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 : DREFCC2011-0253

2. Customer

   • Name : MOTREX CO., LTD.

   • Address : Seoyoung Bldg., 25, Hwangsaeul-ro 258beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea

3. Use of Report : Grant of Certification

4. Product Name / Model Name : SMART DISPLAY / MS300AQY
   (FCC ID : BP9-MS300AQY)

5. Test Method Used : ANSI C63.4:2014
   FCC Part 15 Subpart B
   (FM Broadcast receiver & digital devices)

6. Date of Test : Sep. 22. 2020 ~ Sep. 28. 2020

7 Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing

8. Testing Environment : Temperature (23 ~ 24) °C , Humidity (48 ~ 50) % R.H.

9. Test Result : Refer to the attached Test Result

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

Affirmation	Tested by Name : Hun Lee (Signature)	Technical Manager Name : HyungJun Kim (Signature)

Nov. 03. 2020 .

DT&C Co., Ltd.

Not abided by KS Q ISO / IEC 17025 and KOLAS accreditation.

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-14076, R-14180, R-4496, T-11442, G-10338, G-10754, 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	MOTREX CO., LTD. Seoyoung Bldg., 25, Hwangsaeul-ro 258beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea
Manufacturer	MOTREX CO., LTD. Seoyoung Bldg., 25, Hwangsaeul-ro 258beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea
Factory	MOTREX CO., LTD. 62-7,Pungsesandan 4-ro, Pungse-myeon, Dongnam-gu, Cheonan-si, Chungcheongnam-do, Korea
Product Name	SMART DISPLAY
Model Name	MS300AQY
Add Model Name	None
Maximum Internal Frequency	1 000 MHz
Software Version	QY.CSA.SOP.009.200910
Hardware Version	Rev 0.1
Rated Power	DC 12 V
FCC ID	BP9-MS300AQY
Remarks	

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	AM	The EUT is connected to the SIGNAL GENERATOR and is receiving radio frequency. (MF) The EUT is wirelessly connected to the router and continuously sends and receives data. And we have verified the data. (WIFI5G)
2	FM	The EUT is connected to the SIGNAL GENERATOR and is receiving radio frequency. (VHF II) The EUT is wirelessly connected to the router and continuously sends and receives data. And we have verified the data. (WIFI2.4G) The EUT is wirelessly connected to the GPS SIGNAL GENERATOR and continuously receives data. (GPS)
3	USB	The EUT is connected to USB memory to play the music. (1 kHz tone) The EUT is wirelessly connected to the router and continuously sends and receives data. And we have verified the data. (WIFI5.8G) The EUT is wirelessly connected to the phone and continuously sends and receives data. (Bluetooth)

4.3 Test Configuration Mode

No.	Mode	Description
1	Receiving (AM/FM)	EUT is connected to DC power. EUT is connected to the SIGNAL GENERATOR. EUT is wirelessly connected to the router. EUT is wirelessly connected to the GPS SIGNAL GENERATOR.
2	USB	EUT is connected to DC power. EUT is connected to MULTI MEDIABOX MULTI MEDIABOX is connected to USB MEMORY EUT is wirelessly connected to the router. The EUT is wirelessly connected to the phone.

4.4 Supported Equipment

Used*	Product Type	Manufacturer	Model	Remarks
AE	MULTI MEDIABOX	N/A	N/A	None
AE	Speaker	N/A	N/A	None
AE	Phone	LG	G5	None
AE	USB MEMORY	Sandisk	ULTRA FLAIR 3.0	None
AE	ANT.	N/A	N/A	None
AE	ROUTER	RoHS	NEXT-7004N	None

*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
DC IN	DC	1.8	Non shield	Plastic	None
ANT.	I/O	3.0	Shield	Plastic	None
Multimedia box	I/O	1.5	Non shield	Plastic	None
SPEAKER	I/O	1.6	Non shield	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	DC 12 V	-	-	None

5. Test Summary

Test Items	Applied Standards	Results
Conducted Disturbance	ANSI C63.4 : 2014	**N/A (Note 1)**
Radiated Disturbance	ANSI C63.4 : 2014	**C**
Antenna Power Conduction	ANSI C63.4 : 2014	**C**
Note 1) The EUT is not a device connected to the AC mains.		
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]
-	-	-	-	-	-

-Radiated Disturbance

Frequency [MHz]	Pol.	Result [dBµV/m]	Detector	Limit [dBµV/m]	Margin [dB]
7766.405	V	50.56	Cispr - Average	54.00	3.44

-Antenna Power Conduction

Frequency [MHz]	Result [dBµV/m]	Detector	Limit [dBµV/m]	Margin [dB]
875.623	23.02	RMS	51.70	28.68

6. Test Environment

Test Items	Test date (YYYY-MM-DD)	Temp. (℃)	Humidity (% R.H.)	Pressure (kPa)
Radiated Disturbance	2020-09-22 2020-09-24 2020-09-28	23 24 23	48 50 49	-
Antenna Power Conduction	2020-09-28	24	50	

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.		**Not Applicable**

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**	**N/A**
	EUT Operation mode	**N/A**

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**
-	-	-	-	-	-

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)

Mains terminal disturbance voltage _Measurement data			
Test configuration mode	**N/A**	**EUT Operation mode**	**N/A**
Test voltage (V)	**N/A**	**Test Frequency (Hz)**	**N/A**

7.2 Radiated Disturbance

ANSI C63.4 BETS-7	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, 2**
	EUT Operation mode	**1, 2, 3**

Radiated Disturbance below 1 000 MHz

Frequency range (MHz)	**Quasi-peak limit dBµV/m**		
	Class A		**Class B**
	3 m distance	**10 m distance**	**3 m distance**
30 to 88	49.1	39.1	40
88 to 216	53.5	43.5	43.5
216 to 960	56.4	46.4	46
960 to 1 000	59.5	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 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	ESU40	ROHDE & SCHWARZ	100525	2019.12.20	2020.12.20
TRILOG BROADBAND TEST-ANTENNA WITH 6DB ATT	VULB9160	SCHWARZBECK	9160-3339	2018.10.22	2020.10.22
	2708A	HP	18403	2018.10.22	2020.10.22
LOW NOISE PRE AMPLIFIER	MLA-100K01-B01-26	TSJ	1252741	2020.02.13	2021.02.13
HORN ANTENNA	3117	ETS-LINDGREN	00152093	2020.03.26	2021.03.26
HORN ANTENNA	EM-6969	ELECTRO-METRICS	156	2019.02.13	2021.02.13
PREAMPLIFIER	MLA-0618-B03-34	TSJ	1785642	2019.12.31	2020.12.31
HORN ANTENNA WITH	3116C	ETS-LINDGREN	00213177	2019.12.12	2021.12.12
PREAMPLIFIER	JS44-18004000-35-8P	L3 NARDA-MITEQ	2046884	2019.11.04	2020.11.04
PRE AMPLIFIER	8449B	H.P	3008A00887	2020.08.31	2021.08.31
SIGNAL GENERATOR	SMT03	ROHDE & SCHWARZ	100416	2020.06.03	2021.06.03
REGULATED DC POWER SUPPLY	SDP 30-5D	SMTECHNO	305DPB 048	2020.02.12	2021.02.12
GPS GENERATOR	GSS7000	SPIRENT	0242	N/A	N/A
(NOTE : THE MEASUREMENT ANTENNAS WERE CALIBRATED IN ACCORDANCE TO THE REQUIREMENTS OF C63.5-2017.)					

Calculation

Result(dBuV/m) : Reading Value(dBuV) + Cable loss(dB) - Pre amplifier gain(dB) + Ant. Factor(dB)
Margin : Limit(dBuV/m) - Result(dBuV/m)

Radiated disturbance at (30 ~ 1000) MHz _Measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**1**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

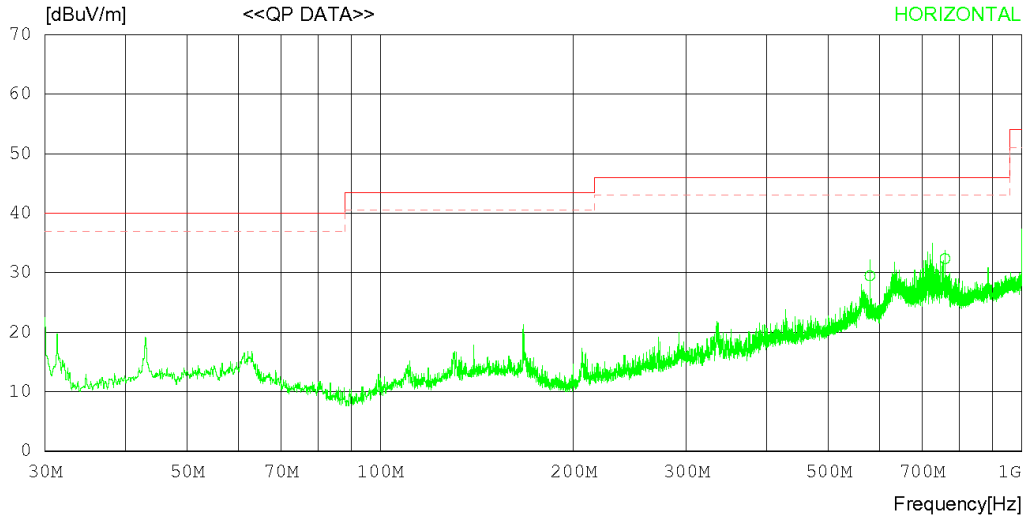
RADIATED EMISSION

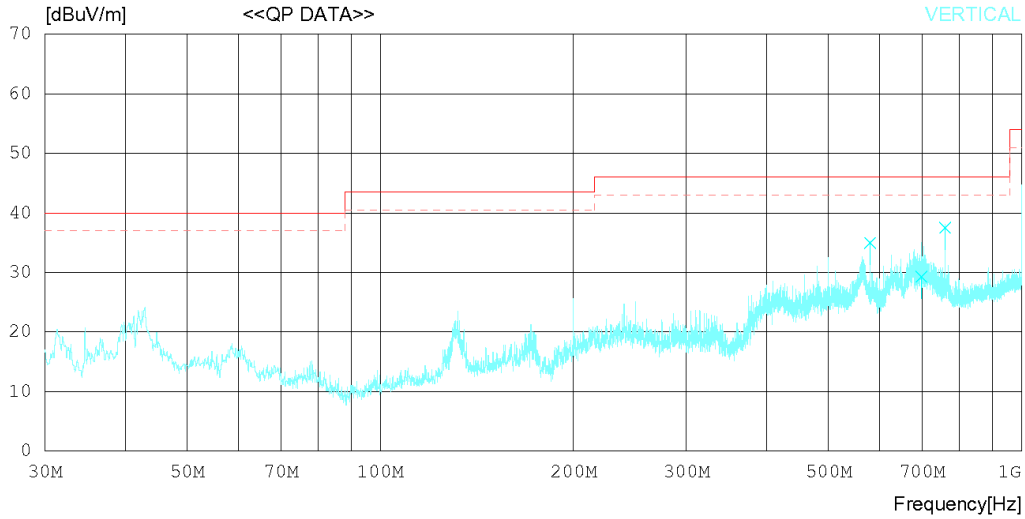
Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition AM

Memo

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





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Temp/Humi 23 'C 48 % R.H.
Test Condition AM

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	579.985	27.60	25.40	2.80	26.33	29.47	46.00	16.53	208	105
2	726.308	23.90	27.65	3.15	26.15	28.55	46.00	17.45	106	93
3	759.970	26.80	28.40	3.27	26.13	32.34	46.00	13.66	198	65
----- Vertical ------										
4	579.989	33.10	25.40	2.80	26.33	34.97	46.00	11.03	121	313
5	697.325	25.30	27.18	2.98	26.17	29.29	46.00	16.71	105	318
6	759.985	32.00	28.40	3.27	26.13	37.54	46.00	8.46	111	302

Radiated disturbance at (1 ~ 6) GHz _Peak measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**1**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

