TEST REPORT

Reference No.	:	WTS17S0169907-1E
FCC ID	:	V8VUN1780
Applicant	:	SKYPINE ELECTRONICS (SHEN ZHEN) CO.,LTD.
Address	:	A1 BUILDING, NO.6 XINXING INDUSTRIAL PARK, XINHE VILLAGE, FUYONG TOWN, BAOAN, SHENZHEN, China
Manufacturer	:	The same as above
Address	:	The same as above
Product Name	:	ALL IN ONE DVD PLAYER
Model No.	:	UN1780, UN1780i, UN1780E
Standards	:	FCC CFR47 Part 15 Section 15.247:2016
Date of Receipt sample	:	Jan. 19, 2017
Date of Test	:	Jan. 20 – Mar. 10, 2017
Date of Issue	:	Mar. 13, 2017
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:
Waltek Services (Shenzhen) Co., Ltd.
Address: 1/F., Fukangtai Building, West Baima Road, Songgang Street, Baoan District, Shenzhen, Guangdong, China
Tel :+86-755-83551033
Fax:+86-755-83552400

Compiled by:

Zero Zhou / Test Engineer

Approved by:

Philo Zhong / Manager

2 Contents

Page

3 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTS17S0169907-1E	Jan. 19, 2017	Jan. 20 – Mar. 10, 2017	Mar. 13, 2017	original	-	Valid

4 General Information

4.1 General Description of E.U.T.

Product Name:	ALL IN ONE DVD PLAYER
Model No.:	UN1780, UN1780i, UN1780E
Model Description:	Only the model names are different. UN1780 is the test sample.
Bluetooth Version:	V4.0(With BLE)
Operation Frequency:	2402-2480MHz, 79(EDR)/40(BLE) Channels in total
Type of Modulation:	GFSK, Pi/4DQPSK, 8DPSK
The lowest oscillator:	32.768KHz
Antenna Gain:	0 dBi
Antenna installation:	PCB Printed Antenna

4.2 Details of E.U.T.

Technical Data:	DC 12V 15A Max

4.3 Channel List

BLE mode

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
0	2402	1	2404	2	2406	3	2408
4	2410	5	2412	6	2414	7	2416
8	2418	9	2420	10	2422	11	2424
12	2426	13	2428	14	2430	15	2432
16	2434	17	2436	18	2438	19	2440
20	2442	21	2444	22	2446	23	2448
24	2450	25	2452	26	2454	27	2456
28	2458	29	2460	30	2462	31	2464
32	2466	33	2468	34	2470	35	2472
36	2474	37	2476	38	2478	39	2480

4.4 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Table 1 Tests Carried Out Under FCC part 15.247

Test mode	Low channel	Middle channel	High channel
Transmitting	2402MHz	2440MHz	2480MHz

4.5 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 7760A**

  Waltek Services(Shenzhen) Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration number 7760A, October 15, 2015.

- **FCC Test Site 1#– Registration No.: 880581**

  Waltek Services(Shenzhen) 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 880581, April 29, 2014.

- **FCC Test Site 2#– Registration No.: 328995**

  Waltek Services(Shenzhen) 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 328995, December 3, 2014.

5 Equipment Used during Test

5.1 Equipments List

Conducted Emissions Test Site 1#

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMI Test Receiver	R&S	ESCI	100947	Sep.14,2016	Sep.13,2017
2.	LISN	R&S	ENV216	101215	Sep.14,2016	Sep.13,2017
3.	Cable	Top	TYPE16(3.5M)	-	Sep.14,2016	Sep.13,2017

Conducted Emissions Test Site 2#

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMI Test Receiver	R&S	ESCI	101155	Sep.14,2016	Sep.13,2017
2.	LISN	SCHWARZBECK	NSLK 8128	8128-289	Sep.14,2016	Sep.13,2017
3.	Limiter	York	MTS-IMP-136	261115-001-0024	Sep.14,2016	Sep.13,2017
4.	Cable	LARGE	RF300	-	Sep.14,2016	Sep.13,2017

3m Semi-anechoic Chamber for Radiation Emissions Test site 1#

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	EMC Analyzer	Agilent	E7405A	MY45114943	Sep.14,2016	Sep.13,2017
2	Active Loop Antenna	Beijing Dazhi	ZN30900A	-	Sep.14,2016	Sep.13,2017
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	336	Apr.19,2016	Apr.18,2017
4	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	Sep.14,2016	Sep.13,2017
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	Apr.19,2016	Apr.18,2017
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	335	Apr.19,2016	Apr.18,2017
7	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	Mar.17,2016	Mar.16,2017
8	Coaxial Cable (above 1GHz)	Top	1GHz-25GHz	EW02014-7	Apr.10,2016	Apr.09,2017

3m Semi-anechoic Chamber for Radiation Emissions Test site 2#

Item	Equipment	Manufacturer	Model No.	Serial No	Last Calibration Date	Calibration Due Date
1	Test Receiver	R&S	ESCI	101296	Sep.14,2016	Sep.13,2017
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	Sep.14,2016	Sep.13,2017
3	Amplifier	Compliance pirection systems inc	PAP-0203	22024	Sep.14,2016	Sep.13,2017
4	Cable	HUBER+SUHNER	CBL2	525178	Sep.14,2016	Sep.13,2017

RF Conducted Testing						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMC Analyzer (9k~26.5GHz)	Agilent	E7405A	MY45114943	Sep.14,2016	Sep.13,2017
2.	Spectrum Analyzer (9k-6GHz)	R&S	FSL6	100959	Sep.14,2016	Sep.13,2017
3.	Signal Analyzer (9k~26.5GHz)	Agilent	N9010A	MY50520207	Sep.14,2016	Sep.13,2017

5.2 Measurement Uncertainty

Parameter	**Uncertainty**
Radio Frequency	± 1 x 10^{-6}
RF Power	± 1.0 dB
RF Power Density	± 2.2 dB
Radiated Spurious Emissions test	± 5.03 dB (Bilog antenna 30M~1000MHz)
	± 4.74 dB (Horn antenna 1000M~25000MHz)
Conducted Spurious Emissions test	± 3.64 dB (AC mains 150KHz~30MHz)

5.3 Test Equipment Calibration

All the test equipments used are valid and calibrated by CEPREI Certification Body that address is No.110 Dongguan Zhuang RD. Guangzhou, P.R.China.

6 Test Summary

Test Items	Test Requirement	Result
Radiated Emissions	15.205(a) 15.209(a)	C
Conducted Emissions	15.207(a)	N/A
Bandwidth	15.247(a)(2)	C
Maximum Peak Output Power	15.247(b)(3),(4)	C
Power Spectral Density	15.247(e)	C
Band Edge	15.247(d)	C
Antenna Requirement	15.203	C
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	1.1307(b)(1)	C
Note: C=Compliance; NC=Not Compliance; NT=Not Tested; N/A=Not Applicable.		

7 Radiated Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.247

Test Method: 558074 D01 DTS Meas Guidance v03r05 & ANSI C63.10:2013

Test Result: PASS

Measurement Distance: 3m

Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

7.1 EUT Operation

Operating Environment:

Temperature: 25.5 °C

Humidity: 51 % RH

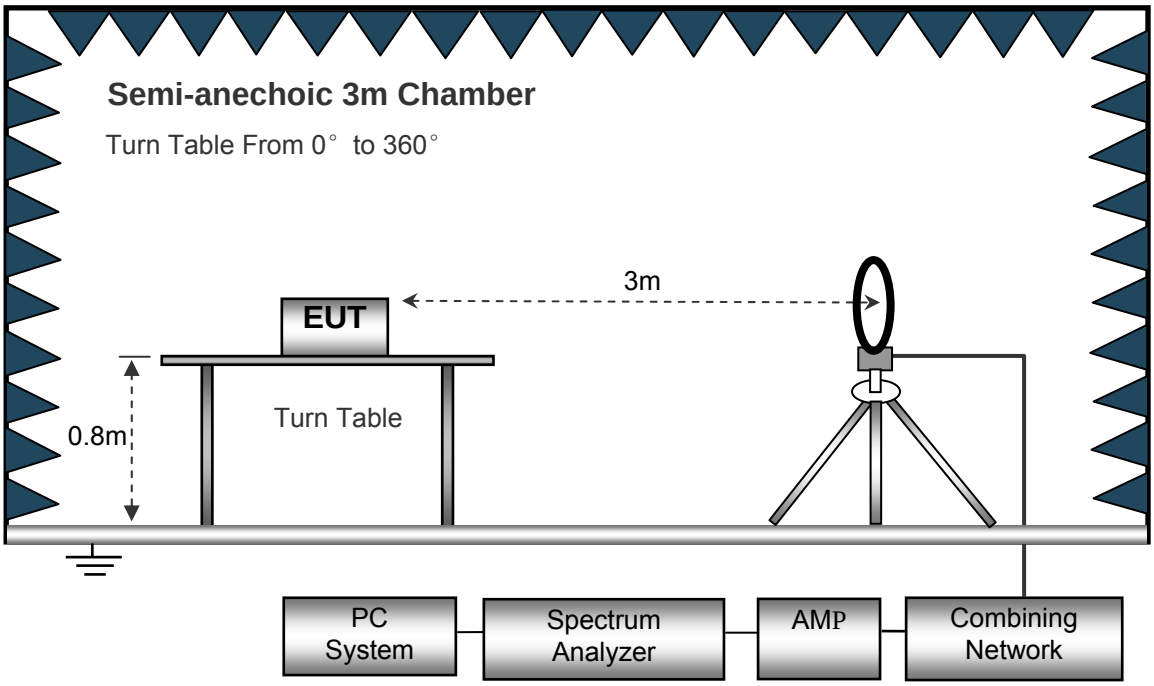
Atmospheric Pressure: 1016 mbar

EUT Operation:

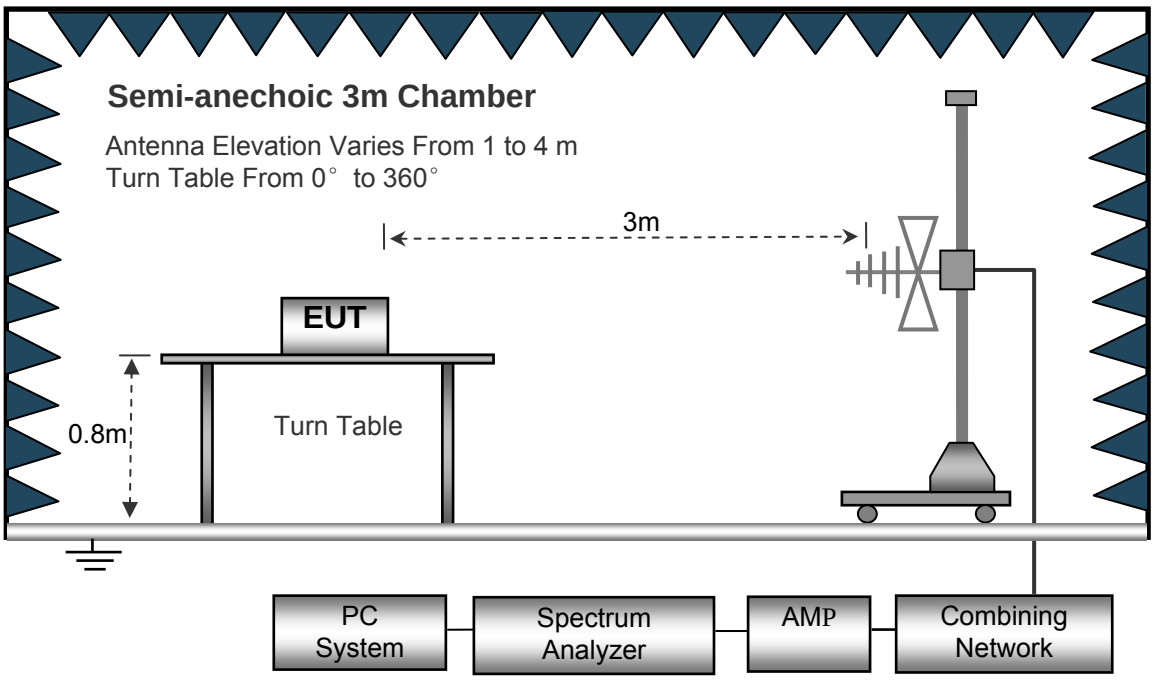
The test was performed in transmitting mode, the test data were shown in the report.

7.2 Test Setup

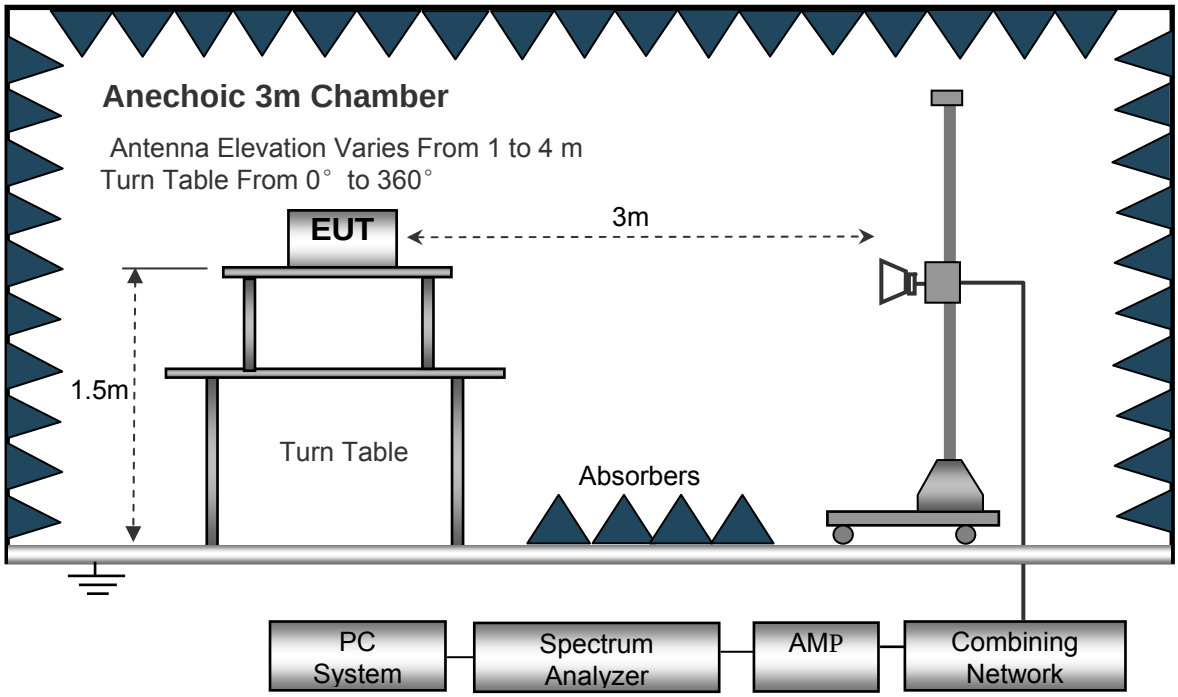
The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10: 2013.
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



7.3 Spectrum Analyzer Setup

Below 30MHz

Sweep Speed ..... Auto
IF Bandwidth..... 10kHz
Video Bandwidth..... 10kHz

Resolution Bandwidth..... 10kHz

30MHz ~ 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth..... 100kHz
Video Bandwidth..... 300kHz

Above 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth..... 1MHz
Video Bandwidth..... 3MHz
Detector ..... Ave.
Resolution Bandwidth..... 1MHz
Video Bandwidth..... 10Hz

7.4 Test Procedure

1. The EUT is placed on a turntable. For below 1GHz, the EUT is 0.8m above ground plane;
For above1GHz, the EUT is 1.5m 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 moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.

7.5 Summary of Test Results

Test Frequency: 9KHz~ 30MHz

The measurements were more than 20 dB below the limit and not reported.

Test Frequency: 30MHz ~ 18GHz

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
GFSK (BLE) Low Channel									
260.23	35.11	QP	300	2.0	H	-13.35	21.76	46.00	-24.24
260.23	40.02	QP	32	1.9	V	-13.35	26.67	46.00	-19.33
4804.00	45.22	PK	56	1.3	V	-1.06	44.16	74.00	-29.84
4804.00	42.10	Ave	56	1.3	V	-1.06	41.04	54.00	-12.96
7206.00	39.26	PK	161	1.9	H	1.33	40.59	74.00	-33.41
7206.00	34.20	Ave	161	1.9	H	1.33	35.53	54.00	-18.47
2310.05	46.33	PK	250	1.3	V	-13.19	33.14	74.00	-40.86
2310.05	39.05	Ave	250	1.3	V	-13.19	25.86	54.00	-28.14
2378.40	44.45	PK	115	1.7	H	-13.14	31.31	74.00	-42.69
2378.40	36.94	Ave	115	1.7	H	-13.14	23.80	54.00	-30.20
2499.91	42.11	PK	325	1.6	V	-13.08	29.03	74.00	-44.97
2499.91	38.52	Ave	325	1.6	V	-13.08	25.44	54.00	-28.56

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
GFSK (BLE) Middle Channel									
260.23	35.53	QP	167	1.8	H	-13.35	22.18	46.00	-23.82
260.23	39.26	QP	284	1.7	V	-13.35	25.91	46.00	-20.09
4880.00	45.75	PK	69	1.9	V	-0.62	45.13	74.00	-28.87
4880.00	42.09	Ave	69	1.9	V	-0.62	41.47	54.00	-12.53
7320.00	38.81	PK	78	1.2	H	2.21	41.02	74.00	-32.98
7320.00	33.19	Ave	78	1.2	H	2.21	35.40	54.00	-18.60
2319.50	46.14	PK	345	1.6	V	-13.19	32.95	74.00	-41.05
2319.50	38.34	Ave	345	1.6	V	-13.19	25.15	54.00	-28.85
2389.65	42.92	PK	68	1.9	H	-13.14	29.78	74.00	-44.22
2389.65	36.32	Ave	68	1.9	H	-13.14	23.18	54.00	-30.82
2489.15	43.87	PK	208	1.6	V	-13.08	30.79	74.00	-43.21
2489.15	38.36	Ave	208	1.6	V	-13.08	25.28	54.00	-28.72

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
GFSK (BLE) High Channel									
260.23	34.24	QP	176	1.2	H	-13.35	20.89	46.00	-25.11
260.23	38.72	QP	328	1.7	V	-13.35	25.37	46.00	-20.63
4960.00	44.27	PK	296	1.3	V	-0.24	44.03	74.00	-29.97
4960.00	43.43	Ave	296	1.3	V	-0.24	43.19	54.00	-10.81
7440.00	39.15	PK	8	1.6	H	2.84	41.99	74.00	-32.01
7440.00	33.12	Ave	8	1.6	H	2.84	35.96	54.00	-18.04
2324.65	45.14	PK	17	1.8	V	-13.19	31.95	74.00	-42.05
2324.65	39.62	Ave	17	1.8	V	-13.19	26.43	54.00	-27.57
2378.04	44.68	PK	55	1.5	H	-13.14	31.54	74.00	-42.46
2378.04	36.34	Ave	55	1.5	H	-13.14	23.20	54.00	-30.80
2490.23	44.98	PK	3	1.6	V	-13.08	31.90	74.00	-42.10
2490.23	37.02	Ave	3	1.6	V	-13.08	23.94	54.00	-30.06

Test Frequency: 18GHz~25GHz

The measurements were more than 20 dB below the limit and not reported.

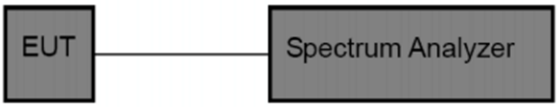
8 Band Edge Measurement

Test Requirement: Section 15.247(d) In addition, radiated emissions which fall in the restricted bands. as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) and 15.205(c).

