



FCC Test Report (2G)

FCC ID : 2AIV5CWELL001

Applicant : CWELL INTERNATIONAL CO.,LTD.

Room 2810-2814, Building A, Qunxing Plaza, Huaqiang North Rd,
Futian District, Shenzhen, 518031, China .

Sample Description

Product Name : Rugged Smartphone

Model No. : HG06

Serial No. : N/A

Trademark : AngelLira

Receipt Date : 2016-06-26

Test Date : 2016-06-27 to 2016-07-05

Issue Date : 2016-07-06

Test Standard(s) : FCC PART 2; FCC PART 22H; FCC PART 24E

Conclusions : PASSED*

*In the configuration tested, the EUT complied with the standards specified above.

Test/Witness Engineer

: Jason Deng

Approved & Authorized

: Frank Zhang

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.



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1. General Information

1.1 Client Information

Applicant	:	CWELL INTERNATIONAL CO.,LTD.
Address	:	Room 2810-2814, Building A, Qunxing Plaza, Huaqiang North Rd, Futian District, Shenzhen, 518031,China .
Manufacturer	:	CWELL INTERNATIONAL CO.,LTD.
Address	:	Room 2810-2814, Building A, Qunxing Plaza, Huaqiang North Rd, Futian District, Shenzhen, 518031,China .

1.2 General Description of EUT (Equipment Under Test)

Product Name	:	Rugged Smartphone	
Models No.	:	HG06	
Difference	:	N/A	
Trademark	:	AngelLira	
Product Description	:	Operation Band:	GSM850,PCS1900
		GSM Power class	GSM 850: Class 4 GSM 1900: Class 1
		Operation frequency	GSM 850: 824.2MHz—848.8MHz GSM 1900: 1850.2MHz—1909.8MHz
		Modulation Technology:	GMSK
		Antenna Type:	Integral Antenna
		Antenna Gain:	1dBi
Power Supply	:	USB DC 5V from PC, DC 3.7V from Li-ion battery	

Note:

- (1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



1.3 Description of Test Mode

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follows was evaluated respectively.

Test Mode	Description
Transmitting mode	Keep the EUT in continuous transmitting with modulation

Remark: The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows: During all testing, EUT is in link mode with base station emulator at maximum power level in each test mode and channel as below:

Mode	Channel	Frequency(MHz)
GSM850	128	824.2
	190	836.6
	251	848.8
PCS1900	512	1850.2
	661	1880.0
	810	1909.8

1.4 Test Instruments List

	Test Equipment	Manufacturer	Model No.	Cal. Date	Cal. Due date
1	Bilog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	May 22, 2016	May 21, 2017
2	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	May 27, 2016	May 26, 2017
3	Coaxial Cable	N/A	N/A	Mar. 28, 2016	Mar. 27, 2017
4	Coaxial Cable	N/A	N/A	Mar. 29, 2016	Mar. 29, 2017



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5	Coaxial cable	N/A	N/A	Mar. 29, 2016	Mar. 29, 2017
6	Coaxial Cable	N/A	N/A	Mar. 29, 2016	Mar. 29, 2017
7	Coaxial Cable	N/A	N/A	Mar. 29, 2016	Mar. 29, 2017
8	Amplifier (10kHz-1.3GHz)	HP	8447D	Mar. 29, 2016	Mar. 29, 2017
9	Amplifier (1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	Jun. 06, 2016	Mar. 29, 2017
10	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	Mar. 29, 2016	Mar. 29, 2017
11	Horn Antenna	ETS-LINDGREN	3160	Mar. 27, 2016	Mar. 27, 2017
12	Positioning Controller	UC	UC3000	N/A	N/A
13	Spectrum analyzer 9kHz-30GHz	Rohde & Schwarz	FSP	May 26, 2016	May 27, 2017
14	EMI Test Receiver	Rohde & Schwarz	ESPI	Mar. 29, 2016	Mar. 30, 2017
15	Loop antenna	Laplace instrument	RF300	May 22,, 2016	May 23, 2017
16	Universal radio communication tester	Rhode & Schwarz	CMU200	May 26, 2016	May 27, 2017
17	Signal Analyzer	Rohde & Schwarz	FSIQ3	May 26, 2016	May 27, 2017
18	L.I.S.N.#1	Rohde & Schwarz	NSLK8126	May 26, 2016	May 27, 2017
19	L.I.S.N.#2	Rohde & Schwarz	ENV216	May 26, 2016	May 27, 2017
20	Power Meter	Anritsu	ML2495A	May 26, 2016	May 27, 2017
21	Power sensor	Anritsu	ML2491A	May 26, 2016	May 27, 2017
22	Base station	Agilent	E5515C	May 26, 2016	May 27, 2017
23	Bilog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9275	May 22, 2016	May 21, 2017
24	Horn Antenna	ETS-LINDGREN	3258	Mar. 27, 2016	Mar. 27, 2017

1.5 Laboratory Location

Shenzhen TOBY technology Co., Ltd

Address: 1 A/F., Bldg.6, Yusheng Industrial Zone The National Road No.107 Xixiang Section 467,

Xixiang, Bao'an, Shenzhen, Guangdong, 518057, China

At the time of testing, the Laboratory is accredited. It is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562 7.

Tel:0086-755-26509301 Fax: 0086-755-26509195



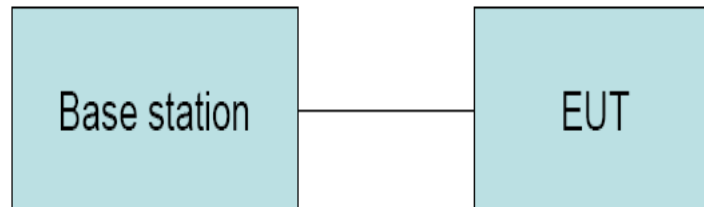
2. Test Summary

Description of Test Item	Standard	Results
Conducted Output power	FCC PART 2: 2.1046 FCC PART 22H: 22.913 (a) FCC PART 24E: 24.232 (c)	PASS
Radiated Output power(erp/eirp)	FCC PART 22H:22.913 (a) FCC PART 24E:24.232(c)	PASS
Occupied bandwidth	FCC PART 2: 2.1049 FCC PART 22H: 22.917 (b) FCC PART 24E: 24.238 (b)	PASS
Frequency stability	FCC PART 2: 2.1055 FCC PART 22H: 22.355 FCC PART 24E: 24.235	PASS
Conducted spurious emission (Antenna terminal)	FCC PART 2: 2.1051 FCC PART 22H: 22.917 FCC PART 24E: 24.238	PASS
Radiated spurious emissions	FCC PART 2: 2.1053 FCC PART 22H: 22.917 FCC PART 24E: 24.238	PASS
Band edge compliance	FCC PART 22H: 22.917 (b) FCC PART 24E: 24.238 (b)	PASS
Power Line Conducted Emission Test	FCC Part 15: 15.207 ANSI C63.4: 2014	PASS



3. Conducted Output Power

3.1. Test Setup



3.2. Limit

Cellular Telephone 850MHz	PCS 1900MHz
38.5dBm(ERP)	33dBm(EIRP)

3.3. Test Procedure

- (1) The EUT's RF output port was connected to base station.
- (2) A call is set up by the SS according to the generic call set up procedure
- (3) Set EUT at maximum power level through base station by power level command
- (4) Measure the maximum output power of EUT at each frequency band and mode by base station.



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3.4. Test Result

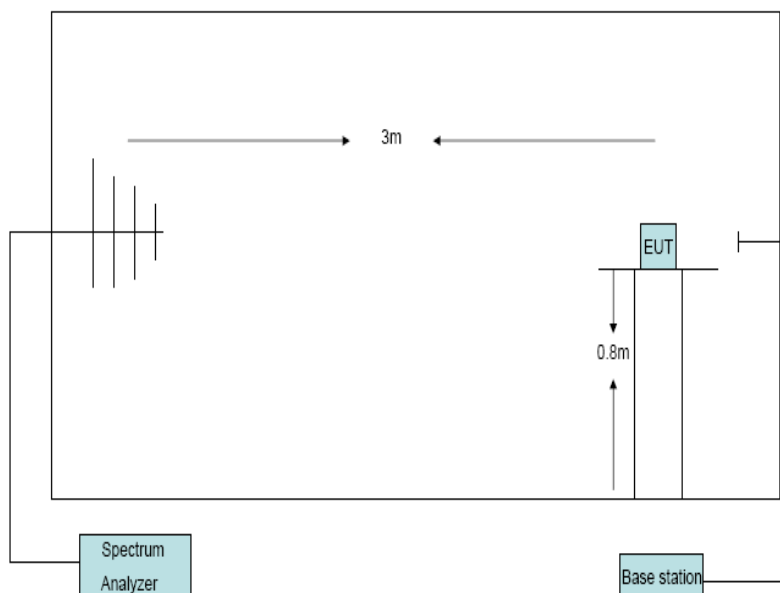
Mode	Channel	PK Output Power(dBm)					Limit (dBm)
		GSM850	GPRS -1 Slot	GPRS -2 Slot	GPRS -3 Slot	GPRS -4 Slot	
GSM 850	128	32.18	31.81	30.89	29.15	28.41	38.5
	190	31.98	31.54	30.70	29.03	28.72	38.5
	251	32.67	32.25	30.91	29.22	28.53	38.5
PCS 1900	512	29.85	29.57	27.47	26.84	25.02	33
	661	29.72	29.88	27.50	26.70	25.26	33
	810	29.70	29.19	27.12	26.38	25.34	33

Mode	Channel	PK Output Power(dBm)				Limit (dBm)
		EGPRS -1 Slot	EGPRS -2 Slot	EGPRS -3 Slot	EGPRS -4 Slot	
GSM 850	128	32.37	30.67	29.04	28.87	38.5
	190	32.55	30.59	29.51	28.42	38.5
	251	32.04	30.13	29.25	28.67	38.5
PCS 1900	512	29.72	27.43	26.45	25.02	33
	661	29.27	27.35	26.11	25.52	33
	810	29.47	27.71	26.51	25.70	33



4. Radiated Power

4.1 Test Setup



4.2 Limit

Cellular Telephone 850MHz	PCS 1900MHz
38.5dBm(ERP)	33dBm(EIRP)

4.3 Test Procedure

1. The EUT was placed on an non-conductive rotating platform with 0.8 meter height in an anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RBW= 3MHz,VBW= 3MHz and peak detector settings.
2. During the measurement, the EUT was enforced in maximum power and linked with a base station. The highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations
3. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (for frequency below 1GHz) or Horn antenna(for frequency above 1GHz) at same location with same polarize of receiver antenna and then a known power of each measure frequency from S.G. was applied into the dipole antenna or Horn antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna.



