FCC Test Report

FCC ID	:	**2AIHD2024**
Contains FCC ID	:	**NKRM18Q2**
Equipment	:	**IG15**
Brand Name	:	**Samsara**
Model Name	:	**010-1015**
Applicant	:	**Samsara Networks Inc** **1990 Alameda St, San Francisco, CA 94103, USA**
Manufacturer	:	**Samsara Networks Inc** **1990 Alameda St, San Francisco, CA 94103, USA**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on May 28, 2020, and testing was started from Jun. 08, 2020 and completed on Jun. 25, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., uishan Dist., Taoyuan City, Taiwan (R.O.C.)

Table of Contents

History of this test report

Report No.	Version	Description	Issued Date
FR7N2021-06AL	01	Initial issue of report	Jul. 22, 2020
FR7N2021-06AL	02	Revise typo (This report is the latest version replacing for the report issued on Jul. 22, 2020)	Aug. 06, 2020

Summary of Test Result

Report Clause	Ref.Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
-	15.247(a)	DTS Bandwidth	Not Performed	Refer to 1.1.5
-	15.247(b)	Maximum Conducted Output Power	Not Performed	Refer to 1.1.5
-	15.247(e)	Power Spectral Density	Not Performed	Refer to 1.1.5
-	15.247(d)	Emissions in Non-restricted Frequency Bands	Not Performed	Refer to 1.1.5
3.2	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and explanations:
None

Reviewed by: Sam Tsai

Report Producer: Debby Hung

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Bluetooth Mode	Ch. Frequency (MHz)	Channel Number
2400-2483.5	LE	2402-2480	0-39 [40]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-LE(1Mbps)	1.0	1TX

Note:
- Bluetooth LE uses a GFSK (1Mbps) modulation.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector
1	Grand-Tek	OS-LTEG-014-01-SA	Outdoor Array antenna	SMA

Ant.	Port	WCDMA Gain (dBi)	
		Band 2	Band 5
1	1	2.6	3.2

Ant.	Port	LTE Gain (dBi)			
		Band 2	Band 4	Band 5	Band 12
1	1	3.2	3.2	2.6	2.6

Note 1: The EUT has one antenna.

Note. 2: The antenna mentioned above will not be sold with the EUT in the market.

For WWAN function:

Ant. 1 (port 1) could transmit/receive.

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From AC Adapter/Battery			
EUT Function	☒	Point-to-multipoint	☐	Point-to-point
Type of EUT				
☒	Stand-alone			
☐	Combined (EUT where the radio part is fully integrated within another device)			
	Combined Equipment - Brand Name / Model No.:	…		
☐	Plug-in radio (EUT intended for a variety of host systems)			
	Host System - Brand Name / Model No.:	…		
☐	Other:			

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-LE(1Mbps)	0.668	1.75	417.188u	3k

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

1.1.5 Table for Permissive Change

This product is an extension of original one reported under FCC ID: 2AIHD2024
Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
Equipment/Model name: IG15/010-1015 was added. (This model replaces the internal antennas of LTE and GPS with external antennas.)	1. AC Conduction and Radiated Emission data was evaluated. 2. Photographs of EUT.

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF:

- KDB 558074 D01 v05r02
- KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.			
☐	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.			
☐	Wen Shan	ADD : No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)	
		TEL : 886-3-318-0787	FAX : 886-3-318-0287
Test site Designation No. TW1097 with FCC.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Edward Wang	24.5~24.8°C/55~59%	24/Jun/2020~25/Jun/2020
Radiated	03CH02-HY	Edward Wang	20.1~25.1°C/52~57%	08/Jun/2020~10/Jun/2020

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	0.9 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V

2.2 Test Channel Mode

Test Software	Dos

Mode	Power Setting
BT-LE(1Mbps)	-
2440MHz	default

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX
1	Adapter Mode

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	CTX
1	Adapter Mode
Operating Mode > 1GHz	CTX
Orthogonal Planes of EUT	**Z Plane**
	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Operating Mode	CTX
1	WWAN + Bluetooth
2	WWAN + WLAN 2.4GHz
Refer to Sporton Test Report No.: FA7N2021-06 for Co-location RF Exposure Evaluation.	

