



TEST REPORT

Report Number: C21T00088-SRD04-V01

Applicant	Cipia Vision Ltd
Product Name	Cipia-FS10
Model Name	FS10-LTE/FS10-LTE-ADS
Brand Name	Cipia
FCC ID	2AZIQFS10C
IC	27633-FS10C

Industrial Internet Innovation Center (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in FCC Part15, ANSI C63.10, KDB 789033, KDB 905462.

Prepared by

Reviewed by

Approved by

Issue Date

2021-12-09

Industrial Internet Innovation Center (Shanghai) Co., Ltd.

NOTE

1. This report is invalid without the signature of the writer, reviewer and authorizer.
2. This report is invalid if altered.
3. For the benefit of clients, if you have any objection to the report, please inform the testing laboratory within 15 days from the date of receiving this report.
4. Samples in the test report are provided by the client. The test results are only applicable to the samples received by the laboratory. The source information of samples (such as sample sender, manufacturer, etc.) in the test report is provided by the client, and the laboratory is not responsible for its authenticity.
5. The test report does not represent the identification of a product by a certification body or an authorized body.
6. This report is only valid as a whole, and no part of the report can be reproduced without the written approval of Industrial Internet Innovation Center (Shanghai) Co., Ltd.
7. Without the written permission of testing institutions and accreditation bodies, this report cannot be used in part or in whole for publicity or product introduction.
8. "N/A" is used in this report to indicate that it is not applicable or available.
9. Industrial Internet Innovation Center (Shanghai) Co., Ltd. assumes the legal responsibility for the report.
10. The measurement uncertainty is not taken into account when deciding conformity, and the results of measurement (or the average of measurement results) are directly used as the criterion for the stating conformity.

Test Laboratory:

Industrial Internet Innovation Center (Shanghai) Co., Ltd.
Add: Building 4, No. 766 Jingang Rd, Pudong, Shanghai, China
Tel: +86 21 68866880



Revision Version

Report Number	Revision	Date	Memo
C21T00088-SRD04-V00	00	2021-10-28	Initial creation of test report
C21T00088-SRD04-V01	01	2021-12-09	Updated the information of 3.1

CONTENTS

1. TEST LABORATORY.....	5
1.1. TESTING LOCATION.....	5
1.2. TESTING ENVIRONMENT.....	5
1.3. PROJECT INFORMATION.....	5
2. CLIENT INFORMATION.....	6
2.1. APPLICANT INFORMATION.....	6
2.2. MANUFACTURER INFORMATION.....	6
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE).....	7
3.1. ABOUT EUT.....	7
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST.....	7
3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST.....	8
4. REFERENCE DOCUMENTS.....	9
4.1. REFERENCE DOCUMENTS FOR TESTING.....	9
4.2. REFERENCE INFORMATION FROM CLIENT.....	9
5. TEST SUMMARY.....	10
5.1. SUMMARY OF TEST RESULTS.....	10
6. MEASUREMENT RESULTS.....	12
6.1. TRANSMITTER SPURIOUS EMISSION.....	14
7. TEST EQUIPMENT LIST.....	19
7.1. RADIATED EMISSION TEST SYSTEM.....	19
ANNEX A: MEASUREMENT UNCERTAINTY.....	20
ANNEX B: ACCREDITATION CERTIFICATE.....	21

1. Test Laboratory

1.1. Testing Location

Company Name	Industrial Internet Innovation Center (Shanghai) Co., Ltd.
Address	Building 4, No. 766 Jingang Rd, Pudong, Shanghai, China
FCC Registration No.	CN1177

1.2. Testing Environment

Normal Temperature	15°C~35°C
Relative Humidity	25%RH~75%RH
Supply Voltage	230V/50Hz

1.3. Project Information

Project Leader	Chen Minfei
Testing Start Date	2021-07-20
Testing End Date	2021-10-28



