

# FCC Part 15B Measurement and Test Report

For

**PC SMART S.A.**

**Carrera 116 no.15-25,Bogota,Colombia**

**FCC ID: 2ABFV-ICH10**

<b>FCC Rule(s):</b>	<u>FCC Part 15 Subpart B</u>
<b>Product Description:</b>	<u>Tablet</u>
<b>Tested Model:</b>	<u>PCSGOB10INW-Series</u>
<b>Report No.:</b>	<u>STR16038170I-4</u>
<b>Tested Date:</b>	<u>2016-03-21 to 2016-03-25</u>
<b>Issued Date:</b>	<u>2016-03-25</u>
<b>Tested By:</b>	<u>Jong Wang / Engineer</u> <i>Jong Wang</i>
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM.Test Technology Co., Ltd.

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## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment Under Test (EUT)

#### Client Information

Applicant: PC SMART S.A.  
Address of applicant: Carrera 116 no.15-25,Bogota,Colombia

Manufacturer: PC SMART S.A.  
Address of manufacturer: Carrera 116 no.15-25,Bogota,Colombia

General Description of EUT	
Product Name:	Tablet
Trade Name:	PCSMART
Model No.:	PCSGOB10INW-Series
Adding Model(s):	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	3.7V
Rated Current:	2A
Rated Power:	/
Power Adapter Model:	3SP Power Adapter TS 5200
Lowest Internal Frequency:	32.768kHz
Highest Internal Frequency:	1GHz
Classification of ITE:	II

## 1.2 Test Standards

The following report is prepared on behalf of the PC SMART S.A. in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

**Maintenance of compliance** is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

## 1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

## 1.4 Test Facility

### **FCC – Registration No.: 934118**

Shenzhen SEM.Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

### **Industry Canada (IC) Registration No.: 11464A**

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

### **CNAS Registration No.: L4062**

Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2<sup>nd</sup> Road, Bao'an District, Shenzhen, P.R.C (518101).

## 1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark
TM1	Charging and playing	Connect HDMI, U Disk
TM2		

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable 1	1.0	Shielded	Unshielded
USB Cable 2	1.0	Unshielded	Unshielded
USB Cable 3	0.1	Unshielded	Unshielded
Earphone Cable	1.0	Unshielded	Unshielded

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E10	LR-63C8R

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
HDMI Cable	1.2	Shielded/	Without Core

## 1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	$\pm 2.88\text{dB}$
Transmitter Spurious Emissions	Radiated	$\pm 5.1\text{dB}$

## 1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Spectrum Analyzer	Agilent	E4407B	MY41440400	2015-06-17	2016-06-16
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2015-06-17	2016-06-16
Amplifier	Agilent	8447F	3113A06717	2015-06-17	2016-06-16
Amplifier	C&D	PAP-1G18	2002	2015-06-17	2016-06-16
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2015-06-17	2016-06-16
Horn Antenna	ETS	3117	00086197	2015-06-17	2016-06-16
Loop Antenna	Schwarz beck	FMZB 1516	9773	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2015-06-17	2016-06-16
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2015-06-17	2016-06-16
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2015-06-17	2016-06-16

## 2. SUMMARY OF TEST RESULTS

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Description of Test	Result
§15.107 (a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

