12.4 MEASUREMENT RESULT

The measurement Below 1GHz data as follows:

GSM 850							
No.	Frequency (MHz)	SA Reading (dBm)	Correction factor (dB/m)	EIRP Result (dBm)	Limit (dBm)	Margin (dB)	Ant. Pol.
GSM_ Lowest Channel							
1	159.759	-63.52	15.52	-48.00	-13.00	-35.00	Horizontal
2	240.144	-62.38	16.75	-45.63	-13.00	-32.63	Horizontal
3	754.963	-57.99	19.35	-38.64	-13.00	-25.64	Horizontal
4	46.708	-63.62	10.44	-53.18	-13.00	-40.18	Vertical
5	433.340	-60.34	17.75	-42.59	-13.00	-29.59	Vertical
6	502.247	-57.74	18.66	-39.08	-13.00	-26.08	Vertical
GSM_ Middle Channel							
1	31.735	-56.46	9.78	-46.68	-13.00	-33.68	Horizontal
2	159.759	-57.46	13.75	-43.71	-13.00	-30.71	Horizontal
3	240.144	-54.97	16.75	-38.22	-13.00	-25.22	Horizontal
4	43.233	-62.64	10.23	-52.41	-13.00	-39.41	Vertical
5	433.340	-59.01	17.75	-41.26	-13.00	-28.26	Vertical
6	498.730	-56.17	18.02	-38.15	-13.00	-25.15	Vertical
GSM_ Highest Channel							
1	159.759	-63.18	13.75	-49.43	-13.00	-36.43	Horizontal
2	240.144	-61.28	16.75	-44.53	-13.00	-31.53	Horizontal
3	679.435	-57.92	19.01	-38.91	-13.00	-25.91	Horizontal
4	43.233	-62.60	10.23	-52.37	-13.00	-39.37	Vertical
5	433.340	-60.79	17.75	-43.04	-13.00	-30.04	Vertical
6	498.730	-58.78	18.02	-40.76	-13.00	-27.76	Vertical

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PCS 1900							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
GSM_ Lowest Channel							
1	159.759	-64.00	15.52	-48.48	-13.00	-35.48	Horizontal
2	240.144	-61.45	16.75	-44.70	-13.00	-31.70	Horizontal
3	754.963	-59.21	19.35	-39.86	-13.00	-26.86	Horizontal
4	46.708	-63.28	10.44	-52.84	-13.00	-39.84	Vertical
5	433.340	-59.86	17.75	-42.11	-13.00	-29.11	Vertical
6	502.247	-57.40	18.66	-38.74	-13.00	-25.74	Vertical
GSM_ Middle Channel							
1	31.735	-62.46	9.78	-52.68	-13.00	-39.68	Horizontal
2	159.759	-62.44	13.75	-48.69	-13.00	-35.69	Horizontal
3	240.144	-60.08	16.75	-43.33	-13.00	-30.33	Horizontal
4	43.233	-63.38	10.23	-53.15	-13.00	-40.15	Vertical
5	433.340	-61.94	17.75	-44.19	-13.00	-31.19	Vertical
6	498.730	-57.30	18.02	-39.28	-13.00	-26.28	Vertical
GSM_ Highest Channel							
1	159.759	-61.94	13.75	-48.19	-13.00	-35.19	Horizontal
2	240.144	-62.32	16.75	-45.57	-13.00	-32.57	Horizontal
3	679.435	-59.12	19.01	-40.11	-13.00	-27.11	Horizontal
4	43.233	-62.49	10.23	-52.26	-13.00	-39.26	Vertical
5	433.340	-61.13	17.75	-43.38	-13.00	-30.38	Vertical
6	498.730	-57.74	18.02	-39.72	-13.00	-26.72	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)	
RMC 12.2kbps_ Lowest Channel							
1	159.759	-65.43	15.52	-49.91	-13.00	-36.91	Horizontal
2	240.144	-60.81	16.75	-44.06	-13.00	-31.06	Horizontal
3	754.963	-58.06	19.35	-38.71	-13.00	-25.71	Horizontal
4	46.708	-63.28	10.44	-52.84	-13.00	-39.84	Vertical
5	433.340	-61.16	17.75	-43.41	-13.00	-30.41	Vertical
6	502.247	-58.48	18.66	-39.82	-13.00	-26.82	Vertical
RMC 12.2kbps_ Middle Channel							
1	31.735	-62.40	9.78	-52.62	-13.00	-39.62	Horizontal
2	159.759	-61.93	13.75	-48.18	-13.00	-35.18	Horizontal
3	240.144	-61.53	16.75	-44.78	-13.00	-31.78	Horizontal
4	43.233	-62.97	10.23	-52.74	-13.00	-39.74	Vertical
5	433.340	-62.17	17.75	-44.42	-13.00	-31.42	Vertical
6	498.730	-59.07	18.02	-41.05	-13.00	-28.05	Vertical
RMC 12.2kbps_ Highest Channel							
1	159.759	-63.26	13.75	-49.51	-13.00	-36.51	Horizontal
2	240.144	-61.84	16.75	-45.09	-13.00	-32.09	Horizontal
3	679.435	-57.72	19.01	-38.71	-13.00	-25.71	Horizontal
4	43.233	-62.48	10.23	-52.25	-13.00	-39.25	Vertical
5	433.340	-60.28	17.75	-42.53	-13.00	-29.53	Vertical
6	498.730	-57.48	18.02	-39.46	-13.00	-26.46	Vertical

