# **TEST REPORT**



DT&C Co., Ltd.

42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 17042 Tel: 031-321-2664, Fax: 031-321-1664

1. Report No.:

DREFCC1809-0267

2. Client / Applicant

· Name : LG Electronics USA, Inc.

Address: 1000 Sylvan Ave. Englewood Cliffs NJ 07632 United States

3. Use of Report: Grant of Certification

4. Product Name / Model Name: Mobile Phone / KX1801

5. Test Standard:

ANSI C 63.4: 2014

FCC Part 15 Subpart B

(Class B personal computers and peripherals)

6. Date of Test: Aug. 20. 2018

7. Testing Environment: Temperature (22) °C, Humidity (44 ~ 53) % R.H.

8. Test Result: Refer to the attached Test Result

Affirmation Tested by Reviewed by

Name: YongKi Kim

The test results presented in this test report are limited only to the sample supplied by applicant and

HyungJun Kim

Name:

the use of this test report is inhibited other than its purpose.

This test report shall not be reproduced except in full, without the written approval of DT&C Co., Ltd.

Sep. 27. 2018

DT&C Co., Ltd.

If this report is required to confirmation of authenticity, please contact to report@dtnc.net



# **CONTENTS**

1. General Remarks	3
2. Test Laboratory	3
3. General Information of EUT	4
4. EUT Operations and Test Configurations	5
4.1 Principle of Configuration Selection	5
4.2 EUT Operation Mode	
4.3 Test Configuration Mode	
4.4 Supported Equipment	5
4.5 EUT In/Output Port	6
4.6 Test Voltage and Frequency	
5. Test Summary	7
6. Test Environment	7
7. Test Results : Emission	8
7.1 Conducted Disturbance	8
7.2 Radiated Disturbance	
8. Revision History	23



## 1. General Remarks

This report contains the result of tests performed by:

DT&C Co., Ltd.

42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 17042 http://www.dtnc.net

Tel: +82-31-321-2664 Fax: +82-31-321-1664

### 2. Test Laboratory

DT&C Co., Ltd. has been accredited / filed / authorized by the agencies listed in the following table;

labie;	one,						
Certificate	Nation	Agency	Code	Remark			
A	Korea	KOLAS	393	ISO/IEC 17025			
Accreditation	South Africa	SABS	0006	ISO/IEC 17025			
	USA	FCC	KR0034 101842 678747, 596748, 804488, 165783	Accredited 2.948 Listed			
	Canada	IC	5740A-3 5740A-4	Registered			
Site Filing	Japan	VCCI	C-1427 R-1364, R-3385, R-4076, R-4180, R-4496, T-1442, G-10338, G-754, G-10815	Registered			
0 111 11	Korea	КС	KR0034	Designation			
Certification	Germany	TUV	CARAT 17 11 89112 005	ISO/IEC 17025			

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the "General requirements for the competent of calibration and testing laboratory".



## 3. General Information of EUT

Applicant	LG Electronics USA, Inc. 1000 Sylvan Ave. Englewood Cliffs NJ 07632 United States
Manufacturer	LG Electronics USA, Inc. 1000 Sylvan Ave. Englewood Cliffs NJ 07632 United States
Factory	LG Electronics USA, Inc. 1000 Sylvan Ave. Englewood Cliffs NJ 07632 United States
Product Name	Mobile Phone
Model Name	KX1801
Add Model Name	None
FCC ID	ZNFKX1801
Rated Power	DC 3.85 V
Remarks	Earphone 1. Manufacturer: CRESYN 2. S/N: EAB63728244  USB Cable 1. Manufacturer: NINGBO 2. S/N: EAD64746101

Related Submittal(s) / Grant(s)
Original submittal only



## 4. EUT Operations and Test Configurations

## 4.1 Principle of Configuration Selection

#### **Emission:**

The equipment under test (EUT) was configured to measure its highest possible radiation level.

The test modes were adapted accordingly in reference to the instructions for use.

For each testing mode different configurations were used,

Refer to the individual tests.

## 4.2 EUT Operation Mode

No.	Mode	Description
1	'READ' & 'WRITE' & 'DELETE'	The EUT is reading, writing, and erasing internal storage

### 4.3 Test Configuration Mode

No.	Mode	Description	
1	PC LINK	EUT was connected PC by USB cable and continuously operated	

### 4.4 Supported Equipment

Used*	Product Type	Manufacturer	Model	Remarks
AE	KEYBOARD	DELL	KB212-B	DOC
AE	MOUSE	LG	SM-9023	DOC
AE	LCD MONITOR	DELL	UP2414Qt	DOC
AE	PC	DELL	DCNE	DOC
AE	SSD 3.0	SAMSUNG	MU-PT250B	DOC
AE	PRINTER	Bixolon	SRP-770	DOC
AE	Headset	SAMSUNG	SHS-150V/M	DOC

<sup>\*</sup>Abbreviations:

AE - Auxiliary/Associated Equipment, or

SIM - Simulator

## 4.5 EUT In/Output Port

Nama	T *	Cable	Cable	Cable	Damania	
Name	Type*	Max. >3 m	Shielded	Back shell	Remarks	
USB	I/O	1.7	Shield	Plastic	KEYBOARD	
USB	I/O	1.7	Shield	Plastic	MOUSE	
POWER IN	AC	1.8	Non Shield	Plastic	LOD MONITOR	
DSUB OUT	I/O	1.8	Shield	Plastic	LCD MONITOR	
POWER IN	AC	1.8	Non Shield	Plastic		
DSUB IN	I/O	1.8	Shield	Plastic		
PARALLEL IN	I/O	2.0	Shield	Plastic		
SERIAL IN	I/O	1.9	Shield	Plastic	PC	
USB	I/O	1.7	Shield	Plastic		
USB	I/O	1.7	Shield	Plastic		
USB	I/O	1.0	Shield	Plastic		
STEREO IN/OUT	I/O	2.0	Non Shield	Plastic		
USB	I/O	1.0	Shield	Plastic	SSD 3.0	
POWER IN	DC	1.8	Non Shield	Plastic		
PARALLEL OUT	I/O	2.0	Shield	Plastic	PRINTER	
SERIAL OUT	I/O	1.9	Shield	Plastic		
STEREO IN/OUT	I/O	2.0	Non Shield	Plastic	Headset	
AUX	I/O	1.8	Non Shield	Plastic	EUT	
USB	I/O	1.0	Non Shield	Plastic	EUT	

\*Abbreviations:

AC = AC Power Port

DC = DC Power Port

N/E = Non-Electrical

I/O = Signal Input or Output Port TP = Telecommunication Ports

# 4.6 Test Voltage and Frequency

Case	Voltage (V)	Frequency (Hz)	Phases	Remarks
1	AC 120	60 Hz	Single	None



## 5. Test Summary

Test Items	Applied Standards	Results
Conducted Disturbance	ANSI C63.4 : 2014	С
Radiated Disturbance	ANSI C63.4 : 2014	С
C=Comply N/C=Not Comply	/ N/T=Not Tested N/A=Not Applicable	

#### The data in this test report are traceable to the national or international standards.

#### -Conducted Disturbance

Frequency [MHz]	Phase	Result [dBµV]	Detector	Limit [dBµV]	Margin [dB]
0.71281	L1	35.37	CAV	46.00	10.63

#### -Radiated Disturbance

Frequency [MHz]	Pol.	Result [dBµV/m]	Detector	Limit [dBµV/m]	Margin [dB]
635.224	Н	39.69	QP	46.00	6.31

## 6. Test Environment

Test Items	Test date (YYYY-MM-DD)	Temp. (℃)	Humidity (% R.H.)	Pressure (kPa)
Conducted Disturbance	2018-08-20	22	44	
Radiated Disturbance	2018-08-20	22	53	-



# 7. Test Results: Emission

## 7.1 Conducted Disturbance

ANSI C63.4	Ma	ains terminal disturbance v	oltage		Result			
Method: The AMN placed 0,8 m from the boundary of the unit under test and bonded to a ground reference plane. This distance was between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment were at least 0,8 m from the AMN. All power was connected to the system through Artificial Mains Network (AMN). Conducted voltage measurements on mains lines were made at the output of the AMN. The measuring port of the LISN for EUT was connected to spectrum analyzer. Using conducted emission test software, the emissions were scanned with peak detector mode. After scanning over the frequency range, suspected emissions were selected to perform final measurement. When performing final measurement, the receiver was used which has Quasi-Peak detector and CISPR Average detector. For (0.15 ~ 30) MHz frequency range, Quasi-Peak detector with 10 kHz RBW and 30 kHz VBW was used. By varying the configuration of the test sample and the cable routing it was attempted to maximize the emission.								
	d sample scanned ov	Frequency range on each si	de of line	Measure	ement Point			
er the followin	er the following frequency range 150 kHz to 30 MHz							
EU	T mode	Test configuration mo	ode		1			
(Refer	to clauses 4)	EUT Operation mod	е		1			
		Limits - Class A						
Frequency (MHz	)	Limit	dΒμV					
Trequency (Miliz	)	Quasi-Peak		Average				
0.15 to 0.50		79		66				
0.50 to 30		73		60				
		Limits – Class B						
Frequency (MHz	,	Limit	dΒμV					
Frequency (WITZ	.)	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				

Measurement uncertainty	
Expended uncertainty <i>U</i>	2.36 dB
(95 %, Confidence level, $k = 2$ )	2.00 %2

Measurement Instrument											
Description	Model	Manufacturer	Identifier	Cal. Date	Cal. Due						
MEASUREMENT SOFTWARE	EMI-C VER. 2.00.0171	TSJ	N/A	N/A	N/A						
EMI TEST RECEIVER	ESR7	ROHDE&SCHWARZ	101109	2017.11.16	2018.11.16						
TWO-LINE V-NETWORK	ENV216	ROHDE&SCHWARZ	101979	2017.12.18	2018.12.18						
LISN	LISN1600	TTI	197204	2018.06.07	2019.06.07						
TRANSIENT LIMITER	TL-B0930A	EMCIS	11002	2017.09.07	2018.09.07						
50 OHM TERMINATOR	CT-01	THE	N/A	2017.12.26	2018.12.26						



