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. : DREFCC1904-0137
2. Client / Applicant
   - Name : LG Electronics USA, Inc.
   - Address : 1000 Sylvan Avenue, Englewood Cliffs NJ 07632 United States
3. Use of Report : Grant of Certification
4. Product Name / Model Name / FCC ID : Mobile Phone / KF1919 / ZNFKF1919
5. Test Standard : ANSI C 63.4 : 2014
   FCC Part 15 Subpart B
   (Class B personal computers and peripherals)
6. Date of Test : Apr. 12. 2019 ~ Apr. 19. 2019
7. Testing Environment : Temperature (20 ~ 22) °C , Humidity (42 ~ 44) % R.H.
8. Test Result : Refer to the attached Test Result

Affirmation	Tested by Name : JooHo Kim (Signature)	Reviewed by Name : HyungJun Kim (Signature)

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

Apr. 26. 2019

DT&C Co., Ltd.

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

CONTENTS

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;

Certificate	Nation	Agency	Code	Remark
Accreditation	Korea	KOLAS	393	ISO/IEC 17025
	South Africa	SABS	0006	ISO/IEC 17025
	Ghana	NCA	NCA agreement 23rd,Oct,2018	-
Site Filing	USA	FCC	KR0034 101842 678747, 596748, 804488, 165783	Accredited 2.948 Listed
	Canada	IC	5740A-3 5740A-4	Registered
	Japan	VCCI	C-1427 R-3385, R-4076, R-4180, R-4496, T-1442, G-10338, G-754, G-10815, G-20051	Registered
Certification	Korea	KC	KR0034	Designation
	Germany	TUV	CARAT 089112 0006 Rev.00	ISO/IEC 17025
	Russia	RMRS	17.10189.296	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 Avenue, Englewood Cliffs NJ 07632 United States
Manufacturer	LG Electronics USA, Inc. 1000 Sylvan Avenue, Englewood Cliffs NJ 07632 United States
Factory	LG Electronics USA, Inc. 1000 Sylvan Avenue, Englewood Cliffs NJ 07632 United States
Product Name	Mobile Phone
Model Name	KF1919
Add Model Name	None
FCC ID	ZNFKF1919
Rated Power	DC 3.85 V
Remarks	None

Accessory	Ear-Mic	**No.**	**Manufacturer**	**P/N**
		1	CRESYN	EAB64468444
	USB data Cable	**No.**	**Manufacturer**	**P/N**
		1	NINGBO	EAD62377927

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	Microsoft	1406	20076223340
AE	MOUSE	LG	SM-9023	58Q02801
AE	LCD MONITOR	DELL	UP2414Qt	CN-OJJRX2-74261-67B-4P4U-A00
AE	PC	DELL	DCNE	NONE
AE	SSD 3.0	SAMSUNG	MU-PT250B	S2WKNAAH32059X
AE	PRINTER	Bixolon	SRP-770	NONE
AE	HEADSET	SAMSUNG	SHS-150V/M	NONE

*Abbreviations:
AE - Auxiliary/Associated Equipment, or
SIM - Simulator

4.5 EUT In/Output Port

Name	Type*	Cable Max. >3 m	Cable Shielded	Cable 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	LCD MONITOR
DSUB OUT	I/O	1.8	Shield	Plastic	
POWER IN	AC	1.8	Non-Shield	Plastic	PC
DSUB IN	I/O	1.8	Shield	Plastic	
PARALLEL IN	I/O	2.0	Shield	Plastic	
SERIAL IN	I/O	1.9	Shield	Plastic	
USB	I/O	1.7	Shield	Plastic	
USB	I/O	1.7	Shield	Plastic	
USB	I/O	1.0	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
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	1.6	Non-Shield	Plastic	EUT
USB	I/O	1.0	Non-Shield	Plastic	

*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	Single	None

5. Test Summary

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

-Conducted Disturbance

Frequency [MHz]	Phase	Result [dBµV]	Detector	Limit [dBµV]	Margin [dB]
0.19942	L1	48.10	Cispr - Average	53.63	5.53

-Radiated Disturbance

Frequency [MHz]	Pol.	Result [dBµV/m]	Detector	Limit [dBµV/m]	Margin [dB]
32.669	V	36.73	Quasi - Peak	40.00	3.27

6. Test Environment

Test Items	Test date (YYYY-MM-DD)	Temp. (℃)	Humidity (% R.H.)	Pressure (kPa)
Conducted Disturbance	2019-04-19	22	44	-
Radiated Disturbance	2019-04-12 2019-04-15	20 22	42 44	-

7. Test Results : Emission

7.1 Conducted Disturbance

ANSI C63.4	Mains terminal disturbance voltage	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.		**Comply**

Fully configured sample scanned over the following frequency range	**Frequency range on each side of line**	**Measurement Point**
	150 kHz to 30 MHz	**Mains**
EUT mode (Refer to clauses 4)	**Test configuration mode**	**1**
	EUT Operation mode	**1**

Limits – Class A

Frequency (MHz)	Limit dBµV	
	Quasi-Peak	Average
0.15 to 0.50	79	66
0.50 to 30	73	60

Limits – Class B

Frequency (MHz)	Limit dBµV	
	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 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	2018.10.29	2019.10.29
LISN	ENV216	ROHDE & SCHWARZ	101979	2018.12.06	2019.12.06
LISN	LISN1600	TTI	197204	2018.06.07	2019.06.07
TRANSIENT LIMITER	TL-B0930A	EMCIS	11002	2018.09.05	2019.09.05
50 OHM TERMINATOR	CT-01	TME	N/A	2018.12.19	2019.12.19

