

FCC Part 90Y

Measurement and Test Report

For

Airspan Networks Inc

777 Yamato Road, Suite 310 Boca Raton FL 33431 USA

FCC ID: PIDMRT4900

FCC Rule(s):	<u>FCC Part 90Y</u>
Product Description:	<u>WiMAX MRT CPE</u>
Tested Model:	<u>Airstream 4001 F49-MRT</u>
Report No.:	<u>STR13108097I-1</u>
Tested Date:	<u>2013-10-14 to 2013-11-18</u>
Issued Date:	<u>2013-11-18</u>
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM.Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Airspan Networks Inc
Address of applicant: 777 Yamato Road, Suite 310 Boca Raton FL 33431
USA
Manufacturer: KZ BroadBand Technologies, Ltd
Address of manufacturer: 1601 Tower C, Skyworth Building, High-tech
Industrial Park, Nanshan District, Shenzhen, China.

General Description of EUT	
Product Name:	WiMAX MRT CPE
Trade Name:	MRTe-4900
Model No.:	Airstream 4001 F49-MRT
Adding Model:	/
Rated Voltage:	DC 12V
Note: The test data is gathered from a production sample provided by the manufacturer.	

Technical Characteristics of EUT	
Frequency Range:	4950-4980MHz
RF Output Power:	27.57 dBm (Conducted)
Modulation:	QPSK, 16QAM, 64QAM
Type of Antenna:	External
Antenna Gain:	2dBi
Lowest Internal Frequency of EUT:	32.768kHz

1.2 Test Standards

The following report is prepared on behalf of the Airspan Networks Inc in accordance with FCC Part 90, Subpart I, E of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 90, Subpart I, E of the Federal Communication Commissions rules. of the Federal Communication Commissions rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with TIA-603-C, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

- **FCC – Registration No.: 934118**

Shenzhen SEM.Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

- **Industry Canada (IC) Registration No.: 11464A**

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	Low Channel	4950MHz
TM2	Middle Channel	4965MHz
TM3	High Channel	4980MHz

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
RJ45	1.5	Unshielded	Without Ferrite
DC Power Cable	1.2	Unshielded	Without Ferrite

Auxiliary Equipment List and Details:	
Equipment 1	
Description:	Storage Battery
Model:	M12-65
Rated Voltage:	DC12
Capacitance:	65AH
Equipment 2	
Description:	Notebook
Model:	E23
Rated Voltage:	DC20V
Rated Current:	4.5A
Power Rating:	90W

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 90.205, § 90.1215	Peak Power Spectral Density	Compliant
§ 90.205, § 90.1215	Maximum Conducted Output Power	Compliant
§ 90.210	Emission mask	Compliant
§ 90.1215e	Peak Excursion	Compliant
§ 90.210	Conducted Spurious emission	Compliant
§ 90.209	Bandwidth	Compliant
§ 90.210	Radiated Spurious Emission	Compliant

3. RF Exposure

3.1 Standard Applicable

According to § 1.1307 and § 2.1093, the portable transmitter must comply the RF exposure requirements.

3.2 Test Result

This product complied with the requirement of the RF exposure, please see the RF Exposure Report.

4. Antenna Requirement

4.1 Standard Applicable

According to FCC 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

4.2 Test Result

This product has a detachable and reverse screw antenna, fulfill the requirement of this section.

5. Power Spectral Density

5.1 Standard Applicable

According to § 90.1215 (a)

(1) The maximum conducted output power should not exceed:

Channel Bandwidth (MHz)	High Power Maximum Conducted Output Power (dBm)
10	30

(2) High power devices are also limited to a peak power spectral density of 21 dBm per one MHz. High power devices using channel bandwidths other than those listed above are permitted; however, they are limited to peak power spectral density of 21 dBm/MHz. If transmitting antennas of directional gain greater than 9 dBi are used, both the maximum conducted output power and the peak power spectral density should be reduced by the amount in decibels that the directional gain of the antenna exceeds 9 dBi.

5.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
Attenuator	ATTEN	ATS010-6-10	DC-6GHz	2013-05-07	2014-05-06

5.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer via a RF combiner.
2. Set center frequency of spectrum analyzer = operating frequency.
3. Set the spectrum analyzer as RBW = 1MHz, VBW = 3MHz, Span = 20MHz.
4. Repeat above procedures until all frequency measured was complete.

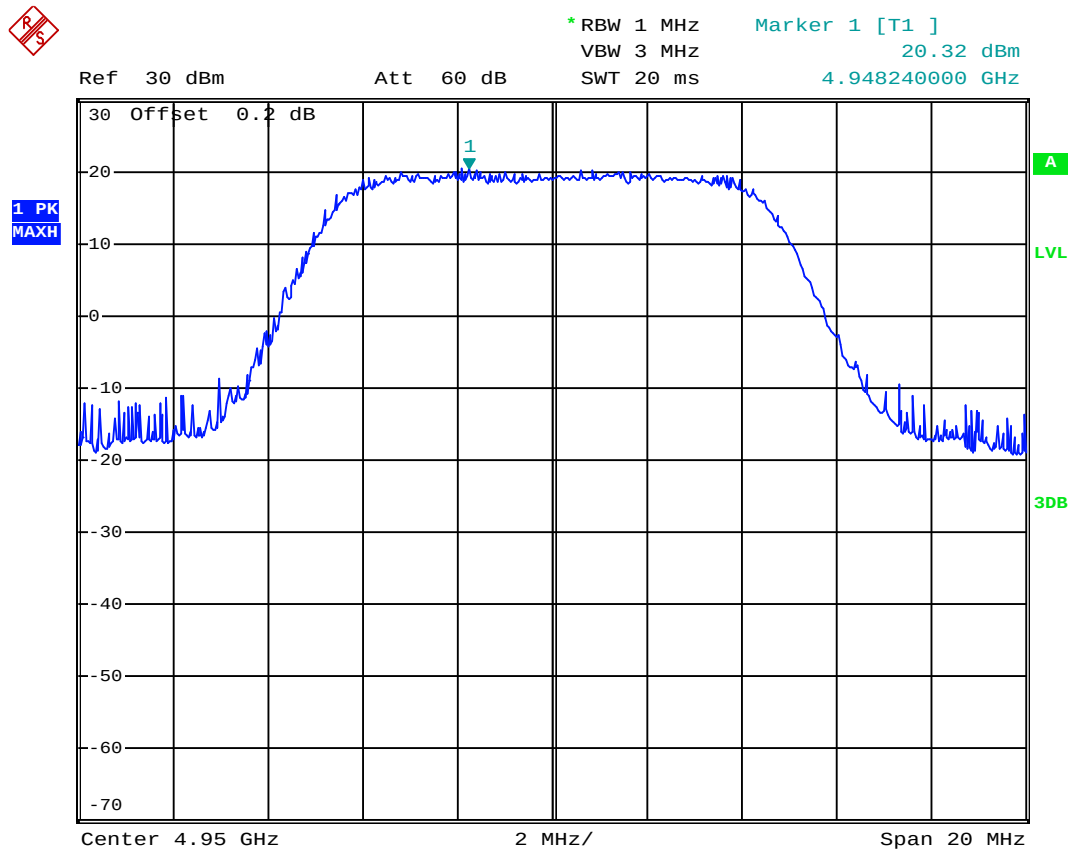
5.4 Environmental Conditions

Temperature:	20° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

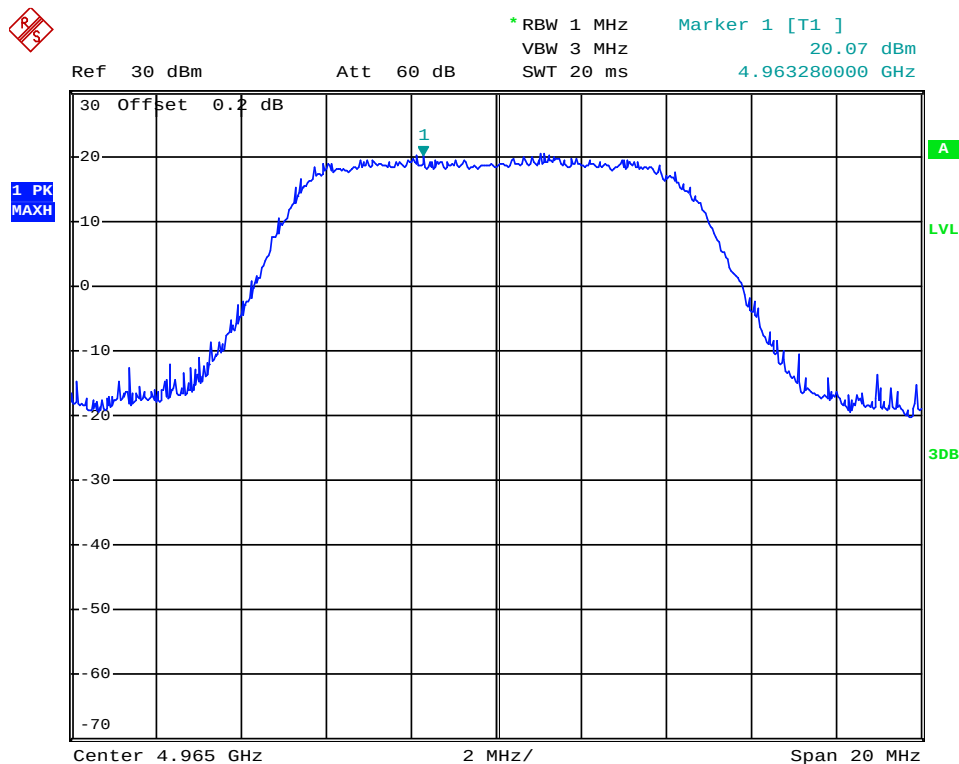
5.5 Summary of Test Results/Plots

Test Mode	Test Channel MHz	Power Spectral Density dBm/MHz	Limit dBm/MHz
802.16	4950	20.32	21
	4965	20.07	21
	4980	20.03	21

