

# CTK Co., Ltd.

386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

# **EMC TEST REPORT For FCC**



Test Report No. : CTK-2012-00683

Date of Issue : July 11, 2012

FCC ID : GU6-9485BT

Model/Type No. : 9485BT

Kind of Product : Mobile Printer

Applicant : Avery Dennison Retail Information Services LLC

Applicant Address : 170 Monarch Lane, Miamisburg, OH 45342

Manufacturer : SEWOO TECH CO., LTD.

Manufacturer Address : 28-6, Gajangsaneopdong-ro, Osan-si, Gyeongi-do, 447-210,

Korea

Contact Person : James A Bacher / Senior Engineer

Telephone : +1-937-865-2020

Received Date : April 10, 2012

Test period : Start : April 23, 2012 End : April 24, 2012

Test Results : X In Compliance Not in Compliance

The test results presented in this report relate only to the object tested.

Tested by

Bong-jun, Jang EMC Test Engineer Date: July 11, 2012 Reviewed by

James Hong

EMC Technical Manager

Date: July 11, 2012

Test Report No.: CTK-2012-00683 Page 1 of 38
Date: July 11, 2012

Form No.: CTK-RF-EF-Part15(Rev.5.7)



## REPORT REVISION HISTORY

Date	Revision	Page No
July 11, 2012	Issued (CTK-2012-00683)	All

This report shall not be reproduced except in full, without the written approval of CTK Co., Ltd. This document may be altered or revised by CTK Co., Ltd. personnel only, and shall be noted in the revision section of the document. Any alteration of this document not carried out by CTK Co., Ltd. will constitute fraud and shall nullify the document.

Test Report No.: CTK-2012-00683 Page 2 of 38 Date: July 11, 2012

This Report shall not be reproduced except in full without the written approval of CTK

Form No.: CTK-RF-EF-Part15(Rev.5.7)



# **TABLE OF CONTENTS**

REPOR	RT REVISION HISTORY	2
1.0	General Product Description	4
1.1	Model Differences	4
1.2	Device Modifications	4
1.3	EUT Configuration(s)	5
1.4	Test Software	6
1.5	EUT Operating Mode(s)	6
1.6	Configuration	7
1.7	Calibration Details of Equipment Used for Measurement	9
1.8	Test Facility	9
1.9	Measurement Procedure	9
1.10	Laboratory Accreditations and Listings	10
1.11 M	Measurement Uncertainty	
2.0	Emissions Test Regulations	11
2.1	Conducted Voltage Emissions	
2.2	Radiated Electric Field Emissions	
APPEN	DIX A – TEST DATA	14
Co	nducted Voltage Emissions	14
Rad	diated Electric Field Emissions	22
APPEN	DIX B - Test Setup Photos and Configuration	26
	nducted Voltage Emissions	
Rad	diated Electric Field Emissions	27
APPEN	DIX C – EUT Photographs	28
EU	IT Internal Photographs	31
	B	
Ba <sup>-</sup>	ttery Charger 1&2	35
Ba <sup>-</sup>	ttery	37
Lak	bel and Locationbel and Location	38

Test Report No.: CTK-2012-00683



## CTK Co., Ltd.

386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

## 1.0 General Product Description

## 1.0.1 Tested Equipment

Unless	s otherwise indicated	I, all tests were conducted or
Model	9485BT.	
	performed on Model sentative of Model	were considered to b

### 1.0.2 Equipment Size, Mobility and Identification

Dimensions:  $\underline{104}$ (W) by 85(D) by 158(H)  $\boxtimes$  m

Mobility: ☐ Table-top ☐ Floor-standing ☐ Built-in ☐ Portable

Serial No.: Prototype

## 1.0.3 Electrical Ratings

[Battery Charger 1] Input: 100-240 Vac, 50-60 Hz, 400 mA

Output: 8.4 Vdc, 0.8 A

[Battery Charger 2] Input: 100-250 Vac, 50-60 Hz, 0.5 A

Output: 8.4 Vdc, 0.8 A

[EUT] Input: 8.4 Vdc

Output: -

### 1.0.4 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

Voltage: 120 Vac Frequency: 60 Hz

### 1.0.5 Clock & Other Frequencies Utilized

12 账

### 1.1 Model Differences

Not applicable

### 1.2 Device Modifications

The following modifications were necessary for compliance:

Not applicable

Test Report No.: CTK-2012-00683

Date: July 11, 2012

This Report shall not be reproduced except in full without the written approval of CTK

Form No.: CTK-RF-EF-Part15(Rev.5.7)

Page 4 of 38



# CTK Co., Ltd.

386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

# 1.3 EUT Configuration(s)

See Appendix B for individual test set-up configuration(s). The following peripheral devices and/or interface cables were connected during the measurement:

### [USB/Serial Printing Mode]

### Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Personal Computer	comwins	DB-P73	BL5497DQ300097T
LCD Monitor	Lite-On Technology Corp.	VS17	CNN5130QMC
Mouse	LOGITECH	M-U48a	LZC10705528
Keyboard	MONTEREY INTERNATIONAL CORP.	K6515	ZCH3011

## 

#	Description	Ferrite Core	Length (m)	Other Details
1	AC power Cable, Unshielded	No	1.8	Connect to AC power
2	Mouse Cable, Shielded	No	1.5	Between a Personal Computer and a Mouse
3	Keyboard Cable, Shielded	No	1.5	Between a Personal Computer and a Keyboard
4	D-sub Cable, Unshielded	Yes	1.5	Between a Personal Computer and a LCD Monitor
5	USB Cable, Shielded	Yes	1.2	Between the EUT and a Personal Computer
6	Serial Cable, Shielded	No	1.2	Between the EUT and a Personal Computer

[Battery Charging Mode: Battery Charger 1]

Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Battery Charger 1	Dongguan Shilong Fuhua Electronic Co., Ltd.	UE09WCP-084080SPC	-

## 

#	Description	Ferrite Core	Length (m)	Other Details
1	DC In Cable, Unshielded	No	1.2	Between the EUT and a Battery Charger 1
2	AC Power	ı	-	Connect to AC power
3	USB Cable, Shielded	Yes	1.2	Connect to the EUT
4	Serial Cable, Shielded	No	1.2	Connect to the EUT

[Battery Charging Mode: Battery Charger 2]

Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Battery Charger 2	BridgePower Corp.	BL607080086100NK	-

### 

#	Description	Ferrite Core	Length (m)	Other Details
1	DC In Cable, Unshielded	Yes	1.2	Between the EUT and a Battery Charger 2
2	AC Power	No	1.8	Connect to AC power
3	USB Cable, Shielded	Yes	1.2	Connect to the EUT
4	Serial Cable, Shielded	No	1.2	Connect to the EUT

