

## FCC TEST REPORT

FOR

Qingdao Hisense Intelligent Commercial System Co., Ltd.

Tablet POS

Test Model: HM516

Prepared for : Qingdao Hisense Intelligent Commercial System Co., Ltd.  
Address : Bldg 3, 151 Zhuzhou Lu, Laoshan, Qingdao, China

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.  
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Date of receipt of test sample : April 25, 2015  
Number of tested samples : 1  
Serial number : 1S352338610700JBU000005  
Date of Test : April 25, 2015 – May 21, 2015  
Date of Report : June 25, 2015

**FCC TEST REPORT**  
**FCC CFR 47 PART 15 C (15.225)-2014**

**Report Reference No. .... : LCS1504251186E**

Date of Issue ..... : June 25, 2015

**Testing Laboratory Name..... : Shenzhen LCS Compliance Testing Laboratory Ltd.**

Address ..... : 1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue,  
Bao'an District, Shenzhen, Guangdong, China

Testing Location/ Procedure..... : Full application of Harmonised standards   
 Partial application of Harmonised standards   
 Other standard testing method

**Applicant's Name ..... : Qingdao Hisense Intelligent Commercial System Co., Ltd.**

Address ..... : Bldg 3, 151 Zhuzhou Lu, Laoshan, Qingdao, China

**Test Specification**

Standard ..... : FCC CFR 47 PART 15 C(15.225)-2014

**Test Report Form No. .... : LCSEMC-1.0**

TRF Originator ..... : Shenzhen LCS Compliance Testing Laboratory Ltd.

Master TRF..... : Dated 2011-03

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**Test Item Description..... : Tablet POS**

Trade Mark ..... : **Hisense**

Test Model..... : HM516

Ratings ..... : DC 3.7V by li-ion polymer battery(8000mAh)

Recharged Voltage: DC 5V/2A

Result ..... : **Positive**

**Compiled by:**

*Leo Lee*

**Supervised by:**

*Glin Lu*

**Approved by:**

*Gavin Liang*

Leo Lee/ File administrators

Glin Lu/ Technique principal

Gavin Liang/ Manager

# FCC -- TEST REPORT

<b>Test Report No. : LCS1504251186E</b>	<u>June 25, 2015</u> Date of issue
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Test Model..... : HM516  EUT..... : Tablet POS
<b>Applicant..... : Qingdao Hisense Intelligent Commercial System Co., Ltd.</b> Address..... : Bldg 3, 151 Zhuzhou Lu, Laoshan, Qingdao, China Telephone..... : / Fax..... : /
<b>Manufacturer..... : Qingdao Hisense Intelligent Commercial System Co., Ltd.</b> Address..... : Bldg 3, 151 Zhuzhou Lu, Laoshan, Qingdao, China Telephone..... : / Fax..... : /
<b>Factory..... : Qingdao Hisense Intelligent Commercial System Co., Ltd.</b> Address..... : Bldg 3, 151 Zhuzhou Lu, Laoshan, Qingdao, China Telephone..... : / Fax..... : /

<b>Test Result</b>	<b>Positive</b>
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The test report merely corresponds to the test sample.  
 It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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## 1. GENERAL INFORMATION

### 1.1 Description of Device (EUT)

EUT	: Tablet POS
Hardware Version	: VER.B
Software Version	: V0.8U.F511.HM516_WCDMA
Test Model	: HM516
Power Supply	: DC 3.7V by li-ion polymer battery(8000mAh) Recharged Voltage: DC 5V/2A
EUT Support	: GSM/GPRS/EGPRS/WCDMA/HSUPA/HSDPA/WIFI/
Radios Application	Bluetooth/NFC
RFID Technology	:
Operating Frequency	: 13.56MHz
Channel Number	: 1
Modulation Technology	: ASK
Antenna Description	: Loop Antenna, 1.5dBi(Max.)

### 1.2 Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	Certificate
FSP GROUP INC.	Switching Power Adapter	FSP040-RHAN2	--	VOC
Qingdao Hisense Intelligent Commercial System Co., Ltd.	Docking Station	HM516		VOC
SHENZHEN HONOR ELECTRONIC CO.,LTD.	SWITCHING ADAPTER	ADS-10BA-06 05010G	--	VOC

### 1.3 External I/O

I/O Port Description	Quantity	Cable
Micro-SD Card Slot	1	N/A
SIM Card Slot	1	N/A
IC Card Slot	1	N/A
USB Port	1	N/A
Headset Jack	1	N/A
Micro USB Port	1	0.9m, unshielded

### 1.4 Description of Test Facility

CNAS Registration Number. is L4595.

FCC Registration Number. is 899208.

Industry Canada Registration Number. is 9642A-1.

VCCI Registration Number. is C-4260 and R-3804.

ESMD Registration Number. is ARCB0108.

UL Registration Number. is 100571-492.

TUV SUD Registration Number. is SCN1081.

TUV RH Registration Number. is UA 50296516-001

### 1.5 Statement of The Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

## 1.6 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Radiation Uncertainty	9KHz~30MHz	3.10dB	(1)
	30MHz~200MHz	2.96dB	(1)
	200MHz~1000MHz	3.10dB	(1)
	1GHz~26.5GHz	3.80dB	(1)
	26.5GHz~40GHz	3.90dB	(1)
Conduction Uncertainty	150kHz~30MHz	1.63dB	(1)
Power disturbance	30MHz~300MHz	1.60dB	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

## 1.7 Description Of Test Modes

There are three test configurations for the pre-testing:

Configuration 1: Stand-alone(Power supplied by build-in battery DC 3.7V)

Configuration 2: Configured with SWITCHING ADAPTER (Used For Charging)

Configuration 3: Configured with Switching Power Adapter and Docking Station (Used For Charging)

For pre-testing, when performed with the Configuration 2 and Configuration 3, the input Voltage/Frequency AC 120V/60Hz and AC 240V/60Hz were used. We found that the Configuration 3(Input AC 120V/60Hz) was the worst case and used for the full test and recorded in this report.

The EUT was operated in the engineering mode. For the Configuration 1, all X, Y, Z axis had been tested and the worst case was record.

## 1.8 Summary Of Test Result

Test Items	FCC Rules	Result
Line Conducted Emissions	15.207	PASS
Field Strength of Fundamental Emissions	15.225(a)(b)(c)	PASS
Radiated Emissions	15.225(d) & 15.209	PASS
20dB Bandwidth	2.1049	PASS
Frequency Stability	15.225(e)	PASS
Antenna Requirement	15.203	PASS

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10: 2013, FCC CFR PART 15C 15.225.

### 2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

### 2.2 EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.225 under the FCC Rules Part 15 Subpart C.

### 2.3 General Test Procedures

#### 2.3.1 Conducted Emissions

According to the requirements in Section 6.2 of ANSI C63.10: 2013, AC power-line conducted emissions shall be measured in the frequency range between 0.15 MHz and 30MHz using Quasi-peak and average detector modes.

