

FCC Test Report

Product Name : IWCU OBU 6.0A
Trade Name : ITRI, CTT
Model No. : 6.0A
FCC ID. : N3X-IWCUOBU6A

Applicant : Industrial Technology Research Institute (ITRI)
Address : No. 195, Sec. 4, Chung Hsing Rd., Chutung, Hsinchu

Date of Receipt : Feb. 26, 2016
Issued Date : Jun. 01, 2016
Report No. : 1630022R-RFUSP22V00
Report Version : V1.0



The test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of Corporation.

Test Report Certification

Issued Date : Jun. 01, 2016

Report No. : 1630022R-RFUSP22V00



Product Name : IWCU OBU 6.0A
Applicant : Industrial Technology Research Institute (ITRI)
Address : No. 195, Sec. 4, Chung Hsing Rd., Chutung, Hsinchu
Manufacturer : Shin Pui Technology Co., Ltd.
Model No. : 6.0A
FCC ID. : N3X-IWCUOBU6A
EUT Voltage : DC 12V
Testing Voltage : DC 12V
Trade Name : ITRI, CTT
Applicable Standard : 47 CFR FCC Part 95
Test Lab : QuieTek Hsin Chu Laboratory
Test Result : Complied

The test results relate only to the samples tested.

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Approved By :

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(Roy Wang / Director)

Revision History

Report No.	Version	Description	Issued Date
1630022R-RFUSP22V00	V1.0	Initial issue of report.	Jun. 01, 2016

Laboratory Information

We, **Quietek Corporation**, are an independent RF consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025 specified testing scopes:

Taiwan R.O.C.	: TAF, Accreditation Number: 3024
USA	: FCC, Registration Number: 365520
Canada	: IC, Submission No: 181665 / IC Registration Number: 4075C-4

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site:<http://www.quietek.com/english/about/certificates.aspx?bval=5>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web site :
http://www.quietek.com/index_en.aspx

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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1. General Information

1.1. EUT Description

Product Name	IWCU OBU 6.0A
Trade Name	ITRI, CTT
Model No.	6.0A
Frequency Range	5860-5920MHz / 7 Channels
Type of Modulation	802.11p(10MHz space)

Antenna Information	
Antenna Type	Dipole Antenna
Antenna Gain	3dBi

1.2. Test Mode

QuieTek has verified the construction and function in typical operation. The preliminary tests were performed in different data rate, and to find the worst condition, which was shown in this test report. The following table is the final test mode.

TX	Mode 1: Transmit
----	------------------

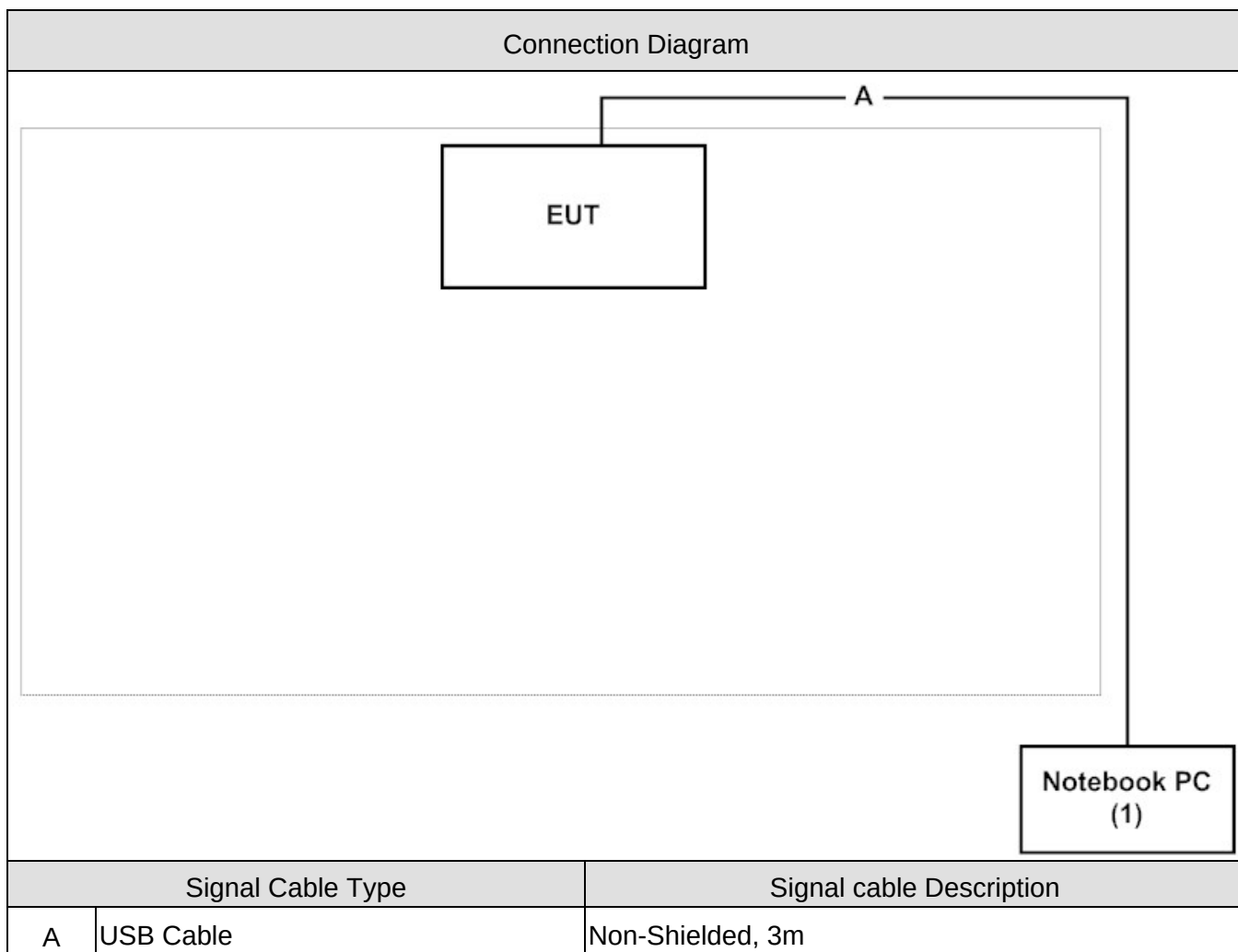
Test Items	Channel	Mode	Result
Emission Bandwidth	172/178/184	1	Complies
Maximum Transmitter power	172/178/184	1	Complies
Transmit Spectrum Mask	172/178/184	1	Complies
Transmitter Conducted Unwanted Emission	172/178/184	1	Complies
Transmitter Radiated Unwanted Emission	172/178/184	1	Complies
Frequency Stability	172/178/184	1	Complies

1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1 Notebook PC	ACER	MS2296	LUSCV021391150 332C2000	DoC	Non-Shielded, 2.5m one ferrite core bonded

1.4. Configuration of tested System



1.5. EUT Exercise Software

1	Setup the EUT as shown in Section 1.4.
2	Execute the TX command on the EUT.
3	Configure the test channel
4	Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	Emission Bandwidth	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	Maximum Transmitter power	15 - 35	25
Humidity (%RH)		25 - 75	48
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	Transmit Spectrum Mask	15 - 35	25
Humidity (%RH)		25 - 75	65
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	Transmitter Conducted Unwanted Emission	15 - 35	24
Humidity (%RH)		25 - 75	49
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	Transmitter Radiated Unwanted Emission	15 - 35	25
Humidity (%RH)		25 - 75	48
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	Frequency Stability	15 - 35	25
Humidity (%RH)		25 - 75	48
Barometric pressure (mbar)		860 - 1060	950-1000

2. Emission Bandwidth

2.1. Test Equipment

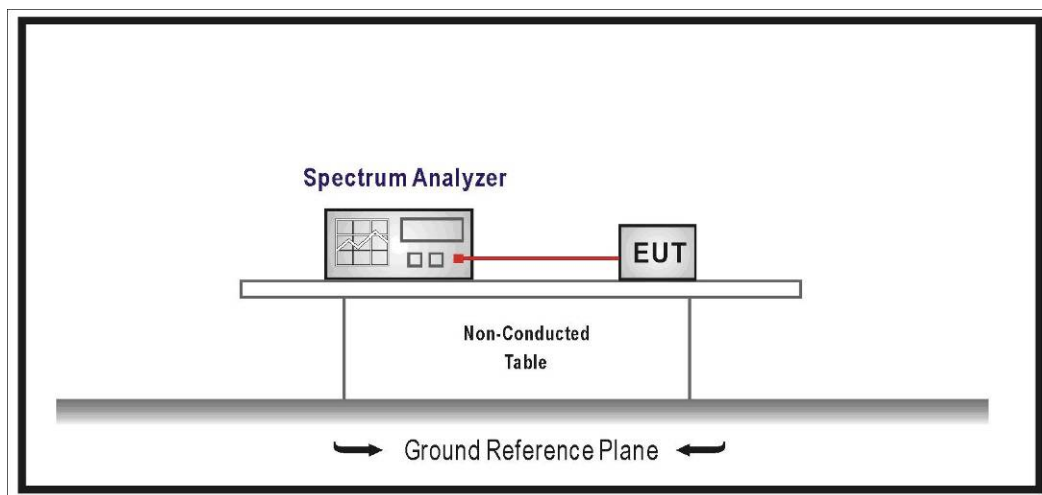
The following test equipments are used during the test:

Emission Bandwidth / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/08/23
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05
Signal Analyzer	R&S	FSV7	101650	2016/11/30

Note: All equipments that need to calibrate are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

The 99% Occupied bandwidth is the frequency bandwidth of the signal power at the 99% channel power of occupied bandwidth when resolution bandwidth should be approximately 1% to 5% of the occupied bandwidth (OBW). These measurements shall also be performed at normal test conditions.

2.4. Test Procedure

Refer as ANSI/TIA-603-D, Clause 1.3.4.4.

2.5. Uncertainty

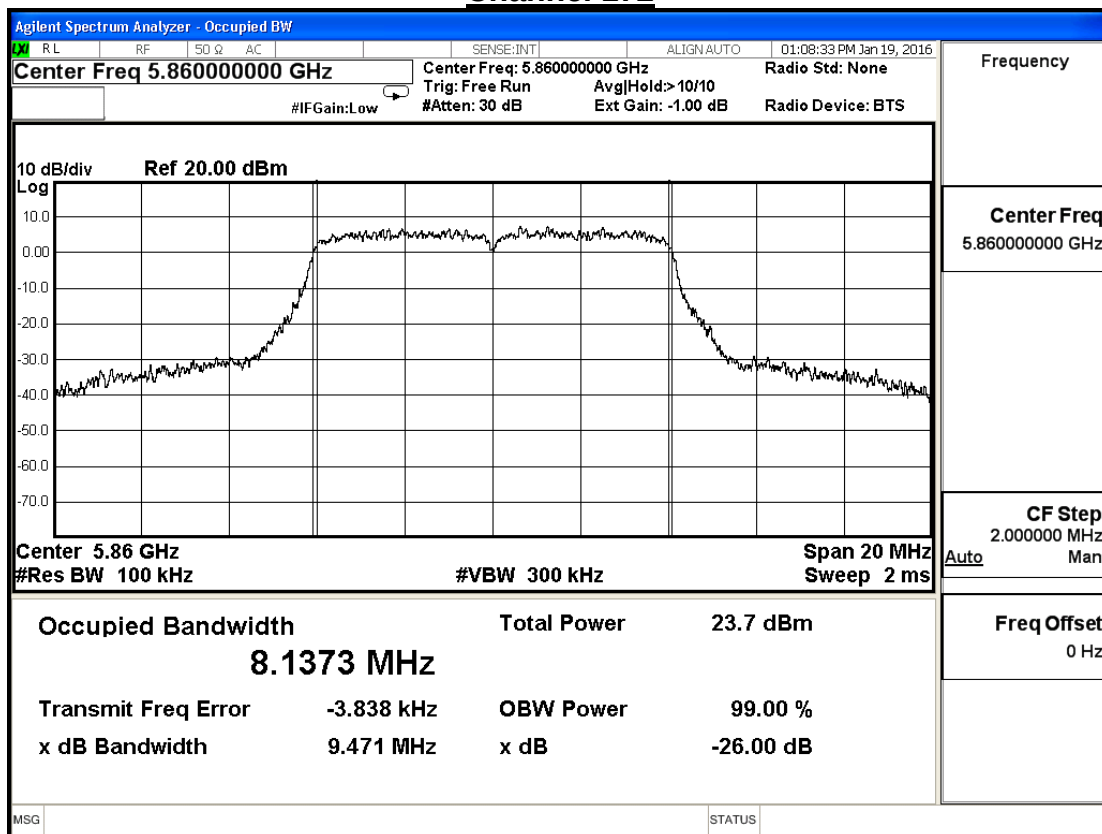
The measurement uncertainty is defined as $\pm 150\text{Hz}$

