

3.5 Field Strength of Spurious Radiation Measurement

3.5.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

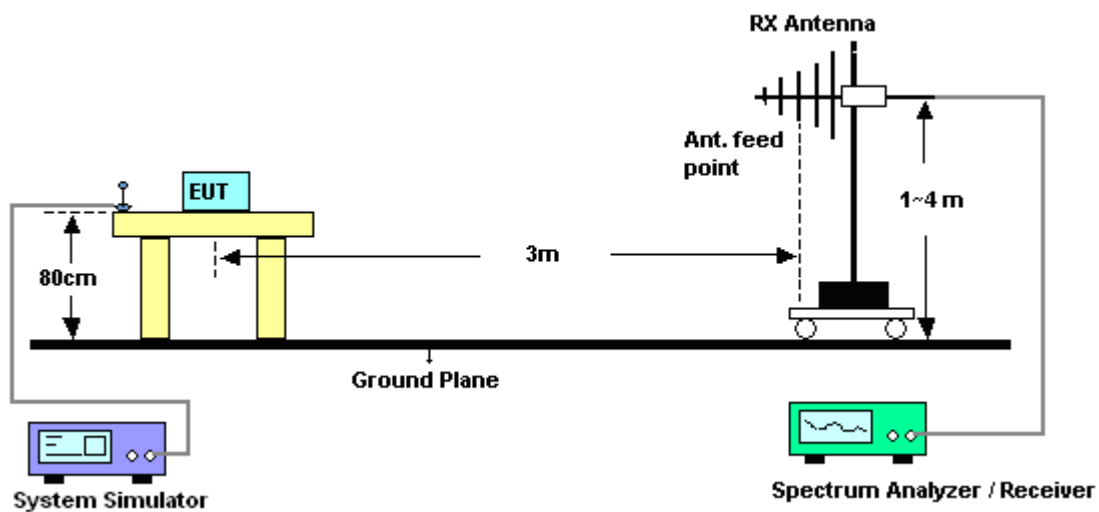
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

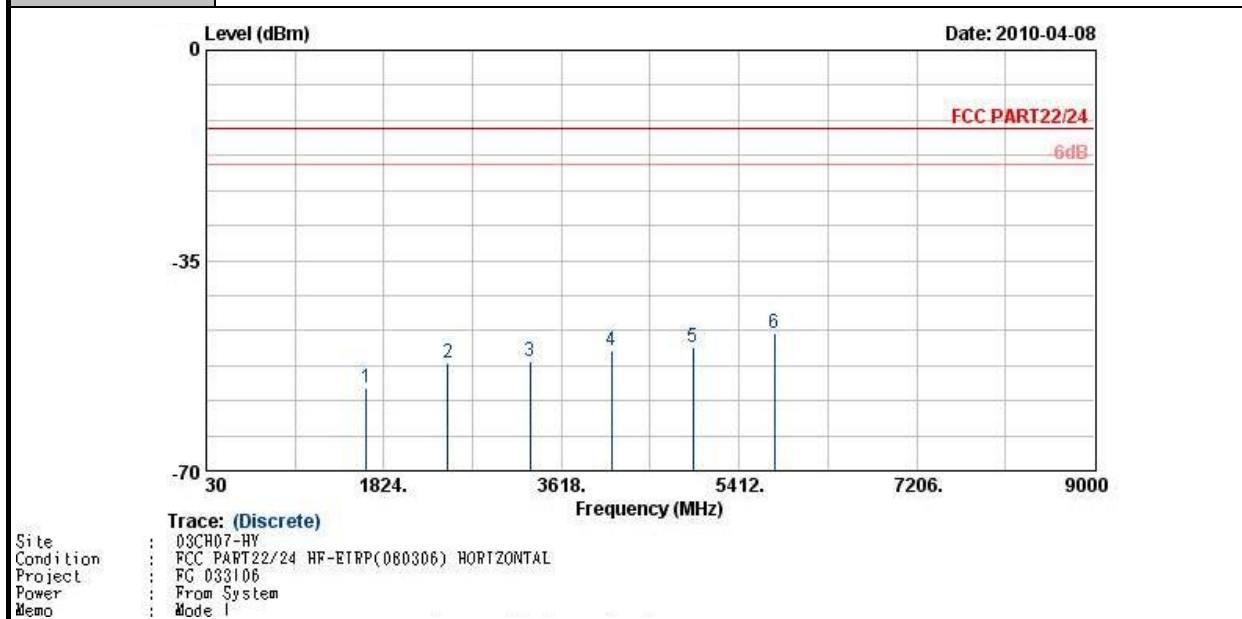
1. The EUT was placed on a rotatable wooden table with 0.8 meter about ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
11. $ERP \text{ (dBm)} = EIRP - 2.15$

3.5.4 Test Setup



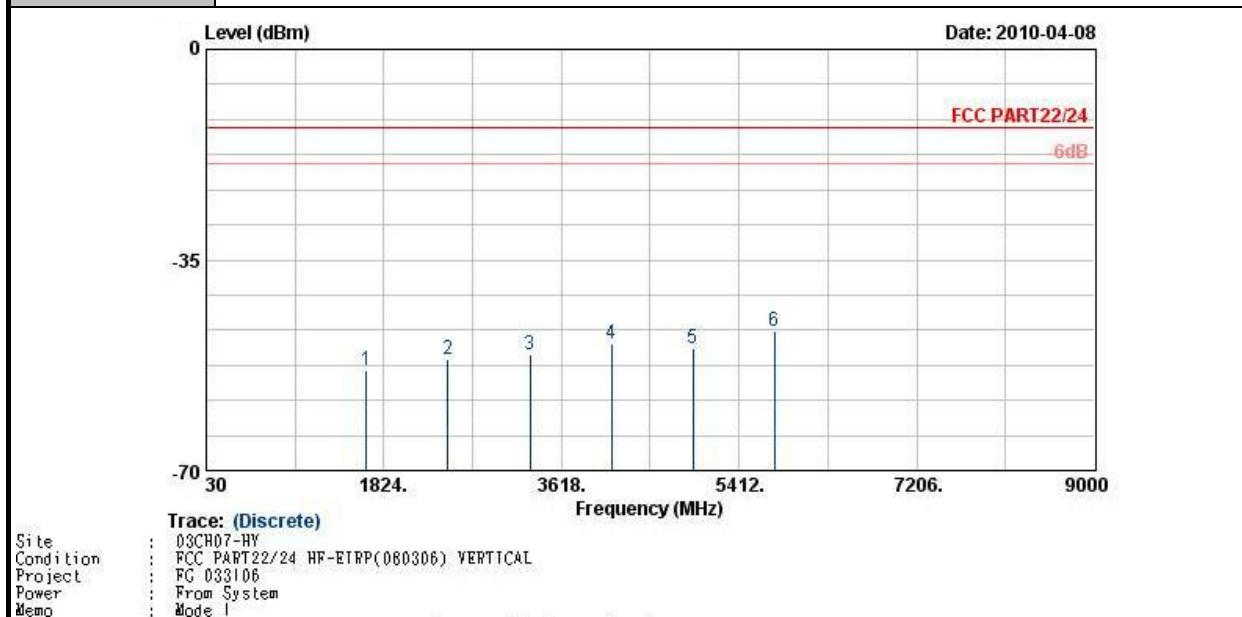
3.5.5 Test Result of Field Strength of Spurious Radiated

Band :	GSM850	Temperature :	24~25°C
Test Mode :	GPRS 8 Link_Channel 128 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



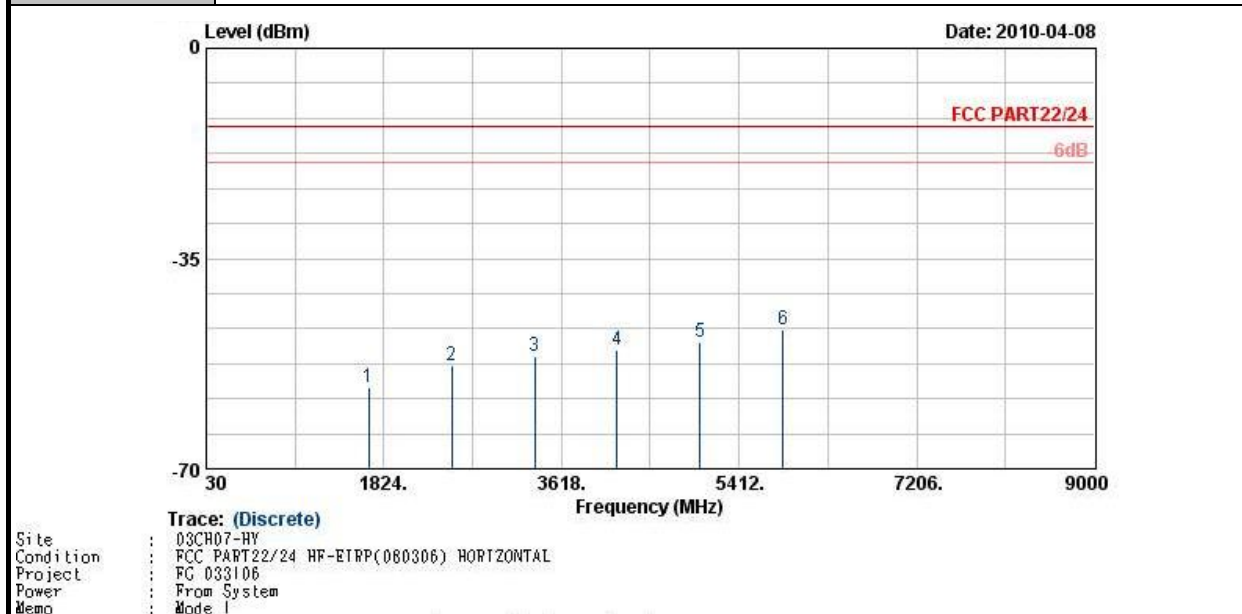
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1645	-56.26	-13	-43.26	-60.57	-56.44	3.1	5.43	H	Pass
2470	-52.07	-13	-39.07	-64.16	-52.06	3.89	6.03	H	Pass
3298	-51.66	-13	-38.66	-64.67	-53.22	4.16	7.87	H	Pass
4123	-50.01	-13	-37.01	-65.26	-51.98	4.88	9.00	H	Pass
4948	-49.49	-13	-36.49	-66.15	-51.88	5.09	9.63	H	Pass
5772	-47.03	-13	-34.03	-67.32	-49.74	5.54	10.40	H	Pass

Band :	GSM850	Temperature :	24~25°C
Test Mode :	GPRS 8 Link_Channel 128 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



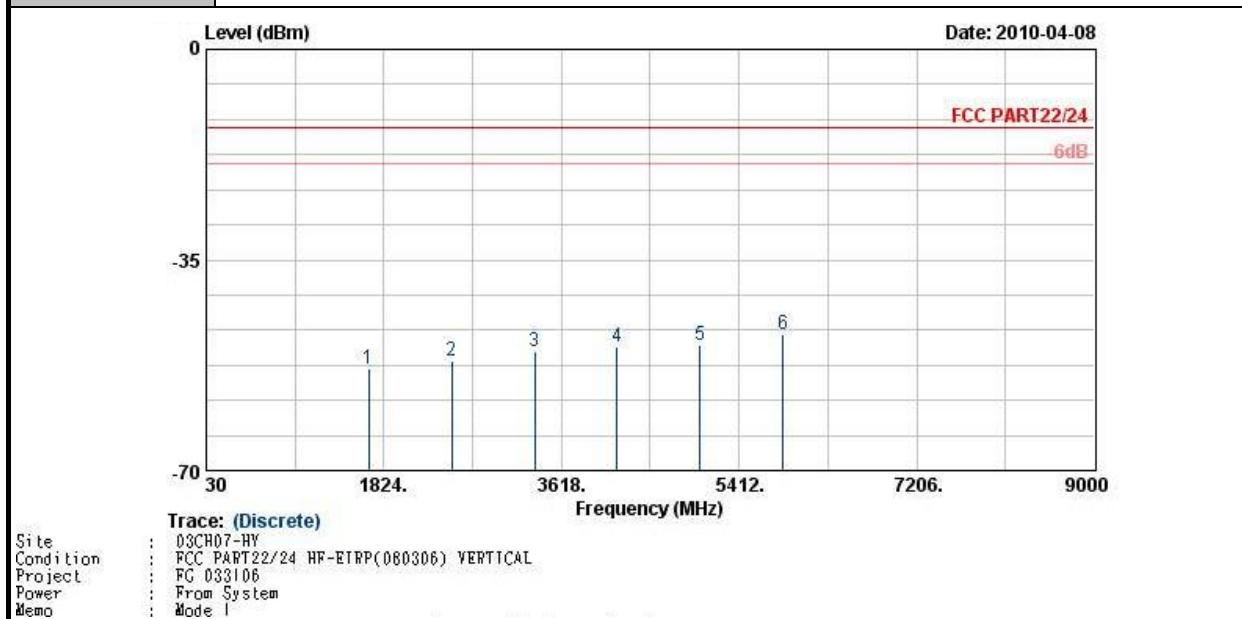
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1645	-53.45	-13	-40.45	-59.59	-53.63	3.1	5.43	V	Pass
2470	-51.52	-13	-38.52	-61.99	-51.51	3.89	6.03	V	Pass
3298	-50.78	-13	-37.78	-65.39	-52.34	4.16	7.87	V	Pass
4123	-48.98	-13	-35.98	-65.05	-50.95	4.88	9.00	V	Pass
4948	-49.67	-13	-36.67	-66.58	-52.06	5.09	9.63	V	Pass
5772	-46.80	-13	-33.80	-66.84	-49.51	5.54	10.40	V	Pass

Band :	GSM850	Temperature :	24~25°C
Test Mode :	GPRS 8 Link_Channel 189 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



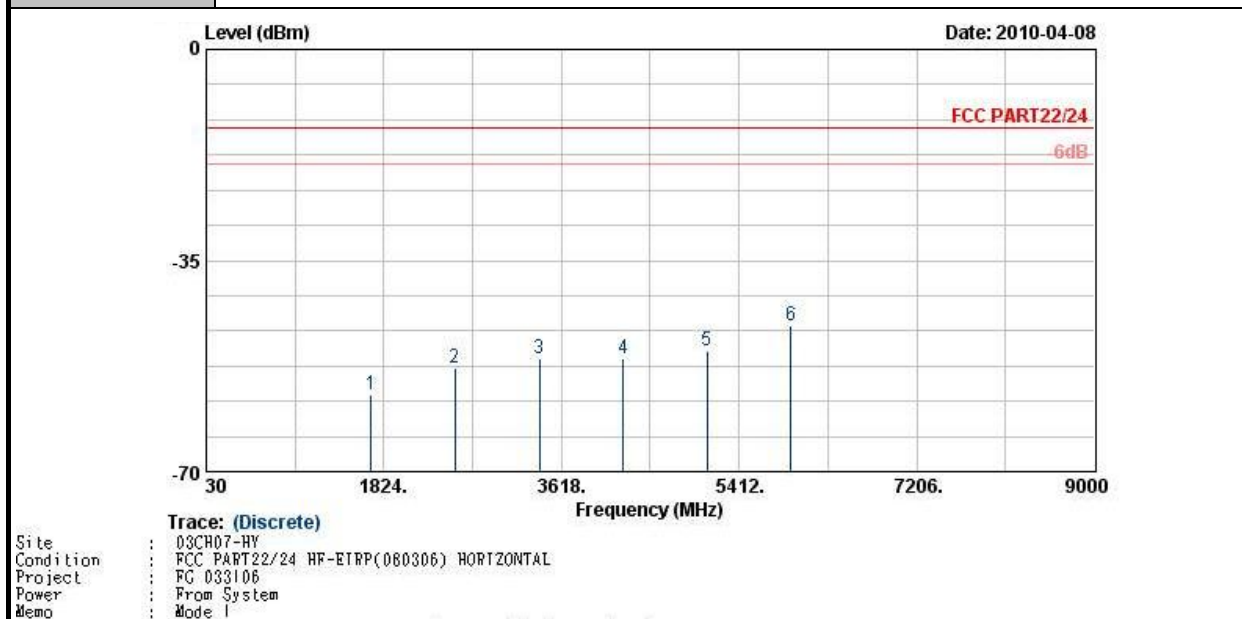
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-56.57	-13	-43.57	-60.55	-56.42	3.39	5.39	H	Pass
2509	-52.90	-13	-39.90	-65.19	-53.16	3.71	6.12	H	Pass
3346	-51.26	-13	-38.26	-64.36	-53.98	3.13	8.00	H	Pass
4182	-50.24	-13	-37.24	-50.24	-54.08	3.01	9.00	H	Pass
5018	-49.01	-13	-36.01	-49.01	-53.98	2.61	9.73	H	Pass
5854	-46.85	-13	-33.85	-46.85	-50.72	4.38	10.40	H	Pass

Band :	GSM850	Temperature :	24~25°C
Test Mode :	GPRS 8 Link_Channel 189 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