#### 2.3.2 Radiated Emissions

The EUT is placed on a turn table and the turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 6.3 of ANSI C63.10: 2013



### **3. SYSTEM TEST CONFIGURATION**

#### **3.1 Justification**

N/A.

#### **3.2 EUT Exercise Software**

N/A.

#### **3.3 Special Accessories**

N/A.

#### **3.4 Block Diagram/Schematics**

Please refer to the report.

#### **3.5 Equipment Modifications**

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

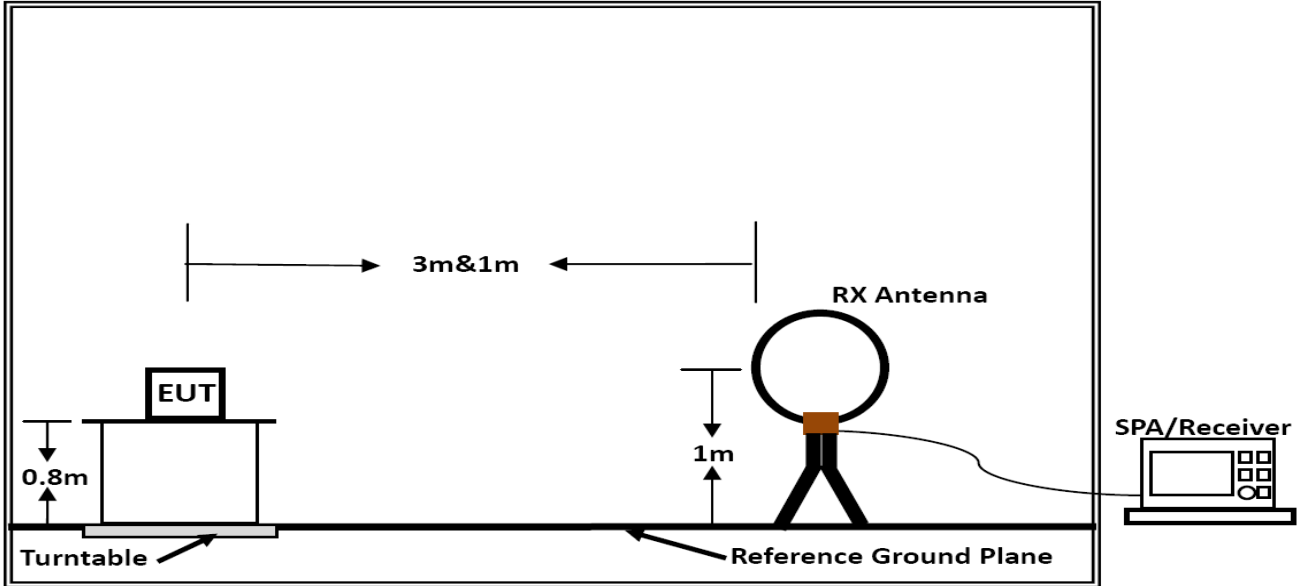
#### **3.6 Test Setup**

Please refer to the test setup photo.

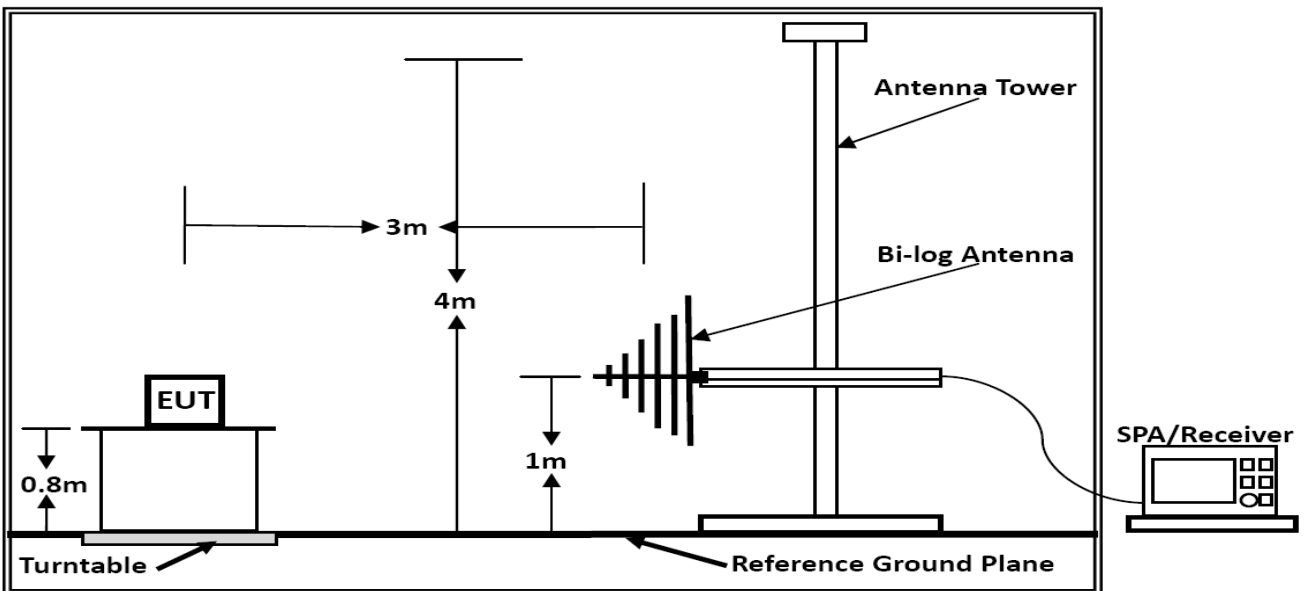
## 4. RADIATED MEASUREMENT

### 4.1 Radiated Emission

#### 4.1.1 Block Diagram of Test Setup



**Below 30MHz**



**Below 1GHz**

#### 4.1.2 Radiated Emission Limit

15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
\1\ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(\2\)
13.36-13.41			

\1\ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

\2\ Above 38.6

Part 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector.

According to Part 15.225 (a), the field strength of any emissions which appear outside of 13.553 ~ 13.567MHz band shall not exceed the general radiated emissions limits.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

Limit calculation and transfer to 3m distance as showed in the following table:

Frequency (MHz)	Limit (dBuV/m)	Distance (m)
0.009-0.490	$20\log(2400/F(\text{KHz}))+40\log(300/3)$	3
0.490-1.705	$20\log(2400/F(\text{KHz}))+40\log(300/3)$	3
1.705-30.0	69.5	3
30-88	40.0	3
88-216	43.5	3
216-960	46.0	3
Above 960	54.0	3

#### 4.1.3 Test Results

**PASS.**

*The test data please refer to following page:*

**9KHz ~ 30MHz**

Note: Only recorded the worst test result for the worst test configuration(Configuration 3(Input AC 120V/60Hz)).

