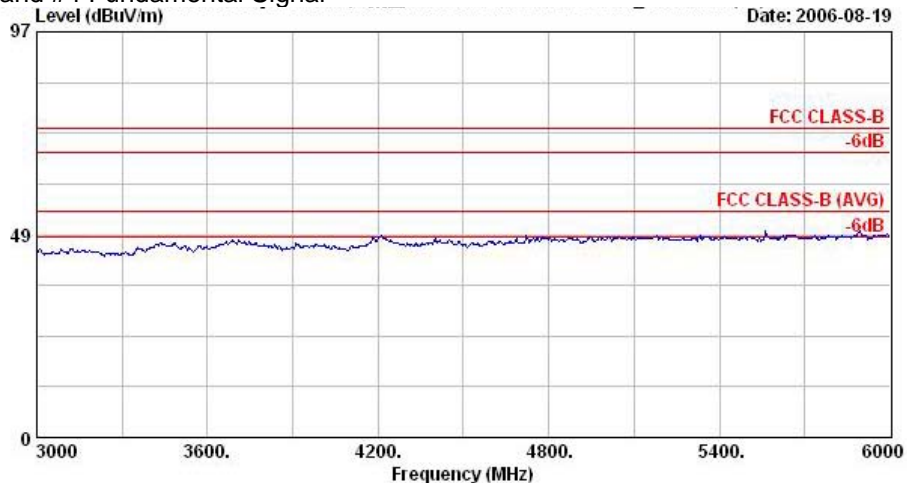
The test that passed at minimum margin was marked by the frame in the following table.



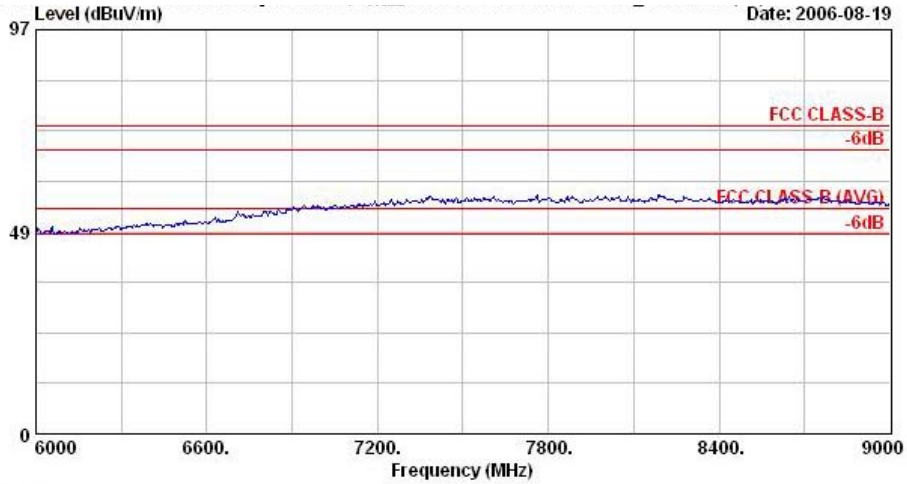
Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH00;2402MHz  
 Plane : E1  
 Data Rate : DHS

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2008.00	52.05	-21.95	74.00	53.35	30.10	3.79	35.19	100	0	Peak
2	2008.00	39.00	-15.00	54.00	40.30	30.10	3.79	35.19	100	325	Average
3	2387.00	56.12	-17.88	74.00	57.07	30.26	4.23	35.44	100	0	Peak
4	2387.00	40.12	-13.88	54.00	41.07	30.26	4.23	35.44	100	325	Average
5 @	2402.00	92.49			93.42	30.27	4.26	35.46	100	0	Peak
6 @	2402.00	86.82			87.76	30.26	4.26	35.46	100	325	Average
7	2484.00	49.46	-24.54	74.00	50.32	30.29	4.36	35.51	100	0	Peak
8	2484.00	38.99	-15.01	54.00	39.85	30.29	4.36	35.51	100	325	Average

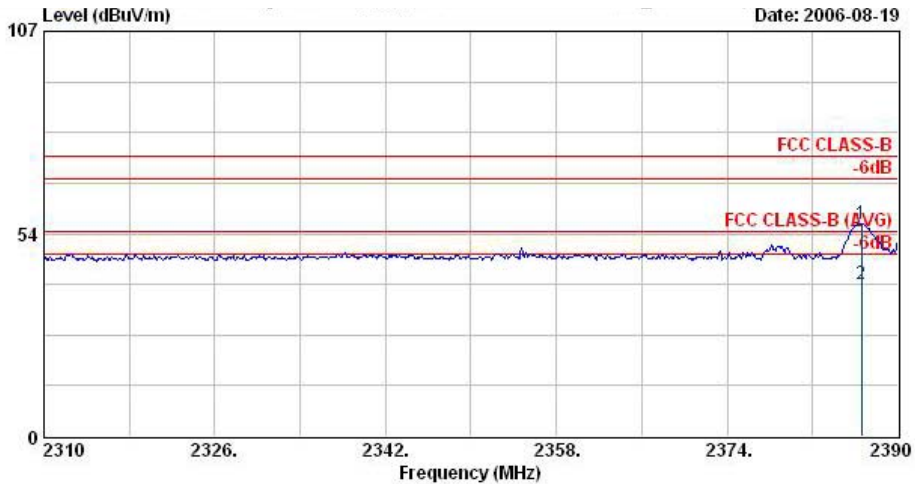
Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH00;2402MHz  
 Plane : E1  
 Data Rate : DHS



