

RF TEST REPORT

Applicant Suzhou ShiRuizhuo Technology
Co., Ltd.

FCC ID 2BQXJ-RRAL0VER01

Product Robotic Lawn Mower

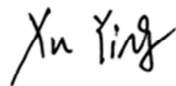
Brand roborock

Model RRAL0VER

Report No. EFTA25100248-IE-08-R1

Issue Date December 24, 2025

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR 47 Part 22H / FCC CFR 47 Part 24E / FCC CFR47 Part 27C / FCC CFR 47 Part 90S**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.



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Summary of Measurement Results

Test Case	Clause in FCC rules	Limits	Verdict
GSM 850; WCDMA Band 5; LTE Band 5/26 (824-849MHz)			
RF Power Output and Effective Radiated Power	2.1046 22.913(a)(5)	$\leq 7 \text{ W (38.45 dBm)}$	PASS ^{Note 1}
Occupied Bandwidth	Refer to the Module report(Report No.: 2211RSU065-U1 and 2211RSU065-U2; FCC ID: XMR202212EG25GL, Grant date: 03/01/2023)		
Band Edge Compliance			
Peak-to-Average Power Ratio			
Frequency Stability			
Spurious Emissions at Antenna Terminals			
Radiated Spurious Emission	2.1053 22.917 (a)	$\leq -13 \text{ dBm}$	PASS
GSM 1900			
RF Power Output and Effective Isotropic Radiated Power	2.1046 24.232(c)	$\leq 2 \text{ W (33 dBm)}$	PASS
Occupied Bandwidth	2.1049	No specific requirements	PASS
Band Edge Compliance	2.1051 24.238(a)	$\leq -13 \text{ dBm}$	PASS
Peak-to-Average Power Ratio	24.232 (d) KDB 971168 D01(5.7)	$\leq 13 \text{ dB}$	PASS
Frequency Stability	2.1055 24.235	The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.	PASS
Spurious Emissions at Antenna Terminals	2.1051 24.238(a)	$\leq -13 \text{ dBm}$	PASS
Radiated Spurious Emission	2.1053 24.238(a)	$\leq -13 \text{ dBm}$	PASS
WCDMA Band 2; LTE Band 2/25			
RF Power Output and Effective Isotropic Radiated Power	2.1046 24.232(c)	$\leq 2 \text{ W (33 dBm)}$	PASS ^{Note 1}
Occupied Bandwidth	Refer to the Module report(Report No.: 2211RSU065-U1 and 2211RSU065-U2; FCC ID: XMR202212EG25GL, Grant date: 03/01/2023)		
Band Edge Compliance			
Peak-to-Average Power Ratio			
Frequency Stability			
Spurious Emissions at Antenna Terminals			

Test Case	Clause in FCC rules	Limits	Verdict
Radiated Spurious Emission	2.1053 24.238(a)	≤ -13 dBm	PASS
WCDMA Band 4; LTE Band 4/66			
RF Power Output and Effective Isotropic Radiated Power	2.1046 27.50(d)(4)	≤ 1 W (30 dBm)	PASS
Occupied Bandwidth	Refer to the Module report(Report No.: 2211RSU065-U1 and 2211RSU065-U2; FCC ID: XMR202212EG25GL,Grant date: 03/01/2023)		
Band Edge Compliance			
Peak-to-Average Power Ratio			
Frequency Stability			
Spurious Emissions at Antenna Terminals			
Radiated Spurious Emission	2.1053 27.53(h)	≤ -13 dBm	PASS
LTE Band 7/38/41			
RF Power Output and Effective Isotropic Radiated Power	2.1046 27.50(h)(2)	≤ 2 W (33 dBm)	PASS ^{Note 1}
Occupied Bandwidth	Refer to the Module report(Report No.: 2211RSU065-U2; FCC ID: XMR202212EG25GL,Grant date: 03/01/2023)		
Band Edge Compliance			
Peak-to-Average Power Ratio			
Frequency Stability			
Spurious Emissions at Antenna Terminals			
Radiated Spurious Emission	2.1053 27.53(m)	≤ -25 dBm	PASS
LTE Band 12			
RF Power Output and Effective Radiated Power	2.1046 27.50(c)(10)	≤ 3 W (34.77 dBm)	PASS ^{Note 1}
Occupied Bandwidth	Refer to the Module report(Report No.: 2211RSU065-U2; FCC ID: XMR202212EG25GL,Grant date: 03/01/2023)		
Band Edge Compliance			
Peak-to-Average Power Ratio			
Frequency Stability			
Spurious Emissions at Antenna Terminals			
Radiated Spurious Emission	2.1053 27.53(g)	≤ -13 dBm	PASS
LTE Band 13			
RF Power Output and Effective Radiated Power	2.1046 27.50(b)(10)	≤ 3 W (34.77 dBm)	PASS ^{Note 1}

Test Case		Clause in FCC rules	Limits	Verdict			
Occupied Bandwidth	Refer to the Module report(Report No.: 2211RSU065-U2; FCC ID: XMR202212EG25GL,Grant date: 03/01/2023)						
Band Edge Compliance							
Peak-to-Average Power Ratio							
Frequency Stability							
Spurious Emissions at Antenna Terminals							
Radiated Spurious Emission	2.1053 27.53(c) 27.53(f)	<table><tr><td>Limit out of the band 1559-1610 MHz</td><td>≤ -13 dBm</td></tr><tr><td>Limit in the band 1559-1610 MHz</td><td>≤ -40 dBm</td></tr></table>	Limit out of the band 1559-1610 MHz	≤ -13 dBm	Limit in the band 1559-1610 MHz	≤ -40 dBm	PASS
Limit out of the band 1559-1610 MHz	≤ -13 dBm						
Limit in the band 1559-1610 MHz	≤ -40 dBm						
LTE Band 26 (814-824MHz)							
RF Power Output and Effective Radiated Power	2.1046 90.635(b)	≤ 100 W (50 dBm)	PASS ^{Note 1}				
Occupied Bandwidth	Refer to the Module report(Report No.: 2211RSU065-U3; FCC ID: XMR202212EG25GL,Grant date: 03/01/2023)						
Emission Masks							
Peak-to-Average Power Ratio							
Frequency Stability							
Spurious Emissions at Antenna Terminals							
Radiated Spurious Emission	2.1053 90.691	≤ -13 dBm	PASS				
Date of Testing: October 29, 2025 ~ November 20, 2025							
Date of Sample Received: October 24, 2025							
Note:							
1. Because of the change of antenna gain, ERP/EIRP need to be re-evaluated.							
2. PASS: The EUT complies with the essential requirements in the standard.							
3. FAIL: The EUT does not comply with the essential requirements in the standard.							
4. The conformity assessment in this report is based on a direct comparison of the test results with the limits by Eurofins TA Technology (Shanghai) Co., Ltd., without considering measurement uncertainty.							

1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **Eurofins TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3 Testing Location

Company:	Eurofins TA Technology (Shanghai) Co., Ltd.
Address:	Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
City:	Shanghai
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Website:	https://www.eurofins.com/electrical-and-electronics
E-mail:	Kain.Xu@cpt.eurofinscn.com

2 General Description of Equipment under Test

2.1 Applicant and Manufacturer Information

Applicant	Suzhou ShiRuizhuo Technology Co., Ltd.
Applicant address	Room 508, Building C, No.112 GLP I-Park, Sutong Road, Suzhou Industrial Park District, Suzhou City, Jiangsu Province, P.R. China
Manufacturer	Suzhou ShiRuizhuo Technology Co., Ltd.
Manufacturer address	Room 508, Building C, No.112 GLP I-Park, Sutong Road, Suzhou Industrial Park District, Suzhou City, Jiangsu Province, P.R. China

2.2 General information

EUT Description				
Model	RRAL0VER			
IMEI	Conducted	859687061773604		
Lab internal SN	Radiated	251024-31-005		
Hardware Version	VERSAHWB1			
Software Version	VERSAADB01			
Power Supply	Battery Charger / Charging Station			
Antenna Type	Internal Antenna			
Rated Power Supply Voltage	21.60VDC			
Operating Voltage	Minimum: 17.00VDC Maximum: 24.80VDC			
Operating Temperature	Lowest: 0°C		Highest: +45°C	
Testing Temperature	Lowest: -30°C		Highest: +50°C	
Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)	Gain (dBi)
	GSM850	824 ~ 849	869 ~ 894	3.07
	GSM1900	1850 ~ 1910	1930 ~ 1990	3.92
	WCDMA Band II	1850 ~ 1910	1930 ~ 1990	3.92
	WCDMA Band IV	1710 ~ 1755	2110 ~ 2155	3.79
	WCDMA Band V	824 ~ 849	869 ~ 894	3.07
	LTE Band 2	1850 ~ 1910	1930 ~ 1990	3.92
	LTE Band 4	1710 ~ 1755	2110 ~ 2155	3.07
	LTE Band 5	824 ~ 849	869 ~ 894	3.07
	LTE Band 7	2500 ~ 2570	2620 ~ 2690	4.92
	LTE Band 12	699 ~ 716	729 ~ 746	-0.36
	LTE Band 13	777 ~ 787	746 ~ 756	2.79
	LTE Band 25	1850 ~ 1915	1930 ~ 1995	3.92
	LTE Band 26 (824 ~ 849)	824 ~ 849	869 ~ 894	3.07
	LTE Band 26	814 ~ 824	859 ~ 869	3.07

	(814 ~ 824)			
	LTE Band 38	2570 ~ 2620	2570 ~ 2620	4.93
	LTE Band 41	2496 ~ 2690	2496 ~ 2690	4.93
	LTE Band 66	1710 ~ 1780	2110 ~ 2180	3.07
Test Modulation	(GPRS)GMSK, (EGPRS) GMSK/ 8PSK; (WCDMA) QPSK,16QAM; (LTE) QPSK, 16QAM;			
HSDPA UE Category	24			
HSUPA UE Category	6			
Power Class	GSM 850: 4 GSM 1900: 1 WCDMA / LTE: 3			
Maximum E.I.R.P./ E.R.P.	GSM850	33.85 dBm		
	GSM1900	32.63 dBm		
	WCDMA Band II	28.38 dBm		
	WCDMA Band IV	27.76 dBm		
	WCDMA Band V	24.71 dBm		
	LTE Band 2/ LTE Band 25	27.54 dBm		
	LTE Band 4/ LTE Band 66	27.41 dBm		
	LTE Band 5/ LTE Band 26 (824 ~ 849)	24.51 dBm		
	LTE Band 7	28.24 dBm		
	LTE Band 12	20.98 dBm		
	LTE Band 13	23.70 dBm		
	LTE Band 26 (814 ~ 824)	23.98 dBm		
	LTE Band 38/ LTE Band 41	28.17 dBm		
EUT Accessory				
Battery	Manufacturer: HUIZHOU DESAY BATTERY CO., LTD. Model: BRR-63C-6000HD			
Battery Charger	Manufacturer: Dongguan Shilong Fuhua Electronic Co., Ltd. Model: TZAM01 Input: 100-240VAC 50/60Hz 2A Output: 32VDC 4.69A 150.08W			
Charging Station	Manufacturer: Suzhou ShiRuizhuo Technology Co., Ltd. Model: MHCR01RR Rated Input:32VDC/4.69A Rated Output: 32VDC/4A			

Note:

1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.

3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards:

FCC CFR 47 Part 22H (2025)

FCC CFR 47 Part 24E (2025)

FCC CFR 47 Part 27C (2025)

FCC CFR 47 Part 90S (2025)

Reference standard:

FCC CFR 47 Part 2 (2025)

ANSI C63.26-2015

KDB 971168 D01 Power Meas License Digital Systems v03r01

4 Test Configuration

All mode and data rates and positions and RB size and modulations were investigated.

Subsequently, only the worst case emissions are reported.

The following testing in GSM/WCDMA/LTE is set based on the maximum RF Output Power.

The following testing in different Bandwidth is set to detailin the following table:

Test items	Modes/Modulation		
	GSM 850	GSM 1900	WCDMA Band 2/4/5
RF Power Output and Effective (Isotropic) Radiated power	GPRS EGPRS	GPRS EGPRS	RMC HSDPA/HSUPA
Occupied Bandwidth	--	GPRS(1Tx slot) EGPRS(1Tx slot)	--
Band Edge Compliance	--	GPRS(1Tx slot) EGPRS(1Tx slot)	--
Peak-to-Average Power Ratio	--	GPRS(1Tx slot) EGPRS(1Tx slot)	--
Frequency Stability	--	GPRS	--
Spurious Emissions at Antenna Terminals	--	GPRS	--
Radiated Spurious Emission	GPRS	GPRS	RMC

Test modes are chosen to be reported as the worst case configuration below for LTE Band:

Test items	Modes	Bandwidth (MHz)						Modulation		RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	H
Radiated Spurious Emission	LTE 2	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 4	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 5	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 7	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 12	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 13	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 17	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 25	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 26 (814 ~ 824)	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 26 (824 ~ 849)	-	-		-	-	-								
	LTE 38	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 41	-	-	O	-	-	-	O	-	O	-	-	-	O	-
	LTE 66	-	-	O	-	-	-	O	-	O	-	-	-	O	-
Note	1. The mark "O" means that this configuration is chosen for testing. 2. The mark "-" means that this configuration is not testing.														

5 Test Case

5.1 RF Power Output and Effective Isotropic Radiated Power

Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Methods of Measurement

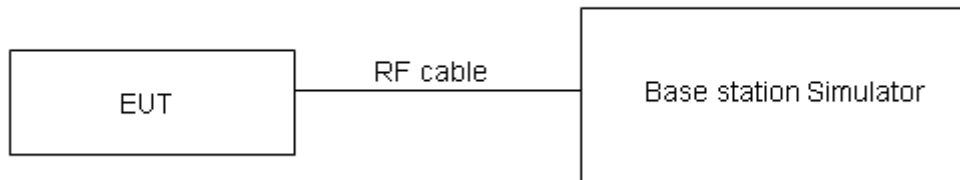
During the process of the testing, The EUT was connected to the Base Station Simulator with a known loss. The EUT is controlled by the Base Station Simulator test set to ensure max power transmission with proper modulation.

ERP can then be calculated as follows:

$EIRP \text{ (dBm)} = \text{Output Power (dBm)} + \text{Antenna Gain (dBi)}$

$EIRP \text{ (dBm)} = ERP \text{ (dBm)} + 2.15 \text{ (dB.)}$

Test Setup



Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U=0.4 \text{ dB}$ for RF power output, $k = 2$, $U= 1.19 \text{ dB}$ for ERP/EIRP.

