

FCC Test Report

FCC ID: 2AOAF-710

Product: Wireless charger Pivot

Trade Name: TYLT

Model Number: QIPVTPPBK-T

Family Model: QIPVTPPXX-T (where XX can be different color)

Report No.: S19031901403001

Prepared for

TYLT, inc.

685 Cochran St. Suite 200 Simi Valley CA93065 US

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street,
Bao'an District, Shenzhen P.R. China

Tel.: +86-0755-61156588 Fax.: +86-0755-61156599

Website: www.ntek.org.cn

TEST RESULT CERTIFICATION**Applicant's name** : TYLT, inc.

Address : 685 Cochran St. Suite 200 Simi Valley CA93065 US

Manufacturer's Name : SHENZHEN GOODWIN TECHNOLOGY CO.,LTDAddress : 4/F,Building A,Huayuan Industrial Park,Fenghuang NO.1 Industrail
Area,Fuyong,Bao'an Dist,Shenzhen,China**Factory 's Name** : SHENZHEN GOODWIN TECHNOLOGY CO.,LTDAddress : 4/F,Building A,Huayuan Industrial Park,Fenghuang NO.1 Industrail
Area,Fuyong,Bao'an Dist,Shenzhen,China**Product description**

Product name..... : Wireless charger Pivot

Model and/or type reference : QIPVTPPBK-T, QIPVTPPXX-T (where XX can be different color)
FCC part 15C:2018**Standards** : ANSI C63.10:2013

KDB 680106 D01 RF Exposure Wireless Charging App v03

This device described above has been tested by Shenzhen NTEK Testing Technology Co., Ltd., and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of Shenzhen NTEK Testing Technology Co., Ltd., this document may be altered or revised by Shenzhen NTEK Testing Technology Co., Ltd., personnel only, and shall be noted in the revision of the document.

The test results of this report relate only to the tested sample identified in this report.

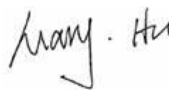
Date of Test :

Date (s) of performance of tests..... : 19 Mar. 2019 ~ 30 Mar. 2019

Date of Issue..... : 30 Mar. 2019

Test Result..... : **Pass**

Testing Engineer : _____



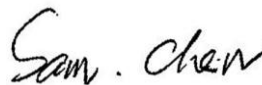
(Mary Hu)

Technical Manager : _____



(Jason Chen)

Authorized Signatory : _____



(Sam Chen)

Table of Contents

Page

1 . TEST SUMMARY	4
1.1 FACILITIES AND ACCREDITATIONS	5
1.2 LABORATORY ACCREDITATIONS AND LISTINGS	5
1.3 MEASUREMENT UNCERTAINTY	5
2 . GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 DESCRIPTION OF TEST SETUP	9
2.3 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL	10
2.4 MEASUREMENT INSTRUMENTS LIST	11
3 . EMC EMISSION TEST	12
3.1 CONDUCTED EMISSION MEASUREMENT	12
3.1.1 POWER LINE CONDUCTED EMISSION	12
3.1.2 TEST PROCEDURE	13
3.1.3 TEST SETUP	13
3.1.4 EUT OPERATING CONDITIONS	13
3.1.5 TEST RESULTS	14
3.2 RADIATED EMISSION MEASUREMENT	18
3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT	18
3.2.2 TEST PROCEDURE	19
3.2.3 TEST SETUP	20
3.2.4 TEST RESULTS	21
4. BANDWIDTH TEST	26
4.1 TEST PROCEDURE	26
4.2 TEST SETUP	26
4.3 TEST RESULT	26
5. ANTENNA APPLICATION	27
5.1 Antenna Requirement	27
5.2 Result	27

1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission					
Standard	Test Item	FCC Rules	Limit	Judgment	Remark
FCC part 15C:2018 ANSI C63.10:2013	Conducted Emission	§15.207	Class B	PASS	
	Radiated Emission	§15.209	Class B	PASS	
	ANTENNA APPLICATION	§15.203	/	PASS	

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report
- (2) For client's request and manual description, the test will not be executed.

1.1 FACILITIES AND ACCREDITATIONS

All measurement facilities used to collect the measurement data are located at
1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126
P.R. China.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR
Publication 22.

1.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

CNAS-Lab. : The Laboratory has been assessed and proved to be in compliance with
CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)

The Certificate Registration Number is L5516.

IC-Registration : The Certificate Registration Number is 9270A-1.

FCC- Accredited : Test Firm Registration Number: 463705.

Designation Number: CN1184

A2LA-Lab. : The Certificate Registration Number is 4298.01

This laboratory is accredited in accordance with the recognized
International Standard ISO/IEC 17025:2005 General requirements for
the competence of testing and calibration laboratories.

This accreditation demonstrates technical competence for a defined
scope and the operation of a laboratory quality management system
(refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).

Name of Firm : Shenzhen NTEK Testing Technology Co., Ltd.

Site Location : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang
Street, Bao'an District, Shenzhen 518126 P.R. China.

1.3 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on
a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence
of approximately **95 %**.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
NTEKC01	ANSI	150 KHz ~ 30MHz	3.2	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
NTEKA01	ANSI	30MHz ~ 1000MHz	4.7	
		1GHz ~12.4GHz	5.0	

Revision History

Report No.	Version	Description	Issued Date
S19031901403001	Rev.01	Initial issue of report	30 Mar. 2019

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Feature and Specification	
Equipment	Wireless charger Pivot
Trade Name	TYLT
FCC ID	2A0AF-710
Model No.	QIPVTPPBK-T
Family Model	QIPVTPPXX-T
Model Difference	All the model are the same circuit and RF module, except the model name and color, where XX can be different color.
Operating Frequency	110KHz~205KHz
Modulation Technique	Induction
Antenna Type	Induction coil
Power supply	<input checked="" type="checkbox"/> DC supply: Input: USB-C 5V/2A or 9V/1.5A
	<input type="checkbox"/> Adapter supply:
Output	Output:5V 2.1A Wireless Output: 10W(Max)
Battery	Capacity: 5000mAh/18.5Wh
HW Version	WP05
SW Version	WP05-C

2.1.1 DESCRIPTION OF TEST MODES

EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

EUT Exercise

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

The following summary table is showing all test modes to demonstrate in compliance with the standard.

