



# TEST REPORT

No. I20Z70351-EMC02

for

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

**Mobile phone**

**Model Name: SM-S111DL, SM-A015U1**

**FCC ID: ZCASMS111DL**

with

**Hardware Version: REV3.0**

**Software Version: S111DL.001(S111DLUDE0ATB3), A015U1.001(A015U1UEE0ATC2)**

**Issued Date: 2020-02-29**

**Note:**

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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**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
I20Z70351-EMC02	Rev.0	1 <sup>st</sup> edition	2020-02-29

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

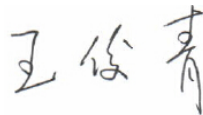
### **2.2. Testing Environment**

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**



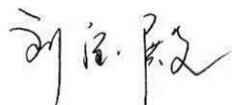
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**Wang Junqing**  
**(Prepared this test report)**



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**Zhang Ying**  
**(Reviewed this test report)**



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**Liu Baodian**  
**Deputy Director of the laboratory**  
**(Approved this test report)**



### **3. Client Information**

#### **3.1. Applicant Information**

Company Name: Samsung Electronics. Co., Ltd.  
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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: R5, A Tower 22 Floor A-1, (Maetan dong)  
129, Samsung-ro, Yeongtong-gu, Suwon-Si, Gyeonggi-do 16677, Korea  
Contact Person JP KIM  
Contact Email jp426.kim@samsung.com  
Telephone: +82-10-4376-0326  
Fax: /

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

### 4.1. About EUT

Description	Mobile phone
Model Name	SM-S111DL
FCC ID	ZCASMS111DL
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	S111DL.001(S111DLUDE0ATB3), A015U1.001(A015U1UEE0ATC2)
EUT2	351767110012936	REV3.0	S111DL.001(S111DLUDE0ATB3), A015U1.001(A015U1UEE0ATC2)

\*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

#### AAE3

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



Length of cable	/
AE6	
Model	EP-DR140AWE
Manufacturer	LUXSHARE-ICT (VIETNAM) LIMITED
Length of cable	/
AE7	
Model	EHS61ASFWE
Manufacturer	DONGGUAN YOUNGBO ELECTRONICS CO.,LTD
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 + AE4+ AE6	Charger
Set.81	EUT2+ AE1 + AE4+ AE6	Charger

Note: Mobile phone SM-S111DL and SM-A015U1 manufactured by Samsung Electronics. Co., Ltd. are variant models based on SM-A015V (FCCID: ZCASMA015V) 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 I19Z70327-EMC02.



## **5. Reference Documents**

### **5.1. Reference Documents for testing**

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

<b>Reference</b>	<b>Title</b>	<b>Version</b>
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.

## 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; 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; 1MHz—1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω

## 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)

## 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

## **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 ( $\mu\text{V}/\text{m}$ )		
	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

### 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:

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

Where

$G_A$ : Antenna factor of receive antenna

$G_{\text{PL}}$ : Path Loss

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

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

#### Measurement Results below 1GHz:

Charging Mode, GSM850MHz, idle, channel 128

Full Spectrum

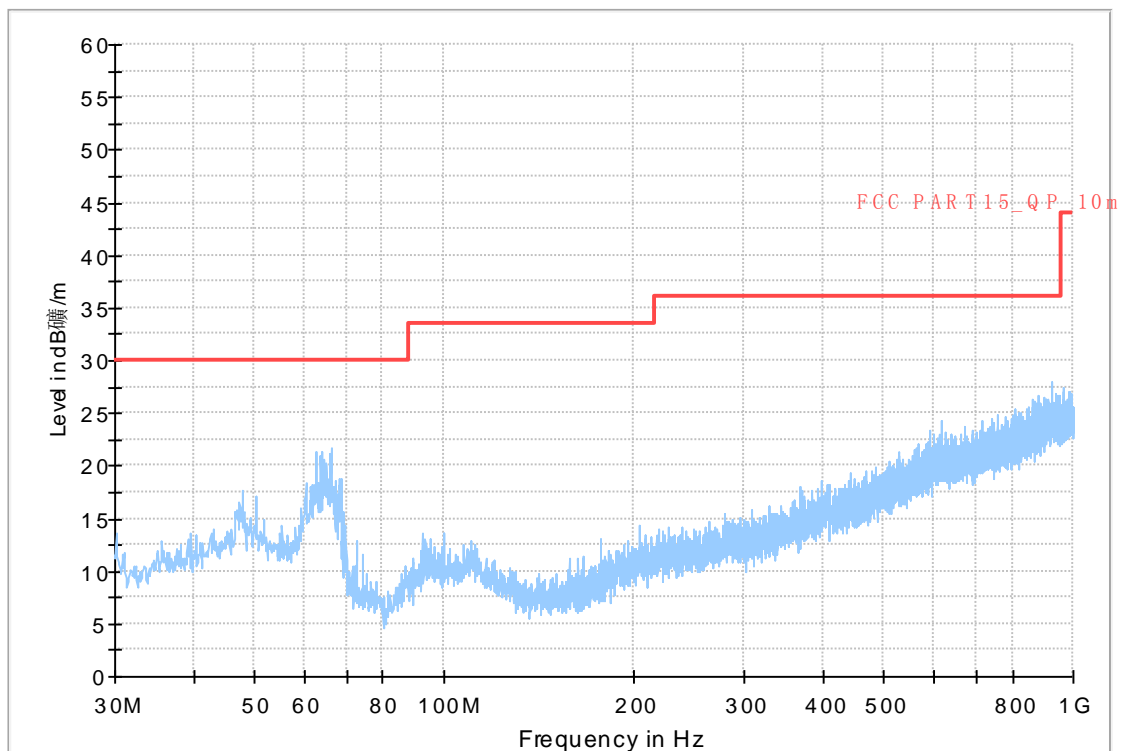
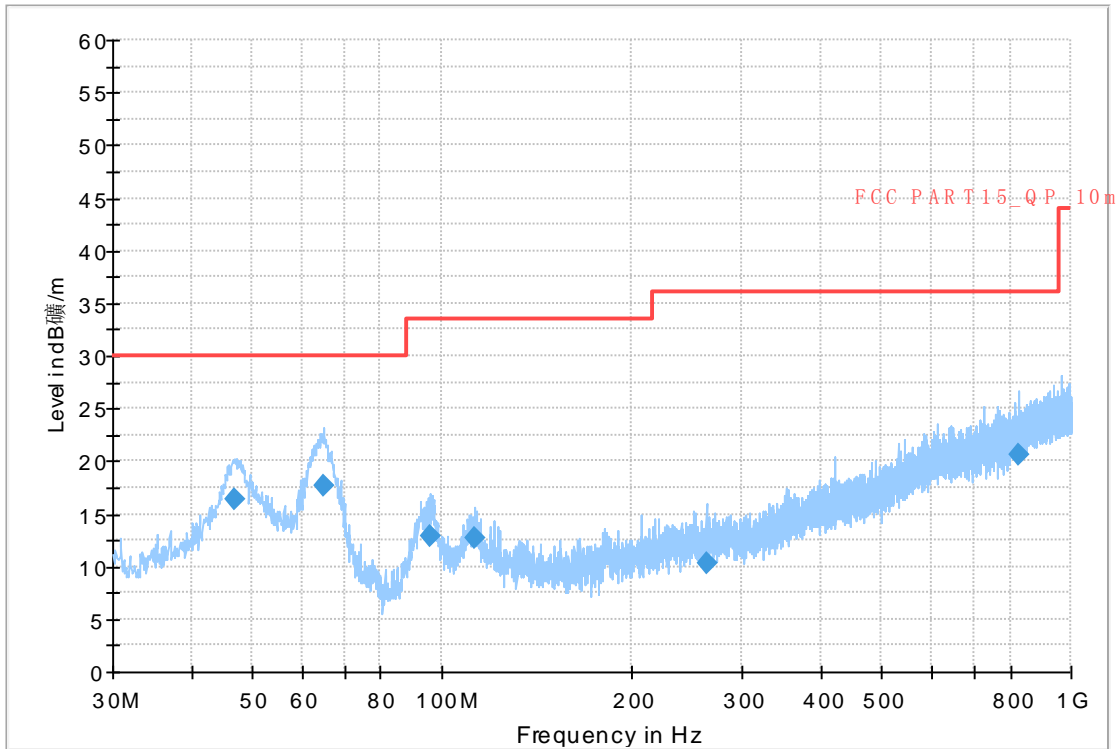


