

Trace: (Discrete)

Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 EUT : PDA PHONE WCDMA (band 1/VTTT) +  
 GSM/GPRS/EDGE(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FR 822609-01  
 Mode : BT Tx\_CH39;2441MHz + Adaptor B  
 Sample : A-M  
 TIME : 357550010017031  
 Data Rate : 2DR5  
 Plane : H

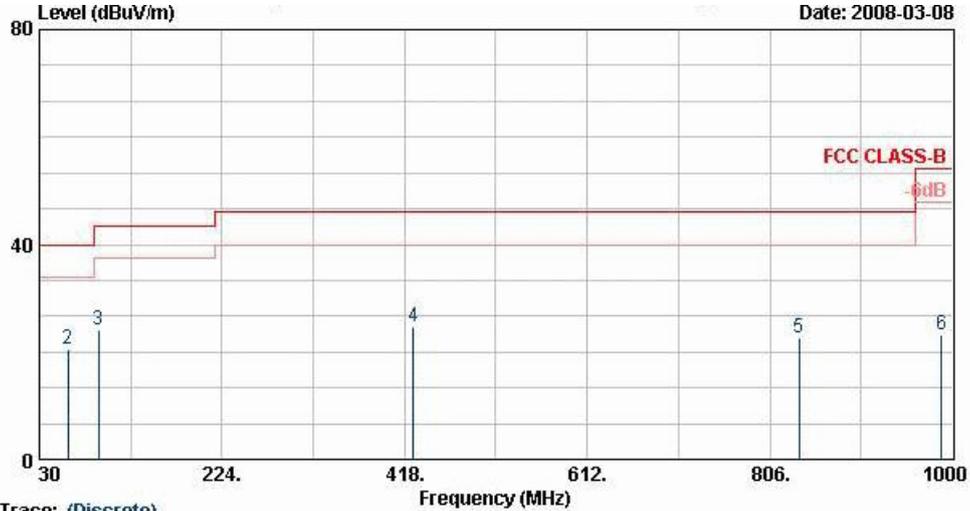
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBUV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBUV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2334.00	44.51	-29.49	74.00	44.56	31.76	3.86	35.67	100	0	Peak
2	2334.00	30.60	-23.40	54.00	30.65	31.76	3.86	35.67	100	13	Average
3 @	2441.00	80.29			80.07	31.93	3.99	35.69	100	13	Average
4 X	2441.00	94.41			94.19	31.93	3.99	35.69	100	0	Peak
5	2494.00	45.41	-28.59	74.00	45.06	32.00	4.05	35.70	100	0	Peak
6	2494.00	30.98	-23.02	54.00	30.63	32.00	4.05	35.70	100	13	Average
7	7521.00	54.02	-19.98	74.00	47.33	35.61	7.28	36.21	100	0	Peak
8	7521.00	43.19	-10.81	54.00	36.51	35.61	7.28	36.21	100	265	Average

