Issuing Laboratory:
Intertek Testing Services Hong Kong Limited

Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined by this laboratory in accordance with its terms of accreditation.

HOKLAS 005
TEST

TEST REPORT

Report Number: 13090377HKG-003

Application
for
Original Grant of 47 CFR Part 15 Certification

Tablet Charger

FCC ID: 2AA5780-H0BQ-16

Prepared and Checked by:

Lau Chin Yu, Benny
Lead Engineer

Approved by:

Nip Ming Fung, Melvin
Assistant Manager
November 05, 2013

GENERAL INFORMATION

Applicant Name:	HSH Management Services Ltd.
Applicant Address:	1/F., United Factory Building, 50 Heung Yip Road, Aberdeen, Hong Kong.
FCC Specification Standard:	FCC Part 15, October 1, 2012 Edition
FCC ID:	2AA5780-H0BQ-16
FCC Model(s):	HSH805
Type of EUT:	Class B Personal Computers and Peripherals
Description of EUT:	Tablet Charger
Serial Number:	N/A
Sample Receipt Date:	September 10, 2013
Date of Test:	September 24, 2013
Report Date:	November 05, 2013
Environmental Conditions:	Temperature: +10 to 40°C Humidity: 10 to 90%

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EXHIBIT 1
TEST RESULTS SUMMARY & STATEMENT OF COMPLIANCE

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1.0 Test Results Summary & Statement of Compliance

1.1 Summary of Test Results

Test Items	FCC Part 15 Section	Results	Details see section
Radiated Emission from Class B Personal Computers and Peripherals	15.109	Pass	4.2
AC Power Line Conducted Emission	15.107	Pass	4.3

1.2 Statement of Compliance

The equipment under test is found to be complying with the following standard:

FCC Part 15, October 1, 2012 Edition

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EXHIBIT 2
GENERAL DESCRIPTION

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2.0 General Description

2.1 Product Description

The HSH805 is a Tablet Charger. It is powered by an adaptor 100-240VAC to 5VDC 2100mA.

2.2 Test Methodology

Both AC power line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2009). Preliminary radiated scans and all radiated measurements were performed in Open Area Test Sites. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

2.3 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data and conducted data are at Roof Top and 2nd Floor respectively of Intertek Testing Services Hong Kong Ltd., which is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been fully placed on file with the FCC.

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EXHIBIT 3
SYSTEM TEST CONFIGURATION

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3.0 **System Test Configuration**

3.1 Justification

For radiated emissions testing, the equipment under test (EUT) was setup to normal mode to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables (if any) were manipulated to produce worst case emissions.

The EUT was powered by a 100-240VAC to 5VDC 2100mA adaptor.

For the measurements, the EUT was attached to a plastic stand if necessary and placed on the wooden turntable. If the EUT attached to peripherals, they were connected and operational to simulate typical use.

The signal was maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization were varied during the search for maximum signal level. The antenna height was varied from 1 to 4 meters. Radiated emissions were taken at three meters unless the signal level was too low for measurement at that distance. If necessary, a pre-amplifier was used and/or the test was conducted at a closer distance.

For radiated measurement, the spectrum analyzer resolution bandwidth was 100 kHz for frequencies below 1000 MHz.

Radiated emission measurement was performed from the frequency 30MHz to 1GHz.

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3.1 Justification - Cont'd

Detector function for radiated emissions is in peak mode. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in Exhibit 4.2.1.

For AC line conducted emission test, the EUT along with its peripherals were placed on a 1.0m(W)x1.5m(L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT was connected to power mains through a line impedance stabilization network (LISN), which provided 50ohm coupling impedance for measuring instrument. The LISN housing, measuring instrument case, reference ground plane, and vertical ground plane were bounded together. The excess power cable between the EUT and the LISN was bundled.

All connecting cables of EUT and peripherals were manipulated to find the maximum emission.

All relevant operation modes have been tested, and the worst case data was included in this report.

3.2 EUT Exercising Software

There was no special software to exercise the device.

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3.3 Details of EUT and Description of Accessories

Details of EUT:

An AC adaptor (provided with the unit) was used to power the device. Their description are listed below.

