



TEST REPORT

Report Reference No..... : TRE1808002301 R/C.....:99994

FCC ID..... : 2AQXMSWP-A59A-QC

Applicant's name..... : Shenzhen Ruijing Industrial Co., Ltd.

Address..... : C1 Building,Hengli Industrial Park,
LonggangStreet,LonggangDistrict.Guangdong,Shenzhen,China

Manufacturer..... : Shenzhen Ruijing Industrial Co., Ltd.

Address..... : C1 Building,Hengli Industrial Park,
LonggangStreet,LonggangDistrict.Guangdong,Shenzhen,China

Test item description : WIRELESS CHARGER

Trade Mark : ZTE

Model/Type reference..... : SWP-A59A-QC

Listed Model(s) : -

Standard : FCC CFR Title 47 Part 15 Subpart C

Date of receipt of test sample..... : August 7, 2018

Date of testing..... : August 8, 2018 – August 26, 2018

Date of issue..... : August 27, 2018

Result..... : PASS

Compiled by
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Yueming.Li

Supervised by
(position+printedname+signature)..... : Project Engineer Jerry Zhao

Jerry Zhao

Approved by
(position+printedname+signature)..... : RF Manager Hans Hu

Hans Hu

Testing Laboratory Name : Shenzhen Huatongwei International Inspection Co., Ltd.

Address..... : 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road,
Tianliao, Gongming, Shenzhen, China

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The test report merely correspond to the test sample.

Contents

<u>1.</u>	<u>TEST STANDARDS AND REPORT VERSION</u>	<u>3</u>
1.1.	Test Standards	3
1.2.	Report version information	3
<u>2.</u>	<u>TEST DESCRIPTION</u>	<u>4</u>
<u>3.</u>	<u>SUMMARY</u>	<u>5</u>
3.1.	Client Information	5
3.2.	Product Description	5
3.3.	EUT operation mode	5
3.4.	EUT configuration	6
3.5.	Modifications	6
<u>4.</u>	<u>TEST ENVIRONMENT</u>	<u>7</u>
4.1.	Address of the test laboratory	7
4.2.	Test Facility	7
4.3.	Environmental conditions	8
4.4.	Statement of the measurement uncertainty	8
4.5.	Equipments Used during the Test	9
<u>5.</u>	<u>TEST CONDITIONS AND RESULTS</u>	<u>10</u>
5.1.	AC Power Conducted Emissions	10
5.2.	20 dB Occupied Bandwidth	15
5.3.	Radiated Spurious Emissions	17
<u>6.</u>	<u>TEST SETUP PHOTOS OF THE EUT</u>	<u>22</u>
<u>7.</u>	<u>EXTERNAL AND INTERNAL PHOTOS OF THE EUT</u>	<u>23</u>

1. TEST STANDARDS AND REPORT VERSION

1.1. Test Standards

The tests were performed according to following standards:

[FCC CFR Title 47 Part 15 Subpart C](#):Intentional Radiators.

[ANSI C63.10-2013](#):AmericanNationalStandardforTestingUnlicensedWirelessDevices.

1.2. Report version information

Revision No.	Date of issue	Description
N/A	2018-08-27	Original

2. TESTDESCRIPTION

Test Item	Section in CFR 47	Result	Test Engineer
AC Power Line Conducted Emissions	15.207	PASS	Tony Duan
20dB Occupied Bandwidth	2.1049	PASS	Baozhu Hu
Spurious Emissions	15.209	PASS	Jiuru Pan

Remark: The measurement uncertainty is not included in the test result.

3. SUMMARY

3.1. Client Information

Applicant:	Shenzhen Ruijing Industrial Co., Ltd.
Address:	C1 Building,Hengli Industrial Park, Longgang Street,Longgang District. Guangdong,Shenzhen,China
Manufacturer:	Shenzhen Ruijing Industrial Co., Ltd.
Address:	C1 Building,Hengli Industrial Park, Longgang Street,Longgang District. Guangdong,Shenzhen,China

3.2. Product Description

Name of EUT:	WIRELESS CHARGER
Trade Mark:	ZTE
Model No.:	SWP-A59A-QC
Listed Model(s):	-
Power supply:	DC 5V/9V, 2A
Rating output:	DC 5V, 1A/9V, 1.1A
Adapter information:	-
RF Specification	
Operation frequency:	115-205KHz
Modulation Type:	ASK

3.3. EUT operation mode

● Test frequency list

Frequency (MHz)
0.149

● TEST MODE

For RF test items
The EUT was programmed to be in continuously transmitting mode with rating output(5V and 9V) for charging
For AC power line conducted emissions:
The EUT was programmed to be in continuously transmitting mode with rating output(5V and 9V) for charging
For Radiated suprious emissions test item:
The EUT was programmed to be in continuously transmitting mode with rating output(5V and 9V) for charging

3.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- - supplied by the manufacturer
- - supplied by the lab

○	Adapter	Manufacturer :	ZTE
		Model No. :	STC-A5915A-Z
○	Mobile phone	Manufacturer :	HUAWEI
		Model No. :	Honor V10
●	USB Cable	Length(m) :	0.8m
		Shield :	Unshield
		Type:	USB 2.0

3.5. Modifications

No modifications were implemented to meet testing criteria.

4. TEST ENVIRONMENT

4.1. Address of the test laboratory

Laboratory: Shenzhen Huatongwei International Inspection Co., Ltd.

Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

Phone: 86-755-26748019 Fax: 86-755-26748089

4.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No. 3902.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 762235

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 762235.

IC-Registration No.: 5377B-1

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377B-1.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

4.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35°C
Relative Humidity:	30~60 %
Air Pressure:	950~1050mba

4.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors in calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report according to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system according to ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei is reported:

Test Items	Measurement Uncertainty	Notes
Conducted spurious emissions 9KHz-30MHz	3.39 dB	(1)
Radiated Emissions 30~1000MHz	4.24 dB	(1)
Occupied Bandwidth	-----	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

4.5. Equipments Used during the Test

Conducted Emissions						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
1	EMITest Receiver	R&S	ESCI	101247	11/11/2017	11/10/2018
2	Artificial Mains	SCHWARZBECK	NNLK 8121	573	11/11/2017	11/10/2018
3	2-Line V-Network	R&S	ESH3-Z5	100049	11/11/2017	11/10/2018
4	Pulse Limiter	R&S	ESH3-Z2	101488	11/11/2017	11/10/2018
5	RF Connection Cable	HUBER+SUHNER	EF400	N/A	11/21/2017	11/20/2018
6	Test Software	R&S	ES-K1	N/A	N/A	N/A

