



Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR231200228201

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TEST REPORT

Application No.: KSCR2312002282AT
FCC ID: 2A69E-RGWWPBK-01
Applicant: Rad Golf, Inc.
Address of Applicant: 4026 N. Miller road Suite 102, Scottsdale, Arizona 85251, US
Manufacturer: GlobalSat WorldCom Corporation
Address of Manufacturer: 16F., No.186, Jian 1st Rd. Zhonghe Dist., New Taipei City 23553 Taiwan
Equipment Under Test (EUT):
EUT Name: WATCH+
Model No.: RGWWPBK-01
Trade Mark: Rad Golf
Standard(s) : 47 CFR Part 15, Subpart B
Date of Receipt: 2023-12-14
Date of Test: 2023-12-29 to 2023-12-31
Date of Issue: 2024-01-10

Test Result:

Pass*

* In the configuration tested, the EUT complied with the standards specified above.

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



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<i>Revision Record</i>			
<i>Version</i>	<i>Description</i>	<i>Date</i>	<i>Remark</i>
00	Original	2024-01-10	/

Authorized for issue by:			
Tested By			
	Eric_Liu/Project Engineer		
Approved By			
	Terry Hou /Reviewer		



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2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	15.107(a);Class B	Pass
Radiated Emissions (30MHz-1GHz)		ANSI C63.4:2014	15.109(a);Class B	Pass
Radiated Emissions (Above 1GHz)		ANSI C63.4:2014	15.109(g);Class B	Pass

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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 5V by adapter
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4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Mobile Phone	ZTE	Z11MAX	/
AC Adapter	DVE	DSA-12G-12FEU	/

4.3 Measurement Uncertainty & Decision Rule

Measurement Uncertainty:

No.	Item	Measurement Uncertainty (U_{LAB}) *	U_{CISPR}
1	Conducted Emission at mains port using AMN	2.4dB (9kHz to 150kHz)	3.8dB (9kHz to 150kHz)
		2.2dB (150kHz to 30MHz)	3.4dB (150kHz to 30MHz)
2	Conducted Emission at telecommunication port using AAN	4.0 dB (150kHz to 30MHz)	5.0dB (150kHz to 30MHz)
3	Radiated Power	3.2dB	4.5dB (30MHz to 300MHz)
4	Radiated Emission (10m)	4.1 dB	6.3dB (30MHz-1GHz)
5	Radiated Emission (3m)	4.6 dB (30MHz-1GHz)	6.3dB (30MHz-1GHz)
		5.0dB (1GHz-6GHz)	5.2dB (1GHz-6GHz)
		5.2dB (6GHz-18GHz)	5.5dB (6GHz-18GHz)
		5.3dB (18GHz-40GHz)	N/A

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Decision Rule:

- CISPR 16-4-2 for emission measurements is as below described.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

U_{LAB} less than U_{CISPR} , therefore:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit.
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.
- For immunity testing no decision rule is applicable.

4.4 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

- 1.SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).
- 2.SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).
3. Sample source: sent by customer.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA**

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

- **FCC**

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

- **ISED**

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 2324E

- **VCCI**

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMI TEST RECEIVER	R&S	ESCI	KS301101	02/03/2023	02/02/2024
TWO-LINE V-NETWORK	R&S	ENV216	KS301197	01/17/2023	01/16/2024
V (V-LISN)	SCHWARZBECK	NNLK 8129	KS301091	01/17/2023	01/16/2024
Pulse LIMITER	R&S	ESH3-Z2	KUS1902E001	01/17/2023	01/16/2024
Software	Faratronic	EZ_EM C-v 3A1	N/A	N/A	N/A

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EMI Test Receiver	R&S	ESCI	KS301196	08/24/2023	08/23/2024
Antenna	TESEQ	CBL 6112D	KUS1806E006	03/05/2022	03/04/2024
Spectrum Analyzer	R&S	FSU26	KS301206	03/16/2023	03/15/2024
Signal Analyzer	R&S	FSV40	KUS1806E003	08/24/2023	08/23/2024
Software	Faratronic	EZ_EM C v 3A1	N/A	N/A	N/A

Radiated Emissions (Above 1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Spectrum Analyzer	R&S	FSU26	KS301206	03/16/2023	03/15/2024
Preamplifier	PANSHAN TECHNOLOGY	LNA:1~18G	KSEM010-2	01/17/2023	01/16/2024
Horn-antenna	SCHWARZBECK	BBHA9120D	KS301079	04/02/2022	04/01/2024
Antenna	SCHAFFNER	CBL6143	CZ301091	10/25/2022	10/24/2024
Software	Faratronic	EZ_EM C-v 3A1	N/A	N/A	N/A