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH00;2402MHz  
 Plane : E1  
 Data Rate : DH5



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH00;2402MHz  
 Plane : E1  
 Data Rate : DH5

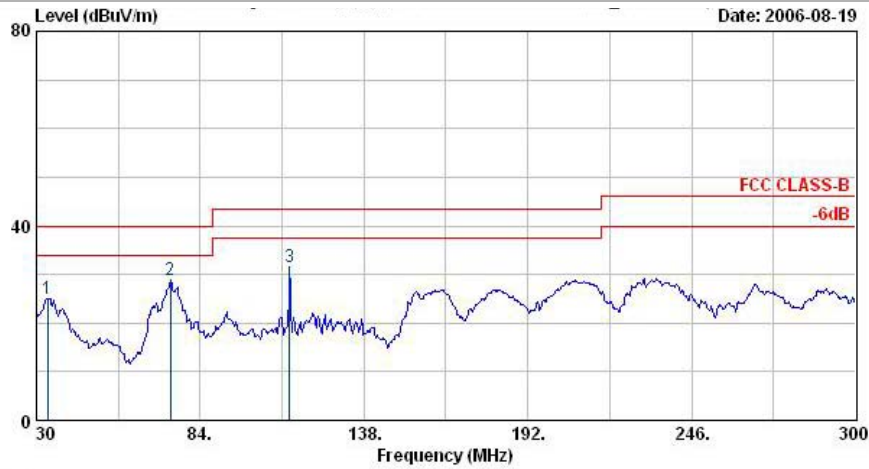
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2386.56	56.12	-17.88	74.00	57.07	30.26	4.23	35.44	100	0 Peak
2 @	2386.56	40.12	-13.88	54.00	41.07	30.26	4.23	35.44	100	325 Average

Remark: There is no more obvious spurious emission except the listings above.



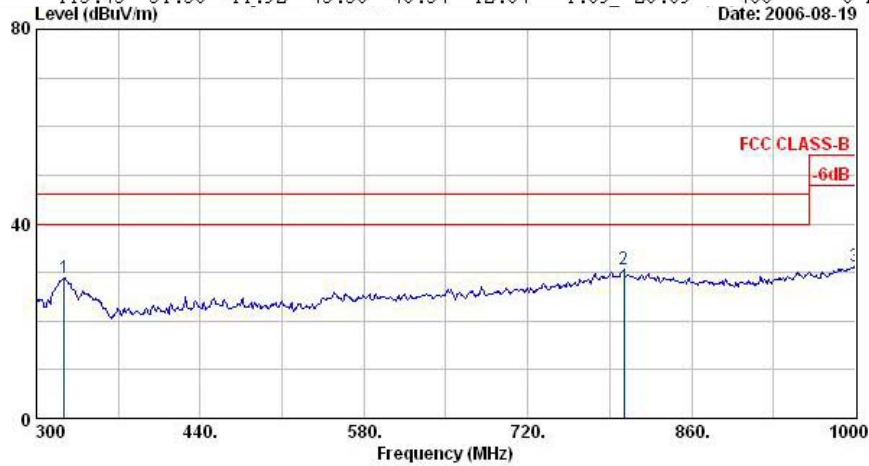
- Test Mode : Mode 8
- Polarization : Horizontal

The test that passed at minimum margin was marked by the frame in the following table.



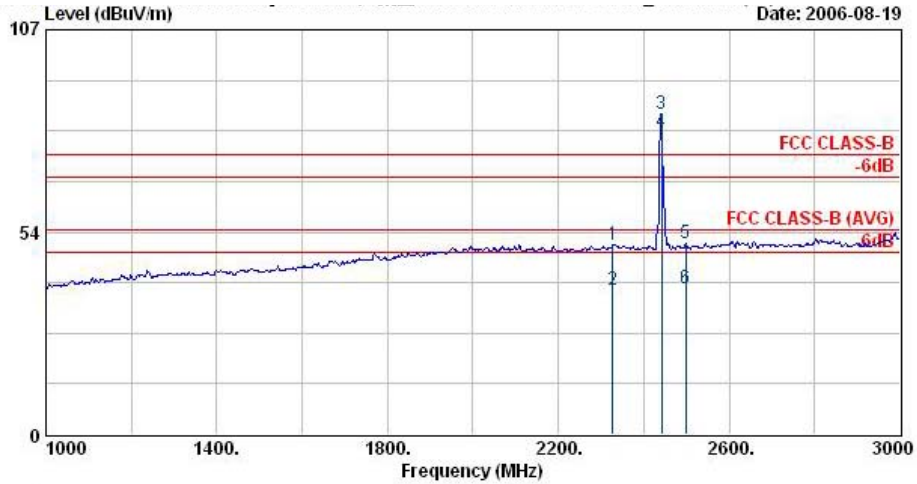
Site : 03CH06-HY  
 Condition : BI-LOG-2004-1122 HORIZONTAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH39,2441MHz  
 Plane : E1  
 Data Rate : DHS

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	33.78	25.05	-14.95	40.00	35.24	17.40	1.04	28.64	400	0 Peak
2 @	74.28	28.74	-11.26	40.00	49.36	6.63	1.45	28.70	100	211 Peak
3	113.43	31.58	-11.92	43.50	46.54	12.04	1.89	28.89	400	0 Peak



