

FCC TEST REPORT

Product : Wireless_TX
Trade mark : N/A
Model/Type reference : TX_B_118001A0
Serial Number : N/A
Report Number : EED32J000796
FCC ID : 2AMKJ-TX-B-001A
Date of Issue : Jun. 19, 2017
Test Standards : 47 CFR Part 15 Subpart C (2015)
Test result : PASS

Prepared for:

Lucky Star Electronics

**6F, No.8 building, the 3rd industrial, Langxia District, Songgan Town,
BaoAn, Shenzhen, China, 518105**

Prepared by:

**Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
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Date:

Jun. 19, 2017

Check No.:2496508381



2 Version

Version No.	Date	Description
00	Jun. 19, 2017	Original

3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203	ANSI C63.10-2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2013	PASS
Field Strength of the Fundamental Signal	47 CFR Part 15 Subpart C Section 15.231 (b)	ANSI C63.10-2013	PASS
Spurious Emissions	47 CFR Part 15 Subpart C Section 15.231 (b)/15.209	ANSI C63.10-2013	PASS
20dB Bandwidth	47 CFR Part 15 Subpart C Section 15.231 (c)	ANSI C63.10-2013	PASS
Dwell Time	47 CFR Part 15 Subpart C Section 15.231 (a)	ANSI C63.10-2013	PASS

Remark:

The tested sample(s) and the sample information are provided by the client.

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5 General Information

5.1 Client Information

Applicant:	Lucky Star Electronics
Address of Applicant:	6F, No.8 building, the 3rd industrial, Langxia District, Songgan Town, BaoAn, Shenzhen, China, 518105
Manufacturer:	Lucky Star Electronics
Address of Manufacturer:	6F, No.8 building, the 3rd industrial, Langxia District, Songgan Town, BaoAn, Shenzhen, China, 518105

5.2 General Description of EUT

Product Name:	Wireless_TX
Model No.(EUT):	TX_B_118001A0
Trade Mark:	N/A
EUT Supports Radios application:	418MHz
Power Supply:	AC 120V/60Hz

5.3 Product Specification subjective to this standard

Frequency Range:	418MHz
Product Software Version:	N/A
Modulation Type:	OOK
Number of Channels:	1
Sample Type:	Fixed product
Antenna Type:	Dipole
Antenna Gain:	5.19dBi
Test voltage:	AC 120V/60Hz
Sample Received Date:	Apr. 19, 2017
Sample tested Date:	Apr. 19, 2017 to Jun. 19, 2017

5.4 Test Environment and Mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1010mbar
Test mode:	
TX mode	Keep the EUT transmitted the continuous modulation test signal at 418MHz.
Normal	The EUT transmitting the signal at 418MHz between the transmitter and receiver.

5.5 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	Supplied by
Transmitter 24V	Sealed Unit Parts Co.,Inc	SXT105	Client
Thermostat	VENSTAR	T2900SCH	Client
RX product (receiver)	Lucky Star Electronics	RX_B_118002A0	Client
Compressor	motors & Armatures,Inc.	61320	Client
Receiver 24V	Diversitech	T2404	Client
Receiver Value	Herm. refriger. comp	TMX130A	Client

5.6 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd.

Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China 518101

Telephone: +86 (0) 755 3368 3668 Fax: +86 (0) 755 3368 3385

No tests were sub-contracted.

5.7 Test Facility

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

CNAS-Lab Code: L1910

Centre Testing International Group Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories..

A2LA-Lab Cert. No. 3061.01

Centre Testing International Group 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.: 886427

Centre Testing International Group 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 886427.

IC-Registration No.: 7408A-2

The 3m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408A-2 .

IC-Registration No.: 7408B-1

The 10m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408B-1.

NEMKO-Aut. No.: ELA503

Centre Testing International Group Co., Ltd. has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10.

VCCI

The Radiation 3 & 10 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-4096. Main Ports Conducted Interference Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-4563.

Telecommunication Ports Conducted Disturbance Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-2146.

The Radiation 3 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-758

5.8 Deviation from Standards

None.

5.9 Abnormalities from Standard Conditions

None.

5.10 Other Information Requested by the Customer

None.

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

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.31dB (30MHz-1GHz)
		0.57dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-12.75GHz)
4	Conduction emission	3.6dB (9kHz to 150kHz)
		3.2dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	2.8%
7	DC power voltages	0.025%

6 Equipment List

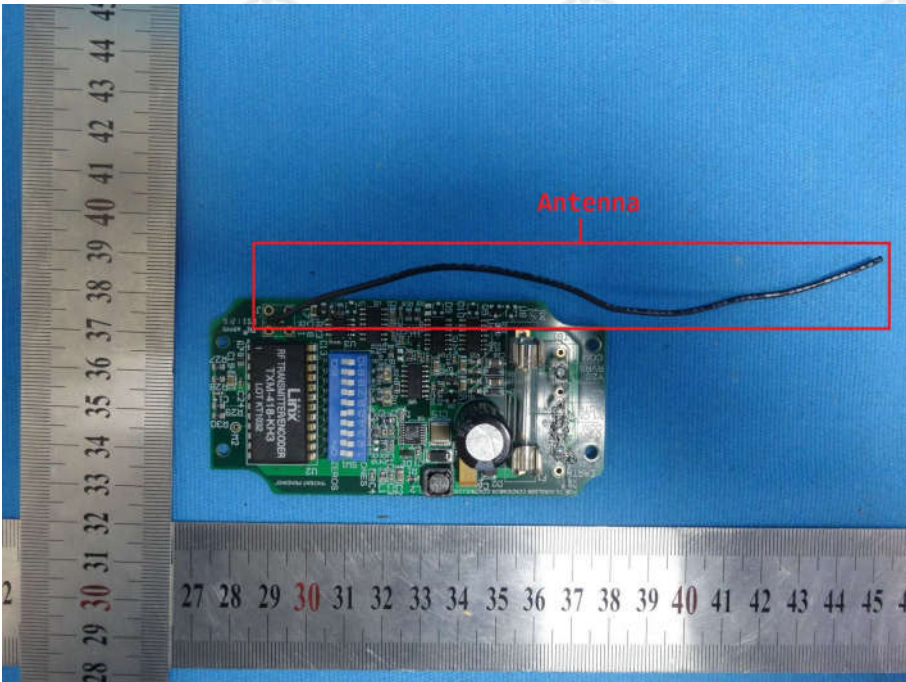
Conducted disturbance Test					
Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Receiver	R&S	ESCI	100009	06-14-2017	06-13-2018
Temperature/ Humidity Indicator	TAYLOR	1451	1905	05-08-2017	05-07-2018
Communication test set	Agilent	E5515C	GB47050534	03-14-2017	03-13-2018
Communication test set	R&S	CMW500	152394	03-14-2017	03-13-2018
LISN	R&S	ENV216	100098	06-13-2017	06-12-2018
LISN	schwarzbeck	NNLK8121	8121-529	06-13-2017	06-12-2018
Voltage Probe	R&S	ESH2-Z3	--	07-09-2014	07-07-2017
Current Probe	R&S	EZ17	100106	06-13-2017	06-12-2018
ISN	TESEQ GmbH	ISN T800	30297	02-23-2017	02-22-2018

RF Conducted test					
Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Spectrum Analyzer	R&S	FSP40	100416	06-13-2017	06-12-2018
Receiver	R&S	ESCI	100435	06-14-2017	06-13-2018
Signal Generator	Agilent	E4438C	MY45095744	03-14-2017	03-13-2018
Signal Generator	Keysight	E8257D	MY53401106	03-14-2017	03-13-2018
High-pass filter (3-18GHz)	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-11-2017	01-10-2018
High-pass filter (6-18GHz)	MICRO-TRONICS	SPA-F-63029-4	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX01CA09C L12-0395-001	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX01CA08C L12-0393-001	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX02CA04C L12-0396-002	---	01-11-2017	01-10-2018

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	---	06-05-2016	06-05-2019
TRILOG Broadband Antenna	SCHWARZBECK	VULB9163	9163-484	05-23-2017	05-22-2018
Microwave Preamplifier	Agilent	8449B	3008A02425	02-16-2017	02-15-2018
Horn Antenna	ETS-LINDGREN	3117	00057407	07-20-2015	07-18-2018
Loop Antenna	ETS	6502	00071730	07-30-2015	07-28-2017
Spectrum Analyzer	R&S	FSP40	100416	06-13-2017	06-12-2018
Receiver	R&S	ESCI	100435	06-14-2017	06-13-2018
Multi device Controller	maturo	NCD/070/10711 112	---	01-11-2017	01-10-2018
LISN	schwarzbeck	NNBM8125	81251547	06-13-2017	06-12-2018
LISN	schwarzbeck	NNBM8125	81251548	06-13-2017	06-12-2018
Signal Generator	Agilent	E4438C	MY45095744	03-14-2017	03-13-2018
Signal Generator	Keysight	E8257D	MY53401106	03-14-2017	03-13-2018
Temperature/ Humidity Indicator	TAYLOR	1451	1905	05-08-2017	05-07-2018
Communication test set	Agilent	E5515C	GB47050534	03-14-2017	03-13-2018
Cable line	Fulai(7M)	SF106	5219/6A	01-11-2017	01-10-2018
Cable line	Fulai(6M)	SF106	5220/6A	01-11-2017	01-10-2018
Cable line	Fulai(3M)	SF106	5216/6A	01-11-2017	01-10-2018
Cable line	Fulai(3M)	SF106	5217/6A	01-11-2017	01-10-2018
Communication test set	R&S	CMW500	152394	03-14-2017	03-13-2018
High-pass filter(3-18GHz)	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-11-2017	01-10-2018
High-pass filter(6-18GHz)	MICRO-TRONICS	SPA-F-63029-4	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX01CA09C L12-0395-001	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX01CA08C L12-0393-001	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX02CA04C L12-0396-002	---	01-11-2017	01-10-2018
band rejection filter	Sinoscite	FL5CX02CA03C L12-0394-001	---	01-11-2017	01-10-2018

7 Test results and Measurement Data

7.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203
15.203 Requirement: 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
EUT Antenna:	
The antenna is dipole antenna and no consideration of replacement . The best case gain of the antenna is 5.19dBi.	
	