Test Cases	
Test Item	Data Rate/ Modulation
AC Conducted Emission	Mode 1: Max load*
Radiated Test Cases	Mode 1: Max load

(*)EUT can only access the specified load, can not adjust the size of the load

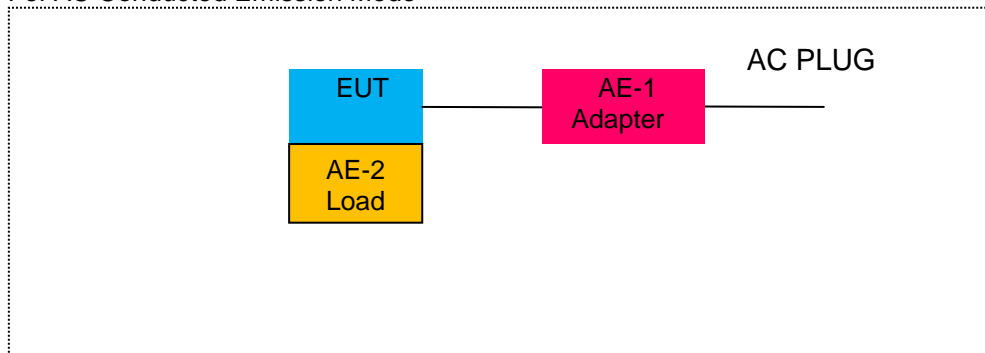
Carrier Frequency and Channel list:

Channel	Frequency(MHz)
1	0.111
2	0.155
3	0.175

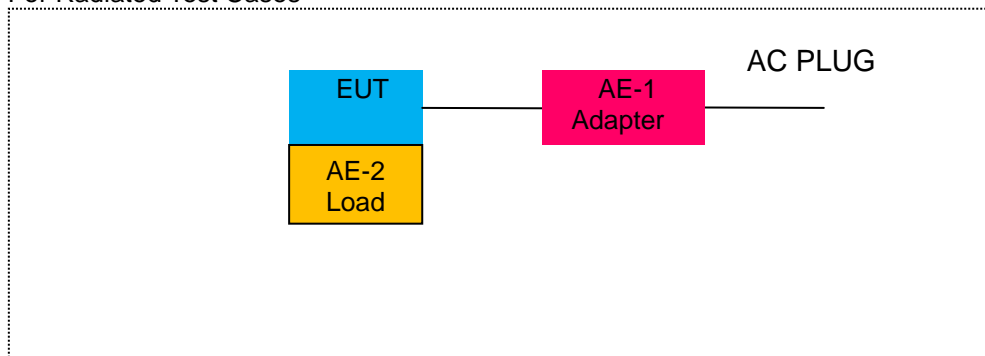
The input of 5V/2A and 9V/1.8A has been tested. But the 9V/1.8A mode is the worst mode, just reported the worst data.

2.2 DESCRIPTION OF TEST SETUP

For AC Conducted Emission Mode



For Radiated Test Cases



2.3 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No.	Series No.	Note
AE-1	Adapter	N/A	N/A	N/A	Peripherals
AE-2	Load	N/A	N/A	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” means “shielded” “with core”; “NO” means “unshielded” “without core”.

2.4 MEASUREMENT INSTRUMENTS LIST

Radiation Test equipment

	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2018.05.19	2019.05.18	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2018.10.08	2019.10.07	1 year
4	Test Receiver	R&S	ESPI	101318	2018.05.19	2019.05.18	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2018.04.08	2019.04.07	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2018.05.19	2019.05.18	1 year
7	Amplifier	EMC	EMC051835 SE	980246	2018.08.05	2019.08.04	1 year
8	Amplifier	MITEQ	TTA1840-35-HG	177156	2018.08.05	2019.08.04	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2018.05.19	2019.05.18	1 year
10	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2017.04.21	2020.04.20	3 year
11	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2017.04.21	2020.04.20	3 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2018.05.19	2019.05.18	1 year
2	LISN	R&S	ENV216	101313	2018.04.18	2019.04.17	1 year
3	LISN	SCHWARZBECK	NNLK 8129	8129245	2018.05.19	2019.05.18	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2018.05.19	2019.05.18	1 year
5	Test Cable (9KHz-30MHz)	N/A	C01	N/A	2017.04.21	2020.04.20	3 year
6	Test Cable (9KHz-30MHz)	N/A	C02	N/A	2017.04.21	2020.04.20	3 year
7	Test Cable (9KHz-30MHz)	N/A	C03	N/A	2017.04.21	2020.04.20	3 year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	limit	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