General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Digital Pressure Meter	Mengde	DYM3	CZ750023	01/31/2023	01/30/2024
Temperature & Humidity Recorder	JDRK	RS-WS-N01-6J	KSEM024-1 KSEM024-2 KSEM024-3 KSEM024-6 KSEM024-7 KSEM024--8 KSEM024--9	03/22/2023	03/21/2024

6 Emission Test Results

6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4:2014

Limit:

0.15MHz-0.5MHz: 66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average

0.5MHz-5MHz: 56dB(μV) quasi-peak, 46dB(μV) average

5MHz-30MHz: 60dB(μV) quasi-peak, 50dB(μV) average

Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 24.5 °C

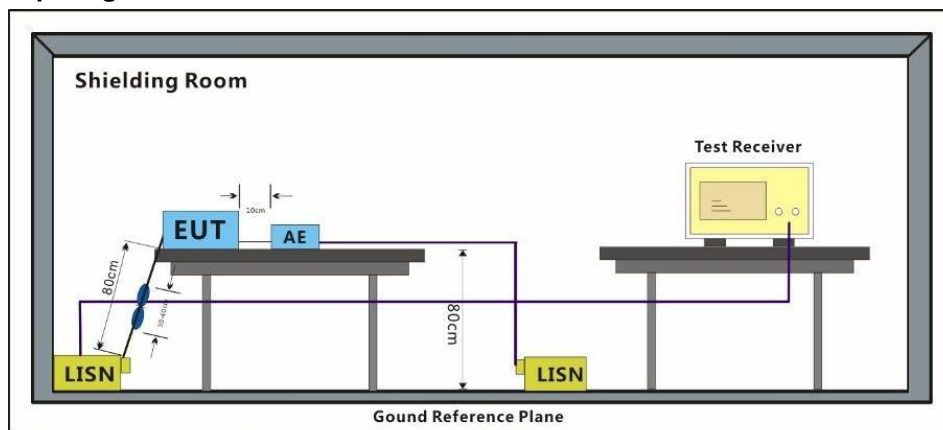
Humidity: 48.6 % RH

Atmospheric Pressure: 1010 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Normal working: Bluetooth + GNSS RX + Battery + Adapter.

