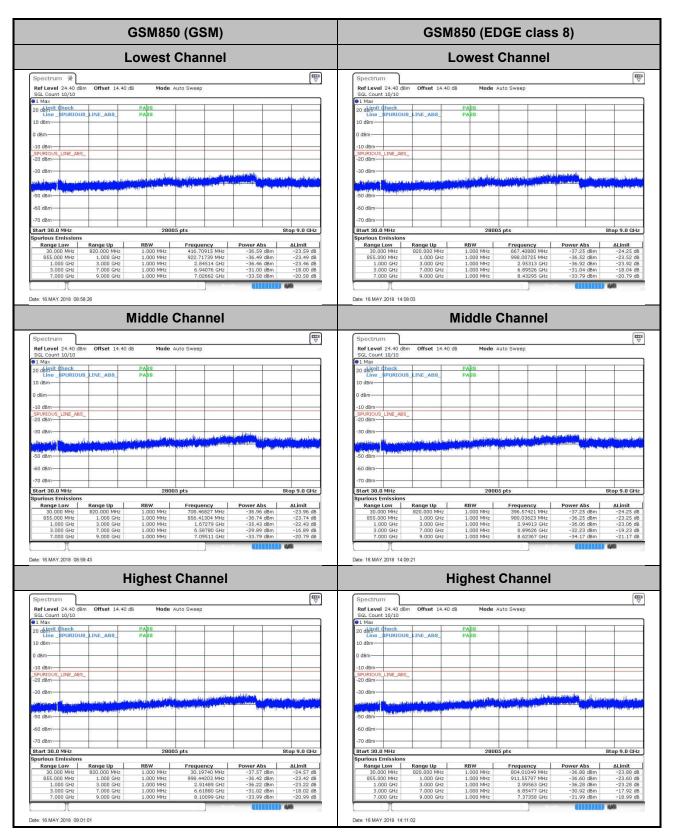


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# **Conducted Spurious Emission**



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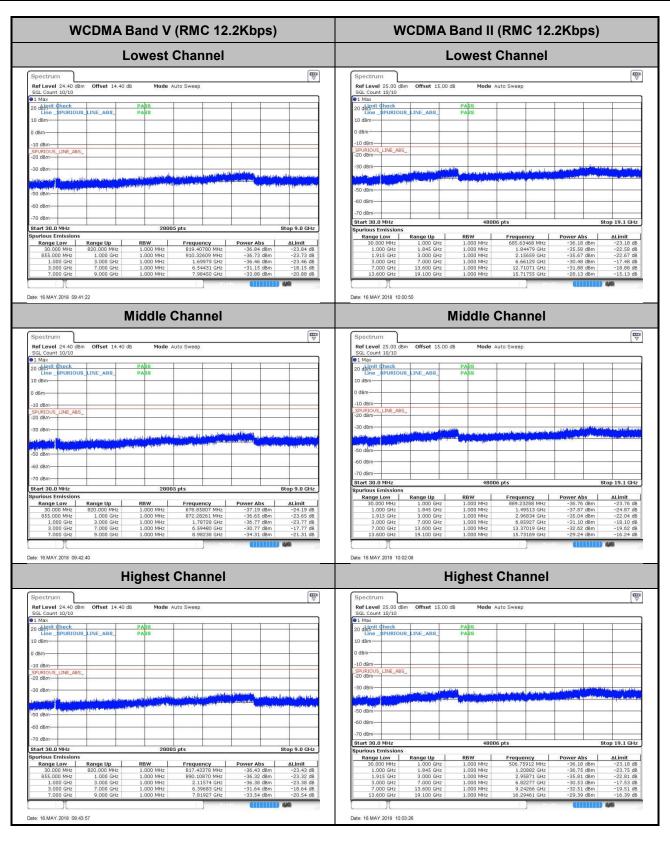
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**GSM1900 (GSM)** GSM1900 (EDGE class 8) **Lowest Channel Lowest Channel** V Mode Auto Sweep Mode Auto Sweep Ref Level 25.00 dBm Offset 15.00 dB Ref Level 25.00 dBm SGL Count 10/10 1 Max Offset 15.00 dB dBm-LINE ABS Stop 19.1 GHz Stop 19.1 GHz Date: 16.MAY.2018 09:22:53 Date: 16.MAY.2018 14:32:12 **Middle Channel Middle Channel** 20 demit Check Line SPURIOUS LINE ABS 30 dBm Stop 19.1 GHz Stop 19.1 GHz Start 30.0 MHz Start 30.0 MHz 48006 pts Date: 16.MAY.2018 09:24:10 Date: 16.MAY.2018 14:33:30 **Highest Channel Highest Channel** Ref Level 25.00 SGL Count 10/10 20 dsmit check Line SPURIOUS LINE\_ABS 20 demit Check Line\_SPURIOUS\_LINE\_ABS dBm-Date: 16.MAY.2018 09:25:28 Date: 16.MAY.2018 14:34:54