2.6. Test Result

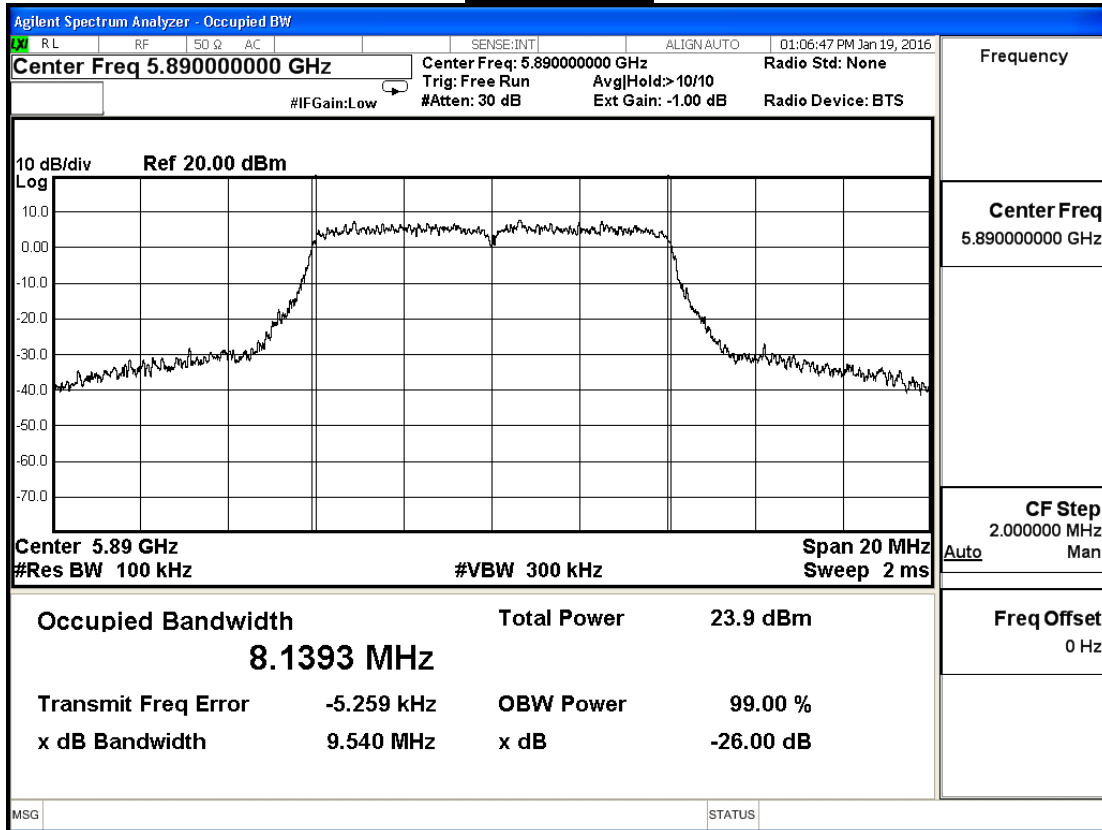
Product	IWCU OBU 6.0A		
Test Item	Emission Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2016/01/19	Test Site	SR7

IEEE 802.11p (ANT 0), Antenna Gain: 3 dBi				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
172	5860	8.1373	--	Pass
178	5890	8.1393	--	Pass
184	5920	8.1398	--	Pass

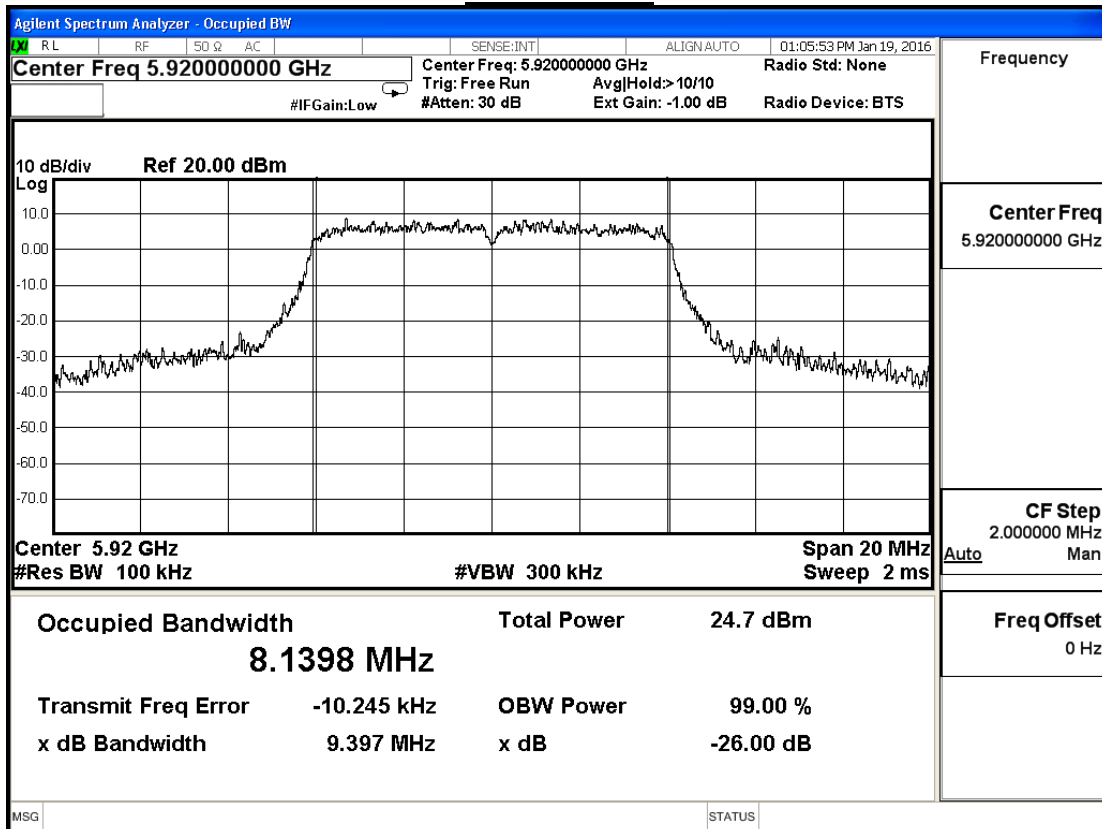
Channel 172



Channel 178



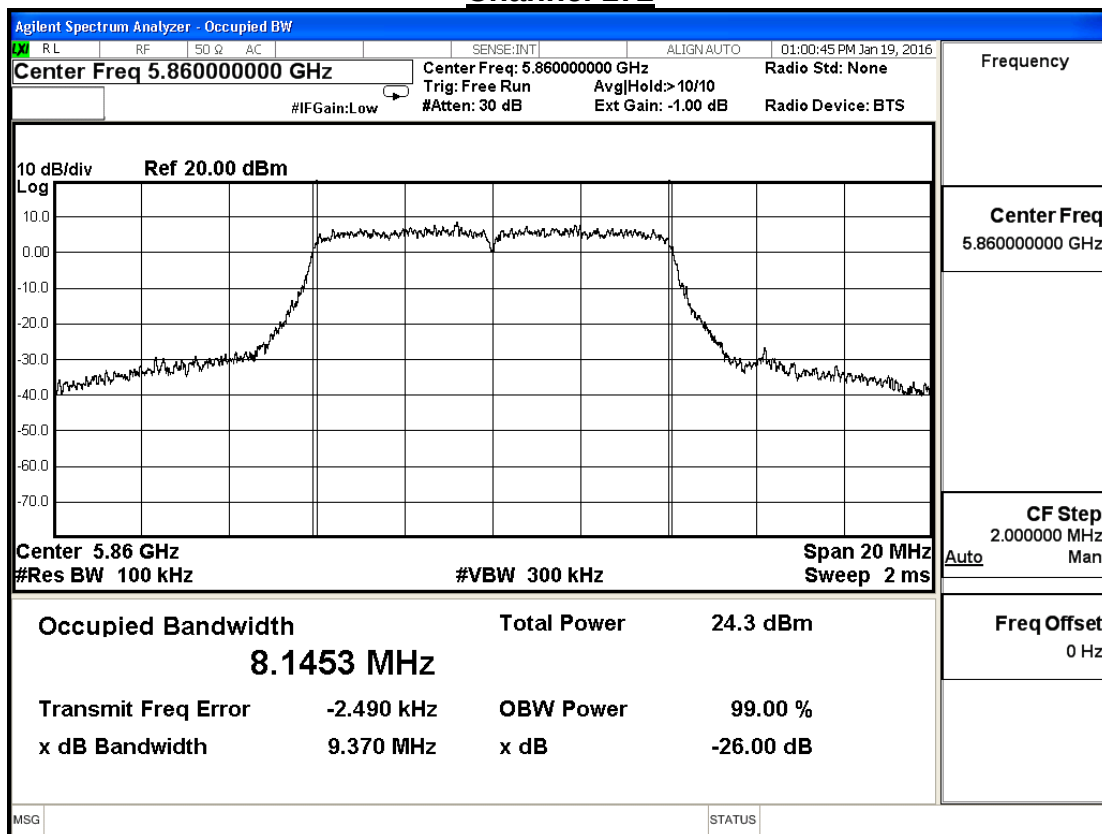
Channel 184



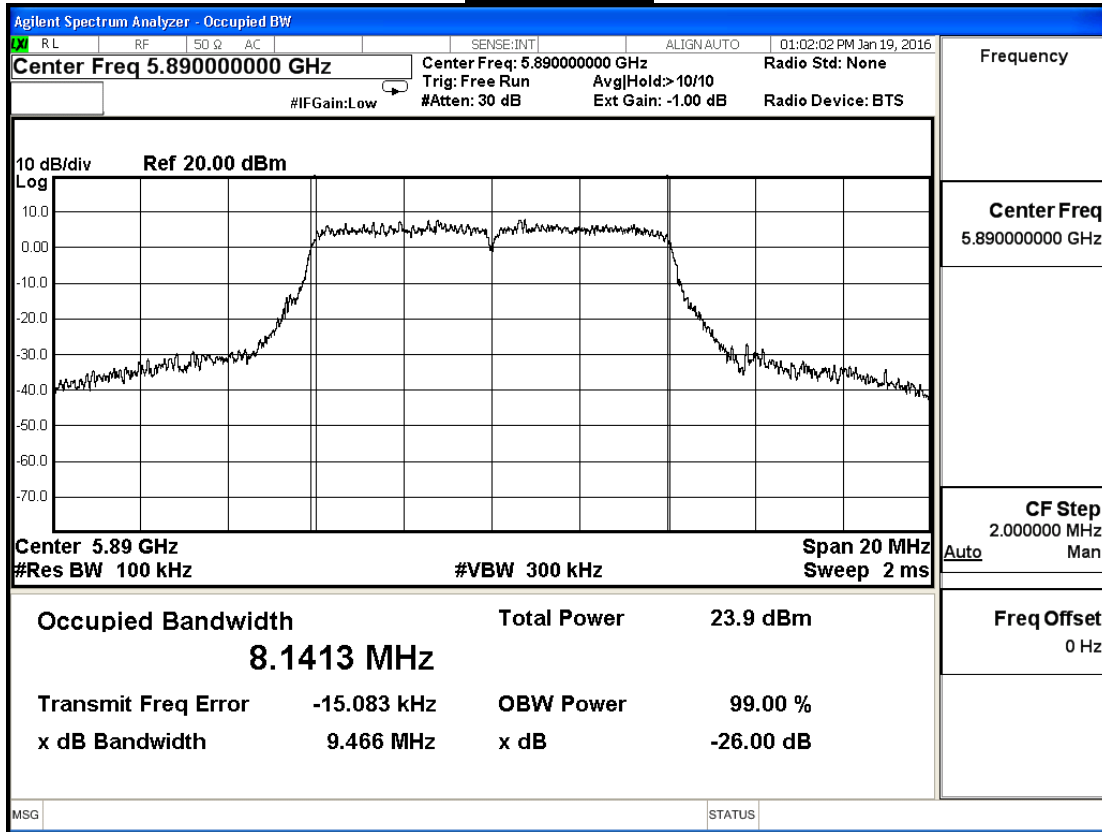
Product	IWCU OBU 6.0A		
Test Item	Emission Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2016/01/19	Test Site	SR7

IEEE 802.11p (ANT 1), Antenna Gain: 3 dBi				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
172	5860	8.1453	--	Pass
178	5890	8.1413	--	Pass
184	5920	8.1400	--	Pass