6.1.3 Test Setup Diagram

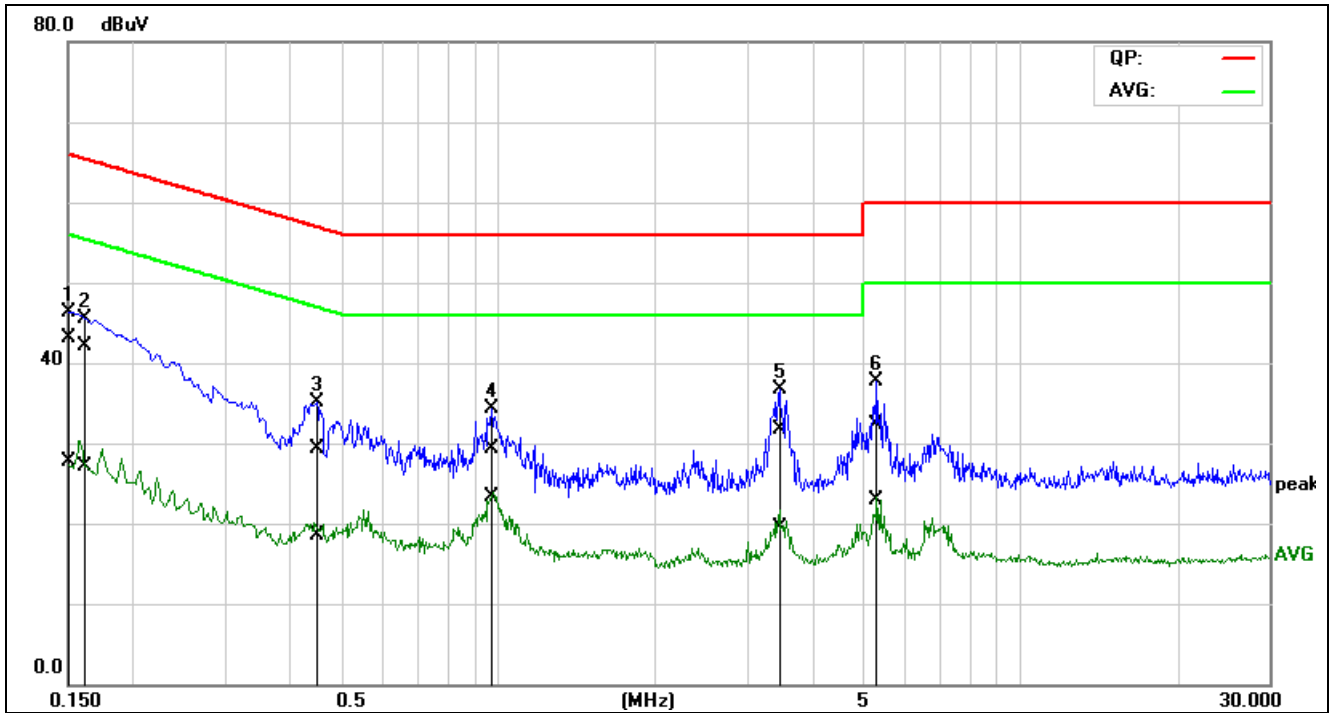


6.1.4 Measurement Procedure and Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

Remark: Level= Read Level+ Cable Loss+ LISN Factor

Test Mode: 00; Line: Live line



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1509	22.91	7.45	20.20	43.11	27.65	65.95	55.95	-22.84	-28.30	Pass
2	0.1639	21.96	6.99	20.15	42.11	27.14	65.26	55.26	-23.15	-28.12	Pass
3	0.4507	9.27	-1.61	20.05	29.32	18.44	56.86	46.86	-27.54	-28.42	Pass
4*	0.9827	9.37	3.36	19.91	29.28	23.27	56.00	46.00	-26.72	-22.73	Pass
5	3.4520	11.80	-0.50	19.98	31.78	19.48	56.00	46.00	-24.22	-26.52	Pass
6	5.3233	12.28	2.90	19.97	32.25	22.87	60.00	50.00	-27.75	-27.13	Pass

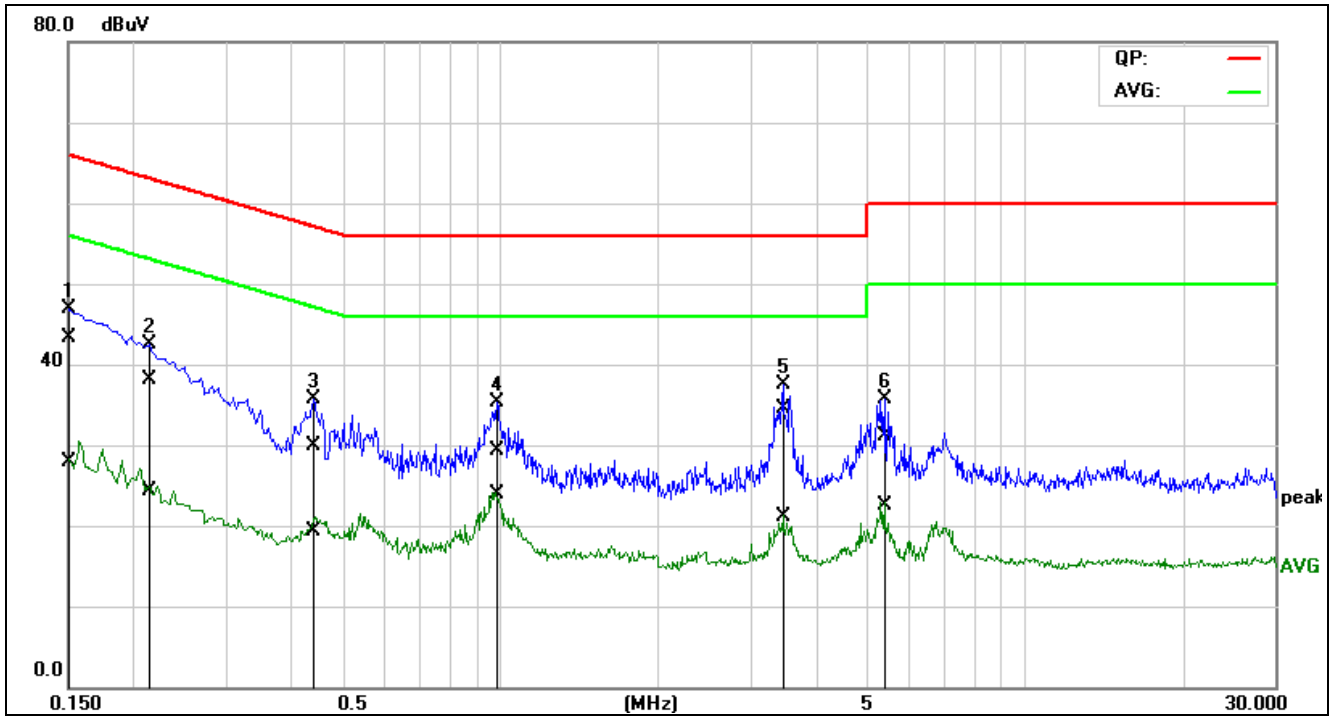
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Test Mode: 00; Line: Neutral Line