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

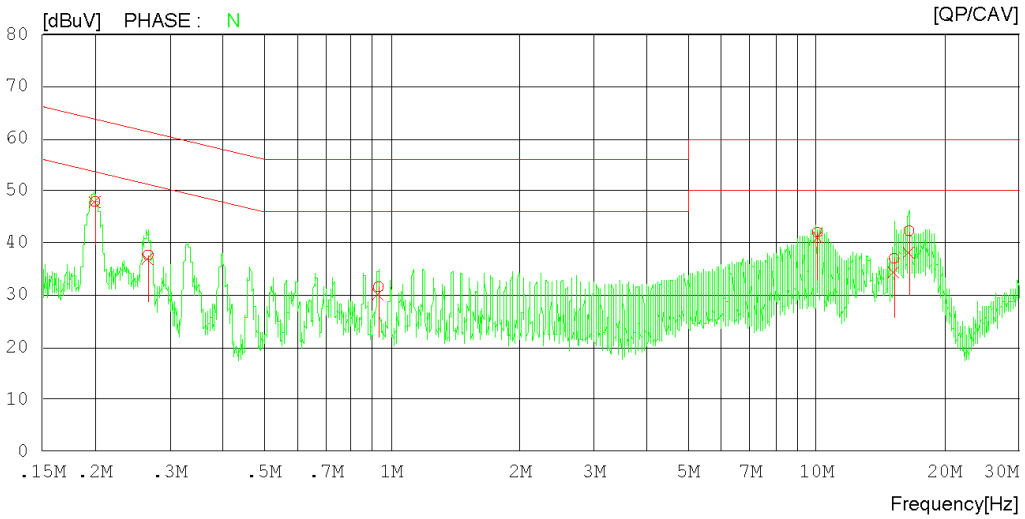
Results of Conducted Emission

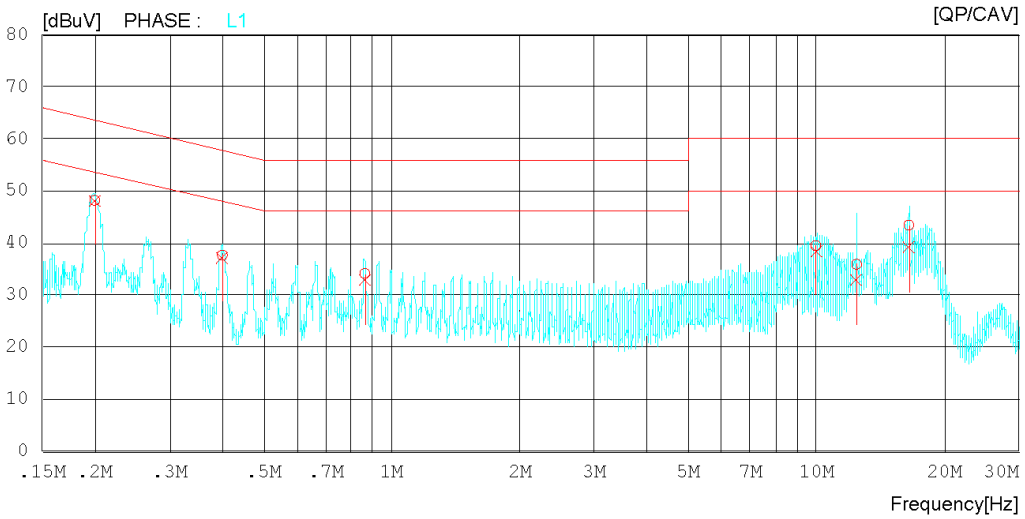
DT&C
Date 2019-04-19

Order No. DTNC1903-02380
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 44 % R.H.
Test Condition PC LINK

Memo

LIMIT : CISPR32_B QP
CISPR32_B AV





Results of Conducted Emission

DT&C
Date 2019-04-19

Order No. DTNC1903-02380
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 44 % R.H.
Test Condition PC LINK

Memo

LIMIT : CISPR32_B QP
CISPR32_B AV

NO	FREQ	READING QP	READING CAV	C.FACTOR	RESULT QP	RESULT CAV	LIMIT QP	LIMIT CAV	MARGIN QP	MARGIN CAV	PHASE
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	
1	0.19982	27.93	27.90	20.03	47.96	47.93	63.62	53.62	15.66	5.69	N
2	0.26645	17.90	17.27	19.79	37.69	37.06	61.23	51.23	23.54	14.17	N
3	0.93050	11.65	10.38	19.92	31.57	30.30	56.00	46.00	24.43	15.70	N
4	10.06631	21.38	20.54	20.65	42.03	41.19	60.00	50.00	17.97	8.81	N
5	15.26589	15.99	13.22	21.07	37.06	34.29	60.00	50.00	22.94	15.71	N
6	16.53547	21.30	17.18	21.03	42.33	38.21	60.00	50.00	17.67	11.79	N
7	0.19942	28.11	28.07	20.03	48.14	48.10	63.63	53.63	15.49	5.53	L1
8	0.39893	17.61	17.20	20.03	37.64	37.23	57.88	47.88	20.24	10.65	L1
9	0.86450	14.06	12.76	20.02	34.08	32.78	56.00	46.00	21.92	13.22	L1
10	9.97890	18.80	17.75	20.65	39.45	38.40	60.00	50.00	20.55	11.60	L1
11	12.44490	14.99	11.90	20.86	35.85	32.76	60.00	50.00	24.15	17.24	L1
12	16.50797	22.37	18.15	21.03	43.40	39.18	60.00	50.00	16.60	10.82	L1

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)

7.2 Radiated Disturbance

ANSI C63.4	Radiated disturbance 30 MHz – 40 GHz	Result
Method: Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 10 or 3 meter below 1GHz and 3 meter above 1GHz. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in horizontal and vertical polarities. Final measurements were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4 m. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable. For final measurement below 1 GHz frequency range, Quasi-Peak detector with (RBW = 120 kHz Bandwidth) was used. For final measurement above 1 GHz frequency range, Peak detector with (RBW = 1 MHz Bandwidth) and CISPR Average detector with (RBW = 1 MHz Bandwidth) were used.		**Comply**

EUT mode (Refer to clauses 4)	**Test configuration mode**	**1**
	EUT Operation mode	**1**

Radiated Disturbance below 1 000 MHz

Frequency range (MHz)	**Quasi-peak limit dBµV/m**	
	Class A (10 m distance)	**Class B (3 m distance)**
30 to 88	39.1	40
88 to 216	43.5	43.5
216 to 960	46.4	46
960 to 1 000	49.5	54

According to 15.109(g), as an alternative to the radiated emission limit shown above, digital devices may be shown to comply with the standards contained in Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22 shown.

Frequency range (MHz)	**Quasi-peak limit dBµV/m**	
	Class A (10 m distance)	**Class B (10 m distance)**
30 to 230	40	30
230 to 1 000	47	37

Radiated Disturbance for above 1 000 MHz at a measurement distance of 3 m

Frequency range (GHz)	**Peak limit dBµV/m**		**Average limit dBµV/m**	
	Class A	**Class B**	**Class A**	**Class B**
1 to 40	80	74	60	54

The test frequency range of Radiated Disturbance measurements are listed below.

