
TEST REPORT FOR GSM TESTING

Report No.: SRTC2020-9004(F)-20111301(A)

Product Name: 5G Multi-mode Terminal

Product Model: A003ZT

Applicant: ZTE CORPORATION

Manufacturer: ZTE CORPORATION

Specification: FCC Part 24E, Part 2 (2019)

FCC ID:SRQ-A003ZT

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30Shixing Street, Shijingshan District,

Beijing, P.R.China

Tel: 86-10-57996183 Fax: 86-10-57996388

CONTENTS

| | |
|---|-----------|
| 1. GENERAL INFORMATION | 2 |
| 1.1 Notes of the test report..... | 2 |
| 1.2 Information about the testing laboratory | 2 |
| 1.3 Applicant’s details..... | 2 |
| 1.4 Manufacturer’s details..... | 2 |
| 1.5 Test Environment | 3 |
| 2 DESCRIPTION OF THE DEVICE UNDER TEST | 4 |
| 2.1 Final Equipment Build Status..... | 4 |
| 2.2 Support Equipment | 5 |
| 2.3 Summary table..... | 5 |
| 3 REFERENCE SPECIFICATION | 6 |
| 4 KEY TO NOTES AND RESULT CODES | 6 |
| 5 RESULT SUMMARY | 7 |
| 6 TEST RESULT..... | 8 |
| 6.1 RF Power Output..... | 8 |
| 6.2 Effective Radiated Power and Effective Isotropic Radiated Power | 9 |
| 6.3 Occupied Bandwidth | 10 |
| 6.4 Emission Bandwidth- | 11 |
| 6.5 Spurious Emissions at antenna terminal | 12 |
| 6.6 Band Edges Compliance..... | 13 |
| 6.7 Frequency Stability..... | 14 |
| 6.8 Radiated Spurious Emissions..... | 15 |
| 6.9 Peak-Average Ratio..... | 17 |
| 7 MEASUREMENT UNCERTAINTIES | 18 |
| 8 TEST EQUIPMENTS | 19 |
| APPENDIX A – TEST DATA OF CONDUCTED EMISSION | 20 |
| APPENDIX B – TEST DATA OF RADIATED EMISSION | 44 |

1. GENERAL INFORMATION

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC). The test results relate only to individual items of the samples which have been tested. The certification and accreditation identifiers used in this report shall not be applicable to the tested or calibrated samples thereof. The manufacturer shall not mark the tested samples or items (or a separate part of the item) with the identifiers of certification and accreditation to mislead relevant parties about the tested samples or items.

1.2 Information about the testing laboratory

| | |
|--------------------|--|
| Company: | The State Radio_monitoring_center Testing Center (SRTC) |
| Address: | 15th Building, No.30 Shixing Street, Shijingshan District, P.R.China |
| City: | Beijing |
| Country or Region: | P.R.China |
| Contacted person: | Liu Jia |
| Tel: | +86 10 57996183 |
| Fax: | +86 10 57996388 |
| Email: | liujiaf@srtc.org.cn |

1.3 Applicant's details

| | |
|--------------------|--|
| Company: | ZTE CORPORATION |
| Address: | No.55, Hi-tech Road South, Shenzhen, P. R. China |
| City: | Shenzhen |
| Country or Region: | China |
| Contacted person: | Wengy Wang |
| Tel: | 86 15999501007 |
| Fax: | --- |
| Email: | wang.wenge@zte.com.cn |

1.4 Manufacturer's details

| | |
|--------------------|--|
| Company: | ZTE CORPORATION |
| Address: | No.55, Hi-tech Road South, Shenzhen, P. R. China |
| City: | Shenzhen |
| Country or Region: | China |
| Contacted person: | Wengy Wang |
| Tel: | 86 15999501007 |
| Fax: | --- |
| Email: | wang.wenge@zte.com.cn |

1.5 Test Environment

| | |
|---|------------|
| Date of Receipt of test sample at SRTC: | 2020-11-13 |
| Testing Start Date: | 2020-11-13 |
| Testing End Date: | 2020-12-02 |

| Environmental Data: | Temperature (°C) | Humidity (%) |
|---------------------|------------------|--------------|
| Ambient | 25 | 47 |
| Maximum Extreme | 55 | --- |
| Minimum Extreme | -10 | --- |

| | |
|--|------|
| Normal Supply Voltage (V d.c.): | 3.87 |
| Maximum Extreme Supply Voltage (V d.c.): | 4.20 |
| Minimum Extreme Supply Voltage (V d.c.): | 3.50 |

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

| | |
|---------------------|---|
| Frequency Range | PCS1900: Tx:1850~1910MHz Rx:1930~1990MHz |
| Modulation Type | GPRS:GMSK EDGE: GMSK/8PSK |
| Emission Designator | 300KGXW/300KG7W |
| Duplex Mode | FDD |
| Duplex Spacing | PCS1900:80MHz |
| Antenna Type | Fixed Internal Antenna |
| Antenna Gain | DCS1800: -1.0dBi |
| Power Supply | Battery/Charger |
| Hardware Version | zd9B |
| Software Version | A003ZT a.1.0 |
| IMEI | 865069050003341 |

2.2 Support Equipment

The following support equipment was used to exercise the DUT during testing:

| | |
|--------------|--------------------------------|
| Equipment | Battery |
| Manufacturer | ZHUHAI COSMX BATTERY CO., LTD. |
| Model Number | Li3939T44P8h756547 |

2.3 Summary table.

| FCC Rule Part | Mode | Frequency Range (MHz) | ERP/ EIRP (dBm) | ERP/ EIRP (W) | Frequency Tolerance (ppm) | Emission Designator |
|---------------|----------|-----------------------|-----------------|---------------|---------------------------|---------------------|
| 24E | GSM1900 | 1850.2-1909.8 | 28.82 | 0.762 | -0.005 | 249KGXW |
| 24E | EDGE1900 | 1850.2-1909.8 | 25.19 | 0.330 | -0.008 | 243KG7W |

3 REFERENCE SPECIFICATION

| Specification | Version | Title |
|----------------|---------------|---|
| FCC Part2 | 2019 | Frequency allocations and radio treaty matters; general rules and regulations |
| FCC Part24 | 2019 | Personal communications services |
| ANSI C63.26 | 2015 | American national standard for compliance testing of transmitters used in licensed radio services |
| KDB 971168 D01 | April 9, 2018 | Measurement guidance for certification of licensed digital transmitters |
| TIA-603-E-2016 | March 2016 | LandMobileFMorPMCommunicationsEquipmentMeasurementandPerformanceStandards |

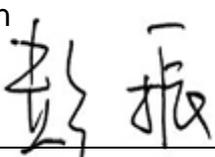
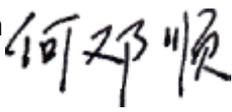
4 KEY TO NOTES AND RESULT CODES

The following are the definition of the test result.

| Code | Meaning |
|------|--|
| PASS | Test result shows that the requirements of the relevant specification have been met. |
| FAIL | Test result shows that the requirements of the relevant specification have not been met. |
| NT | Normal Temperature |
| NV | Nominal voltage |
| HV | High voltage |
| LV | Low voltage |

5 RESULT SUMMARY

| No. | Test case | FCC reference | Verdict |
|-----|---|----------------------------|---------|
| 1 | RF Power Output | 2.1046 | Pass |
| 2 | Effective Radiated Power and Effective Isotropic Radiated Power | 24.232(c) | Pass |
| 3 | Occupied Bandwidth | 2.1049 | Pass |
| 4 | Emission Bandwidth | 2.1049 | Pass |
| 5 | Spurious Emissions at antenna terminals | 2.1051/24.238(a) | Pass |
| 6 | Band Edges Compliance | 2.1051/22.917(a)/24.238(a) | Pass |
| 7 | Frequency Stability | 2.1055/24.235 | Pass |
| 8 | Radiated Spurious Emissions | 2.1053/24.238(a) | Pass |
| 9 | Peak-Average Ratio | 24.232(d) | Pass |

| | |
|--|---|
| This Test Report Is Issued by: Mr. Peng Zhen  | Checked by: Mr. Li Bin  |
| Tested by: Mr. He Dengshun  | Issued date: 20201202 |

6 TEST RESULT

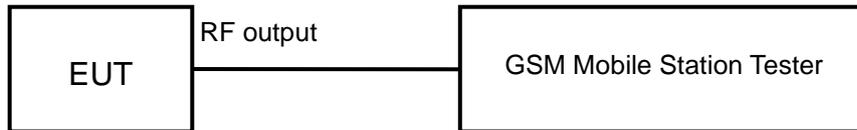
6.1 RF Power Output

Rule Part(s)
FCC Part 2.1046

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 25°C | 47% | 101.9kPa |

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. Then the test data can be read at the tester screen. The loss between RF output port of the EUT and the input port of the tester will be taken into consideration. The measurement will be conducted at three channels (Low, Middle and High channels)

Limits: Nospecific conduct power requirements in part 2.1046.

Test result:

The test results are shown in Appendix A.

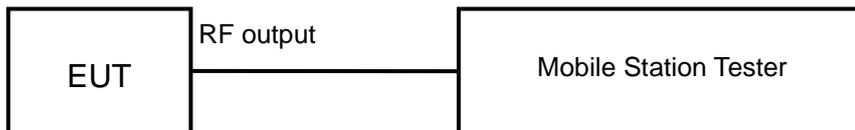
6.2 Effective Radiated Power and Effective Isotropic Radiated Power

Rule Part(s)
FCC Part Part 24.232(c)

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 25°C | 47% | 101.9kPa |

Test setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 5.6

Test Settings

Subclause 5.2.5.5 of ANSI C63.26-2015 is applicable, along with the following provisions. For personal/portable radios utilizing an integral antenna, the factor LC is typically negligible. However, in a fixed station transmit system that utilizes a long cable run between the transmitter and the transmitting antenna, this factor can be significant. The minimum cable loss should be used in this equation.

The relevant equation for determining the ERP or EIRP from the conducted RF output power measured is:

$$ERP/EIRP = P_{Meas} - LC + GT$$

Where:

ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as P_{Meas}, typically dBW or dBm)

P_{Meas} = measured transmitter output power or PSD, in dBW or dBm

LC = signal attenuation in the connecting cable between the transmitter and antenna in dB

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

Limits for PCS1900:

| Operation Mode | Power Step | E.I.R.P. (dBm) |
|----------------|------------|----------------|
| GSM | 0 | ≤33 |
| GPRS | 3 | ≤33 |
| EDGE | 5 | ≤33 |

Test result:

The test results are shown in Appendix A.

