



Test Report No.:
FCCSZ2025-0038-RF3

RF Test Report

FCC ID : 2AYHY-VS321


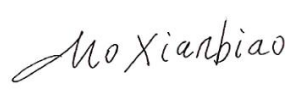

NAME OF SAMPLE : Wireless AI Occupancy Sensor

APPLICANT : Xiamen Milesight IoT Co., Ltd.

CLASSIFICATION OF TEST : N/A

CVC Testing Technology (Shenzhen) Co., Ltd.



Applicant	Name: Xiamen Milesight IoT Co., Ltd. Address: Building C09, Software Park Phase III, Xiamen 361024, Fujian, China		
Manufacturer	Name: Xiamen Milesight IoT Co., Ltd. Address: Building C09, Software Park Phase III, Xiamen 361024, Fujian, China		
Equipment Under Test	Product Name: Wireless AI Occupancy Sensor Model/Type: VS321-915M Additional Model/Type: see Section 2.2 Brand Name: Milesight Serial NO.: N/A Sample NO.: 202504288769-1		
Date of Receipt.	Apr. 29, 2025	Date of Testing	Apr. 29, 2025 ~ Jul. 16, 2025
Test Specification		Test Result	
FCC Part 15, Subpart C, Section 15.247		PASS	
Evaluation of Test Result	The equipment under test was found to comply with the requirements of the standards applied. Seal of CVC Issue Date: Jul. 16, 2025		
Compiled by:  Liang Jiatong Name Signature	Reviewed by:  Mo Xianbiao Name Signature	Approved by:  Dong Sanbi Name Signature	
Other Aspects: NONE.			
Abbreviations: OK, Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested			

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCCSZ2025-0038-RF3	Original release	Jul.16, 2025



1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
FCC 15.207	AC Power Conducted Emission	-	Not applicable
FCC 15.247(d) FCC 15.209	Radiated Emissions	PASS	See section 3.2
FCC 15.247(d) RSS-247 5.5	Out of band Emission Measurement	PASS	Appendix E&F of FCCSZ2025-0038-RF3-A1
FCC 15.247(a)(2)	6dB bandwidth	PASS	Appendix A of FCCSZ2025-0038-RF3-A1
---	Occupied Bandwidth Measurement	PASS	Appendix B of FCCSZ2025-0038-RF3-A1
FCC 15.247(b)	Conducted Output power	PASS	Appendix C of FCCSZ2025-0038-RF3-A1
FCC 15.247(e)	Power Spectral Density	PASS	Appendix D of FCCSZ2025-0038-RF3-A1
FCC 15.203 FCC 15.247(b)	Antenna Requirement	PASS	See section 3.8



1.1 LIST OF TEST AND MEASUREMENT INSTRUMENTS

Antenna Port Conducted Test(BT/WIFI)						
Equipment	Manufacturer	Model No.	Serial Number	Cal. interval	Cal. Day	Cal. Due
Spectrum Analyzer	R&S	FSV 30	CS030002	1 year	2025/04/23	2026/04/22
Spectrum Analyzer	R&S	FSV 40	CS030002	1 year	2025/05/22	2026/05/21
Spectrum Analyzer	PROSUND	SP926B	CS030002	1 year	2025/06/06	2026/06/05
Analog signal Generator	R&S	SMB 100A	CS0300015	1 year	2025/04/23	2026/04/22
Vector signal Generator	R&S	SGT 100A	CS0300017	1 year	2025/04/23	2026/04/22
RF control unit(BT/WIFI) Power Meter	Tonscend	JS0806-2-8CH	CS0300023	1 year	2025/04/23	2026/04/22
RF control unit(DTV)	Tonscend	JS0806-1	CS0300024	1 year	2025/04/23	2026/04/22
DC power supply	R&S	HMC8041-G	CS0300026	1 year	2025/04/23	2026/04/22
#3Shielding room	MORI	443	CS0300009	3 year	2023/05/17	2026/05/16
Digital multimeter	FLUKE	18B+	CS0200056	1 year	2025/05/22	2026/05/21
10db attenuator	JUNKE	SMA-10-18-N	250312743	1 year	2025/06/06	2026/06/05
Power splitter	Anritsu	K240CPOWERDIVIDER	012334	1 year	2025/06/06	2026/06/05
Temperature and humidity meter	UNI-T	A10T	C193561457	1 year	2025/04/29	2026/04/28
Conducted emission						
EMI Test Receiver	R&S	ESR3	CS0300001	1 year	2024/05/25	2025/05/24
Voltage probe	SCHWARZBECK	CVP9222C	CS0200002-2	1 year	2025/04/29	2026/04/28
Voltage probe	R&S	EZ-17	CS0200002-3	1 year	2025/04/23	2026/04/22
ISN network	R&S	ENY81	CS0200015	1 year	2025/04/23	2026/04/22
ISN network	R&S	ENY81Cat6	CS0200016	1 year	2025/04/23	2026/04/22
Artificial Power Network (three-phase)	SCHWARZBECK	NNLK&8129RC	CS0200037	1 year	2025/04/23	2026/04/22
Temperature and humidity meter	UNI-T	A10T	C193561430	1 year	2025/04/29	2026/04/28
limiter (10 dB)	Rohde&Schwarz	ESH3-Z2	102824	1 year	2024/05/16	2025/05/15
RE Test - 3M Chamber(Below 1GHz)						
EMI Test Receiver	Rohde&Schwarz	ESR 26	101718	1 year	2025/05/22	2026/05/21
Loop antenna (8.3k~30MHz)	Rohde&Schwarz	HFH2-Z2E	100951	1 year	2024/06/04	2025/06/03
Antenna(30MHz~1000	SCHWARZBECK	VULB 9168	1132	1 year	2025/02/28	2026/02/27