Fig A.1 Radiated Emission from 30MHz to 1GHz, GSM850MHz, idle, channel 128

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

Full Spectrum



**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

Charging Mode, GSM850MHz, idle, channel 251

Full Spectrum

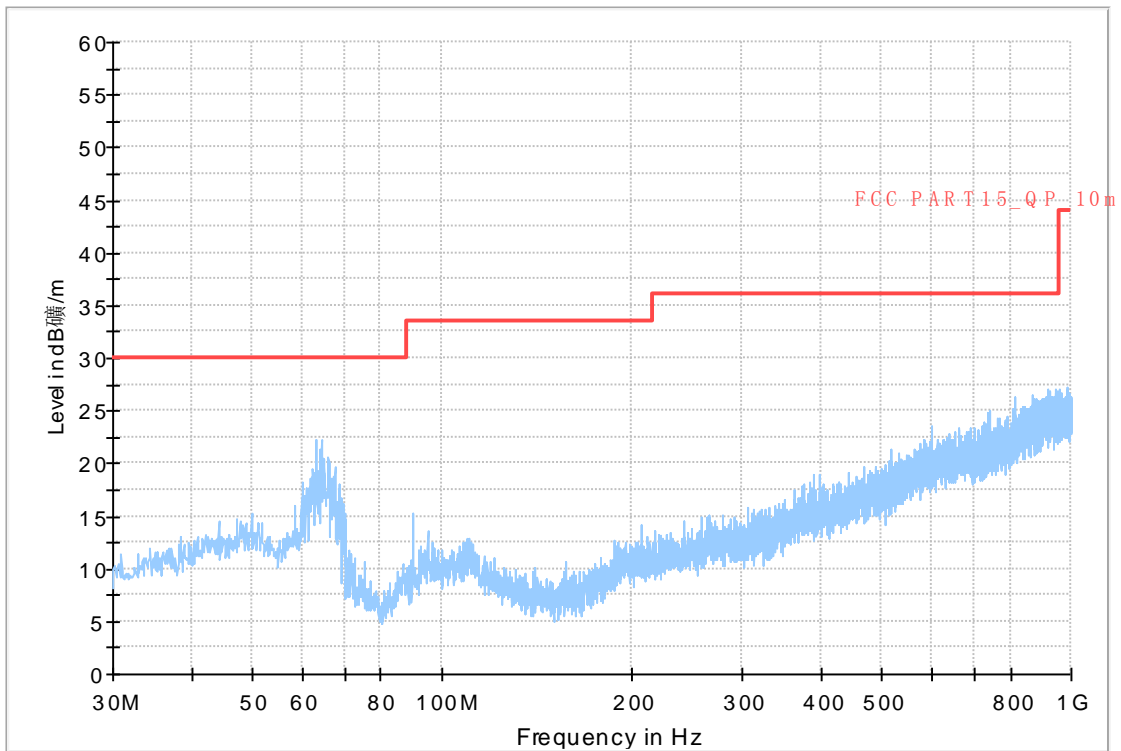


Fig A.3 Radiated Emission from 30MHz to 1GHz, GSM850MHz, idle, channel 251



Charging Mode, WCDMA850MHz, idle, channel 4132

Full Spectrum

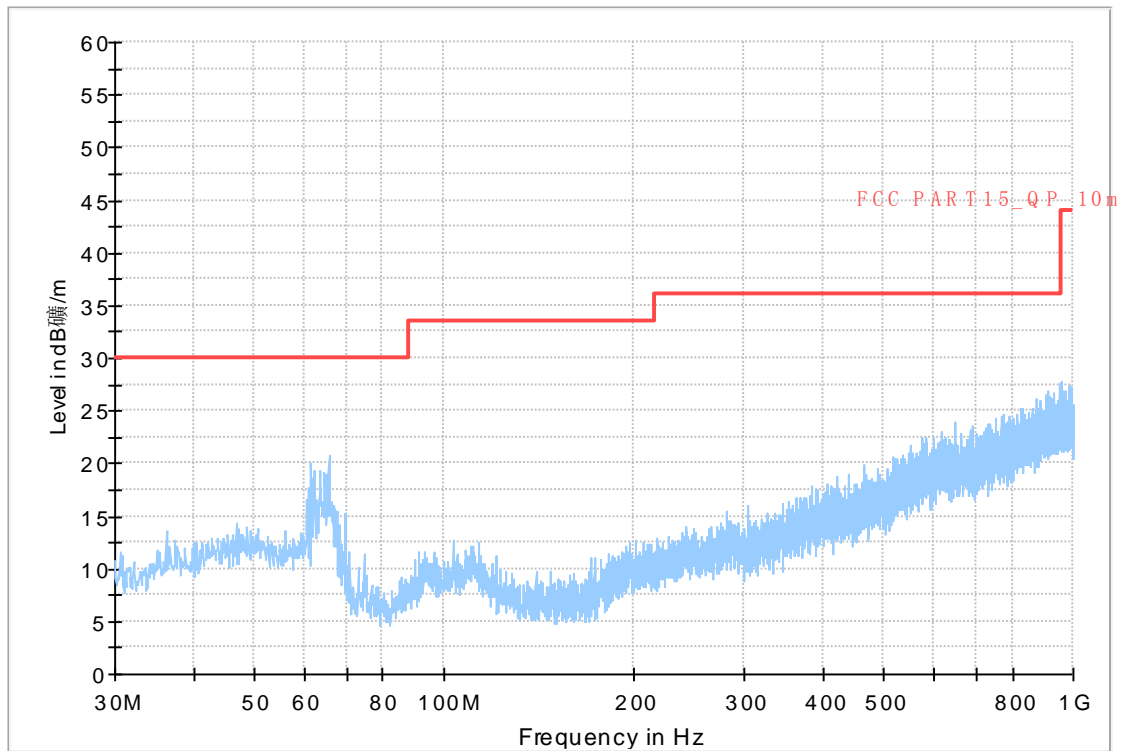
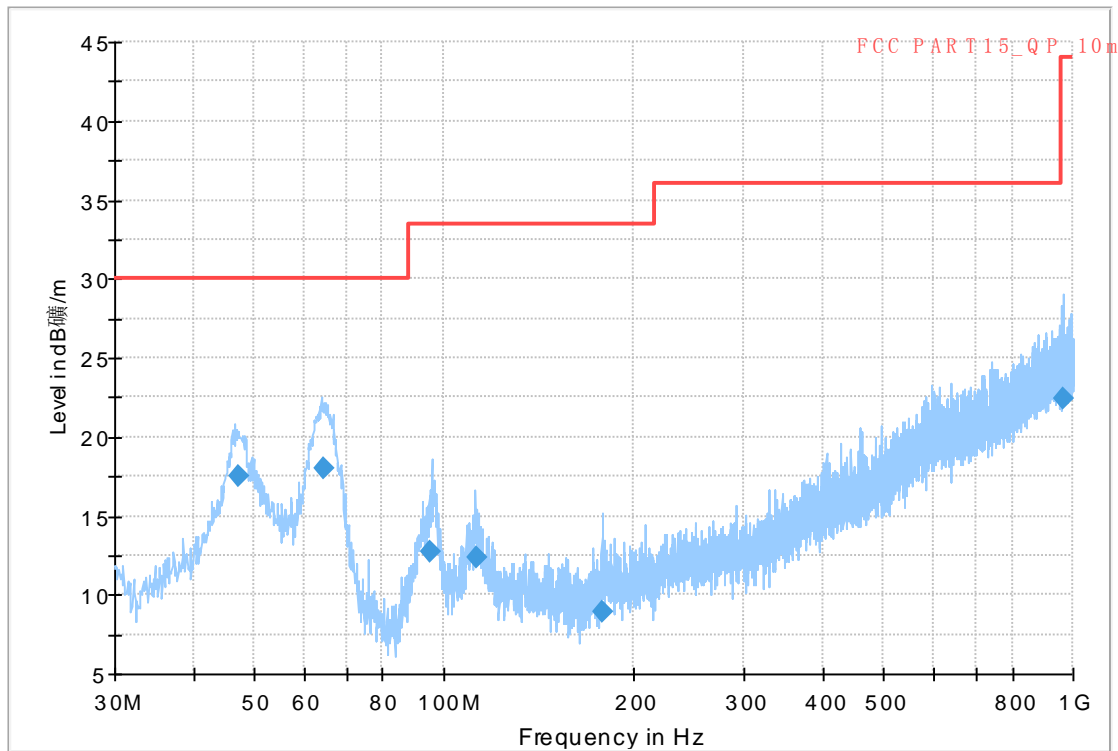