Test Results

Refer to the section 6.1 of this report for test data.

5.2 Occupied Bandwidth

Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

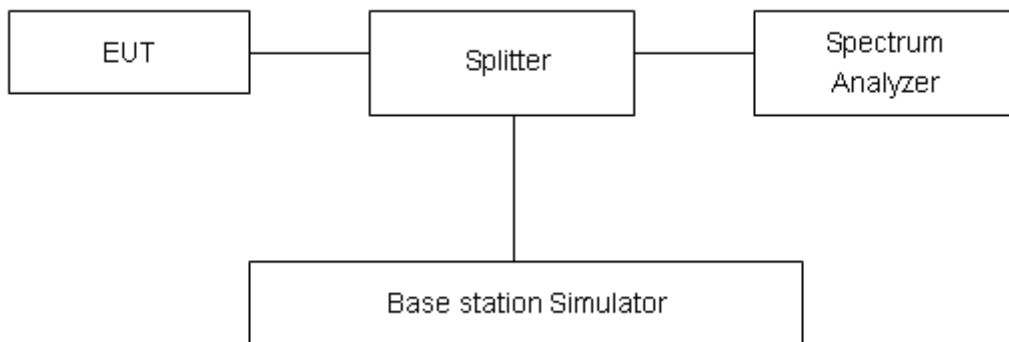
Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.

RBW is set to $\geq 1\%EBW$, VBW is set to 3x RBW.

99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

Test Setup



Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U=624\text{Hz}$.

Test Results

Refer to the section 6.2 of this report for test data.

5.3 Band Edge Compliance

Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured.

The testing follows KDB 971168 D01 v03r01 Section 6.0

The EUT was connected to spectrum analyzer and system simulator via a power divider.

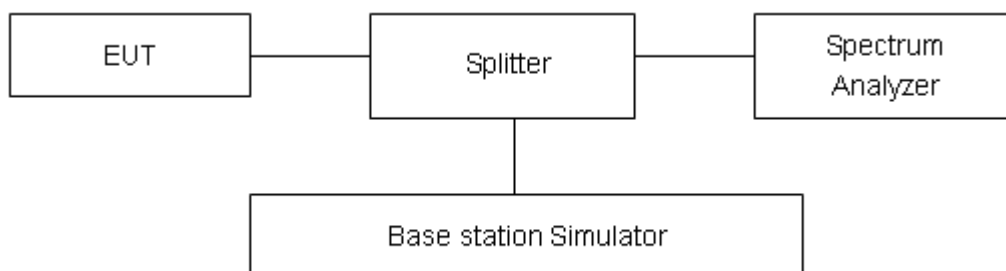
The band edges of low and high channels for the highest RF powers were measured.

Set spectrum analyzer with RMS detector.

The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

Checked that all the results comply with the emission limit line.

Test Setup



Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U=0.684\text{dB}$.

Test Results

Refer to the section 6.3 of this report for test data.

5.4 Peak-to-Average Power Ratio (PAPR)

Ambient condition

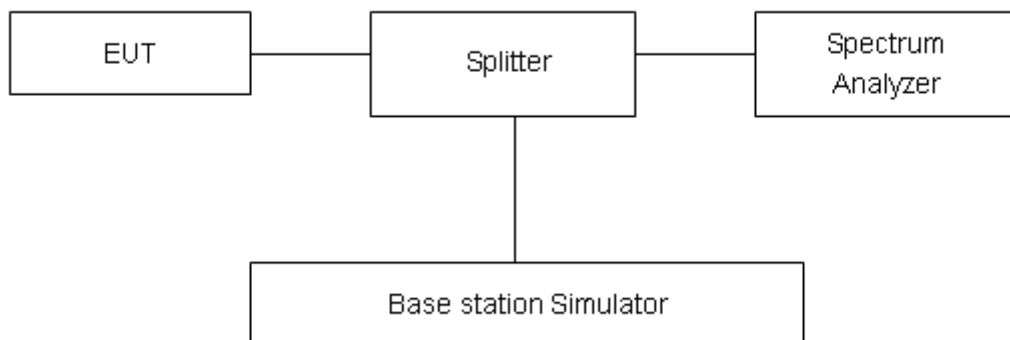
Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Methods of Measurement

Measure the total peak power and record as PPK. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

$$\text{PAPR (dB)} = \text{PPk (dBm)} - \text{PAvg (dBm)}.$$

Test Setup



Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.4$ dB.

Test Results

Refer to the section 6.4 of this report for test data.

5.5 Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +50°C in 10°C step size.

(1) With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

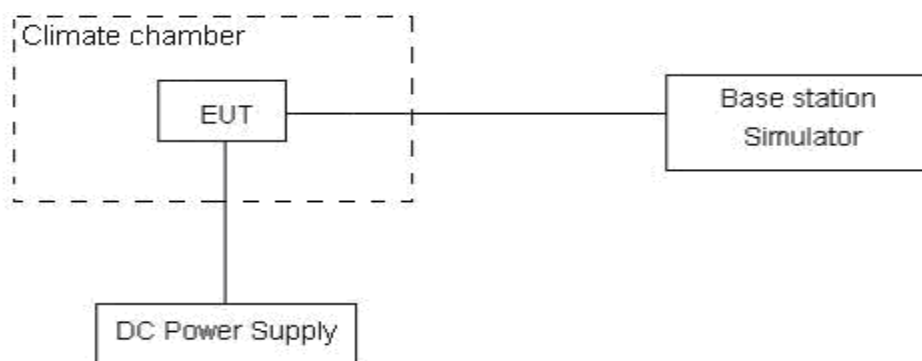
Frequency Stability (Voltage Variation)

The frequency stability shall be measured with variation of primary supply voltage as follows:

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

This transceiver is specified to operate with an input voltage of between 17.00 V and 24.80 V, with a nominal voltage of 21.60V.

Test setup



Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 3$, $U = 0.01\text{ppm}$.

Test Results

Refer to the section 6.5 of this report for test data.

5.6 Spurious Emissions at Antenna Terminals

Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier. The peak detector is used.

RBW is set to 1 kHz (0.009MHz~ 0.15 MHz),

RBW is set to 10 kHz (0.15 MHz~ 30 MHz)

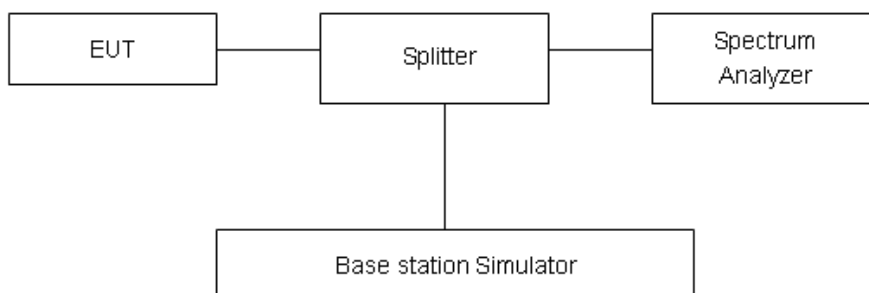
RBW is set to 1000 kHz (30MHz~1000 MHz)

RBW is set to 1000 kHz (above 1000MHz)

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
9kHz-1GHz	0.684 dB
above 1GHz	1.407 dB

Test Results

Refer to the section 6.6 of this report for test data.

5.7 Radiated Spurious Emission

Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26-2015.
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A loop antenna, A log-periodic antenna or 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.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=100kHz, VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz, and the maximum value of the receiver should be recorded as (Pr).
5. 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 (PMea) 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 (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
6. 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 (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
7. The measurement results are obtained as described below:

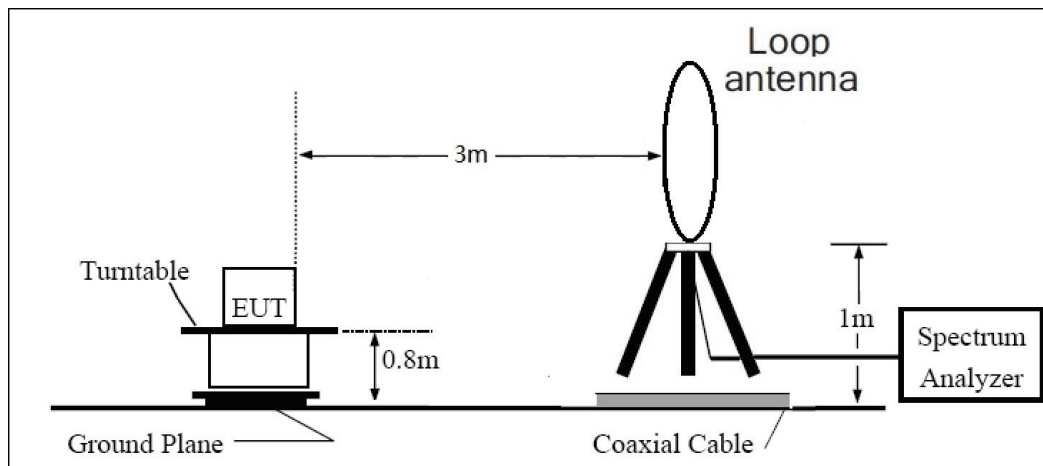
$$\text{Power(EIRP)} = \text{PMea} - \text{PAg} - \text{Pcl} + \text{Ga}$$
The measurement results are amend as described below:

$$\text{Power(EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, $\text{ERP} = \text{EIRP} - 2.15\text{dB}$.

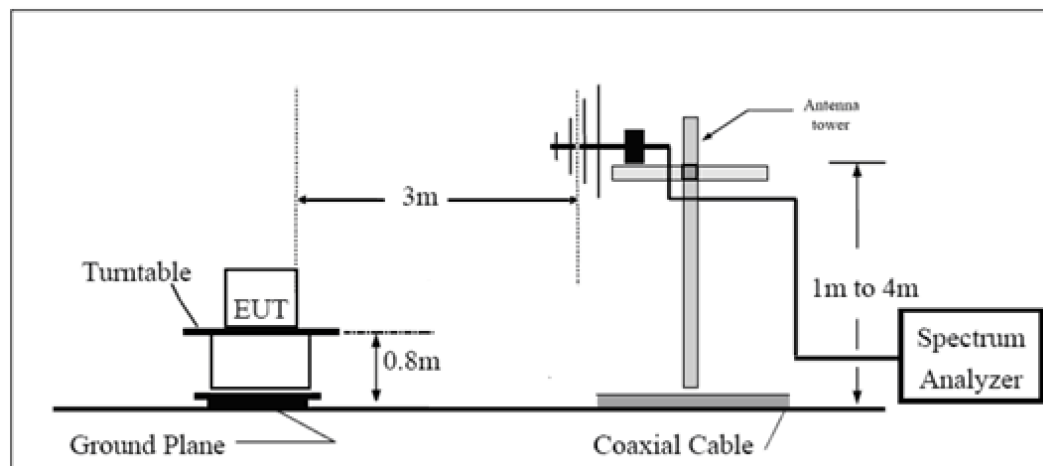
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

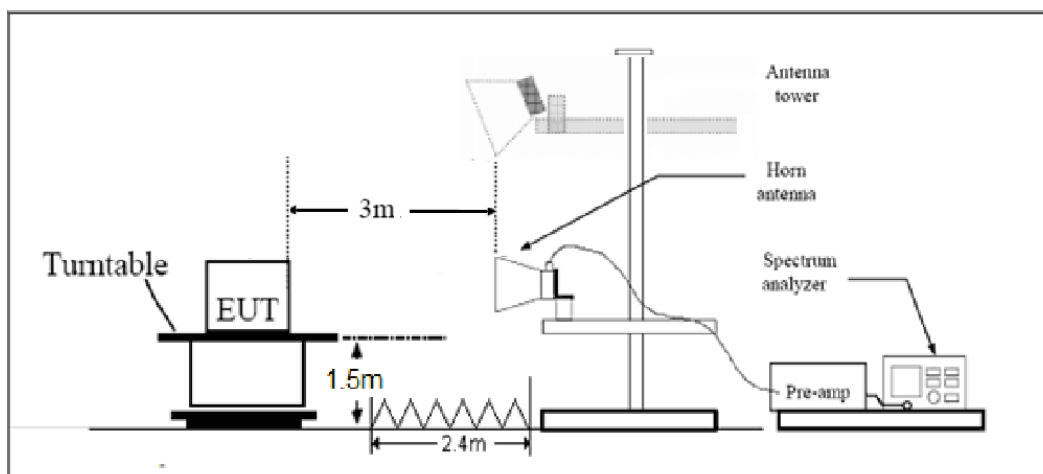
9KHz~ 30MHz



30MHz~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = \pm 1.96$, $U = \pm 3.55$ dB.

Test Results

Refer to the section 6.7 of this report for test data.