2.4 Accessories

Li-ion Battery	Brand Name	SHENZHEN DBK	Model Name	BAT001-P(1S5P)
	Power Rating	3.7 Vdc, 12500 mAh		
Mounting bracket	Brand Name	TIMSON	Model Name	6301A4963000

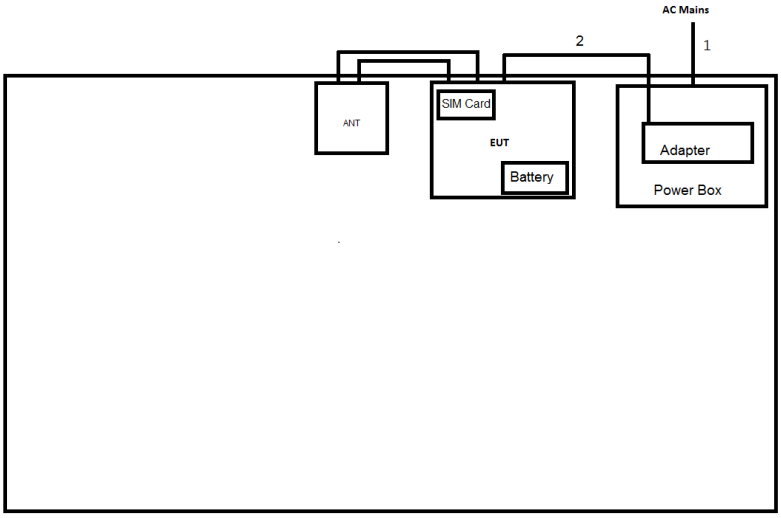
Reminder: Regarding to more detail and other information, please refer to user manual.

2.5 Support Equipment

Support Equipment – AC Conduction and Radiated					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	AC Adapter	DVE	WA-30J12R	-	-

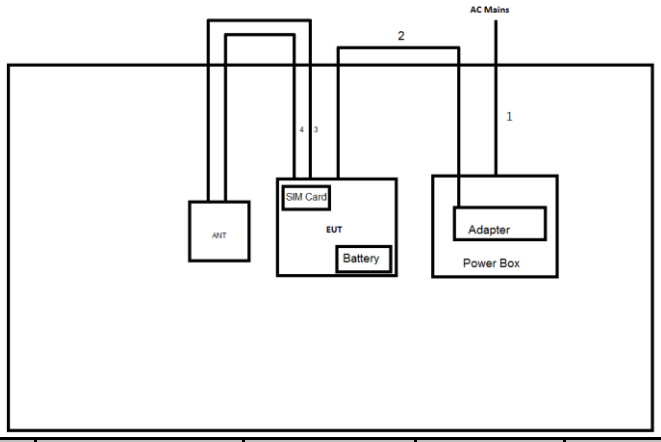
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.8	-
2	DC Power cable	No	2.8	-
3	RF Cable	No	1.5	-
4	RF Cable	No	1.5	-

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.8	-
2	DC Power cable	No	2.8	-
3	RF Cable	No	1.5	-
4	RF Cable	No	1.5	-

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

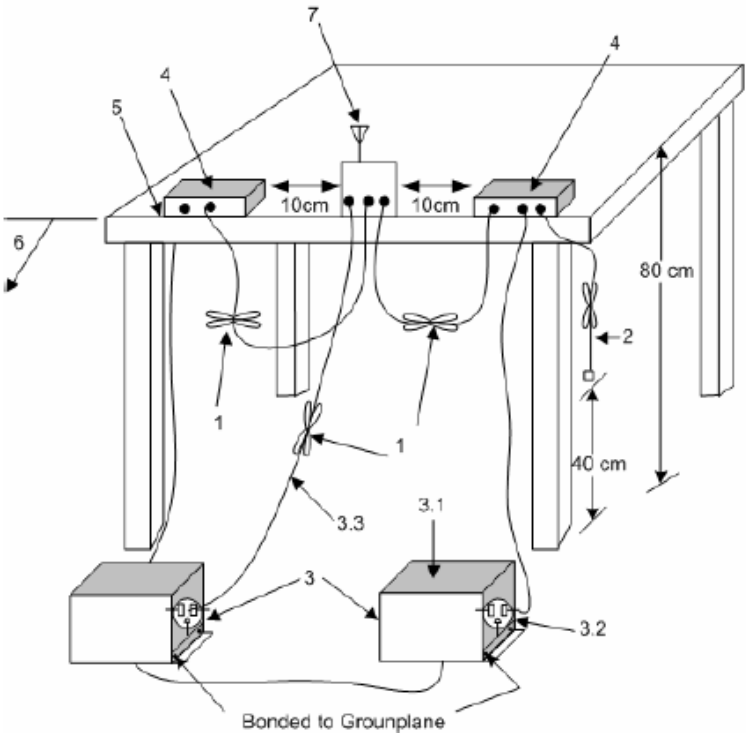
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup

AC Power-line Conducted Emissions



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.
2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50Ωloads. LISN may be placed on top of, or immediately beneath, reference ground plane.
3.1—All other equipment powered from additional LISN(s).
3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
3.3—LISN at least 80 cm from nearest part of EUT chassis.
4—Non-EUT components of EUT system being tested.
5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 Emissions in Restricted Frequency Bands

3.2.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB / decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

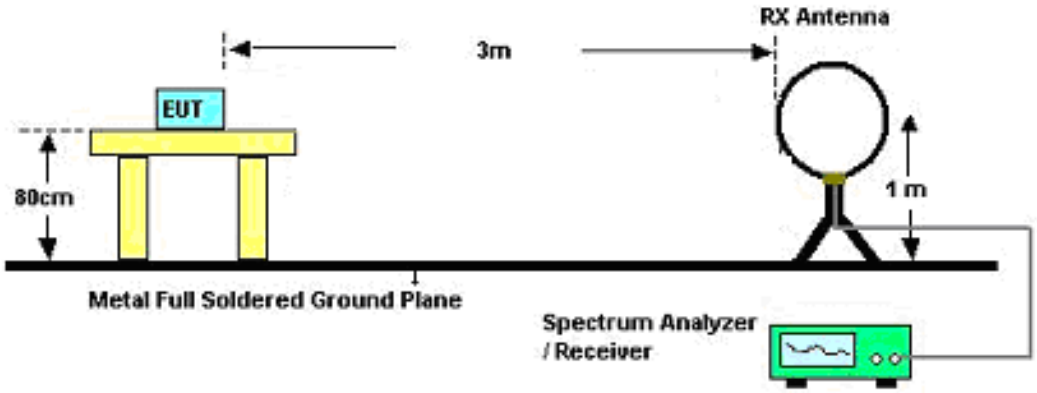
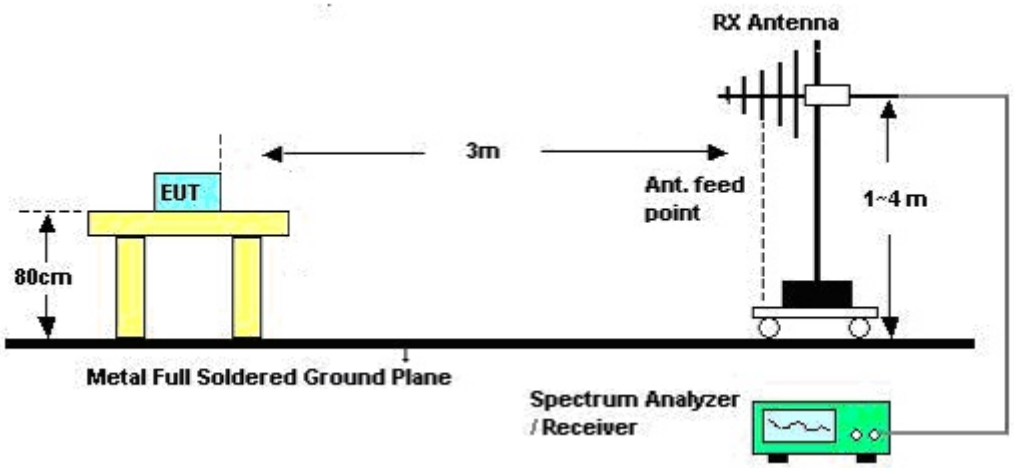
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

