

FCC REPORT

(CDMA)

Applicant: Shenzhen Coosea Group Company Limited

Address of Applicant: 9-10th Floor, Tower 1, Foresea Life Center, Xingye Road,
Bao'an District, Shenzhen City, Guangdong Province, China

Equipment Under Test (EUT)

Product Name: ZEEKER T100

Model No.: ZEEKER T100

Trade mark: ZEEKER

FCC ID: 2A2GN-T100

Applicable standards: FCC CFR Title 47 Part 22 Subpart H
FCC CFR Title 47 Part 24 Subpart E
FCC CFR Title 47 Part 90 Subpart S

Date of sample receipt: 23 Nov., 2021

Date of Test: 24 Nov., to 23 Dec., 2021

Date of report issued: 30 Dec., 2021

Test Result: PASS*

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2. Version

Version No.	Date	Description
00	30 Dec., 2021	Original

Prepared by: Tanet Wei **Date:** 30 Dec., 2021
Report Clerk

Reviewed by: Winner Zhang **Date:** 30 Dec., 2021
Project Engineer

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4. Test Summary

Test Item	Section in CFR 47	Result
RF Exposure (SAR)	Part 1.1307 Part 2.1093	Passed* (Please refer to SAR Report)
RF Output Power	Part 2.1046 Part 22.913 (a)(5) Part 24.232 (c) Part 90.635(b)	Pass
Peak-to-Average Ratio	Part 24.232(d) Part 22.913 (d)	Pass
Modulation Characteristics	Part 2.1047	Pass
99% & -26 dB Occupied Bandwidth	Part 2.1049 Part 22.917 Part 24.238	Pass
Spurious Emissions at Antenna Terminal	Part 2.1051 Part 22.917 (a) Part 24.238 (a) Part 90.691(a)	Pass
Field Strength of Spurious Radiation	Part 2.1053 Part 22.917 (a) Part 24.238 (a)	Pass
Out of band emission, Band Edge	Part 22.917 (a) Part 24.238 (a) Part 90.691(a)	Pass
Frequency stability vs. temperature	Part 22.355 Part 24.235 Part 90.213(a) Part 2.1055(a)(1)(b)	Pass
Frequency stability vs. voltage	Part 22.355 Part 24.235 Part 90.213(a) Part 2.1055(d) (2)	Pass
Remark: 1. Pass: The EUT complies with the essential requirements in the standard. 2. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer).		
Test Method:	ANSI/TIA-603-E-2016 ANSI C63.26-2015	

5. General Information

5.1 Client Information

Applicant:	Shenzhen Coosea Group Company Limited
Address:	9-10th Floor, Tower 1, Foresea Life Center, Xingye Road, Bao'an District, Shenzhen City, Guangdong Province, China
Manufacturer/ Factory:	Sichuan Koobee Communication Equipment Co., Ltd.
Address:	3 Floor, Building 2, 69 Gangyuan Road West Section, Lingang Development Zone, Yibin City, Sichuan Province, China

5.2 General Description of E.U.T.

Product Name:	ZEEKER T100
Model No.:	ZEEKER T100
Operation Frequency range:	BC 0: 824.70MHz-848.31MHz BC 1: 1851.25MHz-1908.75MHz BC 10: 817.90MHz-823.10MHz
Modulation type:	1×RTT: BPSK, QPSK, OQPSK, HPSK
Antenna type:	Internal Antenna
Antenna gain:	BC 0: -3.5 dBi BC 1: 0.4 dBi BC 10: -3.6 dBi
Power supply:	Rechargeable Li-ion Polymer Battery DC3.85V, 5900mAh
AC adapter:	Model: UF22P03 Input: AC100-240V, 50/60Hz, 0.5A Output: DC 5.0V, 3.0A or DC 9.0V, 2.0A or DC 12.0V, 1.5A
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

Operation Frequency List:

BC 0		BC 1	
Channel:	Frequency (MHz)	Channel:	Frequency (MHz)
1013	824.70	25	1851.25
1014	824.73	26	1851.28
....			
383	836.49	599	1879.97
384	836.52	600	1880
385	836.55	601	1880.03
...	...	...	...
776	848.28	1174	1908.72
777	848.31	1175	1908.75
BC 10			
Channel:	Frequency (MHz)		
476	817.90		
477	824.93		
....			
579	820.47		
580	820.50		
581	820.53		
...	...		
683	823.07		
684	823.10		

Regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

BC 0			BC 1		
Channel No.	Frequency(MHz)		Channel No.	Frequency(MHz)	
Lowest channel	1013	824.70	Lowest channel	25	1851.25
Middle channel	384	836.52	Middle channel	600	1880.00
Highest channel	777	848.31	Highest channel	1175	1908.75
BC 10					
Channel No.	Frequency(MHz)				
Lowest channel	476	817.90			
Middle channel	580	820.50			
Highest channel	684	823.10			

5.3 Test environment and mode, and test samples plans

Operating Environment:	
Temperature:	Normal: 15°C ~ 35°C, Extreme: -30°C ~ +50°C
Humidity:	20 % ~ 75 % RH
Atmospheric Pressure:	1008 mbar
Voltage:	Nominal: 3.85Vdc, Extreme: Low 3.50 Vdc, High 4.40 Vdc
Test mode:	
Communicate mode (BC 0 1×RTT)	Keep the EUT in communicating mode on BC 0 (RC3~RC5).
Communicate mode (BC 1 1×RTT)	Keep the EUT in communicating mode on BC 1(RC3~RC5).
Communicate mode (BC 10 1×RTT)	Keep the EUT in communicating mode on BC 1(RC3~RC5).
Remark: 1. Pre-scan all test modes, and found the RC3, SO55 for Cell band, RC3 and SO2 for PCS band were the worst case. 2. The EUT has been tested under continuous transmitting mode. Channel Low, Mid and High for each type band with rated data rate were chosen for full testing. The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for these modes with power adaptor, earphone and Data cable. Just the worst case position (H mode) shown in report.	

5.4 Description of Support Units

Test Equipment	Manufacturer	Model No.	Serial No.
Simulated Station	Anritsu	MT8820C	6201026545

5.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%)
Radiated Emission (30MHz ~ 1GHz) for 3m SAC	4.45 dB
Radiated Emission (1GHz ~ 18GHz) for 3m SAC	5.34 dB
Radiated Emission (18GHz ~ 40GHz) for 3m SAC	5.34 dB

5.6 Additions to, deviations, or exclusions from the method

No

5.7 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations: ● FCC - Designation No.: CN1211 JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551. ● ISED – CAB identifier.: CN0021 The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1. ● CNAS - Registration No.: CNAS L15527 JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527. ● A2LA - Registration No.: 4346.01 This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf
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5.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website: <http://www.ccis-cb.com>

