



Operation Mode: BASE TX Mode Antenna 5
 Fundamental Frequency: 2442Hz (CH MID)
 Temperature : 28
 Humidity : 60%

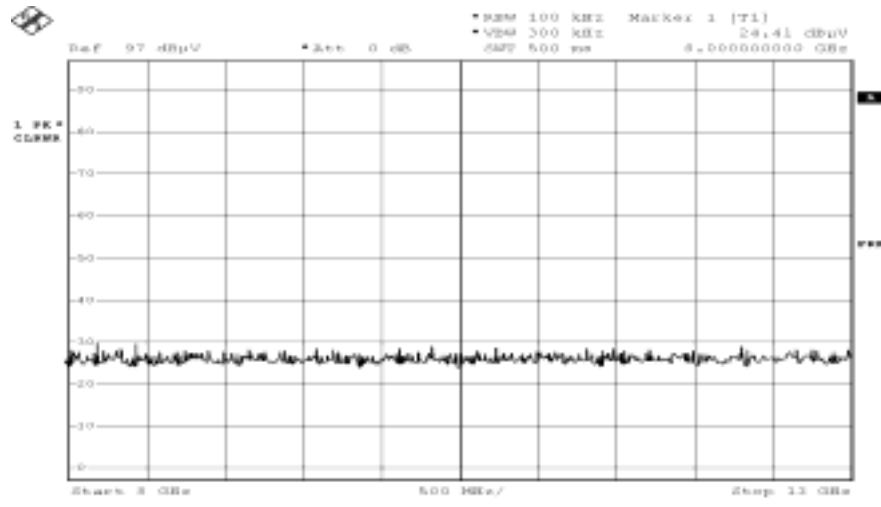
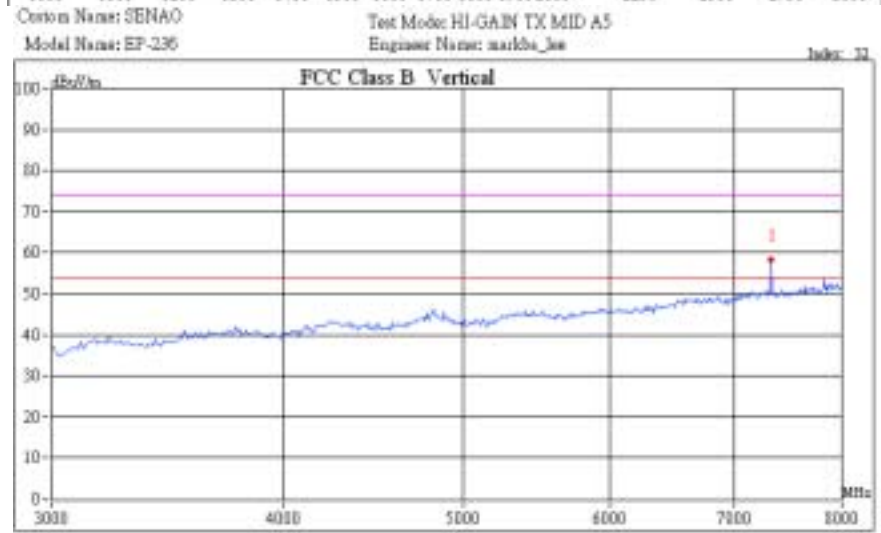
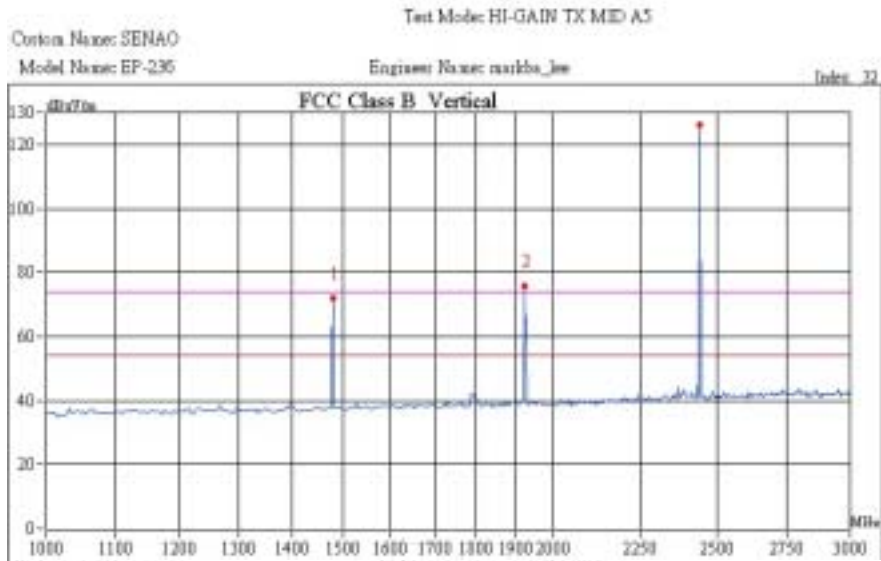
Test Date : 7/22/2002
 Test By: Markba_lee
 Pol: VERTICAL

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	
				Peak (dBuV/m)	AV (dBuV/m)				
1484.0	71.95	36.10	-8.86	63.09	27.24	74.00	54.00	-10.91	Peak
1924.0	75.92	37.60	-7.12	68.80	30.48	74.00	54.00	-5.20	Peak
4880.0	45.66	29.17	2.15	47.81	31.32	74.00	54.00	-22.68	AV
7330.0	58.37	31.78	9.02	67.39	40.80	74.00	54.00	-6.61	Peak
9768.0	---	---	---	---	---	---	---	---	---
12210.0	---	---	---	---	---	---	---	---	---
14652.0	---	---	---	---	---	---	---	---	---
17094.0	---	---	---	---	---	---	---	---	---
19536.0	---	---	---	---	---	---	---	---	---
21978.0	---	---	---	---	---	---	---	---	---
24420.0	---	---	---	---	---	---	---	---	---

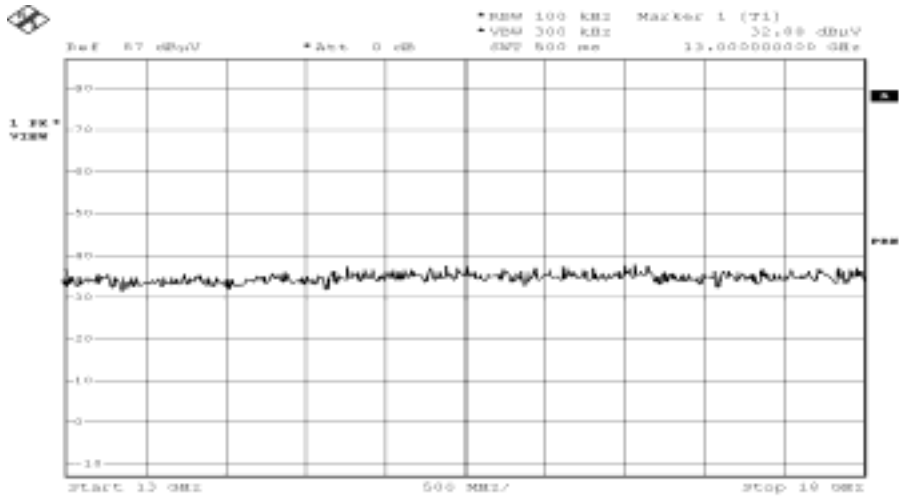
Remark :

- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.

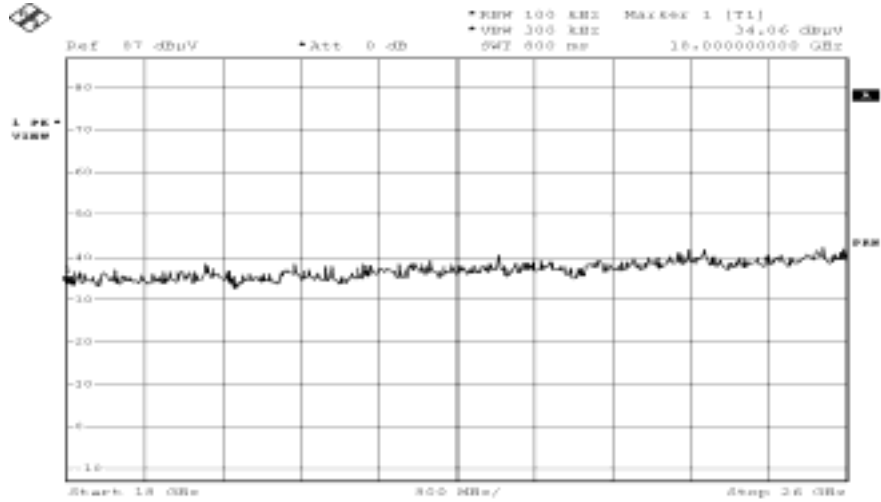
15.209 Radiated Emission Test Plot



Comment At TX Duty cycle
Date: 18. SEP. 2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Operation Mode: BASE TX Mode Antenna 5
 Fundamental Frequency: 2442MHz (CH MID)
 Temperature : 28
 Humidity : 60%

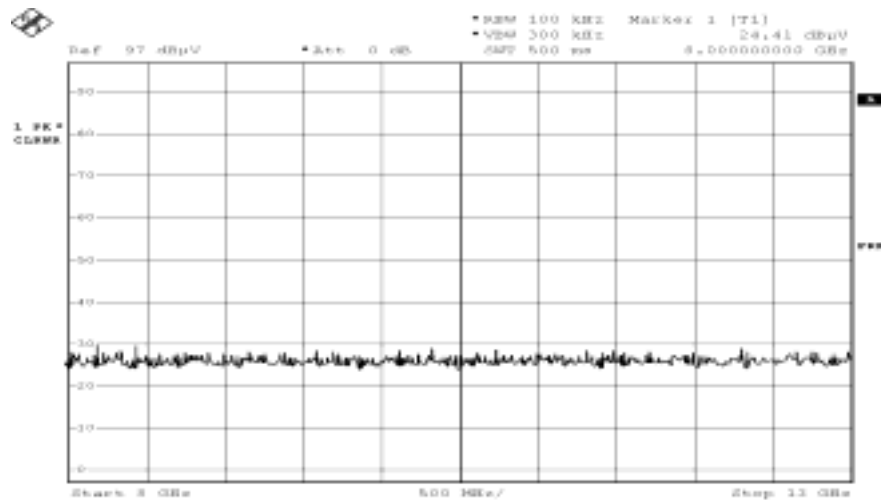
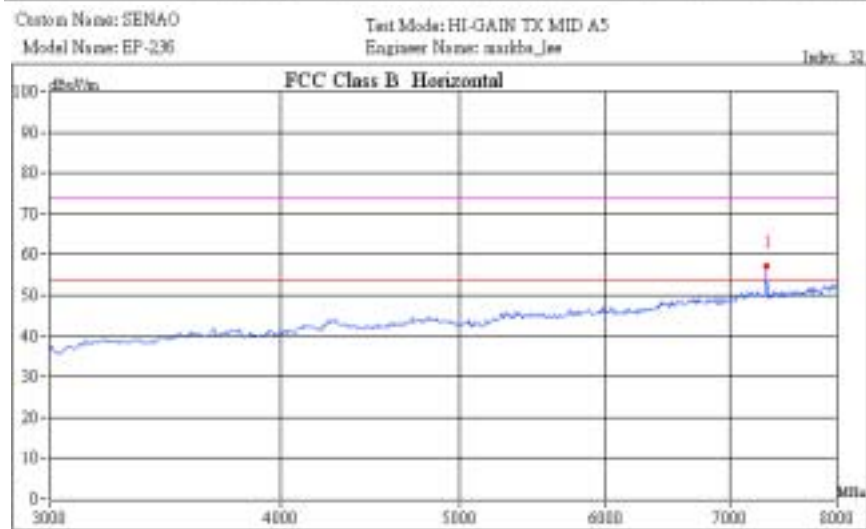
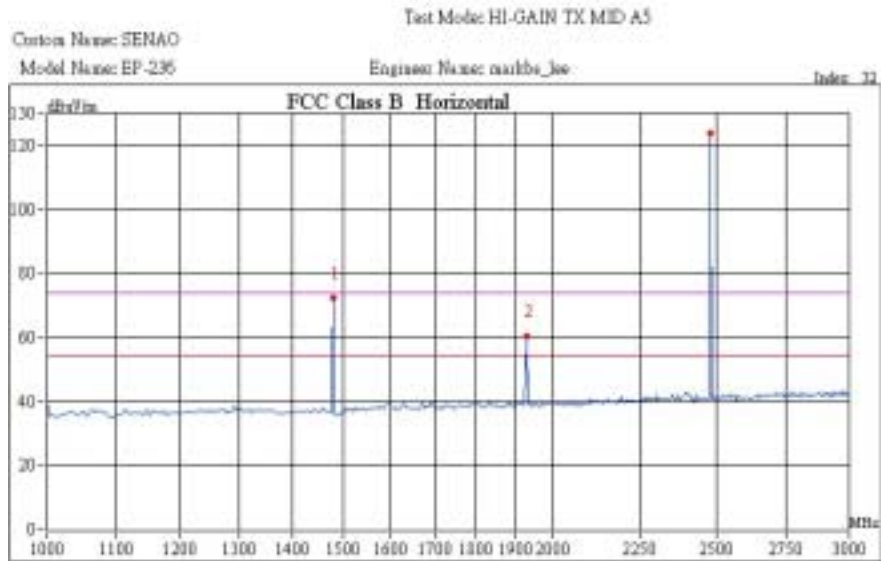
Test Date : 7/22/2002
 Test By: Markba_lee
 Pol: HORIZONTAL

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
1480.0	72.34	36.14	-8.86	63.48	27.28	74.00	54.00	-10.52	Peak
1928.0	60.30	36.27	-7.10	53.20	29.17	74.00	54.00	-20.80	Peak
4880.0	41.50	29.03	2.15	43.65	31.18	74.00	54.00	-22.82	AV
7330.0	57.01	32.09	9.02	66.03	41.11	74.00	54.00	-7.97	Peak
9768.0	---	---	---	---	---	---	---	---	---
12210.0	---	---	---	---	---	---	---	---	---
14652.0	---	---	---	---	---	---	---	---	---
17094.0	---	---	---	---	---	---	---	---	---
19536.0	---	---	---	---	---	---	---	---	---
21978.0	---	---	---	---	---	---	---	---	---
24420.0	---	---	---	---	---	---	---	---	---

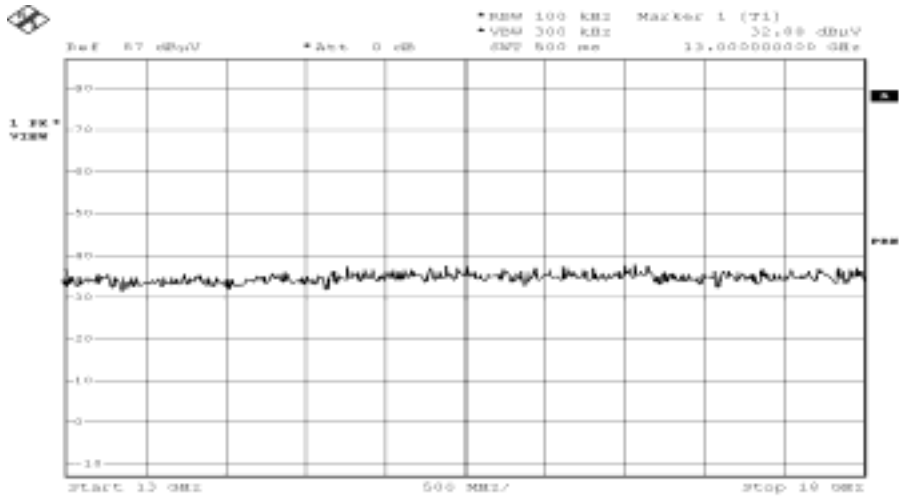
Remark :

- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.

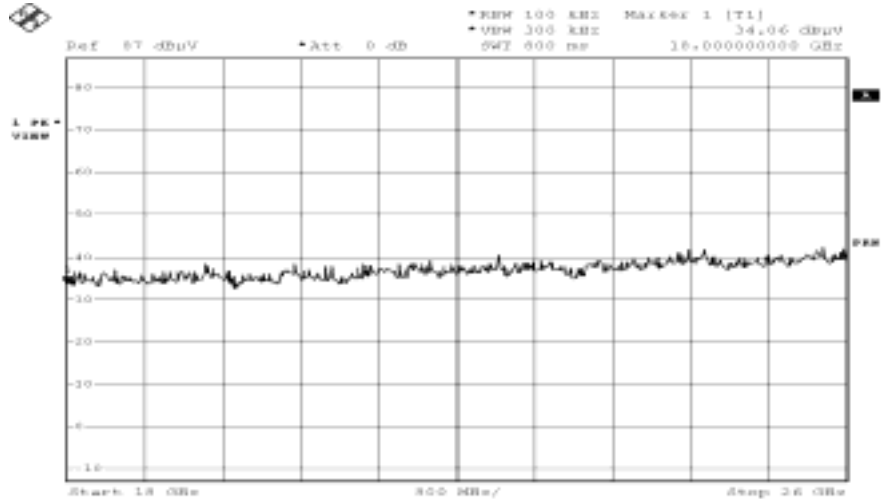
15.209 Radiated Emission Test Plot



Comment: At TX Duty cycle
Date: 18. SEP. 2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Operation Mode: BASE TX Mode Antenna 5
 Fundamental Frequency: 2480MHz (CH High)
 Temperature: 28
 Humidity: 60%

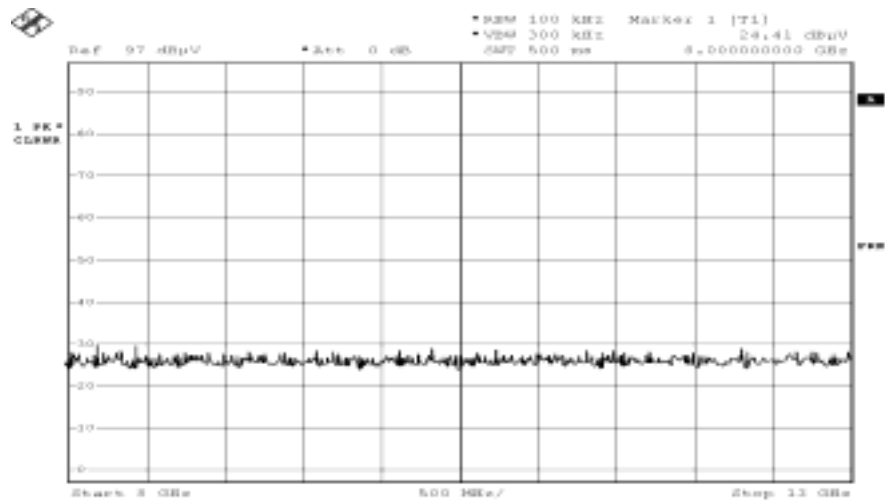
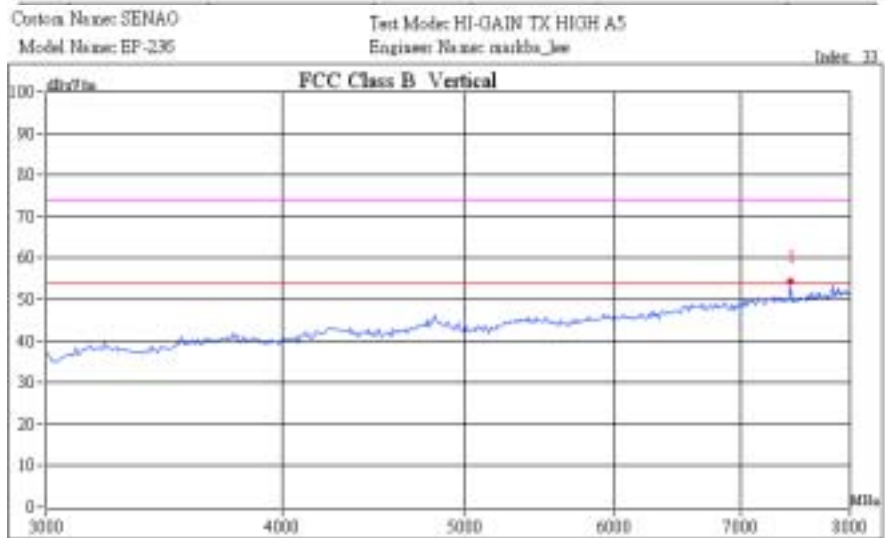
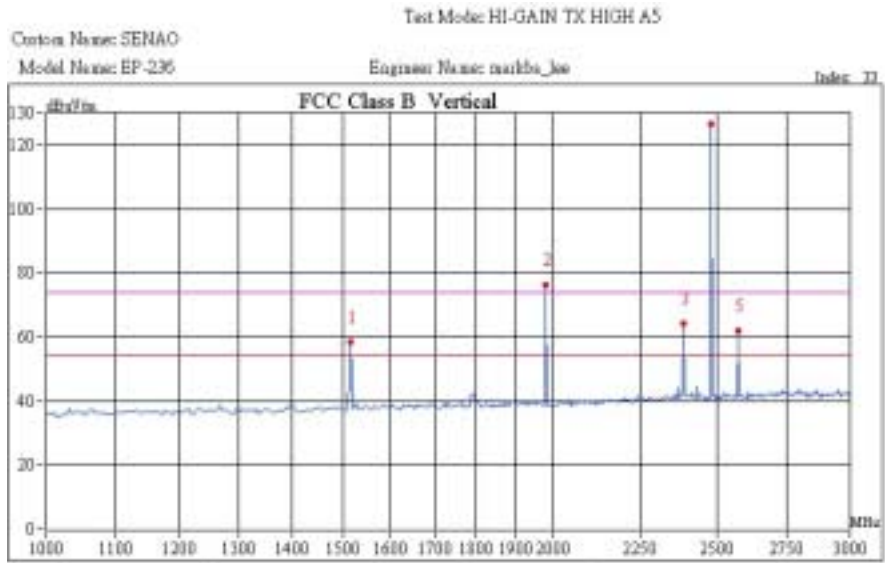
Test Date : 7/22/2002
 Test By: Markba_lee
 Pol: VERTICAL

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	
				Peak (dBuV/m)	AV (dBuV/m)				
1516.0	58.60	36.70	-8.65	49.95	28.05	74.00	54.00	-24.05	Peak
1980.0	76.13	37.94	-6.91	69.22	31.03	74.00	54.00	-4.78	Peak
2388.0	64.31	37.66	-5.26	59.05	32.40	74.00	54.00	-14.95	Peak
2576.0	62.05	37.48	-4.64	57.41	32.84	74.00	54.00	-16.59	Peak
7440.0	54.43	30.63	9.10	63.53	39.73	74.00	54.00	-10.47	Peak
9920.0	---	---	---	---	---	---	---	---	---
12400.0	---	---	---	---	---	---	---	---	---
14880.0	---	---	---	---	---	---	---	---	---
17360.0	---	---	---	---	---	---	---	---	---
19840.0	---	---	---	---	---	---	---	---	---
22320.0	---	---	---	---	---	---	---	---	---
24800.0	---	---	---	---	---	---	---	---	---

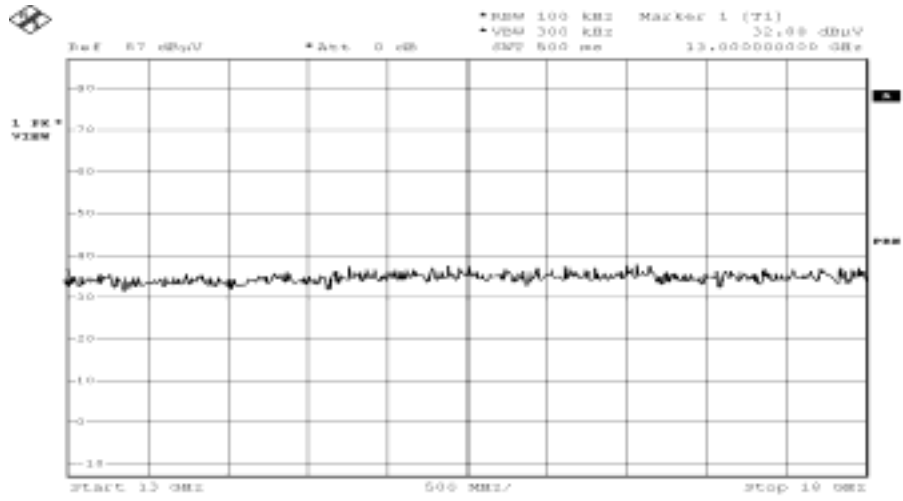
Remark :

- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.

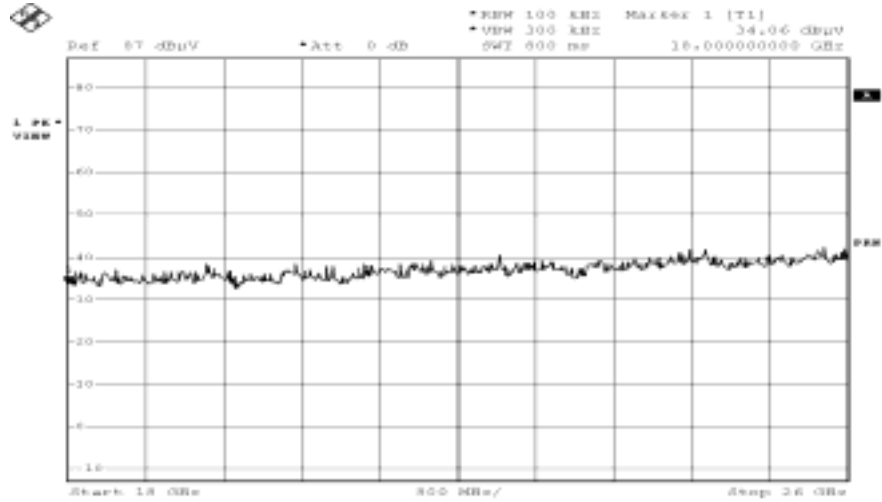
15.209 Radiated Emission Test Plot



Comment: At TX Duty cycle
Date: 18.2KP.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:14:50



Operation Mode: BASE TX Mode Antenna 5
 Fundamental Frequency: 2480MHz (CH High)
 Temperature : 28
 Humidity : 60%

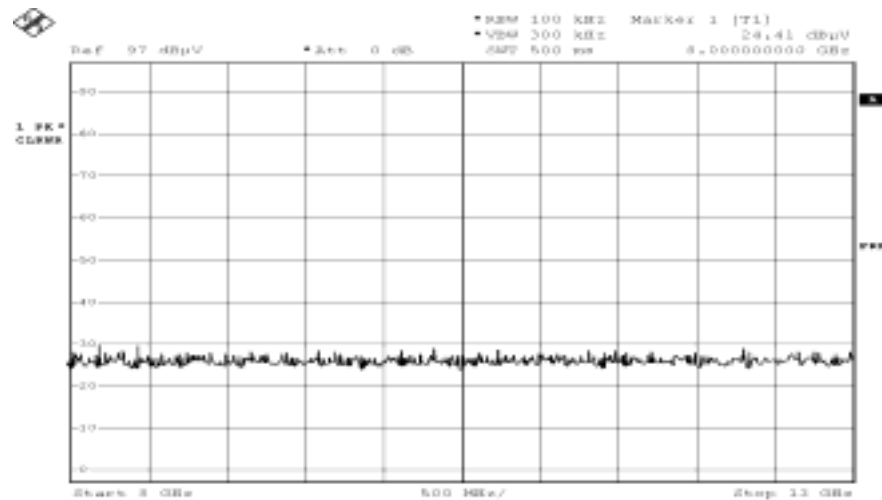
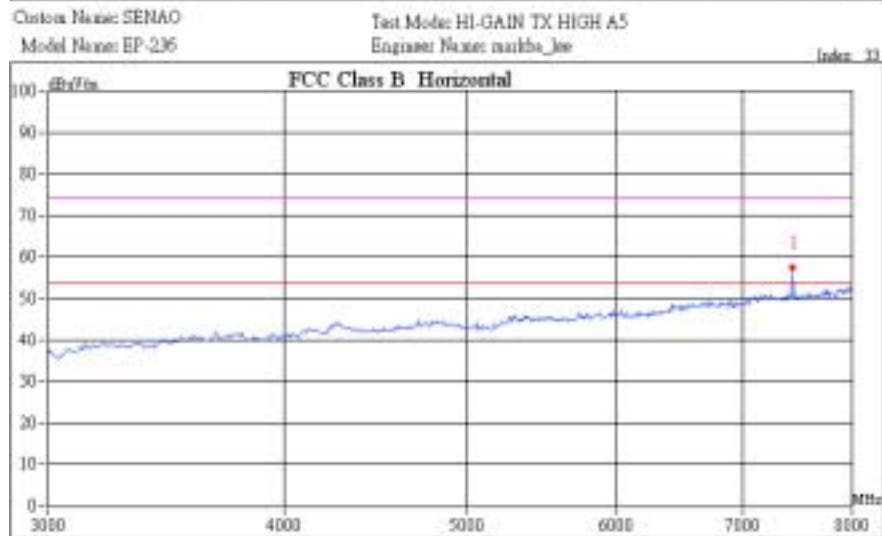
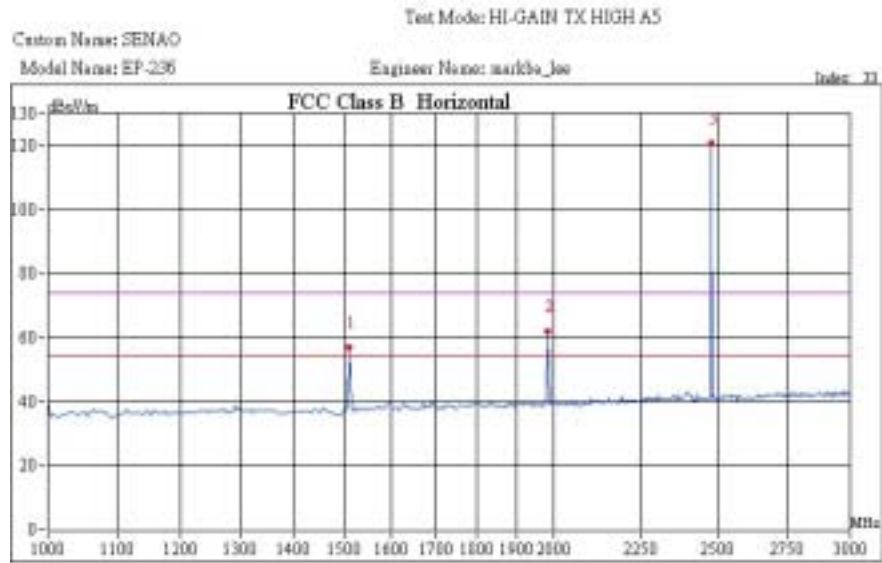
Test Date : 7/22/2002
 Test By: Markba_lee
 Pol: HORIZONTAL

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	
				Peak (dBuV/m)	AV (dBuV/m)				
1512.0	57.03	35.77	-8.66	48.37	27.11	74.00	54.00	-25.63	Peak
1984.0	62.01	36.11	-6.90	55.11	29.21	74.00	54.00	-18.89	Peak
7440.0	57.53	31.04	9.10	66.63	40.14	74.00	54.00	-7.37	Peak
9920.0	---	---	---	---	---	---	---	---	---
12400.0	---	---	---	---	---	---	---	---	---
14880.0	---	---	---	---	---	---	---	---	---
17360.0	---	---	---	---	---	---	---	---	---
19840.0	---	---	---	---	---	---	---	---	---
22320.0	---	---	---	---	---	---	---	---	---
24800.0	---	---	---	---	---	---	---	---	---

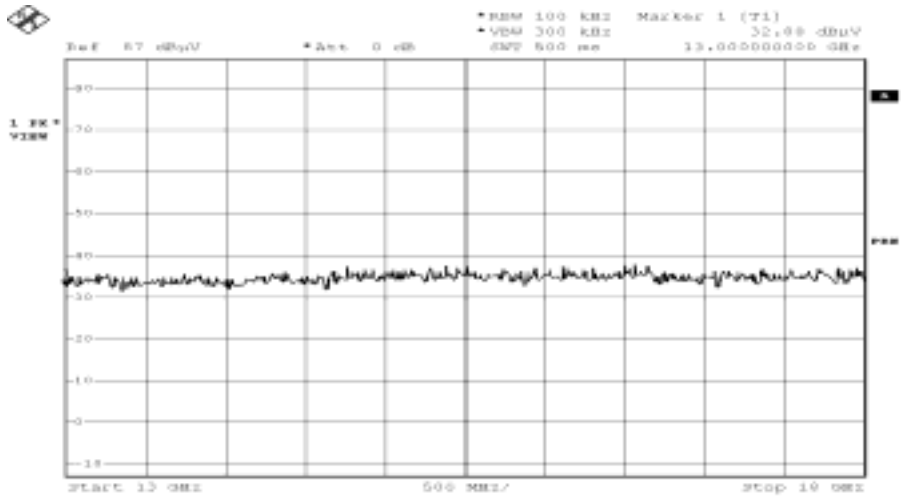
Remark :

- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.