Test Report No.: CTK-2012-00683 Page 5 of 38

Date: July 11, 2012



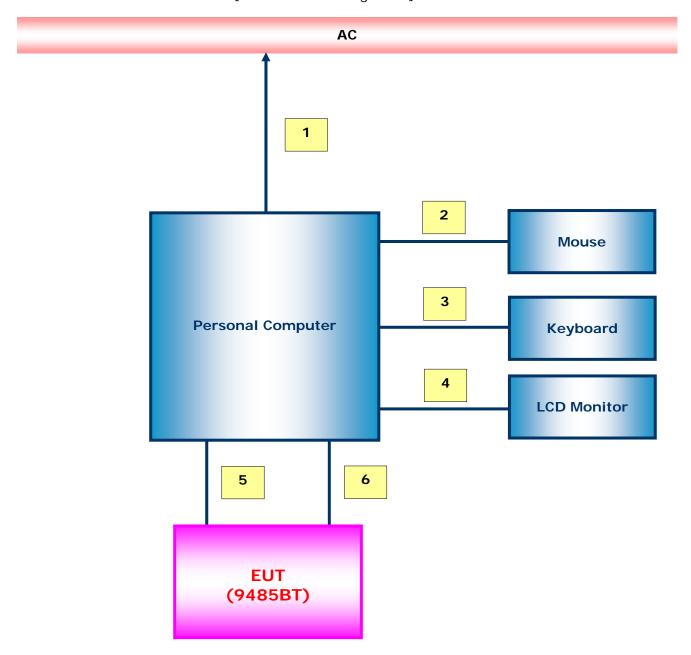
1.4	Test Software  ☐ EMC Test V 1.0 ☐ Display Test Patterns – V1.8 ☐ Ping.exe ☐ LK-Pxx CPCL TEST Program (2012)	0126)
1.5		uring the measurement under the following
	<ul> <li>☐ Standby</li> <li>☐ Display circles pattern</li> <li>☐ Practice operation –</li> <li>1) USB/Serial Printing Mode</li> <li>2) Battery Charging Mode</li> </ul>	☐ Scrolling 'H' ☐ Display color bar pattern

Test Report No.: CTK-2012-00683 Page 6 of 38



# 1.6 Configuration

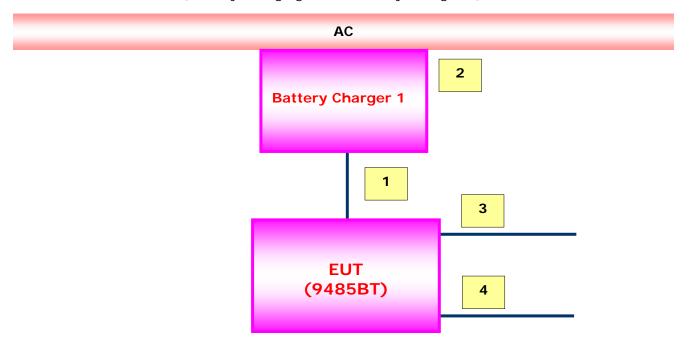
[USB/Serial Printing Mode]



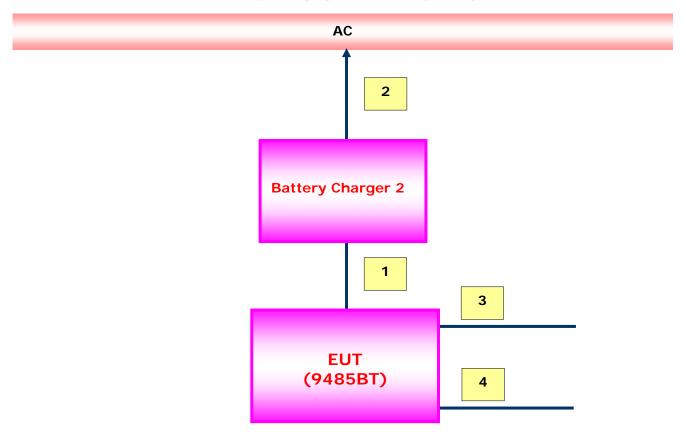
Test Report No.: CTK-2012-00683



[Battery Charging Mode: Battery Charger 1]



[Battery Charging Mode: Battery Charger 2]



Test Report No.: CTK-2012-00683



## CTK Co., Ltd.

386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

## 1.7 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

## 1.8 Test Facility

The measurement facility is located at 386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

### 1.9 Measurement Procedure

Preliminary AC power line conducted emissions tests were performed shielded room. To find worst mode, several typical mode and typical cable position were tested. Final AC power line conducted emissions test was performed shielded room. (location is same as Preliminary test)

Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

Preliminary radiated emissions test were performed anechoic chamber (Distance of antenna and EUT was 3 m). To find worst mode, several typical mode and typical cable position were tested and peak level and frequency were recorded.

Final radiated emissions test was performed Open Area Test Site. Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

- \* Measurement procedures was In accordance with ANSI C63.4-2003 7.2.3, 7.2.4, 8.3.1.1, 8.3.1.2
- Note #1: Comparing this test result and FCC Part 18 limits, the emission of this product can also meet the FCC Part 18.305 Field Strength Limits and 18.307 Conduction Limits.
- Note #2: These results are deemed satisfactory evidence of compliance with ICES-003 of The Canadian Interference-Causing Equipment Regulations.

Test Report No.: CTK-2012-00683 Page 9 of 38



# CTK Co., Ltd.

386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

# 1.10 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3 m & 10 m OATS, 3 m & 10 m SAC and Conducted Test Site to perform FCC Part 15/18 measurements	FC 805871
JAPAN	VCCI	10 m OATS, 3 m & 10 m SAC and Conducted Test Site	R-948, C-986, T-1843, R-3627, G-387
KOREA	ксс	EMI (10 m OATS, 10 m SAC and Conducted Test Site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and Interruptions)	No. 51, KR0025

## 1.11 Measurement Uncertainty

Compliance of the product is based on the measured value.

However, the measurement uncertainty is included for information purposes. The measurement uncertainties given below are based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately

95 %.