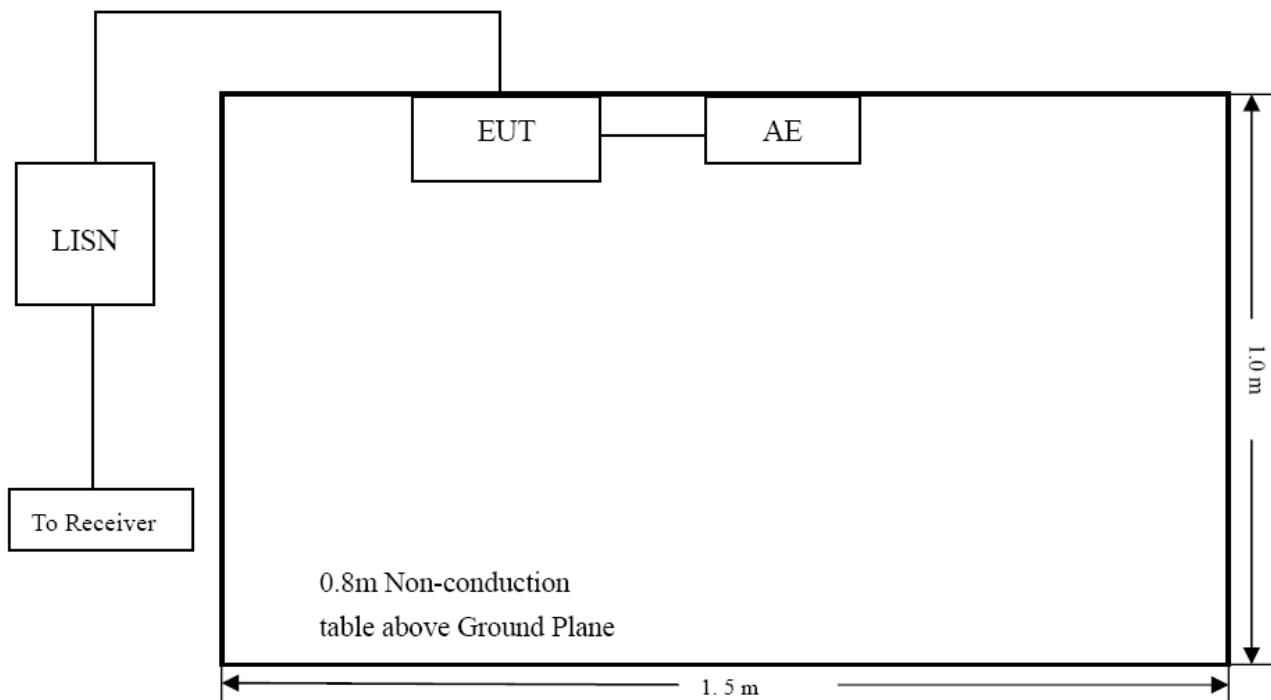
N/A: not applicable

### 3. Conducted Emissions

#### 3.1 Test Procedure

Test is conducting under the description of ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

#### 3.2 Basic Test Setup Block Diagram



#### 3.3 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

#### 3.4 Summary of Test Results/Plots

According to the data in section 3.6, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

