



中认信通
CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

Applicant: 8devices

Address: FCC: Antakalnio 17 - 6 Vilnius Lithuania
IC: Antakalnio g. 17-6 Vilnius Vilnius County LT-10312 Lithuania

FCC ID: Z9W-AP3
Product Name: Wireless Access Point

Model Number: AP3400

Standard(s): FCC Part 15B
ICES-003, ISSUE 7, OCTOBER 2020
ANSI C63.4-2014

The above equipment has been tested and found compliance with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: CR230314564-00C

Date Of Issue: 2023/6/8

Reviewed By: Julie Tan

Julie Tan

Title: RF Engineer

Approved By: Sun Zhong

Sun Zhong

Title: Manager

Test Laboratory: China Certification ICT Co., Ltd (Dongguan)

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Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0123.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR230314564-00C	Original Report	2023/6/8

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

Trade Name:	 HIRSCHMANN
EUT Name:	Wireless Access Point
EUT Model:	AP3400-2Wax
Highest Operation Frequency:	5.825 GHz
Rated Input Voltage:	DC48V from POE
Serial Number:	23N0-1
EUT Received Date:	2023/3/27
EUT Received Status:	Good

Accessory Information:

No.

1.2 Description of Test Configuration

1.2.1 EUT Operation Condition:

EUT Operation Mode:	The system was configured for testing in Typical Use Mode, which was provided by the manufacturer. Test Mode: Operating-software Lan Test was exercised for the data transmission between the 3 Laptop via the EUT.
Equipment Modifications:	No
EUT Exercise Software:	Lan Test
The software was provided by manufacturer. The maximum power was configured as below, that was provided by the manufacturer▲:	

1.2.2 Support Equipment List and Details

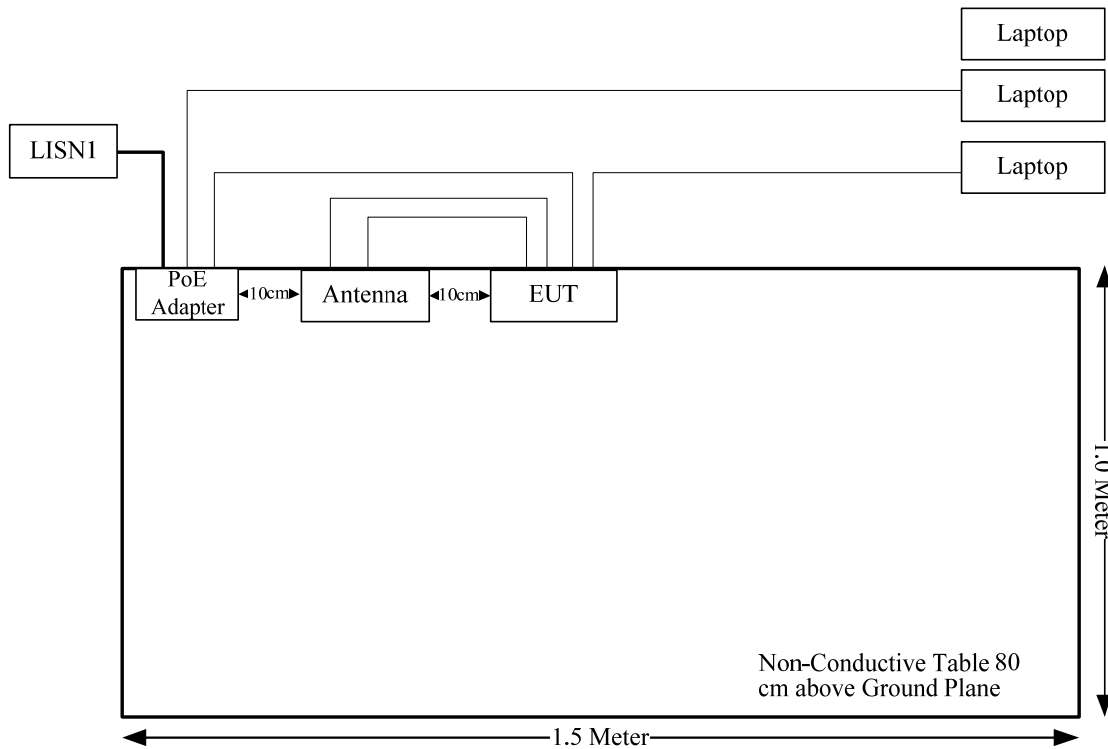
Manufacturer	Description	Model	Serial Number
I.T.E	POE	G1080-PoE48G	EMZBPA21206001
Prestigio	Laptop	PSB141C06	PSB4060470499
Lenovo	Laptop	T460S	60PDTEK8
Lenovo	Laptop	T460S	60PDT223

1.2.3 Support Cable List and Details

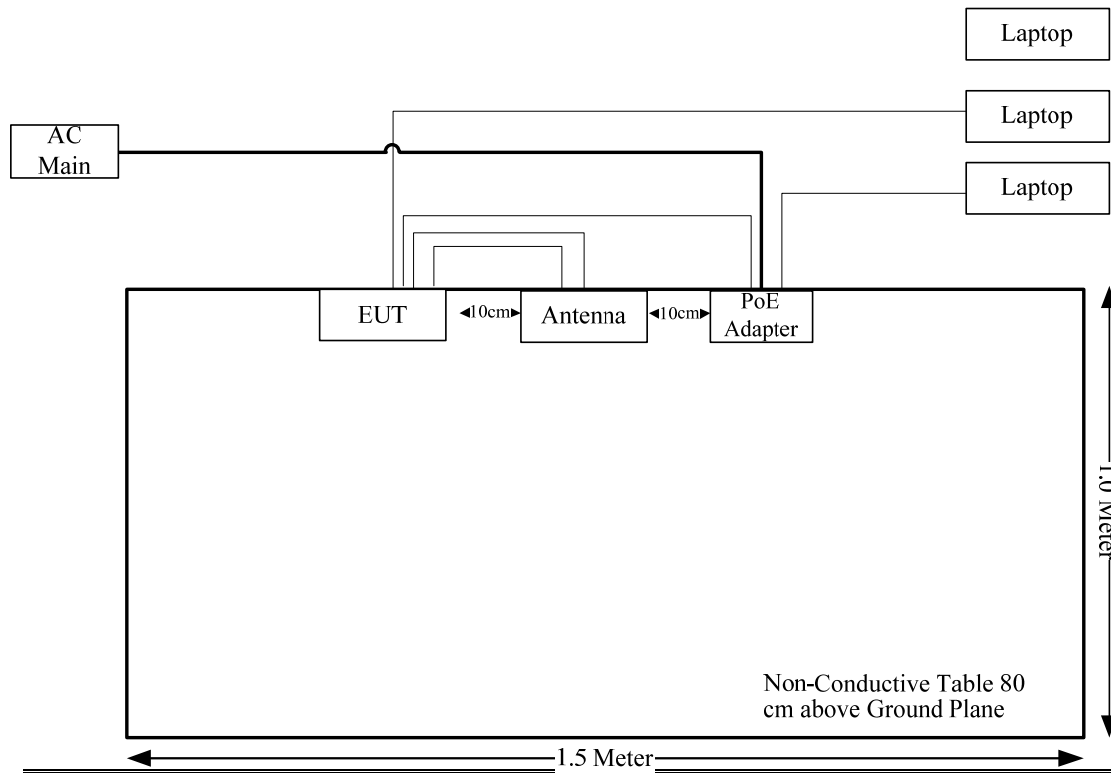
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
RJ45 Cable	Yes	No	1	EUT	PoE Adapter
RJ45 Cable	Yes	No	10	EUT	Laptop
RJ45 Cable	Yes	No	10	PoE	Laptop
RF Cable	Yes	No	2	EUT	Antenna
RF Cable	Yes	No	2	EUT	Antenna