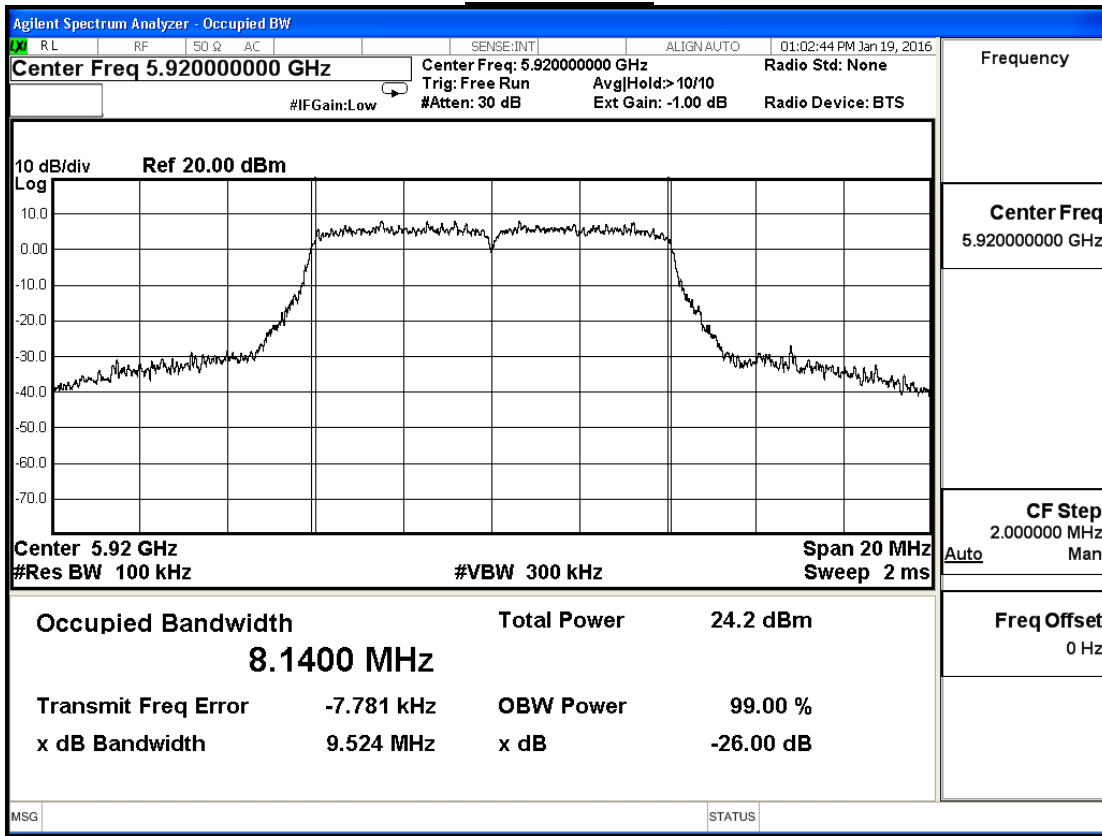
Channel 172



Channel 178



Channel 184



3. Maximum Transmitter Power

3.1. Test Equipment

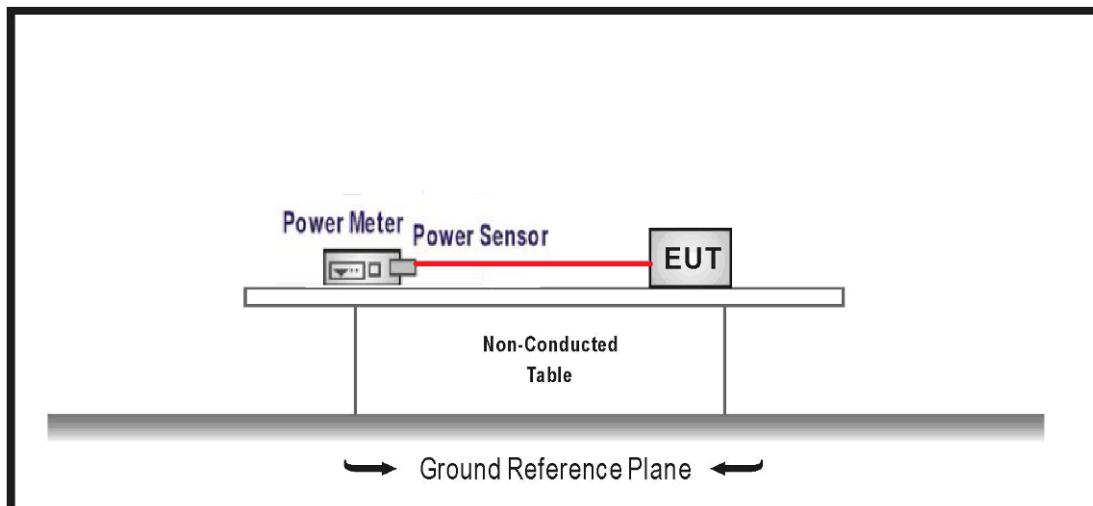
The following test equipments are used during the radiated emission tests:

Maximun Transmitter Power / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Power Meter	Agilent	N1911A	MY45101353	2016/10/11
Power Sensor	Agilent	N1921A	MY45241670	2016/10/11
USB Power Sensor	Keysight	U2021XA	MY54070005	NCR
Temperature & Humidity Chamber	WIT	TH-1S-B	1082101	2017/01/18

Note: All equipments that need to calibrate are with calibration period of 1 year.

3.2. Test Setup



3.3. Limits

5850~5925MHz			
Channel No.	Frequency Range (MHz)	Max. EIRP (dBm)	Channel Use
170	5850-5855	33	Reserved
172	5855-5865	33	Service Channel
174	5865-5875	33	Service Channel
175	5865-5885	23	Service Channel
176	5875-5885	33	Service Channel
178	5885-5895	33/44.8	Control Channel
180	5895-5905	23	Service Channel
181	5895-5915	23	Service Channel
182	5905-5915	23	Service Channel
184	5915-5925	33/40	Service Channel

3.4. Test Procedure

Refer as ANSI/TIA-603-D, Clause 3.2.1.

3.5. Uncertainty

The measurement uncertainty is defined as $\pm 1.27\text{dB}$

3.6. Test Result

Product	IWCU OBU 6.0A		
Test Item	Maximum Transmitter Power		
Test Mode	Mode 1: Transmit		
Date of Test	2016/01/20	Test Site	SR7

IEEE 802.11p (ANT 0), Antenna Gain: 3 dBi					
Channel No.	Frequency (MHz)	Cond. Power Level(dBm)	EIRP Measure Level(dBm)	Cond. Power Limit(dBm)	EIRP Power Limit (dBm)
172	5860	28.09	31.09	28.8	33
178	5890	28.05	31.05	28.8	33
180	5900	19.23	22.23	20.0	23
182	5910	19.74	22.74	20.0	23
184	5920	28.05	31.05	28.8	33

EIRP = Conducted Power + Antenna Gain

Conducted power could overcome limits but EIRP power shall under limits.

Product	IWCU OBU 6.0A		
Test Item	Maximum Transmitter Power		
Test Mode	Mode 1: Transmit		
Date of Test	2016/01/20	Test Site	SR7

IEEE 802.11p (ANT 1), Antenna Gain: 3 dBi					
Channel No.	Frequency (MHz)	Cond. Power Level(dBm)	EIRP Measure Level(dBm)	Cond. Power Limit(dBm)	EIRP Power Limit (dBm)
172	5860	28.35	31.35	28.8	33
178	5890	28.04	31.04	28.8	33
180	5900	19.72	22.72	20.0	23
182	5910	19.60	22.60	20.0	23
184	5920	28.25	31.25	28.8	33

EIRP = Conducted Power + Antenna Gain

Conducted power could overcome limits but EIRP power shall under limits.

Test Result	PASS
-------------	------

4. Transmit Spectrum Mask

4.1. Test Equipment

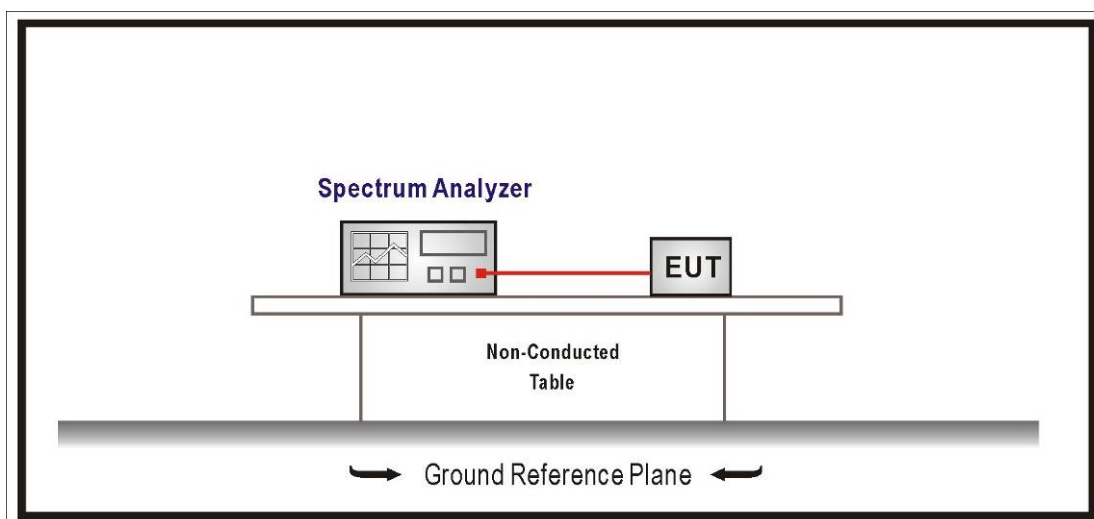
The following test equipments are used during the radiated emission tests:

Transmit Spectrum Mask / SR7

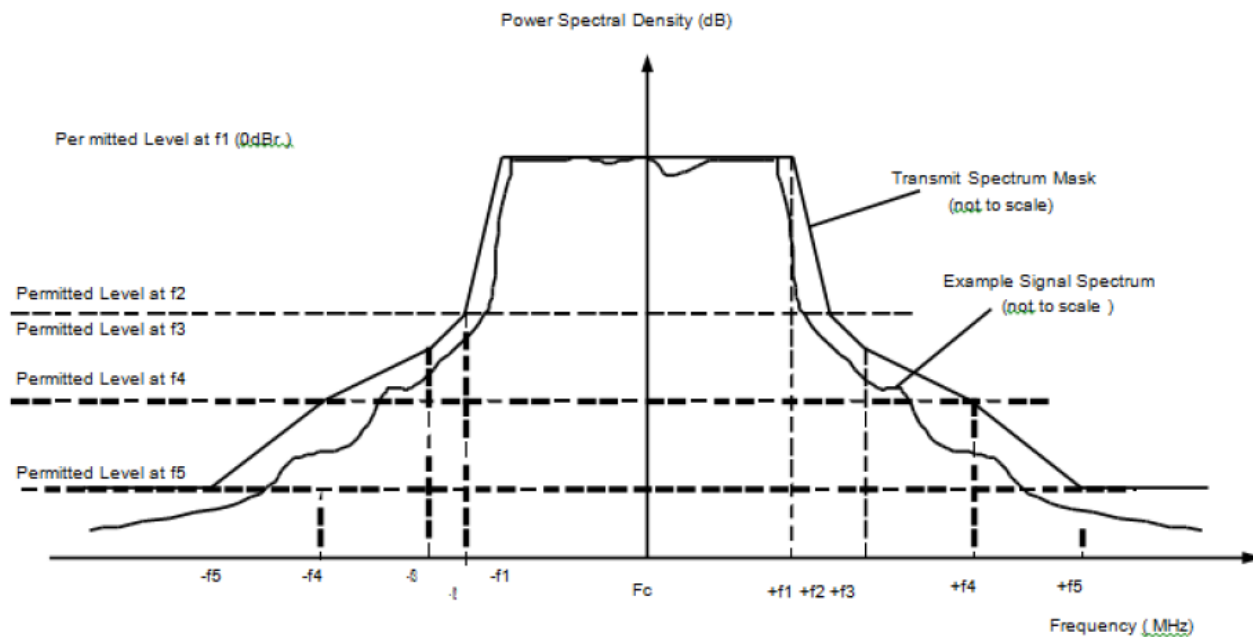
Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/08/23
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05
Signal Analyzer	R&S	FSV7	101650	2016/11/30

Note: All equipments that need to calibrate are with calibration period of 1 year.