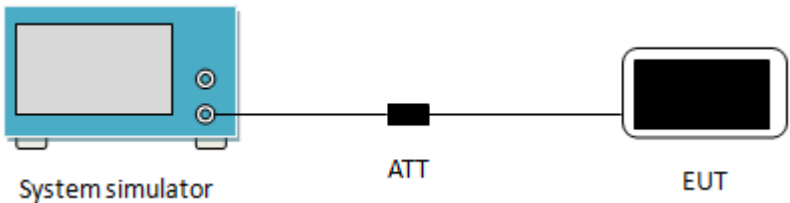
5.9 Test Instruments list

6 Radiated Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	ETS	RFD-100	Q1984	04-14-2021	04-13-2024
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-044	03-07-2021	03-06-2022
BiConiLog Antenna	SCHWARZBECK	VULB9163	9163-1246	03-07-2021	03-06-2022
Biconical Antenna	SCHWARZBECK	VUBA 9117	9117#359	06-17-2021	06-17-2022
Horn Antenna	SCHWARZBECK	BBHA9120D	912D-916	03-07-2021	03-06-2022
Broad-Band Horn Antenna	SCHWARZBECK	BBHA9170	1067	04-02-2021	04-01-2022
Broad-Band Horn Antenna	SCHWARZBECK	BBHA9170	1068	04-02-2021	04-01-2022
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-03-2021	03-02-2022
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-03-2021	03-02-2022
Spectrum analyzer	Keysight	N9010B	MY60240202	10-27-2021	10-26-2022
Simulated Station	Anritsu	MT8820C	6201026545	03-03-2021	03-02-2022
Low Pre-amplifier	SCHWARZBECK	BBV9743B	00305	03-07-2021	03-06-2022
High Pre-amplifier	SKET	LNPA_0118G-50	MF280208233	03-07-2021	03-06-2022
Cable	Qualwave	JYT3M-1G-NN-8M	JYT3M-1	03-07-2021	03-06-2022
Cable	Qualwave	JYT3M-18G-NN-8M	JYT3M-2	03-07-2021	03-06-2022
Cable	Qualwave	JYT3M-1G-BB-5M	JYT3M-3	03-07-2021	03-06-2022
Cable	Bost	JYT3M-40G-SS-8M	JYT3M-4	04-02-2021	04-01-2022
EMI Test Software	Tonscend	TS+	Version:3.0.0.1		

Conducted method:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
Spectrum Analyzer	Keysight	N9020B	MY57431500	07-02-2021	07-01-2022
Simulated Station	Rohde & Schwarz	CMW500	108209	07-02-2021	07-01-2022
RF Control Unit	Tonscend	JS0806-1	N/A	N/A	N/A
Band Reject Filter Group	Tonscend	JS0806-F	21A8060360	N/A	N/A
Test Software	Tonscend	TS+	Version: 2.6.9.0526		

6. Test results

6.1 Conducted Output Power, ERP and EIRP

Test Requirement:	FCC part 22.913(a)(2), FCC part 24.232(c), FCC part 27.50(d)(4), FCC Part 90.635(b)
Limit:	BC 0: 7W BC 1: 2W BC 10: 100W
Test setup:	 The diagram illustrates the test setup. On the left is a blue 'System simulator' box with two output ports. A cable connects one of these ports to a black 'ATT' (attenuator) block. Another cable connects the other side of the 'ATT' block to a black 'EUT' (Equipment Under Test) box on the right.
Test Procedure:	The transmitter output was connected to a calibrated attenuator, the other end of which was connected to the simulated station. Transmitter output power was read off in dBm.
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

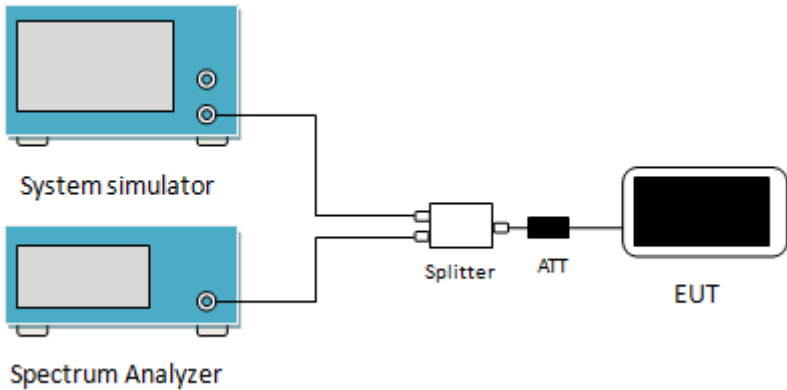
Measurement Data:

RF OUTPUT POWER FOR 1xRTT:

EUT Mode	Radio Configuration (RC)	Service Option (SO)	Conducted Output Power(dBm)			Antenna Gain (dBi)	Max. ERP (dBm)	ERP Limit (dBm)
			Ch.1013	Ch.384	Ch.777			
			824.70MHz	836.52MHz	848.31MHz			
BC 0	RC1	2(Loopback)	23.51	23.50	23.43	-3.5	17.89	38.45
		55(Loopback)	23.54	23.49	23.46			
	RC2	9(Loopback)	23.51	23.46	23.44	-3.5	17.86	
		55(Loopback)	23.33	23.31	23.20			
	RC3	2(Loopback)	23.60	23.32	23.24	-3.5	18.02	
		55(Loopback)	23.64	23.47	23.42			
		32(+F-SCH)	23.67	23.63	23.56			
		32(+SCH)	23.66	23.65	23.58			
	RC4	2(Loopback)	23.62	23.55	23.50	-3.5	17.98	
		55(Loopback)	23.62	23.56	23.23			
		32(+F-SCH)	23.63	23.60	23.54			
		32(+SCH)	23.61	23.58	23.53			
	RC5	9(Loopback)	23.57	23.50	23.25	-3.5	17.92	
		55(Loopback)	23.35	23.32	23.24			
EUT Mode	Radio Configuration (RC)	Service Option (SO)	Conducted Output Power(dBm)			Antenna Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
			Ch.25	Ch.600	Ch.1175			
			1851.25MHz	1880MHz	1908.75MHz			
BC 1	RC1	2(Loopback)	23.39	23.37	23.36	0.4	23.80	33.00
		55(Loopback)	23.40	23.37	23.38			
	RC2	9(Loopback)	22.81	22.85	22.70	0.4	23.83	
		55(Loopback)	23.43	23.35	23.36			
	RC3	2(Loopback)	23.42	23.37	23.40	0.4	23.87	
		55(Loopback)	23.41	23.37	23.39			
		32(+F-SCH)	23.47	23.42	23.40			
		32(+SCH)	23.45	23.41	23.39			
	RC4	2(Loopback)	23.37	23.34	23.37	0.4	23.86	
		55(Loopback)	23.46	23.38	23.36			
		32(+F-SCH)	23.43	23.41	23.41			
		32(+SCH)	23.42	23.42	23.40			
	RC5	9(Loopback)	23.41	23.33	23.32	0.4	23.81	
		55(Loopback)	23.38	23.35	23.37			
EUT Mode	Radio Configuration (RC)	Service Option (SO)	Conducted Output Power(dBm)			Antenna Gain (dBi)	Max. ERP (dBm)	EIRP Limit (dBm)
			Ch.476	Ch.580	Ch.684			
			817.90MHz	820.50MHz	823.10MHz			
BC 10	RC1	2(Loopback)	24.48	24.43	24.44	-3.6	18.73	50.00
		55(Loopback)	24.46	24.39	24.41			
	RC2	9(Loopback)	24.45	24.40	24.41	-3.6	18.70	
		55(Loopback)	24.43	24.37	24.38			
	RC3	2(Loopback)	24.43	24.38	24.42	-3.6	18.79	
		55(Loopback)	24.45	24.40	24.39			
		32(+F-SCH)	24.54	24.49	24.51			
		32(+SCH)	24.52	24.48	24.49			
	RC4	2(Loopback)	24.44	24.39	24.41	-3.6	18.78	
		55(Loopback)	24.45	24.40	24.43			
		32(+F-SCH)	24.53	24.46	24.48			
		32(+SCH)	24.51	24.45	24.48			
	RC5	9(Loopback)	24.48	24.42	24.45	-3.6	18.73	
		55(Loopback)	24.48	24.41	24.44			
Note: EIRP (dBm) = Burst Average power (dBm) + Antenna Gain (dBi). ERP (dBm) = EIRP (dBm) - 2.15 (dB)								