MHz)	K					
3m anechoic chamber	MORI	966	N/A	1 year	2025/05/19	2026/05/18
Preamplifier(10kHz-1G Hz)	Rohde&Schwarz	SCU-01F	100298	1 year	2025/04/23	2026/04/22
Preamplifier(1GHz-18G Hz)	Rohde&Schwarz	SCU-18F	100799	1 year	2025/04/23	2026/04/22
#1 control room	MORI	433	/	3year	2023/05/17	2026/05/16
Temperature and humidity meter	/	C193561473	C193561473	1 year	2025/04/29	2026/04/28
Radiation Spurious						
Spectrum Analyzer	R&S	FSV 40	CS030001	1 year	2025/04/23	2026/04/22
Spectrum Analyzer	R&S	FSVA 3044	CS030004	1 year	2025/05/23	2026/05/22
EMI Test Receiver	R&S	ESR3	CS030005	1 year	2025/05/22	2026/05/21
Horn antenna(1GHz-18GHz)	ETS-Lindgren	3117	CS030007	1 year	2025/03/29	2026/03/28
Horn antenna(18GHz-40GHz)	STEATITE	QMS-00880	CS030008	1 year	2025/03/22	2026/03/21
Automatic control unit(RSE)	R&S	OSP220	CS030019	1 year	2024/07/03	2025/07/02
Filter group(RSE-BT/WiFi)	R&S	WiFi/BT Variant 1	CS030020	1 year	2025/04/23	2026/04/22
Filter group(RSE-Cellular)	R&S	Cellular Variant 1	CS030021	1 year	2025/04/23	2026/04/22
Preamplifier(1GHz-18G Hz)	R&S	SCU18F	CS030031-1	1 year	2025/04/23	2026/04/22
Preamplifier(1GHz-18G Hz)	R&S	SCU-18F	CS030031	1 year	2025/04/23	2026/04/22
Comprehensive Test Instrument	R&S	CMW 500	CS030033	1 year	2025/05/25	2026/05/24
Antenna(30MHz~1001 MHz)	SCHWARZBECK	VULB9168	CS020006	1 year	2025/01/23	2026/01/22
Preamplifier(1GHz-18G Hz)	R&S	SCU-01F	CS020042	1 year	2025/04/23	2026/04/22
Preamplifier(18GHz-40 GHz)	R&S	SCU40A	CS020045	1 year	2025/04/23	2026/04/22
Attenuator	boyang	BY--N-2W-5dB	/	1 year	2025/01/23	2026/01/22
Temperature and humidity meter	yuhuaaze	/	WK0001	1 year	2025/04/29	2026/04/28
#2 control room	MORI	433	CS030028	3 year	2023/05/17	2026/05/16
3m anechoic chamber	MORI	966	CS030011	3 year	2023/05/17	2026/05/16

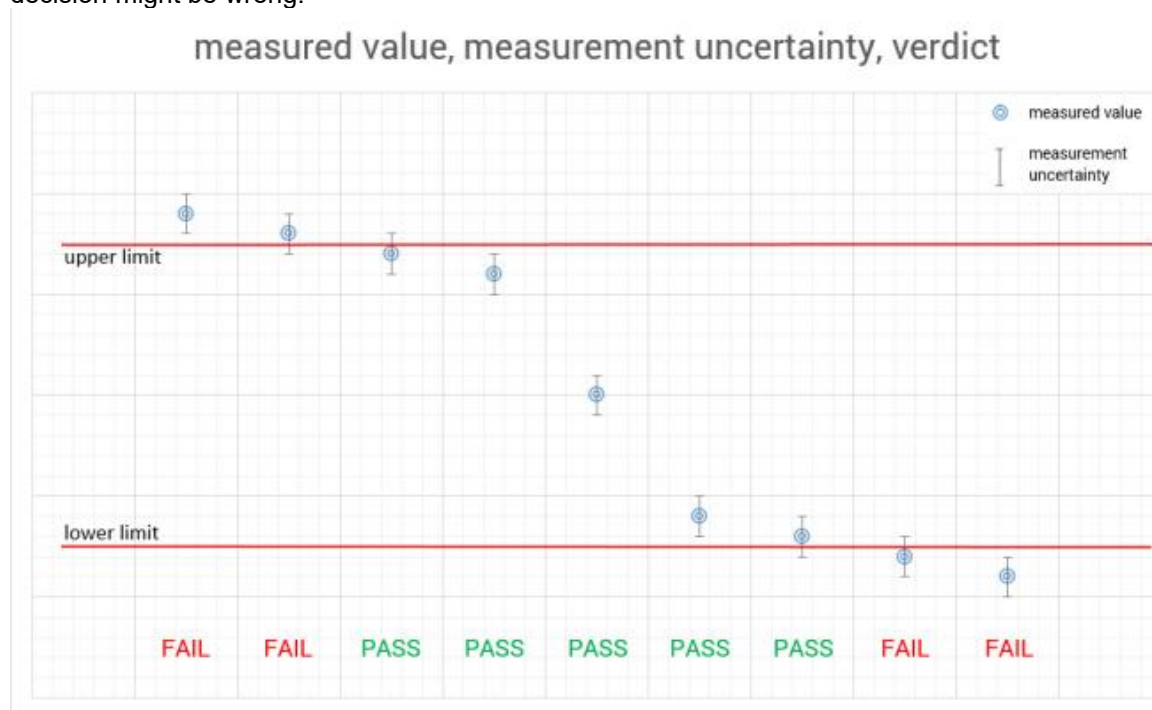
1.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