2. Client Information

2.1. Applicant Information

Company Name	Cipia Vision Ltd
Address	Maskit 8 th st. Hertzelia, Israel
Telephone	+972-77-5047760

2.2. Manufacturer Information

Company Name	Cipia Vision Ltd
Address	Maskit 8 th st. Hertzelia, Israel
Telephone	+972-77-5047760

3. Equipment under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Product Name	Cipia-FS10
Model name	FS10-LTE/FS10-LTE-ADS
Supported Radio Technology and Bands	GSM850/GSM900/DCS1800/PCS1900 WCDMA Band I/II/IV/V/VI/VIII/XIX LTE Band FDD1/2/3/4/5/7/8/12/13/18/19/20/25/26/28 TDD38/39/40/41 BT 4.2 BT 5.0 WLAN 802.11b,g,n WLAN 802.11a,n,ac GPS
Hardware Version	Revision F
Software Version	0.0.0.23
WLAN Frequency	UNII 1: 5150MHz-5250MHz
WLAN type of modulation	OFDM
FCC ID	2AZIQFS10C
IC	27633-FS10C
Extreme Temperature	-30°C~70°C
Nominal Voltage	12V/24V
Extreme High Voltage	32V
Extreme Low Voltage	9V

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N01	867698043657439	Revision F	0.0.0.23	2021-07-20

*EUT ID: is internally used to identify the test sample in the lab.

3.3. Internal Identification of AE used during the test

AE ID*	Description	Model	SN/Remark
AE1	RF cable	N/A	N/A

*AE ID: is internally used to identify the test sample in the lab.

4. Reference Documents

4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices	2018-10-01
ANSI 63.10	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2013
KDB 789033	Information Infrastructure (U-NII) Devices - Part 15, Subpart E	2017
KDB 905462	COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVICES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION	2016
RSS-247 Issue 2	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices	2017
RSS-Gen Issue 5	General Requirements for Compliance of Radio Apparatus	2019

4.2. Reference Information from client

Maximum of Antenna Gain: -2.98 dBi

5. Test Summary

5.1. Summary of Test Results

Measurement Items	Sub-clause of Part15C	Sub-clause of IC	Verdict
Maximum Output Power	15.407(a)	RSS-247 6.2	N/A
Power Spectral Density	15.407(a)	RSS-247 6.2	N/A
99% Occupied Bandwidth	N/A	RSS-Gen 6.7	N/A
-26dB	15. 407(a)	RSS-247 6.2	N/A
Band edge compliance	15.407(b)	RSS-247 6.2	Pass
Transmitter spurious emissions radiated	15.407(b)	RSS-247 6.2	Pass
Spurious emissions radiated < 30 MHz	15.209 & 15.407(b)	RSS-247 6.2 RSS-Gen 8.9,8.10	N/A
Spurious emissions conducted < 30 MHz	15.407(b)	RSS-247 6.2	N/A
Frequency Stability	15.407(g)	RSS-Gen 8.11	N/A
Transmit Power Control	15.407(h)	RSS-247 6.2	N/A

Note:All the test data for each data were verified, but only the worst case was reported.

Test Conditions

Tnom	Normal Temperature
Tmin	Low Temperature
Tmax	High Temperature
Vnom	Normal Voltage
Vmin	Low Voltage
Vmax	High Voltage
Hnom	Norm Humidity
Anom	Norm Air Pressure

For this report, all the test case listed above are tested under Normal Temperature and Normal Voltage, and also under norm humidity, the specific conditions as following:

Temperature	Tnom	25℃
Voltage	Vnom	3.80V
Humidity	Hnom	48%
Air Pressure	Anom	1010hPa



The FS10-LTE/FS10-LTE-ADS, manufactured by Cipia Vision Ltd. is a variant product for testing.

This project is a variant project based on the original report C21T00027-SRD04-V02, We tested the worst case radiation data, and the test data of the worst mode was recorded in the report. The rest of the data are reference prototype report data.