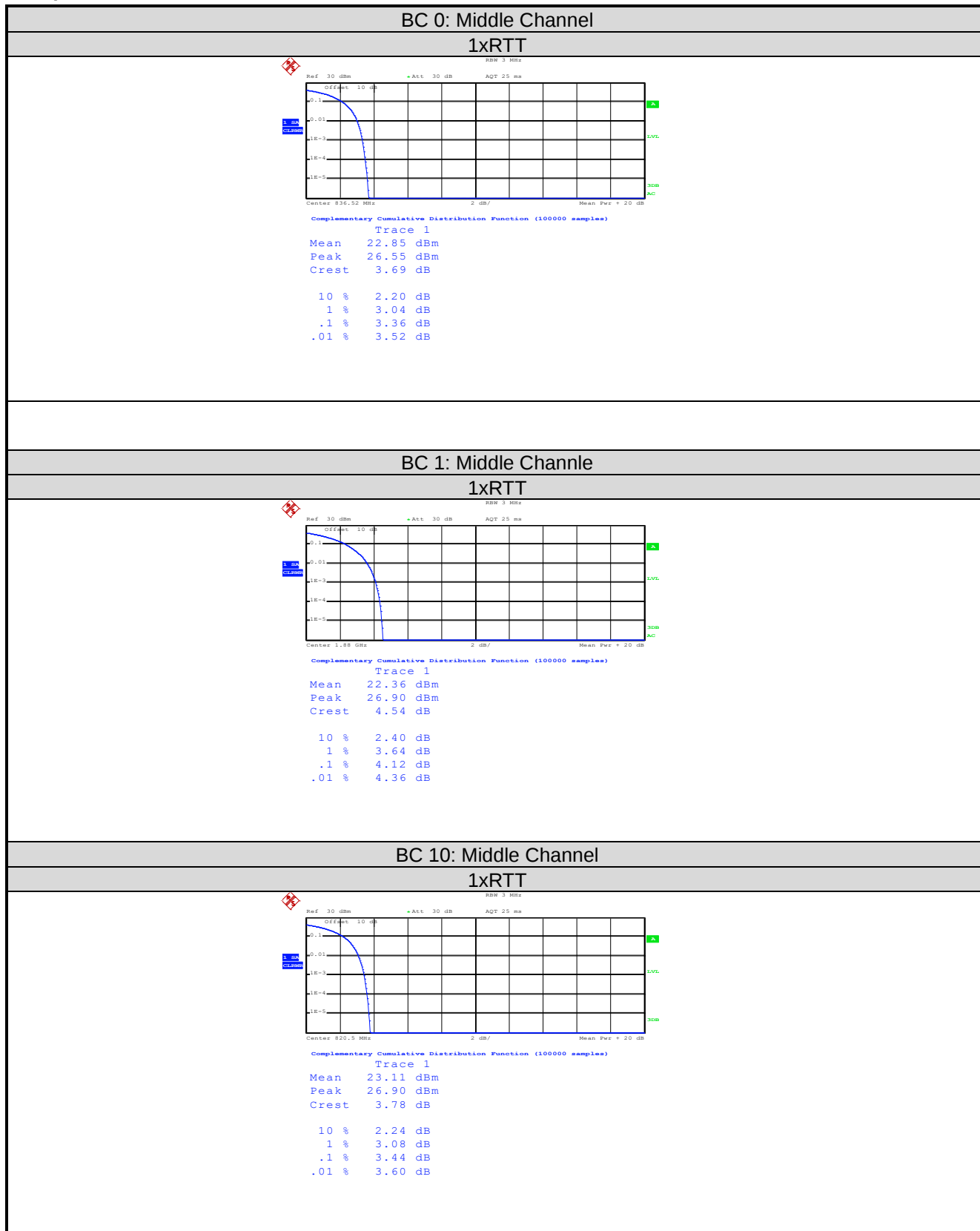
Note: EIRP (dBm) = Burst Average power (dBm) + Antenna Gain (dBi).
ERP (dBm) = EIRP (dBm) - 2.15 (dB).

6.2 Peak-to-Average Ratio

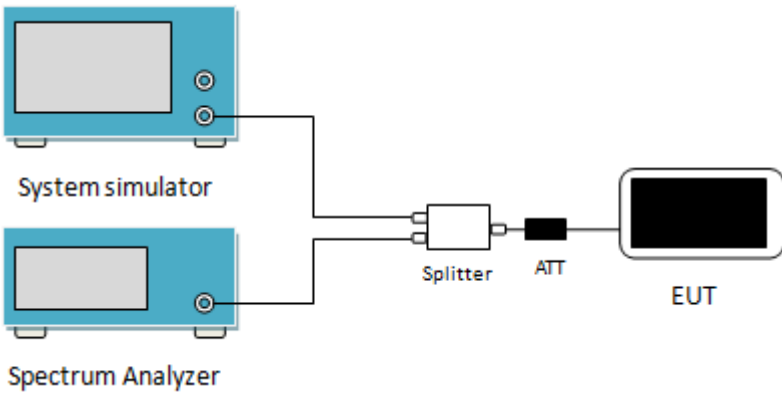
Test Requirement:	FCC part 24.232(d), FCC part 22.913 (d)
Limit:	The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.
Test setup:	 The diagram illustrates the test setup for measuring the Peak-to-Average Ratio (PAR). A System simulator is connected to a Splitter. The other output of the Splitter is connected to an EUT (Equipment Under Test). The output of the EUT is connected to an ATT (Attenuator), which is then connected to the Spectrum Analyzer.
Test Procedure:	1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 Set the CCDF option in spectrum analyzer, $RBW \geq OBW$, 3 Set the EUT working in highest power level, measured and recorded the 0.1% as PAPR level. 4 Repeat step 1~3 at other frequency and modulations.
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Band Class	Test config.	Channel No.	PAPR	Result
Middle channel				
BC 0	1xRTT	384	3.36	Pass
Middle channel				
BC 1	1xRTT	600	4.12	Pass
Middle channel				
BC 10	1xRTT	580	3.44	Pass
Note: Only the worst case mode was shown in report.				

