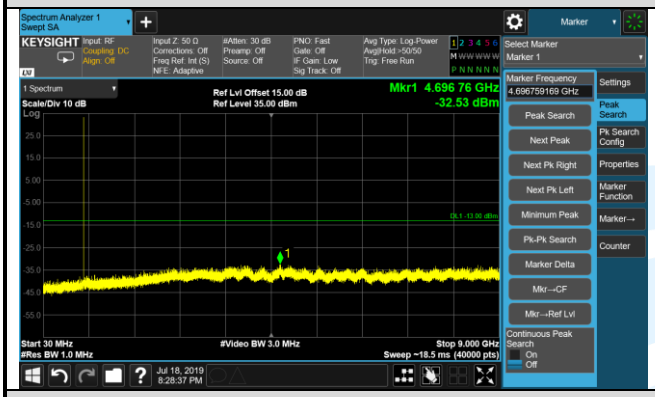
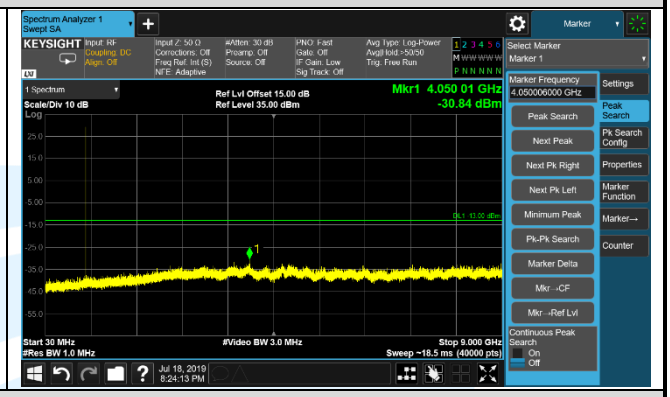
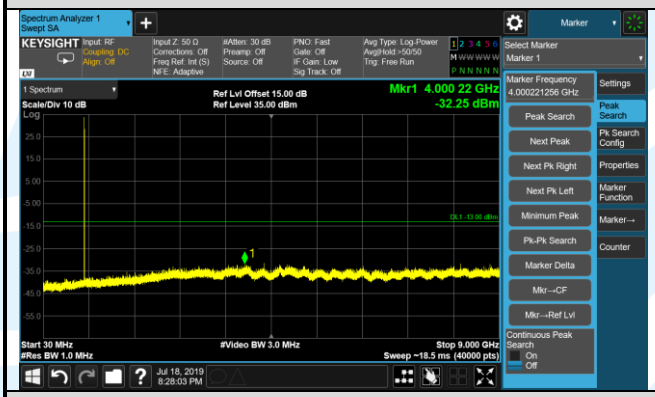
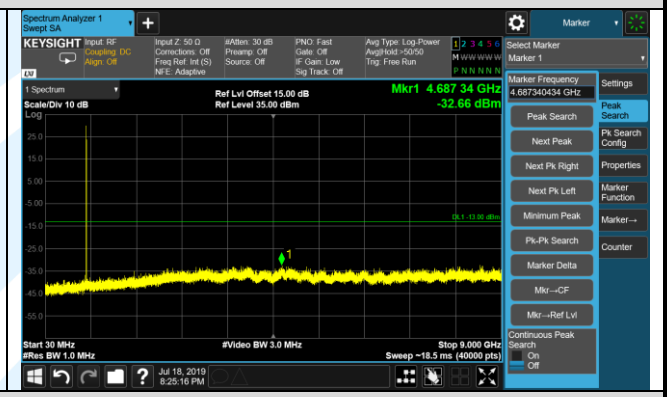
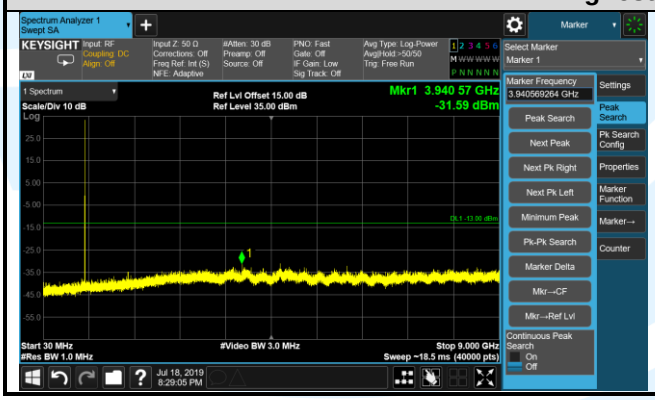