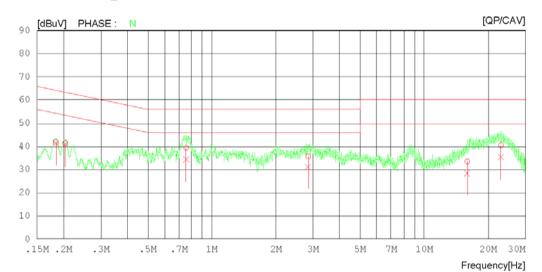
Mains terminal disturbance voltage _Measurement data							
Test configuration mode 1 EUT Operation mode							
Test voltage (V)	120	Test Frequency (Hz)	60				

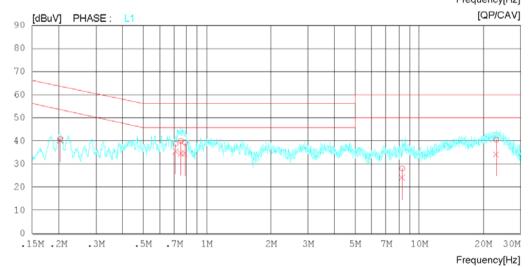
# Results of Conducted Emission

DT&C Date 2018-08-20

Order No. Power Supply Temp/Humi/Atm Test Condition DTNC1808-06316 120 VAC 60 Hz 22 'C 44 %.R.H. PC Link

LIMIT : CISPR22\_B QP CISPR22\_B AV







## Results of Conducted Emission

Date 2018-08-20 DT&C

Order No. Power Supply Temp/Humi/Atm Test Condition

DTNC1808-06316 120 VAC 60 Hz 22 'C 44 %.R.H. PC Link

LIMIT : CISPR22\_B QP CISPR22\_B AV

NC	FREQ	READING QP CAV [dBuV][dBuV]	C.FACTOR	RESULT QP CAV [dBuV] [dBuV]	LIMIT QP CAV [dBuV][dBuV]	MARGIN QP CAV [dBuV][dBuV]	PHASE
1 2 3 4 5 6 7	0.20355 0.75650 2.84216 15.97232 23.01011 0.20359	21.85 21.45 21.39 20.97 19.38 14.10 15.62 11.11 12.30 7.30 19.65 14.29 20.77 20.33 18.46 15.13	19.99 20.03 20.09 20.06 21.17 20.85 20.03	41.84 41.44 41.42 41.00 39.47 34.19 35.68 31.17 33.47 28.47 40.50 35.14 40.80 40.36 38.70 35.37	64.30 54.30 63.46 53.46 56.00 46.00 56.00 50.00 60.00 50.00 63.46 53.46 56.00 46.00	22.46 12.86 22.04 12.46 16.53 11.81 20.32 14.83 26.53 21.53 19.50 14.86 22.66 13.10	N N N N N L1
9 10 11 12	0.75550 0.78850 8.31922	19.46 15.13 19.89 14.60 19.16 14.37 7.42 3.43 19.71 13.45	20.24 20.19 20.16 20.71 20.84	38.70 35.37 40.08 34.79 39.32 34.53 28.13 24.14 40.55 34.29	56.00 46.00 56.00 46.00 56.00 46.00 60.00 50.00	17.30 10.63 15.92 11.21 16.68 11.47 31.87 25.86 19.45 15.71	L1 L1 L1 L1

#### Calculation

N: Neutral phase, L1: Live phase

C.FACTOR(dB): Pulse Limiter(dB) + Cable loss(dB) + Insertion loss of LISN(dB)

 $\begin{aligned} & Result(dB\mu V): Reading \ Value(dB\mu V) + C.FACTOR(dB) \\ & Margin(dB): Limit(dB\mu V) - Result(dB\mu V) \end{aligned}$ 

