



## **4.6 Field Strength of Spurious Radiation**

Equivalent isotropic radiated Power Measurements by substitution method according to ANSI/TIA/EIA-603-A.

### **4.6.1 Measurement Instruments**

As described in chapter 5 of this test report.

### **4.6.2 Test Procedure**

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 reach the maximum spurious emission for both horizontal and vertical polarizations.
5. 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 recored of output power at antenna port.
9. Repeat step 7 to step 8 for another polariztion.
10. Emission level (dBm) = output power + substituion Gain.

### **4.6.3 Test Setup Layout**

As the setup in section 4.3.3.



4.6.4 Test Result

- Test Mode : Mode 1

PCS1900 Radiated Spurious EIRP							
H Polarization				V Polarization			
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)
30.000	-72.270	-13	-59.27	91.290	-79.420	-13	-66.42
123.690	-79.840	-13	-66.84	103.440	-76.460	-13	-63.46
284.880	-80.050	-13	-67.05	248.880	-77.020	-13	-64.02
834.800	-70.900	-13	-57.90	834.800	-68.180	-13	-55.18
854.400	-62.610	-13	-49.61	854.400	-59.830	-13	-46.83
904.800	-64.220	-13	-51.22	906.900	-65.550	-13	-52.55
3758.000	-36.470	-13	-23.47	3758.000	-44.310	-13	-31.31
5638.000	-35.220	-13	-22.22	5638.000	-38.370	-13	-25.37
7518.000	-29.870	-13	-16.87	7518.000	-34.020	-13	-21.02
9398.000	-37.520	-13	-24.52	9398.000	-38.230	-13	-25.23
<b>11278.000</b>	<b>-26.400</b>	<b>-13</b>	<b>-13.40</b>	11278.000	-30.190	-13	-17.19
13158.000	-37.490	-13	-24.49	13158.000	-39.520	-13	-26.52
15038.000	-40.380	-13	-27.38				



- Test Mode : Mode 2

PCS1900 Radiated Spurious EIRP							
H Polarization				V Polarization			
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)
30.000	18.19	94	-75.81	36.480	19.93	94	-74.07
122.880	12.04	94	-81.96	52.680	17.04	94	-76.96
266.790	12.41	94	-81.59	228.180	23.25	94	-70.75
554.800	26.66	94	-67.34	834.800	31.68	94	-68.32
834.800	28.25	94	-65.75	854.400	40.23	94	-53.77
854.400	33.09	94	-60.91	866.300	27.55	94	-66.45
2934.000	49.22	94	-44.78	1208.000	43.39	94	-50.61
3758.000	59.83	94	-34.17	3758.000	62.54	94	-31.46
5638.000	64.52	94	-29.48	5638.000	61.59	94	-32.41
7518.000	64.62	94	-29.38	7518.000	65.43	94	-28.57
9398.000	59.24	94	-34.76	9398.000	61.13	94	-32.87
<b>11278.000</b>	<b>74.90</b>	<b>94</b>	<b>-19.10</b>	11278.000	68.49	94	-25.51
13158.000	69.69	94	-24.31				
15036.000	66.35	94	-27.65				



4.6.5 Test Data

4.6.5.1 Mode 1

Horizontal Polarization

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	30.00	-72.27	-59.27	-13.00	-72.63	0.36	0.00	0.00	Peak	---	---
2 @	123.69	-79.84	-66.84	-13.00	-67.32	-12.52	0.00	0.00	Peak	---	---
3 @	284.88	-80.05	-67.05	-13.00	-69.60	-10.45	0.00	0.00	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	834.80	-70.90	-57.90	-13.00	-69.55	-1.35	0.00	0.00	Peak	---	---
2 @	854.40	-62.61	-49.61	-13.00	-61.44	-1.17	0.00	0.00	Peak	---	---
3 @	904.80	-64.22	-51.22	-13.00	-63.54	-0.68	0.00	0.00	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	1878.00	-53.90			-53.39	-0.51	0.00	0.00	Peak	---	---
2 @	1958.00	-46.43			-45.32	-1.11	0.00	0.00	Peak	---	---

