

FCC PART 22/24 TEST REPORT FCC Part 22 /Part 24						
Report Reference No.:	HK1907111624-1E					
FCC ID:	ZNFX130IM					
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Date of issue	July. 11, 2019					
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Address:	1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, China					
Applicant's name	LG Electronics USA, Inc.					
Address	1000 Sylvan Ava, Englowood Cliffe, Now, Jarsov, United States					
Test specification						
Standard	FCC Part 22: PUBLIC MOBILE S	ERVICES				
Standard	FCC Part 24: PERSONAL COMM	IUNICATIONS SERVICES				
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Test item description	4G Mobile phone					
Trade Mark	LG					
Model/Type reference:	LMX130IM					
Listed Models	1					
Ratings	DC 3.85V From Battery					
Modulation	GMSK/8PSK					
GPRS	Supported					
Hardware version:	.: V2.0					
Software version	: V2.0					
Frequency	GSM 850MHz; PCS 1900MHz;					
Result	PASS	: PASS				



Test Report No. :	H	<1907111624-1E	July. 11, 2019	
-			Date of issue	
Equipment under Test	:	4G Mobile phone		
Model /Type	:	LMX130IM		
Listed Models	:	1		
Applicant	:	LG Electronics USA, Inc		
Address	:	1000 Sylvan Ave. Engle States 07632	wood Cliffs, New Jersey, United	
Manufacturer	:	OPTIEMUS ELECTRON	NICS LIMITED	
Address	:	D-348, Sector 63, Ga Pradesh 201307 India	utam Budh Nagar, Noida, Uttar	

Test Result:	PASS
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The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



Revison History

Revision	Issue Date	Revisions	Revised By
V1.0	2019-07-11	Initial Issue	Jason Zhou



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1 <u>TEST STANDARDS</u>

The tests were performed according to following standards:

FCC Part 2: FREQUENCY ALLOCA-TIONS AND RADIO TREATY MAT-TERS; GENERAL RULES AND REG-ULATIONS

FCC Part 22 Subpart H: PRIVATE LAND MOBILE RADIO SERVICES.

FCC Part 24 Subpart E: PUBLIC MOBILE SERVICES

ANSI/TIA-603-E-2016: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

ANSI C63.26-2015: IEEE/ANSI Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

FCCKDB971168D01 Power Meas License Digital Systems



2 <u>SUMMARY</u>

2.1 General Remarks

Date of receipt of test sample	:	Jun. 24, 2019
Testing commenced on	:	Jun. 25, 2019
Testing concluded on	:	July. 11, 2019

2.2 Product Description

Product Name:	4G Mobile phone
Model/Type reference:	LMX130IM
List Model:	1
Power supply:	DC 3.85V From Battery
Adapter Information	Model: UP0920, Input: 100-240V~, 50/60Hz, 0.3A, Output: 5VDC, 2A
Modilation Type	GMSK/8PSK
Antenna Type	Internal antenna
GSM/EDGE/GPRS	Supported EGPRS/GPRS/GSM
GSM/GPRS Power Class	GSM850:Power Class 4/ PCS1900:Power Class 1
GSM/GPRS Operation Frequency	GSM850 :824.2MHz-848.8MHz/PCS1900:1850.2MHz-1909.8MHz
GPRS Operation Frequency Band	GPRS850/GPRS1900
GPRS/EDGE Multislot Class	EGPRS/GPRS: Multi-slot Class 12
EGPRS Multislot Class	1
Extreme temp. Tolerance	-30°C to +50°C
GPRS operation mode	Class B

2.3 Equipment under Test

Power supply system utilised

Power supply voltage	:	0	120V / 60 Hz	0	230V / 50Hz
		0	12 V DC	0	24 V DC
			Other (specified in blank bel	ow)
DC 3.85V From Battery					

Test frequency list

Test Mode	TX/RX	RF Channel			
Test Mode		Low(L)	Middle (M)	High (H)	
	ТХ	Channel 128	Channel 190	Channel 251	
GSM850		824.2 MHz	836.6 MHz	848.8 MHz	
63101030	RX	Channel 128	Channel 190	Channel 251	
		869.2 MHz	881.6 MHz	893.8 MHz	
Test Mode	TX/RX	RF Channel			
Test Mode		Low(L)	Middle (M)	High (H)	
	ТХ	Channel 512	Channel 661	Channel 810	
GSM1900		1850.2 MHz	1880.0 MHz	1909.8 MHz	
631011900	RX	Channel 512	Channel 661	Channel 810	
	INA	1930.2 MHz	1960.0 MHz	1989.8 MHz	



2.4 Short description of the Equipment under Test (EUT)

This is a 4G Mobile phone.

For more details, refer to the user's manual of the EUT.

2.5 EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

• - supplied by the manufacturer

 \bigcirc - supplied by the lab

0	1	M/N :	/
		Manufacturer:	/

2.6 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID**: ZNFX130IM filing to comply with FCC Part 22 and Part 24 Rules

2.7 Modifications

No modifications were implemented to meet testing criteria.

2.8 General Test Conditions/Configurations

2.8.1 Test Modes

NOTE: The test mode(s) are selected according to relevant radio technology specifications.

Test Mode 1	GPRS
Test Mode 2	GSM
Test Mode 3	EGPRS

2.8.2 Test Environment

Environment Parameter	Selected Values During Tests			
Relative Humidity	Ambient			
Temperature	TN Ambient			
	VL	3.465V		
Voltage	VN	3.85V		
	VH	4.235V		

NOTE: VL=lower extreme test voltage VN=nominal voltage VH=upper extreme test voltage TN=normal temperature

2.9 Modifications

No modifications were implemented to meet testing criteria.



3 TEST ENVIRONMENT

3.1 Address of the test laboratory

Shenzhen HUAK Testing Technology Co., Ltd. Add.:1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park,Heping Community, Fuhai Street, Bao'an District, Shenzhen, China

3.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

3.3 Test Description

3.3.1 Cellular Band (824-849MHz paired with 869-894MHz)

Test Item	FCC Rule No.	Requirements	Verdict
Effective(Isotropic) Radiated Output Power	§2.1046, §22.913	FCC: ERP ≤ 7W.	Pass
Modulation Characteristics	§2.1047	Digital modulation	N/A
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Pass
Band Edges Compliance	§2.1051, §22.917	≤-13dBm/1%*EBW, in 1MHz bands immediately outside and adjacent to The frequency block.	Pass
Spurious Emission at Antenna Terminals	§2.1051, §22.917	FCC: ≤ -13dBm/100kHz, from 9kHz to 10th harmonics but outside authorized operating frequency ranges.	Pass
Field Strength of Spurious Radiation	§2.1053, §22.917	FCC: ≤ -13dBm/100kHz.	Pass
Frequency Stability	§2.1055, §22.355	≤ ±2.5ppm.	Pass
NOTE 1: For the verdict, t	he "N/A" denotes	s "not applicable", the "N/T" de notes "not tested".	



3.3.2 PCS Band (1850-1915MHz paired with 1930-1995MHz)

Test Item	FCC Rule No.	Requirements	Verdict
Effective(Isotropic) Radiated Output Power	§2.1046, §24.232	EIRP ≤ 2W	Pass
Peak-Average Ratio	§2.1046, §24.232	FCC:Limit≤13dB	Pass
Modulation Characteristics	§2.1047	Digital modulation	Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Pass
Band Edges Compliance	§2.1051, §24.238	 ≤ -13dBm/1%*EBW, In 1MHz bands immediately outside and adjacent to The frequency block. 	Pass
Spurious Emission at Antenna Terminals	§2.1051, §24.238	≤-13dBm/1MHz, from 9kHz to10th harmonics but_outside authorized Operating frequency ranges.	Pass
Field Strength of Spurious Radiation	§2.1053, §24.238	≤ -13dBm/1MHz.	Pass
Frequency Stability	§2.1055, §24.235	FCC: within authorized frequency block.	Pass
NOTE 1: For the verdict, t	he "N/A" denote	s "not applicable", the "N/T" de notes "not tested".	

Remark:

1. The measurement uncertainty is not included in the test result.



3.4 Equipments Used during the Test

Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration
LISN	R&S	ENV216	HKE-059	2018/12/27	Due Date 2019/12/26
LISN	R&S	ENV216	HKE-002	2018/12/27	2019/12/26
Receiver	R&S	ESCI 7	HKE-010	2018/12/27	2019/12/26
	R&S	FSP40	HKE-025	2018/12/27	2019/12/20
Spectrum analyzer Spectrum analyzer	Agilent	N9020A	HKE-048	2018/12/27	2019/12/26
RF automatic control unit	Tonscend	JS0806-1	HKE-060	2018/12/27	2019/12/26
Loop antenna	Schwarzbeck	FMZB 1519 B	HKE-014	2018/12/27	2019/12/26
Bilog Broadband Antenna	Schwarzbeck	VULB9163	HKE-012	2018/12/27	2019/12/26
Horn antenna	Schwarzbeck	9120D	HKE-013	2018/12/27	2019/12/26
High gain antenna	Schwarzbeck	LB-180400KF	HKE-054	2018/12/27	2019/12/26
Preamplifier	EMCI	EMC051845SE	HKE-015	2018/12/27	2019/12/26
Preamplifier	Agilent	83051A	HKE-016	2018/12/27	2019/12/26
Preamplifier	Schwarzbeck	BBV 9743	HKE-006	2018/12/27	2019/12/26
Temperature and humidity meter	Boyang	HTC-1	HKE-075	2018/12/27	2019/12/26
High-low temperature chamber	Guangke	HT-80L	HKE-118	2018/12/27	2019/12/26
High pass filter unit	Tonscend	JS0806-F	HKE-055	2018/12/27	2019/12/26
RF Cable(below1GHz)	Times	9kHz-1GHz	HKE-117	2018/12/27	2019/12/26
RF Cable(above 1GHz)	Times	1-40G	HKE-034	2018/12/27	2019/12/26
Power meter	Agilent	E4419B	HKE-085	2018/12/27	2019/12/26
Power Sensor	Agilent	E9300A	HKE-086	2018/12/27	2019/12/26
Conducted test software	Tonscend	TS+ Rev 2.5.0.0	HKE-081	N/A	N/A
Radiated test software	Tonscend	TS+ Rev 2.5.0.0	HKE-082	N/A	N/A
RF test software	Tonscend	JS1120-B Version 2.6	HKE-083	N/A	N/A
RF test software	Tonscend	JS1120-4	HKE-113	N/A	N/A
RF test software	Tonscend	JS1120-3	HKE-114	N/A	N/A
RF test software	Tonscend	JS1120-1	HKE-115	N/A	N/A
Wireless Communication Test Set	R&S	CMW500	HKE-026	2018/12/27	2019/12/26
Wireless Communication Test Set	R&S	CMU200	HKE-029	2018/12/27	2019/12/26



4 TEST CONDITIONS AND RESULTS

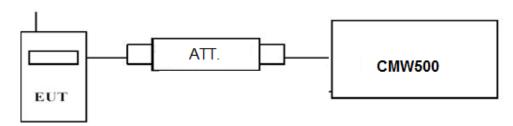
4.1 Output Power

TEST APPLICABLE

During the process of testing, the EUT was controlled via R&S Digital Radio Communication tester (CMW500) to ensure max power transmission and proper modulation. This result contains output power and EIRP measurements for the EUT. In all cases, output power is within the specified limits.

