# TEST REPORT

## No. I20Z70029-EMC02

**for**

**Samsung Electronics. Co., Ltd.**

**Mobile phone**

**Model Name: SM-A015T1**

**FCC ID: ZCASMA015T1**

**with**

**Hardware Version: REV3.0**

**Software Version: A015T1.001 (A015T1UVE1ATC1)**

**Issued Date: 2020-03-16**

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S.Government.

**Test Laboratory:**

CTTL-Telecommunication Technology Labs, CAICT

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# REPORT HISTORY

| Report Number | Revision | Description | Issue Date |
|---|---|---|---|
| I20Z70029-EMC02 | Rev.0 | 1st edition | 2020-03-16 |
| I20Z70029-EMC02 | Rev.1 | 2nd edition | 2020-03-16 |

Note: the latest revision of the test report supersedes all previous version.

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# 1. Test Laboratory

## 1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2005 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (CN0066). The detail accreditation scope can be found on NVLAP website.

# 2. Test Laboratory

## 2.1. Testing Location

**CTTL(huayuan North Road)**

Address: No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China100191

## 2.2. Testing Environment

Normal Temperature: 15-35° C

Relative Humidity: 20-75%

## 2.3. Project data

Testing Start Date: 2019-11-11

Testing End Date: 2020-02-28

## 2.4. Signature

**Wang Junqing**

**(Prepared this test report)**

**Zhang Ying**

**(Reviewed this test report)**

**Liu Baodian**

**Deputy Director of the laboratory**

**(Approved this test report)**

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# 3. Client Information

## 3.1. Applicant Information

| | |
|---|---|
| Company Name: | Samsung Electronics. Co., Ltd. |
| Address: | 19 Chapin Rd.,Building D Pine Brook, NJ 07058 |
| Contact Person | Jenni Chun |
| Contact Email | j1.chun@samsung.com |
| Telephone: | +1-201-937-4203 |
| Fax: | / |

## 3.2. Manufacturer Information

| | |
|---|---|
| Company Name: | Samsung Electronics. Co., Ltd. |
| Address: | Samsung R5, Maetan dong 129, Samsung ro Youngtong gu, Suwon city 443 742, Korea |
| Contact Person | JP KIM |
| Contact Email | jp426.kim@samsung.com |
| Telephone: | +82-10-4376-0326 |
| Fax: | / |

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# 4. Equipment Under Test (EUT) and Ancillary Equipment (AE)

## 4.1. About EUT

| | |
|---|---|
| Description | Mobile phone |
| Model Name | SM-A015T1 |
| FCC ID | ZCASMA015T1 |
| Extreme vol. Limits | 3.6VDC to 4.2VDC (nominal: 3.85VDC) |

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL,Telecommunication Technology Labs, CAICT.

## 4.2. Internal Identification of EUT used during the test

| EUT ID* | SN or IMEI | HW Version | SW Version |
|---|---|---|---|
| EUT1 | 351765110000166 | REV3.0 | A015T1.001 (A015T1UVE1ATC1) |
| EUT2 | 351767110012936 | REV3.0 | A015T1.001 (A015T1UVE1ATC1) |

*EUT ID: is used to identify the test sample in the lab internally.

## 4.3. Internal Identification of AE used during the test

| AE ID* | Description | SN | Remarks |
|---|---|---|---|
| AE1 | Battery | / | / |
| AE3 | Charger | / | 315 |
| AE4 | Charger | / | 929 |
| AE5 | Charger | / | 941 |
| AE6 | USB Cable | / | / |
| AE7 | Headset | / | / |
| AE10 | OTG Cable | / | / |

AE1

| | |
|---|---|
| Model | QL1695 |
| Manufacturer | Ningde Amperex Technology Limited |
| Capacitance | / |
| Nominal voltage | 3.85 V |

AE3

| | |
|---|---|
| Model | EP-TA50JWE |
| Manufacturer | DongYang E&P Inc. |
| Length of cable | / |

AE4

| | |
|---|---|
| Model | EP-TA50JWE |
| Manufacturer | HAEM Co.,Ltd |
| Length of cable | / |

AE5

| | |
|---|---|
| Model | EP-TA50JWE |
| Manufacturer | RF Tech |

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| | |
|---|---|
| Length of cable | / |
| AE6 | |
| Model | EP-DR140AWE |
| Manufacturer | LUXSHARE-ICT (VIETNAM) LIMITED |
| Length of cable | / |
| AE7 | |
| Model | / |
| Manufacturer | / |
| Length of cable | / |
| AE10 | |
| Model | / |
| Manufacturer | / |
| Length of cable | / |

*AE ID: is used to identify the test sample in the lab internally.
Note: The USB cables are shielded.

## 4.4. EUT set-ups

| EUT set-up No. | Combination of EUT and AE | Remarks |
|---|---|---|
| Set.8 | EUT1+ AE1/AE2+ AE4+ AE6 | Charger |
| Set.81 | EUT2+ AE1/AE2+ AE4+ AE6 | Charger |

Note: Mobile phone SM-A015T1 manufactured by Samsung Electronics. Co., Ltd. is a variant model based on SM-A015V for conformance test. According to the declaration of changes, adding the tests for set.81 as follow:

| Test Item | Mode |
|---|---|
| Radiated Emission | LTE band 71 |

Other results are cited from the initial model. The report number for initial model is I19Z70303-EMC02.

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# 5. Reference Documents

## 5.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

| Reference | Title | Version |
|---|---|---|
| FCC Part 15, Subpart B | Radio frequency devices - Unintentional Radiators | 2016 |
| ANSI C63.4 | American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz | 2014 |

Note: The test methods have no deviation with standards.

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# 6. LABORATORY ENVIRONMENT

**Semi-anechoic chamber SAC-1** (23 meters×17meters×10meters) did not exceed following limits along the EMC testing:

| | |
|---|---|
| Temperature | Min. = 15 ˚C, Max. = 35 ˚C |
| Relative humidity | Min. = 15 %, Max. = 75 % |
| Shielding effectiveness | 0.014MHz-1MHz, >60dB;<br>1MHz - 1000MHz, >90dB. |
| Electrical insulation | > 2 MΩ |
| Ground system resistance | < 4 Ω |
| Normalised site attenuation (NSA) | < ±4 dB, 10 m distance |
| Site voltage standing-wave ratio ($S_{VSWR}$) | Between 0 and 6 dB, from 1GHz to 6GHz |
| Uniformity of field strength | Between 0 and 6 dB, from 80 to 3000 MHz |

**Shielded room** did not exceed following limits along the EMC testing:

| | |
|---|---|
| Temperature | Min. = 15 ˚C, Max. = 35 ˚C |
| Relative humidity | Min. = 20 %, Max. = 75 % |
| Shielding effectiveness | 0.014MHz-1MHz, >60dB;<br>1MHz－1000MHz, >90dB. |
| Electrical insulation | > 2 MΩ |
| Ground system resistance | < 4 Ω |

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# 7. SUMMARY OF TEST RESULTS

| Abbreviations used in this clause: | | |
|---|---|---|
| Verdict Column | P | Pass |
| | NA | Not applicable |
| | F | Fail |

| Items | Test Name | Clause in FCC rules | Section in this report | Verdict | Test Location |
|---|---|---|---|---|---|
| 1 | Radiated Emission | 15.109(a) | B.1 | P | **CTTL(huayuan North Road)** |

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## 8. Test Equipments Utilized

| NO. | Description | TYPE | SERIES NUMBER | MANUFACTURE | CAL DUE DATE | CALIBRATION INTERVAL |
|---|---|---|---|---|---|---|
| 1 | Test Receiver | ESU26 | 100235 | R&S | 2020-03-01 | 1 Year |
| 2 | Universal Radio Communication Tester | CMW500 | 150344 | R&S | 2020-11-17 | 1 year |
| 3 | Universal Radio Communication Tester | CMW500 | 116588 | R&S | 2020-12-26 | 1 year |
| 4 | EMI Antenna | VULB 9163 | 9163-1222 | Schwarzbeck | 2020-03-14 | 1 year |

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# ANNEX A: MEASUREMENT RESULTS

**A.1 Radiated Emission**

**Reference**

FCC: CFR Part 15.109(a).

**A.1.1 Method of measurement**

The field strength of radiated emissions from the unintentional radiator at distances of 10 meters(for 30MHz-1GHz). Tested in accordance with the procedures of ANSI C63.4 – 2014, section 8.3.

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3/10 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

**A.1.2 EUT Operating Mode**

The MS is operating in the charging mode and transmitter receiver mode.

**A.1.3 Measurement Limit**

| Frequency range (MHz) | Field strength limit (μV/m) | | |
|---|---|---|---|
| | Quasi-peak | Average | Peak |
| 30-88 | 100 | | |
| 88-216 | 150 | | |
| 216-960 | 200 | | |
| 960-1000 | 500 | | |
| >1000 | | 500 | 5000 |

Note: the above limit is for 3 meters test distance. 10 meters' limit is got by converting.

**A.1.4 Test Condition**

| Frequency range (MHz) | RBW/VBW | Sweep Time (s) | Detector |
|---|---|---|---|
| 30-1000 | 120kHz (IF Bandwidth) | 5 | Peak/Quasi-peak |

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### A.1.5 Measurement Results

A "reference path loss" is established and the $A_{Rpl}$ is the attenuation of “reference path loss”. It includes the antenna factor of receive antenna and the path loss.

The measurement results are obtained as described below:

Result = $P_{Mea} + A_{Rpl} = P_{Mea} + G_A + G_{PL}$

Where

$G_A$: Antenna factor of receive antenna

$G_{PL}$: Path Loss

$P_{Mea}$: Measurement result on receiver.

Measurement uncertainty (worst case): $U$ = 5.44 dB, $k$=2.

**Measurement Results below 1GHz:**

**Charging Mode, GSM850MHz, idle, channel 128**

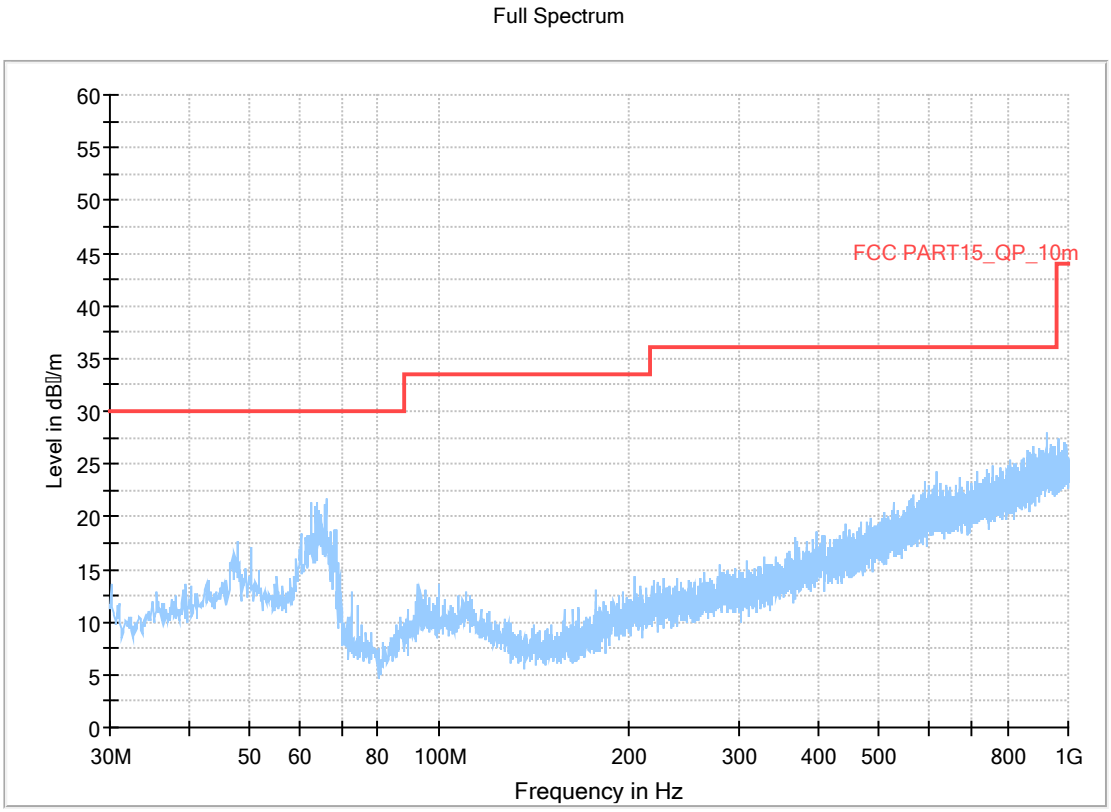


**Fig A.1 Radiated Emission from 30MHz to 1GHz, GSM850MHz, idle, channel 128**

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**Charging Mode, GSM850MHz, idle, channel 190**