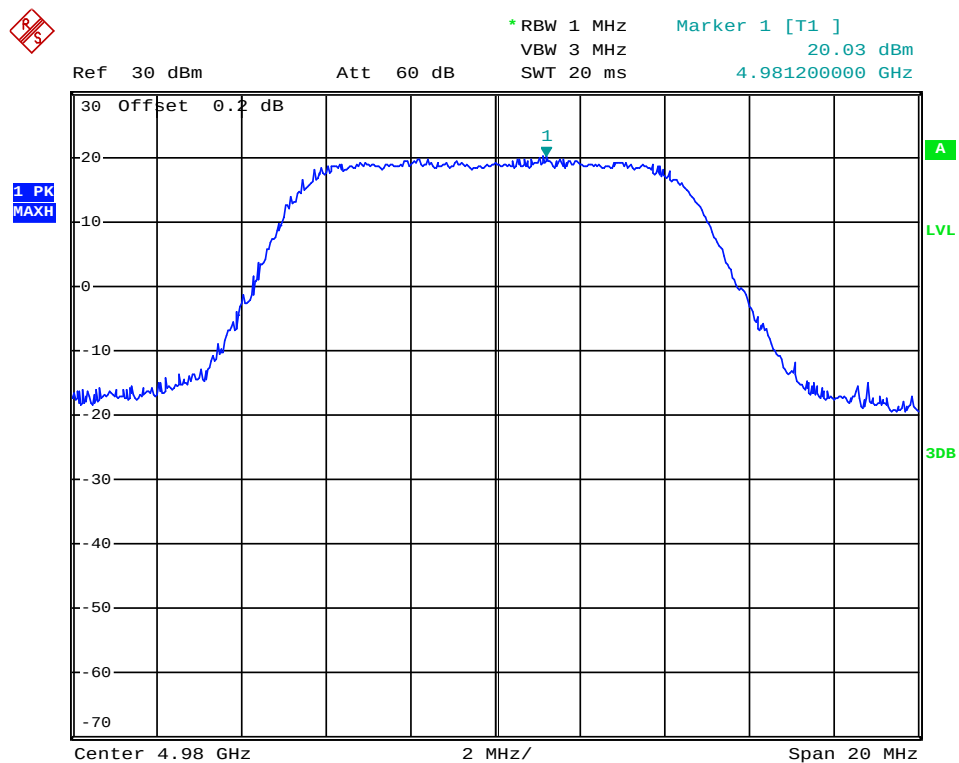
Low Channel: 4950MHz



Middle Channel: 4965MHz



High Channel: 4980MHz



6. Maximum Conducted Output Power

6.1 Standard Applicable

According to § 90.1215 (a)

(1) The maximum conducted output power should not exceed:

Channel Bandwidth (MHz)	High Power Maximum Conducted Output Power (dBm)
10	30

(2) High power devices are also limited to a peak power spectral density of 21 dBm per one MHz. High power devices using channel bandwidths other than those listed above are permitted; however, they are limited to peak power spectral density of 21 dBm/MHz. If transmitting antennas of directional gain greater than 9 dBi are used, both the maximum conducted output power and the peak power spectral density should be reduced by the amount in decibels that the directional gain of the antenna exceeds 9 dBi. However,

6.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
Attenuator	ATTEN	ATS010-6-10	DC-6GHz	2013-05-07	2014-05-06

6.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer via a RF combiner.
2. Set center frequency of spectrum analyzer = operating frequency.
3. Set the spectrum analyzer as RBW = 1MHz, VBW = 3MHz, Span = 20MHz.
4. Repeat above procedures until all frequency measured was complete.

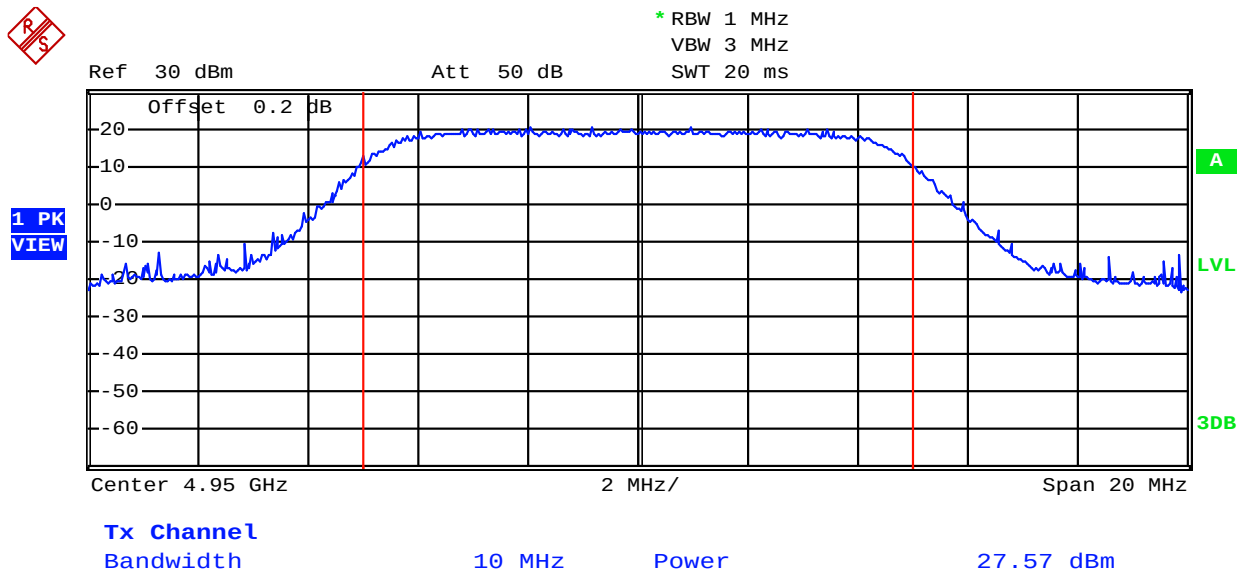
6.4 Environmental Conditions

Temperature:	20° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

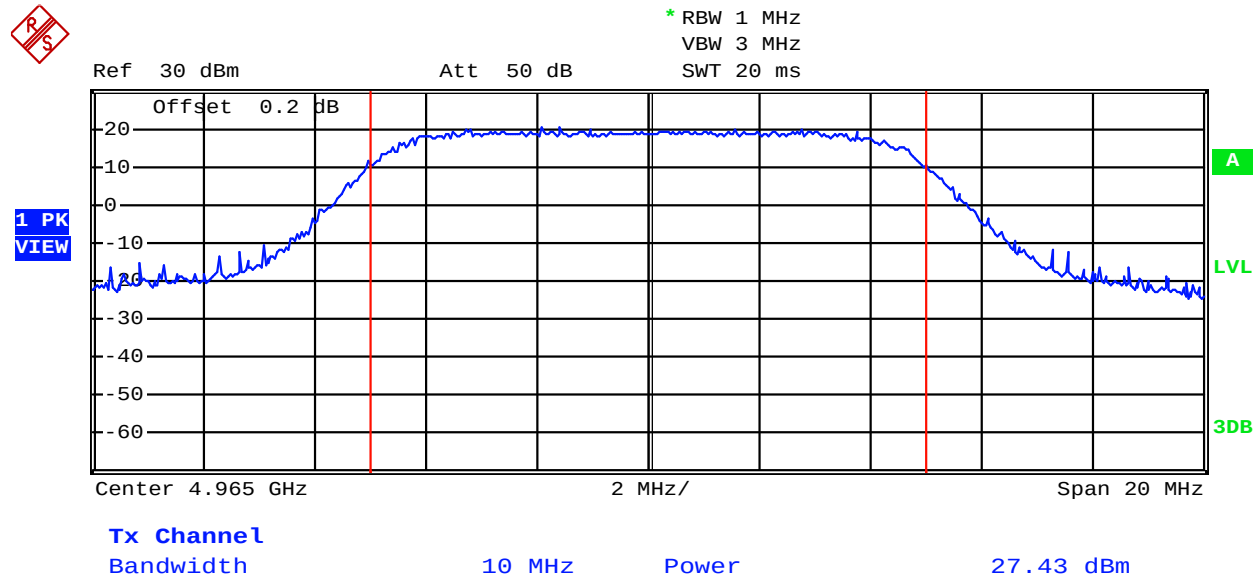
6.5 Summary of Test Results/Plots

Test Mode	Test Channel MHz	Conducted Output Power dBm/MHz	Limit dBm
802.16	4950	27.57	30
	4965	27.43	30
	4980	27.32	30

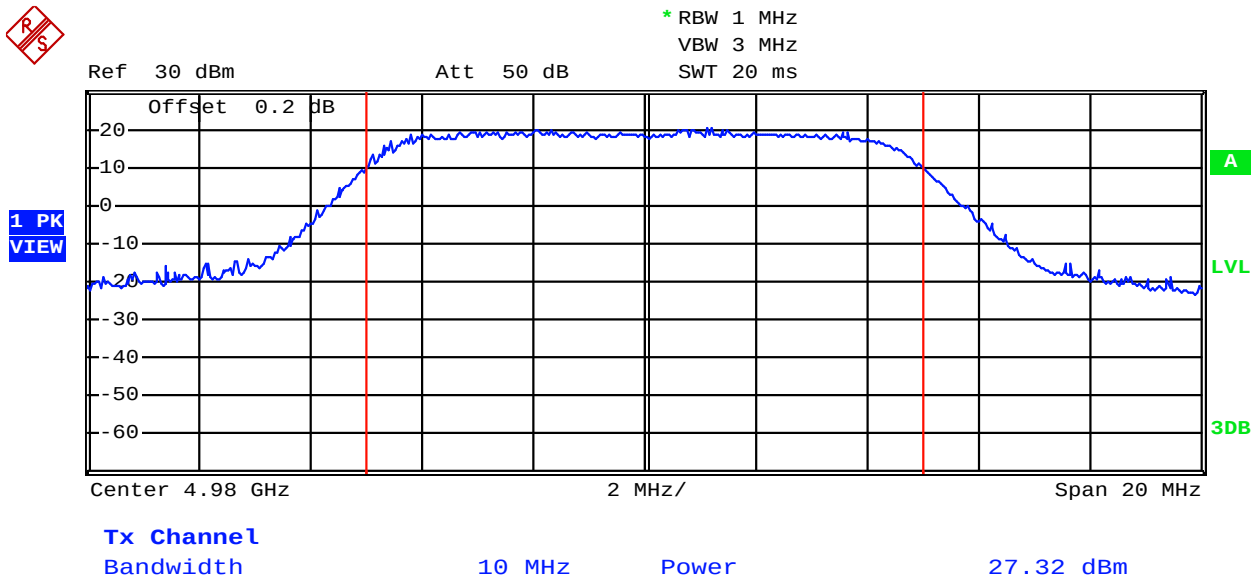
Low Channel: 4950MHz



Middle Channel: 4965MHz



High Channel: 4980MHz



7. Emission Bandwidth

7.1 Standard Applicable

According to 90.209 Bandwidth limitations this test was performed to measure transmitter occupied bandwidth.