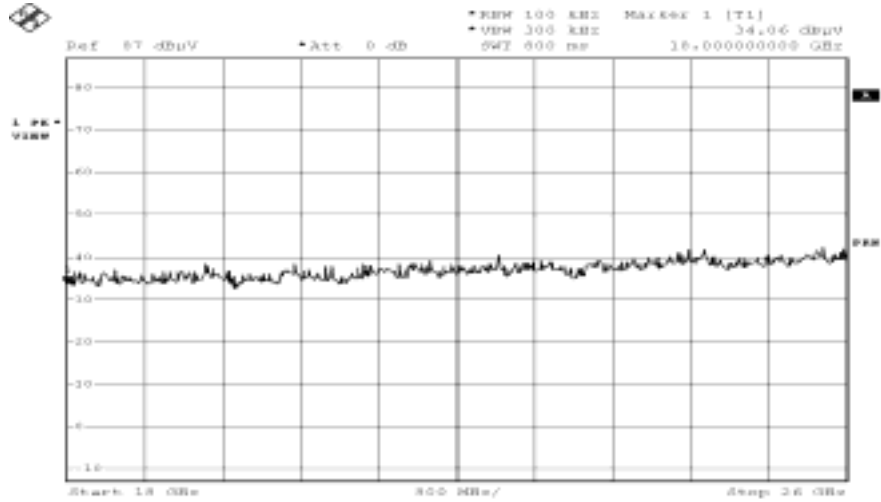
15.209 Radiated Emission Test Plot



Comment At TX Duty cycle
Date: 18.2KP.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Measurement Result (above 1GHz)

Operation Mode: Handset TX X Mode
 Fundamental Frequency: 2401MHz (CH Low)
 Temperature : 28
 Humidity : 60%

Test Date : 7/22/2002
 Test By: Markba_lee
 Pol: VERTICAL

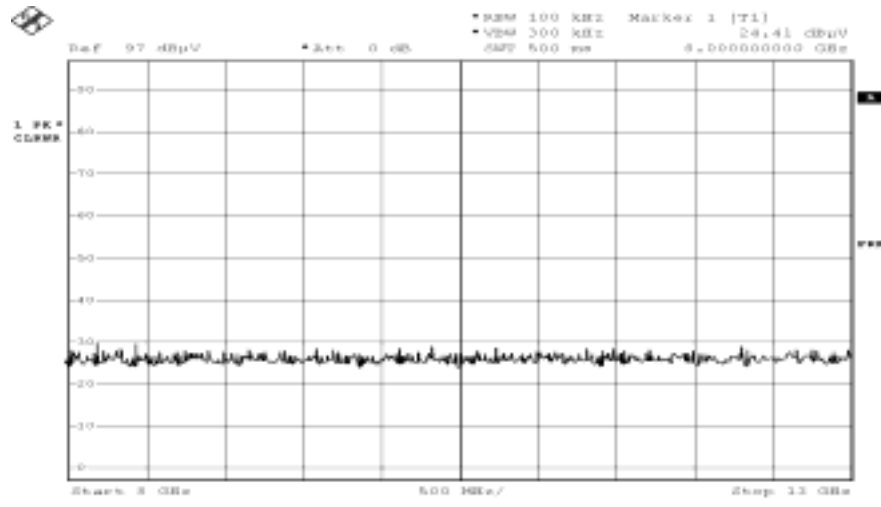
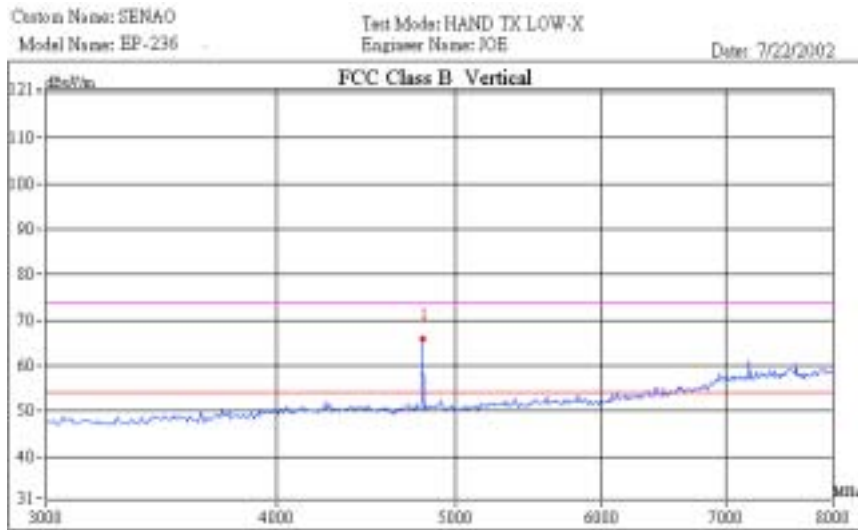
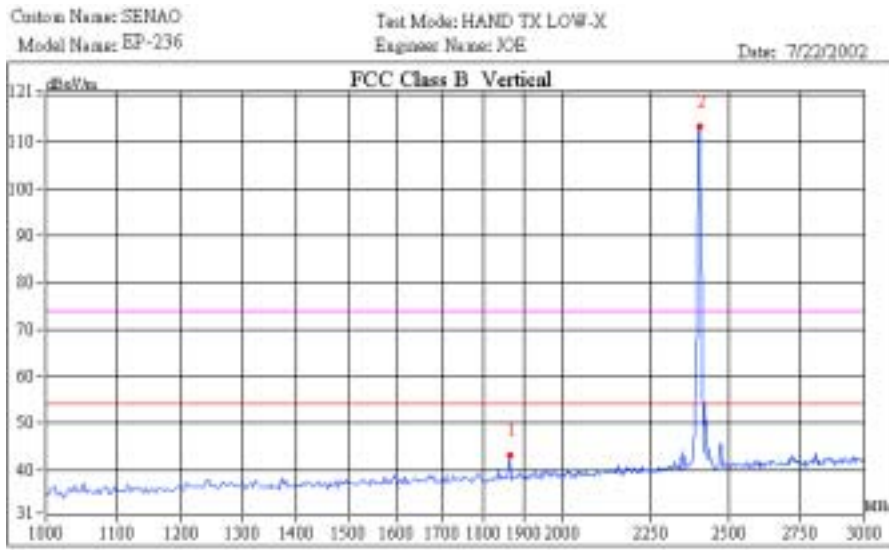
Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	
				Peak (dBuV/m)	AV (dBuV/m)				
1864.0	51.19	36.27	-8.13	43.06	28.14	74.00	54.00	-25.86	AV
4800.0	65.53	36.26	0.28	65.81	36.54	74.00	54.00	-8.19	Peak
7203.0	---	---	---	---	---	---	---	---	---
9604.0	---	---	---	---	---	---	---	---	---
12005.0	---	---	---	---	---	---	---	---	---
14406.0	---	---	---	---	---	---	---	---	---
16807.0	---	---	---	---	---	---	---	---	---
19208.0	---	---	---	---	---	---	---	---	---
21609.0	---	---	---	---	---	---	---	---	---
24010.0	---	---	---	---	---	---	---	---	---

Remark :

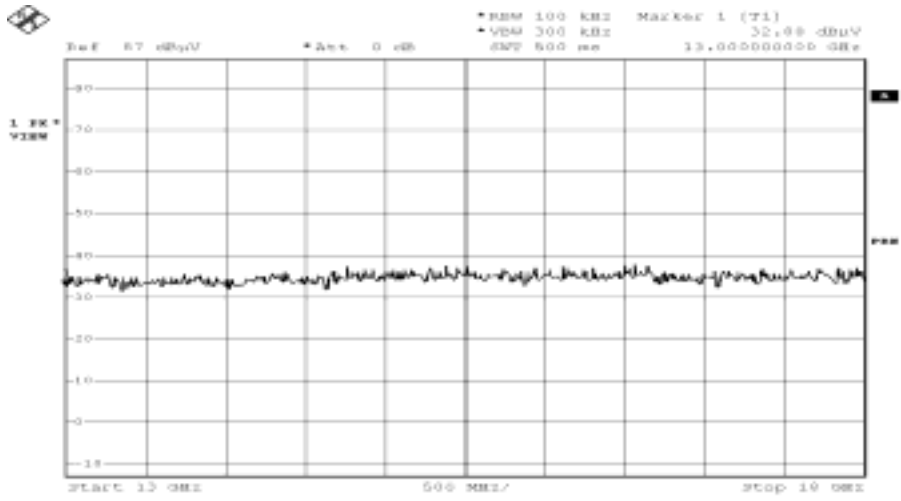
- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.



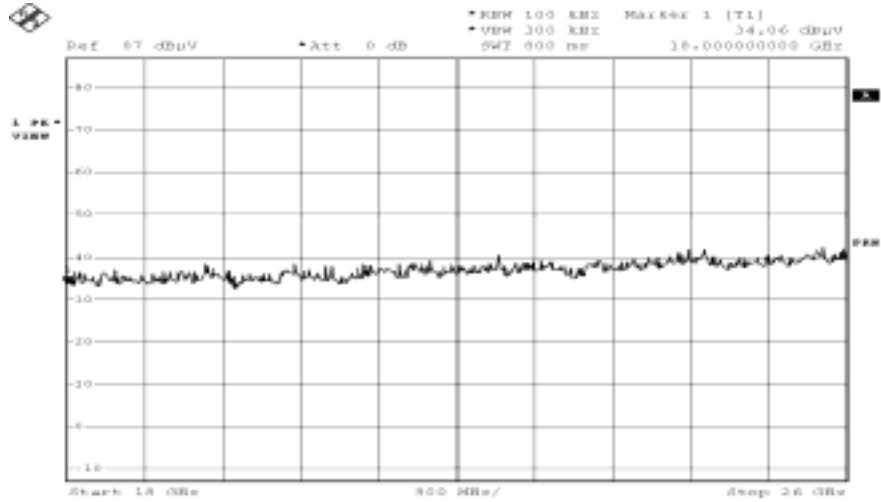
15.209 Radiated Emission Test Plot



Comment At TX Duty cycle
Date: 18.2KP.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Operation Mode: Handset TX X Mode
 Fundamental Frequency: 2401MHz (CH Low)
 Temperature : 28
 Humidity : 60%

Test Date : 7/22/2002
 Test By: Markba_lee
 Pol: HORIZONTAL

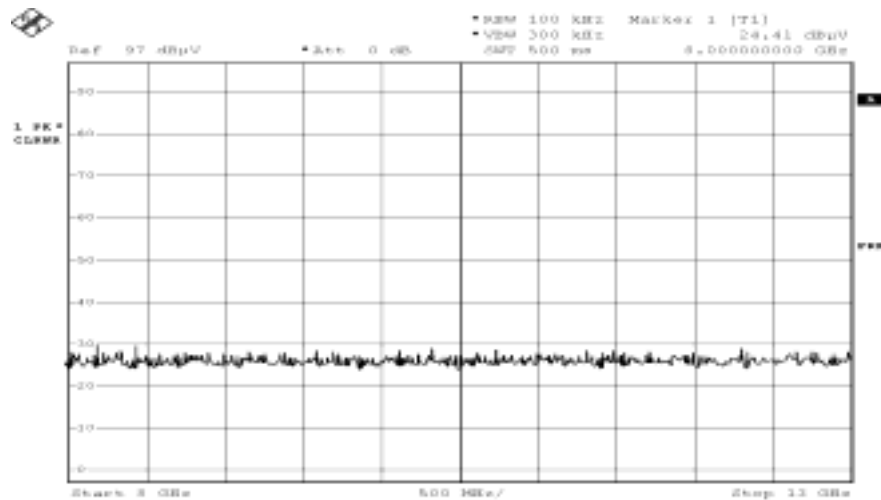
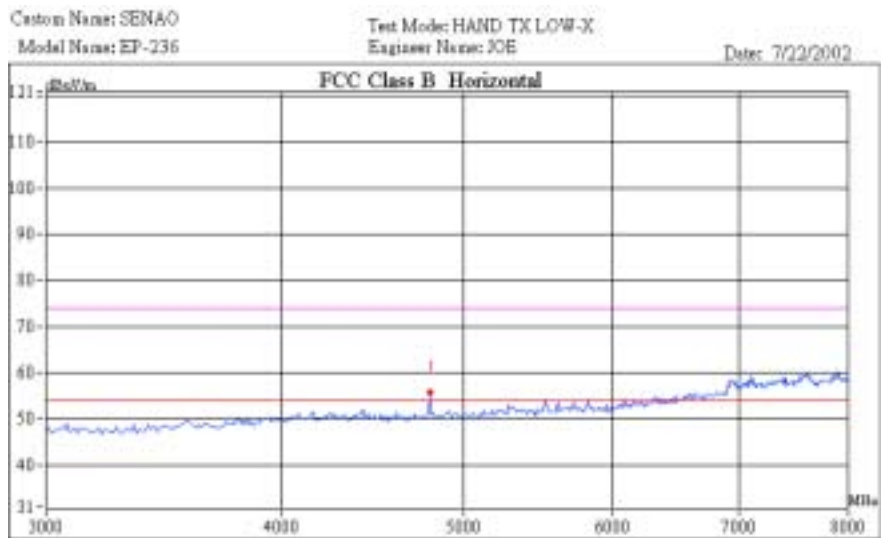
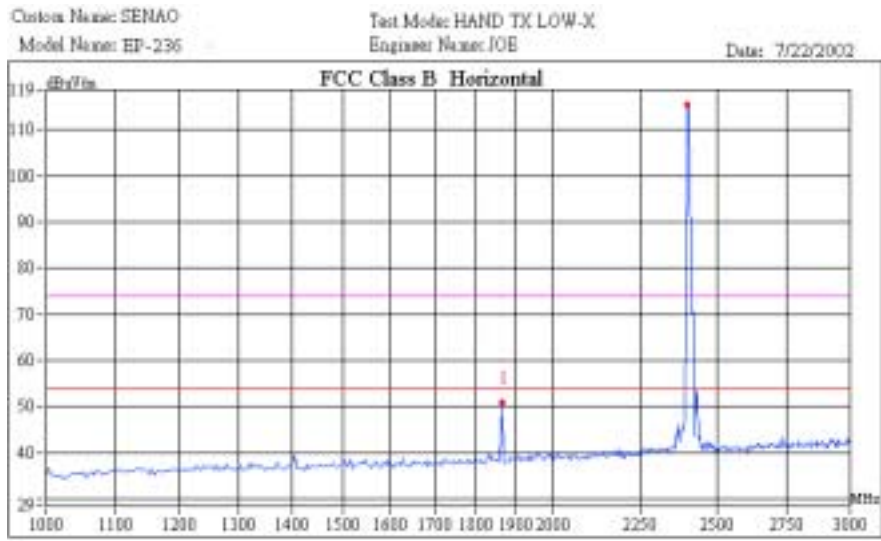
Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
1864.0	58.98	36.84	-8.13	50.85	28.71	74.00	54.00	-23.15	Peak
4800.0	55.40	34.05	0.28	55.68	34.33	74.00	54.00	-18.32	Peak
7203.0	---	---	---	---	---	---	---	---	---
9604.0	---	---	---	---	---	---	---	---	---
12005.0	---	---	---	---	---	---	---	---	---
14406.0	---	---	---	---	---	---	---	---	---
16807.0	---	---	---	---	---	---	---	---	---
19208.0	---	---	---	---	---	---	---	---	---
21609.0	---	---	---	---	---	---	---	---	---
24010.0	---	---	---	---	---	---	---	---	---

Remark :

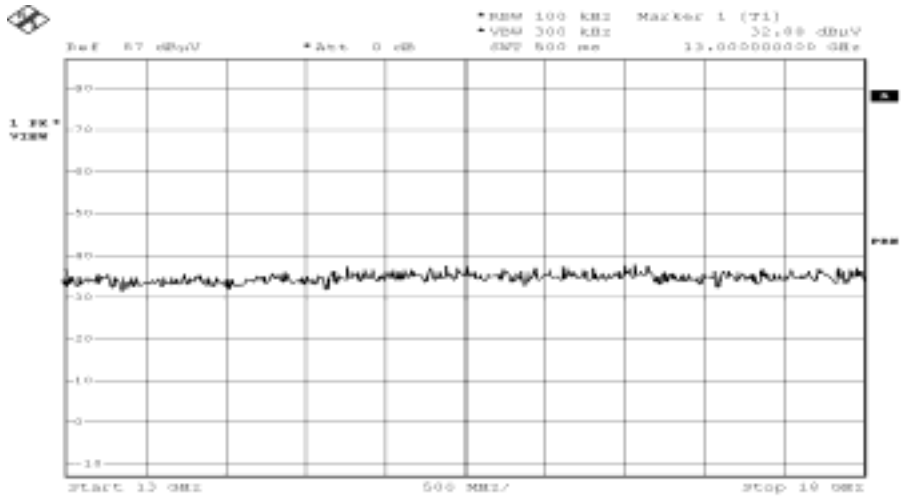
- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
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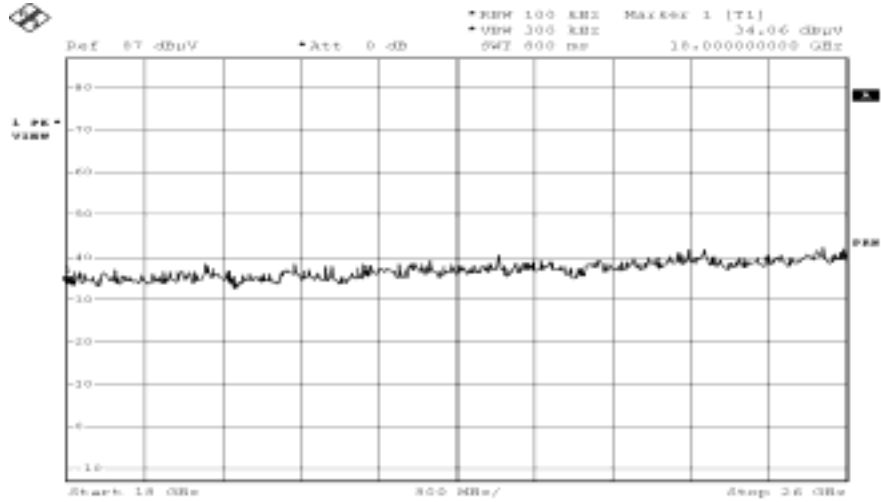
15.209 Radiated Emission Test Plot



Comment: At TX Duty cycle
Date: 18.JUN.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Operation Mode: Handset TX X Mode
 Fundamental Frequency: 2442Hz (CH MID)
 Temperature : 28
 Humidity : 60%

Test Date : 7/22/2002
 Test By: Markba_lee
 Pol: VERTICAL

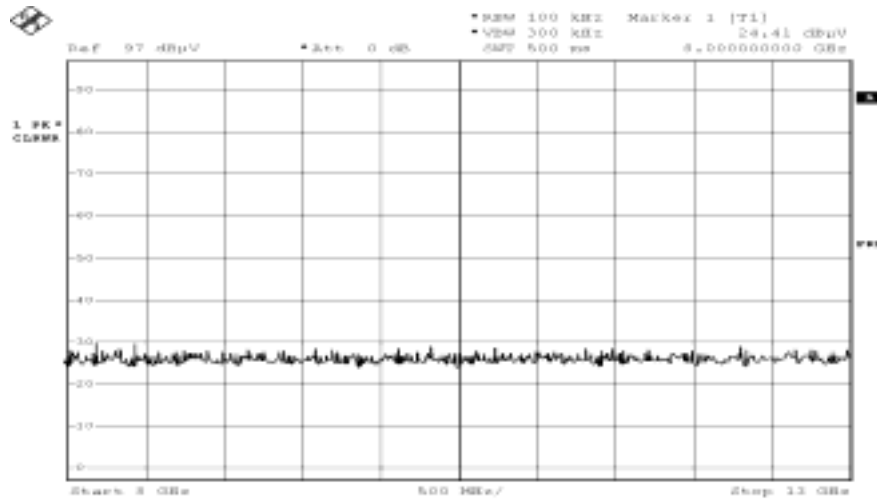
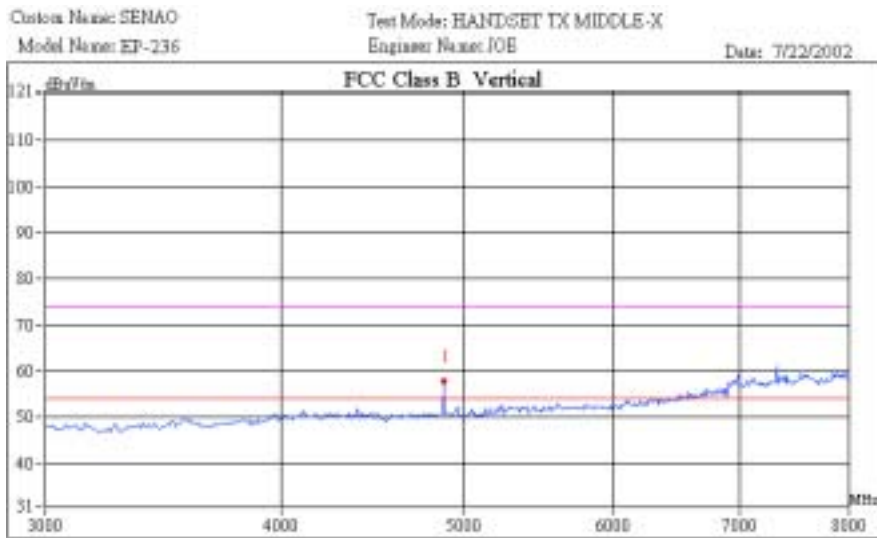
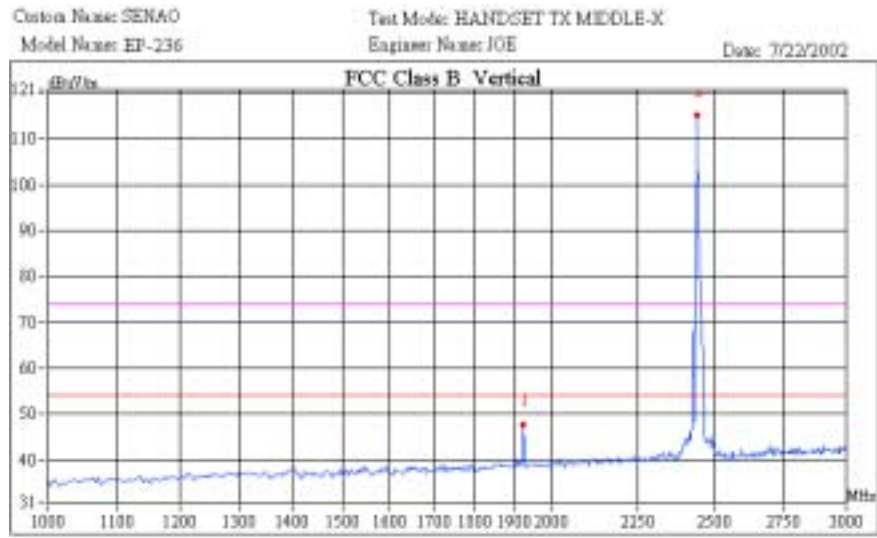
Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
1924.0	55.55	36.82	-7.90	47.65	28.92	74.00	54.00	-25.08	AV
4880.0	57.51	35.76	0.36	57.87	36.12	74.00	54.00	-16.13	Peak
7326.0	---	---	---	---	---	---	---	---	---
9768.0	---	---	---	---	---	---	---	---	---
12210.0	---	---	---	---	---	---	---	---	---
14652.0	---	---	---	---	---	---	---	---	---
17094.0	---	---	---	---	---	---	---	---	---
19536.0	---	---	---	---	---	---	---	---	---
21978.0	---	---	---	---	---	---	---	---	---
24420.0	---	---	---	---	---	---	---	---	---

Remark :

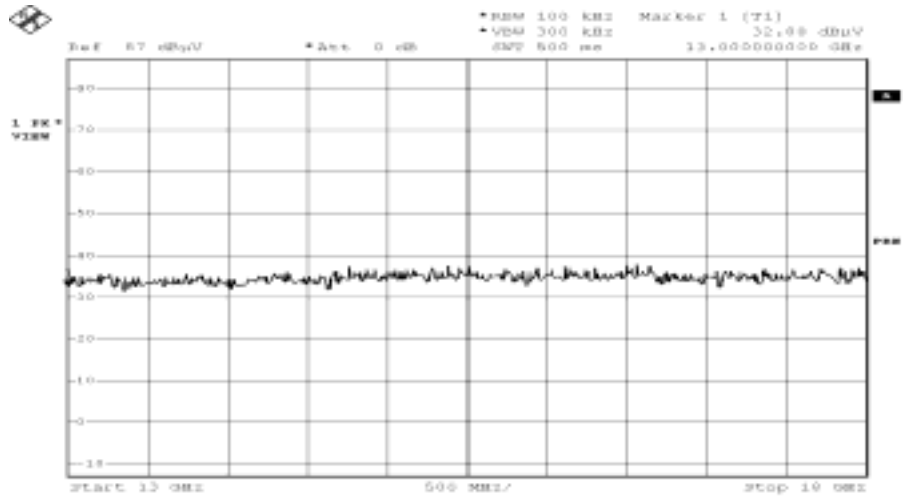
- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
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- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.