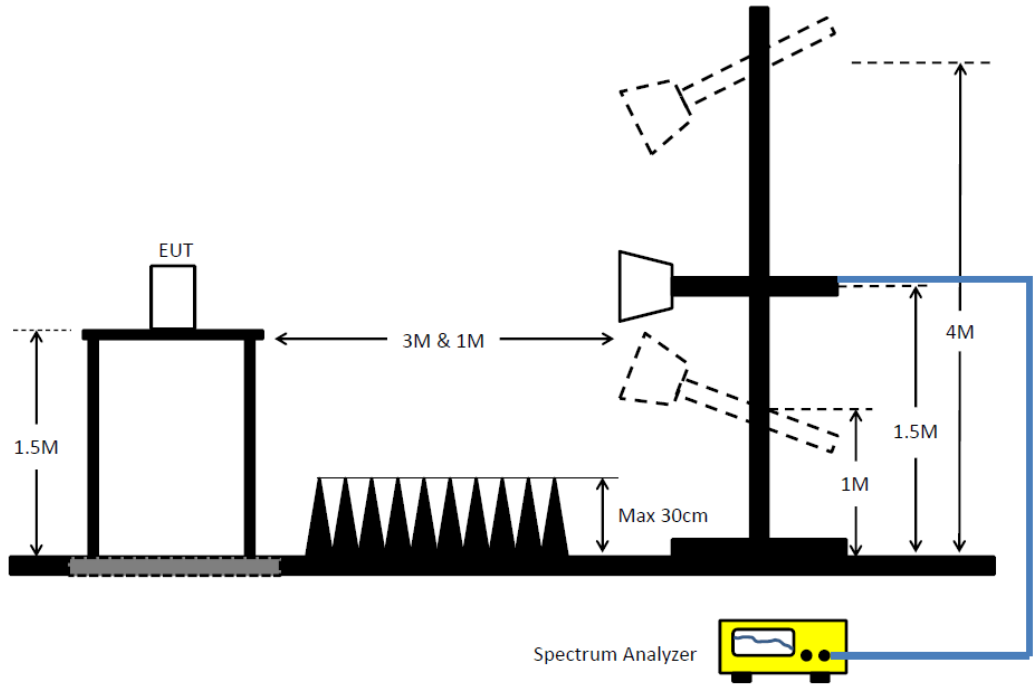
3.2.3 Test Procedures

Test Method	
▪	The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
▪	Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
▪	For the transmitter unwanted emissions shall be measured using following options below:
	▪ Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
▪	For the transmitter band-edge emissions shall be measured using following options below:
	▪ Refer as KDB 558074 clause 8.7.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	▪ Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	▪ Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels.
▪	Use the following spectrum analyzer settings:
	▪ Set RBW=100 kHz for f < 1 GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	▪ Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement. For average measurement, refer as 1.1.4.
▪	KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.
	▪ Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.
	▪ Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

3.2.4 Test Setup

Emissions in Restricted Frequency Bands
9kHz ~30MHz

30MHz~1GHz


Above 1GHz



3.2.5 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

3.2.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix B

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR	102051	9kHz ~ 3.6GHz	29/May/2020	28/May/2021
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	05/Nov/2019	04/Nov/2020
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	23/Sep/2019	22/Sep/2020
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	24/Sep/2019	23/Sep/2020

NCR: Non-Calibration Require

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz ~ 1GHz 3m	29/Aug/2019	28/Aug/2020
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz ~ 18GHz 3m	29/Aug/2019	28/Aug/2020
Amplifier	Agilent	8447D	2944A11149	100kHz ~ 1.3GHz	02/Jul/2019	01/Jul/2020
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz ~ 26.5GHz	16/Oct/2019	15/Oct/2020
Spectrum Analyzer	Rohde & Schwarz	FSP40	100593	9kHz - 40GHz	27/Feb/2020	26/Feb/2021
EMI Test Receiver	R&S	ESR	102052	9kHz ~ 3.6GHz	29/Apr/2020	28/Apr/2021
EMI Test Receiver	R&S	ESR3	102051	9kHz ~ 3.6GHz	29/May/2020	28/May/2021
RF Cable-R03m	Jye Bao	RG142	CB017	9kHz ~ 1GHz	25/Mar/2020	24/Mar/2021
RF Cable-R03m	HUBER+SUHNER	SUCOFLEX104	805193/4+805192/4	1GHz~40GHz	08/Apr/2020	07/Apr/2021
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL 6112B / MTJ6102-05	2723 / 2	30MHz ~ 1GHz	28/Feb/2020	27/Feb/2021
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170339	18GHz ~ 40GHz	14/Apr/2020	13/Apr/2021
Double Ridged Guide Horn Antenna	COM-POWER	AH-118	10094	1GHz~18GHz	17/Jul/2019	16/Jul/2020
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	05/Aug/2019	04/Aug/2020
Loop Antenna	TESEQ	HLA 6120	31244	9k-30MHz	16/Mar/2020	15/Mar/2021

