

TEST REPORT

Application No.: KSCR2511002494AU
FCC ID: 2ALBS1D005271
Applicant: WHETRON ELECTRONICS(SUZHOU) CO., LTD
Address of Applicant: NO.457,XIANGJIANG ROAD, HIGH NEW DISTRICT,SUZHOU, P.R. CHINA
Manufacturer: WHETRON ELECTRONICS(SUZHOU) CO., LTD
Address of Manufacturer: NO.457,XIANGJIANG ROAD, HIGH NEW DISTRICT,SUZHOU, P.R. CHINA
Factory: WHETRON ELECTRONICS(SUZHOU) CO., LTD
Address of Factory: NO.457,XIANGJIANG ROAD, HIGH NEW DISTRICT,SUZHOU, P.R. CHINA
Equipment Under Test (EUT):
EUT Name: BCM
Model No.: 1D005271
Standard(s) : 47 CFR Part 15, Subpart C
Date of Receipt: 2025-09-17
Date of Test: 2025-09-20 to 2025-11-27
Date of Issue: 2025-11-28

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.

Revision Record			
Version	Description	Date	Remark
00	Original	2025-11-28	/

Authorized for issue by:			
Tested By		Maker Qi	
		Maker_Qi/Project Engineer	
Approved By		Terry Hou	
		Terry Hou /Reviewer	

2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.225	N/A	47 CFR Part 15, Subpart C 15.203	Customer Declaration

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
20dB Bandwidth	47 CFR Part 15, Subpart C 15.225	ANSI C63.10 (2020)	47 CFR Part 15, Subpart C Section	Pass
Radiated Emissions (9kHz-30MHz)		ANSI C63.10 (2020)	47 CFR Part 15, Subpart C Section 15.205/15.209	Pass
Radiated Emissions (30MHz-1GHz)		ANSI C63.10 (2020)	47 CFR Part 15, Subpart C Section 15.205/15.209	Pass

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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 12V
Operation Frequency:	125kHz
Modulation Type:	ASK
Number of Channels:	1
Number of Antennas	1
Antenna Type:	Integrated Antenna
Product Type:	☐ Portable device
	☐ Mobile device
	☒ Fixed device

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
DC power supply	Agilent	E3632A	/

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4×10^{-8}
2	Timeout	2s
3	Duty Cycle	0.37%
4	Occupied Bandwidth	3%
5	RF Conducted Power	0.6dB
6	RF Power Density	2.9dB
7	Conducted Spurious Emissions	0.75dB
8	RF Radiated Power	5.2dB (Below 1GHz)
		5.9dB (Above 1GHz)
9	Radiated Spurious Emission Test	4.2dB (Below 30MHz)
		4.5dB (30MHz-1GHz)
		5.1dB (1GHz-18GHz)
		5.4dB (Above 18GHz)
10	Temperature Test	1°C
11	Humidity Test	3%
12	Supply Voltages	1.5%
13	Time	3%
Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.		

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

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
RF Radiated Test						
1	Spectrum Analyzer	R&S	FSV40	KUS1806E003	07/09/2025	07/08/2026
2	Universal Radio Communication Tester	R&S	CMW500	KSEM009-1	02/18/2025	02/17/2026
3	Signal Generator	Agilent	E8257C	KS301066	07/22/2025	07/21/2026
4	Loop Antenna (9KHz-30MHz)	COM-POWER	AL-130R	KUS1806E001	07/11/2025	07/10/2026
5	Bilog Antenna (30MHz-1GHz)	TESEQ	CBL 6112D	KUS1806E005	07/12/2025	07/11/2026
6	Horn-antenna(1-18GHz)	Schwarzbeck	BBHA9120D	KS301079	03/23/2024	03/22/2026
7	Horn Antenna(18-40GHz)	Schwarzbeck	BBHA9170	CZ301058	01/07/2024	01/06/2026
8	Amplifier(30MHz~1GHz)	TST	LNA009100G30	KSEM061	01/15/2025	01/14/2026
9	Amplifier(400MHz~8GHz)	TST	LNA004080G30	KSEM062	01/15/2025	01/14/2026
10	Amplifier(1GHz~18GHz)	TST	LNA010180G45	KSEM039	07/09/2025	07/08/2026
11	Amplifier(18~40GHz)	TST	LNA180400G40	KSEM038	07/09/2025	07/08/2026
12	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-4	02/26/2025	02/25/2026
13	Software	Faratronic	EZ_EMV-3A1	/	NCR	NCR
14	Software	ESE	E3_V 6.111221a	/	NCR	NCR

6 Radio Spectrum Matter Test Results

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is Integrated antenna and no consideration of replacement.