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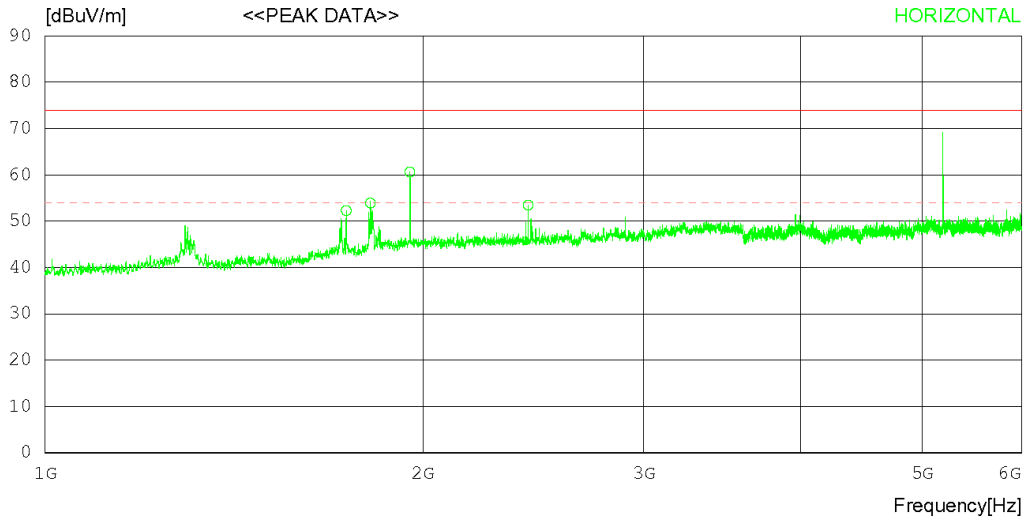
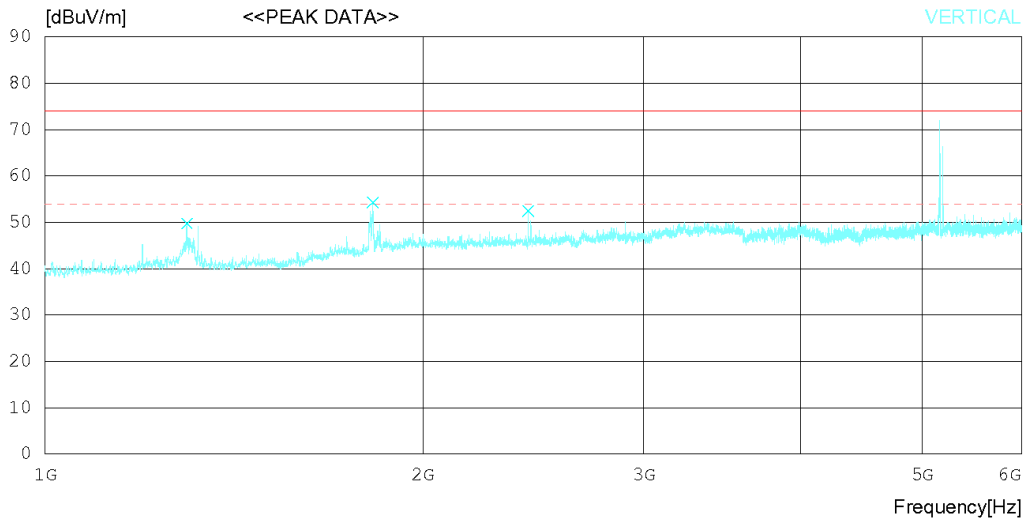
Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition AM

Memo

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





*Remark : (5,150 ~ 5,350) MHz is WIFI 5 G frequency.

RADIATED EMISSION

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Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition AM

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	1738.125	51.00	29.62	7.06	35.39	52.29	74.0	21.71	397	0
2	1816.875	51.70	30.47	7.03	35.30	53.90	74.0	20.1	388	200
3	1953.750	57.30	31.70	6.76	35.15	60.61	74.0	13.39	105	0
4	2426.875	49.30	32.20	7.11	35.14	53.47	74.0	20.53	305	0
----- Vertical ------										
5	1296.875	51.20	29.31	5.13	35.87	49.77	74.0	24.23	243	0
6	1824.375	52.00	30.59	7.01	35.29	54.31	74.0	19.69	258	358
7	2426.875	48.30	32.20	7.11	35.14	52.47	74.0	21.53	166	206

Radiated disturbance at (1 ~ 6) GHz _Average measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**1**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

RADIATED EMISSION

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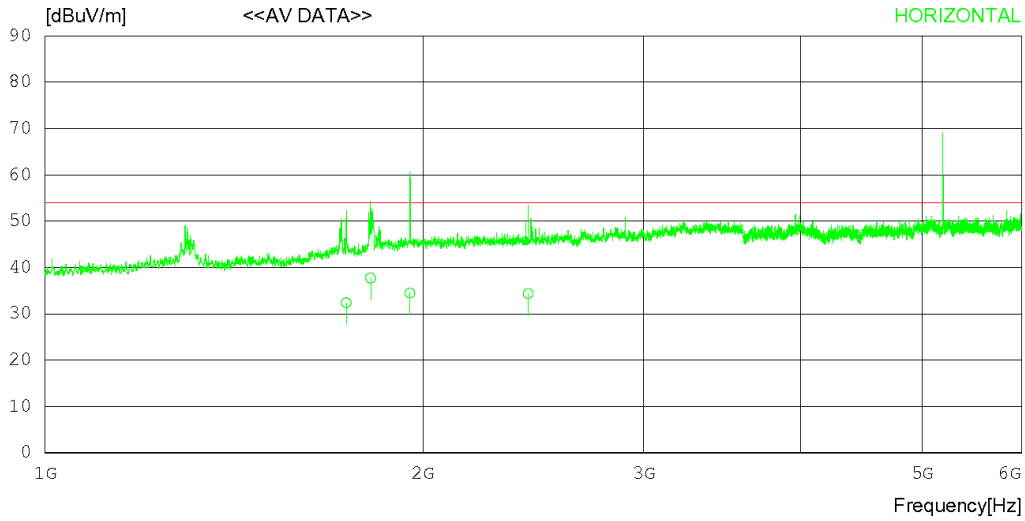
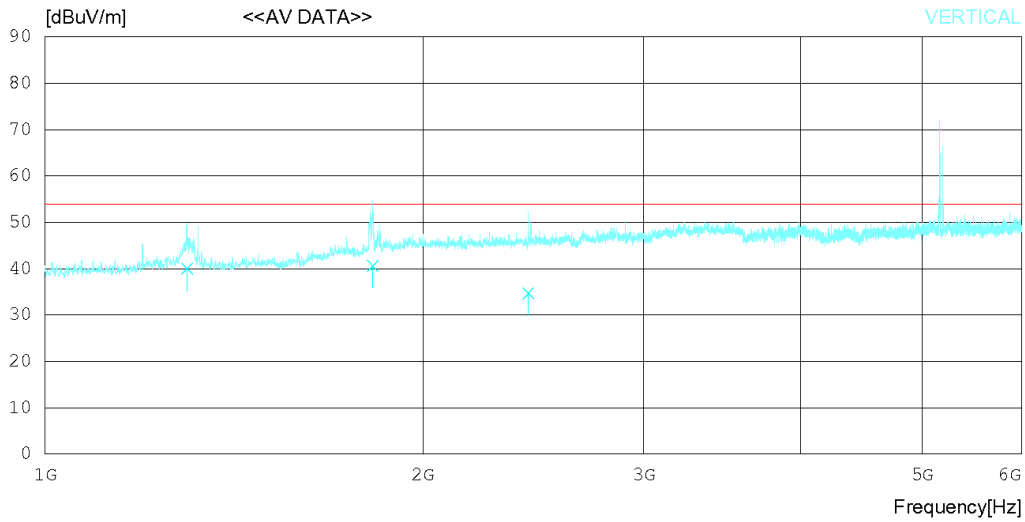
Temp/Humi 23 'C 48 % R.H.
Test Condition AM

Memo

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





*Remark : (5,150 ~ 5,350) MHz is WIFI 5 G frequency.

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Order No. DTNC2009-07656
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Memo

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

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	1738.216	31.10	29.62	7.06	35.39	32.39	54.00	21.61	198	137
2	1817.368	35.50	30.48	7.03	35.30	37.71	54.00	16.29	397	245
3	1953.802	31.20	31.70	6.76	35.15	34.51	54.00	19.49	388	54
4	2427.099	30.20	32.20	7.11	35.14	34.37	54.00	19.63	196	78
----- Vertical ------										
5	1297.335	41.40	29.31	5.13	35.87	39.97	54.00	14.03	105	220
6	1824.225	38.30	30.59	7.01	35.29	40.61	54.00	13.39	203	199
7	2426.816	30.50	32.20	7.11	35.14	34.67	54.00	19.33	312	85

Radiated disturbance at (6 ~ 18) GHz _Peak measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**1**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

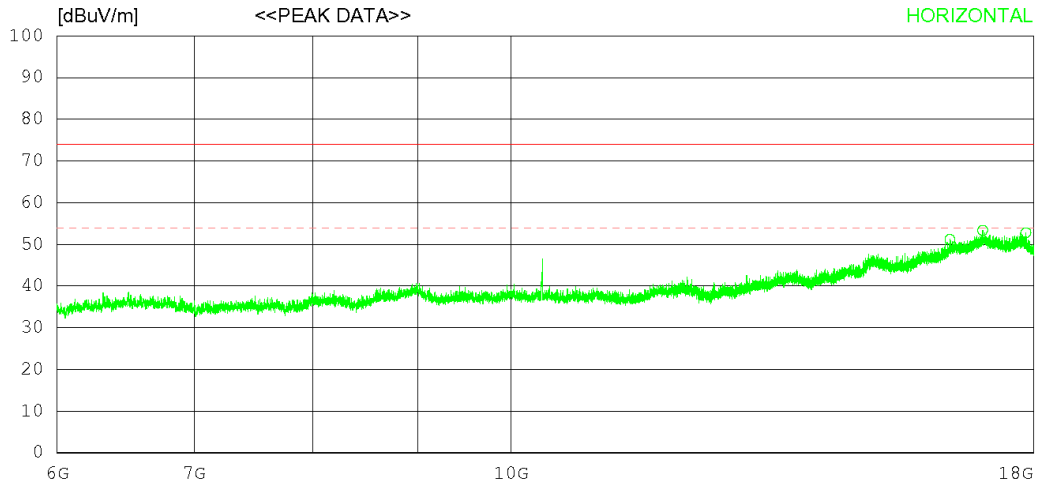
RADIATED EMISSION

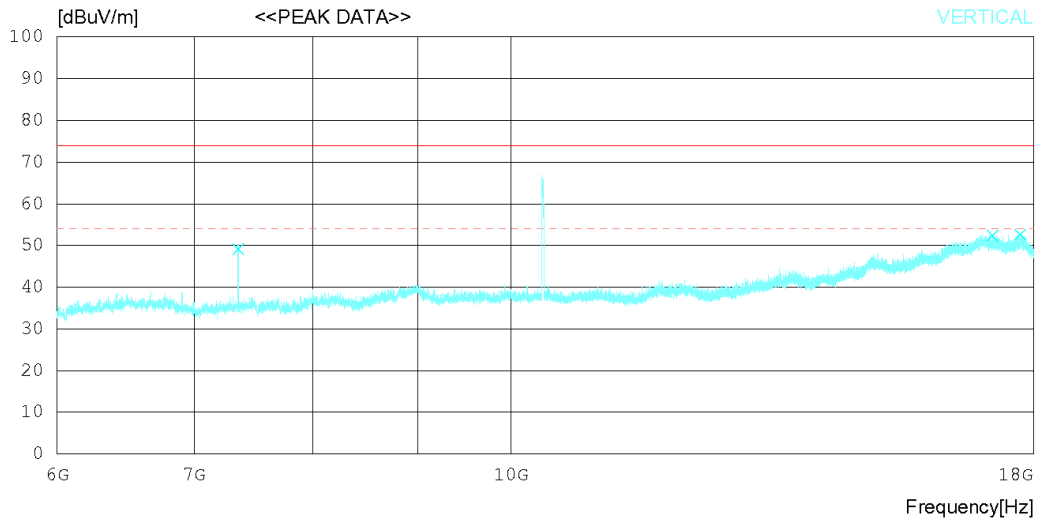
Date 2020-09-28

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 49 % R.H.
Test Condition AM

Memo

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





*Remark : (10,300 ~ 10,700) MHz is WIFI 5 G harmonics of fundamental.

