Prüfbericht-Nr.: *Test report no.:*	**CN22PQ0G 003**	**Auftrags-Nr.:** *Order no.:*	**168490719**	Seite 1 von 13 *Page 1 of 13*
Kunden-Referenz-Nr.: *Client reference no.:*	**N/A**	**Auftragsdatum:** *Order date:*	2024-06-24	
Auftraggeber: *Client:*	**Shenzhen RAKwireless Technology Co.,Ltd.** Room 506, Building B, New Compark, Pingshan First Road, Taoyuan Street, Nanshan District, Shenzhen, Guangdong, P.R. China			
Prüfgegenstand: *Test item:*	WisGate			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	RAK7268, RAK7268V2 (Trademark: RAK)			
Auftrags-Inhalt: *Order content:*	Test Report			
Prüfgrundlage: *Test specification:*	CFR47 FCC Part 15: Subpart B Section 15.107 CFR47 FCC Part 15: Subpart B Section 15.109 ICES-003 Issue 7 October 2020			

Wareneingangsdatum: *Date of sample receipt:*	2024-07-01	Refer to photos documents
Prüfmuster-Nr.: *Test sample no:*	A003755951-002	
Prüfzeitraum: *Testing period:*	2024-08-03 - 2024-08-06	
Ort der Prüfung: *Place of testing:*	Refer to section 2.1	
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüfergebnis*: *Test result*:*	Pass	

geprüft von: *tested by:* ***Datum:*** *Date:* 2024-08-20	X Hardy Suo	**genehmigt von:** *authorized by:* **Ausstellungsdatum:** *Issue date:* 2024-08-20	X Lin Lin
Stellung / Position	Sachverständige(r)/Expert	**Stellung** / Position	Sachverständige(r)/Expert

Sonstiges /
Other:

FCC ID: 2AF6B-RAK7268

This report based on previous report CN22PQ0G 001 (issued by TÜV Rheinland (Shenzhen) Co., Ltd.) for adding an alternative Lora Module (MN: RAK2287X), refer to section 3.1 for details.

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*P(ass) = passed a.m. test specification(s)*	*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. *The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.* *Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.*
2	Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben. *As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.*
3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. *Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.* *Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.*
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the “Zero Guard Band Rule” and “Simple Acceptance” in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.

Modification record	
CN22PQ0G 001	First release
CN22PQ0G 003	Adds an alternative Lora Module (MN: RAK2287X)

Test Summary

5.1 Conducted emissions
RESULT: Pass
5.2 Radiated emissions
RESULT: Pass

Contents

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Result.
Appendix B: Test Setup Photos.

2 Test Sites

2.1 Test Facilities

Shenzhen UnionTrust Quality and Technology Co., Ltd.
16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China

A2LA Certificate Number: 4312.01

IC Registration No.: 21600, CAB identifier: CN0032

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Conducted Emission				
LISN	R&S	ESH2-Z5	860014/024	26-Oct-2024
Receiver	R&S	ESR7	101181	26-Oct-2024
Pulse Limiter	R&S	ESH3-Z2	0357.8810.54	26-Oct-2024
Shielding room	ETS-Lindgren	843	Euroshiedpn-CT001270-1246	4-Nov-2024
Test Software	EZ-EMC	EZ-CON	Software Version: EMC-CON 3A1.1	
Radiated Disturbances				
3m Chamber & Accessory Equipment	ETS-Lindgren	3m	Euroshiedpn-CT001270-1317	10-Nov-2026
Broadband Antenna	ETS-Lindgren	3142E	00201566	29-Oct-2024
6dB Attenuator	Talent	RA6A5-N-18	18103001	29-Oct-2024
Pre-amplifier	HP	8447F	2805A02960	30-Oct-2024
Receiver	ROHDE & SCHWARZ	ESIB26	100114	26-Oct-2024
Double-Ridged Waveguide Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3117-PA	00201541	31-Mar-2025
Pre-amplifier	ETS-Lindgren	00118385	00201874	30-Oct-2024

Multi device Controller	ETS-Lindgren	7006-001	00160105	N/A
Test Software	Audix	e3	Software Version: 9.160323	

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table

No.	Item	Measurement Uncertainty
1	Conducted emission 9kHz-150kHz	±3.2 dB
2	Conducted emission 150kHz-30MHz	±2.7 dB
3	Radiated emission 30MHz-1GHz	± 4.6 dB
4	Radiated emission 1GHz-18GHz	± 4.4 dB
Remark: 95% Confidence Levels, k=2.		

2.6 Location of Original Data

The original copies of all test data taken during actual testing were at this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The Shenzhen UnionTrust Quality and Technology Co., Ltd. facility located at 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a WisGate which supports Lora, 2.4GHz Wi-Fi wireless technologies.

Contains FCC ID: 2AF6B-RAK634, 2AF6B-RAK2287X.

The model RAK7268 is identical with model RAK7268V2 except non-radio related Flash chip U2 (on the wifi module): 16MB and 32MB, and this two Flash chip are pin to pin only the storage space is different.

This report based on previous CN22PQ0G 001 (issued by TÜV Rheinland (Shenzhen) Co., Ltd.) for adding an alternative Lora module (MN: RAK2287X), additional EMC tests were re-performed on model RAK7268V2 with new Lora module (MN: RAK2287X). Refer to report previous CN22PQ0G 001 for original test data with original Lora module (MN: RAK5146).

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	WisGate
Type Designation:	RAK7268, RAK7268V2
Operating Voltage:	DC 12V via AC/DC Adapter or DC 37 ~ 57V via POE adapter
Testing Voltage:	AC 120V, 60Hz (Power supply to AC/DC Adapter or POE adapter)
Operating Temperature Range:	-30 °C ~ +45 °C
AC/DC Adapter information:	Model #1: AD-0241200200US-1 Model #2: PSY1202000US Model #3: PSYC1202000 Rating for all models: Input: AC 100-240V, 50/60Hz, 0.6A Max Output: DC 12.0V, 2A 24.0W Note: Model #2 is identical with model # 3 except the type of plug.

3.3 Independent Operation Modes

The basic operation modes are:

A. On, On, WIFI link + Lora link, powered by AC/DC Adapter

B. On, On, WIFI link + Lora link, powered by POE adapter

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Block Diagram
- Schematics
- Photo Document
- User Manual

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.4: 2014.

