



# TEST REPORT

## No.I21N03152-EMC

for

**IDEMIA Identity and Security France**

**ID Screen 60**

**Model Name: MPH-MB004A**

With

**Hardware Version: V02**

**Software Version: IDEMIA\_WM38\_v01\_211020**

**FCC ID: ZBW-MPHMB004**

**Issued Date: 2022-02-16**

**Designation Number: CN1210**

**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 SAICT.

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## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
I21N03152-EMC	Rev.0	1st edition	2022-02-16

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



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## 1. SUMMARY OF TEST REPORT

### 1.1. Test Items

Description	ID Screen 60
Model Name	MPH-MB004A
Applicant's name	IDEMIA Identity and Security France
Manufacturer's Name	IDEMIA Identity and Security France

### 1.2. Test Standards

FCC Part 15, Subpart B (10-1-2020 Edition); ANSI C63.4-2014.

### 1.3. Test Result

Total test 2 items, pass 2 items. Please refer to "6.2 Test Results".

### 1.4. Testing Location

Address: Building G, Shenzhen International Innovation Center, No.1006  
Shennan Road, Futian District, Shenzhen, Guangdong, China

### 1.5. Project data

Testing Start Date: 2021-11-17

Testing End Date: 2022-02-14

### 1.6. Signature

Liang Yong

(Prepared this test report)

Zhang Yunzhan

(Reviewed this test report)

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(Approved this test report)



## **2. CLIENT INFORMATION**

### **2.1. Applicant Information**

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### **2.2. Manufacturer Information**

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Fax /



### **3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT**

#### **(AE)**

#### **3.1. About EUT**

Description	ID Screen 60
Model Name	MPH-MB004A
FCC ID	ZBW-MPHMB004
Condition of EUT as received	No obvious damage in appearance

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of Shenzhen Academy of Information and Communications Technology.

#### **3.2. Internal Identification of EUT**

<b>EUT ID*</b>	<b>SN or IMEI</b>	<b>HW Version</b>	<b>SW Version</b>	<b>Receive Date</b>
UT04aa	351935780003408	V02	IDEMIA_WM38_v01_211020	2021-11-12
UT05aa	351935780003366	V02	IDEMIA_WM38_v01_211020	2021-11-12
UT12aa	351935780001865	V02	IDEMIA_WM38_v01_211020	2022-01-17

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

#### **3.3. Internal Identification of AE**

<b>AE ID*</b>	<b>Description</b>
AE1	Battery
AE2	Charger
AE3	USB Cable

##### AE1

Model	293780548
Manufacturer	SCUD (Fujian) Electronics Co., Ltd.
Capacity	11900 mAh/45.81Wh
Nominal Voltage	3.87 V

##### AE2-1

Model	A839-200150C-EU1
Manufacturer	Shenzhen Aoda Power Technology Co., Ltd.

##### AE2-2

Model	A839-200150C-US1
Manufacturer	Shenzhen Aoda Power Technology Co., Ltd.

##### AE2-3

Model	A839-200150C-UK1
Manufacturer	Shenzhen Aoda Power Technology Co., Ltd.

##### AE3-1

Model	JWUB1499-M01H
Manufacturer	JUWEI ELECTRONICS CO.,LTD



AE3-2

Model JWUB1453-M01R  
Manufacturer HUIZHOU JUWEI ELECTRONICS CO.,LTD

\*AE ID and AE Label: is used to identify the test sample in the lab internally.

\*AE Label: To distinguish the type and number of AE

AE: ancillary equipment

AE2: The circuit boards of AE2-1 、 AE2-2 and AE2-3 are the same.

### 3.4. EUT Set-ups

<b>EUT set-up No.</b>	<b>Combination of EUT and AE</b>	<b>Remarks</b>
Set.1	EUT+AE1+AE2-1+AE3-1	
Set.2	EUT+AE1+AE3-1+PC	
Set.3	EUT+AE1+AE3-2+PC	



### **3.5. General Description**

The Equipment Under Test (EUT) is a model of ID Screen 60.

It supports GSM 850/900/1800/1900MHz, WCDMA Bands 1/2/5/8/, LTE Bands 1/2/3/4/5/7/8/20/28/38/40/41.

It has MP3, Camera, USB memory, Bluetooth, Wi-Fi, Fingerprint recognition and GNSS functions.

It consists of normal options: Battery, Charger and USB Cable.

Manual and specifications of the EUT were provided to fulfill the test.

Samples (EUT+AE) undergoing test were selected by the Client. Relevant information is provided by the client.





## **4. REFERENCE DOCUMENTS**

### **4.1. 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	(10-1-2020 Edition)
ANSI C63.4	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2014

## 5. LABORATORY ENVIRONMENT

**Semi-anechoic chamber** did not exceed following limits along the EMC testing:

9.10m×6.10m×5.60m (L×W×H)

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz,>60dB; 1MHz-18000MHz,>90dB
Electrical insulation	>2MΩ
Ground system resistance	<4Ω
Normalised site attenuation (NSA)	<±4 dB, 3 m distance, from 30 to 1000 MHz

**Shield 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-10000MHz,>90dB
Electrical insulation	>2MΩ
Ground system resistance	<4Ω

**Fully-anechoic chamber** did not exceed following limits along the EMC testing:

9.10m×6.10m×5.60m (L×W×H)

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz,>60dB; 1MHz-18000MHz,>90dB
Electrical insulation	>2MΩ
Ground system resistance	<4Ω
Voltage Standing Wave Ratio (VSWR)	≤ 6 dB, from 1 to 18GHz, 3 m distance
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz

## 6. SUMMARY OF TEST RESULTS

### 6.1. Testing Environment

Normal Temperature: 15~35°C  
Relative Humidity: 20~75%  
Atmospheric pressure 86~106kPa

### 6.2. Summary of Measurement Results

Abbreviations used in this clause:	
P	Pass
NA	Not applicable
F	Fail

Items	Test Name	Clause in FCC/IC rules	Section in this report	Verdict
1	Radiated Emission	15.109(a)/ Section 6.2	A.1	P
2	Conducted Emission	15.107(a)/ Section 6.1	A.2	P

### 6.3. Statement

#### 6.3.1 Statements of conformity

This report takes measured values as criterion of test conclusion. The test conclusion meets the limit requirements.

## 7. MEASUREMENT UNCERTAINTY

Test item	Frequency ranges	Measurement uncertainty
Radiated Emission	30MHz-1GHz	4.86dB(k=2)
	1GHz-18GHz	4.82dB(k=2)
Conducted Emission	150kHz-30MHz	2.62dB(k=2)

## 8. MEASURING APPARATUS UTILIZED

No.	Name	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1.	Test Receiver	ESR7	101676	R&S	2022.11.24	1 year
2.	Test Receiver	ESCI	100702	R&S	2023.01.12	1 year
3.	Spectrum Analyzer	FSV40	101192	R&S	2023.01.12	1 year
4.	BiLog Antenna	3142E	0224831	ETS-Lindgren	2024.05.27	3 years
5.	Horn Antenna	3117	00066577	ETS-Lindgren	2022.04.02	3 years
6.	LISN	ENV216	102067	R&S	2022.07.15	1 year
7.	Chamber	FACT3-2.0	1285	ETS-Lindgren	2023.05.29	2 years
8.	Software	EMC32	V10.50.40	R&S	/	/
9.	Universal Radio Communication Tester	CMU200	114545	R&S	2023.01.12	1 year
10.	Universal Radio Communication Tester	CMW500	152499	R&S	2022.07.15	1 year

## 9. TEST ACCESSORY UTILIZED

No.	Name	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1.	PC	ThinkPad T480	PF-13LW0C	Lenovo	/	/
2.	Printer	P1008	VNF6C12491	HP	/	/
3.	Mouse	MOEUUOA	44NY517	Lenovo	/	/



## **ANNEX A: MEASUREMENT RESULTS**

### **A.1 Radiated Emission (§15.109(a))**

#### **Reference**

FCC: Part 15.109(a)

#### **A.1.1 Method of measurement**

The field strength of radiated emissions from the unintentional radiator at a distance of 3 meters or 1 meter is tested. Tested in accordance with the procedures of ANSI C63.4 -2014, section 8.3. The EUT was placed on a non-conductive table. Below 18GHz the measurement antenna was placed at a distance of 3 meters from the EUT. Above 18GHz the measurement antenna was placed at a distance of 1 meters from the EUT. (According to Part 15.31(f)(1), 1m limit is calculated by extrapolation factor of 20 dB/decade) 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:**

**Camera:** At the beginning of measurement, the battery is completely discharged. The battery and charger are installed so that the EUT works well and keeping on taking photos.

**Video Player:** The EUT is connected to a charger for charging and keeping on playing mp3.

**Fingerprint recognition:** EUT enables the fingerprint recognition function.

**Data Transfer:** The model of the PC is Lenovo ThinkPad T480, and the serial number of the PC is PF-13LW0C. The EUT is connected to a PC for transmitting data. The software is used to let the PC keep on copying data to EUT or TF Card, reading and erasing the data after copy action was finished.

**GSM receiver:** The EUT is connected to a charger for charging. The EUT is synchronized to System Simulator (SS), and able to respond to paging messages and incoming call. An established call has been released.

**WCDMA receiver:** The EUT is connected to a charger for charging. The EUT is synchronized to System Simulator (SS), and able to respond to paging messages and incoming call. An established call has been released.

**LTE receiver:** The EUT is connected to a charger for charging. The EUT is synchronized to System Simulator (SS), and able to respond to paging messages and incoming call. An established call has been released.

This device contains the receivers which tune and operate between 30MHz-960MHz in the following bands:

GSM850MHz, WCDMA Band5, LTE Band 5.

The EUT was tested while operating in licensed band receiver mode. All licensed band receivers that tune in the range of 30MHz-960MHz, as listed in Section 3.1, are investigated. Only the worst case emissions are reported.

All equipment is placed on the test table top and arranged in a typical configuration in accordance

with ANSI C63.4-2014 and manipulated to obtain worst case emissions.

**A.1.3 Measurement Limit**

Limit from Part 15.109(a)

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

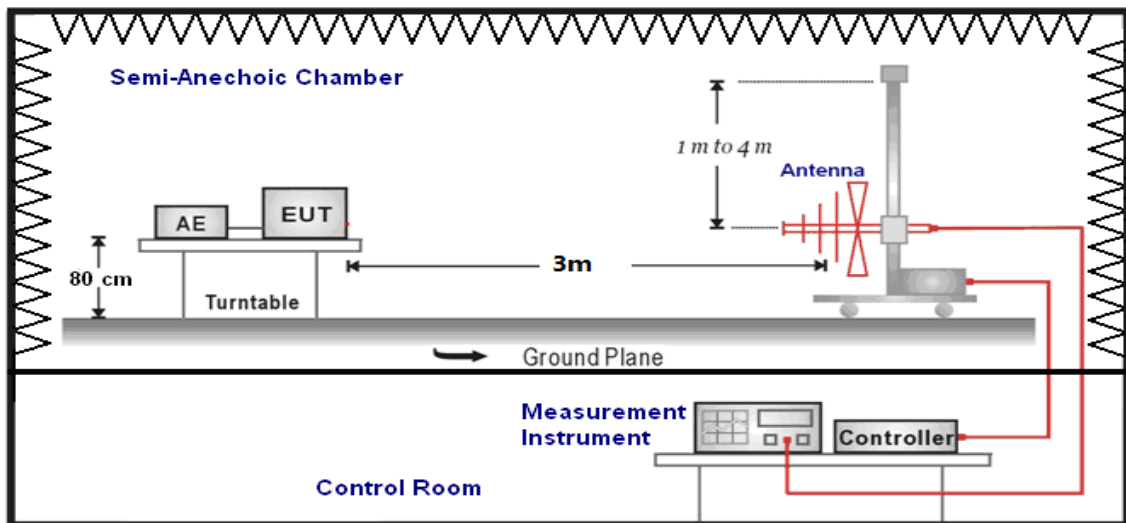
\*Note: The original limit is defined at 10m test distance. This limit is calculated according to CISPR requirements.

**A.1.4 Test Condition**

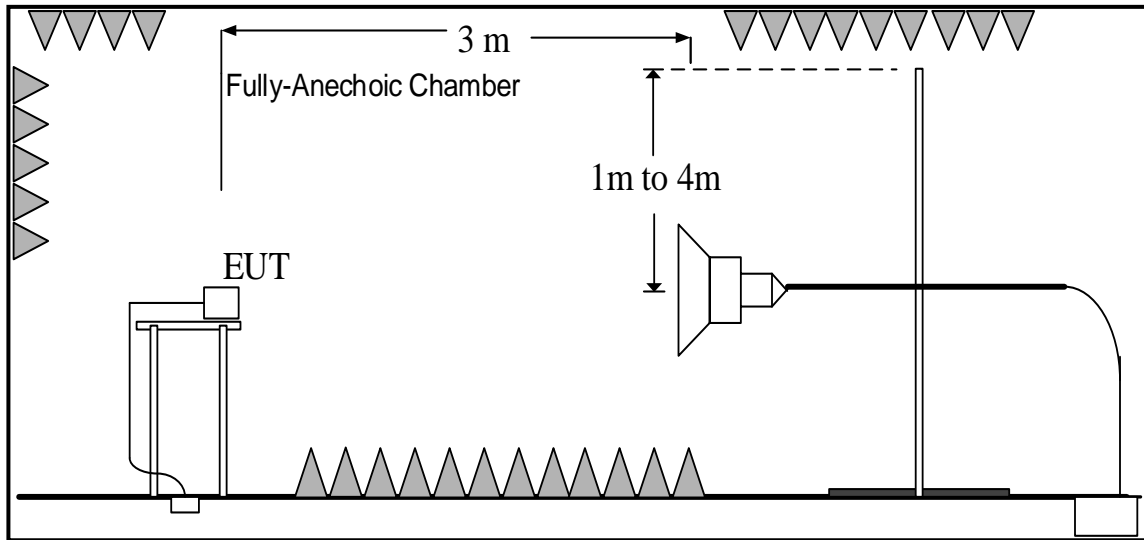
Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	120kHz (IF bandwidth)	5
Above 1000	1MHz/3MHz	15

**A.1.5 Test set-up:**

**30MHz-1GHz**



1GHz-40GHz



**A.1.6 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:

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

Where

$G_A$ : Antenna factor of receive antenna

$G_{PL}$ : Path Loss

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

Result: Quasi-Peak (dB $\mu$ V/m) / Average (dB $\mu$ V/m) / Peak (dB $\mu$ V/m)

Note: the result contains vertical part and Horizontal part

Camera

Frequency range (MHz)	Quasi-Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
		UT04aa/Set.1	
30-88	40.00	See Figure A.1.1.	P
88-216	43.52		
216-960	46.02		
960-1000	54.00		

Frequency range (MHz)	Average Limit (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
			UT04aa/Set.1	
1000 to 3000	54.00	74.00	See Figure A.1.2.	P
3000 to 18000	54.00	74.00	See Figure A.1.3.	P
18000 to 26500	54.00	74.00	See Figure A.1.4.	P
26500 to 40000	54.00	74.00	See Figure A.1.5.	P

## Video Player

Frequency range (MHz)	Quasi-Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
		UT04aa/Set.1	
30-88	40.00	See Figure A.1.6.	P
88-216	43.52		
216-960	46.02		
960-1000	54.00		

Frequency range (MHz)	Average Limit (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
			UT04aa/Set.1	
1000 to 3000	54.00	74.00	See Figure A.1.7.	P
3000 to 18000	54.00	74.00	See Figure A.1.8.	P
18000 to 26500	54.00	74.00	See Figure A.1.9.	P
26500 to 40000	54.00	74.00	See Figure A.1.10.	P

## GSM receiver 850MHz

Frequency range (MHz)	Quasi-Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
		UT04aa/Set.1	
30-88	40.00	See Figure A.1.11.	P
88-216	43.52		
216-960	46.02		
960-1000	54.00		

Frequency range (MHz)	Average Limit (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
			UT04aa/Set.1	
1000 to 3000	54.00	74.00	See Figure A.1.12.	P
3000 to 18000	54.00	74.00	See Figure A.1.13.	P
18000 to 26500	54.00	74.00	See Figure A.1.14.	P
26500 to 40000	54.00	74.00	See Figure A.1.15.	P



## WCDMA receiver Band 5

Frequency range (MHz)	Quasi-Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
		UT04aa/Set.1	
30-88	40.00	See Figure A.1.16.	P
88-216	43.52		
216-960	46.02		
960-1000	54.00		

Frequency range (MHz)	Average Limit (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
			UT04aa/Set.1	
1000 to 3000	54.00	74.00	See Figure A.1.17.	P
3000 to 18000	54.00	74.00	See Figure A.1.18.	P
18000 to 26500	54.00	74.00	See Figure A.1.19.	P
26500 to 40000	54.00	74.00	See Figure A.1.20.	P

## LTE receiver Band 5

Frequency range (MHz)	Quasi-Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
		UT04aa/Set.1	
30-88	40.00	See Figure A.1.21.	P
88-216	43.52		
216-960	46.02		
960-1000	54.00		

Frequency range (MHz)	Average Limit (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
			UT04aa/Set.1	
1000 to 3000	54.00	74.00	See Figure A.1.22.	P
3000 to 18000	54.00	74.00	See Figure A.1.23.	P
18000 to 26500	54.00	74.00	See Figure A.1.24.	P
26500 to 40000	54.00	74.00	See Figure A.1.25.	P

## Fingerprint recognition

Frequency range (MHz)	Quasi-Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
		UT12aa/Set.1	
30-88	40.00	See Figure A.1.26.	P
88-216	43.52		
216-960	46.02		
960-1000	54.00		

Frequency range (MHz)	Average Limit (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
			UT12aa/Set.1	
1000 to 3000	54.00	74.00	See Figure A.1.27.	P
3000 to 18000	54.00	74.00	See Figure A.1.28.	P
18000 to 26500	54.00	74.00	See Figure A.1.29.	P
26500 to 40000	54.00	74.00	See Figure A.1.30.	P

## Data Transfer: PC TO EUT

Frequency range (MHz)	Quasi-Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
		UT04aa/Set.2	
30-88	40.00	See Figure A.1.31.	P
88-216	43.52		
216-960	46.02		
960-1000	54.00		

Frequency range (MHz)	Average Limit (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
			UT04aa/Set.2	
1000 to 3000	54.00	74.00	See Figure A.1.32.	P
3000 to 18000	54.00	74.00	See Figure A.1.33.	P
18000 to 26500	54.00	74.00	See Figure A.1.34.	P
26500 to 40000	54.00	74.00	See Figure A.1.35.	P



Data Transfer: EUT TO PC

Frequency range (MHz)	Quasi-Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
		UT04aa/Set.2	
30-88	40.00	See Figure A.1.36.	P
88-216	43.52		
216-960	46.02		
960-1000	54.00		

Frequency range (MHz)	Average Limit (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
			UT04aa/Set.2	
1000 to 3000	54.00	74.00	See Figure A.1.37.	P
3000 to 18000	54.00	74.00	See Figure A.1.38.	P
18000 to 26500	54.00	74.00	See Figure A.1.39.	P
26500 to 40000	54.00	74.00	See Figure A.1.40.	P

Data Transfer: PC TO TF Card

Frequency range (MHz)	Quasi-Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
		UT04aa/Set.2	
30-88	40.00	See Figure A.1.41.	P
88-216	43.52		
216-960	46.02		
960-1000	54.00		

Frequency range (MHz)	Average Limit (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
			UT04aa/Set.2	
1000 to 3000	54.00	74.00	See Figure A.1.42.	P
3000 to 18000	54.00	74.00	See Figure A.1.43.	P
18000 to 26500	54.00	74.00	See Figure A.1.44.	P
26500 to 40000	54.00	74.00	See Figure A.1.45.	P

## Data Transfer: TF Card TO PC

Frequency range (MHz)	Quasi-Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
		UT04aa/Set.2	
30-88	40.00	See Figure A.1.46.	P
88-216	43.52		
216-960	46.02		
960-1000	54.00		

Frequency range (MHz)	Average Limit (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
			UT04aa/Set.2	
1000 to 3000	54.00	74.00	See Figure A.1.47.	P
3000 to 18000	54.00	74.00	See Figure A.1.48.	P
18000 to 26500	54.00	74.00	See Figure A.1.49.	P
26500 to 40000	54.00	74.00	See Figure A.1.50.	P

## Data Transfer: PC TO EUT

Frequency range (MHz)	Quasi-Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
		UT04aa/Set.3	
30-88	40.00	See Figure A.1.51.	P
88-216	43.52		
216-960	46.02		
960-1000	54.00		

Frequency range (MHz)	Average Limit (dB $\mu$ V/m)	Peak Limit (dB $\mu$ V/m)	Result (dB $\mu$ V/m)	Conclusion
			UT04aa/Set.3	
1000 to 3000	54.00	74.00	See Figure A.1.52.	P
3000 to 18000	54.00	74.00	See Figure A.1.53.	P
18000 to 26500	54.00	74.00	See Figure A.1.54.	P
26500 to 40000	54.00	74.00	See Figure A.1.55.	P

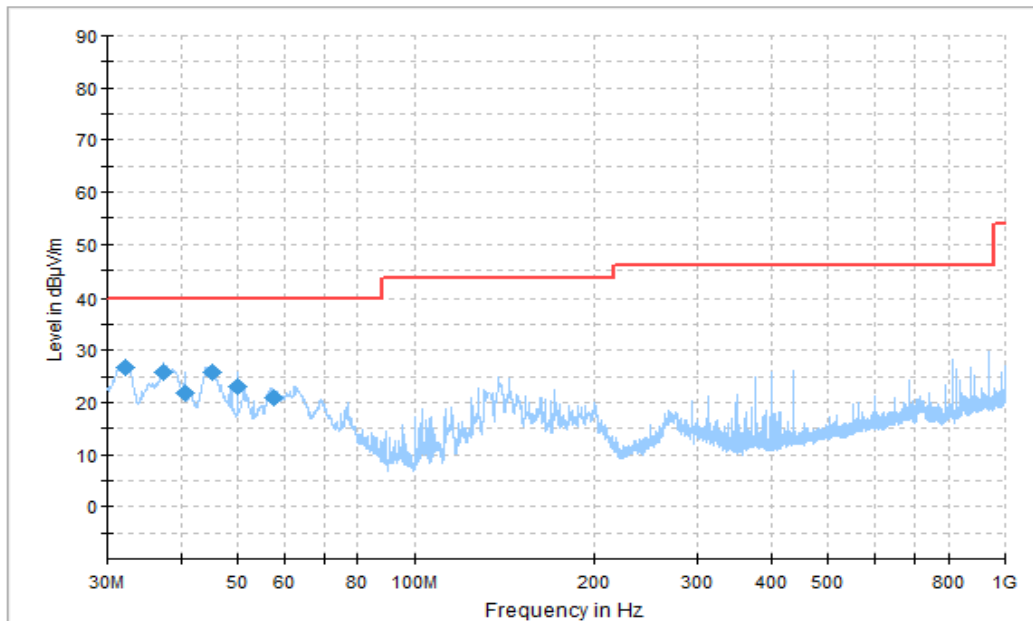


Figure A.1.1. Radiated Emission (Camera , 30MHz to 1GHz)

Final\_Results

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
32.231111	26.55	40.00	13.45	V	-25.8	52.35
37.496667	25.75	40.00	14.25	V	-28.0	53.75
40.636111	21.80	40.00	18.20	V	-29.5	51.30
45.147222	25.75	40.00	14.25	V	-32.6	58.35
50.012778	23.17	40.00	16.83	V	-36.5	59.67
57.586667	21.03	40.00	18.97	V	-37.6	58.63