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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	159.759	-65.61	15.52	-50.09	-13.00	-37.09	Horizontal
2	240.144	-60.07	16.75	-43.32	-13.00	-30.32	Horizontal
3	754.963	-59.27	19.35	-39.92	-13.00	-26.92	Horizontal
4	46.708	-63.76	10.44	-53.32	-13.00	-40.32	Vertical
5	433.340	-59.28	17.75	-41.53	-13.00	-28.53	Vertical
6	502.247	-56.62	18.66	-37.96	-13.00	-24.96	Vertical
RMC 12.2kbps_ Middle Channel							
1	31.735	-62.88	9.78	-53.10	-13.00	-40.1	Horizontal
2	159.759	-61.97	13.75	-48.22	-13.00	-35.22	Horizontal
3	240.144	-60.25	16.75	-43.50	-13.00	-30.5	Horizontal
4	43.233	-61.98	10.23	-51.75	-13.00	-38.75	Vertical
5	433.340	-62.46	17.75	-44.71	-13.00	-31.71	Vertical
6	498.730	-57.16	18.02	-39.14	-13.00	-26.14	Vertical
RMC 12.2kbps_ Highest Channel							
1	159.759	-63.28	13.75	-49.53	-13.00	-36.53	Horizontal
2	240.144	-61.35	16.75	-44.60	-13.00	-31.6	Horizontal
3	679.435	-58.21	19.01	-39.20	-13.00	-26.2	Horizontal
4	43.233	-61.34	10.23	-51.11	-13.00	-38.11	Vertical
5	433.340	-61.07	17.75	-43.32	-13.00	-30.32	Vertical
6	498.730	-58.12	18.02	-40.10	-13.00	-27.1	Vertical

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The measurement Above 1GHz data as follows:

GSM 850							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
GSM_ Lowest Channel							
1	1648.400	-88.21	23.50	-64.71	-13.00	-51.71	Horizontal
2	2472.600	-88.15	29.47	-58.68	-13.00	-45.68	Horizontal
3	1648.400	-89.33	23.72	-65.61	-13.00	-52.61	Vertical
4	2472.600	-88.89	29.47	-59.42	-13.00	-46.42	Vertical
GSM_ Middle Channel							
1	1673.200	-89.35	23.50	-65.85	-13.00	-52.85	Horizontal
2	2509.800	-92.44	29.47	-62.97	-13.00	-48.58	Horizontal
3	1673.200	-92.02	23.72	-68.30	-13.00	-53.74	Vertical
4	2509.800	-94.85	29.47	-65.38	-13.00	-50.93	Vertical
GSM_ Highest Channel							
1	1697.600	-91.01	23.50	-67.51	-13.00	-54.51	Horizontal
2	2546.400	-92.47	29.47	-63.00	-13.00	-50.00	Horizontal
3	1697.600	-91.40	23.72	-67.68	-13.00	-54.68	Vertical
4	2546.400	-92.82	29.47	-63.35	-13.00	-50.35	Vertical

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PCS 1900							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
GSM_ Lowest Channel							
1	3700.400	-88.22	32.11	-56.11	-13.00	-43.11	Horizontal
2	5550.600	-87.68	33.21	-54.47	-13.00	-41.47	Horizontal
3	3700.400	-89.50	32.09	-57.41	-13.00	-44.41	Vertical
4	5550.600	-86.89	34.03	-52.86	-13.00	-39.86	Vertical
GSM_ Middle Channel							
1	3760.000	-83.26	32.11	-51.15	-13.00	-38.15	Horizontal
2	5640.000	-86.59	33.21	-53.38	-13.00	-40.38	Horizontal
3	3760.000	-90.65	32.09	-58.56	-13.00	-45.56	Vertical
4	5640.000	-87.05	34.03	-53.02	-13.00	-40.02	Vertical
GSM_ Highest Channel							
1	3819.600	-87.81	32.11	-55.70	-13.00	-42.70	Horizontal
2	5729.400	-87.60	33.21	-54.39	-13.00	-41.39	Horizontal
3	3819.600	-89.57	32.09	-57.48	-13.00	-44.48	Vertical
4	5729.400	-88.09	34.03	-54.06	-13.00	-41.06	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)	
RMC 12.2kbps_ Lowest Channel							
1	3704.800	-82.73	31.09	-51.64	-13.00	-38.64	Horizontal
2	5557.200	-89.40	34.14	-55.26	-13.00	-42.26	Horizontal
3	3704.800	-80.62	33.13	-47.49	-13.00	-34.49	Vertical
4	5557.200	-85.48	32.66	-52.82	-13.00	-39.82	Vertical
RMC 12.2kbps_ Middle Channel							
1	3760.000	-79.37	31.09	-48.28	-13.00	-35.28	Horizontal
2	5640.000	-88.40	34.14	-54.26	-13.00	-41.26	Horizontal
3	3760.000	-79.78	33.13	-46.65	-13.00	-33.65	Vertical
4	5640.000	-84.53	32.66	-51.87	-13.00	-38.87	Vertical
RMC 12.2kbps_ Highest Channel							
1	3815.200	-82.78	31.09	-51.69	-13.00	-38.69	Horizontal
2	5722.800	-85.84	34.14	-51.70	-13.00	-38.7	Horizontal
3	3815.200	-82.30	33.13	-49.17	-13.00	-36.17	Vertical
4	5722.800	-83.19	32.66	-50.53	-13.00	-37.53	Vertical

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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	-83.62	23.12	-60.5	-13	-47.5	Horizontal
2	2479.200	-86.02	28.47	-57.55	-13	-44.55	Horizontal
3	1652.800	-83.11	23.12	-59.99	-13	-46.99	Vertical
4	2479.200	-83.11	28.47	-54.64	-13	-41.64	Vertical
RMC 12.2kbps_ Middle Channel							
1	1672.800	-83.62	23.12	-60.5	-13	-47.5	Horizontal
2	2509.200	-86.02	28.47	-57.55	-13	-44.55	Horizontal
3	1672.800	-83.11	23.12	-59.99	-13	-46.99	Vertical
4	2509.200	-83.11	28.47	-54.64	-13	-41.64	Vertical
RMC 12.2kbps_ Highest Channel							
1	1693.200	-80.69	23.12	-57.57	-13	-44.57	Horizontal
2	2539.800	-82.48	28.47	-54.01	-13	-41.01	Horizontal
3	1693.200	-80.89	23.12	-57.77	-13	-44.77	Vertical
4	2539.800	-80.57	28.47	-52.1	-13	-39.1	Vertical

Note:

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

4.he device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test. Subsequently, only the worst case emissions are reported.