Fig A.4 Radiated Emission from 30MHz to 1GHz, WCDMA850MHz, idle, channel 4132

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

Full Spectrum



**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

Charging Mode, WCDMA850MHz, idle, channel 4233

Full Spectrum

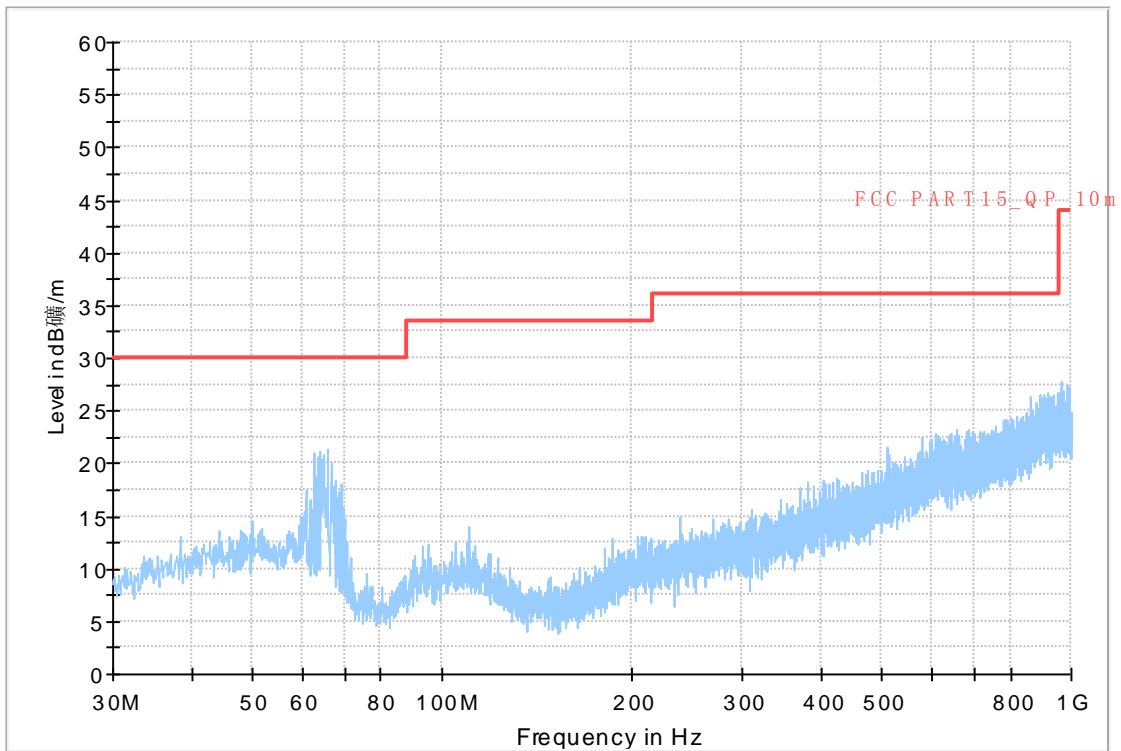


Fig A.6 Radiated Emission from 30MHz to 1GHz, WCDMA850MHz, idle, channel 4233

Charging Mode, LTE band 5, idle, channel 20407

Full Spectrum

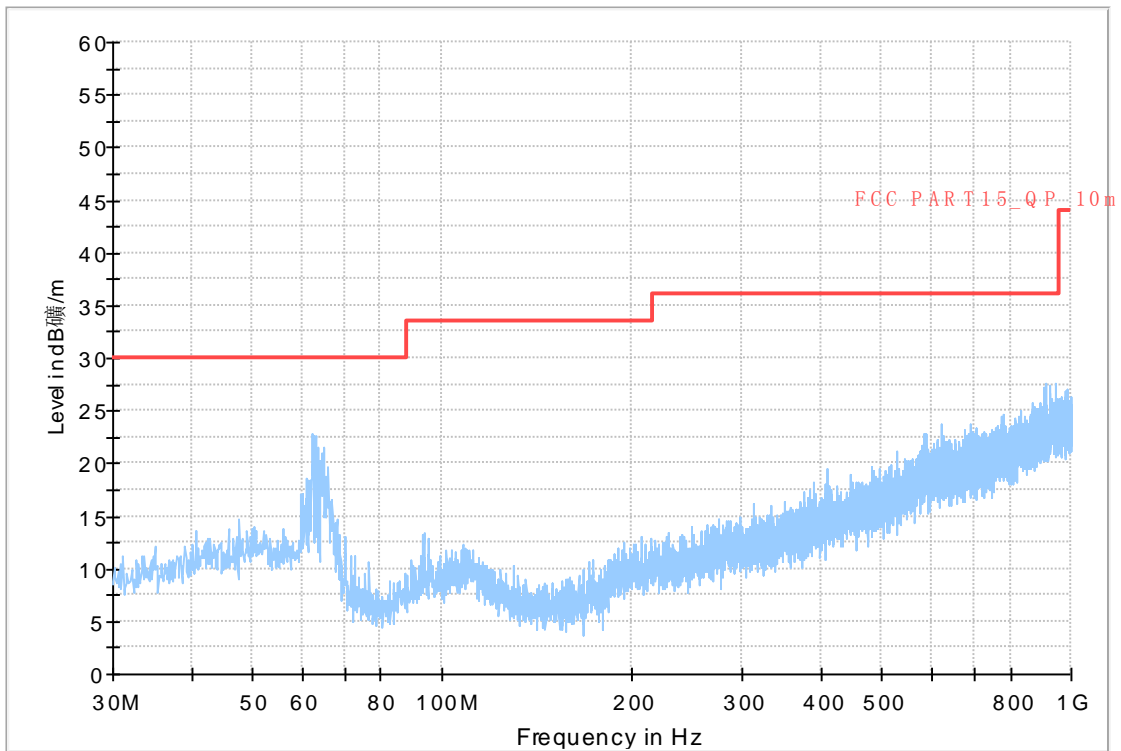