Remark: #3 and #4 Fundamental Signal



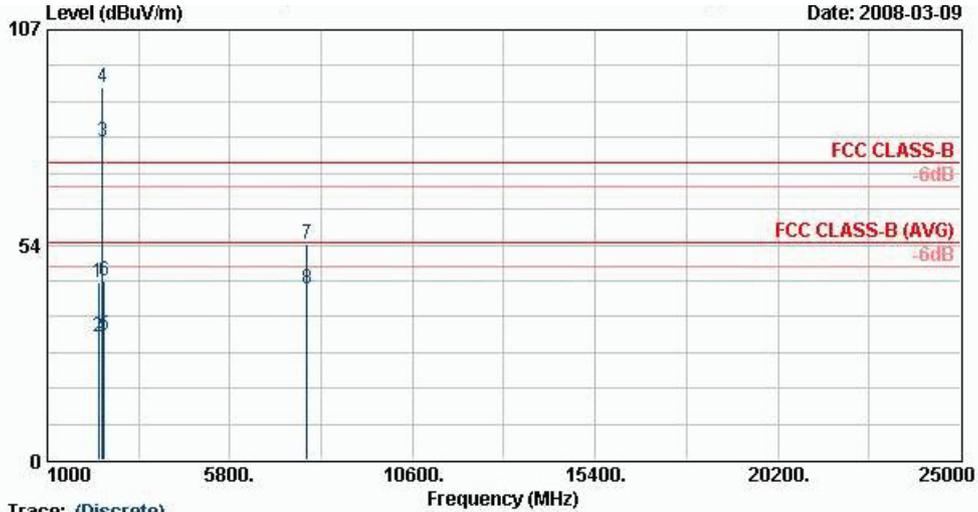
Polarization : Vertical

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



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m LF-ANT(951121) VERTICAL  
 EUT : PDA PHONE WCDMA (band 1/VIII) + GSM/GPRS/EDGE(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FR 822609-01  
 Mode : BT Tx\_CH39;2441MHz + Adaptor B  
 Sample : A-M  
 TIME : 357550010017931  
 Data Rate : 2DR5  
 Plane : H

	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	30.00	28.14	-11.86	40.00	41.68	19.66	0.30	33.50	100	142	Peak
2	60.24	20.41	-19.59	40.00	46.78	6.62	0.40	33.39	---	---	Peak
3	92.64	24.12	-19.38	43.50	47.34	9.62	0.50	33.33	---	---	Peak
4	427.40	24.83	-21.17	46.00	40.93	16.23	0.80	33.13	---	---	Peak
5	836.90	22.60	-23.40	46.00	33.97	20.08	1.20	32.65	---	---	Peak
6	988.80	23.21	-30.79	54.00	32.90	21.16	1.30	32.16	---	---	Peak



Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 EUT : PDA PHONE WCDMA (band I/VIII) +  
 : GSM/GPRS/EDGE(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FR 822609-01  
 Mode : BT Tx\_CH39;2441MHz + Adaptor B  
 Sample : A-M  
 TMET : 357559010017931  
 Data Rate : 2DR5  
 Plane : H

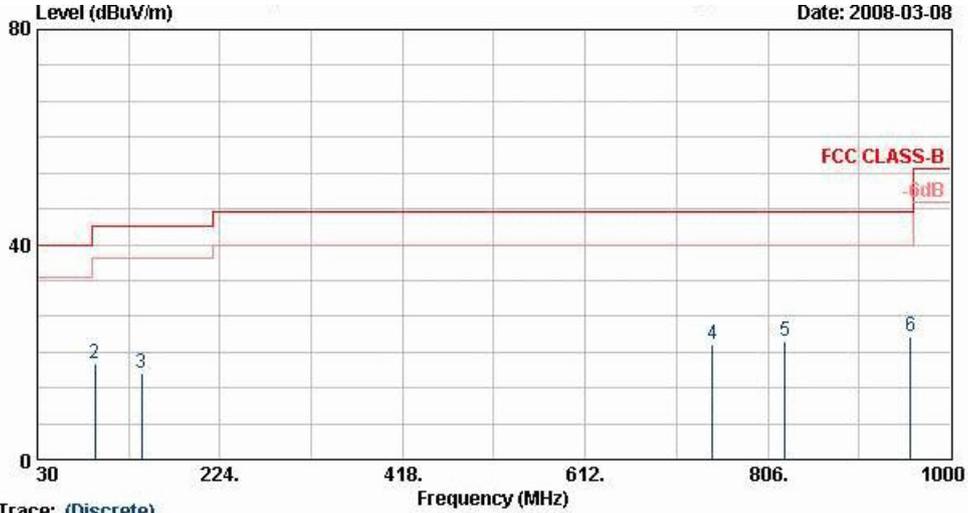
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2348.00	44.35	-29.65	74.00	44.38	31.78	3.86	35.67	100	0	Peak
2	2348.00	30.81	-23.19	54.00	30.84	31.78	3.86	35.67	121	66	Average
3 @	2441.00	79.03			78.81	31.93	3.99	35.69	121	66	Average
4 X	2441.00	92.50			92.28	31.93	3.99	35.69	100	0	Peak
5	2484.00	31.21	-22.79	54.00	30.88	31.98	4.05	35.70	121	66	Average
6	2484.00	44.51	-29.49	74.00	44.18	31.98	4.05	35.70	100	0	Peak
7	7821.00	53.55	-20.45	74.00	46.72	35.66	7.42	36.26	100	0	Peak
8	7821.00	42.45	-11.55	54.00	35.62	35.66	7.42	36.26	100	108	Average

