



PRECISE TESTING

FCC TEST REPORT

FCC ID: 2ABXZU-2100BT

Product Name	:	WIRELESS MICROPHONE
Model Name	:	U-2100BT, U-8298BT, U-8198BT, U-6298BT, U-6198BT, PRO-6988BT, PRO-6198BT, U-1100BT, U-2018BT, U-2008BT, U-2400BT, U-4088BT, U-4188BT, U-4288BT, U-2788BT, U-2988BT, U-3988BT, U-5988BT, Derrica-509BT, Derrica-508BT, Derrica-1000BT, Derrica-2002BT, TWM-321BT, TWM-322BT, PGX24BT, MGX24BT, BGX24BT, UHXPRO-01BT, UHXPRO-02BT, UPRO-MBT, UPRO-HBT, UPRO-MMBT, UPRO-MHBT, JAGUAR-BT, T-40BT, T-42BT
Brand Name	:	Derrica
Report No.	:	PTC18062714001E-FC01
Prepared for		
ENPING SHENGYI ELECTRONIC CO., LTD.		
fl.2-5, Shi Zi Shi Bldg., Xinping Rd., North, Enping, China		
Prepared by		
Dongguan Precise Testing & Certification Corp., Ltd.		
Building D, Baoding Technology Park, Guangming Road 2, Guangming Community, Dongcheng District, Dongguan, Guangdong, China		



PRECISE TESTING

Report No.: PTC18062714001E-FC01

1TEST RESULT CERTIFICATION

Applicant's name : ENPING SHENGYI ELECTRONIC CO., LTD.
Address : fl.2-5, Shi Zi Shi Bldg., Xinping Rd., North, Enping, China
Manufacture's name : ENPING SHENGYI ELECTRONIC CO., LTD.
Address : fl.2-5, Shi Zi Shi Bldg., Xinping Rd., North, Enping, China
Product name : WIRELESS MICROPHONE
Model name : U-2100BT, U-8298BT, U-8198BT, U-6298BT, U-6198BT, PRO-6988BT, PRO-6198BT, U-1100BT, U-2018BT, U-2008BT, U-2400BT, U-4088BT, U-4188BT, U-4288BT, U-2788BT, U-2988BT, U-3988BT, U-5988BT, Derrica-509BT, Derrica-508BT, Derrica-1000BT, Derrica-2002BT, TWM-321BT, TWM-322BT, PGX24BT, MGX24BT, BGX24BT, UHXPRO-01BT, UHXPRO-02BT, UPRO-MBT, UPRO-HBT, UPRO-MMBT, UPRO-MHBT, JAGUAR-BT, T-40BT, T-42BT
Standards : FCC Part 15.236, KDB206256 D01
Test procedure : ANSI C63.10:2013
Test Date : June 26, 2018, July 19, 2018
Date of Issue : July 19, 2018
Test Result : Pass

This device described above has been tested by PTC, and 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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Test Engineer:

Leo Yang / Engineer

Technical Manager:

Chris Du / Manager



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2 Test Summary

FCC Rules	Description Of Test	Result
§15.207 (a)	AC Power Conducted Emission	Not Applicable
§15.236(d)	RF Output Power	Compliant
§15.236(f)	Occupied Bandwidth	Compliant
§15.236(f)(3)	Frequency stability	Compliance
§15.236(g)	Transmitter Spurious Emissions & Emission mask	Compliance
§15.203	Antenna Requirement	Compliant

Remark:

1. Due to this EUT is powered by battery only, the AC Power Conducted Emission is not applicable.
2. The EUT has been tested as an independent unit. And Continual transmitting in maximum power
(The new battery be used during test)



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3 TEST FACILITY

Dongguan Precise Testing & Certification Corp., Ltd.

Address: Building D, Baoding Technology Park, Guangming Road2, Dongcheng District, Dongguan,
Guangdong, China

FCC Registration Number: 790290

A2LA Certificate No.: 4408.01

IC Registration Number: 12191A-1



4 General Information

4.1 General Description of E.U.T.

Product Name	:	WIRELESS MICROPHONE
Model Name	:	U-2100BT, U-8298BT, U-8198BT, U-6298BT, U-6198BT, PRO-6988BT, PRO-6198BT, U-1100BT, U-2018BT, U-2008BT, U-2400BT, U-4088BT, U-4188BT, U-4288BT, U-2788BT, U-2988BT, U-3988BT, U-5988BT, Derrica-509BT, Derrica-508BT, Derrica-1000BT, Derrica-2002BT, TWM-321BT, TWM-322BT, PGX24BT, MGX24BT, BGX24BT, UHXPRO-01BT, UHXPRO-02BT, UPRO-MBT, UPRO-HBT, UPRO-MMBT, UPRO-MHBT, JAGUAR-BT, T-40BT, T-42BT (Note: The samples are the same except appearance and model number. So U-2100BT was selected for full tested.)
Equipment Type	:	DWM: Part 15 wireless microphone.
Operating frequency	:	480-529.75MHz
Antenna Type	:	Internal Antenna
Antenna Gain	:	0 dBi
Type of Modulation	:	FM
Power supply	:	DC 2*1.5V Battery
Hardware Version	:	EG2028-LT20180312
Software Version	:	MS-V1



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4.2 Test Mode

Channel List:

Ch. A				Ch. B			
Ch. No.	Fre./ MHz	Ch. No.	Fre./ MHz	Ch. No.	Fre./ MHz	Ch. No.	Fre./ MHz
CH.000	480.00	CH.050	492.50	CH.000	505.00	CH.050	517.50
CH.001	480.25	CH.051	492.75	CH.001	505.25	CH.051	517.75
CH.002	480.50	CH.052	493.00	CH.002	505.50	CH.052	518.00
CH.003	480.75	CH.053	493.25	CH.003	505.75	CH.053	518.25
CH.004	481.00	CH.054	493.50	CH.004	506.00	CH.054	518.50
CH.005	481.25	CH.055	493.75	CH.005	506.25	CH.055	518.75
CH.006	481.50	CH.056	494.00	CH.006	506.50	CH.056	519.00
CH.007	481.75	CH.057	494.25	CH.007	506.75	CH.057	519.25
CH.008	482.00	CH.058	494.50	CH.008	507.00	CH.058	519.50
CH.009	482.25	CH.059	494.75	CH.009	507.25	CH.059	519.75
CH.010	482.50	CH.060	495.00	CH.010	507.50	CH.060	520.00
CH.011	482.75	CH.061	495.25	CH.011	507.75	CH.061	520.25
CH.012	483.00	CH.062	495.50	CH.012	508.00	CH.062	520.50
CH.013	483.25	CH.063	495.75	CH.013	508.25	CH.063	520.75
CH.014	483.50	CH.064	496.00	CH.014	508.50	CH.064	521.00
CH.015	483.75	CH.065	496.25	CH.015	508.75	CH.065	521.25
CH.016	484.00	CH.066	496.50	CH.016	509.00	CH.066	521.50
CH.017	484.25	CH.067	496.75	CH.017	509.25	CH.067	521.75
CH.018	484.50	CH.068	497.00	CH.018	509.50	CH.068	522.00
CH.019	484.75	CH.069	497.25	CH.019	509.75	CH.069	522.25
CH.020	485.00	CH.070	497.50	CH.020	510.00	CH.070	522.50
CH.021	485.25	CH.071	497.75	CH.021	510.25	CH.071	522.75
CH.022	485.50	CH.072	498.00	CH.022	510.50	CH.072	523.00
CH.023	485.75	CH.073	498.25	CH.023	510.75	CH.073	523.25
CH.024	486.00	CH.074	498.50	CH.024	511.00	CH.074	523.50
CH.025	486.25	CH.075	498.75	CH.025	511.25	CH.075	523.75
CH.026	486.50	CH.076	499.00	CH.026	511.50	CH.076	524.00
CH.027	486.75	CH.077	499.25	CH.027	511.75	CH.077	524.25
CH.028	487.00	CH.078	499.50	CH.028	512.00	CH.078	524.50
CH.029	487.25	CH.079	499.75	CH.029	512.25	CH.079	524.75
CH.030	487.50	CH.080	500.00	CH.030	512.50	CH.080	525.00
CH.031	487.75	CH.081	500.25	CH.031	512.75	CH.081	525.25
CH.032	488.00	CH.082	500.50	CH.032	513.00	CH.082	525.50
CH.033	488.25	CH.083	500.75	CH.033	513.25	CH.083	525.75
CH.034	488.50	CH.084	501.00	CH.034	513.50	CH.084	526.00
CH.035	488.75	CH.085	501.25	CH.035	513.75	CH.085	526.25
CH.036	489.00	CH.086	501.50	CH.036	514.00	CH.086	526.50
CH.037	489.25	CH.087	501.75	CH.037	514.25	CH.087	526.75
CH.038	489.50	CH.088	502.00	CH.038	514.50	CH.088	527.00
CH.039	489.75	CH.089	502.25	CH.039	514.75	CH.089	527.25
CH.040	490.00	CH.090	502.50	CH.040	515.00	CH.090	527.50
CH.041	490.25	CH.091	502.75	CH.041	515.25	CH.091	527.75
CH.042	490.50	CH.092	503.00	CH.042	515.50	CH.092	528.00



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CH.043	490.75	CH.093	503.25	CH.043	515.75	CH.093	528.25
CH.044	491.00	CH.094	503.50	CH.044	516.00	CH.094	528.50
CH.045	491.25	CH.095	503.75	CH.045	516.25	CH.095	528.75
CH.046	491.50	CH.096	504.00	CH.046	516.50	CH.096	529.00
CH.047	491.75	CH.097	504.25	CH.047	516.75	CH.097	529.25
CH.048	492.00	CH.098	504.50	CH.048	517.00	CH.098	529.50
CH.049	492.25	CH.099	504.75	CH.049	517.25	CH.099	529.75

Only test result of sample of in channels 480.0 MHz, 500.0 MHz and 529.75 MHz.



5 Equipment During Test

5.1 Equipments List

RF Conducted Test

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Due
MXG Signal Analyzer	Agilent	N9020A	MY56070279	10Hz-30GHz	Apr 07, 2019
Coaxial Cable	CDS	79254	46107086	10Hz-30GHz	Oct 09, 2018
Antenna Connector	Florida RF Labs	N/A	RF01#	N/A	Aug. 26, 2018

Remark: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

Radiated Emissions(Test Frequency from 9KHz-18GHz)

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Due
EMI Test Receiver	Rohde&Schwarz	ESCI	101417	9KHz-3GHz	Sep. 03, 2018
Loop Antenna	Schwarzbeck	FMZB 1519	012	9 KHz -30MHz	Aug 31, 2018
Bilog Antenna	SCHWARZBECK	VULB9160	9160-3355	25MHz-2GHz	Aug 31, 2018
Preamplifier (low frequency)	SCHWARZBECK	BBV 9475	9745-0013	1MHz-1GHz	Sep. 03, 2018
Cable	Schwarzbeck	PLF-100	549489	9KHz-3GHz	Sep. 03, 2018
Spectrum Analyzer	Agilent	E4407B	MY45109572	9KHz-40GHz	Oct. 13, 2018
Horn Antenna	SCHWARZBECK	9120D	9120D-1246	1GHz-18GHz	Aug. 31, 2018
Power Amplifier	LUNAR EM	LNA1G18-40	J10100000081	1GHz-26.5GHz	Aug. 31, 2018
Cable	H+S	CBL-26	N/A	1GHz-26.5GHz	Sep. 03, 2018



Conducted Emissions

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Due
EMI Test Receiver	Rohde&Schwarz	ESCI	101417	9KHz-3GHz	Sep. 03, 2018
Artificial Mains Network	Rohde&Schwarz	L2-16B	000WX31025	9KHz-300MHz	Sep. 03, 2018
Artificial Mains Network	Rohde&Schwarz	ENV216	101342	9KHz-300MHz	Sep. 03, 2018

5.2 Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	±1.0dB
Power Spectral Density, conducted	±2.2dB
Radio Frequency	± 1 x 10 ⁻⁶
Bandwidth	± 1.5 x 10 ⁻⁶
Time	±2%
Duty Cycle	±2%
Temperature	±1°C
Humidity	±5%
DC and low frequency voltages	±3%
Conducted Emissions (150kHz~30MHz)	±3.64dB
Radiated Emission(30MHz~1GHz)	±5.03dB
Radiated Emission(1GHz~25GHz)	±4.74dB
Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95%	

5.3 Description of Support Units

Equipment	Model No.	Series No.
N/A	N/A	N/A



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5.4 E.U.T. Operation Condition

Operating Environment:	
Temperature:	20.0 °C~25 °C
Humidity:	50 ~70% RH
Atmospheric Pressure:	980~1012 mbar
EUT Operation:	Test the EUT in transmitting mode.