Radiated Emissions						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
1	Semi-Anechoic Chamber	Albatross projects	SAC-3m-01	C11121	10/16/2016	10/15/2019
2	EMI Test Receiver	R&S	ESCI	100900	11/11/2017	11/10/2018
3	Loop Antenna	R&S	HFH2-Z2	100020	11/20/2017	11/19/2020
4	Ultra-Broadband Antenna	SCHWARZBECK	VULB9163	538	4/5/2017	4/4/2020
5	Pre-amplifier	SCHWARZBECK	BBV 9743	9743-0022	10/18/2017	10/17/2018
6	Spectrum Analyzer	R&S	FSP40	100597	11/11/2017	11/10/2018
7	RF Connection Cable	HUBER+SUHNER	RE-7-FL	N/A	11/21/2017	11/20/2018
8	RF Connection Cable	HUBER+SUHNER	RE-7-FH	N/A	11/21/2017	11/20/2018
9	Test Software	Audix	E3	N/A	N/A	N/A
10	Test Software	R&S	ES-K1	N/A	N/A	N/A
11	Turntable	Maturo Germany	TT2.0-1T	N/A	N/A	N/A
12	Antenna Mast	Maturo Germany	CAM-4.0-P-12	N/A	N/A	N/A

RF Conducted Test						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
1	Spectrum Analyzer	R&S	FSV40	100048	11/11/2017	11/10/2018

5. TEST CONDITIONS AND RESULTS

5.1. AC Power Conducted Emissions

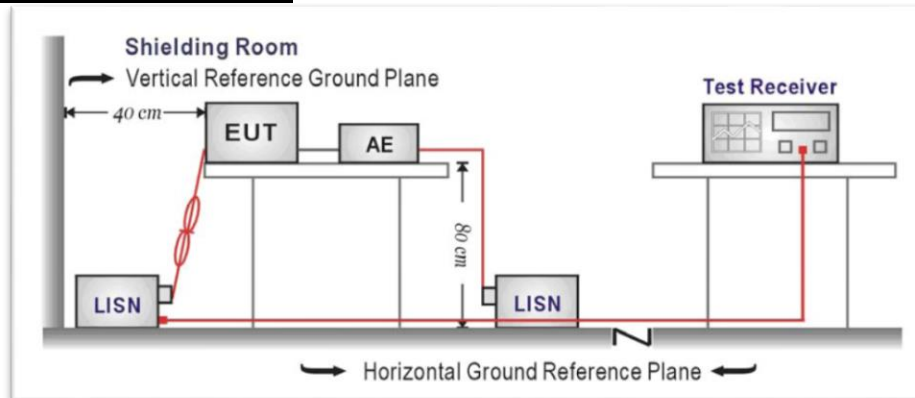
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207:

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was setup according to ANSI C63.10:2013
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 10 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 10 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50ohm /50uH coupling impedance for the measuring equipment.
4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST MODE:

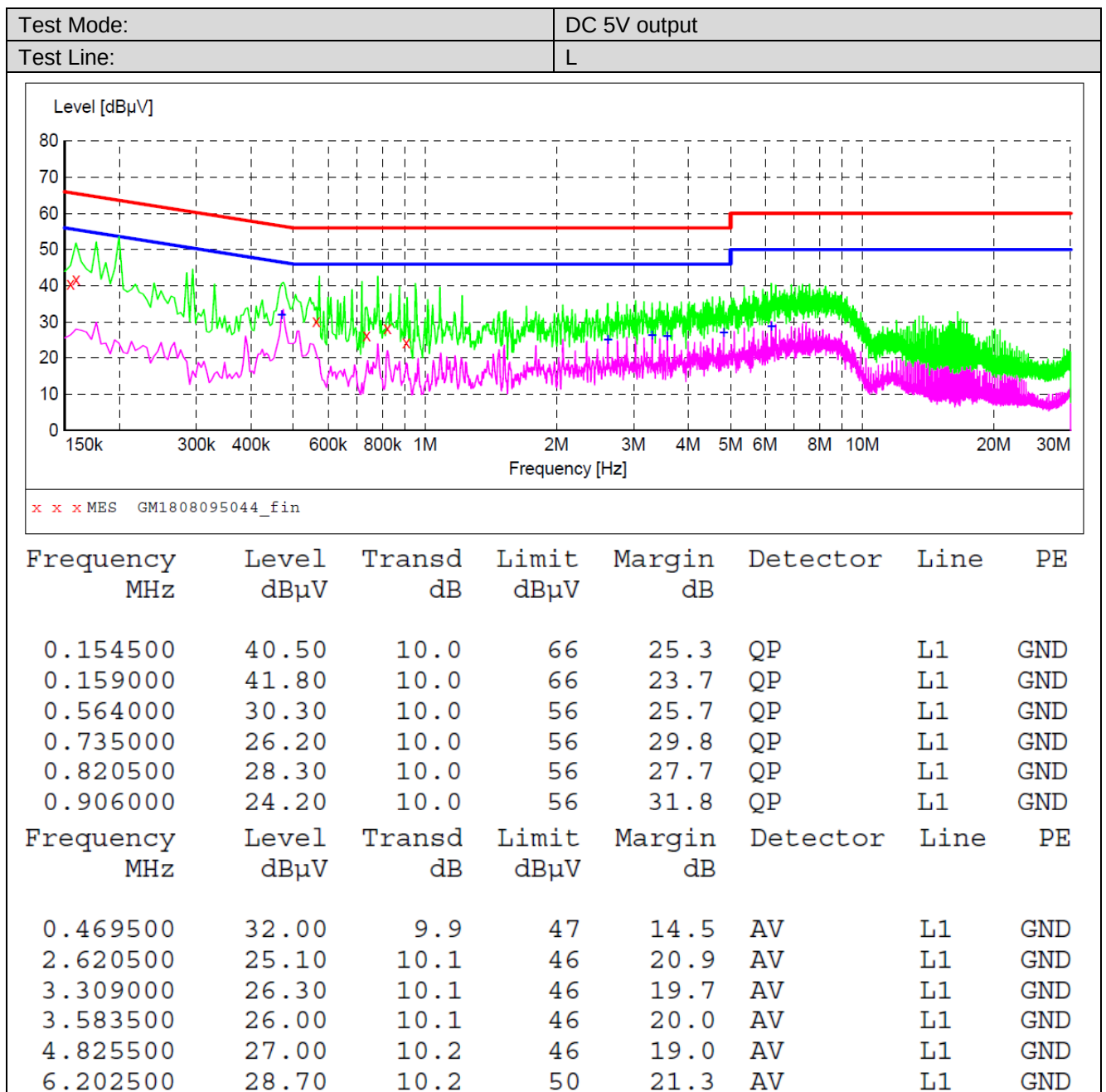
Please refer to the clause 3.3

TEST RESULTS

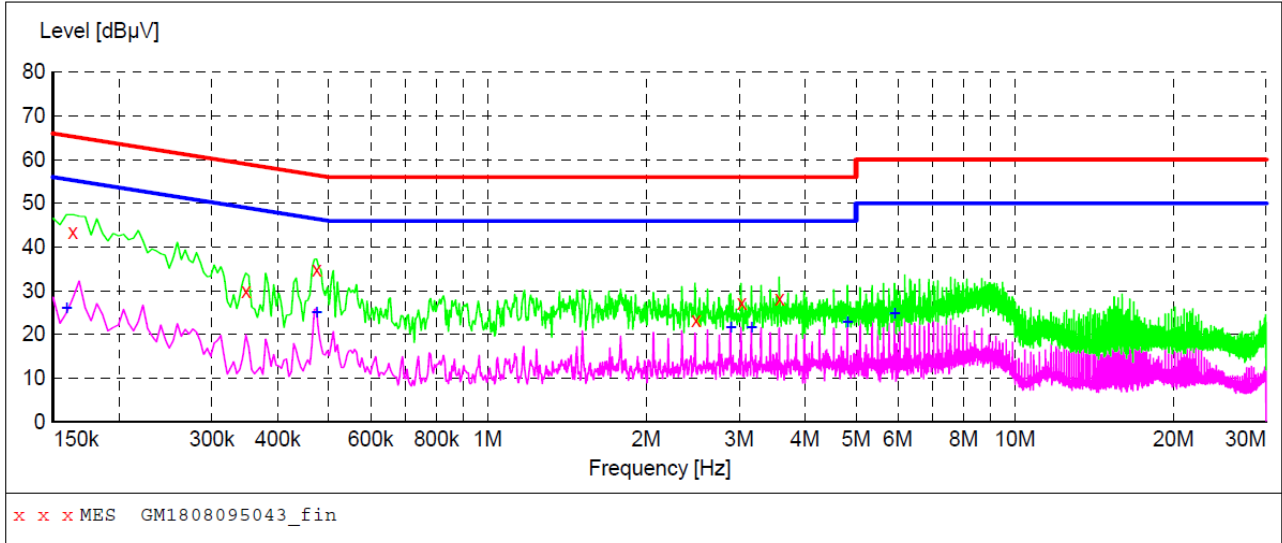
☒ Passed ☐ Not Applicable

Note:

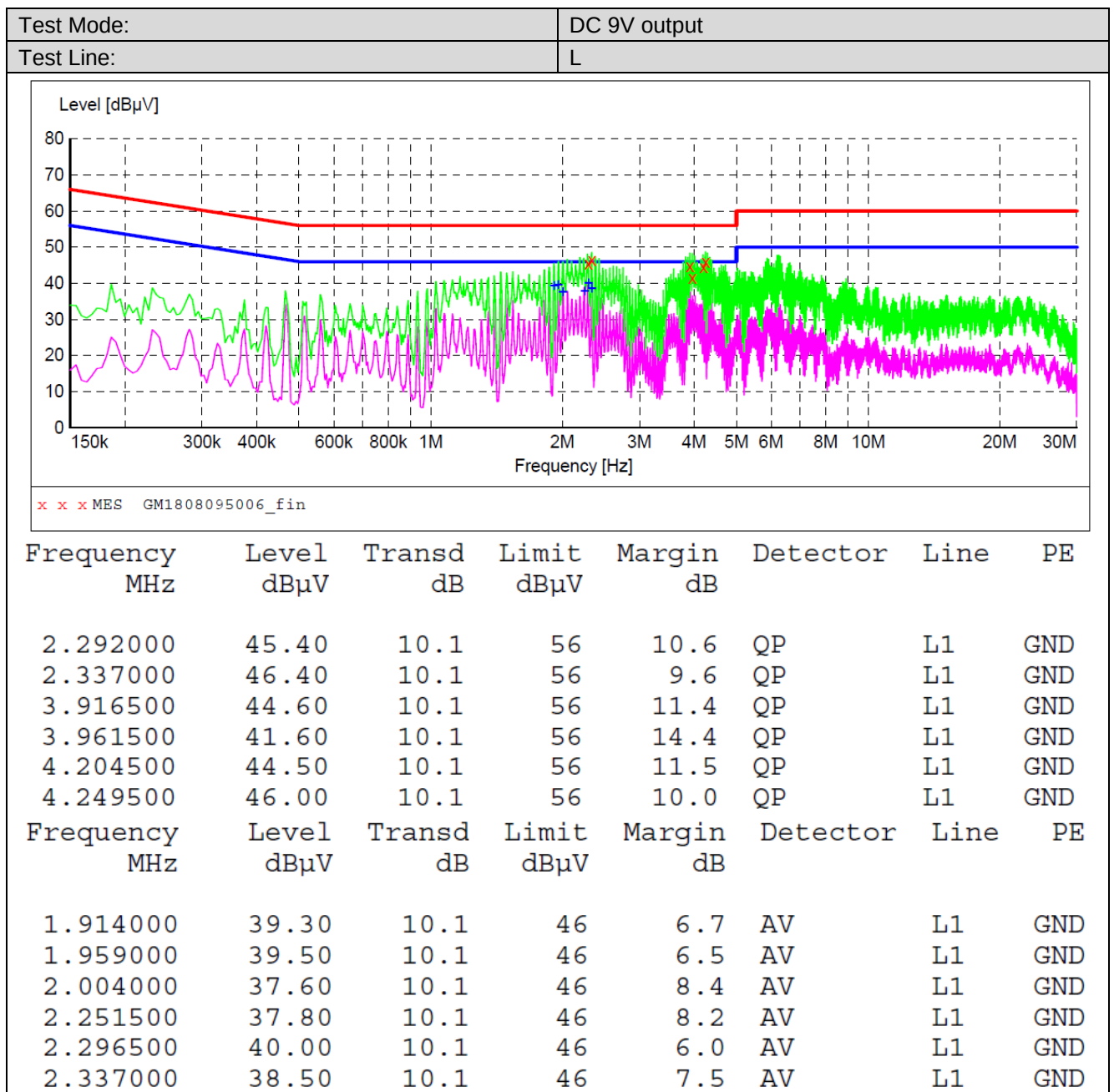
- 1) Transd= Cable lose + Pulse Limiter Factor + Artificial Mains Factor
- 2) Margin= Limit - Level

