

FCC - TEST REPORT

Report Number : **60.790.19.005.01R01** Date of Issue : May 15, 2019

Model : 25443, 25442, 25441, 25439, 25438, 25437
25451, 25452, 25453, 25461, 25462, 25463

Product Type : Lawn & Garden Bluetooth Water Timer

Applicant : Yuan Mei Corp.

Address : No. 21, Lane 409, Sec. 1, Lu Ho Rd., Lu Kang, Chang Hua,
Taiwan, R.O.C.

Production Facility : /

Address : /

Test Result : ☒ Positive ☐ Negative

Total pages
including
Appendices : 40

TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch is a subcontractor to TÜV SÜD Product Service GmbH according to the principles outlined in ISO 17025.

TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch reports apply only to the specific samples tested under stated test conditions. Construction of the actual test samples has been documented. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. The manufacturer/importer is responsible to the Competent Authorities in Europe for any modifications made to the production units which result in non-compliance to the relevant regulations. TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch issued reports.

This report is the confidential property of the client. As a mutual protection to our clients, the public and ourselves, extracts from the test report shall not be reproduced except in full without our written approval

1 Table of Contents

1 Table of Contents.....	2
2 Description of Equipment Under Test	3
3 Summary of Test Standards	4
4 Details about the Test Laboratory	5
4.1 Test Equipment Site List	6
4.2 Measurement System Uncertainty	7
5 Summary of Test Results.....	8
6 General Remarks	9
7 Test Setups.....	10
7.1 Radiated test setups 9kHz-30MHz.....	10
7.2 Radiated test setups Below 1GHz.....	10
7.3 Radiated test setups Above 1GHz	10
7.4 AC Power Line Conducted Emission test setups	11
7.5 Conducted RF test setups.....	11
8 Emission Test Results	12
8.1 Spurious Radiated Emission	12
8.2 Conducted Emission at AC Power line.....	16
8.3 6dB & 99% Bandwidth	17
8.4 Peak Output Power.....	20
8.5 Spurious Emissions at Antenna Terminals.....	23
8.6 100kHz Bandwidth of band edges.....	29
8.7 Power Spectral Density.....	32
8.8 Antenna Requirement.....	35
9 Appendix A - General Product Information	36

2 Description of Equipment Under Test

Description of the Equipment Under Test

Product: Lawn & Garden Bluetooth Water Timer

Model no.: 25443, 25442, 25441, 25439, 25438, 25437
25451, 25452, 25453, 25461, 25462, 25463

FCC ID: 2ASWP-254B1

Rating: 3V DC (4 x1.5V AA battery, parallel 3V)

Frequency: 2402MHz-2480MHz (Tx and Rx)

Antenna gain: 6dBi

Number of operated channel: 40

Modulation: GFSK

Auxiliary Equipment and Software Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.	S/N
Computer	Lenovo	X220	0A72168

Auxiliary Software Used during Test:

DESCRIPTION	SOFTWARE NAME	VERSION	REMARK
RF Test mode software	Texas Instruments BTool	01.41.19	Provided by applicant

3 Summary of Test Standards

Test Standards

FCC Part 15 Subpart C 10-1-18 Edition Federal Communications Commission, PART 15 — Radio Frequency Devices, Subpart C —Intentional Radiators
--

All the tests were performed using the procedures from ANSI C63.4(2014) and ANSI C63.10 (2013).

4 Details about the Test Laboratory

Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
 Building 12&13 Zhiheng Wisdomland Business Park,
 Nantou Checkpoint Road 2,
 Shenzhen 518052, P.R.China
 FCC Registration Number: 502708

Emission Tests	
Test Item	Test Site
FCC Part 15 Subpart C	
FCC Title 47 Part 15.205, 15.209 & 15.247(d) Spurious Radiated Emission	Site 1
FCC Title 47 Part 15.207 Conduct Emission	NIL
FCC Title 47 Part 15.247(a)(1) 6dB & 99% Bandwidth	Site 1
FCC Title 47 Part 15.247(b) Peak Output Power	Site 1
FCC Title 47 Part 2.1051 & 15.247(d) Spurious Emissions at Antenna Terminals	Site 1
FCC Title 47 Part 15.247(d) 100kHz Bandwidth of band edges	Site 1
FCC Title 47 Part 15.247(e) Power Spectral Density	Site 1
FCC Title 47 Part 15.203 & 15.247(b) Antenna Requirement	Site 1

4.1 Test Equipment Site List

Radiated emission Test – Site 1

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2019-7-6
Signal Analyzer	Rohde & Schwarz	FSV40	101031	2019-7-6
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100398	2019-7-6
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2019-6-28
Horn Antenna	Rohde & Schwarz	HF907	102294	2019-6-28
Wideband Horn Antenna	Q-PAR	QWH-SL-18-40-K-SG	12827	2019-7-12
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2019-7-6
Pre-amplifier	Rohde & Schwarz	SCU 40A	100432	2019-7-6
Attenuator	Agilent	8491A	MY39264334	2019-7-6
3m Semi-anechoic chamber	TDK	9X6X6	----	2020-7-7
Test software	Rohde & Schwarz	EMC32	Version 9.15.00	N/A

Conducted Emission Test – Site 1

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	101782	2019-7-6
LISN	Rohde & Schwarz	ENV4200	100249	2019-7-6
LISN	Rohde & Schwarz	ENV432	101318	2019-7-6
LISN	Rohde & Schwarz	ENV216	100326	2019-7-6
ISN	Rohde & Schwarz	ENY81	100177	2019-7-6
ISN	Rohde & Schwarz	ENY81-CA6	101664	2019-7-6
High Voltage Probe	Rohde & Schwarz	TK9420(VT9420)	9420-584	2019-6-30
RF Current Probe	Rohde & Schwarz	EZ-17	100816	2019-6-30
Attenuator	Shanghai Huaxiang	TS2-26-3	080928189	2019-7-6
Test software	Rohde & Schwarz	EMC32	Version9.15.00	N/A

20dB & 99% Bandwidth, Peak Output Power, Spurious Emissions at Antenna Terminals, 100kHz Bandwidth of band edges, Power Spectral Density – Site 1

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
Signal Analyzer	Rohde & Schwarz	FSV40	101030	2019-7-6
Vector Signal Generator	Rohde & Schwarz	SMU 200A	105324	2019-7-6
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157	101226/100851	2019-7-6

4.2 Measurement System Uncertainty

Measurement System Uncertainty Emissions

System Measurement Uncertainty	
Items	Extended Uncertainty
Uncertainty for Radiated Emission in 3m chamber 9kHz-30MHz	4.46dB
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.91dB; Vertical: 4.89dB;
Uncertainty for Radiated Emission in 3m chamber 1000MHz-25000MHz	Horizontal: 4.80dB; Vertical: 4.79dB;
Uncertainty for Conducted Emission at AC Power Line 150kHz-30MHz	3.21dB
Uncertainty for Conducted RF Power	2.13dB
Uncertainty for frequency test	0.6×10^{-7}

5 Summary of Test Results

Emission Tests				
FCC Part 15 Subpart C				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
FCC Title 47 Part 15.205, 15.209 & 15.247(d) Spurious Radiated Emission	12-15	☒	☐	☐
FCC Title 47 Part 15.207 Conduct Emission	16	☐	☐	☒
FCC Title 47 Part 15.247(a)(2) 6dB & 99% Bandwidth	17-20	☒	☐	☐
FCC Title 47 Part 15.247(b) Peak Output Power	21-22	☒	☐	☐
FCC Title 47 Part 2.1051 & 15.247(d) Spurious Emissions at Antenna Terminals	23-28	☒	☐	☐
FCC Title 47 Part 15.247(d) 100kHz Bandwidth of band edges	29-31	☒	☐	☐
FCC Title 47 Part 15.247(e) Power Spectral Density	32-34	☒	☐	☐
FCC Title 47 Part 15.203 & 15.247(b) Antenna Requirement	35	☒	☐	☐

Remark:

(1) Conducted Emission testing is not applicable for battery operating device.