Test plots as below:



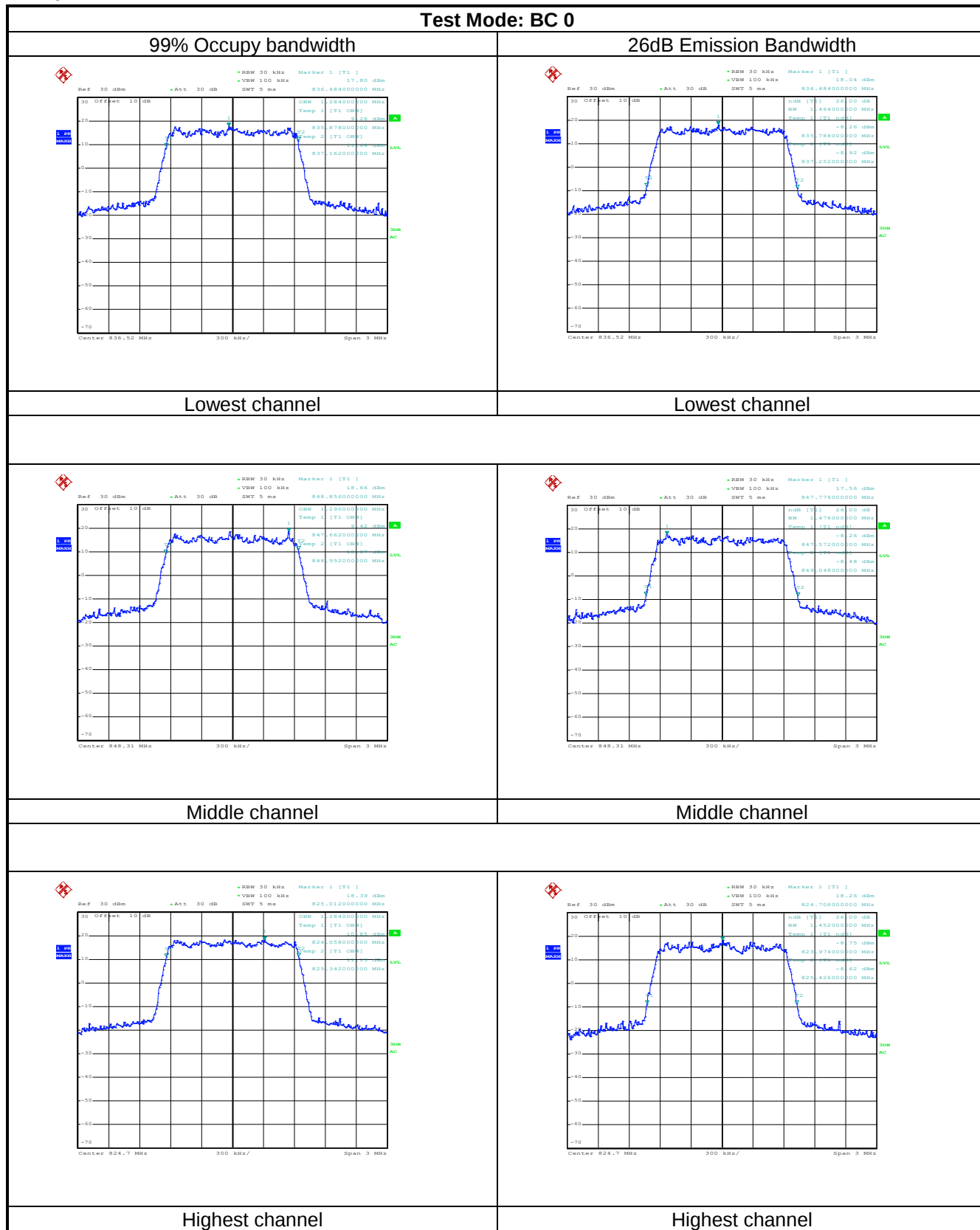
6.3 Occupy Bandwidth

Test Requirement:	FCC part 22.917(b), FCC part 24.238(b)
Test setup:	
Test Procedure:	1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer 2. RBW was set to about 1% of emission BW, VBW= 3 times RBW. 3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

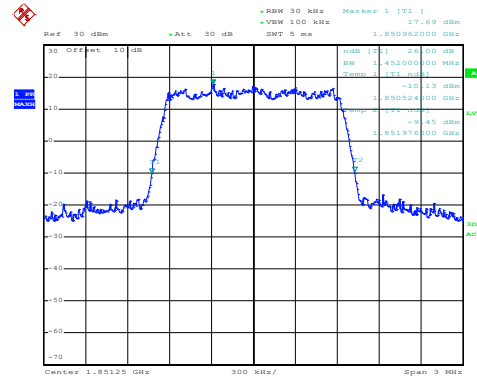
Measurement Data:

EUT Mode	Channel	Frequency (MHz)	99% Occupy bandwidth (kHz)	-26dB bandwidth (kHz)
BC 0	1013	824.70	1284	1452
	384	836.52	1284	1464
	777	848.31	1290	1476
BC 1	25	1851.25	1284	1464
	600	1880.00	1290	1452
	1175	1908.75	1272	1446
BC 10	476	817.90	1290	1452
	580	820.50	1284	1452
	684	823.10	1278	1458

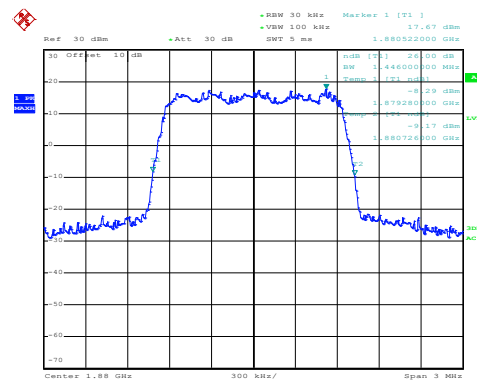
Test plot as follows:



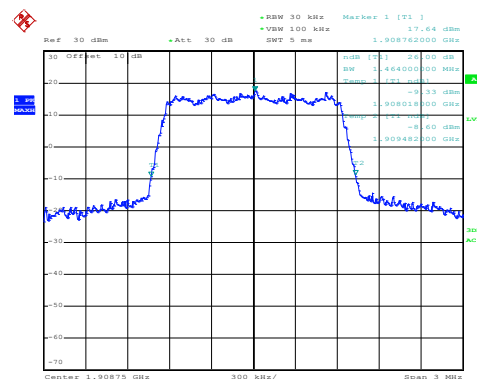
26dB Emission Bandwidth



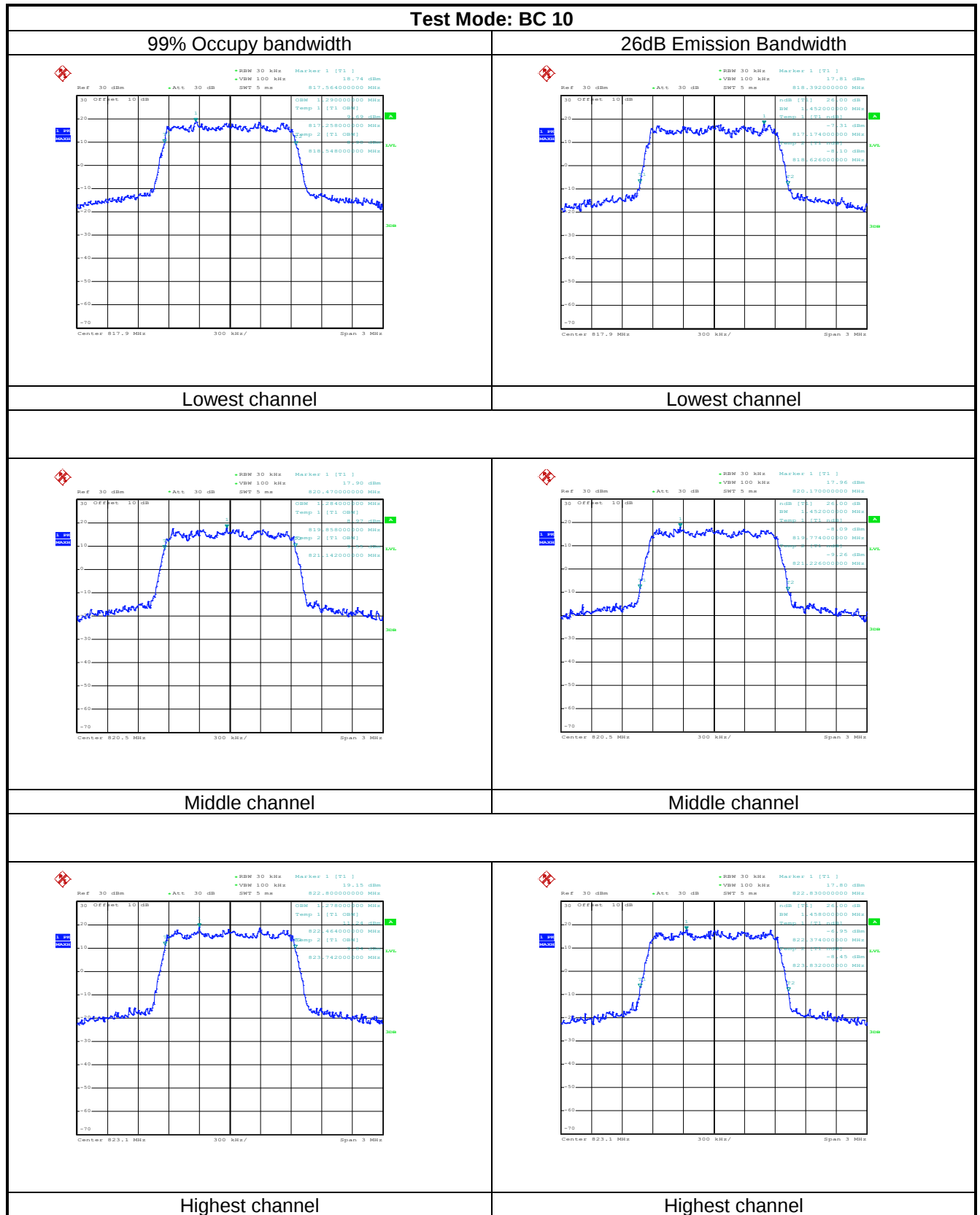
Lowest channel



Middle channel



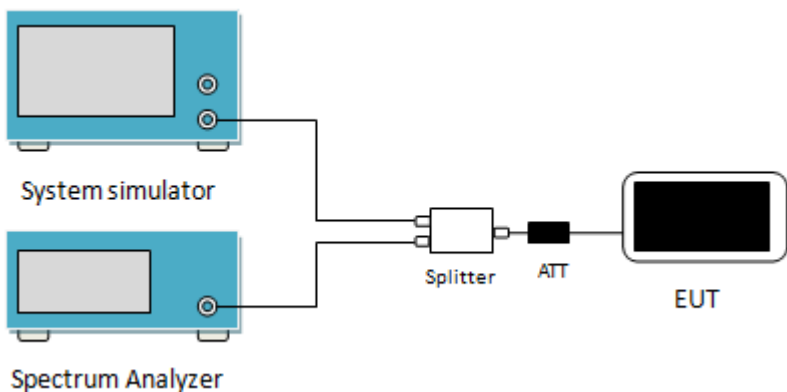
Highest channel



6.4 Modulation Characteristic

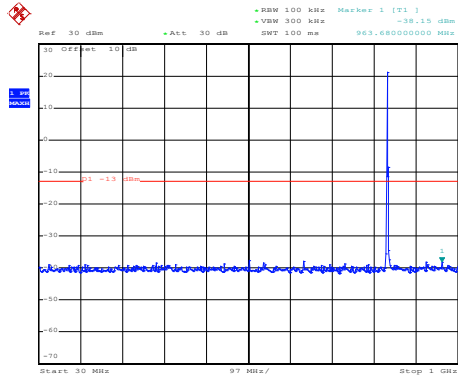
According to FCC § 2.1047(d), Part 22H & 24E & 27L there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

6.5 Out of band emission at antenna terminals

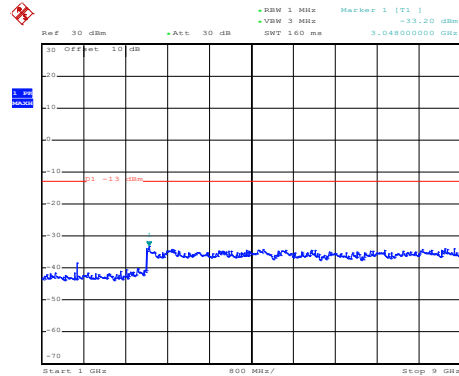
Test Requirement:	FCC part 22.917(a), FCC part 24.238(a), FCC part 90.691(a)
Limit:	-13dBm
Test setup:	 The diagram shows a test setup for out-of-band emission testing. It includes a System simulator, a Spectrum Analyzer, a Splitter, an ATT (Attenuator), and the EUT (Equipment Under Test). The System simulator and Spectrum Analyzer are connected to the Splitter. The Splitter is connected to the ATT, which is then connected to the EUT.
Test Procedure:	1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 The resolution bandwidth of the spectrum analyzer was set at 100 kHz when below 1GHz, 1MHz when above 1 GHz; sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic. 3 For the out of band: Set the RBW=100 kHz, VBW=300 kHz when below 1 GHz, RBW =1 MHz, VBW=3 MHz when above 1 GHz, Start=30MHz, Stop= 10th harmonic. 4 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Test plots as follows (Spurious emission):