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The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Substitution antenna Loss (only for Dipole antenna) - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, $EIRP = LVL + \text{Correction factor}$ and $ERP = EIRP - 2.15$

4.4 Test Data

Mode	Channel	PK Output Power(dBm)			Limit (dBm)
		GSM850	GPRS	EGPRS	
GSM 850	128	25.66	22.12	18.59	38.5
	190	26.01	22.35	18.71	38.5
	251	25.54	22.08	18.62	38.5
PCS 1900	512	23.17	20.51	17.62	33
	661	23.56	20.63	17.65	33
	810	21.17	19.79	17.03	33

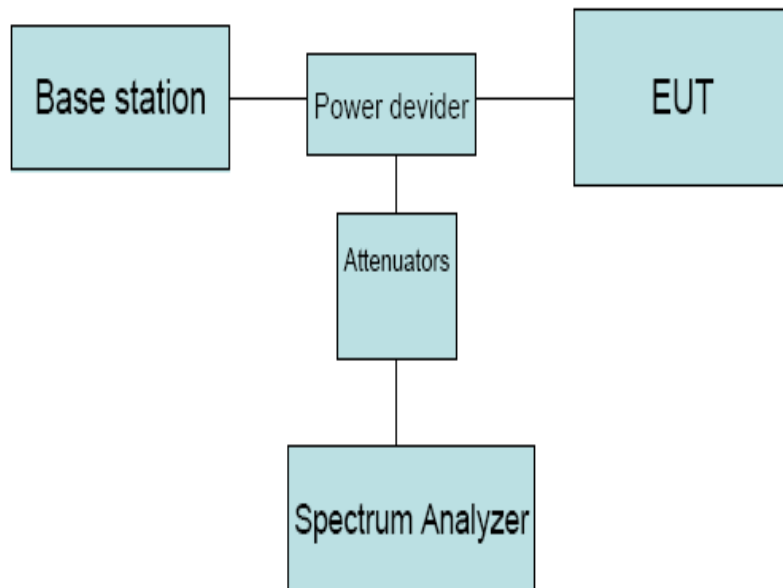


5. Occupied Bandwidth

5.1. Limit

N/A

5.2. Test Setup



5.3. Test Procedure

1. The EUT' RF output port was connected to Spectrum Analyzer and Base Station via power divider.
2. Spectrum analyzer's occupied bandwidth measure function was used to measure 99% bandwidth and -26dBc bandwidth



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5.4. Test Data

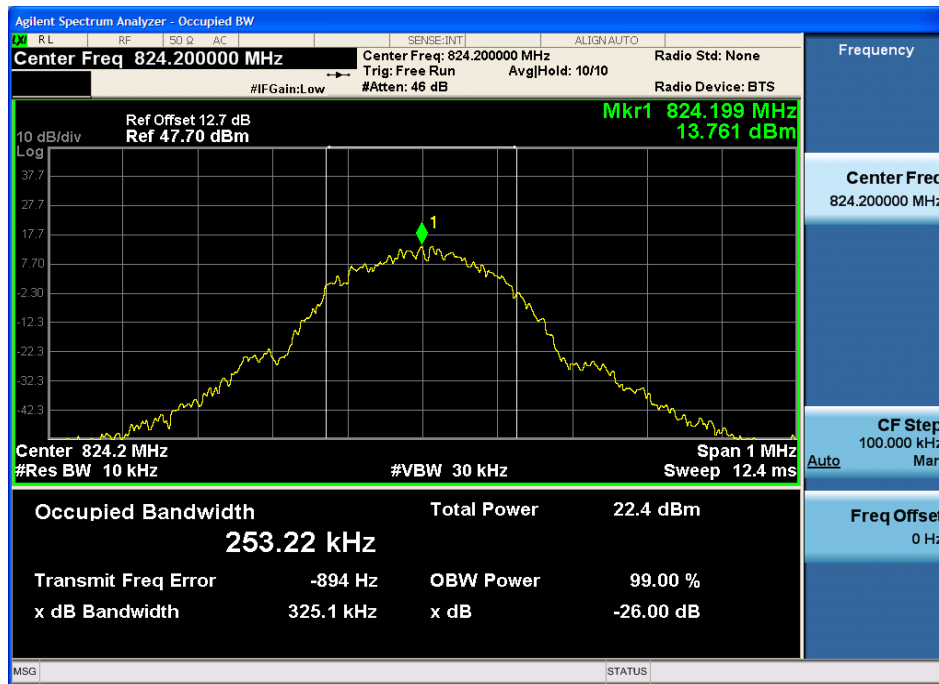
Mode	Channel	99% bandwidth (KHz)	-26dBc bandwidth (KHz)
GSM 850	128	253.22	325.06
	190	245.49	319.54
	251	245.31	320.05
PCS 1900	512	247.27	323.32
	661	244.03	315.92
	810	245.53	323.75

Mode	Channel	99% bandwidth (KHz)	-26dBc bandwidth (KHz)
EGPRS850	128	250.48	319.0
	190	245.90	302.2
	251	243.85	303.3
EGPRS1900	512	251.92	314.6
	661	248.74	323.3
	810	243.92	310.0

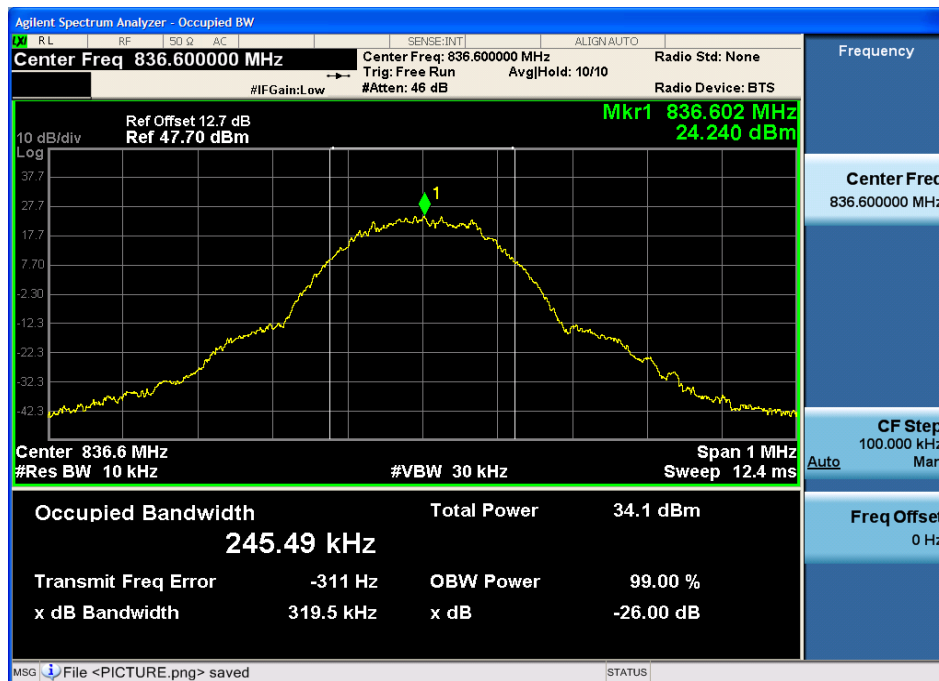


5.5. Test Plot

GSM 850 CH128



GSM 850 CH190



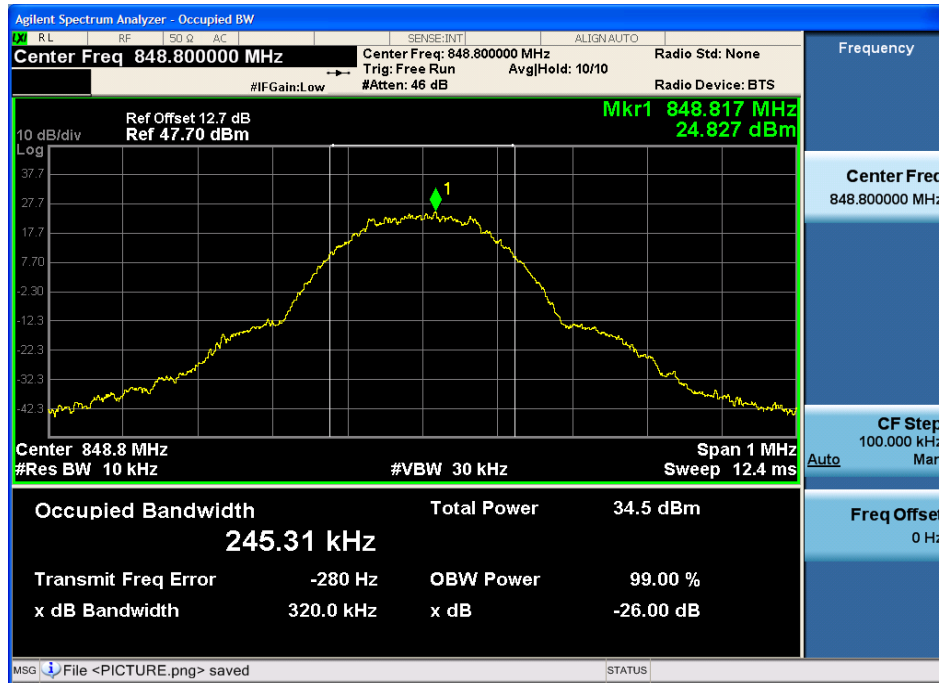


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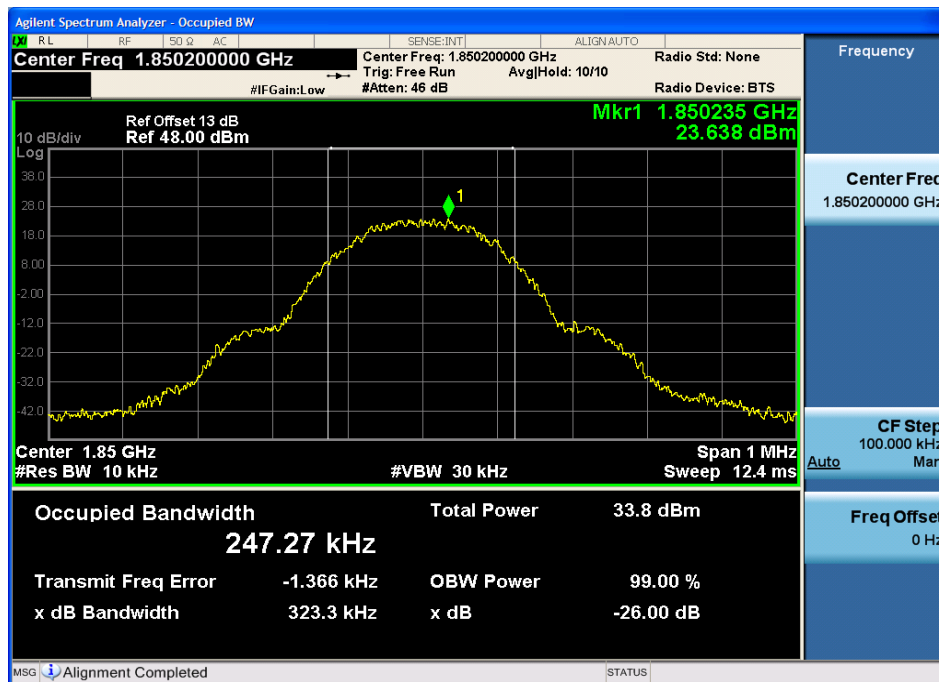
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GSM 850 CH251