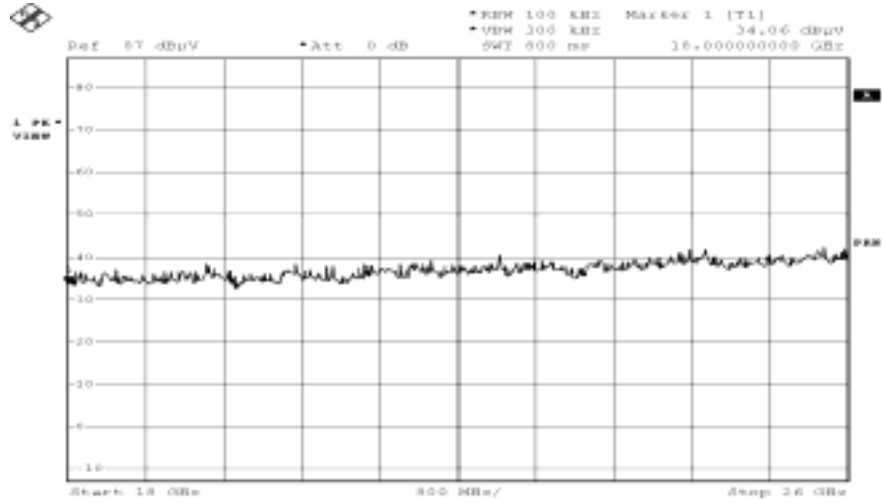
15.209 Radiated Emission Test Plot



Comment: At TX Duty cycle
Date: 18.JUN.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Operation Mode: Handset TX X Mode
 Fundamental Frequency: 2442MHz (CH MID)
 Temperature : 28
 Humidity : 60%

Test Date : 7/22/2002
 Test By: Markba_lee
 Pol: HORIZONTAL

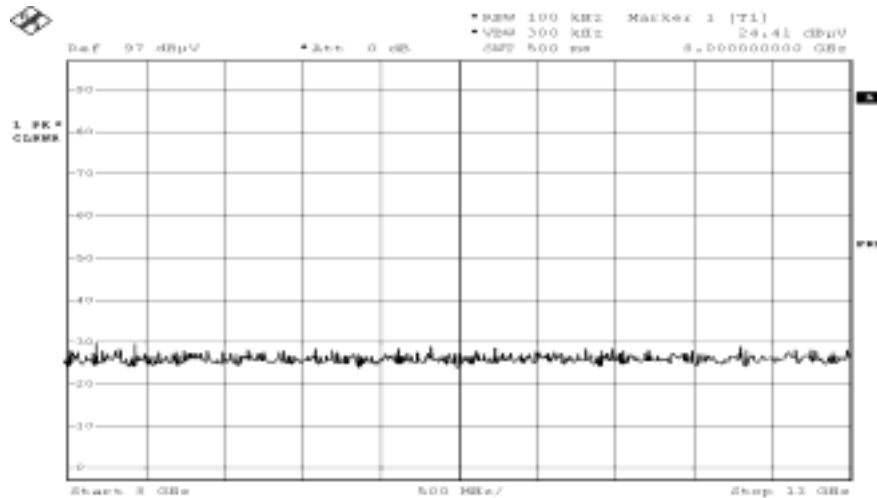
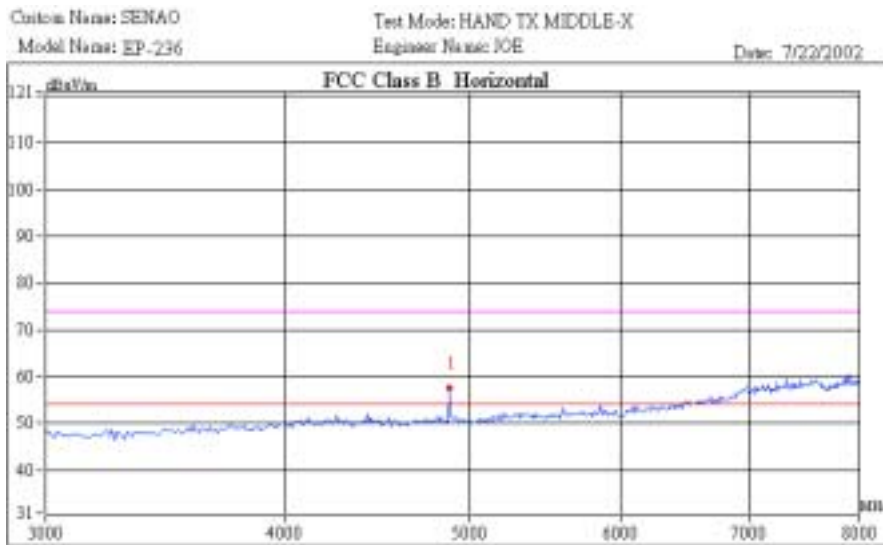
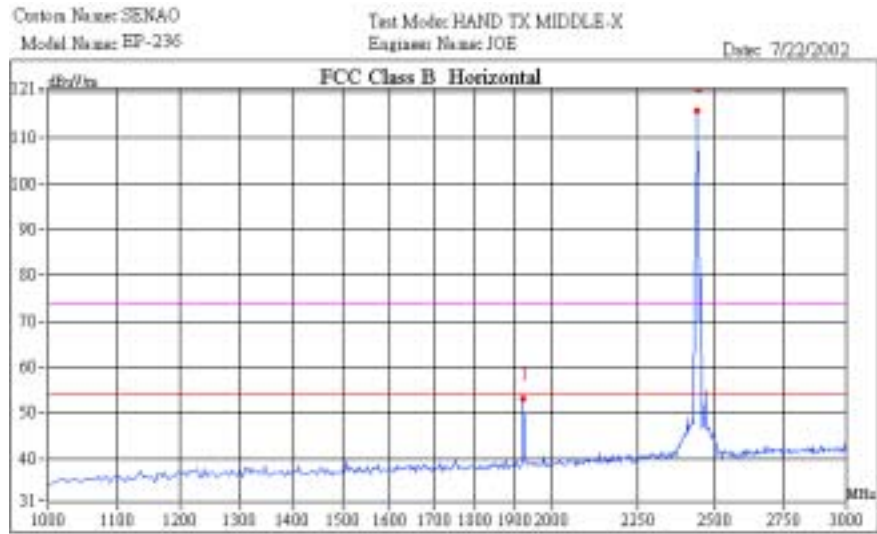
Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
1924.0	61.06	35.17	-7.90	53.16	27.27	74.00	54.00	-20.84	Peak
4880.0	57.22	51.06	0.36	57.58	51.42	74.00	54.00	-2.58	AV
7326.0	---	---	---	---	---	---	---	---	---
9768.0	---	---	---	---	---	---	---	---	---
12210.0	---	---	---	---	---	---	---	---	---
14652.0	---	---	---	---	---	---	---	---	---
17094.0	---	---	---	---	---	---	---	---	---
19536.0	---	---	---	---	---	---	---	---	---
21978.0	---	---	---	---	---	---	---	---	---
24420.0	---	---	---	---	---	---	---	---	---

Remark :

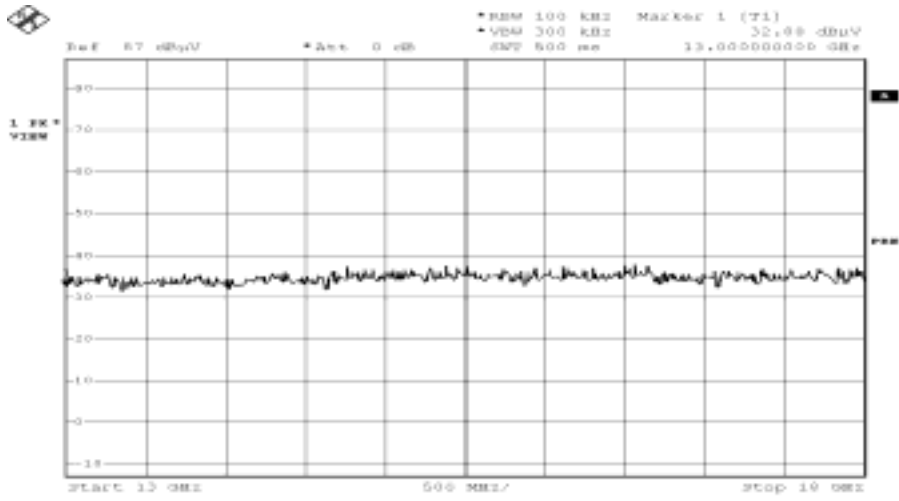
- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.



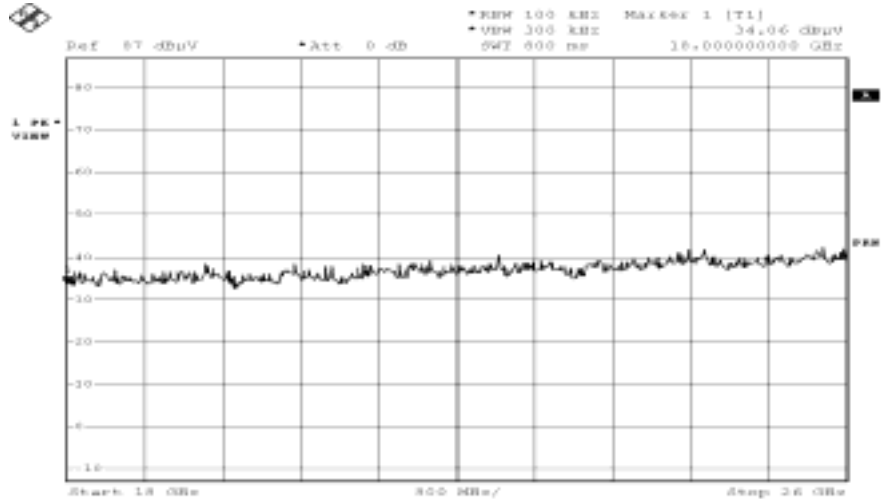
15.209 Radiated Emission Test Plot



Comment At TX Duty cycle
Date: 18.JUN.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:14:50



Operation Mode: Handset TX X Mode
 Fundamental Frequency: 2480MHz (CH High)
 Temperature : 28
 Humidity : 60%

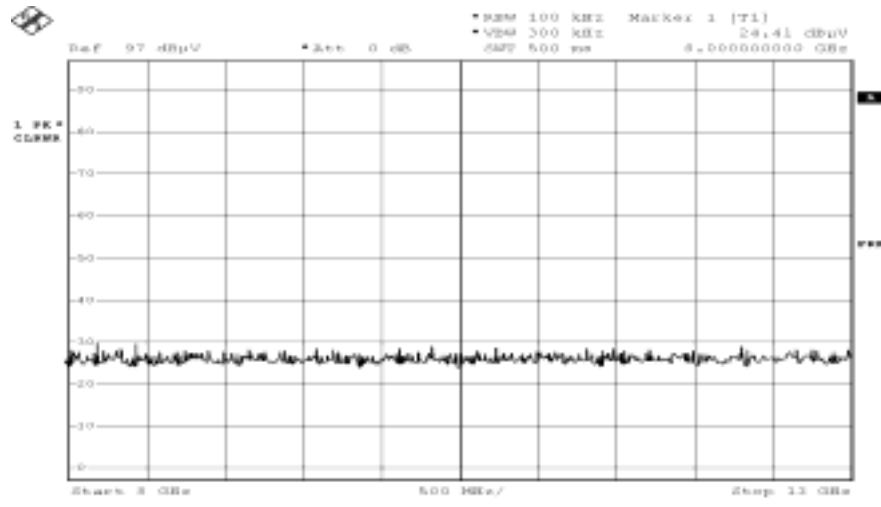
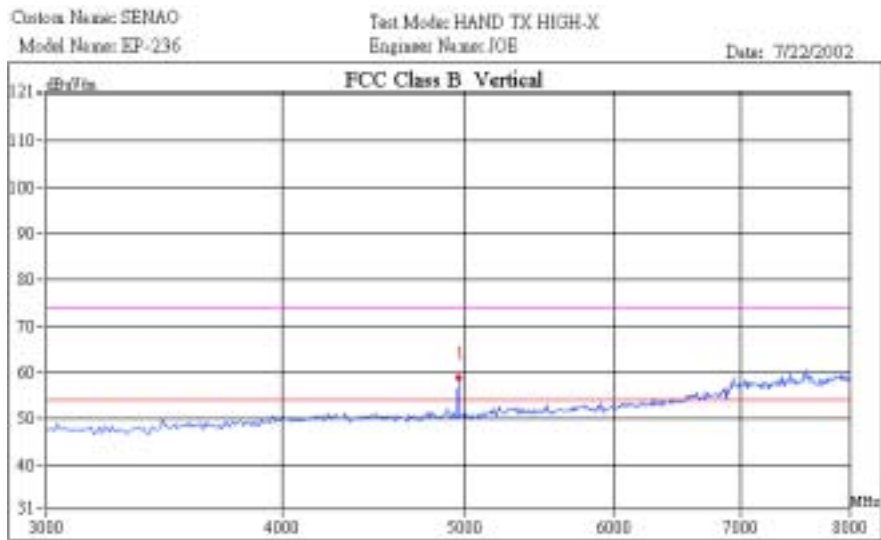
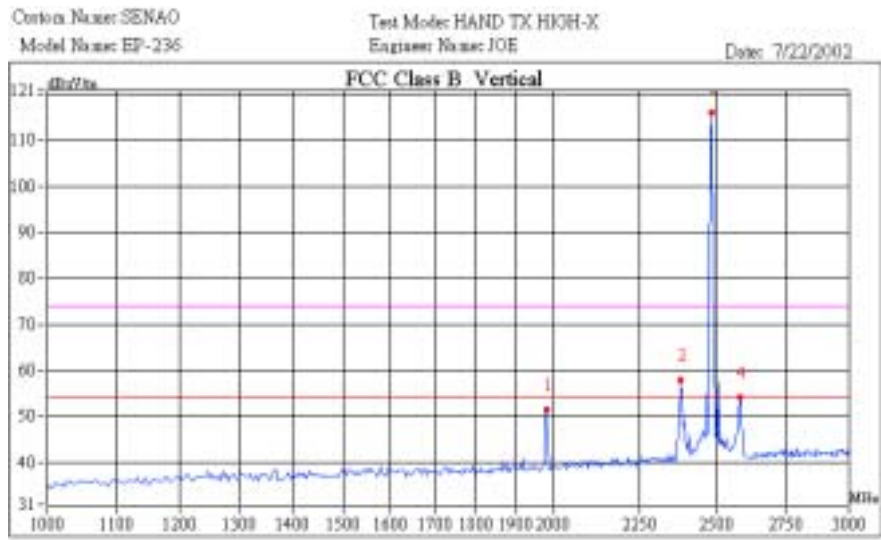
Test Date : 7/22/2002
 Test By: Markba_lee
 Pol: VERTICAL

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
1984.0	59.14	43.97	-7.65	51.49	36.32	74.00	54.00	-17.68	AV
2380.0	64.11	42.61	-6.18	57.93	36.43	74.00	54.00	-16.07	Peak
2584.0	59.60	40.99	-5.59	54.01	35.40	74.00	54.00	-18.60	AV
4960.0	58.53	45.48	6.00	64.53	51.48	74.00	54.00	-2.52	AV
7440.0	---	---	---	---	---	---	---	---	---
9920.0	---	---	---	---	---	---	---	---	---
12400.0	---	---	---	---	---	---	---	---	---
14880.0	---	---	---	---	---	---	---	---	---
17360.0	---	---	---	---	---	---	---	---	---
19840.0	---	---	---	---	---	---	---	---	---
22320.0	---	---	---	---	---	---	---	---	---
24800.0	---	---	---	---	---	---	---	---	---

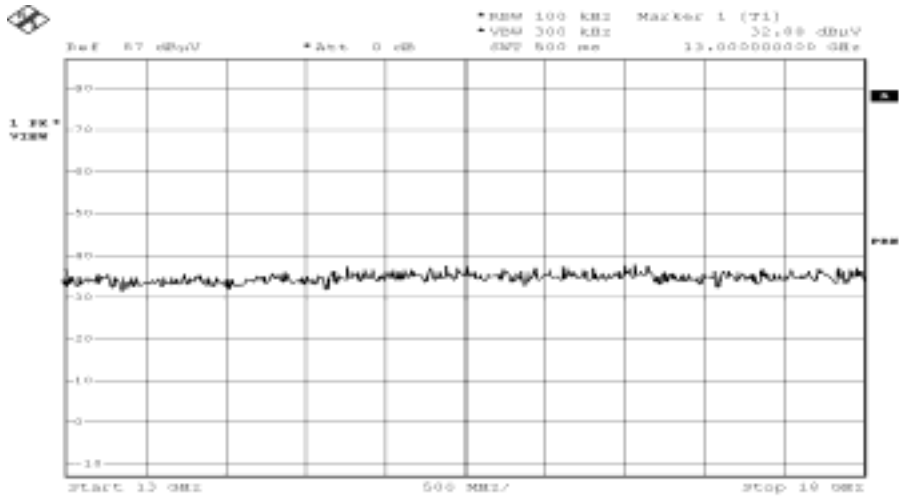
Remark :

- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven’t noise.

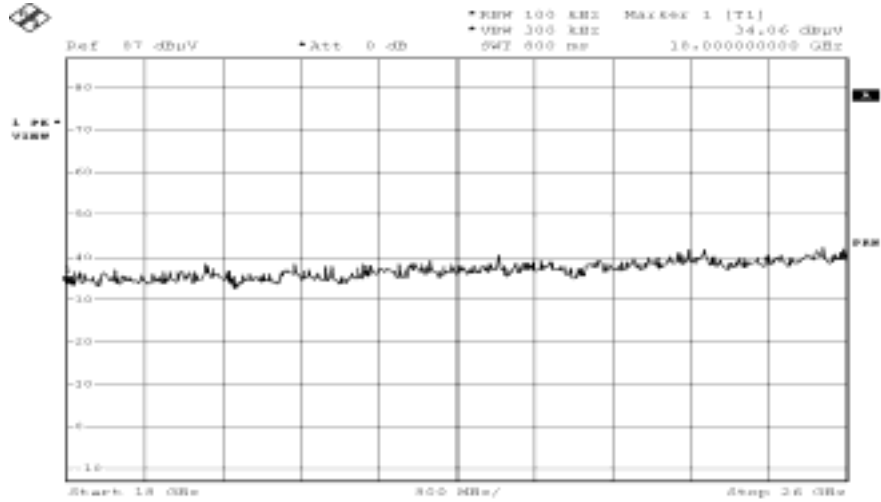
15.209 Radiated Emission Test Plot



Comment: At TX Duty cycle
Date: 18. SEP. 2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Operation Mode: Handset TX X Mode
 Fundamental Frequency: 2480MHz (CH High)
 Temperature : 28
 Humidity : 60%

Test Date : 7/22/2002
 Test By: Markba_lee
 Pol: HORIZONTAL

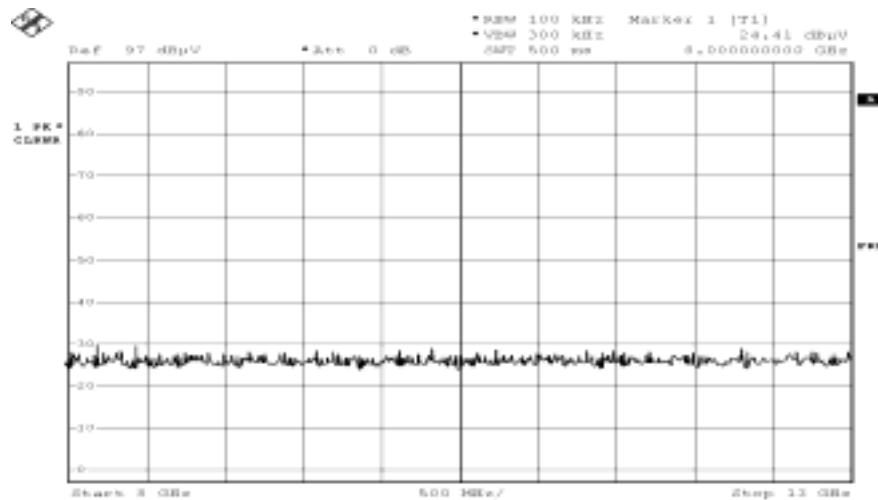
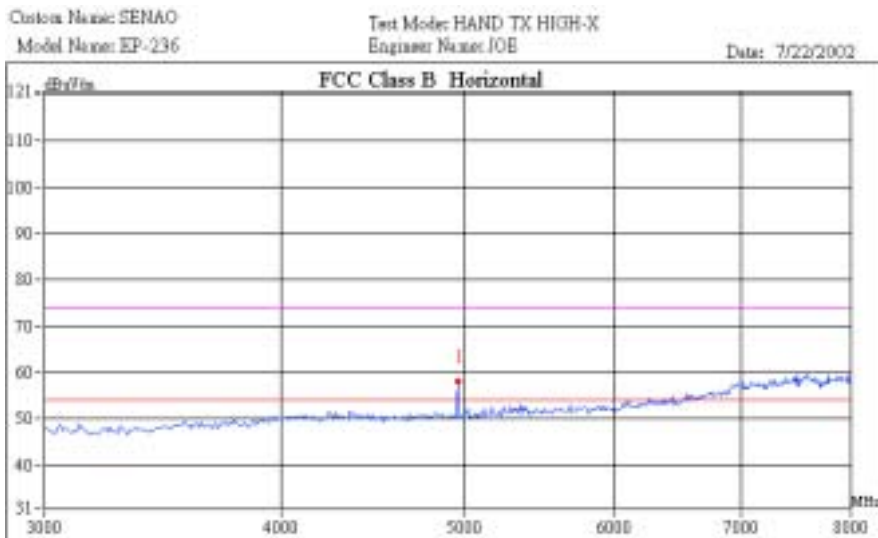
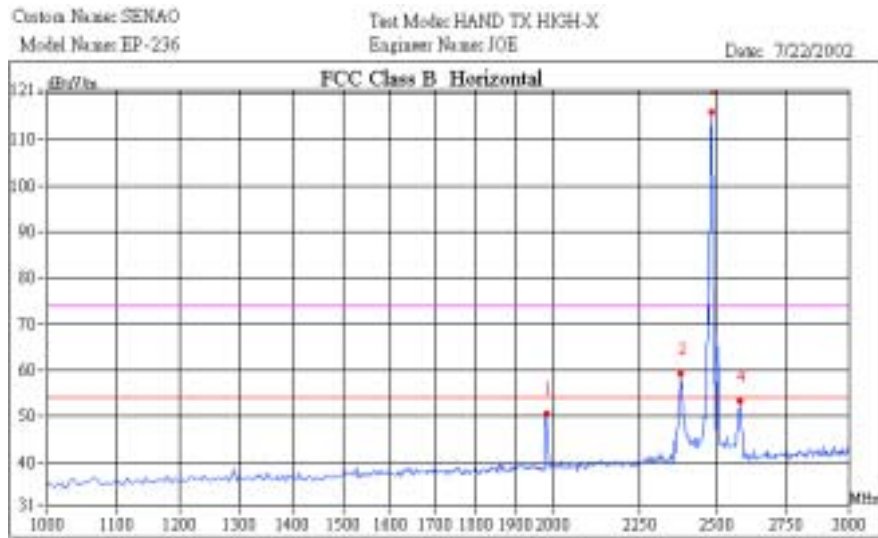
Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
1984.0	58.27	43.20	-7.65	50.62	35.55	74.00	54.00	-18.45	AV
2380.0	65.50	42.35	-6.18	59.32	36.17	74.00	54.00	-14.68	Peak
2584.0	58.91	40.13	-5.59	53.32	34.54	74.00	54.00	-19.46	AV
4960.0	57.77	45.17	0.43	58.20	45.60	74.00	54.00	-8.40	AV
7440.0	---	---	---	---	---	---	---	---	---
9920.0	---	---	---	---	---	---	---	---	---
12400.0	---	---	---	---	---	---	---	---	---
14880.0	---	---	---	---	---	---	---	---	---
17360.0	---	---	---	---	---	---	---	---	---
19840.0	---	---	---	---	---	---	---	---	---
22320.0	---	---	---	---	---	---	---	---	---
24800.0	---	---	---	---	---	---	---	---	---

Remark :

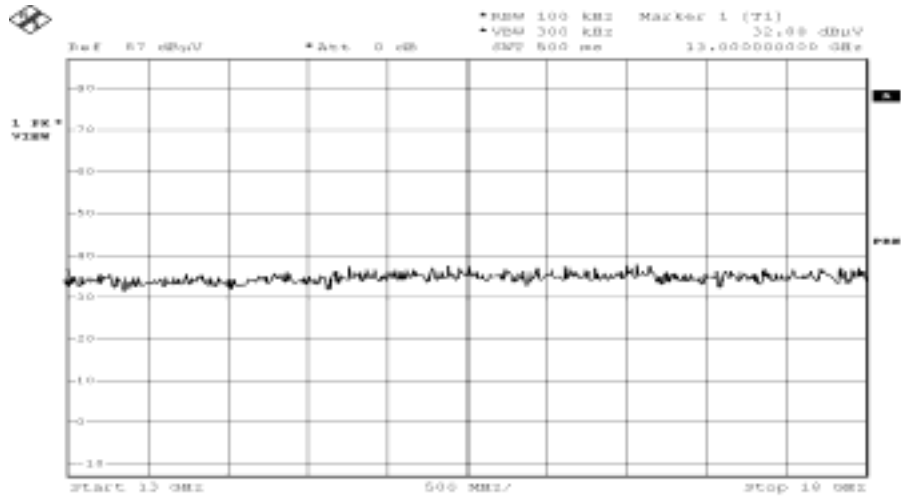
- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.