Test Mode: BC 0 Lowest Channel

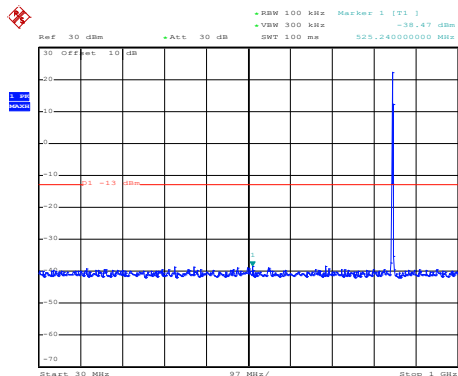


30MHz~1GHz

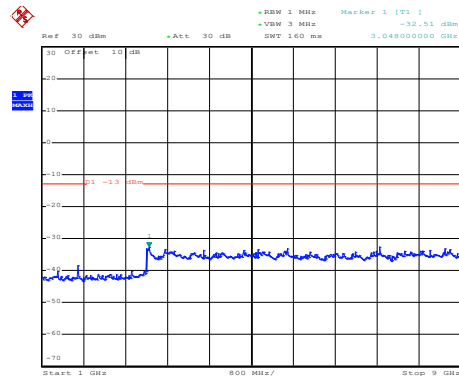


1GHz~9GHz

Middle channel

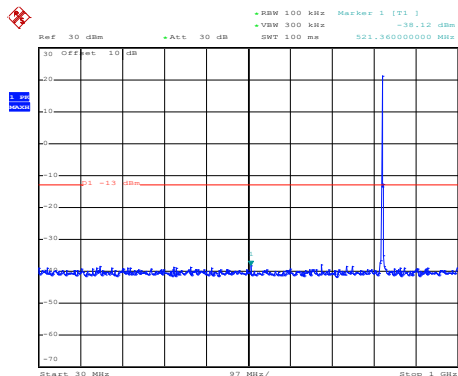


30MHz~1GHz

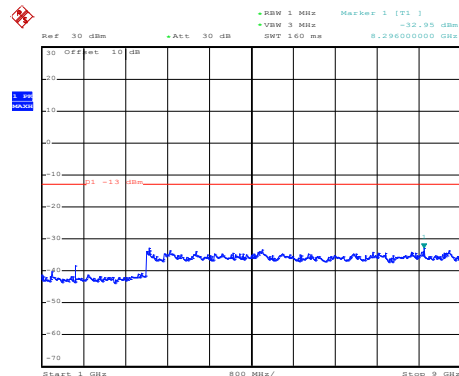


1GHz~9GHz

Highest Channel

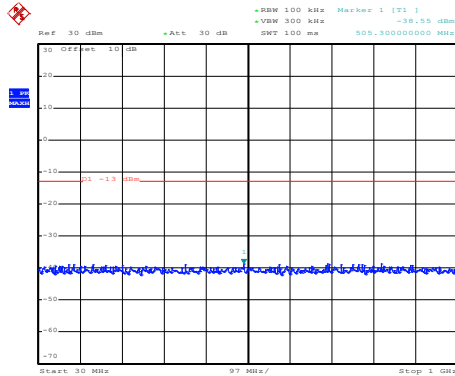


30MHz~1GHz

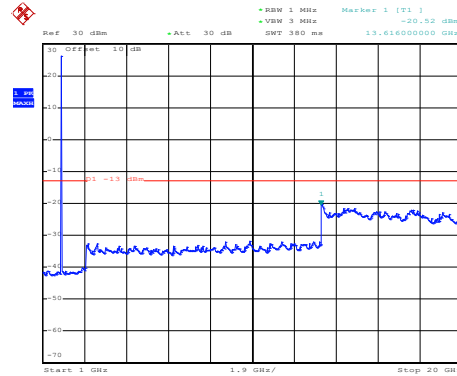


1GHz~9GHz

Test Mode: BC 1 Lowest Channel

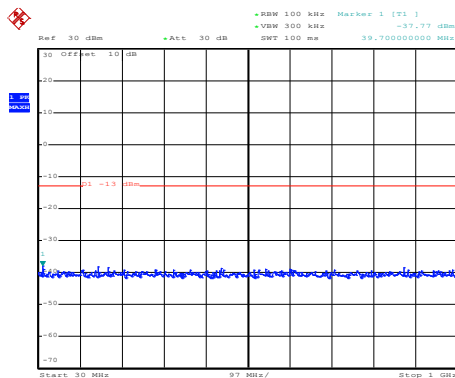


30MHz~1GHz

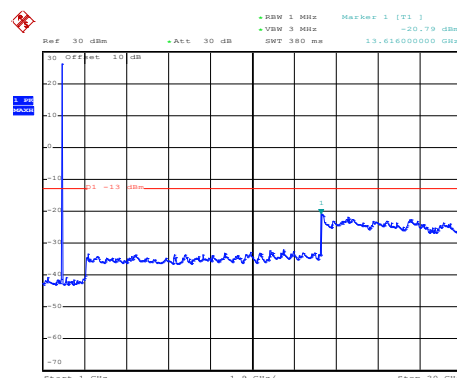


1GHz~20GHz

Middle channel

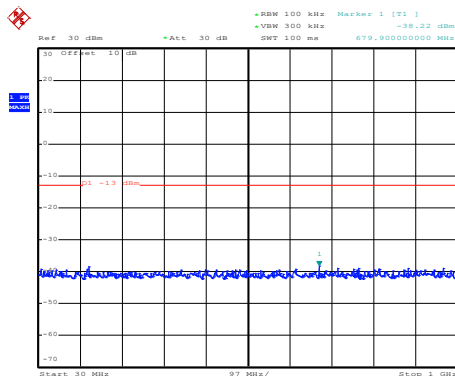


30MHz~1GHz

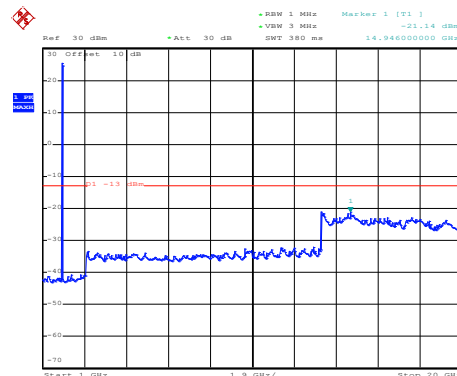


1GHz~20GHz

Highest Channel

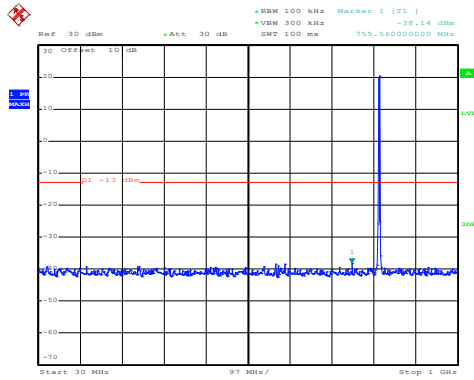


30MHz~1GHz

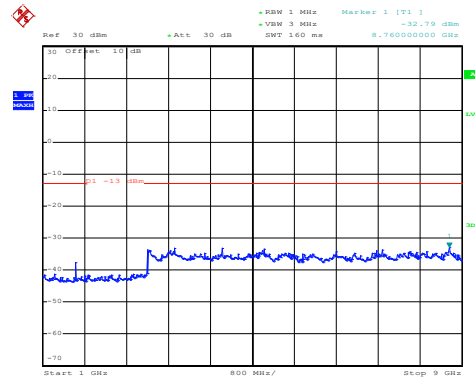


1GHz~20GHz

Test Mode: BC 10 Lowest Channel

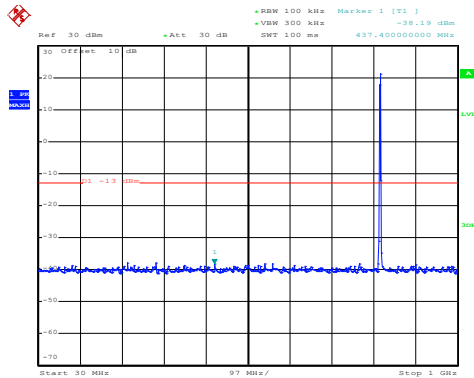


30MHz~1GHz

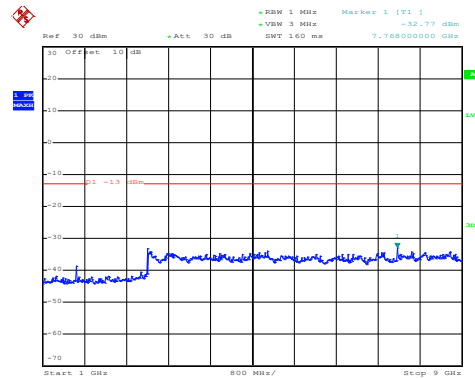


1GHz~20GHz

Middle channel

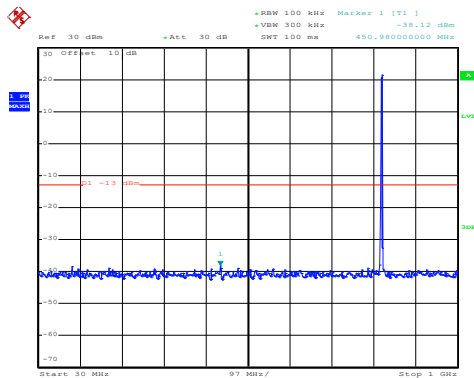


30MHz~1GHz

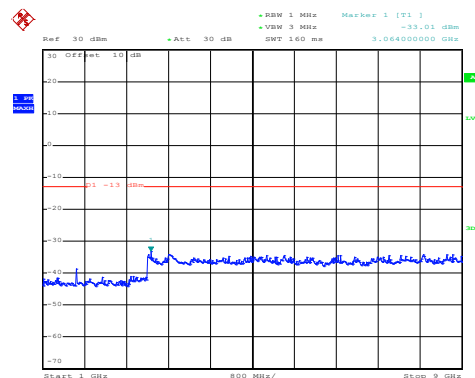


1GHz~20GHz

Highest Channel



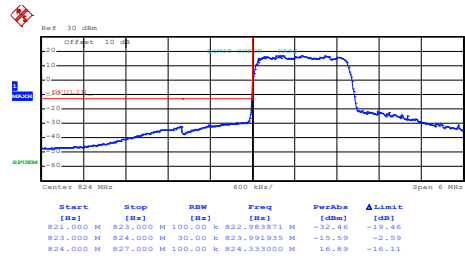
30MHz~1GHz



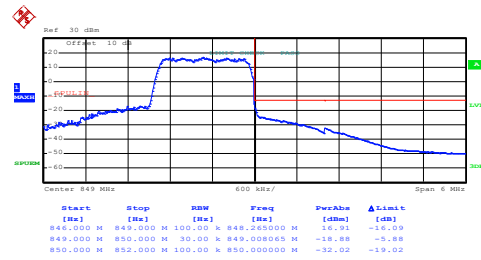
1GHz~20GHz

Band edge emission:

Test Mode: BC 0

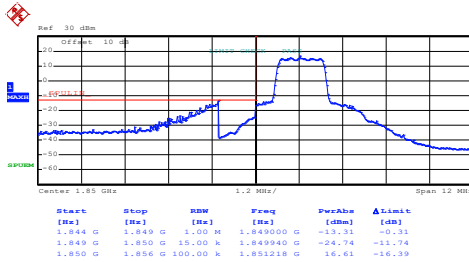


Lowest channel

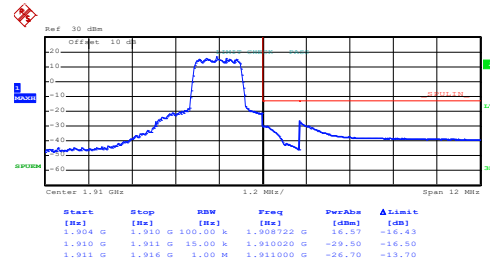


Highest channel

Test Mode: BC 1

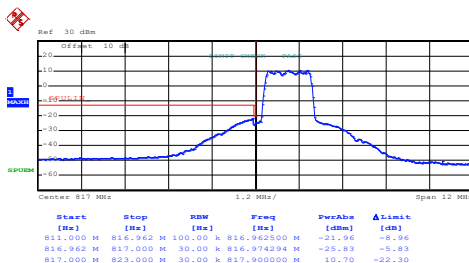


Lowest channel

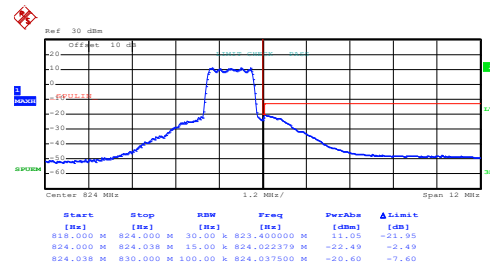


Highest channel

Test Mode: BC 10

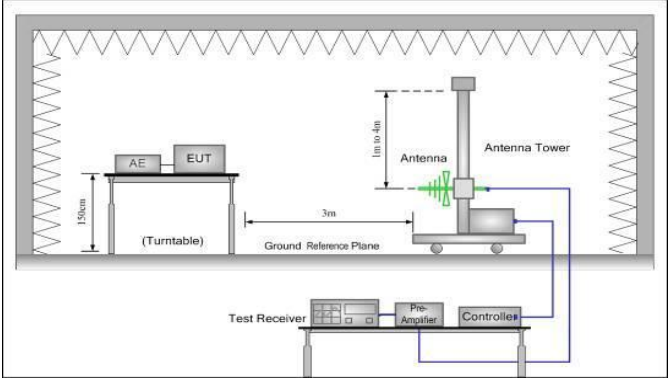
