FCC TEST REPORT

Product	:	Active Stylus
Trade mark	:	HUAWEI
Model/Type reference	:	AF63
Serial Number	:	N/A
Report Number	:	EED32K001194
FCC ID	:	2ABWEAF63
Date of Issue	:	May 31, 2018
Test Standards	:	47 CFR Part 15 Subpart C
Test result	:	PASS

Prepared for:

Sunwoda Electronic Co., Ltd.
1/F, 2/F of Area A&B&D, 3-9F, Administration Building, No.2, Yihe Rd., Shilong Community, Shiyan Street, Bao'an District,SHENZHEN, China

Prepared by:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
FAX: +86-755-3368 3385

Tested By:	Tom chen (Test Project)	Compiled by:	Max Liang (Project Engineer)
Reviewed by:	Ware Xin (Reviewer)	Approved by:	Sheek Luo (Lab supervisor)
Date:	May 31, 2018		Check No.:3096353014

2 Version

Version No.	Date	Description
00	May 31, 2018	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 Section 6.2	N/A
Radiated Emissions	47 CFR Part 15, Subpart C Section 15.209	ANSI C63.10-2013 Section 6.4&6.5&6.6&6.10	PASS
20dB Bandwidth	47 CFR Part 15, Subpart C Section 15.215	ANSI C63.10-2013 Section 6.9.2	PASS

Remark:

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

N/A: The tested sample is supplied by battery, there is no DC input/output port, therefore it is not applicable.

4 Contents

5 General Information

5.1 Client Information

Applicant:	Sunwoda Electronic Co., Ltd.
Address of Applicant:	1/F, 2/F of Area A&B&D, 3-9F, Administration Building, No.2, Yihe Rd., Shilong Community, Shiyan Street, Bao'an District,SHENZHEN, China
Factory:	Sunwoda Electronic Co., Ltd.
Address of Factory:	1/F, 2/F of Area A&B&D, 3-9F, Administration Building, No.2, Yihe Rd., Shilong Community, Shiyan Street, Bao'an District,SHENZHEN, China
Factory:	Sunwoda Electronic Co., Ltd.
Address of Factory:	1/F, 2/F of Area A&B&D, 3-9F, Administration Building, No.2, Yihe Rd., Shilong Community, Shiyan Street, Bao'an District,SHENZHEN, China

5.2 General Description of EUT

Product Name:	Active Stylus
Mode No.(EUT):	AF63
Trade Mark:	HUAWEI
EUT Supports Radios application:	15.625KHz to 40KHz
Power Supply:	ALKALINE BATTERY 1.5V(AAAA)

5.3 Product Specification subjective to this standard

Carrier Frequency:	15.625KHz, 40KHz
Modulation Type:	CW
Antenna Type:	dipoles
Antenna Gain:	0dBi
Hardware Version:	SS1.0(manufacturer declare)
Firmware Version:	V1.0(manufacturer declare)
Test voltage:	ALKALINE BATTERY 1.5V(AAAA)
Sample Received Date:	May 17, 2018
Sample tested Date:	May 17, 2018 May 31, 2018

5.4 Test Environment and Mode

Operating Environment:	
Temperature:	24.3 °C
Humidity:	58.5% RH
Atmospheric Pressure:	1010mbar
Test mode:	
TX mode:	The EUT transmitted the continuous signal at the frequency of 15.625KHz, 40KHz.

5.5 Description of Support Units

The EUT has been tested independently.

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.

FCC Designation No.: CN1164.

5.7 Deviation from Standards

None.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None.

5.10 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

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	---	06-04-2016	06-03-2019
TRILOG Broadband Antenna	SCHWARZBECK	VULB9163	9163-484	06-09-2017	06-08-2018
Preamplifier	JS Tonscend	EMC051845SE	980380	01-19-2018	01-18-2019
Horn Antenna	ETS-LINDGREN	3117	00057407	07-20-2015	07-18-2018
Loop Antenna	ETS	6502	00071730	06-22-2017	06-21-2019
Spectrum Analyzer	R&S	FSP40	100416	06-13-2017	06-12-2018
Receiver	R&S	ESCI	100435	06-14-2017	06-13-2018
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	03-13-2018	03-12-2019
Signal Generator	Keysight	E8257D	MY53401106	03-13-2018	03-12-2019
Temperature/ Humidity Indicator	TAYLOR	1451	1905	05-02-2018	05-01-2019
Communication test set	Agilent	E5515C	GB47050534	03-16-2018	03-15-2019
Cable line	Fulai(7M)	SF106	5219/6A	01-10-2018	01-09-2019
Cable line	Fulai(6M)	SF106	5220/6A	01-10-2018	01-09-2019
Cable line	Fulai(3M)	SF106	5216/6A	01-10-2018	01-09-2019
Cable line	Fulai(3M)	SF106	5217/6A	01-10-2018	01-09-2019
Communication test set	R&S	CMW500	152394	03-16-2018	03-15-2019
High-pass filter	Sinoscite	FL3CX03WG18NM12-0398-002	---	01-10-2018	01-09-2019
band rejection filter	Sinoscite	FL5CX01CA09CL12-0395-001	---	01-10-2018	01-09-2019
band rejection filter	Sinoscite	FL5CX01CA08CL12-0393-001	---	01-10-2018	01-09-2019
band rejection filter	Sinoscite	FL5CX02CA04CL12-0396-002	---	01-10-2018	01-09-2019
band rejection filter	Sinoscite	FL5CX02CA03CL12-0394-001	---	01-10-2018	01-09-2019

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	05-11-2018	05-10-2019

7 Test Result & Measurement Data

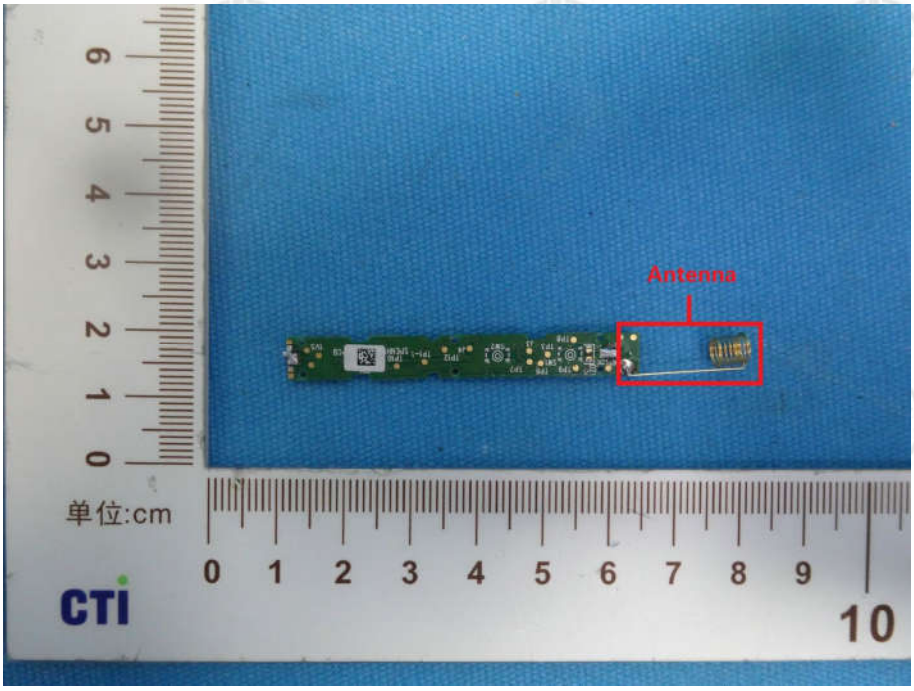
7.1 Antenna Requirement

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 dipoles and no consideration of replacement. The best case gain of the antenna is 0dBi.

