TEST REPORT

Dt&C

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. : DREFCC1805-0169
2. Client / Applicant
   - Name : BLUEBIRD INC.
   - Address : (Dogok-dong, SEI Tower 13,14) 39, Eonjuro30-gil, Gangnam-gu, Seoul, South Korea
3. Use of Report : Grant of Certification
4. Product Name / Model Name : Tablet / RT101
5. Test Standard : ANSI C 63.4 : 2014
   FCC Part 15 Subpart B
   (Class B personal computers and peripherals)
6. Date of Test : Mar. 29. 2018 ~ Apr. 02. 2018
7. Testing Environment : Temperature (19 ~ 22) °C , Humidity 43 % R.H.
8. Test Result : Refer to the attached Test Result

Affirmation	Tested by	Reviewed by
	Name : JaeSeok Choi (Signature)	Name : MyungJin Song (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.

May. 31. 2018

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
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-1364, R-3385, R-4076, R-4180, T-1442, G-10338, G-754, G-10815	Registered
Certification	Korea	KC	KR0034	Designation
	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	BLUEBIRD INC. (Dogok-dong, SEI Tower 13,14) 39, Eonjuro30-gil, Gangnam-gu, Seoul, South Korea
Manufacturer	BLUEBIRD INC. (Dogok-dong, SEI Tower 13,14) 39, Eonjuro30-gil, Gangnam-gu, Seoul, South Korea
Factory	BLUEBIRD INC. (Dogok-dong, SEI Tower 13,14) 39, Eonjuro30-gil, Gangnam-gu, Seoul, South Korea
Product Name	Tablet
Model Name	RT101
Add Model Name	None
RF Module Name	None
FCC ID	SS4RT101
Rated Power	DC 3.8 V
Remarks	None

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	Data transfer (Notebook -> EUT)	Connected Notebook at USB Cable
2	Charging + Rear camera	Connected AC Adapter
3	MP3	Portable Equipment
4	MP4	Portable Equipment

4.3 Test Configuration Mode

No.	Mode	Description
1	Data transfer (Notebook -> EUT)	Continue data communication with Notebook. The data loss rate is confirmed to be 0%. The following modes were also operated and tested simultaneously. continuous preview operation status. And a distortion phenomenon was confirmed
2	Charging + Rear camera	Continuous check of LED lamp (charging lamp on). continuous preview operation status. And a distortion phenomenon was confirmed.
3	MP3	The status of playing the audio file of the mp3 file Using the Audio Analyzer(UPS/R&S) equipment, Confirm -5dB change in reference
4	MP4	The status of playing the audio file of the mp4 file Using the Audio Analyzer(UPS/R&S) equipment, Confirm -5dB change in reference

4.4 Supported Equipment

Used*	Product Type	Manufacturer	Model	Remarks
AE	AC Adapter #1	Ten Pao Electronics (Huizhou) Co.,Ltd	S008ACM0500200	N/A
AE	Battery	GSP Limited	BAT-RT100	24566GSQIQ00044
AE	Notebook	HP	HSTNN-Q95C	N/A
AE	AC Adapter #1 (Notebook)	CHICONY POWER	HSTNN-CA40	N/A

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

4.5 EUT In/Output Port

Name	Type*	Cable Max. >3m	Cable Shielded	Cable Back shell	Remarks
USB	Type C	1.0	-	Plastic	None

*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	**C**
Radiated Disturbance	ANSI C63.4 : 2014	**C**
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]
0.16814	N	61.48	QP	65.05	3.57

-Radiated Disturbance

Frequency [MHz]	Pol.	Result [dBµV/m]	Detector	Limit [dBµV/m]	Margin [dB]
600.002	Vertical	40.19	QP	46.00	5.81

6. Test Environment

Test Items	Test date (YYYY-MM-DD)	Temp. (℃)	Humidity (% R.H.)	Pressure (kPa)
Conducted Disturbance	2018-04-02	19	43	100.9
Radiated Disturbance	2018-03-29	22	43	-

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, 2, 3, 4**
	EUT Operation mode	**1, 2, 3, 4**

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 uncertainty	
Expended uncertainty *U* (95 %, Confidence level, *k* = 2)	2.36 dB

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	ESU8	ROHDE& SCHWARZ	100299	2018.03.13	2019.03.13
LISN	NSLK 8128 RC	SCHWARZBECK	8128 RC-387	2017.11.10	2018.11.10
LISN	NSLK 8128 RC	SCHWARZBECK	8128 RC-388	2017.11.10	2018.11.10
PULSE LIMITER	ESH3-Z2	ROHDE& SCHWARZ	102491	2017.08.08	2018.08.08
50 OHM TERMINATOR	CT-01	TME	N/A	2017.12.26	2018.12.26

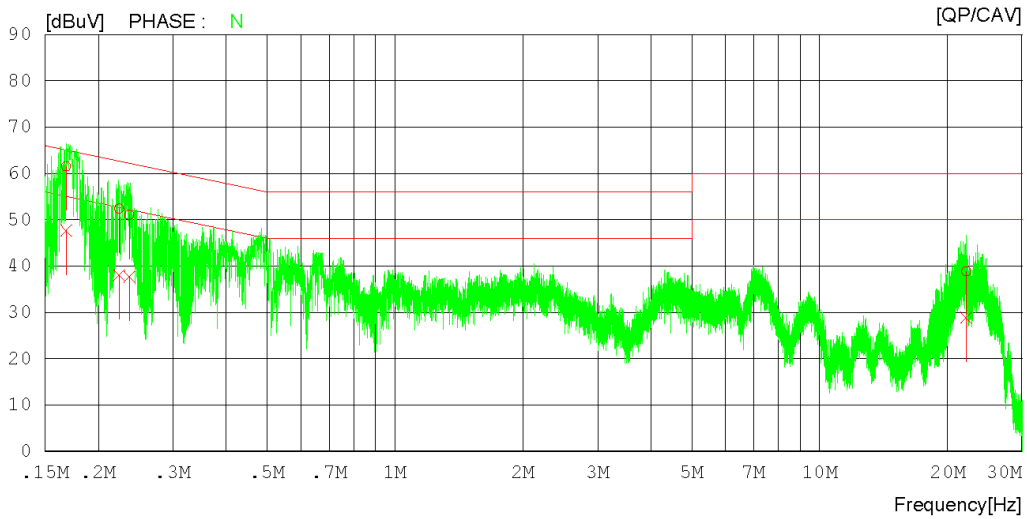
Mains terminal disturbance voltage _Measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**1**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

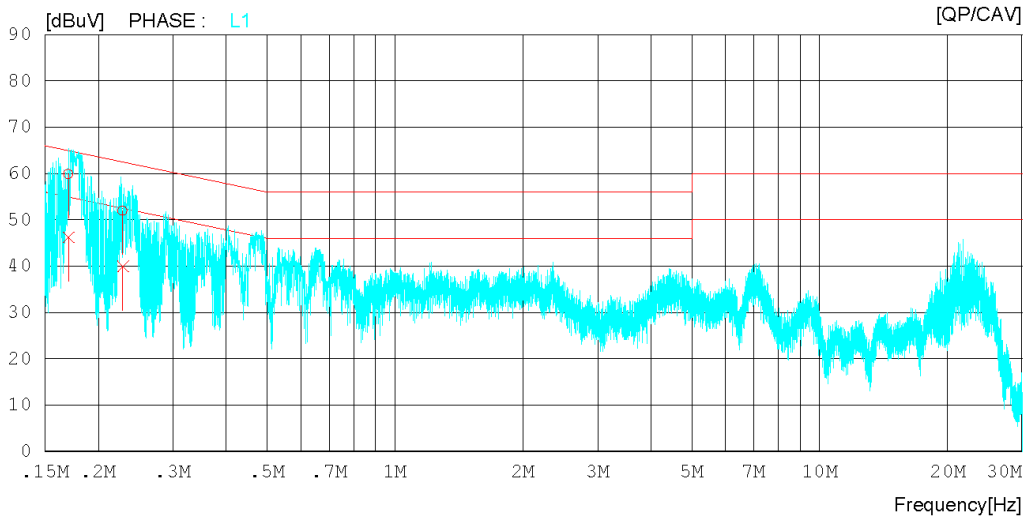
Results of Conducted Emission

DT&C
Date 2018-04-02

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi/Atm 19 'C 43 % R.H. 100.9 kPa
Test Condition Data trans + Front camera

LIMIT : CISPR32_B QP
CISPR32_B AV





Results of Conducted Emission

DT&C
Date 2018-04-02

Order No.	DTNC1802-01423
Power Supply	120 V 60 Hz
Temp/Humi/Atm	19 'C 43 % R.H. 100.9 kPa
Test Condition	Data trans + Front camera

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	0.16814	51.53	37.71	9.95	61.48	47.66	65.05	55.05	3.57	7.39	N
2	0.22415	42.48	28.09	9.94	52.42	38.03	62.66	52.66	10.24	14.63	N
3	0.23710	41.14	27.72	9.94	51.08	37.66	62.20	52.20	11.12	14.54	N
4	22.14835	28.61	18.66	10.28	38.89	28.94	60.00	50.00	21.11	21.06	N
5	0.17019	49.97	36.31	9.90	59.87	46.21	64.95	54.95	5.08	8.74	L1
6	0.22839	41.95	30.00	9.94	51.89	39.94	62.51	52.51	10.62	12.57	L1

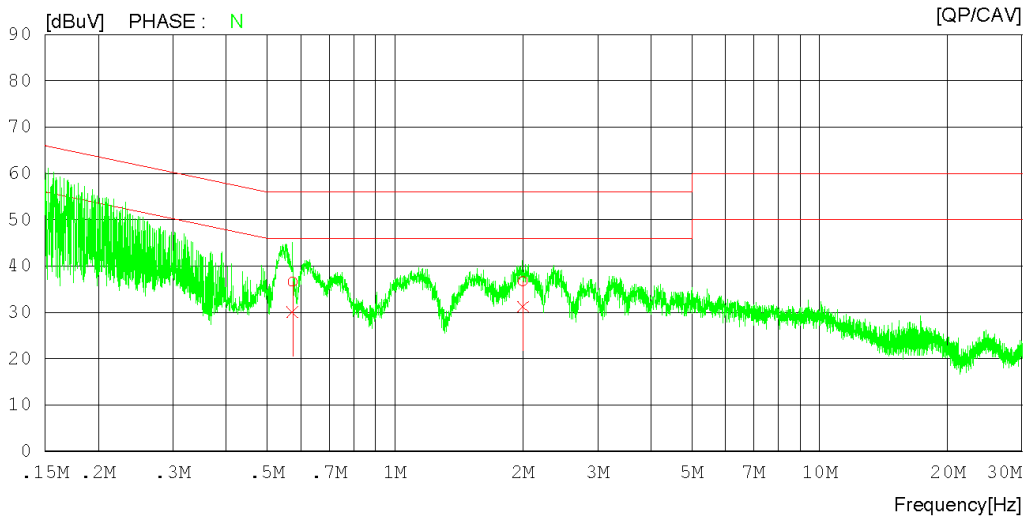
Mains terminal disturbance voltage _Measurement data			
Test configuration mode	**2**	**EUT Operation mode**	**2**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

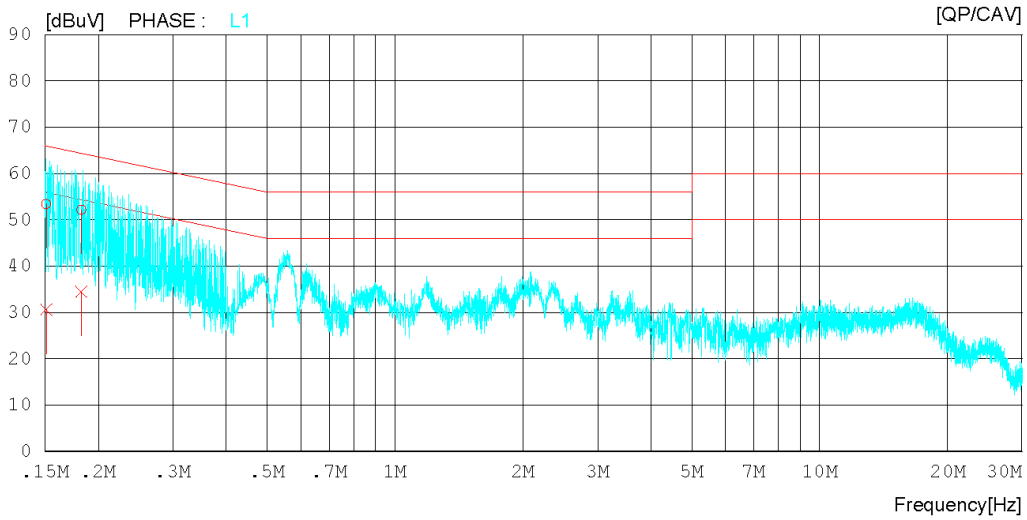
Results of Conducted Emission

DT&C
Date 2018-04-02

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi/Atm 19 'C 43 % R.H. 100.9 kPa
Test Condition Charging + Rear camera

LIMIT : CISPR32_B QP
CISPR32_B AV





Results of Conducted Emission

DT&C
Date 2018-04-02

Order No.	DTNC1802-01423
Power Supply	120 V 60 Hz
Temp/Humi/Atm	19 'C 43 % R.H. 100.9 kPa
Test Condition	Charging + Rear camera

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	0.57403	26.61	20.09	10.00	36.61	30.09	56.00	46.00	19.39	15.91	N
2	2.00214	26.60	21.21	10.05	36.65	31.26	56.00	46.00	19.35	14.74	N
3	0.15095	43.43	20.62	9.94	53.37	30.56	65.95	55.95	12.58	25.39	L1
4	0.18257	42.24	24.54	9.94	52.18	34.48	64.37	54.37	12.19	19.89	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 –18 GHz	Result
Method: Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 10 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, 2, 3, 4**
	EUT Operation mode	**1, 2, 3, 4**

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(CISPR), Pub. 22 shown as below.