Test Method: 558074 D01 DTS Meas Guidance v03r05

Test Mode: Transmitting

8.1 Test setup



8.2 Test Produce

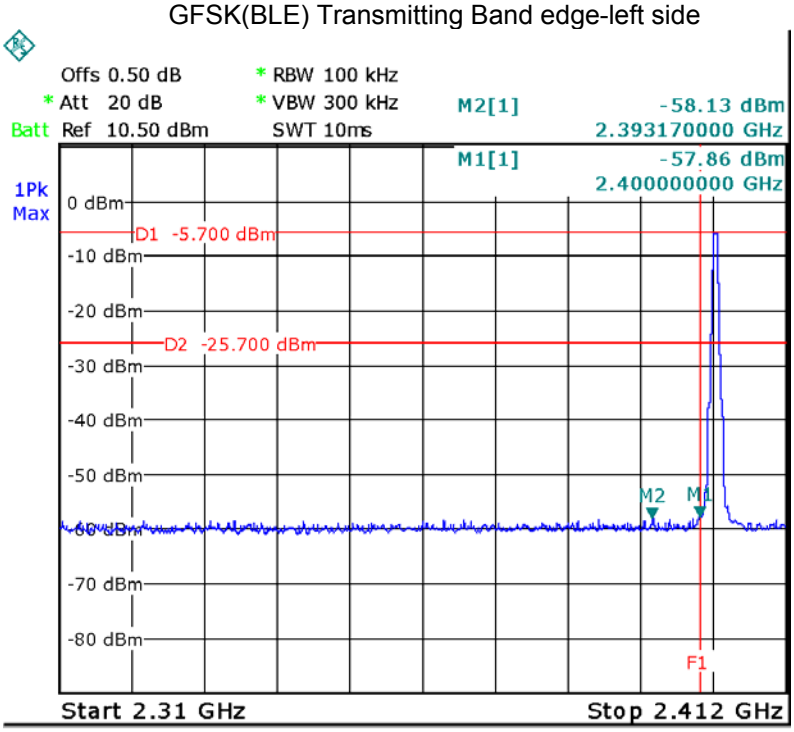
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz, Sweep = auto

   Detector function = peak, Trace = max hold
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

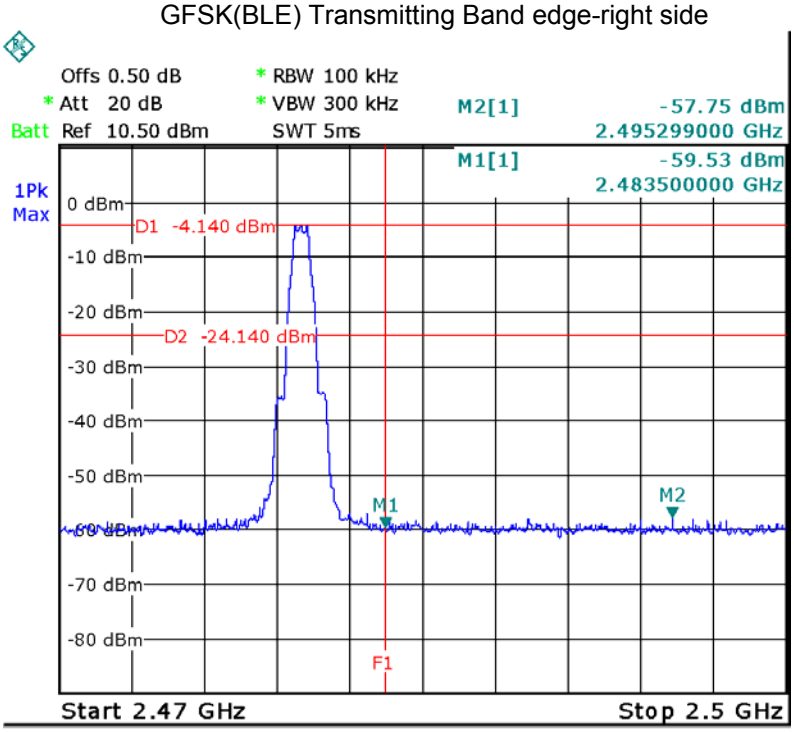
8.3 Test Result

Test plots

GFSK(BLE) Transmitting Band edge-left side



GFSK(BLE) Transmitting Band edge-right side

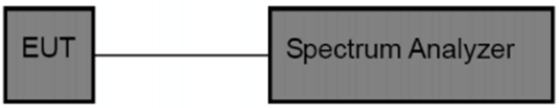


9 Bandwidth Measurement

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: 558074 D01 DTS Meas Guidance v03r05

9.1 Test setup



9.2 Test Procedure

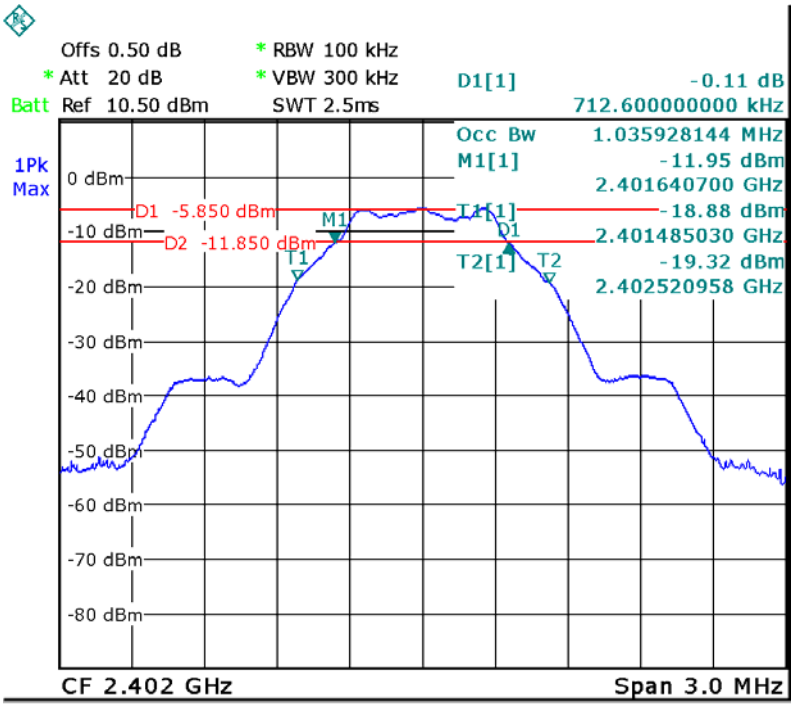
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

9.3 Test Result:

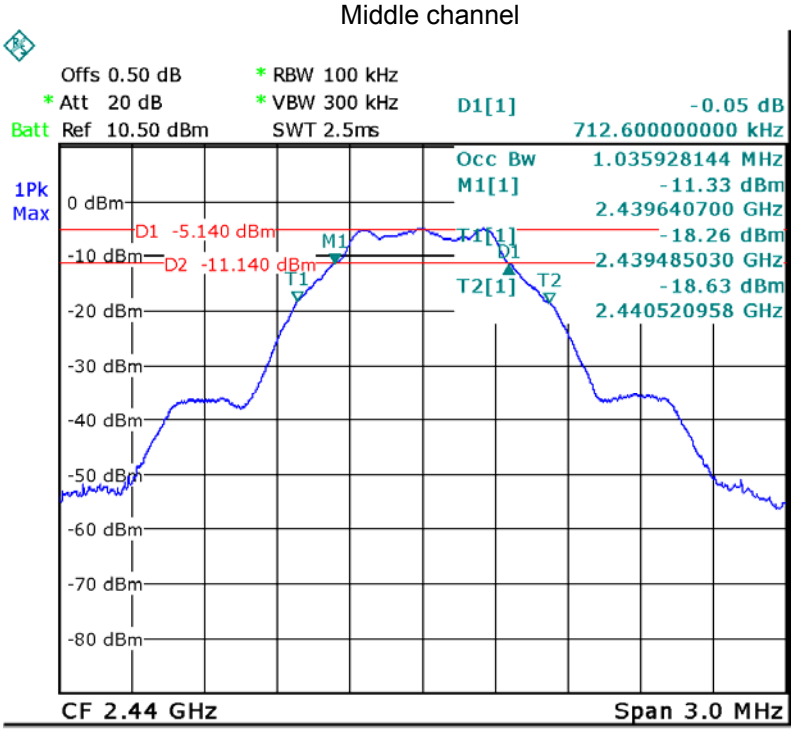
Test Channel	6dB Bandwidth (KHz)	99% Bandwidth(MHz)
Low channel	712.600	1.036
Middle channel	712.600	1.036
High channel	712.600	1.036

Test result plot as follows:

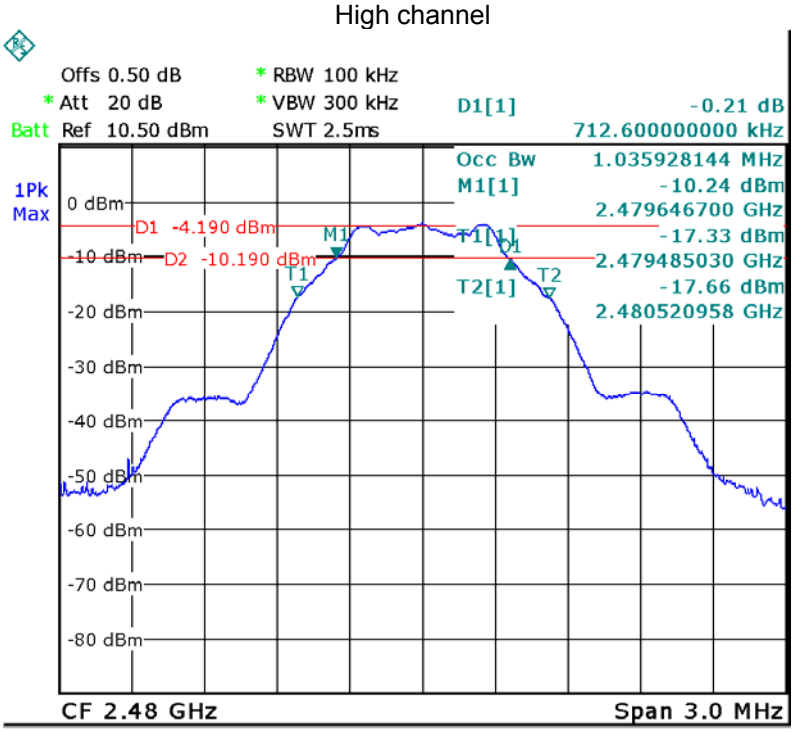
Low channel



Middle channel



High channel

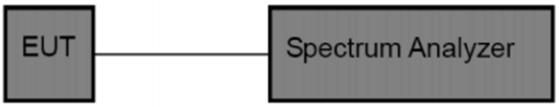


10 Maximum Peak Output Power

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: 558074 D01 DTS Meas Guidance v03r05