Summary

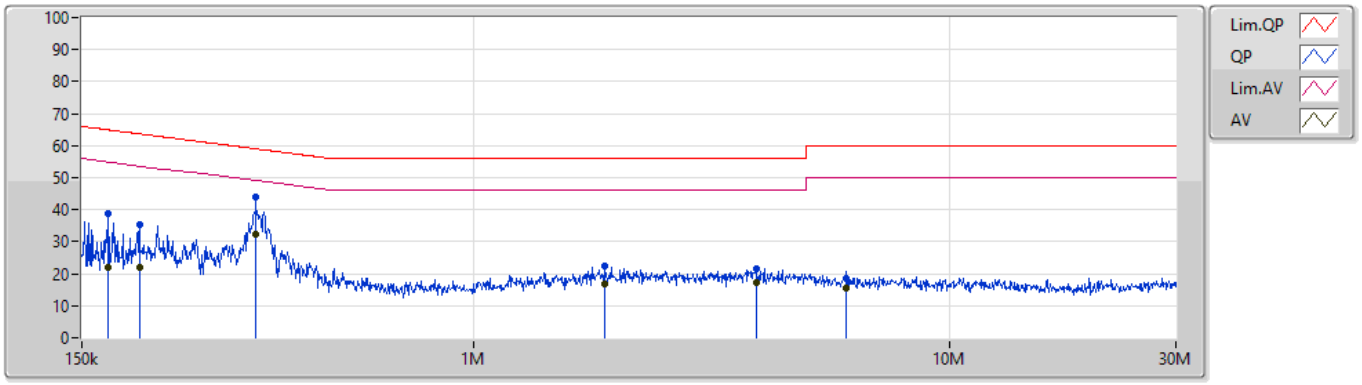
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	355.44k	34.32	48.83	-14.51	Neutral

Mode Configure

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	170.439k	38.88	64.93	-26.05	Line	-
Mode 1	Pass	AV	170.439k	21.86	54.93	-33.07	Line	-
Mode 1	Pass	QP	198.359k	35.42	63.69	-28.27	Line	-
Mode 1	Pass	AV	198.359k	22.16	53.69	-31.53	Line	-
Mode 1	Pass	QP	348.261k	44.03	59.00	-14.97	Line	"Worst"
Mode 1	Pass	AV	348.261k	32.18	49.00	-16.82	Line	-
Mode 1	Pass	QP	1.892M	22.44	56.00	-33.56	Line	-
Mode 1	Pass	AV	1.892M	16.65	46.00	-29.35	Line	-
Mode 1	Pass	QP	3.929M	21.68	56.00	-34.32	Line	-
Mode 1	Pass	AV	3.929M	17.25	46.00	-28.75	Line	-
Mode 1	Pass	QP	6.095M	18.66	60.00	-41.34	Line	-
Mode 1	Pass	AV	6.095M	15.57	50.00	-34.43	Line	-
Mode 1	Pass	QP	150.558k	41.62	65.96	-24.34	Neutral	-
Mode 1	Pass	AV	150.558k	24.80	55.96	-31.16	Neutral	-
Mode 1	Pass	QP	190.656k	37.85	64.01	-26.16	Neutral	-
Mode 1	Pass	AV	190.656k	24.70	54.01	-29.31	Neutral	-
Mode 1	Pass	QP	355.44k	44.01	58.83	-14.82	Neutral	-
Mode 1	Pass	AV	355.44k	34.32	48.83	-14.51	Neutral	"Worst"
Mode 1	Pass	QP	2.287M	21.37	56.00	-34.63	Neutral	-
Mode 1	Pass	AV	2.287M	16.76	46.00	-29.24	Neutral	-
Mode 1	Pass	QP	4.726M	20.51	56.00	-35.49	Neutral	-
Mode 1	Pass	AV	4.726M	16.12	46.00	-29.88	Neutral	-
Mode 1	Pass	QP	7.846M	19.39	60.00	-40.61	Neutral	-
Mode 1	Pass	AV	7.846M	15.88	50.00	-34.12	Neutral	-

