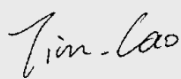


Test report No:
2660507R.702B

FCC TEST REPORT

Product Name	PEPS
Trademark	KOSTAL
Model and /or type reference	SMART KEY MODULE
FCC ID	2AYARBR1SKM
Applicant's name / address	Kostal (shanghai) Management Co.,Ltd. No.189 Xingting Road, Jiading District, Shanghai, P.R.China
Test method requested, standard	CFR 47, FCC Part 15 C
Verdict Summary	IN COMPLIANCE
Documented By (name / position & signature)	Tim Cao / Project Manager 
Approved by (name / position & signature)	Frank He / Technical Manager 
Date of issue	2026-07-22
Report Version	V1.0
Report template No	Template_FCC Part 15C-RF-V1.0

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COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date(receive sample)	Jun. 16, 2026
Date (start test)	Jul. 01, 2026
Date (finish test)	Jul. 15, 2026

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	30% - 60%

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	: Equipment Under Test
QP	: Quasi-Peak
CAV	: CISPR Average
AV	: Average
CDN	: Coupling Decoupling Network
SAC	: Semi-Anechoic Chamber
OATS	: Open Area Test Site
BW	: Bandwidth
AM	: Amplitude Modulation
PM	: Pulse Modulation
HCP	: Horizontal Coupling Plane
VCP	: Vertical Coupling Plane
U_N	: Nominal voltage
T_x	: Transmitter
R_x	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2660507R.702B	V1.0	Initial issue of report.	2026-07-22

REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with CFR 47, FCC Part 15 C .
3. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result.
4. The test results presented in this report relate only to the object tested.
5. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
6. This report will not be used for social proof function in China market.
7. DEKRA declines any responsibility with the following test data provided by customer that may affect the validity of result:
 - Chapter 1.1 General Description of the Item(s);
 - Chapter 1.2 Channel List.

USED EQUIPMENT

Radiated Emission(9KHz-1GHz) / AC2

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date	Firmware Version	Software version
EMI Test Receiver	R&S	ESCI	100573	2026.01.11	2027.01.10	4.42 SP3	N/A
Loop Antenna	R&S	HFH2-Z2E	101149	2026.04.16	2027.04.15	N/A	N/A
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2026.03.24	2027.03.23	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	AC2-TH	2026.06.17	2027.06.16	N/A	N/A
Coaxial Cable	Huber+Suhner	RTS-1909	THM-021	2026.04.30	2027.04.29	N/A	N/A
Anechoic chamber	Quietek	9m*6m*6m	AC2	2024.07.07	2029.07.06	N/A	N/A
Dekra test software	Dekra	N/A	N/A	N/A	N/A	N/A	3

UNCERTAINTY

Uncertainties have been calculated according to the DEKRA internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95% and the value of the measurement uncertainty for the measurement of each parameter meets the requirement of standard allow the Maximum measurement uncertainties.

Test item	Uncertainty
AC Power Line Conducted Emission	± 2.02 dB
Radiated Emission(Below1GHz)	± 3.80 dB
RF antenna conducted test	± 1.27 dB
Emission bandwidth	± 1 kHz
Frequency Stability	± 100 Hz

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Product Name..... :	PEPS
Trademark	KOSTAL
Model No. :	SMART KEY MODULE
Operating Temperature..... :	-40℃- 85℃
Power Supply	12 Vdc
Test EUT	#1
Manufacturer	Kostal (shanghai) Management Co.,Ltd.
Manufacturer address	No.189 Xingting Road, Jiading District, Shanghai, P.R.China
Wireless Specification..... :	RFID
Operating frequency range(s)..... :	125 kHz
Type of modulation	ASK
Number of channel..... :	1
Antenna Type	LF Antenna
Antenna Gain..... :	-5 dBi

Remark:

As above information is provided and confirmed by the applicant. DEKRA is not liable to the accuracy, suitability, reliability or/and integrity of the information.

