FCC Test Report

FCC ID	:	**2AMUGTBSP100**
Equipment	:	**LoRaWAN Sensor**
Model No.	:	**TBMS100, TBDW100, TBHH100, TBHV100** **(refer to item 1.1.1 for more details)**
Brand Name	:	**Tabs**
Applicant	:	**TrackNet, Inc**
Address	:	**900 LAFAYETTE ST #329, SANTA CLARA, California, United States, 95050**
Standard	:	**47 CFR FCC Part 15.247**
Received Date	:	**Sep. 04, 2017**
Tested Date	:	**Sep. 12 ~ Nov. 01, 2017**

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by: **Approved by:**

Along Chen / Assistant Manager **Gary Chang / Manager**

Testing Laboratory 2732

Table of Contents

Release Record

Report No.	Version	Description	Issued Date
FR790401	Rev. 01	Initial issue	Nov. 21, 2017

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	Note	N/A
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 847.55MHz 36.43 (Margin -9.57dB) - PK	Pass
15.247(b)(3)	Maximum Output Power	Max Power [dBm]: 19.20	Pass
15.247(a)(2)	6dB Bandwidth	Meet the requirement of limit	Pass
15.247(e)	Power Spectral Density	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass
Note: The EUT consumes power from battery, so the test is not required.			

1 General Description

1.1 Information

1.1.1 Product Details

The following models are provided to this EUT.

Brand Name	Model Name	Product Name	Description
Tabs	TBMS100	Motion Sensor	With Sensor Board: PIR - Occupency Sensor (U816)
	TBDW100	Door and Window Sensor	With Sensor Board: Door / Window sensor (U705)
	TBHH100	Healthy Home Sensor	With Sensor Board: TH sensor without U817
	TBHV100	Healthy Home Sensor VOC	With Sensor Board: TH + VOC (U817 parts) sensor

1.1.2 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	**Ch. Freq. (MHz)**	**Channel Number**	**Data Rate (bit/sec)**	**Spread Factor**	**Channel Bandwidth (kHz)**
902 ~ 928	903 ~ 914.2	65 ~ 72 [8]	980 ~ 21900	12 ~ 7	500
Note 1: RF output power specifies that Maximum Conducted (Average) Output Power. Note 2: The device uses CSS modulation.					

1.1.3 Antenna Details

Ant. No.	Type	Connector	Gain (dBi)	Remark
1	Monopole	NA	-1.7	---

1.1.4 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	3.6Vdc from battery

1.1.5 Accessories

Accessories		
No.	**Equipment**	**Description**
1	RAMWAY Battery	Model: ER14250 Rating: 3.6Vdc
2	FANSO Battery	Model: ER14250H Rating: 3.6Vdc
3	Magnet	Only for Door and Window Sensor (model: TBDW100)

1.1.6 Channel List

Channel	Frequency(MHz)
65	903
66	904.6
67	906.2
68	907.8
69	909.4
70	911
71	912.6
72	914.2

1.1.7 Test Tool and Duty Cycle

Test Tool	Python, version: 3.5.2	
Duty Cycle and Duty Factor	**Duty Cycle (%)**	**Duty Factor (dB)**
	100%	0

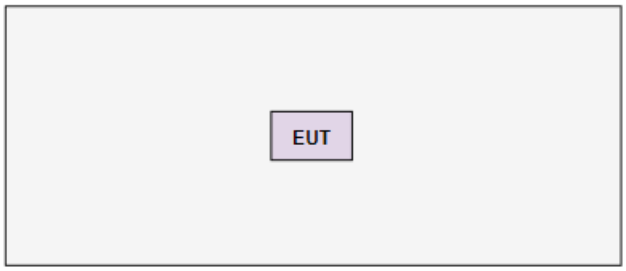
1.1.8 Power Setting

Modulation Mode	**Test Frequency (MHz)**		
	903	**907.8**	**914.2**
CSS	20	20	20

1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Signal cable / Length (m)**
1	Notebook	DELL	Latitude E6430	DoC	---

1.3 Test Setup Chart

Test Setup Diagram


Note: The support notebook is disconnected from EUT and removed from test table after sending command from notebook to control EUT to transmit continuously.

1.4 The Equipment List

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Tested Date	Sep. 12 ~ Sep. 13, 2017				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101498	Nov. 25, 2016	Nov. 24, 2017
Receiver	R&S	ESR3	101658	Nov. 24, 2016	Nov. 23, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 25, 2017	Jul. 24, 2018
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 21, 2016	Dec. 20, 2017
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 25, 2016	Oct. 24, 2017
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 10, 2016	Nov. 09, 2017
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 09, 2016	Dec. 08, 2017
Preamplifier	EMC	EMC02325	980225	Jul. 28, 2017	Jul. 27, 2018
Preamplifier	Agilent	83017A	MY53270014	Aug. 21, 2017	Aug. 20, 2018
Preamplifier	EMC	EMC184045B	980192	Aug. 22, 2017	Aug. 21, 2018
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 09, 2016	Dec. 08, 2017
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	16052	Dec. 09, 2016	Dec. 08, 2017
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 09, 2016	Dec. 08, 2017
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 09, 2016	Dec. 08, 2017
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Oct. 26 ~ Nov. 01, 2017				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	ROHDE&SCHWARZ	FSV40	101486	Nov. 15, 2016	Nov. 14, 2017
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Nov. 21, 2016	Nov. 20, 2017
Power Sensor	Agilent	U2021XA	MY53480019	Feb. 06, 2017	Feb. 05, 2018
DC POWER SOURCE	GW INSTEK	GPC-6030D	EM892433	Oct. 26, 2017	Oct. 25, 2018
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Measurement Software	Agilent	EN RF test	1.1501125	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Test Standards

According to the specification of EUT, the EUT must comply with following standards and KDB documents.

47 CFR FCC Part 15.247
ANSI C63.10-2013
FCC KDB 558074 D01 DTS Meas Guidance v04

1.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Measurement Uncertainty	
Parameters	**Uncertainty**
Bandwidth	±34.134 Hz
Conducted power	±0.808 dB
Power density	±0.463 dB
Conducted emission	±2.670 dB
AC conducted emission	±2.90 dB
Radiated emission ≤ 1GHz	±3.66 dB
Radiated emission > 1GHz	±5.63 dB

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
Radiated Emissions	03CH01-WS	25°C / 63%	Vincent Yeh
RF Conducted	TH01-WS	22°C / 65%	Felix Sung

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- IC site registration No.: 10807A-1

2.2 The Worst Test Modes and Channel Details

Test item	Test Frequency (MHz)	Channel Bandwidth (kHz)	Modulation / SF	Test Configuration
Conducted Emissions Radiated Emissions >1GHz Maximum Output Power 6dB Bandwidth Power Spectral Density	903 / 907.8 / 914.2	500	CSS / 12	1
Radiated Emissions ≤1GHz	903 / 907.8 / 914.2	500	CSS / 12	1, 2, 3, 4

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **X-plane** result was found as the worst case and was shown in this report.
2. Test configurations for radiated emission below 1GHz test are listed as follows:
   1) Test configuration 1: model TBMS100
   2) Test configuration 2: model TBDW100
   3) Test configuration 3: model TBHH100
   4) Test configuration 4: model TBHV100

3 Transmitter Test Results

3.1 6dB and Occupied Bandwidth

3.1.1 Limit of 6dB Bandwidth

The minimum 6dB bandwidth shall be at least 500 kHz.

3.1.2 Test Procedures

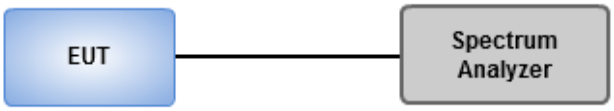
6dB Bandwidth

1. Set resolution bandwidth (RBW) = 100 kHz, Video bandwidth = 300 kHz.
2. Detector = Peak, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission.

Occupied Bandwidth

1. Set resolution bandwidth (RBW) = 10kHz, Video bandwidth = 30kHz.
2. Detector = Sample, Trace mode = max hold.
3 Sweep = auto couple, Allow the trace to stabilize.
4. Use the OBW measurement function of spectrum analyzer to measure the occupied bandwidth.

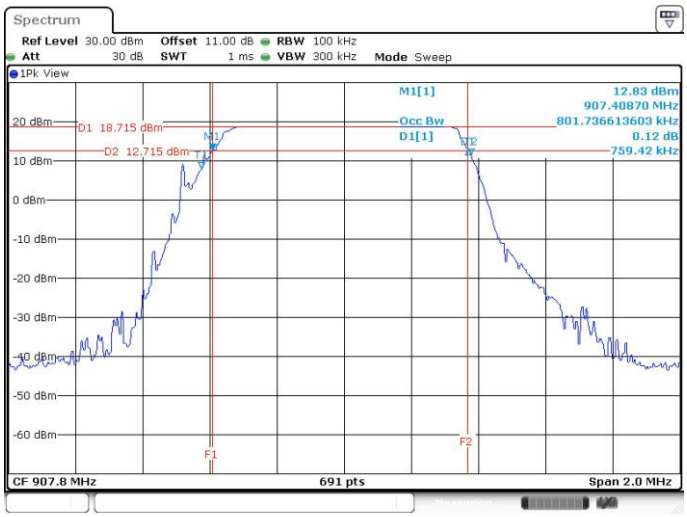
3.1.3 Test Setup



3.1.4 Test Result of 6dB and Occupied Bandwidth

Modulation / SF	Freq. (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
CSS / 12	903	0.771	0.5
CSS / 12	907.8	0.759	0.5
CSS / 12	914.2	0.780	0.5

Worst Plot



Modulation / SF	Freq. (MHz)	99% Occupied Bandwidth (MHz)
CSS / 12	903	0.607
CSS / 12	907.8	0.631
CSS / 12	914.2	0.625

Worst Plot

3.2 RF Output Power

3.2.1 Limit of RF Output Power

Conducted power shall not exceed 1Watt.

☒ Antenna gain <= 6dBi, no any corresponding reduction is in output power limit.

☐ Antenna gain > 6dBi

Transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

3.2.2 Test Procedures

☐ Maximum Peak Conducted Output Power

☐ **Spectrum analyzer**

1. Set RBW = 1MHz, VBW = 3MHz, Detector = Peak.
2. Sweep time = auto, Trace mode = max hold, Allow trace to fully stabilize.
3. Use the spectrum analyzer channel power measurement function with the band limits set equal to the DTS bandwidth edges.

☐ **Power meter**

1. A broadband Peak RF power meter is used for output power measurement. The video bandwidth of power meter is greater than DTS bandwidth of EUT. If duty cycle of test signal is not 100 %, trigger and gating function of power meter will be enabled to capture transmission burst for measuring output power.

☒ Maximum Conducted Output Power

☒ **Power meter**

1. A broadband Average RF power meter is used for output power measurement. The video bandwidth of power meter is greater than DTS bandwidth of EUT. If duty cycle of test signal is not 100 %, trigger and gating function of power meter will be enabled to capture transmission burst for measuring output power.

3.2.3 Test Setup

3.2.4 Test Result of Maximum Output Power

Modulation / SF	Freq. (MHz)	Output Power (mW)	Output Power (dBm)	Limit (dBm)
CSS / 12	903	83.17638	19.20	30
CSS / 12	907.8	83.17638	19.20	30
CSS / 12	914.2	82.98508	19.19	30

3.3 Power Spectral Density

3.3.1 Limit of Power Spectral Density

Power spectral density shall not be greater than 8 dBm in any 3 kHz band.

3.3.2 Test Procedures

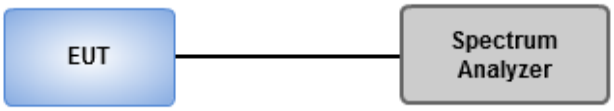
☐ Maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit.