PCS 1900 CH512



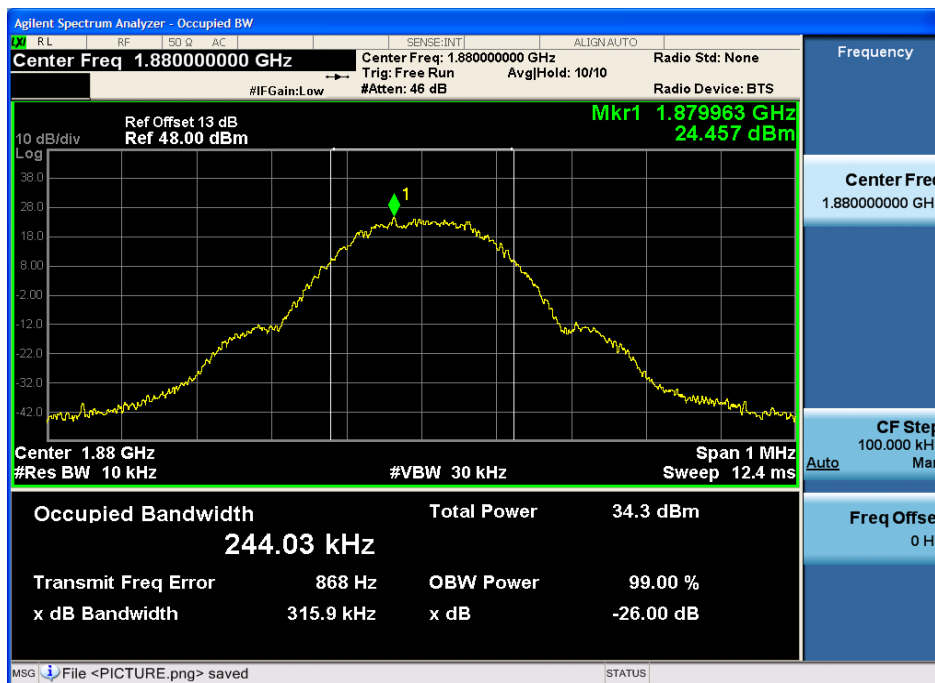


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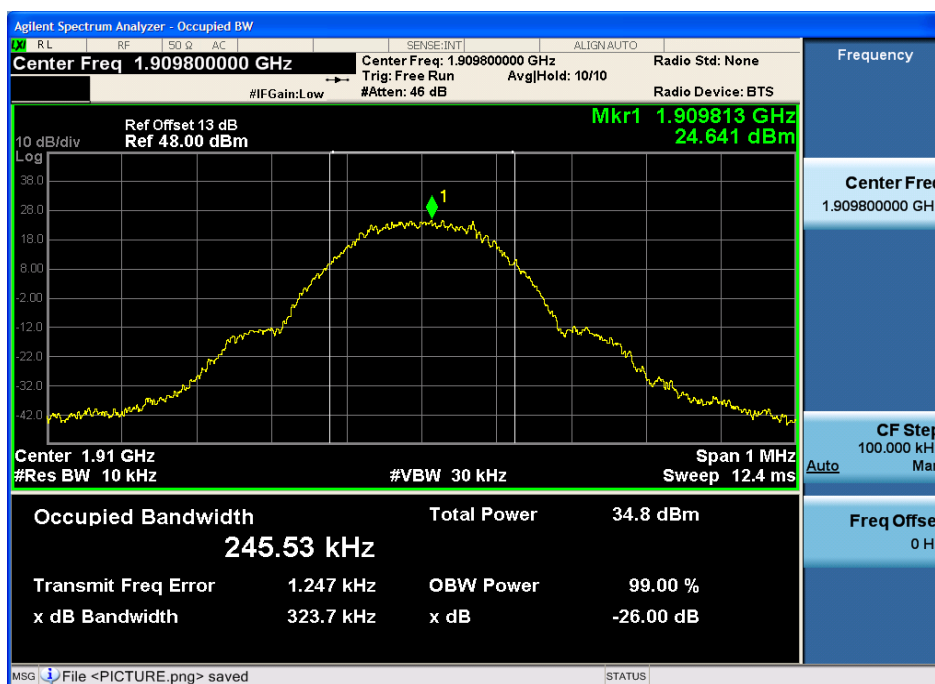
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PCS 1900 CH661



PCS 1900 CH810



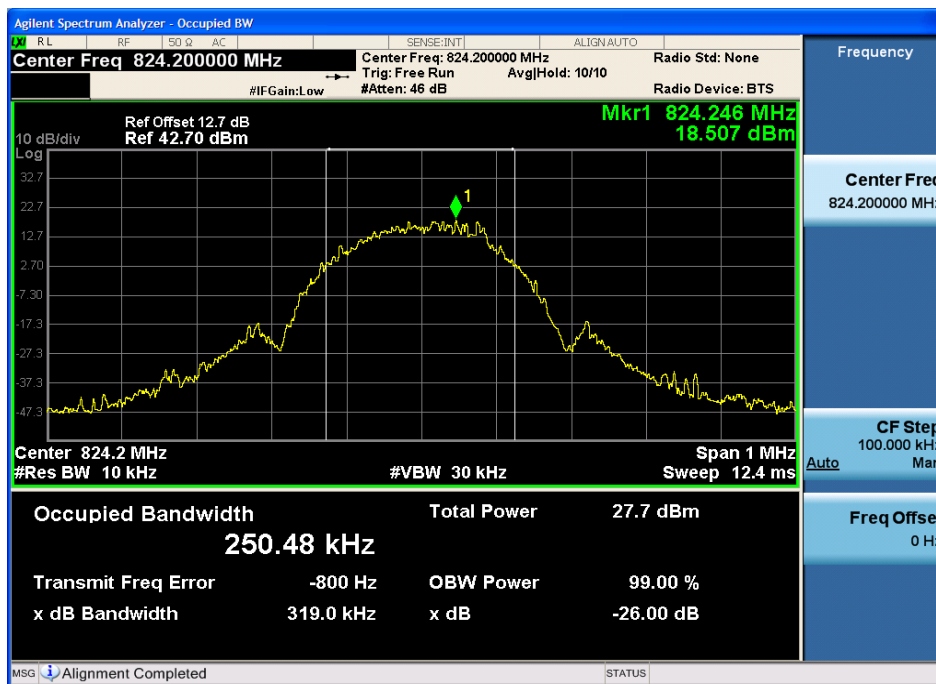


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EGPRS 850
CH128



CH190



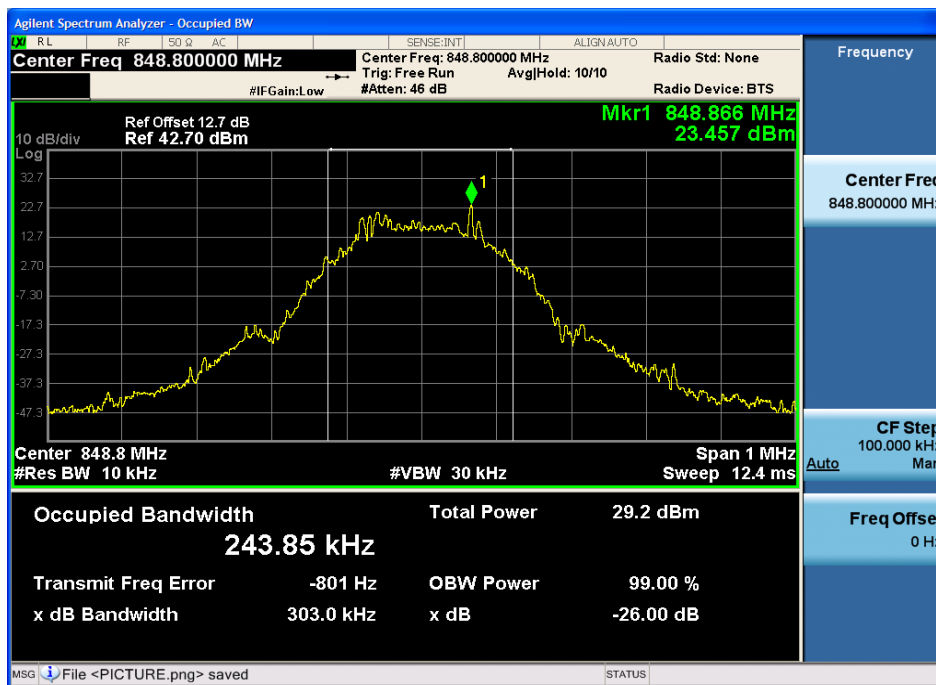


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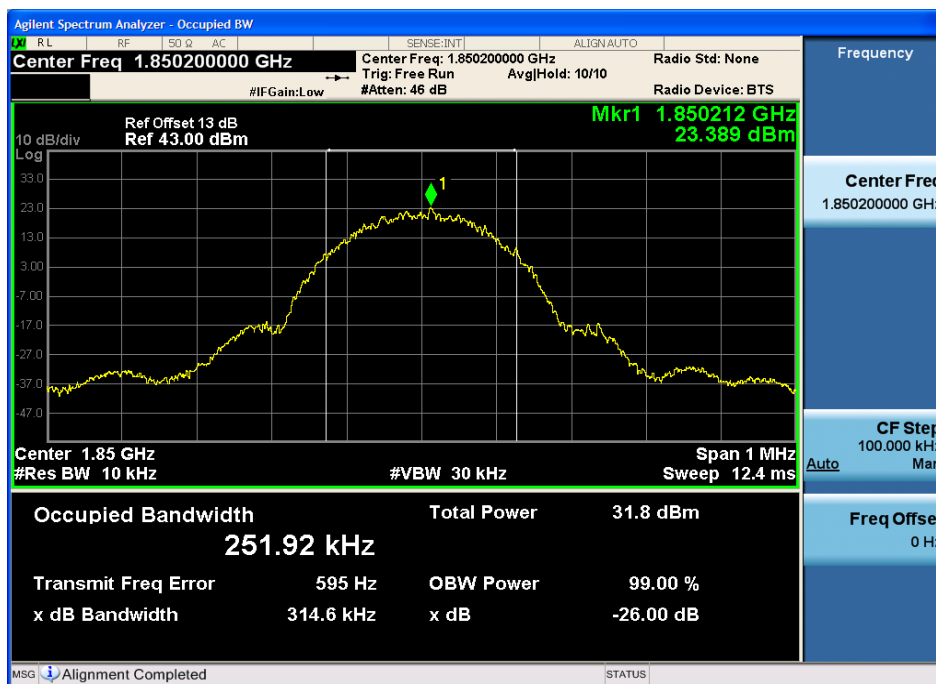
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CH251