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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	16383.750	28.70	36.85	21.84	36.17	51.22	74.0	22.78	115	138
2	17001.000	28.40	37.55	23.81	36.40	53.36	74.0	20.64	204	75
3	17848.500	29.60	38.20	22.55	37.56	52.79	74.0	21.21	204	311
----- Vertical ------										
4	7356.750	43.40	31.40	12.40	38.12	49.08	74.0	24.92	108	0
5	17186.250	29.00	37.69	22.33	36.62	52.40	74.0	21.6	385	358
6	17731.500	29.20	38.11	22.69	37.37	52.63	74.0	21.37	168	358

Radiated disturbance at (6 ~ 18) GHz _Average measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**1**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

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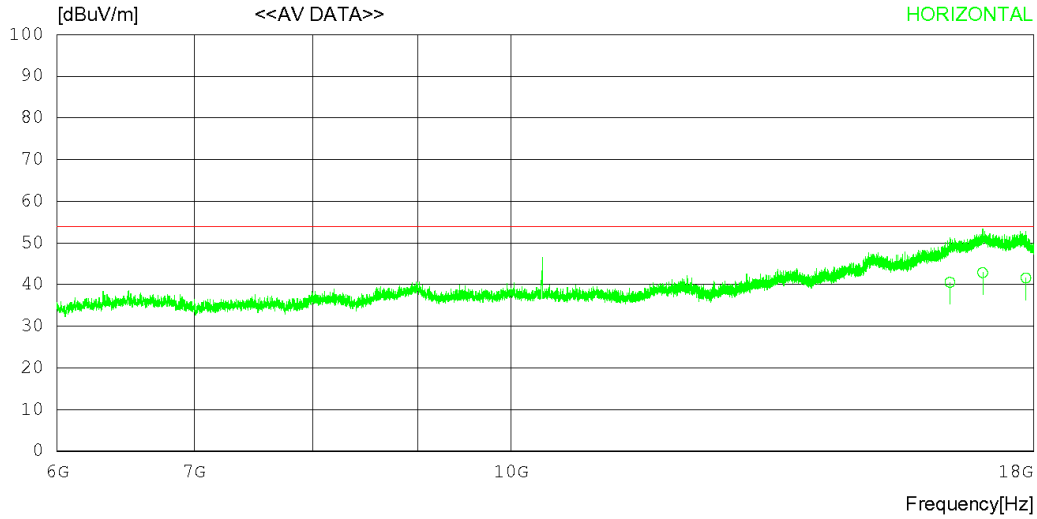
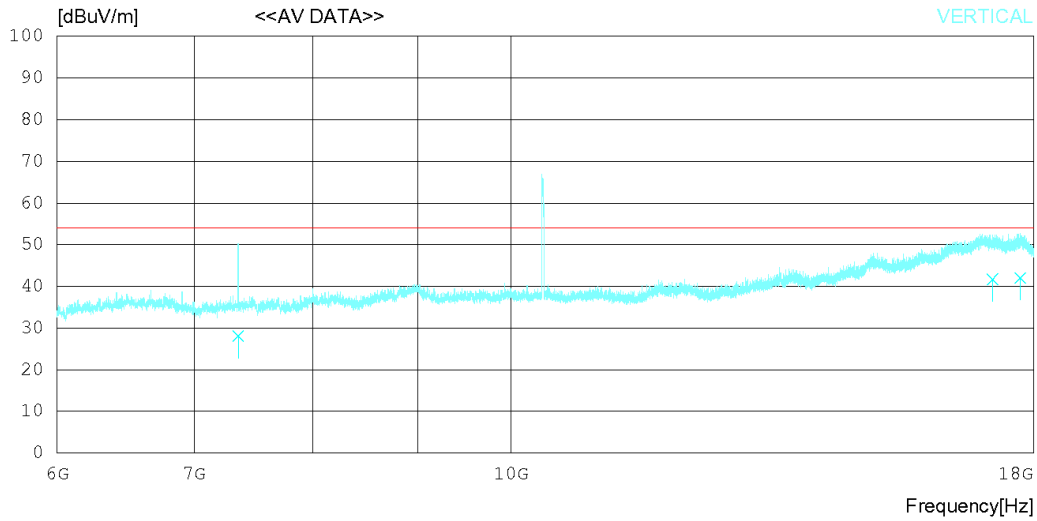
FCC Part15 Subpart.B Class B (3m) - GHz(Average)





*Remark : (10,300 ~ 10,700) MHz is WIFI 5 G harmonics of fundamental.

RADIATED EMISSION

Date 2020-09-28

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 49 % R.H.
Test Condition AM

Memo

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

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	16383.950	18.00	36.85	21.84	36.17	40.52	54.00	13.48	105	205
2	17001.440	17.90	37.55	23.79	36.40	42.84	54.00	11.16	112	109
3	17848.230	18.40	38.20	22.55	37.56	41.59	54.00	12.41	186	249
----- Vertical ------										
4	7356.690	22.40	31.40	12.40	38.12	28.08	54.00	25.92	397	55
5	17186.690	18.30	37.69	22.32	36.62	41.69	54.00	12.31	205	345
6	17731.040	18.60	38.11	22.69	37.37	42.03	54.00	11.97	225	302

Radiated disturbance at (18 ~ 40) GHz _Peak measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**1**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

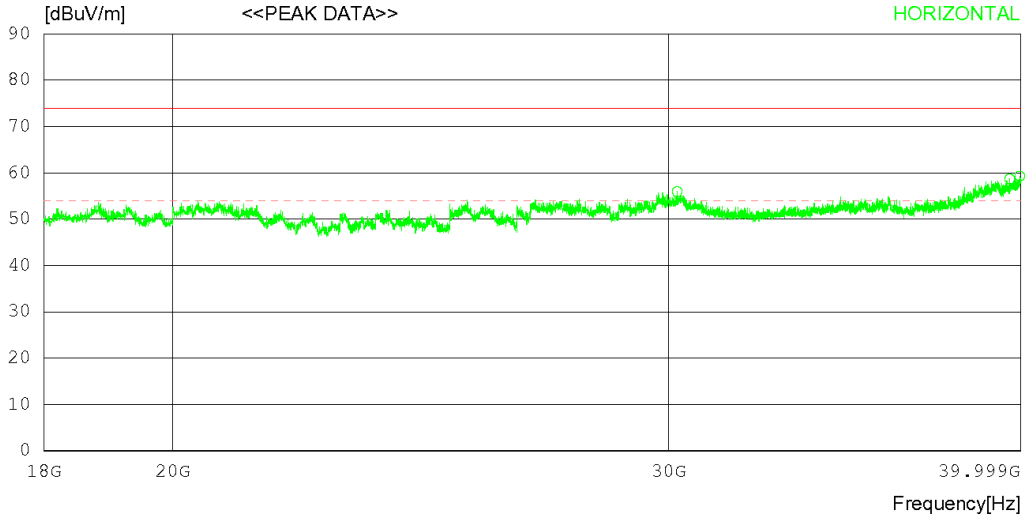
RADIATED EMISSION

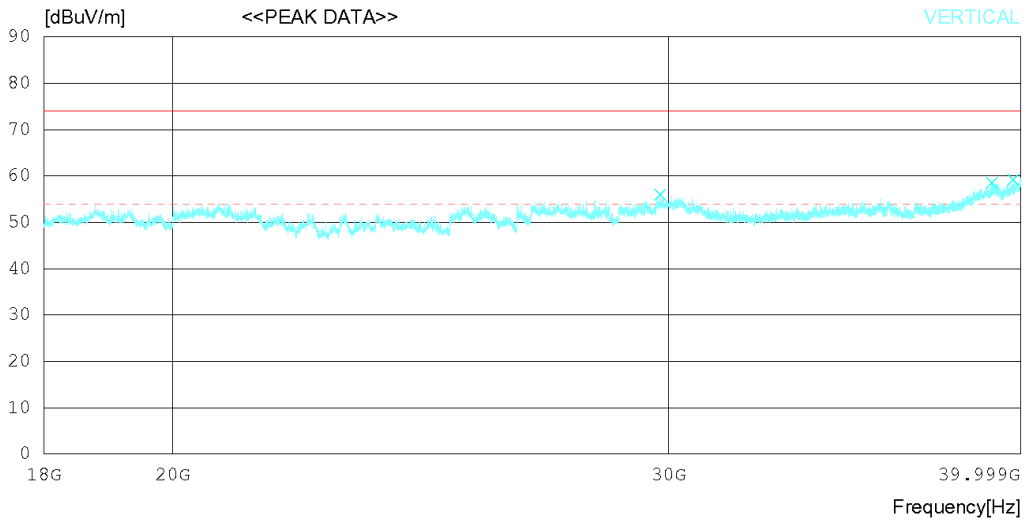
Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition AM

Memo

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





RADIATED EMISSION

Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition AM

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	30210.000	38.30	47.50	22.36	52.21	55.95	74.0	18.05	112	354
2	39653.500	37.00	48.61	25.31	52.22	58.70	74.0	15.3	198	201
3	39975.250	37.30	49.25	24.93	52.20	59.28	74.0	14.72	225	184
----- Vertical ------										
4	29786.500	38.30	47.59	22.34	52.27	55.96	74.0	18.04	205	0
5	39073.250	37.10	47.67	25.99	52.25	58.51	74.0	15.49	397	274
6	39755.250	37.40	48.81	25.19	52.21	59.19	74.0	14.81	303	210

Radiated disturbance at (18 ~ 40) GHz _Average measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**1**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

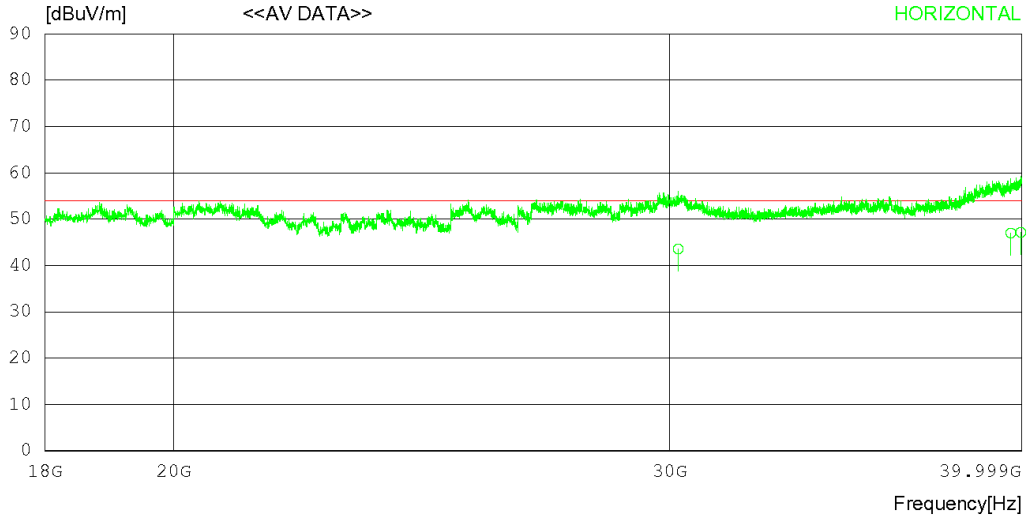
RADIATED EMISSION

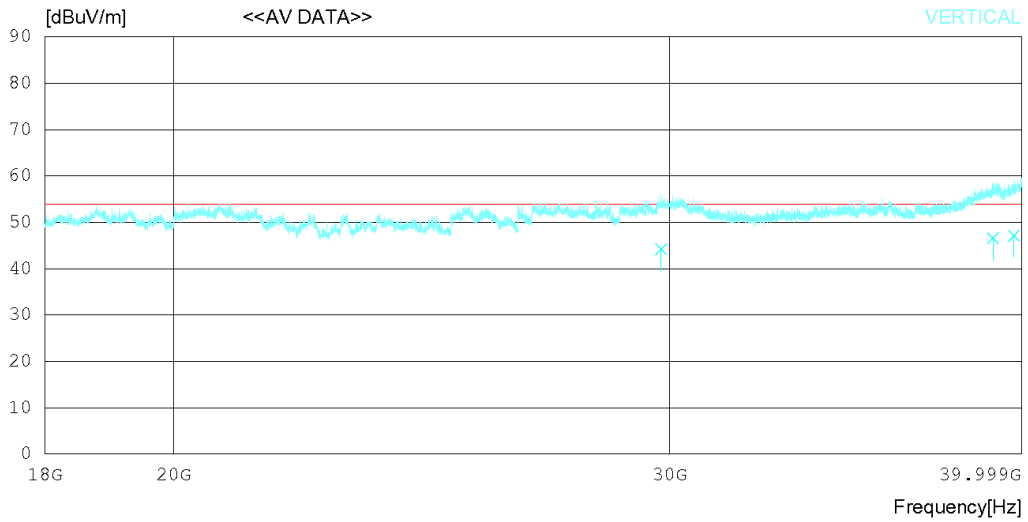
Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition AM

Memo

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





RADIATED EMISSION

Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition AM

Memo

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

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	30210.590	25.90	47.50	22.36	52.21	43.55	54.00	10.45	156	351
2	39653.650	25.30	48.61	25.31	52.22	47.00	54.00	7.00	208	250
3	39975.990	25.20	49.25	24.93	52.20	47.18	54.00	6.82	263	199
----- Vertical ------										
4	29786.360	26.50	47.59	22.34	52.27	44.16	54.00	9.84	212	55
5	39073.650	25.20	47.67	25.99	52.25	46.61	54.00	7.39	391	288
6	39755.640	25.40	48.81	25.19	52.21	47.19	54.00	6.81	335	223

Radiated disturbance at (30 ~ 1000) MHz _Measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**2**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

