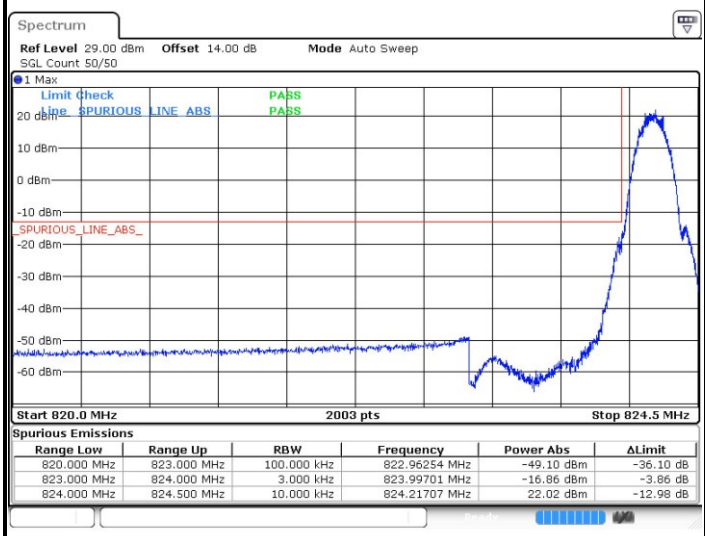
Conducted Band Edge

GSM850 (GSM)

Lowest Band Edge

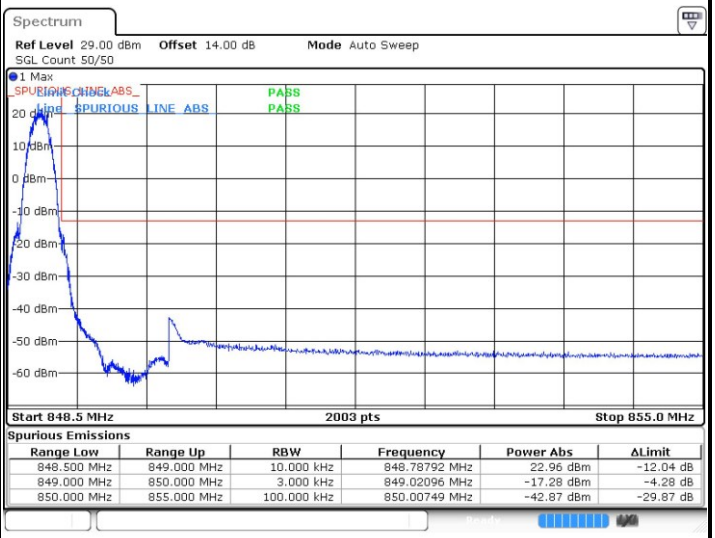


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
820.000 MHz	823.000 MHz	100.000 kHz	822.96254 MHz	-49.10 dBm	-36.10 dB
823.000 MHz	824.000 MHz	3.000 kHz	823.99701 MHz	-16.86 dBm	-3.86 dB
824.000 MHz	824.500 MHz	10.000 kHz	824.21707 MHz	22.02 dBm	-12.98 dB

Date: 17.OCT.2017 16:23:32

Highest Band Edge



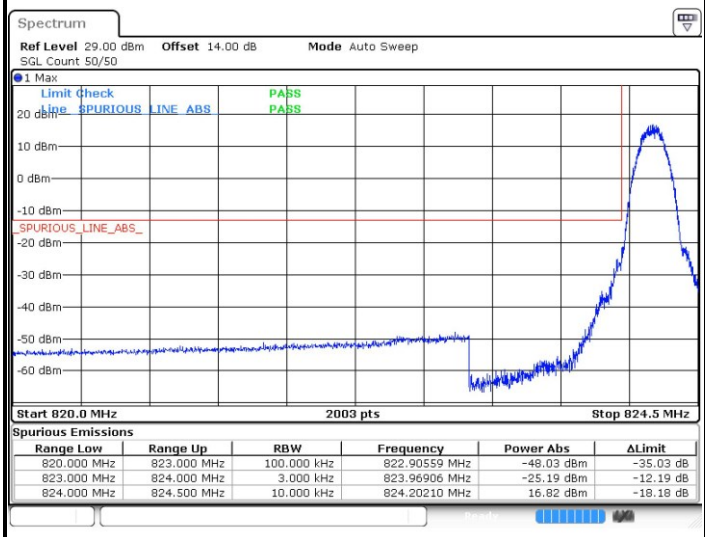
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
848.500 MHz	849.000 MHz	10.000 kHz	848.78792 MHz	22.96 dBm	-12.04 dB
849.000 MHz	850.000 MHz	3.000 kHz	849.02096 MHz	-17.28 dBm	-4.28 dB
850.000 MHz	855.000 MHz	100.000 kHz	850.00749 MHz	-42.87 dBm	-29.87 dB

Date: 17.OCT.2017 16:25:28

GSM850 (EDGE class 8)

Lowest Band Edge

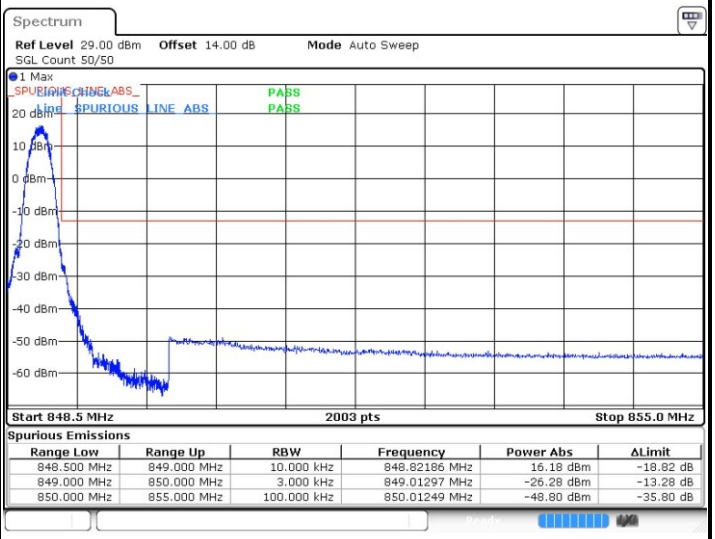


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
820.000 MHz	823.000 MHz	100.000 kHz	822.90559 MHz	-48.03 dBm	-35.03 dB
823.000 MHz	824.000 MHz	3.000 kHz	823.96906 MHz	-25.19 dBm	-12.19 dB
824.000 MHz	824.500 MHz	10.000 kHz	824.20210 MHz	16.82 dBm	-18.18 dB

