TEST REPORT

Product	:	Dual AutoGate Connect
Trade mark	:	N/A
Model/Type reference	:	304854
Serial Number	:	N/A
Report Number	:	EED32O80257301
FCC ID	:	2AK3PGSD-500349
Date of Issue	:	Jul. 01, 2022
Test Standards	:	47 CFR Part 15 Subpart C
Test result	:	PASS

Prepared for:

Rentokil Initial 1927 Plc
Compass House, Manor Royal, Crawley, West Sussex,
RH10 9PY, United Kingdom

Prepared by:

Centre Testing International Group Co., Ltd.
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Approved by:	Aaron Ma	Date:	Jul. 01, 2022
	Aaron Ma		Check No.:6930280222

CENTRE TESTING INTERNATIONAL GROUP CO.,LTD. CTI Report Seal

2 Version

Version No.	Date	Description
00	Jul. 01, 2022	Original

3 Test Summary

Test Item	Test Requirement	Test method	Result
Conducted Peak Output Power	47 CFR Part 15Subpart C Section 15.247 (b)(3)	ANSI C63.10-2013	Note 1
6dB Occupied Bandwidth	47 CFR Part 15Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013	Note 1
Power Spectral Density	47 CFR Part 15Subpart C Section 15.247 (e)	ANSI C63.10-2013	Note 1
Band-edge for RF Conducted Emissions	47 CFR Part 15Subpart C Section 15.247(d)	ANSI C63.10-2013	Note 1
RF Conducted Spurious Emissions	47 CFR Part 15Subpart C Section 15.247(d)	ANSI C63.10-2013	Note 1
Radiated Spurious Emissions	47 CFR Part 15Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15Subpart C Section 15.205/15.209	ANSI C63.10-2013	Note 1

Remark:

Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

This report is only for C2PC application.

Note 1: Refer to FCC ID: 2AK3PGSD-500349 report.
This test report (Ref. No.:EED32O80257301) is only valid with the original test report which the report of FCC ID: 2AK3PGSD-500349.
Review this report and original report,the module without changes in circuit and product function, therefore in this report the Radiated Spurious Emission were retested and shown the data in this report, other tests data please refer to original report which the report of FCC ID: 2AK3PGSD-500349.

4 Content

5 Test Requirement

5.1 Test setup

5.1.1 For Radiated Emissions test setup

Radiated Emissions setup:

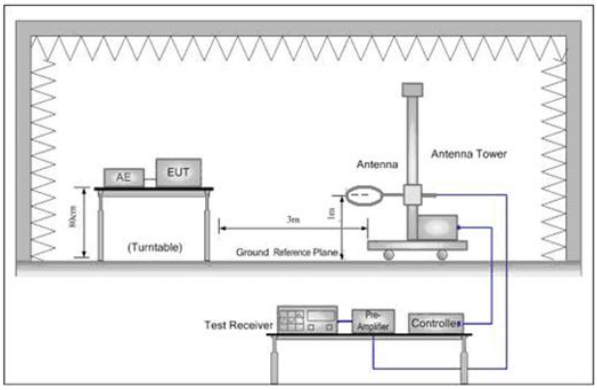


Figure 1. Below 30MHz

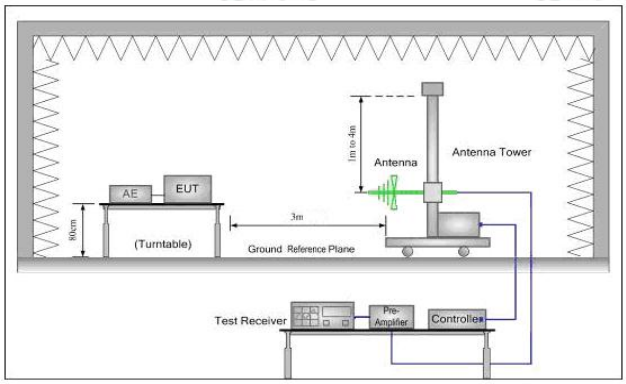


Figure 2. 30MHz to 1GHz

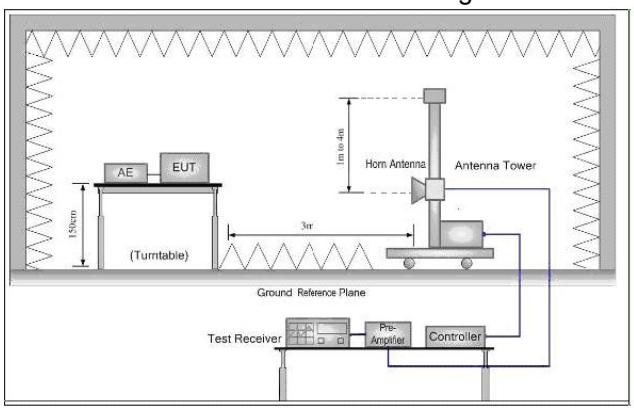


Figure 3. Above 1GHz

5.2 Test Environment

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010mbar

6 General Information

6.1 Client Information

Applicant:	Rentokil Initial 1927 Plc
Address of Applicant:	Compass House, Manor Royal, Crawley, West Sussex, RH10 9PY, United Kingdom
Manufacturer:	Rentokil Initial 1927 Plc
Address of Manufacturer:	Compass House, Manor Royal, Crawley, West Sussex, RH10 9PY, United Kingdom

6.2 General Description of EUT

Product Name:	Dual AutoGate Connect
Model No. (EUT):	304854
Add Model No.:	N/A
Trade Mark:	N/A
Frequency Band:	915.25~927.5MHz
Modulation Type:	FSK
Sample Type:	Fixed Product
Test Power Grade:	Default
Test Software of EUT:	SecureCRTP ortable.exe
Antenna Type:	Internal antenna
Antenna gain:	-3.9dBi
Power Supply:	Battery：DC 6.0V
Test Voltage:	DC 6.0V
Sample Received Date:	May 08, 2022
Sample tested Date:	May 08, 2022 to May 20, 2022

6.3 Description of Support Units

The EUT has been tested with associated equipment below.

Associated equipment name		Manufacture	model	S/N serial number	Supplied by	Certification
AE	Notebook	DELL	DELL 3490	D245DX2	CTI	CE&FCC

6.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd
Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China
Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385
No tests were sub-contracted.
FCC Designation No.: CN1164

6.5 Abnormalities from Standard Conditions

None.

6.6 Other Information Requested by the Customer

None.

6.7 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.3dB (30MHz-1GHz)
		4.5dB (1GHz-12.75GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

7 Equipment List

3M Semi/full-anechoic Chamber					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
3M Chamber & Accessory Equipment	TDK	SAC-3	---	05/24/2019	05/23/2022
Receiver	R&S	ESCI7	100938-003	10/14/2021	10/13/2022
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	9163-618	05/23/2019	05/22/2022
Multi device Controller	maturo	NCD/070/10711112	---	---	---
Horn Antenna	ETS-LINGREN	BBHA 9120D	9120D-1869	04/15/2021	04/14/2024
Spectrum Analyzer	R&S	FSP40	100416	04/01/2022	03/31/2023
Microwave Preamplifier	Agilent	8449B	3008A02425	06/23/2021	06/22/2022