According to clause 3.1, all test were applied on model RAK7268V2.

4.3 Special Accessories and Auxiliary Equipment

Table 3: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N	Remark
Portable Laptop	Lenovo	ThinkPad T480	10Q67059	N/A
POE Adapter	RAK	GRT-POE20-480050	N/A	Input: AC 100V~240V, 50/60Hz, 0.5A Max Output: DC 48V, 0.5A, 24W

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF). No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

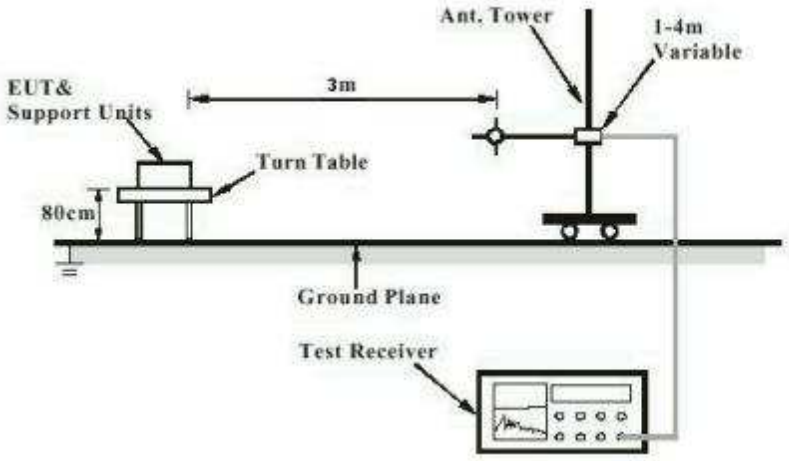


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

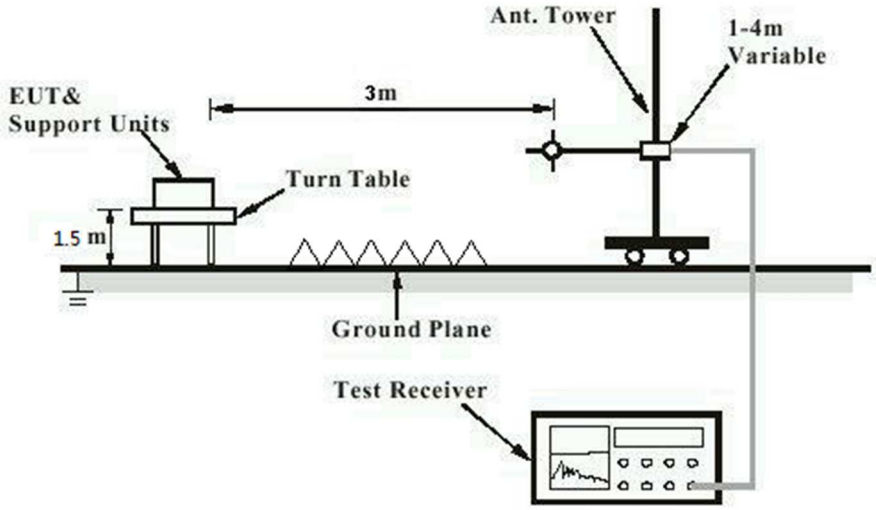
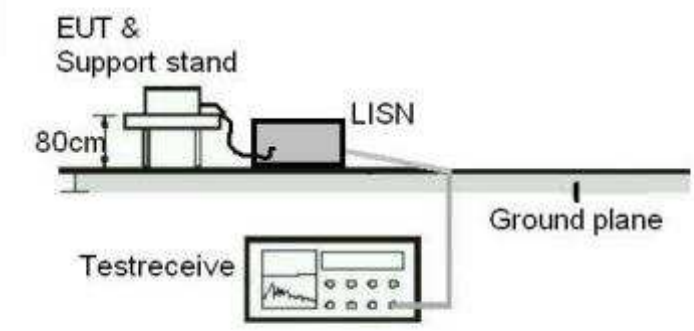


Diagram of Measurement Configuration for Mains Conduction Measurement



5 Test Results

5.1 Conducted Emissions

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.107(a) ICES-003 Issue 7, Clause 3.2.1
Basic standard	:	ANSI C63.4: 2014
Frequency range	:	150KHz - 30MHz
Classification	:	Class B
Limit	:	FCC Part 15.107(a) & ICES-003 Table 1
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-08-03 - 2024-08-06
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A, B
Earthing	:	Not Connected
Ambient temperature	:	Refer to test data
Relative humidity	:	Refer to test data
Atmospheric pressure	:	101 kPa

For the measurement records, refer to appendix A.

5.2 Radiated Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.109(a) ICES-003 Issue 7, Clause 3.2.2
Basic standard	:	ANSI C63.4: 2014
Frequency range	:	30MHz to 5th highest fundamental frequency
Classification	:	Class B
Limit	:	FCC Part 15.109(a) ICES-003 Table 2 & Table 4
Kind of test site	:	3m Semi-anechoic Chamber & 3m Full-anechoic Chamber

Test Setup

Date of testing	:	2024-08-03 - 2024-08-06
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A, B
Earthing	:	Not Connected
Ambient temperature	:	Refer to test data
Relative humidity	:	Refer to test data
Atmospheric pressure	:	101 kPa

For the measurement records, refer to appendix A.

Remark 1: The limit of below radiated emission test data is from FCC part 15.109, it also meet the limit of ICES-003 issue 7.

Remark 2: The host (RAK7268V2) has been evaluated according to module: LoRa Concentrator Module with C2PC (FCC ID: 2AF6B-RAK2287X) procedure in test report CN22PQ0G 004, and the Radiated Spurious Emissions was carried out within frequency range 9 kHz to the fifth harmonics, refer to CN22PQ0G 004 for details of measurement results.