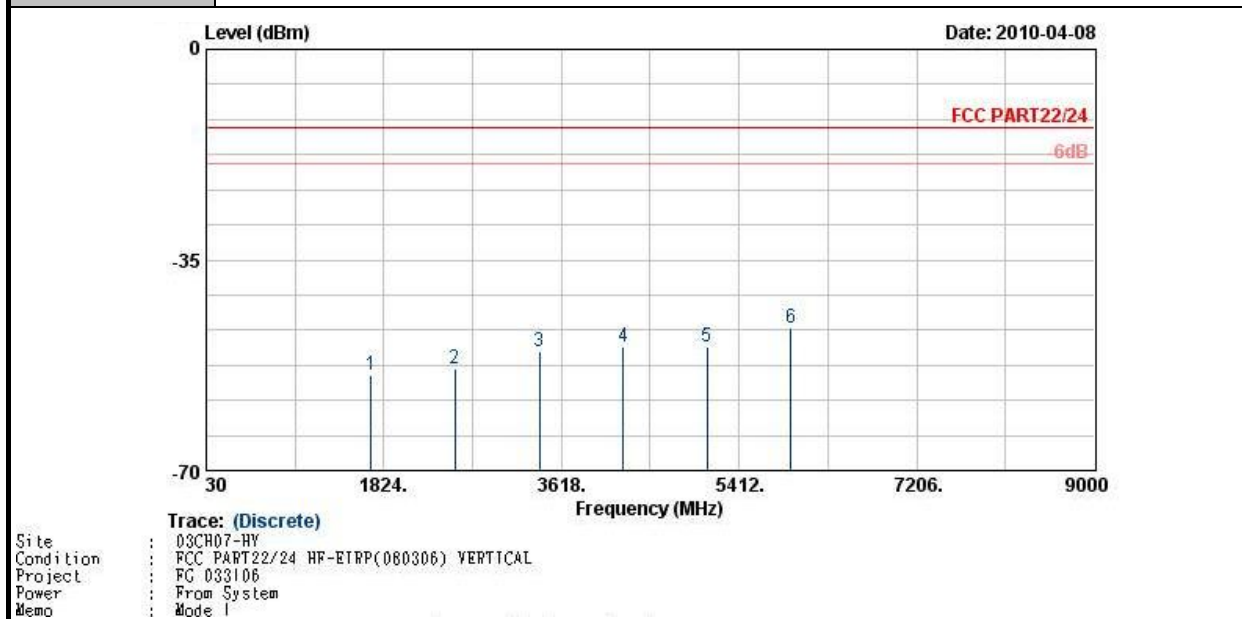
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-53.14	-13	-40.14	-63.21	-52.99	3.39	5.39	V	Pass
2509	-51.74	-13	-38.74	-64.48	-52	3.71	6.12	V	Pass
3346	-50.32	-13	-37.32	-64.91	-53.04	3.13	8.00	V	Pass
4182	-49.42	-13	-36.42	-65.5	-53.26	3.01	9.00	V	Pass
5018	-49.15	-13	-36.15	-66.21	-54.12	2.61	9.73	V	Pass
5854	-47.48	-13	-34.48	-67.8	-51.35	4.38	10.40	V	Pass

Band :	GSM850	Temperature :	25~26°C
Test Mode :	GPRS 8 Link_Channel 251 (With USB Cable)	Relative Humidity :	47~48%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



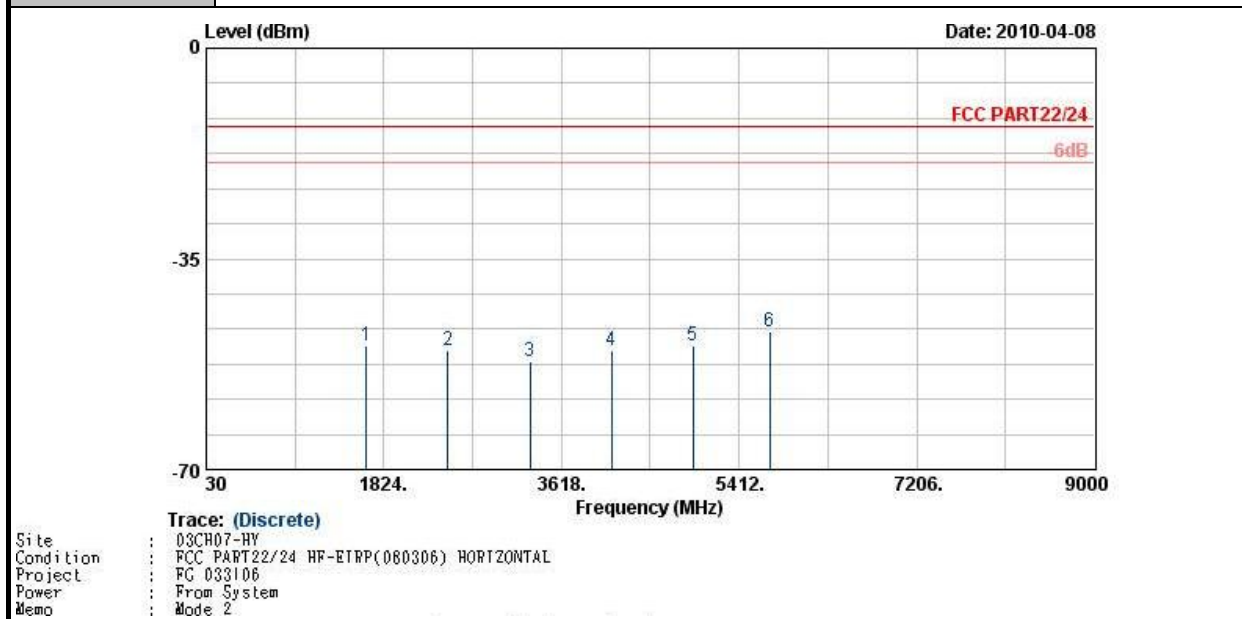
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-57.33	-13	-44.33	-65.34	-57.51	3.02	5.35	H	Pass
2544	-52.82	-13	-39.82	-65.12	-53.13	3.73	6.19	H	Pass
3393	-51.39	-13	-38.39	-64.57	-53.38	3.98	8.12	H	Pass
4241	-51.36	-13	-38.36	-66.59	-53.37	4.84	9.00	H	Pass
5089	-49.97	-13	-36.97	-67.28	-52.28	5.36	9.82	H	Pass
5938	-45.85	-13	-32.85	-66.72	-48.27	5.83	10.40	H	Pass

Band :	GSM850	Temperature :	24~25°C
Test Mode :	GPRS 8 Link_Channel 251 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



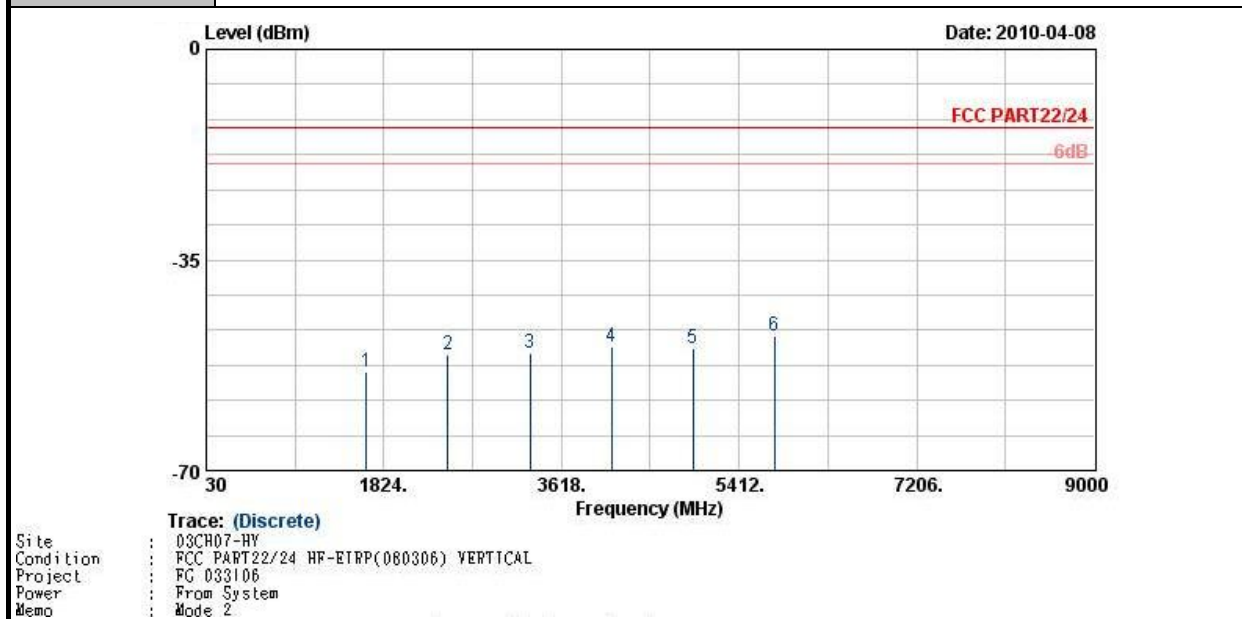
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-54.19	-13	-41.19	-64.45	-54.37	3.02	5.35	V	Pass
2544	-53.08	-13	-40.08	-65.96	-53.39	3.73	6.19	V	Pass
3393	-50.25	-13	-37.25	-64.82	-52.24	3.98	8.12	V	Pass
4241	-49.52	-13	-36.52	-65.63	-51.53	4.84	9.00	V	Pass
5089	-49.55	-13	-36.55	-66.96	-51.86	5.36	9.82	V	Pass
5938	-46.35	-13	-33.35	-66.9	-48.77	5.83	10.40	V	Pass

Band :	GSM850	Temperature :	24~25°C
Test Mode :	EDGE 8 Link_Channel 128 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



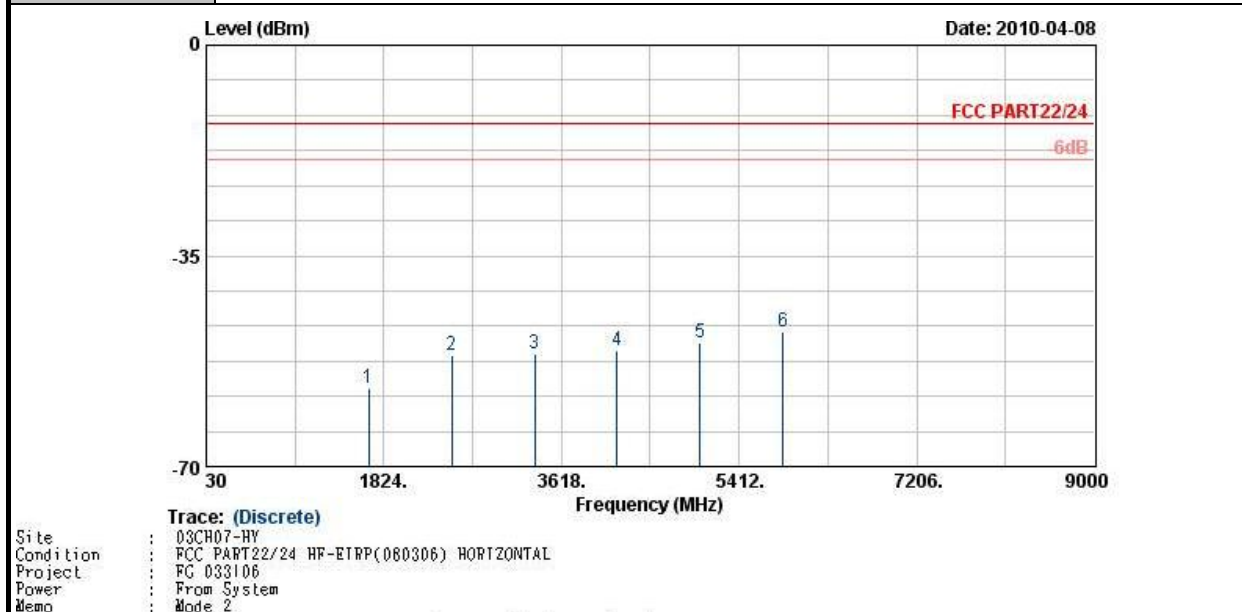
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1645	-49.45	-13	-36.45	-56.91	-49.63	3.1	5.43	H	Pass
2470	-50.27	-13	-37.27	-60.21	-50.26	3.89	6.03	H	Pass
3298	-52.00	-13	-39.00	-65.01	-53.56	4.16	7.87	H	Pass
4123	-50.16	-13	-37.16	-65.42	-52.13	4.88	9.00	H	Pass
4948	-49.41	-13	-36.41	-66.07	-51.8	5.09	9.63	H	Pass
5772	-47.05	-13	-34.05	-67.15	-49.76	5.54	10.40	H	Pass

Band :	GSM850	Temperature :	24~25°C
Test Mode :	EDGE 8 Link_Channel 128 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



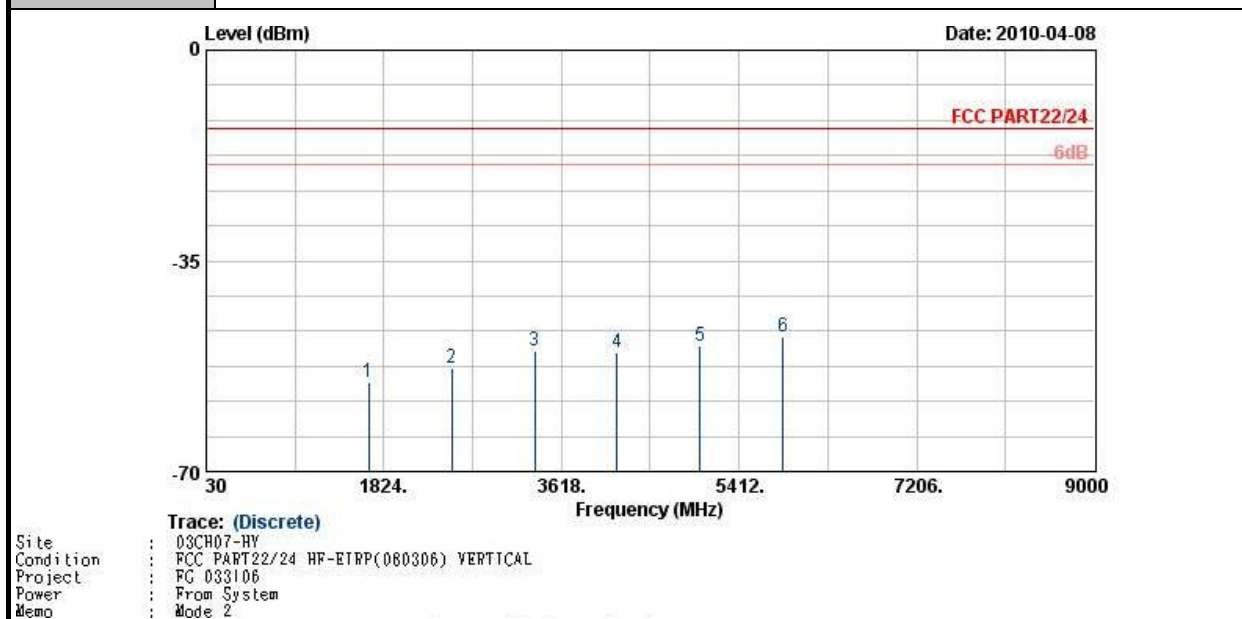
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1645	-53.69	-13	-40.69	-59.83	-53.87	3.1	5.43	V	Pass
2470	-50.64	-13	-37.64	-61.11	-50.63	3.89	6.03	V	Pass
3298	-50.51	-13	-37.51	-65.13	-52.07	4.16	7.87	V	Pass
4123	-49.34	-13	-36.34	-65.4	-51.31	4.88	9.00	V	Pass
4948	-49.77	-13	-36.77	-66.67	-52.16	5.09	9.63	V	Pass
5772	-47.52	-13	-34.52	-67.55	-50.23	5.54	10.40	V	Pass

Band :	GSM850	Temperature :	24~25°C
Test Mode :	EDGE 8 Link_Channel 189 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



