TEST REPORT

Applicant:	Janam Technologies LLC
Address of Applicant:	100 CROSSWAYS PARK WEST, SUITE 105, WOODBURY, New York, United States 11797
Manufacturer:	Janam Technologies LLC
Address of Manufacturer:	100 CROSSWAYS PARK WEST, SUITE 105, WOODBURY, New York, United States 11797
Product name:	XM20 MOBILE BARCODE TERMINAL
Model:	XM20
Rating(s):	Rechargeable battery: 3.7Vdc DC 5.5V, 2A
Trademark:	XM
Standards:	FCC Part 15.247 :2013
FCC ID:	UTWXM20-R
Date of Receipt:	2014-12-01
Date of Test:	2014-12-01~2015-05-18
Date of Issue:	2015-05-18
Test Result	**Pass***

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

Authorized for issue by:

Test by:			***Reviewed by:***		
May.18.2015	Jumy Qiu Project Engineer		May.18.2015	Pauler Li Project Manager	
Date	*Name/Position*	*Signature*	*Date*	*Name/Position*	*Signature*

Possible test case verdicts:	
test case does not apply to the test object ..:	N/A
test object does meet the requirement .....:	P (Pass)
test object does not meet the requirement ..:	F (Fail)

Testing Laboratory information:		
Testing Laboratory Name ..... :		I-Test Laboratory
Address ..... :		1-2 floor, South Block, Building A2 , No 3 Keyan Lu, Science City, Guangzhou, Guangdong Province, P.R. China
Testing location	:	Same as above
Tel	:	0086-20-32209330
Fax	:	0086-20-62824387
E-mail	:	itl@i-testlab.com

General remarks:

The test results presented in this report relate only to the object tested.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report would be invalid test report without all the signatures of testing technician and approver.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

General product information:

There are two config - 18000C config and Railway Config.
For 18000C config
Operating Frequency: 902.75 MHz to 927.25 MHz for RFID
Channels: 50 channels with 0.5MHz step for RFID
Modulation Technique: ASK

For Railway config
Operating Frequency: 918.7 MHz to 921.45 MHz for RFID
Channels: 51 channels with 25KHz step for RFID
Modulation Technique: Carrier only

1 Test Summary

Test	Test Requirement	Test method	Result
Antenna Requirement	FCC PART 15 C section 15.247 (c) and Section 15.203	FCC PART 15 C section 15.247 (c) and Section 15.203	PASS
Occupied Bandwidth (-20dB)	FCC PART 15 C section 15.247 (a)(1)(i);	ANSI C63.10: 2009 Clause 6.9 & DA 00-705	PASS
Carrier Frequencies Separated	FCC PART 15 C section 15.247(a)(1);	DA 00-705	PASS
Hopping Channel Number	FCC PART 15 C section 15.247(a)(1)(i)	DA 00-705	PASS
Dwell Time	FCC PART 15 C section 15.247(a)(1)(i);	DA 00-705	PASS
Maximum Peak Output Power	FCC PART 15 C section 15.247(b)(2);	ANSI C63.10:2009 Clause 6.10 & DA 00-705	PASS
Conducted Spurious Emission (30 MHz to 25 GHz)	FCC PART 15 C section 15.247(d);	ANSI C63.10:2009 Clause 6.7 & DA 00-705	PASS
Radiated Spurious Emission (9 kHz to 25 GHz)	FCC PART 15 C section 15.247(d);	ANSI C63.10:2009 Clause 6.4, 6.5 and 6.6 & DA 00-705	PASS
Band Edges Measurement	FCC PART 15 C section 15.247 (d) &15.205	ANSI C63.10:2009 Clause 6.9 & DA 00-705	PASS
Conducted Emissions at Mains Terminals	FCC PART 15 C section 15.207;	ANSI C63.10:2009 Clause 6.2 & DA 00-705	PASS

Remark:

N/A: not applicable. Refer to the relative section for the details.
EUT: In this whole report EUT means Equipment Under Test.
Tx: In this whole report Tx (or tx) means Transmitter.
Rx: In this whole report Rx (or rx) means Receiver.
RF: In this whole report RF means Radio Frequency.
ANSI C63.10: the detail version is ANSI C63.10:2009 in the whole report.
DA 00-705: “Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems”

2 Contents

3 General Information

3.1 Client Information

Applicant:	Janam Technologies LLC
Address of Applicant:	100 CROSSWAYS PARK WEST, SUITE 105, WOODBURY, New York, United States 11797

3.2 General Description of E.U.T.

Name:	XM20 MOBILE BARCODE TERMINAL
Model No.:	XM20
Trade Mark:	XM
Operating Frequency:	902.75 MHz to 927.25 MHz for RFID (For 18000C config) 918.7 MHz to 921.45 MHz for RFID (For Railway config)
Channels:	50 channels with 0.5MHz step for RFID (For 18000C config) 51 channels with 25KHz step for RFID (For Railway config)
Modulation Technique:	ASK (For 18000C config) Carrier only (For Railway config)
Dwell time	Per channel is less than 0.4s.
Antenna Type	Patch Antenna
Antenna gain:	2.2dBi max
Function:	RFID Reader

3.3 Details of E.U.T.

EUT Power Supply:	Lithium battery :3.7V×1
Test mode:	The program used to control the EUT for staying in continuous transmitting and receiving mode is programmed. For 18000C config channel lowest (902.75MHz), middle (915.25MHz) and highest (927.25MHz) are chosen for full testing. For Railway config channel lowest (918.7MHz), middle (919.325MHz) and highest (921.45MHz) are chosen for full testing.
Power cord:	/

3.4 Description of Support Units

The EUT has been tested as an independent unit for fixed frequency by testing lab.

3.5 Test Location

All tests were performed at:

I-Test Laboratory

1-2 floor, South Block, Building A2 , No 3 Keyan Lu, Science City, Guangzhou, Guangdong Province, P.R. China

0086-20-32209330

itl@i-testlab.com

No tests were sub-contracted.

3.6 Deviation from Standards

Biconical and log periodic antennas were used instead of dipole antennas.

3.7 Abnormalities from Standard Conditions

None.

3.8 Other Information Requested by the Customer

None.

3.9 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS(Lab code:L4957)**
- **FCC (Registration No.:935596)**
- **IC (Registration NO.:8368A)**

3.10 Measurement Uncertainty

The below measurement uncertainties given below are based on a 95% confidence level (base on a coverage factor (k=2).)

Parameter	Uncertainty
Radio frequency	$\pm 1.06 \times 10^{-7}$
total RF power, conducted	1.37 dB
RF power density , conducted	2.89 dB
All emissions, radiated	±3.35 dB
Temperature	±0.23 °C
Humidity	±0.3 %
DC and low frequency voltages	±0.3 %

4 Instruments Used during Test

No.	Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
ITL-114	Spectrum Analyzer	Agilent	N9010A	MY51250936	2015/01/19	2016/01/19
ITL-116	Pre Amplifier	HP	8447F	3113A05905	2015/01/19	2016/01/19
ITL-117	Wideband Amplifier Super Ultra	Mini-circuits	ZVA-183-S+	469101134	2015/01/19	2016/01/19
ITL-105	Biconilog Antenna	ETS•Lindgren	3142D	00108096	2015/01/24	2018/01/24
ITL-110	Horn Antenna	A-INFOMW	JXTXLB-10180-N	J2031090612133	2015/01/24	2018/01/24
ITL-102	EMI Test receiver	R&S	ESCI	100910	2014/06/17	2015/06/17
ITL-103	Two-line v-network	R&S	ENV216	100120	2014/06/17	2015/06/17
ITL-115	50Ω Coaxial Cable	Mini-circuits	CBL	C001	2014/09/07	2015/09/07
ITL-100	Semi-Anechoic chamber	ETS•Lindgren	FACT3 2.0	CT09015	2013/06/17	2016/06/17
ITL-145	Loop Antenna	ZHINAN	ZN30900A	002489	2015/01/19	2016/01/19
ITL-146	Horn Antenna	Schwarzbeck	BBHA 9170	B09806543	2014/06/08	2015/06/08
ITL-101	Shielded Room	ETS•Lindgren	8*4*3	CT09010	2015/03/09	2018/03/09

5 Test Results

5.1 E.U.T. test conditions

Test Voltage: Input: AC 120V, 60 Hz

Temperature: 20.0 -25.0 °C

Humidity: 38-50 % RH

Atmospheric Pressure: 1000 -1010 mbar

Test frequencies and frequency range: According to the 15.31(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and, if required, reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table:

According to the 15.33 (a) For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in the following table:

Number of fundamental frequencies to be tested in EUT transmit band

Frequency range in which	Number of	Location in frequency range
1 MHz or less	1	Middle
1 MHz to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top, 1 near middle and 1 near bottom

Frequency range of radiated emission measurements

Lowest frequency generated	Upper frequency range of measurement
9 kHz to below 10 GHz	10th harmonic of highest fundamental frequency or to 40 GHz,
At or above 10 GHz to below	5th harmonic of highest fundamental frequency or to 100 GHz,
At or above 30 GHz	5th harmonic of highest fundamental frequency or to 200 GHz,

EUT channels and frequencies list for RFID:

For 18000C config :

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	902.75	18	911.25	35	919.75
2	903.25	19	911.75	36	920.25
3	903.75	20	912.25	37	920.75
4	904.25	21	912.75	38	921.25
5	904.75	22	913.25	39	921.75
6	905.25	23	913.75	40	922.25
7	905.75	24	914.25	41	922.75
8	906.25	25	914.75	42	923.25
9	906.75	26	915.25	43	923.75
10	907.25	27	915.75	44	924.25
11	907.75	28	916.25	45	924.75
12	908.25	29	916.75	46	925.25
13	908.75	30	917.25	47	925.75
14	909.25	31	917.75	48	926.25
15	909.75	32	918.25	49	926.75
16	910.25	33	918.75	50	927.25
17	910.75	34	919.25		

Test frequencies are the lowest channel: 1 channel (902.75 MHz), middle channel: 26 channel (915.25 MHz) and highest channel: 50 channel (927.25 MHz)

For Railway config:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	918.7	18	919.125	35	921.05
2	918.725	19	919.15	36	921.075
3	918.75	20	919.175	37	921.1
4	918.775	21	919.2	38	921.125
5	918.8	22	919.225	39	921.15
6	918.825	23	919.25	40	921.175
7	918.85	24	919.275	41	921.2
8	918.875	25	919.3	42	921.225
9	918.9	26	919.325	43	921.25
10	918.925	27	920.85	44	921.275
11	918.95	28	920.875	45	921.3
12	918.975	29	920.9	46	921.325
13	919	30	920.925	47	921.35
14	919.025	31	920.95	48	921.375
15	919.05	32	920.975	49	921.4
16	919.075	33	921	50	921.425
17	919.1	34	921.025	51	921.45

Test frequencies are the lowest channel: 1 channel (918.7 MHz), middle channel: 26 channel (919.325 MHz) and highest channel: 50 channel (921.45 MHz)

5.2 Antenna requirement

Standard requirement

15.203 requirement:

For intentional device. According to 15.203. an intentional radiator shall be designed to Ensure that no antenna other than that furnished by the responsible party shall be used with the device.

EUT Antenna

The antenna is a Patch antenna and no consideration of replacement. The best case gain of the antenna is 2.2dBi.

Test result: The unit does meet the FCC requirements.

5.3 Occupied Bandwidth

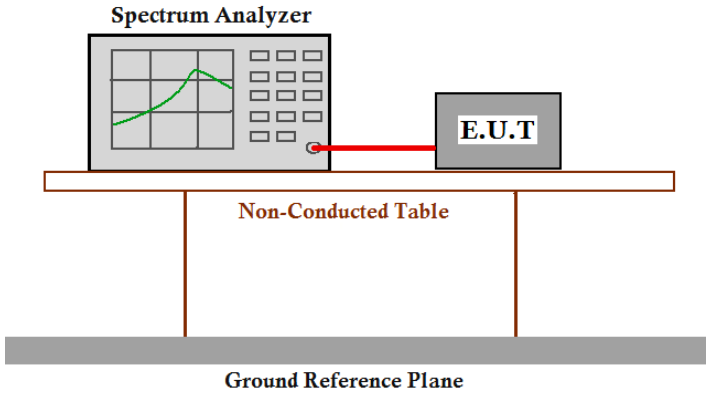
Test Requirement: FCC Part 15 C section 15.247

(a)(1)(i) The 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

Test Method: ANSI C63.10:2009 Clause 6.9 & DA 00-705

Test Status: The program used to control the EUT for staying in continuous transmitting and receiving mode is programmed. For 18000C config channel lowest (902.75MHz), middle (915.25MHz) and highest (927.25MHz) are chosen for full testing. For Railway config channel lowest (918.7MHz), middle (919.325MHz) and highest (921.45MHz) are chosen for full testing.

Test Configuration:



Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: Span = approximately 2 to 3 times the 20dB bandwidth, centring on a hopping channel;
3. Set the spectrum analyzer: RBW >= 1% of the 20dB bandwidth VBW >= RBW. Sweep = auto; Detector Function = Peak. Trace = Max Hold.
4. Mark the peak frequency and -20dB points bandwidth.

Test result (-20dB bandwidth), For RFID

For 18000C config :

Test Channel	Bandwidth(MHz)
Lowest	0.068
Middle	0.074
Highest	0.083

For Railway config:

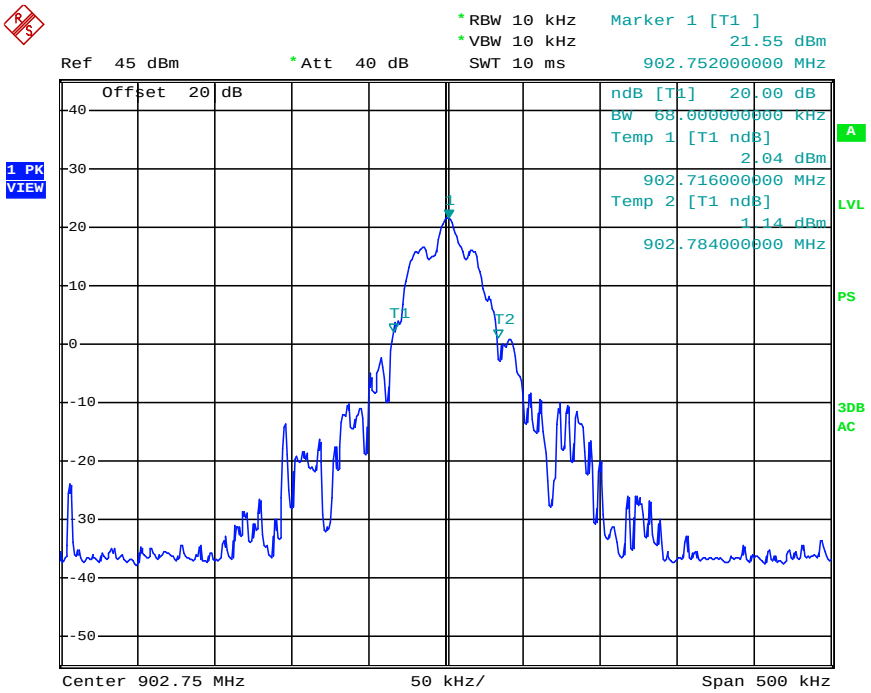
Test Channel	Bandwidth(Hz)
Lowest	290
Middle	360
Highest	290

For RFID

For 18000C config

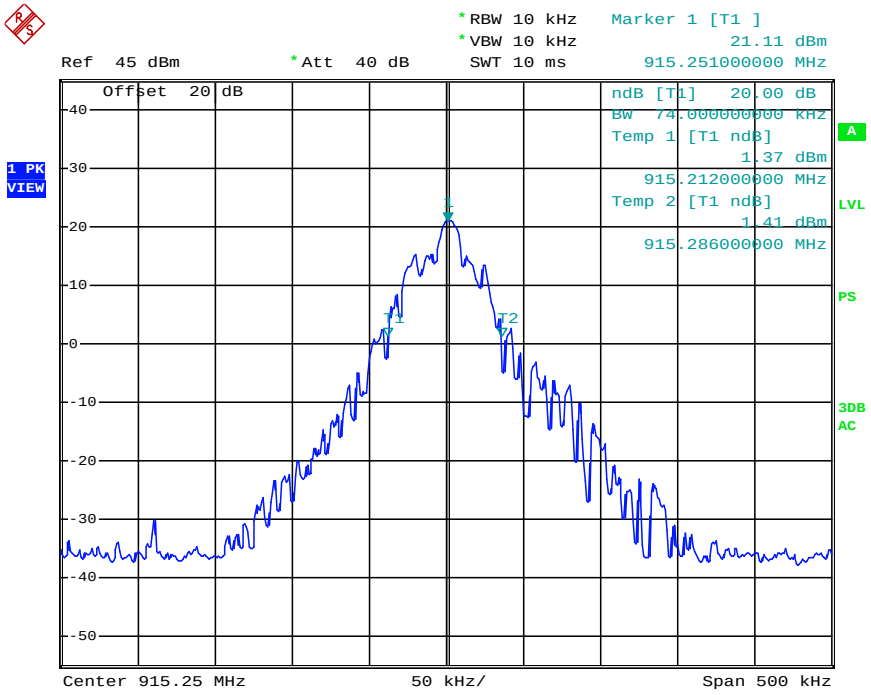
Result plot as follows:

Lowest Channel:



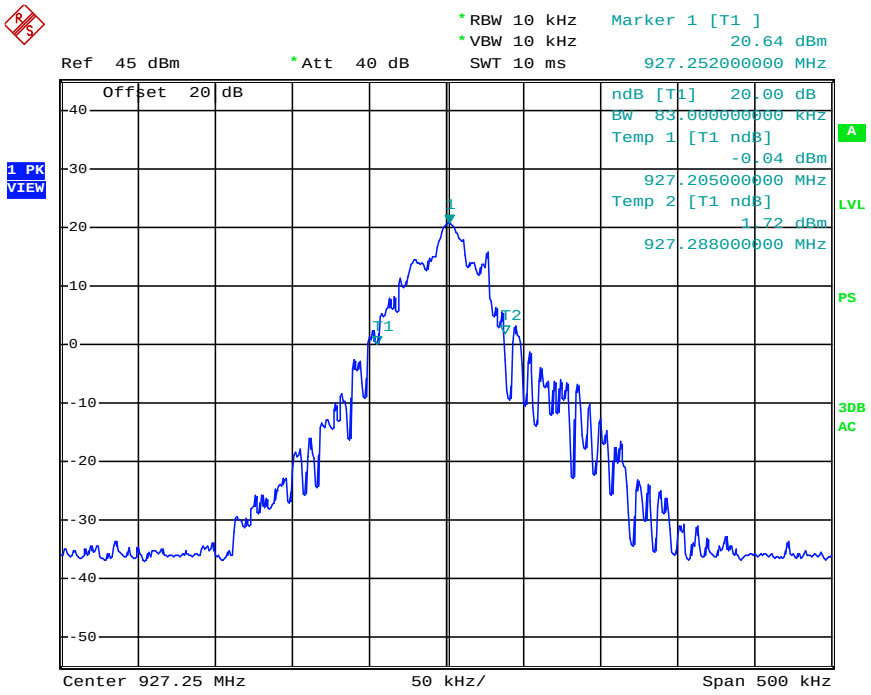
Date: 17.MAR.2015 14:19:44

Middle Channel:



Date: 17.MAR.2015 14:20:50

Highest Channel:



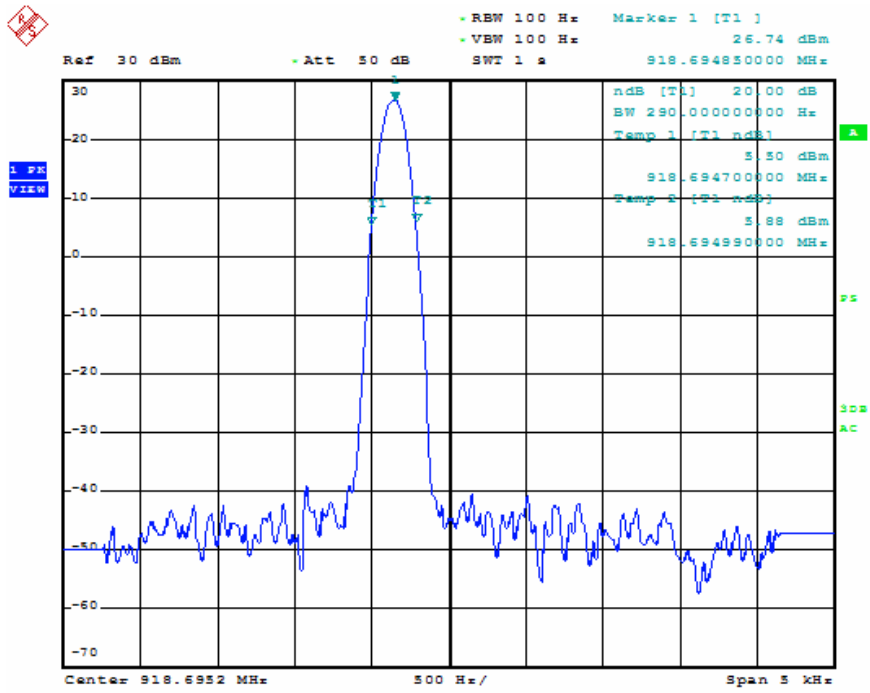
Date: 17.MAR.2015 14:24:07

For RFID

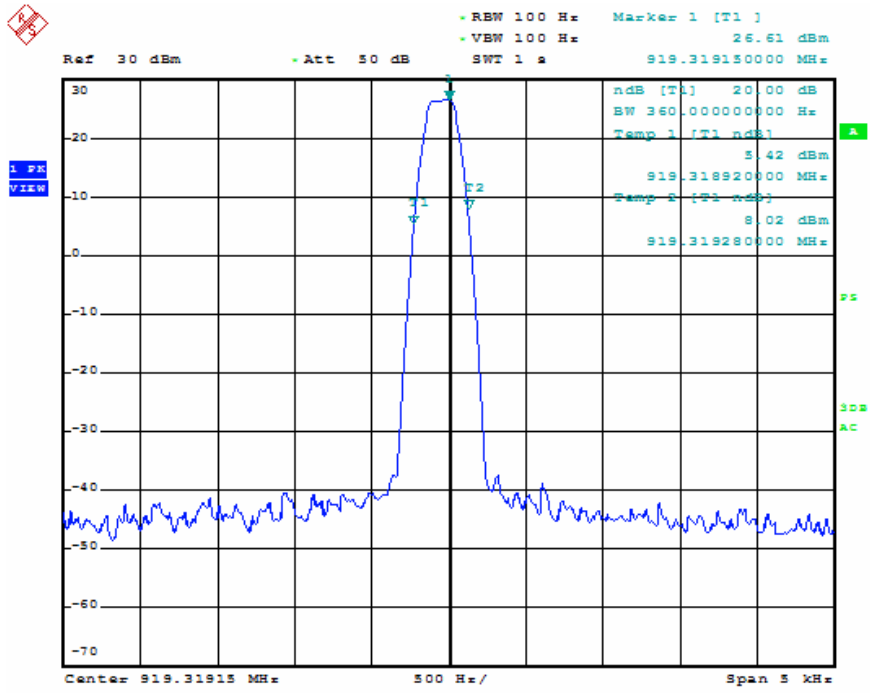
For Railway config

Result plot as follows:

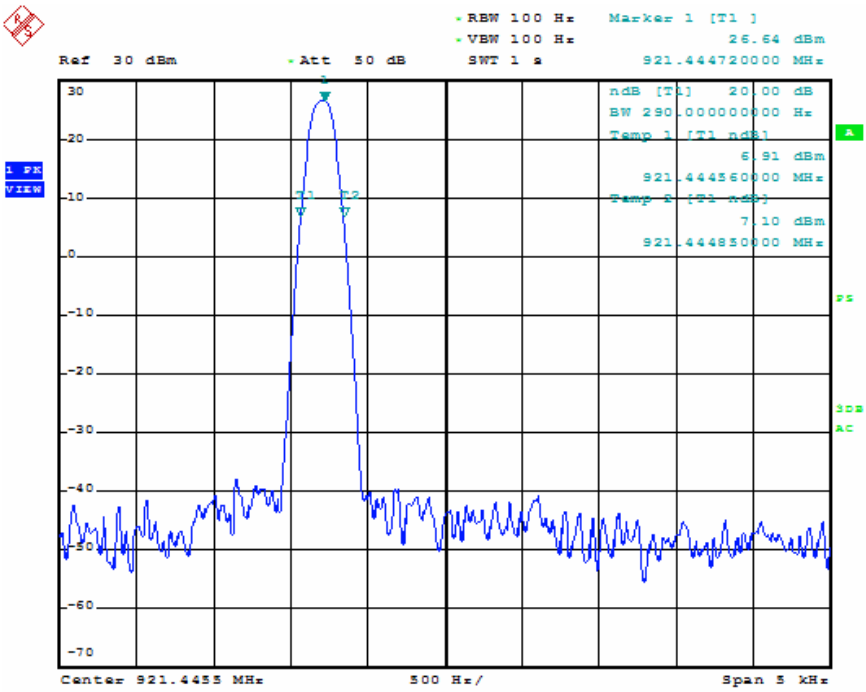
Lowest Channel:



Middle Channel:



Highest Channel:



5.4 Carrier Frequencies Separated

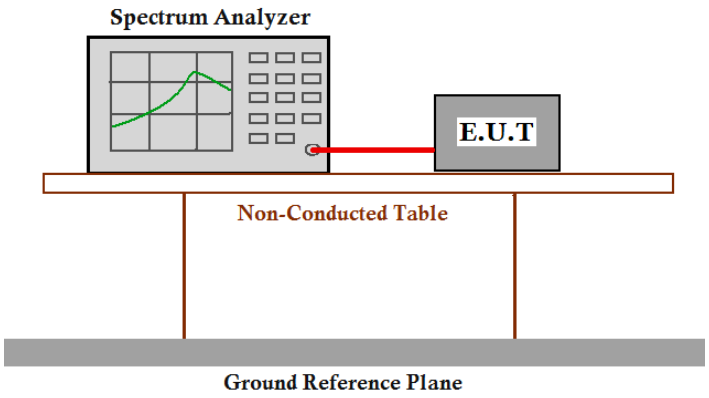
Test Requirement: FCC Part 15 C section 15.247

(a),(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Test Method: DA 00-705

Test Status: The program used to control the EUT for staying in continuous transmitting and receiving mode is programmed. For 18000C config channel lowest (902.75MHz), middle (915.25MHz) and highest (927.25MHz) are chosen for full testing. For Railway config channel lowest (918.7MHz), middle (919.325MHz) and highest (921.45MHz) are chosen for full testing.

Test Configuration:



Test Procedure:

1. Remove the antenna from the EUT and then connect a low attenuation RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW >= 1% of the span, VBW >= RBW,. Sweep = auto; Detector Function = Peak. Trace = Max, hold.
3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section. Submit this plot.

Test result:

For RFID
For 18000C config :

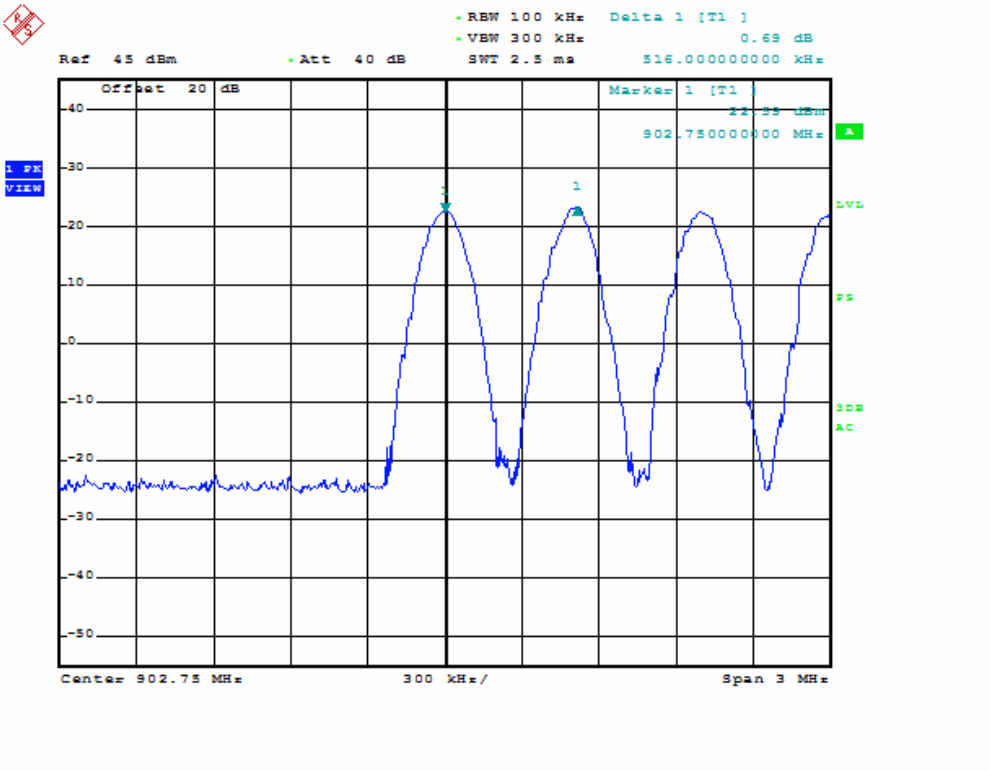
Test Channel	Carrier Frequencies Separated	Pass/Fail
Lower Channels (channel 1 and channel 2)	0.516 MHz	Pass
Middle Channels (channel 25 and channel 26)	0.516 MHz	Pass
Upper Channels (channel 49 and channel 50)	0.504 MHz	Pass
Remark: The limit is maximum the 20 dB bandwidth: 0.083 MHz		

For Railway config:

Test Channel	Carrier Frequencies Separated	Pass/Fail
Lower Channels (channel 1 and channel 2)	0.025 MHz	Pass
Middle Channels (channel 25 and channel 26)	0.025 MHz	Pass
Upper Channels (channel 50 and channel 51)	0.025 MHz	Pass
Remark: The limit is maximum the 20 dB bandwidth: 360 Hz		

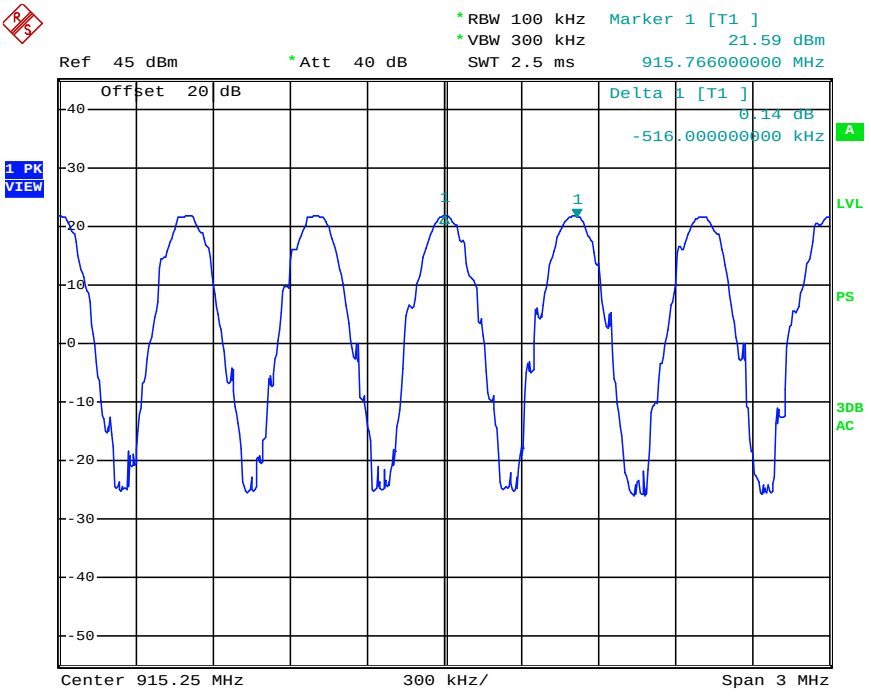
For RFID
For 18000C config
Carrier Frequencies Separated plot:

1. Lowest Channels:



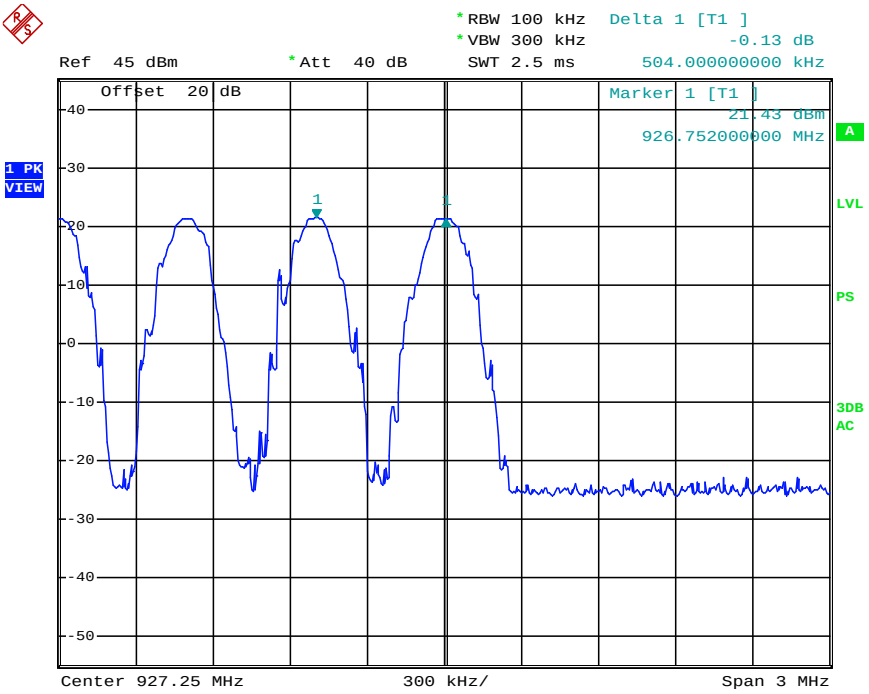
Date: 10.FEB.2015 16:56:18

2. Middle Channels:



Date: 10.FEB.2015 16:58:02

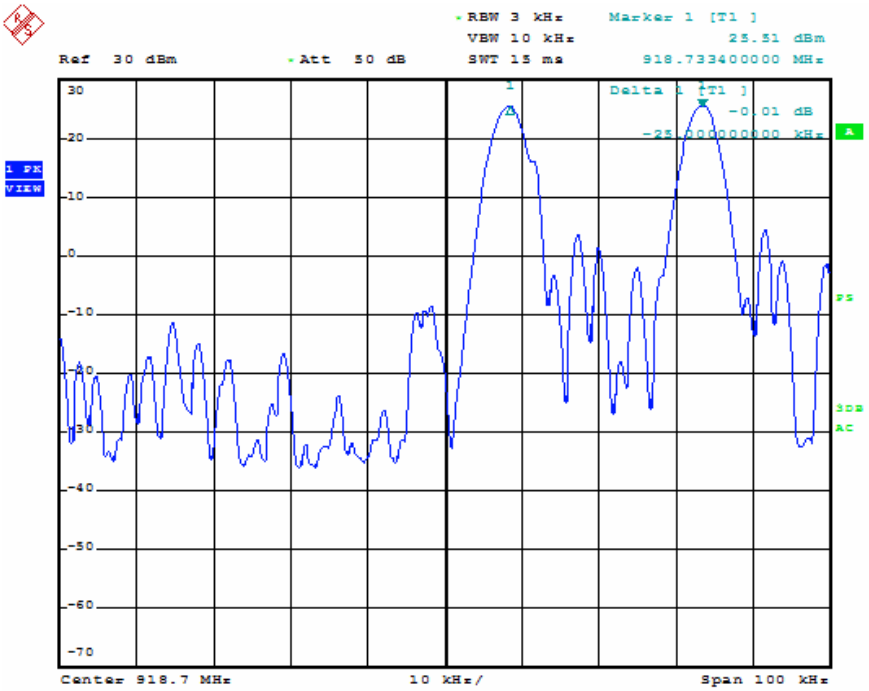
3. Highest Channels



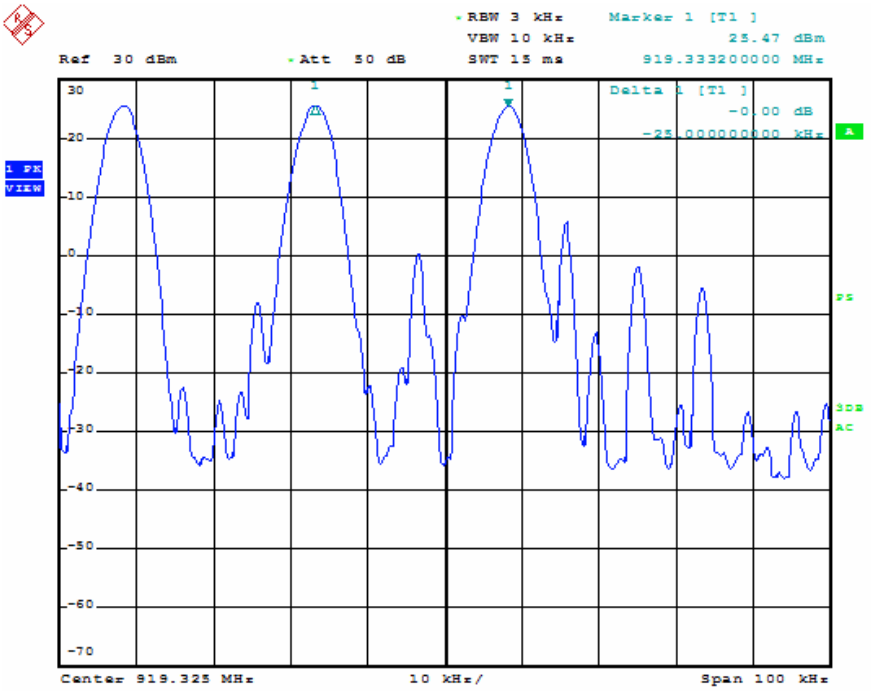
Date: 10.FEB.2015 16:59:48

For RFID
For Railway config
Carrier Frequencies Separated plot:

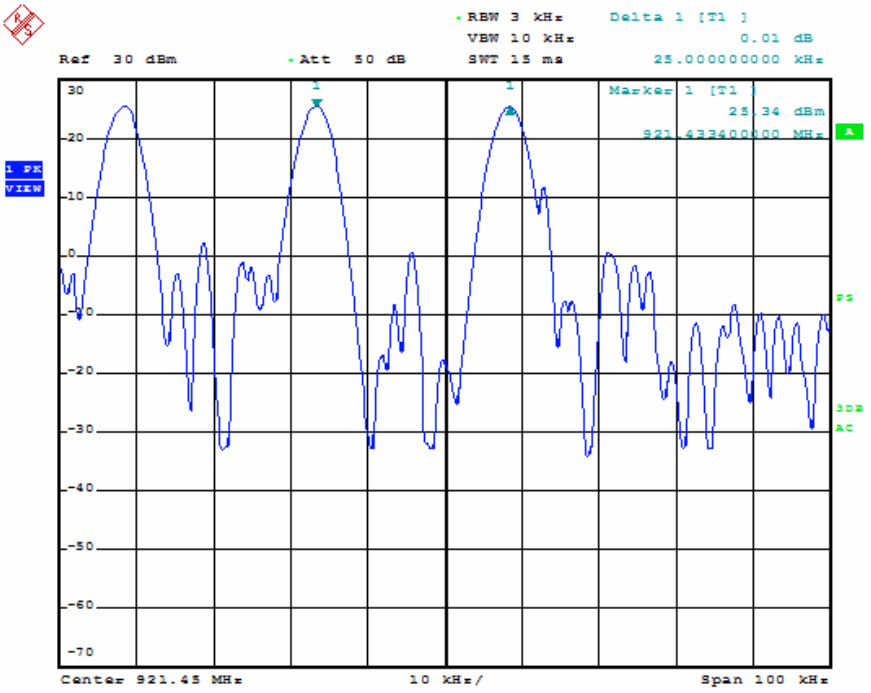
1. Lowest Channels:



2. Middle Channels:



3. Highest Channels



5.5 Hopping Channel Number

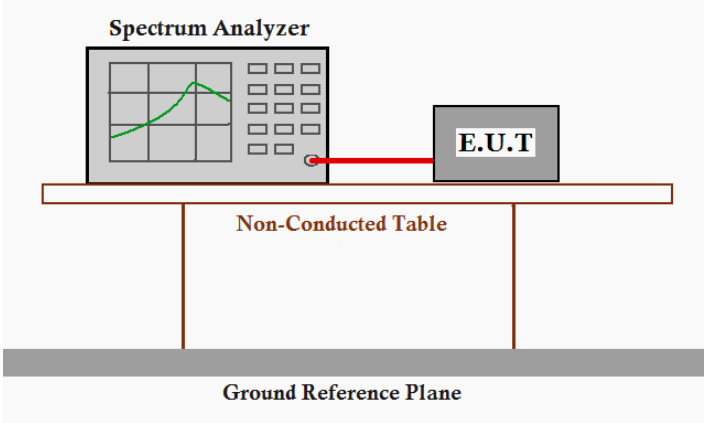
Test Requirement: FCC Part15 C section 15.247

(b)(2)For frequency hopping systems operating in the 902–928 MHz band: 1watt for systems employing at least 50 hopping channels;

Test Method: DA 00-705

Test Status: The program used to control the EUT for staying in continuous transmitting and receiving mode is programmed. For 18000C config channel lowest (902.75MHz), middle (915.25MHz) and highest (927.25MHz) are chosen for full testing. For Railway config channel lowest (918.7MHz), middle (919.325MHz) and highest (921.45MHz) are chosen for full testing.