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13. FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

13.1 PROVISIONS APPLICABLE

13.1.1 For Hand carried battery powered equipment

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. The frequency stability of the transmitter is measured by:

a.) Temperature: The temperature is varied from 0°C to +55°C in 10°C increments using an environmental chamber.

b.) Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Part 24 and Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

13.1.2 For equipment powered by primary supply voltage

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from 0°C to +55°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

13.2 MEASUREMENT METHOD

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a “call mode”. This is accomplished with the use of R&S CMW500 DIGITAL RADIO COMMUNICATION TESTER.

1 Measure the carrier frequency at room temperature.

2 Subject the EUT to overnight soak at 0℃. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on channel 20175 for LTE band 4 measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

3 Repeat the above measurements at 10℃ increments from 0℃ to +55℃. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.

4 Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1 1/2 hours unpowered, to allow any self-heating to stabilize, before

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continuing.

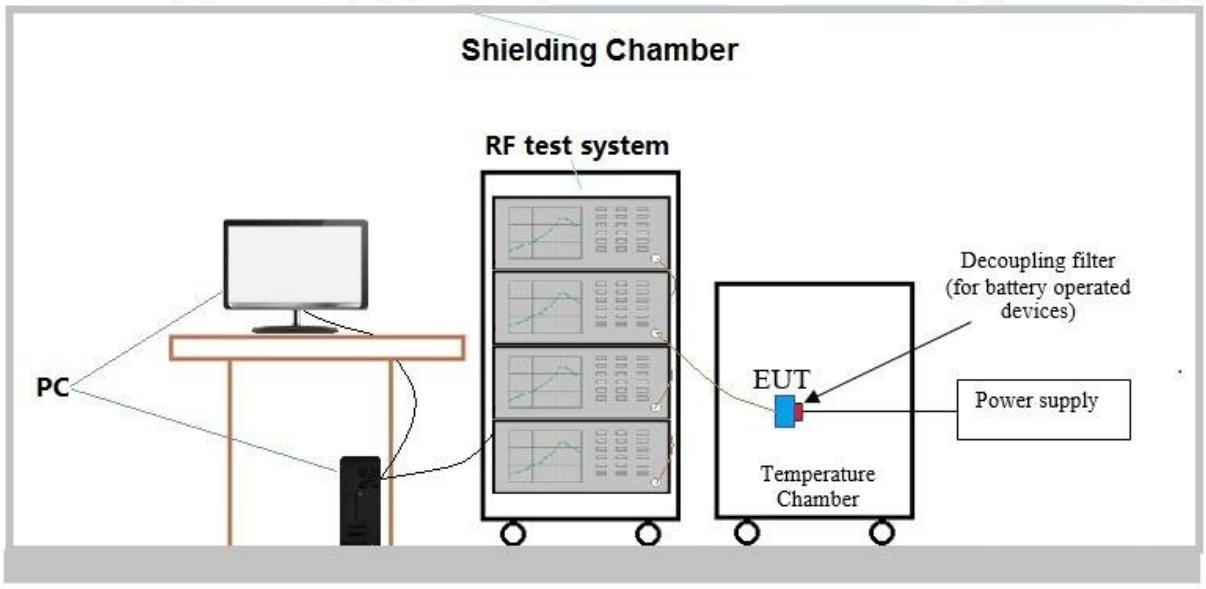
5 Subject the EUT to overnight soak at +50℃.

