

FCC Test Report

Product Name : SAVARI DSRC UNIT

Model No. : S-50

FCC ID. : 2AADT-SAV-S50

Applicant : Savari INC.

Address : Suite 131 2005 De La Cruz Blvd, #128, Santa
Clara. CA 95050

Date of Receipt : 2014/12/03

Issued Date : 2015/04/22

Report No. : 14C0219R-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 : 2015/04/22


Report No. : 14C0219R-RFUSP22V00




Product Name : SAVARI DSRC UNIT
Applicant : Savari INC.
Address : Suite 131 2005 De La Cruz Blvd, #128, Santa Clara. CA
95050
Manufacturer : Transystem INC.
Model No. : S-50
FCC ID. : 2AADT-SAV-S50
EUT Voltage : DC 12V
Trade Name : SAVARI
Applicable Standard : FCC CFR 47 Part 95
Test Result : Complied

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.

Documented By : 

(Carol Tsai / Engineering Adm. Specialist)

Reviewed By : 

(Jimmie Liu / Senior Engineer)

Approved By : 

(Roy Wang / Director)

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: 150981

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/tw/ctg/cts/accreditations.htm>

The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

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

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E-Mail : service@quietek.com

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1. General Information

1.1. EUT Description

Product Name	SAVARI DSRC UNIT
Trade Name	SAVARI
Model No.	S-50
Frequency Range	5860-5920MHz / 7 Channels For 10MHz 5875-5905MHz / 2 Channels For 20MHz
Type of Modulation	Orthogonal Frequency Division Multiplexing (OFDM)
Antenna Gain	-2.5dBi
Antenna Type	Soldered on PCB

5GHz(10MHz)

Working Frequency of Each Channel			
Channel 172	5860MHz	Channel 180	5900MHz
Channel 174	5870MHz	Channel 182	5910MHz
Channel 176	5880MHz	Channel 184	5920MHz
Channel 178	5890MHz		

5GHz(20MHz)

Working Frequency of Each Channel			
Channel 175	5875MHz	Channel 181	5905MHz

Note:

1. This device is the SAVARI DSRC UNIT, including 2.4GHz&5GHz Short- Range Communications Service On-Board Units transmitting and receiving function.
2. Regards to the frequent band operation; three channels were selected to perform the test, then shown on this report.
3. This device is a composite device in accordance with Part 15 regulations. The function receiving was measured and made a test report that the report number is 14C0219R-RFUSP01V00 under Declaration of Conformity

1.2. Test Mode

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 Mode
----	-----------------------

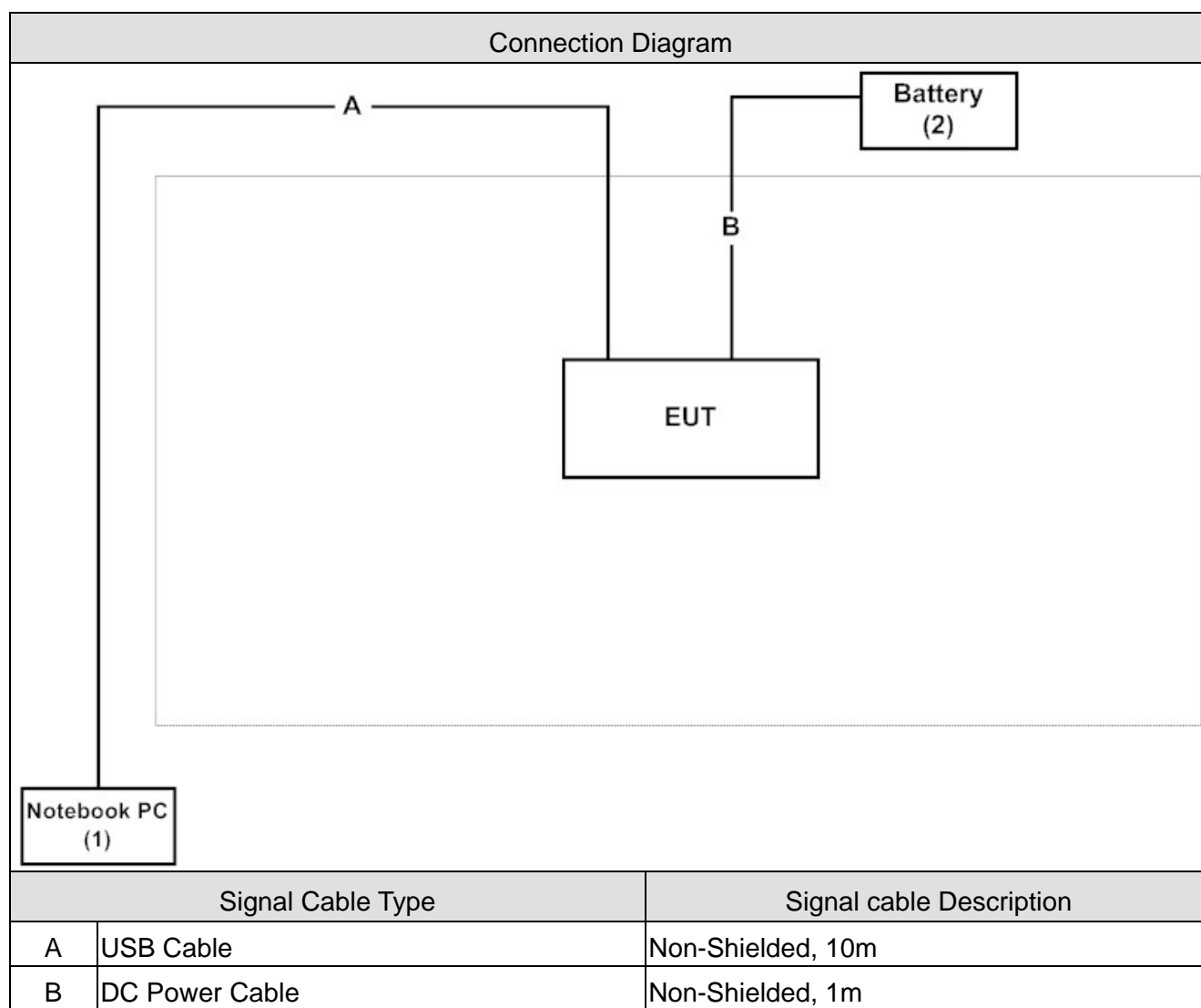
Test Items	Channel	Mode	Result
Emission Bandwidth	172/178/184 175/181	1	Complies
Maximum Transmitter power	172/174/176 /178/180 /182/184 175/181	1	Complies
Transmit Spectrum Mask	172/174/176 /178/180 /182/184 175/181	1	Complies
Transmitter Conducted Unwanted Emission	172/178/184 175/181	1	Complies
Transmitter Radiated Unwanted Emission	172/178/184 175/181	1	Complies
Frequency Stability	172/178/184 175/181	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	PAV70	LUSEW0D0371 105FE221601	DoC	Non-Shielded, 2.5m one ferrite core bonded
2	Battery	YUASA	NP7-12	N/A	DoC	--

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 laptop.
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

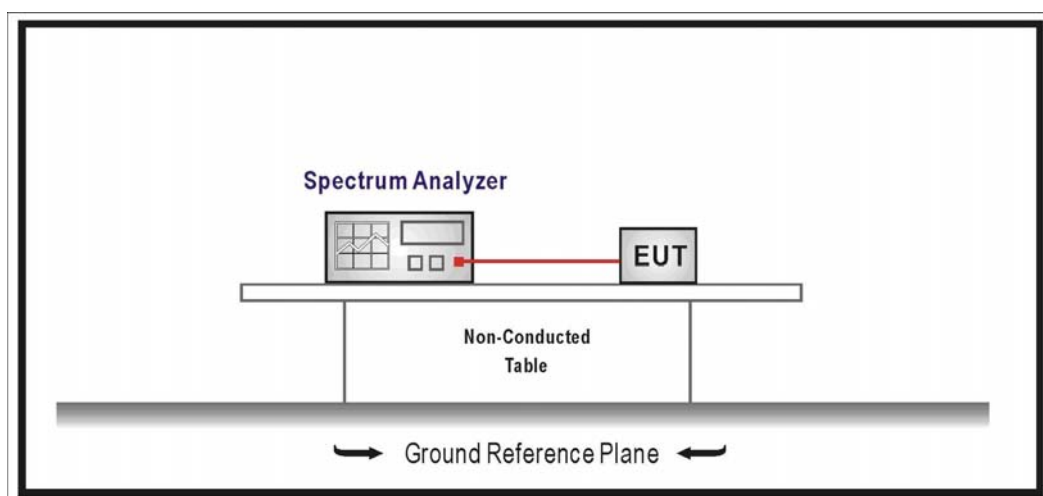
The following test equipments are used during the test:

Emission Bandwidth / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2015/07/14

Note: 1. 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 onditions .

2.4. Test Procedure

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

2.5. Uncertainty

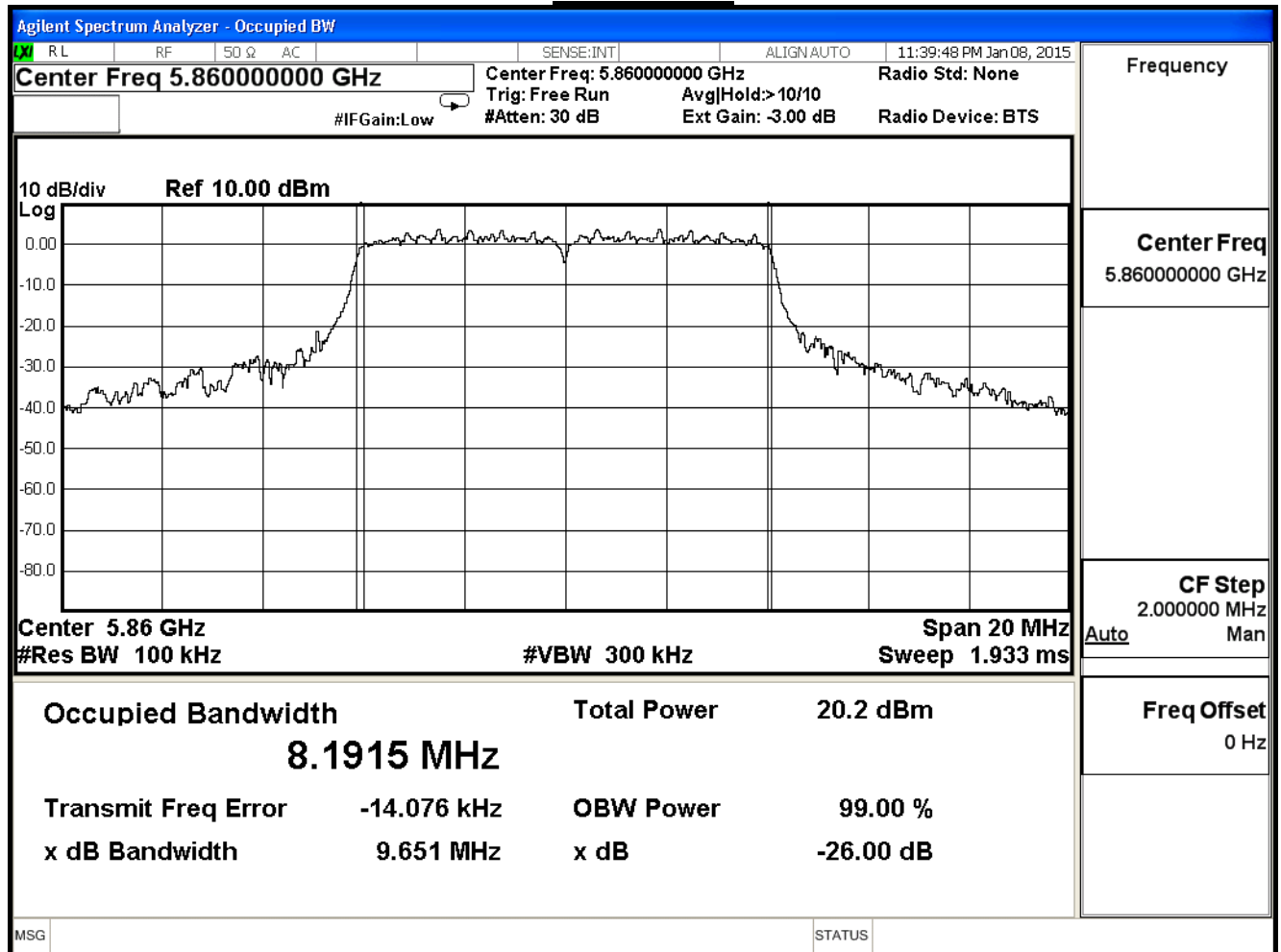
The measurement uncertainty is defined as $\pm 150\text{Hz}$

2.6. Test Result

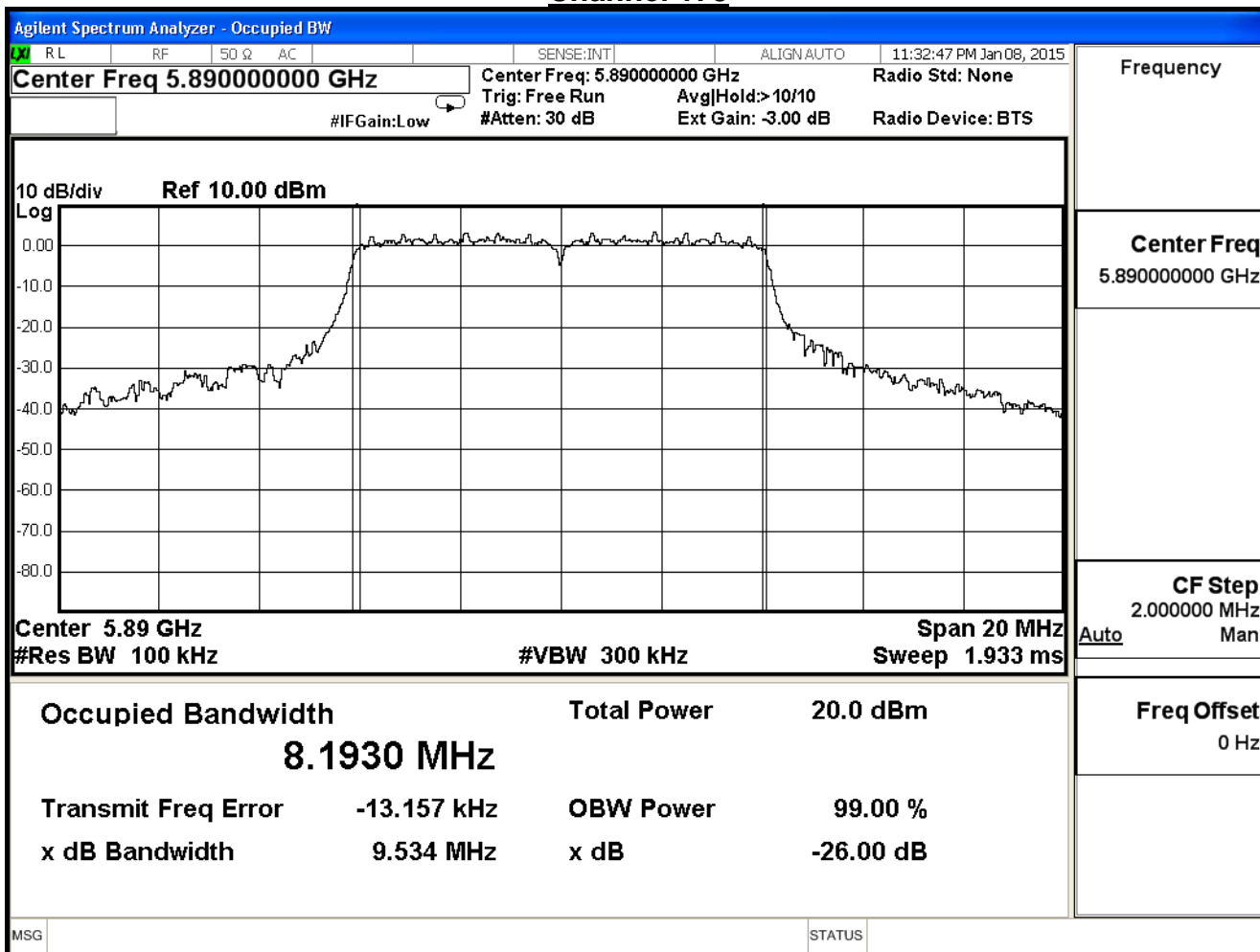
Product	SAVARI DSRC UNIT		
Test Item	Emission Bandwidth		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/01/08	Test Site	SR7