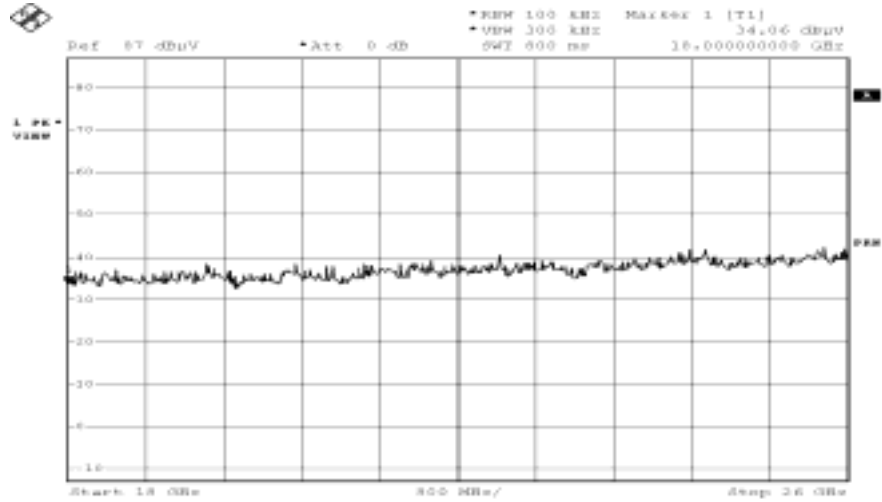
15.209 Radiated Emission Test Plot



Comment: At TX Duty cycle
 Date: 18.JUN.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:14:50

Measurement Result (above 1GHz)

Operation Mode: Handset TX Y Mode
 Fundamental Frequency: 2401MHz (CH Low)
 Temperature : 28
 Humidity : 60%

Test Date : 7/22/2002
 Test By: Joe Zhong
 Pol: VERTICAL

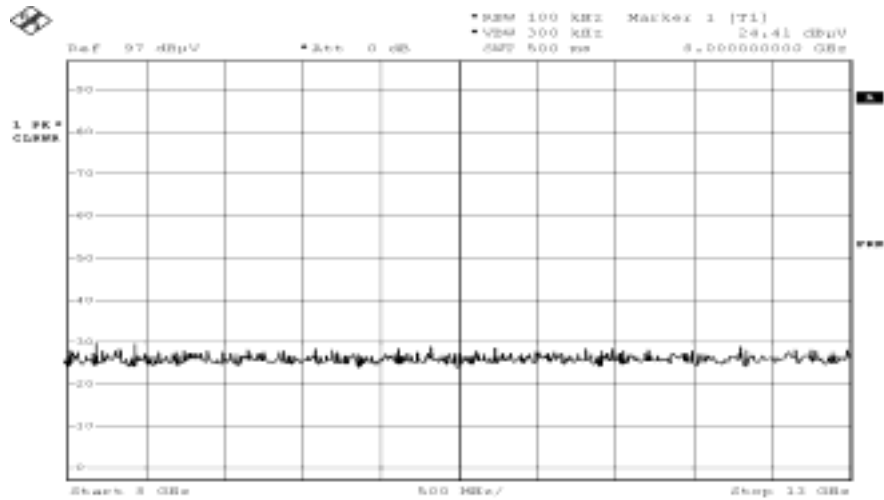
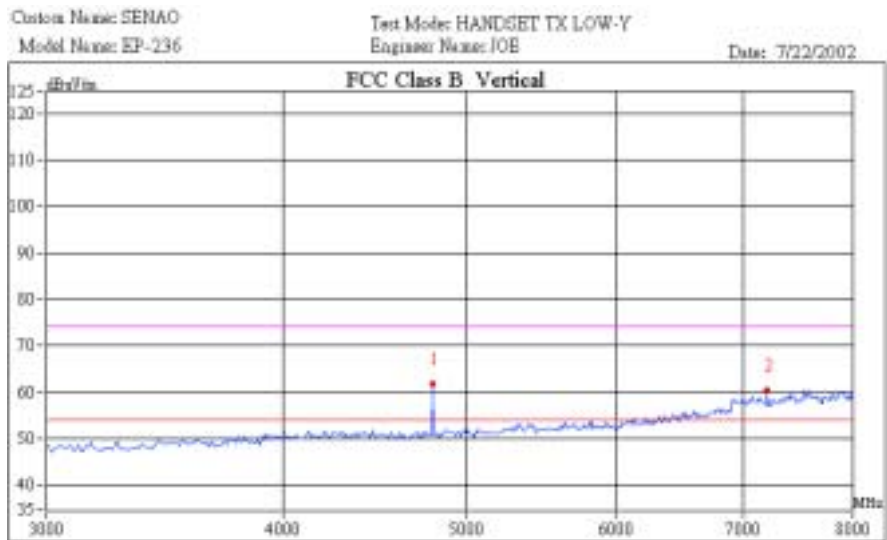
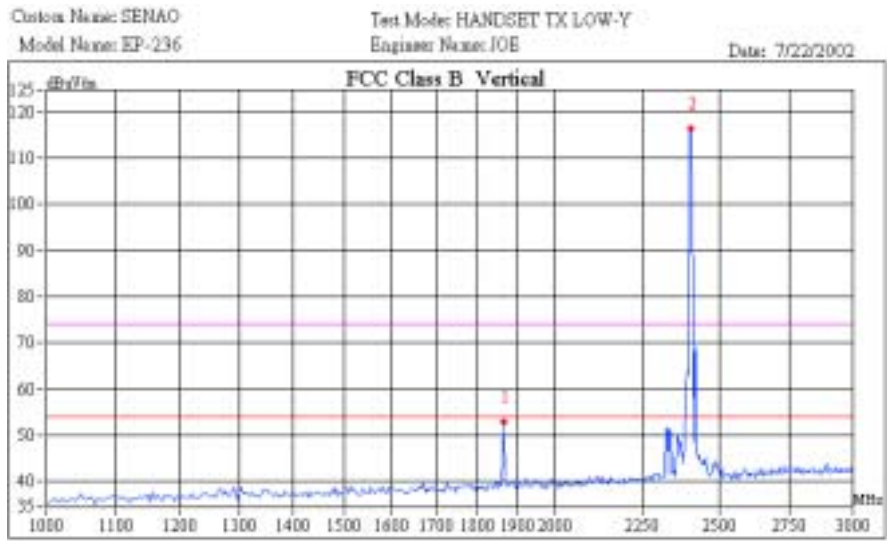
Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
1864.0	60.99	41.14	-8.13	52.86	33.01	74.00	54.00	-20.99	AV
4800.0	61.62	47.95	0.28	61.90	48.23	74.00	54.00	-5.77	AV
7210.0	54.26	43.00	6.22	60.48	49.22	74.00	54.00	-4.78	AV
9604.0	---	---	---	---	---	---	---	---	---
12005.0	---	---	---	---	---	---	---	---	---
14406.0	---	---	---	---	---	---	---	---	---
16807.0	---	---	---	---	---	---	---	---	---
19208.0	---	---	---	---	---	---	---	---	---
21609.0	---	---	---	---	---	---	---	---	---
24010.0	---	---	---	---	---	---	---	---	---

Remark :

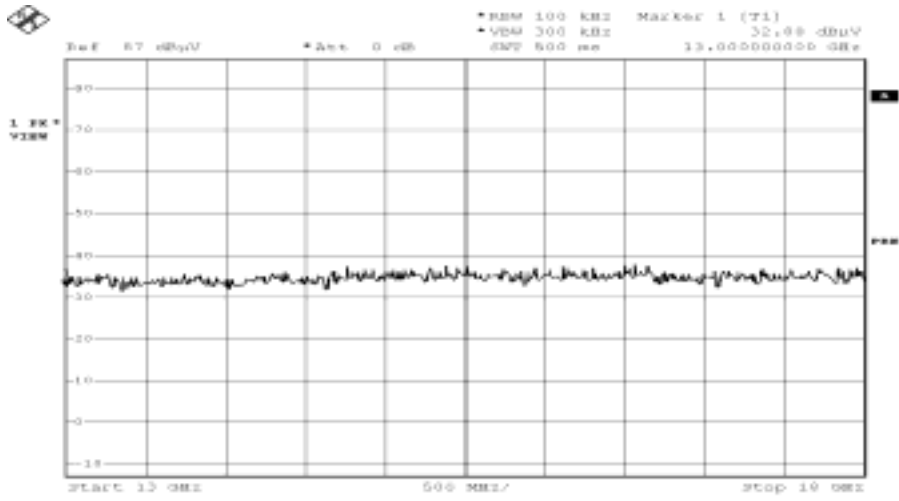
- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.



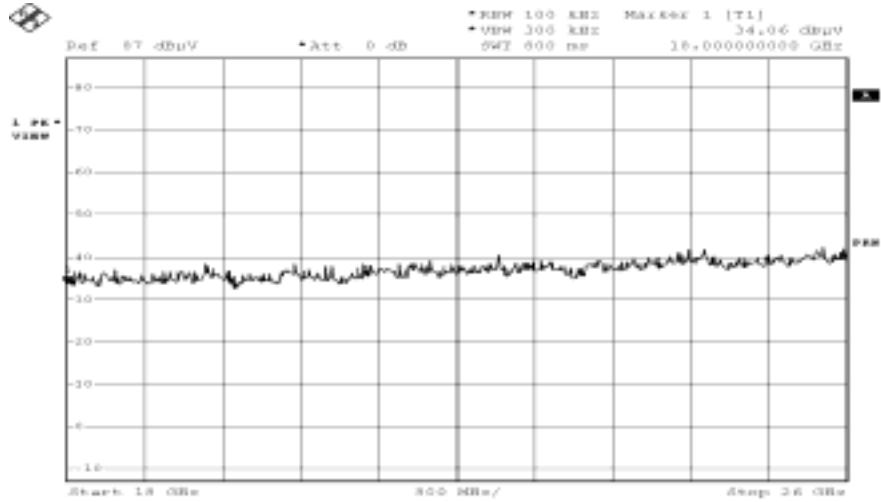
15.209 Radiated Emission Test Plot



Comment At TX Duty cycle
Date: 18.JUN.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Operation Mode: Handset TX Y Mode
 Fundamental Frequency: 2401MHz (CH Low)
 Temperature : 28
 Humidity : 60%

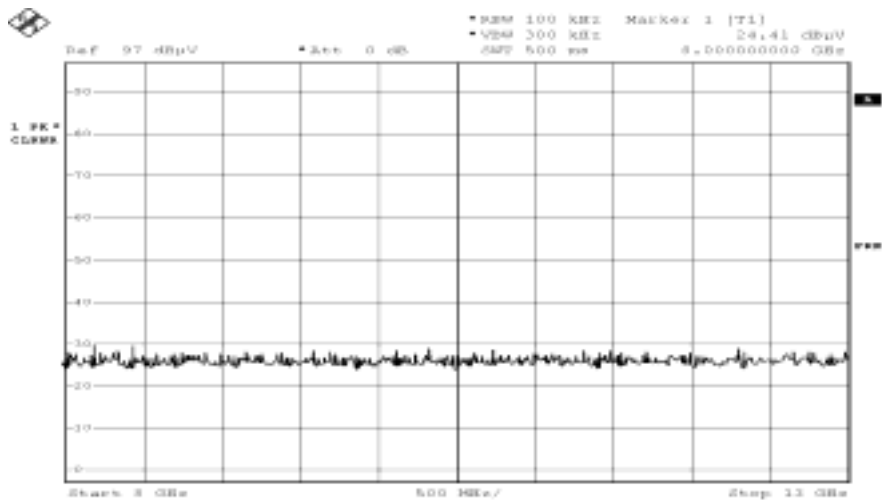
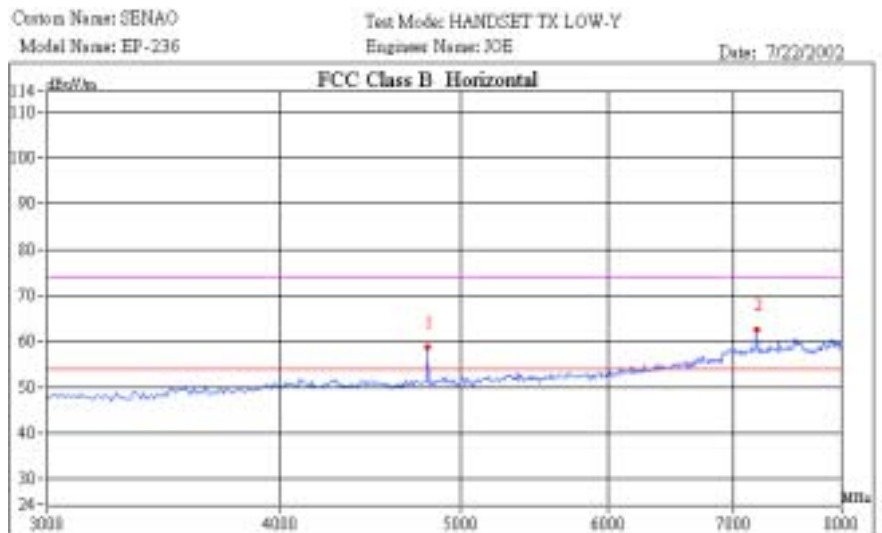
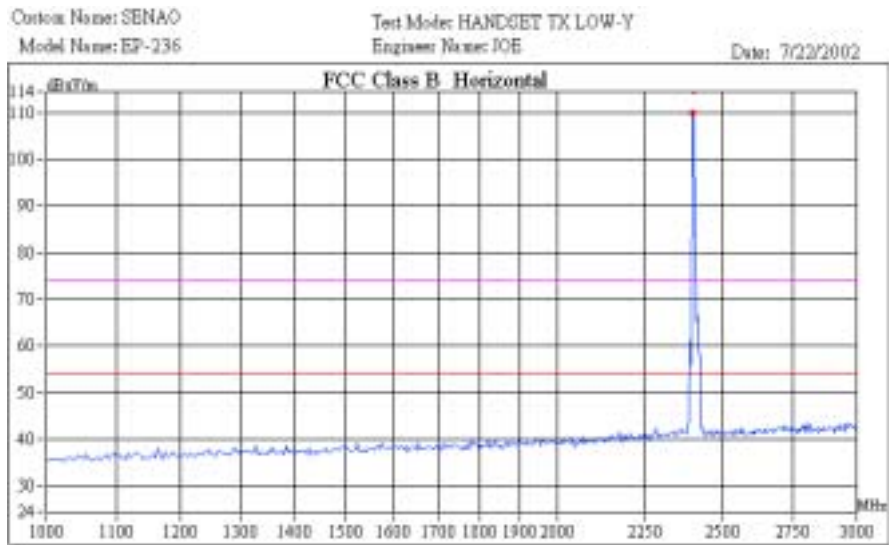
Test Date : 7/22/2002
 Test By: Joe Zhong
 Pol: HORIZONTAL

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4800.0	58.58	41.13	0.28	58.86	41.41	74.00	54.00	-12.59	AV
7210.0	56.26	41.06	6.22	62.48	47.28	74.00	54.00	-6.72	AV
9604.0	---	---	---	---	---	---	---	---	---
12005.0	---	---	---	---	---	---	---	---	---
14406.0	---	---	---	---	---	---	---	---	---
16807.0	---	---	---	---	---	---	---	---	---
19208.0	---	---	---	---	---	---	---	---	---
21609.0	---	---	---	---	---	---	---	---	---
24010.0	---	---	---	---	---	---	---	---	---

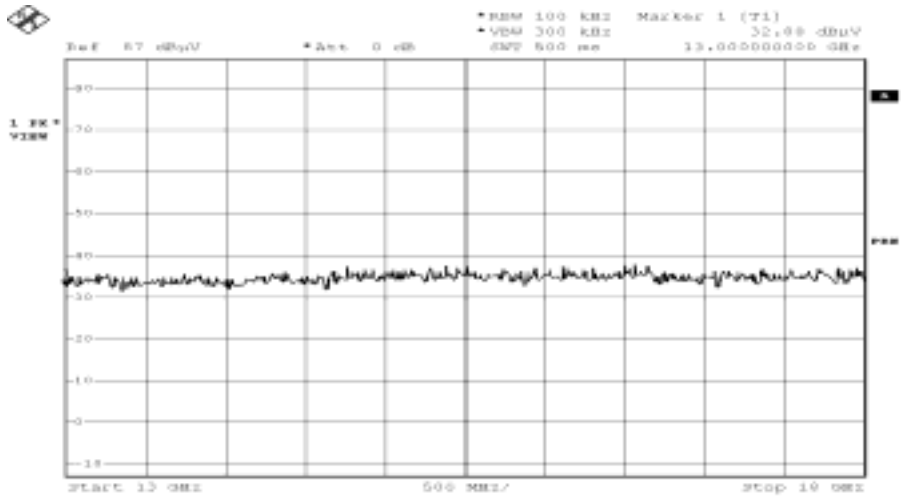
Remark :

- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.

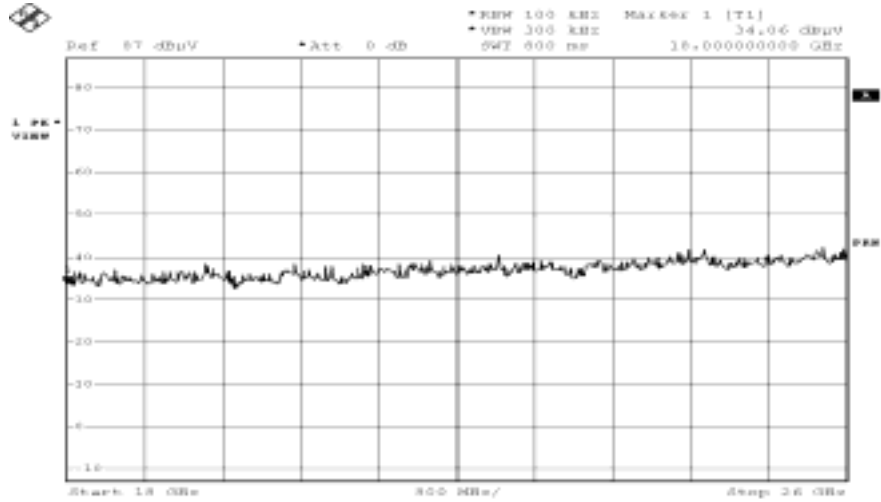
15.209 Radiated Emission Test Plot



Comment: As TX Duty cycle
Date: 18.2KP.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Operation Mode: Handset TX Y Mode
 Fundamental Frequency: 2442Hz (CH MID)
 Temperature : 28
 Humidity : 60%

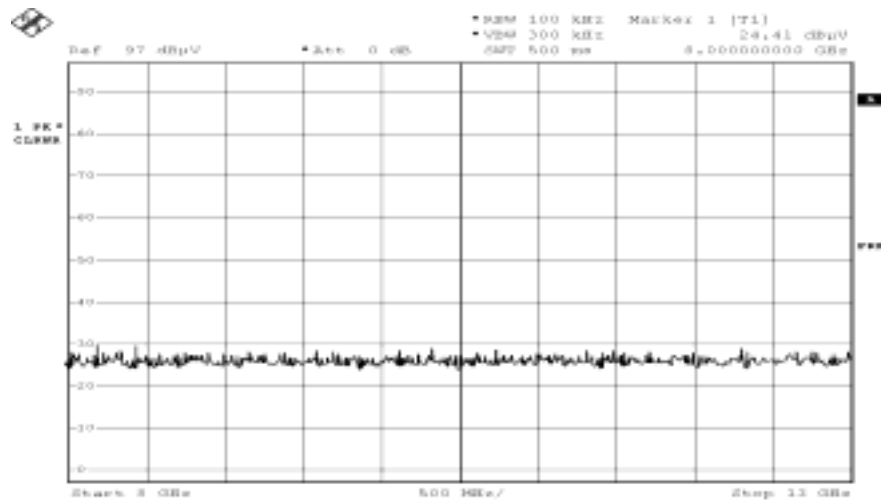
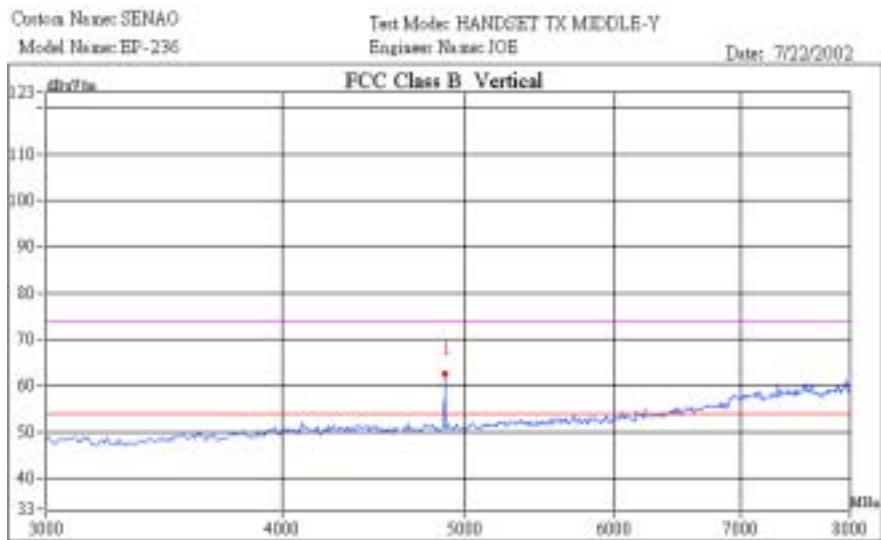
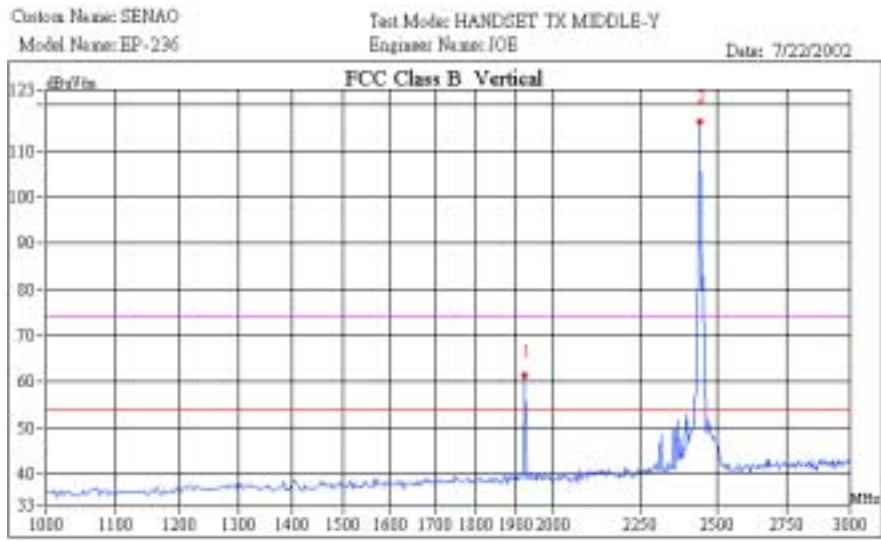
Test Date : 7/22/2002
 Test By: Joe Zhong
 Pol: VERTICAL

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
1924.0	69.37	42.38	-7.90	61.47	34.48	74.00	54.00	-12.53	Peak
4880.0	62.15	48.19	0.36	62.51	48.55	74.00	54.00	-5.45	AV
7326.0	---	---	---	---	---	---	---	---	---
9768.0	---	---	---	---	---	---	---	---	---
12210.0	---	---	---	---	---	---	---	---	---
14652.0	---	---	---	---	---	---	---	---	---
17094.0	---	---	---	---	---	---	---	---	---
19536.0	---	---	---	---	---	---	---	---	---
21978.0	---	---	---	---	---	---	---	---	---
24420.0	---	---	---	---	---	---	---	---	---

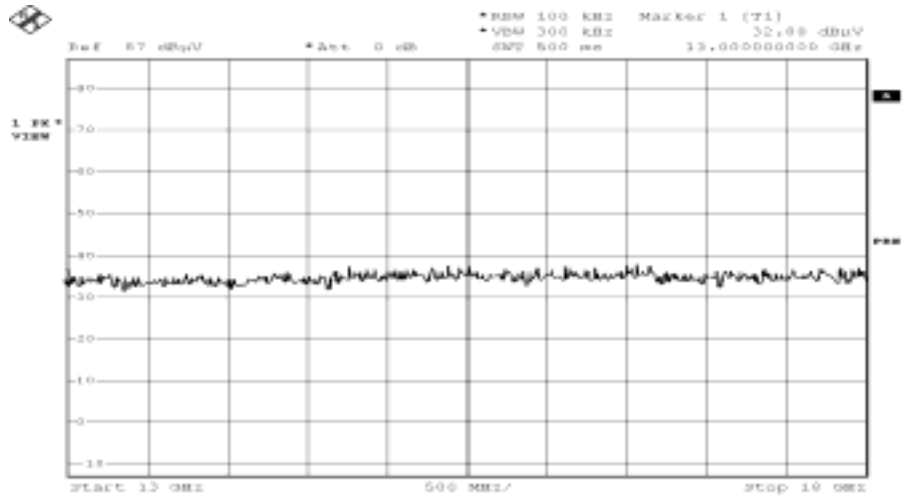
Remark :

- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.

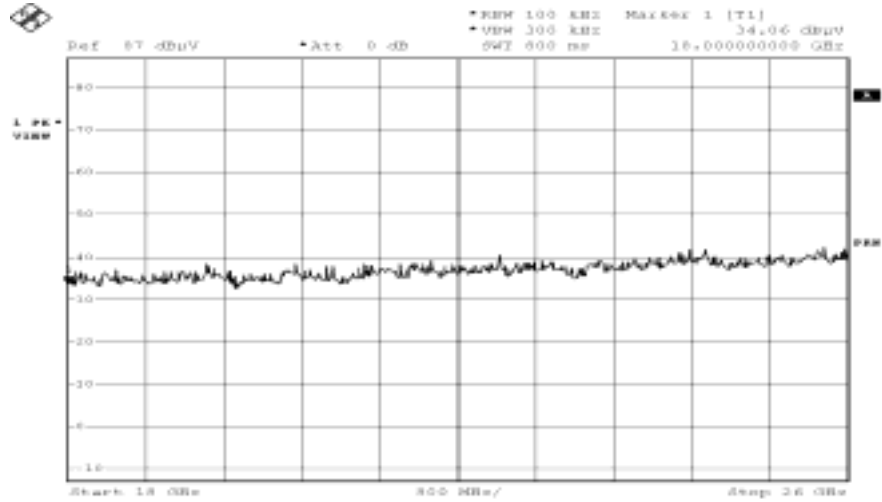
15.209 Radiated Emission Test Plot



Comment: At TX Duty cycle
 Date: 18.JUN.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Operation Mode: Handset TX Y Mode
 Fundamental Frequency: 2442MHz (CH MID)
 Temperature : 28
 Humidity : 60%

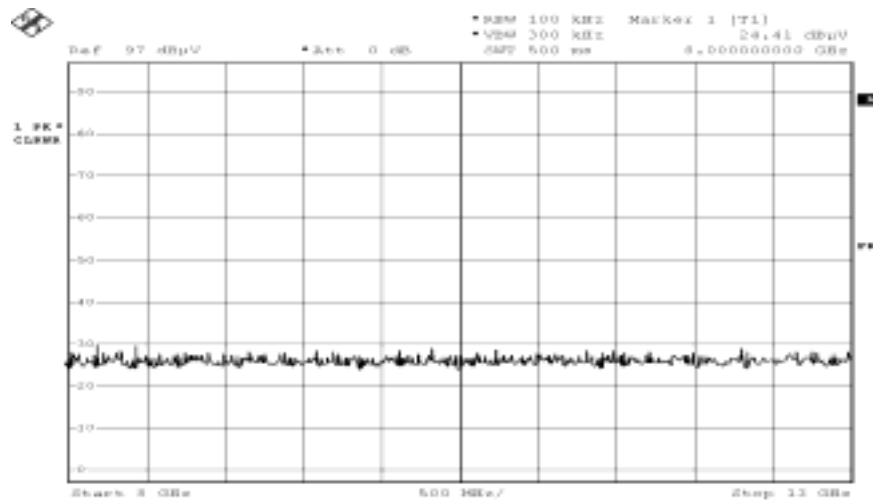
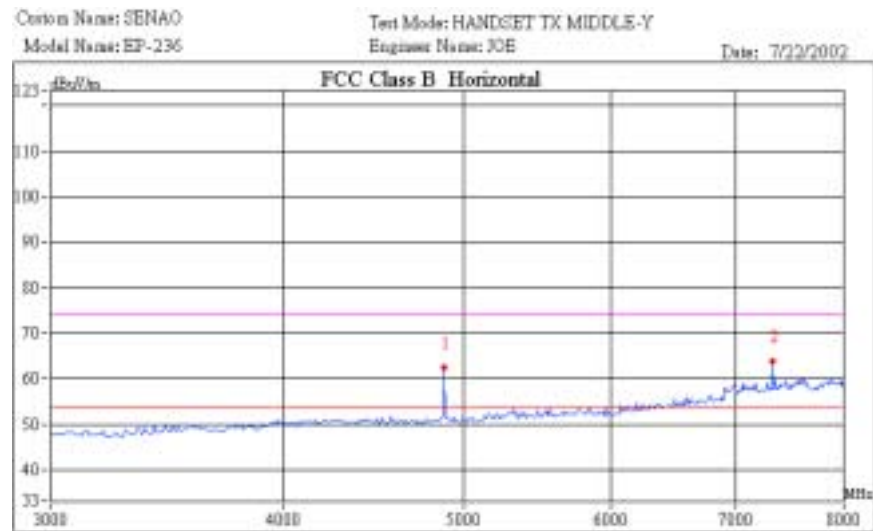
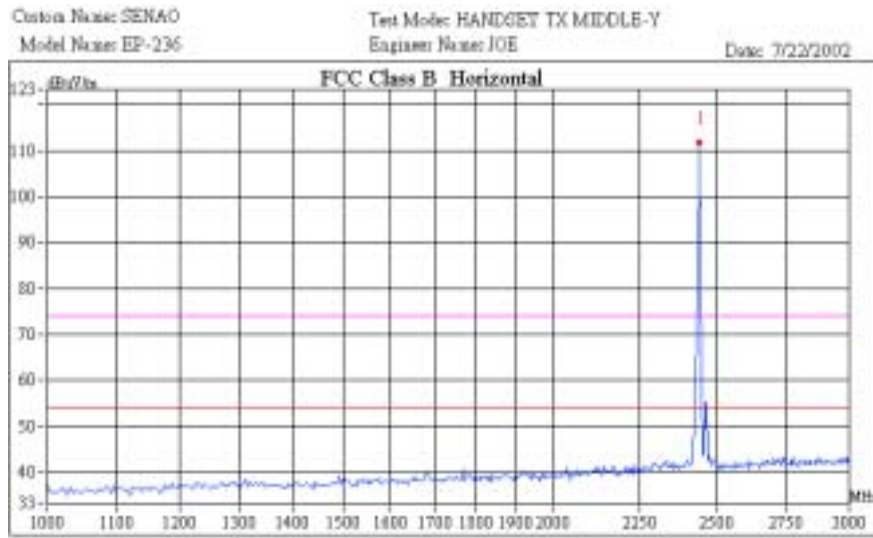
Test Date : 7/22/2002
 Test By: Joe Zhong
 Pol: HORIZONTAL

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
4880.0	62.03	48.17	0.36	62.39	48.53	74.00	54.00	-5.47	AV
7330.0	57.34	40.69	6.42	63.76	47.11	74.00	54.00	-6.89	AV
9768.0	---	---	---	---	---	---	---	---	---
12210.0	---	---	---	---	---	---	---	---	---
14652.0	---	---	---	---	---	---	---	---	---
17094.0	---	---	---	---	---	---	---	---	---
19536.0	---	---	---	---	---	---	---	---	---
21978.0	---	---	---	---	---	---	---	---	---
24420.0	---	---	---	---	---	---	---	---	---

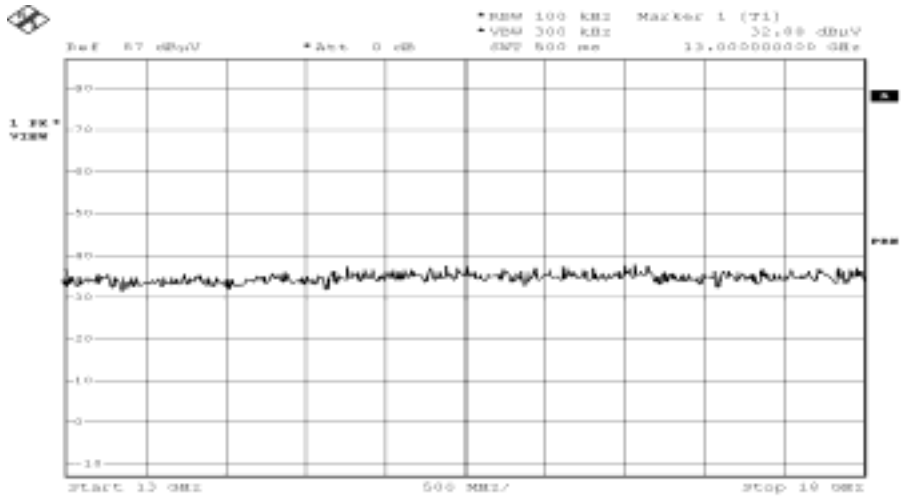
Remark :

- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.