Antenna location: Refer to Internal photos.

6.2 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C Section

Test Method: ANSI C63.10 (2020)

Measurement Distance: 3m

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22.5 °C

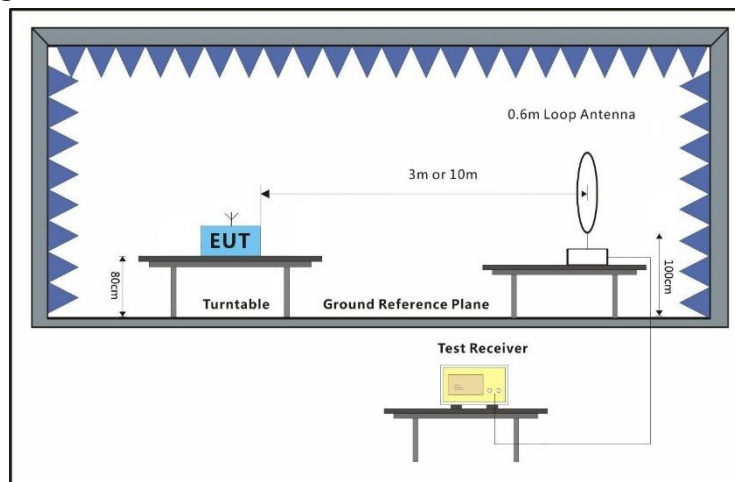
Humidity: 48.2 % RH

Atmospheric Pressure: 1010 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX mode_Keep the EUT in transmitting mode

6.2.3 Test Setup Diagram



6.2.4 Measurement Procedure and Data

Please Refer to Appendix for Details

6.3 Radiated Emissions (9kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2020)

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength (microvolts/meter)	Limit (dBuV/m)	Detector	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	-	-	300
0.490-1.705	24000/F(kHz)	-	-	30
1.705-30	30	-	-	30

Below 30MHz

If field strength is measured at only a single point, then that point shall be at the radial from the EUT that produces the maximum emission at the frequency being measured, as described in 5.4. If that point is closer to the EUT than $\lambda/2\pi$ and the limit distance is greater than $\lambda/2\pi$, the measurement shall be extrapolated to the limit distance by conservatively presuming that the field strength decreases at a 40 dB/decade of distance rate to the $\lambda/2\pi$ distance, and at a 20 dB/decade of distance rate beyond $\lambda/2\pi$. This shall be accomplished using Equation (2):

$$FS_{(10m)} = FS_{(30/300m)} + 40\log\{d_{(near\ field)}/d_{(10m)}\} + 20\log\{d_{(30/300m)}/d_{(near\ field)}\} \quad (2)$$

If the single point measured is at a distance greater than $\lambda/2\pi$, then extrapolation to the limit distance shall be calculated using Equation (3):

$$FS_{(10m)} = FS_{(30/300m)} + 20\log\{d_{(30/300m)}/d_{(10m)}\} \quad (3)$$

If both the single point and the limit distance are equal to or closer to the EUT than $\lambda/2\pi$, then extrapolation to the limit distance shall be calculated using Equation (4):

$$FS_{(10m)} = FS_{(30/300m)} + 40\log\{d_{(30/300m)}/d_{(10m)}\} \quad (4)$$

Remark:

$$d_{near\ field} = 47.77 / f_{MHz}$$

where f_{MHz} is the frequency of the emission being measured in MHz.