IEEE 802.11p(10MHz)(ANT 0), Antenna Gain: -2.5dBi				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
172	5860	8.1915	--	Pass
178	5890	8.1930	--	Pass
184	5920	8.1870	--	Pass

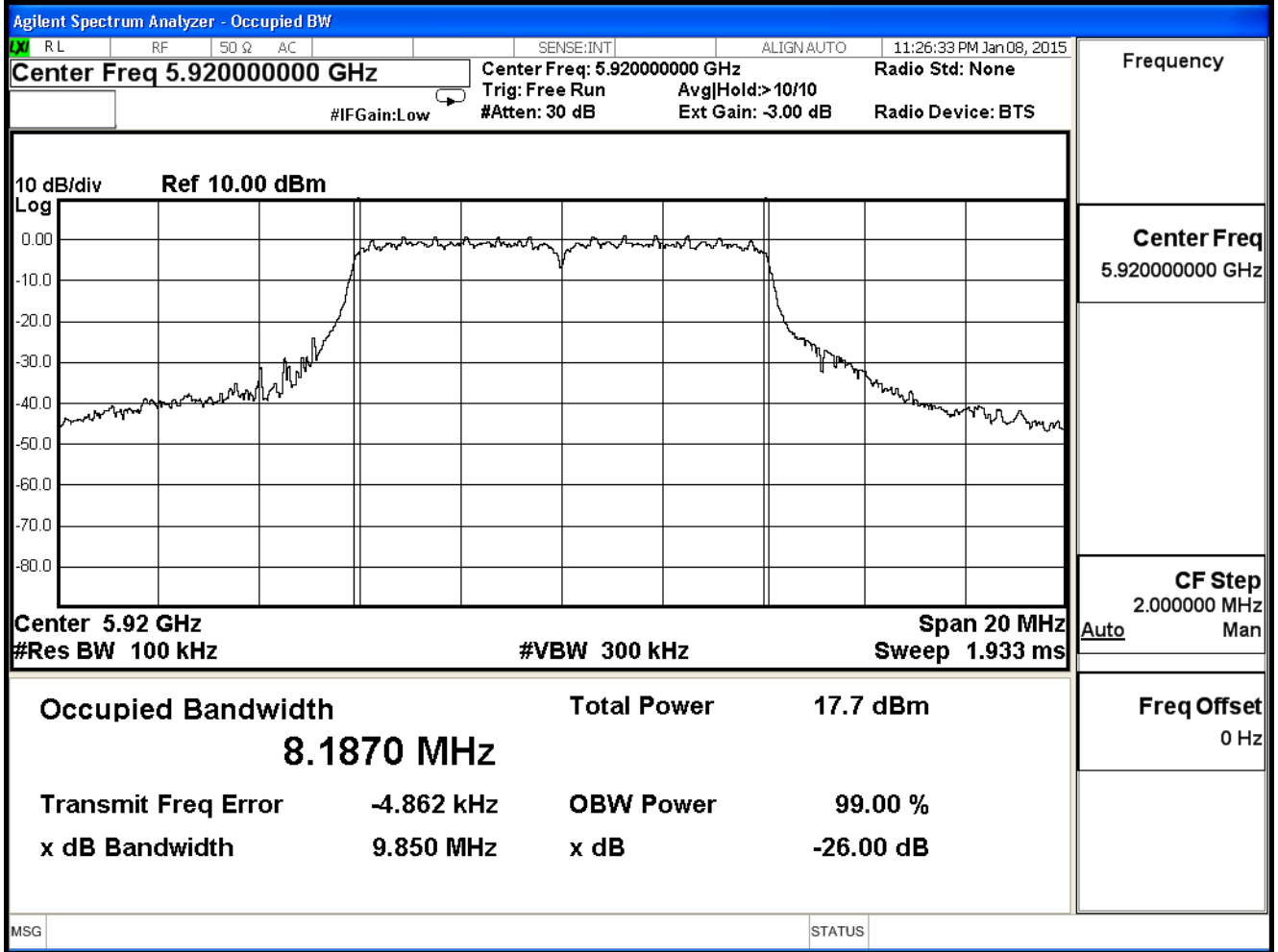
Channel 172



Channel 178



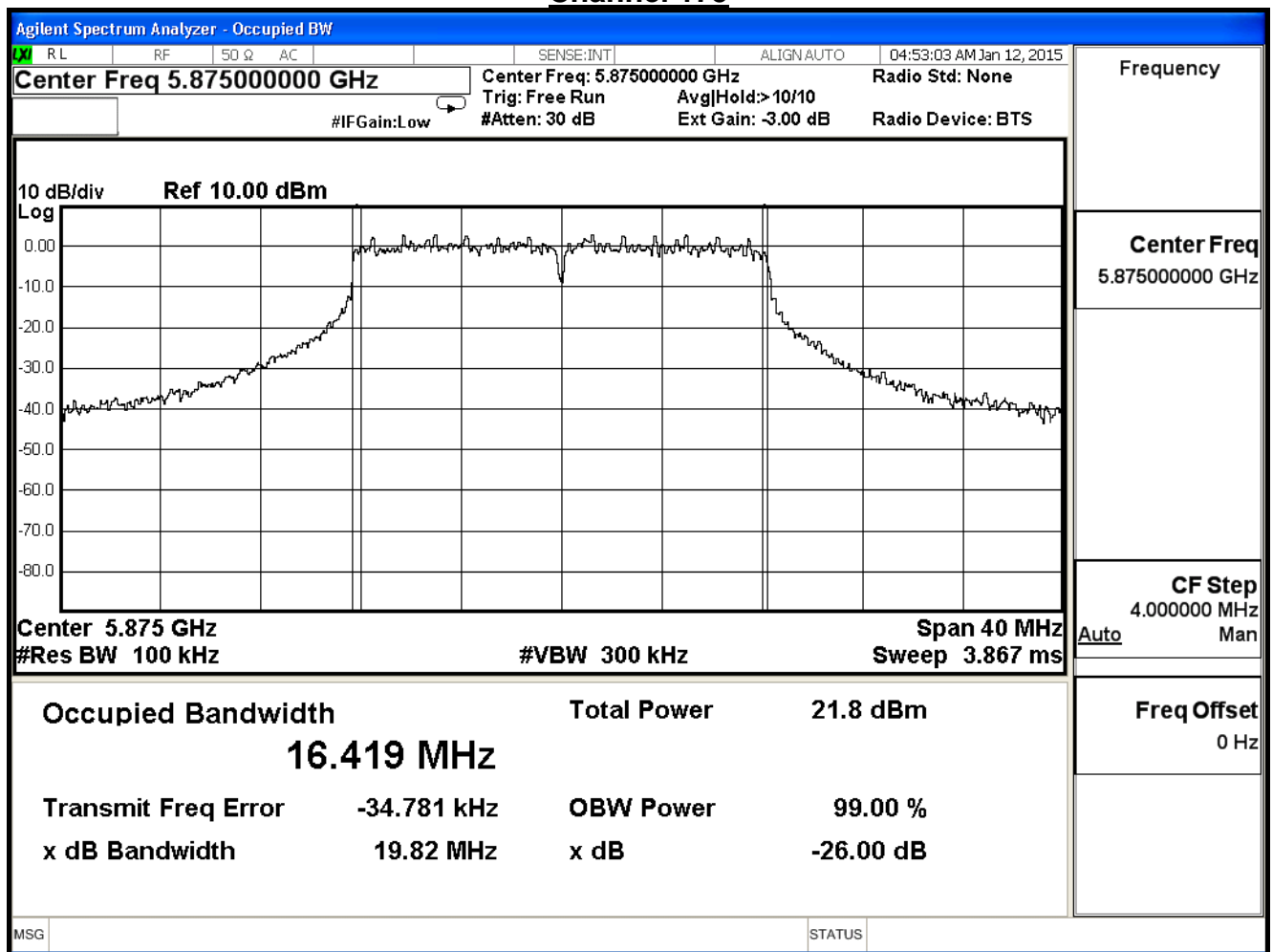
Channel 184



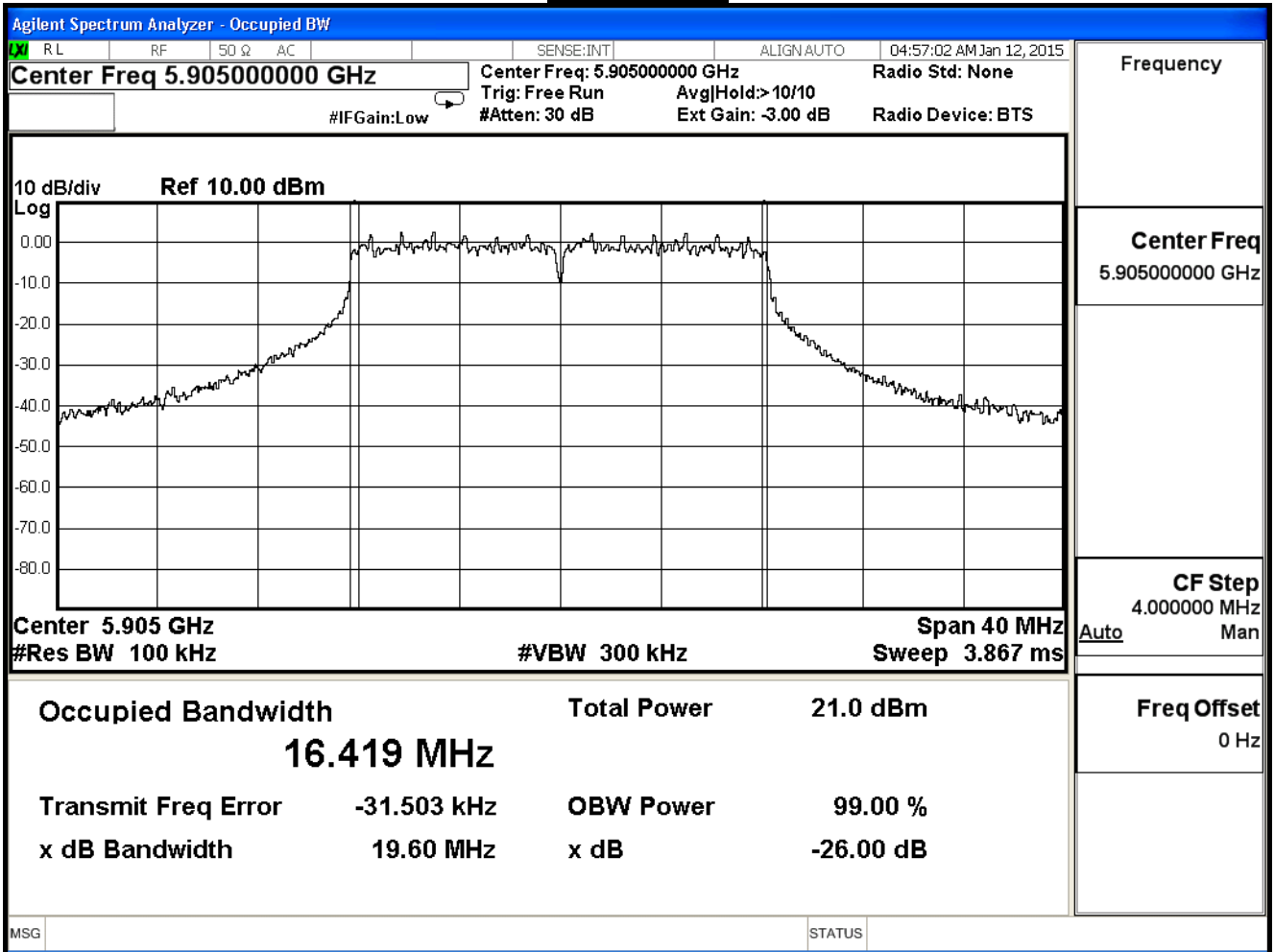
Product	SAVARI DSRC UNIT		
Test Item	Emission Bandwidth		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/01/08	Test Site	SR7

IEEE 802.11p(20MHz)(ANT 0), Antenna Gain: -2.5dBi				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
175	5875	16.419	--	Pass
181	5905	16.419	--	Pass

Channel 175



Channel 181



3. Maximum Transmitter Power

3.1. Test Equipment

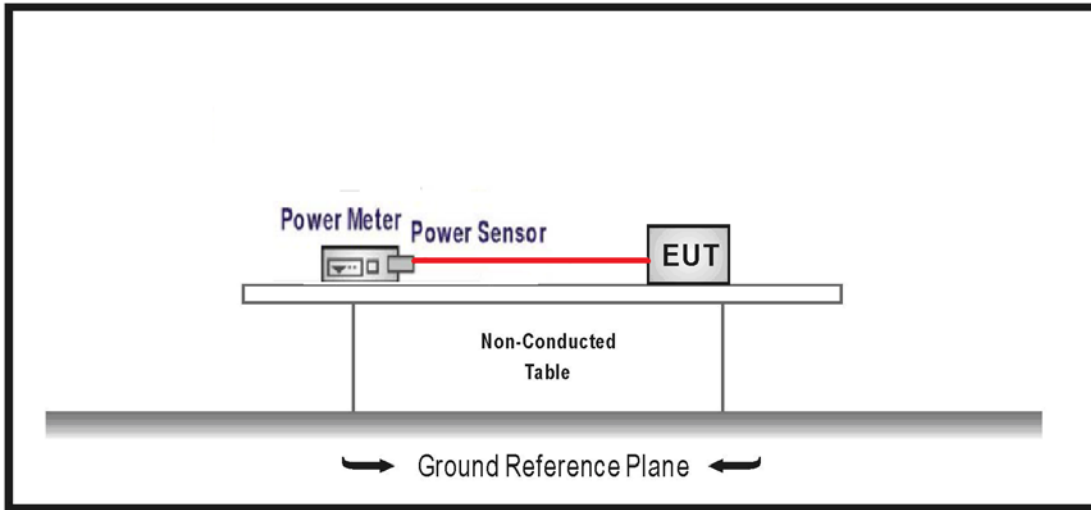
The following test equipments are used during the radiated emission tests:

Maximun Transmitter Power / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Power Meter	Agilent	N1911A	MY45101353	2015/10/31

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

3.2. Test Setup



3.3. Limits

Portable DSRCs-OBUs is 1.0 mW, other as following as:				
Frequency Range(MHz)	Channel	BW: 5/10MHz	Cond. Power	EIRP Power
5855-5865	172	5860 MHz	28.8 dBm	33 dBm
5865-5875	174	5870 MHz	28.8 dBm	33 dBm
5875-5885	176	5880 MHz	28.8 dBm	33 dBm
5885-5895	178	5890 MHz	28.8 dBm	33 dBm
5895-5905	180	5900 MHz	20 dBm	23 dBm
5905-5915	182	5910 MHz	20 dBm	23 dBm
5915-5925	184	5920 MHz	28.8 dBm	33 dBm
Frequency Range(MHz)	Channel	BW:20MHz	Cond. Power	EIRP Power
5855-5865	175	5875 MHz	20 dBm	23 dBm
5865-5875	181	5905 MHz	20 dBm	23 dBm

Note 1: Conducted power could overcome limits but EIRP power shall under limits
 Note 2: Refer as ASTM E2213-03 Clause 8.9.1, FCC Part 95.639 & FCC ET Docket No. 98-95.

3.4. Test Procedure

Refer as ANSI/TIA-603-D, Clause 3.2.1 for power meter measurement.
 Refer KDB 412172 for guidelines determining the ERP and EIRP.