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 uncertainty	
Expended uncertainty *U* (95 %, Confidence level, *k* = 2)	4.16 dB, (30 ~ 1 000) MHz 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	100469	2017.07.06	2018.07.06
TRILOG BROAD BAND ANTENNA	VULB9160	SCHWARZBECK	9160-3339	2017.04.21	2019.04.21
LOW NOISE PRE AMPLIFIER	MLA-100K01-B01-26	TSJ	1252741	2018.02.19	2019.02.19
PRE AMPLIFIER	8449B	H.P	3008A00887	2017.09.06	2018.09.06
BROAD-BAND HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1014	2016.08.05	2018.08.05
HORN ANTENNA	EM-6969	ELECTRO-METRICS	156	2018.01.02	2019.01.02
PREAMPLIFIER	MLA-0618-B03-34	TSJ	1785642	2017.03.02	2019.03.02
(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**

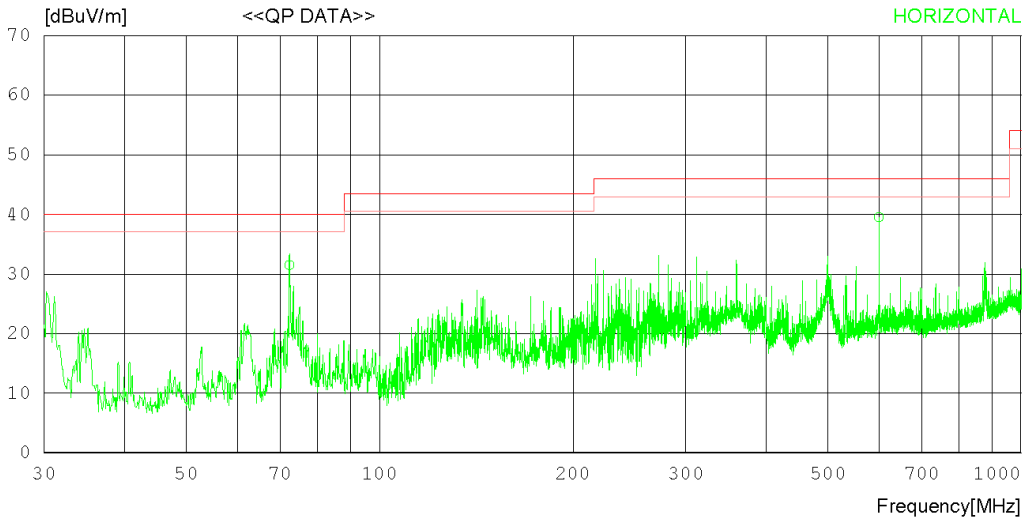
RADIATED EMISSION

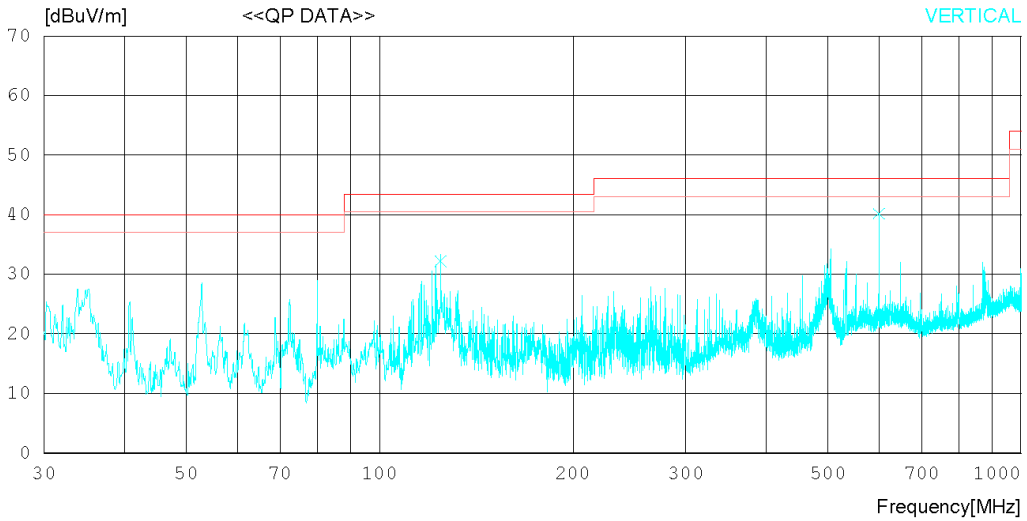
Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Data trans + Front camera

Memo

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





RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Data trans + Front camera

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	72.437	45.90	9.66	1.41	25.53	31.44	40.00	8.56	300	1
2	600.002	40.10	20.30	4.33	25.24	39.49	46.00	6.51	100	135
----- Vertical ------										
3	124.452	44.20	11.78	1.80	25.56	32.22	43.50	11.28	100	1
4	600.002	40.80	20.30	4.33	25.24	40.19	46.00	5.81	100	358

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**

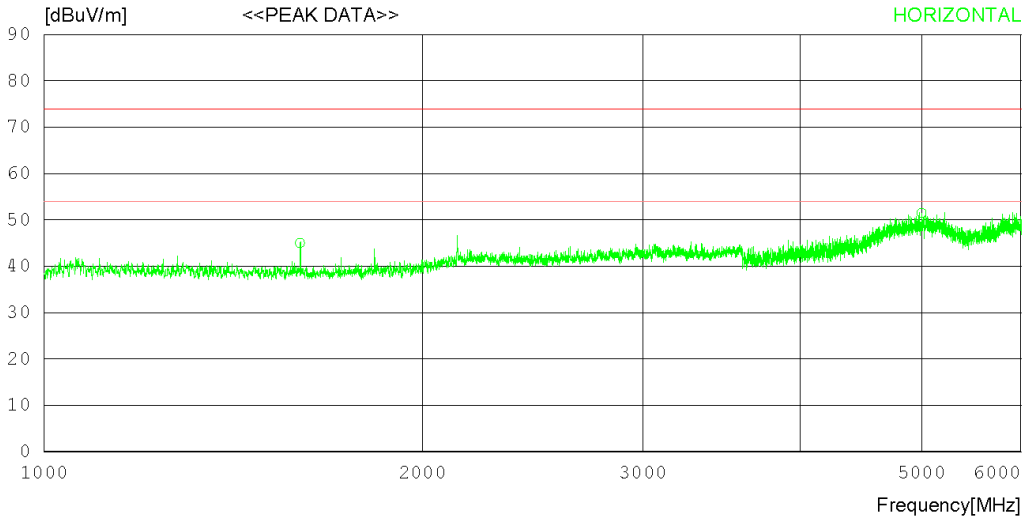
RADIATED EMISSION

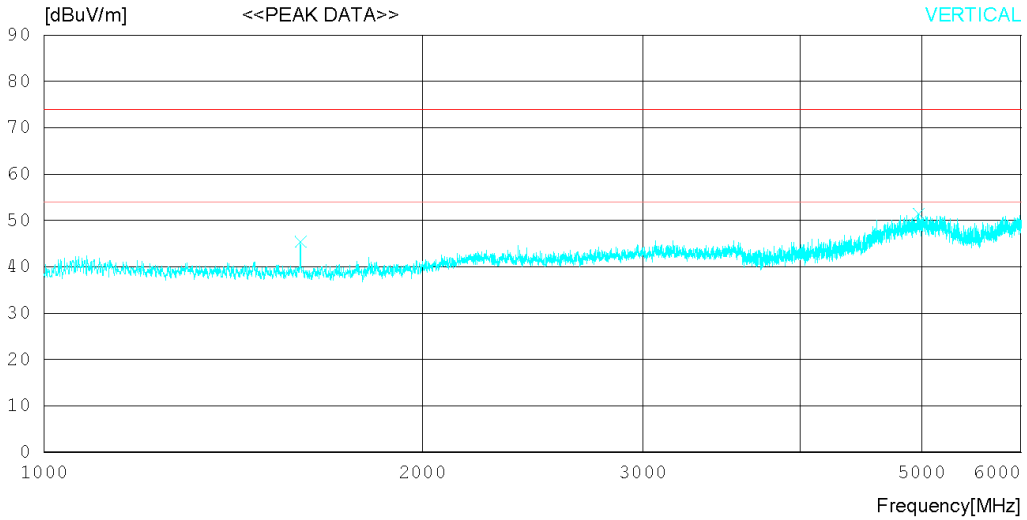
Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Data trans + Front camera

Memo

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





RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Data trans + Front camera

Memo

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

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	1599.375	48.30	24.86	4.20	32.35	45.01	74.0	28.99	100	124
2	4996.875	42.10	31.55	10.07	32.23	51.49	74.0	22.51	100	359
----- Vertical ------										
3	1599.375	48.70	24.86	4.20	32.35	45.41	74.0	28.59	100	358
4	4971.875	42.10	31.51	10.05	32.24	51.42	74.0	22.58	100	176

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**

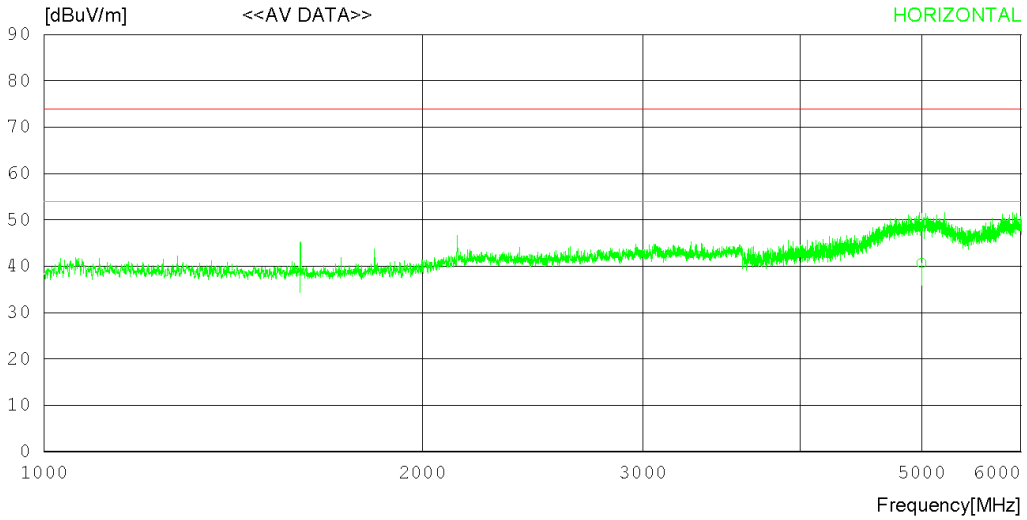
RADIATED EMISSION

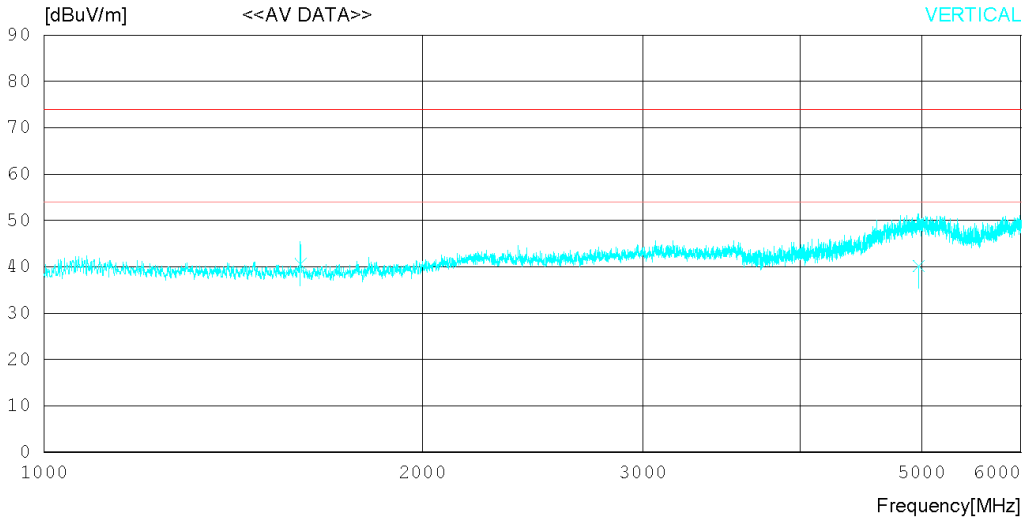
Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Data trans + Front camera