7.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
Attenuator	ATTEN	ATS010-6-10	DC-6GHz	2013-05-07	2014-05-06

7.3 Test Procedure

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Trace mode = max hold.
- 4) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

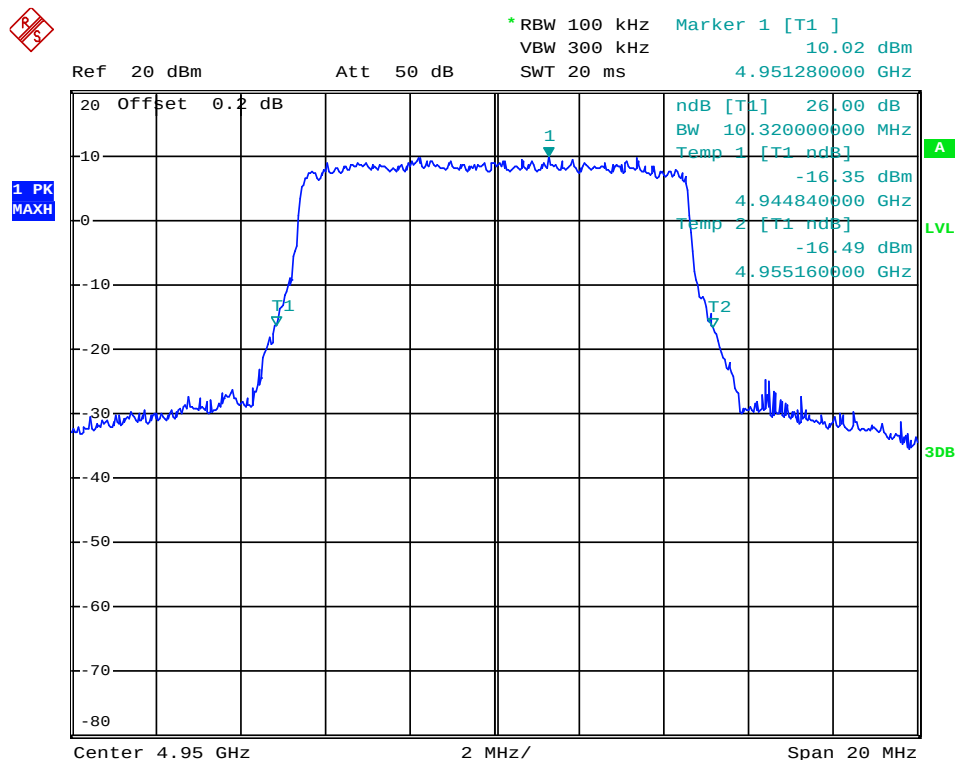
7.4 Environmental Conditions

Temperature:	24° C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

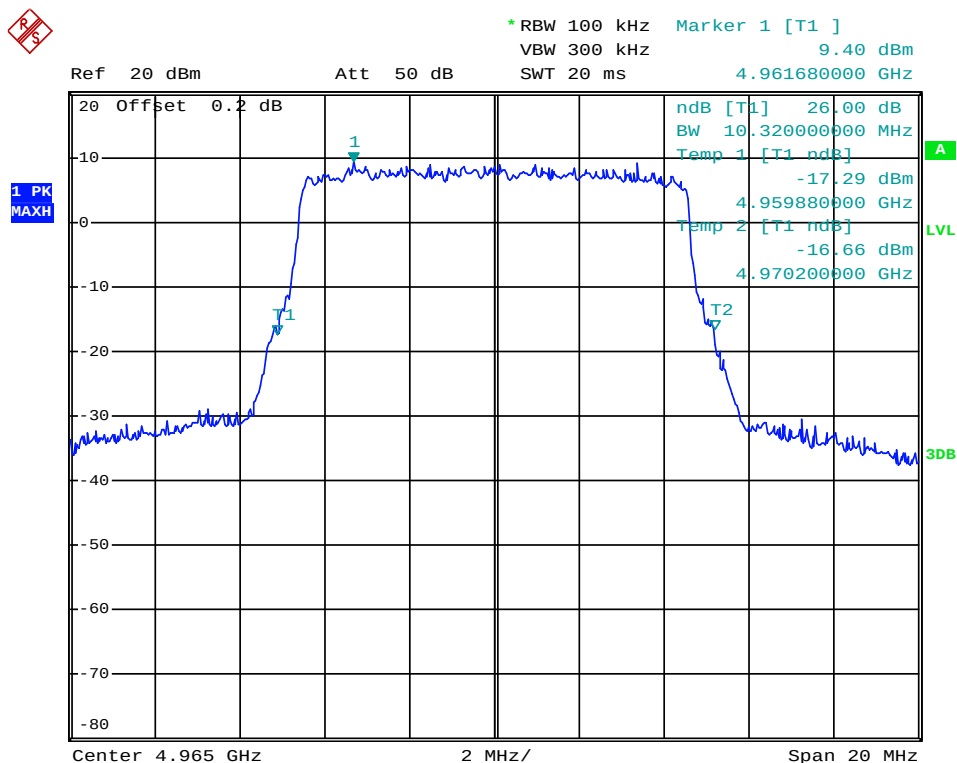
7.5 Summary of Test Results/Plots

Test Mode	Test Channel MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	Limit MHz
802.116	4950	10.32	/	/
	4965	10.32	/	/
	4980	10.20	/	/

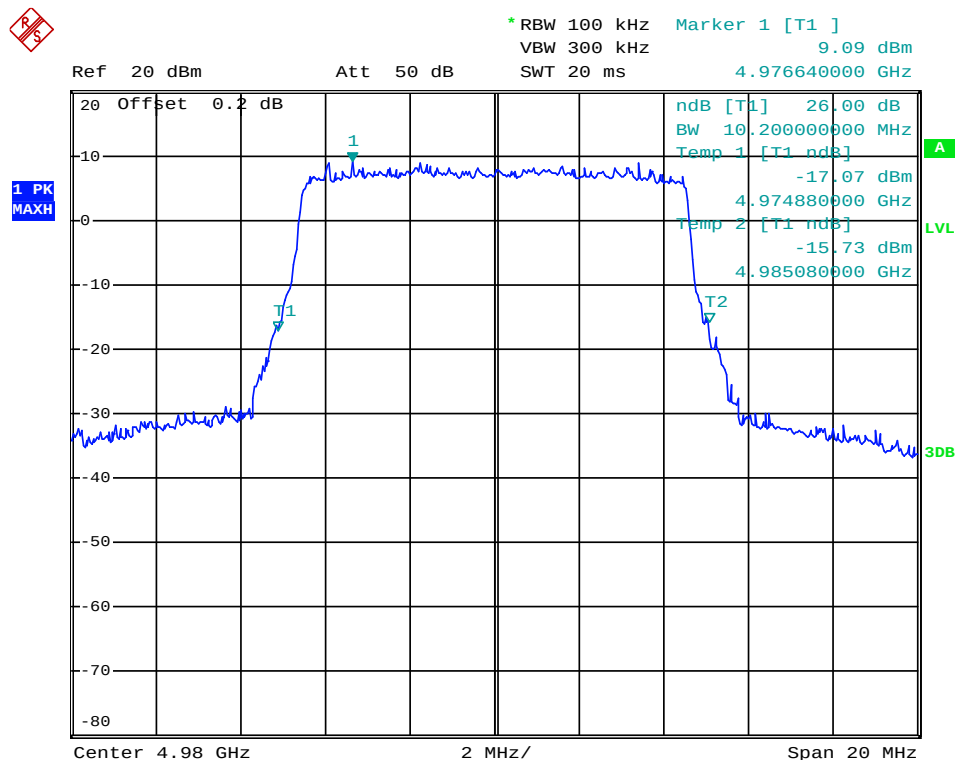
Low Channel:



Middle Channel:



High Channel:



8. Emission Masks

8.1 Standard Applicable

According to § 90.210 Emission masks M:

For high power transmitters (greater than 20 dBm) operating in the 4940-4990 MHz frequency band, the power spectral density of the emissions must be attenuated below the output power of the transmitter as follows:

- (1) On any frequency removed from the assigned frequency between 0-45% of the authorized bandwidth (BW): 0 dB.
- (2) On any frequency removed from the assigned frequency between 45-50% of the authorized bandwidth: $56.8 \log (\% \text{ of (BW)/45})$ dB. 26
- (3) On any frequency removed from the assigned frequency between 50-55% of the authorized bandwidth: $26 + 14.5 \log (\% \text{ of BW/50})$ dB. 32
- (4) On any frequency removed from the assigned frequency between 55-100% of the authorized bandwidth: $32 + 31 \log (\% \text{ of (BW)/55})$ dB. 40
- (5) On any frequency removed from the assigned frequency between 100-150% of the authorized bandwidth: $40 + 5.7 \log (\% \text{ of (BW)/100})$ dB. 55
- (6) On any frequency removed from the assigned frequency between above 150% of the authorized bandwidth: 50 dB or $55 + 10 \log (P)$ dB, whichever is the lesser attenuation.
- (7) The zero dB reference is measured relative to the highest average power of the fundamental emission measured across the designated channel bandwidth using a resolution bandwidth of at least one percent of the occupied bandwidth of the fundamental emission and a video bandwidth of 30 kHz. The power spectral density is the power measured within the resolution bandwidth of the measurement device divided by the resolution bandwidth of the measurement device. Emission levels are also based on the use of measurement instrumentation employing a resolution bandwidth of at least one percent of the occupied bandwidth.

8.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
Attenuator	ATTEN	ATS010-6-10	DC-6GHz	2013-05-07	2014-05-06

8.3 Test Procedure

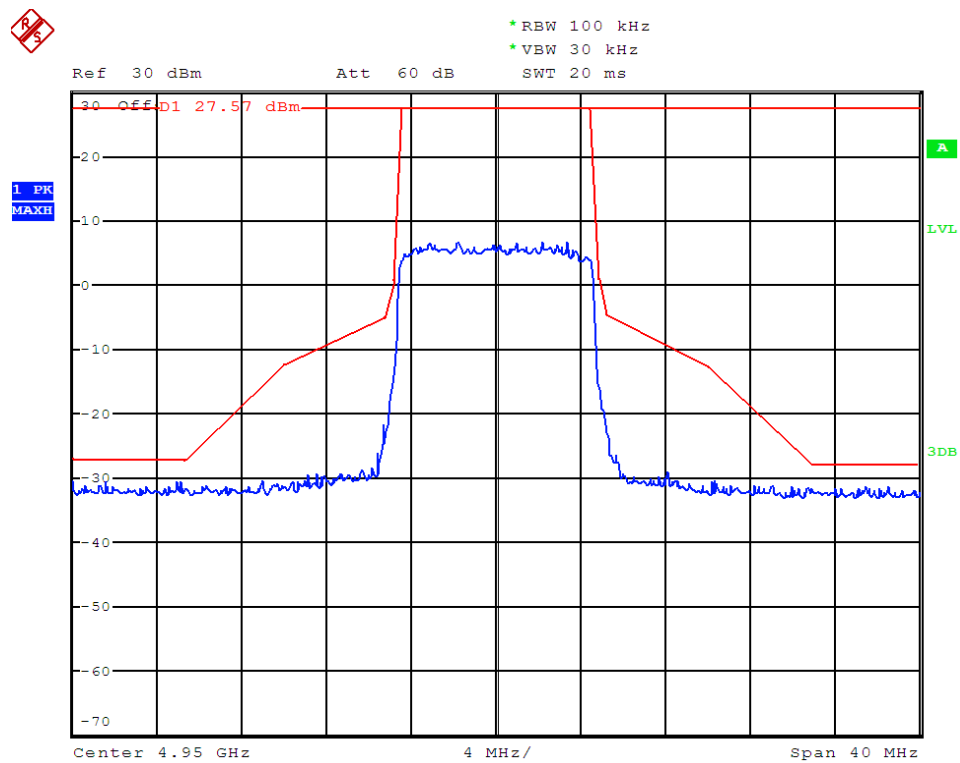
- 1) Set RBW = 100kHz
- 2) Set the VBW 30kHz.
- 3) Trace mode = max hold.