4.2. Test Setup



4.3. Limits



4.4. Test Procedure

The measurements of transmit spectral density are made using RBW=100KHz,VBW=30KHz

4.5. Uncertainty

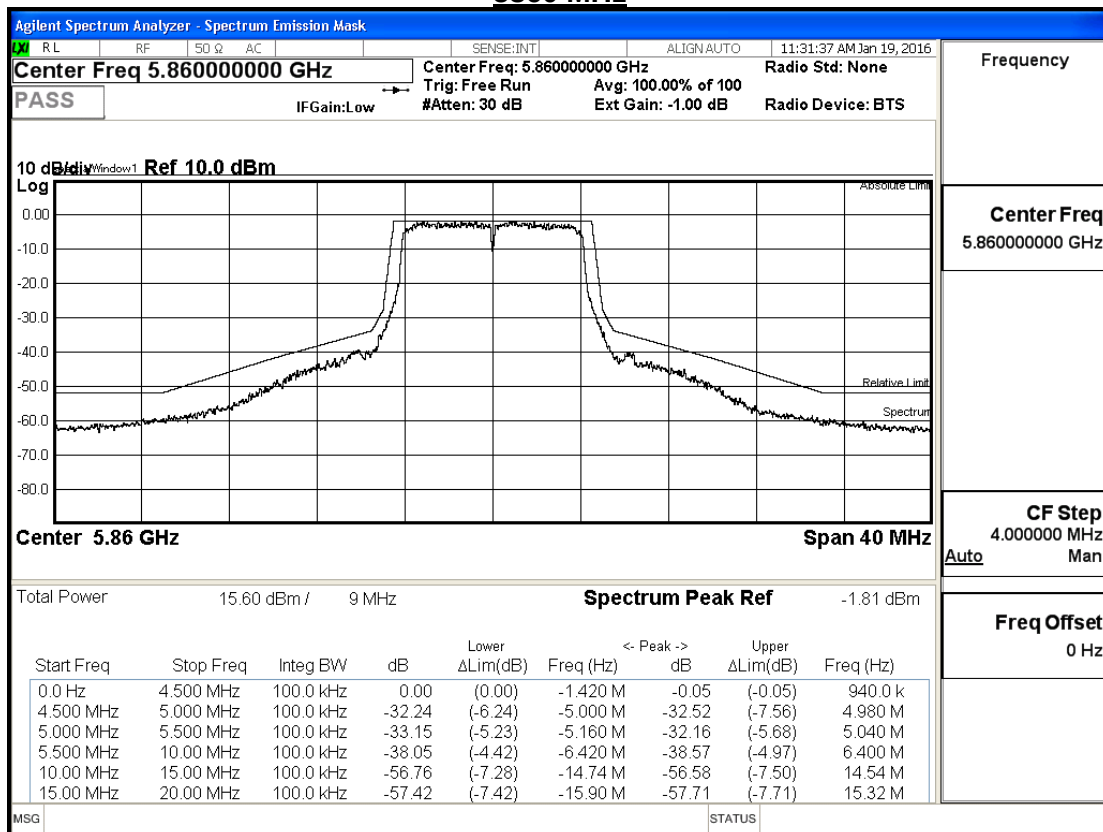
The measurement uncertainty is defined as ± 1.27 dB

4.6. Test Result

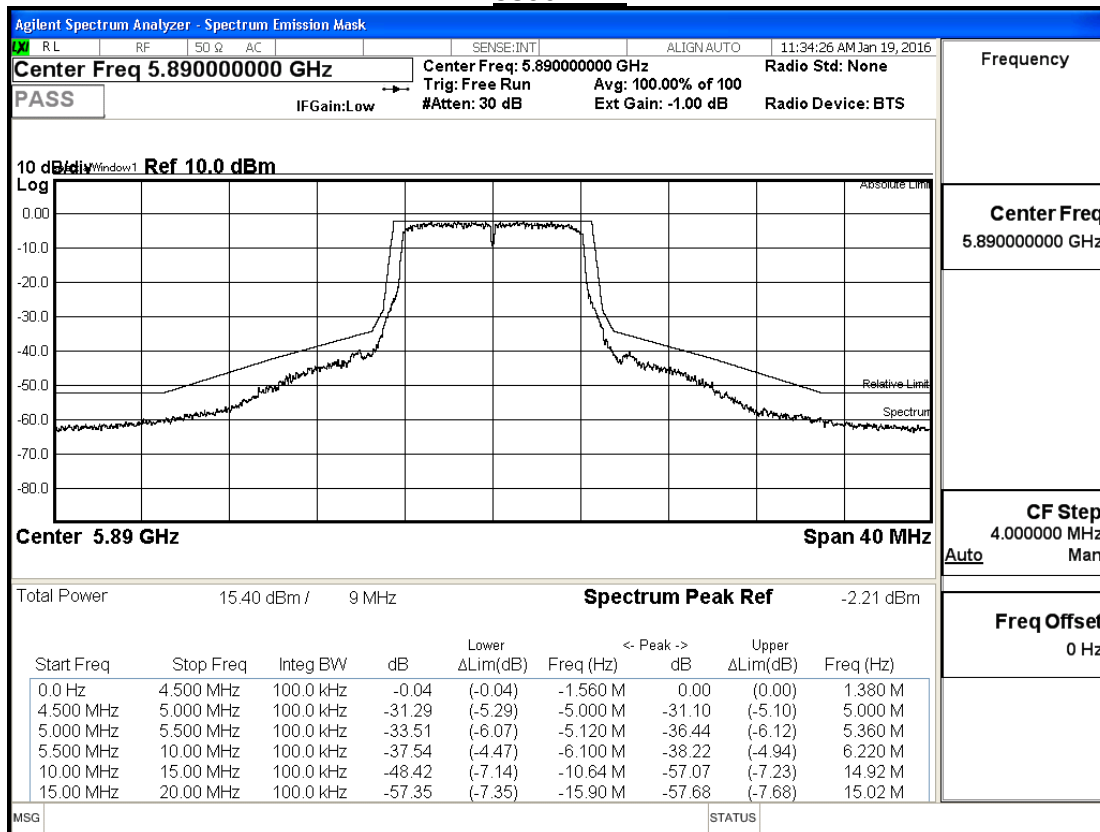
Product	IWCU OBU 6.0A		
Test Item	Transmit Spectrum Mask		
Test Mode	Mode 1: Transmit		
Date of Test	2016/01/19	Test Site	SR7

IEEE 802.11p (ANT 0), Antenna Gain: 3 dBi			
Channel No.	Frequency (MHz)	Result	Limit (dBm)
.172	5860	Pass	≤ -25
178	5890	Pass	≤ -25
184	5920	Pass	≤ -25