3.5. Uncertainty

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

3.6. Test Result

Product	SAVARI DSRC UNIT		
Test Item	Maximum Transmitter Power		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/01/07	Test Site	SR7

IEEE 802.11p(10MHz)(ANT 0), Antenna Gain: -2.5dBi					
Channel No.	Frequency (MHz)	Cond. Power Level(dBm)	EIRP Measure Level(dBm)	Cond. Power Limit(dBm)	EIRP Power Limit (dBm)
172	5860	23.65	21.15	28.8	33
174	5870	23.75	21.25	28.8	33
176	5880	23.66	21.16	28.8	33
178	5890	23.58	21.08	28.8	33
180	5900	19.80	17.30	20.0	23
182	5910	19.64	17.14	20.0	23
184	5920	22.38	19.88	28.8	33

* Cond. Power lever detector = Peak detector

Product	SAVARI DSRC UNIT		
Test Item	Maximum Transmitter Power		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/04/22	Test Site	SR7

IEEE 802.11p (20MHz)(ANT 0), Antenna Gain: -2.5dBi					
Channel No.	Frequency (MHz)	Cond. Power Level(dBm)	EIRP Measure Level(dBm)	Cond. Power Limit(dBm)	EIRP Power Limit (dBm)
175	5875	19.88	17.38	20.0	23
181	5905	19.72	17.22	20.0	23

* Cond. Power lever detector = Peak detector

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

4. Transmit Spectrum Mask

4.1. Test Equipment

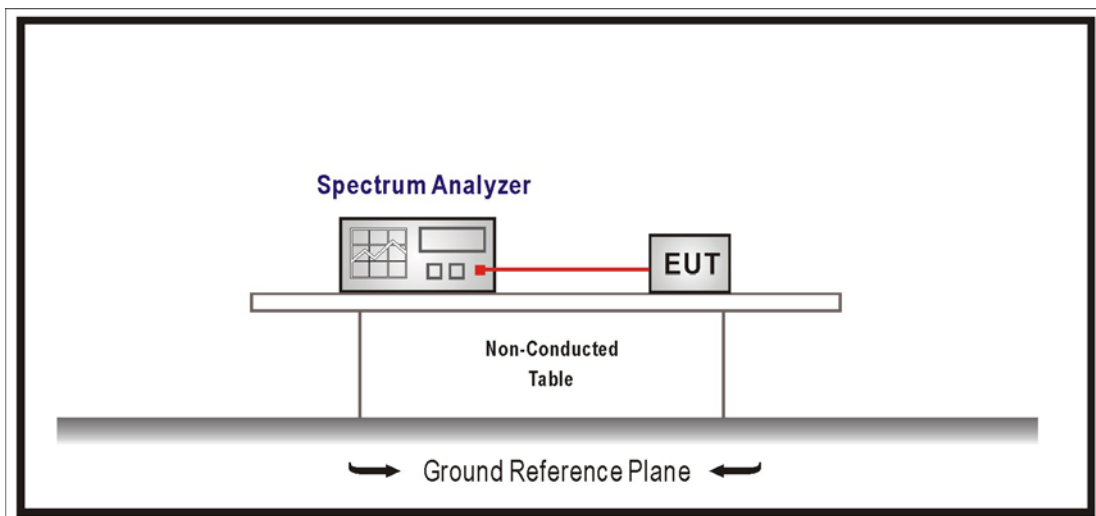
The following test equipments are used during the radiated emission tests:

Transmit Spectrum Mask / SR7

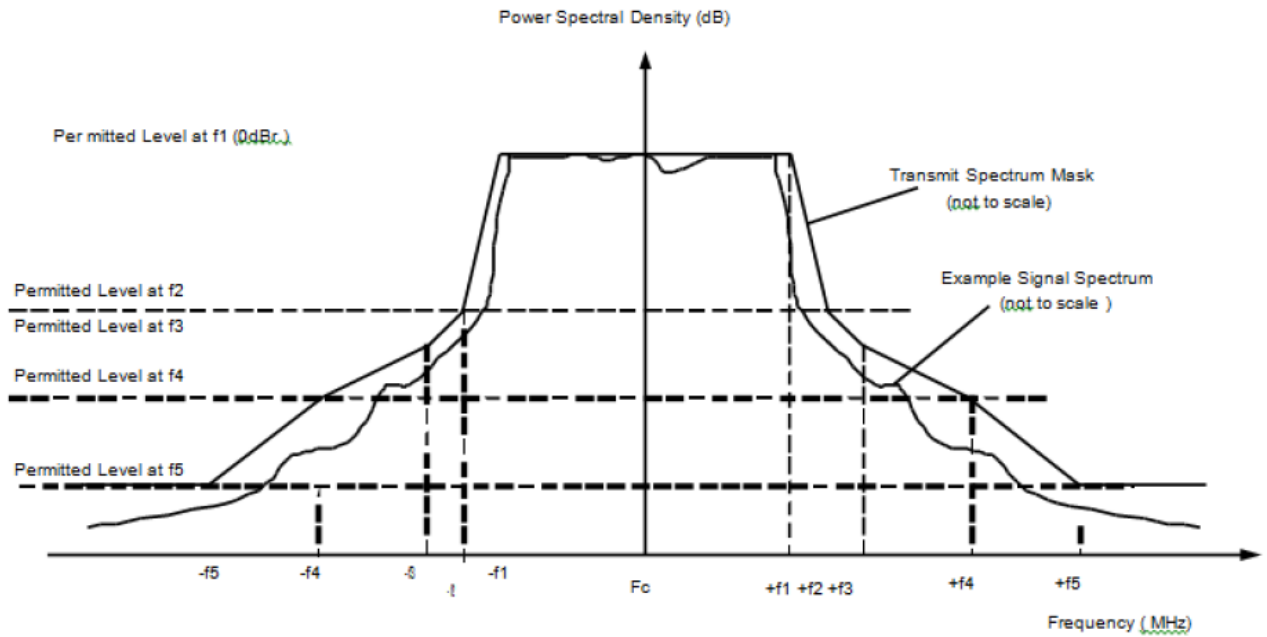
Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2015/07/14

Note: 1. 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

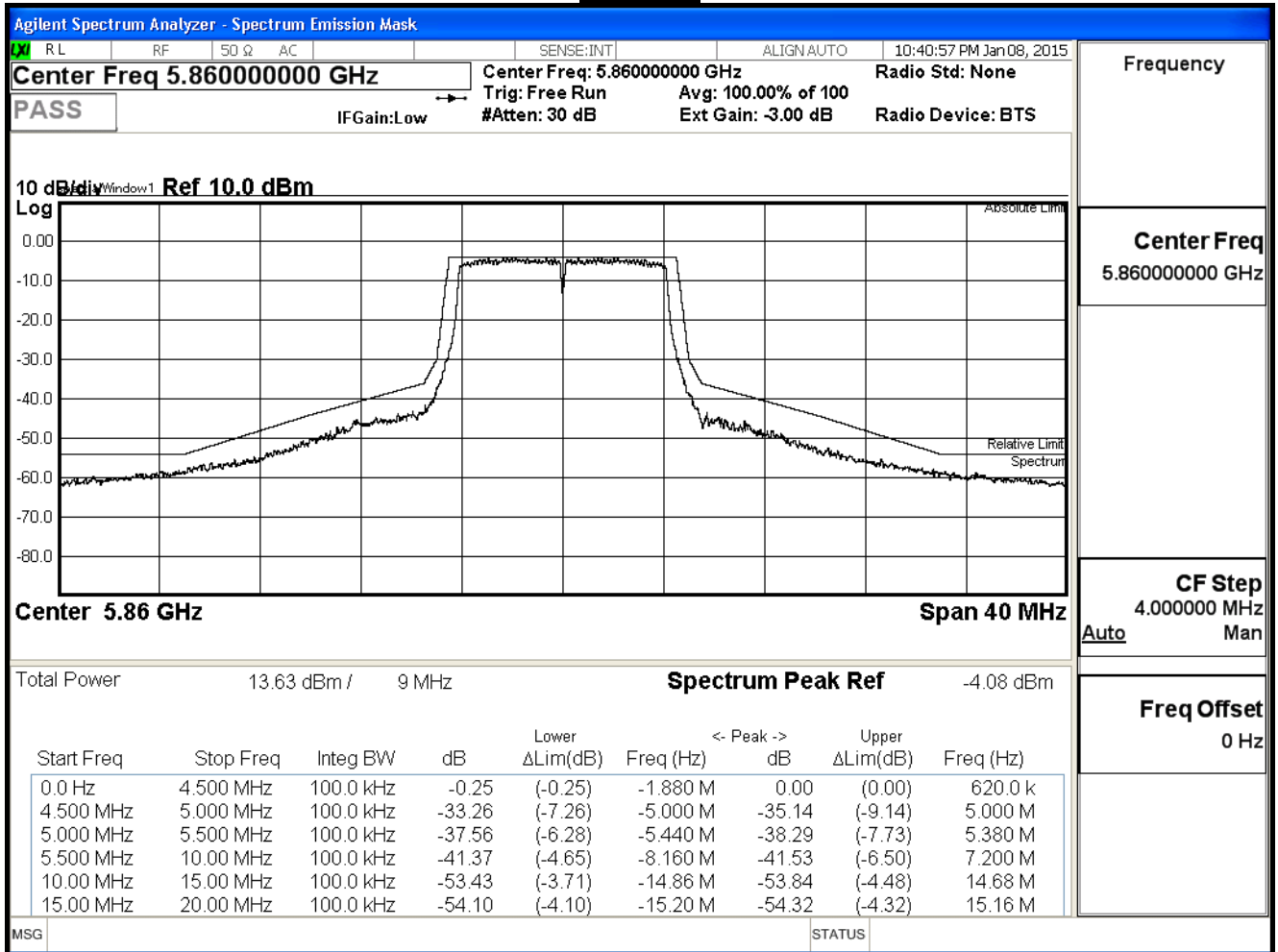
The measurement uncertainty is defined as ± 1.27 dB

4.6. Test Result

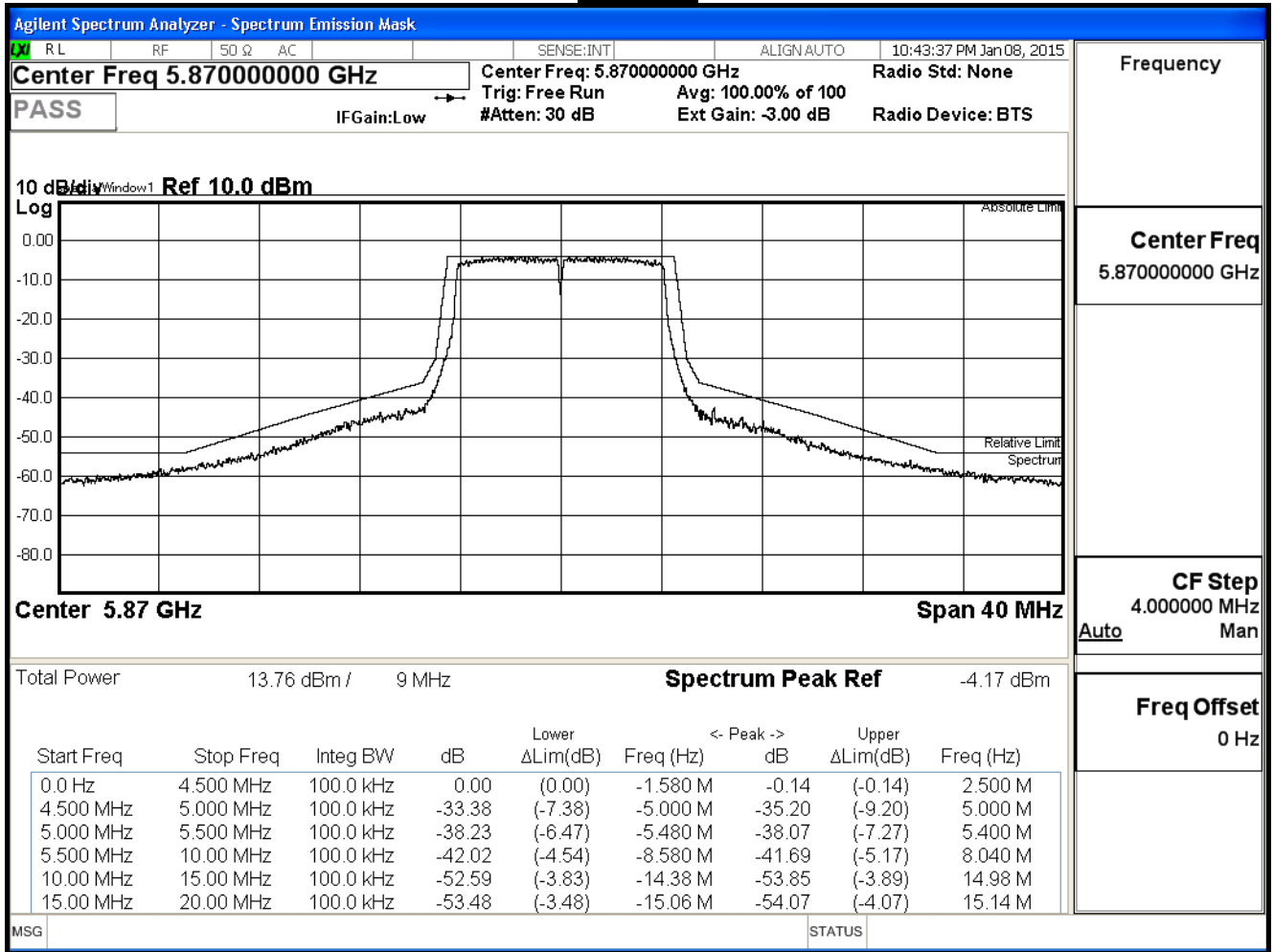
Product	SAVARI DSRC UNIT		
Test Item	Transmit Spectrum Mask		
Test Mode	Mode 1: Transmit Mode (IEEE 802.11p (10MHz)(ANT 0))		
Date of Test	2015/01/07	Test Site	SR7

Channel	Frequency (MHz)	Result
172	5860	Pass
174	5870	Pass
176	5880	Pass
178	5890	Pass
180	5900	Pass
182	5910	Pass
184	5920	Pass