7.2 Conducted Emissions

Test Requirement: 47 CFR Part 15C Section 15.207
Test Method: ANSI C63.10
Test Frequency Range: 150kHz to 30MHz

Limit:

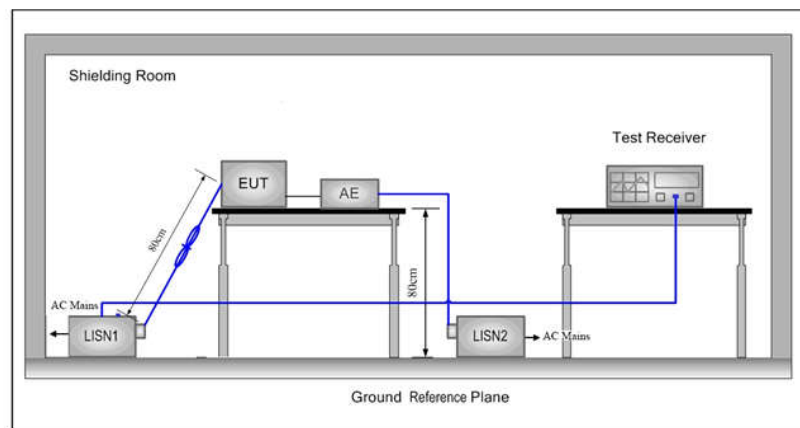
Frequency range (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

Test Procedure:

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.

Test Setup:



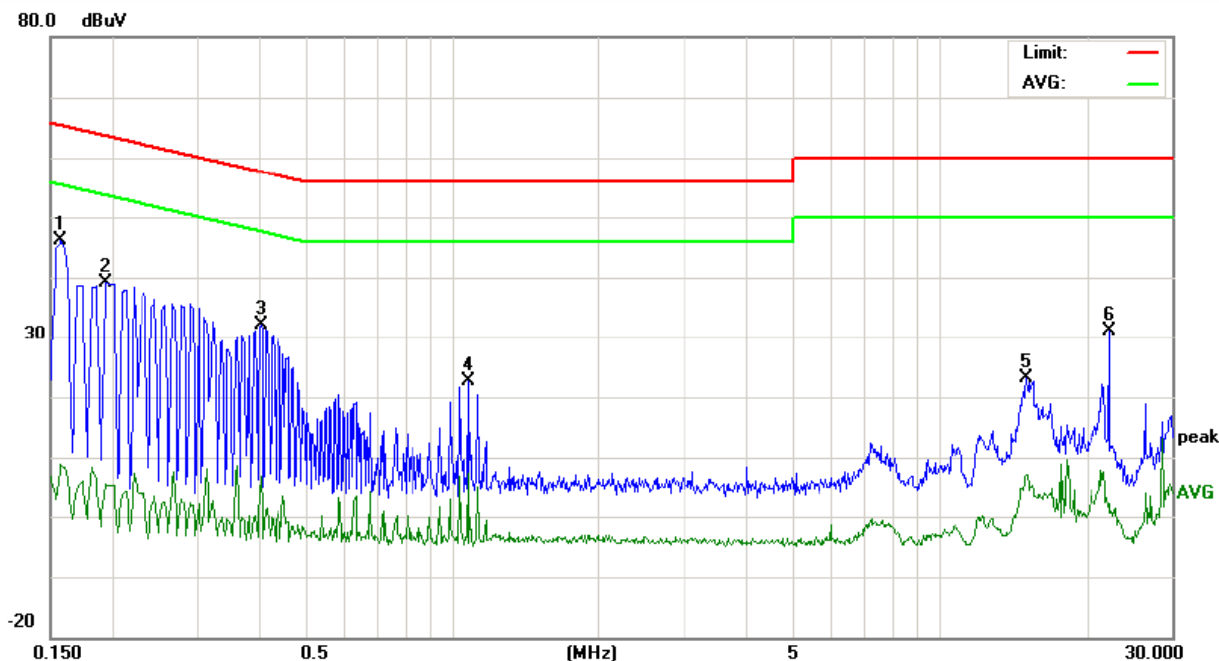
Test Mode: Normal mode
Instruments Used: Refer to section 6 for details
Test Results: Pass

Test data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

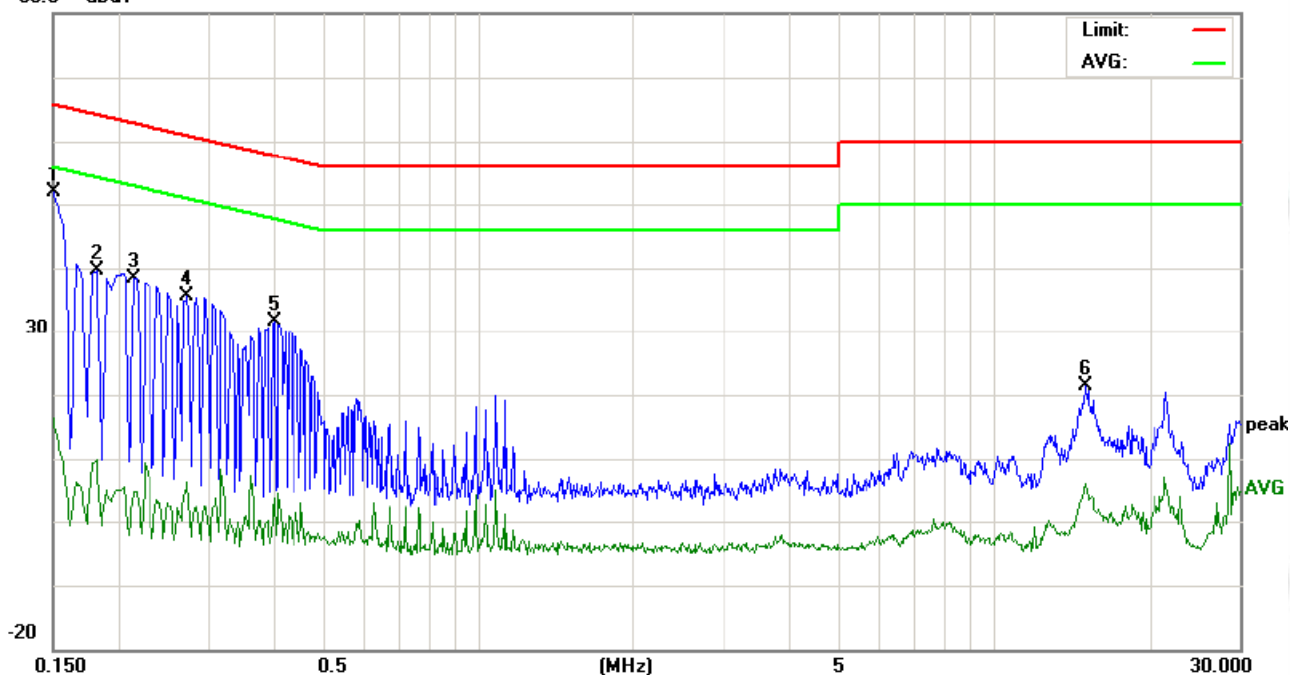
Live Line:



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1580	36.35	27.51	-3.91	9.76	46.11	37.27	5.85	65.56	55.56	-28.29	-49.71	P	
2	0.1940	29.45	21.94	-7.22	9.72	39.17	31.66	2.50	63.86	53.86	-32.20	-51.36	P	
3	0.4060	22.35	13.82	-6.21	9.75	32.10	23.57	3.54	57.73	47.73	-34.16	-44.19	P	
4	1.0820	12.92	11.80	-5.08	9.63	22.55	21.43	4.55	56.00	46.00	-34.57	-41.45	P	
5	15.1100	13.23	4.99	-4.82	10.01	23.24	15.00	5.19	60.00	50.00	-45.00	-44.81	P	
6	22.3700	20.92	-6.03	-11.8	10.17	31.09	4.14	-1.68	60.00	50.00	-55.86	-51.68	P	

Neutral Line:

80.0 dBuV



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1500	42.12	35.34	10.36	9.77	51.89	45.11	20.13	65.99	55.99	-20.88	-35.86	P	
2	0.1819	30.00	22.78	-3.43	9.73	39.73	32.51	6.30	64.39	54.39	-31.88	-48.09	P	
3	0.2162	42.17	19.00	-8.60	9.72	51.89	28.72	1.12	62.96	52.96	-34.24	-51.84	P	
4	0.2740	25.78	16.72	-7.07	9.76	35.54	26.48	2.69	60.99	50.99	-34.51	-48.30	P	
5	0.4020	21.86	13.14	-8.13	9.75	31.61	22.89	1.62	57.81	47.81	-34.92	-46.19	P	
6	15.1140	11.31	4.63	-5.24	10.01	21.32	14.64	4.77	60.00	50.00	-45.36	-45.23	P	