7.2 Radiated Emissions

Test Requirement: 47 CFR Part 15C Section 15.201

Test Method: ANSI C63.10-2013

Test Site: 3m (Semi-Anechoic Chamber)

Limit: All emissions are at least 40 dB below the limits in § 15.209

Receiver Setup:

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

Test Setup:

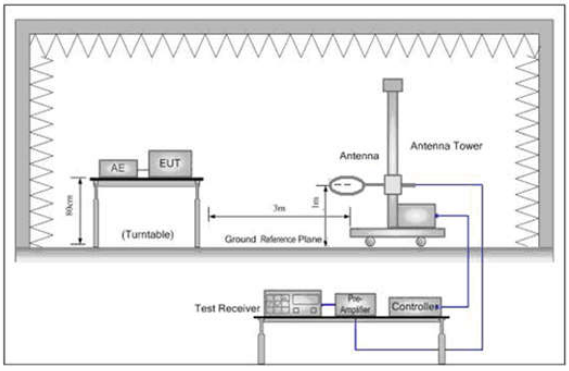


Figure 1. Below 30MHz

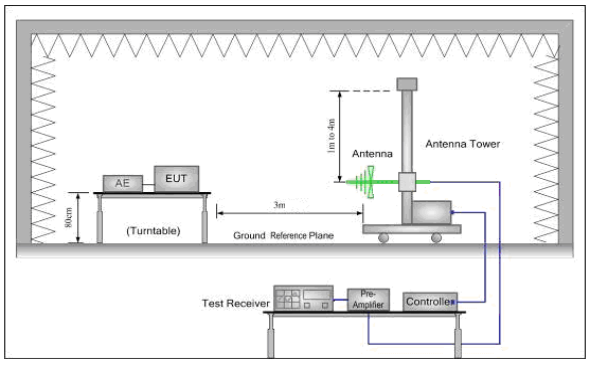


Figure 2. 30MHz to 1GHz

Test Procedure:

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is placed 1m above the ground find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. The center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Limit:

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

Test Mode: Transmitting mode

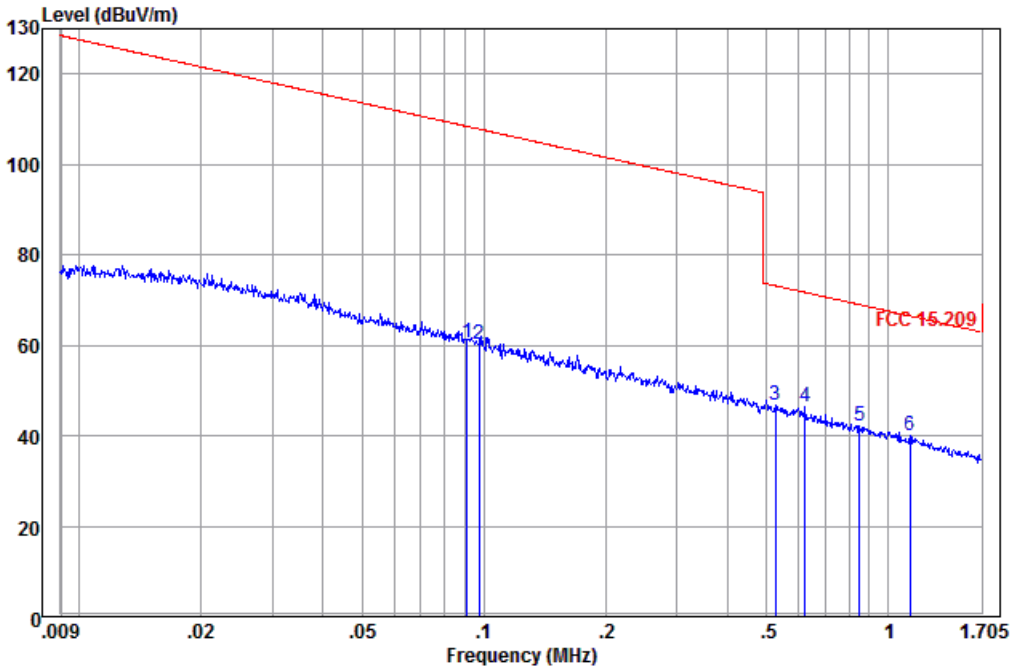
Instruments Used: Refer to section 6 for details

Test Result: Pass

Measurement Data:

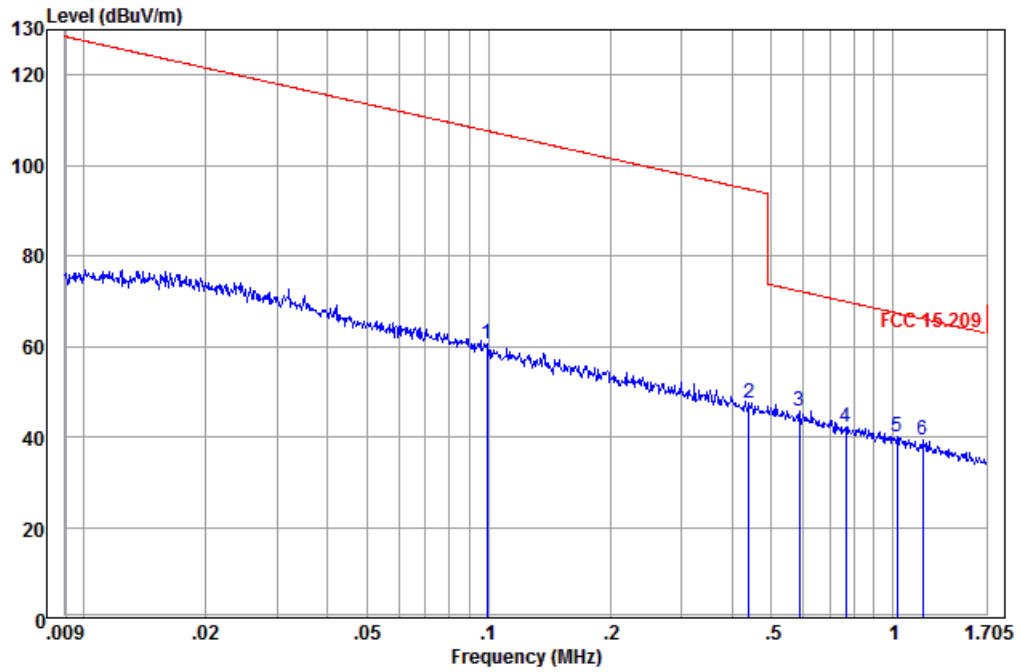
9K-1.705M

Horizontal



	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	0.091	11.43	0.10	48.93	60.46	108.42	-47.96	Horizontal	QP
2	0.097	11.41	0.11	48.59	60.11	107.83	-47.72	Horizontal	QP
3	0.527	11.30	0.12	35.26	46.68	73.17	-26.49	Horizontal	QP
4 pp	0.623	11.30	0.12	34.97	46.39	71.70	-25.31	Horizontal	QP
5	0.849	11.34	0.12	30.72	42.18	69.00	-26.82	Horizontal	QP
6	1.133	11.40	0.14	28.48	40.02	66.48	-26.46	Horizontal	QP

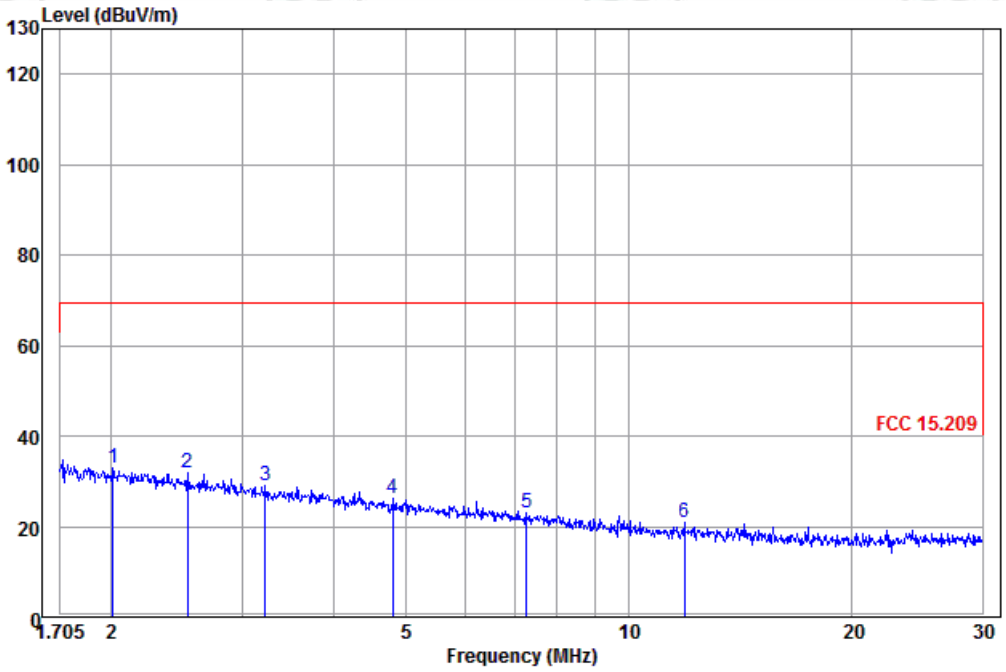
Vertical



	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	0.099	11.40	0.11	48.98	60.49	107.65	-47.16	Vertical	QP
2	0.441	11.30	0.12	36.18	47.60	94.72	-47.12	Vertical	QP
3 pp	0.588	11.30	0.12	34.44	45.86	72.21	-26.35	Vertical	QP
4	0.764	11.31	0.12	30.88	42.31	69.91	-27.60	Vertical	QP
5	1.025	11.40	0.13	28.64	40.17	67.35	-27.18	Vertical	QP
6	1.187	11.40	0.15	27.62	39.17	66.06	-26.89	Vertical	QP

