



TEST REPORT



Dt&C Co., Ltd.

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



1. Report No : DREKFCC2308-0114
2. Customer
 - Name : The Whistler Group, Inc.
 - Address : 168 Ayer Road, Littleton, MA 01460, USA
3. Use of Report : Grant of Certification
4. Product Name / Model Name : Digital Trunking Desktop Radio Scanner / WS1065
(FCC ID : HSXSC04 / IC : 1698A-SC04)
5. Test Method Used : ANSI C63.4:2014
FCC Part 15 Subpart B (CSR-Scanning Receiver)
*RSS-215 Issue 2
6. Date of Test : Jan. 05. 2023 ~ Jan. 29. 2023
7. Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing
(Address : Refer to the attached)
8. Testing Environment : Temperature (20 ~ 24) °C , Humidity (40 ~ 45) % 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.
This laboratory is not accredited for the test results marked. " * "

Affirmation	Tested by	Technical Manager
	Name : JunSeo Park 	Name : DaeHwa Eun 

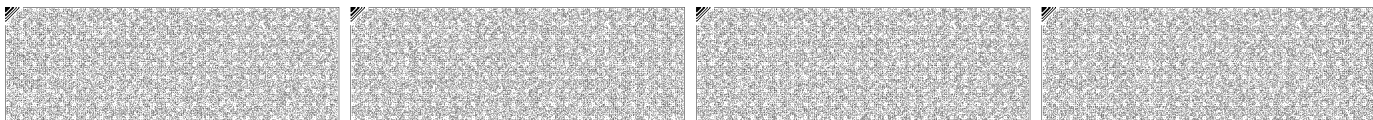
The above test report is the accredited test result by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.

Aug. 16. 2023

Dt&C Co., Ltd.

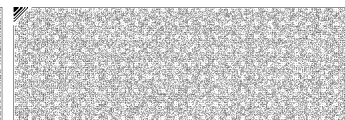
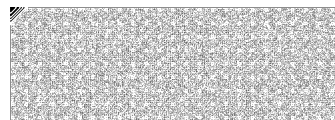
Accredited by KOLAS, Republic of KOREA

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



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Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



1. General Remarks

This report contains the result of tests performed by :

Dt&C Co., Ltd.

42, Yurim-ro, 154 beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea

<http://www.dtcn.net>

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

2. Test Laboratory

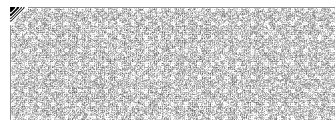
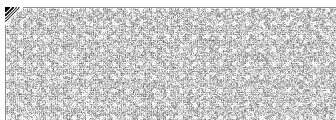
Address of Laboratory

☐	Branch site	42, Yurim-ro 154 beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea
☐	Satellite facilities-1	46, Yurim-ro 154 beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea
☒	Satellite facilities-2	38, Yurim-ro 154 beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea
☐	Satellite facilities-3	28, Baengnyeong-ro 20 beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea

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	Designation
	Canada	IC	KR0034	Designation
	Japan	VCCI	C-11427, R-13385, R-14076, R-14180, R-14496, T-11442, G-10338, G-10754, G-10815, G-20051	Registered
Certification	Korea	KC	KR0034	Designation
	Germany	TUV	CARAT 089112 0010 Rev.00	ISO/IEC 17025
	Russia	RMRS	22.03.01.01196.296	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	The Whistler Group, Inc. 168 Ayer Road, Littleton, MA 01460, USA
Manufacturer	RDX, Inc 1106 Daeryung Techno Twon 8, 96 Gamasanro, Guemcheon-gu, Seoul, Korea
Factory	Radix Telecom Phils., Industries Inc. Sunpino BLDG, Block 6 Lot 10, Phase II CEZ Rosario Cabite 4106 Philippines
Product Name	Digital Trunking Desktop Radio Scanner
Model Name (FCC, IC)	WS1065
Add Model Name (FCC)	PRO-652
Add Model Name (IC)	None
PMN (IC)	WS1065
Add Model Difference	The main board is identical, adding derivative models to the buyer's difference - PRO-652 _RADIOSHACK - WS1065 _WHISTER
Software Version	CPUUpdater_1040_B_U3.0
Hardware Version	3377 MAIN REV.0
Firmware Version	CPUUpdater_1040_B_U3.0
RF Module Name	None
Maximum Internal Frequency	20.9431 MHz
Rated Power	AC 120 V, 60 Hz
FCC ID	HSXSC04
IC	1698A-SC04
Remarks	None

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



4. EUT Operations and Test Configurations

4.1 Principle of Configuration Selection

Emission :

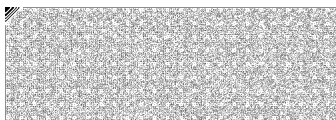
The equipment under test (EUT) was configured to measure its highest possible radiation level.
 The test modes were adapted accordingly in reference to the instructions for use.
 For each testing mode different configurations were used,
 Refer to the individual tests.

4.2 EUT Operation Mode

No.	Mode	Description
1	SCAN MODE	EUT receives power from AC ADAPTOR EUT was set to constantly scan all bands(25 MHz ~ 1300 MHz)
2	PC/IF MODE	EUT receives power from AC ADAPTOR EUT is connected to the laptop through the PC/IF port, runs the DEMO program installed on the laptop, and stores the scanned LIST file in the PC for testing

4.3 Test Configuration Mode

No.	Mode	Description
1	SCAN MODE	EUT is connected Earphone EUT is connected Speaker EUT is connected AC ADAPTOR
2	PC/IF MODE	EUT is connected Earphone EUT is connected Speaker EUT is connected AC ADAPTOR EUT is connected PC/IF Cable to laptop



4.4 Supported Equipment

Used*	Product Type	Manufacturer	Model	Remarks
AE	laptop	DELL	Latitude 5580	9TCV9H2
AE	laptop adaptor	Lite-On Technology(Changzhou)Co.,Ltd.	LA65NM130	CN-0G4X7T-LOC00-92M-1 5B3-A05
AE	USB scanner Programming cable	The Whistler Group Inc.	N/A	N/A
AE	Speaker	BTS-1001	Shenzhen Yorzee Life&Culture Development CO.,LTD.	N/A
AE	speaker adaptor	SRJ05012-02	Shenzhen JieFu Electronic Technology Co.,Ltd.	N/A
*Abbreviations: AE - Auxiliary/Associated Equipment, or SIM - Simulator				

4.5 EUT In/Output Port

Name	Type*	Cable Max. >3 m	Cable Shielded	Cable Back shell	Remarks
AUX	I/O	1.8	Non-Shielded	Plastic	Earphone
EXT SP	I/O	2.0	Non-Shielded	Plastic	Speaker
BNC	N/E	-	-	-	ANTENNA
PC/IF	I/O	0.7	Shielded	Plastic	laptop
DC IN	DC	1.8	Non-Shielded	Plastic	N/A
AC IN	AC	-	-	Plastic	Adaptor(EUT)
*Abbreviations: AC = AC Power Port DC = DC Power Port N/E = Non-Electrical I/O = Signal Input or Output Port TP = Telecommunication Ports					

4.6 Test Voltage and Frequency

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



5. Test Summary

Test Items	Applied Standards	Results
Conducted Disturbance	ANSI C63.4 : 2014 RSS-215 Issue 2	C
Radiated Disturbance	ANSI C63.4 : 2014 RSS-215 Issue 2	C
Antenna Power Conduction	ANSI C63.4 : 2014 RSS-215 Issue 2	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.

Measurement Uncertainty	
Test Items	$U (k = 2)$
Conducted Disturbance (9 kHz~ 30 MHz)	Mains : 3.6 dB Signal : 6.0 dB
Conducted Disturbance (150 kHz ~ 30 MHz)	Mains : 3.4 dB Signal : 6.0 dB
Radiated Disturbance (3m)	Below 1 GHz : 5.86 dB Above 1 GHz : 6.98 dB
Radiated Disturbance (10m)	Below 1 GHz : 4.92 dB Above 1 GHz : 6.98 dB
Antenna Power Conduction	N/A

- Conducted Disturbance

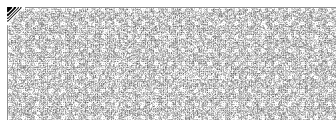
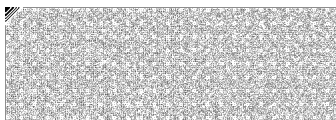
Frequency [MHz]	Pol.	Result [dB μ V/m]	Detector	Limit [dB μ V/m]	Margin [dB]
0.45780	N	38.00	Cispr - Average	46.73	8.73

-Radiated Disturbance

Frequency [MHz]	Pol.	Result [dB μ V/m]	Detector	Limit [dB μ V/m]	Margin [dB]
70.255	V	33.40	Quasi - Peak	40.00	6.60

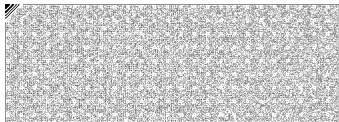
-Antenna Power Conduction

Frequency [MHz]	Result [dB μ V/m]	Detector	Limit [dB μ V/m]	Margin [dB]
622.410	28.27	RMS	50.00	21.73



6. Test Environment

Test Items	Test date (YYYY-MM-DD)	Temp. (°C)	Humidity (% R.H.)	Pressure (kPa)
Conducted Disturbance	2023-06-28	21	40	100.1
Radiated Disturbance	2023-06-05	20	42	-
	2023-06-10	23	40	
	2023-06-11	20	42	
	2023-06-11	23	40	
Antenna Power Conduction	2023-06-29	24	45	99.8



7. Test Results : Emission

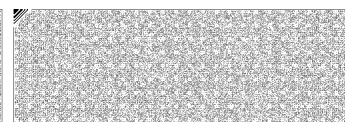
7.1 Conducted Disturbance

ANSI C63.4, RSS-215 Issue 2	Mains terminal disturbance voltage		Result	
<u>Method:</u> 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		
	EUT Operation mode	1, 2		
Limits – Class A				
Frequency (MHz)	Limit dBµV			
	Quasi-Peak	Average		
0.15 to 0.50	79	66		
0.50 to 30	73	60		
Limits – Class B				
Frequency (MHz)	Limit dBµV			
	Quasi-Peak	Average		
0.15 to 0.50	66 to 56	56 to 46		
0.50 to 5	56	46		
5 to 30	60	50		

Measurement Instrument					
Description	Model	Manufacturer	Identifier	Cal. Date	Cal. Due
MEASUREMENT SOFTWARE	EMI-C VER.2.00.0171	TSJ	N/A	N/A	N/A
EMI TEST RECEIVER	ESC17	ROHDE&SCHWARZ	100910	2023.01.31	2024.01.31
LISN	NSLK 8128	SCHWARZBECK	5024	2022.07.13	2023.07.13
LISN	NSLK 8128 RC	SCHWARZBECK	8128 RC-387	2022.10.26	2023.10.26
PULSE LIMITER	ESH3-Z2	ROHDE&SCHWARZ	101333	2022.08.22	2023.08.22

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)