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

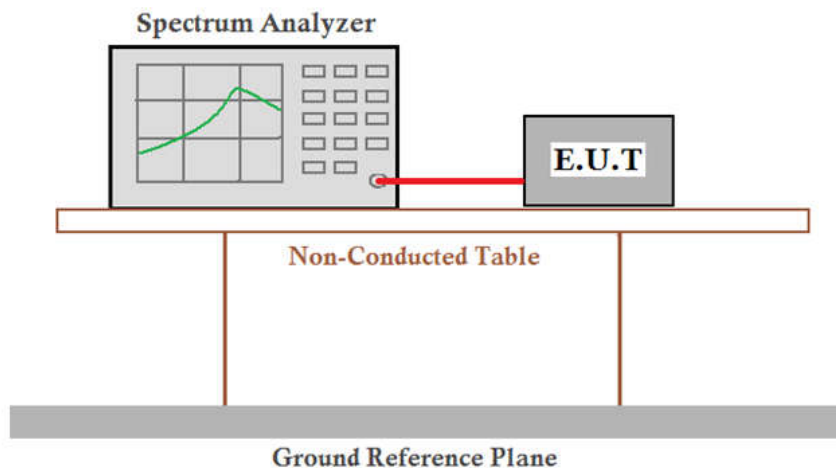
7.3 Spurious Emissions

7.3.1 Duty Cycle

Test Requirement: 47 CFR Part 15C Section 15.35 (c)

Test Method: ANSI C63.10

Test Setup:

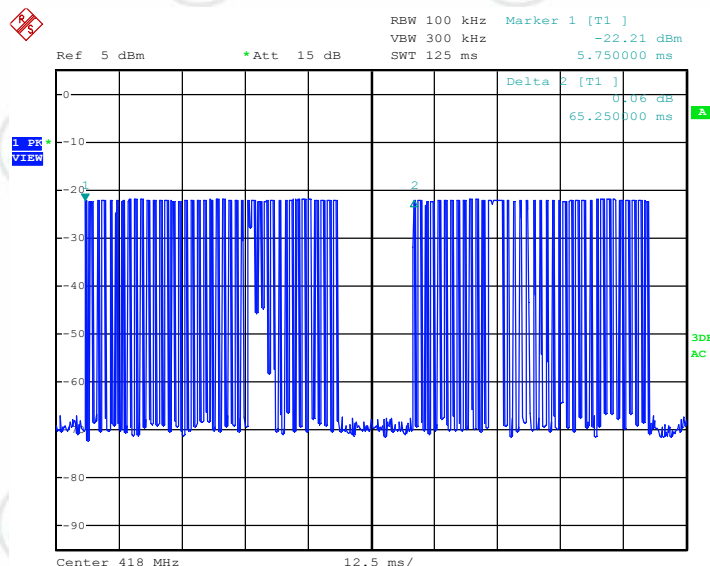


Limit: N/A

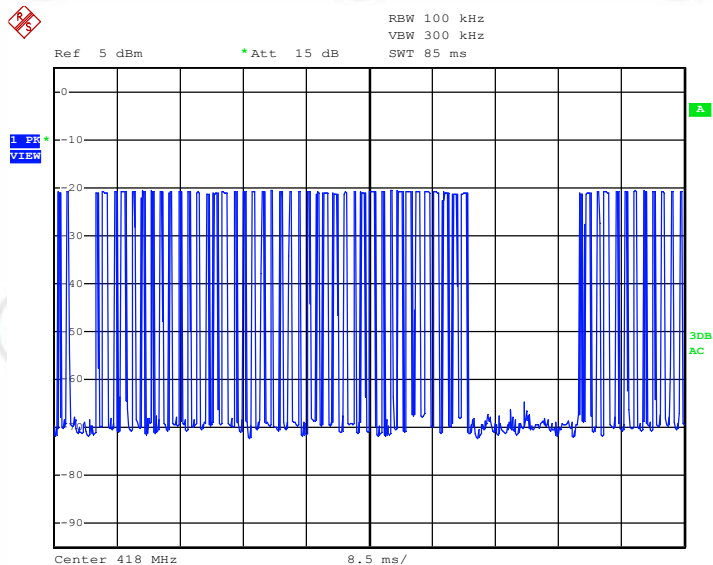
Test Mode: TX mode

Instruments Used: Refer to section 6 for details

Test plot as follows:

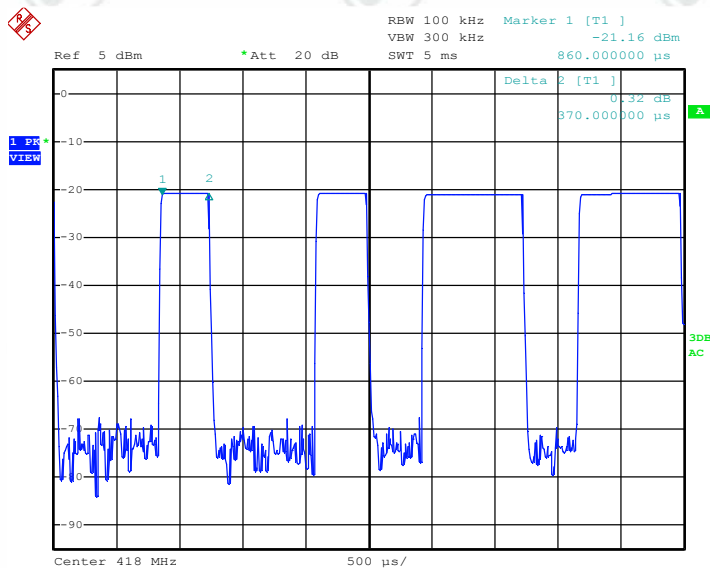


Date: 12.JUL.2017 17:13:47

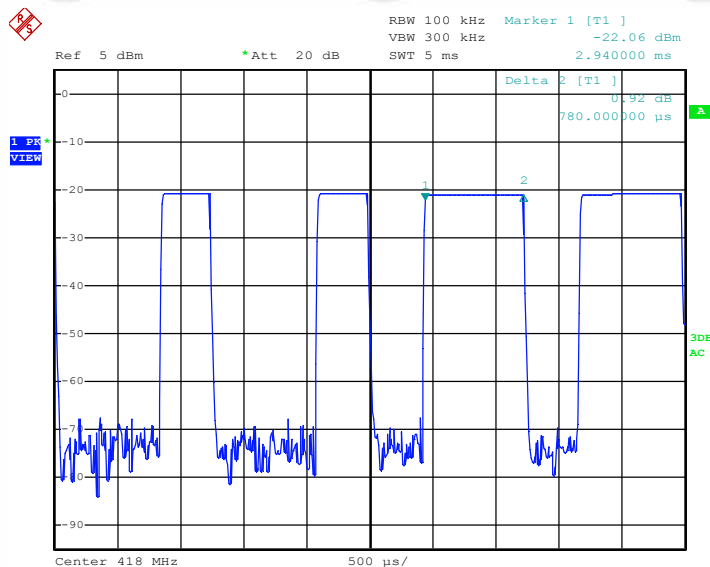


Date: 12.JUL.2017 17:18:46

Time slot:



Date: 12.JUL.2017 17:22:42



Date: 12.JUL.2017 17:23:10

Average factor:	
Calculate Formula:	Average value=Peak value + PDCF
	PDCF=20 log(Duty cycle)
	Duty cycle = T on time / T period
Calculated average factor:	Ton time = $0.37 \times 25 + 0.78 \times 16 = 21.73$ (ms); T period = 65.25 (ms)
	PDCF = $20 \log(21.73/65.25) = -9.55$ dB

7.3.2 Spurious Emissions

Test Requirement: 47 CFR Part 15C Section 15.231(b) and 15.209

Test Method: ANSI C63.10

Test Site: Measurement Distance: 3m (Semi-Anechoic Chamber)

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 Setup:

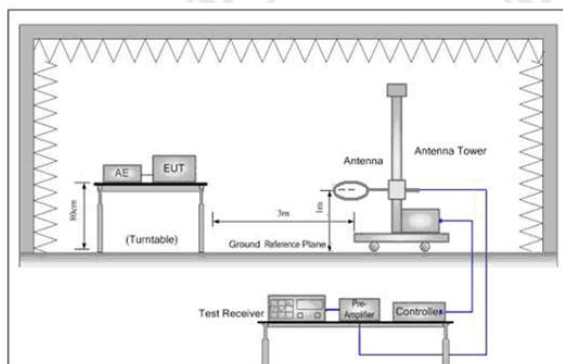


Figure 1. Below 30MHz

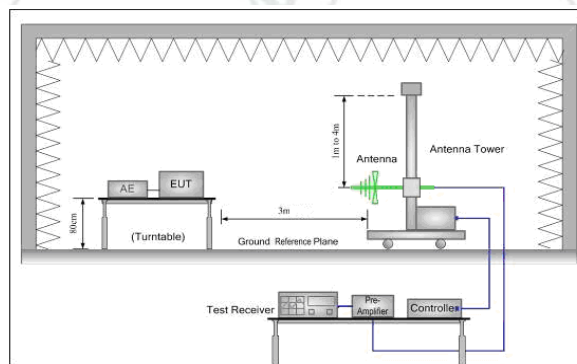


Figure 2. 30MHz to 1GHz

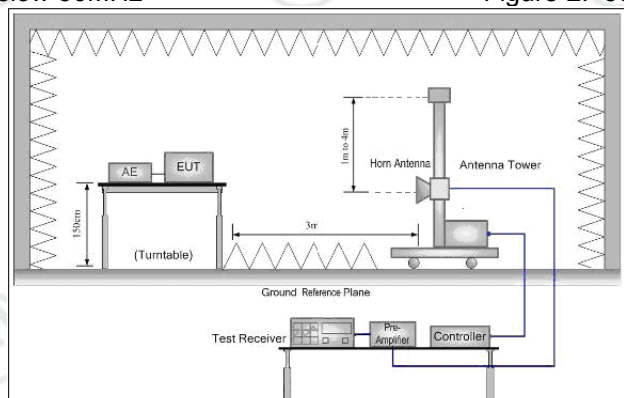


Figure 3. Above 1GHz

Test Procedure:

Below 1GHz test procedure as below:

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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 rotation table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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:

- Different from above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change from table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).
- Test the EUT in the lowest channel, middle channel, the Highest channel
- 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.
- Repeat above procedures until all frequencies measured was complete.