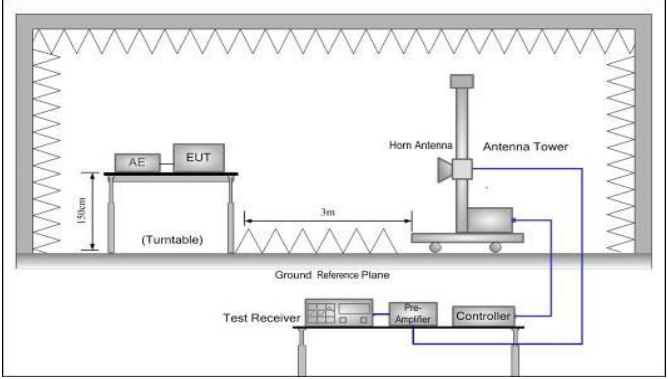


Lowest channel



Highest channel

6.6 Field strength of spurious radiation measurement

Test Requirement:	FCC part 22.917(a), FCC part 24.238(a), FCC part 90.691(a)
Limit:	-13dBm
Test setup:	Below 1GHz  Above 1GHz 
Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. 3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method. 4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency. $ERP / EIRP = S.G. \text{ output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}$
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details.
Test results:	Passed

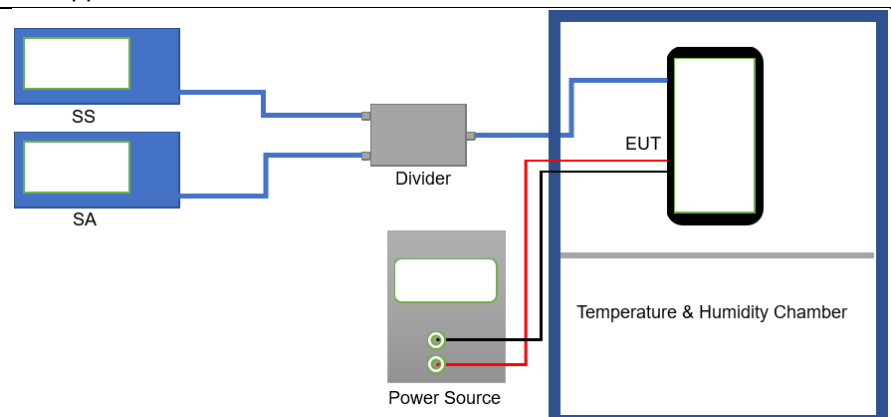
Measurement Data (worst case):

BC 0				
Lowest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1649.40	Vertical	-28.87	-13.00	Pass
2474.10	V	-25.43		
3298.80	V	-51.08		
4123.50	V	-49.67		
1649.40	Horizontal	-29.96	-13.00	Pass
2474.10	H	-25.54		
3298.80	H	-50.64		
4123.50	H	-49.63		
Middle channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1673.04	Vertical	-29.45	-13.00	Pass
2509.56	V	-25.37		
3346.08	V	-50.37		
4182.60	V	-49.74		
1673.04	Horizontal	-29.50	-13.00	Pass
2509.56	H	-26.01		
3346.08	H	-50.60		
4182.60	H	-49.23		
Highest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1696.62	Vertical	-29.32	-13.00	Pass
2544.93	V	-25.21		
3393.24	V	-48.48		
4241.55	V	-48.64		
1696.62	Horizontal	-29.74	-13.00	Pass
2544.93	H	-25.42		
3393.24	H	-48.83		
4241.55	H	-49.98		
Remark:				
1. The emission levels of below 1 GHz are very lower than the limit and not show in test report.				