Remark: #3 and #4 Fundamental Signal



Test Mode : Mode 6  
Polarization : Horizontal

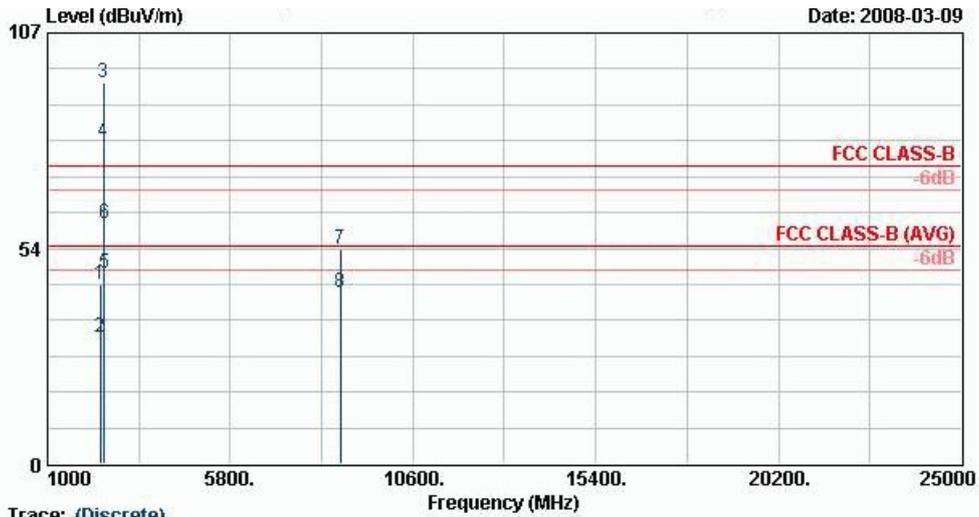
The test that passed at minimum margin was marked by the frame in the following table.



Trace: (Discrete)

Site : 03CH06-HY  
Condition : FCC CLASS-B 3m LF-ANT(951121) HORIZONTAL  
EUT : PDA PHONE WCDMA (band I/VIII) +  
GSM/GPRS/EDGE(900/1800/1900)  
Power : 120Vac/60Hz  
Model : FR 822609-01  
Mode : BT Tx\_CH78;2480MHz + Adaptor B  
Sample : A-M  
TIME1 : 357559010017931  
Data Rate : 2DH5  
Plane : H

	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	30.00	26.24	-13.76	40.00	39.78	19.66	0.30	33.50	100	137	Peak
2	91.29	17.75	-25.75	43.50	41.32	9.23	0.50	33.30	---	---	Peak
3	140.43	16.14	-27.36	43.50	38.96	10.26	0.51	33.60	---	---	Peak
4	747.30	21.52	-24.48	46.00	33.99	19.32	1.10	32.89	---	---	Peak
5	824.30	22.13	-23.87	46.00	33.56	19.99	1.20	32.62	---	---	Peak
6	957.30	22.89	-23.11	46.00	33.06	20.94	1.27	32.38	---	---	Peak



Trace: (Discrete)

Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 EUT : PDA PHONE WCDMA (band 1/VIII) +  
 GSM/GPRS/EDGE(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FR 822609-01  
 Mode : BT Tx\_CH78;2480MHz + Adaptor B  
 Sample : A-M  
 TIME : 357559010017931  
 Data Rate : 2DH5  
 Plane : H