6 List of Tables

Appendix A

Test Results

1 Appendix A.1: Test Plots of Conducted Emissions

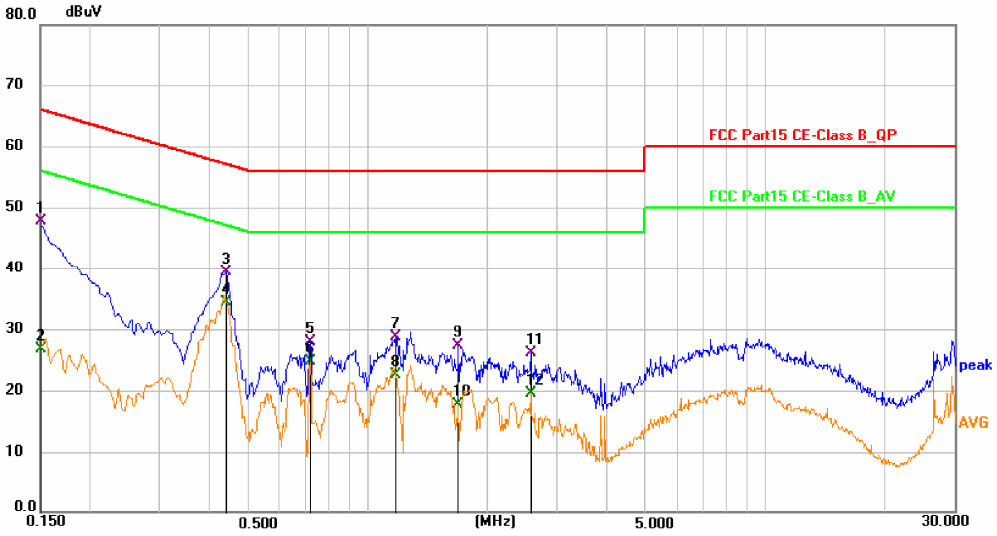
Site LAB
Limit: FCC Part15 CE-Class B_QP
EUT: WisGate
M/N: RAK7268V2
Mode: Test Mode 1:On,2.4G WIFI link_Lora kink,powered by AC/DC Adapter
Note:

Phase: *L1*
Power: AC120/60Hz

Temperature: 24.4 ℃
Humidity: 53.6 %RH
Air Pressure: 99.6 kpa

Conducted Emission Measurement

24072912929_RAK7268V2 Data :#1 Date: 2024/8/3 Time: 17:30:09



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	37.41	10.20	47.61	66.00	-18.39	QP	P	
2	0.1500	16.52	10.20	26.72	56.00	-29.28	AVG	P	
3	0.4380	29.09	10.15	39.24	57.10	-17.86	QP	P	
4 *	0.4380	24.11	10.15	34.26	47.10	-12.84	AVG	P	
5	0.7170	17.69	10.21	27.90	56.00	-28.10	QP	P	
6	0.7170	14.56	10.21	24.77	46.00	-21.23	AVG	P	
7	1.1760	18.34	10.33	28.67	56.00	-27.33	QP	P	
8	1.1760	12.25	10.33	22.58	46.00	-23.42	AVG	P	
9	1.6980	17.03	10.25	27.28	56.00	-28.72	QP	P	
10	1.6980	7.47	10.25	17.72	46.00	-28.28	AVG	P	
11	2.5710	15.80	10.24	26.04	56.00	-29.96	QP	P	
12	2.5710	9.21	10.24	19.45	46.00	-26.55	AVG	P	

*:Maximum data x:Over limit !:over margin

Engineer Signature: linson

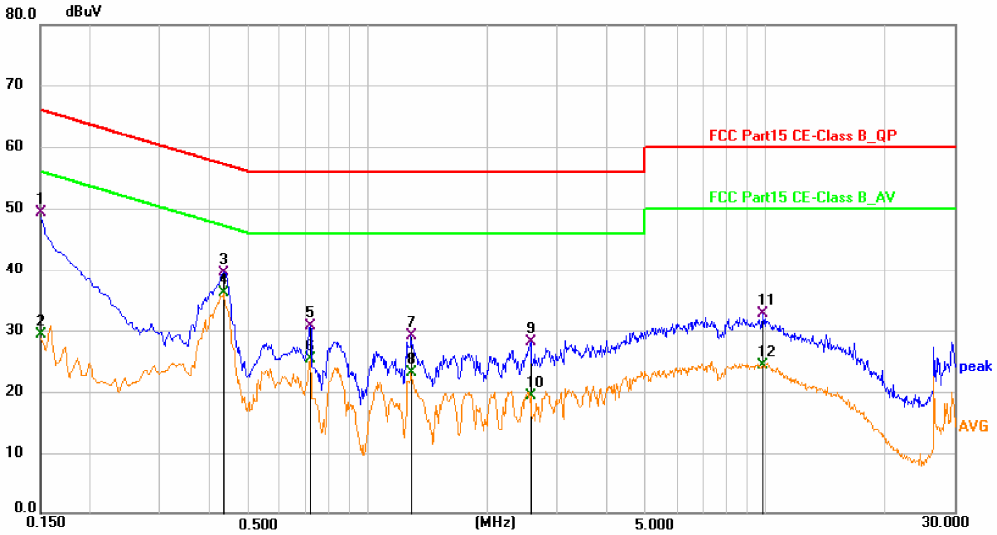
Site LAB
Limit: FCC Part15 CE-Class B_QP
EUT: WisGate
M/N: RAK7268V2
Mode: Test Mode 1:On,2.4G WIFI link_Lora kink,powered by AC/DC Adapter
Note:

Phase: N
Power: AC120/60Hz

Temperature: 24.4 ℃
Humidity: 53.6 %RH
Air Pressure: 99.6 kpa

Conducted Emission Measurement

24072912929_RAK7268V2 Data :#2 Date: 2024/8/3 Time: 17:31:51



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	39.02	10.19	49.21	66.00	-16.79	QP	P	
2	0.1500	19.02	10.19	29.21	56.00	-26.79	AVG	P	
3	0.4334	29.23	10.22	39.45	57.19	-17.74	QP	P	
4 *	0.4334	25.88	10.22	36.10	47.19	-11.09	AVG	P	
5	0.7170	20.49	10.25	30.74	56.00	-25.26	QP	P	
6	0.7170	15.08	10.25	25.33	46.00	-20.67	AVG	P	
7	1.2839	18.82	10.20	29.02	56.00	-26.98	QP	P	
8	1.2839	12.92	10.20	23.12	46.00	-22.88	AVG	P	
9	2.5754	17.84	10.28	28.12	56.00	-27.88	QP	P	
10	2.5754	9.06	10.28	19.34	46.00	-26.66	AVG	P	
11	9.8925	22.24	10.39	32.63	60.00	-27.37	QP	P	
12	9.8925	13.99	10.39	24.38	50.00	-25.62	AVG	P	