No.	Item	Measurement Uncertainty
1	Occupied Channel Bandwidth	$\pm 1.86\%$
2	RF output power, conducted	$\pm 0.9\text{ dB}$
3	Power Spectral Density, conducted	$\pm 0.8\text{ dB}$
4	Conducted emission test	$\pm 2.7\text{ dB}$
5	Radiated emission 9kHz-30MHz	$\pm 5.6\text{ dB}$
	Radiated emission 30MHz-1GHz	$\pm 4.6\text{ dB}$
	Radiated emission 1GHz-18GHz	$\pm 4.4\text{ dB}$
	Radiated emission 18GHz-40GHz	$\pm 5.1\text{ dB}$
6	Temperature	$\pm 0.73\text{ }^{\circ}\text{C}$
7	Humidity	$\pm 3.90\%$
8	Supply voltages	$\pm 0.37\%$
9	Time	$\pm 0.27\%$
Remark: 95% Confidence Levels, k=2.		

Only the measured values related to their corresponding limits will be used to decide whether the equipment under test meets the requirements of the test standards listed.

The measurement uncertainty is mentioned in this test report, but is not taken into account - neither to the limits nor to the measurement results. Measurement results with a smaller margin to the corresponding limits than the measurement uncertainty have a potential risk of more than 5% that the decision might be wrong.





1.3 TEST LOCATION

The tests and measurements refer to this report were performed by EMC testing Lab. of CVC Testing Technology (Shenzhen) Co., Ltd.

Lab Address: No. 1301-14&16, Guanguang Road, Xinlan Community, Guanlan Subdistrict, Longhua District, Shenzhen, Guangdong, China

Post Code: 518110 Tel: 0755-23763060-8805

Fax: 0755-23763060 E-mail: sz-kf@cvc.org.cn

FCC(Test firm designation number: CN1363)

IC(Test firm CAB identifier number: CN0137)

CNAS(Test firm designation number: L16091)



2 GENERAL INFORMATION

2.1 GENERAL PRODUCT INFORMATION

PRODUCT	Wireless AI Occupancy Sensor
BRAND	Milesight
TEST MODEL	VS321-915M
ADDITIONAL MODEL	see section 2.2
POWER SUPPLY	DC 3.6V from battery(4*3.6V ER14505 LITHIUM BATTERY AA SIZE)
MODULATIONTECHNOLOGY	DTS
MODULATION TYPE	GFSK for BT-LE
OPERATING FREQUENCY	2402MHz ~ 2480MHz for BT-LE 1M&2M
NUMBER OF CHANNEL	BT-LE:40
PEAK OUTPUT POWER	5.69 dBm for BT-LE(Maximum)
ANTENNA TYPE(Note 5)	Ceramic Antenna with 4.48dBi gain
FIX FREQUENCY SOFTWARE	N/A
I/O PORTS	Refer to user's manual
<p>Note:</p> <ol style="list-style-type: none">1. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.3. EUT photo refer to report (Report NO.: FCCSZ2025-0038-EUT).4. Since the above data and/or information is provided by the client, CVC is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.	



2.2 ADDITIONAL MODEL/TYPE

Main Model No.	Serial Model No.	Difference
VS321-915M	VS321-868M, NF321-868M, NF321-915M, VS321,NF321	1.only differences are the model no and appearance silkprint

2.3 OTHER INFORMATION

Operating frequency of each channel

BT-LE(1 Mbps& 2Mbps)							
CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

1. The channels which were indicated in bold type of the above channel list were selected as representative test channel. Therefore only the data of the test channels were recorded in this report.
2. By means of test software which provided by manufacture, the power levels during the tests were set

BT-LE 1M&2M	
FREQUENCY (MHZ)	POWER SETTING
2402	default
2440	default
2480	default



2.4 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, xyz axis and antenna ports

EUT CONFIGURE MODE	APPLICABLE TEST ITEMS				DESCRIPTION
	RE<1G	RE≥1G	PLC	APCM	
A	√	√	-	√	BT Function

Where **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

RE≥1G: Radiated Emission above 1GHz
APCM: Antenna Port Conducted Measurement

TEST CASES	BT	MIMO/CDD	PARTIAL RU
AC Power Conducted Emission	O	N/A	N/A
Radiated Emissions	O	N/A	N/A
Out of band Emission Measurement	O	N/A	N/A
6dB bandwidth	O	N/A	N/A
Occupied Bandwidth Measurement	O	N/A	N/A
Conducted Output power	O	N/A	N/A
Power Spectral Density	O	N/A	N/A

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE (SYSTEM)	TESTED BY
RE<1G	24deg. C, 55%RH	DC 3.6V	Liu Yuan
RE≥1G	24deg. C, 55%RH	DC 3.6V	Liu Yuan
APCM	25deg. C, 58%RH	DC 3.6V	Liu Yuan



RADIATED EMISSION TEST (BELOW 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- ☒ The worst case was found when positioned on x axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	BT-LE	0 to 39	1	DTS	GFSK	1.0

For the test results, only the worst case was shown in test report.