8.4 Environmental Conditions

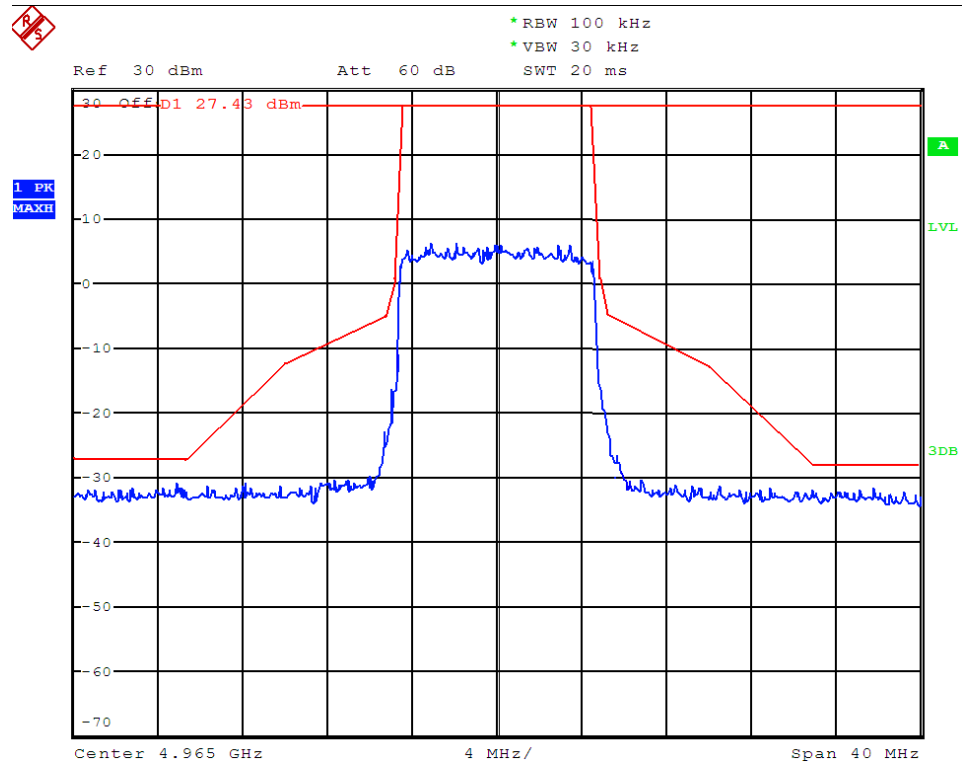
Temperature:	26° C
Relative Humidity:	60%
ATM Pressure:	1018 mbar

8.5 Summary of Test Results/Plots

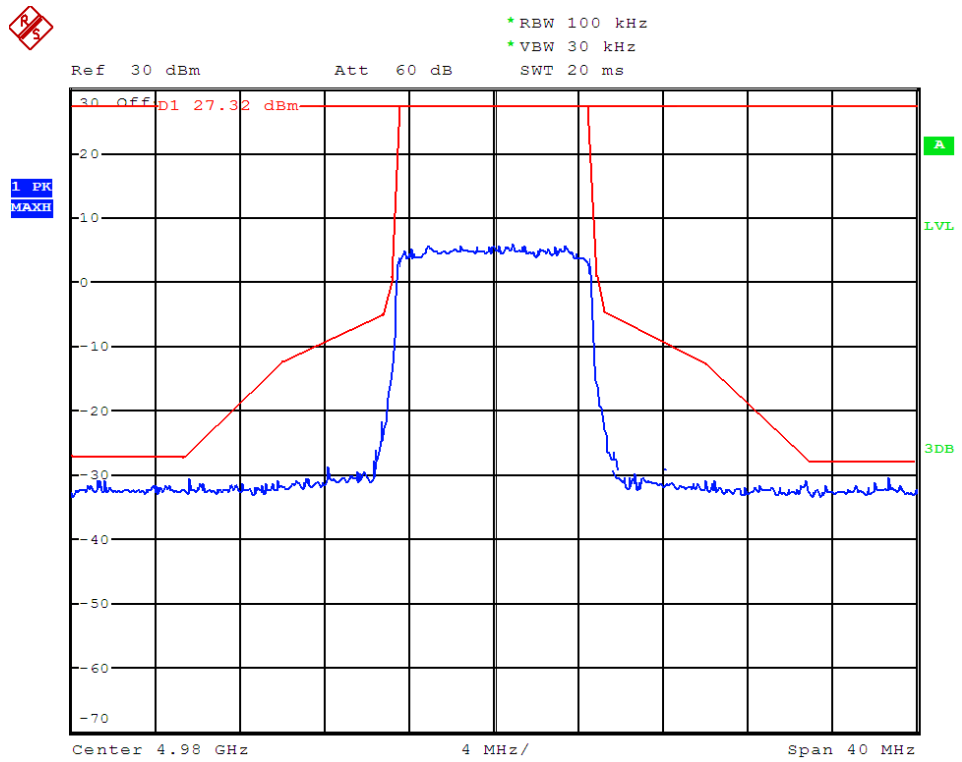
Low Channel:



Middle Channel:



High Channel:



9. Peak Excursion

9.1 Standard Applicable

According to 90.1215 (e) The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

9.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
Attenuator	ATTEN	ATS010-6-10	DC-6GHz	2013-05-07	2014-05-06

9.3 Test Procedure

- 2) Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth.
- 3) Find the maximum of the peak-max-hold spectrum.
 - a) Set RBW = 1 MHz.
 - b) VBW $\geq$ 3 MHz.
 - c) Detector = peak.
 - d) Trace mode = max-hold.
 - e) Allow the sweeps to continue until the trace stabilizes.
 - f) Use the peak search function to find the peak of the spectrum.
- 5) Compute the ratio of the modulation envelope (measured using a peak hold function) to the maximum conducted output power

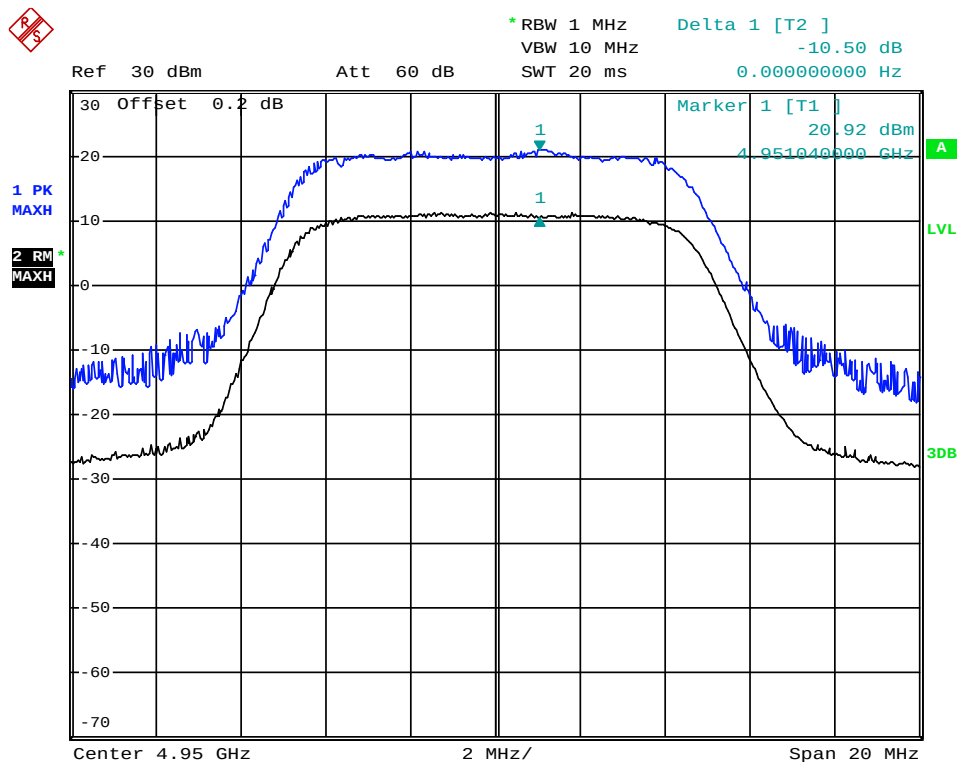
9.4 Environmental Conditions

Temperature:	26° C
Relative Humidity:	64%
ATM Pressure:	1011 mbar

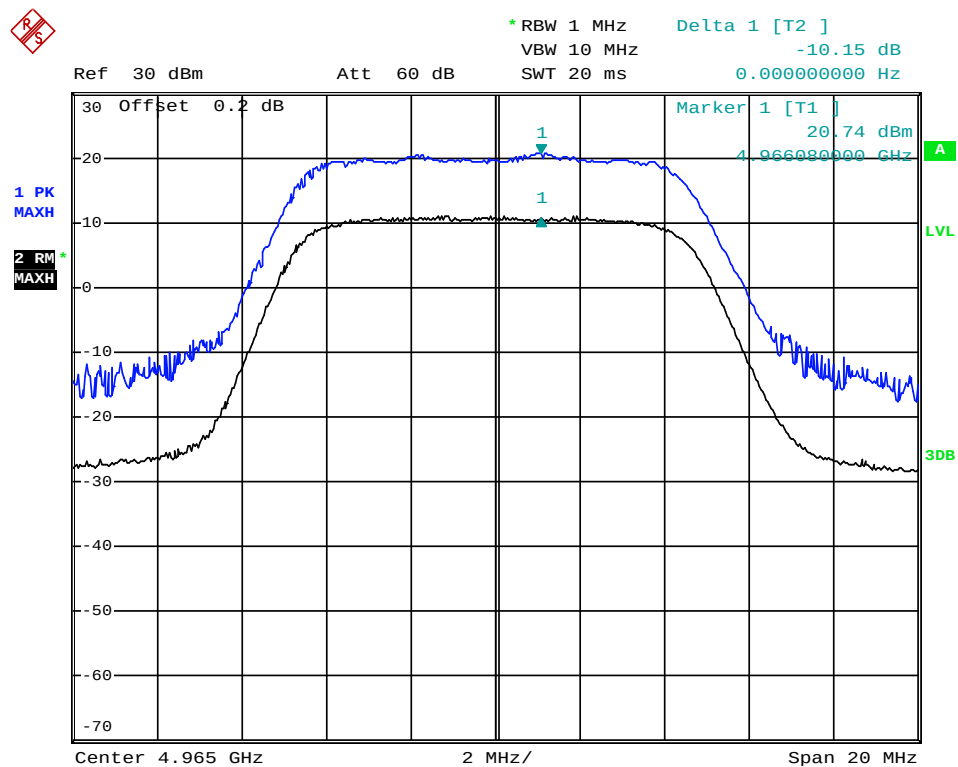
9.5 Summary of Test Results/Plots

Test Mode	Test Channel MHz	Reading dBc	Limit dBc
802.16	4950	-10.50	-13
	4965	-10.15	-13
	4980	-10.29	-13