1.2.4 Block Diagram of Test Setup

AC line conducted emissions:



Spurious Emissions:



1.3 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Parameter	Measurement Uncertainty
Unwanted Emissions, radiated	30M~200MHz: 4.15 dB, 200M~1GHz: 5.61 dB, 1G~6GHz: 5.14 dB, 6G~18GHz: 5.93 dB, 18G~26.5G: 5.47 dB, 26.5G~40G: 5.63 dB
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5\%$
AC Power Lines Conducted Emission	2.8 dB (150 kHz to 30 MHz)

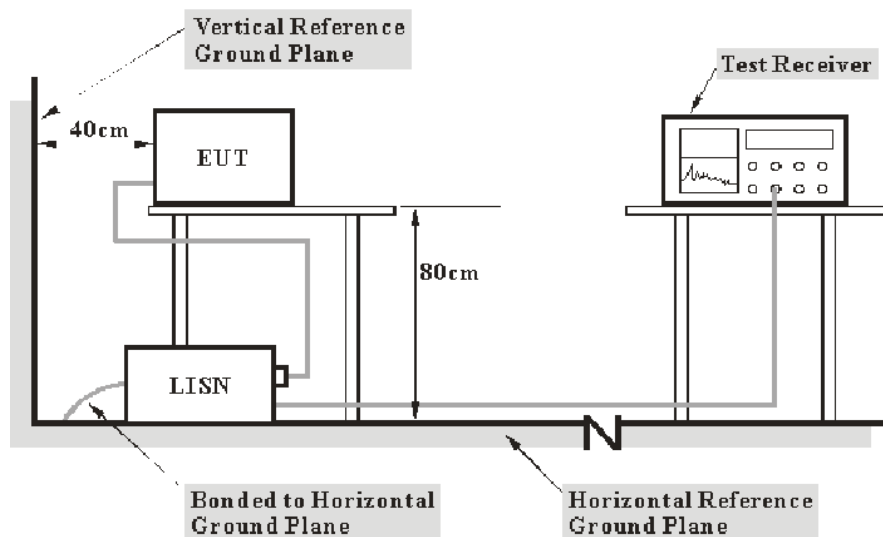
2. SUMMARY OF TEST RESULTS

Standard Clause	Description of Test	Test Result
FCC§15.107 ICES-003§3.2.1	Conducted emissions	Compliance
FCC§15.109 ICES-003§3.2.2	Radiated emissions	Compliance

3. REQUIREMENTS AND TEST PROCEDURES

3.1 AC Line Conducted Emissions

3.1.1 EUT Setup



Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15 B Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The adapter or EUT was connected to the main LISN with a 120 V/60 Hz AC power source.

3.1.2 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

3.1.3 Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN and the other support equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT, the report shall list the six emissions with the smallest margin relative to the limit, unless the margin is greater than 20 dB.

All data was recorded in the Quasi-peak and average detection mode.

The report shall list the six emissions with the smallest margin relative to the limit, unless the margin is greater than 20 dB.

3.1.4 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = attenuation caused by cable loss + voltage division factor of AMN

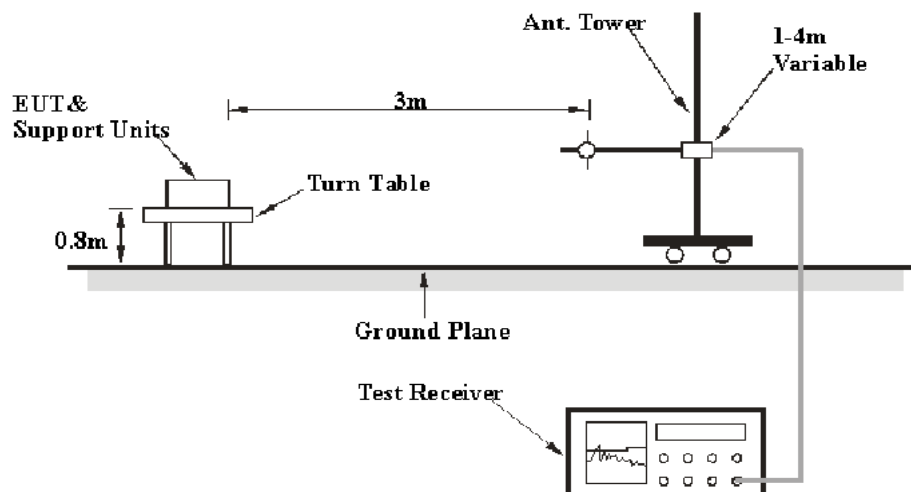
The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

