FCC Test Report

Report No: FCS202202135W01

Issued for

Applicant:	Shenzhen ANLEON Electronic Co.,LTD
Address:	HuiLongYuan 1-2-303, Minzhi, Longhua,Shenzhen
Product Name:	Wireless In-Ear Monitor System
Brand Name:	ANLEON
Model Name:	S2
Series Model:	S3,S4
FCC ID:	2AGRX-S2-561-568

Issued By: Flux Compliance Service Laboratory
Add: Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan
Tel: 769-27280901 Fax:769-27280901 http://www.fcs-lab.com

TEST RESULT CERTIFICATION

Applicant's Name	:	Shenzhen ANLEON Electronic Co.,LTD
Address	:	HuiLongYuan 1-2-303, Minzhi, Longhua,Shenzhen
Manufacture's Name	:	Shenzhen ANLEON Electronic Co.,LTD
Address	:	HuiLongYuan 1-2-303, Minzhi, Longhua,Shenzhen

Product Description

Product Name	:	Wireless In-Ear Monitor System
Brand Name	:	ANLEON
Model Name	:	S2
Series Model	:	S3,S4
Test Standards	:	FCC Rules and Regulations Part 15 Subpart C section 15.236
Test Procedure	:	ANSI C63.10:2013

This device described above has been tested FCS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Date of Test.....:

Date (s) of performance of tests.	:	24 Feb. 2022 ~ 07 Mar. 2022
Date of Issue	:	07 Mar. 2022
Test Result	:	Pass

Tested by : Scott shen
(Scott Shen)

Reviewed by : Duke Qian
(Duke Qian)

Approved by : Jack Wang
(Jack Wang)

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Revision History

Rev.	Issue Date	Effect Page	Contents
00	07 Mar. 2022	N/A	Initial Issue

1. SUMMARY OF TEST RESULTS

FCC Part 15 Subpart C section 15.236			
Standard Section	Test Item	Judgment	Remark
FCC Part 15.236(d)	Maximum Radiated Power	PASS	--
FCC Part 15.236(f)(2)	Occupied Bandwidth	PASS	--
FCC Part 15.236(g)	Necessary bandwidth	PASS	--
FCC Part 15.236(f)(3)	Frequency stability	PASS	--
FCC Part 15.236(g)	Emission within the band and outside this band	PASS	--
FCC Part 107(a)	Conducted Emission	NA	--
FCC Part 15.203	Antenna Requirement	PASS	--

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

(2) All tests are according to ANSI C63.10:2013

1.1 TEST LABORATORY

Company Name:	Flux Compliance Service Laboratory
Address:	Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan
Telephone:	+86-769-27280901
Fax:	+86-769-27280901
Laboray Accreditations	
FCC Test Firm Registration Number: 514908 CNAS Number： L15566 Designation number：CN0127 A2LA accreditation number：5545.01 ISED Number：25801	

1.2 MEASUREMENT UNCERTAINTY

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

No.	Item	Uncertainty
1	RF output power, conducted	±0.71dB
2	Unwanted Emissions, conducted	±2.98 dB
3	Conducted Emission (9KHz-150KHz)	±4.13 dB
4	Conducted Emission (150KHz-30MHz)	±4.74 dB
5	All emissions,radiated(<1G) 30MHz-1000MHz	±3.2 dB
6	All emissions,radiated (1GHz -18GHz)	±3.66 dB
7	All emissions,radiated (18GHz -40GHz)	±4.31 dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Wireless In-Ear Monitor System
Brand Name	ANLEON
Model Name	S2
Series Model	S3,S4
Model differences	The above product with same circuit, PCB layout, electrical parts, materials and wiring structures, Appearance shape, the materials of decorative accessories is same, only different color.
Channel List	Please refer to the Note 2.
Operation frequency	Channel：561-568MHz
Modulation Type	FM
Antenna Type	Integral Antenna
Antenna Gain (dBi)	1.0(dBi)
Power Supply	DC 9V 500mA
Battery	DC 9V
Hardware version number	V1.0
Software version number	V1.0
Connecting I/O Port(s)	Please refer to the User's Manual

Note:

1. For a more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.

2. **Channel List**

Channel					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	561.00	02	568.00		

Ant.	Atnenna Brand	Antenna Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	Integral Antenna	N/A	1.0	Antenna

2.2 DESCRIPTION OF THE TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test software:FCC tools

The test softeware was used to control EUT work in continuous TX mode, and select test channel, Wireless mode as below table, the following operating modes were applied for the related test items. All test modes were tested, only the result of the worst case was recorded in the report.

Tested mode, channel , information		
Mode	Channel	Frequency (MHz)
Channel	CH 01	561.0
	CH 02	568.0

Note: that use new battery during the test

2.3 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

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

Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note
N/A	N/A	N/A	N/A	N/A	N/A

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note
N/A	N/A	N/A	N/A	N/A	N/A

Note:

(1) The support equipment was authorized by Declaration of Confirmation.

