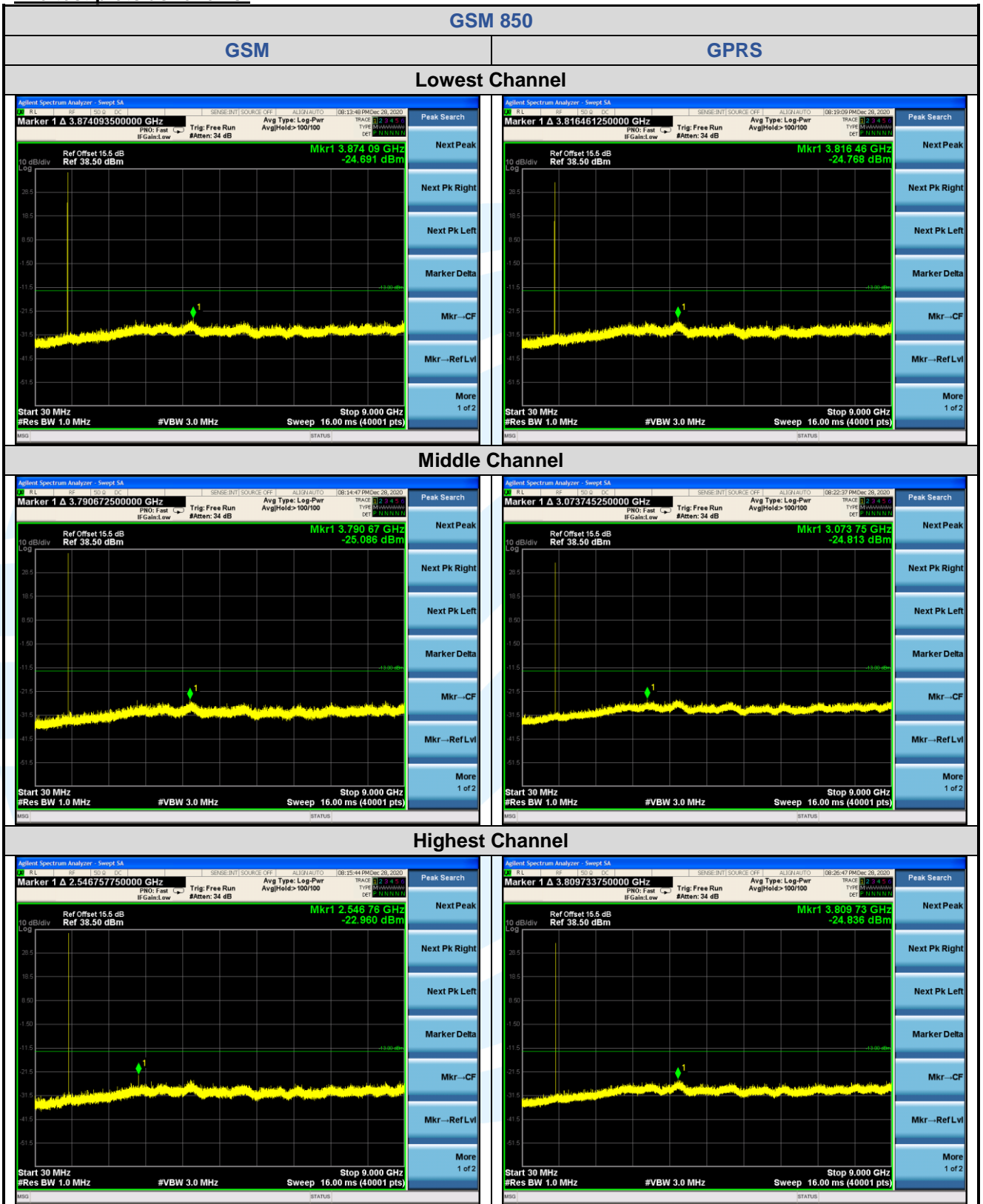


The test plots as follows:



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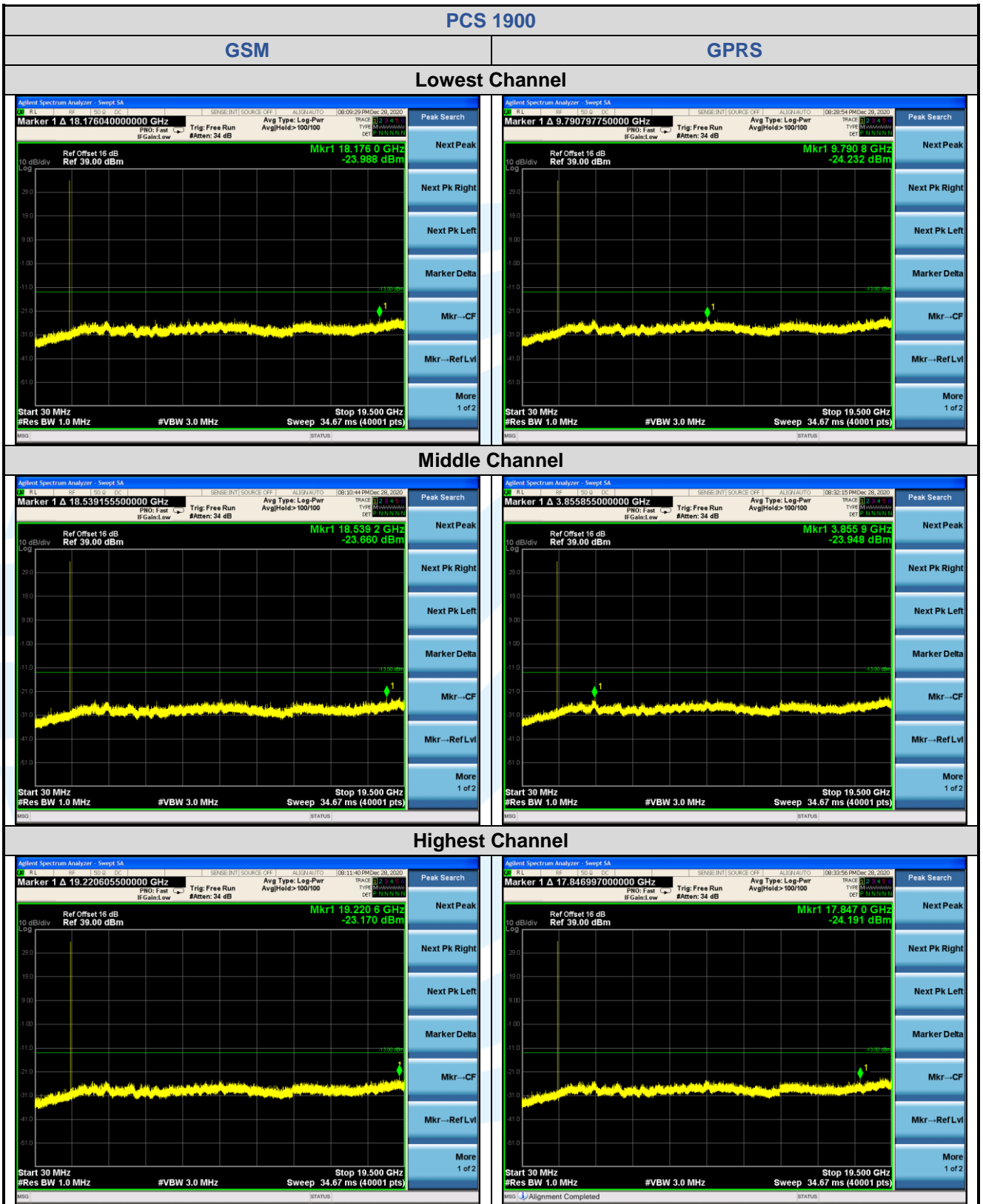
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