1. Set the RBW = 3kHz, VBW = 10kHz.
2. Detector = Peak, Sweep time = auto couple.
3. Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

☒ Maximum (average) conducted output power was used to demonstrate compliance to the fundamental output power limit.

1. Set the RBW = 3kHz, VBW = 10 kHz.
2. Detector = RMS, Sweep time = auto couple.
3. Employ trace averaging (RMS) mode over a minimum of 100 traces
4. Use the peak marker function to determine the maximum amplitude level.

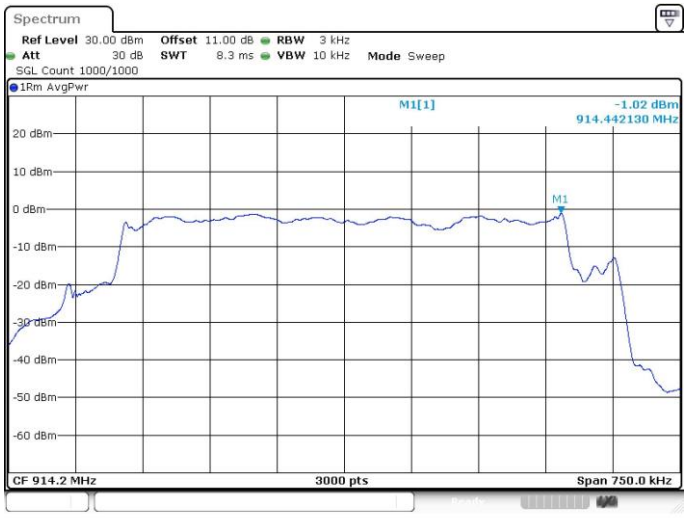
3.3.3 Test Setup



3.3.4 Test Result of Power Spectral Density

Modulation / SF	Freq. (MHz)	Total Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)
CSS / 12	903	-1.46	8.00
CSS / 12	907.8	-1.28	8.00
CSS / 12	914.2	-1.02	8.00

Worst Plot



3.4 Unwanted Emissions into Restricted Frequency Bands

3.4.1 Limit of Unwanted Emissions into Restricted Frequency Bands

Restricted Band Emissions Limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1:
Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit
Note 2:
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

3.4.2 Test Procedures

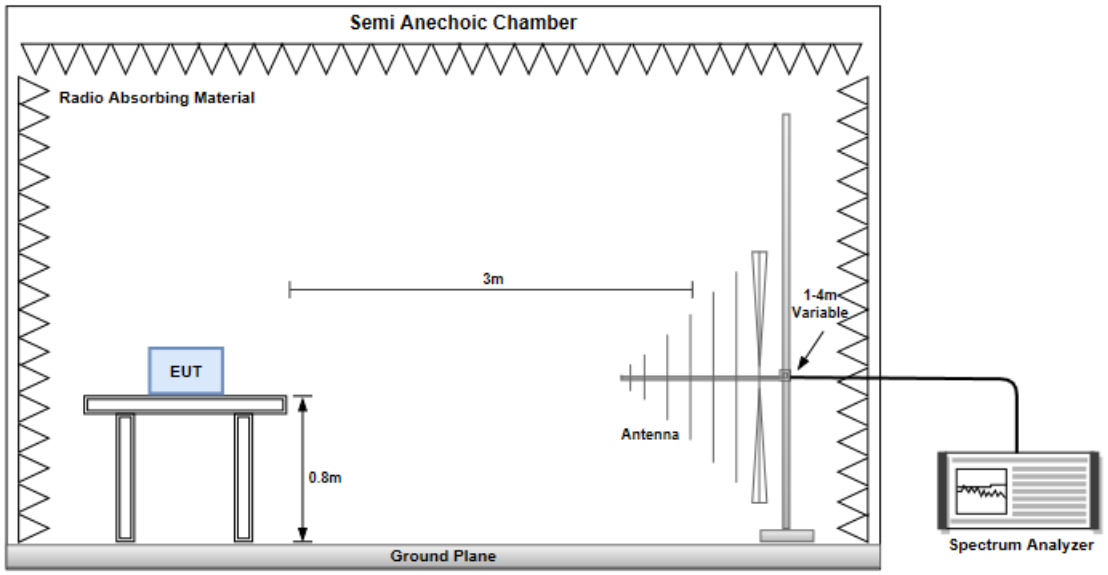
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

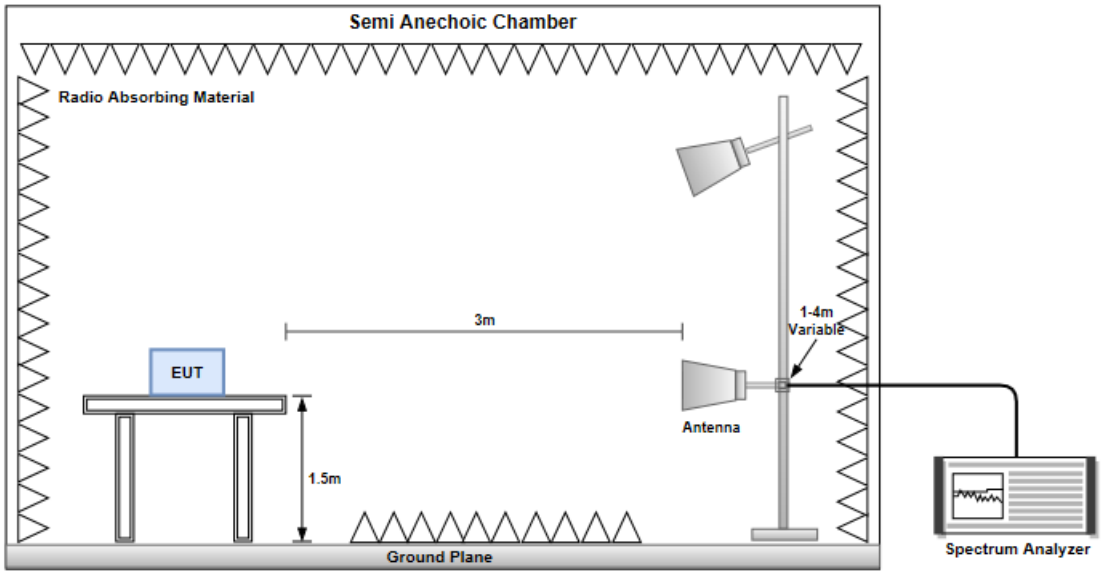
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.

3.4.3 Test Setup

Radiated Emissions below 1 GHz



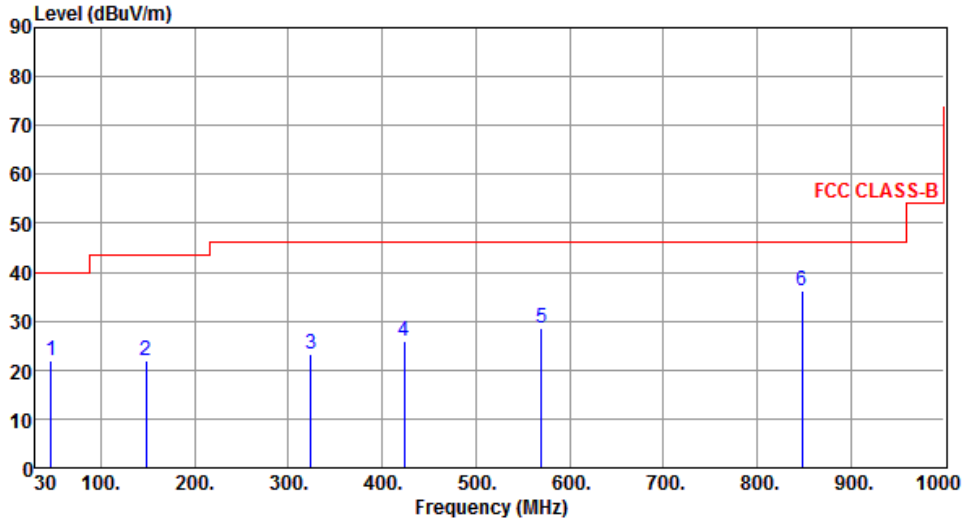
Radiated Emissions above 1 GHz



Test configuration 1: model TBMS100

3.4.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

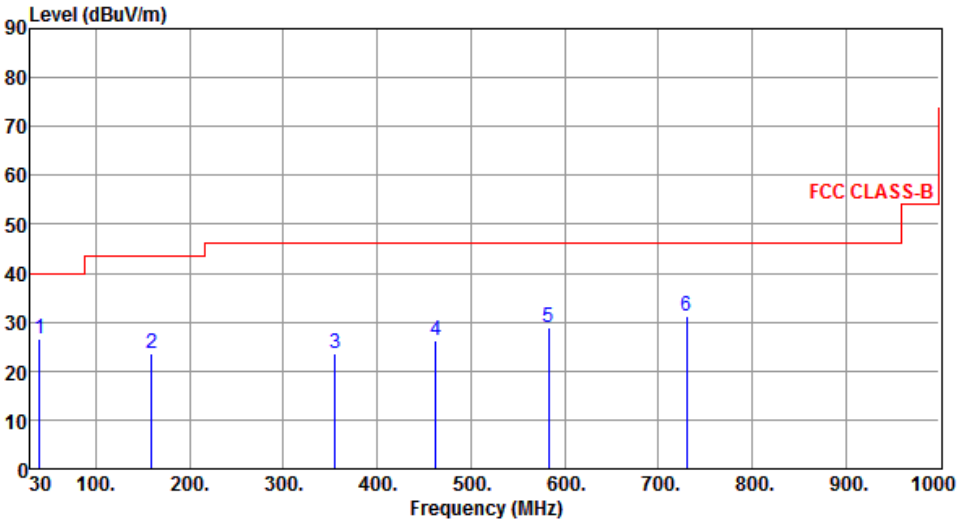
Modulation / SF	CSS / 12	**Test Freq. (MHz)**	903
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	46.49	21.82	40.00	-18.18	29.61	-7.79	Peak	---	---
2	148.34	21.96	43.50	-21.54	30.36	-8.40	Peak	---	---
3	323.91	23.16	46.00	-22.84	30.22	-7.06	Peak	---	---
4	423.82	25.74	46.00	-20.26	30.13	-4.39	Peak	---	---
5	570.29	28.71	46.00	-17.29	30.05	-1.34	Peak	---	---
6	847.71	36.33	46.00	-9.67	33.24	3.09	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

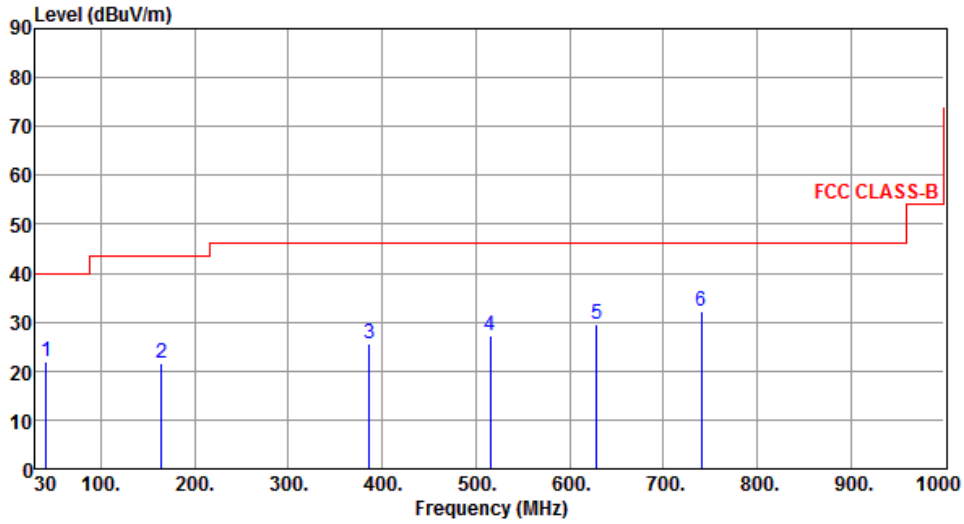
Modulation / SF	CSS / 12	Test Freq. (MHz)	903
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.70	26.67	40.00	-13.33	34.86	-8.19	Peak	---	---
2	159.01	23.70	43.50	-19.80	31.94	-8.24	Peak	---	---
3	354.95	23.64	46.00	-22.36	29.90	-6.26	Peak	---	---
4	462.62	26.22	46.00	-19.78	29.76	-3.54	Peak	---	---
5	582.90	28.79	46.00	-17.21	29.87	-1.08	Peak	---	---
6	730.34	31.17	46.00	-14.83	29.85	1.32	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