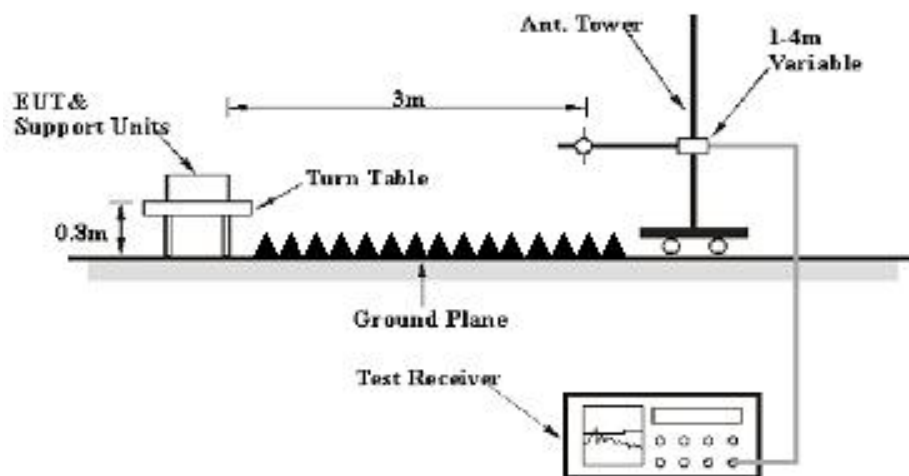
3.2 Radiation Spurious Emissions

3.2.1 EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emissions were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was with the FCC Part 15 B Class B limits.

3.2.2 EMI Test Receiver Setup

The system was investigated from 30 MHz to 30 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	Peak
	1 MHz	3 MHz	/	AVG

If the maximized peak measured value complies with under the limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

3.2.3 Test Procedure

During the radiated emissions, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The data was recorded in the Quasi-peak detection mode for below 1 GHz.

All emissions under the average limit and under the noise floor have not recorded in the report.

3.2.4 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = Antenna Factor + Cable Loss- Amplifier Gain

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

4. TEST DATA AND RESULTS

4.1 AC Line Conducted Emissions

Serial Number:	23N0-1	Test Date:	2023/04/24
Test Site:	CE	Test Mode:	Operating
Tester:	David Huang	Test Result:	Pass

Environmental Conditions:

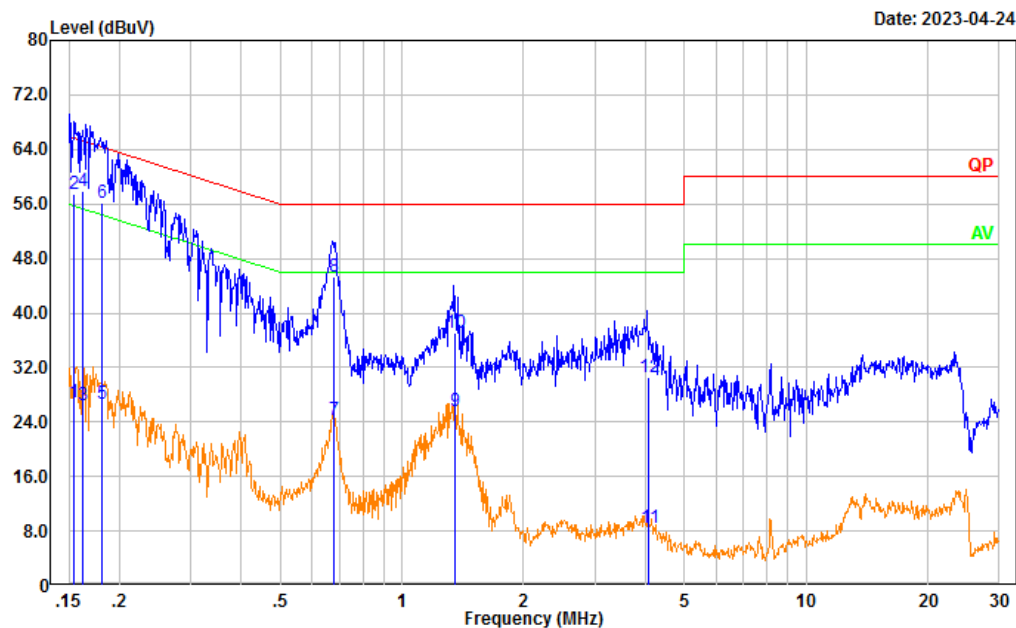
Temperature: (°C)	25	Relative Humidity: (%)	64	ATM Pressure: (kPa)	101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101134	2023/03/31	2024/03/30
R&S	EMI Test Receiver	ESR3	102726	2022/07/15	2023/07/14
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2022/08/07	2023/08/06
Audix	Test Software	E3	190306 (V9)	N/A	N/A

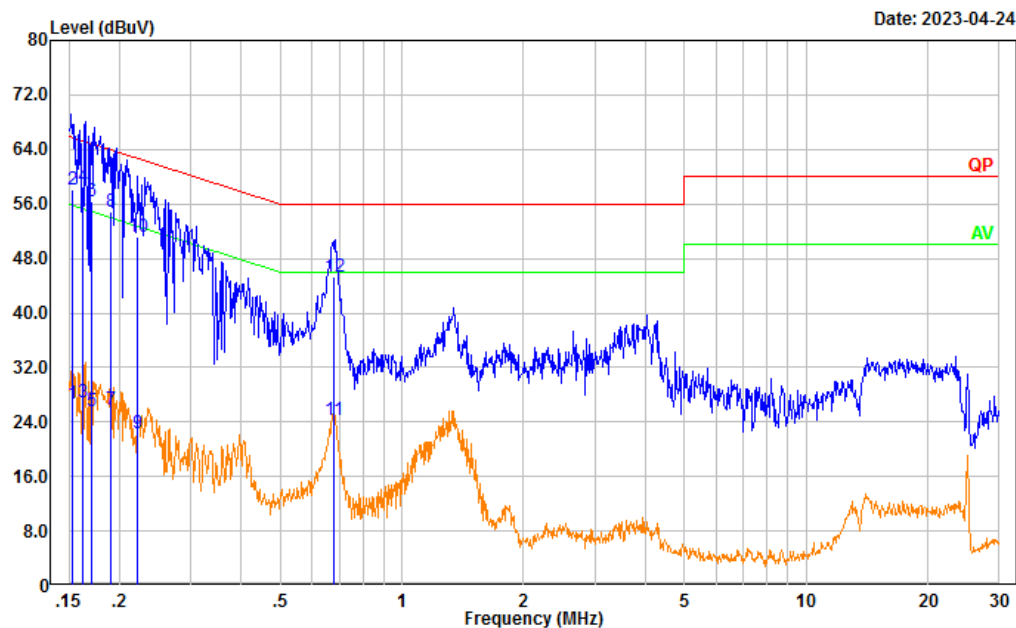
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Port: Line
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
<hr/>							
1	0.154	17.35	9.61	26.96	55.77	28.81	Average
2	0.154	47.78	9.61	57.39	65.77	8.38	QP
3	0.163	16.93	9.61	26.54	55.33	28.79	Average
4	0.163	48.25	9.61	57.86	65.33	7.47	QP
5	0.181	17.09	9.61	26.70	54.42	27.72	Average
6	0.181	46.52	9.61	56.13	64.42	8.29	QP
7	0.680	14.74	9.62	24.36	46.00	21.64	Average
8	0.680	35.64	9.62	45.26	56.00	10.74	QP
9	1.358	16.06	9.62	25.68	46.00	20.32	Average
10	1.358	27.53	9.62	37.15	56.00	18.85	QP
11	4.081	-1.14	9.65	8.51	46.00	37.49	Average
12	4.081	20.81	9.65	30.46	56.00	25.54	QP