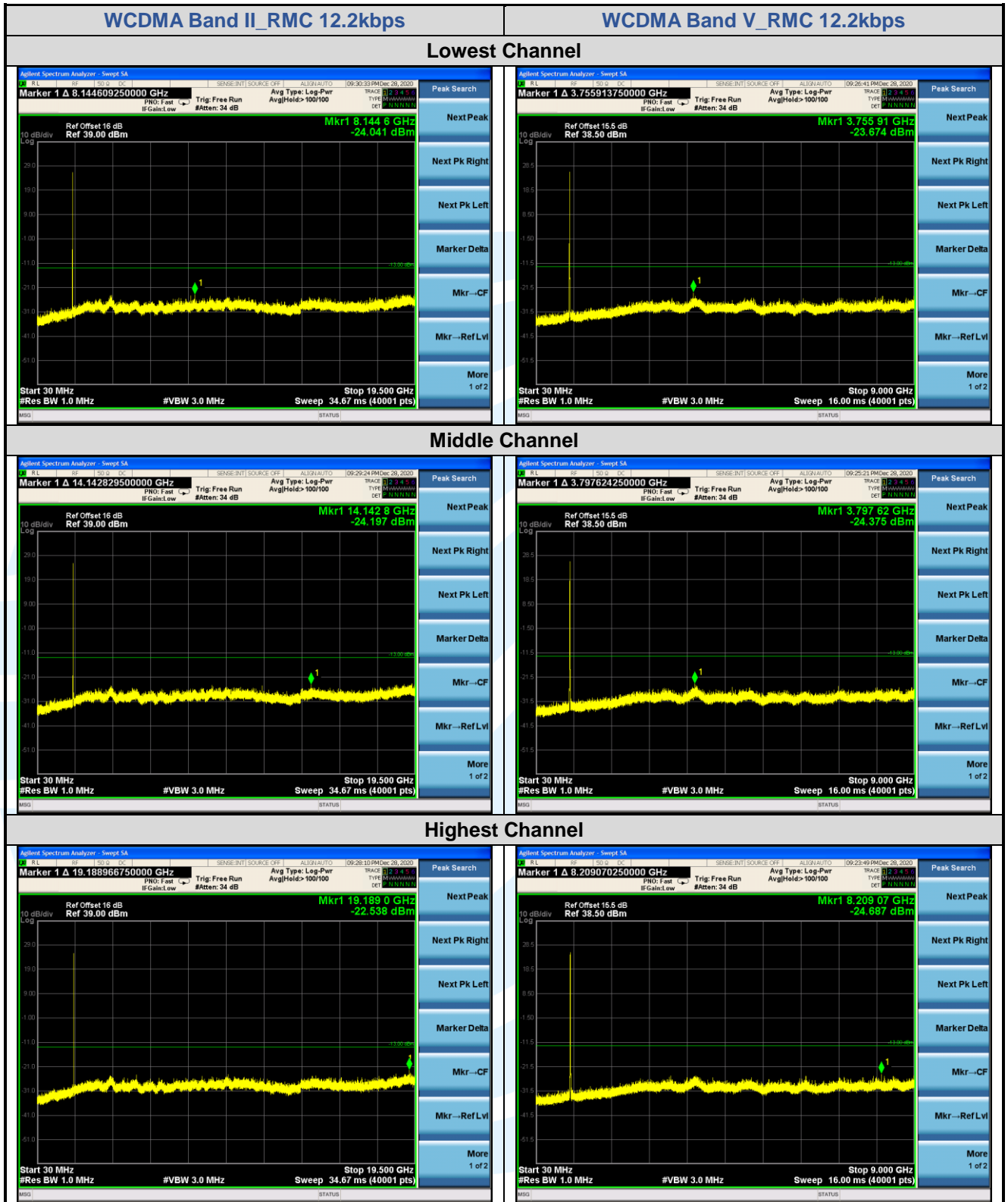
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**Remark:**