*:Maximum data x:Over limit !:over margin

Engineer Signature: linson

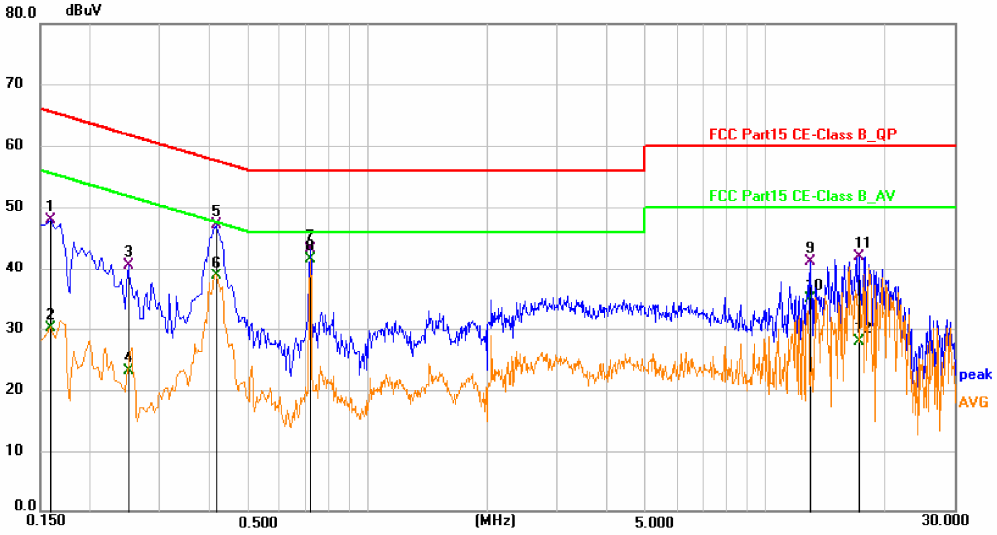
Site LAB
Limit: FCC Part15 CE-Class B_QP
EUT: WisGate
M/N: RAK7268V2
Mode: Test Mode 2:On,2.4G WIFI link_Lora kink,powered by POE Adapter
Note:

Phase: N
Power: AC120/60Hz

Temperature: 24.4 ℃
Humidity: 53.6 %RH
Air Pressure: 99.6 kpa

Conducted Emission Measurement

24072912929_RAK7268V2 Data :#3 Date: 2024/8/3 Time: 17:39:39



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1590	37.72	10.17	47.89	65.52	-17.63	QP	P	
2	0.1590	19.92	10.17	30.09	55.52	-25.43	AVG	P	
3	0.2490	30.45	10.08	40.53	61.79	-21.26	QP	P	
4	0.2490	13.00	10.08	23.08	51.79	-28.71	AVG	P	
5	0.4153	36.98	10.20	47.18	57.54	-10.36	QP	P	
6	0.4153	28.43	10.20	38.63	47.54	-8.91	AVG	P	
7	0.7170	32.92	10.25	43.17	56.00	-12.83	QP	P	
8 *	0.7170	31.24	10.25	41.49	46.00	-4.51	AVG	P	
9	13.0515	30.57	10.54	41.11	60.00	-18.89	QP	P	
10	13.0515	24.46	10.54	35.00	50.00	-15.00	AVG	P	
11	17.2050	31.25	10.69	41.94	60.00	-18.06	QP	P	
12	17.2050	17.19	10.69	27.88	50.00	-22.12	AVG	P	

*:Maximum data x:Over limit !:over margin

Engineer Signature: linson

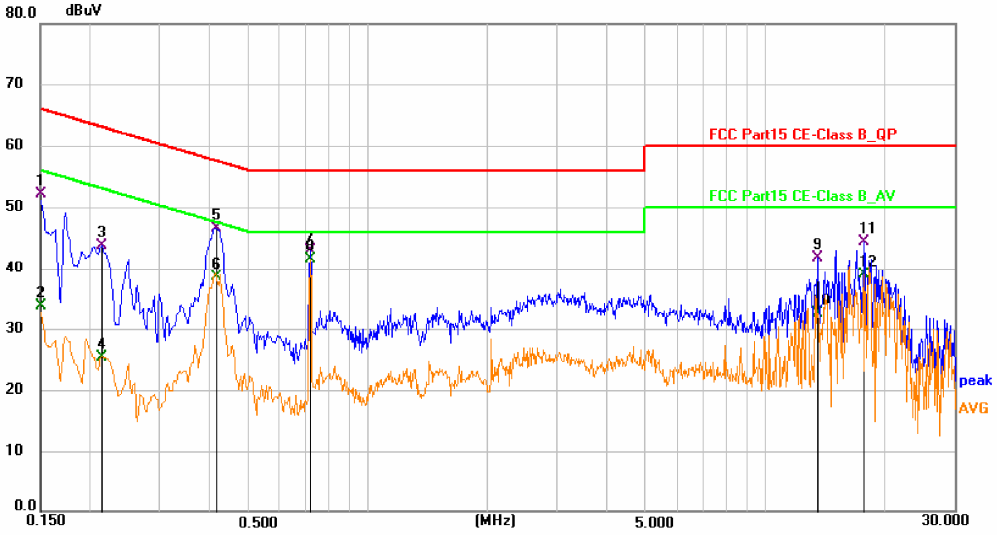
Site LAB
Limit: FCC Part15 CE-Class B_QP
EUT: WisGate
M/N: RAK7268V2
Mode: Test Mode 2:On,2.4G WIFI link_Lora kink,powered by POE Adapter
Note:

Phase: *L1*
Power: AC120/60Hz

Temperature: 24.4 ℃
Humidity: 53.6 %RH
Air Pressure: 99.6 kpa

Conducted Emission Measurement

24072912929_RAK7268V2 Data :#4 Date: 2024/8/3 Time: 17:41:46

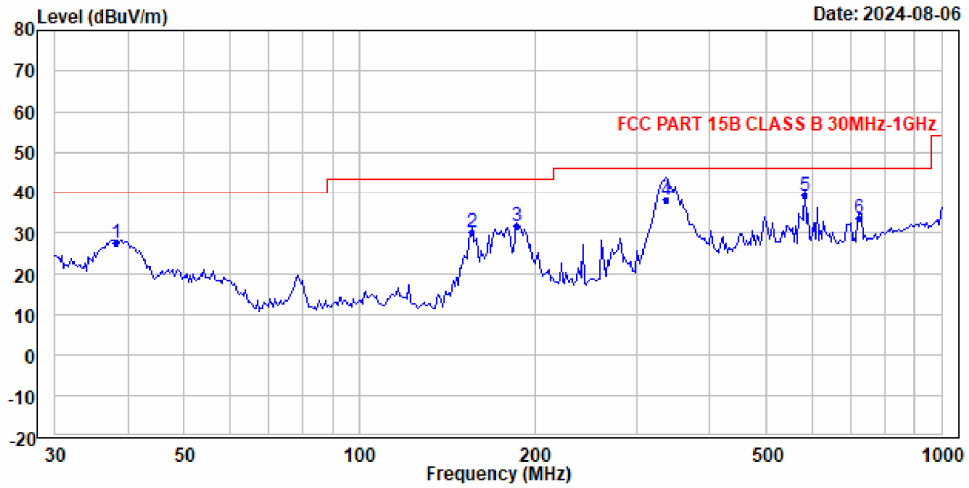


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	41.92	10.20	52.12	66.00	-13.88	QP	P	
2	0.1500	23.60	10.20	33.80	56.00	-22.20	AVG	P	
3	0.2130	33.46	10.17	43.63	63.09	-19.46	QP	P	
4	0.2130	15.16	10.17	25.33	53.09	-27.76	AVG	P	
5	0.4155	36.34	10.13	46.47	57.54	-11.07	QP	P	
6	0.4155	28.40	10.13	38.53	47.54	-9.01	AVG	P	
7	0.7170	32.74	10.21	42.95	56.00	-13.05	QP	P	
8 *	0.7170	31.28	10.21	41.49	46.00	-4.51	AVG	P	
9	13.6005	31.17	10.50	41.67	60.00	-18.33	QP	P	
10	13.6005	21.92	10.50	32.42	50.00	-17.58	AVG	P	
11	17.7585	33.72	10.67	44.39	60.00	-15.61	QP	P	
12	17.7585	28.26	10.67	38.93	50.00	-11.07	AVG	P	

*:Maximum data x:Over limit !:over margin

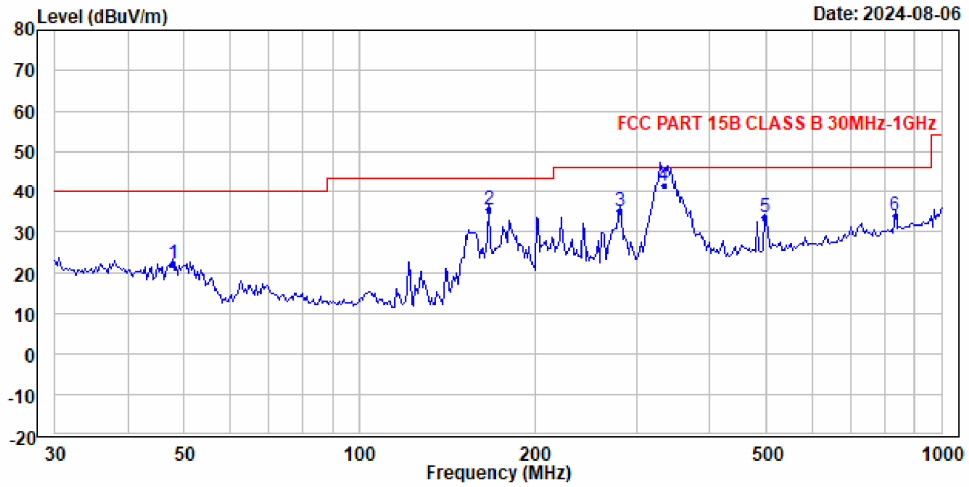
Engineer Signature: linson

2 Appendix A.2: Test Plots of Radiated Emissions, below 1GHz



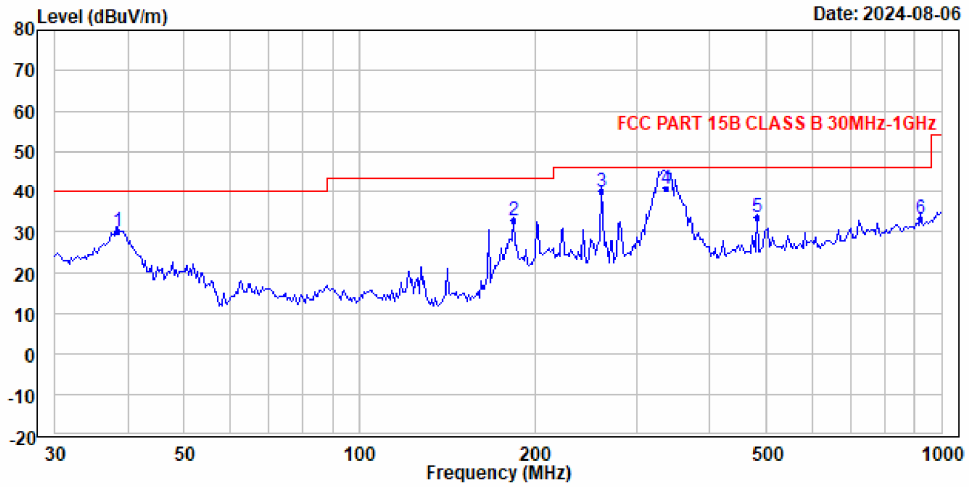
Condition : 3m Vertical
Temp.(C)/Hum.(%): 25.2(C)/55.1(%)
Press : 100.2kpa
Product : WisGate
Model No. : RAK7268V2
Power Rating : AC 120V/60Hz
Test Engineer : Bowie
Test Mode : Test Mode 1: On, 2.4G WIFI link + Lora link, powered by AC/DC
Remark :