Industrial Internet Innovation Center (Shanghai) Co., Ltd. only performed test cases which identified with Pass/Fail/Inc result in section 5.1.

Industrial Internet Innovation Center (Shanghai) Co., Ltd. has verified that the compliance of the tested device specified in section 3 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 4 of this test report.

6. Measurement Results

Shielding Room1 (6.0 meters×3.0 meters×2.7 meters) did not exceed following limits along the conducted RF performance testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Ground system resistance	< 0.5

Control room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. =30 %, Max. = 60 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 10 k
Ground system resistance	< 0.5

Fully-anechoic chamber1 (6.9 meters×10.9 meters×5.4 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 25 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 10 k
Ground system resistance	< 0.5
VSWR	Between 0 and 6 dB, from 1GHz to 18GHz
Site Attenuation Deviation	Between -4 and 4 dB,30MHz to 1GHz
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

6.3. 2 Band Edges - Radiated

Measurement Limit:

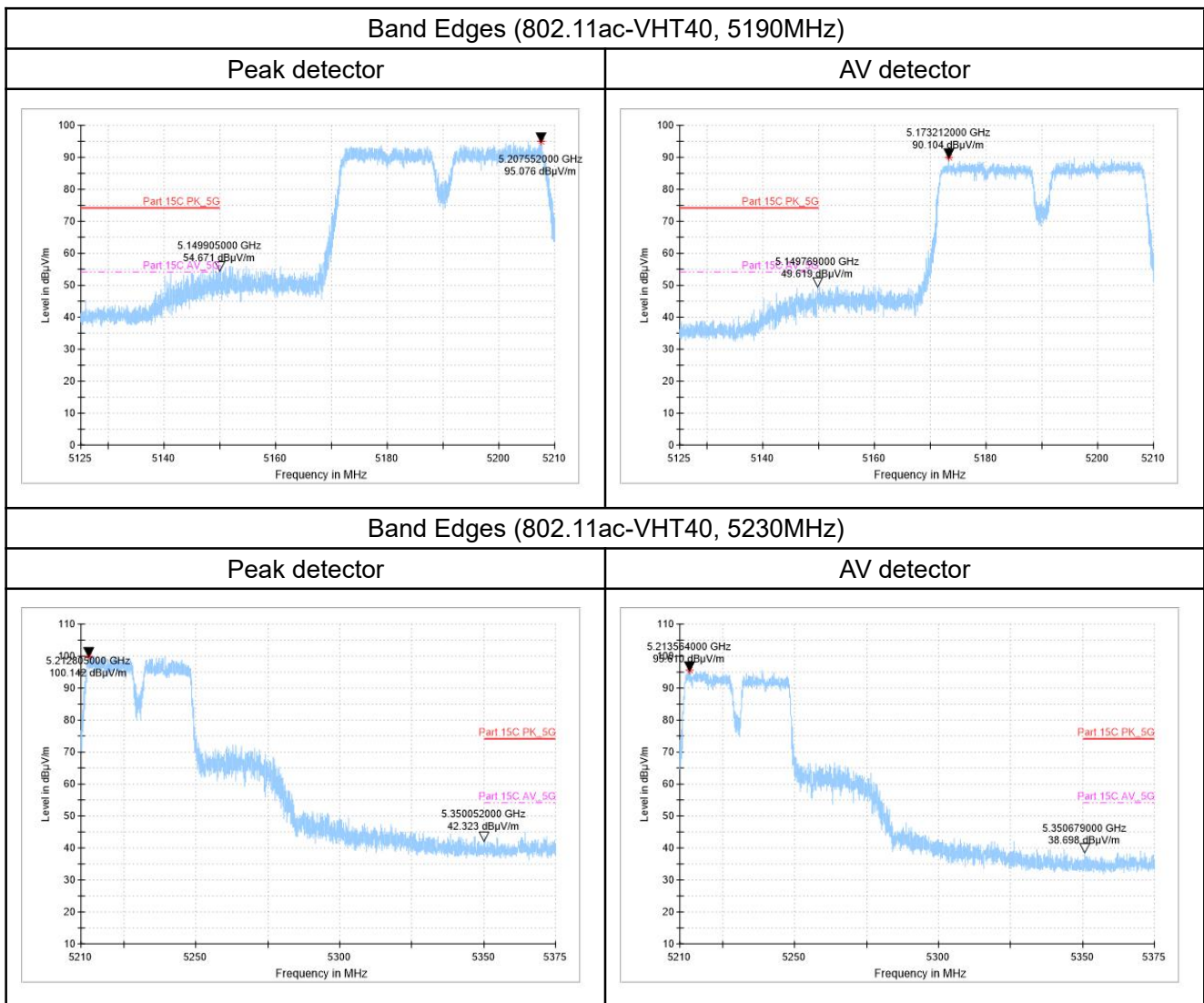
Standard	Limit (dB μ V/m)	
	Peak	Average
FCC 47 CFR Part 15.209	68.2	54