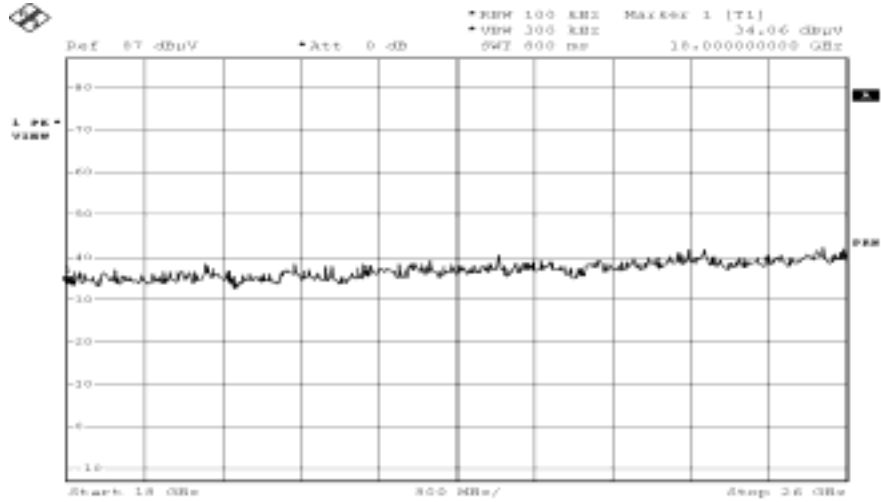
15.209 Radiated Emission Test Plot



Comment: At TX Duty cycle
 Date: 18.JUN.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Operation Mode: Handset TX Y Mode
 Fundamental Frequency: 2480MHz (CH High)
 Temperature : 28
 Humidity : 60%

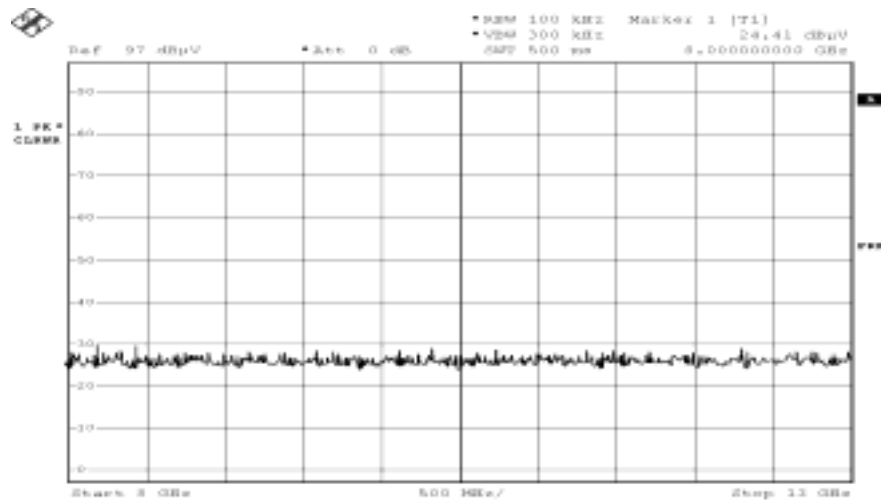
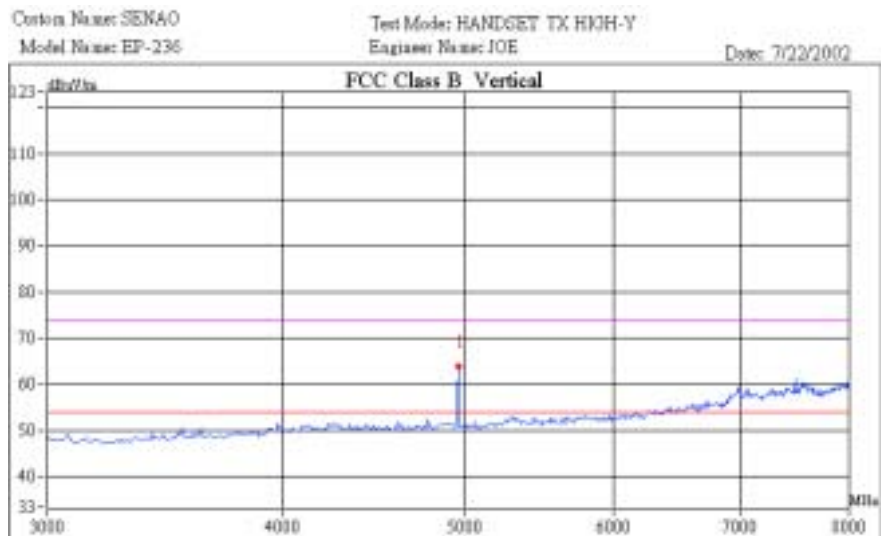
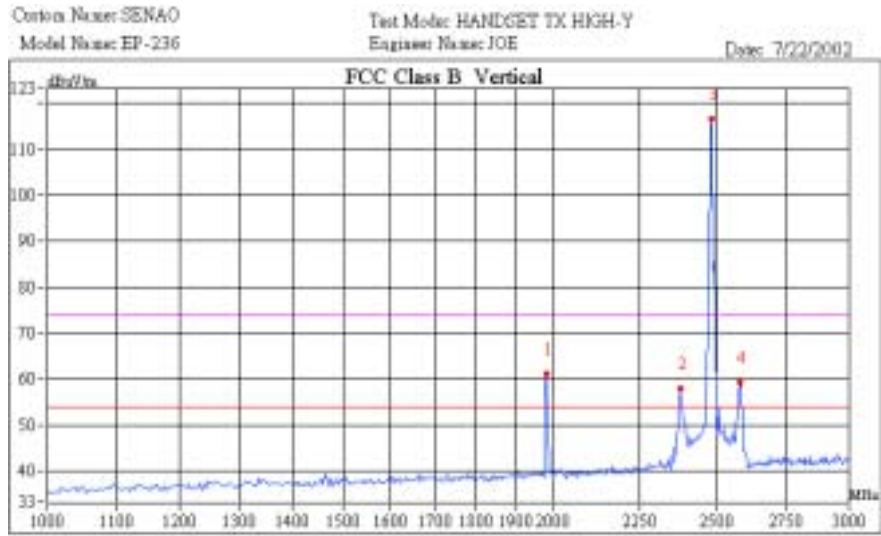
Test Date : 7/22/2002
 Test By: Joe Zhong
 Pol: VERTICAL

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
1984.0	68.90	44.44	-7.65	61.25	36.79	74.00	54.00	-12.75	Peak
2380.0	64.15	42.16	-6.18	57.97	35.98	74.00	54.00	-16.03	Peak
2584.0	64.92	41.73	-5.59	59.33	36.14	74.00	54.00	-14.67	Peak
4960.0	63.39	47.29	0.43	63.82	47.72	74.00	54.00	-6.28	AV
7440.0	---	---	---	---	---	---	---	---	---
9920.0	---	---	---	---	---	---	---	---	---
12400.0	---	---	---	---	---	---	---	---	---
14880.0	---	---	---	---	---	---	---	---	---
17360.0	---	---	---	---	---	---	---	---	---
19840.0	---	---	---	---	---	---	---	---	---
22320.0	---	---	---	---	---	---	---	---	---
24800.0	---	---	---	---	---	---	---	---	---

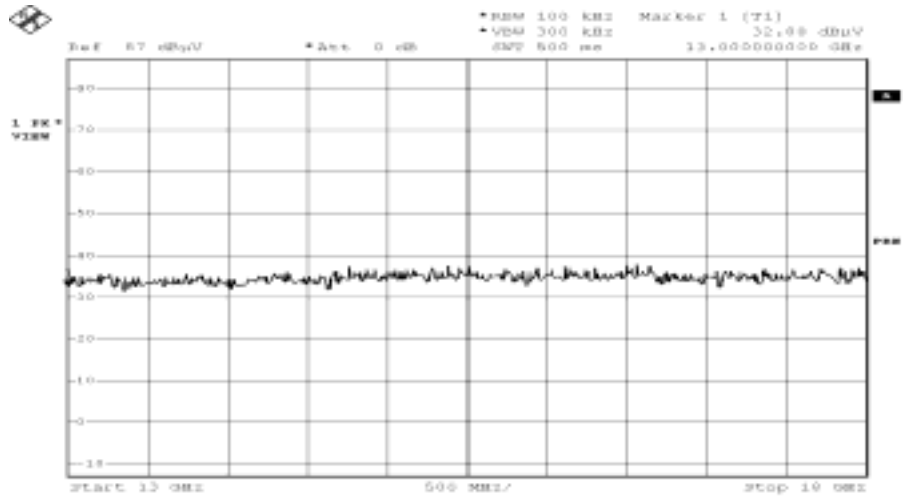
Remark :

- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven’t noise.

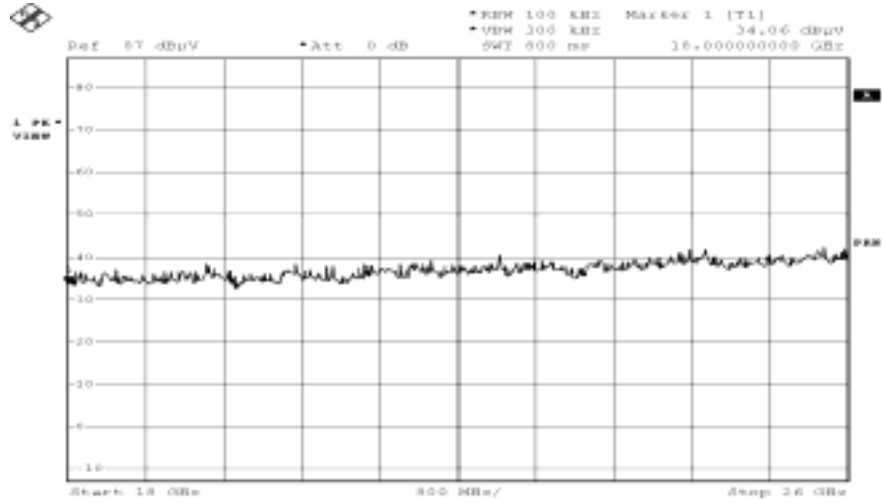
15.209 Radiated Emission Test Plot



Comment: At TX Duty cycle
Date: 18.2KP.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:14:50



Operation Mode: Handset TX Y Mode
 Fundamental Frequency: 2480MHz (CH High)
 Temperature : 28
 Humidity : 60%

Test Date : 7/22/2002
 Test By: Joe Zhong
 Pol: HORIZONTAL

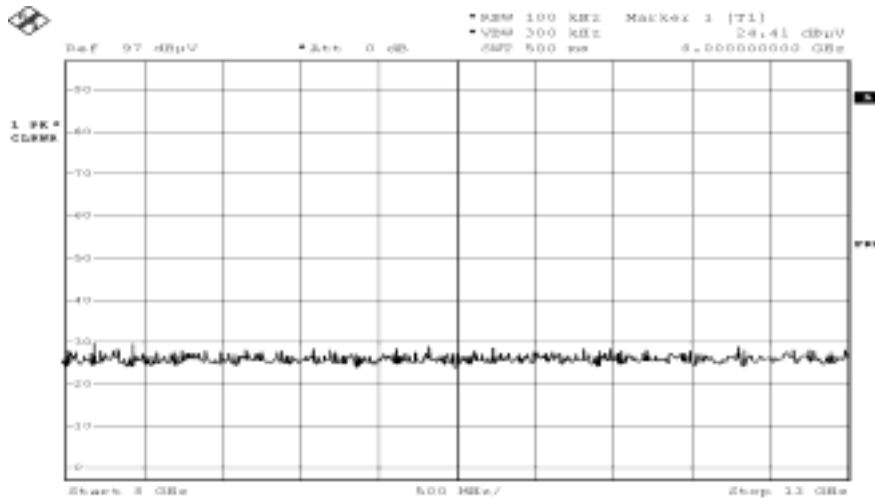
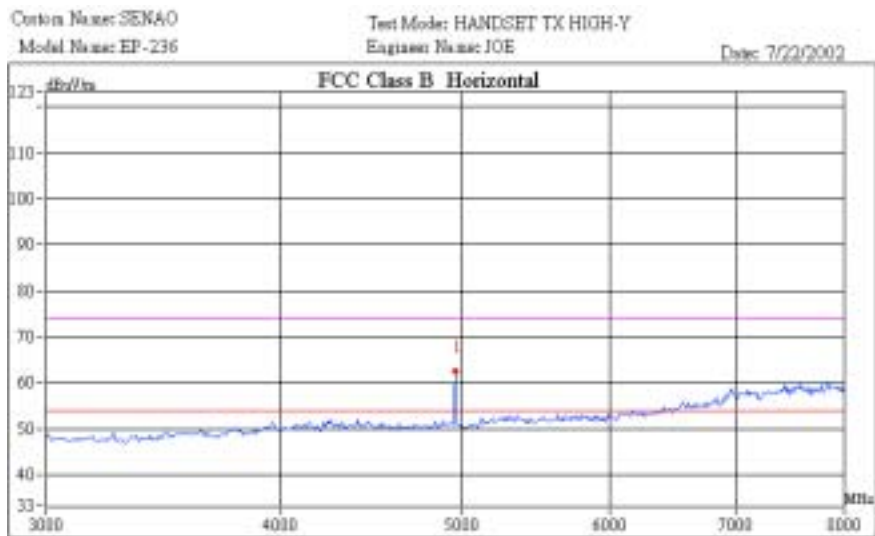
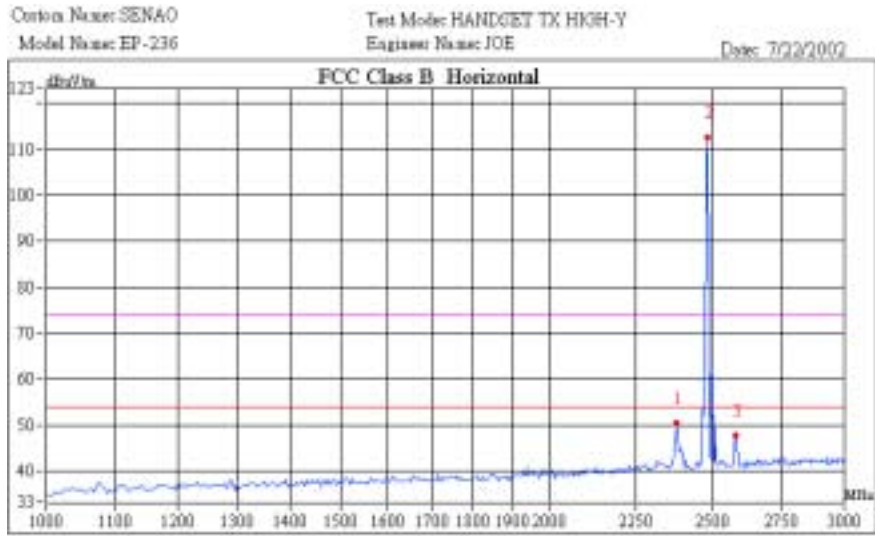
Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2380.0	56.52	39.76	-6.18	50.34	33.58	74.00	54.00	-20.42	AV
2584.0	53.27	38.56	-5.59	47.68	32.97	74.00	54.00	-21.03	AV
4960.0	62.12	47.82	0.43	62.55	48.25	74.00	54.00	-5.75	AV
7440.0	---	---	---	---	---	---	---	---	---
9920.0	---	---	---	---	---	---	---	---	---
12400.0	---	---	---	---	---	---	---	---	---
14880.0	---	---	---	---	---	---	---	---	---
17360.0	---	---	---	---	---	---	---	---	---
19840.0	---	---	---	---	---	---	---	---	---
22320.0	---	---	---	---	---	---	---	---	---
24800.0	---	---	---	---	---	---	---	---	---

Remark :

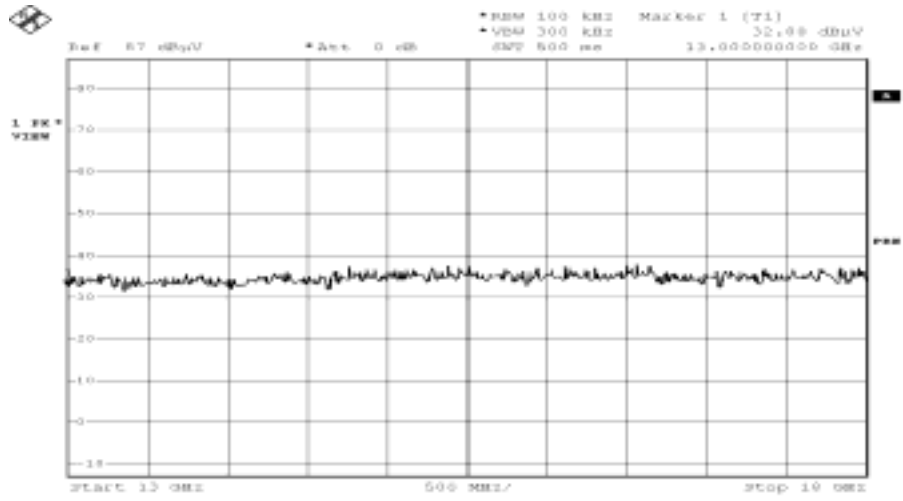
- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.



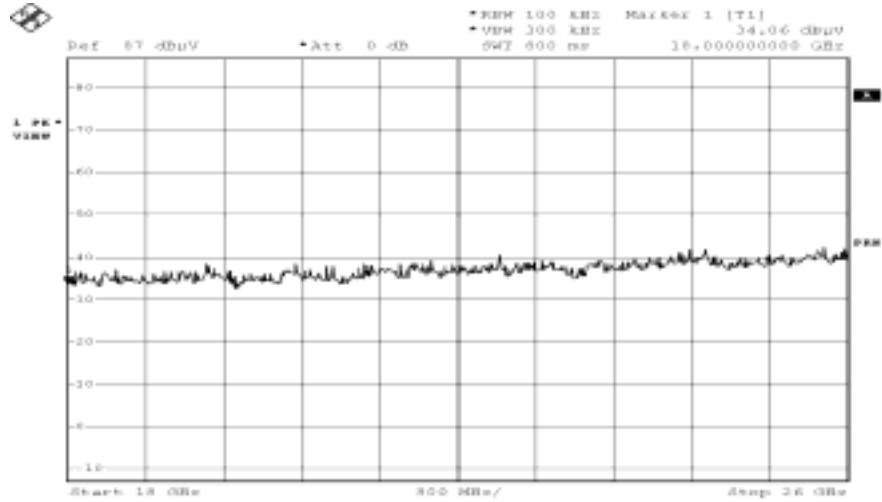
15.209 Radiated Emission Test Plot



Comment At TX Duty cycle
 Date: 18.JUN.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50

Measurement Result (above 1GHz)

Operation Mode: Handset TX Z Mode
 Fundamental Frequency: 2401MHz (CH Low)
 Temperature : 28
 Humidity : 60%

Test Date : 7/22/2002
 Test By: Joe Zhong
 Pol: VERTICAL

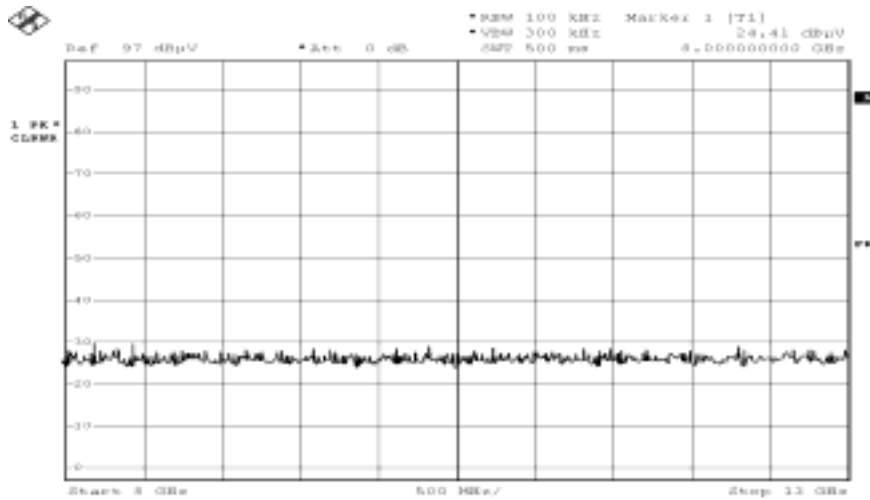
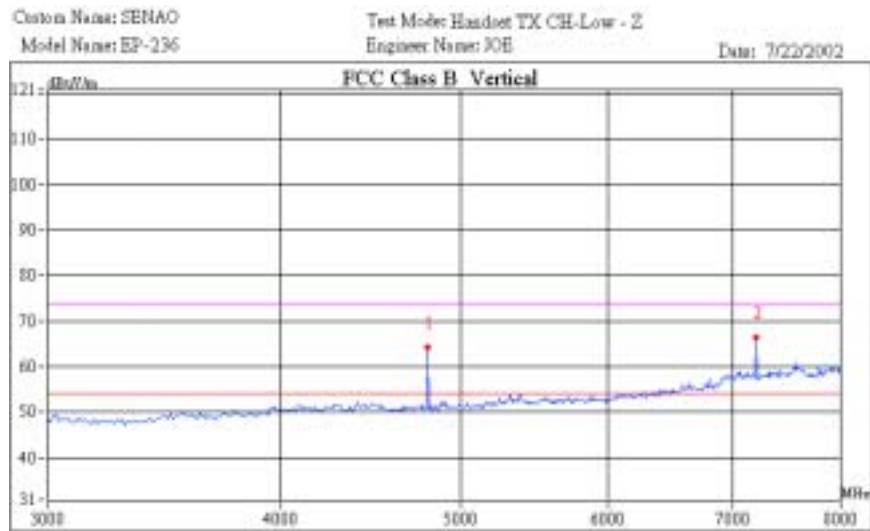
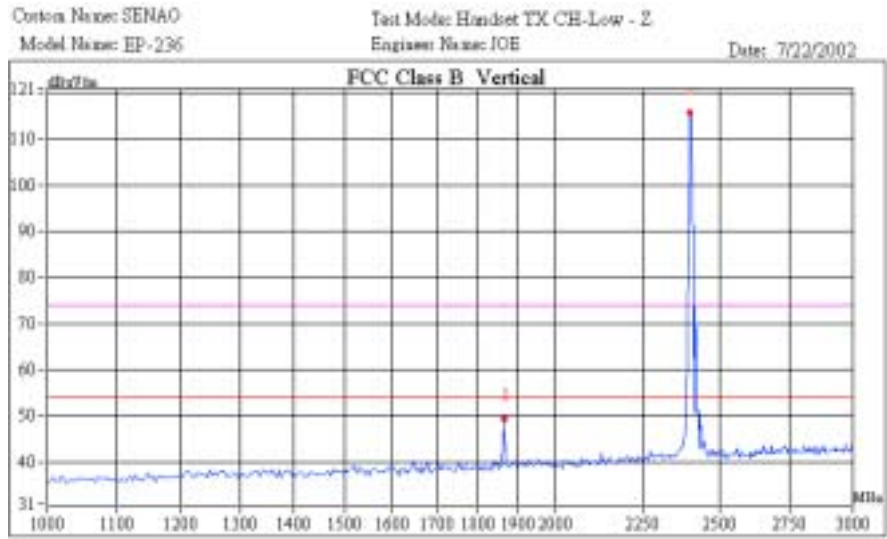
Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
1864.0	57.31	35.50	-8.13	49.18	27.37	74.00	54.00	-24.82	Peak
4800.0	63.94	34.58	0.28	64.22	34.86	74.00	54.00	-9.78	Peak
7210.0	60.35	33.91	6.22	66.57	40.13	74.00	54.00	-7.43	Peak
9604.0	---	---	---	---	---	---	---	---	---
12005.0	---	---	---	---	---	---	---	---	---
14406.0	---	---	---	---	---	---	---	---	---
16807.0	---	---	---	---	---	---	---	---	---
19208.0	---	---	---	---	---	---	---	---	---
21609.0	---	---	---	---	---	---	---	---	---
24010.0	---	---	---	---	---	---	---	---	---

Remark :

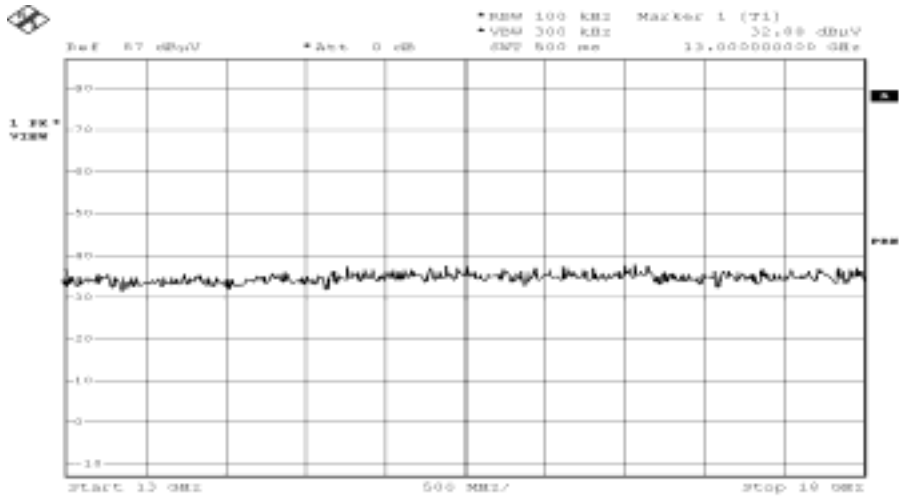
- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.