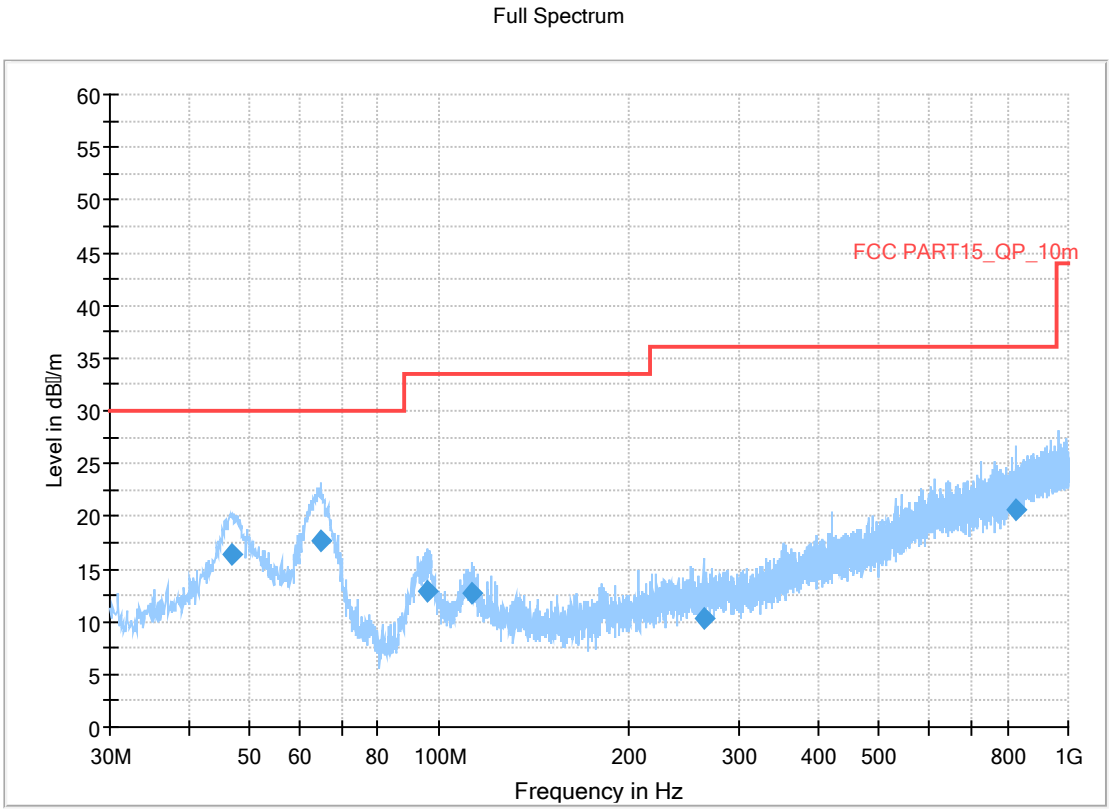


**Fig A.2 Radiated Emission from 30MHz to 1GHz, GSM850MHz, idle, channel 190**

## Final_Result

| Frequency (MHz) | QuasiPeak (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|---|---|---|---|---|---|---|---|---|
| 46.846000 | 16.37 | 30.00 | 13.63 | 1000.0 | 120.000 | 125.0 | V | 263.0 |
| 65.077000 | 17.71 | 30.00 | 12.29 | 1000.0 | 120.000 | 104.0 | V | 183.0 |
| 95.905000 | 12.80 | 33.50 | 20.72 | 1000.0 | 120.000 | 179.0 | V | 261.0 |
| 112.662000 | 12.62 | 33.50 | 20.90 | 1000.0 | 120.000 | 125.0 | V | 255.0 |
| 263.271000 | 10.28 | 36.00 | 25.74 | 1000.0 | 120.000 | 125.0 | V | 90.0 |
| 824.675000 | 20.69 | 36.00 | 15.33 | 1000.0 | 120.000 | 125.0 | V | -30.0 |

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**Charging Mode, GSM850MHz, idle, channel 251**

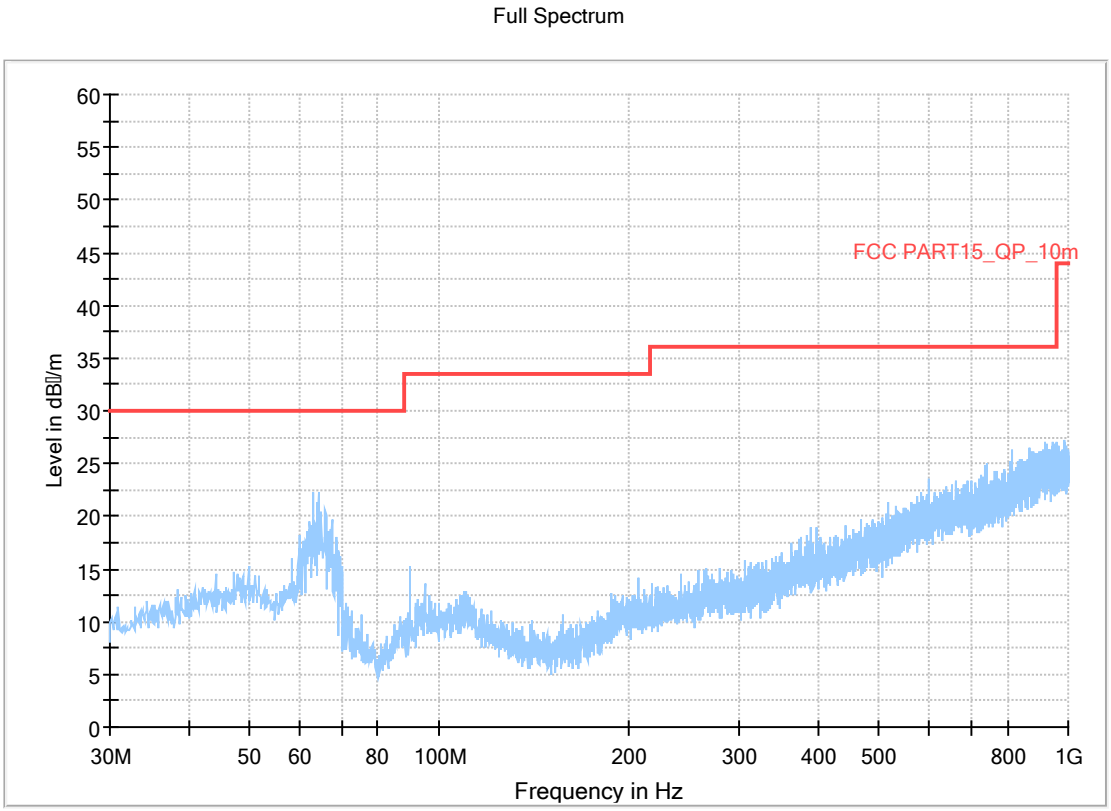


**Fig A.3 Radiated Emission from 30MHz to 1GHz, GSM850MHz, idle, channel 251**

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**Charging Mode, WCDMA850MHz, idle, channel 4132**

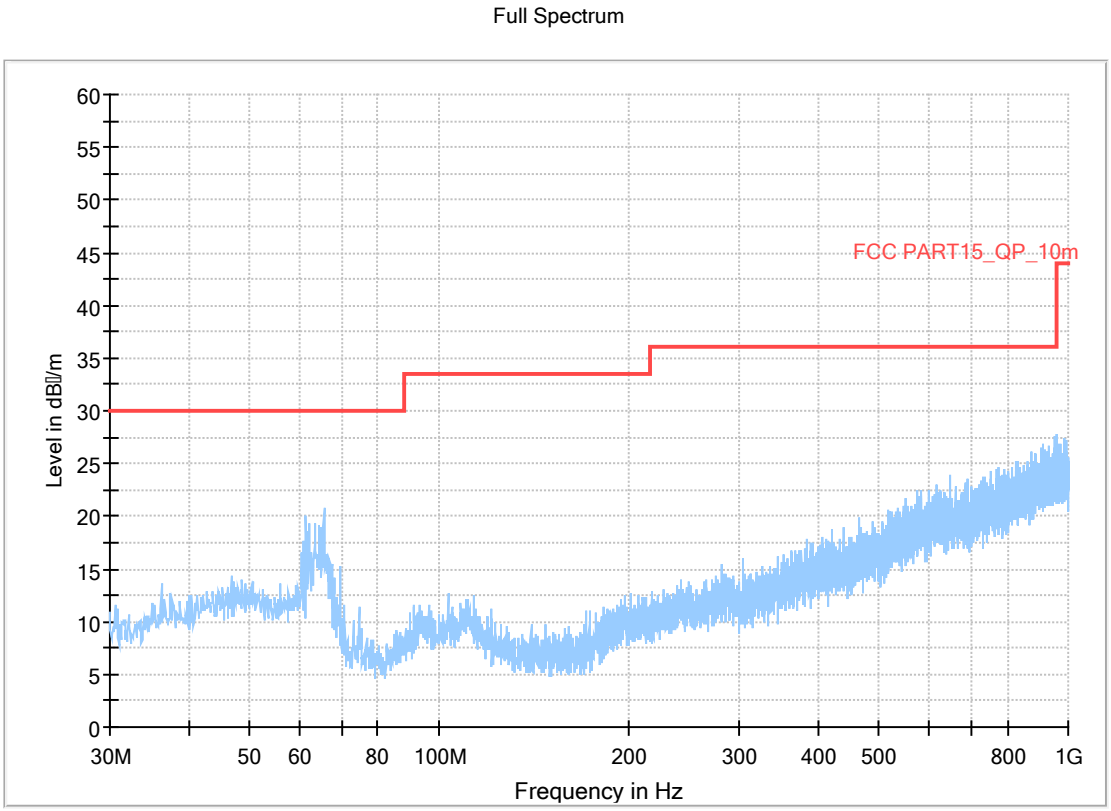


**Fig A.4 Radiated Emission from 30MHz to 1GHz, WCDMA850MHz, idle, channel 4132**

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**Charging Mode, WCDMA850MHz, idle, channel 4183**

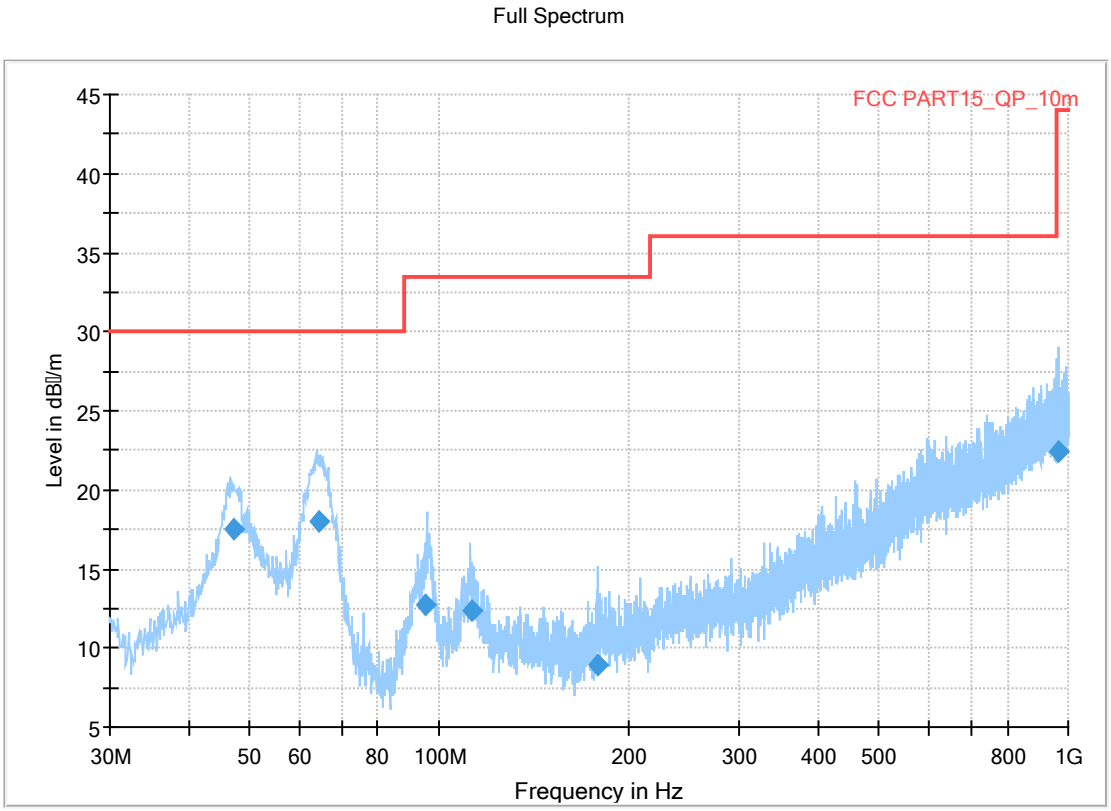


**Fig A.5 Radiated Emission from 30MHz to 1GHz, WCDMA850MHz, idle, channel 4183**

## Final_Result

| Frequency (MHz) | QuasiPeak (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|---|---|---|---|---|---|---|---|---|
| 47.261000 | 17.47 | 30.00 | 12.53 | 1000.0 | 120.000 | 111.0 | V | -5.0 |
| 64.333000 | 18.04 | 30.00 | 11.96 | 1000.0 | 120.000 | 225.0 | V | -12.0 |
| 95.152000 | 12.68 | 33.50 | 20.84 | 1000.0 | 120.000 | 102.0 | V | 287.0 |
| 112.893000 | 12.38 | 33.50 | 21.14 | 1000.0 | 120.000 | 125.0 | V | 265.0 |
| 178.267000 | 8.87 | 33.50 | 24.65 | 1000.0 | 120.000 | 119.0 | V | 8.0 |
| 962.794000 | 22.43 | 44.00 | 21.55 | 1000.0 | 120.000 | 325.0 | V | 168.0 |