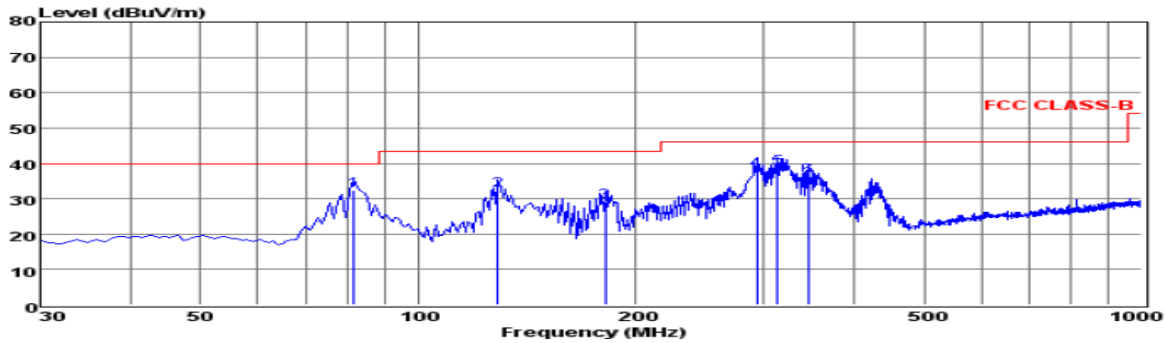
Freq. MHz	Antenna Pol.	Reading dBuV	Factor dB	Measured dBuV/m	Limit dBuV/m	Margin dB	Remark
0.350	H	--	--	--	65	--	--
1.000	H	--	--	--	65	--	--
3.66	H	36.86	11.71	48.57	69.5	-20.93	Peak
10.43	H	17.30	11.04	28.34	69.5	-41.16	Peak
13.56	H	56.20	10.86	67.06	124	-56.94	Peak
16.71	H	14.02	10.54	24.56	69.5	-44.94	Peak
23.56	H	15.57	9.60	25.17	69.5	-44.33	Peak
28.63	H	11.84	8.91	20.75	69.5	-48.75	Peak
0.350	V	--	--	--	65	--	--
0.860	V	--	--	--	65	--	--
3.66	V	36.83	11.69	48.52	69.5	-20.98	Peak
10.43	V	17.62	11.01	28.63	69.5	-40.87	Peak
13.56	V	56.65	10.86	67.51	124	-56.49	Peak
16.71	V	14.83	10.57	25.40	69.5	-44.10	Peak
23.56	V	16.08	9.59	25.67	69.5	-43.83	Peak
28.63	V	12.05	8.93	20.98	69.5	-48.52	Peak

\*Note: Factor= Antenna Gain + Cable Loss – Amplifier Gain;

“--” means noise floor.

**30MHz ~ 1GHz**

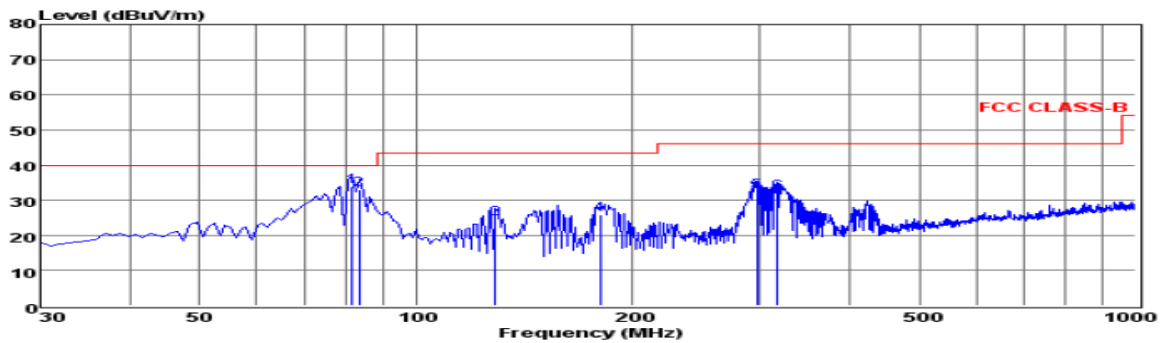
The Worst Test Result For Configuration 2(Input AC 120V/60Hz): Configured with SWITCHING ADAPTER (Used For Charging)



Env./Ins: 24°C/56%  
 EUT: Tablet POS  
 M/N: HM516  
 Power Rating: AC 120V/60Hz  
 Test Mode: TX-NFC  
 Operator: Leo  
 Memo: With DC 5V Adapter  
 pol: HORIZONTAL

	Freq MHz	Reading dBuV	CabLos dB	Antfac dB/m	Measured dBuV/m	Limit dBuV/m	Over dB	Remark
1	81.41	22.78	0.65	9.04	32.47	40.00	-7.53	QP
2	128.94	22.54	0.67	9.09	32.30	43.50	-11.20	QP
3	181.32	18.36	0.89	9.80	29.05	43.50	-14.45	QP
4	293.84	23.93	1.08	12.94	37.95	46.00	-8.05	QP
5	314.21	24.39	1.09	13.25	38.73	46.00	-7.27	QP
6	346.22	21.07	1.13	14.22	36.42	46.00	-9.58	QP

Note: 1. All readings are Quasi-peak values.  
 2. Measured= Reading + Antenna Factor + Cable Loss  
 3. The emission that ate 20db blow the official limit are not reported

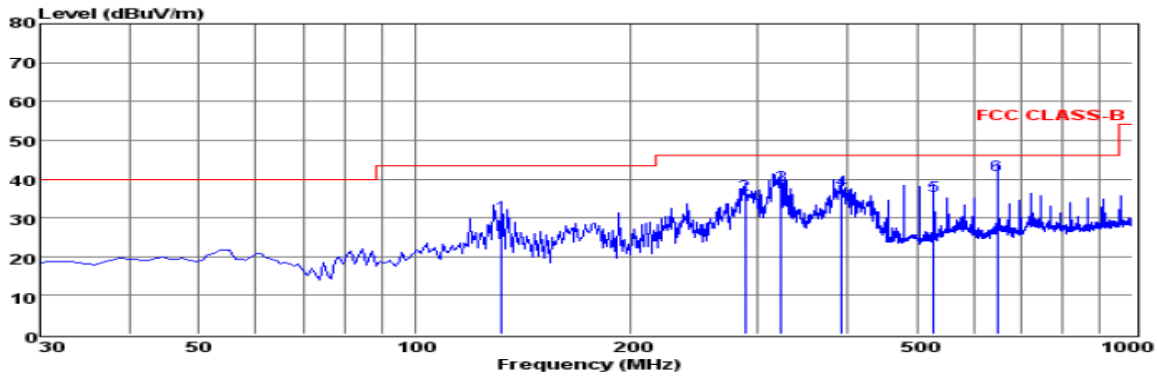


Env./Ins: 24°C/56%  
 EUT: Tablet POS  
 M/N: HM516  
 Power Rating: AC 120V/60Hz  
 Test Mode: TX-NFC  
 Operator: Leo  
 Memo: With DC 5V Adapter  
 pol: VERTICAL