3M full-anechoic Chamber					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
RSE Automatic test software	JS Tonscend	JS36-RSE	10166	---	---
Receiver	Keysight	N9038A	MY57290136	03-01-2022	03-28-2023
Spectrum Analyzer	Keysight	N9020B	MY57111112	02-23-2022	02-22-2023
Spectrum Analyzer	Keysight	N9030B	MY57140871	02-23-2022	02-22-2023
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-1148	04-30-2021	04-29-2024
Horn Antenna	Schwarzbeck	BBHA 9170	9170-832	04-17-2021	04-16-2024
Communication Antenna	Schwarzbeck	CLSA 0110L	1014	---	---
Horn Antenna	ETS-LINDGREN	3117	57407	07-04-2021	07-03-2024
Preamplifier	EMCI	EMC184055SE	980596	04-20-2022	04-19-2023
Communication test set	R&S	CMW500	102898	12-24-2021	12-23-2022
Preamplifier	EMCI	EMC001330	980563	04-01-2022	03-31-2023
Preamplifier	JS Tonscend	980380	EMC051845 SE	12-24-2021	12-23-2022
Temperature/ Humidity Indicator	biaozhi	GM1360	EE1186631	04-11-2022	04-10-2023
Fully Anechoic Chamber	TDK	FAC-3	---	01-16-2021	01-15-2024
Signal Generator	KEYSIGHT	E8257D	MY53401106	12-24-2021	12-23-2022
Cable line	Times	SFT205-NMSM-2.50M	394812-0001	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0002	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0003	---	---
Cable line	Times	SFT205-NMSM-2.50M	393495-0001	---	---
Cable line	Times	EMC104-NMNM-1000	SN160710	---	---
Cable line	Times	SFT205-NMSM-3.00M	394813-0001	---	---
Cable line	Times	SFT205-NMNM-1.50M	381964-0001	---	---
Cable line	Times	SFT205-NMSM-7.00M	394815-0001	---	---
Cable line	Times	HF160-KMKM-3.00M	393493-0001	---	---

8 Radiated Spurious Emissions

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Test Procedure:

Below 1GHz test procedure as below:

Test method Refer as KDB 558074 D01, Section 12.1

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. 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, whichwas 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 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.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
j. Repeat above procedures until all frequencies measured was complete.

Limit:

Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

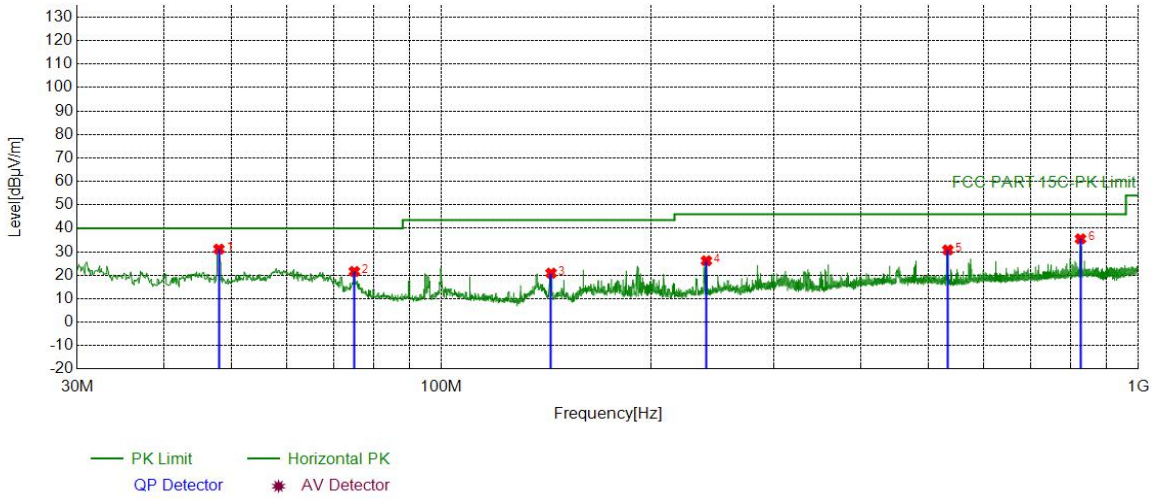
Radiated Spurious Emissions test Data:

Radiated Emission below 1GHz

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all channel, only the worst case channel 915.25MHz was recorded in the report.