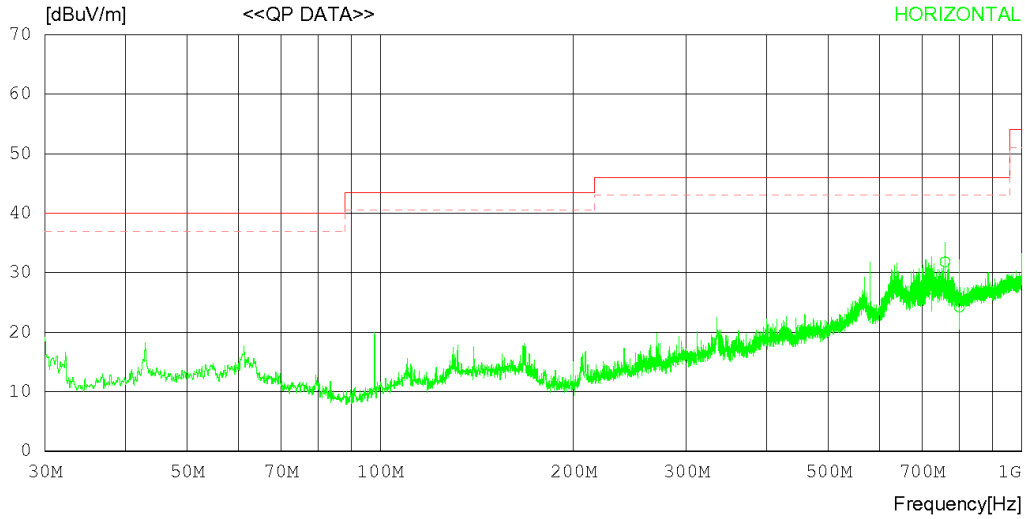
RADIATED EMISSION

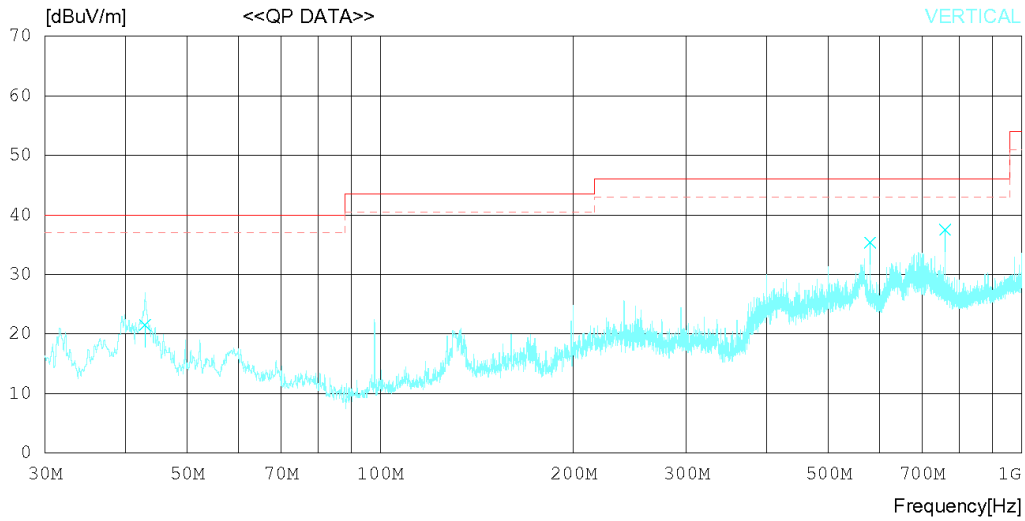
Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition FM

Memo

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





RADIATED EMISSION

Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition FM

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	724.088	22.70	27.56	3.15	26.15	27.26	46.00	18.74	205	34
2	759.998	26.30	28.40	3.27	26.13	31.84	46.00	14.16	197	105
3	799.680	19.00	28.20	3.17	26.14	24.23	46.00	21.77	104	153
----- Vertical ------										
4	42.949	29.80	17.59	0.69	26.58	21.50	40.00	18.50	105	334
5	579.998	33.50	25.40	2.80	26.33	35.37	46.00	10.63	110	296
6	759.987	32.00	28.40	3.27	26.13	37.54	46.00	8.46	102	205

Radiated disturbance at (1 ~ 6) GHz _Peak measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**2**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

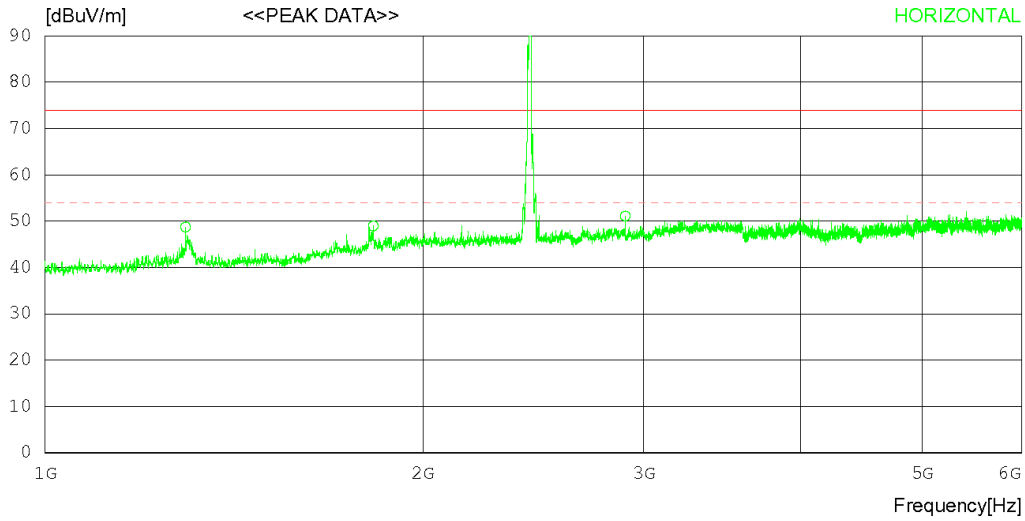
RADIATED EMISSION

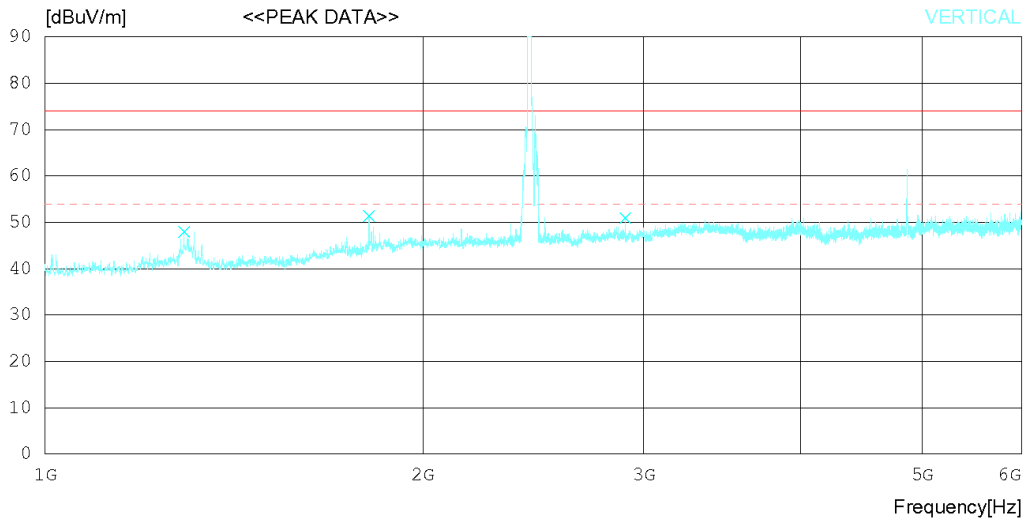
Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition FM

Memo

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





*Remark : (2,412 ~ 2,472) MHz is WIFI 2.4 G frequency.
(4,824 ~ 4,944) MHz is WIFI 2.4 G harmonics of fundamental.

RADIATED EMISSION

Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition FM

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	1294.375	50.20	29.31	5.12	35.88	48.75	74.0	25.25	397	155
2	1826.250	46.60	30.62	7.02	35.29	48.95	74.0	25.05	305	358
3	2900.000	46.20	32.60	7.53	35.19	51.14	74.0	22.86	397	358
----- Vertical ------										
4	1290.625	49.40	29.32	5.11	35.88	47.95	74.0	26.05	104	183
5	1811.875	49.20	30.39	7.04	35.31	51.32	74.0	22.68	388	0
6	2900.000	46.00	32.60	7.53	35.19	50.94	74.0	23.06	206	0

Radiated disturbance at (1 ~ 6) GHz _Average measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**2**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

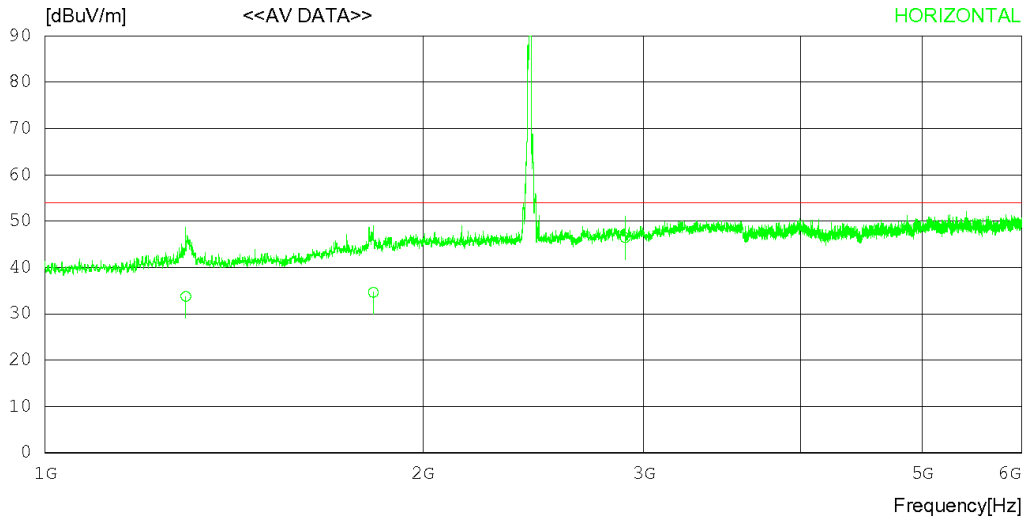
RADIATED EMISSION

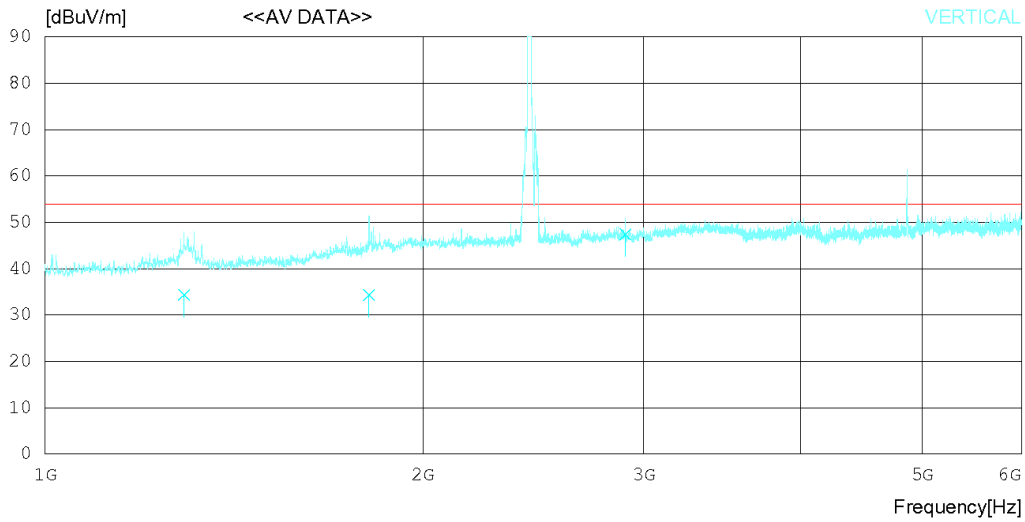
Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition FM

Memo

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





*Remark : (2,412 ~ 2,472) MHz is WIFI 2.4 G frequency.
(4,824 ~ 4,944) MHz is WIFI 2.4 G harmonics of fundamental.

RADIATED EMISSION

Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition FM

Memo

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

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	1294.739	35.20	29.31	5.12	35.88	33.75	54.00	20.25	111	135
2	1826.608	32.30	30.63	7.02	35.29	34.66	54.00	19.34	379	334
3	2900.062	41.50	32.60	7.52	35.19	46.43	54.00	7.57	396	325
----- Vertical ------										
4	1290.302	35.80	29.32	5.11	35.88	34.35	54.00	19.65	303	165
5	1812.066	32.20	30.39	7.04	35.31	34.32	54.00	19.68	202	130
6	2900.056	42.50	32.60	7.52	35.19	47.43	54.00	6.57	389	34

Radiated disturbance at (6 ~ 18) GHz _Peak measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**2**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