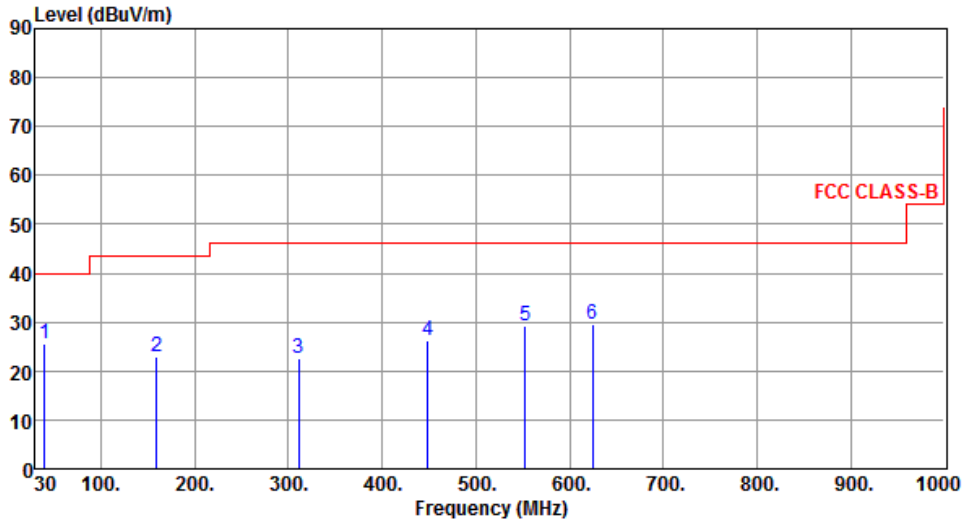
Modulation / SF	CSS / 12	Test Freq. (MHz)	907.8
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	41.64	21.79	40.00	-18.21	29.85	-8.06	Peak	---	---
2	164.83	21.62	43.50	-21.88	30.03	-8.41	Peak	---	---
3	385.99	25.50	46.00	-20.50	30.86	-5.36	Peak	---	---
4	515.00	27.28	46.00	-18.72	29.80	-2.52	Peak	---	---
5	628.49	29.59	46.00	-16.41	30.00	-0.41	Peak	---	---
6	741.01	32.32	46.00	-13.68	30.76	1.56	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

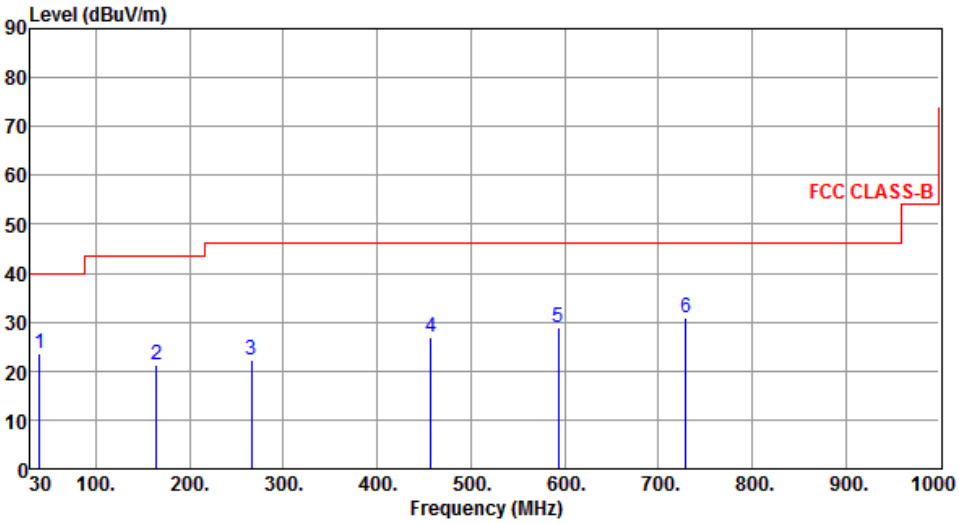
Modulation / SF	CSS / 12	Test Freq. (MHz)	907.8
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.70	25.65	40.00	-14.35	33.84	-8.19	Peak	---	---
2	159.01	23.03	43.50	-20.47	31.27	-8.24	Peak	---	---
3	311.30	22.63	46.00	-23.37	30.02	-7.39	Peak	---	---
4	449.04	26.13	46.00	-19.87	29.94	-3.81	Peak	---	---
5	552.83	29.32	46.00	-16.68	31.02	-1.70	Peak	---	---
6	624.61	29.51	46.00	-16.49	29.95	-0.44	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

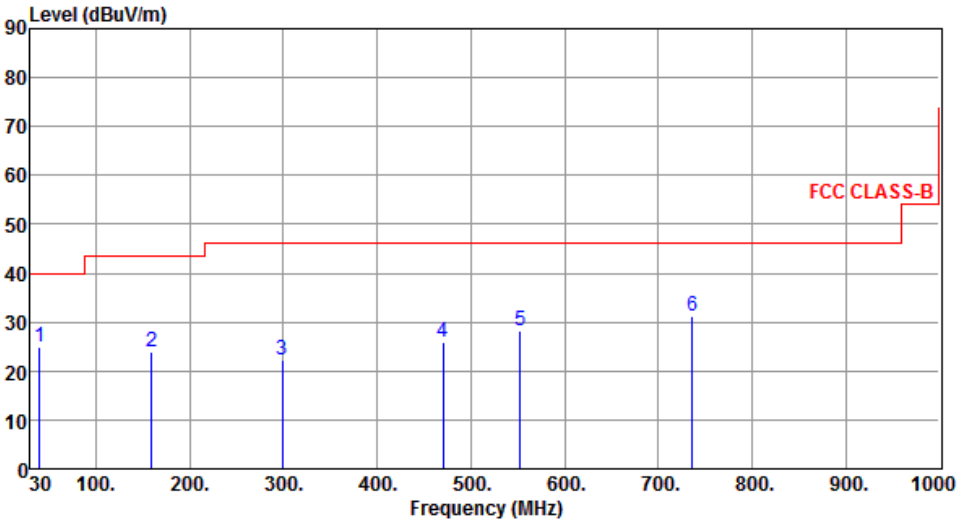
Modulation / SF	CSS / 12	Test Freq. (MHz)	914.2
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.70	23.66	40.00	-16.34	31.85	-8.19	Peak	---	---
2	164.83	21.37	43.50	-22.13	29.78	-8.41	Peak	---	---
3	265.71	22.13	46.00	-23.87	30.87	-8.74	Peak	---	---
4	457.77	26.83	46.00	-19.17	30.47	-3.64	Peak	---	---
5	593.57	28.90	46.00	-17.10	29.75	-0.85	Peak	---	---
6	729.37	30.73	46.00	-15.27	29.44	1.29	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation / SF	CSS / 12	Test Freq. (MHz)	914.2
Polarization	Vertical		

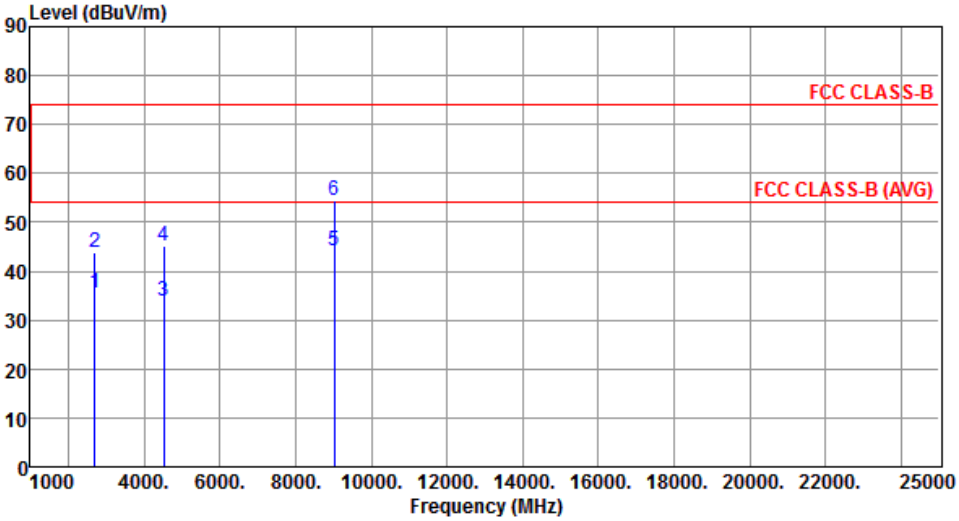


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.70	24.78	40.00	-15.22	32.97	-8.19	Peak	---	---
2	159.01	23.79	43.50	-19.71	32.03	-8.24	Peak	---	---
3	298.69	22.20	46.00	-23.80	29.90	-7.70	Peak	---	---
4	470.38	26.05	46.00	-19.95	29.45	-3.40	Peak	---	---
5	552.83	28.39	46.00	-17.61	30.09	-1.70	Peak	---	---
6	736.16	31.18	46.00	-14.82	29.73	1.45	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

3.4.5 Transmitter Radiated Unwanted Emissions (Above 1GHz)

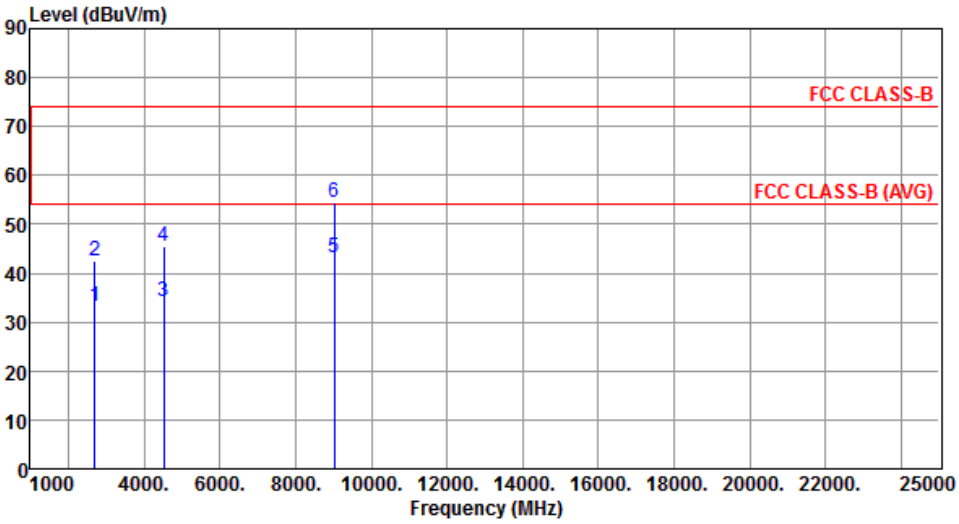
Modulation / SF	CSS / 12	Test Freq. (MHz)	903
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2709.00	35.63	54.00	-18.37	37.66	-2.03	Average	285	3
2	2709.00	43.75	74.00	-30.25	45.78	-2.03	Peak	285	3
3	4515.00	33.79	54.00	-20.21	30.80	2.99	Average	119	28
4	4515.00	45.08	74.00	-28.92	42.09	2.99	Peak	119	28
5	9030.00	44.05	54.00	-9.95	32.91	11.14	Average	149	91
6	9030.00	54.35	74.00	-19.65	43.21	11.14	Peak	149	91