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

$$FS_{\text{limit}} = FS_{\text{max}} - 40 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right)$$

where

FS_{limit} is the calculation of field strength at the limit distance, expressed in dBμV/m
 FS_{max} is the measured field strength, expressed in dBμV/m
 d_{measure} is the distance of the measurement point from the EUT
 d_{limit} is the reference distance or the distance of the $\lambda/2\pi$ point

6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 20.8 °C

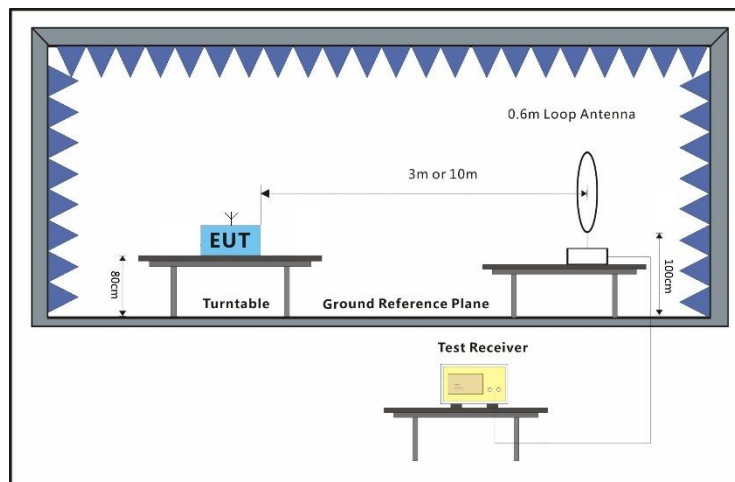
Humidity: 49.5 % RH

Atmospheric Pressure: 1010 mbar

6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	TX mode_Keep the EUT in transmitting mode

6.3.3 Test Setup Diagram



6.3.4 Measurement Procedure and Data

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.

Please Refer to Appendix for Details

6.4 Radiated Emissions (30MHz-1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2020)

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands above 1000 MHz. Radiated emission limits in these three bands (9-90kHz,110-490kHz and Above 1GHz) are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 20.8 °C

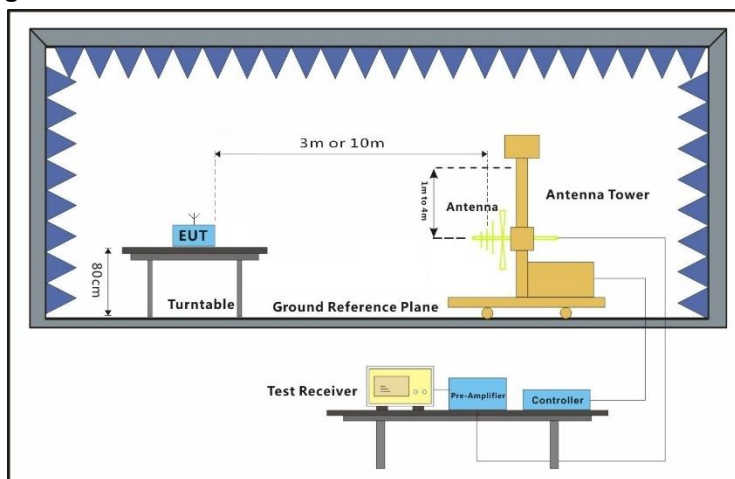
Humidity: 49.5 % RH

Atmospheric Pressure: 1010 mbar

6.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	05	TX mode_Keep the EUT in transmitting mode

6.4.3 Test Setup Diagram



6.4.4 Measurement Procedure and Data

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground for below 1GHz at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Please Refer to Appendix for Details



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7 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2509002494AU