Test Configuration:

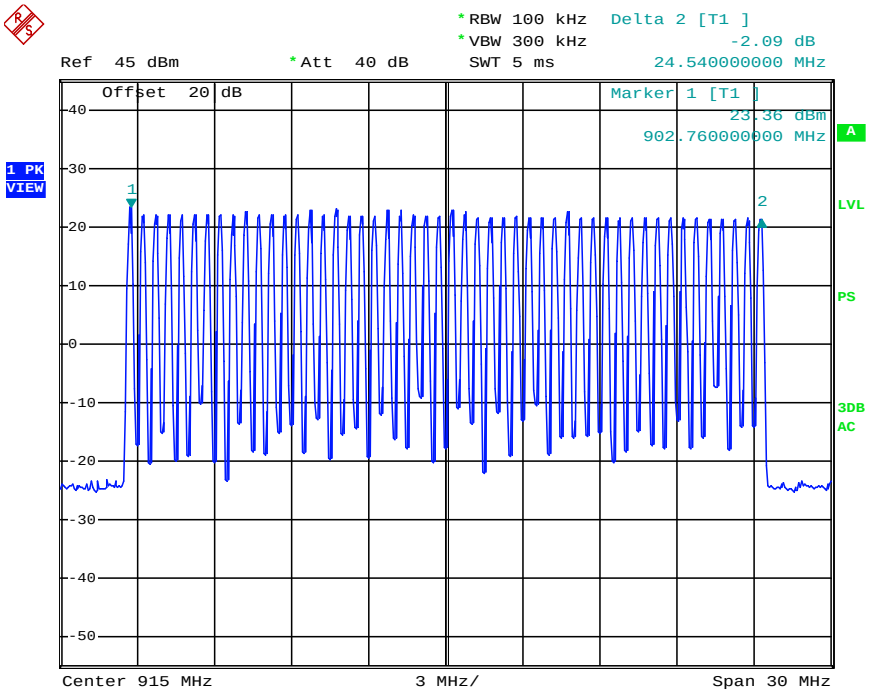


Test Procedure:

1. Remove the antenna from the EUT and then connect a low attenuation RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 100 kHz. VBW = 300 kHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.
3. Allow the trace to stabilize. It may prove necessary to break the span up to sections. in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section.
4. Set the spectrum analyzer: start frequency =900 MHz. stop frequency = 930 MHz. Submit the test result graph.

For RFID
For 18000C config

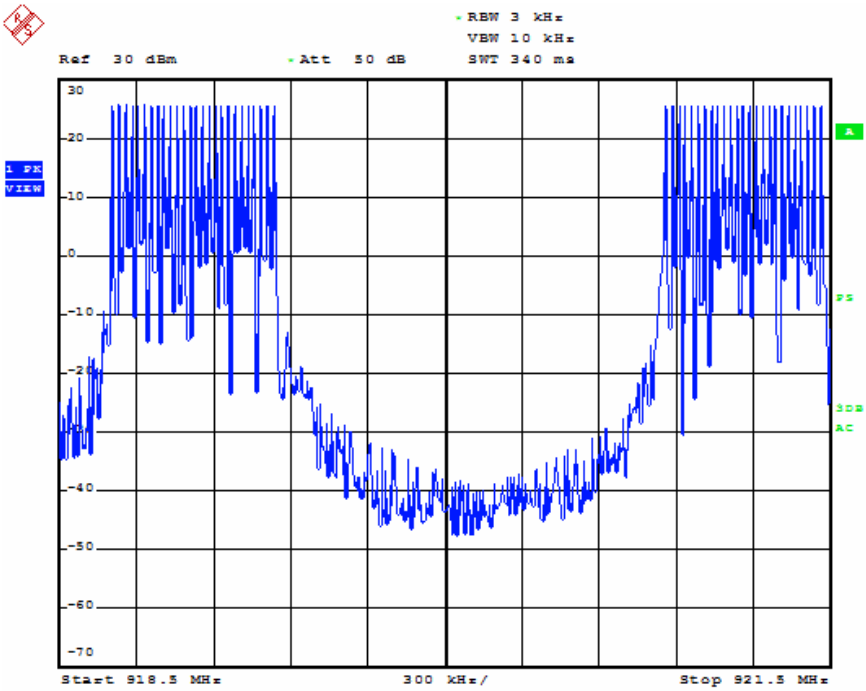
Test result: Total channels are 50 channels.



Date: 10.FEB.2015 16:22:39

For Railway config

Test result: Total channels are 51 channels.



Test result: The unit does meet the FCC requirements.

5.6 Dwell Time

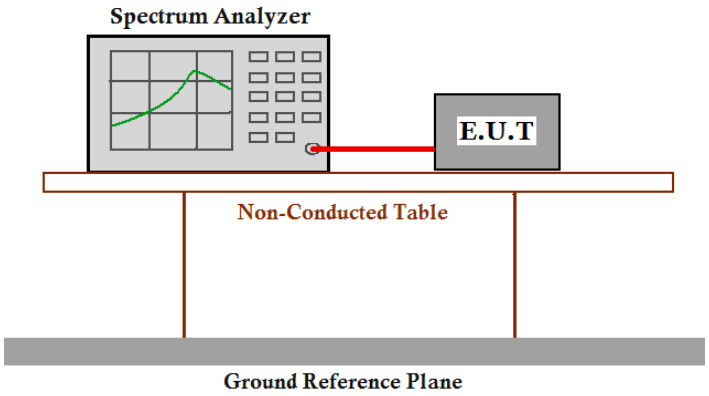
Test Requirement: FCC Part 15 C section 15.247

(a)(1)(i) For frequency hopping systems operating in the 902–928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period

Test Method: DA 00-705

Test Status: The program used to control the EUT for staying in continuous transmitting and receiving mode is programmed. For 18000C config channel lowest (902.75MHz), middle (915.25MHz) and highest (927.25MHz) are chosen for full testing. For Railway config channel lowest (918.7MHz), middle (919.325MHz) and highest (921.45MHz) are chosen for full testing.

Test Configuration:



Test Procedure:

1. Remove the antenna from the EUT and then connect a low attenuation RF cable from the antenna port to the spectrum.

2. Set spectrum analyzer span = 0. centered on a hopping channel;
3. Set RBW = 1 MHz and VBW = 1 MHz. Sweep = as necessary to capture the entire dwell time per hopping channel. Detector Function = Peak. Trace = View;
4. Use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g.. data rate. modulation format. etc.). Repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s). An oscilloscope may be used instead of a spectrum analyzer.

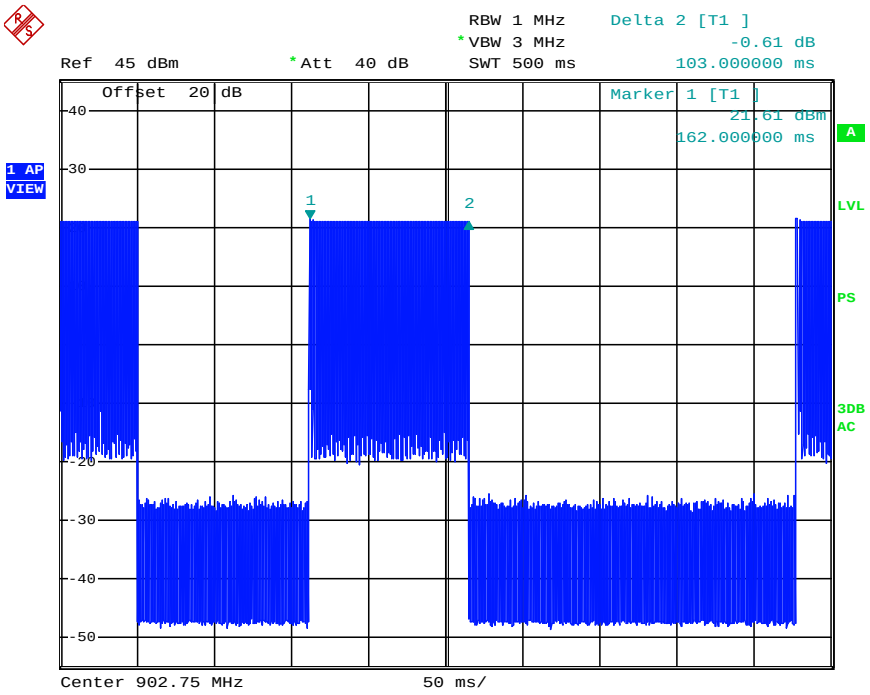
Test Result:

For RFID

For 18000C config

1. **Channel 1:** 902.75 MHz

Test Data



Date: 17.MAR.2015 18:03:59

Average Time of Occupancy

Event duration=103ms

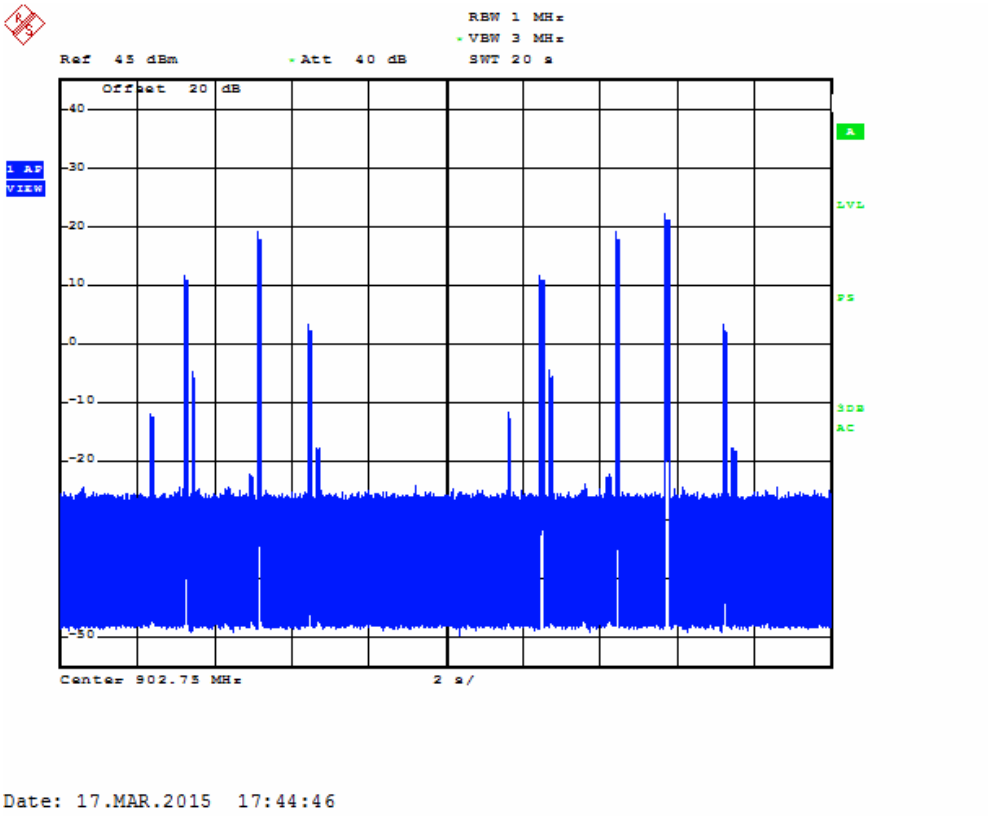


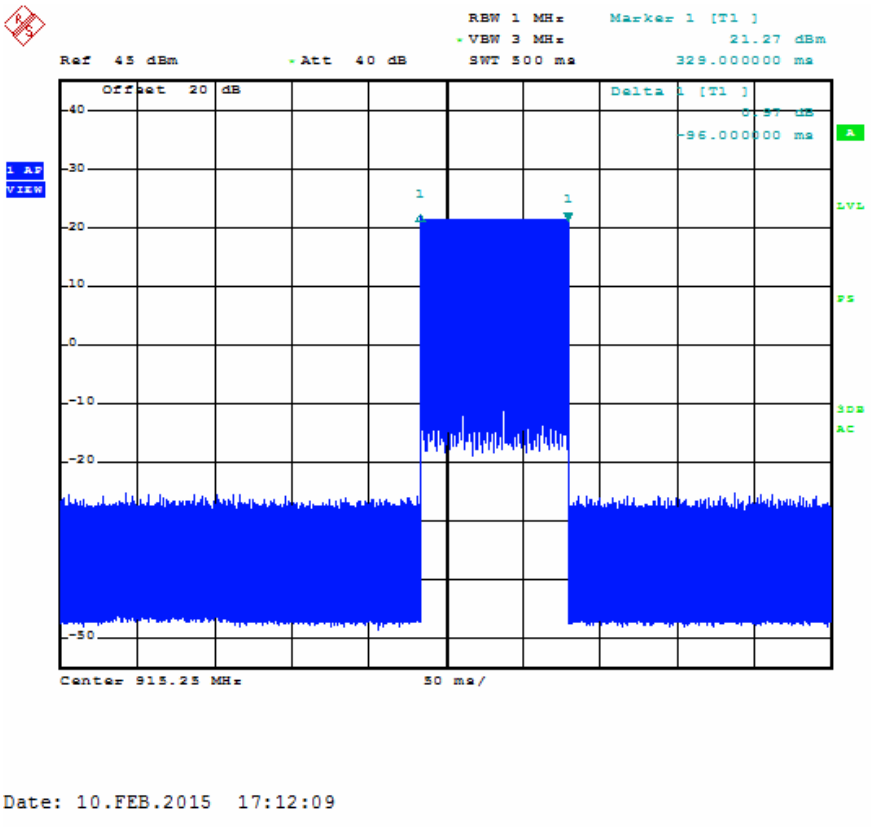
Figure 1: Number of events in 20sec

Sweep time =Event duration * Number of event in 20s=103ms*1=103ms

The results are not greater than 0.4 seconds

2. **Channel 26:** 915.25 MHz

Test Data



Average Time of Occupancy

Event duration=96ms

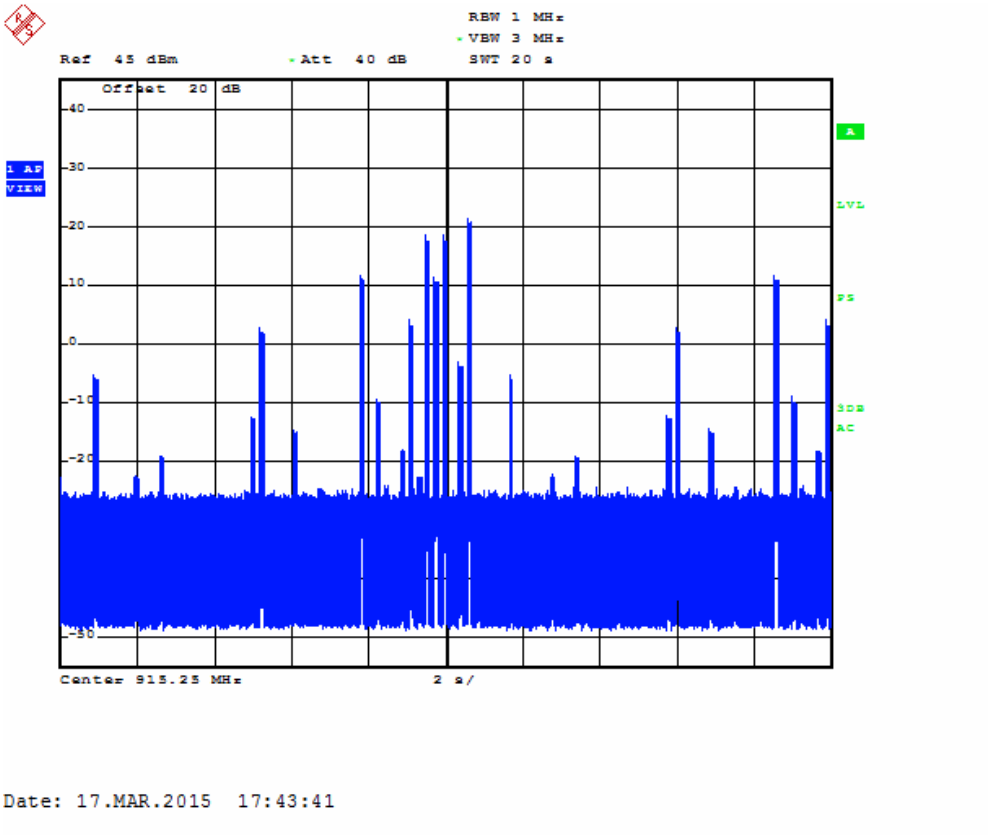


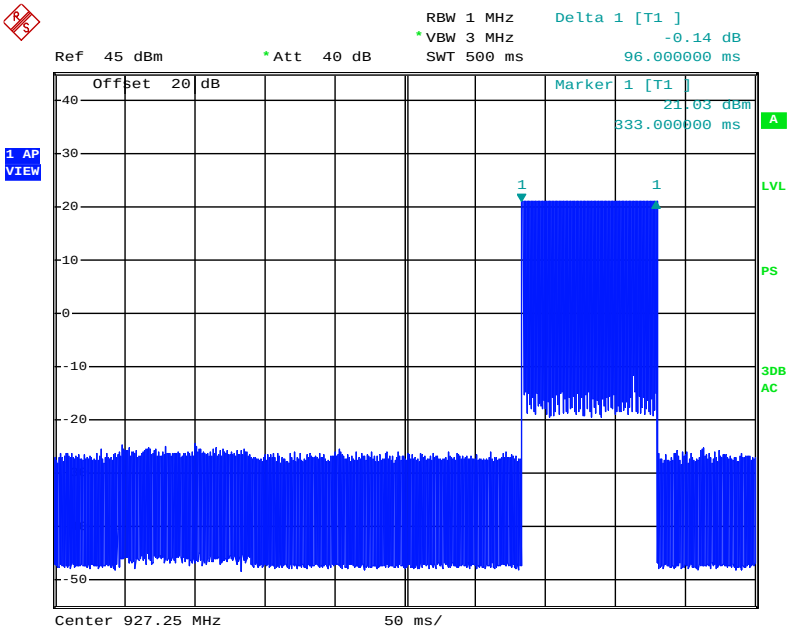
Figure 2: Number of events in 20sec

Sweep time =Event duration * Number of event in 20s=96ms*1=96ms

The results are not greater than 0.4 seconds

3. **Channel 50:** 927.25 MHz

Test Data



Date: 10.FEB.2015 17:14:20

Average Time of Occupancy

Event duration=96ms

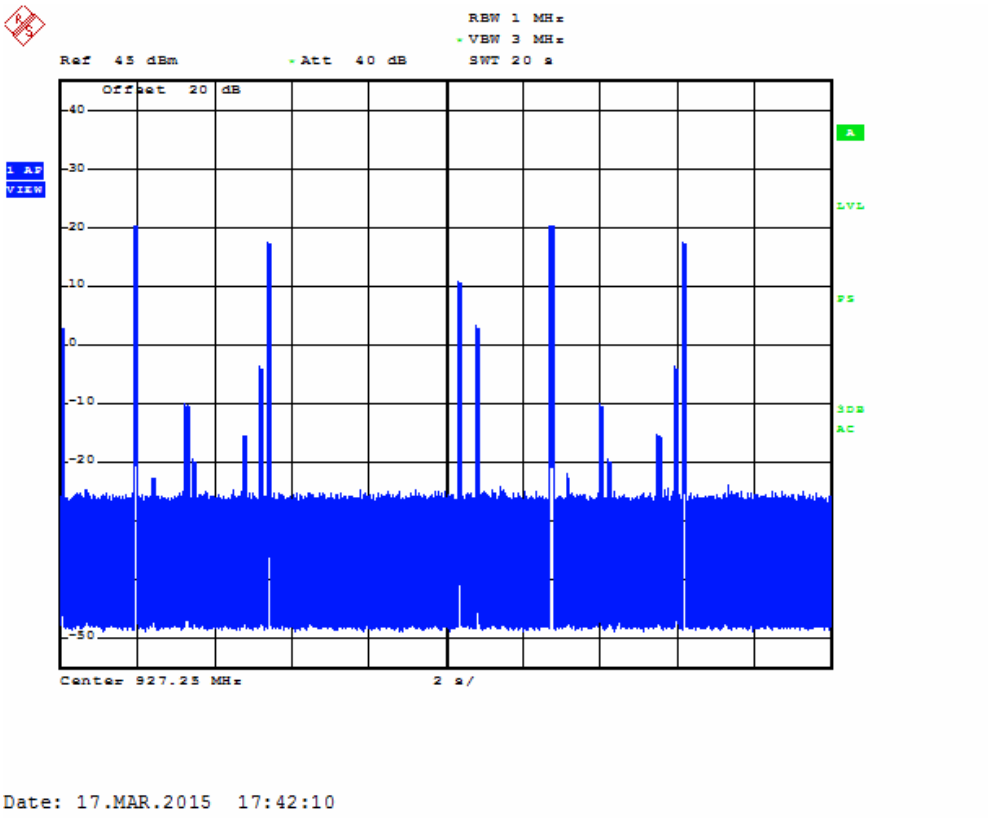


Figure 2: Number of events in 20sec

Sweep time =Event duration * Number of event in 20s=96ms*2=192ms

The results are not greater than 0.4 seconds

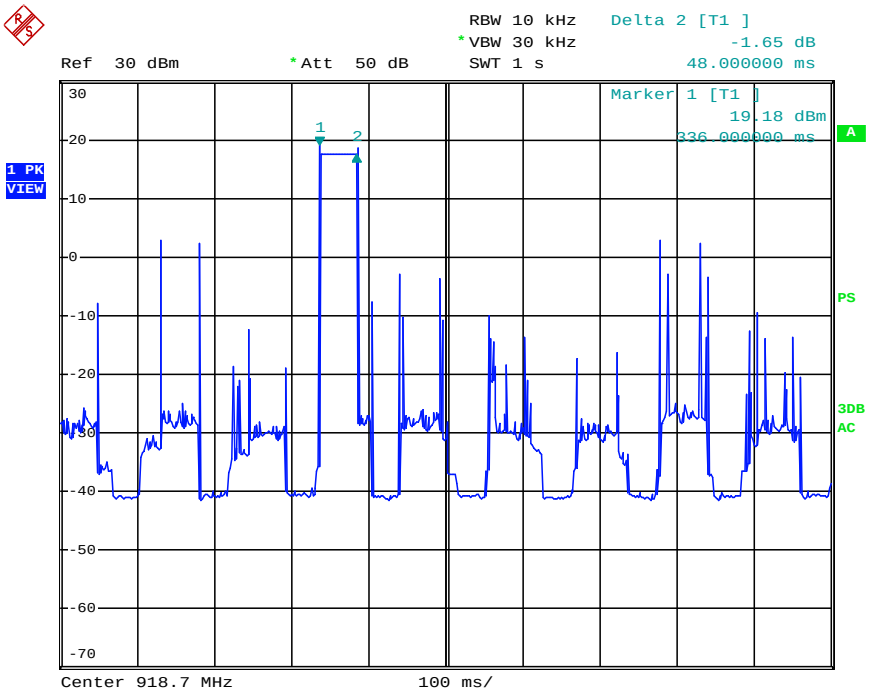
Test Result:

For RFID

For Railway config

4. **Channel 1:** 918.7 MHz

Test Data



Date: 5.MAY.2015 10:23:35

Average Time of Occupancy

Event duration=48ms

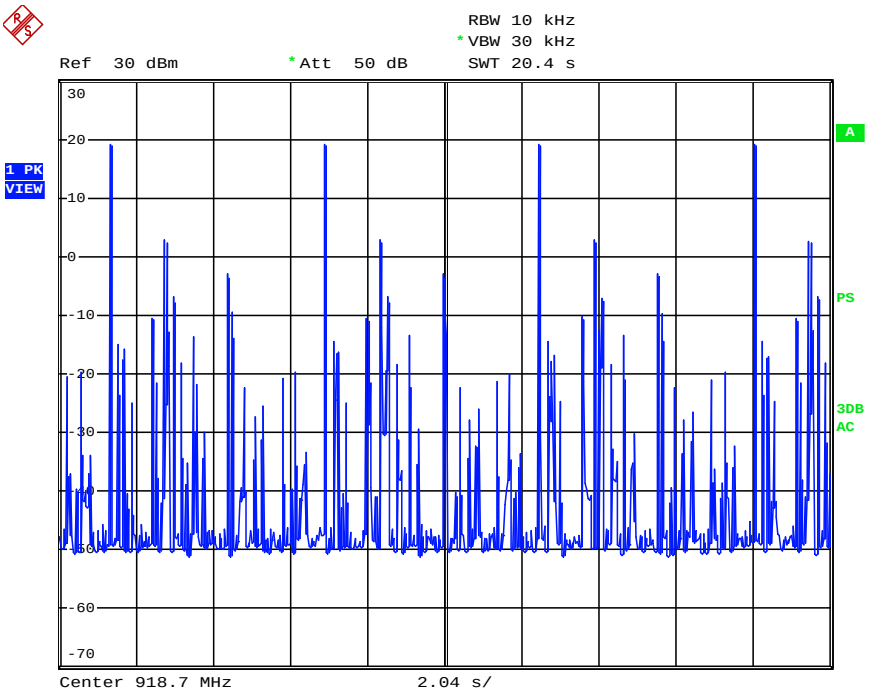
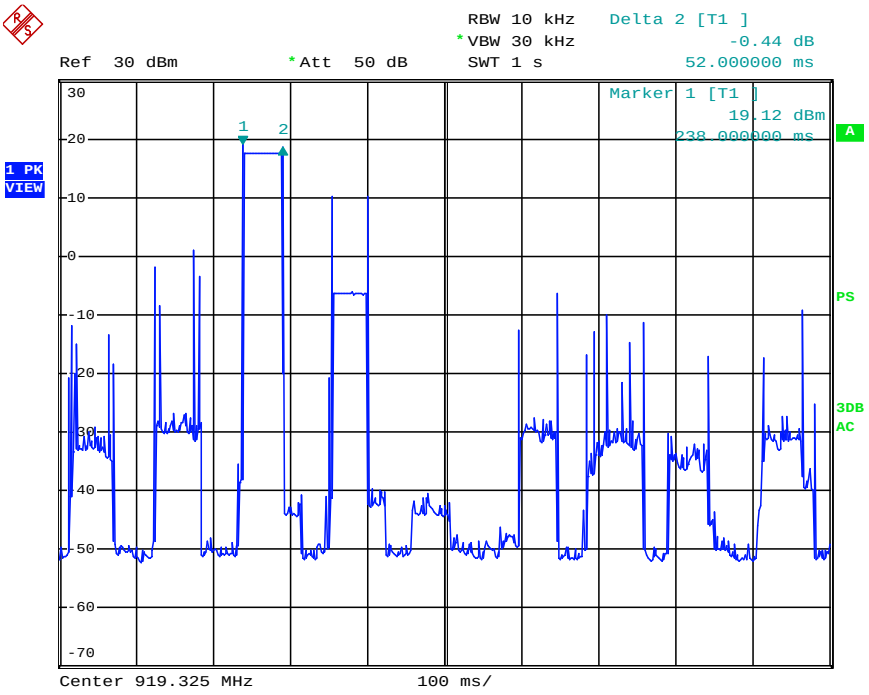


Figure 2: Number of events in 20.4 sec

Sweep time =Event duration * Number of event in 20.4s=48ms*4=192ms

The results are not greater than 0.4 seconds

5. **Channel 26:** 919.325 MHz



Date: 5.MAY.2015 10:24:51

Average Time of Occupancy

Event duration=48ms

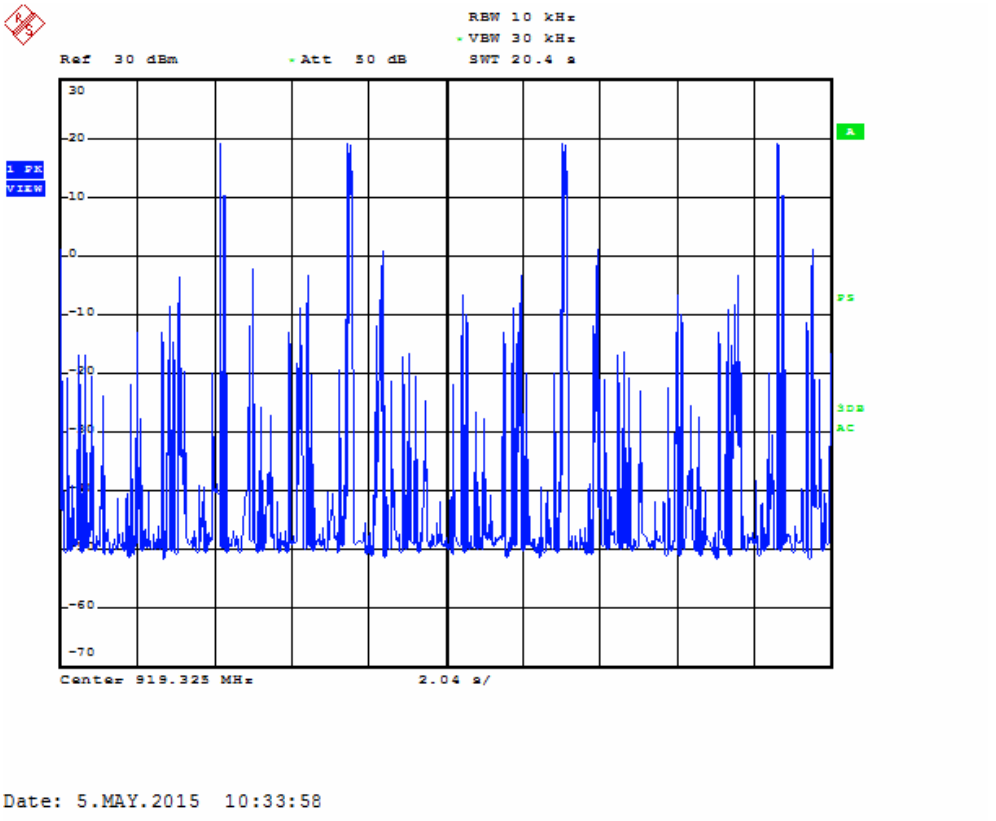
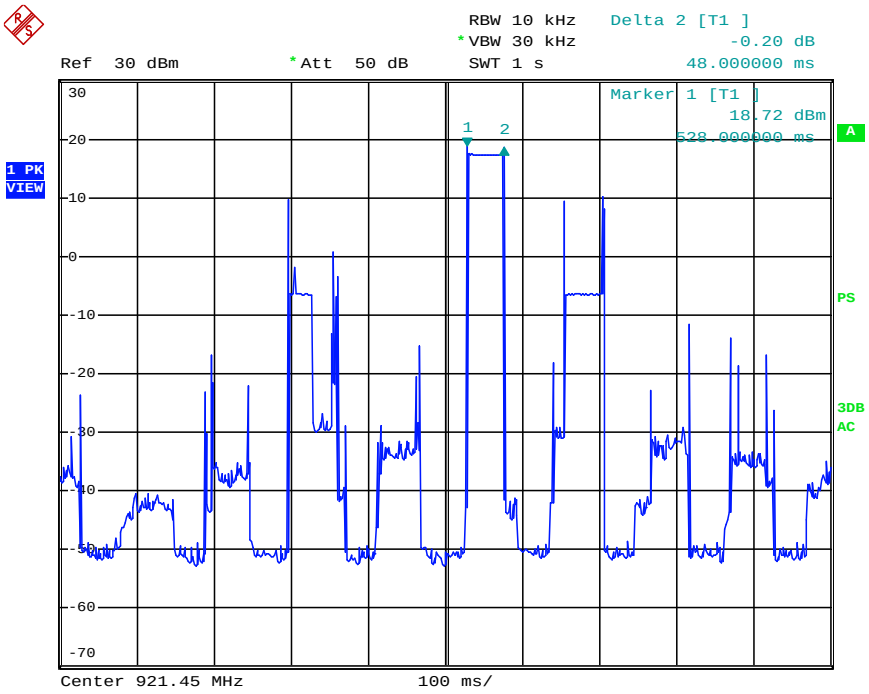


Figure 2: Number of events in 20.4 sec

Sweep time =Event duration * Number of event in 20.4s=48ms*4=192ms

The results are not greater than 0.4 seconds

6. **Channel 51:** 921.45 MHz



Date: 5.MAY.2015 10:26:12

Average Time of Occupancy

Event duration=48ms

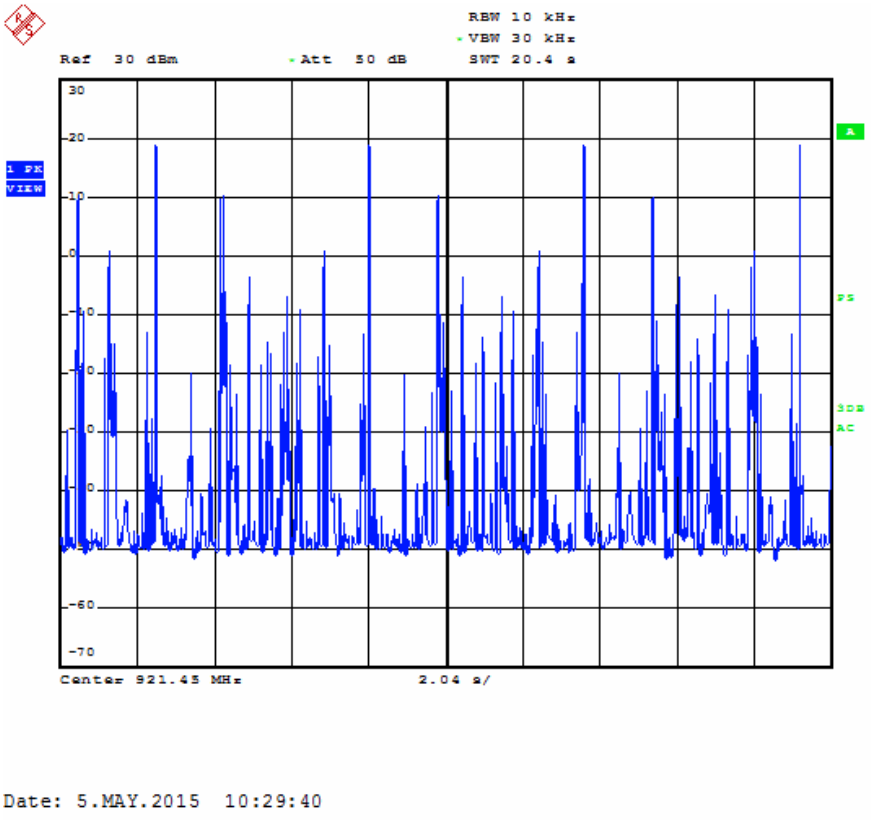


Figure 2: Number of events in 20.4 sec

Sweep time =Event duration * Number of event in 20.4s=48ms*4=192ms

The results are not greater than 0.4 seconds

The unit does meet the FCC requirements.

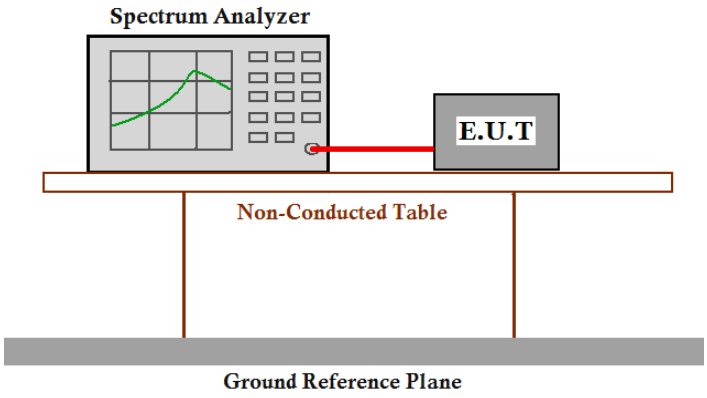
5.7 Maximum Peak Output Power

Test Requirement: FCC Part 15 C section 15.247
(b)(2) For frequency hopping systems operating in the 902–928 MHz band: 1watt for systems employing at least 50hopping channels;

Test Method: ANSI C63.10:2009 Clause 6.10 & DA 00-705

Test mode: The program used to control the EUT for staying in continuous transmitting and receiving mode is programmed. For 18000C config channel lowest (902.75MHz), middle (915.25MHz) and highest (927.25MHz) are chosen for full testing. For Railway config channel lowest (918.7MHz), middle (919.325MHz) and highest (921.45MHz) are chosen for full testing.

Test Configuration:



Test Procedure:

1. Remove the antenna from the EUT and then connect a low attenuation RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 3 MHz. VBW = 3 MHz. Sweep = auto; Detector Function = Peak.
3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

Test Result: (For RFID)

For 18000C config :

Test Channel	Fundamental Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Result
Lowest	902.75	20.86	30	Pass
Middle	915.25	20.02	30	Pass
Highest	927.25	19.07	30	Pass

For Railway config:

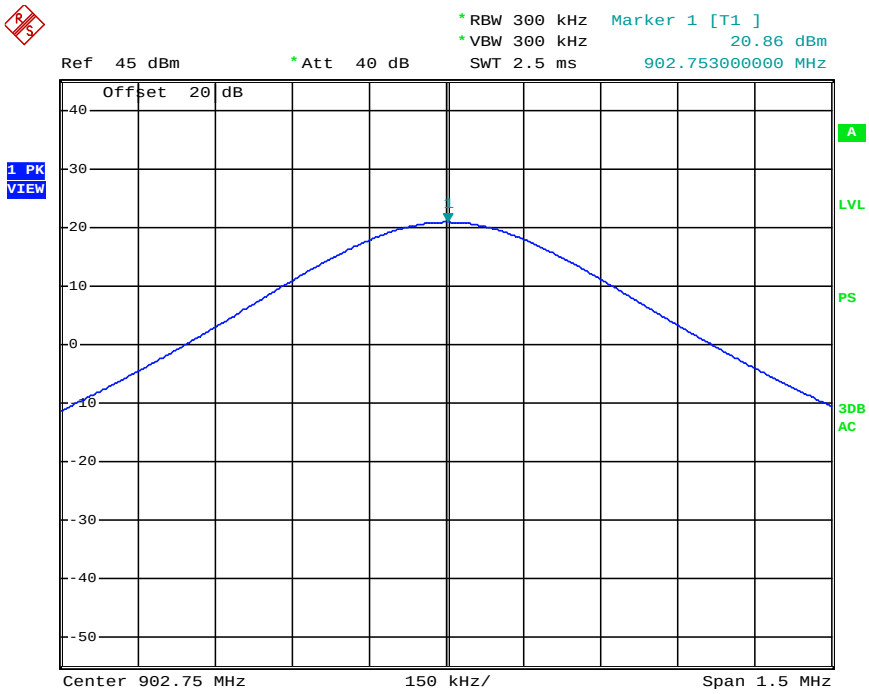
Test Channel	Fundamental Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Result
Lowest	918.7	26.50	30	Pass
Middle	919.325	26.77	30	Pass
Highest	921.45	26.46	30	Pass

Test result: The unit does meet the FCC requirements.

Test result plot as follows:

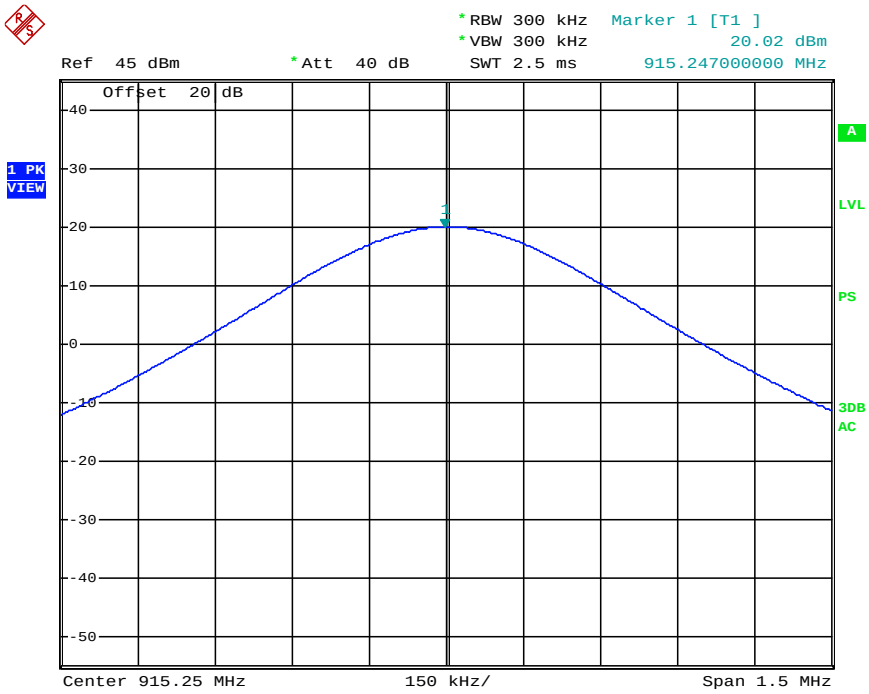
For RFID
For 18000C config

Lowest Channel:



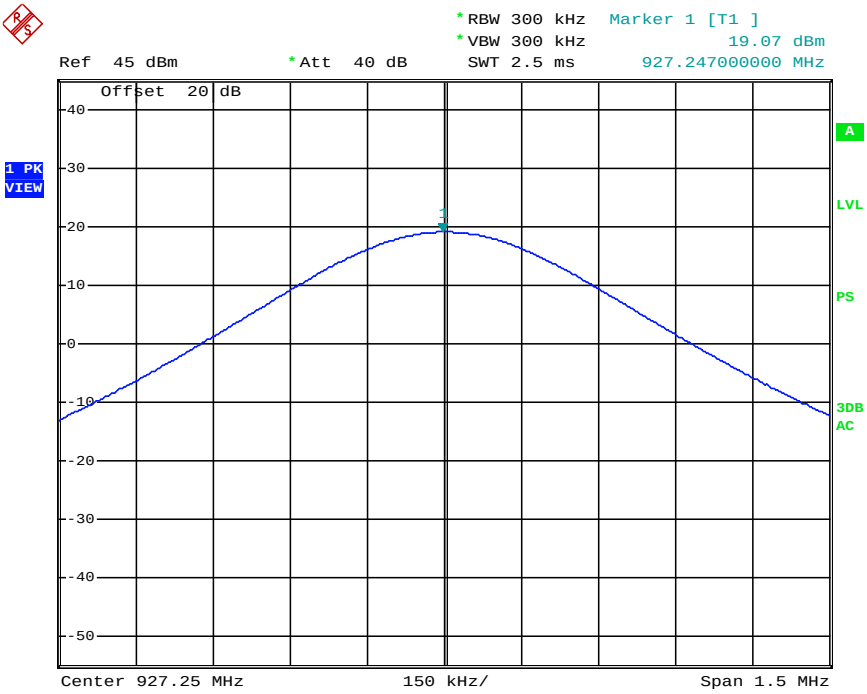
Date: 17.MAR.2015 17:52:28

Middle Channel:



Date: 17.MAR.2015 17:56:24

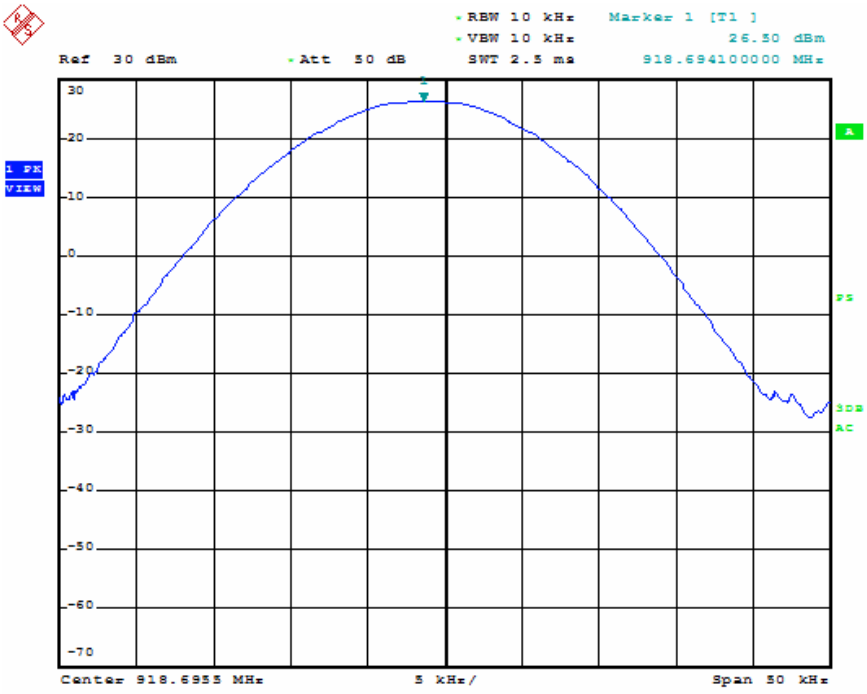
Highest Channel:



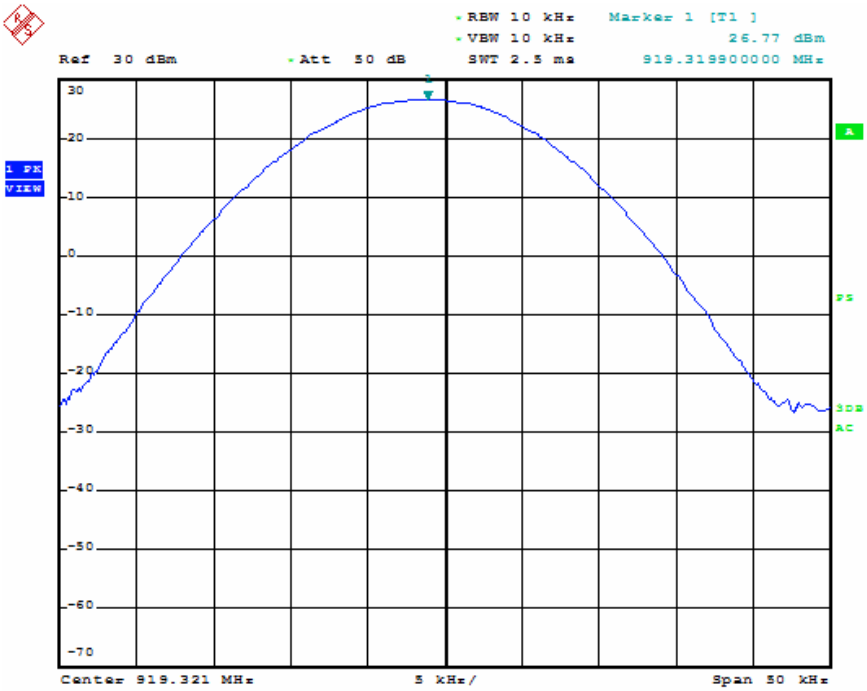
Date: 17.MAR.2015 17:57:52

For Railway config

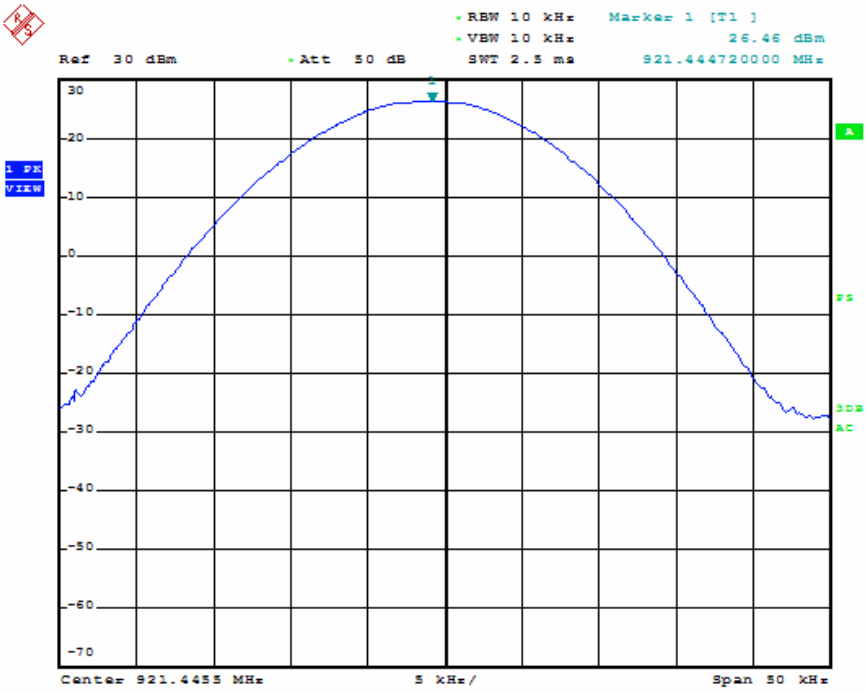
Lowest Channel:



Middle Channel:



Highest Channel:



5.8 Conducted Spurious Emissions

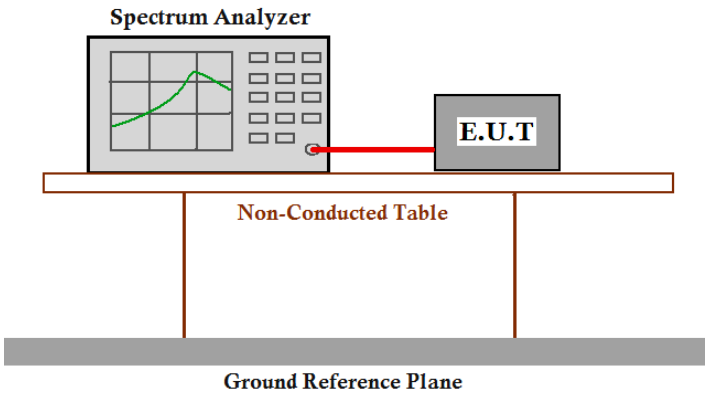
Test Requirement: FCC Part15 C section 15.247

(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating. The radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. Based on either an RF conducted or a radiated measurement. Provided the transmitter demonstrates compliance with the peak conducted power limits.

Test Method: ANSI C63.10: 2009 Clause 6.7 & DA 00-705

Test Status: The program used to control the EUT for staying in continuous transmitting and receiving mode is programmed. For 18000C config channel lowest (902.75MHz), middle (915.25MHz) and highest (927.25MHz) are chosen for full testing. For Railway config channel lowest (918.7MHz), middle (919.325MHz) and highest (921.45MHz) are chosen for full testing.

Test Configuration:



Test Procedure:

1. Remove the antenna from the EUT and then connect a low attenuation RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 100 kHz. VBW >= RBW. Sweep = auto; Detector Function = Peak (Max. hold).

For RFID

For 18000C config

Test result plot as follows:

Lowest Channel:

Middle Channel

Highest channel

For RFID

For Railway config

Test result plot as follows:

Lowest Channel:

Middle Channel

Highest channel

5.9 Radiated Spurious Emissions

Test Requirement: FCC Part15 C section 15.247

(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating. The radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that Contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, and provided the transmitter demonstrates compliance with the peak conducted power limits.

Test Method: ANSI C63.10: 2009 Clause 6.4, 6.5 and 6.6 & DA 00-705

Test Status: The program used to control the EUT for staying in continuous transmitting and receiving mode is programmed. For 18000C config channel lowest (902.75MHz), middle (915.25MHz) and highest (927.25MHz) are chosen for full testing. For Railway config channel lowest (918.7MHz), middle (919.325MHz) and highest (921.45MHz) are chosen for full testing.

Detector: For PK value:

RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz, 9kHz for <30MHz
VBW ≥ RBW
Sweep = auto

Detector function = peak

Trace = max hold

For AV value:

RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz, 9kHz for <30MHz

VBW =10 Hz

Sweep = auto

Detector function = peak

Trace = max hold

15.209 Limit: 40.0 dBμV/m between 30MHz & 88MHz

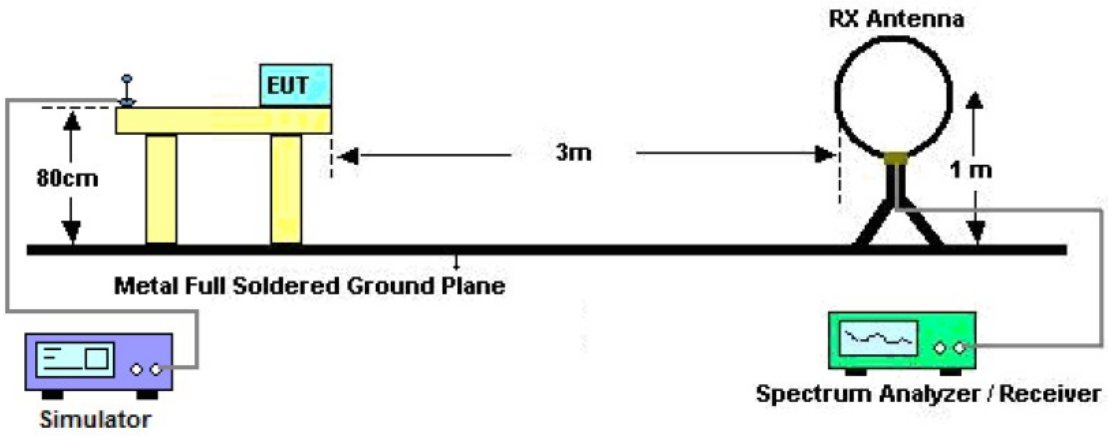
43.5 dBμV/m between 88MHz & 216MHz

46.0 dBμV/m between 216MHz & 960MHz

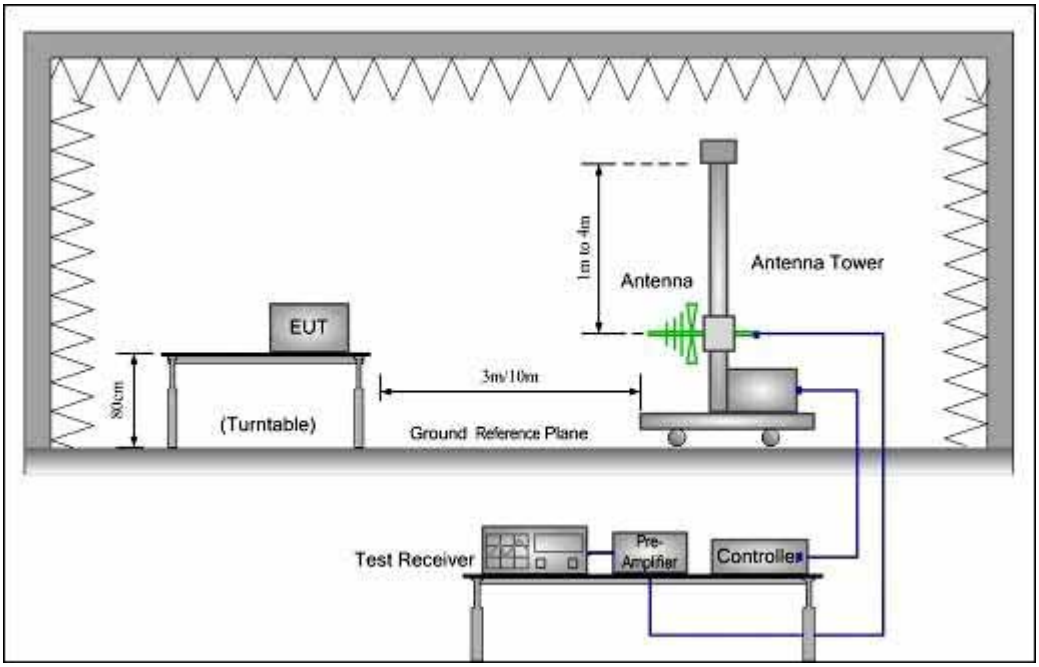
54.0 dBμV/m above 960MHz

Test Configuration:

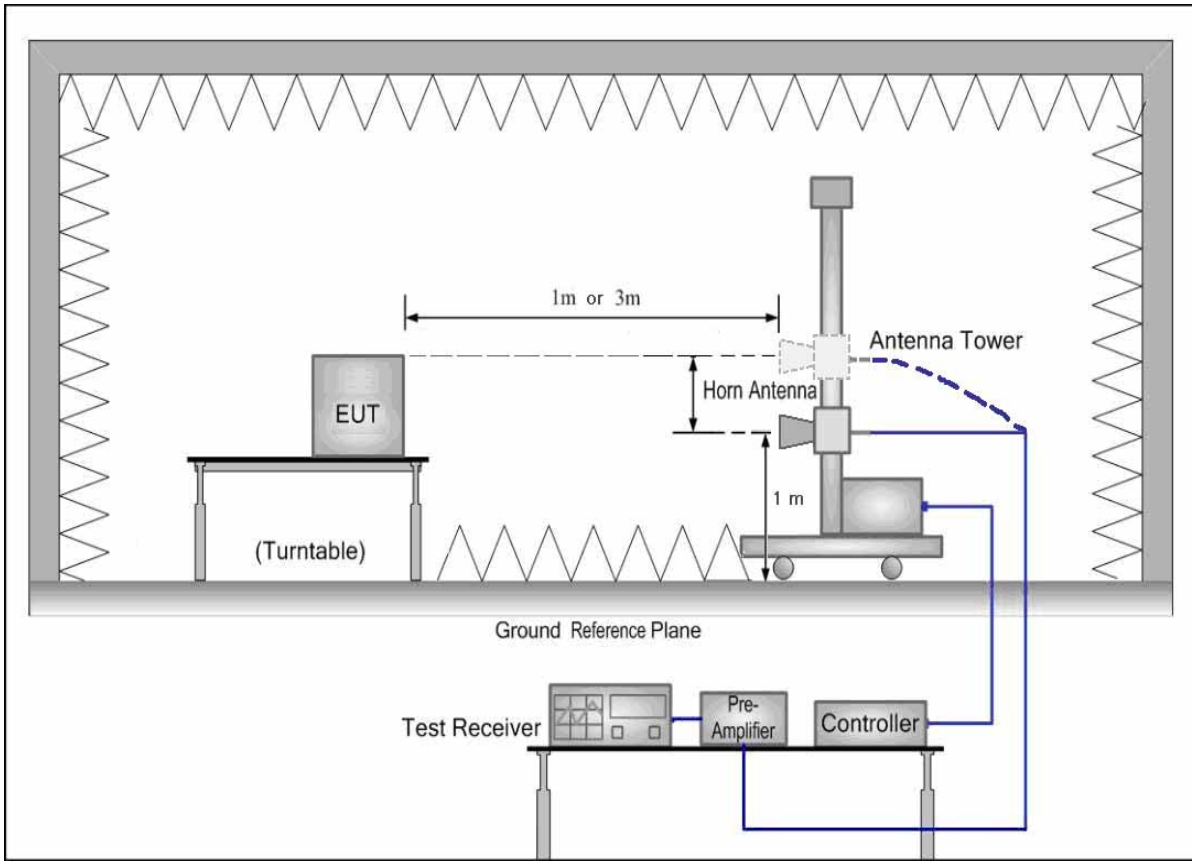
1) 9kHz to 30MHz emissions:



2) 30 MHz to 1 GHz emissions:



3) 1 GHz to 40 GHz emissions:



Test Procedure: The procedure used was ANSI Standard C63.4:2003. The receiver was scanned from 30MHz to 25GHz.When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. After pre-test, it was found that the worse radiation emission was get at the X position. So the data shown was the X position only. The worst case emissions were reported.

Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log (dwell time/100 ms), in an effort to demonstrate compliance with the 15.209 limit.

Submit this data.

5.9.1 Harmonic and other spurious emissions

For 18000C config

Test at low Channel in transmitting status

9kHz~30MHz Test result

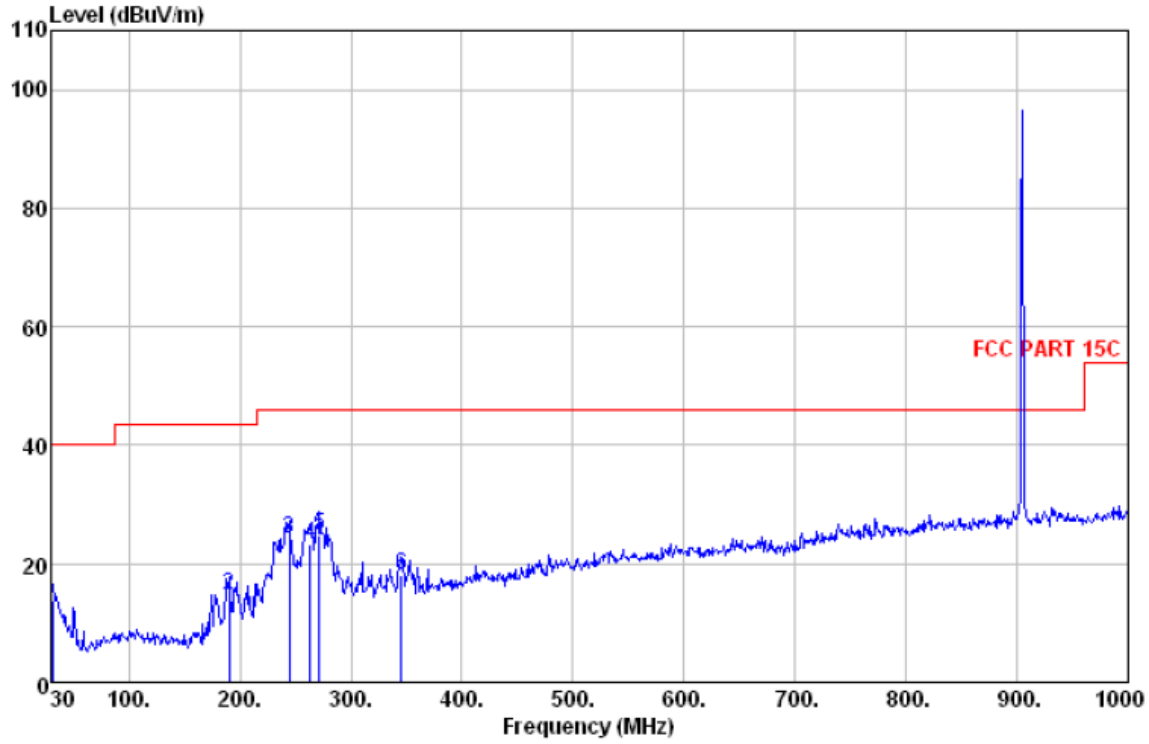
The Low frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not report

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Horizontal:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

No.	Freq	Level	Remark	Antenna Factor	Cable Loss	Limit Line	Margin	A/pos	T/pos
	MHz	dBuV/m		dB/m	dB	dBuV/m	dB	cm	deg
1	30.970	13.66	QP	17.36	0.64	40.00	-26.34	199	96
2	190.050	14.78	QP	8.89	1.66	43.50	-28.72	200	142
3	244.370	24.13	QP	11.16	1.90	46.00	-21.87	203	79
4	263.770	23.42	QP	12.42	1.98	46.00	-22.58	201	275
5	271.530	24.67	QP	12.88	2.01	46.00	-21.33	198	146
6	345.250	18.18	QP	13.81	2.27	46.00	-27.82	193	329

Level=Read Level + Antenna Factor + Cable Loss

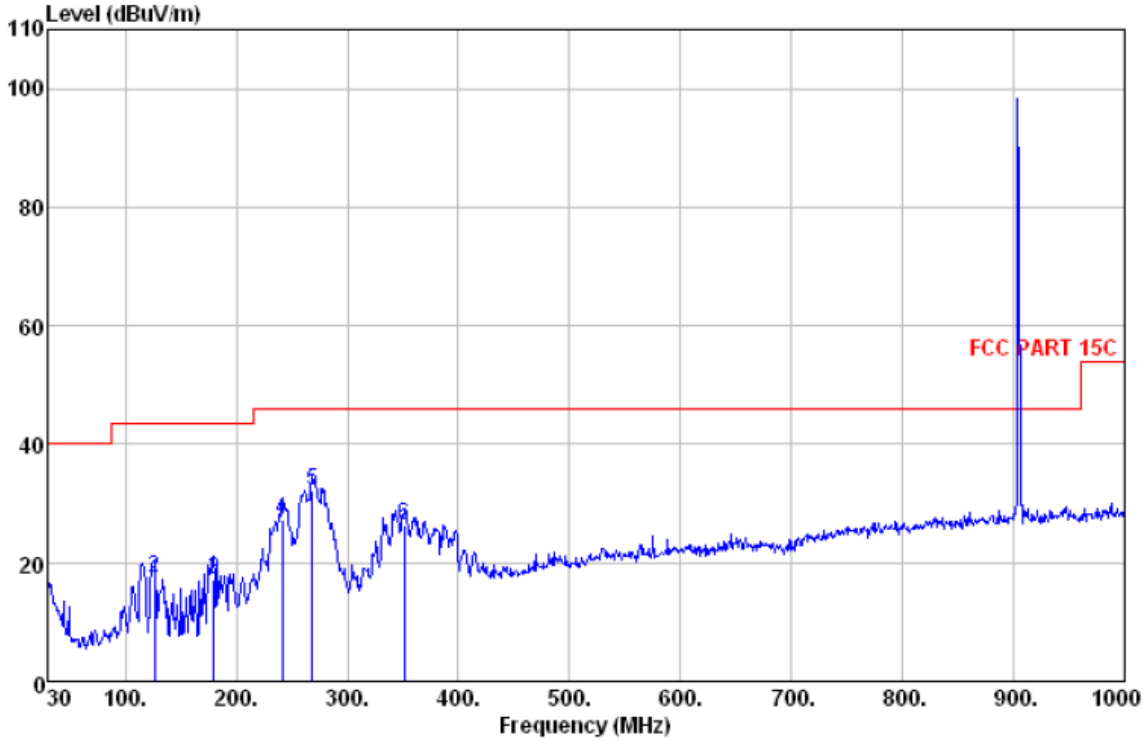
Test at low Channel in transmitting status

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

No.	Freq	Level	Remark	Antenna Factor	Cable Loss	Limit Line	Margin	A/pos	T/pos
	MHz	dBuV/m		dB/m	dB	dBuV/m	dB	cm	deg
1	30.000	13.70	QP	17.90	0.63	40.00	-26.30	105	264
2	126.030	17.42	QP	7.64	1.33	43.50	-26.08	103	195
3	179.380	17.22	QP	8.29	1.61	43.50	-26.28	107	360
4	241.460	27.21	QP	10.99	1.89	46.00	-18.79	102	74
5	268.620	32.06	QP	12.84	2.00	46.00	-13.94	101	121
6	351.070	26.23	QP	13.95	2.28	46.00	-19.77	100	340

Level=Read Level + Antenna Factor + Cable Loss

1~25 GHz Harmonics & Spurious Emissions. Peak & Average Measurement

Peak Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization

Average Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization

No emission above 1GHz was found during the test.