(1) An AC adaptor (100-240VAC to 5VDC 2100mA, Model: S018KU0500210, Brand: Ten Pao) (Supplied by Client)
(2) An AC adaptor (100-240VAC to 5VDC 2100mA Model: SSA-18W-05 US 050210F Brand: Sunstrong) (Supplied by Client)

Description of Peripherals:

(1) Samsung Tablet Galaxy Tab 10.1 inch, Model: GT-P7510, FCC ID: A3LGTP7510 (Supplied by Client)

3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

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EXHIBIT 4
TEST RESULTS

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4.0 **Test Results**

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

4.1 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

FS = RA + AF + CF - AG + PD + AV

where FS = Field Strength in dBμV/m
RA = Receiver Amplitude (including preamplifier) in dBμV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
PD = Pulse Desensitization in dB
AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflects the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

FS = RA + AF + CF - AG + PD +AV

Example
Assume a receiver reading of 62.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB, and the resultant average factor was -10 dB. The net field strength for comparison to the appropriate emission limit is 32 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 62.0 dBμV
AF = 7.4 dB
CF = 1.6 dB
AG = 29 dB
PD = 0 dB
AV = -10 dB
FS = 62 + 7.4 +1.6 -29 +0 + (-10) = 32 dBμV/m

Level in μV/m = Common Antilogarithm [(32 dBμV/m)/20] = 39.8 μV/m

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4.2 Radiated Emissions

4.2.1 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
at

409.236 MHz

The worst case radiated emission configuration photographs are attached in the Appendix and saved with filename: config photos.pdf

4.2.2 Radiated Emission Data

The data in tables 2 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Passed by 5.6 dB margin with adaptor “Ten Pao”

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Mode: Tablet ON Charging with Ten Pao Adaptor

Table 1

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
V	64.410	40.6	16	9.0	33.6	40.0	-6.4
V	108.235	35.5	16	14.0	33.5	43.5	-10.0
H	192.365	34.8	16	16.0	34.8	43.5	-8.7
H	268.256	28.6	16	22.0	34.6	46.0	-11.4
H	368.459	26.0	16	24.0	34.0	46.0	-12.0
H	409.236	32.4	16	24.0	40.4	46.0	-5.6
H	456.845	24.2	16	26.0	34.2	46.0	-11.8

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna is used for the emission over 1000MHz.

5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205.

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Mode: Tablet ON Charging with Sunstrong Adaptor

Table 2

Radiated Emission Data

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
V	64.410	40.8	16	9.0	33.8	40.0	-6.2
V	108.232	35.5	16	14.0	33.5	43.5	-10.0
H	192.364	34.8	16	16.0	34.8	43.5	-8.7
H	268.256	28.5	16	22.0	34.5	46.0	-11.5
H	368.459	26.0	16	24.0	34.0	46.0	-12.0
H	409.224	32.3	16	24.0	40.3	46.0	-5.7
H	456.325	24.0	16	26.0	34.0	46.0	-12.0

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna is used for the emission over 1000MHz.

5. Emission (the row indicated by ***bold italic***) within the restricted band meets the requirement of FCC Part 15 Section 15.205.

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4.2.3 Transmitter Duty Cycle Calculation

This device is a computer peripheral. It is not necessary to apply average factor to the measurement result.

4.3 AC Power Line Conducted Emission

[ ] Not applicable – EUT is only powered by battery for operation.

[×] EUT connects to AC power line. Emission Data is listed in following pages.

[ ] Base Unit connects to AC power line and has transmission. Handset connects to AC power line but has no transmission. Emission Data of Base Unit is listed in following pages.

4.3.1 AC Power Line Conducted Emission Configuration Photograph

Worst Case Line-Conducted Configuration
at

0.1995 MHz

The worst case line conducted configuration photographs are saved with filename: config photos.pdf

4.3.2 AC Power Line Conducted Emission Data

The plot(s) and data in the following pages list the significant emission frequencies, the limit and the margin of compliance

Passed by 4.67 dB margin compare with quasi-peak limit with adaptor “Ten Pao”