4.1.1 Conducted Output Power

TEST CONFIGURATION



TEST PROCEDURE

Conducted Power Measurement:

- a) Place the EUT on a bench and set it in transmitting mode.
- b) Connect a low loss RF cable from the antenna port to a CMW500 by an Att.
- c) EUT Communicate with CMW500 then selects a channel for testing.
- d) Add a correction factor to the display CMW500, and then test.

GSM850								
Function	Power step	Nominal output power (dBm)	Power &Multislot class	Operation class				
GSM	5	33dBm(2W)	4	/				
GPRS	3	33dBm(2W)	12	В				
EDGE	8	27dBm(0.5W)	12	В				

PCS1900								
Function	Power step	Nominal output power (dBm)	Power &Multislot class	Operation class				
GSM	0	30dBm(1W)	1	/				
GPRS	3	30dBm(1W)	12	В				
EDGE	2	27dBm(0.5W)	12	В				



TEST RESULTS

		Burst A	verage Conducted pow	er (dBm)			
GSI	VI 850	(Channel/Frequency(MH	z)			
		128/824.2	190/836.6	251/848.8			
G	SM	30.81	31.03	30.93			
	1TX slot	30.86	31.04	30.99			
GPRS	2TX slot	27.95	27.97	27.81			
(GMSK)	3TX slot	27.04	27.08	26.90			
	4TX slot	25.83	25.87	25.73			
	1TX slot	26.08	25.87	25.95			
EGPRS	2TX slot	25.05	24.62	24.75			
(8PSK)	3TX slot	22.80	22.44	22.51			
	4TX slot	4TX slot 20.82 20.66		20.63			
		Burst A	verage Conducted pow	er (dBm)			
GSM	1 1900	Channel/Frequency(MHz)					
		512/1850.2	661/1880.0	810/1909.8			
G	SM	30.12	30.14	29.90			
	1TX slot	30.16	30.16	29.86			
GPRS	2TX slot	26.91	26.92	26.62			
(GMSK)	3TX slot	25.31	25.27	24.97			
	4TX slot	24.20	24.17	23.84			
	1TX slot	29.28	29.28	28.57			
EGPRS	2TX slot	26.69	27.17	26.23			
(8PSK)	3TX slot	25.05	25.08	24.30			
	4TX slot	22.43	23.00	21.71			



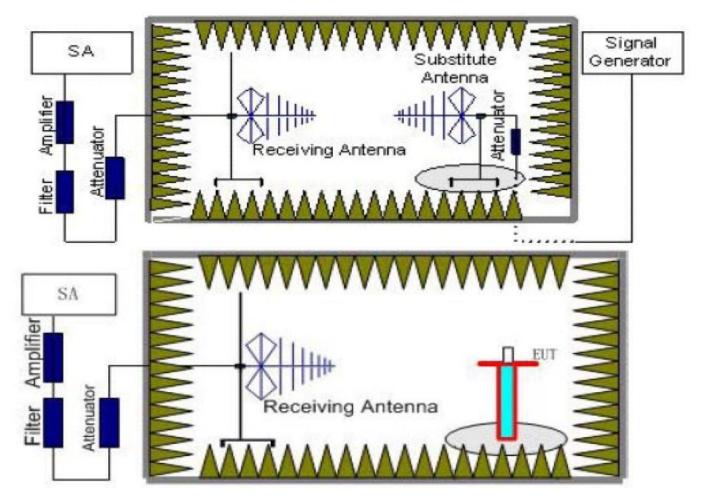
4.1.2 Radiated Output Power

TEST DESCRIPTION

This is the test for the maximum radiated power from the EUT.

Rule Part 24.232(c) specifies, "Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power" and 24.232(e) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage." Rule Part 22.913(a) specifies " The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts."

TEST CONFIGURATION



TEST PROCEDURE

- EUT was placed on a 0.80 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 0.80m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
- 2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
- 3. The EUT is then put into continuously transmitting mode at its maximum power level during the test.Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz, And the maximum value of the receiver should be recorded as (P_r).
- 4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the



substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (P_{cl}), the Substitution Antenna Gain (G_a) and the Amplifier Gain (P_{Ag}) should be recorded after test. The measurement results are obtained as described below:

Power(EIRP)=P_{Mea}- P_{Ag} - P_{cl} + G_a

We used SMF100A micowave signal generator which signal level can up to 33dBm, so we not used power Amplifier for substituation test; The measurement results are amend as described below: Power(EIRP)= P_{Mea} - P_{cl} + G_a

- 6. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
- 7. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

<u>TEST LIMIT</u>

Note: We test the H direction and V direction, V direction is worse.

According to 22.913(a) and 24.232(c), the ERP should be not exceed following table limits:

GSM850(GPRS850,EDGE850)							
Function	Power Step	Burst Peak ERP (dBm)					
GSM	5	≤38.45dBm (7W)					
GPRS	3	≤38.45dBm (7W)					
EDGE	8	≤38.45dBm (7W)					

PCS1900(GPRS1900,EDGE1900)								
Function	Power Step	Burst Peak EIRP (dBm)						
GSM	0	≤33dBm (2W)						
GPRS	3	≤33dBm (2W)						
EDGE	2	≤33dBm (2W)						

TEST RESULTS

Remark:

1. We were tested all Configuration refer 3GPP TS151 010.

- 2. EIRP= $P_{Mea}(dBm)$ - $P_{cl}(dB)$ + $P_{Ag}(dB)$ + $G_a(dBi)$
- 3. ERP = EIRP 2.15dBi as EIRP by subtracting the gain of the dipole.

Note: 1.We tesed Horizontal and Vertical, and Recorded the worst data at the Vertical

GSM 850

Frequency (MHz)	Р _{меа} (dBm)	P _{cl} (dB)	G₂ Antenna Gain(dB)	Correction (dB)	P _{Ag} (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
824.20	-13.54	2.42	8.45	2.15	36.82	27.16	38.45	11.29	V
836.60	-14.79	2.46	8.45	2.15	36.82	26.2	38.45	12.25	V
848.80	-13.33	2.53	8.36	2.15	36.82	27.05	38.45	11.4	V

GSM 1900

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1850.20	-13.98	3.41	10.24	33.6	26.45	33.01	6.56	V
1880.00	-14.2	3.49	10.24	33.6	26.15	33.01	6.86	V
1909.80	-14.35	3.55	10.23	33.6	25.93	33.01	7.08	V



GPRS 850

Frequency (MHz)	Р _{меа} (dBm)	P _{cl} (dB)	G₂ Antenna Gain(dB)	Correction (dB)	P _{Ag} (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
824.20	-13.54	2.42	8.45	2.15	36.82	27.16	38.45	11.29	V
836.60	-14.31	2.46	8.45	2.15	36.82	25.83	38.45	12.62	V
848.80	-12.88	2.53	8.36	2.15	36.82	27.09	38.45	11.36	V

GPRS 1900

Frequency (MHz)	Р _{меа} (dBm)	P _{cl} (dB)	Gª Antenna Gain(dB)	P _{Ag} (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1850.20	-13.98	3.41	10.24	33.6	26.45	33.01	6.56	V
1880.00	-14.32	3.49	10.24	33.6	26.03	33.01	6.98	V
1909.80	-12.89	3.55	10.23	33.6	27.39	33.01	5.62	V

EGPRS 850

Frequency (MHz)	Р _{меа} (dBm)	P _{cl} (dB)	Gª Antenna Gain(dB)	Correction (dB)	P _{Ag} (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
824.20	-13.54	2.42	8.45	2.15	36.82	27.16	38.45	11.29	V
836.60	-15.32	2.46	8.45	2.15	36.82	25.34	38.45	13.11	V
848.80	-12.71	2.53	8.36	2.15	36.82	27.79	38.45	10.66	V

EGPRS 1900

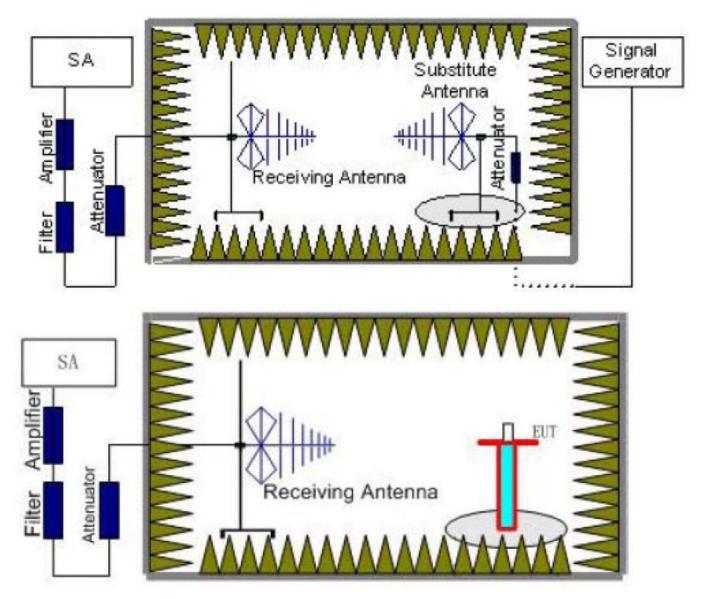
Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1850.20	-13.98	3.41	10.24	33.6	26.45	33.01	6.56	V
1880.00	-14.69	3.49	10.24	33.6	25.66	33.01	7.35	V
1909.80	-12.75	3.55	10.23	33.6	27.53	33.01	5.48	V

4.2 Radiated Spurious Emssion

TEST APPLICABLE

According to the TIA/EIA 603D:2010 test method, The Receiver or Spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier that can be as high as 1910 MHz. The resolution bandwidth is set as outlined in Part 24.238 and Part 22.917. The spectrum is scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of PCS1900 and GSM850.