10.1 Test setup



10.2 Test Procedure

558074 D01 DTS Meas Guidance v03r05 section 9.1.1

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

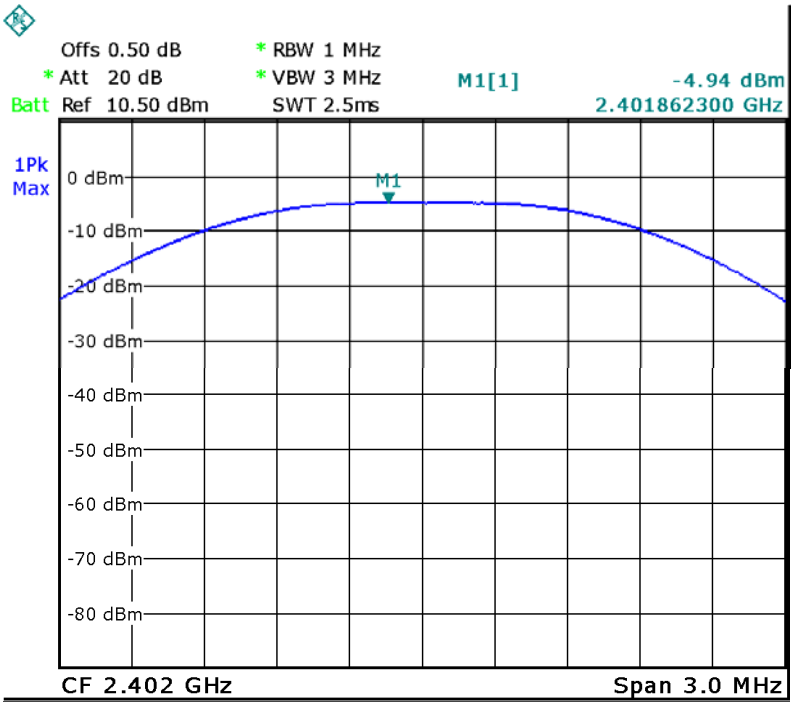
2. Set the spectrum analyzer: RBW = 1MHz. VBW = 3MHz. Sweep = auto; Detector Function = Peak, Set the span to fully encompass the DTS bandwidth.

3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

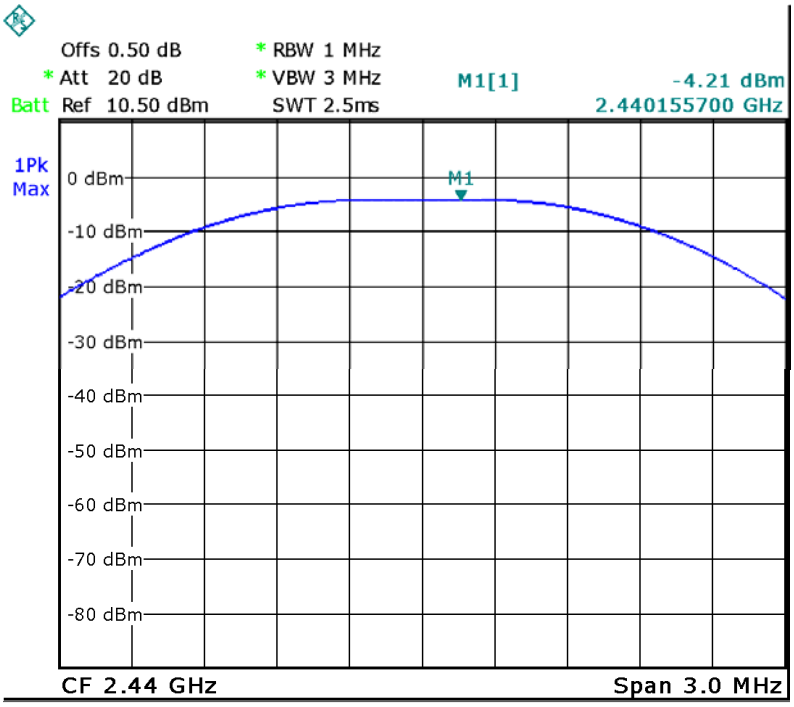
10.3 Test Result

Maximum Peak Output Power (dBm)		
Low channel	Middle channel	High channel
-4.94	-4.21	-3.22
Limit : 1W/30dBm		

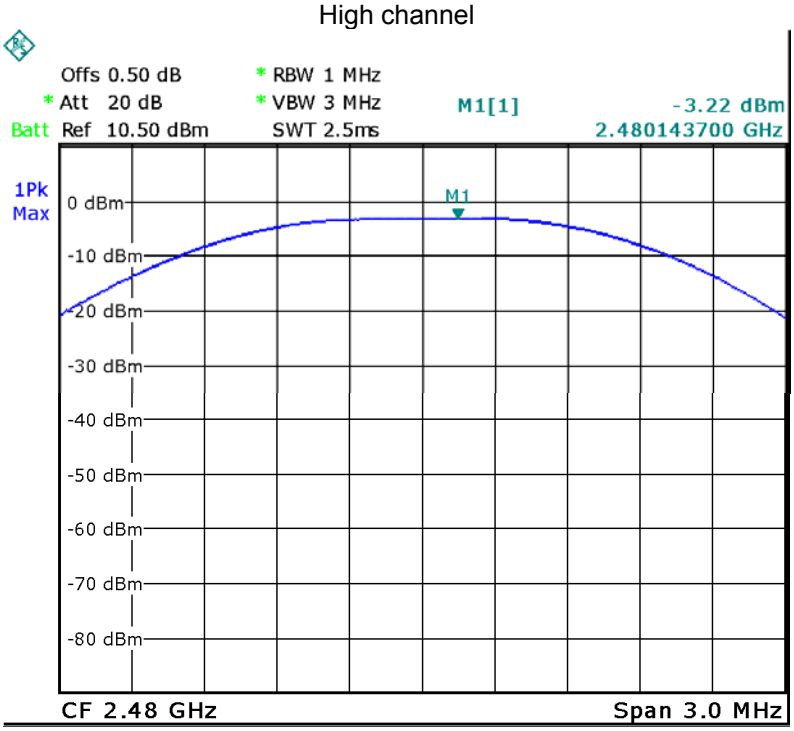
Low channel



Middle channel



High channel

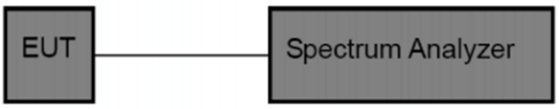


11 Power Spectral density

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: 558074 D01 DTS Meas Guidance v03r05

11.1 Test setup



11.2 Test Procedure

558074 D01 DTS Meas Guidance v03r05 section 10.2

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

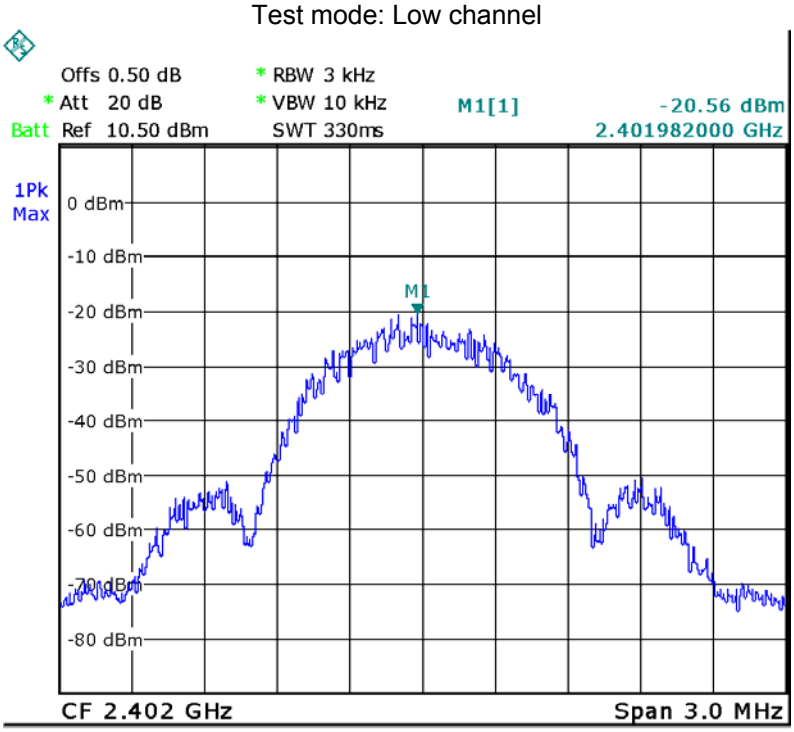
2. Set the spectrum analyzer: RBW = 3kHz. VBW = 10kHz , Span = 1.5 times the DTS channel bandwidth(6 dB bandwidth). Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