6 Test Results

6.1 RF Power Output and Effective (Isotropic) Radiated Power

Mode	Slot	Conducted Power (dBm)			ERP (dBm)		
		GSM 850 Channel			GSM 850 Channel		
		128	189	251	128	189	251
GPRS	1	32.26	32.62	32.93	33.18	33.54	33.85
	2	30.61	31.05	31.42	31.53	31.97	32.34
	3	29.08	29.55	30.01	30.00	30.47	30.93
	4	27.95	28.51	28.93	28.87	29.43	29.85
EGPRS (GMSK)	1	32.20	32.61	32.89	33.12	33.53	33.81
	2	30.57	31.07	31.48	31.49	31.99	32.40
	3	29.38	29.92	30.32	30.30	30.84	31.24
	4	28.24	28.47	28.94	29.16	29.39	29.86
EGPRS (8PSK)	1	26.05	26.50	26.91	26.97	27.42	27.83
	2	24.97	25.41	25.79	25.89	26.33	26.71
	3	23.38	23.91	24.26	24.30	24.83	25.18
	4	22.26	22.67	23.01	23.18	23.59	23.93

GSM 1900		Maximum Output Power (dBm)			EIRP (dBm)		
		Channel 512	Channel 661	Channel 810	Channel 512	Channel 661	Channel 810
		1850.2 (MHz)	1880 (MHz)	1909.8 (MHz)	1850.2 (MHz)	1880 (MHz)	1909.8 (MHz)
GPRS (GMSK)	1TXslot	28.65	28.54	28.62	32.57	32.46	32.54
	2TXslots	28.59	28.37	28.55	32.51	32.29	32.47
	3TXslots	27.41	27.02	27.01	31.33	30.94	30.93
	4TXslots	26.11	25.62	25.78	30.03	29.54	29.70
EGPRS (8PSK)	1TXslot	28.71	28.61	28.53	32.63	32.53	32.45
	2TXslots	28.53	28.48	28.46	32.45	32.40	32.38
	3TXslots	27.48	27.24	27.28	31.40	31.16	31.20
	4TXslots	26.17	25.96	26.04	30.09	29.88	29.96

Mode	3GPP Subtest	Conducted Power (dBm)			EIRP (dBm)		
		Band II Channel			Band II Channel		
		9262	9400	9538	9262	9400	9538
WCDMA R99	1	24.26	24.36	24.46	28.18	28.28	28.38
HSDPA	1	23.35	23.37	23.49	27.27	27.29	27.41
	2	23.37	23.50	23.50	27.29	27.42	27.42
	3	22.87	23.00	23.01	26.79	26.92	26.93
	4	22.87	23.00	23.01	26.79	26.92	26.93
HSUPA	1	23.04	23.11	23.13	26.96	27.03	27.05
	2	22.39	22.43	22.43	26.31	26.35	26.35
	3	22.04	22.02	22.04	25.96	25.94	25.96
	4	22.58	22.62	22.63	26.50	26.54	26.55
	5	23.37	23.41	23.47	27.29	27.33	27.39
Mode	3GPP Subtest	Conducted Power (dBm)			EIRP (dBm)		
		Band IV Channel			Band IV Channel		
		1312	1412	1513	1312	1412	1513
WCDMA R99	1	23.93	23.97	23.96	27.72	27.76	27.75
HSDPA	1	23.08	23.04	23.07	26.87	26.83	26.86
	2	23.08	23.04	23.02	26.87	26.83	26.81
	3	22.60	22.55	22.54	26.39	26.34	26.33
	4	22.59	22.55	22.54	26.38	26.34	26.33
HSUPA	1	22.68	22.49	22.51	26.47	26.28	26.30
	2	21.95	22.01	21.95	25.74	25.80	25.74
	3	21.60	21.61	21.58	25.39	25.40	25.37
	4	22.20	22.20	22.17	25.99	25.99	25.96
	5	23.03	23.03	23.03	26.82	26.82	26.82
Mode	3GPP Subtest	Conducted Power (dBm)			ERP (dBm)		
		Band V Channel			Band V Channel		
		4132	4182	4233	4132	4182	4233
WCDMA R99	1	23.73	23.79	23.55	24.65	24.71	24.47
HSDPA	1	22.65	22.73	22.52	23.57	23.65	23.44
	2	22.68	22.75	22.52	23.60	23.67	23.44
	3	22.21	22.28	22.05	23.13	23.20	22.97
	4	22.21	22.29	22.05	23.13	23.21	22.97
HSUPA	1	22.35	22.46	22.23	23.27	23.38	23.15
	2	21.13	21.30	20.98	22.05	22.22	21.90
	3	20.72	20.83	20.60	21.64	21.75	21.52
	4	22.10	22.26	22.03	23.02	23.18	22.95
	5	22.64	22.70	22.47	23.56	23.62	23.39

LTE Band 2/25					
Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)
QPSK					
1850.70	1.4	1	0	23.25	27.17
1882.50				23.24	27.16
1914.30				23.32	27.24
1850.70	1.4	1	2	23.44	27.36
1882.50				23.33	27.25
1914.30				23.54	27.46
1850.70	1.4	1	6	23.31	27.23
1882.50				23.22	27.14
1914.30				23.26	27.18
1850.70	1.4	6	0	22.36	26.28
1882.50				22.32	26.24
1914.30				22.39	26.31
1851.50	3	1	0	23.48	27.40
1882.50				23.18	27.10
1913.50				23.12	27.04
1851.50	3	1	7	23.39	27.31
1882.50				23.29	27.21
1913.50				23.26	27.18
1851.50	3	1	14	23.17	27.09
1882.50				23.36	27.28
1913.50				22.98	26.90
1851.50	3	15	0	22.36	26.28
1882.50				22.24	26.16
1913.50				22.44	26.36
1852.50	5	1	0	23.20	27.12
1882.50				23.26	27.18
1912.50				23.27	27.19
1852.50	5	1	12	23.23	27.15
1882.50				23.30	27.22
1912.50				23.16	27.08
1852.50	5	1	24	23.23	27.15
1882.50				23.26	27.18
1912.50				23.21	27.13
1852.50	5	25	0	22.21	26.13

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1882.50				22.26	26.18
1912.50				22.33	26.25
1855.00				23.23	27.15
1882.50	10	1	0	23.21	27.13
1910.00				23.21	27.13
1855.00	10	1	24	23.23	27.15
1882.50				23.38	27.30
1910.00				23.40	27.32
1855.00	10	1	49	23.23	27.15
1882.50				23.16	27.08
1910.00				23.18	27.10
1855.00	10	50	0	22.38	26.30
1882.50				22.35	26.27
1910.00				22.47	26.39
1857.50	15	1	0	23.21	27.13
1882.50				23.35	27.27
1907.50				23.32	27.24
1857.50	15	1	37	23.38	27.30
1882.50				23.38	27.30
1907.50				23.30	27.22
1857.50	15	1	74	23.44	27.36
1882.50				23.26	27.18
1907.50				23.32	27.24
1857.50	15	75	0	22.25	26.17
1882.50				22.39	26.31
1907.50				22.52	26.44
1860.00	20	1	0	23.23	27.15
1882.50				23.36	27.28
1905.00				23.30	27.22
1860.00	20	1	49	23.50	27.42
1882.50				23.48	27.40
1905.00				23.62	27.54
1860.00	20	1	99	23.23	27.15
1882.50				23.23	27.15
1905.00				23.44	27.36
1860.00	20	100	0	22.32	26.24
1882.50				22.39	26.31
1905.00				22.50	26.42
16QAM					
1850.70	1.4	1	0	21.88	25.80

1882.50				21.96	25.88
1914.30				22.08	26.00
1850.70	1.4	1	2	22.03	25.95
1882.50				21.81	25.73
1914.30				21.98	25.90
1850.70	1.4	1	6	21.91	25.83
1882.50				22.10	26.02
1914.30				21.91	25.83
1850.70	1.4	6	0	21.38	25.30
1882.50				21.56	25.48
1914.30				21.33	25.25
1851.50	3	1	0	22.09	26.01
1882.50				21.88	25.80
1913.50				22.04	25.96
1851.50	3	1	7	22.00	25.92
1882.50				22.25	26.17
1913.50				22.27	26.19
1851.50	3	1	14	21.94	25.86
1882.50				22.17	26.09
1913.50				22.05	25.97
1851.50	3	15	0	21.39	25.31
1882.50				21.28	25.20
1913.50				21.46	25.38
1852.50	5	1	0	21.97	25.89
1882.50				22.12	26.04
1912.50				21.85	25.77
1852.50	5	1	12	21.50	25.42
1882.50				21.91	25.83
1912.50				21.88	25.80
1852.50	5	1	24	22.06	25.98
1882.50				22.27	26.19
1912.50				21.65	25.57
1852.50	5	25	0	21.33	25.25
1882.50				21.41	25.33
1912.50				21.38	25.30
1855.00	10	1	0	22.06	25.98
1882.50				22.43	26.35
1910.00				21.98	25.90
1855.00	10	1	24	22.02	25.94
1882.50				22.41	26.33

1910.00				22.16	26.08
1855.00	10	1	49	21.91	25.83
1882.50				22.01	25.93
1910.00				22.16	26.08
1855.00	10	50	0	21.39	25.31
1882.50				21.35	25.27
1910.00				21.49	25.41
1857.50	15	1	0	22.16	26.08
1882.50				22.27	26.19
1907.50				21.85	25.77
1857.50	15	1	37	22.24	26.16
1882.50				22.46	26.38
1907.50				22.54	26.46
1857.50	15	1	74	22.01	25.93
1882.50				22.14	26.06
1907.50				22.17	26.09
1857.50	15	75	0	21.27	25.19
1882.50				21.50	25.42
1907.50				21.43	25.35
1860.00	20	1	0	22.25	26.17
1882.50				22.60	26.52
1905.00				21.97	25.89
1860.00	20	1	49	22.25	26.17
1882.50				21.82	25.74
1905.00				22.46	26.38
1860.00	20	1	99	21.96	25.88
1882.50				21.66	25.58
1905.00				22.41	26.33
1860.00	20	100	0	21.22	25.14
1882.50				21.41	25.33
1905.00				21.44	25.36

LTE Band2/25					
Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)
QPSK					
1850.70	1.4	1	0	23.25	27.17
1882.50				23.24	27.16
1914.30				23.32	27.24
1850.70	1.4	1	2	23.44	27.36

1882.50				23.33	27.25
1914.30				23.54	27.46
1850.70				23.31	27.23
1882.50	1.4	1	6	23.22	27.14
1914.30				23.26	27.18
1850.70				22.36	26.28
1882.50	1.4	6	0	22.32	26.24
1914.30				22.39	26.31
1851.50				23.48	27.40
1882.50	3	1	0	23.18	27.10
1913.50				23.12	27.04
1851.50				23.39	27.31
1882.50	3	1	7	23.29	27.21
1913.50				23.26	27.18
1851.50				23.17	27.09
1882.50	3	1	14	23.36	27.28
1913.50				22.98	26.90
1851.50				22.36	26.28
1882.50	3	15	0	22.24	26.16
1913.50				22.44	26.36
1852.50				23.20	27.12
1882.50	5	1	0	23.26	27.18
1912.50				23.27	27.19
1852.50				23.23	27.15
1882.50	5	1	12	23.30	27.22
1912.50				23.16	27.08
1852.50				23.23	27.15
1882.50	5	1	24	23.26	27.18
1912.50				23.21	27.13
1852.50				22.21	26.13
1882.50	5	25	0	22.26	26.18
1912.50				22.33	26.25
1855.00				23.23	27.15
1882.50	10	1	0	23.21	27.13
1910.00				23.21	27.13
1855.00				23.23	27.15
1882.50	10	1	24	23.38	27.30
1910.00				23.40	27.32
1855.00				23.23	27.15
1882.50	10	1	49	23.16	27.08
1910.00				23.18	27.10
1855.00				22.38	26.30
1882.50	10	50	0	22.35	26.27

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1910.00				22.47	26.39
1852.50	5	1	0	23.20	27.12
1882.50				23.26	27.18
1912.50				23.27	27.19
1852.50	5	1	12	23.23	27.15
1882.50				23.30	27.22
1912.50				23.16	27.08
1852.50	5	1	24	23.23	27.15
1882.50				23.26	27.18
1912.50				23.21	27.13
1852.50	5	25	0	22.21	26.13
1882.50				22.26	26.18
1912.50				22.33	26.25
1855.00	10	1	0	23.23	27.15
1882.50				23.21	27.13
1910.00				23.21	27.13
1855.00	10	1	24	23.23	27.15
1882.50				23.38	27.30
1910.00				23.40	27.32
1855.00	10	1	49	23.23	27.15
1882.50				23.16	27.08
1910.00				23.18	27.10
1855.00	10	50	0	22.38	26.30
1882.50				22.35	26.27
1910.00				22.47	26.39
16QAM					
1850.70	1.4	1	0	21.88	25.80
1882.50				21.96	25.88
1914.30				22.08	26.00
1850.70	1.4	1	2	22.03	25.95
1882.50				21.81	25.73
1914.30				21.98	25.90
1850.70	1.4	1	6	21.91	25.83
1882.50				22.10	26.02
1914.30				21.91	25.83
1850.70	1.4	6	0	21.38	25.30
1882.50				21.56	25.48
1914.30				21.33	25.25
1851.50	3	1	0	22.09	26.01
1882.50				21.88	25.80
1913.50				22.04	25.96
1851.50	3	1	7	22.00	25.92
1882.50				22.25	26.17

1913.50				22.27	26.19
1851.50	3	1	14	21.94	25.86
1882.50				22.17	26.09
1913.50				22.05	25.97
1851.50	3	15	0	21.39	25.31
1882.50				21.28	25.20
1913.50				21.46	25.38
1852.50	5	1	0	21.97	25.89
1882.50				22.12	26.04
1912.50				21.85	25.77
1852.50	5	1	12	21.50	25.42
1882.50				21.91	25.83
1912.50				21.88	25.80
1852.50	5	1	24	22.06	25.98
1882.50				22.27	26.19
1912.50				21.65	25.57
1852.50	5	25	0	21.33	25.25
1882.50				21.41	25.33
1912.50				21.38	25.30
1855.00	10	1	0	22.06	25.98
1882.50				22.43	26.35
1910.00				21.98	25.90
1855.00	10	1	24	22.02	25.94
1882.50				22.41	26.33
1910.00				22.16	26.08
1855.00	10	1	49	21.91	25.83
1882.50				22.01	25.93
1910.00				22.16	26.08
1855.00	10	50	0	21.39	25.31
1882.50				21.35	25.27
1910.00				21.49	25.41
1857.50	15	1	0	22.16	26.08
1882.50				22.27	26.19
1907.50				21.85	25.77
1857.50	15	1	37	22.24	26.16
1882.50				22.46	26.38
1907.50				22.54	26.46
1857.50	15	1	74	22.01	25.93
1882.50				22.14	26.06
1907.50				22.17	26.09
1857.50	15	75	0	21.27	25.19
1882.50				21.50	25.42
1907.50				21.43	25.35

1860.00	20	1	0	22.25	26.17
1882.50				22.60	26.52
1905.00				21.97	25.89
1860.00	20	1	49	22.25	26.17
1882.50				21.82	25.74
1905.00				22.46	26.38
1860.00	20	1	99	21.96	25.88
1882.50				21.66	25.58
1905.00				22.41	26.33
1860.00	20	100	0	21.22	25.14
1882.50				21.41	25.33
1905.00				21.44	25.36