Limit:

(Spurious Emissions)

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.

Limit:

(Field strength of the fundamental signal)

Frequency	Limit (dBμV/m @3m)	Remark
418MHz	80.28	Average Value
	100.28	Peak Value

Test mode:

TX mode

Instruments Used:

Refer to section 6 for details

Test Results:

Pass

Test data

Field Strength Of The Fundamental Signal

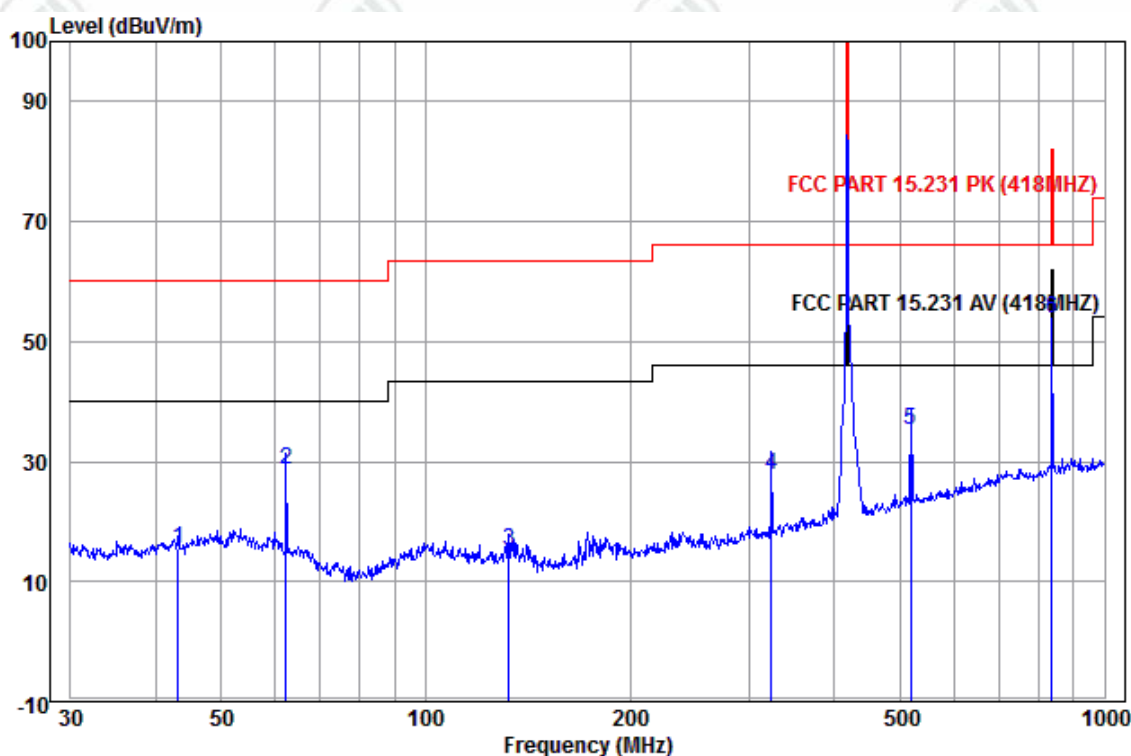
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Read Level (dBμV)	Peak Level (dBμV/m)	PDCF (from P.16)	Calculated Average value (dBuV/m)	Average Limit (dBμV/m)	Over Limit (dB)	Polarization
418	16.60	2.87	60.96	80.43	-9.55	70.88	80.28	-9.40	H
418	16.60	2.87	61.13	80.60	-9.55	71.05	80.28	-9.23	V

Spurious Emissions

30MHz-1GHz

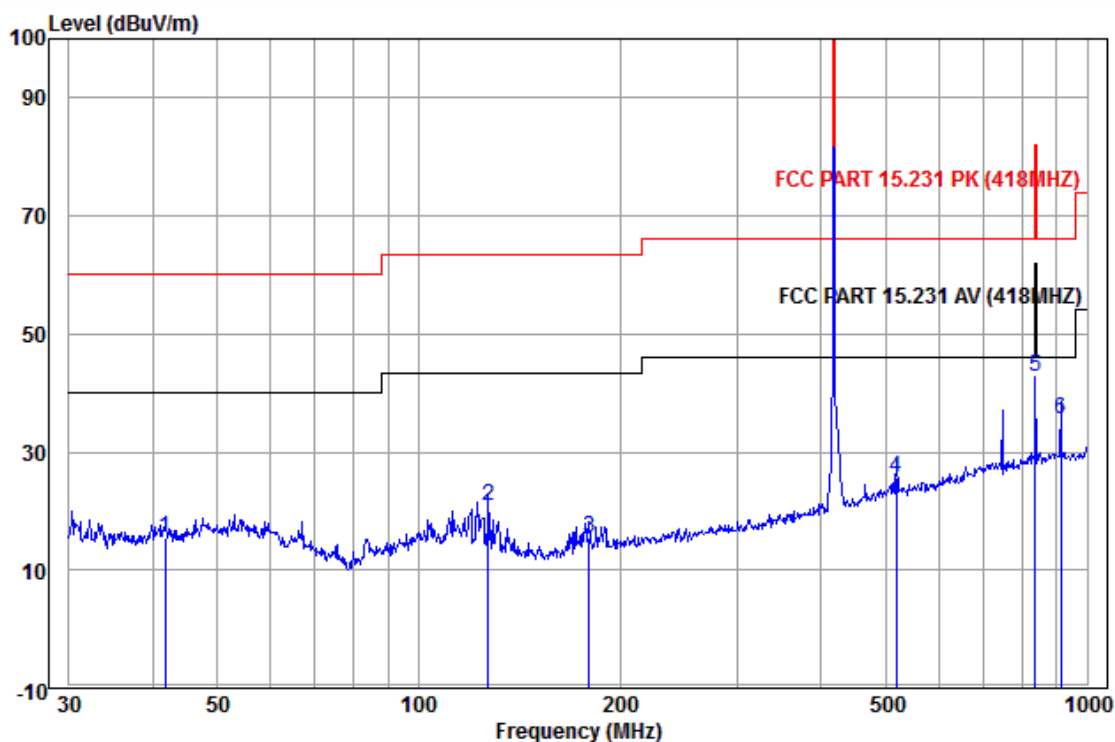
QP value:

Horizontal



	Ant Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	43.202	14.51	0.83	0.01	15.35	60.00	-44.65	Horizontal	QP
2	62.213	13.00	1.43	14.10	28.53	60.00	-31.47	Horizontal	QP
3	132.685	10.76	1.58	2.90	15.24	63.50	-48.26	Horizontal	QP
4	323.320	14.13	2.54	11.18	27.85	66.00	-38.15	Horizontal	QP
5 qp	519.065	18.48	3.16	13.63	35.27	66.00	-30.73	Horizontal	QP
6 pp	836.000	21.82	4.08	28.05	53.95	82.00	-28.05	Horizontal	Peak

Vertical



	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	41.713	14.37	0.69	0.44	15.50	60.00	-44.50	Vertical	QP
2	127.218	11.12	1.58	8.17	20.87	63.50	-42.63	Vertical	QP
3	180.017	10.90	1.98	2.46	15.34	63.50	-48.16	Vertical	QP
4	519.065	18.48	3.16	3.93	25.57	66.00	-40.43	Vertical	QP
5 pk	836.000	21.82	4.08	16.85	42.75	82.00	-39.25	Vertical	Peak
6 pp	912.862	22.40	4.33	8.89	35.62	66.00	-30.38	Vertical	QP

Above 1GHz

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Polarization
1254.000	30.35	2.58	34.91	48.94	46.96	80.28	-33.32	Horizontal
1672.000	31.18	2.98	34.53	50.67	50.30	74.00	-23.70	Horizontal
2090.000	31.91	3.49	34.32	41.30	42.38	80.28	-37.90	Horizontal
2508.000	32.76	4.56	34.41	40.84	43.75	80.28	-36.53	Horizontal
2926.000	33.48	5.47	34.49	40.72	45.18	80.28	-35.10	Horizontal
3344.000	33.30	5.55	34.54	41.22	45.53	80.28	-34.75	Horizontal
1254.000	30.35	2.58	34.91	45.02	43.04	80.28	-37.24	Vertical
1672.000	31.18	2.98	34.53	50.43	50.06	74.00	-23.94	Vertical
2090.000	31.91	3.49	34.32	54.35	55.43	80.28	-25.37	Vertical
2508.000	32.76	4.56	34.41	42.64	45.55	80.28	-35.25	Vertical
2926.000	33.48	5.47	34.49	40.83	45.29	80.28	-35.51	Vertical
3762.000	32.97	5.48	34.58	46.04	49.91	80.28	-30.89	Vertical

Remark:

- 1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading - Correct Factor
Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor
- 2) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