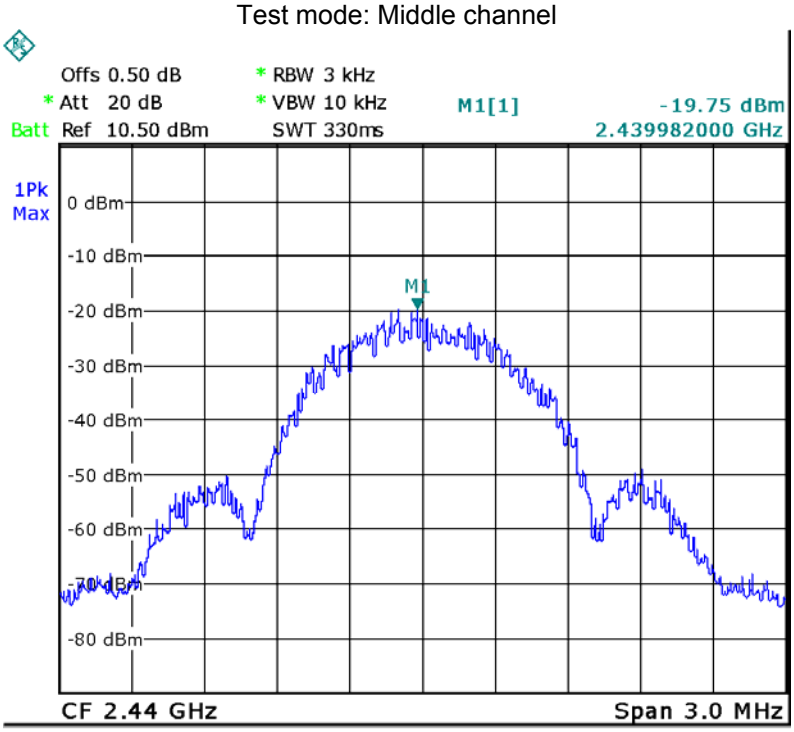
11.3 Test Result

Power Spectral Density		
Low channel	Middle channel	High channel
-20.56	-19.75	-18.77
Limit : 8dBm per 3kHz		

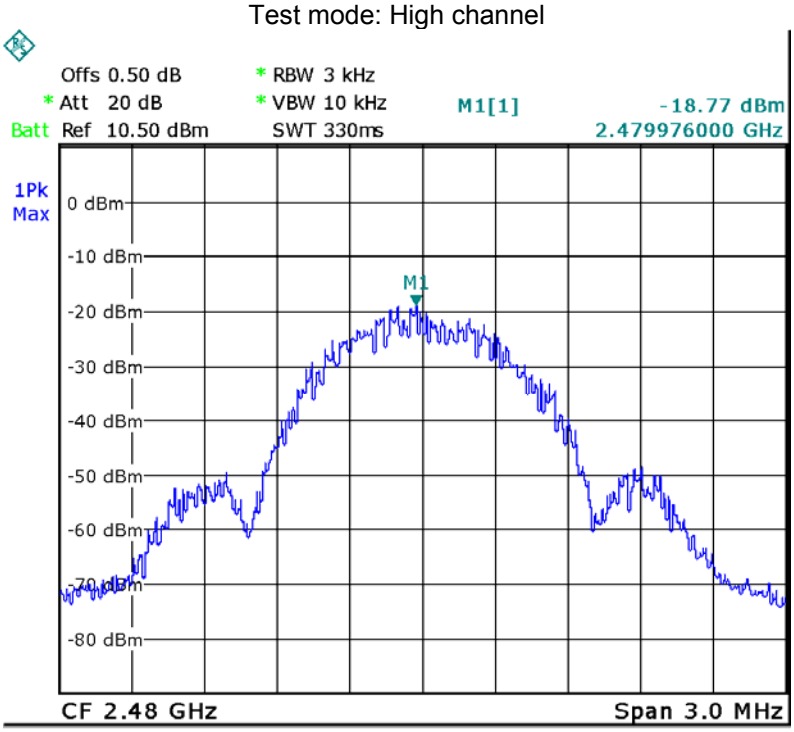
Test mode: Low channel



Test mode: Middle channel



Test mode: High channel



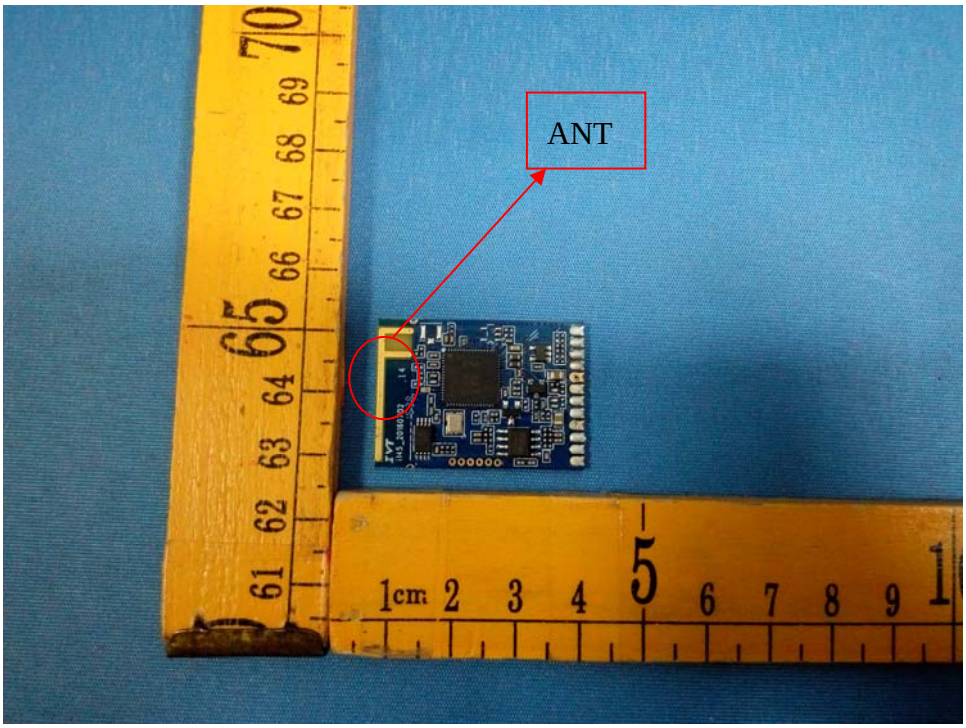
12 Antenna Requirement

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 shall be considered sufficient to comply with the provisions of this section. 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

For intentional device, according to FCC 47 CFR Section 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.

Result:

The EUT has one PCB printed antenna, the gain is 0dBi. meets the requirements of FCC 15.203.



13 RF Exposure

Test Requirement: FCC Part 1.1307

Evaluation Method: FCC Part 2.1091 & KDB 447498 D01 General RF Exposure Guidance v06

13.1 Requirements

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

13.2 The procedures / limit

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

13.3 MPE Calculation Method

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

S = power density (in appropriate units, e.g. mW/cm^2)
P = output power to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

From the peak EUT RF output power, the minimum mobile separation distance, R=20cm, as well as the gain of the used antenna, the RF power density can be obtained

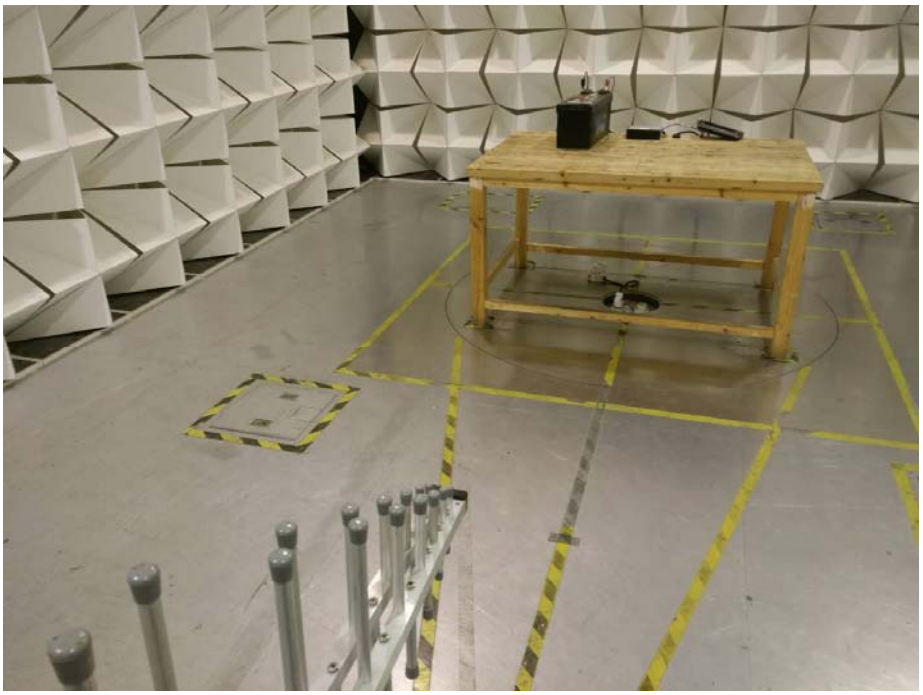
Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (mW/cm2)	Limit of Power Density (mW/cm2)
0.00	1.000	-3.22	0.48	0.000095	1