**-4.03 dB at 0.1900 MHz** in the **Neutral, Peak** detector, 0.15-30MHz

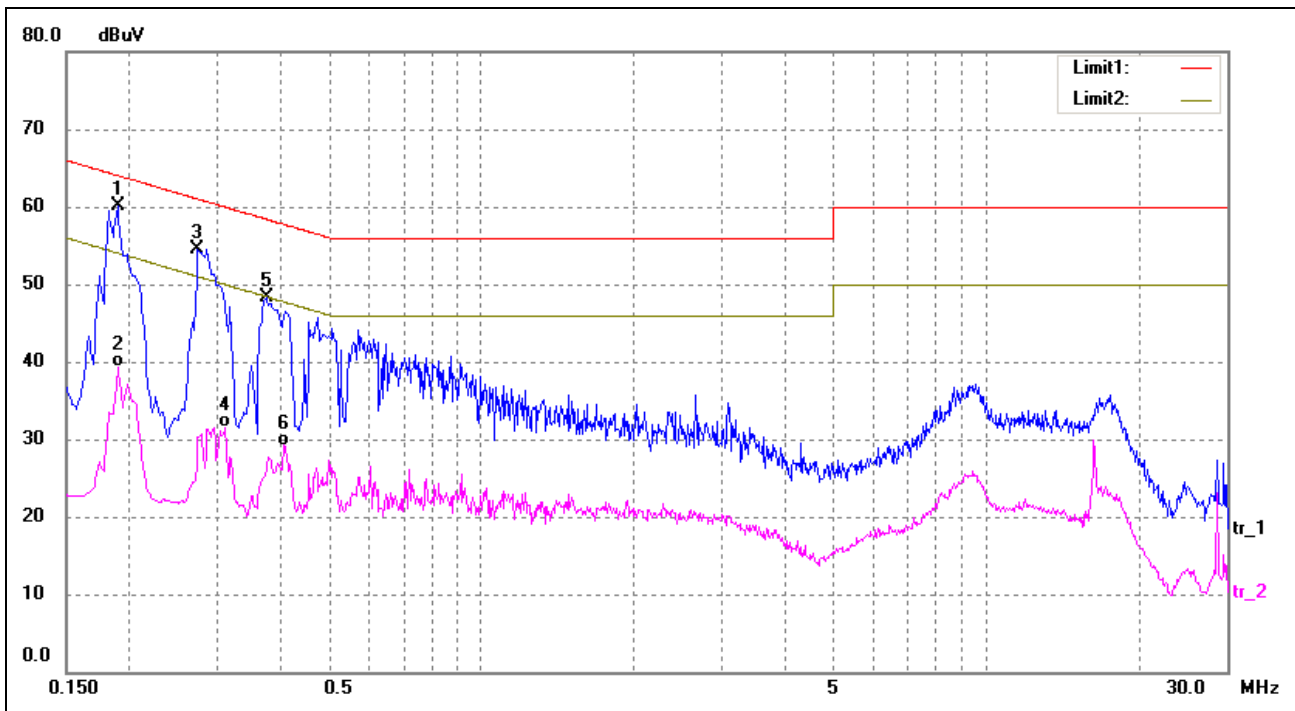


### 3.5 Conducted Emissions Test Data

#### Plot of Conducted Emissions Test Data

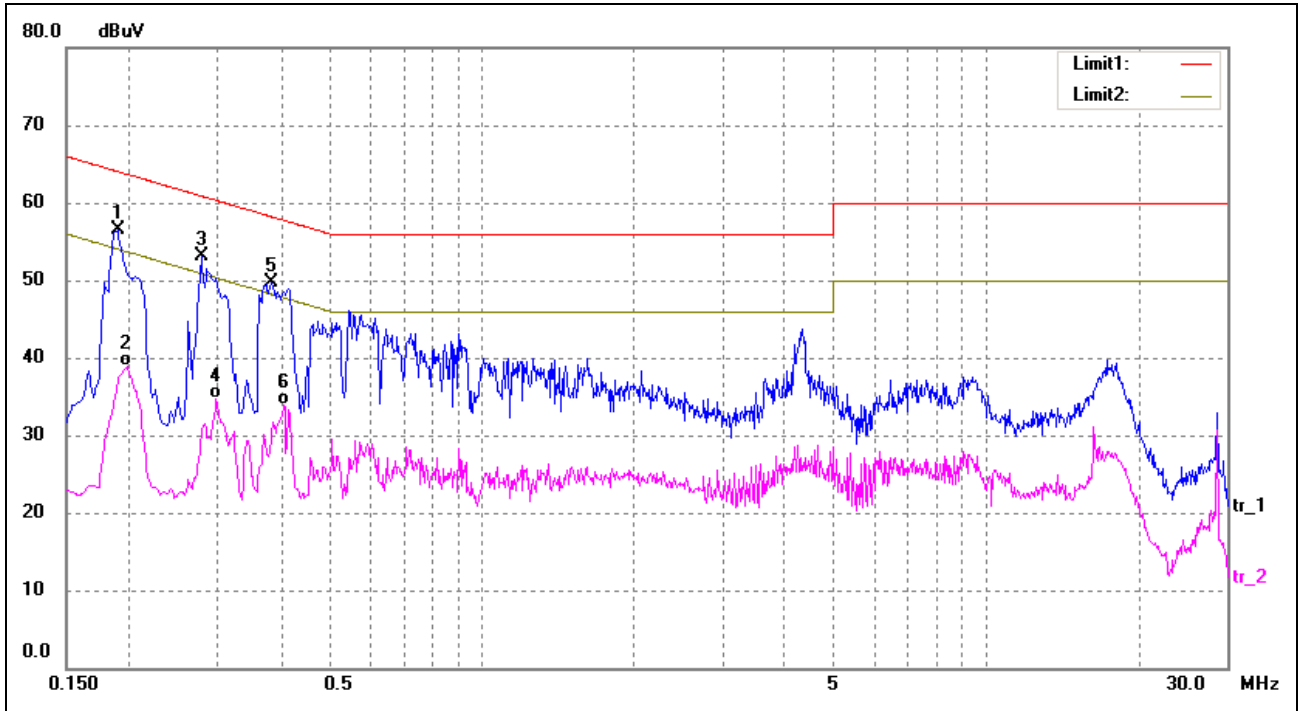
EUT: *Tablet*  
 Tested Model: *PCSGOB10INW-Series*  
 Operating Condition: *TM1*  
 Comment: *AC 120V/60Hz*