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**Charging Mode, WCDMA850MHz, idle, channel 4233**

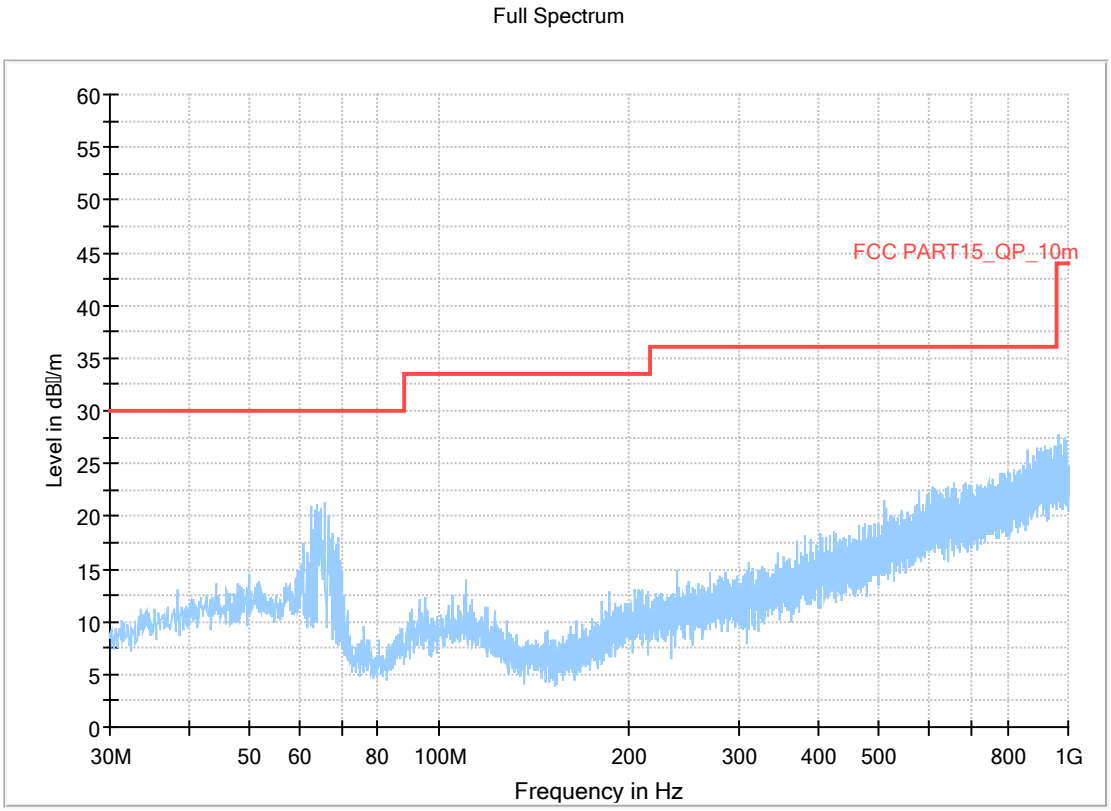


**Fig A.6 Radiated Emission from 30MHz to 1GHz, WCDMA850MHz, idle, channel 4233**

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**Charging Mode, LTE band 5, idle, channel 20407**

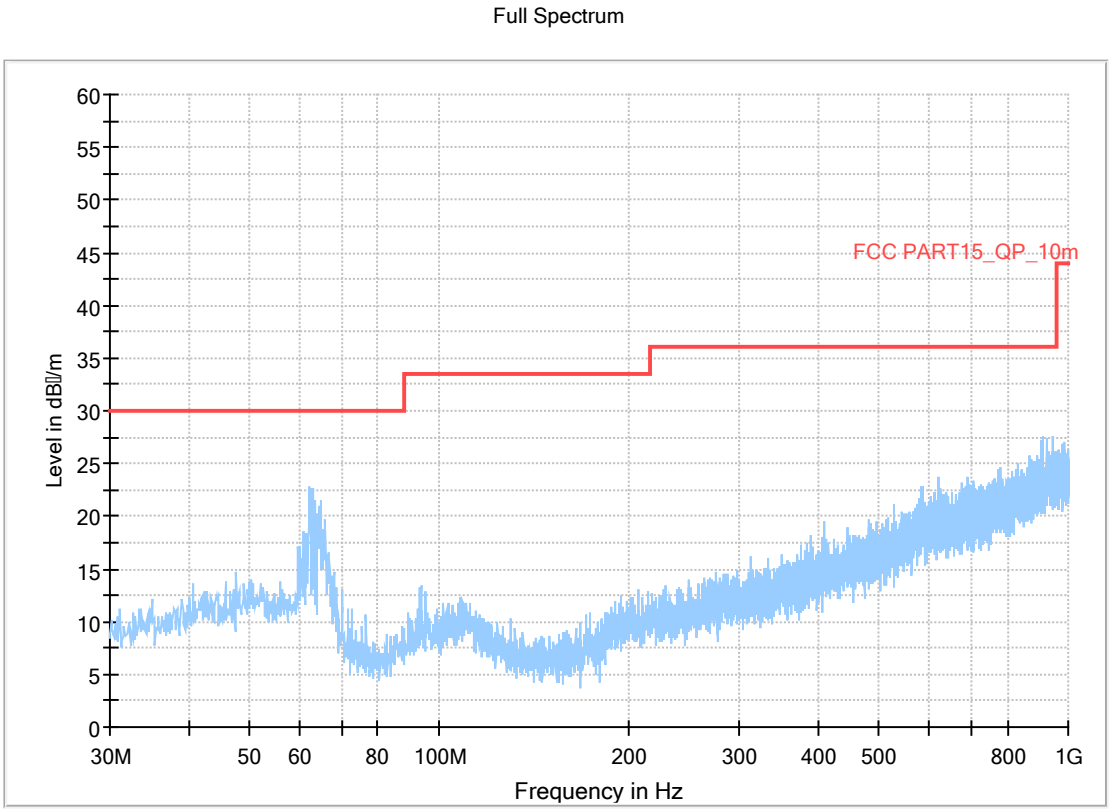


**Fig A.7 Radiated Emission from 30MHz to 1GHz, LTE band 5, idle, channel 20407**

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**Charging Mode, LTE band 5, idle, channel 20525**

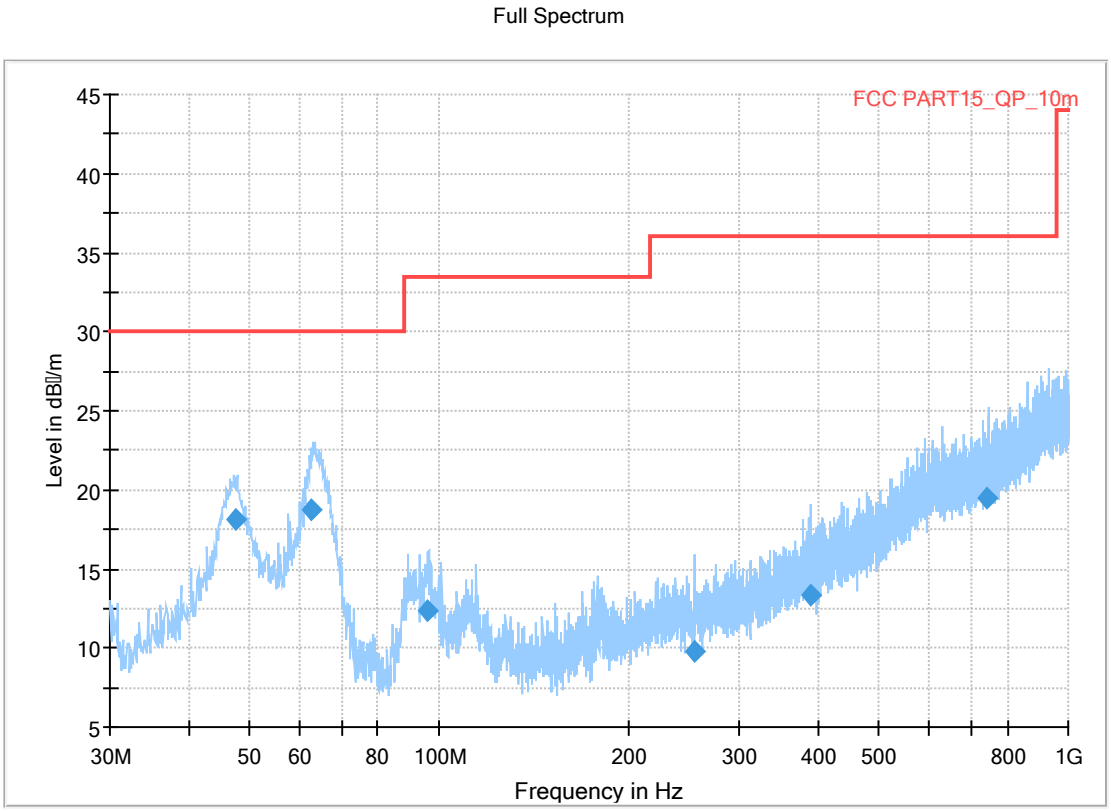


**Fig A.8 Radiated Emission from 30MHz to 1GHz, LTE band 5, idle, channel 20525**

## Final_Result

| Frequency (MHz) | QuasiPeak (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|---|---|---|---|---|---|---|---|---|
| 47.428000 | 18.13 | 30.00 | 11.87 | 1000.0 | 120.000 | 102.0 | V | 151.0 |
| 62.814000 | 18.72 | 30.00 | 11.28 | 1000.0 | 120.000 | 102.0 | V | 151.0 |
| 95.734000 | 12.35 | 33.50 | 21.17 | 1000.0 | 120.000 | 125.0 | V | -30.0 |
| 255.534000 | 9.81 | 36.00 | 26.21 | 1000.0 | 120.000 | 288.0 | V | 30.0 |
| 390.240000 | 13.35 | 36.00 | 22.67 | 1000.0 | 120.000 | 282.0 | V | 107.0 |
| 745.029000 | 19.44 | 36.00 | 16.58 | 1000.0 | 120.000 | 125.0 | V | 30.0 |

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**Charging Mode, LTE band 5, idle, channel 20643**