6 General Remarks

Remarks

Client informs that the **25441, 25442, 25437, 25438, 25439, 25451, 25452, 25453, 25461, 25462, 25463** have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction with **25443**. The difference lies only on the model number, appearance and removal of 915MHz receiver function (Client's conformation letter shown at appendix A)

EMC tests were performed on model: **25443**.

This submittal(s) (test report) is intended for **FCC ID: 2ASWP-254B1**, complies with Section 15.203, 15.205, 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C rules for the DTS grant.

The TX and RX range is 2402MHz-2480MHz.

SUMMARY:

- All tests according to the regulations cited on page 8 were

☒ - Performed

☐ - **Not** Performed

- The Equipment Under Test

☒ - **Fulfills** the general approval requirements.

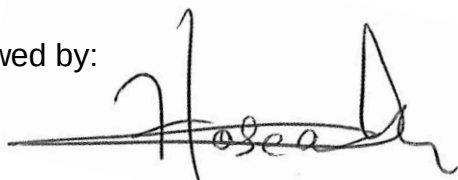
☐ - **Does not** fulfill the general approval requirements.

Sample Received Date: January 31, 2019

Testing Start Date: March 4, 2019

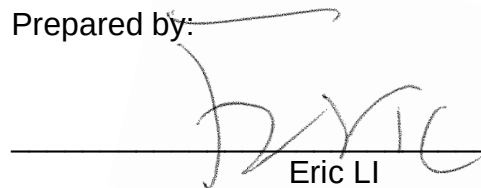
Testing End Date: March 15, 2019

Reviewed by:



Hosea CHAN
EMC Project Engineer

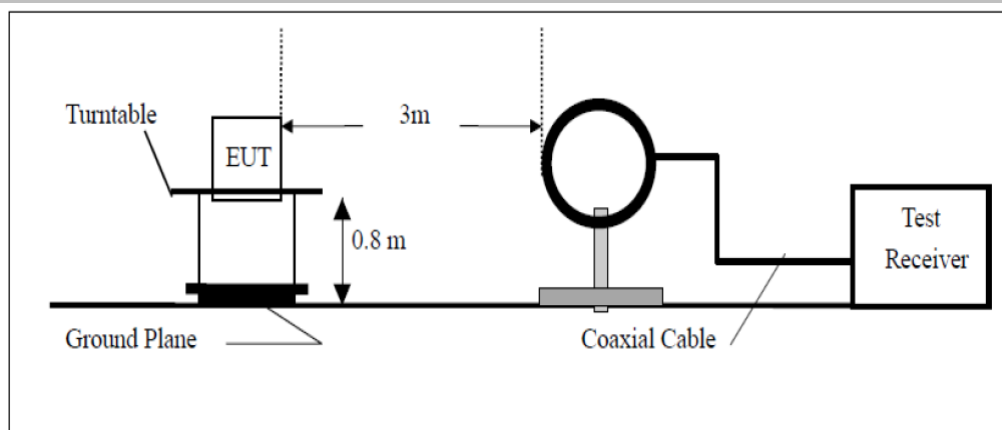
Prepared by:



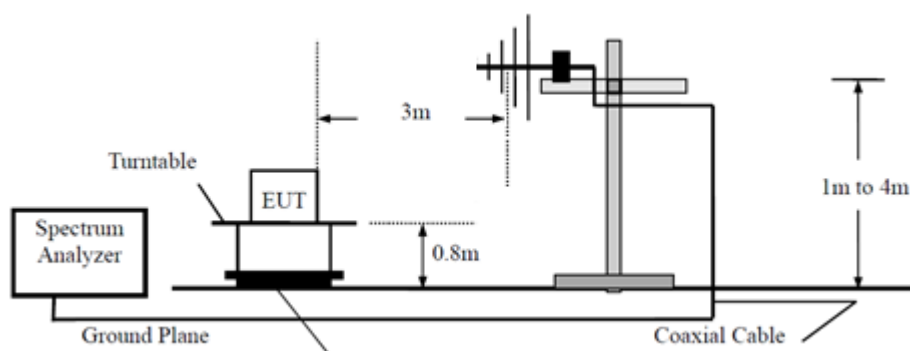
Eric LI
EMC Senior Project Engineer

7 Test Setups

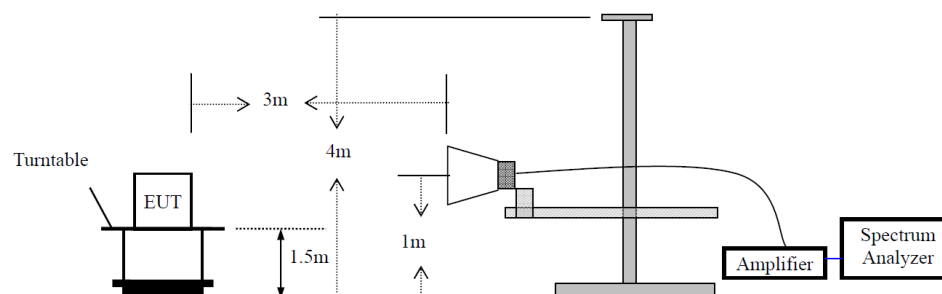
7.1 Radiated test setups 9kHz-30MHz



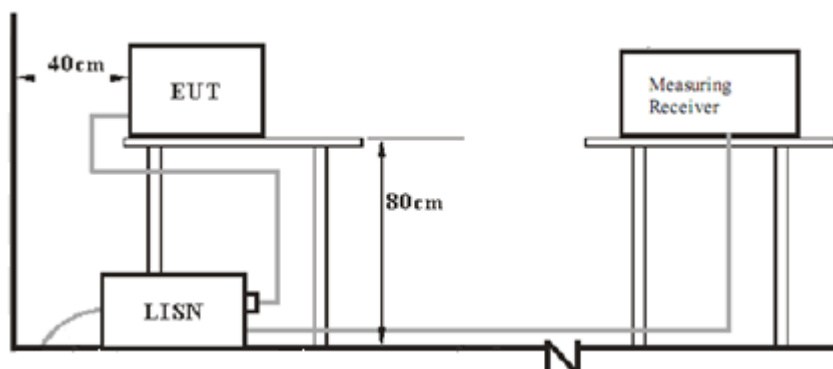
7.2 Radiated test setups Below 1GHz



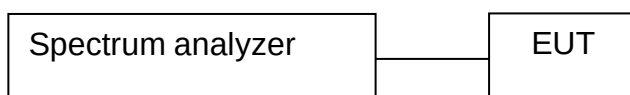
7.3 Radiated test setups Above 1GHz



7.4 AC Power Line Conducted Emission test setups



7.5 Conducted RF test setups



8 Emission Test Results

8.1 Spurious Radiated Emission

EUT: 25443
 Op Condition: Operated, TX Mode
 (Worst case lies on 2480MHz channel)
 Test Specification: FCC15.205, 15.209 & 15.247(d)
 Comment: 3V DC
 Remark: 9kHz to 1GHz