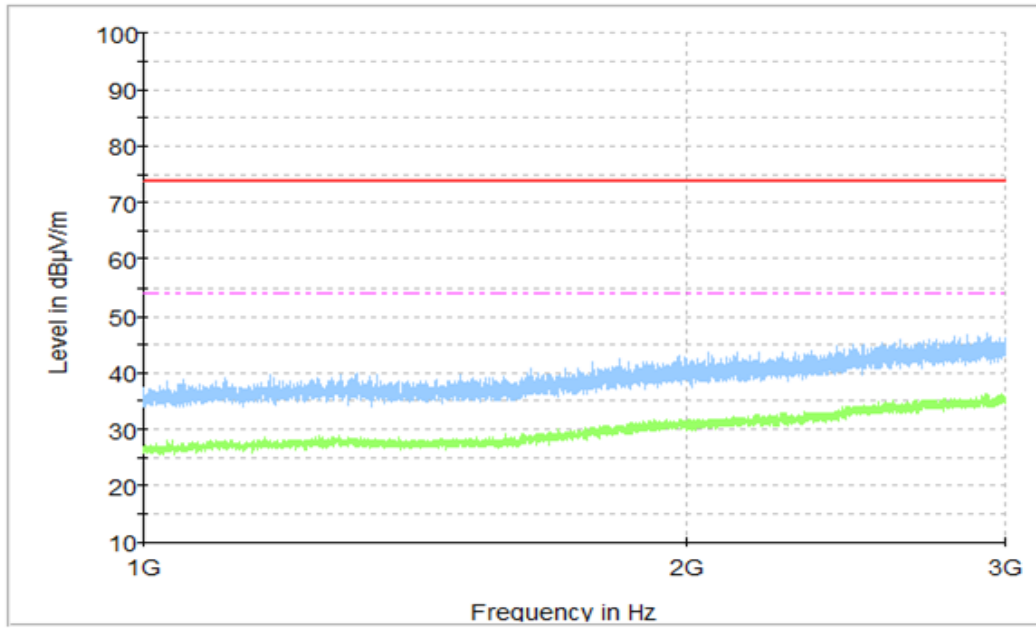


Figure A.1.2. Radiated Emission (Camera , 1GHz to 3GHz)

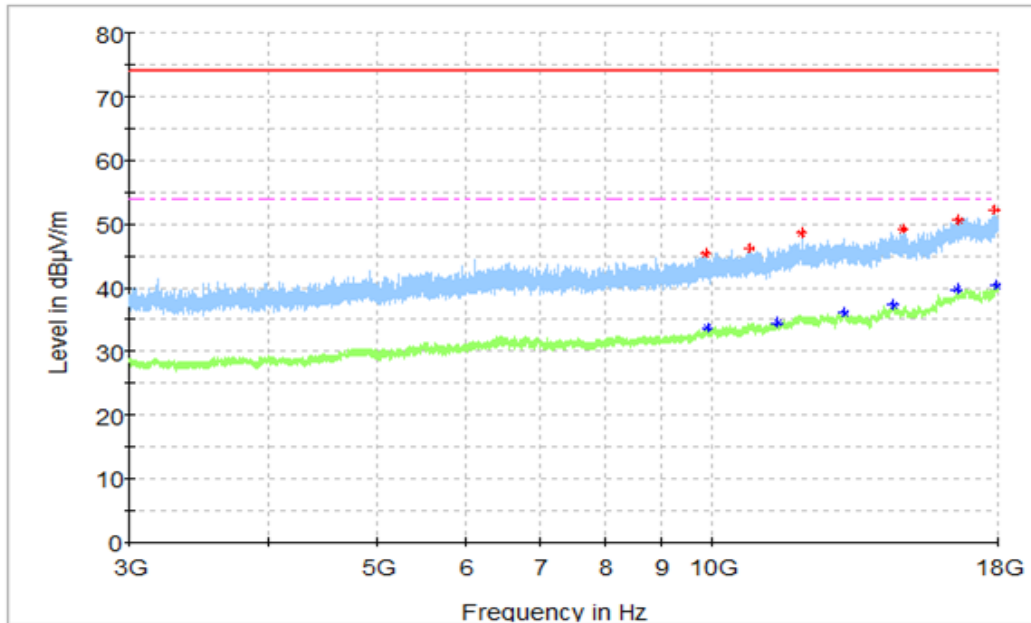


Figure A.1.3. Radiated Emission (Camera , 3GHz to 18GHz)

**Final\_Results\_PK**

Frequency(MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
9874.500000	45.38	74.00	28.62	V	5.2	40.18
10800.000000	46.22	74.00	27.78	H	6.2	40.02
12032.500000	48.64	74.00	25.36	H	8.1	40.54
14817.000000	49.23	74.00	24.77	H	11.3	37.93
16580.500000	50.57	74.00	23.43	V	15.2	35.37
17917.000000	52.25	74.00	21.75	V	17.1	35.15

**Final\_Results\_AVG**

Frequency(MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
9885.000000	33.69	54.00	20.31	V	5.3	28.39
11435.000000	34.52	54.00	19.48	H	6.8	27.72
13125.000000	36.17	54.00	17.83	H	9.8	26.37
14505.500000	37.25	54.00	16.75	H	11.7	25.55
16550.500000	39.65	54.00	14.35	H	15.3	24.35
17947.500000	40.28	54.00	13.72	H	17.3	22.98

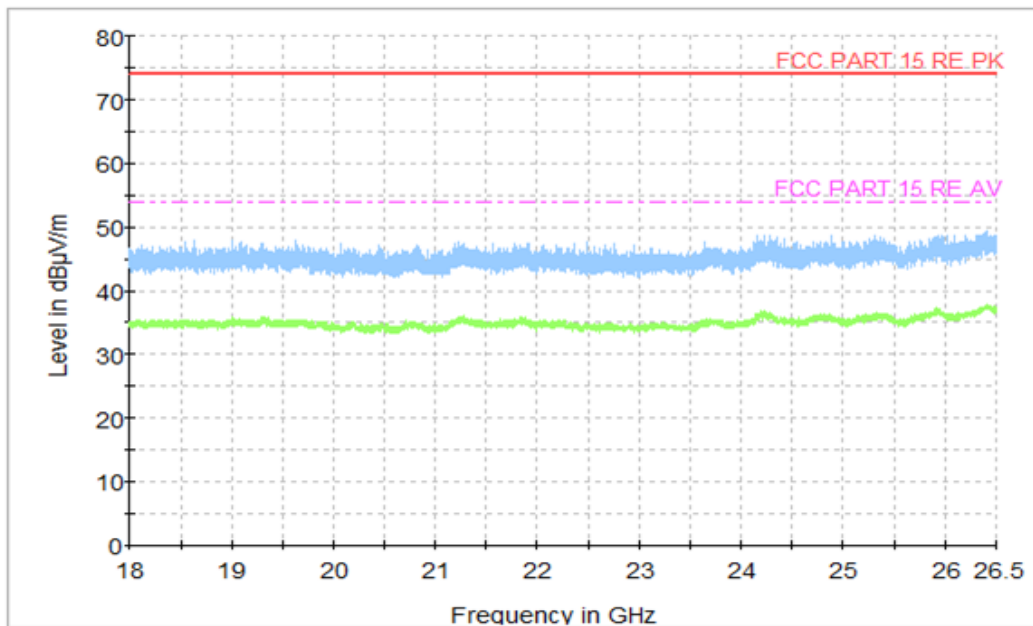


Figure A.1.4. Radiated Emission (Camera , 18GHz to 26.5GHz)

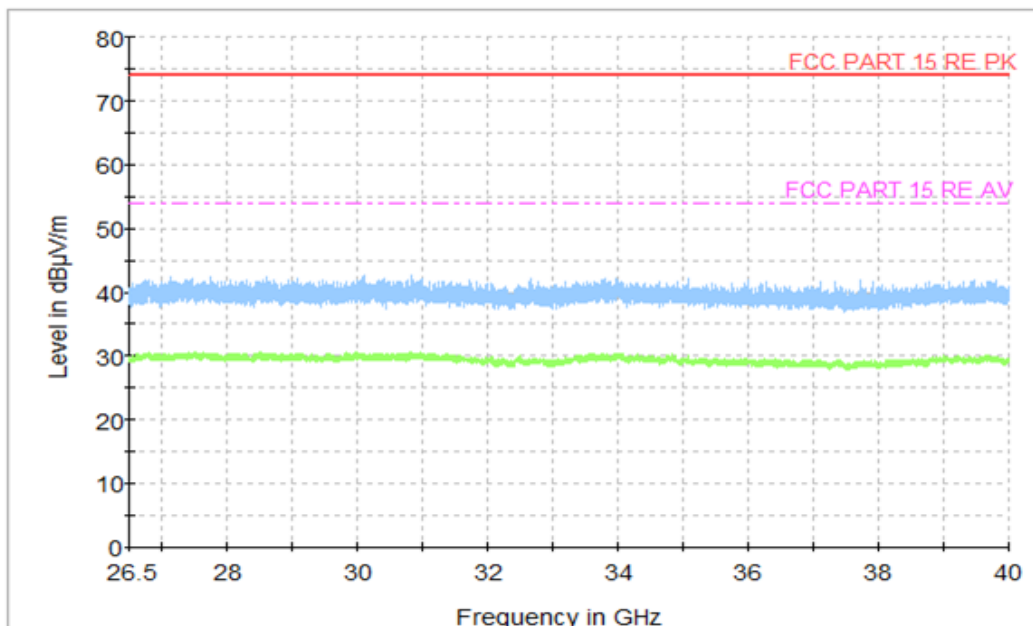


Figure A.1.5. Radiated Emission (Camera , 26.5GHz to 40GHz)



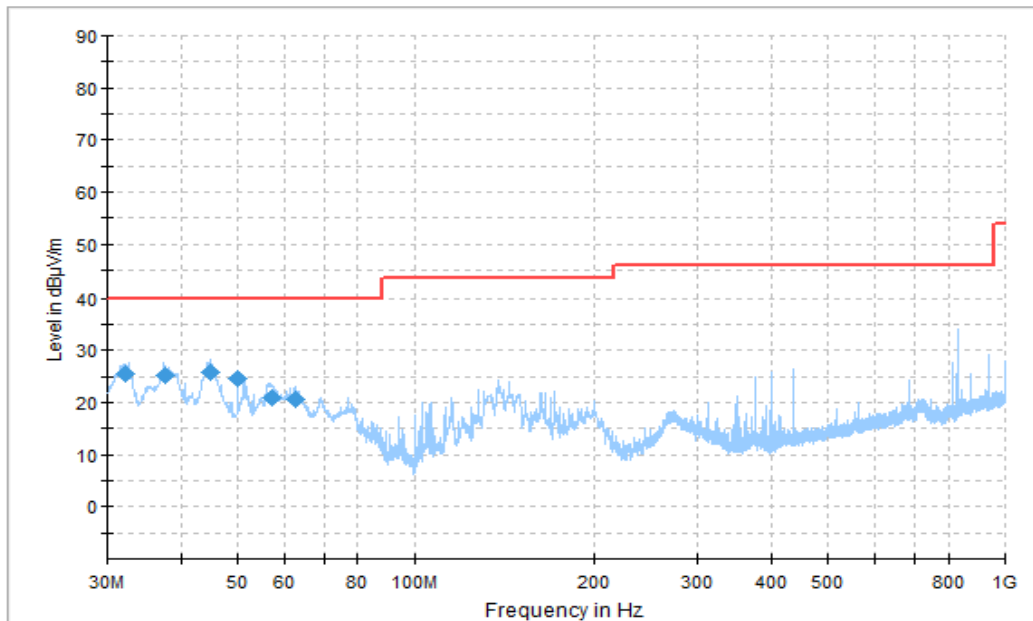


Figure A.1.6. Radiated Emission (Video Player , 30MHz to 1GHz)

Final\_Results

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
32.286667	25.53	40.00	14.47	V	-25.8	51.33
37.510556	25.06	40.00	14.94	V	-28.0	53.06
45.067222	25.68	40.00	14.32	V	-32.5	58.18
49.998889	24.52	40.00	15.48	V	-36.5	61.02
57.204444	20.84	40.00	19.16	V	-37.8	58.64
62.501111	20.43	40.00	19.57	V	-35.8	56.23

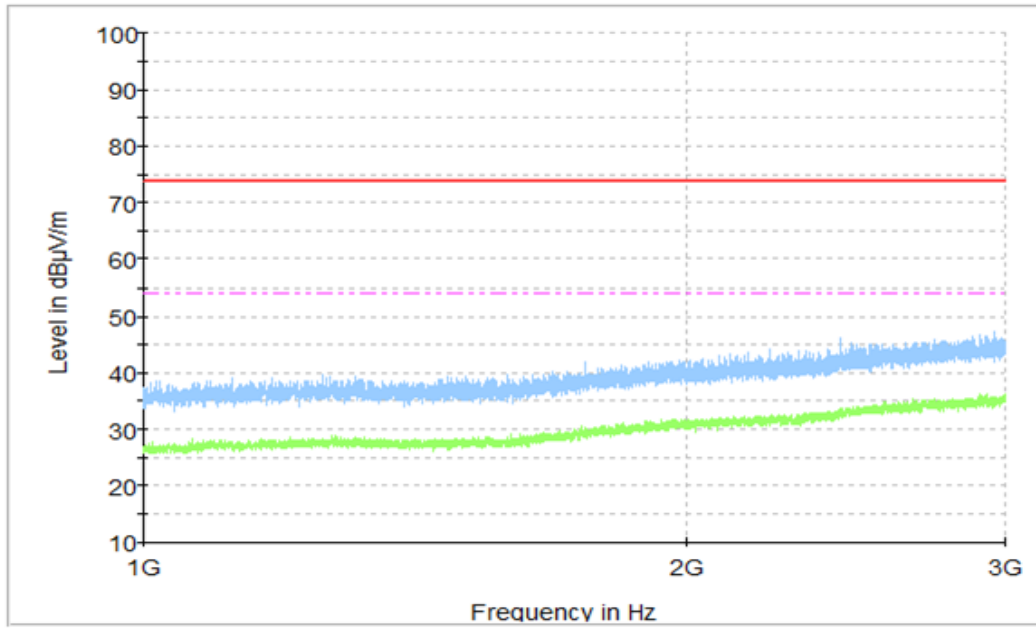


Figure A.1.7. Radiated Emission (Video Player , 1GHz to 3GHz)

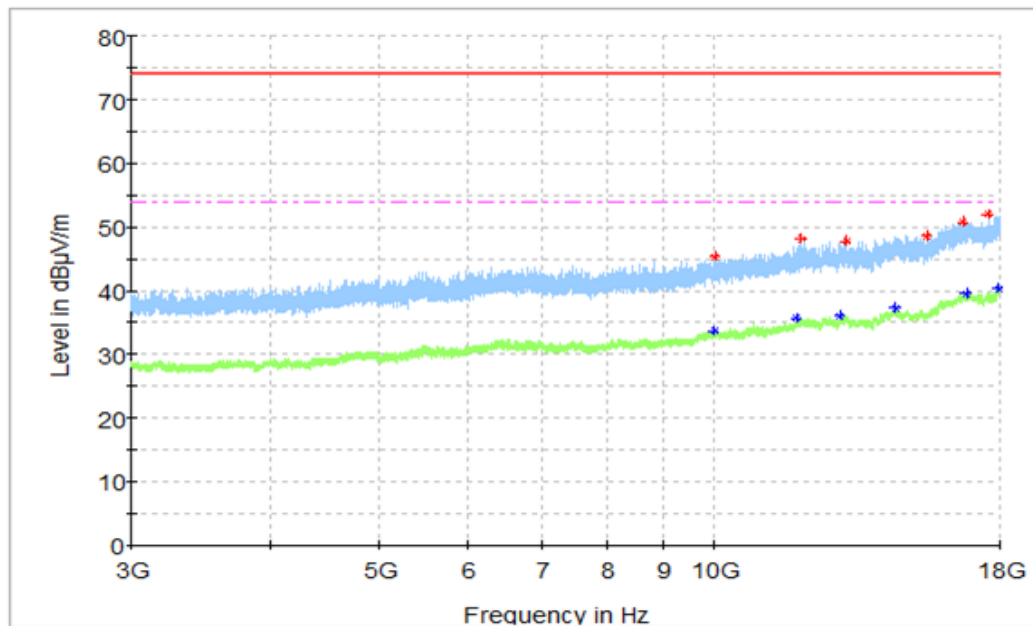


Figure A.1.8. Radiated Emission (Video Player , 3GHz to 18GHz)

**Final\_Results\_PK**

Frequency(MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
10007.500000	45.32	74.00	28.68	V	5.4	39.92
11946.500000	48.11	74.00	25.89	V	8.1	40.01
13091.500000	47.75	74.00	26.25	H	9.5	38.25
15488.000000	48.54	74.00	25.46	H	12.5	36.04
16702.000000	50.71	74.00	23.29	V	15.4	35.31
17589.000000	51.92	74.00	22.08	H	15.9	36.02

**Final\_Results\_AVG**

Frequency(MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
9998.500000	33.73	54.00	20.27	H	5.3	28.43
11850.000000	35.77	54.00	18.23	V	8.0	27.77
12970.000000	36.12	54.00	17.88	H	9.4	26.72
14498.500000	37.19	54.00	16.81	H	11.7	25.49
16817.500000	39.58	54.00	14.42	H	16.0	23.58
17945.000000	40.24	54.00	13.76	H	17.3	22.94

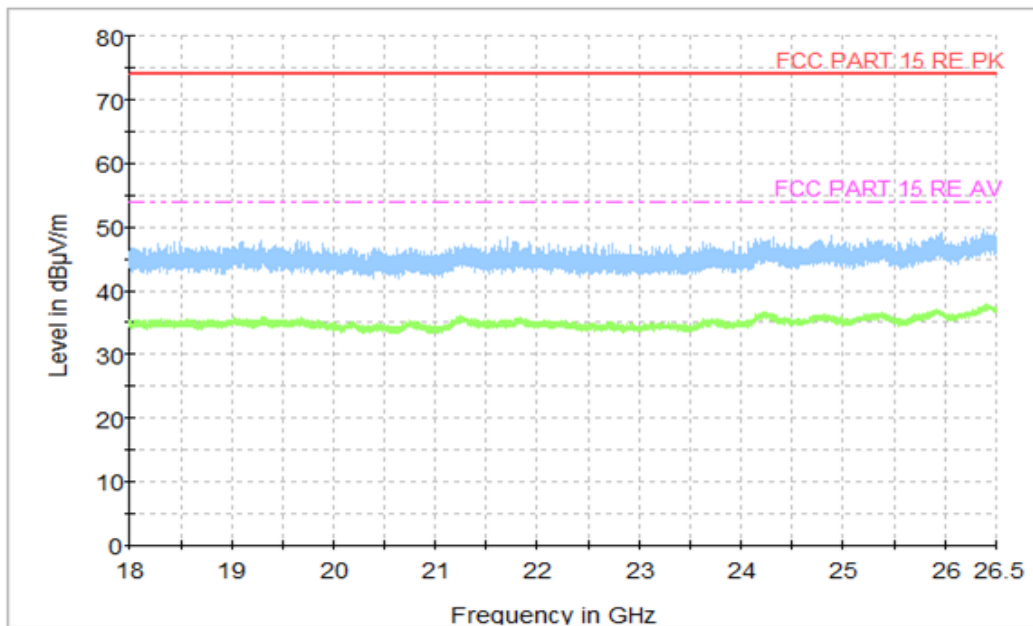


Figure A.1.9. Radiated Emission (Video Player , 18GHz to 26.5GHz)

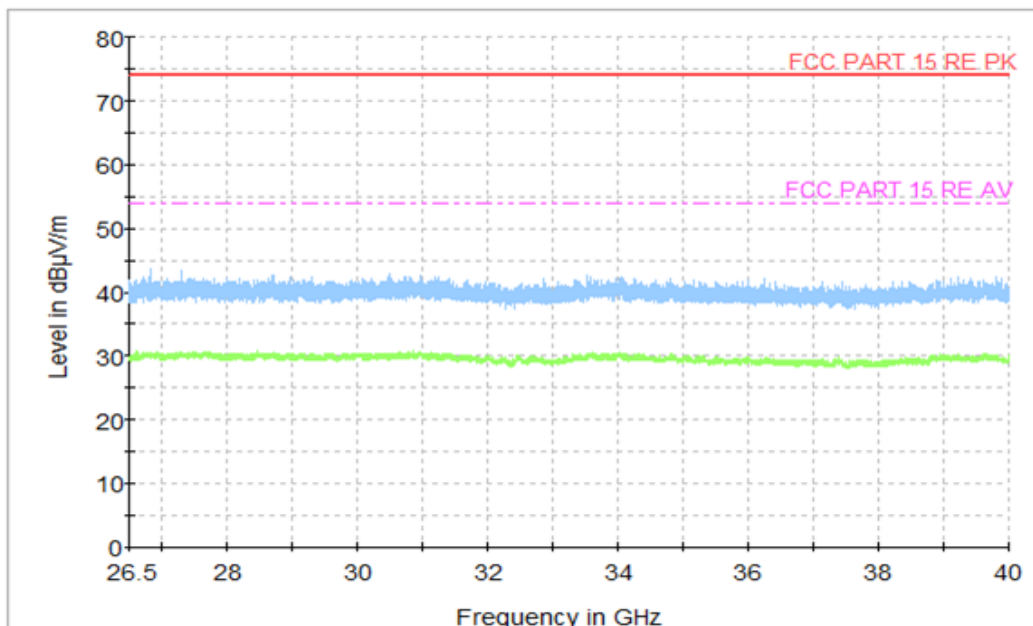


Figure A.1.10. Radiated Emission (Video Player , 26.5GHz to 40GHz)

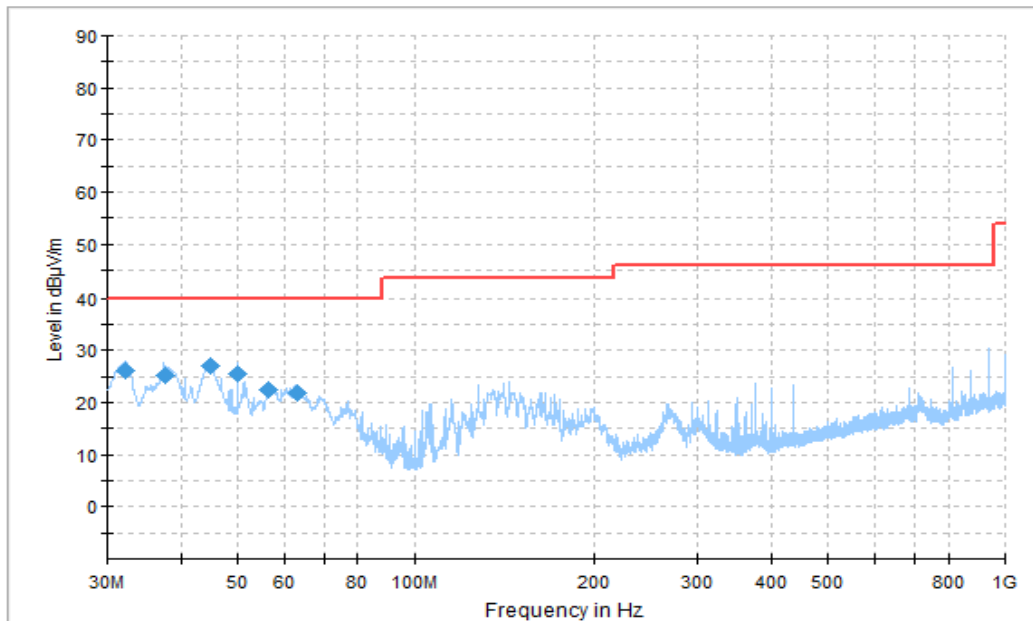


Figure A.1.11. Radiated Emission (GSM receiver 850MHz, 30MHz to 1GHz)

Final\_Results

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
32.160000	26.14	40.00	13.86	V	-25.7	51.84
37.510556	25.28	40.00	14.72	V	-28.0	53.28
44.907222	27.08	40.00	12.92	V	-32.4	59.48
50.012778	25.45	40.00	14.55	V	-36.5	61.95
56.263889	22.39	40.00	17.61	V	-38.3	60.69
63.165000	21.66	40.00	18.34	V	-35.7	57.36