TEST CONFIGURATION



TEST PROCEDURE

- EUT was placed on a 0.80 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 0.80m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
- 2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated



through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.

- 3. The EUT is then put into continuously transmitting mode at its maximum power level during the test.Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz, And the maximum value of the receiver should be recorded as (P_r).
- 4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
- 5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (P_{cl}), the Substitution Antenna Gain (G_a) and the Amplifier Gain (P_{Ag}) should be recorded after test. The measurement results are obtained as described below:

- 6. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
- 7. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15dBi.
- 8. In order to make sure test results more clearly, we set frequency range and sweep time for difference frequency range as follows table:

Working	Subrange	RBW	VBW	Sweep time
Frequency	(GHz)			(s)
	0.00009~0.15	1KHz	3KHz	30
	0.00015~0.03	10KHz	30KHz	10
	0.03~1	100KHz	300KHz	10
GSM 850	1~2	1 MHz	3 MHz	2
	2~5	1 MHz	3 MHz	3
	5~8	1 MHz	3 MHz	3
	8~10	1 MHz	3 MHz	3
	0.00009~0.15	1KHz	3KHz	30
	0.00015~0.03	10KHz	30KHz	10
	0.03~1	100KHz	300KHz	10
	1~2	1 MHz	3 MHz	2
PCS 1900	2~5	1 MHz	3 MHz	3
PC5 1900	5~8	1 MHz	3 MHz	3
	8~11	1 MHz	3 MHz	3
	11~14	1 MHz	3 MHz	3
	14~18	1 MHz	3 MHz	3
	18~20	1 MHz	3 MHz	2

TEST LIMITS

According to 24.238 and 22.917 specify that 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 specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

Frequency	Channel	Frequency Range	Verdict
	Low	9KHz-10GHz	PASS
GSM 850	Middle	9KHz -10GHz	PASS
	High	9KHz -10GHz	PASS
	Low	9KHz -20GHz	PASS
PCS 1900	Middle	9KHz -20GHz	PASS
	High	9KHz -20GHz	PASS



Remark:

- 1. We were tested all refer 3GPP TS151 010.
- 2. EIRP= $P_{Mea}(dBm)$ - $P_{cl}(dB)$ + $G_a(dBi)$
- 3. We were not recorded other points as values lower than limits.
- 4. Margin = Limit EIRP

GSM 850_ Low Channel

Frequency (MHz)	Р _{меа} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1648.4	-30.98	3.00	3.00	9.58	-24.4	-13	11.4	Н
2472.6	-36.82	3.03	3.00	10.72	-29.13	-13	16.13	Н
1648.4	-30.46	3.00	3.00	9.68	-23.78	-13	10.78	V
2472.6	-39.21	3.03	3.00	10.72	-31.52	-13	18.52	V

GSM 850_ Middle Channel

Frequency (MHz)	Р _{меа} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.2	-29.12	3.00	3.00	9.58	-22.54	-13	9.54	Н
2509.8	-39.55	3.03	3.00	10.72	-31.86	-13	18.86	Н
1673.2	-30.96	3.00	3.00	9.68	-24.28	-13	11.28	V
2509.8	-38.3	3.03	3.00	10.72	-30.61	-13	17.61	V

GSM 850_ High Channel

Frequency (MHz)	P _{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1697.6	-32.51	3.00	3.00	9.58	-25.93	-13	12.93	Н
2546.4	-37.9	3.03	3.00	10.72	-30.21	-13	17.21	Н
1697.6	-31.19	3.00	3.00	9.68	-24.51	-13	11.51	V
2546.4	-35.63	3.03	3.00	10.72	-27.94	-13	14.94	V

GSM 1900_ Low Channel

Frequency (MHz)	Р _{меа} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3700.4	-36.34	4.39	3.00	12.34	-28.39	-13.00	15.39	Н
5550.6	-41.93	5.31	3.00	13.52	-33.72	-13.00	20.72	Н
3700.4	-34.52	4.39	3.00	12.34	-26.57	-13.00	13.57	V
5550.6	-43.71	5.31	3.00	13.52	-35.5	-13.00	22.5	V

GSM 1900_ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.0	-36.55	4.41	3.00	12.34	-28.62	-13.00	15.62	Н
5640.0	-41.28	5.38	3.00	13.58	-33.08	-13.00	20.08	Н
3760.0	-35.14	4.41	3.00	12.34	-27.21	-13.00	14.21	V
5640.0	-43.02	5.38	3.00	13.58	-34.82	-13.00	21.82	V

GSM 1900_ High Channel

Frequency (MHz)	P _{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3819.6	-36.36	4.45	3.00	12.45	-28.36	-13.00	15.36	Н
5729.4	-42.15	5.47	3.00	13.66	-33.96	-13.00	20.96	Н
3819.6	-35.48	4.45	3.00	12.45	-27.48	-13.00	14.48	V
5729.4	-43.25	5.48	3.00	13.66	-35.07	-13.00	22.07	V



GPRS 850_ Low Channel

Frequency (MHz)	P _{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1648.4	-30.98	3.00	3.00	9.58	-24.4	-13	11.4	Н
2472.6	-37.06	3.03	3.00	10.72	-29.37	-13	16.37	Н
1648.4	-30.85	3.00	3.00	9.68	-24.17	-13	11.17	V
2472.6	-39.01	3.03	3.00	10.72	-31.32	-13	18.32	V

GPRS 850_ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.2	-28.93	3.00	3.00	9.58	-22.35	-13	9.35	Н
2509.8	-39.76	3.03	3.00	10.72	-32.07	-13	19.07	Н
1673.2	-30.1	3.00	3.00	9.68	-23.42	-13	10.42	V
2509.8	-38.48	3.03	3.00	10.72	-30.79	-13	17.79	V

GPRS 850_ High Channel

Frequency (MHz)	Р _{меа} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1697.6	-32.75	3.00	3.00	9.58	-26.17	-13	13.17	Н
2546.4	-38.12	3.03	3.00	10.72	-30.43	-13	17.43	Н
1697.6	-30.85	3.00	3.00	9.68	-24.17	-13	11.17	V
2546.4	-35.25	3.03	3.00	10.72	-27.56	-13	14.56	V

GPRS 1900_ Low Channel

Frequency (MHz)	Р _{меа} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3700.4	-36.34	4.39	3.00	12.34	-28.39	-13.00	15.39	Н
5550.6	-41.86	5.31	3.00	13.52	-33.65	-13.00	20.65	Н
3700.4	-35.16	4.39	3.00	12.34	-27.21	-13.00	14.21	V
5550.6	-43.38	5.31	3.00	13.52	-35.17	-13.00	22.17	V

GPRS 1900_ Middle Channel

Frequency (MHz)	Р _{меа} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.0	-36.99	4.41	3.00	12.34	-29.06	-13.00	16.06	Н
5640.0	-42.2	5.38	3.00	13.58	-34	-13.00	21	Н
3760.0	-36	4.41	3.00	12.34	-28.07	-13.00	15.07	V
5640.0	-43.04	5.38	3.00	13.58	-34.84	-13.00	21.84	V

GPRS 1900_ High Channel

F	requency (MHz)	P _{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
	3819.6	-36.06	4.45	3.00	12.45	-28.06	-13.00	15.06	Н
	5729.4	-41.96	5.47	3.00	13.66	-33.77	-13.00	20.77	Н
	3819.6	-35.22	4.45	3.00	12.45	-27.22	-13.00	14.22	V
	5729.4	-43.41	5.48	3.00	13.66	-35.23	-13.00	22.23	V



EGPRS 850_ Low Channel

Frequency (MHz)	Р _{меа} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1648.4	-30.46	3.00	3.00	9.58	-23.88	-13	10.88	Н
2472.6	-37.07	3.03	3.00	10.72	-29.38	-13	16.38	Н
1648.4	-30.23	3.00	3.00	9.68	-23.55	-13	10.55	V
2472.6	-39.61	3.03	3.00	10.72	-31.92	-13	18.92	V

EGPRS 850_ Middle Channel

Frequency (MHz)	Р _{меа} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.2	-30.98	3.00	3.00	9.58	-24.4	-13	11.4	Н
2509.8	-37.21	3.03	3.00	10.72	-29.52	-13	16.52	Н
1673.2	-30.65	3.00	3.00	9.68	-23.97	-13	10.97	V
2509.8	-39.62	3.03	3.00	10.72	-31.93	-13	18.93	V

EGPRS 850_ High Channel

Frequency (MHz)	Р _{меа} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1697.6	-28.19	3.00	3.00	9.58	-21.61	-13	8.61	Н
2546.4	-38.97	3.03	3.00	10.72	-31.28	-13	18.28	Н
1697.6	-31.2	3.00	3.00	9.68	-24.52	-13	11.52	V
2546.4	-38.32	3.03	3.00	10.72	-30.63	-13	17.63	V

EGPRS 1900_ Low Channel

Frequency (MHz)	P _{Mea} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3700.4	-36.34	4.41	3.00	12.34	-28.41	-13.00	15.41	Н
5550.6	-41.56	5.38	3.00	13.58	-33.36	-13.00	20.36	Н
3700.4	-34.11	4.41	3.00	12.34	-26.18	-13.00	13.18	V
5550.6	-43.5	5.38	3.00	13.58	-35.3	-13.00	22.3	V

EGPRS 1900_ Middle Channel

Frequency (MHz)	Р _{меа} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.0	-37.12	4.41	3.00	12.34	-29.19	-13.00	16.19	Н
5640.0	-42.29	5.38	3.00	13.58	-34.09	-13.00	21.09	Н
3760.0	-35.44	4.41	3.00	12.34	-27.51	-13.00	14.51	V
5640.0	-42.94	5.38	3.00	13.58	-34.74	-13.00	21.74	V

EGPRS 1900_ High Channel

Frequency (MHz)	Р _{меа} (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3819.6	-36.42	4.45	3.00	12.45	-28.42	-13.00	15.42	Н
5729.4	-42.18	5.47	3.00	13.66	-33.99	-13.00	20.99	Н
3819.6	-35.74	4.45	3.00	12.45	-27.74	-13.00	14.74	V
5729.4	-43.65	5.48	3.00	13.66	-35.47	-13.00	22.47	V

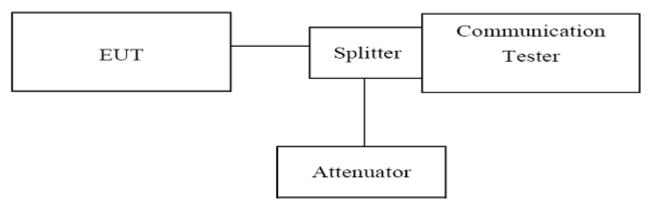


4.3 Occupied Bandwidth and Emission Bandwidth

TEST APPLICABLE

Similar to conducted emissions; occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of PCS1900 band and GSM850 band. The table below lists the measured 99% Bandwidth and -26dBc Bandwidth.