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1518	23.04	7.69	20.26	43.30	27.95	65.90	55.90	-22.60	-27.95	Pass
2	0.2128	18.00	4.07	20.14	38.14	24.21	63.10	53.10	-24.96	-28.89	Pass
3	0.4429	9.84	-0.75	20.09	29.93	19.34	57.01	47.01	-27.08	-27.67	Pass
4	0.9770	9.30	3.83	19.99	29.29	23.82	56.00	46.00	-26.71	-22.18	Pass
5*	3.4597	14.48	1.07	19.98	34.46	21.05	56.00	46.00	-21.54	-24.95	Pass
6	5.4067	11.14	2.65	19.91	31.05	22.56	60.00	50.00	-28.95	-27.44	Pass

6.2 Radiated Emissions (30MHz-1GHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4:2014

Limit:

Class B

Test Distance: 3m

30MHz -88MHz 40.0(dBµV/m) quasi-peak

88MHz-216MHz 43.5(dBµV/m) quasi-peak

216MHz-960MHz 46.0(dBµV/m) quasi-peak

960MHz-1000MHz 54.0(dBµV/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30MHz to1000MHz

Class B

Test Distance: 10m

30MHz -88MHz 29.5(dBµV/m) quasi-peak

88MHz-216MHz 33.1(dBµV/m) quasi-peak

216MHz-960MHz 35.6(dBµV/m) quasi-peak

960MHz-1000MHz 43.5(dBµV/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30MHz to1000MHz

6.2.1 E.U.T. Operation

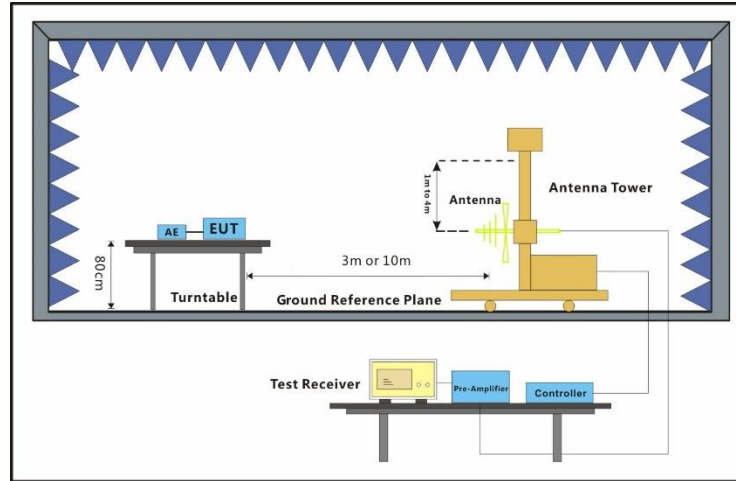
Operating Environment:

Temperature: 19.5 °C Humidity: 42.2 % RH Atmospheric Pressure: 1010 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	Normal working: Bluetooth + GNSS RX + Battery + Adapter.
	01	Normal working: Bluetooth + GNSS RX + Battery + PC.
Final test	00	Normal working: Bluetooth + GNSS RX + Battery + Adapter.