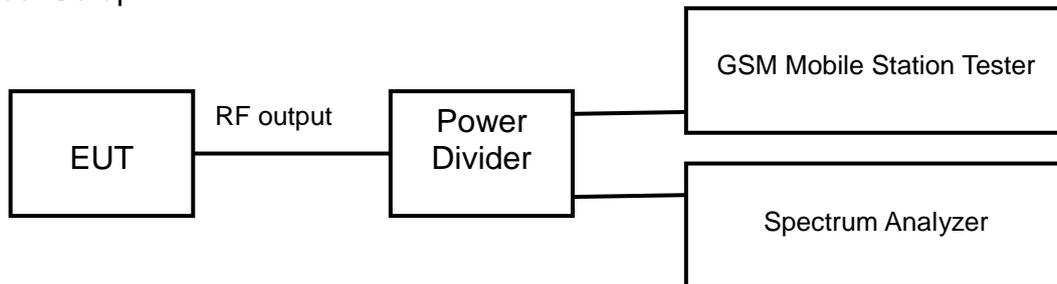
6.3 Occupied Bandwidth

Rule Part(s)
Part 2.1049

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 25°C | 47% | 101.9kPa |

Test Setup:



Test procedure:

KDB 971168 D01 v03r01 – Section 4.2

Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

Limits: No specific occupied bandwidth requirements in part 2.1049

Test result:

The test results are shown in Appendix A.

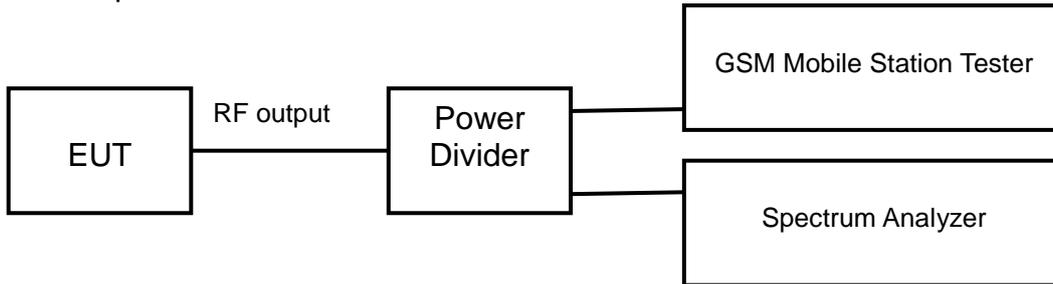
6.4 Emission Bandwidth-

Rule Part(s)
 Part 2.1049

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 25°C | 47% | 101.9kPa |

Test Setup:



Test procedure:

KDB 971168 D01 v03r01 – Section 4.2

Test Settings

1. The signal analyzer’s automatic bandwidth measurement capability was used to perform the 26dB occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the emission bandwidth observed in Step 7

Limits:No specific occupied bandwidth requirements in part 2.1049

Test result:

The test results are shown in Appendix A.

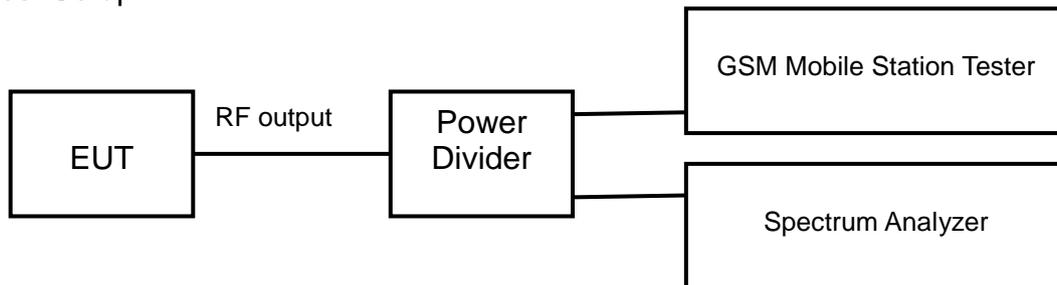
6.5 Spurious Emissions at antenna terminal

Rule Part(s)
FCC Part 2.1053/ 24.238(a)

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 25°C | 47% | 101.9kPa |

Test Setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 6.0

Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 10GHz for Cell, 20GHz for PCS
2. RBW=100 kHz (For below 1GHz),1MHz (For above 1GHz)
3. VBW ≥ 3 x RBW
4. Detector = RMS
5. Trace mode = trace average for continuous emissions, max hold for pulse emissions
6. Sweep time = auto couple
7. The trace was allowed to stabilize

Limits:

The minimum permissible attenuation level of any spurious emission is $43 + \log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

Test result:

The test results are shown in Appendix A.

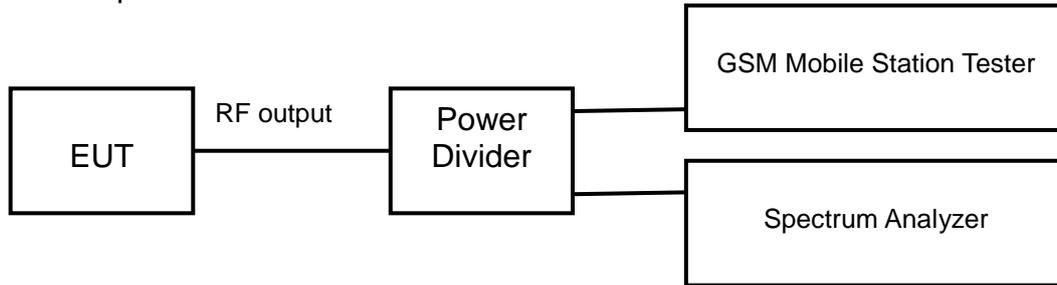
6.6 Band Edges Compliance

Rule Part (s)
FCC Part 2.1051/Part 24.238(a)

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 25°C | 47% | 101.9kPa |

Test Setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 6.0

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span=2MHz
3. RBW > 1% of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points $\geq 2 \times \text{Span/RBW}$
7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Limit: The minimum permissible attenuation level of any spurious emission is $43 + \log_{10}(P_{\text{[Watts]}})$, where P is the transmitter power in Watts.

Test result:
The test results are shown in Appendix A.

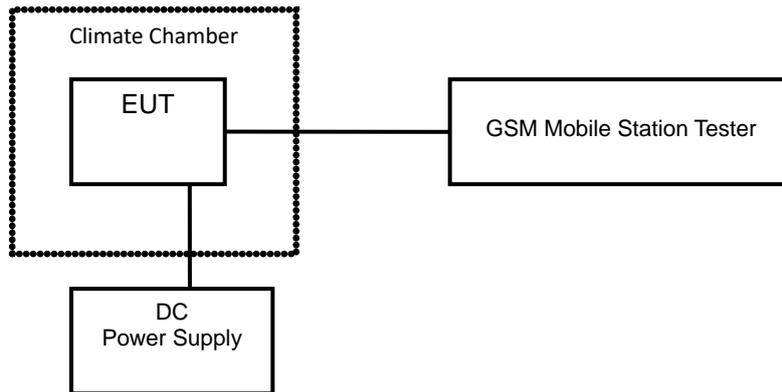
6.7 Frequency Stability

Rule Part(s)
FCC Part 2.1055/Part 24.235

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 25°C | 47% | 101.9kPa |

Test setup:



Test Procedure:
ANSI/TIA-603-E-2016

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C (The temperature range can be declared by the manufacturer). A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Limits: For Part 24, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test result:
The test results are shown in Appendix A.

6.8 Radiated Spurious Emissions

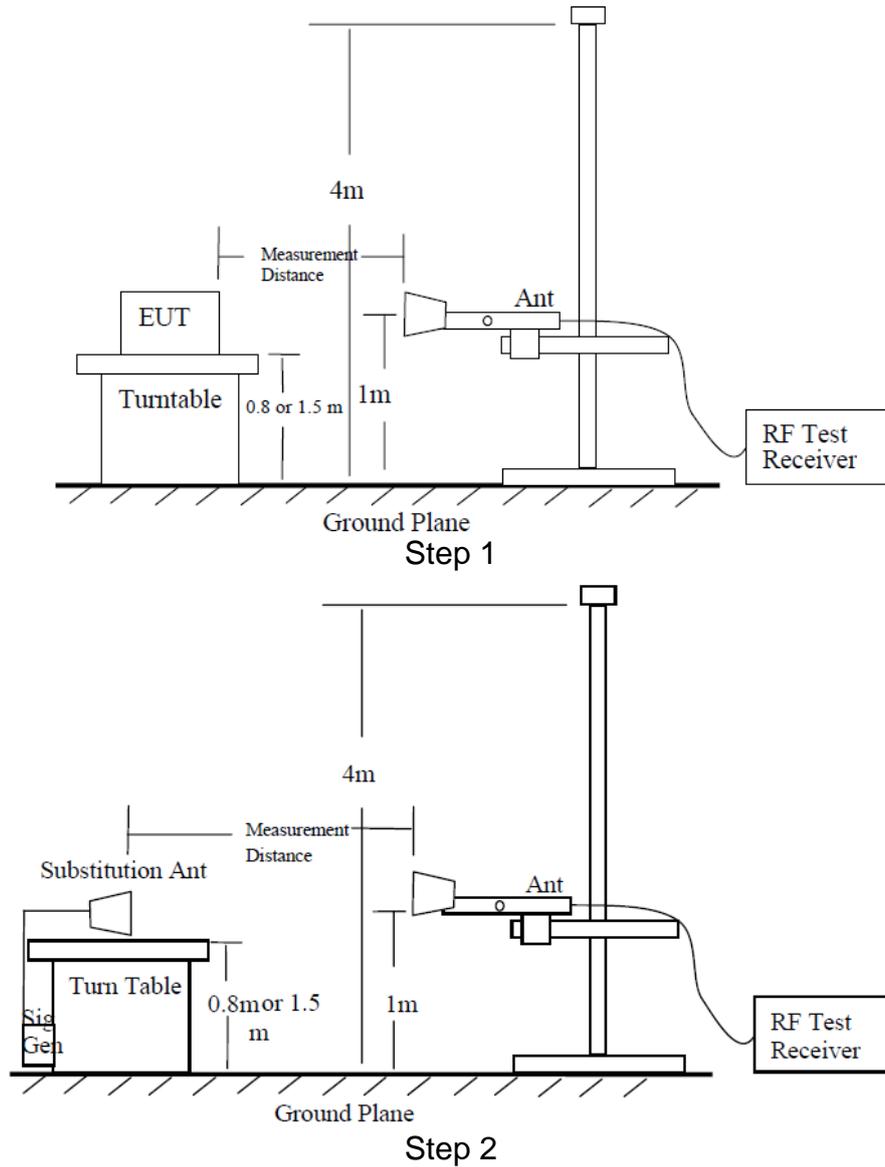
Rule Part(s)

FCC Part2.1053/ 22.917(a)/Part 24.238(a)

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 25°C | 47% | 101.9kPa |

Test Setup:



Test procedure:

The measurements procedures in TIA-603-E-2016 are used.