Measurement Type	Frequency Range	Expanded Uncertainty
Conducted Emission	150 kHz to 30 MHz	$\pm$ 2.48 dB (C.L.: Approx. 95 %, $k=2$ )
Radiated Emission	30 MHz to 1000 MHz	$\pm$ 3.70 dB (C.L.: Approx. 95 %, $k=2$ )

Test Report No.: CTK-2012-00683 Page 10 of 38



### **Emissions Test Regulations** 2.0

The emissions tests were performed according	to following regulations	S:
☐ EN 61000-6-3:2007		
☐ EN 61000-6-4:2007		
☐ EN 55011:2007 +A2:2007	☐ Group 1 ☐ Class A	Group 2 Class B
☐ EN 55013:2001 +A1:2003 +A2:2006		
☐ EN 55014-1:2006 ☐ EN 55014-1:2006 +A1:2009		
☐ EN 55015:2006 +A1:2007 +A2:2009		
☐ EN 61204-3:2000	☐ Class A	☐ Class B
☐ EN 61131-2:2007		
☐ EN 61326-1:2006	☐ Class A	☐ Class B
☐ EN 55022:2006 +A1:2007	☐ Class A	☐ Class B
☐ EN 61000-3-2:2006 +A1:2009 +A2:2009		
☐ EN 61000-3-3:2008		
☐ VCCI V-3/2011.04	☐ Class A	☐ Class B
AS/NZS CISPR22: 2009	☐ Class A	☐ Class B
	☐ Class A	☐ Class B
☐ CISPR 22:2006	☐ Class A	☐ Class B

Page 11 of 38 Test Report No.: CTK-2012-00683



### **Conducted Voltage Emissions** 2.1

**Test Date** 

April 23, 2012

**Test Location** 

Shielded Room

### **Test Equipment**

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
$\boxtimes$	EMI TEST RECEIVER	Rohde & Schwarz	ESCI3	100032	2013-02-09
$\boxtimes$	LISN	Rohde & Schwarz	ENV216	101235	2012-08-18
$\boxtimes$	LISN	Rohde & Schwarz	ENV216	101236	2012-08-06
	EMI Test Receiver	Rohde & Schwarz	ESHS30	828144/002	2013-02-09
	LISN	Rohde & Schwarz	ENV216	101150	2013-02-09
	LISN	Rohde & Schwarz	ENV216	101151	2012-03-09

## **Frequency Range of Measurement**

150 kHz to 30 MHz

**Instrument Settings** 

IF Band Width: 9 klb

**Test Results** 

The requirements are: 

MET NOT MET NOT APPLICABLE

Frequency (ﷺ)	Measured Data (dBμV)	Margin (dB)	Remark
0.532 500	47.5	8.5	Quasi-peak (Battery Charging Mode: Battery Charger 1)

### Remarks

See Appendix A for test data.

Test Report No.: CTK-2012-00683 Page 12 of 38



### **Radiated Electric Field Emissions** 2.2

Test Date April 24, 2012						
Test Location Testing was performed 10 m OATS 10 m SAC  Test Equipment	d at a test distand ☐ 3 m OATS ☑ 3 m SAC	ce of:				
Name of Equi	ipment Mai	nufacturer	Model	No.	Serial No.	Due Date
☐ EMI TEST RECEIVE		& Schwarz	ESCI7		100814	2012-12-13
□ ULTRA Broadband		& Schwarz	HL562		100203	2013-07-05
		Instrument Co.	310		291721	2013-03-27
☐ EMI TEST RECEIVE	ER Rohde	& Schwarz	ESCI7		100816	2012-12-16
Double Ridged Guid	de Antenna ETS-L	indgren	3115		00078894	2013-03-22
PREAMPLIFIER		Technologies	8449B		3008A02307	2012-11-17
Frequency Range  30 Mb to 1 Gb  1 Gb to _ Gb  Instrument Settin		nt				
<ul><li>☑ IF Band Width: 12</li><li>☑ IF Band Width: 1!</li><li>Test Results</li></ul>	O kHz					
The requirements are	: MET N	OT MET	NOT A	PPLIC	ABLE	
Frequency (Mb)	Measured Data (dBμV/m)	Margi (dB)	n		Remar	
672.010	20.2	4 0			Quasi-pe	eak

6.8

(Serial Printing Mode)

### Remarks

See Appendix A for test data.

39.2

672.019

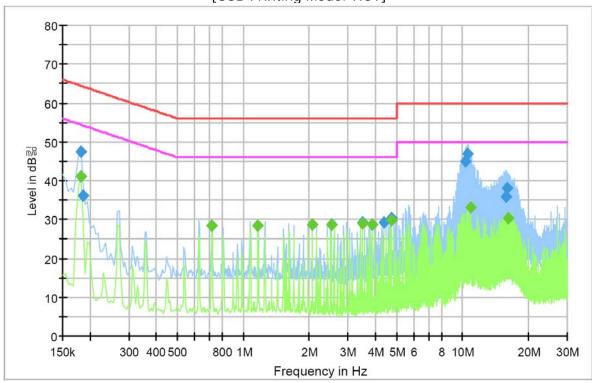
Page 13 of 38 Test Report No.: CTK-2012-00683



## APPENDIX A - TEST DATA

## **Conducted Voltage Emissions**

[USB Printing Mode: HOT]



### **Final Result 1**

Frequency (MHz)	QuasiPeak (dB킯)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB킮)
0.181500	47.5	1000.0	9.000	On	L1	10.0	16.9	64.4
0.186000	36.1	1000.0	9.000	On	L1	10.0	28.1	64.2
2.512500	28.8	1000.0	9.000	On	L1	9.9	27.2	56.0
3.498000	29.4	1000.0	9.000	On	L1	9.8	26.6	56.0
4.393500	29.4	1000.0	9.000	On	L1	9.8	26.6	56.0
4.753500	30.2	1000.0	9.000	On	L1	9.8	25.8	56.0
10.306500	44.9	1000.0	9.000	On	L1	9.7	15.1	60.0
10.504500	47.0	1000.0	9.000	On	L1	9.7	13.0	60.0
15.810000	35.8	1000.0	9.000	On	L1	9.8	24.2	60.0
16.057500	38.2	1000.0	9.000	On	L1	9.8	21.8	60.0

### Final Result 2

Frequency (MHz)	Average (dB킯)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB킮)
0.181500	41.1	1000.0	9.000	On	L1	10.0	13.3	54.4
0.717000	28.3	1000.0	9.000	On	L1	10.1	17.7	46.0
1.167000	28.5	1000.0	9.000	On	L1	10.0	17.5	46.0
2.062500	28.7	1000.0	9.000	On	L1	9.9	17.3	46.0
2.512500	28.6	1000.0	9.000	On	L1	9.9	17.4	46.0
3.498000	28.9	1000.0	9.000	On	L1	9.8	17.1	46.
3.858000	28.7	1000.0	9.000	On	L1	9.8	17.3	46.
4.753500	29.7	1000.0	9.000	On	L1	9.8	16.3	46.
10.855500	33.0	1000.0	9.000	On	L1	9.7	17.0	50.
16.156500	30.4	1000.0	9.000	On	L1	9.8	19.6	50.