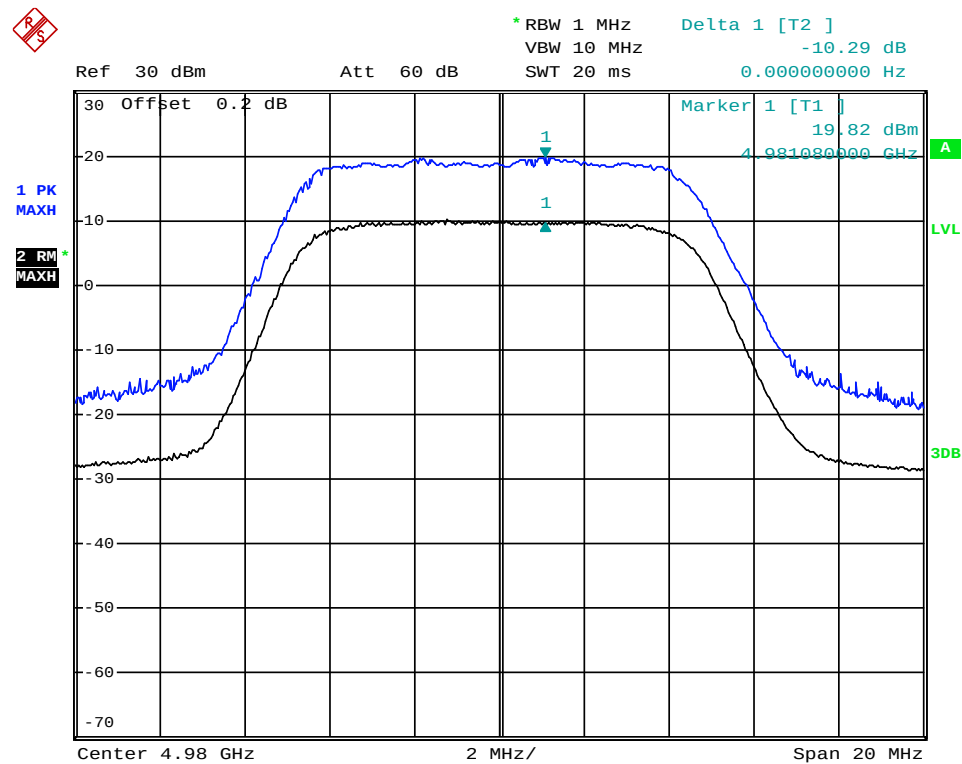
Low Channel:



Middle Channel:



High Channel:



10. FREQUENCY STABILITY

10.1 Standard Applicable

According to FCC Part 2.1055(a)(1), the frequency stability shall be measure with variation of ambient temperature from -30°C to $+50^{\circ}\text{C}$, and according to FCC 2.1055(d)(2), the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point which is specified by the manufacturer.

10.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2013-05-07	2014-05-06
Attenuator	ATTEN	ATS100-4-20	/	2013-05-07	2014-05-06

10.3 Test Procedure

According to §2.1055, the following test procedure was performed.

The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.

The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode

Temperature:	Supply Voltage
20°C	85-115% of declared nominal voltage
-30°C to +50°C	Normal

10.4 Environmental Conditions

Temperature:	20°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

10.4 Test Result

Reference Frequency: 4950 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (kHz)	Error %
50	12	-403.40100	-0.000081
40	12	-352.13796	-0.000071
30	12	-412.63767	-0.000083
20	12	-220.63747	-0.000045
10	12	412.63712	0.000083
0	12	400.63703	0.000081
-10	12	421.63687	0.000085
-20	12	530.63673	0.000107
-30	12	235.63684	0.000048

Reference Frequency: 4965 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (kHz)	Error %
50	12	-405.40100	-0.000082
40	12	-352.13426	-0.000071
30	12	-511.63767	-0.000103
20	12	320.64250	0.000065
10	12	412.63712	0.000083
0	12	401.63703	0.000081
-10	12	401.63687	0.000081
-20	12	330.63612	0.000067
-30	12	235.63684	0.000048

Reference Frequency: 4980 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (kHz)	Error %
50	12	-410.41800	-0.000083
40	12	-312.13742	-0.000063
30	12	-431.63722	-0.000087
20	12	-420.63201	-0.000085
10	12	402.41200	0.000081
0	12	401.63703	0.000081
-10	12	401.63687	0.000081
-20	12	358.6312	0.000072
-30	12	235.63412	0.000048

So, Frequency Stability Versus Input Voltage is:

Reference Frequency: 4950 MHz		
Power Supplied (VDC)	Frequency Measure with Time Elapsed	
	MCF (kHz)	Error %
12	-402.12458	-0.000081
3.3	359.25445	0.000073
3.3	382.10730	0.000077

Reference Frequency: 4965 MHz		
Power Supplied (VDC)	Frequency Measure with Time Elapsed	
	MCF (kHz)	Error %
3.3	-400.12008	-0.000081
3.3	359.25000	0.000073
3.3	382.10413	0.000077

Reference Frequency: 4980 MHz		
Power Supplied (VDC)	Frequency Measure with Time Elapsed	
	MCF (kHz)	Error %
3.3	-402.181255	-0.000081
3.3	359.25111	0.000073
3.3	343.36910	0.000069

11. Conducted Spurious Emissions

11.1 Standard Applicable

According to § 90.210 Emission masks L:

On any frequency removed from the assigned frequency between above 150% of the authorized bandwidth: 50 dB or $55 + 10 \log (P)$ dB, whichever is the lesser attenuation.

11.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
Spectrum Analyzer	Agilent	E4446A	MY51100012	2013-05-07	2014-05-06
Attenuator	ATTEN	ATS010-6-10	DC-6GHz	2013-05-07	2014-05-06

11.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer via a RF combiner.
2. Set the spectrum analyzer as RBW = 1MHz, VBW=1MHz, Sweep = auto
3. Set the Lowest, Middle and Highest Transmitting Channel, observed the outside band of 30MHz to 30GHz, then mark the higher-level emission for comparing with the FCC rules.

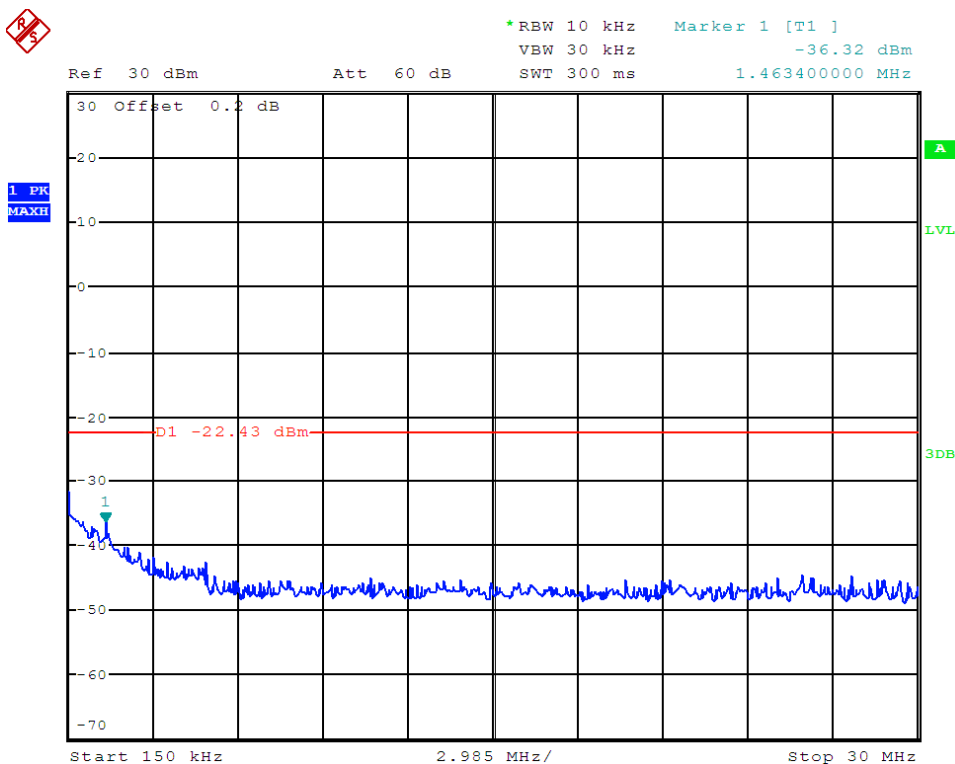
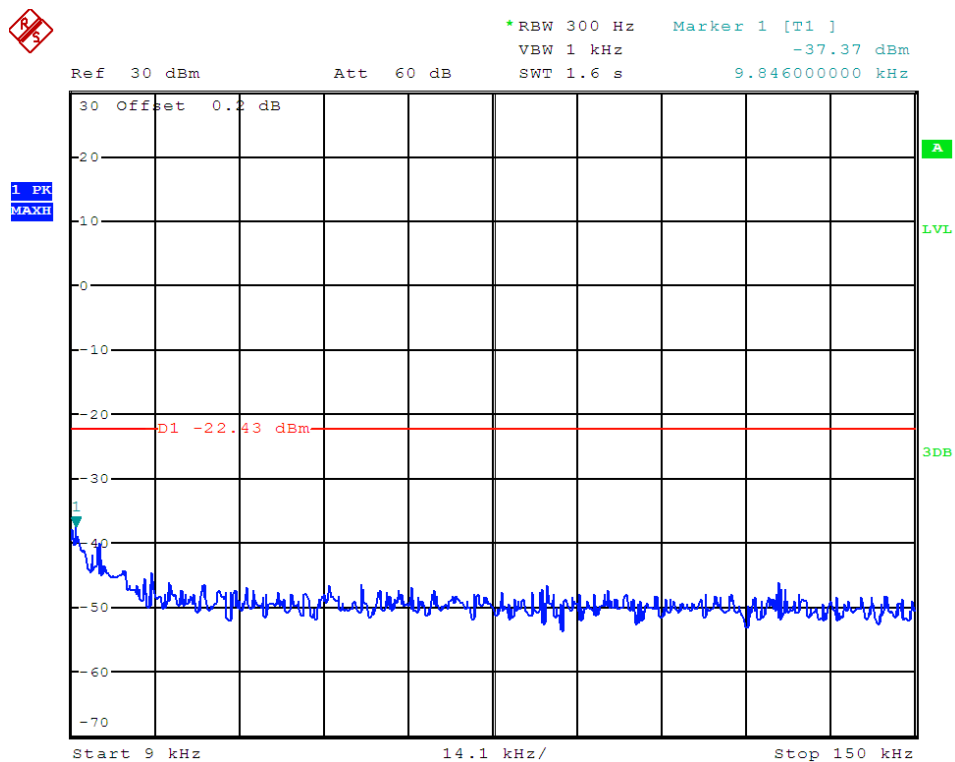
11.4 Environmental Conditions