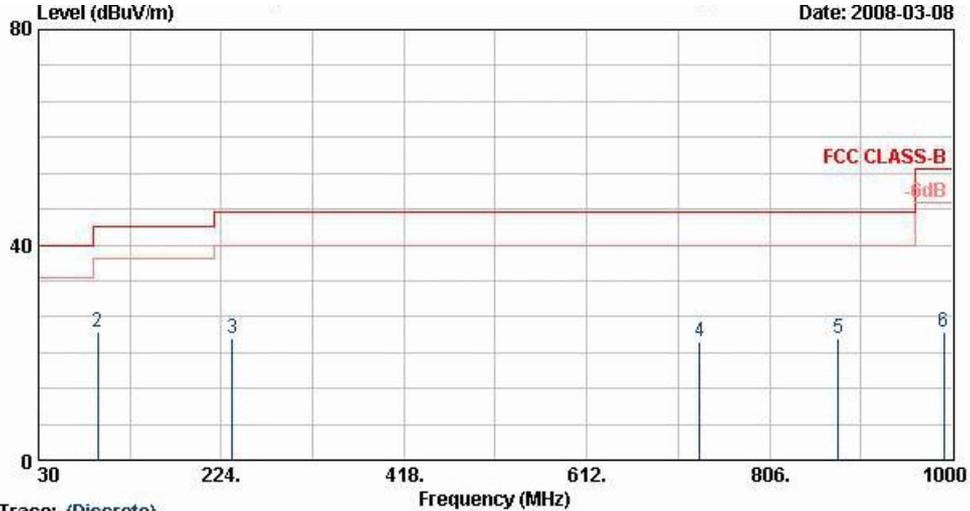
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	44.65	-29.35	74.00	44.56	31.86	3.92	35.68	100	0	Peak
2	2390.00	31.34	-22.66	54.00	31.24	31.86	3.92	35.68	102	14	Average
3 @	2480.00	94.50			94.17	31.98	4.05	35.70	100	0	Peak
4 @	2480.00	80.00			79.67	31.98	4.05	35.70	102	14	Average
5	2483.50	47.51	-6.49	54.00	47.18	31.98	4.05	35.70	102	14	Average
6	2483.50	59.67	-14.33	74.00	59.34	31.98	4.05	35.70	100	0	Peak
7	8697.00	53.27	-20.73	74.00	46.17	36.08	7.45	36.42	100	0	Peak
8	8697.00	42.45	-11.55	54.00	35.34	36.08	7.45	36.42	100	224	Average

Remark: #3 and #4 Fundamental Signal



Polarization : Vertical

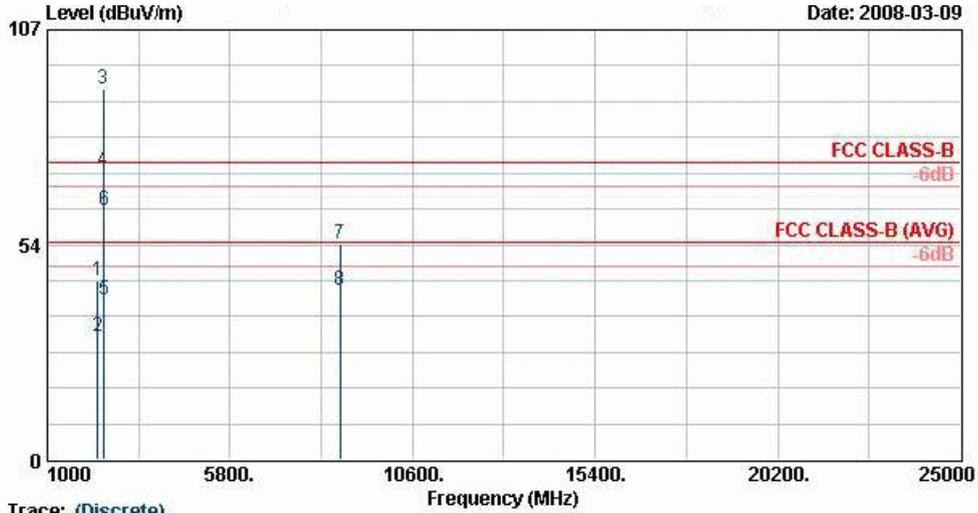
The test that passed at minimum margin was marked by the frame in the following table.