2 DESCRIPTION OF TEST SETUP

2.1 Auxiliary equipment / Test software for the EUT

Auxiliary equipment	Type / Version	Manufacturer	Supplied by
N/A	N/A	N/A	N/A
software	Type / Version	Manufacturer	Supplied by
N/A	N/A	N/A	N/A

3 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

3.1 Standards

Standard	Year	Description
FCC CFR Title 47 Part 15 Subpart C	2023	Intentional Radiators
ANSI C63.10	2020	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

3.2 Overview of results

Requirement – Test case	Basic standard(s)	Verdict	Remark
AC Power Line Conducted Emission	FCC CFR Title 47 Part 15 Subpart C Section 15.207	N/A	---
Field Strength of Spurious	FCC CFR Title 47 Part 15 Subpart C Section 15.209	PASS	---
Emission bandwidth	FCC CFR Title 47 Part 15 Subpart C Section 15.215(c)	PASS	---
Antenna Requirement	FCC CFR Title 47 Part 15 Subpart C Section 15.203	PASS	---

3.3 Test Facility

USA : FCC Designation Number: CN1199

4 TEST ITEMS OF LIMIT/SETUP/PROCEDURE

4.1 AC Power Line Conducted Emission

VERDICT: N/A

4.1.1 Limit

Standard	FCC Part 15 Subpart E Paragraph 15.207	
Frequency range [MHz]	Limit: QP [dB(μV) ¹⁾]	Limit: AV [dB(μV) ¹⁾]
0,15 - 0,50	66 - 56 ²⁾	56 - 46 ²⁾
0,50 - 5,0	56	46
5,0 - 30	60	50

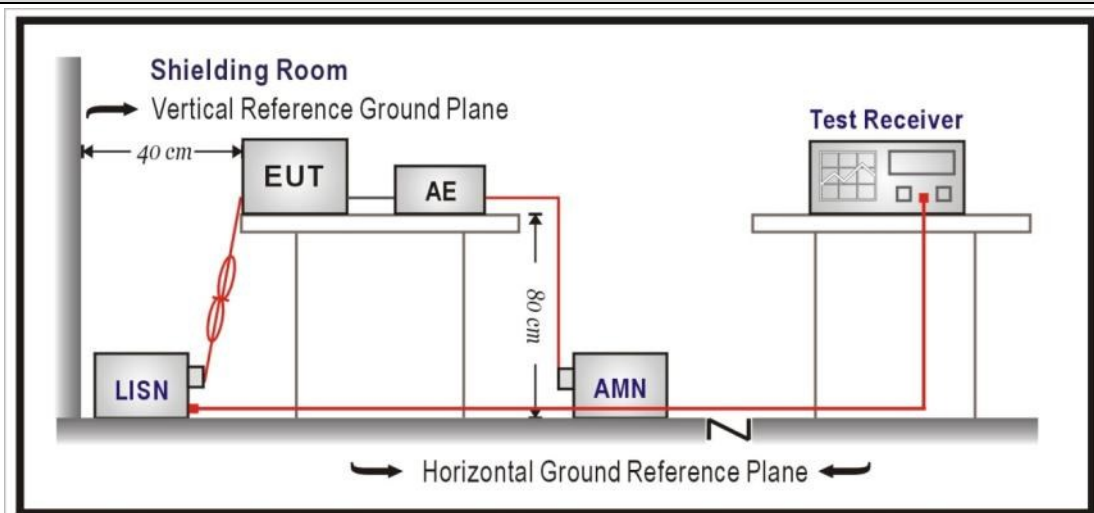
¹⁾ At the transition frequency, the lower limit applies.

²⁾ The limit decreases linearly with the logarithm of the frequency.

NOTE 1: The exclusion band for transmitters shall be considered for transmitters operating at frequencies below 30 MHz.

NOTE 2: Where the AC output port is directly connected (or via a circuit breaker) to the AC power input port of the EUT the AC power output port need not to be tested.

4.1.2 Test Setup



4.1.3 Test Procedure

	References Rule	Chapter	Item
☒	ANSI C63.10	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices

4.2 Radiated Emissions**VERDICT: PASS****4.2.1 Limit****Standard**

FCC Part 15 Subpart C Paragraph 15. 209

Restricted Band Emissions Limit

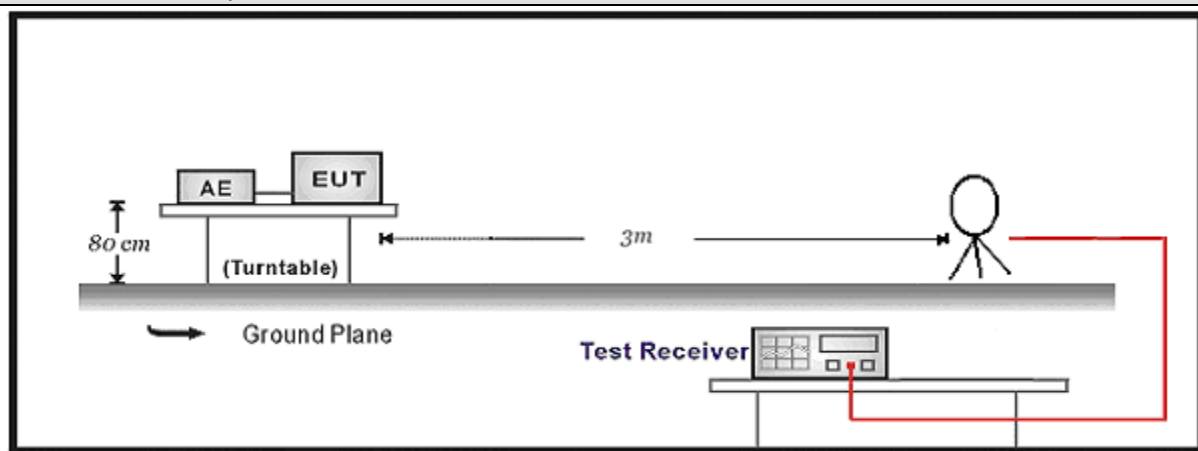
Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 _(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 _(Note 1)
1.705 - 30	30	29.5	30 _(Note 1)
30 - 88	100	40	3 _(Note 2)
88 - 216	150	43.5	3 _(Note 2)
216 - 960	200	46	3 _(Note 2)
Above 960	500	54	3 _(Note 2)

Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two 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).

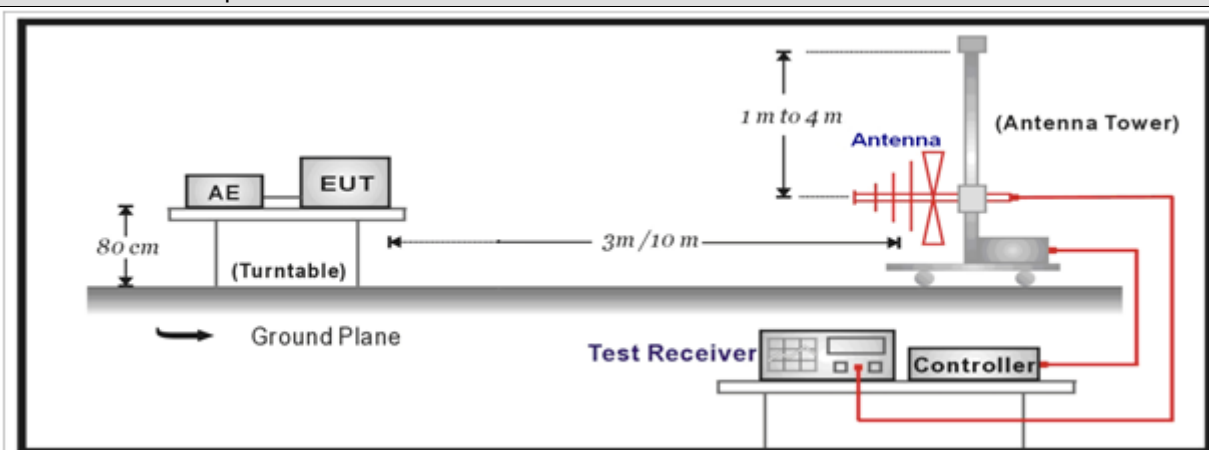
Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. 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 linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

4.2.2 Test Setup

Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



4.2.3 Test Procedure

	References Rule	Chapter	Description
☒	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
☒	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
☐	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