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	**Upper frequency of measurement range (MHz)**
Below 108	1 000
108 – 500	2 000
500 – 1 000	5 000
Above 1 000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

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	100469	2018.06.28	2019.06.28
TRILOG BROADBAND TEST-ANTENNA WITH 6DB ATT	VULB9160	SCHWARZBECK	9160-3339	2018.10.22	2020.10.22
	8491B	HP	18403	2018.10.22	2020.10.22
LOW NOISE PRE AMPLIFIER	MLA-100K01-B01-26	TSJ	1252741	2019.02.18	2020.02.18
PREAMPLIFIER	8449B	H.P	3008A00887	2018.08.31	2019.08.31
HORN ANTENNA	3117	ETS-LINDGREN	00152093	2018.03.26	2020.03.26
HORN ANTENNA WITH PREAMPLIFIER	EM-6969	ELECTRO-METRICS	156	2019.02.13	2021.02.13
	MLA-0618-B03-34	TSJ	1785642	2019.01.02	2020.01.02
HORN ANTENNA WITH PREAMPLIFIER	3116C	ETS-LINDGREN	00213177	2017.12.05	2019.12.05
	JS44-18004000-35-8P	L3 NARDA-MITEQ	2046884	2018.11.09	2019.11.09
(NOTE : THE MEASUREMENT ANTENNAS WERE CALIBRATED IN ACCORDANCE TO THE REQUIREMENTS OF C63.5-2017.)					

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

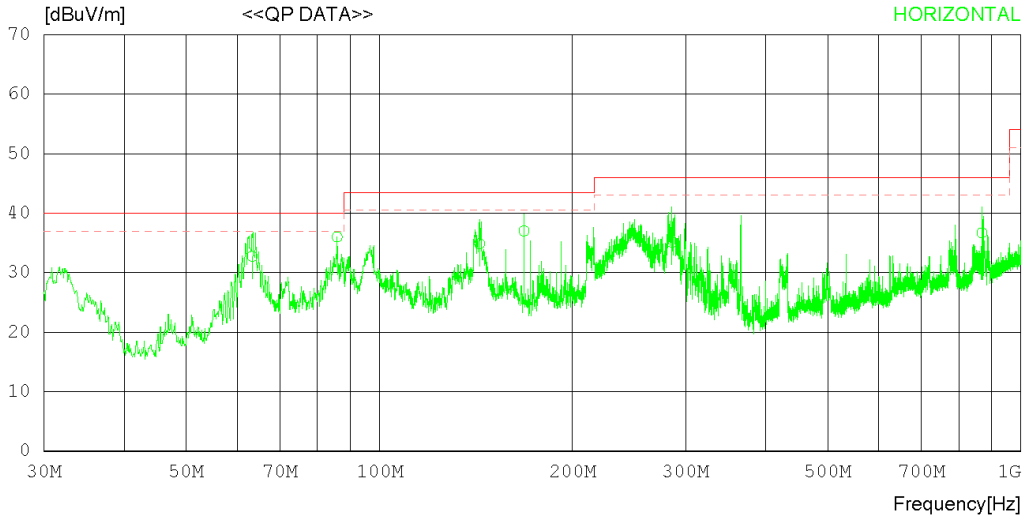
RADIATED EMISSION

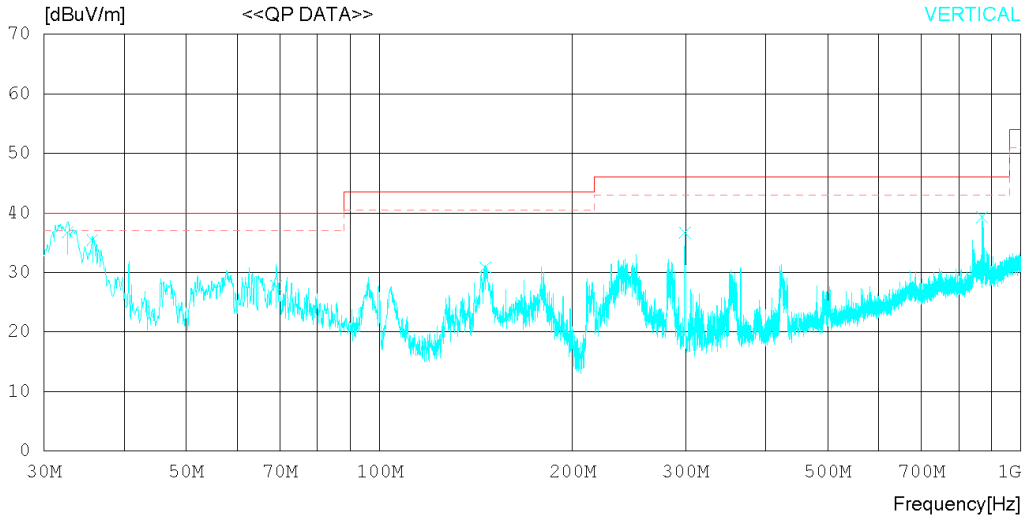
Date 2019-04-12

Order No. DTNC1903-02380
Power Supply 120 V 60 Hz
Temp/Humi 20 'C 42 % R.H.
Test Condition PC LINK

Memo

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





RADIATED EMISSION

Date 2019-04-12

Order No. DTNC1903-02380
Power Supply 120 V 60 Hz
Temp/Humi 20 'C 42 % R.H.
Test Condition PC LINK

Memo

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

No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	63.318	38.50	17.77	2.24	25.77	32.74	40.00	7.26	300	95
2	85.907	45.70	13.51	2.49	25.73	35.97	40.00	4.03	200	67
3	143.175	38.90	18.76	2.87	25.67	34.86	43.50	8.64	101	244
4	168.005	41.30	18.26	3.08	25.64	37.00	43.50	6.50	200	1
5	285.635	37.70	19.37	3.83	25.81	35.09	46.00	10.91	101	275
6	869.641	27.00	29.20	6.27	25.78	36.69	46.00	9.31	300	300
----- Vertical ------										
7	32.669	45.20	15.47	1.88	25.82	36.73	40.00	3.27	100	45
8	35.693	43.40	15.94	1.92	25.81	35.45	40.00	4.55	114	156
9	69.029	34.50	16.69	2.32	25.76	27.75	40.00	12.25	100	1
10	146.352	34.80	18.83	2.91	25.67	30.87	43.50	12.63	137	180
11	299.798	39.10	19.50	3.94	25.84	36.70	46.00	9.30	106	3
12	869.978	29.60	29.20	6.27	25.78	39.29	46.00	6.71	125	355