Site : 03CH06-HY  
 Condition : BI-LOG-2004-1122 HORIZONTAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH39,2441MHz  
 Plane : E1  
 Data Rate : DHS

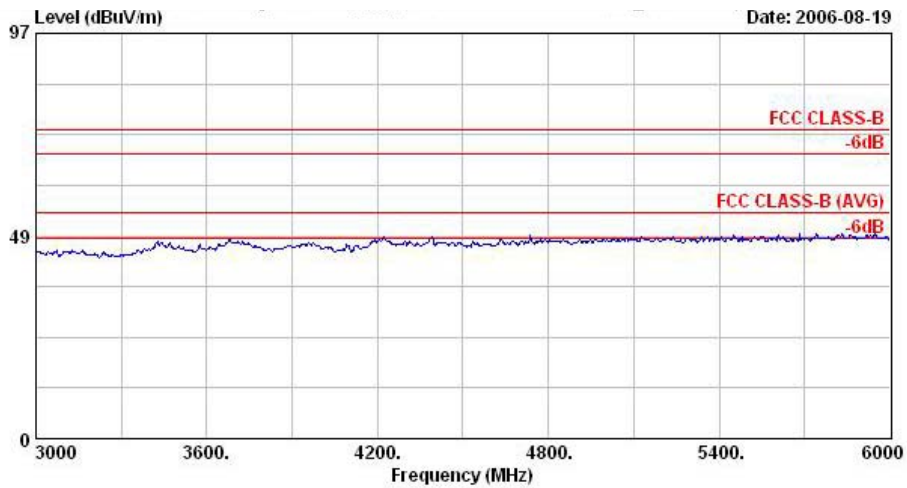
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	323.80	28.99	-17.01	46.00	40.91	13.65	3.38	28.95	100	0 Peak
2	801.90	30.53	-15.47	46.00	31.93	21.86	5.61	28.88	100	0 Peak
3	1000.00	31.14	-22.86	54.00	30.72	22.97	6.24	28.79	100	0 Peak



Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH39,2441MHz  
 Plane : E1  
 Data Rate : DHS

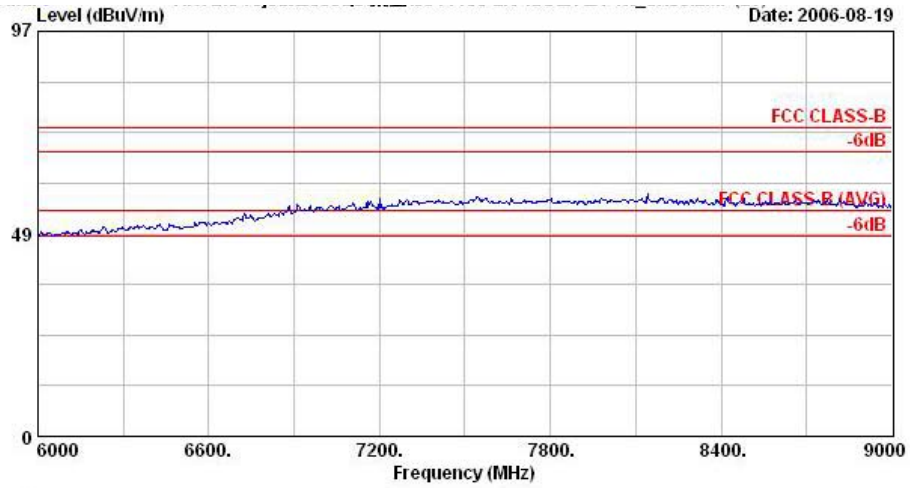
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2328.00	49.98	-24.02	74.00	50.98	30.23	4.17	35.40	100	0 Peak
2	2328.00	38.38	-15.62	54.00	39.38	30.23	4.17	35.40	100	274 Average
3 @	2441.00	84.64			85.54	30.28	4.29	35.47	100	0 Peak
4 @	2441.00	79.99			80.88	30.28	4.33	35.49	100	274 Average
5	2498.00	50.33	-23.67	74.00	51.17	30.30	4.39	35.53	100	0 Peak
6	2498.00	38.65	-15.35	54.00	39.49	30.30	4.39	35.53	100	274 Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH39,2441MHz  
 Plane : E1  
 Data Rate : DHS



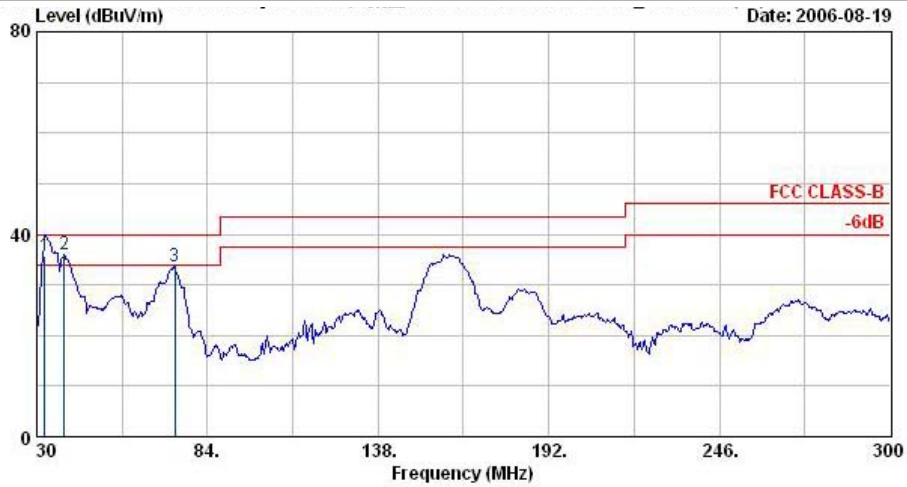


Site : 03CH06-HY  
Condition : HF-ANT-060410 HORIZONTAL  
EUT : Smart Phone  
Power : 120Vac/60Hz  
Model : FR 681418  
Memo : BT Tx\_CH39,2441MHz  
Plane : E1  
Data Rate : DHS