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1	38.096	27.37	34.71	20.73	0.00	0.83	28.90	40.00	-12.63	QP
2	156.426	30.34	44.97	13.07	0.00	1.26	28.96	43.50	-13.16	QP
3	186.468	31.58	43.49	15.70	0.00	1.38	28.99	43.50	-11.92	QP
4	336.482	38.01	45.48	19.93	0.00	1.74	29.14	46.00	-7.99	QP
5 PP	582.112	39.47	40.67	26.04	0.00	2.23	29.47	46.00	-6.53	QP
6	723.793	33.76	31.77	28.88	0.00	2.42	29.31	46.00	-12.24	QP



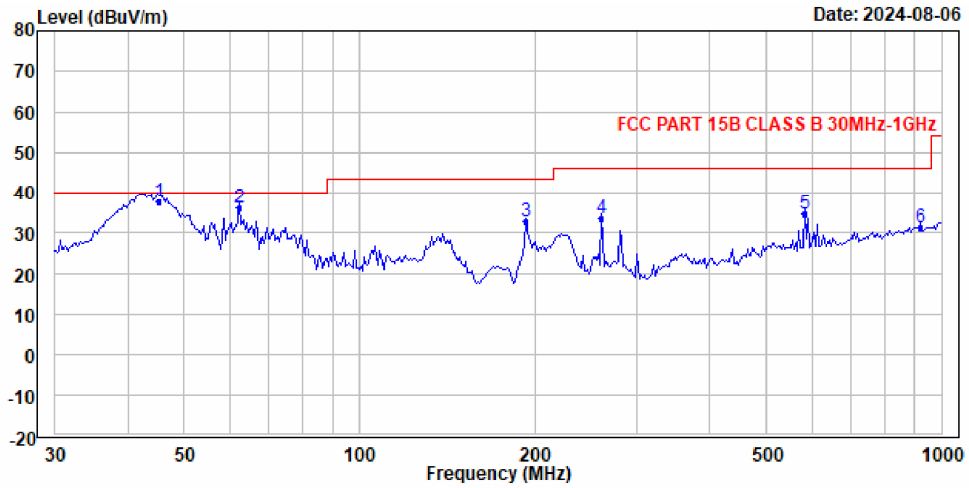
Condition : 3m Horizontal
Temp.(C)/Hum.(%): 25.2(C)/55.1(%)
Press : 100.2kpa
Product : WisGate
Model No. : RAK7268V2
Power Rating : AC 120V/60Hz
Test Engineer : Bowie
Test Mode : Test Mode 1: On, 2.4G WIFI link + Lora link, powered by AC/DC
Remark :

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1	47.703	22.27	35.37	14.99	0.00	0.81	28.90	40.00	-17.73	QP
2	166.639	35.59	48.17	15.09	0.00	1.30	28.97	43.50	-7.91	QP
3	280.294	35.20	44.86	17.81	0.00	1.61	29.08	46.00	-10.80	QP
4 PP	333.659	41.72	49.25	19.87	0.00	1.73	29.13	46.00	-4.28	QP
5	498.730	33.54	36.08	24.75	0.00	2.06	29.35	46.00	-12.46	QP
6	833.013	34.14	30.49	30.16	0.00	2.64	29.15	46.00	-11.86	QP



Condition : 3m Horizontal
Temp.(C)/Hum.(%): 25.2(C)/55.1(%)
Press : 100.2kpa
Product : WisGate
Model No. : RAK7268V2
Power Rating : AC 120V/60Hz
Test Engineer : Bowie
Test Mode : Test Mode 2: On, 2.4G WIFI link + Lora link, powered by POE ac
Remark : POE放外面

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1	38.365	30.28	37.80	20.54	0.00	0.84	28.90	40.00	-9.72	QP
2	183.866	32.69	44.41	15.89	0.00	1.37	28.98	43.50	-10.81	QP
3	261.273	40.13	50.48	17.15	0.00	1.56	29.06	46.00	-5.87	QP
4 PP	336.935	40.74	48.20	19.94	0.00	1.74	29.14	46.00	-5.26	QP
5	481.511	33.50	36.56	24.23	0.00	2.03	29.32	46.00	-12.50	QP
6	919.132	33.37	28.43	31.10	0.00	2.86	29.02	46.00	-12.63	QP

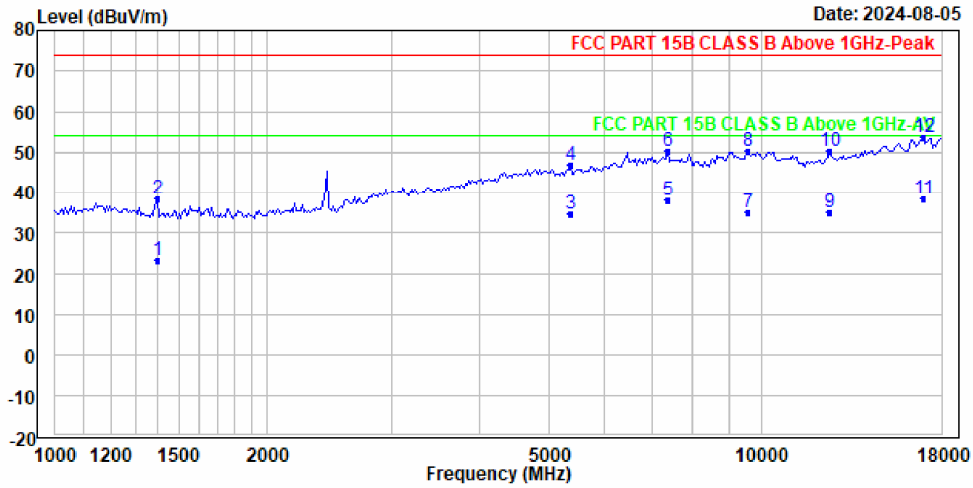


Condition : 3m Vertical
Temp.(C)/Hum.(%): 25.2(C)/55.1(%)
Press : 100.2kpa
Product : WisGate
Model No. : RAK7268V2
Power Rating : AC 120V/60Hz
Test Engineer : Bowie
Test Mode : Test Mode 2: On, 2.4G WIFI link + Lora link, powered by POE ac
Remark : POE放外面