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

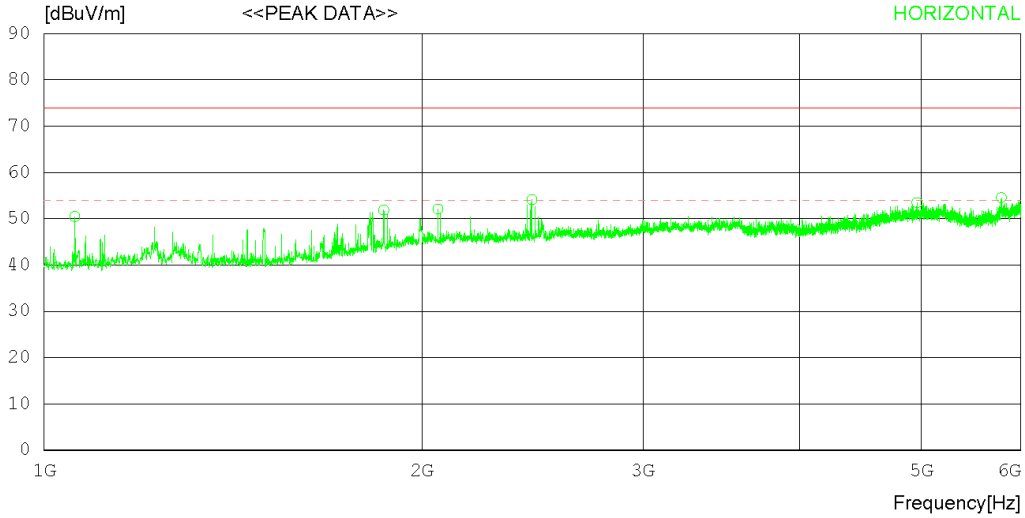
RADIATED EMISSION

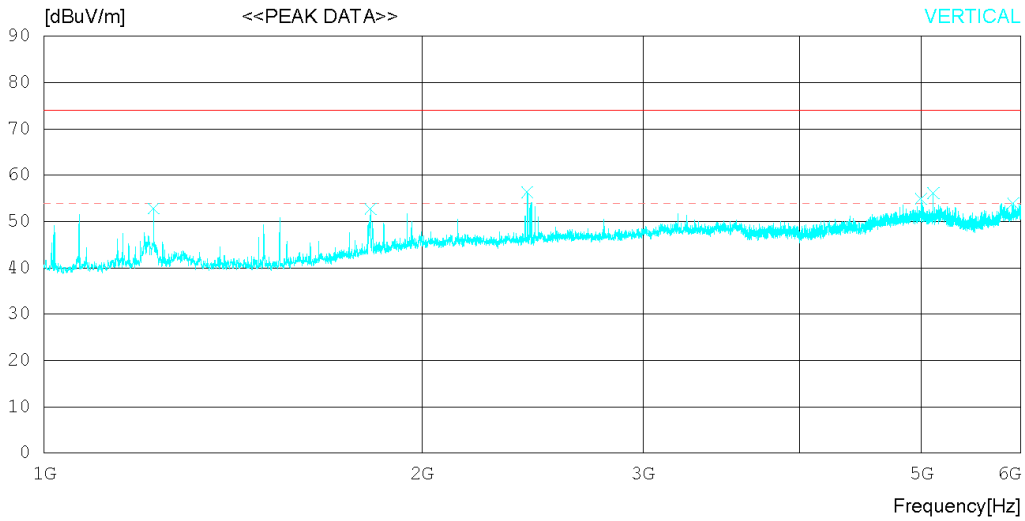
Date 2019-04-12

Order No. DTNC1903-02380
Power Supply 120 V 60 Hz
Temp/Humi 20 'C 42 % R.H.
Test Condition PC LINK

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Peak)
FCC Part15 Subpart.B Class B (3m) - GHz(Average)





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Order No. DTNC1903-02380
Power Supply 120 V 60 Hz
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Test Condition PC LINK

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Peak)
FCC Part15 Subpart.B Class B (3m) - GHz(Average)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1058.125	54.40	27.50	4.36	35.79	50.47	74.0	23.53	312	358
2	1864.375	50.30	30.74	5.80	34.96	51.88	74.0	22.12	242	9
3	2060.000	49.00	31.70	6.21	34.82	52.09	74.0	21.91	300	358
4	2446.875	50.20	32.08	6.69	34.83	54.14	74.0	19.86	389	284
5	4957.500	43.20	34.19	10.69	34.63	53.45	74.0	20.55	400	0
6	5788.125	43.30	34.70	11.24	34.73	54.51	74.0	19.49	400	0
----- Vertical ------										
7	1222.500	54.90	28.76	4.77	35.62	52.81	74.0	21.19	100	74
8	1820.000	51.60	30.48	5.68	35.01	52.75	74.0	21.25	180	358
9	2426.875	52.60	31.96	6.67	34.83	56.40	74.0	17.6	199	358
10	4993.750	44.70	34.11	10.72	34.64	54.89	74.0	19.11	282	208
11	5109.375	46.00	34.12	10.70	34.65	56.17	74.0	17.83	142	119
12	5914.375	42.40	35.03	11.29	34.75	53.97	74.0	20.03	400	358