Date: 17.OCT.2017 16:44:39

Highest Band Edge



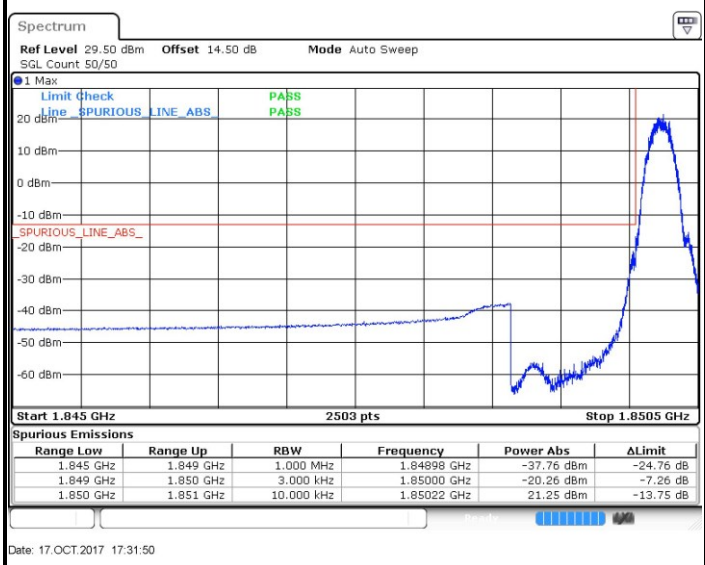
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
848.500 MHz	849.000 MHz	10.000 kHz	848.82186 MHz	16.18 dBm	-18.82 dB
849.000 MHz	850.000 MHz	3.000 kHz	849.01297 MHz	-26.28 dBm	-13.28 dB
850.000 MHz	855.000 MHz	100.000 kHz	850.01249 MHz	-48.80 dBm	-35.80 dB

Date: 17.OCT.2017 16:46:25

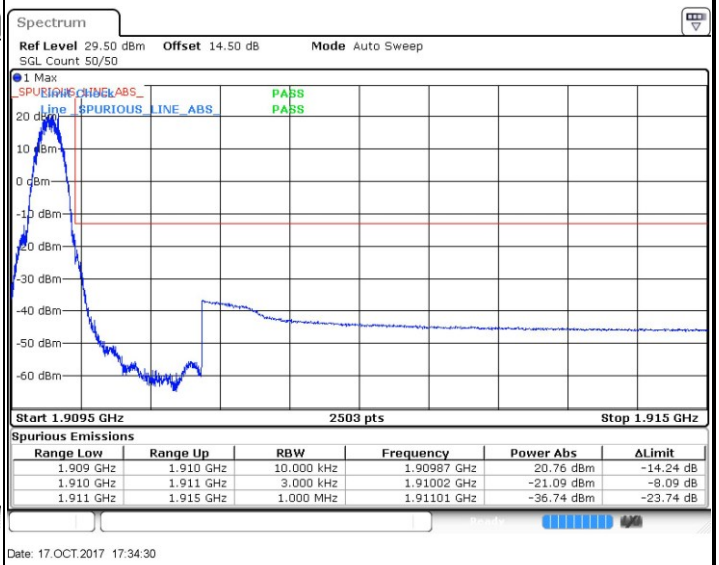
GSM1900 (GSM)