Memo

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





RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Data trans + Front camera

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)
FCC Part15 Subpart.B Class B (3m) - 18G(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	1599.375	42.30	24.86	4.20	32.35	39.01	54.00	14.99	100	124
2	4996.875	31.30	31.55	10.07	32.23	40.69	54.00	13.31	100	359
----- Vertical ------										
3	1599.375	43.90	24.86	4.20	32.35	40.61	54.00	13.39	100	358
4	4971.875	30.80	31.51	10.05	32.24	40.12	54.00	13.88	100	176

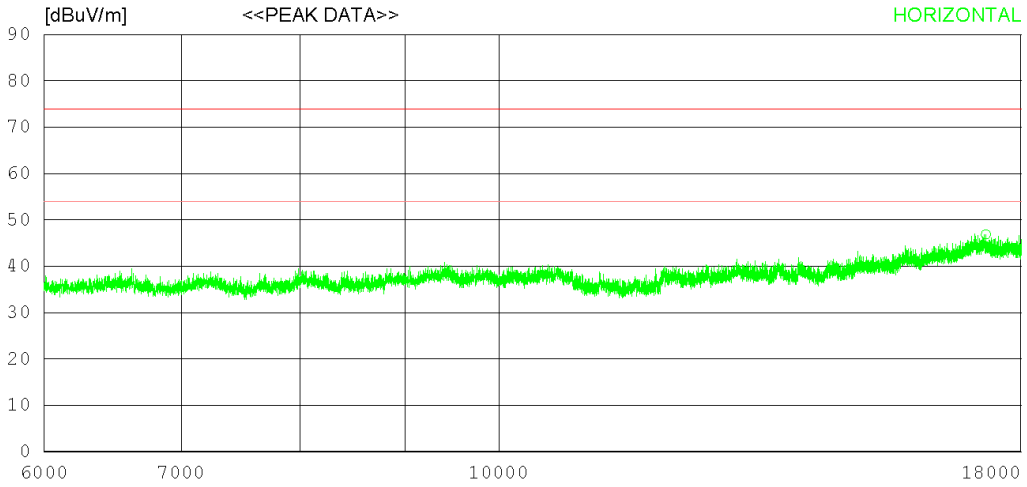
Radiated disturbance at (6 ~ 18) GHz _Peak measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**1**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

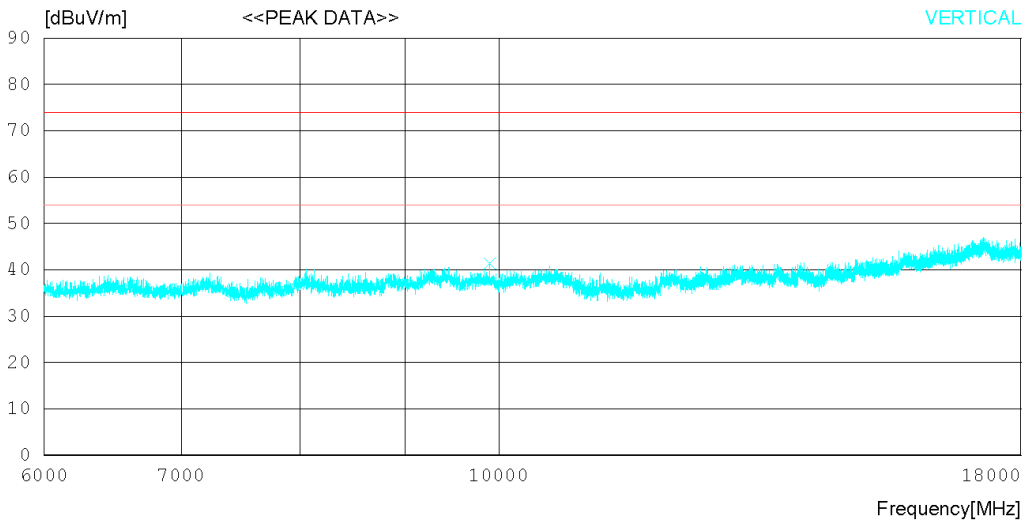
RADIATED EMISSION

Date 2018-03-29

Order No.	DTNC1802-01423
Power Supply	120 V 60 Hz
Temp/Humi	22 'C 43 % R.H.
Test Condition	Data trans + Front camera

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





* The measurement is performed above 18 GHz up to 30 GHz and not found emissions above 18 GHz.

RADIATED EMISSION

Date 2018-03-29

Order No.	DTNC1802-01423
Power Supply	120 V 60 Hz
Temp/Humi	22 'C 43 % R.H.
Test Condition	Data trans + Front camera

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

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	17295.000	32.20	37.78	13.40	36.55	46.83	74.0	27.17	100	1
----- Vertical ------										
2	9904.500	36.10	32.25	11.14	38.08	41.41	74.0	32.59	100	175
3	17263.500	29.80	37.74	13.39	36.50	44.43	74.0	29.57	100	1

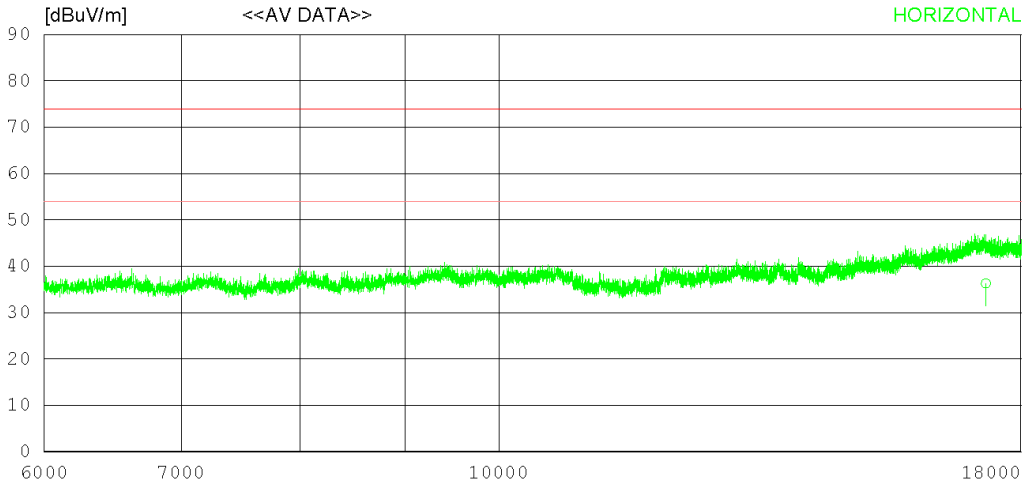
Radiated disturbance at (6 ~ 18) GHz _Average measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**1**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

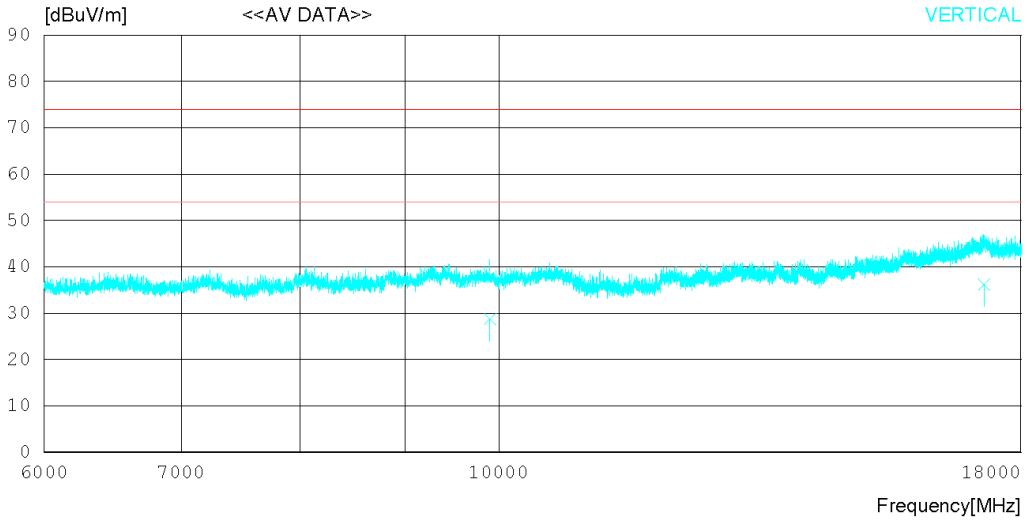
RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Data trans + Front camera

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





* The measurement is performed above 18 GHz up to 30 GHz and not found emissions above 18 GHz.

RADIATED EMISSION

Date 2018-03-29

Order No.	DTNC1802-01423
Power Supply	120 V 60 Hz
Temp/Humi	22 'C 43 % R.H.
Test Condition	Data trans + Front camera

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)
FCC Part15 Subpart.B Class B (3m) - 18G(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	17295.000	21.60	37.78	13.40	36.55	36.23	54.00	17.77	100	1
----- Vertical ------										
2	9904.500	23.40	32.25	11.14	38.08	28.71	54.00	25.29	100	175
3	17263.500	21.50	37.74	13.39	36.50	36.13	54.00	17.87	100	1

Radiated disturbance at (30 ~ 1000) MHz _Measurement data			
Test configuration mode	**2**	**EUT Operation mode**	**2**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