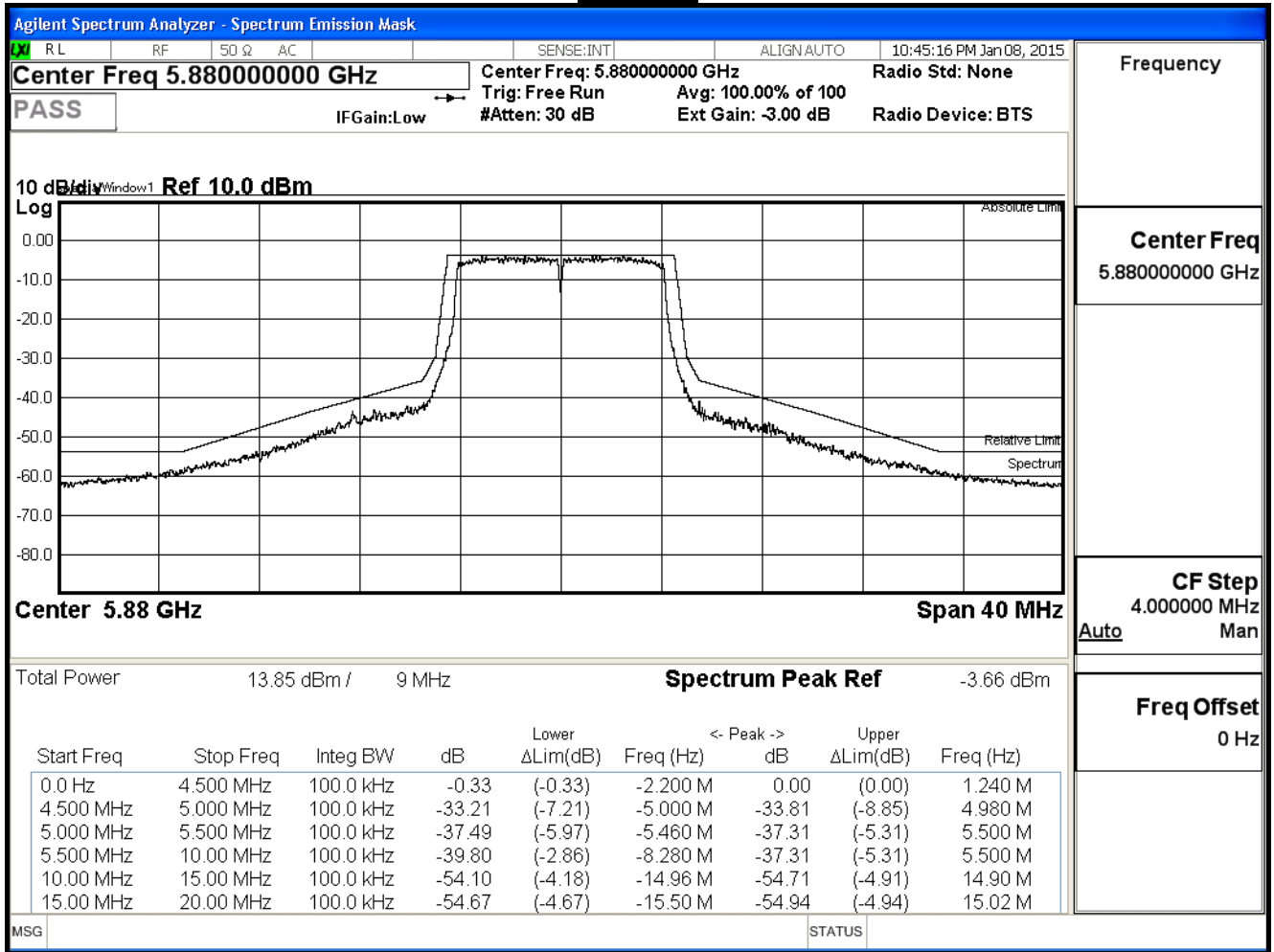
5860MHz



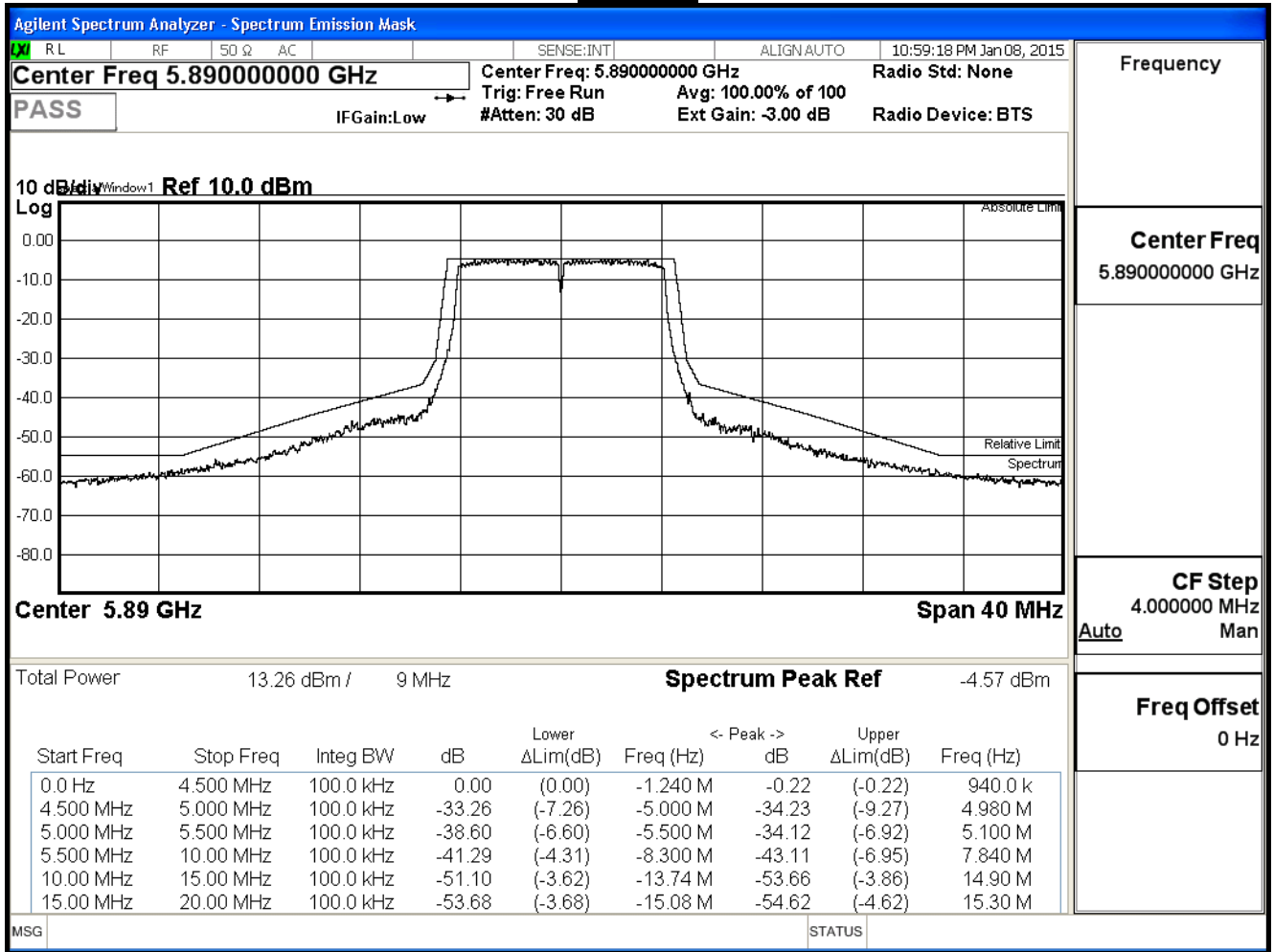
5870MHz



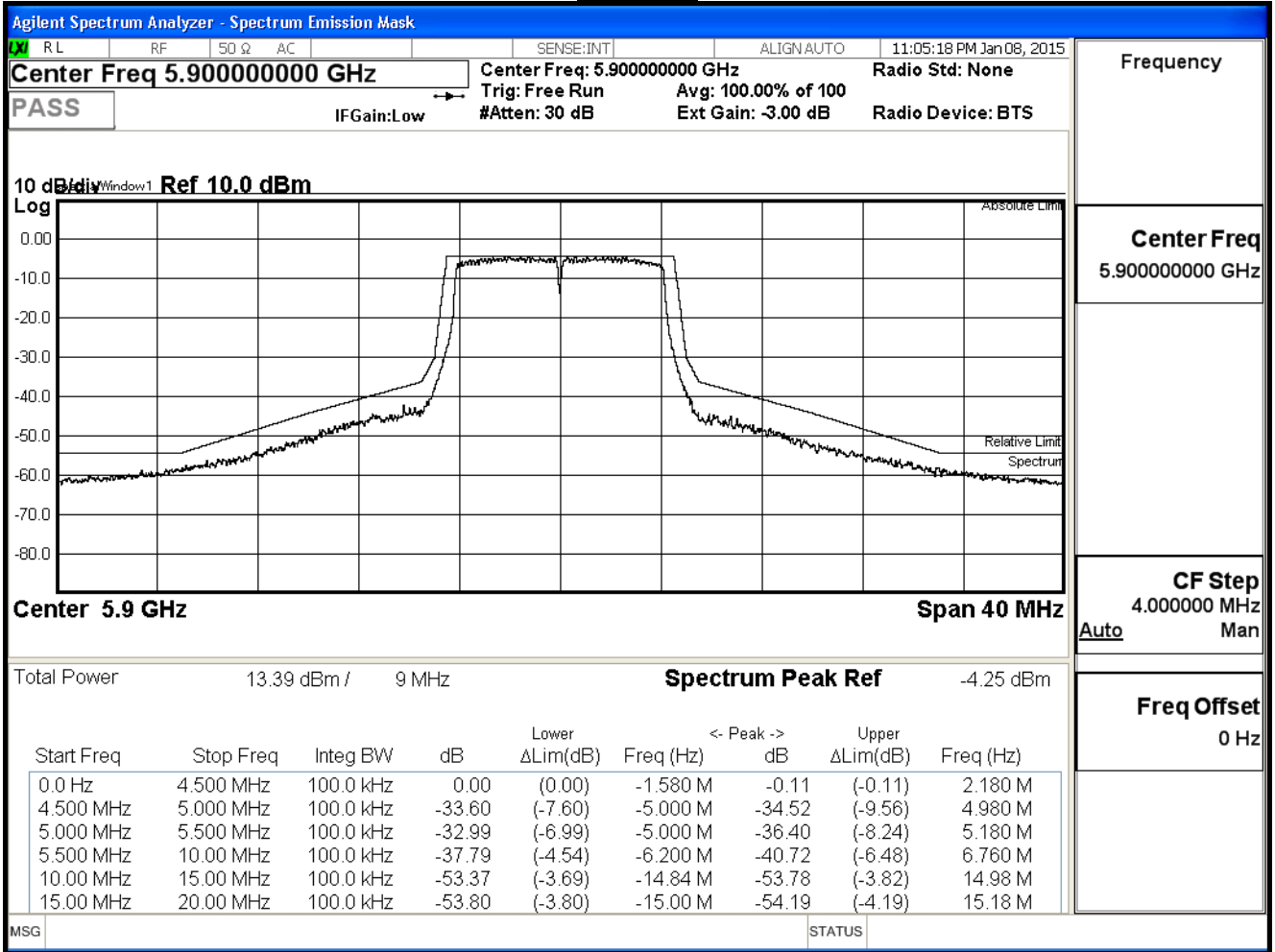
5880MHz



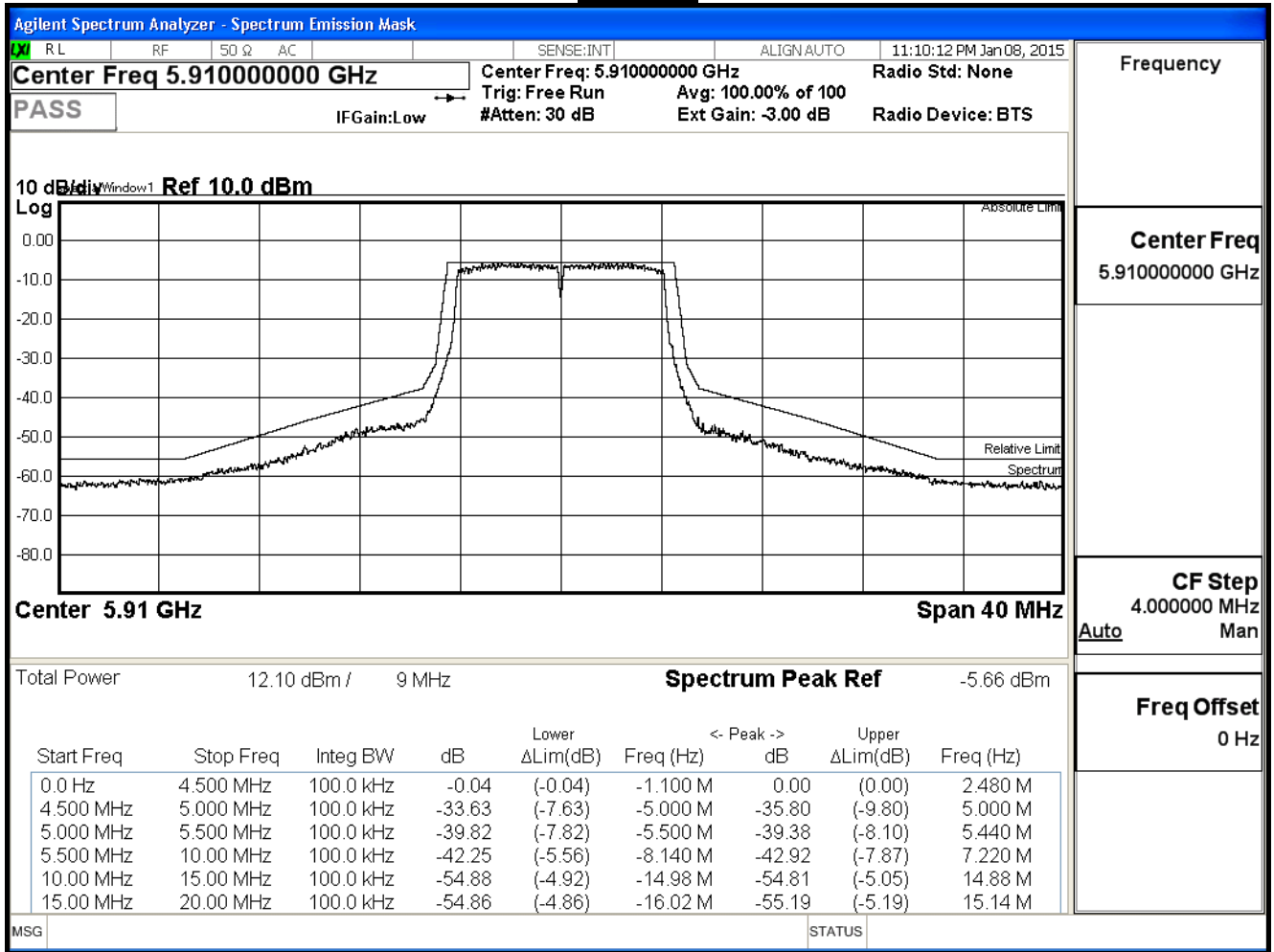
5890MHz



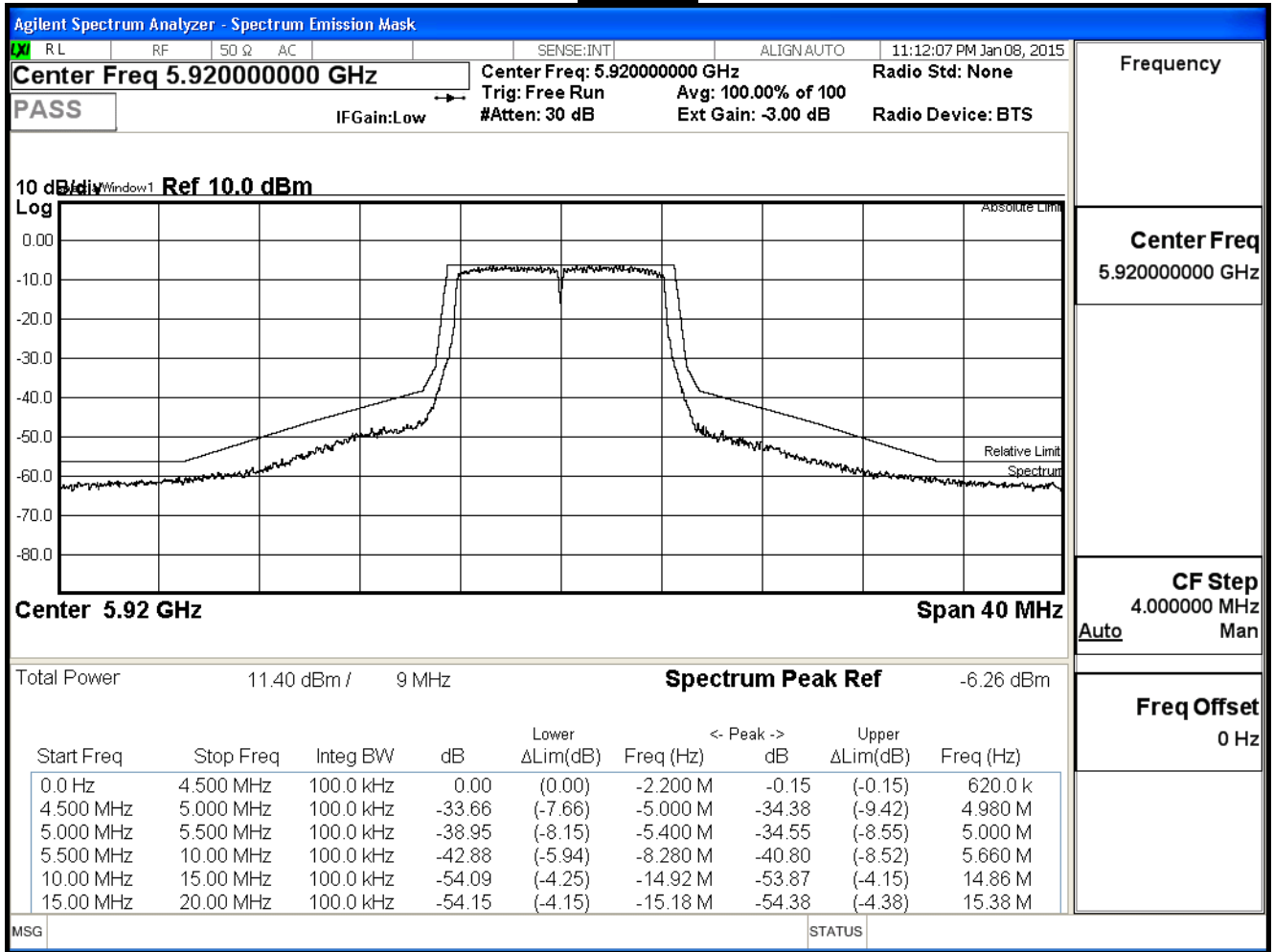
5900MHz



5910MHz



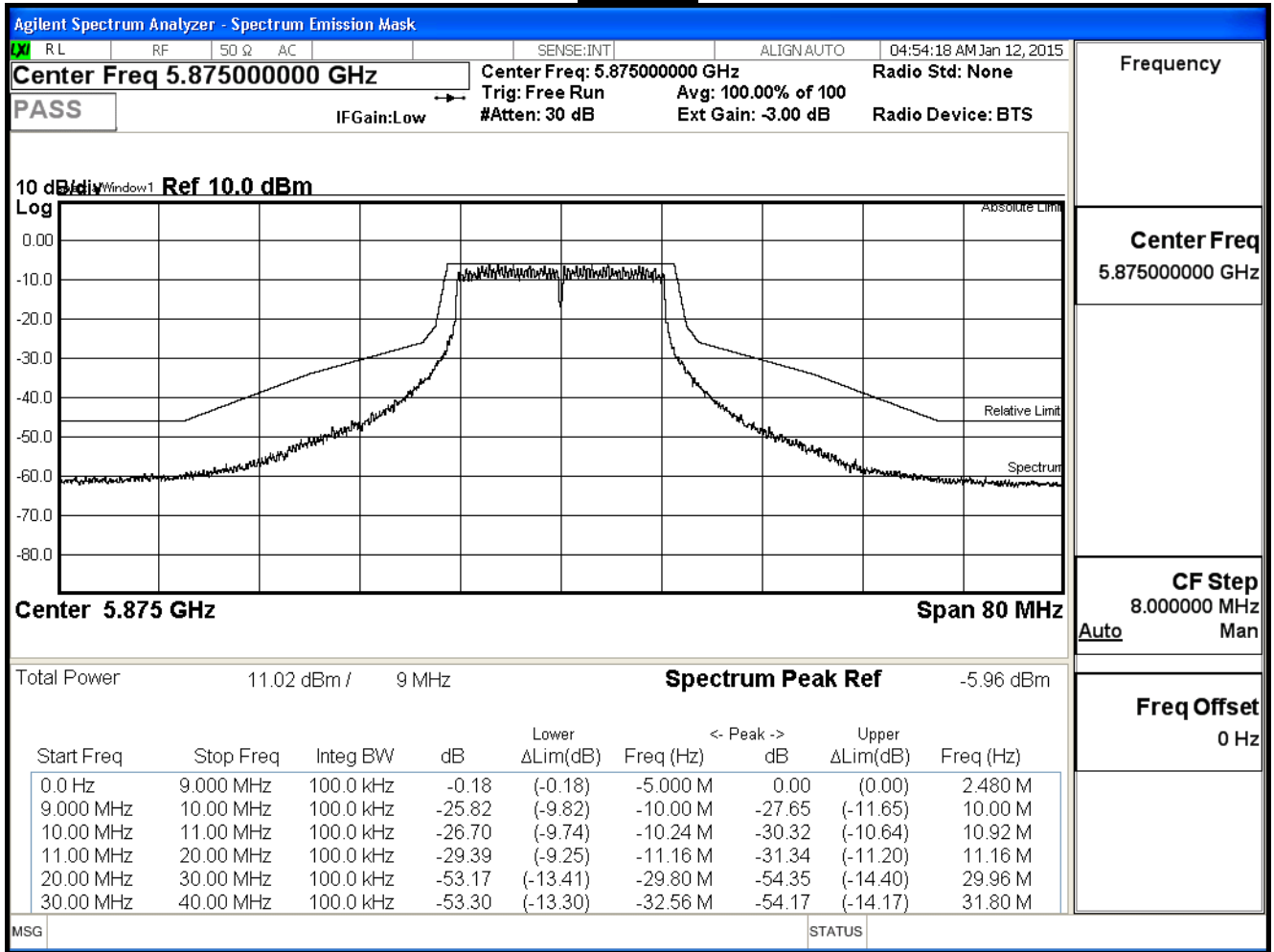
5920MHz



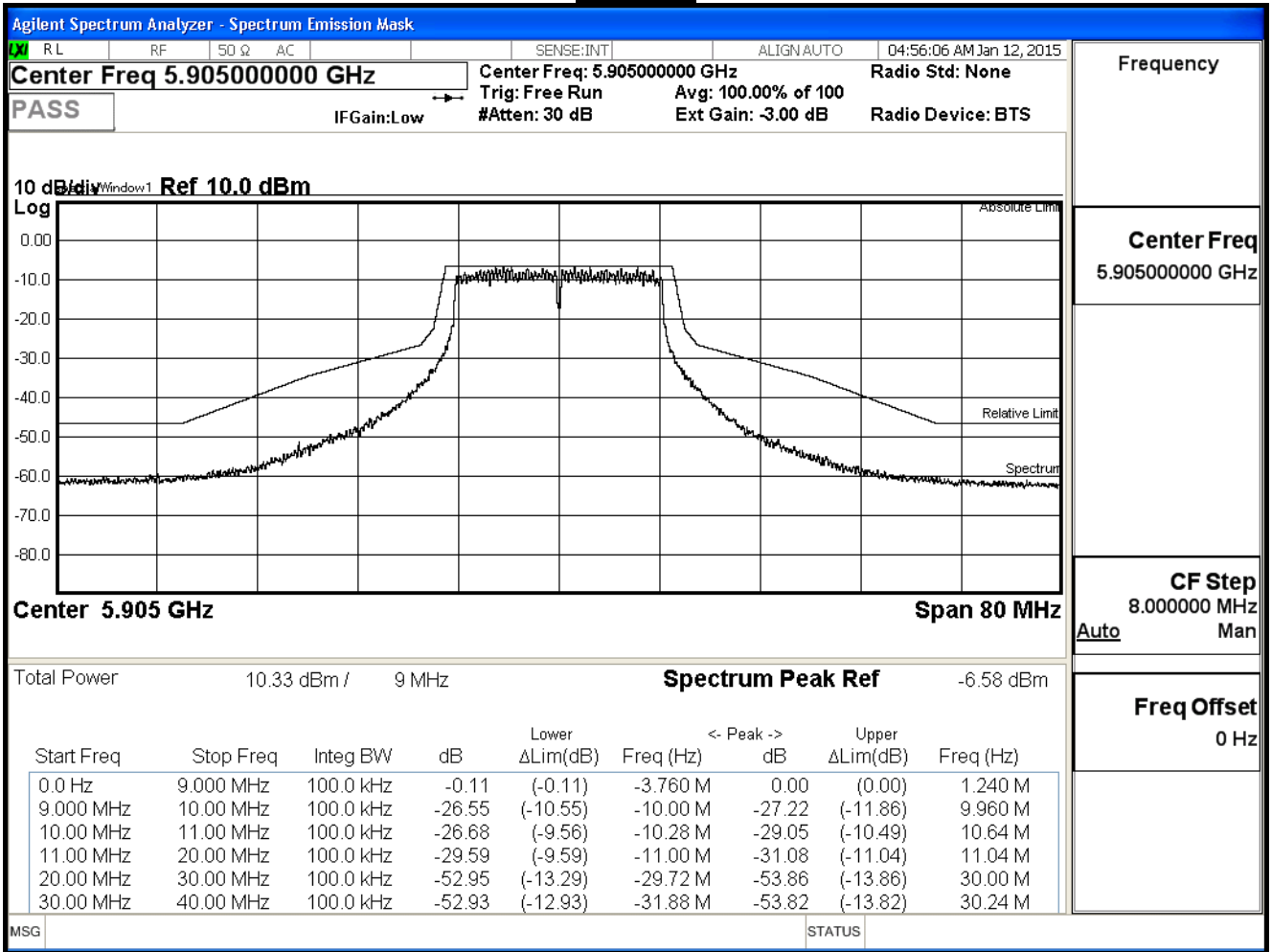
Product	SAVARI DSRC UNIT		
Test Item	Transmit Spectrum Mask		
Test Mode	Mode 1: Transmit Mode (IEEE 802.11p (20MHz)(ANT 0))		
Date of Test	2015/01/07	Test Site	SR7

Channel	Frequency (MHz)	Result
175	5875	Pass
181	5905	Pass

5875MHz



5905MHz



5. Transmitter Conducted Unwanted Emission

5.1. Test Equipment

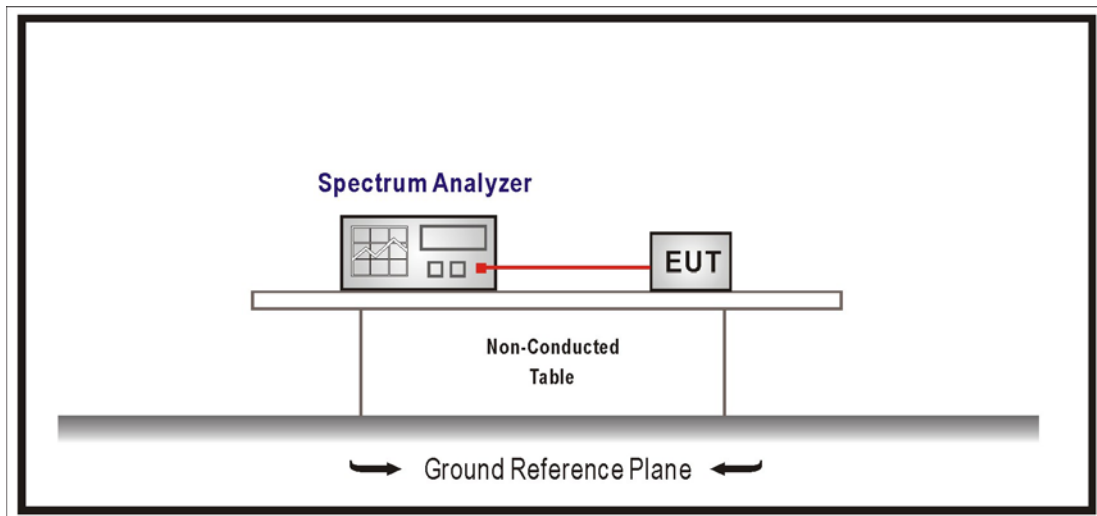
The following test equipments are used during the radiated emission test:

Transmitter Conducted Unwanted Emission / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	R&S	FSV 40	101049	2015/07/14

Note: 1. 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 for conducted measurement

5.5. Uncertainty

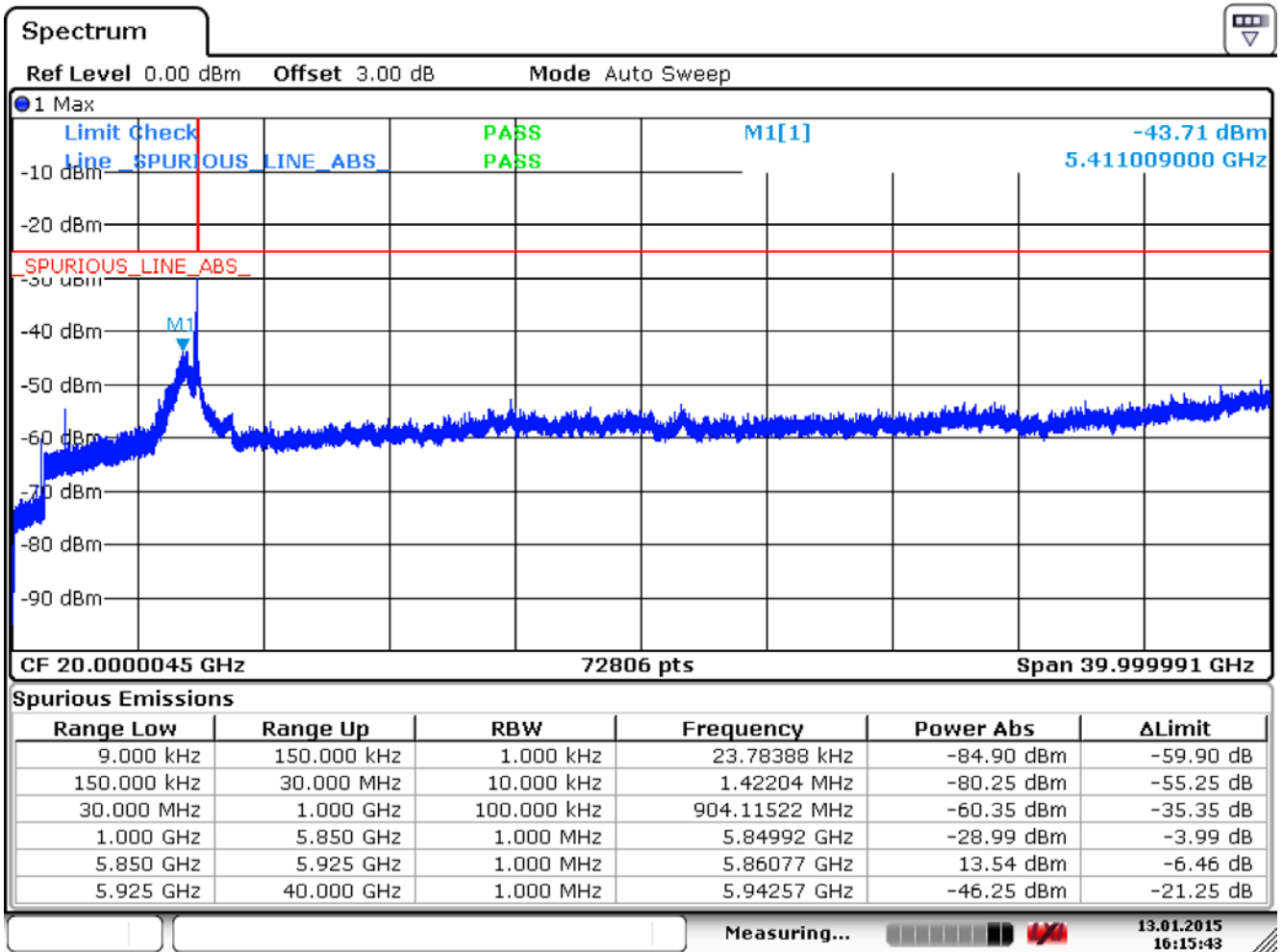
The measurement uncertainty is defined as ± 1.27 dB

5.6. Test Result

Product	SAVARI DSRC UNIT		
Test Item	Transmitter Conducted Unwanted Emission		
Test Mode	Mode 1: Transmit Mode (IEEE 802.11p (10MHz)(ANT 0))		
Date of Test	2015/01/07	Test Site	SR7

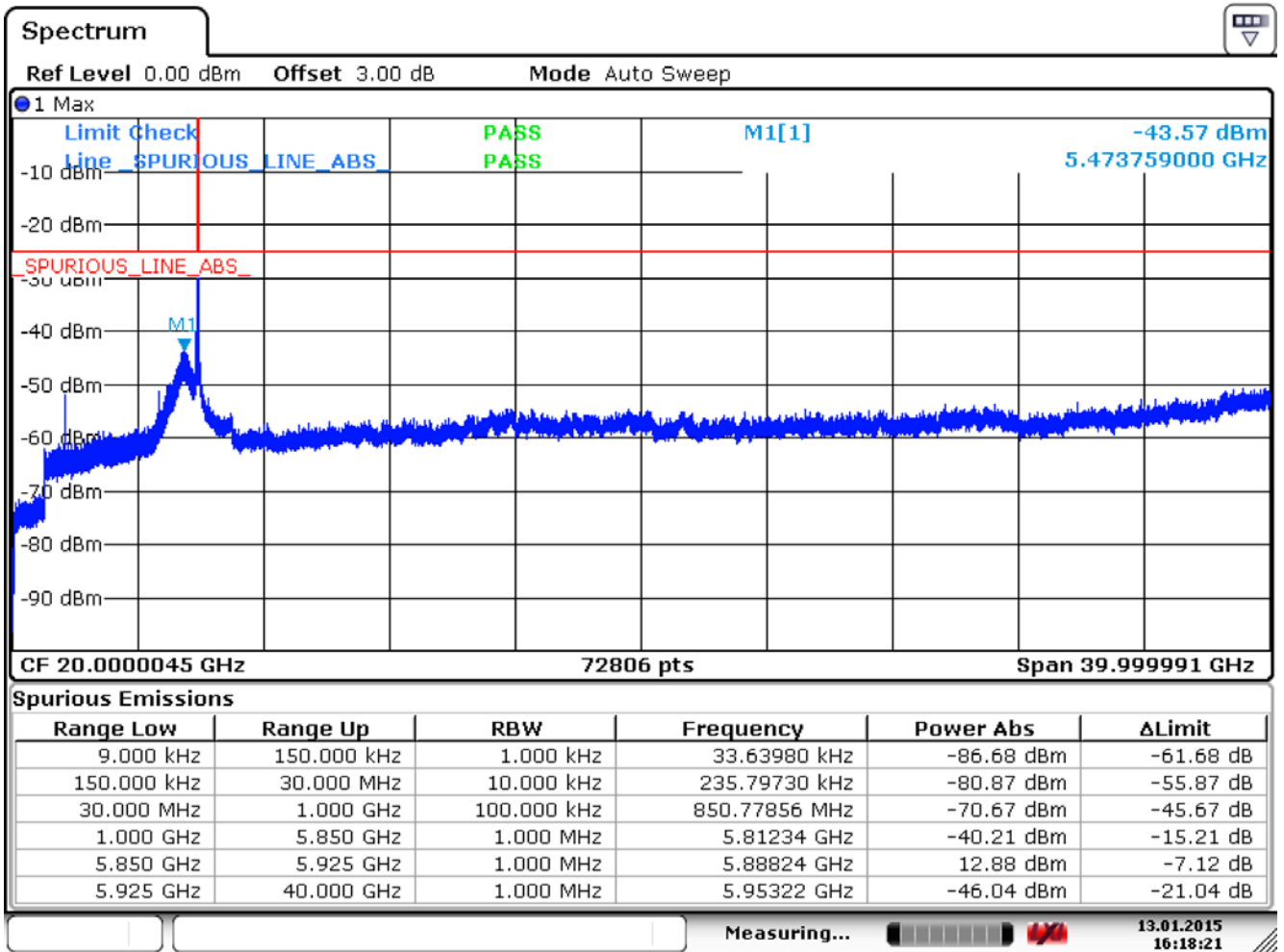
Channel	Frequency (MHz)	Unwanted Frequency (MHz)	Measurement (dBm)	Limit (dBm)
172	5860	5411.009	-43.71	≤ -25
178	5890	5473.759	-43.57	≤ -25
184	5920	5449.809	-43.85	≤ -25