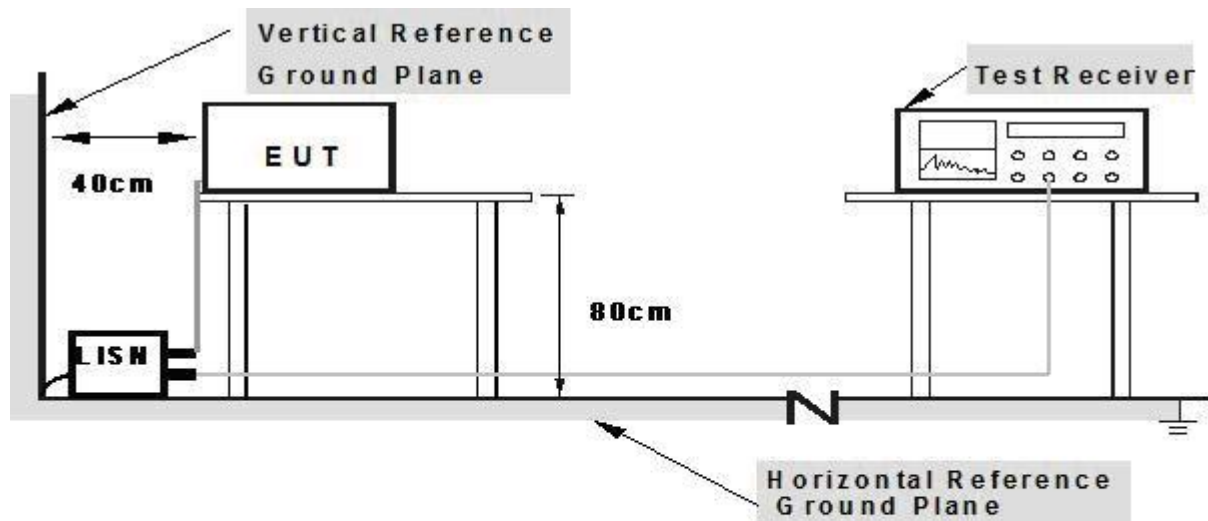
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

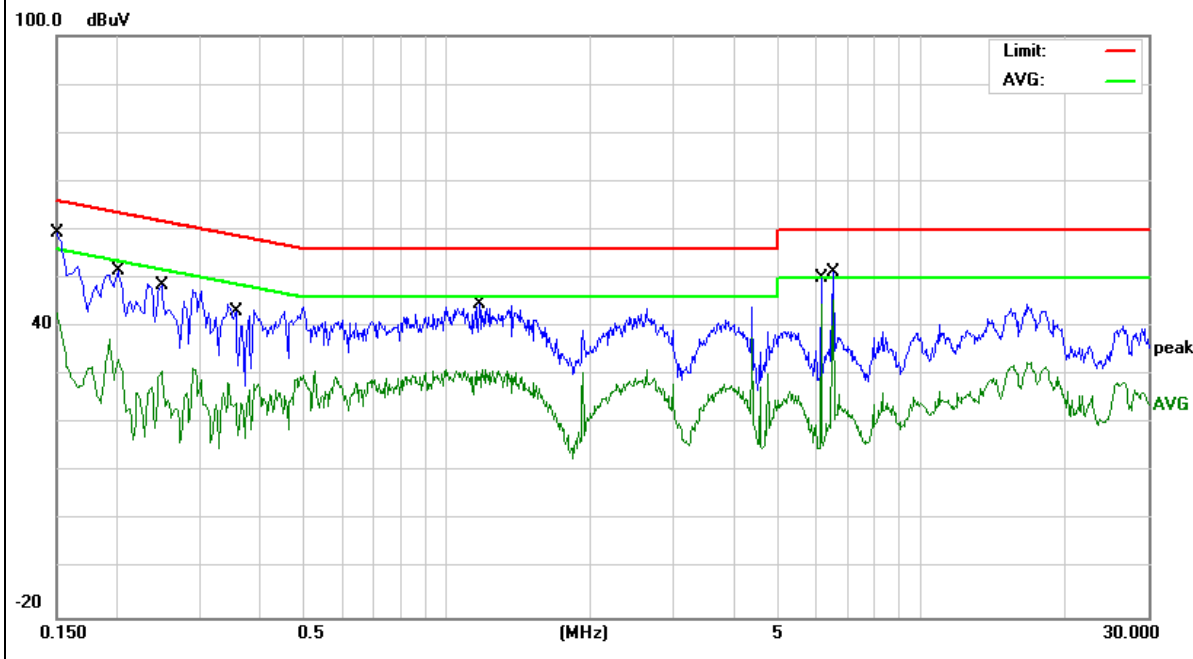
3.1.5 TEST RESULTS

EUT:	Wireless charger Pivot	Model Name. :	QIPVTPPBK-T
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2018-11-19
Test Mode:	Mode 1(Normal link)	Phase :	L
Test Voltage:	DC 9V from adapter AC 120V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1500	49.62	9.75	59.37	65.99	-6.62	QP
0.2020	41.79	9.76	51.55	63.52	-11.97	AVG
0.2020	27.58	9.76	37.34	53.52	-16.18	QP
0.2500	38.86	9.76	48.62	61.75	-13.13	AVG
0.2500	21.10	9.76	30.86	51.75	-20.89	QP
0.3578	33.06	9.74	42.80	48.78	-5.98	AVG
1.1658	34.82	9.74	44.56	56.00	-11.44	QP
1.1658	21.48	9.74	31.22	46.00	-14.78	AVG
6.1417	40.12	9.88	50.00	60.00	-10.00	QP
6.1417	34.65	9.88	44.53	50.00	-5.47	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