Test Specification: *Neutral*



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1900	50.51	9.50	60.01	64.04	-4.03	peak
2	0.1900	29.75	9.50	39.25	54.04	-14.79	AVG
3	0.2740	44.99	9.50	54.49	61.00	-6.51	peak
4	0.3100	22.07	9.50	31.57	49.97	-18.40	AVG
5	0.3740	38.89	9.50	48.39	58.41	-10.02	peak
6	0.4060	19.70	9.50	29.20	47.73	-18.53	AVG

Test Specification: Line



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1900	46.97	9.50	56.47	64.04	-7.57	peak
2	0.1980	29.46	9.50	38.96	53.69	-14.73	AVG
3	0.2780	43.57	9.50	53.07	60.88	-7.81	peak
4	0.2980	25.18	9.50	34.68	50.30	-15.62	AVG
5	0.3820	40.16	9.50	49.66	58.24	-8.58	peak
6	0.4060	24.41	9.50	33.91	47.73	-13.82	AVG

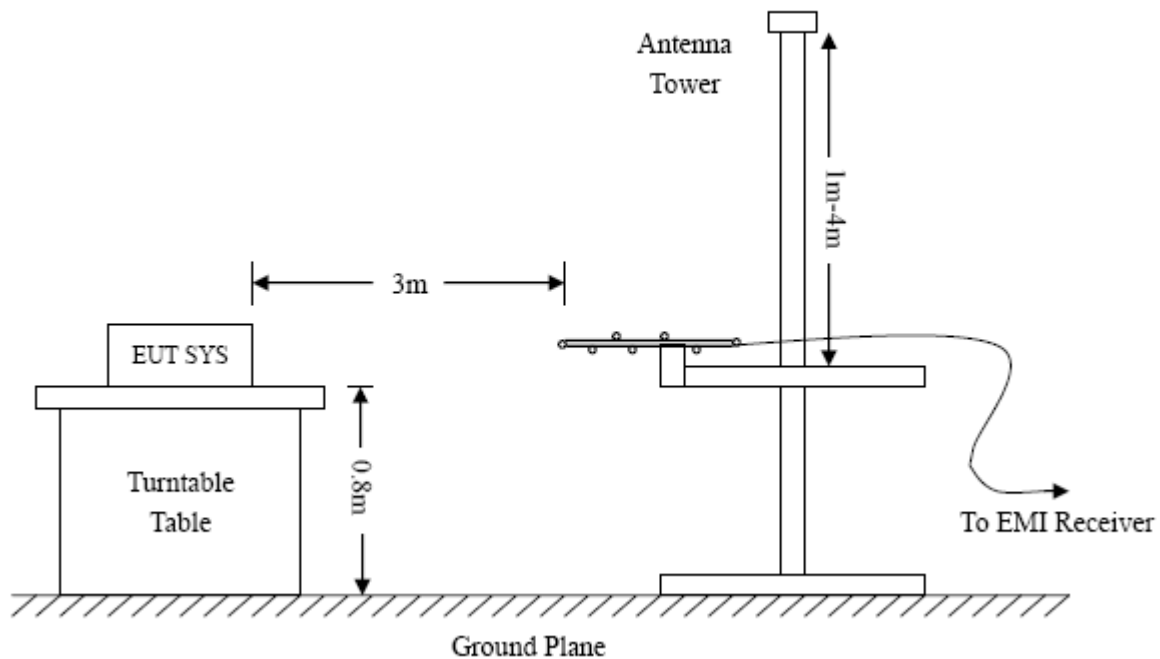
## 4. RADIATED EMISSION

### 4.1 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.109 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



### 4.2 Test Receiver Setup

Frequency :9kHz-30MHz

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz,

VBW=300KHz

Sweep time= Auto

Trace = max hold

Detector function = peak, QP

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

Detector function = peak, AV

### 4.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB $\mu$ V means the emission is 6dB $\mu$ V below the maximum limit for a Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