EGPRS1900
CH512



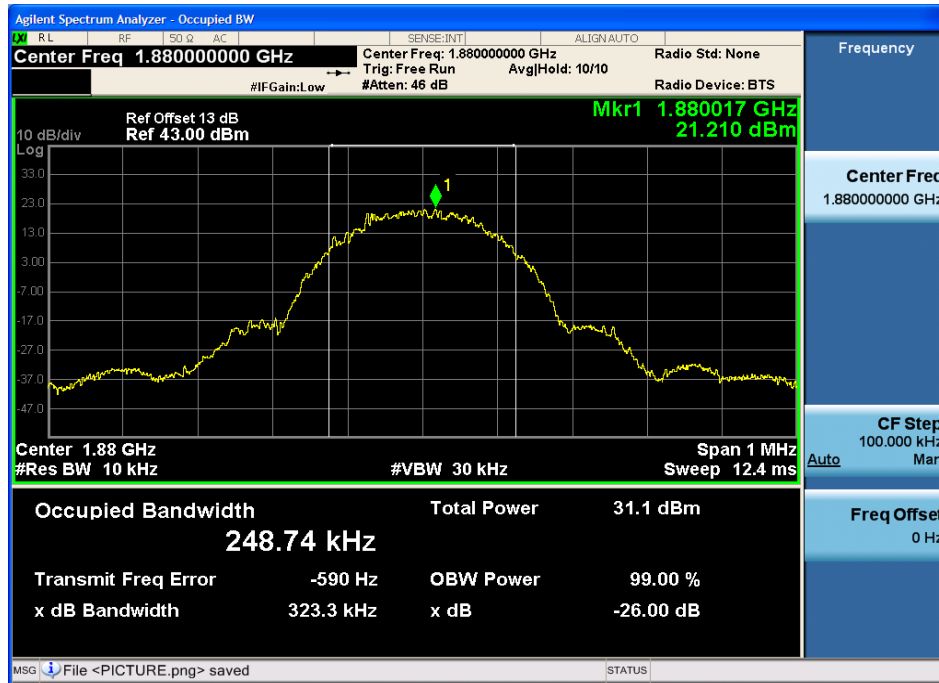


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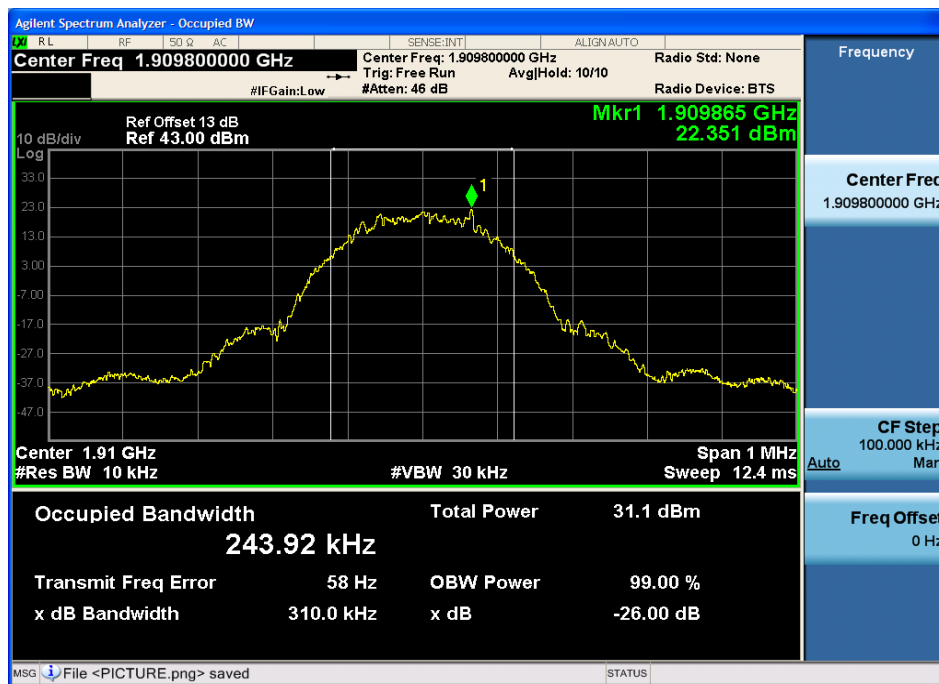
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CH661



CH810



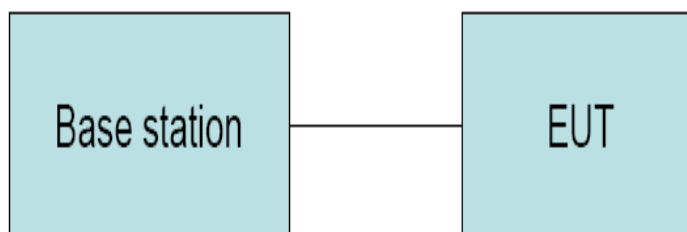


6. Frequency Stability

6.1. Limit

Cellular Telephone 850MHz	PCS 1900MHz
± 2.5 ppm	Must stay within the authorized frequency block

6.2. Test Setup



6.3. Test Procedure

Test Procedures for Temperature Variation:

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -10°C and the EUT was stabilized for three hours. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 45°C . The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.
4. If the EUT can not be turned on at -10°C , the testing lowest temperature will be raised in 10°C step until the EUT can be turned on.

Test Procedures for Voltage Variation

1. The EUT was placed in a temperature chamber at $25 \pm 5^{\circ}\text{C}$ and connected with the base station.
2. The power supply voltage to the EUT was varied from DC 5V to 3.5V
3. The variation in frequency was measured for the worst case.



6.4. Test Data

Frequency VS Voltage

Mode	Voltage (V)	Frequency error (Hz)	frequency error (ppm)
GSM 850 CH 190	4.1V	17.67	0.02
	3.7V	-18.28	-0.02
	3.1V	15.31	0.02
PCS 1900 CH661	4.1V	-26.28	-0.01
	3.7V	36.18	0.02
	3.1V	-29.57	-0.02

Frequency VS Temperature

Mode	Temperature (°C)	Frequency error (Hz)	frequency error (ppm)
GSM 850 CH190	-30	18.45	0.02
	-20	19.24	0.02
	-10	17.96	0.02
	0	21.45	0.02
	10	-15.77	-0.02
	20	18.54	0.02
	30	-12.27	-0.02
	40	-13.29	-0.02
	50	-21.32	-0.01
PCS 1900 CH661	-30	36.32	0.02
	-20	23.25	0.01
	-10	28.76	0.02
	0	37.24	0.02
	10	-24.77	-0.01
	20	31.42	0.02
	30	-24.35	-0.01
	40	21.21	0.02
	50	-16.29	-0.02



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Frequency VS Voltage

Mode	Voltage (V)	Frequency error (Hz)	frequency error (ppm)
EGPRS850 CH 190	4.1V	17.52	0.02
	3.7V	-18.34	-0.02
	3.1V	15.46	0.02
EGPRS1900 CH661	4.1V	-26.71	-0.01
	3.7V	36.35	0.02
	3.1V	-29.57	-0.02

Frequency VS Temperature

Mode	Temperature (°C)	Frequency error (Hz)	frequency error (ppm)
EGPRS850 CH190	-30	18.27	0.02
	-20	19.15	0.02
	-10	17.77	0.02
	0	21.83	0.02
	10	-15.32	-0.02
	20	17.54	0.02
	30	-12.62	-0.02
	40	-13.63	-0.02
	50	-21.57	-0.01
EGPRS1900 CH661	-30	36.43	0.02
	-20	23.29	0.01
	-10	28.52	0.02
	0	37.17	0.02
	10	-24.54	-0.01
	20	31.73	0.02
	30	-24.28	-0.01
	40	21.18	0.02
	50	-16.46	-0.02

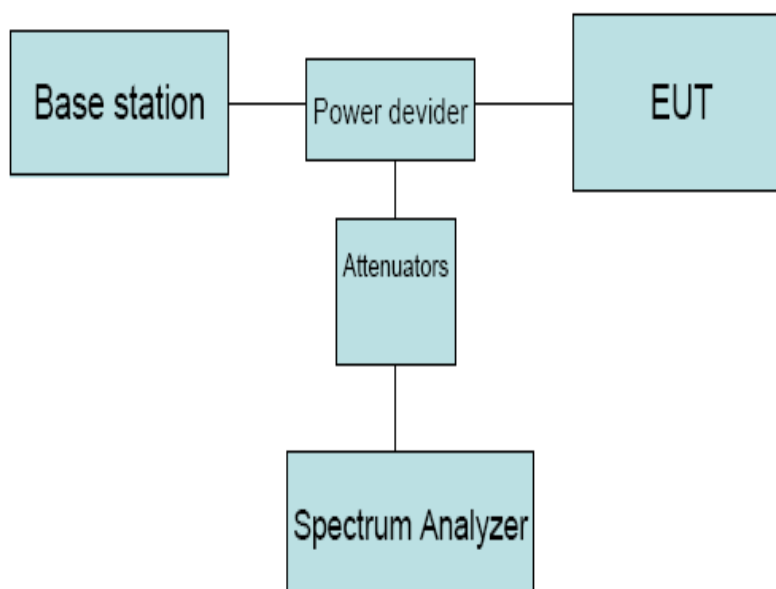


7. Conducted Spurious Emission

7.1. Limit

The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency outside the frequency band by at least $(43 + 10 \log P)$ dB, in this case, -13dBm.