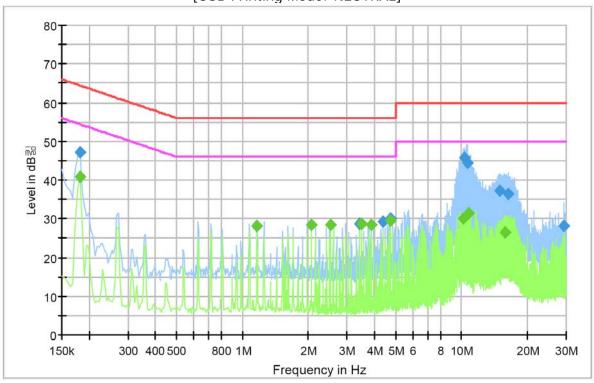
Test Report No.: CTK-2012-00683

Date: July 11, 2012

Page 14 of 38



[USB Printing Mode: NEUTRAL]



## **Final Result 1**

Frequency (MHz)	QuasiPeak (dB鮤)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB氯)
0.181500	47.2	1000.0	9.000	On	N	10.0	17.2	64.4
1.167000	28.2	1000.0	9.000	On	N	10.0	27.8	56.0
3.408000	28.7	1000.0	9.000	On	N	9.8	27.3	56.0
4.393500	29.2	1000.0	9.000	On	N	9.8	26.8	56.0
4.753500	30.0	1000.0	9.000	On	N	9.8	26.0	56.0
10.261500	45.7	1000.0	9.000	On	N	9.7	14.3	60.0
10.612500	44.5	1000.0	9.000	On	N	9.7	15.5	60.0
14.865000	37.1	1000.0	9.000	On	N	9.8	22.9	60.0
16.417500	36.5	1000.0	9.000	On	N	9.8	23.5	60.0
29.463000	28.2	1000.0	9.000	On	N	10.2	31.8	60.0

## Final Result 2

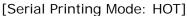
Frequency (MHz)	Average (dB긺)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB킮)
0.181500	40.9	1000.0	9.000	On	N	10.0	13.6	54.4
1.167000	28.2	1000.0	9.000	On	N	10.0	17.8	46.0
2.062500	28.5	1000.0	9.000	On	N	9.9	17.5	46.0
2.512500	28.3	1000.0	9.000	On	N	9.9	17.7	46.0
3.498000	28.7	1000.0	9.000	On	N	9.8	17.3	46.0
3.858000	28.5	1000.0	9.000	On	N	9.8	17.5	46.0
4.753500	29.5	1000.0	9.000	On	N	9.8	16.5	46.0
10.162500	30.0	1000.0	9.000	On	N	9.7	20.0	50.0
10.765500	31.3	1000.0	9.000	On	N	9.7	18.7	50.0
15.868500	26.6	1000.0	9.000	On	N	9.8	23.4	50.0

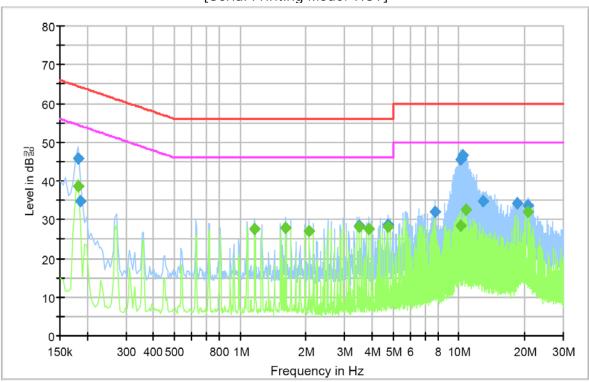
Test Report No.: CTK-2012-00683

Date: July 11, 2012

Page 15 of 38







## Final Result 1

Frequency (MHz)	QuasiPeak (dB킱)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB킮)
0.181500	45.9	1000.0	9.000	On	L1	10.0	18.5	64.4
0.186000	34.9	1000.0	9.000	On	L1	10.0	29.3	64.2
3.502500	28.4	1000.0	9.000	On	L1	9.8	27.6	56.0
4.758000	28.7	1000.0	9.000	On	L1	9.8	27.3	56.0
7.813500	32.0	1000.0	9.000	On	L1	9.7	28.0	60.0
10.225500	45.5	1000.0	9.000	On	L1	9.7	14.5	60.0
10.473000	46.7	1000.0	9.000	On	L1	9.7	13.3	60.0
12.930000	34.8	1000.0	9.000	On	L1	9.8	25.2	60.0
18.438000	34.1	1000.0	9.000	On	L1	9.8	25.9	60.0
20.625000	33.6	1000.0	9.000	On	L1	9.8	26.4	60.0

## Final Result 2

Frequency (MHz)	Average (dB킱)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB梨)
0.181500	38.7	1000.0	9.000	On	L1	10.0	15.8	54.4
1.167000	27.5	1000.0	9.000	On	L1	10.0	18.5	46.0
1.617000	27.7	1000.0	9.000	On	L1	9.9	18.3	46.0
2.067000	27.1	1000.0	9.000	On	L1	9.9	18.9	46.0
3.502500	28.2	1000.0	9.000	On	L1	9.8	17.8	46.0
3.862500	27.7	1000.0	9.000	On	L1	9.8	18.3	46.0
4.758000	28.2	1000.0	9.000	On	L1	9.8	17.8	46.0
10.176000	28.4	1000.0	9.000	On	L1	9.7	21.6	50.0
10.774500	32.5	1000.0	9.000	On	L1	9.7	17.5	50.0
20.625000	32.0	1000.0	9.000	On	L1	9.8	18.0	50.0

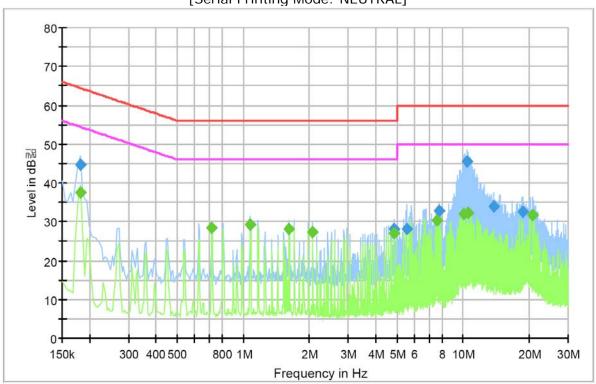
Test Report No.: CTK-2012-00683

Date: July 11, 2012

Page 16 of 38



[Serial Printing Mode: NEUTRAL]