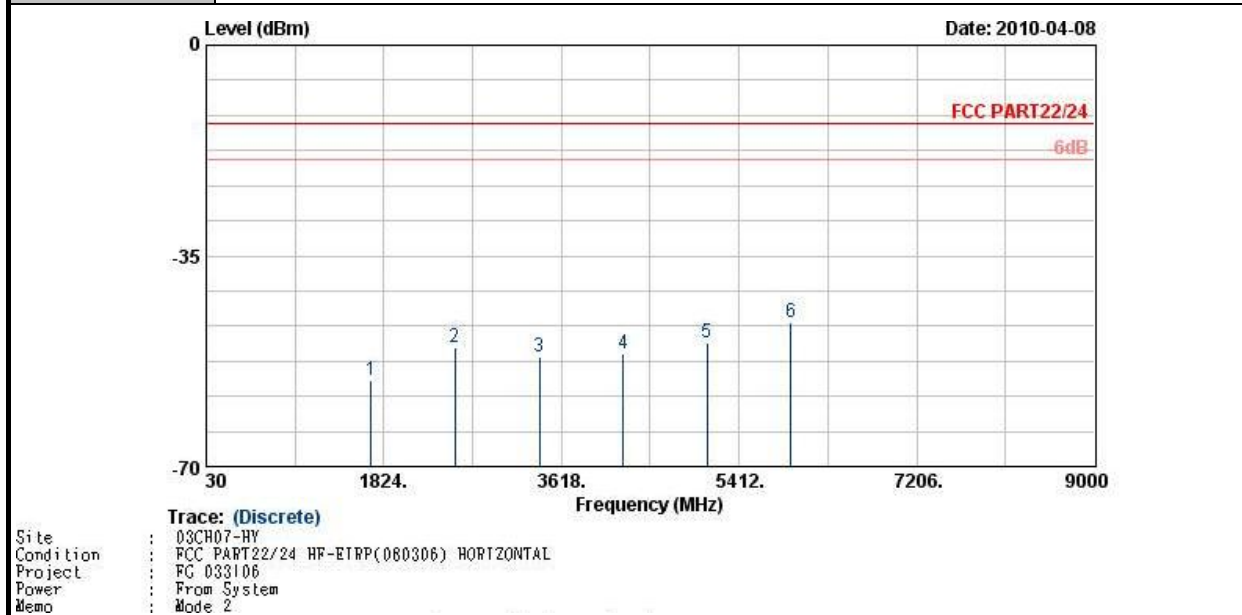
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-56.86	-13	-43.86	-61.16	-56.71	3.39	5.39	H	Pass
2509	-51.57	-13	-38.57	-61.71	-51.83	3.71	6.12	H	Pass
3345	-51.35	-13	-38.35	-64.44	-54.07	3.13	8.00	H	Pass
4182	-50.62	-13	-37.62	-65.87	-54.46	3.01	9.00	H	Pass
5018	-49.47	-13	-36.47	-66.38	-54.44	2.61	9.73	H	Pass
5854	-47.56	-13	-34.56	68.17	-51.43	4.38	10.40	H	Pass

Band :	GSM850	Temperature :	24~25°C
Test Mode :	EDGE 8 Link_Channel 189 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



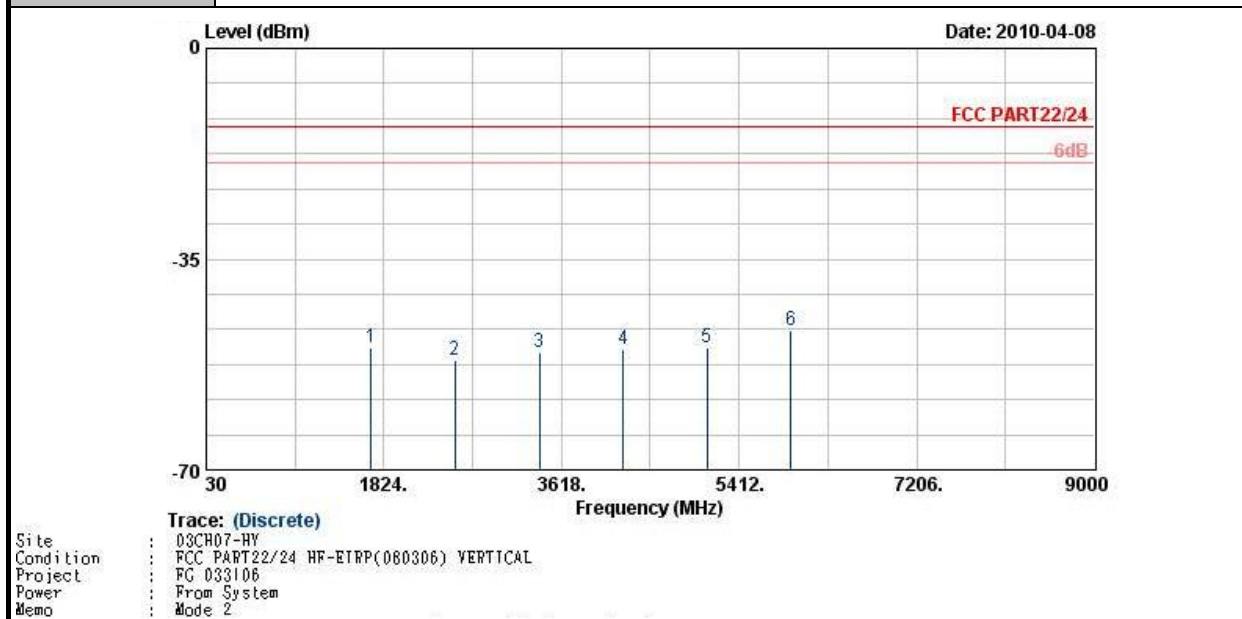
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-55.18	-13	-42.18	-65.25	-55.03	3.39	5.39	V	Pass
2509	-52.72	-13	-39.72	-65.45	-52.98	3.71	6.12	V	Pass
3345	-49.94	-13	-36.94	-64.54	-52.66	3.13	8.00	V	Pass
4182	-50.16	-13	-37.16	-66.25	-54	3.01	9.00	V	Pass
5018	-49.18	-13	-36.18	-66.24	-54.15	2.61	9.73	V	Pass
5854	-47.50	-13	-34.50	-67.83	-51.37	4.38	10.40	V	Pass

Band :	GSM850	Temperature :	24~25°C
Test Mode :	EDGE 8 Link_Channel 251 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



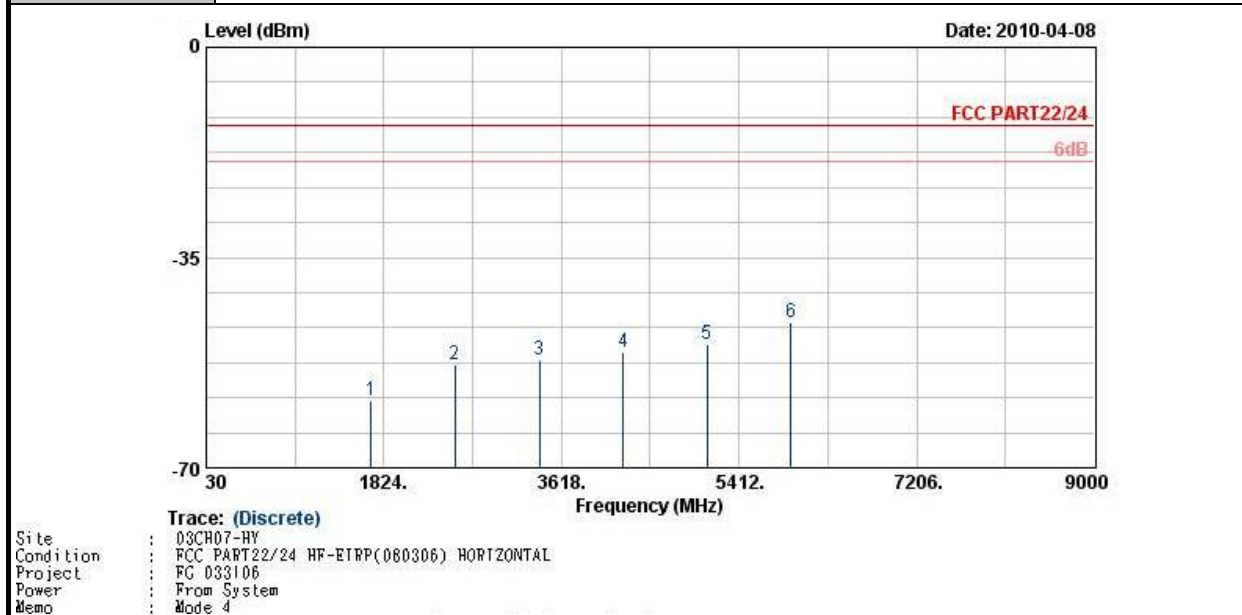
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1693	-55.80	-13	-42.80	-63.81	-55.98	3.02	5.35	H	Pass
2545	-50.11	-13	-37.11	-60.26	-50.42	3.73	6.19	H	Pass
3393	-51.90	-13	-38.90	-65.09	-53.89	3.98	8.12	H	Pass
4241	-51.30	-13	-38.30	-66.53	-53.31	4.84	9.00	H	Pass
5089	-49.35	-13	-36.35	-66.66	-51.66	5.36	9.82	H	Pass
5938	-46.06	-13	-33.06	-66.94	-48.48	5.83	10.40	H	Pass

Band :	GSM850	Temperature :	24~25°C
Test Mode :	EDGE 8 Link_Channel 251 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



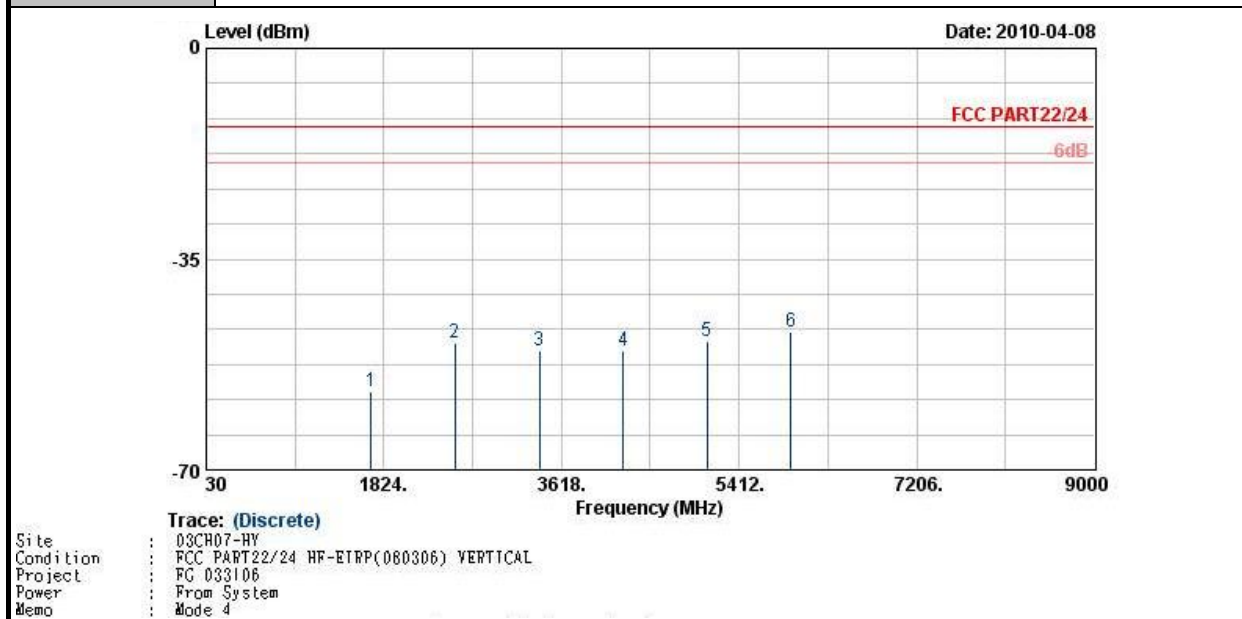
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1693	-49.64	-13	-36.64	-57.06	-49.82	3.02	5.35	V	Pass
2545	-51.72	-13	-38.72	-64.59	-52.03	3.73	6.19	V	Pass
3393	-50.59	-13	-37.59	-65.16	-52.58	3.98	8.12	V	Pass
4241	-49.98	-13	-36.98	-66.08	-51.99	4.84	9.00	V	Pass
5089	-49.64	-13	-36.64	-67.05	-51.95	5.36	9.82	V	Pass
5938	-46.77	-13	-33.77	-67.32	-49.19	5.83	10.40	V	Pass

Band :	GSM850	Temperature :	24~25°C
Test Mode :	GPRS 8 Link_Channel 251 (Without USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



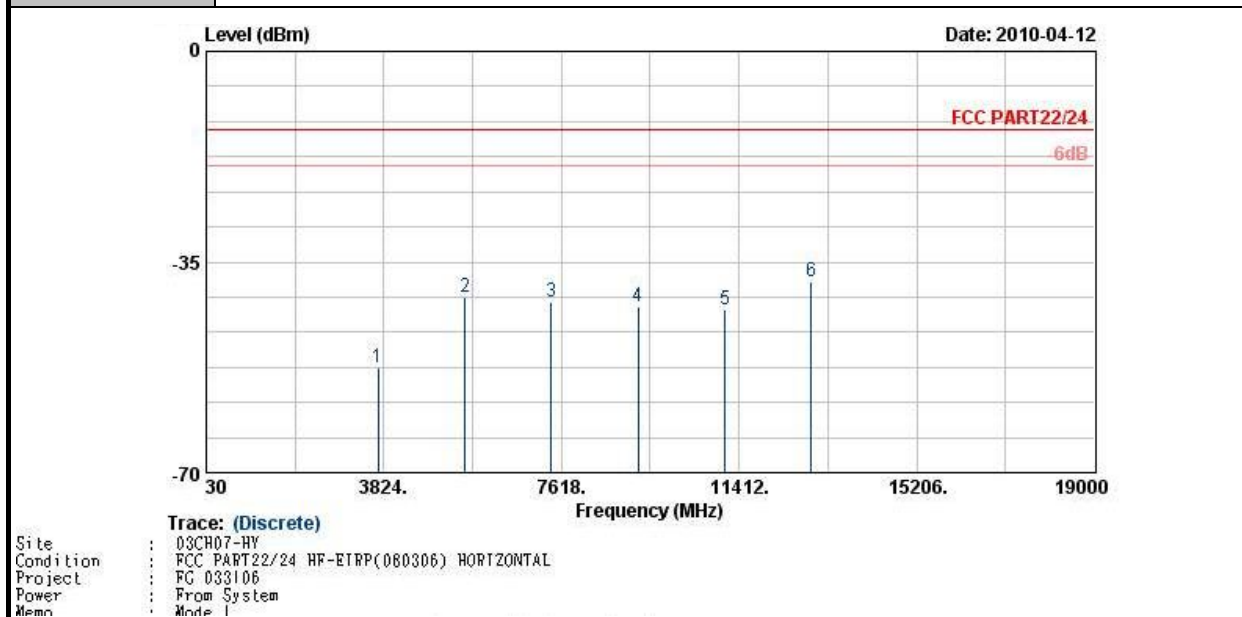
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1693	-58.88	-13	-45.88	-62.65	-59.06	3.02	5.35	H	Pass
2544	-52.70	-13	-39.70	-62.85	-53.01	3.73	6.19	H	Pass
3393	-51.96	-13	-38.96	-65.15	-53.95	3.98	8.12	H	Pass
4241	-50.75	-13	-37.75	-65.98	-52.76	4.84	9.00	H	Pass
5089	-49.56	-13	-36.56	-66.87	-51.87	5.36	9.82	H	Pass
5938	-45.83	-13	-32.83	-66.7	-48.25	5.83	10.40	H	Pass

Band :	GSM850	Temperature :	24~25°C
Test Mode :	GPRS 8 Link_Channel 251 (Without USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



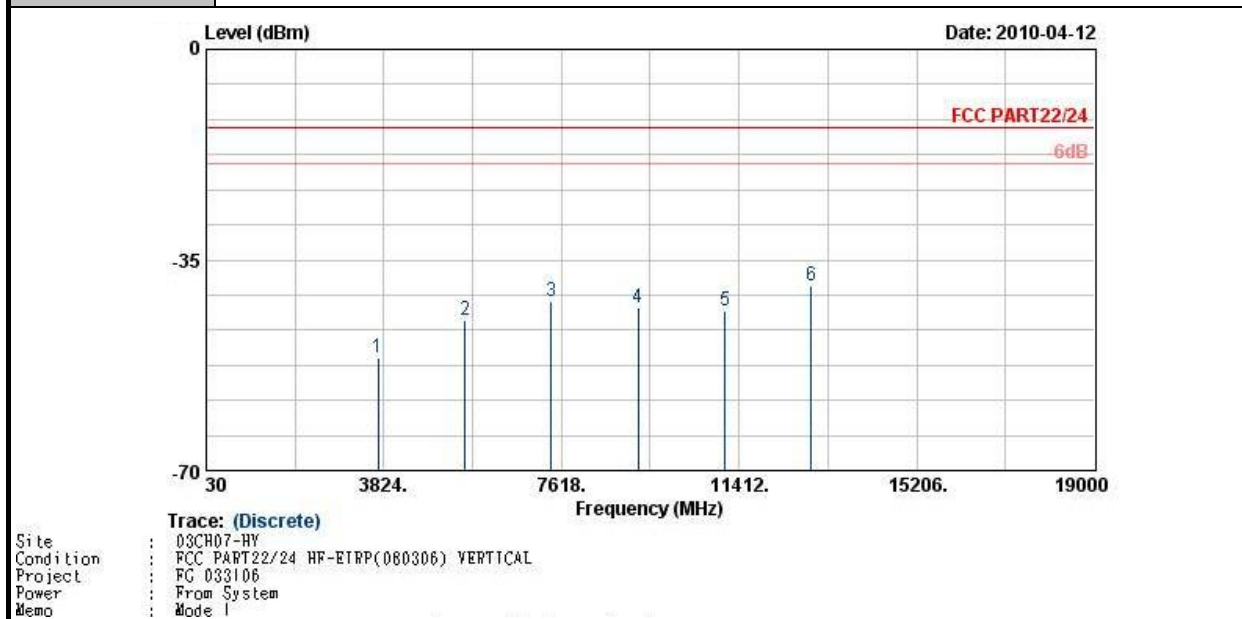
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1693	-56.99	-13	-43.99	-61.76	-57.17	3.02	5.35	V	Pass
2544	-48.88	-13	-35.88	-58.6	-49.19	3.73	6.19	V	Pass
3393	-50.27	-13	-37.27	-64.84	-52.26	3.98	8.12	V	Pass
4241	-50.21	-13	-37.21	-66.32	-52.22	4.84	9.00	V	Pass
5089	-48.56	-13	-35.56	-65.97	-50.87	5.36	9.82	V	Pass
5938	-47.13	-13	-34.13	-67.69	-49.55	5.83	10.40	V	Pass