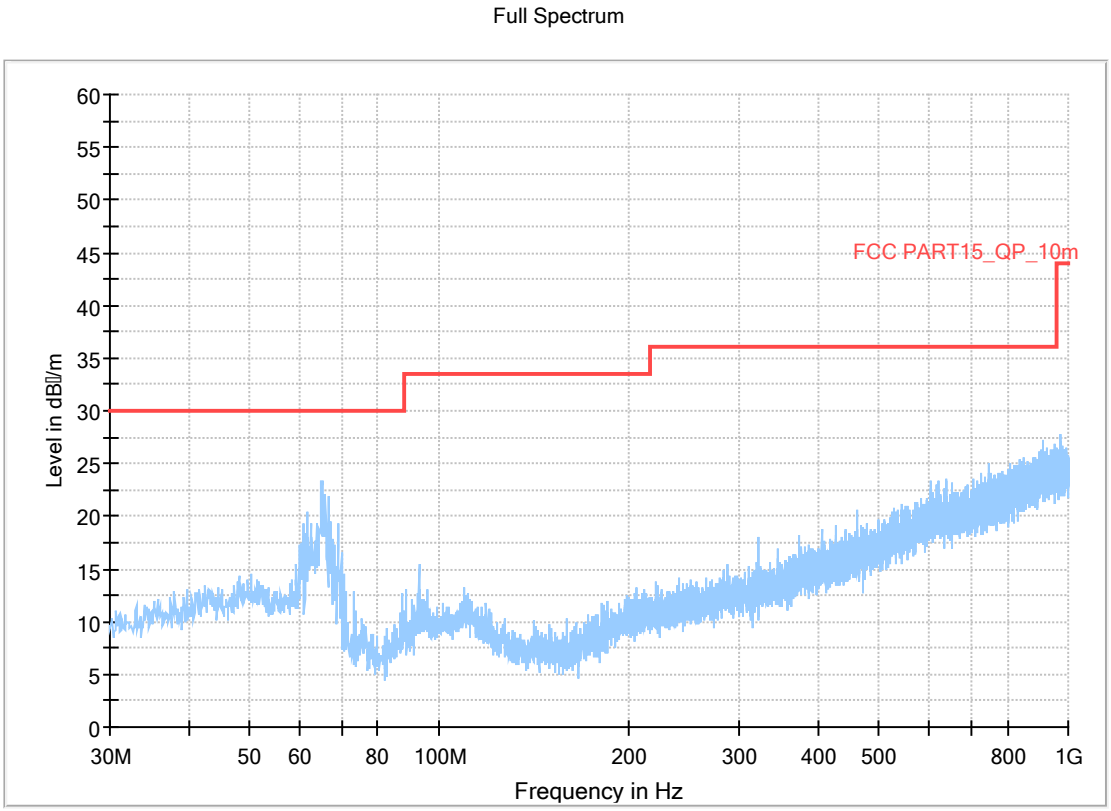


**Fig A.9 Radiated Emission from 30MHz to 1GHz, LTE band 5, idle, channel 20643**

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**Charging Mode, LTE band 71, idle, channel 133147**

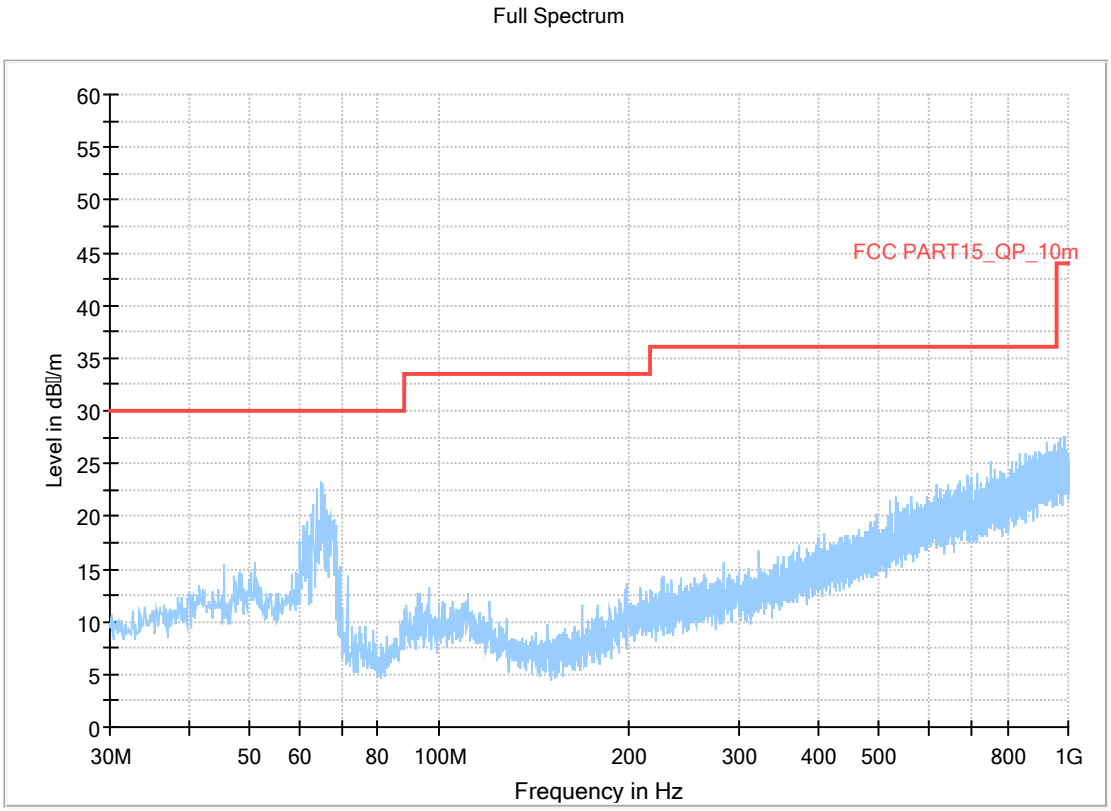


**Fig A.10 Radiated Emission from 30MHz to 1GHz, LTE band 71, idle, channel 133147**

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**Charging Mode, LTE band 71, idle, channel 133297**

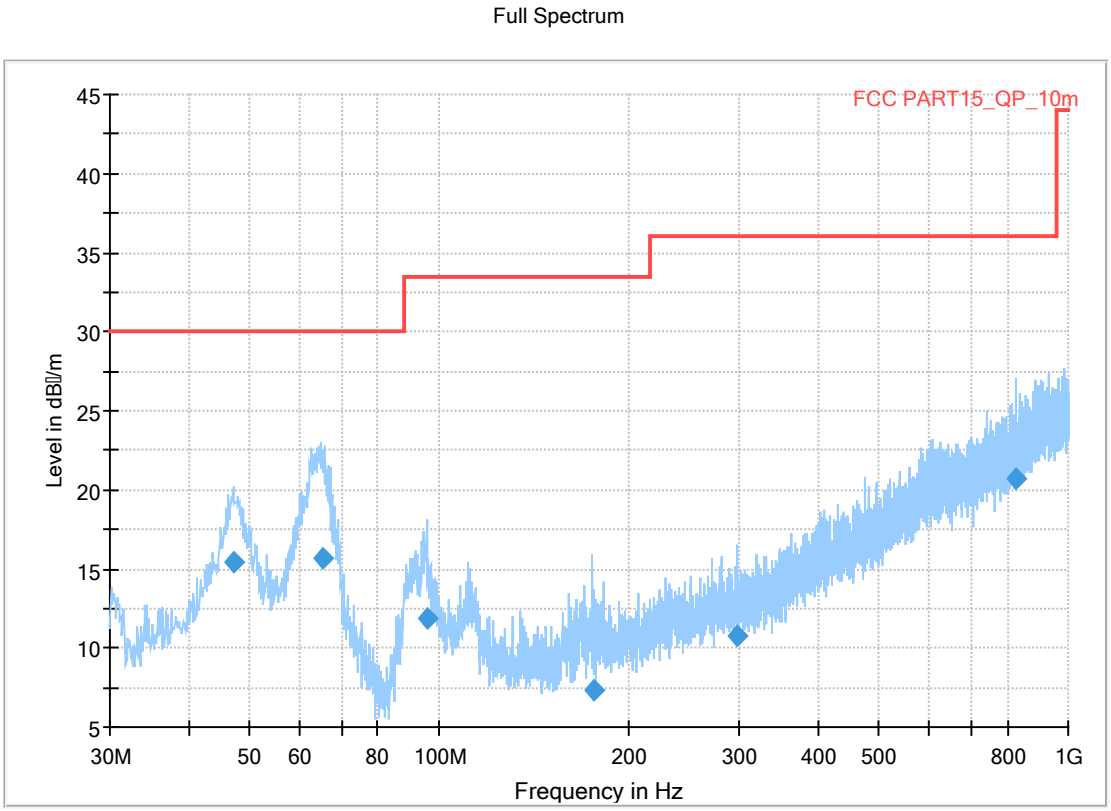


**Fig A.11 Radiated Emission from 30MHz to 1GHz, LTE band 71, idle, channel 133297**

## Final_Result

| Frequency (MHz) | QuasiPeak (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|---|---|---|---|---|---|---|---|---|
| 47.132000 | 15.40 | 30.00 | 14.60 | 1000.0 | 120.000 | 125.0 | V | -30.0 |
| 65.423000 | 15.68 | 30.00 | 14.32 | 1000.0 | 120.000 | 225.0 | V | -2.0 |
| 95.752000 | 11.84 | 33.50 | 21.68 | 1000.0 | 120.000 | 121.0 | V | -17.0 |
| 175.777000 | 7.33 | 33.50 | 26.19 | 1000.0 | 120.000 | 196.0 | V | -29.0 |
| 298.459000 | 10.80 | 36.00 | 25.22 | 1000.0 | 120.000 | 213.0 | V | 115.0 |
| 826.264000 | 20.73 | 36.00 | 15.29 | 1000.0 | 120.000 | 193.0 | V | 240.0 |

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**Charging Mode, LTE band 71, idle, channel 133447**

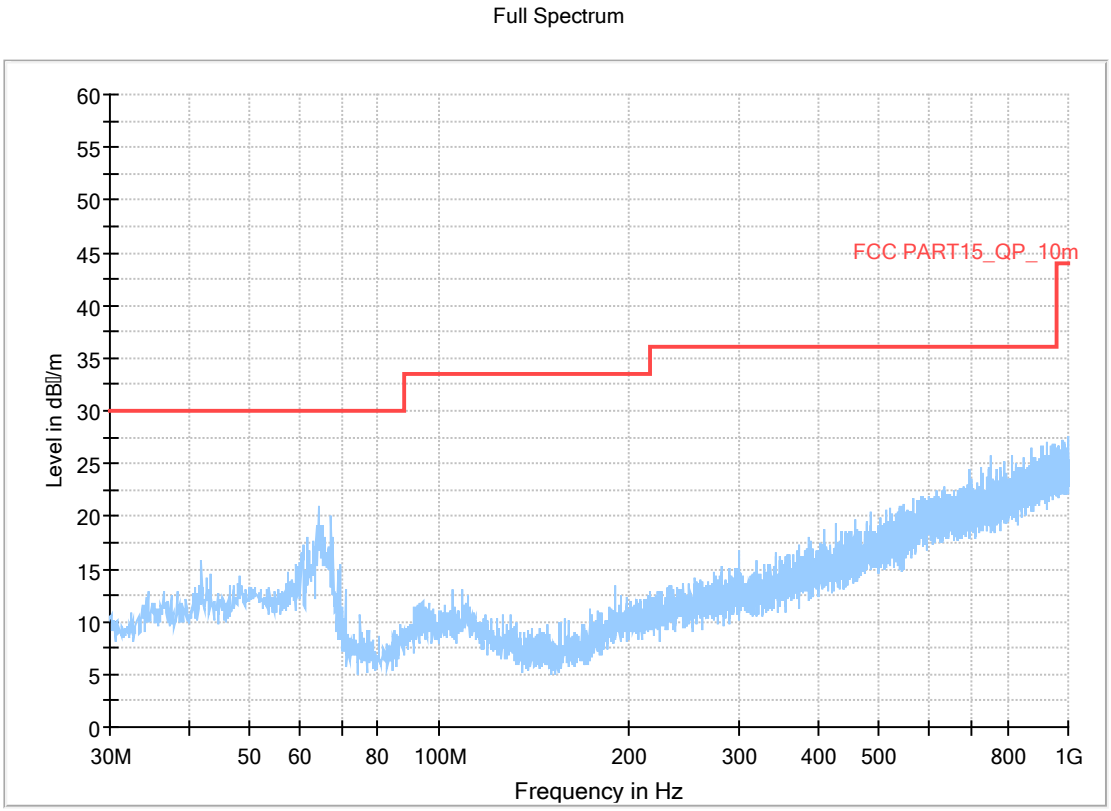


**Fig A.12 Radiated Emission from 30MHz to 1GHz, LTE band 71, idle, channel 133447**

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**Measurement Results above 1GHz:**