Trace: (Discrete)

Site : D3CH06-RV  
 Condition : FCC CLASS-B 3m LP-ANT(851121) VERTICAL  
 EUT : PDA PHONE WCDMA (band I/VIII) + GSM/GPRS/EDGE(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FR 822609-01  
 Mode : BT Tx\_CH78;2480MHz + Adaptor B  
 Sample : A-M  
 TIME1 : 357559010017931  
 Data Rate : 2DH5  
 Plane : H

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark	
	MHz	dBUV/m	Limit	Line	Level	Loss	Factor	Pos	Pos		
			dB	dBUV/m	dBUV	dB	dB	cm	deg		
1	30.00	28.29	-11.71	40.00	41.83	19.66	0.30	33.50	100	118 Peak	
2	92.64	23.75	-19.75	43.50	46.97	9.62	0.50	33.33	---	---	Peak
3	235.74	22.69	-23.31	46.00	44.04	11.41	0.70	33.46	---	---	Peak
4	731.90	22.10	-23.90	46.00	34.79	19.19	1.10	32.97	---	---	Peak
5	878.90	22.58	-23.42	46.00	33.65	20.38	1.30	32.75	---	---	Peak
6	990.90	23.85	-30.15	54.00	33.51	21.18	1.30	32.13	---	---	Peak



Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 EUT : PDA PHONE WCDMA (band I/VIII) +  
 GSM/GPRS/EDGE(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FR 822609-01  
 Mode : BT Tx\_CH76;2480MHz + Adaptor B  
 Sample : A-M  
 TIME : 357550010017931  
 Data Rate : 2DR5  
 Plane : H

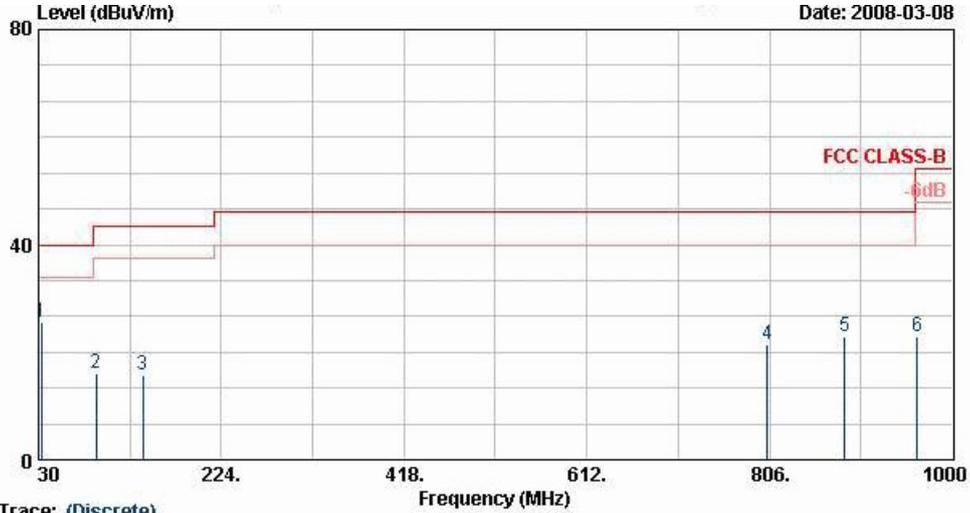
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2332.00	44.70	-29.30	74.00	44.76	31.76	3.86	35.67	100	0	Peak
2	2332.00	30.67	-23.33	54.00	30.72	31.76	3.86	35.67	100	181	Average
3 @	2480.00	92.21			91.88	31.98	4.05	35.70	100	0	Peak
4 X	2480.00	72.03			71.70	31.98	4.05	35.70	100	181	Average
5	2483.50	39.76	-14.24	54.00	39.43	31.98	4.05	35.70	100	181	Average
6	2483.50	62.05	-11.95	74.00	61.72	31.98	4.05	35.70	100	0	Peak
7	8691.00	53.61	-20.39	74.00	46.55	36.06	7.42	36.42	100	0	Peak
8	8691.00	42.14	-11.86	54.00	35.09	36.06	7.42	36.42	100	161	Average