	Freq MHz	Reading dBuV	CabLos dB	Antfac dB/m	Measured dBuV/m	Limit dBuV/m	Over dB	Remark
1	81.41	24.31	0.65	9.04	34.00	40.00	-6.00	QP
2	83.35	22.63	0.54	9.73	32.90	40.00	-7.10	QP
3	128.94	14.98	0.67	9.09	24.74	43.50	-18.76	QP
4	180.35	15.27	0.89	9.71	25.87	43.50	-17.63	QP
5	297.72	18.15	1.12	13.02	32.29	46.00	-13.71	QP
6	318.09	17.68	1.01	13.30	31.99	46.00	-14.01	QP

Note: 1. All readings are Quasi-peak values.  
 2. Measured= Reading + Antenna Factor + Cable Loss  
 3. The emission that ate 20db blow the official limit are not reported

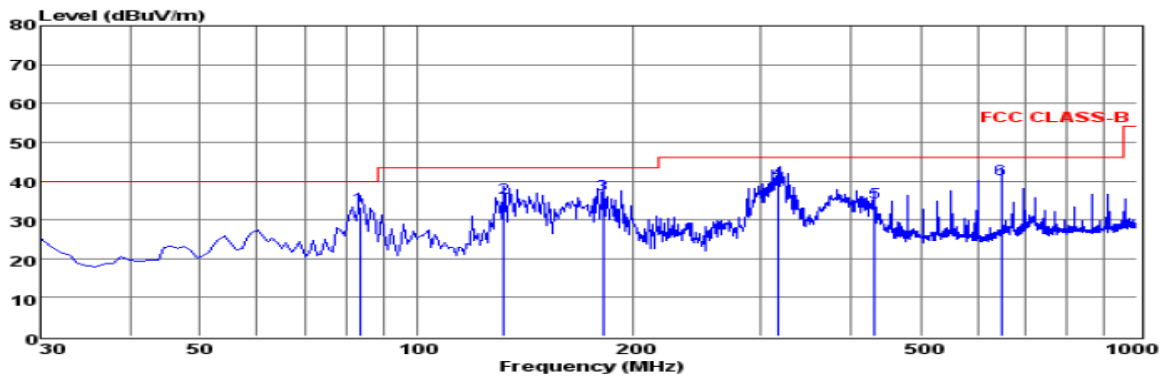
The Worst Test Result For Configuration 3(Input AC 120V/60Hz): Configured with Switching Power Adapter and Docking Station (Used For Charging)



Env./Ins: 24°C/56%  
 EUT: Tablet POS  
 M/N: HM516  
 Power Rating: AC 120V/60Hz  
 Test Mode: TX-NFC  
 Operator: Leo  
 Memo: With DC 12V Adapter & Docking Station  
 pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	131.85	21.22	0.76	8.79	30.77	43.50	-12.73	QP
2	288.02	22.22	1.05	12.83	36.10	46.00	-9.90	QP
3	323.91	23.92	1.10	13.48	38.50	46.00	-7.50	QP
4	392.78	21.06	1.20	14.89	37.15	46.00	-8.85	QP
5	528.58	17.09	1.46	17.11	35.66	46.00	-10.34	QP
6	647.89	20.87	1.54	18.62	41.03	46.00	-4.97	QP

Note: 1. All readings are Quasi-peak values.  
 2. Measured= Reading + Antenna Factor + Cable Loss  
 3. The emission that are 20db below the official limit are not reported



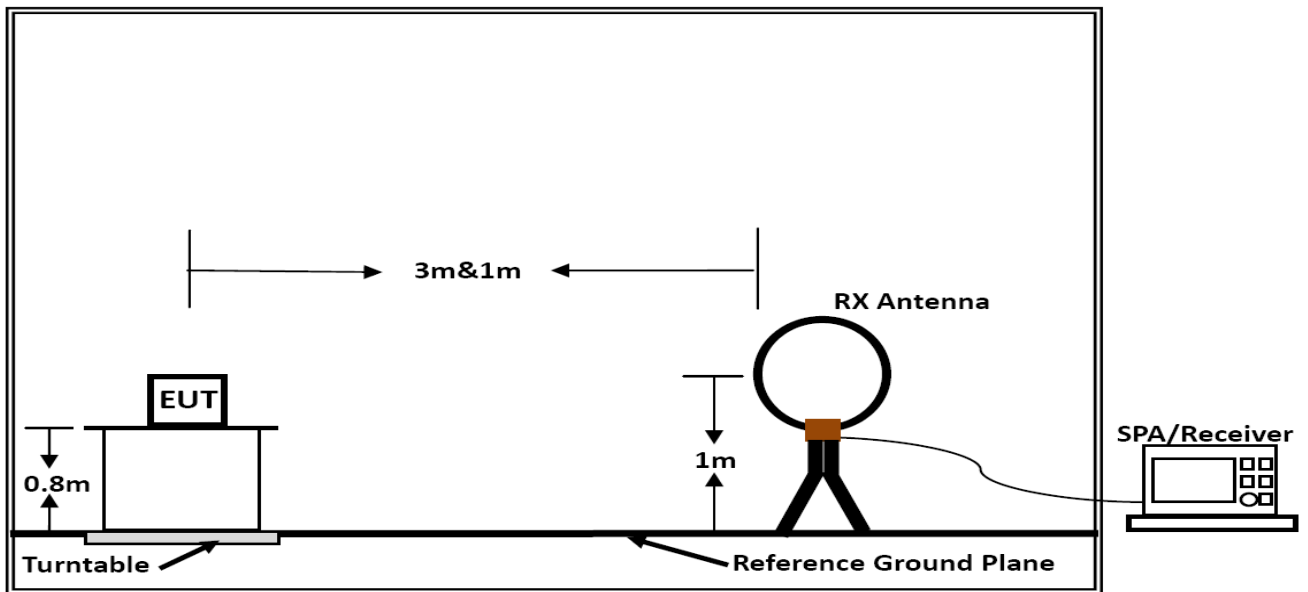
Env./Ins: 24°C/56%  
 EUT: Tablet POS  
 M/N: HM516  
 Power Rating: AC 120V/60Hz  
 Test Mode: TX-NFC  
 Operator: Leo  
 Memo: With DC 12V Adapter & Docking Station  
 pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	83.35	23.01	0.54	9.73	33.28	40.00	-6.72	QP
2	131.85	26.19	0.76	8.79	35.74	43.50	-7.76	QP
3	181.32	26.00	0.89	9.80	36.69	43.50	-6.81	QP
4	318.09	25.70	1.01	13.30	40.01	46.00	-5.99	QP
5	431.58	17.68	1.28	15.52	34.48	46.00	-11.52	QP
6	647.89	20.16	1.54	18.62	40.32	46.00	-5.68	QP