8 EUT Constructional Details (EUT Photos)

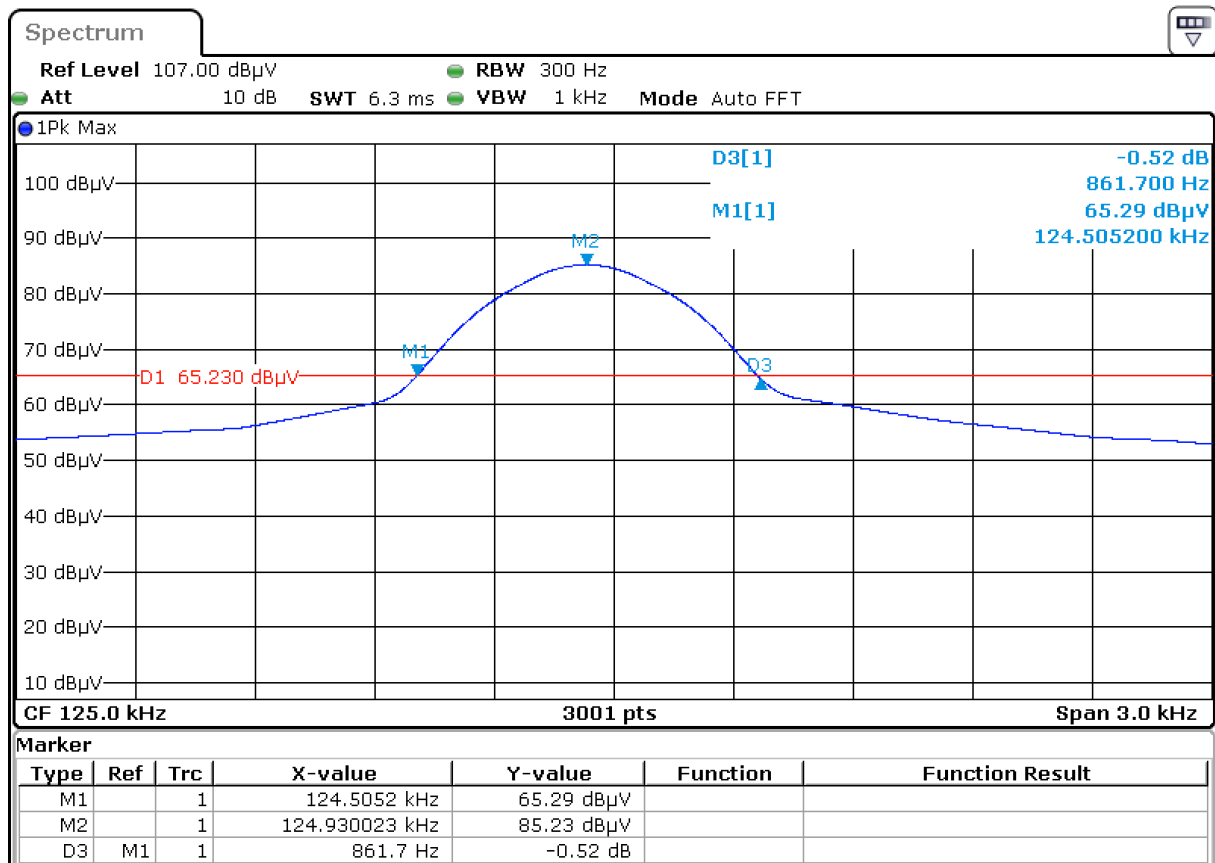
Refer to Appendix_Photographs of EUT Constructional Details for KSCR2509002494AU