**Charging Mode, GSM850MHz, idle, channel 128**

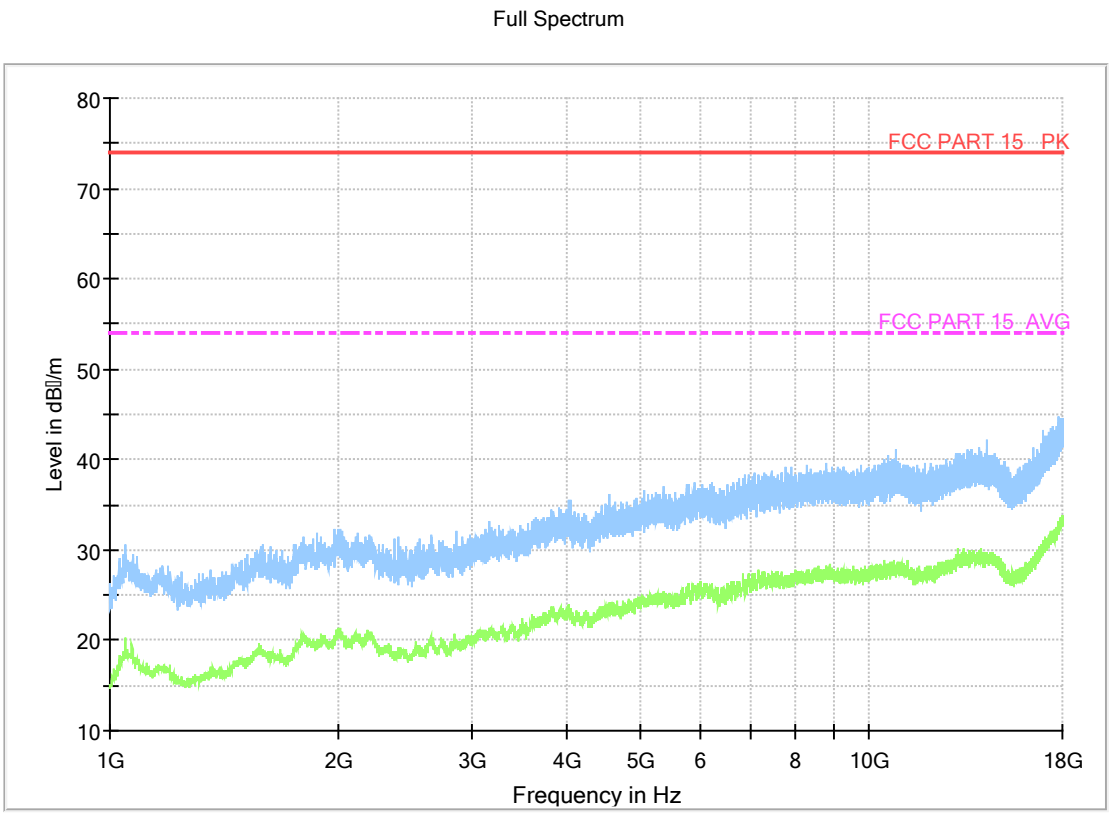


**Fig A.13 Radiated Emission from 1GHz to 18GHz, GSM850MHz, idle, channel 128**

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**Charging Mode, GSM850MHz, idle, channel 190**

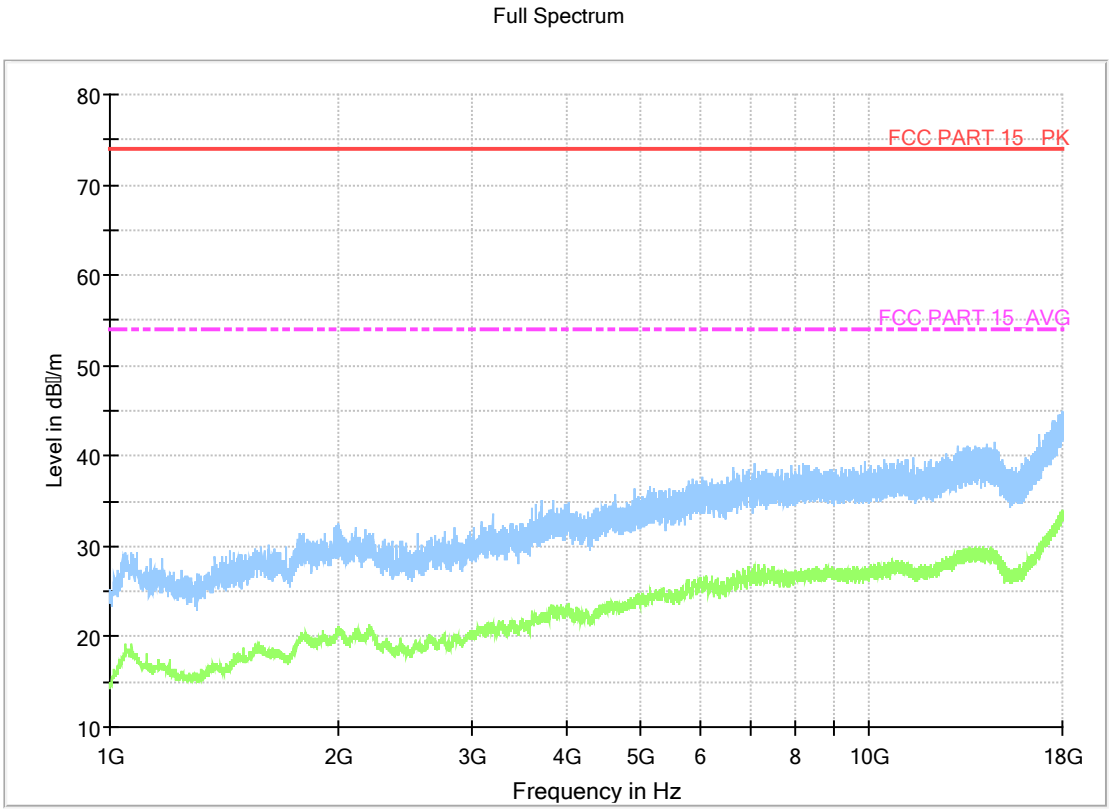


**Fig A.14 Radiated Emission from 1GHz to 18GHz, GSM850MHz, idle, channel 190**

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**Charging Mode, GSM850MHz, idle, channel 251**

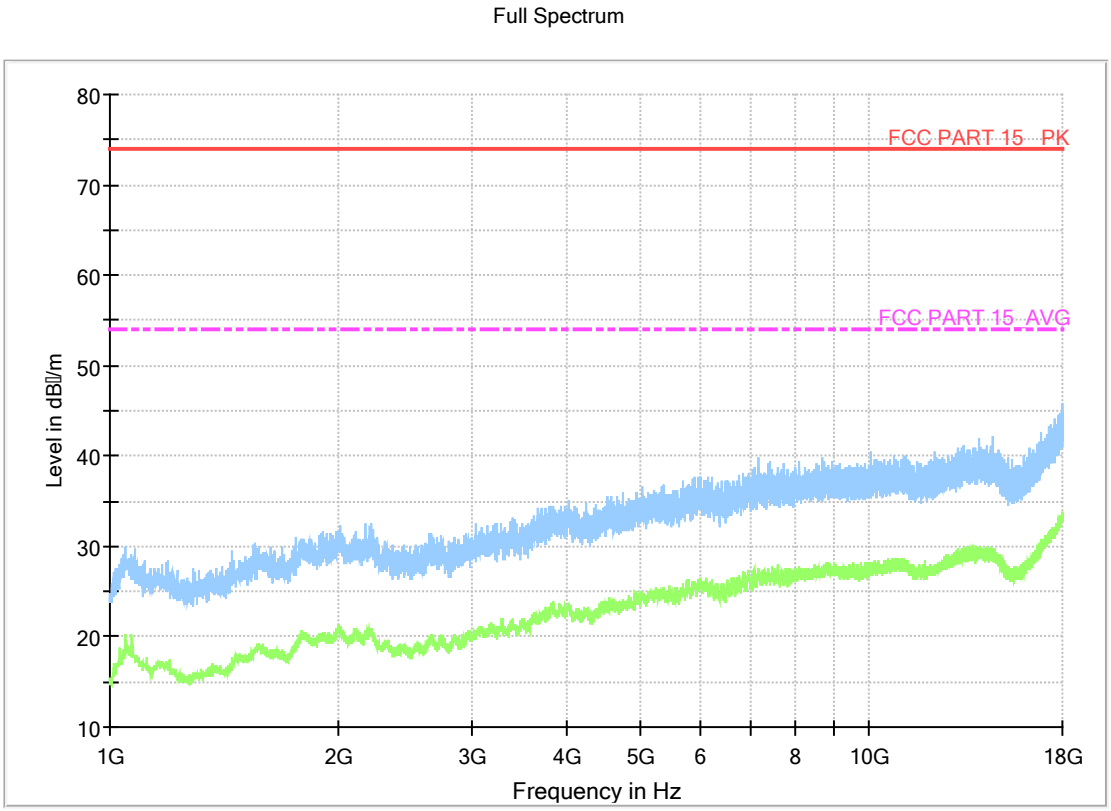


**Fig A.15 Radiated Emission from 1GHz to 18GHz, GSM850MHz, idle, channel 251**

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**Charging Mode, WCDMA850MHz, idle, channel 4132**

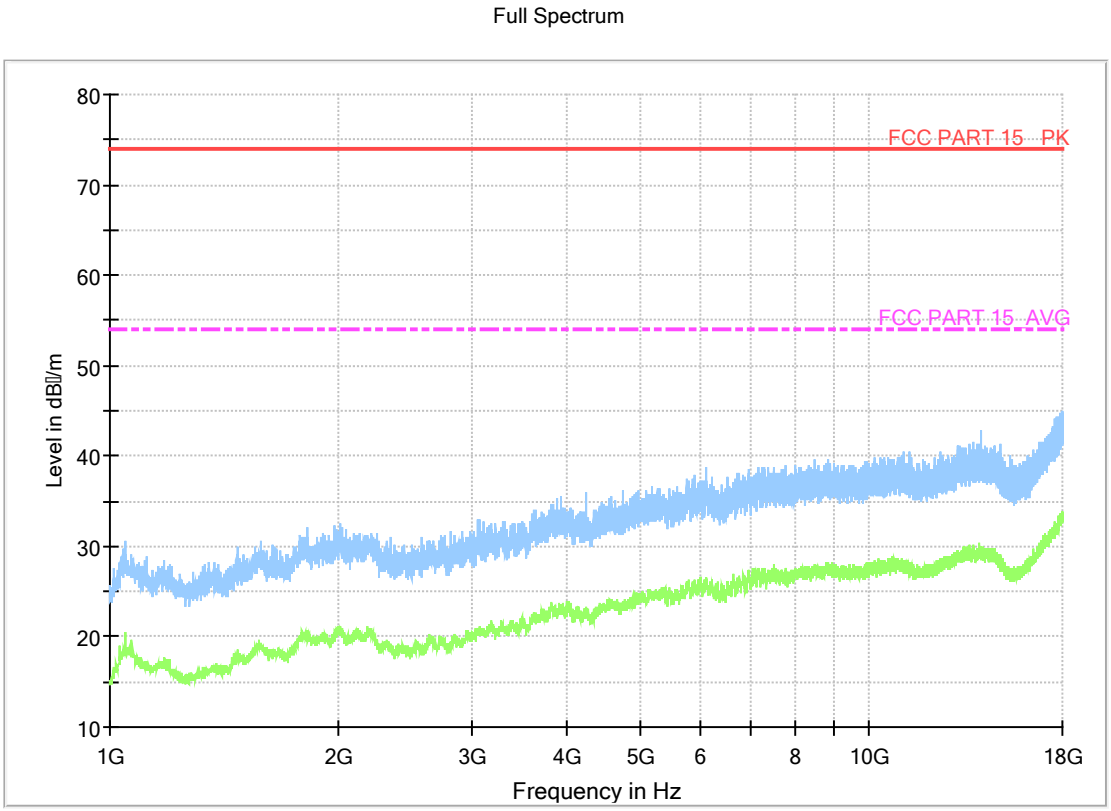


**Fig A.16 Radiated Emission from 1GHz to 18GHz, WCDMA850MHz, idle, channel 4132**

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**Charging Mode, WCDMA850MHz, idle, channel 4183**