BC 1				
Lowest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3702.50	Vertical	-49.86	-13.00	Pass
5553.75	V	-43.55		
7405.00	V	-39.25		
9256.25	V	-37.78		
3702.50	Horizontal	-49.90	-13.00	Pass
5553.75	H	-43.59		
7405.00	H	-40.20		
9256.25	H	-37.79		
Middle channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3760.00	Vertical	-51.18	-13.00	Pass
5640.00	V	-43.77		
7520.00	V	-42.28		
9400.00	V	-40.07		
3760.00	Horizontal	-51.17	-13.00	Pass
5640.00	H	-43.15		
7520.00	H	-41.97		
9400.00	H	-39.77		
Highest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3817.50	Vertical	-50.58	-13.00	Pass
5726.25	V	-42.51		
7635.00	V	-41.08		
9543.75	V	-38.97		
3817.50	Horizontal	-50.35	-13.00	Pass
5726.25	H	-43.18		
7635.00	H	-40.40		
9543.75	H	-38.19		
Remark:				
1. The emission levels of below 1 GHz are very lower than the limit and not show in test report.				

BC 10				
Lowest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1635.80	Vertical	-57.53	-13.00	Pass
2453.70	V	-52.80		
3271.60	V	-49.86		
4089.50	V	-47.64		
1635.80	Horizontal	-56.64	-13.00	Pass
2453.70	H	-46.32		
3271.60	H	-49.74		
4089.50	H	-45.31		
Middle channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1641.00	Vertical	-57.28	-13.00	Pass
2461.50	V	-52.35		
3282.00	V	-49.63		
4102.50	V	-48.02		
1641.00	Horizontal	-56.20	-13.00	Pass
2461.50	H	-46.05		
3282.00	H	-49.93		
4102.50	H	-45.29		
Highest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1646.20	Vertical	-57.54	-13.00	Pass
2469.30	V	-52.70		
3292.40	V	-49.20		
4115.50	V	-48.18		
1646.20	Horizontal	-56.55	-13.00	Pass
2469.30	H	-45.58		
3292.40	H	-50.19		
4115.50	H	-45.34		
Remark:				
2. The emission levels of below 1 GHz are very lower than the limit and not show in test report.				

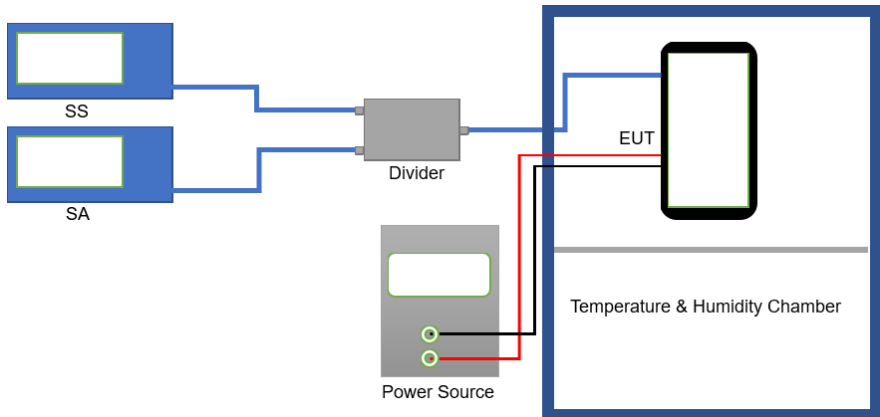
6.7 Frequency stability V.S. Temperature measurement

Test Requirement:	FCC Part 22.355, FCC Part 24.235, FCC Part 2.1055(a)(1)(b)
Limit:	±2.5 ppm
Test setup:	 The diagram illustrates the test setup. On the left, there are two blue boxes labeled 'SS' (Signal Source) and 'SA' (Spectrum Analyzer). They are connected to a central grey box labeled 'Divider'. The output of the 'Divider' is connected to a black rectangular box labeled 'EUT' (Equipment Under Test) which is placed inside a larger blue-outlined box labeled 'Temperature & Humidity Chamber'. Below the chamber, there is a grey box labeled 'Power Source' with two green circles representing terminals. Red and black lines connect these terminals to the 'EUT' inside the chamber.
Test procedure:	1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25 °C operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to –30 °C . After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10 °C increased per stage until the highest temperature of +50 °C reached
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (the worst channel):

Reference Frequency: BC 0 Middle channel=384 channel=836.52MHz					
Power supplied (Vac)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
120	-30	176	0.210395	±2.5	Pass
	-20	165	0.197246		
	-10	158	0.188878		
	0	152	0.181705		
	10	143	0.170946		
	20	135	0.161383		
	30	124	0.148233		
	40	118	0.141061		
	50	107	0.127911		
Reference Frequency: BC1 Middle channel=600 channel=1880MHz					
Power supplied (Vac)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
120	-30	178	0.094681	±2.5	Pass
	-20	160	0.085106		
	-10	152	0.080851		
	0	146	0.077660		
	10	170	0.090426		
	20	134	0.071277		
	30	141	0.075000		
	40	127	0.067553		
	50	116	0.061702		
Reference Frequency: BC 10 Middle channel=384 channel=836.52MHz					
Power supplied (Vac)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
120	-30	173	0.206809	±2.5	Pass
	-20	165	0.197246		
	-10	140	0.167360		
	0	133	0.158992		
	10	124	0.148233		
	20	115	0.137474		
	30	147	0.175728		
	40	154	0.184096		
	50	102	0.121934		
Note: Only the worst case shown in the report.					

6.8 Frequency stability V.S. Voltage measurement

Test Requirement:	FCC Part 22.355, FCC Part 24.235, FCC Part 2.1055(d)(2)
Limit:	$\pm 2.5\text{ppm}$
Test setup:	 The diagram illustrates the test setup. A Signal Source (SS) and a Spectrum Analyzer (SA) are connected to a Divider. The output of the Divider is connected to the EUT (Equipment Under Test) inside a Temperature & Humidity Chamber. A Power Source is also connected to the EUT.
Test procedure:	1. Set chamber temperature to 25 °C. Use a variable DC power source to power the EUT and set the voltage to rated voltage. 2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. 3. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (the worst channel):

Reference Frequency: BC 0 Middle channel=384 channel=836.52MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.35	80	0.095634	±2.5	Pass
	3.80	70	0.083680		
	3.55	62	0.074117		
Reference Frequency: BC 1 Middle channel=600 channel=1880MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.35	84	0.044681	±2.5	Pass
	3.80	72	0.038298		
	3.55	58	0.030851		
Reference Frequency: BC 10 Middle channel=580 channel=820.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.35	87	0.106033	±2.5	Pass
	3.80	73	0.088970		
	3.55	67	0.081658		
Note: Only the worst case shown in the report.					

8 EUT Constructional Details

Reference to the test report No. JYTSZB-R12-2102611.

-----End of report-----