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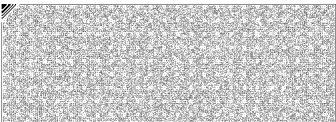
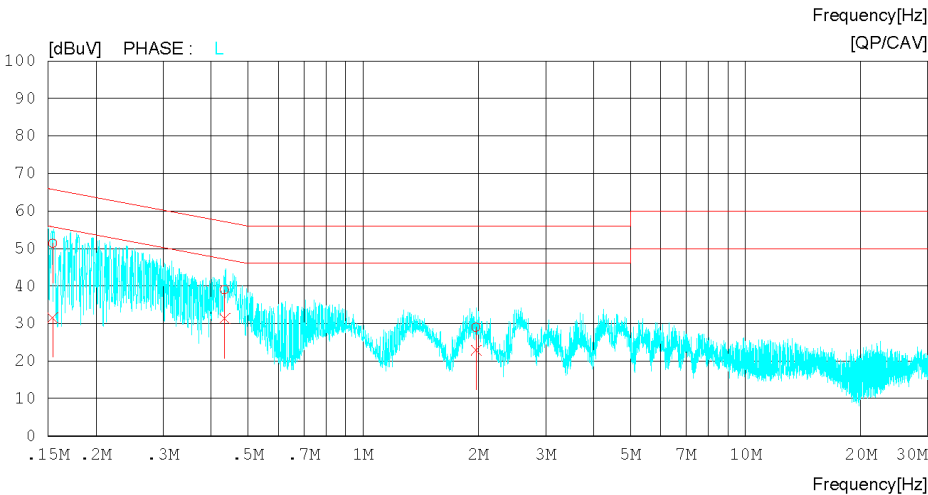
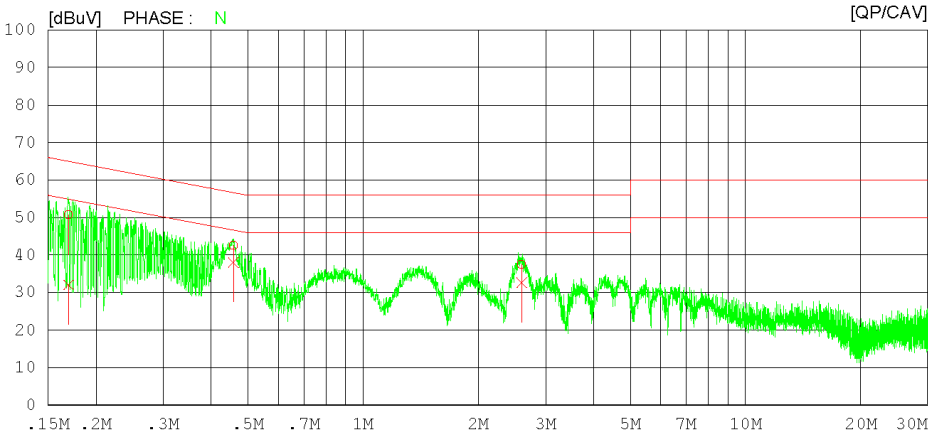
Mains terminal disturbance voltage _Measurement data			
Test configuration mode	1	EUT Operation mode	1
Test voltage (V)	AC 120	Test Frequency (Hz)	60

Results of Conducted Emission

Date 2023-06-28

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi/Atm 21 °C 40 % R.H. 100.1 kPa
Test Condition SCAN MODE

LIMIT : FCC Part15 Subpart.B Class B.AV
FCC Part15 Subpart.B Class B.QP





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



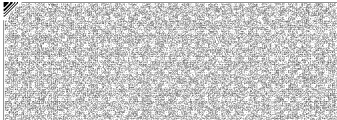
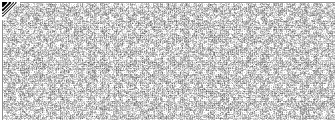
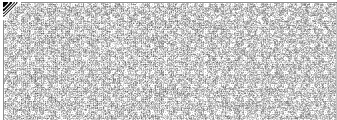
Results of Conducted Emission

Date 2023-06-28

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi/Atm 21 °C 40 % R.H. 100.1 kPa
Test Condition SCAN MODE

LIMIT : FCC Part15 Subpart.B Class B.AV
FCC Part15 Subpart.B Class B.QP

NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	CAV [dBuV]		QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]	
1	0.16975	40.73	22.07	10.00	50.73	32.07	64.97	54.97	14.24	22.90	N
2	0.45780	32.61	28.00	10.00	42.61	38.00	56.73	46.73	14.12	8.73	N
3	2.59520	27.42	22.63	10.05	37.47	32.68	56.00	46.00	18.53	13.32	N
4	0.15419	41.47	21.64	9.91	51.38	31.55	65.77	55.77	14.39	24.22	L
5	0.43453	29.04	21.39	9.90	38.94	31.29	57.17	47.17	18.23	15.88	L
6	1.97320	19.01	12.77	10.04	29.05	22.81	56.00	46.00	26.95	23.19	L





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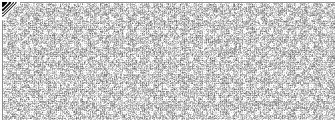
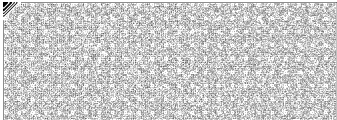
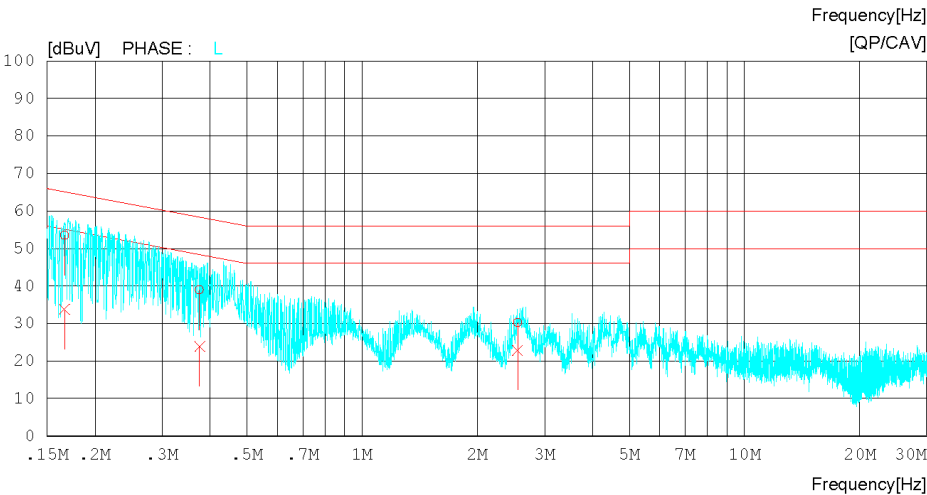
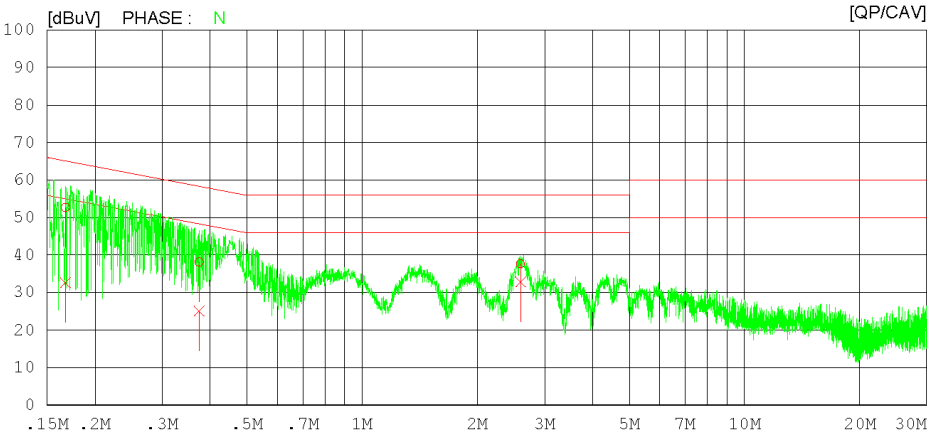
Mains terminal disturbance voltage _Measurement data			
Test configuration mode	2	EUT Operation mode	2
Test voltage (V)	AC 120	Test Frequency (Hz)	60

Results of Conducted Emission

Date 2023-06-28

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi/Atm 21 °C 40 % R.H. 100.1 kPa
Test Condition PCIF MODE

LIMIT : FCC Part15 Subpart.B Class B.AV
FCC Part15 Subpart.B Class B.QP





Report No.: DREKFCC2308-0114
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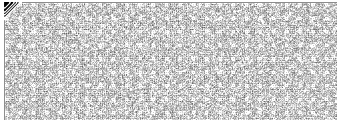
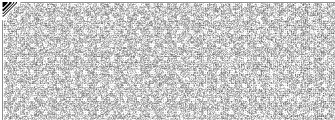
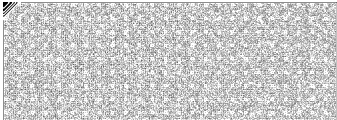
Results of Conducted Emission

Date 2023-06-28

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi/Atm 21 °C 40 % R.H. 100.1 kPa
Test Condition PCIF MODE

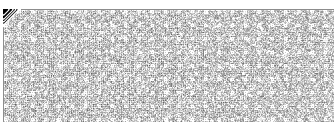
LIMIT : FCC Part15 Subpart.B Class B.AV
FCC Part15 Subpart.B Class B.QP

NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	CAV [dBuV]		QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]	
1	0.16757	42.67	22.59	10.00	52.67	32.59	65.08	55.08	12.41	22.49	N
2	0.37505	28.12	15.13	9.99	38.11	25.12	58.39	48.39	20.28	23.27	N
3	2.59760	27.54	22.87	10.05	37.59	32.92	56.00	46.00	18.41	13.08	N
4	0.16669	43.54	23.78	9.90	53.44	33.68	65.12	55.12	11.68	21.44	L
5	0.37580	29.05	13.97	9.89	38.94	23.86	58.37	48.37	19.43	24.51	L
6	2.54920	20.16	12.77	10.05	30.21	22.82	56.00	46.00	25.79	23.18	L



7.2 Radiated Disturbance

ANSI C63.4, RSS-215 Issue 2	Radiated disturbance 30 MHz –18 GHz**			Result
<u>Method:</u> 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	
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 contained in Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22 shown.				
Frequency range (MHz)	Quasi-peak limit dBµV/m			
	Class A (10 m distance)		Class B (10 m distance)	
30 to 230	40		30	
230 to 1 000	47		37	
Radiated Disturbance for above 1 000 MHz at a measurement distance of 3 m				
Frequency range (GHz)	Peak limit dBµV/m		Average limit dBµV/m	
	Class A	Class B	Class A	Class B
1 to 40	80	74	60	54
The test frequency range of Radiated Disturbance measurements are listed below.				
Highest frequency generated or used in the device or on which the device operates or tunes (MHz)			Upper frequency of measurement range (MHz)	
Below 108			1 000	
108 – 500			2 000	
500 – 1 000			5 000	
Above 1 000			5th harmonic of the highest frequency or 40 GHz, whichever is lower	





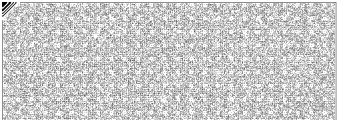
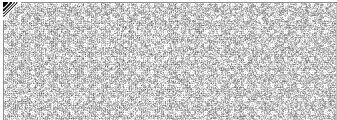
Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