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1 PP	45.240	37.66	50.00	15.73	0.00	0.83	28.90	40.00	-2.34	QP
2	62.304	36.30	53.52	10.83	0.00	0.85	28.90	40.00	-3.70	QP
3	193.137	32.73	44.11	16.21	0.00	1.40	28.99	43.50	-10.77	QP
4	261.273	33.75	44.10	17.15	0.00	1.56	29.06	46.00	-12.25	QP
5	582.112	34.79	35.99	26.04	0.00	2.23	29.47	46.00	-11.21	QP
6	919.132	31.49	26.55	31.10	0.00	2.86	29.02	46.00	-14.51	QP

3 Appendix A.3: Test Plots of Radiated Emissions, above 1GHz

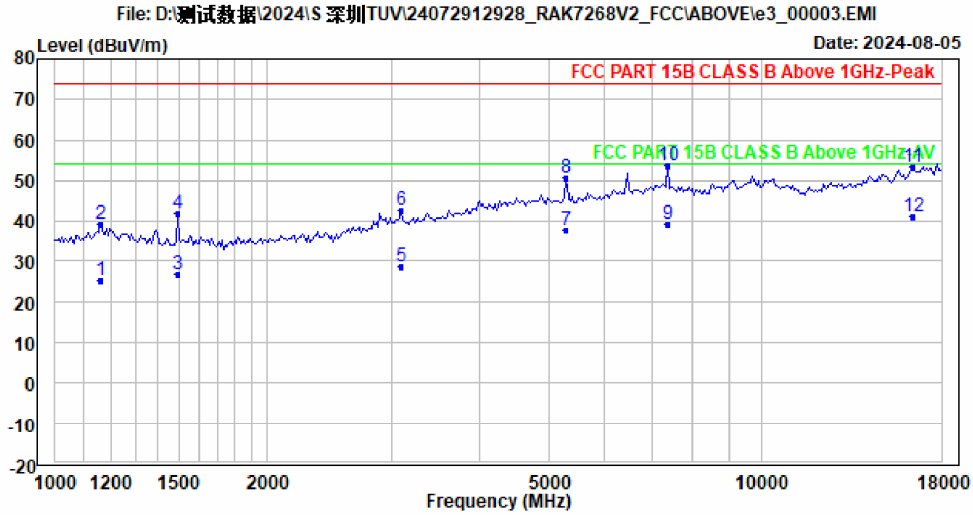
Note: Testing was carried out within frequency range 30MHz to the 5th harmonics. The measurement results above 18GHz were greater than 20dB below the limit, so only record the test result within the 30MHz to 18GHz.



Condition : 3m Horizontal
Temp.(C)/Hum.(%): 25.6(C)/55.7(%)
Press : 100.4kpa
Product : WisGate
Model No. : RAK7268V2
Power Rating : AC 120V/60Hz
Test Engineer : Bowie
Test Mode : Test Mode 1: On, 2.4G WIFI link + Lora link, powered by AC/DC
Remark :

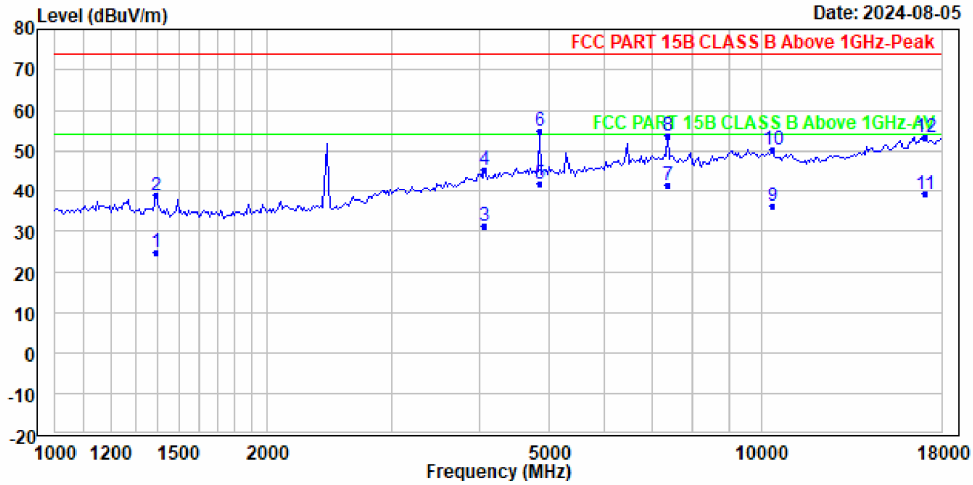
	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1	1399.276	23.42	36.47	28.48	0.00	5.25	46.78	54.00	-30.58	Average
2	1399.276	38.58	51.63	28.48	0.00	5.25	46.78	74.00	-35.42	Peak
3	5364.350	34.73	35.93	34.79	0.00	9.55	45.54	54.00	-19.27	Average
4	5364.350	46.85	48.05	34.79	0.00	9.55	45.54	74.00	-27.15	Peak
5	7376.898	38.10	36.79	36.50	0.00	10.39	45.58	54.00	-15.90	Average
6	7376.898	50.22	48.91	36.50	0.00	10.39	45.58	74.00	-23.78	Peak
7	9573.587	35.05	31.96	37.37	0.00	11.71	45.99	54.00	-18.95	Average
8	9573.587	50.21	47.12	37.37	0.00	11.71	45.99	74.00	-23.79	Peak
9	12496.580	35.21	31.36	39.60	0.00	13.16	48.91	54.00	-18.79	Average
10	12496.580	50.36	46.51	39.60	0.00	13.16	48.91	74.00	-23.64	Peak
11	PP16987.000	38.56	29.93	41.79	0.00	14.04	47.20	54.00	-15.44	Average
12	PK16987.000	53.72	45.09	41.79	0.00	14.04	47.20	74.00	-20.28	Peak

UnionTrust Shenzhen UnionTrust Quality and Technology Co., Ltd.