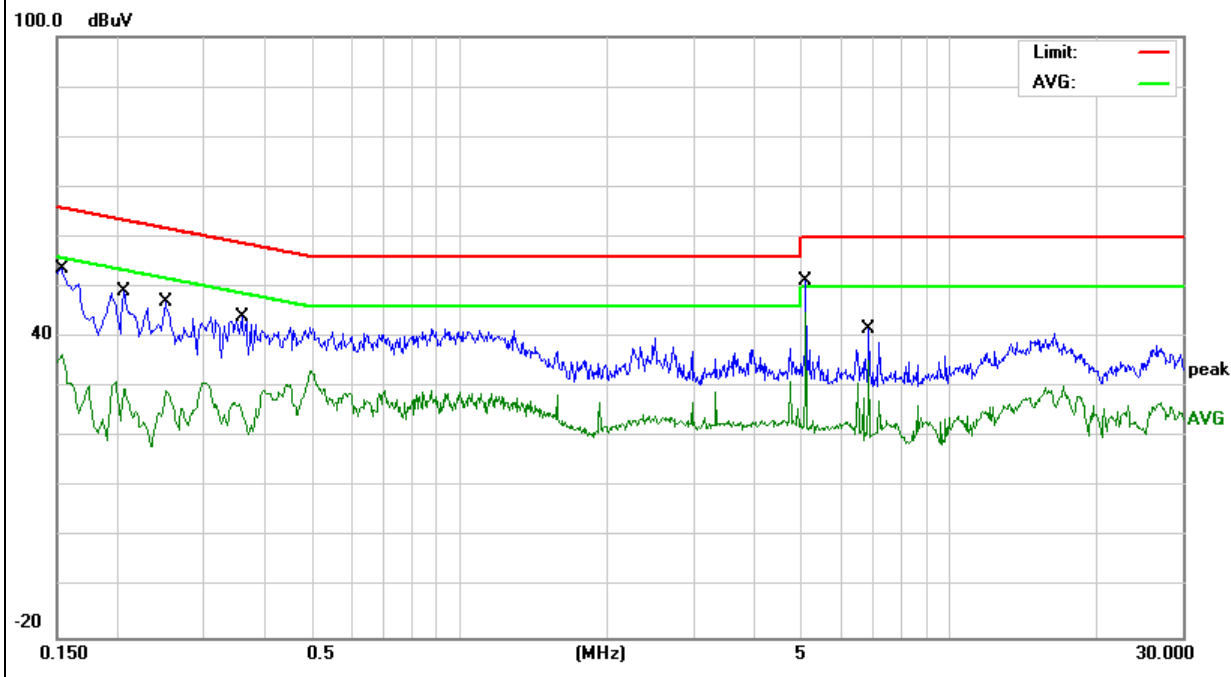


EUT:	Wireless charger Pivot	Model Name. :	QIPVTPPBK-T
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2018-11-19
Test Mode:	Mode 1(Normal link)	Phase :	N
Test Voltage:	DC 9V from adapter AC 120V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1539	44.01	9.74	53.75	65.78	-12.03	QP
0.1539	26.74	9.74	36.48	55.78	-19.30	AVG
0.2058	39.56	9.73	49.29	63.37	-14.08	QP
0.2058	21.42	9.73	31.15	53.37	-22.22	AVG
0.2500	37.17	9.74	46.91	61.75	-14.84	QP
0.2500	19.54	9.74	29.28	51.75	-22.47	AVG
0.3578	34.37	9.75	44.12	58.78	-14.66	QP
0.3578	17.14	9.75	26.89	48.78	-21.89	AVG
5.0899	41.39	9.94	51.33	60.00	-8.67	QP
5.0899	34.90	9.94	44.84	50.00	-5.16	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



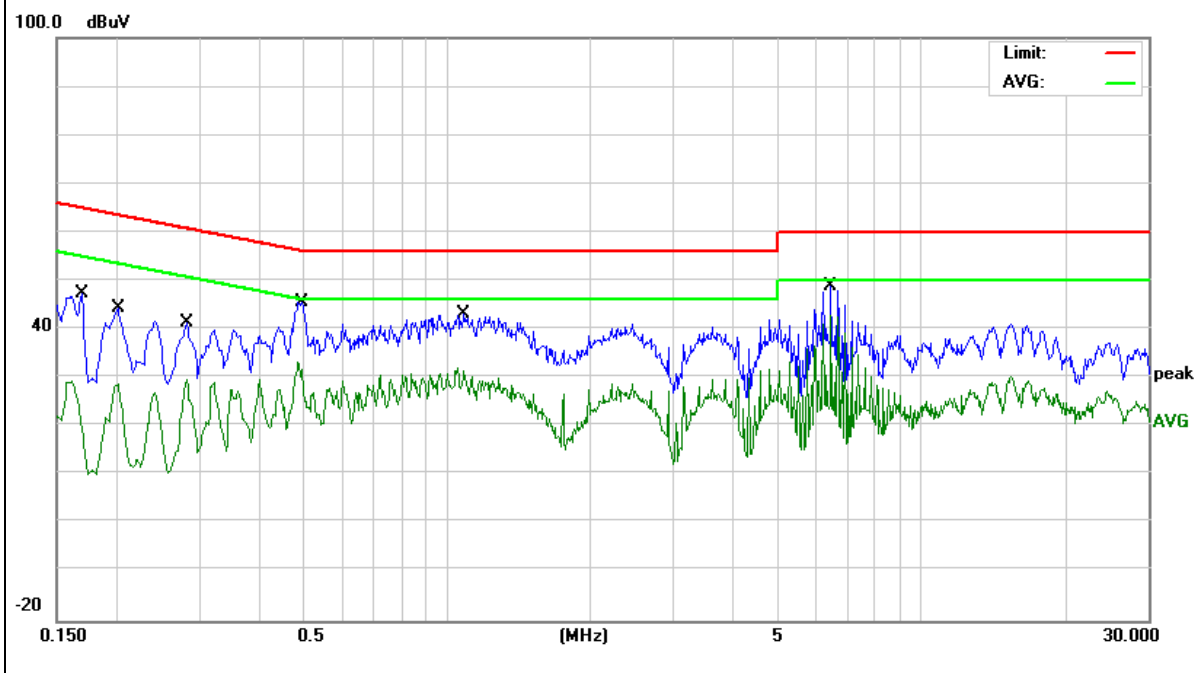
EUT:	Wireless charger Pivot	Model Name. :	QIPVTPPBK-T
------	------------------------	---------------	-------------

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2018-11-19
Test Mode:	Mode 1(Normal link)	Phase :	L
Test Voltage:	DC 9V from adapter AC 240V/60Hz		