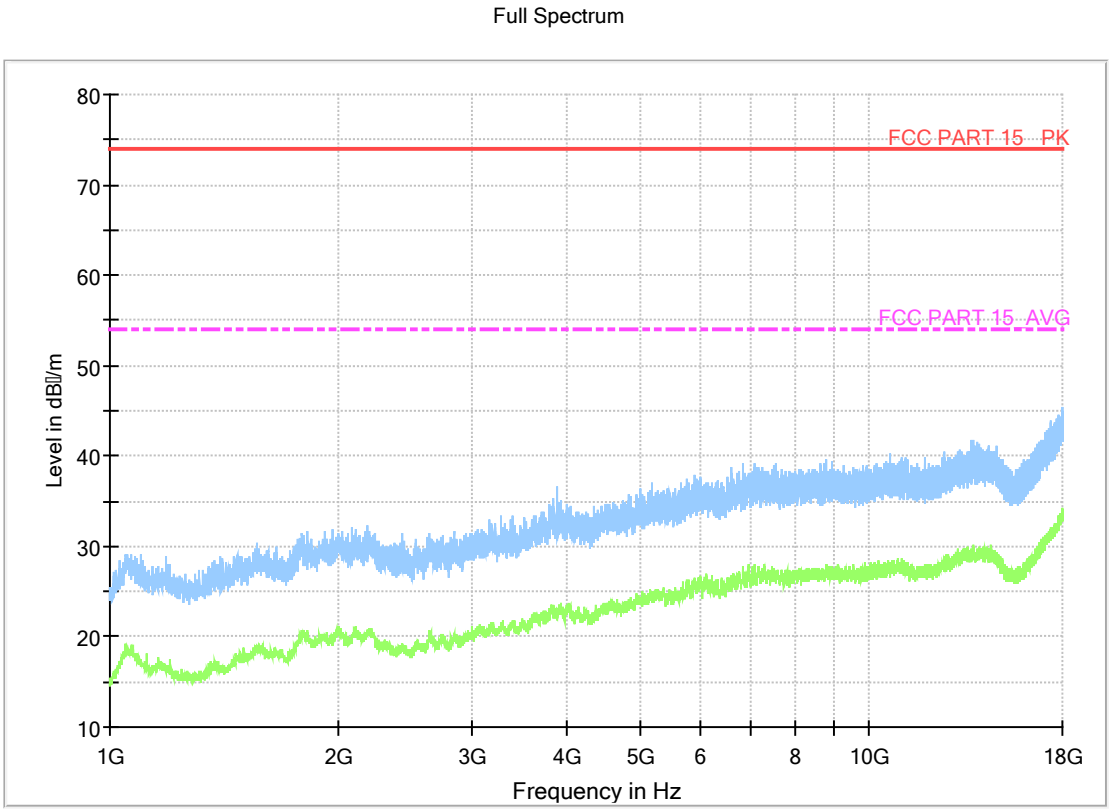


**Fig A.17 Radiated Emission from 1GHz to 18GHz, WCDMA850MHz, idle, channel 4183**

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**Charging Mode, WCDMA850MHz, idle, channel 4233**

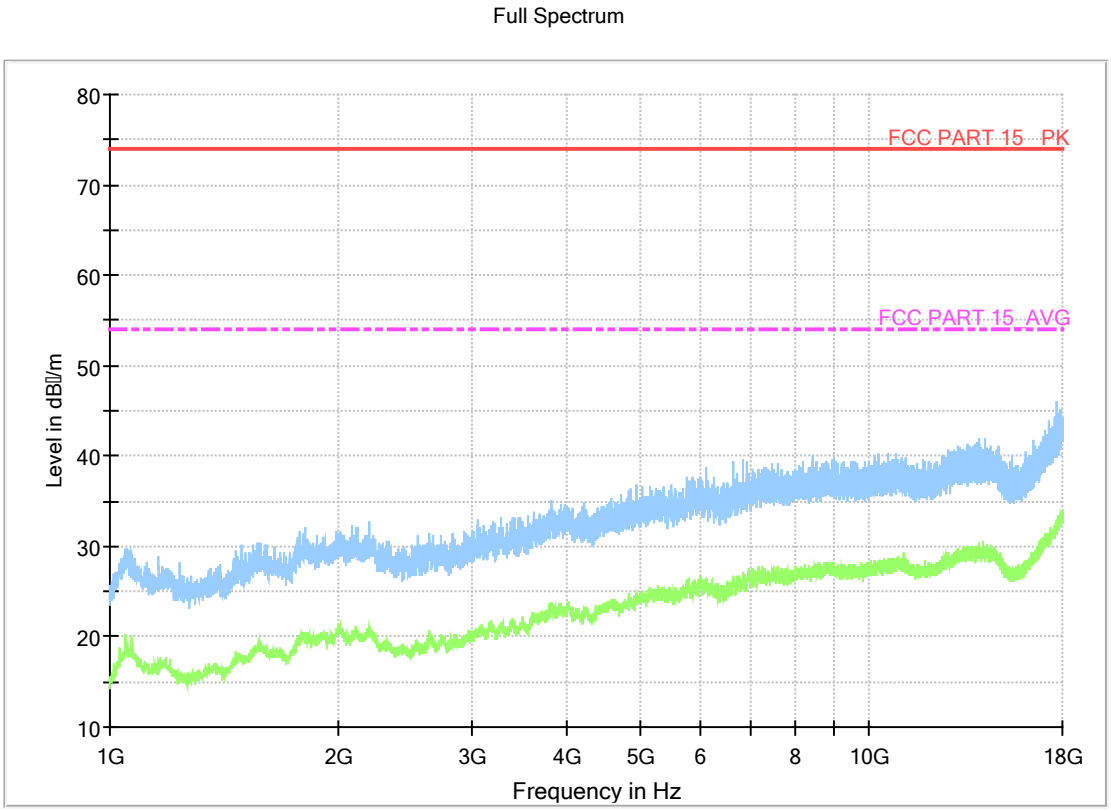


**Fig A.18 Radiated Emission from 1GHz to 18GHz, WCDMA850MHz, idle, channel 4233**

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**Charging Mode, LTE band 5, idle, channel 20407**

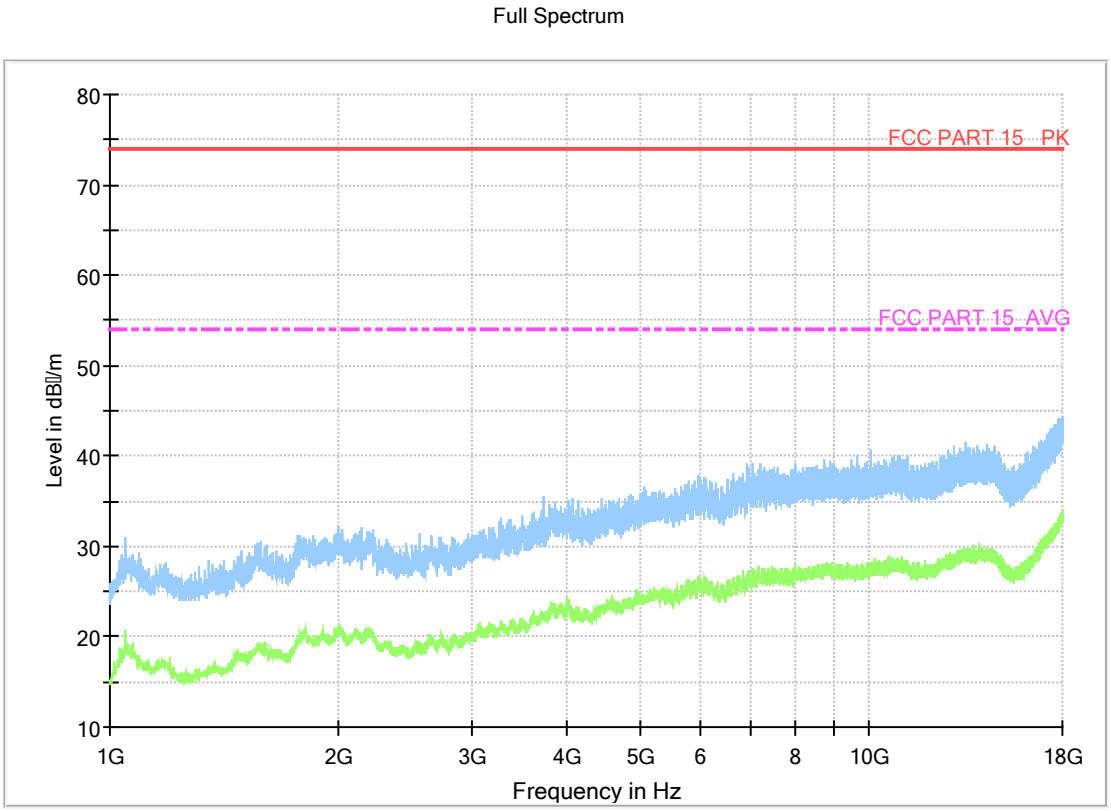


**Fig A.19 Radiated Emission from 1GHz to 18GHz, LTE band 5, idle, channel 20407**

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**Charging Mode, LTE band 5, idle, channel 20525**

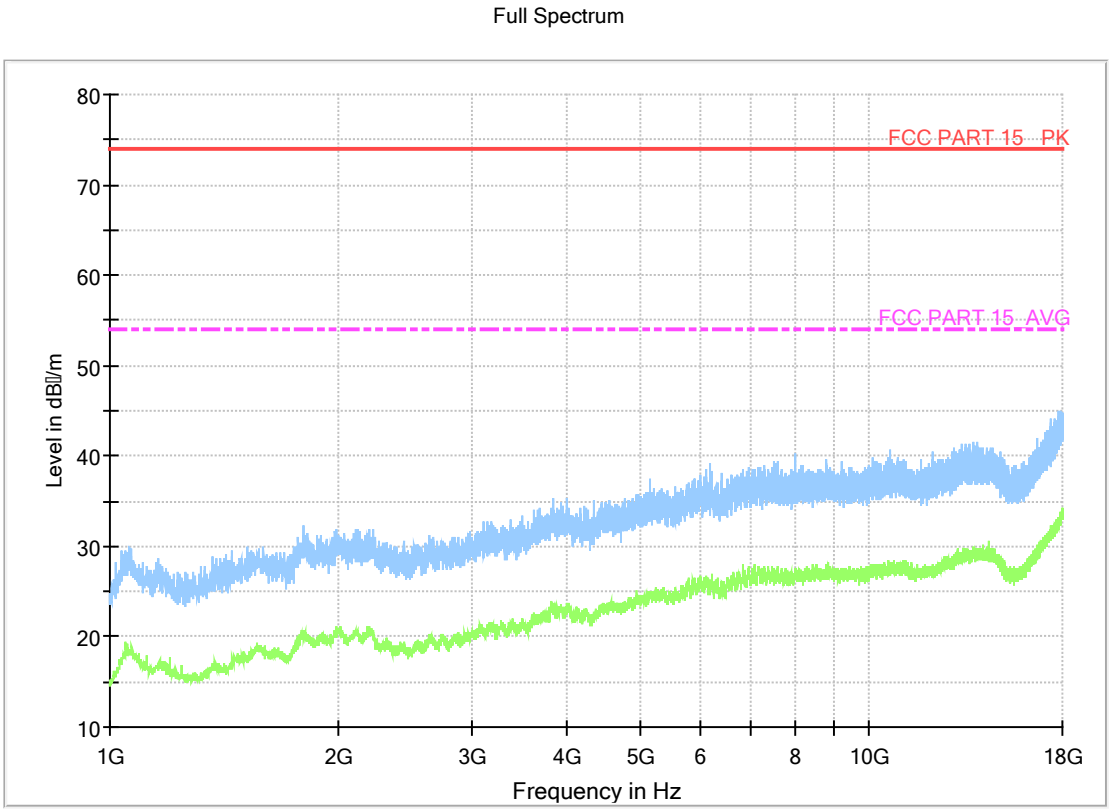


**Fig A.20 Radiated Emission from 1GHz to 18GHz, LTE band 5, idle, channel 20525**

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**Charging Mode, LTE band 5, idle, channel 20643**