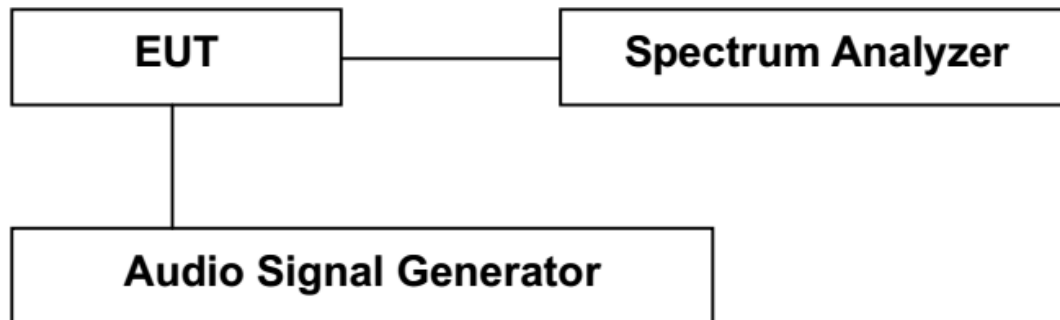


6 Max. RF Output Power

6.1 Test Requirement:

1. The maximum output power was measured with a Spectrum analyzer connected to antenna terminal while EUT was operating in unmodulated situation.
2. Power was supplied to the battery input connector a power supply. The power supply was set for +3.0VDC. The spectrum analyzer was connected at antenna terminal to measure RF Power of carrier.
3. A Multimeter was connected in series with final RF stage to measure the current; A multimeter was used to measure final RF stage supply voltage. Then the voltage v.s. current of the final RF stage can be showed.
4. In the bands allocated and assigned for broadcast television and in the 600MHz service band: 50mW (17dBm)

6.2 Test SET-UP (Block Diagram of Configuration):



6.3 Test result:

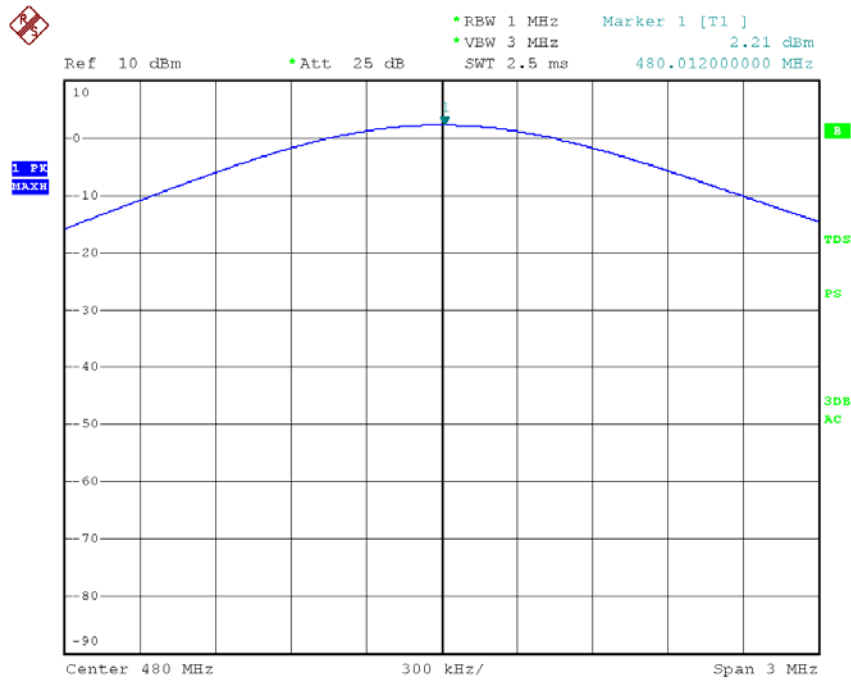
Frequency (MHz)	Output Power (dBm)	Limit (dBm)
Low Channel: 480.0	2.21	17
Middle Channel: 505.0	2.58	17
High Channel: 529.75	3.83	17



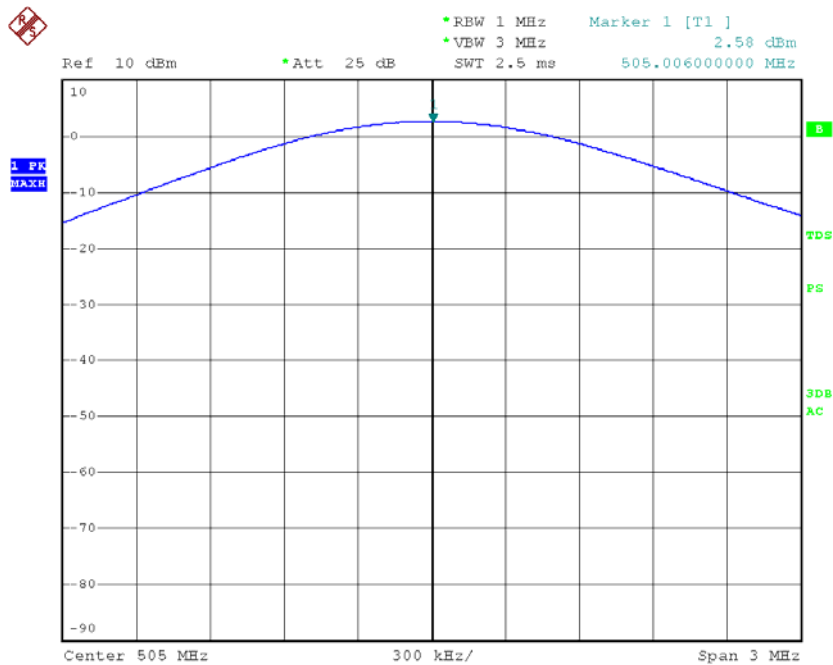
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Low ch.: 480.0 MHz



Middle ch.: 505.0 MHz

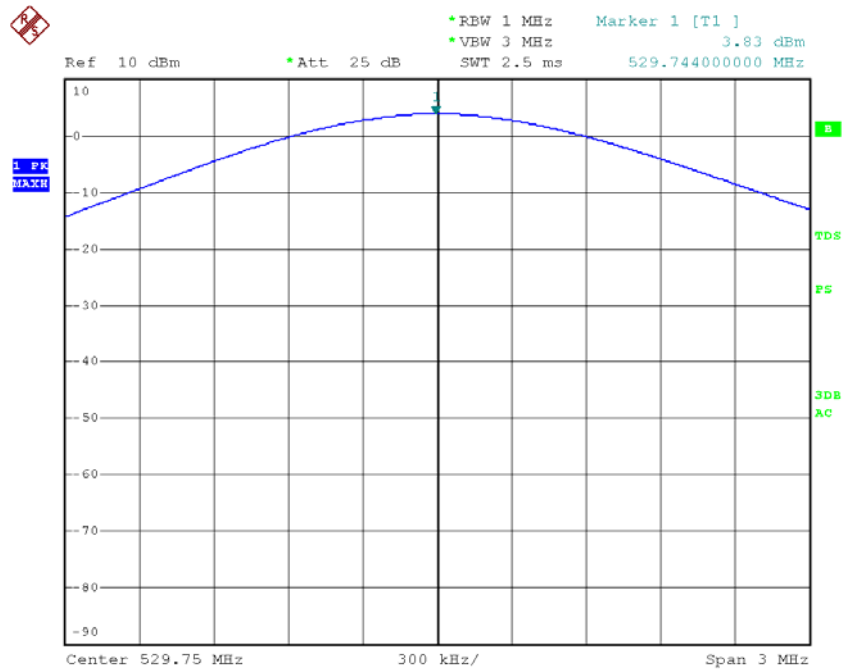




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High ch.: 529.75 MHz





7 Occupied Bandwidth

7.1 Test Requirement:

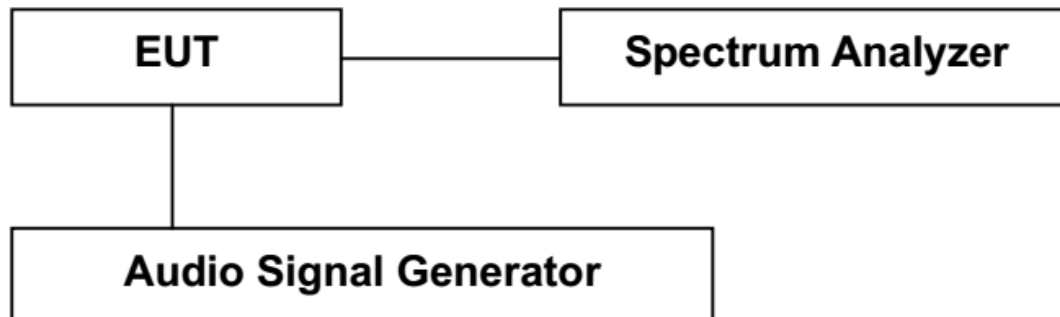
According to FCC 15.236(f), The operating frequency within a permissible band of operation as defined in paragraph (c) must comply with the following requirements.

(1) The frequency selection shall be offset from the upper or lower band limits by 25kHz or an integral multiple thereof.

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

According the ANSI C6.10-2013 section 6.9 for additional test set-up procedure, the occupied bandwidth of emission was measured with a spectrum analyzer connected to the antenna terminal while EUT was operating in 2.5kHz tone at an input level 16dB greater than necessary to produce 50 percent modulation. Then mark the -26dB Bandwidth and record it.

7.2 Test SET-UP (Block Diagram of Configuration):



7.3 Test result:

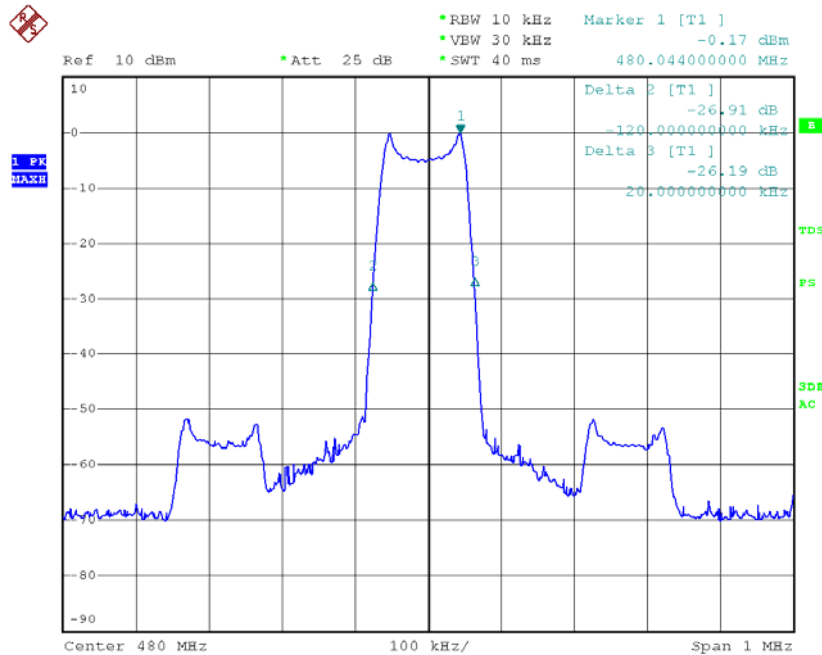
Frequency (MHz)	99% Bandwidth (kHz)	-26dB Bandwidth (kHz)	Limit
Low Channel: 480.0	122.0	144.0	<200KHz
Middle Channel: 505.0	124.0	144.0	<200KHz
High Channel: 529.75	124.0	142.0	<200KHz