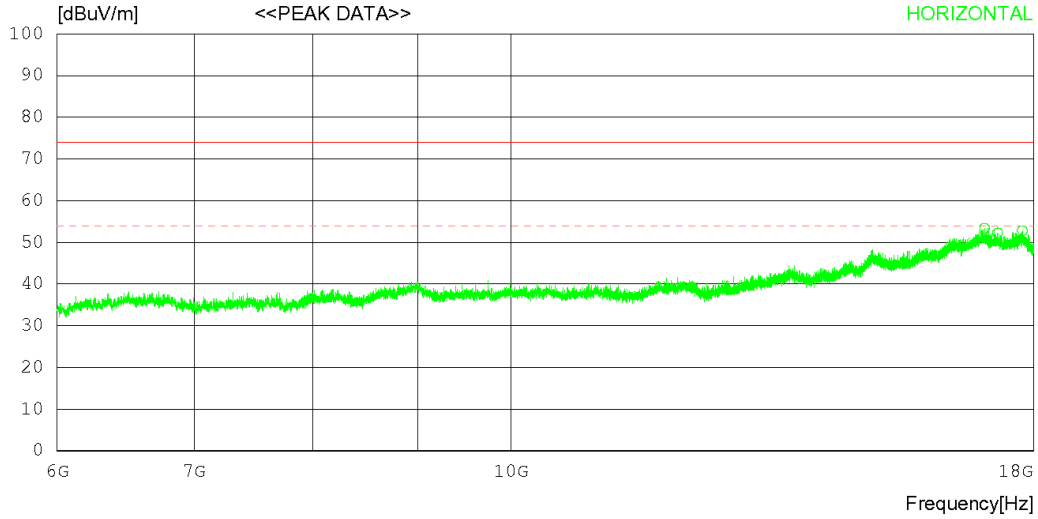
RADIATED EMISSION

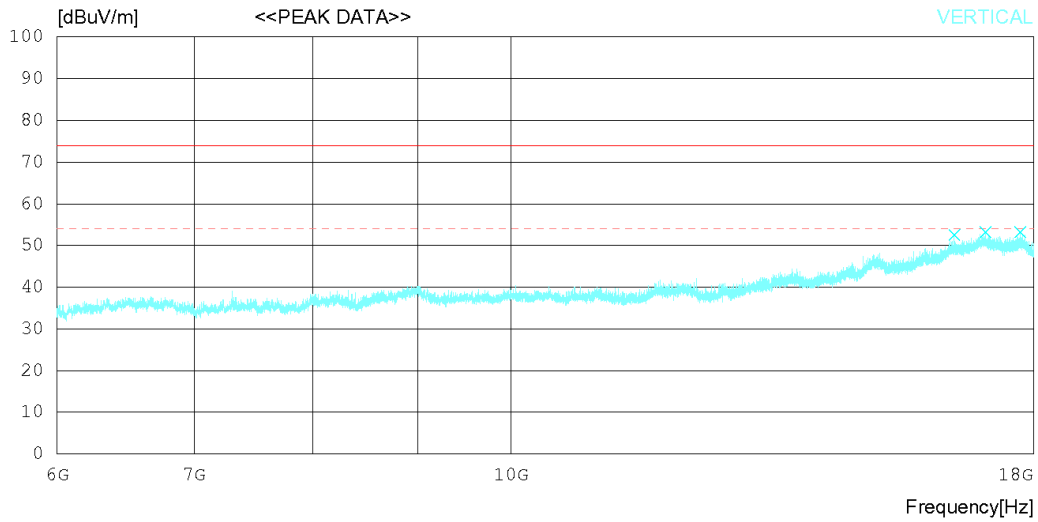
Date 2020-09-28

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 49 % R.H.
Test Condition FM

Memo

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





RADIATED EMISSION

Date 2020-09-28

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 49 % R.H.
Test Condition FM

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	17034.000	28.70	37.58	23.54	36.44	53.38	74.0	20.62	155	0
2	17286.000	29.10	37.77	22.13	36.74	52.26	74.0	21.74	199	201
3	17774.250	29.30	38.15	22.77	37.44	52.78	74.0	21.22	196	0
----- Vertical ------										
4	16465.500	29.80	36.95	21.90	36.12	52.53	74.0	21.47	187	52
5	17052.750	28.70	37.59	23.39	36.46	53.22	74.0	20.78	205	207
6	17733.000	29.80	38.11	22.70	37.37	53.24	74.0	20.76	199	264

Radiated disturbance at (6 ~ 18) GHz _Average measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**2**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

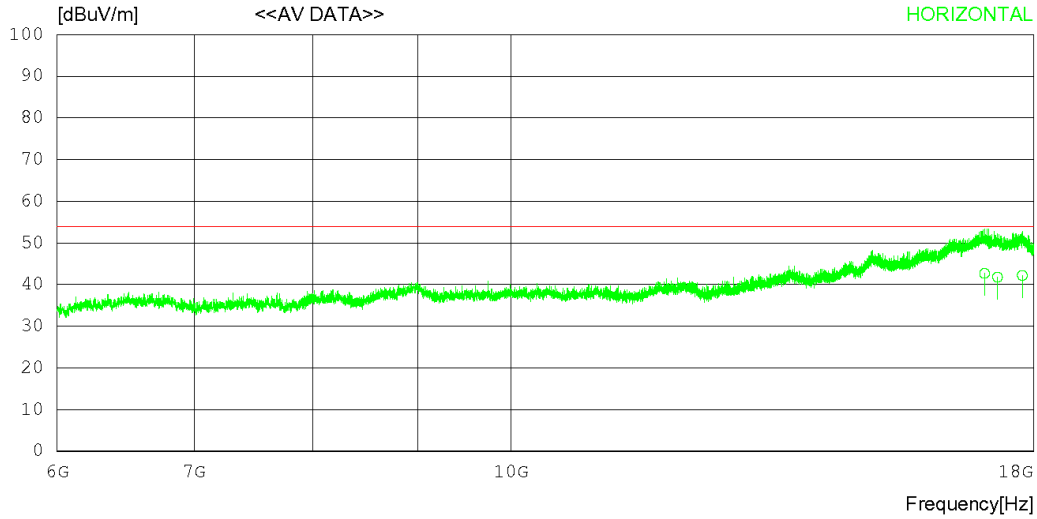
RADIATED EMISSION

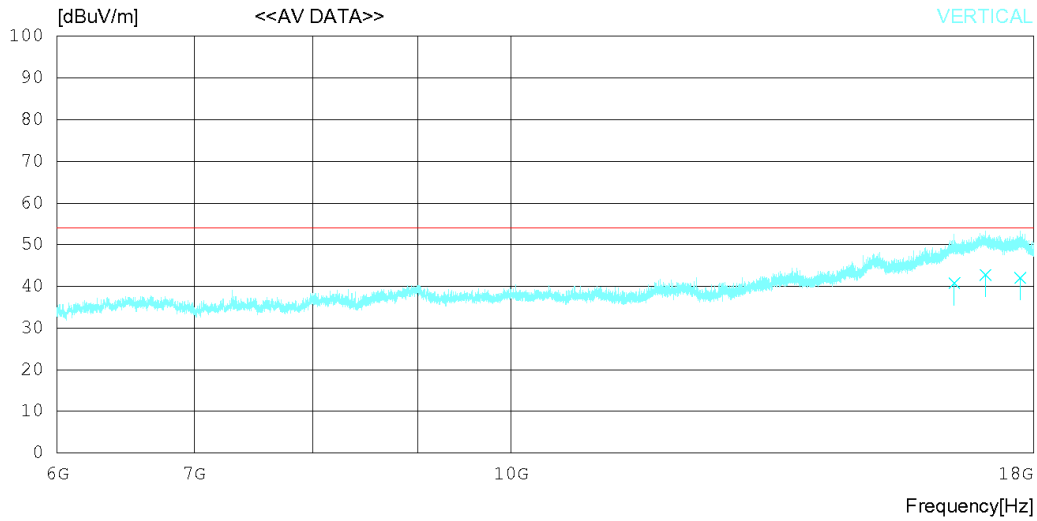
Date 2020-09-28

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 49 % R.H.
Test Condition FM

Memo

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





RADIATED EMISSION

Date 2020-09-28

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 49 % R.H.
Test Condition FM

Memo

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

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	17033.670	18.00	37.58	23.54	36.44	42.68	54.00	11.32	197	55
2	17285.970	18.60	37.77	22.13	36.74	41.76	54.00	12.24	215	226
3	17774.340	18.70	38.15	22.77	37.44	42.18	54.00	11.82	205	36
----- Vertical ------										
4	16465.870	18.00	36.95	21.90	36.12	40.73	54.00	13.27	112	305
5	17052.350	18.20	37.59	23.40	36.46	42.73	54.00	11.27	106	268
6	17733.320	18.60	38.11	22.70	37.37	42.04	54.00	11.96	204	315

Radiated disturbance at (18 ~ 40) GHz _Peak measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**2**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

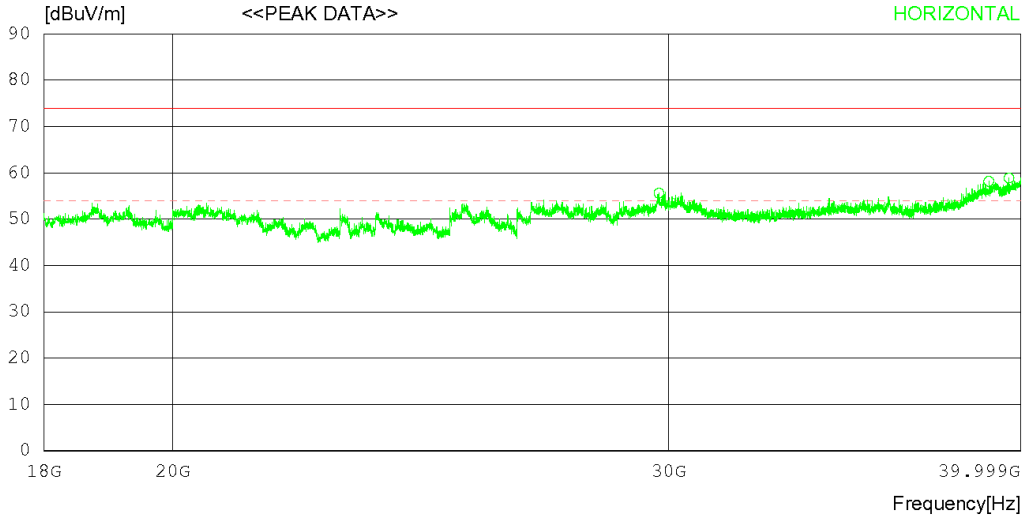
RADIATED EMISSION

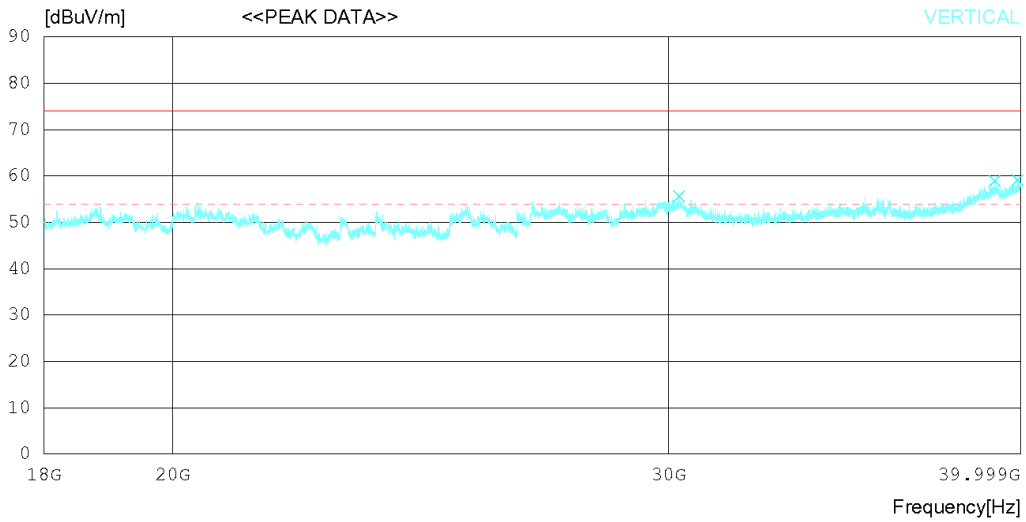
Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition FM

Memo

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





RADIATED EMISSION

Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition FM

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	29761.750	38.00	47.56	22.34	52.28	55.62	74.0	18.38	394	358
2	38977.000	36.80	47.58	26.04	52.25	58.17	74.0	15.83	104	0
3	39623.250	37.20	48.55	25.34	52.22	58.87	74.0	15.13	387	0
----- Vertical ------										
4	30254.000	38.00	47.50	22.37	52.21	55.66	74.0	18.34	312	273
5	39166.750	37.50	47.83	25.88	52.24	58.97	74.0	15.03	112	0
6	39898.250	37.20	49.10	25.02	52.21	59.11	74.0	14.89	395	0

Radiated disturbance at (18 ~ 40) GHz _Average measurement data			
Test configuration mode	**1**	**EUT Operation mode**	**2**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