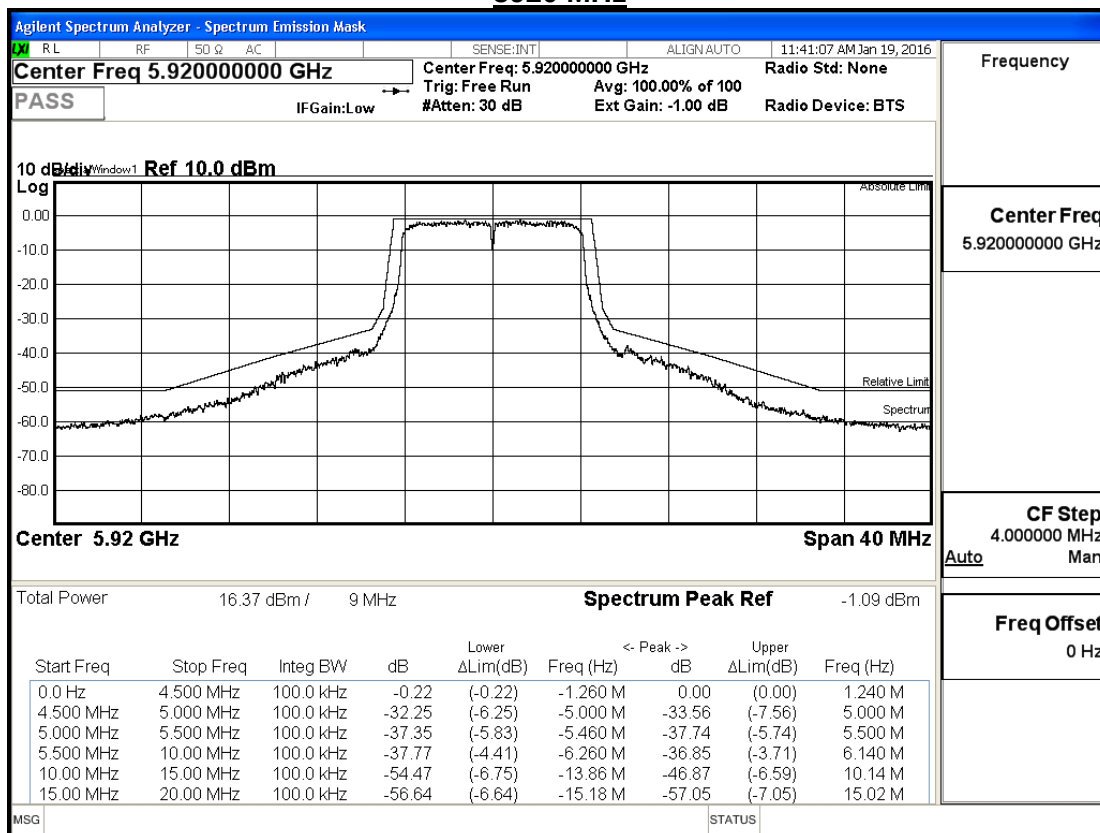
5860 MHz



5890 MHz



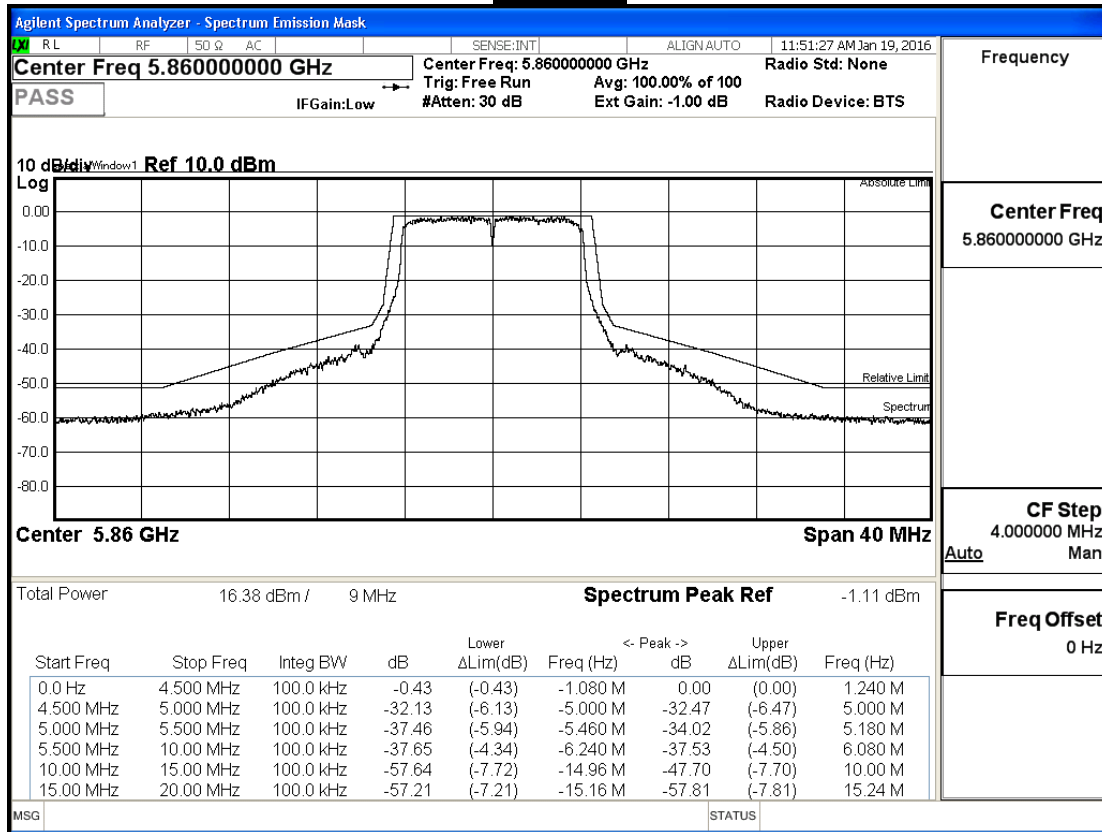
5920 MHz



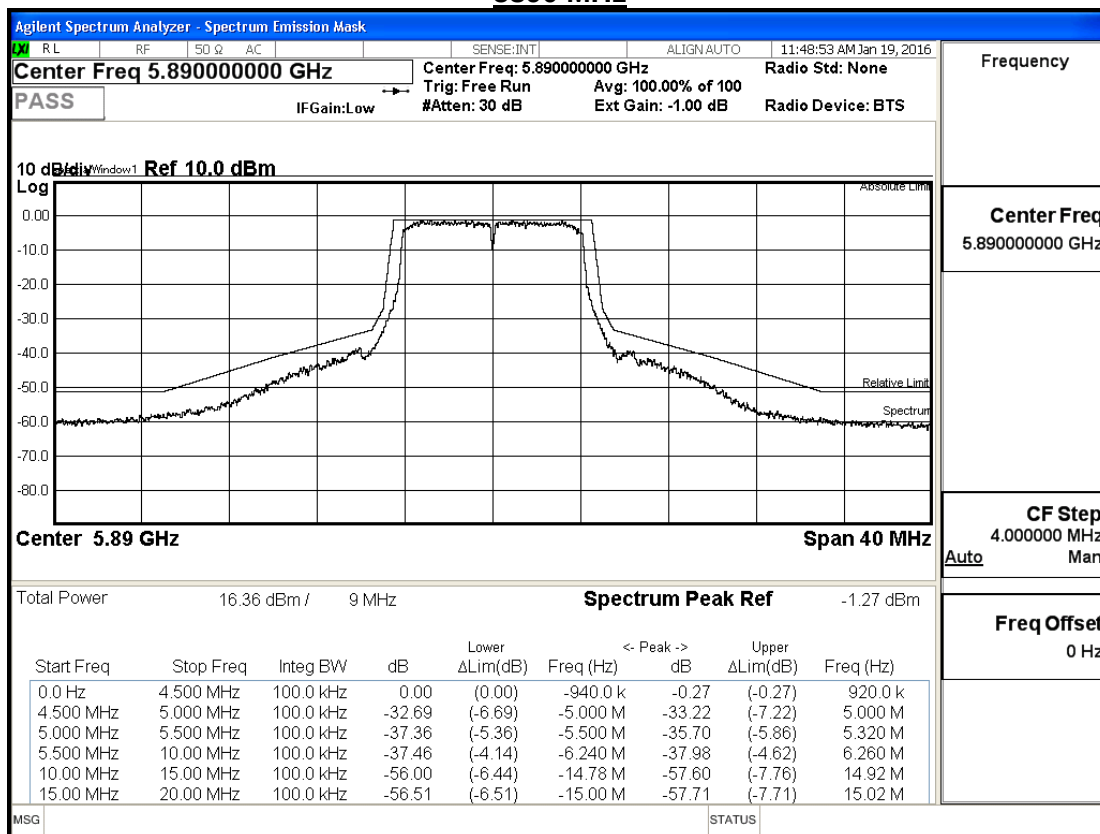
Product	IWCU OBU 6.0A		
Test Item	Transmit Spectrum Mask		
Test Mode	Mode 1: Transmit		
Date of Test	2016/01/19	Test Site	SR7

IEEE 802.11p (ANT 1), Antenna Gain: 3 dBi			
Channel No.	Frequency (MHz)	Result	Limit (dBm)
172	5860	Pass	≤ -25
178	5890	Pass	≤ -25
184	5920	Pass	≤ -25

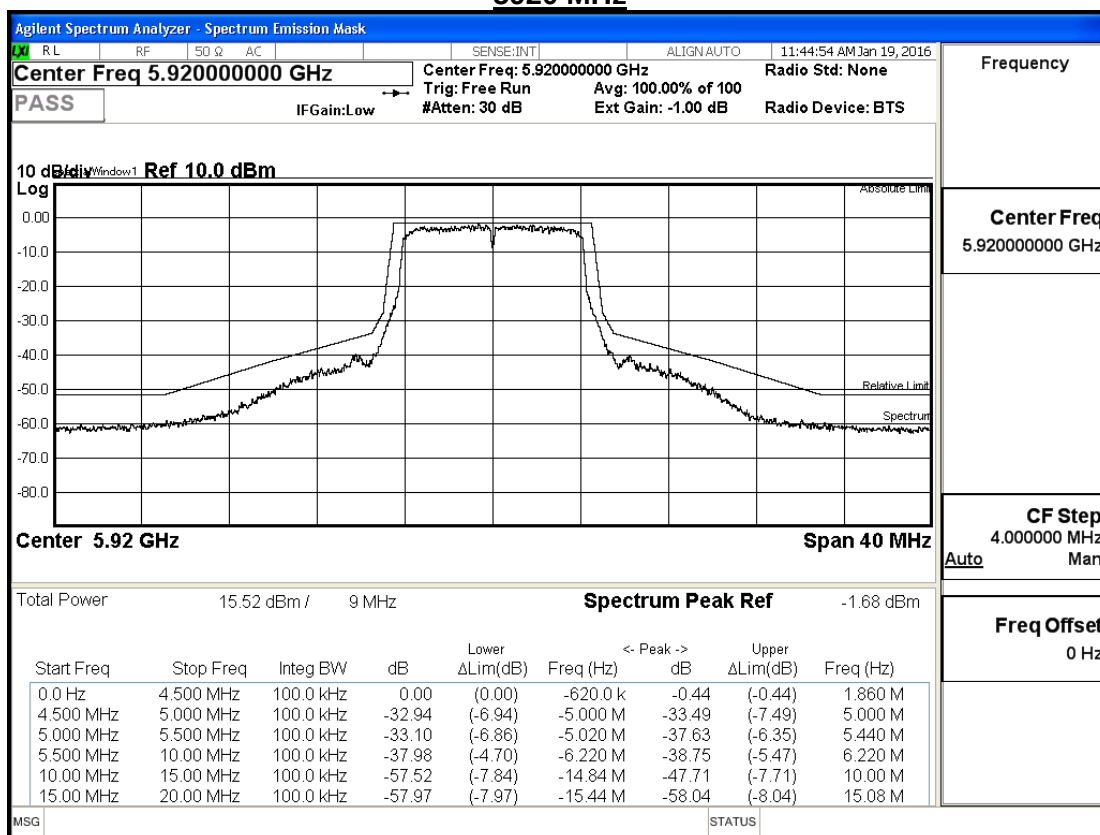
5860 MHz



5890 MHz



5920 MHz



5. Transmitter Conducted Unwanted Emission

5.1. Test Equipment

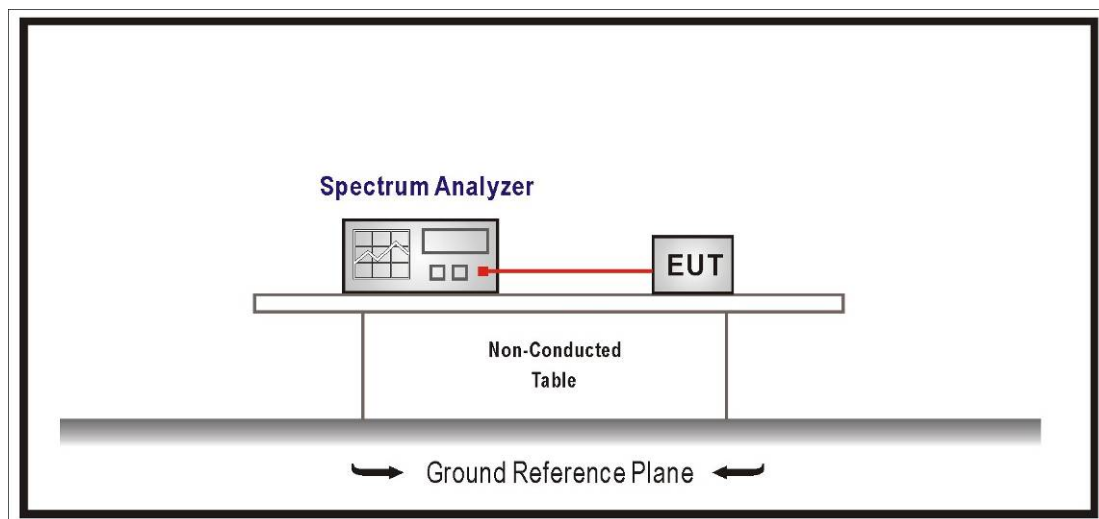
The following test equipments are used during the radiated emission test:

Transmitter Conducted Unwanted Emission / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/08/23
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05
Signal Analyzer	R&S	FSV7	101650	2016/11/30

Note: All equipments that need to calibrate are with calibration period of 1 year.

5.2. Test Setup



5.3. Limits

The power of any emission outside a license's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $[55 + 10 \log (P)]$ (-25dBm).

5.4. Test Procedure

Refer as ANSI/TIA-603-D-2010, clause 3.2.13.

5.5. Uncertainty

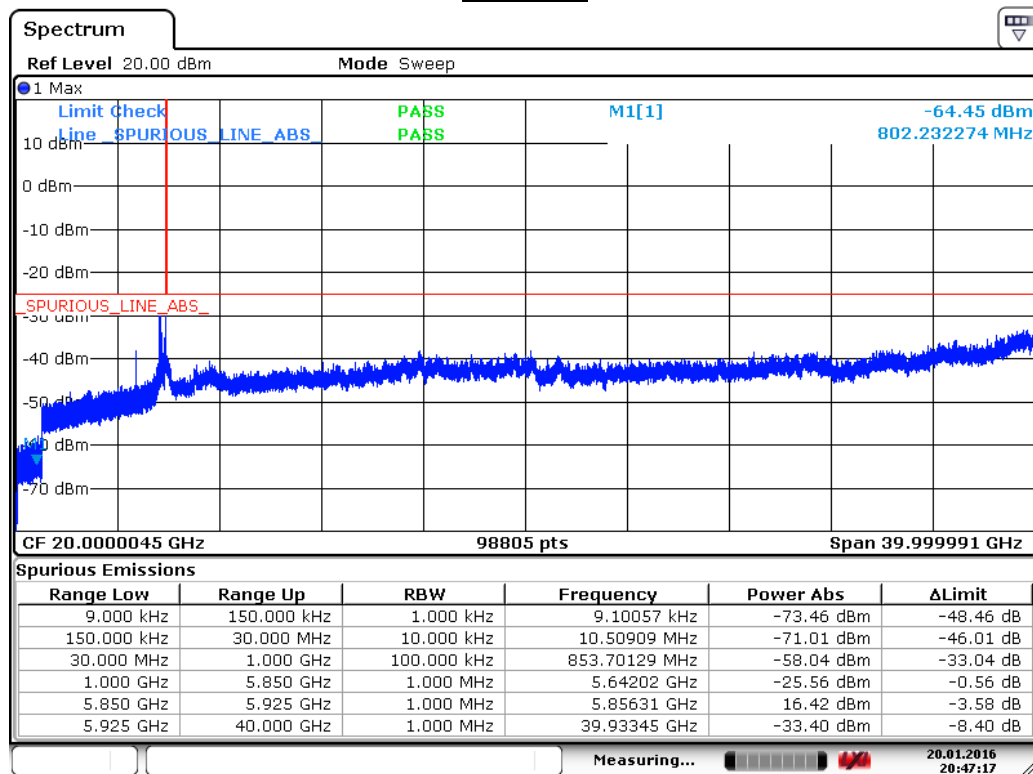
The measurement uncertainty is defined as ± 1.27 dB

5.6. Test Result

Product	IWCU OBU 6.0A		
Test Item	Transmitter Conducted Unwanted Emission		
Test Mode	Mode 1: Transmit		
Date of Test	2016/01/19	Test Site	SR7

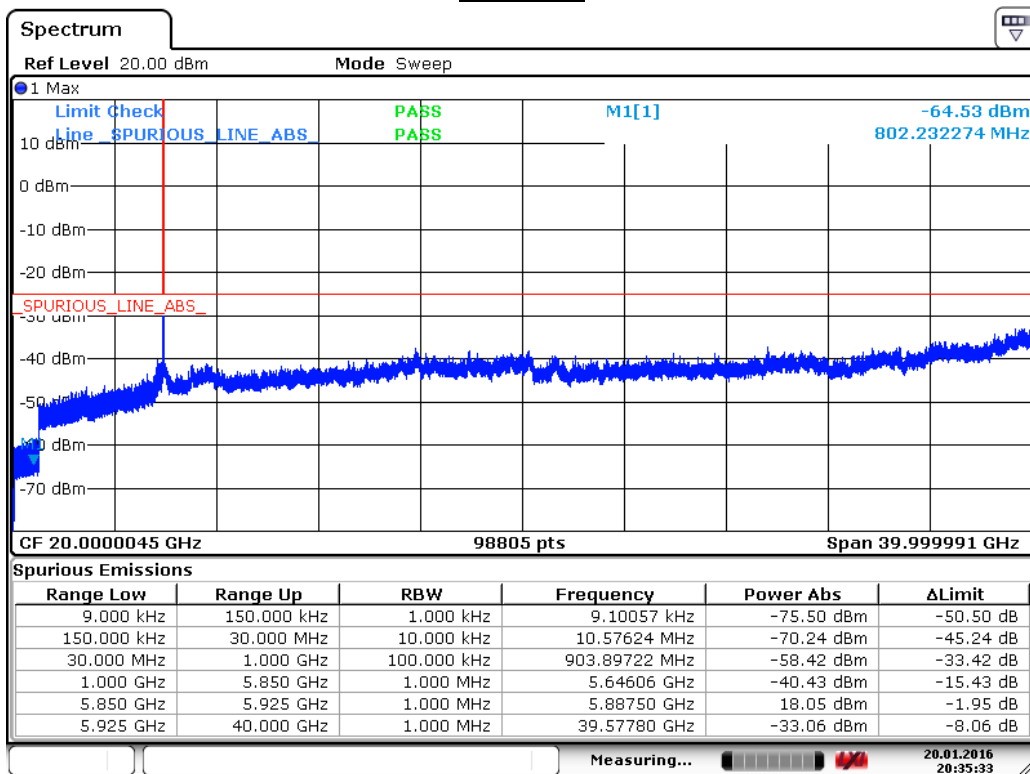
IEEE 802.11p (ANT 0), Antenna Gain: 3 dBi			
Channel No.	Frequency (MHz)	Result	Limit (dBm)
172	5860	Pass	≤ -25
178	5890	Pass	≤ -25
184	5920	Pass	≤ -25