Conducted Emissions at Powerline_Mode 1

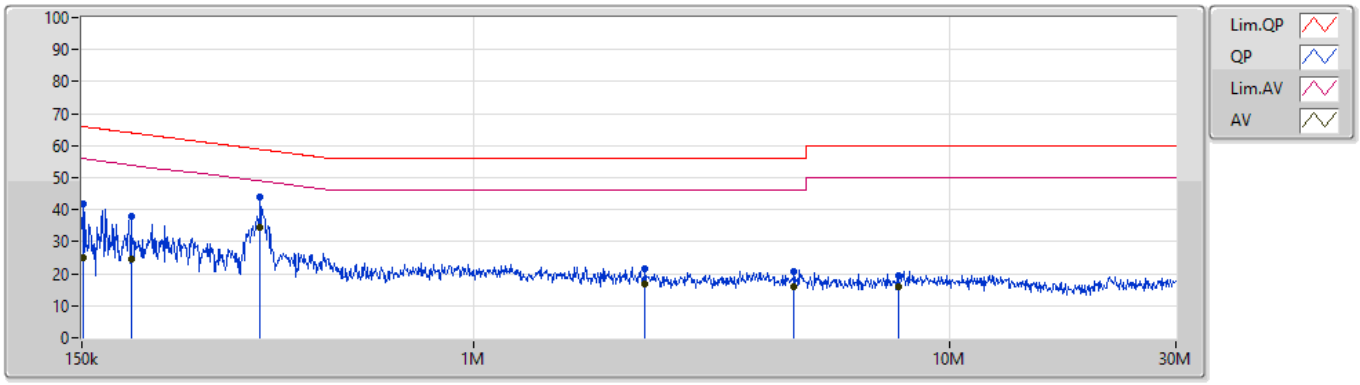
25/06/2020



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	170.439k	38.88	64.93	-26.05	19.64	Line	-	19.24	9.66	0.11	9.87
AV	170.439k	21.86	54.93	-33.07	19.64	Line	-	2.22	9.66	0.11	9.87
QP	198.359k	35.42	63.69	-28.27	19.63	Line	-	15.79	9.65	0.11	9.87
AV	198.359k	22.16	53.69	-31.53	19.63	Line	-	2.53	9.65	0.11	9.87
QP	348.261k	44.03	59.00	-14.97	19.63	Line	"Worst"	24.40	9.64	0.12	9.87
AV	348.261k	32.18	49.00	-16.82	19.63	Line	-	12.55	9.64	0.12	9.87
QP	1.892M	22.44	56.00	-33.56	19.67	Line	-	2.77	9.65	0.15	9.87
AV	1.892M	16.65	46.00	-29.35	19.67	Line	-	-3.02	9.65	0.15	9.87
QP	3.929M	21.68	56.00	-34.32	19.73	Line	-	1.95	9.66	0.19	9.88
AV	3.929M	17.25	46.00	-28.75	19.73	Line	-	-2.48	9.66	0.19	9.88
QP	6.095M	18.66	60.00	-41.34	19.77	Line	-	-1.11	9.67	0.22	9.88
AV	6.095M	15.57	50.00	-34.43	19.77	Line	-	-4.20	9.67	0.22	9.88

Conducted Emissions at Powerline_Mode 1

25/06/2020



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	150.558k	41.62	65.96	-24.34	19.63	Neutral	-	21.99	9.65	0.11	9.87
AV	150.558k	24.80	55.96	-31.16	19.63	Neutral	-	5.17	9.65	0.11	9.87
QP	190.656k	37.85	64.01	-26.16	19.62	Neutral	-	18.23	9.64	0.11	9.87
AV	190.656k	24.70	54.01	-29.31	19.62	Neutral	-	5.08	9.64	0.11	9.87
QP	355.44k	44.01	58.83	-14.82	19.62	Neutral	-	24.39	9.63	0.12	9.87
AV	355.44k	34.32	48.83	-14.51	19.62	Neutral	"Worst"	14.70	9.63	0.12	9.87
QP	2.287M	21.37	56.00	-34.63	19.68	Neutral	-	1.69	9.65	0.16	9.87
AV	2.287M	16.76	46.00	-29.24	19.68	Neutral	-	-2.92	9.65	0.16	9.87
QP	4.726M	20.51	56.00	-35.49	19.75	Neutral	-	0.76	9.67	0.20	9.88
AV	4.726M	16.12	46.00	-29.88	19.75	Neutral	-	-3.63	9.67	0.20	9.88
QP	7.846M	19.39	60.00	-40.61	19.82	Neutral	-	-0.43	9.69	0.25	9.88
AV	7.846M	15.88	50.00	-34.12	19.82	Neutral	-	-3.94	9.69	0.25	9.88

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	2.492G	49.11	54.00	-4.89	3	Horizontal	162	1.23	-