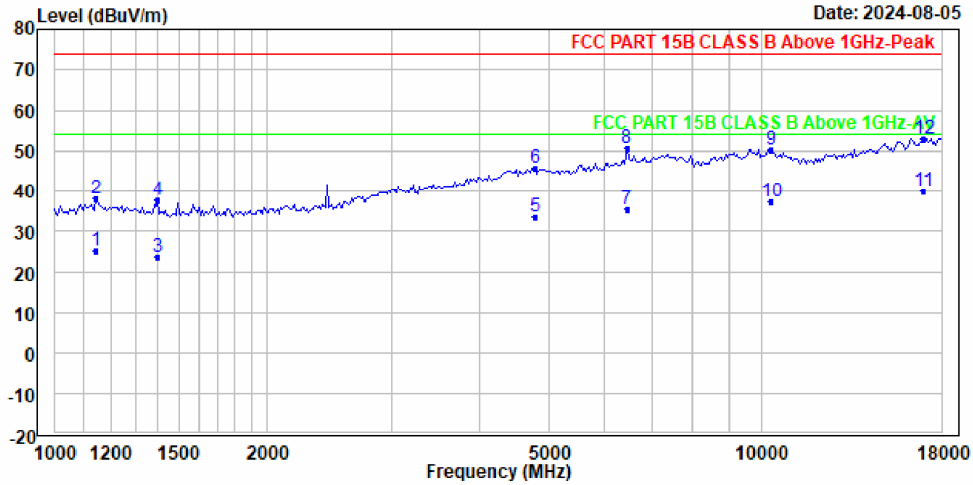
Condition : 3m Vertical
Temp.(C)/Hum.(%): 25.6(C)/55.7(%)
Press : 100.4kpa
Product : WisGate
Model No. : RAK7268V2
Power Rating : AC 120V/60Hz
Test Engineer : Bowie
Test Mode : Test Mode 1: On, 2.4G WIFI link + Lora link, powered by AC/DC
Remark :

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1	1162.532	25.36	38.34	28.91	0.00	4.61	46.50	54.00	-28.64	Average
2	1162.532	39.50	52.48	28.91	0.00	4.61	46.50	74.00	-34.50	Peak
3	1491.333	26.68	39.76	28.32	0.00	5.49	46.89	54.00	-27.32	Average
4	1491.333	41.83	54.91	28.32	0.00	5.49	46.89	74.00	-32.17	Peak
5	3094.121	28.67	34.57	33.11	0.00	8.22	47.23	54.00	-25.33	Average
6	3094.121	42.81	48.71	33.11	0.00	8.22	47.23	74.00	-31.19	Peak
7	5302.564	37.71	39.05	34.74	0.00	9.52	45.60	54.00	-16.29	Average
8	5302.564	50.84	52.18	34.74	0.00	9.52	45.60	74.00	-23.16	Peak
9	7376.898	39.45	38.14	36.50	0.00	10.39	45.58	54.00	-14.55	Average
10 PK	7376.898	53.59	52.28	36.50	0.00	10.39	45.58	74.00	-20.41	Peak
11	16406.780	53.23	45.39	41.43	0.00	13.63	47.22	74.00	-20.77	Peak
12 PP	16406.780	41.10	33.26	41.43	0.00	13.63	47.22	54.00	-12.90	Average



Condition : 3m Vertical
Temp.(C)/Hum.(%): 25.6(C)/55.7(%)
Press : 100.4kpa
Product : WisGate
Model No. : RAK7268V2
Power Rating : AC 120V/60Hz
Test Engineer : Bowie
Test Mode : Test Mode 2: On, 2.4G WIFI link + Lora link, powered by POE ac
Remark :

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1	1391.194	24.68	37.73	28.50	0.00	5.22	46.77	54.00	-29.32	Average
2	1391.194	38.82	51.87	28.50	0.00	5.22	46.77	74.00	-35.18	Peak
3	4062.276	31.31	34.12	33.87	0.00	9.03	45.71	54.00	-22.69	Average
4	4062.276	45.45	48.26	33.87	0.00	9.03	45.71	74.00	-28.55	Peak
5 PP	4861.298	41.88	43.93	34.47	0.00	9.35	45.87	54.00	-12.12	Average
6 PK	4861.298	55.01	57.06	34.47	0.00	9.35	45.87	74.00	-18.99	Peak
7	7376.898	41.65	40.34	36.50	0.00	10.39	45.58	54.00	-12.35	Average
8	7376.898	53.77	52.46	36.50	0.00	10.39	45.58	74.00	-20.23	Peak
9	10382.280	36.22	32.84	38.49	0.00	11.93	47.04	54.00	-17.78	Average
10	10382.280	50.37	46.99	38.49	0.00	11.93	47.04	74.00	-23.63	Peak
11	17085.680	39.36	30.58	41.77	0.00	14.04	47.03	54.00	-14.64	Average
12	17085.680	53.51	44.73	41.77	0.00	14.04	47.03	74.00	-20.49	Peak



Condition : 3m Horizontal
Temp.(C)/Hum.(%): 25.6(C)/55.7(%)
Press : 100.4kpa
Product : WisGate
Model No. : RAK7268V2
Power Rating : AC 120V/60Hz
Test Engineer : Bowie
Test Mode : Test Mode 2: On, 2.4G WIFI link + Lora link, powered by POE ac
Remark :

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1	1142.505	25.08	38.05	28.94	0.00	4.56	46.47	54.00	-28.92	Average
2	1142.505	38.22	51.19	28.94	0.00	4.56	46.47	74.00	-35.78	Peak
3	1399.276	23.70	36.75	28.48	0.00	5.25	46.78	54.00	-30.30	Average
4	1399.276	37.84	50.89	28.48	0.00	5.25	46.78	74.00	-36.16	Peak
5	4777.554	33.52	35.61	34.46	0.00	9.31	45.86	54.00	-20.48	Average
6	4777.554	45.65	47.74	34.46	0.00	9.31	45.86	74.00	-28.35	Peak
7	6456.773	35.67	34.51	36.32	0.00	10.02	45.18	54.00	-18.33	Average
8	6456.773	50.83	49.67	36.32	0.00	10.02	45.18	74.00	-23.17	Peak
9	10322.320	50.45	47.08	38.38	0.00	11.94	46.95	74.00	-23.55	Peak
10	10322.320	37.31	33.94	38.38	0.00	11.94	46.95	54.00	-16.69	Average
11	PP16987.000	40.05	31.42	41.79	0.00	14.04	47.20	54.00	-13.95	Average
12	PK16987.000	53.19	44.56	41.79	0.00	14.04	47.20	74.00	-20.81	Peak