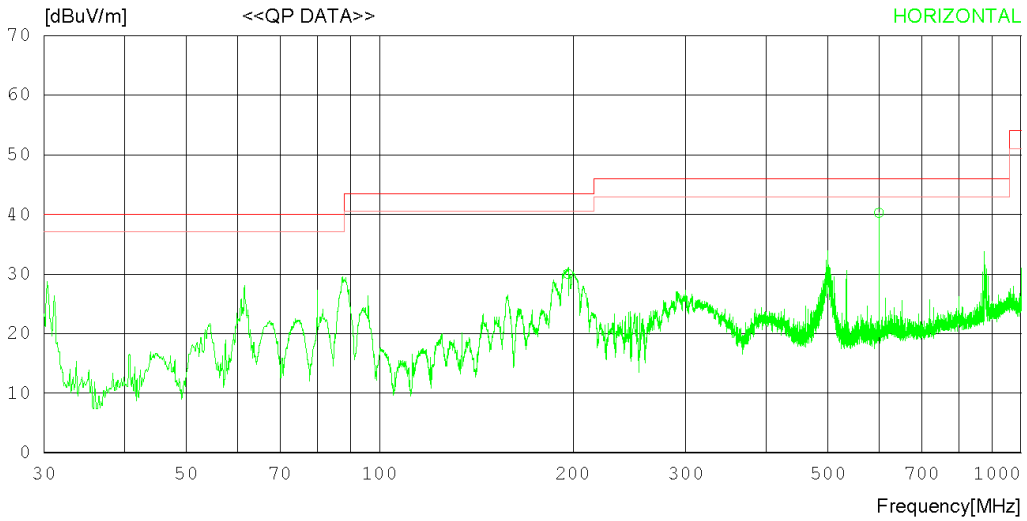
RADIATED EMISSION

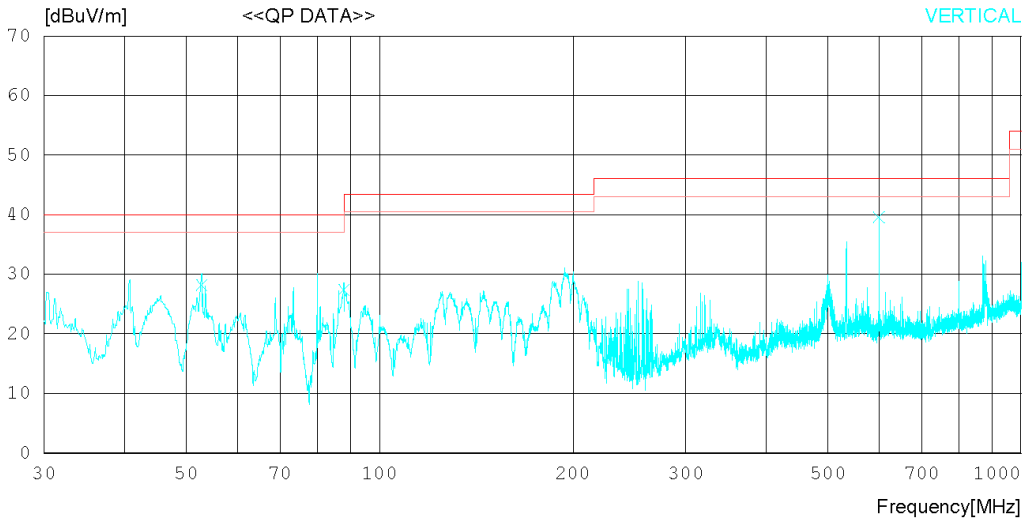
Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Charging + Rear camera

Memo

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





RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Charging + Rear camera

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	196.715	43.30	9.93	2.29	25.52	30.00	43.50	13.50	200	1
2	600.002	40.80	20.30	4.33	25.24	40.19	46.00	5.81	200	359
----- Vertical ------										
3	52.795	40.60	11.96	1.13	25.51	28.18	40.00	11.82	200	302
4	87.957	44.20	7.32	1.41	25.54	27.39	40.00	12.61	300	0
5	600.002	40.20	20.30	4.33	25.24	39.59	46.00	6.41	100	297

Radiated disturbance at (1 ~ 6) GHz _Peak measurement data			
Test configuration mode	**2**	**EUT Operation mode**	**2**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

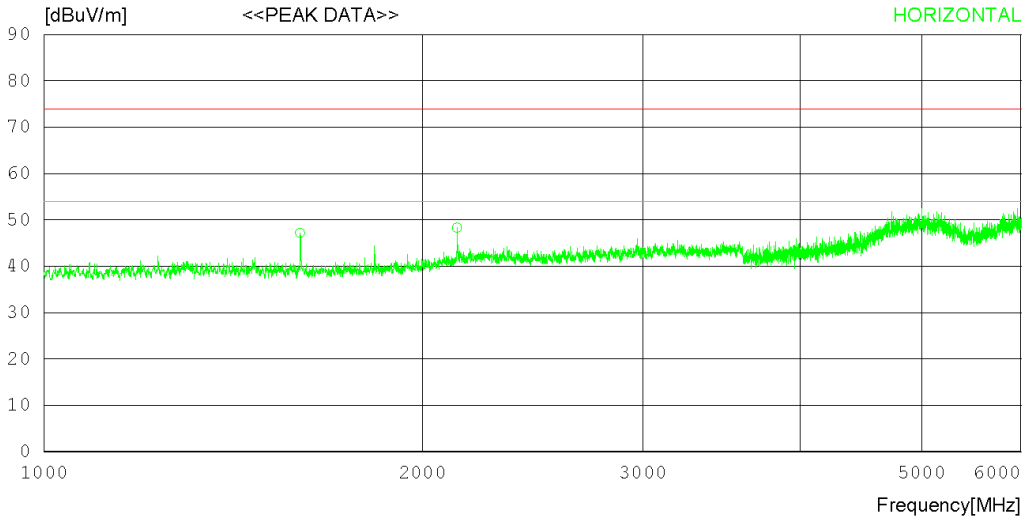
RADIATED EMISSION

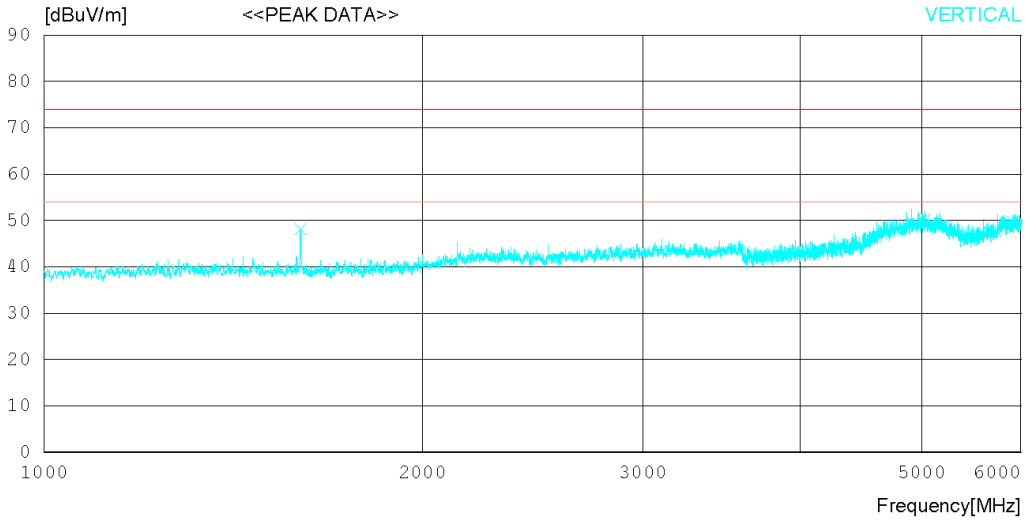
Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Charging + Rear camera

Memo

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





RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Charging + Rear camera

Memo

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

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	1599.375	50.50	24.86	4.20	32.35	47.21	74.0	26.79	100	1
2	2133.125	48.60	27.37	4.83	32.53	48.27	74.0	25.73	100	210
----- Vertical ------										
3	1599.375	51.40	24.86	4.20	32.35	48.11	74.0	25.89	100	358

Radiated disturbance at (1 ~ 6) GHz _Average measurement data			
Test configuration mode	**2**	**EUT Operation mode**	**2**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

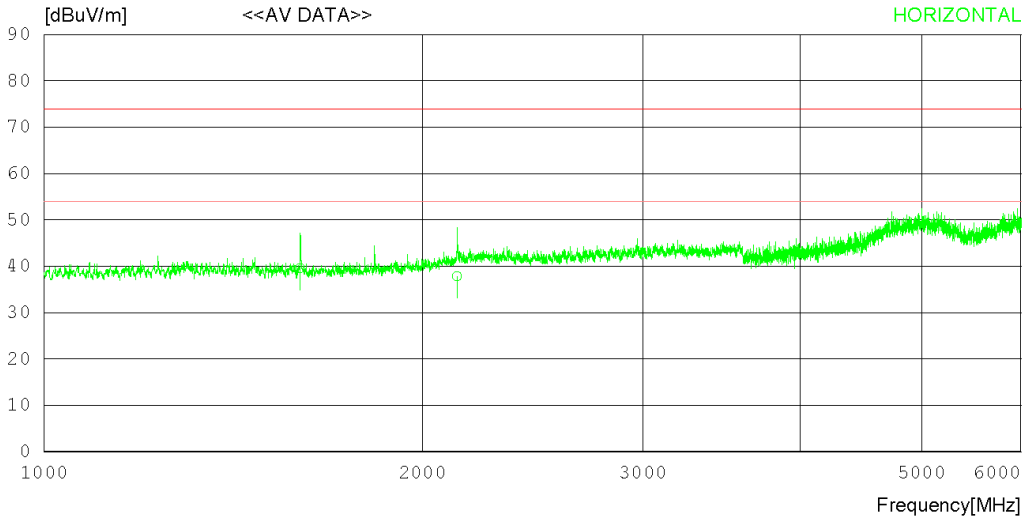
RADIATED EMISSION

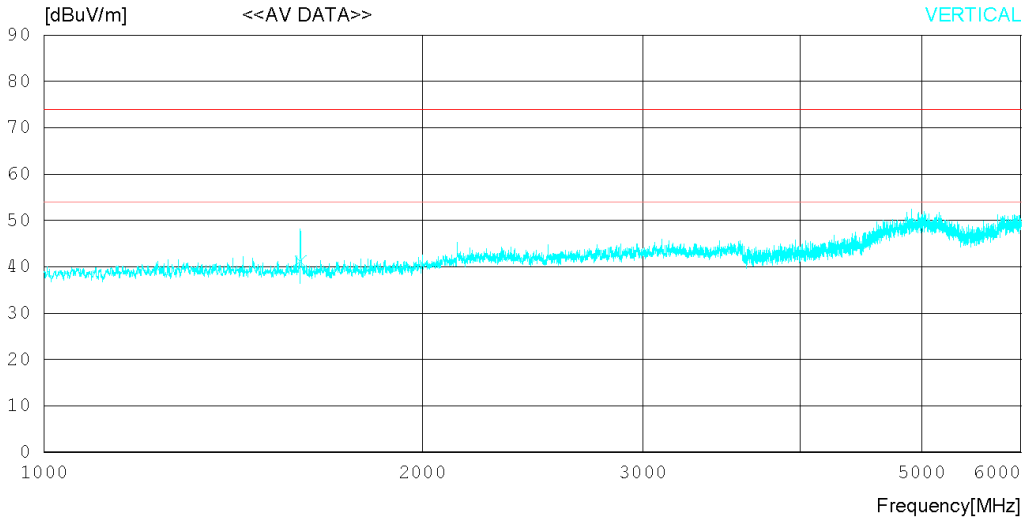
Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Charging + Rear camera

Memo

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





RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Charging + Rear camera

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)
FCC Part15 Subpart.B Class B (3m) - 18G(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	1599.375	42.90	24.86	4.20	32.35	39.61	54.00	14.39	100	1
2	2133.125	38.20	27.37	4.83	32.53	37.87	54.00	16.13	100	210
----- Vertical ------										
3	1599.375	44.40	24.86	4.20	32.35	41.11	54.00	12.89	100	358

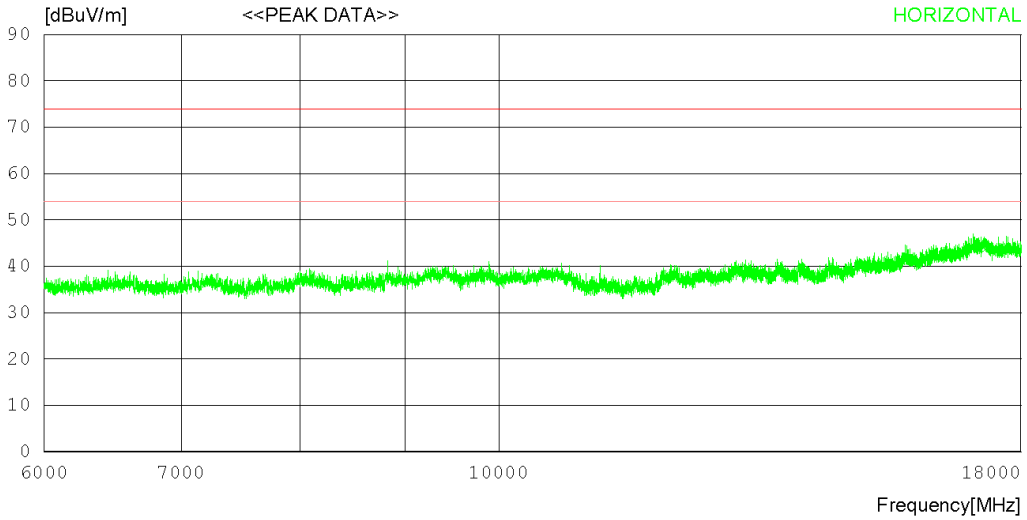
Radiated disturbance at (6 ~ 18) GHz _Peak measurement data			
Test configuration mode	**2**	**EUT Operation mode**	**2**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