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**

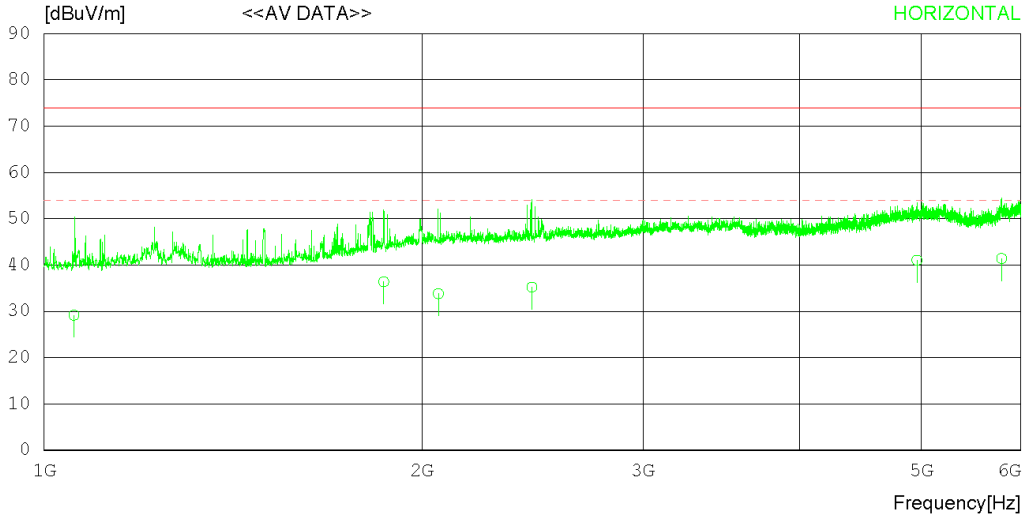
RADIATED EMISSION

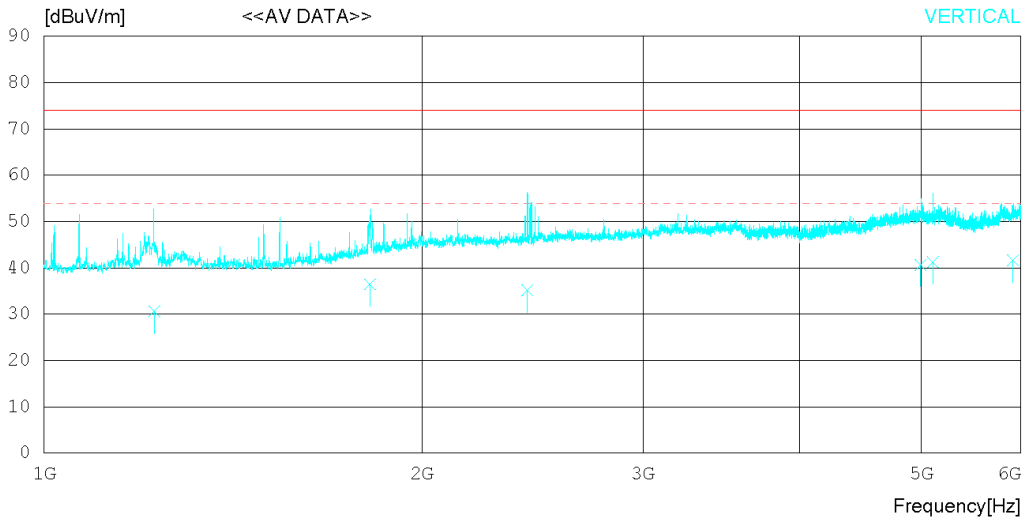
Date 2019-04-12

Order No. DTNC1903-02380
Power Supply 120 V 60 Hz
Temp/Humi 20 'C 42 % R.H.
Test Condition PC LINK

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Average)
FCC Part15 Subpart.B Class B (3m) - GHz(Peak)





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Date 2019-04-12

Order No. DTNC1903-02380
Power Supply 120 V 60 Hz
Temp/Humi 20 'C 42 % R.H.
Test Condition PC LINK

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Average)
FCC Part15 Subpart.B Class B (3m) - GHz(Peak)

No.	FREQ [MHz]	READING CAV [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1056.273	33.10	27.48	4.36	35.79	29.15	54.00	24.85	315	75
2	1864.666	34.80	30.75	5.80	34.96	36.39	54.00	17.61	236	2
3	2060.946	30.70	31.70	6.21	34.82	33.79	54.00	20.21	300	324
4	2447.068	31.30	32.08	6.69	34.83	35.24	54.00	18.76	381	50
5	4958.381	30.80	34.18	10.69	34.63	41.04	54.00	12.96	400	268
6	5789.636	30.20	34.70	11.24	34.73	41.41	54.00	12.59	398	223
----- Vertical ------										
7	1224.235	32.70	28.75	4.78	35.62	30.61	54.00	23.39	100	182
8	1817.778	35.30	30.47	5.68	35.01	36.44	54.00	17.56	176	352
9	2426.900	31.40	31.96	6.67	34.83	35.20	54.00	18.80	199	95
10	4991.751	30.50	34.12	10.71	34.64	40.69	54.00	13.31	275	212
11	5107.156	31.10	34.11	10.71	34.65	41.27	54.00	12.73	139	136
12	5913.550	30.10	35.03	11.29	34.75	41.67	54.00	12.33	400	340