(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.4 EQUIPMENTS LIST

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Company No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESRP 3	FCS-E001	2022.02.10	2023.02.09
Signal Analyzer	R&S	FSV40-N	FCS-E012	2022.02.10	2023.02.09
Active loop Antenna	ZHINAN	ZN30900C	FCS-E013	2022.02.10	2023.02.09
Bilog Antenna	SCHWARZBECK	VULB 9168	FCS-E002	2022.02.10	2023.02.09
Horn Antenna	SCHWARZBECK	BBHA 9120D	FCS-E003	2022.02.10	2023.02.09
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	FCS-E018	2022.02.10	2023.02.09
Pre-Amplifier(0.1M-3GHz)	EMCI	EM330N	FCS-E004	2022.02.10	2023.02.09
Pre-Amplifier (1G-18GHz)	N/A	TSAMP-0518SE	FCS-E014	2022.02.10	2023.02.09
Pre-Amplifier (18G-40GHz)	TERA-MW	TRLA-0400	FCS-E019	2022.02.10	2023.02.09
Temperature & Humidity	HTC-1	victor	FCS-E005	2022.02.10	2023.02.09
Signal generator	Agilent	E4421B	FCS-E025	2022.02.10	2023.02.09

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Company No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESPI	FCS-E020	2022.02.10	2023.02.09
LISN	R&S	ENV216	FCS-E007	2022.02.10	2023.02.09
LISN	ETS	3810/2NM	FCS-E009	2022.02.10	2023.02.09
Temperature & Humidity	HTC-1	victor	FCS-E008	2022.02.10	2023.02.09

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Company No.	Last calibration	Calibrated until
Spectrum Analyzer	Keysight	N9020A	FCS-E015	2022.02.10	2023.02.09
Spectrum Analyzer	Agilent	E4447A	MY50180039	2022.02.10	2023.02.09
Spectrum Analyzer	R&S	FSV-40	101499	2022.02.10	2023.02.09
Power meter	Aglient	U2021XA	MY55150021	2022.02.10	2023.02.09

3 MAXIMUM RADIATED POWER

3.1 LIMIT

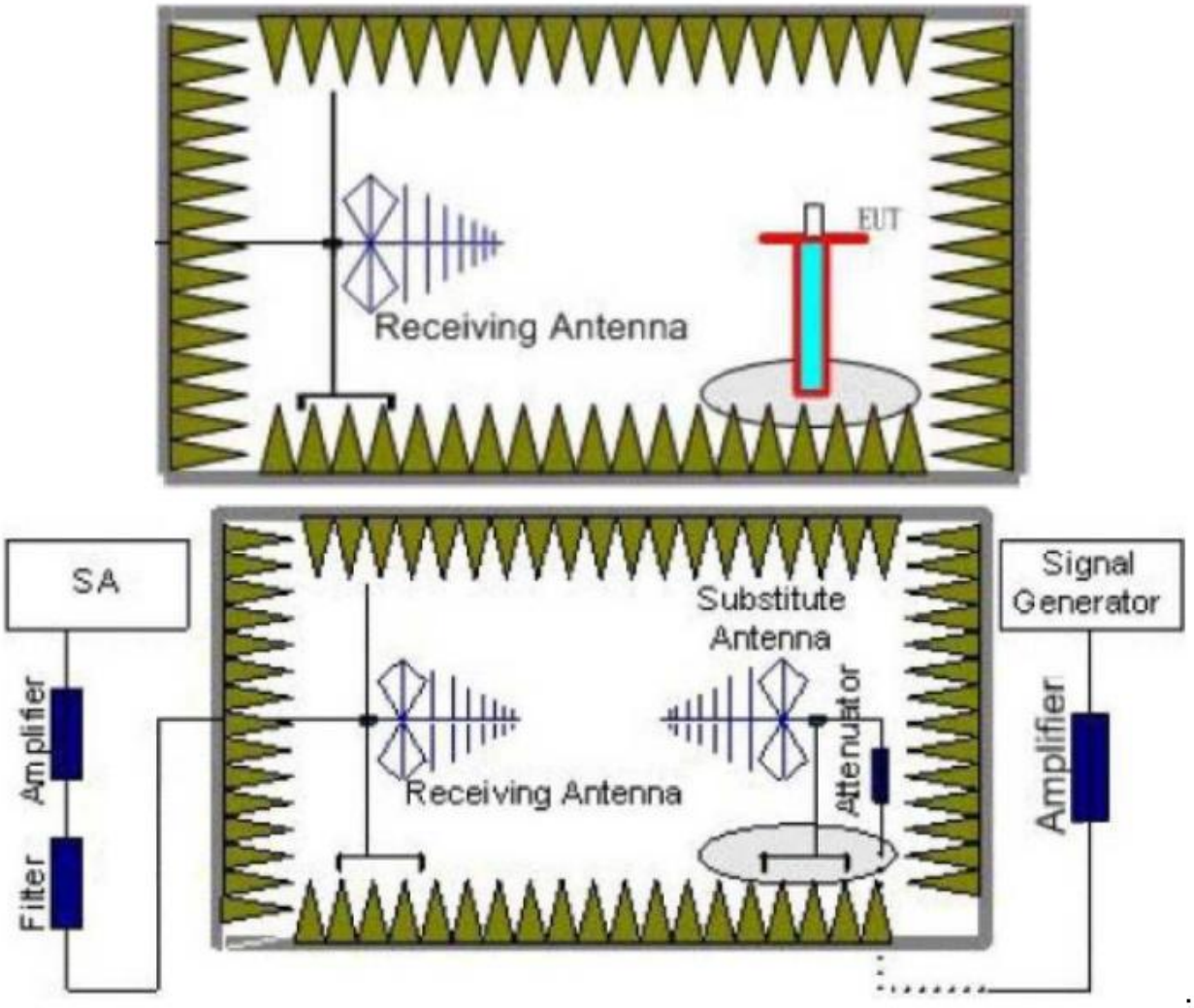
The maximum radiated power shall not exceed the following values:
(1) In the bands allocated and assigned for broadcast television and in the 600 MHz service band: 50 mW EIRP
(2) In the 600 MHz guard band and the 600 MHz duplex gap: 20 mW EIRP