RADIATED EMISSION TEST :

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- ☒ The worst case was found when positioned on x axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE PARAMETER
A	BT-LE	0 to 39	0,19, 39	DTS	GFSK	1.0 Mbps
B	BT-LE	0 to 39	0,19, 39	DTS	GFSK	2.0 Mbps



ANTENNA PORT CONDUCTED MEASUREMENT:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE PARAMETER
A	BT-LE	0 to 39	0,19, 39	DTS	GFSK	1.0 Mbps
B	BT-LE	0 to 39	0,19, 39	DTS	GFSK	2.0 Mbps

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

FCC PART 15, Subpart C. Section 15.247
KDB 558074 D01 15.247 Meas Guidance v05r02
ANSI C63.10-2020

All test items have been performed and recorded as per the above standards

2.6 DESCRIPTION OF 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.

During the tests:

Support Equipment							
NO	Description	Brand	Model No.	Serial Number	Supplied by		
1	laptop	HP	N/A	N/a	lab		
Support Cable							
NO	Description	Quantity (Number)	Length (cm)	Detachable (Yes/ No)	Shielded (Yes/ No)	Cores (Number)	Supplied by



3 TEST TYPES AND RESULTS

3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

3.1.1 Limit

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).

FREQUENCIES (MHz)	FIELD STRENGTH (Microvolts/Meter)	MEASUREMENT DISTANCE (Meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE: 1. The lower limit shall apply at the transition frequencies.
NOTE: 2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
NOTE: 3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

3.1.2 Measurement procedure

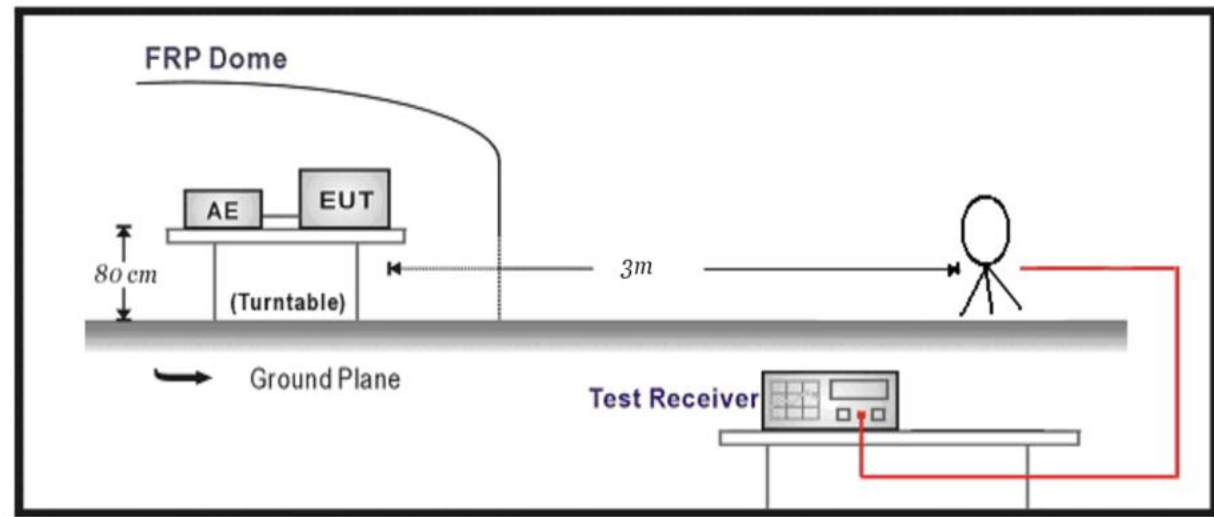
- The EUT was placed on the top of a rotating table 1.5 meters(above 1GHz) and 0.8 meters(below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- For below 1GHz was used bilog antenna, and above 1GHz was used horn antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters 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.
- For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.
- During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.

NOTE:

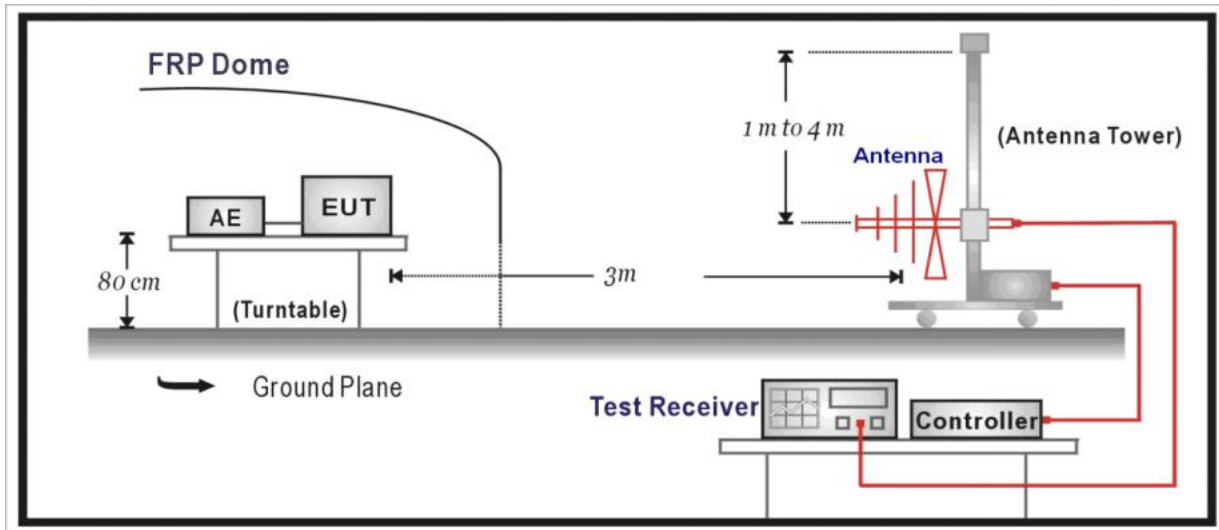
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $> 98\%$) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The testing of the EUT was performed on all 3 orthogonal axes; the worst-case test configuration was reported on the file test setup photo.