Mode:	FSK Transmitting	Channel:	915.25MHz
Remark:			

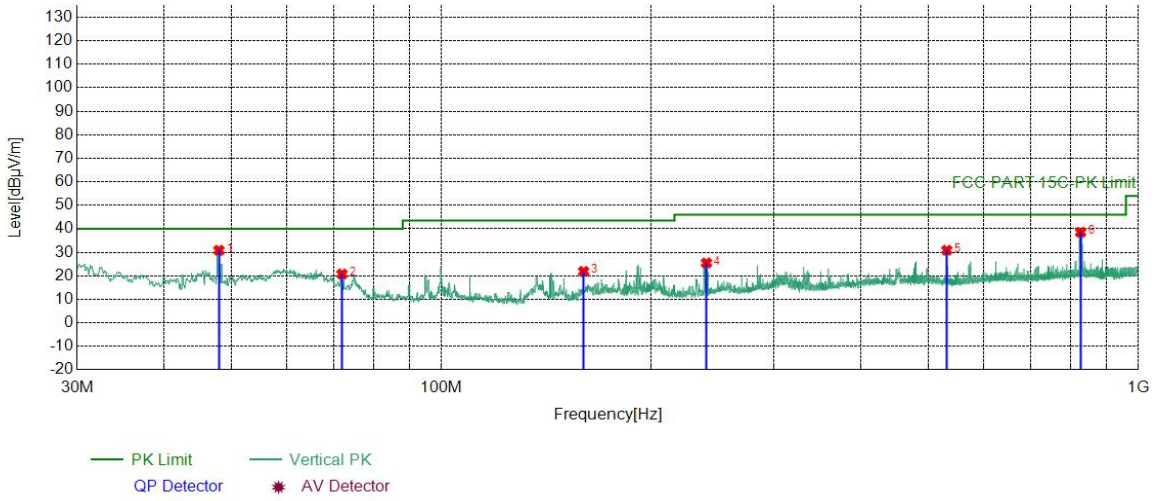
Test Graph



Suspected List									
NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	47.9468	-17.17	48.32	31.15	40.00	8.85	PASS	Horizontal	PK
2	75.0125	-21.68	43.30	21.62	40.00	18.38	PASS	Horizontal	PK
3	143.6954	-21.89	42.78	20.89	43.50	22.61	PASS	Horizontal	PK
4	240.0260	-16.77	42.94	26.17	46.00	19.83	PASS	Horizontal	PK
5	533.0923	-10.18	40.98	30.80	46.00	15.20	PASS	Horizontal	PK
6	826.2556	-6.13	41.64	35.51	46.00	10.49	PASS	Horizontal	PK

Mode:	FSK Transmitting	Channel:	915.25MHz
Remark:			

Test Graph



Suspected List									
NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	47.9468	-17.17	48.03	30.86	40.00	9.14	PASS	Vertical	PK
2	72.0052	-21.15	41.92	20.77	40.00	19.23	PASS	Vertical	PK
3	159.9930	-21.15	43.01	21.86	43.50	21.64	PASS	Vertical	PK
4	240.0260	-16.77	42.23	25.46	46.00	20.54	PASS	Vertical	PK
5	531.2491	-10.22	41.11	30.89	46.00	15.11	PASS	Vertical	PK
6	826.5467	-6.13	44.68	38.55	46.00	7.45	PASS	Vertical	PK

Transmitter Emission above 1GHz

Mode:	FSK Transmitting	Channel:	915.25MHz
Remark:			

Suspected List

NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1830.4554	-24.54	73.37	48.83	74.00	25.17	PASS	Horizontal	PK
2	1831.0554	-24.53	71.67	47.14	54.00	6.86	PASS	Horizontal	AV
3	3191.9461	-20.67	59.06	38.39	74.00	35.61	PASS	Horizontal	PK
4	4257.0171	-17.55	58.71	41.16	74.00	32.84	PASS	Horizontal	PK
5	5838.7226	-13.43	54.14	40.71	74.00	33.29	PASS	Horizontal	PK
6	7799.6533	-11.54	54.11	42.57	74.00	31.43	PASS	Horizontal	PK
7	9151.5434	-8.13	54.84	46.71	74.00	27.29	PASS	Horizontal	PK