Test Result

☒ Passed☐ Not Passed

Frequency MHz	Result dBμV/m	Limit dBμV/m	Margin dB	Detector PK/QP/AV	Ant. Polarity H/V	Corr. (dB)
47.675556	18.27	40.00	-21.73	Peak	H	-25.4
58.722778	18.23	40.00	-21.77	Peak	H	-26.9
867.595000	30.95	46.00	-15.05	Peak	H	-16.0
58.291667	19.72	40.00	-20.28	Peak	V	-26.9
866.517222	26.46	46.00	-19.54	Peak	V	-16.0
943.308889	32.49	46.00	-13.51	Peak	V	-15.3

Remark:

1. As the measured peak value not exceeded the Quasi peak limit, Quasi peak value no need to be measured.

Spurious Radiated Emission

EUT: 25443
 Op Condition: Operated, TX Mode (2402MHz)
 Test Specification: FCC15.205, 15.209 & 15.247(d)
 Comment: 3V DC
 Remark: 1GHz to 25GHz

Test Result	
☒	Passed
☐	Not Passed

Frequency	Result	Limit	Margin	Detector	Ant. Polarity	Corr.
MHz	dBμV/m	dBμV/m	dB	PK/QP/AV	H/V	(dB)
1261.500000	32.10	54.00	-21.90	Peak	H	-12.0
1774.750000	28.29	54.00	-25.71	Peak	H	-10.1
4804.218750	42.86	54.00	-11.14	Peak	H	2.7
8267.812500	38.30	54.00	-15.7	Peak	H	6.0
11930.625000	40.85	54.00	-13.15	Peak	H	10.6
1994.125000	35.69	54.00	-18.31	Peak	V	-9.3
2096.437500	36.66	54.00	-17.34	Peak	V	-8.3
4804.218750	37.61	54.00	-16.39	Peak	V	2.7
7206.562500	37.95	54.00	-16.05	Peak	V	5.0
9502.031250	41.45	54.00	-12.55	Peak	V	9.2

Remark:

1.As the measured peak value not exceeded the average limit, average value no need to be measured.

Spurious Radiated Emission

EUT: 25443
 Op Condition: Operated, TX Mode (2440MHz)
 Test Specification: FCC15.205, 15.209 & 15.247(d)
 Comment: 3V DC
 Remark: 1GHz to 25GHz

Test Result	
☒	Passed
☐	Not Passed

Frequency MHz	Result dBμV/m	Limit dBμV/m	Margin dB	Detector PK/QP/AV	Ant. Polarity H/V	Corr. (dB)
1321.750000	29.55	54.00	-24.45	Peak	H	-11.8
1762.375000	28.75	54.00	-25.25	Peak	H	-10.0
4879.218750	43.59	54.00	-10.41	Peak	H	2.9
10166.250000	41.38	54.00	-12.62	Peak	H	8.7
15300.468750	47.68	54.00	-6.32	Peak	H	18.5
1857.125000	32.40	54.00	-21.60	Peak	V	-9.9
1994.000000	32.89	54.00	-21.11	Peak	V	-9.3
4879.218750	39.96	54.00	-14.04	Peak	V	2.9
7422.187500	38.01	54.00	-15.99	Peak	V	6.0
9523.125000	41.85	54.00	-12.15	Peak	V	9.1

Remark:

1.As the measured peak value not exceeded the average limit, average value no need to be measured.

Spurious Radiated Emission

EUT: 25443
 Op Condition: Operated, TX Mode (2480MHz)
 Test Specification: FCC15.205, 15.209 & 15.247(d)
 Comment: 3V DC
 Remark: 1GHz to 25GHz

Test Result	
☒	Passed
☐	Not Passed

Frequency MHz	Result dBμV/m	Limit dBμV/m	Margin dB	Detector PK/QP/AV	Ant. Polarity H/V	Corr. (dB)
1255.562500	33.10	54.00	-20.90	Peak	H	-12.0
1770.250000	29.18	54.00	-24.82	Peak	H	-10.1
4960.312500	43.74	54.00	-10.26	Peak	H	3.3
7439.062500	38.88	54.00	-15.12	Peak	H	6.0
9378.281250	41.52	54.00	-12.48	Peak	H	8.6
2098.562500	33.96	54.00	-20.04	Peak	V	-8.3
2384.125000	34.57	54.00	-19.43	Peak	V	-6.0
4959.375000	41.68	54.00	-12.32	Peak	V	3.3
7425.000000	39.26	54.00	-14.74	Peak	V	6.0
9527.343750	40.58	54.00	-13.42	Peak	V	9.0

Remark:

- 1.As the measured peak value not exceeded the average limit, average value no need to be measured.

8.2 Conducted Emission at AC Power line

EUT: 25443
Op Condition: Operated, TX Mode
Test Specification: FCC15.207
Comment: 3V DC
Remark:

Test Result

☐ Passed

☐ Not Passed

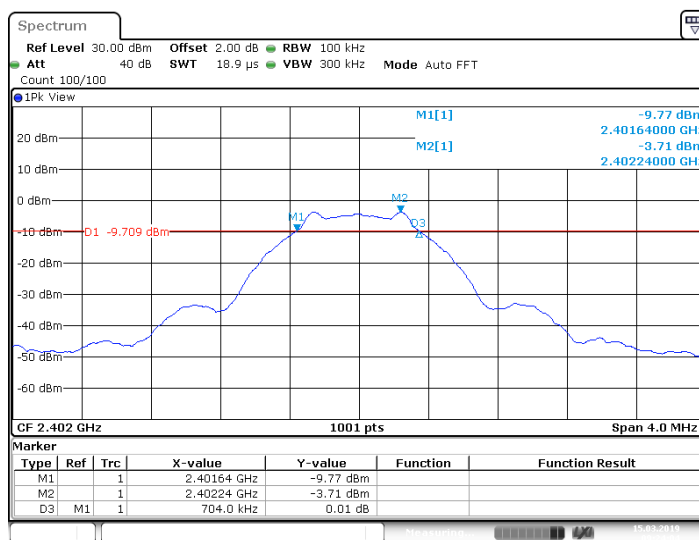
Conducted Emission testing is not applicable for this EUT as it is a battery operating device.

8.3 6dB & 99% Bandwidth

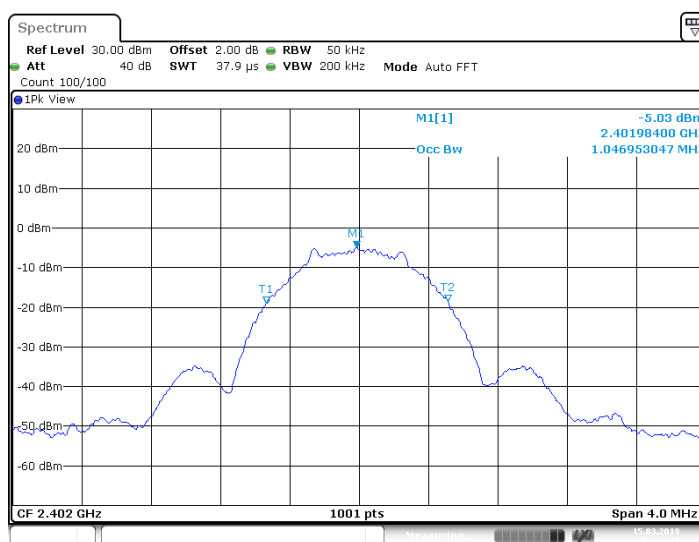
EUT: 25443
 Op Condition: Operated, TX Mode (2402MHz)
 Test Specification: FCC15.247(a)(2), 6dB Bandwidth & 99% Bandwidth
 Comment: 3V DC

Test Result

☒ Passed
☐ Not Passed



Date: 15 MAR 2019 09:24:05



Date: 15 MAR 2019 09:24:16

Bandwidth	Measured Value	Limit
6dB bandwidth	0.704MHz	> 0.5MHz
99% OCB	1.047MHz	NA