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

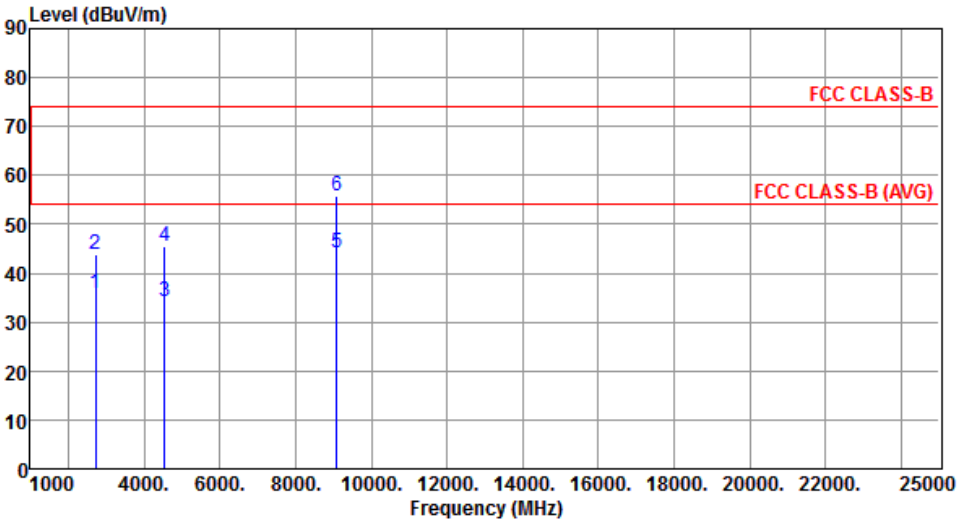
Modulation / SF	CSS / 12	Test Freq. (MHz)	903
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2709.00	33.09	54.00	-20.91	35.12	-2.03	Average	279	152
2	2709.00	42.63	74.00	-31.37	44.66	-2.03	Peak	279	152
3	4515.00	34.05	54.00	-19.95	31.06	2.99	Average	205	9
4	4515.00	45.37	74.00	-28.63	42.38	2.99	Peak	205	9
5	9030.00	43.03	54.00	-10.97	31.89	11.14	Average	300	150
6	9030.00	54.52	74.00	-19.48	43.38	11.14	Peak	300	150

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

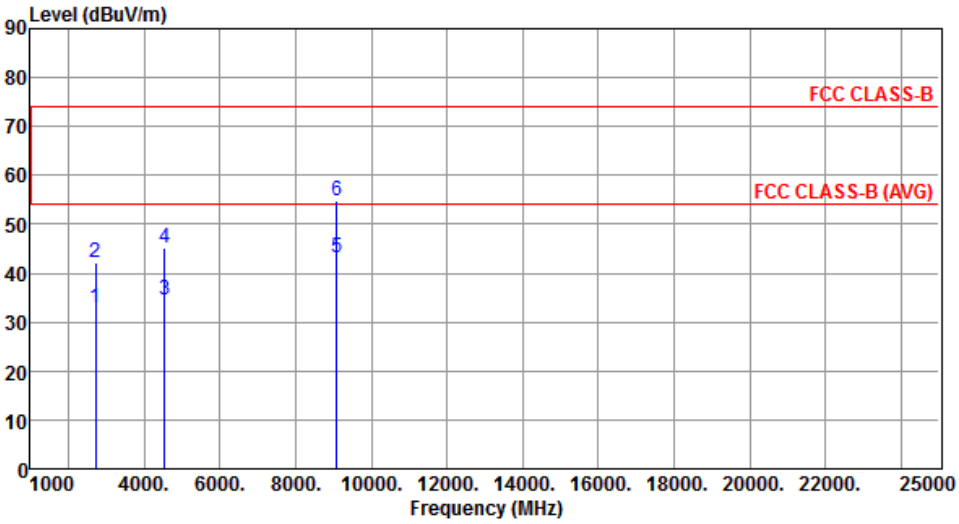
Modulation / SF	CSS / 12	Test Freq. (MHz)	907.8
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2723.40	35.88	54.00	-18.12	37.86	-1.98	Average	280	9
2	2723.40	43.98	74.00	-30.02	45.96	-1.98	Peak	280	9
3	4539.00	34.32	54.00	-19.68	31.28	3.04	Average	127	43
4	4539.00	45.35	74.00	-28.65	42.31	3.04	Peak	127	43
5	9078.00	44.08	54.00	-9.92	32.79	11.29	Average	155	94
6	9078.00	55.63	74.00	-18.37	44.34	11.29	Peak	155	94

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

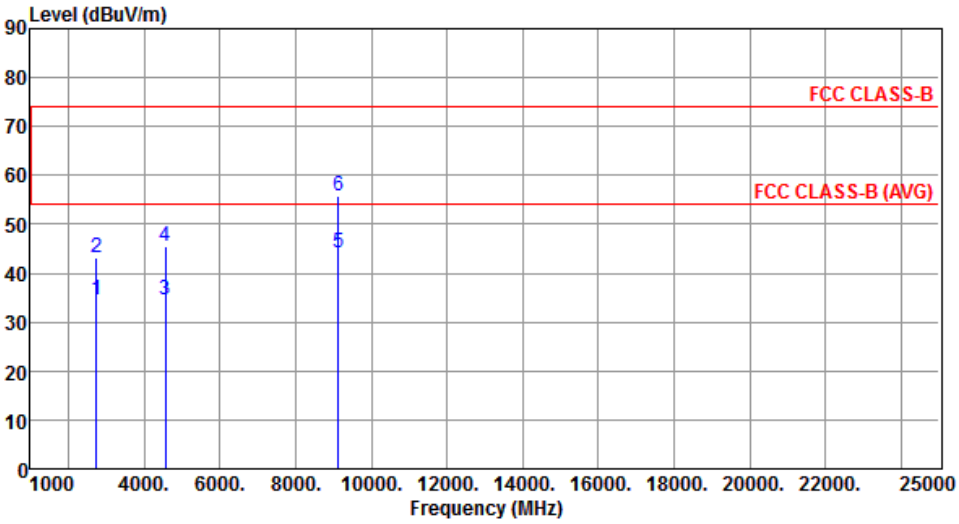
Modulation / SF	CSS / 12	Test Freq. (MHz)	907.8
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2723.40	32.92	54.00	-21.08	34.90	-1.98	Average	276	151
2	2723.40	42.27	74.00	-31.73	44.25	-1.98	Peak	276	151
3	4539.00	34.41	54.00	-19.59	31.37	3.04	Average	138	26
4	4539.00	45.33	74.00	-28.67	42.29	3.04	Peak	138	26
5	9078.00	43.20	54.00	-10.80	31.91	11.29	Average	305	152
6	9078.00	54.77	74.00	-19.23	43.48	11.29	Peak	305	152

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

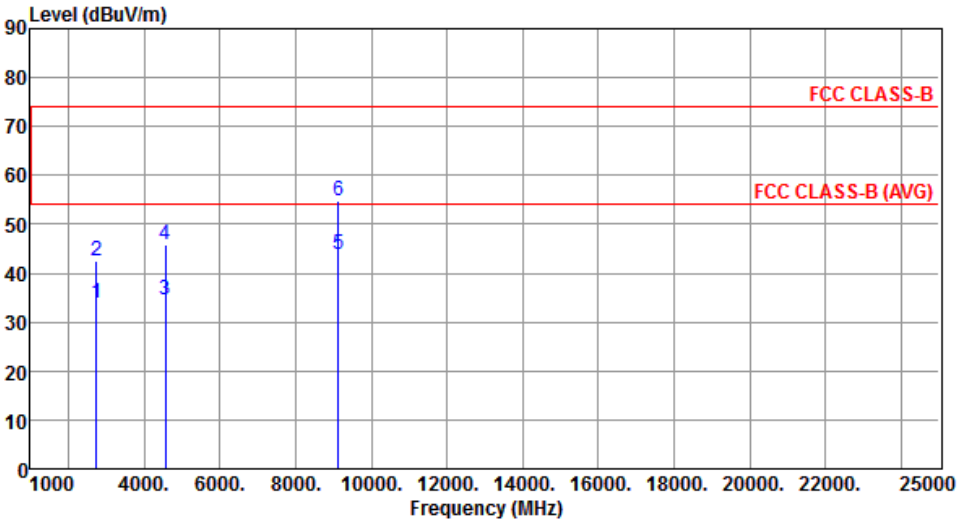
Modulation / SF	CSS / 12	Test Freq. (MHz)	914.2
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2742.60	34.44	54.00	-19.56	36.36	-1.92	Average	262	7
2	2742.60	43.17	74.00	-30.83	45.09	-1.92	Peak	262	7
3	4571.00	34.39	54.00	-19.61	31.26	3.13	Average	144	50
4	4571.00	45.51	74.00	-28.49	42.38	3.13	Peak	144	50
5	9142.00	44.06	54.00	-9.94	32.56	11.50	Average	168	87
6	9142.00	55.86	74.00	-18.14	44.36	11.50	Peak	168	87

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation / SF	CSS / 12	Test Freq. (MHz)	914.2
Polarization	Vertical		



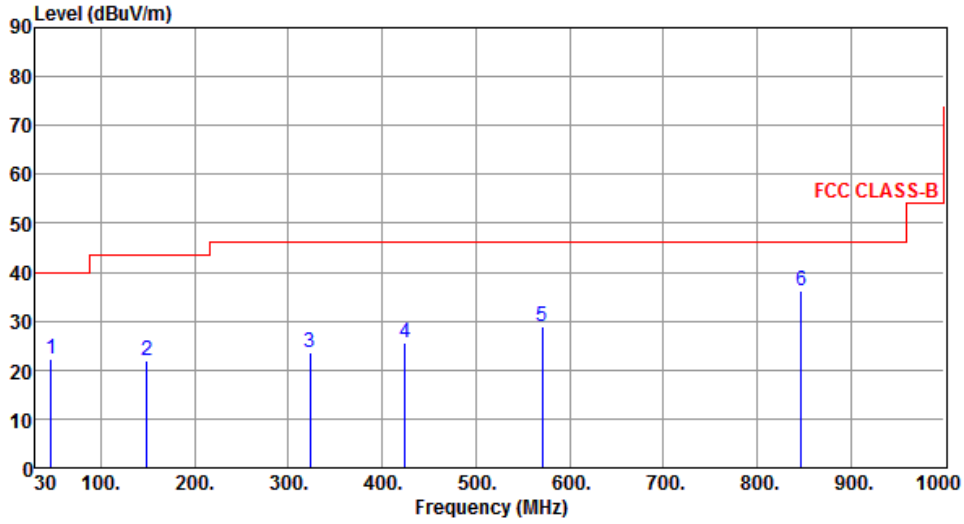
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2742.60	33.74	54.00	-20.26	35.66	-1.92	Average	273	158
2	2742.60	42.37	74.00	-31.63	44.29	-1.92	Peak	273	158
3	4571.00	34.58	54.00	-19.42	31.45	3.13	Average	141	20
4	4571.00	45.90	74.00	-28.10	42.77	3.13	Peak	141	20
5	9142.00	43.83	54.00	-10.17	32.33	11.50	Average	294	150
6	9142.00	54.92	74.00	-19.08	43.42	11.50	Peak	294	150