Lowest Band Edge



Date: 17.OCT.2017 17:31:50

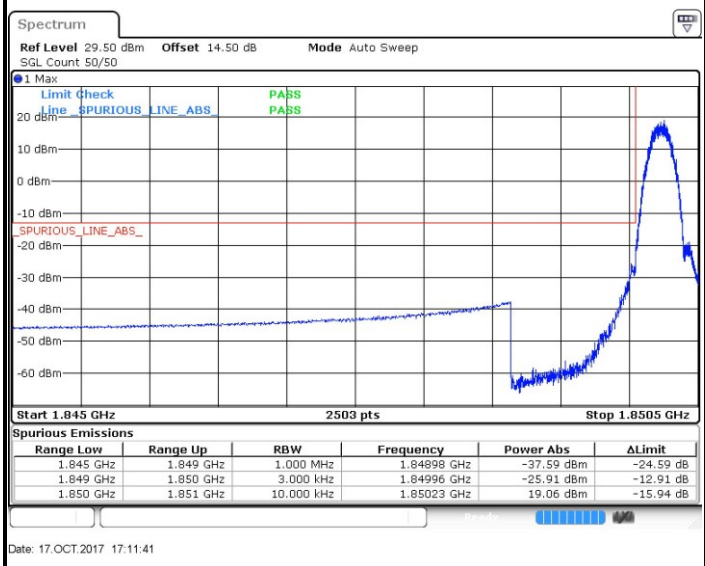
Highest Band Edge



Date: 17.OCT.2017 17:34:30

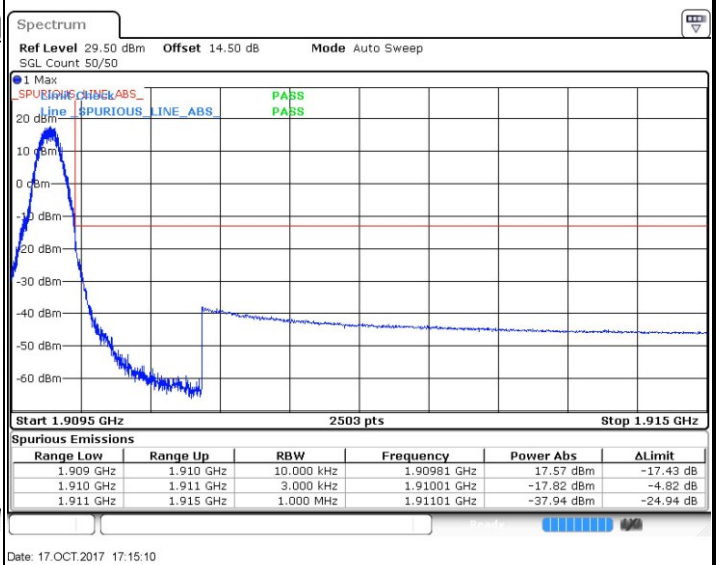
GSM1900 (EDGE class 8)

Lowest Band Edge



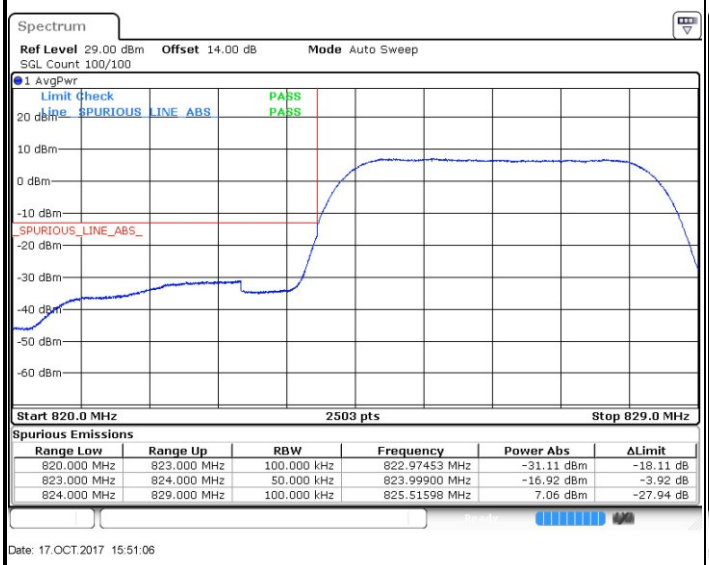
Date: 17.OCT.2017 17:11:41

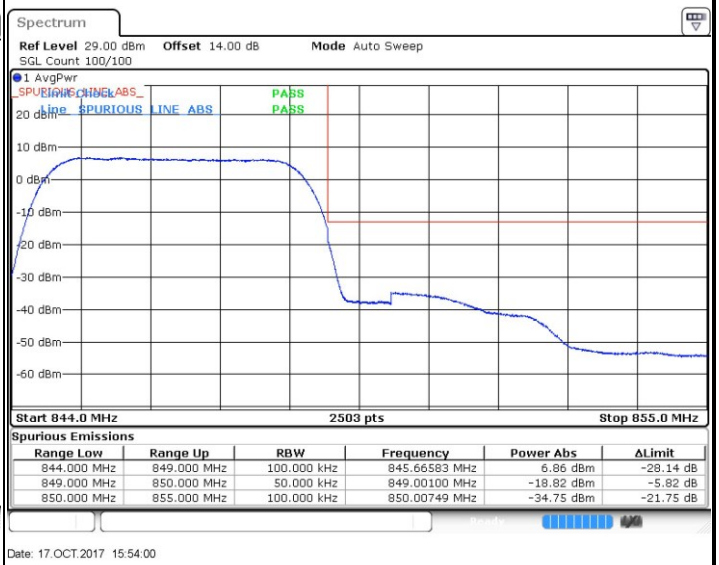
Highest Band Edge



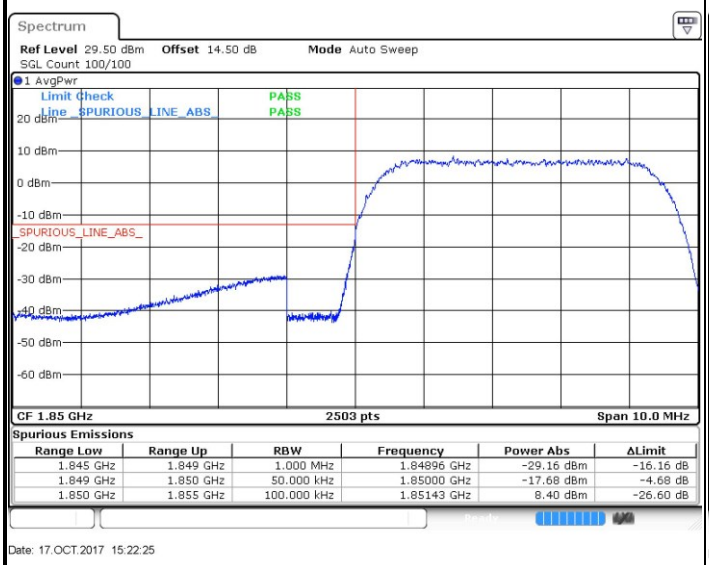
Date: 17.OCT.2017 17:15:10

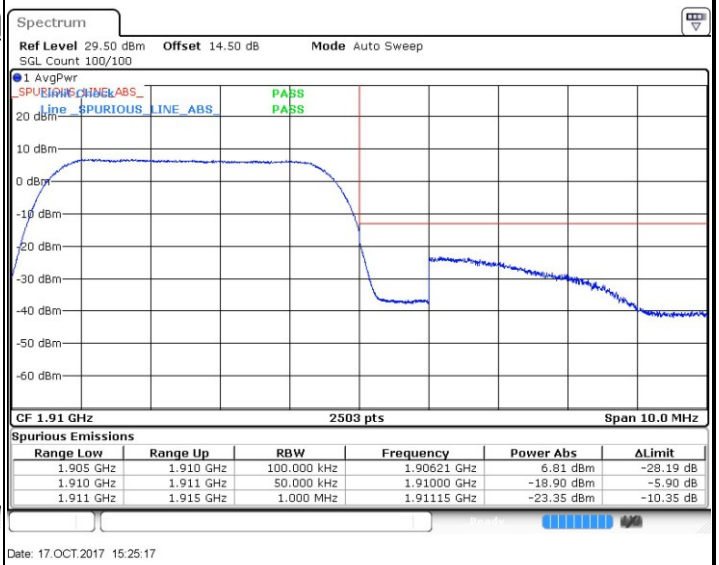
WCDMA Band V (RMC 12.2Kbps)	
Lowest Band Edge	**Highest Band Edge**