Band :	GSM1900	Temperature :	24~25°C
Test Mode :	GPRS 8 Link_Channel 512 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3702	-52.55	-13	-39.55	-66.71	-56.67	4.52	8.64	H	Pass
5552	-40.83	-13	-27.83	-61.44	-46.03	5.2	10.40	H	Pass
7405	-41.67	-13	-28.67	-68.03	-47.7	6.02	12.05	H	Pass
9256	-42.42	-13	-29.42	-67.69	-48.11	7.46	13.15	H	Pass
11107	-42.95	-13	-29.95	-71.09	-47.46	8.85	13.36	H	Pass
12958	-38.19	-13	-25.19	-70.39	-43	8.36	13.17	H	Pass

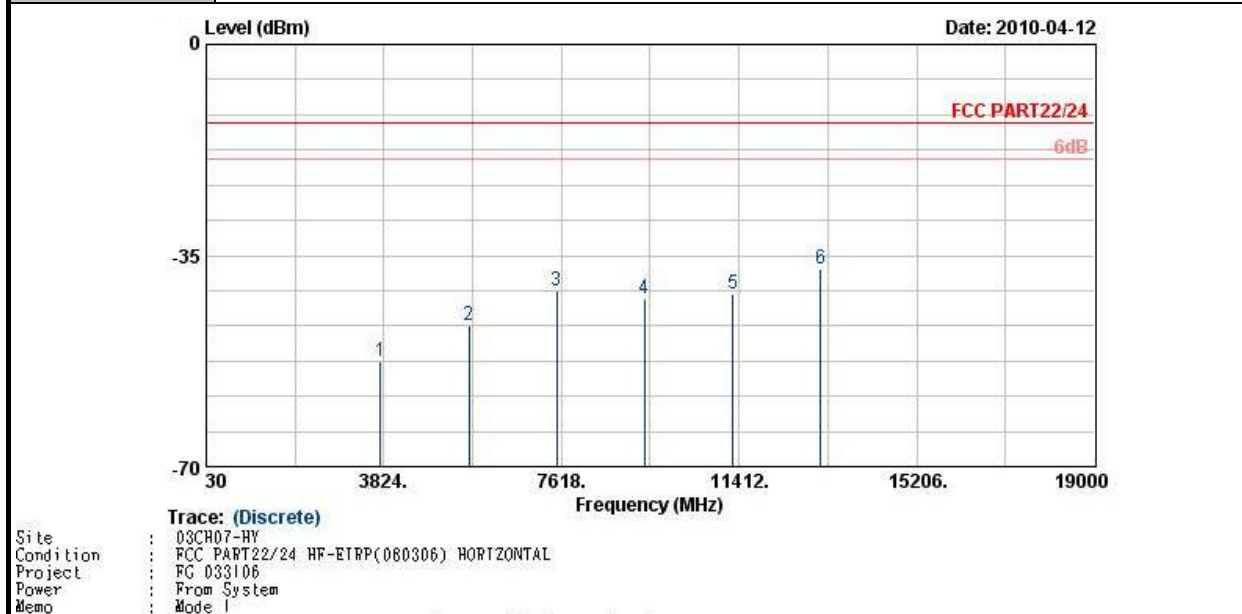
Band :	GSM1900	Temperature :	24~25°C
Test Mode :	GPRS 8 Link_Channel 512 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3702	-51.23	-13	-38.23	-66.38	-55.35	4.52	8.64	V	Pass
5552	-44.93	-13	-31.93	-64.56	-50.13	5.2	10.40	V	Pass
7405	-41.79	-13	-28.79	-67.8	-47.82	6.02	12.05	V	Pass
9256	-43.00	-13	-30.00	-68.1	-48.69	7.46	13.15	V	Pass
11107	-43.51	-13	-30.51	-70.94	-48.02	8.85	13.36	V	Pass
12958	-39.34	-13	-26.34	-69.56	-44.15	8.36	13.17	V	Pass

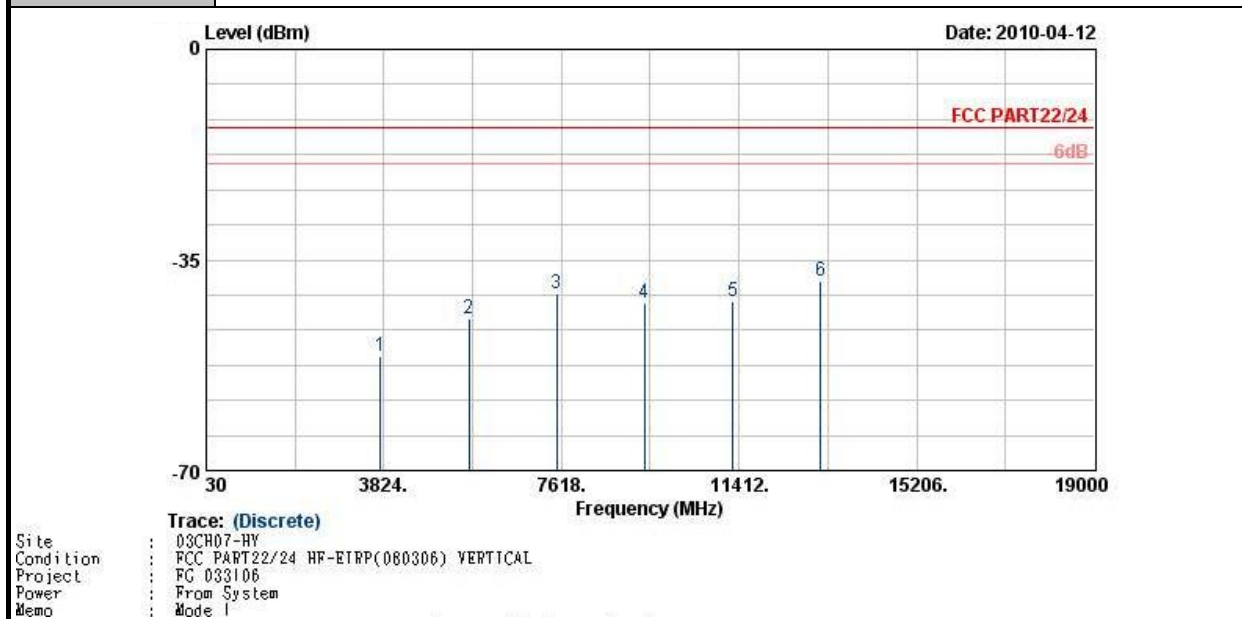


Band :	GSM1900	Temperature :	24~25°C
Test Mode :	GPRS 8 Link_Channel 661 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-52.55	-13	-39.55	-66.9	-55.07	4.88	7.40	H	Pass
5636	-46.67	-13	-33.67	-64.26	-49.93	5.55	8.81	H	Pass
7520	-40.94	-13	-27.94	-67.22	-44.01	6.64	9.71	H	Pass
9396	-42.19	-13	-29.19	-67.65	-46	6.91	10.72	H	Pass
11280	-41.48	-13	-28.48	-69.91	-45.01	7.23	10.76	H	Pass
13160	-37.14	-13	-24.14	-69.57	-39.37	8.8	11.03	H	Pass

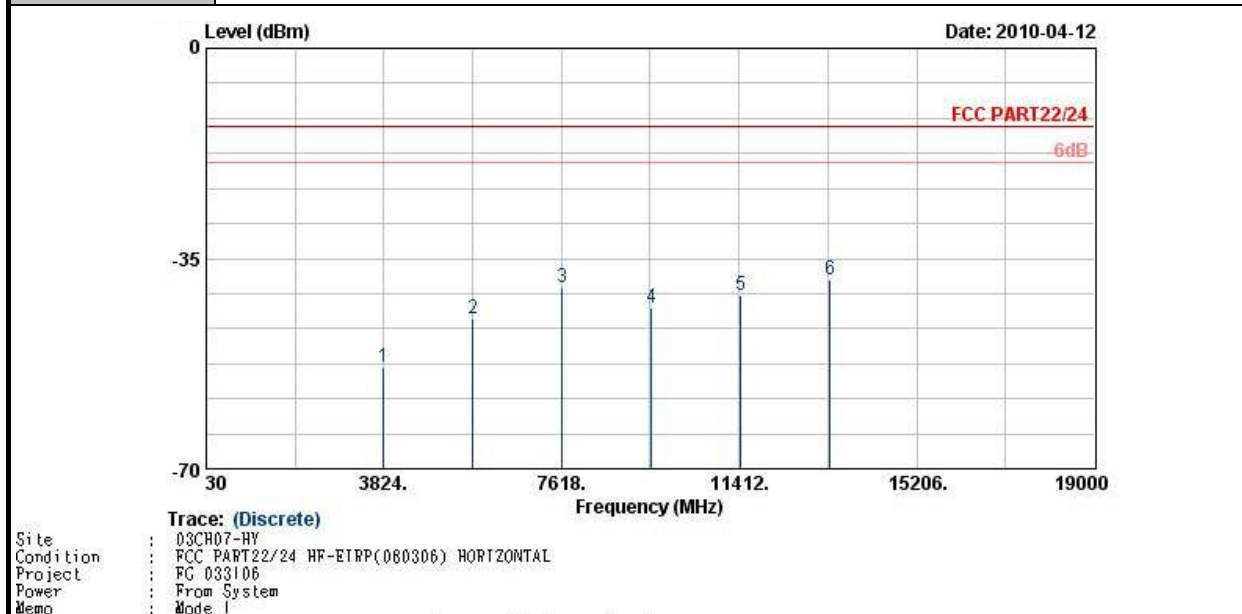
Band :	GSM1900	Temperature :	24~25°C
Test Mode :	GPRS 8 Link_Channel 661 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-50.97	-13	-37.97	-66.27	-54	4.88	7.91	V	Pass
5636	-44.85	-13	-31.85	-63.57	-49.07	5.55	9.77	V	Pass
7520	-40.58	-13	-27.58	-66.63	-44.75	6.64	10.81	V	Pass
9396	-42.25	-13	-29.25	-67.6	-46.86	6.91	11.52	V	Pass
11280	-41.85	-13	-28.85	-69.52	-45.98	7.23	11.36	V	Pass
13160	-38.50	-13	-25.50	-68.95	-41.86	8.8	12.16	V	Pass

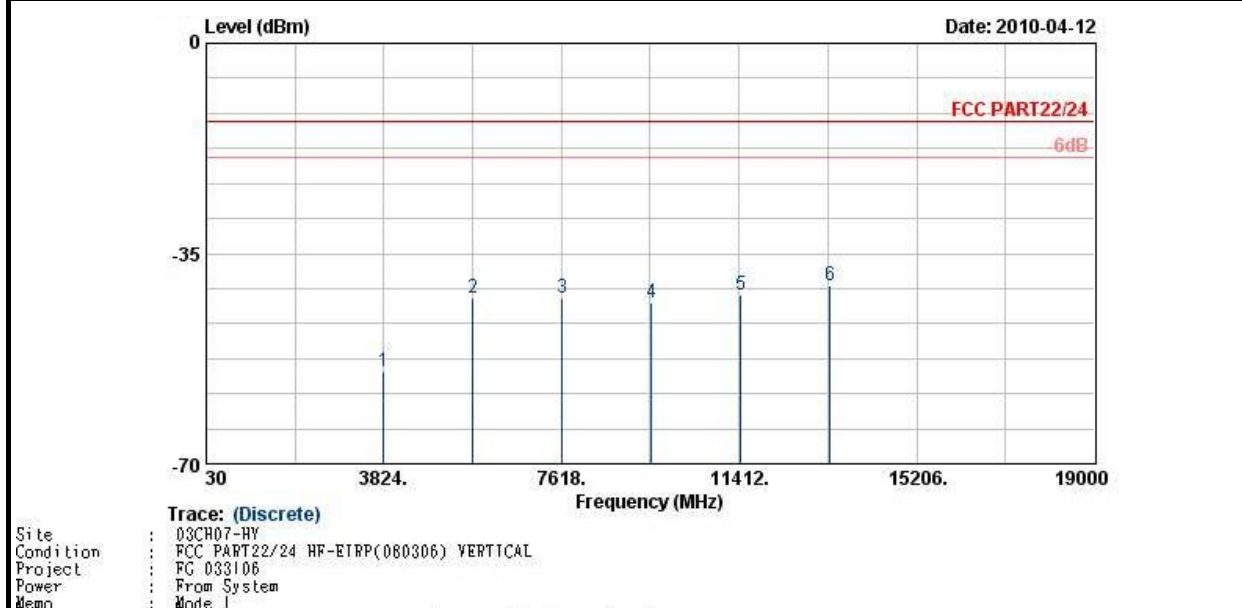


Band :	GSM1900	Temperature :	24~25°C
Test Mode :	GPRS 8 Link_Channel 810 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



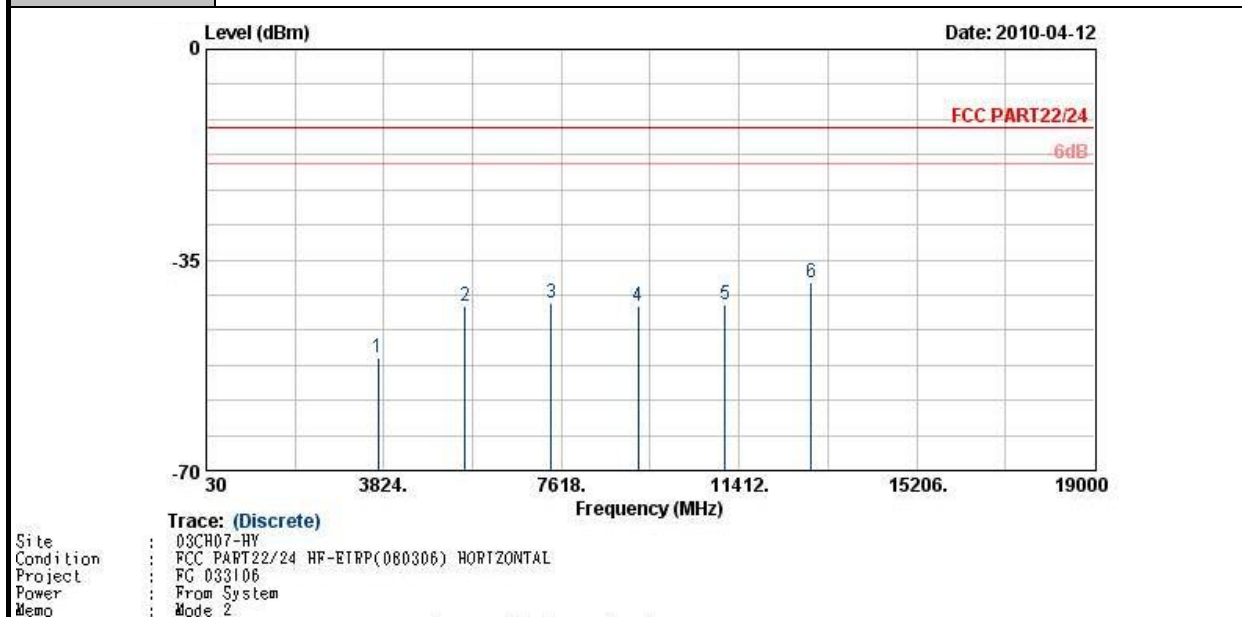
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3817	-53.11	-13	-40.11	-67.72	-57.11	4.78	8.78	H	Pass
5728	-45.08	-13	-32.08	-64.15	-49.82	5.66	10.40	H	Pass
7635	-39.90	-13	-26.90	-65.37	-45.93	6.28	12.31	H	Pass
9543	-43.10	-13	-30.10	-68.93	-49.09	7.2	13.19	H	Pass
11452	-41.24	-13	-28.24	-69.96	-45.87	8.59	13.22	H	Pass
13361	-38.47	-13	-25.47	-71.13	-42.78	9.4	13.71	H	Pass

Band :	GSM1900	Temperature :	24~25°C
Test Mode :	GPRS 8 Link_Channel 810 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