3.1.3 Test setup

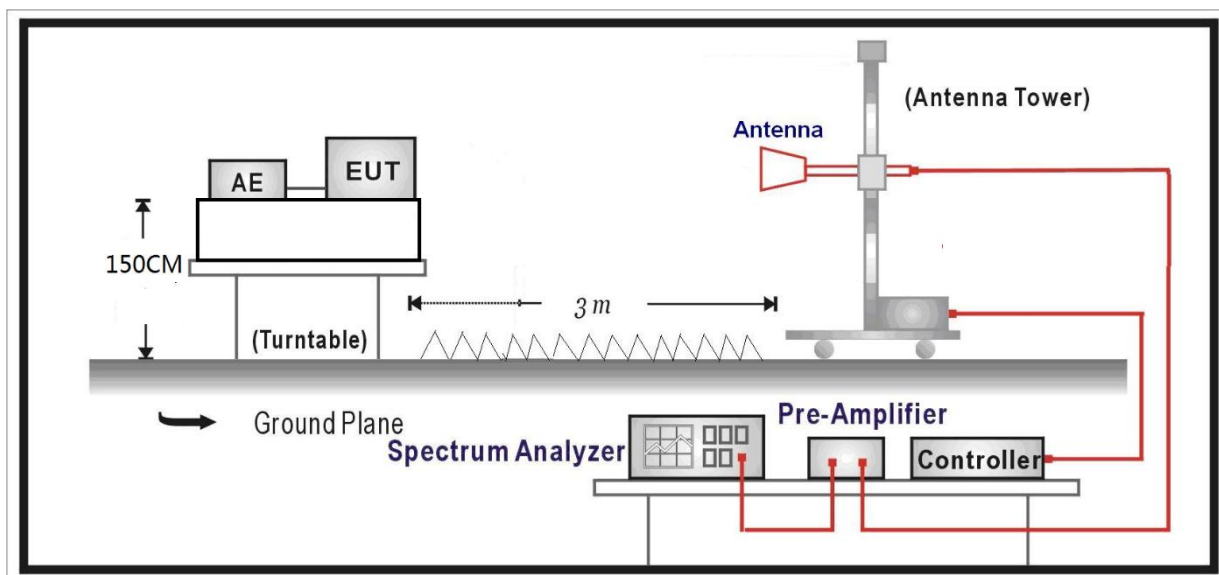
Below 30MHz Test Setup:



Below 1GHz Test Setup:

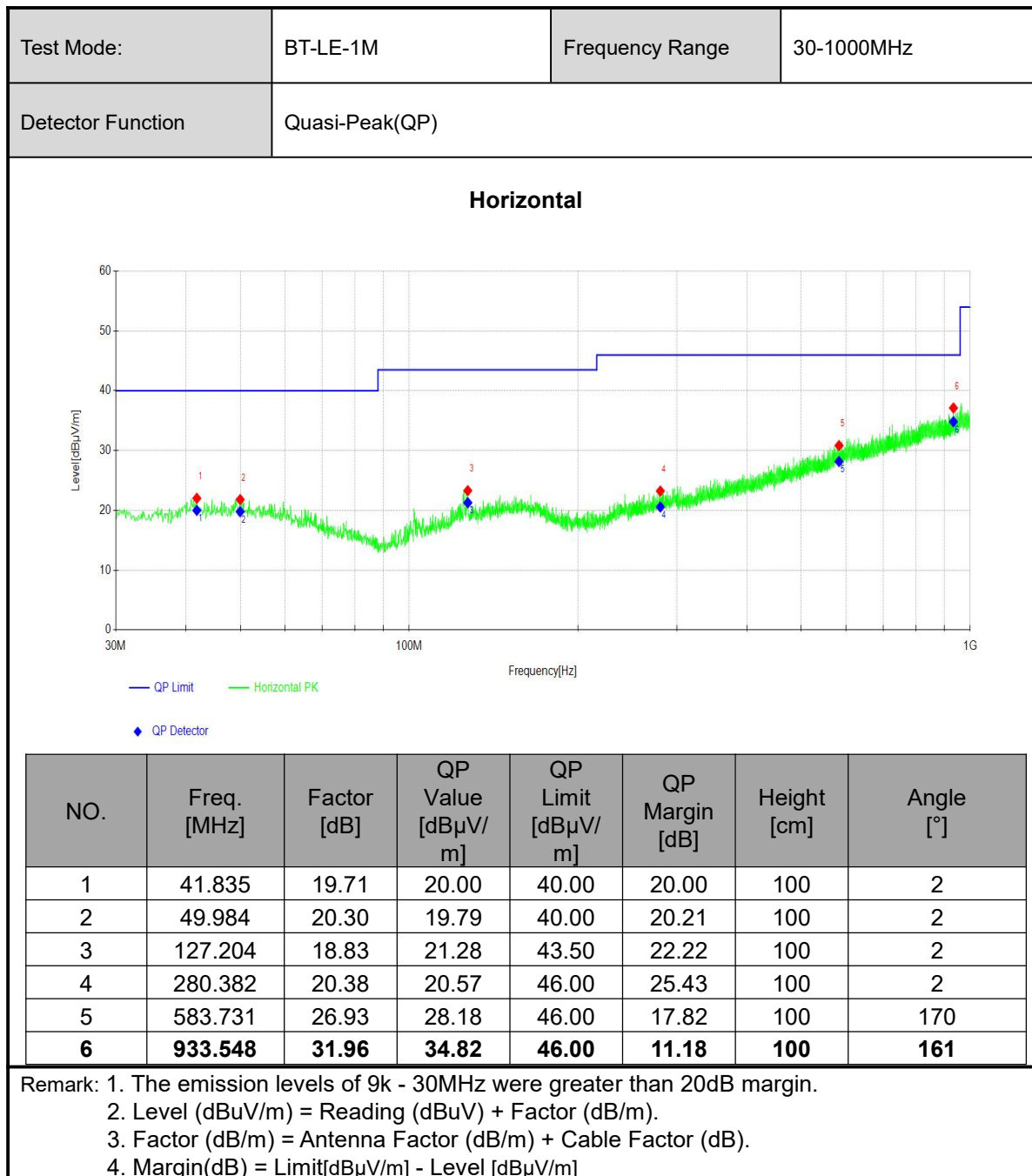


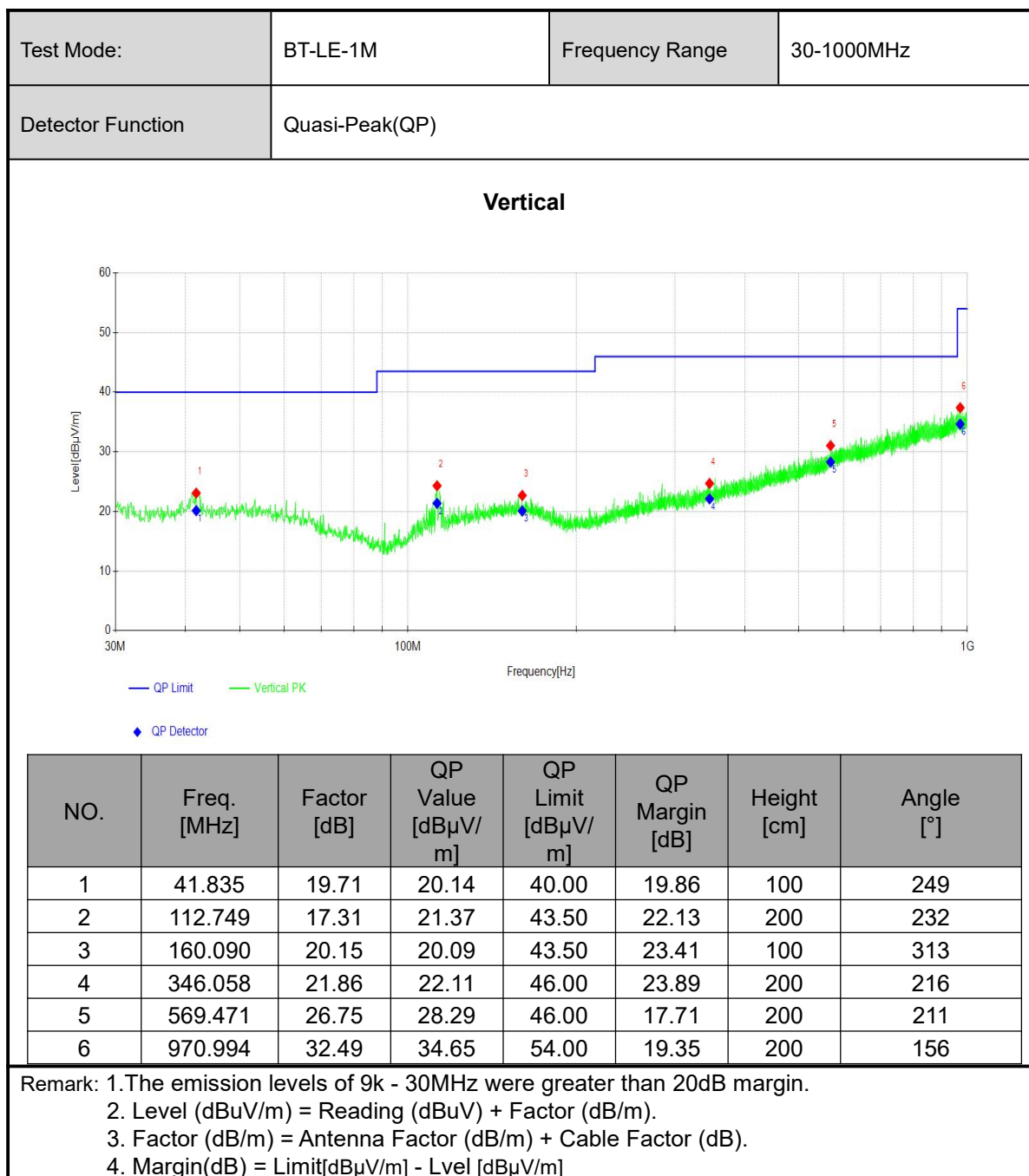
Above 1GHz Test Setup:



3.1.4 Test results

BELOW 1GHz WORST-CASE DATA:







ABOVE 1GHz DATA

All test modes have been conducted, and the report only presents the worst case (**BT-LE 1Mbps**).