5860MHz



Date: 13.JAN.2015 16:15:42

5890MHz

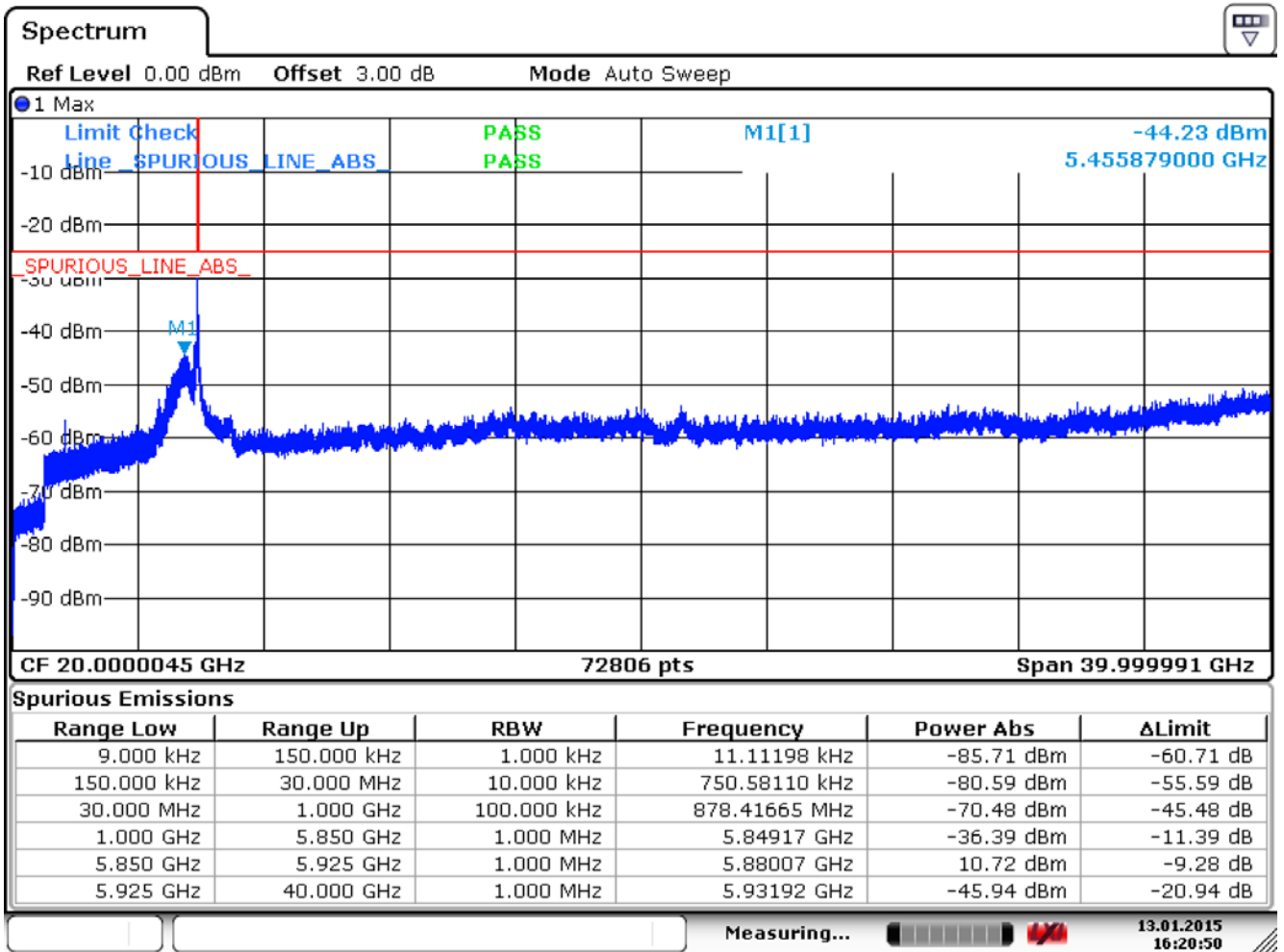


Date: 13.JAN.2015 16:18:20

Product	SAVARI DSRC UNIT		
Test Item	Transmitter Conducted Unwanted Emission		
Test Mode	Mode 1: Transmit Mode (IEEE 802.11p (20MHz)(ANT 0))		
Date of Test	2015/01/07	Test Site	SR7

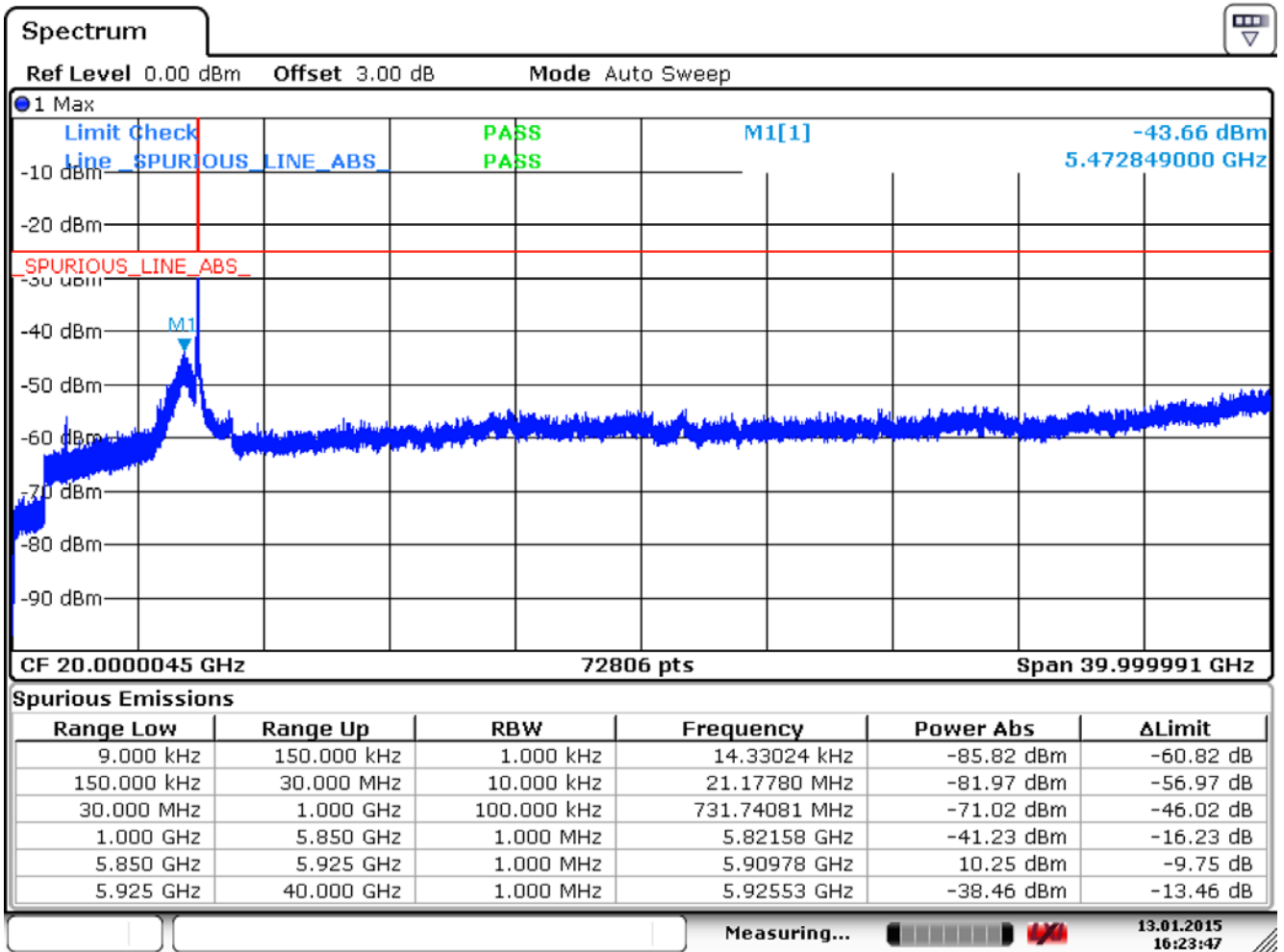
Channel	Frequency (MHz)	Unwanted Frequency (MHz)	Measurement (dBm)	Limit (dBm)
175	5875	5455.879	-44.23	≤ -25
181	5905	5472.849	-43.66	≤ -25

5875MHz



Date: 13.JAN.2015 16:20:50

5905MHz



Date: 13.JAN.2015 16:23:47

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

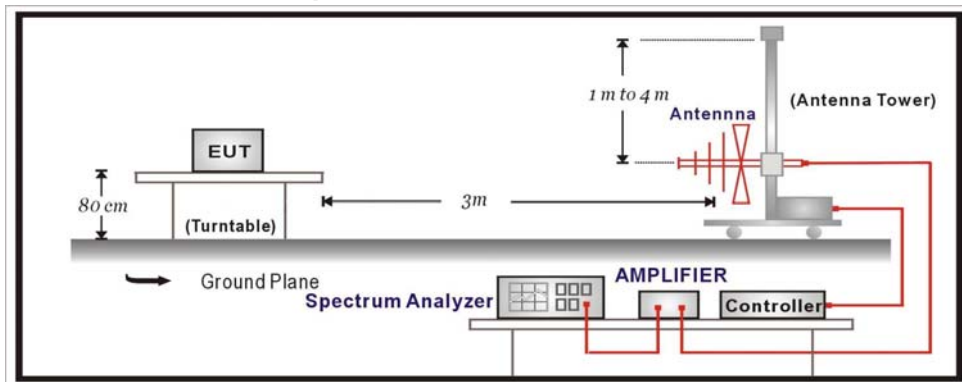
Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	SCHAFFNER	CBL6112B	2895	2015/08/14
Double Ridged Guide Horn Antenna	Schwarzback	BBHA 9120	D743	2015/02/12
Pre-Amplifier	Quietek	AMF-4D.	888003	2015/06/02
Pre-Amplifier	Quietek	AP-025C	CHM-0706049	2015/02/06
k Type Cable	Huber Suhner	Sucoflex 102	25623/2	2015/02/10
Spectrum Analyzer	R&S	FSV 40	101049	2015/07/14
RF-communications Test set	HP	8920A	3614A08091	2015/04/27

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

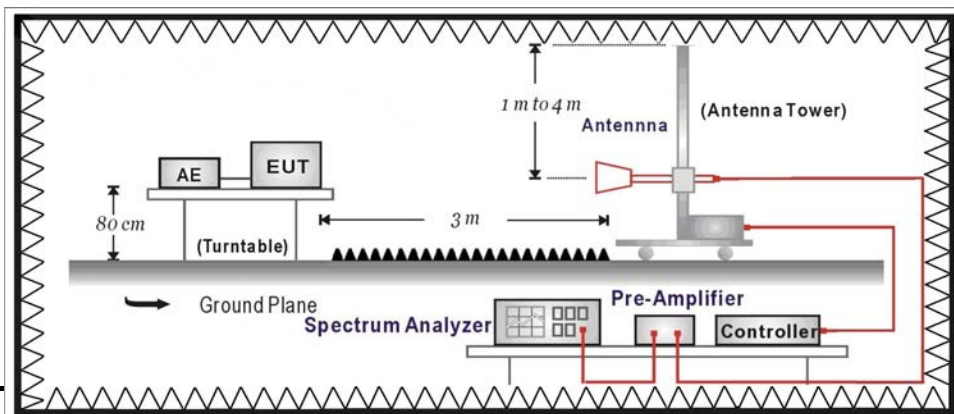
6.2. Test Setup

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 for radiated measurement.

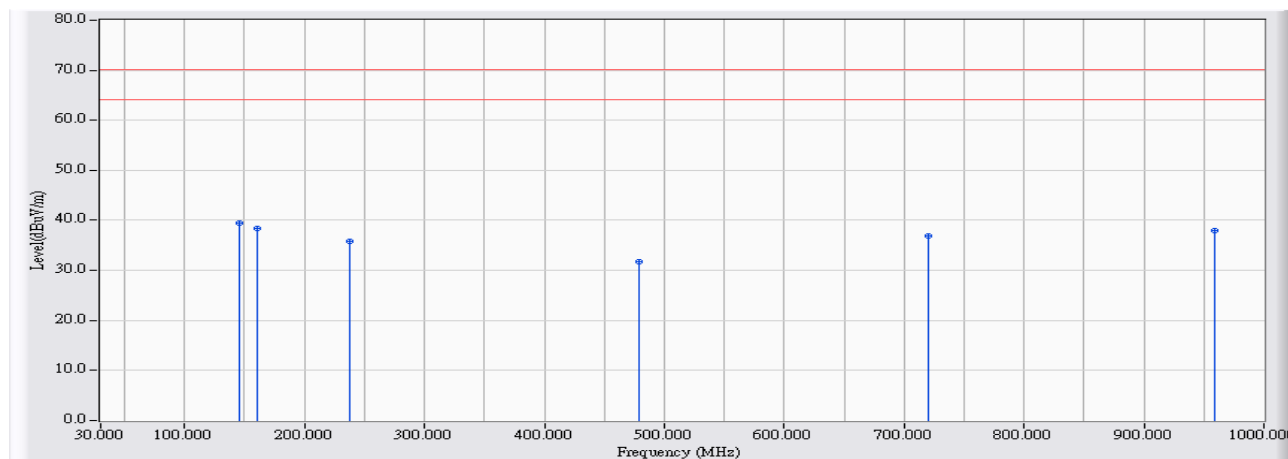
6.5. Uncertainty

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

6.6. Test Result

30MHz-1GHz Spurious

Site : CB1	Time : 2015/01/16 - 11:34
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_30M-1G-4_9161 - HORIZONTAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 10M 5890MHz