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WCDMA Band IV (RMC 12.2Kbps) **Lowest Channel** Ref Level 30.00 dBm Offset 15.00 dB SGL Count 10/10 Mode Auto Sweep Date: 16.MAY.2018 10:19:28 **Middle Channel ₩** 20 dbline Stop 18.0 GHz Start 30.0 MH Date: 16.MAY.2018 10:20:45 **Highest Channel** 

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# Frequency Stability

Test Conditions	Middle Channel	GSM850 (GSM)	GSM850 (EDGE class 8)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation	on (ppm)	Result
50	Normal Voltage	0.0036	0.0012	
40	Normal Voltage	0.0407	0.0072	
30	Normal Voltage	0.0012	0.0442	
20(Ref.)	Normal Voltage	0.0000	0.0000	
10	Normal Voltage	0.0371	0.0598	
0	Normal Voltage	0.0227	0.0478	
-10	Normal Voltage	0.0215	0.0371	PASS
-20	Normal Voltage	0.0012	0.0072	
-30	Normal Voltage	0.0024	0.0383	
20	Maximum Voltage	0.0036	0.0287	
20	Normal Voltage	0.0036	0.0036	
20	Battery End Point	0.0191	0.0263	1

#### Note:

1. Normal Voltage = 3.85V. ; Battery End Point (BEP) =3.435V. ; Maximum Voltage =4.4 V

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Test Conditions	Middle Channel	GSM1900 (GSM)	GSM1900 (EDGE class 8)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviatio	n (ppm)	Result
50	Normal Voltage	0.0170	0.0239	
40	Normal Voltage	0.0011	0.0021	
30	Normal Voltage	0.0048	0.0032	
20(Ref.)	Normal Voltage	0.0000	0.0000	
10	Normal Voltage	0.0176	0.0011	
0	Normal Voltage	0.0138	0.0000	
-10	Normal Voltage	0.0016	0.0011	PASS
-20	Normal Voltage	0.0133	0.0053	
-30	Normal Voltage	0.0016	0.0032	
20	Maximum Voltage	0.0160	0.0048	
20	Normal Voltage	0.0005	0.0128	
20	Battery End Point	0.0037	0.0138	

- 1. Normal Voltage = 3.85V. ; Battery End Point (BEP) =3.435V. ; Maximum Voltage =4.4 V
- 2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

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Test Conditions	Middle Channel	WCDMA Band V (RMC 12.2Kbps)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0036	
40	Normal Voltage	0.0538	
30	Normal Voltage	0.0395	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0179	
0	Normal Voltage	0.0359	
-10	Normal Voltage	0.0012	PASS
-20	Normal Voltage	0.0203	
-30	Normal Voltage	0.0311	
20	Maximum Voltage	0.0514	
20	Normal Voltage	0.0191	
20	Battery End Point	0.0048	

1. Normal Voltage = 3.85V. ; Battery End Point (BEP) =3.435V. ; Maximum Voltage =4.4V

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Test Conditions	Middle Channel	WCDMA Band II (RMC 12.2Kbps)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0170	
40	Normal Voltage	0.0101	
30	Normal Voltage	0.0021	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0005	
0	Normal Voltage	0.0016	
-10	Normal Voltage	0.0080	PASS
-20	Normal Voltage	0.0032	
-30	Normal Voltage	0.0000	
20	Maximum Voltage	0.0021	
20	Normal Voltage	0.0080	
20	Battery End Point	0.0096	