6.2.3 Test Setup Diagram

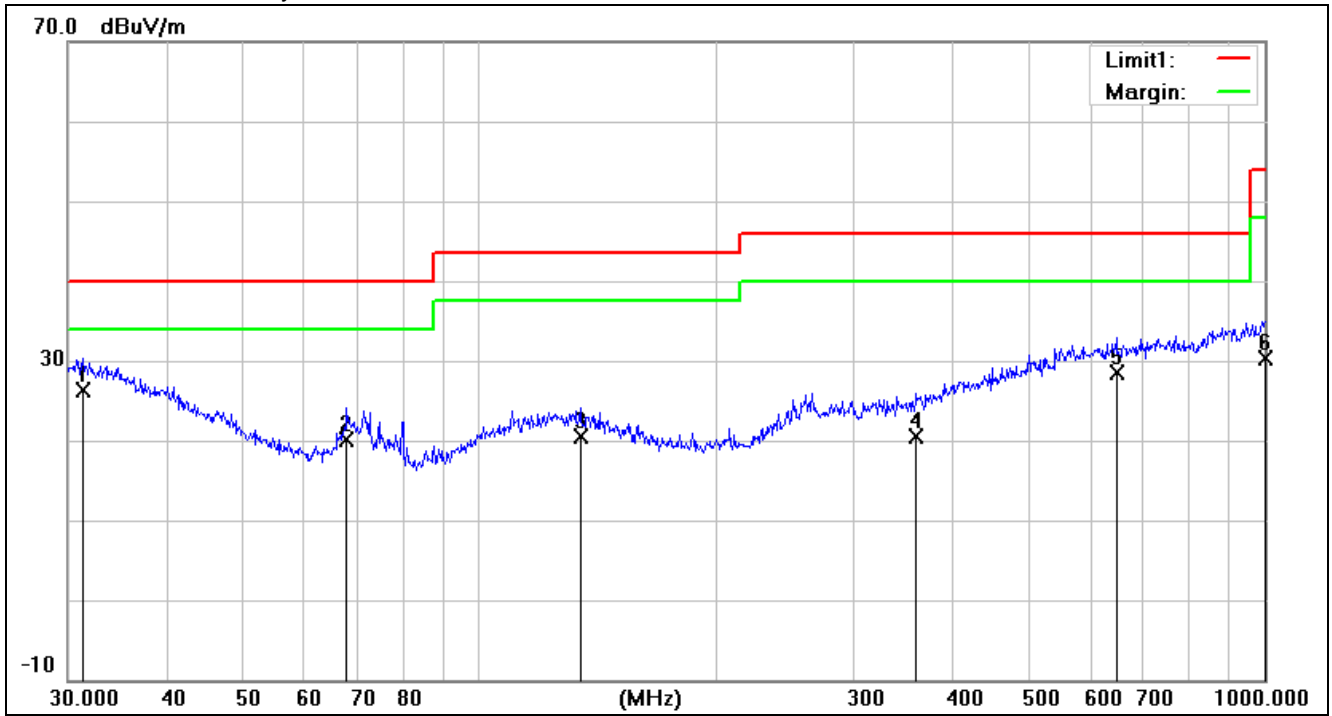


6.2.4 Measurement Procedure and Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

Remark: $Level = Read\ Level + Cable\ Loss + Antenna\ Factor - Preamp\ Factor$

Test Mode: 00; Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	31.3992	1.19	25.20	26.39	40.00	-13.61	200	174	QP
2	67.9129	4.60	15.54	20.14	40.00	-19.86	100	3	QP
3	134.5592	1.34	19.17	20.51	43.50	-22.99	200	359	QP
4	360.4477	-1.72	22.19	20.47	46.00	-25.53	200	359	QP
5	647.3856	0.76	27.80	28.56	46.00	-17.44	200	359	QP
6	1000.0000	0.20	30.09	30.29	54.00	-23.71	200	359	QP