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	2022.11.29	2023.11.29
TRILOG BROADBAND TEST-ANTENNA	VULB9160	SCHWARZBECK	9160-3363	2022.09.29	2024.09.29
6 DB ATTENUATOR	2708A	H.P	23831	2022.09.29	2024.09.29
LOW NOISE PRE AMPLIFIER	MLA-100K01-B01-26	TSJ	1252741	2022.02.08	2023.02.08
BROAD-BAND HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1014	2022.08.02	2023.08.02
PRE AMPLIFIER	8449B	H.P	3008A00887	2022.08.24	2023.08.24
HORN ANTENNA	EM-6969	ELECTRO-METRICS	156	2022.12.20	2023.12.20
PREAMPLIFIER	MLA-0618-B03-34	TSJ	1785642	2022.12.20	2023.12.20
(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)





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Radiated disturbance at (30 ~ 1 000) MHz _Measurement data			
Test configuration mode	1	EUT Operation mode	1
Test voltage (V)	AC 120	Test Frequency (Hz)	60
FCC Part 15 Subpart B			

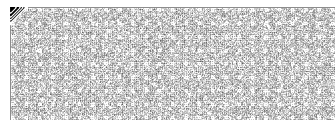
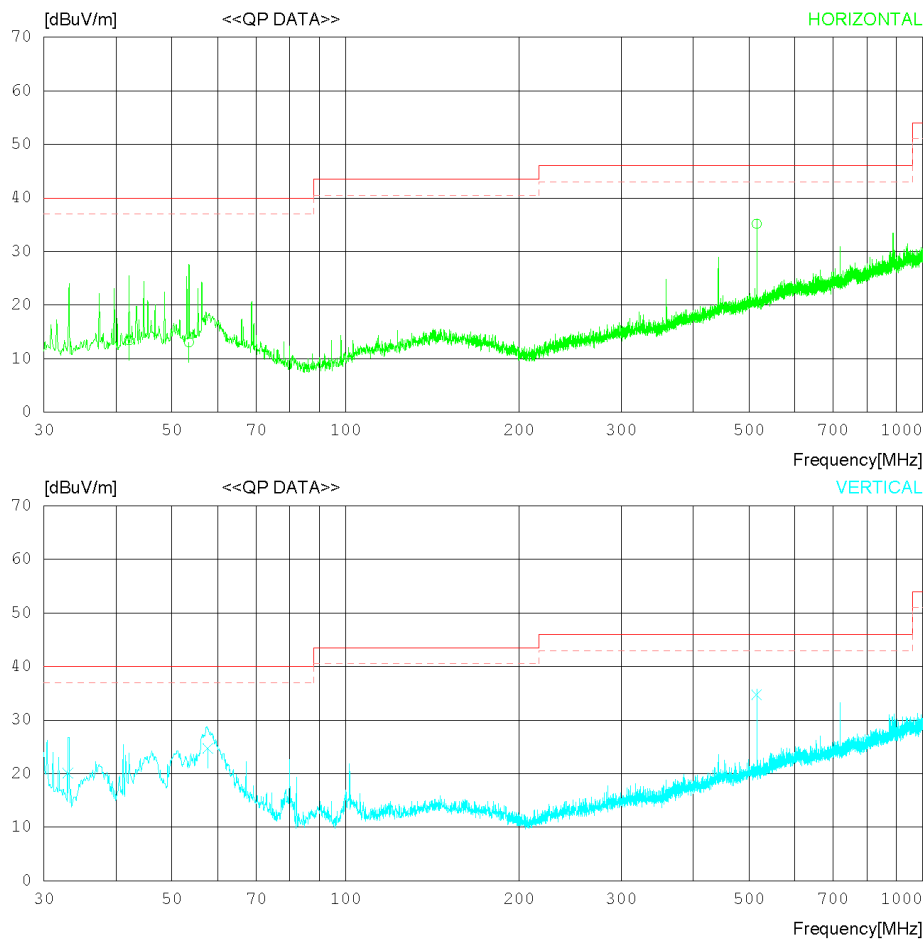
Date 2023-06-05

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 20 'C 42 % R.H.
Test Condition SCAN MODE

Memo

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

Antenna Factor
1. ANT_EMC-309_VULB9160_3363_with ATT_2022-09-29
Cable Loss
1. C1_ANT TO BOTTOM_UNDER_2023_05_16
2. C2_AMP TO BOTTOM_UNDER_2023_02_17
3. C3_AMP TO RECEIVER_UNDER_2022.12.12
Pre Amp Gain
1. EMC-110_AMP_MLA-100K01-B01-26_1252741_2023.02.07





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Date 2023-06-05

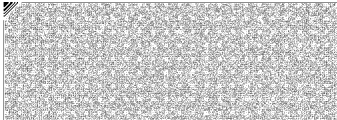
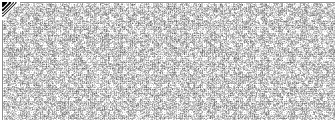
Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 20 'C 42 % R.H.
Test Condition SCAN MODE

Memo

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

Antenna Factor
1. ANT_EMC-309_VULB9160_3363_with ATT_2022-09-29
Cable Loss
1. C1_ANT TO BOTTOM_UNDER_2023_05_16
2. C2_AMP TO BOTTOM_UNDER_2023_02_17
3. C3_AMP TO RECEIVER_UNDER_2022.12.12
Pre Amp Gain
1. EMC-110_AMP_MLA-100K01-B01-26_1252741_2023.02.07

No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	QP	FACTOR							
		[dBuV]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- HORIZONTAL -----										
1	42.125	21.20	17.73	0.91	26.44	13.40	40.00	26.60	311	78
2	53.523	20.30	18.05	1.09	26.41	13.03	40.00	26.97	202	123
3	515.472	34.30	23.81	3.20	26.15	35.16	46.00	10.84	113	305
----- VERTICAL -----										
4	33.031	28.60	17.10	0.85	26.48	20.07	40.00	19.93	311	179
5	57.766	32.20	17.82	1.10	26.42	24.70	40.00	15.30	305	45
6	515.472	33.90	23.81	3.20	26.15	34.76	46.00	11.24	112	42





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Radiated disturbance at (30 ~ 1 000) MHz _Measurement data			
Test configuration mode	1	EUT Operation mode	1
Test voltage (V)	AC 120	Test Frequency (Hz)	60
ICES-003 Issue 7			

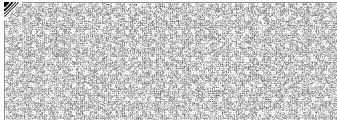
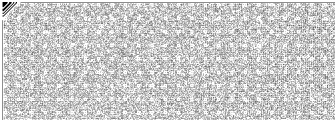
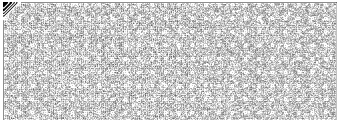
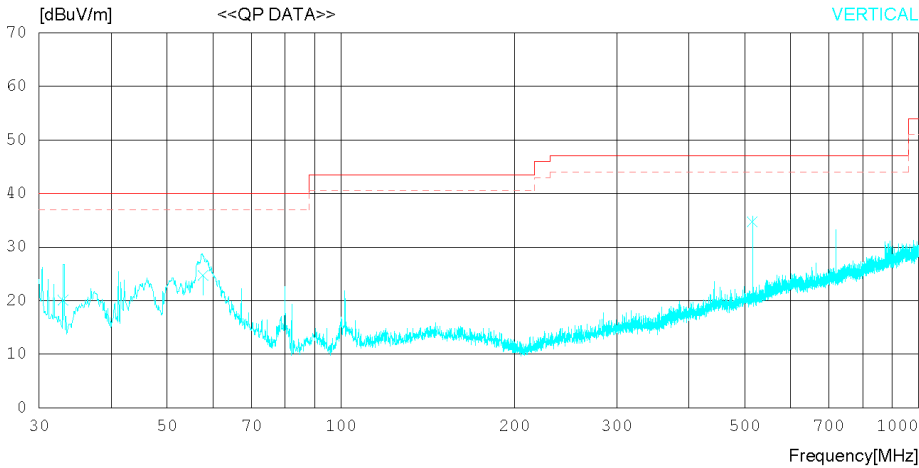
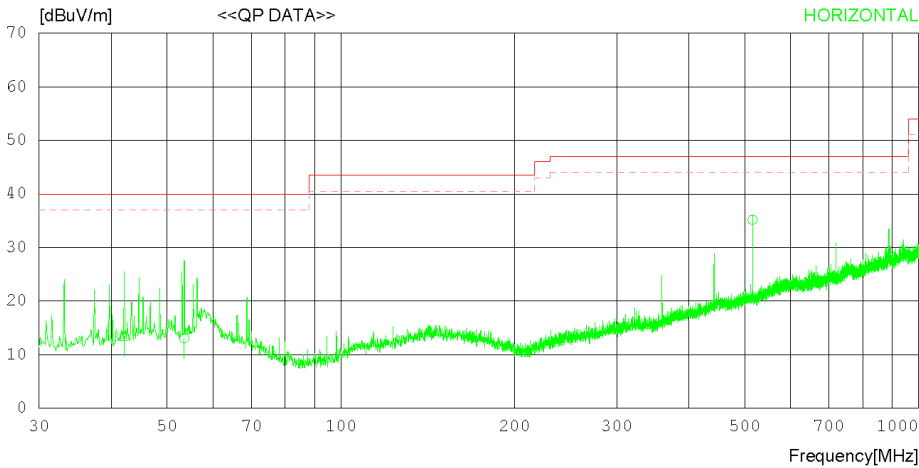
Date 2023-06-05

Order No. DTNC2305-03440
Power Supply 120 V 60 Hz
Temp/Humi 20 'C 42 % R.H.
Test Condition SCAN MODE

Memo

LIMIT : ICES-003 Issue 7_Class B
MARGIN: 3 dB

Antenna Factor
1. ANT_EMC-309_VULB9160_3363_with ATT_2022-09-29
Cable Loss
1. C1_ANT TO BOTTOM_UNDER_2023_05_16
2. C2_AMP TO BOTTOM_UNDER_2023_02_17
3. C3_AMP TO RECEIVER_UNDER_2022.12.12
Pre Amp Gain
1. EMC-110_AMP_MLA-100K01-B01-26_1252741_2023.02.07





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Date 2023-06-05

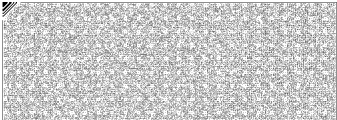
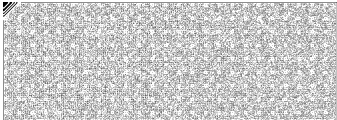
Order No. DTNC2305-03440
Power Supply 120 V 60 Hz
Temp/Humi 20 'C 42 % R.H.
Test Condition SCAN MODE

Memo

LIMIT : ICES-003 Issue 7_Class B
MARGIN: 3 dB

Antenna Factor
1. ANT_EMC-309_VULB9160_3363_with ATT_2022-09-29
Cable Loss
1. C1_ANT TO BOTTOM_UNDER_2023_05_16
2. C2_AMP TO BOTTOM_UNDER_2023_02_17
3. C3_AMP TO RECEIVER_UNDER_2022.12.12
Pre Amp Gain
1. EMC-110_AMP_MLA-100K01-B01-26_1252741_2023.02.07

No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	QP	FACTOR							
		[dBuV]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- HORIZONTAL -----										
1	42.125	21.20	17.73	0.91	26.44	13.40	40.00	26.60	311	78
2	53.523	20.30	18.05	1.09	26.41	13.03	40.00	26.97	202	123
3	515.472	34.30	23.81	3.20	26.15	35.16	47.00	11.84	113	305
----- VERTICAL -----										
4	33.031	28.60	17.10	0.85	26.48	20.07	40.00	19.93	311	179
5	57.766	32.20	17.82	1.10	26.42	24.70	40.00	15.30	305	45
6	515.472	33.90	23.81	3.20	26.15	34.76	47.00	12.24	112	42