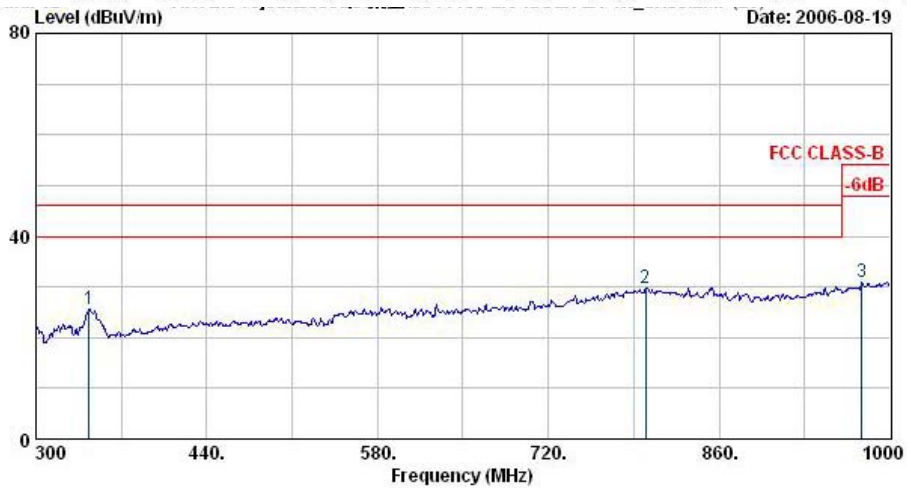
- Polarization : Vertical

The test that passed at minimum margin was marked by the frame in the following table.



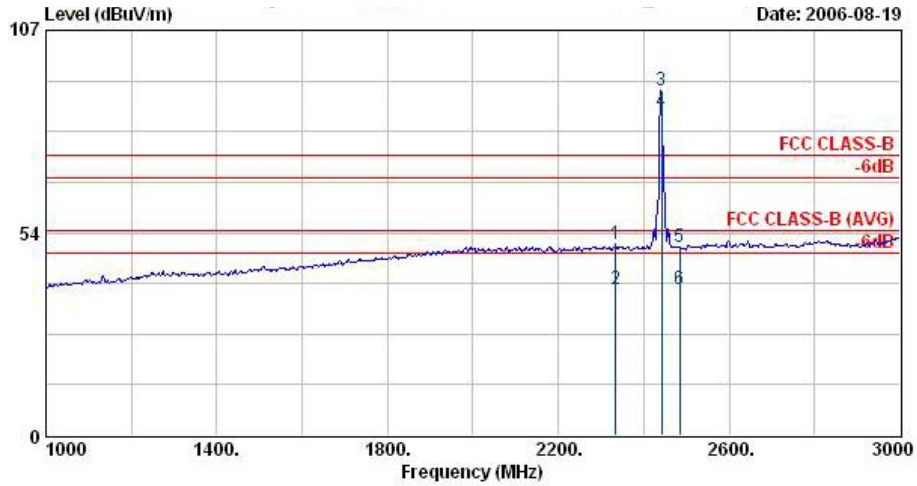
Site : 03CH06-HY  
 Condition : BI-LOG-2004-1122 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH39\_2441MHz  
 Plane : E1  
 Data Rate : DHS

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	32.43	35.61	-4.39	40.00	45.50	17.73	1.01	28.63	100	281 OP
2 @	38.64	35.88	-4.12	40.00	48.04	15.28	1.23	28.66	400	0 Peak
3 @	73.74	33.63	-6.37	40.00	54.35	6.55	1.43	28.70	400	0 Peak



Site : 03CH06-HY  
 Condition : BI-LOG-2004-1122 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH39\_2441MHz  
 Plane : E1  
 Data Rate : DHS

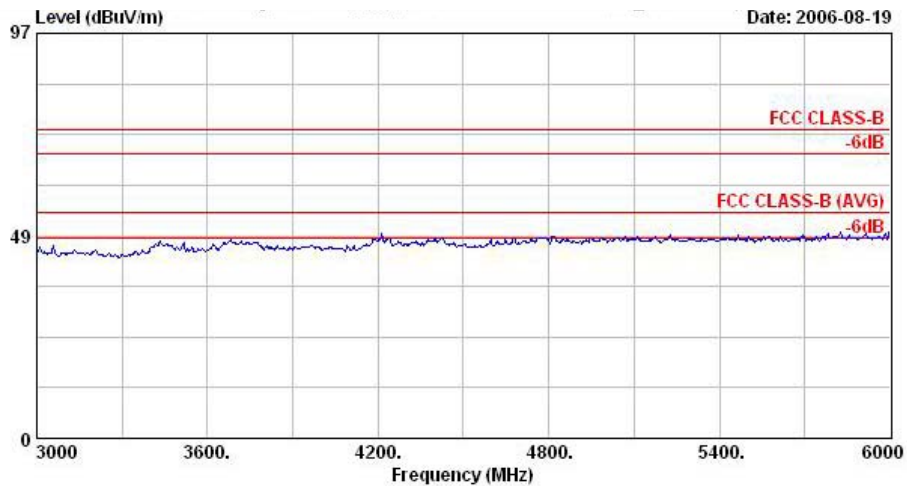
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	343.40	25.62	-20.38	46.00	36.92	14.22	3.48	29.00	100	0 Peak
2	799.80	29.69	-16.31	46.00	31.04	21.90	5.62	28.87	100	0 Peak
3	976.90	30.96	-23.04	54.00	31.56	22.26	5.96	28.83	100	0 Peak