Suspected List

NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1830.4554	-24.54	70.14	45.60	74.00	28.40	PASS	Vertical	PK
2	2746.1164	-22.08	63.29	41.21	74.00	32.79	PASS	Vertical	PK
3	4659.0439	-16.76	59.58	42.82	74.00	31.18	PASS	Vertical	PK
4	6393.7596	-12.90	56.55	43.65	74.00	30.35	PASS	Vertical	PK
5	7460.0307	-11.39	55.78	44.39	74.00	29.61	PASS	Vertical	PK
6	9152.7435	-8.12	60.46	52.34	74.00	21.66	PASS	Vertical	PK
7	9152.7435	-8.12	57.54	49.42	54.00	4.58	PASS	Vertical	AV

Mode:	FSK Transmitting	Channel:	921.00MHz
Remark:			

Suspected List

NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1842.4562	-24.48	73.08	48.60	74.00	25.40	PASS	Horizontal	PK
2	1843.0562	-24.47	71.62	47.15	54.00	6.85	PASS	Horizontal	AV
3	2764.1176	-22.01	63.01	41.00	74.00	33.00	PASS	Horizontal	PK
4	4606.2404	-16.75	57.45	40.70	74.00	33.30	PASS	Horizontal	PK
5	5527.3018	-14.29	55.04	40.75	74.00	33.25	PASS	Horizontal	PK
6	6448.9633	-12.87	54.13	41.26	74.00	32.74	PASS	Horizontal	PK
7	9212.7475	-7.69	55.68	47.99	74.00	26.01	PASS	Horizontal	PK

Suspected List

NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1842.4562	-24.48	72.39	47.91	74.00	26.09	PASS	Vertical	PK
2	1843.0562	-24.47	70.09	45.62	54.00	8.38	PASS	Vertical	AV
3	2764.1176	-22.01	65.31	43.30	74.00	30.70	PASS	Vertical	PK
4	3998.3999	-18.86	61.64	42.78	74.00	31.22	PASS	Vertical	PK
5	5527.3018	-14.29	57.64	43.35	74.00	30.65	PASS	Vertical	PK
6	6448.9633	-12.87	56.97	44.10	74.00	29.90	PASS	Vertical	PK
7	9212.7475	-7.69	57.74	50.05	54.00	3.95	PASS	Vertical	AV
8	9212.7475	-7.69	60.17	52.48	74.00	21.52	PASS	Vertical	PK

Mode:	FSK Transmitting	Channel:	927.5MHz
Remark:			

Suspected List									
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1855.0570	-24.41	72.55	48.14	74.00	25.86	PASS	Horizontal	PK
2	1855.6570	-24.41	71.11	46.70	54.00	7.30	PASS	Horizontal	AV
3	2782.1188	-21.93	64.07	42.14	74.00	31.86	PASS	Horizontal	PK
4	4637.4425	-16.76	56.71	39.95	74.00	34.05	PASS	Horizontal	PK
5	5565.1043	-14.17	56.66	42.49	74.00	31.51	PASS	Horizontal	PK
6	6492.7662	-12.84	53.83	40.99	74.00	33.01	PASS	Horizontal	PK
7	9274.5516	-7.94	54.69	46.75	74.00	27.25	PASS	Horizontal	PK

Suspected List									
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1855.0570	-24.41	71.95	47.54	74.00	26.46	PASS	Vertical	PK
2	1855.6570	-24.41	69.67	45.26	54.00	8.74	PASS	Vertical	AV
3	2782.7188	-21.93	65.51	43.58	74.00	30.42	PASS	Vertical	PK
4	3709.7807	-20.09	58.93	38.84	74.00	35.16	PASS	Vertical	PK
5	4648.8433	-16.76	61.46	44.70	74.00	29.30	PASS	Vertical	PK
6	5565.1043	-14.17	59.34	45.17	74.00	28.83	PASS	Vertical	PK
7	9274.5516	-7.94	60.09	52.15	74.00	21.85	PASS	Vertical	PK
8	9275.1517	-7.94	57.98	50.04	54.00	3.96	PASS	Vertical	AV