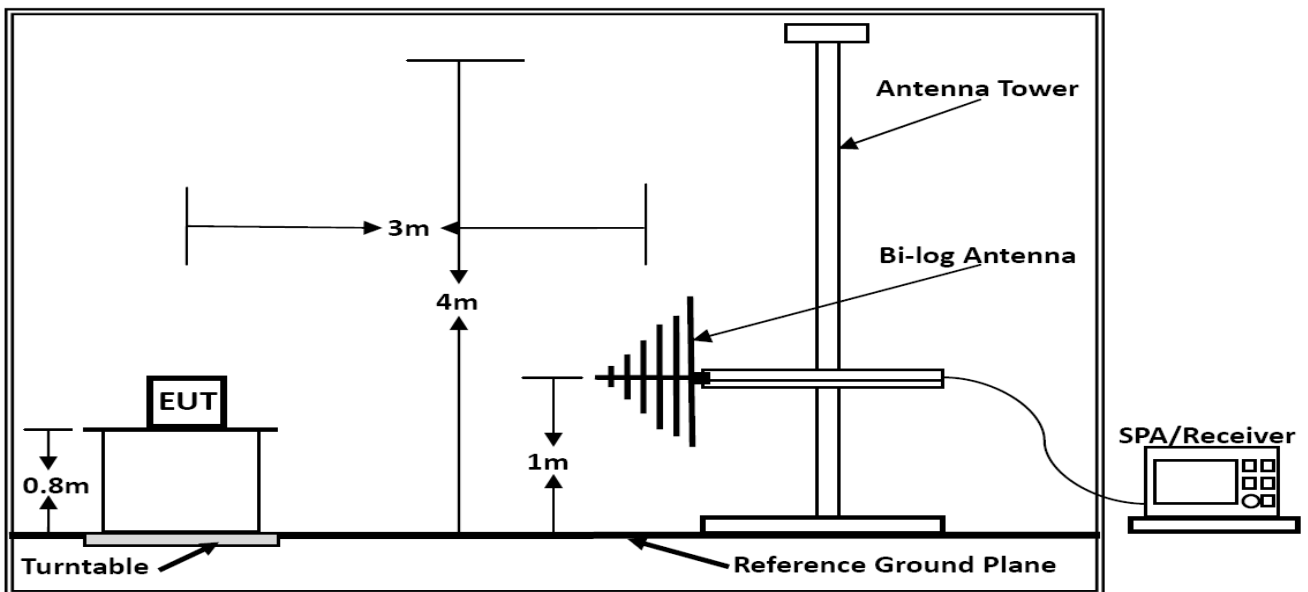
Note: 1. All readings are Quasi-peak values.  
 2. Measured= Reading + Antenna Factor + Cable Loss  
 3. The emission that are 20db below the official limit are not reported

## 4.2 Field Strength of Fundamental Emissions and Mask Measurement

### 4.2.1 Block Diagram of Test Setup



**Below 30MHz**



**Below 1GHz**



#### 4.2.2 Field strength of fundamental emissions limit and Mask limit

The field strength of fundamental emissions shall not exceed 15848 microvolts/meter at 30 meters. The emissions limit in this paragraph is based on measurement instrumentation employing a QP detector.

Frequencies (MHz)	Field Strength (microvolts/meter)	Field Strength (dB $\mu$ V/m) at 10m	Field Strength (dB $\mu$ V/m) at 3m
13.553 ~ 13.567MHz	15848 at 30m	103.08 (QP)	124 (QP)

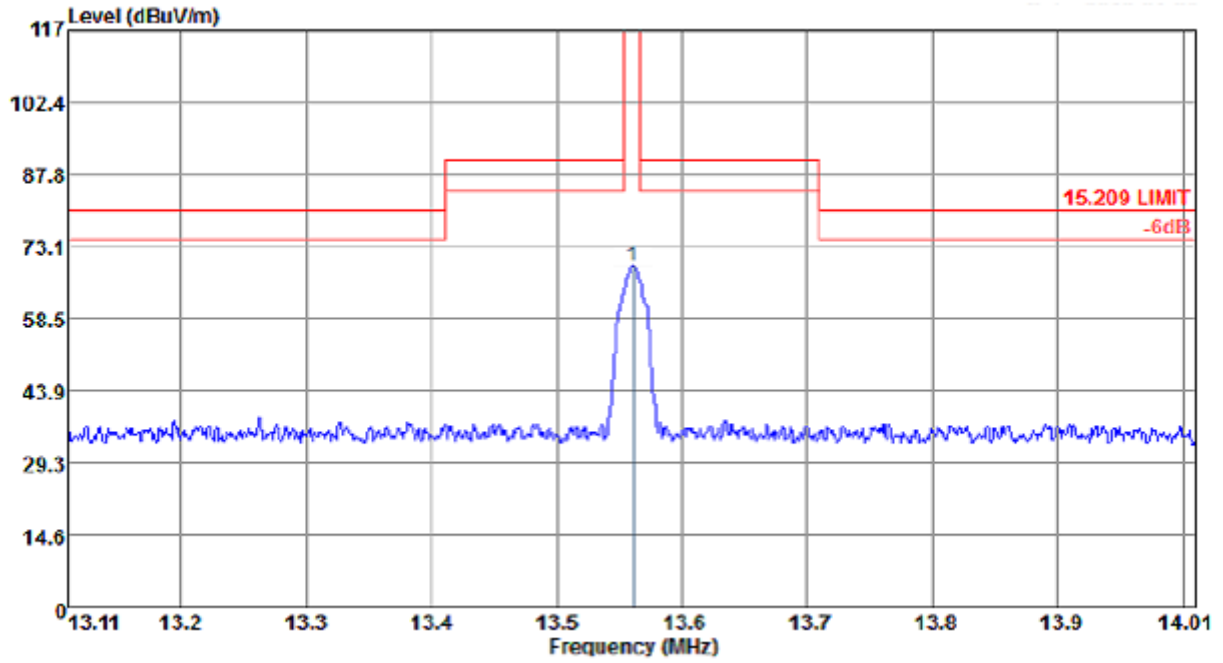
#### Mask Limit:

Frequency (MHz)	Limit (dB $\mu$ V/m)	Distance (m)
1.705-13.110	69.5	3
13.110-13.410	80.5	3
13.410-13.553	90.5	3
13.553-13.567	124.0	3
13.567-13.710	90.5	3
13.710-14.010	80.5	3
14.010-30.000	69.5	3