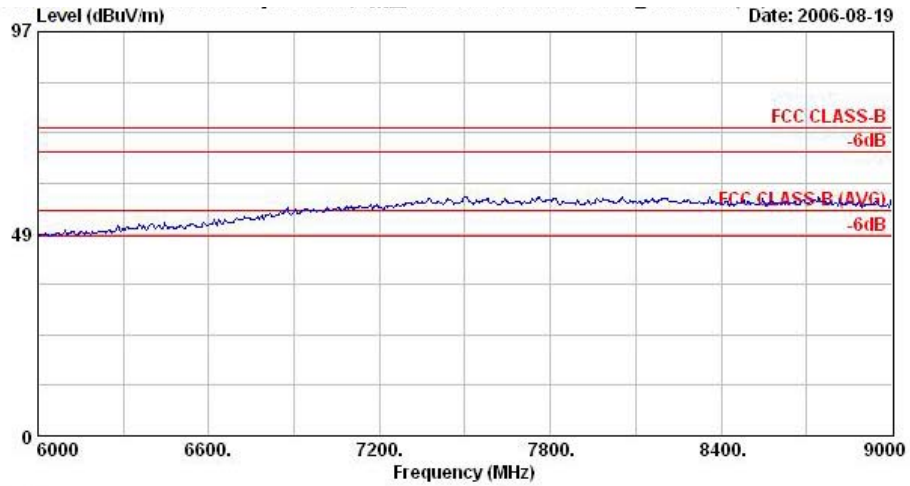
Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH39,2441MHz  
 Plane : E1  
 Data Rate : DHS

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	cm	deg		
1	2334.00	50.37	-23.63	74.00	51.38	30.23	4.17	35.40	100	360	Peak
2	2334.00	38.51	-15.49	54.00	39.51	30.23	4.17	35.40	100	252	Average
3 @	2441.00	91.28			92.18	30.28	4.29	35.47	100	360	Peak
4 @	2441.00	85.56			86.45	30.28	4.33	35.49	100	252	Average
5	2484.00	49.84	-24.16	74.00	50.70	30.29	4.36	35.51	100	360	Peak
6	2484.00	38.65	-15.35	54.00	39.51	30.29	4.36	35.51	100	252	Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH39,2441MHz  
 Plane : E1  
 Data Rate : DHS



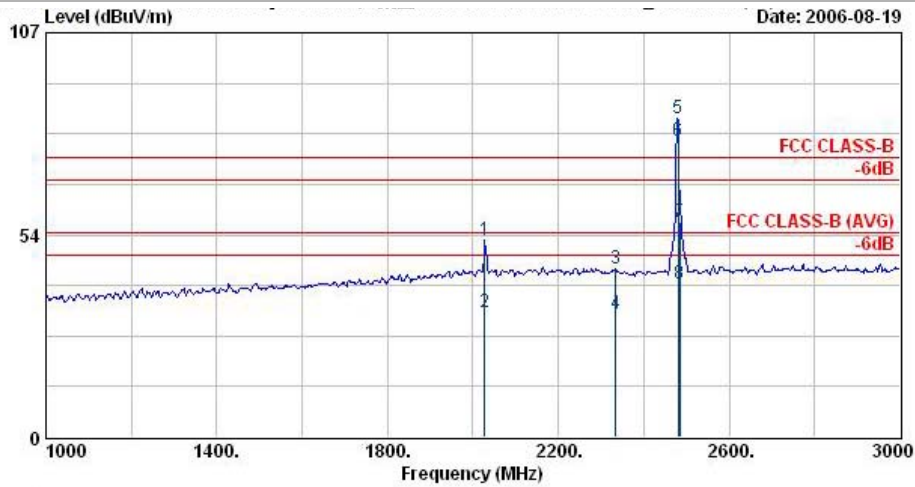
Site : 03CH06-HY  
Condition : HF-ANT-060410 VERTICAL  
EUT : Smart Phone  
Power : 120Vac/60Hz  
Model : FR 681418  
Memo : BT Tx\_CH39;2441MHz  
Plane : E1  
Data Rate : DHS

Remark: There is no more obvious spurious emission except the listings above.