## **Final Result 1**

Frequency (MHz)	QuasiPeak (dB氯)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB氯)
0.181500	44.8	1000.0	9.000	On	N	10.0	19.7	64.4
1.077000	29.3	1000.0	9.000	On	N	10.0	26.7	56.0
4.848000	28.3	1000.0	9.000	On	N	9.8	27.7	56.0
5.568000	28.0	1000.0	9.000	On	N	9.8	32.0	60.0
7.813500	32.9	1000.0	9.000	On	N	9.7	27.1	60.0
10.378500	45.6	1000.0	9.000	On	N	9.7	14.4	60.0
10.428000	45.5	1000.0	9.000	On	N	9.7	14.5	60.0
13.735500	34.0	1000.0	9.000	On	N	9.8	26.0	60.0
18.753000	32.6	1000.0	9.000	On	N	9.9	27.4	60.0
20.634000	31.8	1000.0	9.000	On	N	9.9	28.2	60.0

## Final Result 2

Frequency (MHz)	Average (dB킱)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB梨)
0.181500	37.6	1000.0	9.000	On	N	10.0	16.8	54.4
0.717000	28.4	1000.0	9.000	On	N	10.1	17.6	46.0
1.077000	29.4	1000.0	9.000	On	N	10.0	16.6	46.0
1.617000	28.1	1000.0	9.000	On	N	9.9	17.9	46.0
2.067000	27.2	1000.0	9.000	On	N	9.9	18.8	46.0
4.848000	27.1	1000.0	9.000	On	N	9.8	18.9	46.0
7.633500	30.3	1000.0	9.000	On	N	9.7	19.7	50.0
10.126500	31.9	1000.0	9.000	On	N	9.7	18.1	50.0
10.527000	32.2	1000.0	9.000	On	N	9.7	17.8	50.0
20.629500	31.7	1000.0	9.000	On	N	9.9	18.3	50.0

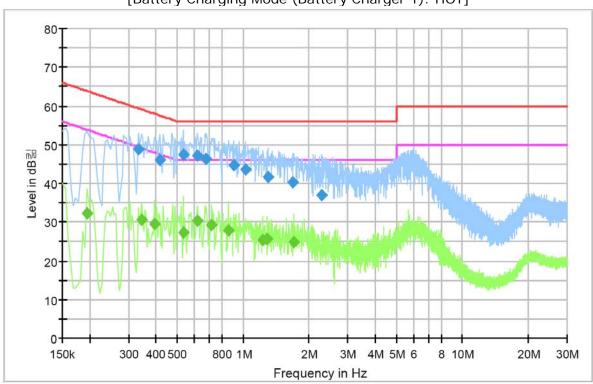
Test Report No.: CTK-2012-00683

Date: July 11, 2012

Page 17 of 38



[Battery Charging Mode (Battery Charger 1): HOT]



## Final Result 1

Frequency (MHz)	QuasiPeak (dB킮)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB킮)
0.334500	48.8	1000.0	9.000	On	L1	10.0	10.6	59.3
0.415500	46.0	1000.0	9.000	On	L1	10.0	11.5	57.5
0.532500	47.5	1000.0	9.000	On	L1	10.0	8.5	56.0
0.618000	47.3	1000.0	9.000	On	L1	10.1	8.7	56.0
0.681000	46.5	1000.0	9.000	On	L1	10.1	9.5	56.0
0.906000	44.6	1000.0	9.000	On	L1	10.0	11.4	56.0
1.027500	43.5	1000.0	9.000	On	L1	10.0	12.5	56.0
1.297500	41.6	1000.0	9.000	On	L1	10.0	14.4	56.0
1.693500	40.1	1000.0	9.000	On	L1	9.9	15.9	56.0
2.292000	36.8	1000.0	9.000	On	L1	9.9	19.2	56.0

## Final Result 2

Frequency (MHz)	Average (dB킯)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB氯)
0.195000	32.3	1000.0	9.000	On	L1	10.1	21.5	53.8
0.343500	30.7	1000.0	9.000	On	L1	10.0	18.4	49.1
0.393000	29.5	1000.0	9.000	On	L1	10.0	18.5	48.0
0.532500	27.4	1000.0	9.000	On	L1	10.0	18.6	46.0
0.618000	30.4	1000.0	9.000	On	L1	10.1	15.6	46.0
0.717000	29.2	1000.0	9.000	On	L1	10.1	16.8	46.0
0.856500	27.7	1000.0	9.000	On	L1	10.0	18.3	46.0
1.230000	25.3	1000.0	9.000	On	L1	10.0	20.7	46.0
1.284000	25.8	1000.0	9.000	On	L1	10.0	20.2	46.0
1.707000	24.8	1000.0	9.000	On	L1	9.9	21.2	46.0

Test Report No.: CTK-2012-00683

Date: July 11, 2012

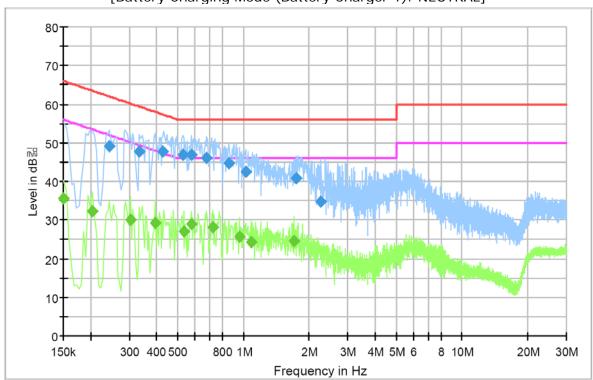
This Report shall not be reproduced except in full without the written approval of CTK

Form No.: CTK-RF-EF-Part15(Rev.5.7)

Page 18 of 38



### [Battery Charging Mode (Battery Charger 1): NEUTRAL]



## **Final Result 1**

Frequency (MHz)	QuasiPeak (dB湿)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB氯)
0.244500	49.1	1000.0	9.000	On	N	10.1	12.9	61.9
0.334500	47.8	1000.0	9.000	On	N	10.0	11.5	59.3
0.429000	47.7	1000.0	9.000	On	N	9.9	9.5	57.3
0.528000	47.0	1000.0	9.000	On	N	9.9	9.0	56.0
0.577500	46.9	1000.0	9.000	On	N	10.0	9.1	56.0
0.681000	45.9	1000.0	9.000	On	N	10.1	10.1	56.0
0.856500	44.7	1000.0	9.000	On	N	10.0	11.3	56.0
1.023000	42.6	1000.0	9.000	On	N	10.0	13.4	56.0
1.752000	40.9	1000.0	9.000	On	N	9.9	15.1	56.0
2.265000	34.9	1000.0	9.000	On	N	9.9	21.1	56.0