7.4 20dB Bandwidth

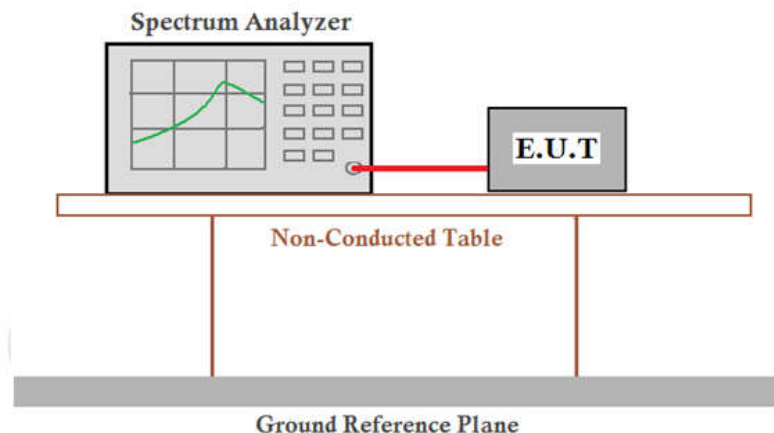
Test Requirement:

47 CFR Part 15C Section 15.231 (c)

Test Method:

ANSI C63.10

Test Setup:



Limit:

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Test Mode:

TX mode

Instruments Used:

Refer to section 6 for details

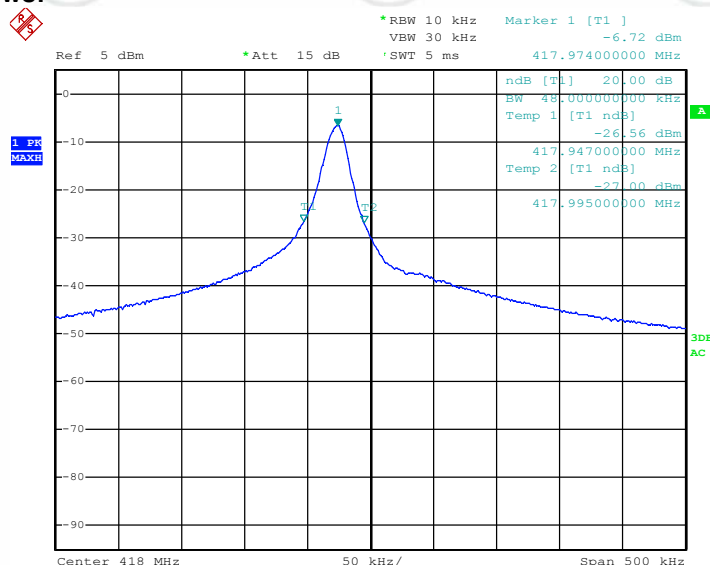
Test Results:

Pass

Measurement Data

20dB bandwidth (MHz)	Limit (MHz)	Results
0.048	1.045	Pass

Test plot as follows:



Date: 13.JUN.2017 11:50:05

7.5 Dwell Time

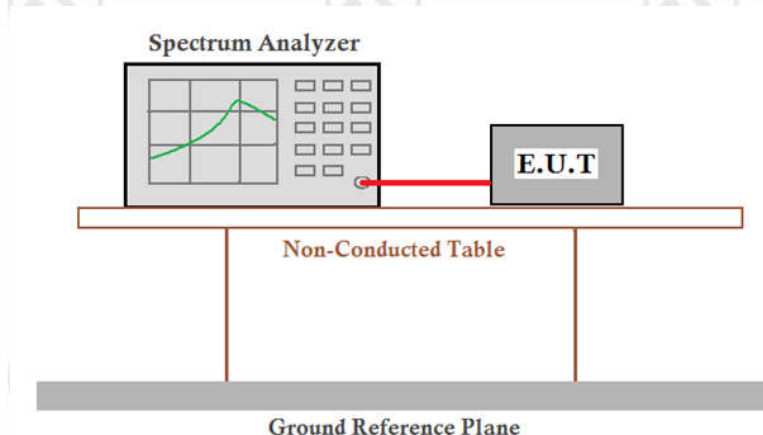
Test Requirement:

47 CFR Part 15C Section 15.231 (a) (2)

Test Method:

ANSI C63.10

Test Setup:



Limit:

Not more than 5 seconds

Test Mode:

Normal mode

Instruments Used:

Refer to section 6 for details

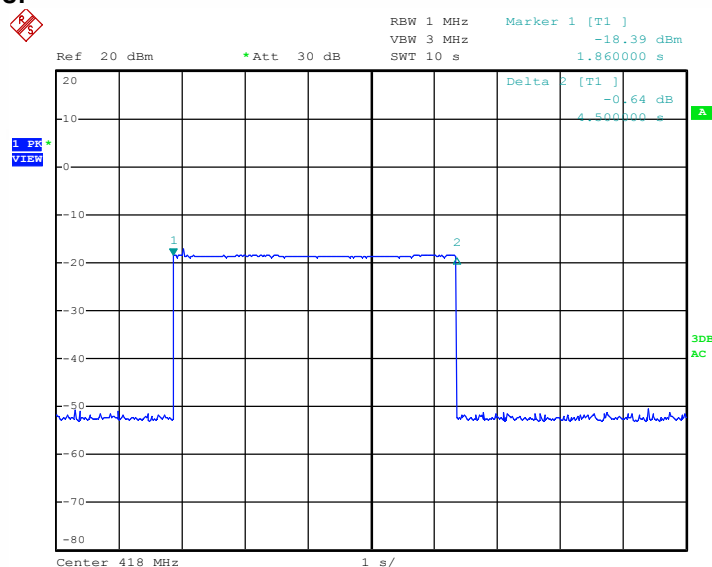
Test Results:

Pass

Measurement Data

Transmitting time(S)	Limit (S)	Results
4.5	≤5	Pass

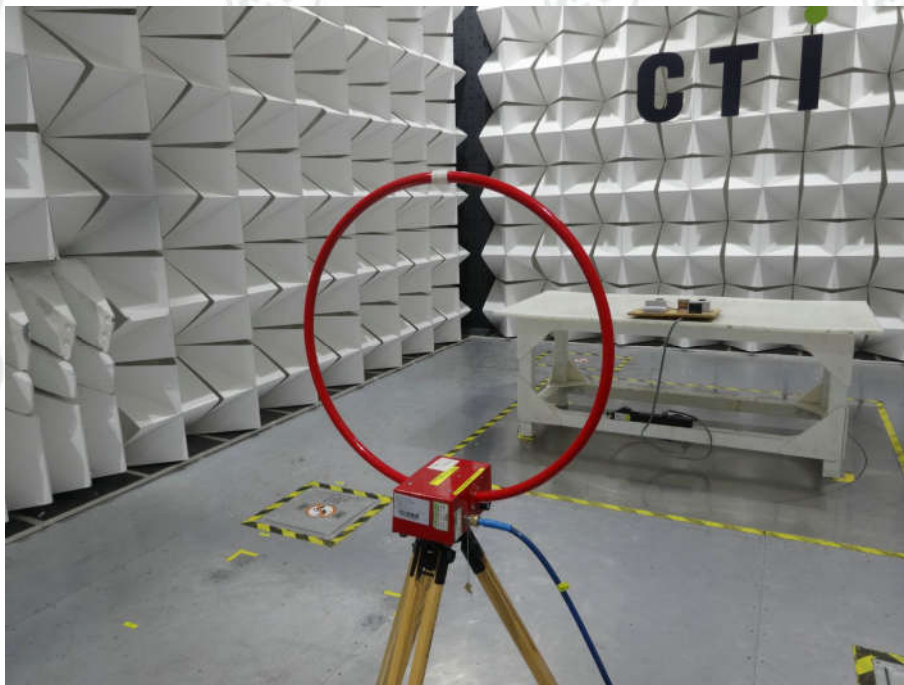
Test plot as follows:



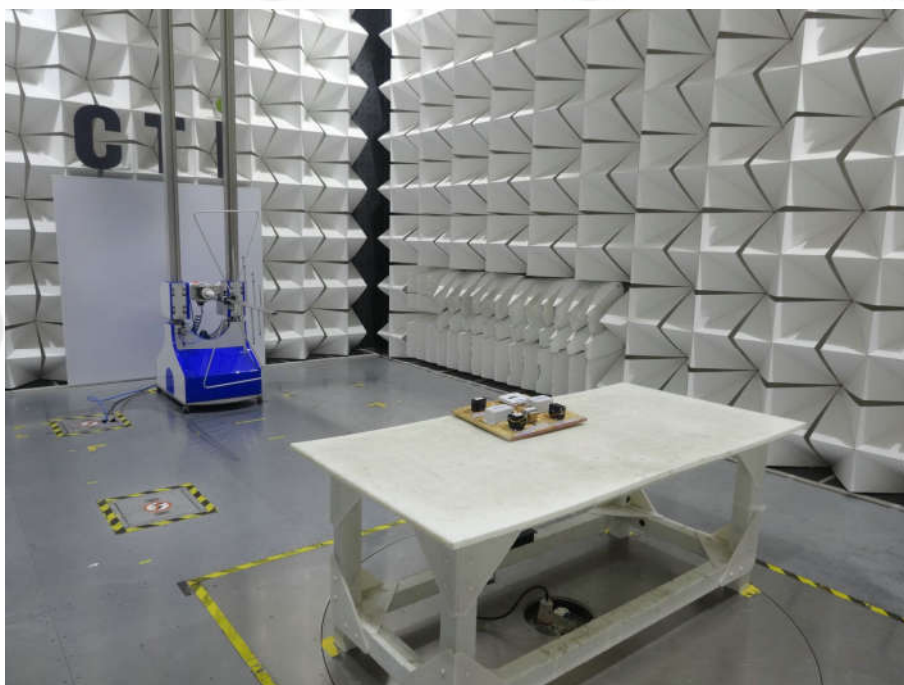
Date: 13.JUN.2017 10:32:46

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

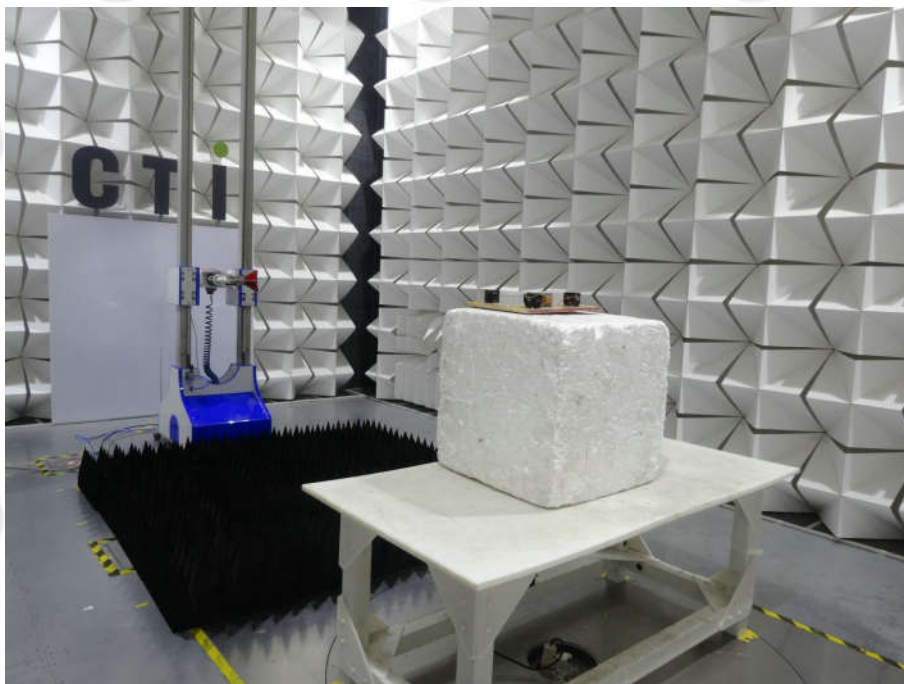
Test Model No.:TX_B_118001A0



Radiated emission Test Setup-1(9kHz~30MHz)



Radiated spurious emission Test Setup-1(Below 1GHz)



Radiated spurious emission Test Setup-2(Above 1GHz)