- Test Mode : Mode 9
- Polarization : Horizontal

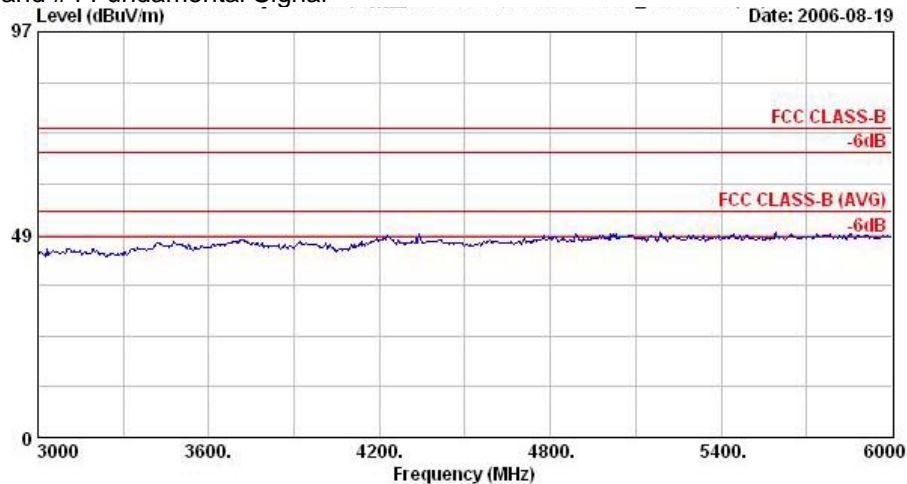
**The test that passed at minimum margin was marked by the frame in the following table.**



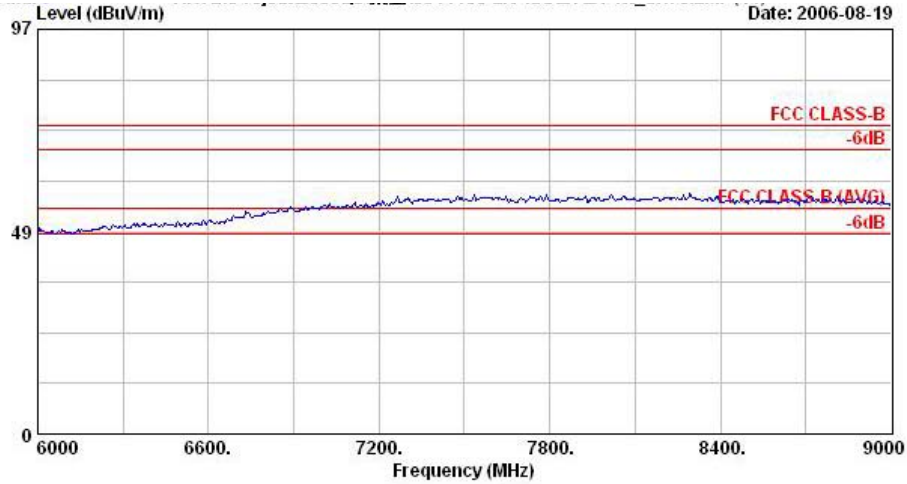
Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH78,2480MHz  
 Plane : E1  
 Data Rate : DH5

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2028.00	52.10	-21.90	74.00	53.39	30.11	3.79	35.19	100	0	Peak
2	2028.00	33.10	-20.90	54.00	34.39	30.11	3.79	35.19	100	106	Average
3	2334.00	44.57	-29.43	74.00	45.58	30.23	4.17	35.40	100	0	Peak
4	2334.00	32.54	-21.46	54.00	33.54	30.23	4.17	35.40	100	106	Average
5 @	2480.00	84.36			85.22	30.29	4.36	35.51	100	0	Peak
6 @	2480.00	78.36			79.22	30.29	4.36	35.51	100	106	Average
7	2483.50	57.06	-16.94	74.00	57.92	30.29	4.36	35.51	100	0	Peak
8	2483.50	40.50	-13.50	54.00	41.36	30.29	4.36	35.51	100	106	Average

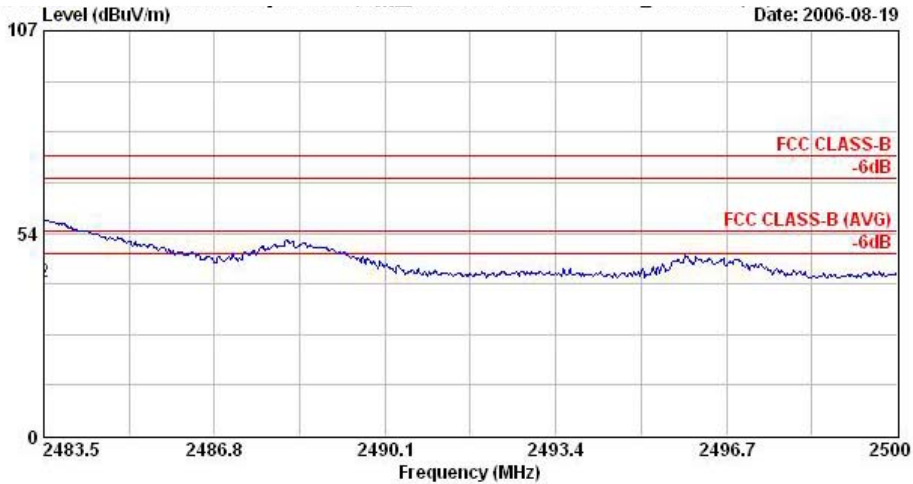
Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH78,2480MHz  
 Plane : E1  
 Data Rate : DH5



Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : Smart Phone  
 Power : 120Vac/50Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH78,2480MHz  
 Plane : E1  
 Data Rate : DHS