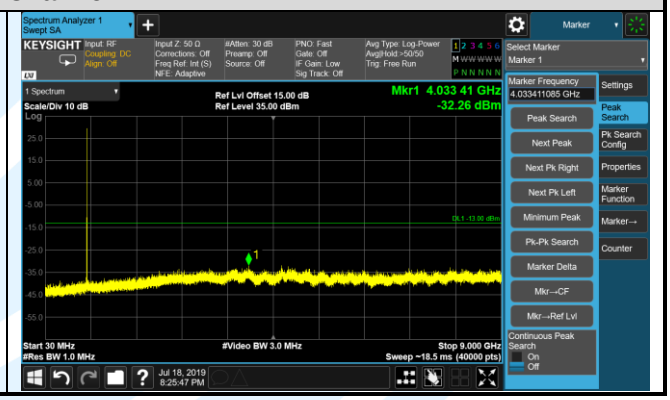
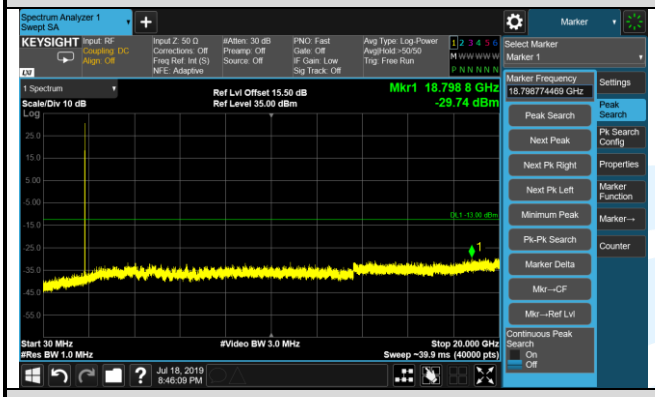
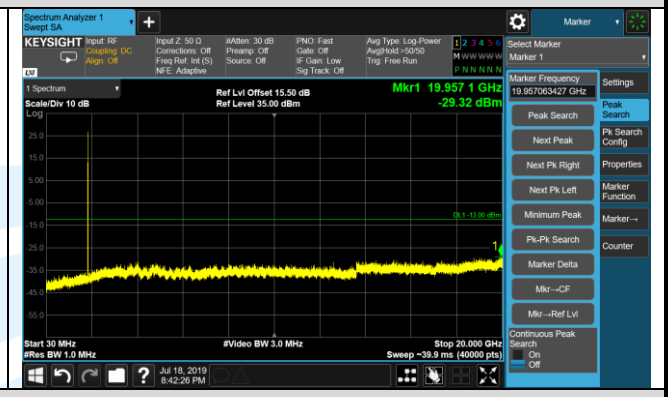
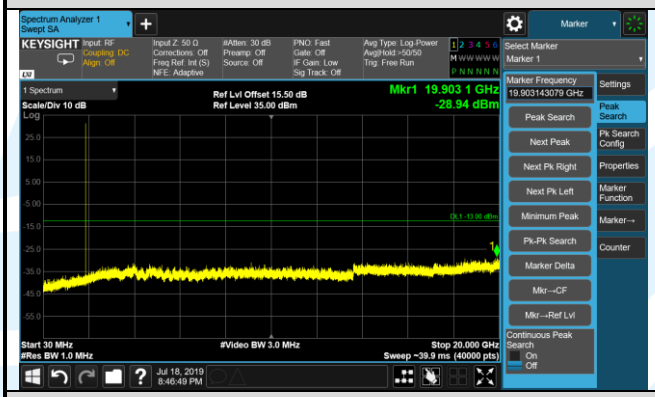
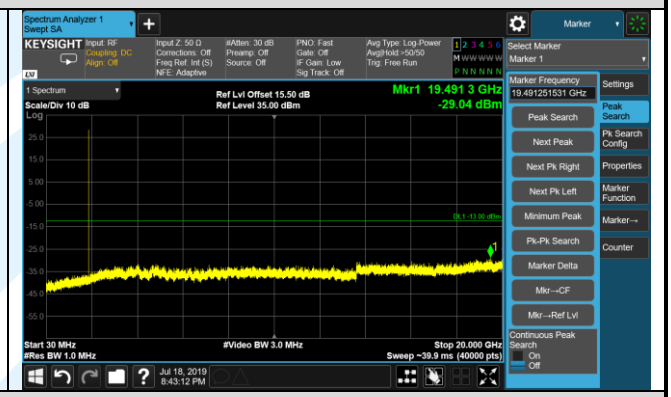