1) All the above radiation data, the fundamental frequency is not marked, it may exceed the limit, please ignore it.

## 5.8 FIELD STRENGTH OF SPURIOUS RADIATION

**Test Requirement:** FCC 47 CFR Part 2.1053,  
FCC 47 CFR Part 22.917(a)(b),  
FCC 47 CFR Part 24.238(a)(b),

**Test Method:** ANSI C63.26-2015 & KDB 971168 D01v03r01 Section 7

**Limits:**

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB. The emission limit equal to -13 dBm.

**Test Setup:** Refer to section 4.2.1 for details.

**Test Procedures:** KDB 971168 D01v03r01 Section 7

**Equipment Used:** Refer to section 3 for details.

**Test Result:** Pass

**The measurement data as follows:**

GSM 850							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	35.762	-88.33	30.02	-58.31	-13.00	-45.31	Horizontal
2	95.649	-86.68	25.33	-61.35	-13.00	-48.35	Horizontal
3	669.952	-86.79	40.04	-46.75	-13.00	-33.75	Horizontal
4	1648.400	-45.82	0.04	-45.78	-13.00	-32.78	Horizontal
5	2472.600	-54.07	2.72	-51.35	-13.00	-38.35	Horizontal
6	95.649	-86.38	25.33	-61.05	-13.00	-48.05	Vertical
7	478.139	-87.62	36.29	-51.33	-13.00	-38.33	Vertical
8	798.620	-86.55	40.59	-45.96	-13.00	-32.96	Vertical
9	1648.400	-44.38	-0.74	-45.12	-13.00	-32.12	Vertical
10	2472.600	-57.86	2.32	-55.54	-13.00	-42.54	Vertical
<b>Middle Channel</b>							
1	95.649	-85.93	25.33	-60.60	-13.00	-47.60	Horizontal
2	338.855	-86.99	32.61	-54.38	-13.00	-41.38	Horizontal
3	669.952	-86.18	40.04	-46.14	-13.00	-33.14	Horizontal
4	1673.200	-46.38	0.19	-46.19	-13.00	-33.19	Horizontal
5	2509.800	-49.61	2.82	-46.79	-13.00	-33.79	Horizontal
6	276.382	-87.89	30.52	-57.37	-13.00	-44.37	Vertical
7	565.978	-87.63	38.20	-49.43	-13.00	-36.43	Vertical
8	703.731	-86.53	39.62	-46.91	-13.00	-33.91	Vertical
9	1673.200	-48.62	-0.57	-49.19	-13.00	-36.19	Vertical
10	2509.800	-56.41	2.41	-54.00	-13.00	-41.00	Vertical
<b>Middle Channel</b>							
1	97.002	-85.66	25.42	-60.24	-13.00	-47.24	Horizontal
2	228.617	-87.39	28.77	-58.62	-13.00	-45.62	Horizontal
3	320.331	-86.81	31.74	-55.07	-13.00	-42.07	Horizontal
4	1697.600	-49.07	0.34	-48.73	-13.00	-35.73	Horizontal
5	2546.400	-52.73	2.93	-49.80	-13.00	-36.80	Horizontal
6	95.649	-86.92	25.33	-61.59	-13.00	-48.59	Vertical
7	389.987	-87.47	33.78	-53.69	-13.00	-40.69	Vertical
8	527.571	-86.57	37.44	-49.13	-13.00	-36.13	Vertical
9	1697.600	-54.88	-0.40	-55.28	-13.00	-42.28	Vertical
10	2546.400	-55.66	2.50	-53.16	-13.00	-40.16	Vertical