1. Normal Voltage = 3.85V. ; Battery End Point (BEP) =3.435V. ; Maximum Voltage =4.4V

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Test Conditions	Middle Channel	WCDMA Band IV (RMC 12.2Kbps)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0167	
40	Normal Voltage	0.0133	
30	Normal Voltage	0.0012	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0110	
0	Normal Voltage	0.0075	
-10	Normal Voltage	0.0040	PASS
-20	Normal Voltage	0.0006	
-30	Normal Voltage	0.0069	
20	Maximum Voltage	0.0069	
20	Normal Voltage	0.0098	
20	Battery End Point	0.0023	

- 1. Normal Voltage = 3.85V. ; Battery End Point (BEP) =3.435V. ; Maximum Voltage =4.4V
- **2.** The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

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## **Appendix B. Test Results of Conducted Test**

## **Radiated Spurious Emission**

	GSM850 (GSM)										
Channel	Frequency (MHz)	ERP (dBm)	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)			
	1648	-45.89	-13	-32.89	-48.01	1.333	5.60	Н			
	2472	-33.60	-13	-20.60	-36.51	1.64	6.70	Н			
Lowest	3294	-56.67	-13	-43.67	-60.03	1.89	7.40	Н			
Lowest	1648	-43.95	-13	-30.95	-46.07	1.33	5.60	V			
	2472	-30.78	-13	-17.78	-33.69	1.64	6.70	V			
	3294	-55.47	-13	-42.47	-58.83	1.89	7.40	V			
	1672	-49.06	-13	-36.06	-51.18	1.333	5.60	Н			
	2508	-36.17	-13	-23.17	-39.08	1.64	6.70	Н			
Middle	3348	-56.25	-13	-43.25	-59.61	1.89	7.40	Н			
ivildale	1672	-44.51	-13	-31.51	-46.63	1.33	5.60	V			
	2510	-30.07	-13	-17.07	-32.98	1.64	6.70	V			
	3348	-57.39	-13	-44.39	-60.75	1.89	7.40	V			
	1698	-47.19	-13	-34.19	-49.31	1.333	5.60	Н			
	2546	-35.41	-13	-22.41	-38.32	1.64	6.70	Н			
Linbook	3396	-56.36	-13	-43.36	-59.72	1.89	7.40	Н			
Highest	1698	-46.29	-13	-33.29	-48.41	1.33	5.60	V			
	2546	-34.21	-13	-21.21	-37.12	1.64	6.70	V			
	3396	-55.46	-13	-42.46	-58.82	1.89	7.40	V			

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

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			GS	M850 (EDC	GE class 8)			
Channel	Frequency (MHz)	ERP (dBm)	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
	1648	-59.45	-13	-46.45	-61.57	1.333	5.60	Н
	2472	-51.88	-13	-38.88	-54.79	1.64	6.70	Н
Lowest	3294	-56.53	-13	-43.53	-59.89	1.89	7.40	Н
Lowest	1648	-57.08	-13	-44.08	-59.20	1.33	5.60	V
	2472	-46.44	-13	-33.44	-49.35	1.64	6.70	V
	3294	-55.13	-13	-42.13	-58.49	1.89	7.40	V
	1672	-57.65	-13	-44.65	-59.77	1.333	5.60	Н
	2510	-53.20	-13	-40.20	-56.11	1.64	6.70	Н
Middle	3348	-56.32	-13	-43.32	-59.68	1.89	7.40	Н
Middle	1672	-57.71	-13	-44.71	-59.83	1.33	5.60	V
	2510	-50.86	-13	-37.86	-53.77	1.64	6.70	V
	3348	-55.28	-13	-42.28	-58.64	1.89	7.40	V
	1698	-54.13	-13	-41.13	-56.25	1.333	5.60	Н
	2546	-47.04	-13	-34.04	-49.95	1.64	6.70	Н
LPakast	3396	-57.42	-13	-44.42	-60.78	1.89	7.40	Н
Highest	1698	-52.17	-13	-39.17	-54.29	1.33	5.60	V
	2546	-43.68	-13	-30.68	-46.59	1.64	6.70	V
	3396	-55.63	-13	-42.63	-58.99	1.89	7.40	V