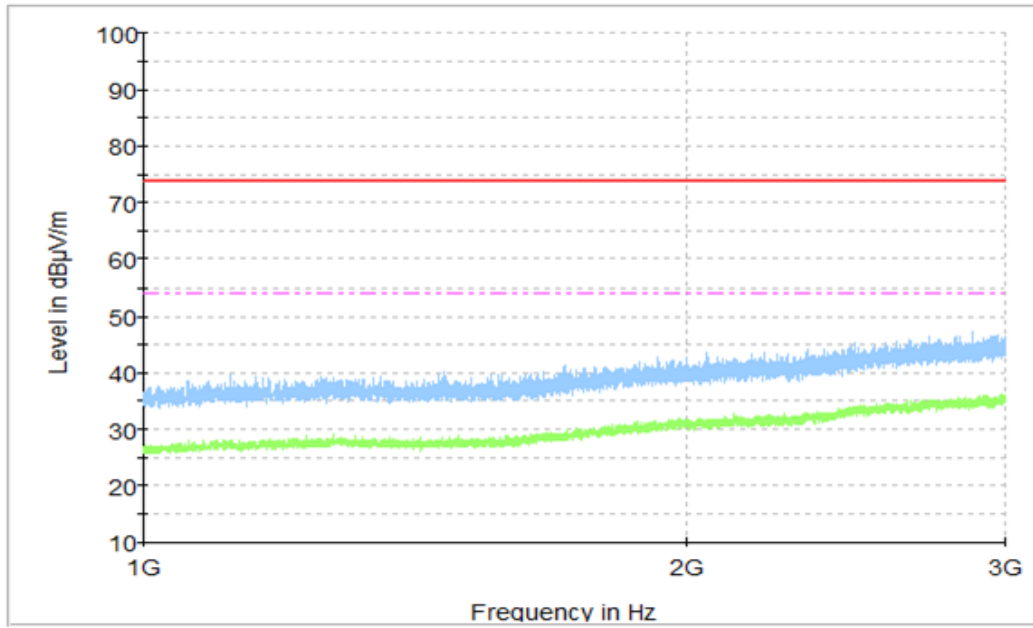


Figure A.1.12. Radiated Emission (GSM receiver 850MHz , 1GHz to 3GHz)

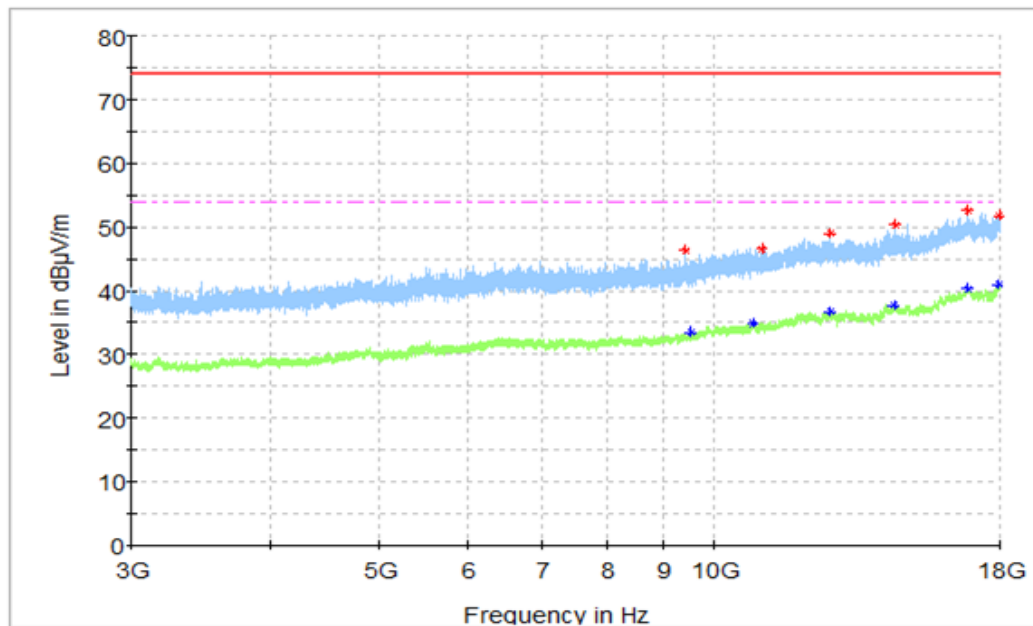


Figure A.1.13. Radiated Emission (GSM receiver 850MHz , 3GHz to 18GHz)

**Final\_Results\_PK**

Frequency(MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
9393.000000	46.27	74.00	27.73	V	3.8	42.47
11030.000000	46.56	74.00	27.44	V	6.2	40.36
12703.000000	49.06	74.00	24.94	V	8.9	40.16
14523.000000	50.31	74.00	23.69	H	11.7	38.61
16857.000000	52.58	74.00	21.42	H	15.9	36.68
17977.500000	51.71	74.00	22.29	V	16.9	34.81

**Final\_Results\_AVG**

Frequency(MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
9513.000000	33.35	54.00	20.65	H	4.0	29.35
10818.000000	34.88	54.00	19.12	H	6.3	28.58
12673.500000	36.72	54.00	17.28	H	9.0	27.72
14459.500000	37.65	54.00	16.35	H	11.8	25.85
16837.500000	40.27	54.00	13.73	H	15.7	24.57
17941.000000	40.98	54.00	13.02	H	17.2	23.78

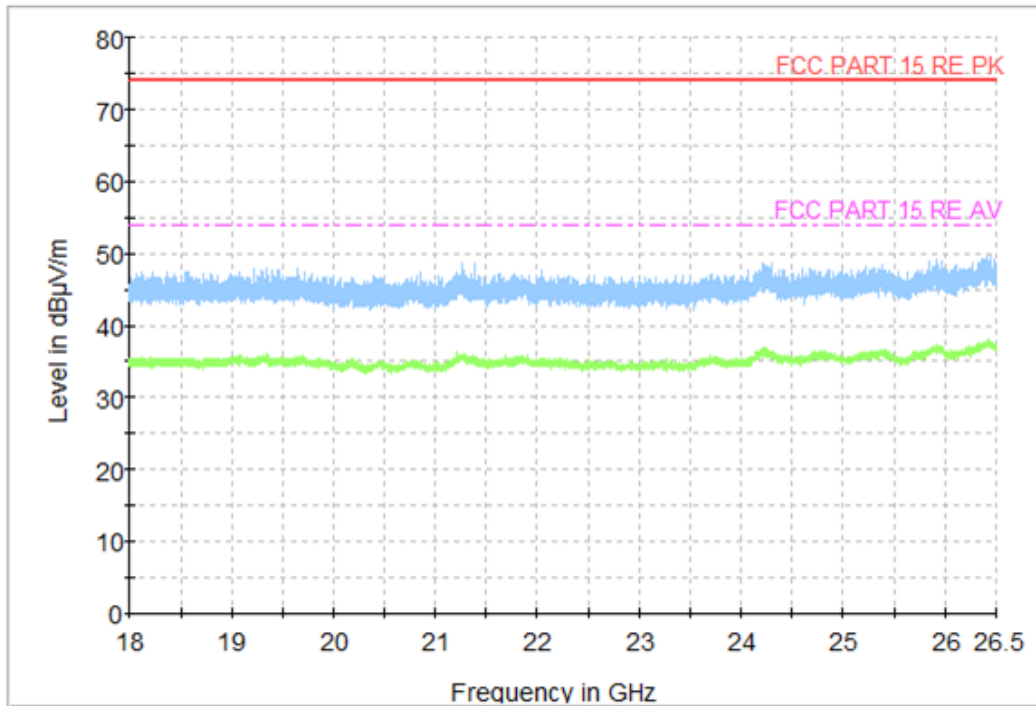


Figure A.1.14. Radiated Emission (GSM receiver 850MHz , 18GHz to 26.5GHz)

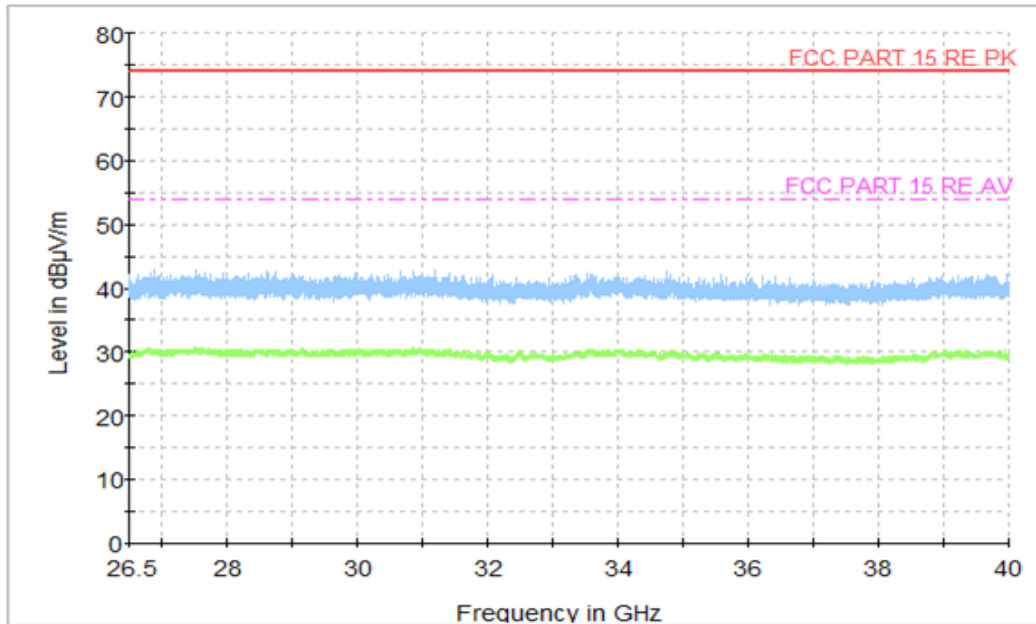


Figure A.1.15. Radiated Emission (GSM receiver 850MHz , 26.5GHz to 40GHz)



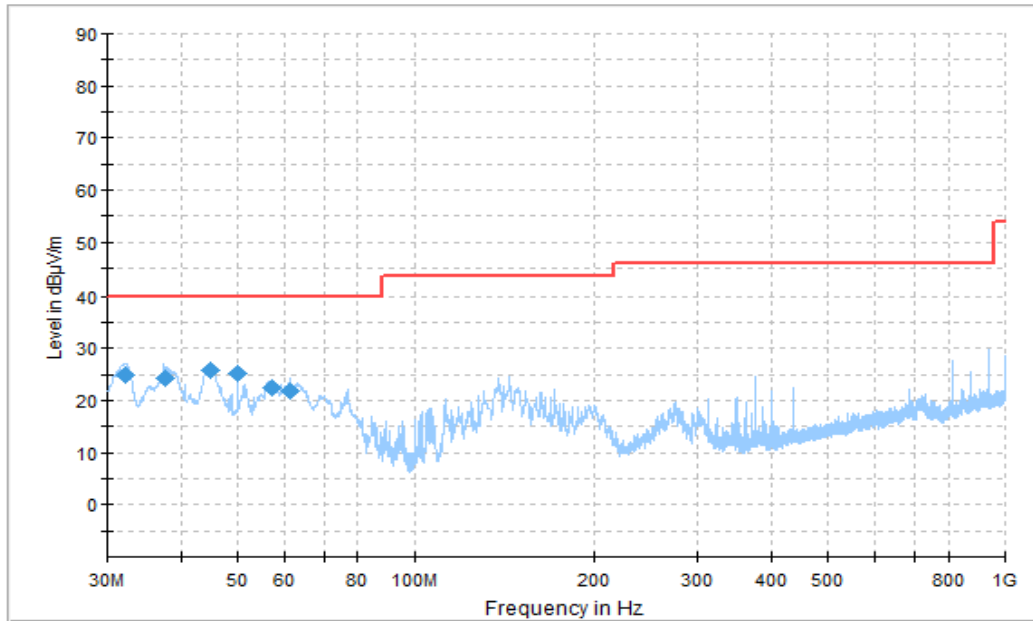


Figure A.1.16. Radiated Emission (WCDMA receiver Band 5, 30MHz to 1GHz)

Final\_Results

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
32.160000	24.84	40.00	15.16	V	-25.7	50.54
37.510556	24.22	40.00	15.78	V	-28.0	52.22
45.002778	25.78	40.00	14.22	V	-32.5	58.28
49.998889	25.24	40.00	14.76	V	-36.5	61.74
57.113889	22.53	40.00	17.47	V	-37.8	60.33
61.247778	21.83	40.00	18.17	V	-36.4	58.23

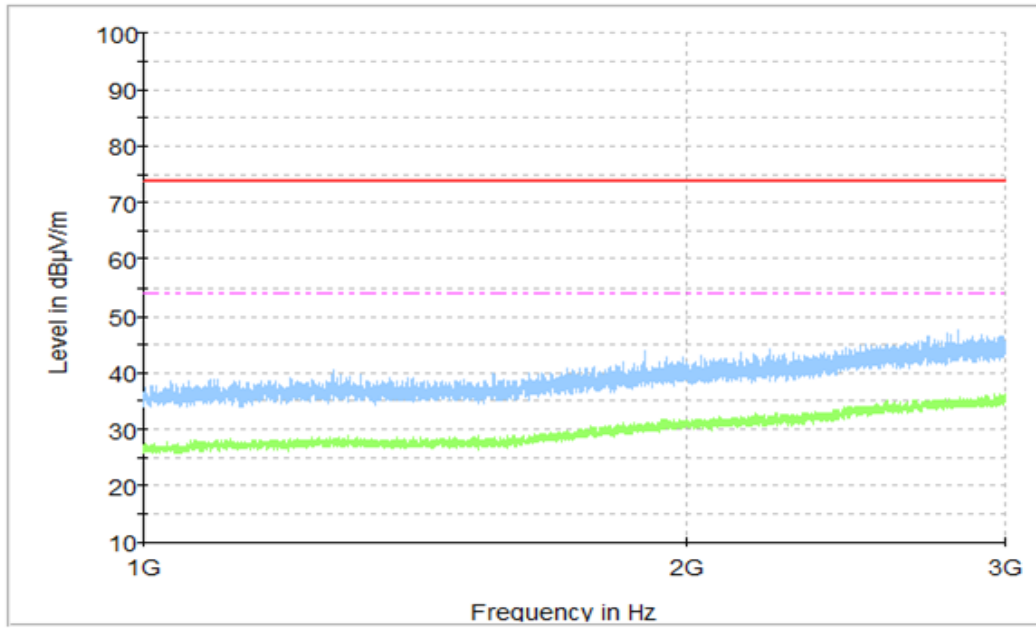
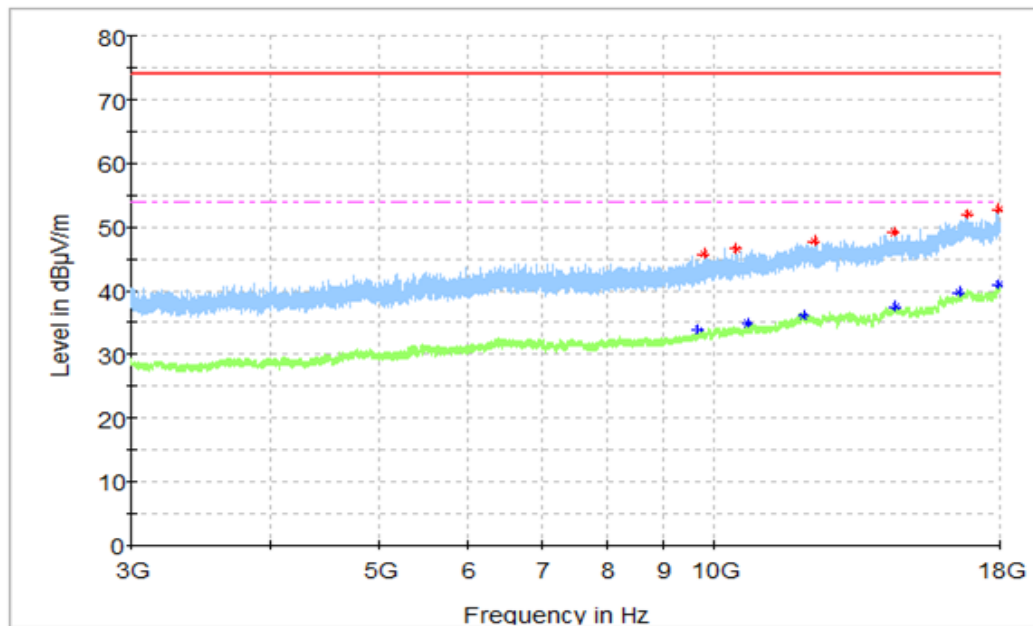


Figure A.1.17. Radiated Emission (WCDMA receiver Band 5, 1GHz to 3GHz)



**Figure A.1.18. Radiated Emission (WCDMA receiver Band 5, 3GHz to 18GHz)**

**Final\_Results\_PK**

Frequency(MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
9768.500000	45.74	74.00	28.26	V	4.9	40.84
10443.500000	46.56	74.00	27.44	H	5.2	41.36
12286.500000	47.67	74.00	26.33	H	8.5	39.17
14477.000000	49.07	74.00	24.93	H	11.6	37.47
16877.000000	51.94	74.00	22.06	V	16.0	35.94
17951.500000	52.70	74.00	21.30	V	17.1	35.60

**Final\_Results\_AVG**

Frequency(MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
9673.000000	33.77	54.00	20.23	H	4.7	29.07
10702.500000	34.81	54.00	19.19	V	6.2	28.61
12008.500000	36.13	54.00	17.87	H	8.3	27.83
14491.000000	37.48	54.00	16.52	H	11.7	25.78
16556.000000	39.62	54.00	14.38	H	15.3	24.32
17952.500000	40.90	54.00	13.10	H	17.1	23.80

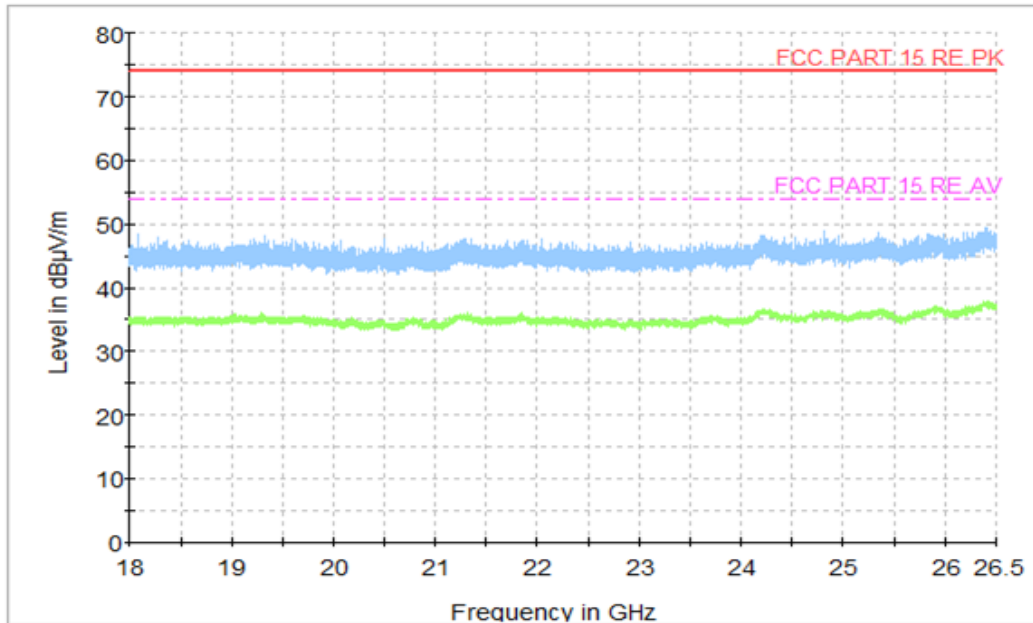


Figure A.1.19. Radiated Emission (WCDMA receiver Band 5, 18GHz to 26.5GHz)

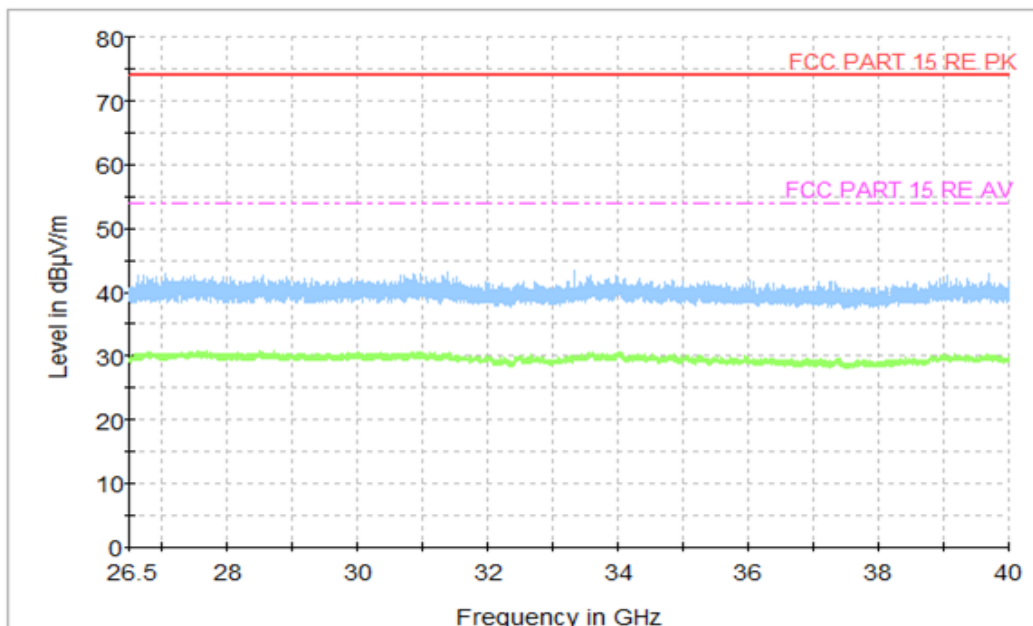


Figure A.1.20. Radiated Emission (WCDMA receiver Band 5, 26.5GHz to 40GHz)

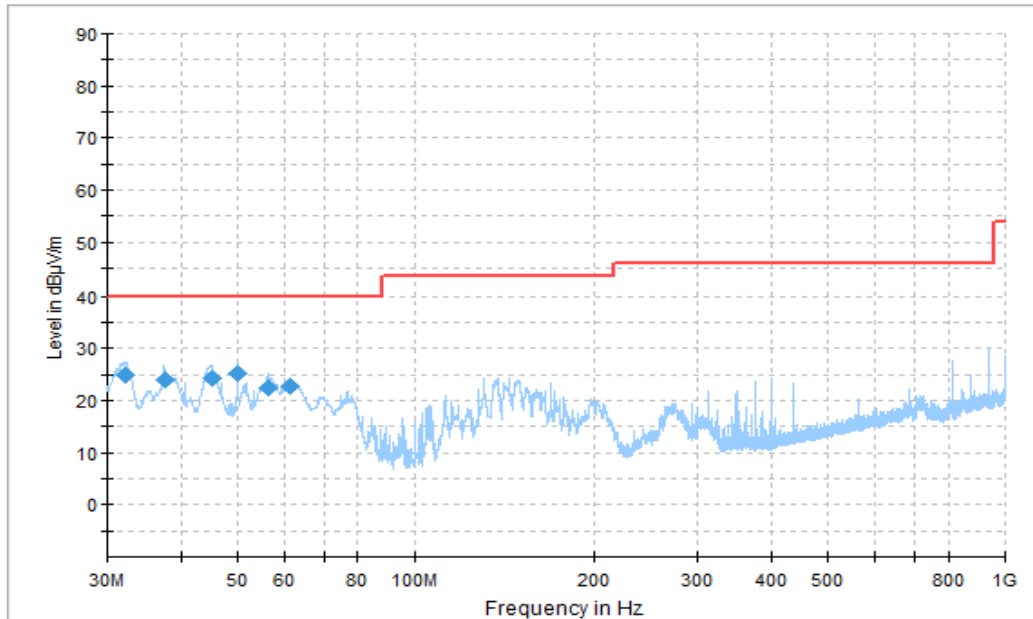


Figure A.1.21. Radiated Emission (LTE receiver Band 5, 30MHz to 1GHz)