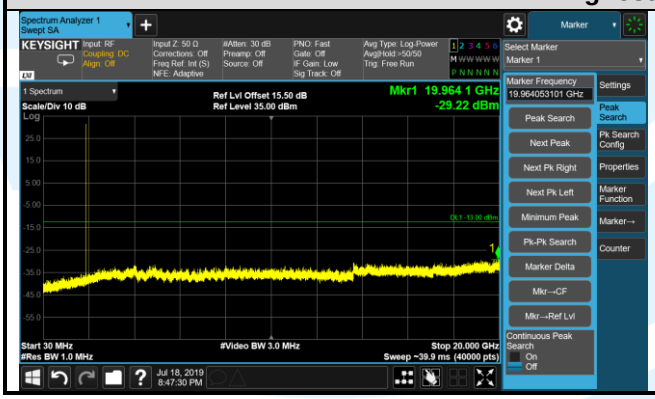
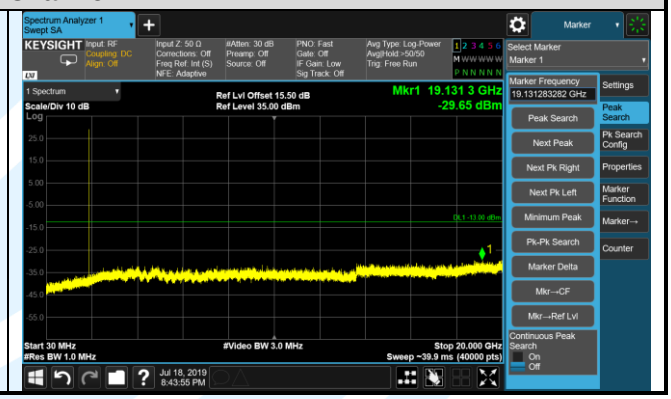
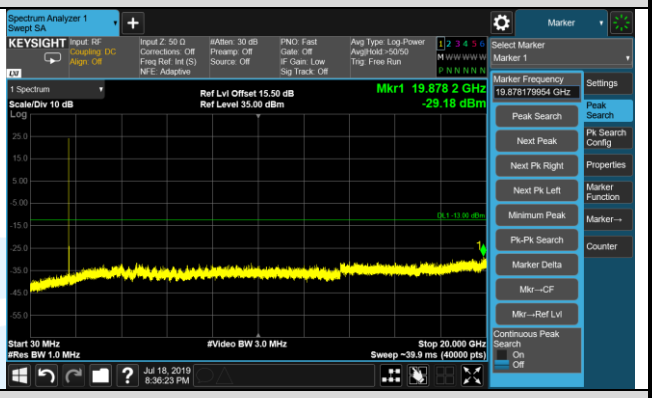
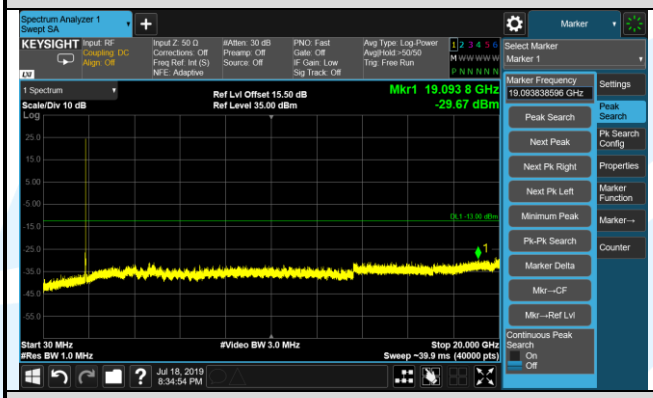
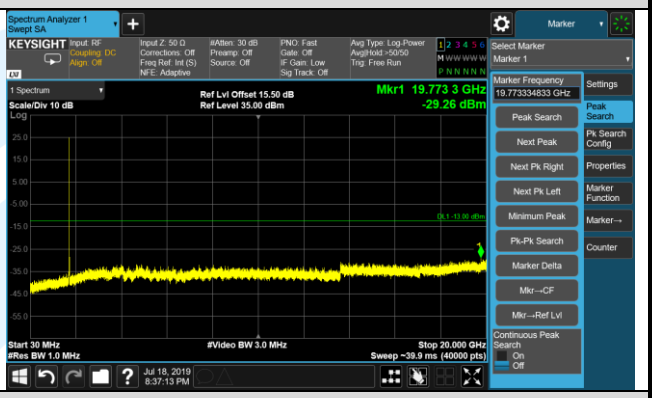
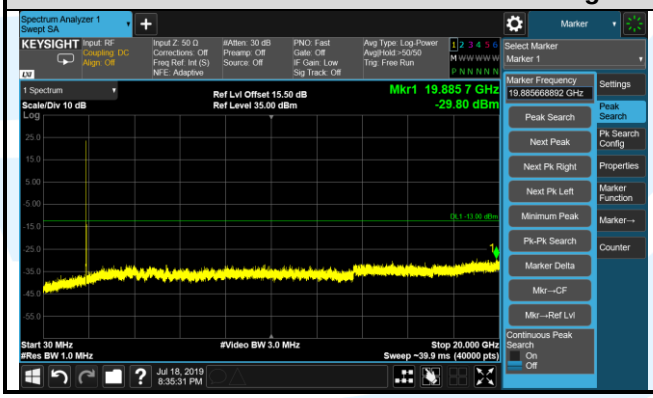