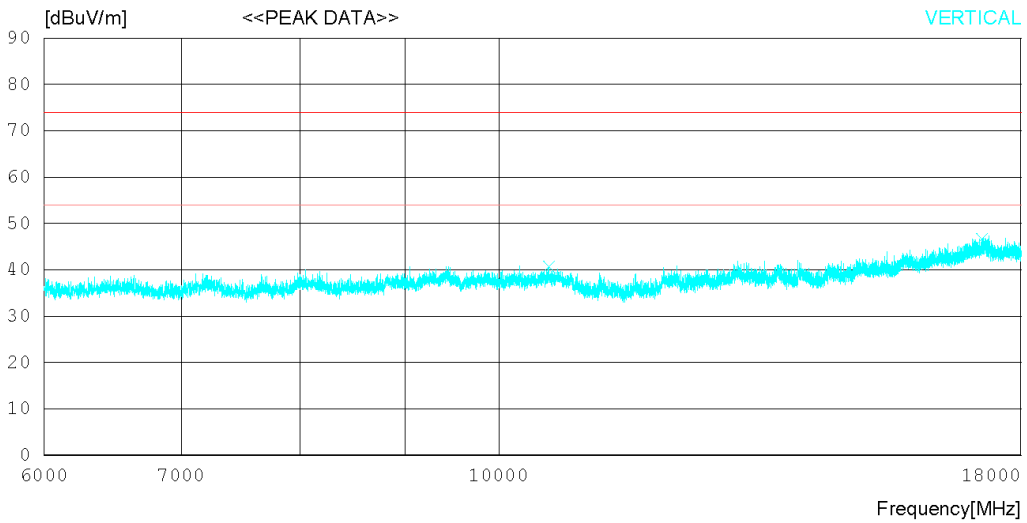
RADIATED EMISSION

Date 2018-03-29

Order No.	DTNC1802-01423
Power Supply	120 V 60 Hz
Temp/Humi	22 'C 43 % R.H.
Test Condition	Charging + Rear camera

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





* The measurement is performed above 18 GHz up to 30 GHz and not found emissions above 18 GHz.

RADIATED EMISSION

Date 2018-03-29

Order No.	DTNC1802-01423
Power Supply	120 V 60 Hz
Temp/Humi	22 'C 43 % R.H.
Test Condition	Charging + Rear camera

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

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	17207.250	29.50	37.67	13.35	36.42	44.10	74.0	29.9	100	1
----- Vertical ------										
2	10583.250	34.50	32.49	11.40	37.70	40.69	74.0	33.31	100	358
3	17226.750	32.00	37.70	13.37	36.44	46.63	74.0	27.37	100	1

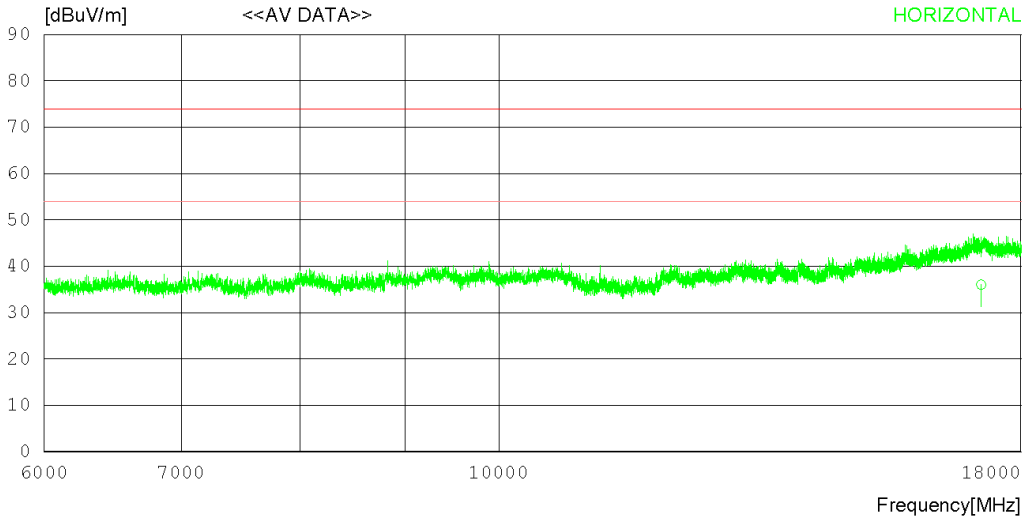
Radiated disturbance at (6 ~ 18) GHz _Average measurement data			
Test configuration mode	**2**	**EUT Operation mode**	**2**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

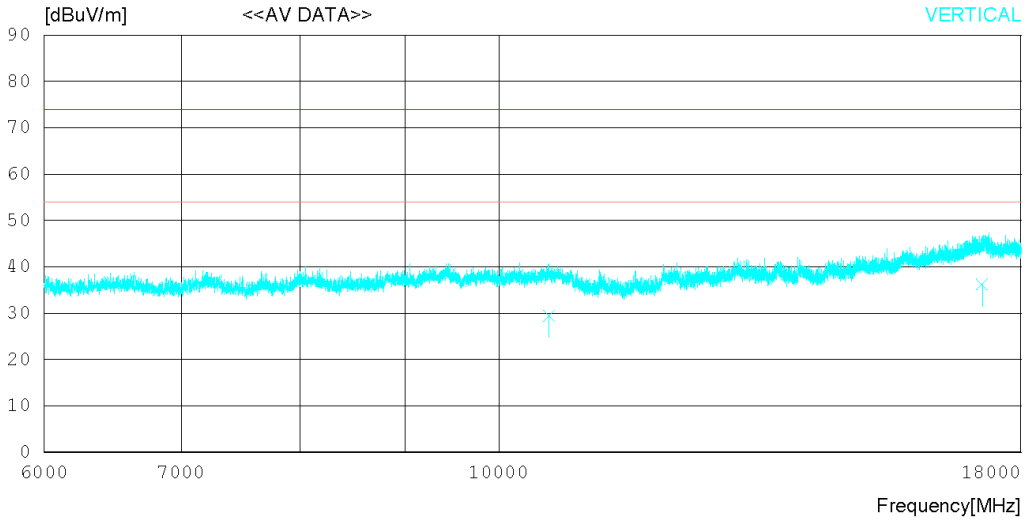
RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply 120 V 60 Hz
Temp/Humi 22 'C 43 % R.H.
Test Condition Charging + Rear camera

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





* The measurement is performed above 18 GHz up to 30 GHz and not found emissions above 18 GHz.

RADIATED EMISSION

Date 2018-03-29

Order No.	DTNC1802-01423
Power Supply	120 V 60 Hz
Temp/Humi	22 'C 43 % R.H.
Test Condition	Charging + Rear camera

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)
FCC Part15 Subpart.B Class B (3m) - 18G(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	17207.250	21.40	37.67	13.35	36.42	36.00	54.00	18.00	100	1
----- Vertical ------										
2	10583.250	23.30	32.49	11.40	37.70	29.49	54.00	24.51	100	358
3	17226.750	21.50	37.70	13.37	36.44	36.13	54.00	17.87	100	1

Radiated disturbance at (30 ~ 1000) MHz _Measurement data			
Test configuration mode	**3**	**EUT Operation mode**	**3**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

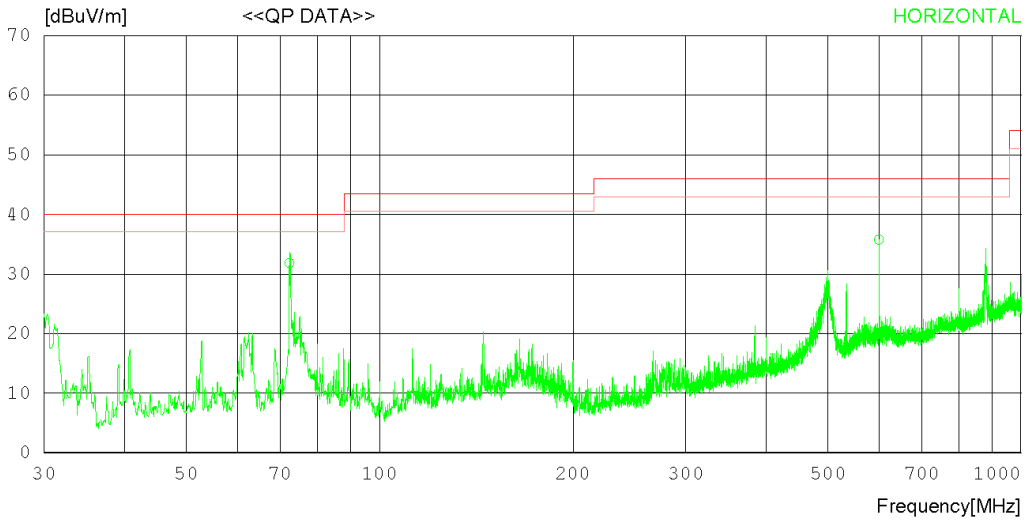
RADIATED EMISSION

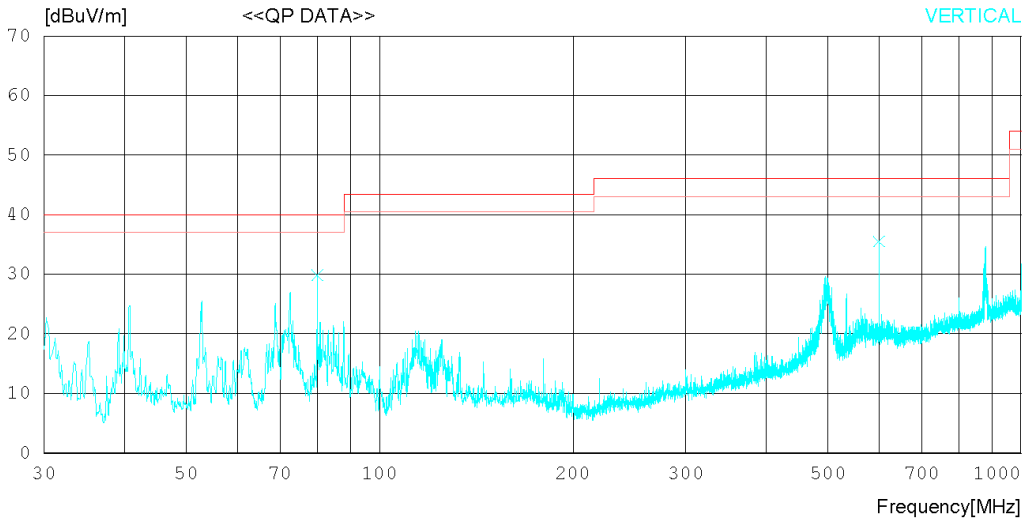
Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H.
Test Condition MP3

Memo

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





RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H.
Test Condition MP3

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	72.437	46.30	9.66	1.41	25.53	31.84	40.00	8.16	300	105
2	600.002	36.30	20.30	4.33	25.24	35.69	46.00	10.31	100	237
----- Vertical ------										
3	79.955	46.10	7.81	1.51	25.53	29.89	40.00	10.11	400	245
4	600.002	36.10	20.30	4.33	25.24	35.49	46.00	10.51	100	1

Radiated disturbance at (1 ~ 6) GHz _Peak measurement data			
Test configuration mode	**3**	**EUT Operation mode**	**3**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