9 Appendix

9.1 20dB Bandwidth

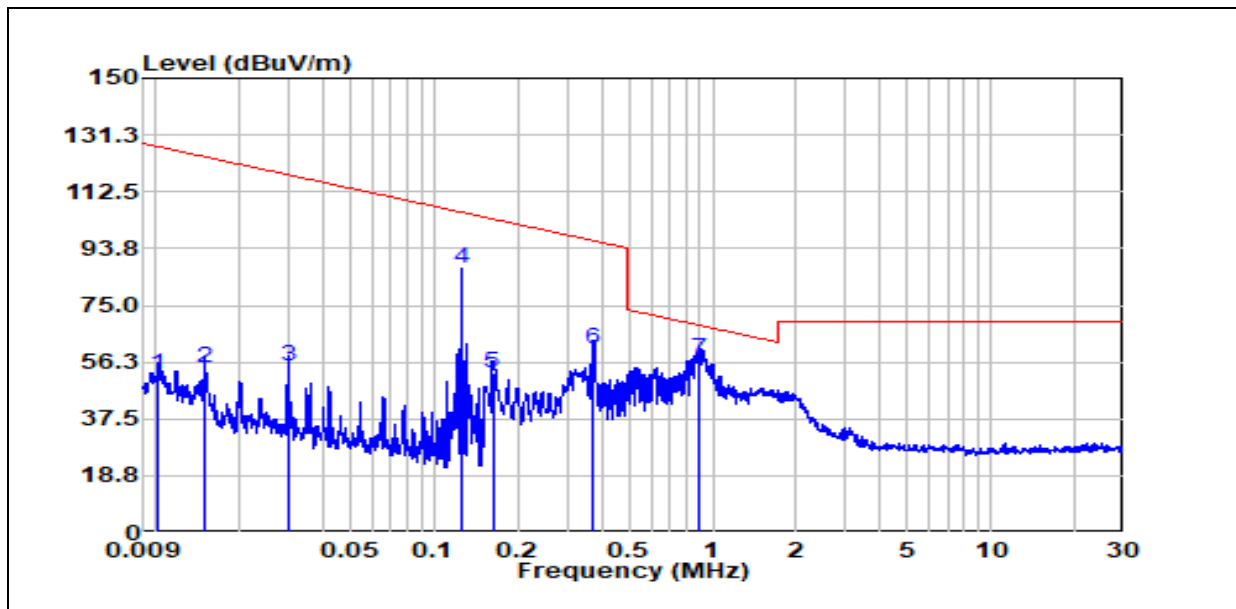
20dB bandwidth (Hz)	Result
861.7	Pass

Test plot as follows:



9.2 Radiated Emissions(9kHz-30MHz)

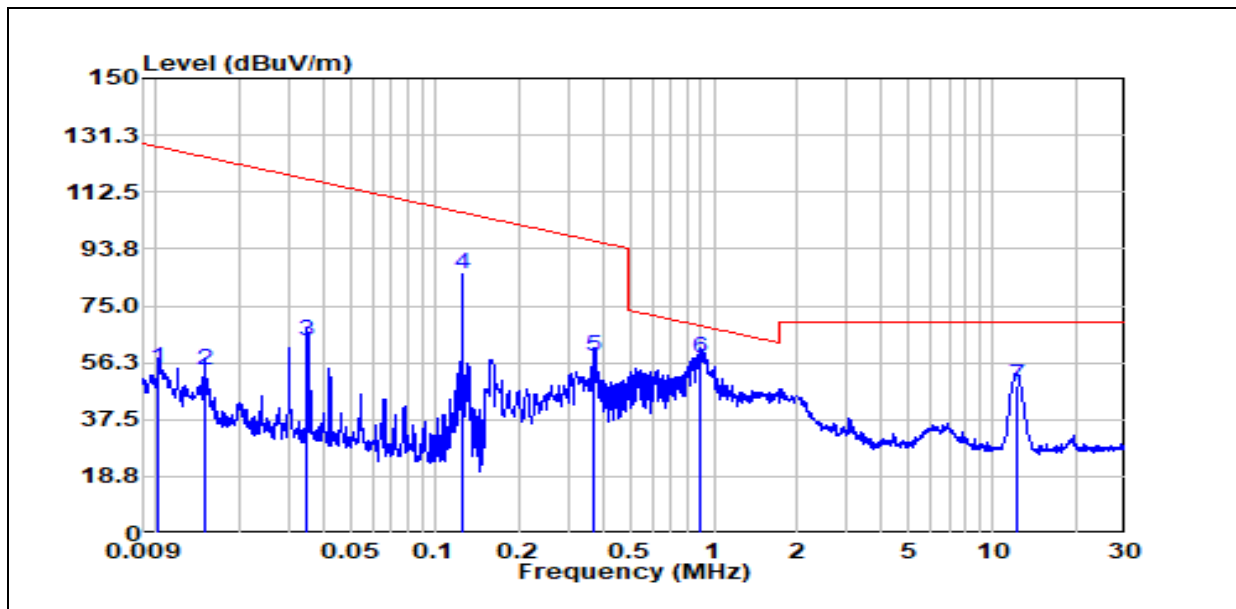
Horizontal



Item	Freq.	Read Level	Correct Factor	Result Level@3m	Result Level@SPEC	Limit Line@SPEC	Over Limit	Detector
(Mark)	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.01	31.69	20.32	52.01	-27.99	47.37	-75.36	QP
2	0.02	33.96	20.36	54.32	-25.68	44.07	-69.75	QP
3	0.03	34.62	20.46	55.08	-24.92	38.04	-62.96	QP
4	0.13	66.52	20.65	87.17	7.17	25.65	-18.48	peak
5	0.16	32.28	20.59	52.87	-27.13	23.40	-50.53	QP
6	0.37	39.97	20.48	60.45	-19.55	16.18	-35.73	QP
7	0.89	36.66	20.43	57.09	17.09	28.58	-11.49	QP

Note: SPEC represents the limit of the distance 3m converts to the standard.