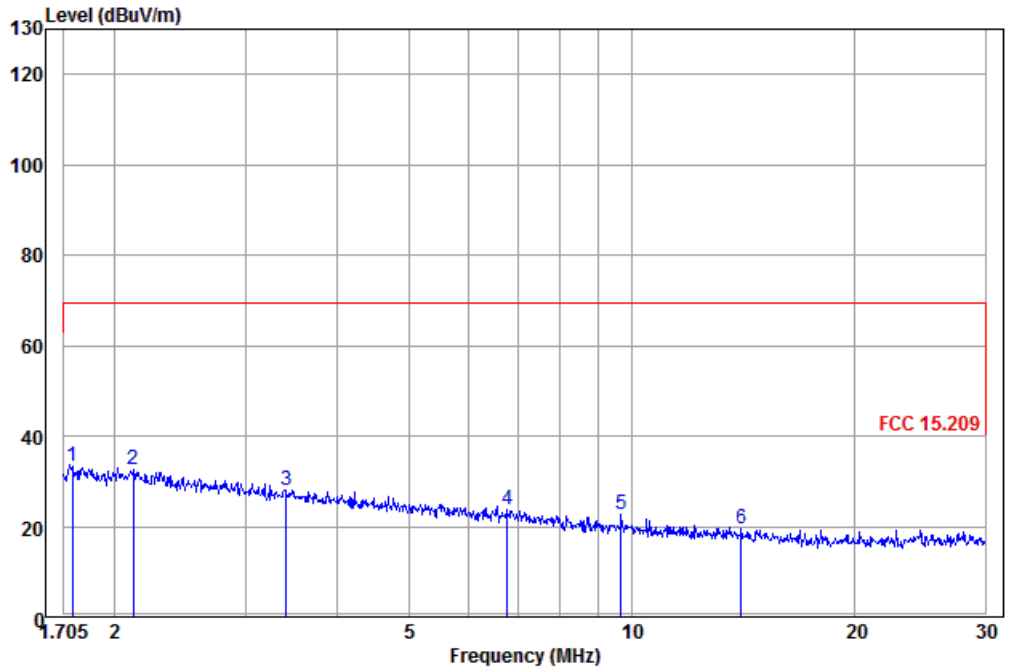
1.705M-30M

Horizontal



	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 pp	2.008	11.40	0.20	21.25	32.85	69.50	-36.65	Horizontal	QP
2	2.533	11.46	0.18	20.37	32.01	69.50	-37.49	Horizontal	QP
3	3.223	11.45	0.17	17.44	29.06	69.50	-40.44	Horizontal	QP
4	4.787	11.22	0.15	14.68	26.05	69.50	-43.45	Horizontal	QP
5	7.276	11.04	0.41	11.52	22.97	69.50	-46.53	Horizontal	QP
6	11.881	10.81	0.67	9.37	20.85	69.50	-48.65	Horizontal	QP

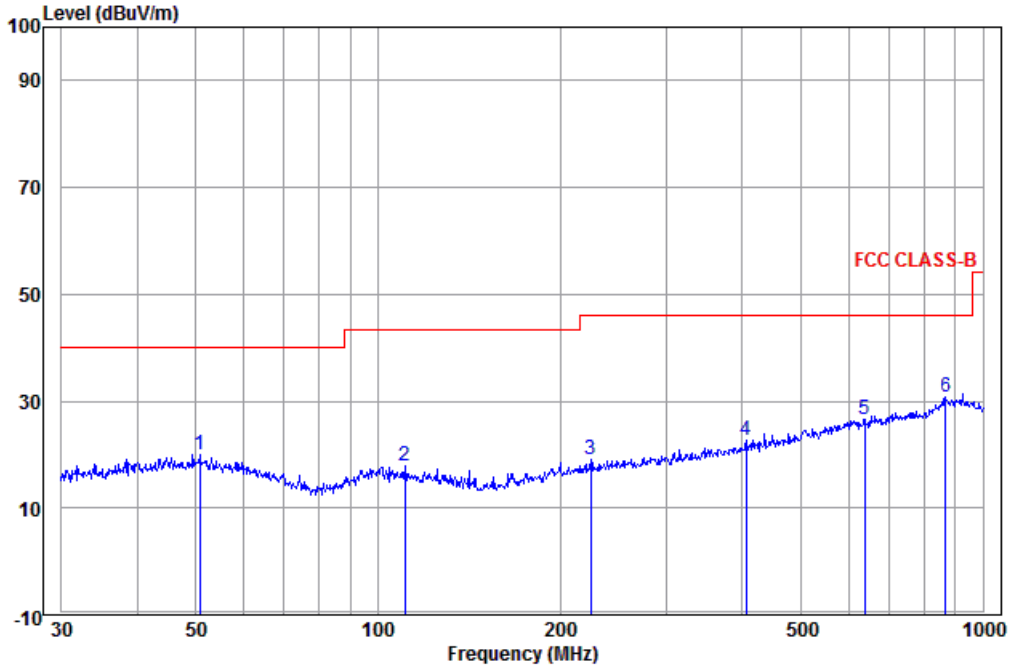
Vertical



	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 pp	1.750	11.40	0.19	21.81	33.40	69.50	-36.10	Vertical	QP
2	2.114	11.41	0.19	21.06	32.66	69.50	-36.84	Vertical	QP
3	3.403	11.41	0.18	16.46	28.05	69.50	-41.45	Vertical	QP
4	6.773	11.07	0.36	12.22	23.65	69.50	-45.85	Vertical	QP
5	9.665	10.91	0.62	11.00	22.53	69.50	-46.97	Vertical	QP
6	14.031	10.73	0.69	7.92	19.34	69.50	-50.16	Vertical	QP

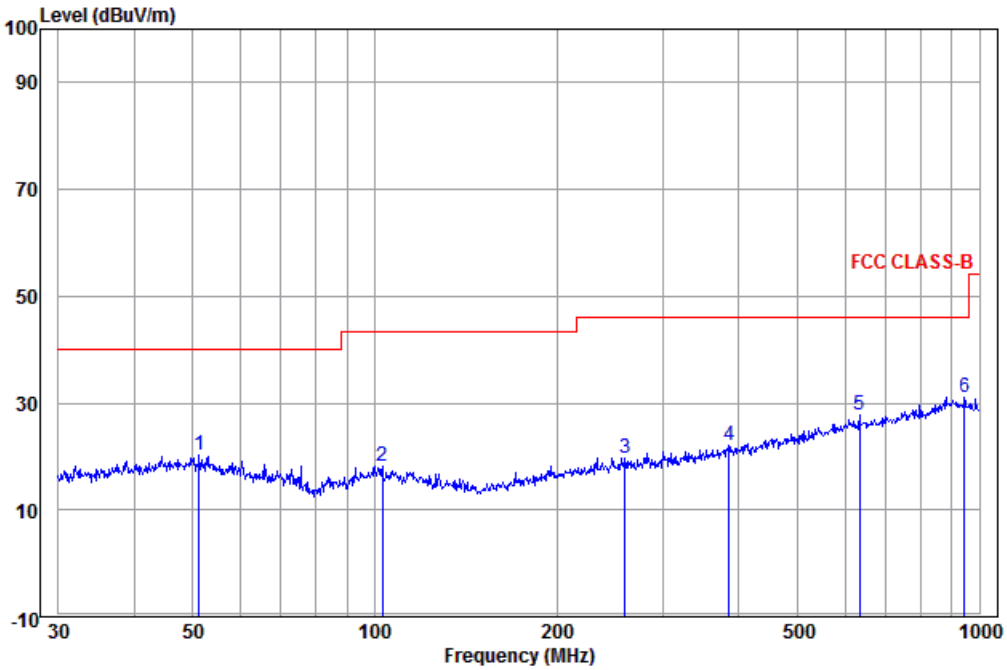
30MHz-1000MHz

Horizontal



	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	50.764	14.48	0.12	5.40	20.00	40.00	-20.00	Horizontal	QP
2	110.957	11.55	0.60	5.72	17.87	43.50	-25.63	Horizontal	QP
3	224.519	12.07	1.22	5.65	18.94	46.00	-27.06	Horizontal	QP
4	406.088	15.33	1.34	5.88	22.55	46.00	-23.45	Horizontal	QP
5	638.369	18.85	1.83	6.01	26.69	46.00	-19.31	Horizontal	QP
6 pp	869.130	21.61	2.47	6.54	30.62	46.00	-15.38	Horizontal	QP