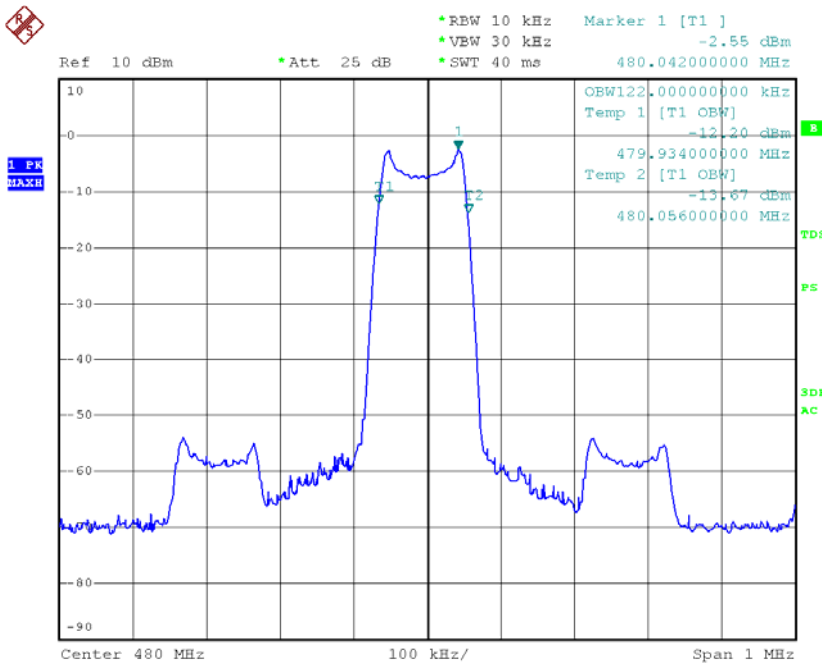
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Low ch.: -26dB bandwidth



Low ch.: 99% bandwidth

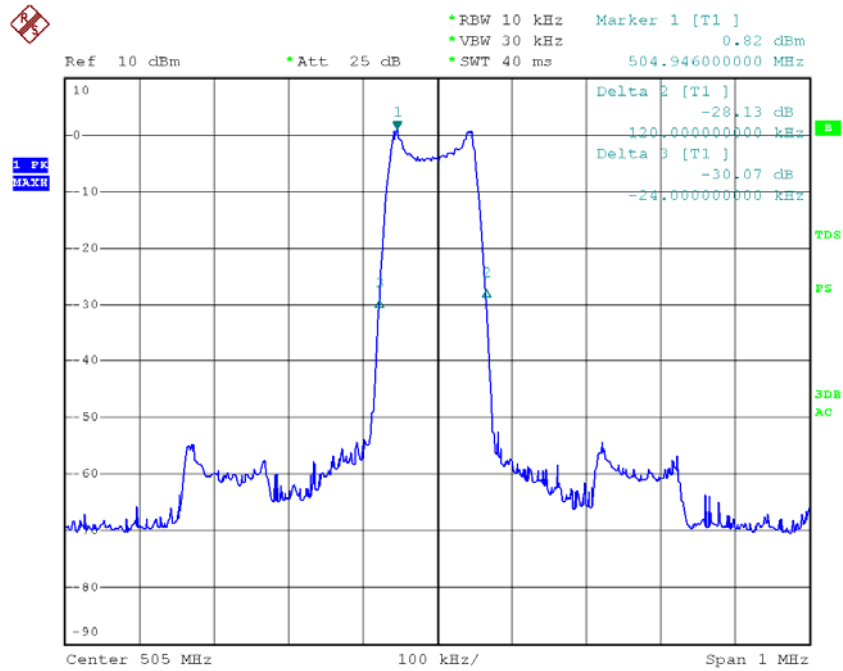




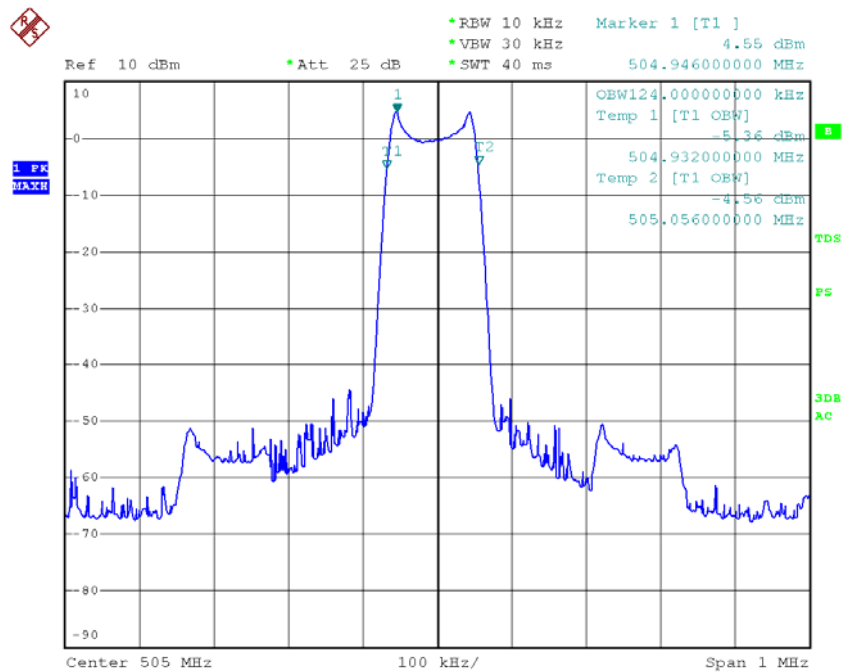
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Middle ch.: -26dB bandwidth



Middle ch.: 99% bandwidth

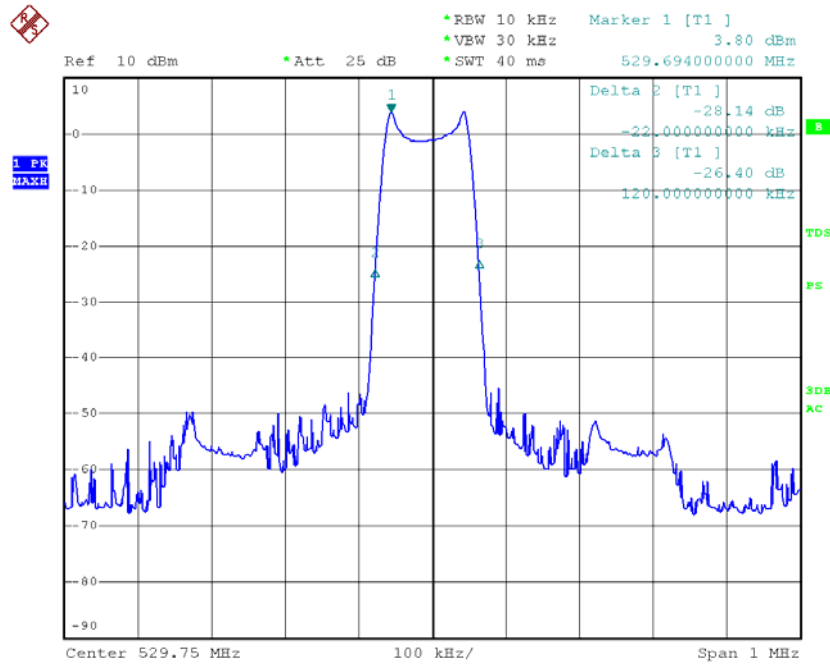




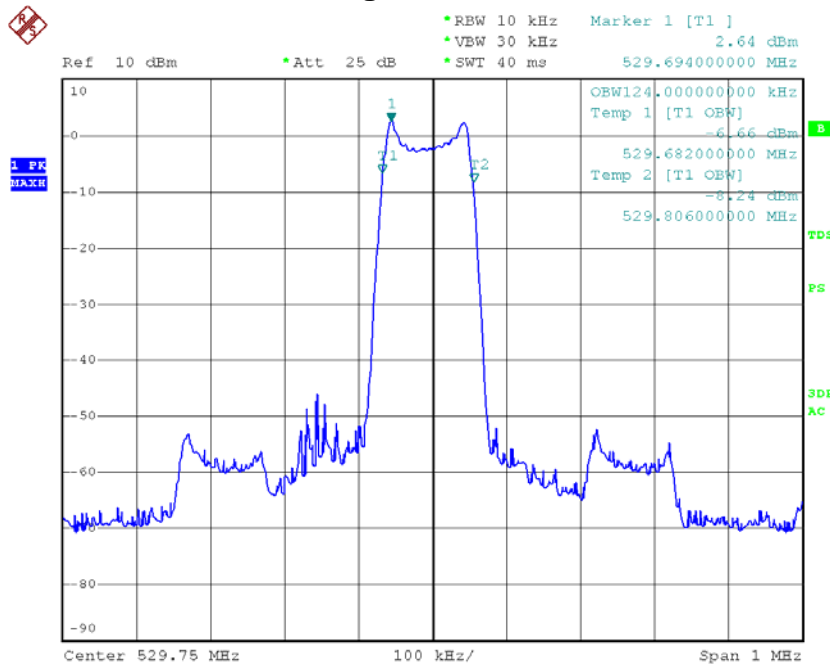
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High ch.: -26dB bandwidth



High ch.: 99% bandwidth





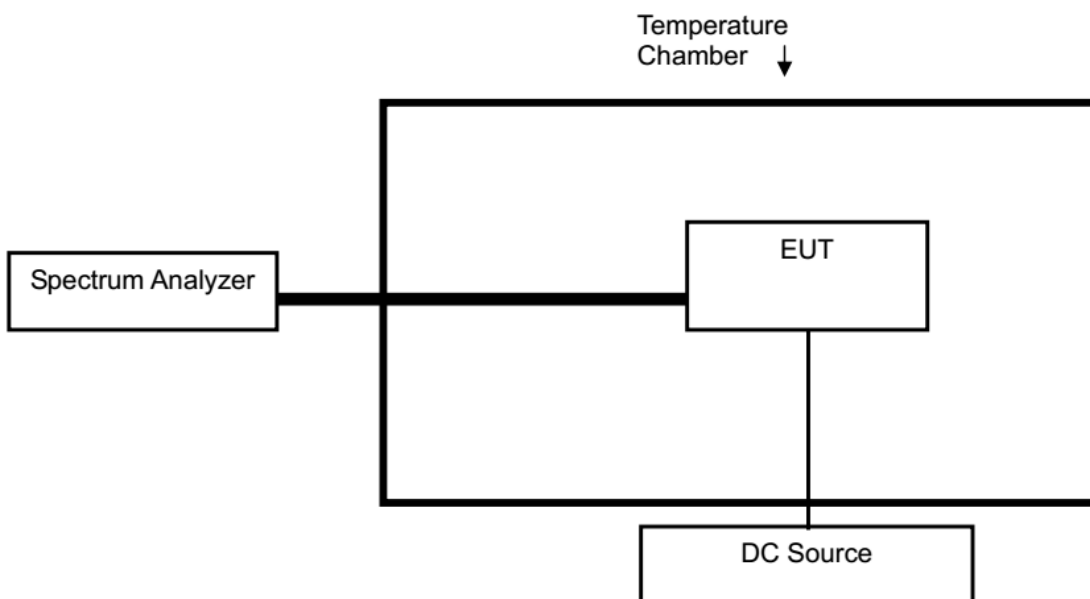
8 Frequency Stability

8.1 Test Requirement:

According to FCC 15.236(f)(3), 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. Battery operated equipment shall be tested using a new battery.

1. Setup the configuration of the ambient temperature from -20 degrees to 50 degrees with sufficient time. And measure the different power of the EUT with an artificial power from highest to end point voltage.
2. Set frequency counter center frequency to the right frequency needs to be measured.