The spectrum was scanned from 30MHz to the 10th harmonic of the highest frequency generated within the equipment.

Step 1:

The measurement is carried out in the chamber. EUT was placed on a 0.8m ($f < 1\text{GHz}$)/1.5m ($f > 1\text{GHz}$) high non-conductive table at a 3 meters test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. The height of receiving antenna from 1m to 4m and varies in certain range to find the maximum power value. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. A peak detector is used and RBW is set to 100 kHz ($f < 1\text{GHz}$)/1MHz ($f > 1\text{GHz}$). The antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum power value on spectrum analyzer or receiver. The spectrum analyzer scans from 30MHz to 10th harmonic of the carrier. A notch filter is necessary in the band near to the carrier frequency. A high pass filter is needed to avoid the distortion of the testing equipment in the band above the carrier frequency.

Step 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.

A power (P_{mea}) is applied to the input of the substitution antenna, and adjusts 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.

A "reference path loss" should be calculated after test. The attenuation of "reference path loss" is the cable loss between the Signal Source with the Substitution Antenna (P_{ca}) and the Substitution Antenna Gain (G_a).

Calculation procedure:

The data of cable loss and antenna gain has been calibrated in full testing frequency range before the testing.

The power of the Radiated Spurious Emissions is calculated by adding the cable loss and antenna gain. The basic equation with a sample calculation is as followed:

$$\text{Power (EIRP)} = P_{mea} + P_{ca} + G_a$$

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

Assumed the power of signal source record is -20dBm. A cable loss of -30dB, and an antenna gain of 11dB are added.

$$P = P_{mea} + P_{ca} + G_a = (-20\text{dBm}) + (-30\text{dB}) + (11\text{dB}) = -39\text{dBm}$$

Note: We tested both horizontal and vertical polarization, but only the largest numerical polarity of the two polarities was recorded in the final report.

Test result:

The test results are shown in Appendix B.

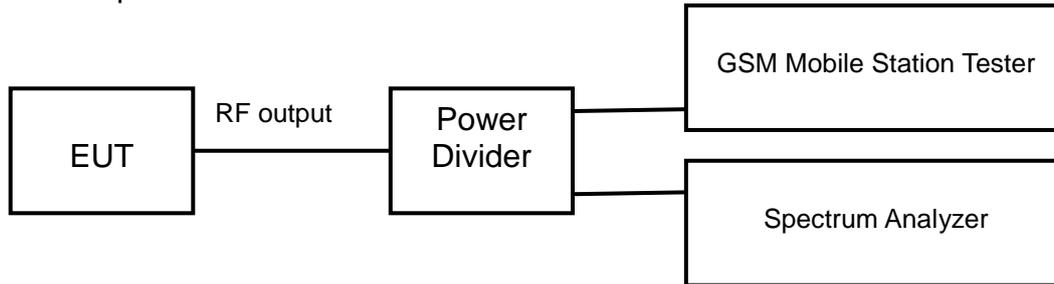
6.9 Peak-Average Ratio

Rule Part(s)
FCC Part 24.232(d)

Ambient condition:

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 25°C | 47% | 101.9kPa |

Test Setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 5.7.1

Test settings:

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Limits: the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Test result:

The test results are shown in Appendix A

7 MEASUREMENT UNCERTAINTIES

| Items | Uncertainty | |
|----------------------|----------------|--------|
| Occupied Bandwidth | 3kHz | |
| Peak power output | 0.67dB | |
| Band edge compliance | 1.20dB | |
| Spurious emissions | 30MHz~1GHz | 2.83dB |
| | 1GHz~12.75GHz | 2.50dB |
| | 12.75GHz~25GHz | 2.75dB |

8 TEST EQUIPMENTS

| No. | Name/Model | Manufacturer | S/N | Calibration Date | Calibration Due Date |
|-----|--|--------------|--------------|------------------|----------------------|
| 1 | MT8820C Mobile Station Tester | Anritsu | 6201300660 | 2020.08.20 | 2021.08.19 |
| 2 | CMW500 RadioCommunication Station | R&S | 161702 | 2020.08.20 | 2021.08.19 |
| 2 | FSV40 Spectrum Analyzer | R&S | 101065 | 2020.08.20 | 2021.08.19 |
| 3 | N9020A Spectrum Analyzer | Agilent | MY48010771 | 2020.08.20 | 2021.08.19 |
| 4 | 6007 Power Divider | Weinschel | 6007-GJ-1 | 2020.08.20 | 2021.08.19 |
| 5 | DC Power Supply E3645A | Agilent | MY40000741 | 2020.03.01 | 2021.02.28 |
| 6 | Temperature chamber SH241 | ESPEC | 92013758 | 2020.08.20 | 2021.08.19 |
| 7 | 12.65m×8.03m×7.50m Fully-Anechoic Chamber | FRANKONIA | ---- | ---- | ---- |
| 8 | 23.18m×16.88m×9.60m Semi-Anechoic Chamber | FRANKONIA | --- | ---- | ---- |
| 9 | Turn table Diameter:1m | FRANKONIA | ---- | ---- | ---- |
| 10 | Turn table Diameter:5m | FRANKONIA | ---- | ---- | ---- |
| 11 | Antenna master FAC(MA4.0) | MATURO | ---- | ---- | ---- |
| 12 | Antenna master SAC(MA4.0) | MATURO | ---- | ---- | ---- |
| 13 | 9.080m×5.255m×3.525m Shielding room | FRANKONIA | ---- | ---- | ---- |
| 14 | HF 907 Double-Ridged Waveguide Horn Antenna | R&S | 100512 | 2020.08.20 | 2021.08.19 |
| 15 | HF 907 Double-Ridged Waveguide Horn Antenna | R&S | 100513 | 2020.08.20 | 2021.08.19 |
| 16 | HL562 Ultra log antenna | R&S | 100016 | 2020.08.20 | 2021.08.19 |
| 17 | 3160-09 Receive antenna | SCHWARZ-BECK | 002058-002 | 2020.08.20 | 2021.08.19 |
| 18 | ESI 40 EMI test receiver | R&S | 100015 | 2020.08.20 | 2021.08.19 |
| 19 | ESCS30 EMI test receiver | R&S | 100029 | 2020.08.20 | 2021.08.19 |
| 20 | HL562 Receive antenna | R&S | 100167 | 2020.08.20 | 2021.08.19 |
| 21 | ENV216 AMN | R&S | 3560.6550.12 | 2020.08.20 | 2021.08.19 |

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

RF Power Output

PCS1900

GSM Measured Power:

| Carrier frequency (MHz) | Channel No. | RF Power Output (dBm) |
|-------------------------|-------------|-----------------------|
| 1850.2 | 512 | 29.58 |
| 1880.0 | 661 | 29.53 |
| 1909.8 | 810 | 29.82 |

GPRS Measured Power:

| Carrier frequency (MHz) | Channel No. | TX Mode | RF Power Output (dBm) |
|-------------------------|-------------|------------------|-----------------------|
| 1850.2 | 512 | 4Downlink1uplink | 29.54 |
| 1880.0 | 661 | | 29.40 |
| 1909.8 | 810 | | 29.61 |
| 1850.2 | 512 | 3Downlink2uplink | 28.98 |
| 1880.0 | 661 | | 28.88 |
| 1909.8 | 810 | | 29.14 |
| 1850.2 | 512 | 2Downlink3uplink | 28.61 |
| 1880.0 | 661 | | 29.00 |
| 1909.8 | 810 | | 29.22 |
| 1850.2 | 512 | 1Downlink4uplink | 26.89 |
| 1880.0 | 661 | | 27.30 |
| 1909.8 | 810 | | 27.52 |

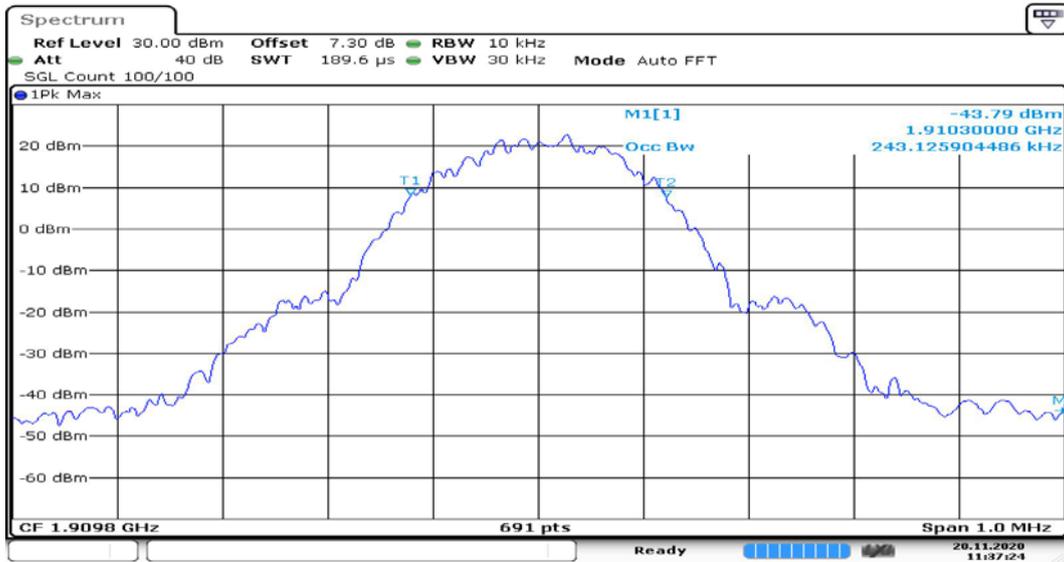
EGPRS (8PSK) Measured Power:

| Carrier frequency (MHz) | Channel No. | TX Mode | RF Power Output (dBm) |
|-------------------------|-------------|--------------------------|-----------------------|
| 1850.2 | 512 | 8PSK 4Downlink1uplink | 26.19 |
| 1880.0 | 661 | | 24.85 |
| 1909.8 | 810 | | 25.14 |
| 1850.2 | 512 | 8PSK 3Downlink2uplink | 26.08 |
| 1880.0 | 661 | | 24.71 |
| 1909.8 | 810 | | 25.00 |
| 1850.2 | 512 | 8PSK 2Downlink3uplink | 24.46 |
| 1880.0 | 661 | | 25.00 |
| 1909.8 | 810 | | 24.81 |
| 1850.2 | 512 | 8PSK 1Downlink4uplink | 24.24 |
| 1880.0 | 661 | | 24.33 |
| 1909.8 | 810 | | 24.58 |