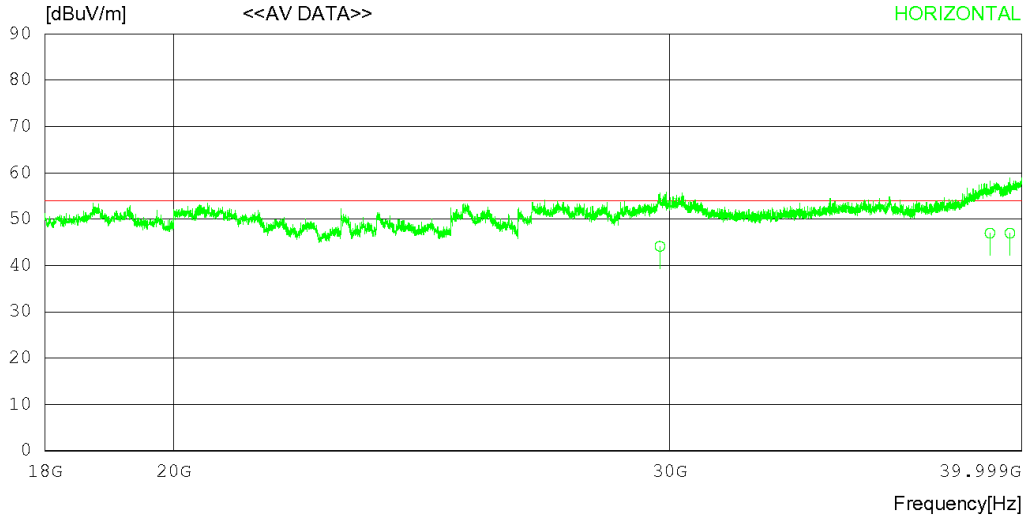
RADIATED EMISSION

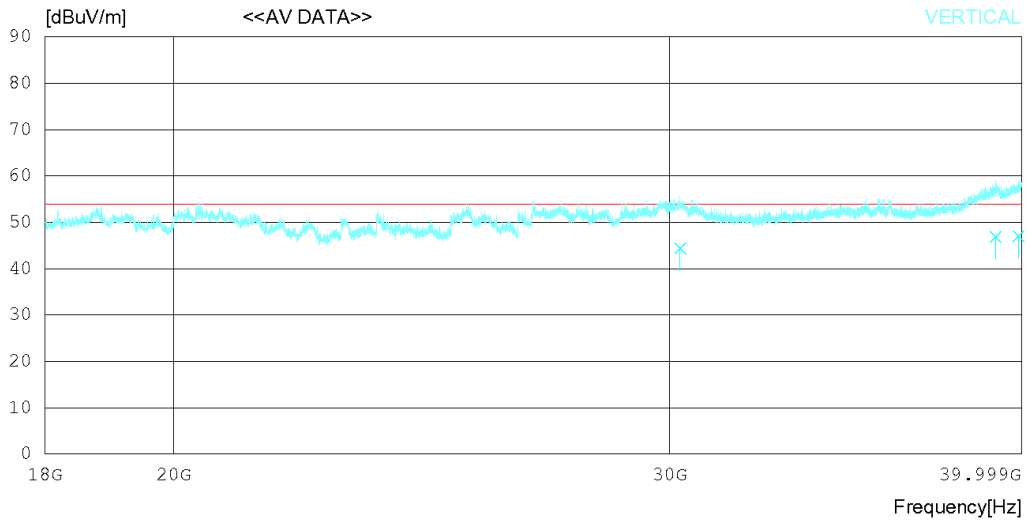
Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition FM

Memo

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





RADIATED EMISSION

Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition FM

Memo

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

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	29761.560	26.50	47.56	22.34	52.28	44.12	54.00	9.88	367	344
2	38977.640	25.60	47.58	26.04	52.25	46.97	54.00	7.03	107	54
3	39623.790	25.30	48.55	25.34	52.22	46.97	54.00	7.03	342	32
----- Vertical ------										
4	30254.880	26.70	47.50	22.37	52.21	44.36	54.00	9.64	285	255
5	39166.350	25.40	47.83	25.88	52.24	46.87	54.00	7.13	165	105
6	39898.640	25.10	49.10	25.02	52.21	47.01	54.00	6.99	399	145

Radiated disturbance at (30 ~ 1000) MHz _Measurement data			
Test configuration mode	**2**	**EUT Operation mode**	**3**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

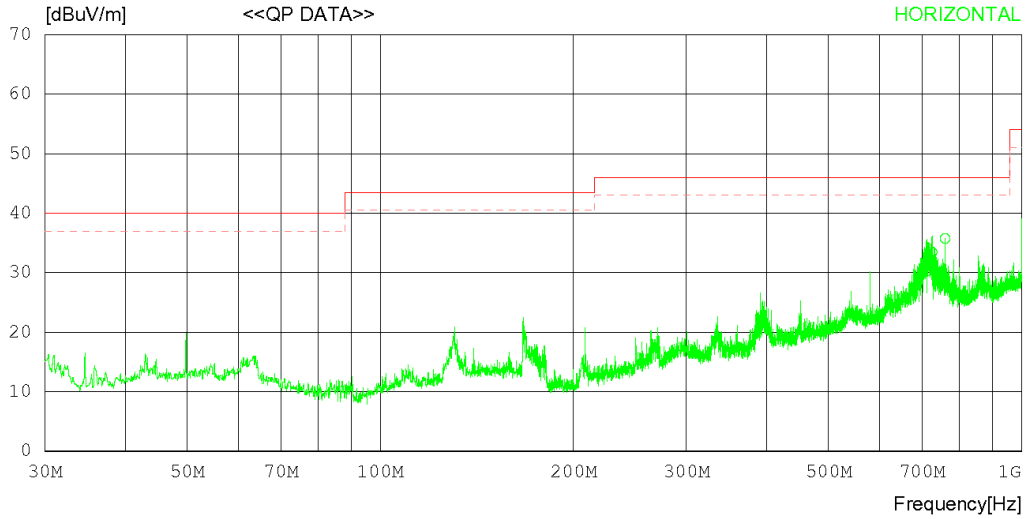
RADIATED EMISSION

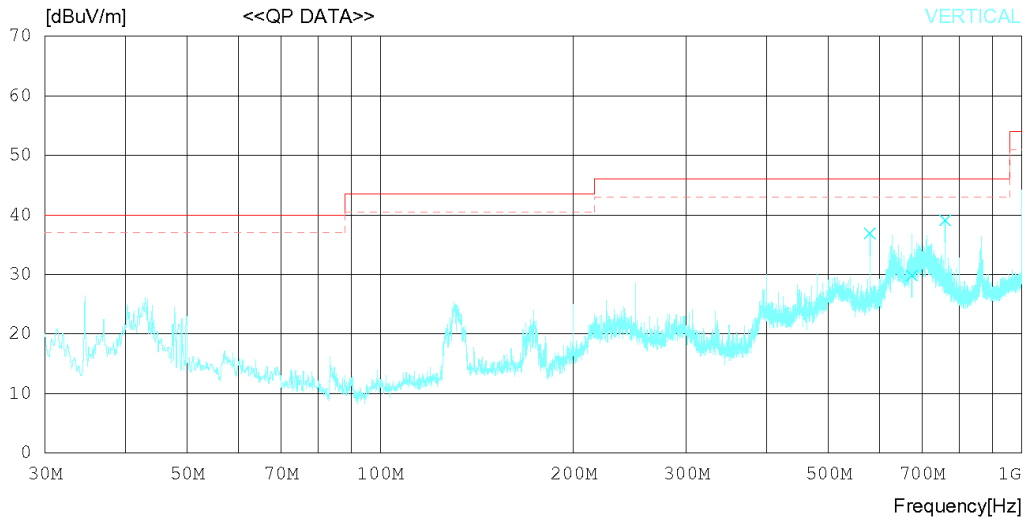
Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition USB

Memo

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





RADIATED EMISSION

Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition USB

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	711.824	26.20	27.15	3.07	26.16	30.26	46.00	15.74	197	33
2	725.493	28.80	27.62	3.14	26.15	33.41	46.00	12.59	112	78
3	759.968	30.20	28.40	3.27	26.13	35.74	46.00	10.26	105	113
----- Vertical ------										
4	579.992	35.00	25.40	2.80	26.33	36.87	46.00	9.13	115	54
5	674.002	25.70	27.44	2.88	26.21	29.81	46.00	16.19	105	267
6	759.972	33.60	28.40	3.27	26.13	39.14	46.00	6.86	102	344

Radiated disturbance at (1 ~ 6) GHz _Peak measurement data			
Test configuration mode	**2**	**EUT Operation mode**	**3**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

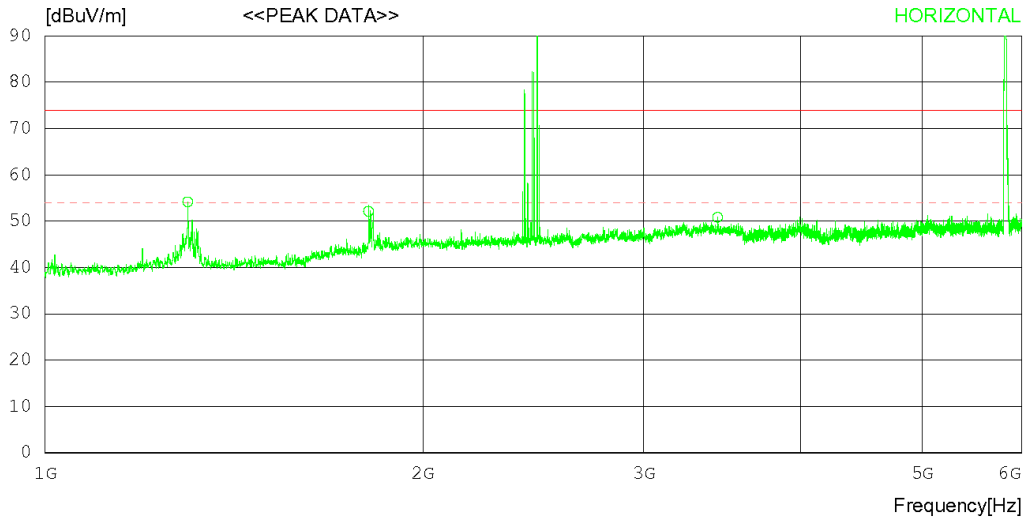
RADIATED EMISSION

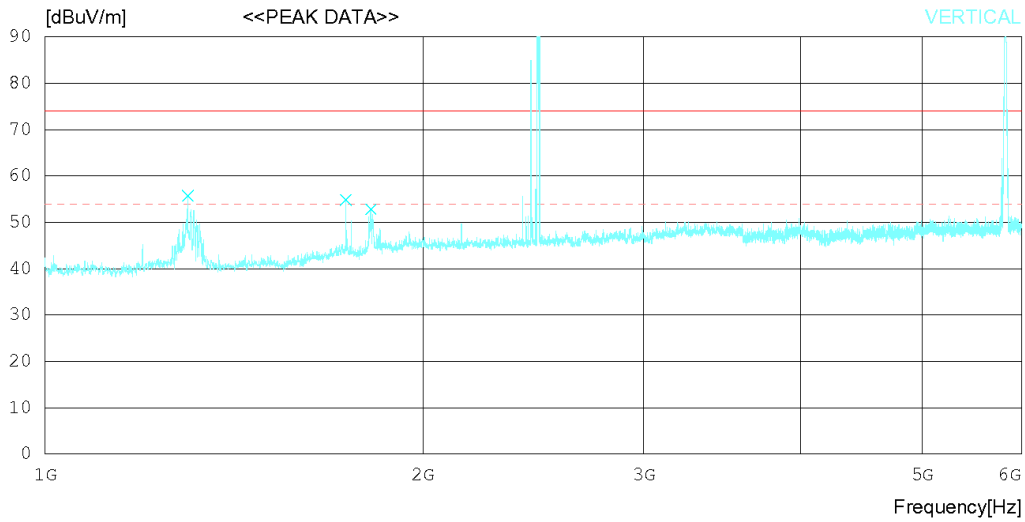
Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition USB

Memo

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





* Remark : (2,402 ~ 2,480) MHz is BT frequency.
(5,725 ~ 5,815) MHz are WIFI 5.8 G frequency.

RADIATED EMISSION

Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition USB

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	1299.375	55.60	29.30	5.14	35.87	54.17	74.0	19.83	254	358
2	1810.625	50.00	30.37	7.04	35.31	52.10	74.0	21.9	204	352
3	3435.000	43.90	33.40	8.50	34.98	50.82	74.0	23.18	105	46
----- Vertical ------										
4	1299.375	57.20	29.30	5.14	35.87	55.77	74.0	18.23	202	0
5	1736.250	53.50	29.63	7.06	35.39	54.80	74.0	19.2	335	358
6	1817.500	50.60	30.48	7.03	35.30	52.81	74.0	21.19	309	358

Radiated disturbance at (1 ~ 6) GHz _Average measurement data			
Test configuration mode	**2**	**EUT Operation mode**	**3**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

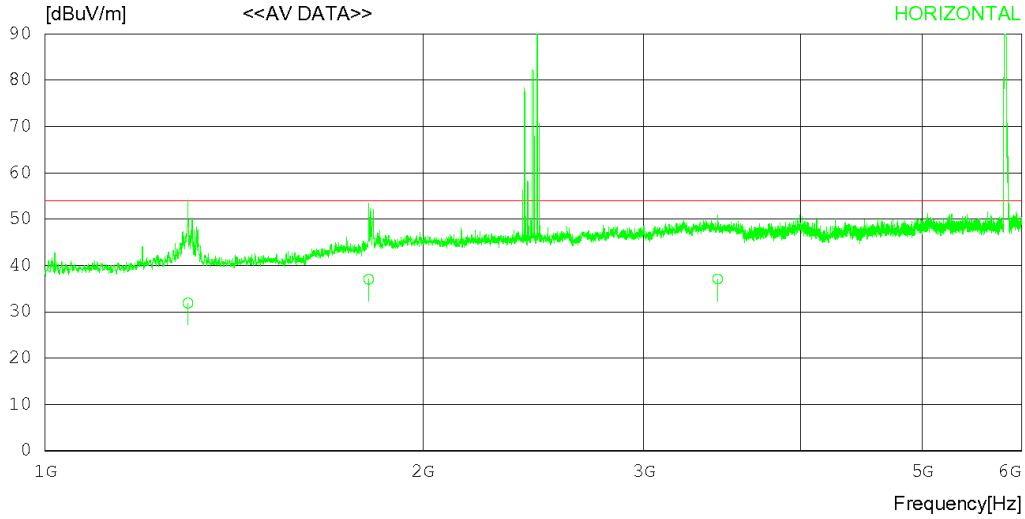
RADIATED EMISSION

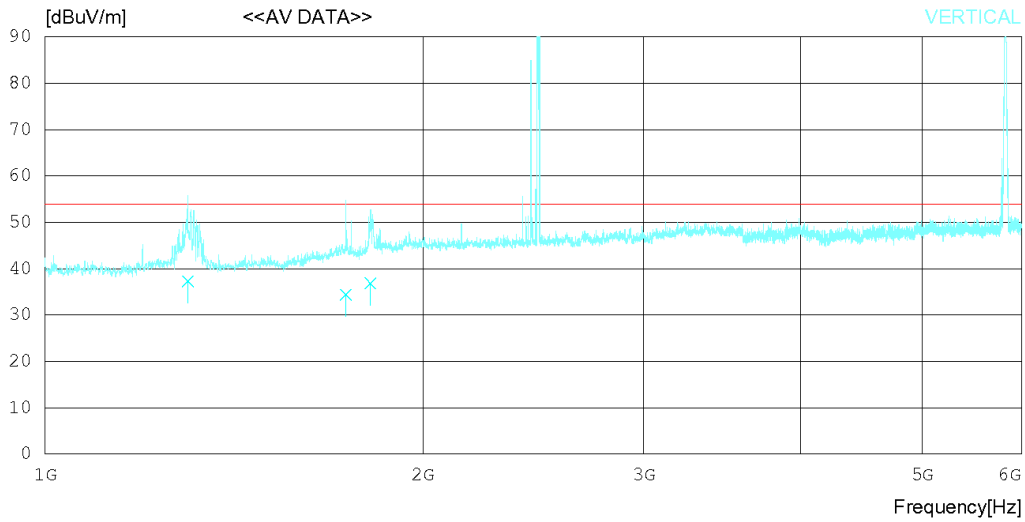
Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition USB

Memo

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





* Remark : (2,402 ~ 2,480) MHz is BT frequency.
(5,725 ~ 5,815) MHz are WIFI 5.8 G frequency.