## Final Result 2

Frequency (MHz)	Average (dB킱)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB킮)
0.150000	35.6	1000.0	9.000	On	N	10.2	20.4	56.0
0.204000	32.2	1000.0	9.000	On	N	10.2	21.3	53.4
0.303000	30.0	1000.0	9.000	On	N	10.1	20.2	50.2
0.393000	29.3	1000.0	9.000	On	N	10.0	18.7	48.0
0.532500	26.9	1000.0	9.000	On	N	9.9	19.1	46.0
0.577500	28.8	1000.0	9.000	On	N	10.0	17.2	46.0
0.726000	28.2	1000.0	9.000	On	N	10.1	17.8	46.0
0.955500	25.6	1000.0	9.000	On	N	10.0	20.4	46.0
1.081500	24.3	1000.0	9.000	On	N	10.0	21.7	46.0
1.707000	24.6	1000.0	9.000	On	N	9.9	21.4	46.0

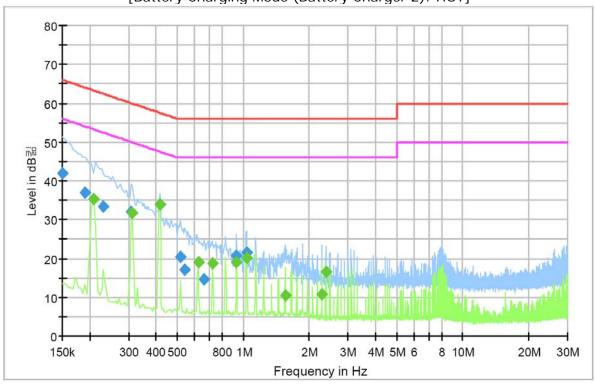
Test Report No.: CTK-2012-00683

Date: July 11, 2012

Page 19 of 38



[Battery Charging Mode (Battery Charger 2): HOT]



### **Final Result 1**

i iiiai ixc	Juit 1							
Frequency (MHz)	QuasiPeak (dB켍)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB氯)
0.150000	42.1	1000.0	9.000	On	L1	10.2	23.9	66.0
0.190500	37.1	1000.0	9.000	On	L1	10.0	27.0	64.0
0.231000	33.5	1000.0	9.000	On	L1	10.1	28.9	62.4
0.307500	32.1	1000.0	9.000	On	L1	10.1	27.9	60.0
0.415500	34.0	1000.0	9.000	On	L1	10.0	23.6	57.5
0.519000	20.5	1000.0	9.000	On	L1	10.0	35.5	56.0
0.541500	17.1	1000.0	9.000	On	L1	10.0	38.9	56.0
0.663000	14.6	1000.0	9.000	On	L1	10.1	41.4	56.0
0.933000	20.6	1000.0	9.000	On	L1	10.0	35.4	56.0
1.036500	21.6	1000.0	9.000	On	L1	10.0	34.4	56.0

## Final Result 2

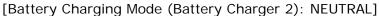
Frequency (MHz)	Average (dB킯)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB氯)
0.208500	35.4	1000.0	9.000	On	L1	10.1	17.9	53.3
0.312000	31.7	1000.0	9.000	On	L1	10.1	18.2	49.9
0.415500	33.9	1000.0	9.000	On	L1	10.0	13.6	47.5
0.622500	19.0	1000.0	9.000	On	L1	10.1	27.0	46.0
0.726000	18.8	1000.0	9.000	On	L1	10.1	27.2	46.0
0.933000	18.9	1000.0	9.000	On	L1	10.0	27.1	46.0
1.036500	20.1	1000.0	9.000	On	L1	10.0	25.9	46.0
1.554000	10.5	1000.0	9.000	On	L1	9.9	35.5	46.0
2.278500	10.7	1000.0	9.000	On	L1	9.9	35.3	46.0
2.377500	16.5	1000.0	9.000	On	L1	9.9	29.5	46.0

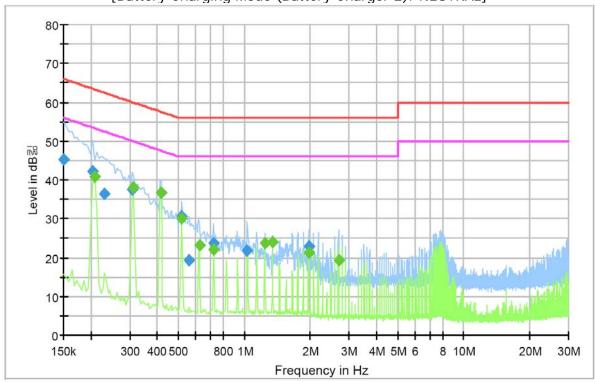
Test Report No.: CTK-2012-00683

Date: July 11, 2012

Page 20 of 38







### Final Result 1

Frequency	QuasiPeak	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit	
(MHz)	(dB氯)	Time (ms)	(kHz)			(dB)	(dB)	(dB氯)	
0.150000	45.2	1000.0	9.000	On	N	10.2	20.8	66.0	
0.204000	42.2	1000.0	9.000	On	N	10.2	21.2	63.4	
0.231000	36.4	1000.0	9.000	On	N	10.2	26.0	62.4	
0.307500	37.4	1000.0	9.000	On	N	10.1	22.6	60.0	
0.415500	36.8	1000.0	9.000	On	N	10.0	20.7	57.	
0.519000	30.6	1000.0	9.000	On	N	9.9	25.4	56.0	
0.559500	19.4	1000.0	9.000	On	N	10.0	36.6	56.0	
0.721500	23.7	1000.0	9.000	On	N	10.1	32.3	56.0	
1.032000	21.7	1000.0	9.000	On	N	10.0	34.3	56.	
1.963500	22.9	1000.0	9.000	On	N	9.9	33.1	56.	