8.2 Test SET-UP (Block Diagram of Configuration):





8.3 Test Result:

Test conditions		Frequency Error		
Temperature (°C)	Voltage (V)	480.0MHz	505.0MHz	529.75MHz
-20	3.0	480.000	505.014	529.750
	2.55	480.000	505.013	529.763
	3.45	480.010	505.010	529.753
25	3.0	480.010	505.015	529.759
	2.55	480.008	505.012	529.758
	3.45	480.001	505.013	529.761
50	3.0	480.011	505.013	529.755
	2.55	480.005	505.018	529.755
	3.45	480.000	505.018	529.761
Max. frequency error (ppm)		+23.0	+36.0	+24.5
Limit(ppm)		±50ppm		



9 Radiated Spurious Emissions & Emission Mask

9.1 Test Requirement:

According to FCC 15.236(g), Emission within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in Section 8.3 of ETSI EN 300 422-1 V1.4.2(2011-08). Emissions outside this band shall comply with the limit specified at the edges of the ETSI mask.

9.2 Test Procedure:

Radiated spurious emission test procedure:

- a. Blow 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi- anechoic chamber room.
- b. For the radiated emission test above 1GHz:
The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter full anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- c. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The height of antenna 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.
- e. 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 and the rotatable 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.
- f. A Quasi-peak measurement was then made for that frequency point for below 1GHz test. Peak and /or AVG for above 1GHz emission test.



During the radiated emission test, the spectrum analyzer was set with the following configurations:

Frequency Band (MHz)	Level	Resolution Bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	3 MHz
	Average	1 MHz	10 Hz or 3MHz

Emission Mask test procedure:

Necessary Bandwidth (BN) for Analogue Systems

Method of Measurement

The arrangement of test equipment as shown in figure B.1 shall be used. Note that the noise meter conforms to (quasi peak) without weighting filter (flat).

With the Low Frequency (LF) audio signal generator set to 500 Hz, the audio input level to the EUT shall be adjusted to 8 dB below the limiting threshold (-8 dB (lim)) as declared by the manufacturer.

The corresponding audio output level from the demodulator shall be measured and recorded.

The input impedance of the noise meter shall be sufficiently high to avoid more than 0,1 dB change in input level when the meter is switched between input and output. The audio input level shall be increased by 20 dB, i.e. to +12 dB (lim), and the corresponding change in output level shall be measured.

It shall be checked that the audio output level has increased by ≤ 10 dB.

If this condition is not met, the initial audio input level shall be increased from -8 dB (lim) in 1 dB steps until the above condition is fulfilled, and the input level recorded in the test report. This level replaces the value derived from the manufacturer's declaration and is defined as -8 dB (lim).

If the transmitter incorporates more than one audio input, e.g. stereo systems, the second and subsequent channels shall be simultaneously driven from the same noise source, attenuated to a level of -6 dB (lim).

The transmitter RF output spectrum shall be measured, using a spectrum analyser with the following settings:

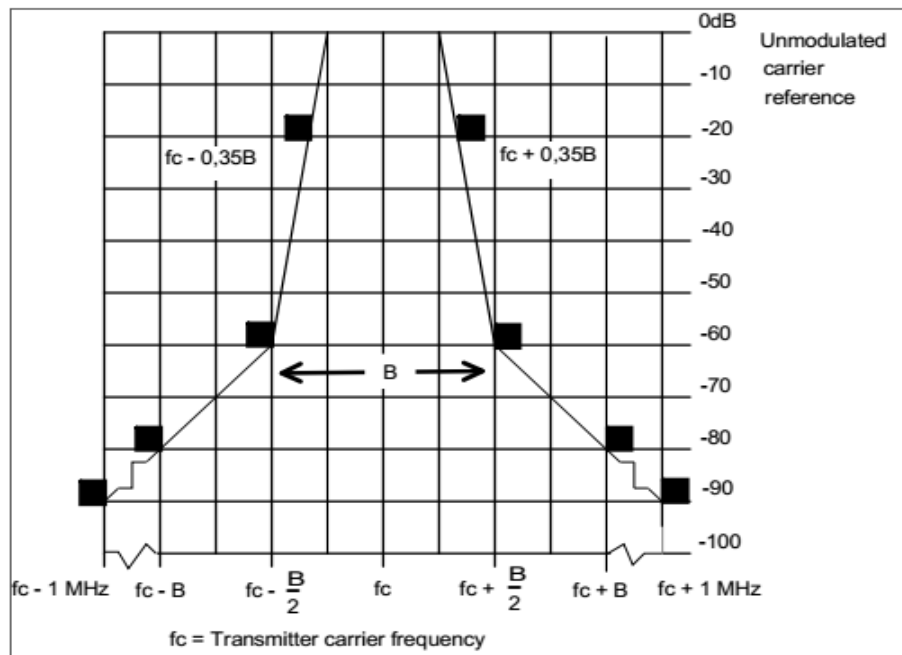
- centre frequency: f_c : Transmitter (Tx) nominal frequency;
- dispersion (Span): $f_c - 1 \text{ MHz}$ to $f_c + 1 \text{ MHz}$;
- Resolution BandWidth (RBW): 1 kHz;
- Video BandWidth (VBW): 1 kHz; - detector: Peak hold

Limits for spurious emissions

State	Frequency, unit: MHz		
	47 to 74 87.5 to 137 174 to 230 470 to 862	Other frequencies Blow 1000	Frequency above 1000
Operation	4nW(-54dBm)	250nW(-36dBm)	1uW(-30dBm)
Standby	2nW(-57dBm)	2nW(-57dBm)	20nW(-57dBm)

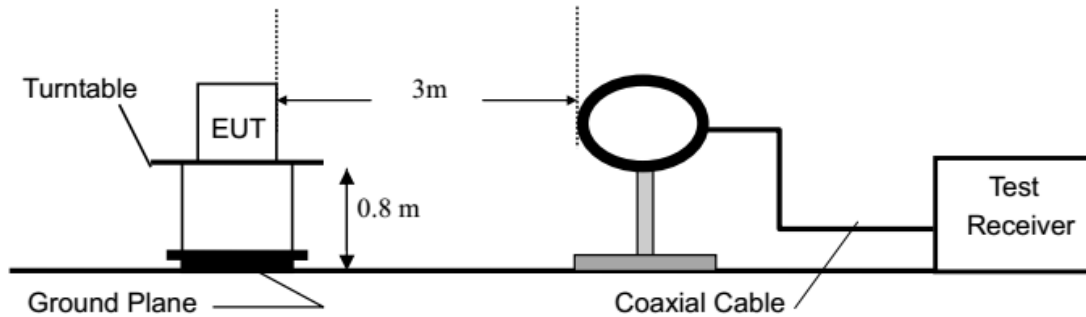
Measured valued for equipment in each frequency band must fall below the values given in table above.

Limits for Emission Mask

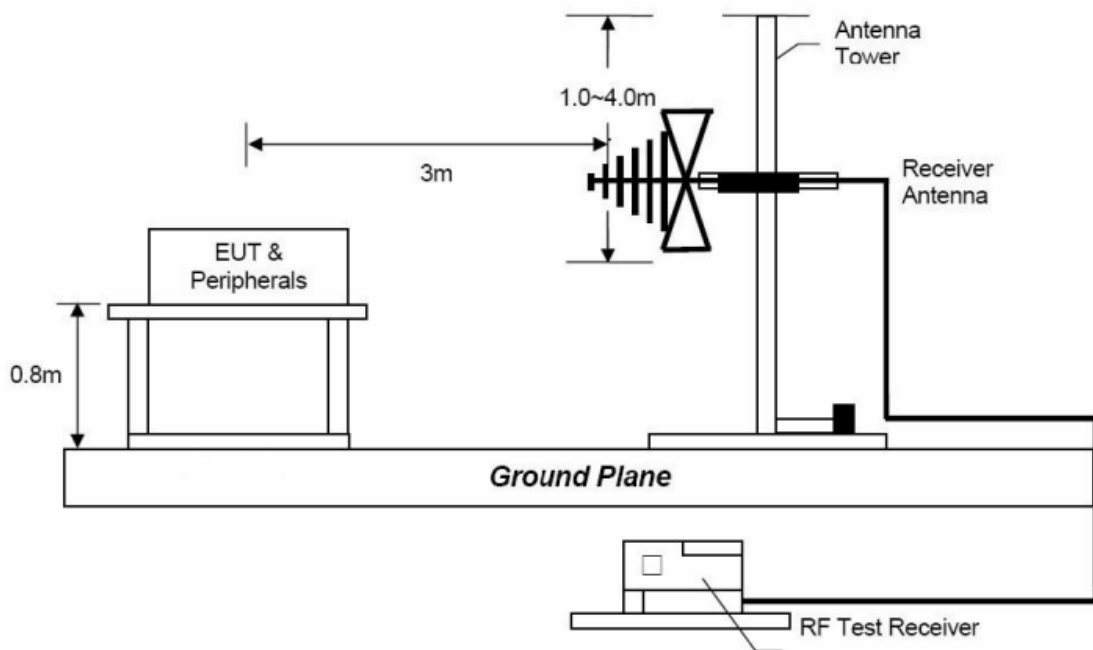


9.3 Test SET-UP (Block Diagram of Configuration):

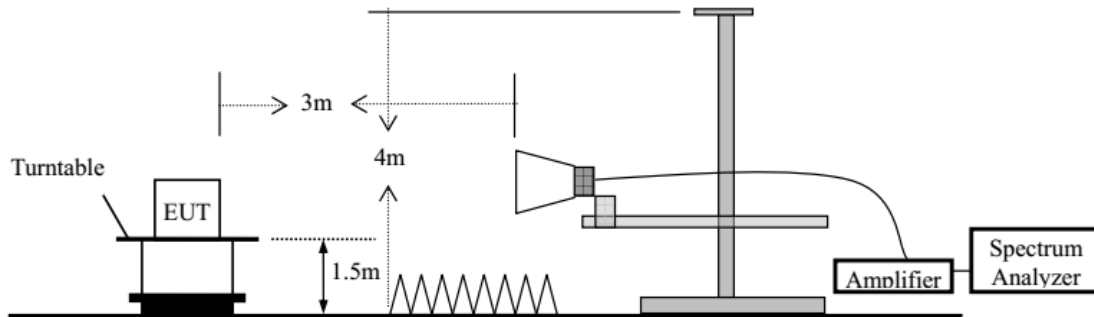
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



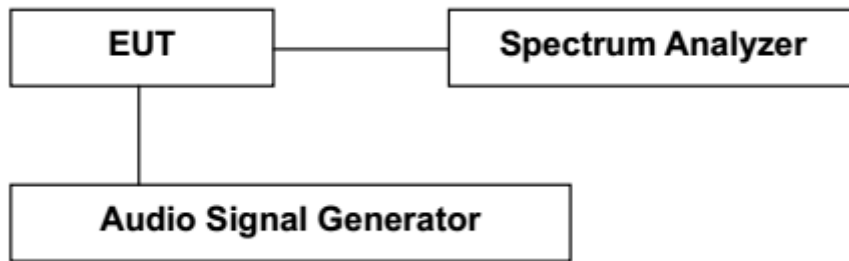
(B) Radiated Emission Test Set-Up, Frequency 30MHz to 1GHz



(C) Radiated Emission Test Set-Up, Frequency above 1GHz



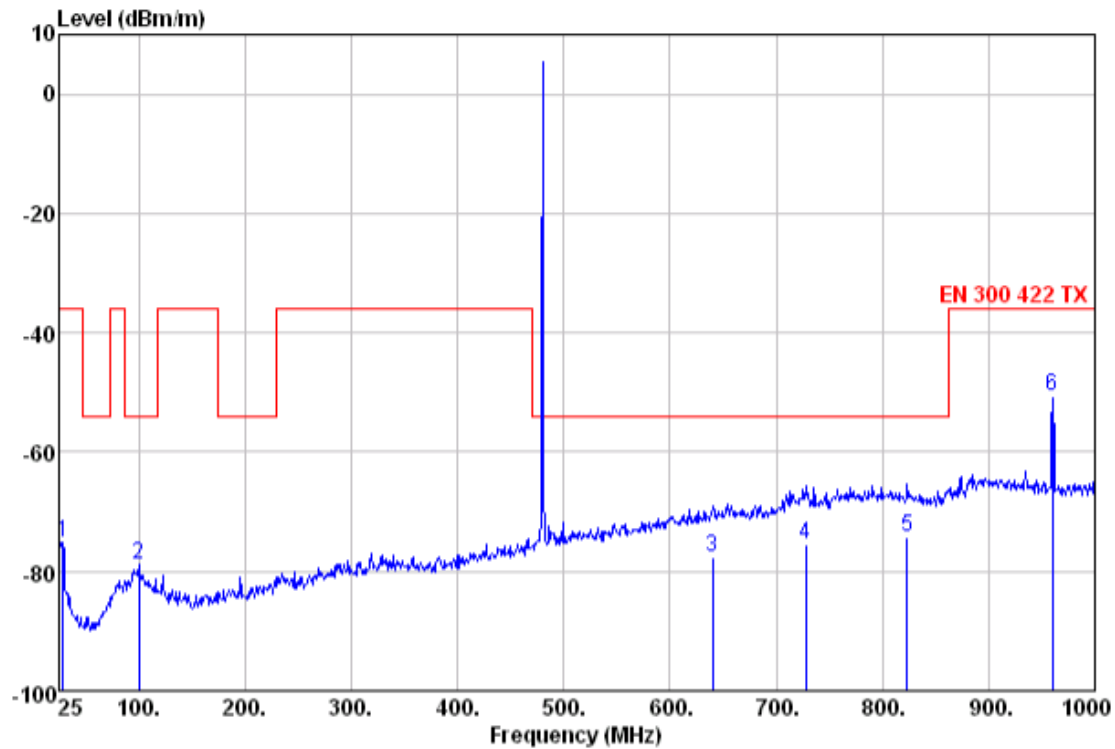
(D) Emission Mask Test set-up.



