

7.78

9.18

35.85

36.54

100

---

288 Average

--- Peak

39.55

-9.63

34.70

78.01

Remark: #3 and #4 Fundamental Signal

7977.00

9846.00

10

11

0

-7.81

54.00

74.00

46.19

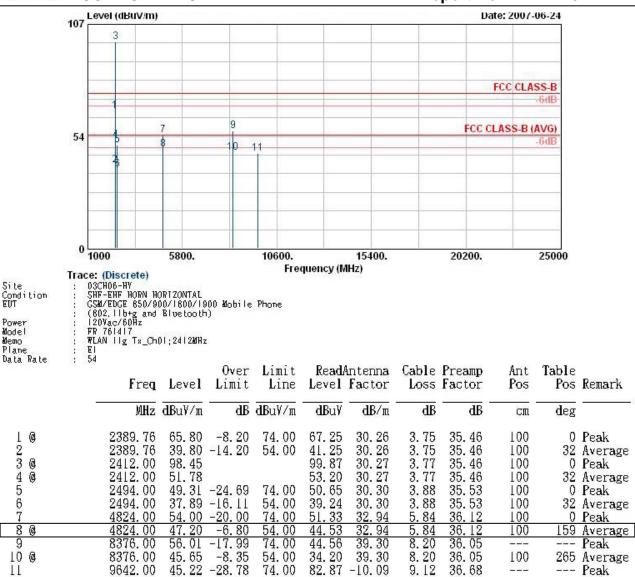
41.02 -32.98



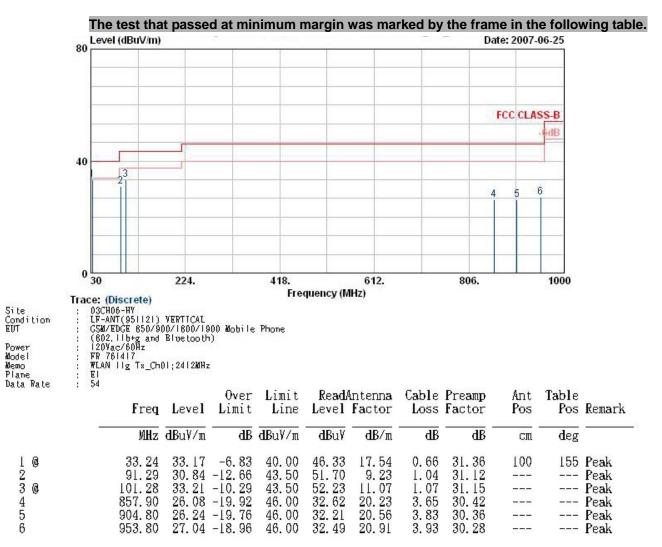
- Test Mode : Mode 4
- Polarization : Horizontal

	The test that passed at minimum margin was marked by the frame in the following table. Level (dBuV/m) Date: 2007-06-25 The test that passed at minimum margin was marked by the frame in the following table. The test that passed at minimum margin was marked by the frame in the following table. The test that passed at minimum margin was marked by the frame in the following table. The test that passed at minimum margin was marked by the frame in the following table. The test that passed at minimum margin was marked by the frame in the following table. The test that passed at minimum margin was marked by the frame in the following table. The test that passed at minimum margin was marked by the frame in the following table. The test that passed at minimum margin was marked by the frame in the following table. The test that passed at minimum margin was marked by the frame in the following table. The test that passed at minimum margin was marked by the frame in the following table. The test that passed at minimum margin was marked by the frame in the following table. The test that passed at minimum margin was marked by the frame in the following table. The test that passed at minimum margin was marked by the frame in the following table. The test that passed at minimum margin was marked by the frame in the test for											
	80 Level (	dBuV/m)		17.0000.000.000	997 997 <del>201 (2</del> 988)			an a	– Da	nte: 20	007-06-25	
	00											
										FCC	CLASS-B	
				-	-			-				
		21			-							
			_			_				4	5 6	
	8											
			3									
	0 30		224.						806.		1000	
					Free	quency (M	Hz)					
Site Condition	: 03CH06 : LF-ANT	-HY (951121)	HORIZONTA	L								
ÊŨT	: GSM/ED	CE 850/90	0/1800/19	00 Mobile	Phone							
Power Model	; 120Vac	/60Hz										
Memo Plane	; WEAN I		1;2412 <b>10</b> Hz									
Data Rate												
		Fron	Lovel									Pomark
		ITCU	Peact	LIMIC	Line	Peaci	ractor	1033	Tactor	1	03 103	Kenal K
		MHz	dBu¥∕m	dB	dBu∛/m	dBu¥	dB∕π	dB	dB		cm deg	
Ť		21 60	09 40	10 59	40.00	95 09	10 00	0.05	21 20			D1
1										_		
30										1		
2 3@ 4 5 6		883.80	27.24	-18.76	46.00	33.47	20.41	3.75	30.39	-		Peak
5		955.90 992.30		-19.62 -27.29	46.00 54.00	$31.80 \\ 31.79$	$20.93 \\ 21.18$	$3.93 \\ 4.00$	30. 28 30. 27	-		Peak Peak
0		994. OV	20.41	-21.23	04.00	91.13	41.10	4.00	30.21			LEGK