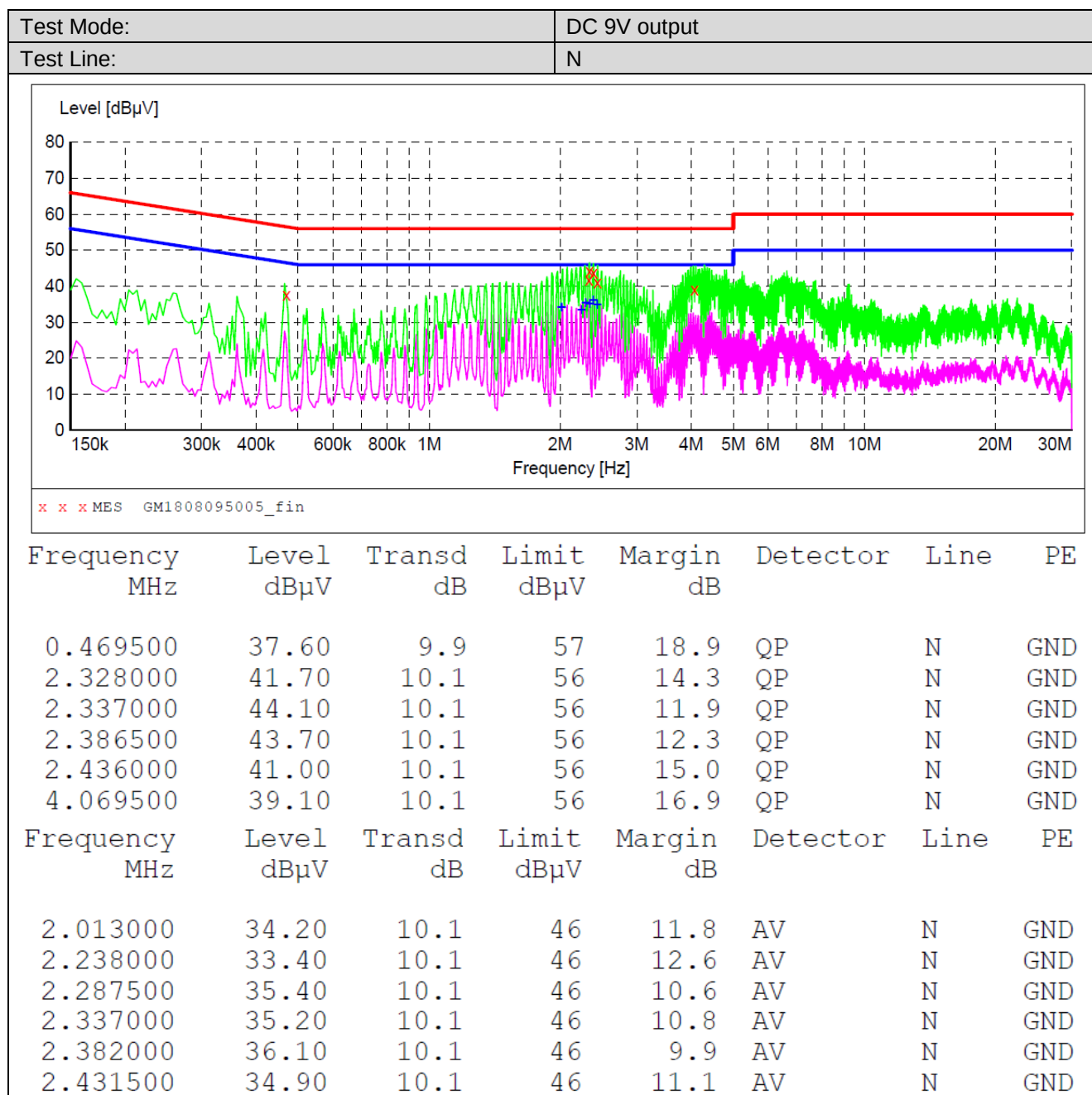


Test Mode:	DC 5V output
Test Line:	N



Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.163500	43.50	10.0	65	21.8	QP	N	GND
0.348000	30.00	9.9	59	29.0	QP	N	GND
0.474000	34.80	9.9	56	21.6	QP	N	GND
2.485500	23.20	10.1	56	32.8	QP	N	GND
3.034500	27.20	10.1	56	28.8	QP	N	GND
3.583500	28.10	10.1	56	27.9	QP	N	GND
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.159000	26.10	10.0	56	29.4	AV	N	GND
0.474000	25.00	9.9	46	21.4	AV	N	GND
2.895000	21.50	10.1	46	24.5	AV	N	GND
3.169500	21.70	10.1	46	24.3	AV	N	GND
4.825500	22.90	10.2	46	23.1	AV	N	GND
5.928000	24.70	10.2	50	25.3	AV	N	GND



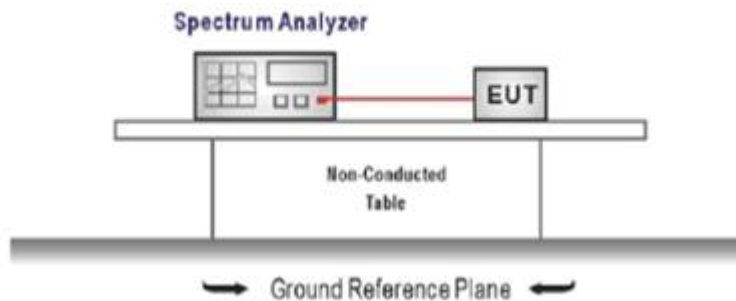


5.2. 20 dB Occupied Bandwidth

Limit

FCC Part 2.1049, Only applicable to report.

TEST CONFIGURATION



TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer through an attenuator, the pathloss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. Use the following spectrum analyzer settings:
Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel
RBW $\geq$ 1% of the 20 dB bandwidth, VBW $\geq$ RBW
Sweep = auto, Detector function = peak, Trace = max hold
4. Measure and record the results in the test report (5V rating output).