TEST CONFIGURATION



TEST PROCEDURE

- 1. The EUT was set up for the max output power with pseudo random data modulation;
- 2. The Occupied bandwidth and Emission Bandwidth were measured with Aglient Spectrum Analyzer N9020A (peak);
- 3. Set RBW=5.1KHz,VBW=51KHz,Span=1MHz,SWT=500ms;
- 4. Set SPA Max hold and View, Set 99% Occupied Bandwidth/ Set -26dBc Occupied Bandwidth
- These measurements were done at 3 frequencies, 1850.20 MHz, 1880.00 MHz and 1909.80 MHz for PCS1900 band; 824.20MHz, 836.60 MHz and 848.80 MHz for GSM850 band. (Low, middle and high of operational frequency range).

TEST RESULTS

	GSM 850									
Channel Number	Frequency (MHz)	Occupied Bandwidth (99% BW) (kHz)	Emission Bandwidth (26 dBc BW) (kHz)	Verdict						
128	824.20	245.7	311	PASS						
190	836.60	247.7	322	PASS						
251	848.80	243.8	309	PASS						

	GSM 1900						
Channel Frequency Number (MHz) Occupied Bandwidth (99% BW) (kHz)		Emission Bandwidth (26 dBc BW) (kHz)	Verdict				
128	824.20	243.6	308	PASS			
190	836.60	246.7	313	PASS			
251	848.80	244.0	316	PASS			

GPRS 850						
Channel Frequency (99% BW) Number (MHz) (kHz)		Emission Bandwidth (26 dBc BW) (kHz)	Verdict			
128	824.20	240.8	300	PASS		
190	836.60	242.1	316	PASS		
251	848.80	242.2	316	PASS		

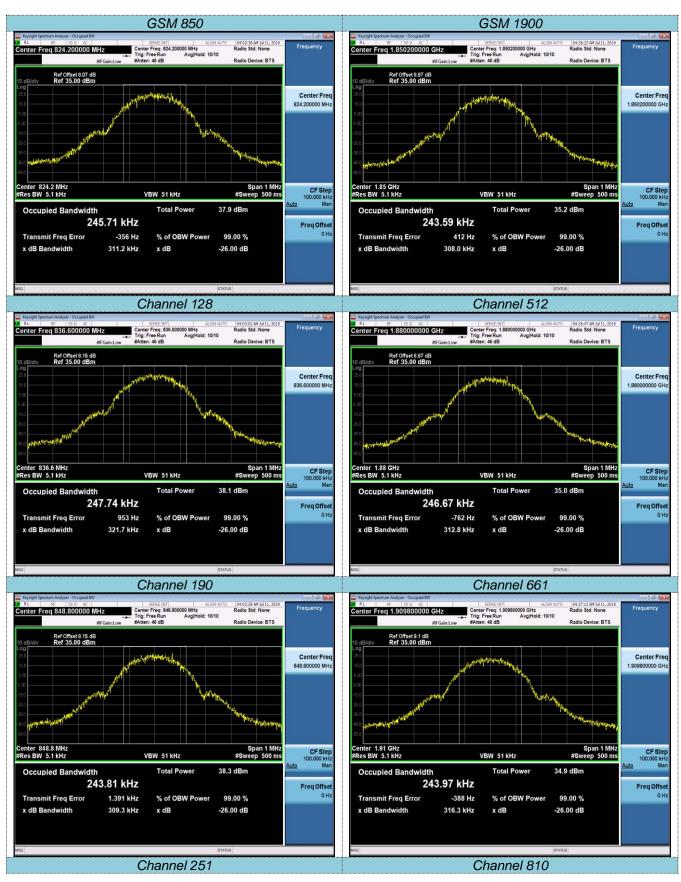


	GPRS 1900						
Channel Frequency (99% BW) Number (MHz) (kHz)		Emission Bandwidth (26 dBc BW) (kHz)	Verdict				
128	824.20	243.3	312	PASS			
190	836.60	244.0	309	PASS			
251	848.80	242.9	316	PASS			

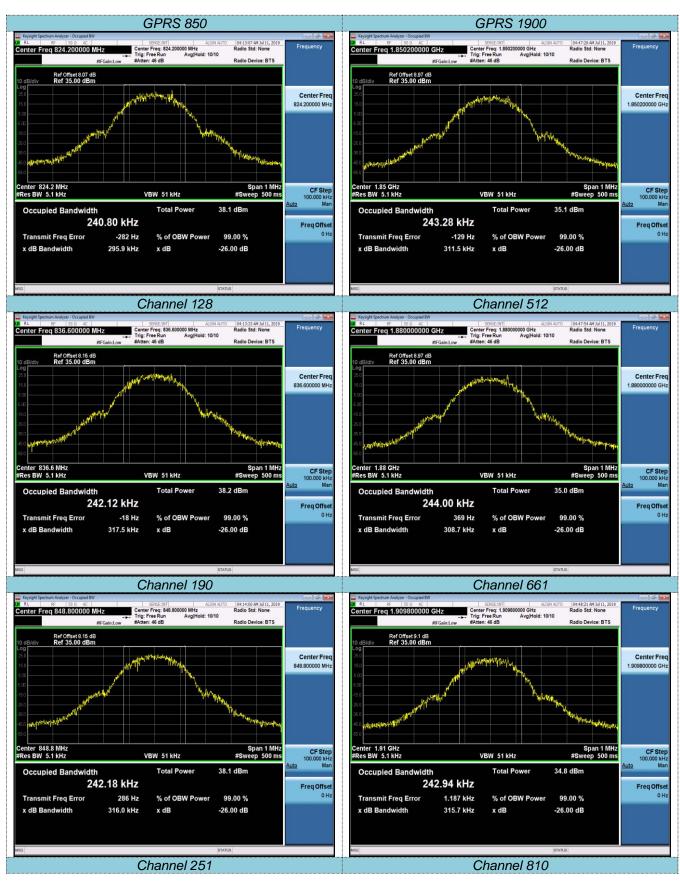
	EGPRS 850						
Channel Number	(99% RW)		Emission Bandwidth (26 dBc BW) (kHz)	Verdict			
128	824.20	245.3	307	PASS			
190	836.60	243.2	312	PASS			
251	848.80	239.4	310	PASS			

	EGPRS 1900						
Channel Frequency (MHz) Occupied Bandwidth (99% BW) (kHz) (kHz)		Emission Bandwidth (26 dBc BW) (kHz)	Verdict				
128	824.20	241.2	308	PASS			
190	836.60	243.8	308	PASS			
251	848.80	242.9	301	PASS			

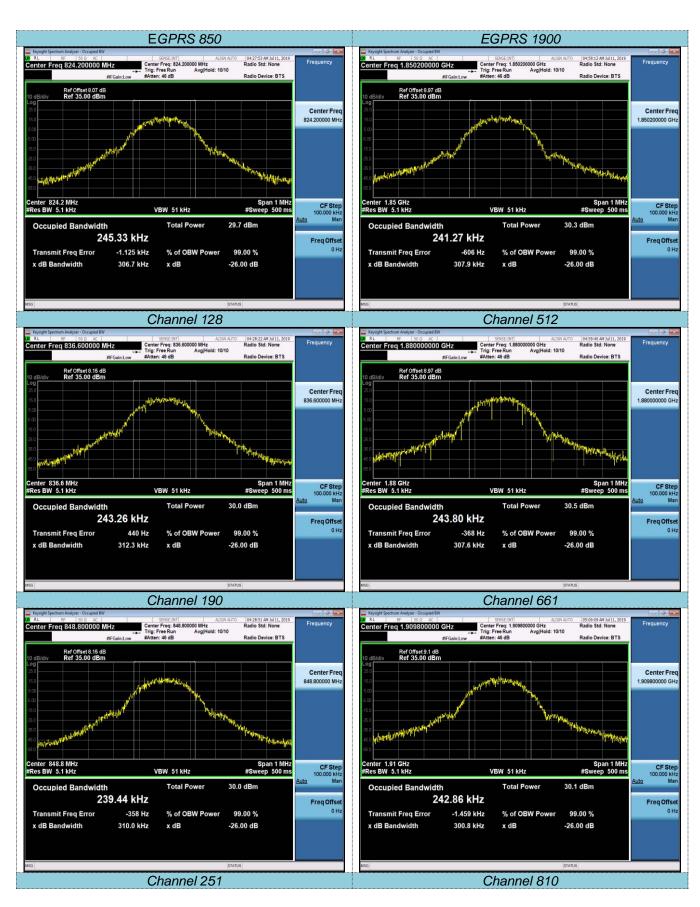












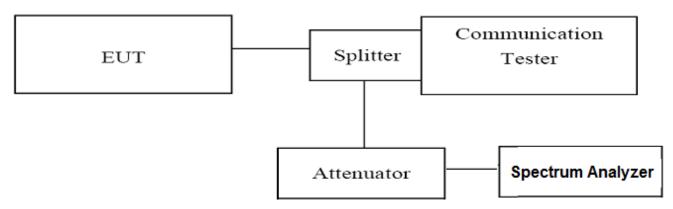


4.4 Band Edge Complicance

TEST APPLICABLE

During the process of testing, the EUT was controlled via Aglient Digital Radio Communication tester (CMW500) to ensure max power transmission and proper modulation.