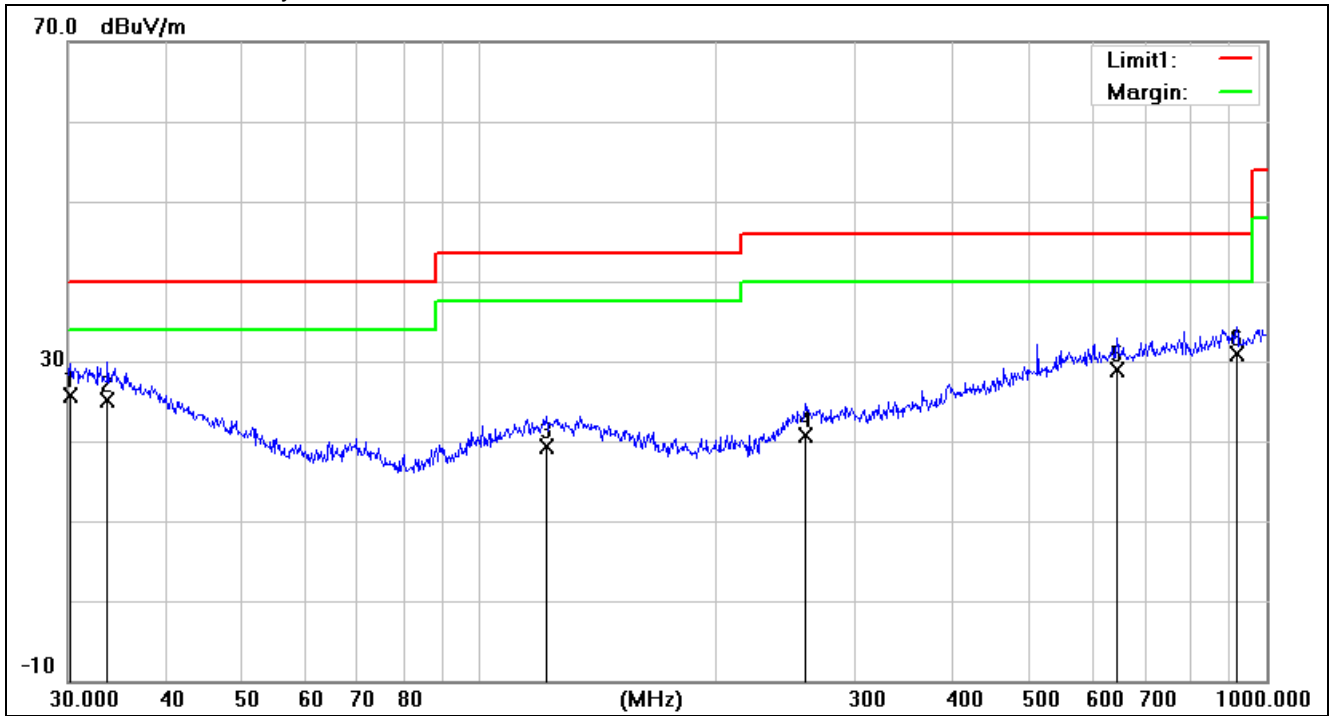
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Test Mode: 00; Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.2111	0.35	25.30	25.65	40.00	-14.35	100	56	QP
2	33.6803	0.16	24.98	25.14	40.00	-14.86	100	10	QP
3	121.5486	-0.08	19.44	19.36	43.50	-24.14	200	336	QP
4	259.2338	-0.10	20.77	20.67	46.00	-25.33	100	21	QP
5	645.1195	1.04	27.83	28.87	46.00	-17.13	100	151	QP
6	916.0687	1.68	29.26	30.94	46.00	-15.06	100	330	QP

6.3 Radiated Emissions (Above 1GHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4:2014

Limit:

Class B

Above 1GHz 74(dBµV/m) peak, 54(dBµV/m) average

Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000M to18000MHz

6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

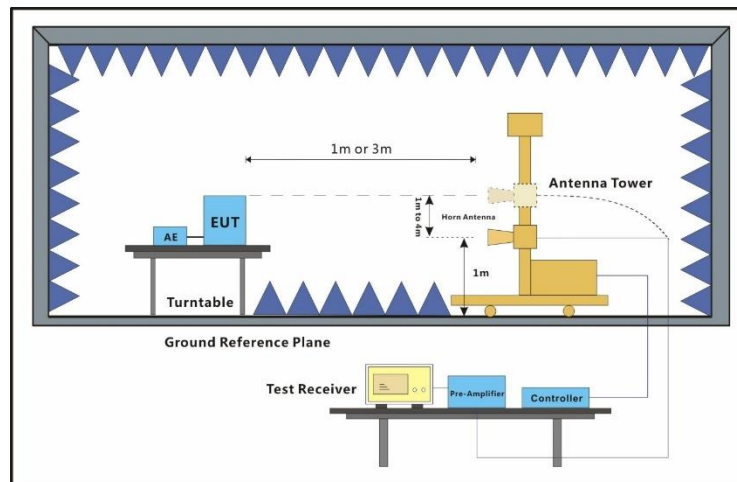
Humidity: 55 % RH

Atmospheric Pressure: 1010 mbar

6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	Normal working: Bluetooth + GNSS RX + Battery + Adapter.
	01	Normal working: Bluetooth + GNSS RX + Battery + PC.
Final test	00	Normal working: Bluetooth + GNSS RX + Battery + Adapter.