The measurement is made according to KDB 789033.

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Measurement Result:

U-NII-1:



6.1. Transmitter Spurious Emission

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.407	-27 dBm/MHz

The measurement is made according to KDB 789033

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

Below 1GHz (detector: Peak and Quasi-Peak)

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz (detector: Peak):

(a) PEAK: RBW=1MHz / VBW=3MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=3MHz / Sweep= AUTO

Limit in restricted band:

Frequency of emission (MHz)	Field strength(dBμV/m)	Measurement distance(m)
0.009-0.490	129-94	3
0.490-1.705	74-63	3
1.705-30	70	3
30-88	40.0	3
88-216	43.5	3
216-960	46.0	3
Above 960	54.0	3

Note: for frequency range below 960MHz, the limit in 15.209 is defined in 10m test distance. The limit used above is calculated from 10m to 3m

Modulation type and data rate tested (Only worst case result is given below):

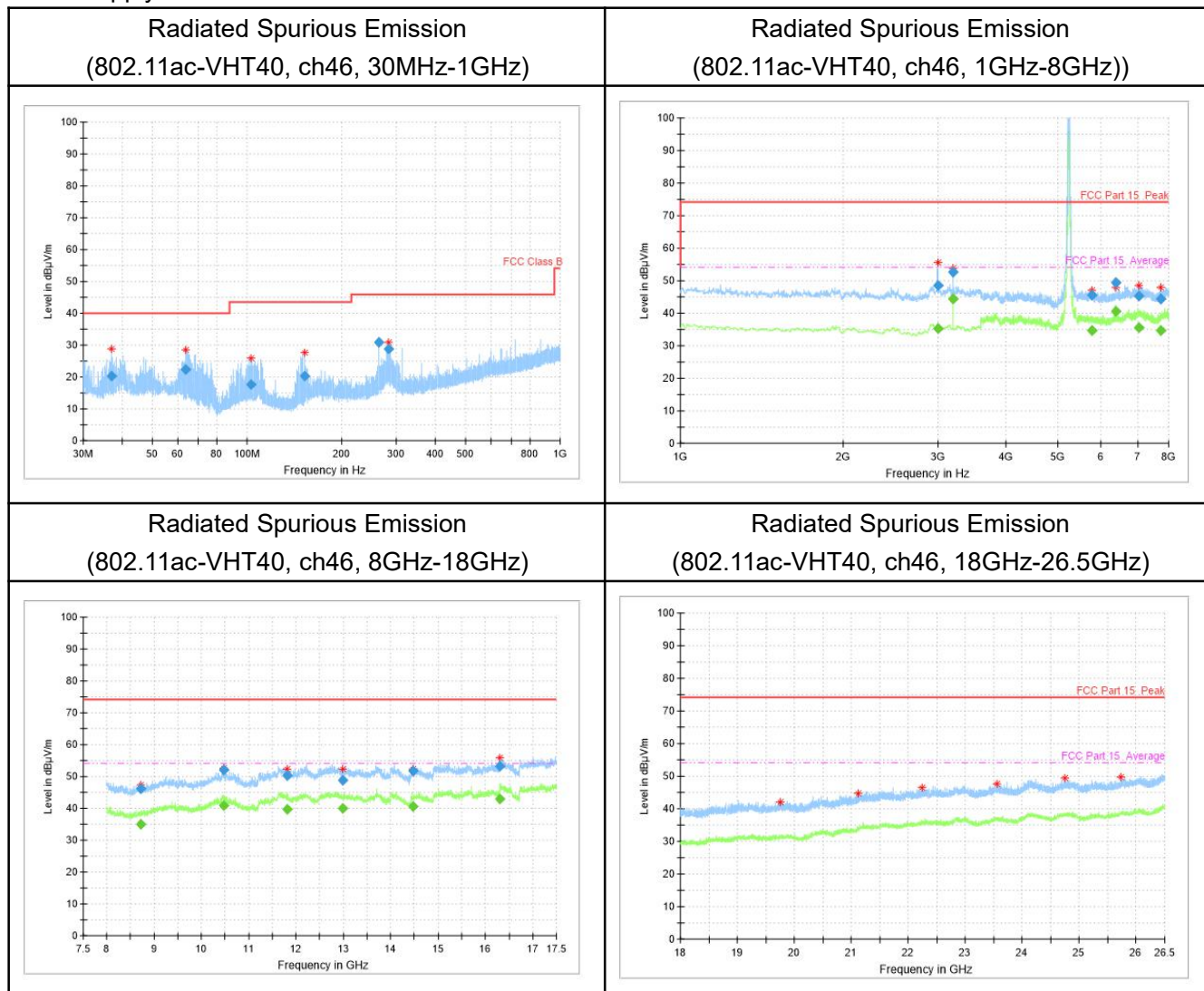
U-NII-1:

Mode	Data rate	Channel
802.11ac-VHT40	MCS0	46(5230MHz)

Measurement Results:

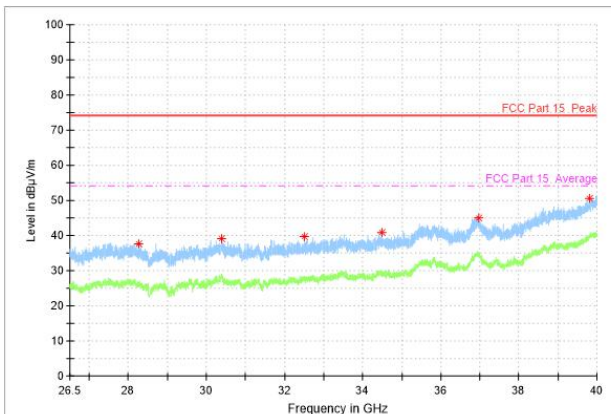
U-NII-1:

Main supply:



Radiated Spurious Emission
(802.11ac-VHT40, ch46, 26.5GHz-40GHz)

/



/

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

$$\text{Result} = P_{Mea} + A_{Rpl} = P_{Mea} + \text{Cable Loss} + \text{Antenna Factor}$$

U-NII-1:
RSE-11AC(40M)-CH46-30M-1G

Frequency (MHz)	Result (dB μ V/m)	ARpl (dB)	PMea (dB μ V/m)	Polarity
37.0	20.17	-13.4	33.57	V
63.6	22.33	-13.8	36.13	V
102.8	17.64	-13.4	31.04	H
152.4	20.34	-17	37.34	H
264.0	30.86	-11.7	42.56	H
283.8	28.75	-11.4	40.15	H