LTE Band4/66					
Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)
QPSK					
1710.70	1.4	1	0	23.05	26.84
1745.00				23.08	26.87
1779.30				23.33	27.12
1710.70	1.4	1	2	23.09	26.88
1745.00				23.15	26.94
1779.30				23.41	27.20
1710.70	1.4	1	6	22.98	26.77
1745.00				22.97	26.76
1779.30				23.03	26.82
1710.70	1.4	6	0	22.16	25.95
1732.50				22.16	25.95
1754.30				22.36	26.15
1711.50	3	1	0	23.09	26.88
1745.00				23.20	26.99
1778.50				23.34	27.13
1711.50	3	1	7	23.13	26.92
1745.00				23.03	26.82
1778.50				23.44	27.23
1711.50	3	1	14	23.19	26.98
1745.00				23.04	26.83
1778.50				23.31	27.10
1711.50	3	15	0	22.20	25.99
1745.00				22.30	26.09
1778.50				22.40	26.19
1712.50	5	1	0	23.16	26.95

1745.00				23.24	27.03
1777.50				23.34	27.13
1712.50	5	1	12	23.23	27.02
1745.00				23.15	26.94
1777.50				23.51	27.30
1712.50	5	1	24	23.17	26.96
1745.00				23.16	26.95
1777.50				23.45	27.24
1712.50	5	25	0	22.24	26.03
1745.00				22.16	25.95
1777.50				22.51	26.30
1715.00	10	1	0	23.12	26.91
1745.00				23.17	26.96
1775.00				23.13	26.92
1715.00	10	1	24	23.25	27.04
1745.00				23.43	27.22
1775.00				23.38	27.17
1715.00	10	1	49	22.94	26.73
1745.00				23.36	27.15
1775.00				23.11	26.90
1715.00	10	50	0	22.34	26.13
1745.00				22.33	26.12
1775.00				22.40	26.19
1717.50	15	1	0	23.24	27.03
1745.00				23.21	27.00
1772.50				23.28	27.07
1717.50	15	1	37	23.29	27.08
1745.00				23.26	27.05
1772.50				23.57	27.36
1717.50	15	1	74	23.25	27.04
1745.00				23.10	26.89
1772.50				23.36	27.15
1717.50	15	75	0	22.36	26.15
1745.00				22.34	26.13
1772.50				22.49	26.28
1720.00	20	1	0	23.12	26.91
1745.00				23.22	27.01
1770.00				23.30	27.09
1720.00	20	1	49	23.57	27.36
1745.00				23.48	27.27
1770.00				23.62	27.41
1720.00	20	1	99	23.39	27.18
1745.00				23.45	27.24

1770.00				23.34	27.13
1720.00	20	100	0	22.30	26.09
1745.00				22.40	26.19
1770.00				22.45	26.24
16QAM					
1710.70	1.4	1	0	21.67	25.46
1745.00				22.09	25.88
1779.30				21.76	25.55
1710.70	1.4	1	2	21.89	25.68
1745.00				22.16	25.95
1779.30				21.71	25.50
1710.70	1.4	1	6	21.85	25.64
1745.00				21.95	25.74
1779.30				21.78	25.57
1710.70	1.4	6	0	21.57	25.36
1732.50				21.10	24.89
1754.30				21.22	25.01
1711.50	3	1	0	21.93	25.72
1745.00				21.92	25.71
1778.50				22.18	25.97
1711.50	3	1	7	22.38	26.17
1745.00				22.23	26.02
1778.50				22.12	25.91
1711.50	3	1	14	21.79	25.58
1745.00				21.88	25.67
1778.50				22.16	25.95
1711.50	3	15	0	21.30	25.09
1745.00				21.38	25.17
1778.50				21.30	25.09
1712.50	5	1	0	21.48	25.27
1745.00				22.05	25.84
1777.50				22.19	25.98
1712.50	5	1	12	21.56	25.35
1745.00				22.20	25.99
1777.50				22.42	26.21
1712.50	5	1	24	21.63	25.42
1745.00				22.20	25.99
1777.50				22.22	26.01
1712.50	5	25	0	21.15	24.94
1745.00				21.19	24.98
1777.50				21.56	25.35
1715.00	10	1	0	22.01	25.80
1745.00				22.06	25.85

1775.00				21.95	25.74
1715.00	10	1	24	22.06	25.85
1745.00				22.15	25.94
1775.00				22.33	26.12
1715.00	10	1	49	22.06	25.85
1745.00				21.99	25.78
1775.00				21.91	25.70
1715.00	10	50	0	21.24	25.03
1745.00				21.45	25.24
1775.00				21.30	25.09
1717.50	15	1	0	21.95	25.74
1745.00				22.08	25.87
1772.50				22.23	26.02
1717.50	15	1	37	22.22	26.01
1745.00				22.11	25.90
1772.50				22.63	26.42
1717.50	15	1	74	22.09	25.88
1745.00				22.02	25.81
1772.50				22.15	25.94
1717.50	15	75	0	21.42	25.21
1745.00				21.47	25.26
1772.50				21.41	25.20
1720.00	20	1	0	21.80	25.59
1745.00				21.52	25.31
1770.00				21.83	25.62
1720.00	20	1	49	21.89	25.68
1745.00				21.89	25.68
1770.00				21.81	25.60
1720.00	20	1	99	21.68	25.47
1745.00				21.86	25.65
1770.00				22.43	26.22
1720.00	20	100	0	21.32	25.11
1745.00				21.42	25.21
1770.00				21.49	25.28

LTE Band5/26 (824-849)					
Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)
QPSK					
824.70	1.4	1	0	23.20	24.12
836.50				23.35	24.27
848.30				23.29	24.21

824.70	1.4	1	2	23.25	24.17
836.50				23.34	24.26
848.30				23.28	24.20
824.70	1.4	1	6	23.21	24.13
836.50				23.08	24.00
848.30				23.18	24.10
824.70	1.4	6	0	22.25	23.17
836.50				22.27	23.19
848.30				22.25	23.17
825.50	3	1	0	22.91	23.83
836.50				23.08	24.00
846.50				23.21	24.13
825.50	3	1	7	23.21	24.13
836.50				23.23	24.15
846.50				23.18	24.10
825.50	3	1	14	23.11	24.03
836.50				23.26	24.18
846.50				23.20	24.12
825.50	3	15	0	22.16	23.08
836.50				22.37	23.29
846.50				22.25	23.17
826.50	5	1	0	23.12	24.04
836.50				23.10	24.02
846.50				23.10	24.02
826.50	5	1	12	23.48	24.40
836.50				23.44	24.36
846.50				23.48	24.40
826.50	5	1	24	23.30	24.22
836.50				23.11	24.03
846.50				23.06	23.98
826.50	5	25	0	22.42	23.34
836.50				22.28	23.20
846.50				22.30	23.22
829.00	10	1	0	23.16	24.08
836.50				22.97	23.89
844.00				23.07	23.99
829.00	10	1	24	23.52	24.44
836.50				23.59	24.51
844.00				23.55	24.47
829.00	10	1	49	22.87	23.79
836.50				23.04	23.96
844.00				22.93	23.85
829.00	10	50	0	22.33	23.25

836.50				22.37	23.29
844.00				22.33	23.25
821.50				22.98	23.90
836.50	15	1	0	23.10	24.02
841.50				22.87	23.79
821.50				23.31	24.23
836.50	15	1	37	23.00	23.92
841.50				23.37	24.29
821.50				22.99	23.91
836.50	15	1	74	22.88	23.80
841.50				22.89	23.81
821.50				22.30	23.22
836.50	15	75	0	22.19	23.11
841.50				22.17	23.09
16QAM					
824.70				21.90	22.82
836.50	1.4	1	0	21.92	22.84
848.30				21.84	22.76
824.70				21.81	22.73
836.50	1.4	1	2	21.95	22.87
848.30				21.86	22.78
824.70				21.81	22.73
836.50	1.4	1	6	22.06	22.98
848.30				21.95	22.87
824.70				21.15	22.07
836.50	1.4	6	0	21.52	22.44
848.30				21.13	22.05
825.50				21.96	22.88
836.50	3	1	0	21.93	22.85
846.50				21.82	22.74
825.50				22.22	23.14
836.50	3	1	7	22.41	23.33
846.50				22.20	23.12
825.50				21.89	22.81
836.50	3	1	14	22.06	22.98
846.50				21.96	22.88
825.50				21.36	22.28
836.50	3	15	0	21.27	22.19
846.50				21.26	22.18
826.50				21.55	22.47
836.50	5	1	0	21.95	22.87
846.50				22.01	22.93
826.50	5	1	12	22.22	23.14

836.50				21.99	22.91
846.50				22.40	23.32
826.50	5	1	24	21.54	22.46
836.50				21.70	22.62
846.50				21.65	22.57
826.50	5	25	0	21.35	22.27
836.50				21.32	22.24
846.50				21.24	22.16
829.00	10	1	0	21.99	22.91
836.50				22.01	22.93
844.00				22.03	22.95
829.00	10	1	24	22.16	23.08
836.50				21.94	22.86
844.00				22.25	23.17
829.00	10	1	49	21.58	22.50
836.50				21.84	22.76
844.00				21.97	22.89
829.00	10	50	0	21.56	22.48
836.50				21.37	22.29
844.00				21.35	22.27
821.50	15	1	0	21.91	22.83
836.50				21.72	22.64
841.50				21.83	22.75
821.50	15	1	37	22.52	23.44
836.50				22.02	22.94
841.50				22.35	23.27
821.50	15	1	74	21.71	22.63
836.50				21.80	22.72
841.50				21.55	22.47
821.50	15	75	0	21.16	22.08
836.50				21.22	22.14
841.50				21.32	22.24

LTE Band 7					
Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)
QPSK					
2502.50	5	1	0	22.58	27.50
2535.00				22.92	27.84
2567.50				22.88	27.80
2502.50	5	1	12	22.77	27.69

2535.00				23.03	27.95
2567.50				23.09	28.01
2502.50	5	1	24	22.66	27.58
2535.00				22.88	27.80
2567.50				23.07	27.99
2502.50	5	25	0	21.78	26.70
2535.00				22.01	26.93
2567.50				22.14	27.06
2505.00	10	1	0	22.69	27.61
2535.00				22.90	27.82
2565.00				22.70	27.62
2505.00	10	1	24	22.82	27.74
2535.00				23.00	27.92
2565.00				23.13	28.05
2505.00	10	1	49	22.52	27.44
2535.00				23.01	27.93
2565.00				22.97	27.89
2505.00	10	50	0	21.89	26.81
2535.00				22.12	27.04
2565.00				22.17	27.09
2507.50	15	1	0	22.84	27.76
2535.00				22.97	27.89
2562.50				23.02	27.94
2507.50	15	1	37	22.90	27.82
2535.00				23.15	28.07
2562.50				22.94	27.86
2507.50	15	1	74	22.74	27.66
2535.00				22.83	27.75
2562.50				23.32	28.24
2507.50	15	75	0	21.87	26.79
2535.00				22.04	26.96
2562.50				21.98	26.90
2510.00	20	1	0	22.79	27.71
2535.00				23.04	27.96
2560.00				23.32	28.24
2510.00	20	1	49	22.84	27.76
2535.00				23.23	28.15
2560.00				23.10	28.02
2510.00	20	1	99	22.80	27.72
2535.00				22.82	27.74
2560.00				23.11	28.03
2510.00	20	100	0	21.94	26.86
2535.00				21.92	26.84

2560.00				21.97	26.89
16QAM					
2502.50	5	1	0	21.57	26.49
2535.00				21.69	26.61
2567.50				21.49	26.41
2502.50	5	1	12	21.60	26.52
2535.00				21.51	26.43
2567.50				21.96	26.88
2502.50	5	1	24	21.22	26.14
2535.00				21.37	26.29
2567.50				22.03	26.95
2502.50	5	25	0	20.72	25.64
2535.00				20.97	25.89
2567.50				21.13	26.05
2505.00	10	1	0	21.52	26.44
2535.00				21.72	26.64
2565.00				21.97	26.89
2505.00	10	1	24	21.40	26.32
2535.00				21.98	26.90
2565.00				21.77	26.69
2505.00	10	1	49	21.21	26.13
2535.00				21.49	26.41
2565.00				21.62	26.54
2505.00	10	50	0	20.89	25.81
2535.00				21.14	26.06
2565.00				21.24	26.16
2507.50	15	1	0	21.58	26.50
2535.00				21.79	26.71
2562.50				21.77	26.69
2507.50	15	1	37	21.82	26.74
2535.00				22.07	26.99
2562.50				22.03	26.95
2507.50	15	1	74	21.53	26.45
2535.00				21.61	26.53
2562.50				21.77	26.69
2507.50	15	75	0	20.80	25.72
2535.00				20.97	25.89
2562.50				21.02	25.94
2510.00	20	1	0	21.98	26.90
2535.00				21.88	26.80
2560.00				21.52	26.44
2510.00	20	1	49	21.81	26.73
2535.00				21.35	26.27

2560.00				21.49	26.41
2510.00	20	1	99	21.18	26.10
2535.00				21.13	26.05
2560.00				21.46	26.38
2510.00	20	100	0	20.88	25.80
2535.00				20.94	25.86
2560.00				20.96	25.88

LTE Band 12					
Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)
QPSK					
699.7	1.4	1	0	22.79	20.28
707.5				23.12	20.61
715.3				23.04	20.53
699.7	1.4	1	2	22.75	20.24
707.5				23.32	20.81
715.3				22.86	20.35
699.7	1.4	1	6	22.61	20.10
707.5				23.15	20.64
715.3				22.73	20.22
699.7	1.4	6	0	21.90	19.39
707.5				22.13	19.62
715.3				22.10	19.59
700.5	3	1	0	22.84	20.33
707.5				23.07	20.56
714.5				23.19	20.68
700.5	3	1	7	23.08	20.57
707.5				23.49	20.98
714.5				23.03	20.52
700.5	3	1	14	23.10	20.59
707.5				23.22	20.71
714.5				22.75	20.24
700.5	3	15	0	22.18	19.67
707.5				22.22	19.71
714.5				22.07	19.56
701.5	5	1	0	22.95	20.44
707.5				22.89	20.38
713.5				23.15	20.64
701.5	5	1	12	23.07	20.56
707.5				23.36	20.85
713.5				23.26	20.75