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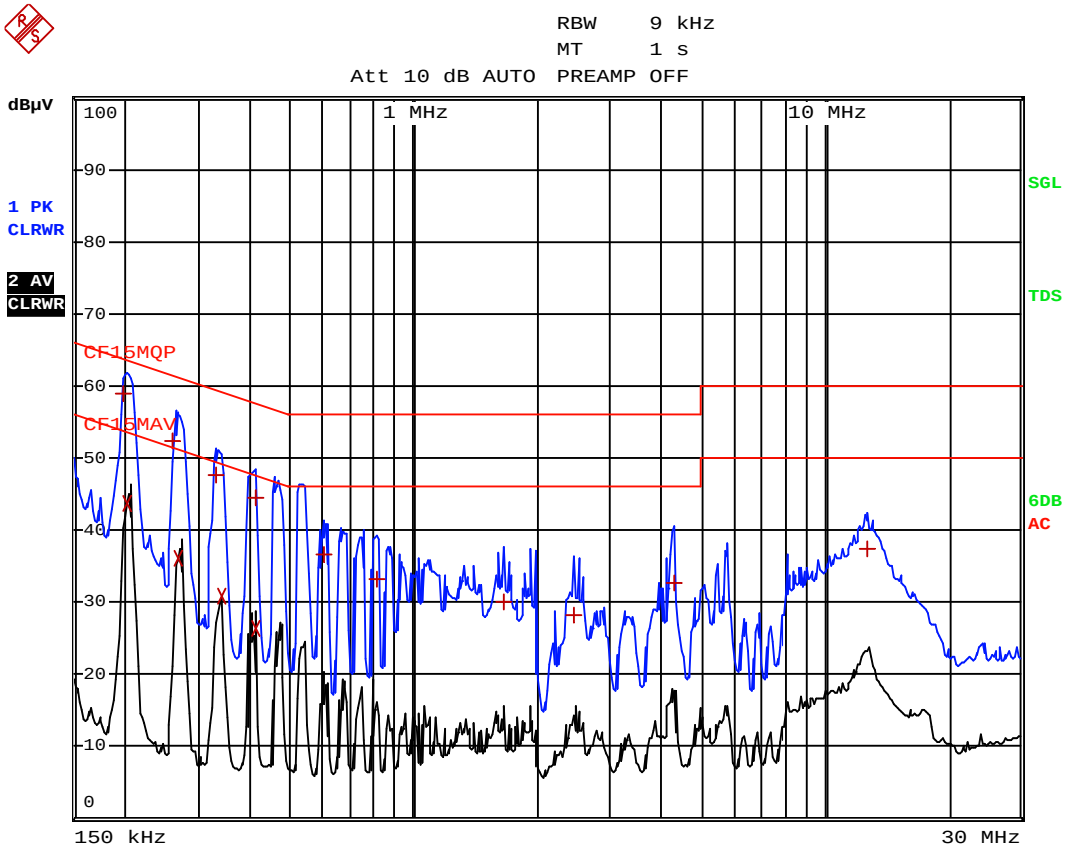
Worst Case: Tablet ON Charging with Adaptor "Ten Pao"



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Worst Case: Tablet ON Charging with Adaptor "Ten Pao"

EDIT PEAK LIST (Final Measurement Results)

Trace1: CF15MQP
Trace2: CF15MAV
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV		DELTA LIMIT dB
1	Quasi Peak	199.5 kHz	58.95	N	-4.67
2	CISPR Average	204 kHz	43.79	N	-9.65
1	Quasi Peak	262.5 kHz	52.44	N	-8.91
2	CISPR Average	271.5 kHz	36.08	L1	-14.98
1	Quasi Peak	330 kHz	47.55	N	-11.89
2	CISPR Average	339 kHz	30.73	N	-18.49
1	Quasi Peak	411 kHz	44.45	N	-13.17
2	CISPR Average	411 kHz	26.25	N	-21.37
1	Quasi Peak	604.5 kHz	36.61	L1	-19.38
1	Quasi Peak	811.5 kHz	33.13	L1	-22.87
1	Quasi Peak	1.653 MHz	29.92	L1	-26.07
1	Quasi Peak	2.463 MHz	28.12	L1	-27.87
1	Quasi Peak	4.3305 MHz	32.74	N	-23.25
1	Quasi Peak	12.669 MHz	37.46	N	-22.53