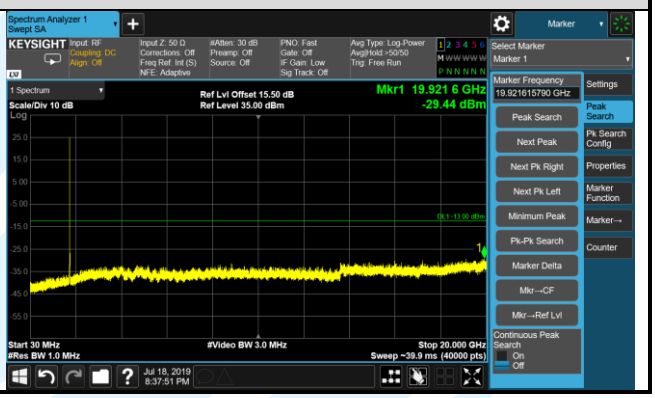
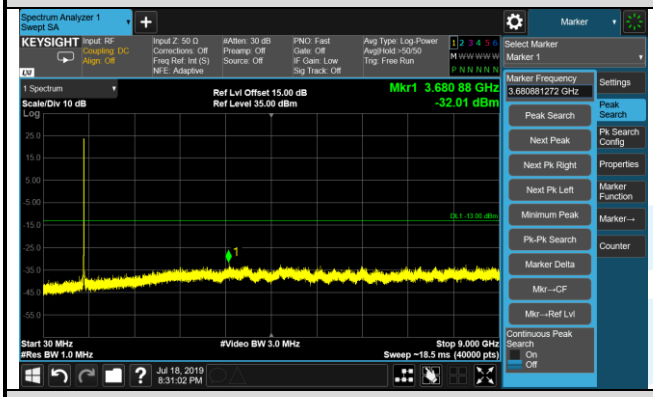
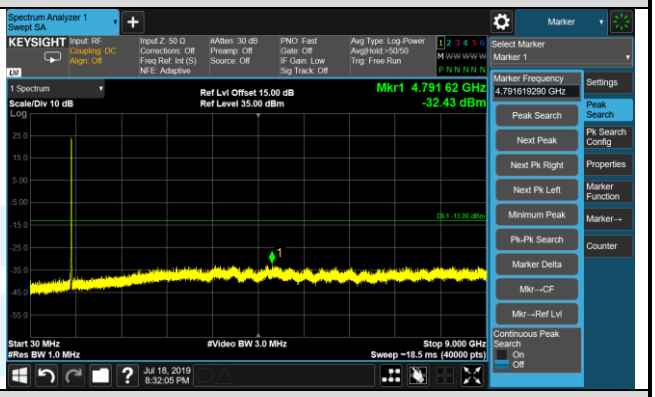
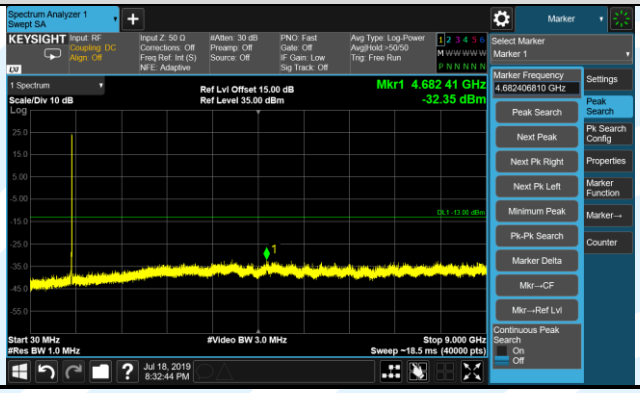
The test plots as follows:

GSM 850	
GPRS	**EDGE**
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

PCS 1900	
GPRS	EDGE
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

WCDMA Band II_RMC 12.2kbps	WCDMA Band IV_RMC 12.2kbps
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

WCDMA Band V_RMC 12.2kbps	
Lowest Channel	Middle Channel
	
Highest Channel	
	

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),
FCC 47 CFR Part 27.53(h)(1),
RSS-132 Issue 3, Section 5.5,
RSS-133 Issue 6, Section 6.5,
RSS-139 Issue 3, Section 6.6

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

Limits:

FCC 47 CFR Part 22.917(a), FCC 47 CFR Part 24.238(a), FCC 47 CFR Part 27.53(h)(1),
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.

RSS-132 Issue 3, Section 5.5, RSS-133 Issue 6, Section 6.6, RSS-139 Issue 3, Section 6.5,
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 (MHz)	SA Reading (dBm)	Correction factor (dB/m)	EIRP Result (dBm)	Limit (dBm)	Margin (dB)	Ant. Pol.
GPRS_ Lowest Channel							
1	1648.400	-60.00	2.39	-57.61	-13.00	-44.61	Horizontal
2	2472.600	-56.16	9.16	-47.00	-13.00	-34.00	Horizontal
3	3296.800	-63.52	11.90	-51.62	-13.00	-38.62	Horizontal
4	1648.400	-64.40	4.03	-60.37	-13.00	-47.37	Vertical
5	2472.600	-57.00	11.49	-45.51	-13.00	-32.51	Vertical
6	3296.800	-65.64	13.22	-52.42	-13.00	-39.42	Vertical
GPRS_ Middle Channel							
1	1673.200	-64.71	2.59	-62.12	-13.00	-49.12	Horizontal
2	2509.800	-55.91	9.17	-46.74	-13.00	-33.74	Horizontal
3	3346.400	-66.13	12.08	-54.05	-13.00	-41.05	Horizontal
4	1673.200	-64.65	4.31	-60.34	-13.00	-47.34	Vertical
5	2509.800	-55.86	11.46	-44.40	-13.00	-31.40	Vertical
6	3346.400	-64.73	13.37	-51.36	-13.00	-38.36	Vertical
GPRS_ Highest Channel							
1	1697.600	-65.83	2.78	-63.05	-13.00	-50.05	Horizontal
2	2546.400	-62.95	9.22	-53.73	-13.00	-40.73	Horizontal
3	3395.200	-67.05	12.26	-54.79	-13.00	-41.79	Horizontal
4	1697.600	-65.23	4.59	-60.64	-13.00	-47.64	Vertical
5	2546.400	-59.91	11.45	-48.46	-13.00	-35.46	Vertical
6	3395.200	-66.93	13.52	-53.41	-13.00	-40.41	Vertical