Remark: #1 MS TCH Signal

#2 BS TCH Signal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	3758.00	-36.47	-23.47	-13.00	-44.39	7.92	0.00	0.00	Peak	---	---

memo : FG511807 CH001 Link mode

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	5638.00	-35.22	-22.22	-13.00	-45.19	9.97	0.00	0.00	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	7518.00	-29.87	-16.87	-13.00	-45.67	15.80	0.00	0.00	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	9398.00	-37.52	-24.52	-13.00	-55.74	18.22	0.00	0.00	Peak	---	---



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB		cm	deg
1 @	11278.00	-26.40	-13.40	-13.00	-46.70	20.30	0.00	0.00 Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB		cm	deg
1 @	13158.00	-37.49	-24.49	-13.00	-56.20	18.71	0.00	0.00 Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB		cm	deg
1 @	15038.00	-40.38	-27.38	-13.00	-58.04	17.66	0.00	0.00 Peak	---	---



Vertical Polarization

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	91.29	-79.42	-66.42	-13.00	-70.47	-8.95	0.00	0.00	Peak	---	---
2 @	103.44	-76.46	-63.46	-13.00	-68.73	-7.72	0.00	0.00	Peak	---	---
3 @	284.88	-77.02	-64.02	-13.00	-70.25	-6.77	0.00	0.00	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	834.80	-68.18	-55.18	-13.00	-69.53	1.35	0.00	0.00	Peak	---	---
2 @	854.40	-59.83	-46.83	-13.00	-61.33	1.50	0.00	0.00	Peak	---	---
3 @	906.90	-65.55	-52.55	-13.00	-67.47	1.92	0.00	0.00	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	1878.00	-53.46			-53.05	-0.40	0.00	0.00	Peak	---	---
2 @	1958.00	-39.52			-38.93	-0.60	0.00	0.00	Peak	---	---

Remark: #1 MS TCH Signal  
#2 BS TCH Signal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	3758.00	-44.31	-31.31	-13.00	-50.95	6.64	0.00	0.00	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	5638.00	-38.37	-25.37	-13.00	-47.03	8.65	0.00	0.00	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	7518.00	-34.02	-21.02	-13.00	-47.39	13.37	0.00	0.00	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	9398.00	-38.23	-25.23	-13.00	-55.43	17.20	0.00	0.00	Peak	---	---



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	11278.00	-30.19	-17.19	-13.00	-49.07	18.87	0.00	0.00	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBm	dB	dBm	dBm	dB	dB	dB		cm	deg
1 @	13158.00	-39.52	-26.52	-13.00	-55.32	15.79	0.00	0.00	Peak	---	---





4.6.5.2 Mode 2

Horizontal Polarization

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	30.00	18.19	-75.81	94.00	30.89	18.73	32.12	0.70	Peak	---	---
2 @	122.88	12.04	-81.96	94.00	30.27	12.31	32.01	1.46	Peak	---	---
3 @	266.79	12.41	-81.59	94.00	29.21	12.91	31.92	2.21	Peak	---	---

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	554.80	26.66	-67.34	94.00	36.06	18.62	31.48	3.46	Peak	---	---
2 @	834.80	28.25	-65.75	94.00	34.40	21.21	31.79	4.43	Peak	---	---
3 @	854.40	33.09	-60.91	94.00	39.39	20.83	31.66	4.53	Peak	---	---

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	1878.00	57.31			58.69	29.80	34.97	3.80	Peak	---	---
2 @	1958.00	49.32			49.96	30.37	34.93	3.93	Peak	---	---
3 @	2934.00	49.22	-44.78	94.00	48.91	30.31	35.05	5.04	Peak	---	---

Remark: #1 MS TCH Signal  
#2 BS TCH Signal

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	3758.00	59.83	-34.17	94.00	57.70	30.82	35.21	6.51	Peak	---	---

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	5638.00	64.52	-29.48	94.00	58.76	34.04	35.07	6.79	Peak	---	---