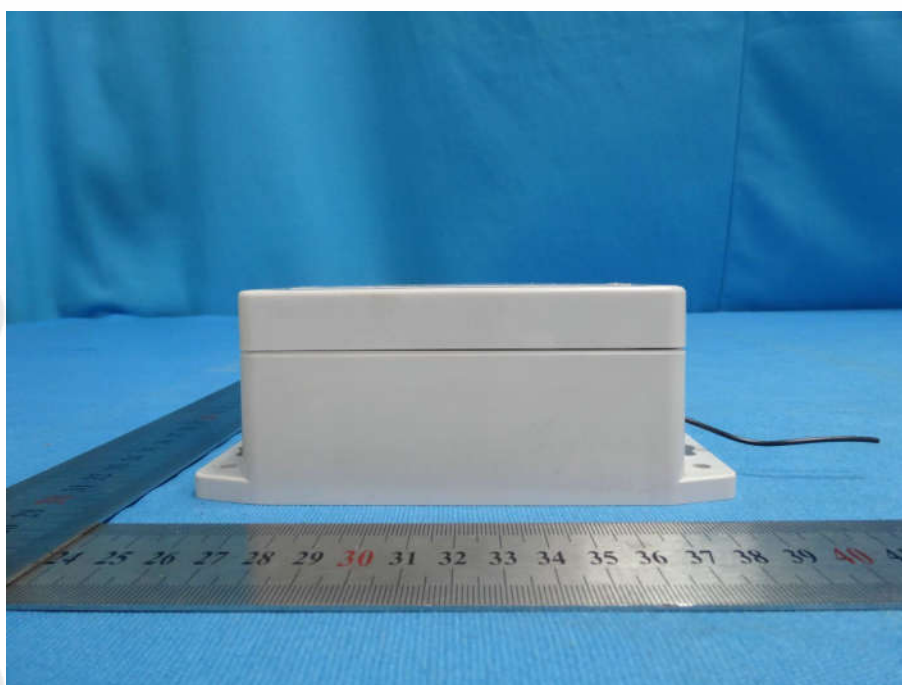
Conducted Emissions

APPENDIX 2 PHOTOGRAPHS OF EUT

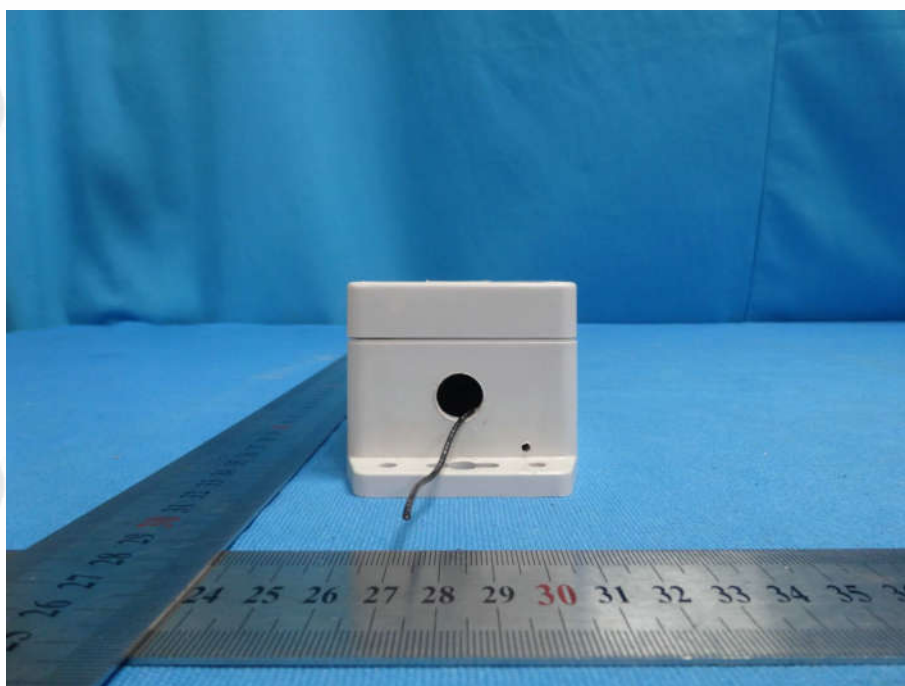
Test mode No.:TX_B_118001A0



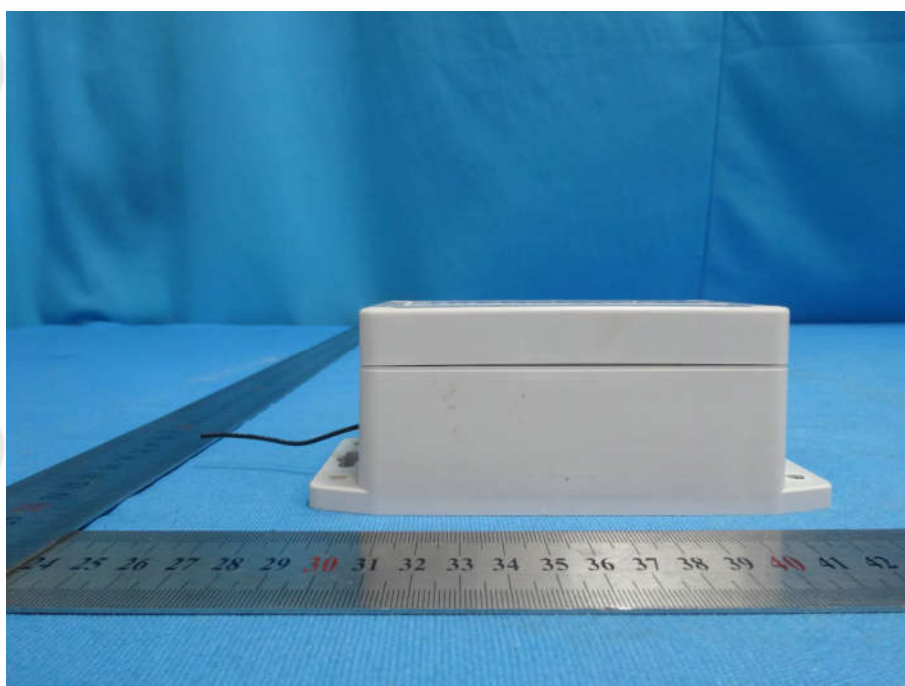
View of Product-1



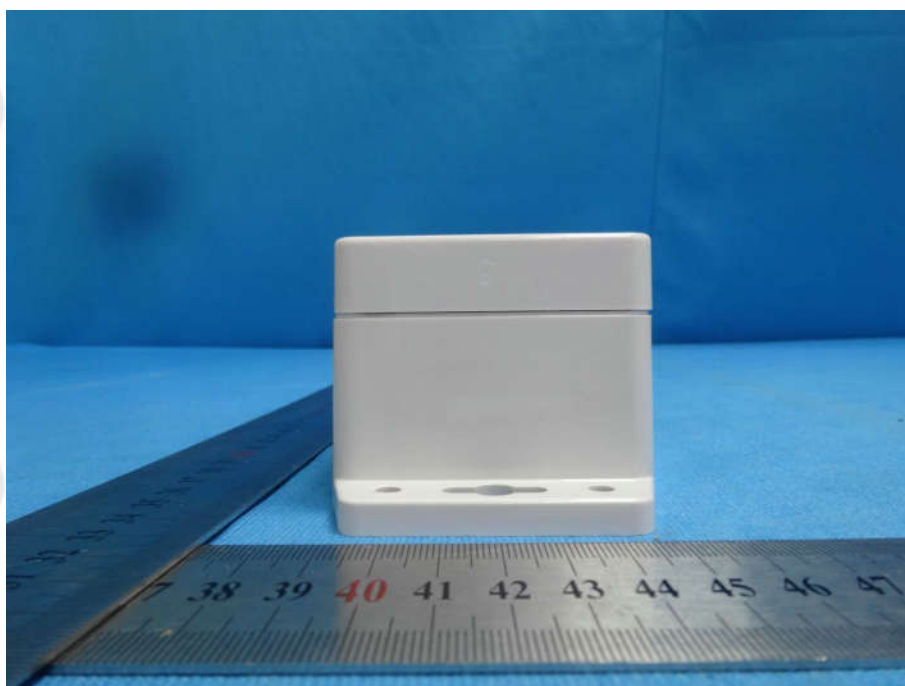
View of Product-2



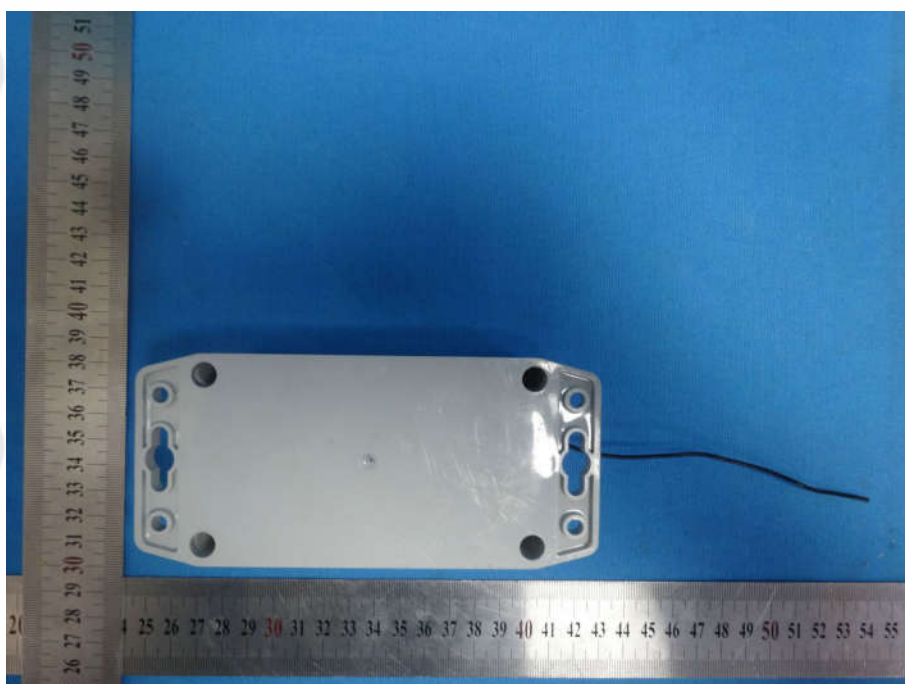
View of Product-3



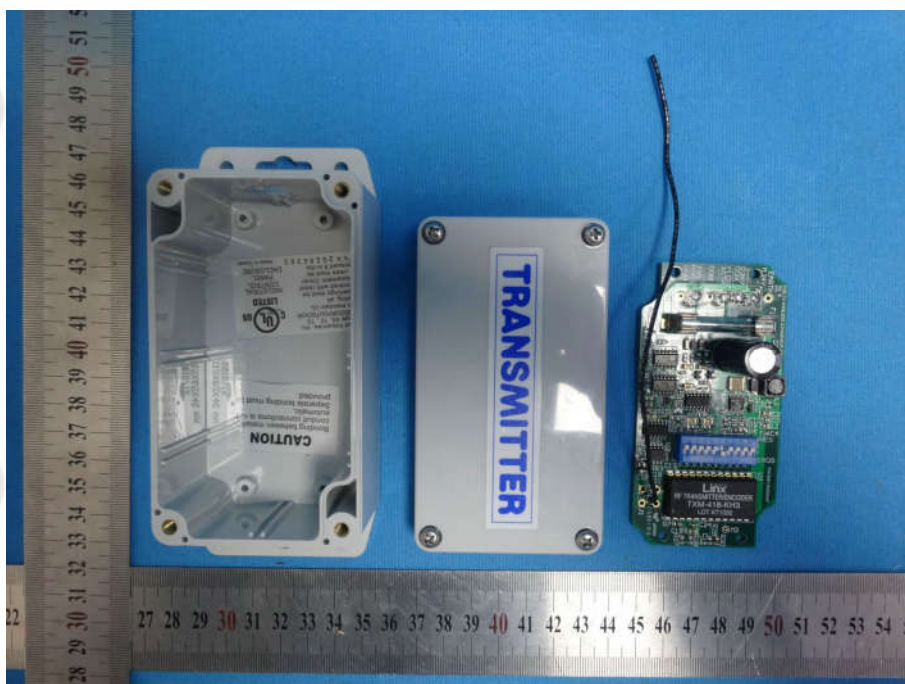
View of Product-4



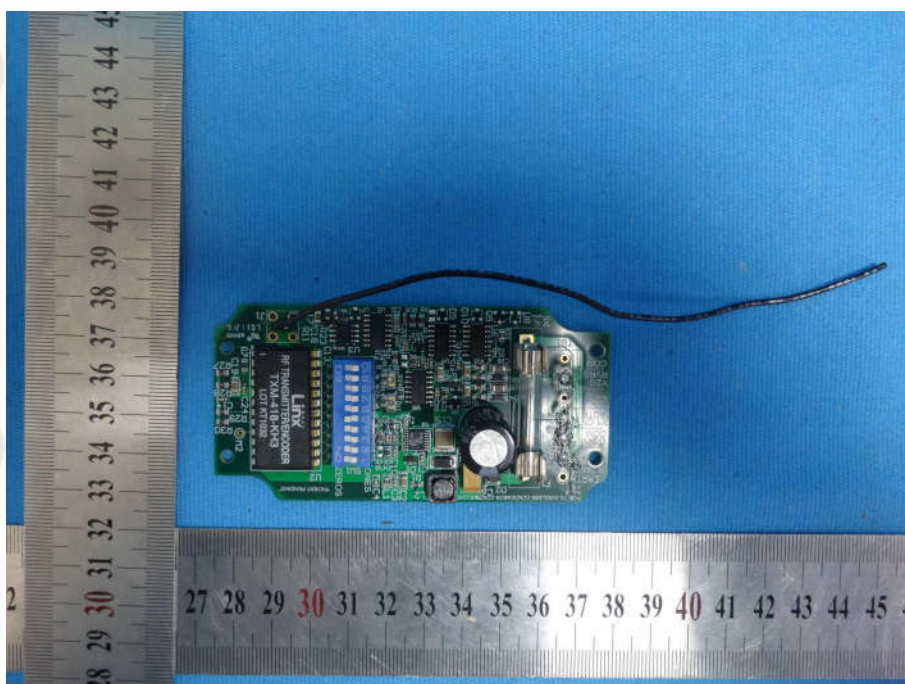
View of Product-5