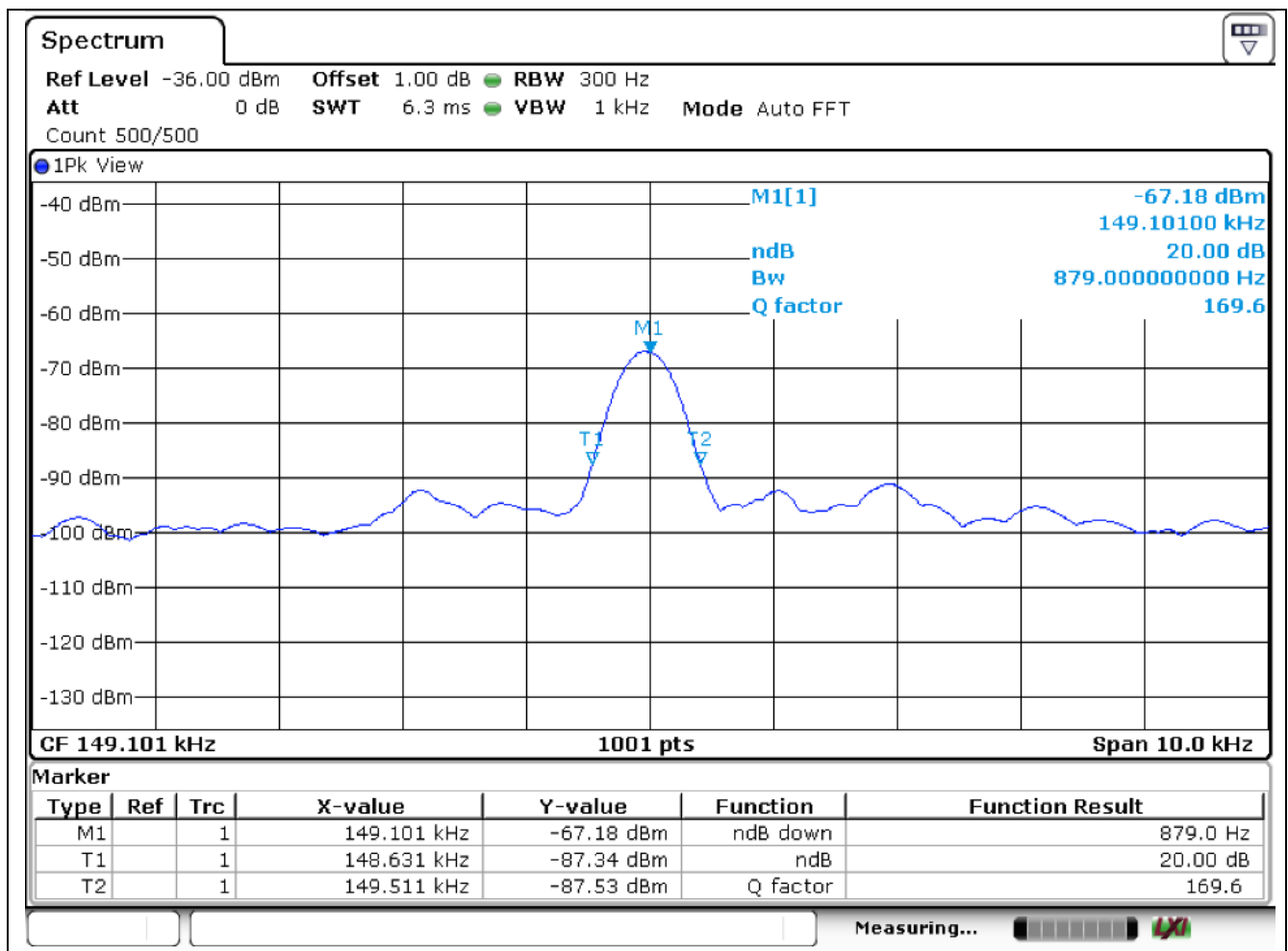
TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ Passed ☐ Not Applicable

Test Channel	20dB Bandwidth (KHz)	Limit (KHz)	Result
0.149MHz	0.879	-	Pass



5.3. Radiated Spurious Emissions

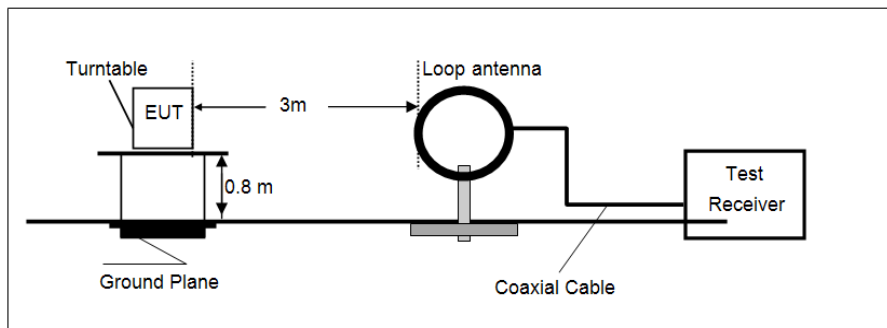
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.209

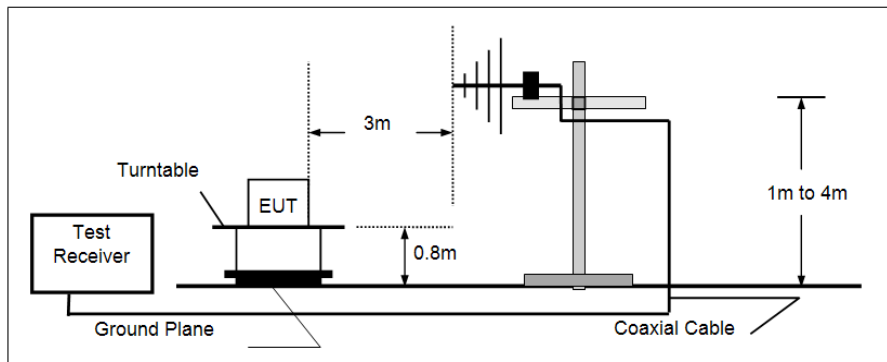
Frequency [MHz]	Field Strength [uV/m]	Measurement Distance [Meters]
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