Remark: #3 and #4 Fundamental Signal



Test Mode : Mode 9  
Polarization : Horizontal

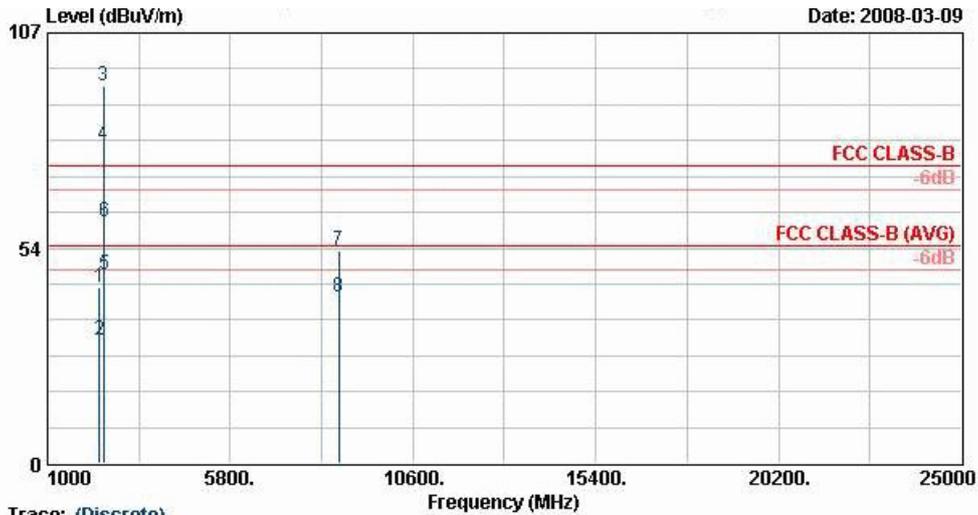
The test that passed at minimum margin was marked by the frame in the following table.



Trace: (Discrete)

Site : 03CH06-HY  
Condition : FCC CLASS-B 3m LF-ANT(851121) HORIZONTAL  
EUT : PDA PHONE WCDMA (band I/VIII) +  
GSM/GPRS/EDGE(900/1800/1900)  
Power : 120Vac/60Hz  
Model : FR 822609-01  
Mode : BT Tx\_CH78;2480MHz + Adaptor B  
Sample : A-M  
TIME : 357559010017931  
Data Rate : 3DH5  
Plane : H

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos		
			dB	dBuV/m	dBuV	dB	dB	cm	deg		
1	33.24	25.72	-14.28	40.00	41.25	17.54	0.30	33.38	100	105 Peak	
2	91.29	16.06	-27.44	43.50	39.63	9.23	0.50	33.30	---	---	Peak
3	140.43	15.82	-27.68	43.50	38.65	10.26	0.51	33.60	---	---	Peak
4	803.30	21.50	-24.50	46.00	33.02	19.84	1.20	32.57	---	---	Peak
5	885.90	22.84	-23.16	46.00	33.88	20.43	1.30	32.77	---	---	Peak
6	962.90	22.91	-31.09	54.00	32.97	20.98	1.30	32.34	---	---	Peak



Trace: (Discrete)

Site : 03CH06-RV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL  
 EUT : PDA PHONE WCDMA (band 1/VIII) +  
 GSM/GPRS/EDGE(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FR 822609-01  
 Mode : BT Tx\_CH78;2480MHz + Adaptor B  
 Sample : A-B  
 TIME : 357550010017931  
 Data Rate : 3DH5  
 Plane : H