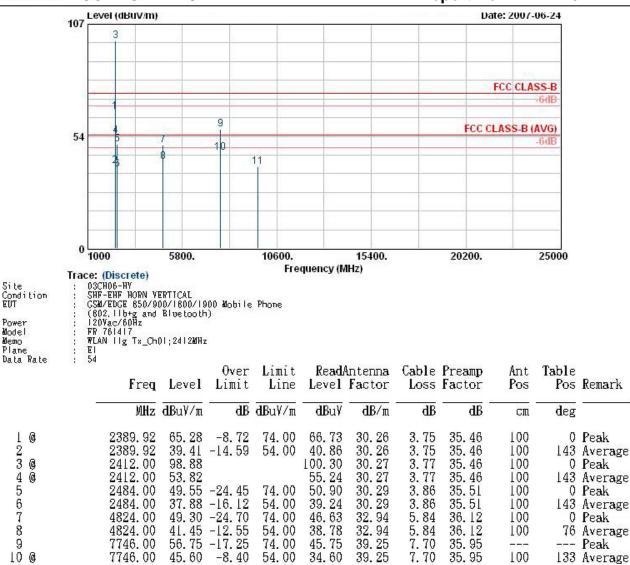




FCC TEST REPORT







34.60

76.46

39.25

-10.09

35.95

36.68

9.12

100

\_\_\_

133 Average

--- Peak

Remark: #3 and #4 Fundamental Signal

7746.00

9642.00

10

11

0

45.60

38.81 -35.19

-8.40

54.00

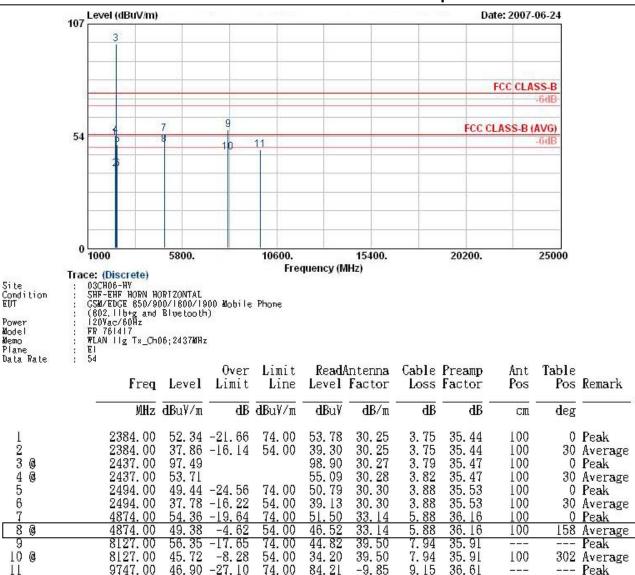
74.00



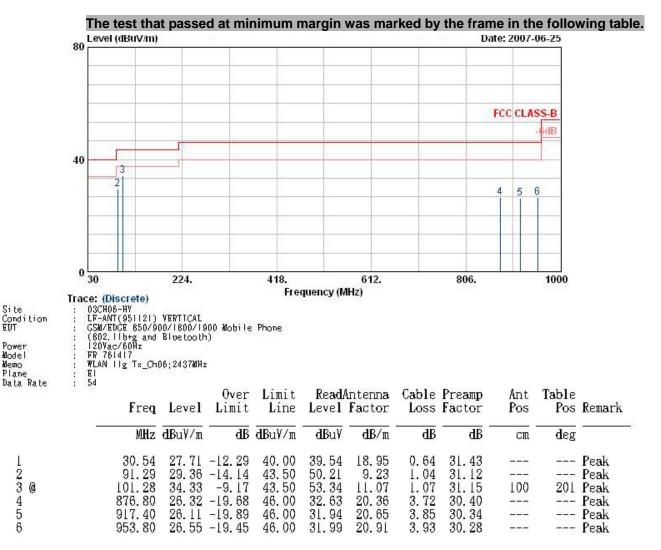
- Test Mode : Mode 5
- Polarization : Horizontal

	The	e test tha	t passe	d at mii	nimum r	nargin	was ma	rked by	the fran	ne i	n th	e follov	wing table.
	80 Leve	el (dBuV/m)		9 <mark>7</mark> .0070.0000	ertert <del>a daa</del> aa			ar ser se s <del>a</del> estas T	- Da	ate: 2	007-	06-25	
			1									0	
										FCC	CLAS	SS-B	
		-										-6dB	
		-											
	40		_									-	
	-	21									5	6	
		Ĩ.								4	1	Ť	
		_		-					-				
			_			_				_		_	
											_		
	0 <u>30</u>	13.20	224	-	440		612.		000		5-52	1000	
		12 1-12 1-12	224.		418. Fre	quency (M			806.			1000	
Site	: 03CH	Discrete) 06-HY											
Condition EUT	: GSM/	NT(951121) EDGE 850/91	0/1800/19	00 Mobile	Phone								
Power	: (802	.llb+g and ac/60Hz	BluetootH	1)									
Model Memo	; FR 7	61417 Hg Tx Chi	)6:2437 <b>0</b> Hz										
Plane Data Rate	E1 54												
pata satu				0ver	Limit		intenna		Preamp		int	Table	
		Freq	Level	Limit	Line	Level	Factor	Loss	Factor	F	os	Pos	Remark
		MHz	dBu∛/m		dBu¥∕m	dBu¥	dB/m		dB		cm	deg	
		, <b>111</b> 23	discre m	an a	disci i m	abar	CLLS: M	ur.	an s		On	dog	
l		31.62		-17.02	40.00	35.47	18.25	0.65	31.39				Peak
2 3 @		91.29 101.28		-15.49 -11.27	43.50 43.50	48.86 51.24	$9.23 \\ 11.07$	$1.04 \\ 1.07$	$31.12 \\ 31.15$		00		Peak Peak
4		896.40		-20.10	46.00	31.97	20.50	3.80	30.37	-			Peak
1 2 3 @ 4 5 6		934.90	26.87	-19.13	46.00	32.51	20.78	3.89	30.31	20			Peak
6		964.30	27.77	-26.23	54.00	33.12	20.98	3.95	30.28	50			Peak