4.3 Emission bandwidth

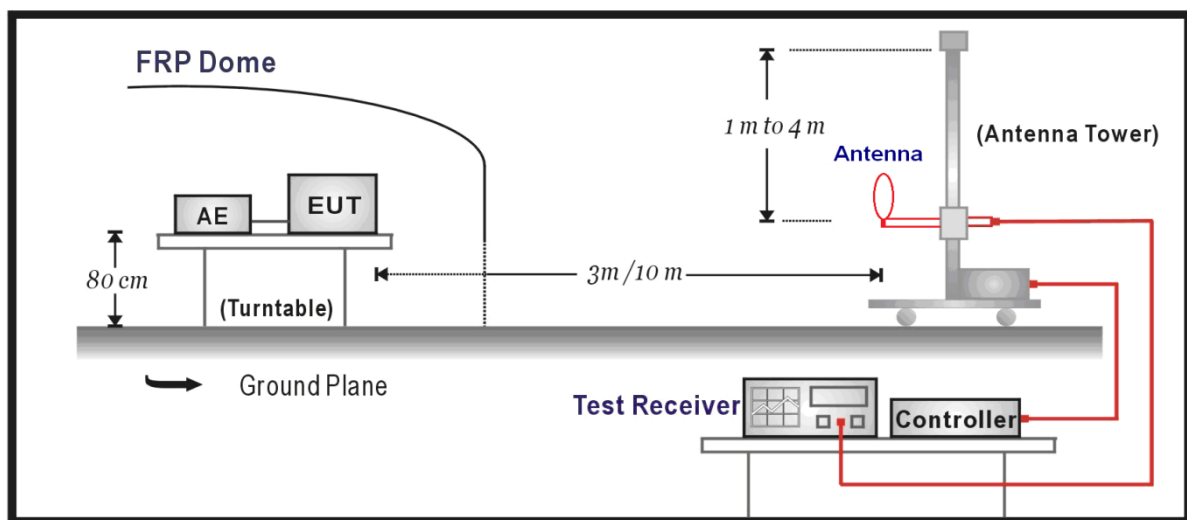
VERDICT: PASS

4.3.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.215
-----------------	--

Within the band.

4.3.2 Test Setup



4.3.3 Test Procedure

	Reference Rule	Chapter	Description
☒	ANSI C63.10	6.9.2	Occupied bandwidth—relative measurement procedure

4.4 Antenna Requirement**VERDICT: PASS****4.4.1 Limit:****Standard**

FCC Part 15 Subpart E Paragraph 15.203

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 shall be considered sufficient to comply with the provisions of this section. 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

4.4.2 Antenna Connector Construction:

The use of a permanently attached antenna



The antenna use of a unique coupling to the intentional radiator



The use of a nonstandard antenna jack or electrical connector

Please refer to the attached document "Internal Photograph" to show the antenna connector.

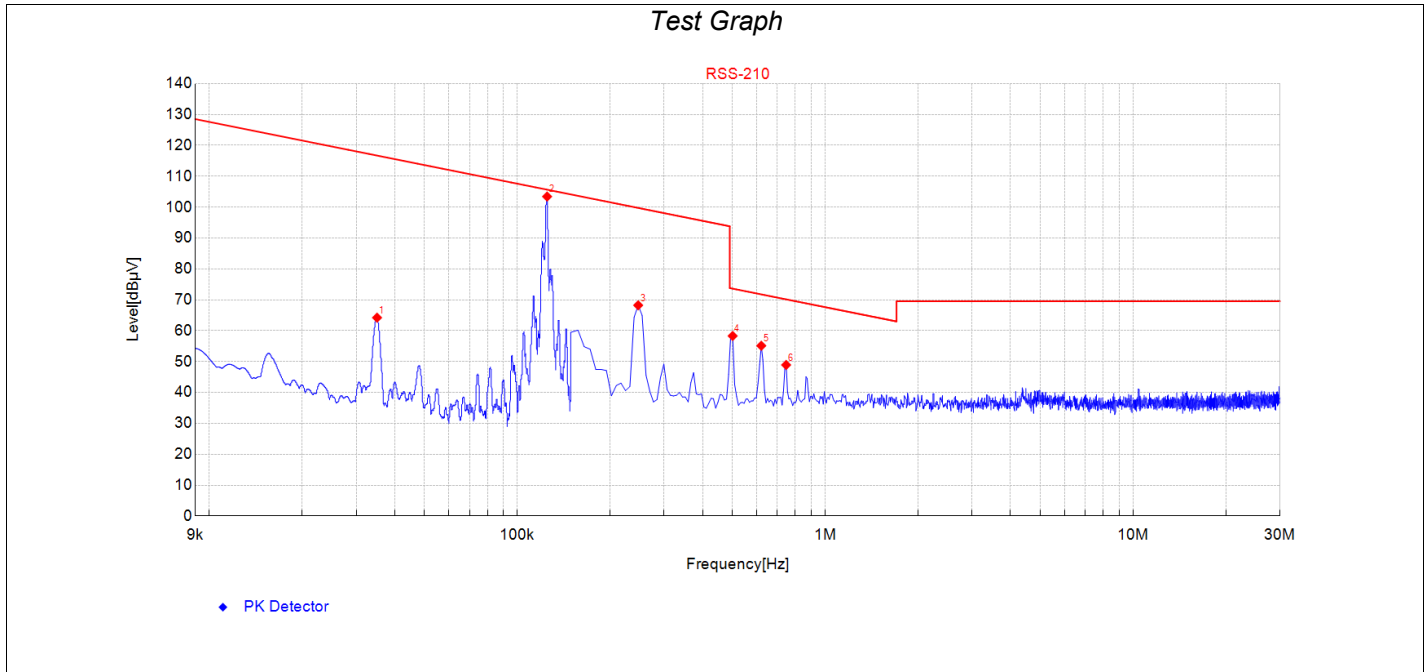
5 TEST SETUP PHOTO AND EUT PHOTO

Remark: The test setup photo and EUT Photo please see appendix.