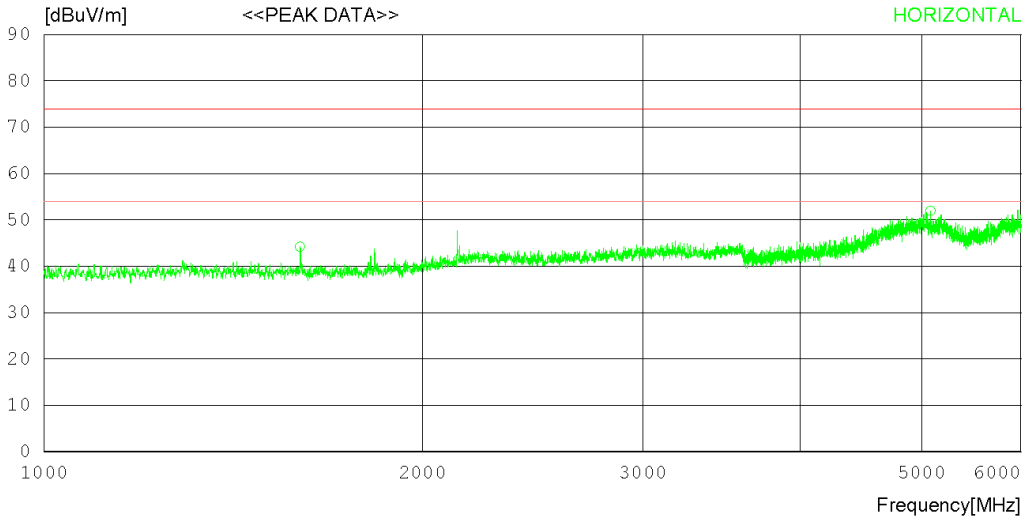
RADIATED EMISSION

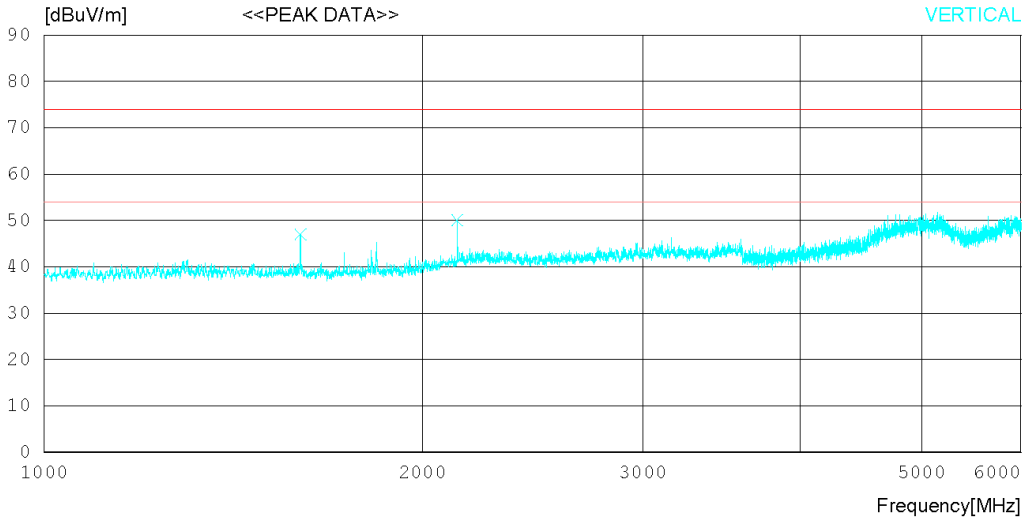
Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H.
Test Condition MP3

Memo

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





RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H.
Test Condition MP3

Memo

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

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	1599.375	47.50	24.86	4.20	32.35	44.21	74.0	29.79	100	358
2	5080.625	42.80	31.60	9.88	32.29	51.99	74.0	22.01	100	296
----- Vertical ------										
3	1599.375	50.20	24.86	4.20	32.35	46.91	74.0	27.09	100	1
4	2132.500	50.40	27.36	4.83	32.53	50.06	74.0	23.94	100	1

Radiated disturbance at (1 ~ 6) GHz _Average measurement data			
Test configuration mode	**3**	**EUT Operation mode**	**3**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

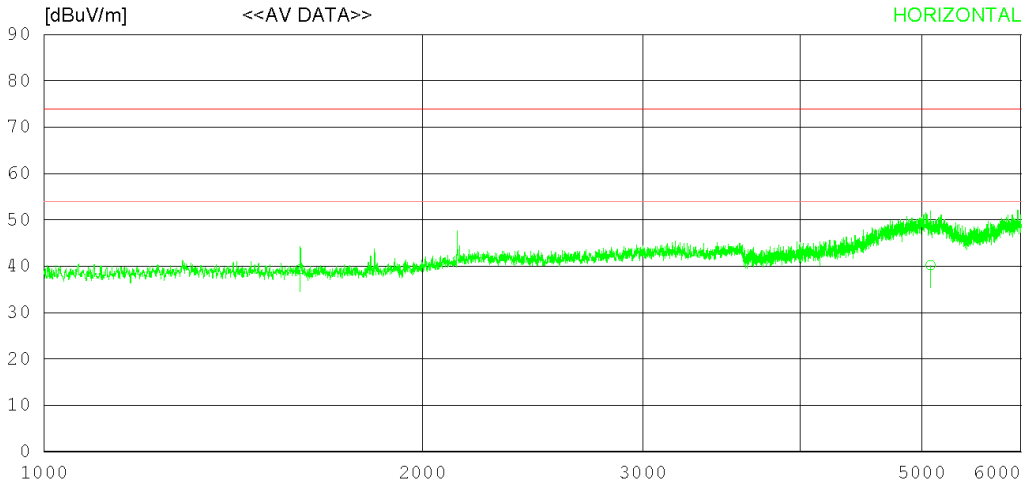
RADIATED EMISSION

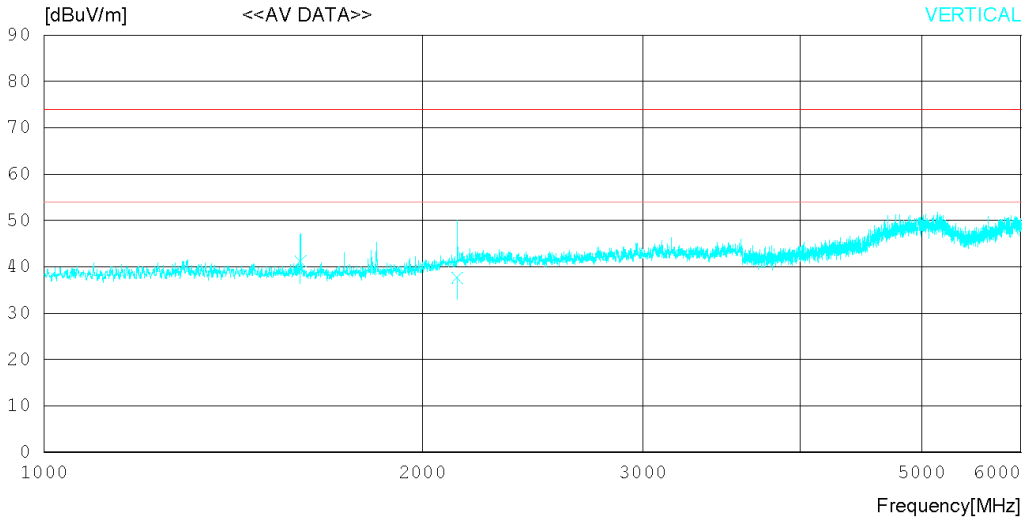
Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H.
Test Condition MP3

Memo

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





RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H.
Test Condition MP3

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)
FCC Part15 Subpart.B Class B (3m) - 18G(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	1599.375	42.60	24.86	4.20	32.35	39.31	54.00	14.69	100	358
2	5080.625	31.00	31.60	9.88	32.29	40.19	54.00	13.81	100	296
----- Vertical ------										
3	1599.375	44.40	24.86	4.20	32.35	41.11	54.00	12.89	100	1
4	2132.500	38.00	27.36	4.83	32.53	37.66	54.00	16.34	100	1

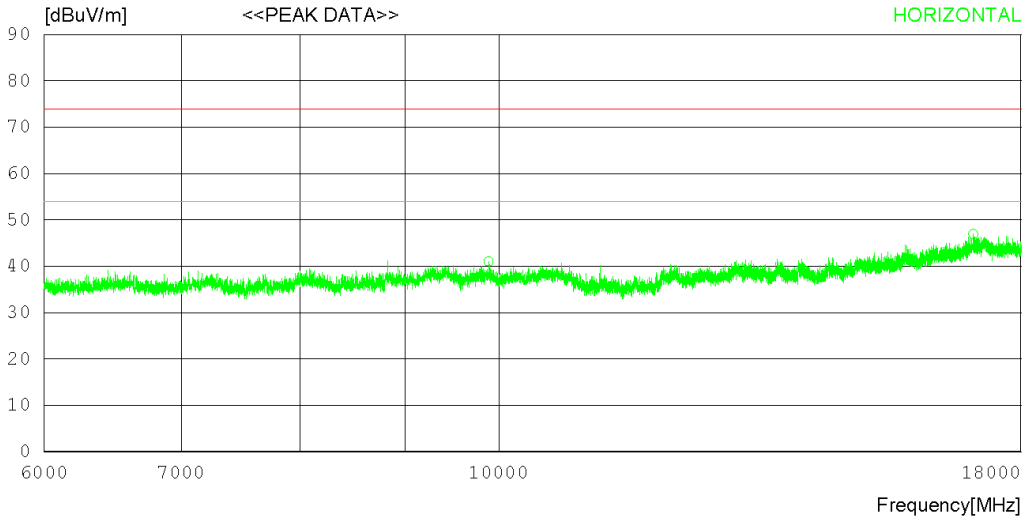
Radiated disturbance at (6 ~ 18) GHz _Peak measurement data			
Test configuration mode	**3**	**EUT Operation mode**	**3**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

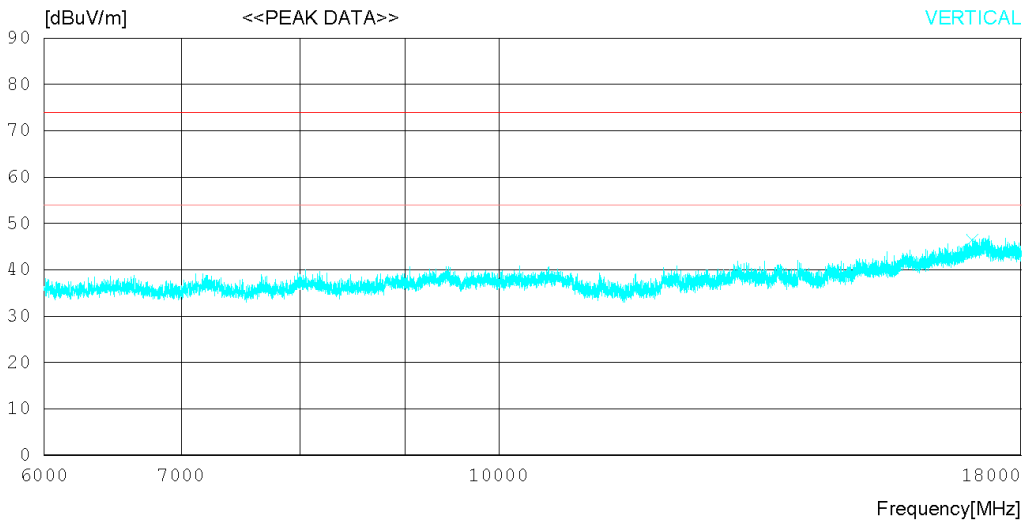
RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H
Test Condition MP3

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





* The measurement is performed above 18 GHz up to 30 GHz and not found emissions above 18 GHz.