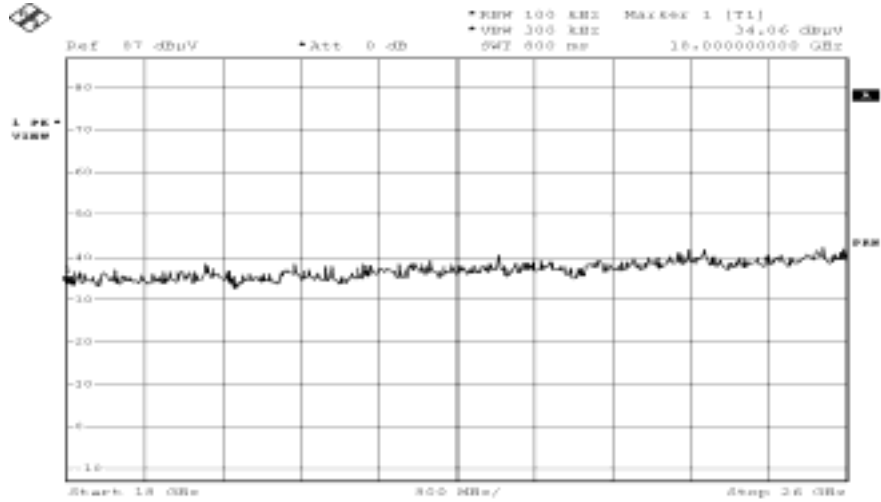
15.209 Radiated Emission Test Plot



Comment: As TX Duty cycle
Date: 18.JUN.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Operation Mode: Handset TX Z Mode
 Fundamental Frequency: 2401MHz (CH Low)
 Temperature : 28
 Humidity : 60%

Test Date : 7/22/2002
 Test By: Joe Zhong
 Pol: HORIZONTAL

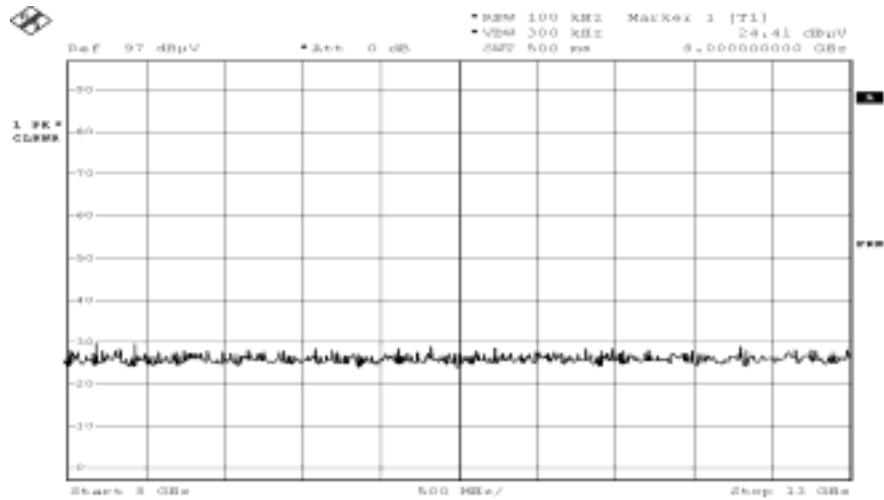
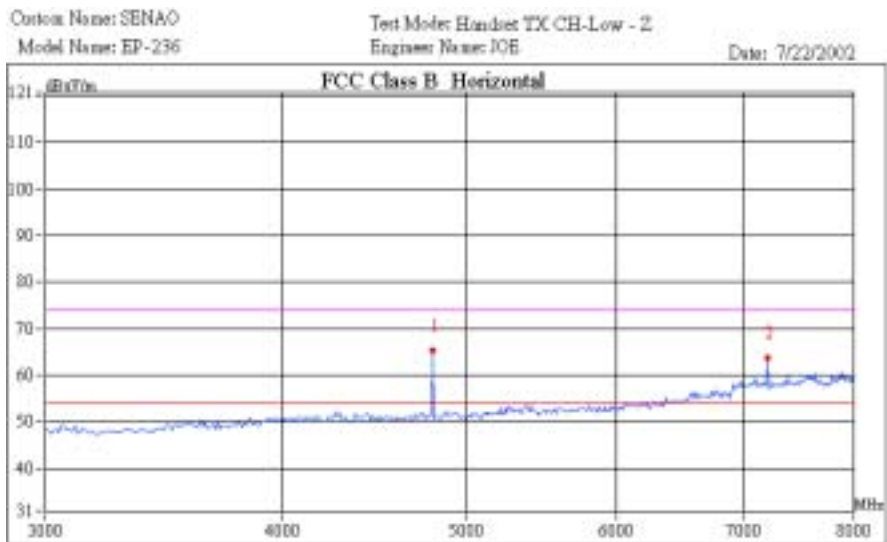
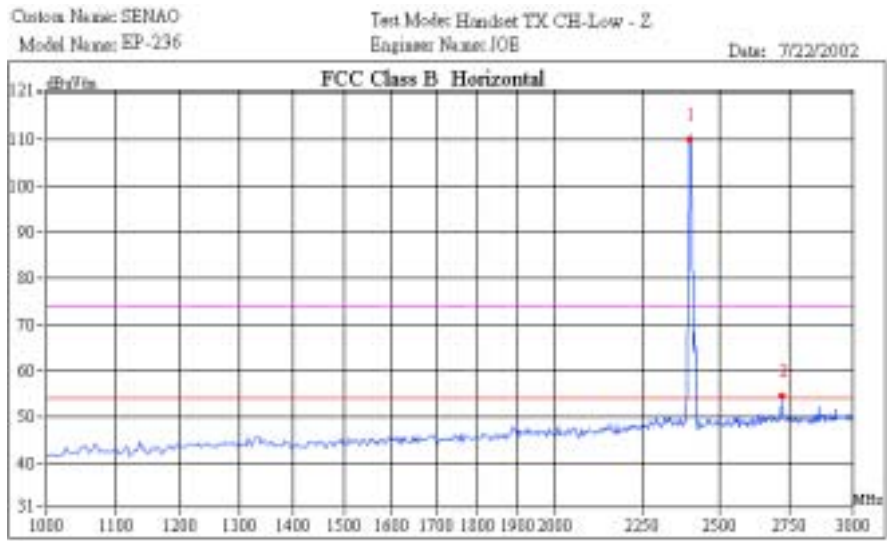
Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2724.0	60.05	36.48	-5.26	54.79	31.22	74.00	54.00	-19.21	Peak
4800.0	65.00	49.07	0.28	65.28	49.35	74.00	54.00	-4.65	AV
7210.0	57.57	44.02	6.22	63.79	50.24	74.00	54.00	-3.76	AV
9604.0	---	---	---	---	---	---	---	---	---
12005.0	---	---	---	---	---	---	---	---	---
14406.0	---	---	---	---	---	---	---	---	---
16807.0	---	---	---	---	---	---	---	---	---
19208.0	---	---	---	---	---	---	---	---	---
21609.0	---	---	---	---	---	---	---	---	---
24010.0	---	---	---	---	---	---	---	---	---

Remark :

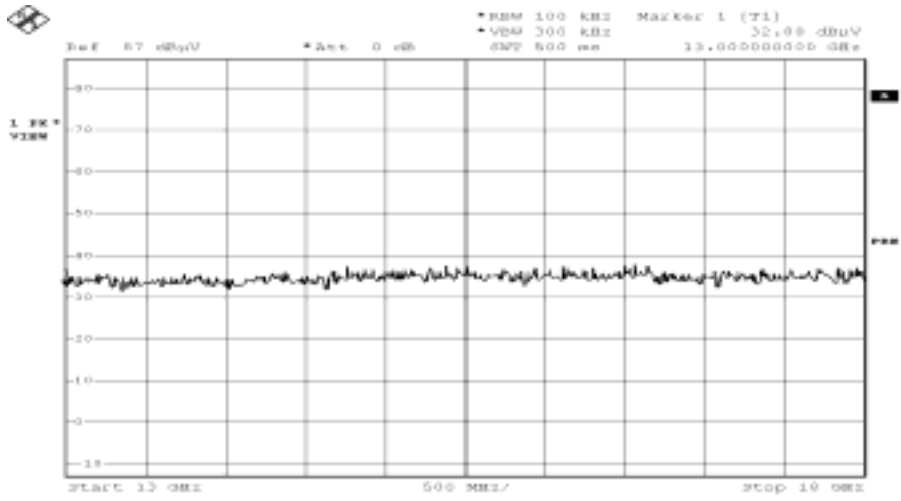
- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.



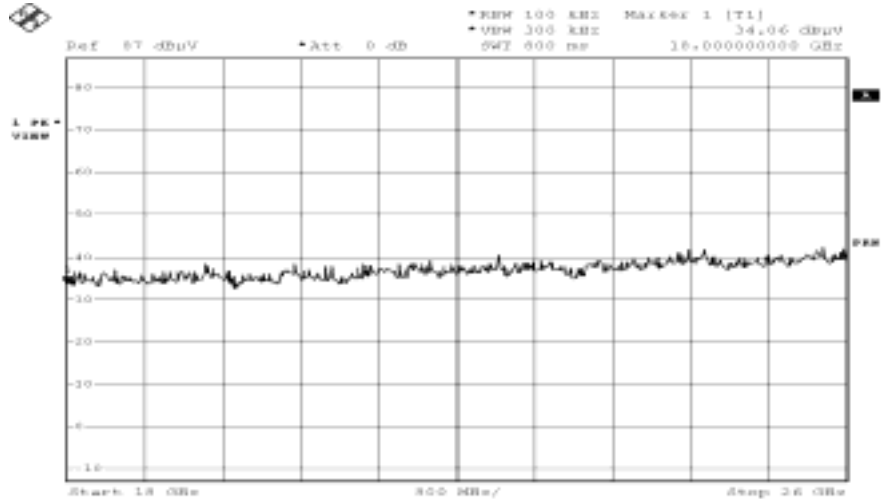
15.209 Radiated Emission Test Plot



Comment: As TX Duty cycle
Date: 18.JUN.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Operation Mode: Handset TX Z Mode
 Fundamental Frequency: 2442Hz (CH MID)
 Temperature : 28
 Humidity : 60%

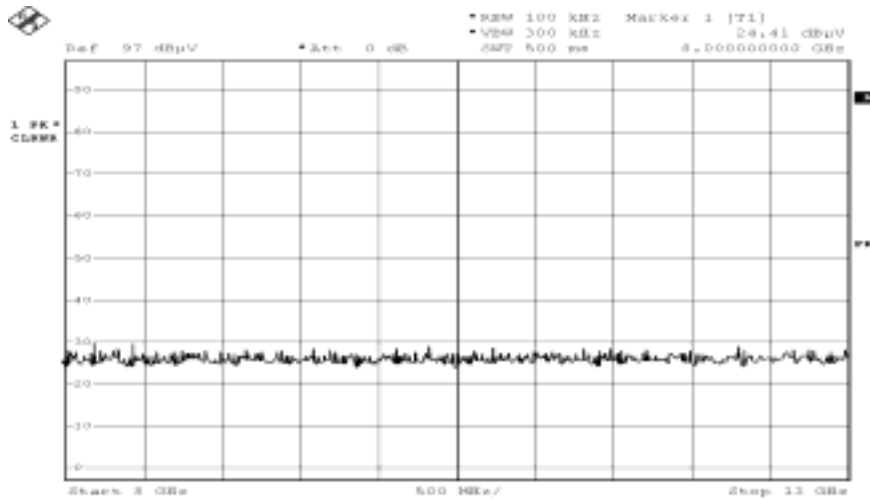
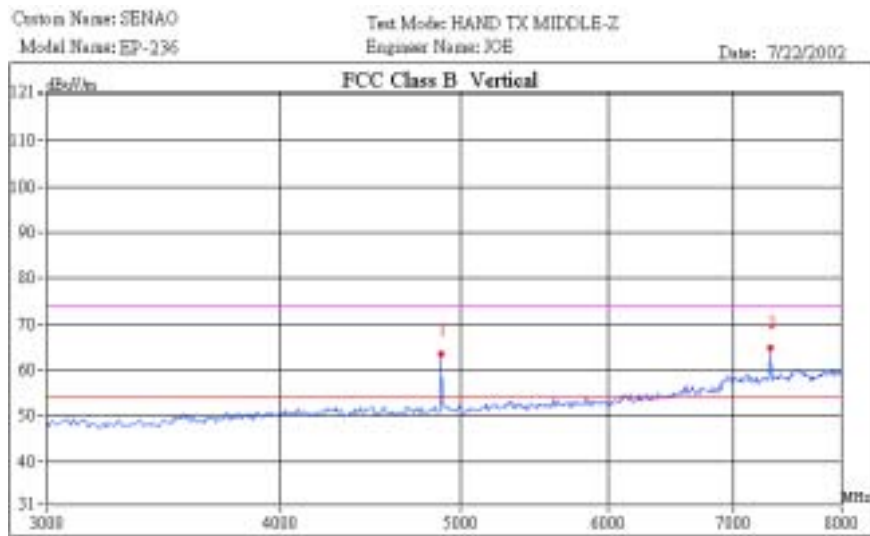
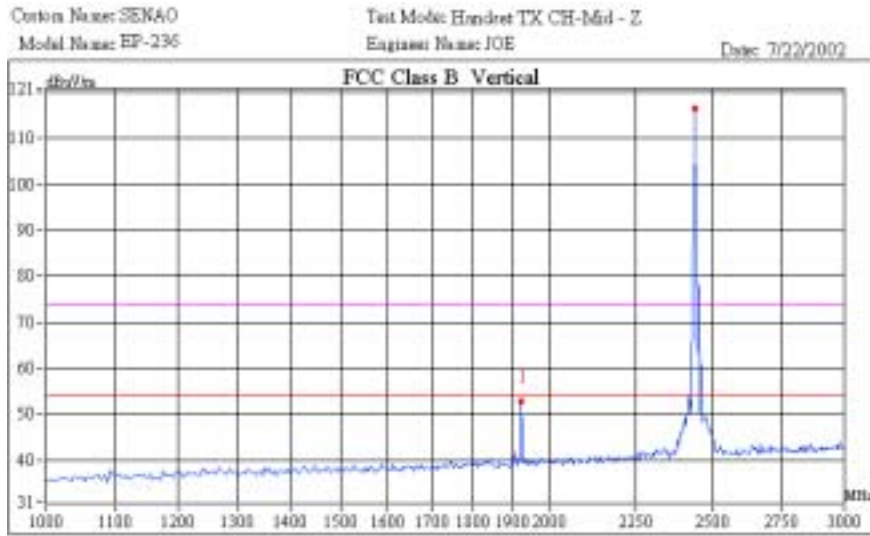
Test Date : 7/22/2002
 Test By: Joe Zhong
 Pol: VERTICAL

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
1924.0	60.79	35.31	-7.90	52.89	27.41	74.00	54.00	-21.11	Peak
4880.0	63.03	34.27	0.36	63.39	34.63	74.00	54.00	-10.61	Peak
7330.0	58.37	34.16	6.42	64.79	40.58	74.00	54.00	-9.21	Peak
9768.0	---	---	---	---	---	---	---	---	---
12210.0	---	---	---	---	---	---	---	---	---
14652.0	---	---	---	---	---	---	---	---	---
17094.0	---	---	---	---	---	---	---	---	---
19536.0	---	---	---	---	---	---	---	---	---
21978.0	---	---	---	---	---	---	---	---	---
24420.0	---	---	---	---	---	---	---	---	---

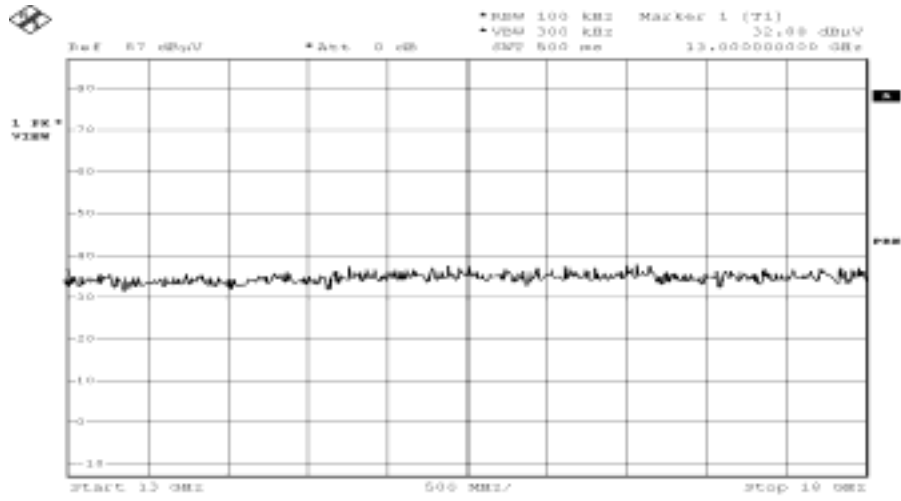
Remark :

- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.

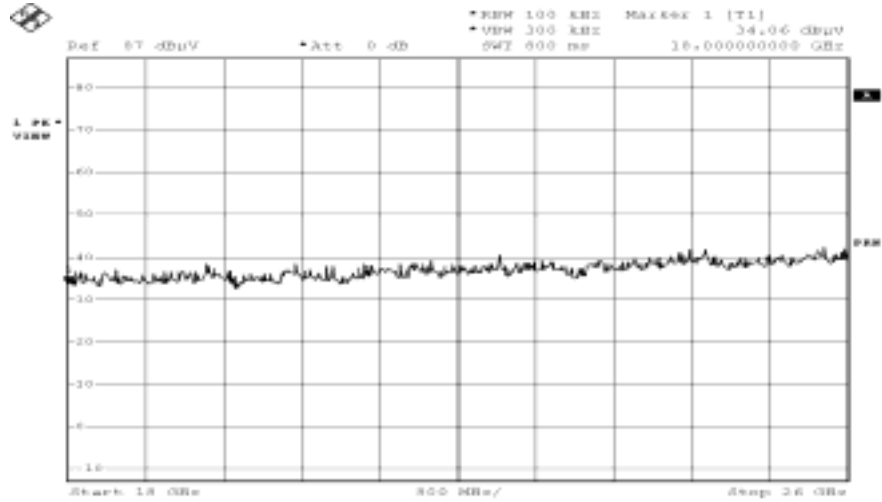
15.209 Radiated Emission Test Plot



Comment: As TX Duty cycle
Date: 18.2KP.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50



Operation Mode: Handset TX Z Mode
 Fundamental Frequency: 2442MHz (CH MID)
 Temperature : 28
 Humidity : 60%

Test Date : 7/22/2002
 Test By: Joe Zhong
 Pol: HORIZONTAL

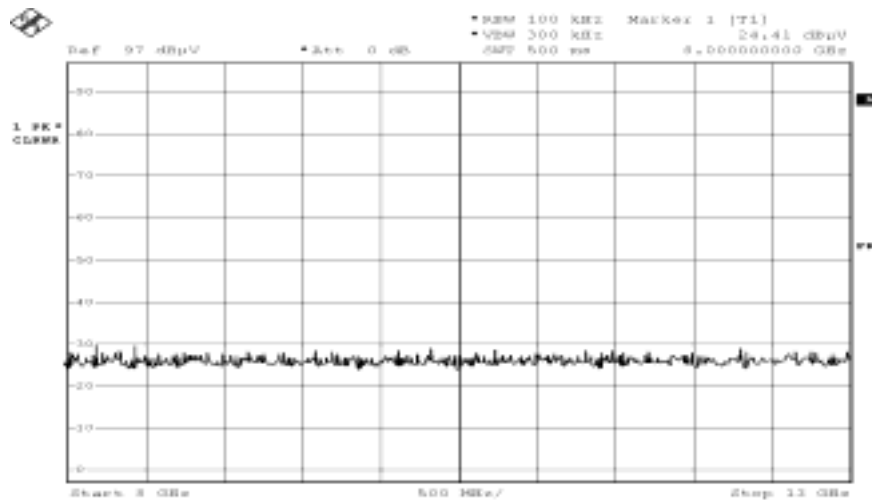
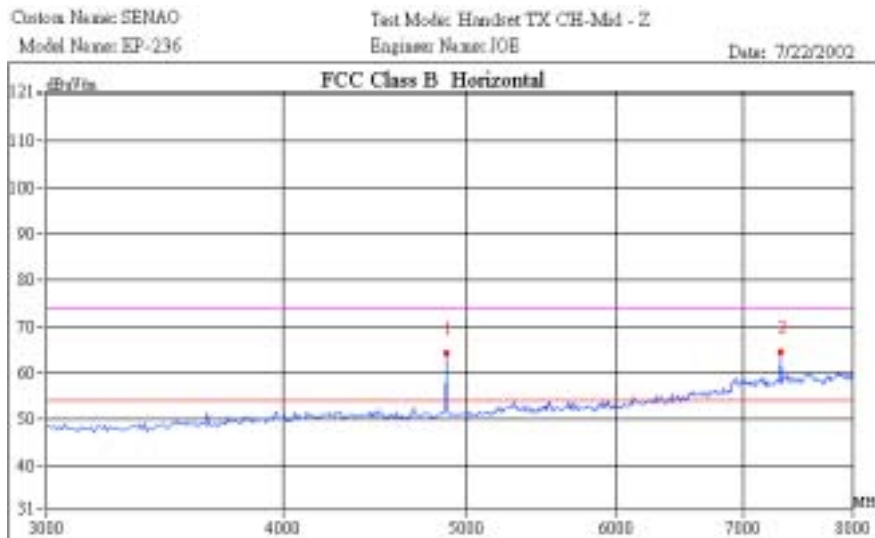
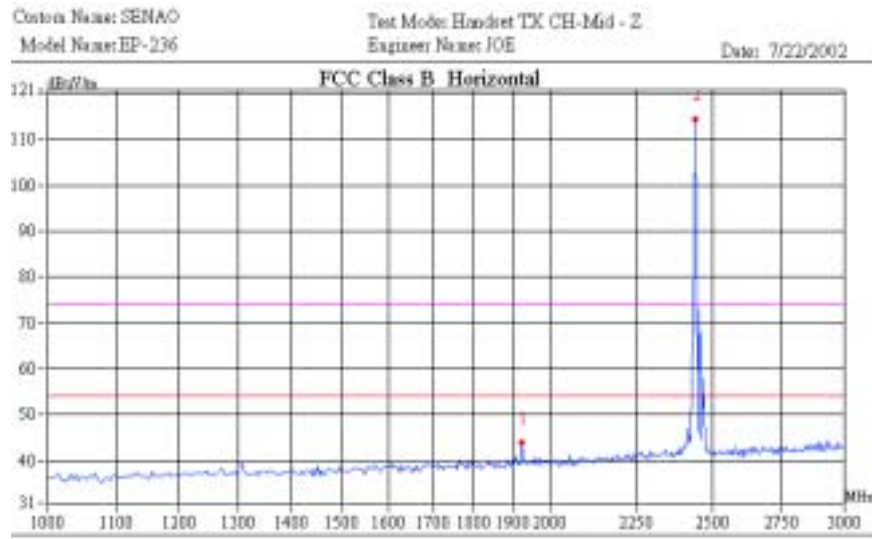
Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
1924.0	51.94	38.49	-7.90	44.04	30.59	74.00	54.00	-23.41	AV
4880.0	63.89	47.18	0.36	64.25	47.54	74.00	54.00	-6.46	AV
7330.0	58.24	44.63	6.42	64.66	51.05	74.00	54.00	-2.95	AV
9768.0	---	---	---	---	---	---	---	---	---
12210.0	---	---	---	---	---	---	---	---	---
14652.0	---	---	---	---	---	---	---	---	---
17094.0	---	---	---	---	---	---	---	---	---
19536.0	---	---	---	---	---	---	---	---	---
21978.0	---	---	---	---	---	---	---	---	---
24420.0	---	---	---	---	---	---	---	---	---

Remark :

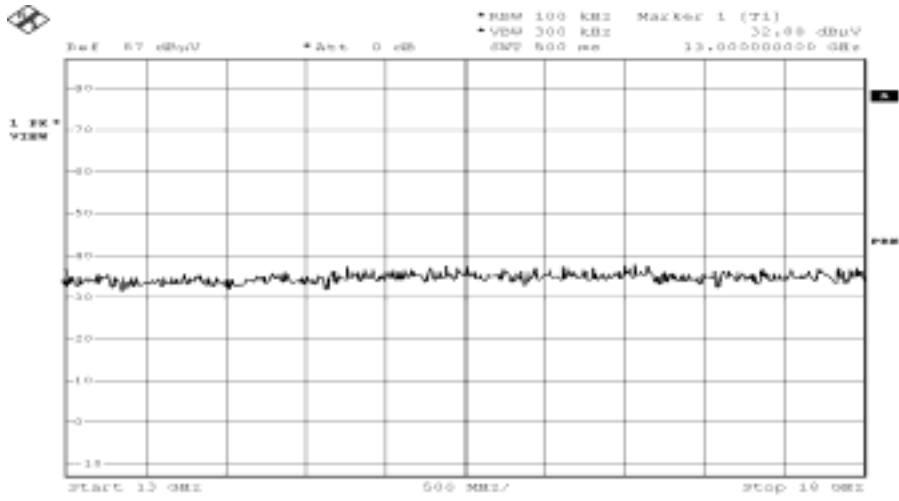
- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.



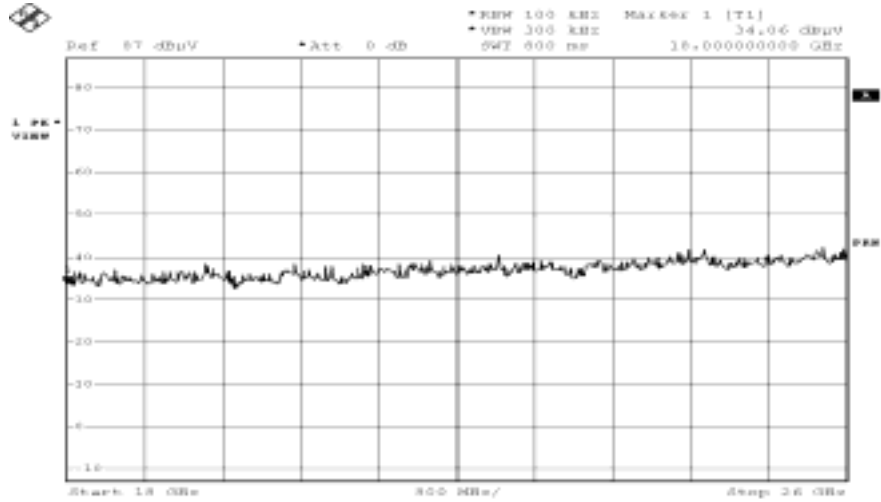
15.209 Radiated Emission Test Plot



Comment: As TX Duty cycle
Date: 18.2KP.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:14:50



Operation Mode: Handset TX Z Mode
 Fundamental Frequency: 2480MHz (CH High)
 Temperature : 28
 Humidity : 60%

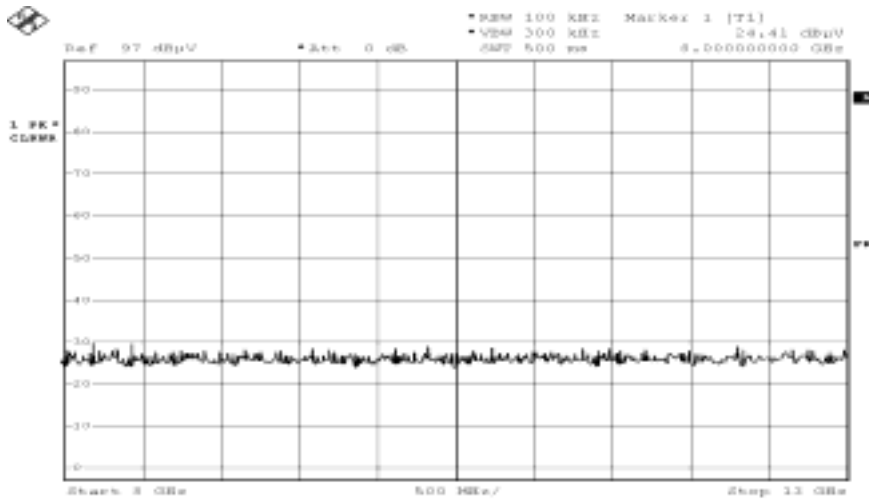
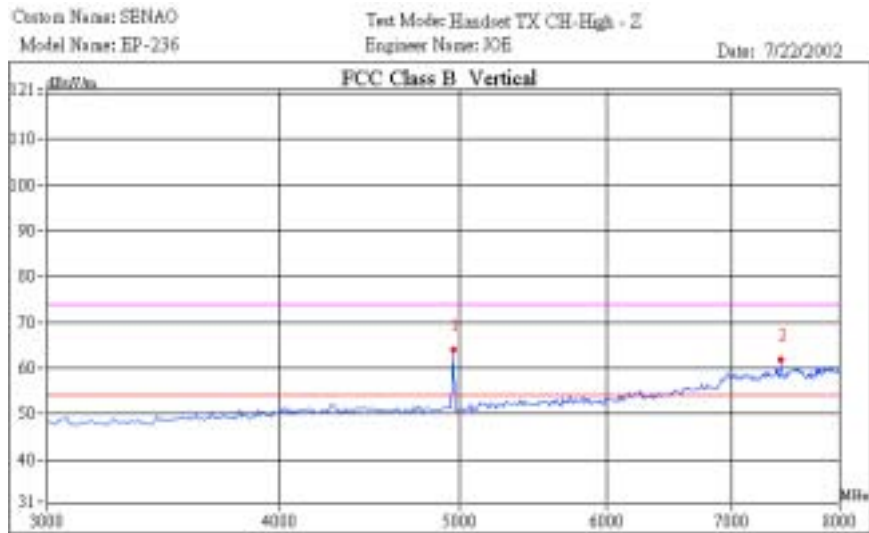
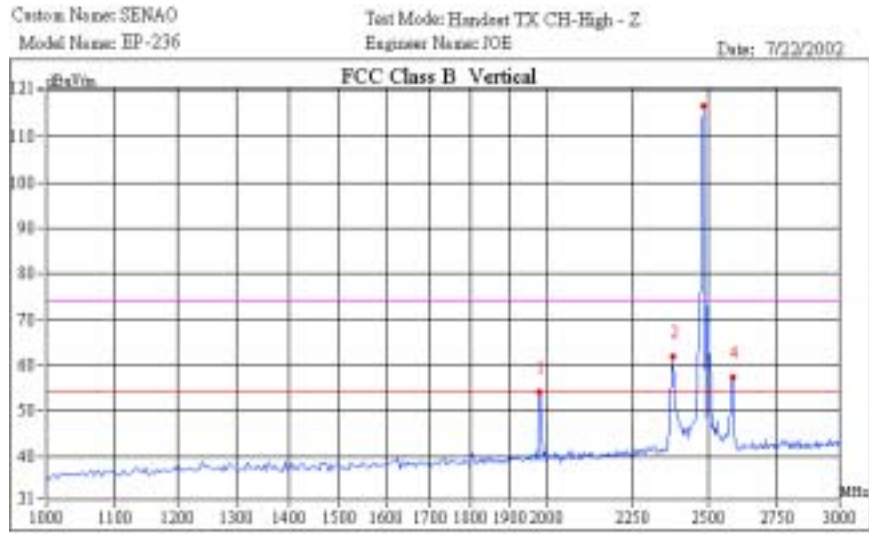
Test Date : 7/22/2002
 Test By: Joe Zhong
 Pol: VERTICAL

Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
1984.0	61.89	41.97	-7.67	54.22	34.30	74.00	54.00	-19.70	AV
2380.0	68.14	43.70	-6.18	61.96	37.52	74.00	54.00	-12.04	Peak
2588.0	63.06	44.57	-5.59	57.47	38.98	74.00	54.00	-15.02	AV
4960.0	63.71	33.13	0.43	64.14	33.56	74.00	54.00	-9.86	Peak
7440.0	55.19	33.12	6.60	61.79	39.72	74.00	54.00	-12.21	Peak
9920.0	---	---	---	---	---	---	---	---	---
12400.0	---	---	---	---	---	---	---	---	---
14880.0	---	---	---	---	---	---	---	---	---
17360.0	---	---	---	---	---	---	---	---	---
19840.0	---	---	---	---	---	---	---	---	---
22320.0	---	---	---	---	---	---	---	---	---
24800.0	---	---	---	---	---	---	---	---	---

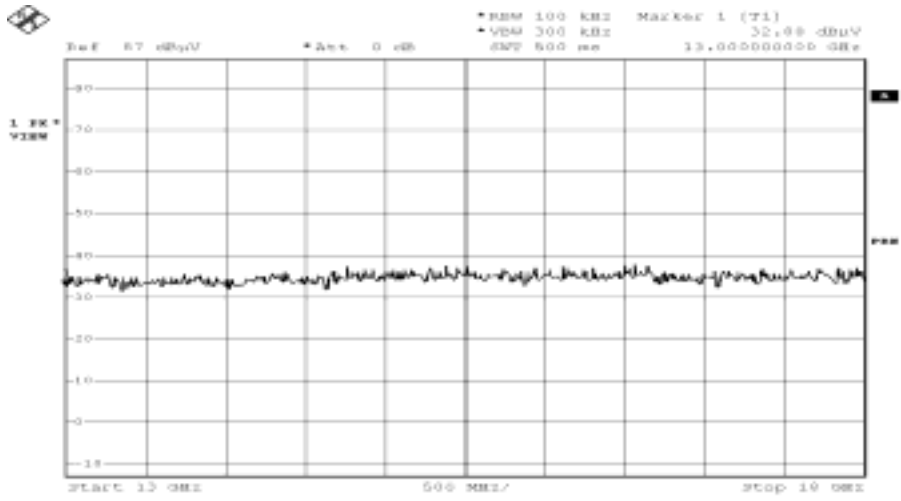
Remark :

- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.