Test at Middle Channel in transmitting status

9kHz~30MHz Test result

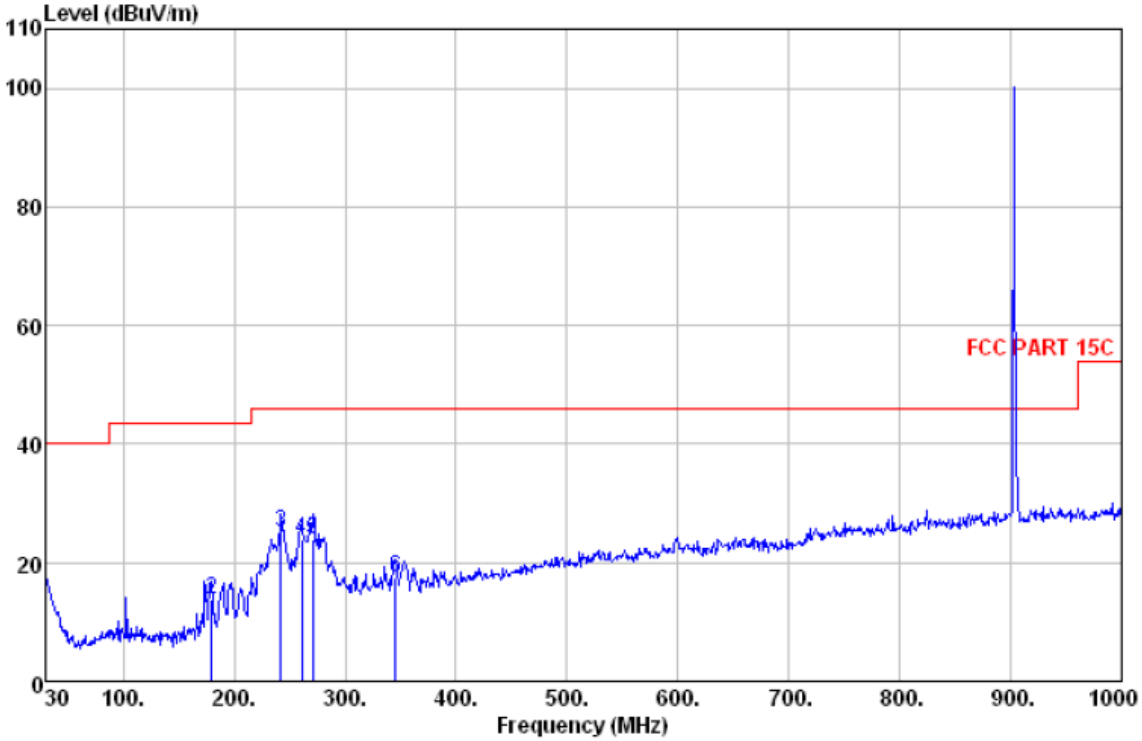
The Low frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not report

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Horizontal:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

No.	Freq	Level	Remark	Antenna Factor	Cable Loss	Limit Line	Margin	A/pos	T/pos
	MHz	dBuV/m		dB/m	dB	dBuV/m	dB	cm	deg
1	30.000	14.77	QP	17.90	0.63	40.00	-25.23	195	76
2	179.380	13.77	QP	8.29	1.61	43.50	-29.73	200	125
3	242.430	25.24	QP	11.05	1.90	46.00	-20.76	202	272
4	260.860	24.01	QP	12.48	1.97	46.00	-21.99	198	84
5	270.560	24.04	QP	12.95	2.01	46.00	-21.96	199	174
6	345.250	17.59	QP	13.81	2.27	46.00	-28.41	203	313

Level=Read Level + Antenna Factor + Cable Loss

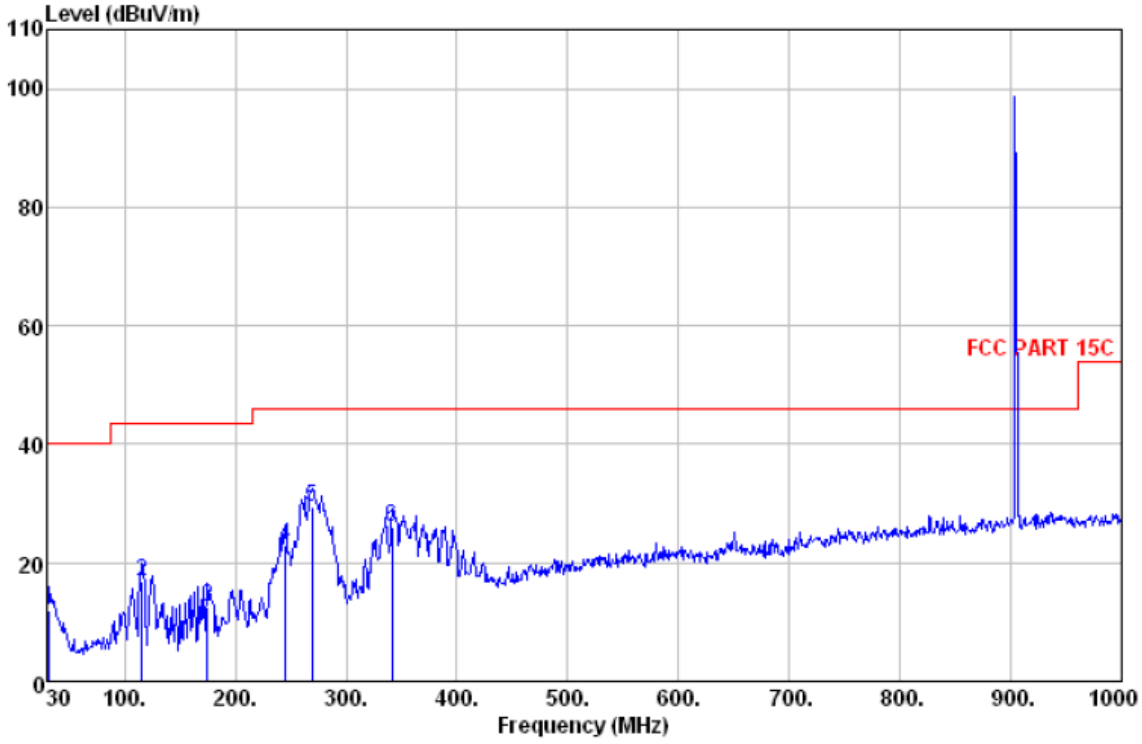
Test at Middle Channel in transmitting status

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

No.	Freq	Level	Remark	Antenna Factor	Cable Loss	Limit Line	Margin	A/pos	T/pos
	MHz	dBuV/m		dB/m	dB	dBuV/m	dB	cm	deg
1	31.940	11.80	QP	16.83	0.65	40.00	-28.20	101	321
2	115.360	16.88	QP	8.16	1.27	43.50	-26.62	109	197
3	174.530	12.49	QP	8.22	1.58	43.50	-31.01	107	241
4	245.340	22.97	QP	11.24	1.91	46.00	-23.03	103	67
5	269.590	29.34	QP	12.95	2.01	46.00	-16.66	104	218
6	341.370	26.11	QP	13.73	2.25	46.00	-19.89	100	130

Level=Read Level + Antenna Factor + Cable Loss

1~25 GHz Harmonics & Spurious Emissions. Peak & Average Measurement

Peak Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization

Average Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization

No emission above 1GHz was found during the test.

Test at high Channel in transmitting status

9kHz~30MHz Test result

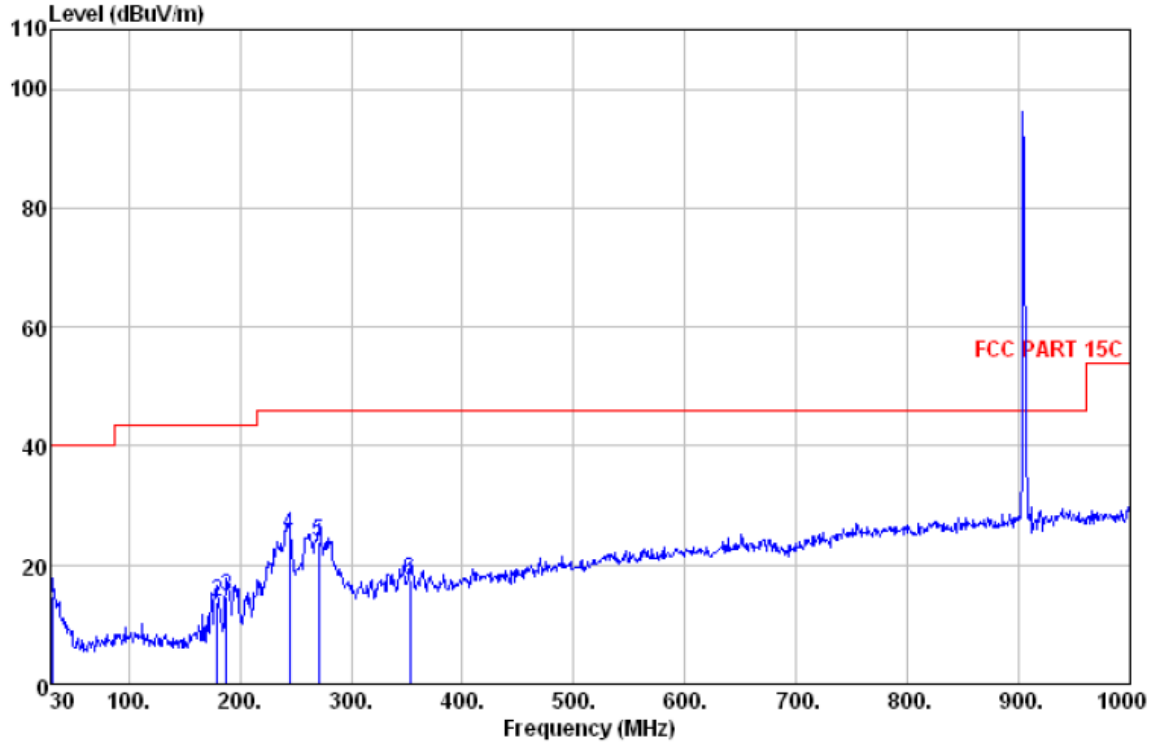
The Low frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not report

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Horizontal:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

No.	Freq	Level	Remark	Antenna Factor	Cable Loss	Limit Line	Margin	A/pos	T/pos
	MHz	dBuV/m		dB/m	dB	dBuV/m	dB	cm	deg
1	30.970	14.67	QP	17.36	0.64	40.00	-25.33	200	47
2	179.380	13.69	QP	8.29	1.61	43.50	-29.81	193	234
3	188.110	14.68	QP	8.68	1.65	43.50	-28.82	197	125
4	244.370	25.03	QP	11.16	1.90	46.00	-20.97	201	79
5	270.560	24.04	QP	12.95	2.01	46.00	-21.96	196	278
6	353.010	17.55	QP	14.05	2.29	46.00	-28.45	185	353

Level=Read Level + Antenna Factor + Cable Loss

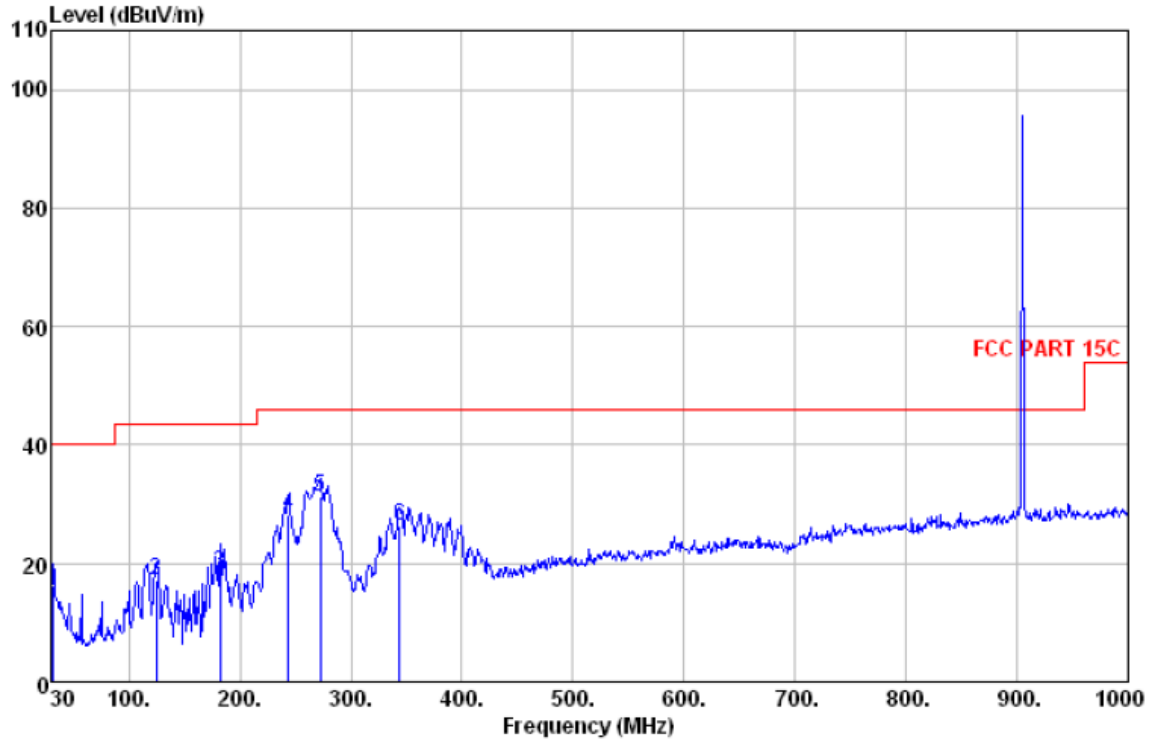
Test at High Channel in transmitting status

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

No.	Freq	Level	Remark	Antenna Factor	Cable Loss	Limit Line	Margin	A/pos	T/pos
	MHz	dBuV/m		dB/m	dB	dBuV/m	dB	cm	deg
1	31.940	16.29	QP	16.83	0.65	40.00	-23.71	106	351
2	125.060	17.22	QP	7.70	1.33	43.50	-26.28	102	88
3	182.290	18.27	QP	8.30	1.62	43.50	-25.23	103	192
4	243.400	28.30	QP	11.10	1.90	46.00	-17.70	108	273
5	272.500	31.37	QP	12.80	2.02	46.00	-14.63	100	175
6	344.280	26.49	QP	13.79	2.26	46.00	-19.51	101	236

Level=Read Level + Antenna Factor + Cable Loss

1~25 GHz Harmonics & Spurious Emissions. Peak & Average Measurement

Peak Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization

Average Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization

No emission above 1GHz was found during the test.

For Railway config
Test at low Channel in transmitting status

9kHz~30MHz Test result

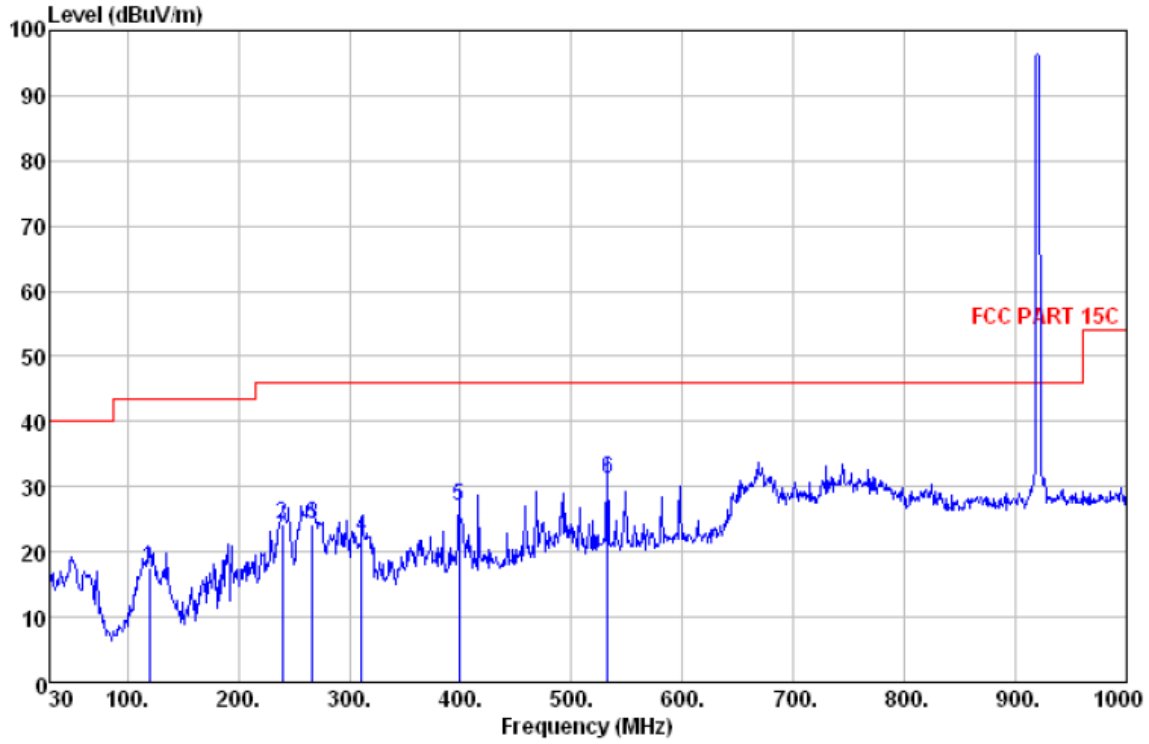
The Low frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not report

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Horizontal:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

No.	Freq	Level	Remark	Antenna Factor	Cable Loss	Limit Line	Margin	A/pos	T/pos
	MHz	dBuV/m		dB/m	dB	dBuV/m	dB	cm	deg
1	120.210	17.59	QP	7.70	1.30	43.50	-25.91	204	347
2	239.520	24.13	QP	10.90	1.88	46.00	-21.87	222	44
3	266.680	24.20	QP	12.60	1.99	46.00	-21.80	185	49
4	311.300	22.17	QP	13.65	2.16	46.00	-23.83	125	241
5	398.600	27.15	QP	15.94	2.44	46.00	-18.85	196	244
6	532.460	31.15	QP	19.53	2.87	46.00	-14.85	163	54

Level=Read Level + Antenna Factor + Cable Loss

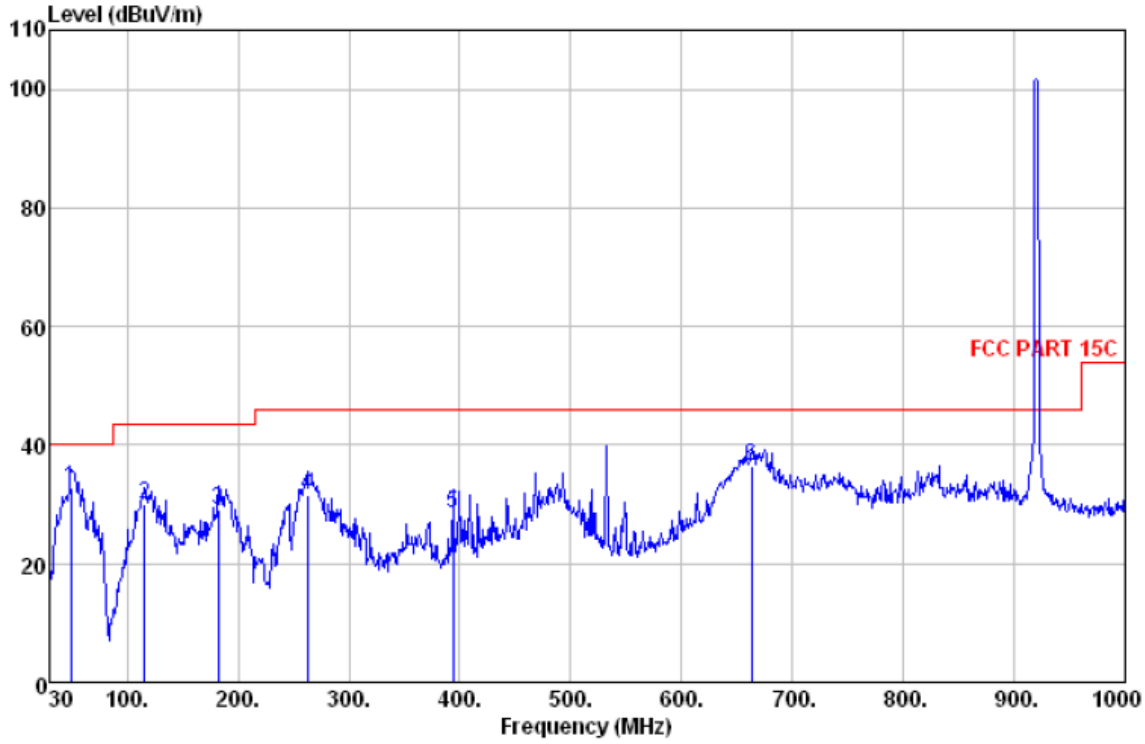
Test at low Channel in transmitting status

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

No.	Freq	Level	Remark	Antenna Factor	Cable Loss	Limit Line	Margin	A/pos	T/pos
	MHz	dBuV/m		dB/m	dB	dBuV/m	dB	cm	deg
1	49.400	32.71	QP	8.57	0.80	40.00	-7.29	100	274
2	115.360	29.90	QP	8.16	1.27	43.50	-13.60	152	63
3	182.290	29.15	QP	8.30	1.62	43.50	-14.35	111	44
4	262.800	31.61	QP	12.44	1.98	46.00	-14.39	235	44
5	393.750	28.42	QP	15.75	2.43	46.00	-17.58	254	74
6	663.410	36.43	QP	20.77	3.23	46.00	-9.57	152	85

Level=Read Level + Antenna Factor + Cable Loss

1~25 GHz Harmonics & Spurious Emissions. Peak & Average Measurement

Peak Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization

Average Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization

No emission above 1GHz was found during the test.