## Final Result 2

Frequency (MHz)	Average (dB킱)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB氯)
0.208500	41.0	1000.0	9.000	On	N	10.2	12.3	53.3
0.312000	37.9	1000.0	9.000	On	N	10.1	12.0	49.9
0.415500	36.8	1000.0	9.000	On	N	10.0	10.8	47.5
0.519000	30.2	1000.0	9.000	On	N	9.9	15.8	46.0
0.622500	23.2	1000.0	9.000	On	N	10.0	22.8	46.0
0.726000	22.1	1000.0	9.000	On	N	10.1	23.9	46.0
1.239000	23.8	1000.0	9.000	On	N	10.0	22.2	46.0
1.342500	23.9	1000.0	9.000	On	N	10.0	22.1	46.0
1.963500	21.3	1000.0	9.000	On	N	9.9	24.7	46.0
2.688000	19.4	1000.0	9.000	On	N	9.9	26.6	46.0

Test Report No.: CTK-2012-00683

Date: July 11, 2012

This Report shall not be reproduced except in full without the written approval of CTK

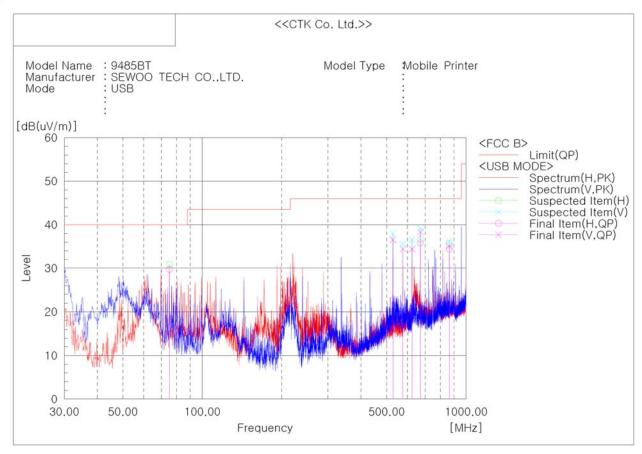
Form No.: CTK-RF-EF-Part15(Rev.5.7)

Page 21 of 38



### **Radiated Electric Field Emissions**

### [USB Printing Mode]



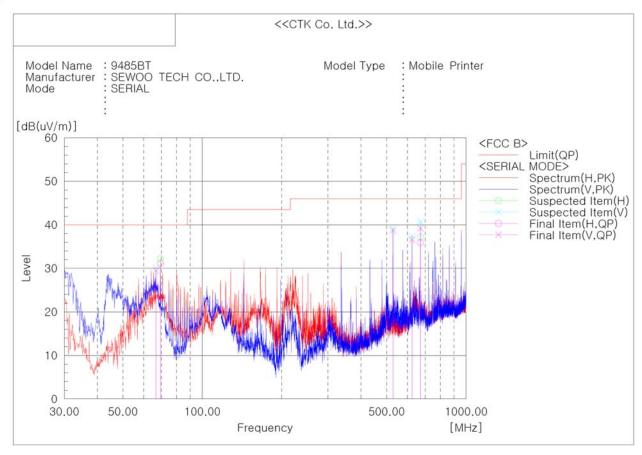
_	1	D 1	1
-	inal	Resul	T

No.	Frequency	(P)	Reading QP	c.f	Result OP	Limit QP	Margin QP	Height	Angle
	[MHz]		[dB(uV)]	[dB(1/m)]	[dB(uV/m)]	[dB(uV/m)]	[dB]	[cm]	[deg]
1	75.105	H	52.7	-23.0	29.7	40.0	10.3	205.0	108.0
2	528.095	V	46.3	-9.8	36.5	46.0	9.5	100.0	70.0
3	575.989	V	43.6	-9.2	34.4	46.0	11.6	100.0	70.0
4	624.004	V	42.8	-8.4	34.4	46.0	11.6	100.0	70.0
5	672.019	V	45.6	-7.3	38.3	46.0	7.7	100.0	220.0
6	672.019	H	43.1	-7.3	35.8	46.0	10.2	100.0	119.0
7	864.079	V	38.7	-3.6	35.1	46.0	10.9	195.0	139.0
8	864.079	Н	38.0	-3.6	34.4	46.0	11.6	205.0	0.0

Test Report No.: CTK-2012-00683



### [Serial Printing Mode]



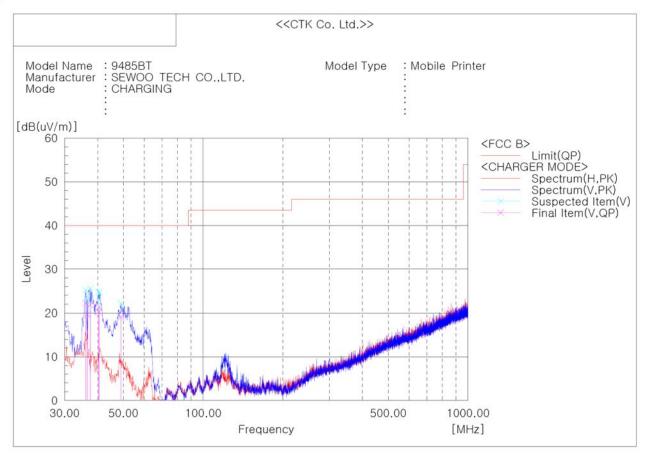
### Final Result

No.	Frequency	(P)	Reading QP	c.f	Result OP	Limit QP	Margin QP	Height	Angle
	[MHz]		[dB(uV)]	[dB(1/m)]	[dB(uV/m)]	[dB(uV/m)]	[dB]	[cm]	[deg]
1	66.739	V	54.6	-25.1	29.5	40.0	10.5	100.0	178.0
2	69.406	H	55.5	-24.4	31.1	40.0	8.9	304.0	295.0
3	528.095	V	48.5	-9.8	38.7	46.0	7.3	100.0	29.0
4	624.004	V	45.0	-8.4	36.6	46.0	9.4	100.0	178.0
5	672.019	V	46.5	-7.3	39.2	46.0	6.8	100.0	178.0
6	672.019	H	43.2	-7.3	35.9	46.0	10.1	100.0	280.0

Test Report No.: CTK-2012-00683 Page 23 of 38



## [Battery Charging Mode (Battery Charger 1)]



### Final Result

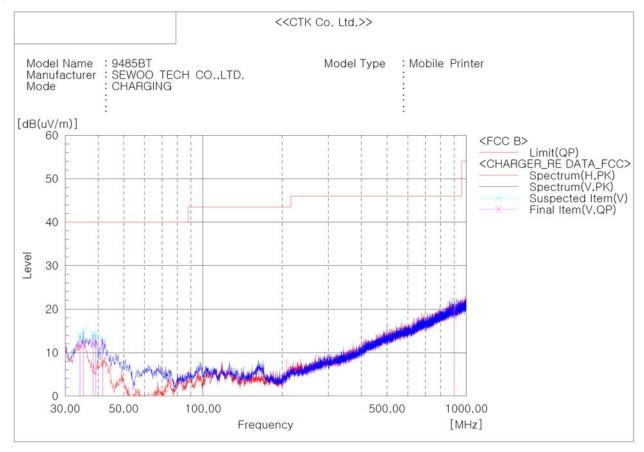
No.	Frequency	(P)	Reading QP	c.f	Result OP	Limit QP	Margin QP	Height	Angle
	[MHz]		[dB(uV)]	[dB(1/m)]	[dB(uV/m)]	[dB(uV/m)]	[dB]	[cm]	[deg]
1	36.063	V	37.1	-14.9	22.2	40.0	17.8	294.0	183.0
2	36.548	V	34.9	-15.2	19.7	40.0	20.3	294.0	183.0
3	37.518	V	37.5	-15.7	21.8	40.0	18.2	194.0	0.0
4	49.036	V	41.2	-22.1	19.1	40.0	20.9	294.0	221.0
5	40.306	V	37.7	-17.4	20.3	40.0	19.7	194.0	64.0
6	40.549	V	38.8	-17.5	21.3	40.0	18.7	194.0	64.0