Final\_Results

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
32.163333	24.91	40.00	15.09	V	-25.7	50.61
37.510556	23.86	40.00	16.14	V	-28.0	51.86
45.119444	24.14	40.00	15.86	V	-32.6	56.74
50.012778	25.25	40.00	14.75	V	-36.5	61.75
56.303889	22.34	40.00	17.66	V	-38.3	60.64
61.247778	22.59	40.00	17.41	V	-36.4	58.99

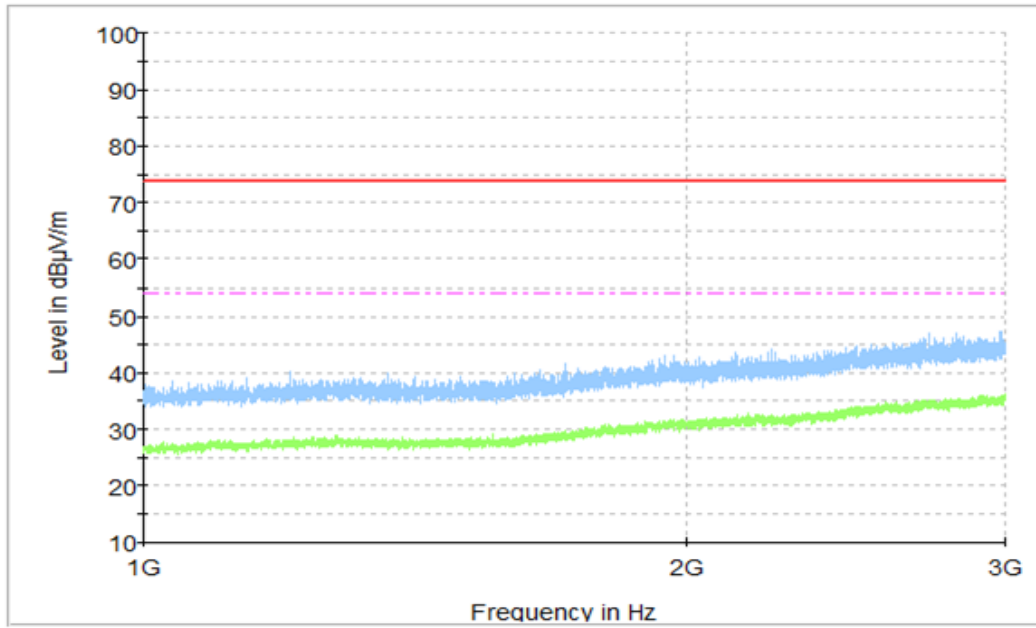


Figure A.1.22. Radiated Emission (LTE receiver Band 5, 1GHz to 3GHz)

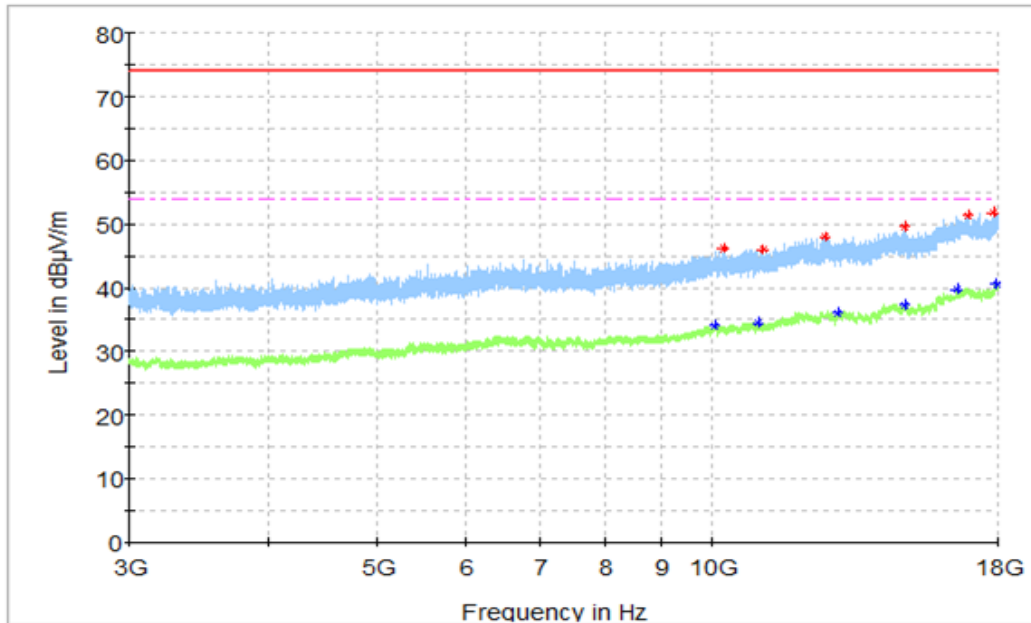


Figure A.1.23. Radiated Emission (LTE receiver Band 5, 3GHz to 18GHz)

**Final\_Results\_PK**

Frequency(MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
10225.000000	46.15	74.00	27.85	V	5.4	40.75
11093.500000	46.01	74.00	27.99	V	6.2	39.81
12598.500000	47.90	74.00	26.10	V	8.5	39.40
14880.000000	49.63	74.00	24.37	H	11.7	37.93
16956.500000	51.36	74.00	22.64	V	15.9	35.46
17851.500000	51.80	74.00	22.20	H	16.5	35.30

**Final\_Results\_AVG**

Frequency(MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
10032.500000	34.00	54.00	20.00	V	5.5	28.50
11004.000000	34.48	54.00	19.52	H	6.4	28.08
12942.000000	36.16	54.00	17.84	H	9.5	26.66
14853.500000	37.25	54.00	16.75	H	11.5	25.75
16545.500000	39.66	54.00	14.34	H	15.3	24.36
17949.000000	40.45	54.00	13.55	V	17.2	23.25

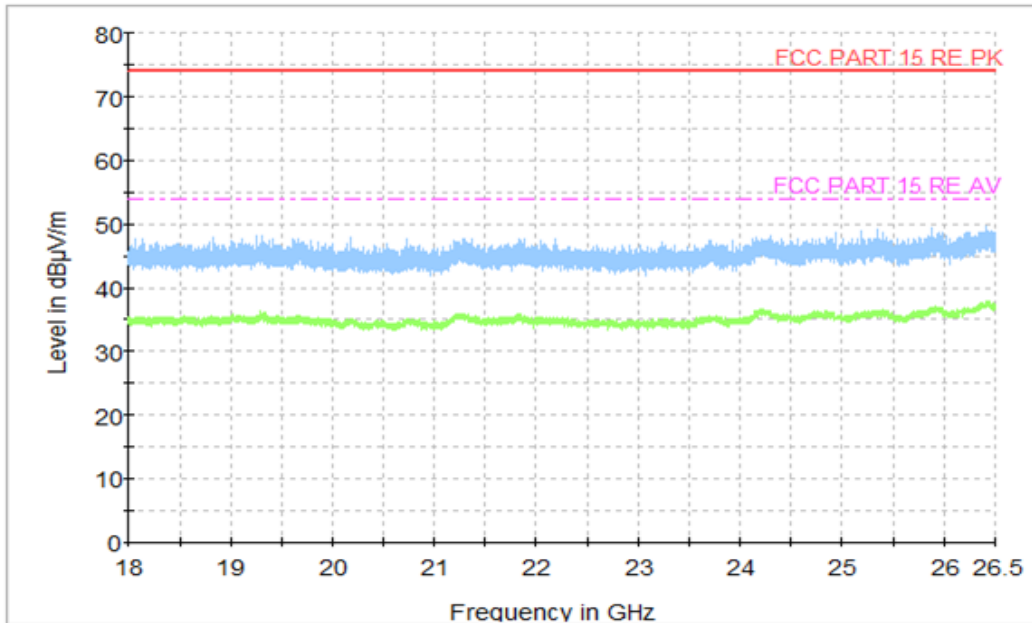


Figure A.1.24. Radiated Emission (LTE receiver Band 5, 18GHz to 26.5GHz)

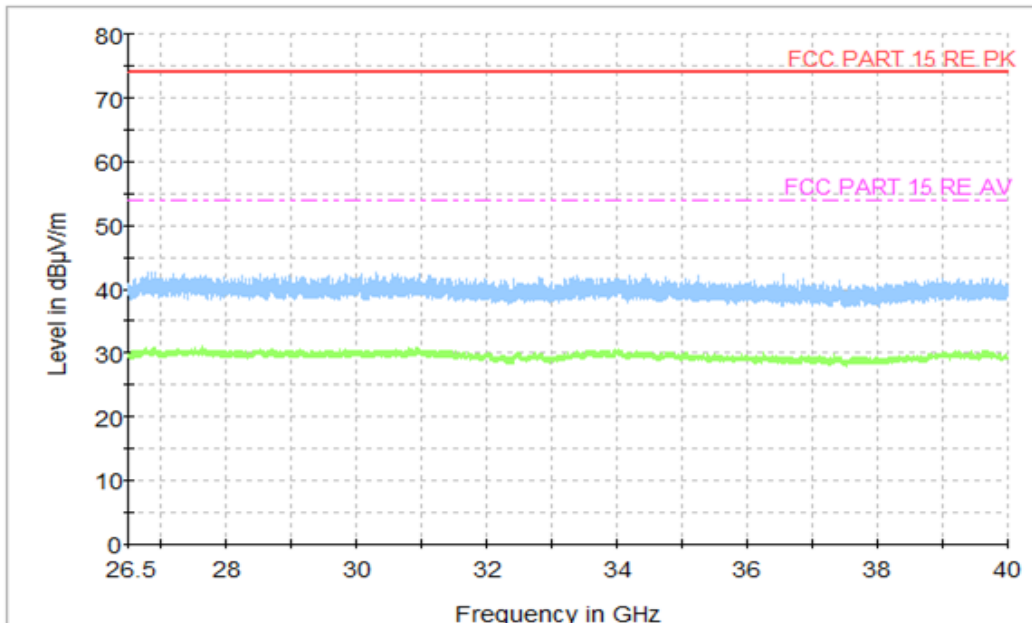


Figure A.1.25. Radiated Emission (LTE receiver Band 5, 26.5GHz to 40GHz)



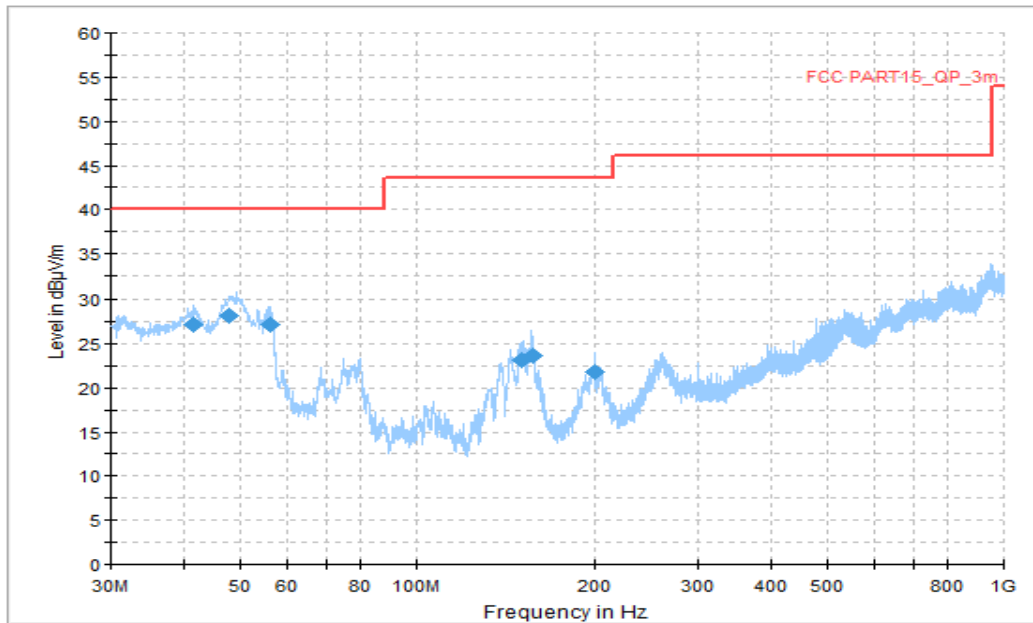


Figure A.1.26. Radiated Emission (Fingerprint recognition , 30MHz to 1GHz)

**Final\_Results**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
41.424444	27.14	40.00	12.86	V	-19	46.14
47.837222	28.15	40.00	11.85	V	-21	49.15
56.028333	27.08	40.00	12.92	V	-22	49.08
149.471667	23.16	43.52	20.36	V	-19	42.16
156.369444	23.62	43.52	19.90	V	-17	40.62
199.965556	21.86	43.52	21.66	V	-17	38.86

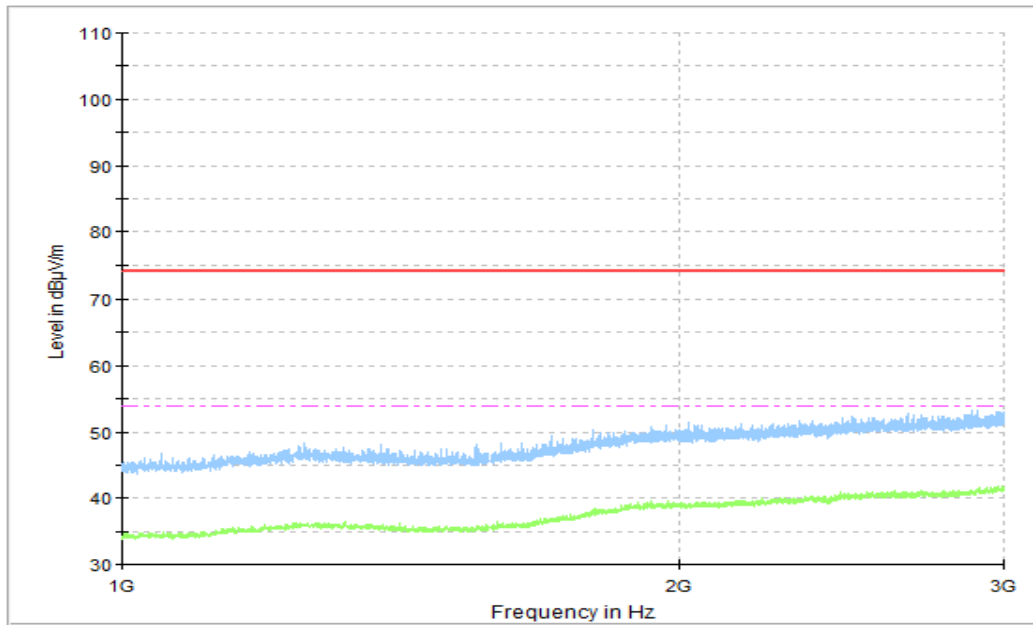


Figure A.1.27. Radiated Emission (Fingerprint recognition , 1GHz to 3GHz)

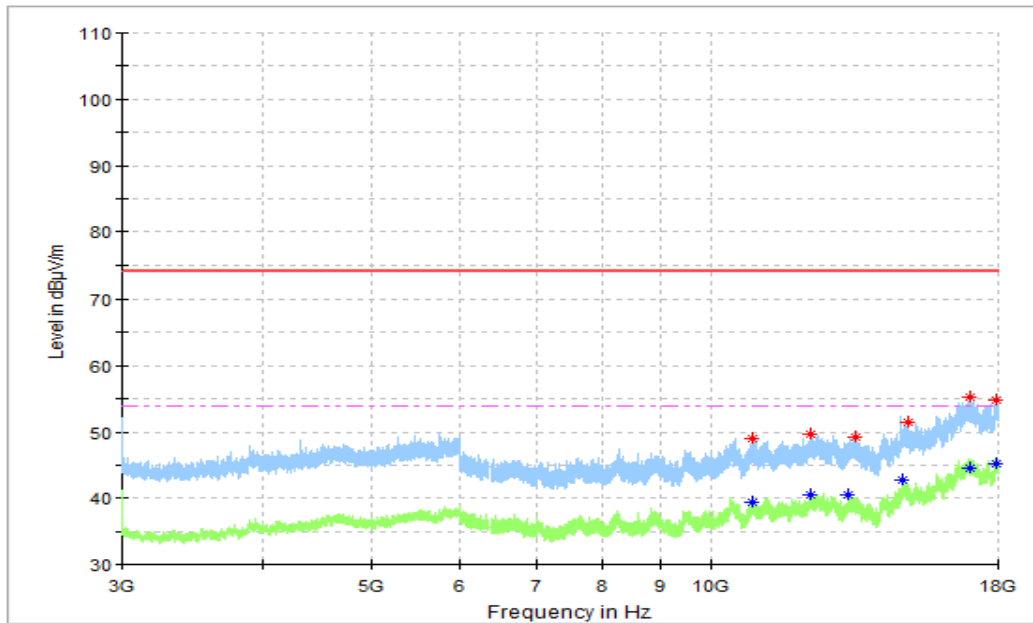


Figure A.1.28. Radiated Emission (Fingerprint recognition , 3GHz to 18GHz)

**Final\_Results\_PK**

Frequency(MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
10890.000000	48.91	74.00	25.09	H	9.3	39.61
12254.142857	49.62	74.00	24.38	V	10.9	38.72
13450.285714	49.21	74.00	24.79	V	11.5	37.71
14941.714286	51.48	74.00	22.52	H	12.9	38.58
16960.714286	55.34	74.00	18.66	V	18.3	37.04
17916.857143	54.84	74.00	19.16	V	18.9	35.94

**Final\_Results\_AVG**

Frequency(MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
10894.285714	39.38	54.00	14.62	H	9.4	29.98
12250.285714	40.53	54.00	13.47	H	10.9	29.63
13247.571429	40.51	54.00	13.49	V	11.1	29.41
14819.142857	42.75	54.00	11.25	V	12.9	29.85
16960.714286	44.60	54.00	9.40	V	18.3	26.3
17916.857143	45.30	54.00	8.70	V	18.9	26.40

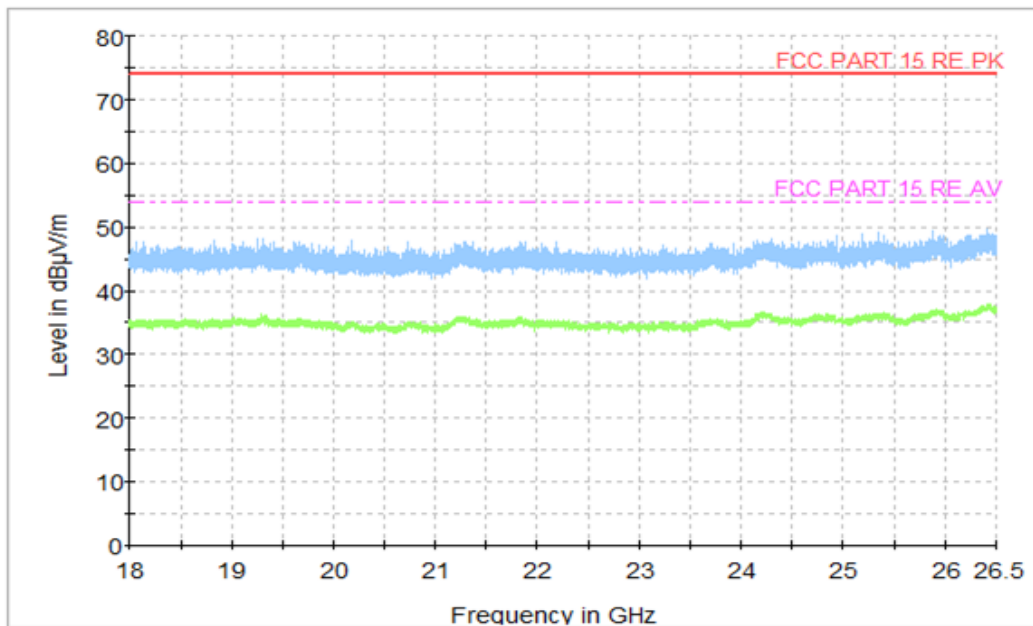


Figure A.1.29. Radiated Emission (Fingerprint recognition , 18GHz to 26.5GHz)

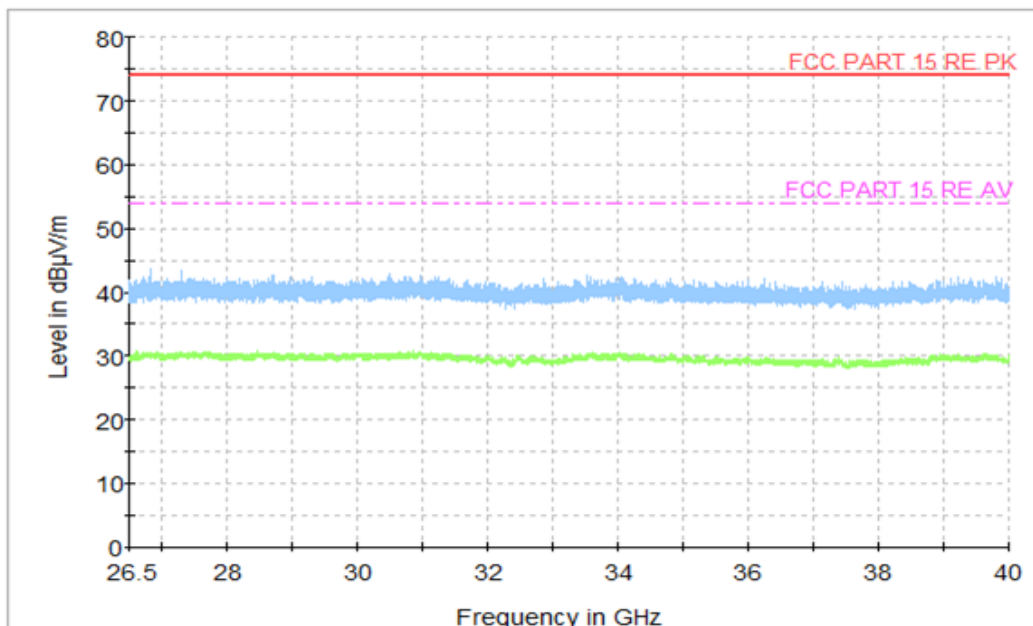


Figure A.1.30. Radiated Emission (Fingerprint recognition , 26.5GHz to 40GHz)

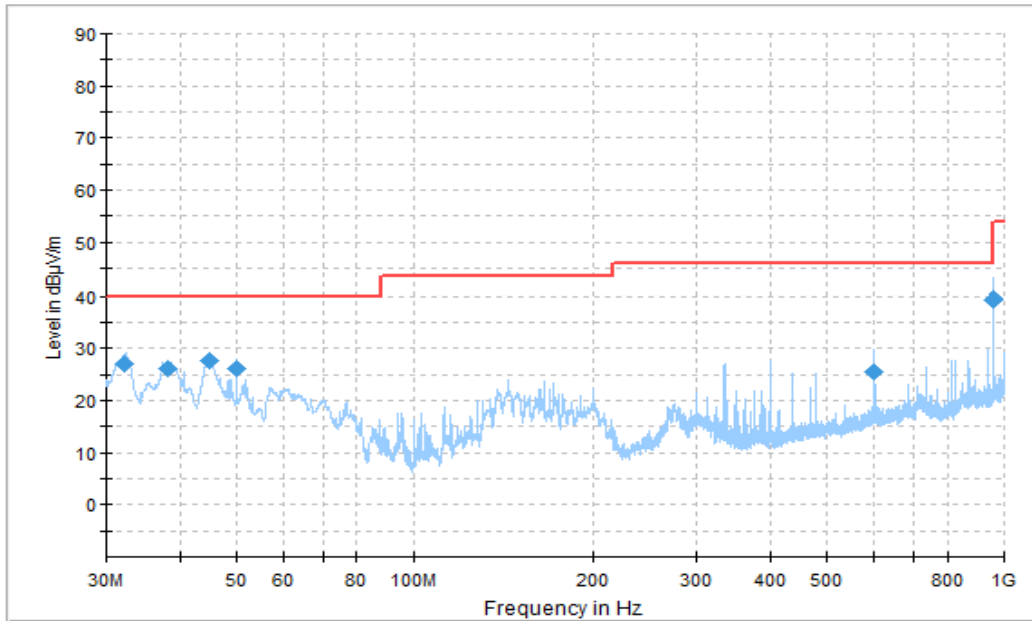


Figure A.1.31. Radiated Emission (Data Transfer: PC TO EUT, 30MHz to 1GHz)