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701.5	5	1	24	22.89	20.38
707.5				22.93	20.42
713.5				22.95	20.44
701.5	5	25	0	22.08	19.57
707.5				22.28	19.77
713.5				22.10	19.59
704.0	10	1	0	22.75	20.24
707.5				22.72	20.21
711.0				22.93	20.42
704.0	10	1	24	23.20	20.69
707.5				23.40	20.89
711.0				23.43	20.92
704.0	10	1	49	22.83	20.32
707.5				22.93	20.42
711.0				22.70	20.19
704.0	10	50	0	22.18	19.67
707.5				22.18	19.67
711.0				22.23	19.72
16QAM					
699.7	1.4	1	0	21.79	19.28
707.5				21.56	19.05
715.3				21.71	19.20
699.7	1.4	1	2	21.83	19.32
707.5				21.52	19.01
715.3				21.35	18.84
699.7	1.4	1	6	21.57	19.06
707.5				21.44	18.93
715.3				21.59	19.08
699.7	1.4	6	0	20.95	18.44
707.5				21.35	18.84
715.3				21.09	18.58
700.5	3	1	0	21.91	19.40
707.5				21.79	19.28
714.5				21.83	19.32
700.5	3	1	7	21.84	19.33
707.5				22.05	19.54
714.5				22.17	19.66
700.5	3	1	14	21.62	19.11
707.5				21.55	19.04
714.5				21.82	19.31
700.5	3	15	0	21.07	18.56
707.5				21.17	18.66
714.5				21.15	18.64

701.5	5	1	0	21.35	18.84
707.5				21.93	19.42
713.5				21.44	18.93
701.5	5	1	12	21.58	19.07
707.5				22.11	19.60
713.5				22.07	19.56
701.5	5	1	24	21.24	18.73
707.5				21.85	19.34
713.5				21.24	18.73
701.5	5	25	0	20.95	18.44
707.5				21.17	18.66
713.5				21.11	18.60
704.0	10	1	0	21.73	19.22
707.5				21.40	18.89
711.0				21.72	19.21
704.0	10	1	24	21.45	18.94
707.5				21.61	19.10
711.0				22.07	19.56
704.0	10	1	49	21.73	19.22
707.5				22.04	19.53
711.0				21.20	18.69
704.0	10	50	0	21.35	18.84
707.5				21.15	18.64
711.0				21.21	18.70

LTE Band 13					
Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)
QPSK					
779.5	5	1	0	22.82	25.61
782.0				22.89	25.68
784.5				22.83	25.62
779.5	5	1	12	22.82	25.61
782.0				22.89	25.68
784.5				22.98	25.77
779.5	5	1	24	22.90	25.69
782.0				22.78	25.57
784.5				22.92	25.71
779.5	5	25	0	22.05	24.84
782.0				22.06	24.85
784.5				22.02	24.81
782.0	10	1	0	22.75	25.54

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782.0		1	24	23.06	25.85
782.0		1	49	22.90	25.69
782.0		50	0	22.00	24.79
16QAM					
779.5	5	1	0	21.73	24.52
782.0				21.81	24.60
784.5				21.73	24.52
779.5	5	1	12	21.32	24.11
782.0				21.38	24.17
784.5				21.88	24.67
779.5	5	1	24	21.50	24.29
782.0				21.70	24.49
784.5				21.93	24.72
779.5	5	25	0	21.00	23.79
782.0				20.86	23.65
784.5				20.83	23.62
782.0	10	1	0	21.63	24.42
782.0		1	24	21.84	24.63
782.0		1	49	21.58	24.37
782.0		50	0	21.00	23.79

LTE Band 26(814-824)					
Frequency (MHz)	Channel BW (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)
QPSK					
814.7	1.4	1	0	22.70	23.62
819.0				22.70	23.62
823.3				23.04	23.96
814.7	1.4	1	2	22.83	23.75
819.0				22.62	23.54
823.3				22.98	23.90
814.7	1.4	1	6	22.89	23.81
819.0				22.64	23.56
823.3				22.81	23.73
814.7	1.4	6	0	21.92	22.84
819.0				21.81	22.73
823.3				21.93	22.85
815.5	3	1	0	22.81	23.73
819.0				22.69	23.61
822.5				22.66	23.58
815.5	3	1	7	22.98	23.90
819.0				22.80	23.72

822.5				23.06	23.98
815.5	3	1	14	22.90	23.82
819.0				22.51	23.43
822.5				22.85	23.77
815.5	3	15	0	21.99	22.91
819.0				21.83	22.75
822.5				21.95	22.87
816.5	5	1	0	22.81	23.73
819.0				22.84	23.76
821.5				22.85	23.77
816.5	5	1	12	22.92	23.84
819.0				22.69	23.61
821.5				23.03	23.95
816.5	5	1	24	22.70	23.62
819.0				22.56	23.48
821.5				22.96	23.88
816.5	5	25	0	21.80	22.72
819.0				21.73	22.65
821.5				21.99	22.91
819.0	10	1	0	22.76	23.68
		1	24	22.85	23.77
		1	49	22.71	23.63
		50	0	21.89	22.81
821.5	15	1	0	22.76	23.68
		1	36	22.96	23.88
		1	74	22.91	23.83
		75	0	21.97	22.89
16QAM					
814.7	1.4	1	0	21.80	22.72
819.0				21.45	22.37
823.3				21.49	22.41
814.7	1.4	1	2	21.76	22.68
819.0				21.41	22.33
823.3				21.17	22.09
814.7	1.4	1	6	21.50	22.42
819.0				21.47	22.39
823.3				21.70	22.62
814.7	1.4	6	0	20.81	21.73
819.0				20.59	21.51
823.3				20.84	21.76
815.5	3	1	0	21.54	22.46
819.0				21.31	22.23
822.5				21.63	22.55

815.5	3	1	7	21.81	22.73
819.0				21.73	22.65
822.5				21.75	22.67
815.5	3	1	14	21.64	22.56
819.0				21.46	22.38
822.5				21.51	22.43
815.5	3	15	0	20.98	21.90
819.0				20.84	21.76
822.5				21.01	21.93
816.5	5	1	0	21.62	22.54
819.0				21.49	22.41
821.5				21.41	22.33
816.5	5	1	12	21.90	22.82
819.0				21.72	22.64
821.5				21.85	22.77
816.5	5	1	24	21.20	22.12
819.0				21.11	22.03
821.5				21.38	22.30
816.5	5	25	0	20.71	21.63
819.0				20.77	21.69
821.5				20.84	21.76
819.0	10	1	0	21.44	22.36
		1	24	21.58	22.50
		1	49	21.27	22.19
		50	0	21.04	21.96
821.5	15	1	0	21.60	22.52
		1	36	22.02	22.94
		1	74	21.78	22.70
		75	0	20.86	21.78

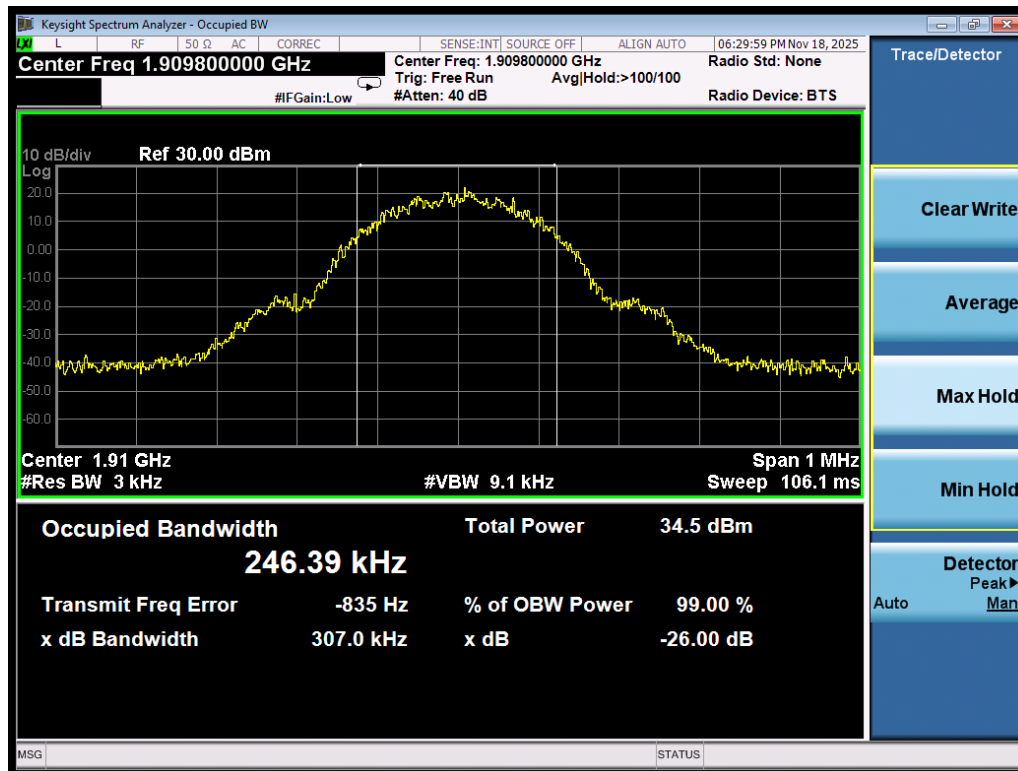
LTE Band 38/41					
Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)
QPSK					
2498.50	5	1	0	22.57	27.50
2593.00				22.64	27.57
2687.50				22.85	27.78
2498.50	5	1	12	22.71	27.64
2593.00				22.90	27.83
2687.50				23.02	27.95
2498.50	5	1	24	22.68	27.61
2593.00				22.62	27.55
2687.50				22.69	27.62
2498.50	5	25	0	21.81	26.74
2593.00				21.58	26.51
2687.50				21.77	26.70
2501.00	10	1	0	22.57	27.50
2593.00				22.48	27.41
2685.00				22.96	27.89
2501.00	10	1	24	22.57	27.50
2593.00				22.50	27.43
2685.00				22.69	27.62
2501.00	10	1	49	22.66	27.59
2593.00				22.51	27.44
2685.00				22.60	27.53
2501.00	10	50	0	21.81	26.74
2593.00				21.68	26.61
2685.00				21.74	26.67
2503.50	15	1	0	22.66	27.59
2593.00				22.88	27.81
2682.50				22.99	27.92
2503.50	15	1	37	23.01	27.94
2593.00				22.77	27.70
2682.50				23.01	27.94
2503.50	15	1	74	22.81	27.74
2593.00				22.76	27.69
2682.50				23.24	28.17
2503.50	15	75	0	21.72	26.65
2593.00				21.62	26.55
2682.50				21.69	26.62
2506.00	20	1	0	22.35	27.28

2593.00				22.66	27.59
2680.00				22.52	27.45
2506.00				22.83	27.76
2593.00	20	1	49	22.64	27.57
2680.00				22.94	27.87
2506.00				22.46	27.39
2593.00	20	1	99	22.43	27.36
2680.00				22.67	27.60
2506.00				21.58	26.51
2593.00	20	100	0	21.64	26.57
2680.00				21.73	26.66
16QAM					
2498.50				21.73	26.66
2593.00	5	1	0	21.45	26.38
2687.50				21.60	26.53
2498.50				21.85	26.78
2593.00	5	1	12	21.73	26.66
2687.50				21.94	26.87
2498.50				21.64	26.57
2593.00	5	1	24	21.26	26.19
2687.50				21.64	26.57
2498.50				20.77	25.70
2593.00	5	25	0	20.65	25.58
2687.50				20.85	25.78
2501.00				20.91	25.84
2593.00	10	1	0	20.81	25.74
2685.00				20.92	25.85
2501.00				21.02	25.95
2593.00	10	1	24	20.69	25.62
2685.00				20.75	25.68
2501.00				21.00	25.93
2593.00	10	1	49	20.48	25.41
2685.00				20.77	25.70
2501.00				20.77	25.70
2593.00	10	50	0	20.75	25.68
2685.00				20.89	25.82
2503.50				21.28	26.21
2593.00	15	1	0	21.35	26.28
2682.50				21.38	26.31
2503.50				21.48	26.41
2593.00	15	1	37	21.31	26.24
2682.50				21.35	26.28
2503.50	15	1	74	21.04	25.97

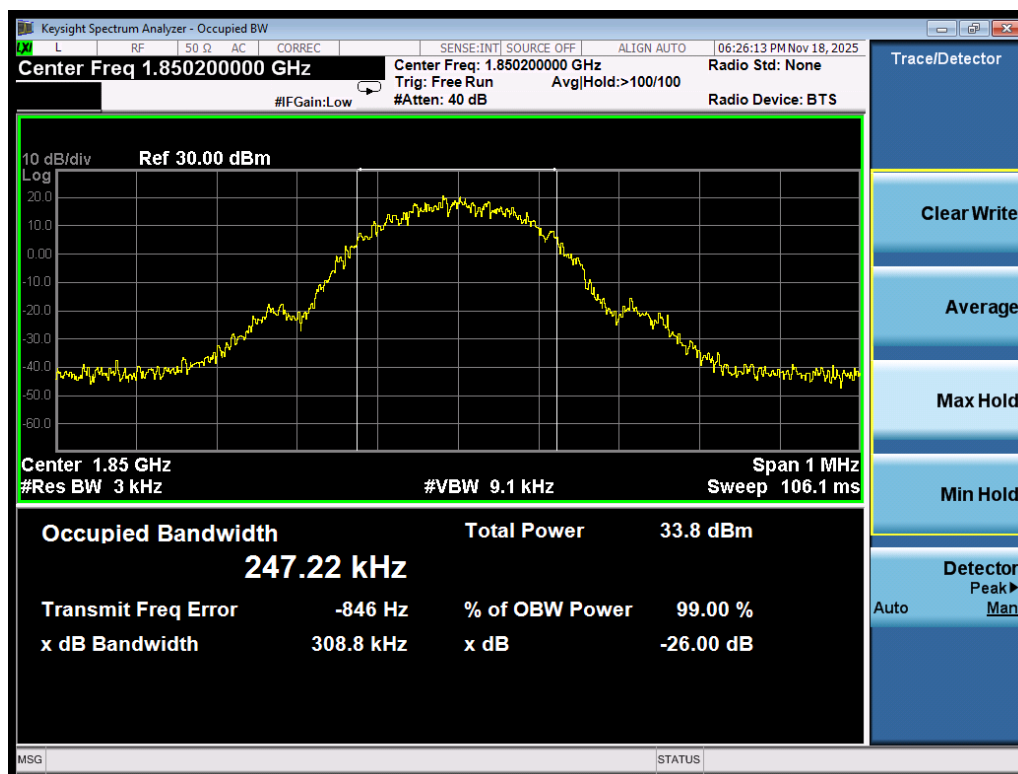
2593.00				21.17	26.10
2682.50				21.30	26.23
2503.50	15	75	0	20.62	25.55
2593.00				20.63	25.56
2682.50				20.73	25.66
2506.00	20	1	0	21.49	26.42
2593.00				21.66	26.59
2680.00				21.40	26.33
2506.00	20	1	49	21.57	26.50
2593.00				21.37	26.30
2680.00				21.47	26.40
2506.00	20	1	99	21.32	26.25
2593.00				21.32	26.25
2680.00				21.27	26.20
2506.00	20	100	0	20.59	25.52
2593.00				20.67	25.60
2680.00				20.68	25.61