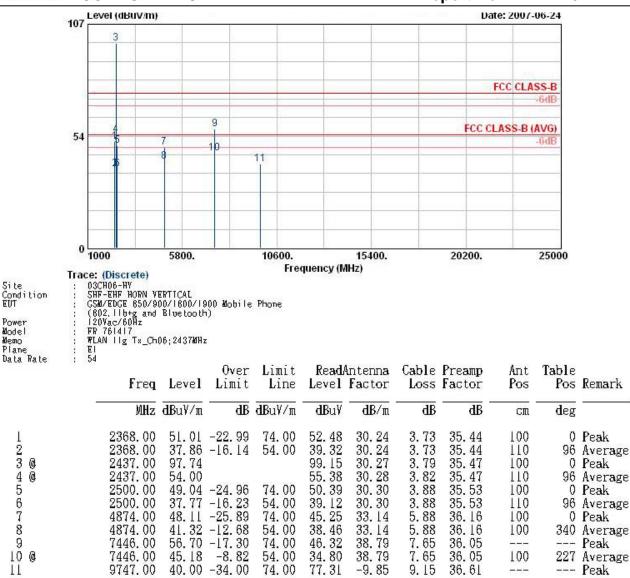












77.31

-9.85

9.15

36.61

\_\_\_

--- Peak

40.00 -34.00

9747.00

Remark: #3 and #4 Fundamental Signal

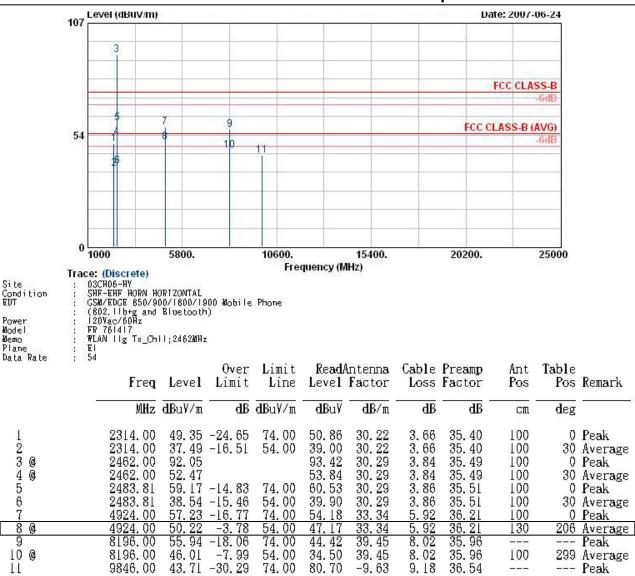


• Test Mode : Mode 6

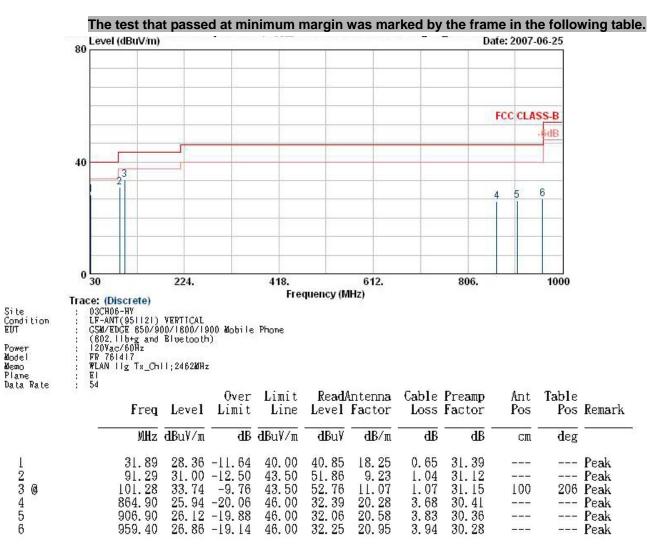
Polarization : Horizontal

	The test		d at mi	nimum r	nargin	was ma	rked by		ne in th te: 2007-		wing table.
	80										
									FCC CLA		
	40									-6dB	
	2							4	5	6	
	0 30	224.		418.		612.		806.		1000	
Site Condition EUT Power Model Memo Plane Data Rate	: GSM/EDGE 65 : (602,116+g : 120Vac/60Hz : FR 761417	2) 21) HORIZONT/ 0/900/1800/19 and Bluetooth	900 <b>M</b> obile 1)		quency (M	Hz)					
		eq Level	Over Limit	Limit Line		ntenna Factor		Preamp Factor	Ant Pos	Table Pos	Remark
		Hz dBu¥/m	dB	dBu¥∕m	dBu¥	dB/m	dB	dB	CM	deg	
1 2 3 @ 4 5 6	31. 91. 101. 803. 906. 950.	29 27.70 28 32.53 30 25.56 90 25.88	-16.11 -15.80 -10.97 -20.44 -20.12 -18.71	40.00 43.50 43.50 46.00 46.00 46.00	36.38 48.56 51.55 32.78 31.83 32.76	18.25 9.23 11.07 19.84 20.58 20.89	0.65 1.04 1.07 3.42 3.83 3.92	31. 39 31. 12 31. 15 30. 49 30. 36 30. 28	100 	354 	Peak Peak Peak Peak Peak Peak