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	51.301	14.39	0.12	5.82	20.33	40.00	-19.67	Vertical	QP
2	103.080	12.22	0.59	5.37	18.18	43.50	-25.32	Vertical	QP
3	259.234	12.76	1.29	5.72	19.77	46.00	-26.23	Vertical	QP
4	385.281	14.98	1.32	5.63	21.93	46.00	-24.07	Vertical	QP
5	633.907	18.84	1.83	6.96	27.63	46.00	-18.37	Vertical	QP
6 pp	945.440	22.01	2.36	6.79	31.16	46.00	-14.84	Vertical	QP

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 + Antenna Factor + Cable Factor – Preamplifier Factor

7.3 20dB Bandwidth

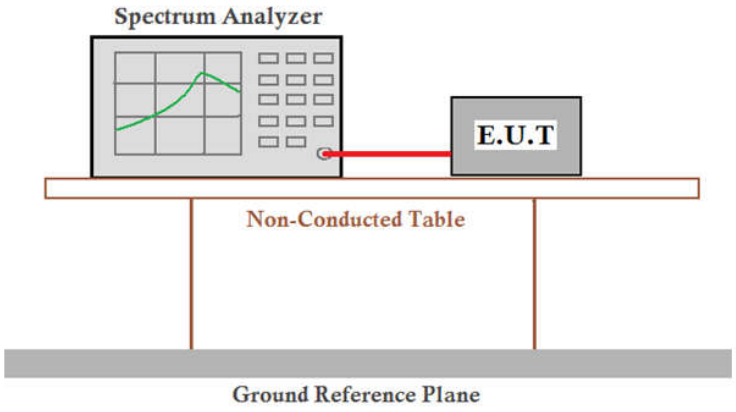
Test Requirement: 47 CFR Part 15C Section 15.215

Test Method: ANSI C63.10-2013

Limit: Operation within the band

Requirement : Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in subpart E of this part, must be designed to ensure that 20dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equip compliance with the 20dB attenuation specification may base on measurement at the intentional radiator's antenna output terminal unless the intentional radiator uses a permanently attached antenna, in which case compliance shall be.deomonstrated by measuring the radiated emissions.

Test Setup:



Test Mode: Transmitter mode

Instruments Used: Refer to section 6 for details

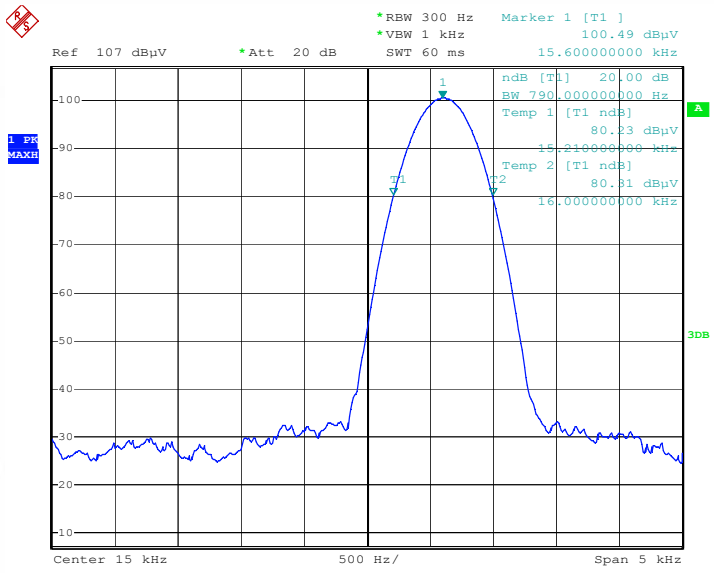
Test Result: Pass

Measurement Data:

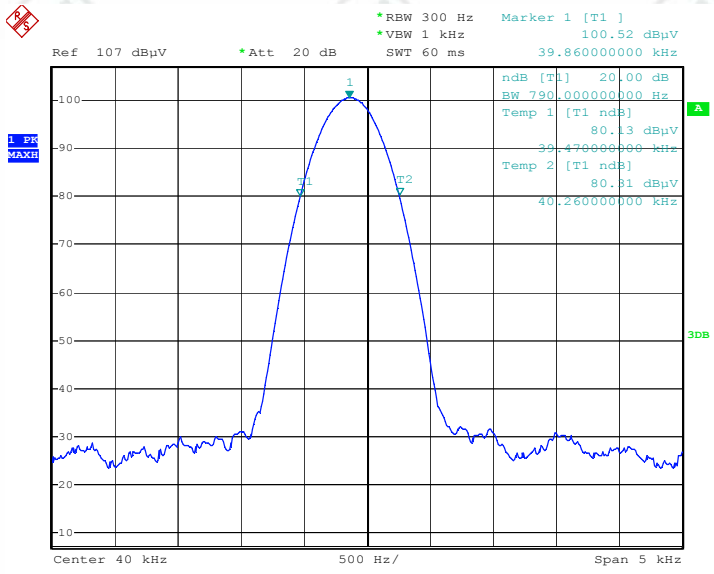
Test Frequency	20dB bandwidth (Hz)	Result
15.625KHz	790	Pass
40KHz	790	Pass

Test plot as follows:

Test mode:	Transmitter	Test channel:	15.625KHz

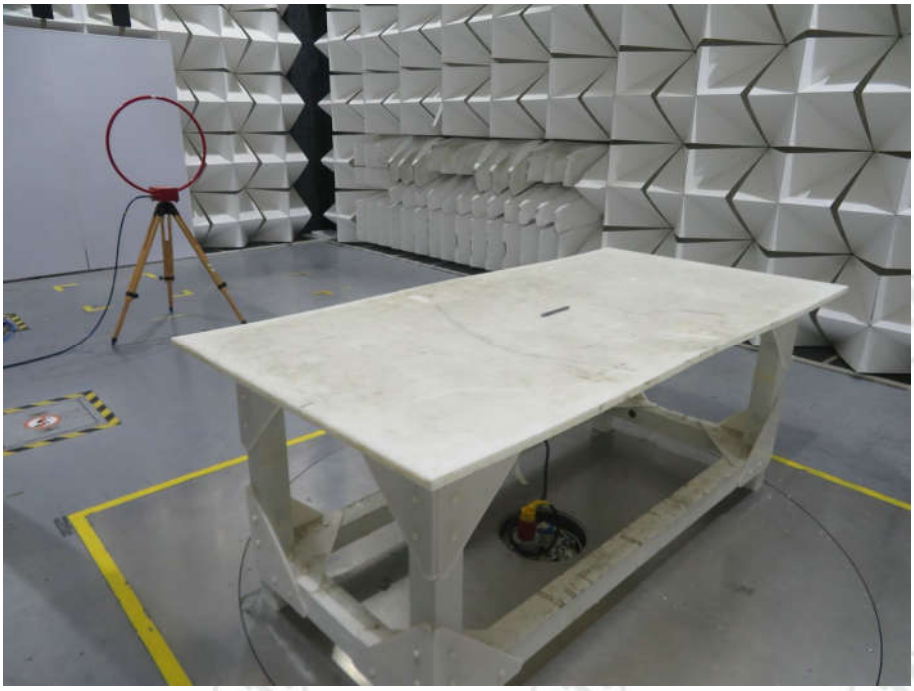


Test mode:	Transmitter	Test channel:	40KHz



APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

Test Model No.: AF63

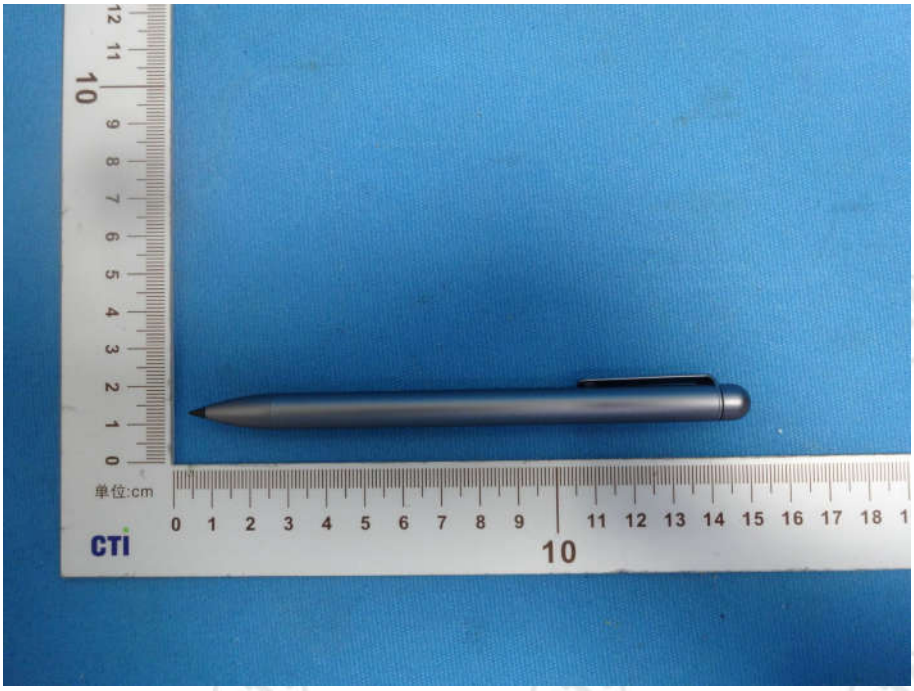


Radiated emission Test Setup-1(9kHz～30MHz)