Date: 24.SEP.2013 15:46:27

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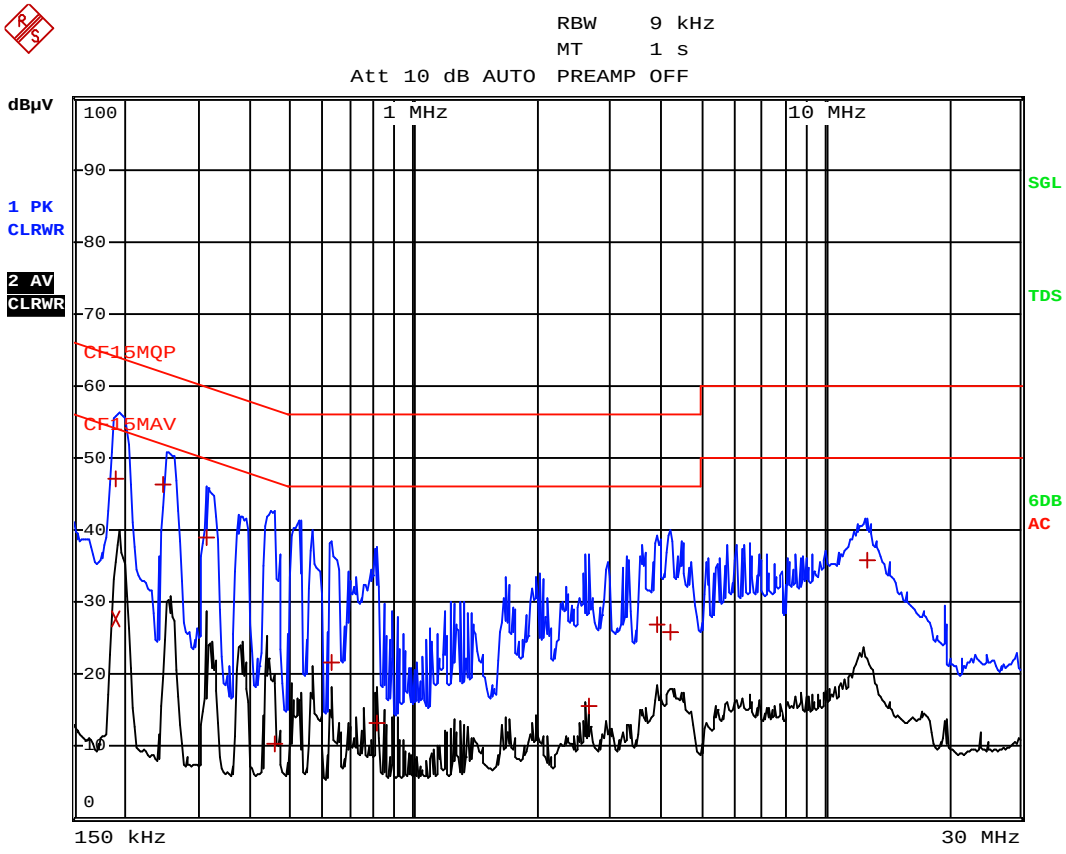
Worst Case: Tablet OFF Charging with Adaptor "Ten Pao"



Date: 24.SEP.2013 15:57:19

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Worst Case: Tablet OFF Charging with Adaptor "Ten Pao"

EDIT PEAK LIST (Final Measurement Results)

Trace1: CF15MQP
Trace2: CF15MAV
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV		DELTA LIMIT dB
1	Quasi Peak	190.5 kHz	47.16	L1	-16.85
2	CISPR Average	190.5 kHz	27.57	N	-26.44
1	Quasi Peak	249 kHz	46.37	N	-15.41
1	Quasi Peak	312 kHz	39.10	N	-20.81
1	Quasi Peak	456 kHz	10.40	L1	-46.36
1	Quasi Peak	627 kHz	21.78	L1	-34.21
1	Quasi Peak	811.5 kHz	13.15	N	-42.85
1	Quasi Peak	2.6745 MHz	15.70	L1	-40.29
1	Quasi Peak	3.921 MHz	26.79	N	-29.20
1	Quasi Peak	4.218 MHz	25.77	N	-30.22
1	Quasi Peak	12.6915 MHz	35.71	N	-24.28