3.2 TEST PROCEDURE

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all test transmit frequencies were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test Set Test Receiver or Spectrum RBW=1 MHz,VBW=3MHz, And the maximum value of the receiver should be recorded as (Pr).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. An amplifier may be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pd) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
   The measurement results are obtained as described below:
   POWer(EIRP)=PMea+PAg- Pd + Ga
6. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
7. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi

3.3 TEST SETUP

Test Configuration



3.4 TEST RESULTS

Test mode	Channel	Frequency （MHz）	Peak Output Power (dBm)	Cable loss(dBm)	Atnenna Gain (dBi)	EIRP(dBm)	Limit(dBm)	Verdict
Channel	01	561.10	5.14	1.0	1.0	7.14	16.99	PASS
	02	568.00	5.23	1.0	1.0	7.23		

Note:EIRP(dBm)=Peak Output Power(dBm)+Cable loss(dBm)+Atnenna Gain(dBi)

4. OCCUPIED BANDWIDTH

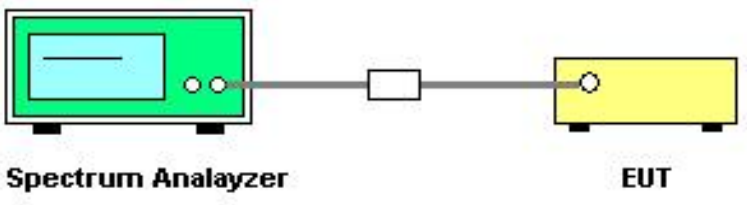
4.1 LIMIT

One or more adjacent 25KHz segments within the assignable frequencies may be combined to form a channel whose maximum bandwidth shall not exceed 200 kHz. The operating bandwidth shall not exceed 200 kHz

4.2 TEST PROCEDURE

Parameter	Setting
Detector	Peak/AV
Sweep time	Auto
Resolution bandwidth	1 % to 5 % of the occupied bandwidth
Video bandwidth:	3 x resolution bandwidth
Span:	2 x emission bandwidth
Trace mode:	Max. hold
Analyzer function:	99% power occupied bandwidth function
EUT:	Modulated signal with max(FM,2.5kHz tone). frequency deviation

4.3 TEST SETUP

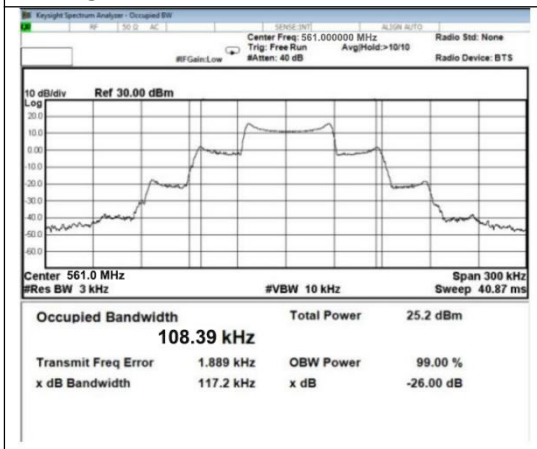


4.4 TEST RESULTS

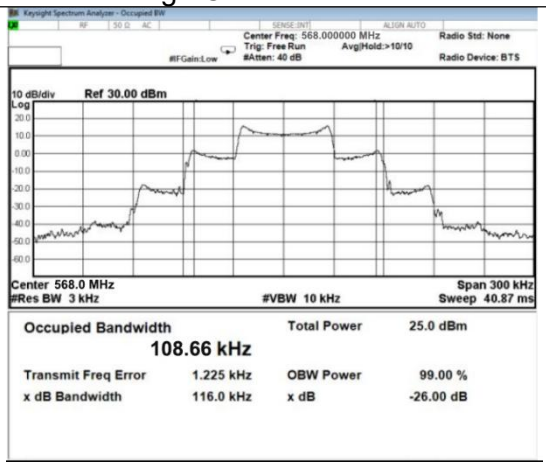
Test mode	Channel	Frequency （MHz）	20dB Bandwidth (MHz)	99% Bandwidth (KHz)	Limit(KHz)	Verdict
Channel	Low CH	561.00	0.1172	108.39	200	PASS
	High CH	568.00	0.1160	108.66		