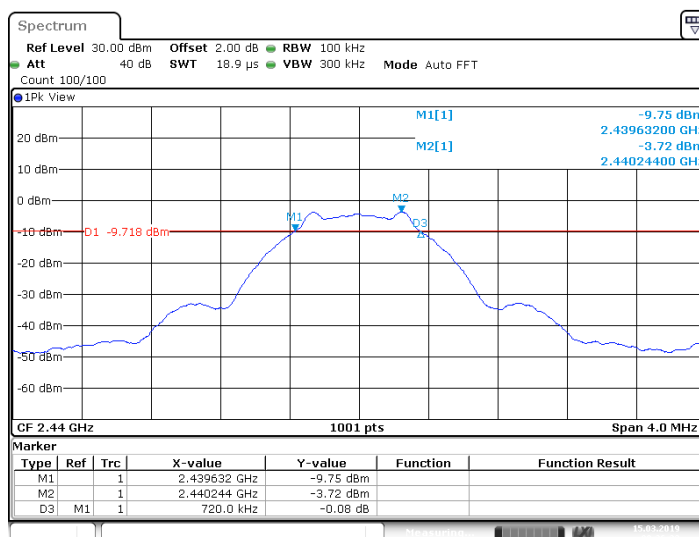
6dB & 99% Bandwidth

EUT: 25443
 Op Condition: Operated, TX Mode (2440MHz)
 Test Specification: FCC15.247(a)(2), 6dB Bandwidth & 99% Bandwidth
 Comment: 3V DC

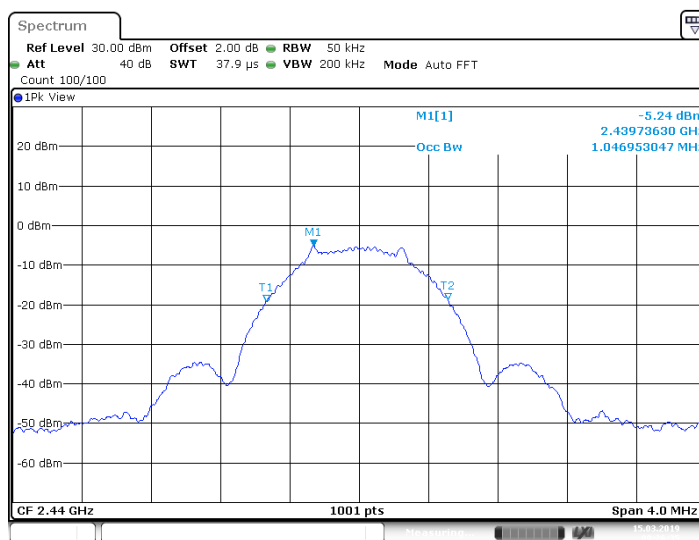
Test Result

☒ Passed

☐ Not Passed



Date: 15 MAR 2019 09:26:24



Date: 15 MAR 2019 09:26:35

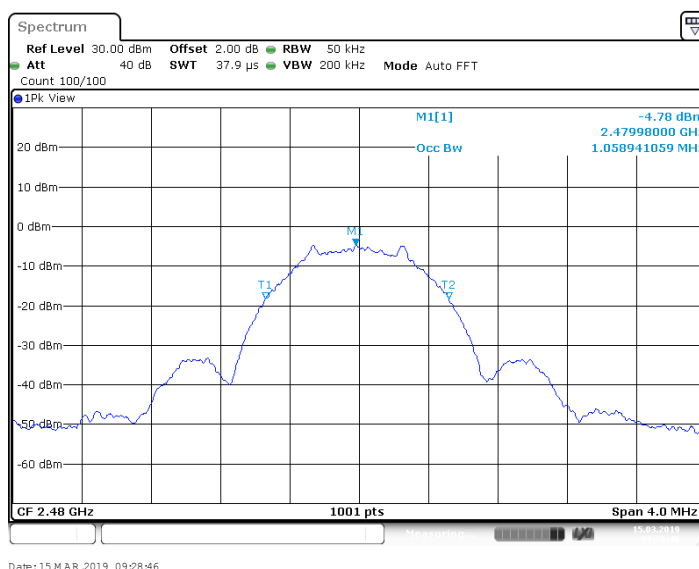
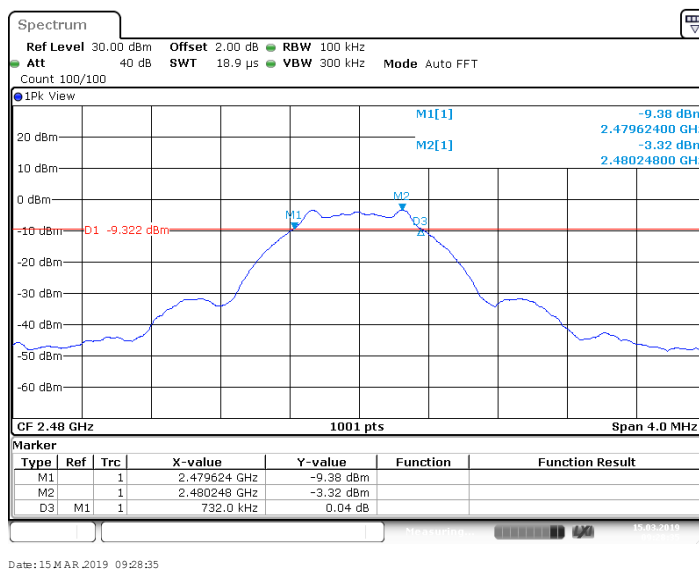
Bandwidth	Measured Value	Limit
6dB bandwidth	0.720 MHz	> 0.5 MHz
99% OCB	1.047 MHz	NA

6dB & 99% Bandwidth

EUT: 25443
 Op Condition: Operated, TX Mode (2480MHz)
 Test Specification: FCC15.247(a)(2), 6dB Bandwidth & 99% Bandwidth
 Comment: 3V DC

Test Result

☒ Passed
☐ Not Passed



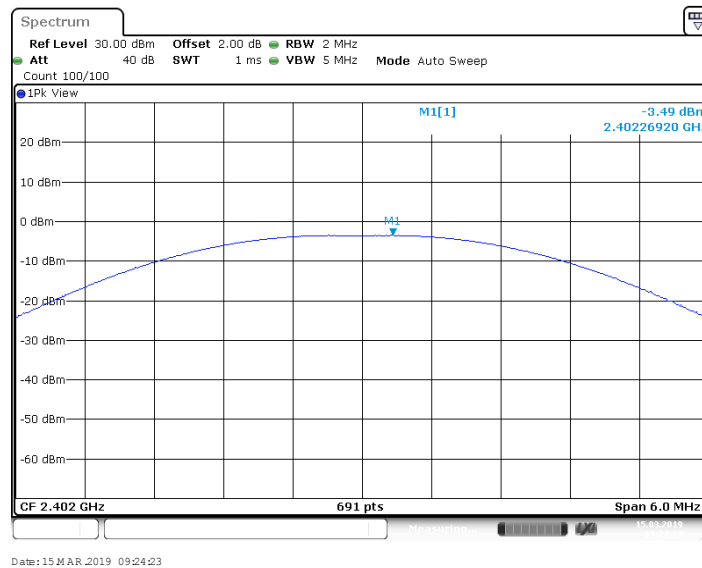
Bandwidth	Measured Value	Limit
6dB bandwidth	0.732 MHz	> 0.5 MHz
99% OCB	1.059 MHz	NA

8.4 Peak Output Power

EUT: 25443
Op Condition: Operated, TX Mode (2402MHz)
Test Specification: FCC15.247(b)
Comment: 3V DC