PCS 1900							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
GPRS_ Lowest Channel							
1	3700.400	-60.67	13.77	-46.90	-13.00	-33.90	Horizontal
2	5550.600	-54.75	16.02	-38.73	-13.00	-25.73	Horizontal
3	7400.800	-65.18	18.90	-46.28	-13.00	-33.28	Horizontal
4	3700.400	-61.27	15.13	-46.14	-13.00	-33.14	Vertical
5	5550.600	-52.24	16.91	-35.33	-13.00	-22.33	Vertical
6	7400.800	-64.65	18.36	-46.29	-13.00	-33.29	Vertical
GPRS_ Middle Channel							
1	3760.000	-64.85	13.87	-50.98	-13.00	-37.98	Horizontal
2	5640.000	-60.80	16.10	-44.70	-13.00	-31.70	Horizontal
3	7520.000	-66.30	19.09	-47.21	-13.00	-34.21	Horizontal
4	3760.000	-63.42	15.28	-48.14	-13.00	-35.14	Vertical
5	5640.000	-56.58	16.97	-39.61	-13.00	-26.61	Vertical
6	7520.000	-66.52	18.48	-48.04	-13.00	-35.04	Vertical
GPRS_ Highest Channel							
1	3819.600	-66.13	13.98	-52.15	-13.00	-39.15	Horizontal
2	5729.400	-68.68	16.37	-52.31	-13.00	-39.31	Horizontal
3	7639.200	-65.47	19.11	-46.36	-13.00	-33.36	Horizontal
4	3819.600	-62.64	15.44	-47.20	-13.00	-34.20	Vertical
5	5729.400	-66.27	17.23	-49.04	-13.00	-36.04	Vertical
6	7639.200	-66.15	18.48	-47.67	-13.00	-34.67	Vertical

WCDMA Band II							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
RMC 12.2kbps_ Lowest Channel							
1	3704.800	-67.11	13.78	-53.33	-13.00	-40.33	Horizontal
2	5557.200	-67.13	16.01	-51.12	-13.00	-38.12	Horizontal
3	7409.600	-66.21	18.92	-47.29	-13.00	-34.29	Horizontal
4	3704.800	-67.12	15.14	-51.98	-13.00	-38.98	Vertical
5	5557.200	-67.13	16.90	-50.23	-13.00	-37.23	Vertical
6	7409.600	-66.21	18.37	-47.84	-13.00	-34.84	Vertical
RMC 12.2kbps_ Middle Channel							
1	3760.000	-66.88	13.87	-53.01	-13.00	-40.01	Horizontal
2	5640.000	-66.91	16.10	-50.81	-13.00	-37.81	Horizontal
3	7520.000	-66.13	19.09	-47.04	-13.00	-34.04	Horizontal
4	3760.000	-65.48	15.28	-50.20	-13.00	-37.20	Vertical
5	5640.000	-67.00	16.97	-50.03	-13.00	-37.03	Vertical
6	7520.000	-64.73	18.48	-46.25	-13.00	-33.25	Vertical
RMC 12.2kbps_ Highest Channel							
1	3815.200	-67.06	13.97	-53.09	-13.00	-40.09	Horizontal
2	5722.800	-66.86	16.35	-50.51	-13.00	-37.51	Horizontal
3	7630.400	-65.06	19.09	-45.97	-13.00	-32.97	Horizontal
4	3815.200	-64.94	15.43	-49.51	-13.00	-36.51	Vertical
5	5722.800	-66.87	17.21	-49.66	-13.00	-36.66	Vertical
6	7630.400	-65.07	18.47	-46.60	-13.00	-33.60	Vertical