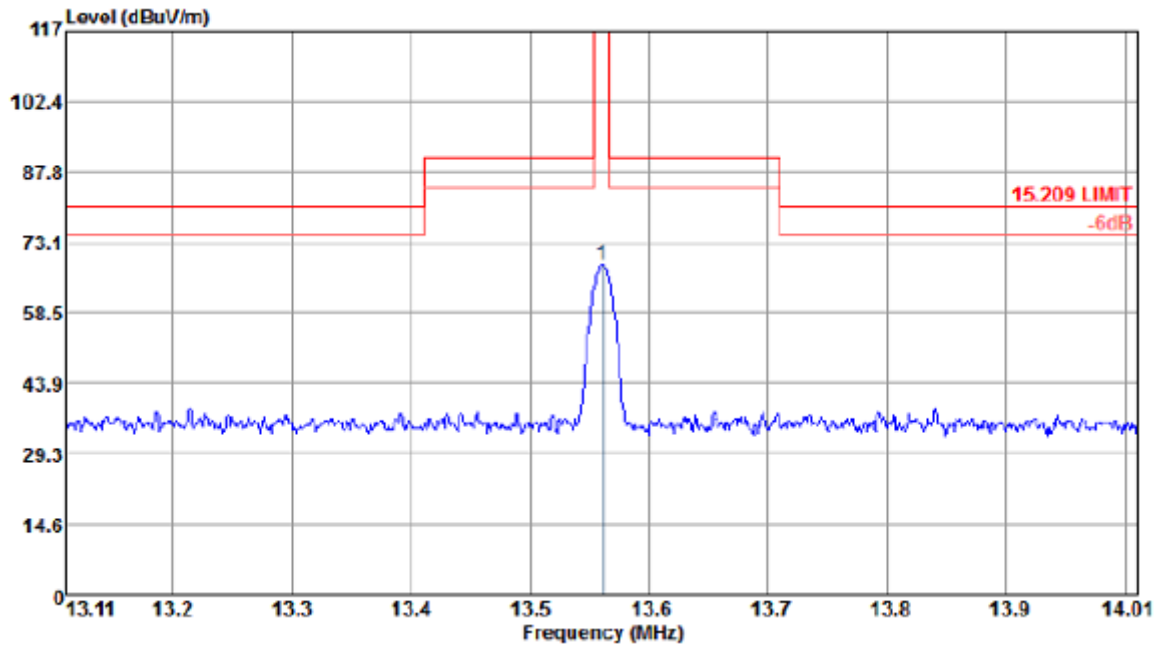
#### 4.2.3 Test Results

**PASS.**

*The test data please refer to following page:*



	Freq.(MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Pol.	Remark
1	13.56	56.20	10.86	67.06	124	H	QP



	Freq.(MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Pol.	Remark
1	13.56	56.65	10.86	67.51	124	V	QP

\*Note: Factor= Antenna Gain + Cable Loss – Amplifier Gain

Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m).

Measured distance is 3m.

All emissions emit form non-NFC function of digital unintentional emissions. All NFC’s spurious emissions are below 20dB of limits.

## 5. BANDWIDTH OF THE OPERATING FREQUENCY

### 5.1 Standard Applicable

Intentional radiators must be designed to ensure that the 20 dB bandwidth of the emissions in the specific band (13.553 ~ 13.567MHz).

### 5.2 Test Result

EUT	Tablet POS	
RBW	100Hz	
VBW	100Hz	
SPAN	500Hz	
Carrier Freq. (MHz)	20dB Bandwidth (KHz)	
13.56	0.245	

Please refer to the test plot:



## 6. FREQUENCY STABILITY MEASUREMENT

### 6.1 Standard Applicable

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% (100ppm) of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

### 6.2 Test Result

#### Voltage vs. Frequency Stability

Voltage(V)	Measurement Frequency (MHz)
DC 3.3V	13.56047
DC 3.7V	13.56041
DC 4.2V	13.56044
Max. Deviation (MHz)	0.00047
Max. Deviation (ppm)	34.6608

#### Temperature vs. Frequency Stability

Temperature (°C)	Measurement Frequency (MHz)
-20	13.56053
-10	13.56051
0	13.56049
10	13.56043
20	13.56041
30	13.56045
40	13.56047
50	13.56051
Max. Deviation (MHz)	0.00053
Max. Deviation (ppm)	39.0855

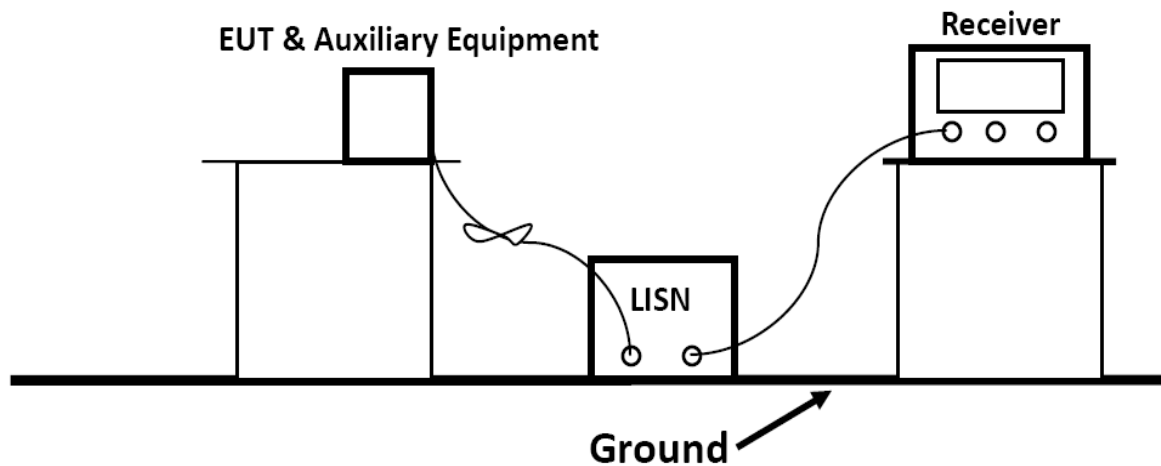
## 7. LINE CONDUCTED EMISSIONS

### 7.1 Standard Applicable

According to §15.207 (a) or RSS-GEN: For an intentional radiator which 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 150 kHz to 30 MHz shall not exceed 250 microvolt (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range are listed as follows:

Frequency Range(MHz)	Limits (dB $\mu$ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

### 7.2 Block Diagram of Test Setup

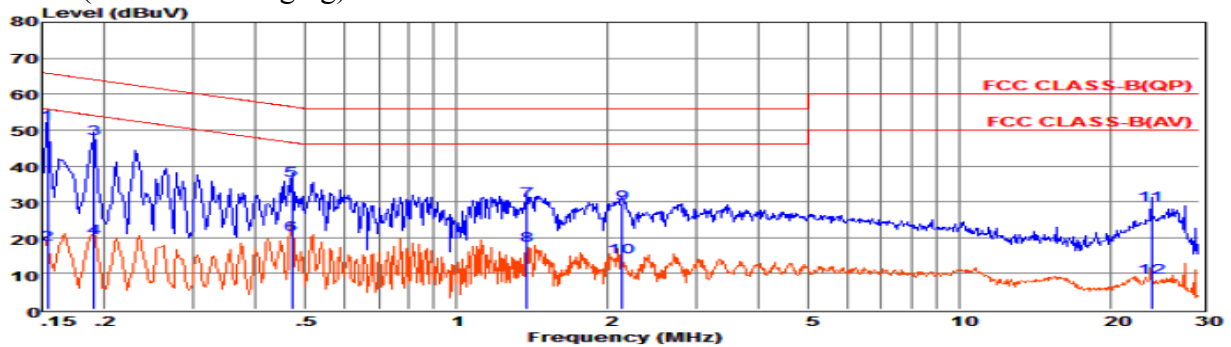


### 7.3 Test Results

PASS.