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	GSM1900 (GSM)										
Channel	Frequency ( MHz )	ERP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)			
	3699	-57.51	-13	-44.51	-59.23	5.08	6.80	Н			
	5550	-50.93	-13	-37.93	-52.60	8.03	9.70	Н			
Lawast	7401	-50.25	-13	-37.25	-52.63	9.43	11.81	Н			
Lowest	3699	-57.14	-13	-44.14	-58.86	5.08	6.80	V			
	5550	-51.68	-13	-38.68	-53.35	8.03	9.70	V			
	7401	-50.40	-13	-37.40	-52.78	9.43	11.81	V			
	3759	-57.48	-13	-44.48	-59.20	5.08	6.80	Н			
	5640	-49.51	-13	-36.51	-51.18	8.03	9.70	Н			
Middle	7521	-50.02	-13	-37.02	-52.40	9.43	11.81	Н			
Middle	3759	-57.45	-13	-44.45	-59.17	5.08	6.80	V			
	5640	-46.42	-13	-33.42	-48.09	8.03	9.70	V			
	7521	-49.74	-13	-36.74	-52.12	9.43	11.81	V			
	3819	-57.95	-13	-44.95	-59.67	5.08	6.80	Н			
	5730	-52.00	-13	-39.00	-53.67	8.03	9.70	Н			
Linkoot	7638	-50.08	-13	-37.08	-52.46	9.43	11.81	Н			
Highest	3819	-57.47	-13	-44.47	-59.19	5.08	6.80	V			
	5730	-51.25	-13	-38.25	-52.92	8.03	9.70	V			
	7638	-50.08	-13	-37.08	-52.46	9.43	11.81	V			

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	GSM1900 (EDGE class 8)										
Channel	Frequency (MHz)	ERP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)			
	3699	-57.48	-13	-44.48	-59.20	5.08	6.80	Н			
	5550	-55.18	-13	-42.18	-56.85	8.03	9.70	Н			
Lawast	7401	-50.05	-13	-37.05	-52.43	9.43	11.81	Н			
Lowest	3699	-57.28	-13	-44.28	-59.00	5.08	6.80	V			
	5550	-55.07	-13	-42.07	-56.74	8.03	9.70	V			
	7401	-49.95	-13	-36.95	-52.33	9.43	11.81	V			
	3759	-57.76	-13	-44.76	-59.48	5.08	6.80	Н			
	5640	-54.95	-13	-41.95	-56.62	8.03	9.70	Н			
NA: al all a	7521	-49.99	-13	-36.99	-52.37	9.43	11.81	Н			
Middle	3759	-57.40	-13	-44.40	-59.12	5.08	6.80	V			
	5640	-54.75	-13	-41.75	-56.42	8.03	9.70	V			
	7521	-49.84	-13	-36.84	-52.22	9.43	11.81	V			
	3819	-57.99	-13	-44.99	-59.71	5.08	6.80	Н			
	5730	-54.83	-13	-41.83	-56.50	8.03	9.70	Н			
I Park and	7638	-50.15	-13	-37.15	-52.53	9.43	11.81	Н			
Highest	3819	-57.66	-13	-44.66	-59.38	5.08	6.80	V			
	5730	-54.67	-13	-41.67	-56.34	8.03	9.70	V			
	7638	-49.79	-13	-36.79	-52.17	9.43	11.81	V			

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	WCDMA Band V(RMC 12.2Kbps)										
Channel	Frequency (MHz)	ERP (dBm)	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)			
	1652	-59.14	-13	-46.14	-61.26	1.333	5.60	Н			
	2480	-48.64	-13	-35.64	-51.55	1.64	6.70	Н			
Lowest	3306	-56.02	-13	-43.02	-59.38	1.89	7.40	Н			
Lowest	1652	-55.04	-13	-42.04	-57.16	1.33	5.60	V			
	2480	-39.00	-13	-26.00	-41.91	1.64	6.70	V			
	3306	-54.76	-13	-41.76	-58.12	1.89	7.40	V			
	1672	-56.76	-13	-43.76	-58.88	1.333	5.60	Н			
	2510	-46.68	-13	-33.68	-49.59	1.64	6.70	Н			
Middle	3348	-56.54	-13	-43.54	-59.90	1.89	7.40	Н			
Middle	1672	-55.47	-13	-42.47	-57.59	1.33	5.60	V			
	2510	-44.69	-13	-31.69	-47.60	1.64	6.70	V			
	3348	-55.08	-13	-42.08	-58.44	1.89	7.40	V			
	1694	-57.79	-13	-44.79	-59.91	1.333	5.60	Н			
	2540	-48.45	-13	-35.45	-51.36	1.64	6.70	Н			
l limboot	3384	-56.25	-13	-43.25	-59.61	1.89	7.40	Н			
Highest	1694	-58.63	-13	-45.63	-60.75	1.33	5.60	V			
	2540	-44.98	-13	-31.98	-47.89	1.64	6.70	V			
	3384	-55.10	-13	-42.10	-58.46	1.89	7.40	V			