WCDMA Band IV							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
RMC 12.2kbps_ Lowest Channel							
1	3424.800	-67.37	12.45	-54.92	-13.00	-41.92	Horizontal
2	5137.200	-65.63	16.11	-49.52	-13.00	-36.52	Horizontal
3	6849.600	-65.97	18.49	-47.48	-13.00	-34.48	Horizontal
4	3424.800	-66.02	13.70	-52.32	-13.00	-39.32	Vertical
5	5137.200	-65.63	17.08	-48.55	-13.00	-35.55	Vertical
6	6849.600	-65.00	18.34	-46.66	-13.00	-33.66	Vertical
RMC 12.2kbps_ Middle Channel							
1	3464.800	-65.83	12.74	-53.09	-13.00	-40.09	Horizontal
2	5197.200	-66.33	16.21	-50.12	-13.00	-37.12	Horizontal
3	6929.600	-65.22	18.33	-46.89	-13.00	-33.89	Horizontal
4	3464.800	-65.85	13.97	-51.88	-13.00	-38.88	Vertical
5	5197.200	-66.34	17.17	-49.17	-13.00	-36.17	Vertical
6	6929.600	-65.82	18.10	-47.72	-13.00	-34.72	Vertical
RMC 12.2kbps_ Highest Channel							
1	3505.200	-67.62	13.03	-54.59	-13.00	-41.59	Horizontal
2	5257.800	-68.18	16.20	-51.98	-13.00	-38.98	Horizontal
3	7010.400	-65.81	18.19	-47.62	-13.00	-34.62	Horizontal
4	3505.200	-66.73	14.24	-52.49	-13.00	-39.49	Vertical
5	5257.800	-66.17	17.15	-49.02	-13.00	-36.02	Vertical
6	7010.400	-65.28	17.88	-47.40	-13.00	-34.40	Vertical

WCDMA Band V							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
RMC 12.2kbps_ Lowest Channel							
1	1652.800	-60.36	2.43	-57.93	-13.00	-44.93	Horizontal
2	2479.200	-58.83	9.16	-49.67	-13.00	-36.67	Horizontal
3	3305.600	-65.48	11.93	-53.55	-13.00	-40.55	Horizontal
4	1652.800	-63.30	4.08	-59.22	-13.00	-46.22	Vertical
5	2479.200	-58.83	11.48	-47.35	-13.00	-34.35	Vertical
6	3305.600	-65.47	13.24	-52.23	-13.00	-39.23	Vertical
RMC 12.2kbps_ Middle Channel							
1	1673.200	-63.53	2.59	-60.94	-13.00	-47.94	Horizontal
2	2509.800	-60.20	9.17	-51.03	-13.00	-38.03	Horizontal
3	3346.400	-66.79	12.08	-54.71	-13.00	-41.71	Horizontal
4	1673.200	-63.88	4.31	-59.57	-13.00	-46.57	Vertical
5	2509.800	-57.99	11.46	-46.53	-13.00	-33.53	Vertical
6	3346.400	-65.88	13.37	-52.51	-13.00	-39.51	Vertical
RMC 12.2kbps_ Highest Channel							
1	1693.200	-63.96	2.75	-61.21	-13.00	-48.21	Horizontal
2	2539.800	-59.65	9.22	-50.43	-13.00	-37.43	Horizontal
3	3386.400	-66.27	12.22	-54.05	-13.00	-41.05	Horizontal
4	1693.200	-65.95	4.54	-61.41	-13.00	-48.41	Vertical
5	2539.800	-56.87	11.45	-45.42	-13.00	-32.42	Vertical
6	3386.400	-66.26	13.48	-52.78	-13.00	-39.78	Vertical

5.9 FREQUENCY STABILITY

Test Requirement: FCC 47 CFR Part 2.1055 &
FCC 47 CFR Part 22.355 &
FCC 47 CFR Part 24.235 &
FCC 47 CFR Part 27.54,
RSS-132 Issue 3, Section 5.3,
RSS-133 Issue 6, Section 6.3,
RSS-139 Issue 3, Section 6.4

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 ±2.5 ppm for mobile stations.