7.2. Test Setup



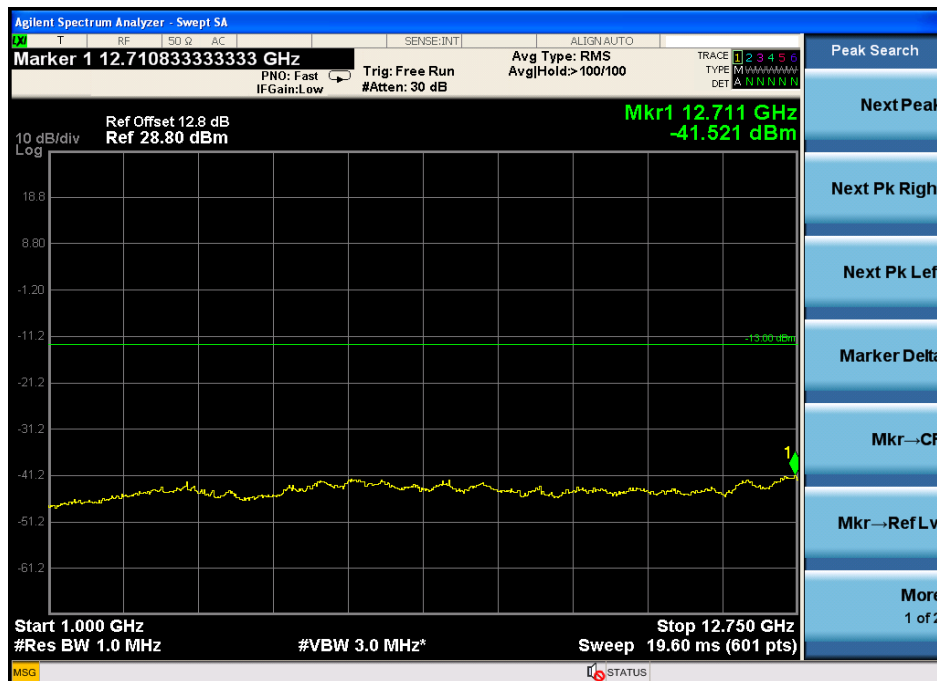
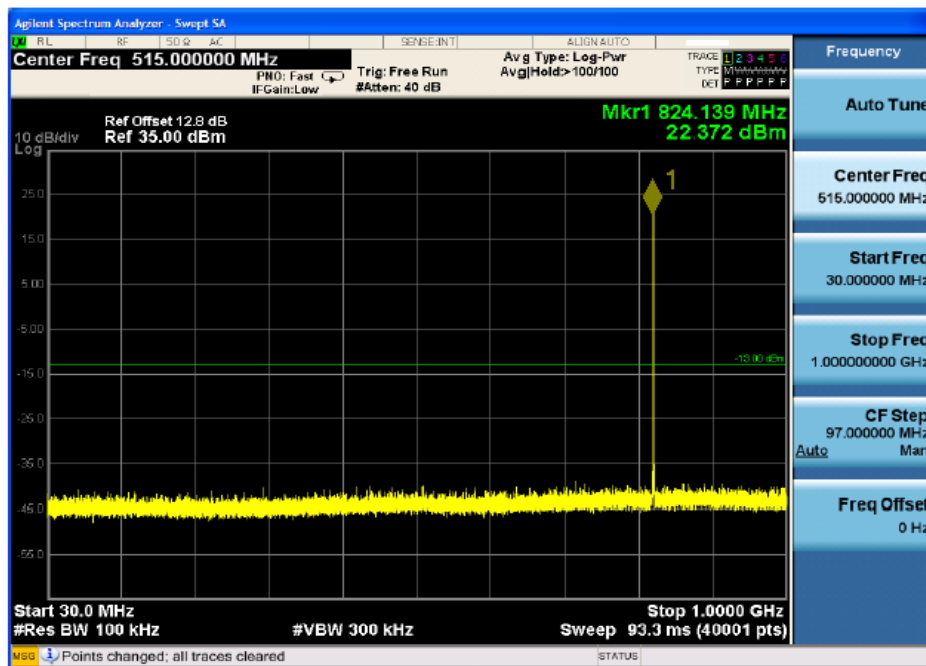
7.3. Test Procedure

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The low, middle and high channels of each band and mode's spurious emissions for 30MHz to 10th Harmonic were measured by Spectrum analyzer.



7.4. Test Plot

Test Mode: GSM 850 CH 128



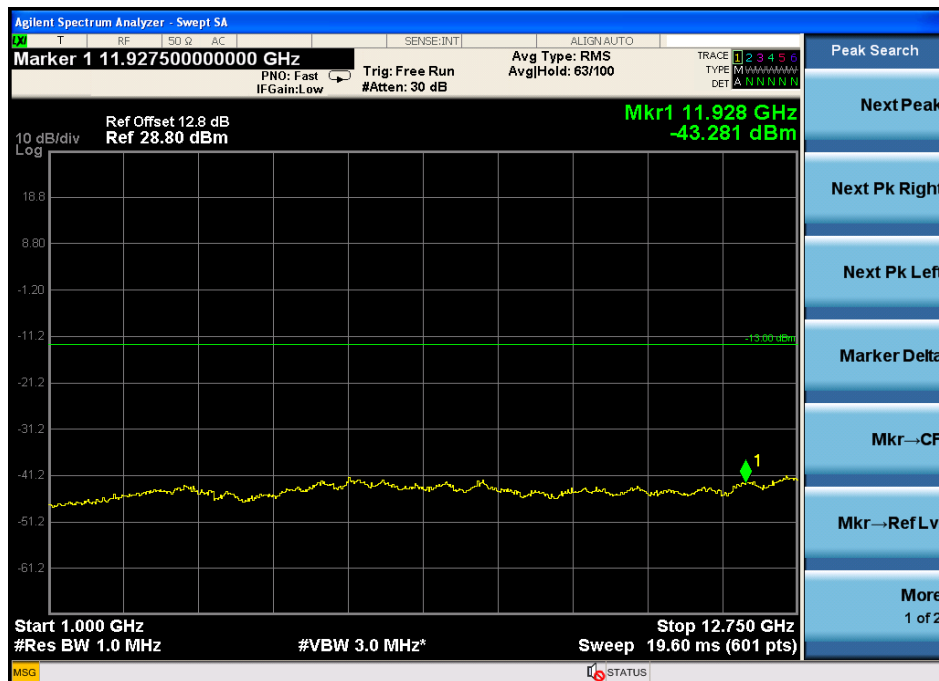
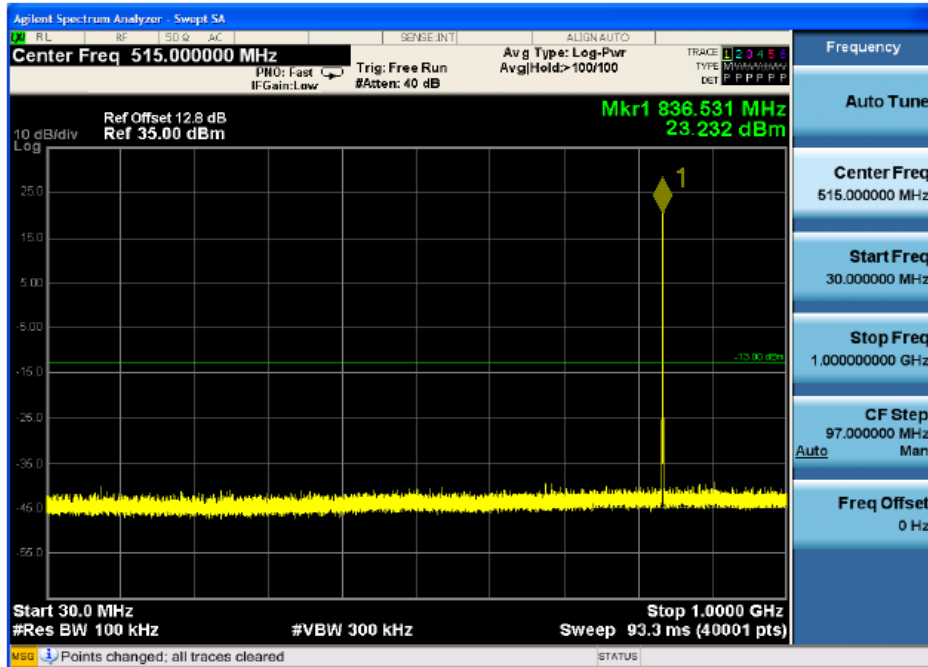


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Test Mode: GSM 850 CH 190



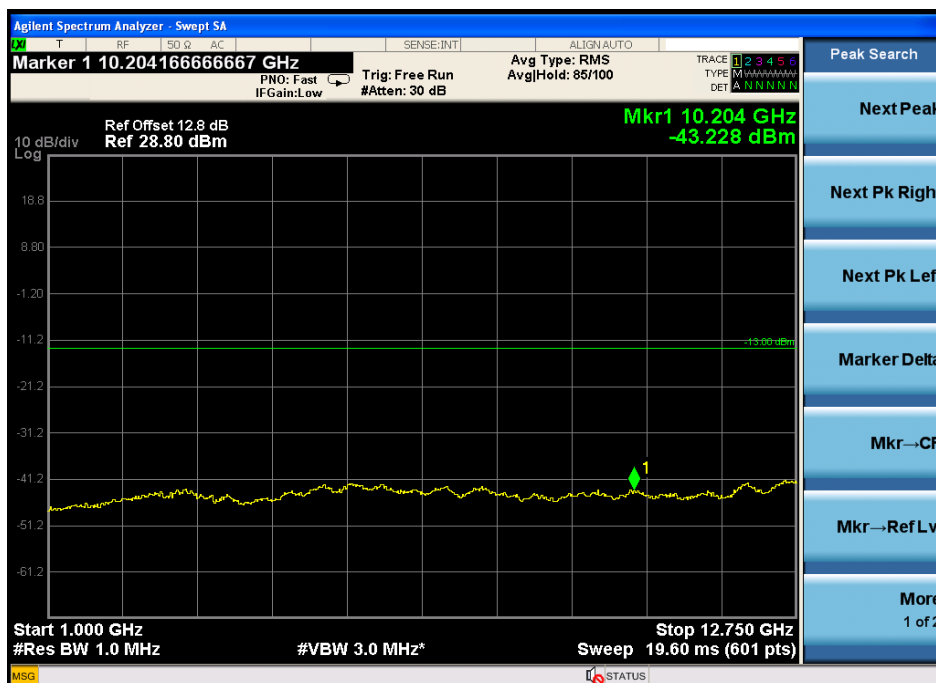
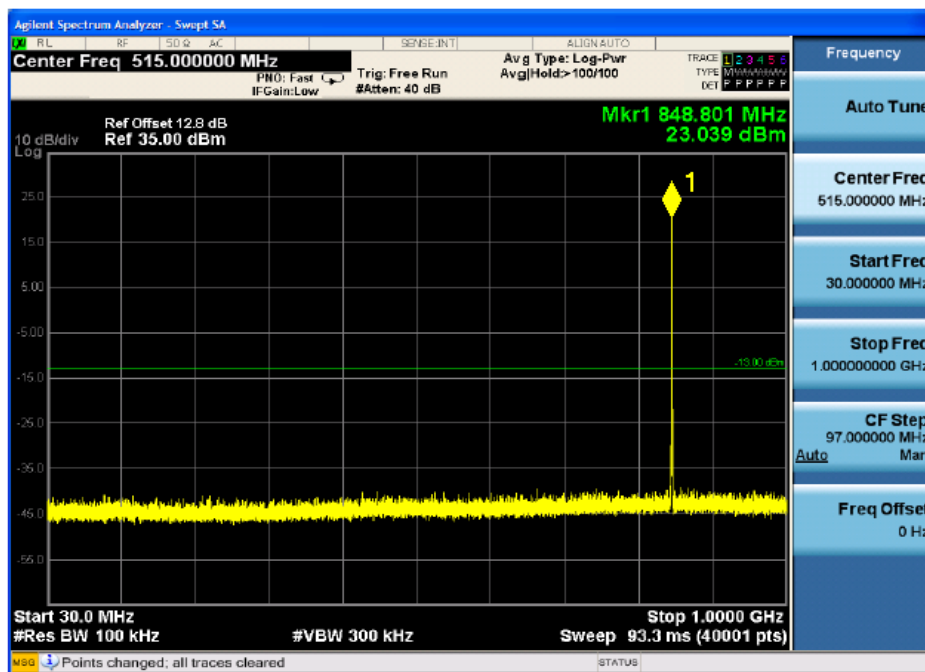