Test at Middle Channel in transmitting status

9kHz~30MHz Test result

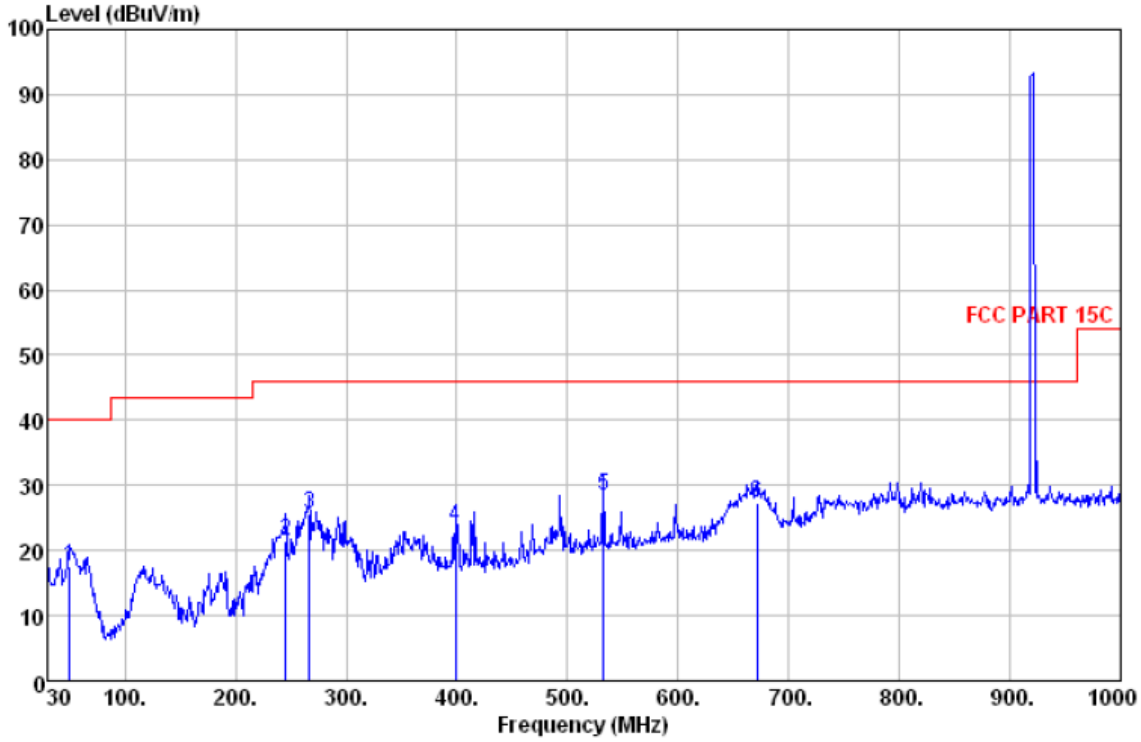
The Low frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not report

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Horizontal:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

No.	Freq	Level	Remark	Antenna Factor	Cable Loss	Limit Line	Margin	A/pos	T/pos
	MHz	dBuV/m		dB/m	dB	dBuV/m	dB	cm	deg
1	50.370	17.68	QP	8.24	0.81	40.00	-22.32	124	14
2	245.340	21.55	QP	11.24	1.91	46.00	-24.45	111	235
3	266.680	25.51	QP	12.60	1.99	46.00	-20.49	155	54
4	398.600	23.58	QP	15.94	2.44	46.00	-22.42	136	214
5	532.460	28.44	QP	19.53	2.87	46.00	-17.56	188	54
6	671.170	27.34	QP	20.89	3.25	46.00	-18.66	193	74

Level=Read Level + Antenna Factor + Cable Loss

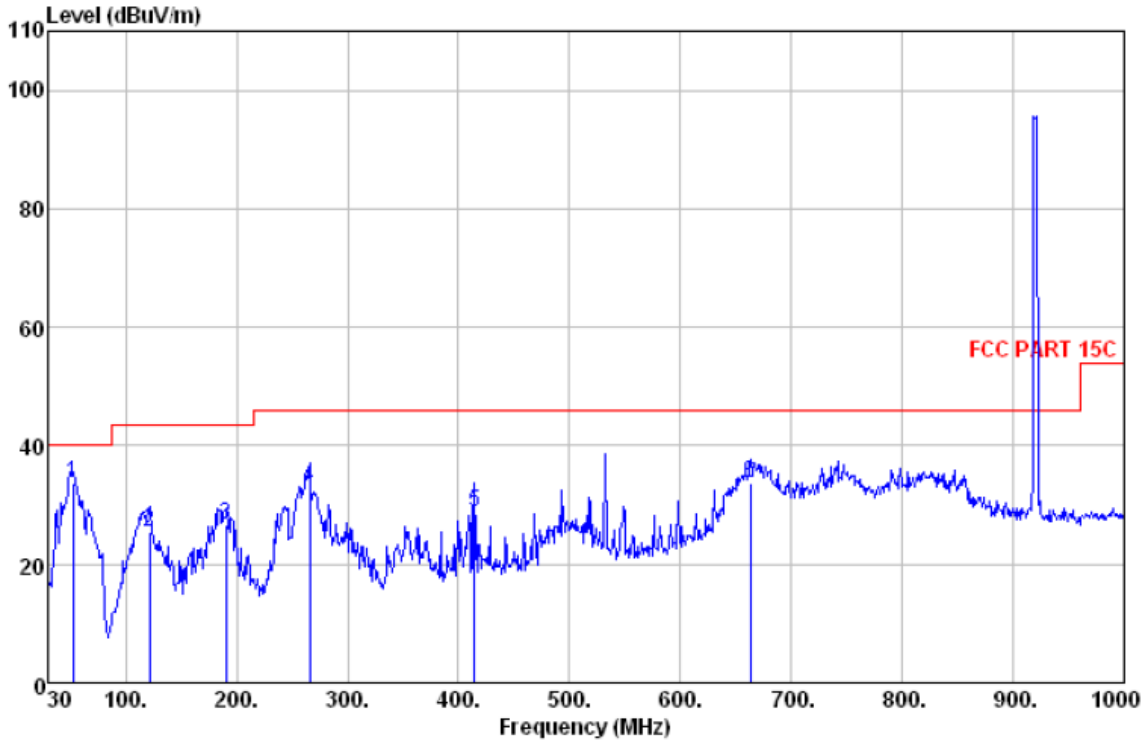
Test at Middle Channel in transmitting status

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

No.	Freq	Level	Remark	Antenna Factor	Cable Loss	Limit Line	Margin	A/pos	T/pos
	MHz	dBuV/m		dB/m	dB	dBuV/m	dB	cm	deg
1	52.310	33.64	QP	7.94	0.83	40.00	-6.36	100	22
2	121.180	25.57	QP	7.70	1.30	43.50	-17.93	120	44
3	190.050	26.52	QP	8.89	1.66	43.50	-16.98	188	74
4	265.710	33.13	QP	12.49	1.99	46.00	-12.87	168	32
5	414.120	28.66	QP	16.31	2.50	46.00	-17.34	112	63
6	663.410	33.84	QP	20.77	3.23	46.00	-12.16	214	96

Level=Read Level + Antenna Factor + Cable Loss

1~25 GHz Harmonics & Spurious Emissions. Peak & Average Measurement

Peak Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization

Average Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization

No emission above 1GHz was found during the test.

Test at high Channel in transmitting status

9kHz~30MHz Test result

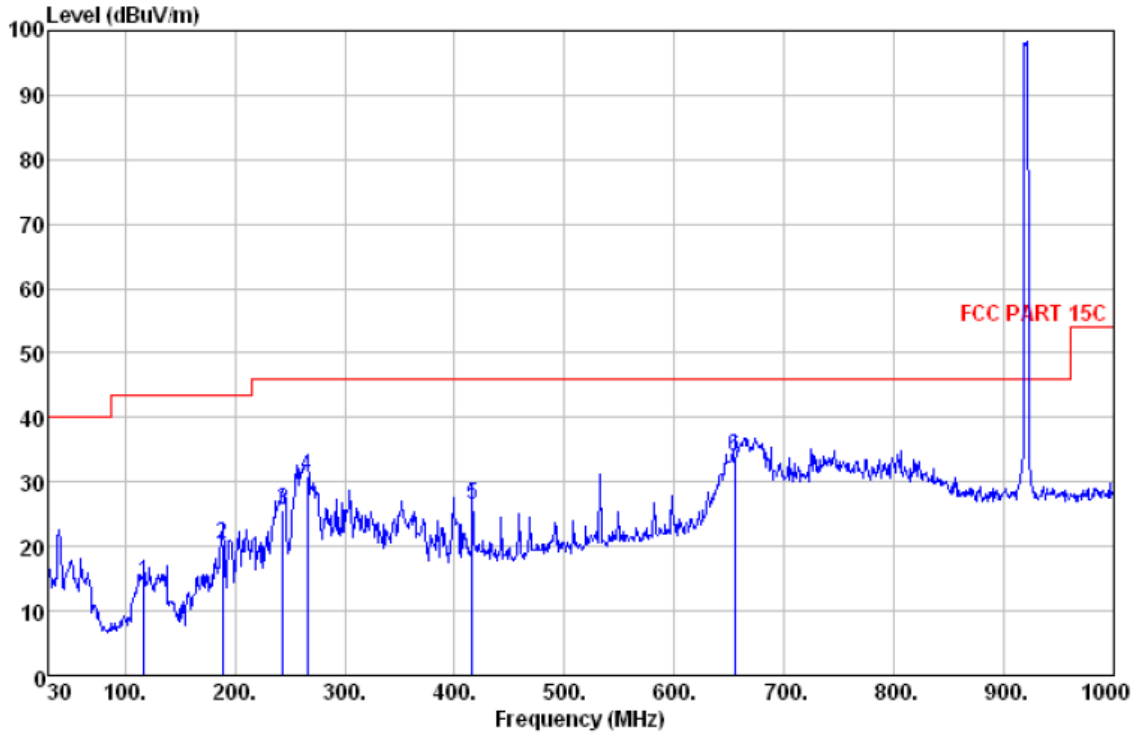
The Low frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not report

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Horizontal:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

No.	Freq	Level	Remark	Antenna Factor	Cable Loss	Limit Line	Margin	A/pos	T/pos
	MHz	dBuV/m		dB/m	dB	dBuV/m	dB	cm	deg
1	117.300	14.47	QP	7.97	1.28	43.50	-29.03	100	55
2	189.080	20.27	QP	8.79	1.66	43.50	-23.23	124	255
3	243.400	25.67	QP	11.10	1.90	46.00	-20.33	142	49
4	265.710	30.99	QP	12.49	1.99	46.00	-15.01	196	25
5	416.060	26.54	QP	16.40	2.51	46.00	-19.46	185	254
6	654.680	34.02	QP	20.81	3.21	46.00	-11.98	166	236

Level=Read Level + Antenna Factor + Cable Loss

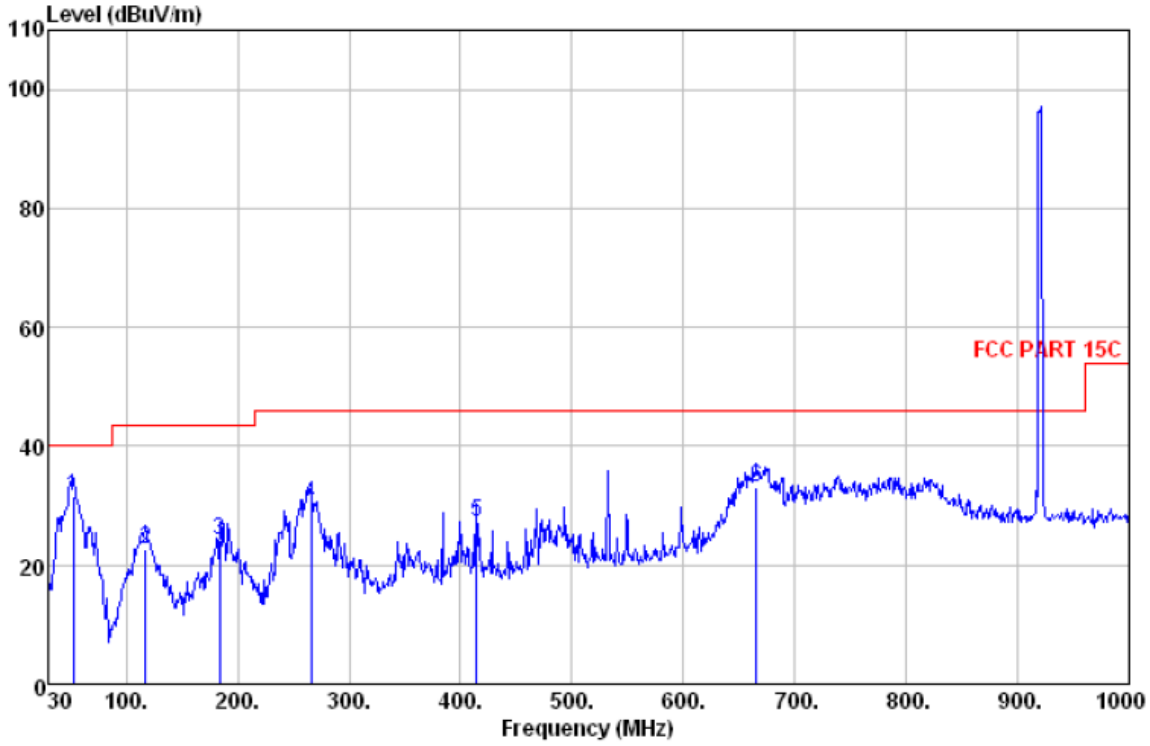
Test at High Channel in transmitting status

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBμV/m)



Quasi-peak measurement

No.	Freq	Level	Remark	Antenna Factor	Cable Loss	Limit Line	Margin	A/pos	T/pos
	MHz	dBuV/m		dB/m	dB	dBuV/m	dB	cm	deg
1	52.310	31.56	QP	7.94	0.83	40.00	-8.44	100	24
2	117.300	22.60	QP	7.97	1.28	43.50	-20.90	100	92
3	184.230	24.31	QP	8.30	1.63	43.50	-19.19	100	57
4	265.710	30.21	QP	12.49	1.99	46.00	-15.79	280	52
5	414.120	27.30	QP	16.31	2.50	46.00	-18.70	200	41
6	665.350	33.23	QP	20.81	3.24	46.00	-12.77	124	63

Level=Read Level + Antenna Factor + Cable Loss

1~25 GHz Harmonics & Spurious Emissions. Peak & Average Measurement

Peak Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization

Average Measurement:

Frequency (MHz)	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Antenna polarization

No emission above 1GHz was found during the test.

5.10 Band Edges Requirement

Test Requirement: FCC Part15 C section 15.247

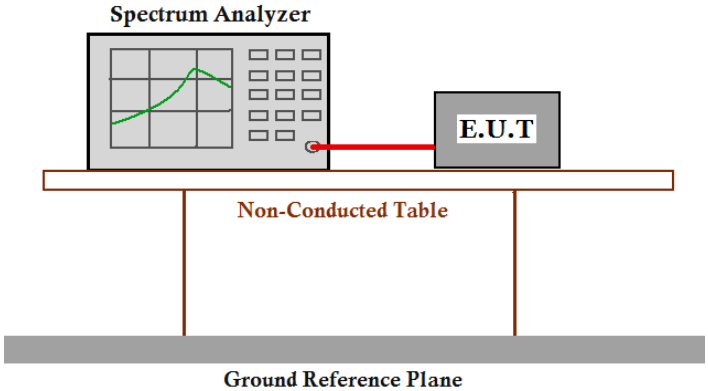
(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, 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) (see Section 15.205(c)).

Frequency Band: 902-928 MHz

Test Method: ANSI C63.10:2009 Clause 6.9 & DA 00-705

Test Status: The program used to control the EUT for staying in continuous transmitting and receiving mode is programmed. For 18000C config channel lowest (902.75MHz), middle (915.25MHz) and highest (927.25MHz) are chosen for full testing. For Railway config channel lowest (918.7MHz), middle (919.325MHz) and highest (921.45MHz) are chosen for full testing.

Test Configuration:



Test Procedure: Set RBW of spectrum analyzer to 100 kHz and VBW of spectrum analyzer to 300 kHz with suitable frequency span including 100 kHz bandwidth from band edge.

The band edges was measured and recorded Result:

The Lower Edges attenuated more than 20dB.

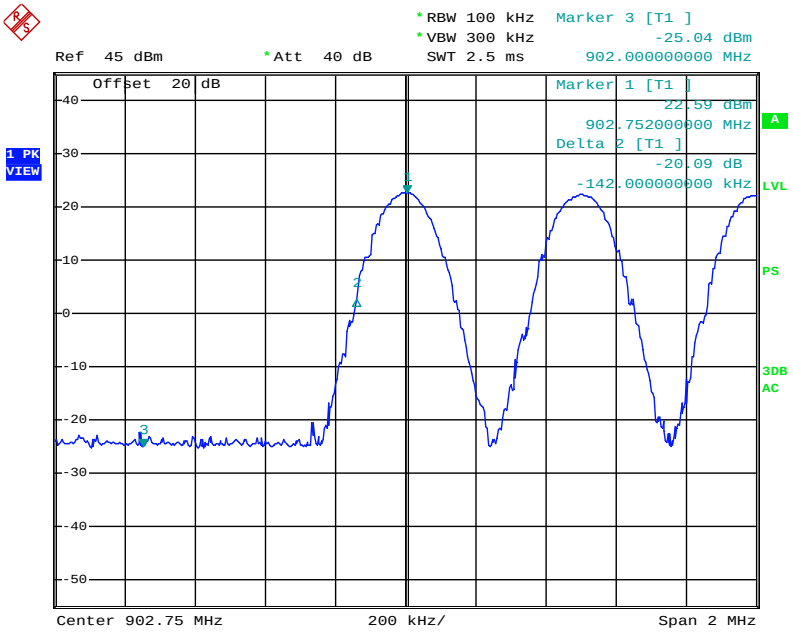
The Upper Edges attenuated more than 20dB.

The graph as below. Represents the emissions take for this device.