Channel	BT-LE 1Mbps	Frequency	2402MHz
Frequency Range	Above 1G	Detector Function	PK/AV

Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2339.35	40.56	-1.70	38.86	54.00	15.14	PK	Horizontal
2	2346.77	51.15	-1.54	49.61	74.00	24.39	AV	Horizontal
3	2390.00	40.01	-1.37	38.64	54.00	15.36	AV	Horizontal
4	2390.00	48.76	-1.37	47.39	74.00	26.61	PK	Horizontal
5	2402.12	99.28	-1.26	98.02			AV	Horizontal
6	2402.25	100.00	-1.25	98.75			PK	Horizontal
7	4804.00	43.46	9.29	52.75	74.00	21.25	PK	Horizontal
8	4804.00	34.96	9.29	44.25	54.00	9.75	AV	Horizontal
9	7206.00	27.01	12.81	39.82	74.00	34.18	PK	Horizontal
10	7206.00	19.63	12.81	32.44	54.00	21.56	AV	Horizontal
11	9608.00	26.80	13.32	40.12	74.00	33.88	PK	Horizontal
12	9608.00	19.77	13.32	33.09	54.00	20.91	AV	Horizontal
13	2350.78	50.91	-1.44	49.47	74.00	24.53	AV	Vertical
14	2361.43	40.73	-1.26	39.47	54.00	14.53	PK	Vertical
15	2390.00	39.95	-1.37	38.58	54.00	15.42	AV	Vertical
16	2390.00	48.34	-1.37	46.97	74.00	27.03	PK	Vertical
17	2401.64	99.63	-1.26	98.37			AV	Vertical
18	2401.68	104.99	-1.26	103.73			PK	Vertical
19	4804.00	42.87	9.29	52.16	74.00	21.84	PK	Vertical
20	4804.00	34.44	9.29	43.73	54.00	10.27	AV	Vertical
21	7206.00	19.21	12.81	32.02	54.00	21.98	AV	Vertical
22	7206.00	28.18	12.81	40.99	74.00	33.01	PK	Vertical
23	9608.00	27.70	13.32	41.02	74.00	32.98	AV	Vertical
24	9608.00	19.25	13.32	32.57	54.00	21.43	PK	Vertical

Remark: 1. The emission levels of other frequencies were greater than 20dB margin.

2. Level (dBuV/m) = Reading (dBuV) + Factor (dB/m).

3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

4. Margin(dB) = Limit[dBμV/m] - Level [dBμV/m]



Channel	BT-LE 1Mbps	Frequency	2440MHz
Frequency Range	Above 1G	Detector Function	PK/AV

Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	4880.00	34.55	9.79	44.34	54.00	9.66	PK	Horizontal
2	4880.00	43.07	9.79	52.86	74.00	21.14	AV	Horizontal
3	7320.00	27.88	11.02	38.90	74.00	35.10	AV	Horizontal
4	7320.00	21.98	11.02	33.00	54.00	21.00	PK	Horizontal
5	9760.00	19.52	13.25	32.77	54.00	21.23	PK	Horizontal
6	9760.00	27.02	13.25	40.27	74.00	33.73	AV	Horizontal
7	4880.00	34.58	9.79	44.37	54.00	9.63	PK	Vertical
8	4880.00	42.72	9.79	52.51	74.00	21.49	AV	Vertical
9	7320.00	28.27	11.02	39.29	74.00	34.71	AV	Vertical
10	7320.00	20.84	11.02	31.86	54.00	22.14	PK	Vertical
11	9760.00	19.55	13.25	32.80	54.00	21.20	PK	Vertical
12	9760.00	26.48	13.25	39.73	74.00	34.27	AV	Vertical

Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV) + Factor (dB/m).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBμV/m] - Level [dBμV/m]



Channel	BT-LE 1Mbps	Frequency	2480MHz
Frequency Range	Above 1G	Detector Function	PK/AV

Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	2480.05	98.02	-1.31	96.71			PK	Horizontal
2	2480.10	99.72	-1.31	98.41			AV	Horizontal
3	2483.50	45.72	-1.15	44.57	74.00	29.43	PK	Horizontal
4	2483.50	37.67	-1.15	36.52	54.00	17.48	AV	Horizontal
5	2484.11	51.41	-1.12	50.29	74.00	23.71	PK	Horizontal
6	2487.10	45.32	-0.98	44.34	54.00	9.66	AV	Horizontal
7	4960.00	34.87	10.70	45.57	54.00	8.43	PK	Horizontal
8	4960.00	42.59	10.70	53.29	74.00	20.71	AV	Horizontal
9	7440.00	28.30	9.75	38.05	74.00	35.95	AV	Horizontal
10	7440.00	20.78	9.75	30.53	54.00	23.47	PK	Horizontal
11	9920.00	19.45	13.83	33.28	54.00	20.72	AV	Horizontal
12	9920.00	28.00	13.83	41.83	74.00	32.17	PK	Horizontal
13	2479.83	104.82	-1.30	103.52			AV	Vertical
14	2479.85	101.90	-1.30	100.60			PK	Vertical
15	2483.50	39.78	-1.15	38.63	54.00	15.37	PK	Vertical
16	2483.50	46.60	-1.15	45.45	74.00	28.55	AV	Vertical
17	2487.49	47.65	-0.96	46.69	54.00	7.31	AV	Vertical
18	2487.66	52.50	-0.95	51.55	74.00	22.45	PK	Vertical
19	4960.00	34.55	10.70	45.25	54.00	8.75	PK	Vertical
20	4960.00	42.83	10.70	53.53	74.00	20.47	AV	Vertical
21	7440.00	28.48	9.75	38.23	74.00	35.77	AV	Vertical
22	7440.00	21.04	9.75	30.79	54.00	23.21	PK	Vertical
23	9920.00	18.98	13.83	32.81	54.00	21.19	AV	Vertical
24	9920.00	28.14	13.83	41.97	74.00	32.03	PK	Vertical

- Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBμV/m) = Reading (dBμV) + Factor (dB/m).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBμV/m] - Level [dBμV/m]