#### 7.2 Radiated Disturbance

ANSI C63.4		Radiated disturk	oance 30 MHz	–18 GHz		Result	
or 3 met the rece measure height fr where a (RBW = detector	ter below 1GHz and 3 sive antenna located a ements were then per rom 1 to 4 m. All frequipplicable. For final most 120 kHz Bandwidth)	meter above 1GHz. That various heights in ho formed by rotating the lencies were investigate easurement below 1 G was used. For final m	The EUT was rotorizontal and vertorizontal and vertorized in both horized in both horized in grand rage asurement about the EUT was a surement and eut was a surement about the EUT was a sure	b EUT separation distance ated 360° about its azimu ical polarities. Final adjusting the receive anteontal and vertical antennange, Quasi-Peak detectoive 1 GHz frequency rangetor with (RBW = 1 MHz	nth with nna a polarity, r with	Comply	
EU	T mode	Test configur	ation mode	•	1		
(Refer to	o clauses 4)	EUT Operat	ion mode	•	1		
		Radiated Disturba	nce below 1 00	0 MHz			
Freque	ency range		Quasi-po	eak limit dBµV/m			
(	(MHz)	Class A (10 r	n distance)	Class B (3	m distan	ce)	
30	0 to 88	39.	1	4	10		
88	3 to 216	43.	5	43	3.5		
0.14	6 to 960	46.	4	46			
216	6 10 960		-				
960	to 1 000	49.	5		54		
960 According to 15 comply with the (CISPR), Pub. 2	to 1 000 .109(g), as an alterna standards contained 22 shown.	49. tive to the radiated em	5 nission limit show International Spe	n above, digital devices n ecial Committee on Radio	nay be sh		
960 According to 15 comply with the CISPR), Pub. 2 Freque	to 1 000 .109(g), as an alterna standards contained 22 shown.	49. tive to the radiated em in Third Edition of the	5 nission limit show International Spe Quasi-pe	n above, digital devices n ecial Committee on Radio	may be sh Interfere	nce	
960 According to 15 comply with the CISPR), Pub. 2 Freque	to 1 000 .109(g), as an alterna standards contained 22 shown. ency range	tive to the radiated emin Third Edition of the	5 nission limit show International Spe Quasi-pe n distance)	n above, digital devices necial Committee on Radio eak limit dBµV/m Class B (10	may be shot interference m distan	nce	
960 According to 15 comply with the CISPR), Pub. 2 Freque (	to 1 000 .109(g), as an alterna standards contained 22 shown. ency range (MHz)	49. tive to the radiated em in Third Edition of the  Class A (10 r	5 hission limit show International Spe  Quasi-pe  n distance)	vn above, digital devices necial Committee on Radio eak limit dBµV/m Class B (10	may be sh Interferen m distan	nce	
960 According to 15 comply with the (CISPR), Pub. 2 Freque (	to 1 000 .109(g), as an alterna standards contained 22 shown. ency range (MHz) to 230 to 1 000	49. tive to the radiated emin Third Edition of the  Class A (10 r	5 nission limit show International Spe  Quasi-pe n distance)	vn above, digital devices necial Committee on Radio eak limit dBµV/m Class B (10	may be shot interference m distant	nce	
960 According to 15 comply with the CISPR), Pub. 2 Freque ( 30 230	to 1 000 .109(g), as an alterna standards contained 22 shown. ency range (MHz) 0 to 230 to 1 000 Radiated Disturb	49. tive to the radiated em in Third Edition of the  Class A (10 r  40  47  ance for above 1 00	5 hission limit show International Spe  Quasi-pe  n distance)  O MHz at a mea	n above, digital devices necial Committee on Radio  eak limit dBµV/m  Class B (10  3  surement distance of 3	may be shown interference in the shown in th	nce)	
960 According to 15 comply with the CISPR), Pub. 2 Freque ( 30 230	to 1 000 .109(g), as an alterna standards contained 22 shown. ency range (MHz) to 230 to 1 000 Radiated Disturbency range	49. tive to the radiated emin Third Edition of the  Class A (10 r  40  47  ance for above 1 00  Peak limit	Sinission limit show International Spendistance)  O MHz at a mea	eak limit dBµV/m  Class B (10  3  surement distance of 3  Average limit dBµV/m	may be shown in the shown in th	nce)	
960 According to 15 comply with the CISPR), Pub. 2 Freque ( 30 230  Freque (	to 1 000 .109(g), as an alterna standards contained 22 shown. ency range (MHz) 0 to 230 to 1 000 Radiated Disturb ency range (GHz)	tive to the radiated em in Third Edition of the  Class A (10 r  40  47  ance for above 1 00  Peak limit  Class A	Sinission limit show International Spendistance)  O MHz at a meadBμV/m  Class B	rn above, digital devices necial Committee on Radio eak limit dBµV/m Class B (10 3 surement distance of 3 Average lim Class A	may be shown in the shown in th	/m ass B	
960 According to 15 comply with the CISPR), Pub. 2 Freque ( 30 230  Freque (	to 1 000 .109(g), as an alterna standards contained 22 shown. ency range (MHz) 0 to 230 to 1 000 Radiated Disturb ency range (GHz) to 40	Class A (10 r  Class A (10 r  47  Ance for above 1 00  Peak limit  Class A  80	Suission limit show International Spendistance)  O MHz at a meadBμV/m  Class B	rn above, digital devices necial Committee on Radio  eak limit dBµV/m  Class B (10  3  surement distance of 3  Average lin  Class A  60	may be shot interference m distant 30 m mit dBµV.	nce)	
960 According to 15 comply with the CISPR), Pub. 2 Freque ( 30 230  Freque ( 1	to 1 000 .109(g), as an alterna standards contained 22 shown. ency range (MHz) 0 to 230 to 1 000 Radiated Disturb ency range (GHz) to 40 The test frequency	tive to the radiated emin Third Edition of the  Class A (10 r  40  47  ance for above 1 00  Peak limit  Class A  80  range of Radiated D	Sinission limit show International Spendarsi-pendistance)  O MHz at a meadBμV/m  Class B  74  isturbance mea	ecial Committee on Radio  eak limit dBµV/m  Class B (10  3  surement distance of 3  Average limit dBass A  60  surements are listed be	may be shown as the shown as the show.	/m ass B	
960 According to 15 comply with the CISPR), Pub. 2 Freque ( 30 230  Freque ( 1	to 1 000 .109(g), as an alterna standards contained 22 shown. ency range (MHz) 0 to 230 to 1 000 Radiated Disturb ency range (GHz) to 40 The test frequency frequency generate	Class A (10 r  Class A (10 r  47  Ance for above 1 00  Peak limit  Class A  80	Sission limit show International Special Quasi-point distance)  O MHz at a meadBμV/m  Class B  74  isturbance meadice	rn above, digital devices necial Committee on Radio  eak limit dBµV/m  Class B (10  3  surement distance of 3  Average lin  Class A  60	may be shown as the shown as the show.	/m ass B	
960 According to 15 comply with the CISPR), Pub. 2 Freque ( 30 230  Freque ( 1	to 1 000 .109(g), as an alterna standards contained 22 shown. ency range (MHz) 0 to 230 to 1 000 Radiated Disturb ency range (GHz) to 40 The test frequency frequency generate	tive to the radiated em in Third Edition of the  Class A (10 r  40  47  ance for above 1 00  Peak limit  Class A  80  range of Radiated D d or used in the dev rates or tunes (MHz)	Sission limit show International Special Quasi-point distance)  O MHz at a meadBμV/m  Class B  74  isturbance meadice	ecial Committee on Radio  eak limit dBµV/m  Class B (10  3  surement distance of 3  Average limit dBass A  60  surements are listed be  Upper frequency of mea	may be shown as the shown as the show.	/m ass B	
960 According to 15 comply with the CISPR), Pub. 2 Freque ( 30 230 Freque ( 1	to 1 000 .109(g), as an alterna standards contained 22 shown. ency range (MHz) 0 to 230 to 1 000 Radiated Disturb ency range (GHz) to 40 The test frequency frequency generate hich the device ope	tive to the radiated em in Third Edition of the  Class A (10 r  40  47  ance for above 1 00  Peak limit  Class A  80  range of Radiated D d or used in the dev rates or tunes (MHz) 08	Sission limit show International Special Quasi-point distance)  O MHz at a meadBμV/m  Class B  74  isturbance meadice	eak limit dBµV/m  Class B (10  3  Surement distance of 3  Average lin  Class A  60  Surements are listed be  Upper frequency of mean (MHz)	may be shown as the shown as the show.	/m ass B	
960 According to 15 comply with the CISPR), Pub. 2 Freque ( 30 230 Freque ( 1	to 1 000  .109(g), as an alterna standards contained 22 shown.  ency range (MHz)  0 to 230  to 1 000  Radiated Disturb ency range (GHz)  to 40  The test frequency frequency generate hich the device ope Below 1	tive to the radiated em in Third Edition of the  Class A (10 r  40  47  ance for above 1 00  Peak limit  Class A  80  range of Radiated D d or used in the deverates or tunes (MHz)  08  00	Sinission limit show International Special Quasi-point distance)  O MHz at a mea dBμV/m  Class B  74  isturbance mea	rn above, digital devices necial Committee on Radio  eak limit dBµV/m  Class B (10  3  surement distance of 3  Average lin  Class A  60  surements are listed be  Upper frequency of mea  (MHz)  1 000	may be sho Interference m distant 30 87 Classification Classificat	/m ass B 54	