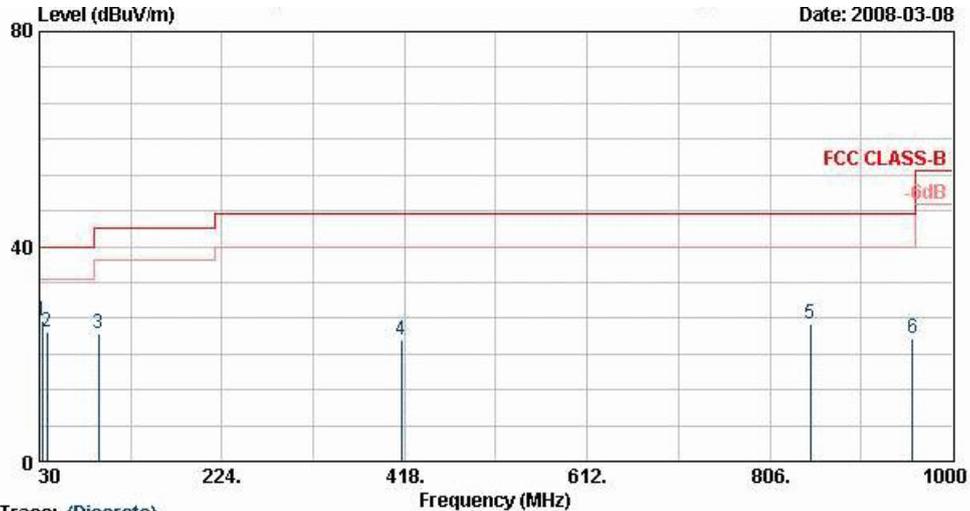
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBUV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBUV/m	dBUV	dB/m	dB	dB	cm	deg	
1	2356.00	43.94	-30.06	74.00	43.95	31.81	3.86	35.67	100	0	Peak
2	2356.00	30.63	-23.37	54.00	30.64	31.81	3.86	35.67	103	12	Average
3 @	2480.00	93.68			93.35	31.98	4.05	35.70	100	0	Peak
4 @	2480.00	79.32			78.99	31.98	4.05	35.70	103	12	Average
5	2483.50	46.86	-7.14	54.00	46.53	31.98	4.05	35.70	103	12	Average
6	2483.50	60.00	-14.00	74.00	59.67	31.98	4.05	35.70	100	0	Peak
7	8652.00	52.84	-21.16	74.00	45.83	36.01	7.39	36.39	100	0	Peak
8	8652.00	41.53	-32.47	74.00	34.52	36.01	7.39	36.39	100	213	Average

Remark: #3 and #4 Fundamental Signal



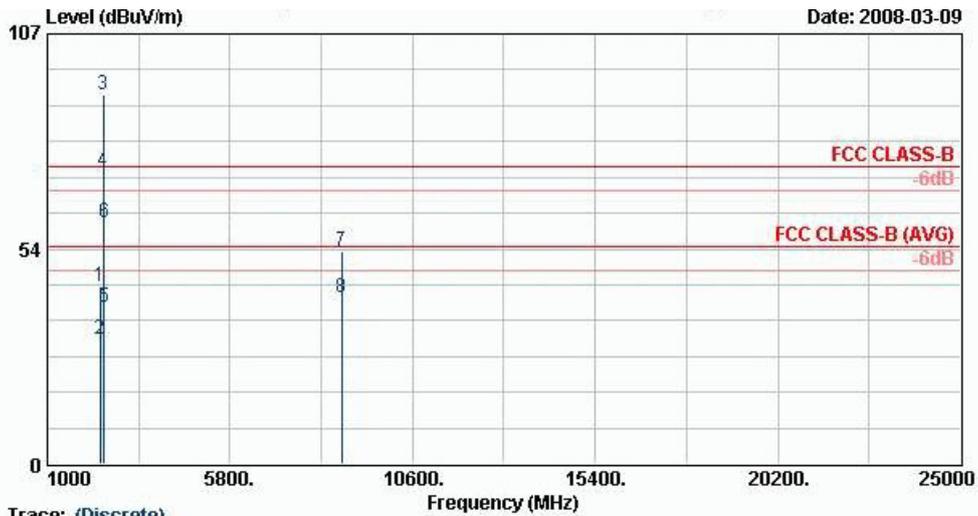
Polarization : Vertical

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



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m LF-ANT(951121) VERTICAL  
 EUT : PDA PHONE WCDMA (band I/VIII) + GSM/GPRS/EDGE(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FR 822609-01  
 Mode : BT Tx\_CH76;2480MHz + Adaptor B  
 Sample : A-M  
 TIME : 357550010017931  
 Data Rate : 3DH5  
 Plane : H