Test Result

☒ Passed
☐ Not Passed



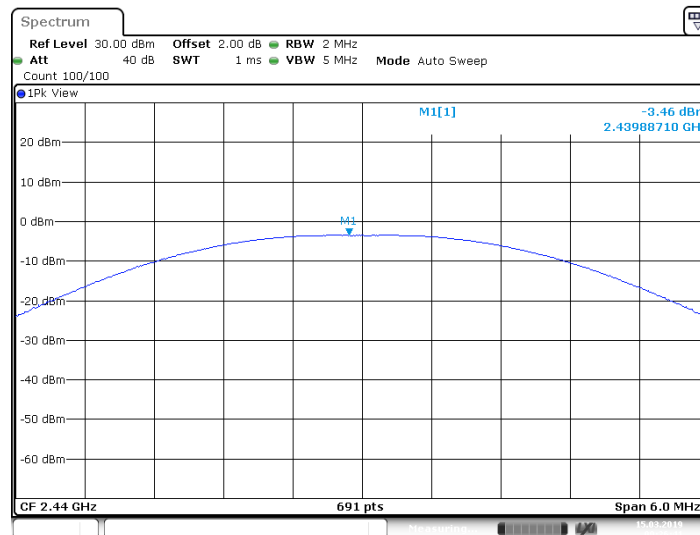
Conducted Output Power	Limit
-3.49 dBm	< 30dBm

Peak Output Power

EUT: 25443
Op Condition: Operated, TX Mode (2440MHz)
Test Specification: FCC15.247(b)
Comment: 3V DC

Test Result

☒ Passed
☐ Not Passed



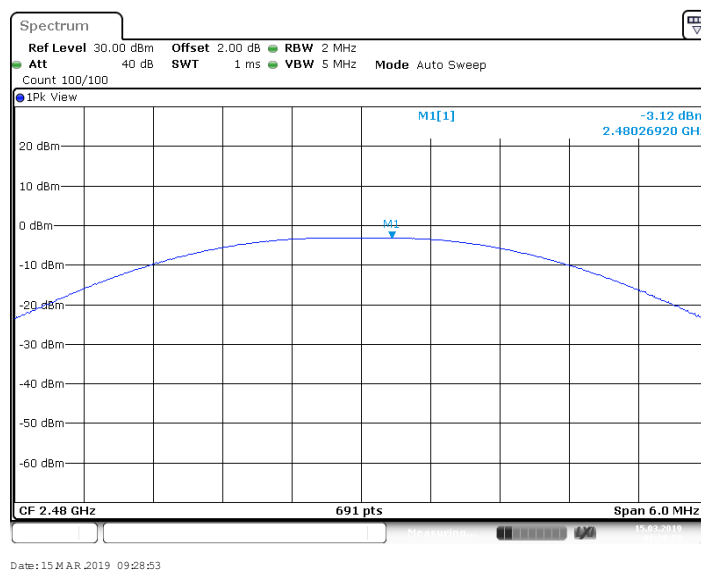
Conducted Output Power	Limit
-3.46 dBm	< 30dBm

Peak Output Power

EUT: 25443
 Op Condition: Operated, TX Mode (2480MHz)
 Test Specification: FCC15.247(b)
 Comment: 3V DC

Test Result

☒ Passed
☐ Not Passed



Conducted Output Power	Limit
-3.12 dBm	< 30dBm

8.5 Spurious Emissions at Antenna Terminals

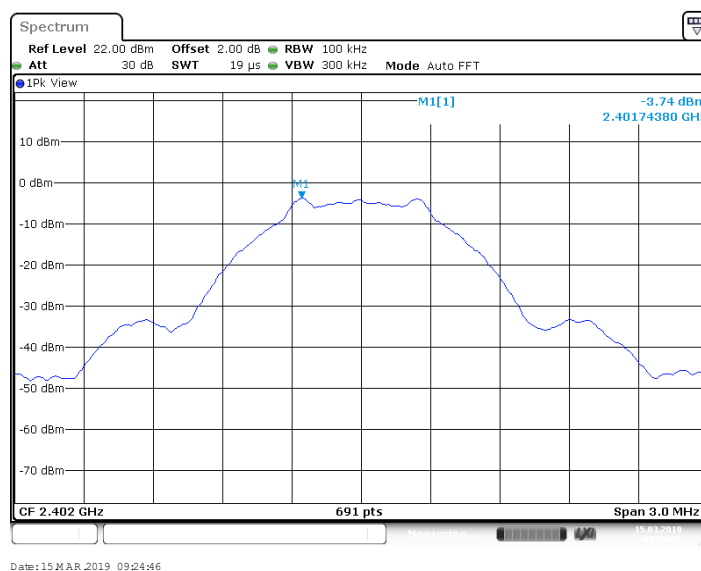
EUT: 25443
 Op Condition: Operated, TX Mode (2402MHz)
 Test Specification: FCC2.1051 & 15.247(d)
 Comment: 3V DC

Test Result

☒ Passed

☐ Not Passed

Channel	FreqRange	RefLevel	Result	Limit	Verdict
2402	Reference	-3.74	-3.74	---	PASS
2402	30~1000	-3.74	-55.03	<=-23.74	PASS
2402	1000~26500	-3.74	-52.28	<=-23.74	PASS

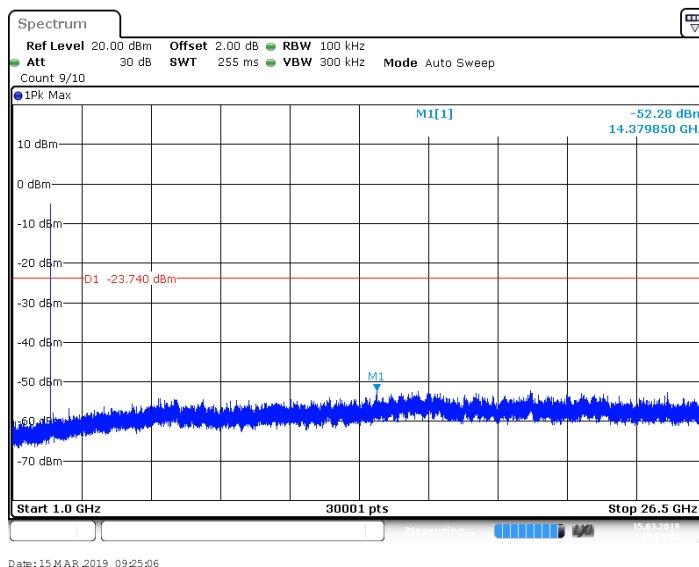
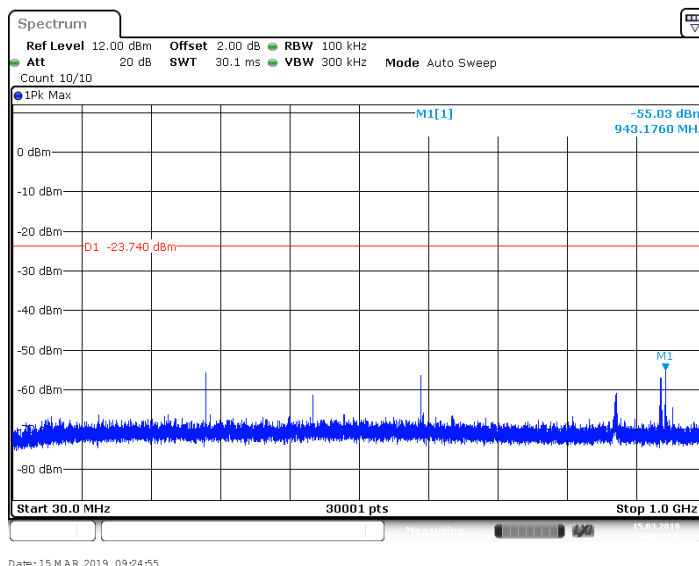