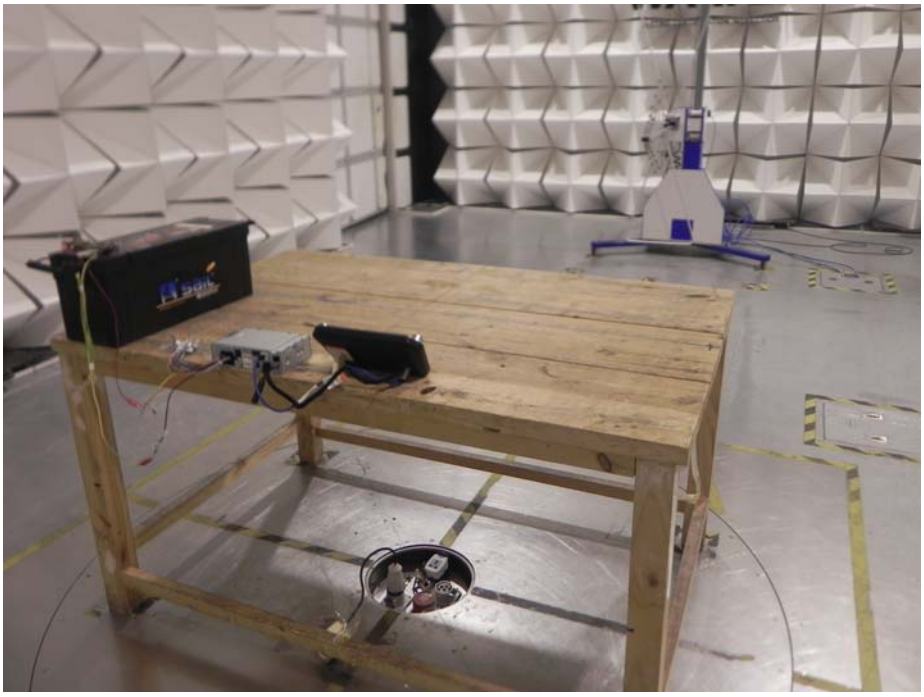
14 Photographs – Test Setup Photos

14.1 Photograph – Radiated Emission

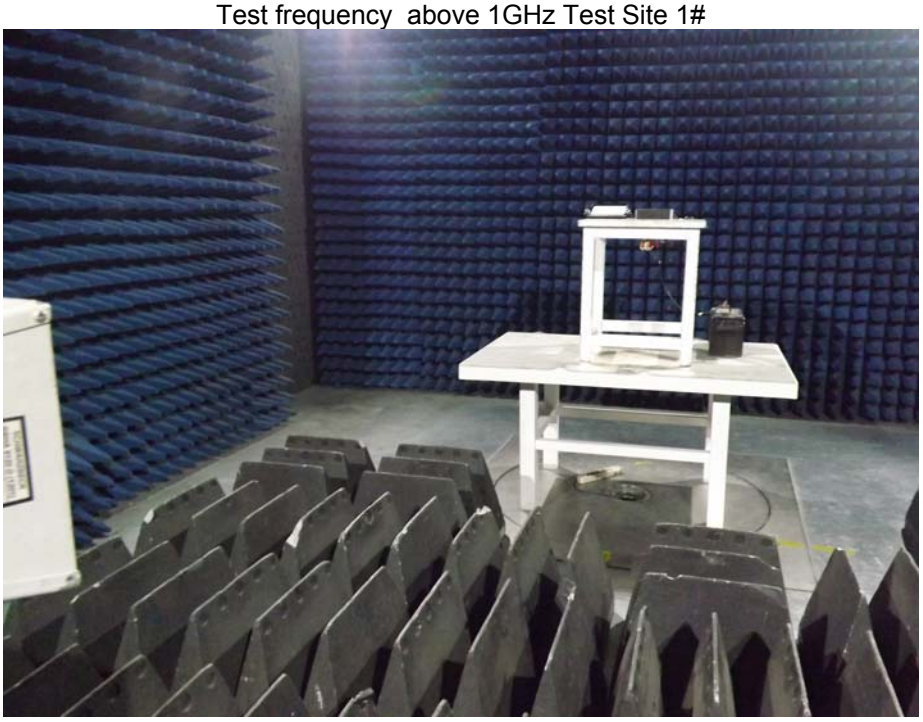
Test frequency 9KHz to 30MHz Test Site 2#

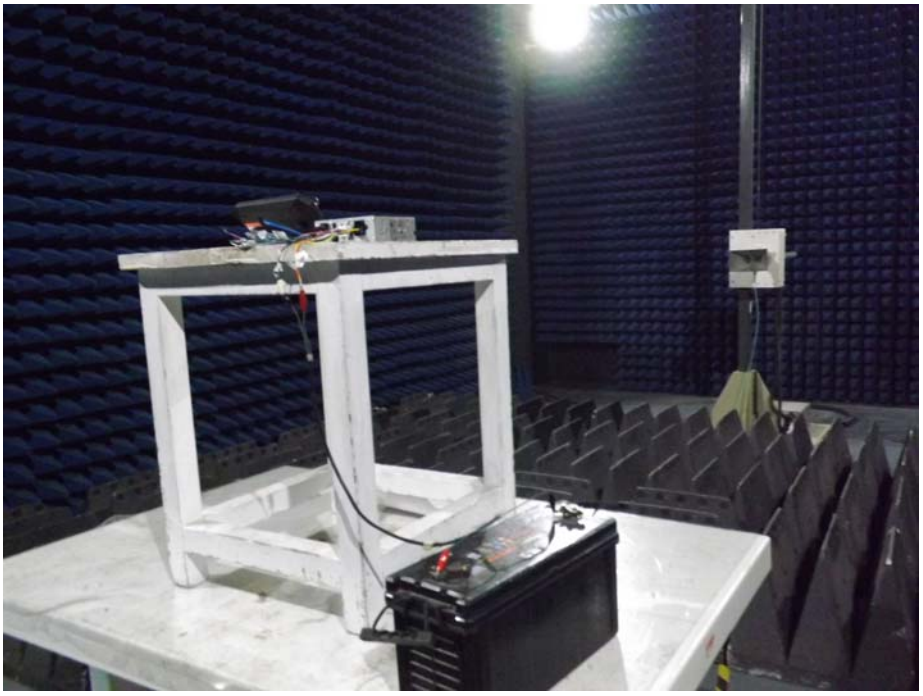
Test frequency from 30MHz to 1GHz Test Site 2#