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1700	37.47	9.76	47.23	64.96	-17.73	QP
0.1700	19.13	9.76	28.89	54.96	-26.07	AVG
0.2028	33.52	9.76	43.28	63.49	-20.21	QP
0.2028	18.38	9.76	28.14	53.49	-25.35	AVG
0.2816	31.65	9.75	41.40	60.77	-19.37	QP
0.2816	19.82	9.75	29.57	50.77	-21.20	AVG
0.4939	35.92	9.74	45.66	56.10	-10.44	QP
0.4939	23.41	9.74	33.15	46.10	-12.95	AVG
1.0859	33.36	9.74	43.10	56.00	-12.90	QP
1.0859	22.24	9.74	31.98	46.00	-14.02	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

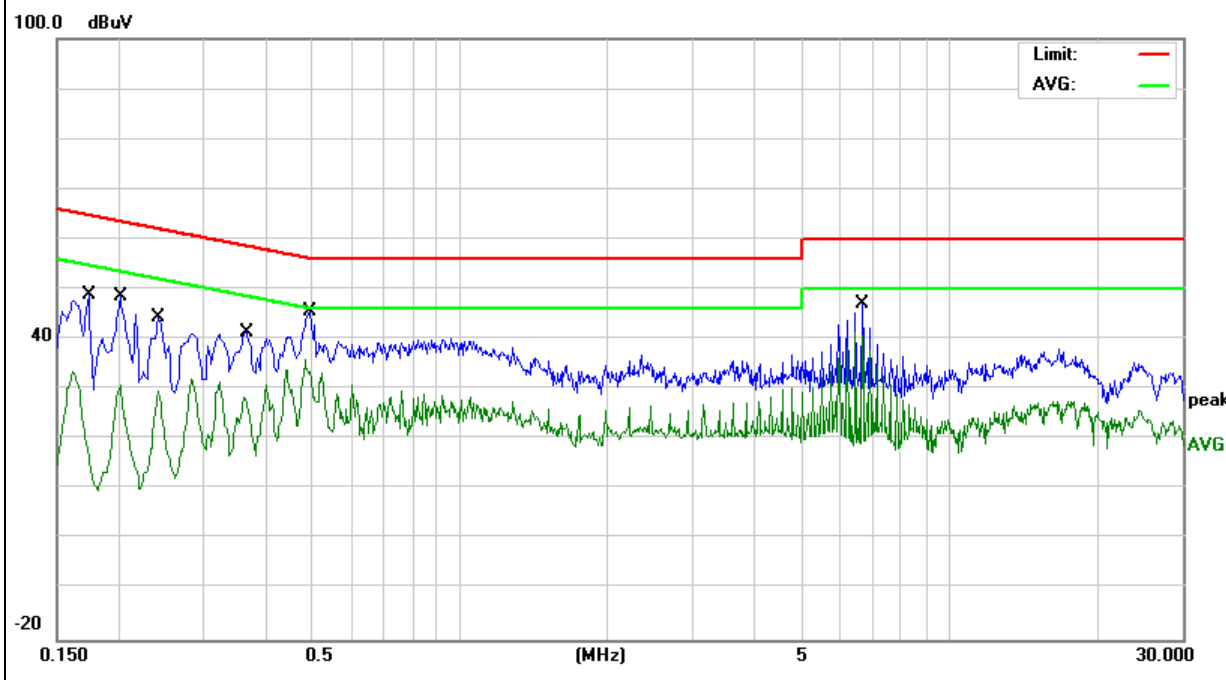


EUT:	Wireless charger Pivot	Model Name. :	QIPVTPPBK-T
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2018-11-19
Test Mode:	Mode 1(Normal link)	Phase :	N
Test Voltage:	DC 9V from adapter AC 240V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1737	39.13	9.73	48.86	64.78	-15.92	QP
0.1737	23.81	9.73	33.54	54.78	-21.24	AVG
0.2020	38.68	9.73	48.41	63.52	-15.11	QP
0.2020	21.21	9.73	30.94	53.52	-22.58	AVG
0.2419	34.47	9.74	44.21	62.03	-17.82	QP
0.2419	19.82	9.74	29.56	52.03	-22.47	AVG
0.3659	31.60	9.75	41.35	58.59	-17.24	QP
0.3659	18.75	9.75	28.50	48.59	-20.09	AVG
0.4939	35.68	9.75	45.43	56.10	-10.67	QP
0.4939	24.46	9.75	34.21	46.10	-11.89	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



Note: The input of 5V/2A and 9V/1.8A has been tested. But the 9V/1.8A mode is the worst mode, just reported the worst data.

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

Notes:

- (1) Measurement was performed at an antenna to the closed point of EUT distance of meters.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).
- (3) Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of 15.205, and the emissions located in restricted bands also comply with 15.209 limit.
- (4) 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

3.2.2 TEST PROCEDURE

Test Arrangement for Radiated Emissions up to 1 GHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. 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, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna (Blow 30M, use loop antenna), and its 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency below 1GHz.

Test Arrangement for Radiated Emissions above 1 GHz.

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited chamber room. 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, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Use the following receiver/spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW=200Hz for 9KHz to 150KHz,