6 TEST RESULT

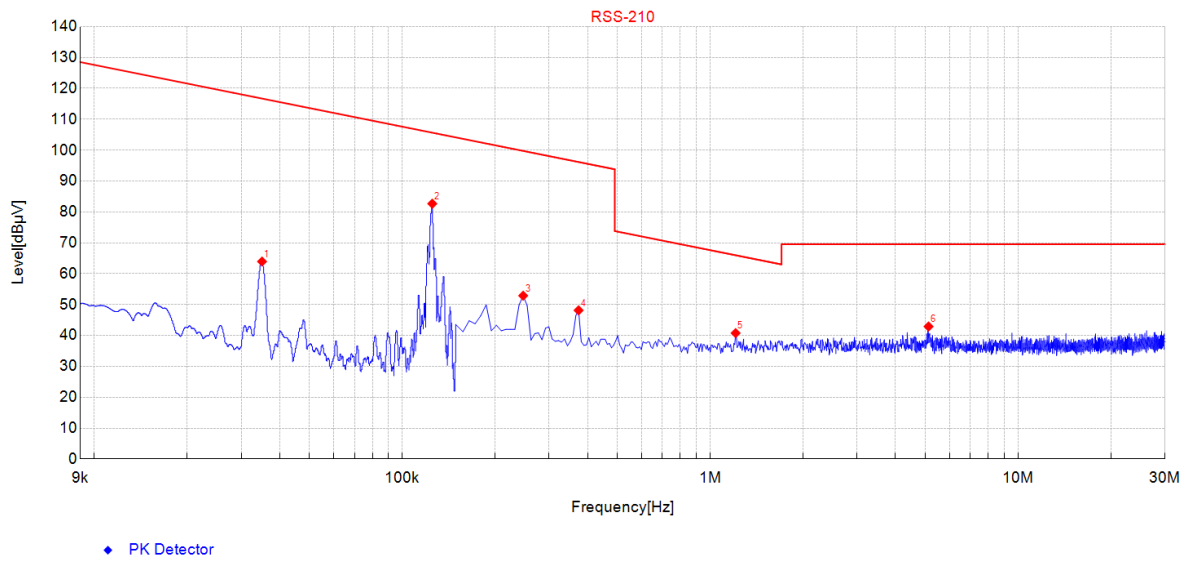
Appendix A: Field Strength of Spurious

Operating-X



Data List

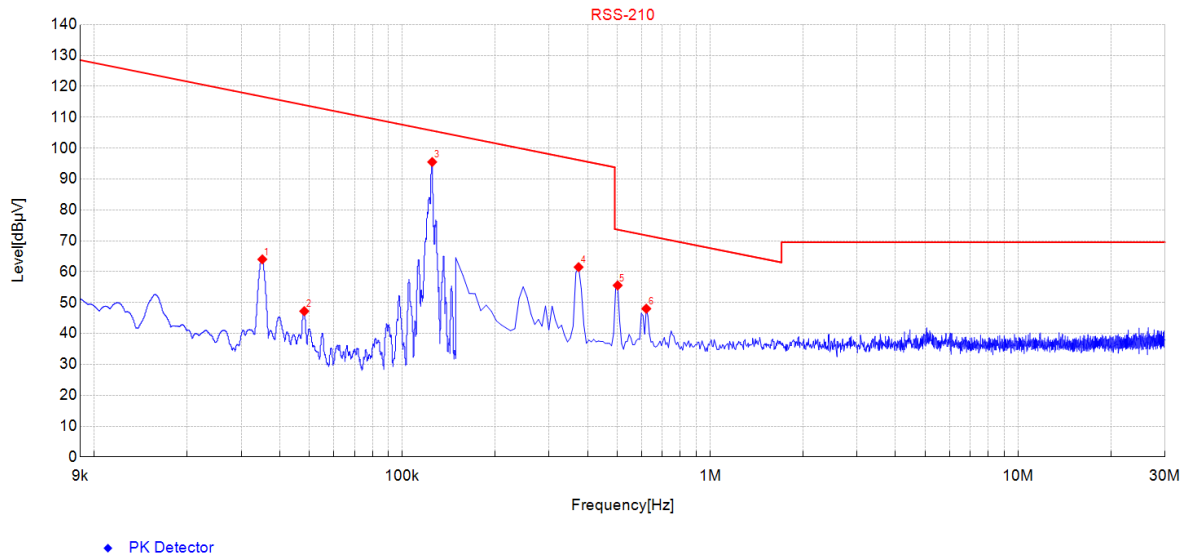
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV]	Factor [dB/m]	Limit [dBμV]	Margin [dB]	Det	Pol	Verdict
1	0.03505	44.37	64.22	19.85	116.70	52.48	PK	Vertic	PASS
2	0.125008	83.47	103.43	19.96	105.66	2.23	PK	Vertic	PASS
3	0.247013	48.21	68.23	20.02	99.75	31.52	PK	Vertic	PASS
4	0.500738	38.25	58.31	20.06	73.61	15.30	PK	Vertic	PASS
5	0.620138	35.11	55.13	20.02	71.76	16.63	PK	Vertic	PASS
6	0.747	28.94	48.92	19.98	70.15	21.23	PK	Vertic	PASS