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Test configuration 2: model TBDW100

3.4.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)

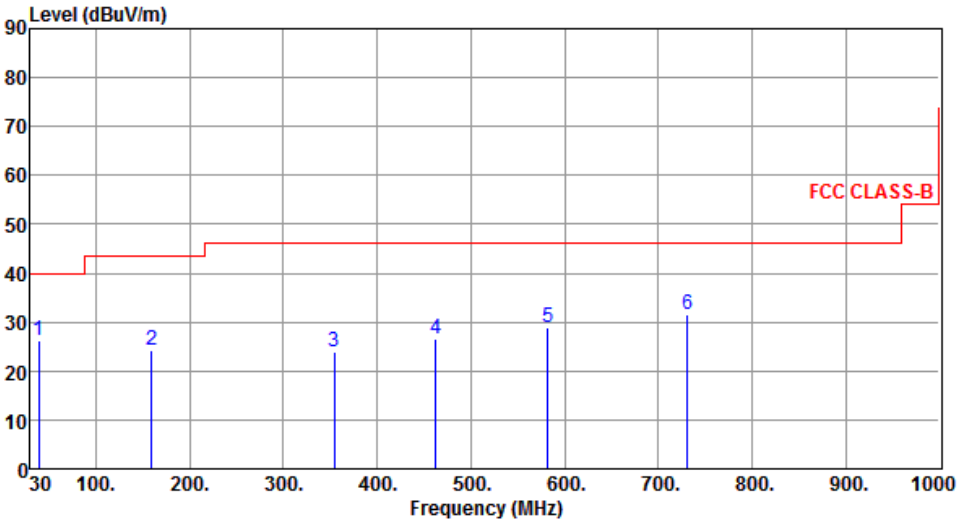
Modulation / SF	CSS / 12	**Test Freq. (MHz)**	903
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	46.92	22.19	40.00	-17.81	29.98	-7.79	Peak	---	---
2	149.26	21.85	43.50	-21.65	30.22	-8.37	Peak	---	---
3	323.19	23.53	46.00	-22.47	30.61	-7.08	Peak	---	---
4	424.22	25.53	46.00	-20.47	29.92	-4.39	Peak	---	---
5	570.58	29.03	46.00	-16.97	30.36	-1.33	Peak	---	---
6	847.46	36.11	46.00	-9.89	33.02	3.09	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

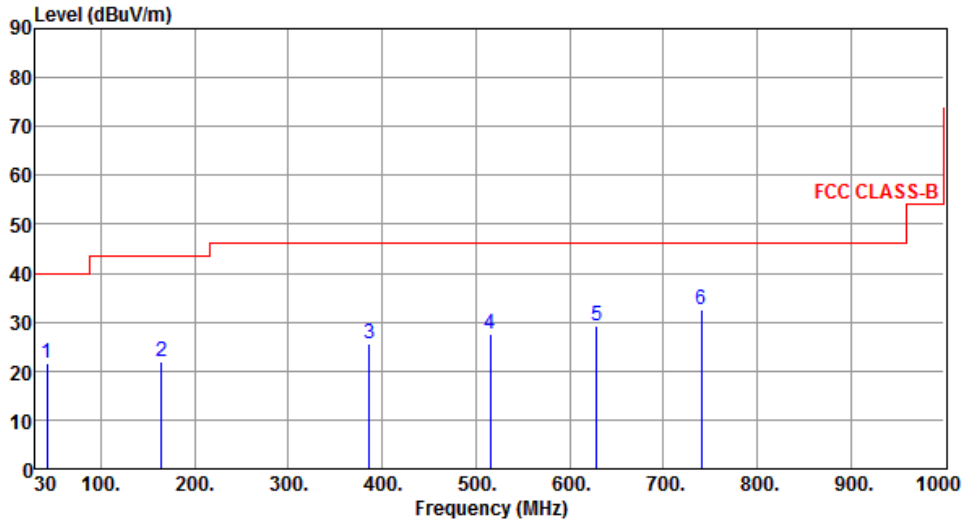
Modulation / SF	CSS / 12	Test Freq. (MHz)	903
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.27	26.35	40.00	-13.65	34.57	-8.22	Peak	---	---
2	159.64	24.16	43.50	-19.34	32.39	-8.23	Peak	---	---
3	354.42	23.88	46.00	-22.12	30.16	-6.28	Peak	---	---
4	462.16	26.55	46.00	-19.45	30.11	-3.56	Peak	---	---
5	582.37	28.94	46.00	-17.06	30.03	-1.09	Peak	---	---
6	731.07	31.51	46.00	-14.49	30.18	1.33	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

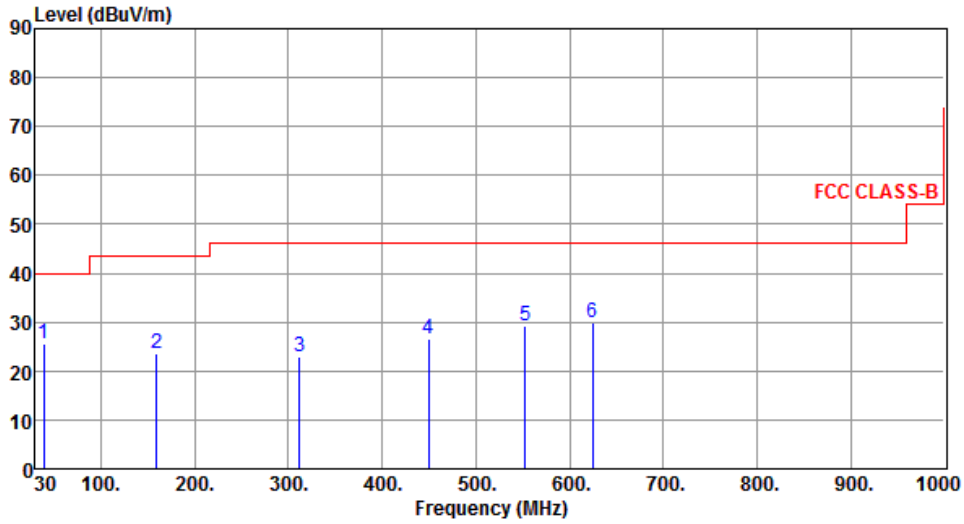
Modulation / SF	CSS / 12	Test Freq. (MHz)	907.8
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	42.17	21.72	40.00	-18.28	29.75	-8.03	Peak	---	---
2	164.37	21.82	43.50	-21.68	30.21	-8.39	Peak	---	---
3	385.99	25.50	46.00	-20.50	30.86	-5.36	Peak	---	---
4	515.36	27.54	46.00	-18.46	30.04	-2.50	Peak	---	---
5	628.83	29.37	46.00	-16.63	29.77	-0.40	Peak	---	---
6	740.82	32.52	46.00	-13.48	30.97	1.55	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

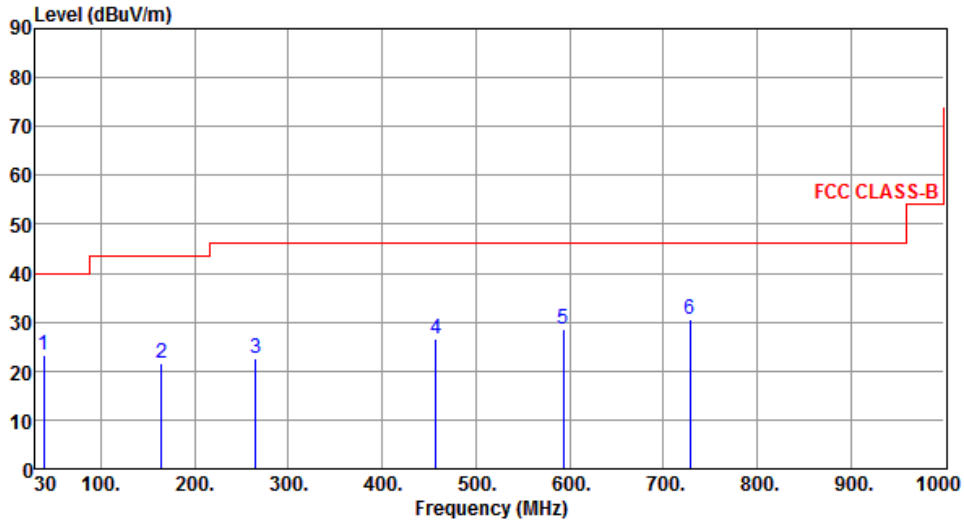
Modulation / SF	CSS / 12	Test Freq. (MHz)	907.8
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.36	25.48	40.00	-14.52	33.70	-8.22	Peak	---	---
2	159.46	23.42	43.50	-20.08	31.66	-8.24	Peak	---	---
3	312.17	22.92	46.00	-23.08	30.28	-7.36	Peak	---	---
4	449.61	26.62	46.00	-19.38	30.42	-3.80	Peak	---	---
5	552.26	29.18	46.00	-16.82	30.90	-1.72	Peak	---	---
6	624.38	29.74	46.00	-16.26	30.19	-0.45	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

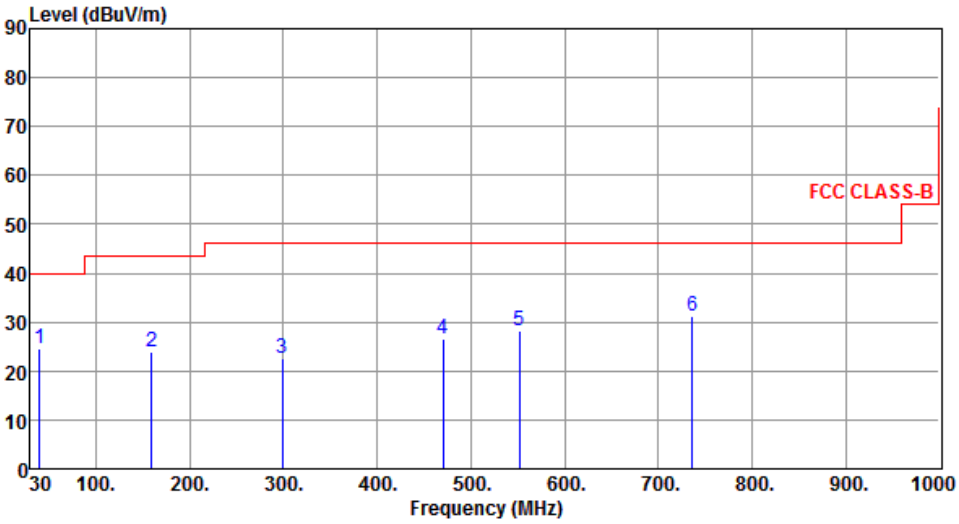
Modulation / SF	CSS / 12	Test Freq. (MHz)	914.2
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.34	23.36	40.00	-16.64	31.58	-8.22	Peak	---	---
2	164.62	21.55	43.50	-21.95	29.95	-8.40	Peak	---	---
3	265.28	22.44	46.00	-23.56	31.21	-8.77	Peak	---	---
4	457.27	26.62	46.00	-19.38	30.27	-3.65	Peak	---	---
5	593.25	28.42	46.00	-17.58	29.27	-0.85	Peak	---	---
6	728.72	30.59	46.00	-15.41	29.31	1.28	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation / SF	CSS / 12	Test Freq. (MHz)	914.2
Polarization	Vertical		