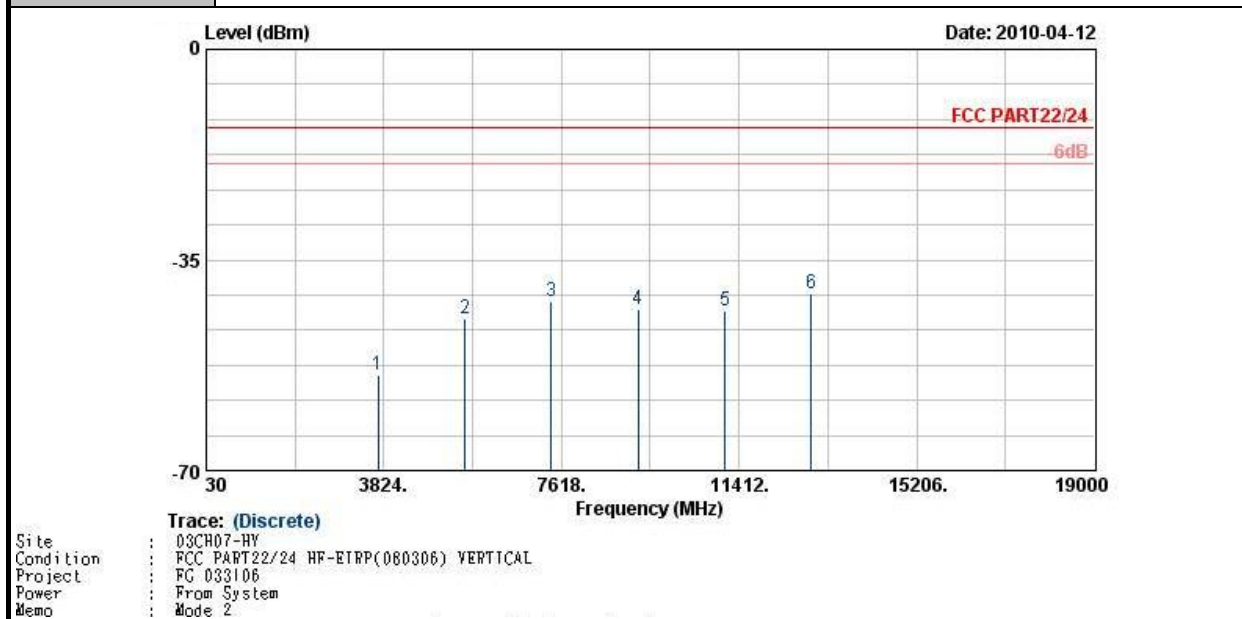
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3817	-54.58	-13	-41.58	-70.08	-58.58	4.78	8.78	V	Pass
5728	-42.44	-13	-29.44	-62.45	-47.18	5.66	10.40	V	Pass
7635	-42.40	-13	-29.40	-67.69	-48.43	6.28	12.31	V	Pass
9543	-43.25	-13	-30.25	-68.83	-49.24	7.2	13.19	V	Pass
11452	-41.92	-13	-28.92	-69.83	-46.55	8.59	13.22	V	Pass
13361	-40.23	-13	-27.23	-70.94	-44.54	9.4	13.71	V	Pass

Band :	GSM1900	Temperature :	24~25°C
Test Mode :	EDGE 8 Link_Channel 512 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



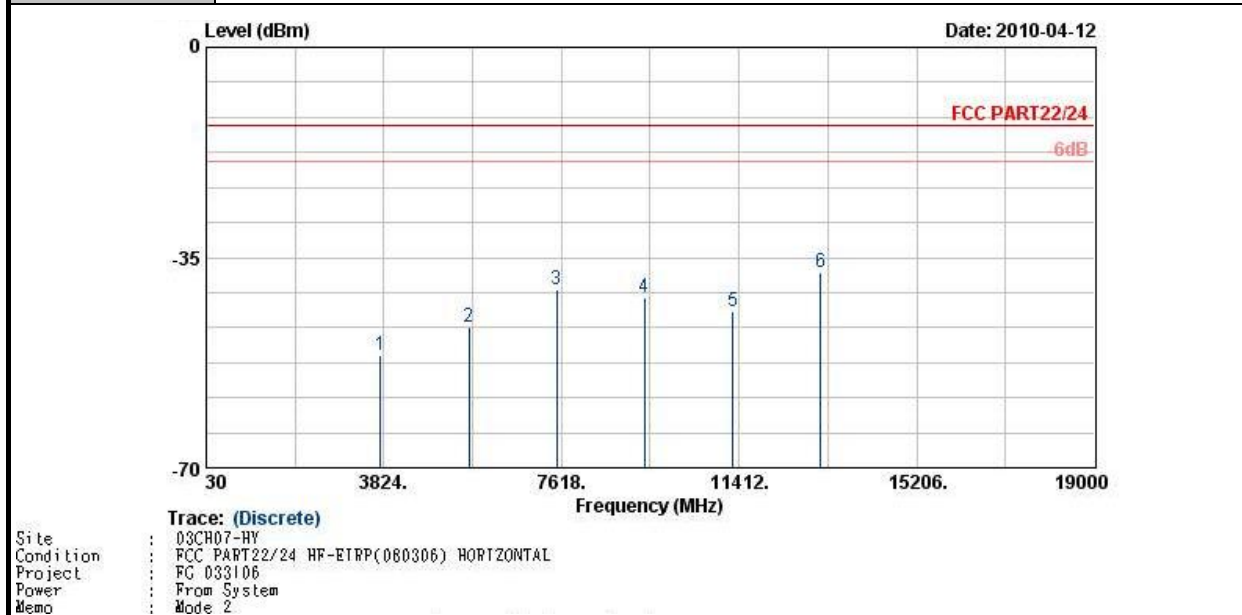
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3696	-51.24	-13	-38.24	-63.36	-55.36	4.52	8.64	H	Pass
5552	-42.69	-13	-29.69	-62.63	-47.89	5.2	10.40	H	Pass
7405	-42.16	-13	-29.16	-68.52	-48.19	6.02	12.05	H	Pass
9256	-42.67	-13	-29.67	-67.94	-48.36	7.46	13.15	H	Pass
11107	-42.46	-13	-29.46	-70.61	-46.97	8.85	13.36	H	Pass
12958	-38.75	-13	-25.75	-70.95	-43.56	8.36	13.17	H	Pass

Band :	GSM1900	Temperature :	24~25°C
Test Mode :	EDGE 8 Link_Channel 512 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



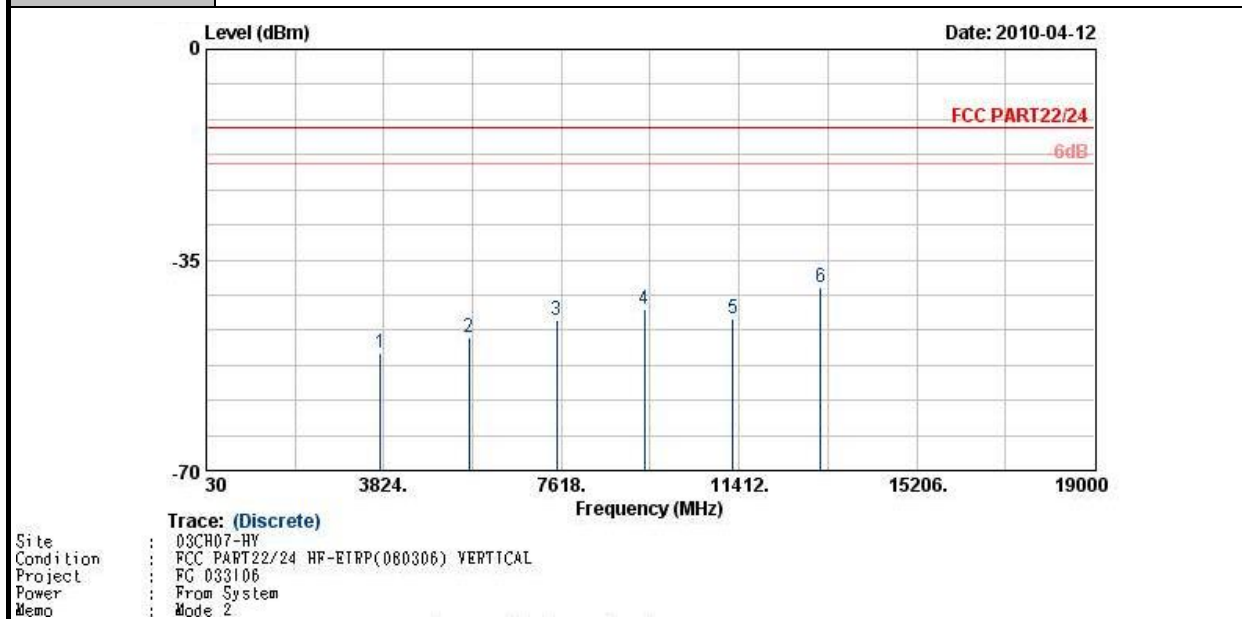
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3696	-54.19	-13	-41.19	-69.34	-58.31	4.52	8.64	V	Pass
5552	-44.71	-13	-31.71	-64.34	-49.91	5.2	10.40	V	Pass
7405	-41.82	-13	-28.82	-67.83	-47.85	6.02	12.05	V	Pass
9256	-43.27	-13	-30.27	-68.37	-48.96	7.46	13.15	V	Pass
11107	-43.33	-13	-30.33	-70.77	-47.84	8.85	13.36	V	Pass
12958	-40.47	-13	-27.47	-70.68	-45.28	8.36	13.17	V	Pass

Band :	GSM1900	Temperature :	24~25°C
Test Mode :	EDGE 8 Link_Channel 661 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-51.17	-13	-38.17	-65.52	-53.69	4.88	7.40	H	Pass
5636	-46.66	-13	-33.66	-64.25	-49.92	5.55	8.81	H	Pass
7520	-40.36	-13	-27.36	-66.63	-43.43	6.64	9.71	H	Pass
9392	-41.76	-13	-28.76	-66.86	-45.57	6.91	10.72	H	Pass
11280	-44.09	-13	-31.09	-72.52	-47.62	7.23	10.76	H	Pass
13160	-37.53	-13	-24.53	-69.96	-39.76	8.8	11.03	H	Pass

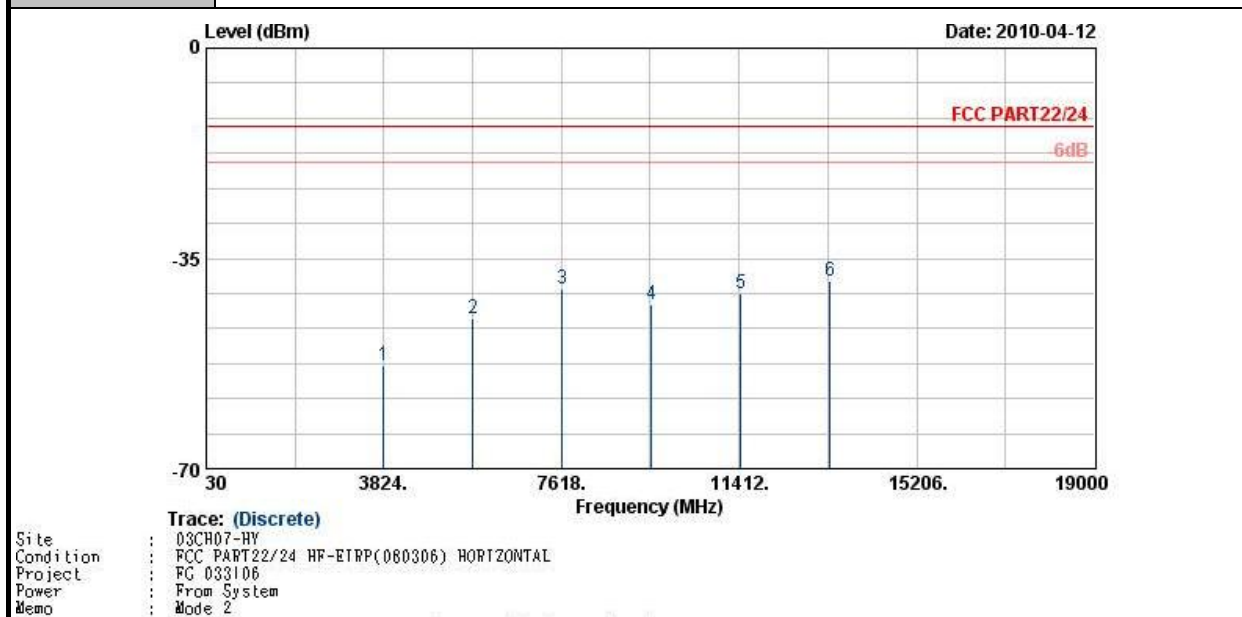
Band :	GSM1900	Temperature :	24~25°C
Test Mode :	EDGE 8 Link_Channel 661 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-50.48	-13	-37.48	-65.78	-53.51	4.88	7.91	V	Pass
5636	-47.91	-13	-34.91	-65.83	-52.13	5.55	9.77	V	Pass
7520	-45.11	-13	-32.11	-65.77	-49.28	6.64	10.81	V	Pass
9396	-43.25	-13	-30.25	-68.6	-47.86	6.91	11.52	V	Pass
11280	-44.80	-13	-31.80	-72.47	-48.93	7.23	11.36	V	Pass
13160	-39.58	-13	-26.58	-70.02	-42.94	8.8	12.16	V	Pass

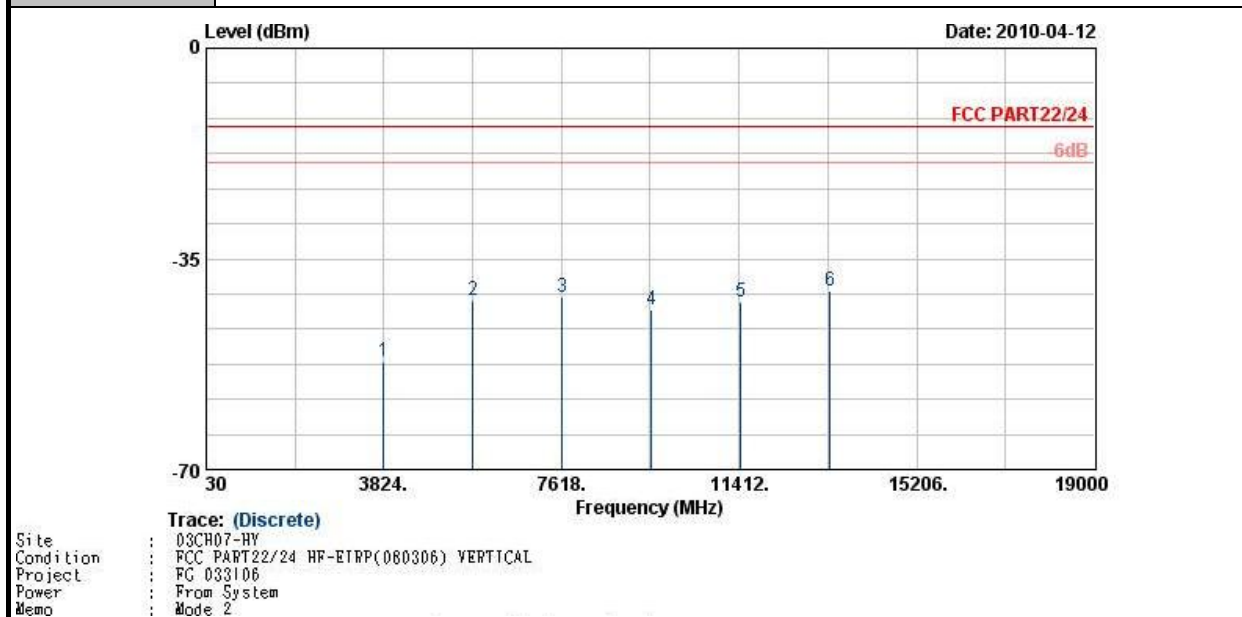


Band :	GSM1900	Temperature :	24~25°C
Test Mode :	EDGE 8 Link_Channel 810 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