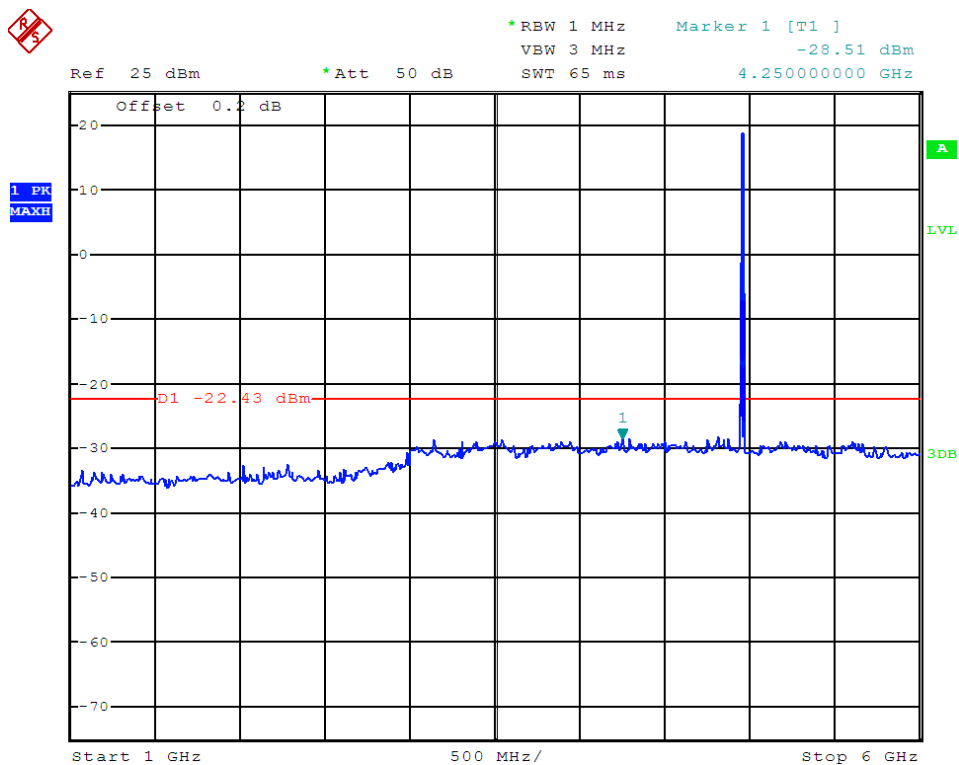
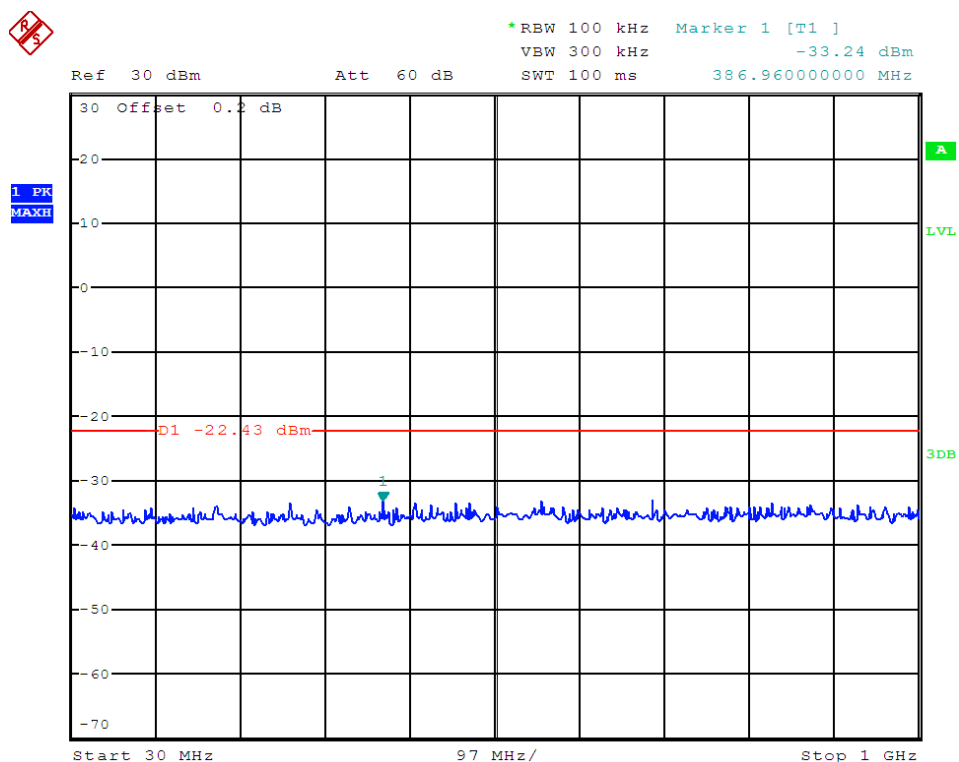
Temperature:	21° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

11.5 Summary of Test Results/Plots

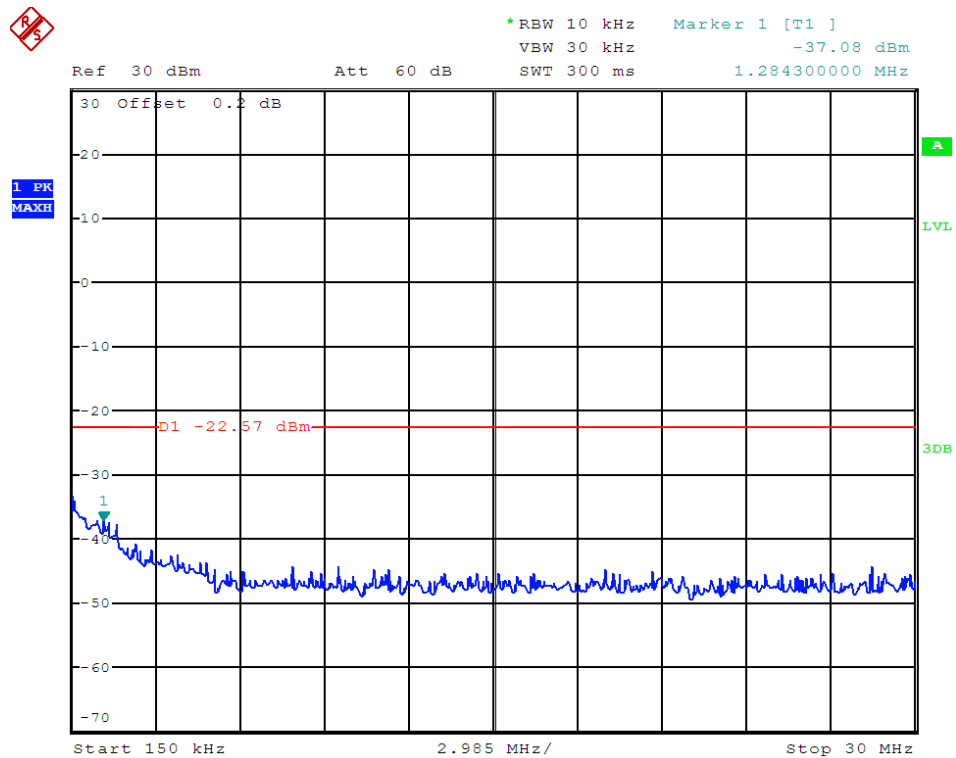
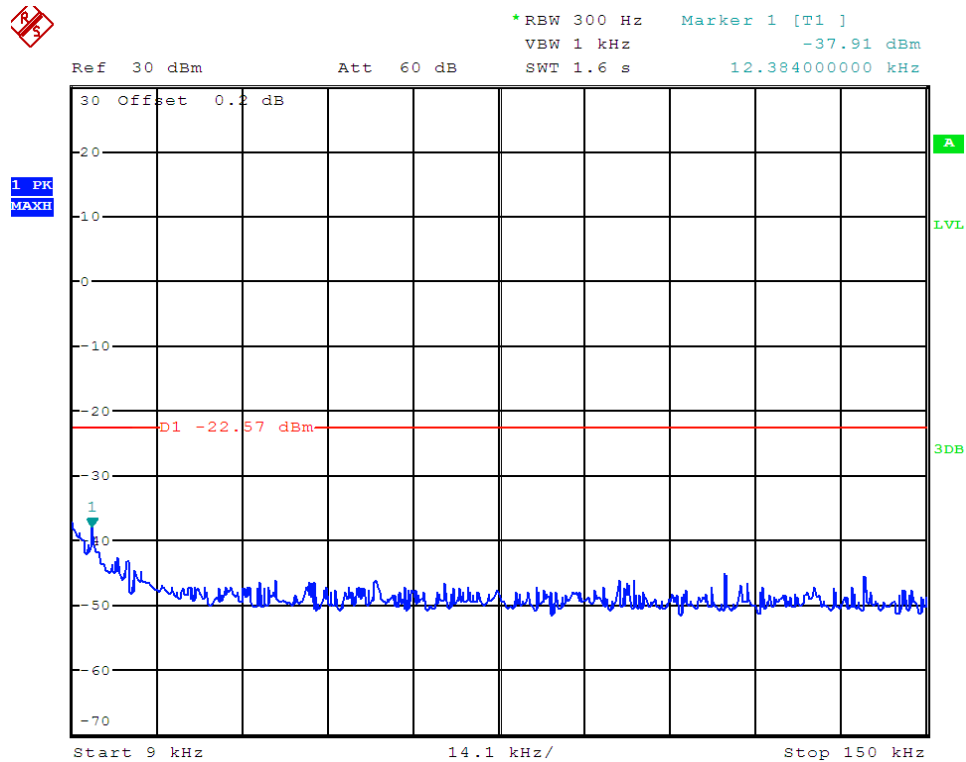
Channel Frequency MHz	Power Level dBm	Out of Band Emission Limit dBm
4950	27.57	-22.43
4965	27.43	-22.57
4980	27.32	-22.68