Date: 20.NOV.2020 11:36:38

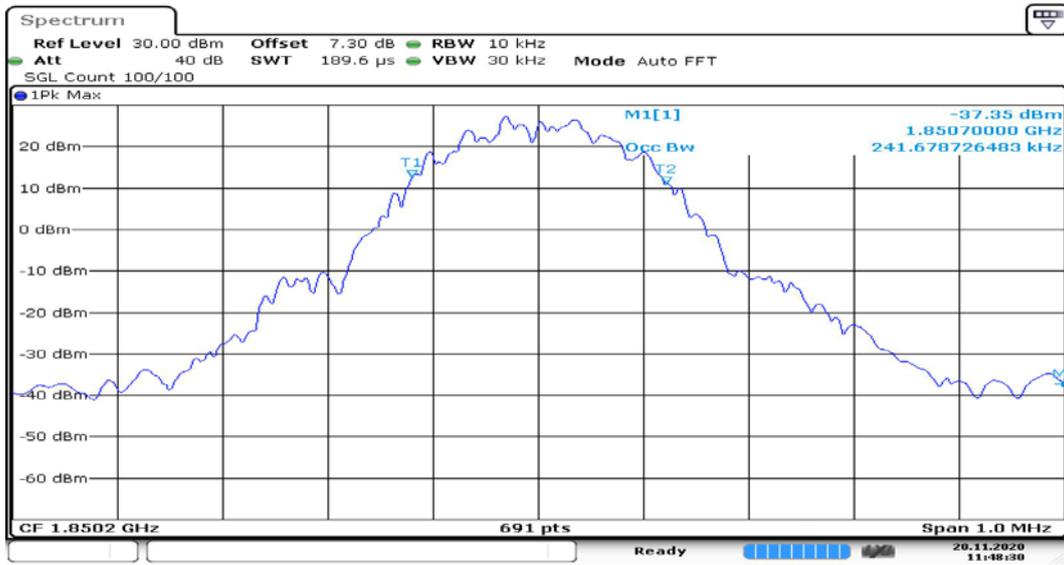
Channel 661



Date: 20.NOV.2020 11:37:24

Channel 810

GPRS MODE:



Date: 20.NOV.2020 11:48:30

Channel 512



Date: 20.NOV.2020 11:49:45

Channel 661



Date: 20.NOV.2020 11:50:41

Channel 810

EDGE (8PSK) MODE:



Date: 20.NOV.2020 12:13:34

Channel 512



Date: 20.NOV.2020 12:14:50

Channel 661



Date: 20.NOV.2020 12:15:46

Channel 810

Emission Bandwidth

PCS1900

GSM MODE:

| Carrier frequency (MHz) | Channel No. | Bandwidth of -26dB transmitter power(kHz) |
|-------------------------|-------------|---|
| 1850.2 | 512 | 311.10 |
| 1880.0 | 661 | 314.00 |
| 1909.8 | 810 | 301.00 |

GPRS MODE:

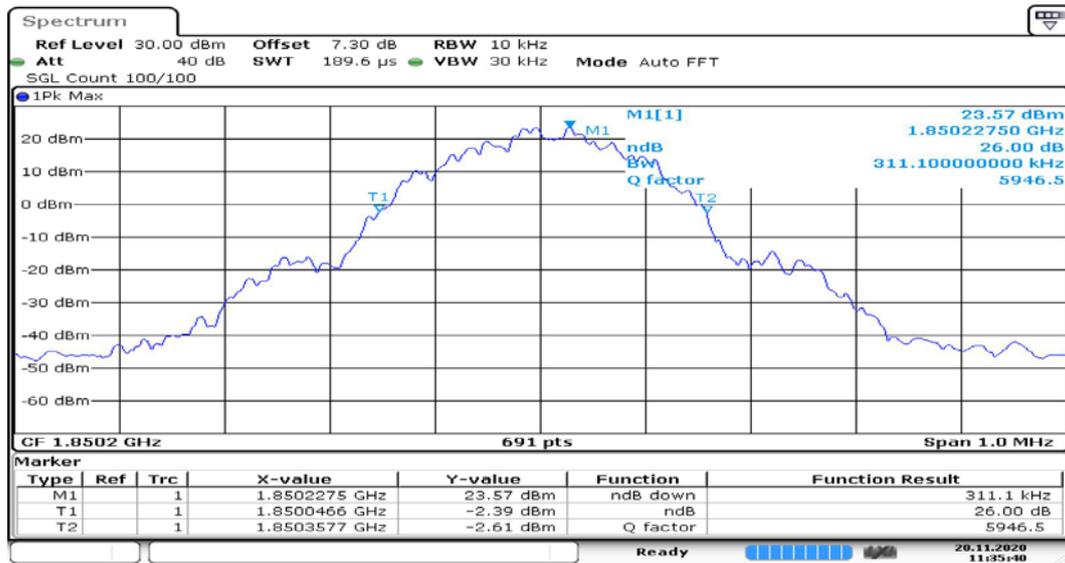
| Carrier frequency (MHz) | Channel No. | Bandwidth of 99% Power (kHz) |
|-------------------------|-------------|------------------------------|
| 1850.2 | 512 | 308.20 |
| 1880.0 | 661 | 309.70 |
| 1909.8 | 810 | 311.10 |

EDGE (8PSK) MODE:

| Carrier frequency (MHz) | Channel No. | Bandwidth of -26dB transmitter power(kHz) |
|-------------------------|-------------|---|
| 1850.2 | 512 | 302.50 |
| 1880.0 | 661 | 298.10 |
| 1909.8 | 810 | 306.80 |

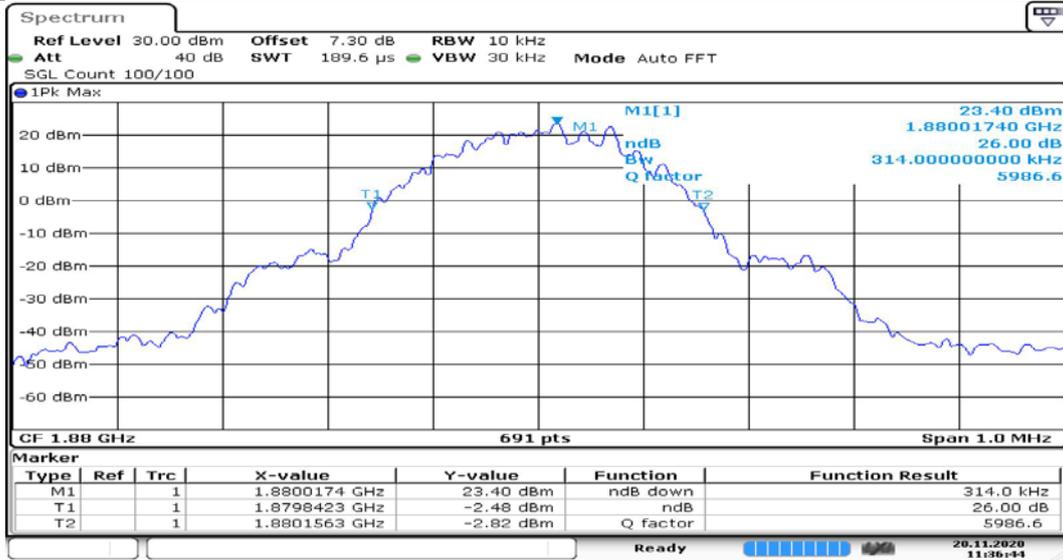
PCS1900

GSM MODE:



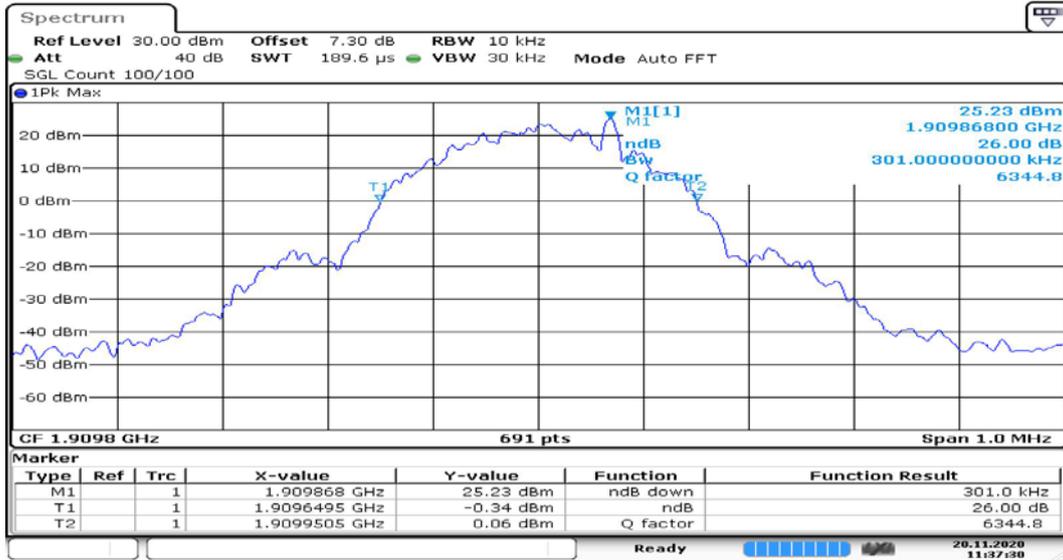
Date: 20.NOV.2020 11:35:40

Channel 512



Date: 20. NOV. 2020 11:36:45

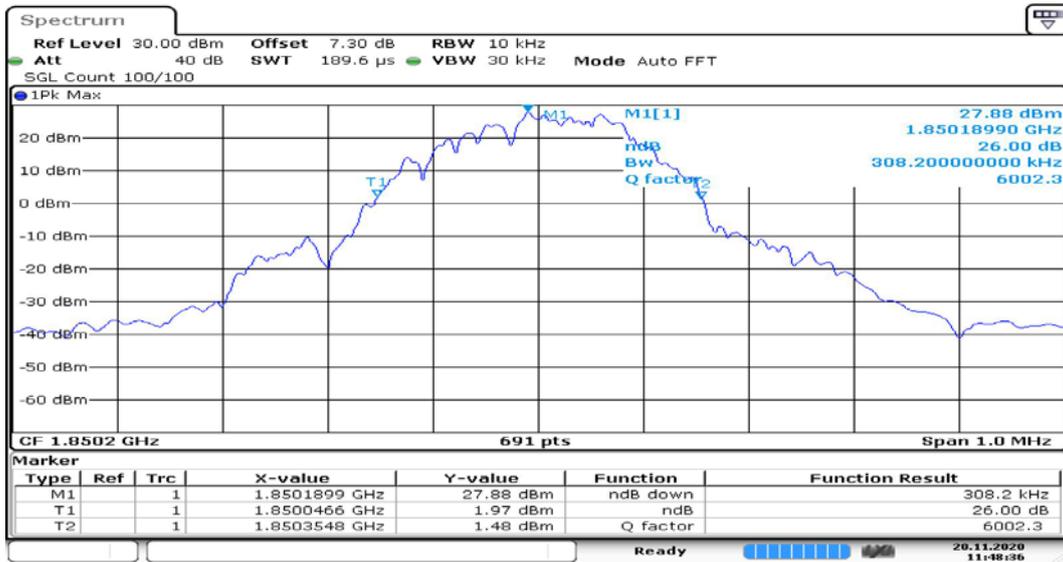
Channel 661



Date: 20. NOV. 2020 11:37:30

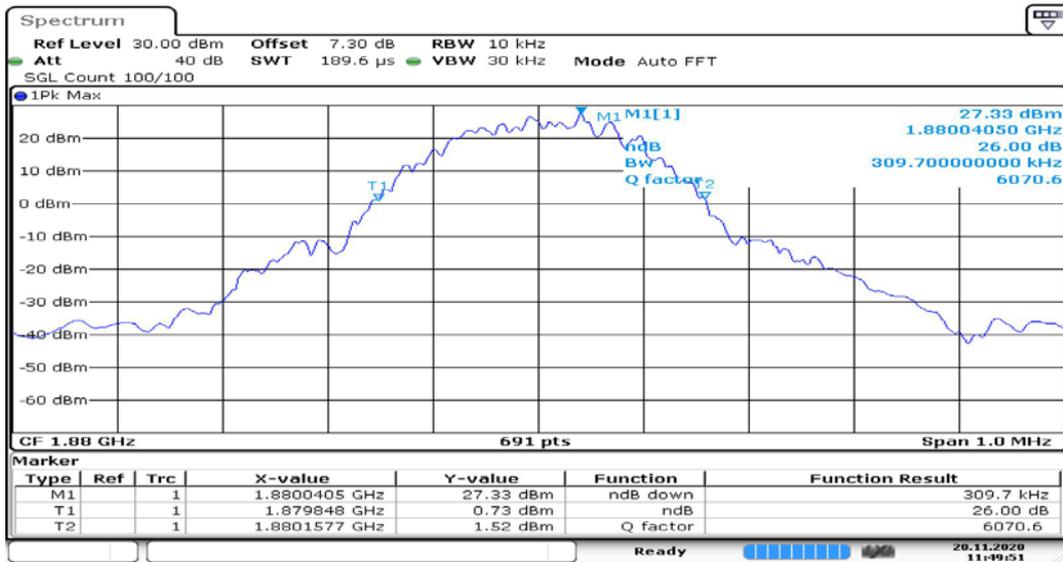
Channel 810

GPRS MODE:



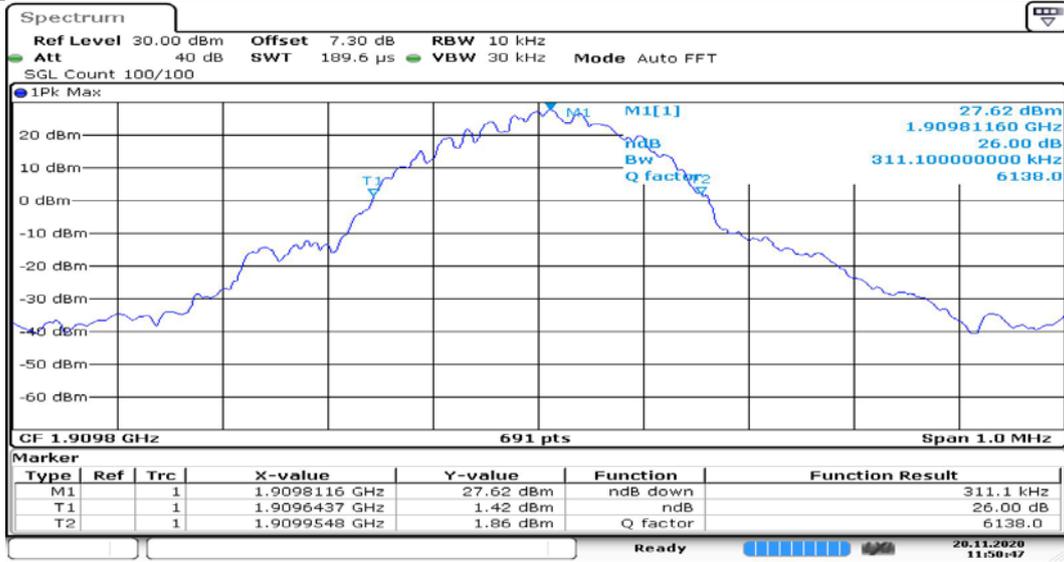
Date: 20.NOV.2020 11:48:36

Channel 512



Date: 20.NOV.2020 11:49:51

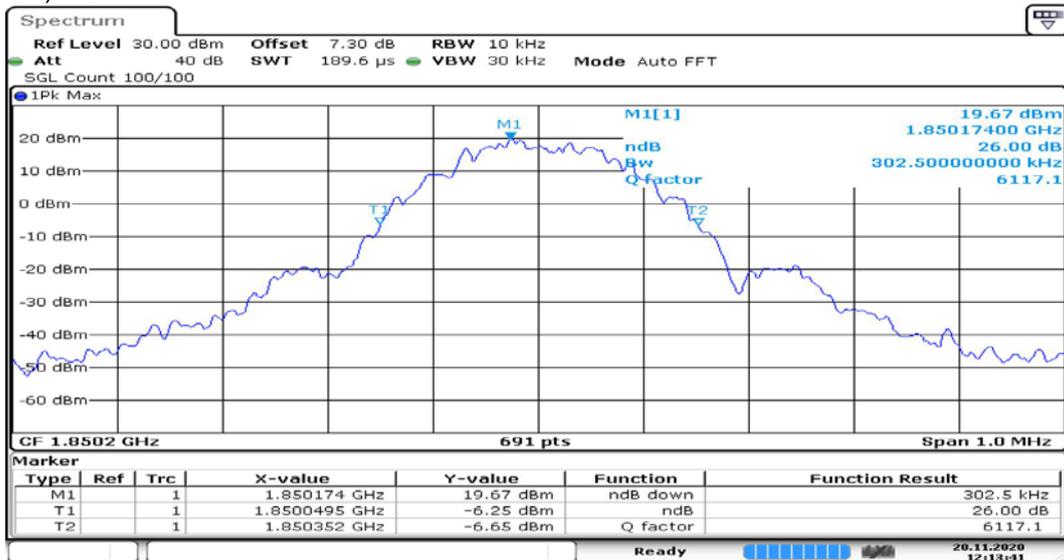
Channel 661



Date: 20.NOV.2020 11:50:47

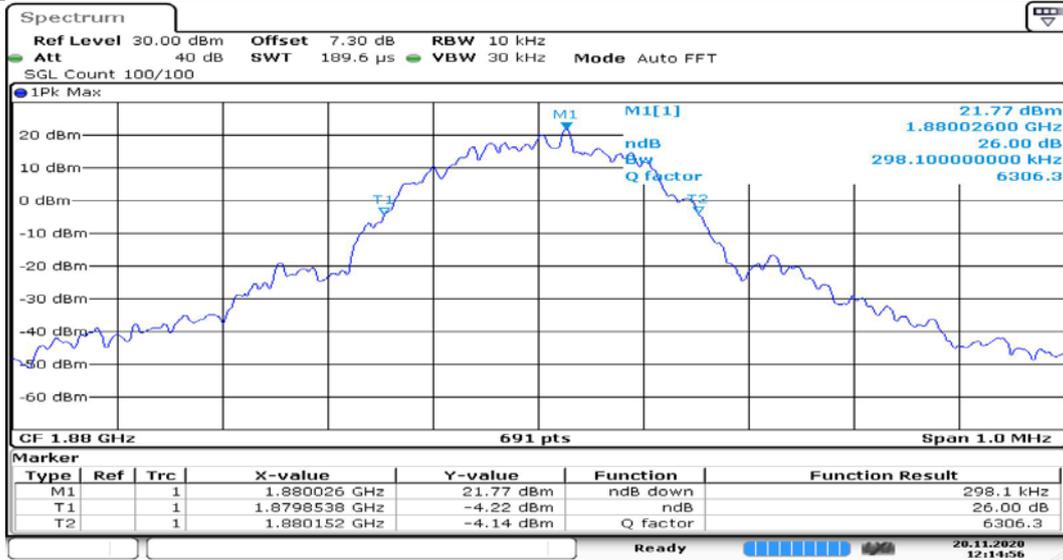
Channel 810

EDGE (8PSK) MODE:



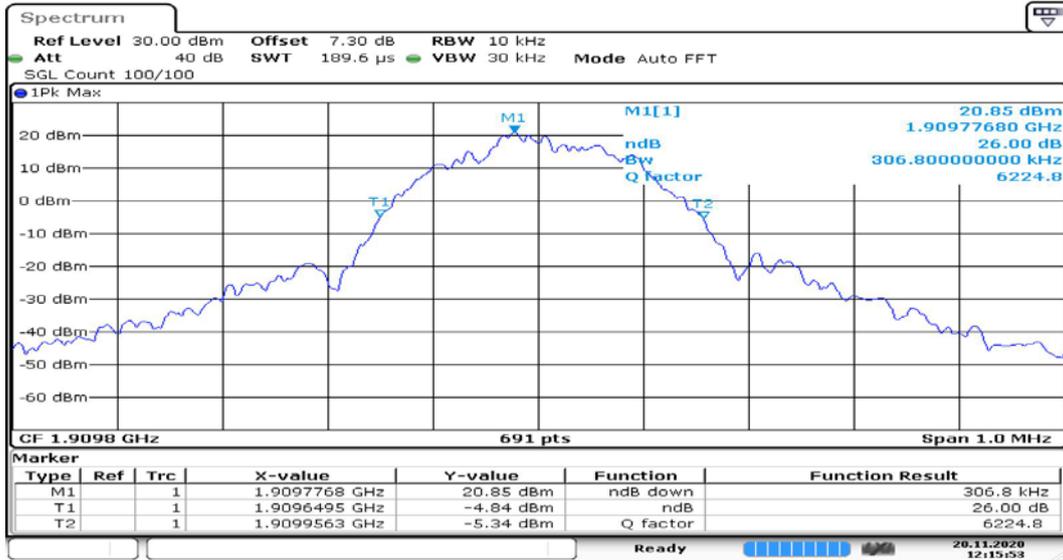
Date: 20.NOV.2020 12:13:41

Channel 512



Date: 20.NOV.2020 12:14:56

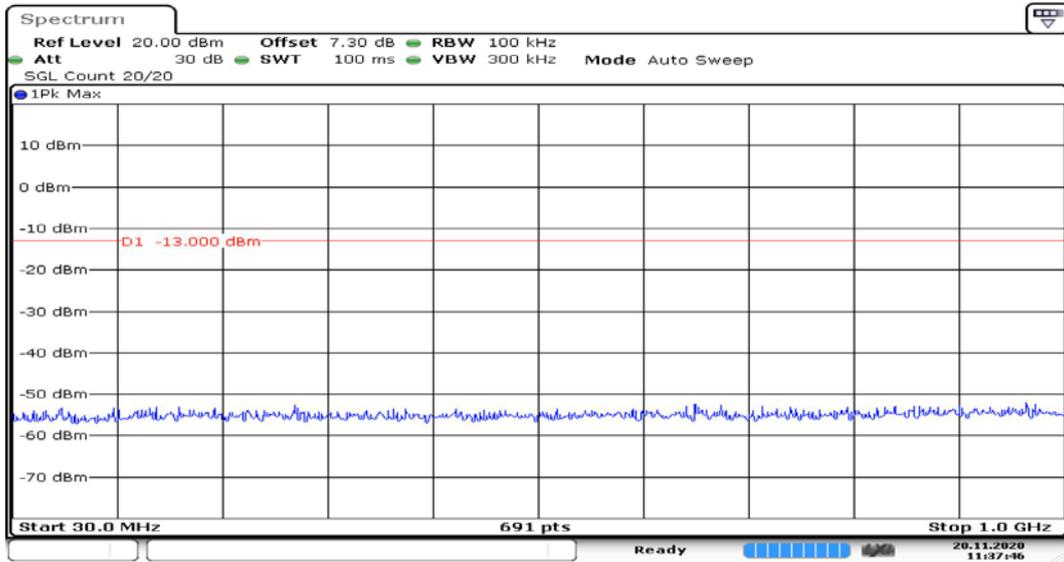
Channel 661



Date: 20.NOV.2020 12:15:52

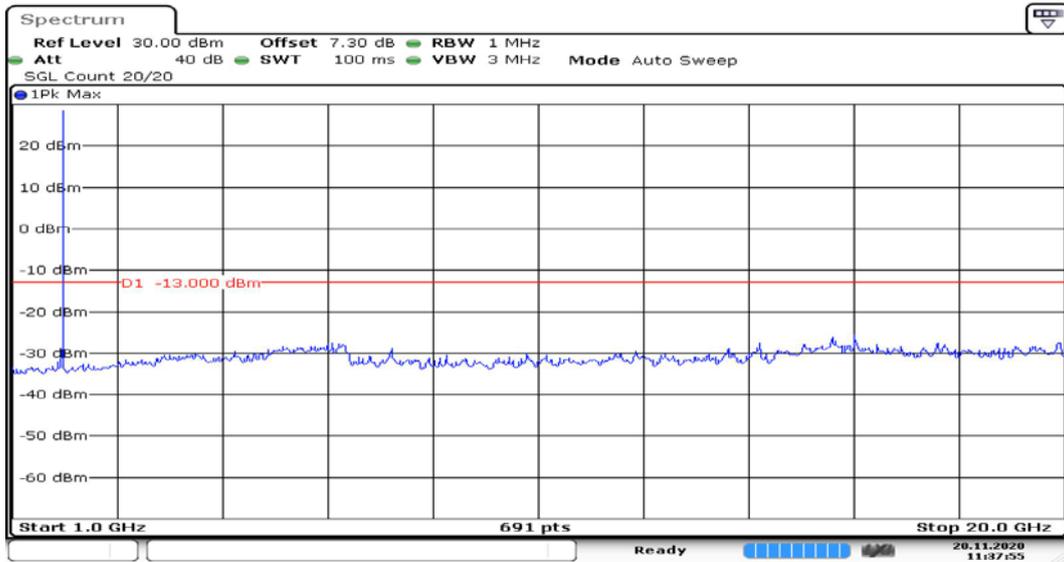
Channel 810

Spurious Emissions at antenna terminal
 PCS1900
 GSM MODE:



Date: 20.NOV.2020 11:37:46

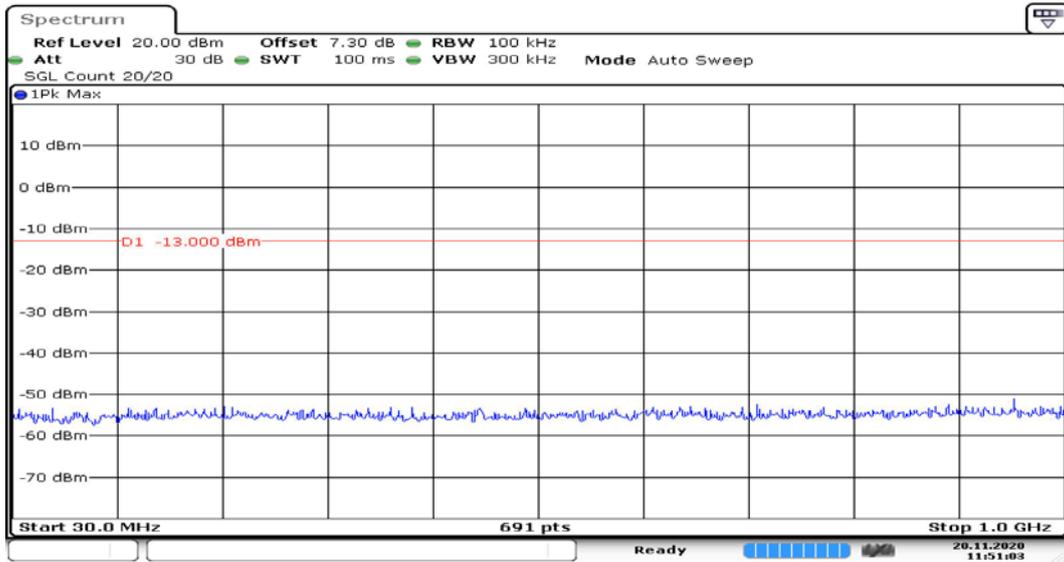
Channel 661 30MHz~1GHz



Date: 20.NOV.2020 11:37:56

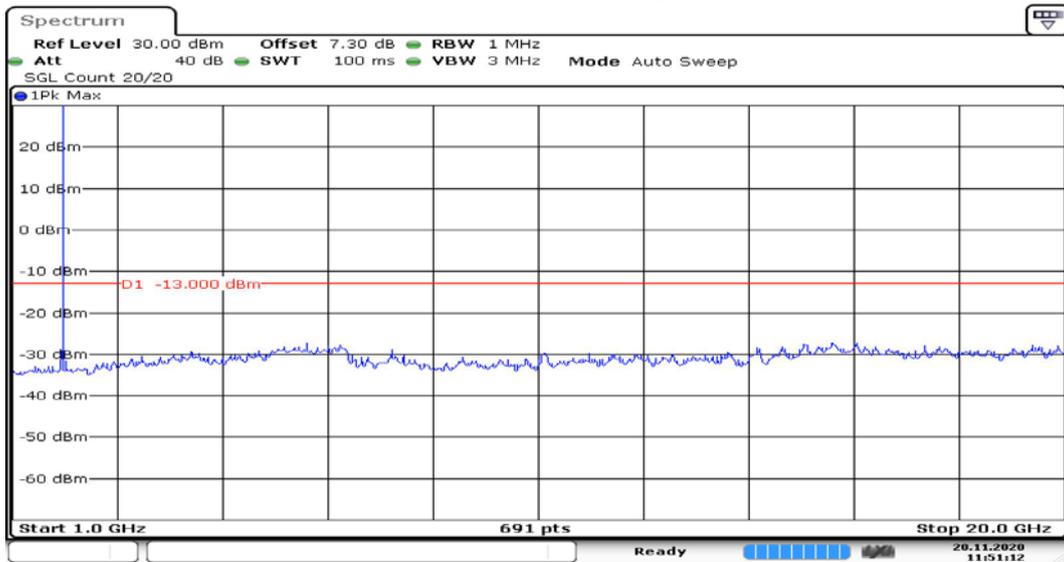
Channel 661 1GHz~20GHz

GPRS MODE:



Date: 20.NOV.2020 11:51:03

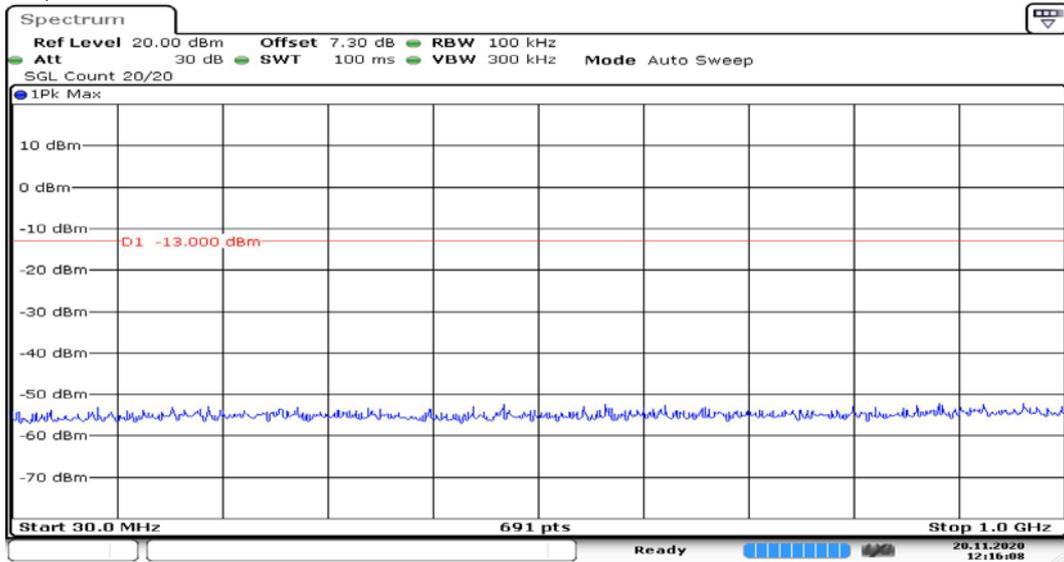
Channel 661 30MHz~1GHz



Date: 20.NOV.2020 11:51:12

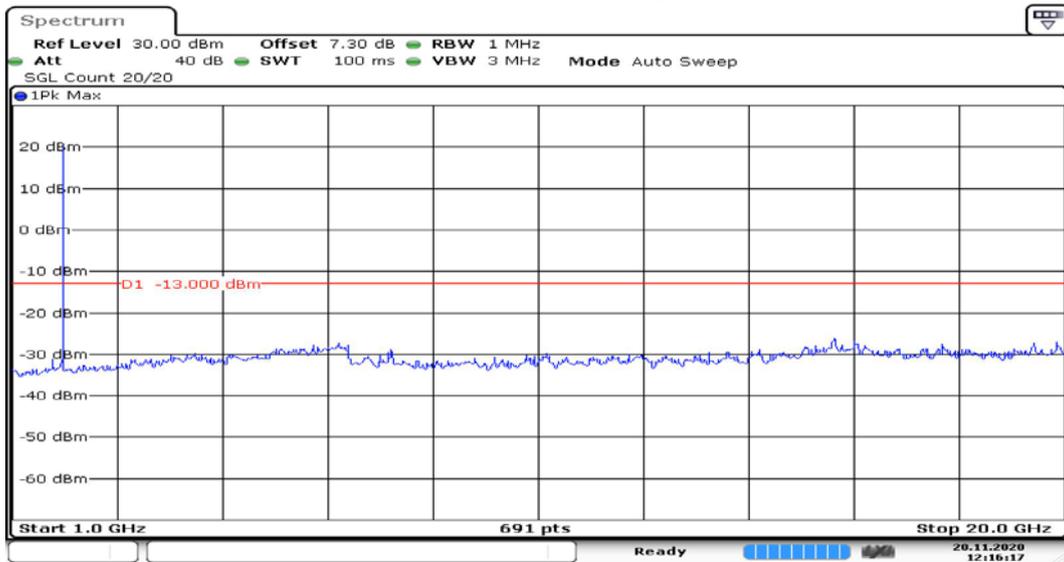
Channel 661 1GHz~20GHz

EDGE (8PSK) MODE:



Date: 20.NOV.2020 12:16:08

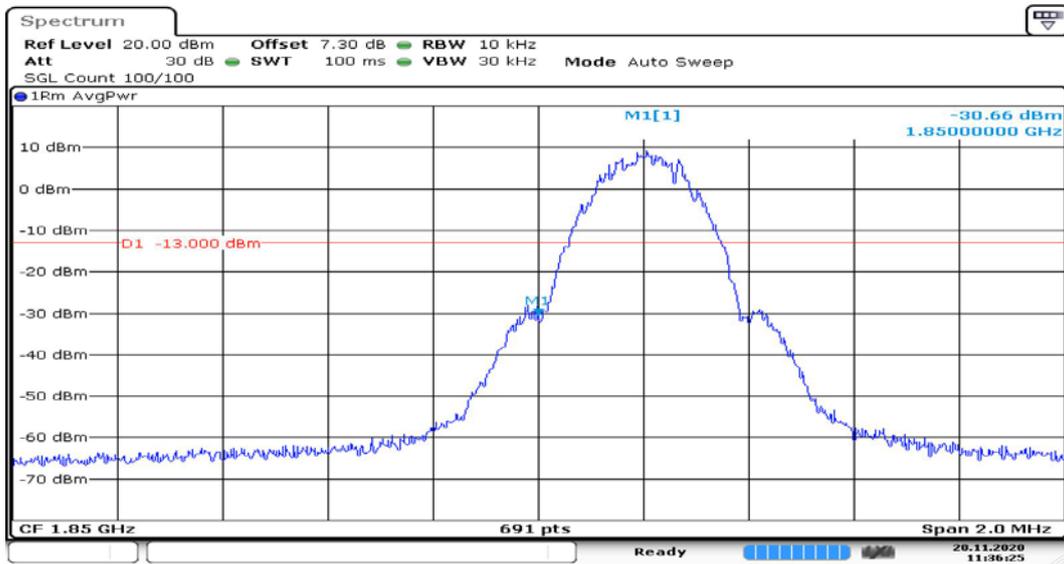
Channel 661 30MHz~1GHz



Date: 20.NOV.2020 12:16:18

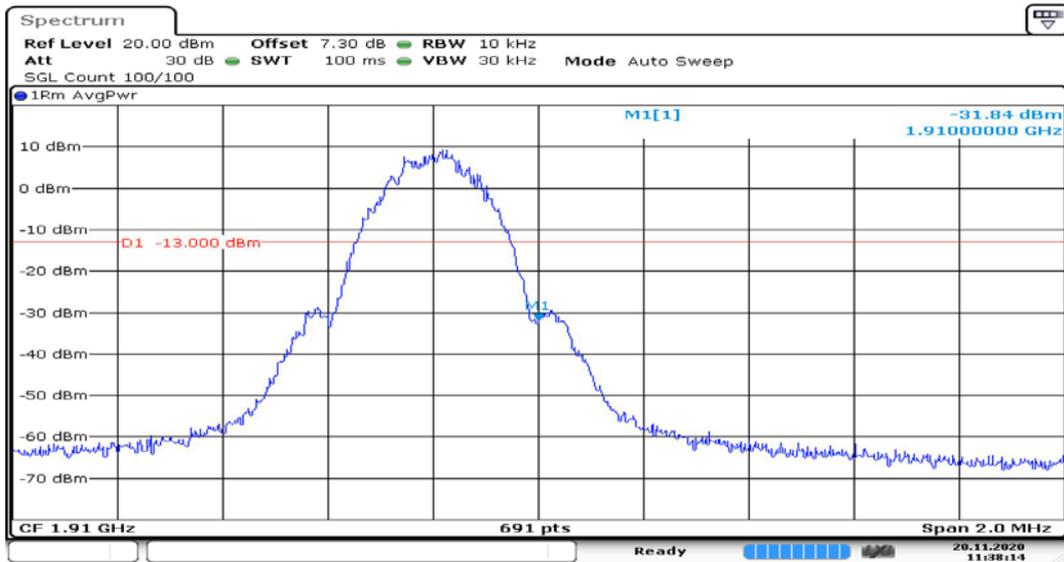
Channel 661 1GHz~20GHz

Band Edges Compliance
 PCS1900
 GSM MODE:



Date: 20. NOV. 2020 11:36:25

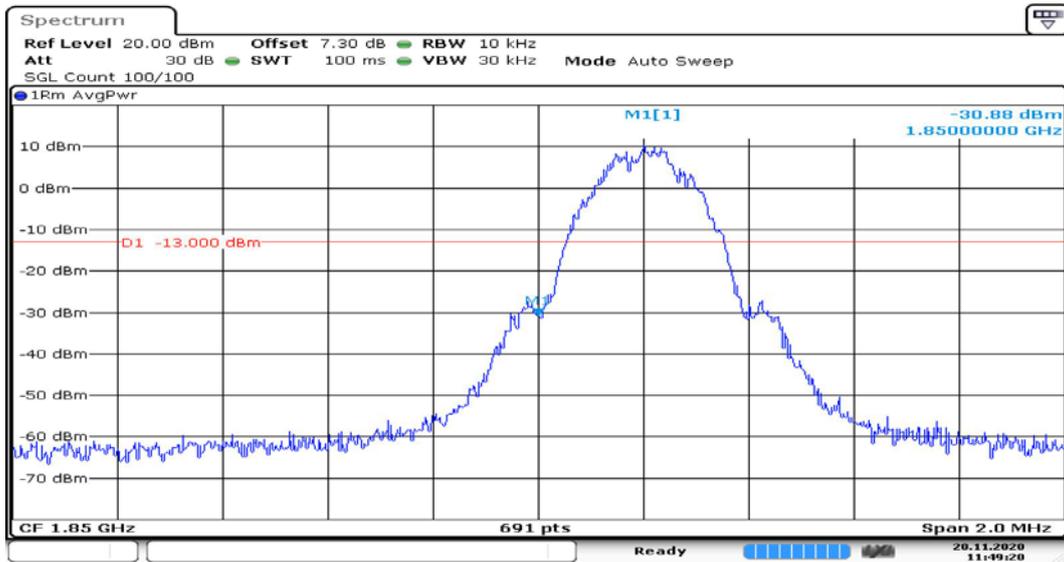
Channel 512



Date: 20. NOV. 2020 11:38:15

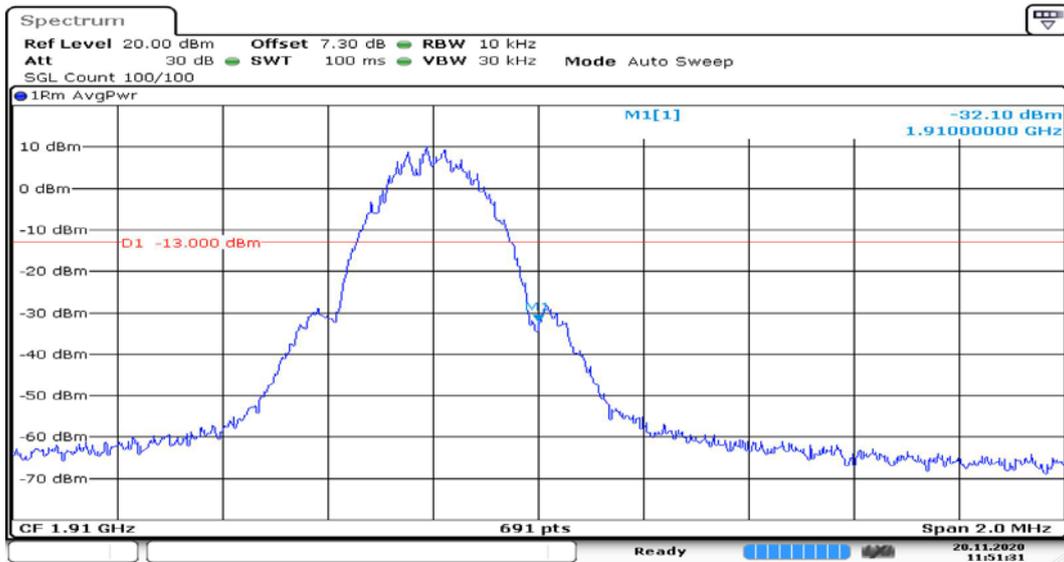
Channel 810

GPRS MODE:



Date: 20.NOV.2020 11:49:20

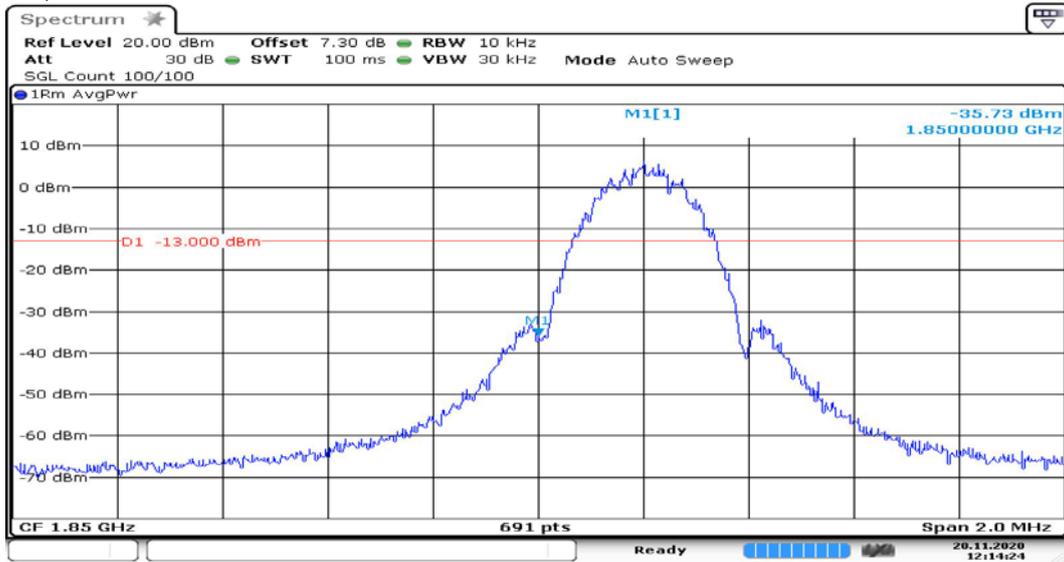
Channel 512



Date: 20.NOV.2020 11:51:31

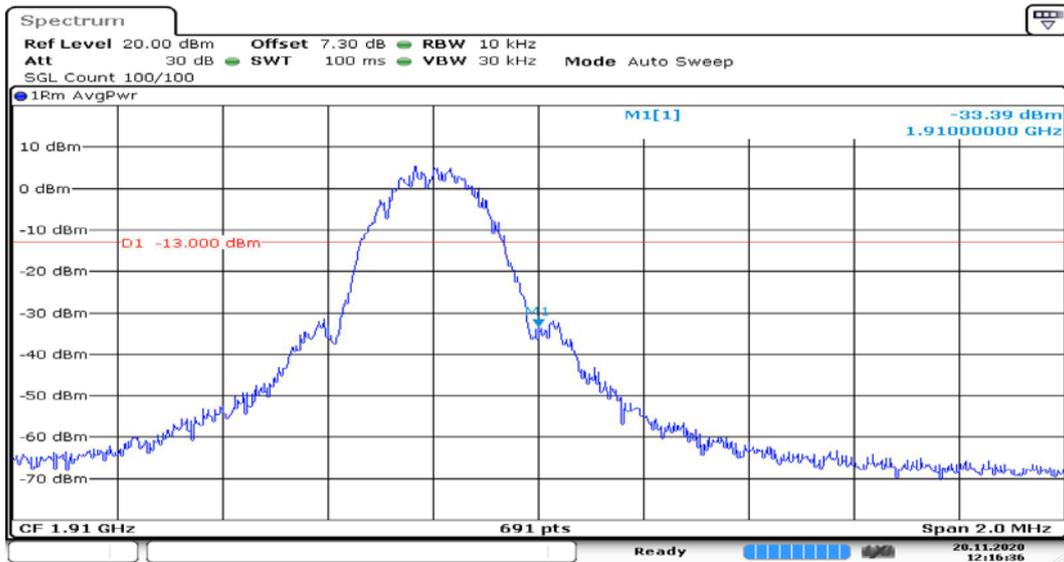
Channel 810

EDGE (8PSK) MODE:



Date: 20.NOV.2020 12:14:25

Channel 512



Date: 20.NOV.2020 12:16:36

Channel 810

Frequency Stability
PCS1900
GSM MODE:

| Temperature(°C) | Test Result (ppm)@NV | | |
|-----------------|----------------------|-------------|-------------|
| | Channel 512 | Channel 661 | Channel 810 |
| -10 | -0.002 | -0.003 | 0.002 |
| 0 | -0.002 | -0.002 | 0.002 |
| +10 | -0.003 | -0.004 | 0.002 |
| +20 | 0.000 | 0.000 | 0.000 |
| +30 | 0.000 | -0.003 | 0.002 |
| +40 | 0.000 | -0.005 | 0.003 |
| +50 | -0.003 | -0.004 | 0.000 |
| +55 | -0.001 | 0.002 | -0.003 |
| Voltage | Test Result (ppm)@NT | | |
| | Channel 512 | Channel 661 | Channel 810 |
| LV | 0.001 | -0.004 | 0.000 |
| HV | 0.000 | -0.002 | 0.000 |

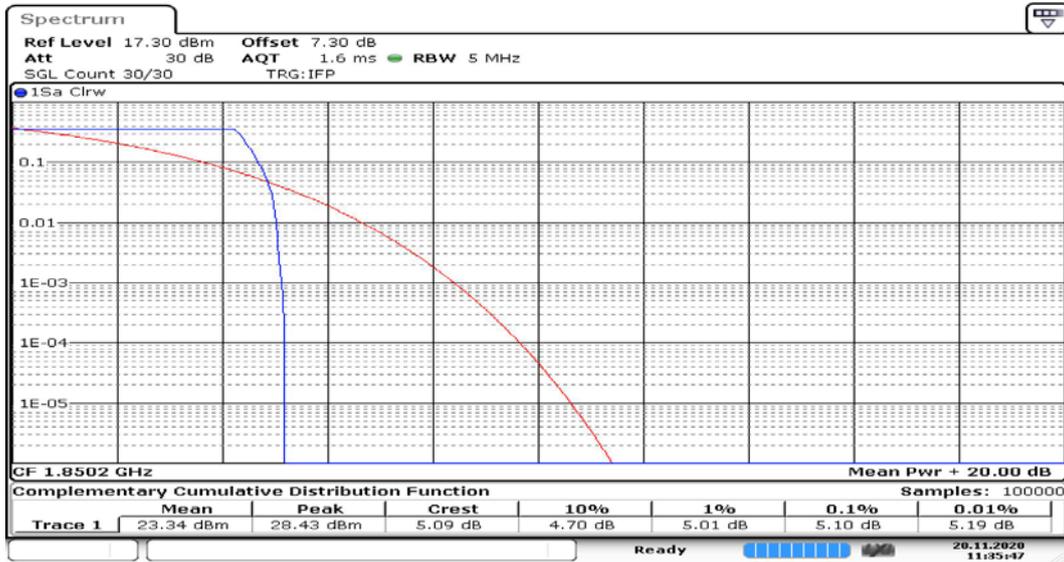
GPRS MODE:

| Temperature(°C) | Test Result (ppm)@NV | | |
|-----------------|----------------------|-------------|-------------|
| | Channel 512 | Channel 661 | Channel 810 |
| -10 | 0.002 | -0.001 | -0.003 |
| 0 | -0.002 | -0.001 | -0.002 |
| +10 | 0.001 | -0.003 | 0.001 |
| +20 | 0.000 | 0.000 | 0.000 |
| +30 | 0.000 | -0.001 | 0.000 |
| +40 | -0.003 | -0.004 | -0.002 |
| +50 | -0.001 | -0.002 | 0.000 |
| +55 | -0.001 | 0.001 | 0.002 |
| Voltage | Test Result (ppm)@NT | | |
| | Channel 512 | Channel 661 | Channel 810 |
| LV | -0.002 | -0.002 | -0.002 |
| HV | -0.001 | -0.001 | 0.001 |

EDGE (8PSK) MODE:

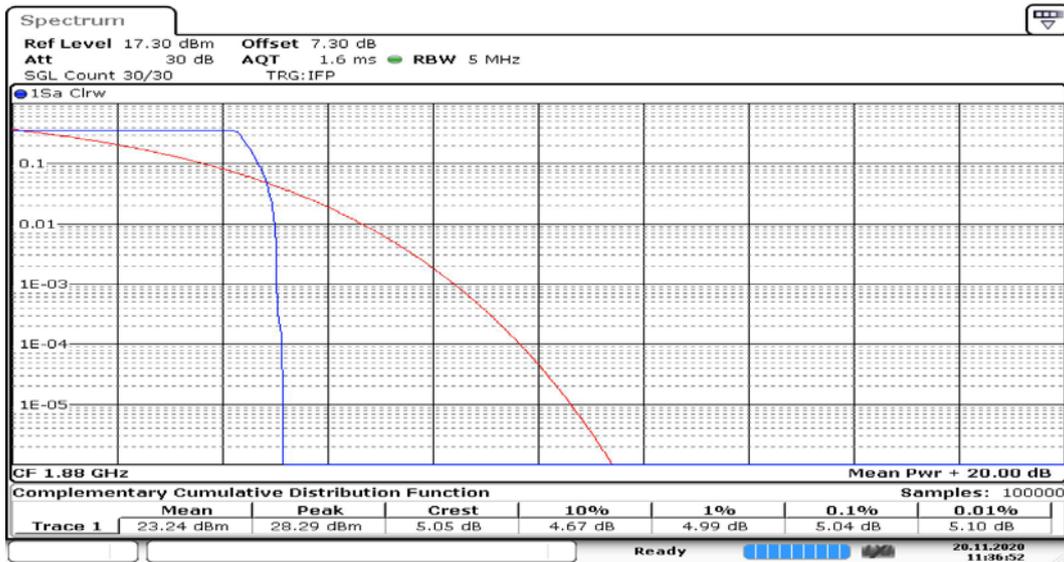
| Temperature(°C) | Test Result (ppm)@NV | | |
|-----------------|----------------------|-------------|-------------|
| | Channel 512 | Channel 661 | Channel 810 |
| -10 | -0.002 | -0.011 | -0.008 |
| 0 | 0.002 | -0.004 | 0.001 |
| +10 | -0.004 | -0.003 | -0.014 |
| +20 | 0.000 | 0.000 | 0.000 |
| +30 | 0.002 | -0.001 | -0.004 |
| +40 | 0.002 | -0.004 | 0.000 |
| +50 | -0.012 | -0.007 | -0.002 |
| +55 | -0.001 | 0.002 | -0.003 |
| Voltage | Test Result (ppm)@NT | | |
| | Channel 512 | Channel 661 | Channel 810 |
| LV | 0.003 | -0.014 | -0.001 |
| HV | -0.001 | -0.013 | 0.001 |

Peak-Average Ratio
PCS1900
GSM MODE:



Date: 20. NOV. 2020 11:35:48

Channel 512



Date: 20. NOV. 2020 11:36:52

Channel 661