TEST CONFIGURATION



TEST PROCEDURE

- 1. The EUT was set up for the max output power with pseudo random data modulation;
- 2. The power was measured with Aglient Spectrum Analyzer N9020A;
- 3. Set RBW=5.1KHz,VBW=51KHz,Span=3MHz,SWT=300ms, Dector: RMS;
- 4. These measurements were done at 3 frequencies, 1850.20 MHz, 1880.00 MHz and 1909.80 MHz for PCS1900 band; 824.20 MHz, 836.60 MHz and 848.80 MHz for GSM850 band. (bottom, middle and top of operational frequency range).

TEST RESULTS

GSM 850						
Channel	Frequency	Measurement Results		Limit		
Number	Frequency (MHz)	Frequency (MHz)		(dBm)	Verdict	
128	824.20	823.995	-15.40	-13.00	PASS	
251	848.80	849.022	-15.17	-13.00	PASS	

GSM 1900						
Channel	Eroquopov	Measurement Results		Limit		
Number	Frequency (MHz)	Frequency (MHz)	Values (dBm)	(dBm)	Verdict	
512	1850.20	1849.995	-18.08	-13.00	PASS	
810	1909.80	1910.018	-18.96	-13.00	PASS	

GPRS 850						
Channel	Frequency	Measurement Results		Limit		
Number	Frequency (MHz)	Frequency (MHz)	Values (dBm)	Limit (dBm)	Verdict	
128	824.20	823.892	-16.59	-13.00	PASS	
251	848.80	849.020	-15.46	-13.00	PASS	

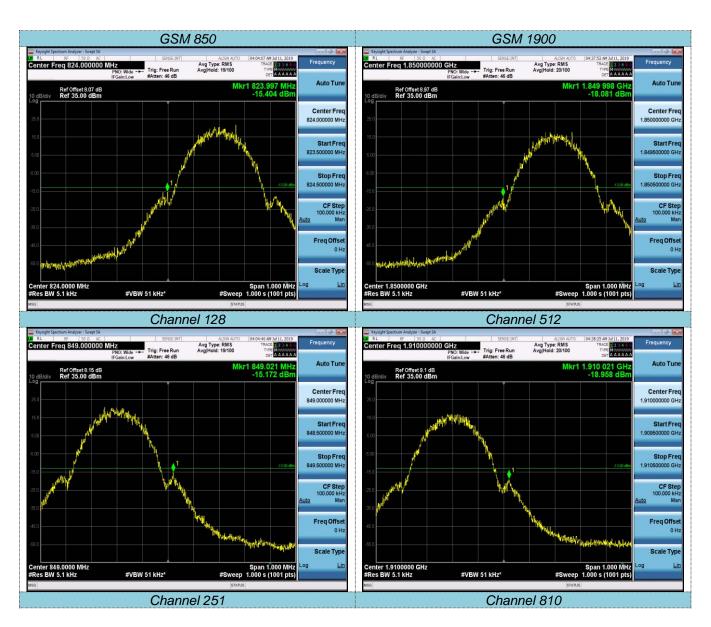
GPRS 1900						
Channel	Eroquopov	Measurement Results		Limit		
Number	Frequency (MHz)		Values (dBm)	Limit (dBm)	Verdict	
512	1850.20	1849.999	-19.16	-13.00	PASS	
810	1909.80	1910.018	-19.39	-13.00	PASS	



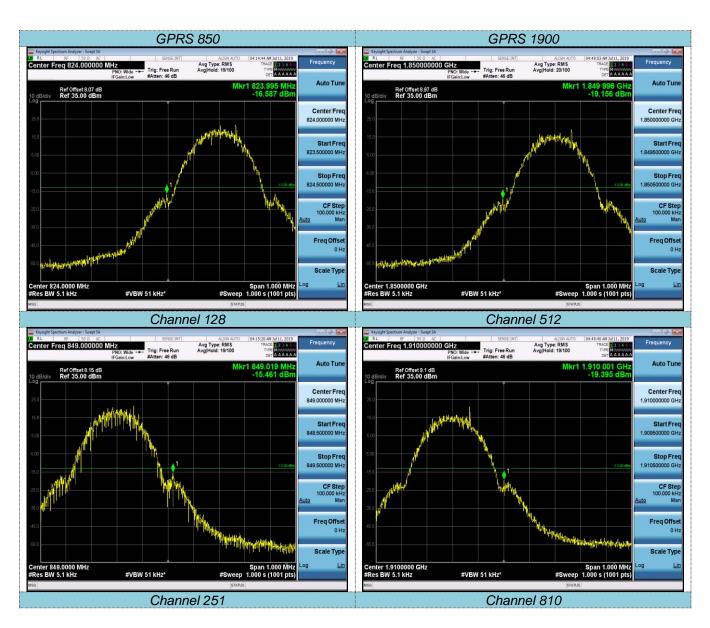
EGPRS 850						
Channel	Frequency	Measurement Results		Limit		
Number	Frequency (MHz)	Frequency (MHz)	Values (dBm)	(dBm)	Verdict	
128	824.20	823.984	-21.30	-13.00	PASS	
251	848.80	849.017	-24.32	-13.00	PASS	

EGPRS 1900						
Channel	Eroquopov	Measurement Results		Limit		
Channel Number	Frequency (MHz)	Frequency (MHz)	Values (dBm)	Limit (dBm)	Verdict	
512	1850.20	1849.998	-23.90	-13.00	PASS	
810	1909.80	1910.012	-25.44	-13.00	PASS	

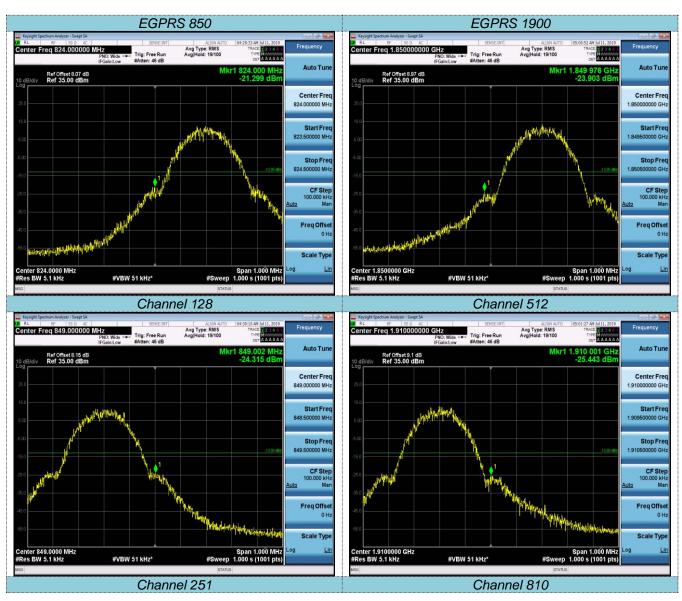














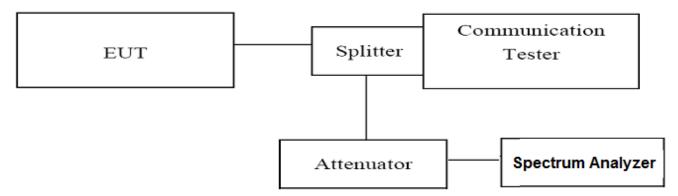
4.5 Spurious Emssion on Antenna Port

TEST APPLICABLE

The following steps outline the procedure used to measure the conducted emissions from the EUT.

- 1. Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the equipment of PCS1900 band, this equates to a frequency range of 9 KHz to 19.1 GHz, data taken from 9 KHz to 25 GHz. For GSM850, data taken from 9 KHz to 9 GHz.
- 2. The sweep time is set automatically by instrument itself. That should be the optimal sweep time for the span and the RBW. If the sweep time is too short, that is sweep is too fast, the sweep result is not accurate; if the sweep time is too long, that is sweep is too low, some frequency components may be lost. The instrument will give an optimal sweep time according the selected span and RBW.
- The procedure to get the conducted spurious emission is as follows: The trace mode is set to MaxHold to get the highest signal at each frequency; Wait 25 seconds; Get the result.
- 4. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.

TEST CONFIGURATION



TEST PROCEDURE

- 1. The EUT was set up for the max output power with pseudo random data modulation;
- 2. The power was measured with Agilent Spectrum Analyzer N9020A (peak);
- 3. These measurements were done at 3 frequencies, 1850.20 MHz, 1880.00 MHz and 1909.80 MHz for PCS1900 band; 824.20 MHz, 836.60 MHz and 848.80 MHz for GSM850 band. (Low, middle and high of operational frequency range).

<u>TEST LIMIT</u>

Part 24.238 and Part 22.917 specify that 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 specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

TEST RESULTS

Note:We tested GPRS/EGPRS mode and recorded the worst case at the GPRS mode.

4.5.1 For GPRS 850Test Results

A. Test Verdict

Test Mode/ Channel	Frequency (MHz)	Frequency Range	Limit (dBm)	Verdict
GPRS 850	824.20	30MHz -3GHz	-13.00	PASS
/128		3GHz-9GHz	-13.00	PASS
GPRS 850	000.00	30MHz -3GHz	-13.00	PASS
/190	836.60	3GHz-9GHz	-13.00	PASS
GPRS 850	848.80	30MHz -3GHz	-13.00	PASS
/251	040.00	3GHz-9GHz	-13.00	PASS

Note:

1. In general, the worse case attenuation requirement shown above was applied. 2."---" means that the emission level is too low to be measured or at least 20 dB down than the limit.