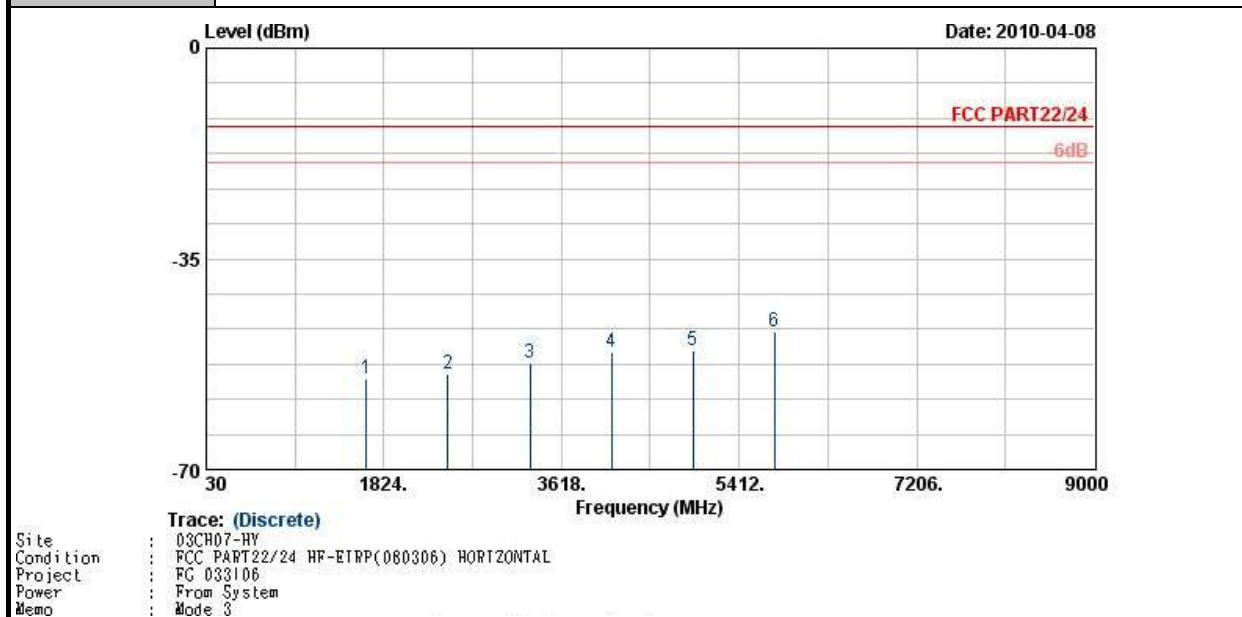
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3817	-52.89	-13	-39.89	-67.51	-56.89	4.78	8.78	H	Pass
5728	-44.95	-13	-31.95	-64.02	-49.69	5.66	10.40	H	Pass
7636	-40.14	-13	-27.14	-65.61	-46.17	6.28	12.31	H	Pass
9543	-42.73	-13	-29.73	-68.56	-48.72	7.2	13.19	H	Pass
11452	-40.91	-13	-27.91	-69.63	-45.54	8.59	13.22	H	Pass
13361	-38.72	-13	-25.72	-71.38	-43.03	9.4	13.71	H	Pass

Band :	GSM1900	Temperature :	24~25°C
Test Mode :	EDGE 8 Link_Channel 810 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



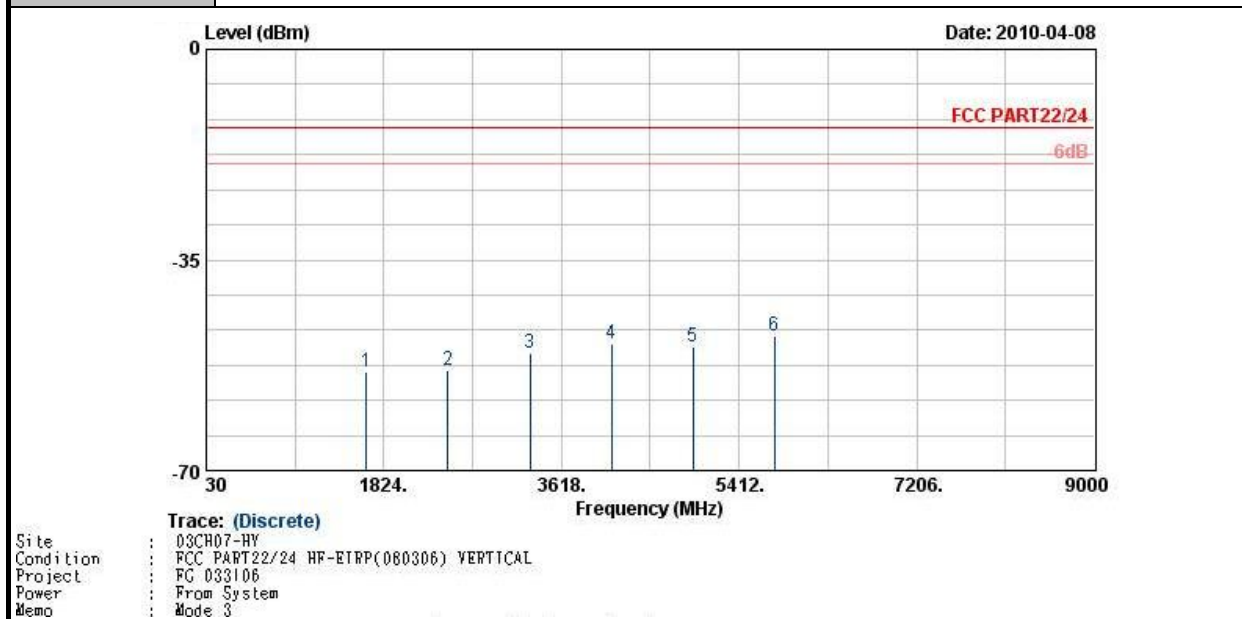
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3817	-51.93	-13	-38.93	-67.44	-55.93	4.78	8.78	V	Pass
5728	-41.87	-13	-28.87	-61.85	-46.61	5.66	10.40	V	Pass
7636	-41.25	-13	-28.25	-66.54	-47.28	6.28	12.31	V	Pass
9543	-43.57	-13	-30.57	-69.16	-49.56	7.2	13.19	V	Pass
11452	-42.12	-13	-29.12	-70.03	-46.75	8.59	13.22	V	Pass
13361	-40.36	-13	-27.36	-71.06	-44.67	9.4	13.71	V	Pass

Band :	WCDMA Band V	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 4132 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



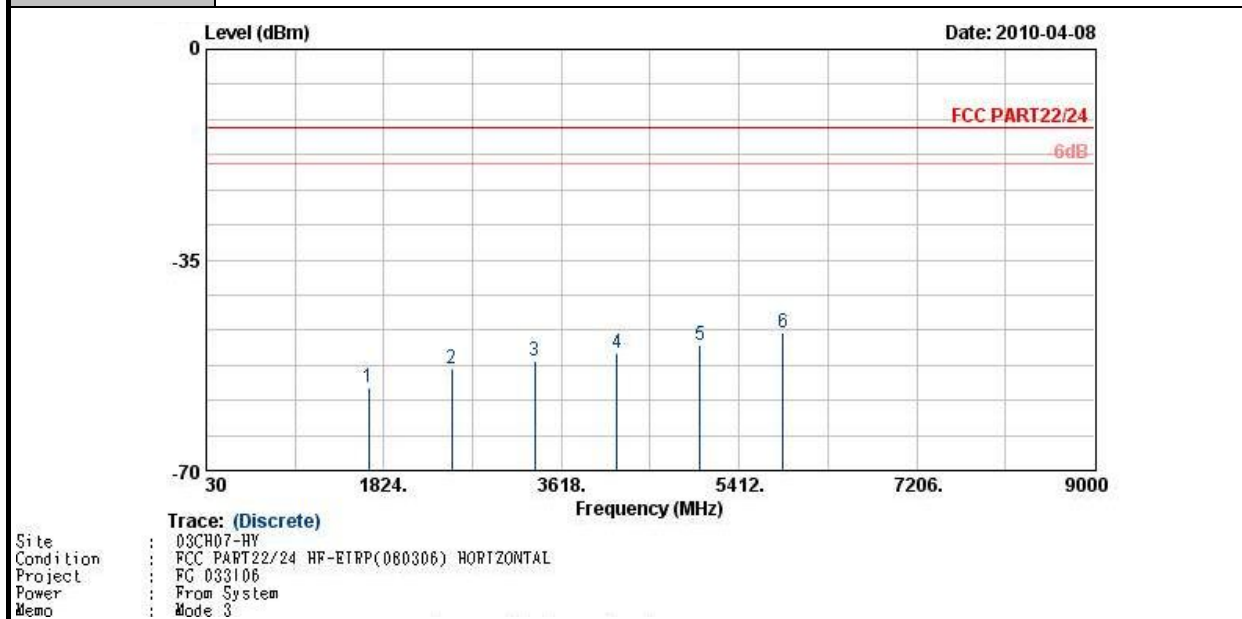
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1645	-54.90	-13	-41.90	-62.65	-55.08	3.1	5.43	H	Pass
2474	-54.02	-13	-41.02	-66.21	-54.01	3.89	6.03	H	Pass
3298	-52.31	-13	-39.31	-65.32	-53.87	4.16	7.87	H	Pass
4123	-50.52	-13	-37.52	-65.77	-52.49	4.88	9.00	H	Pass
4948	-50.12	-13	-37.12	-66.78	-52.51	5.09	9.63	H	Pass
5772	-47.22	-13	-34.22	-67.51	-49.93	5.54	10.40	H	Pass

Band :	WCDMA Band V	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 4132 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



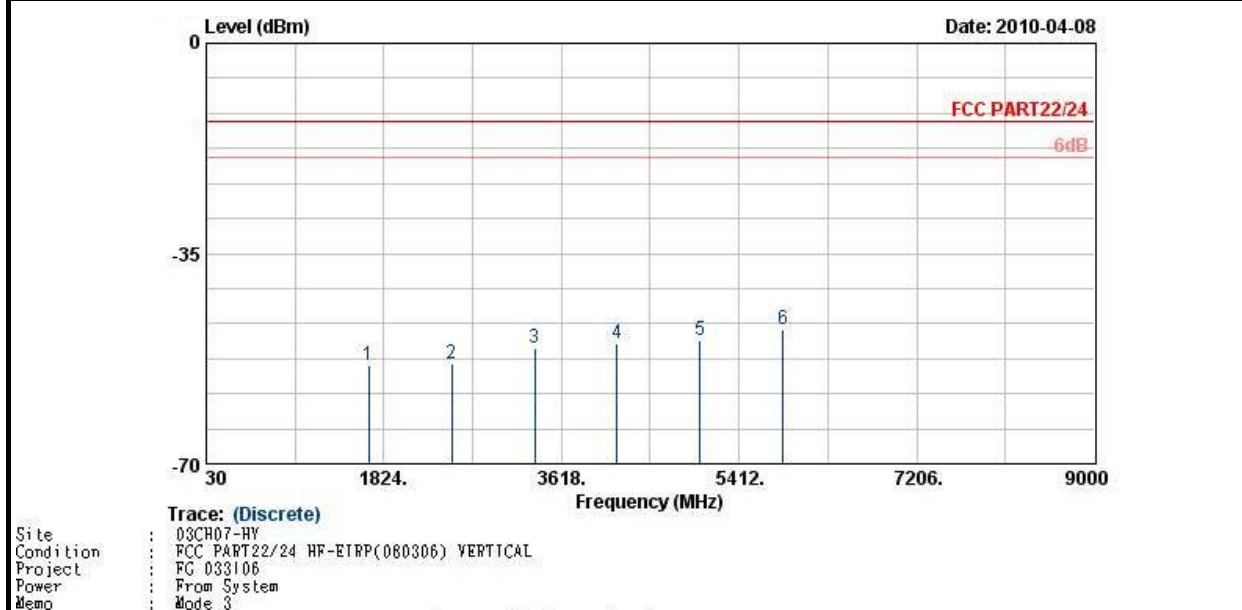
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1645	-53.69	-13	-40.69	-59.83	-53.87	3.1	5.43	V	Pass
2474	-53.24	-13	-40.24	-65.89	-53.23	3.89	6.03	V	Pass
3298	-50.35	-13	-37.35	-64.97	-51.91	4.16	7.87	V	Pass
4123	-49.01	-13	-36.01	-65.07	-50.98	4.88	9.00	V	Pass
4948	-49.49	-13	-36.49	-66.4	-51.88	5.09	9.63	V	Pass
5772	-47.73	-13	-34.73	-67.76	-50.44	5.54	10.40	V	Pass

Band :	WCDMA Band V	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 4182 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-56.26	-13	-43.26	-64.18	-56.11	3.39	5.39	H	Pass
2509	-53.17	-13	-40.17	-65.46	-53.43	3.71	6.12	H	Pass
3345	-51.66	-13	-38.66	-64.76	-54.38	3.13	8.00	H	Pass
4182	-50.47	-13	-37.47	-65.72	-54.31	3.01	9.00	H	Pass
5018	-49.06	-13	-36.06	-65.97	-54.03	2.61	9.73	H	Pass
5854	-47.10	-13	-34.10	-67.71	-50.97	4.38	10.40	H	Pass

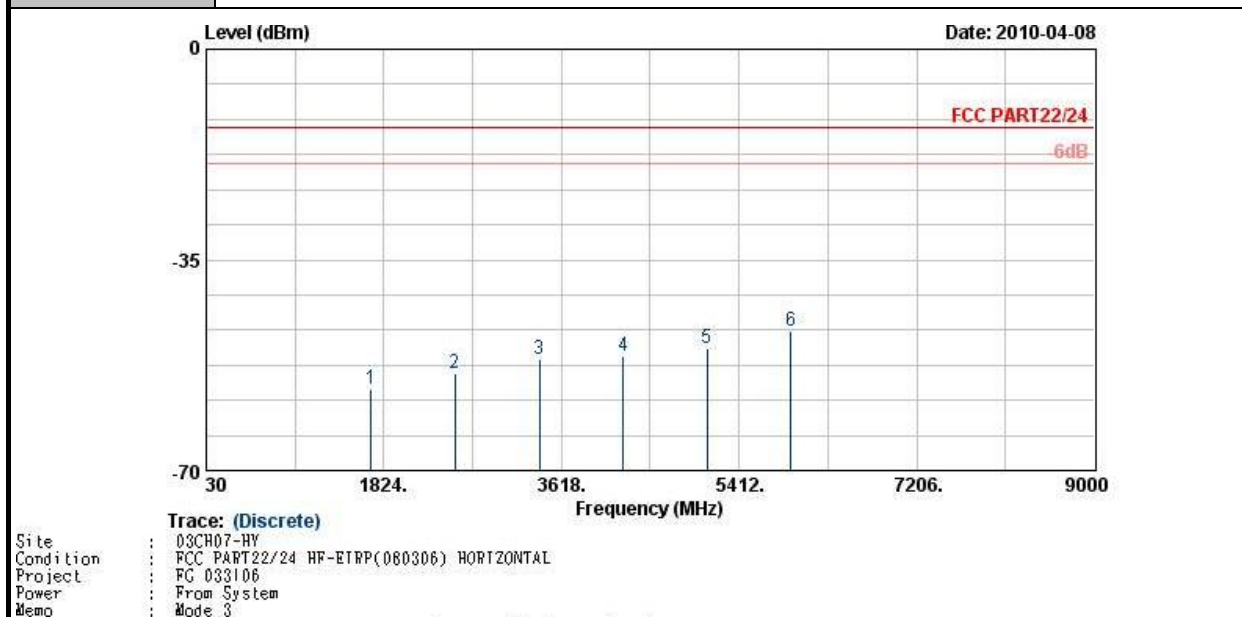
Band :	WCDMA Band V	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 4182 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-53.67	-13	-40.67	-63.84	-53.52	3.39	5.39	V	Pass
2509	-53.34	-13	-40.34	-66.08	-53.6	3.71	6.12	V	Pass
3345	-50.68	-13	-37.68	-65.27	-53.4	3.13	8.00	V	Pass
4182	-49.85	-13	-36.85	-65.93	-53.69	3.01	9.00	V	Pass
5018	-49.34	-13	-36.34	-66.4	-54.31	2.61	9.73	V	Pass
5854	-47.62	-13	-34.62	-67.94	-51.49	4.38	10.40	V	Pass

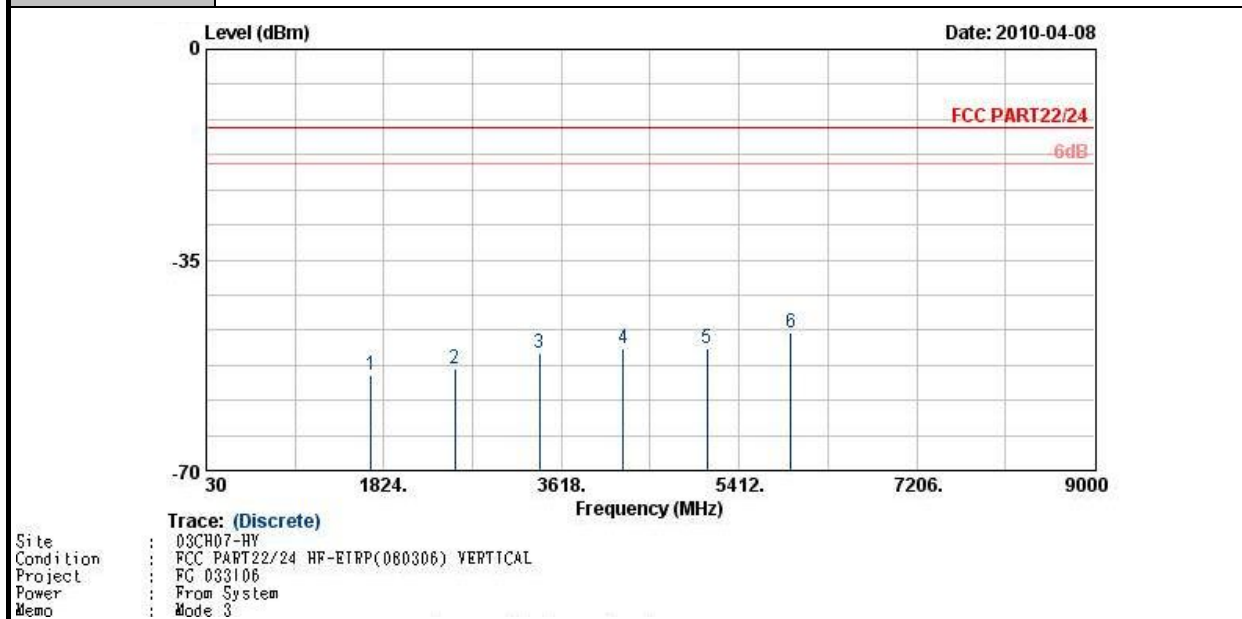


Band :	WCDMA Band V	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 4233 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