5860MHz



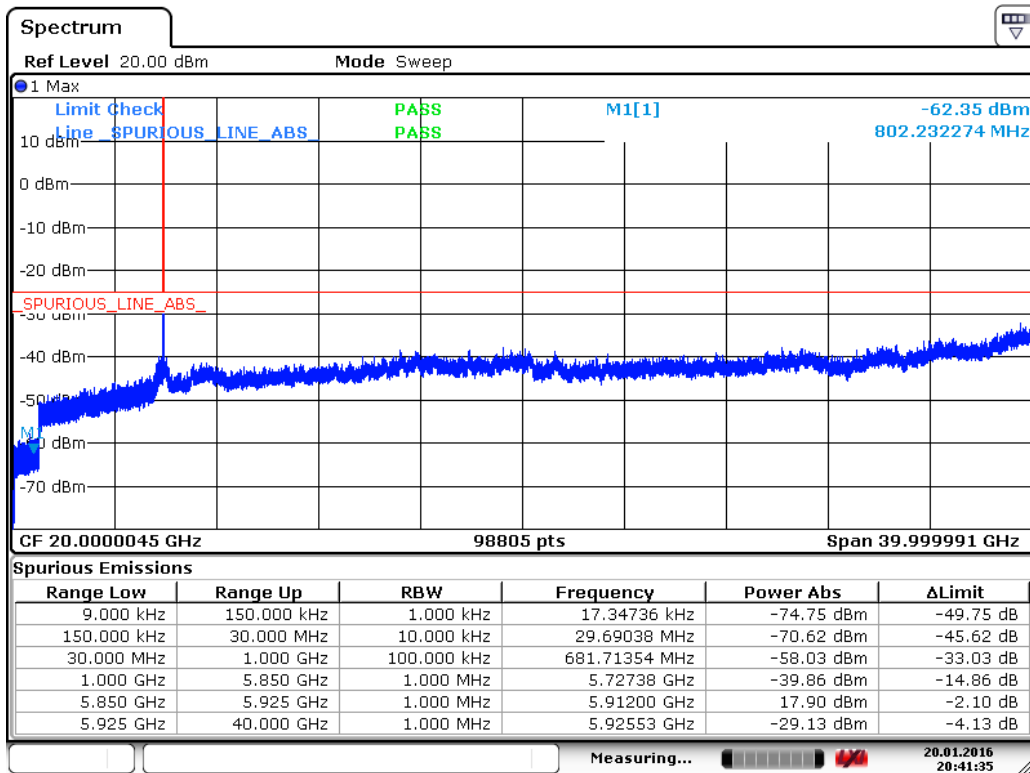
Date: 20.JAN.2016 20:47:16

5890MHz



Date: 20.JAN.2016 20:35:32

5920MHz

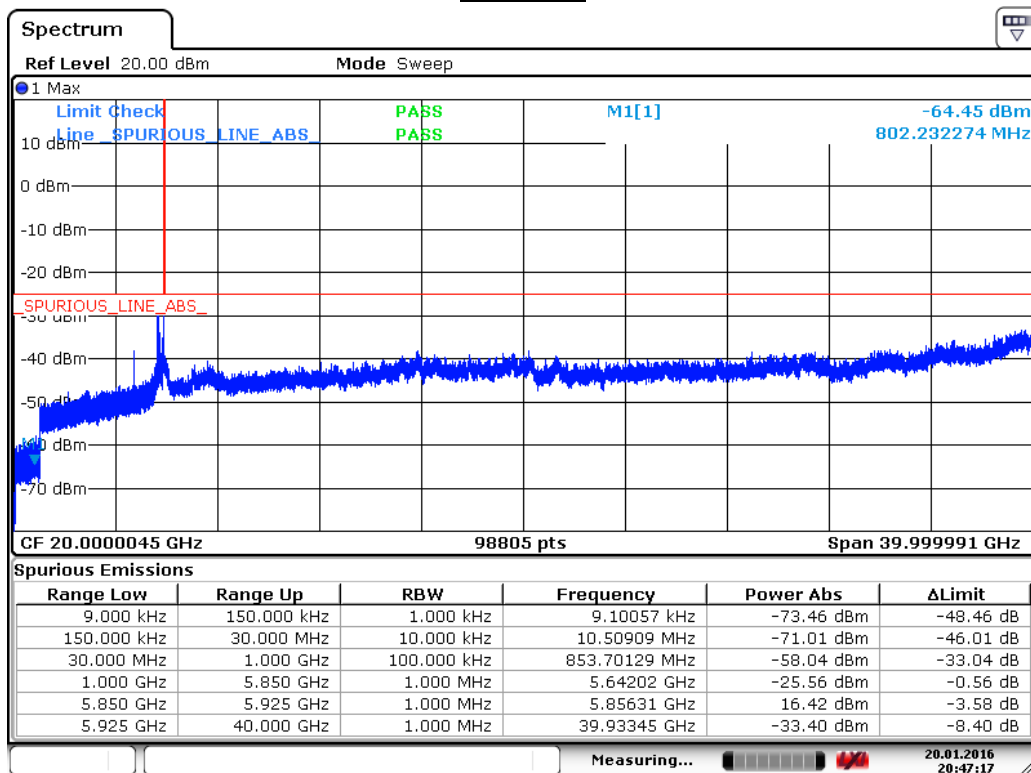


Date: 20.JAN.2016 20:41:35

Product	IWCU OBU 6.0A		
Test Item	Transmitter Conducted Unwanted Emission		
Test Mode	Mode 1: Transmit		
Date of Test	2016/01/19	Test Site	SR7

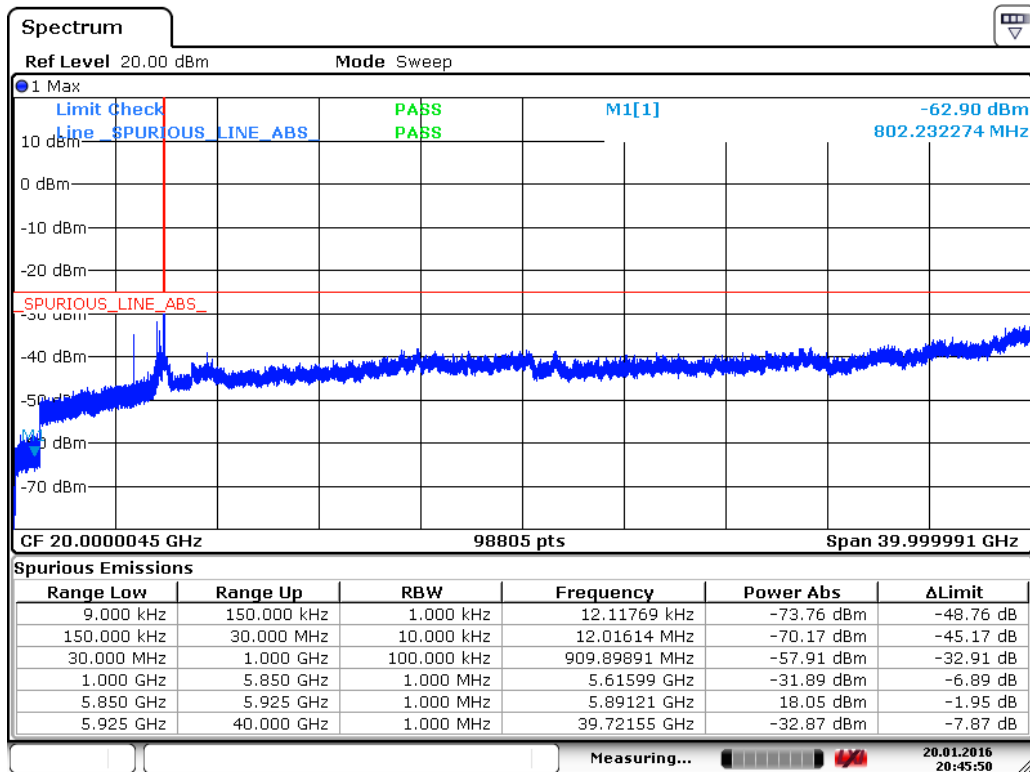
IEEE 802.11p (ANT 1), Antenna Gain: 3 dBi			
Channel No.	Frequency (MHz)	Result	Limit (dBm)
172	5860	Pass	≤ -25
178	5890	Pass	≤ -25
184	5920	Pass	≤ -25

5860MHz



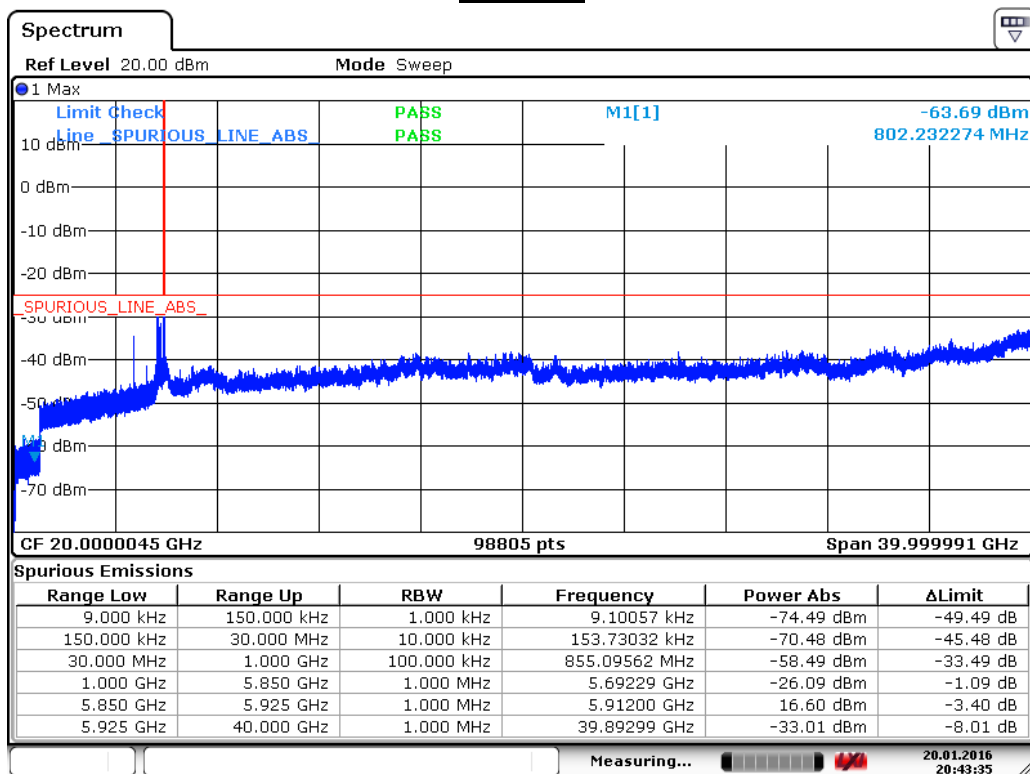
Date: 20.JAN.2016 20:47:16

5890MHz



Date: 20.JAN.2016 20:45:49

5920MHz



Date: 20.JAN.2016 20:43:35

6. Transmitter Radiated Unwanted Emission

6.1. Test Equipment

The following test equipments are used during the band edge tests:

Transmitter Radiated Unwanted Emission/ CB1

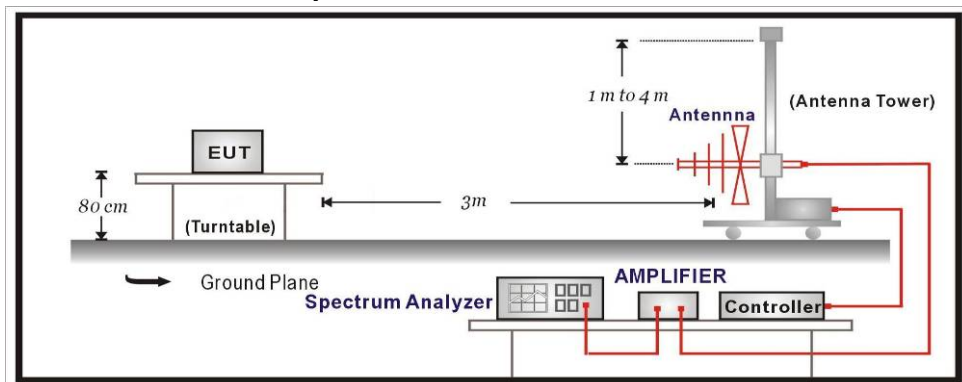
Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	Schaffner	CBL6112B	2895	2016/08/14
Double Ridged Guide Horn Antenna	Schwarzbeck	BBHA 9120	D743	2017/01/14
Pre-Amplifier	EMCI	EMC0031835	4583/10/13	2017/01/26
Pre-Amplifier	QuieTek	AP-025C	CHM-0706049	2017/01/03
Spectrum Analyzer	Agilent	E4440A	MY46187335	2016/12/24
k Type Cable	Huber+Suhner	SF 102	25623/2	2017/01/11
Horn Antenna	Schwarzbeck	BBHA 9170	203	2016/09/07
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05

Note: All equipments that need to calibrate are with calibration period of 1 year.