Vertica

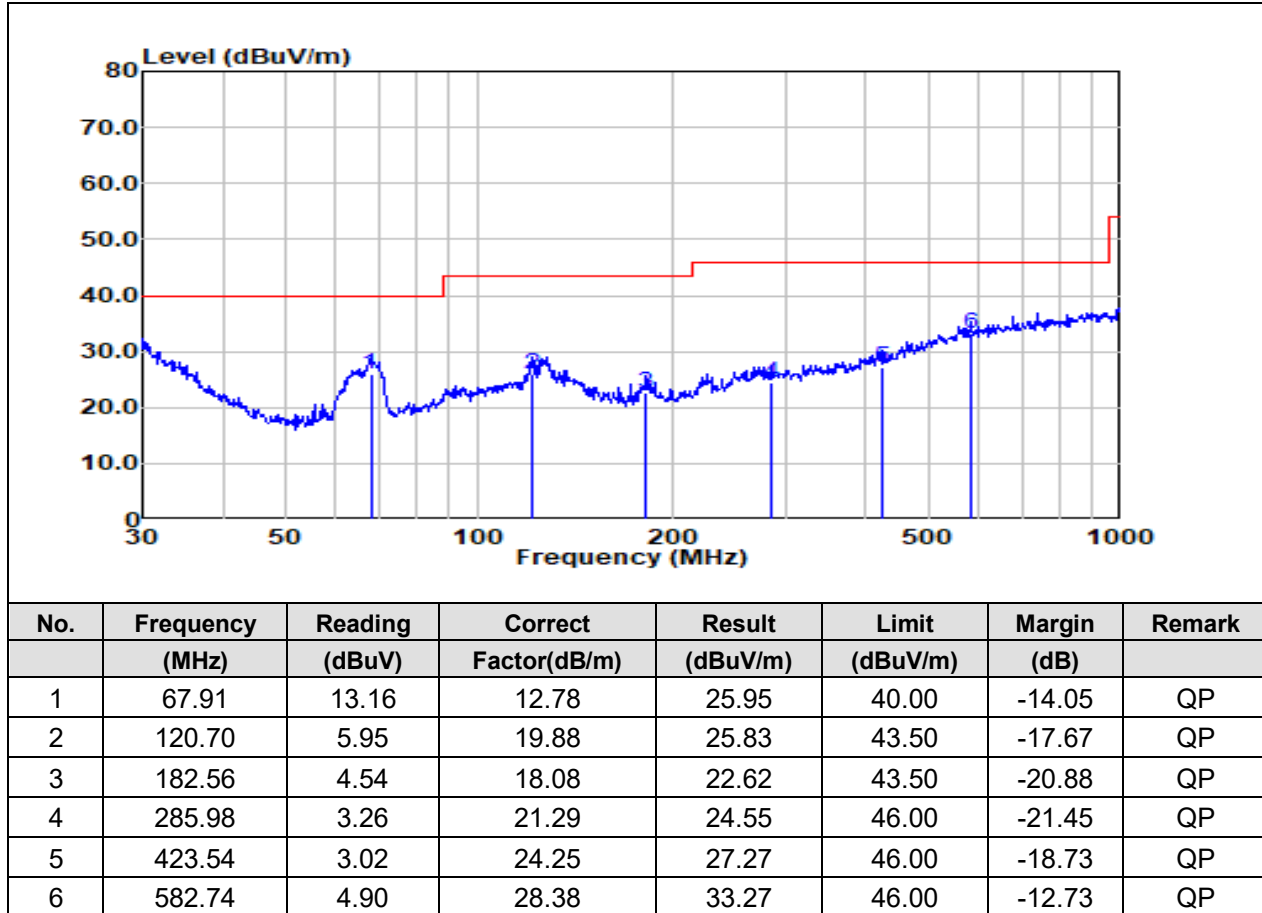


Item	Freq.	Read Level	Correct Factor	Result Level@3m	Result Level@SPEC	Limit Line@SPEC	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dBUV/m)	(dBUV/m)	(dBUV/m)	(dB)	
1	0.01	34.19	20.32	54.51	-25.49	47.37	-72.86	QP
2	0.02	33.45	20.36	53.81	-26.19	44.06	-70.25	QP
3	0.04	43.04	20.40	63.45	-16.55	36.70	-53.25	QP
4	0.12	65.05	20.65	85.70	5.70	25.66	-19.96	peak
5	0.37	37.83	20.48	58.31	-21.69	16.18	-37.87	QP
6	0.90	37.47	20.43	57.89	17.89	28.51	-10.62	QP
7	12.24	27.80	21.05	48.84	8.84	29.50	-20.66	QP