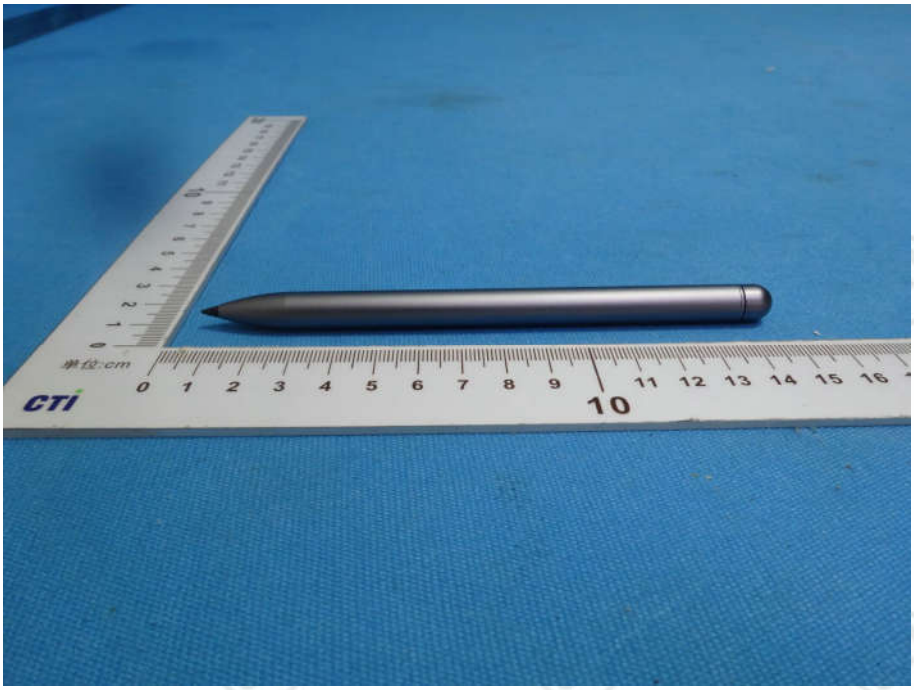
Radiated emission Test Setup-1(30MHz～1000MHz)