Test Report No.: CTK-2012-00683

Date: July 11, 2012



### [Battery Charging Mode (Battery Charger 2)]



Fi	nal	Resul	t

No.	Frequency	(P)	Reading QP	c.f	Result QP	Limit QP	Margin QP	Height	Angle
	[MHz]		[dB(uV)]	[dB(1/m)]	[dB(uV/m)]	[dB(uV/m)]	[dB]	[cm]	[deg]
1	34.123	V	25.6	-14.0	11.6	40.0	28.4	100.0	252.0
2	35.214	V	26.3	-14.4	11.9	40.0	28.1	100.0	102.0
3	38.245	V	28.4	-16.2	12.2	40.0	27.8	100.0	177.0
4	39.215	V	29.2	-16.8	12.4	40.0	27.6	100.0	0.0
5	41.640	V	30.3	-18.1	12.2	40.0	27.8	100.0	139.0
6	901.424	V	22.8	-2.9	19.9	46.0	26.1	195.0	221.0

Test Report No.: CTK-2012-00683 Page 25 of 38



# **APPENDIX B - Test Setup Photos and Configuration**

## **Conducted Voltage Emissions**

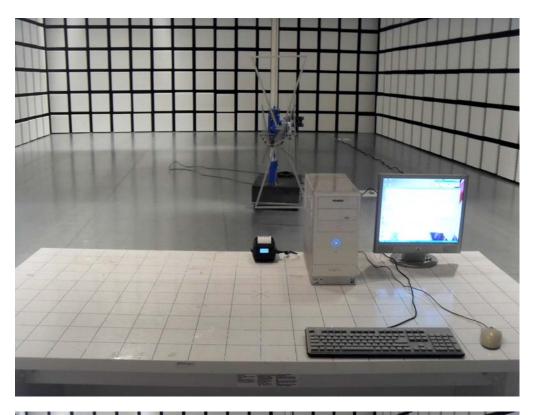




Test Report No.: CTK-2012-00683



## **Radiated Electric Field Emissions**





Test Report No.: CTK-2012-00683



# **APPENDIX C – EUT Photographs**

Page 28 of 38 Test Report No.: CTK-2012-00683

Date: July 11, 2012







Test Report No.: CTK-2012-00683

Date: July 11, 2012

Page 29 of 38







Test Report No.: CTK-2012-00683 Date: July 11, 2012



## **EUT Internal Photographs**



Page 31 of 38 Test Report No.: CTK-2012-00683



## **PCB**

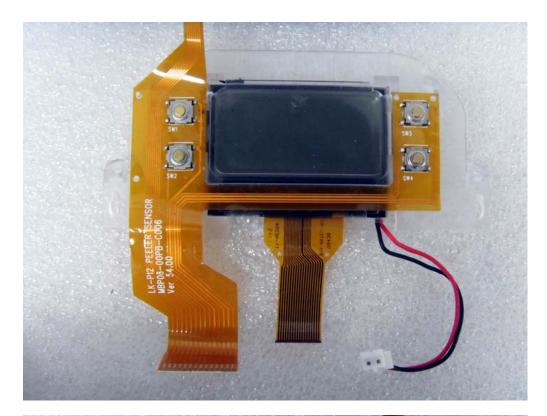




Test Report No.: CTK-2012-00683

Date: July 11, 2012







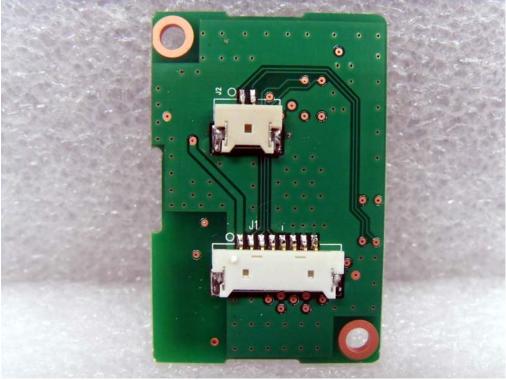
Test Report No.: CTK-2012-00683

Date: July 11, 2012

Page 33 of 38







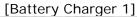
Test Report No.: CTK-2012-00683

Date: July 11, 2012

Page 34 of 38



## **Battery Charger 1&2**







Test Report No.: CTK-2012-00683

Date: July 11, 2012



[Battery Charger 2]







Test Report No.: CTK-2012-00683

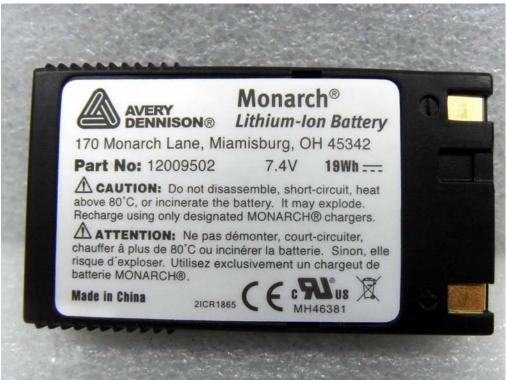
Date: July 11, 2012

Page 36 of 38



## **Battery**





Test Report No.: CTK-2012-00683

Date: July 11, 2012

Form No.: CTK-RF-EF-Part15(Rev.5.7)

Page 37 of 38



# CTK Co., Ltd.

386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

### **Label and Location**





Monarch® 9485BT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1)this device may not cause harmful interference, and 2) this device must accept any interference that may cause undesired operations.

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Cet appareil numerique de la classe B respecte toutes les exigences du Reglement sur le material broilleur du Canada.

DC Input: DC 8.4V .... 0.8A

Avery Dennison

FCC ID: GU6-9485BT

IC ID: 1502A-9485BT



Country of Origin: South Korea

RoHS

I.T.E. 9M03

Test Report No.: CTK-2012-00683 Page 38 of 38
Date: July 11, 2012