Channel

Low CH



High CH



5 NECESSARY BANDWITH

5.1 LIMIT

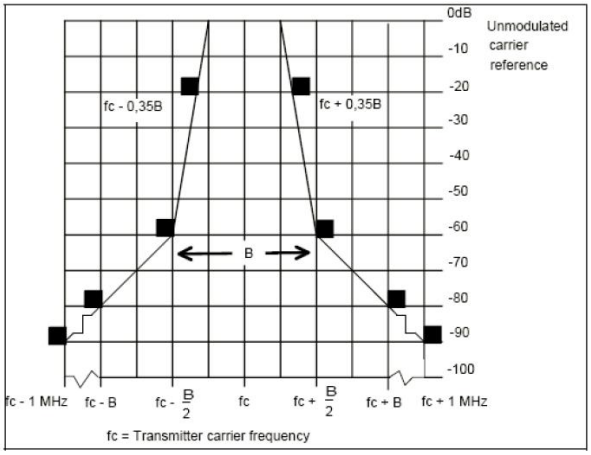
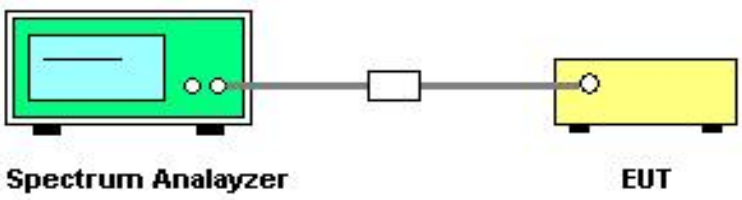


Figure 1: Spectrum mask for analogue systems in all bands

5.2 TEST PROCEDURE

EN300422-1 V1.4.2 Clause 8.3.

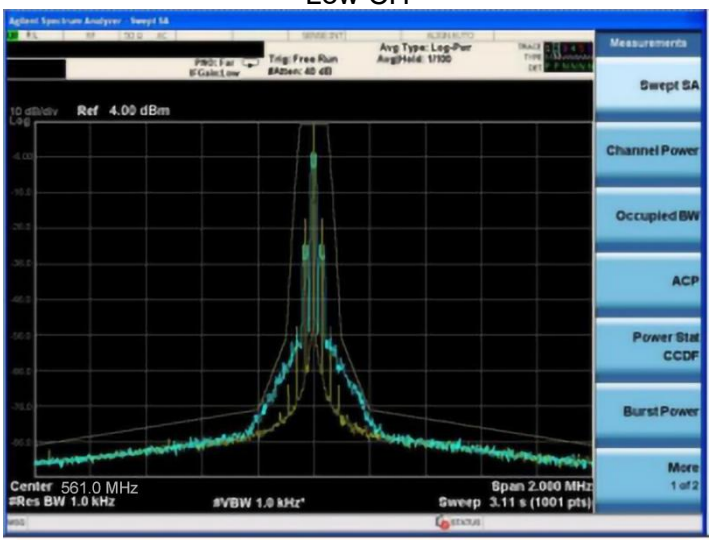
5.3 TEST SETUP



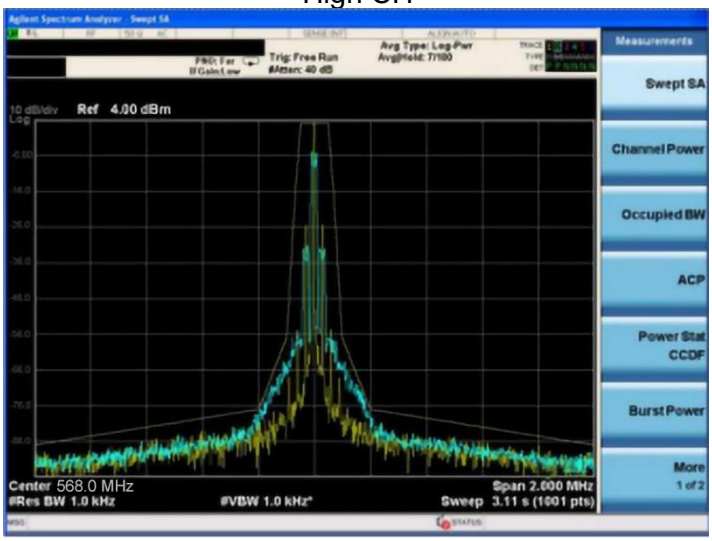
5.4 TEST RESULT

Emission Mask
Channel

Low CH



High CH



6. TRANSMITTER UNWANTED EMISSIONS

6.1 LIMIT

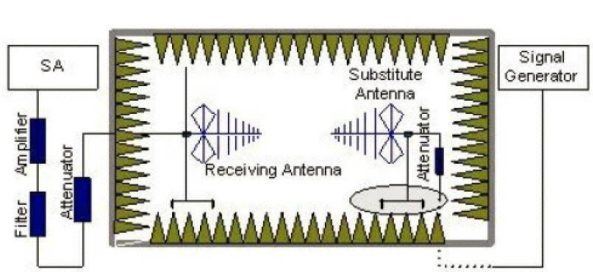
Spurious emissions are emissions outside the frequency range(s) of the equipment. The power of the spurious emissions shall not exceed the limits of table as below:

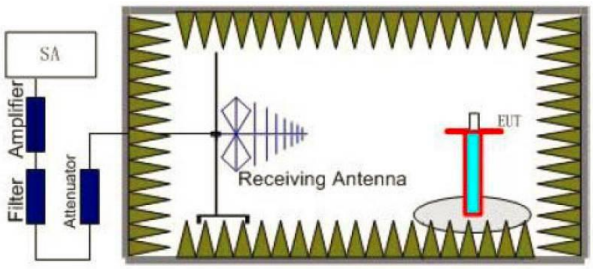
State	Frequency		
	47MHz to 74MHz, 87.5MHz to 137MHz 174MHz to 230MHz, 470MHz to 862MHz	Other Frequencies below 1000MHz	Frequencies above 1000MHz
Operation	4nW	250nW	1uW
Standby	2nW	2nW	20nW

6.2 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer through an attenuator. Set spectrum analyzer start 30MHz to 6000MHz with 100 KHz RBW and 300 KHz VBW
2. Please refer to ETSI EN 300 422-1 V1.4.2 (2011-08) clause 6.1 for the test conditions.
3. Please refer to ETSI EN 300 422-1 V1.4.2 (2011-08) clause 8.4.2 for the measurement method.

6.3 TEST SETUP

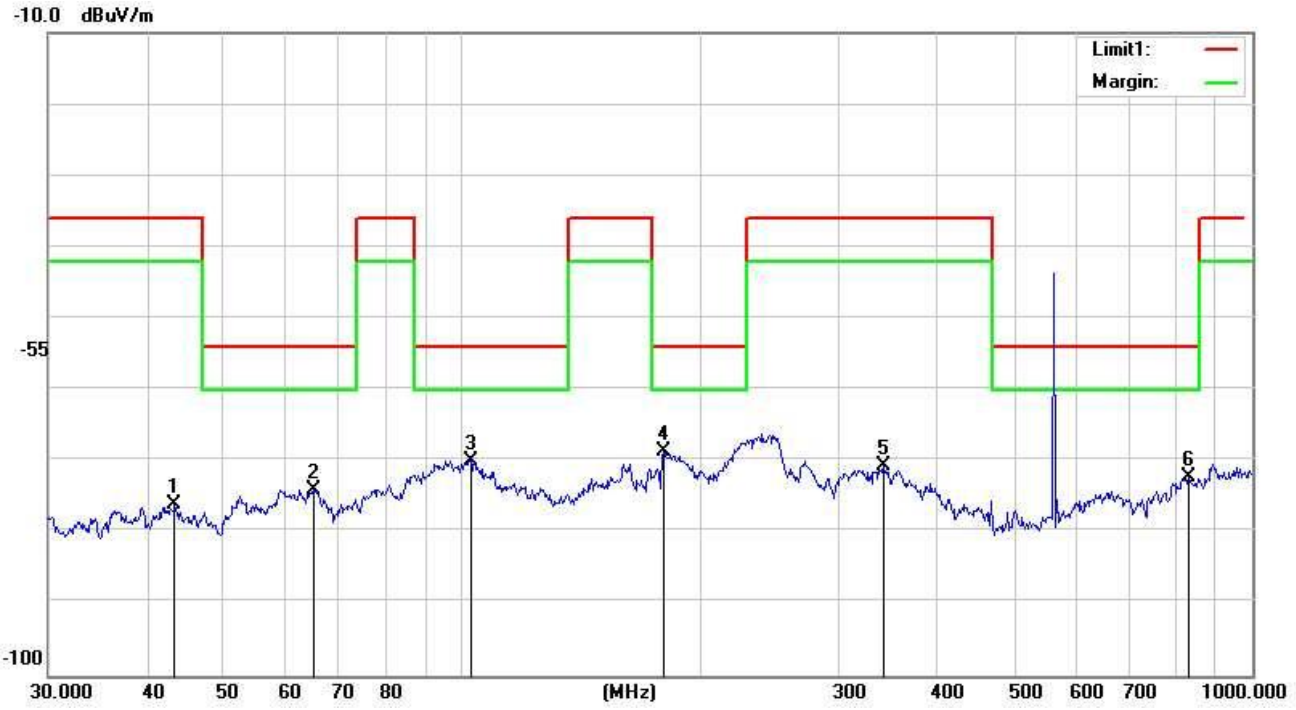




6.4 TEST RESULTS

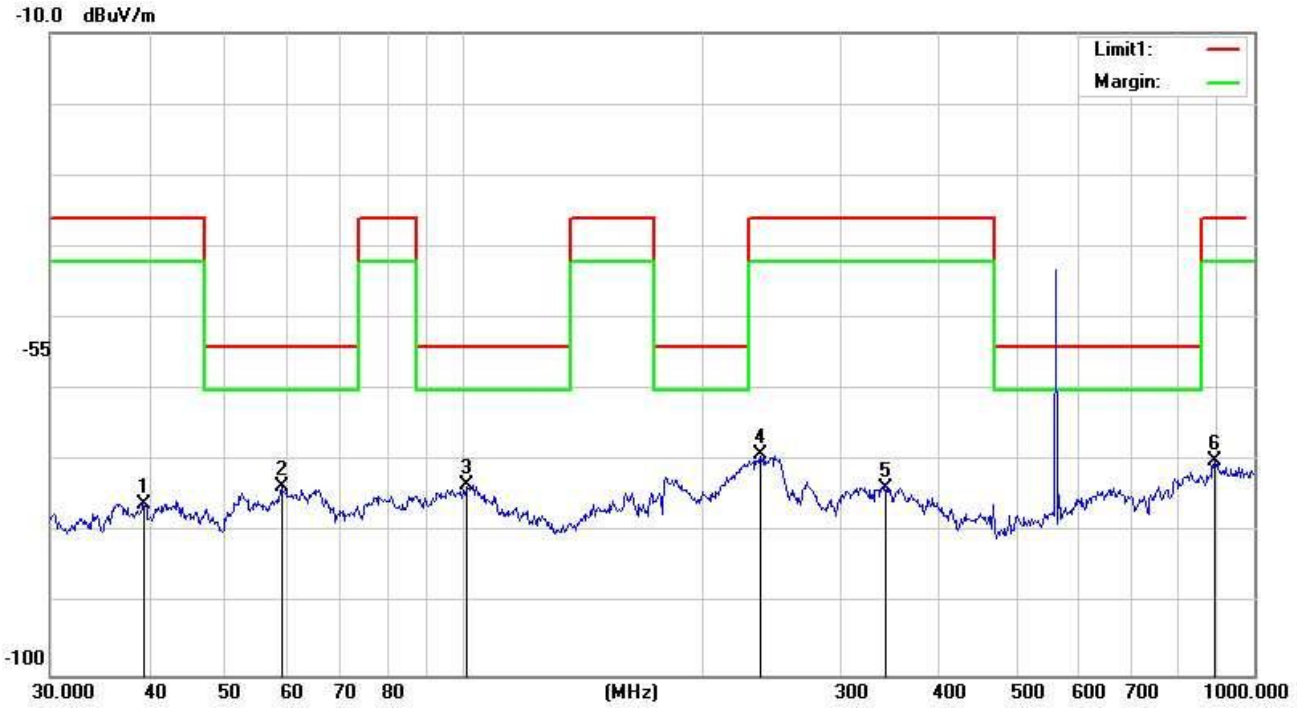
CHNNEL –LOW CH–30MHZ-1000MHZ