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Radiated disturbance at (1 ~ 6) GHz _ Peak Measurement data			
Test configuration mode	1	EUT Operation mode	1
Test voltage (V)	AC 120	Test Frequency (Hz)	60

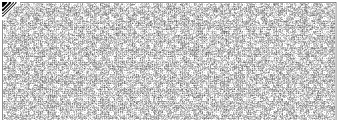
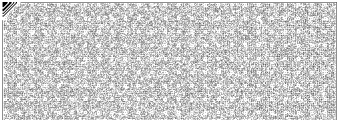
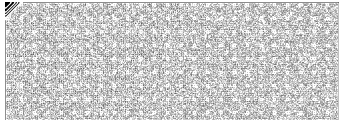
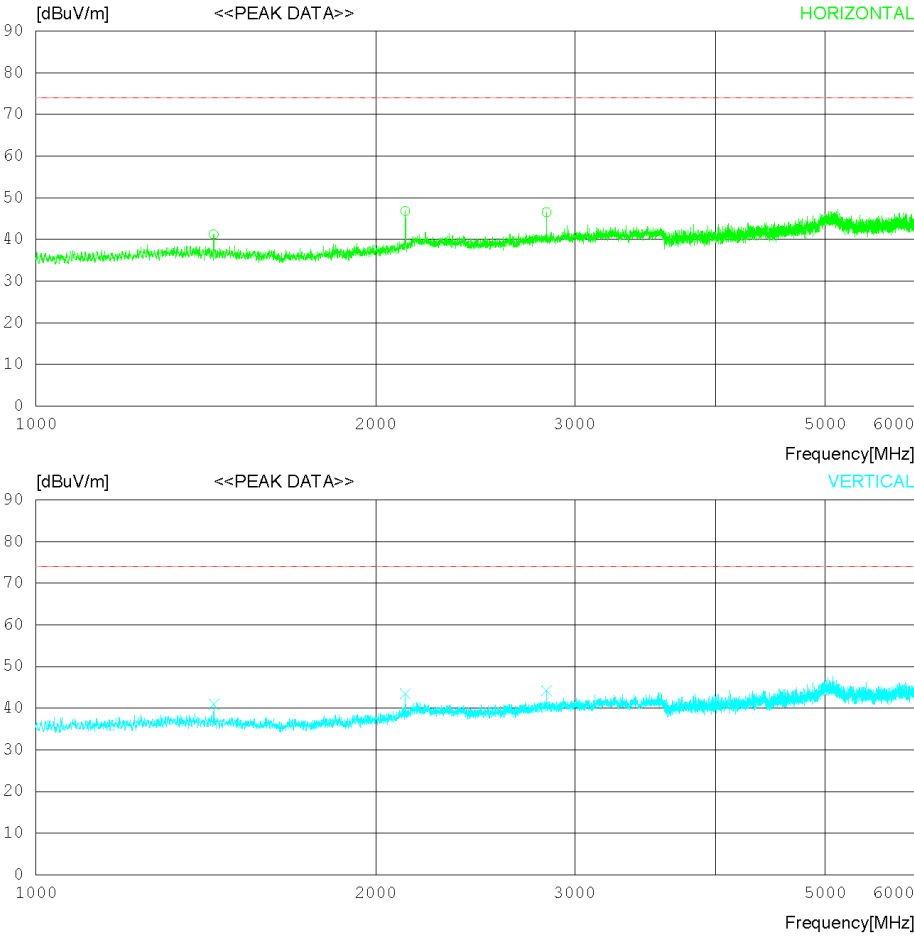
Date 2023-06-10

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 °C 40 % R.H.
Test Condition SCAN MODE

Memo

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

Antenna Factor
1. ANT_9120D_1014_22.08.02
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
3. #29_C3_Amp to Receiver_3m_1-18G_2022-09-15
Pre Amp Gain
1. AMP_8449B_3008A00887_2022.08.24





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Date 2023-06-10

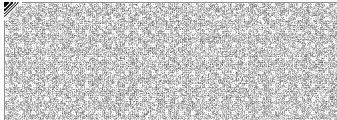
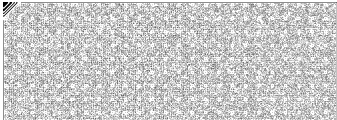
Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 'C 40 % R.H.
Test Condition SCAN MODE

Memo

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

Antenna Factor
1. ANT_9120D_1014_22.08.02
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
3. #29_C3_Amp to Receiver_3m_1-18G_2022-09-15
Pre Amp Gain
1. AMP_8449B_3008A00887_2022.08.24

No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	PEAK [dBuV]	FACTOR [dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- HORIZONTAL -----										
1	1436.875	46.90	25.93	4.10	35.71	41.22	74.0	32.78	312	0
2	2123.750	49.90	27.37	4.74	35.19	46.82	74.0	27.18	134	184
3	2831.875	47.80	28.44	5.43	35.12	46.55	74.0	27.45	145	270
----- VERTICAL -----										
4	1437.500	46.60	25.93	4.10	35.71	40.92	74.0	33.08	220	180
5	2123.750	46.50	27.37	4.74	35.19	43.42	74.0	30.58	220	35
6	2831.875	45.40	28.44	5.43	35.12	44.15	74.0	29.85	305	358





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



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

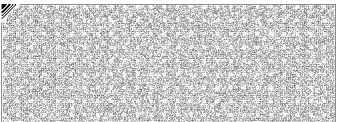
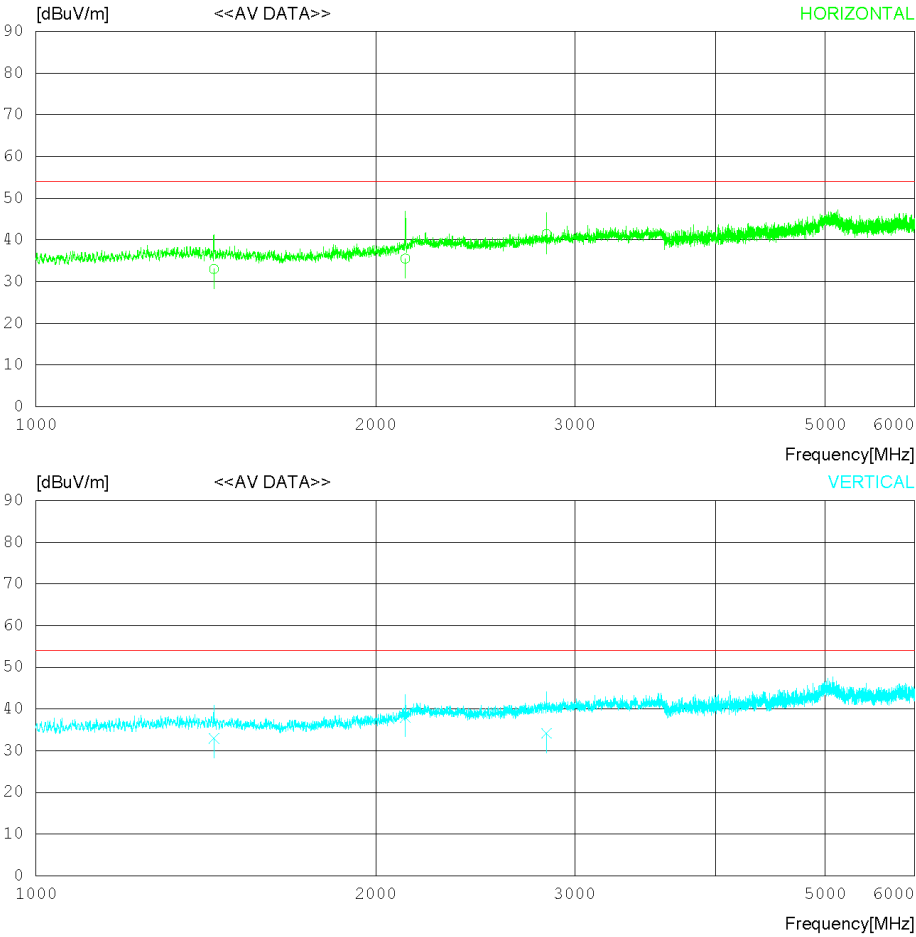
Date 2023-06-10

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 'C 40 % R.H.
Test Condition SCAN MODE

Memo

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

Antenna Factor
1. ANT_9120D_1014_22.08.02
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
3. #29_C3_Amp to Receiver_3m_1-18G_2022-09-15
Pre Amp Gain
1. AMP_8449B_3008A00887_2022.08.24





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Date 2023-06-10

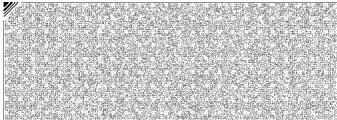
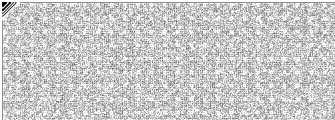
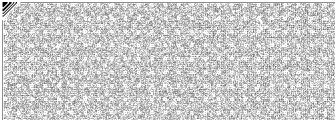
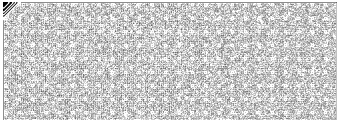
Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 'C 40 % R.H.
Test Condition SCAN MODE

Memo

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

Antenna Factor
1. ANT_9120D_1014_22.08.02
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
3. #29_C3_Amp to Receiver_3m_1-18G_2022-09-15
Pre Amp Gain
1. AMP_8449B_3008A00887_2022.08.24

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	1437.399	38.70	25.93	4.10	35.71	33.02	54.00	20.98	220	145
2	2124.008	38.60	27.38	4.74	35.19	35.53	54.00	18.47	112	167
3	2832.009	42.70	28.44	5.43	35.12	41.45	54.00	12.55	113	270
----- VERTICAL -----										
4	1437.399	38.60	25.93	4.10	35.71	32.92	54.00	21.08	234	202
5	2124.019	41.10	27.38	4.74	35.19	38.03	54.00	15.97	175	315
6	2831.995	35.40	28.44	5.43	35.12	34.15	54.00	19.85	356	186