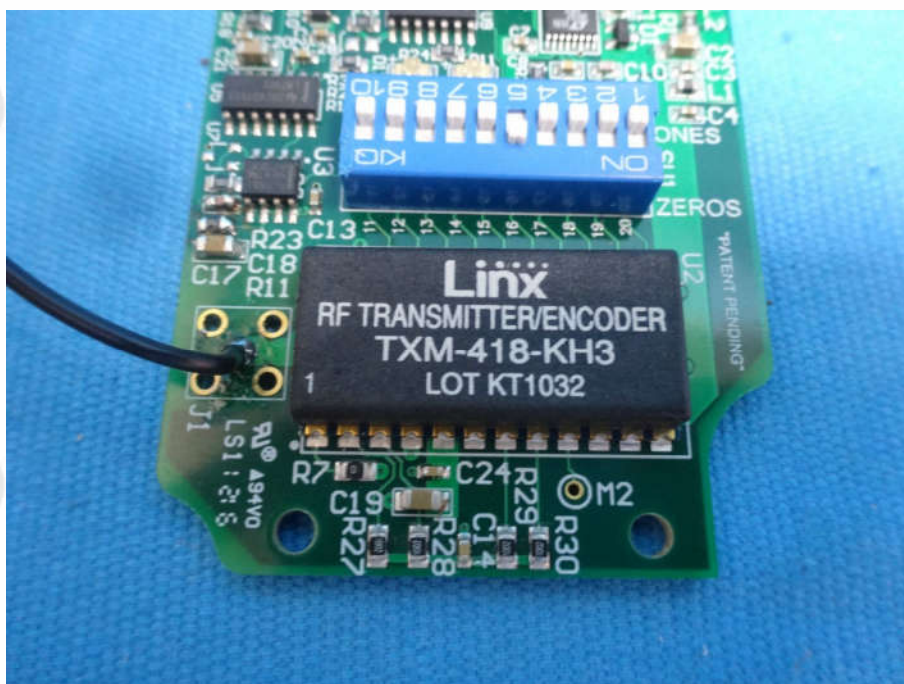
View of Product-6



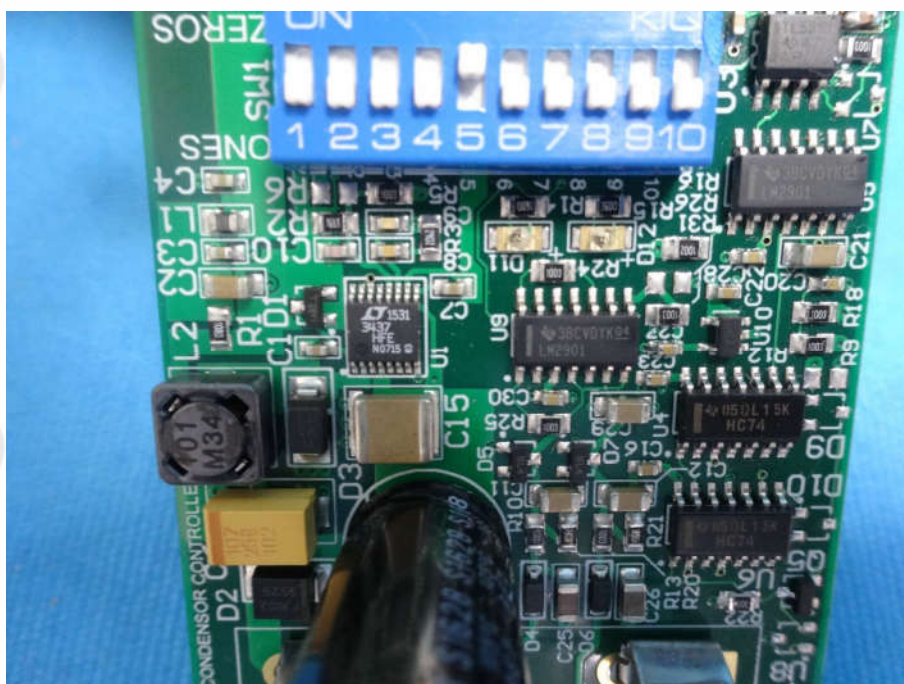
View of Product-7



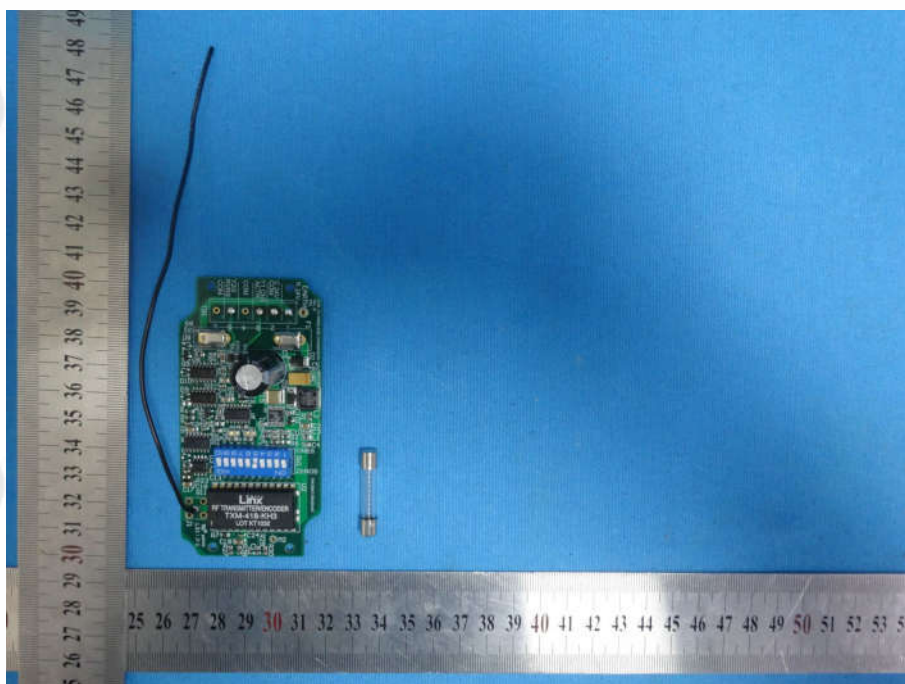
View of Product-8



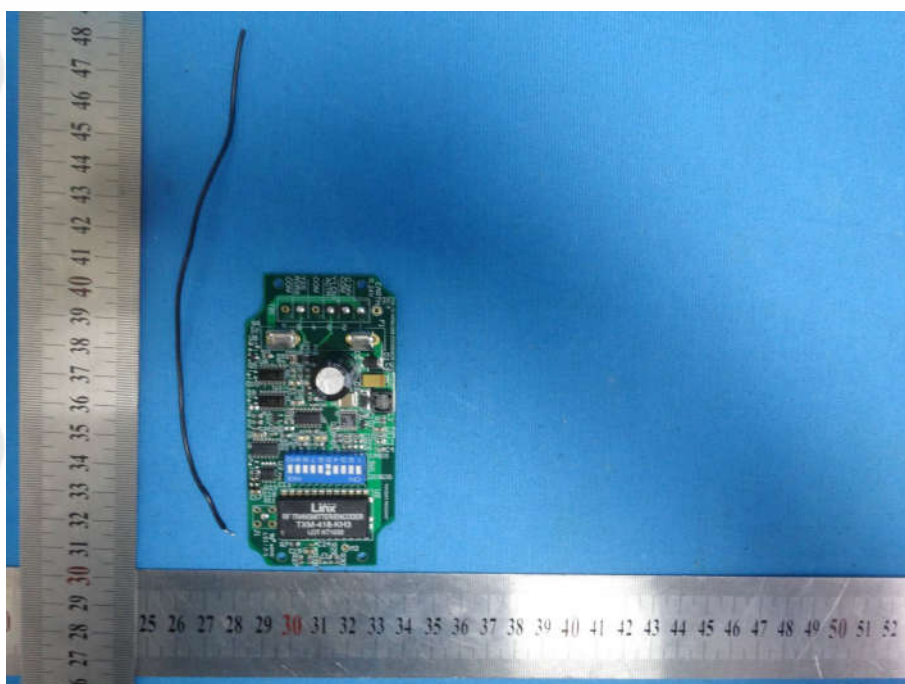
View of Product-9



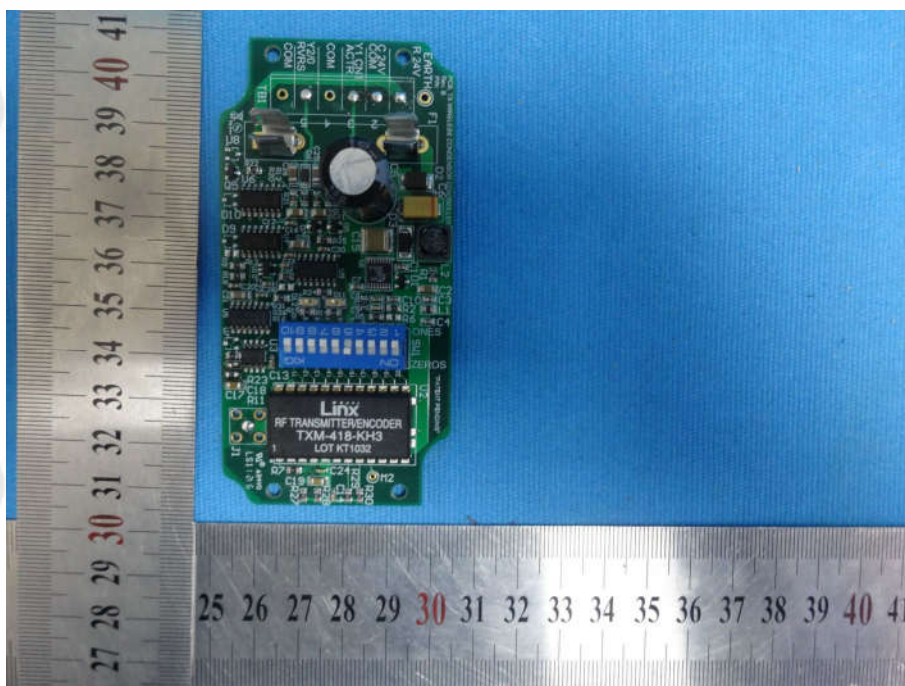
View of Product-10



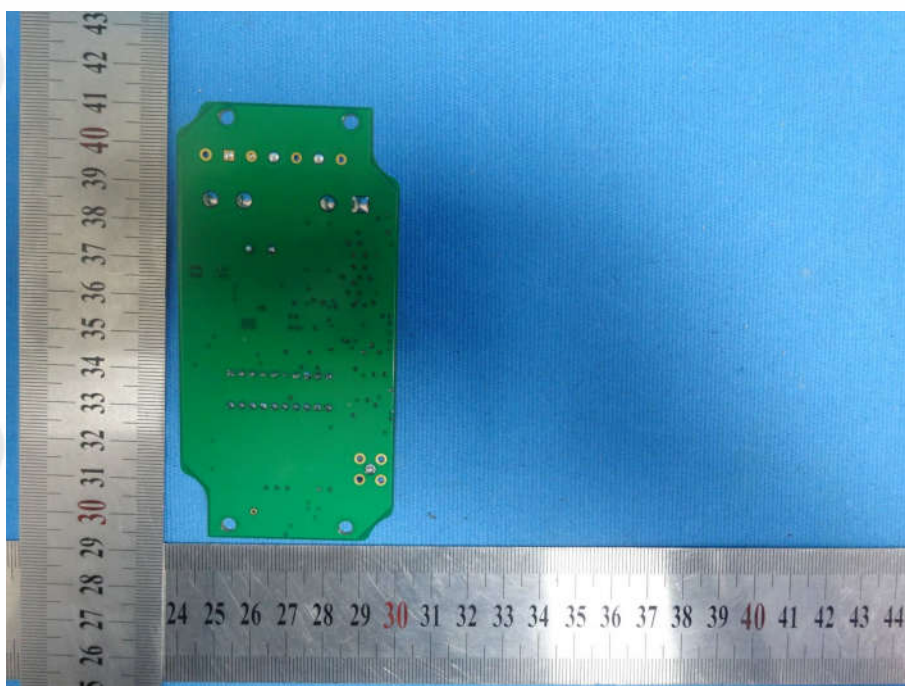
View of Product-11



View of Product-12



View of Product-13



View of Product-14

*** End of Report ***

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