For RFID

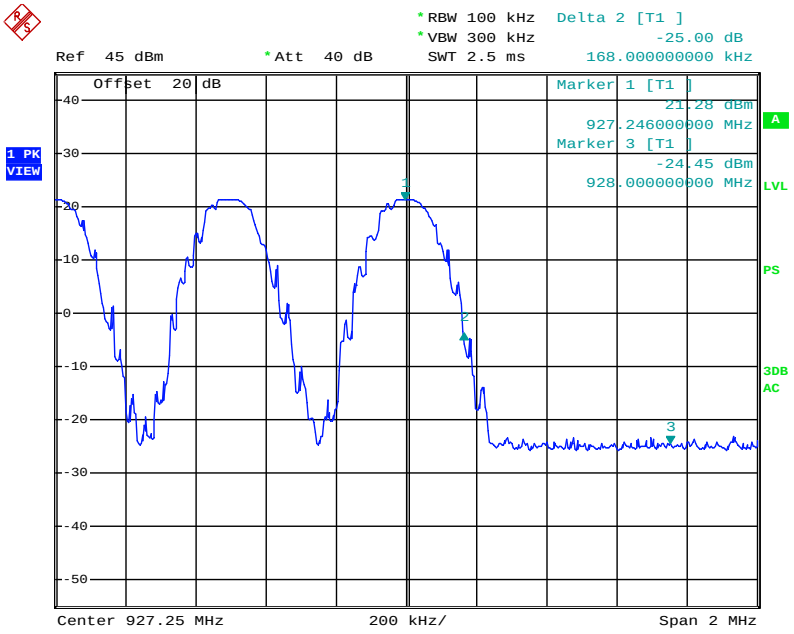
For 18000C config

Low channel:



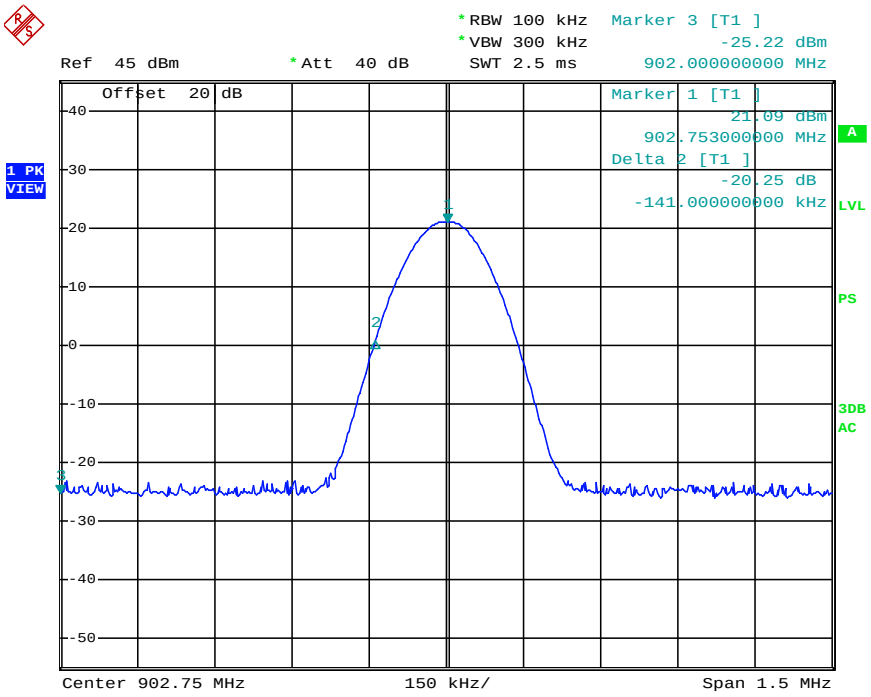
Date: 10.FEB.2015 17:51:03

High channel:



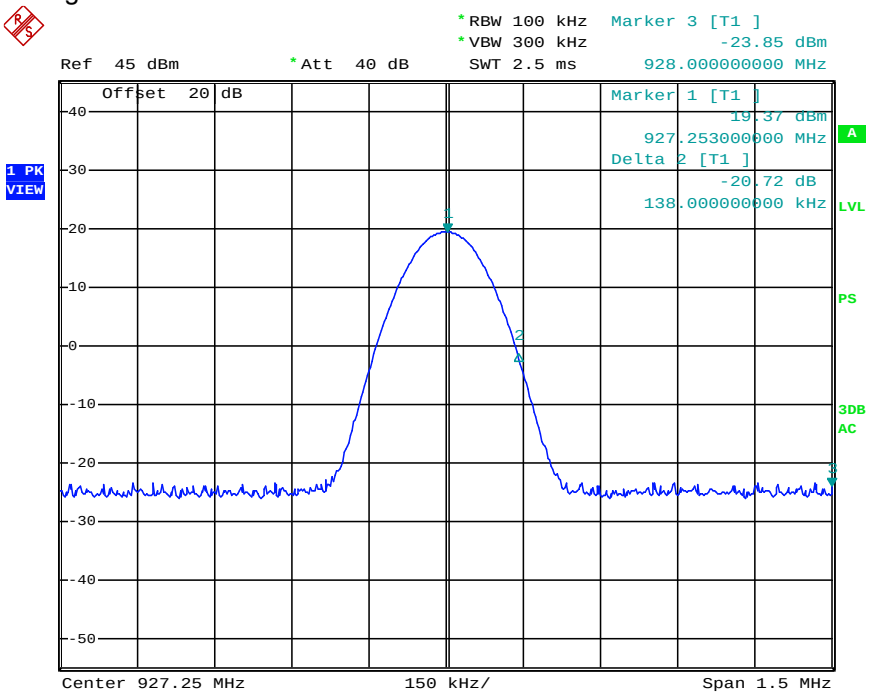
Date: 10.FEB.2015 17:52:58

Low channel:



Date: 17.MAR.2015 17:54:44

High channel:

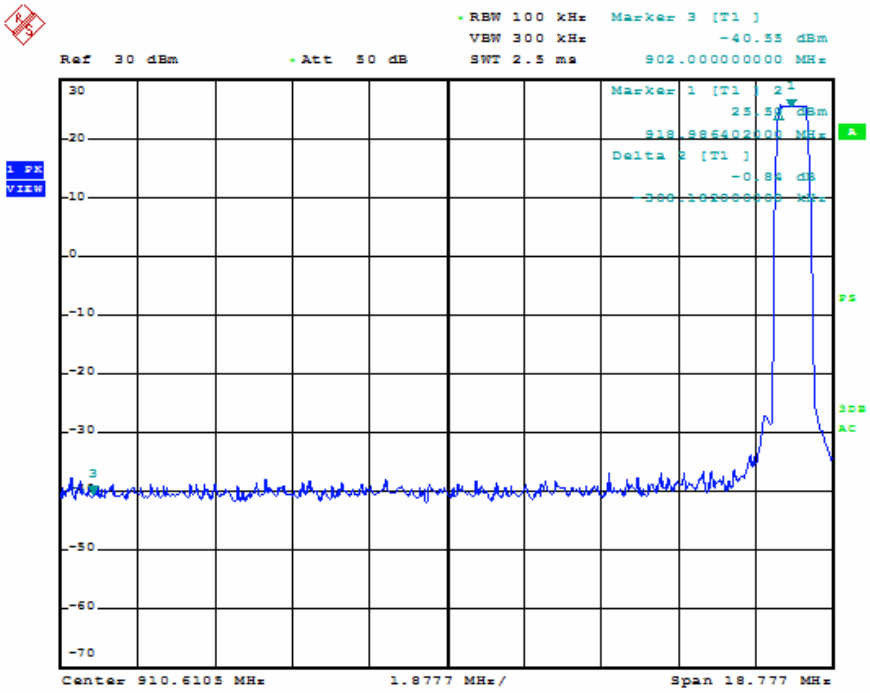


Date: 17.MAR.2015 17:59:11

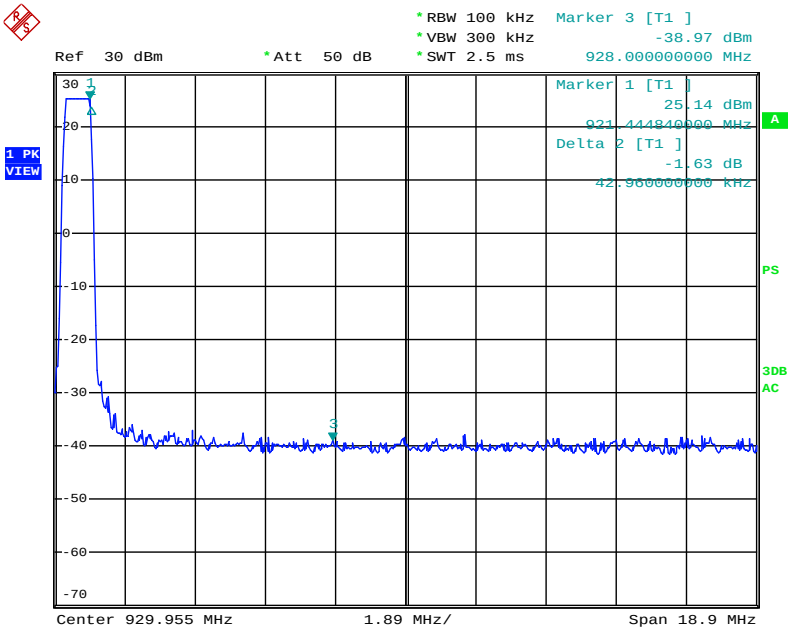
For RFID

For 18000C config

Low channel:

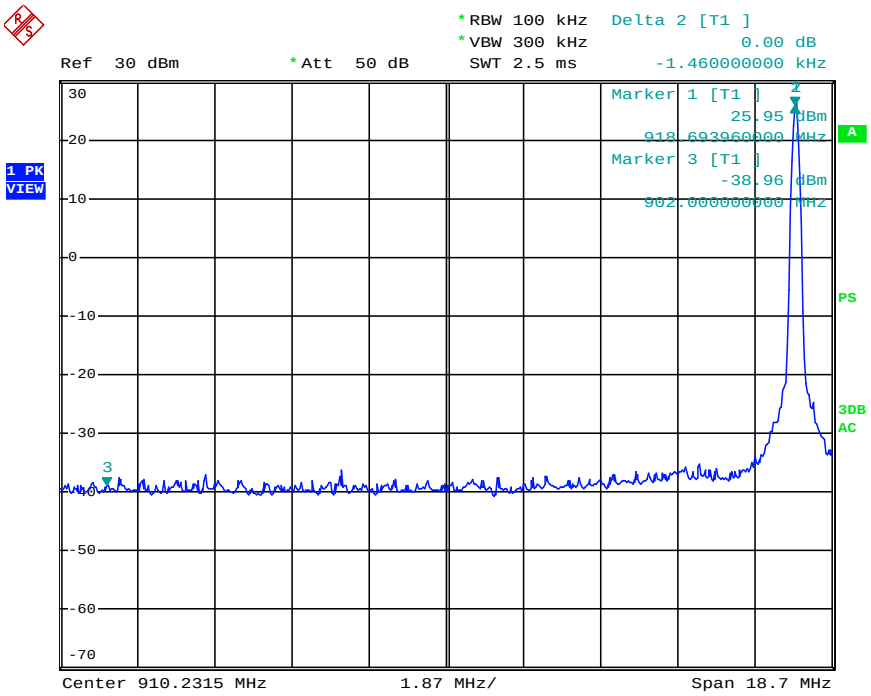


High channel:



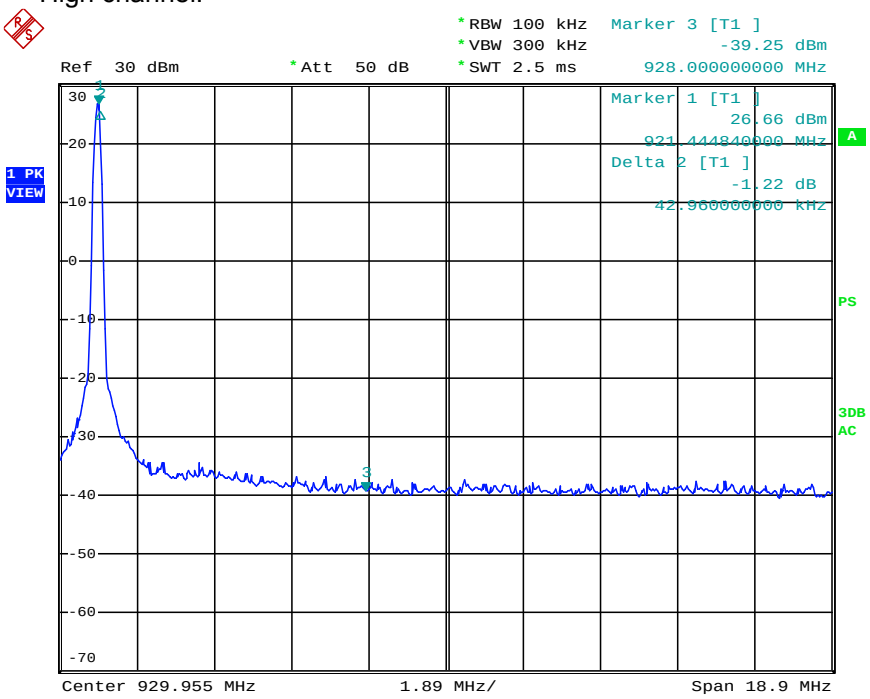
Date: 5.MAY.2015 10:56:30

Low channel:



Date: 5.MAY.2015 09:46:22

High channel:



Date: 5.MAY.2015 10:53:15

Test result: The unit does meet the FCC requirements.

5.11 Conducted Emissions at Mains Terminals 150 kHz to 30 MHz

Test Requirement: FCC Part 15 C section 15.207

Test Method: ANSI C63.10:2009 Clause 6.2 & DA 00-705

Frequency Range: 150 kHz to 30 MHz

Detector: Peak for pre-scan (9 kHz Resolution Bandwidth)

Test Limit

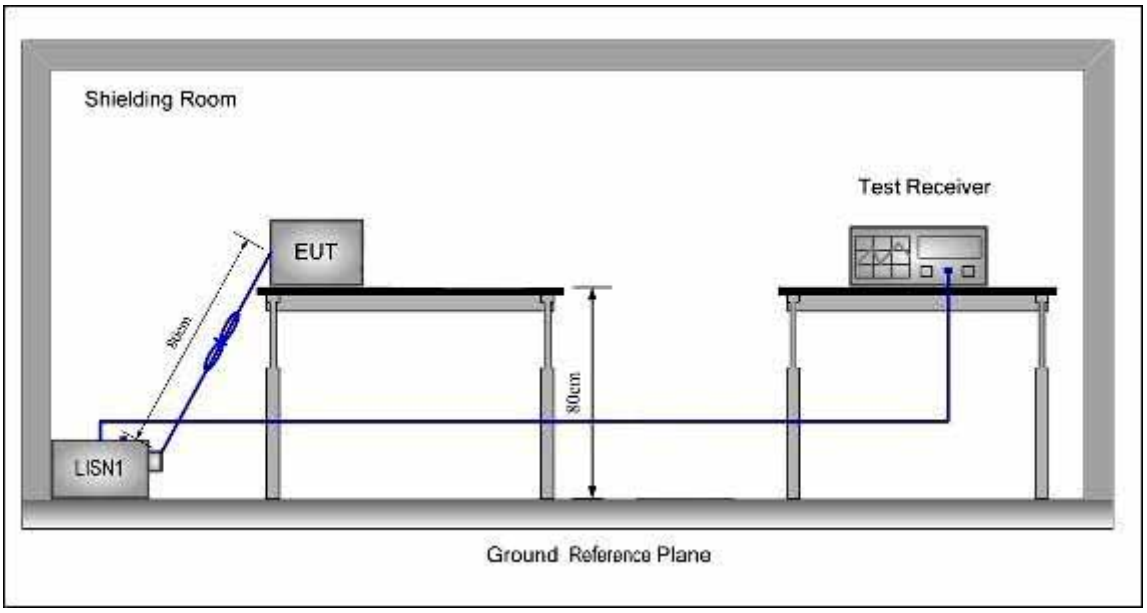
Limits for conducted disturbance at the mains ports of class B

Frequency Range	Class B Limit dB(µV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
NOTE 1 The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.		

EUT Operation:

Test in normal operating mode. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage.
Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Test Configuration:



Test procedure:

1. The mains terminal disturbance voltage test was conducted in a shielded room.

2. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.

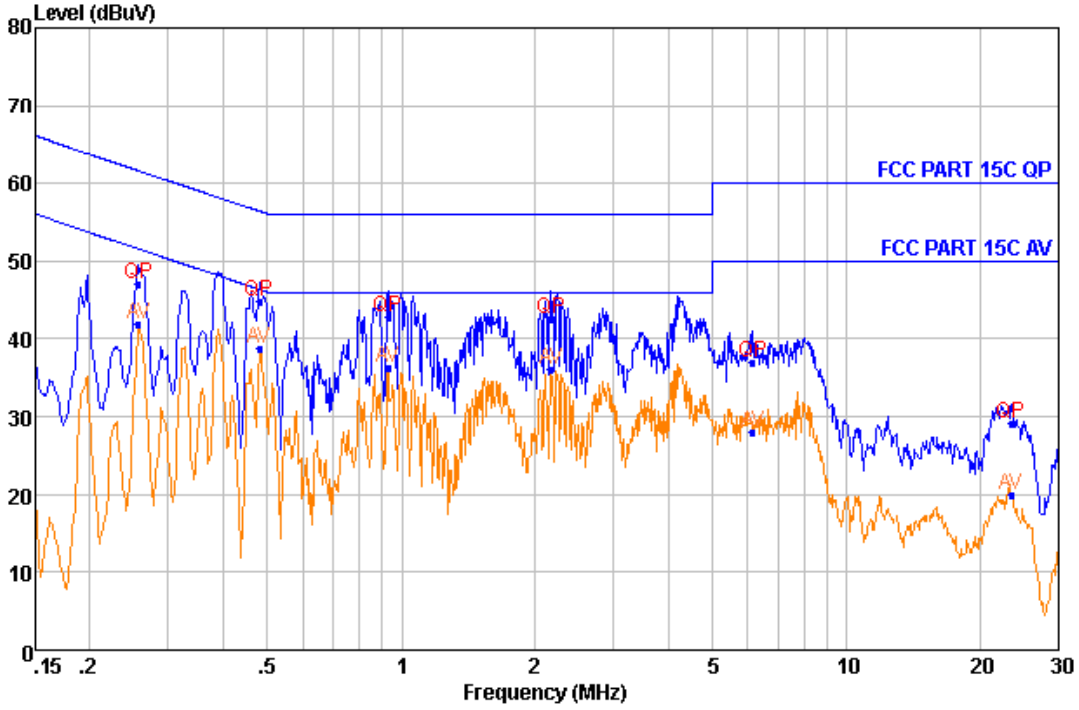
5.11.1 Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected. For EUT the communicating was worst case mode.

The following Quasi-Peak and Average measurements were performed on the EUT
Live line

Peak Scan:

Level (dBµV)



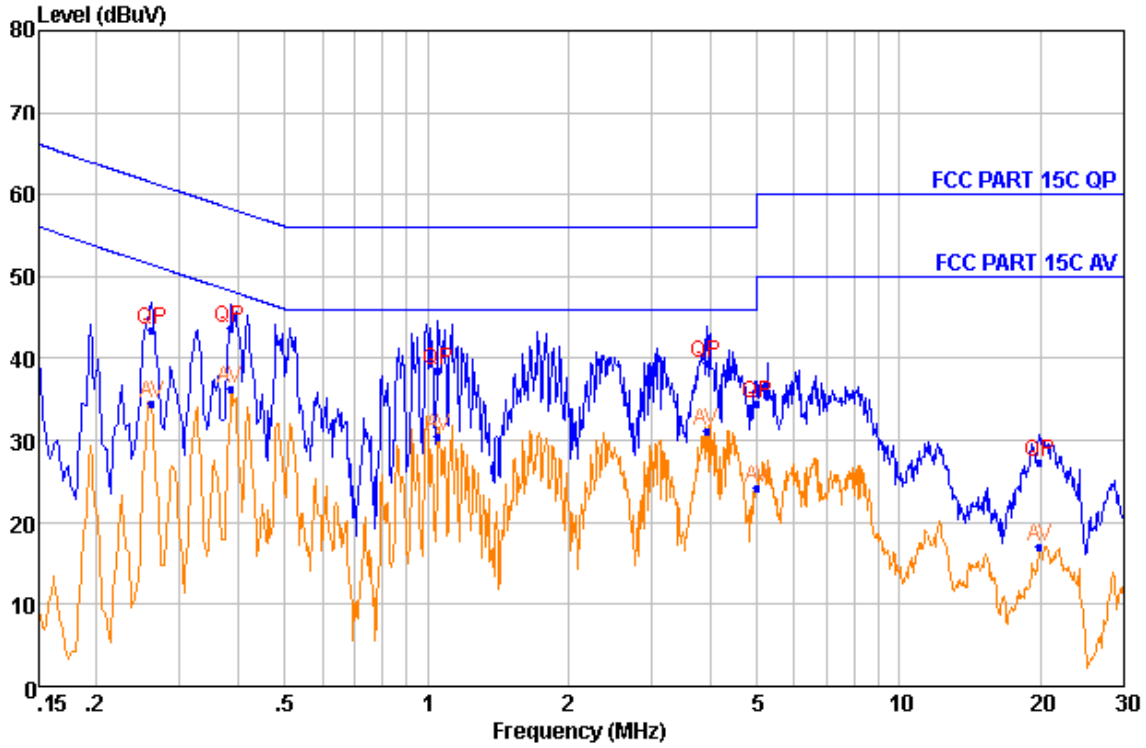
Quasi-peak and Average measurement

NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Over Limit dB
1	0.258	47.04	QP	9.49	0.41	61.51	-14.47
2	0.258	41.86	Average	9.49	0.41	51.51	-9.65
3	0.480	44.71	QP	9.34	0.44	56.33	-11.62
4	0.480	38.81	Average	9.34	0.44	46.33	-7.52
5	0.931	42.88	QP	9.27	0.46	56.00	-13.12
6	0.931	36.28	Average	9.27	0.46	46.00	-9.72
7	2.174	42.55	QP	9.32	0.50	56.00	-13.45
8	2.174	36.13	Average	9.32	0.50	46.00	-9.87
9	6.140	37.04	QP	9.30	0.54	60.00	-22.96
10	6.140	28.12	Average	9.30	0.54	50.00	-21.88
11	23.456	29.13	QP	9.72	0.59	60.00	-30.87
12	23.456	20.16	Average	9.72	0.59	50.00	-29.84

Neutral Line

Peak Scan:

Level (dBµV)



Quasi-peak and Average measurement

NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Over Limit dB
1	0.262	43.37	QP	9.37	0.41	61.38	-18.01
2	0.262	34.59	Average	9.37	0.41	51.38	-16.79
3	0.384	43.58	QP	9.36	0.43	58.18	-14.60
4	0.384	36.25	Average	9.36	0.43	48.18	-11.93
5	1.052	38.66	QP	9.37	0.47	56.00	-17.34
6	1.052	30.56	Average	9.37	0.47	46.00	-15.44
7	3.915	39.43	QP	9.42	0.52	56.00	-16.57
8	3.915	31.16	Average	9.42	0.52	46.00	-14.84
9	5.000	34.46	QP	9.43	0.53	56.00	-21.54
10	5.000	24.37	Average	9.43	0.53	46.00	-21.63
11	19.903	27.46	QP	9.91	0.58	60.00	-32.54
12	19.903	17.06	Average	9.91	0.58	50.00	-32.94

--End of Report--