RSE-11AC(40M)-CH46-1G-8G

Frequency (MHz)	Result (dB μ V/m)	ARpl (dB)	PMea (dB μ V/m)	Polarity
2992.4	48.64	1.8	46.84	V
3191.8	52.58	0.5	52.08	V
5767.4	45.69	2.3	43.39	V
6383.8	49.29	2.8	46.49	V
7031.8	45.22	4.4	40.82	H
7719.4	44.44	3.8	40.64	V

RSE-11AC(40M)-CH46-8G-18G

Frequency (MHz)	Result (dB μ V/m)	ARpl (dB)	PMea (dB μ V/m)	Polarity
8724.8	46.24	3.9	42.34	H
10464.4	52.1	7.5	44.6	V
11808.6	50.21	9.9	40.31	H
12978.6	48.8	11	37.8	H
14459.6	51.84	12.5	39.34	H
16304.0	53.1	16.1	37	H

RSE-11AC(40M)-CH46-18G-26.5G

Frequency (MHz)	Result (dB μ V/m)	ARpl (dB)	PMea (dB μ V/m)	Polarity
19745.9	41.92	-4.4	46.32	V
21120.4	44.57	-3.3	47.87	V
22247.4	46.54	-1.9	48.44	H
23558.2	47.63	-1.4	49.03	V
24755.0	49.32	0.6	48.72	V
25733.3	49.81	0.9	48.91	V



RSE-11AC(40M)-CH46-26.5G-40G

Frequency (MHz)	Result (dB μ V/m)	ARpl (dB)	PMea (dB μ V/m)	Polarity
28276.6	37.68	-0.2	37.88	H
30379.9	39.13	1.2	37.93	H
32504.8	39.72	3.4	36.32	H
34494.7	40.84	4.5	36.34	H
36980.0	45.04	8.3	36.74	V
39819.1	50.56	13.6	36.96	V

7. Test Equipment List

7.1. Radiated Emission Test System

Item	Equipment Name	Type	Serial Number	Manufacturer	Cal. Date	Cal. interval
1	Universal Radio Communication Tester	CMU200	123123	R&S	2021-05-10	1 year
2	EMI Test Receiver	ESU40	100307	R&S	2021-05-10	1 year
3	TRILOG Broadband Antenna	VULB9163	VULB9163-51 5	Schwarzbeck	2020-02-28	2 years
4	Double- ridged Waveguide Antenna	ETS-3117	00135890	ETS	2020-02-28	2 years
5	2-Line V-Network	ENV216	101380	R&S	2021-05-10	1 year
6	EMI Test Software	EMC32 V 9.15.00	N/A	R&S	N/A	N/A

Anechoic chamber

Fully anechoic chamber by ETS.

Annex A: Measurement Uncertainty

Measurement uncertainty for all the testing in this report are within the limit specified in 3IN documents .
The detailed measurement uncertainty is defined in 3IN documents.

Measurement Items	Range	Confidence Level	Calculated Uncertainty
Peak Output Power-Conducted	5100MHz-5875MHz	95%	1.024dB
Peak Power Spectral Density	5100MHz-5875MHz	95%	1.024dB/MHz
Conducted Emission	30MHz-2GHz	95%	0.90dB
Conducted Emission	2GHz-3.6GHz	95%	0.88dB
Conducted Emission	3.6GHz-8GHz	95%	0.96dB
Conducted Emission	8GHz-20GHz	95%	0.94dB
Conducted Emission	20GHz-22GHz	95%	0.88dB
Conducted Emission	22GHz-26GHz	95%	0.86dB
Transmitter Spurious Emission-Radiated	9KHz-30MHz	95%	5.66dB
Transmitter Spurious Emission-Radiated	30MHz-1000MHz	95%	4.98dB
Transmitter Spurious Emission-Radiated	1000MHz -18000MHz	95%	5.06dB
Transmitter Spurious Emission-Radiated	18000MHz -40000MHz	95%	5.20dB

Annex B: Accreditation Certificate



*****END OF REPORT*****