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Test Mode: GSM 850 CH 251



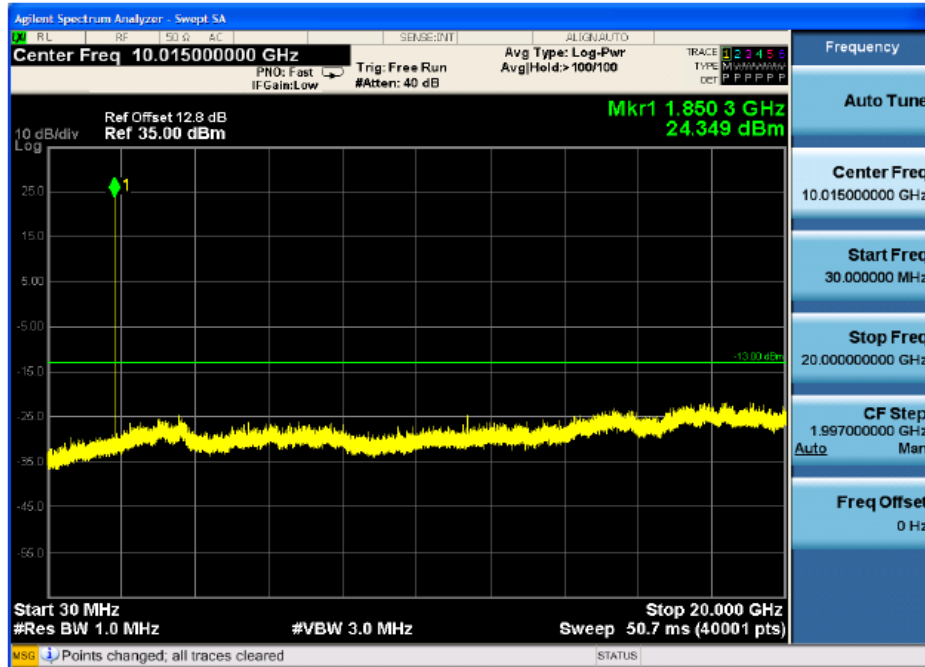


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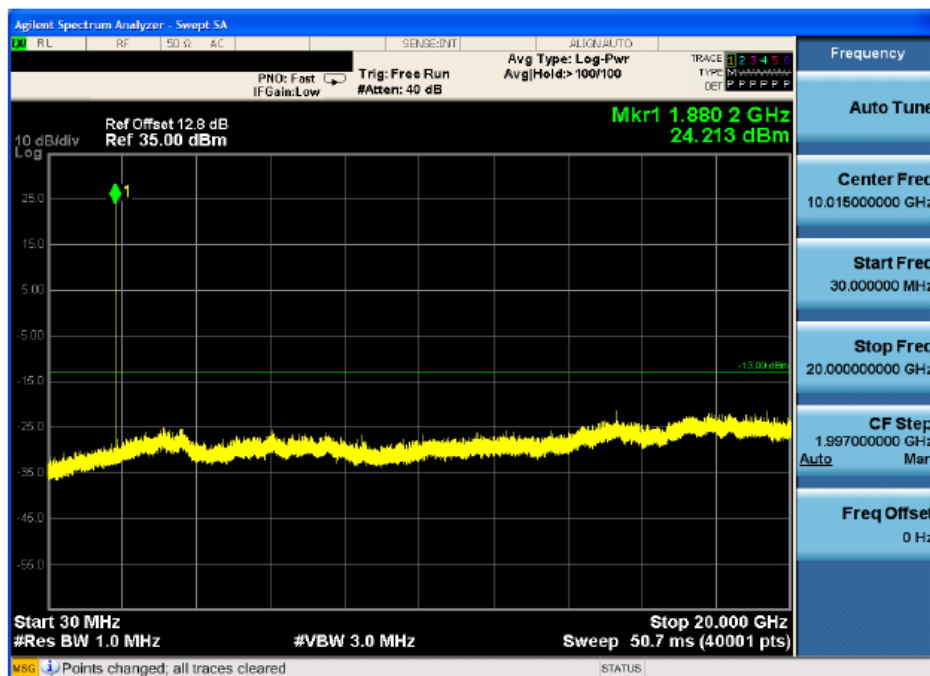
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Test Mode: GSM 1900 CH 512



Test Mode: GSM 1900 CH 661



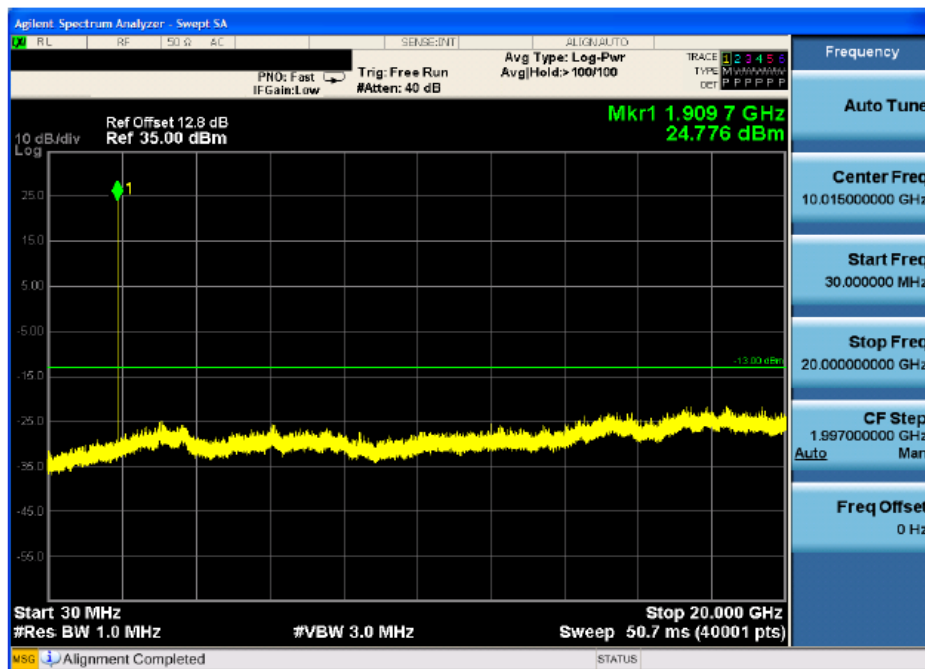


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Test Mode: GSM 1900 CH 810

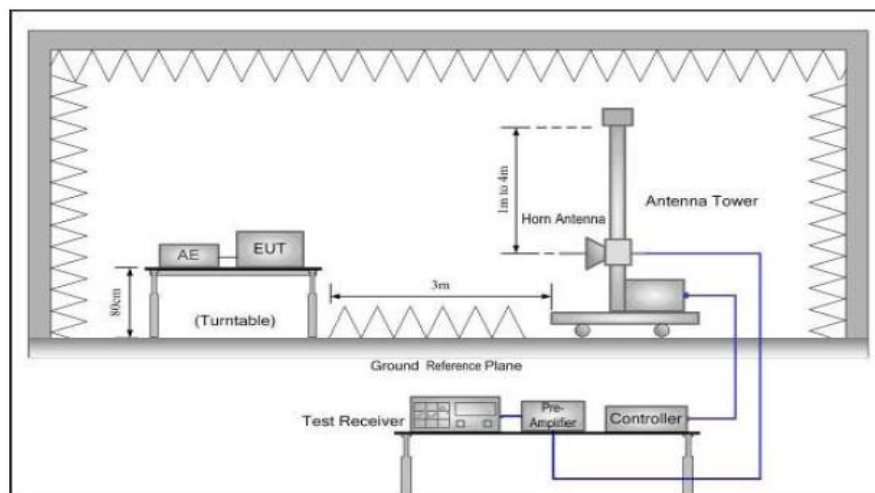


8. Radiated Spurious Emission

8.1. Limit

The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency outside the frequency band by at least $(43 + 10 \log P)$ dB, in this case, -13dBm.

8.2. Test Setup



8.3. Test Procedure

1. The EUT was placed on a non-conductive rotating platform with 0.8 meter height in an anechoic chamber. The radiated spurious emissions from 30MHz to 10th harmonic of fundamental frequency were measured at 3m with a test antenna and a spectrum analyzer with RBW= 1MHz, VBW= 1MHz, peak detector settings.
2. During the measurement, the EUT was enforced in maximum power and linked with a base station. All the spurious emissions (record as LVL) at 3m were measured by rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
3. Final spurious emissions levels were measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (for frequency below 1GHz) or Horn antenna (for frequency above 1GHz) at same location with same polarize of receiver antenna and then a known power of each measure frequency from S.G. was applied into the dipole antenna or Horn antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Substitution antenna Loss (only for Dipole antenna) - Analyzer reading. Then final

spurious emissions were calculated with the correction factor, $EIRP = LVL + \text{Correction factor}$ and



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ERP = EIRP – 2.15

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8.4. Test Result

Test Mode: GSM 850 CH128						
Frequency (MHz)	Antenna polarization	LVL (dBm)	Correction factor(dB)	Result (ERP)(dBm)	Limit (dBm)	Margin (dB)
537.31	H	-58.19	-6.53	-64.72	-13	51.72
537.31	V	-61.45	-6.53	-67.98	-13	54.98
1648.4	H	-56.52	11.5	-45.02	-13	32.02
1648.4	V	-46.66	10.56	-36.1	-13	23.1
Test Mode: GSM 850 CH190						
1673.2	H	-55.96	10.94	-45.02	-13	32.02
1673.2	V	-52.36	10.9	-41.46	-13	28.46
Test mode: GSM 850 CH251						
1697.6	H	-49.14	11.67	-37.47	-13	24.47
1697.6	V	-44.81	11.13	-33.68	-13	20.68

Test Mode: GSM 1900 CH512						
Frequency (MHz)	Antenna polarization	LVL (dBm)	Correction factor(dB)	Result (ERP)(dBm)	Limit (dBm)	Margin (dB)
537.31	H	-59.12	-6.53	-59.12	-13	46.12
537.31	V	-61.25	-6.53	-61.25	-13	48.25
3700.4	H	-58.39	14.92	-58.39	-13	45.39
3700.4	V	-49.91	14.95	-49.91	-13	36.91
Test Mode: GSM 1900 CH661						
3760	H	-59.22	15.03	-59.22	-13	46.22
3760	V	-50.26	15.11	-50.26	-13	37.26
Test mode: GSM 1900 CH810						
3819.6	H	-59.38	15.15	-59.38	-13	46.38
3819.6	V	-50.45	15.2	-50.45	-13	37.45
Note: All the other emissions not recorded were too low to read, and deemed to comply with limit.						