WCDMA Band II (RMC 12.2Kbps)	
Lowest Band Edge	**Highest Band Edge**

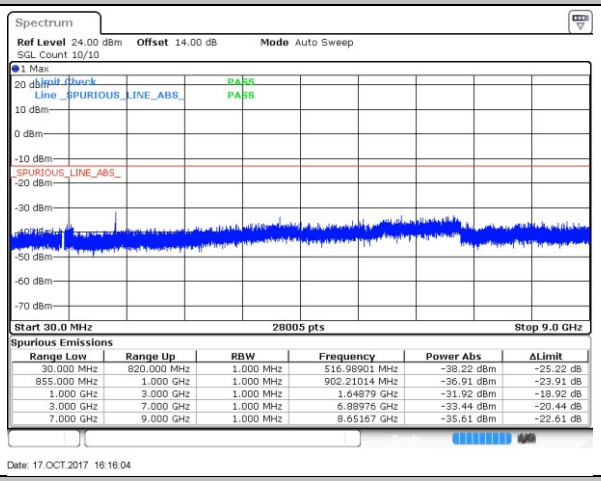




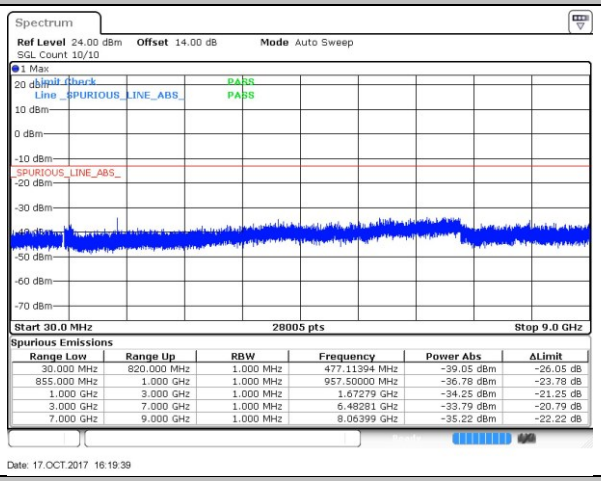
Conducted Spurious Emission

GSM850 (GSM)

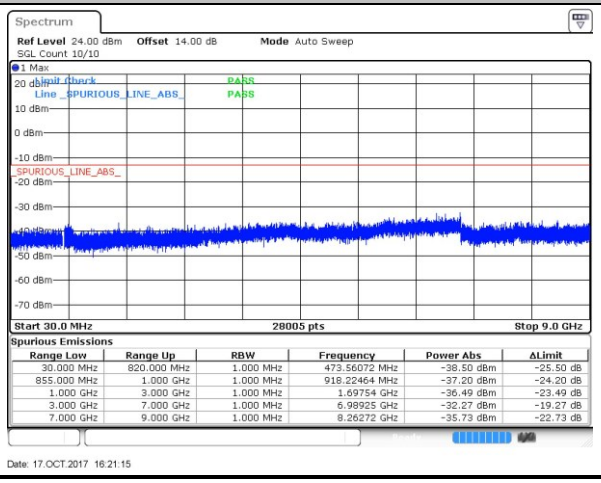
Lowest Channel



Middle Channel

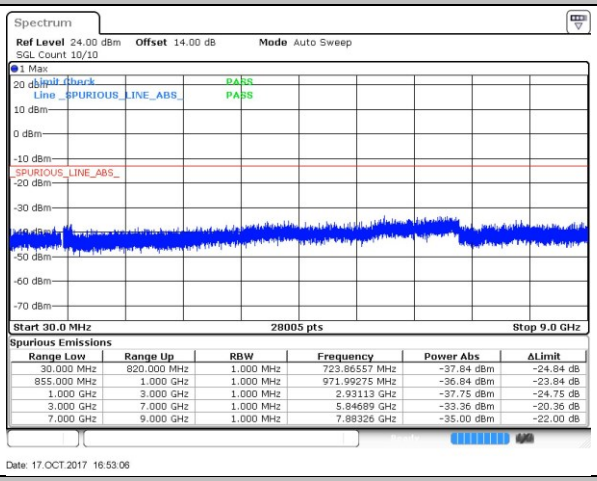


Highest Channel

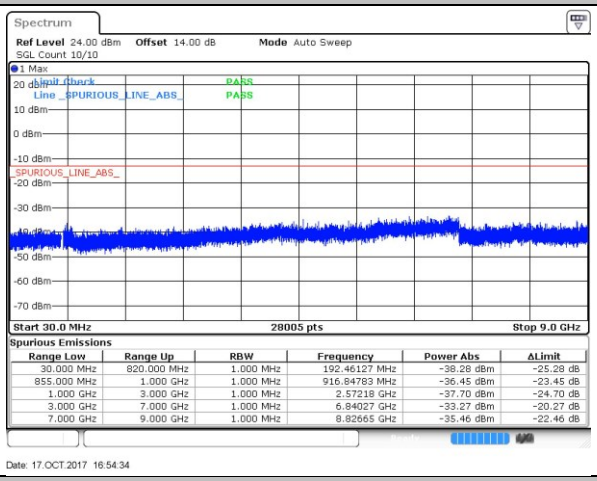


GSM850 (EDGE class 8)