Final\_Results

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
32.257222	27.07	40.00	12.93	V	-25.8	52.87
38.117222	26.00	40.00	14.00	V	-28.4	54.4
45.028889	27.51	40.00	12.49	V	-32.5	60.01
49.998889	26.13	40.00	13.87	V	-36.5	62.63
601.541111	25.59	46.00	20.41	V	-21.2	46.79
959.994444	39.35	46.00	6.65	H	-16.3	55.65

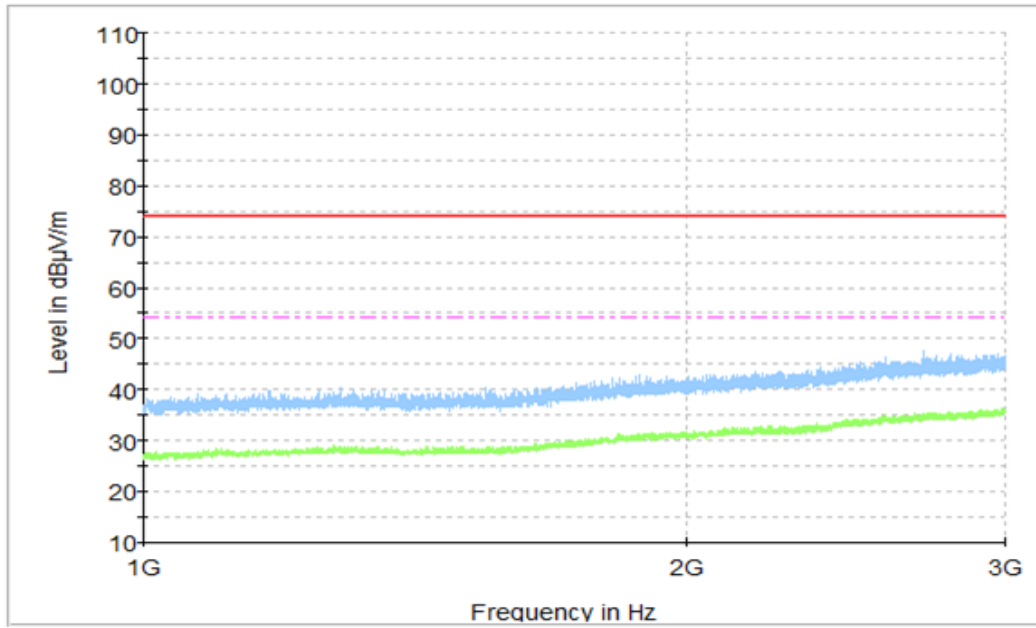


Figure A.1.32. Radiated Emission (Data Transfer: PC TO EUT, 1GHz to 3GHz)

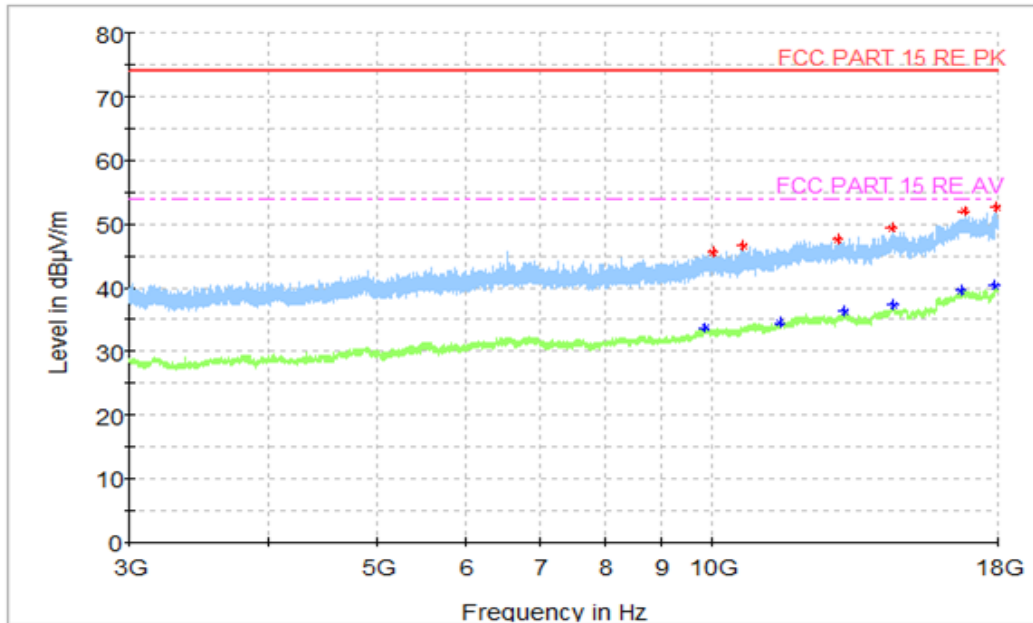


Figure A.1.33. Radiated Emission (Data Transfer: PC TO EUT, 3GHz to 18GHz)

**Final\_Results\_PK**

Frequency(MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
10009.500000	45.53	74.00	28.47	V	5.4	40.13
10622.500000	46.47	74.00	27.53	H	5.5	40.97
12946.000000	47.56	74.00	26.44	V	9.3	38.26
14456.000000	49.37	74.00	24.63	H	11.7	37.67
16805.500000	51.93	74.00	22.07	V	15.8	36.13
17950.500000	52.68	74.00	21.32	H	17.2	35.48

**Final\_Results\_AVG**

Frequency(MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
9847.000000	33.64	54.00	20.36	H	5.2	28.44
11490.000000	34.51	54.00	19.49	V	7.0	27.51
13124.500000	36.23	54.00	17.77	V	9.8	26.43
14507.500000	37.32	54.00	16.68	H	11.7	25.62
16688.500000	39.46	54.00	14.54	V	15.3	24.16
17915.500000	40.35	54.00	13.65	H	17.2	23.15

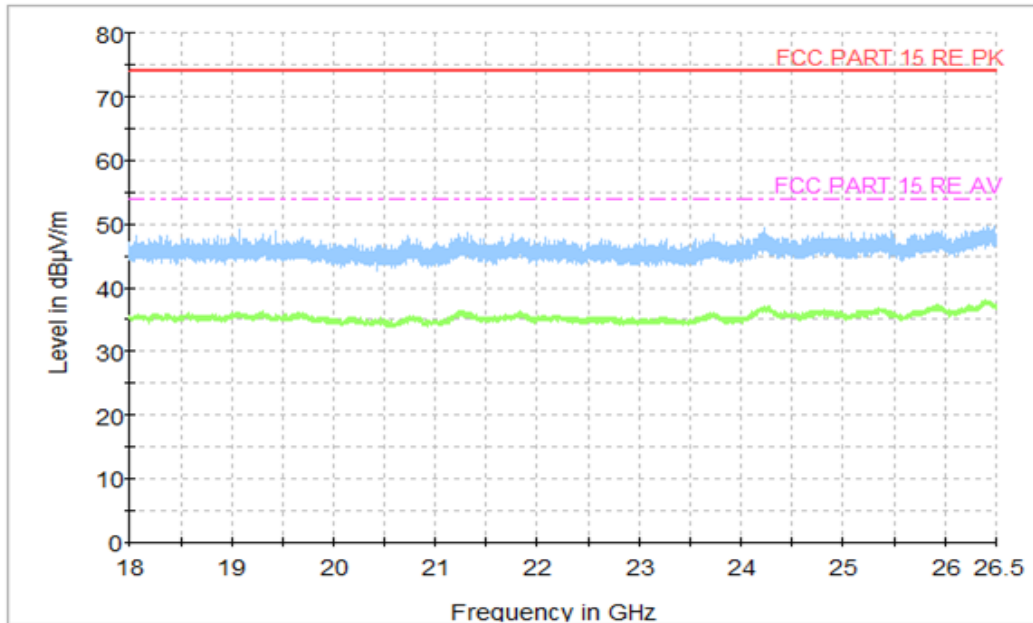


Figure A.1.34. Radiated Emission (Data Transfer: PC TO EUT, 18GHz to 26.5GHz)

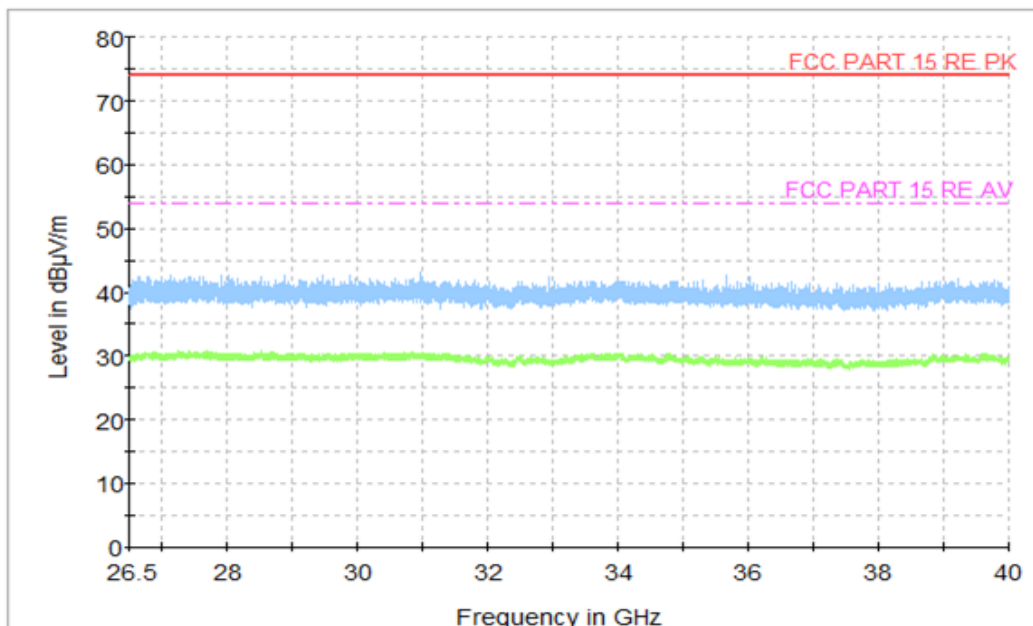


Figure A.1.35. Radiated Emission (Data Transfer: PC TO EUT, 26.5GHz to 40GHz)



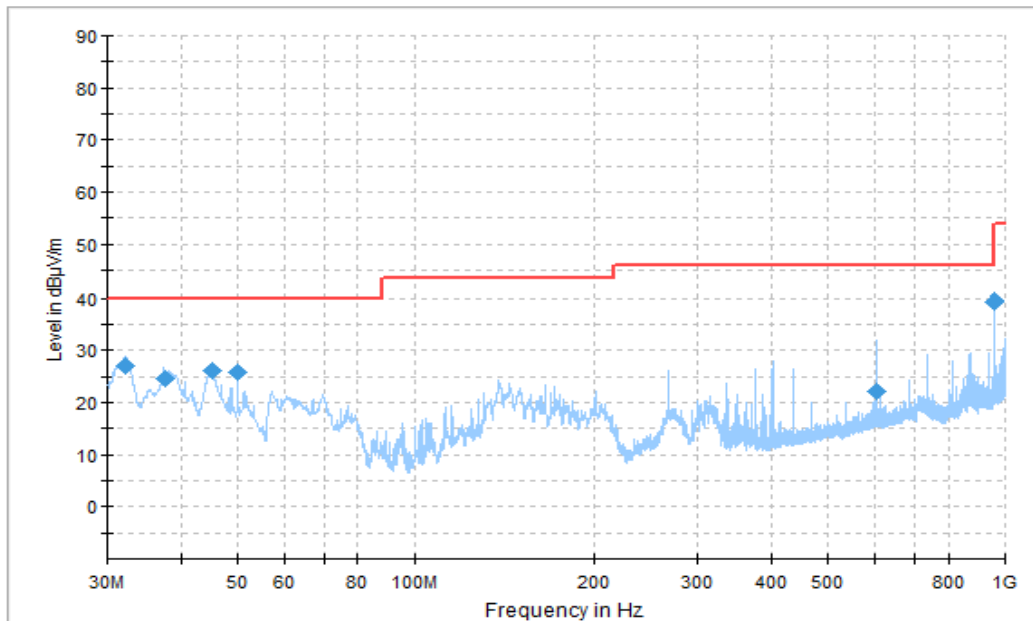


Figure A.1.36. Radiated Emission (Data Transfer: EUT TO PC, 30MHz to 1GHz)

Final\_Results

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
32.151111	26.97	40.00	13.03	V	-25.7	52.67
37.510556	24.55	40.00	15.45	V	-28.0	52.55
45.122778	26.14	40.00	13.86	V	-32.6	58.74
50.012778	25.87	40.00	14.13	V	-36.5	62.37
603.023889	22.22	46.00	23.78	V	-21.2	43.42
960.048333	39.26	54.00	14.74	H	-16.3	55.56

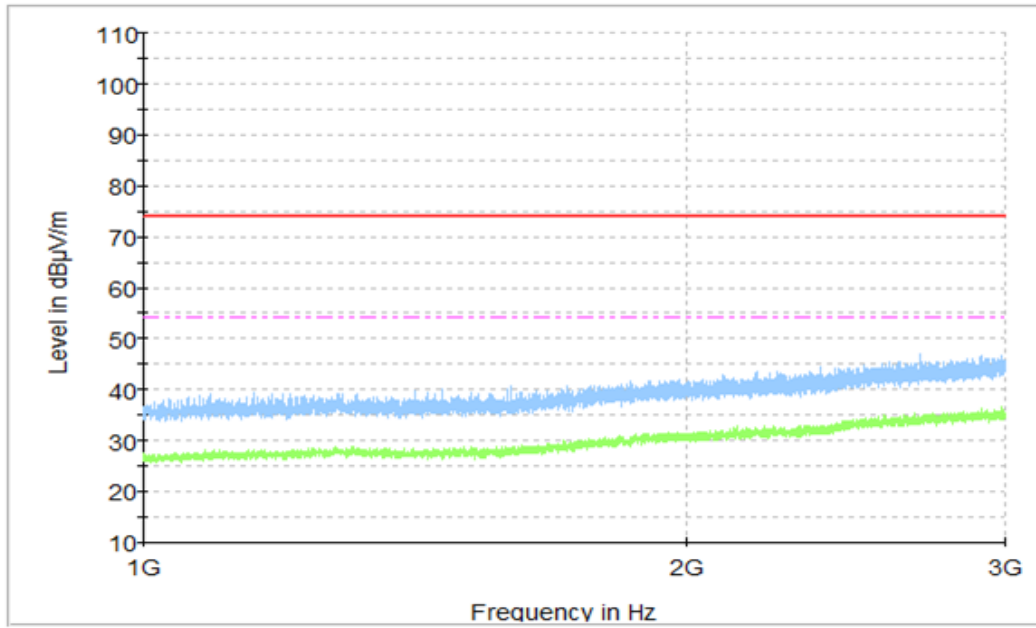


Figure A.1.37. Radiated Emission (Data Transfer: EUT TO PC, 1GHz to 3GHz)

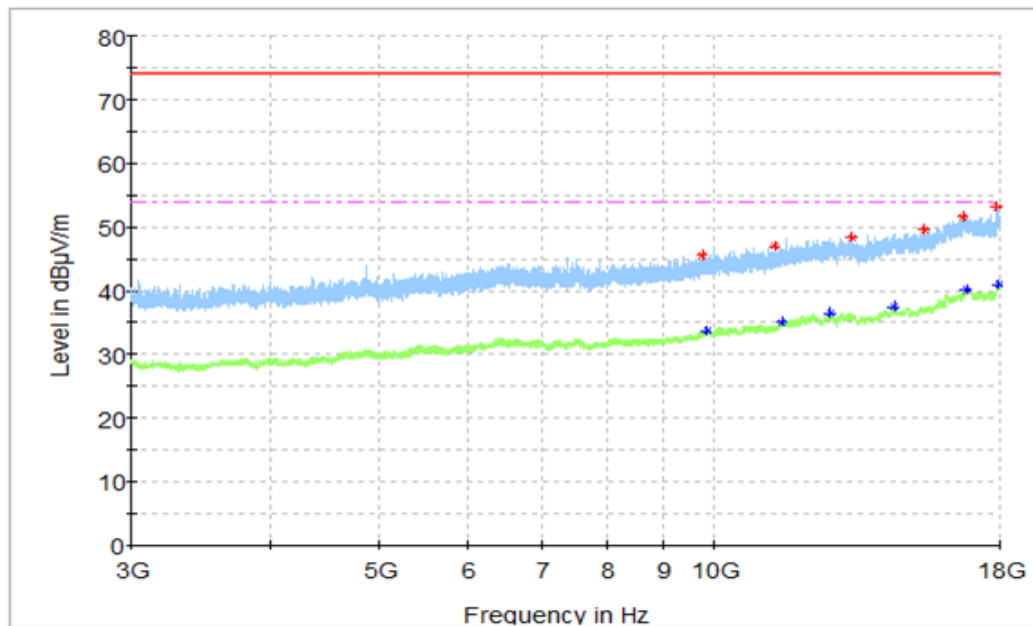


Figure A.1.38. Radiated Emission (Data Transfer: EUT TO PC, 3GHz to 18GHz)

**Final\_Results\_PK**

Frequency(MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
9758.000000	45.63	74.00	28.37	V	4.9	40.73
11335.500000	47.05	74.00	26.95	H	6.4	40.65
13254.000000	48.45	74.00	25.55	H	9.5	38.95
15424.000000	49.67	74.00	24.33	V	12.5	37.17
16715.500000	51.52	74.00	22.48	H	15.4	36.12
17911.000000	53.21	74.00	20.79	H	17.3	35.91

**Final\_Results\_AVG**

Frequency(MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
9850.000000	33.72	54.00	20.28	V	5.3	28.42
11491.500000	35.07	54.00	18.93	V	7.0	28.07
12669.500000	36.51	54.00	17.49	H	8.9	27.61
14460.000000	37.50	54.00	16.50	V	11.8	25.70
16781.000000	40.11	54.00	13.89	V	15.9	24.21
17953.000000	40.89	54.00	13.11	H	17.1	23.79

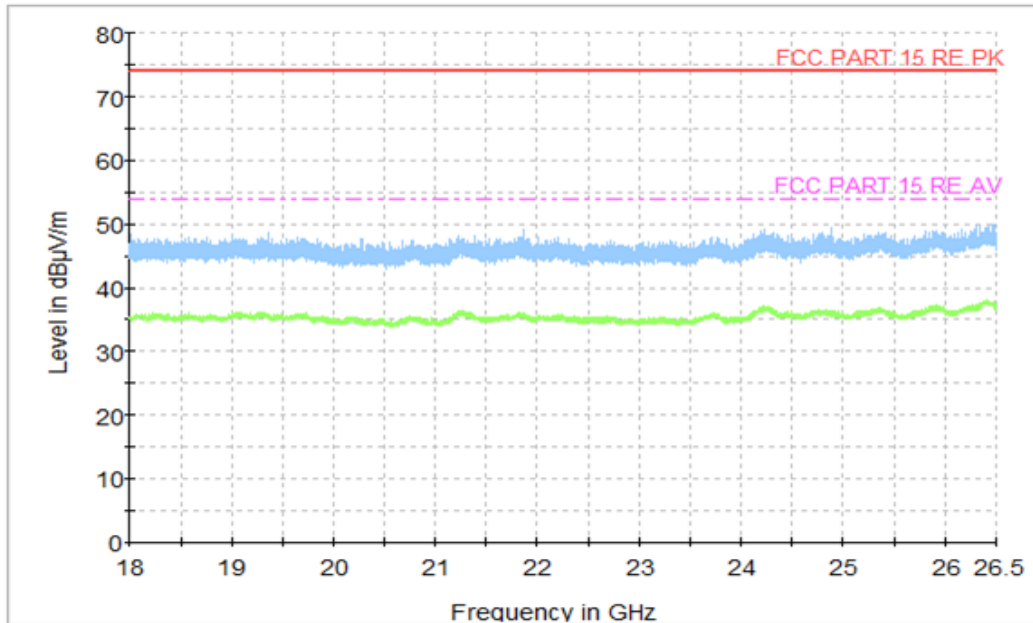


Figure A.1.39. Radiated Emission (Data Transfer: EUT TO PC, 18GHz to 26.5GHz)

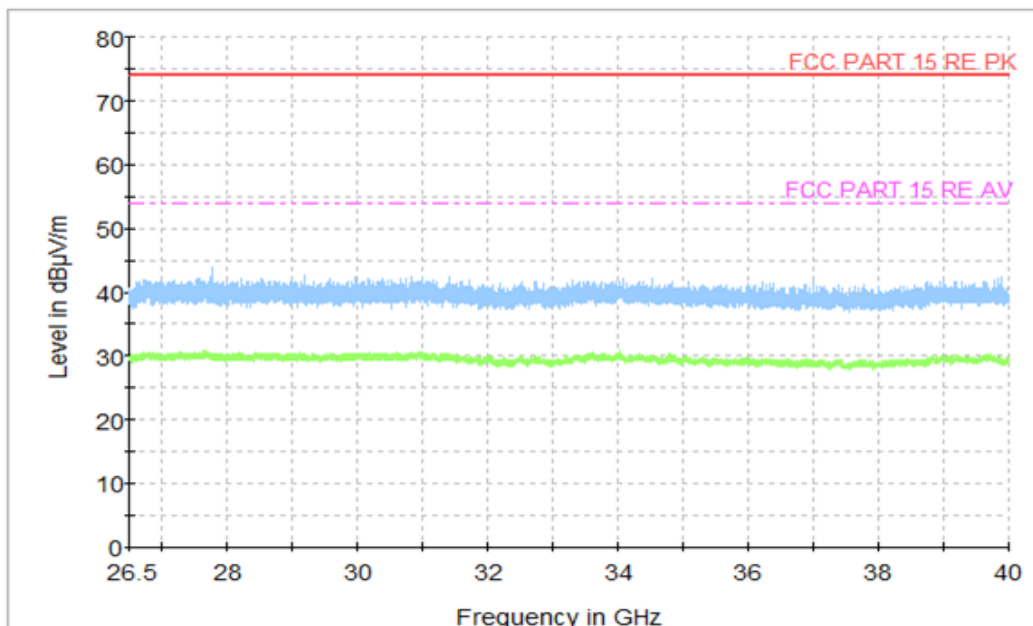


Figure A.1.40. Radiated Emission (Data Transfer: EUT TO PC, 26.5GHz to 40GHz)

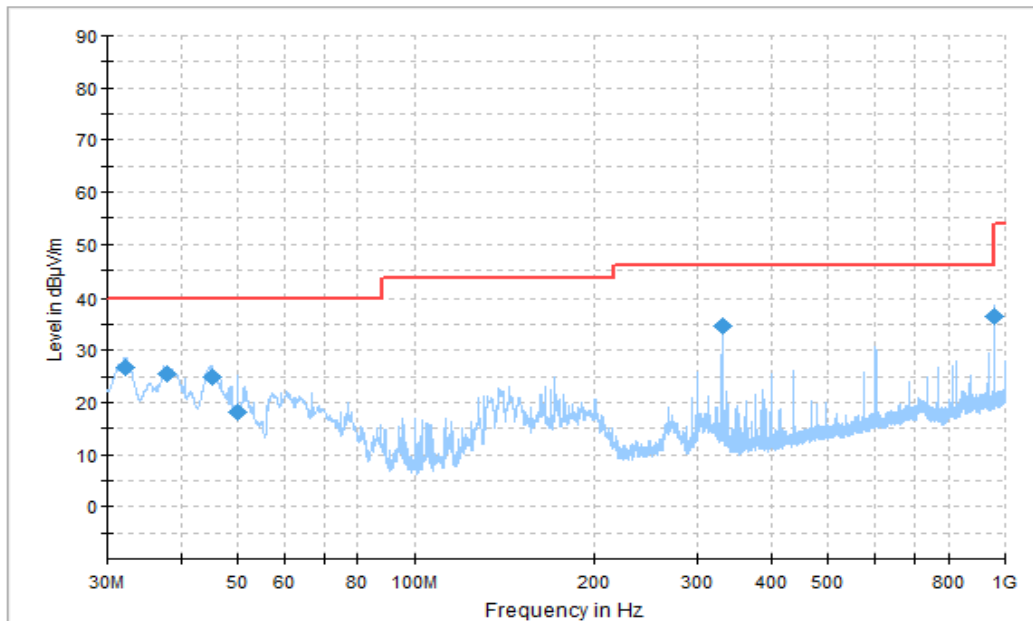


Figure A.1.41. Radiated Emission (Data Transfer: PC TO TF Card, 30MHz to 1GHz)