Measurement uncertainty	
Expended uncertainty U	4.16 dB, (30 ~ 1 000) MHz
(95 %, Confidence level, $k = 2$ )	3.74 dB, (1 ~ 6) GHz



Measurement Instrument											
Description	Model	Manufacturer	Identifier	Cal. Date	Cal. Due						
MEASUREMENT SOFTWARE	EMI-R VER. 2.00.0177	TSJ	N/A	N/A	N/A						
EMI TEST RECEIVER	ESU	ROHDE&SCHWARZ	100538	2018.01.29	2019.01.29						
BILOG ANTENNA	VULB 9160	SCHWARZBECK	3359	2017.09.14	2019.09.14						
LOW NOISE PRE AMPLIFIER	MLA-100K01-B01-26	TSJ	1252741	2018.02.19	2019.02.19						
HORN ANTENNA	3117	ETS-LINDGREN	00152093	2018.03.26	2020.03.26						
HORN ANTENNA WITH PREAMPLIFIER	EM-6969/ MLA-0618-B03-34	ELECTRO-METRICS/ TSJ	156/ 1785642	2017.02.10	2019.02.10						
PREAMPLIFIER	8449B	AGILENT TECHNOLOGIES	3008A01590	2018.02.20	2019.02.20						
HORN ANTENNA WITH PREAMPLIFIER	3116C / JS44-18004000-35-8P	ETS-LINDGREN / L3 NARDA-MITEQ	00213177 / 2046884	2017.12.05	2019.12.05						
(NOTE : THE MEASUREM	IENT ANTENNAS WERE	CALIBRATED IN ACCO	RDANCE TO THE F	REQUIREMENTS C	OF C63.5-2017.)						