Port: neutral
Note:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.153	16.98	9.61	26.59	55.86	29.27	Average
2	0.153	48.41	9.61	58.02	65.86	7.84	QP
3	0.162	17.33	9.61	26.94	55.35	28.41	Average
4	0.162	48.87	9.61	58.48	65.35	6.87	QP
5	0.171	16.06	9.61	25.67	54.91	29.24	Average
6	0.171	46.84	9.61	56.45	64.91	8.46	QP
7	0.191	16.19	9.61	25.80	54.01	28.21	Average
8	0.191	45.22	9.61	54.83	64.01	9.18	QP
9	0.221	12.71	9.61	22.32	52.78	30.46	Average
10	0.221	41.61	9.61	51.22	62.78	11.56	QP
11	0.679	14.59	9.62	24.21	46.00	21.79	Average
12	0.679	35.64	9.62	45.26	56.00	10.74	QP

4.2 Radiation Spurious Emissions

Serial Number:	23N0-1	Test Date:	2023/04/24 ~2023/6/8
Test Site:	966-2, 966-1	Test Mode:	Operating
Tester:	Vic Du, Mack Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.7~26.7	Relative Humidity: (%)	52~59	ATM Pressure: (kPa)	100.6~100.9
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020/10/19	2023/10/18
R&S	EMI Test Receiver	ESR3	102724	2022/07/15	2023/07/14
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2022/07/17	2023/07/16
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2022/07/17	2023/07/16
Sonoma	Amplifier	310N	186165	2022/07/17	2023/07/16
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020/10/13	2023/10/12
PASTERNAK	Horn Antenna	PE9852/2F-20	112002	2021/02/05	2024/02/04
PASTERNAK	Horn Antenna	PE9850/2F-20	072001	2021/02/05	2024/02/04
R&S	Spectrum Analyzer	FSV40	101591	2022/07/15	2023/07/14
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2022/08/07	2023/08/06
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2022/08/07	2023/08/06
MICRO-COAX	Coaxial Cable	UFB142A-1-2362-200200	235772-001	2022/08/07	2023/08/06
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2022/11/09	2023/11/08
Quinstar	Preamplifier	QLW-18405536-JO	15964001005	2022/9/16	2023/9/15
Audix	Test Software	E3	201021 (V9)	N/A	N/A
E-Microwave	Band Rejection Filter	2400-2483.5MHz	OE01902424	2022/08/07	2023/08/06
Mini Circuits	High Pass Filter	VHF-6010+	31119	2022/08/07	2023/08/06
E-Microwave	Band Rejection Filter	5150-5850MHz	OE01902423	2022/08/07	2023/08/06

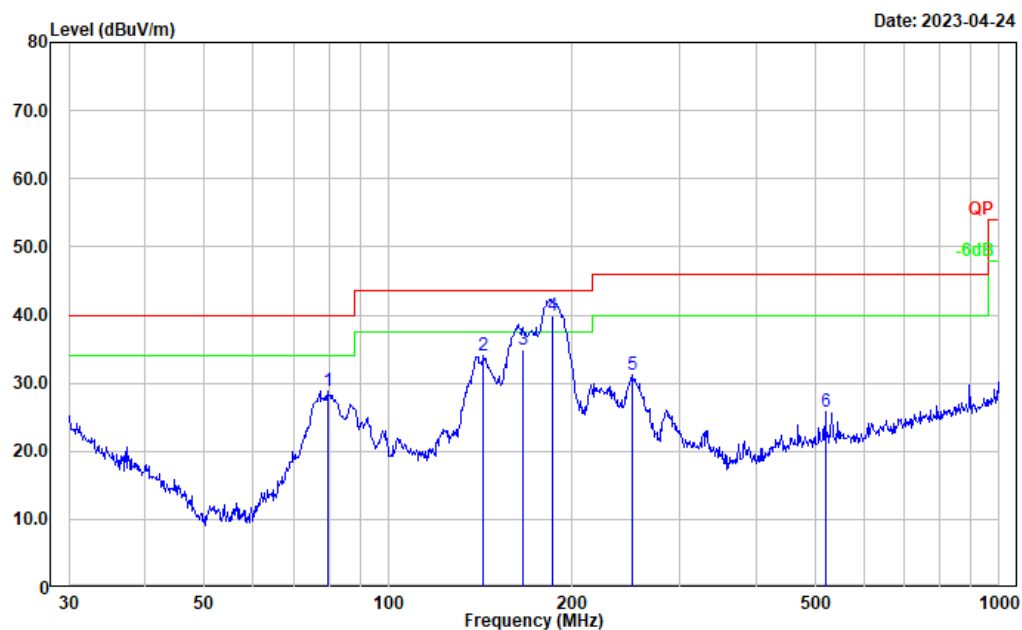
* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

Please refer to the below table and plots.