Date: 24.SEP.2013 15:57:03

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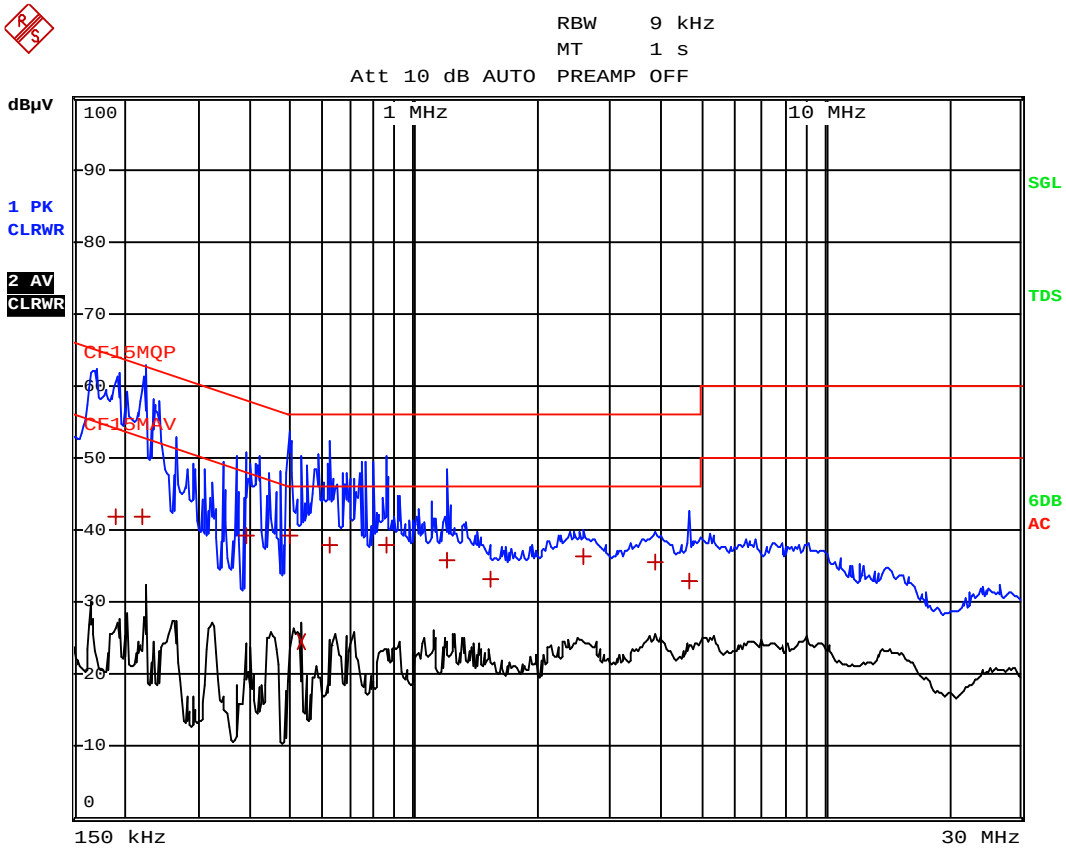
Worst Case: Tablet ON Charging with Adaptor "Sunstrong"



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Worst Case: Tablet ON Charging with Adaptor "Sunstrong"

EDIT PEAK LIST (Final Measurement Results)

Trace1: CF15MQP
Trace2: CF15MAV
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV		DELTA LIMIT dB
1	Quasi Peak	190.5 kHz	41.96	N	-22.04
1	Quasi Peak	222 kHz	41.83	L1	-20.91
1	Quasi Peak	388.5 kHz	39.27	L1	-18.82
1	Quasi Peak	496.5 kHz	39.26	N	-16.79
2	CISPR Average	528 kHz	24.63	N	-21.36
1	Quasi Peak	622.5 kHz	38.00	N	-17.99
1	Quasi Peak	861 kHz	37.86	N	-18.13
1	Quasi Peak	1.203 MHz	35.94	N	-20.06
1	Quasi Peak	1.5315 MHz	33.26	L1	-22.73
1	Quasi Peak	2.5935 MHz	36.47	L1	-19.52
1	Quasi Peak	3.858 MHz	35.49	L1	-20.50
1	Quasi Peak	4.6815 MHz	32.95	L1	-23.04