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



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

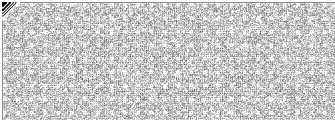
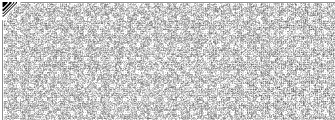
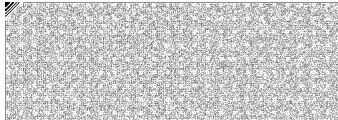
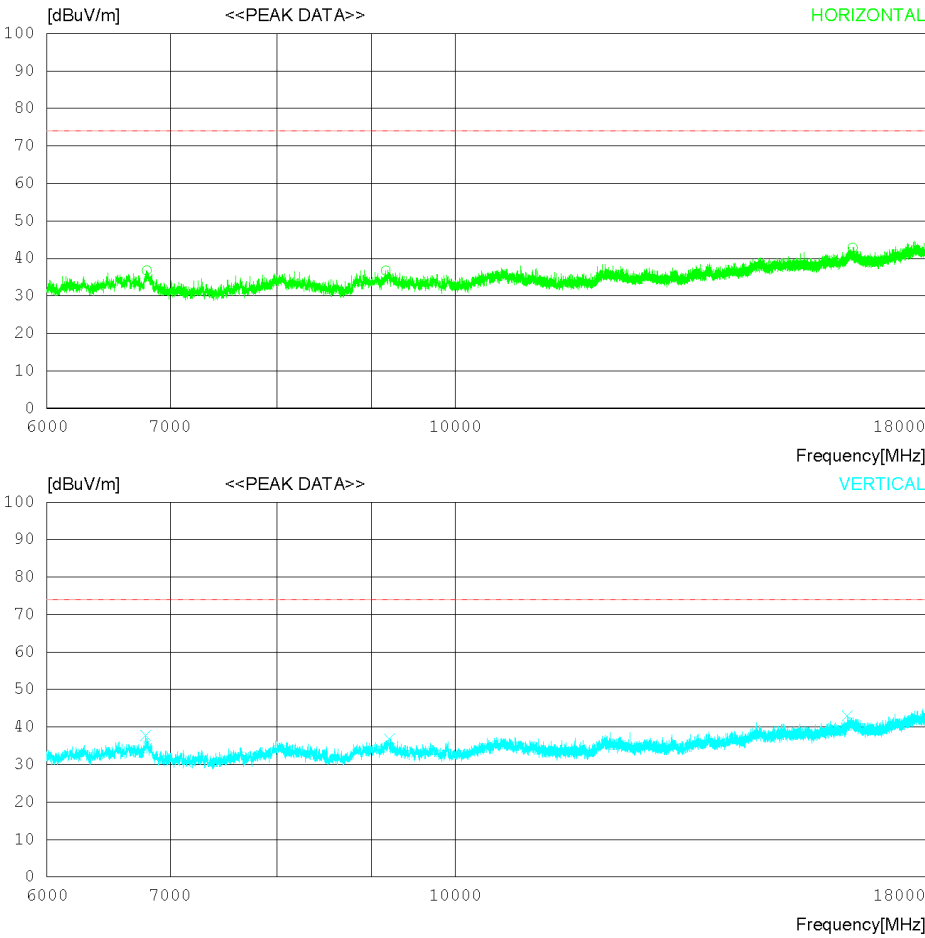
Date 2023-06-11

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 °C 40 % R.H.
Test Condition SCAN MODE

Memo

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

Antenna Factor
1. EMC-233-A_EM-6969_156_2022.12.20
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
Pre Amp Gain
1. EMC-233-M_MLA-0618-B03-34_2022.12.20





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Date 2023-06-11

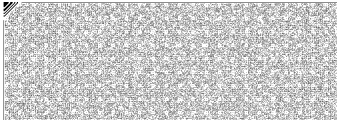
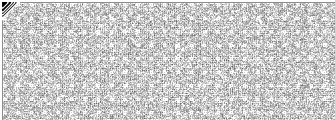
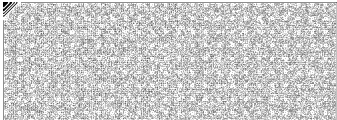
Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 'C 40 % R.H.
Test Condition SCAN MODE

Memo

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

Antenna Factor
1. EMC-233-A_EM-6969_156_2022.12.20
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
Pre Amp Gain
1. EMC-233-M_MLA-0618-B03-34_2022.12.20

No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	PEAK [dBuV]	FACTOR [dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- HORIZONTAL -----										
1	6797.250	36.80	31.10	8.06	39.19	36.77	74.0	37.23	220	326
2	9164.250	33.80	31.60	9.73	38.39	36.74	74.0	37.26	131	358
3	16428.000	30.40	36.40	13.31	37.23	42.88	74.0	31.12	145	4
----- VERTICAL -----										
4	6789.750	37.80	31.10	8.05	39.20	37.75	74.0	36.25	131	358
5	9208.500	33.80	31.58	9.86	38.40	36.84	74.0	37.16	112	358
6	16320.750	30.80	36.18	13.31	37.24	43.05	74.0	30.95	350	0





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Radiated disturbance at (6 ~ 18) GHz _ Average Measurement data			
Test configuration mode	1	EUT Operation mode	1
Test voltage (V)	AC 120	Test Frequency (Hz)	60

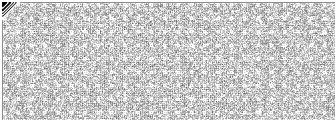
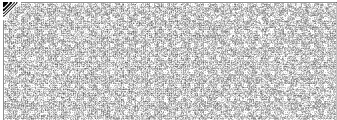
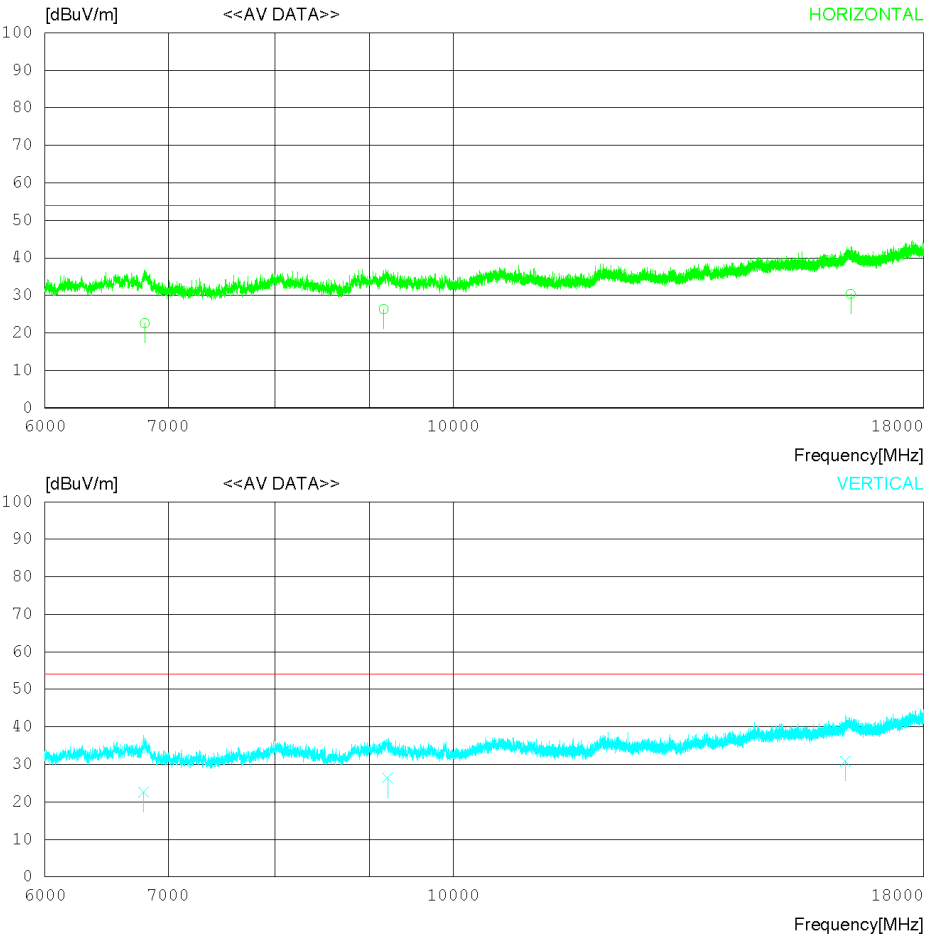
Date 2023-06-11

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 'C 40 % R.H.
Test Condition SCAN MODE

Memo

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

Antenna Factor
1. EMC-233-A_EM-6969_156_2022.12.20
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
Pre Amp Gain
1. EMC-233-M_MLA-0618-B03-34_2022.12.20





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Date 2023-06-11

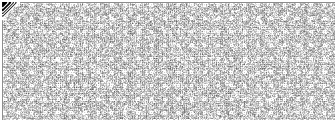
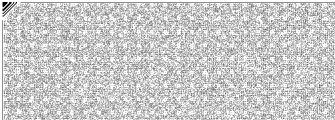
Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 'C 40 % R.H.
Test Condition SCAN MODE

Memo

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

Antenna Factor
1. EMC-233-A_EM-6969_156_2022.12.20
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
Pre Amp Gain
1. EMC-233-M_MLA-0618-B03-34_2022.12.20

No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	CAV [dBuV]	FACTOR [dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- HORIZONTAL -----										
1	6797.310	22.60	31.10	8.06	39.19	22.57	54.00	31.43	305	305
2	9164.177	23.40	31.60	9.73	38.39	26.34	54.00	27.66	145	112
3	16428.410	17.90	36.40	13.30	37.23	30.37	54.00	23.63	134	145
----- VERTICAL -----										
4	6789.741	22.60	31.10	8.05	39.20	22.55	54.00	31.45	231	131
5	9208.432	23.40	31.58	9.86	38.40	26.44	54.00	27.56	113	213
6	16320.120	18.60	36.18	13.31	37.24	30.85	54.00	23.15	350	234





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Radiated disturbance at (30 ~ 1 000) MHz _Measurement data			
Test configuration mode	2	EUT Operation mode	2
Test voltage (V)	AC 120	Test Frequency (Hz)	60
FCC Part 15 Subpart B			

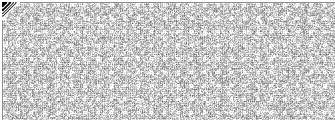
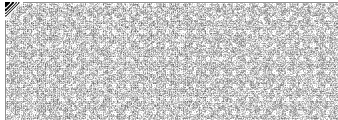
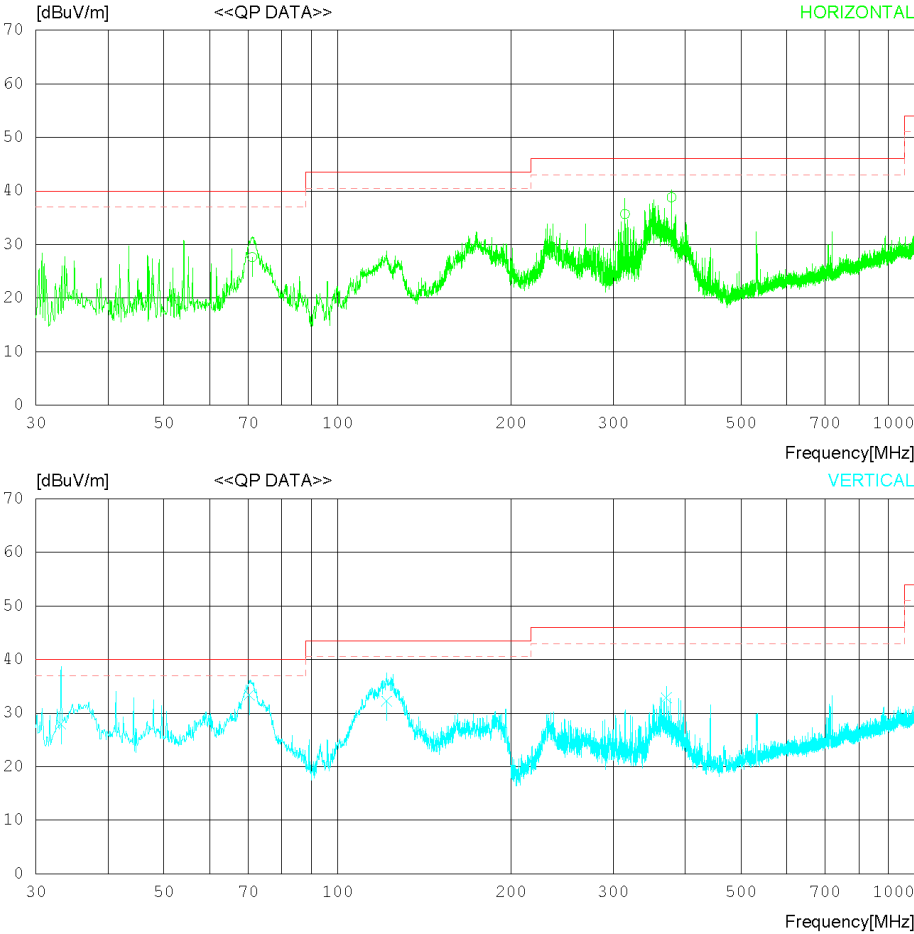
Date 2023-06-11