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**

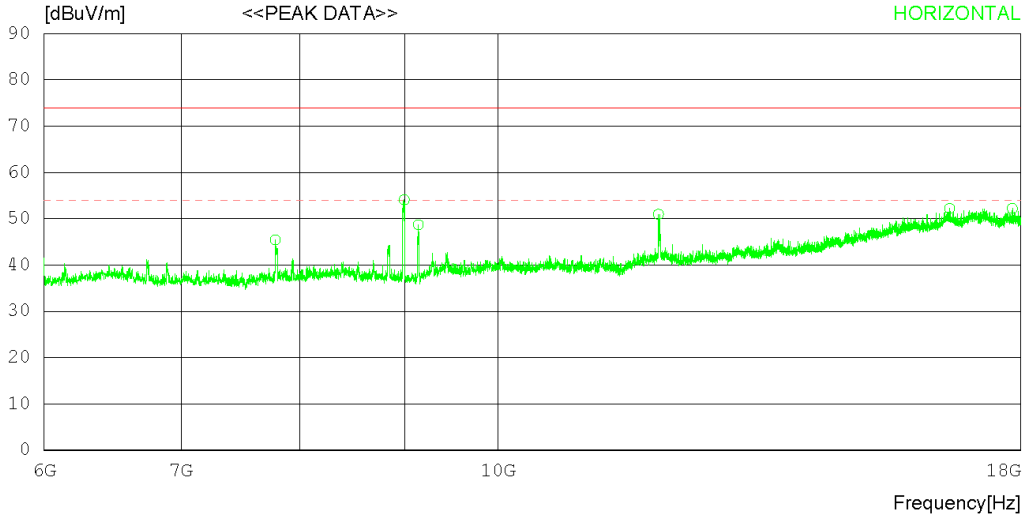
RADIATED EMISSION

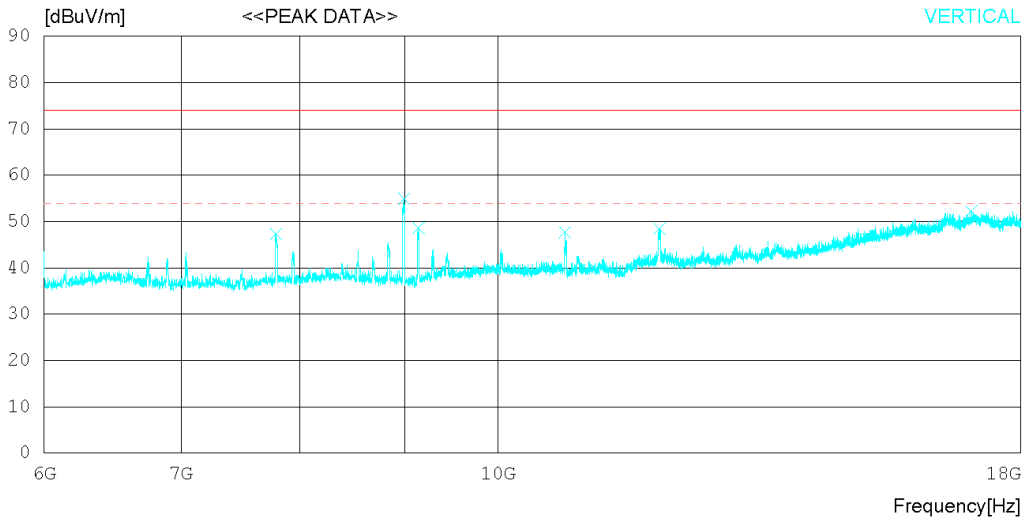
Date 2019-04-15

Order No. DTNC1903-02380
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 44 % R.H.
Test Condition PC LINK

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Peak)
FCC Part15 Subpart.B Class B (3m) - GHz(Average)





RADIATED EMISSION

Date 2019-04-15

Order No.	DTNC1903-02380
Power Supply	120 V 60 Hz
Temp/Humi	22 'C 44 % R.H.
Test Condition	PC LINK

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Peak)
FCC Part15 Subpart.B Class B (3m) - GHz(Average)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	7782.000	39.70	31.33	12.56	38.13	45.46	74.0	28.54	129	0
2	8997.000	47.50	32.10	13.40	38.92	54.08	74.0	19.92	200	93
3	9141.000	41.90	32.16	13.64	39.01	48.69	74.0	25.31	215	97
4	11973.000	39.60	33.43	15.62	37.71	50.94	74.0	23.06	231	122
5	16615.500	32.00	37.12	20.00	36.91	52.21	74.0	21.79	140	8
6	17827.500	32.40	38.19	19.75	38.13	52.21	74.0	21.79	108	116
----- Vertical ------										
7	7785.000	41.60	31.33	12.57	38.13	47.37	74.0	26.63	400	20
8	8995.500	48.40	32.10	13.40	38.92	54.98	74.0	19.02	278	358
9	9144.000	41.80	32.16	13.65	39.02	48.59	74.0	25.41	199	11
10	10777.500	38.70	32.44	14.64	38.11	47.67	74.0	26.33	216	351
11	11988.000	37.00	33.45	15.66	37.68	48.43	74.0	25.57	199	358
12	17023.500	31.90	37.57	20.09	37.28	52.28	74.0	21.72	199	54

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**

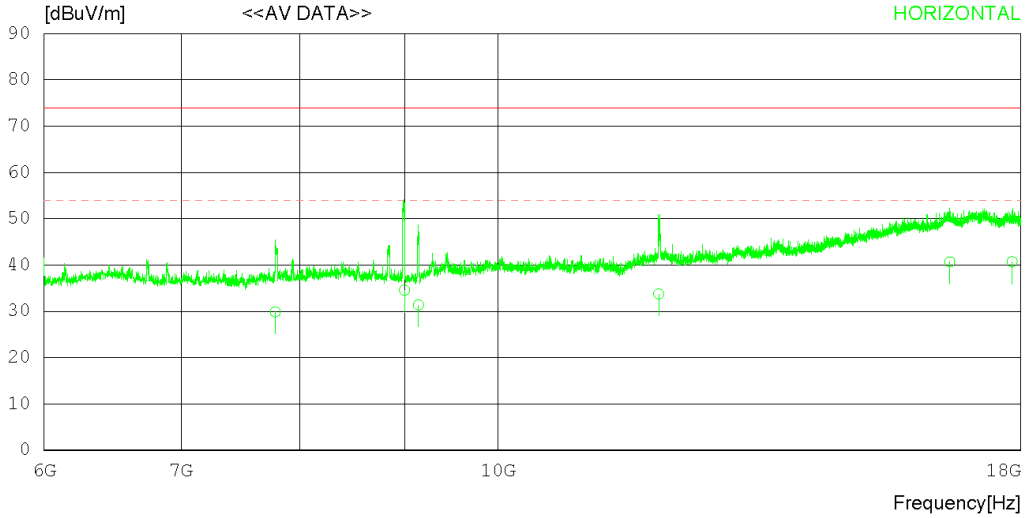
RADIATED EMISSION

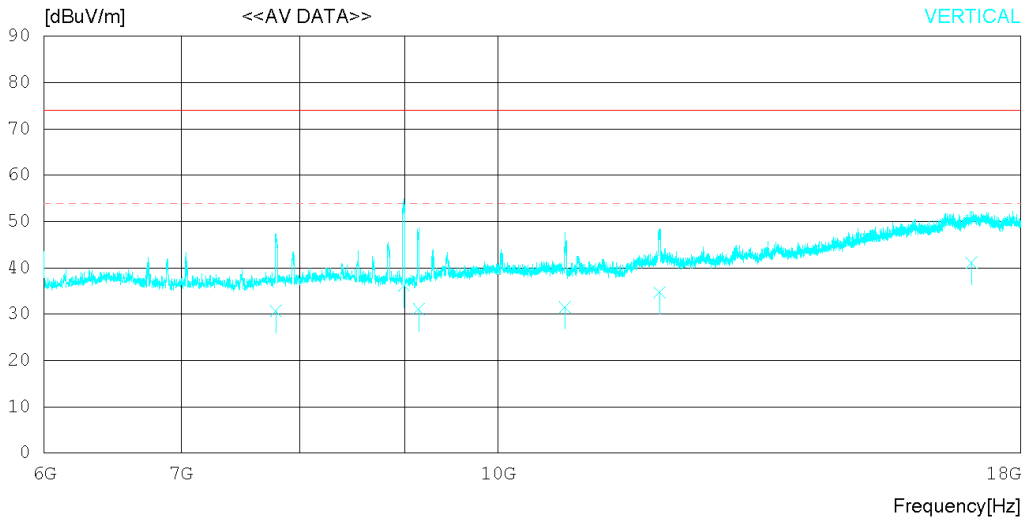
Date 2019-04-15

Order No. DTNC1903-02380
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 44 % R.H.
Test Condition PC LINK

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Average)
FCC Part15 Subpart.B Class B (3m) - GHz(Peak)





RADIATED EMISSION

Date 2019-04-15

Order No.	DTNC1903-02380
Power Supply	120 V 60 Hz
Temp/Humi	22 'C 44 % R.H.
Test Condition	PC LINK