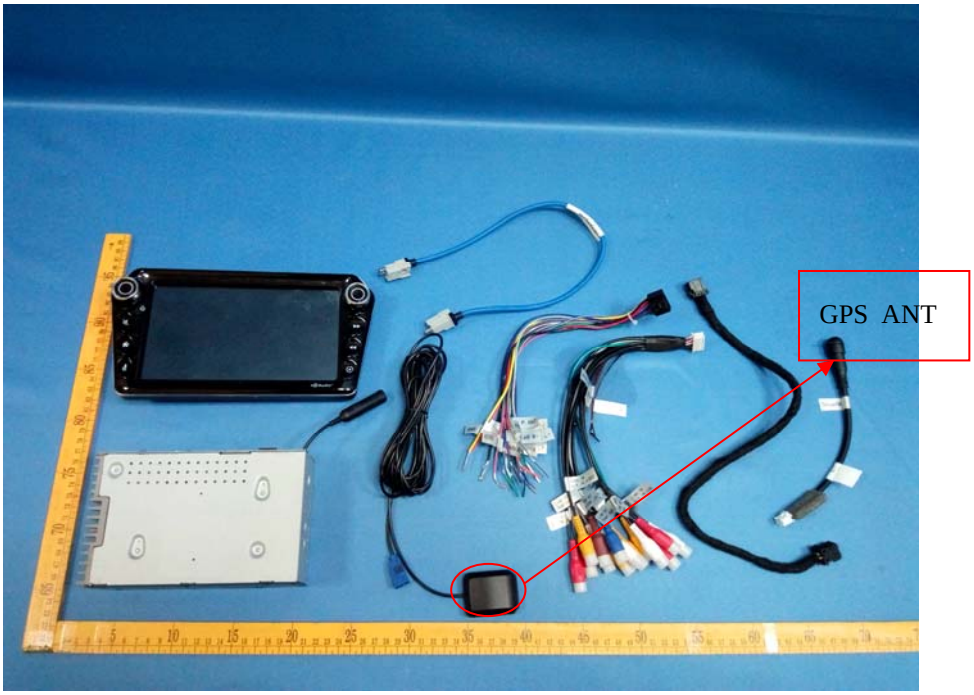
Test frequency above 1GHz Test Site 1#

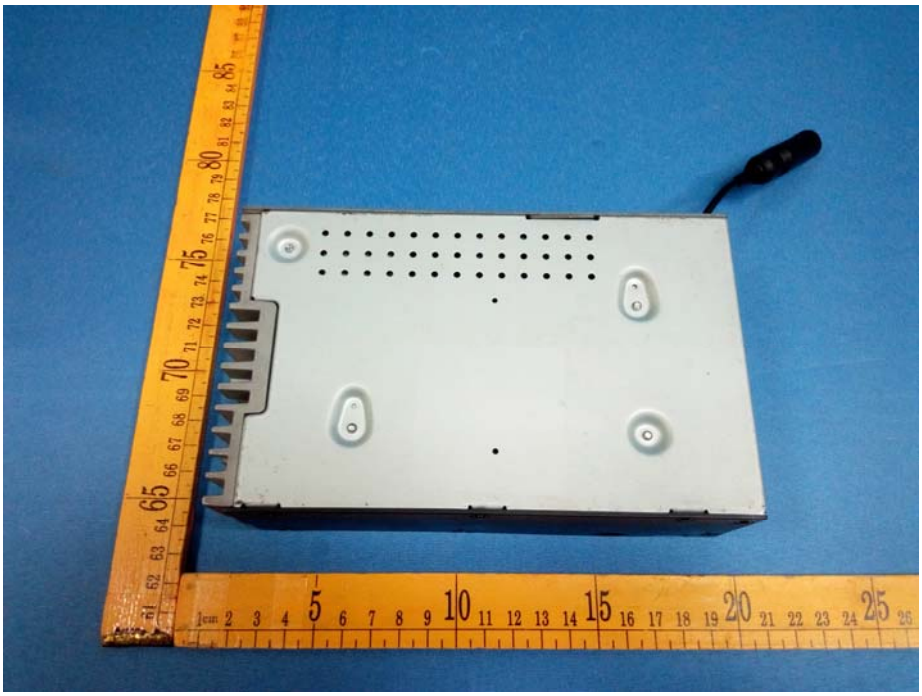


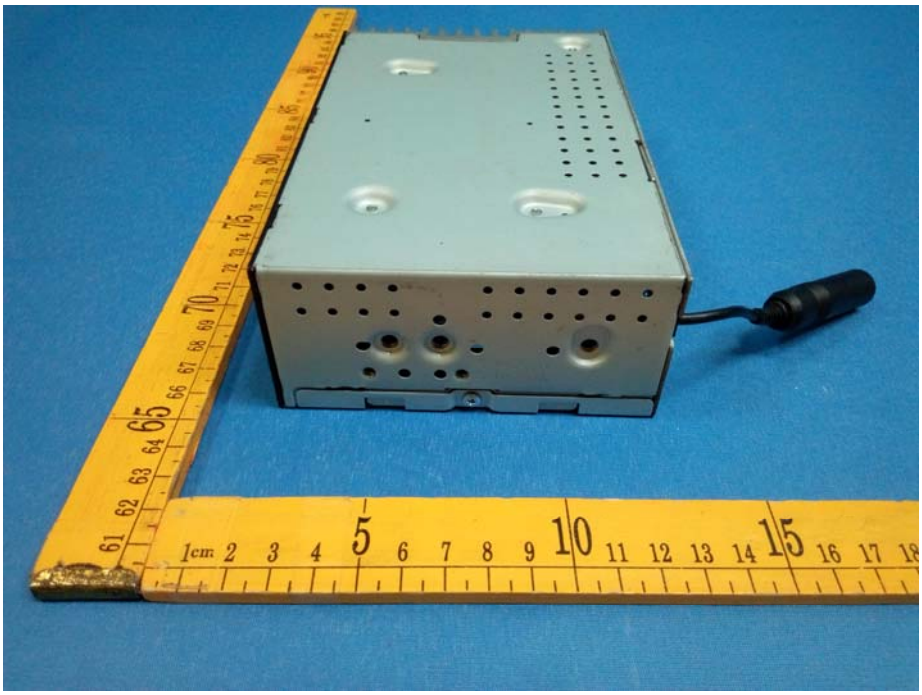


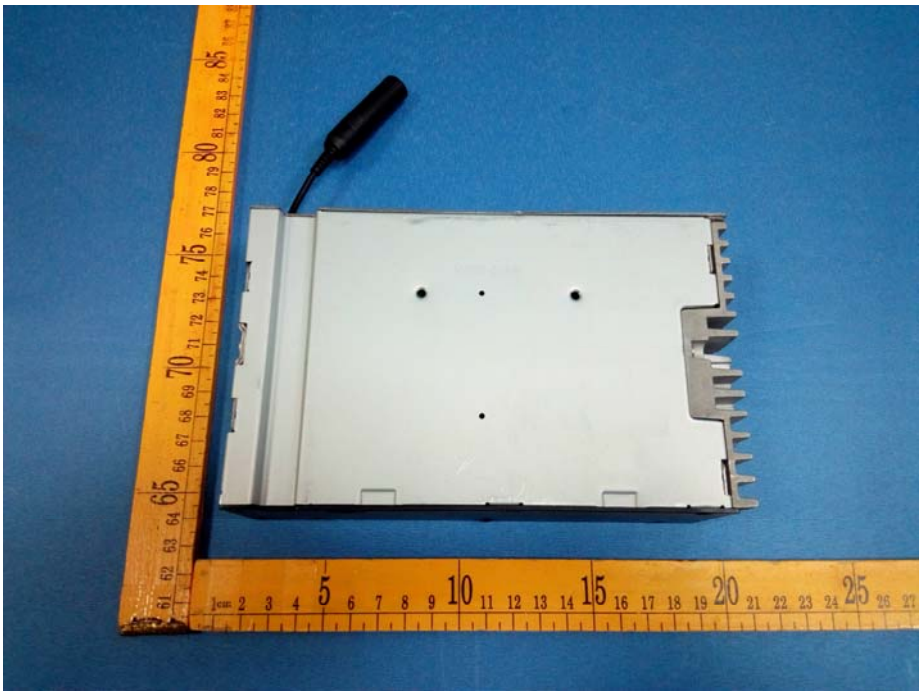
15 Photographs - Constructional Details

15.1 Model UN1780 – External Photos

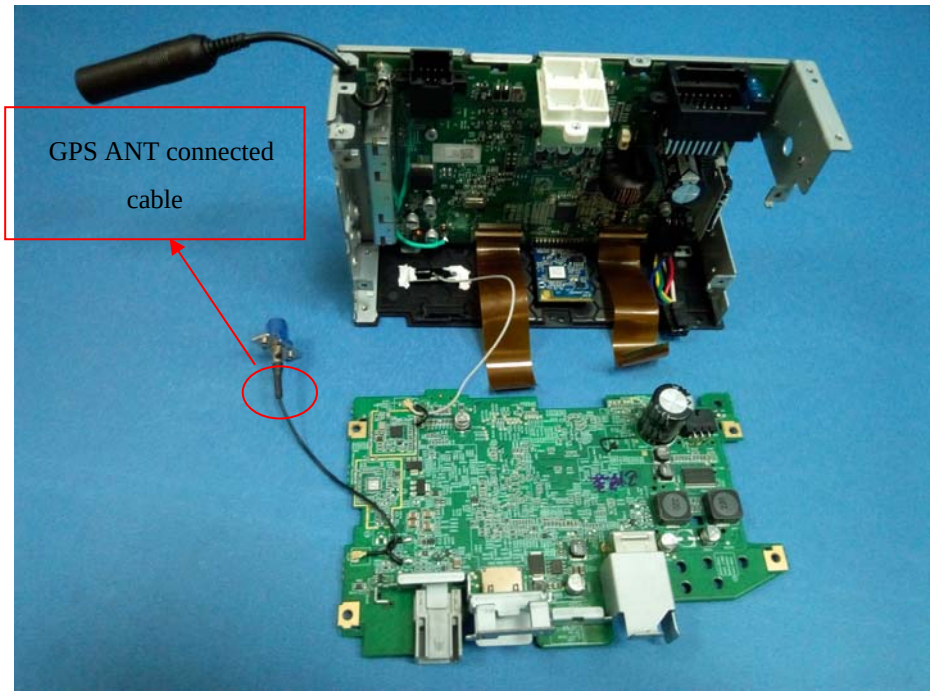


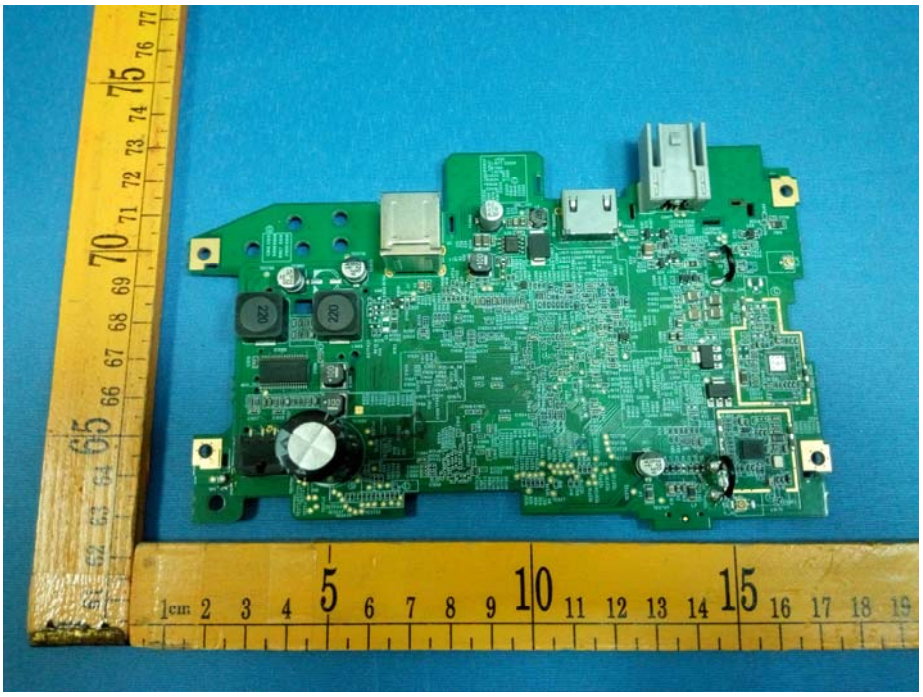


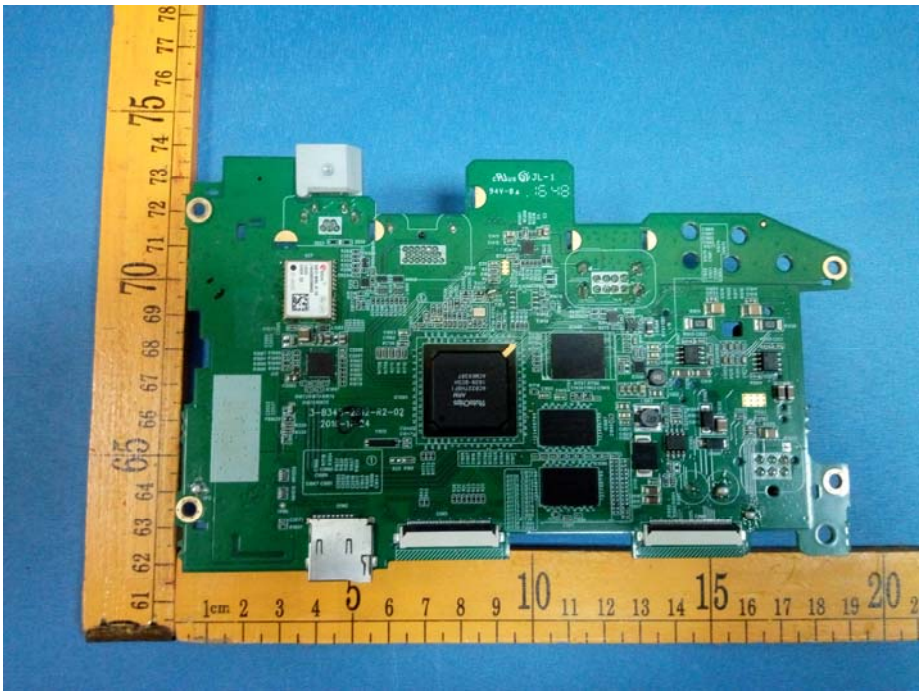