APPENDIX 2 PHOTOGRAPHS OF EUT

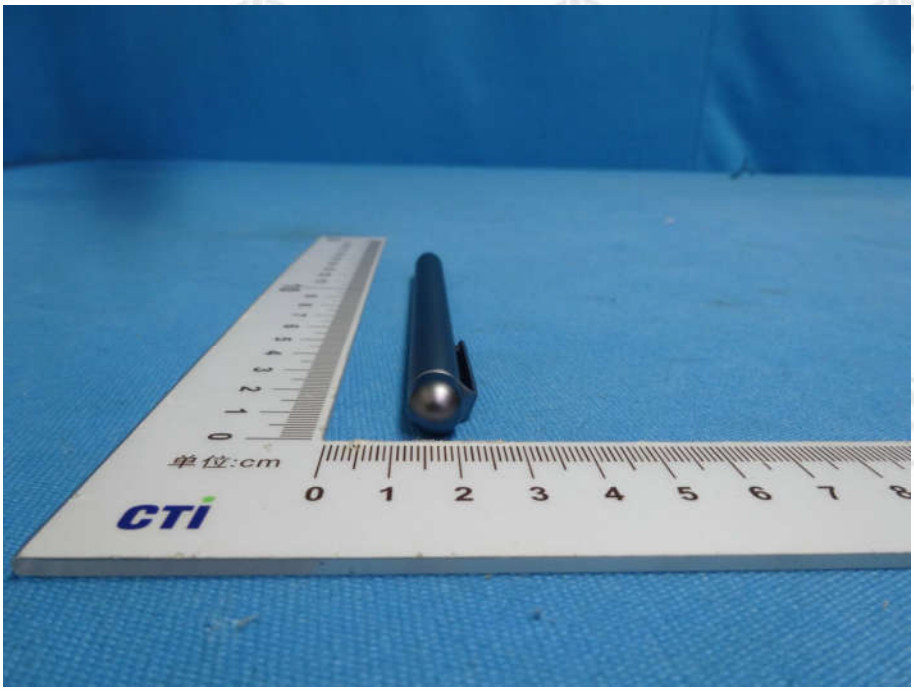
Test Model No.: AF63



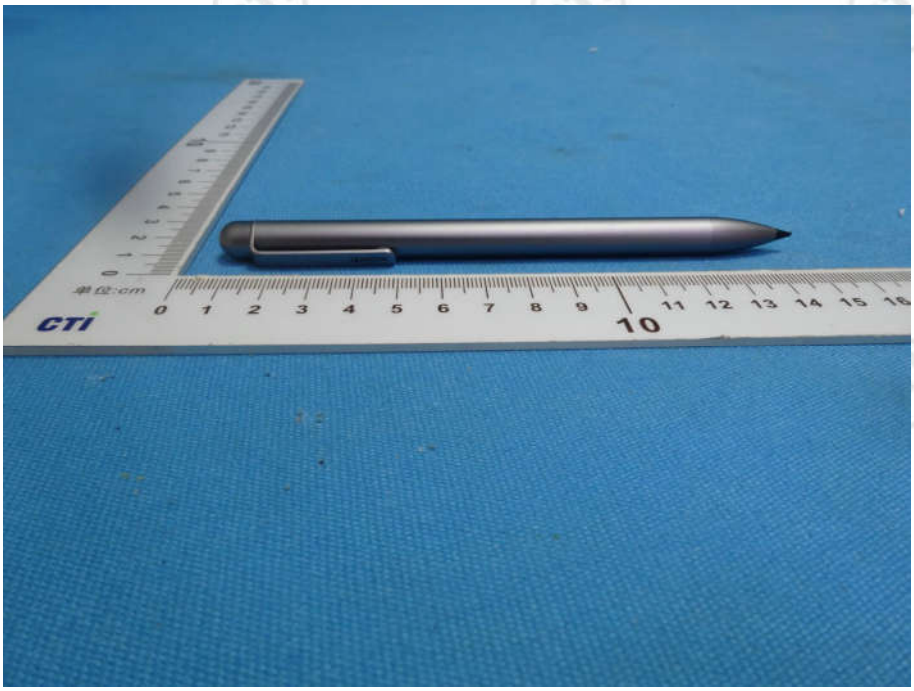
View of Product-1



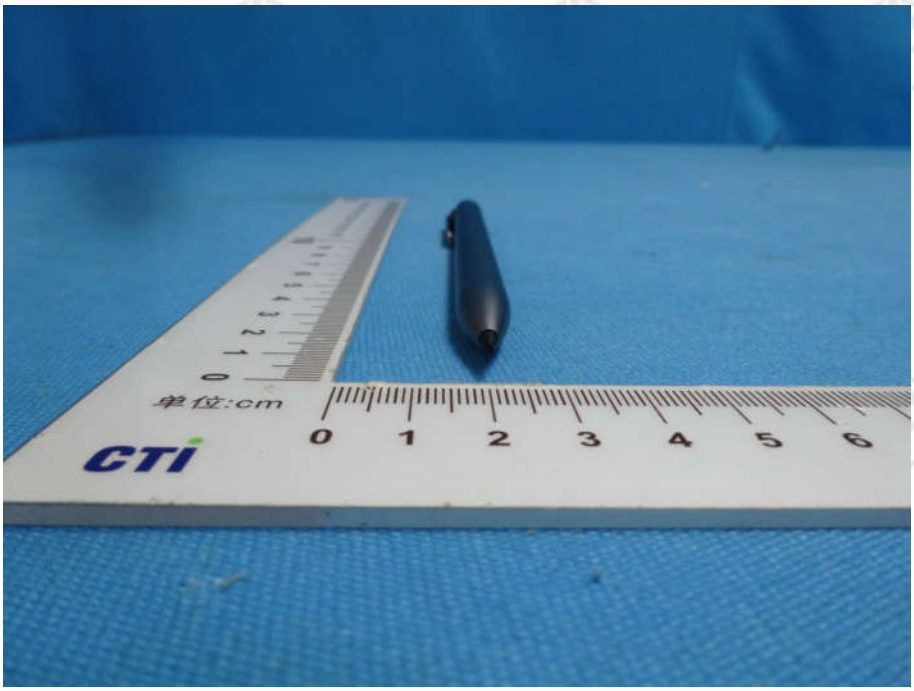
View of Product-2



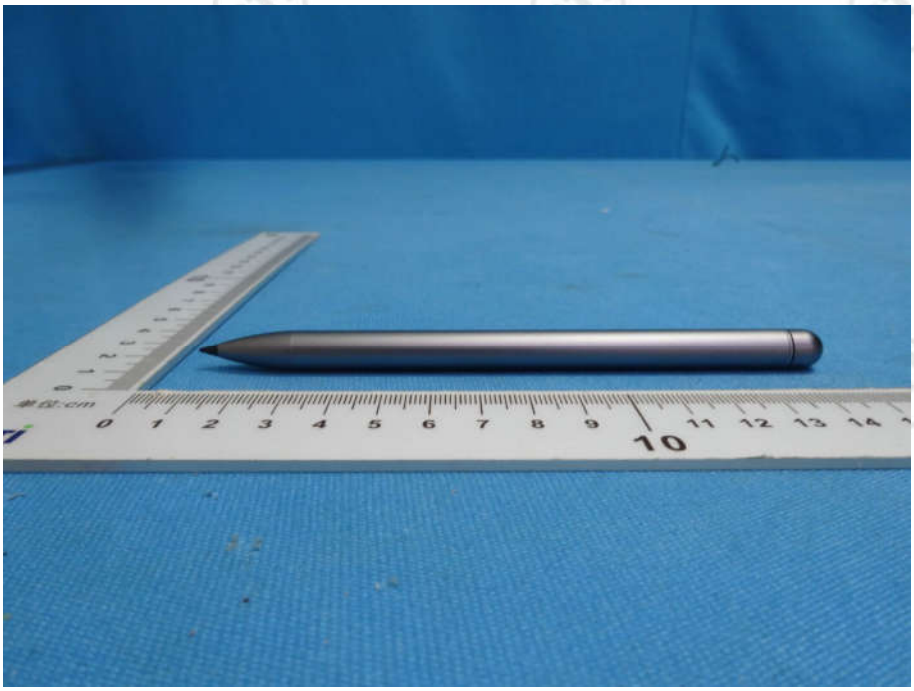
View of Product-3



View of Product-4



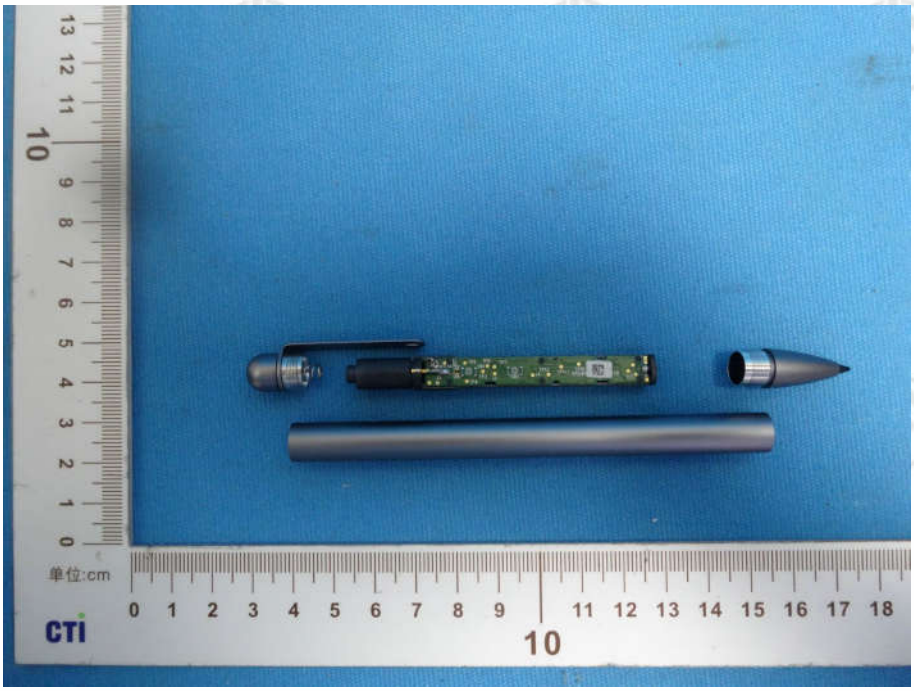
View of Product-5



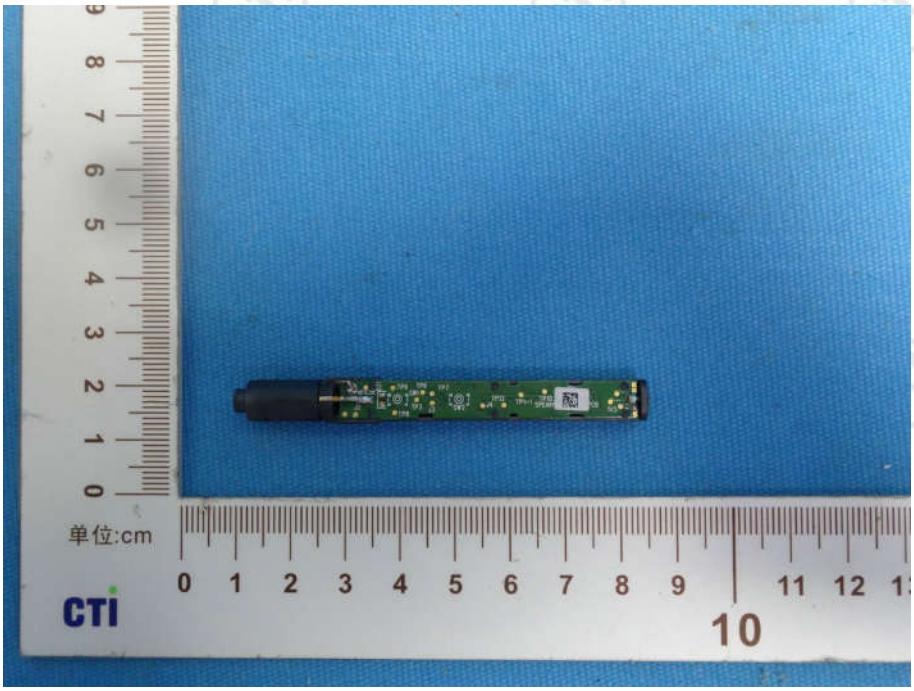