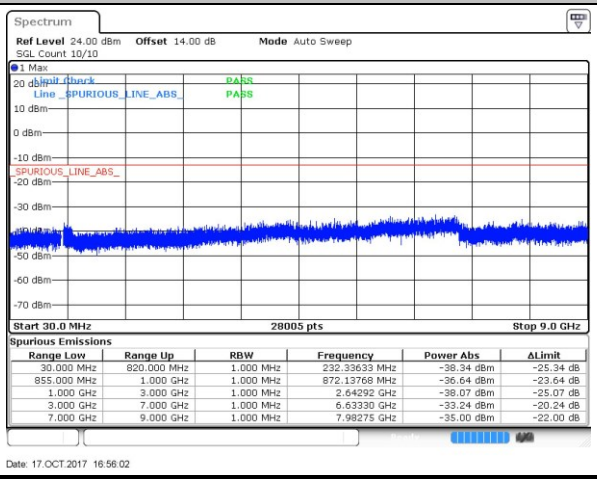
Lowest Channel

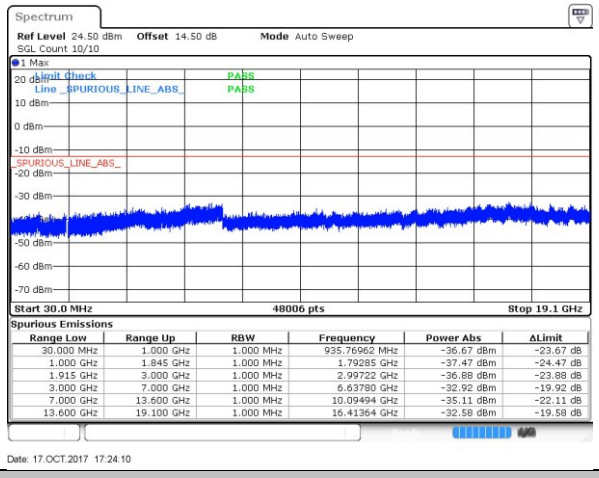
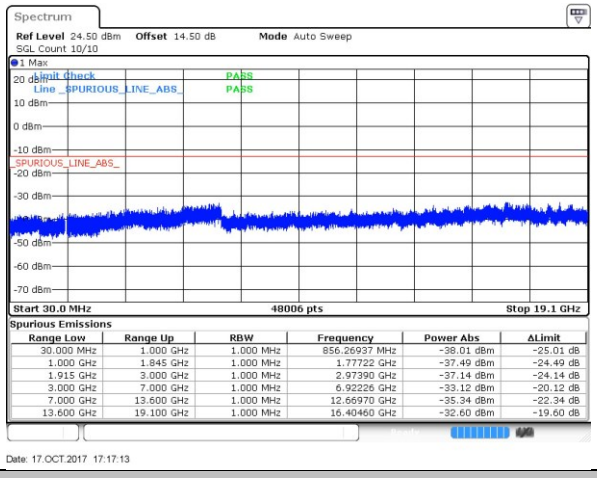
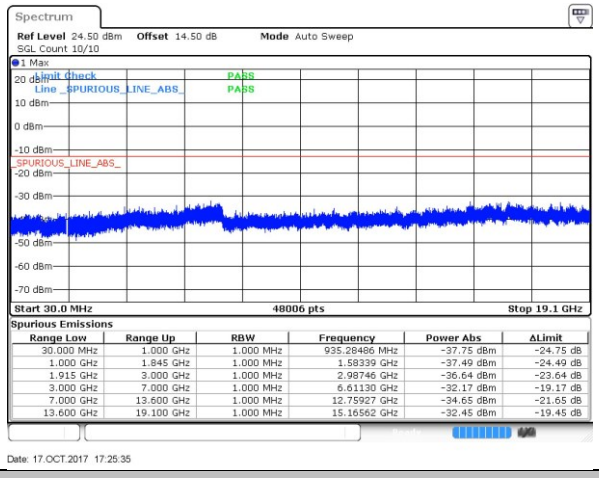
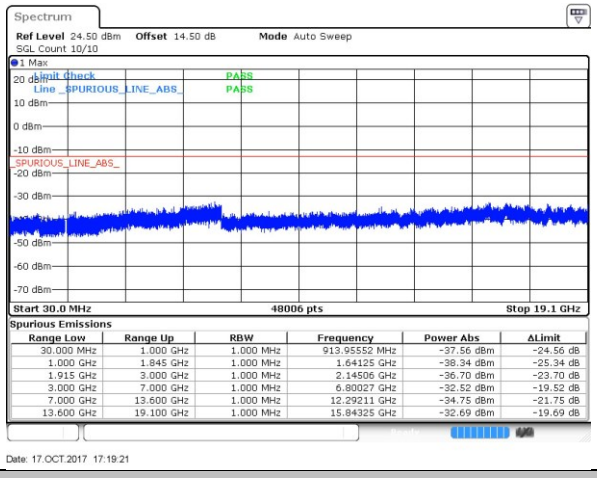
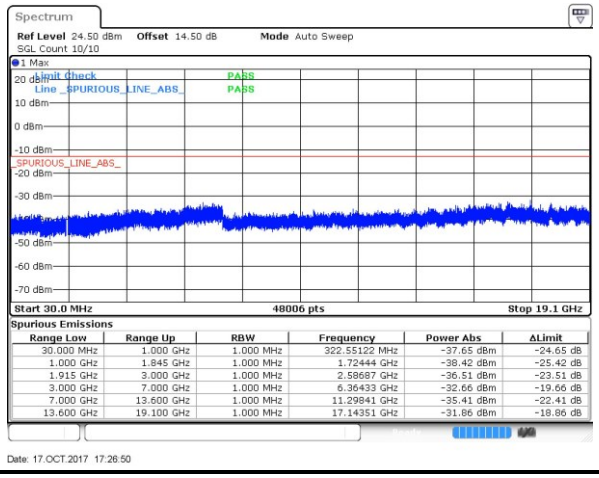
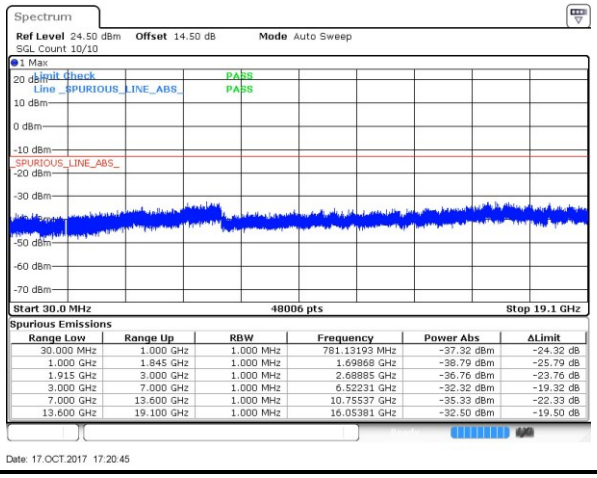