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 20 °C 42 % R.H.
Test Condition PC/IF MODE

Memo

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

Antenna Factor
1. ANT_EMC-309_VULB9160_3363_with ATT_2022-09-29
Cable Loss
1. C1_ANT TO BOTTOM_UNDER_2023_05_16
2. C2_AMP TO BOTTOM_UNDER_2023_02_17
3. C3_AMP TO RECEIVER_UNDER_2022.12.12
Pre Amp Gain
1. EMC-110_AMP_MLA-100K01-B01-26_1252741_2023.02.07





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Date 2023-06-11

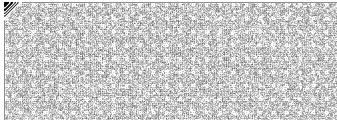
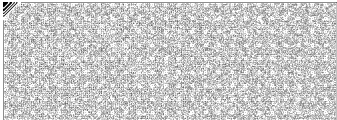
Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 20 'C 42 % R.H.
Test Condition PC/IF MODE

Memo

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

Antenna Factor
1. ANT_EMC-309_VULB9160_3363_with ATT_2022-09-29
Cable Loss
1. C1_ANT TO BOTTOM_UNDER_2023_05_16
2. C2_AMP TO BOTTOM_UNDER_2023_02_17
3. C3_AMP TO RECEIVER_UNDER_2022.12.12
Pre Amp Gain
1. EMC-110_AMP_MLA-100K01-B01-26_1252741_2023.02.07

No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	QP	FACTOR							
		[dBuV]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- HORIZONTAL -----										
1	71.104	36.70	16.18	1.19	26.44	27.63	40.00	12.37	311	78
2	314.566	40.20	19.40	2.46	26.40	35.66	46.00	10.34	320	110
3	378.827	41.30	21.18	2.66	26.34	38.80	46.00	7.20	221	134
----- VERTICAL -----										
4	33.153	36.50	17.08	0.85	26.48	27.95	40.00	12.05	312	45
5	70.255	42.30	16.35	1.19	26.44	33.40	40.00	6.60	220	110
6	121.663	40.30	16.90	1.53	26.50	32.23	43.50	11.27	131	231
7	371.067	35.60	20.94	2.65	26.36	32.83	46.00	13.17	134	336





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Radiated disturbance at (30 ~ 1 000) MHz _Measurement data			
Test configuration mode	2	EUT Operation mode	2
Test voltage (V)	AC 120	Test Frequency (Hz)	60
ICES-003 Issue 7			

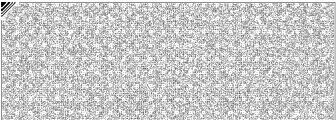
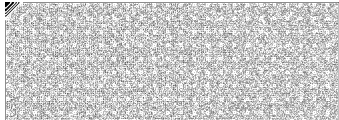
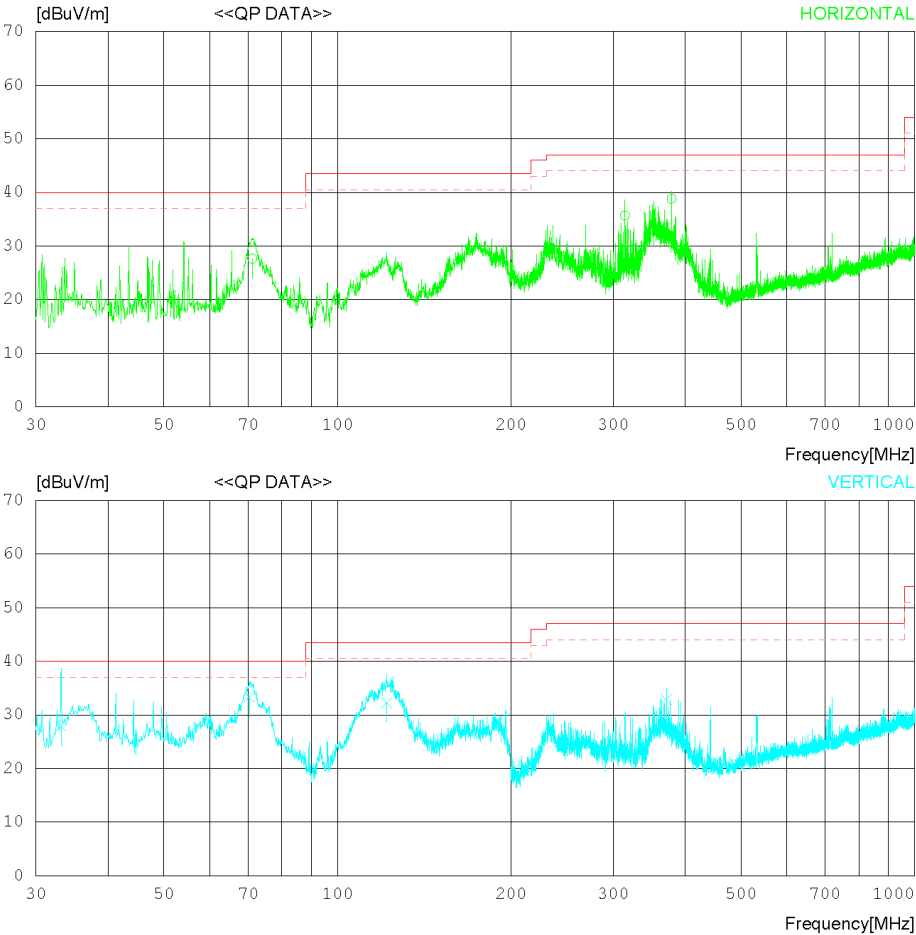
Date 2023-06-11

Order No. DTNC2305-03440
Power Supply 120 V 60 Hz
Temp/Humi 20 'C 42 % R.H.
Test Condition PC/IF MODE

Memo

LIMIT : ICES-003 Issue 7_Class B
MARGIN: 3 dB

Antenna Factor
1. ANT_EMC-309_VULB9160_3363_with ATT_2022-09-29
Cable Loss
1. C1_ANT TO BOTTOM_UNDER_2023_05_16
2. C2_AMP TO BOTTOM_UNDER_2023_02_17
3. C3_AMP TO RECEIVER_UNDER_2022.12.12
Pre Amp Gain
1. EMC-110_AMP_MLA-100K01-B01-26_1252741_2023.02.07





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Date 2023-06-11

Order No. DTNC2305-03440
Power Supply 120 V 60 Hz
Temp/Humi 20 °C 42 % R.H.
Test Condition PC/IF MODE

Memo

LIMIT : ICES-003 Issue 7_Class B
MARGIN: 3 dB

Antenna Factor
1. ANT_EMC-309_VULB9160_3363_with ATT_2022-09-29
Cable Loss
1. C1_ANT TO BOTTOM_UNDER_2023_05_16
2. C2_AMP TO BOTTOM_UNDER_2023_02_17
3. C3_AMP TO RECEIVER_UNDER_2022.12.12
Pre Amp Gain
1. EMC-110_AMP_MLA-100K01-B01-26_1252741_2023.02.07

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	71.104	36.70	16.18	1.19	26.44	27.63	40.00	12.37	311	78
2	314.566	40.20	19.40	2.46	26.40	35.66	47.00	11.34	320	110
3	378.827	41.30	21.18	2.66	26.34	38.80	47.00	8.20	221	134
----- VERTICAL -----										
4	33.153	36.50	17.08	0.85	26.48	27.95	40.00	12.05	312	45
5	70.255	42.30	16.35	1.19	26.44	33.40	40.00	6.60	220	110
6	121.663	40.30	16.90	1.53	26.50	32.23	43.50	11.27	131	231
7	371.067	35.60	20.94	2.65	26.36	32.83	47.00	14.17	134	336





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Radiated disturbance at (1 ~ 6) GHz _ Peak Measurement data			
Test configuration mode	2	EUT Operation mode	2
Test voltage (V)	AC 120	Test Frequency (Hz)	60

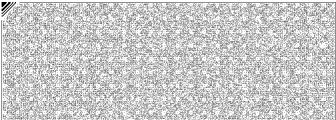
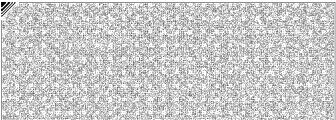
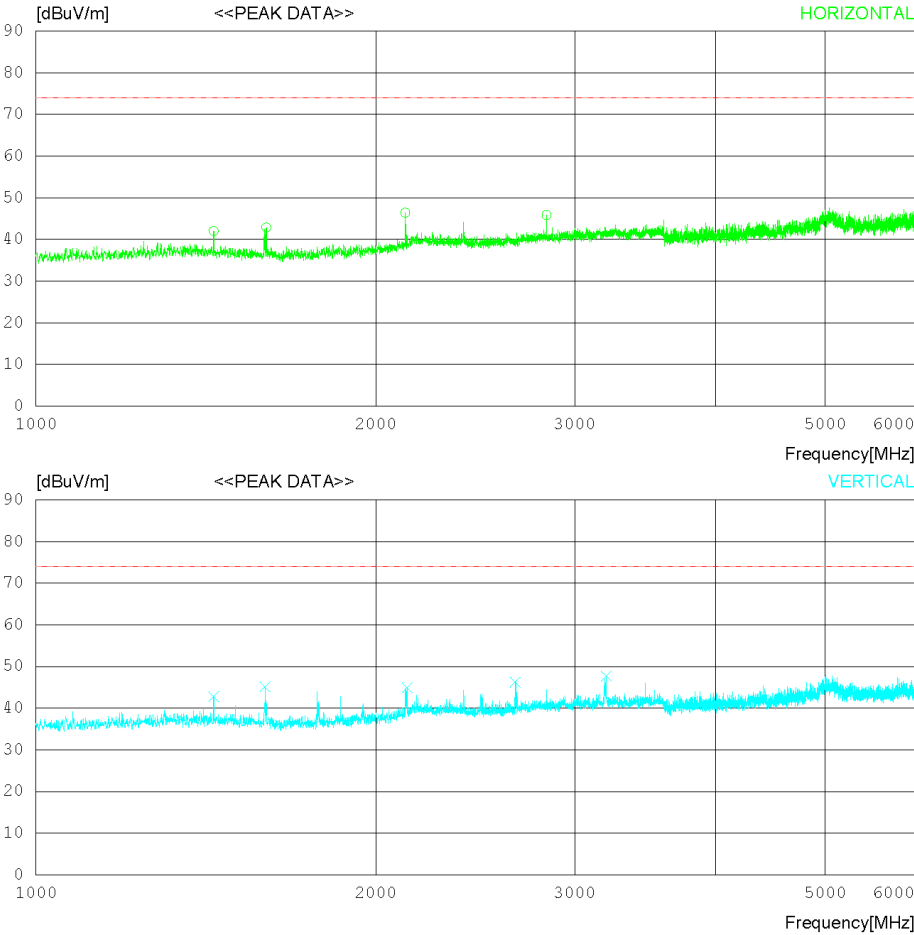
Date 2023-06-11