B. Test Plots



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Test Mode: GPRS	Test channel : 128	Test Mode: GPRS	Test channel : 190
Kenyaht Spectrum Andrez - Swegt SA. SR L	ALISH AUTO 04:16:94 AM Jul 1: 2019 Avg Type: RMS Trace provide a series AvgHold: 100100 prof AAAAAA Mkr2 977.7 MHz Auto Tu	IFGain:Low #Atten: 40 dB	ALIGN AUTO 04:16:49 AM Jul 11, 2019 per RMS TRACE 2 4 4 Frequency d: 100/100 Trive AAAAAA Mkr2 643.7 MHz Auto Tune
Ref Offset 8.5 dB 10 dB/div Ref 35.00 dBm	-33.361 dBm	10 dB/div Ref 35.00 dBm	-34.063 dBm
25.0	Center Fr 515.00000 M		Center Freq 515.000000 MHz
150	Start Fr	150	Start Freq
5.00	30.00000 N	5.00	30.000000 MHz
-5.00	Stop Fr 		1.00000000 GHz
-250	CF St	750	CF Step
-36.0	97.00000 N		97.00000 MHz <u>Auto</u> Man
-450	Freq Offs	t	Freq Offset 0 Hz
-56.0	Scale Ty	.55.0	Scale Type
Start 0.0300 GHz #Res BW 1.0 MHz #VBW 3.0 MHz*	Stop 1.0000 GHz Sweep 1.199 ms (1000 pts)	Start 0.0300 GHz #Res BW 1.0 MHz #VBW 3.0 MHz*	Stop 1.0000 GHz Log Lin Sweep 1.199 ms (1000 pts)
MSG	STATUS	MSC	STATUS
30MHz [,]	~1GHz	30MHz~1G	Hz
Trig: Free Run PRO: Fast →→ Free Store Rev 40 B Free Store Rev 40 B Free Run Free Free Run Free Free Run Free Free Run Free Free Run Free Free Run Free Free Free Free Free Free Free Free	ALIGN AUTO 04:16:13 AM Jul 11, 2019 Avg Type: RMS TRACE 12 14 Avg[Hold: 61/100 tree DET A A A A A A	PNO: Fast Trig: Free Run Avg Ho IFGain:Low #Atten: 40 dB	ALIGN AUTO 04:16:58 AM Jul 11, 2019 pe: RMS TRACE 2 4 4 JUL d: 61/100 TYPE DET A A A A A A
Ref Offset 10.48 dB 10 dB/div Ref 35.00 dBm	Mkr1 6.921 1 GHz -27.572 dBm	2 Ref Offset 10.48 dB 10 dB/div Ref 35.00 dBm	Mkr1 5.780 1 GHz -27.949 dBm
25.0	Center Fr 5.00000000 G		Center Freq 5.00000000 GHz
15.0	Start Fr	15.0	Start Freq
5.00	1.00000000 G		1.00000000 GHz
-500	130040 9.00000000 G		-13.00 de 9.000000000 GHz
-15.0	CF St	1:50	CF Step
-36 0 mean third with this and a static to a back to the static state	Boo.ocooco Marte	z zastali zasta	800.000000 MHz Auto Man
-450	FreqOff		Freq Offset
-55 0	Scale Ty	-55.0	Scale Type
Start 1.000 GHz	Stop 9.000 GHz	2 Start 1.000 GHz	Stop 9.000 GHz
#Res BW 1.0 MHz #VBW 3.0 MHz*	Sweep 13.65 ms (8190 pts)	#Res BW 1.0 MHz #VBW 3.0 MHz*	Sweep 13.65 ms (8190 pts)
1GHz ~	-9GHz	1GHz ~9GI	Ηz



Test Mode: GPRS	Test channel : 251
Keysigkt Spectrum Analyzer - Swept SA SPECE-3NT R L RF 55.0 AC Conter Freq 515.000000 MHZ Trig: Free Run Trig: Free Run PNO: East Atten: 40 dB Atten: 40 dB	ALIGN AUTO 04:17:33 A4 Jul 12:019 Avg Type: RMS TRACE 23:45 Frequency Avg Hold: 100/100 TYPE A A A A A
10 dB/div Ref 35.00 dBm	Mkr2 776.7 MHz -34.257 dBm
15.0	515.00000 MH
500	30.00000 MH
150	1,00000000 GH
35.0	2 an any second s
450	0 H Scale Typ
Start 0.0300 GHz #Res BW 1.0 MHz #VBW 3.0 MHz*	Stop 1.0000 GHz Sweep 1.199 ms (1000 pts)
30MHz~	-1GHz
Reynight Spectrum Analyzer Swept 5A RL PF 500 AC Set Set Set Set Set Set Set Set Set	ALIGN AUTO 04:17:11 AM Jul 11, 2019 Avg Type: RMS TRACE 10 10 11, 2019 Avg/Hold: 61/100 Type
IFGain:Low #Atten: 40 dB	Avg Hold: 61/100 TYPE AAAAAA
IFGaincLow #Atten: 40 dB	Mkr1 5.078 6 GHz Auto Tun -27.778 dBm
	Mkr1 5.078 6 GHz -27.778 dBm Center Fre 5.00000000 GH
	Mkr1 5.078 6 GHz -27.778 dBm Center Fre
	Mkr1 5.078 6 GHz Auto Tun -27.778 dBm Center Fre 5.00000000 GH Start Fre 1.00000000 GH Start Fre 9.00000000 GH 9.0000000 GH
	Mkr15.078 G GHz Auto Tun .27.778 dBm Center Fre .00000000 GH Start Fre .00000000 GH Stop Fre .00000000 GH Stop Fre .00000000 GH CF Ste
Ref Offset 10.48 dB 10 dB/div Ref 35.00 dBm 20	Mkr15.078 6 GHz -27.778 dBm -27.778 dBm Center Fre 5.00000000 GH Start Fre 1.00000000 GH Start Fre 9.0000000 GH Start Fre 9.0000000 GH Mkr15.078 dBm -1.00000000 GH -1.0000000 GH -1.00000000 GH -1.0000000 GH -1.000000 GH -1.0000000 GH -1.0000000 GH -1.0000000 GH -1.0000000 GH -1.0000000 GH -1.0000000 GH -1.00000000 GH -1.00000000 GH -1.0000000 GH -1.0000000 GH -1.0000000 GH -1.0000000 GH -1.00000000 GH -1.0000000 GH -1.0000000 GH -1.0000000 GH -1.0000000 GH -1.0000000 GH -1.0000000 GH -1.000000 GH -1.0000000 GH -1.000000 GH -1.0000000 GH -1.00000000 GH -1.0000000 GH -1.00000000 GH -1.000000000 GH -1.000000000 GH -1.000000000 GH -1.000000000 GH -1.0000000000 GH -1.00000000000000 GH -1.000000000000000000000000000000000000
Ref Offset 10.48 dB 10 dB/div Ref 35.00 dBm 20	Mkr15.078 6 GHz -27.778 dBm Center Fre 5.00000000 GH 1.00000000 GH 1.00000000 GH 1.00000000 GH 5.00000000 GH 5.000000000 GH 5.00000000 GH 5.0000000 GH 5.0000000 GH 5.0000000 GH 5.0000000 GH 5.0000000 GH 5.0000000 GH 5.0000000 GH 5.0000000 GH 5.00000000 GH 5.00000000 GH 5.00000000 GH 5.00000000 GH 5.00000000 GH 5.00000000 GH 5.000000000000 GH 5.000000000000000000000000000000000000



4.5.2 For GPRS 1900 Test Results

A. Test Verdict

Test Mode/ Channel	Frequency (MHz)	Frequency Range	Limit (dBm)	Verdict
		9KHz-150KHz	-13.00	PASS
GPRS 1900	1850.20	150KHz-30MHz	-13.00	PASS
/512	1650.20	30MHz -8GHz	-13.00	PASS
		8GHz-20GHz	-13.00	PASS
		9KHz-150KHz	-13.00	PASS
GPRS 1900	1880.00	150KHz-30MHz	-13.00	PASS
/661	1000.00	30MHz -8GHz	-13.00	PASS
		8GHz-20GHz	-13.00	PASS
		9KHz-150KHz	-13.00	PASS
GPRS 1900	1909.80	150KHz-30MHz	-13.00	PASS
/810	1909.00	30MHz -8GHz	-13.00	PASS
		8GHz-20GHz	-13.00	PASS

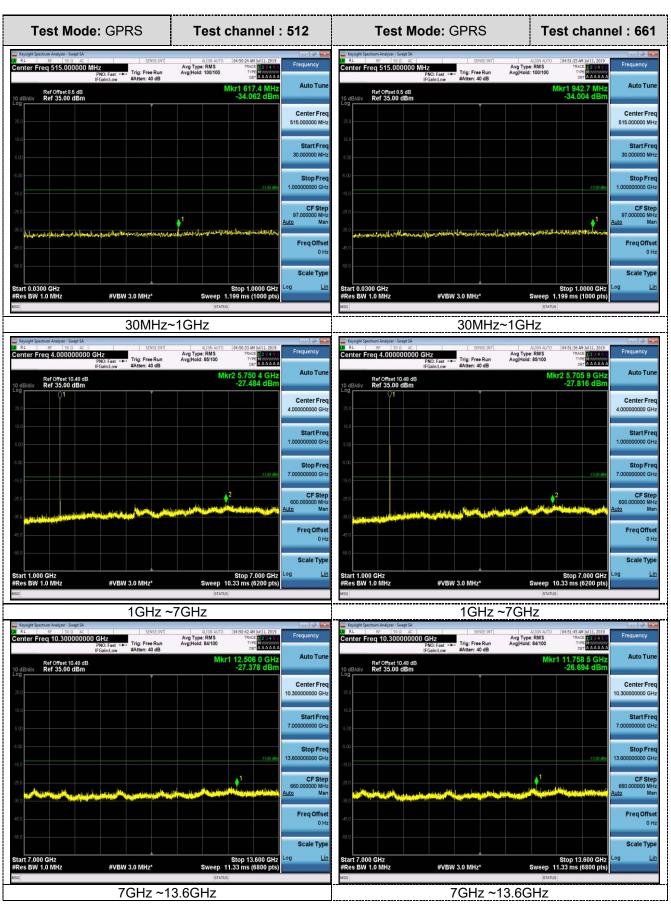
Note:

1. In general, the worse case attenuation requirement shown above was applied.

2."---" means that the emission level is too low to be measured or at least 20 dB down than the limit.