PCS 1900							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	54.135	-70.89	-5.31	-76.20	-13.00	-63.20	Horizontal
2	607.181	-78.92	9.51	-69.41	-13.00	-56.41	Horizontal
3	945.334	-80.80	14.50	-66.30	-13.00	-53.30	Horizontal
4	3700.400	-54.56	6.78	-47.78	-13.00	-34.78	Horizontal
5	5550.600	-60.84	10.87	-49.97	-13.00	-36.97	Horizontal
6	350.972	-80.18	4.70	-75.48	-13.00	-62.48	Vertical
7	573.988	-80.45	8.90	-71.55	-13.00	-58.55	Vertical
8	945.334	-81.39	13.17	-68.22	-13.00	-55.22	Vertical
9	3700.400	-50.18	6.76	-43.42	-13.00	-30.42	Vertical
10	5550.600	-62.48	11.36	-51.12	-13.00	-38.12	Vertical
<b>Middle Channel</b>							
1	53.756	-70.91	-5.28	-76.19	-13.00	-63.19	Horizontal
2	693.910	-80.26	11.18	-69.08	-13.00	-56.08	Horizontal
3	938.714	-81.88	14.28	-67.60	-13.00	-54.60	Horizontal
4	3760.000	-61.57	6.93	-54.64	-13.00	-41.64	Horizontal
5	5640.000	-61.22	10.84	-50.38	-13.00	-37.38	Horizontal
6	30.425	-79.41	3.89	-75.52	-13.00	-62.52	Vertical
7	546.437	-80.24	8.30	-71.94	-13.00	-58.94	Vertical
8	912.695	-81.08	13.06	-68.02	-13.00	-55.02	Vertical
9	3760.000	-55.47	6.93	-48.54	-13.00	-35.54	Vertical
10	5640.000	-62.67	11.32	-51.35	-13.00	-38.35	Vertical
<b>Highest Channel</b>							
1	53.756	-70.61	-5.28	-75.89	-13.00	-62.89	Horizontal
2	620.117	-80.02	9.73	-70.29	-13.00	-57.29	Horizontal
3	952.000	-82.37	14.62	-67.75	-13.00	-54.75	Horizontal
4	3819.600	-61.29	7.08	-54.21	-13.00	-41.21	Horizontal
5	5729.400	-62.71	10.82	-51.89	-13.00	-38.89	Horizontal
6	421.329	-79.95	6.38	-73.57	-13.00	-60.57	Vertical
7	615.774	-80.10	8.34	-71.76	-13.00	-58.76	Vertical
8	919.132	-81.11	13.14	-67.97	-13.00	-54.97	Vertical
9	3819.600	-57.23	7.11	-50.12	-13.00	-37.12	Vertical
10	5729.400	-61.90	11.27	-50.63	-13.00	-37.63	Vertical

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WCDMA Band II							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>RMC 12.2kbps_ Lowest Channel</b>							
1	53.756	-69.06	-5.28	-74.34	-13.00	-61.34	Horizontal
2	598.707	-79.22	9.31	-69.91	-13.00	-56.91	Horizontal
3	938.714	-81.91	14.28	-67.63	-13.00	-54.63	Horizontal
4	3704.800	-60.13	6.79	-53.34	-13.00	-40.34	Horizontal
5	5557.200	-62.66	10.87	-51.79	-13.00	-38.79	Horizontal
6	590.351	-79.54	8.47	-71.07	-13.00	-58.07	Vertical
7	703.731	-80.05	10.19	-69.86	-13.00	-56.86	Vertical
8	850.760	-79.79	11.71	-68.08	-13.00	-55.08	Vertical
9	3704.800	-60.66	6.77	-53.89	-13.00	-40.89	Vertical
10	5557.200	-61.68	11.36	-50.32	-13.00	-37.32	Vertical
<b>RMC 12.2kbps_ Middle Channel</b>							
1	53.379	-70.15	-5.25	-75.40	-13.00	-62.40	Horizontal
2	684.226	-80.58	10.97	-69.61	-13.00	-56.61	Horizontal
3	912.695	-81.30	13.51	-67.79	-13.00	-54.79	Horizontal
4	3760.000	-58.89	6.93	-51.96	-13.00	-38.96	Horizontal
5	5640.000	-62.81	10.84	-51.97	-13.00	-38.97	Horizontal
6	149.968	-77.74	-2.19	-79.93	-13.00	-66.93	Vertical
7	348.514	-79.50	4.62	-74.88	-13.00	-61.88	Vertical
8	833.013	-80.76	11.80	-68.96	-13.00	-55.96	Vertical
9	3760.000	-56.83	6.93	-49.90	-13.00	-36.90	Vertical
10	5640.000	-61.00	11.32	-49.68	-13.00	-36.68	Vertical
<b>RMC 12.2kbps_ Highest Channel</b>							
1	54.135	-69.41	-5.31	-74.72	-13.00	-61.72	Horizontal
2	669.952	-80.52	10.60	-69.92	-13.00	-56.92	Horizontal
3	925.613	-81.86	13.82	-68.04	-13.00	-55.04	Horizontal
4	3815.200	-61.25	7.07	-54.18	-13.00	-41.18	Horizontal
5	5722.800	-60.89	10.83	-50.06	-13.00	-37.06	Horizontal
6	421.329	-80.32	6.38	-73.94	-13.00	-60.94	Vertical
7	598.707	-79.06	8.22	-70.84	-13.00	-57.84	Vertical
8	972.283	-81.37	13.24	-68.13	-13.00	-55.13	Vertical
9	3815.200	-55.98	7.10	-48.88	-13.00	-35.88	Vertical
10	5722.800	-62.99	11.28	-51.71	-13.00	-38.71	Vertical