RADIATED EMISSION

Date 2018-03-29

Order No.	DTNC1802-01423
Power Supply	Battery
Temp/Humi	22 'C 43 % R.H
Test Condition	MP3

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

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	9890.250	35.70	32.24	11.17	38.07	41.04	74.0	32.96	100	356
2	17050.500	32.20	37.49	13.42	36.18	46.93	74.0	27.07	100	239
----- Vertical ------										
3	17034.000	31.60	37.47	13.43	36.15	46.35	74.0	27.65	100	166

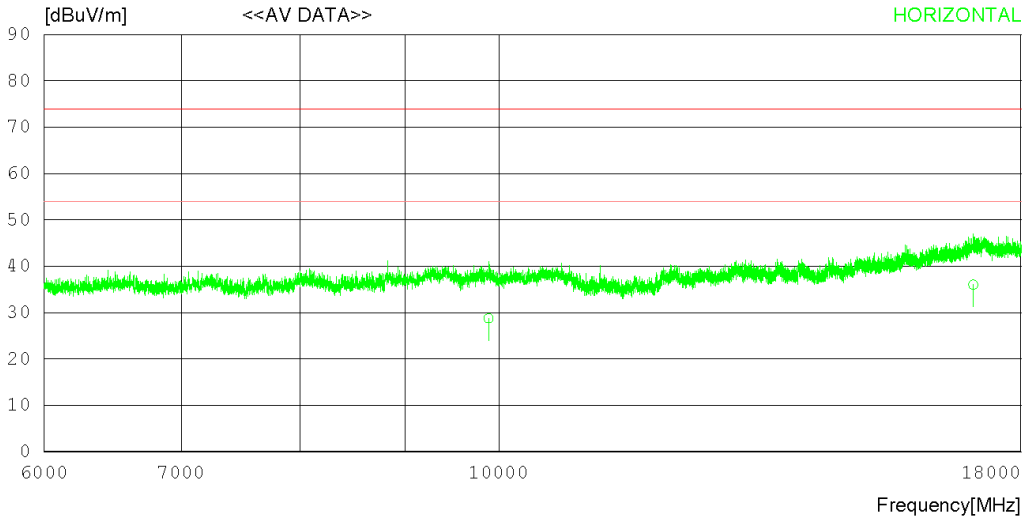
Radiated disturbance at (6 ~ 18) GHz _Average measurement data			
Test configuration mode	**3**	**EUT Operation mode**	**3**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

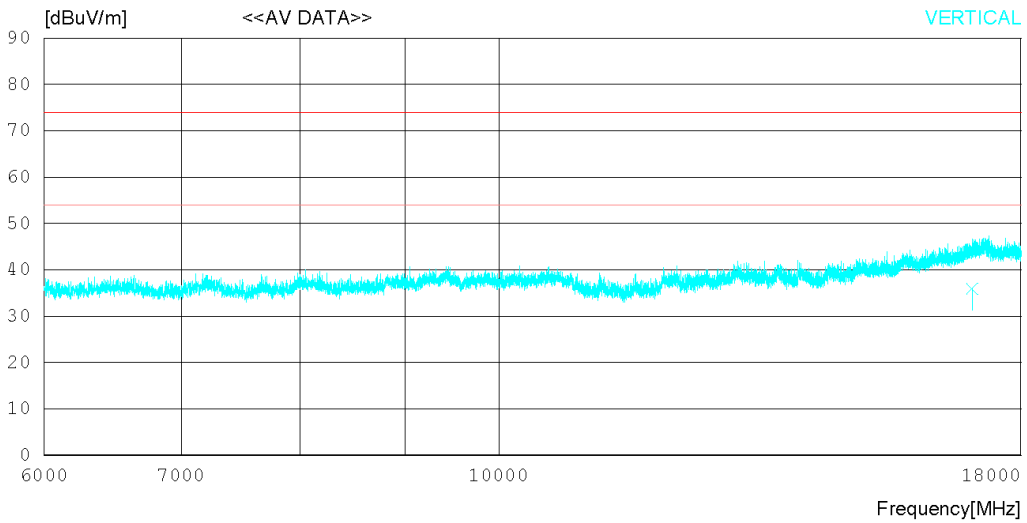
RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H
Test Condition MP3

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





* The measurement is performed above 18 GHz up to 30 GHz and not found emissions above 18 GHz.

RADIATED EMISSION

Date 2018-03-29

Order No.	DTNC1802-01423
Power Supply	Battery
Temp/Humi	22 'C 43 % R.H
Test Condition	MP3

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)
FCC Part15 Subpart.B Class B (3m) - 18G(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	9890.250	23.40	32.24	11.17	38.07	28.74	54.00	25.26	100	356
2	17050.500	21.30	37.49	13.42	36.18	36.03	54.00	17.97	100	239
----- Vertical ------										
3	17034.000	21.20	37.47	13.43	36.15	35.95	54.00	18.05	100	166

Radiated disturbance at (30 ~ 1000) MHz _Measurement data			
Test configuration mode	**4**	**EUT Operation mode**	**4**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

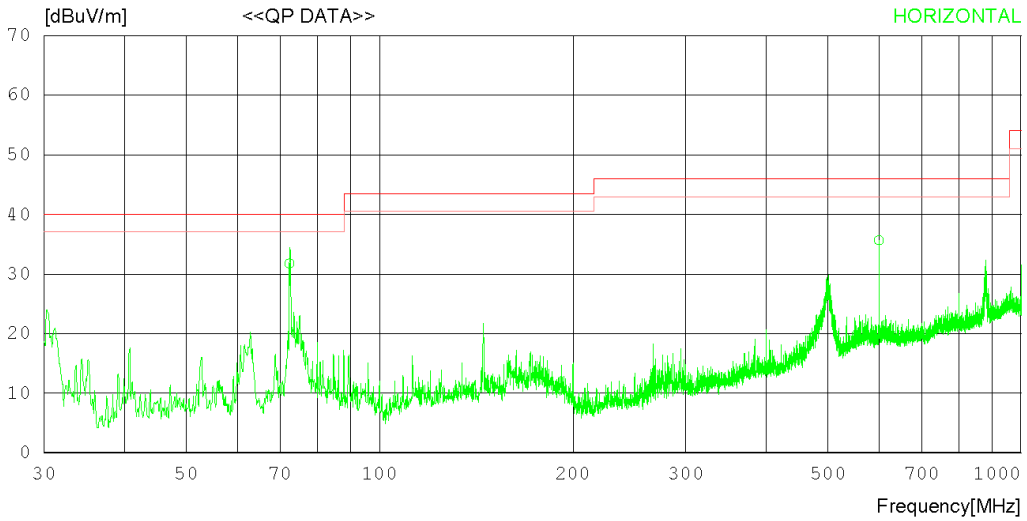
RADIATED EMISSION

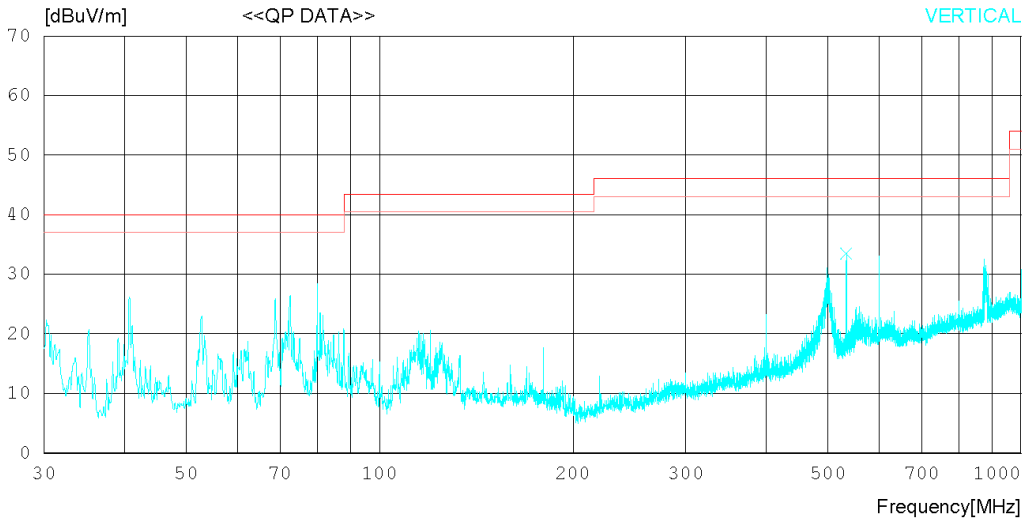
Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H.
Test Condition MP4

Memo

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





RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H.
Test Condition MP4

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	72.437	46.20	9.66	1.41	25.53	31.74	40.00	8.26	300	115
2	600.002	36.20	20.30	4.33	25.24	35.59	46.00	10.41	300	352
----- Vertical ------										
3	533.300	36.40	18.37	4.07	25.35	33.49	46.00	12.51	100	193

Radiated disturbance at (1 ~ 6) GHz _Peak measurement data			
Test configuration mode	**4**	**EUT Operation mode**	**4**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

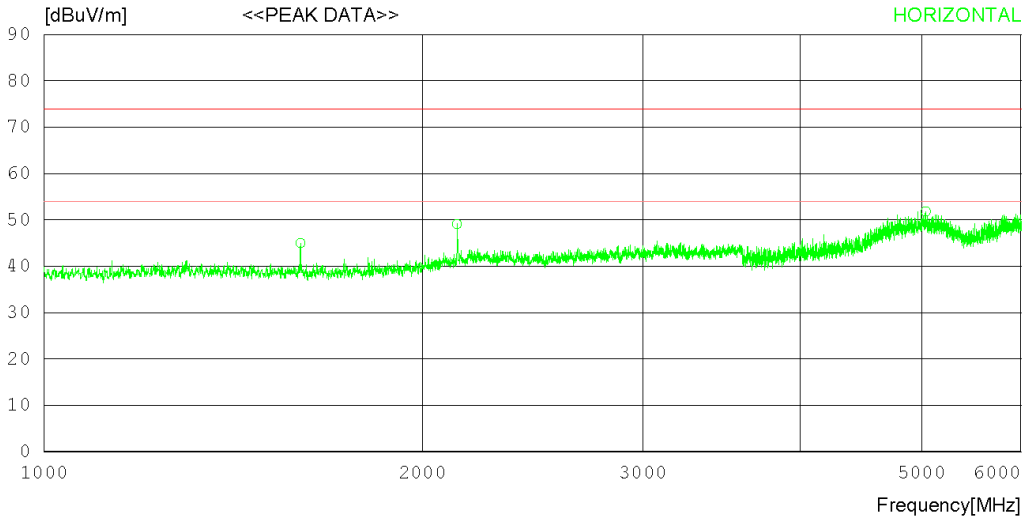
RADIATED EMISSION

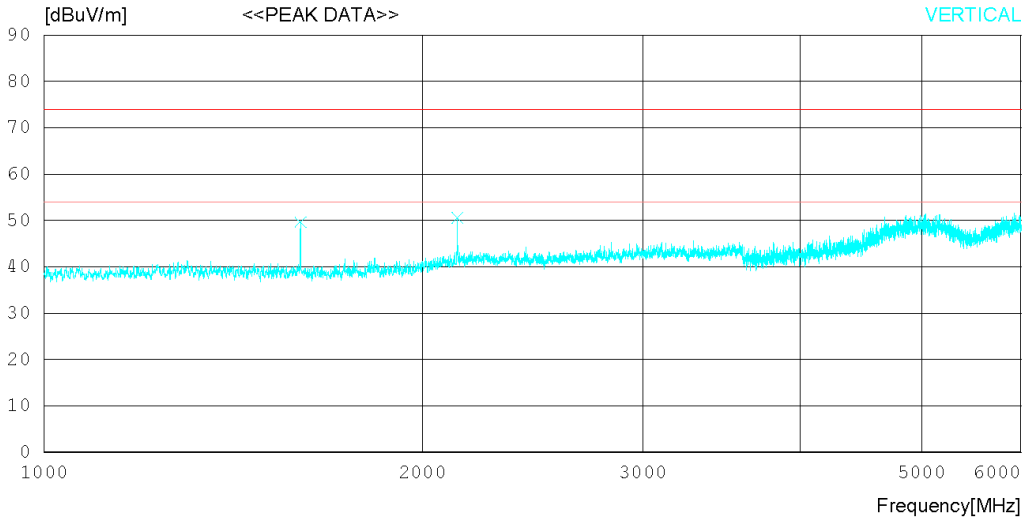
Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H.
Test Condition MP4

Memo

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





RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H.
Test Condition MP4

Memo

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

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	1600.000	48.30	24.86	4.20	32.35	45.01	74.0	28.99	100	353
2	2133.125	49.40	27.37	4.83	32.53	49.07	74.0	24.93	100	358
3	5037.500	42.50	31.57	9.99	32.26	51.80	74.0	22.2	100	325
----- Vertical ------										
4	1600.000	52.90	24.86	4.20	32.35	49.61	74.0	24.39	100	183
5	2133.125	50.90	27.37	4.83	32.53	50.57	74.0	23.43	100	230

Radiated disturbance at (1 ~ 6) GHz _Average measurement data			
Test configuration mode	**4**	**EUT Operation mode**	**4**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