9.4 Test result:

Refer the following plot.

30MHz – 1GHz, Horizontal@Low ch.: 480MHz



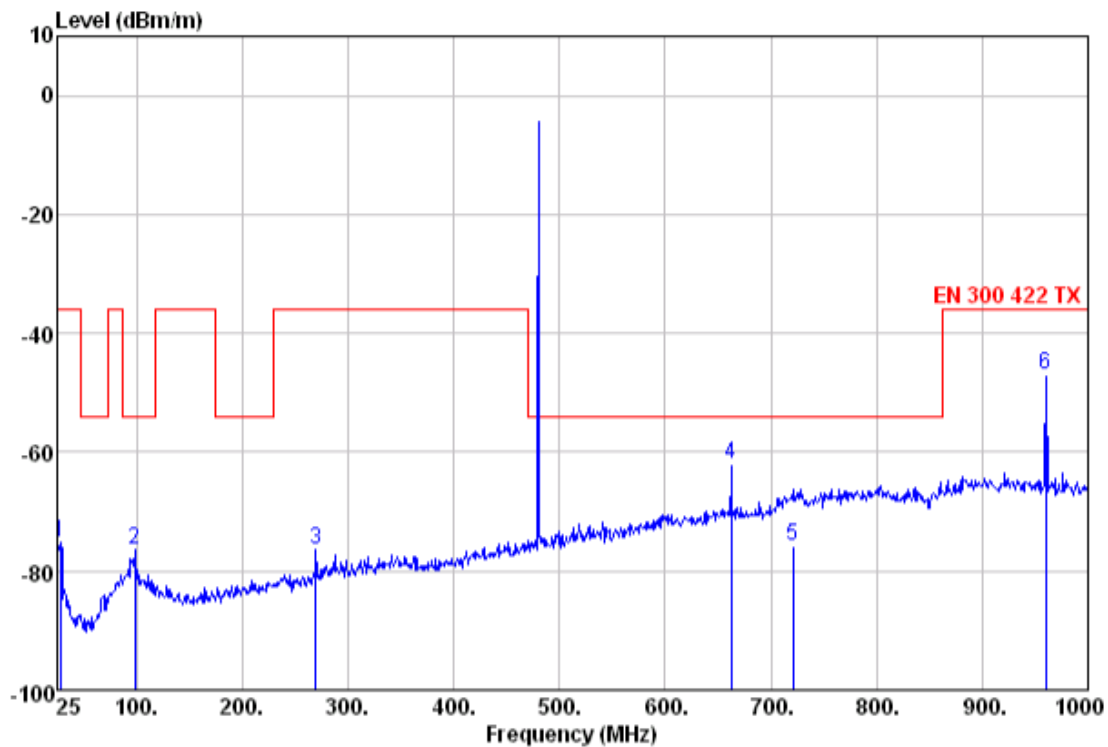
Spurious Emission Frequency (MHz)	P _{SigGen} (dBm)	AUX factor (dB)	EIRP (QP value) (dBm)	ERP (QP value) (dBm)	Limit/ dBm	Margin(dB)
28.9	-103.5	28.3	-75.2	-77.35	-36	-41.35
100.1	-105.5	29.0	-76.5	-78.65	-54	-24.65
640.2	-104.6	28.2	-76.4	-78.55	-54	-24.55
728.0	-100.1	38.1	-62.0	-64.15	-54	-10.15
823.5	-115.0	39.3	-75.7	-77.85	-54	-23.85
960.0	-91.8	41.8	-50.0	-52.15	-36	-16.15

Note:

480.0MHz is the transmitter's fundamental frequency, and its limit need not be considered in this test.

ERP will always be 2.15 dB less than EIRP for the same radiator in a given direction.

30MHz – 1GHz, Vertical@Low ch.: 480MHz



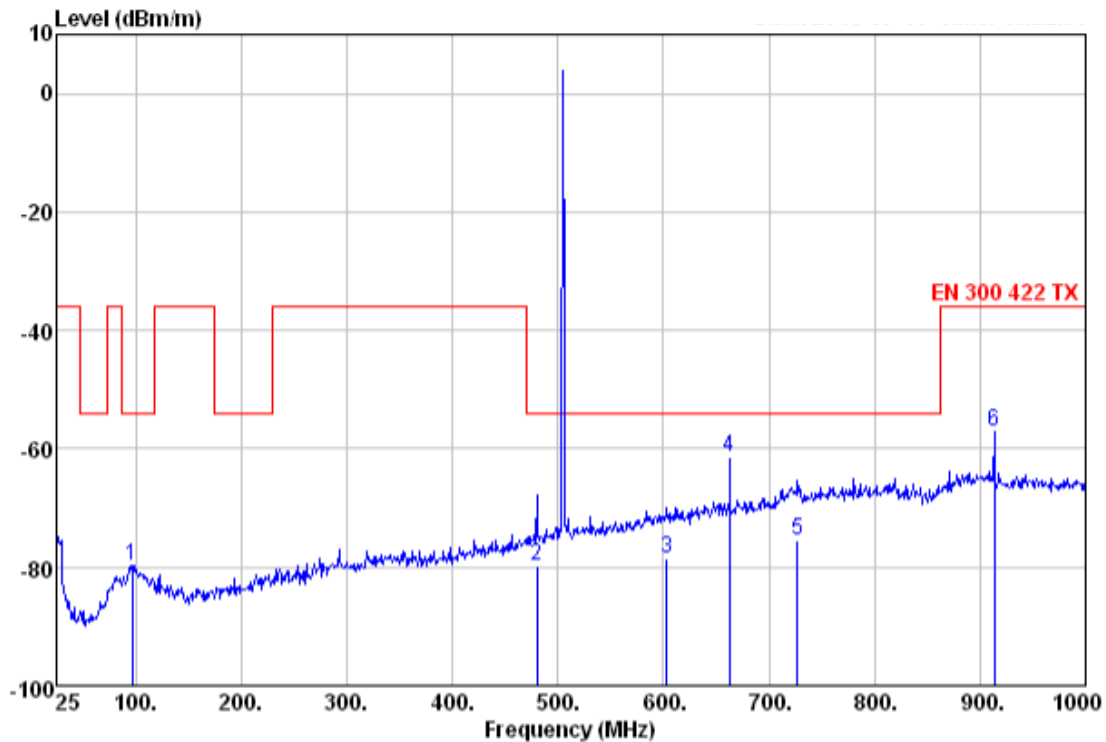
Spurious Emission Frequency (MHz)	P _{SigGen} (dBm)	AUX factor (dB)	EIRP (QP value) (dBm)	ERP (QP value) (dBm)	Limit/ dBm	Margin(dB)
27.9	-103.5	28.3	-75.2	-77.35	-36	-41.35
98.1	-105.5	29.0	-76.5	-78.65	-54	-24.65
269.7	-104.6	28.2	-76.4	-78.55	-36	-42.55
662.7	-100.1	38.1	-62.0	-64.15	-54	-10.15
721.2	-115.0	39.3	-75.7	-77.85	-54	-23.85
960.0	-89.3	41.8	-47.5	-49.65	-36	-13.65

Note:

480.0MHz is the transmitter's fundamental frequency, and its limit need not be considered in this test.

ERP will always be 2.15 dB less than EIRP for the same radiator in a given direction.

30MHz – 1GHz, Horizontal@Middle ch.: 505MHz



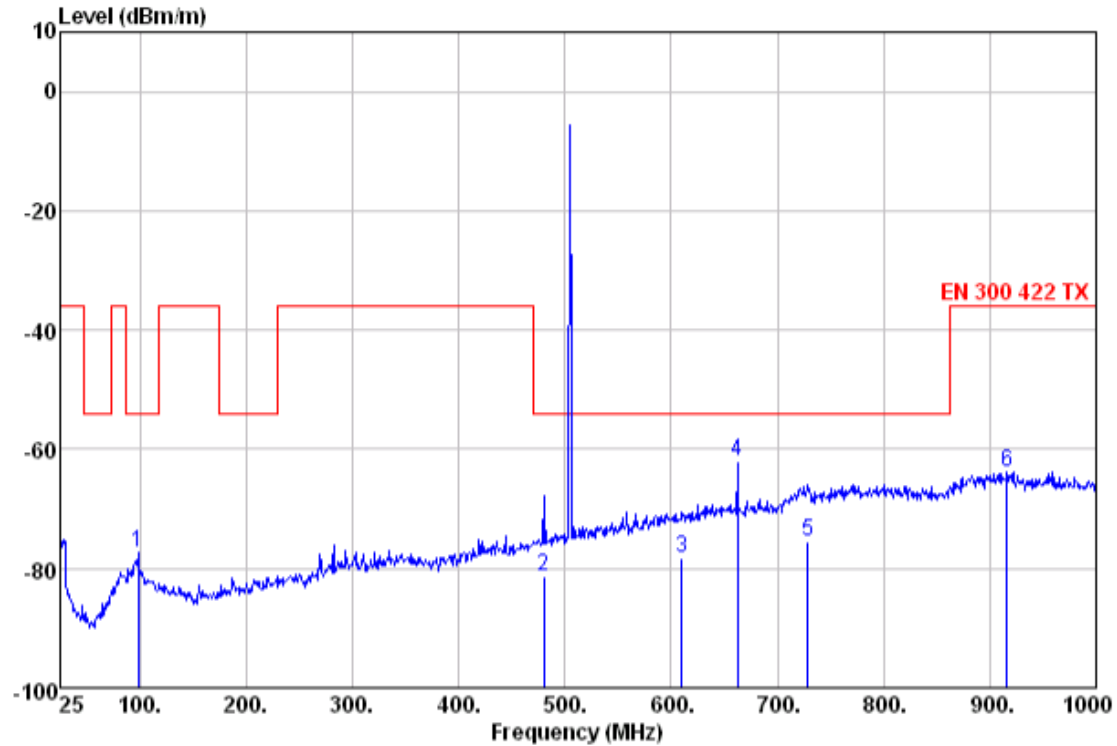
Spurious Emission Frequency (MHz)	P _{SigGen} (dBm)	AUX factor (dB)	EIRP (QP value) (dBm)	ERP (QP value) (dBm)	Limit/ dBm	Margin(dB)
97.2	-108.5	28.9	-79.6	-81.75	-54	-27.75
480.3	-114.5	34.6	-79.9	-82.05	-54	-28.05
603.2	-115.4	37.0	-78.4	-80.55	-54	-26.55
662.7	-99.4	38.1	-61.3	-63.45	-54	-9.45
727.0	-115.1	39.6	-75.5	-77.65	-54	-23.65
913.2	-99.7	42.6	-57.1	-59.25	-36	-23.25

Note:

505.0MHz is the transmitter's fundamental frequency, and its limit need not be considered in this test.