Spurious Emissions at Antenna Terminals

EUT: 25443
Op Condition: Operated, TX Mode (2402MHz)
Test Specification: FCC2.1051 & 15.247(d)
Comment: 3V DC

Test Result

☒ Passed
☐ Not Passed



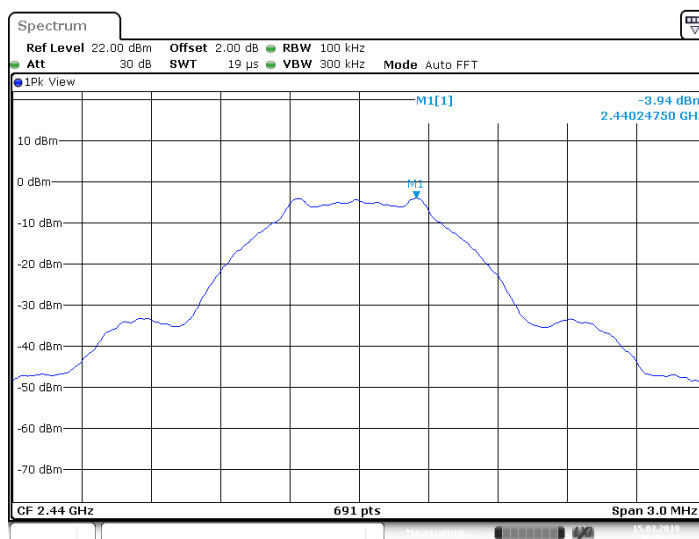
Spurious Emissions at Antenna Terminals

EUT: 25443
 Op Condition: Operated, TX Mode (2440MHz)
 Test Specification: FCC2.1051 & 15.247(d)
 Comment: 3V DC

Test Result

☒ Passed
☐ Not Passed

Channel	FreqRange	RefLevel	Result	Limit	Verdict
2440	Reference	-3.94	-3.94	---	PASS
2440	30~1000	-3.94	-55.88	<=-23.94	PASS
2440	1000~26500	-3.94	-51.74	<=-23.94	PASS



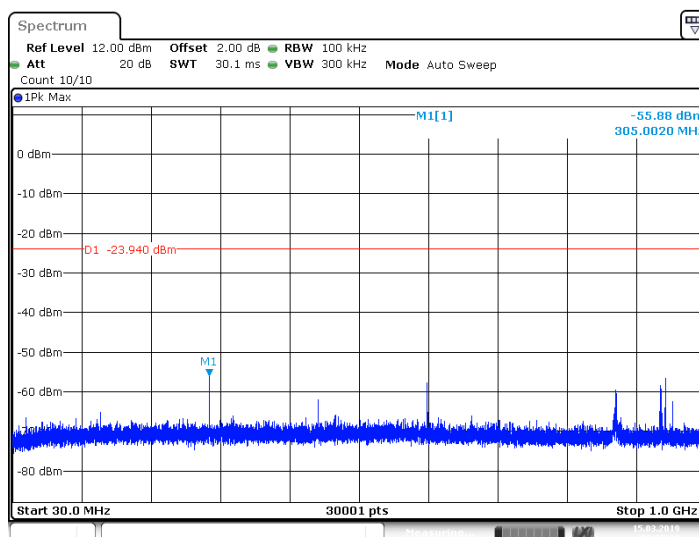
Date: 15 MAR 2019 09:26:54

Spurious Emissions at Antenna Terminals

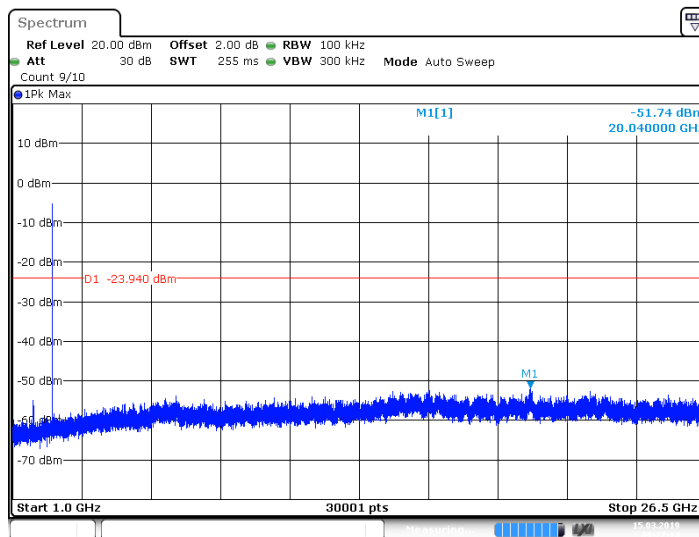
EUT: 25443
Op Condition: Operated, TX Mode (2440MHz)
Test Specification: FCC2.1051 & 15.247(d)
Comment: 3V DC

Test Result

☒ Passed
☐ Not Passed



Date: 15 MAR 2019 09:27:03



Date: 15 MAR 2019 09:27:15

Spurious Emissions at Antenna Terminals

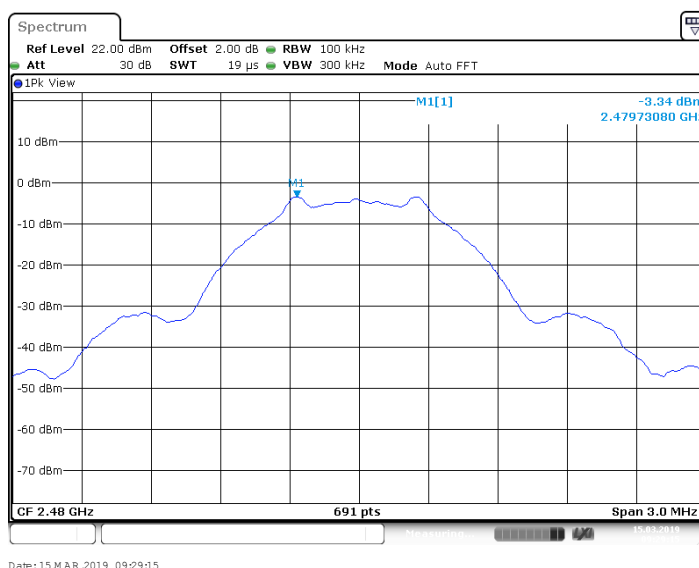
EUT: 25443
 Op Condition: Operated, TX Mode (2480MHz)
 Test Specification: FCC2.1051 & 15.247(d)
 Comment: 3V DC

Test Result

☒ Passed

☐ Not Passed

Channel	FreqRange	RefLevel	Result	Limit	Verdict
2480	Reference	-3.34	-3.34	---	PASS
2480	30~1000	-3.34	-55.27	≤ -23.34	PASS
2480	1000~26500	-3.34	-51.56	≤ -23.34	PASS