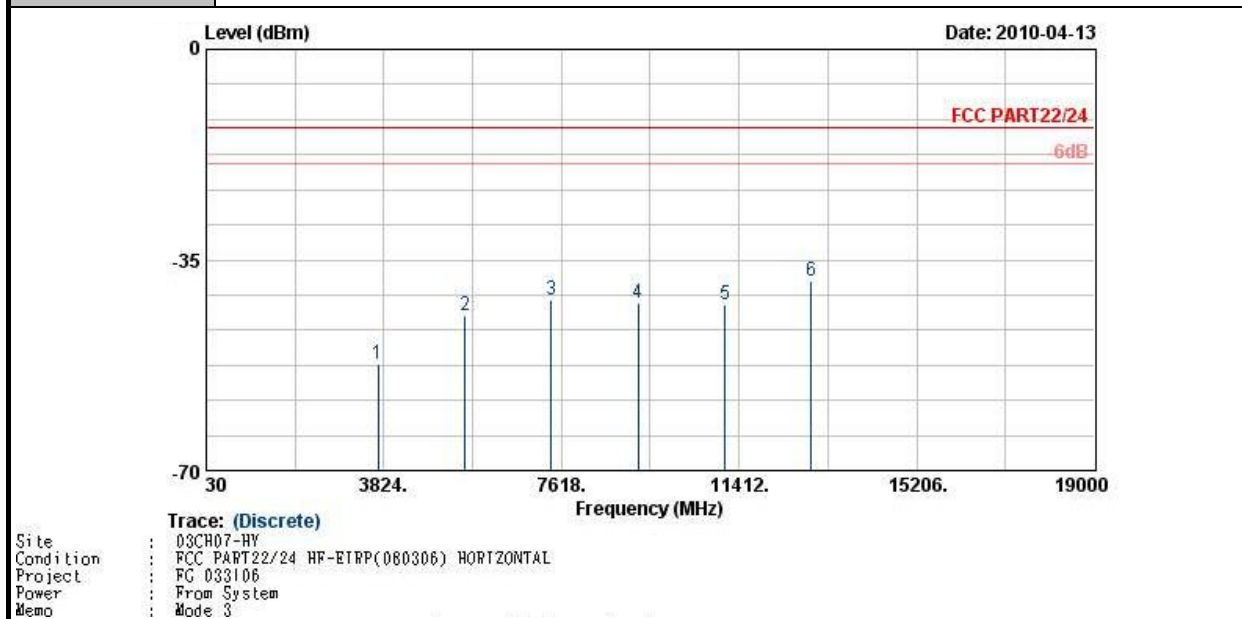
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-56.53	-13	-43.53	-64.54	-56.71	3.02	5.35	H	Pass
2544	-53.99	-13	-40.99	-66.29	-54.3	3.73	6.19	H	Pass
3393	-51.61	-13	-38.61	-64.79	-53.6	3.98	8.12	H	Pass
4241	-51.12	-13	-38.12	-66.36	-53.13	4.84	9.00	H	Pass
5089	-49.69	-13	-36.69	-67	-52	5.36	9.82	H	Pass
5938	-46.87	-13	-33.87	-67.75	-49.29	5.83	10.40	H	Pass

Band :	WCDMA Band V	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 4233 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



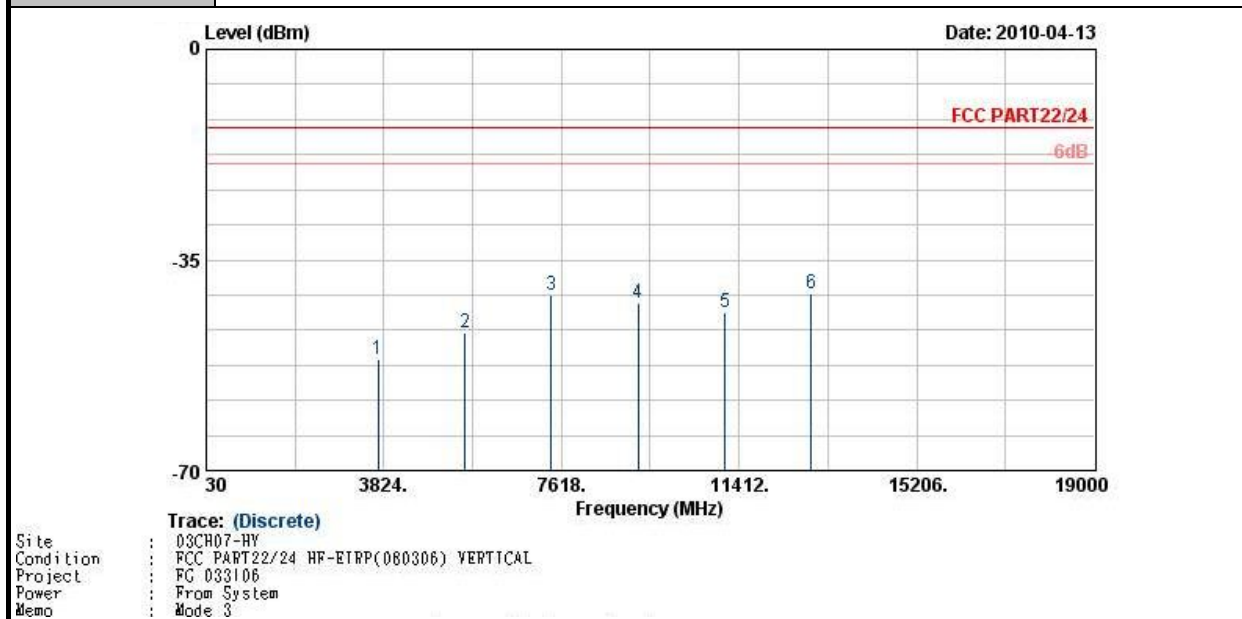
Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1696	-54.08	-13	-41.08	-64.33	-54.26	3.02	5.35	V	Pass
2544	-53.16	-13	-40.16	-66.03	-53.47	3.73	6.19	V	Pass
3393	-50.40	-13	-37.40	-64.97	-52.39	3.98	8.12	V	Pass
4241	-49.72	-13	-36.72	-65.83	-51.73	4.84	9.00	V	Pass
5089	-49.66	-13	-36.66	-67.08	-51.97	5.36	9.82	V	Pass
5938	-47.20	-13	-34.20	-67.76	-49.62	5.83	10.40	V	Pass

Band :	WCDMA Band II	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 9262 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3702	-52.36	-13	-39.36	-66.52	-56.48	4.52	8.64	H	Pass
5552	-44.31	-13	-31.31	-63.84	-49.51	5.2	10.40	H	Pass
7405	-41.74	-13	-28.74	-68.1	-47.77	6.02	12.05	H	Pass
9256	-42.13	-13	-29.13	-67.4	-47.82	7.46	13.15	H	Pass
11107	-42.43	-13	-29.43	-70.57	-46.94	8.85	13.36	H	Pass
12958	-38.47	-13	-25.47	-70.67	-43.28	8.36	13.17	H	Pass

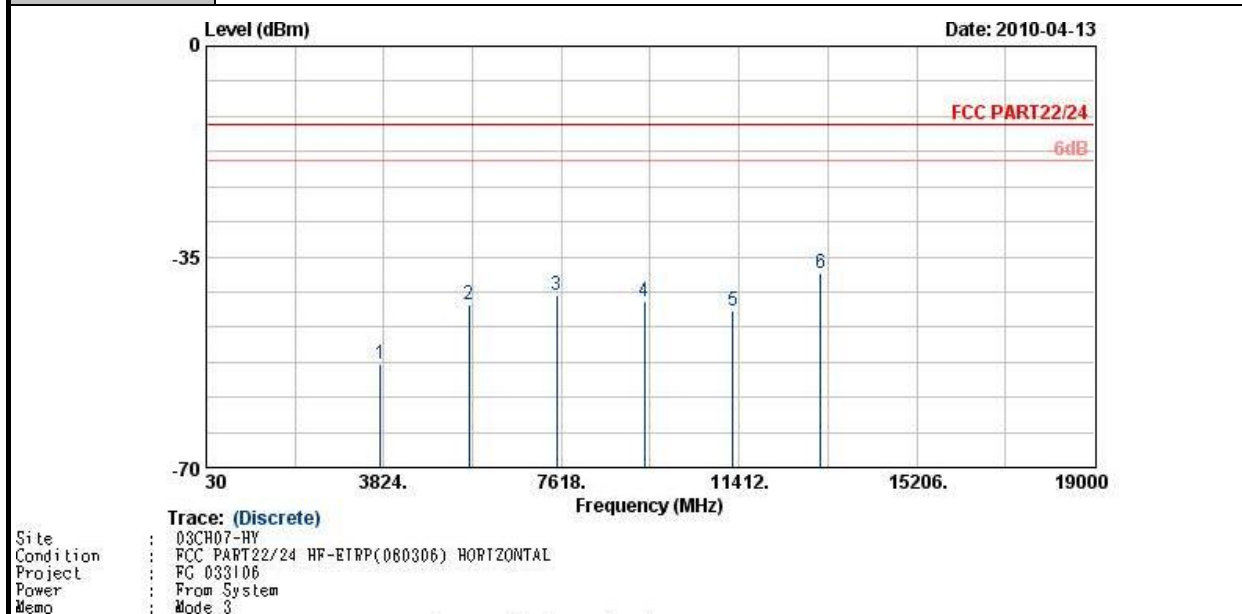
Band :	WCDMA Band II	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 9262 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3702	-51.59	-13	-38.59	-66.73	-55.71	4.52	8.64	V	Pass
5552	-46.98	-13	-33.98	-66.25	-52.18	5.2	10.40	V	Pass
7405	-40.90	-13	-27.90	-66.91	-46.93	6.02	12.05	V	Pass
9256	-42.22	-13	-29.22	-67.33	-47.91	7.46	13.15	V	Pass
11107	-43.74	-13	-30.74	-71.17	-48.25	8.85	13.36	V	Pass
12958	-40.66	-13	-27.66	-70.88	-45.47	8.36	13.17	V	Pass

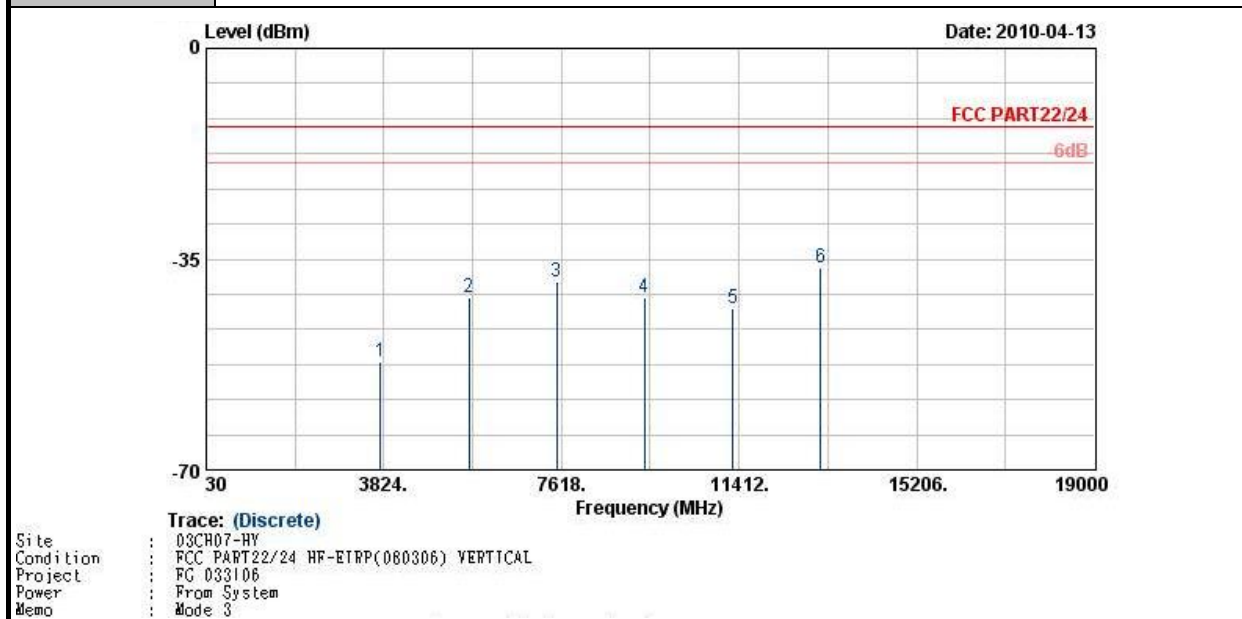


Band :	WCDMA Band II	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 9400 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-52.84	-13	-39.84	-67.46	-55.36	4.88	7.40	H	Pass
5636	-42.97	-13	-29.97	-63.83	-46.23	5.55	8.81	H	Pass
7520	-41.45	-13	-28.45	-67.56	-44.52	6.64	9.71	H	Pass
9396	-42.44	-13	-29.44	-67.95	-46.25	6.91	10.72	H	Pass
11280	-43.93	-13	-30.93	-72.51	-47.46	7.23	10.76	H	Pass
13160	-37.85	-13	-24.85	-70.33	-40.08	8.8	11.03	H	Pass

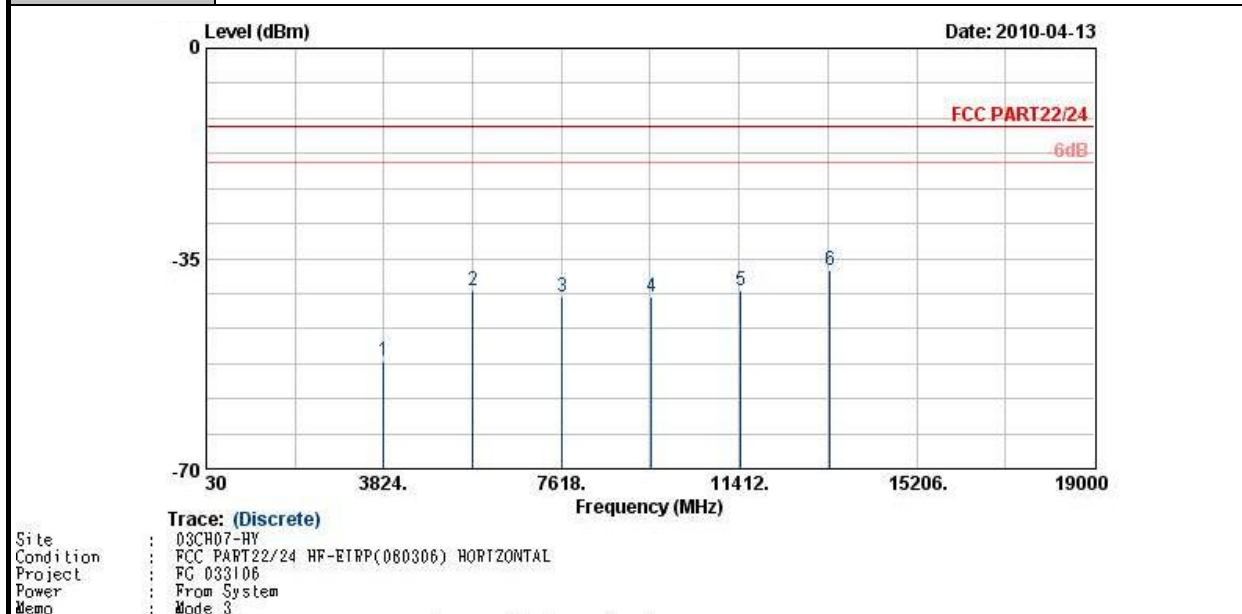
Band :	WCDMA Band II	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 9400 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-51.92	-13	-38.92	-67.05	-54.95	4.88	7.91	V	Pass
5636	-41.40	-13	-28.40	-63.22	-45.62	5.55	9.77	V	Pass
7520	-38.89	-13	-25.89	-66.1	-43.06	6.64	10.81	V	Pass
9396	-41.32	-13	-28.32	-67.63	-45.93	6.91	11.52	V	Pass
11280	-43.11	-13	-30.11	-72.29	-47.24	7.23	11.36	V	Pass
13160	-36.35	-13	-23.35	-69.96	-39.71	8.8	12.16	V	Pass