ERP will always be 2.15 dB less than EIRP for the same radiator in a given direction.

30MHz – 1GHz, Vertical@Middle ch: 505MHz



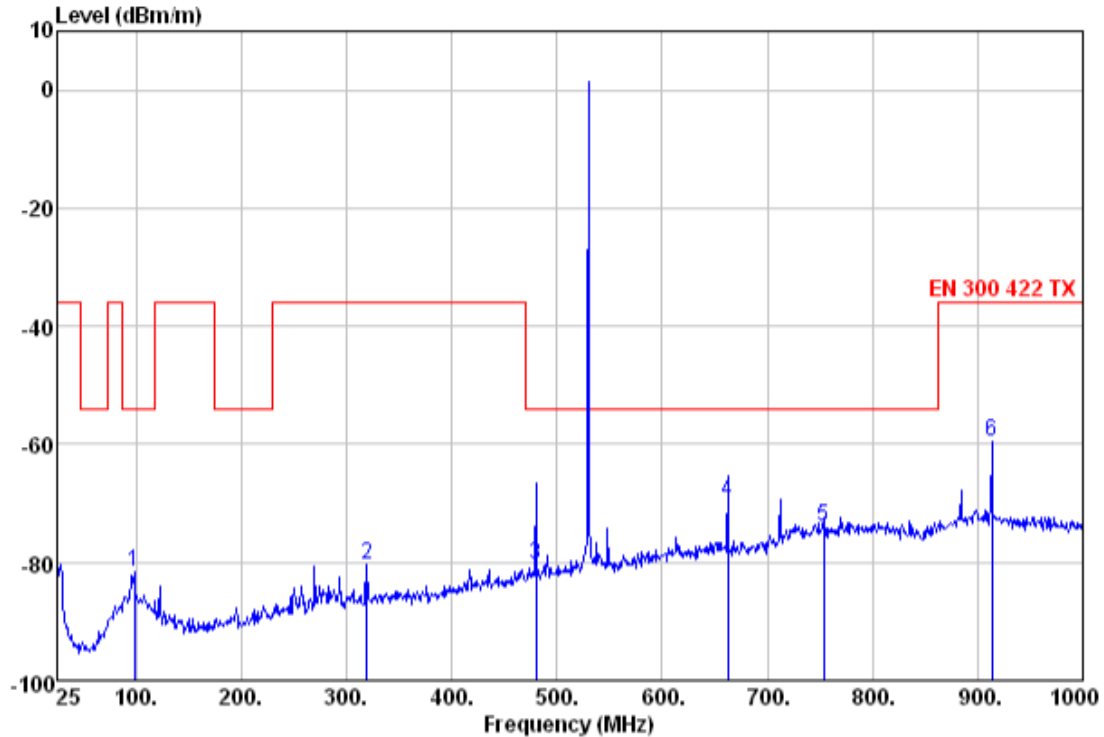
Spurious Emission Frequency (MHz)	P _{SigGen} (dBm)	AUX factor (dB)	EIRP (QP value) (dBm)	ERP (QP value) (dBm)	Limit/ dBm	Margin(dB)
98.1	-106.3	29.0	-77.3	-79.45	-54	-25.45
480.3	-116.0	34.6	-81.4	-83.55	-54	-29.55
610.0	-115.5	37.2	-78.3	-80.45	-54	-26.45
662.7	-100.0	38.1	-61.9	-64.05	-54	-10.05
729.0	-115.2	39.7	-75.5	-77.65	-54	-23.65
916.2	-106.6	42.6	-64.0	-66.15	-36	-30.15

Note:

505.0MHz is the transmitter's fundamental frequency, and its limit need not be considered in this test.

ERP will always be 2.15 dB less than EIRP for the same radiator in a given direction.

30MHz – 1GHz, Horizontal@High ch.: 529.75MHz



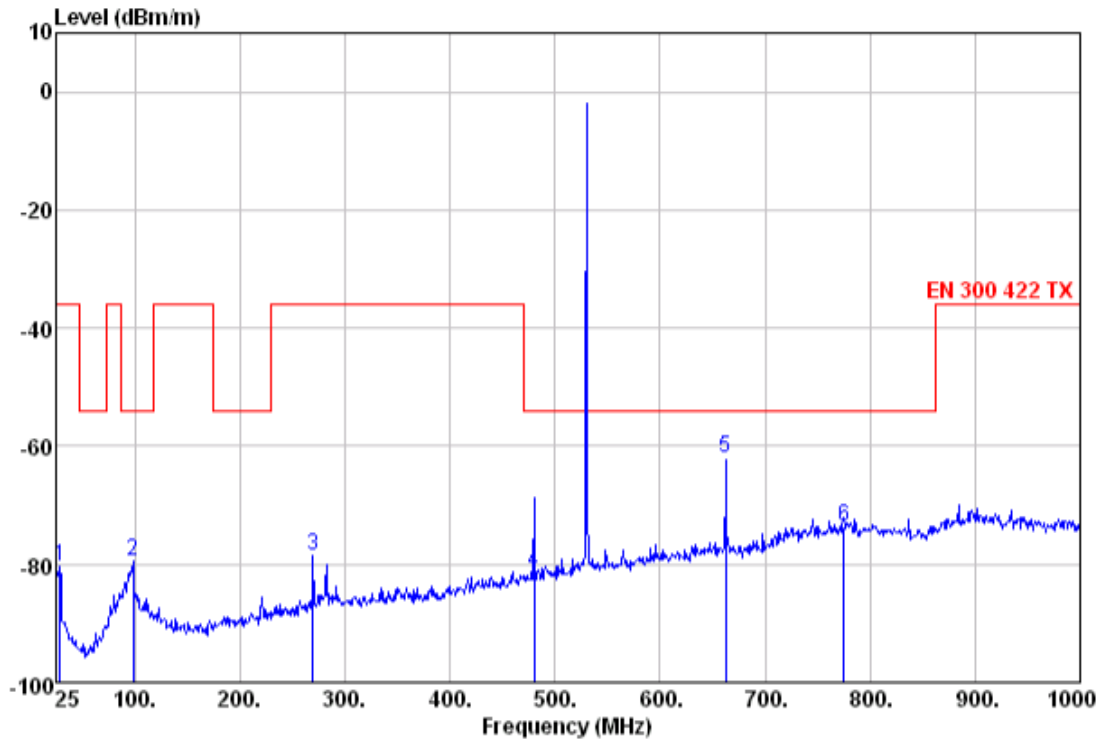
Spurious Emission Frequency (MHz)	P _{SigGen} (dBm)	AUX factor (dB)	EIRP (QP value) (dBm)	ERP (QP value) (dBm)	Limit/ dBm	Margin(dB)
98.1	-110.6	29.0	-81.6	-83.75	-54	-29.75
319.5	-111.0	30.5	-80.5	-82.65	-36	-46.65
480.3	-115.1	34.6	-80.5	-82.65	-54	-28.65
662.7	-107.8	38.1	-69.7	-71.85	-54	-17.85
753.3	-114.8	40.7	-74.1	-76.25	-54	-22.25
913.2	-102.1	42.6	-59.5	-61.65	-36	-25.65

Note:

529.75MHz is the transmitter's fundamental frequency, and its limit need not be considered in this test.

ERP will always be 2.15 dB less than EIRP for the same radiator in a given direction.

30MHz – 1GHz, Vertical@High ch.: 529.75MHz



Spurious Emission Frequency (MHz)	P _{SigGen} (dBm)	AUX factor (dB)	EIRP (QP value) (dBm)	ERP (QP value) (dBm)	Limit/ dBm	Margin(dB)
28.9	-108.8	28.3	-80.5	-82.65	-36	-46.65
98.1	-108.5	29.0	-79.5	-81.65	-54	-27.65
269.7	-106.8	28.2	-78.6	-80.75	-36	-44.75
480.3	-116.0	34.6	-81.4	-83.55	-54	-29.55
662.7	-100.1	38.1	-62.0	-64.15	-54	-10.15
774.8	-114.7	41.0	-73.7	-75.85	-54	-21.85

Note:

529.75MHz is the transmitter's fundamental frequency, and its limit need not be considered in this test.

ERP will always be 2.15 dB less than EIRP for the same radiator in a given direction.



Frequency Range: 1-5.3GHz

Spurious Emission Frequency (MHz)	P _{SigGen} (dBm)	AUX factor (dB)	EIRP (AV value) (dBm)	Limit/ dBm	Margin(dB)	Ant.Pol. (H/V)
Operation Mode: TX Mode@Low ch.: 480.0MHz						
1440.0	-31.6	-6.6	-38.2	-30	-8.2	V
1920.0	-33.8	-5.8	-39.6	-30	-9.6	V

1440.0	-32.9	-6.6	-39.5	-30	-9.5	H
1920.0	-34.1	-5.8	-39.9	-30	-9.9	H

Operation Mode: TX Mode@Middle ch.: 505.0MHz						
1010.0	-30.3	-7.2	-37.5	-30	-7.5	V
1515.0	-32.0	-6.6	-38.6	-30	-8.6	V

1010.0	-31.1	-7.2	-38.3	-30	-8.3	H
1515.0	-32.7	-6.6	-39.3	-30	-9.3	H

Operation Mode: TX Mode@High ch.: 529.75MHz						
1059.5	-31.4	-7.2	-38.6	-30	-8.6	V
1589.3	-31.8	-6.6	-38.4	-30	-8.4	V

1059.5	-32.0	-7.2	-39.2	-30	-9.2	H
1589.3	-32.1	-6.6	-38.7	-30	-8.7	H

Other harmonics emissions are lower than 10dB below the allowable limit.

Note:

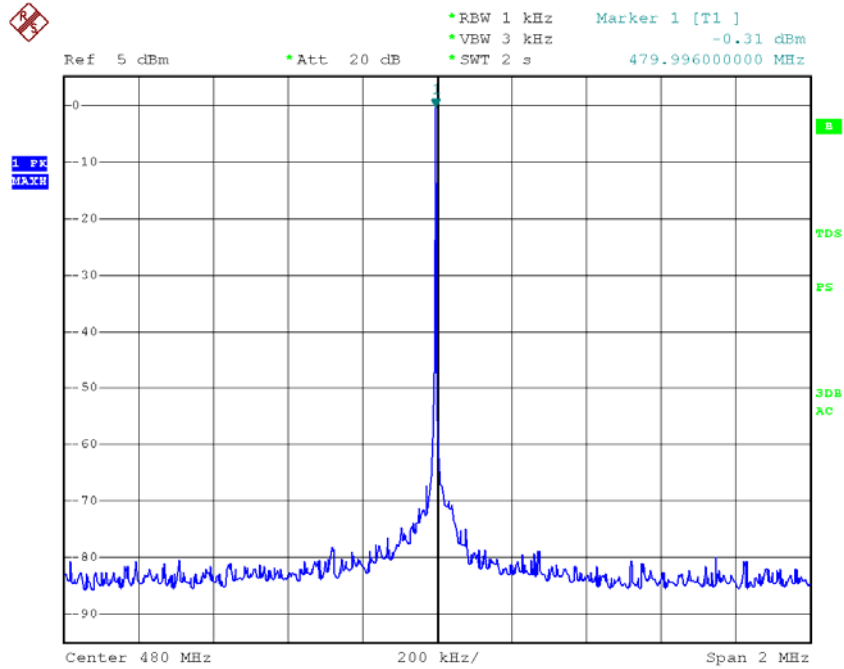
- (1) All Readings are Peak Value and AV.
- (2) Emission Level= Reading Level + Factor
- (3) Factor= Antenna Gain + Cable Loss – Amplifier Gain
- (4) Data of measurement within this frequency range shown “ ---” in the table above means the reading of emissions are attenuated more than 10dB below the permissible limits.
- (5) Measurement uncertainty : ± 3.7 dB.
- (6) Horn antenna used for the emission over 1000MHz.