RADIATED EMISSION

Date 2020-09-22

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 23 'C 48 % R.H.
Test Condition USB

Memo

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

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	1299.844	33.30	29.30	5.14	35.87	31.87	54.00	22.13	205	302
2	1811.053	34.90	30.38	7.04	35.31	37.01	54.00	16.99	298	344
3	3435.398	30.20	33.40	8.49	34.98	37.11	54.00	16.89	297	105
----- Vertical ------										
4	1299.859	38.70	29.30	5.14	35.87	37.27	54.00	16.73	204	53
5	1736.361	33.10	29.63	7.06	35.39	34.40	54.00	19.60	305	325
6	1817.248	34.60	30.48	7.03	35.30	36.81	54.00	17.19	105	344

Radiated disturbance at (6 ~ 18) GHz _Peak measurement data			
Test configuration mode	**2**	**EUT Operation mode**	**3**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

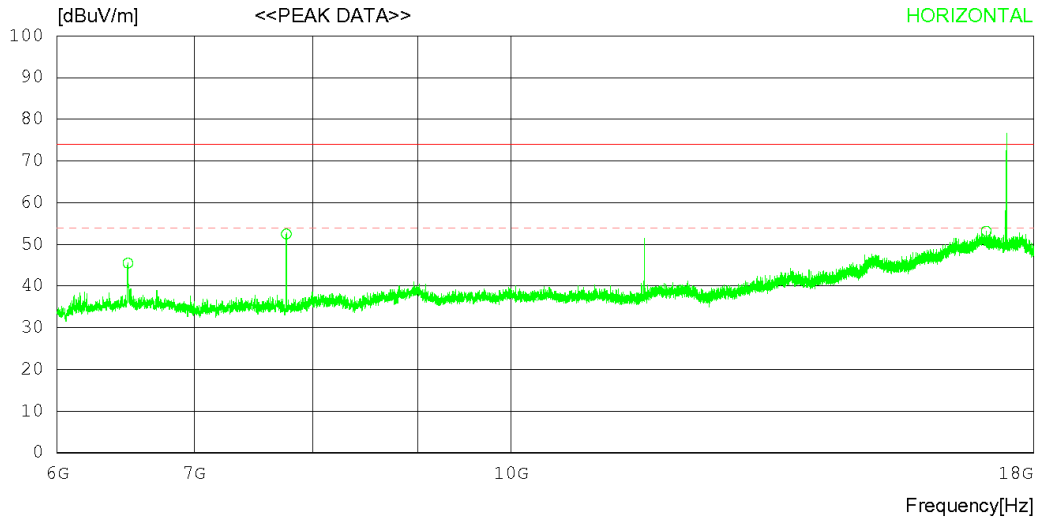
RADIATED EMISSION

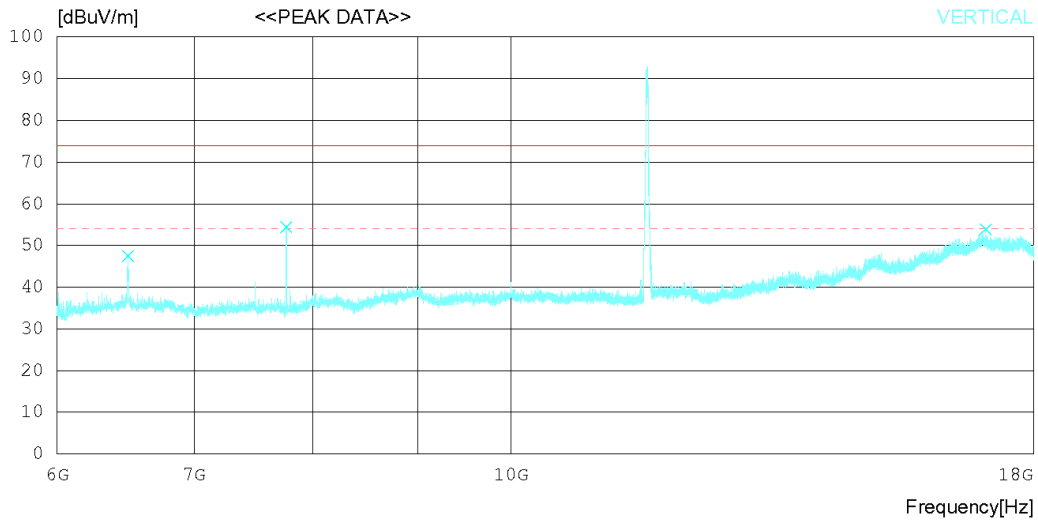
Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition USB

Memo

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





* Remark : (11,450 ~ 11,630) MHz are WIFI 5.8 G harmonics of fundamental.
(17,175 ~ 17,445) MHz is WIFI 5.8 G harmonics of fundamental.

RADIATED EMISSION

Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition USB

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	6498.750	41.30	31.59	11.42	38.80	45.51	74.0	28.49	124	0
2	7765.500	46.80	31.34	12.15	37.82	52.47	74.0	21.53	205	322
3	17067.750	28.80	37.60	23.27	36.48	53.19	74.0	20.81	102	104
----- Vertical ------										
4	6499.500	43.30	31.59	11.42	38.80	47.51	74.0	26.49	335	358
5	7765.500	48.70	31.34	12.15	37.82	54.37	74.0	19.63	155	251
6	17055.750	29.40	37.59	23.37	36.47	53.89	74.0	20.11	199	351

Radiated disturbance at (6 ~ 18) GHz _Average measurement data			
Test configuration mode	**2**	**EUT Operation mode**	**3**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

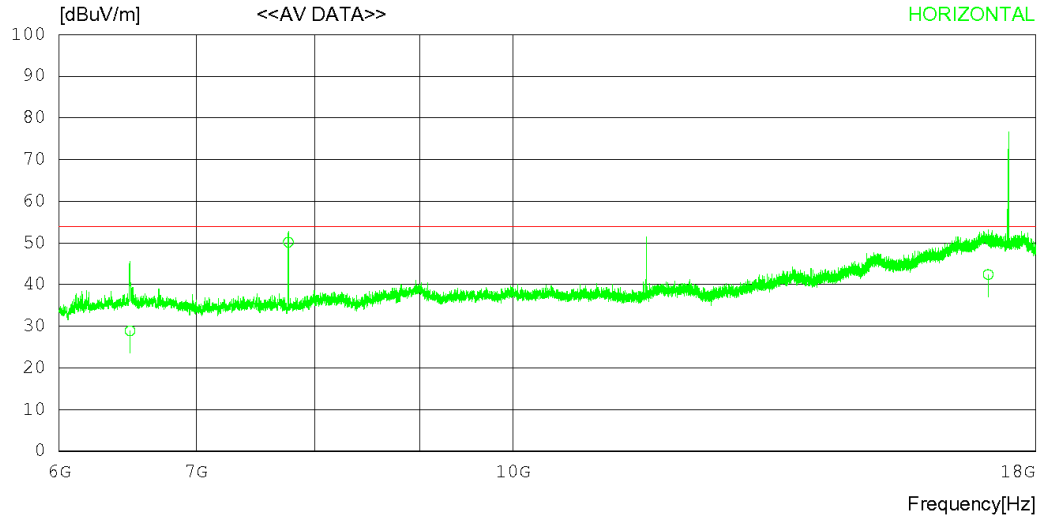
RADIATED EMISSION

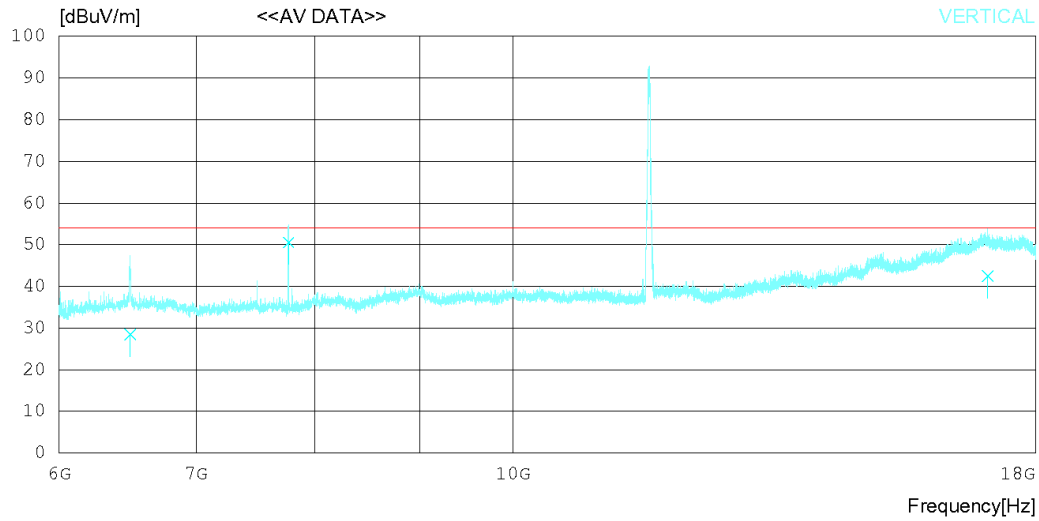
Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition USB

Memo

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





* Remark : (11,450 ~ 11,630) MHz are WIFI 5.8 G harmonics of fundamental.
(17,175 ~ 17,445) MHz is WIFI 5.8 G harmonics of fundamental.

RADIATED EMISSION

Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition USB

Memo

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

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	6499.339	24.70	31.59	11.42	38.80	28.91	54.00	25.09	115	67
2	7766.653	44.50	31.34	12.14	37.82	50.16	54.00	3.84	202	297
3	17068.650	18.00	37.60	23.27	36.48	42.39	54.00	11.61	107	115
----- Vertical ------										
4	6499.903	24.20	31.59	11.42	38.80	28.41	54.00	25.59	341	301
5	7766.405	44.90	31.34	12.14	37.82	50.56	54.00	3.44	155	251
6	17055.610	18.00	37.59	23.37	36.47	42.49	54.00	11.51	204	335

Radiated disturbance at (18 ~ 40) GHz _Peak measurement data			
Test configuration mode	**2**	**EUT Operation mode**	**3**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