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Average)
FCC Part15 Subpart.B Class B (3m) - GHz(Peak)

No.	FREQ [MHz]	READING CAV [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	7782.000	24.10	31.33	12.56	38.13	29.86	54.00	24.14	137	2
2	8998.638	28.00	32.10	13.40	38.93	34.57	54.00	19.43	200	84
3	9141.811	24.60	32.16	13.64	39.02	31.38	54.00	22.62	215	109
4	11974.650	22.40	33.43	15.62	37.70	33.75	54.00	20.25	227	142
5	16616.770	20.50	37.12	19.99	36.92	40.69	54.00	13.31	143	8
6	17825.600	20.90	38.19	19.75	38.13	40.71	54.00	13.29	110	113
----- Vertical ------										
7	7785.419	24.90	31.33	12.57	38.13	30.67	54.00	23.33	400	56
8	8996.086	29.60	32.10	13.40	38.92	36.18	54.00	17.82	290	312
9	9145.669	24.30	32.17	13.65	39.02	31.10	54.00	22.90	199	242
10	10779.240	22.60	32.44	14.64	38.11	31.57	54.00	22.43	214	349
11	11988.720	23.30	33.45	15.66	37.68	34.73	54.00	19.27	199	347
12	17023.700	20.70	37.57	20.08	37.28	41.07	54.00	12.93	185	110

Radiated disturbance at (18 ~ 40) GHz _Peak measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**1**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

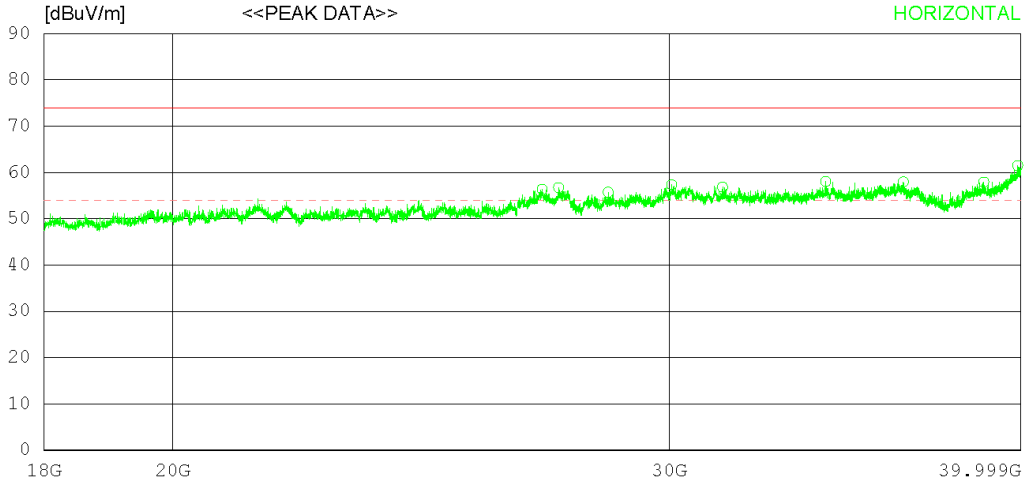
RADIATED EMISSION

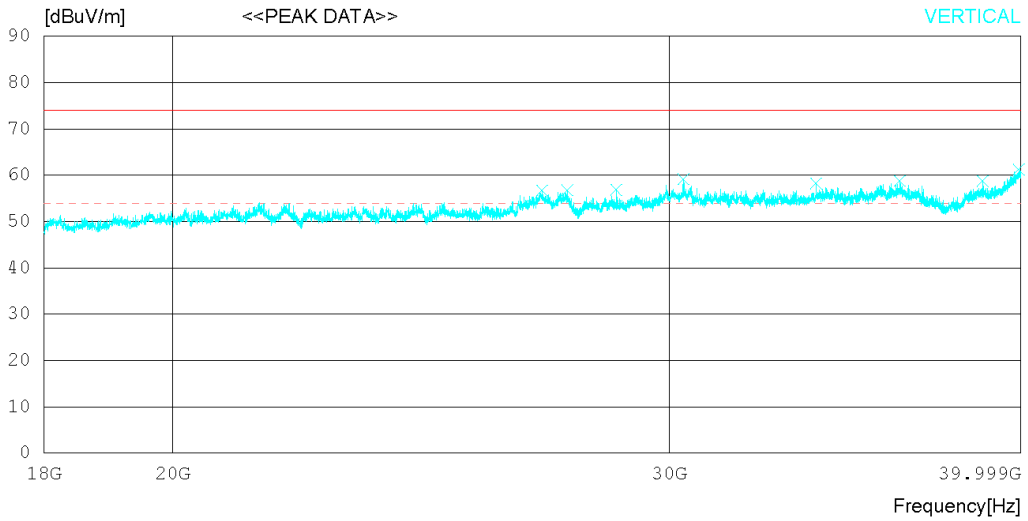
Date 2019-04-15

Order No. DTNC1903-02380
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 44 % R.H.
Test Condition PC LINK

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Peak)
FCC Part15 Subpart.B Class B (3m) - GHz(Average)





RADIATED EMISSION

Date 2019-04-15

Order No.	DTNC1903-02380
Power Supply	120 V 60 Hz
Temp/Humi	22 'C 44 % R.H.
Test Condition	PC LINK

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Peak)
FCC Part15 Subpart.B Class B (3m) - GHz(Average)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	27042.000	42.90	46.86	20.70	54.12	56.34	74.0	17.66	400	140
2	27410.500	42.80	46.83	21.14	54.05	56.72	74.0	17.28	331	142
3	28546.250	40.50	47.12	21.97	53.85	55.74	74.0	18.26	200	358
4	30069.750	41.10	48.10	21.72	53.60	57.32	74.0	16.68	320	0
5	31343.000	40.80	47.61	22.00	53.60	56.81	74.0	17.19	400	224
6	34104.000	41.20	48.18	23.06	54.41	58.03	74.0	15.97	300	0
7	36334.250	41.20	48.11	22.99	54.38	57.92	74.0	16.08	218	351
8	38801.000	40.30	47.80	23.09	53.28	57.91	74.0	16.09	400	358
9	39895.500	41.40	48.64	23.99	52.57	61.46	74.0	12.54	105	309
----- Vertical ------										
10	27044.750	43.30	46.86	20.71	54.12	56.75	74.0	17.25	199	0
11	27608.500	42.80	46.82	21.22	54.02	56.82	74.0	17.18	282	14
12	28736.000	41.50	47.24	21.93	53.82	56.85	74.0	17.15	306	265
13	30353.000	43.00	47.92	21.85	53.60	59.17	74.0	14.83	299	210
14	33837.250	41.40	48.16	23.01	54.33	58.24	74.0	15.76	187	0
15	36235.250	42.00	48.22	22.98	54.42	58.78	74.0	15.22	100	214
16	38765.250	41.20	47.76	23.11	53.30	58.77	74.0	15.23	199	0
17	39934.000	41.10	48.66	24.05	52.54	61.27	74.0	12.73	400	358