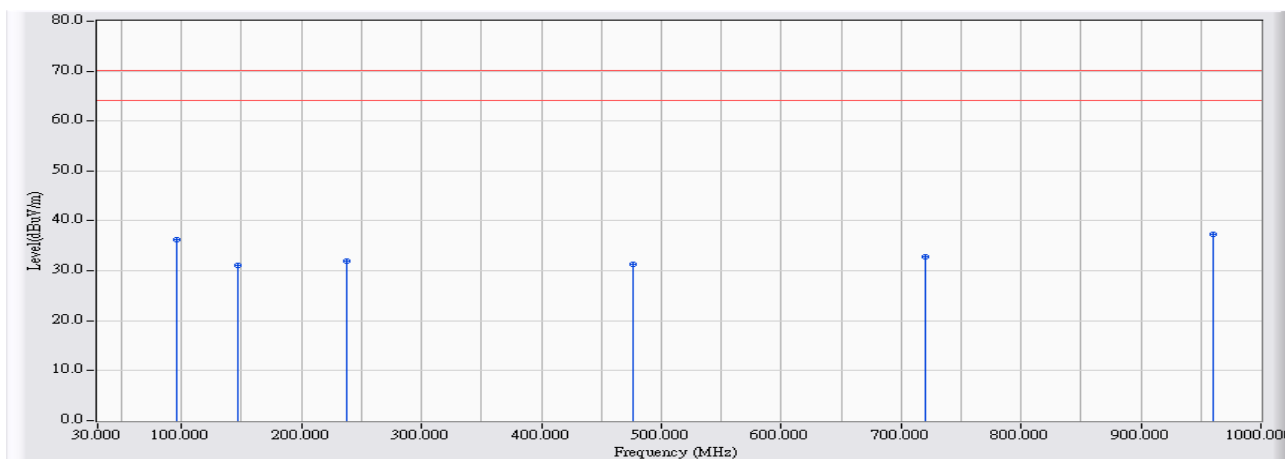


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	145.857	17.068	22.318	39.386	-30.814	70.200	PEAK
2		160.885	17.806	20.550	38.356	-31.844	70.200	PEAK
3		237.961	12.050	23.807	35.857	-34.343	70.200	PEAK
4		478.401	17.494	14.222	31.716	-38.484	70.200	PEAK
5		719.810	21.313	15.591	36.903	-33.297	70.200	PEAK
6		959.280	24.019	13.845	37.864	-32.336	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 : 2015/01/16 - 11:35
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_30M-1G-4_9161 - VERTICAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 10M 5890MHz

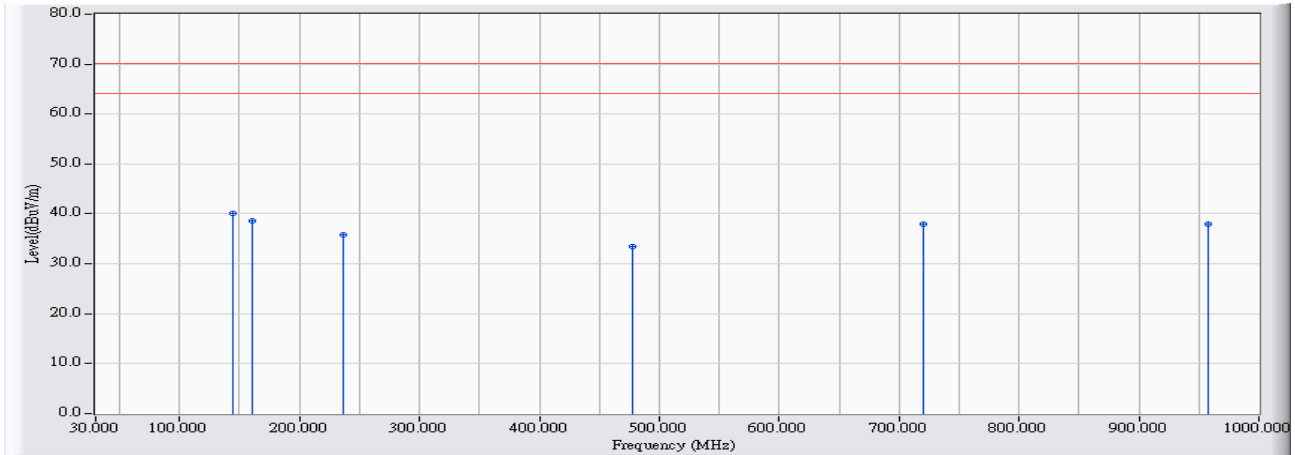


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	95.442	12.144	24.056	36.199	-34.001	70.200	PEAK
2	146.342	17.151	14.040	31.191	-39.009	70.200	PEAK
3	237.961	12.050	19.887	31.937	-38.263	70.200	PEAK
4	476.947	17.476	13.826	31.302	-38.898	70.200	PEAK
5	719.810	21.313	11.575	32.887	-37.313	70.200	PEAK
6	* 959.765	24.024	13.348	37.372	-32.828	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 : 2015/01/16 - 11:33
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_30M-1G-4_9161 - HORIZONTAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 20M 5905MHz

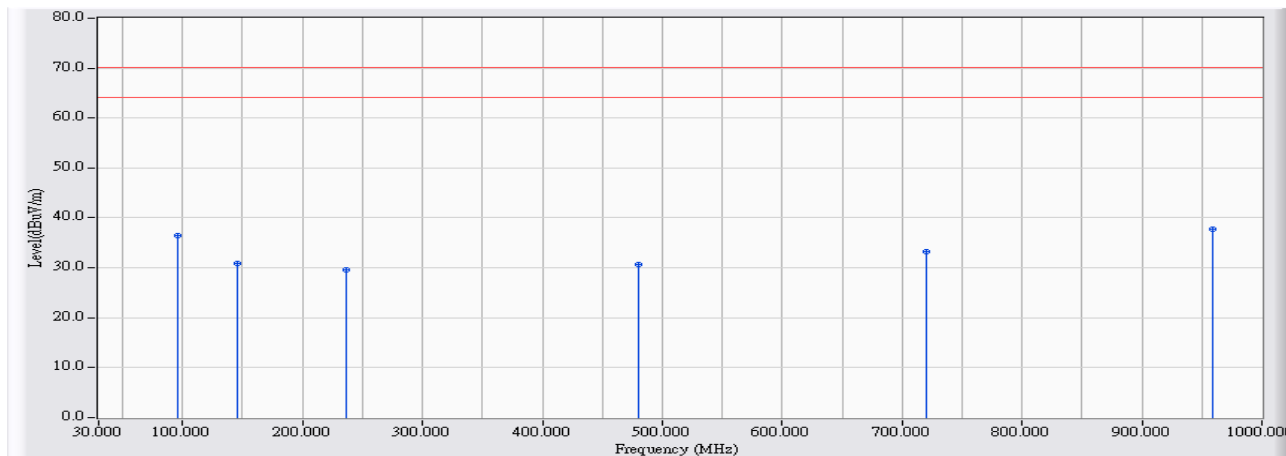


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	144.888	16.901	23.164	40.065	-30.135	70.200	PEAK
2		160.885	17.806	20.831	38.637	-31.563	70.200	PEAK
3		236.022	12.072	23.687	35.758	-34.442	70.200	PEAK
4		477.916	17.488	16.065	33.553	-36.647	70.200	PEAK
5		719.810	21.313	16.688	38.000	-32.200	70.200	PEAK
6		958.311	24.010	13.878	37.888	-32.312	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 : 2015/01/16 - 11:32
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_30M-1G-4_9161 - VERTICAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 20M 5905MHz



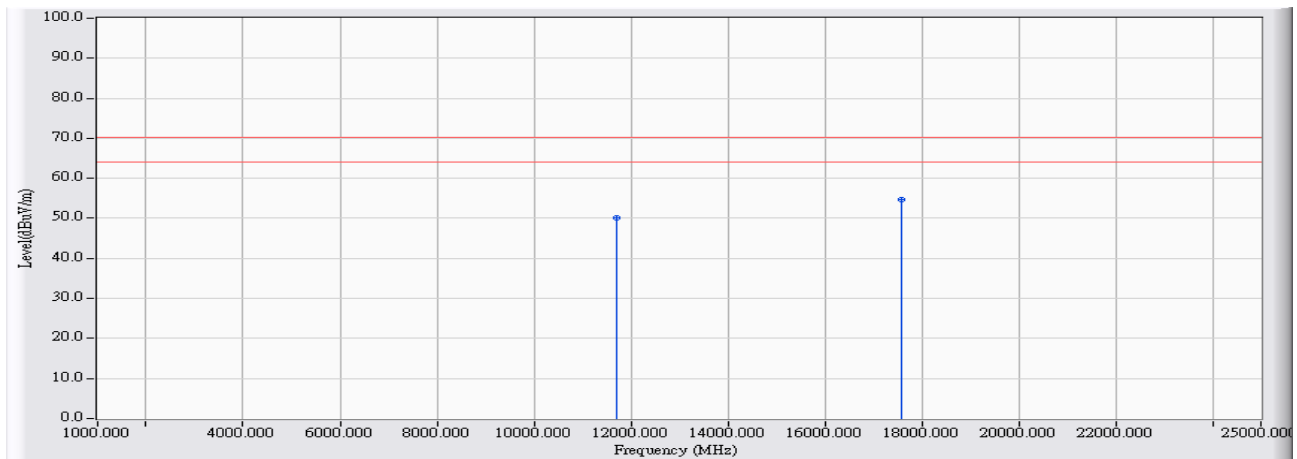
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	95.442	12.144	24.235	36.378	-33.822	70.200	PEAK
2	145.857	17.068	13.857	30.925	-39.275	70.200	PEAK
3	236.507	12.066	17.550	29.616	-40.584	70.200	PEAK
4	480.340	17.517	13.172	30.689	-39.511	70.200	PEAK
5	719.810	21.313	11.972	33.284	-36.916	70.200	PEAK
6	* 959.280	24.019	13.645	37.664	-32.536	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.

Harmonic & Spurious:

Site : CB1	Time : 2015/01/06 - 11:06
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 10M 5860MHz

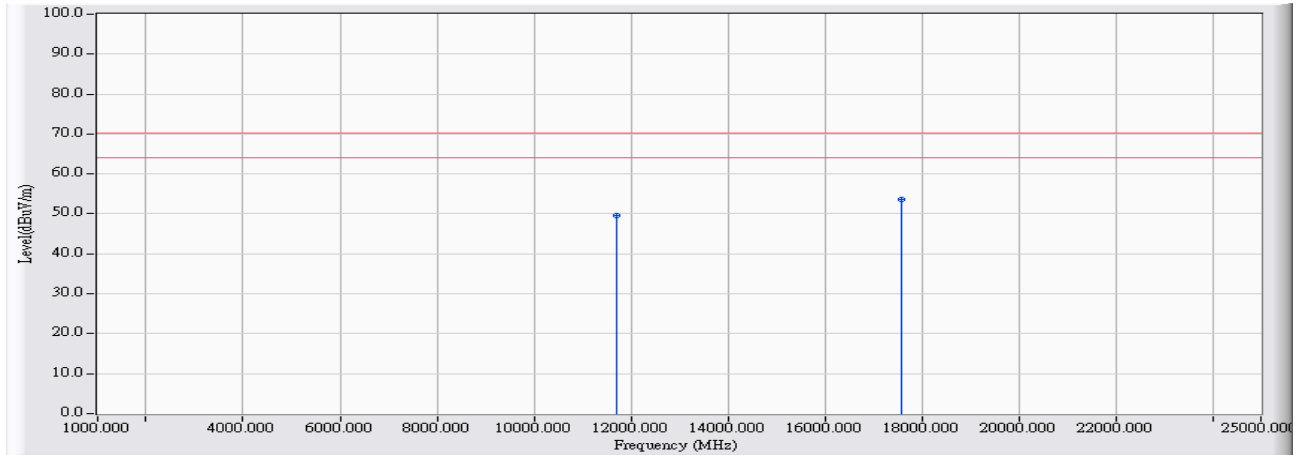


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		11720.000	11.360	38.650	50.010	-20.190	70.200	PEAK
2	*	17580.000	17.601	36.980	54.581	-15.619	70.200	PEAK

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 : 2015/01/06 - 11:03
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 10M 5860MHz

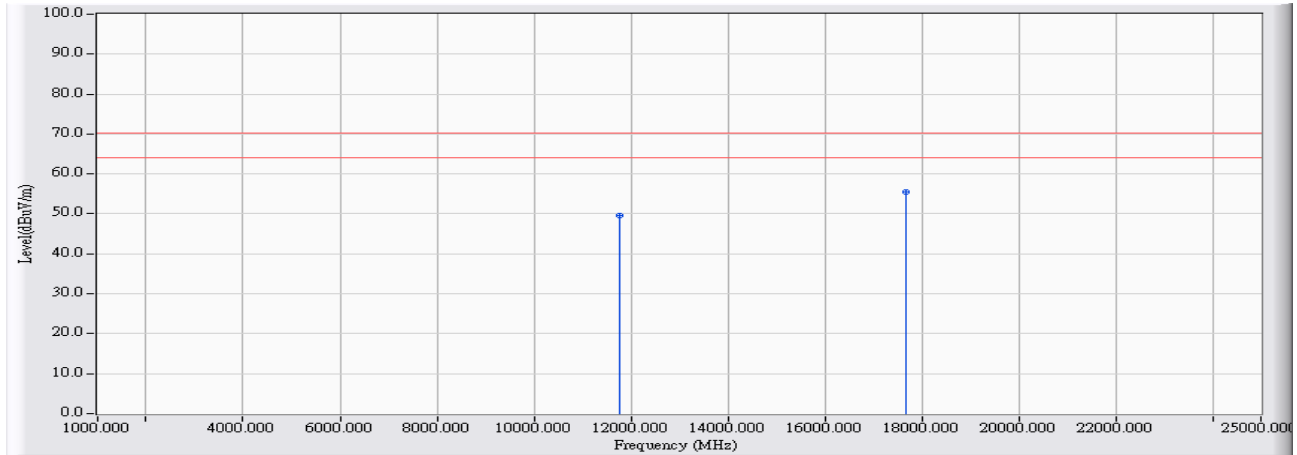


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	11720.000	11.360	38.300	49.660	-20.540	70.200	PEAK
2	* 17580.000	17.601	35.940	53.541	-16.659	70.200	PEAK

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 : 2015/01/06 - 11:09
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 10M 5890MHz

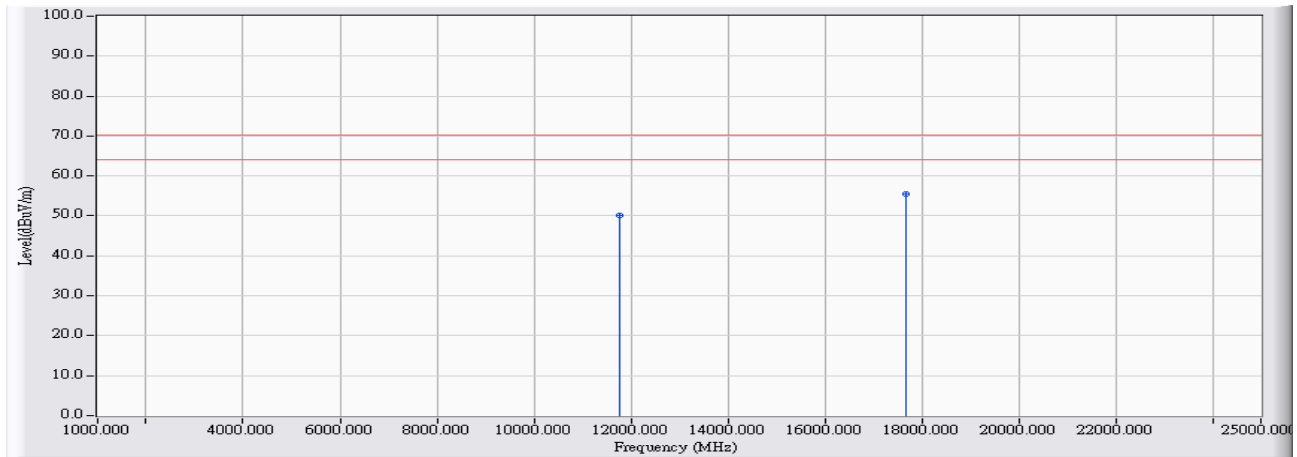


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	11780.000	11.314	38.250	49.564	-20.636	70.200	PEAK
2	* 17670.000	18.681	36.800	55.481	-14.719	70.200	PEAK

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 : 2015/01/06 - 11:13
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 10M 5890MHz