Fig A.7 Radiated Emission from 30MHz to 1GHz, LTE band 5, idle, channel 20407

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

Full Spectrum

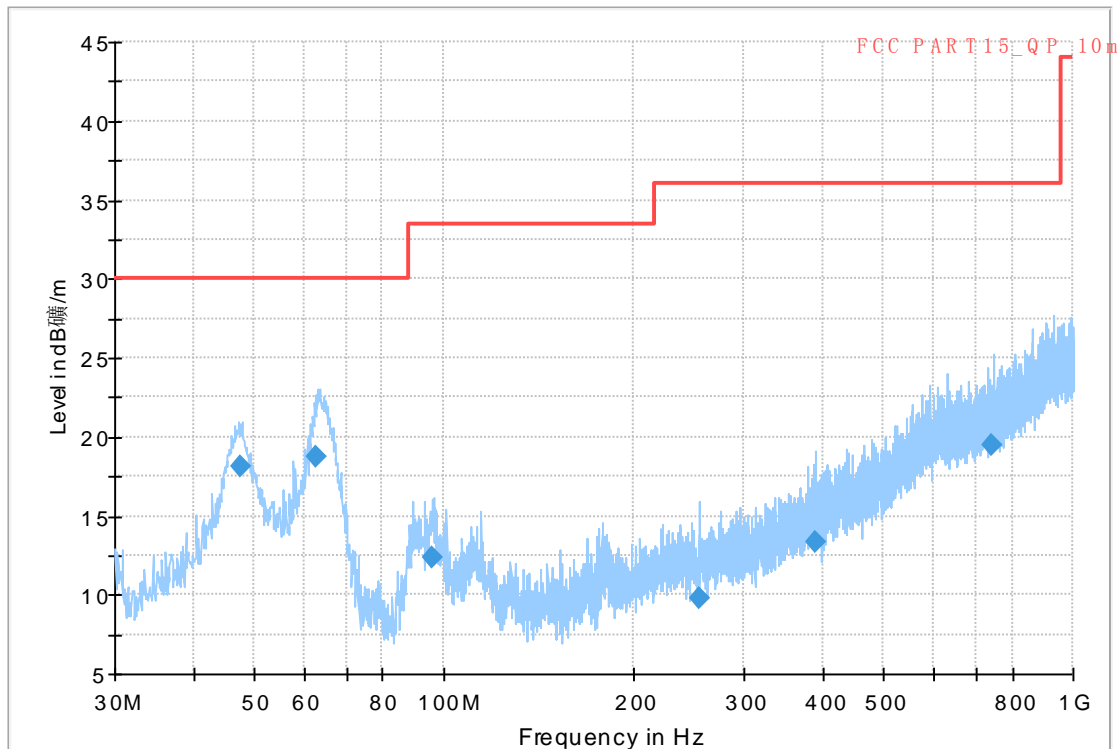


Fig A.8 Radiated Emission from 30MHz to 1GHz, LTE band 5, idle, channel 20525

### 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

Charging Mode, LTE band 5, idle, channel 20643

Full Spectrum

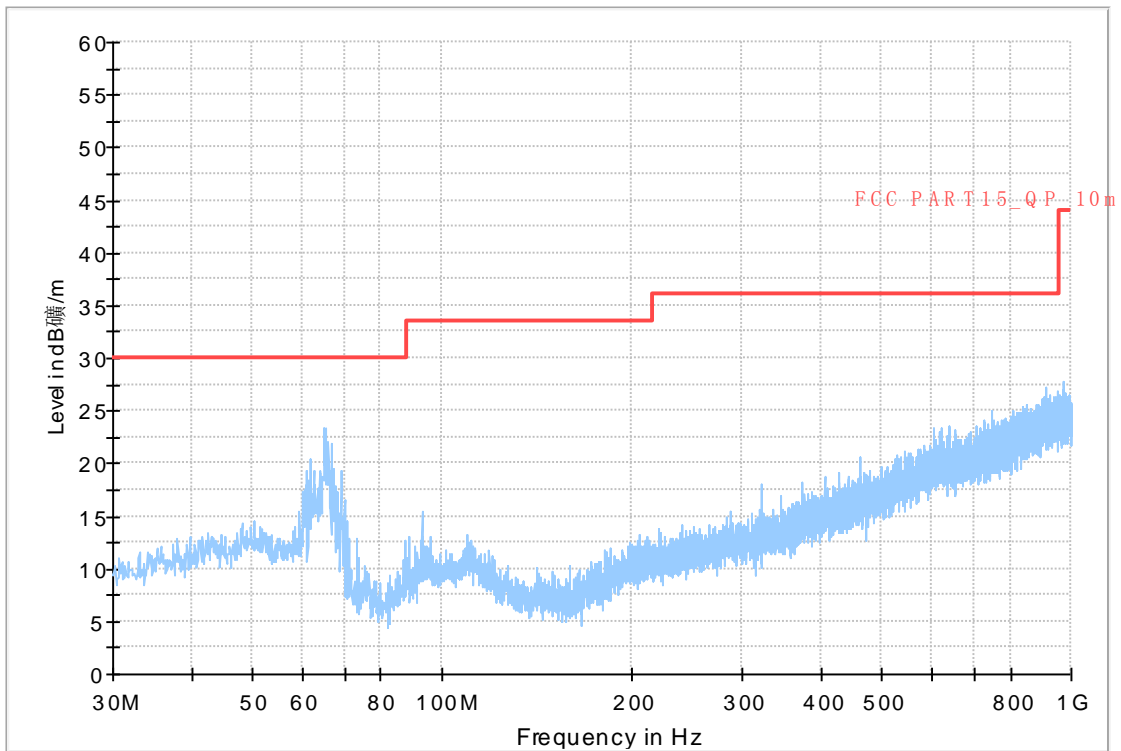


Fig A.9 Radiated Emission from 30MHz to 1GHz, LTE band 5, idle, channel 20643

Charging Mode, LTE band 71, idle, channel 133147