Operating-Y**Test Graph****Data List**

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV]	Factor [dB/m]	Limit [dBμV]	Margin [dB]	Det	Pol	Verdict
1	0.03505	44.09	63.94	19.85	116.70	52.76	PK	Vertic	PASS
2	0.125184	62.70	82.66	19.96	105.65	22.99	PK	Vertic	PASS
3	0.247013	32.87	52.89	20.02	99.75	46.86	PK	Vertic	PASS
4	0.373875	28.09	48.14	20.05	96.15	48.01	PK	Vertic	PASS
5	1.209675	20.81	40.77	19.96	65.97	25.20	PK	Vertic	PASS
6	5.120025	22.80	42.90	20.10	69.50	26.60	PK	Vertic	PASS

Operating-Z

Test Graph

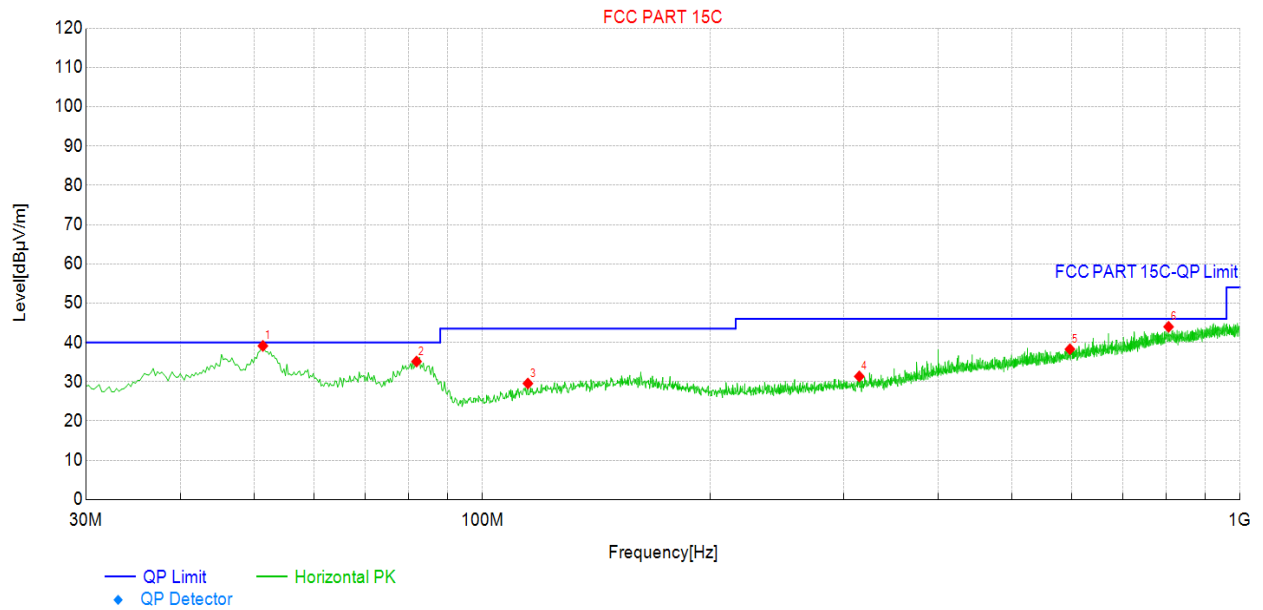


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV]	Factor [dB/m]	Limit [dBμV]	Margin [dB]	Det	Pol	Verdict
1	0.03512	44.14	63.99	19.85	116.68	52.69	PK	Vertic	PASS
2	0.048057	27.35	47.21	19.86	113.96	66.75	PK	Vertic	PASS
3	0.125114	75.55	95.51	19.96	105.65	10.14	PK	Vertic	PASS
4	0.373875	41.43	61.48	20.05	96.15	34.67	PK	Vertic	PASS
5	0.500738	35.50	55.56	20.06	73.61	18.05	PK	Vertic	PASS
6	0.620138	28.01	48.03	20.02	71.76	23.73	PK	Vertic	PASS