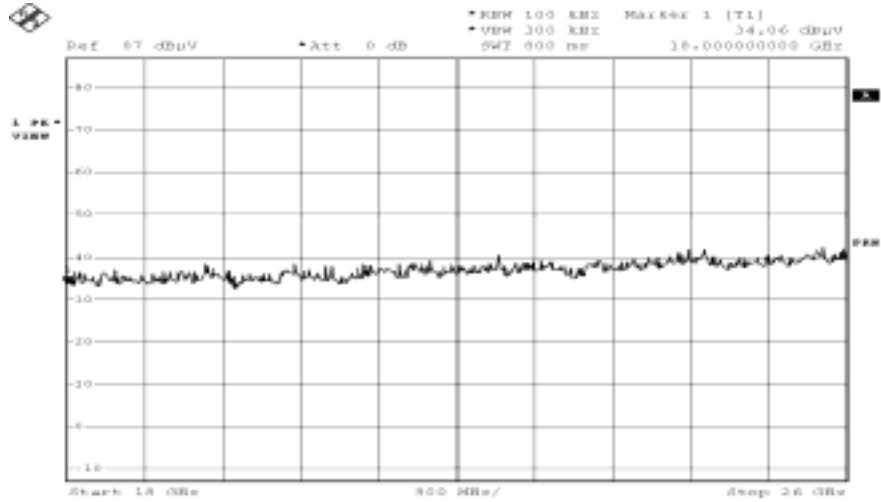
15.209 Radiated Emission Test Plot



Comment At TX Duty cycle
Date: 18.JUN.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:14:50



Operation Mode: Handset TX Z Mode
 Fundamental Frequency: 2480MHz (CH High)
 Temperature : 28
 Humidity : 60%

Test Date : 7/22/2002
 Test By: Joe Zhong
 Pol: HORIZONTAL

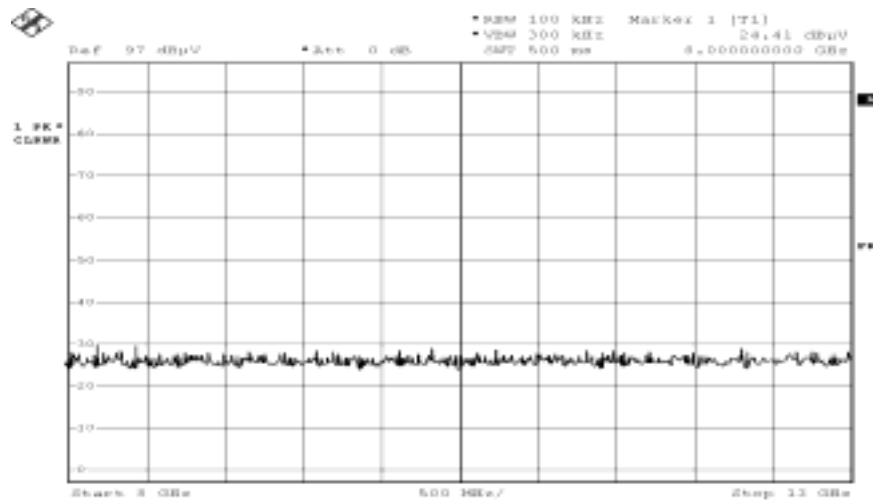
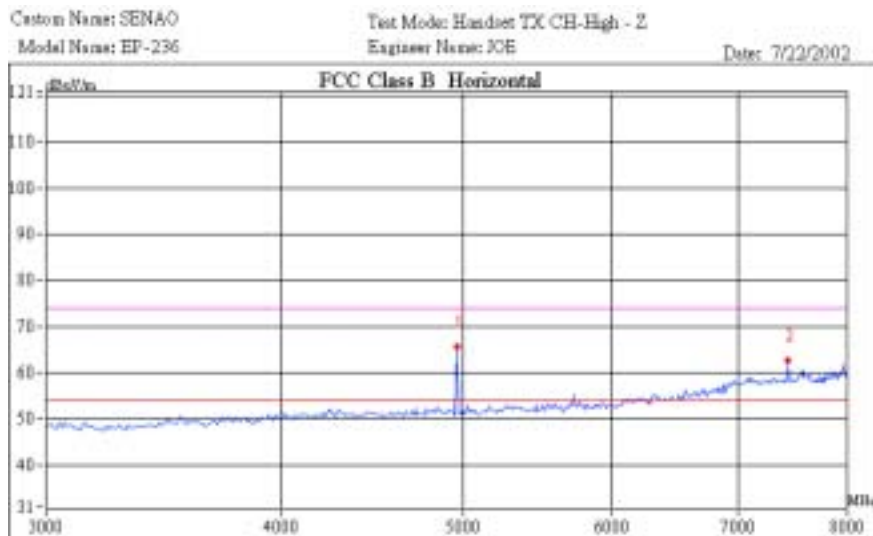
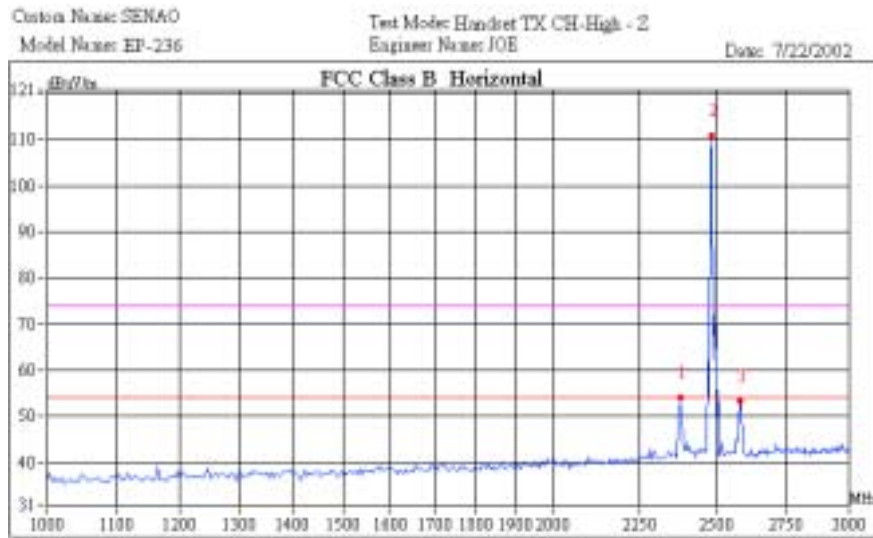
Freq. (MHz)	Peak	AV	Ant./CL CF(dB)	Actual FS		Peak	AV	Margin (dB)	
	Reading (dBuV)	Reading (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
2380.0	60.27	40.61	-6.18	54.09	34.43	74.00	54.00	-19.57	AV
2588.0	59.65	38.99	-5.59	54.06	33.40	74.00	54.00	-19.94	Peak
4960.0	65.13	48.78	0.43	65.56	49.21	74.00	54.00	-4.79	AV
7452.0	56.16	43.09	6.60	62.76	49.69	74.00	54.00	-4.31	AV
9920.0	---	---	---	---	---	---	---	---	---
12400.0	---	---	---	---	---	---	---	---	---
14880.0	---	---	---	---	---	---	---	---	---
17360.0	---	---	---	---	---	---	---	---	---
19840.0	---	---	---	---	---	---	---	---	---
22320.0	---	---	---	---	---	---	---	---	---
24800.0	---	---	---	---	---	---	---	---	---

Remark :

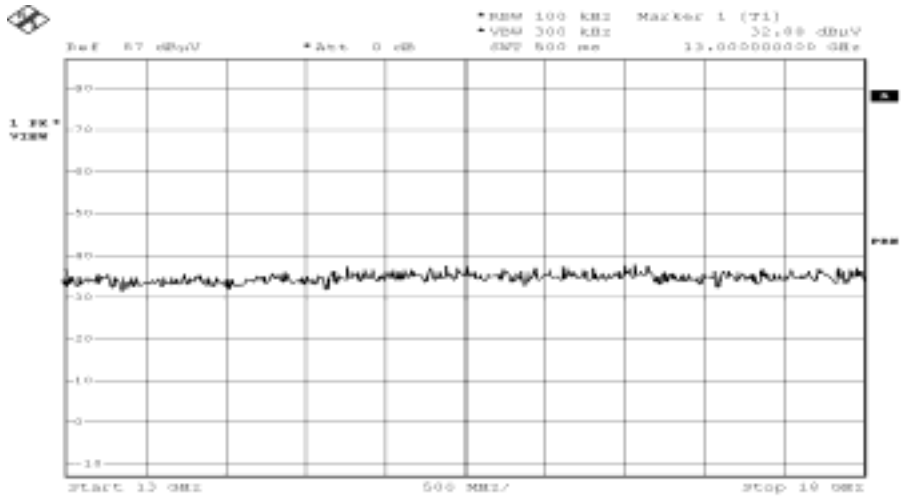
- (1) Measuring frequencies from 30 MHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency **above 1000MHz** were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 8GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
 The RBW is setting to 100KHz for frequency above 8GHz, for the purpose of ascertain this device haven't noise.



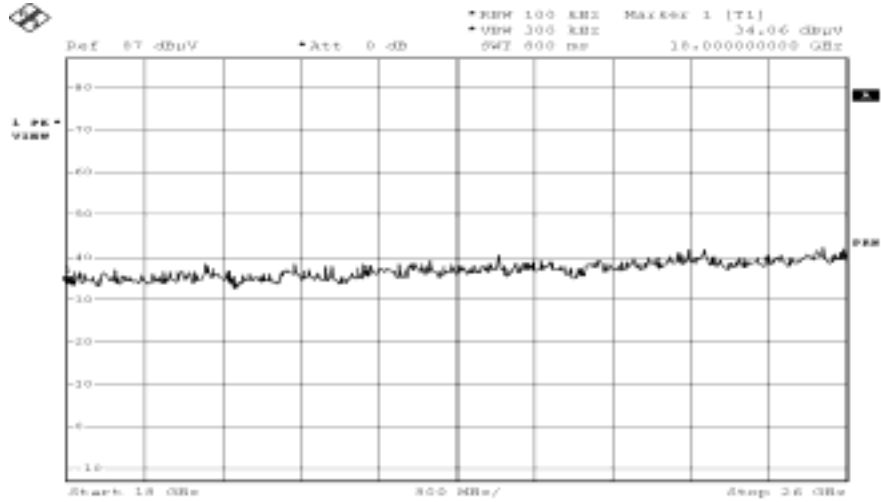
15.209 Radiated Emission Test Plot



Comment: At TX Duty cycle
Date: 18.JUN.2002 09:46:35



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:11:53



Comment A: TX Duty cycle
Date: 18.SEP.2002 06:12:50

10 FREQUENCY SEPARATION

10.1 Standard Applicable

According to §15.247(a), Frequency hopping systems shall have hopping channel carrier frequencies separated by minimum of 25KHz or the 20dB bandwidth of the hopping channel, whichever is greater.

10.2 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set center frequency of spectrum analyzer = middle of hopping channel .
4. Set the spectrum analyzer as RBW,VBW=100KHz, Adjust Span to 10 MHz, Sweep = auto.
5. Max hold. Mark 2 Peaks of hopping channel and record the 2 peaks frequency.

10.3 Measurement Result

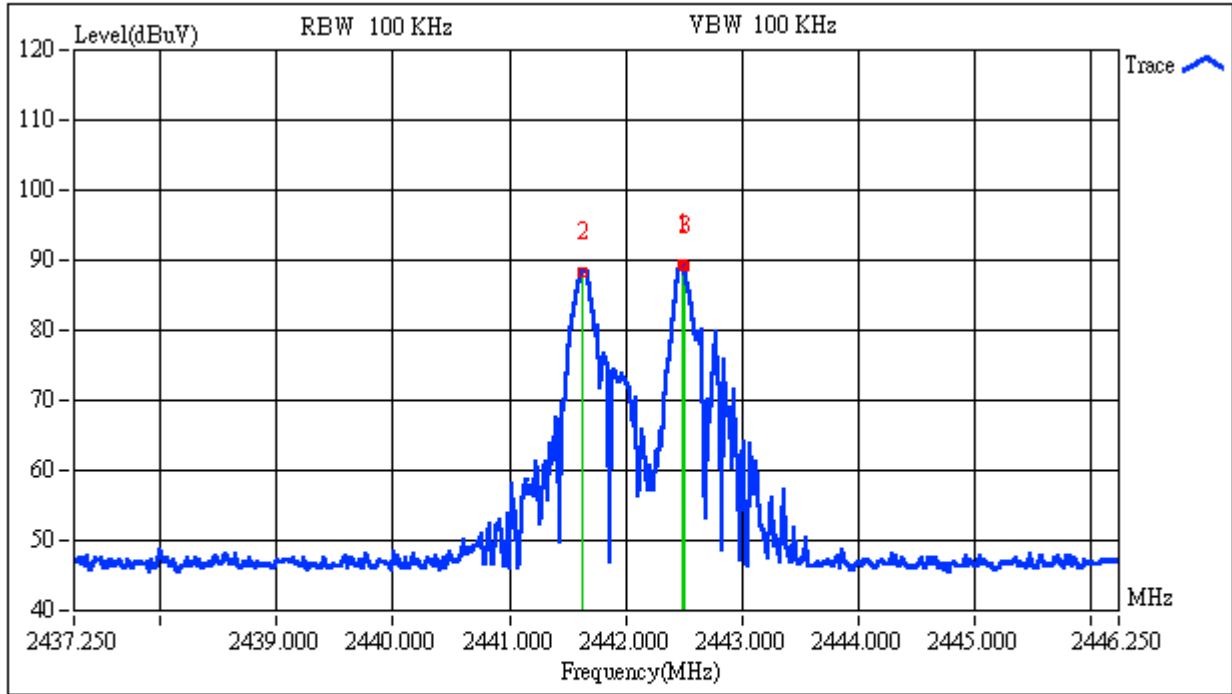
	Upper Frequency MHz	Lower Frequency MHz	Channel separation MHz	Limit MHz	Result
Handset	2442.74	2441.91	0.828	20dB BandWidth	PASS
Base	2442.51	2441.62	0.882	20dB BandWidth	PASS

10.4 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	Model No.	Serial No.	LAST CAL.	Cal. Due.
Spectrum Analyzer	ADVANTEST	R3271A	NA	10/15/2001	10/14/2002
low loss cable	Huber + Suhner	Sucoflex 104	N/A	N/A	N/A



Frequency Separation Test Data (Base)



Custom Name:

SENAO

Engineer:

JOE

Model Name:

EP-236

Report No.:

020033-R

Test Mode:

BASE

Peak

2442.49

MHz

Band Width

89.38

dBuV

0.882

MHz

Delta1

2441.62

MHz

Delta2

2442.51

MHz

88.32

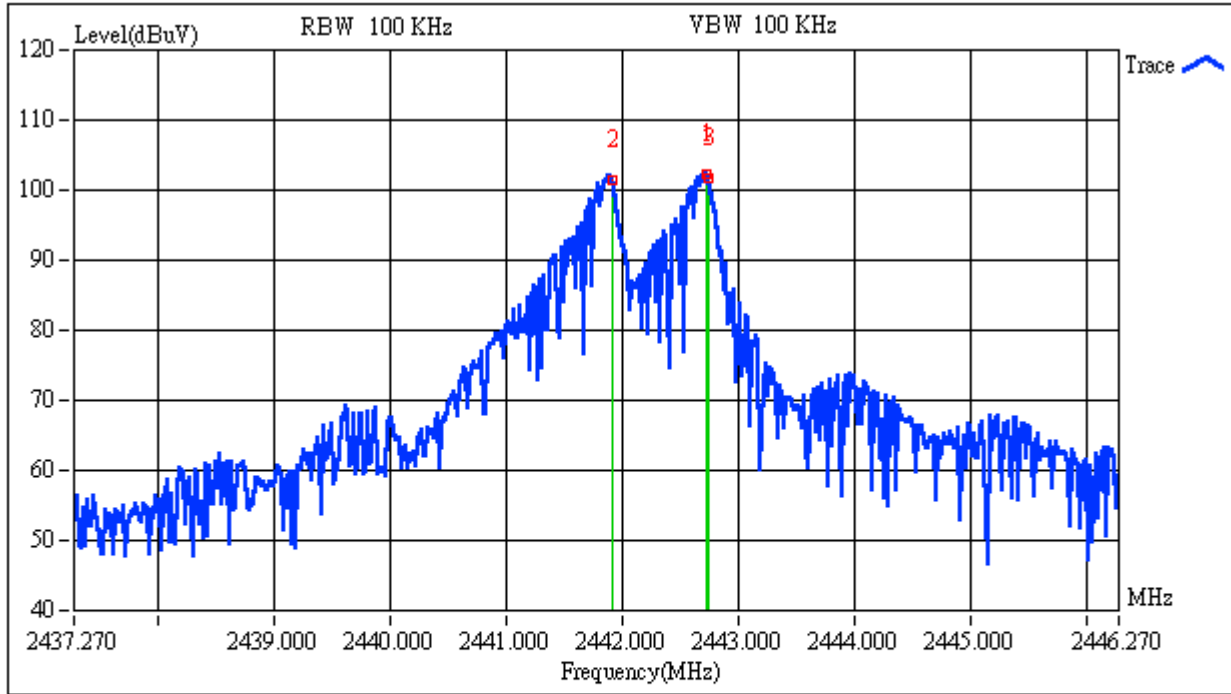
dBuV

89.24

dBuV



Frequency Separation Test Data (Handset)



Custom Name:	Engineer:	Peak	Band Width
SENAO	JOE	2442.72 MHz	0.828 MHz
Model Name:	Report No.:	102.41 dBuV	
EP-236	020033-R	Delta1 2441.91 MHz	Delta2 2442.74 MHz
Test Mode:		101.45 dBuV	101.64 dBuV
HANDSET			

11 NUMBER OF HOPPING FREQUENCY

11.1 Standard Applicable

According to §15.247(a)(1)(ii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz and 5725MHz – 5850MHz bands shall use at least 75 hopping frequencies.

11.2 Measurement Procedure

1. Place the EUT on the table and enable hopping function .
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set spectrum analyzer Start=2400MHz, Stop = 2483.5MHz, Sweep = auto.
4. Set the spectrum analyzer as RBW, VBW=100KHz,
5. Max hold, view and count how many channel in the band.

11.3 Measurement Result

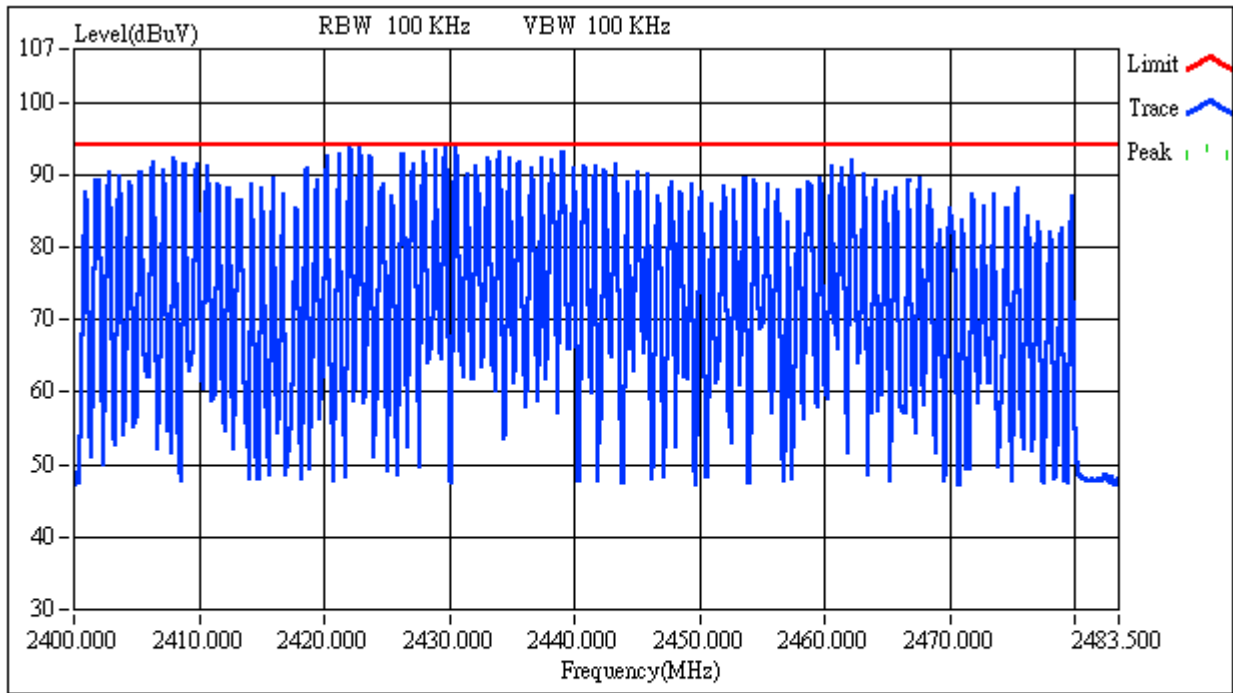
Total no of hopping channel	Limit (CH)	Measurement result (CH)	Result
Handset	75	92	PASS
Base	75	92	PASS

11.4 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	Model No.	Serial No.	LAST CAL.	Cal. Due.
Spectrum Analyzer	ADVANTEST	R3271A	NA	10/15/2001	10/14/2002
low loss cable	Huber + Suhner	Sucoflex 104	N/A	N/A	N/A



Channel Number (Handset)



Custom Name:

SENAO

Engineer:

JOE

Result CH

Model Name:

EP-236

Report No.:

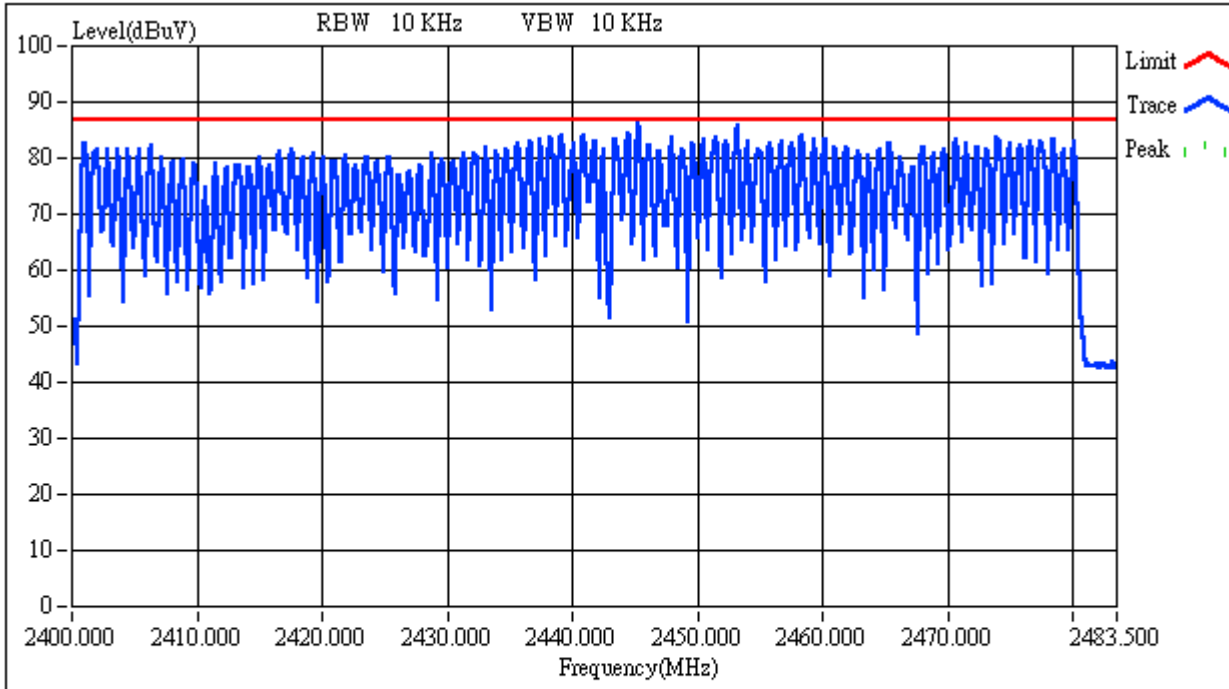
020033-R

Test Mode:

BASE



Channel Number (Handset)



Custom Name:

SENAO

Engineer:

JOE

Result CH

Model Name:

EP-236

Report No.:

020033-R

Test Mode:

HANDSET



12 TIME OF OCCUPANCY (DWELL TIME)

12.1 Standard Applicable

According to §15.247(a)(1)(ii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz and 5725MHz – 5850MHz bands. The average time of occupancy on any frequency shall not greater than 0.4 s within a 30s period.

12.2 Measurement Procedure

1. Place the EUT on the table and enable hopping function.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set center frequency of spectrum analyzer = operating frequency.
4. Set the spectrum analyzer as RBW,VBW=1MHz, Span = 0Hz , Adjust Sweep = 30s.
5. Repeat above procedures until all frequency measured were complete.