Radiated disturbance at (30 ~ 1000) MHz _Measurement data							
Test configuration mode	Test configuration mode 1 EUT Operation mode 1						
Test voltage (V)	120	Test Frequency (Hz)	60				

Date 2018-08-20

 Order No.
 DTNC1808-06316

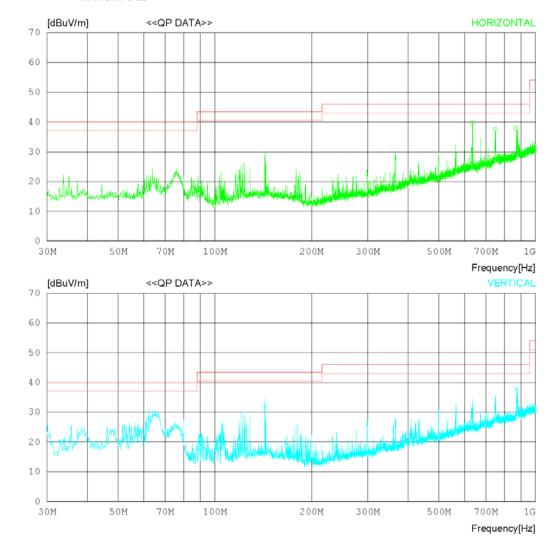
 Power Supply
 120 VAC 60 Hz

 Temp/Humi
 22 'C 53 %.R.H.

 Test Condition
 PC Link

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) MARGIN: 3 dB





Date 2018-08-20

DTNC1808-06316 120 VAC 60 Hz 22 'C 53 %.R.H. PC Link Order No. Power Supply Temp/Humi Test Condition

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) MARGIN: 3 dB

No	. FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	QP [dBuV]	FACTOR [dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	] [dB]	[cm]	[DEG]
 	Horizont	tal								
2	635.224 749.417 869.358	34.10 29.70 28.90	26.40 28.19 29.30	4.43 4.90 5.18	25.24 25.35 25.57	39.69 37.44 37.81	46.00 46.00 46.00	6.31 8.56 8.19	151 100 145	33 312 348
 	Vertical	1								
-	62.331 143.444 870.207	34.60 36.50 28.90	17.37 19.34 29.30	1.25 1.93 5.19	25.52 25.58 25.57	27.70 32.19 37.82	40.00 43.50 46.00	12.30 11.31 8.18	100 100 100	247 277 341



Radiated disturbance at (1 ~ 6) GHz _Peak measurement data							
Test configuration mode	Test configuration mode 1 EUT Operation mode 1						
Test voltage (V)	120	Test Frequency (Hz)	60				

Date 2018-08-20

 Order No.
 DTNC1808-06316

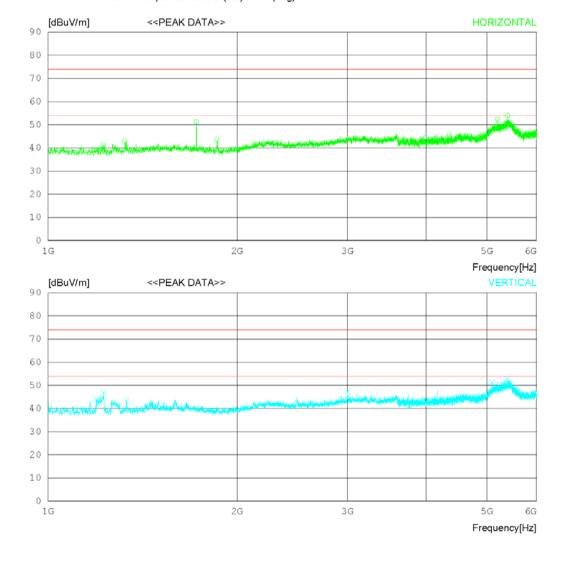
 Power Supply
 120 VAC 60 Hz

 Temp/Humi
 22 'C 53 %.R.H.

 Test Condition
 PC Link

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Peak) FCC Part15 Subpart.B Class B (3m) - 18G(Avg)





Date 2018-08-20

Order No. DTNC1808-06316
Power Supply 120 VAC 60 Hz
Temp/Humi 22 'C 53 %.R.H.
Test Condition PC Link

Memo

LIMIT : FCC Part15 Subpart B Class B (3m) - 18G (Peak) FCC Part15 Subpart B Class B (3m) - 18G (Avg)

No	. FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	PEAK [dBuV]	FACTOR [dB]	(dB]	[dB]	[dBuV/m]	[dBuV/m	n] [dB]	[cm]	[DEG]
	Horizont	:al	-							
1 2 3 4 5	1324.37 1722.50 1858.12 5194.37	5 45.70 2 5 46.70 2 0 54.10 2 5 46.60 2 5 42.70 3 5 42.40 3	4.57 5.13 4.84 4.47	3.78 3.91 4.37 4.48 7.57 7.60	32.19 32.24 32.40 32.46 32.36 32.50	41.25 42.94 51.20 43.46 52.38 53.96	74.0 74.0 74.0 74.0 74.0 74.0	32.75 31.06 22.8 30.54 21.62 20.04	100 100 210 100 100 400	215 358 235 154 179
	Vertical	L	-							
7 8 9 10 11 12	1226.25 1333.12 3000.00 5092.50	0 48.50 2 0 51.20 2 5 47.10 2 0 45.00 2 0 42.60 3 5 41.20 3	3.98 4.60 9.00 3.76	3.75 3.78 3.91 5.84 7.34 7.60	32.18 32.20 32.24 32.58 32.29 32.50	43.84 46.76 43.37 47.26 51.41 52.74	74.0 74.0 74.0 74.0 74.0	30.16 27.24 30.63 26.74 22.59 21.26	200 100 100 100 100 100	1 1 65 1 313 1