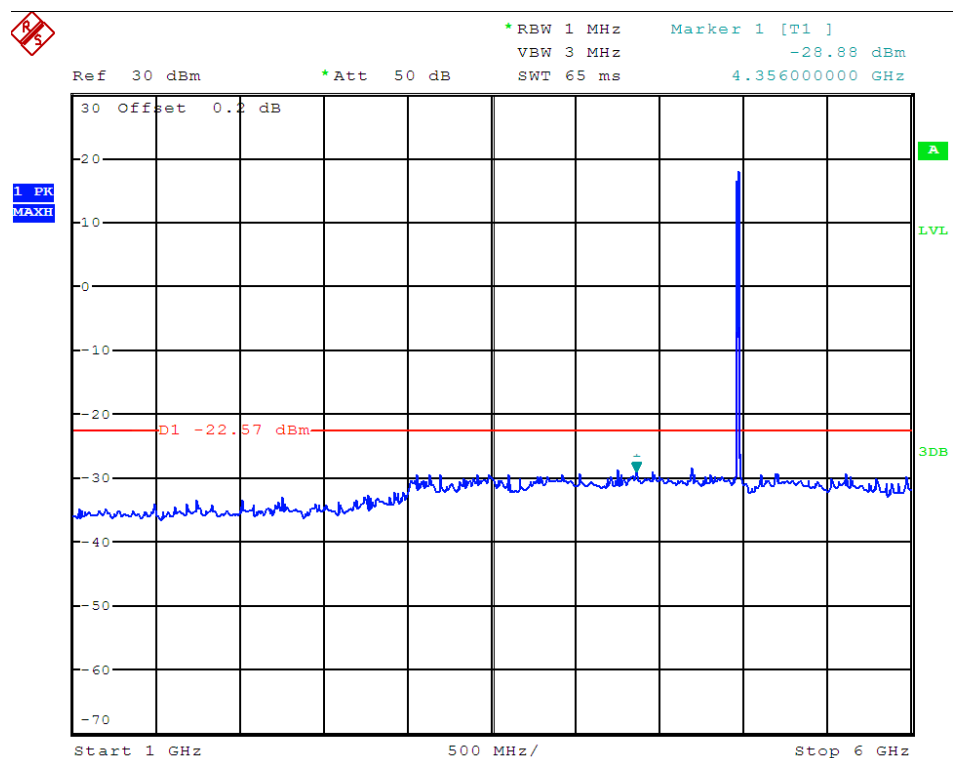
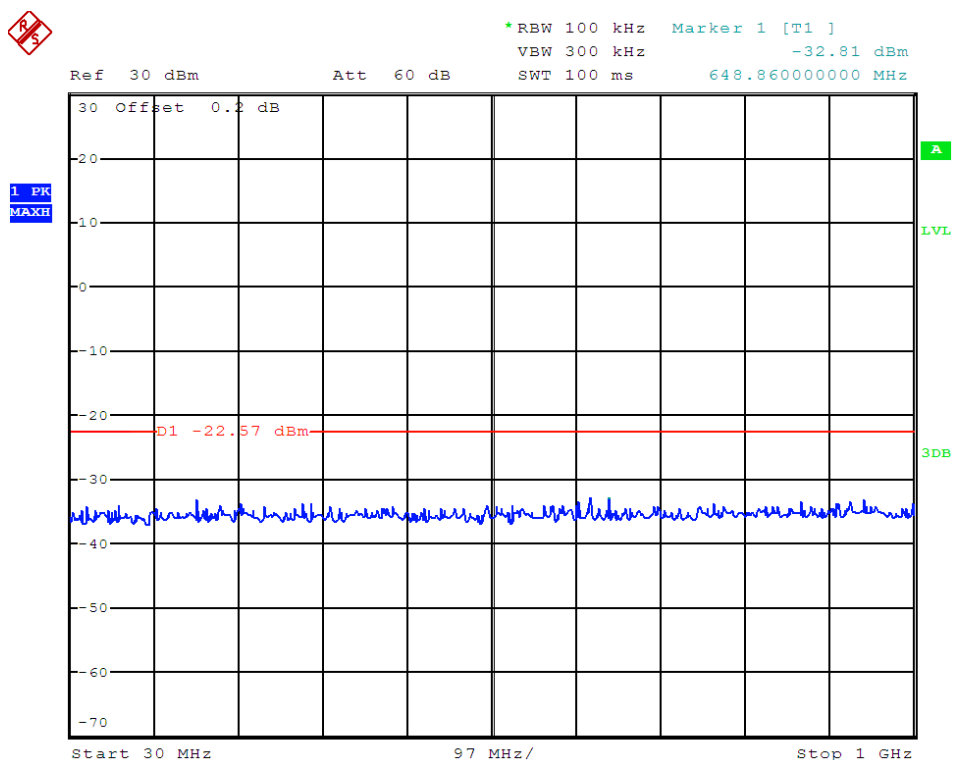
Low Channel: 4950MHz



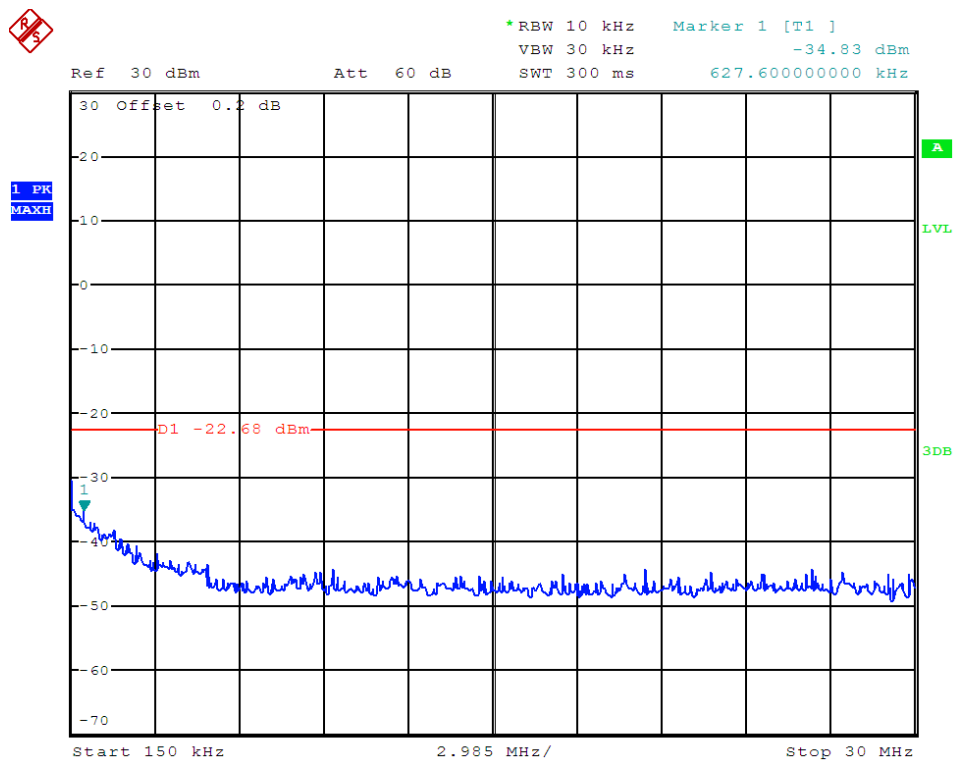
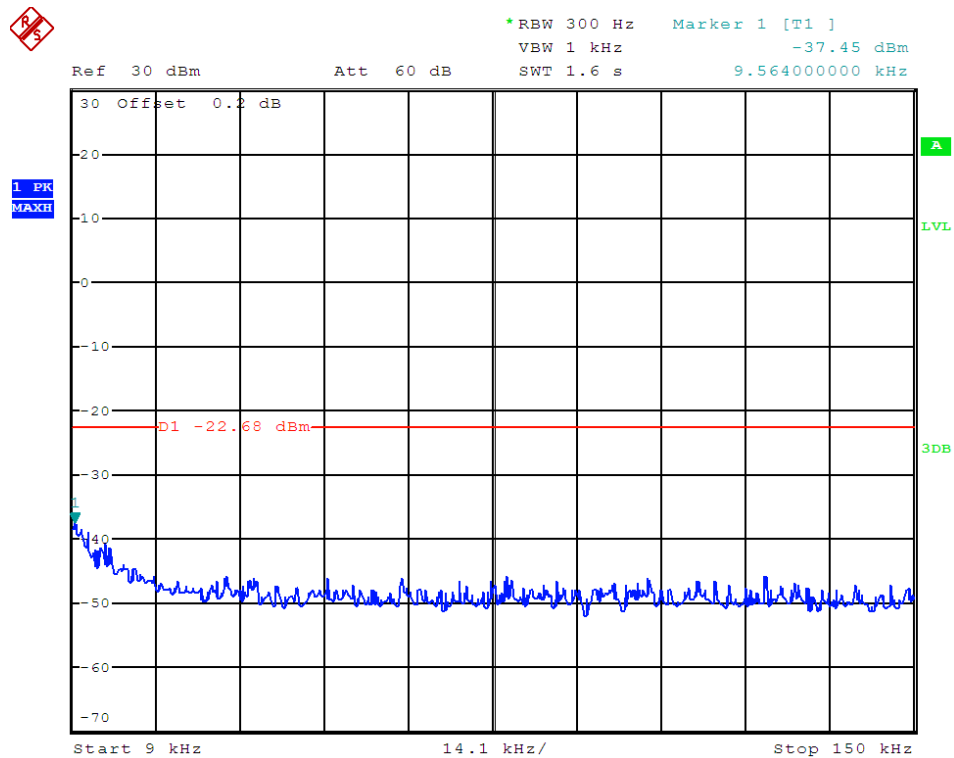