Full Spectrum

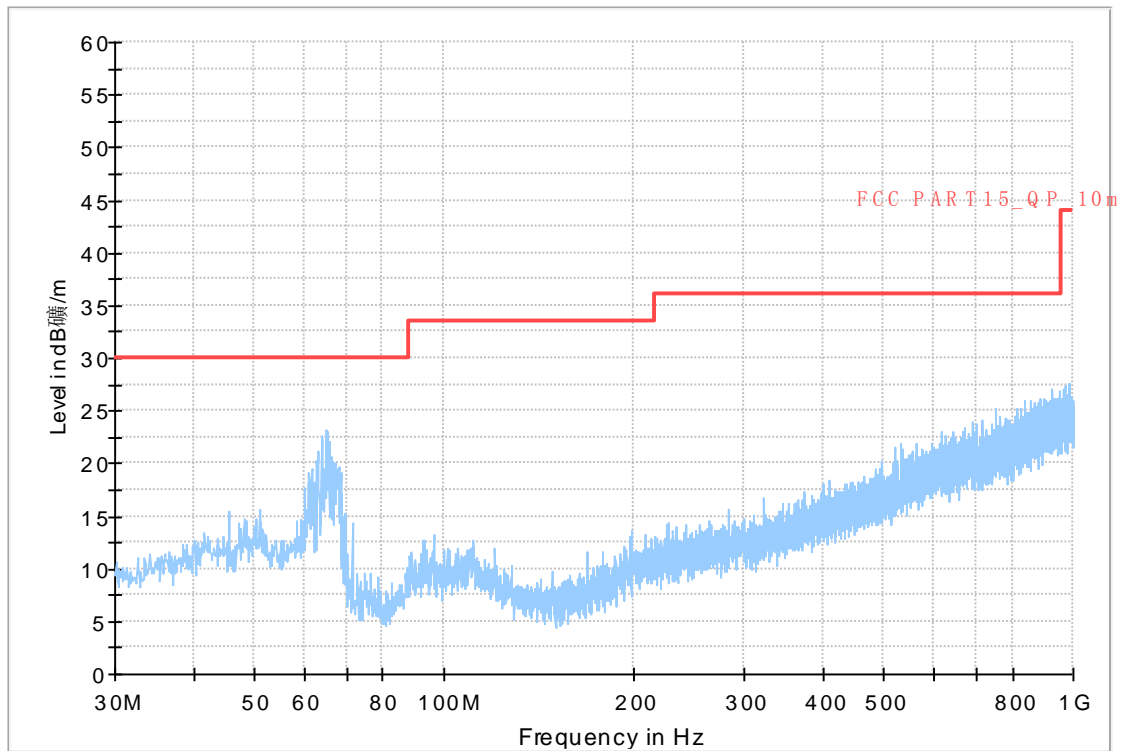


Fig A.10 Radiated Emission from 30MHz to 1GHz, LTE band 71, idle, channel 133147

Charging Mode, LTE band 71, idle, channel 133297

Full Spectrum

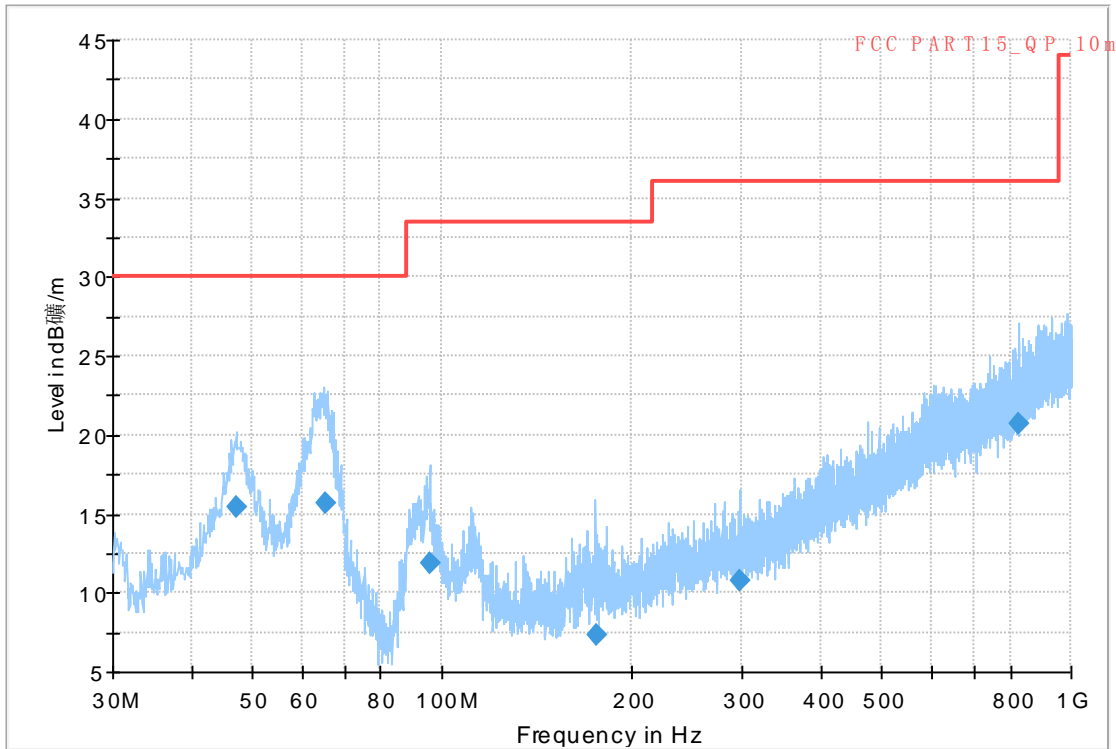


Fig A.11 Radiated Emission from 30MHz to 1GHz, LTE band 71, idle, channel 133297

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



Charging Mode, LTE band 71, idle, channel 133447

Full Spectrum

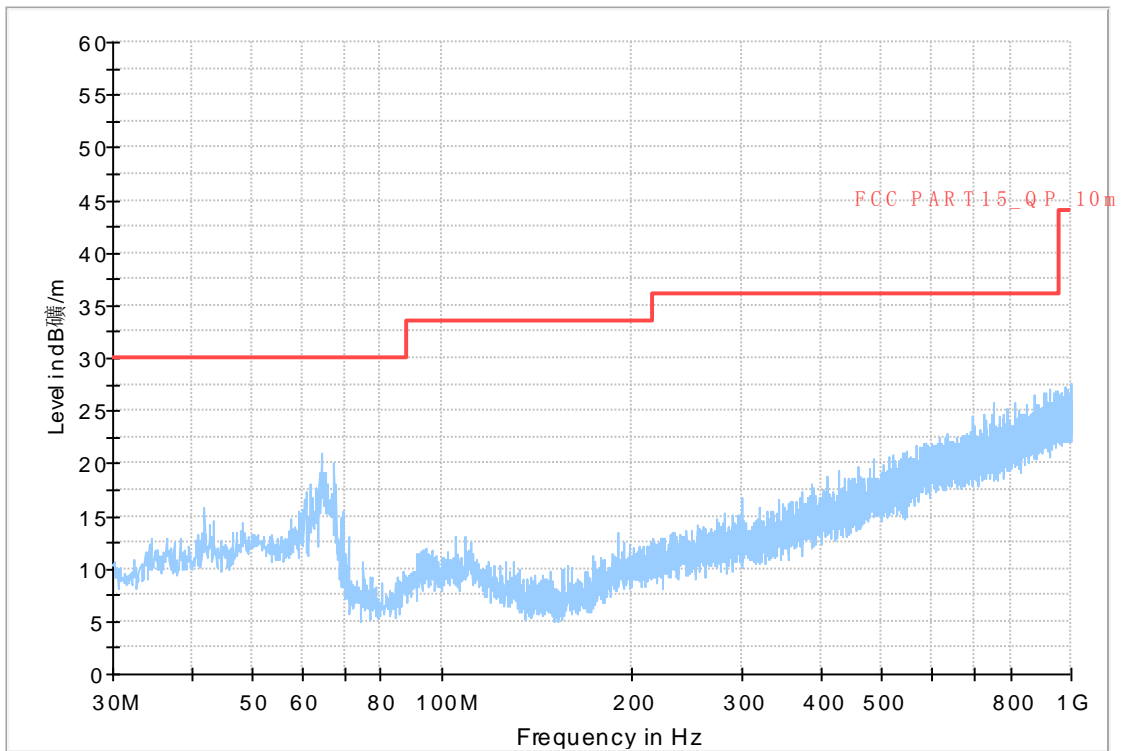
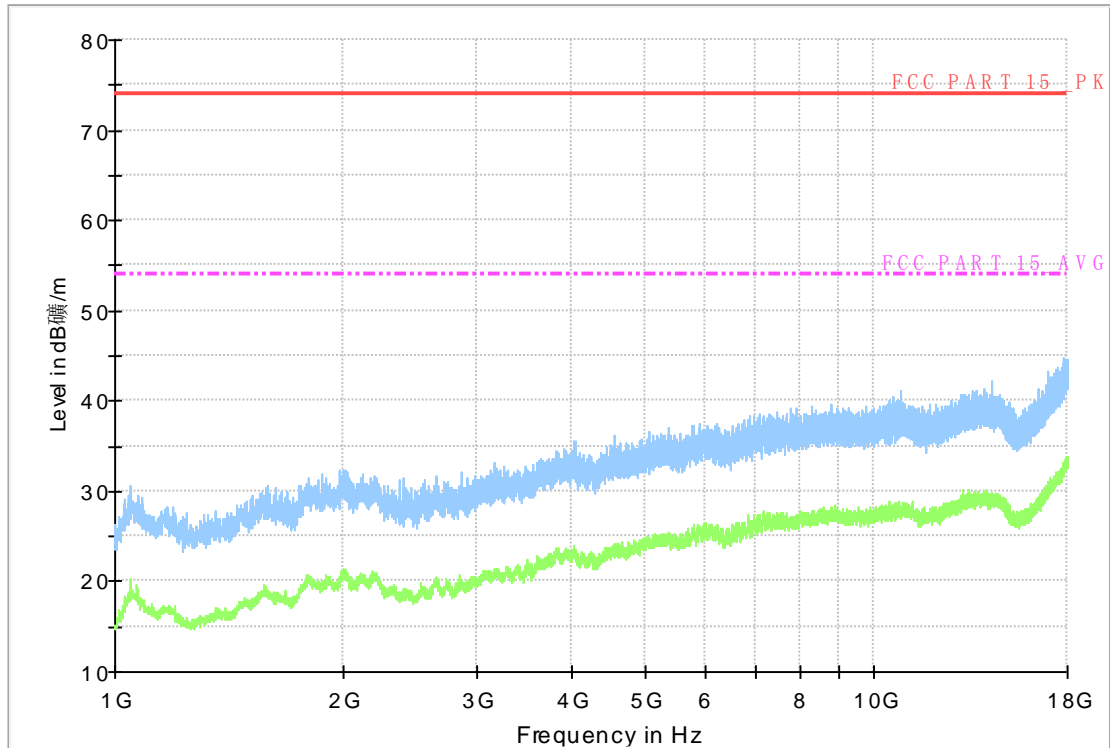