Date: 24.SEP.2013 15:24:14

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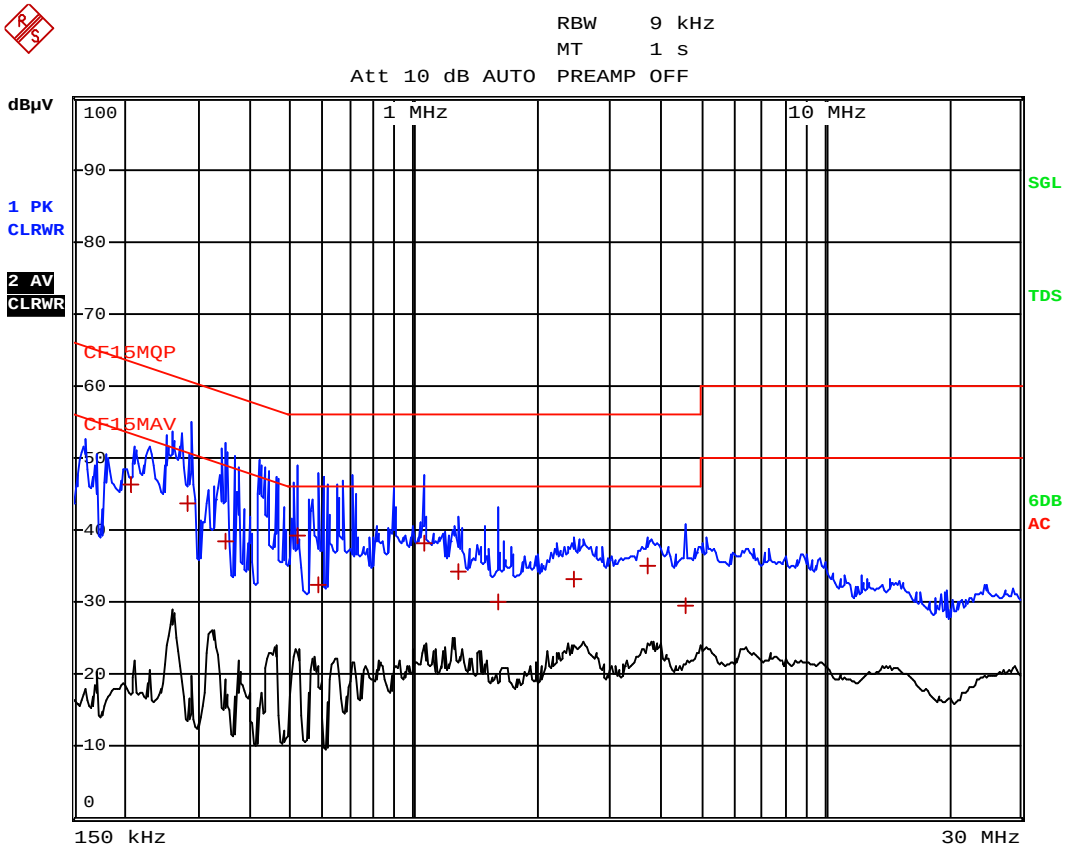
Worst Case: Tablet OFF Charging with Adaptor "Sunstrong"



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Worst Case: Tablet OFF Charging with Adaptor "Sunstrong"

EDIT PEAK LIST (Final Measurement Results)

Trace1: CF15MQP
Trace2: CF15MAV
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV		DELTA LIMIT dB
1	Quasi Peak	208.5 kHz	46.43	N	-16.82
1	Quasi Peak	285 kHz	43.72	N	-16.94
1	Quasi Peak	348 kHz	38.41	N	-20.59
1	Quasi Peak	519 kHz	39.20	L1	-16.79
1	Quasi Peak	582 kHz	32.42	N	-23.57
1	Quasi Peak	1.0635 MHz	38.16	N	-17.83
1	Quasi Peak	1.2795 MHz	34.30	N	-21.69
1	Quasi Peak	1.608 MHz	30.18	L1	-25.82
1	Quasi Peak	2.4495 MHz	33.15	L1	-22.84
1	Quasi Peak	3.7185 MHz	35.04	L1	-20.95
1	Quasi Peak	4.578 MHz	29.55	L1	-26.44

Date: 24.SEP.2013 15:32:27

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EXHIBIT 5
EQUIPMENT LIST

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5.0 **Equipment List**

1) Radiated Emissions Test

Equipment	EMI Test Receiver	Biconical Antenna	Spectrum Analyzer
Registration No.	EW-2500	EW-0571	EW-2188
Manufacturer	ROHDESCHWARZ	EMCO	AGILENTTECH
Model No.	ESCI	9504-4685	E4407B
Calibration Date	Mar. 22, 2013	Apr. 05, 2012	Nov 05, 2012
Calibration Due Date	Feb. 28, 2014	Oct. 05, 2013	Nov 05, 2013

Equipment	Log Periodic Antenna (200 - 1000)MHz
Registration No.	EW-1042
Manufacturer	EMCO
Model No.	0001-1109
Calibration Date	Apr. 25, 2012
Calibration Due Date	Oct. 25, 2013

2) Conducted Emissions Test

Equipment	EMI Test Receiver	Artificial Mains Network
Registration No.	EW-2666	EW-2501
Manufacturer	ROHDESCHWARZ	ROHDESCHWARZ
Model No.	ESCI7	ENV-216
Calibration Date	Jun. 20, 2013	Nov. 30, 2012
Calibration Due Date	Jun. 20, 2014	Nov. 30, 2013

END OF TEST REPORT

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