RBW=9kHz for 150KHz to 30MHz,

RBW=120KHz for 30MHz to 1GHz

VBW $\geq 3 \times$ RBW

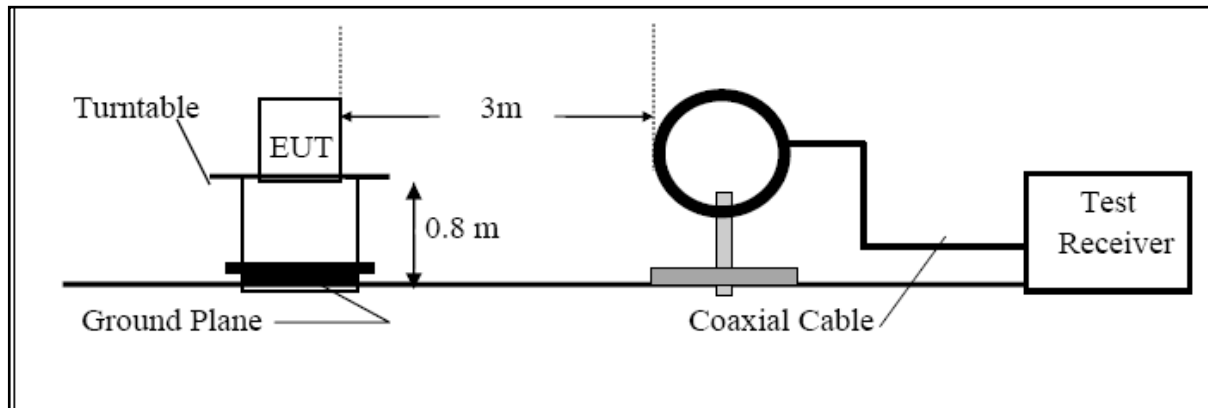
Sweep = auto

Detector function = QP

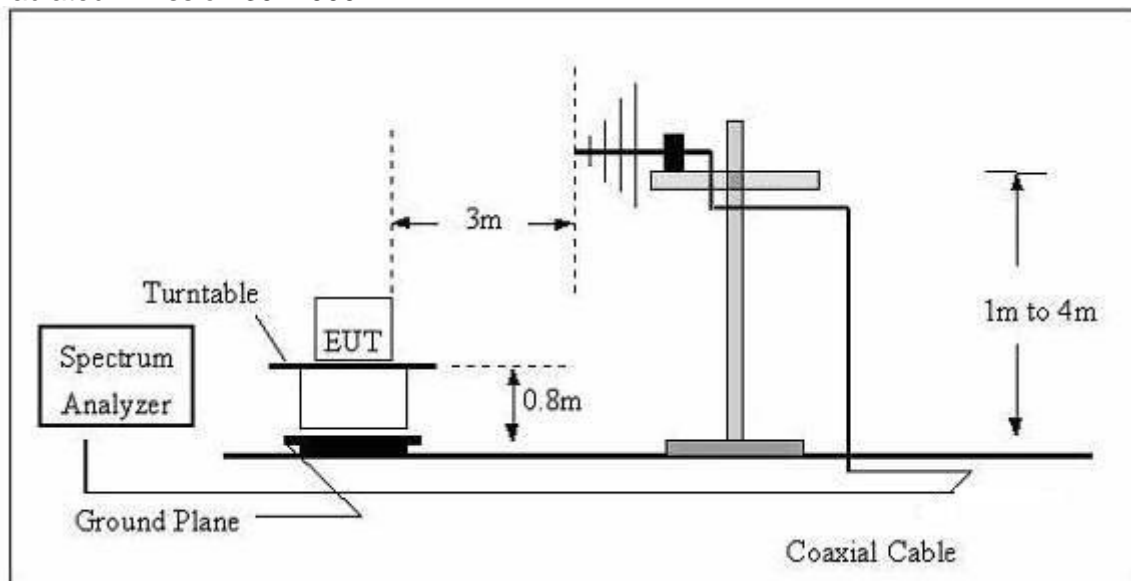
Trace = max hold

3.2.3 TEST SETUP

For Radiated Emission Test Set-Up, Frequency Below 30MHz



For Radiated Emission 30~1000MHz



3.2.4 TEST RESULTS

TEST RESULTS (9KHz~30MHz)

Note: The mode of 5W and 9.9W load has been tested. But the 9.9W mode is the worst mode, just reported the worst data.

EUT:	Wireless charger Pivot	Model Name. :	QIPVTPPBK-T
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2018-11-19
Test Mode :	Low frequency/Max Load	Polarization :	X
Test Power :	DC 9V from adapter AC 120V/60Hz		

Frequency	Ant.Pol.	Emission Level	Limits	Margin	Remark
(MHz)		(dBuV/m)	(dBuV/m)	(dB)	
0.054	X	42.28	113.0	-70.7	Avg
0.111	X	62.36	106.7	-44.3	Avg(fundamental frequency)
0.643	X	44.21	71.44	-27.23	QP
2.925	X	33.26	69.54	-36.28	QP
4.973	X	42.02	69.54	-27.52	QP
19.675	X	35.33	69.54	-34.21	QP

Note:

Below 30MHz, Pre-test the X, Y, Z axis to find X axis is worst case, so only record X axis test data.

X: Field strength which this device generates since the position of the charging coil and loop antenna differ by 0 degrees.

Y: Field strength which this device generates since the position of the charging coil and loop antenna differ by 90 degrees.

Z: Field strength which this device generates since the position of the charging coil and loop antenna differ by 180 degrees.

EUT:	Wireless charger Pivot	Model Name. :	QIPVTPPBK-T
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2018-11-19
Test Mode :	Mid frequency/Max Load	Polarization :	X
Test Power :	DC 9V from adapter AC 120V/60Hz		

Frequency (MHz)	Ant.Pol.	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
0.036	X	41.24	116.48	-75.24	Avg
0.157	X	74.98	103.69	-28.71	Avg(fundamental frequency)
0.582	X	37.52	72.31	-34.79	QP
0.815	X	32.84	69.38	-36.54	QP
1.516	X	31.62	63.99	-32.37	QP
7.132	X	45.21	69.54	-24.33	QP

Note:

Below 30MHz, Pre-test the X, Y, Z axis to find X axis is worst case, so only record X axis test data.

X: Field strength which this device generates since the position of the charging coil and loop antenna differ by 0 degrees.

Y: Field strength which this device generates since the position of the charging coil and loop antenna differ by 90 degrees.

Z: Field strength which this device generates since the position of the charging coil and loop antenna differ by 180 degrees.