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.3534	-59.20	-16.92	-76.12	-36.00	-40.12	peak
2	65.1145	-54.58	-19.38	-73.96	-54.00	-19.96	peak
3	102.7192	-52.34	-17.58	-69.92	-54.00	-15.92	peak
4	180.0165	-49.26	-19.44	-68.70	-54.00	-14.70	peak
5	341.9786	-57.92	-12.78	-70.70	-36.00	-34.70	peak
6	830.4002	-67.88	-4.26	-72.14	-54.00	-18.14	peak

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	39.4371	-58.95	-17.09	-76.04	-36.00	-40.04	peak
2	58.8185	-56.68	-16.91	-73.59	-54.00	-19.59	peak
3	100.9340	-55.63	-17.78	-73.41	-54.00	-19.41	peak
4	237.4760	-53.78	-15.34	-69.12	-36.00	-33.12	peak
5	341.9786	-60.92	-12.78	-73.70	-36.00	-37.70	peak
6	890.7278	-66.47	-3.43	-69.90	-36.00	-33.90	peak

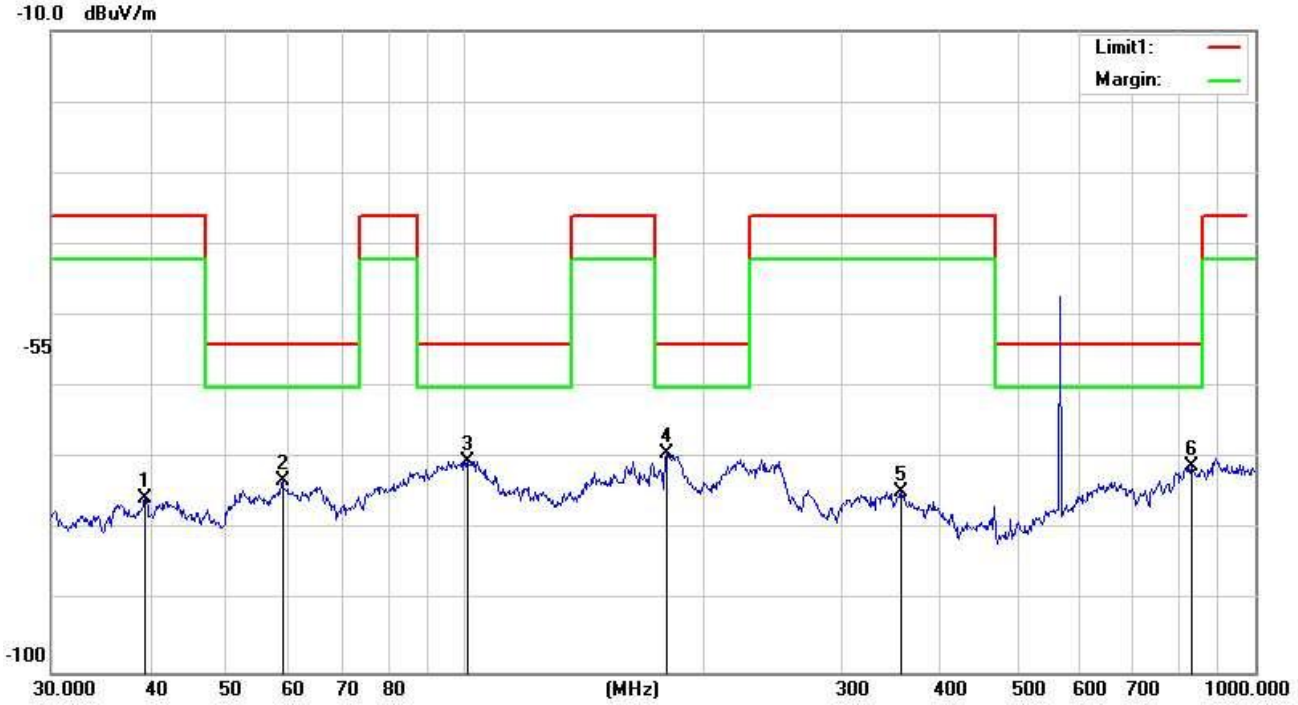
Note :