3.2 6DB BANDWIDTH MEASUREMENT

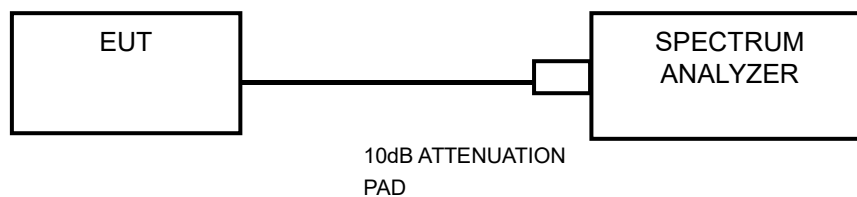
3.2.1 Limits

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

3.2.2 Measurement procedure

- Set resolution bandwidth (RBW) = 100KHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.2.3 Test setup



3.3 CONDUCTED OUTPUT POWER

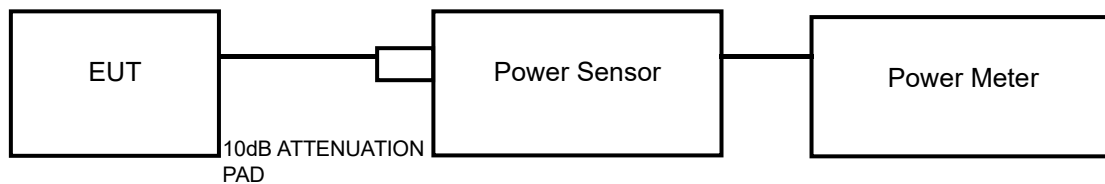
3.3.1 Limits

For DTS employing digital modulation techniques operating in the bands 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W.

3.3.2 Measurement procedure

- a. A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor and set the detector to PEAK. Record the power level.

3.3.3 Test setup



3.4 POWER SPECTRAL DENSITY MEASUREMENT

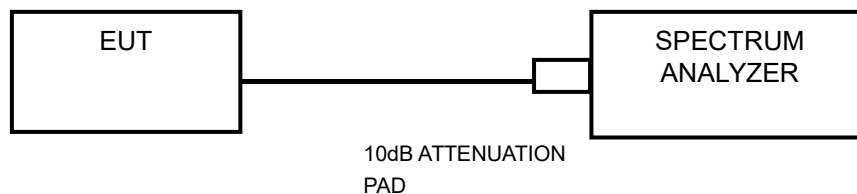
3.4.1 Limits

The Maximum of Power Spectral Density Measurement is 8dBm/3KHz.

3.4.2 Measurement procedure

- Set instrument center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set RBW to: 3KHz
- Set VBW $\geq 3 \times$ RBW.
- Detector = peak
- Ensure that the number of measurement points in the sweep $\geq 2 \times$ span/RBW.
- Sweep time = auto couple.
- Use the peak marker function to determine the maximum amplitude level.

3.4.3 Test setup





3.5 OUT OF BAND EMISSION MEASUREMENT

3.5.1 Limits

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

3.5.2 Measurement procedure

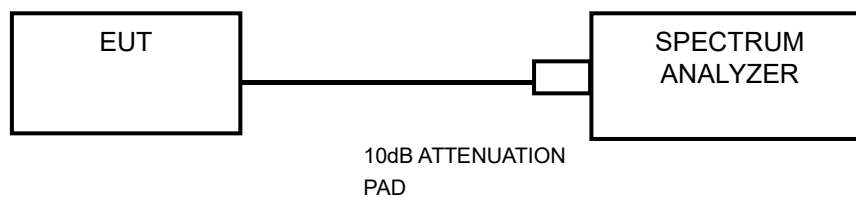
Measurement Procedure -Reference Level

- Set the RBW = 100 kHz.
- Set the VBW \geq 300 kHz.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHzband segment within the fundamental EBW.

Measurement Procedure –Unwanted Emission Level

- Set RBW = 100 kHz.
- Set VBW \geq 300 kHz.
- Set span to encompass the spectrum to be examined
- Detector = peak.
- Trace Mode = max hold.
- Sweep = auto couple.

3.5.3 Test setup



3.6 OCCUPIED BANDWIDTH MEASUREMENT

3.6.1 Measurement procedure

The transmitter antenna output was connected to the spectrum analyzer through an attenuator. The resolution bandwidth shall be set to the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth.

below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

3.6.2 TEST SETUP





3.7 ANTENNA REQUIREMENT

3.7.1 LIMITS OFFREQUENCY STABILITY

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. And according to FCC 47 CFR Section 15.247 (b) , if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.7.2 ANTENNA ANTI-REPLACEMENT CONSTRUCTION

The antenna used for this product is ceramic antenna and that no antenna other than that furnished by the responsible party shall be used with the device

3.7.3 ANTENNA GAIN

The maximum antenna gain is 4.48dBi.



4 PHOTOGRAPHS OF TEST SETUP

Please refer to the attached file (Test Setup Photo).



5 PHOTOGRAPHS OF THE EUT

Please refer to the attached file (External Photos report and Internal Photos).

----- End of the Report -----



Important

- (1) The test report is invalid without the official stamp of CVC;
- (2) Any part photocopies of the test report are forbidden without the written permission from CVC;
- (3) The test report is invalid without the signatures of Approval and Reviewer;
- (4) The test report is invalid if altered;
- (5) Objections to the test report must be submitted to CVC within 15 days.
- (6) Generally, commission test is responsible for the tested samples only.
- (7) As for the test result “-” or “N” means “not applicable”, “/” means “not test”, “P” means “pass” and “F” means “fail”

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