6.2 Occupied Bandwidth

Mode	Channel	Frequency (MHz)	99% Power Bandwidth (MHz)	-26dBc Bandwidth (MHz)
GPRS 1900 (GMSK)	512	1850.2	0.247	0.309
	661	1880	0.244	0.312
	810	1909.8	0.246	0.307
EGPRS 1900 (8-PSK)	512	1850.2	0.243	0.299
	661	1880	0.247	0.301
	810	1909.8	0.241	0.305



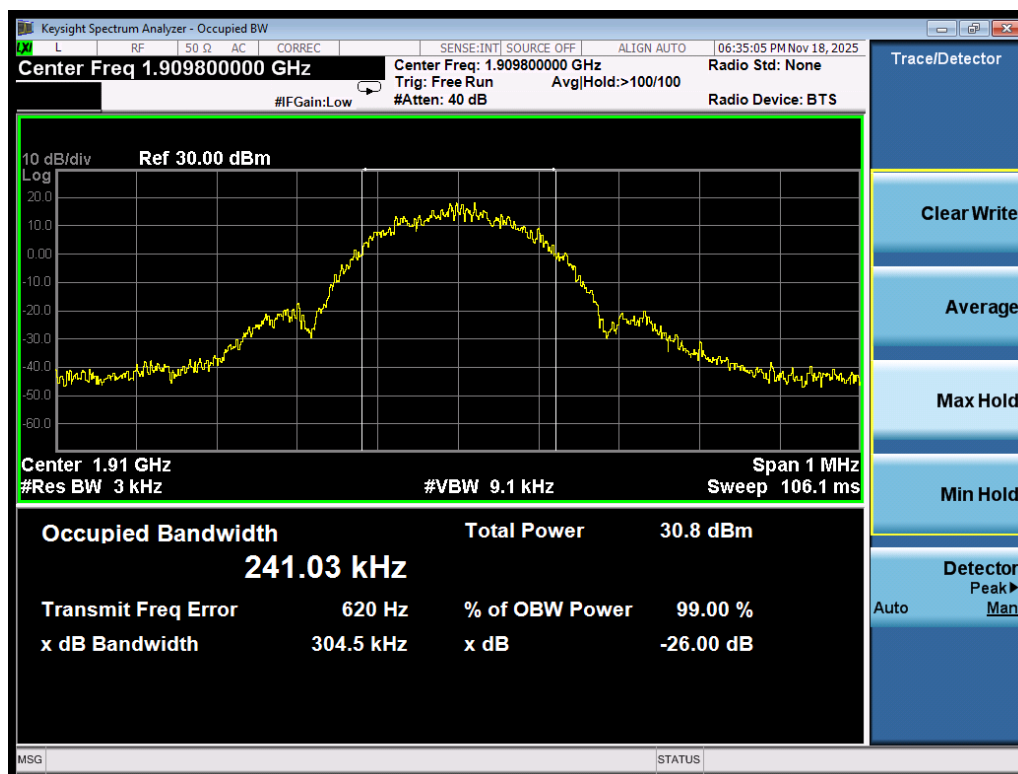
GSM1900\OCB\GPRS\H



GSM1900\OCB\GPRS\L



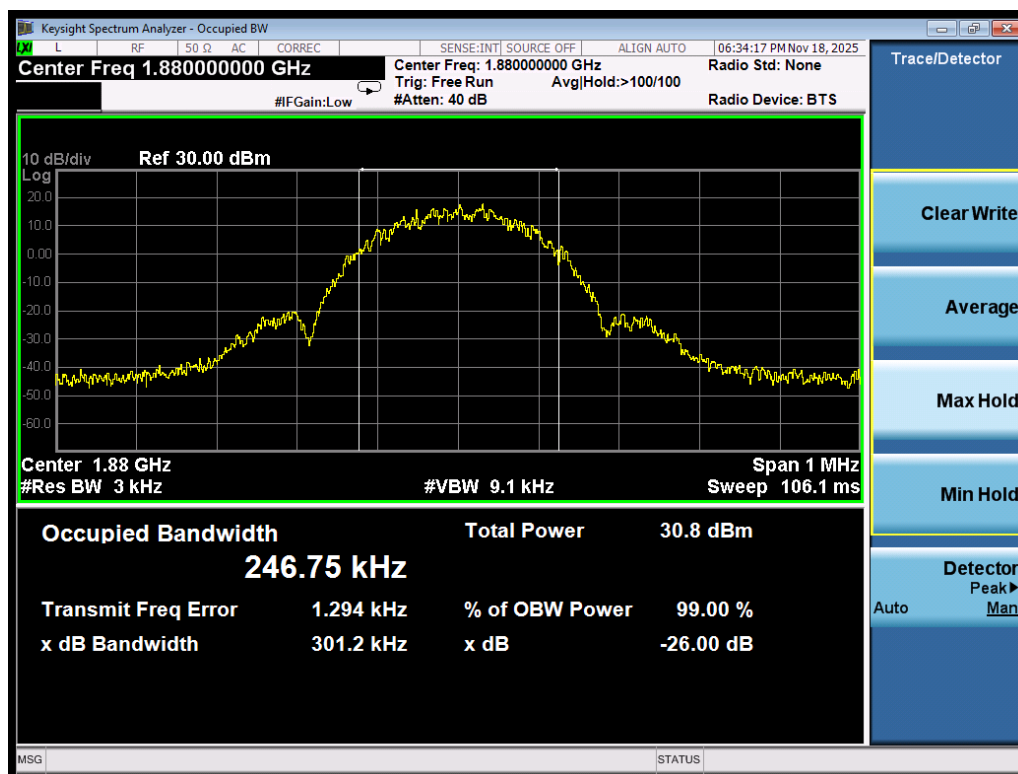
GSM1900\OCB\GPRS\IM



GSM1900\OCB\EGPRS\H



GSM1900\OCB\EGPRS\L



GSM1900\OCB\EGPRS\M

6.3 Band Edge Compliance

All the test traces in the plots shows the test results clearly.