6.3.3 Test Setup Diagram



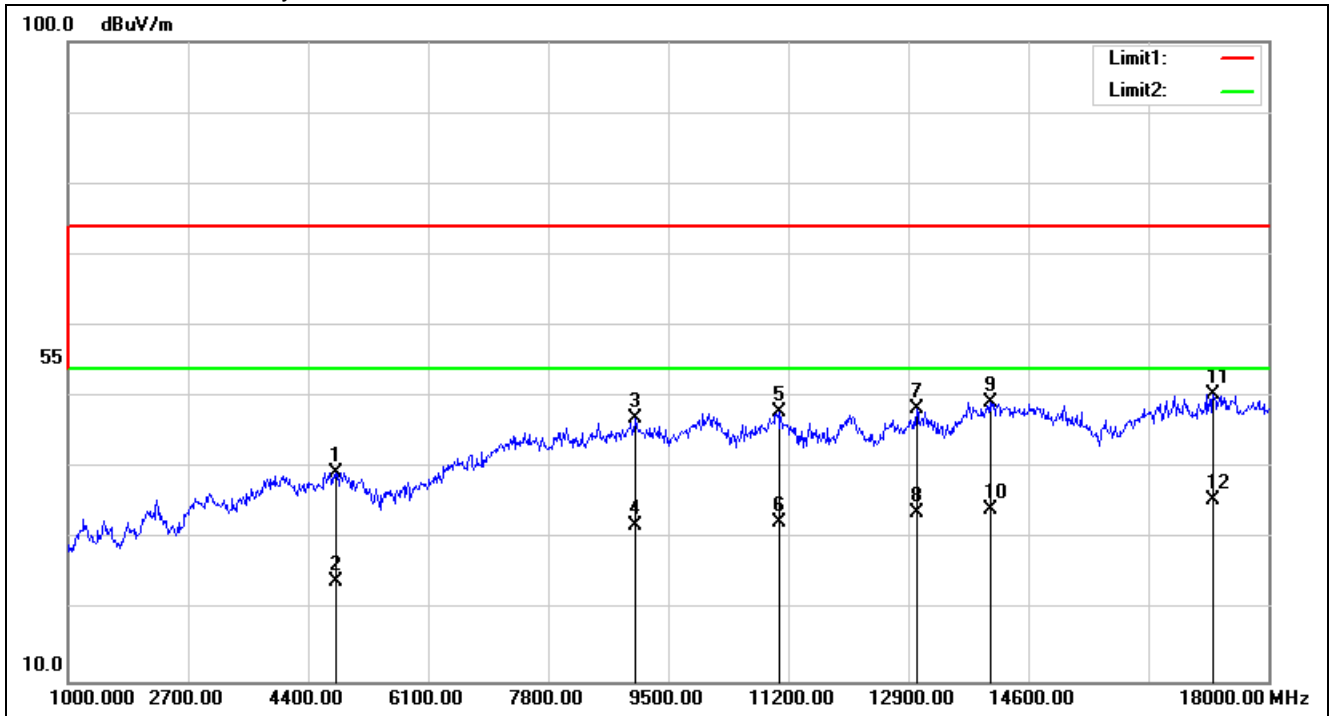
6.3.4 Measurement Procedure and Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

The red line show in graphic is the limit in standard used in this section.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Test Mode: 00; Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4791.000	52.53	-13.09	39.44	74.00	-34.56	200	1	peak
2	4791.000	37.24	-13.09	24.15	54.00	-29.85	200	1	AVG
3	9041.000	51.35	-4.34	47.01	74.00	-26.99	100	300	peak
4	9041.000	36.39	-4.34	32.05	54.00	-21.95	100	300	AVG
5	11064.000	49.37	-1.56	47.81	74.00	-26.19	100	43	peak
6	11064.000	34.01	-1.56	32.45	54.00	-21.55	100	43	AVG
7	13019.000	49.96	-1.55	48.41	74.00	-25.59	100	1	peak
8	13019.000	35.20	-1.55	33.65	54.00	-20.35	100	1	AVG
9	14056.000	48.26	1.00	49.26	74.00	-24.74	100	36	peak
10	14056.000	33.15	1.00	34.15	54.00	-19.85	100	36	AVG
11	17218.000	45.76	4.71	50.47	74.00	-23.53	200	360	peak
12	17218.000	30.87	4.71	35.58	54.00	-18.42	200	360	AVG