### 4.4 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

### 4.5 Summary of Test Results/Plots

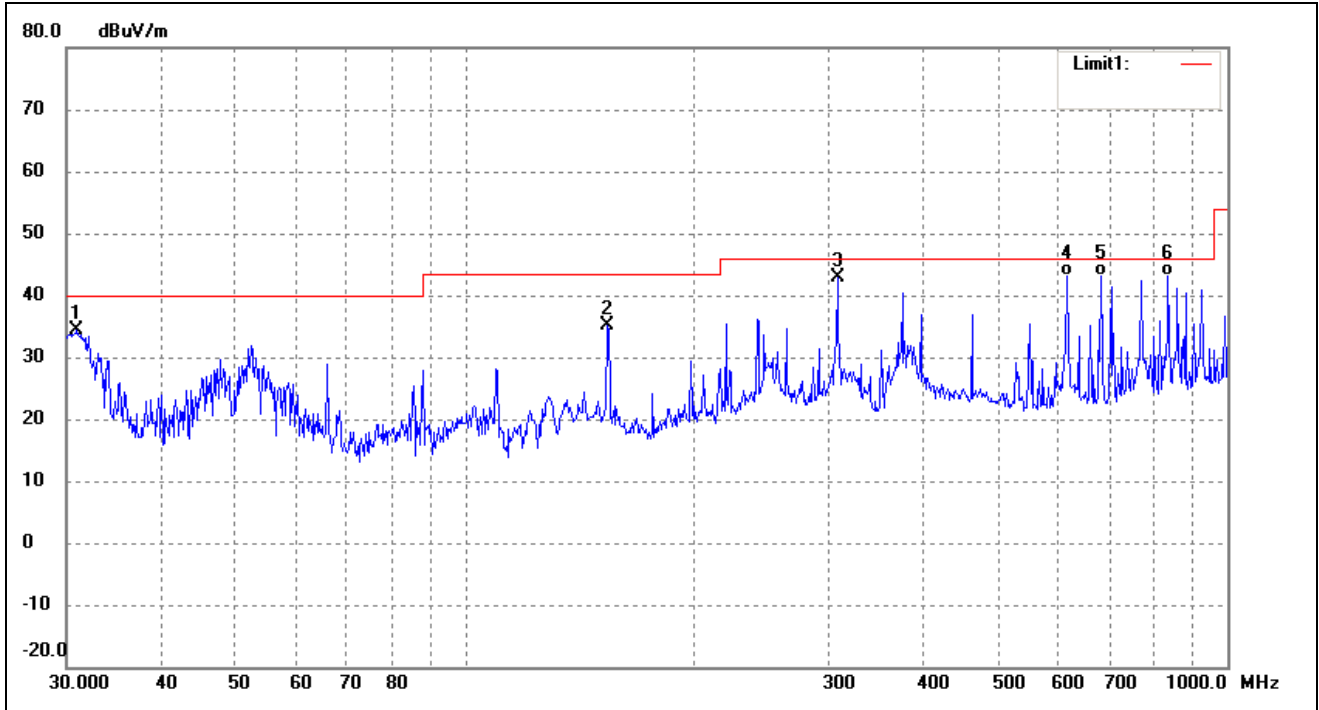
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