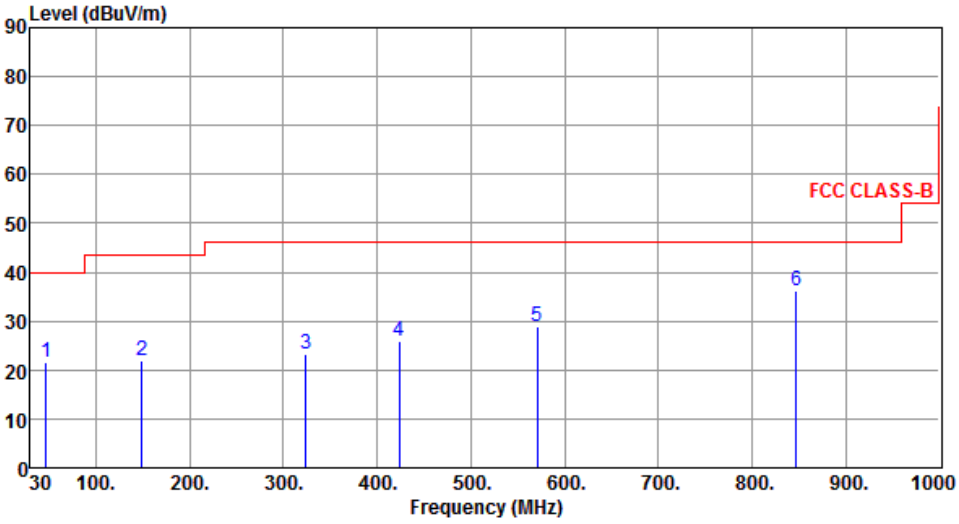
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.62	24.62	40.00	-15.38	32.81	-8.19	Peak	---	---
2	159.37	23.89	43.50	-19.61	32.13	-8.24	Peak	---	---
3	299.05	22.44	46.00	-23.56	30.13	-7.69	Peak	---	---
4	470.75	26.42	46.00	-19.58	29.82	-3.40	Peak	---	---
5	552.22	28.14	46.00	-17.86	29.86	-1.72	Peak	---	---
6	736.67	31.36	46.00	-14.64	29.90	1.46	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Test configuration 3: model TBHH100

3.4.7 Transmitter Radiated Unwanted Emissions (Below 1GHz)

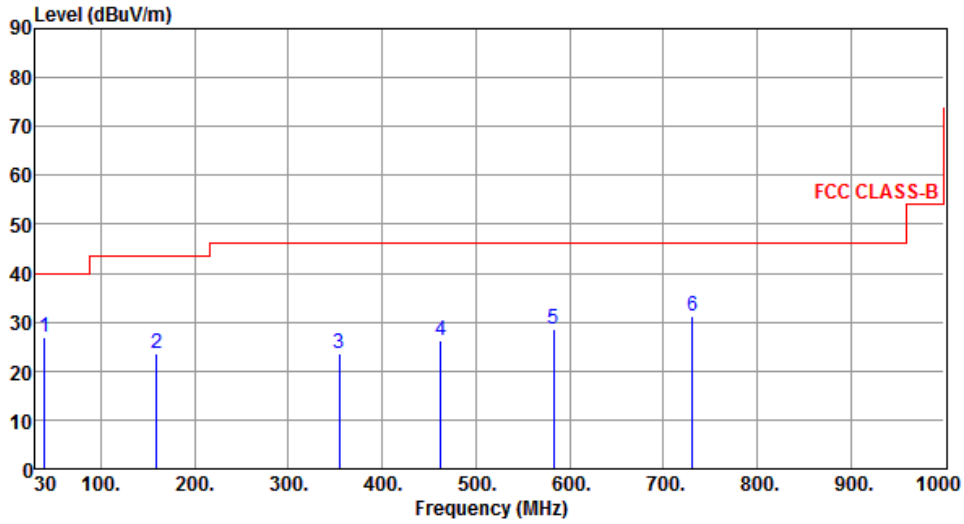
Modulation / SF	CSS / 12	**Test Freq. (MHz)**	903
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	46.66	21.43	40.00	-18.57	29.22	-7.79	Peak	---	---
2	148.66	21.82	43.50	-21.68	30.21	-8.39	Peak	---	---
3	323.64	23.33	46.00	-22.67	30.40	-7.07	Peak	---	---
4	423.52	25.82	46.00	-20.18	30.22	-4.40	Peak	---	---
5	570.91	28.96	46.00	-17.04	30.28	-1.32	Peak	---	---
6	847.43	36.27	46.00	-9.73	33.18	3.09	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

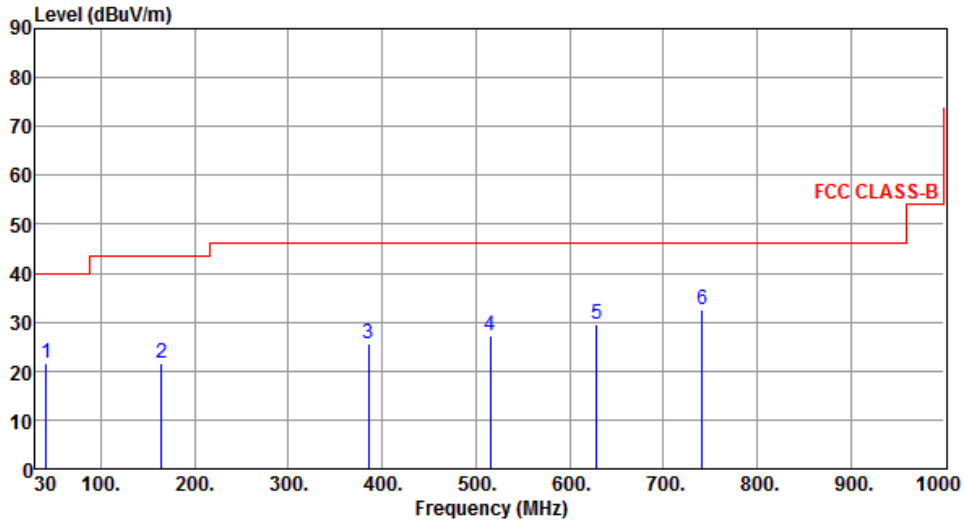
Modulation / SF	CSS / 12	Test Freq. (MHz)	903
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.61	26.85	40.00	-13.15	35.04	-8.19	Peak	---	---
2	159.36	23.56	43.50	-19.94	31.80	-8.24	Peak	---	---
3	354.26	23.53	46.00	-22.47	29.81	-6.28	Peak	---	---
4	462.45	26.38	46.00	-19.62	29.93	-3.55	Peak	---	---
5	582.61	28.68	46.00	-17.32	29.76	-1.08	Peak	---	---
6	730.95	31.35	46.00	-14.65	30.02	1.33	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

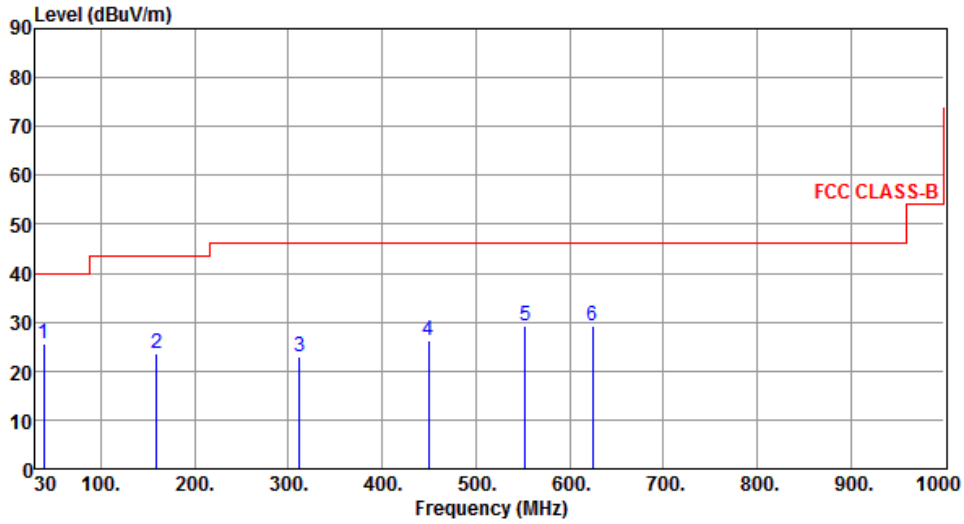
Modulation / SF	CSS / 12	Test Freq. (MHz)	907.8
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	41.22	21.69	40.00	-18.31	29.79	-8.10	Peak	---	---
2	164.74	21.51	43.50	-21.99	29.92	-8.41	Peak	---	---
3	385.65	25.62	46.00	-20.38	30.99	-5.37	Peak	---	---
4	515.33	27.39	46.00	-18.61	29.89	-2.50	Peak	---	---
5	628.78	29.44	46.00	-16.56	29.84	-0.40	Peak	---	---
6	741.62	32.57	46.00	-13.43	31.00	1.57	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

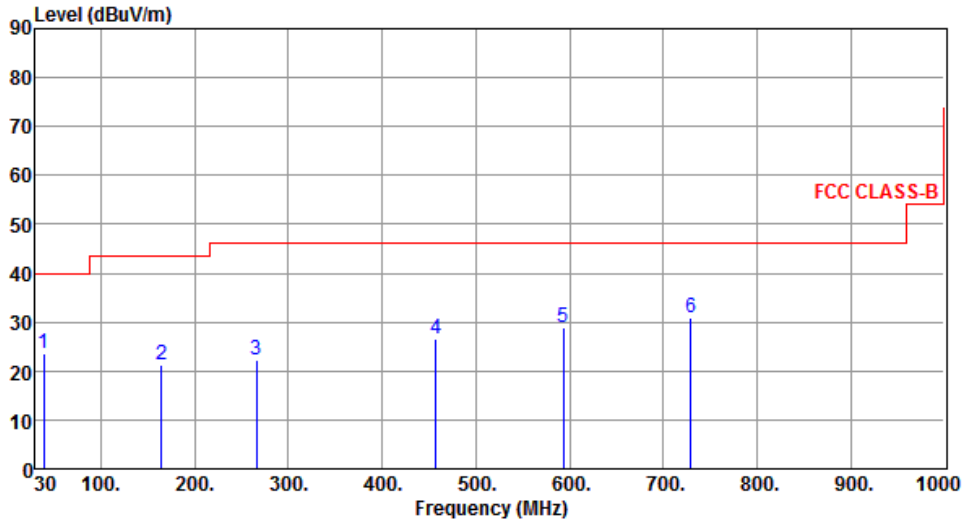
Modulation / SF	CSS / 12	Test Freq. (MHz)	907.8
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.00	25.52	40.00	-14.48	33.76	-8.24	Peak	---	---
2	159.48	23.46	43.50	-20.04	31.70	-8.24	Peak	---	---
3	311.62	22.92	46.00	-23.08	30.29	-7.37	Peak	---	---
4	449.52	26.31	46.00	-19.69	30.11	-3.80	Peak	---	---
5	552.52	29.25	46.00	-16.75	30.95	-1.70	Peak	---	---
6	624.31	29.33	46.00	-16.67	29.78	-0.45	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