6 With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

7 Repeat the above measurements at 0℃ increments from +50℃ to 0℃. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.

8 At all temperature levels hold the temperature to +/- 0.5℃ during the measurement procedure.

13.3 MEASUREMENT SETUP



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13.3 MEASUREMENT RESULT

Test Results

Frequency Error vs. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.(V)	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	GSM	LCH	TN	VL	9.69	0.011757	±2.5	PASS
			TN	VN	6.26	0.007595	±2.5	PASS
			TN	VH	8.01	0.009719	±2.5	PASS
		MCH	TN	VL	9.81	0.011726	±2.5	PASS
			TN	VN	9.88	0.011810	±2.5	PASS
			TN	VH	9.88	0.011810	±2.5	PASS
		HCH	TN	VL	7.68	0.009048	±2.5	PASS
			TN	VN	8.33	0.009814	±2.5	PASS
			TN	VH	9.04	0.010650	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.(V)	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	EGPRS	LCH	TN	VL	3.78	0.004586	±2.5	PASS
			TN	VN	6.65	0.008068	±2.5	PASS
			TN	VH	4.81	0.005836	±2.5	PASS
		MCH	TN	VL	5.62	0.006718	±2.5	PASS
			TN	VN	7.04	0.008415	±2.5	PASS
			TN	VH	6.88	0.008224	±2.5	PASS
		HCH	TN	VL	7.72	0.009095	±2.5	PASS
			TN	VN	5.07	0.005973	±2.5	PASS
			TN	VH	4.42	0.005207	±2.5	PASS

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Test Band	Test Mode	Test Channel	Test Temp.	Test Volt. (V)	Freq.Error (Hz)	Freq.vs.rated (ppm)	Verdict
PCS1900	GSM	LCH	TN	VL	16.01	0.008653	PASS
			TN	VN	20.47	0.011064	PASS
			TN	VH	16.59	0.008967	PASS
		MCH	TN	VL	16.08	0.008553	PASS
			TN	VN	14.27	0.007590	PASS
			TN	VH	15.17	0.008069	PASS
		HCH	TN	VL	13.95	0.007304	PASS
			TN	VN	17.63	0.009231	PASS
			TN	VH	12.98	0.006797	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt. (V)	Freq.Error (Hz)	Freq.vs.rated (ppm)	Verdict
GSM1900	EGPRS	LCH	TN	VL	16.40	0.008864	PASS
			TN	VN	14.66	0.007923	PASS
			TN	VH	13.20	0.007134	PASS
		MCH	TN	VL	17.34	0.009223	PASS
			TN	VN	19.73	0.010495	PASS
			TN	VH	16.27	0.008654	PASS
		HCH	TN	VL	17.63	0.009231	PASS
			TN	VN	18.40	0.009635	PASS
			TN	VH	17.43	0.009127	PASS

Note: Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very samll. As such it is determined that channels at the band edge would remain in-band when the maximum measured frequency deviation noted duing the frequency stability tests is applied. Therefore the device is detemined to remain operating in band over the temperture and voltage range as tested.

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Frequency Error vs. Temperature:

Test Band	Test Mode	Test Channel	Test Volt.	Test Tem. (℃)	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	GSM	LCH	VN	0	9.36	0.011356	±2.5	PASS
			VN	10	7.62	0.009245	±2.5	PASS
			VN	20	9.30	0.011284	±2.5	PASS
			VN	30	8.59	0.010422	±2.5	PASS
			VN	40	9.43	0.011441	±2.5	PASS
			VN	50	8.91	0.010810	±2.5	PASS
GSM850	GSM	MCH	VN	0	8.98	0.010734	±2.5	PASS
			VN	10	11.04	0.013196	±2.5	PASS
			VN	20	12.40	0.014822	±2.5	PASS
			VN	30	8.65	0.010339	±2.5	PASS
			VN	40	10.65	0.012730	±2.5	PASS
			VN	50	6.52	0.007793	±2.5	PASS
GSM850	GSM	HCH	VN	0	9.23	0.010874	±2.5	PASS
			VN	10	9.23	0.010874	±2.5	PASS
			VN	20	8.27	0.009743	±2.5	PASS
			VN	30	8.20	0.009661	±2.5	PASS
			VN	40	8.39	0.009885	±2.5	PASS
			VN	50	9.81	0.011557	±2.5	PASS