B. Test Plots







Keysight Spectrum Analyzer - Swept SA						trum Analyzer - Swep						
Center Freq 16.800000000	SENSI PNO: Fast →→ IFGain:Low IFGain:Low SENSI Trig: Free R #Atten: 40 c	Avg Type: RMS Avg Hold: 58/100	04:50:51 AM Jul 11, 2019 TRACE 2 345 TYPE M	Frequency	Center Fr	RF 50 Ω eq 16.80000	00000 CH7	- Trig: Free Ru #Atten: 40 dB	Avg Typ n Avg Hole		04:51:53 AM Jul 11, 2019 TRACE 2 3 4 5 TYPE M	Frequency
Ref Offset 10.48 dB 10 dB/div Ref 35.00 dBm		Mk	r1 19.617 9 GHz -22.147 dBm	Auto Tune	10 dB/div	Ref Offset 10.4 Ref 35.00 di	18 dB Bm			Mkr1	18.877 8 GHz -22.568 dBm	Auto Tune
26.0				Center Freq 16.80000000 GHz	25.0							Center Freq 16.80000000 GHz
5.00				Start Freq 13.60000000 GHz	5.00							Start Freq 13.60000000 GHz
-5.00			-13.00 dBm	Stop Freq 20.00000000 GHz	-5.00						-13.00 dBn	Stop Freq 20.000000000 GHz
-25.0	and the spectrum of the second se		فيسابقهم التغيير والتغاي	CF Step 640.000000 MHz <u>Auto</u> Man	-25.0		tist in attacking an of	بر به ال ^{ارد} و ال	Negative and the second		and a state of the second	CF Step 640.000000 MHz <u>Auto</u> Man
-45.0				Freq Offset 0 Hz	-45.0							Freq Offset 0 Hz
-co.u				Scale Type	-50.0							Scale Type
Start 13.600 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz*	Sweep	Stop 20.000 GHz 16.21 ms (6400 pts)	Log <u>Lin</u>	Start 13.60 #Res BW		#VBV	/ 3.0 MHz*		Sweep 16	Stop 20.000 GHz .21 ms (6400 pts)	Log <u>Lin</u>
13.6GHz ~20GHz						1	3.6G⊦	lz ~20				



No. 6W // John Willing / John Burger / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) Signer / Lision (Utility pro) <t< th=""><th></th><th>1</th><th></th><th> </th></t<>		1		
	Test Mode: GPRS	Test channel	: 810	
Autor </td <td>RL RF 50 AC SENSE:INT</td> <td>ALIGN AUTO 04:52:27 AM Jul 11, 2019 Avg Type: RMS TRACE</td> <td>Frequency</td> <td></td>	RL RF 50 AC SENSE:INT	ALIGN AUTO 04:52:27 AM Jul 11, 2019 Avg Type: RMS TRACE	Frequency	
<pre>comparison of a state of a s</pre>	PNO: Fast Ing. Free Run IFGain:Low #Atten: 40 dB	DET A A A A A A	Auto Tune	
A second sec	Ref Offset 8.5 dB dB/div Ref 35.00 dBm			
	6.0			
Buy Provide and Provide an	50		Start Freq	
	100		30.000000 MHz	
A set of the set o	5.00	-13.00 @8		
Construction of the large of the la	15.0			
The first of book of the firs	50		97.000000 MHz	
a monometa a field of	alasian nangangkalan morina kanalasian natura kanalasian kanalasian kanalasian kanalasian kanalasian kanalasian 150	and and the second a		
	55.0			
	tart 0.0300 GHz	Stop 1.0000 GHz	100	
The first state of the first st	Res BW 1.0 MHz #VBW 3.0 MHz*	Sweep 1.199 ms (1000 pts)		
The ref race 4 00000000 000 000 000 000 000 000 000	30MHz	~1GHz		
Market are top of the t		ALIGN AUTO 04:52:37 AM Jul 11, 2019		
House to deal a second to deal	PN0: Fast Ing: Free kun IFGain:Low #Atten: 40 dB	DET A A A A A A		
1 1	Ref Offset 10.49 dB 0 dB/div Ref 35.00 dBm	MKP2 5.846 3 GHZ -27.836 dBm		
The second sec	25.0			
Second Prove The second Prov	15.0		Start Freq	
The set of	5.00		1.000000000 GHz	
All of the second sec	-5.00	-13.00 @8		
Construction of the second of the se	-15.0			
Scale Type trans 1.000 GHz severe 10.3000000 GHz reader TGCHZ ~7GHz TGCHZ ~7GH			600.000000 MHz	
scale Type tar 1 1000 CH2 reverse 10.30 m (620 pris) tar 1 1000 CH2 reverse 100.30 m (620 pris) tar 1 CHZ ~7CHZ reverse 10.30 m (620 pris) tar 1 CHZ ~7CHZ reverse 10.30 m (620 pris) tar 1 CHZ ~7CHZ reverse 10.30 m (620 pris) tar 1 CHZ ~7CHZ ~7CHZ reverse 10.30 m (620 pris) tar 1 CHZ ~7CHZ ~7C	-450			
Rat 1 000 CH2 Res BV 10 MHz VBW 3.0 MHz Sweep 10.33 ms (200 pts) THE ALL STATES States Res BV 10.4 ms The State Res BV	55.0			
Res BW 10 MHz ⁴ #VBW 30 MHz ⁴ Sweep 10.33 ms (6200 pts) ISMAB ICFL 2~7GHz Forger Sent Sent Sent Sent Sent Sent Sent Sent	Start 1.000 GHz	Stop 7.000 GHz	100	
Proved Statut	Res BW 1.0 MHz #VBW 3.0 MHz*	Sweep 10.33 ms (6200 pts)		
AL e* 98 a. Sector ALD ATO MAIL 2004 enter Freq 10.030000000000000000000000000000000000		~7GHz		
0. Blow Ref 05:00 dBm -27.223 dBm Add 0 fde 09 -27.223 dBm -27.223 dBm Center Freq 100 -27.223 dBm -27.223 dBm -27.223 dBm		ALIGN AUTO 04:52:47 AM Jul 11, 2019 Avg Type: RMS TRACE 12:4 Avg[Hold: 84/100 Type]	Contraction of the local division of the loc	
90 Center Freq 50 Center Freq 50 Start Freq 51 Start Freq 52 Start Freq 53 Start Freq 54 Start Freq 55 Start Freq 56 Start Freq 57 Start Freq 58 Start Freq <				
50 50 50 50 50 50 50 50 50 50 50 50 50 5	o dB/div Ref 35.00 dBm	-27.223 dBm		
500 700000000 GHz 500 500 500 10000000 GHz 500 100000000 GHz 500 100000000 GHz 500 1000000000000000000000000000000000000	25.0			
Stop Freq Stop Freq Stop Freq Stop Stop Freq Stop Stop Freq Stop Stop Stop Stop Stop Stop Stop Stop Freq Stop	500			
50 50 50 50 50 50 50 50 50 50	-5.00			
Store	15.0	-13.00 dBm		
Store	25.0		CF Step 660.000000 MHz	
CO CO CO CO CO			<u>Auto</u> Man	
tart 7.000 GHz Stop 13.600 GHz Res BW 1.0 MHz #VBW 3.0 MHz' Sweep 11.33 ms (6800 GHz) so	45.0			
Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 11.33 ms (6800 pts) sol [status]	55.0		Scale Type	
SG STATUS	Start 7.000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz*	Stop 13.600 GHz Sweep 11.33 ms (6800 pts)	Log <u>Lin</u>	
	5G	STATUS		



	SENSE:INT	ALIGN AUTO	04:52:56 AM Jul 11,	Frequency
DNO: East alter Trig: P	ree Run	Avg Hold: 58/100	TYPE MWW	
IFGain:Low #Atten	: 40 dB	-	DET A A A	
		Mkr	1 18 913 8 6	Auto Tune
		init.	-22 175 d	200
			22.110 0	
				Center Freq
				16.80000000 GHz
				Start Freq
				13.60000000 GHz
				100
				Stop Freq
			-13.0	20.00000000 GHz
			• • ·	
	a	A Staling of the staling of the	All and a state of the second state	CF Step
in the second	and the second second		and the second sec	640.000000 MHz Auto Man
				Auto Man
				1.1
				Freq Offset
				0 Hz
				0 Hz
				Scale Type
				ocure Type
			Stop 20.000 (Log Lin
#VBW 3.0 M	H7*	Sween 1	6.21 ms (6400	ofs)
# * B * * 0.0 i i i	12			<i>,</i> ,,,,
		STATUS		
12 60		20GHz		
	IFGelicLow RAtter	IFGainLow #Atten: 40 dB	PNC: Fast Frig: Free Ring Avgipted: 80100 IFGelinc.low Avgipted: 80100 Mkr	IFGainstow EAtter: 40 dB Certification Certi



4.6 Frequency Stability Test

TEST APPLICABLE

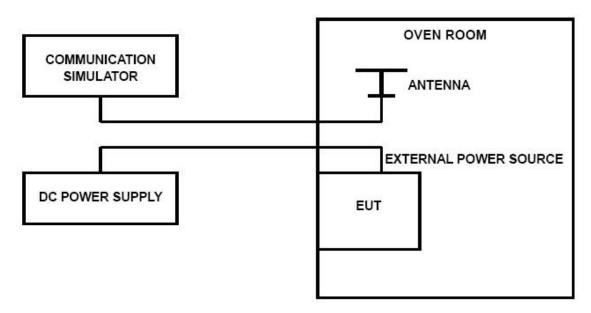
- 1. According to FCC Part 2 Section 2.1055 (a)(1), the frequency stability shall be measured with variation of ambient temperature from -30°C to +50°C centigrade.
- 2. According to FCC Part 2 Section 2.1055 (E) (2), for battery powered equipment, the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point, which is specified by the manufacture.
- 3. Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried voltage equipment and the end voltage point was 10.8V.

TEST PROCEDURE

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 CMU200 DIGITAL RADIO COMMUNICATION TESTER.