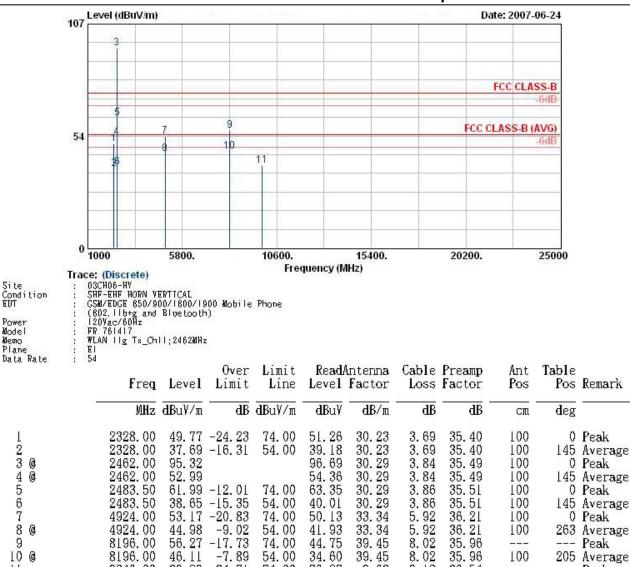




FCC TEST REPORT







74.00

54.00

74.00

-7.89

46.11

39.29 -34.71

39.45

39.45

-9.63

35.96

35.96

36.54

9.18

\_\_\_\_

100

\_\_\_\_

--- Peak

--- Peak

205 Average

44.75

34.60

76.27

Remark: #3 and #4 Fundamental Signal

8196.00

8196.00

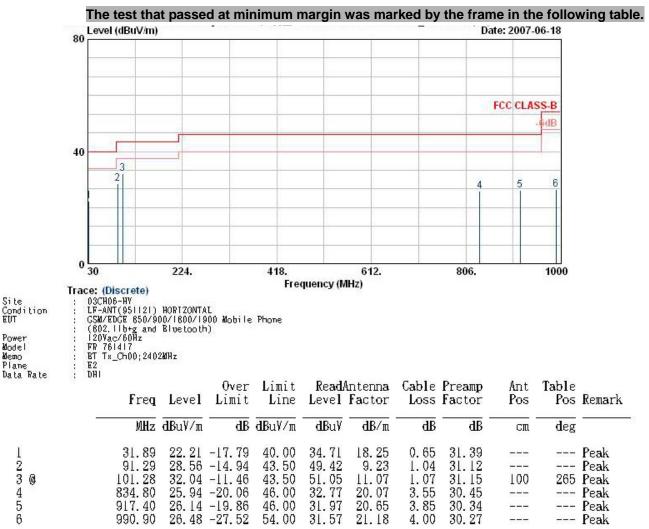
9846.00

10

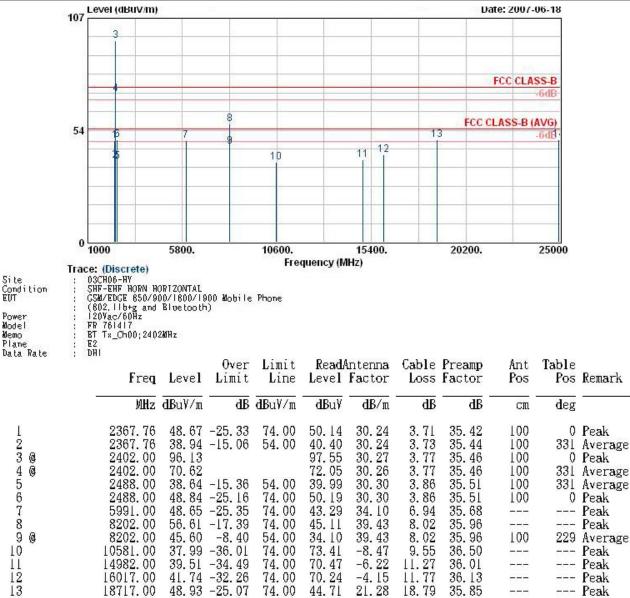
11



- Test Mode : Mode 7
- · Polarization : Horizontal







21.91

18.75

38.57

\_\_\_\_

46.92

Remark: #3 and #4 Fundamental Signal

24896.00

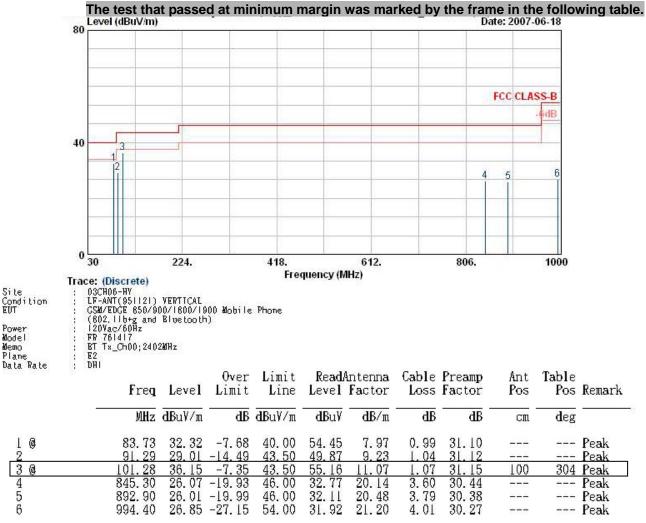