Final\_Results

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
32.200000	26.65	40.00	13.35	V	-25.7	52.35
37.837222	25.49	40.00	14.51	V	-28.2	53.69
45.135000	24.91	40.00	15.09	V	-32.6	57.51
49.998889	18.09	40.00	21.91	V	-36.5	54.59
330.184444	34.63	46.00	11.38	H	-28.2	62.83
959.994444	36.37	46.00	9.63	H	-16.3	52.67

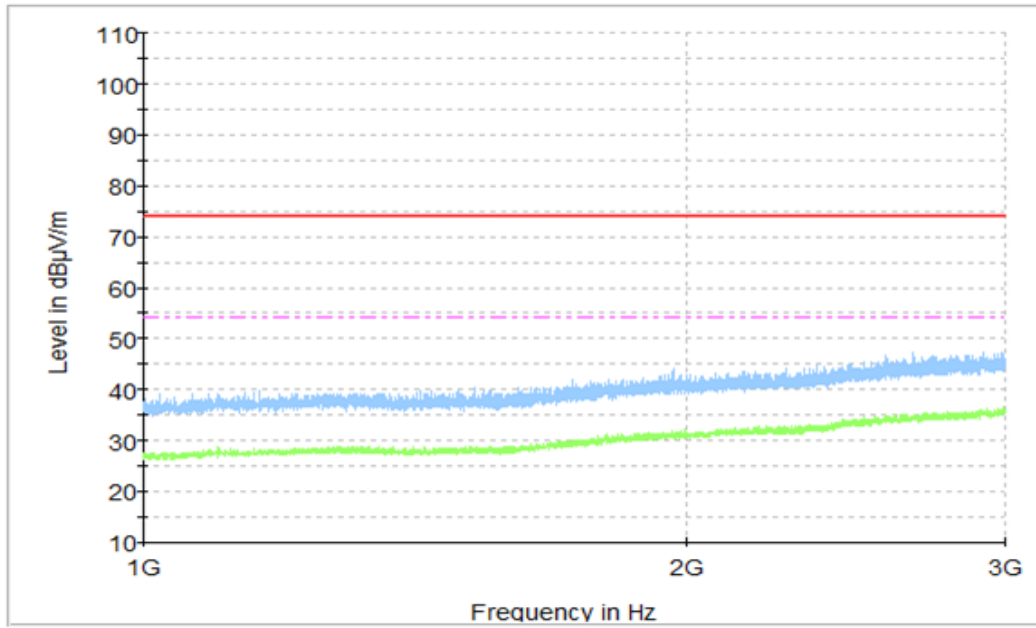
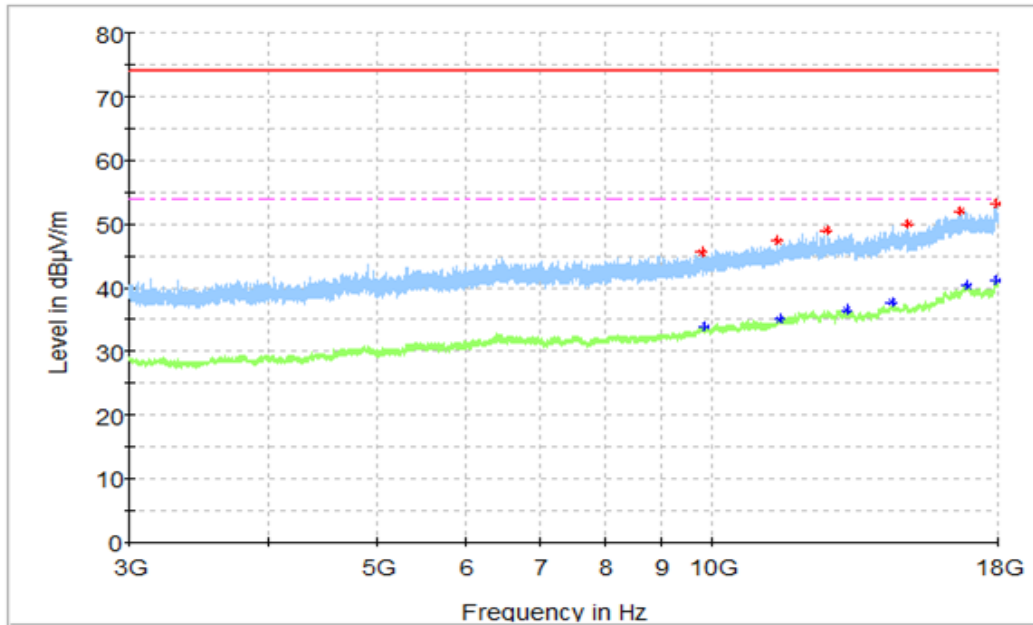


Figure A.1.42. Radiated Emission (Data Transfer: PC TO TF Card, 1GHz to 3GHz)



**Figure A.1.43. Radiated Emission (Data Transfer: PC TO TF Card, 3GHz to 18GHz)**  
**Final\_Results\_PK**

Frequency(MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
14536.250000	55.27	74.00	18.73	V	18	37.27
15100.250000	56.27	74.00	17.73	H	18	38.27
15659.500000	58.93	74.00	15.07	V	20	38.93
16263.750000	58.20	74.00	15.80	V	21	37.20
17016.250000	60.22	74.00	13.78	H	23	37.22
17946.250000	58.32	74.00	15.68	V	24	34.32

**Final\_Results\_AVG**

Frequency(MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
14536.250000	42.81	54.00	11.19	V	18	24.81
15100.250000	43.81	54.00	10.19	H	18	25.81
15659.500000	45.64	54.00	8.36	V	20	25.64
16263.750000	45.42	54.00	8.58	V	21	24.42
17016.250000	47.23	54.00	6.77	H	23	24.23
17946.250000	45.95	54.00	8.05	V	24	21.95

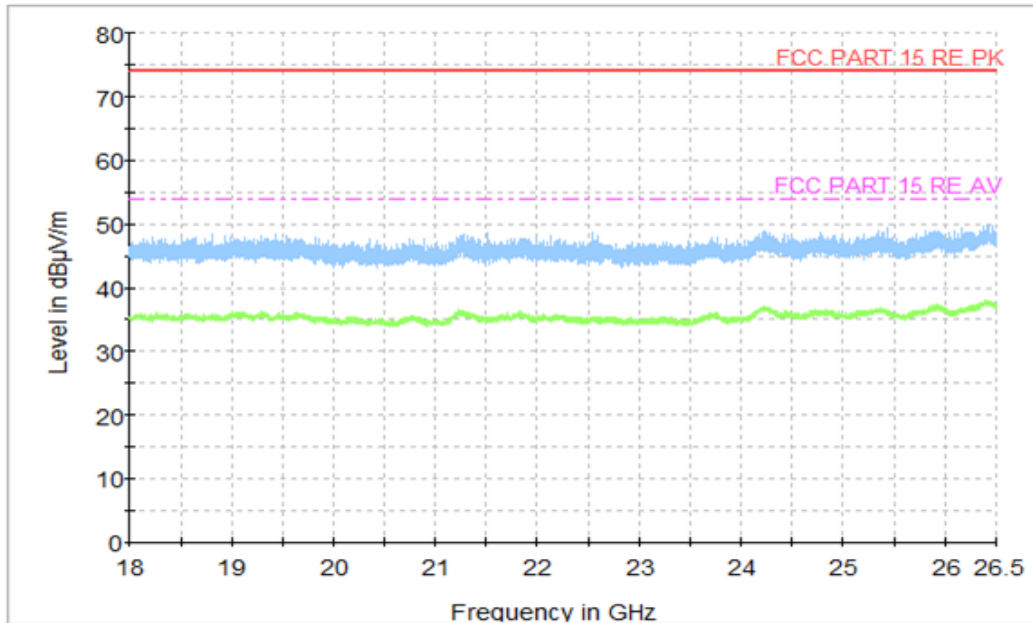


Figure A.1.44. Radiated Emission (Data Transfer: PC TO TF Card, 18GHz to 26.5GHz)

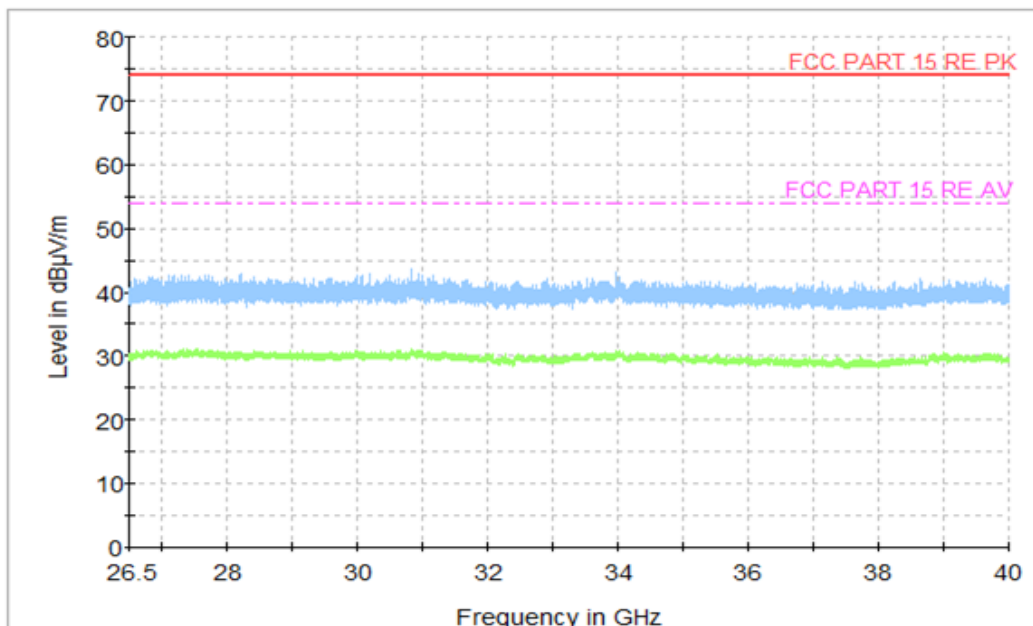
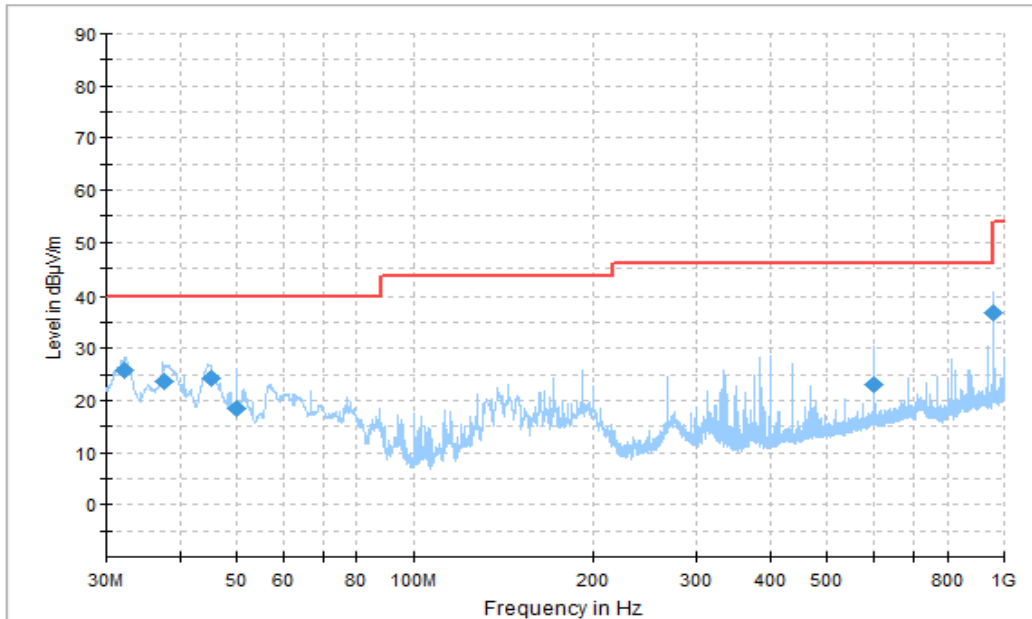


Figure A.1.45. Radiated Emission (Data Transfer: PC TO TF Card, 26.5GHz to 40GHz)





**Figure A.1.46. Radiated Emission (Data Transfer: TF Card TO PC, 30MHz to 1GHz)**  
**Final\_Results**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
32.151111	25.72	40.00	14.28	V	-25.7	51.42
37.510556	23.76	40.00	16.24	V	-28.0	51.76
45.107222	24.40	40.00	15.60	V	-32.6	57.00
49.998889	18.51	40.00	21.49	V	-36.5	55.01
601.864444	23.00	46.00	23.00	V	-21.2	44.2
960.048333	36.89	54.00	17.11	H	-16.3	53.19

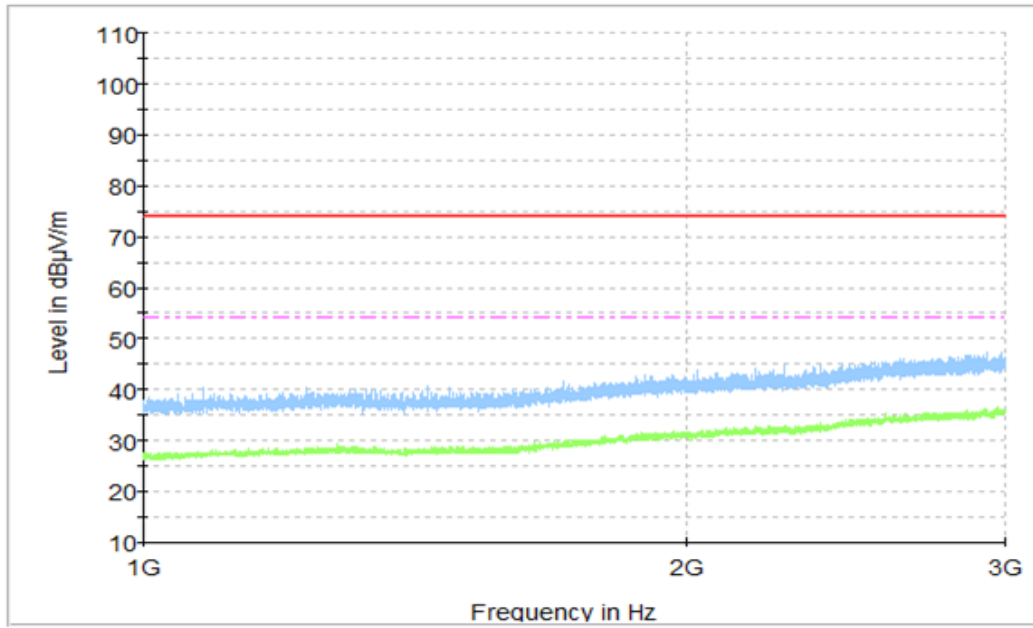


Figure A.1.47. Radiated Emission (Data Transfer: TF Card TO PC, 1GHz to 3GHz)

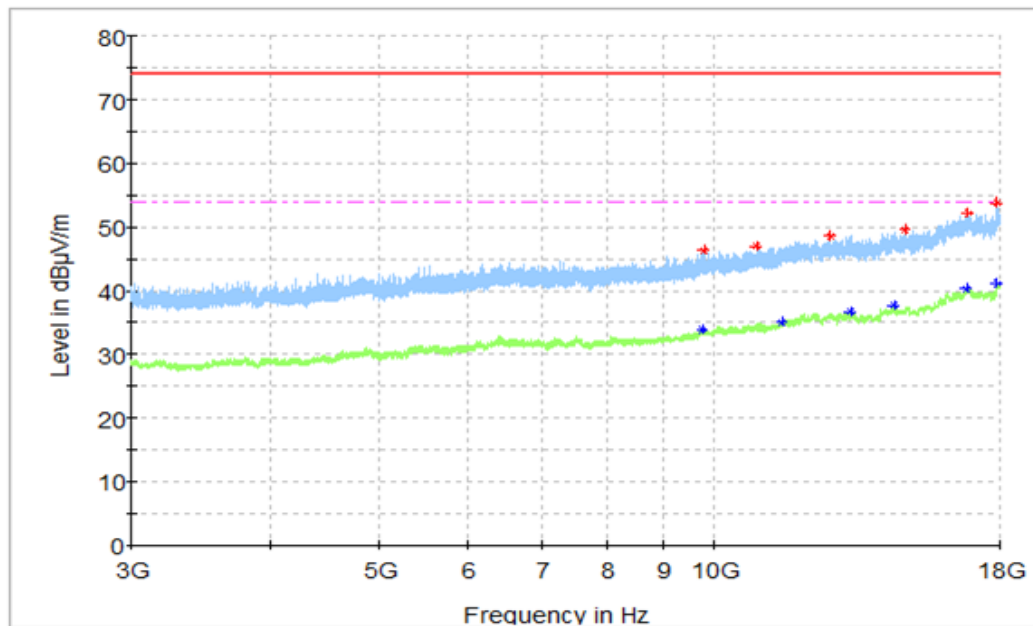


Figure A.1.48. Radiated Emission (Data Transfer: TF Card TO PC, 3GHz to 18GHz)

**Final\_Results\_PK**

Frequency(MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
9792.500000	46.43	74.00	27.57	V	5.0	41.43
10885.500000	46.93	74.00	27.07	V	6.4	40.53
12701.000000	48.55	74.00	25.45	H	9.0	39.55
14840.500000	49.53	74.00	24.47	H	11.5	38.03
16828.500000	52.13	74.00	21.87	V	15.7	36.43
17910.500000	53.73	74.00	20.27	V	17.4	36.33

**Final\_Results\_AVG**

Frequency(MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
9760.500000	33.84	54.00	20.16	H	4.9	28.94
11490.000000	35.14	54.00	18.86	V	7.0	28.14
13216.000000	36.67	54.00	17.33	V	9.9	26.77
14465.000000	37.66	54.00	16.34	V	11.7	25.96
16780.000000	40.21	54.00	13.79	H	15.8	24.41
17907.500000	41.08	54.00	12.92	V	17.3	23.78

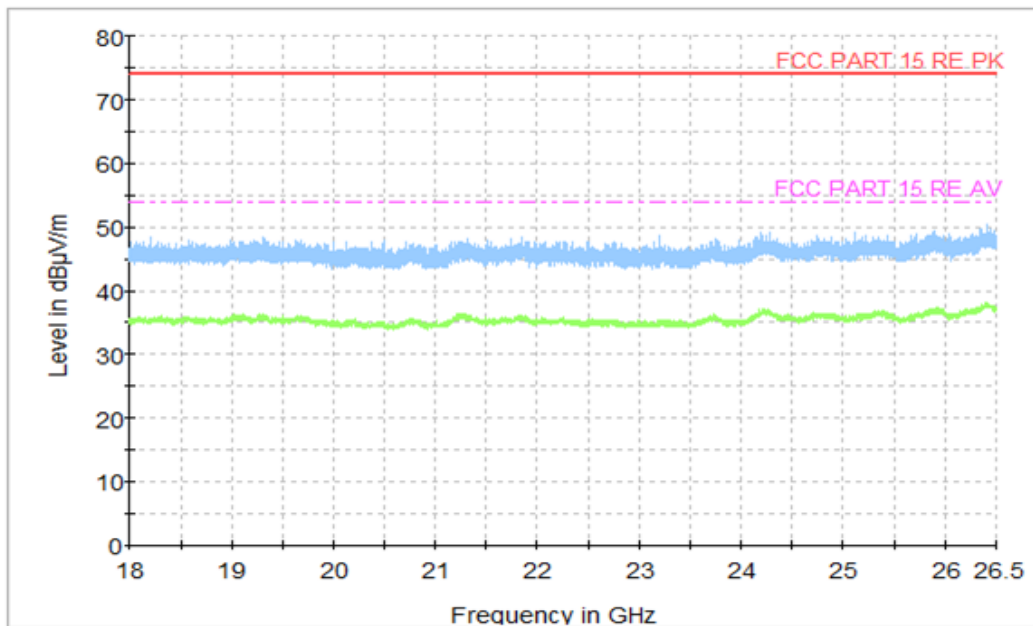


Figure A.1.49. Radiated Emission (Data Transfer: TF Card TO PC, 18GHz to 26.5GHz)

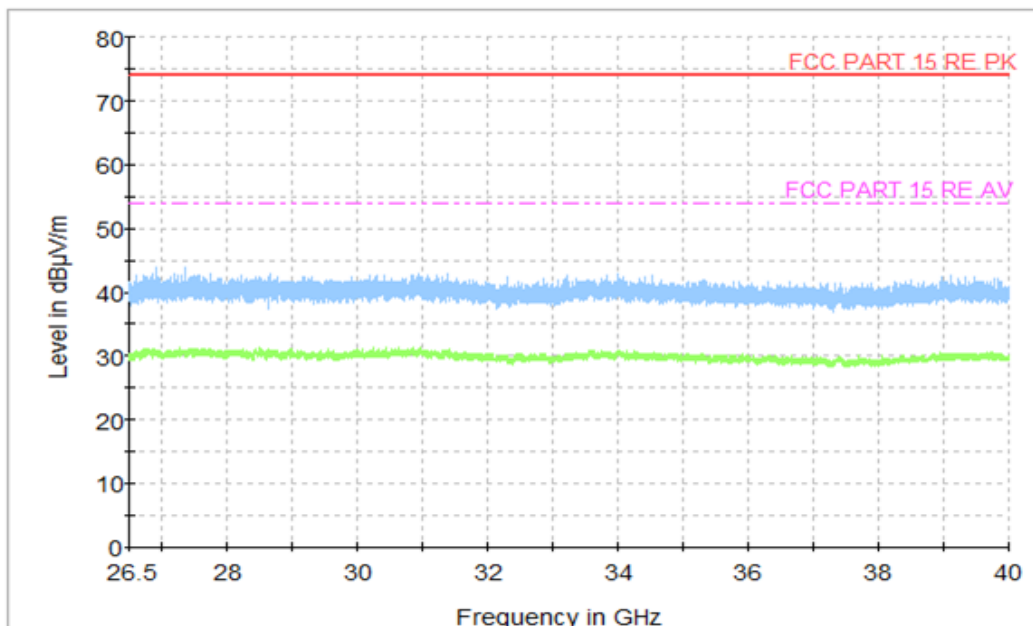


Figure A.1.50. Radiated Emission (Data Transfer: TF Card TO PC, 26.5GHz to 40GHz)