View of Product-6

View of Product-7

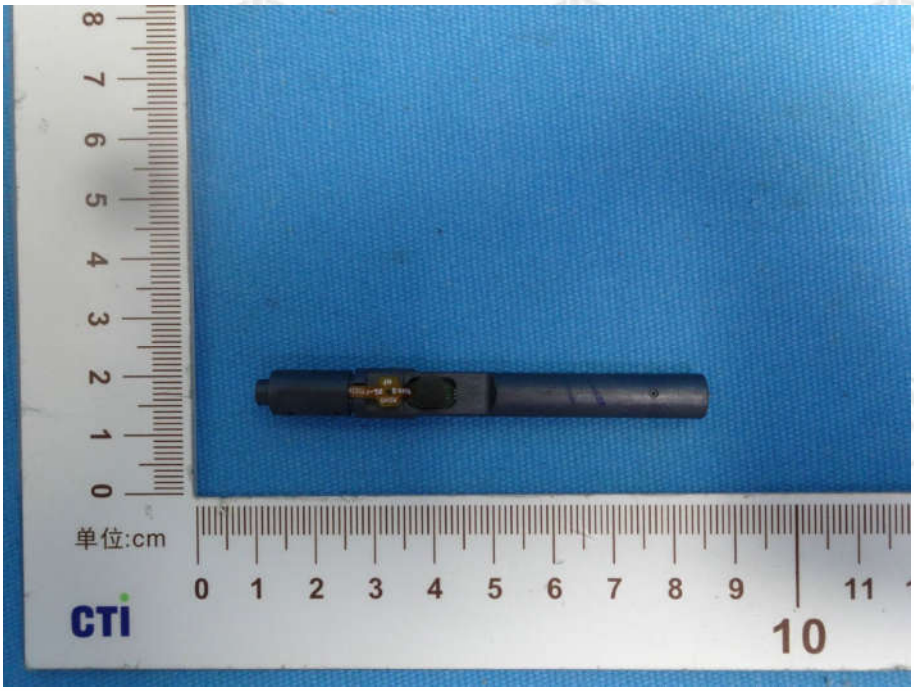
View of Product-8



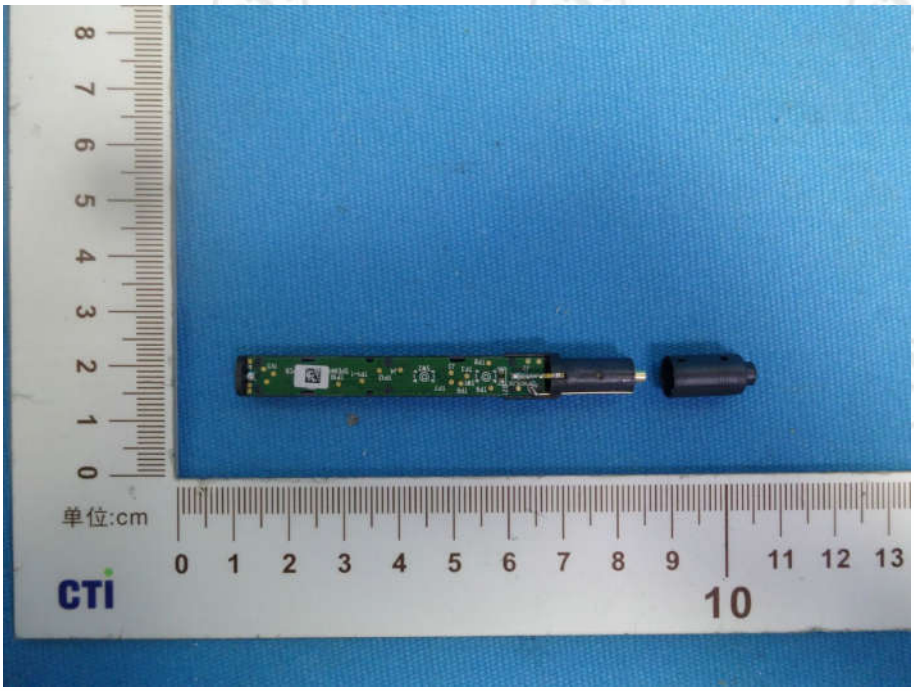
View of Product-9



View of Product-10



View of Product-11



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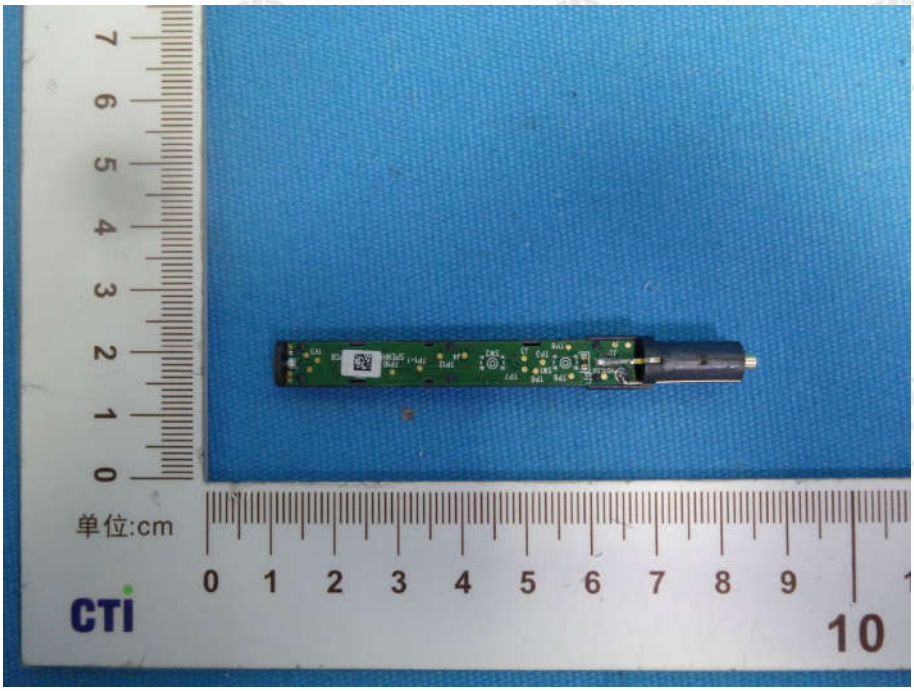
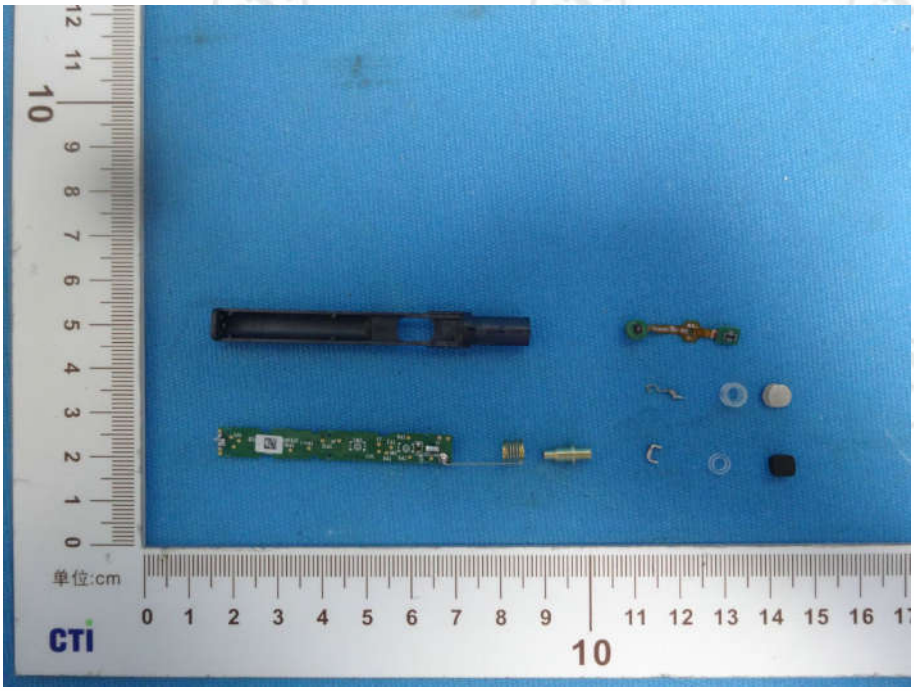
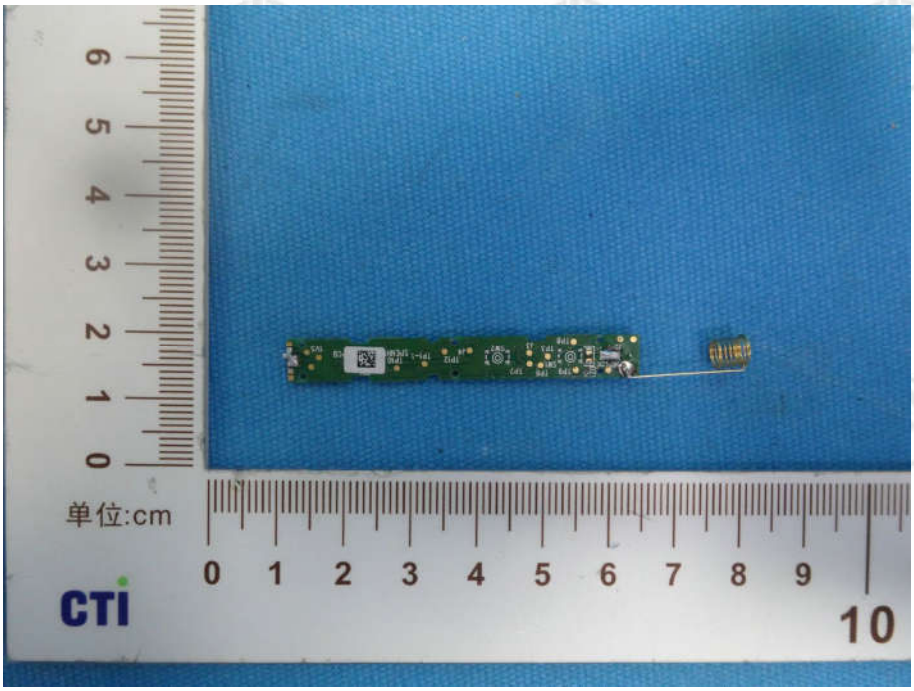