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 °C 40 % R.H.
Test Condition PC/IF MODE

Memo

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

Antenna Factor
1. ANT_9120D_1014_22.08.02
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
3. #29_C3_Amp to Receiver_3m_1-18G_2022-09-15
Pre Amp Gain
1. AMP_8449B_3008A00887_2022.08.24





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Date 2023-06-11

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 °C 40 % R.H.
Test Condition PC/IF MODE

Memo

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

Antenna Factor

1. ANT_9120D_1014_22.08.02

Cable Loss

1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15

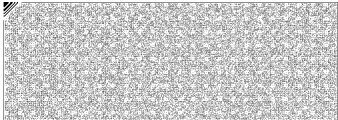
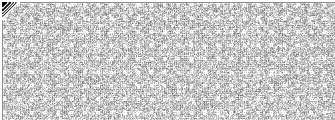
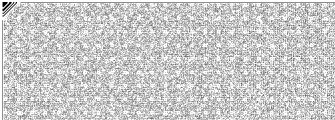
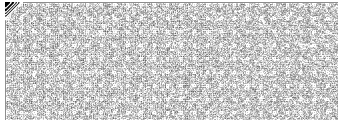
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15

3. #29_C3_Amp to Receiver_3m_1-18G_2022-09-15

Pre Amp Gain

1. AMP_8449B_3008A00887_2022.08.24

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	1436.875	47.70	25.93	4.10	35.71	42.02	74.0	31.98	132	318
2	1599.375	48.90	25.30	4.26	35.56	42.90	74.0	31.1	220	183
3	2123.750	49.50	27.37	4.74	35.19	46.42	74.0	27.58	352	358
4	2831.875	47.10	28.44	5.43	35.12	45.85	74.0	28.15	168	358
----- VERTICAL -----										
5	1436.875	48.40	25.93	4.10	35.71	42.72	74.0	31.28	321	0
6	1595.625	51.10	25.32	4.26	35.56	45.12	74.0	28.88	158	96
7	2132.500	47.80	27.58	4.75	35.19	44.94	74.0	29.06	114	0
8	2657.500	48.30	27.82	5.25	35.13	46.24	74.0	27.76	234	0
9	3199.375	47.80	29.00	5.85	34.98	47.67	74.0	26.33	220	129





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



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

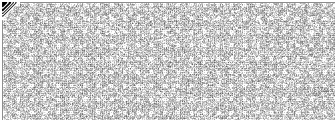
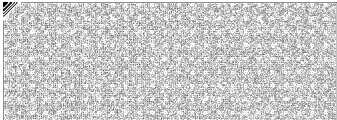
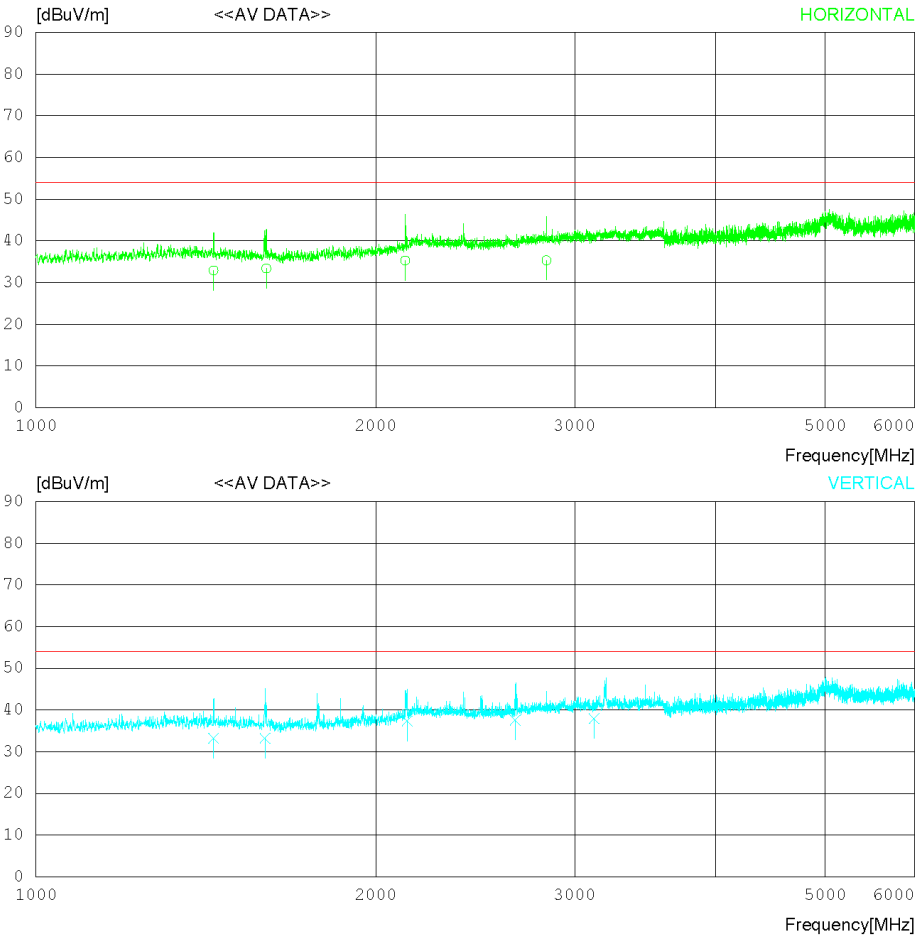
Date 2023-06-11

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 'C 40 % R.H.
Test Condition PC/IF MODE

Memo

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

Antenna Factor
1. ANT_9120D_1014_22.08.02
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
3. #29_C3_Amp to Receiver_3m_1-18G_2022-09-15
Pre Amp Gain
1. AMP_8449B_3008A00887_2022.08.24





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Date 2023-06-11

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 'C 40 % R.H.
Test Condition PC/IF MODE

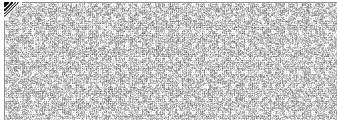
Memo

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

Antenna Factor

- 1. ANT_9120D_1014_22.08.02
- Cable Loss
- 1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
- 2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
- 3. #29_C3_Amp to Receiver_3m_1-18G_2022-09-15
- Pre Amp Gain
- 1. AMP_8449B_3008A00887_2022.08.24

No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	CAV	FACTOR							
		[dBuV]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- HORIZONTAL -----										
1	1436.421	38.60	25.93	4.10	35.71	32.92	54.00	21.08	220	133
2	1599.354	39.40	25.30	4.26	35.56	33.40	54.00	20.60	224	223
3	2123.543	38.40	27.37	4.74	35.19	35.32	54.00	18.68	131	121
4	2831.114	36.60	28.44	5.43	35.12	35.35	54.00	18.65	145	13
----- VERTICAL -----										
5	1436.241	38.90	25.93	4.10	35.71	33.22	54.00	20.78	131	45
6	1594.937	39.20	25.32	4.25	35.56	33.21	54.00	20.79	131	305
7	2132.134	40.20	27.57	4.75	35.19	37.33	54.00	16.67	247	324
8	2657.223	39.60	27.81	5.25	35.13	37.53	54.00	16.47	305	45
9	3120.364	38.40	28.84	5.76	35.03	37.97	54.00	16.03	223	305





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



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

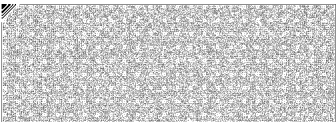
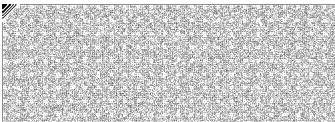
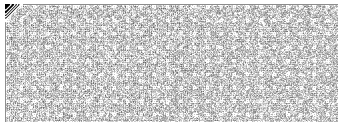
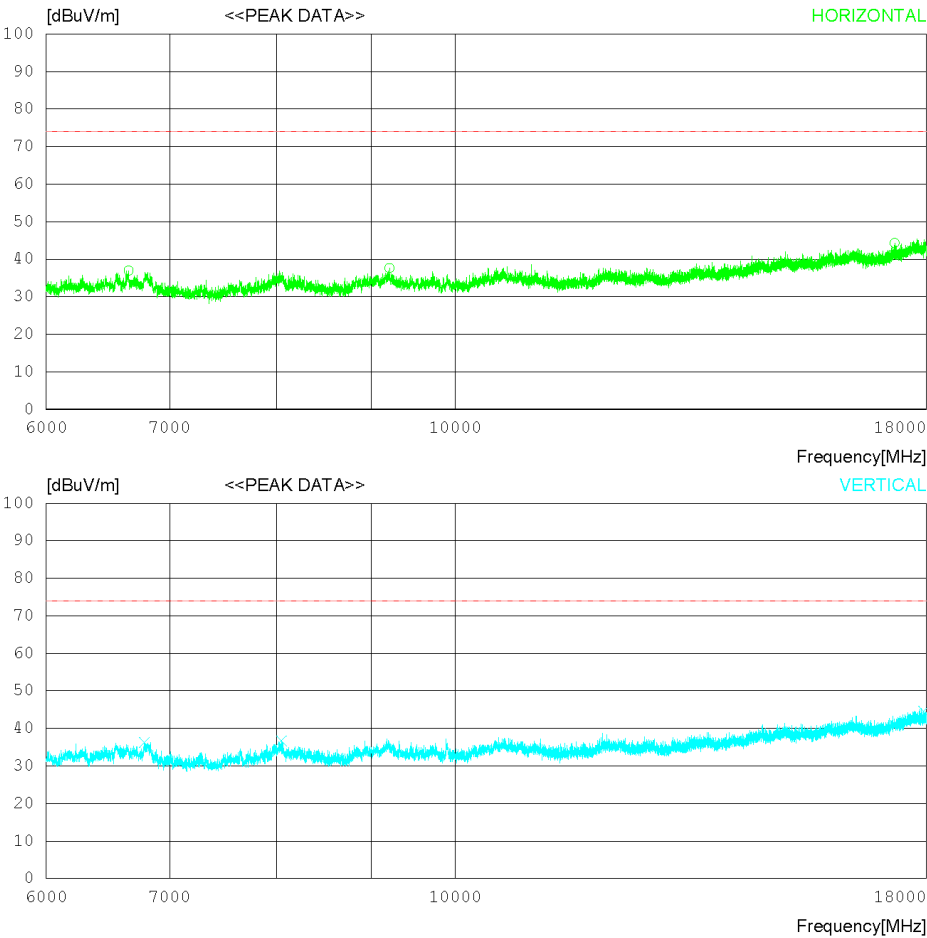
Date 2023-06-11

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 °C 40 % R.H.
Test Condition PC/IF MODE

Memo

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

Antenna Factor
1. EMC-233-A_EM-6969_156_2022.12.20
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
Pre Amp Gain
1. EMC-233-M_MLA-0618-B03-34_2022.12.20





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Date 2023-06-11

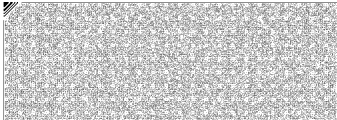
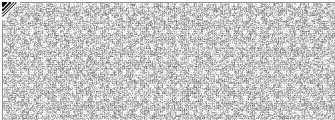
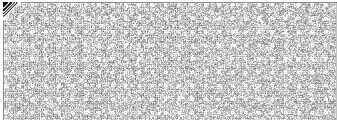
Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 °C 40 % R.H.
Test Condition PC/IF MODE