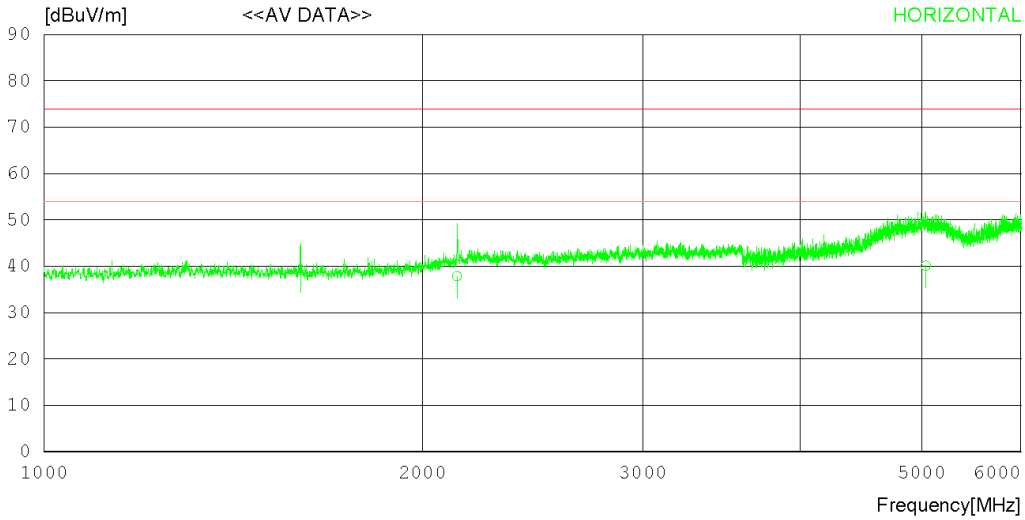
RADIATED EMISSION

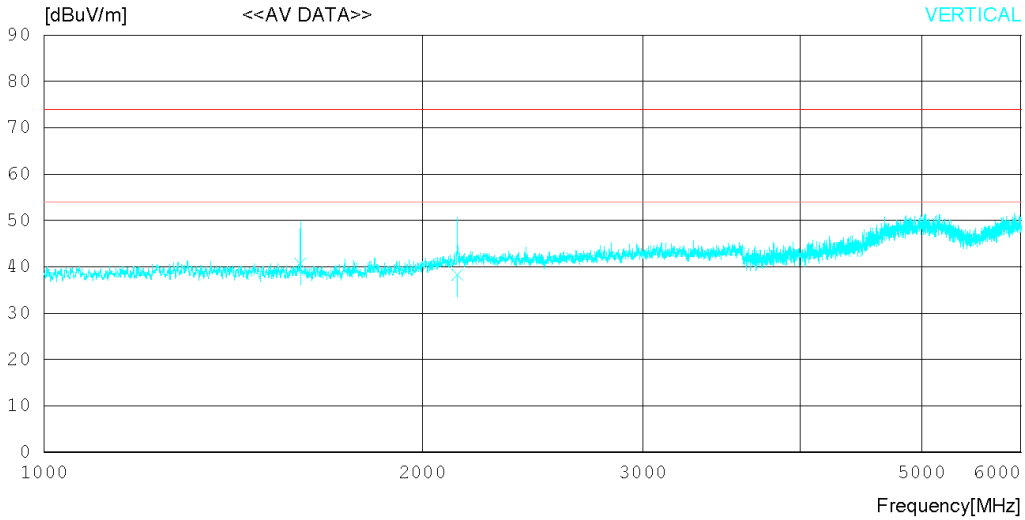
Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H.
Test Condition MP4

Memo

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





RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H.
Test Condition MP4

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)
FCC Part15 Subpart.B Class B (3m) - 18G(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	1600.000	42.50	24.86	4.20	32.35	39.21	54.00	14.79	100	353
2	2133.125	38.20	27.37	4.83	32.53	37.87	54.00	16.13	100	358
3	5037.500	30.80	31.57	9.99	32.26	40.10	54.00	13.90	100	325
----- Vertical ------										
4	1600.000	44.00	24.86	4.20	32.35	40.71	54.00	13.29	100	183
5	2133.125	38.60	27.37	4.83	32.53	38.27	54.00	15.73	100	230

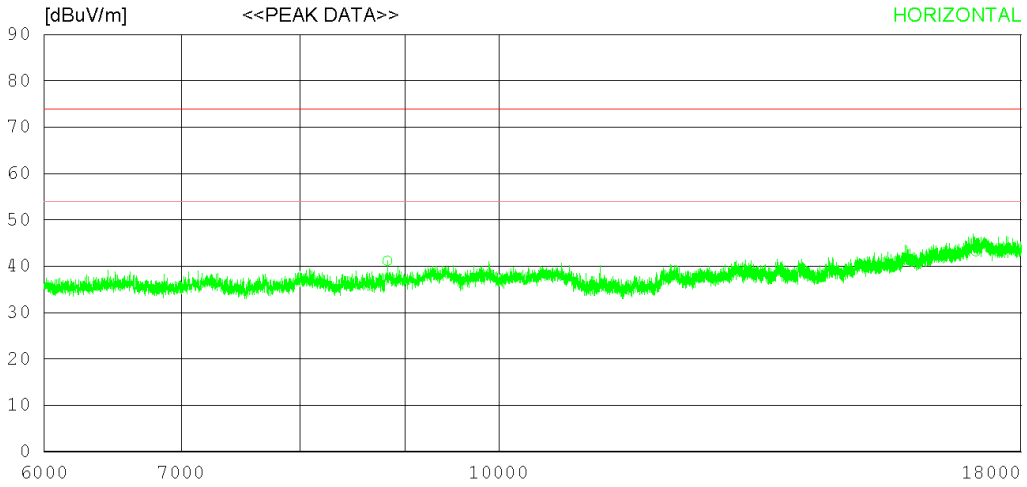
Radiated disturbance at (6 ~ 18) GHz _Peak measurement data			
Test configuration mode	**4**	**EUT Operation mode**	**4**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

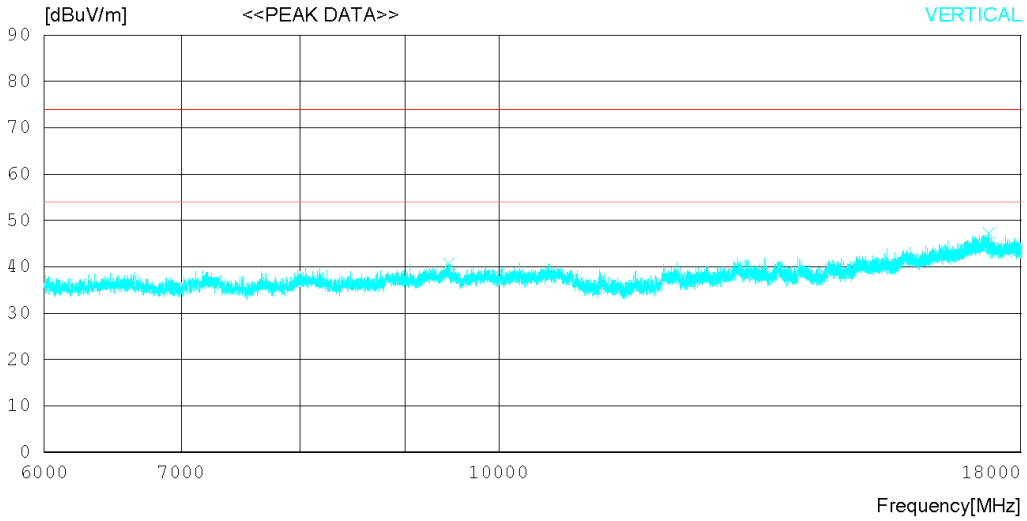
RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H
Test Condition MP4

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





* The measurement is performed above 18 GHz up to 30 GHz and not found emissions above 18 GHz.

RADIATED EMISSION

Date 2018-03-29

Order No.	DTNC1802-01423
Power Supply	Battery
Temp/Humi	22 'C 43 % R.H
Test Condition	MP4

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

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	8826.750	36.40	31.74	10.75	37.71	41.18	74.0	32.82	100	358
2	17106.750	28.50	37.55	13.40	36.26	43.19	74.0	30.81	100	1
----- Vertical ------										
3	9455.250	35.80	32.03	10.77	37.90	40.70	74.0	33.3	100	358
4	17352.750	32.70	37.84	13.43	36.64	47.33	74.0	26.67	100	223

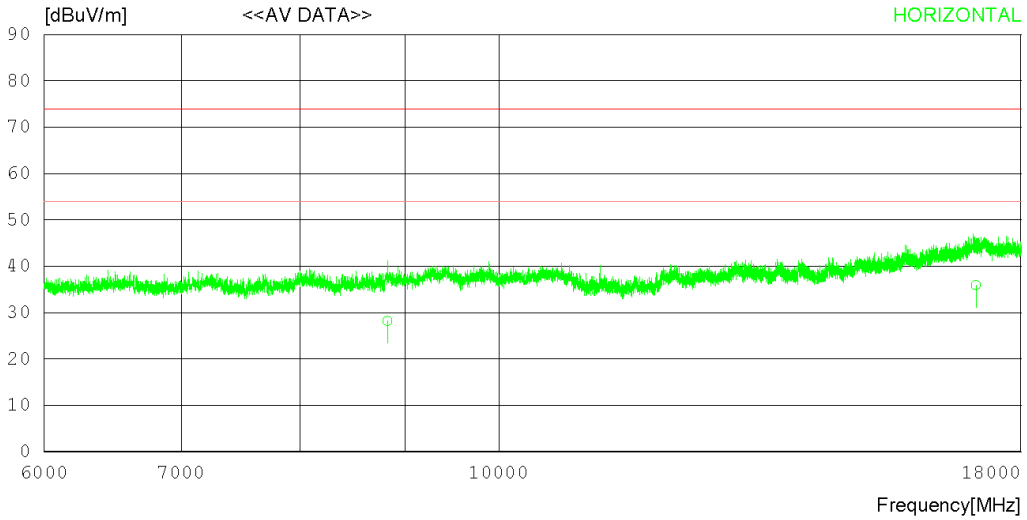
Radiated disturbance at (6 ~ 18) GHz _Average measurement data			
Test configuration mode	**4**	**EUT Operation mode**	**4**
Test voltage (V)	**120**	**Test Frequency (Hz)**	**60**

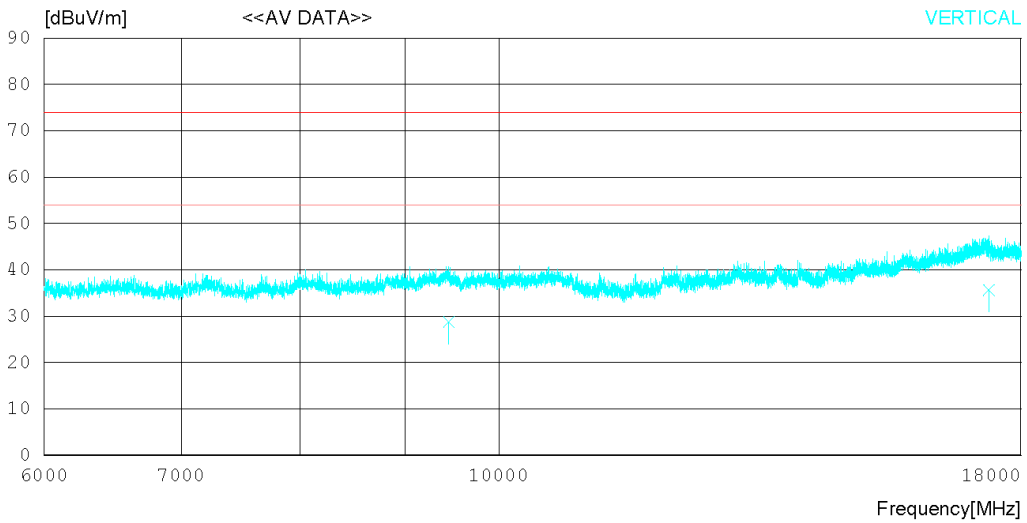
RADIATED EMISSION

Date 2018-03-29

Order No. DTNC1802-01423
Power Supply Battery
Temp/Humi 22 'C 43 % R.H
Test Condition MP4

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





* The measurement is performed above 18 GHz up to 30 GHz and not found emissions above 18 GHz.

RADIATED EMISSION

Date 2018-03-29

Order No.	DTNC1802-01423
Power Supply	Battery
Temp/Humi	22 'C 43 % R.H
Test Condition	MP4

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)
FCC Part15 Subpart.B Class B (3m) - 18G(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	8826.750	23.40	31.74	10.75	37.71	28.18	54.00	25.82	100	358
2	17106.750	21.20	37.55	13.40	36.26	35.89	54.00	18.11	100	1
----- Vertical ------										
3	9455.250	23.80	32.03	10.77	37.90	28.70	54.00	25.30	100	358
4	17352.750	21.00	37.84	13.43	36.64	35.63	54.00	18.37	100	223

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
May.31.2018	Initial report	JaeSeok Choi	MyungJin Song

-End of test report-