TEST CONFIGURATION

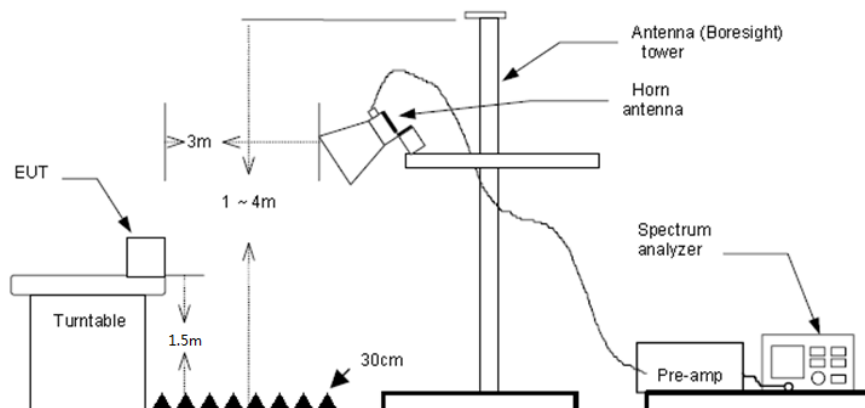
- 9 kHz ~ 30 MHz



- 30 MHz ~ 1 GHz



- Above 1 GHz



TEST PROCEDURE

1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.
2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
4. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get a better signal level to comply with the guidelines.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. Use the following spectrum analyzer settings
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) From 9KHz to 30MHz:
RBW=10KHz, VBW =30KHz, Sweep time= Auto, Trace = max hold, Detector function = peak
§ 15.209(d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
 - (3) Below 1 GHz:
RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;
If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
 - (4) From 1 GHz to 10th harmonic:
RBW=1MHz, VBW=3MHz Peak detector for Peak value.
RBW=1MHz, VBW=3MHz RMS detector for Average value.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:

- 1) Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- 2) The EUT was pre-scanned the frequency band (9 kHz ~ 30 MHz), found the DC 5V OUTPUT was the worst data, and recorded it in the report.

Radiated Spurious Emissions**9 kHz ~ 30 MHz**

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Test value
0.04	31.67	20.00	0.05	0.00	51.72	115.56	-63.84	QP
0.08	20.14	20.00	0.05	0.00	40.19	109.54	-79.35	QP
0.14	64.44	20.00	0.06	0.00	84.50	104.68	-20.18	QP
0.42	41.52	20.00	0.08	0.00	61.60	95.13	-33.53	QP
0.70	32.18	20.00	0.10	0.00	52.28	70.70	-18.42	QP
0.97	26.88	20.00	0.11	0.00	46.99	67.86	-20.87	QP
7.20	9.05	20.00	0.24	22.06	7.23	69.54	-62.31	QP

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Test value
0.149	64.44	20	0.06	0	84.5	104.14	-19.64	QP

■ 30 MHz ~ 1 GHz

Test Mode:	DC 5V output
Polarization:	Vertical

Level [dB μ V/m]

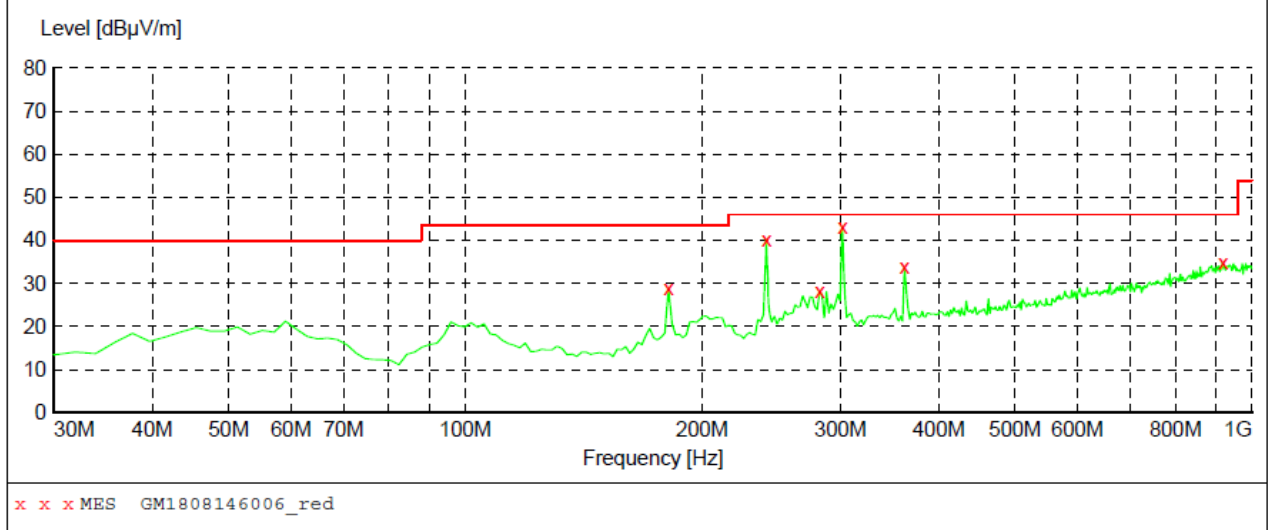
Frequency [Hz]