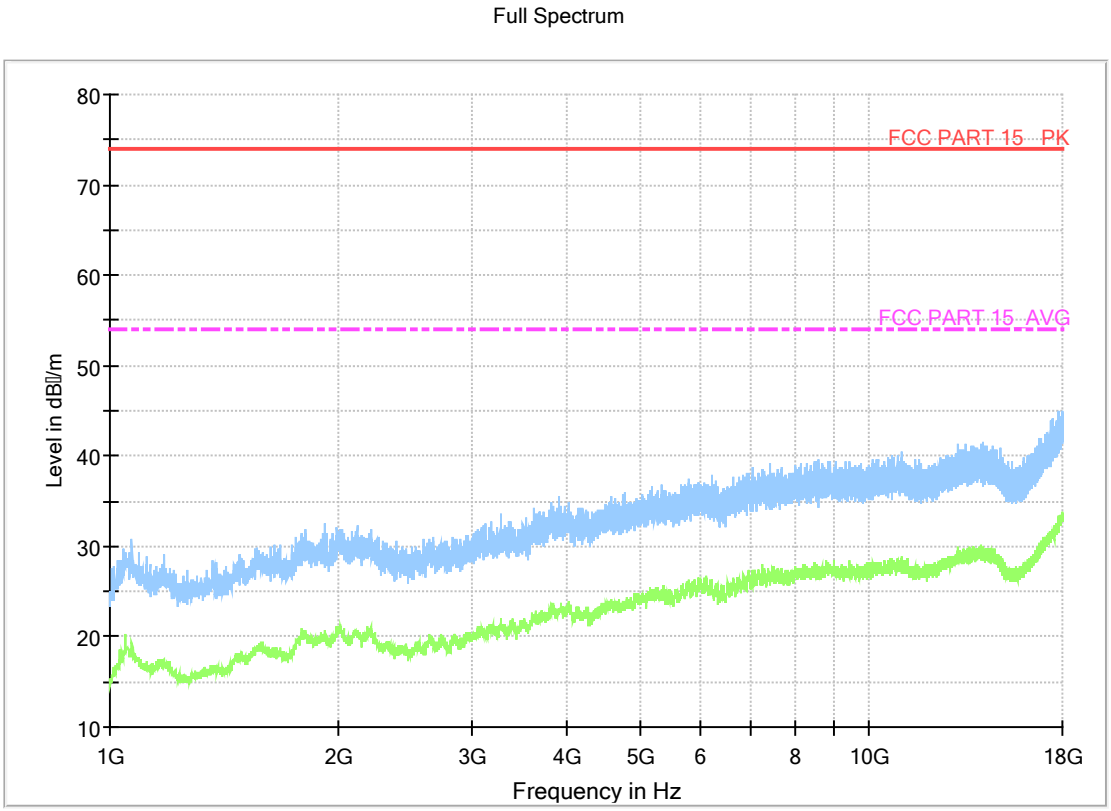


**Fig A.21 Radiated Emission from 1GHz to 18GHz, LTE band 5, idle, channel 20643**

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**Charging Mode, LTE band 71, idle, channel 133147**

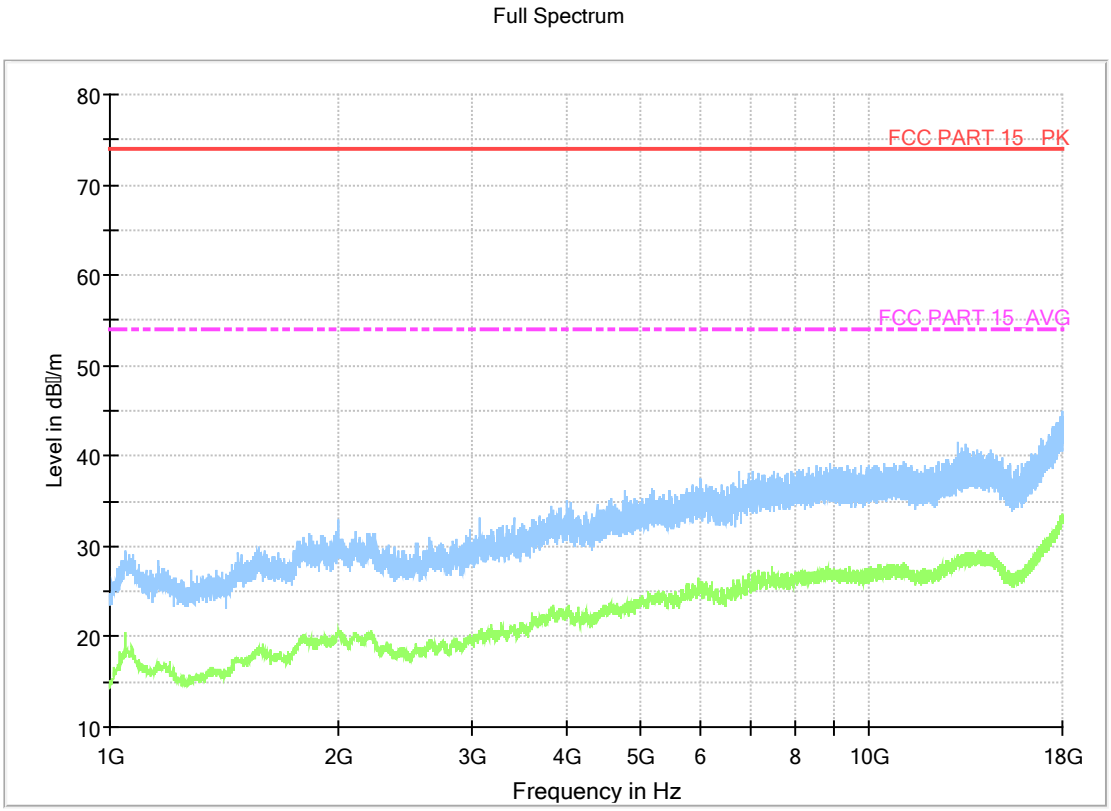


**Fig A.22 Radiated Emission from 30MHz to 1GHz, LTE band 71, idle, channel 133147**

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**Charging Mode, LTE band 71, idle, channel 133297**

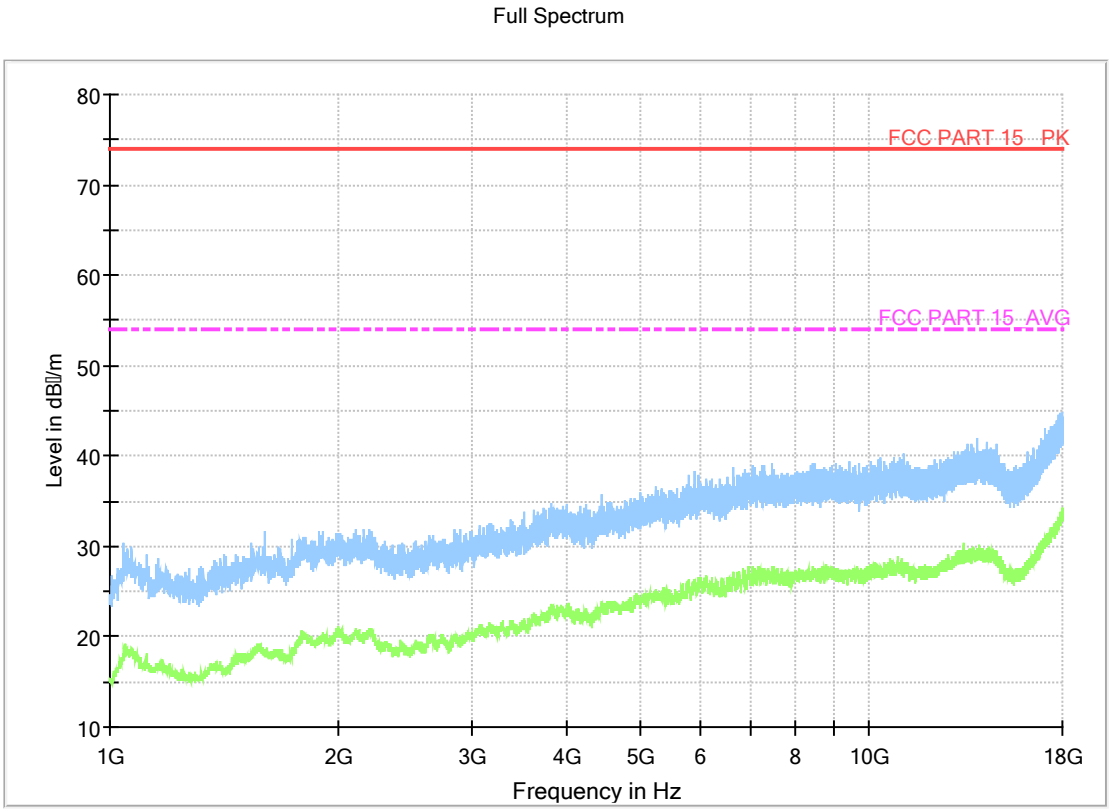


**Fig A.23 Radiated Emission from 30MHz to 1GHz, LTE band 71, idle, channel 133297**

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**Charging Mode, LTE band 71, idle, channel 133447**

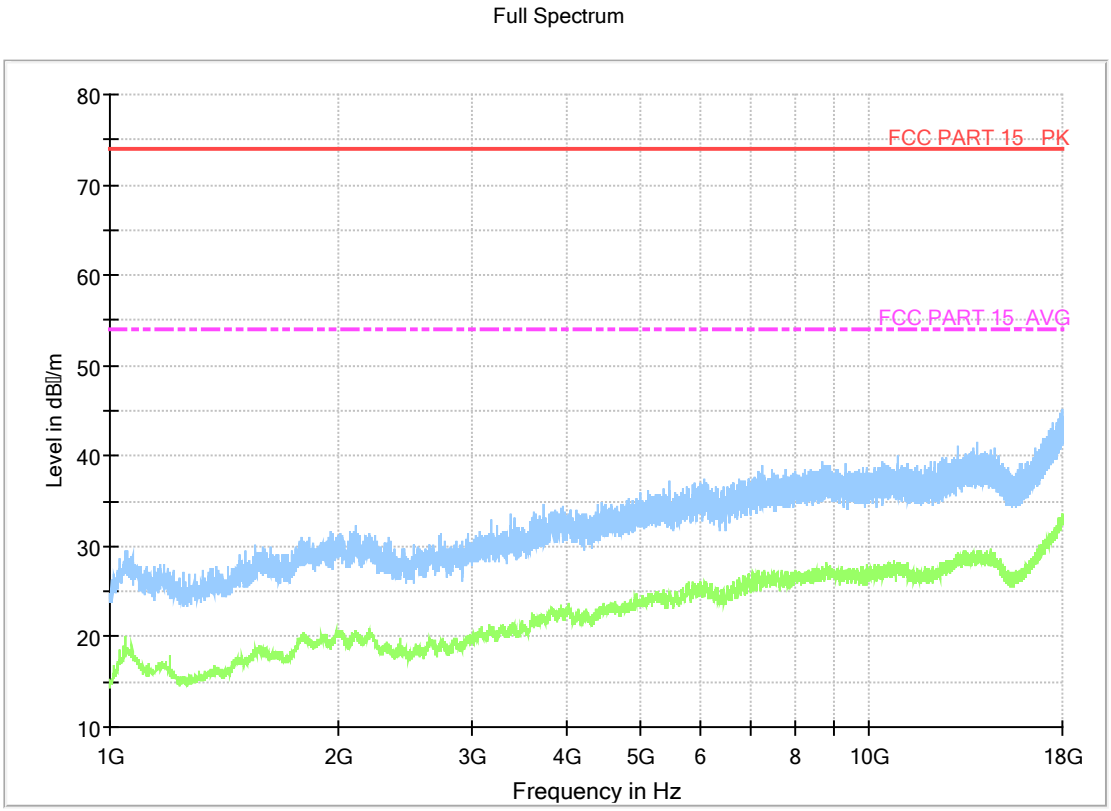


**Fig A.24 Radiated Emission from 30MHz to 1GHz, LTE band 71, idle, channel 133447**

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**Measurement results for GSM850MHz idle, channel 128:**

**Charging Mode/Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17984.700 | 33.7 | -17.7 | 45.6 | 5.800 | H |
| 17973.933 | 33.6 | -17.7 | 45.6 | 5.700 | H |
| 17954.667 | 33.6 | -17.7 | 45.6 | 5.700 | V |
| 17983.000 | 33.5 | -17.7 | 45.6 | 5.600 | H |
| 17993.200 | 33.5 | -17.7 | 45.6 | 5.600 | H |
| 17913.300 | 33.5 | -18.5 | 45.6 | 6.400 | H |

**Charging Mode/ Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17792.033 | 44.8 | -18.5 | 45.6 | 17.700 | H |
| 17890.633 | 44.7 | -18.5 | 45.6 | 17.600 | H |
| 17990.367 | 44.5 | -17.7 | 45.6 | 16.600 | V |
| 17882.133 | 44.5 | -18.5 | 45.6 | 17.400 | H |
| 17981.300 | 44.5 | -17.7 | 45.6 | 16.600 | H |
| 17975.067 | 44.4 | -17.7 | 45.6 | 16.500 | H |

**Measurement results for GSM850MHz idle, channel 190:**

**Charging Mode/Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17993.200 | 34.0 | -17.7 | 45.6 | 6.100 | H |
| 17992.633 | 33.8 | -17.7 | 45.6 | 5.900 | H |
| 17998.300 | 33.8 | -17.7 | 45.6 | 5.900 | V |
| 17950.133 | 33.8 | -17.7 | 45.6 | 5.900 | H |
| 17983.567 | 33.7 | -17.7 | 45.6 | 5.800 | H |
| 17967.700 | 33.7 | -17.7 | 45.6 | 5.800 | H |