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Test Band	Test Mode	Test Channel	Test Volt.	Test Tem. (℃)	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	EGPRS	LCH	VN	0	6.23	0.007559	±2.5	PASS
			VN	10	6.13	0.007438	±2.5	PASS
			VN	20	6.97	0.008457	±2.5	PASS
			VN	30	6.65	0.008068	±2.5	PASS
			VN	40	7.10	0.008614	±2.5	PASS
			VN	50	5.49	0.006661	±2.5	PASS
GSM850	EGPRS	MCH	VN	0	16.21	0.019376	±2.5	PASS
			VN	10	18.76	0.022424	±2.5	PASS
			VN	20	16.98	0.020296	±2.5	PASS
			VN	30	15.34	0.018336	±2.5	PASS
			VN	40	13.56	0.016208	±2.5	PASS
			VN	50	14.79	0.017679	±2.5	PASS
GSM850	EGPRS	HCH	VN	-10	8.59	0.010120	±2.5	PASS
			VN	0	9.46	0.011145	±2.5	PASS
			VN	10	9.07	0.010686	±2.5	PASS
			VN	20	10.27	0.012099	±2.5	PASS
			VN	30	7.17	0.008447	±2.5	PASS
			VN	40	10.62	0.012512	±2.5	PASS

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Test Band	Test Mode	Test Channel	Test Volt.	Test Tem. (℃)	Freq.Error (Hz)	Freq.vs.rated (ppm)	Verdict
PCS1900	GSM	LCH	VN	0	13.37	0.007226	PASS
			VN	10	12.59	0.006805	PASS
			VN	20	17.76	0.009599	PASS
			VN	30	15.17	0.008199	PASS
			VN	40	15.37	0.008307	PASS
			VN	50	15.30	0.008269	PASS
PCS1900	GSM	MCH	VN	0	13.88	0.007383	PASS
			VN	10	17.56	0.009340	PASS
			VN	20	13.24	0.007043	PASS
			VN	30	18.21	0.009686	PASS
			VN	40	15.76	0.008383	PASS
			VN	50	18.85	0.010027	PASS
PCS1900	GSM	HCH	VN	0	16.66	0.008723	PASS
			VN	10	18.21	0.009535	PASS
			VN	20	15.43	0.008079	PASS
			VN	30	15.88	0.008315	PASS
			VN	40	17.50	0.009163	PASS
			VN	50	15.50	0.008116	PASS

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Test Band	Test Mode	Test Channel	Test Volt.	Test Tem. (℃)	Freq.Error (Hz)	Freq.vs.rated (ppm)	Verdict
GSM1900	EGPRS	LCH	VN	0	18.21	0.009842	PASS
			VN	10	15.59	0.008426	PASS
			VN	20	20.44	0.011047	PASS
			VN	30	22.73	0.012285	PASS
			VN	40	20.73	0.011204	PASS
			VN	50	19.05	0.010296	PASS
GSM1900	EGPRS	MCH	VN	0	17.53	0.009324	PASS
			VN	10	19.18	0.010202	PASS
			VN	20	13.59	0.007229	PASS
			VN	30	13.79	0.007335	PASS
			VN	40	17.66	0.009394	PASS
			VN	50	19.44	0.010340	PASS
GSM1900	EGPRS	HCH	VN	0	14.56	0.007624	PASS
			VN	10	12.17	0.006372	PASS
			VN	20	10.33	0.005409	PASS
			VN	30	11.36	0.005948	PASS
			VN	40	13.14	0.006880	PASS
			VN	50	15.50	0.008116	PASS

Note: Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very samll. As such it is determined that channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is detemined to remain operating in band over the temperture and voltage range as tested.