x x x MES GM1808146005_red

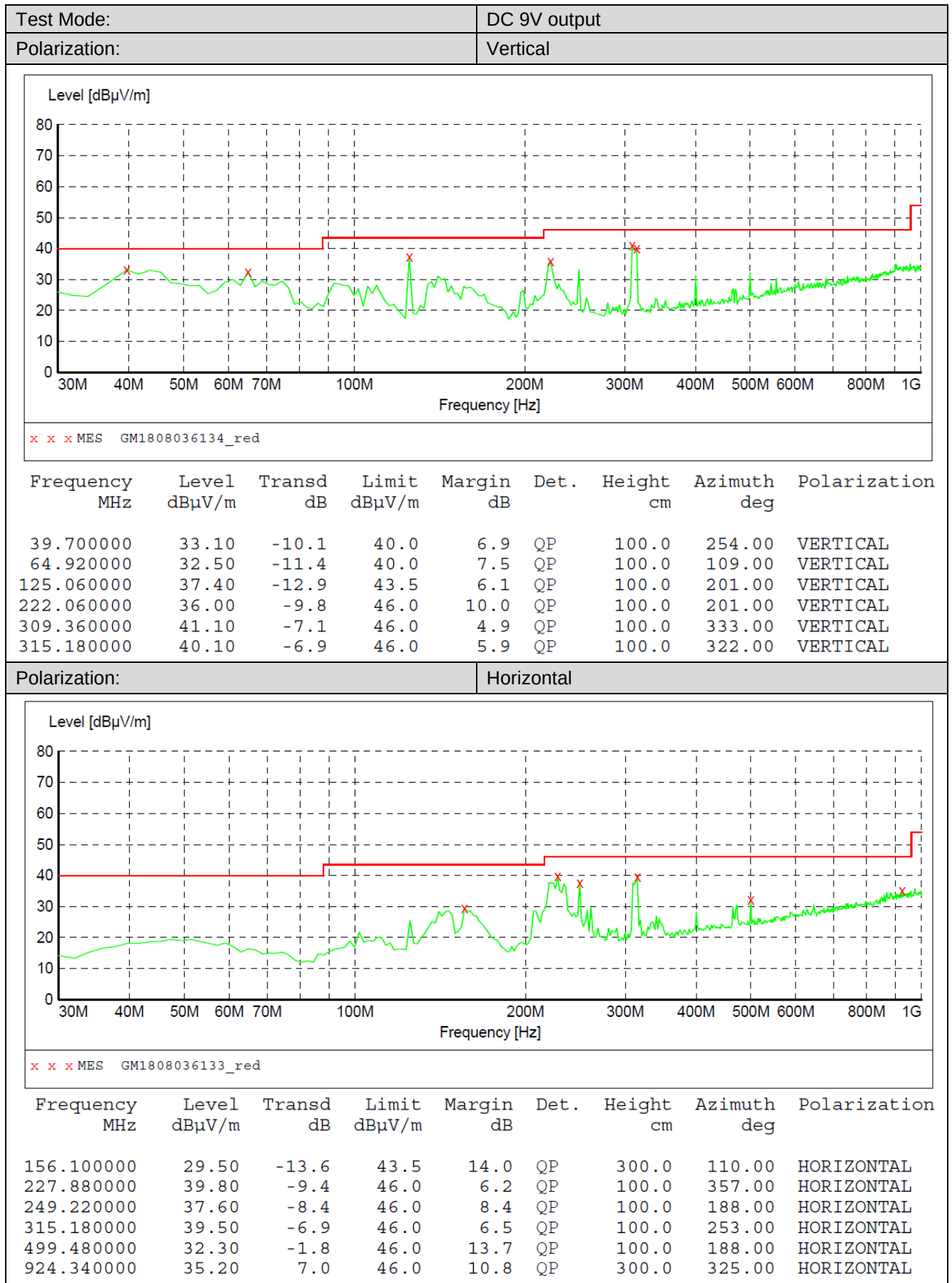
Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
37.760000	27.00	-10.8	40.0	13.0	QP	100	114.00	VERTICAL
61.040000	28.30	-10.3	40.0	11.7	QP	100	103.00	VERTICAL
95.960000	26.30	-11.2	43.5	17.2	QP	100	155.00	VERTICAL
181.320000	29.40	-12.1	43.5	14.1	QP	100	103.00	VERTICAL
241.460000	29.80	-8.7	46.0	16.2	QP	100	265.00	VERTICAL
916.580000	35.20	6.9	46.0	10.8	QP	300	172.00	VERTICAL

Polarization:

Horizontal



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
181.320000	28.80	-12.1	43.5	14.7	QP	100.0	122.00	HORIZONTAL
241.460000	40.20	-8.7	46.0	5.8	QP	100.0	149.00	HORIZONTAL
282.200000	28.10	-7.7	46.0	17.9	QP	100.0	149.00	HORIZONTAL
301.600000	43.20	-7.2	46.0	2.8	QP	100.0	0.00	HORIZONTAL
361.740000	33.70	-5.6	46.0	12.3	QP	100.0	14.00	HORIZONTAL
918.520000	34.80	7.0	46.0	11.2	QP	300.0	359.00	HORIZONTAL



6. TEST SETUP PHOTOS OF THE EUT

Conducted Emissions (AC Mains)

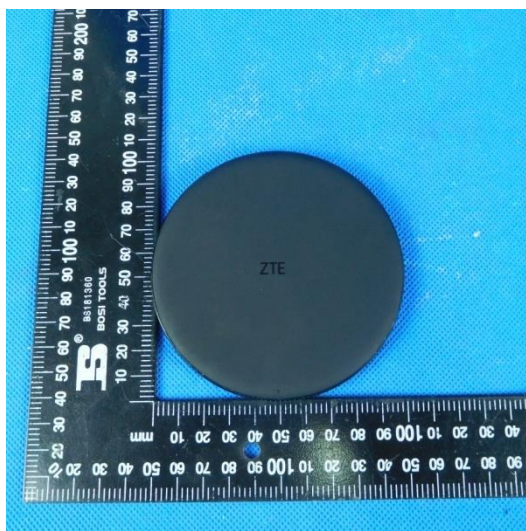


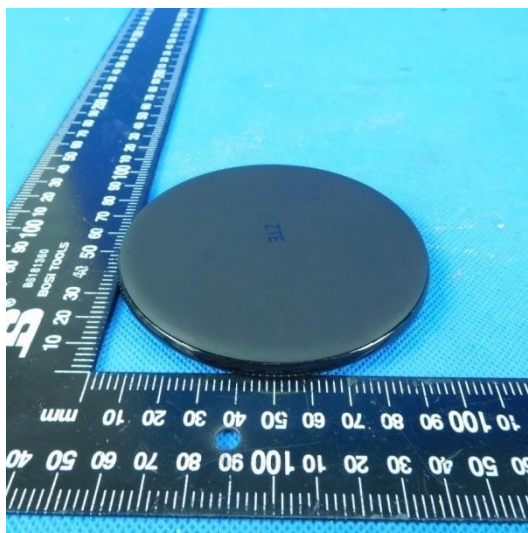
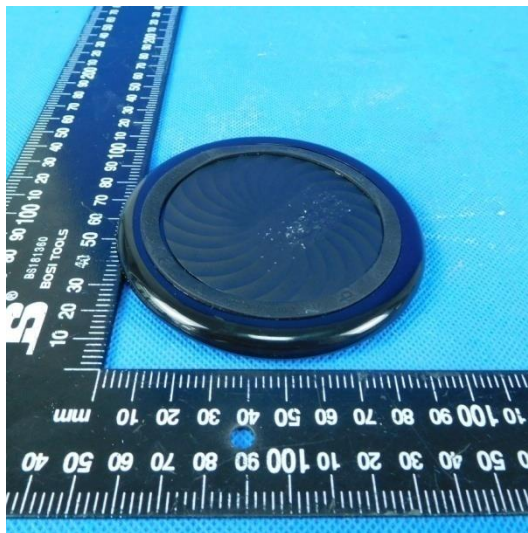
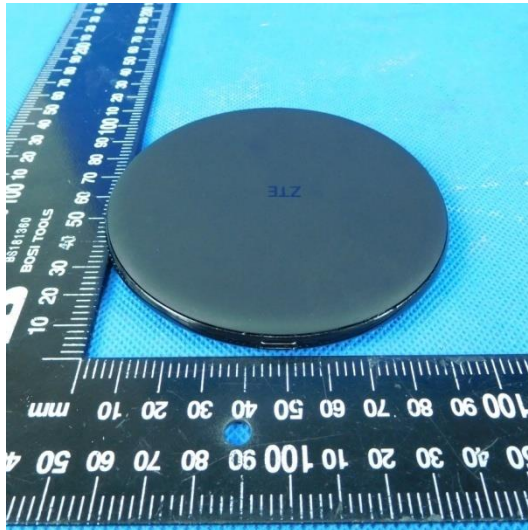
Radiated Emissions