49.00 -25.00

74.00

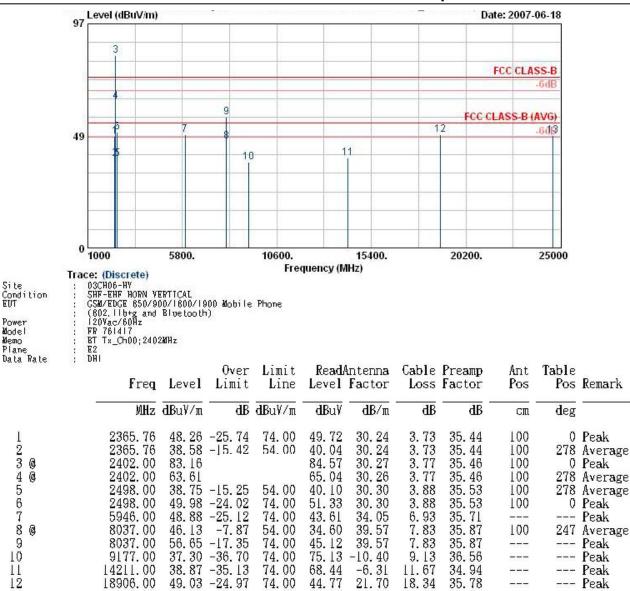
14

--- Peak









24628.00

48.55 -25.45

74.00

46.20

21.85

38.79

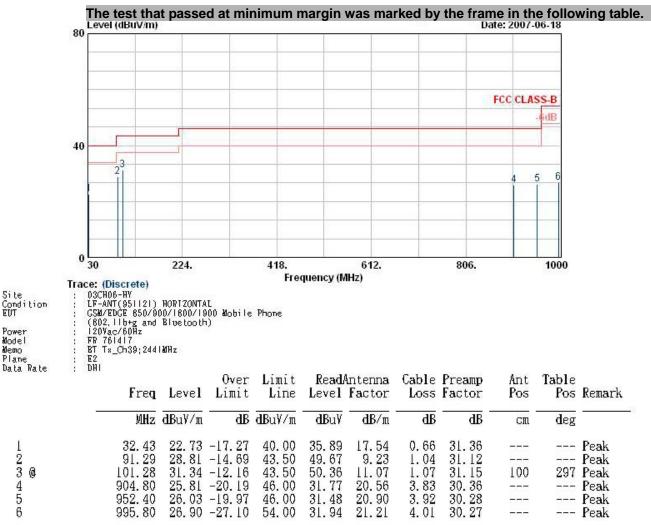
\_\_\_

--- Peak

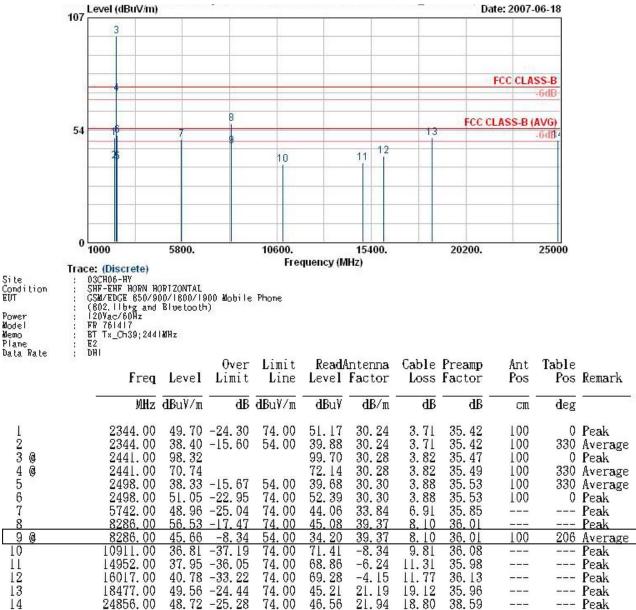
19.30



- Test Mode : Mode 8
- Polarization : Horizontal







74.00

46.56

18.80

38.59

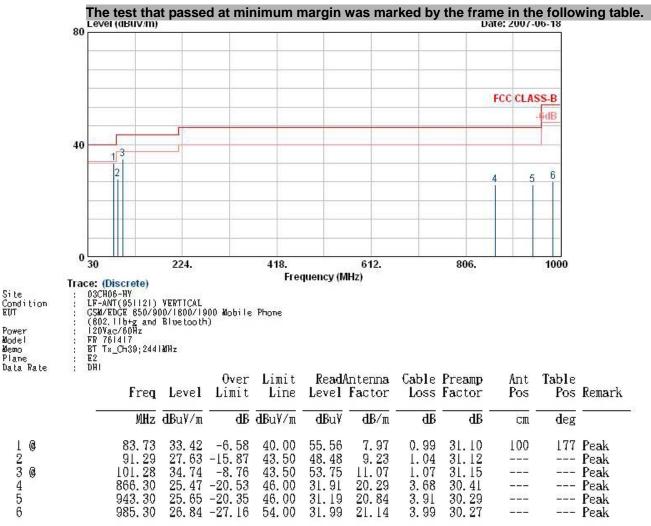
\_\_\_\_

Remark: #3 and #4 Fundamental Signal

24856.00

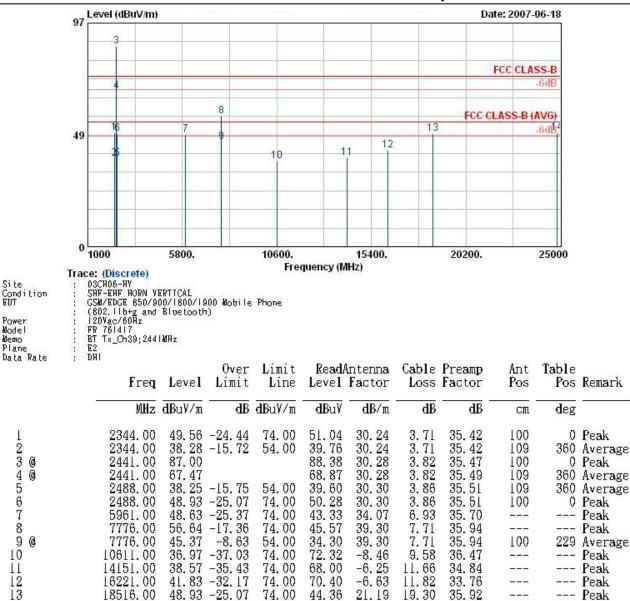
14

--- Peak





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Remark: #3 and #4 Fundamental Signal