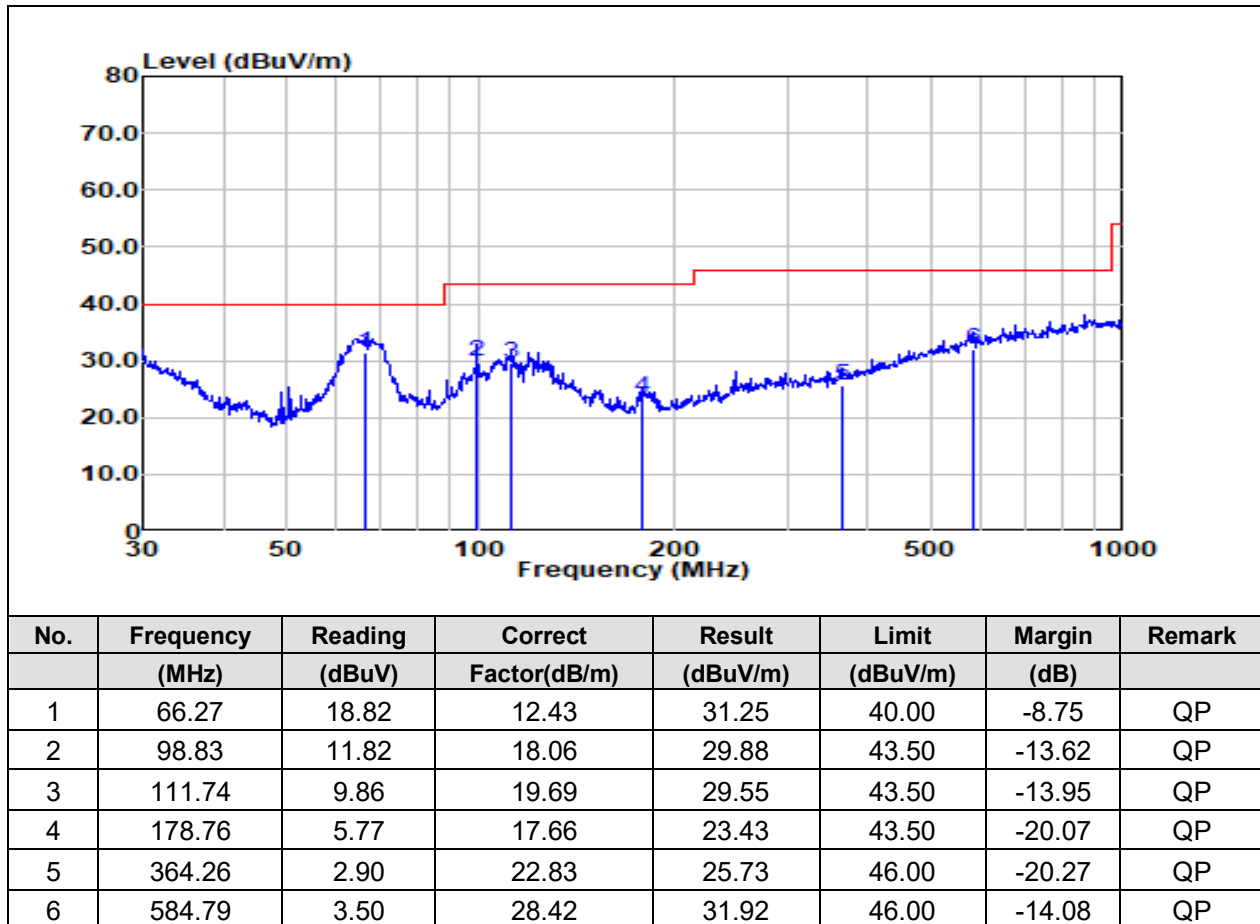
Note: SPEC represents the limit of the distance 3m converts to the standard.

9.3 Below 1GHz

Horizontal



Vertical



- End of the Report -