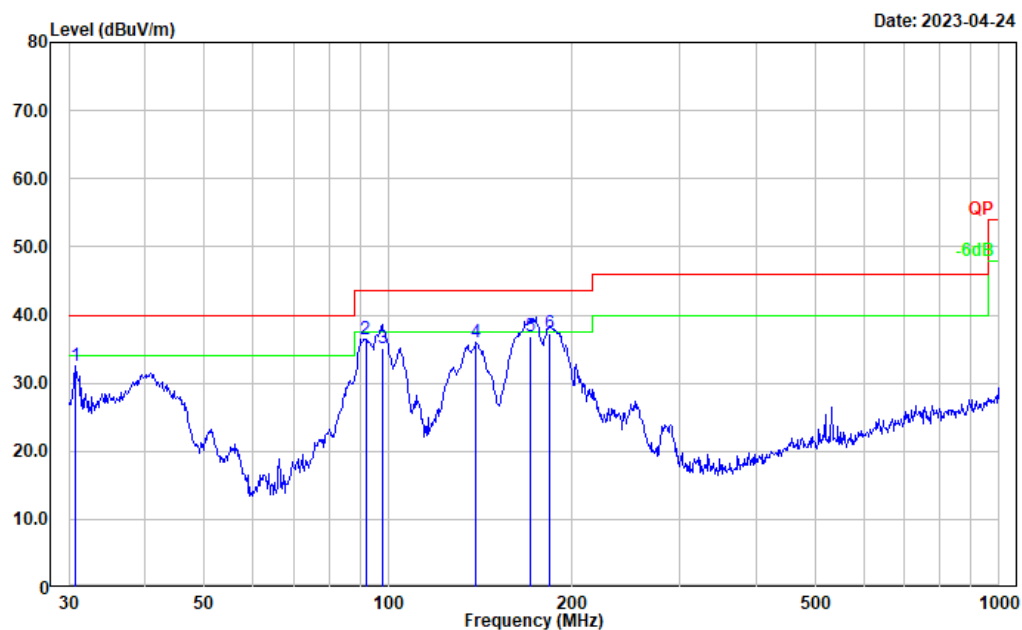
1) 30MHz-1GHz:

Polarization: horizontal
Note:



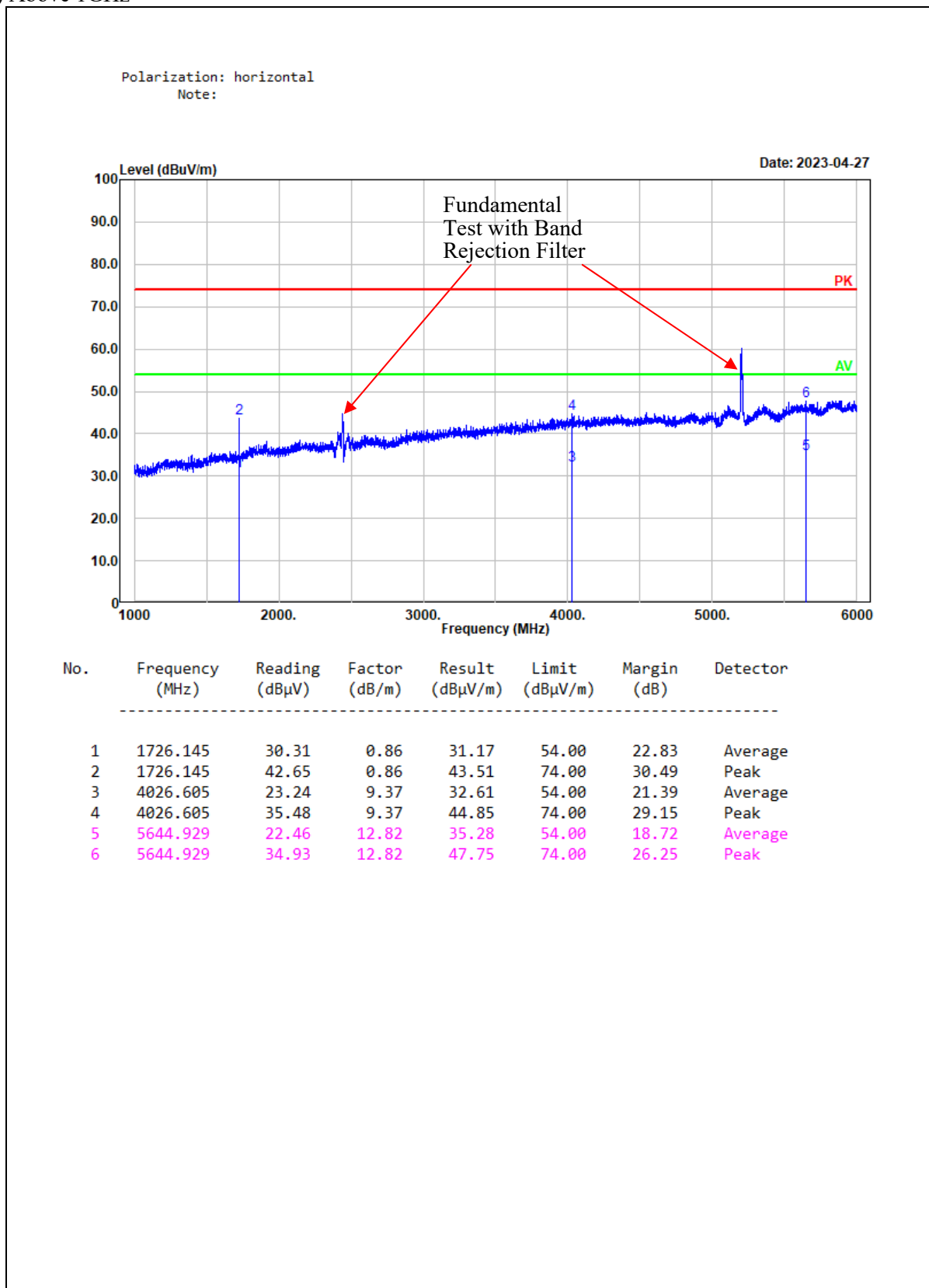
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	79.521	46.15	-17.41	28.74	40.00	11.26	Peak
2	143.326	45.87	-11.93	33.94	43.50	9.56	Peak
3	166.044	47.51	-12.53	34.98	43.50	8.52	QP
4	185.618	53.41	-13.56	39.85	43.50	3.65	QP
5	250.301	44.37	-13.08	31.29	46.00	14.71	Peak
6	519.065	31.64	-5.84	25.80	46.00	20.20	Peak