49.51 -24.49

74.00

47.21

22.02

18.91

38.64

\_\_\_\_

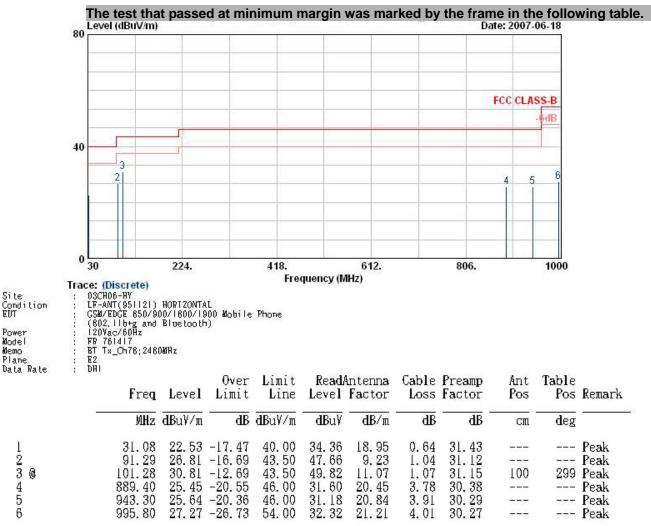
24828.00

14

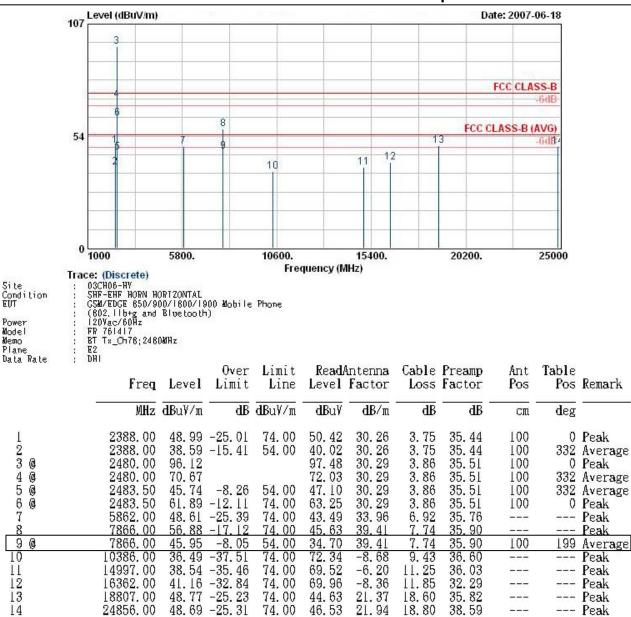
--- Peak

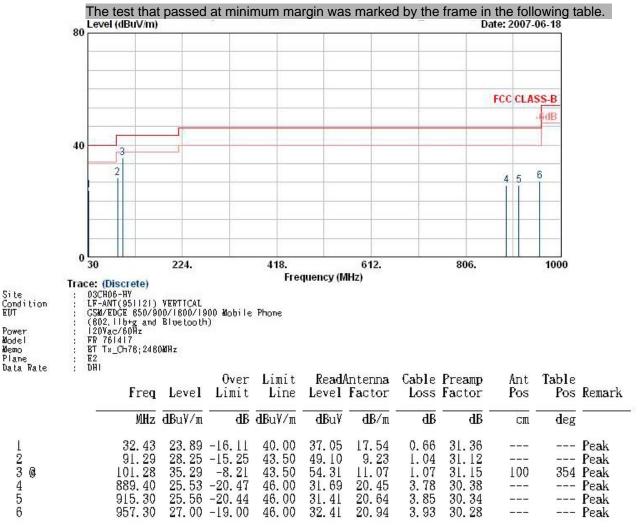


- Test Mode : Mode 9
- · Polarization : Horizontal

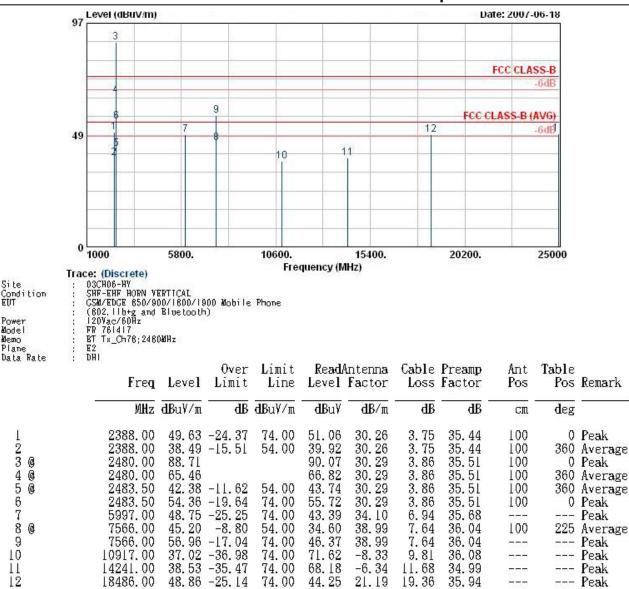












49.12 -24.88

74.00

47.25

21.79

18.58

38.51