Fig A.12 Radiated Emission from 30MHz to 1GHz, LTE band 71, idle, channel 133447

**Measurement Results above 1GHz:  
Charging Mode, GSM850MHz, idle, channel 128**

Full Spectrum



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

Charging Mode, GSM850MHz, idle, channel 190

Full Spectrum

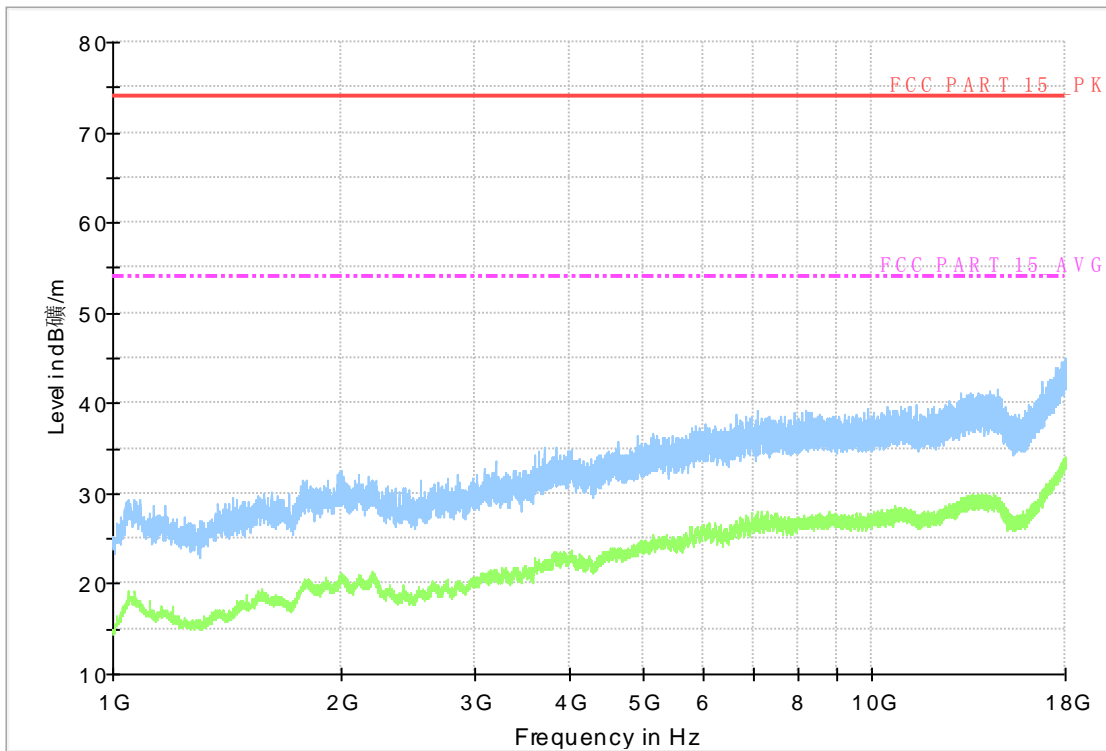


Fig A.14 Radiated Emission from 1GHz to 18GHz, GSM850MHz, idle, channel 190

Charging Mode, GSM850MHz, idle, channel 251

Full Spectrum

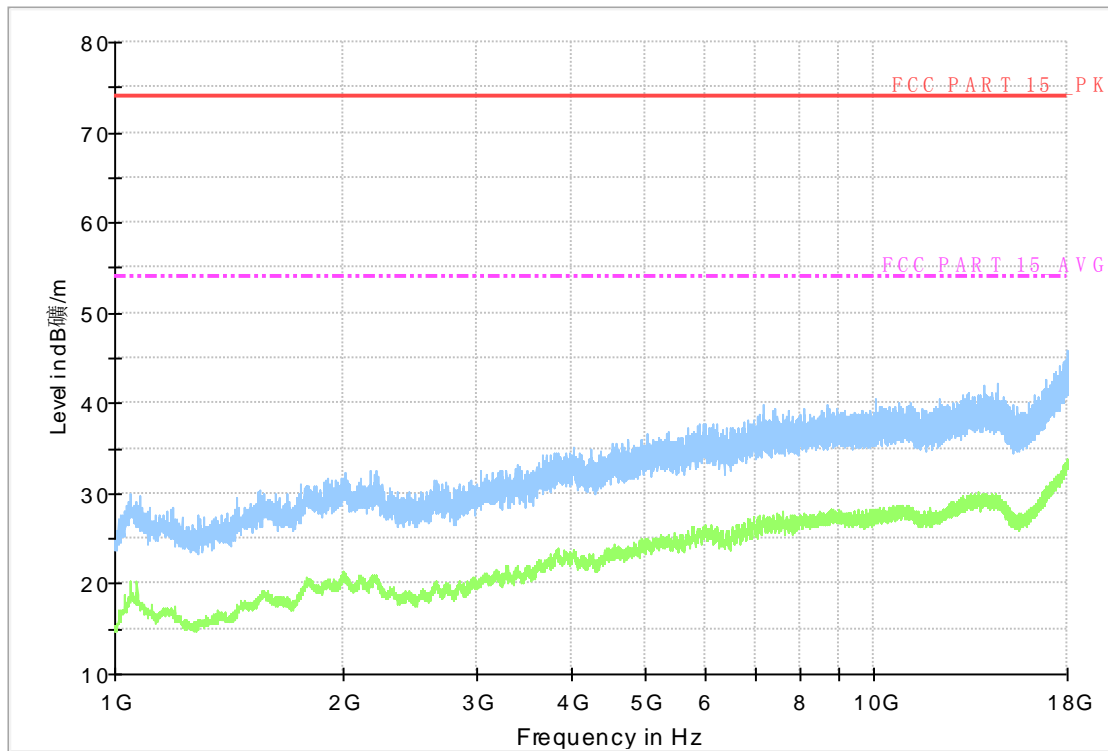


Fig A.15 Radiated Emission from 1GHz to 18GHz, GSM850MHz, idle, channel 251

Charging Mode, WCDMA850MHz, idle, channel 4132

Full Spectrum

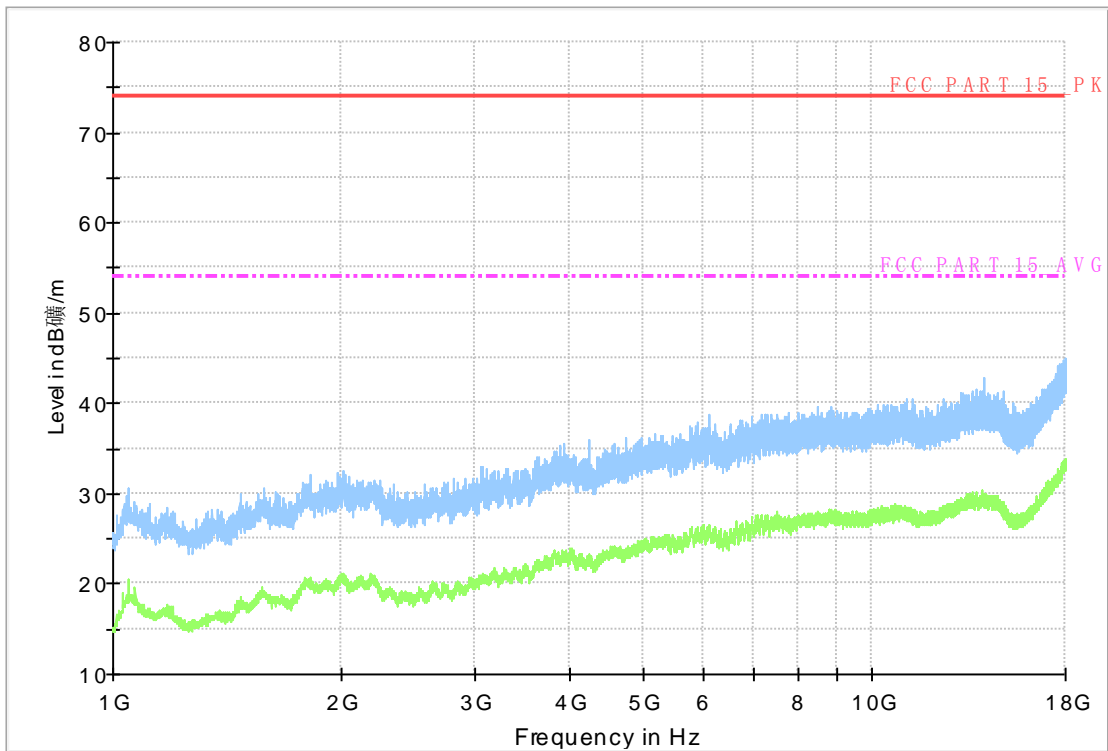


Fig A.16 Radiated Emission from 1GHz to 18GHz, WCDMA850MHz, idle, channel 4132

Charging Mode, WCDMA850MHz, idle, channel 4183

Full Spectrum

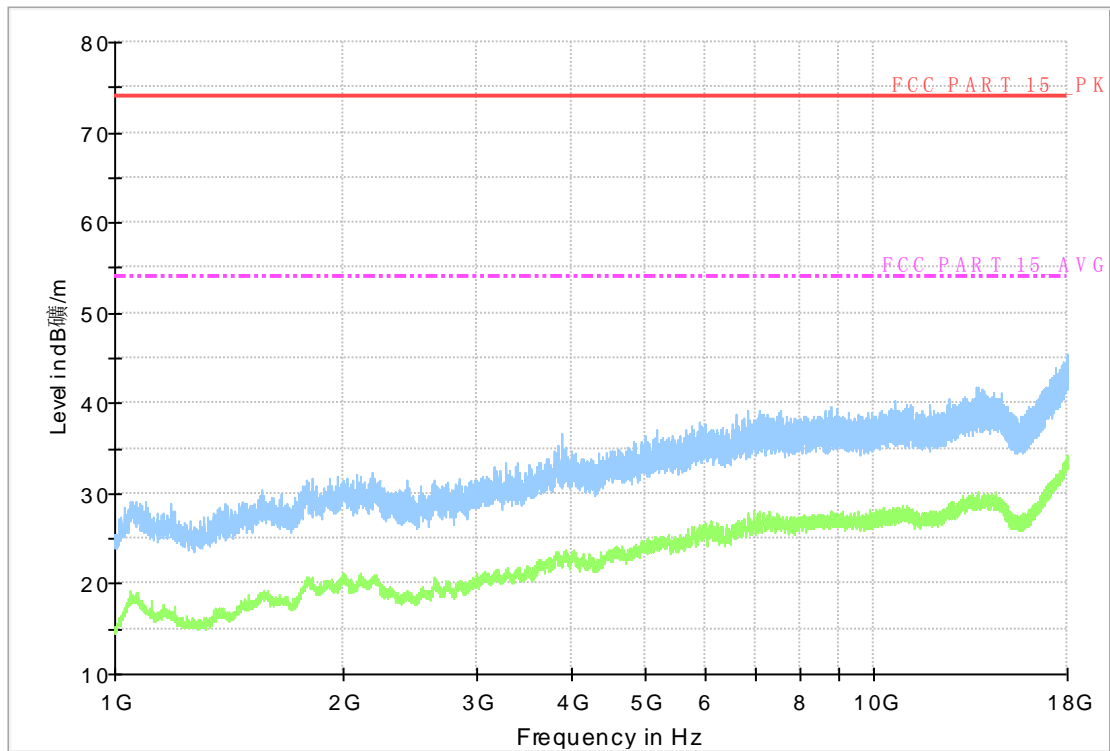


Fig A.17 Radiated Emission from 1GHz to 18GHz, WCDMA850MHz, idle, channel 4183

Charging Mode, WCDMA850MHz, idle, channel 4233

Full Spectrum

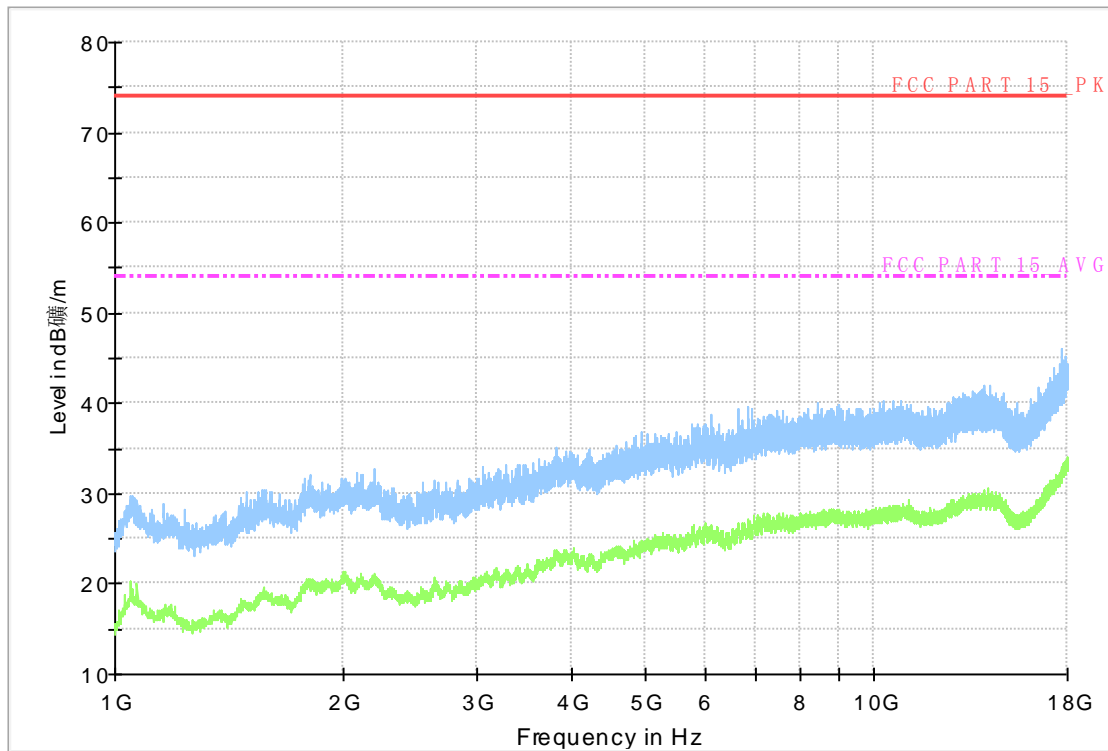