**-1.08 dB at 323.3204 MHz in the Horizontal polarization, 30 MHz to 1 GHz, 3Meters**

**Plot of Radiated Emissions Test Data**

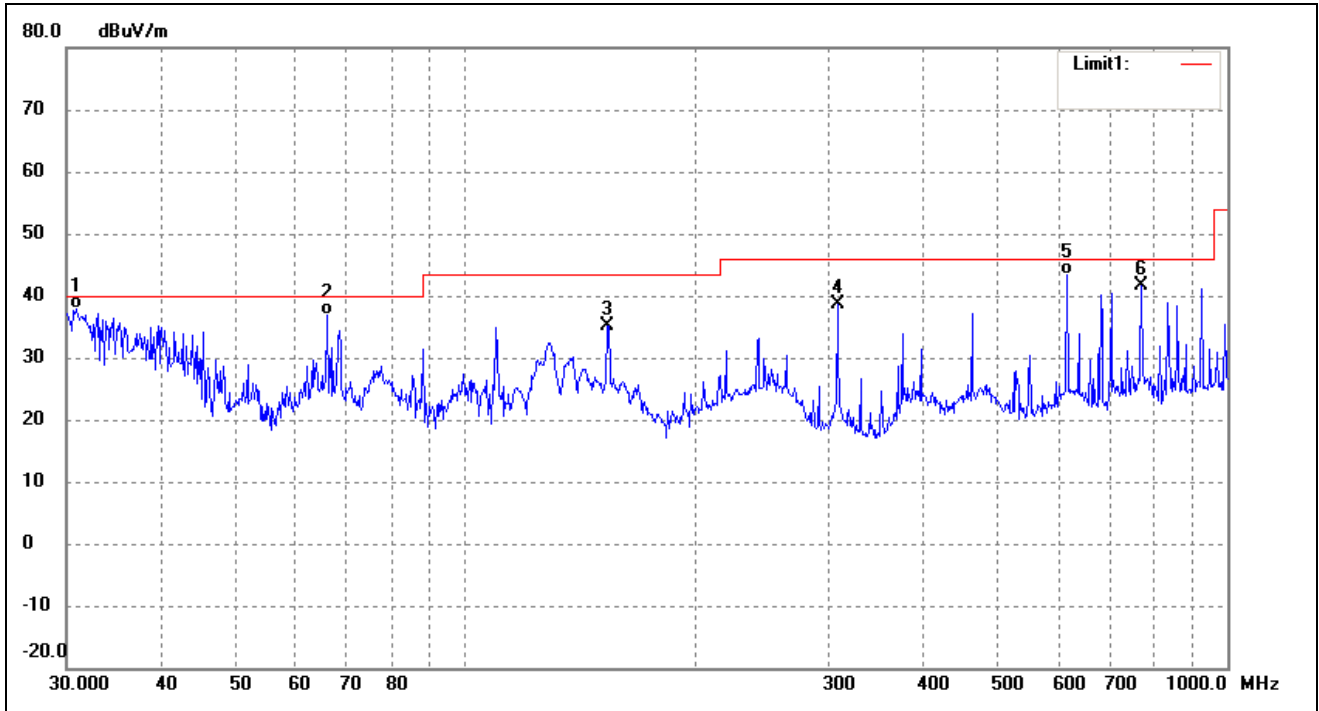
EUT: *Tablet*  
 Tested Model: *PCSGOB10INW-Series*  
 Operating Condition: *TM1*  
 Comment: *AC 120V/60Hz*

Test Specification: *Horizontal*



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	30.9618	44.38	-10.07	34.31	40.00	-5.69	60	200	peak
2	153.7384	47.50	-12.37	35.13	43.50	-8.37	87	200	peak
3	307.8312	48.16	-5.24	42.92	46.00	-3.08	135	200	peak
4	616.3718	42.26	0.99	43.25	46.00	-2.75	168	200	QP
5	682.3483	43.10	0.10	43.20	46.00	-2.80	217	200	QP
6	836.2441	41.24	1.84	43.08	46.00	-2.92	263	200	QP

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	30.8535	48.00	-10.10	37.90	40.00	-2.10	27	100	QP
2	66.0340	48.38	-11.54	36.84	40.00	-3.16	59	100	QP
3	153.7384	47.52	-12.37	35.15	43.50	-8.35	135	100	peak
4	307.8312	43.82	-5.24	38.58	46.00	-7.42	166	100	peak
5	616.3718	42.30	0.99	43.29	46.00	-2.71	182	100	QP
6	771.4486	39.30	2.43	41.73	46.00	-4.27	239	100	peak

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