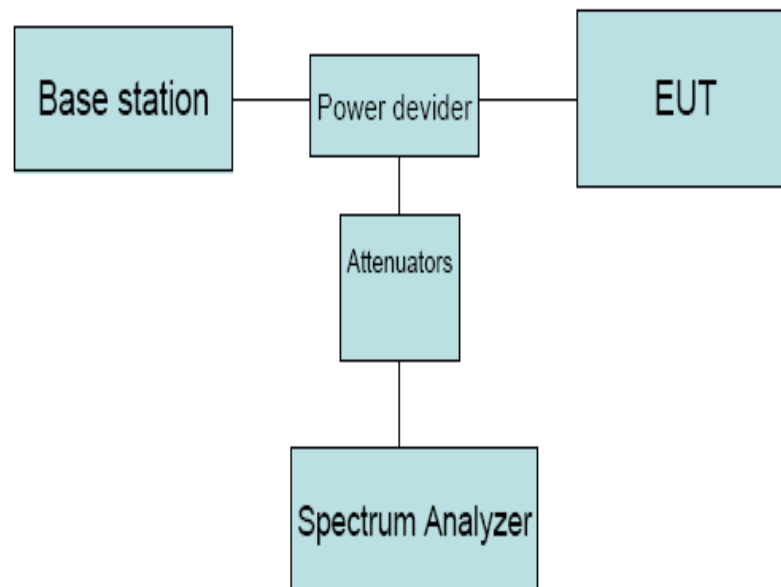


9. Band Edge Requirement

9.1. Limit

The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency outside the frequency band by at least $(43 + 10 \log P)$ dB, in this case, -13dBm.

9.2. Test Setup

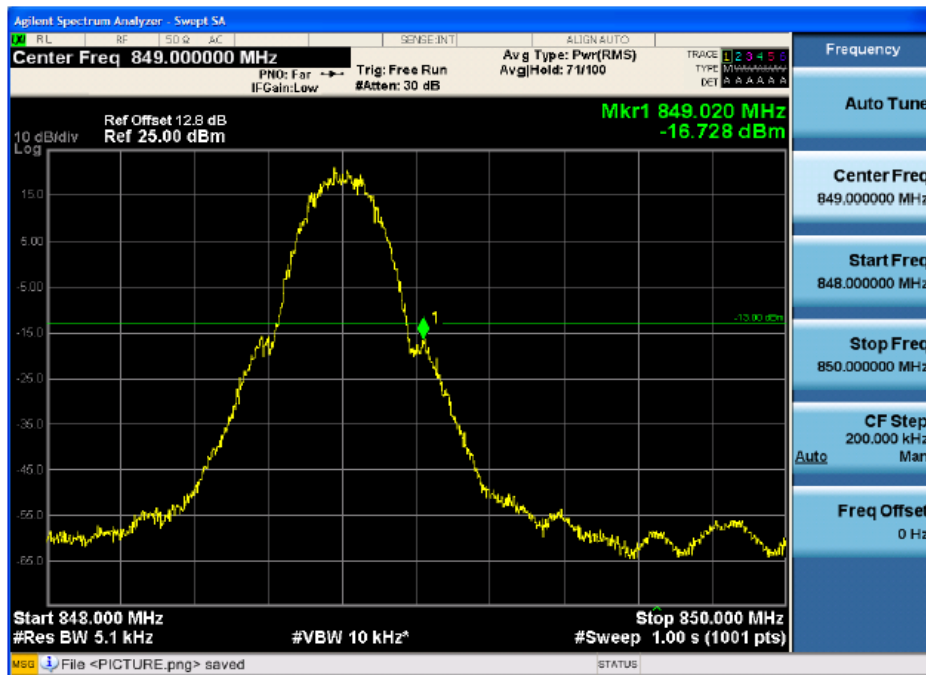
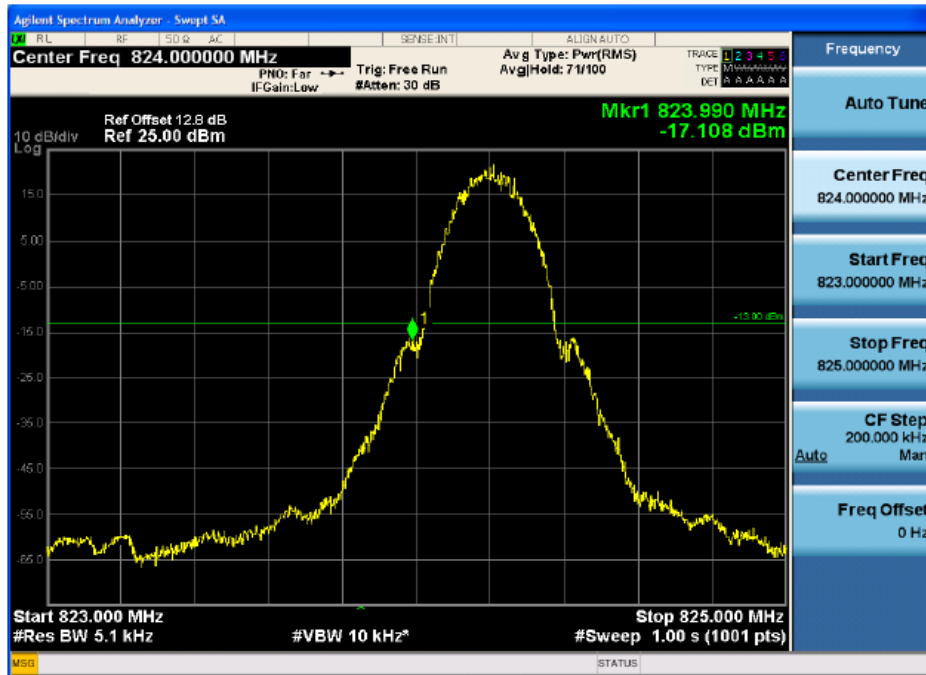


9.3. Test Procedure

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The band edges of low and high channels for the highest RF powers were measured.



9.4. Test Plot



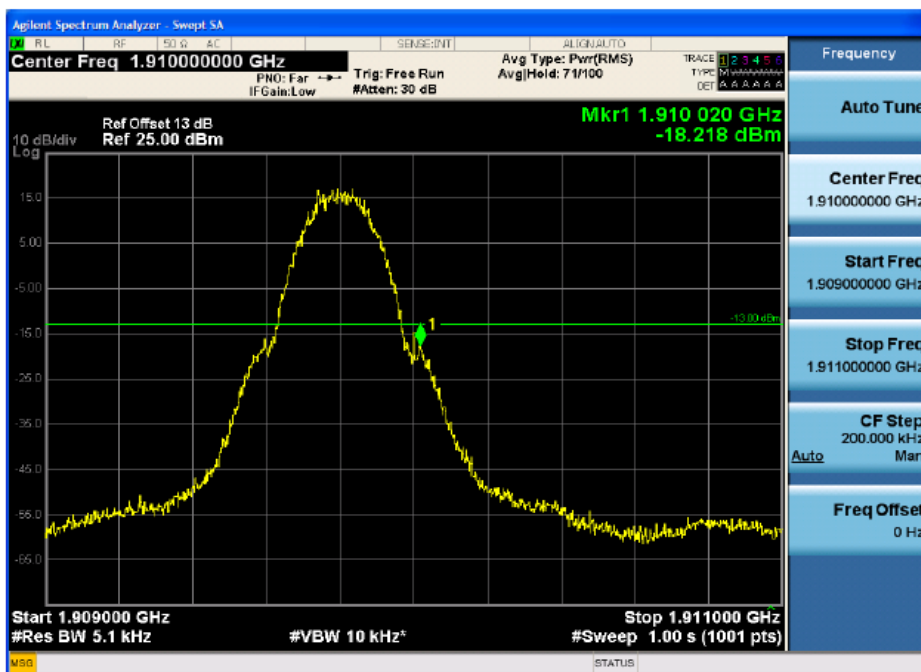
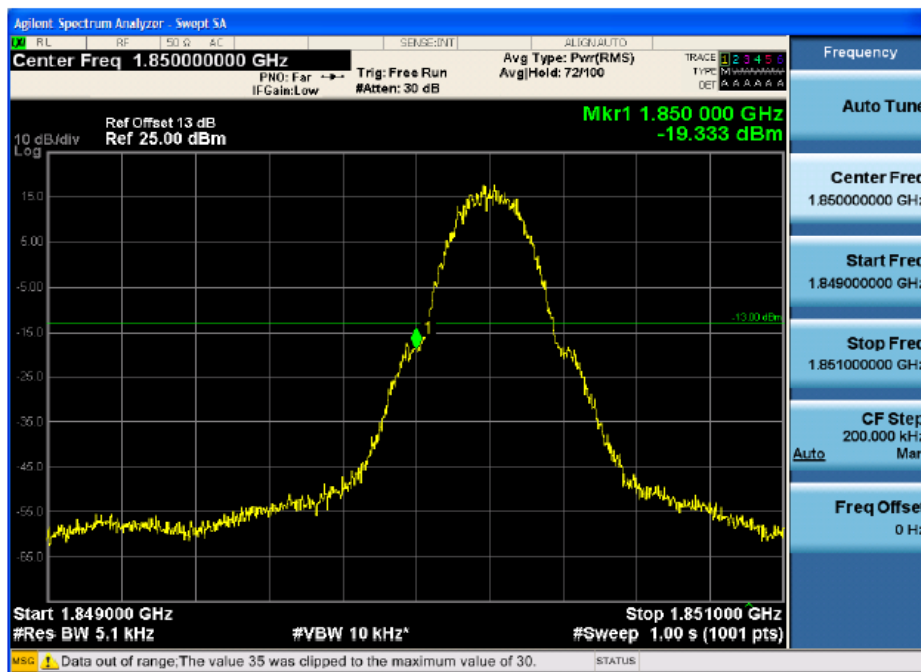


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Test Mode: GSM 1900





10. Power Line Conducted Emission

11.1. Test Standard and Limit

11.1.1 Test Standard

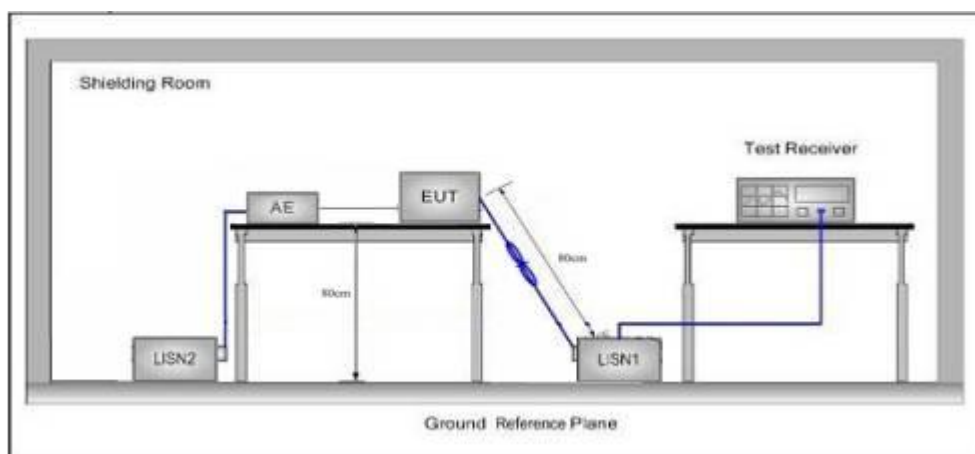
FCC Part15 C Section 15.207

11.1.2 Test Limit

Frequency	Maximum RF Line Voltage (dB μ V)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Remark: (1) *Decreasing linearly with logarithm of the frequency.
(2) The lower limit shall apply at the transition frequencies.