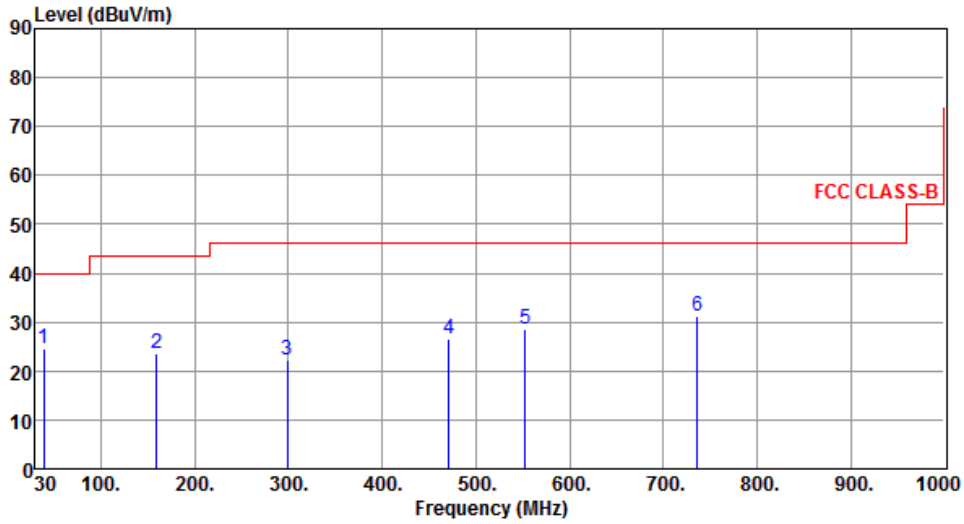
Modulation / SF	CSS / 12	Test Freq. (MHz)	914.2
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.30	23.44	40.00	-16.56	31.66	-8.22	Peak	---	---
2	164.55	21.26	43.50	-22.24	29.66	-8.40	Peak	---	---
3	265.65	22.37	46.00	-23.63	31.12	-8.75	Peak	---	---
4	457.58	26.68	46.00	-19.32	30.32	-3.64	Peak	---	---
5	593.43	28.74	46.00	-17.26	29.59	-0.85	Peak	---	---
6	729.53	30.88	46.00	-15.12	29.59	1.29	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation / SF	CSS / 12	Test Freq. (MHz)	914.2
Polarization	Vertical		



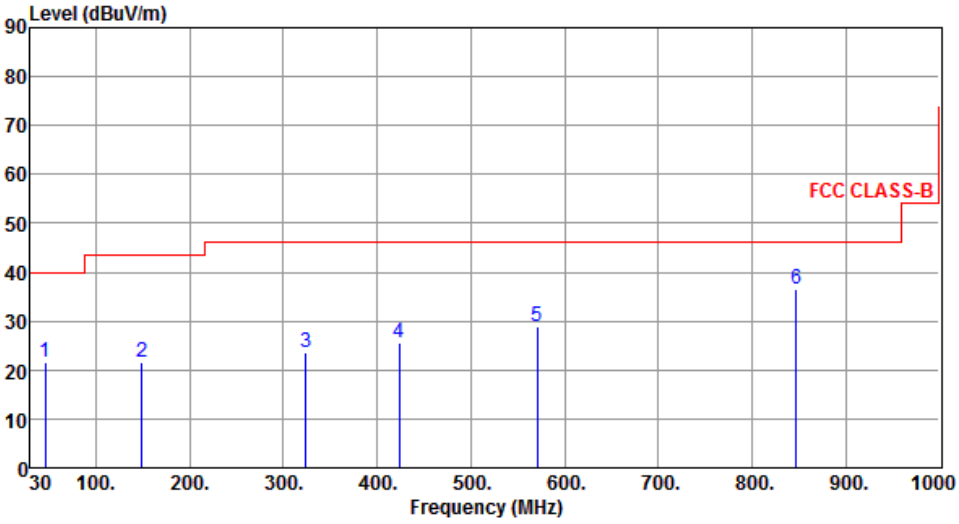
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.26	24.55	40.00	-15.45	32.77	-8.22	Peak	---	---
2	159.46	23.58	43.50	-19.92	31.82	-8.24	Peak	---	---
3	298.53	22.36	46.00	-23.64	30.06	-7.70	Peak	---	---
4	470.96	26.46	46.00	-19.54	29.85	-3.39	Peak	---	---
5	552.54	28.59	46.00	-17.41	30.29	-1.70	Peak	---	---
6	736.35	31.33	46.00	-14.67	29.88	1.45	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Test configuration 4: model TBHV100

3.4.8 Transmitter Radiated Unwanted Emissions (Below 1GHz)

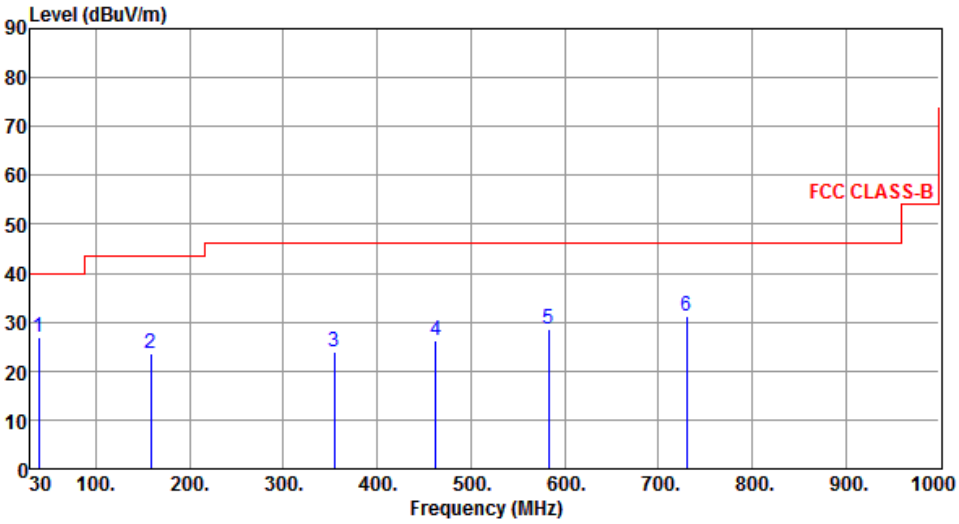
Modulation / SF	CSS / 12	**Test Freq. (MHz)**	903
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	46.28	21.74	40.00	-18.26	29.53	-7.79	Peak	---	---
2	148.66	21.63	43.50	-21.87	30.02	-8.39	Peak	---	---
3	323.61	23.45	46.00	-22.55	30.52	-7.07	Peak	---	---
4	423.41	25.56	46.00	-20.44	29.96	-4.40	Peak	---	---
5	570.64	28.93	46.00	-17.07	30.26	-1.33	Peak	---	---
6	847.55	36.43	46.00	-9.57	33.34	3.09	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

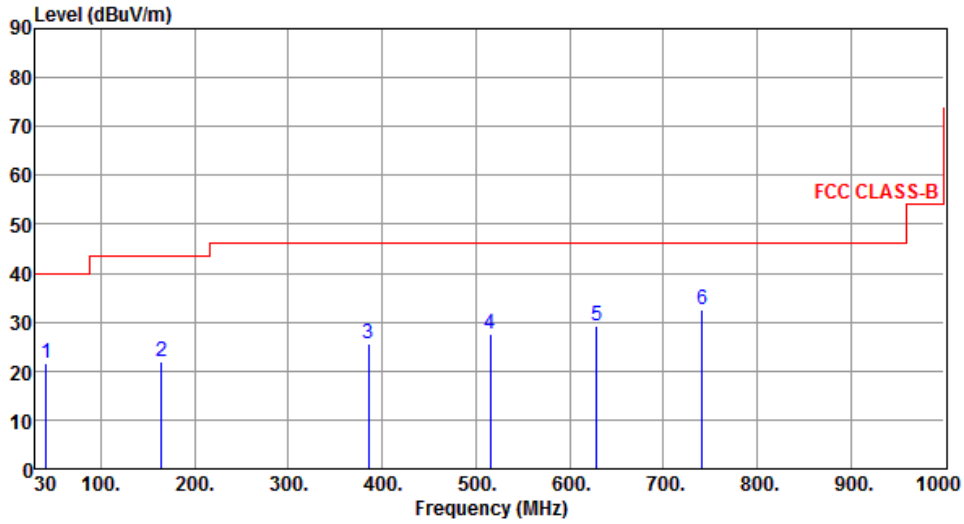
Modulation / SF	CSS / 12	Test Freq. (MHz)	903
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.34	26.88	40.00	-13.12	35.10	-8.22	Peak	---	---
2	158.64	23.54	43.50	-19.96	31.78	-8.24	Peak	---	---
3	354.74	23.82	46.00	-22.18	30.09	-6.27	Peak	---	---
4	462.26	26.35	46.00	-19.65	29.90	-3.55	Peak	---	---
5	583.26	28.53	46.00	-17.47	29.60	-1.07	Peak	---	---
6	730.29	31.35	46.00	-14.65	30.03	1.32	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

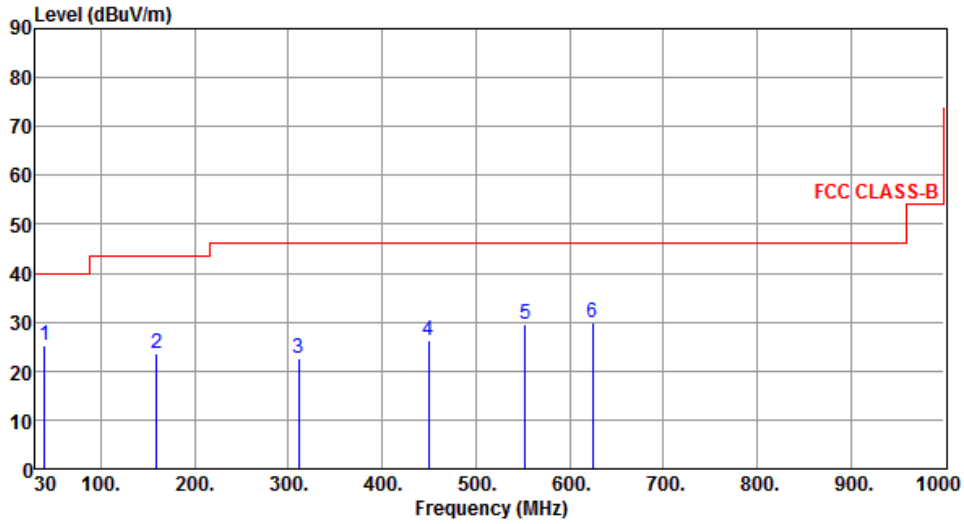
Modulation / SF	CSS / 12	Test Freq. (MHz)	907.8
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	41.88	21.59	40.00	-18.41	29.64	-8.05	Peak	---	---
2	164.41	21.85	43.50	-21.65	30.25	-8.40	Peak	---	---
3	385.26	25.57	46.00	-20.43	30.95	-5.38	Peak	---	---
4	515.62	27.45	46.00	-18.55	29.95	-2.50	Peak	---	---
5	628.63	29.29	46.00	-16.71	29.69	-0.40	Peak	---	---
6	741.81	32.56	46.00	-13.44	30.99	1.57	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