Radiated disturbance at (18 ~ 40) GHz _Average measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**1**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

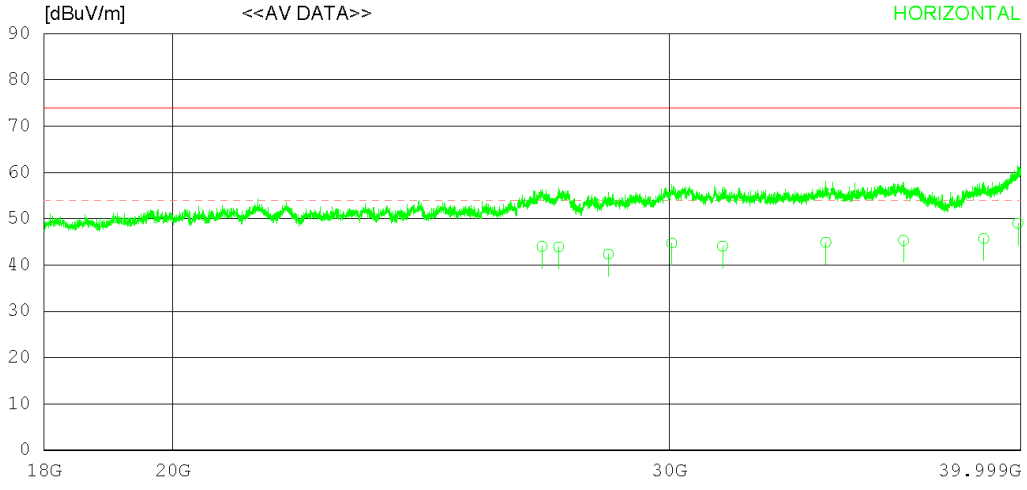
RADIATED EMISSION

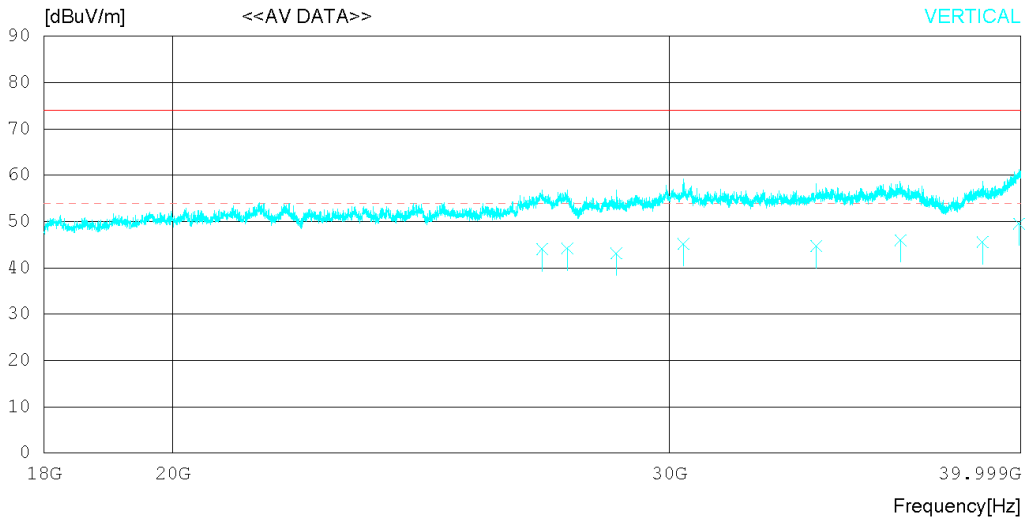
Date 2019-04-15

Order No. DTNC1903-02380
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 44 % R.H.
Test Condition PC LINK

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Average)
FCC Part15 Subpart.B Class B (3m) - GHz(Peak)





RADIATED EMISSION

Date 2019-04-15

Order No.	DTNC1903-02380
Power Supply	120 V 60 Hz
Temp/Humi	22 'C 44 % R.H.
Test Condition	PC LINK

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Average)
FCC Part15 Subpart.B Class B (3m) - GHz(Peak)

No.	FREQ [MHz]	READING CAV [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	27039.96030.60	46.86	20.70	54.12	44.04	54.00	9.96	400	171	
2	27409.62030.00	46.83	21.14	54.05	43.92	54.00	10.08	329	260	
3	28547.71027.10	47.12	21.97	53.85	42.34	54.00	11.66	200	114	
4	30070.20028.50	48.10	21.72	53.60	44.72	54.00	9.28	320	36	
5	31344.30028.10	47.61	22.00	53.60	44.11	54.00	9.89	400	95	
6	34105.53028.10	48.18	23.05	54.41	44.92	54.00	9.08	300	2	
7	36336.11028.60	48.11	22.99	54.38	45.32	54.00	8.68	219	96	
8	38803.05028.10	47.81	23.09	53.28	45.72	54.00	8.28	394	352	
9	39897.09029.00	48.64	23.99	52.57	49.06	54.00	4.94	107	271	
----- Vertical ------										
10	27044.57030.60	46.86	20.71	54.12	44.05	54.00	9.95	199	21	
11	27609.72030.20	46.82	21.22	54.02	44.22	54.00	9.78	270	167	
12	28737.26027.80	47.24	21.93	53.82	43.15	54.00	10.85	311	153	
13	30355.47029.00	47.92	21.85	53.60	45.17	54.00	8.83	299	164	
14	33838.45027.90	48.15	23.01	54.34	44.72	54.00	9.28	183	170	
15	36255.64029.20	48.20	22.99	54.41	45.98	54.00	8.02	100	283	
16	38763.36028.00	47.76	23.11	53.30	45.57	54.00	8.43	190	326	
17	39936.35029.40	48.67	24.05	52.54	49.58	54.00	4.42	400	331	

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
Apr. 26. 2019	Initial report	JooHo Kim	HyungJun Kim

-End of test report-