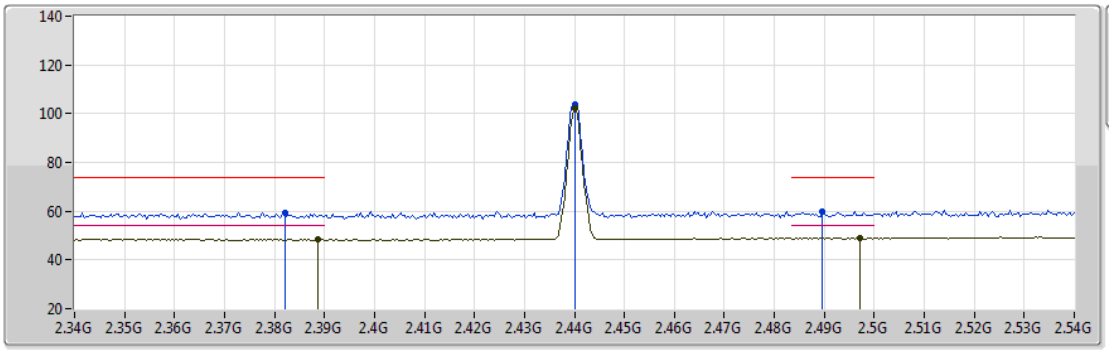
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	AV	2.3888G	48.43	54.00	-5.57	3	Vertical	327	3.00	-
2440MHz	Pass	AV	2.44G	102.46	Inf	-Inf	3	Vertical	327	3.00	-
2440MHz	Pass	AV	2.4972G	49.03	54.00	-4.97	3	Vertical	327	3.00	-
2440MHz	Pass	PK	2.382G	59.30	74.00	-14.70	3	Vertical	327	3.00	-
2440MHz	Pass	PK	2.44G	104.00	Inf	-Inf	3	Vertical	327	3.00	-
2440MHz	Pass	PK	2.4896G	59.93	74.00	-14.07	3	Vertical	327	3.00	-
2440MHz	Pass	AV	2.3668G	48.52	54.00	-5.48	3	Horizontal	162	1.23	-
2440MHz	Pass	AV	2.44G	104.33	Inf	-Inf	3	Horizontal	162	1.23	-
2440MHz	Pass	AV	2.492G	49.11	54.00	-4.89	3	Horizontal	162	1.23	-
2440MHz	Pass	PK	2.3896G	60.00	74.00	-14.00	3	Horizontal	162	1.23	-
2440MHz	Pass	PK	2.4396G	105.77	Inf	-Inf	3	Horizontal	162	1.23	-
2440MHz	Pass	PK	2.4916G	60.03	74.00	-13.97	3	Horizontal	162	1.23	-
2440MHz	Pass	AV	4.87552G	34.11	54.00	-19.89	3	Vertical	216	1.49	-
2440MHz	Pass	PK	4.87758G	46.34	74.00	-27.66	3	Vertical	216	1.49	-
2440MHz	Pass	AV	4.87614G	34.20	54.00	-19.80	3	Horizontal	343	2.87	-
2440MHz	Pass	PK	4.87716G	46.59	74.00	-27.41	3	Horizontal	343	2.87	-

BT-LE(1Mbps)

2440MHz_TX

08/06/2020

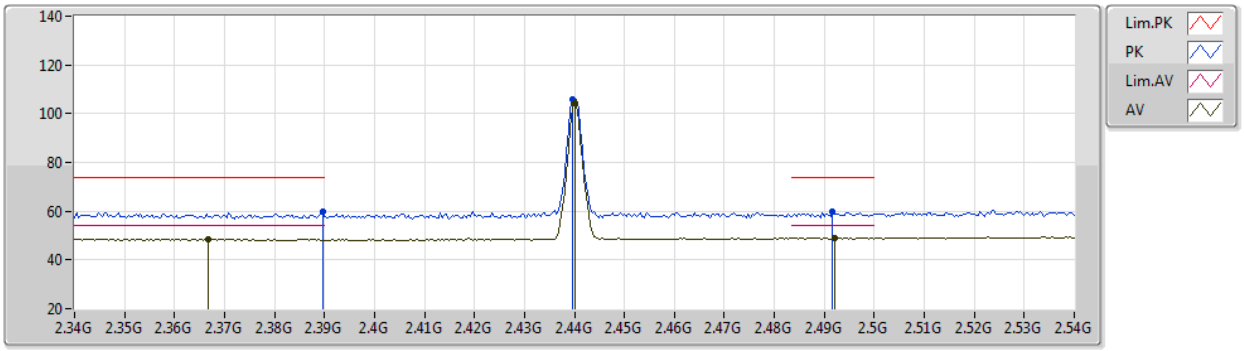


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3888G	48.43	54.00	-5.57	35.63	3	Vertical	327	3.00	-	12.80	29.68	5.95	-
AV	2.44G	102.46	Inf	-Inf	35.91	3	Vertical	327	3.00	-	66.55	29.90	6.01	-
AV	2.4972G	49.03	54.00	-4.97	36.27	3	Vertical	327	3.00	-	12.76	30.19	6.08	-
PK	2.382G	59.30	74.00	-14.70	35.61	3	Vertical	327	3.00	-	23.69	29.66	5.95	-
PK	2.44G	104.00	Inf	-Inf	35.91	3	Vertical	327	3.00	-	68.09	29.90	6.01	-
PK	2.4896G	59.93	74.00	-14.07	36.22	3	Vertical	327	3.00	-	23.71	30.15	6.07	-

BT-LE(1Mbps)