EUT:	Wireless charger Pivot	Model Name. :	QIPVTPPBK-T
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2018-11-19
Test Mode :	High frequency/Max Load	Polarization :	X
Test Power :	DC 9V from adapter AC 120V/60Hz		

Frequency (MHz)	Ant. Pol.	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
0.047	X	36.96	114.16	-77.20	Avg
0.205	X	79.86	101.37	-21.51	Avg(fundamental frequency)
0.502	X	39.65	73.59	-33.94	QP
1.416	X	35.03	64.58	-29.55	QP
5.432	X	34.23	69.54	-35.31	QP
8.154	X	32.28	69.54	-37.26	QP

Note:

Below 30MHz, Pre-test the X, Y, Z axis to find X axis is worst case, so only record X axis test data.

X: Field strength which this device generates since the position of the charging coil and loop antenna differ by 0 degrees.

Y: Field strength which this device generates since the position of the charging coil and loop antenna differ by 90 degrees.

Z: Field strength which this device generates since the position of the charging coil and loop antenna differ by 180 degrees.

TEST RESULTS (30MHz ~1000MHz)

Note: The High/ Middle/ Low frequency mode of 5W and 9.9W load has been tested. But the 9.9W High frequency mode is the worst mode, just reported the worst data.

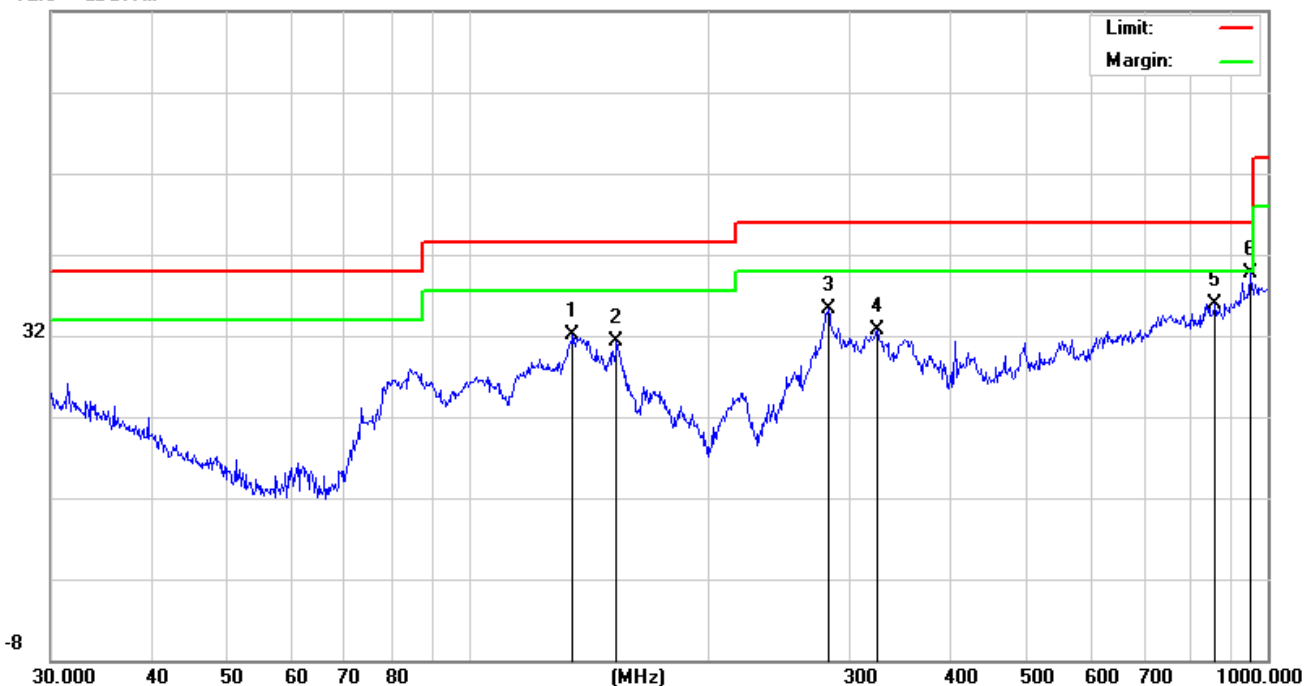
EUT:	Wireless charger Pivot	Model Name. :	QIPVTPPBK-T
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2018-11-19
Test Mode :	High frequency/Max Load	Polarization :	Horizontal
Test Power :	DC 9V from adapter AC 120V/60Hz		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	135.0319	18.67	13.38	32.05	43.50	-11.45	QP
H	153.2004	18.68	12.61	31.29	43.50	-12.21	QP
H	281.9946	18.65	16.63	35.28	46.00	-10.72	QP
H	324.4560	15.98	16.63	32.61	46.00	-13.39	QP
H	860.0352	7.31	28.69	36.00	46.00	-10.00	QP
H	952.0937	8.56	31.13	39.69	46.00	-6.31	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.