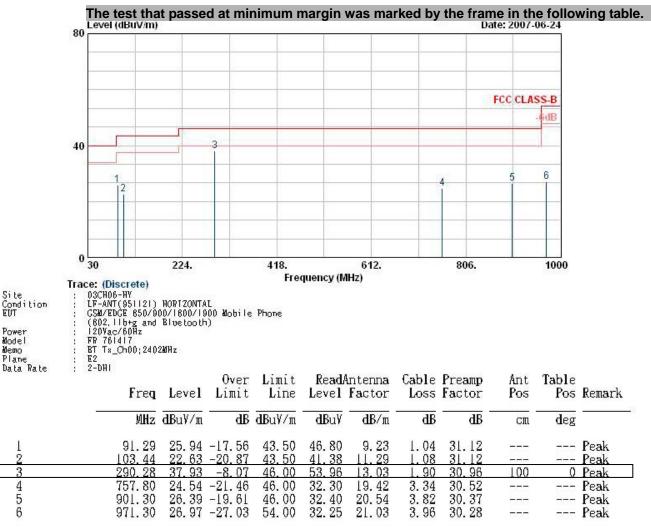
\_\_\_

--- Peak

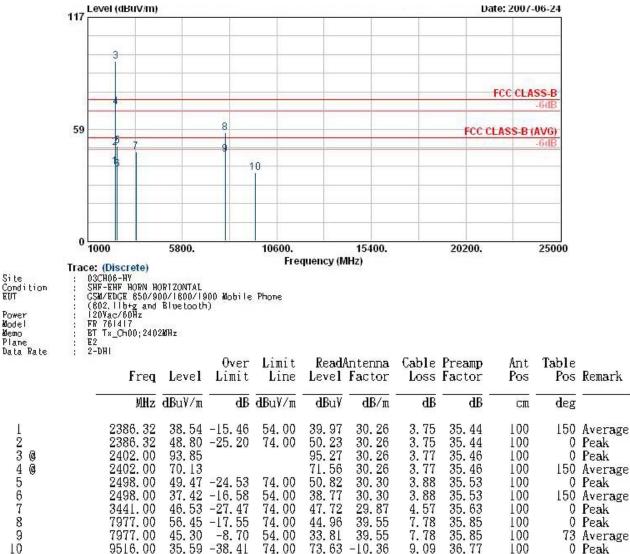
24968.00

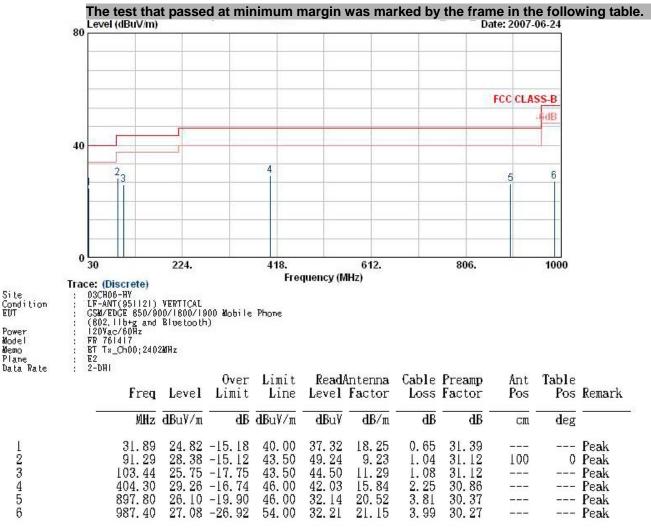


- Test Mode : Mode 10
- · Polarization : Horizontal



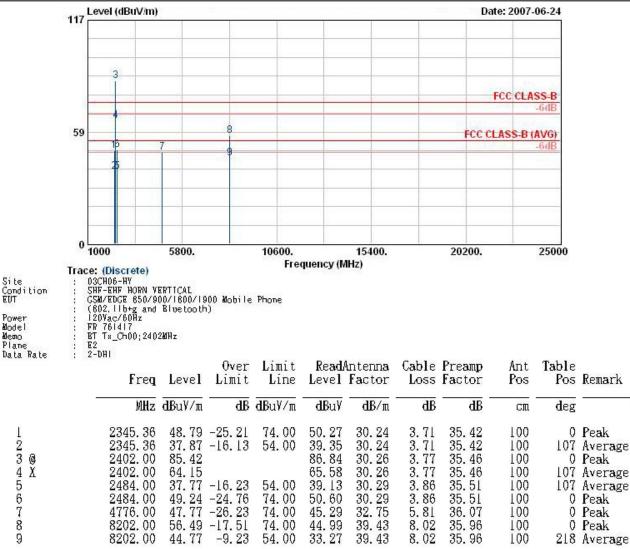






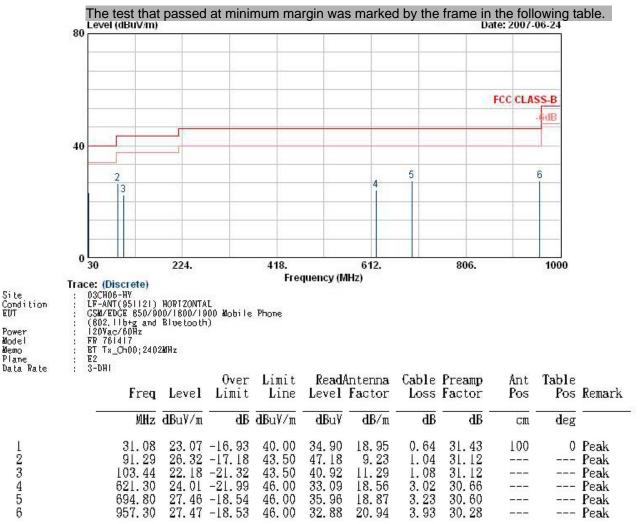


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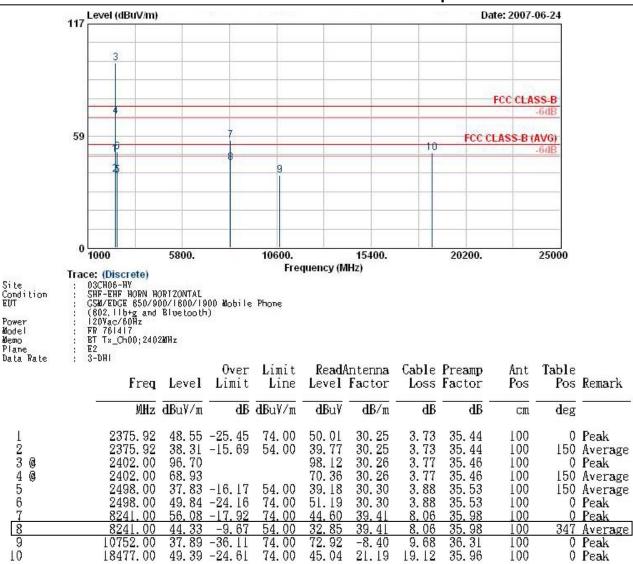