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	7518.00	64.62	-29.38	94.00	53.25	39.51	35.72	7.58	Peak	---	---





	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	9398.00	59.24	-34.76	94.00	47.96	38.80	36.25	8.73	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	11278.00	74.90	-19.10	94.00	60.48	40.43	35.35	9.34	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	13158.00	69.69	-24.31	94.00	52.76	41.19	35.02	10.76	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	15036.00	66.35	-27.65	94.00	47.03	43.33	35.83	11.82	Peak	---	---



Vertical Polarization

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	834.80	31.68	-62.32	94.00	37.83	21.21	31.79	4.43	Peak	---	---
2 @	854.40	40.23	-53.77	94.00	46.52	20.83	31.66	4.53	Peak	---	---
3 @	866.30	27.55	-66.45	94.00	33.48	20.61	31.43	4.90	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	36.48	19.93	-74.07	94.00	35.22	16.17	32.15	0.69	Peak	---	---
2 @	52.68	17.04	-76.96	94.00	39.35	9.24	32.44	0.90	Peak	---	---
3 @	228.18	23.25	-70.75	94.00	43.02	10.08	31.80	1.95	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	1208.00	43.39	-50.61	94.00	50.83	25.27	35.72	3.00	Peak	---	---
2 @	1878.00	59.53			60.90	29.80	34.97	3.80	Peak	---	---

Remark: #2 MS TCH Signal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	3758.00	62.54	-31.46	94.00	60.41	30.82	35.21	6.51	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	5638.00	61.59	-32.41	94.00	55.83	34.04	35.07	6.79	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	7518.00	65.43	-28.57	94.00	54.06	39.51	35.72	7.58	Peak	---	---



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	9398.00	61.13	-32.87	94.00	49.85	38.80	36.25	8.73	Peak	---	---

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	11278.00	68.49	-25.51	94.00	54.08	40.43	35.35	9.34	Peak	---	---

### 4.7 Frequency Stability (Temperature Variation)

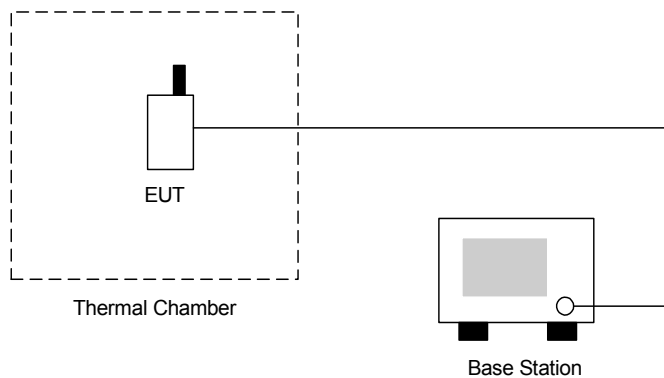
#### 4.7.1 Measurement Instrument

As described in chapter 5 of this test report.

#### 4.7.2 Test Procedure

1. The EUT and test equipment were set up as shown on the following section.
2. With all power removed, the temperature was decreased to -30°C and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was note within one minute.
3. With power OFF, the temperature was raised in 10°C steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change ws noted within one minute.
4. The temperature tests were performed for the worst case.
5. Test data was recorded.

#### 4.7.3 Test Setup Layout



#### 4.7.4 Test Result

▪ Test Mode : PCS 1900 CH661

Temperature(°C)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	33	0.02	2.5	Passed
-20	28	0.01		
-10	36	0.02		
0	-20	-0.01		
10	-26	-0.01		
20	-31	-0.02		
30	-28	-0.01		
40	-33	-0.02		
50	-36	-0.02		

### 4.8 Frequency Stability (Voltage Variation)

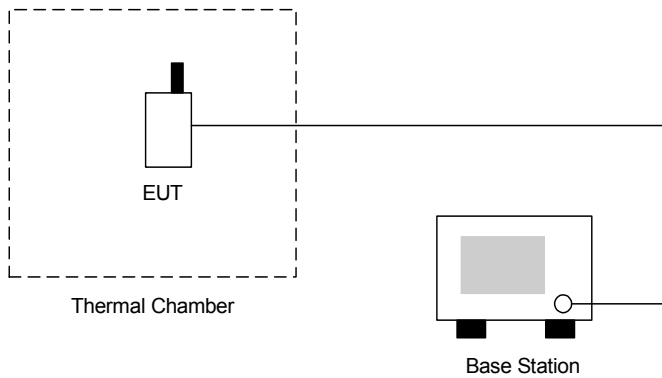
#### 4.8.1 Measurement Instrument

As described in chapter 5 of this test report.