Memo

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

Antenna Factor
1. EMC-233-A_EM-6969_156_2022.12.20
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
Pre Amp Gain
1. EMC-233-M_MLA-0618-B03-34_2022.12.20

No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	PEAK [dBuV]	FACTOR [dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- HORIZONTAL -----										
1	6650.250	37.40	31.00	7.91	39.34	36.97	74.0	37.03	132	358
2	9208.500	34.60	31.58	9.86	38.40	37.64	74.0	36.36	131	358
3	17295.750	31.00	37.09	13.68	37.46	44.31	74.0	29.69	350	0
----- VERTICAL -----										
4	6782.250	36.30	31.10	8.05	39.21	36.24	74.0	37.76	305	358
5	8046.750	35.20	31.39	8.45	38.34	36.70	74.0	37.3	112	165
6	17934.750	30.00	37.37	15.64	38.38	44.63	74.0	29.37	113	0





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(FCC ID : HSXSC04 / IC : 1698A-SC04)



Radiated disturbance at (6 ~ 18) GHz _ Average Measurement data			
Test configuration mode	2	EUT Operation mode	2
Test voltage (V)	AC 120	Test Frequency (Hz)	60

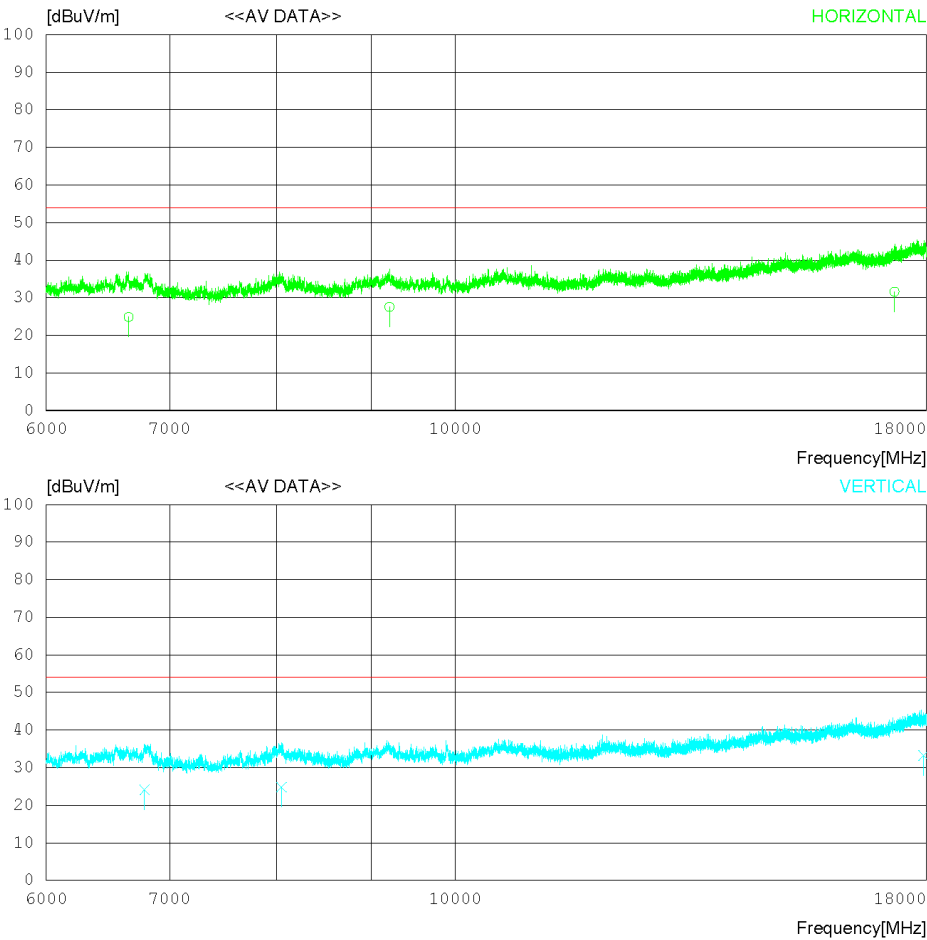
Date 2023-06-11

Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 °C 40 % R.H.
Test Condition PC/IF MODE

Memo

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

Antenna Factor
1. EMC-233-A_EM-6969_156_2022.12.20
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
Pre Amp Gain
1. EMC-233-M_MLA-0618-B03-34_2022.12.20





Report No.: DREKFCC2308-0114
(FCC ID : HSXSC04 / IC : 1698A-SC04)



Date 2023-06-11

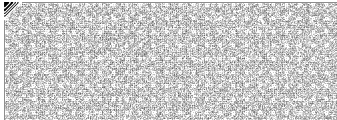
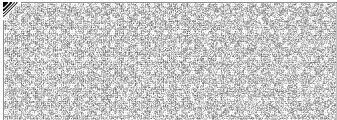
Order No. DTNC2305-03436
Power Supply 120 V 60 Hz
Temp/Humi 23 °C 40 % R.H.
Test Condition PC/IF MODE

Memo

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

Antenna Factor
1. EMC-233-A_EM-6969_156_2022.12.20
Cable Loss
1. #27_C1_Ant to Bottom_3m_1-18G_2022-09-15
2. #28_C2_Bottom to Amp(Filter,Receiver)_3m_1-18G_2022-09-15
Pre Amp Gain
1. EMC-233-M_MLA-0618-B03-34_2022.12.20

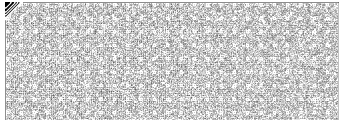
No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	CAV [dBuV]	FACTOR [dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- HORIZONTAL -----										
1	6650.348	25.30	31.00	7.91	39.34	24.87	54.00	29.13	213	340
2	9208.113	24.50	31.58	9.87	38.40	27.55	54.00	26.45	243	154
3	17295.630	18.30	37.09	13.68	37.46	31.61	54.00	22.39	133	206
----- VERTICAL -----										
4	6783.455	24.10	31.10	8.05	39.21	24.04	54.00	29.96	243	134
5	8045.997	23.30	31.39	8.45	38.34	24.80	54.00	29.20	360	202
6	17934.620	18.60	37.37	15.64	38.38	33.23	54.00	20.77	305	131



7.3 Antenna Power Conduction

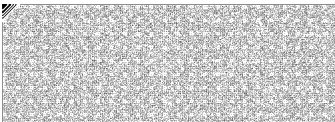
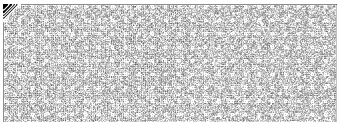
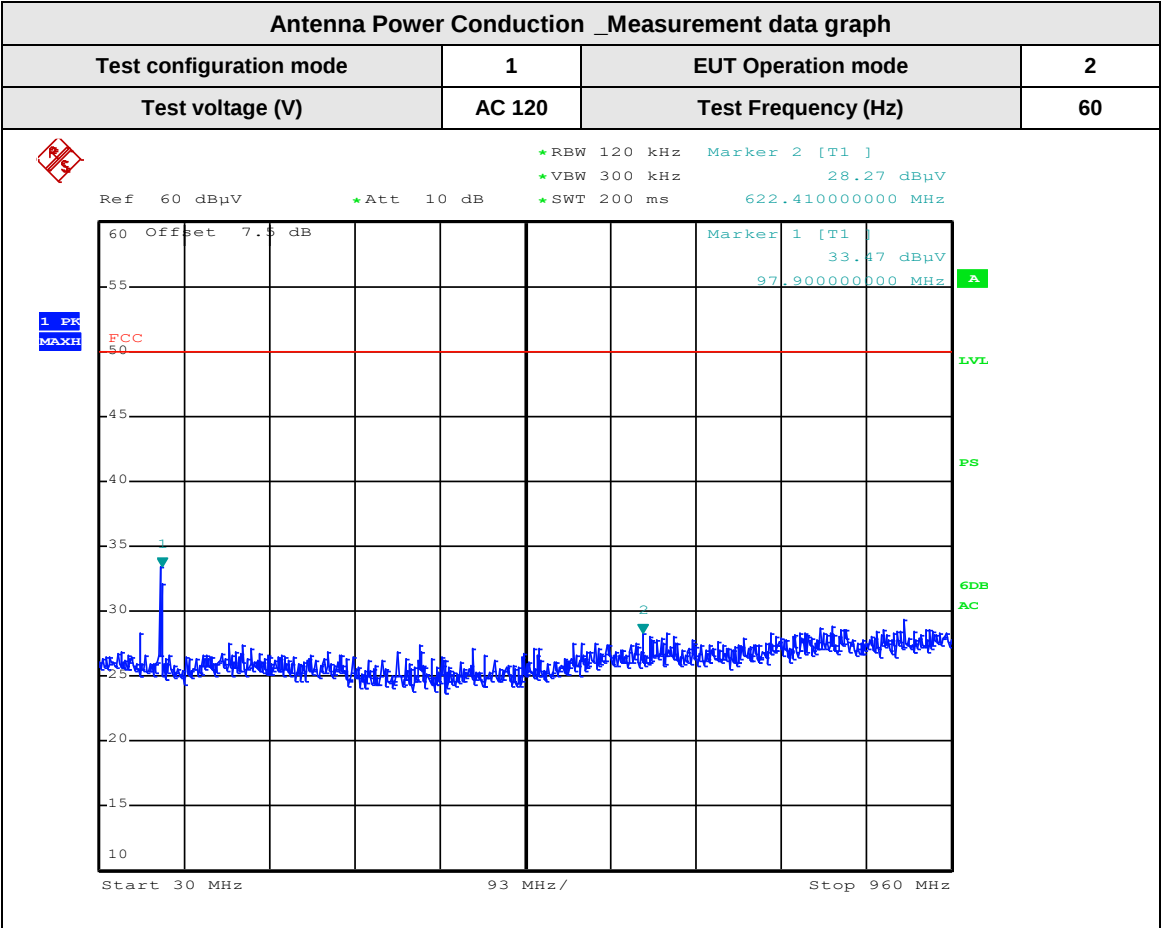
ANSI C63.4	Antenna power conduction	Result
<u>Method:</u> Power on the receive antenna terminals was to be determined by measurement of the voltage present at these terminals. Antenna conducted power measurements was performed with the EUT antenna terminals connected directly to measuring instrument 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
Fully configured sample scanned over the following frequency range	Frequency range on each side of line	Limit
	30 MHz to 1 000 MHz	2 nW (50 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 (Refer to clauses 4)	Test configuration mode	1
	EUT Operation mode	1

Measurement Instrument					
Description	Model	Manufacturer	Identifier	Cal. Date	Cal. Due
POWER SPLITTER	ZFRSC-123-S+	MINI-CIRCUITS	SF314201229	2022.07.14	2023.07.14
BROADCAST TEST CENTER	BTC	ROHDE&SCHWARZ	100253	2023.02.07	2024.02.07
EMI TEST RECEIVER	ESU40	ROHDE&SCHWARZ	100525	2022.11.29	2023.11.29





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8. Revision History

Date	Report No.	Description	Revised By	Reviewed By
Aug. 16. 2023	DREKFCC2308-0114	Initial report	JunSeo Park	DaeHwa Eun

-End of test report-