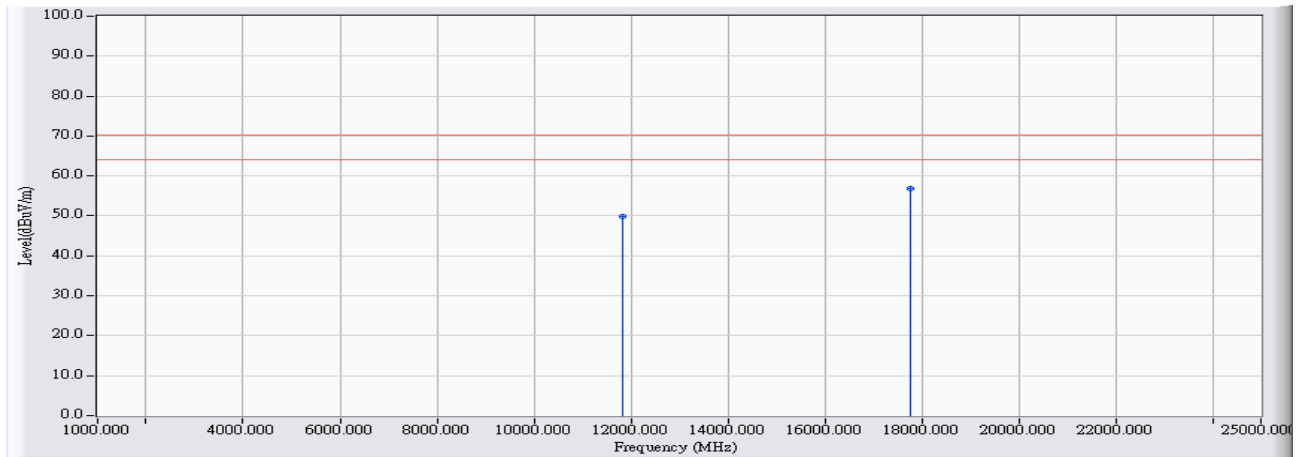


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	11780.000	11.314	38.800	50.114	-20.086	70.200	PEAK
2	* 17670.000	18.681	36.790	55.471	-14.729	70.200	PEAK

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 : 2015/01/06 - 11:20
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 10M 5920MHz

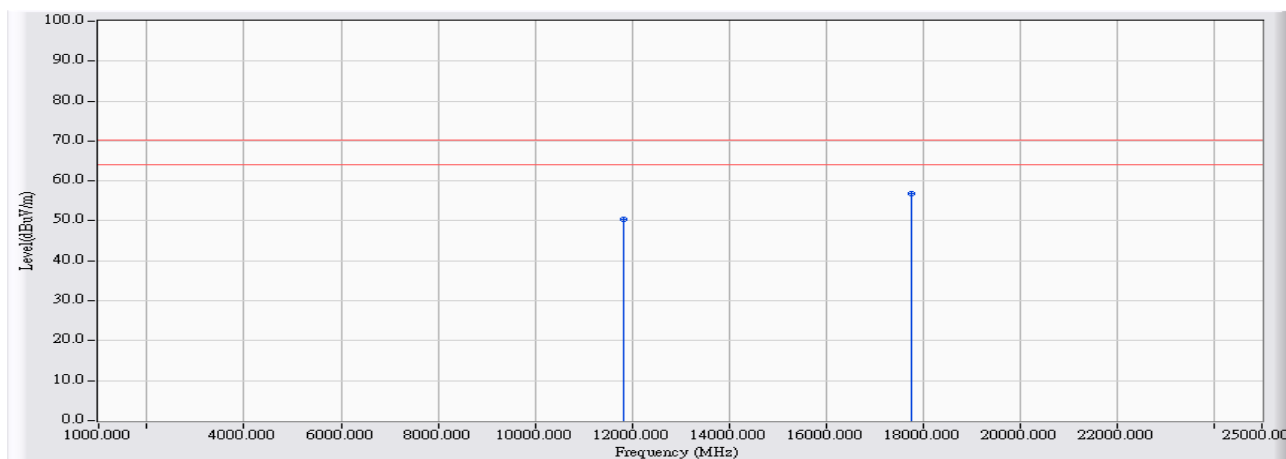


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	11840.000	11.267	38.680	49.947	-20.253	70.200	PEAK
2	* 17760.000	19.761	37.110	56.871	-13.329	70.200	PEAK

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 : 2015/01/06 - 11:17
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 10M 5920MHz

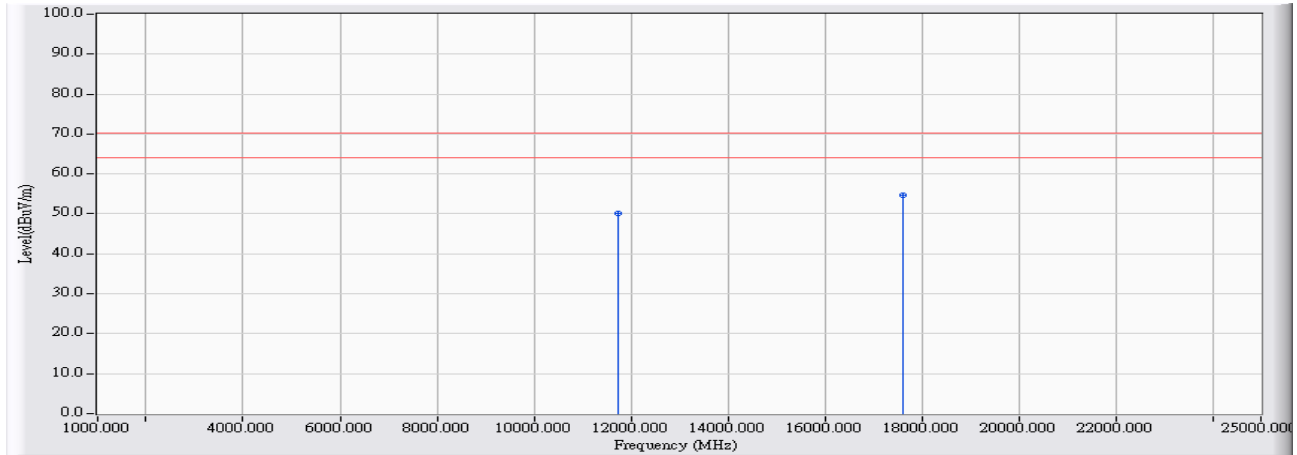


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	11840.000	11.267	39.180	50.447	-19.753	70.200	PEAK
2	* 17760.000	19.761	37.110	56.871	-13.329	70.200	PEAK

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 : 2015/01/06 - 11:26
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 20M 5875MHz

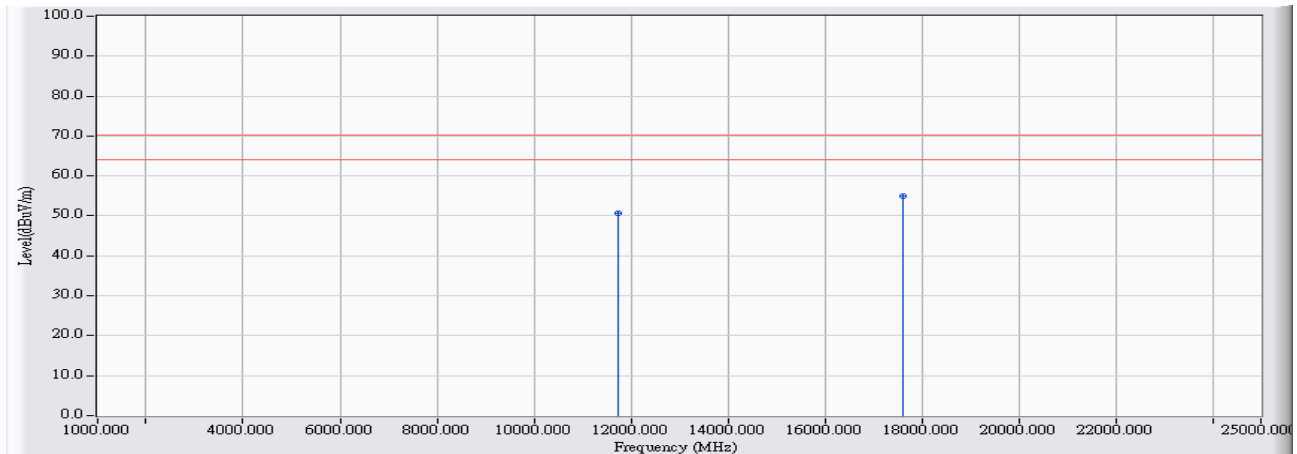


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	11750.000	11.337	38.710	50.047	-20.153	70.200	PEAK
2	* 17625.000	18.141	36.520	54.661	-15.539	70.200	PEAK

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 : 2015/01/06 - 11:29
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 20M 5875MHz

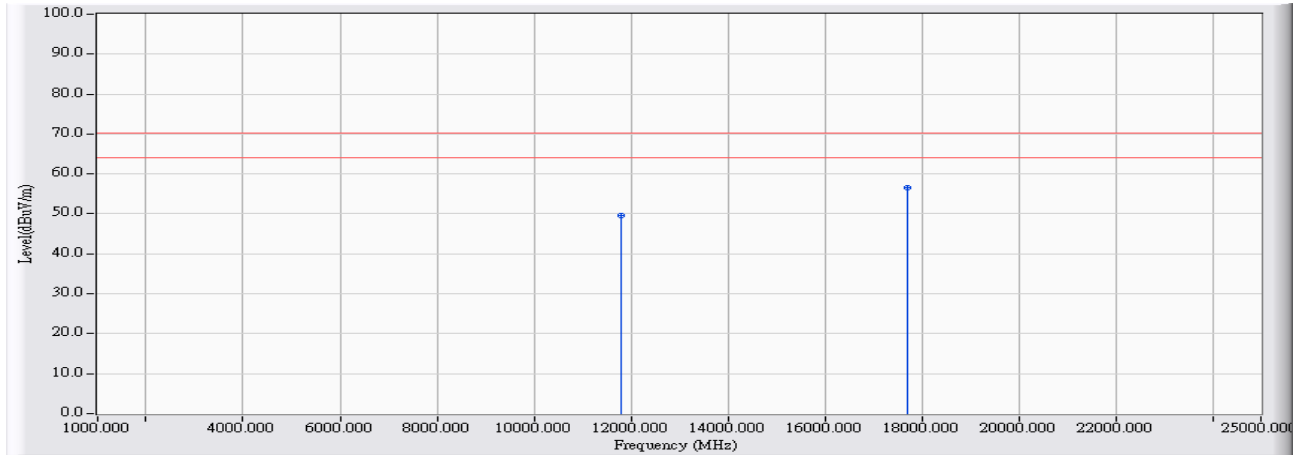


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	11750.000	11.337	39.220	50.557	-19.643	70.200	PEAK
2	* 17625.000	18.141	36.910	55.051	-15.149	70.200	PEAK

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 : 2015/01/06 - 11:36
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 20M 5905MHz

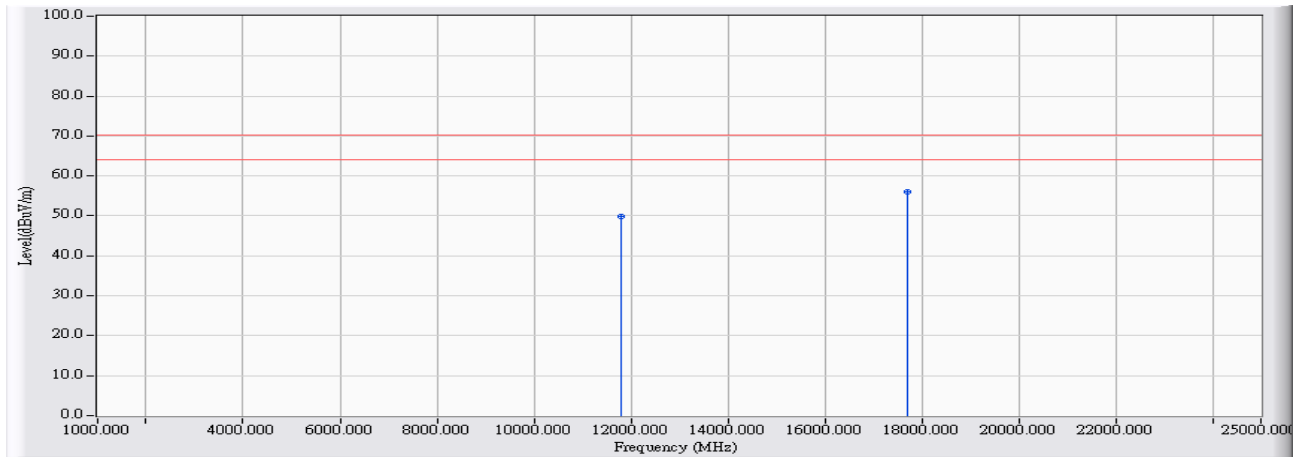


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	11810.000	11.291	38.320	49.611	-20.589	70.200	PEAK
2	* 17715.000	19.221	37.250	56.471	-13.729	70.200	PEAK

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 : 2015/01/06 - 11:32
Limit : FCC_Part95_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : DC 12V
EUT : Savari DSRC unit	Note : 20M 5905MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	11810.000	11.291	38.510	49.801	-20.399	70.200	PEAK
2	* 17715.000	19.221	36.770	55.991	-14.209	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

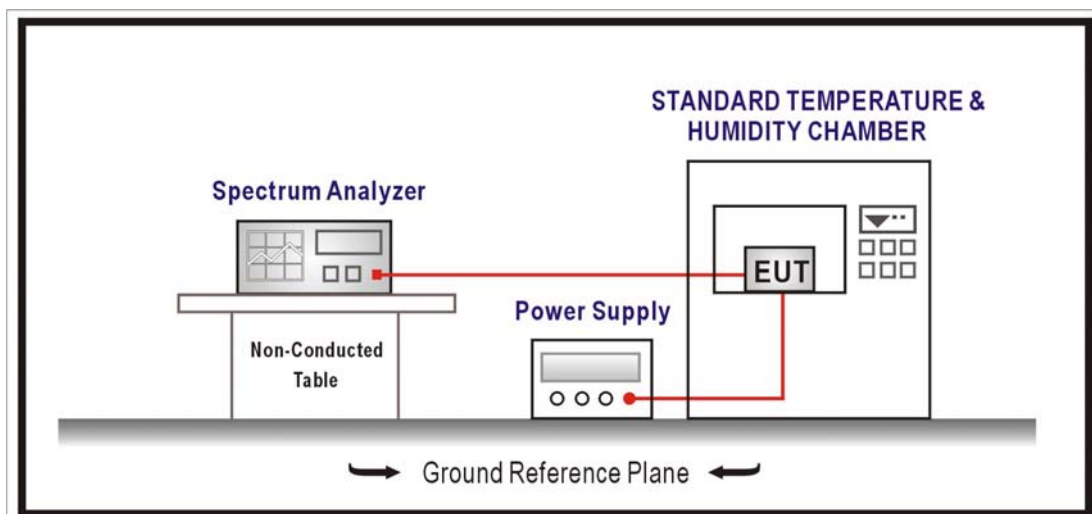
The following test equipments are used during the radiated emission tests:

Frequency Stability / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2015/07/14
Temperature & Humidity Chamber	WIT	TH-1S-B	1082101	2016/01/21

Note: 1. 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

7.5. Uncertainty

The measurement uncertainty is defined as ± 150 Hz

7.6. Test Result

Product	SAVARI DSRC UNIT		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit Mode- 5890MHz(IEEE 802.11p (10MHz)(ANT 0))		
Date of Test	2015/01/08	Test Site	SR7

Temperature Interval(°C)	DC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Limit(ppm)
-20	12	5890.0107	1.8224	10
-10		5890.0083	1.4021	10
0		5890.0002	0.0374	10
10		5890.0332	5.6291	10
20		5890.0471	7.9896	10
30		5890.0260	4.4096	10
40		5890.0283	4.8067	10
50		5890.0583	9.9052	10

Temperature Interval (°C)	DC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Limit(ppm)
25	10	5890.0524	8.8909	10
	12	5890.0328	5.5761	10
	14	5890.0383	6.5026	10

Product	SAVARI DSRC UNIT		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit Mode- 5905MHz(IEEE 802.11p (20MHz)(ANT 0))		
Date of Test	2015/01/08	Test Site	SR7

Temperature Interval(°C)	DC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Limit(ppm)
-20	12	5905.0199	3.3716	10
-10		5905.0205	3.4668	10
0		5905.0481	8.1431	10
10		5905.0077	1.3006	10
20		5905.0401	6.7993	10
30		5905.0329	5.5719	10
40		5905.0276	4.6775	10
50		5905.0324	5.4951	10

Temperature Interval (°C)	DC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Limit(ppm)
25	10	5905.0400	6.7726	10
	12	5905.0172	2.9045	10
	14	5905.0484	8.1976	10