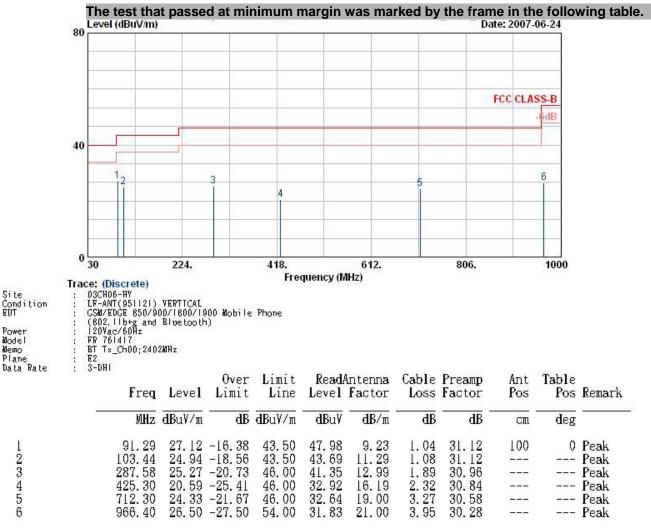
- Test Mode : Mode 13
- · Polarization : Horizontal





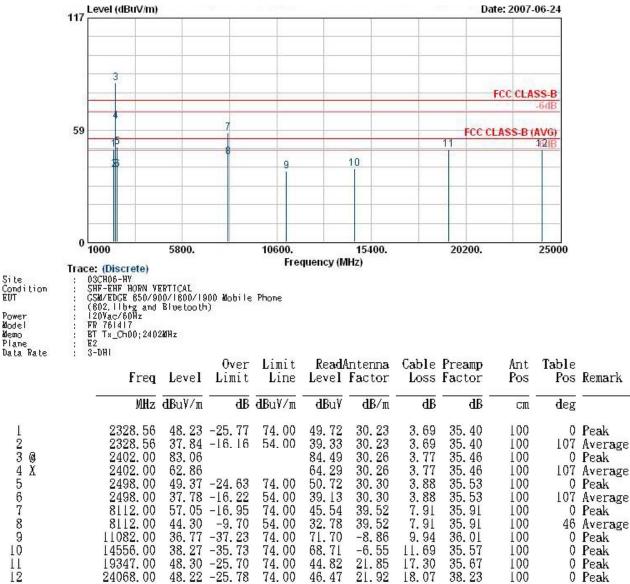
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### 5.12 Antenna Requirements

#### 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 Chips for both WLAN and BT without 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 powen 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	100359	9kHz – 2.75GHz	Mar. 01, 2007	Feb. 29, 2008	Conduction (CO04-HY)			
LISN	MessTec	NNB-2/16Z	99079	9kHz – 30MHz	Mar. 31, 2007	Mar. 30, 2008	Conduction (CO04-HY)			
LISN (Support Unit)	EMCO	3810/2NM	9703-1839	9kHz – 30MHz	Mar. 22, 2007	Mar. 21, 2008	Conduction (CO04-HY)			
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9kHz – 30MHz	Apr. 20, 2007	Apr. 19, 2008	Conduction (CO04-HY)			
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	N/A	Conduction (CO04-HY)			
Isolation Transformer	Erika Fiedler OHG	D-65396 Walluf	58	45MHz-2.15GHz	N/A	N/A	Conduction (CO04-HY)			
Spectrum analyzer	Agilent	E4408B	MY44211030	9KHz-26.5GHz	Oct. 05, 2006	Oct. 04, 2007	Radiation (03CH06-HY)			
EMI Test Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jul. 13, 2007	Jul. 12, 2008	Radiation (03CH06-HY)			
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Nov. 20, 2006	Nov. 19, 2007	Radiation (03CH06-HY)			
Double Ridge Horn Antenna	Com-Power	AH118	071025	1G~18G	Jun. 04, 2007	Jun. 03, 2008	Radiation (03CH06-HY)			
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	9170-249	14G - 40G	Nov. 20, 2006	Nov. 19, 2008	Radiation (03CH06-HY)			
Pre Amplifier	Agilent	8449B	3008A01917	1G - 26.5G	Nov. 15, 2006	Nov. 14, 2007	Radiation (03CH06-HY)			
Pre Amplifier	Mini Circuits	ZKL-2	D092004-1	10~2500MHz	Nov. 15, 2006	Nov. 14, 2007	Radiation (03CH06-HY)			
Base Station Simulator	R & S	CMU200	106656	WCDMA	Nov. 20, 2006	Nov. 19, 2007	Radiation (03CH06-HY)			



## 7. Uncertainty Evaluation

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

Contribution	Uncerta	$u(x_i)$	
	٩D	Probability	$u(x_i)$
	dB	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
combined standard uncertainty Uc(y)		1.13	
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)		2.26	

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

Contribution	Uncerta		
	٩D	Probability	$u(x_i)$
	dB	Distribution	
Receiver reading	0.11	Normal(k=2)	0.06
Antenna factor calibration	0.91	Normal(k=2)	0.46
Cable loss calibration	0.12	Normal(k=2)	0.06
Pre Amplifier Gain calibration	0.15	Normal(k=2)	0.08
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.52	Rectangular	0.88
Mismatch	+0.45/-0.48	U-shaped	0.33
combined standard uncertainty Uc(y)		1.30	
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)		2.60	

The measured result is : y dBuV ± U dB

for a level of confidence of approximately 95% , ( k= 2 )



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

Contribution	Uncerta	inty of $x_i$		Ci	$Ci^*u(x_i)$		
	dB	Probability Distribution	$u(x_i)$	Cl			
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 Γ1= 0.197 Antenna VSWR Γ2= 0.194 Uncertainty=20log(1-Γ1*Γ2*Γ3)	+0.34/-0.35	U-shaped	0.244	1	0.244		
Combined standard uncertainty Uc(y)	2.36						
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)			4.72				