2440MHz_TX

08/06/2020

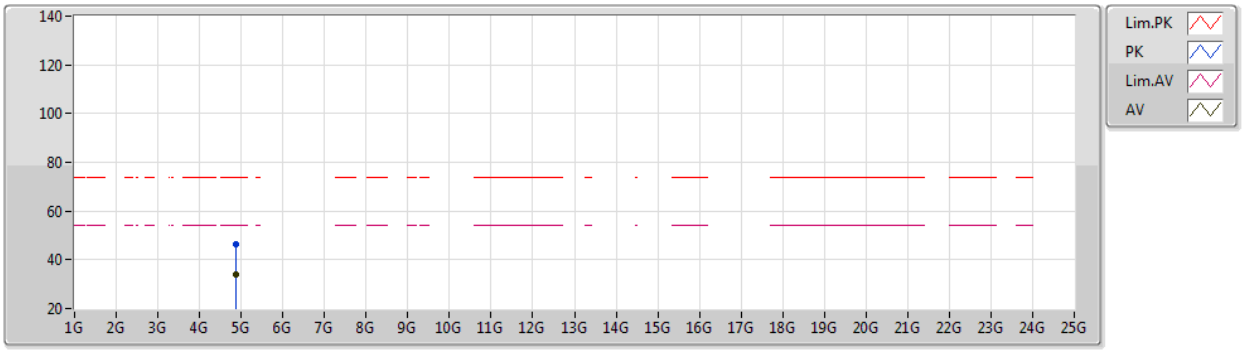


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3668G	48.52	54.00	-5.48	35.57	3	Horizontal	162	1.23	-	12.95	29.63	5.94	-
AV	2.44G	104.33	Inf	-Inf	35.91	3	Horizontal	162	1.23	-	68.42	29.90	6.01	-
AV	2.492G	49.11	54.00	-4.89	36.23	3	Horizontal	162	1.23	-	12.88	30.16	6.07	-
PK	2.3896G	60.00	74.00	-14.00	35.63	3	Horizontal	162	1.23	-	24.37	29.68	5.95	-
PK	2.4396G	105.77	Inf	-Inf	35.91	3	Horizontal	162	1.23	-	69.86	29.90	6.01	-
PK	2.4916G	60.03	74.00	-13.97	36.23	3	Horizontal	162	1.23	-	23.80	30.16	6.07	-

BT-LE(1Mbps)

2440MHz_TX

08/06/2020

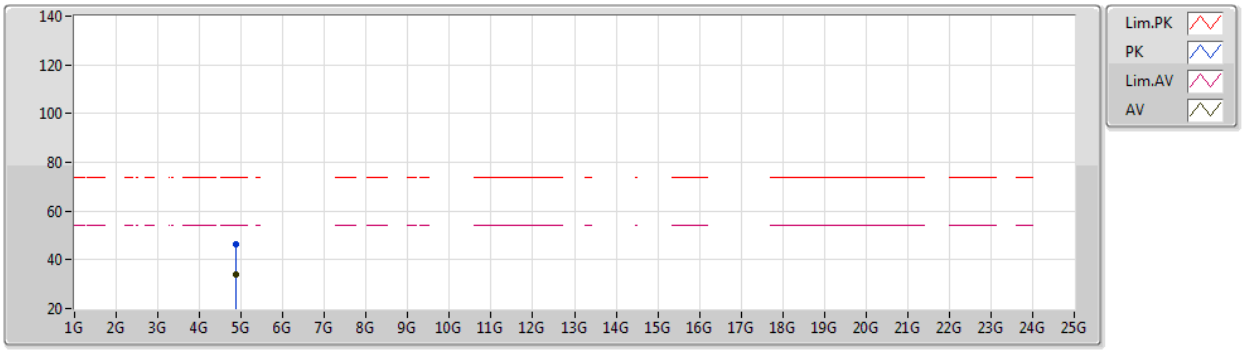


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87552G	34.11	54.00	-19.89	8.18	3	Vertical	216	1.49	-	25.93	33.75	8.30	33.87
PK	4.87758G	46.34	74.00	-27.66	8.19	3	Vertical	216	1.49	-	38.15	33.76	8.30	33.87

BT-LE(1Mbps)

2440MHz_TX

08/06/2020



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87614G	34.20	54.00	-19.80	8.18	3	Horizontal	343	2.87	-	26.02	33.75	8.30	33.87
PK	4.87716G	46.59	74.00	-27.41	8.18	3	Horizontal	343	2.87	-	38.41	33.75	8.30	33.87

Level (dBuV/m) = Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)