Polarization: vertical
Note:

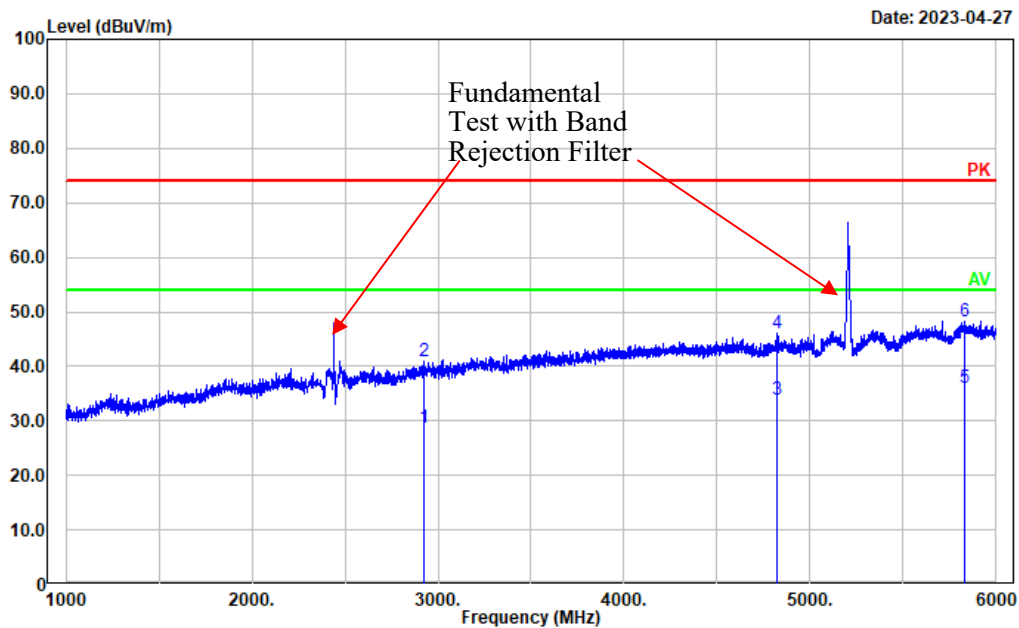


No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1	30.745	36.68	-4.17	32.51	40.00	7.49	Peak
2	91.816	53.00	-16.50	36.50	43.50	7.00	Peak
3	98.103	49.83	-14.76	35.07	43.50	8.43	QP
4	139.361	47.74	-11.83	35.91	43.50	7.59	Peak
5	171.016	49.78	-13.01	36.77	43.50	6.73	QP
6	183.844	50.92	-13.58	37.34	43.50	6.16	QP

2) Above 1GHz

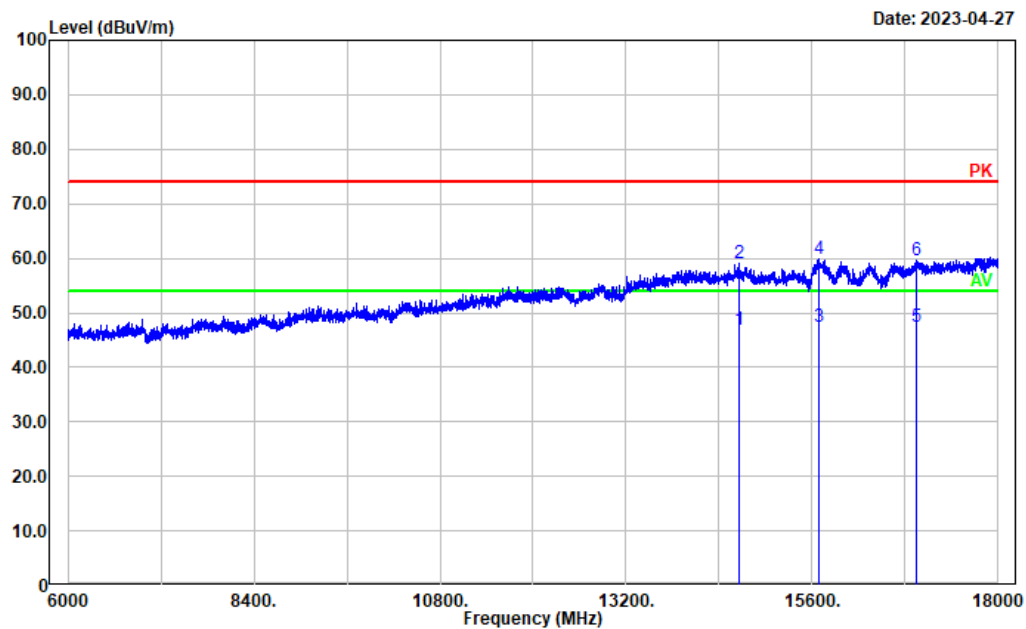


Polarization: Vertical
Note:



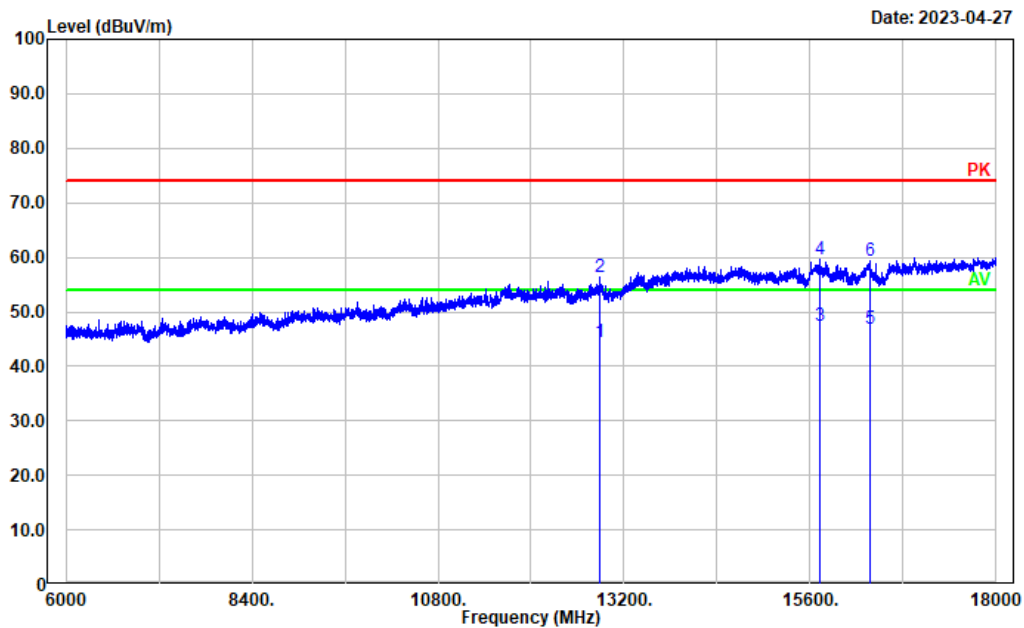
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	2921.384	23.14	5.71	28.85	54.00	25.15	Average
2	2921.384	35.27	5.71	40.98	74.00	33.02	Peak
3	4818.764	23.04	10.93	33.97	54.00	20.03	Average
4	4818.764	35.08	10.93	46.01	74.00	27.99	Peak
5	5826.965	23.11	13.03	36.14	54.00	17.86	Average
6	5826.965	35.21	13.03	48.24	74.00	25.76	Peak