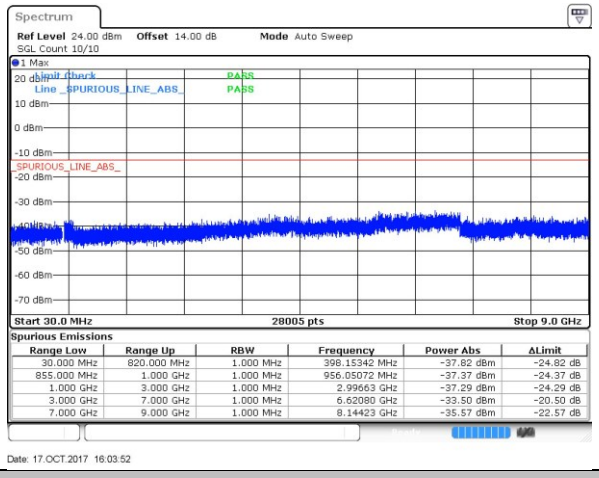
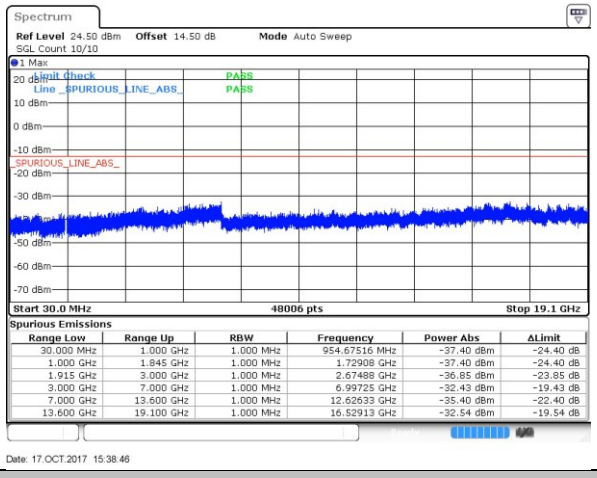
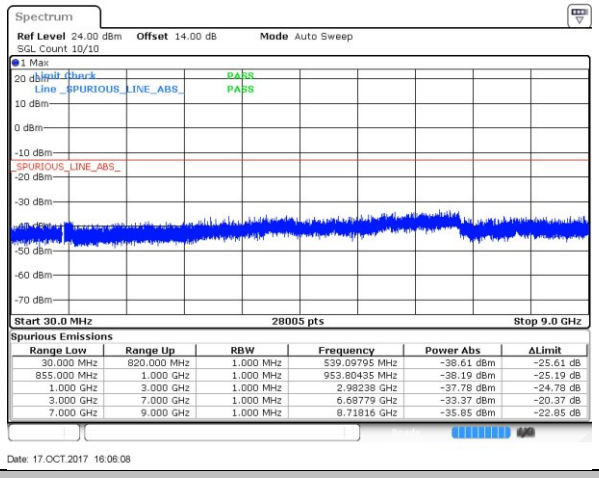
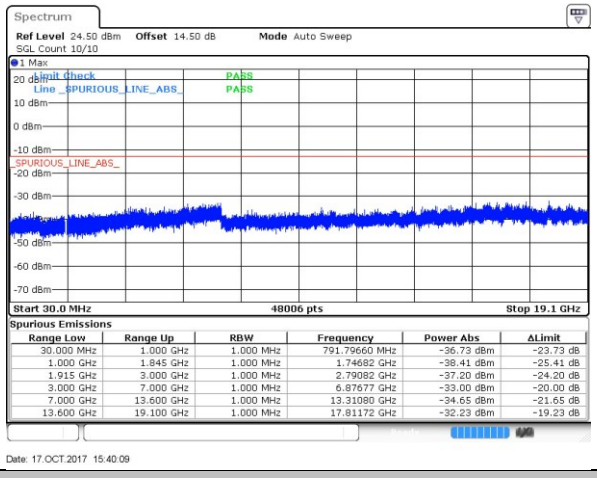
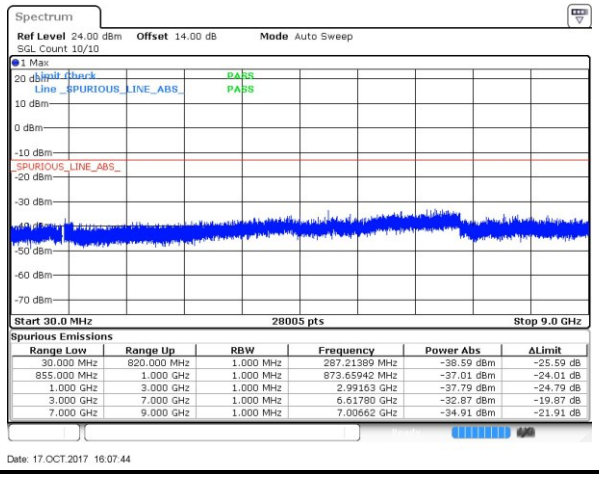
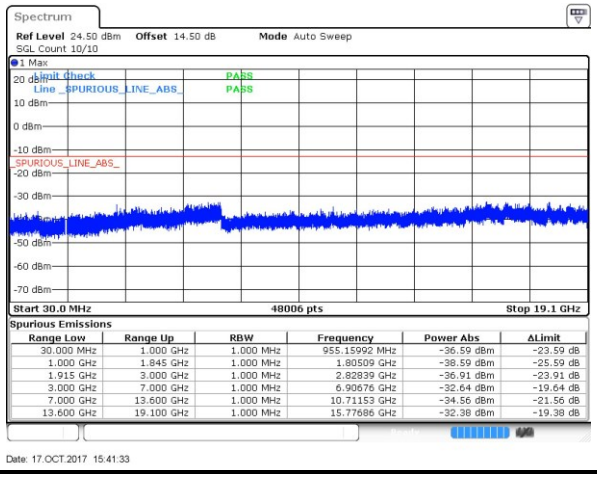
Middle Channel