	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	33.24	26.17	-13.83	40.00	41.71	17.54	0.30	33.38	100	129	Peak
2	37.83	23.95	-16.05	40.00	42.33	14.56	0.30	33.24	---	---	Peak
3	92.64	23.85	-19.65	43.50	47.06	9.62	0.50	33.33	---	---	Peak
4	414.80	22.60	-23.40	46.00	38.83	16.02	0.85	33.10	---	---	Peak
5	848.80	25.50	-20.50	46.00	36.81	20.16	1.20	32.68	---	---	Peak
6	957.30	23.05	-22.95	46.00	33.22	20.94	1.27	32.38	---	---	Peak



Trace: (Discrete)

Site : 03CH06-HV  
 Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL  
 EUT : PDA PHONE WCDMA (band 1/VTTT) +  
 GSM/GPRS/EDGE(900/1800/1900)  
 Power : 120Vac/60Hz  
 Model : FR 822609-01  
 Mode : BT Tx\_CH78;2480MHz + Adaptor B  
 Sample : A-M  
 TIME : 357550010017031  
 Data Rate : 3DH5  
 Plane : H

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBUV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBUV/m	dBuV	dB	dB	cm	deg	
1	2388.00	44.08	-29.92	74.00	43.98	31.86	3.92	35.68	100	0 Peak
2	2388.00	30.96	-23.04	54.00	30.86	31.86	3.92	35.68	100	182 Average
3 X	2480.00	91.71			91.38	31.98	4.05	35.70	100	0 Peak
4 @	2480.00	72.86			72.53	31.98	4.05	35.70	100	182 Average
5	2483.50	39.01	-14.99	54.00	38.68	31.98	4.05	35.70	100	182 Average
6	2483.50	60.20	-13.80	74.00	59.87	31.98	4.05	35.70	100	0 Peak
7	8727.00	52.85	-21.15	74.00	45.68	36.13	7.48	36.44	100	0 Peak
8	8727.00	41.42	-12.58	54.00	34.25	36.13	7.48	36.44	100	251 Average

Remark: #3 and #4 Fundamental Signal



## **5.10 Antenna Requirements**

### **5.10.1 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.

### **5.10.2 Antenna Connected Construction**

The antenna used in this product is PIFA Antenna without connector and it is considered to meet antenna requirement of FCC.

### **5.10.3 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**

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	Mar. 03, 2008	Mar. 02, 2009	Conduction (CO04-HY)
LISN	MessTec	NNB-2/16Z	99079	9kHz – 30MHz	Mar. 31, 2008	Mar. 30, 2009	Conduction (CO04-HY)
LISN (Support Unit)	EMCO	3810/2NM	9703-1839	9kHz – 30MHz	Mar. 22, 2008	Mar. 21, 2009	Conduction (CO04-HY)
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9kHz – 30MHz	Apr. 20, 2007	Apr. 19, 2008	Conduction (CO04-HY)
ISN	SCHAFFNER	ISN T400	21653	9kHz –30MHz	Mar. 27, 2008	Mar. 26, 2009	Conduction (CO04-HY)
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	N/A	Conduction (CO04-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211028	9KHz-26.5GHz	Oct. 17, 2007	Oct. 16, 2008	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jul. 26, 2007	Jul. 25, 2008	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Dec. 01, 2007	Nov. 30, 2008	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	9170-251	14G - 40G	Oct. 17, 2007	Oct. 16, 2008	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1G - 26.5G	Nov. 22, 2007	Nov. 21, 2008	Radiation (03CH06-HY)
Pre Amplifier	EMEC	PA303	PA303-SMA-059	100K~3GHz	Nov. 26, 2007	Nov. 25, 2008	Radiation (03CH06-HY)
Base Station Simulator	R & S	CMU200	103937	Third-Band	Oct. 19, 2007	Oct. 18, 2008	Radiation (03CH06-HY)



## 7. Uncertainty Evaluation

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

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 (30 MHz ~ 1000 MHz)

Contribution	Uncertainty of $x_i$		$u(x_i)$
	dB	Probability 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
<b>Combined standard uncertainty Uc(y)</b>	<b>1.30</b>		
<b>Measuring uncertainty for a level of Confidence of 95% U=2Uc(y)</b>	<b>2.60</b>		



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

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>				

The measured result is :  $y$  dBuV  $\pm$   $U$  dB  
for a level of confidence of approximately 95% , (  $k = 2$  )