12.3 Measurement Result

33 (Pulse number within 30s)* 0.756 (ms) = 24.95 (ms)

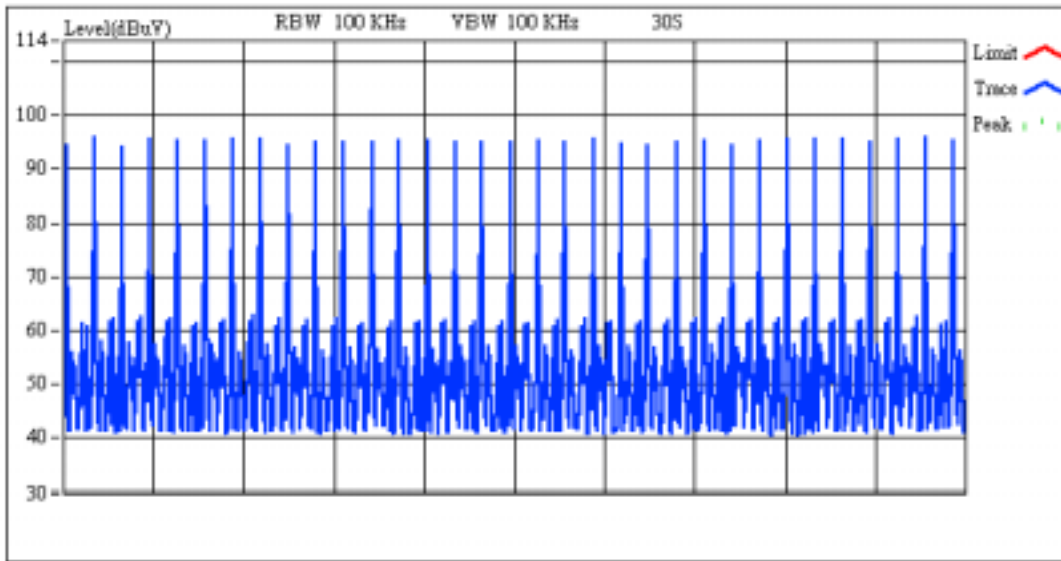
	CH	Total of Dwell Time (ms)	Limit (ms)	Result
BASE	Low	24.95	400.00	PASS
	Mid	24.95	400.00	PASS
	High	23.76	400.00	PASS
HANDSET	Low	24.95	400.00	PASS
	Mid	24.95	400.00	PASS
	High	22.57	400.00	PASS

12.4 Measurement Equipment Used:

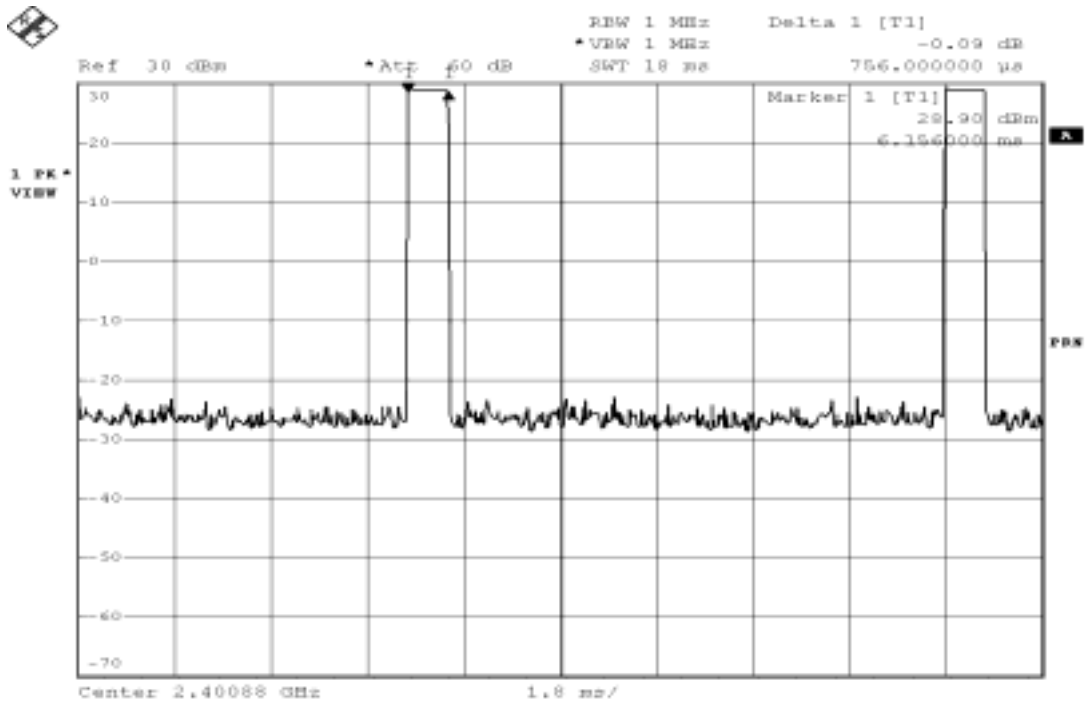
EQUIPMENT TYPE	MFR	Model No.	Serial No.	LAST CAL.	Cal. Due.
Spectrum Analyzer	ADVANTEST	R3271A	NA	10/15/2001	10/14/2002
low loss cable	Huber + Suhner	Sucoflex 104	N/A	N/A	N/A



Dwell Time Test Data (BASE CH-Low)



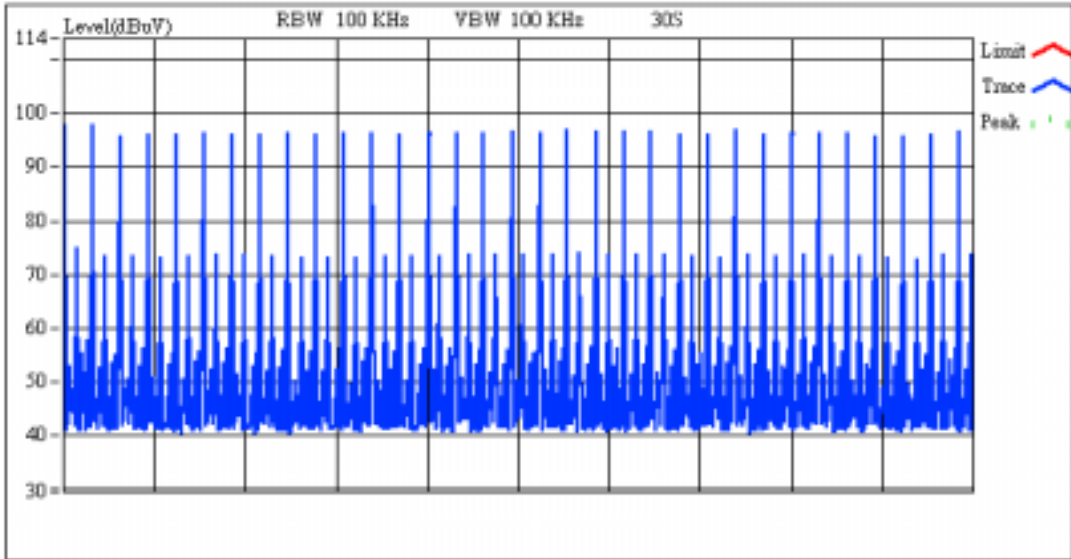
Custom Name:	Engineer:
SENAO	JOE
Model Name:	Report No.:
EP-236	020033-R
Test Mode:	
BASE TXLOW	



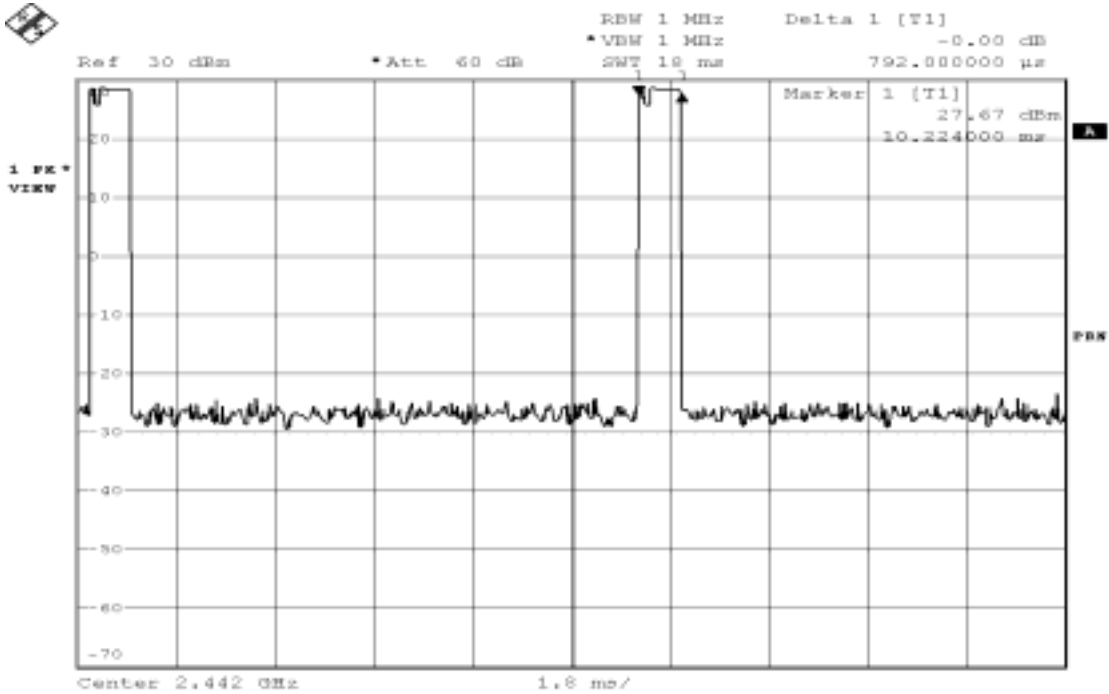
Comment A: TX Duty cycle
 Date: 18.SEP.2002 11:41:46



Dwell Time Test Data (BASE CH-Mid)



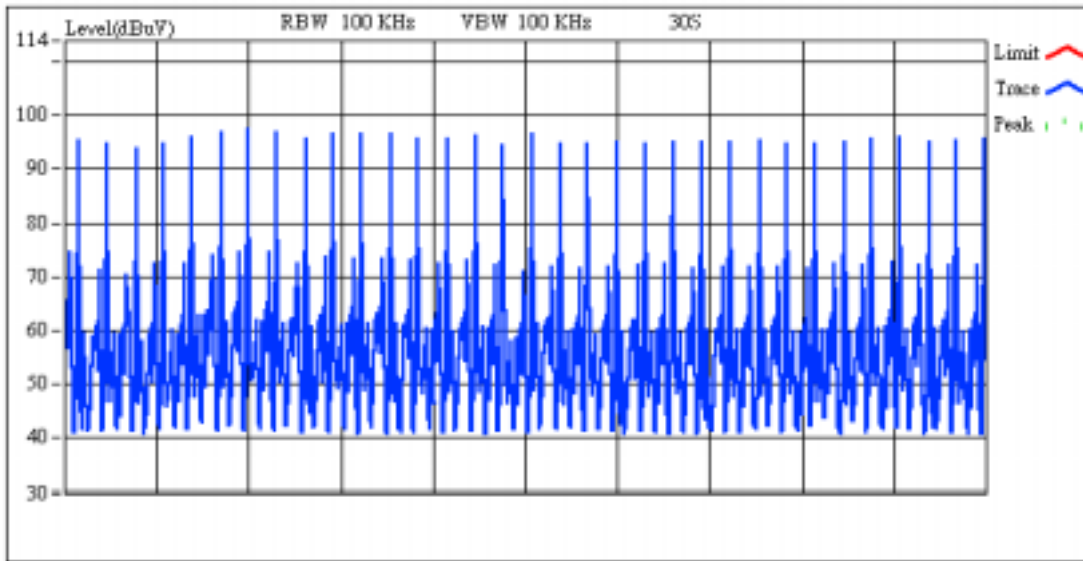
Custom Name:	Engineer:
SENAO	JOE
Model Name:	Report No.:
EP-236	020033-R
Test Mode:	
BASE TXMID	



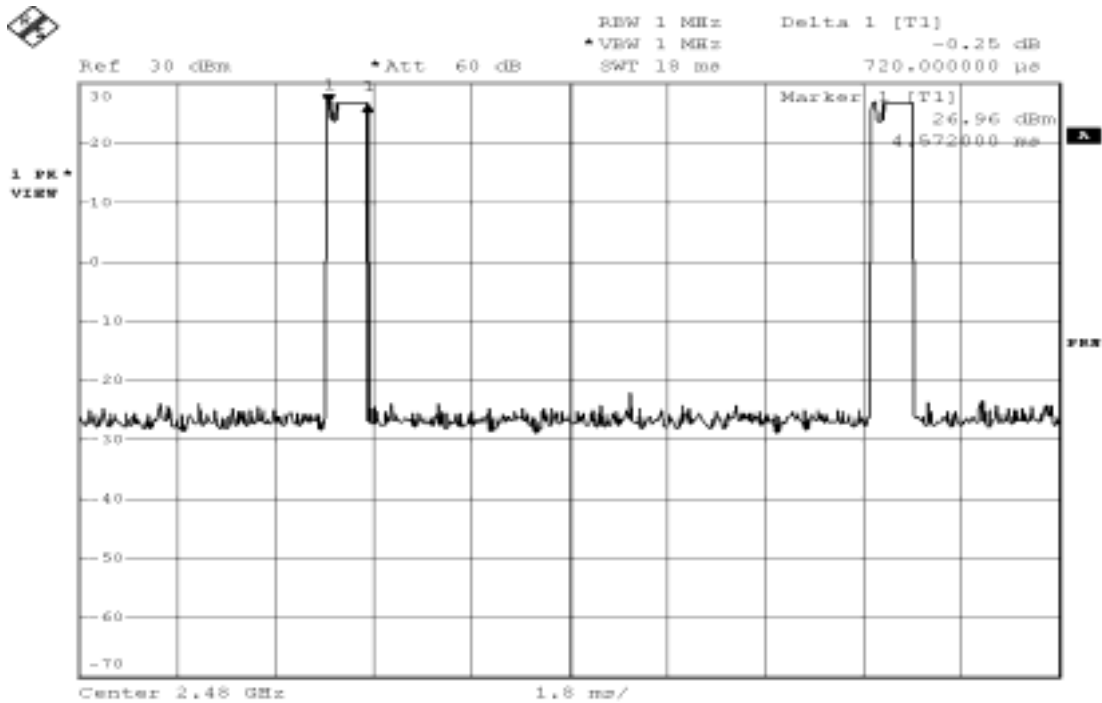
Comment A: TX Duty cycle
 Date: 18.SEP.2002 11:43:26



Dwell Time Test Data (BASE CH-High)



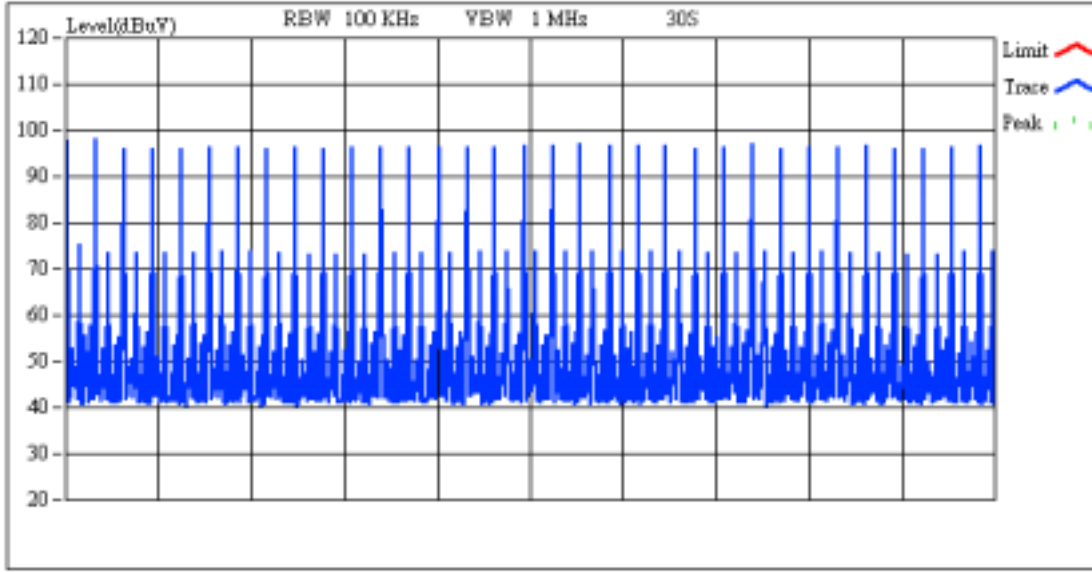
Custom Name:	Engineer:
SENAO	JOE
Model Name:	Report No.:
EP-236	020033-R
Test Mode:	
BASE TXHIG	



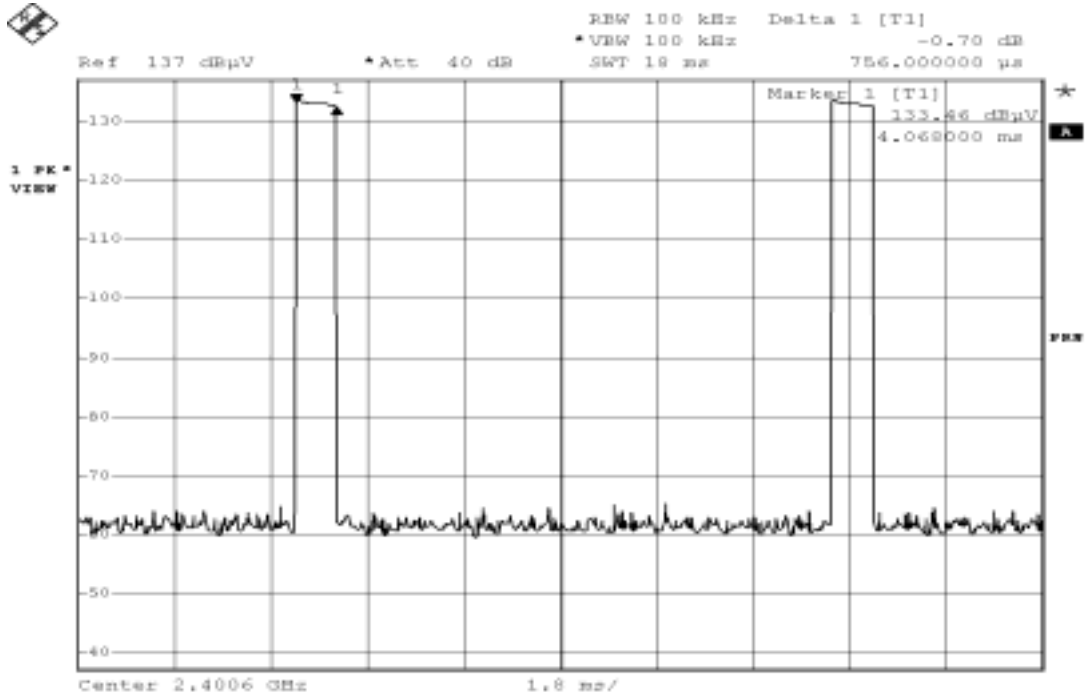
Comment A: TX Duty cycle
 Date: 18.SEP.2002 11:45:05



Dwell Time Test Data (HANDSET CH-Low)



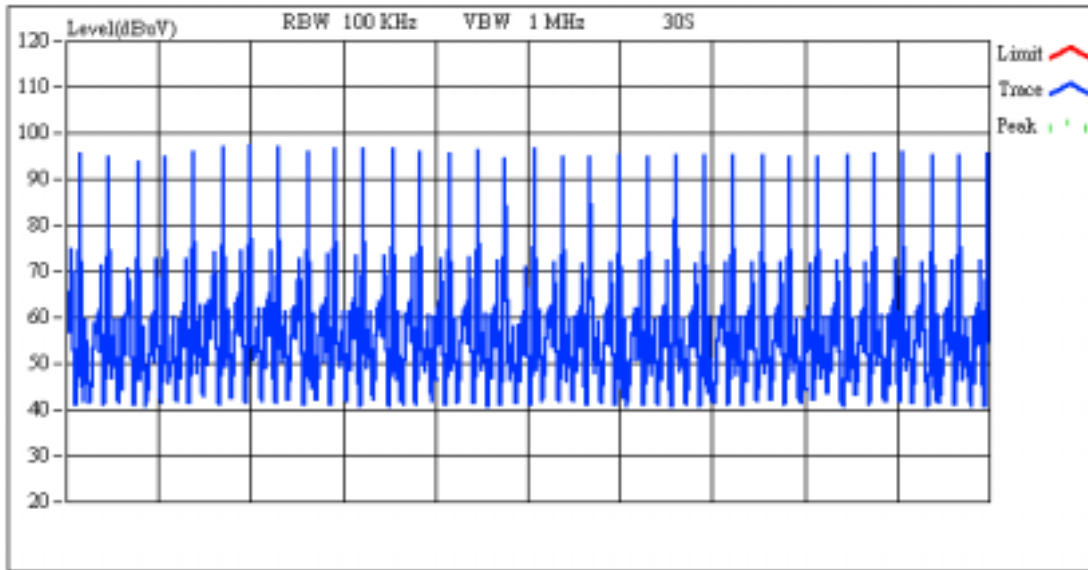
Custom Name:	Engineer:
<input type="text" value="SENAO"/>	<input type="text" value="JOE"/>
Model Name:	Report No.:
<input type="text" value="EP-236"/>	<input type="text" value="020033-R"/>
Test Mode:	
<input type="text" value="HANDSET TXLOW"/>	



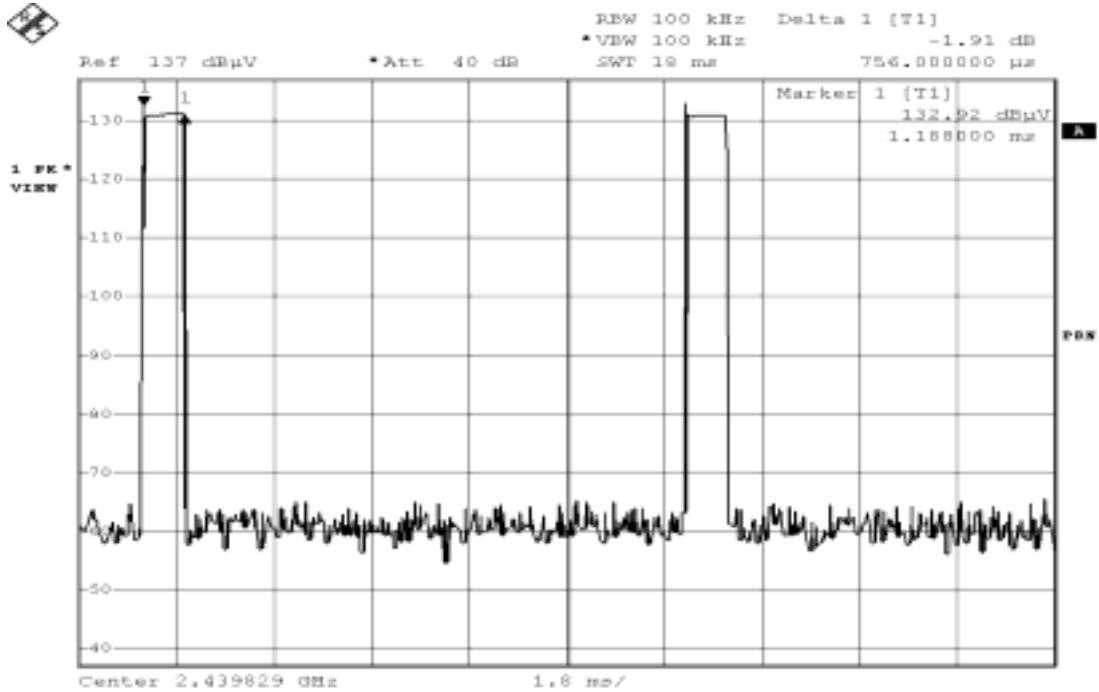
Comment A: TX Duty cycle
 Date: 18.SEP.2002 10:57:08



Dwell Time Test Data (HANDSET CH-Mid)



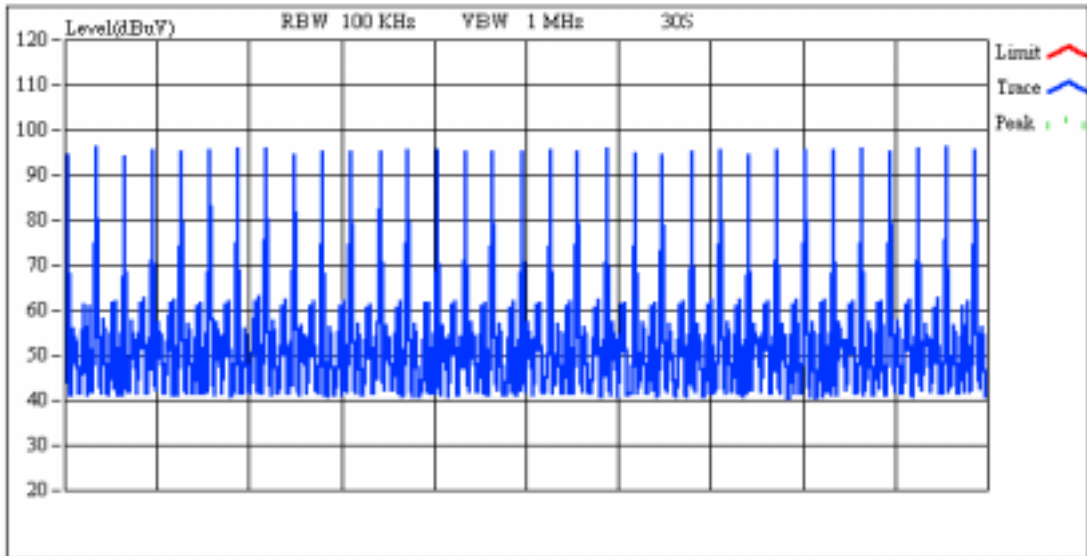
Custom Name:	Engineer:
<input type="text" value="SENAO"/>	<input type="text" value="JOE"/>
Model Name:	Report No.:
<input type="text" value="EP-236"/>	<input type="text" value="020033-R"/>
Test Mode:	
<input type="text" value="HANDSET TXMID"/>	



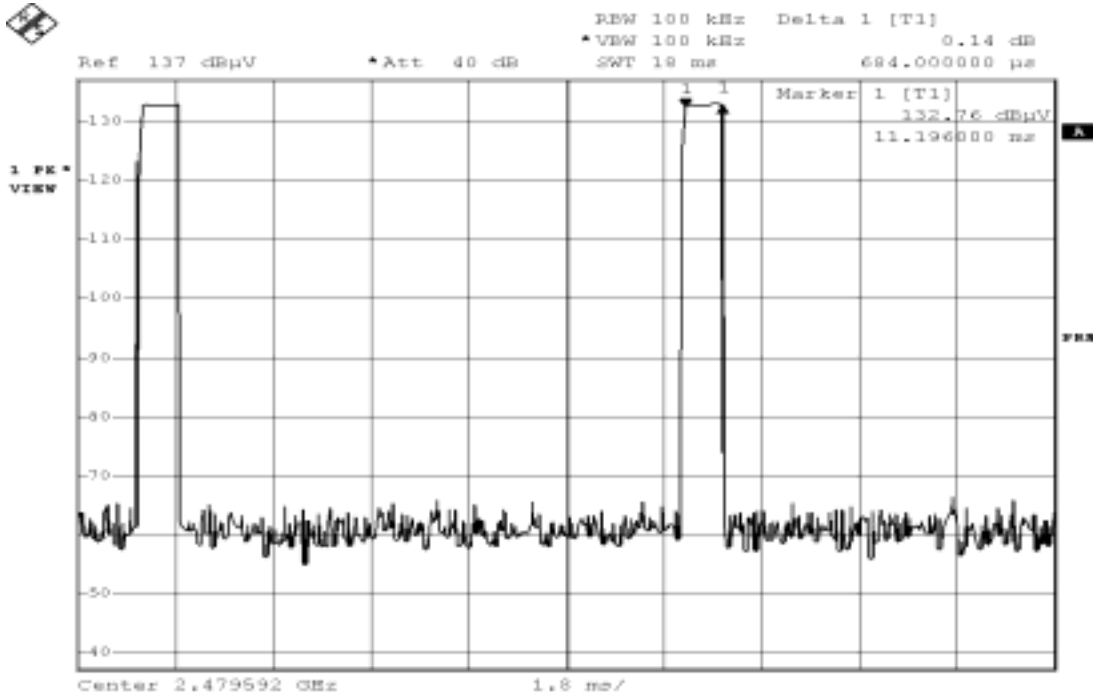
Comment A: TX Duty cycle
 Date: 18-SEP-2002 11:24:23



Dwell Time Test Data (HANDSET CH-High)



Custom Name:	Engineer:
SENAO	JOE
Model Name:	Report No.:
EP-236	020033-R
Test Mode:	
HANDSET TXHIGH	



Comment A: TX Duty cycle
 Date: 18.SEP.2002 11:14:20

13 ANTENNA REQUIREMENT

13.1 Standard Applicable

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

And according to §15.246(1), if transmitting antennas of directional gain greater than 6dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

13.2 Antenna Connected Construction

The directional gins of each antenna used for transmitting is as below

Handset Antenna Gain: 1.45 dBi

Base

Base Unit Test Mode	Description	Model Name	Cable	Antenna Gain (dBi)	Output Power Measure
# 0	Internal	N/A	N/A	≥ 0	The power shall not reduce
# 1	1/4 λ Dipole	IC-6500RS-101	N/A	5	27.8dBm max., Pass the requirement.
# 2	1/4 λ Dipole	IG-102NR-101	RG316	6	27.8dBm max., Pass the requirement.
# 3	AG Dipole	1GP-24001	RG223	6	27.8dBm max., Pass the requirement.
# 4	Patch Antenna	PA-010-101	RG223	10	27.8dBm max., Pass the requirement.
# 5	Patch	1PG-24002	RG223	12	27.8dBm max., Pass the requirement.

14 SAR Measurement

14.1 Standard Applicable

According to §15.247(b)(4) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

The test was under preceded and the test report will be attached.

According to §1.1310 and §2.1093 RF exposure is calculated.

Limits for Maximum Permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-15000	/	/	1.0	30

F = frequency in MHz

* = Plane-wave equipment power density



MPE Prediction

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{P \cdot G}{4 \cdot R^2}$$

Where: S = Power density

P = Power input to antenna

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

EUT: BASE with Antenna : IC-6500RS-101

Maximum peak output power at antenna input terminal: 27.80(dBm)

Maximum peak output power at antenna input terminal: 602.5 (mW)

Antenna gain (typical): 5 (dBi)

Maximum antenna gain: 3.16 (numeric)

Prediction distance: 20 (cm)

Prediction frequency: 2401 (MHz)

MPE limit for uncontrolled exposure at prediction frequency: 1 (mW/cm²)

Power density at predication frequency at 20 (cm) distance = 0.2132 mW/cm²

S	P	P	Cable Loss	G	R
mW/cm ²	mW	dBm	dB	dBi	cm
0.213280116	602.5595861	27.8	2.5	5	20

EUT: BASE with Antenna : 1PG-24002

Maximum peak output power at antenna input terminal: 27.80 (dBm)

Maximum peak output power at antenna input terminal: 602.5 (mW)

Antenna gain (typical): 12 (dBi)

Maximum antenna gain: 15.84 (numeric)

Prediction distance: 20 (cm)

Prediction frequency: 2401 (MHz)

MPE limit for uncontrolled exposure at prediction frequency: 1 (mW/cm²)

Power density at predication frequency at 20 (cm) distance =0.75674 mW/cm²



S	P	P	Cable Loss	G	R
mW/cm ²	mW	dBm	dB	dBi	cm
0.75674641	602.5595861	27.8	4	12	20

9.8 Measurement Result

The predicted power density level at 20 cm is below the uncontrolled exposure limit of 1 mW/cm² at 2401MHz.