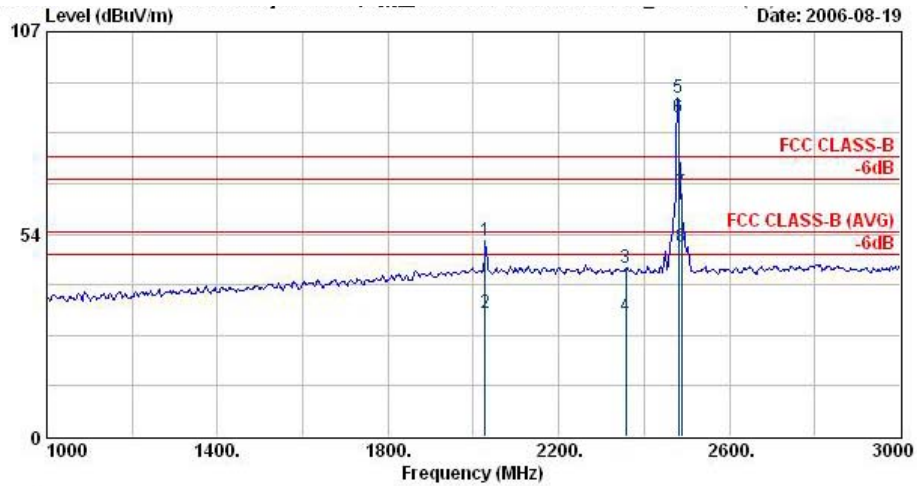
Site : 03CH06-HY  
 Condition : HF-ANT-060410 HORIZONTAL  
 EUT : Smart Phone  
 Power : 120Vac/50Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH78,2480MHz  
 Plane : E1  
 Data Rate : DHS

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2483.50	57.06	-16.94	74.00	57.92	30.29	4.36	35.51	100	0	Peak
2	2483.50	40.50	-13.50	54.00	41.36	30.29	4.36	35.51	100	106	Average



- Polarization : Vertical

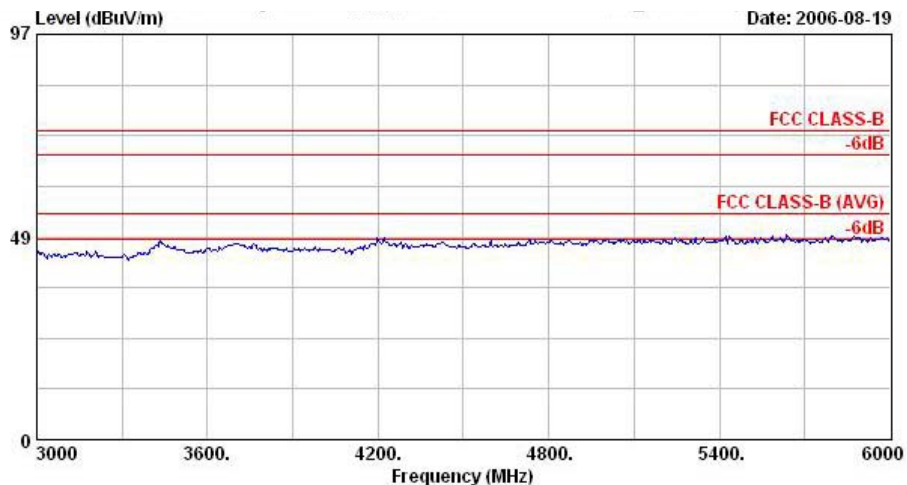
The test that passed at minimum margin was marked by the frame in the following table.



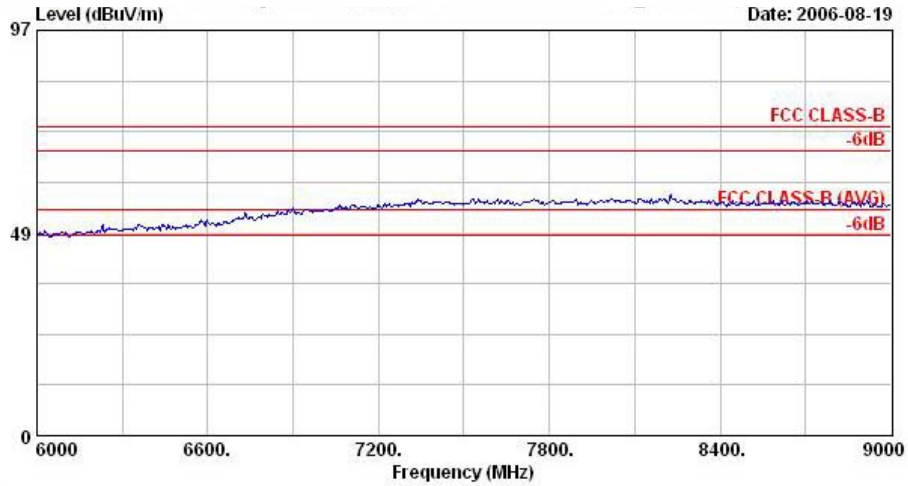
Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH78,2480MHz  
 Plane : E1  
 Data Rate : DHS