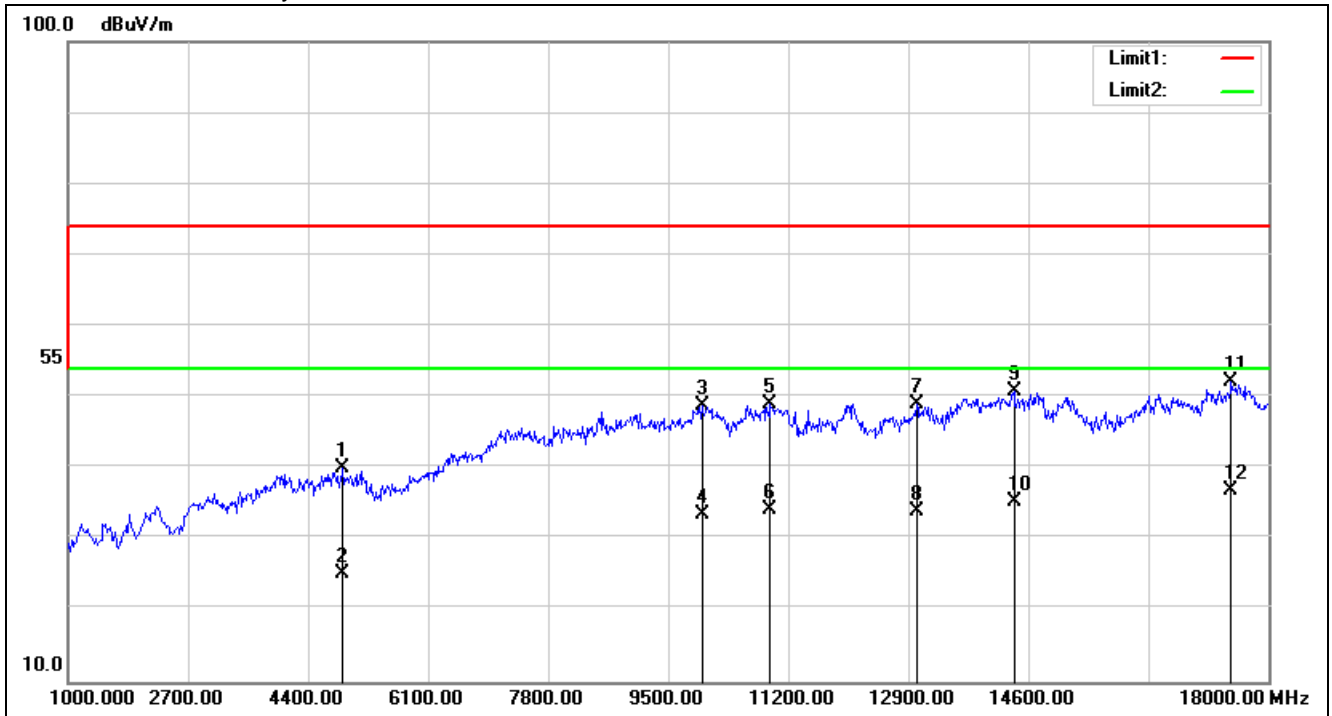
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Test Mode: 00; Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4893.000	53.12	-13.00	40.12	74.00	-33.88	200	243	peak
2	4893.000	38.13	-13.00	25.13	54.00	-28.87	200	243	AVG
3	9976.000	51.75	-3.05	48.70	74.00	-25.30	100	0	peak
4	9976.000	36.58	-3.05	33.53	54.00	-20.47	100	0	AVG
5	10945.000	50.38	-1.27	49.11	74.00	-24.89	100	92	peak
6	10945.000	35.53	-1.27	34.26	54.00	-19.74	100	92	AVG
7	13019.000	50.67	-1.55	49.12	74.00	-24.88	100	170	peak
8	13019.000	35.60	-1.55	34.05	54.00	-19.95	100	170	AVG
9	14396.000	49.18	1.61	50.79	74.00	-23.21	100	221	peak
10	14396.000	33.65	1.61	35.26	54.00	-18.74	100	221	AVG
11	17473.000	45.88	6.34	52.22	74.00	-21.78	200	209	peak
12	17473.000	30.55	6.34	36.89	54.00	-17.11	200	209	AVG



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7 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2312002282AT

8 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2312002282AT

- End of the Report -