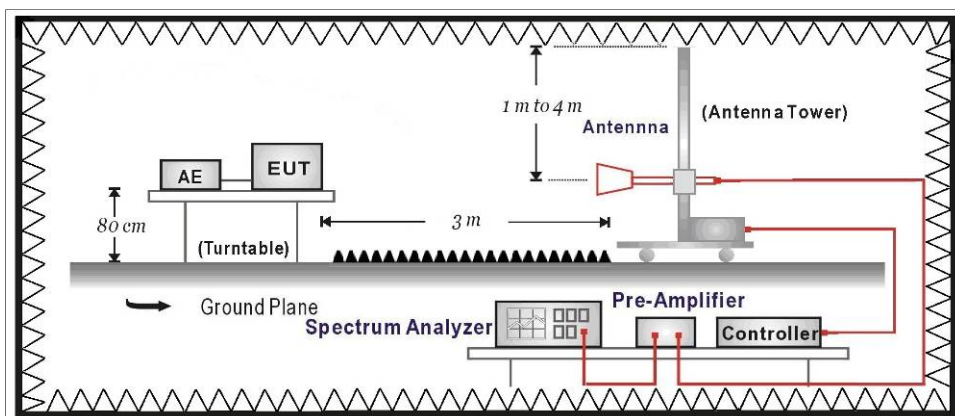
6.2. Test Setup

RF Radiated Measurement:

Under 1GHz Test Setup:



Above 1GHz Test Setup:



6.3. Limits

Refer as ASTM E2213-03 Clause 8.9.2

6.4. Test Procedure

Refer as ANSI/TIA-603-D-2010. Clause 3.2.12.

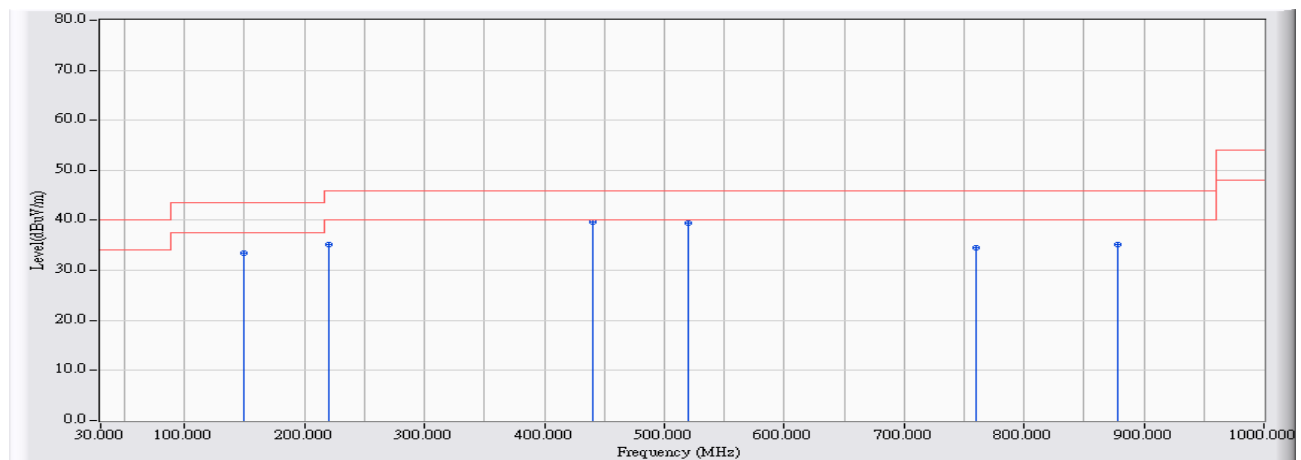
6.5. Uncertainty

The measurement uncertainty is defined as $\pm 3.65\text{dB}$

6.6. Test Result

30MHz-1GHz Spurious

Site : CB1	Time : 2016/01/25 - 19:10
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_30M-1G-4_9161 - HORIZONTAL	Power : DC 12V
EUT : IWCU OBU 6.0A	Note : Mode 1: Transmit_5890MHz

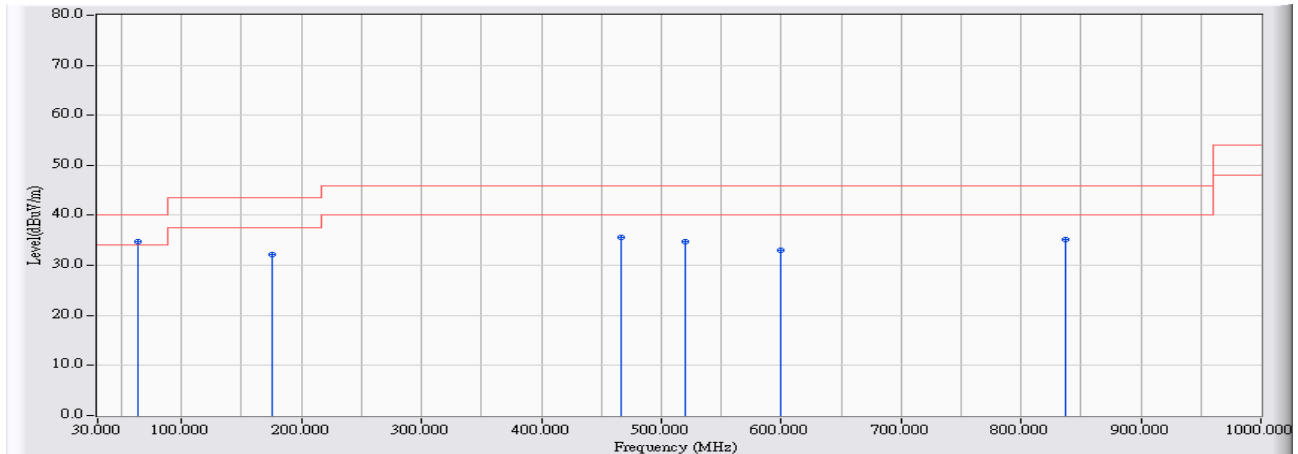


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		149.977	17.746	15.729	33.475	-10.025	43.500	QUASIPeAK
2		220.392	12.242	22.993	35.235	-10.765	46.000	QUASIPeAK
3	*	439.978	16.916	22.752	39.667	-6.333	46.000	QUASIPeAK
4		519.995	18.143	21.220	39.363	-6.637	46.000	QUASIPeAK
5		759.949	21.818	12.749	34.568	-11.432	46.000	QUASIPeAK
6		877.598	23.199	11.999	35.198	-10.802	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	Time : 2016/01/25 - 19:08
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_30M-1G-4_9161 - VERTICAL	Power : DC 12V
EUT : IWCU OBU 6.0A	Note : Mode 1: Transmit_5890MHz



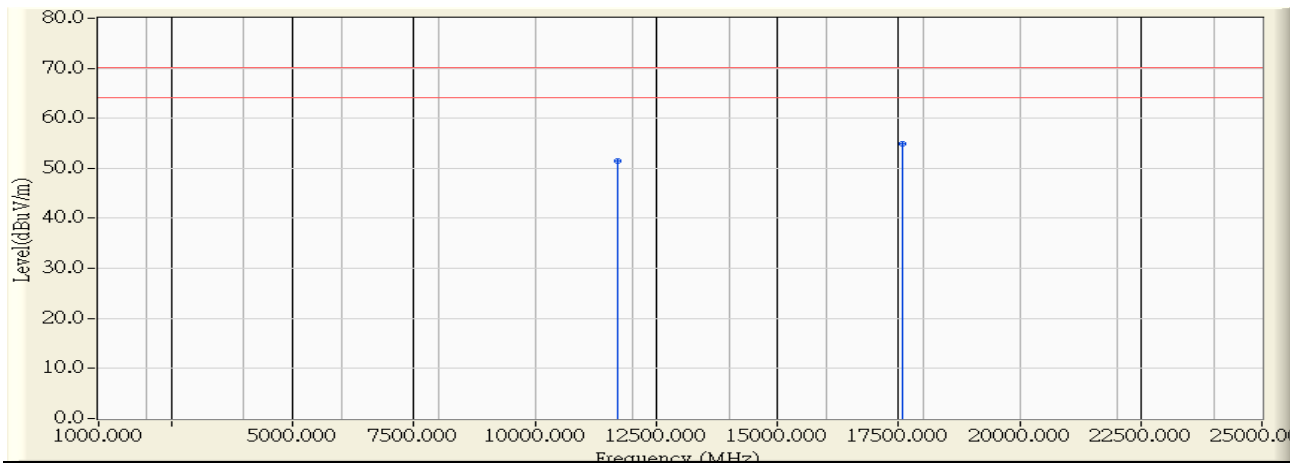
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	63.074	10.214	24.444	34.658	-5.342	40.000	QUASIPeAK
2		175.000	15.247	16.965	32.212	-11.288	43.500	QUASIPeAK
3		466.456	17.351	18.313	35.664	-10.336	46.000	QUASIPeAK
4		519.995	18.143	16.696	34.839	-11.161	46.000	QUASIPeAK
5		600.012	19.702	13.304	33.006	-12.994	46.000	QUASIPeAK
6		837.638	22.748	12.379	35.128	-10.872	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Harmonic & Spurious:

Site : CB1	Time : 2016/01/26 - 17:50
Limit : FCC Part90	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 12V
EUT : IWCU OBU 6.0A	Note : Mode 1: Transmit_5860MHz

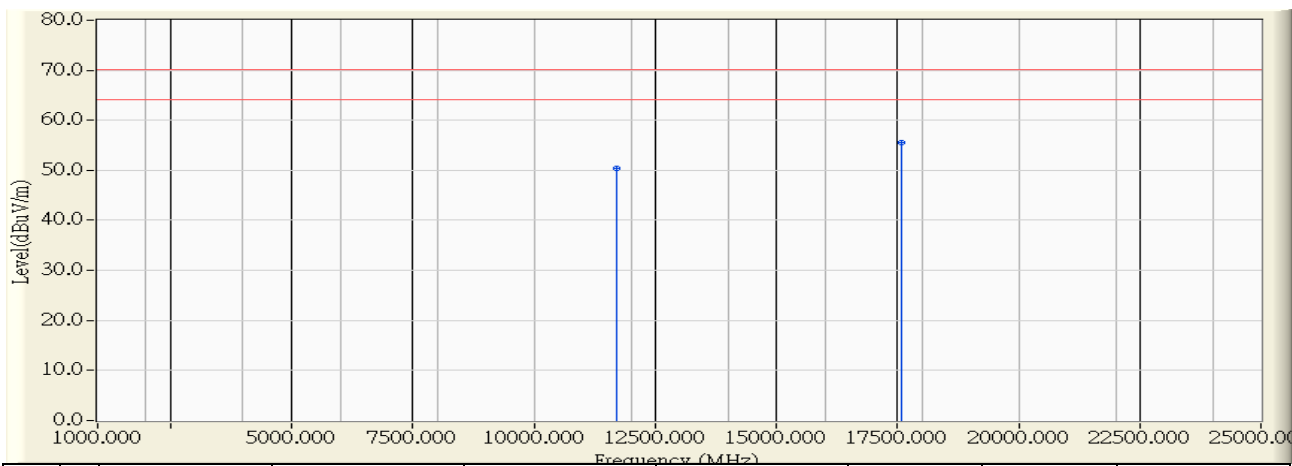


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		11720.000	10.754	40.720	51.475	-18.725	70.200	PEAK
2	*	17580.000	16.757	38.180	54.937	-15.263	70.200	PEAK

Note:

1. All Reading Levels are Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	Time : 2016/01/26 - 17:47
Limit : FCC Part90	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 12V
EUT : IWCU OBU 6.0A	Note : Mode 1: Transmit_5860MHz