Radiated disturbance at (1 ~ 6) GHz _Average measurement data								
Test configuration mode 1 EUT Operation mode 1								
Test voltage (V)	120	Test Frequency (Hz)	60					

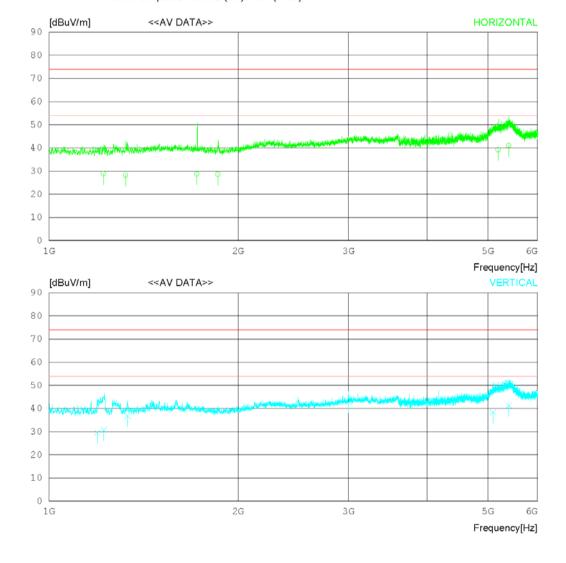
## **RADIATED EMISSION**

Date 2018-08-20

Order No. Power Supply Temp/Humi Test Condition DTNC1808-06316 120 VAC 60 Hz 22 'C 53 %.R.H.

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg) FCC Part15 Subpart.B Class B (3m) - 18G(Peak)





Date 2018-08-20

Order No. Power Supply Temp/Humi Test Condition DTNC1808-06316 120 VAC 60 Hz 22 'C 53 %.R.H.

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg) FCC Part15 Subpart.B Class B (3m) - 18G(Peak)

No	o. FREQ	READING CAV	ANT FACTOR	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m	] [dB]	[cm]	[DEG]
	- Horizont	al								
1 2 3 4 5 6	1219.945 1322.866 1719.888 1858.170 5190.558 5395.078	31.90 31.70 31.80 29.60	23.94 24.57 25.14 24.84 34.44 36.44	3.78 3.90 4.37 4.48 7.56 7.60	32.19 32.24 32.40 32.46 32.36 32.50	28.83 28.13 28.81 28.66 39.24 41.04	54.00 54.00 54.00 54.00 54.00 54.00	25.17 25.87 25.19 25.34 14.76 12.96	100 100 210 100 100 400	209 244 233 92 154 144
	- Vertical	L								
7 8 9 10 11	1194.001 1221.353 1333.333 2999.988 5093.397	35.20 40.60 40.50 29.60	23.77 23.95 24.60 29.00 33.77	3.75 3.78 3.91 5.84 7.34	32.18 32.19 32.24 32.58 32.29	29.54 30.74 36.87 42.76 38.42	54.00 54.00 54.00 54.00	24.46 23.26 17.13 11.24 15.58	200 100 100 100	270 221 171 180 320
12	5399.290	29.70	36.49	7.60	32.51	41.28	54.00	12.72	100	21

Radiated disturbance at (6 ~ 18) GHz _Peak measurement data								
Test configuration mode 1 EUT Operation mode 1								
Test voltage (V)	120	Test Frequency (Hz)	60					

## **RADIATED EMISSION**

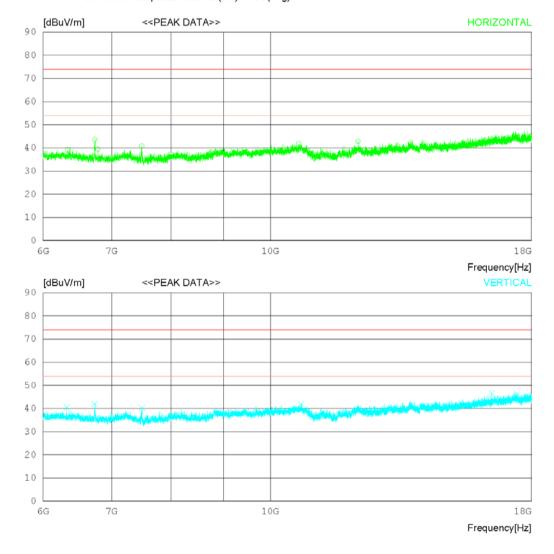
Date 2018-08-20

Order No. Power Supply Temp/Humi Test Condition

DTNC1808-06316 120 VAC 60 Hz 22 'C 53 %.R.H.

Model Name

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Peak) FCC Part15 Subpart.B Class B (3m) - 18G(Avg)



<sup>\*</sup> The measurement is performed above 18 GHz up to 30 GHz and not found emissions above 18 GHz.



Date 2018-08-20

Order No. Power Supply Temp/Humi Test Condition DTNC1808-06316 120 VAC 60 Hz 22 'C 53 %.R.H.