1. Result = Reading + Corrected Factor Note :

2. The fundamental wave filtered out during the test.

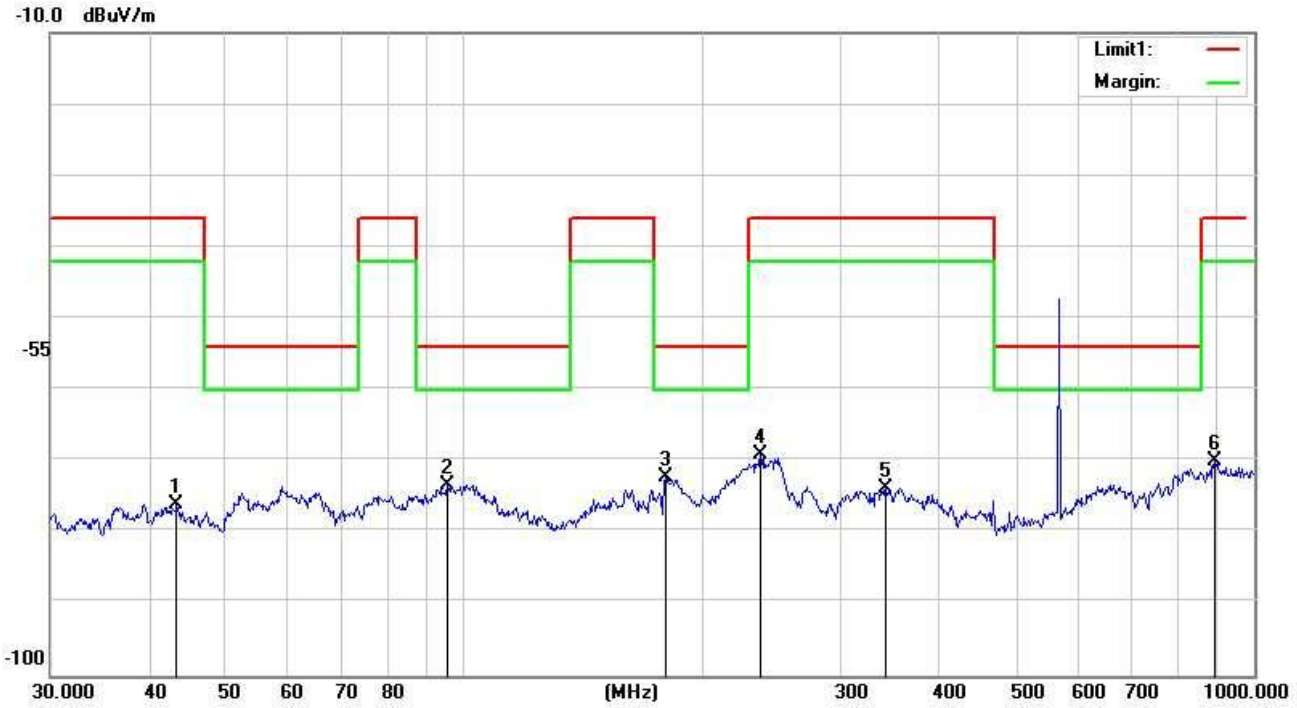
CHNNEL –HIGH CH–30MHZ-1000MHZ

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	39.4371	-58.45	-17.09	-75.54	-36.00	-39.54	peak
2	58.8185	-56.18	-16.91	-73.09	-54.00	-19.09	peak
3	100.9340	-52.63	-17.78	-70.41	-54.00	-16.41	peak
4	180.0165	-49.76	-19.44	-69.20	-54.00	-15.20	peak
5	356.6757	-62.14	-12.64	-74.78	-36.00	-38.78	peak
6	830.4002	-66.88	-4.26	-71.14	-54.00	-17.14	peak

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.3534	-59.20	-16.92	-76.12	-36.00	-40.12	peak
2	95.4270	-54.32	-19.09	-73.41	-54.00	-19.41	peak
3	180.0165	-52.76	-19.44	-72.20	-54.00	-18.20	peak
4	237.4760	-53.78	-15.34	-69.12	-36.00	-33.12	peak
5	341.9786	-60.92	-12.78	-73.70	-36.00	-37.70	peak
6	890.7278	-66.47	-3.43	-69.90	-36.00	-33.90	peak

Note :