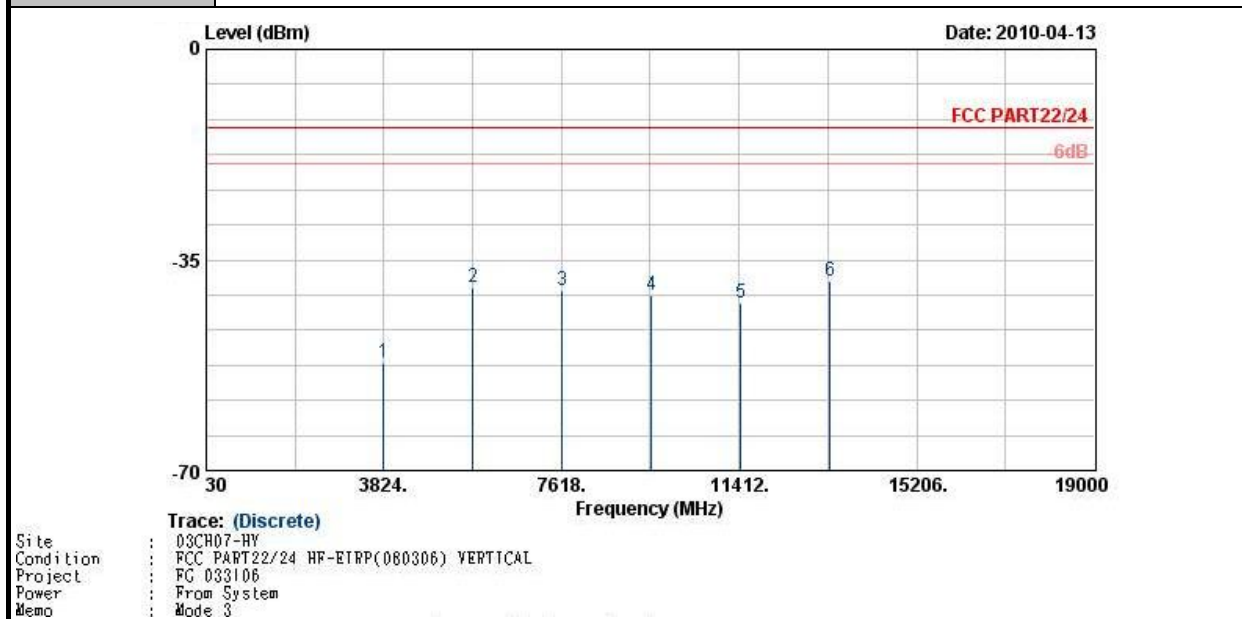


Band :	WCDMA Band II	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 9538 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



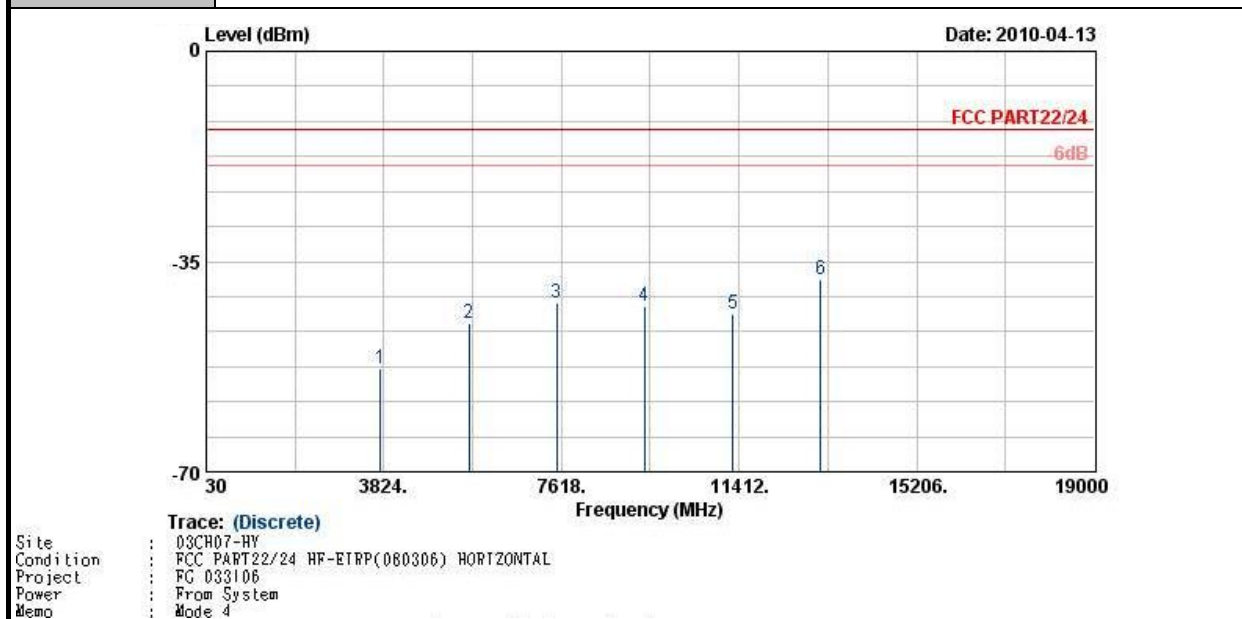
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3817	-51.97	-13	-38.97	-68.07	-55.97	4.78	8.78	H	Pass
5728	-40.23	-13	-27.23	-62.57	-44.97	5.66	10.40	H	Pass
7635	-41.26	-13	-28.26	-67.61	-47.29	6.28	12.31	H	Pass
9543	-41.37	-13	-28.37	-69.06	-47.36	7.2	13.19	H	Pass
11452	-40.23	-13	-27.23	-69.91	-44.86	8.59	13.22	H	Pass
13361	-36.85	-13	-23.85	-71.41	-41.16	9.4	13.71	H	Pass

Band :	WCDMA Band II	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 9538 (With USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



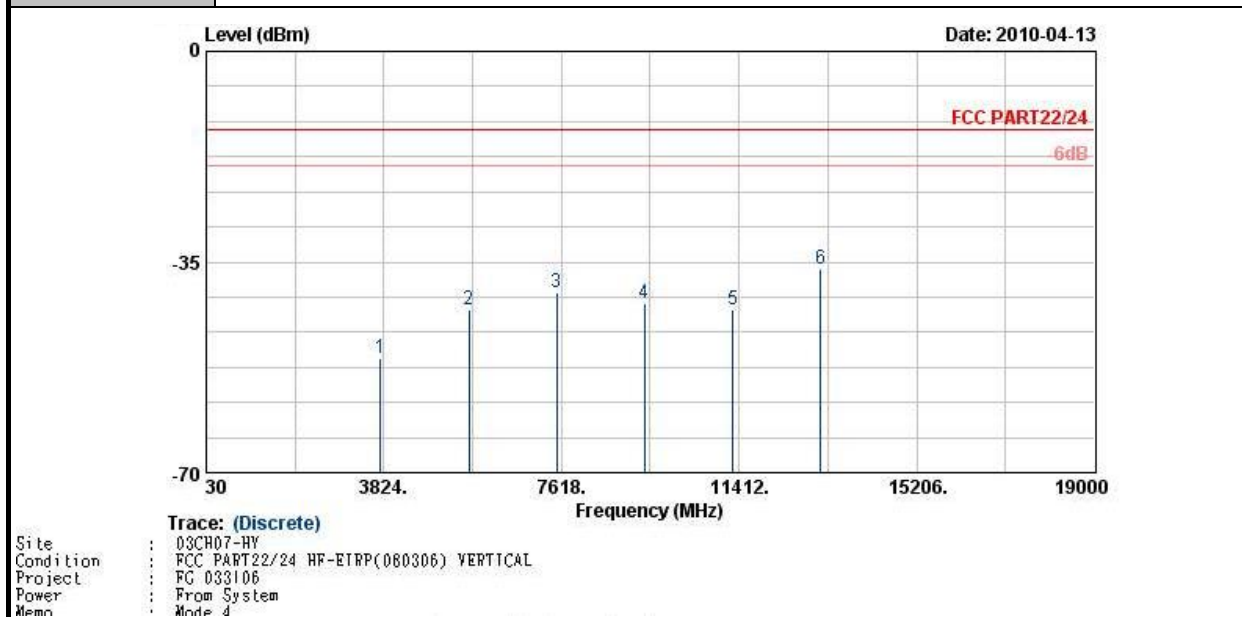
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3817	-51.94	-13	-38.94	-68.04	-55.94	4.78	8.78	V	Pass
5728	-39.68	-13	-26.68	-62.02	-44.42	5.66	10.40	V	Pass
7635	-40.19	-13	-27.19	-66.46	-46.22	6.28	12.31	V	Pass
9543	-40.88	-13	-27.88	-67.92	-46.87	7.2	13.19	V	Pass
11452	-42.13	-13	-29.13	-70.3	-46.76	8.59	13.22	V	Pass
13361	-38.57	-13	-25.57	-70.44	-42.88	9.4	13.71	V	Pass

Band :	WCDMA Band II	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 9400 (Without USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-52.83	-13	-39.83	-67.45	-55.35	4.88	7.40	H	Pass
5636	-45.20	-13	-32.20	-66.06	-48.46	5.55	8.81	H	Pass
7520	-41.84	-13	-28.84	-67.95	-44.91	6.64	9.71	H	Pass
9396	-42.41	-13	-29.41	-67.92	-46.22	6.91	10.72	H	Pass
11280	-43.61	-13	-30.61	-72.19	-47.14	7.23	10.76	H	Pass
13160	-37.95	-13	-24.95	-70.43	-40.18	8.8	11.03	H	Pass

Band :	WCDMA Band II	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link_Channel 9400 (Without USB Cable)	Relative Humidity :	49~53%
Test Engineer :	Cona Huang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-50.95	-13	-37.95	-66.08	-53.98	4.88	7.91	V	Pass
5636	-42.84	-13	-29.84	-64.66	-47.06	5.55	9.77	V	Pass
7520	-40.11	-13	-27.11	-67.32	-44.28	6.64	10.81	V	Pass
9396	-42.01	-13	-29.01	-68.32	-46.62	6.91	11.52	V	Pass
11280	-42.85	-13	-29.85	-72.03	-46.98	7.23	11.36	V	Pass
13160	-36.08	-13	-23.08	-68.69	-39.44	8.8	12.16	V	Pass

3.6 Frequency Stability Measurement

3.6.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.

3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

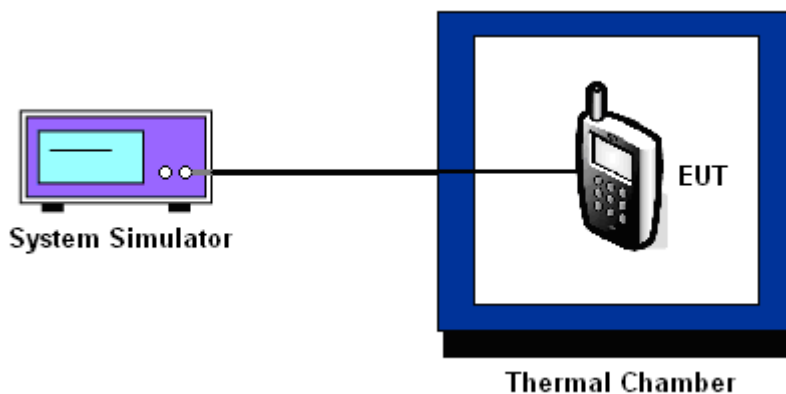
3.6.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized for three hours. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C . The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.
4. If the EUT can not be turned on at -30°C , the testing lowest temperature will be raised in 10°C step until the EUT can be turned on.

3.6.4 Test Procedures for Voltage Variation

1. The EUT was placed in a temperature chamber at $25\pm 5^{\circ}\text{C}$ and connected with the base station.
2. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

3.6.5 Test Setup



3.6.6 Test Result of Temperature Variation

Band :	GSM 850	Channel :	189
Limit (ppm) :	2.5		

Temperature (°C)	GPRS 8		EDGE 8		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	N/A	N/A	N/A	N/A	PASS
-20	N/A	N/A	N/A	N/A	
-15	-6	-0.01	-17	-0.02	
-10	-12	-0.01	19	0.02	
0	-18	-0.02	22	0.03	
10	19	0.02	18	0.02	
20	16	0.02	-17	-0.02	
30	22	0.03	-11	-0.01	
40	-18	-0.02	-12	-0.01	
50	24	0.03	-16	-0.02	

Note: The manufacturer declared that the EUT could work properly between temperatures -15°C~55°C.

Band :	GSM 1900	Channel :	661
Limit (ppm) :	2.5		

Temperature (°C)	GPRS 8		EDGE 8		Result
	Freq. Dev. (Hz)	Deviation (ppm)	Freq. Dev. (Hz)	Deviation (ppm)	
-30	N/A	N/A	N/A	N/A	PASS
-20	N/A	N/A	N/A	N/A	
-15	16	0.01	25	0.01	
-10	19	0.01	19	0.01	
0	-17	-0.01	23	0.01	
10	-16	-0.01	22	0.01	
20	-18	-0.01	26	0.01	
30	23	0.01	-17	-0.01	
40	22	0.01	-18	-0.01	
50	24	0.01	19	0.01	

Note: The manufacturer declared that the EUT could work properly between temperatures -15°C~55°C.

Band :	WCDMA Band V	Channel :	4182
Limit (ppm) :	2.5		

Temperature (°C)	RMC 12.2Kbps		Result
	Freq. Dev. (Hz)	Deviation (ppm)	
-30	N/A	N/A	PASS
-20	N/A	N/A	
-15	-6	-0.01	
-10	-10	-0.01	
0	-11	-0.01	
10	11	0.01	
20	12	0.01	
30	-6	-0.01	
40	-7	-0.01	
50	8	0.01	

Note: The manufacturer declared that the EUT could work properly between temperatures -15°C~55°C.

Band :	WCDMA Band II	Channel :	9400
Limit (ppm) :	2.5		

Temperature (°C)	RMC 12.2Kbps		Result
	Freq. Dev. (Hz)	Deviation (ppm)	
-30	N/A	N/A	PASS
-20	N/A	N/A	
-15	12	0.01	
-10	18	0.01	
0	-19	-0.01	
10	18	0.01	
20	-11	-0.01	
30	22	0.01	
40	16	0.01	
50	-18	-0.01	

Note: The manufacturer declared that the EUT could work properly between temperatures -15°C~55°C.

3.6.7 Test Result of Voltage Variation

Band & Channel	Mode	Voltage (Volt)	Freq. Dev. (Hz)	Deviation (ppm)	Limit (ppm)	Result
GSM 850 CH189	GPRS 8	5.0	8	0.01	2.5	PASS
	EDGE 8	5.0	-16	-0.02		
GSM 1900 CH661	GPRS 8	5.0	23	0.01		
	EDGE 8	5.0	27	0.01		
WCDMA Band V CH4182	RMC 12.2Kbps	5.0	-10	-0.01		
WCDMA Band II CH9400	RMC 12.2Kbps	5.0	-14	-0.01		

Note: Normal Voltage = 5.0V.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
System Simulator	R&S	CMU200	116456	N/A	Jun. 05, 2008	Jun. 04, 2010	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 23, 2009	Jun. 22, 2010	Conducted (TH02-HY)
Thermal Chamber	TEN BILLION	TTH-D35P	TBN-930701	N/A	Jul. 29, 2009	Jul. 28, 2010	Conducted (TH02-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 31, 2009	Oct. 30, 2010	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP	101067	9KHz ~ 30GHz	Dec. 04, 2009	Dec. 03, 2010	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 20, 2009	Aug. 19, 2010	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 14, 2009	Oct. 13, 2010	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Dec.09,2009	Dec. 08, 2010	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32dB. GAIN	Mar. 27, 2010	Mar. 26, 2011	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 KHz~30 MHz	May 22, 2008	May 21, 2010	Radiation (03CH07-HY)
System Simulator	R&S	CMU200	117997	N/A	May 14, 2009	May 13, 2011	-

5 Uncertainty of Evaluation

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

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
Combined Standard Uncertainty $U_c(y)$	1.27		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.54		

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=2)	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 = $20\log(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty $U_c(y)$	2.36				
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72				

6 Certification of TAF Accreditation



Certificate No. : L1190-100107

財團法人全國認證基金會
Taiwan Accreditation Foundation

Certificate of Accreditation

This is to certify that

Sporton International Inc.
EMC & Wireless Communications Laboratory
No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien,
Taiwan, R.O.C.

is accredited in respect of laboratory

Accreditation Criteria	: ISO/IEC 17025:2005
Accreditation Number	: 1190
Originally Accredited	: December 15, 2003
Effective Period	: January 10, 2010 to January 09, 2013
Accredited Scope	: Testing Field, see described in the Appendix
Specific Accreditation Program	: Accreditation Program for Designated Testing Laboratory for Commodities Inspection Accreditation Program for Telecommunication Equipment Testing Laboratory Accreditation Program for BSMI Mutual Recognition Arrangement with Foreign Authorities



Jay-San Chen
President, Taiwan Accreditation Foundation
Date : January 07, 2010

Pl, total 21 pages

The Appendix forms an integral part of this Certificate, which shall be invalid when use without the Appendix



Appendix A. Photographs of EUT

Please refer to Sporton report number EP033106 as below.