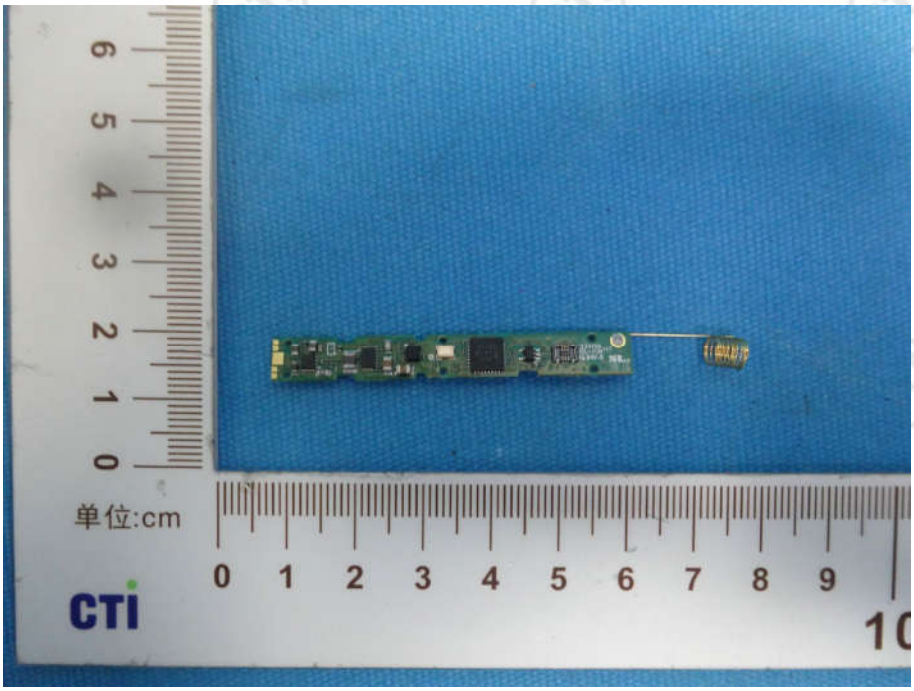
View of Product-13



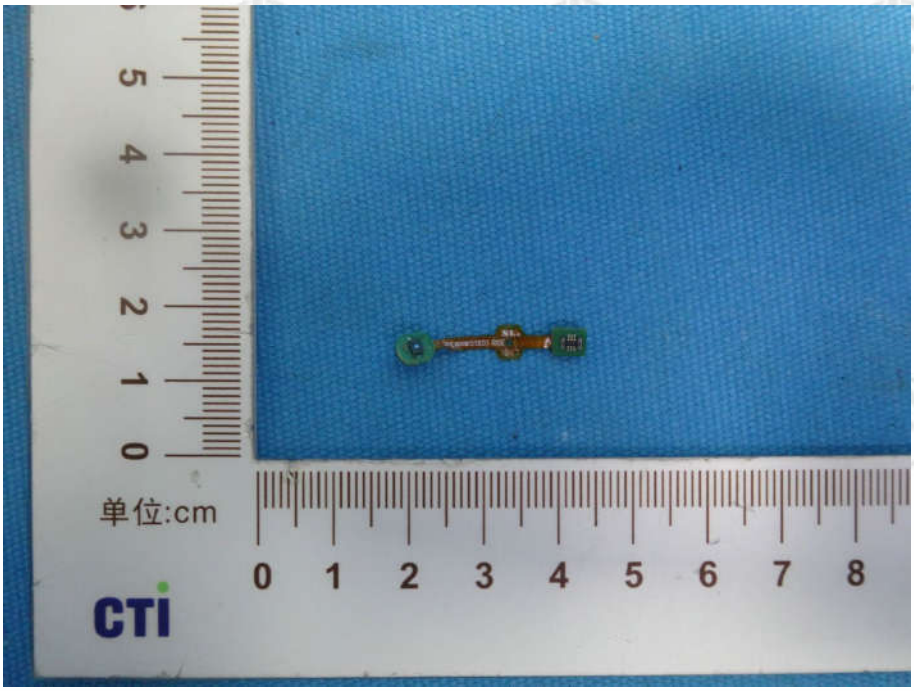
View of Product-14



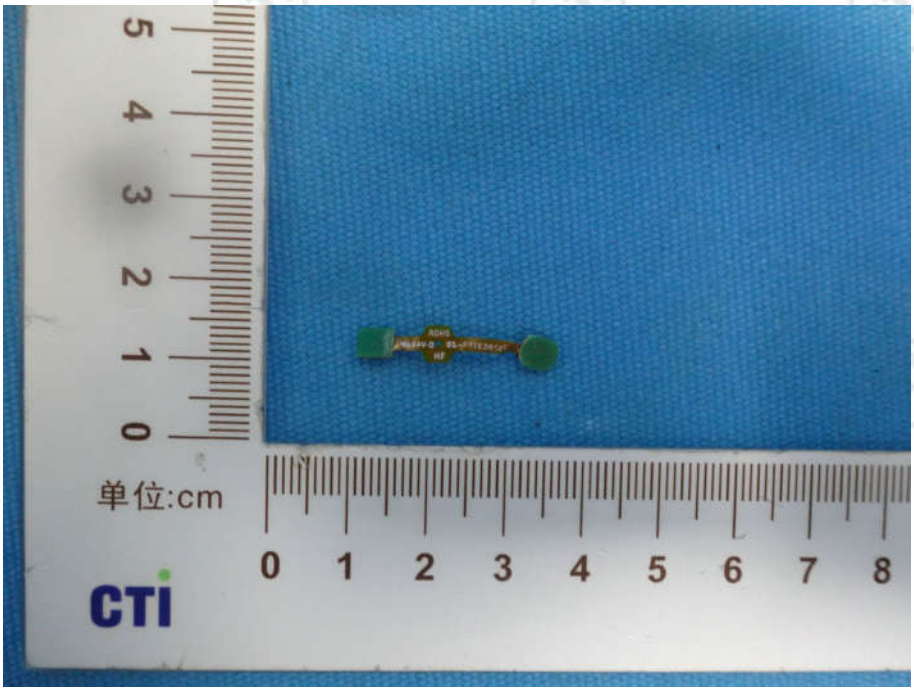
View of Product-15



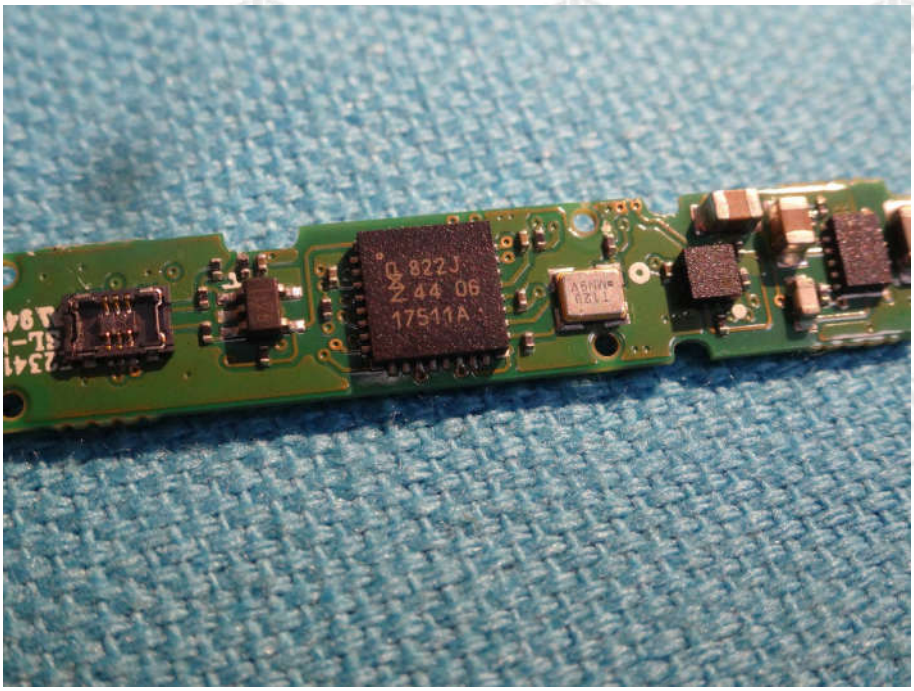
View of Product-16



View of Product-17



View of Product-18



View of Product-19

*** End of Report ***

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