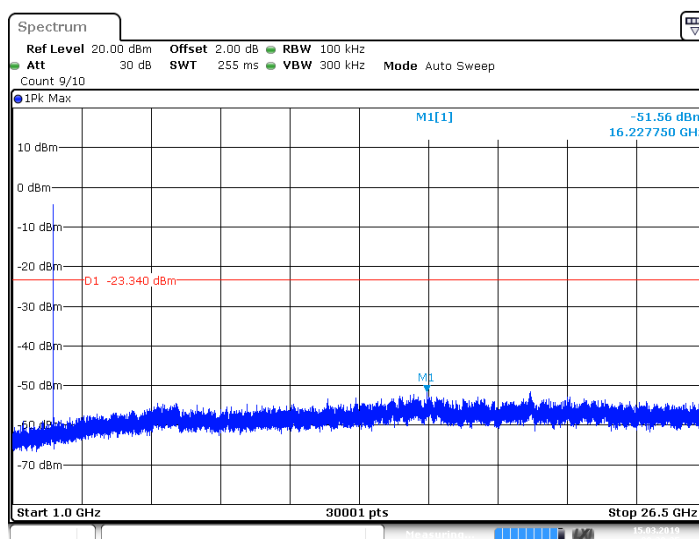
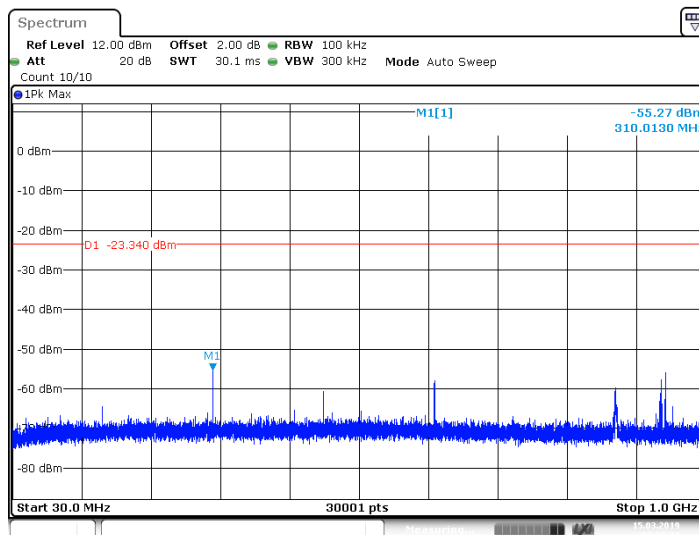
Spurious Emissions at Antenna Terminals

EUT: 25443
Op Condition: Operated, TX Mode (2480MHz)
Test Specification: FCC2.1051 & 15.247(d)
Comment: 3V DC

Test Result

☒ Passed

☐ Not Passed

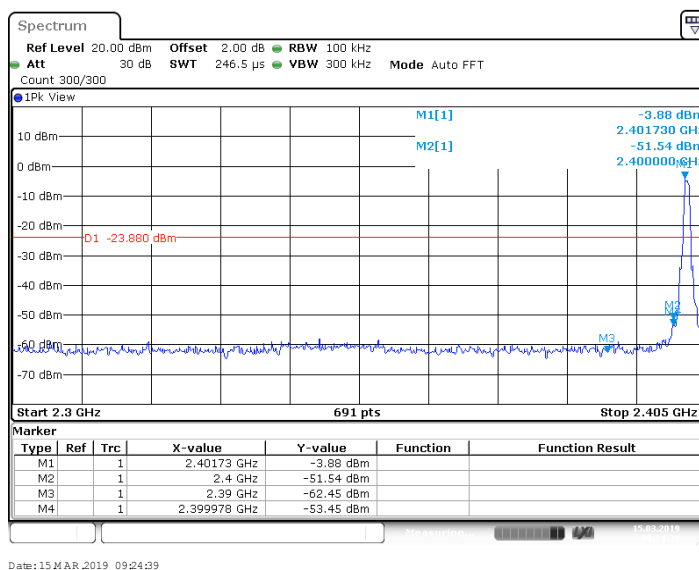


8.6 100kHz Bandwidth of band edges

EUT: 25443
 Op Condition: Operated, TX Mode (2402MHz)
 Test Specification: FCC15.247(d), Conducted method
 Comment: 3V DC

Test Result

☒ Passed
☐ Not Passed



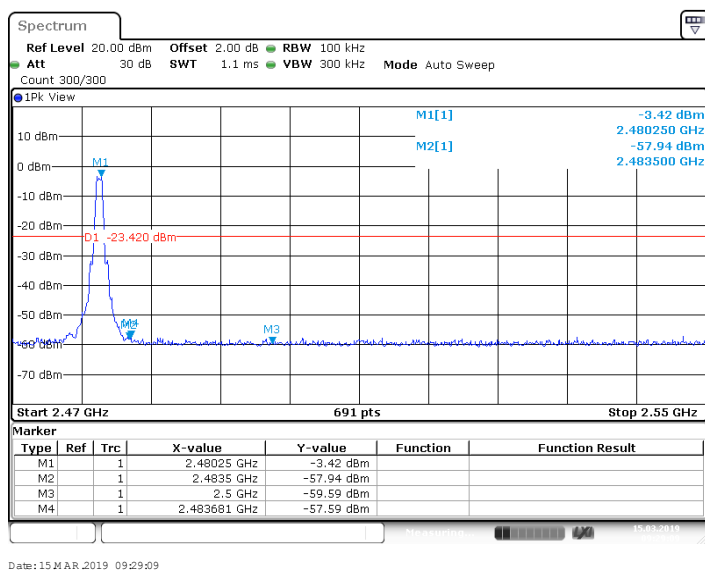
Band edges	Limit
47.66 dB	> 20dB

100kHz Bandwidth of band edges

EUT: 25443
 Op Condition: Operated, TX Mode (2480MHz)
 Test Specification: FCC15.247(d), Conducted method
 Comment: 3V DC

Test Result

☒ Passed
☐ Not Passed



Band edges	Limit
54.52 dB	> 20dB

100kHz Bandwidth of band edges

EUT: 25443
 Op Condition: Operated, TX Mode (2402MHz & 2480MHz)
 Test Specification: FCC15.247(d), Radiated method
 Comment: 3V DC

Test Result	
☒	Passed
☐	Not Passed

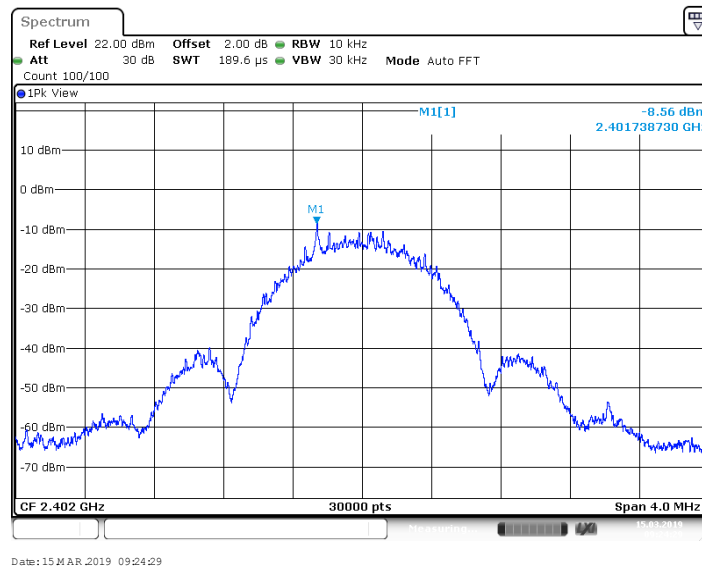
Channel	Frequency MHz	Result dBμV/m	Limit dBμV/m	Margin dB	Detector PK /AV	Ant. Polarity H/V	Corr. (dB)
2402	2400.00	43.62	74.00	-30.38	Peak	H	-5.5
2402	2400.00	33.98	54.00	-20.02	Average	H	-5.5
2402	2400.00	40.15	74.00	-33.85	Peak	V	-5.5
2402	2400.00	31.17	54.00	-22.83	Average	V	-5.5
2480	2483.50	42.66	74.00	-31.34	Peak	H	-4.8
2480	2483.50	34.23	54.00	-19.77	Average	H	-4.8
2480	2483.50	38.54	74.00	-35.46	Peak	V	-4.8
2480	2483.50	31.85	54.00	-22.15	Average	V	-4.8