#### Model Name

LIMIT : FCC Part15 Subpart B Class B (3m) - 18G (Peak) FCC Part15 Subpart B Class B (3m) - 18G (Avg)

No.	. FREQ	READING PEAK	ANT FACTO	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/n	n] [dB]	[cm]	[DEG]
	Horizon	tal								
1 2 3 4 5	6743.25 6786.00 7491.75 10665.7	00 39.20 3 50 43.02 3 00 38.84 3 50 39.89 3 75 35.68 3 00 36.44 3	1.40 1.39 1.37 2.52	7.54 7.88 7.92 8.36 11.40 11.45	38.91 38.77 38.75 38.79 37.72 38.43	39.25 43.53 39.40 40.83 41.88 42.79	74.0 74.0 74.0 74.0 74.0 74.0	34.75 30.47 34.6 33.17 32.12 31.21	100 130 100 330 100 195	72 171 358 358 358 358 129
	Vertica	1								
7 8 9 10 11	6741.75 7493.25 10725.7	60 40.35 3 60 41.42 3 60 39.29 3 75 35.64 3 60 31.88 3	1.40 1.37 2.54	7.52 7.88 8.37 11.46 14.09	38.90 38.77 38.80 37.74 36.36	40.39 41.93 40.23 41.90 46.46	74.0 74.0 74.0 74.0 74.0	33.61 32.07 33.77 32.1 27.54	100 155 100 100	122 358 286 358 121
12	17441.2	25030.853	7.95	14.25	36.77	46.28	74.0	27.72	190	1

Radiated disturbance at (6 ~ 18) GHz _Average measurement data								
Test configuration mode 1 EUT Operation mode 1								
Test voltage (V)	120	Test Frequency (Hz)	60					

## **RADIATED EMISSION**

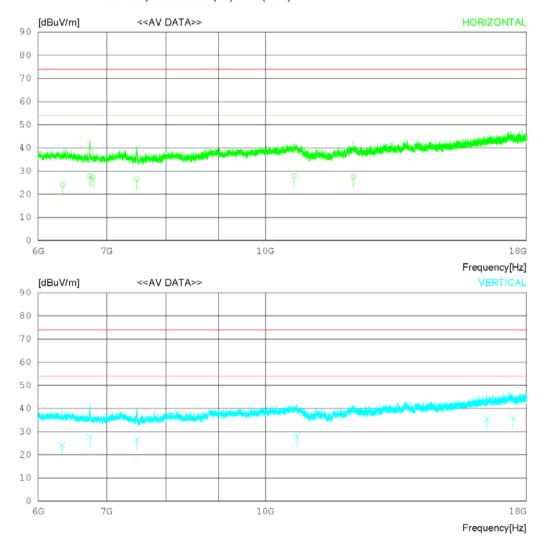
Date 2018-08-20

Order No. Power Supply Temp/Humi Test Condition

DTNC1808-06316 120 VAC 60 Hz 22 'C 53 %.R.H.

Model Name

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg) FCC Part15 Subpart.B Class B (3m) - 18G(Peak)



<sup>\*</sup> The measurement is performed above 18 GHz up to 30 GHz and not found emissions above 18 GHz.





Date 2018-08-20

Order No. Power Supply Temp/Humi Test Condition DTNC1808-06316 120 VAC 60 Hz 22 'C 53 %.R.H.

#### Model Name

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg) FCC Part15 Subpart.B Class B (3m) - 18G(Peak)

No	. FREQ	READING		LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	CAV [dBuV]	FACTOF [dB]	( [dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
	· Horizont	al								
1	6344.510	23 90	31.42	7.54	38.91	23.95	54.00	30.05	100	112
2	6741.850		31.40	7.88	38.77	27.81	54.00	26.19	130	211
_										
3	6787.540		31.39	7.92	38.75	27.36	54.00	26.64	100	349
4	7492.220		31.37	8.36	38.79	26.64	54.00	27.36	330	330
5	10667.99		32.52	11.40	37.72	27.90	54.00	26.10	100	339
6	12180.94	021.10	33.33	11.45	38.43	27.45	54.00	26.55	195	139
	· Vertical	L								
7	6331.220	24.10	31.42	7.54	38.91	24.15	54.00	29.85	100	221
8	6741.950	27.20	31.40	7.88	38.77	27.71	54.00	26.29	155	271
9	7492.661		31.37	8.36	38.80	26.73	54.00	27.27	100	184
10	10737.75		32.55	11.47	37.75	28.07	54.00	25.93	100	334
11	16461.80		36.85	14.10	36.36	35.49	54.00	18.51	100	138
12	17450.81	020.60	37.96	14.25	36.79	36.02	54.00	17.98	190	80

#### Calculation

N : Neutral phase, L1 : Live phase

C.FACTOR(dB): Pulse Limiter(dB) + Cable loss(dB) + Insertion loss of LISN(dB)

Result(dBµV) : Reading Value(dBµV) + C.FACTOR(dB)

Margin(dB) : Limit(dBμV) - Result(dBμV)

# 8. Revision History

Date	Description	Revised By	Reviewed By
Sep. 27. 2018	Initial report	YongKi Kim	HyungJun Kim

<sup>-</sup>End of test report-