Operating

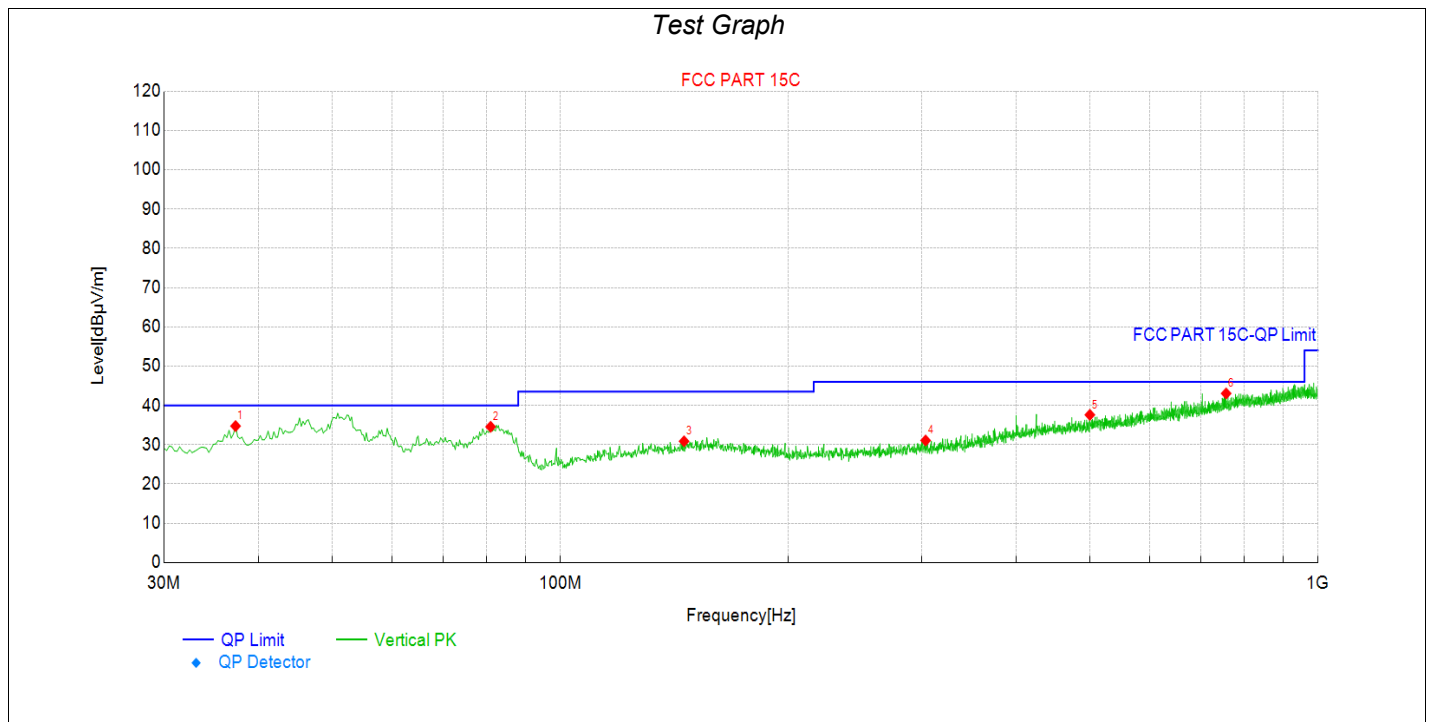
Test Graph



Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	51.34	24.40	39.12	14.720	40.00	0.88	PK	Horizo	PASS
2	81.90	24.79	35.14	10.350	40.00	4.86	PK	Horizo	PASS
3	114.88	17.11	29.55	12.440	43.50	13.95	PK	Horizo	PASS
4	314.45	14.90	31.35	16.450	46.00	14.65	PK	Horizo	PASS
5	596.48	14.72	38.28	23.560	46.00	7.72	PK	Horizo	PASS
6	805.03	16.79	43.98	27.190	46.00	2.02	PK	Horizo	PASS