Polarization: horizontal
Note:



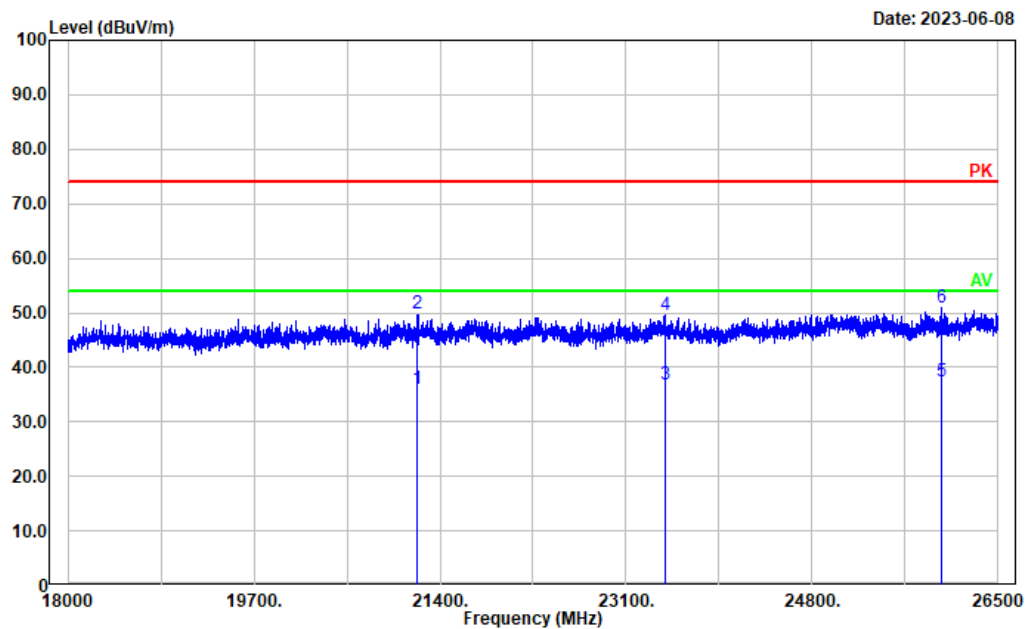
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	14658.530	22.21	24.71	46.92	54.00	7.08	Average
2	14658.530	34.41	24.71	59.12	74.00	14.88	Peak
3	15685.940	25.24	22.29	47.53	54.00	6.47	Average
4	15685.940	37.47	22.29	59.76	74.00	14.24	Peak
5	16938.990	22.25	25.15	47.40	54.00	6.60	Average
6	16938.990	34.51	25.15	59.66	74.00	14.34	Peak

Polarization: vertical
Note:



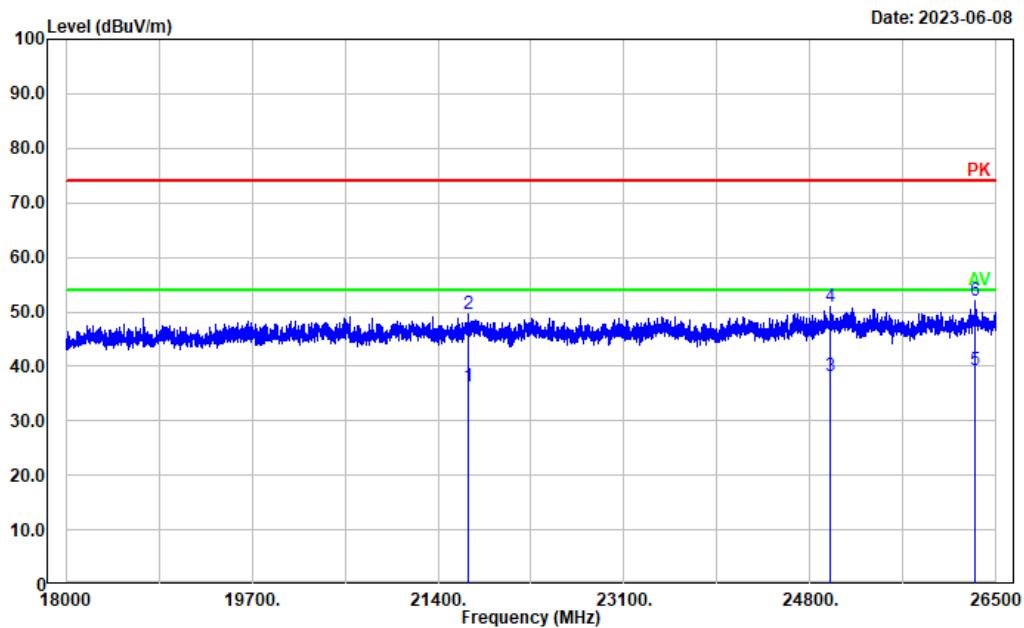
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	12884.580	22.11	22.24	44.35	54.00	9.65	Average
2	12884.580	34.21	22.24	56.45	74.00	17.55	Peak
3	15724.340	25.13	22.28	47.41	54.00	6.59	Average
4	15724.340	37.25	22.28	59.53	74.00	14.47	Peak
5	16377.280	24.44	22.54	46.98	54.00	7.02	Average
6	16377.280	36.88	22.54	59.42	74.00	14.58	Peak