*The test data please refer to following page.*

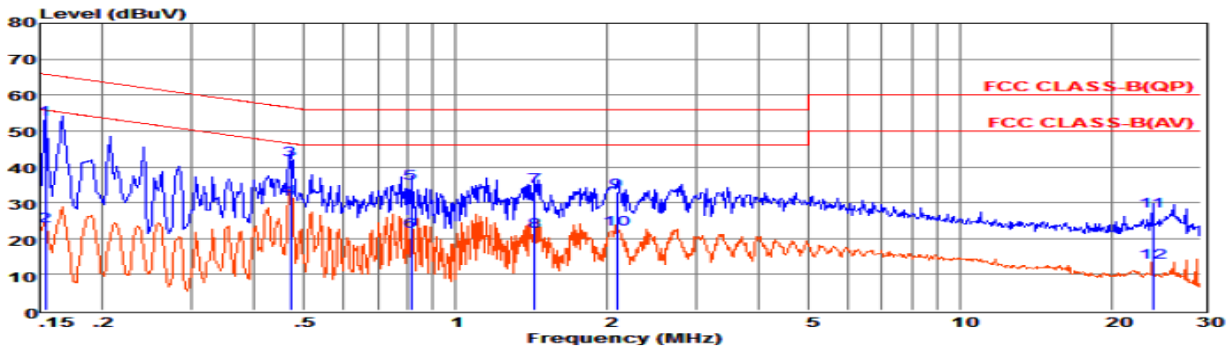
The Worst Test Result For Configuration 2(Input AC 120V/60Hz): Configured with SWITCHING ADAPTER (Used For Charging)



Env. Ins: 24\*/56%  
 EUT: Tablet POS  
 M/N: HMS16  
 Power Rating: AC 120V/60Hz  
 Test Mode: TX-NFC  
 Operator: Leo  
 Memo: With DC 5V Adapter  
 Pol: LINE

Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1 0.15403	32.23	9.58	0.02	10.00	51.83	65.78	-13.95	QP
2 0.15413	-1.42	9.58	0.02	10.00	18.18	55.77	-37.59	Average
3 0.19039	27.81	9.62	0.02	10.00	47.45	64.02	-16.57	QP
4 0.19049	0.20	9.62	0.02	10.00	19.84	54.02	-34.18	Average
5 0.47110	16.35	9.62	0.04	10.00	36.01	56.49	-20.48	QP
6 0.47120	1.19	9.62	0.04	10.00	20.85	46.49	-25.64	Average
7 1.38109	10.63	9.63	0.05	10.00	30.31	56.00	-25.69	QP
8 1.38209	-1.78	9.63	0.05	10.00	17.90	46.00	-28.10	Average
9 2.13259	9.72	9.64	0.05	10.00	29.41	56.00	-26.59	QP
10 2.13359	-5.14	9.64	0.05	10.00	14.55	46.00	-31.45	Average
1124.01475	9.28	9.71	0.13	10.00	29.12	60.00	-30.88	QP
1224.01575	-10.94	9.71	0.13	10.00	8.90	50.00	-41.10	Average

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten\_Fac.  
 2. The emission levels that are 20dB below the official limit are not reported.

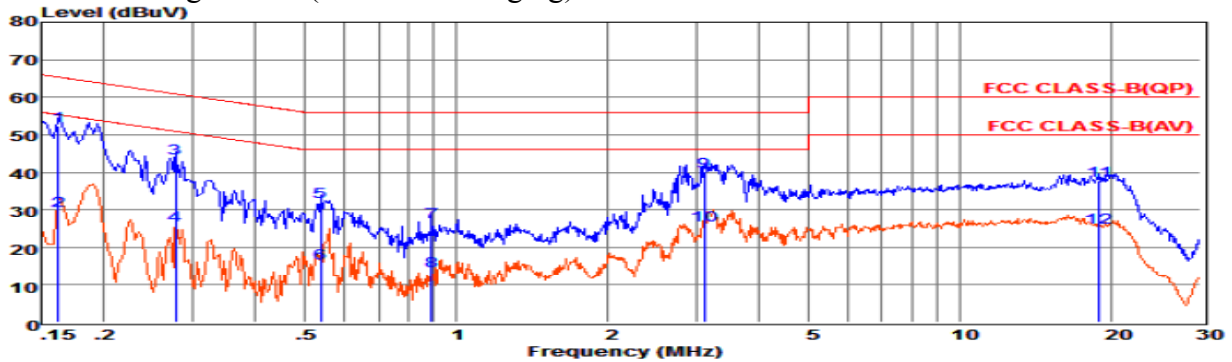


Env. Ins: 24\*/56%  
 EUT: Tablet POS  
 M/N: HMS16  
 Power Rating: AC 120V/60Hz  
 Test Mode: TX-NFC  
 Operator: Leo  
 Memo: With DC 5V Adapter  
 Pol: NEUTRAL

Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1 0.15403	33.64	9.69	0.02	10.00	53.35	65.78	-12.43	QP
2 0.15413	3.74	9.69	0.02	10.00	23.45	55.77	-32.32	Average
3 0.47110	22.24	9.62	0.04	10.00	41.90	56.49	-14.59	QP
4 0.47120	11.62	9.62	0.04	10.00	31.28	46.49	-15.21	Average
5 0.81737	15.84	9.63	0.04	10.00	35.51	56.00	-20.49	QP
6 0.81747	2.28	9.63	0.04	10.00	21.95	46.00	-24.05	Average
7 1.43328	14.77	9.63	0.05	10.00	34.45	56.00	-21.55	QP
8 1.43428	2.27	9.63	0.05	10.00	21.95	46.00	-24.05	Average
9 2.08787	13.34	9.63	0.05	10.00	33.02	56.00	-22.98	QP
10 2.08887	2.90	9.63	0.05	10.00	22.58	46.00	-23.42	Average
1124.01475	7.69	9.82	0.13	10.00	27.64	60.00	-32.36	QP
1224.01575	-6.54	9.82	0.13	10.00	13.41	50.00	-36.59	Average

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten\_Fac.  
 2. The emission levels that are 20dB below the official limit are not reported.