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2028.00	51.54	-22.46	74.00	52.83	30.11	3.79	35.19	100	360	Peak
2	2028.00	32.77	-21.23	54.00	34.06	30.11	3.79	35.19	100	260	Average
3	2358.00	44.75	-29.25	74.00	45.72	30.24	4.20	35.42	100	360	Peak
4	2358.00	31.92	-22.08	54.00	32.90	30.24	4.20	35.42	100	260	Average
5 @	2480.00	89.33			90.19	30.29	4.36	35.51	100	360	Peak
6 @	2480.00	84.18			85.04	30.29	4.36	35.51	100	260	Average
7	2488.00	64.38	-9.62	74.00	65.24	30.29	4.36	35.51	100	360	Peak
8 @	2488.00	50.07	-3.93	54.00	50.92	30.30	4.36	35.51	100	260	Average

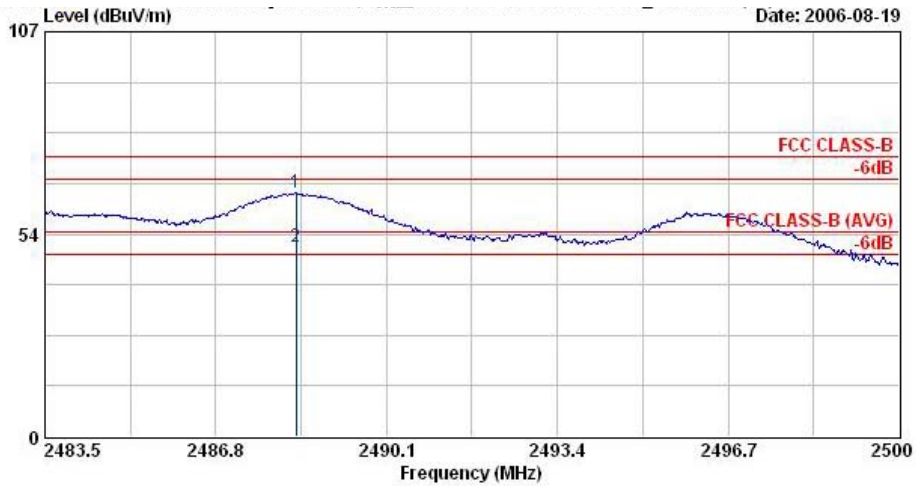
Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH78,2480MHz  
 Plane : E1  
 Data Rate : DHS



Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
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Site : 03CH06-HY  
 Condition : HF-ANT-060410 VERTICAL  
 EUT : Smart Phone  
 Power : 120Vac/60Hz  
 Model : FR 681418  
 Memo : BT Tx\_CH78,2480MHz  
 Plane : E1  
 Data Rate : DHS

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2488.35	64.38	-9.62	74.00	65.23	30.30	4.36	35.51	100	0	Peak
2 @	2488.35	50.07	-3.93	54.00	50.92	30.30	4.36	35.51	100	260	Average

Remark: There is no more obvious spurious emission except the listings above.





## **5.12 Antenna Requirements**

### **5.12.1 Standard Applicable**

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

And according to FCC 47 CFR Section 15.247 (b), if directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi.

### **5.12.2 Antenna Connected Construction**

The antennas used in this product are Chip antennas for both WLAN and BT without antenna connector and it is considered to meet antenna requirement of FCC.

### **5.12.3 Antenna Gain**

The antenna gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



**6 List of Measuring Equipments Used**

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	Feb. 22, 2006	Feb. 22, 2007	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/009	9kHz – 30MHz	Mar. 29, 2006	Mar. 29, 2007	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Apr. 19, 2006	Apr. 19, 2007	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 – 60Hz	N/A	N/A	Conduction (CO01-HY)
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9kHz – 30MHz	Dec. 22, 2005	Dec. 22, 2006	Conduction (CO01-HY)
Spectrum analyzer	Agilent	E4408B	MY44211030	9KHz-26.5GHz	Jul. 25, 2006	Jul. 24, 2007	Radiation (03CH06-HY)
Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jun. 28, 2006	Jun. 27, 2007	Radiation (03CH06-HY)
Controller	CT	SC100	N/A	N/A	N/A	N/A	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Nov. 22, 2004	Nov. 22, 2006	Radiation (03CH06-HY)
Horn Antenna	Com-Power	AH118	071025	1G-18G	Feb. 1, 2005	Feb. 1, 2007	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	9170-249	14G - 40G	Jul. 21, 2006	Jul. 20, 2007	Radiation (03CH06-HY)
Amplifier	MITEQ	AMF-6F	997165	26G - 40G	Jul. 21, 2006	Jul. 20, 2007	Radiation (03CH06-HY)
Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	N/A	Radiation (03CH06-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	N/A	Radiation (03CH06-HY)



## 7 Uncertainty Evaluation

### Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of $x_i$		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch	+0.34/-0.35	U-shape	0.24
<b>combined standard uncertainty Uc(y)</b>	<b>1.13</b>		
<b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>	<b>2.26</b>		

### Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of $x_i$		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch	+0.39/-0.41	U-shaped	0.28
<b>combined standard uncertainty Uc(y)</b>	<b>1.27</b>		
<b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>	<b>2.54</b>		



**Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)**

Contribution	Uncertainty of $x_i$		$u(x_i)$	$C_i$	$C_i * u(x_i)$
	dB	Probability Distribution			
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20 \log(1 - \Gamma_1 * \Gamma_2 * \Gamma_3)$	+0.34/-0.35	U-shaped	0.244	1	0.244
<b>Combined standard uncertainty <math>U_c(y)</math></b>	<b>2.36</b>				
<b>Measuring uncertainty for a level of confidence of 95% <math>U = 2U_c(y)</math></b>	<b>4.72</b>				