WCDMA Band V							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>RMC 12.2kbps_ Lowest Channel</b>							
1	87.914	-86.55	24.79	-61.76	-13.00	-48.76	Horizontal
2	505.789	-87.45	36.53	-50.92	-13.00	-37.92	Horizontal
3	693.910	-87.69	40.62	-47.07	-13.00	-34.07	Horizontal
4	1652.800	-55.21	0.07	-55.14	-13.00	-42.14	Horizontal
5	2479.200	-56.60	2.74	-53.86	-13.00	-40.86	Horizontal
6	97.002	-87.15	25.42	-61.73	-13.00	-48.73	Vertical
7	259.443	-87.98	30.14	-57.84	-13.00	-44.84	Vertical
8	531.291	-87.38	37.51	-49.87	-13.00	-36.87	Vertical
9	1652.800	-60.39	-0.71	-61.10	-13.00	-48.10	Vertical
10	2479.200	-56.95	2.34	-54.61	-13.00	-41.61	Vertical
<b>RMC 12.2kbps_ Middle Channel</b>							
1	97.002	-86.31	25.42	-60.89	-13.00	-47.89	Horizontal
2	430.305	-87.64	34.99	-52.65	-13.00	-39.65	Horizontal
3	611.462	-87.74	39.04	-48.70	-13.00	-35.70	Horizontal
4	1672.800	-61.18	0.19	-60.99	-13.00	-47.99	Horizontal
5	2509.200	-56.67	2.82	-53.85	-13.00	-40.85	Horizontal
6	148.917	-87.52	26.34	-61.18	-13.00	-48.18	Vertical
7	488.326	-86.04	36.54	-49.50	-13.00	-36.50	Vertical
8	713.692	-87.22	39.52	-47.70	-13.00	-34.70	Vertical
9	1672.800	-60.53	-0.57	-61.10	-13.00	-48.10	Vertical
10	2509.200	-53.36	2.41	-50.95	-13.00	-37.95	Vertical
<b>RMC 12.2kbps_ Highest Channel</b>							
1	97.002	-87.53	25.42	-62.11	-13.00	-49.11	Horizontal
2	311.452	-87.99	31.44	-56.55	-13.00	-43.55	Horizontal
3	602.929	-86.64	38.90	-47.74	-13.00	-34.74	Horizontal
4	1693.200	-58.67	0.32	-58.35	-13.00	-45.35	Horizontal
5	2539.800	-55.98	2.91	-53.07	-13.00	-40.07	Horizontal
6	147.875	-87.58	26.24	-61.34	-13.00	-48.34	Vertical
7	516.565	-87.68	37.20	-50.48	-13.00	-37.48	Vertical
8	708.694	-87.68	39.57	-48.11	-13.00	-35.11	Vertical
9	1693.200	-60.10	-0.43	-60.53	-13.00	-47.53	Vertical
10	2539.800	-54.52	2.48	-52.04	-13.00	-39.04	Vertical

Remark:

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

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### 5.9 FREQUENCY STABILITY

**Test Requirement:** FCC 47 CFR Part 2.1055 &  
 FCC 47 CFR Part 22.355 &  
 FCC 47 CFR Part 24.235 &

**Test Method:** ANSI C63.26-2015 & KDB 971168 D01v03r01

**Limits:**

**FCC 47 CFR Part 22.355,**

The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations.