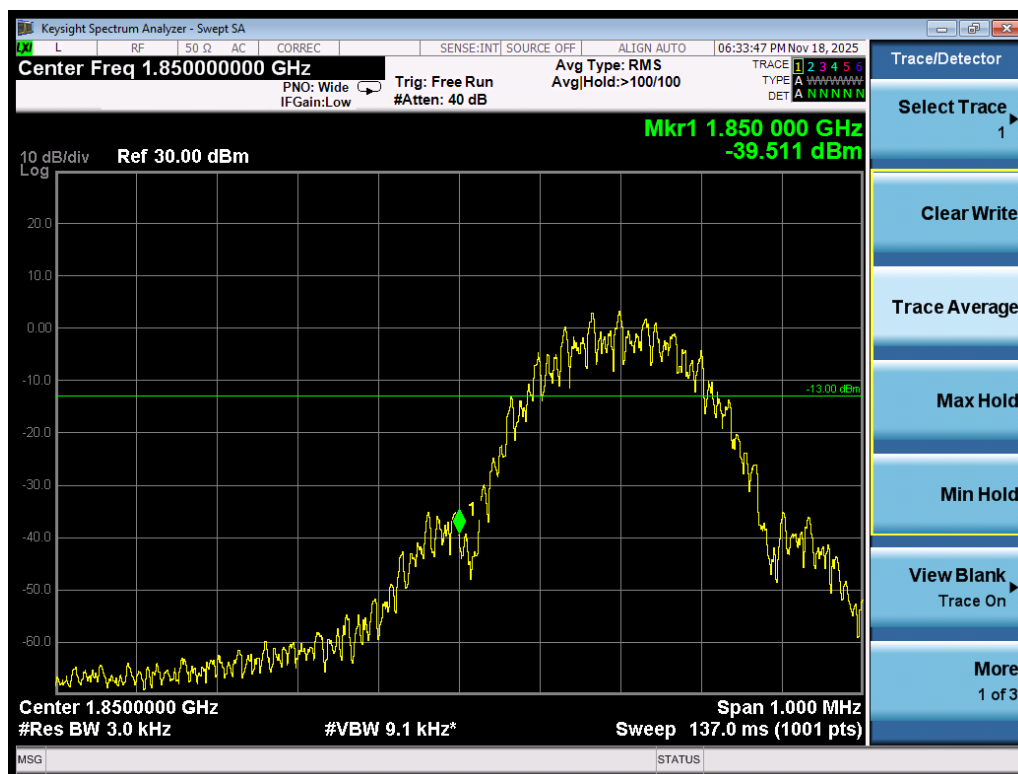
GSM1900\Band edge\GPRS\H



GSM1900\Band edge\GPRS\L



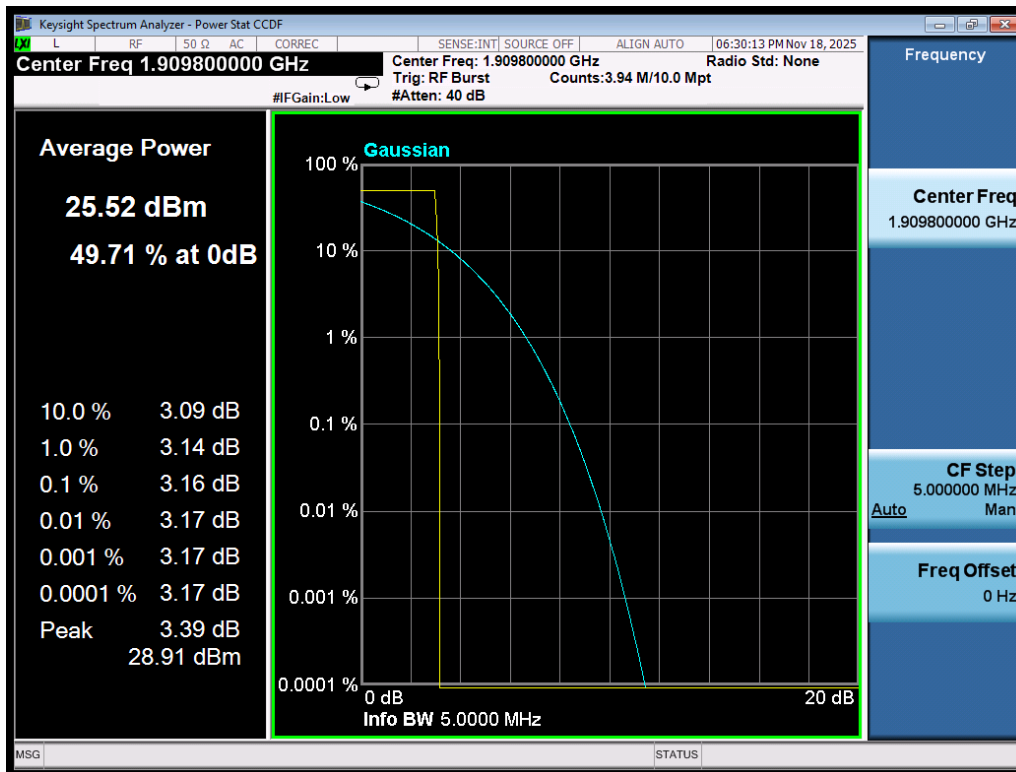
GSM1900\Band edge\EGPRS\H



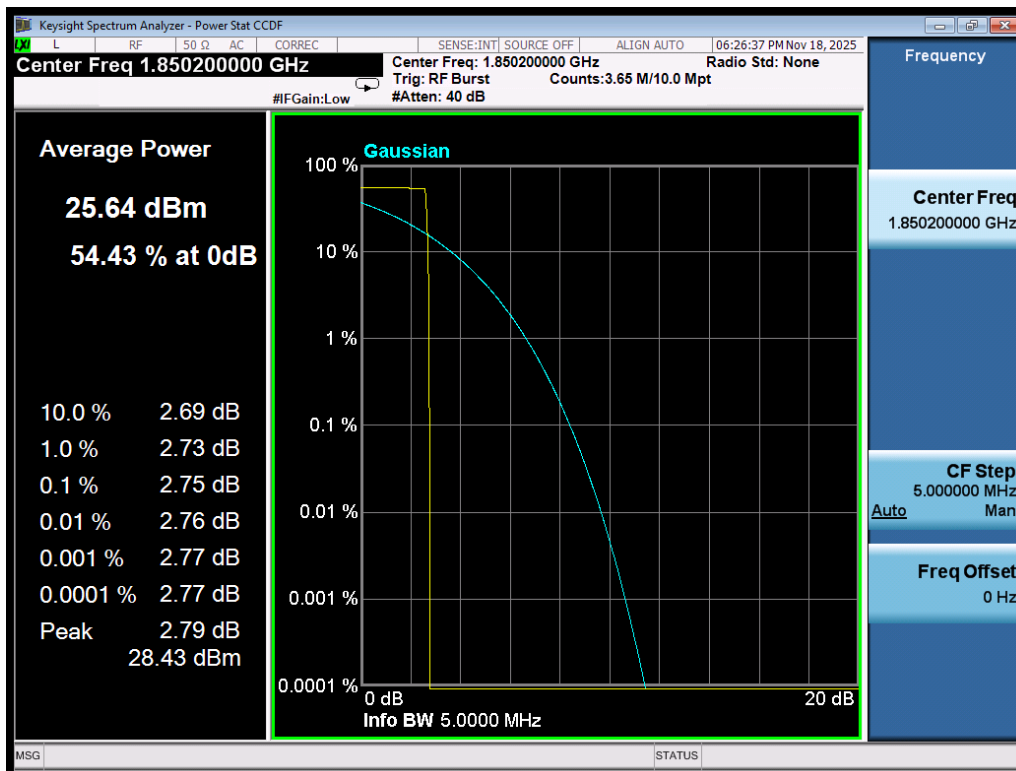
GSM1900\Band edge\EGPRS\L

6.4 Peak-to-Average Power Ratio (PAPR)

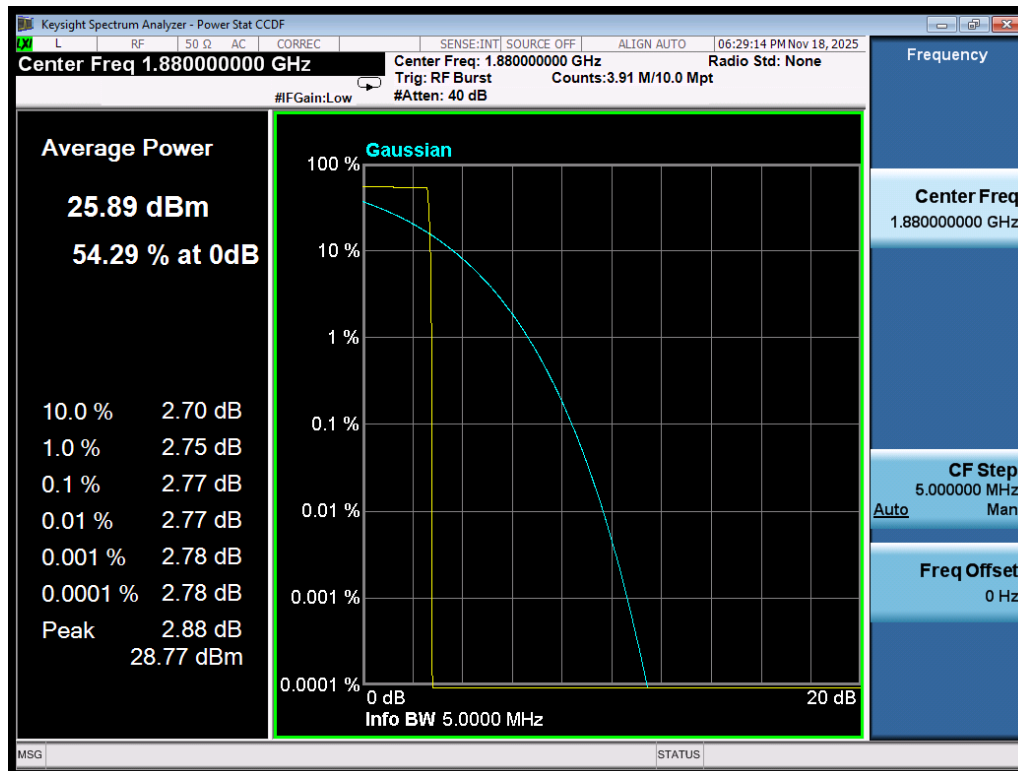
GSM1900	Channel	Peak (dBm)	Avg (dBm)	PAPR (dB)
GPRS	L	28.39	25.64	2.75
	M	28.66	25.89	2.77
	H	28.68	25.52	3.16
EGPRS	L	28.35	22.45	5.90
	M	28.47	22.46	6.01
	H	28.90	22.85	6.05



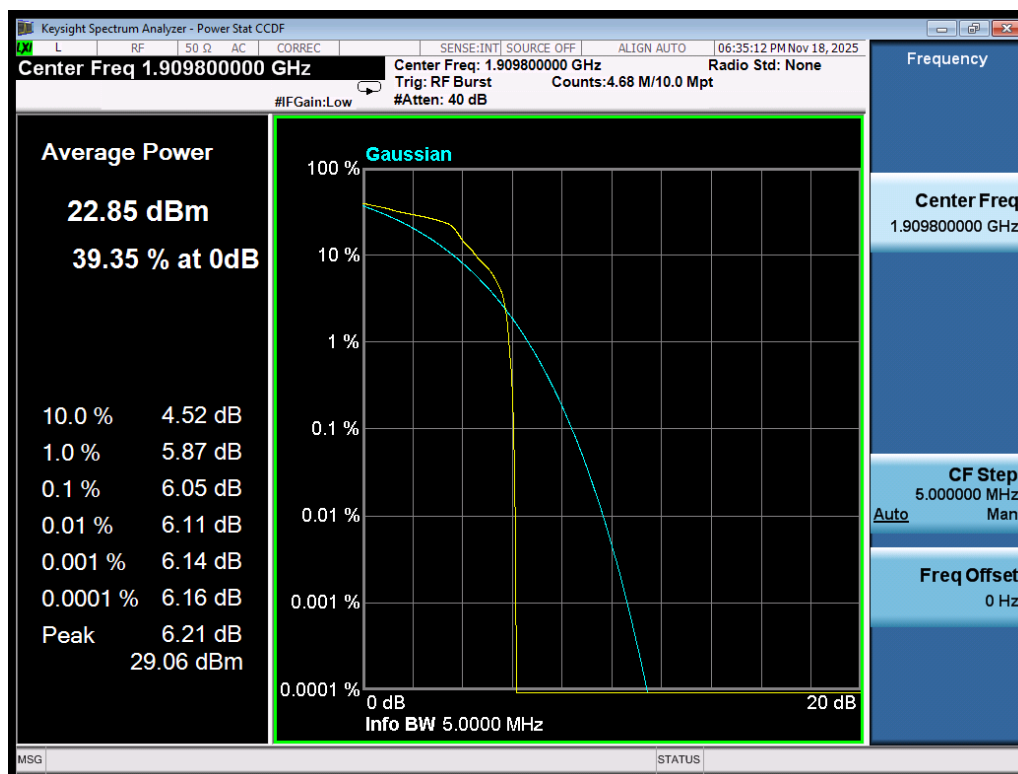
GSM1900\PAPR\GPRS\H



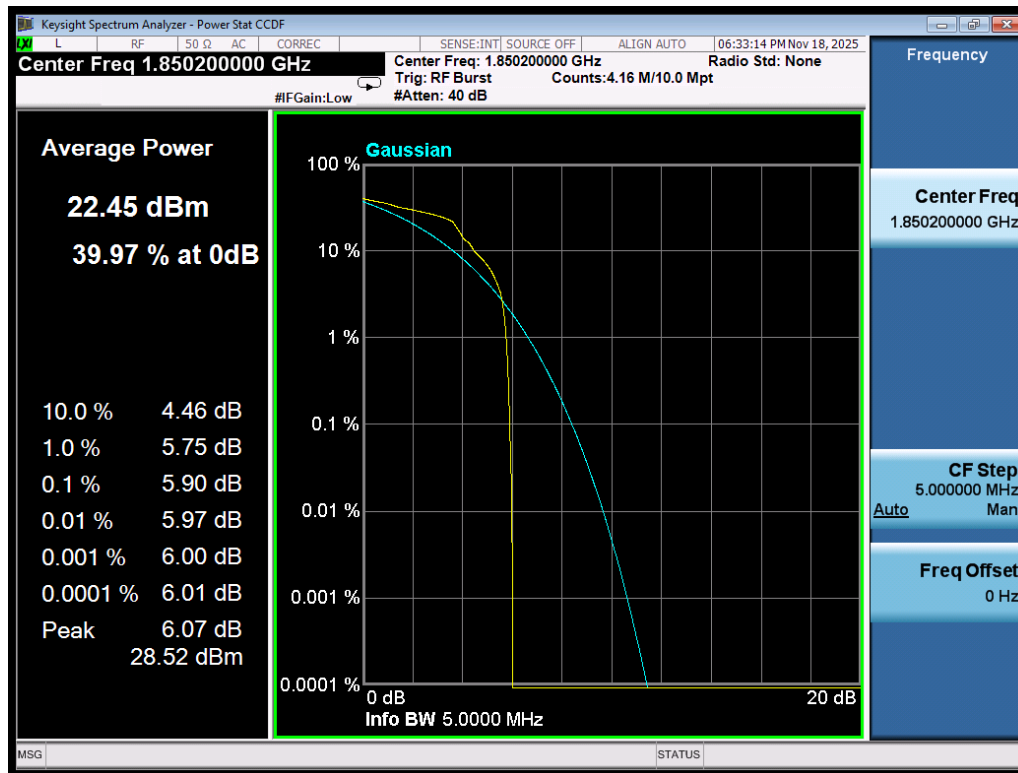
GSM1900\PAPR\GPRS\L



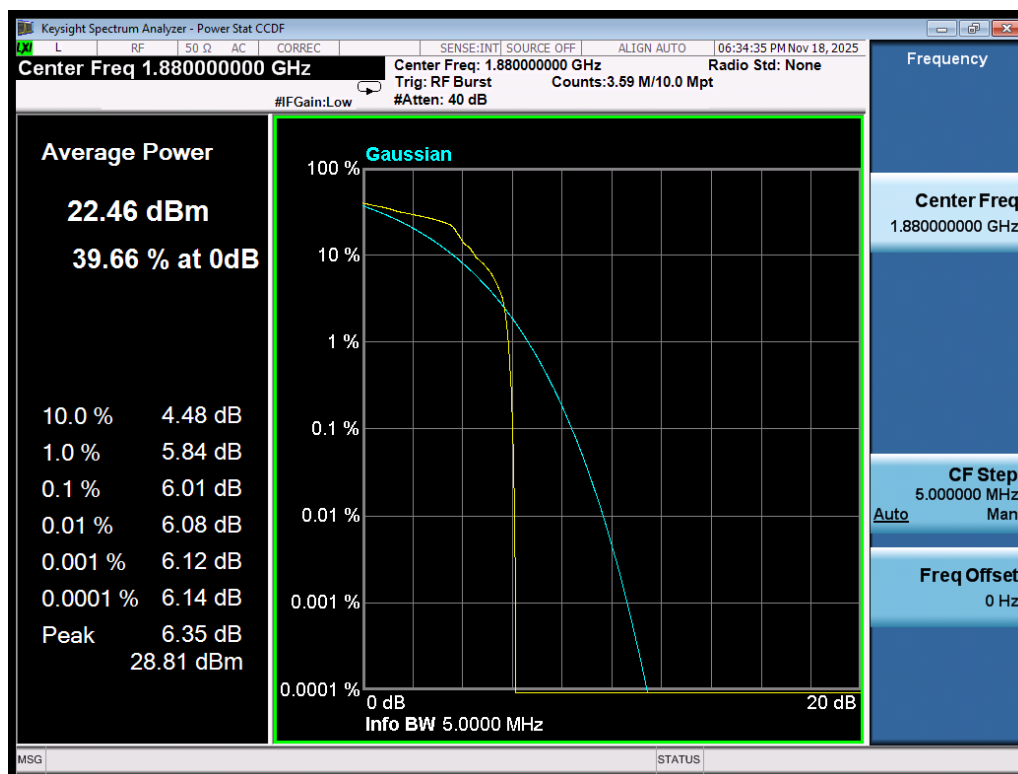
GSM1900\PAPR\GPRS\IM



GSM1900\PAPR\EGPRS\IH



GSM1900\PAPR\EGPRS\L



GSM1900\PAPR\EGPRS\M

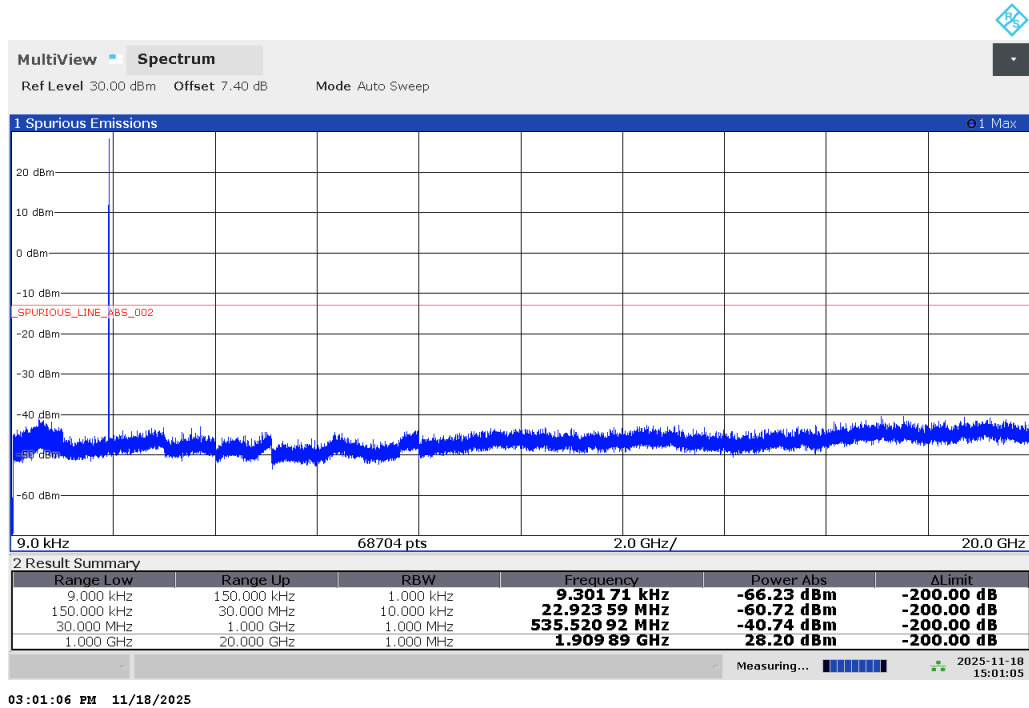
6.5 Frequency Stability

GSM1900 Fc(MHz)	Condition		F Low (MHz)	F High (MHz)	Limit (MHz)	Verdict
1850.2	BANDWIDTH	0.2MHz	GSMK	GSMK	1850-1910	PASS
	Temperature	Voltage				
	Extreme (50°C)	NV	1850.069	1850.331	1850-1910	PASS
	Extreme (40°C)		1850.062	1850.338	1850-1910	PASS
	Extreme (30°C)		1850.062	1850.338	1850-1910	PASS
	Extreme (20°C)		1850.072	1850.328	1850-1910	PASS
	Extreme (10°C)		1850.074	1850.326	1850-1910	PASS
	Extreme (0°C)		1850.070	1850.330	1850-1910	PASS
	Extreme (-10°C)		1850.069	1850.331	1850-1910	PASS
	Extreme (-20°C)		1850.077	1850.323	1850-1910	PASS
	Extreme (-30°C)		1850.072	1850.328	1850-1910	PASS
	25°C	LV	1850.074	1850.326	1850-1910	PASS
		HV	1850.063	1850.337	1850-1910	PASS
GSM1900 Fc(MHz)	Condition		F Low (MHz)	F High (MHz)	Limit (MHz)	Verdict
1909.8	BANDWIDTH	0.2MHz	GSMK	GSMK	1850-1910	PASS
	Temperature	Voltage				
	Extreme (50°C)	NV	1909.673	1909.927	1850-1910	PASS
	Extreme (40°C)		1909.663	1909.937	1850-1910	PASS
	Extreme (30°C)		1909.665	1909.935	1850-1910	PASS
	Extreme (20°C)		1909.676	1909.924	1850-1910	PASS
	Extreme (10°C)		1909.678	1909.922	1850-1910	PASS
	Extreme (0°C)		1909.667	1909.933	1850-1910	PASS
	Extreme (-10°C)		1909.676	1909.924	1850-1910	PASS
	Extreme (-20°C)		1909.665	1909.935	1850-1910	PASS
	Extreme (-30°C)		1909.662	1909.938	1850-1910	PASS
	25°C	LV	1909.679	1909.921	1850-1910	PASS
		HV	1909.671	1909.929	1850-1910	PASS