11.2. Test Setup



11.3. Test Procedure

1) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega / 50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

2) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.

The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal



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ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

The Test Receiver setup: RBW=9kHz, VBW=30kHz, Sweep time= auto

11.4. Test Data

Please to see the following pages

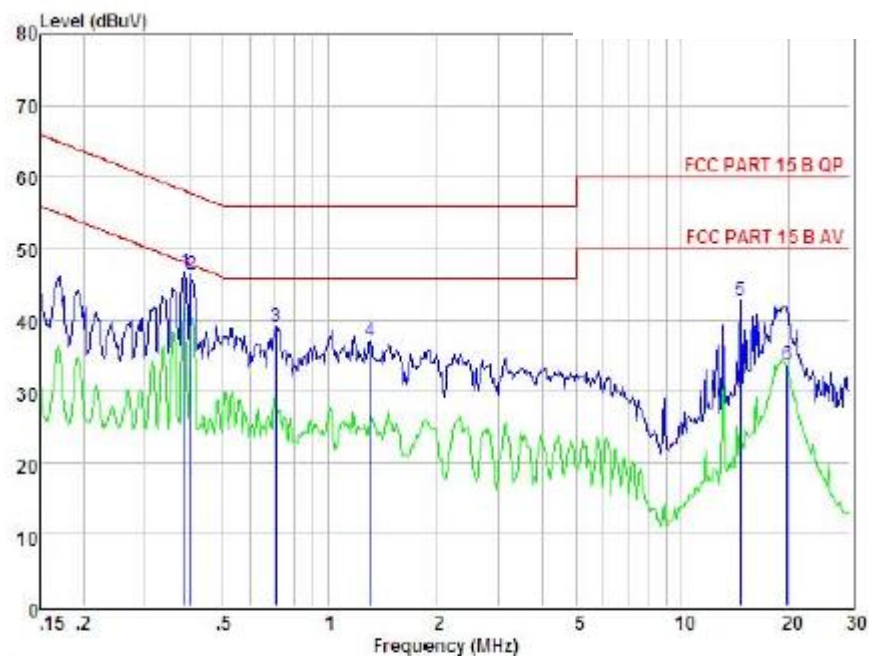


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EUT: Rugged Smartphone M/N: HG06
Operating Condition: Charging & Working mode
Test Site: Shielded room
Operator: Jason
Test Specification: AC120V/60Hz
Polarization: Line
Note: Tem:25°C Hum:50%



Condition : FCC PART 15 B QP									
POL: LINE Temp: 25.7 °C Run: 51 %									
Item	Freq MHz	Read Level dBUV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBUV	Limit dBUV	Margin dBUV	Remark
1	0.389	37.08	0.03	-9.57	0.10	46.78	58.08	-11.30	Peak
2	0.406	36.52	0.03	-9.57	0.10	46.22	57.73	-11.51	Peak
3	0.708	29.36	0.04	-9.59	0.10	39.09	56.00	-16.91	Peak
4	1.310	27.36	0.05	-9.65	0.10	37.16	56.00	-18.84	Peak
5	14.672	32.26	0.24	-9.86	0.23	42.59	60.00	-17.41	Peak
6	19.950	23.30	0.31	-9.80	0.35	33.76	60.00	-26.24	Peak

Remark: Level = Read Level + LISN Factor - Preamp Factor + Cable Loss

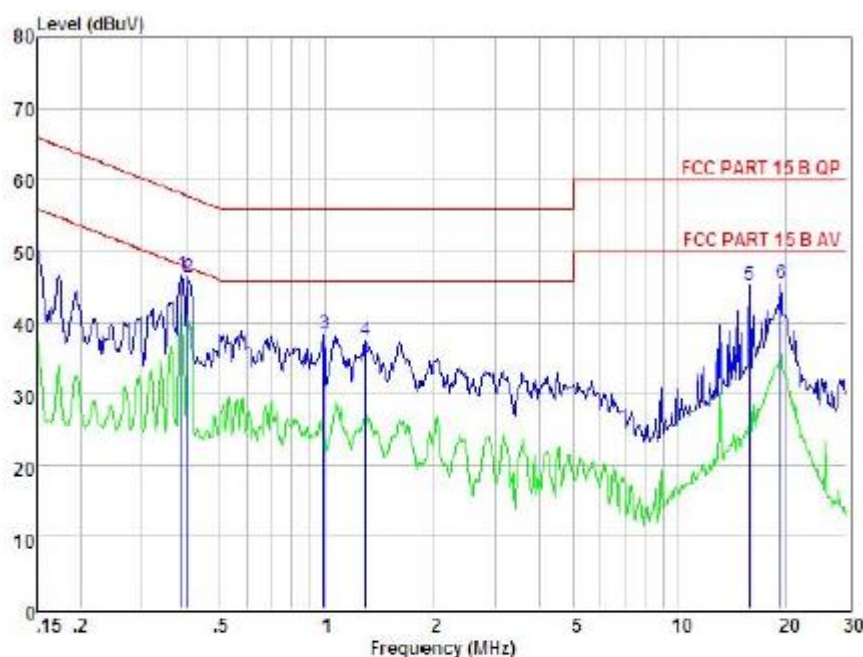


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EUT: Rugged Smartphone M/N: HG06
Operating Condition: Charging & Working mode
Test Site: Shielded room
Operator: Jason
Test Specification: AC 120V/60Hz
Polarization: Neutral
Note: Tem:25°C Hum:50%



Condition : FCC PART 15 B QP POL: NEUTRAL Temp: 25.7 °C Run: 51 %									
Item	Freq	Read	LISN	Preamp	Cable	Level	Limit	Margin	Remark
	MHz	dBuV	Factor	Factor	Loss	dBuV	dBuV	dBuV	
			dB	dB	dB				
1	0.389	36.99	0.03	-9.57	0.10	46.69	58.08	-11.39	Peak
2	0.406	36.60	0.03	-9.57	0.10	46.30	57.73	-11.43	Peak
3	0.989	28.52	0.04	-9.63	0.10	38.29	56.00	-17.71	Peak
4	1.296	27.69	0.05	-9.65	0.10	37.49	56.00	-18.51	Peak
5	15.865	34.80	0.25	-9.83	0.27	45.15	60.00	-14.85	Peak
6	19.532	34.92	0.31	-9.80	0.34	45.37	60.00	-14.63	Peak

Remark: Level = Read Level + LISN Factor - Preamp Factor + Cable Loss

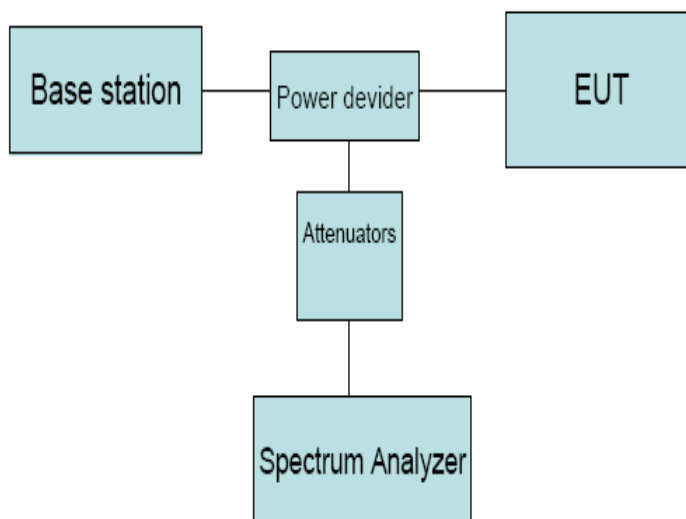


11 Peak-to-Average Ratio

11.1 Limit

In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

11.2 Test Setup



11.3 Test Procedure

The EUT' RF output port was connected to Measurement Instrument(s) and Base Station via power divider, and then measure the test data.

11.4 Test Result

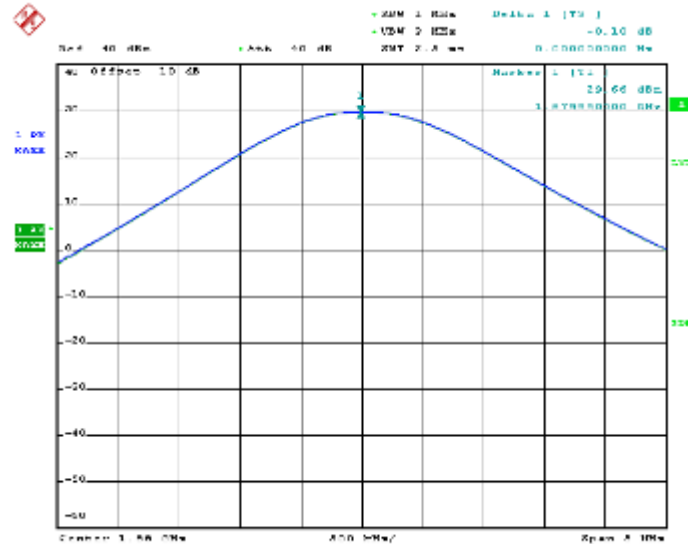
Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
GSM1900	GSM	LCH	0.10	13	PASS
		MCH	0.10	13	PASS
		HCH	0.10	13	PASS
	GPRS	LCH	0.16	13	PASS
		MCH	0.16	13	PASS
		HCH	0.16	13	PASS



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Test plots of worst case
GSM mode



Test plots of worst case
GSM mode