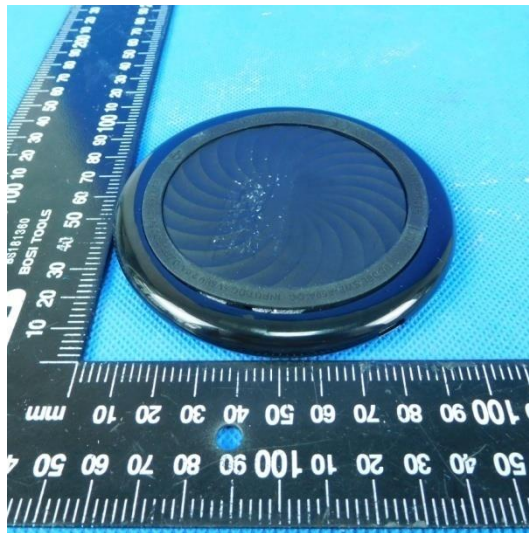


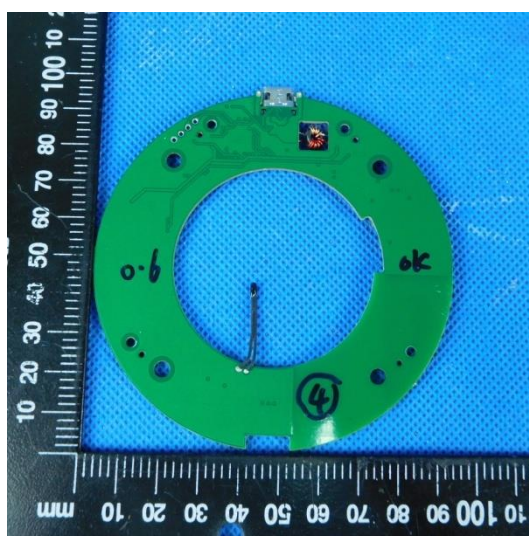
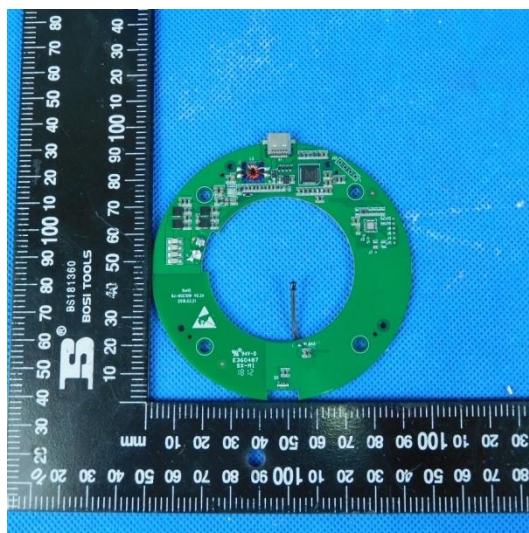
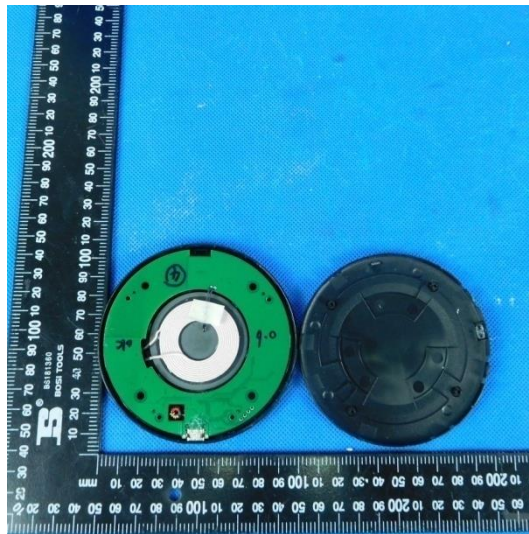
7. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

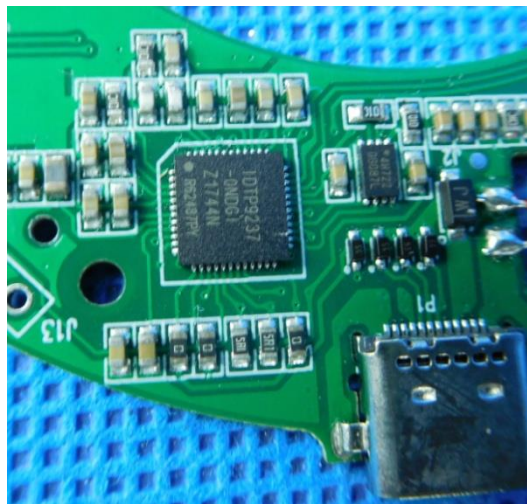
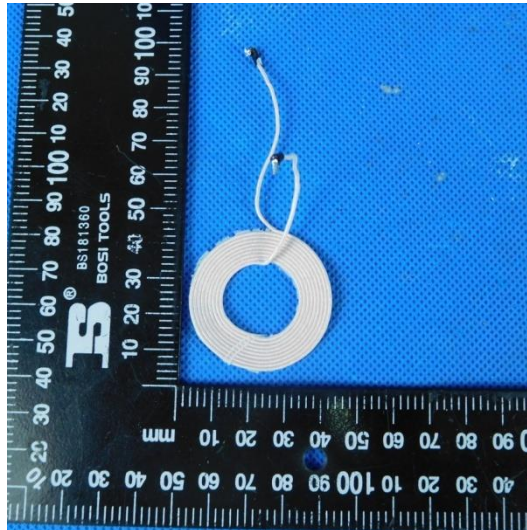
External Photos of the EUT







Internal Photos of the EUT



-----End of Report-----