Polarization: Horizontal
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	21194.940	37.26	-1.20	36.06	54.00	17.94	Average
2	21194.940	50.93	-1.20	49.73	74.00	24.27	Peak
3	23452.990	37.49	-0.61	36.88	54.00	17.12	Average
4	23452.990	50.20	-0.61	49.59	74.00	24.41	Peak
5	25976.290	37.42	0.10	37.52	54.00	16.48	Average
6	25976.290	50.92	0.10	51.02	74.00	22.98	Peak

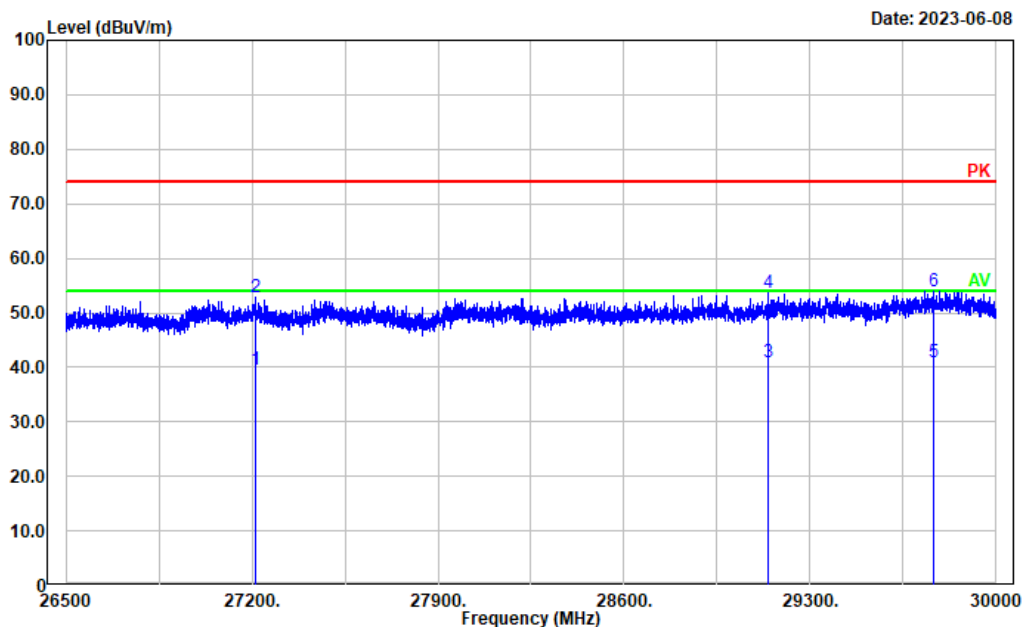
Polarization: vertical
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector

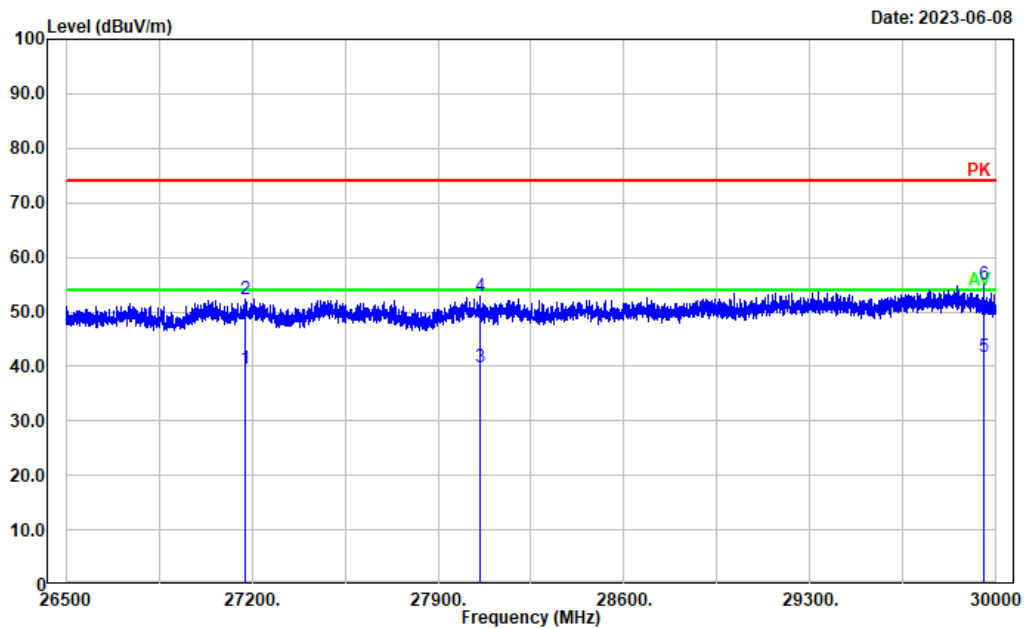
1	21676.130	37.42	-1.15	36.27	54.00	17.73	Average
2	21676.130	50.77	-1.15	49.62	74.00	24.38	Peak
3	24988.400	37.40	0.76	38.16	54.00	15.84	Average
4	24988.400	50.15	0.76	50.91	74.00	23.09	Peak
5	26306.160	38.52	0.91	39.43	54.00	14.57	Average
6	26306.160	51.25	0.91	52.16	74.00	21.84	Peak

Polarization: Horizontal
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	27215.540	37.43	2.22	39.65	54.00	14.35	Average
2	27215.540	50.65	2.22	52.87	74.00	21.13	Peak
3	29142.330	36.52	4.46	40.98	54.00	13.02	Average
4	29142.330	49.24	4.46	53.70	74.00	20.30	Peak
5	29766.150	35.42	5.46	40.88	54.00	13.12	Average
6	29766.150	48.59	5.46	54.05	74.00	19.95	Peak

Polarization: Vertical
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	27175.630	37.42	2.14	39.56	54.00	14.44	Average
2	27175.630	50.13	2.14	52.27	74.00	21.73	Peak
3	28059.910	36.51	3.22	39.73	54.00	14.27	Average
4	28059.910	49.75	3.22	52.97	74.00	21.03	Peak
5	29953.790	36.42	5.28	41.70	54.00	12.30	Average
6	29953.790	49.63	5.28	54.91	74.00	19.09	Peak

===== END OF REPORT =====