72.0 dBuV/m



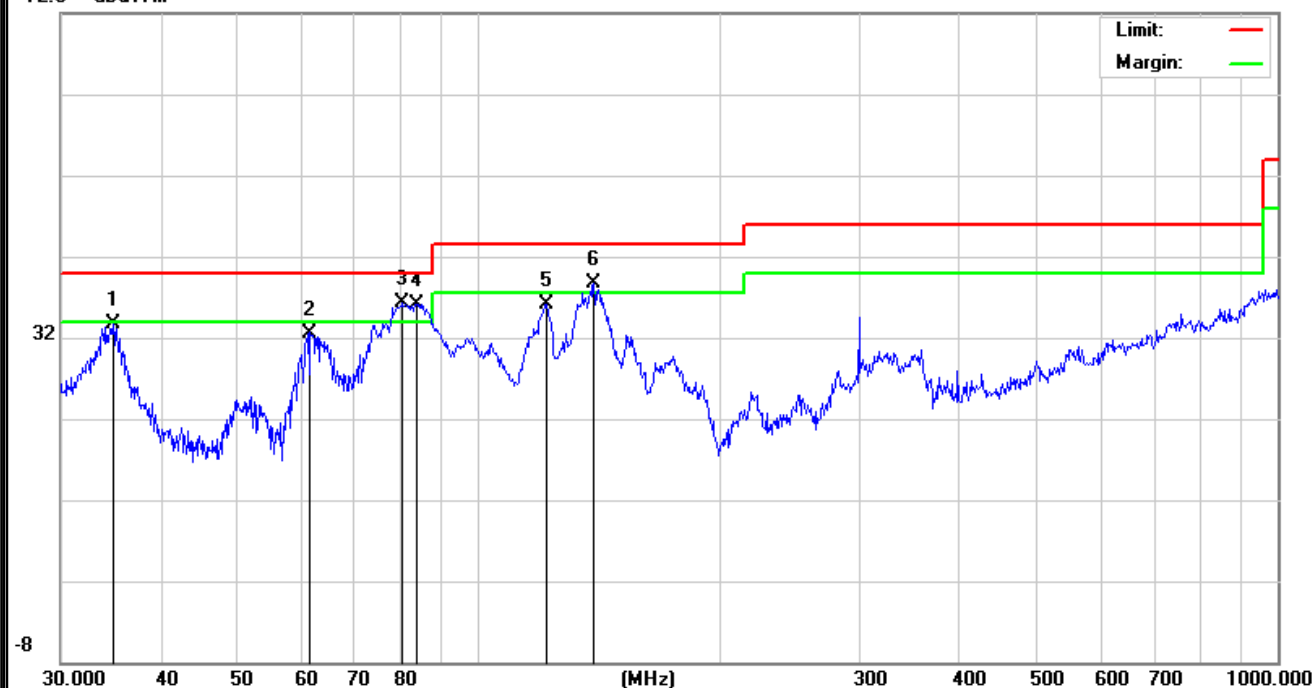
EUT:	Wireless charger Pivot	Model Name. :	QIPVTPPBK-T
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2018-11-19
Test Mode :	High frequency/Max Load	Polarization :	Vertical
Test Power :	DC 9V from adapter AC 120V/60Hz		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	34.8823	17.01	16.77	33.78	40.00	-6.22	QP
V	61.5618	26.18	6.42	32.60	40.00	-7.40	QP
V	80.3619	27.46	8.77	36.23	40.00	-3.77	QP
V	83.8156	26.80	9.30	36.10	40.00	-3.90	QP
V	121.5485	22.88	13.22	36.10	43.50	-7.40	QP
V	139.3613	25.46	13.31	38.77	43.50	-4.73	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.

72.0 dBuV/m



4. BANDWIDTH TEST

4.1 TEST PROCEDURE

- 1). The transmitter output (antenna port) was connected to the spectrum analyzer in peak mode.
- 2). 20dB Bandwidth the resolution bandwidth of 1 kHz and the video bandwidth of 1 kHz were used.
- 3). Measured the spectrum width with power higher than 20dB below carrier.

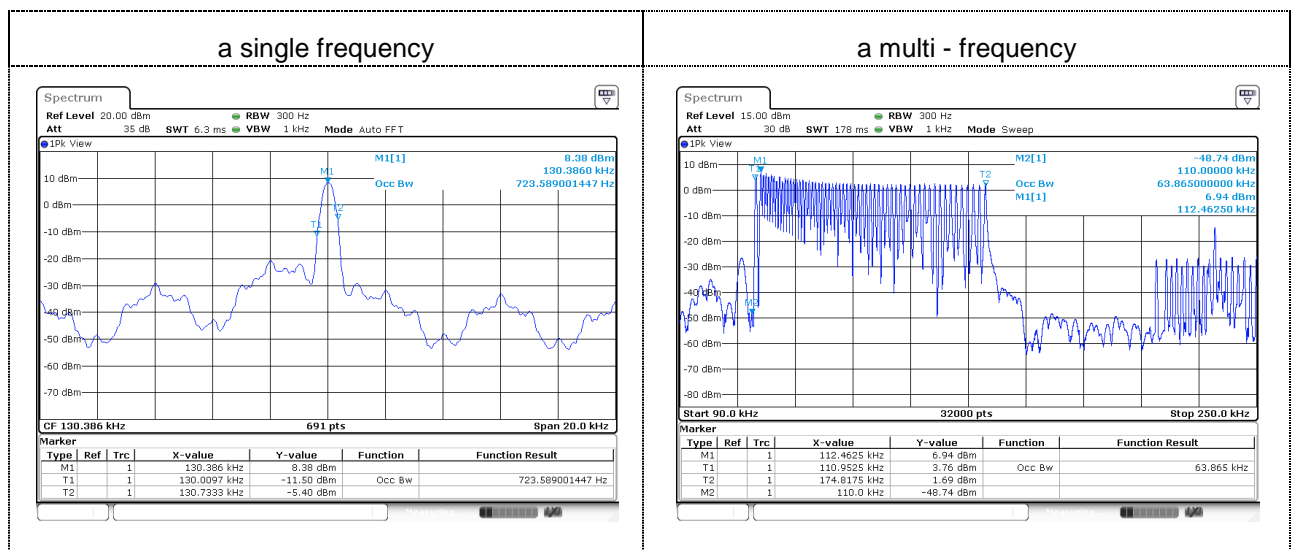
4.2 TEST SETUP



4.3 TEST RESULT

EUT:	Wireless charger Pivot	Model Name. :	QIPVTPPBK-T
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Mode :	Operating maxload
Test Power :	DC 9V from adapter AC 120V/60Hz		

99% Bandwidth- a single frequency (Hz)	F_L (kHz)	F_H (kHz)	Note: $F_L > 110\text{kHz}$, $F_H < 495\text{kHz}$, compliance with the Restricted bands requirements according to Part 15.205
723.589	110.9525	174.8175	



5. ANTENNA APPLICATION

5.1 Antenna Requirement

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

5.2 Result

The EUT antenna is permanent attached antenna. It comply with the standard requirement.

END REPORT