Fig A.18 Radiated Emission from 1GHz to 18GHz, WCDMA850MHz, idle, channel 4233

Charging Mode, LTE band 5, idle, channel 20407

Full Spectrum

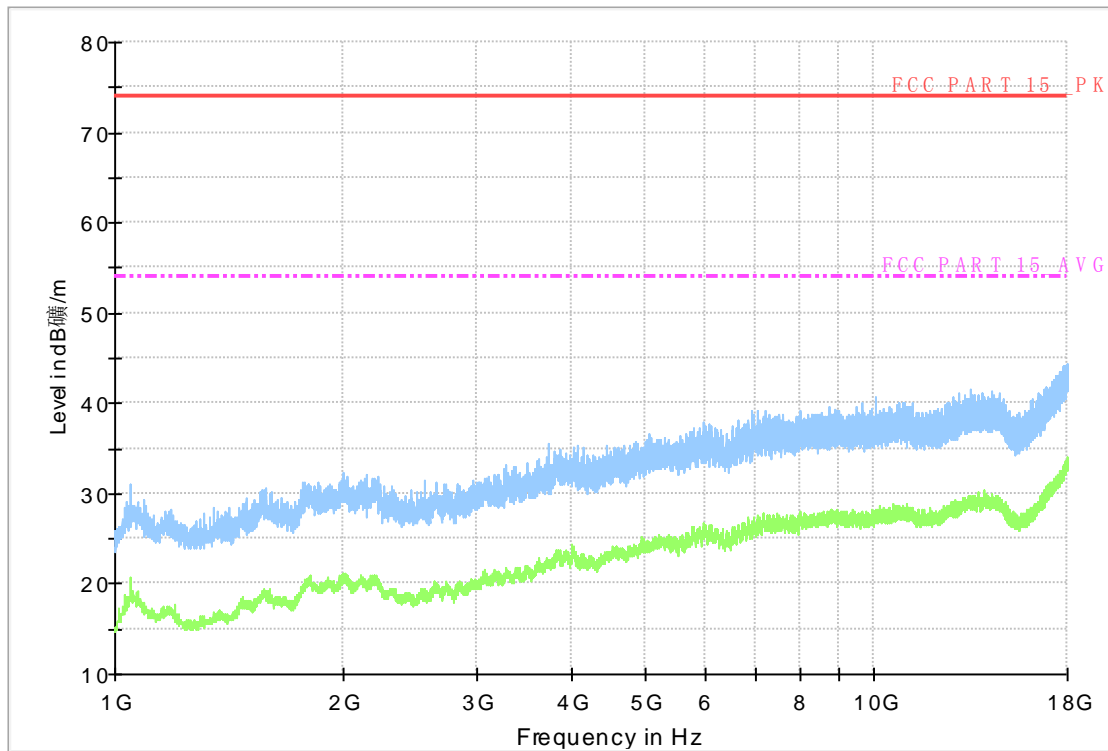


Fig A.19 Radiated Emission from 1GHz to 18GHz, LTE band 5, idle, channel 20407



Charging Mode, LTE band 5, idle, channel 20525

Full Spectrum

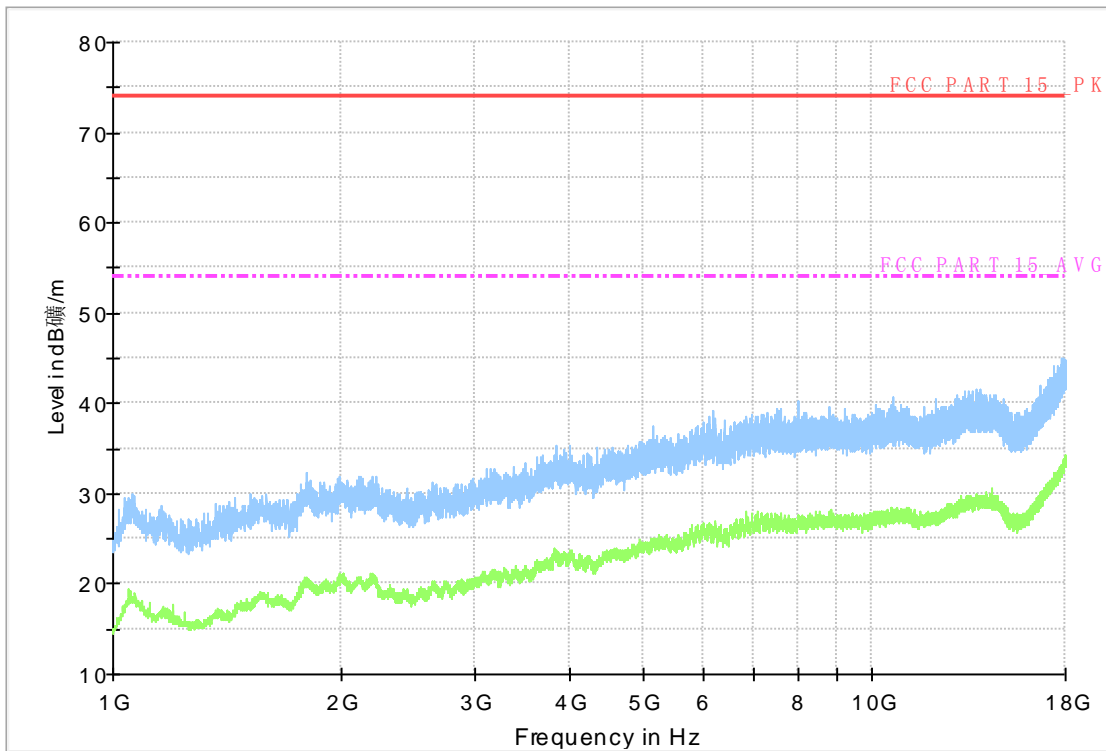


Fig A.20 Radiated Emission from 1GHz to 18GHz, LTE band 5, idle, channel 20525

Charging Mode, LTE band 5, idle, channel 20643

Full Spectrum

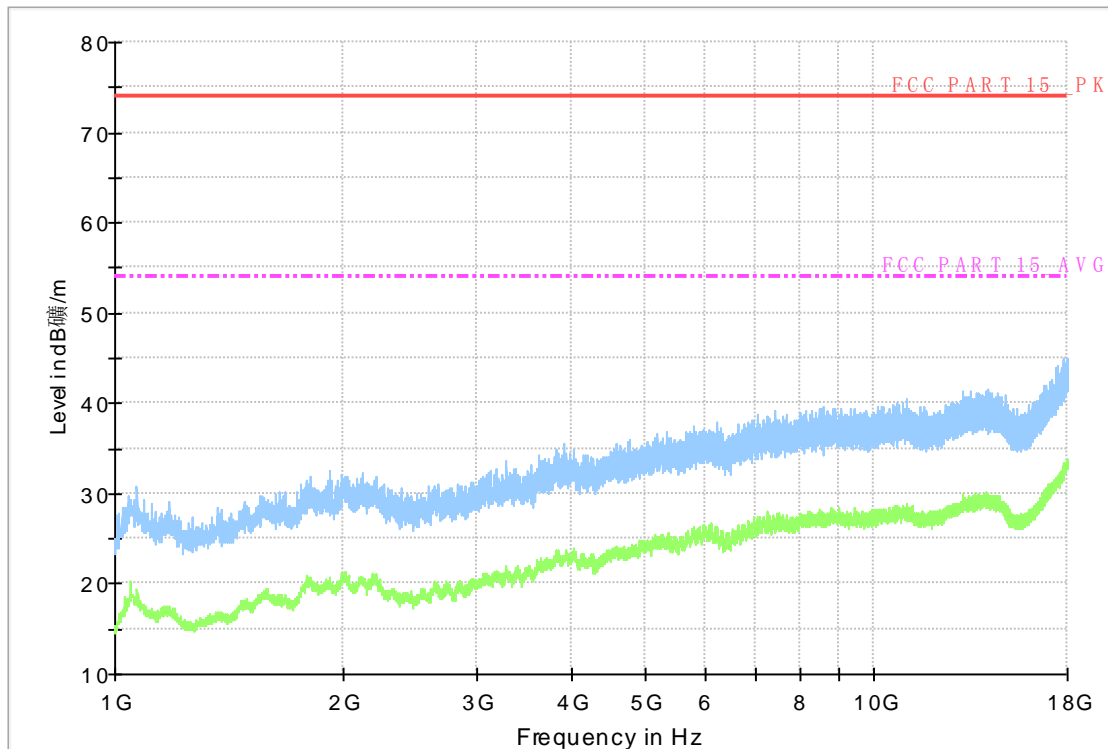


Fig A.21 Radiated Emission from 1GHz to 18GHz, LTE band 5, idle, channel 20643

Charging Mode, LTE band 71, idle, channel 133147

Full Spectrum

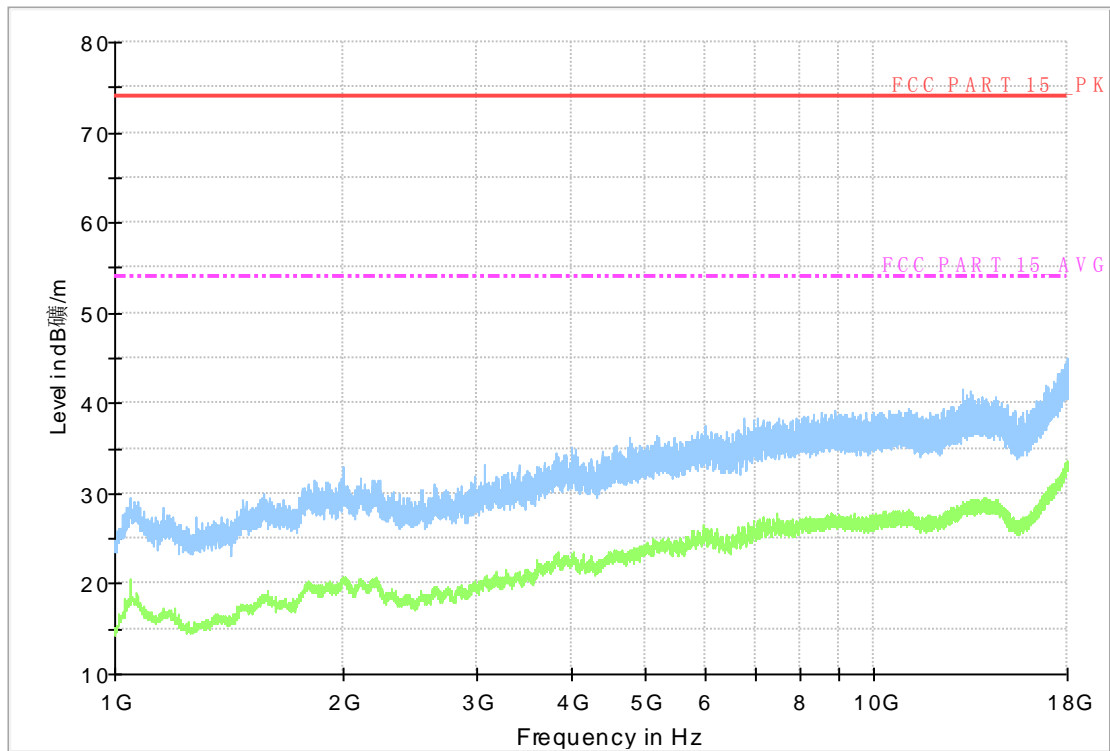


Fig A.22 Radiated Emission from 30MHz to 1GHz, LTE band 71, idle, channel 133147

Charging Mode, LTE band 71, idle, channel 133297

Full Spectrum

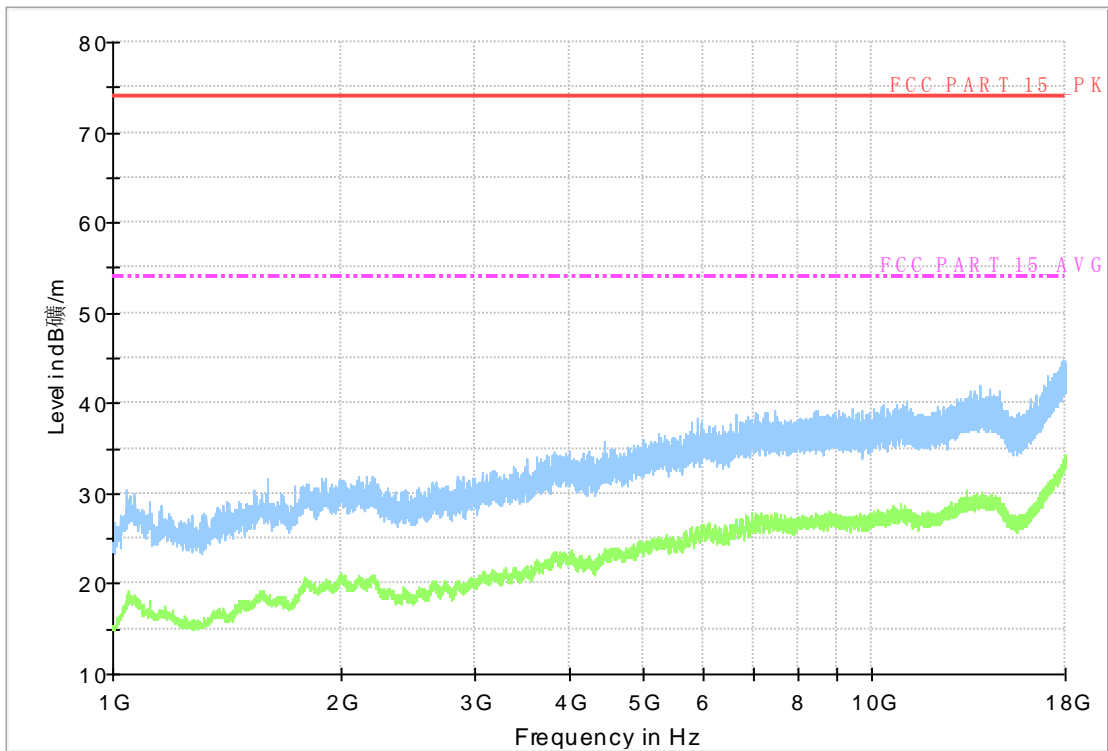


Fig A.23 Radiated Emission from 30MHz to 1GHz, LTE band 71, idle, channel 133297

Charging Mode, LTE band 71, idle, channel 133447

Full Spectrum