**Charging Mode/ Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17979.600 | 44.9 | -17.7 | 45.6 | 17.000 | H |
| 17967.700 | 44.9 | -17.7 | 45.6 | 17.000 | H |
| 17968.833 | 44.7 | -17.7 | 45.6 | 16.800 | V |
| 17920.667 | 44.6 | -17.7 | 45.6 | 16.700 | H |
| 17784.667 | 44.6 | -18.5 | 45.6 | 17.500 | H |
| 17881.000 | 44.6 | -18.5 | 45.6 | 17.500 | H |

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**Measurement results for GSM850MHz idle, channel 251:**

**Charging Mode/Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17983.000 | 33.8 | -17.7 | 45.6 | 5.900 | H |
| 17975.633 | 33.6 | -17.7 | 45.6 | 5.700 | H |
| 17977.900 | 33.6 | -17.7 | 45.6 | 5.700 | V |
| 17989.800 | 33.6 | -17.7 | 45.6 | 5.700 | H |
| 17962.600 | 33.5 | -17.7 | 45.6 | 5.600 | H |
| 17954.667 | 33.5 | -17.7 | 45.6 | 5.600 | H |

**Charging Mode/ Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17969.400 | 45.9 | -17.7 | 45.6 | 18.000 | H |
| 17997.733 | 45.1 | -17.7 | 45.6 | 17.200 | H |
| 17874.767 | 44.7 | -18.5 | 45.6 | 17.600 | V |
| 17832.267 | 44.5 | -18.5 | 45.6 | 17.400 | H |
| 17921.233 | 44.5 | -17.7 | 45.6 | 16.600 | H |
| 17980.733 | 44.5 | -17.7 | 45.6 | 16.600 | H |

**Measurement results for WCDMA850MHz idle, channel 4132:**

**Charging Mode/Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17977.333 | 33.7 | -17.7 | 45.6 | 5.800 | H |
| 17963.167 | 33.7 | -17.7 | 45.6 | 5.800 | H |
| 17904.233 | 33.6 | -18.5 | 45.6 | 6.500 | V |
| 17981.867 | 33.6 | -17.7 | 45.6 | 5.700 | H |
| 17984.700 | 33.6 | -17.7 | 45.6 | 5.700 | H |
| 17935.400 | 33.6 | -17.7 | 45.6 | 5.700 | H |

**Charging Mode/ Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17976.767 | 44.9 | -17.7 | 45.6 | 17.000 | H |
| 17882.700 | 44.8 | -18.5 | 45.6 | 17.700 | H |
| 17975.633 | 44.7 | -17.7 | 45.6 | 16.800 | V |
| 17956.367 | 44.5 | -17.7 | 45.6 | 16.600 | H |
| 17967.700 | 44.5 | -17.7 | 45.6 | 16.600 | H |
| 17840.767 | 44.4 | -18.5 | 45.6 | 17.300 | H |

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**Measurement results for WCDMA850MHz idle, channel 4183:**

**Charging Mode/Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17954.100 | 34.0 | -17.7 | 45.6 | 6.100 | H |
| 17979.600 | 34.0 | -17.7 | 45.6 | 6.100 | H |
| 17972.233 | 33.9 | -17.7 | 45.6 | 6.000 | V |
| 17993.200 | 33.9 | -17.7 | 45.6 | 6.000 | H |
| 17985.833 | 33.7 | -17.7 | 45.6 | 5.800 | H |
| 17994.900 | 33.7 | -17.7 | 45.6 | 5.800 | H |

**Charging Mode/ Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17949.000 | 45.5 | -17.7 | 45.6 | 17.600 | H |
| 17972.800 | 45.1 | -17.7 | 45.6 | 17.200 | H |
| 17977.900 | 44.8 | -17.7 | 45.6 | 16.900 | V |
| 17988.100 | 44.7 | -17.7 | 45.6 | 16.800 | H |
| 17970.533 | 44.6 | -17.7 | 45.6 | 16.700 | H |
| 17806.200 | 44.6 | -18.5 | 45.6 | 17.500 | H |

**Measurement results for WCDMA850MHz idle, channel 4233:**

**Charging Mode/Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17971.667 | 33.7 | -17.7 | 45.6 | 5.800 | H |
| 17994.900 | 33.6 | -17.7 | 45.6 | 5.700 | H |
| 17958.633 | 33.6 | -17.7 | 45.6 | 5.700 | V |
| 17982.433 | 33.6 | -17.7 | 45.6 | 5.700 | H |
| 17968.267 | 33.6 | -17.7 | 45.6 | 5.700 | H |
| 17946.733 | 33.5 | -17.7 | 45.6 | 5.600 | H |

**Charging Mode/ Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17720.633 | 46.0 | -18.9 | 45.6 | 19.300 | H |
| 17934.833 | 45.1 | -17.7 | 45.6 | 17.200 | H |
| 17835.100 | 44.7 | -18.5 | 45.6 | 17.600 | V |
| 17900.833 | 44.7 | -18.5 | 45.6 | 17.600 | H |
| 17752.933 | 44.6 | -18.5 | 45.6 | 17.500 | H |
| 17888.933 | 44.5 | -18.5 | 45.6 | 17.400 | H |

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**Measurement results for LTE Band 5 idle, channel 20407:**

**Charging Mode/Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17968.267 | 34.1 | -17.7 | 45.6 | 6.200 | H |
| 17916.133 | 33.7 | -17.7 | 45.6 | 5.800 | H |
| 17990.367 | 33.7 | -17.7 | 45.6 | 5.800 | V |
| 17952.967 | 33.6 | -17.7 | 45.6 | 5.700 | H |
| 17962.600 | 33.6 | -17.7 | 45.6 | 5.700 | H |
| 17998.300 | 33.6 | -17.7 | 45.6 | 5.700 | H |

**Charging Mode/ Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17992.633 | 44.4 | -17.7 | 45.6 | 16.500 | H |
| 17964.867 | 44.3 | -17.7 | 45.6 | 16.400 | H |
| 17817.533 | 44.2 | -18.5 | 45.6 | 17.100 | V |
| 17814.700 | 44.2 | -18.5 | 45.6 | 17.100 | H |
| 17985.833 | 44.1 | -17.7 | 45.6 | 16.200 | H |
| 17996.033 | 44.1 | -17.7 | 45.6 | 16.200 | H |

**Measurement results for LTE Band 5 idle, channel 20525:**

**Charging Mode/Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17985.833 | 33.8 | -17.7 | 45.6 | 5.900 | H |
| 17988.667 | 33.8 | -17.7 | 45.6 | 5.900 | H |
| 17972.800 | 33.7 | -17.7 | 45.6 | 5.800 | V |
| 17918.400 | 33.7 | -17.7 | 45.6 | 5.800 | H |
| 17974.500 | 33.7 | -17.7 | 45.6 | 5.800 | H |
| 17980.733 | 33.7 | -17.7 | 45.6 | 5.800 | H |

**Charging Mode/ Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17838.500 | 45.0 | -18.5 | 45.6 | 17.900 | H |
| 17865.133 | 44.9 | -18.5 | 45.6 | 17.800 | H |
| 17973.933 | 44.9 | -17.7 | 45.6 | 17.000 | V |
| 17915.567 | 44.8 | -17.7 | 45.6 | 16.900 | H |
| 17979.600 | 44.8 | -17.7 | 45.6 | 16.900 | H |
| 17894.600 | 44.8 | -18.5 | 45.6 | 17.700 | H |

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**Measurement results for LTE Band 5 idle, channel 20643:**

**Charging Mode/Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17962.600 | 33.8 | -17.7 | 45.6 | 5.900 | H |
| 17965.433 | 33.6 | -17.7 | 45.6 | 5.700 | H |
| 17977.900 | 33.5 | -17.7 | 45.6 | 5.600 | V |
| 17839.067 | 33.5 | -18.5 | 45.6 | 6.400 | H |
| 17997.167 | 33.5 | -17.7 | 45.6 | 5.600 | H |
| 17955.233 | 33.5 | -17.7 | 45.6 | 5.600 | H |

**Charging Mode/ Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17973.367 | 45.0 | -17.7 | 45.6 | 17.100 | H |
| 17785.800 | 44.9 | -18.5 | 45.6 | 17.800 | H |
| 17823.200 | 44.8 | -18.5 | 45.6 | 17.700 | V |
| 17979.033 | 44.7 | -17.7 | 45.6 | 16.800 | H |
| 17989.233 | 44.4 | -17.7 | 45.6 | 16.500 | H |
| 17783.533 | 44.4 | -18.5 | 45.6 | 17.300 | H |

**Measurement results for LTE Band 71 idle, channel 23205:**

**Charging Mode/Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17993.767 | 33.7 | -17.7 | 45.6 | 5.800 | H |
| 17950.700 | 33.5 | -17.7 | 45.6 | 5.600 | H |
| 17992.067 | 33.4 | -17.7 | 45.6 | 5.500 | V |
| 17997.167 | 33.3 | -17.7 | 45.6 | 5.400 | H |
| 17984.700 | 33.3 | -17.7 | 45.6 | 5.400 | H |
| 17896.300 | 33.3 | -18.5 | 45.6 | 6.200 | H |

**Charging Mode/ Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17971.100 | 44.9 | -17.7 | 45.6 | 17.000 | H |
| 17946.167 | 44.5 | -17.7 | 45.6 | 16.600 | H |
| 17986.967 | 44.3 | -17.7 | 45.6 | 16.400 | V |
| 17958.633 | 44.3 | -17.7 | 45.6 | 16.400 | H |
| 17998.867 | 44.3 | -17.7 | 45.6 | 16.400 | H |
| 17933.133 | 44.3 | -17.7 | 45.6 | 16.400 | H |

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**Measurement results for LTE Band 71 idle, channel 23230:**

**Charging Mode/Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17966.000 | 34.2 | -17.7 | 45.6 | 6.300 | H |
| 17992.067 | 34.2 | -17.7 | 45.6 | 6.300 | H |
| 17994.333 | 34.1 | -17.7 | 45.6 | 6.200 | V |
| 17901.967 | 33.9 | -18.5 | 45.6 | 6.800 | H |
| 17999.433 | 33.8 | -17.7 | 45.6 | 5.900 | H |
| 17983.567 | 33.8 | -17.7 | 45.6 | 5.900 | H |

**Charging Mode/ Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17881.567 | 44.7 | -18.5 | 45.6 | 17.600 | H |
| 17865.133 | 44.6 | -18.5 | 45.6 | 17.500 | H |
| 17903.667 | 44.5 | -18.5 | 45.6 | 17.400 | V |
| 17765.400 | 44.5 | -18.5 | 45.6 | 17.400 | H |
| 17926.333 | 44.5 | -17.7 | 45.6 | 16.600 | H |
| 17968.833 | 44.4 | -17.7 | 45.6 | 16.500 | H |

**Measurement results for LTE Band 71 idle, channel 23255:**

**Charging Mode/Average detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17998.300 | 33.6 | -17.7 | 45.6 | 5.700 | H |
| 17989.800 | 33.5 | -17.7 | 45.6 | 5.600 | H |
| 17982.433 | 33.4 | -17.7 | 45.6 | 5.500 | V |
| 17965.433 | 33.3 | -17.7 | 45.6 | 5.400 | H |
| 17974.500 | 33.3 | -17.7 | 45.6 | 5.400 | H |
| 17993.200 | 33.3 | -17.7 | 45.6 | 5.400 | H |

**Charging Mode/ Peak detector**

| Frequency (MHz) | Measurement Result (dBμV/m) | Cable loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBμV) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|
| 17955.800 | 45.2 | -17.7 | 45.6 | 17.300 | H |
| 17902.533 | 44.7 | -18.5 | 45.6 | 17.600 | H |
| 17986.400 | 44.4 | -17.7 | 45.6 | 16.500 | V |
| 17879.300 | 44.4 | -18.5 | 45.6 | 17.300 | H |
| 17779.567 | 44.2 | -18.5 | 45.6 | 17.100 | H |
| 17969.967 | 44.1 | -17.7 | 45.6 | 16.200 | H |

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## ANNEX B: PERSONS INVOLVED IN THIS TESTING

| Test Item | Test Software and Version | Software Vendor | Test operator |
|---|---|---|---|
| Radiated Emission | EMC32 V9.01.00 | R&S | Yan Hanchen<br>Wang Huan |

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

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