Highest Channel



GSM1900 (GSM)	GSM1900 (EDGE class 8)
Lowest Channel	**Lowest Channel**
	
Middle Channel	**Middle Channel**
	
Highest Channel	**Highest Channel**
	

WCDMA Band V (RMC 12.2Kbps)	WCDMA Band II (RMC 12.2Kbps)
Lowest Channel	**Lowest Channel**
	
Middle Channel	**Middle Channel**
	
Highest Channel	**Highest Channel**
	

Frequency Stability

Test Conditions	Middle Channel	GSM850 (GSM)	GSM850 (EDGE class 8)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)		Result
50	Normal Voltage	0.0036	0.0263	PASS
40	Normal Voltage	0.0012	0.0239	
30	Normal Voltage	0.0036	0.0215	
20(Ref.)	Normal Voltage	0.0000	0.0000	
10	Normal Voltage	0.0203	0.0012	
0	Normal Voltage	0.0036	0.0227	
-10	Normal Voltage	0.0048	0.0048	
-20	Normal Voltage	0.0203	0.0263	
-30	Normal Voltage	0.0215	0.0036	
20	Maximum Voltage	0.0024	0.0227	
20	Normal Voltage	0.0000	0.0000	
20	Battery End Point	0.0036	0.0203	

Note:

1. Normal Voltage = 3.85V. ；Battery End Point (BEP) = 3.5 V.；Maximum Voltage =4.35 V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Test Conditions	Middle Channel	GSM1900 (GSM)	GSM1900 (EDGE class 8)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)		Result
50	Normal Voltage	0.0027	0.0011	PASS
40	Normal Voltage	0.0176	0.0117	
30	Normal Voltage	0.0021	0.0011	
20(Ref.)	Normal Voltage	0.0000	0.0000	
10	Normal Voltage	0.0032	0.0021	
0	Normal Voltage	0.0048	0.0016	
-10	Normal Voltage	0.0037	0.0037	
-20	Normal Voltage	0.0149	0.0122	
-30	Normal Voltage	0.0048	0.0032	
20	Maximum Voltage	0.0032	0.0011	
20	Normal Voltage	0.0000	0.0000	
20	Battery End Point	0.0176	0.0133	

Note:

1. Normal Voltage = 3.85V. ；Battery End Point (BEP) = 3.5 V.；Maximum Voltage =4.35 V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Test Conditions	Middle Channel	WCDMA Band V (RMC 12.2Kbps)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0096	PASS
40	Normal Voltage	0.0120	
30	Normal Voltage	0.0143	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0000	
0	Normal Voltage	0.0072	
-10	Normal Voltage	0.0132	
-20	Normal Voltage	0.0000	
-30	Normal Voltage	0.0084	
20	Maximum Voltage	0.0072	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0108	

Note:

1. Normal Voltage = 3.85V. ；Battery End Point (BEP) = 3.5 V.；Maximum Voltage =4.35 V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Test Conditions	Middle Channel	WCDMA Band II (RMC 12.2Kbps)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0005	PASS
40	Normal Voltage	0.0069	
30	Normal Voltage	0.0011	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0016	
0	Normal Voltage	0.0021	
-10	Normal Voltage	0.0069	
-20	Normal Voltage	0.0011	
-30	Normal Voltage	0.0011	
20	Maximum Voltage	0.0021	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0064	

Note:

1. Normal Voltage = 3.85V. ；Battery End Point (BEP) = 3.5 V.；Maximum Voltage =4.35 V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Test Result for SIM1 with Sample 1

GSM850 (GSM)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672.8	-54.55	-13	-41.55	-60.11	-58.96	2.84	9.40	H
	2509.2	-51.71	-13	-38.71	-62.19	-56.46	3.7	10.60	H
	3345.6	-56.62	-13	-43.62	-71.38	-62.70	4.37	12.60	H
	1672.8	-68.84	-13	-55.84	-73.55	-73.25	2.84	9.40	V
	2509.2	-64.43	-13	-51.43	-74.26	-69.18	3.70	10.60	V
	3345.6	-64.43	-13	-51.43	-76.87	-70.51	4.37	12.60	V

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

EDGE 850 (GSM)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672.8	-53.48	-13	-40.48	-59.25	-57.89	2.84	9.40	H
	2509.2	-54.31	-13	-41.31	-64.73	-59.06	3.7	10.60	H
	3345.6	-56.66	-13	-43.66	-71.42	-62.74	4.37	12.60	H
	1672.8	-67.29	-13	-54.29	-72.00	-71.70	2.84	9.40	V
	2509.2	-63.13	-13	-50.13	-72.96	-67.88	3.70	10.60	V
	3345.6	-62.80	-13	-49.80	-76.37	-68.88	4.37	12.60	V