8.7 Power Spectral Density

EUT: 25443
 Op Condition: Operated, TX Mode (2402MHz)
 Test Specification: FCC15.247(e)
 Comment: 3V DC

Test Result

☒ Passed
☐ Not Passed

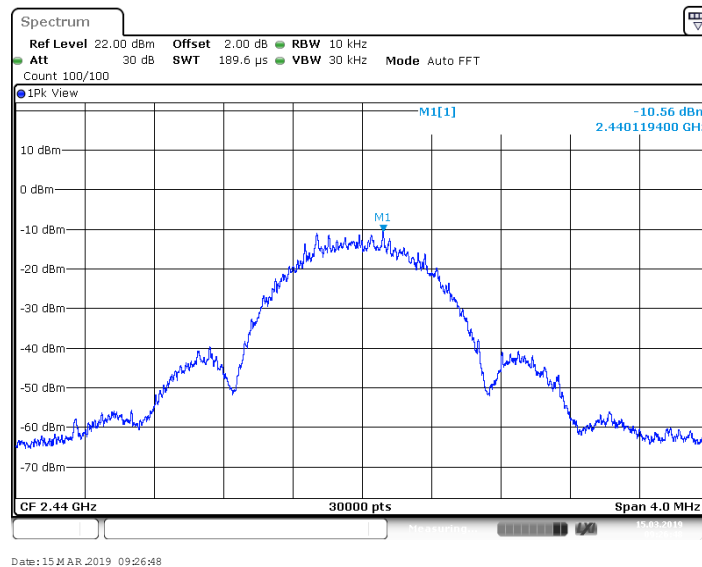


PSD	Limit
-8.56 dBm	< 8 dBm

Power Spectral Density

EUT: 25443
Op Condition: Operated, TX Mode (2440MHz)
Test Specification: FCC15.247(e)
Comment: 3V DC

Test Result
☒ Passed
☐ Not Passed



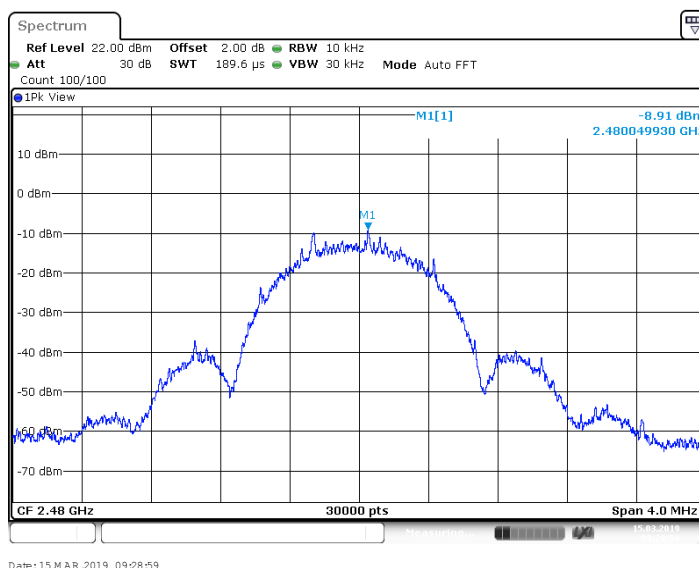
PSD	Limit
-10.56 dBm	< 8 dBm

Power Spectral Density

EUT: 25443
 Op Condition: Operated, TX Mode (2480MHz)
 Test Specification: FCC15.247(e)
 Comment: 3V DC

Test Result

☒ Passed
☐ Not Passed



PSD	Limit
-8.91 dBm	< 8 dBm

8.8 Antenna Requirement

EUT: 25443
Op Condition: Operated, TX Mode
Test Specification: FCC15.203 & 15.247(b)
Comment: 3V DC

Test Result

☒ Passed
☐ Not Passed

Limit

For intentional device, according to FCC Title 47 Part 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. And according to FCC Title 47 Part 15.247(b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The antenna used in this product is integrated antenna on PCB, and the maximum gain of this antenna is 6dBi.

9 Appendix A - General Product Information

Radiofrequency radiation exposure evaluation

This exposure evaluation is intended for **FCC ID: 2ASWP-254B1**.

According to FCC CFR 47 part1 1.1310, As specified in Table 1B of 47 CFR 1.1310 – Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

MPE calculation method:

$Pd = (P \cdot G) / (4 \cdot \pi \cdot R^2)$, where

Pd = power density in mW/cm²

P = output power to antenna in mW

G = gain of antenna in linear scale

$\pi = 3.1416$

R = calculation distance in cm

>> The antenna gain is 0dBi (=1 in linear scale).

Manufacturer specified the separation distance is: 20cm

The power of EUT measured (2402MHz) is: -3.49dBm = 0.448mW

The power of EUT measured (2440MHz) is: -3.46dBm = 0.451mW

The power of EUT measured (2480MHz) is: -3.12dBm = 0.488mW

>> The Pd calculated of 2402MHz is 0.00009mW/cm²

The Pd calculated of 2440MHz is 0.00009mW/cm²

The Pd calculated of 2480MHz is 0.00010mW/cm²

Which is smaller than the threshold of 1mW/cm².

Therefore, the device is exempt from stand-alone SAR test requirements.

General Product Information

Declaration Letter of Model Difference



Tel : 886-4-7775096 Fax : 886-4-7783107
website : www.yuanmei.tw e-mail : support@yuanmei.tw
No. 21, Lane 409, Sec. 1, Lu Ho Rd., Lu Kang, Chang Hua, 505 Taiwan R.O.C.

To: TÜV SÜD Hong Kong Limited

Attention: Mr. Edmond Fung

From: Yuan Mei Corp.

Date: August 26, 2019

Fax No:

Total Page (Cover Included): 1

Declaration Letter

Subject:

We:

Officially notify TÜV SÜD Hong Kong Limited that the <<Additional Model>> have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction, with <<PRODUCT>>, <<Main Test Model>>. The difference lies only on model 25439, 25438, 25437 remove 915MHZ receiver function, appearance & model number.

<<Additional Model >>: 25442, 25441, 25439, 25438, 25437, 25451, 25452, 25453, 25461, 25462, 25463

<<Main Test Model >>: 25443

<<Product>>: Lawn & Garden Bluetooth Water Timer

Applicant: Yuan Mei Corp.

Aug. 26, 2019

(Date)


(Applicant's authorized signature and company Chop)
Name: Lita Lin
Job title: VP of Sales & Marketing

General Product Information

	Sample	Model	Different	remark
1.		25443 (main test model)	Main test unit. 1. have BLE & 915MHz RX function	
2.		25442	1. have BLE & 915MHz RX function 2. only different on appearance	
3.		25441	1. have BLE & 915MHz RX function 2. only different on appearance	
4.		25439	1. without 915MHz RX function 2. different on appearance	
5.		25438	1. without 915MHz RX function 2. different on appearance	

General Product Information

6.		25437	1. without 915MHz RX function 2. different on appearance	
7.		25451	1. have BLE & 915MHz RX function 2. only different on appearance	
8.		25452	1. have BLE & 915MHz RX function 2. only different on appearance	
9.		25453	1. have BLE & 915MHz RX function 2. only different on appearance	

General Product Information

10.		25461	1. without 915MHz RX function 2. different on appearance	
11.		25462	1. without 915MHz RX function 2. different on appearance	
12.		25463	1. without 915MHz RX function 2. different on appearance	