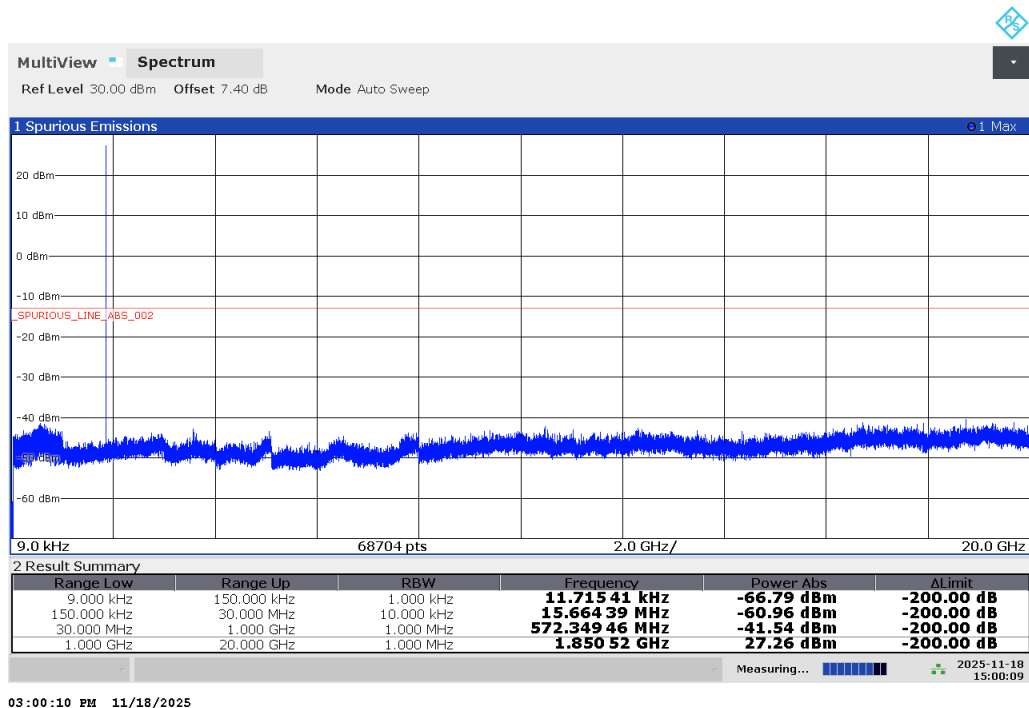
6.6 Spurious Emissions at Antenna Terminals

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

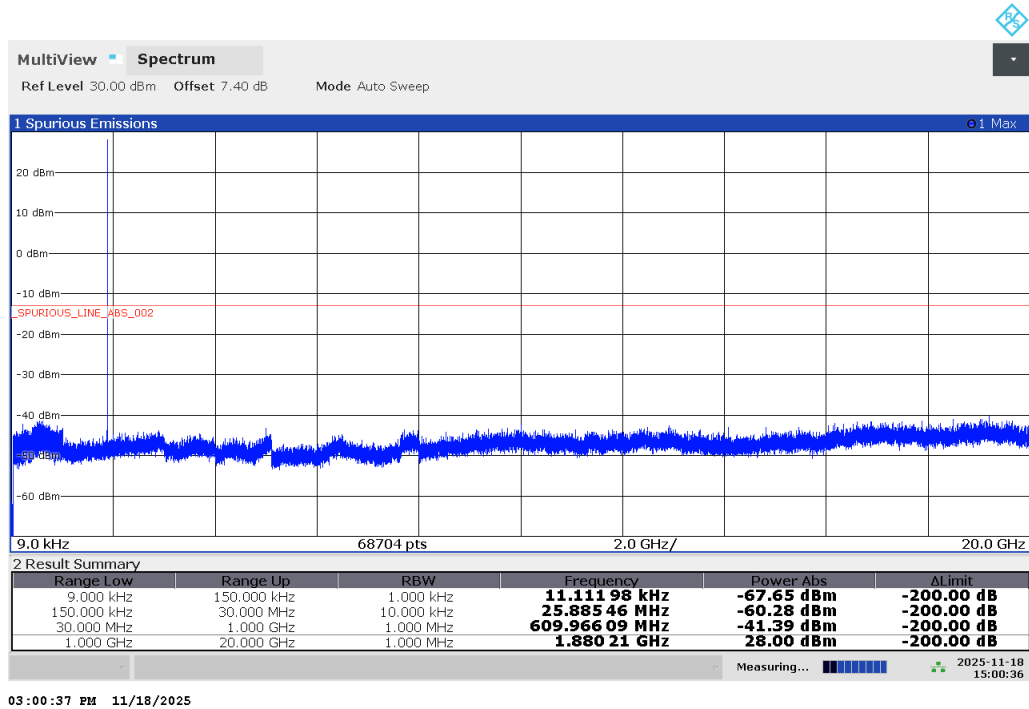
The signal beyond the limit is carrier.



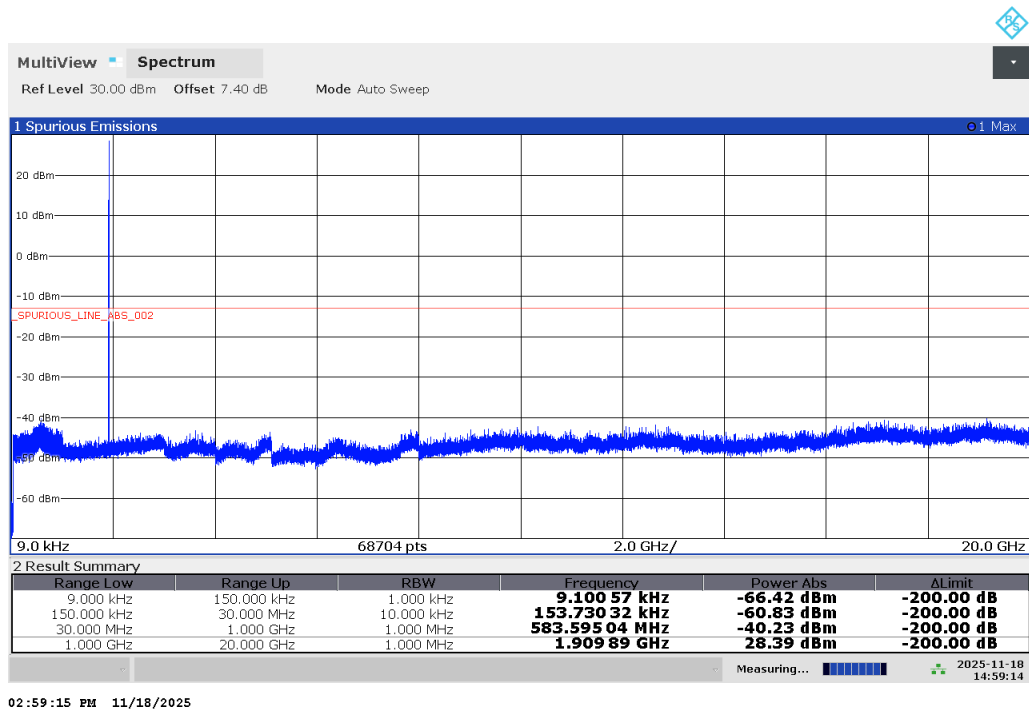
GSM1900\CSE\GPRS\H



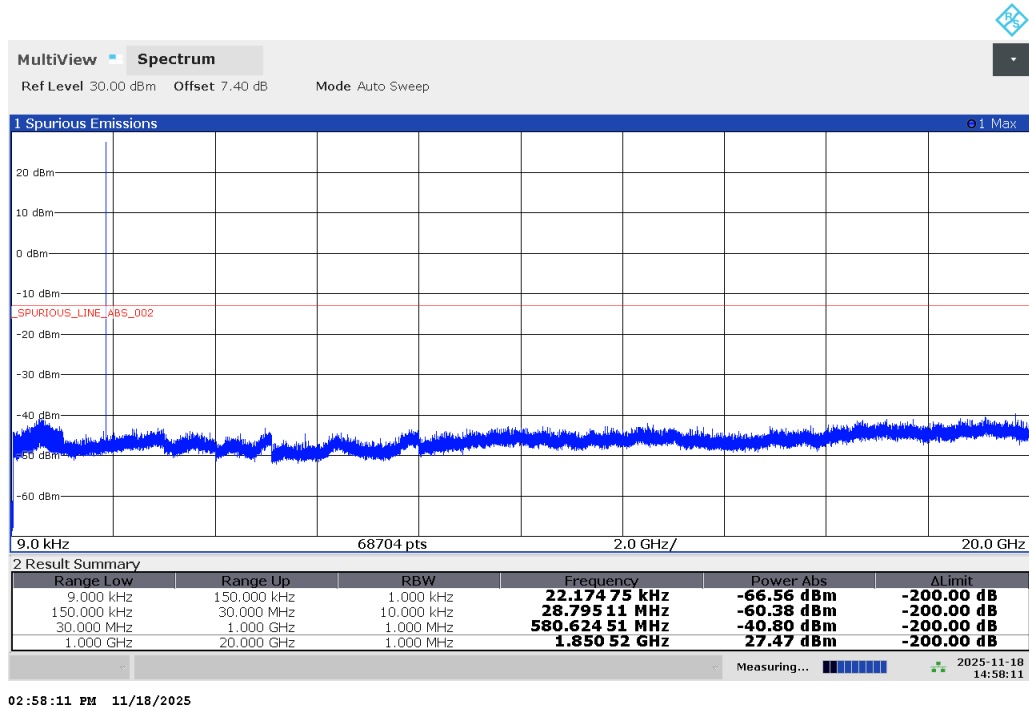
GSM1900\CSE\GPRS\L



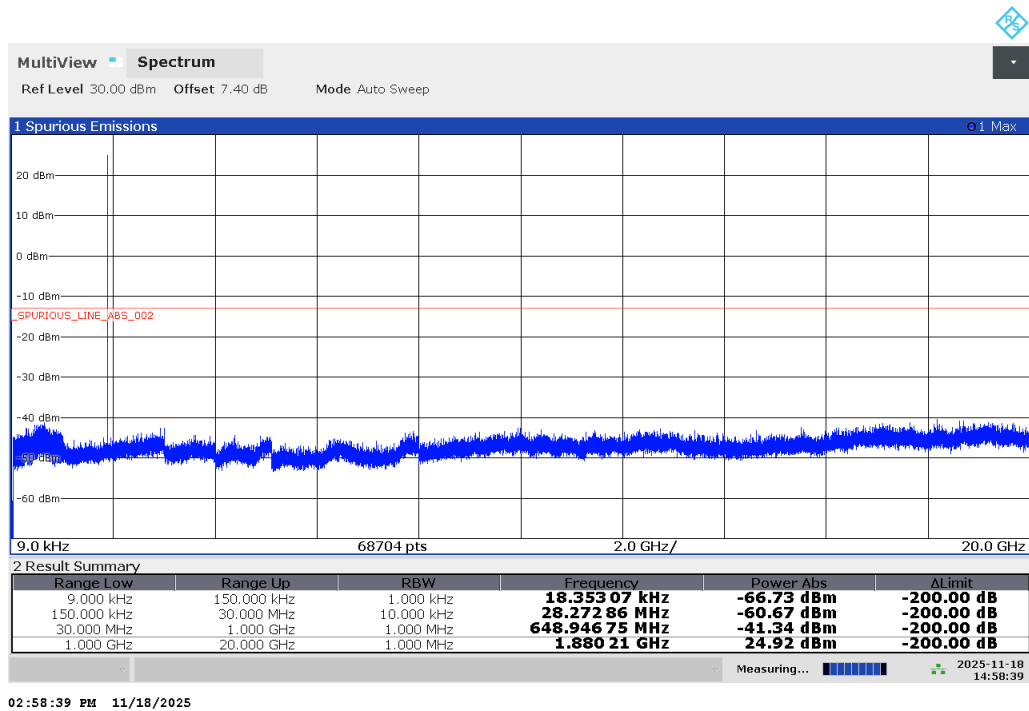
GSM1900\CSE\GPRS\M



GSM1900\CSE\EGPRS\H



GSM1900\CSE\EGPRS\L



GSM1900\CSE\EGPRS\M

6.7 Radiated Spurious Emission

The detailed test data see *EFTA25100248-IE-08-R1-ANNEX G* Test Result.

7 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Climate Chamber	WEISS	VT 4002	582261194500 10	2025-05-06	2026-05-05
Wireless Communication Tester	R&S	CMW500	150415	2025-05-06	2026-05-05
Spectrum Analyzer	Keysight	N9020A	MY52330084	2025-05-06	2026-05-05
DC Power Supply	UNI-T	UTP1310+	C220795889	2025-05-06	2026-05-05
Spectrum Analyzer	R&S	FSV3044	101053	2024-12-02	2025-12-01
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2023-04-16	2026-04-15
Spectrum Analyzer	R&S	FSV30	100815	2024-12-02	2025-12-01
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	1439	2024-07-06	2027-07-05
Horn Antenna	SCHWARZBECK	BBHA 9120D	1594	2023-12-05	2026-12-04
Software	R&S	EMC32	10.35.10	/	/

8 The EUT Appearance

Refer to *EUT Appearance*.

9 Test Setup Photos

Refer to *Part22_24_27_90 Test Setup*.

***** END OF REPORT *****