FCC 47 CFR Part 24.235, FCC 47 CFR Part 27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

RSS-132 Issue 3, Section 5.3,
The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations and ±1.5 ppm for base stations

RSS-133 Issue 6, Section 6.3,
The carrier frequency shall not depart from the reference frequency, in excess of ±2.5 ppm for mobile stations and ±1.0 ppm for base stations.

RSS-139 Issue 3, Section 6.4,
The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

Test Setup: Refer to section 4.2.2 for details.

Test Procedures:

1) Use CMW 500 with Frequency Error measurement capability.
   a) Temp. = −30° to + 50°C
   b) Voltage =low voltage, 3.5 Vdc, Normal, 3.7 Vdc and High voltage, 4.2 Vdc.
2) Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to 20ºC 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 +50ºC 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 (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
GSM 850							
GPRS	190 / 836.6	VL	TN	-12	-0.0143	± 2.5	Pass
		VN		-19	-0.0227	± 2.5	Pass
		VH		-16	-0.0191	± 2.5	Pass
		VN	50	-19	-0.0227	± 2.5	Pass
			40	-14	-0.0167	± 2.5	Pass
			30	-21	-0.0251	± 2.5	Pass
			20	-15	-0.0179	± 2.5	Pass
			10	-16	-0.0191	± 2.5	Pass
			0	-13	-0.0155	± 2.5	Pass
			-10	-16	-0.0191	± 2.5	Pass
			-20	-21	-0.0251	± 2.5	Pass
			-30	-16	-0.0191	± 2.5	Pass

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
PCS 1900							
GPRS	661 / 1880.0	VL	TN	-13	-0.0069	N/A	Pass
		VN		-19	-0.0101		Pass
		VH		-19	-0.0101		Pass
		VN	50	-17	-0.0090		Pass
			40	-16	-0.0085		Pass
			30	-17	-0.0090		Pass
			20	-15	-0.0080		Pass
			10	-18	-0.0096		Pass
			0	-10	-0.0053		Pass
			-10	-16	-0.0085		Pass
			-20	-15	-0.0080		Pass
			-30	-18	-0.0096		Pass

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
WCDMA Band II							
RMC 12.2kbps	9400 / 1880.0	VL	TN	-12	-0.0064	N/A	Pass
		VN		-13	-0.0069		Pass
		VH		-16	-0.0085		Pass
		VN	50	-13	-0.0069		Pass
			40	-18	-0.0096		Pass
			30	-13	-0.0069		Pass
			20	-15	-0.0080		Pass
			10	-10	-0.0053		Pass
			0	-16	-0.0085		Pass
			-10	-16	-0.0085		Pass
			-20	-14	-0.0074		Pass
			-30	-19	-0.0101		Pass

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
WCDMA Band IV							
RMC 12.2kbps	1412 / 1732.4	VL	TN	12	0.0069	N/A	Pass
		VN		15	0.0087		Pass
		VH		15	0.0087		Pass
		VN	50	14	0.0081		Pass
			40	17	0.0098		Pass
			30	13	0.0075		Pass
			20	14	0.0081		Pass
			10	15	0.0087		Pass
			0	16	0.0092		Pass
			-10	13	0.0075		Pass
			-20	18	0.0104		Pass
			-30	14	0.0081		Pass

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
WCDMA Band V							
RMC 12.2kbps	4182 / 836.4	VL	TN	8	0.0096	± 2.5	Pass
		VN		4	0.0048	± 2.5	Pass
		VH		6	0.0072	± 2.5	Pass
		VN	50	9	0.0108	± 2.5	Pass
			40	3	0.0036	± 2.5	Pass
			30	7	0.0084	± 2.5	Pass
			20	4	0.0048	± 2.5	Pass
			10	7	0.0084	± 2.5	Pass
			0	6	0.0072	± 2.5	Pass
			-10	8	0.0096	± 2.5	Pass
			-20	3	0.0036	± 2.5	Pass
			-30	8	0.0096	± 2.5	Pass

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 ***