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Frequency Error vs. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.(V)	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA850	UMTS	LCH	TN	VL	-11.03	-0.01	±2.5	PASS
			TN	VN	-11.35	-0.01	±2.5	PASS
			TN	VH	-13.96	-0.02	±2.5	PASS
		MCH	TN	VL	-9.81	-0.01	±2.5	PASS
			TN	VN	-14.45	-0.02	±2.5	PASS
			TN	VH	-4.76	-0.01	±2.5	PASS
		HCH	TN	VL	-9.92	-0.01	±2.5	PASS
			TN	VN	-4.99	-0.01	±2.5	PASS
			TN	VH	-13.00	-0.02	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.(V)	Freq.Error (Hz)	Freq.vs.rated (ppm)	Verdict
WCDMA1900	UMTS	LCH	TN	VL	-24.22	-0.01	PASS
			TN	VN	-16.43	-0.01	PASS
			TN	VH	-11.54	-0.01	PASS
		MCH	TN	VL	-20.52	-0.01	PASS
			TN	VN	-23.76	-0.01	PASS
			TN	VH	-12.76	-0.01	PASS
		HCH	TN	VL	-21.26	-0.01	PASS
			TN	VN	-21.29	-0.01	PASS
			TN	VH	-15.79	-0.01	PASS

Note: Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very samll. As such it is determined that channels at the band edge would remain in-band when the maximum measured frequency deviation noted duing the frequency stability tests is applied. Therefore the device is detemined to remain operating in band over the temperture and voltage range as tested.

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Frequency Error vs. Temperature:

Test Band	Test Mode	Test Channel	Test Volt.	Test Tem. (℃)	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA850	UMTS	LCH	VN	0	-11.75	-0.014218	±2.5	PASS
			VN	10	-3.88	-0.004695	±2.5	PASS
			VN	20	-5.60	-0.006776	±2.5	PASS
			VN	30	-14.24	-0.017231	±2.5	PASS
			VN	40	-7.28	-0.008809	±2.5	PASS
			VN	50	-8.99	-0.010879	±2.5	PASS
WCDMA850	UMTS	MCH	VN	0	-8.16	-0.009874	±2.5	PASS
			VN	10	-12.47	-0.015090	±2.5	PASS
			VN	20	-6.39	-0.007640	±2.5	PASS
			VN	30	-8.83	-0.010557	±2.5	PASS
			VN	40	-4.90	-0.005858	±2.5	PASS
			VN	50	-9.09	-0.010868	±2.5	PASS
WCDMA850	UMTS	HCH	VN	0	-12.31	-0.014896	±2.5	PASS
			VN	10	-7.28	-0.008809	±2.5	PASS
			VN	20	-10.71	-0.012805	±2.5	PASS
			VN	30	-8.38	-0.010019	±2.5	PASS
			VN	40	-8.19	-0.009792	±2.5	PASS
			VN	50	-7.97	-0.009529	±2.5	PASS