**FCC 47 CFR Part 24.235**

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

**Test Setup:** Refer to section 4.2.2 for details.

**Test Procedures:**

- 1) Use CMW 500 with Frequency Error measurement capability.
  - a) Temp. =  $-30^{\circ}$  to  $+50^{\circ}\text{C}$
  - b) Voltage =low voltage, 3.45 Vdc, Normal, 3.8 Vdc and High voltage, 4.35 Vdc.

2) Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to  $20^{\circ}\text{C}$  and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until  $+50^{\circ}\text{C}$  is reached.

3) Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

**Equipment Used:** Refer to section 3 for details.

**Test Result:** Pass

Modulation	Channel/ Frequency (MHz)	Voltage	Temperature	Deviation	Deviation	Limit	Result
		(Vdc)	( $^{\circ}\text{C}$ )	(Hz)	(ppm)	(ppm)	
<b>GSM 850</b>							
GMSK	190 / 836.6	VL	TN	26	0.0311	$\pm 2.5$	Pass
		VN		23	0.0275	$\pm 2.5$	Pass
		VH		33	0.0394	$\pm 2.5$	Pass
		VN	50	23	0.0275	$\pm 2.5$	Pass
			40	31	0.0371	$\pm 2.5$	Pass
			30	24	0.0287	$\pm 2.5$	Pass
			20	26	0.0311	$\pm 2.5$	Pass
			10	31	0.0371	$\pm 2.5$	Pass
			0	24	0.0287	$\pm 2.5$	Pass
			-10	19	0.0227	$\pm 2.5$	Pass
			-20	23	0.0275	$\pm 2.5$	Pass
			-30	23	0.0275	$\pm 2.5$	Pass

Modulation	Channel/ Frequency (MHz)	Voltage	Temperature	Deviation	Deviation	Limit	Result
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
<b>PCS 1900</b>							
GMSK	661 / 1880.0	VL	TN	29	0.0154	N/A	Pass
		VN		26	0.0138		Pass
		VH		27	0.0144		Pass
		VN	50	26	0.0138		Pass
			40	31	0.0165		Pass
			30	27	0.0144		Pass
			20	24	0.0128		Pass
			10	22	0.0117		Pass
			0	27	0.0144		Pass
			-10	37	0.0197		Pass
			-20	24	0.0128		Pass
			-30	25	0.0133		Pass

Modulation	Channel/ Frequency (MHz)	Voltage	Temperature	Deviation	Deviation	Limit	Result
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
<b>WCDMA Band II</b>							
RMC 12.2kbps	9400 / 1880.0	VL	TN	25	0.0133	N/A	Pass
		VN		31	0.0165		Pass
		VH		31	0.0165		Pass
		VN	50	29	0.0154		Pass
			40	25	0.0133		Pass
			30	29	0.0154		Pass
			20	31	0.0165		Pass
			10	19	0.0101		Pass
			0	29	0.0154		Pass
			-10	23	0.0122		Pass
			-20	33	0.0176		Pass
			-30	23	0.0122		Pass

Modulation	Channel/ Frequency (MHz)	Voltage	Temperature	Deviation	Deviation	Limit	Result
		(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
<b>WCDMA Band V</b>							
RMC 12.2kbps	4182 / 836.4	VL	TN	27	0.0323	± 2.5	Pass
		VN		28	0.0335	± 2.5	Pass
		VH		31	0.0371	± 2.5	Pass
		VN	50	22	0.0263	± 2.5	Pass
			40	27	0.0323	± 2.5	Pass
			30	23	0.0275	± 2.5	Pass
			20	25	0.0299	± 2.5	Pass
			10	26	0.0311	± 2.5	Pass
			0	27	0.0323	± 2.5	Pass
			-10	29	0.0347	± 2.5	Pass
			-20	26	0.0311	± 2.5	Pass
			-30	31	0.0371	± 2.5	Pass

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## APPENDIX 1 PHOTOS OF TEST SETUP

See test photos attached in Appendix 1 for the actual connections between Product and support equipment.

## APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal photos.

\*\*\* End of Report \*\*\*

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