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	WCDMA Band II(RMC 12.2Kbps)										
Channel	Frequency ( MHz )	ERP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)			
	3705	-57.48	-13	-44.48	-59.20	5.08	6.80	Н			
	5556	-53.27	-13	-40.27	-54.94	8.03	9.70	Н			
Lawast	7410	-50.28	-13	-37.28	-52.66	9.43	11.81	Н			
Lowest	3705	-56.90	-13	-43.90	-58.62	5.08	6.80	V			
	5556	-51.89	-13	-38.89	-53.56	8.03	9.70	V			
	7410	-50.16	-13	-37.16	-52.54	9.43	11.81	V			
	3759	-55.96	-13	-42.96	-57.68	5.08	6.80	Н			
	5640	-52.66	-13	-39.66	-54.33	8.03	9.70	Н			
Middle	7521	-50.05	-13	-37.05	-52.43	9.43	11.81	Н			
Middle	3759	-56.88	-13	-43.88	-58.60	5.08	6.80	V			
	5640	-51.39	-13	-38.39	-53.06	8.03	9.70	V			
	7521	-49.79	-13	-36.79	-52.17	9.43	11.81	V			
	3816	-56.74	-13	-43.74	-58.46	5.08	6.80	Н			
	5724	-46.09	-13	-33.09	-47.76	8.03	9.70	Н			
Linkoot	7629	-49.66	-13	-36.66	-52.04	9.43	11.81	Н			
Highest	3816	-57.27	-13	-44.27	-58.99	5.08	6.80	V			
	5724	-45.32	-13	-32.32	-46.99	8.03	9.70	V			
	7629	-49.34	-13	-36.34	-51.72	9.43	11.81	V			

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	WCDMA Band IV(RMC 12.2Kbps)										
Channel	Frequency (MHz)	ERP ( dBm )	Limit ( dBm )	Over Limit ( dB )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)			
	3426	-48.70	-13	-35.70	-52.67	4.87	8.84	Н			
	5136	-44.93	-13	-31.93	-46.37	7.70	9.14	Н			
Lawast	6849	-51.50	-13	-38.50	-53.19	8.98	10.66	Н			
Lowest	3423	-51.48	-13	-38.48	-55.45	4.87	8.84	V			
	5139	-47.32	-13	-34.32	-48.76	7.70	9.14	V			
	6849	-51.32	-13	-38.32	-53.01	8.98	10.66	V			
	3468	-47.69	-13	-34.69	-51.66	4.87	8.84	Н			
	5196	-44.96	-13	-31.96	-46.40	7.70	9.14	Н			
N 4: al all a	6930	-51.47	-13	-38.47	-53.16	8.98	10.66	Н			
Middle	3465	-48.88	-13	-35.88	-52.85	4.87	8.84	V			
	5202	-45.60	-13	-32.60	-47.04	7.70	9.14	V			
	6930	-51.37	-13	-38.37	-53.06	8.98	10.66	V			
	3504	-56.75	-13	-43.75	-60.72	4.87	8.84	Н			
	5259	-51.98	-13	-38.98	-53.42	7.70	9.14	Н			
LPakaat	7011	-50.68	-13	-37.68	-52.37	8.98	10.66	Н			
Highest	3504	-54.30	-13	-41.30	-58.27	4.87	8.84	V			
	5259	-49.66	-13	-36.66	-51.10	7.70	9.14	V			
	7011	-50.93	-13	-37.93	-52.62	8.98	10.66	V			

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