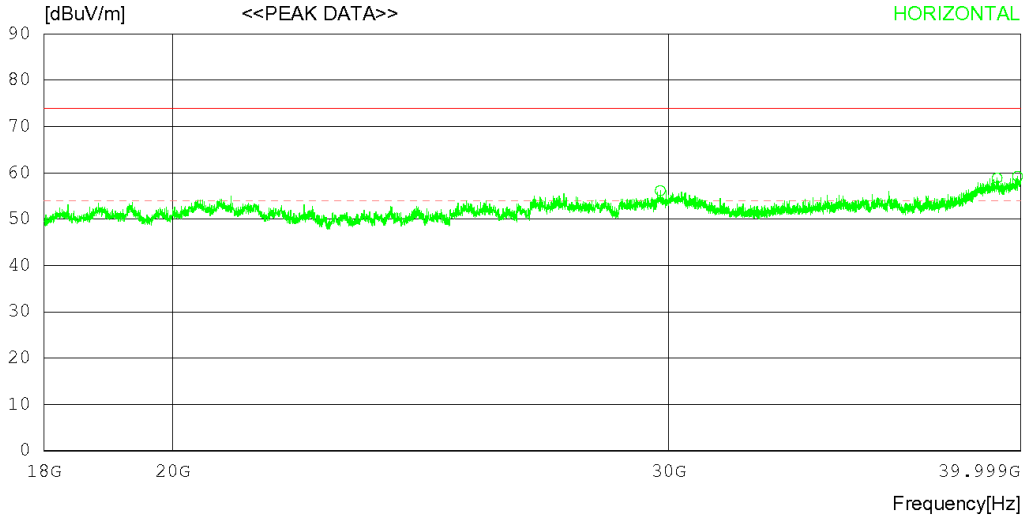
RADIATED EMISSION

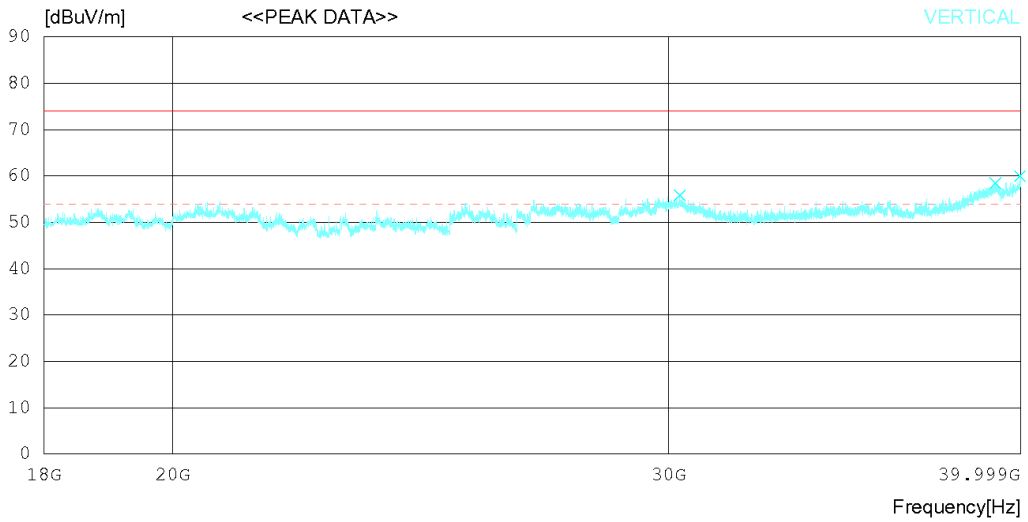
Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition USB

Memo

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





RADIATED EMISSION

Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition USB

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	29794.750	38.50	47.59	22.34	52.27	56.16	74.0	17.84	398	91
2	39243.750	37.40	47.94	25.79	52.24	58.89	74.0	15.11	303	0
3	39906.500	37.30	49.11	25.01	52.20	59.22	74.0	14.78	311	358
----- Vertical ------										
4	30273.250	38.20	47.50	22.37	52.21	55.86	74.0	18.14	241	0
5	39186.000	37.00	47.87	25.86	52.24	58.49	74.0	15.51	154	197
6	39989.000	38.00	49.28	24.92	52.20	60.00	74.0	14	104	0

Radiated disturbance at (18 ~ 40) GHz _Average measurement data			
Test configuration mode	**2**	**EUT Operation mode**	**3**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**

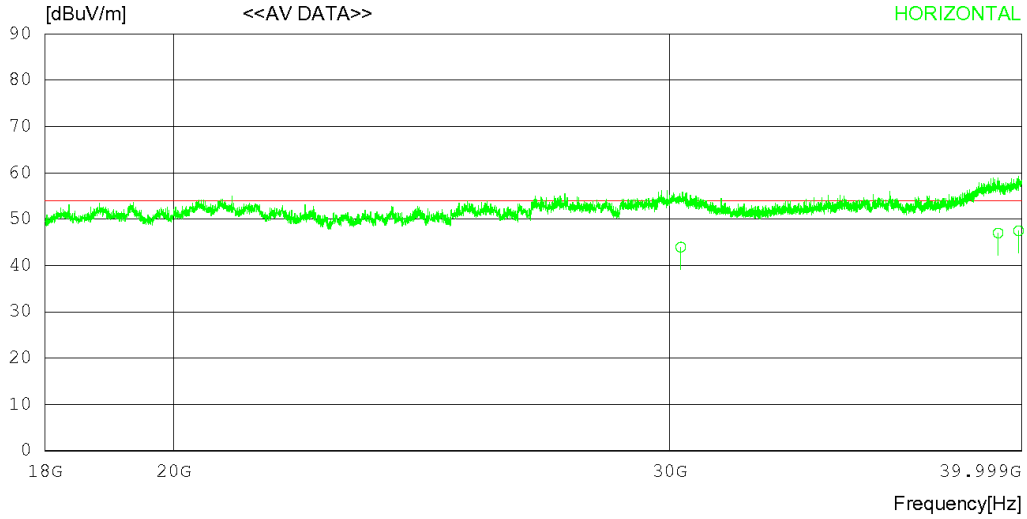
RADIATED EMISSION

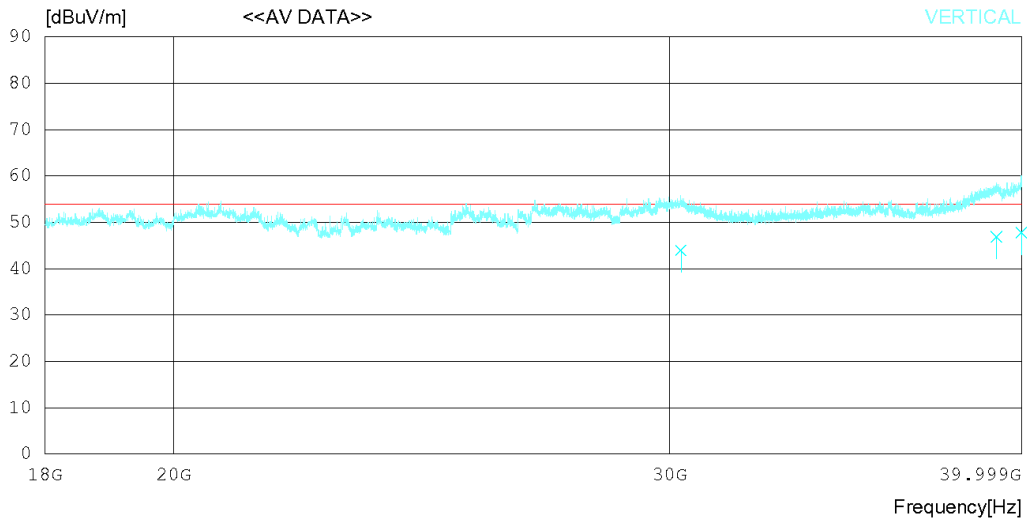
Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition USB

Memo

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





RADIATED EMISSION

Date 2020-09-24

Order No. DTNC2009-07656
Power Supply DC 12 V
Temp/Humi 24 'C 50 % R.H.
Test Condition USB

Memo

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

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	30273.210	26.30	47.50	22.37	52.21	43.96	54.00	10.04	364	105
2	39243.730	25.50	47.94	25.79	52.24	46.99	54.00	7.01	297	56
3	39906.500	25.60	49.11	25.01	52.20	47.52	54.00	6.48	324	344
----- Vertical ------										
4	30273.610	26.30	47.50	22.37	52.21	43.96	54.00	10.04	220	45
5	39186.150	25.40	47.87	25.86	52.24	46.89	54.00	7.11	188	251
6	39988.710	25.80	49.28	24.92	52.20	47.80	54.00	6.20	110	54

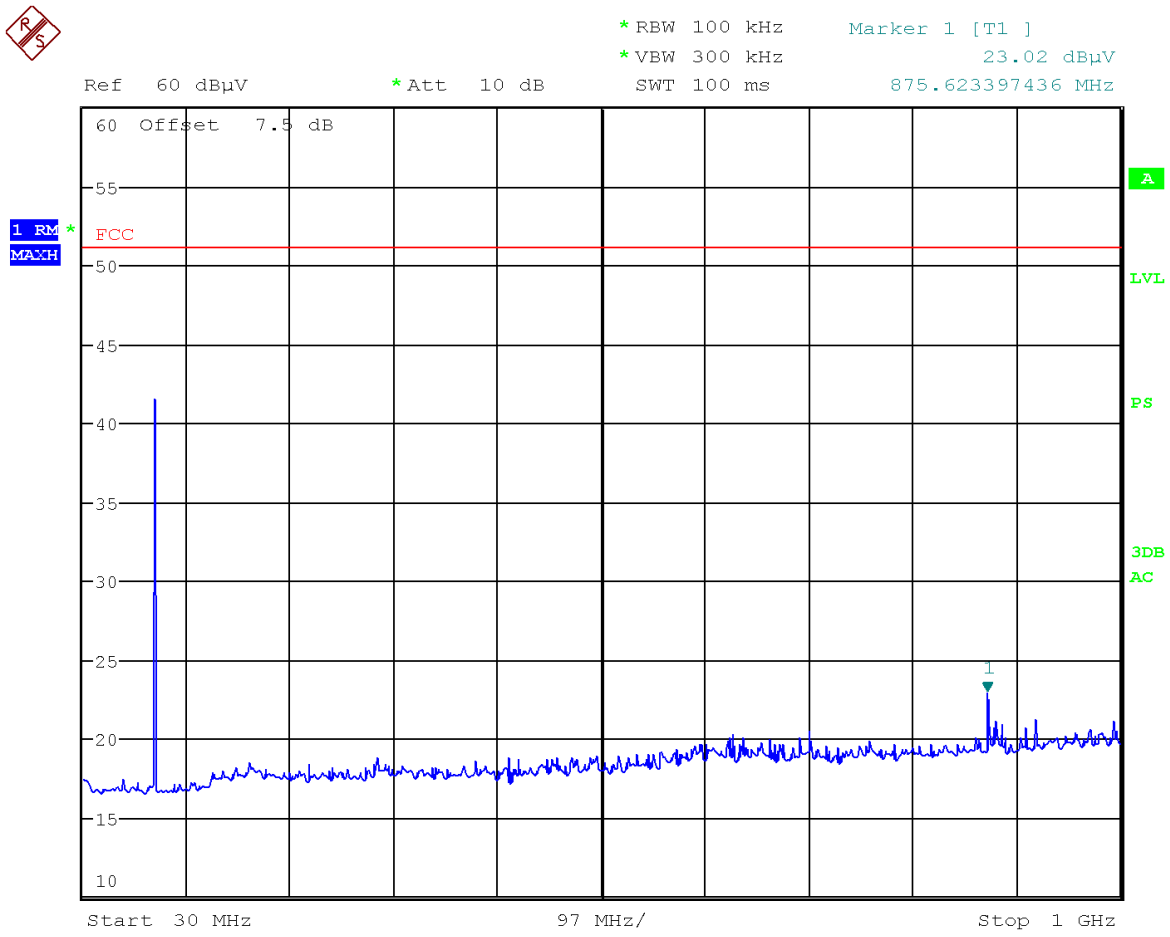
7.3 Antenna Power Conduction

ANSI C63.4	Antenna power conduction	Result
Method: Power on the receive antenna terminals was to be determined by measurement of the voltage present at these terminals. Antenna conducted power measurements was performed with the EUT antenna terminals connected directly to measuring instrument using a impedance-Matching network to connect the measurement Instrument to the antenna terminals of the EUT. The losses in decibels in impedance-matching network and cables was added to the measured values in dBμV. The measurements were repeated with the receiver tuned to a frequency until all of frequencies had been successively measured. Power in the receive antenna terminals in the ratio of V^2 /R, where V is the loss-corrected voltage measured at the antenna terminals, and R is the impedance of the measuring instrument		**Comply**

	Frequency range on each side of line	**Limit**
Fully configured sample scanned over the following frequency range	**30 MHz to 2 150 MHz**	**2 nW (51.7 dBμV)**
	54 MHz to 300 MHz **300 MHz to 450 MHz** **450 MHz to 804 MHz**	**-26 dBmV (34 dBμV)** **-20 dBmV (40 dBμV)** **-15 dBmV (45 dBμV)**
Measurement Point	**Tuner port**	
EUT mode	**Test configuration mode**	**1**
(Refer to clauses 4)	**EUT Operation mode**	**2**

Measurement Instrument					
Description	**Model**	**Manufacturer**	**Identifier**	**Cal. Date**	**Cal. Due**
EMI TEST RECEIVER	ESU	ROHDE & SCHWARZ	100538	2020.01.20	2021.01.20
IMPEDANCE MATCHING PAD	8AP50NM75NF	COPPER MOUNTAIN TECNOLOGIES	16012	2019.12.10	2020.12.10
SPLITTER	ZFRSC-123-S+	MINI CIRCUITS	SF139801142	2020.07.21	2021.07.21
SIGNAL GENERATOR	SMT03	ROHDE & SCHWARZ	100416	2020.06.03	2021.06.03
REGULATED DC POWER SUPPLY	SDP 30-5D	SMTECHNO	305DPB 048	2020.02.12	2021.02.12

Antenna Power Conduction _Measurement data graph			
Test configuration mode	**1**	**EUT Operation mode**	**2**
Test voltage (V)	**DC 12 V**	**Test Frequency (Hz)**	**-**



8. Revision History

Date	Description	Revised By	Reviewed By
Nov. 03. 2020	Initial report	Hun Lee	HyungJun Kim

-End of test report-