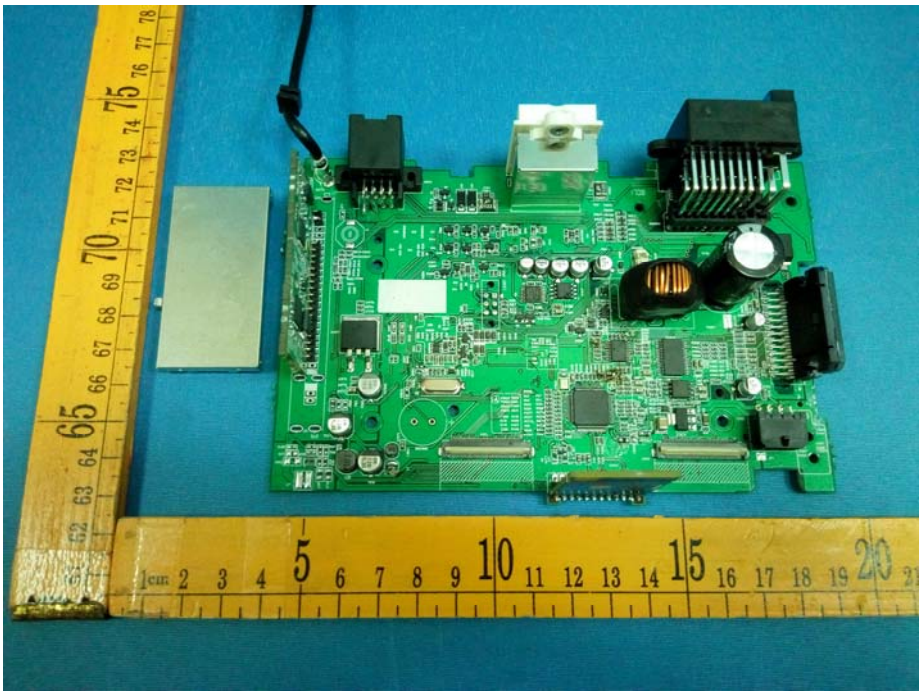


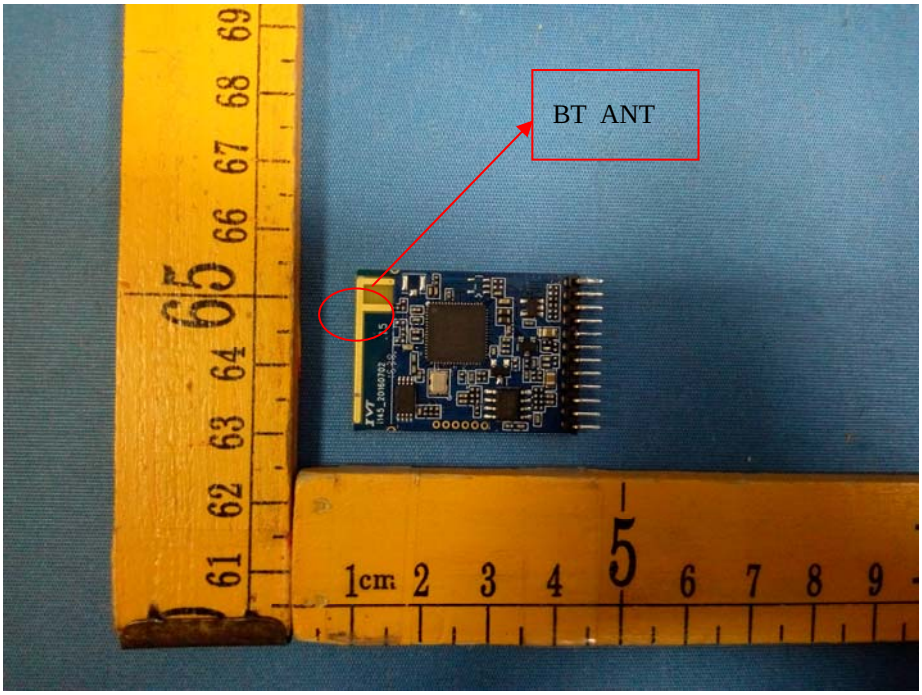
15.2 Model UN1780-Internal Photos

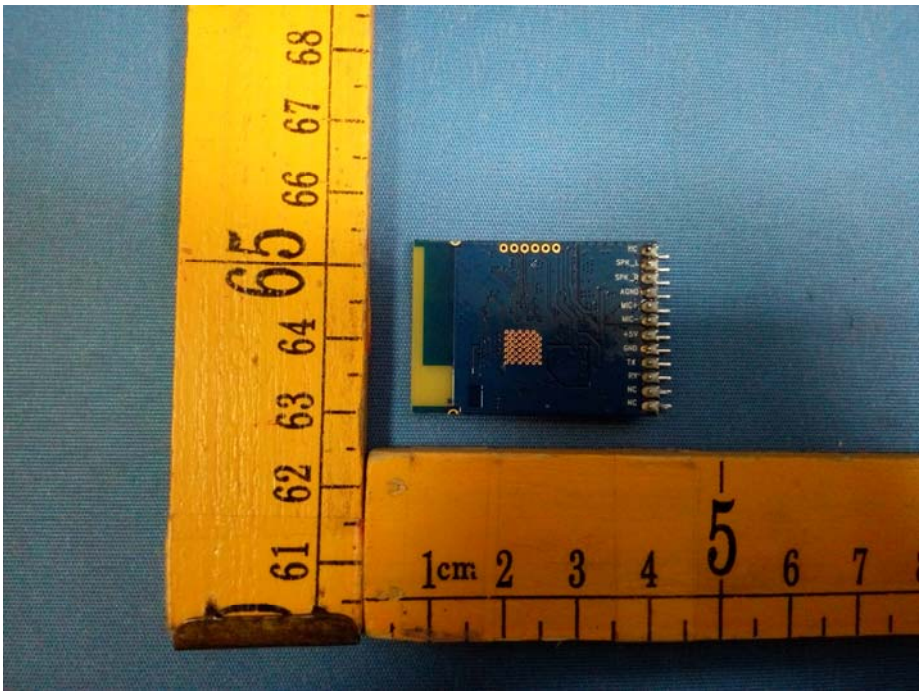

GPS ANT connected
cable

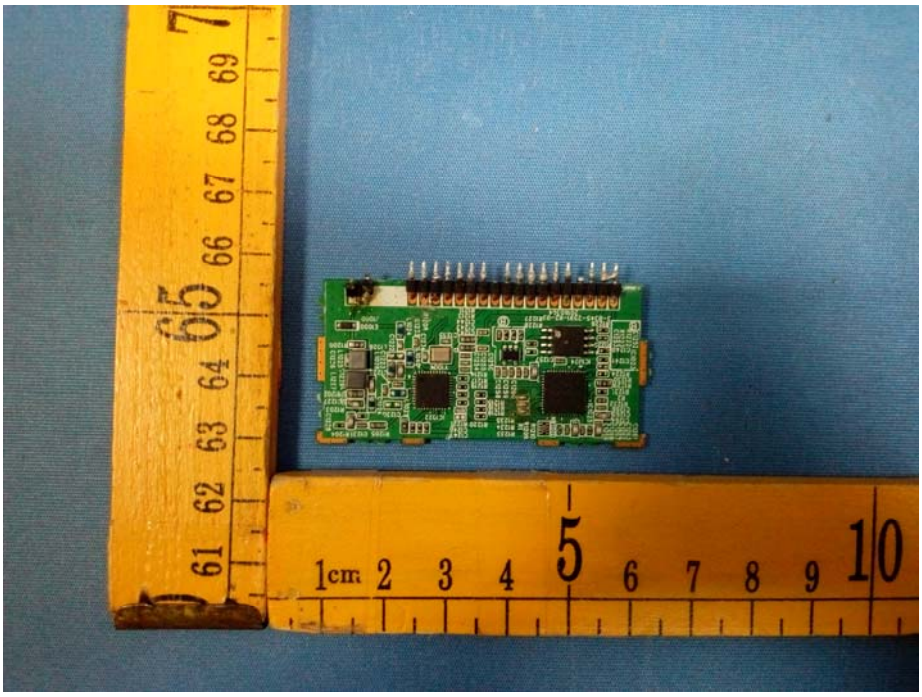


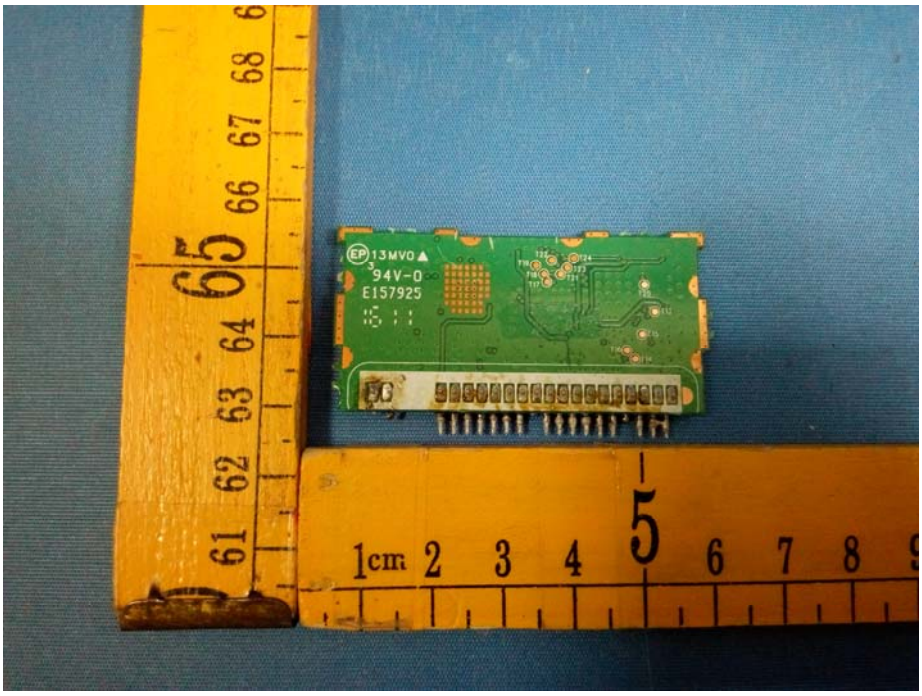





BT ANT


61 62 63 64 65 66 67 68
1cm 2 3 4 5 6 7


61 62 63 64 65 66 67 68 69 7
1cm 2 3 4 5 6 7 8 9 10



======End of Report======