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Test Band	Test Mode	Test Channel	Test Volt.	Test Tem. (℃)	Freq.Error (Hz)	Freq.vs.rated (ppm)	Verdict
WCDMA1900	UMTS	LCH	VN	0	-20.90	-0.011283	PASS
			VN	10	-9.06	-0.004891	PASS
			VN	20	-17.26	-0.009318	PASS
			VN	30	-21.70	-0.011715	PASS
			VN	40	-14.86	-0.008022	PASS
			VN	50	-20.40	-0.011013	PASS
WCDMA1900	UMTS	MCH	VN	0	-19.67	-0.010619	PASS
			VN	10	-18.43	-0.009949	PASS
			VN	20	-18.81	-0.010005	PASS
			VN	30	-14.56	-0.007745	PASS
			VN	40	-18.13	-0.009644	PASS
			VN	50	-21.74	-0.011564	PASS
WCDMA1900	UMTS	HCH	VN	0	-16.91	-0.008995	PASS
			VN	10	-11.95	-0.006356	PASS
			VN	20	-16.85	-0.008833	PASS
			VN	30	-22.25	-0.011664	PASS
			VN	40	-19.09	-0.010007	PASS
			VN	50	-17.85	-0.009357	PASS

Note: Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is detemined to remain operating in band over the temperture and voltage range as tested.

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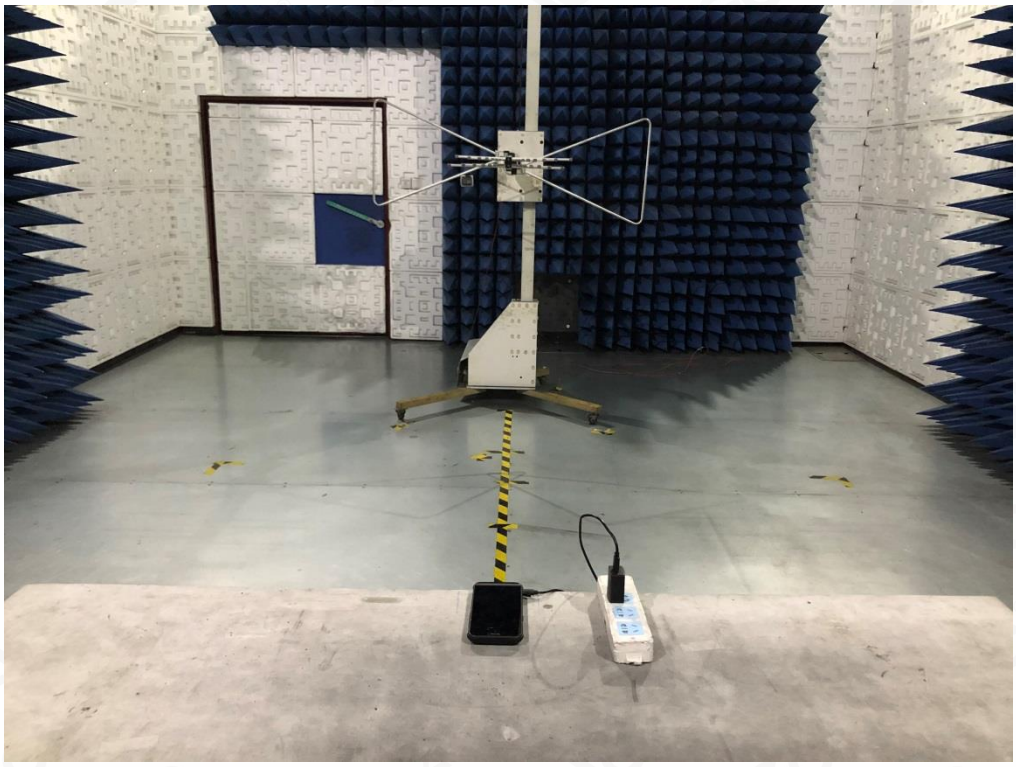
APPENDIX A: PHOTOGRAPHS OF TEST SETUP

RADIATED SPURIOUS EMISSION



RADIATED SPURIOUS ABOVE 1G EMISSION

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APPENDIX B: PHOTOGRAPHS OF EUT

Refer to the Report No.: AGC00408210701AP01

----END OF REPORT----

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Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").

2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.

3.The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

4. The non-CMA report issued by AGC is only permitted to be used by the client as internal reference use and shall not be used for public demonstration purpose.

5. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.

6. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

7. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.

8.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.

9. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.

10. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

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