Operating

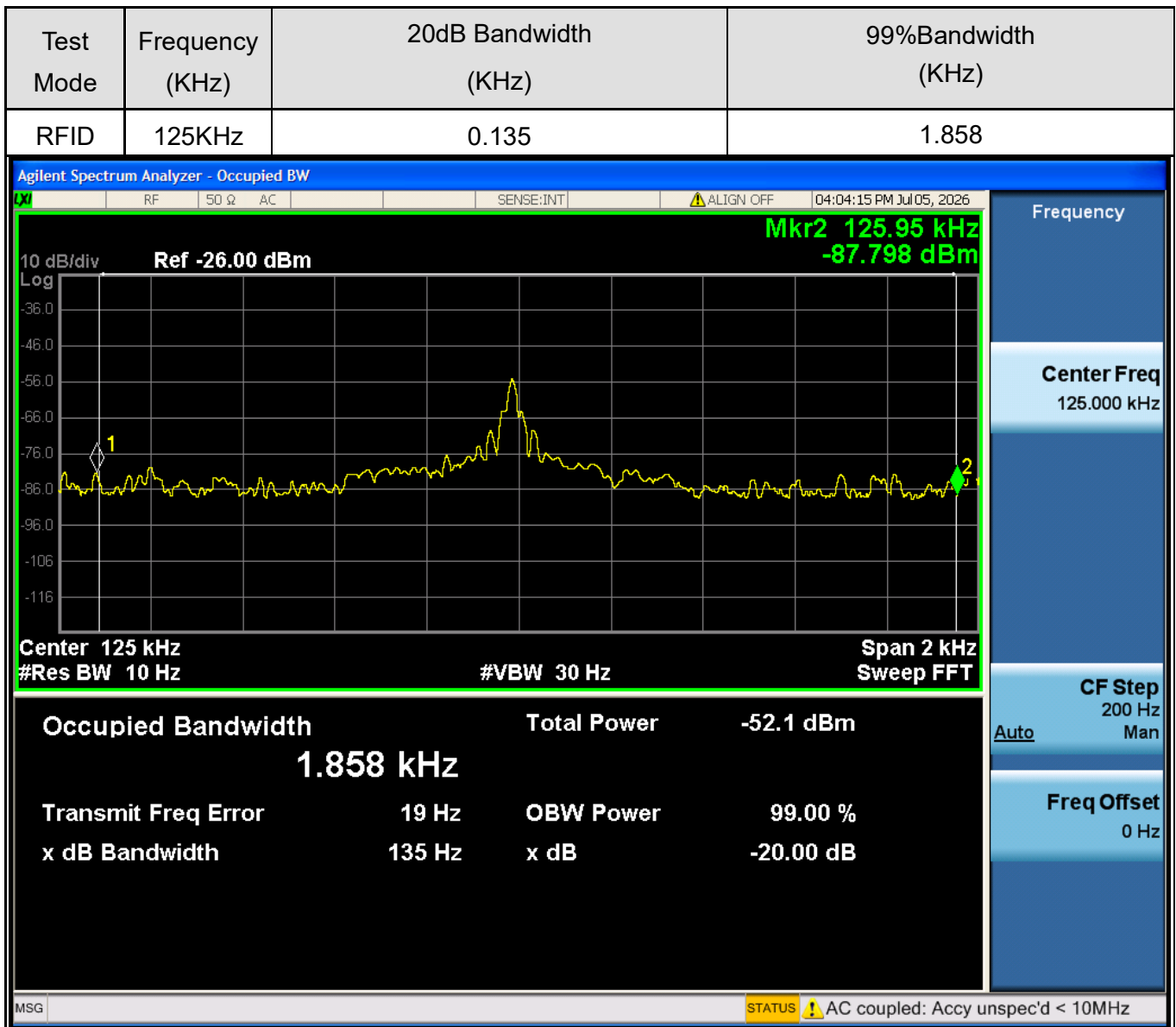


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	37.28	20.45	34.75	14.300	40.00	5.25	PK	Vertic	PASS
2	80.93	24.10	34.57	10.470	40.00	5.43	PK	Vertic	PASS
3	145.67	16.03	30.88	14.850	43.50	12.62	PK	Vertic	PASS
4	303.54	14.91	31.08	16.170	46.00	14.92	PK	Vertic	PASS
5	499.97	16.30	37.61	21.310	46.00	8.39	PK	Vertic	PASS
6	756.53	16.64	43.05	26.410	46.00	2.95	PK	Vertic	PASS

Note:

1. All Readings below 1GHz are PK, PK as an alternative to CISPR quasi-peak measurements or average measurements.
2. Level=Reading+Factor.

Appendix B: Emission bandwidth

The End