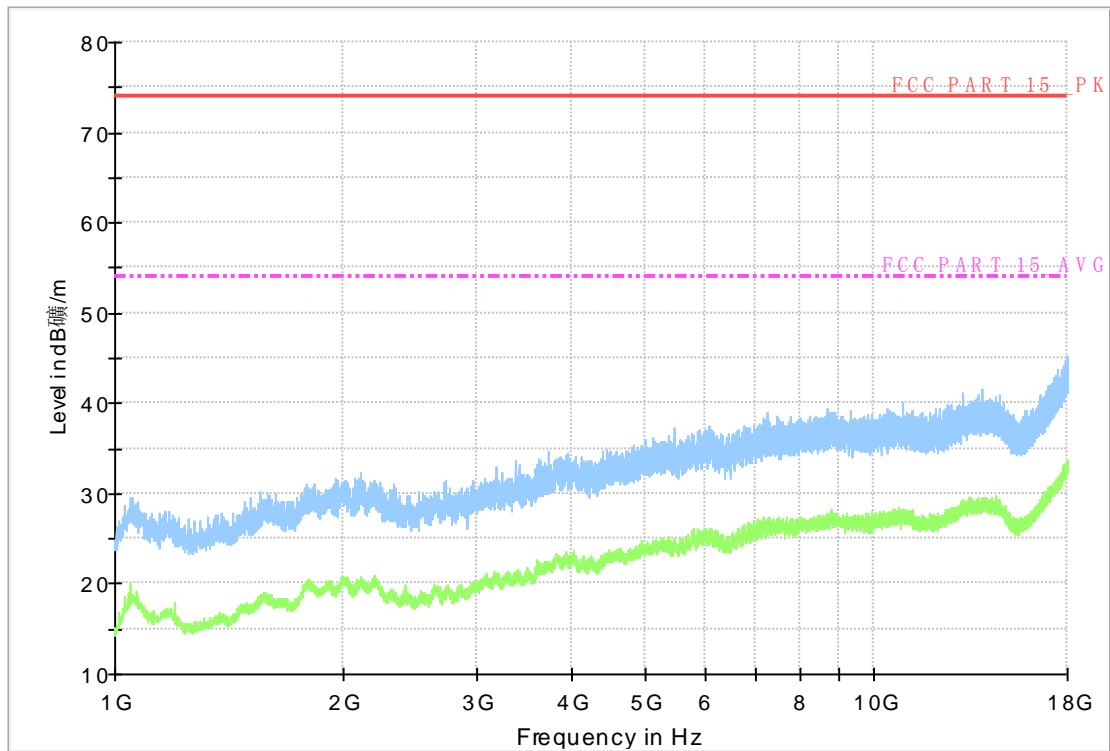


Fig A.24 Radiated Emission from 30MHz to 1GHz, LTE band 71, idle, channel 133447

**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

**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

**Measurement results for WCDMA850MHz idle, channel 4183:**
**Charging Mode/Average detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	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 (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	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 (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	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 (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	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



**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

**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

**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



**ANNEX B: PERSONS INVOLVED IN THIS TESTING**

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

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