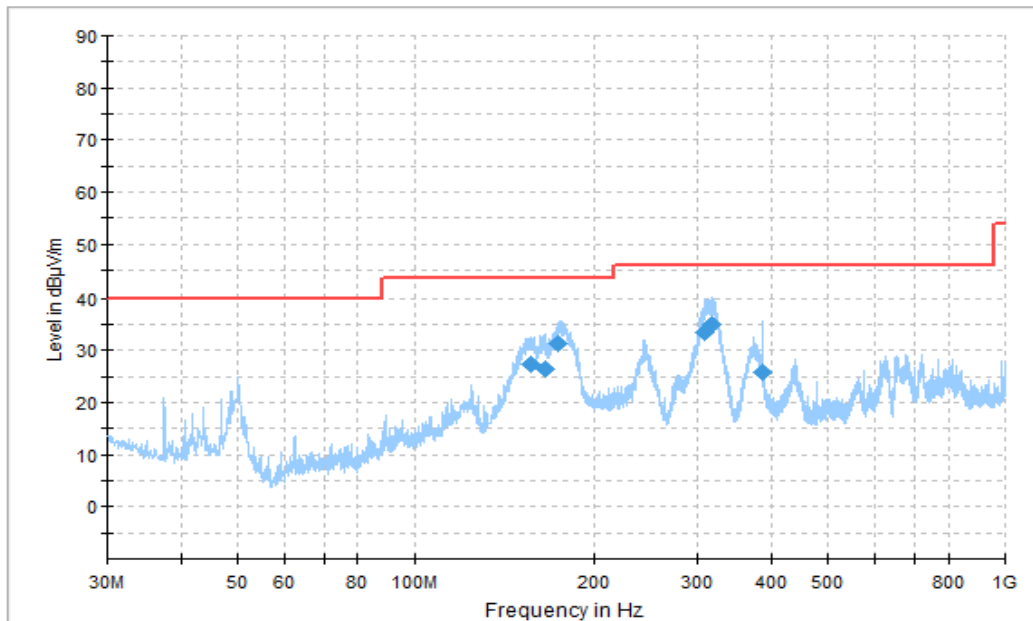


Figure A.1.51. Radiated Emission (Data Transfer: PC TO EUT, 30MHz to 1GHz)

Final\_Results

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
156.226111	27.42	43.50	16.08	V	-13	40.42
165.561111	26.39	43.50	17.11	V	-21	47.39
174.106667	31.34	43.50	12.16	V	-18	49.34
308.735000	33.31	46.00	12.69	H	-17	50.31
318.377778	35.09	46.00	10.91	H	-17	52.09
387.478889	25.73	46.00	20.27	H	-7	32.73

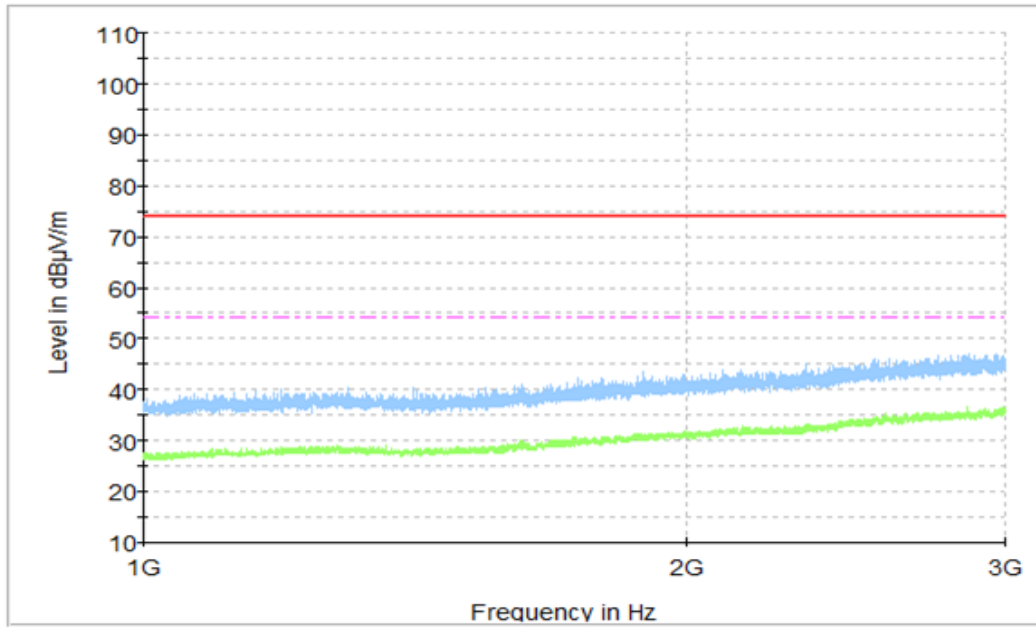


Figure A.1.52. Radiated Emission (Data Transfer: PC TO EUT, 1GHz to 3GHz)

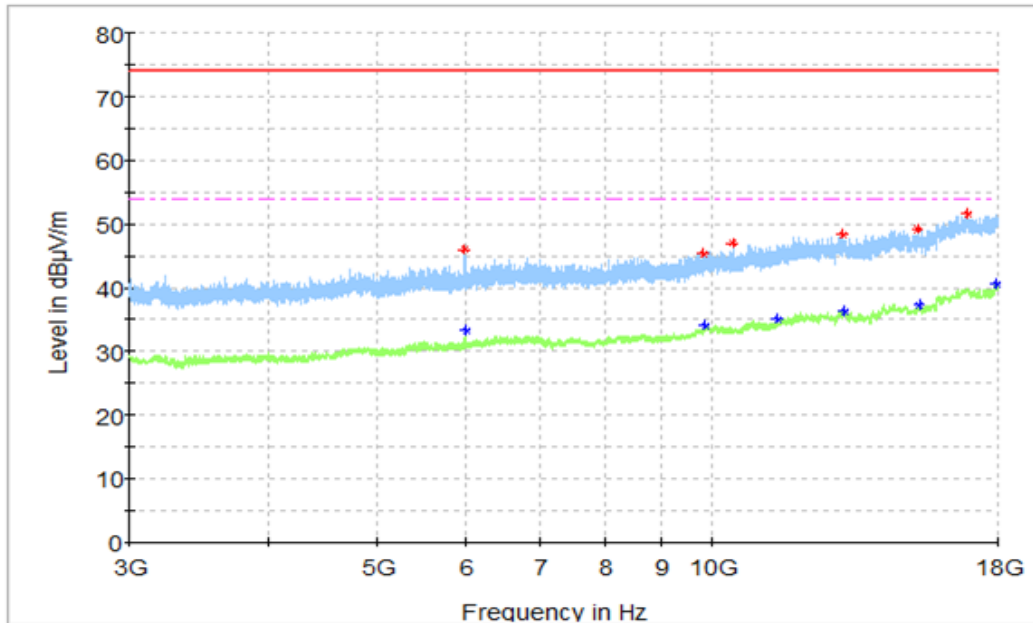


Figure A.1.53. Radiated Emission (Data Transfer: PC TO EUT, 3GHz to 18GHz)

**Final\_Results\_PK**

Frequency(MHz)	Peak (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
5979.000000	46	74.00	28.00	V	1.5	44.50
9819.000000	45.43	74.00	28.57	H	5.0	40.43
10426.500000	46.92	74.00	27.08	H	5.3	41.62
13055.000000	48.43	74.00	25.57	V	9.2	39.23
15291.500000	49.11	74.00	24.89	H	12.2	36.91
16882.000000	51.5	74.00	22.50	H	16.1	35.40

**Final\_Results\_AVG**

Frequency(MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin(dB)	Polarity	ARpl (dB/m)	P <sub>Mea</sub> (dBµV)
6000.000000	33.19	54.00	20.81	V	1.3	31.89
9851.500000	34.04	54.00	19.96	H	5.4	28.64
11428.500000	34.98	54.00	19.02	H	6.7	28.28
13124.000000	36.31	54.00	17.69	V	9.8	26.51
15295.000000	37.3	54.00	16.70	H	12.2	25.1
17952.500000	40.58	54.00	13.42	H	17.1	23.48

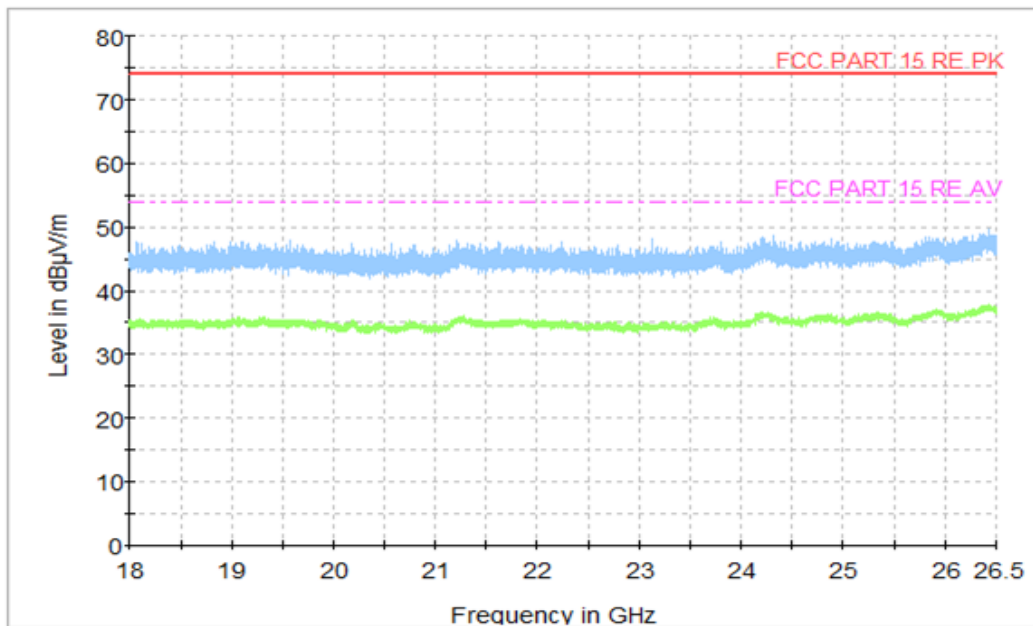


Figure A.1.54. Radiated Emission (Data Transfer: PC TO EUT, 18GHz to 26.5GHz)

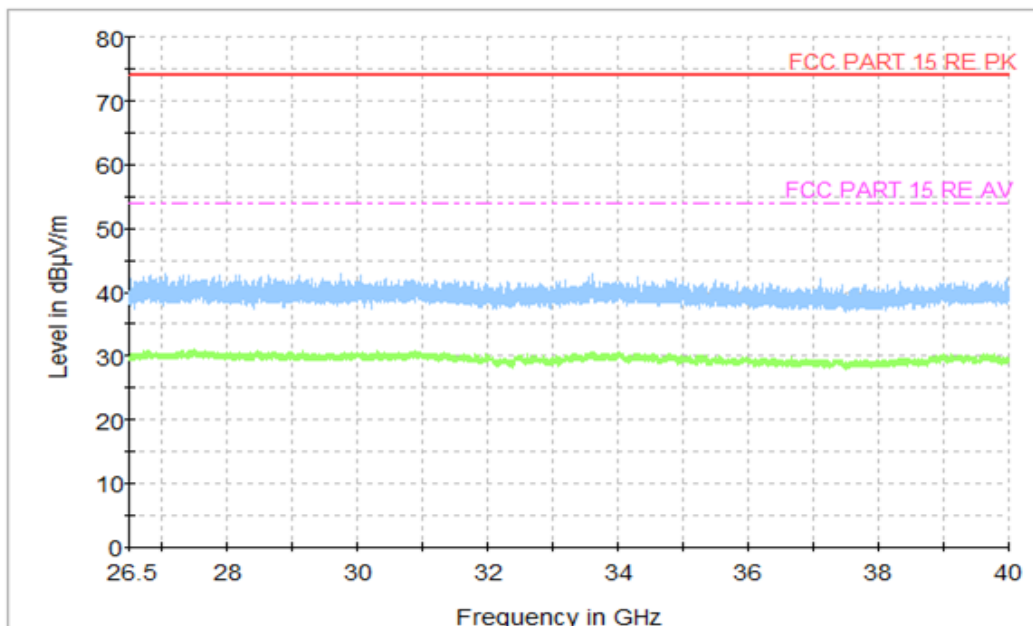


Figure A.1.55. Radiated Emission (Data Transfer: PC TO EUT, 26.5GHz to 40GHz)



**A.2 Conducted Emission (§15.107(a))****Reference**

FCC: Part 15.107(a)

**A.2.1 Method of measurement**

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150kHz to 30MHz shall not exceed the limits. Tested in accordance with the procedures of ANSI C63.4 -2014, section 7.3.

**A.2.2 EUT Operating Mode:**

**Camera:** At the beginning of measurement, the battery is completely discharged. The battery and charger are installed so that the EUT works well and keeping on taking photos.

**Video Player:** The EUT is connected to a charger for charging and keeping on playing mp3.

**Fingerprint recognition:** EUT enables the fingerprint recognition function.

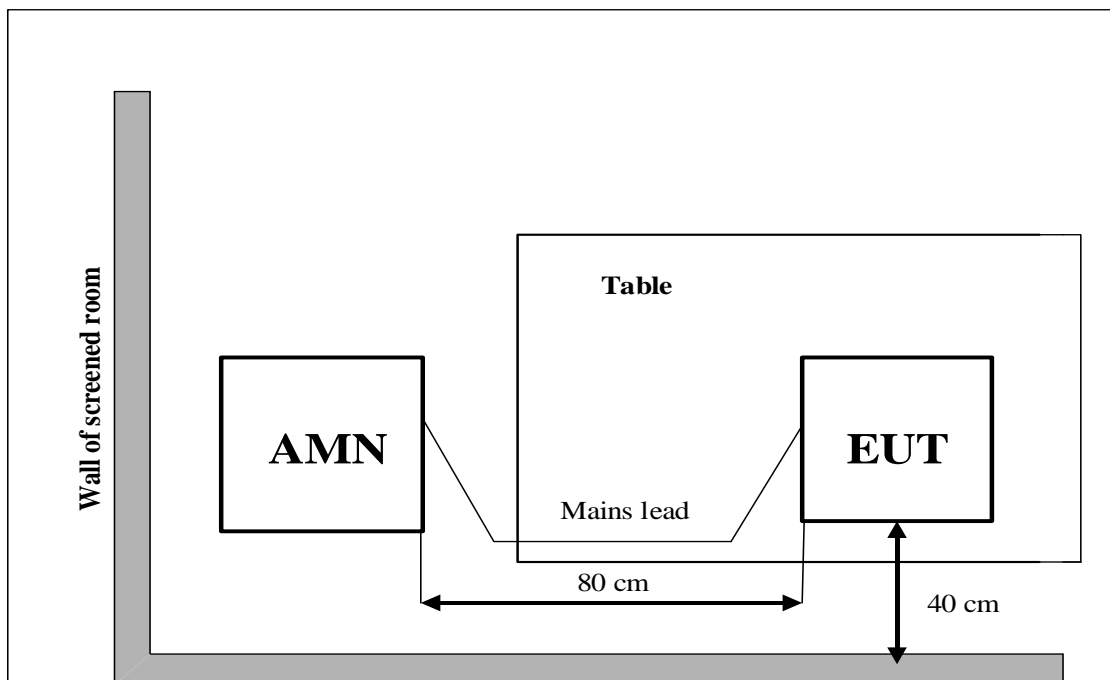
**Data Transfer:** The model of the PC is Lenovo ThinkPad T480, and the serial number of the PC is PF-13LW0C. The EUT is connected to a PC for transmitting data. The software is used to let the PC keep on copying data to EUT or TF Card, reading and erasing the data after copy action was finished.

**A.2.3 Measurement Limit**

Frequency of emission (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\*Decreases with the logarithm of the frequency

**A.2.4 Test set-up:**



**A.2.5 Test Condition in charging mode**

Voltage (V)	Frequency (Hz)
120	60
240	60

RBW	Sweep Time(s)
9kHz	1

**A.2.6 Measurement Results**

QuasiPeak(dBμV) /Average(dBμV) =PMea+Corr

Where

Corr: PathLoss + Voltage Division Factor

PMea: Measurement result on receiver.

Camera

AC Input Port/ Voltage: 120V/60Hz

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Average Limit (dBμV)	Result (dBμV)	Conclusion
			UT05aa/Set.1	
0.15 to 0.5	66 to 56	56 to 46	See Figure A.2.1.	P
0.5 to 5	56	46		
5 to 30	60	50		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

## Video Player

AC Input Port/ Voltage: 120V/60Hz

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)	Conclusion
			UT05aa/Set.1	
0.15 to 0.5	66 to 56	56 to 46	See Figure A.2.2.	P
0.5 to 5	56	46		
5 to 30	60	50		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

## Fingerprint recognition

AC Input Port/ Voltage: 120V/60Hz

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)	Conclusion
			UT12aa/Set.1	
0.15 to 0.5	66 to 56	56 to 46	See Figure A.2.3.	P
0.5 to 5	56	46		
5 to 30	60	50		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

## Data Transfer

AC Input Port/ Voltage: 120V/60Hz

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)	Conclusion
			UT05aa/Set.2	
0.15 to 0.5	66 to 56	56 to 46	See Figure A.2.4.	P
0.5 to 5	56	46		
5 to 30	60	50		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

## Data Transfer

AC Input Port/ Voltage: 120V/60Hz

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)	Conclusion
			UT05aa/Set.3	
0.15 to 0.5	66 to 56	56 to 46	See Figure A.2.5.	P
0.5 to 5	56	46		
5 to 30	60	50		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

## Camera

AC Input Port/ Voltage: 240V/60Hz

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)	Conclusion
			UT05aa/Set.1	
0.15 to 0.5	66 to 56	56 to 46	See Figure A.2.6.	P
0.5 to 5	56	46		
5 to 30	60	50		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

## Video Player

AC Input Port/ Voltage: 240V/60Hz

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)	Conclusion
			UT05aa/Set.1	
0.15 to 0.5	66 to 56	56 to 46	See Figure A.2.7.	P
0.5 to 5	56	46		
5 to 30	60	50		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

## Fingerprint recognition

AC Input Port/ Voltage: 240V/60Hz

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)	Conclusion
			UT12aa/Set.1	
0.15 to 0.5	66 to 56	56 to 46	See Figure A.2.8.	P
0.5 to 5	56	46		
5 to 30	60	50		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

## Data Transfer

AC Input Port/ Voltage: 240V/60Hz

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)	Conclusion
			UT05aa/Set.2	
0.15 to 0.5	66 to 56	56 to 46	See Figure A.2.9.	P
0.5 to 5	56	46		
5 to 30	60	50		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.



Data Transfer

AC Input Port/ Voltage: 240V/60Hz

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)	Conclusion
			UT05aa/Set.3	
0.15 to 0.5	66 to 56	56 to 46	See Figure A.2.10.	P
0.5 to 5	56	46		
5 to 30	60	50		

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

AC Input Port/ Voltage: 120V/60Hz

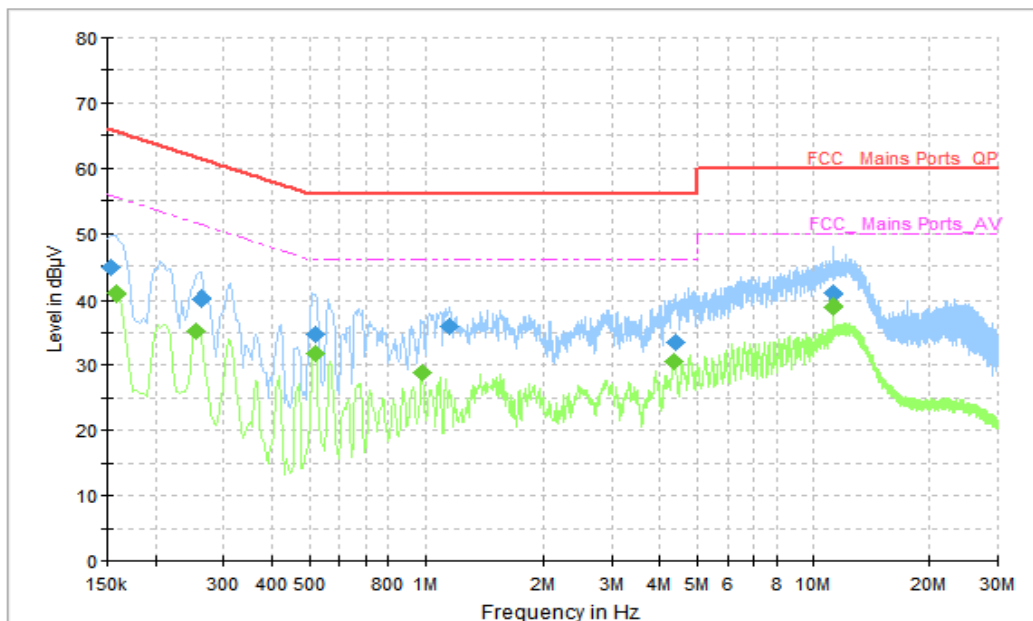


Figure A.2.1. Conducted Emission(Camera)

**Final\_Result\_QPK**

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.154000	44.71	65.78	21.07	N	10	34.71
0.262000	40.15	61.37	21.22	L1	10	30.15
0.518000	34.69	56.00	21.31	N	10	24.69
1.158000	35.88	56.00	20.12	N	10	25.88
4.394000	33.61	56.00	22.39	L1	10	23.61
11.250000	40.90	60.00	19.10	L1	10	30.90

**Final\_Result\_AVG**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.158000	40.91	55.57	14.66	N	10	30.91
0.254000	35.21	51.63	16.42	N	10	25.21
0.518000	31.77	46.00	14.23	N	10	21.77
0.978000	28.93	46.00	17.07	N	10	18.93
4.354000	30.49	46.00	15.51	L1	10	20.49
11.254000	38.91	50.00	11.09	L1	10	28.91

AC Input Port/ Voltage: 120V/60Hz

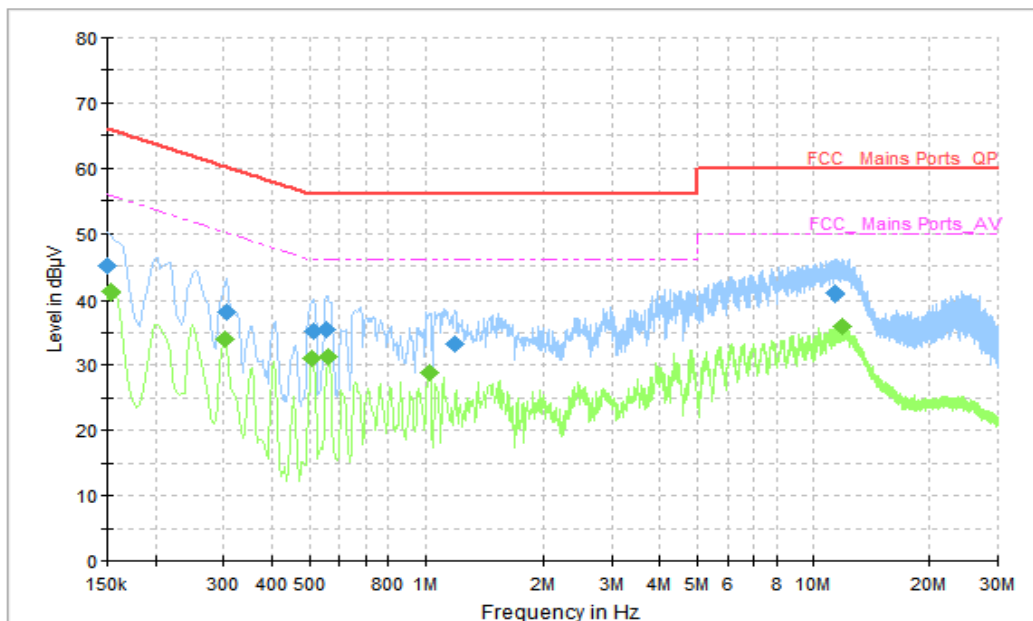


Figure A.2.2. Conducted Emission(Video Player)

Final\_Result\_QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.150000	45.09	66.00	20.91	N	10	35.09
0.306000	38.08	60.08	12.00	L1	10	28.08
0.514000	35.17	56.00	20.83	L1	10	25.17
0.554000	35.48	56.00	20.52	L1	10	25.48
1.190000	33.30	56.00	22.70	L1	10	23.3
11.402000	40.96	60.00	19.04	N	10	30.96

Final\_Result\_AVG

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.154000	41.07	55.78	14.72	N	10	31.07
0.302000	33.97	50.19	16.22	L1	10	23.97
0.506000	31.01	46.00	14.99	L1	10	21.01
0.562000	31.40	46.00	14.60	L1	10	21.40
1.026000	28.76	46.00	17.24	L1	10	18.76
11.818000	36.04	50.00	13.96	N	10	26.04