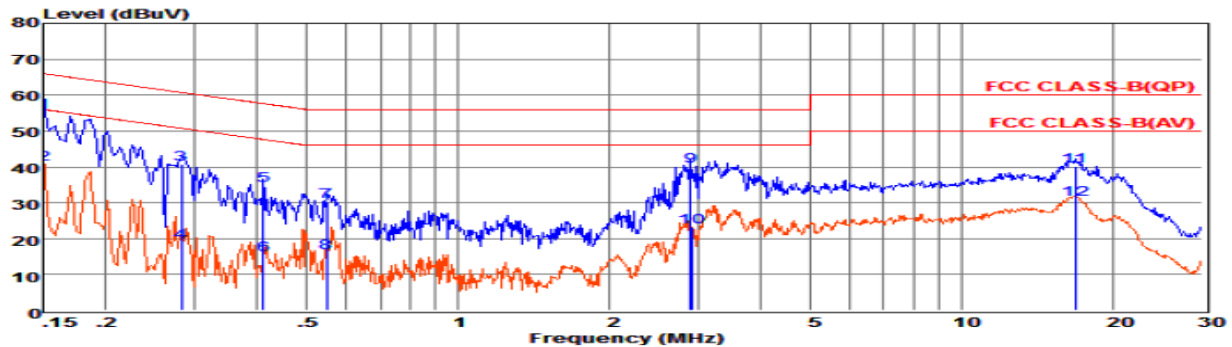
The Worst Test Result For Configuration 3(Input AC 120V/60Hz): Configured with Switching Power Adapter and Docking Station (Used For Charging)



Env. Ins: 24\*/56#  
 EUT: Tablet POS  
 M/N: HM516  
 Power Rating: AC 120V/60Hz  
 Test Mode: TX-NFC  
 Operator: Leo  
 Memo: With DC 12V Adapter & Docking Station  
 Pol: LINE

Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1 0.16241	32.78	9.59	0.02	10.00	52.39	65.34	-12.95	QP
2 0.16251	10.04	9.59	0.02	10.00	29.65	55.33	-25.68	Average
3 0.27734	23.92	9.63	0.03	10.00	43.58	60.90	-17.32	QP
4 0.27744	6.32	9.63	0.03	10.00	25.98	50.89	-24.91	Average
5 0.53782	12.33	9.62	0.04	10.00	31.99	56.00	-24.01	QP
6 0.53792	-3.82	9.62	0.04	10.00	15.84	46.00	-30.16	Average
7 0.89441	6.94	9.63	0.05	10.00	26.62	56.00	-29.38	QP
8 0.89451	-5.94	9.63	0.05	10.00	13.74	46.00	-32.26	Average
9 3.10657	20.56	9.64	0.06	10.00	40.26	56.00	-15.74	QP
10 3.10757	6.16	9.64	0.06	10.00	25.86	46.00	-20.14	Average
1118.92046	17.80	9.75	0.11	10.00	37.66	60.00	-22.34	QP
1218.92460	5.28	9.75	0.11	10.00	25.14	50.00	-24.86	Average

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten\_Fac.  
 2. The emission levels that are 20dB below the official limit are not reported.



Env. Ins: 24\*/56#  
 EUT: Tablet POS  
 M/N: HM516  
 Power Rating: AC 120V/60Hz  
 Test Mode: TX-NFC  
 Operator: Leo  
 Memo: With DC 12V Adapter & Docking Station  
 Pol: NEUTRAL

Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1 0.15000	35.70	9.70	0.02	10.00	55.42	66.00	-10.58	QP
2 0.15010	21.13	9.70	0.02	10.00	40.85	55.99	-15.14	Average
3 0.28178	21.09	9.60	0.03	10.00	40.72	60.76	-20.04	QP
4 0.28198	-0.69	9.60	0.03	10.00	18.94	50.76	-31.82	Average
5 0.41048	15.07	9.61	0.04	10.00	34.72	57.64	-22.92	QP
6 0.41058	-4.04	9.61	0.04	10.00	15.61	47.64	-32.03	Average
7 0.54934	10.82	9.62	0.04	10.00	30.48	56.00	-25.52	QP
8 0.54944	-3.45	9.62	0.04	10.00	16.21	46.00	-29.79	Average
9 2.89979	20.48	9.64	0.06	10.00	40.18	56.00	-15.82	QP
10 2.90079	3.42	9.64	0.06	10.00	23.12	46.00	-22.88	Average
1116.74973	20.36	9.76	0.11	10.00	40.23	60.00	-19.77	QP
1216.75073	10.99	9.76	0.11	10.00	30.86	50.00	-19.14	Average

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten\_Fac.  
 2. The emission levels that are 20dB below the official limit are not reported.



## **8. ANTENNA REQUIREMENT**

### **8.1 Standard Applicable**

According to § 15.203, An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

### **8.2 Antenna Connected Construction**

The antenna used for transmitting is permanently attached and no consideration of replacement. Please see EUT photo for details.

## 9. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Cal Date	Due Date
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	June 18,2014	June 17,2015
Signal analyzer	Agilent	E4448A(External mixers to 40GHz)	US44300469	9kHz~40GHz	July 16,2014	July 15,2015
LISN	MESS Tec	NNB-2/16Z	99079	9KHz-30MHz	June 18,2014	June 17,2015
LISN (Support Unit)	EMCO	3819/2NM	9703-1839	9KHz-30MHz	June 18,2014	June 17,2015
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9KHz-30MHz	June 18,2014	June 17,2015
ISN	SCHAFFNER	ISN ST08	21653	9KHz-30MHz	June 18,2014	June 17,2015
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30M-1GHz 3m	June 18,2014	June 17,2015
Amplifier	SCHAFFNER	COA9231A	18667	9kHz-2GHz	June 18,2014	June 17,2015
Amplifier	Agilent	8449B	3008A02120	1GHz-26.5GHz	July 16,2014	July 15,2015
Amplifier	MITEQ	AMF-6F-260400	9121372	26.5GHz-40GHz	July 16,2014	July 15,2015
Spectrum Analyzer	Agilent	E4407B	MY41440292	9k-26.5GHz	July 16,2014	July 15,2015
MAX Signal Analyzer	Agilent	N9020A	MY50510140	20Hz~26.5GHz	Oct. 27, 2014	Oct. 26, 2015
Loop Antenna	R&S	HFH2-Z2	860004/001	9k-30MHz	June 18,2014	June 17,2015
By-log Antenna	SCHWARZBECK	VULB9163	9163-470	30MHz-1GHz	June 10,2015	June 09,2016
Horn Antenna	EMCO	3115	6741	1GHz-18GHz	June 10,2015	June 09,2016
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15GHz-40GHz	June 10,2015	June 09,2016
RF Cable-R03m	Jye Bao	RG142	CB021	30MHz-1GHz	June 18,2014	June 17,2015
RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1GHz-40GHz	June 18,2014	June 17,2015
Power Meter	R&S	NRVS	100444	DC-40GHz	June 18,2014	June 17,2015
RF CABLE-1m	JYE Bao	RG142	CB034-1m	20MHz-7GHz	June 18,2014	June 17,2015
Power Sensor	R&S	NRV-Z51	100458	DC-30GHz	June 18,2014	June 17,2015
Power Sensor	R&S	NRV-Z32	10057	30MHz-6GHz	June 18,2014	June 17,2015
RF CABLE-2m	JYE Bao	RG142	CB035-2m	20MHz-1GHz	June 18,2014	June 17,2015
DC power Source	GW	GPC-6030D	C671845	/	June 18,2014	June 17,2015
Temperature & Humidity Chamber	Wuhuan	HTP205	/	/	June 18,2014	June 17,2015

Note: All equipment through GRGT EST calibration

-----THE END OF REPORT-----