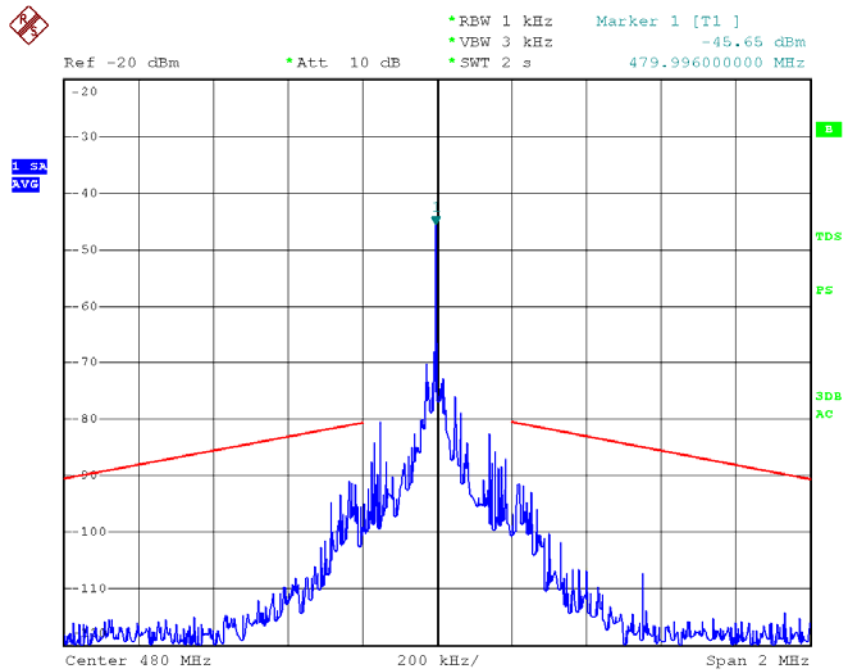
PRECISE TESTING

Report No.: PTC18062714001E-FC01

Mask Emission Low channel, Un-modulated

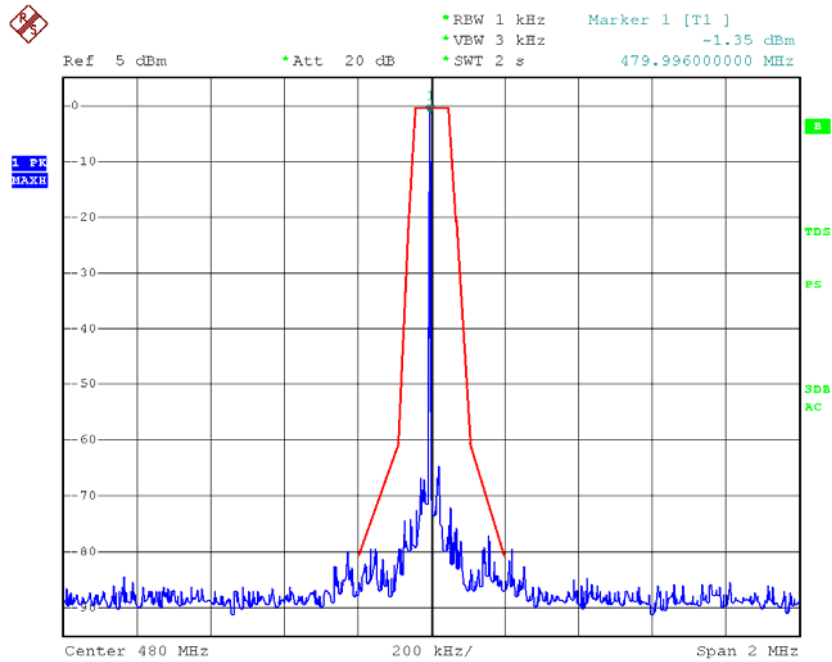


Low channel, White Noise AVG

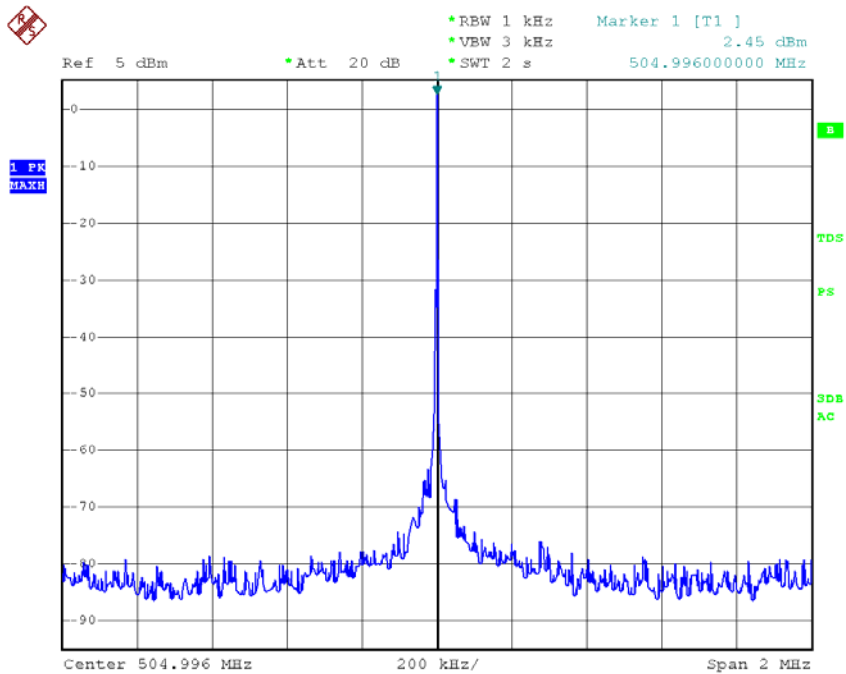




Low channel, White Noise Peak



Middle channel, Un-modulated

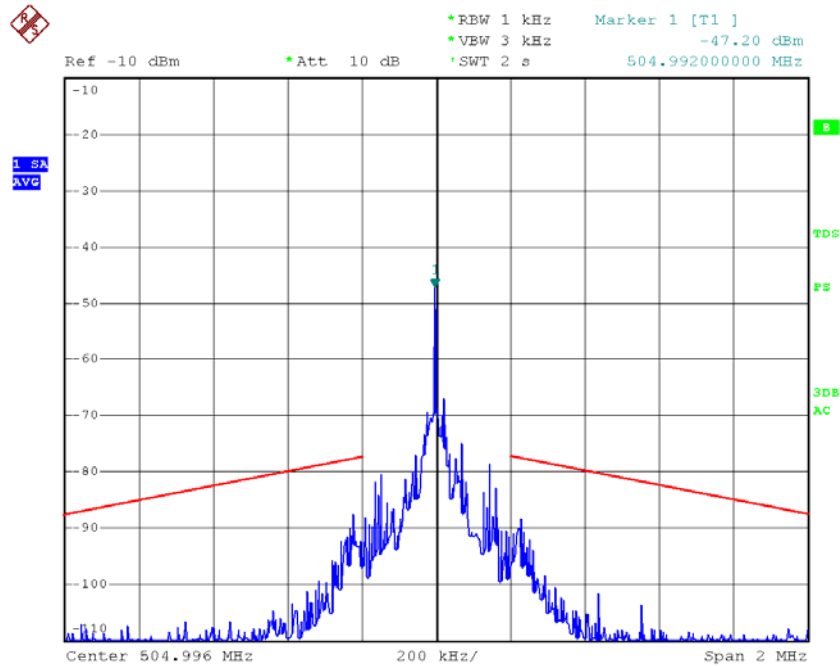




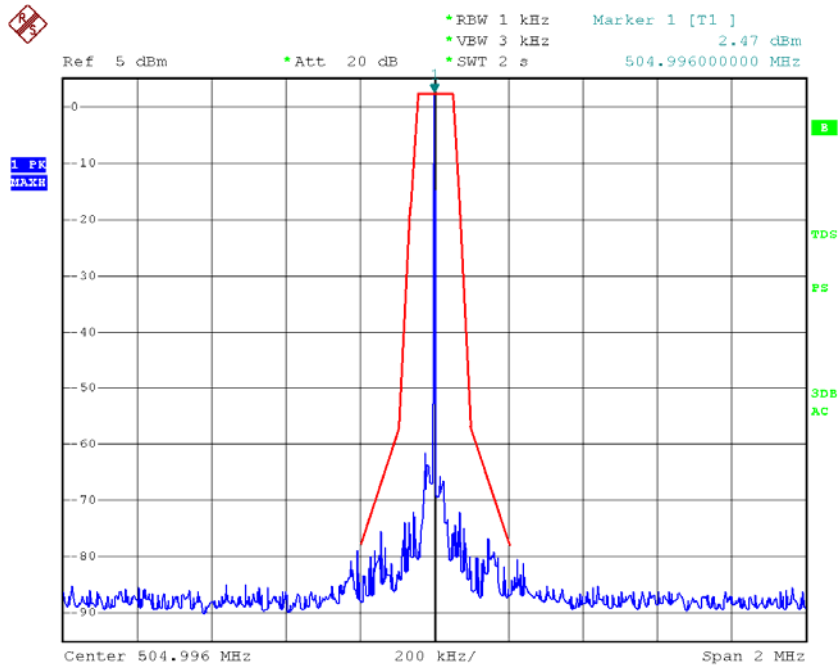
PRECISE TESTING

Report No.: PTC18062714001E-FC01

Middle channel, White Noise AVG



Middle channel, White Noise Peak

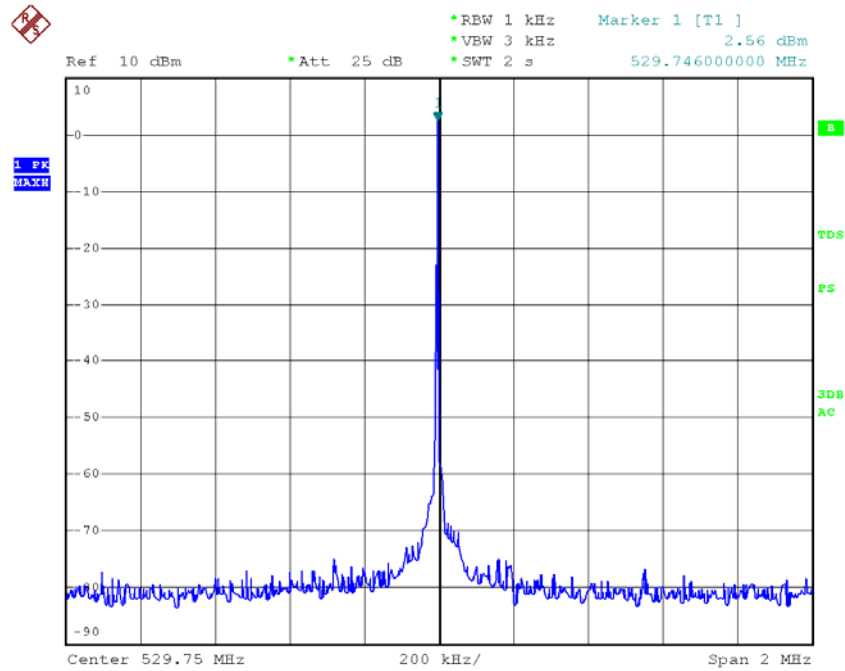




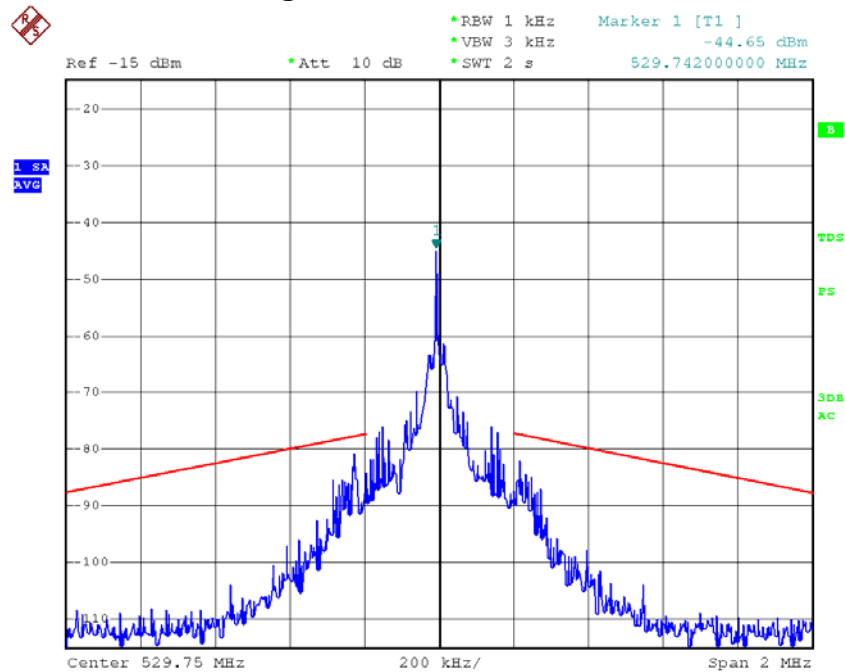
PRECISE TESTING

Report No.: PTC18062714001E-FC01

High channel, Un-modulated



High channel, White Noise AVG

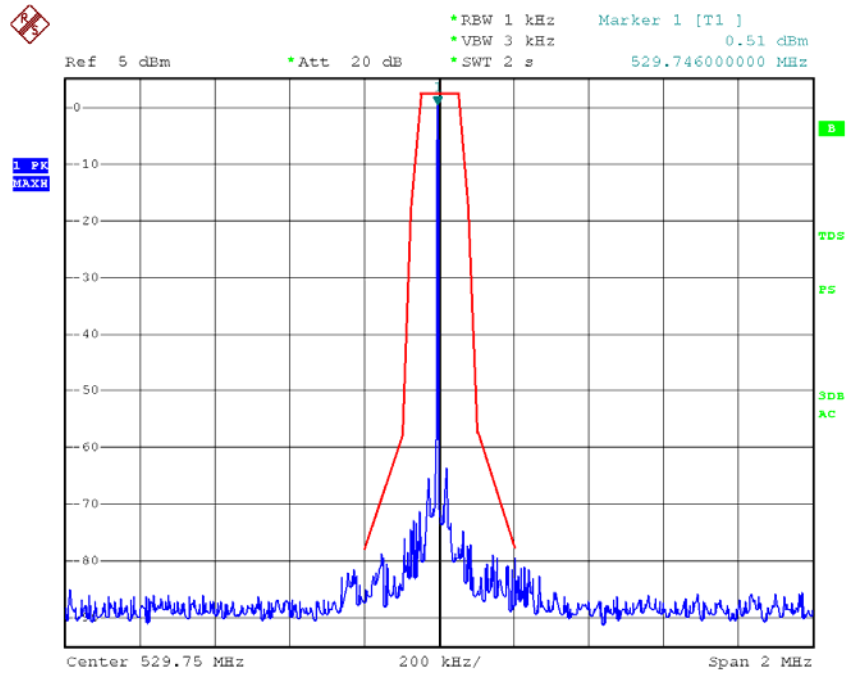




PRECISE TESTING

Report No.: PTC18062714001E-FC01

High channel, White Noise Peak





PRECISE TESTING

Report No.: PTC18062714001E-FC01

10 Antenna requirement

10.1 Test Requirement:

From 206256 D01 Wireless Microphone Certification v02:
Compliance with Section 15.203 antenna requirements
does not apply to devices operated under Section 15.236.

10.2 Test Results

The antenna is integral antenna and no consideration of replacement, and the best case gain of the antenna is 0dBi. So, the antenna is consider meet the requirement.



PRECISE TESTING

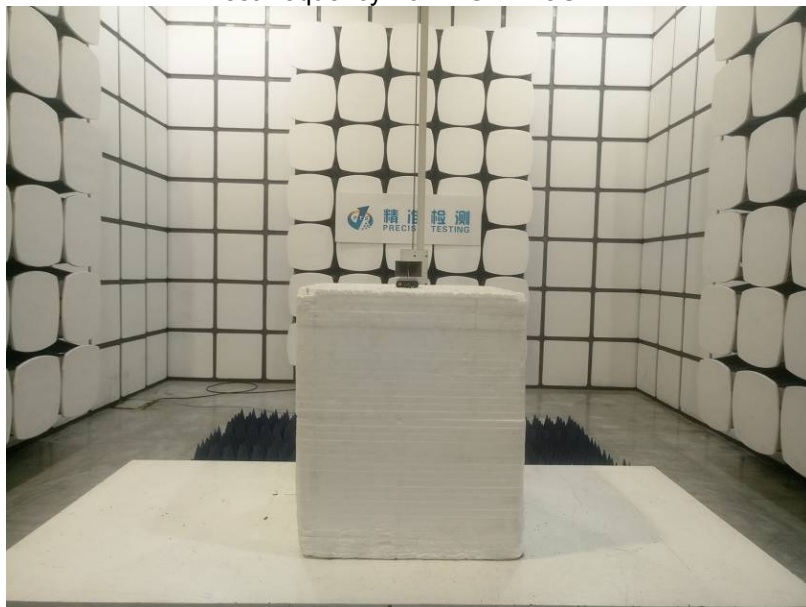
Report No.: PTC18062714001E-FC01

11 TEST PHOTOS

Radiated Spurious Emissions
Test Frequency From 30MHz-1000MHz



Test frequency from 1GHz-18GHz





PRECISE TESTING

Report No.: PTC18062714001E-FC01

12 EUT PHOTOS





PRECISE TESTING

Report No.: PTC18062714001E-FC01





PRECISE TESTING

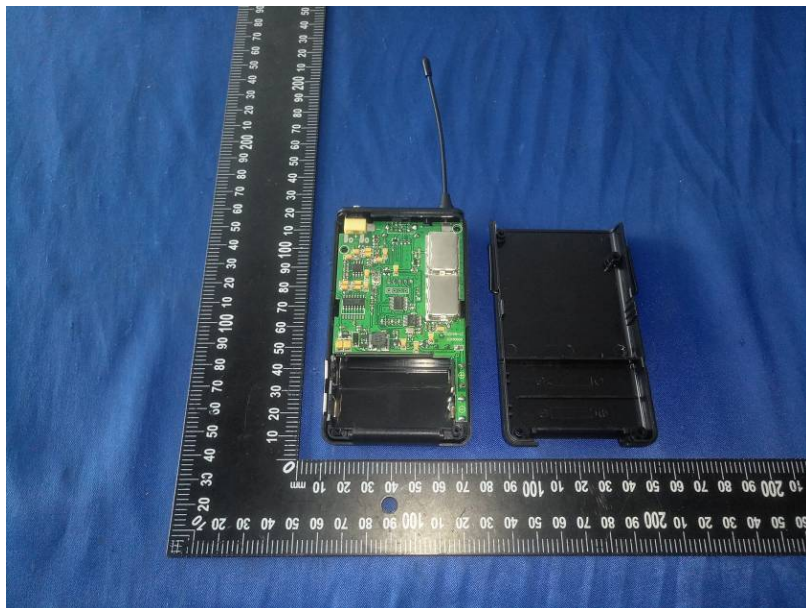
Report No.: PTC18062714001E-FC01





PRECISE TESTING

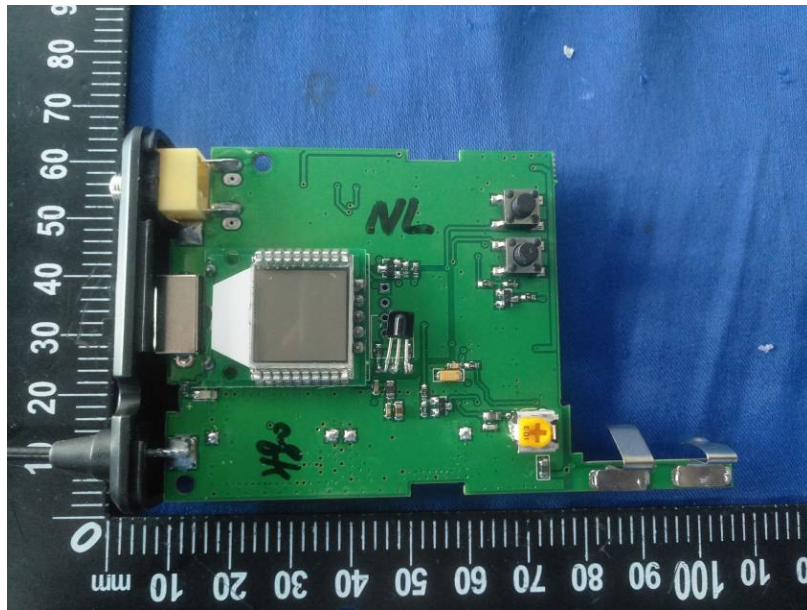
Report No.: PTC18062714001E-FC01





PRECISE TESTING

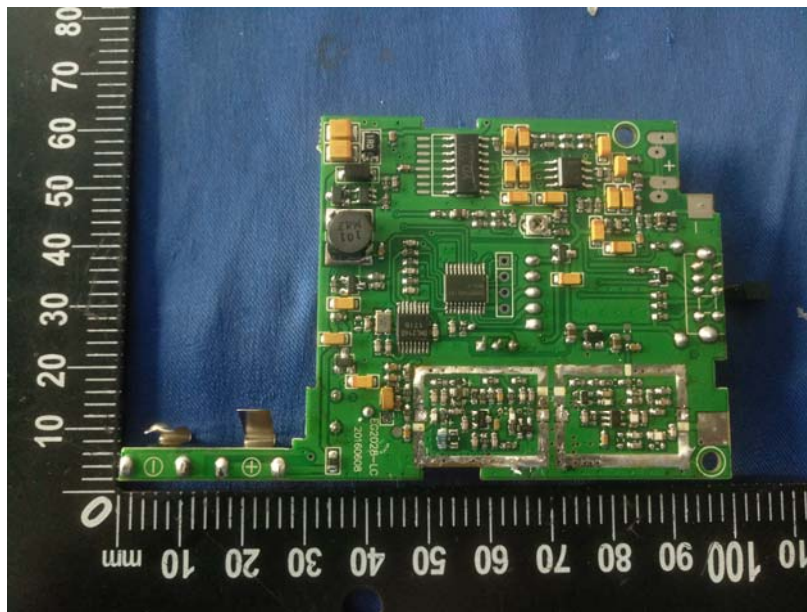
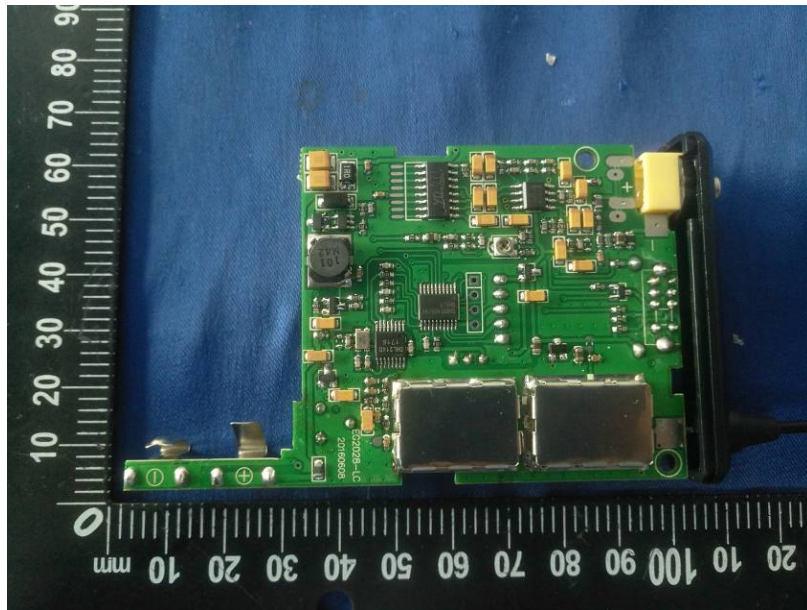
Report No.: PTC18062714001E-FC01





PRECISE TESTING

Report No.: PTC18062714001E-FC01



*****THE END REPORT*****