AC Input Port/ Voltage: 120V/60Hz

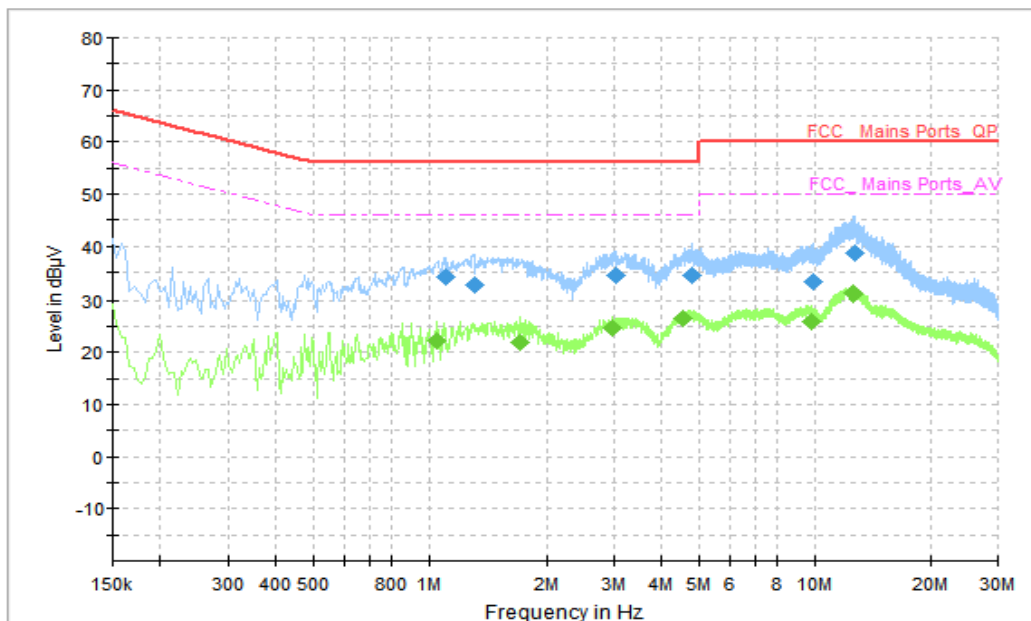


Figure A.2.3. Conducted Emission(Fingerprint recognition)

**Final\_Result\_QPK**

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
1.106000	33.98	56.00	22.02	L1	10	23.98
1.310000	32.73	56.00	23.27	L1	10	22.73
3.022000	34.52	56.00	21.48	L1	10	24.52
4.810000	34.55	56.00	21.45	L1	10	24.55
9.950000	33.15	60.00	26.85	N	10	23.15
12.742000	38.70	60.00	21.30	N	11	27.70

**Final\_Result\_AVG**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
1.050000	22.10	46.00	23.90	L1	10	12.10
1.714000	21.81	46.00	24.19	N	10	11.81
2.962000	24.68	46.00	21.32	L1	10	14.68
4.534000	26.61	46.00	19.39	L1	10	16.61
9.758000	25.83	50.00	24.17	N	10	15.83
12.586000	31.18	50.00	18.82	N	11	20.18



AC Input Port/ Voltage: 120V/60Hz

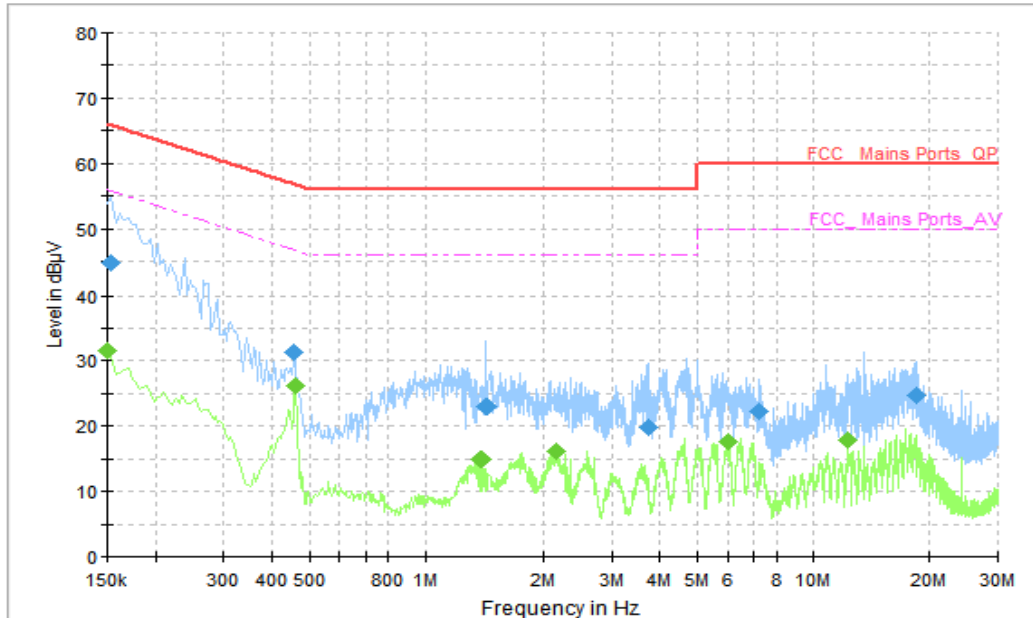


Figure A.2.4. Conducted Emission(Data Transfer)

**Final\_Result\_QPK**

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.154000	44.69	65.78	21.09	N	10	34.69
0.458000	31.41	56.73	25.32	N	10	21.41
1.434000	23.10	56.00	32.90	N	10	13.10
3.738000	19.71	56.00	36.29	N	10	9.71
7.230000	22.22	60.00	37.78	N	10	12.22
18.506000	24.83	60.00	35.17	N	10	14.83

**Final\_Result\_AVG**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.150000	31.62	56.00	24.38	N	10	21.62
0.462000	26.27	46.66	20.39	N	10	16.27
1.378000	15.00	46.00	31.00	N	10	5.00
2.166000	16.11	46.00	29.89	N	10	6.11
5.978000	17.60	50.00	32.40	N	10	7.6
12.290000	17.80	50.00	32.20	N	10	7.80

AC Input Port/ Voltage: 120V/60Hz

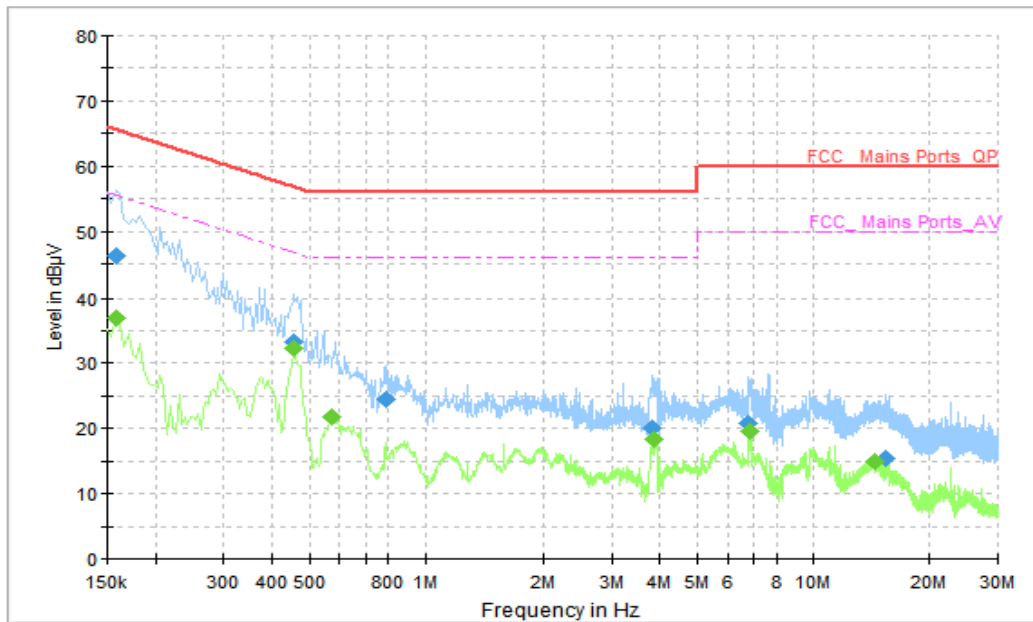


Figure A.2.5. Conducted Emission(Data Transfer)

**Final\_Result\_QPK**

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.158000	46.21	65.57	19.36	N	10	36.21
0.458000	33.26	56.73	23.47	N	10	23.26
0.790000	24.59	56.00	31.41	N	10	14.59
3.830000	20.11	56.00	35.89	N	10	10.11
6.754000	20.89	60.00	39.11	N	10	10.89
15.442000	15.30	60.00	44.70	N	10	5.30

**Final\_Result\_AVG**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.158000	36.99	55.57	18.58	N	10	26.99
0.458000	32.23	46.73	14.49	N	10	22.23
0.570000	21.81	46.00	24.19	N	10	11.81
3.870000	18.46	46.00	27.54	N	10	8.46
6.826000	19.65	50.00	30.35	N	10	9.65
14.410000	14.96	50.00	35.04	N	10	4.96

AC Input Port/ Voltage: 240V/60Hz

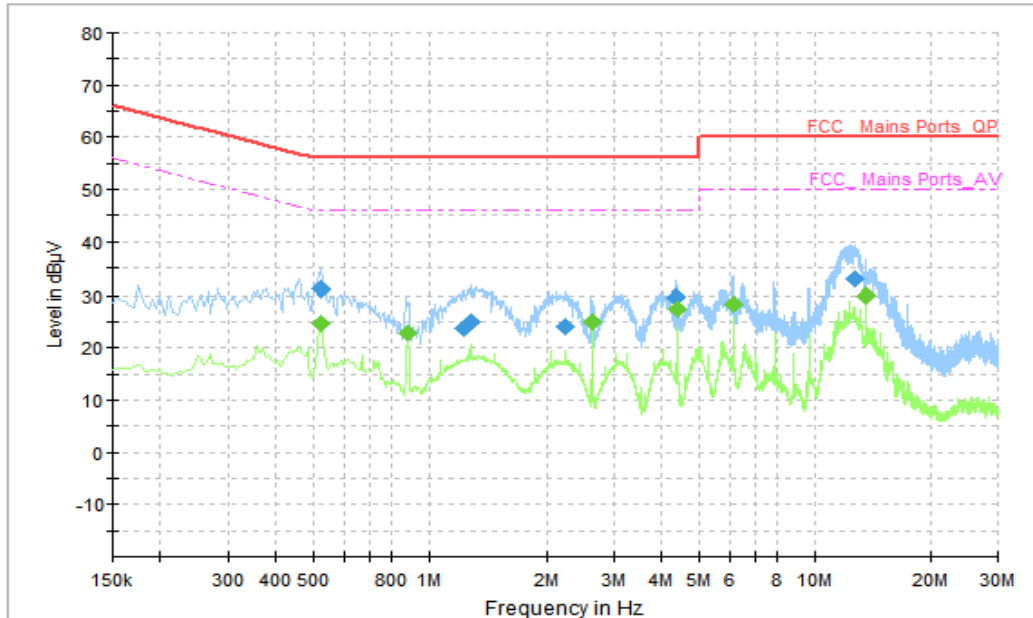


Figure A.2.6. Conducted Emission(Camera)

**Final\_Result\_QPK**

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.522000	30.94	56.00	25.06	N	10	20.94
1.226000	23.84	56.00	32.16	L1	10	13.84
1.290000	24.95	56.00	31.05	L1	10	14.95
2.234000	24.14	56.00	31.86	N	10	14.14
4.358000	29.42	56.00	26.58	L1	10	19.42
12.694000	32.96	60.00	27.04	N	11	21.96

**Final\_Result\_AVG**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.522000	24.61	46.00	21.39	L1	10	14.61
0.882000	22.91	46.00	23.09	N	10	12.91
2.638000	24.87	46.00	21.13	L1	10	14.87
4.398000	27.27	46.00	18.73	L1	10	17.27
6.158000	28.41	50.00	21.60	L1	10	18.41
13.562000	29.94	50.00	20.06	N	11	18.94

AC Input Port/ Voltage: 240V/60Hz

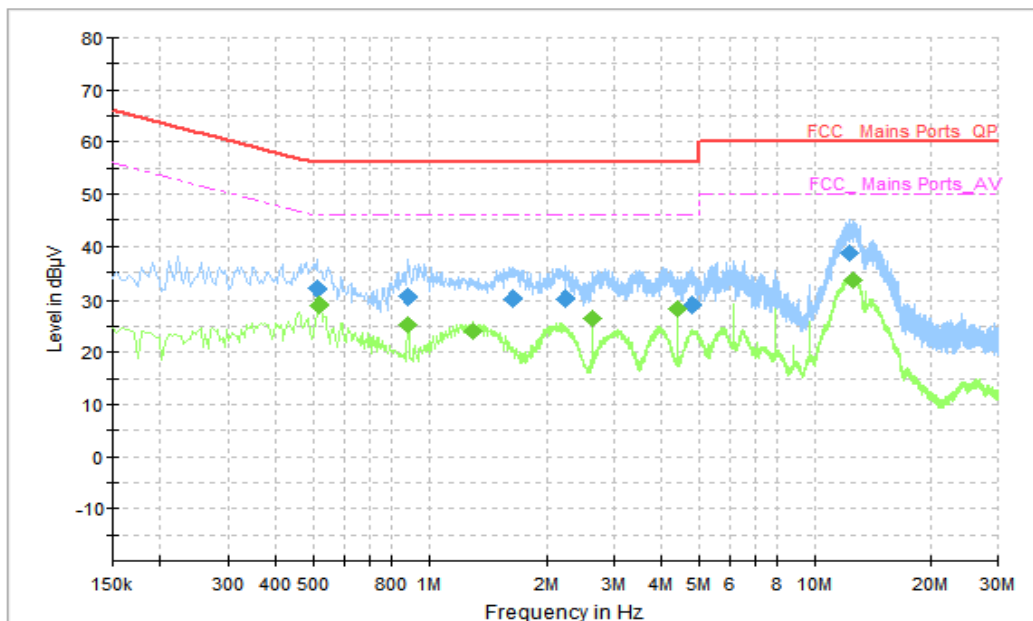


Figure A.2.7. Conducted Emission(Video Player)

**Final\_Result\_QPK**

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.510000	31.95	56.00	24.05	N	10	21.95
0.882000	30.45	56.00	25.55	L1	10	20.45
1.626000	30.25	56.00	25.75	L1	10	20.25
2.230000	30.22	56.00	25.78	L1	10	20.22
4.798000	28.90	56.00	27.10	L1	10	18.9
12.286000	38.59	60.00	21.41	N	10	28.59

**Final\_Result\_AVG**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.518000	28.85	46.00	17.15	L1	10	18.85
0.882000	25.11	46.00	20.89	N	10	15.11
1.306000	24.03	46.00	21.97	L1	10	14.03
2.642000	26.57	46.00	19.43	L1	10	16.57
4.402000	28.27	46.00	17.73	L1	10	18.27
12.542000	33.63	50.00	16.37	N	10	23.63

AC Input Port/ Voltage: 240V/60Hz

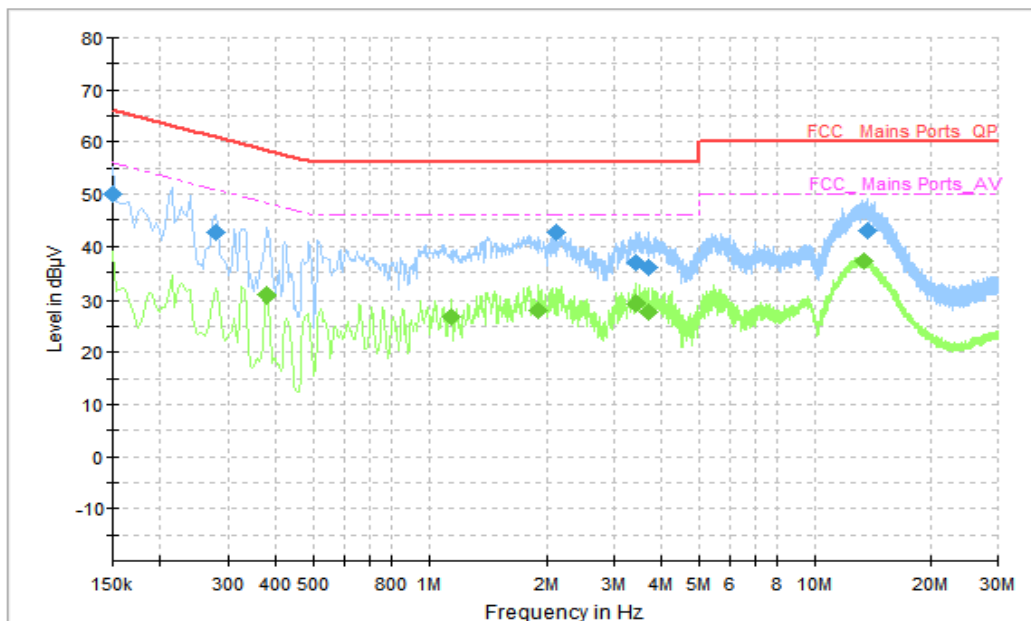


Figure A.2.8. Conducted Emission(Fingerprint recognition)

Final\_Result\_QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.150000	50.17	66.00	15.83	N	10	40.17
0.278000	42.76	60.88	18.11	N	10	32.76
2.118000	42.65	56.00	13.35	N	10	32.65
3.430000	36.85	56.00	19.15	L1	10	26.85
3.698000	35.87	56.00	20.13	L1	10	25.87
13.674000	43.07	60.00	16.93	L1	10	33.07

Final\_Result\_AVG

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.378000	30.80	48.32	17.53	N	10	20.80
1.142000	26.91	46.00	19.09	L1	10	16.91
1.902000	28.00	46.00	18.00	N	10	18.00
3.422000	29.32	46.00	16.68	L1	10	19.32
3.702000	27.78	46.00	18.22	L1	10	17.78
13.386000	37.08	50.00	12.92	L1	10	27.08

AC Input Port/ Voltage: 240V/60Hz

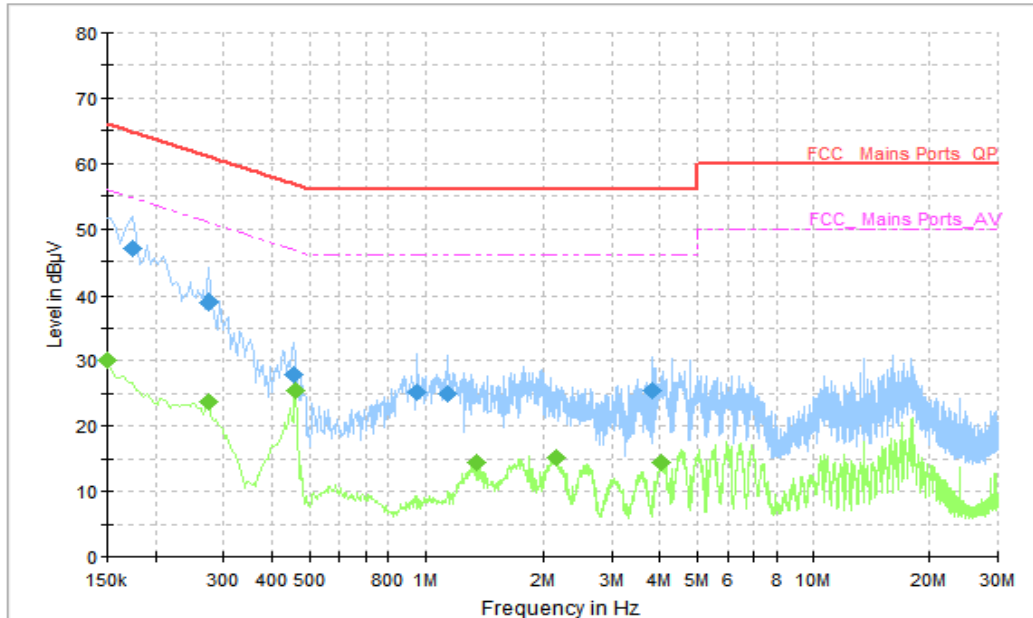


Figure A.2.9. Conducted Emission(Data Transfer)

**Final\_Result\_QPK**

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.174000	46.95	64.77	17.82	N	10	36.95
0.274000	38.92	61.00	22.08	N	10	28.92
0.454000	27.79	56.80	29.01	N	10	17.79
0.950000	25.08	56.00	30.92	N	10	15.08
1.142000	24.94	56.00	31.06	N	10	14.94
3.830000	25.49	56.00	30.51	N	10	15.49

**Final\_Result\_AVG**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.150000	30.09	56.00	25.91	N	10	20.09
0.274000	23.68	51.00	27.32	N	10	13.68
0.462000	25.55	46.66	21.11	N	10	15.55
1.354000	14.46	46.00	31.54	N	10	4.46
2.146000	15.24	46.00	30.76	N	9	6.24
4.050000	14.39	46.00	31.61	N	10	4.39

AC Input Port/ Voltage: 240V/60Hz

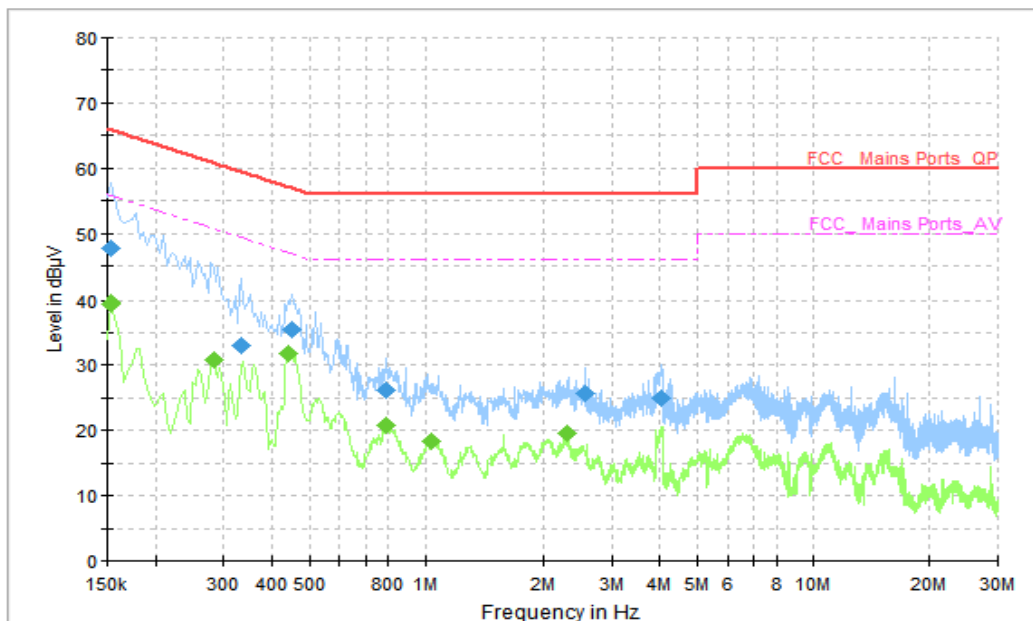


Figure A.2.10. Conducted Emission(Data Transfer)

**Final\_Result\_QPK**

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.154000	47.80	65.78	17.98	N	10	37.80
0.334000	33.11	59.35	26.24	N	10	23.11
0.450000	35.59	56.88	21.29	N	10	25.59
0.794000	26.10	56.00	29.90	N	10	16.10
2.570000	25.72	56.00	30.28	N	10	15.72
4.050000	25.04	56.00	30.96	N	10	15.04

**Final\_Result\_AVG**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	P <sub>Mea</sub> (dBµV)
0.154000	39.49	55.78	16.29	N	10	29.49
0.282000	30.75	50.76	20.01	N	10	20.75
0.442000	31.87	47.02	15.15	N	10	21.87
0.790000	20.79	46.00	25.21	N	10	10.79
1.038000	18.47	46.00	27.53	N	9	9.47
2.310000	19.45	46.00	26.55	N	10	9.45

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