#### 4.8.2 Test Procedure

1. The EUT was placed in a temperature chamber at  $25 \pm 5^\circ\text{C}$  and connected as the following section.
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.

#### 4.8.3 Test Setup Layout



#### 4.8.4 Test Result

- Test Mode : PCS 1900 CH661

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
3.7	-31	-0.02	2.5	Passed
BEP	-28	-0.01		
4.3	-30	-0.02		

Remark:

1. Normal Voltage=3.7V
2. Battery End Point (BEP)=3.1 V



## 5 List of Measurement Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
Spectrum analyzer	Agilent	E4408B	MY44211030	9KHz-26.5GHz	Jul. 27, 2004	Jul. 26, 2005	Radiation (03CH06-HY)
Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jul,09,2004	Jul, 10,2005	Radiation (03CH06-HY)
Controller	CT	SC100	N/A	N/A	N/A	N/A	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Nov. 22, 2004	Nov. 21, 2005	Radiation (03CH06-HY)
Horn Antenna	Com-Power	AH118	071025	1G-18G	Feb. 22, 2005	Feb. 22, 2006	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	9170-249	14G - 40G	Jun. 22, 2004	Jun. 22, 2005	Radiation (03CH06-HY)
PreAmplifier	Com-Power	PA-103	161055	1MHz - 1000MHz	Apr. 26, 2004	Apr. 26, 2005	Radiation (03CH06-HY)
HF Amplifier	MITEQ	AFS44	973248	0.1G - 26.5G	May 20, 2004	May 20, 2005	Radiation (03CH06-HY)
Amplifier	MITEQ	AMF-6F	997165	26G - 40G	Jun. 24, 2004	Jun. 24, 2005	Radiation (03CH06-HY)
Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	N/A	Radiation (03CH06-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	N/A	Radiation (03CH06-HY)
Base Station Emulator	Agilent	E5515C	GB43460754	Qual-band	Jan. 12, 2004	Jan. 12, 2006	Base Station
Radio Communication Tester	R&S	CMU200	105934	Qual-band	Aug. 24, 2004	Aug. 24, 2005	Base Station
Thermal Chamber	Ten Billion	TTH-D35P	N/A	N/A	NCR	NCR	EMS Chamber





## 6 Uncertainty Evaluation

### Uncertainty of Conducted Emission Evaluation (30kHz ~ 1000MHz) (03CH03)

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 Receiver VSWR $\Gamma_1 = 0.20$ Antenna VSWR $\Gamma_2 = 0.23$ Uncertainty = $20\log(1-\Gamma_1*\Gamma_2)$	+0.39/-0.41	U-shaped	0.28
<b>combined standard uncertainty <math>U_c(y)</math></b>	<b>1.27</b>		
<b>Measuring uncertainty for a level of confidence of 95% <math>U=2U_c(y)</math></b>	<b>2.54</b>		

### Uncertainty of Radiated Emission Evaluation (1GHz ~ 40GHz) (03CH03)

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

$$U = \sqrt{\{(1/2)^2 + (0.3/2)^2 + (2^2 + 0.5^2 + 2^2 + 0.25^2 + 2^2)/3 + (0.54)^2/2\}} = 2.2 \text{ for 10m test distance}$$

$$U = \sqrt{\{(1/2)^2 + (0.3/2)^2 + (2^2 + 3^2 + 2^2 + 0.25^2 + 2^2)/3 + (0.54)^2/2\}} = 2.7 \text{ for 3m test distance}$$

END OF TEST REPORT

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