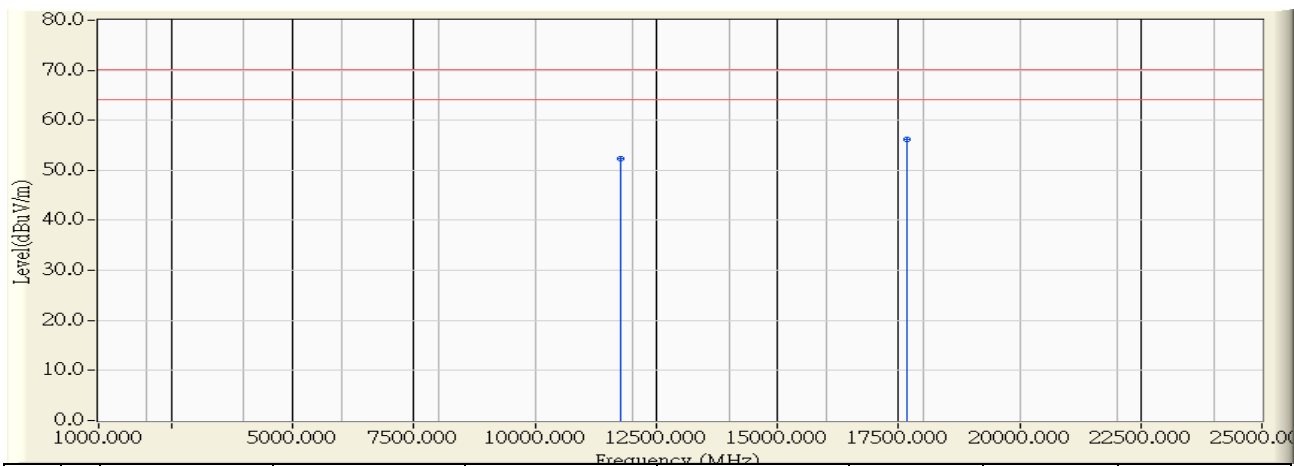


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		11720.000	10.386	40.110	50.496	-19.704	70.200	PEAK
2	*	17580.000	16.757	38.710	55.467	-14.733	70.200	PEAK

Note:

1. All Reading Levels are Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	Time : 2016/01/26 - 17:54
Limit : FCC Part90	Margin : 6
Probe : CB1 FCC EFS 1-18G H2 - HORIZONTAL	Power : DC 12V
EUT : IWCU OBU 6.0A	Note : Mode 1: Transmit 5890MHz

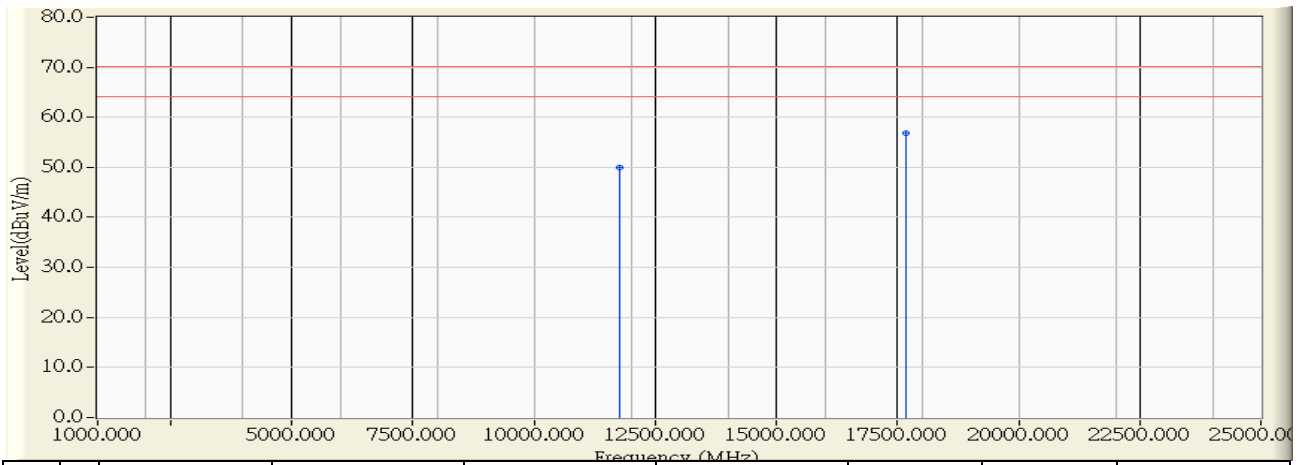


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		11780.000	10.680	41.720	52.400	-17.800	70.200	PEAK
2	*	17670.000	17.876	38.280	56.156	-14.044	70.200	PEAK

Note:

1. All Reading Levels are Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	Time : 2016/01/26 - 17:58
Limit : FCC Part90	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 12V
EUT : IWCU OBU 6.0A	Note : Mode 1: Transmit_5890MHz

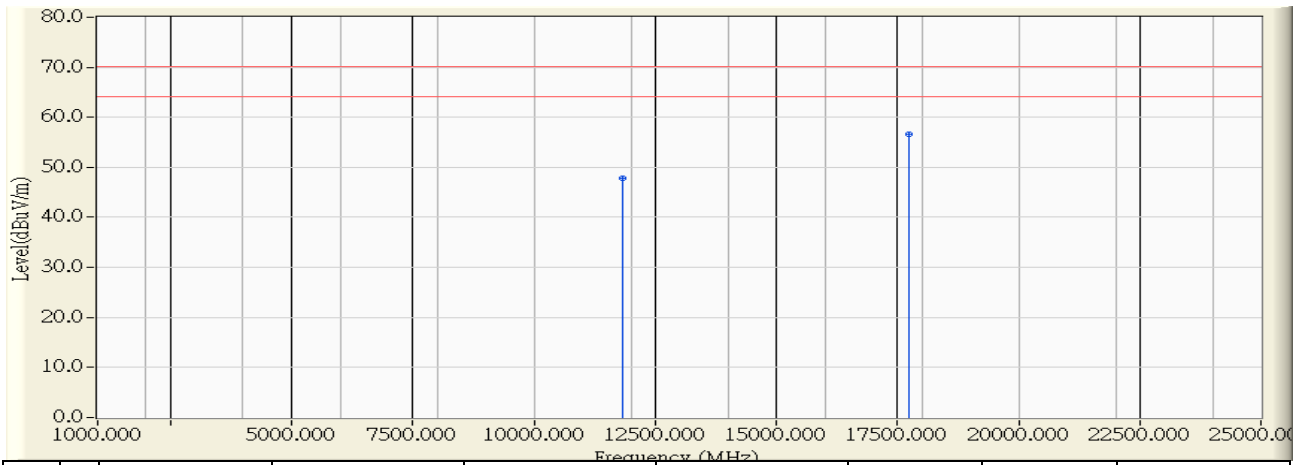


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		11780.000	10.282	39.730	50.012	-20.188	70.200	PEAK
2	*	17670.000	17.876	38.880	56.756	-13.444	70.200	PEAK

Note:

1. All Reading Levels are Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	Time : 2016/01/26 - 19:04
Limit : FCC Part90	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	Power : DC 12V
EUT : IWCU OBU 6.0A	Note : Mode 1: Transmit_5920MHz

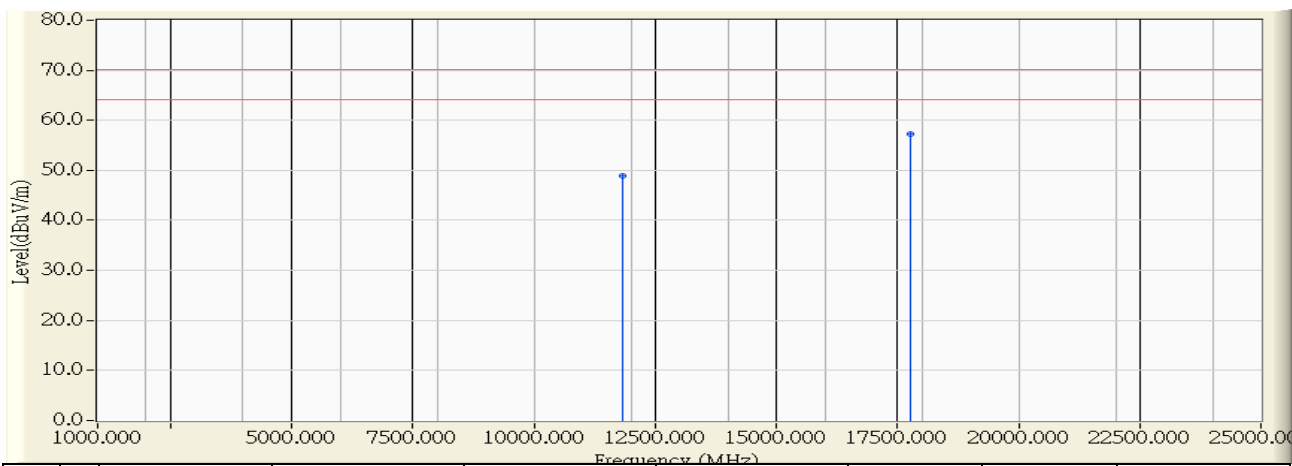


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		11833.920	10.614	37.300	47.914	-22.286	70.200	PEAK
2	*	17751.920	18.895	37.770	56.665	-13.535	70.200	PEAK

Note:

1. All Reading Levels are Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	Time : 2016/01/26 - 18:59
Limit : FCC Part90	Margin : 6
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	Power : DC 12V
EUT : IWCU OBU 6.0A	Note : Mode 1: Transmit_5920MHz



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		11837.590	10.182	38.640	48.822	-21.378	70.200	PEAK
2	*	17753.920	18.920	38.400	57.320	-12.880	70.200	PEAK

Note:

1. All Reading Levels are Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

7. Frequency Stability

7.1. Test Equipment

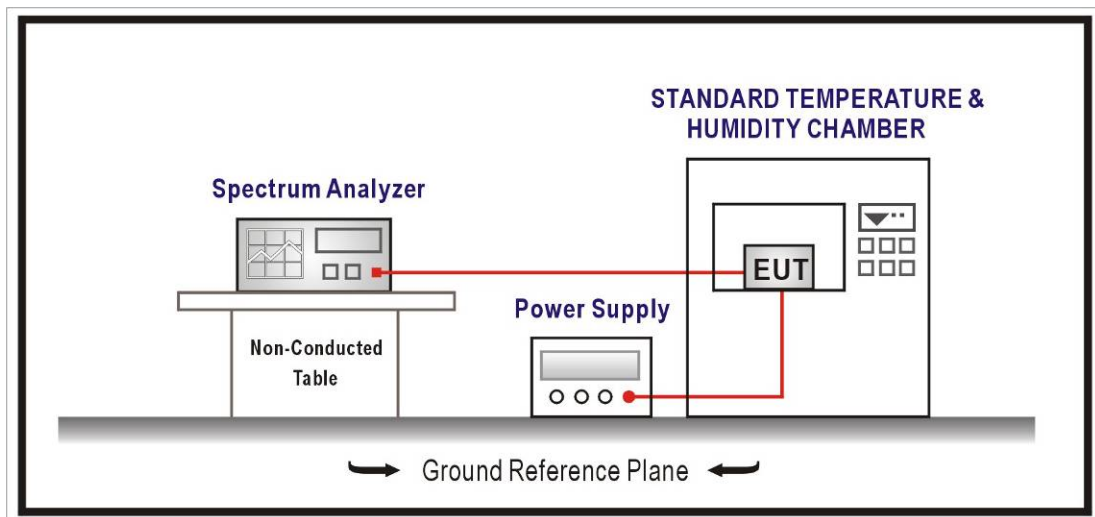
The following test equipments are used during the radiated emission tests:

Frequency Stability / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/08/23
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05
Signal Analyzer	R&S	FSV7	101650	2016/11/30

Note: All equipments that need to calibrate are with calibration period of 1 year.

7.2. Test Setup



7.3. Limits

Temperature range requirements: -20 to +50° C.

Voltage Variation +, -15%

±10 PPM

7.4. Test Procedure

The frequency stability was measured per ANSI/TIA 603-D: 2010 clause 3.2.2

7.5. Uncertainty

The measurement uncertainty is defined as ± 150 Hz

7.6. Test Result

Product	IWCU OBU 6.0A		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit-5890MHz		
Date of Test	2016/03/24	Test Site	SR7

Temperature Interval(°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Limit(ppm)
-20	120	5890.0224	3.8050	10
-10		5890.0154	2.6125	10
0		5889.9927	-1.2413	10
10		5889.9772	-3.8753	10
20		5889.9873	-2.1547	10
30		5889.9685	-5.3529	10
40		5889.9639	-6.1255	10
50		5889.9470	-8.9909	10

Temperature Interval(°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Limit(ppm)
25	102	5890.0081	1.3773	10
	120	5890.0035	0.6013	10
	138	5889.9917	-1.4081	10