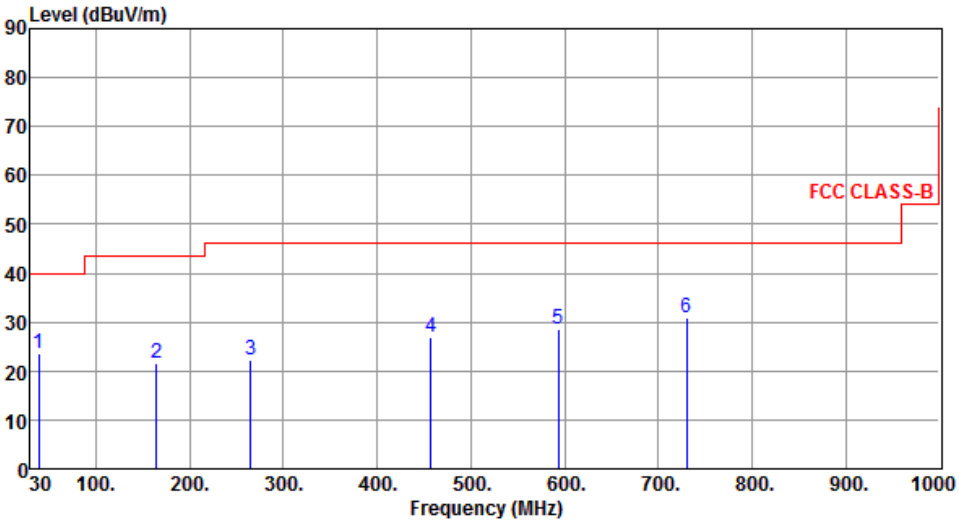
Modulation / SF	CSS / 12	Test Freq. (MHz)	907.8
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.43	25.22	40.00	-14.78	33.43	-8.21	Peak	---	---
2	159.46	23.44	43.50	-20.06	31.68	-8.24	Peak	---	---
3	311.16	22.54	46.00	-23.46	29.93	-7.39	Peak	---	---
4	449.28	26.32	46.00	-19.68	30.12	-3.80	Peak	---	---
5	552.76	29.49	46.00	-16.51	31.19	-1.70	Peak	---	---
6	624.45	29.82	46.00	-16.18	30.27	-0.45	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

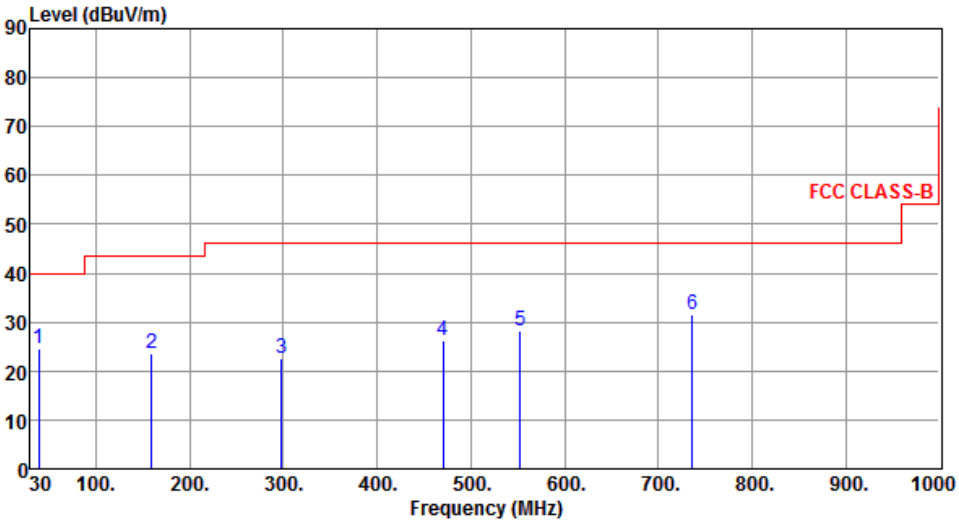
Modulation / SF	CSS / 12	Test Freq. (MHz)	914.2
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.36	23.46	40.00	-16.54	31.68	-8.22	Peak	---	---
2	164.55	21.49	43.50	-22.01	29.89	-8.40	Peak	---	---
3	265.28	22.33	46.00	-23.67	31.10	-8.77	Peak	---	---
4	457.53	26.96	46.00	-19.04	30.60	-3.64	Peak	---	---
5	593.64	28.65	46.00	-17.35	29.49	-0.84	Peak	---	---
6	729.84	30.92	46.00	-15.08	29.61	1.31	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation / SF	CSS / 12	Test Freq. (MHz)	914.2
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	39.26	24.63	40.00	-15.37	32.85	-8.22	Peak	---	---
2	159.67	23.62	43.50	-19.88	31.85	-8.23	Peak	---	---
3	298.43	22.43	46.00	-23.57	30.13	-7.70	Peak	---	---
4	470.49	26.26	46.00	-19.74	29.66	-3.40	Peak	---	---
5	552.64	28.29	46.00	-17.71	29.99	-1.70	Peak	---	---
6	736.65	31.56	46.00	-14.44	30.10	1.46	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

3.5 Emissions in Non-Restricted Frequency Bands

3.5.1 Emissions in Non-Restricted Frequency Bands Limit

Peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz

3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

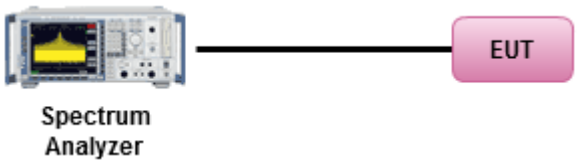
Reference level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Use the peak marker function to determine the maximum PSD level

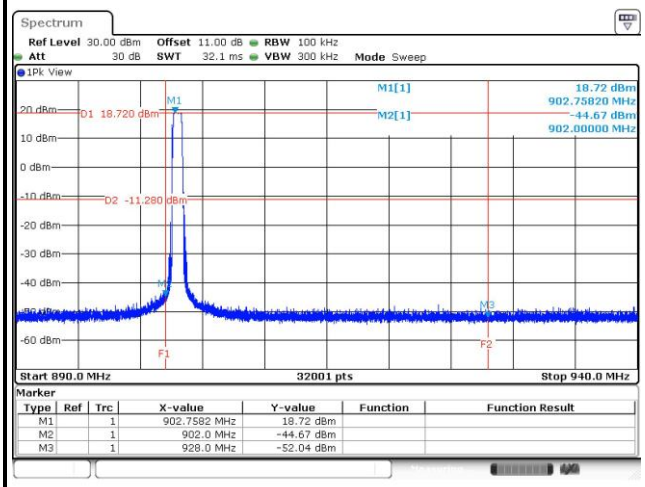
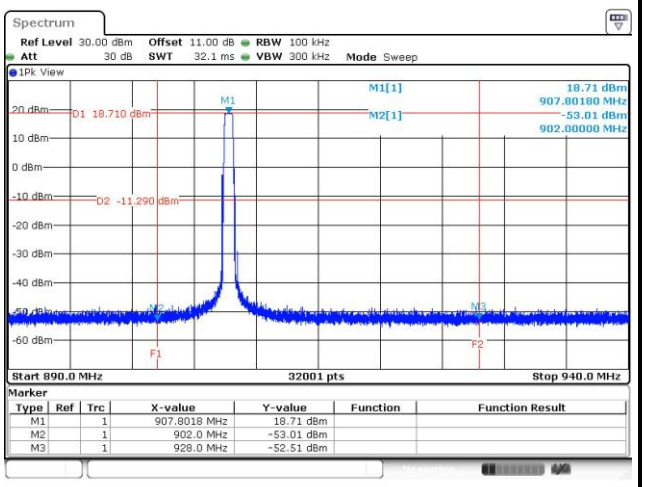
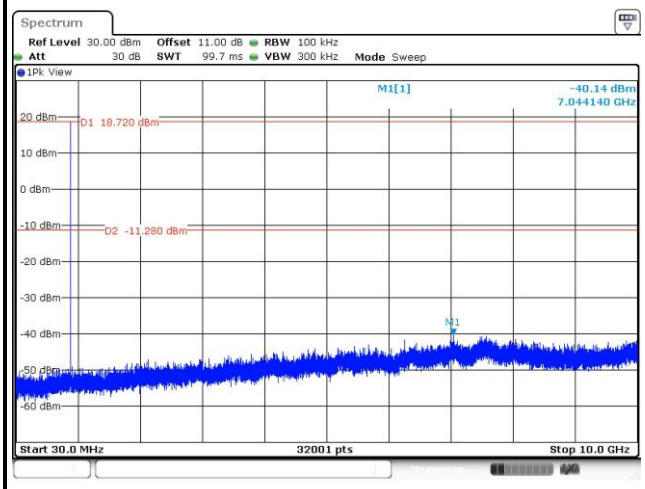
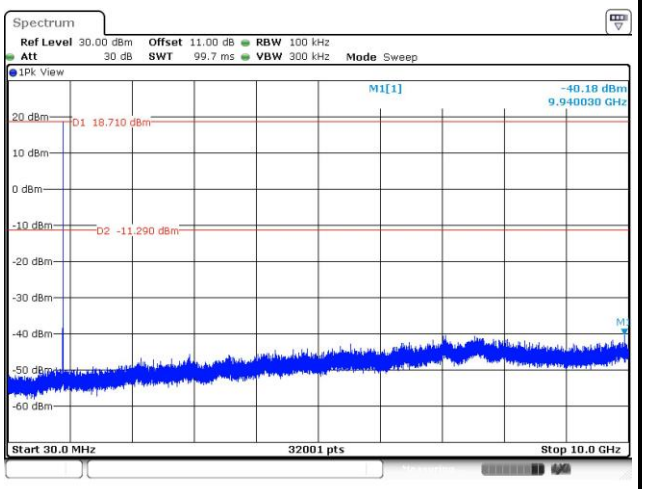
Emission level measurement

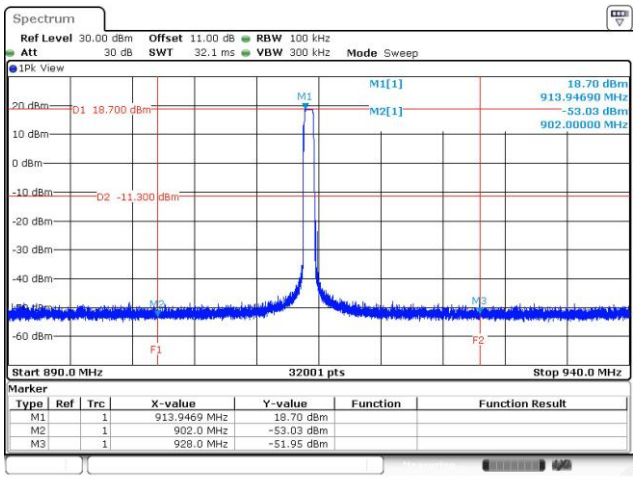
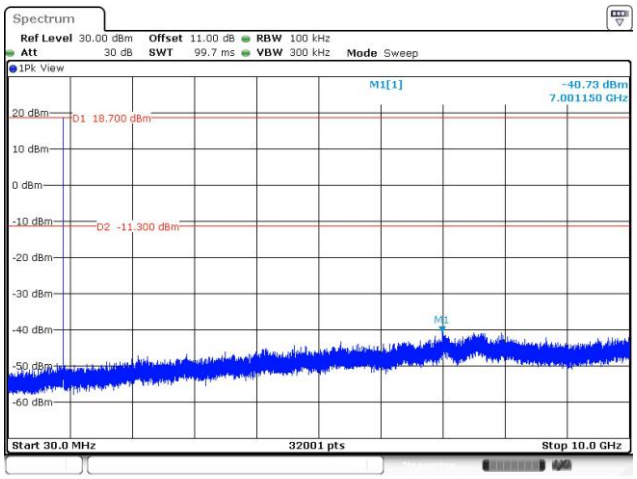
1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Scan Frequency range is up to 10GHz
4. Use the peak marker function to determine the maximum amplitude level

3.5.4 Test Setup

Transmitter Radiated Bandedge Emissions


3.5.5 Unwanted Emissions into Non-Restricted Frequency Bands

TX Freq 903MHz / 30MHz~10GHz (down 30dBc)	TX Freq 907.8MHz / 30MHz~10GHz (down 30dBc)
	
	

TX Freq 914.2MHz / 30MHz~10GHz (down 30dBc)	---
	---
	---

4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website http://www.icertifi.com.tw.

Linkou	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.

If you have any suggestion, please feel free to contact us as below information.

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

==END==