- 1. Measure the carrier frequency at room temperature;
- 2. Subject the EUT to overnight soak at -30°C;
- 3. With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on middle channel of PCS 1900 and GSM850, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming;
- 4. Repeat the above measurements at 10℃ increments from -30℃ to +50℃. Allow at least 0.5 hours at each temperature, unpowered, before making measurements;
- Remeasure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments remeasuring carrier frequency at each voltage. Pause at nominal voltage for 0.5 hours unpowered, to allow any self-heating to stabilize, before continuing;
- 6. Subject the EUT to overnight soak at $+50^{\circ}$ C;
- 7. With the EUT, powered via nominal voltage, connected to the CMU200 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;
- 8. Repeat the above measurements at 10℃ increments from +50℃ to -30℃. Allow at least 0.5 hours at each temperature, unpowered, before making measurements;
- 9. At all temperature levels hold the temperature to +/- 0.5° C during the measurement procedure;

TEST CONFIGURATION





TEST LIMITS

For Hand carried battery powered equipment

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of between 3.40VDC and 4.20VDC, with a nominal voltage of 3.80 DC. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress. These voltages represent a tolerance of -10 % and +12.5 %. For the purposes of measuring frequency stability these voltage limits are to be used.

For equipment powered by primary supply voltage

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. For this EUT section 2.1055(d)(1) applies. This requires varying primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

TEST RESULTS

	GPRS 850 Middle channel=190 channel=836.6MHz									
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict					
9.45V	25	5.23	0.006364	2.50	PASS					
10.50V	25	7.55	0.009106	2.50	PASS					
11.55V	25	6.13	0.007483	2.50	PASS					
10.50V	-30	8.91	0.010605	2.50	PASS					
10.50V	-20	5.68	0.006879	2.50	PASS					
10.50V	-10	8.46	0.010121	2.50	PASS					
10.50V	0	10.07	0.011846	2.50	PASS					
10.50V	10	6.33	0.007548	2.50	PASS					
10.50V	20	7.30	0.008060	2.50	PASS					
10.50V	30	5.23	0.006463	2.50	PASS					
10.50V	40	7.55	0.009146	2.50	PASS					
10.50V	50	6.13	0.007483	2.50	PASS					

	GPRS 1900 Middle channel=661 channel=1880MHz									
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict					
9.45V	25	20.40	0.011206	2.50	PASS					
10.50V	25	18.21	0.009824	2.50	PASS					
11.55V	25	21.31	0.011581	2.50	PASS					
10.50V	-30	17.56	0.009430	2.50	PASS					
10.50V	-20	15.95	0.008448	2.50	PASS					
10.50V	-10	14.46	0.007619	2.50	PASS					
10.50V	0	22.08	0.011516	2.50	PASS					
10.50V	10	20.86	0.010932	2.50	PASS					
10.50V	20	24.28	0.012731	2.50	PASS					
10.50V	30	20.40	0.011062	2.50	PASS					
10.50V	40	18.21	0.009482	2.50	PASS					
10.50V	50	21.31	0.011428	2.50	PASS					



	GSM 850 Middle channel=190 channel=836.6MHz									
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict					
9.45V	25	11.88	0.014441	2.50	PASS					
10.50V	25	6.13	0.007483	2.50	PASS					
11.55V	25	9.69	0.011775	2.50	PASS					
10.50V	-30	11.11	0.013208	2.50	PASS					
10.50V	-20	8.27	0.009858	2.50	PASS					
10.50V	-10	8.98	0.010743	2.50	PASS					
10.50V	0	10.53	0.012460	2.50	PASS					
10.50V	10	14.72	0.017324	2.50	PASS					
10.50V	20	10.59	0.012764	2.50	PASS					
10.50V	30	11.88	0.014441	2.50	PASS					
10.50V	40	6.13	0.007483	2.50	PASS					
10.50V	50	9.69	0.011577	2.50	PASS					

	GSM 1900 Middle channel=661 channel=1880MHz									
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict					
9.45V	25	21.44	0.011858	2.50	PASS					
10.50V	25	20.60	0.011314	2.50	PASS					
11.55V	25	28.93	0.015663	2.50	PASS					
10.50V	-30	14.27	0.007509	2.50	PASS					
10.50V	-20	21.31	0.011353	2.50	PASS					
10.50V	-10	16.79	0.008894	2.50	PASS					
10.50V	0	28.41	0.014786	2.50	PASS					
10.50V	10	22.02	0.011532	2.50	PASS					
10.50V	20	23.44	0.012427	2.50	PASS					
10.50V	30	21.44	0.011536	2.50	PASS					
10.50V	40	20.60	0.011314	2.50	PASS					
10.50V	50	28.93	0.015663	2.50	PASS					



	EGPRS 850 Middle channel=190 channel=836.6MHz									
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict					
9.45V	25	6.84	0.026767	2.50	PASS					
10.50V	25	7.62	0.025682	2.50	PASS					
11.55V	25	6.46	0.025896	2.50	PASS					
10.50V	-30	8.07	0.024981	2.50	PASS					
10.50V	-20	9.49	0.022781	2.50	PASS					
10.50V	-10	8.65	0.022109	2.50	PASS					
10.50V	0	8.14	0.059516	2.50	PASS					
10.50V	10	9.88	0.061415	2.50	PASS					
10.50V	20	8.33	0.060354	2.50	PASS					
10.50V	30	5.62	0.060727	2.50	PASS					
10.50V	40	7.55	0.058595	2.50	PASS					
10.50V	50	8.01	0.058685	2.50	PASS					

	EGPRS 1900 Middle channel=661 channel=1880MHz									
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict					
9.45V	25	8.59	0.018719	2.50	PASS					
10.50V	25	12.20	0.019215	2.50	PASS					
11.55V	25	10.53	0.017217	2.50	PASS					
10.50V	-30	17.05	0.020814	2.50	PASS					
10.50V	-20	9.75	0.016560	2.50	PASS					
10.50V	-10	12.07	0.020339	2.50	PASS					
10.50V	0	9.69	0.027348	2.50	PASS					
10.50V	10	14.85	0.035386	2.50	PASS					
10.50V	20	9.62	0.037307	2.50	PASS					
10.50V	30	12.33	0.037546	2.50	PASS					
10.50V	40	14.72	0.036341	2.50	PASS					
10.50V	50	12.46	0.037694	2.50	PASS					

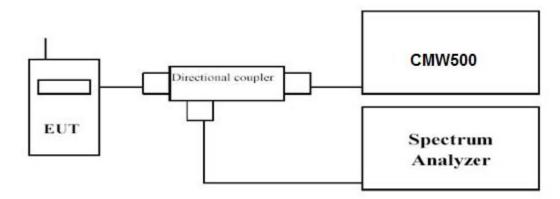


4.7 Peak-to-Average Ratio (PAR)

<u>LIMIT</u>

The Peak-to-Average Ratio (PAR) of the transmission may not exceed 13 dB.

TEST CONFIGURATION



TEST PROCEDURE

Use spectrum to measure the total peak power and record as P_{Pk} . Use spectrum to measure the total average power and record as P_{Avg} . Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm).

Determine the PAPR from:

PAPR (dB) = P_{Pk} (dBm) - P_{Avg} (dBm).

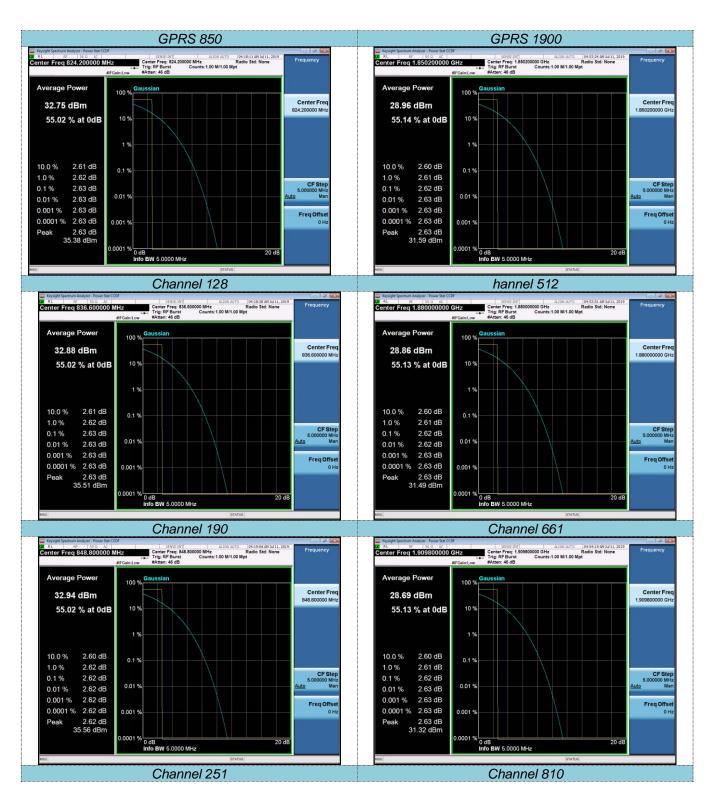
TEST RESULTS

Note:We tested EGPRS/GPRS/GSM mode and recorded the worst case at the GPRS mode.

	GPRS 850		
Frequency (MHz)	Peak power	AV power	Measured (dB)
824.20	31.59	28.96	2.63
836.60	33.81	31.16	2.65
848.80	33.90	31.24	2.66

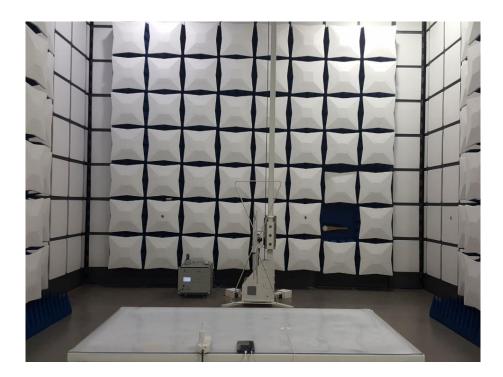
	GPRS 1900		
Frequency (MHz)	Peak power	AV power	Measured (dB)
1850.20	31.59	28.96	2.63
1880.00	31.49	28.86	2.63
1909.80	31.32	28.69	2.63







5 Test Setup Photos of the EUT





.....End of Report.....