1. Result = Reading + Corrected Factor Note :

2. The fundamental wave filtered out during the test.

CHANNEL 1GHZ-6GHZ

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel-561.0MHz						
1122.0	-49.65	7.92	-41.73	-30	-11.73	H
1683.0	-52.36	13.97	-38.39	-30	-8.39	H
1122.0	-48.27	7.92	-40.35	-30	-10.35	V
1683.0	-47.69	13.64	-34.05	-30	-4.05	V
High Channel-568.0MHz						
1136.0	-53.68	8.27	-45.41	-30	-15.41	H
1704.0	-52.11	13.73	-38.38	-30	-8.38	H
1136.0	-50.36	8.27	-42.09	-30	-12.09	V
1704.0	-49.25	13.73	-35.52	-30	-5.52	V

Note: all other emissions are attenuated 20dB below the limits, so it does not record in report.

7. FREQUENCY STABILITY

7.1 LIMIT

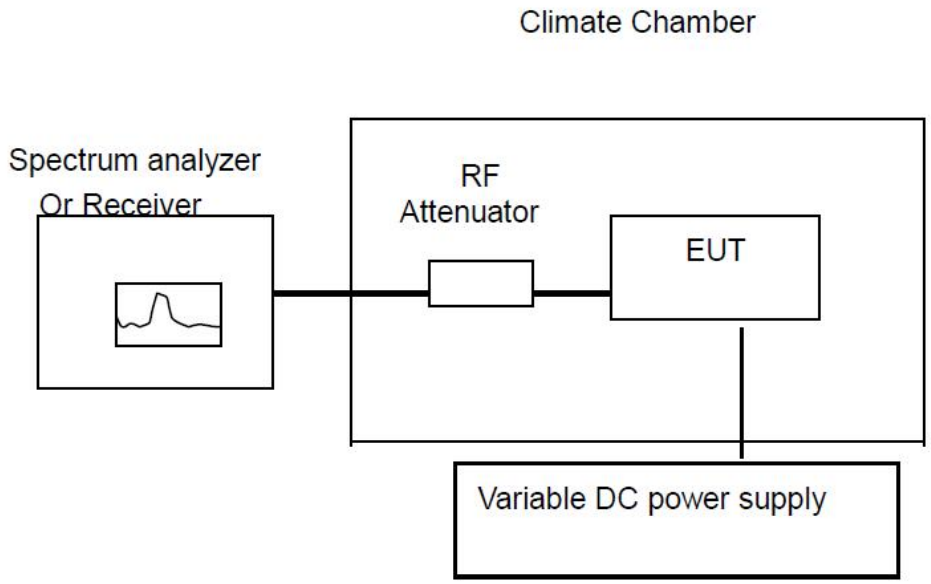
The frequency tolerance of the carrier signal shall be maintained within ±0.005% of the operating frequency over a temperature variation of −20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C

7.2 TEST PROCEDURE

a. The EUT was connected to an external DC power supply and the RF output was connected to a frequency counter via feed through attenuators. The EUT was placed inside the temperature chamber. The DC leads and the RF output cable, exited the chamber through an opening made for that purpose.
After the temperature stabilized the frequency output was recorded form the counter. An external variable DC power supply was connected to the battery terminals of the equipment under test.

b. For hand carried, battery powered equipment primary supply voltage was reduced to the battery operating end point as specified by the manufacturer. The output frequency was recorded for each battery voltage.

7.3 TEST SETUP



7.4 TEST RESULTS

(1) Frequency stability versus input voltage (Supply Nominal voltage is DC 3V)

(2) Frequency stability versus input voltage (Supply battery operating end point which shall be specified by the manufacturer DC 3V)

Refernce Frequency: 561.00MHz			
Power supply	Environment Temperature(℃)	Frequency Error （Hz）	Frequency Error (ppm)
DC 8.55V	20	1010	1.80
DC 9V	20	1008	1.80
DC 9.45V	20	1015	1.81

Refernce Frequency: 561.00MHz				
Frequency Deviation measured with time Elapse(30 minutes)				
Environment Temperature(℃)	Frequency Error （Hz）	Frequency Error (ppm)	Limit (ppm)	Results
50	1021	1.82	50	Pass
40	1008	1.80		
30	1005	1.79		
20	1008	1.80		
10	1007	1.80		
0	1009	1.80		
-10	1008	1.80		
-20	1009	1.80		

Refernce Frequency: 568.00MHz			
Power supply	Environment Temperature(℃)	Frequency Error （Hz）	Frequency Error (ppm)
DC 8.55V	20	1009	1.78
DC 9V	20	1006	1.77
DC 9.45V	20	1010	1.78

Refernce Frequency: 568.00MHz				
Frequency Deviation measured with time Elapse(30 minutes)				
Environment Temperature(℃)	Frequency Error （Hz）	Frequency Error (ppm)	Limit (ppm)	Results
50	1011	1.78	50	Pass
40	1006	1.77		
30	1006	1.77		
20	1008	1.77		
10	1007	1.77		
0	1008	1.77		
-10	1008	1.77		
-20	1006	1.77		

8 ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

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

8.2 EUT ANTENNA

The antennas used for this product are Integral antenna and other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 1.0 dBi.

※※※※※END OF THE REPORT※※※※※