WCDMA Band V (RMC 12.2Kbps)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672.8	-70.29	-13	-57.29	-75.85	-74.70	2.84	9.40	H
	2509.2	-62.56	-13	-49.56	-72.98	-67.31	3.7	10.60	H
	3345.6	-65.30	-13	-52.30	-80.06	-71.38	4.37	12.60	H
	1672.8	-71.63	-13	-58.63	-76.34	-76.04	2.84	9.40	V
	2509.2	-68.35	-13	-55.35	-78.18	-73.10	3.70	10.60	V
	3345.6	-66.88	-13	-53.88	-80.45	-72.96	4.37	12.60	V

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

GSM1900 (GSM)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-58.76	-13	-45.76	-78.37	-66.51	4.85	12.60	H
	5640	-57.62	-13	-44.62	-81.07	-65.14	5.58	13.10	H
	7520	-59.72	-13	-46.72	-83.24	-64.46	6.56	11.30	H
	3760	-61.05	-13	-48.05	-81.44	-68.80	4.85	12.6	V
	5640	-59.59	-13	-46.59	-83.64	-67.11	5.58	13.1	V
	7520	-60.00	-13	-47.00	-83.54	-64.74	6.56	11.3	V

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

EDGE1900 (GSM)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-61.76	-13	-48.76	-81.37	-69.51	4.85	12.60	H
	5640	-59.76	-13	-46.76	-83.21	-67.28	5.58	13.10	H
	7520	-59.87	-13	-46.87	-83.39	-64.61	6.56	11.30	H
	3760	-60.72	-13	-47.72	-81.11	-68.47	4.85	12.6	V
	5640	-59.45	-13	-46.45	-83.5	-66.97	5.58	13.1	V
	7520	-59.91	-13	-46.91	-83.45	-64.65	6.56	11.3	V

WCDMA Band II (RMC 12.2Kbps)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-61.79	-13	-48.79	-81.40	-69.54	4.85	12.60	H
	5640	-60.12	-13	-47.12	-83.57	-67.64	5.58	13.10	H
	7520	-59.92	-13	-46.92	-83.44	-64.66	6.56	11.30	H
	3760	-61.01	-13	-48.01	-81.4	-68.76	4.85	12.6	V
	5640	-59.51	-13	-46.51	-83.56	-67.03	5.58	13.1	V
	7520	-59.92	-13	-46.92	-83.46	-64.66	6.56	11.3	V

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

Test Result for SIM2 with Sample 1

GSM850 (GSM)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672.8	-53.91	-13	-40.91	-59.51	-58.32	2.84	9.40	H
	2509.2	-47.10	-13	-34.10	-59.79	-51.85	3.7	10.60	H
	3345.6	-56.57	-13	-43.57	-71.33	-62.65	4.37	12.60	H
	1672.8	-67.25	-13	-54.25	-71.96	-71.66	2.84	9.40	V
	2509.2	-68.49	-13	-55.49	-78.32	-73.24	3.70	10.60	V
	3345.6	-65.52	-13	-52.52	-79.09	-71.60	4.37	12.60	V

GSM1900 (GSM)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-61.48	-13	-48.48	-81.09	-69.23	4.85	12.60	H
	5640	-59.70	-13	-46.70	-83.15	-67.22	5.58	13.10	H
	7520	-59.85	-13	-46.85	-83.37	-64.59	6.56	11.30	H
	3760	-60.92	-13	-47.92	-81.31	-68.67	4.85	12.6	V
	5640	-59.54	-13	-46.54	-83.59	-67.06	5.58	13.1	V
	7520	-59.95	-13	-46.95	-83.49	-64.69	6.56	11.3	V

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

Test Result for SIM2 with Sample 2

GSM850 (GSM)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1672.8	-68.62	-13	-55.62	-74.18	-73.03	2.84	9.40	H
	2509.2	-58.61	-13	-45.61	-69.03	-63.36	3.7	10.60	H
	3345.6	-62.88	-13	-49.88	-77.64	-68.96	4.37	12.60	H
	1672.8	-69.74	-13	-56.74	-74.45	-74.15	2.84	9.40	V
	2509.2	-64.96	-13	-51.96	-74.79	-69.71	3.70	10.60	V
	3345.6	-64.14	-13	-51.14	-77.71	-70.22	4.37	12.60	V

Test Result for SIM1 with Sample 2

GSM1900 (GSM)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-61.92	-13	-48.92	-81.53	-69.67	4.85	12.60	H
	5640	-59.33	-13	-46.33	-82.78	-66.85	5.58	13.10	H
	7520	-60.39	-13	-47.39	-83.91	-65.13	6.56	11.30	H
	3760	-61.27	-13	-48.27	-81.66	-69.02	4.85	12.6	V
	5640	-58.77	-13	-45.77	-82.82	-66.29	5.58	13.1	V
	7520	-60.52	-13	-47.52	-84.06	-65.26	6.56	11.3	V

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

Appendix D. Product Equality Declaration

ShenZhen Chenyee Technology Co., Ltd.

32F, Tower A, East Pacific International Center, No.7888, Shennan Avenue, Futian District, Shenzhen-518040, China

Tel: 86-0755-23949253 ; Fax: +86-0755-82792995

Date: December 1, 2017

Product Equality Declaration

We, ShenZhen Chenyee Technology Co., Ltd., declare on our sole responsibility for the product change of Model Name: HY1-1713 as below:

1. HW version changed from Founder to Red board.
   Changed description:

- ◆ Changed some components for WCDMA B2, such as capacitance, resistance, but do not affect the RF characteristics.
- ◆ Antenna (Changed matching for WCDMA B2.)

2. Additional supplier for PCB Board.
Except for the above of changed and no modification is performed.

All of these changes listed above have been applied to the samples used for lab tests.

Sincerely yours,

Signature
Sophia on behalf of
ShenZhen Chenyee Technology Co., Ltd.