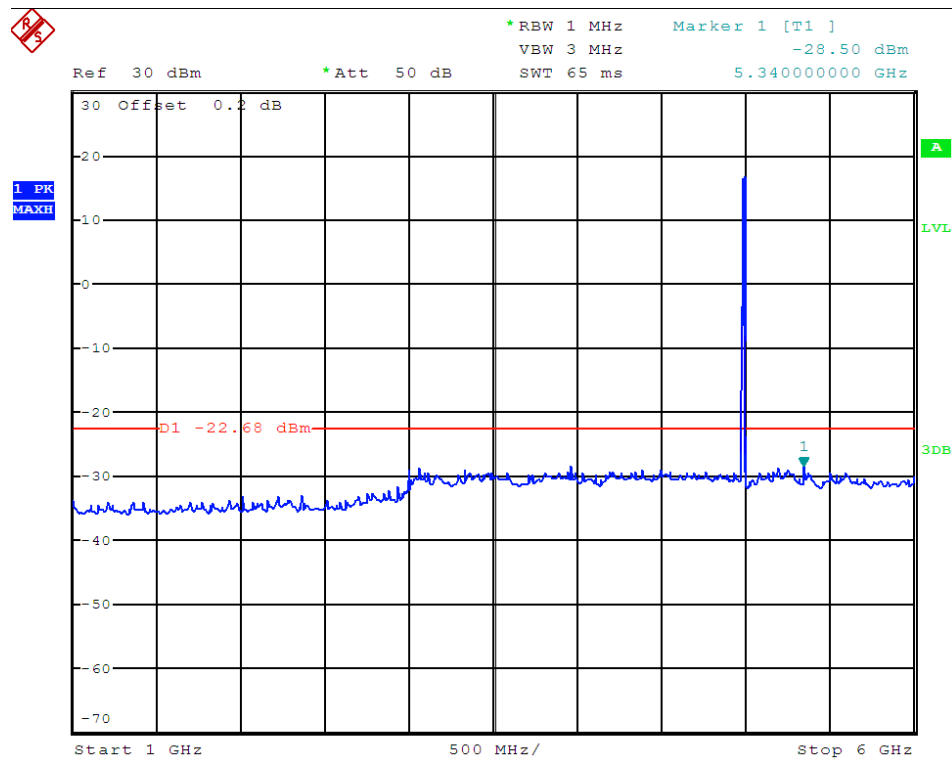
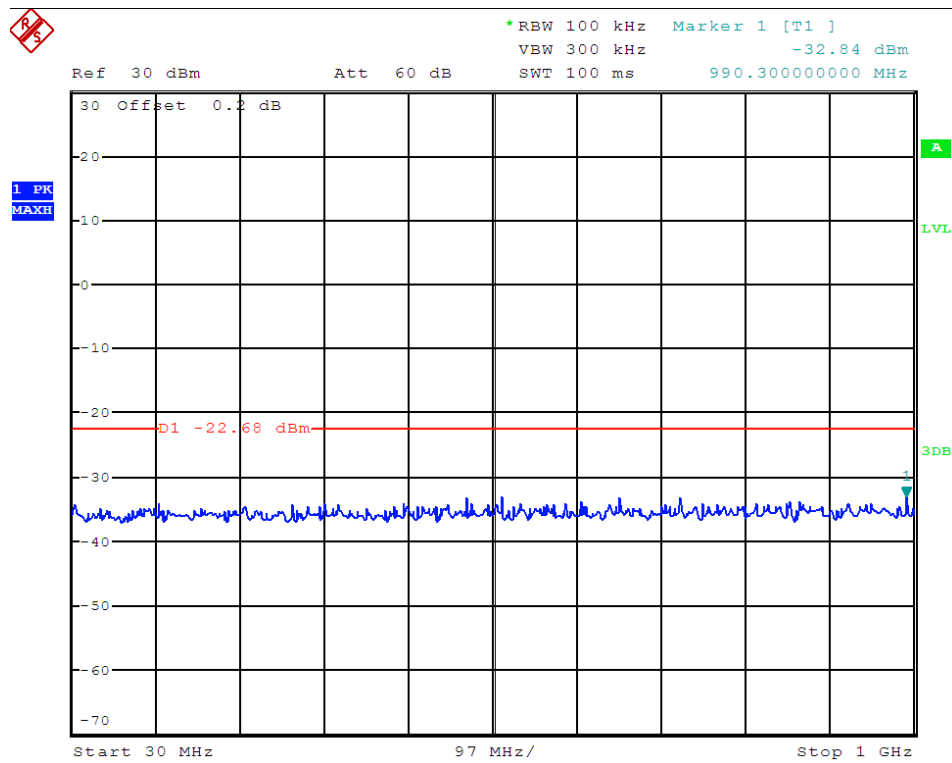
Middle Channel: 4965MHz





High Channel: 4980MHz





Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 6GHz are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

12. Radiated Spurious Emissions

12.1 Measurement Uncertainty

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is ± 5.10 dB.

12.2 Standard Applicable

According to § 90.210 Emission masks L:

On any frequency removed from the assigned frequency above 150% of the authorized bandwidth: 40 dB.

12.3 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
EMI Test Receiver	R&S	ESVB	825471/005	2013-05-07	2014-05-06
Pre-amplifier	Agilent	8447F	3113A06717	2013-05-07	2014-05-06
Pre-amplifier	Compliance Direction	PAP-0118	24002	2013-05-07	2014-05-06
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2013-04-20	2014-04-19
Horn Antenna	ETS	3117	00086197	2013-04-20	2014-04-19
Horn Antenna	ETS	3116B	00088203	2013-04-20	2014-04-19
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2013-04-20	2014-04-19

12.4 Test Procedure

The setup of EUT is according with per TIA-603-C measurement procedure. The specification used was with the FCC Part 15.205 15.407(b)(6) and FCC Part 15.209 Limit..

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

1. The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on the turntable.
2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT .The test was performed by placing the EUT on 3-orthogonal axis.
3. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the ERP were measured by the substitution.
4. Absolute level = substituted level + Antenna gain – Cable Loss

12.5 Test Receiver Setup

During the radiated emission test for above 1GHz, the test receiver was set with the following configurations:

For peak detector:

RBW = 1000kHz, VBW = 3000kHz, Sweep Time = Auto

12.6 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 90 Limit}$$

Channel Frequency MHz	Power Level dBm	Out of Band Emission Limit dBm
4950	27.57	-22.43
4965	27.43	-22.57
4980	27.32	-22.68

12.7 Environmental Conditions

Temperature:	22° C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

12.8 Summary of Test Results/Plots

According to the data below, the FCC Part 90 standards, and had the worst cases:

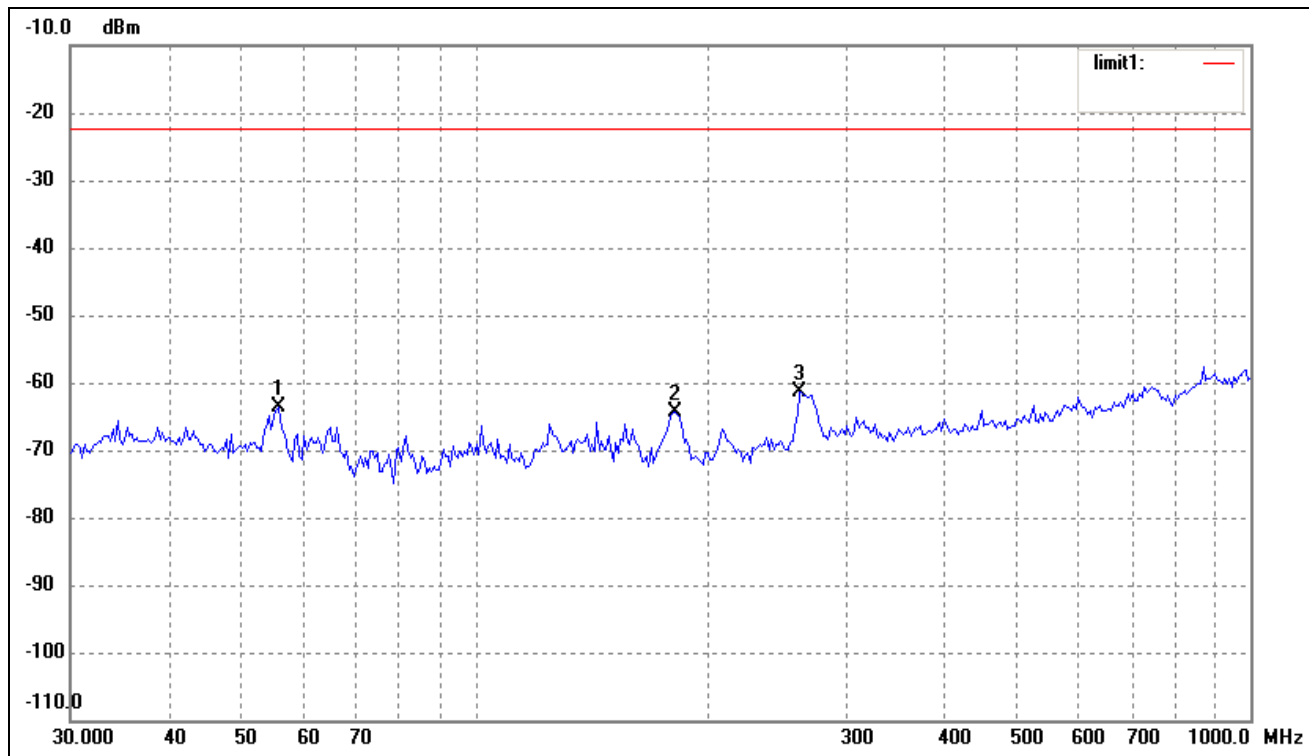
Note: *this EUT was tested in 3 orthogonal positions and the worst case position data was reported.*

Spurious Emission From 30 MHz to 1 GHz

Test mode: Low Channel 4950MHz

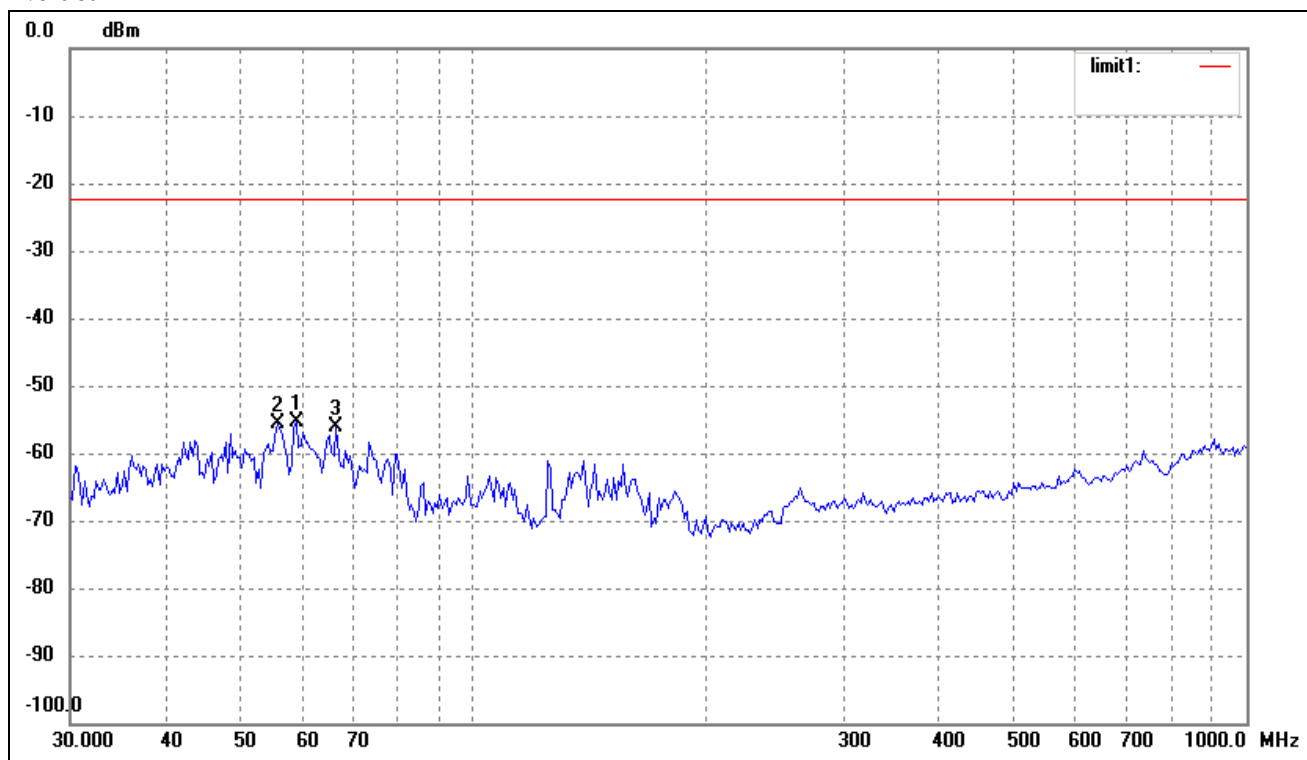
Comment:

Horizontal

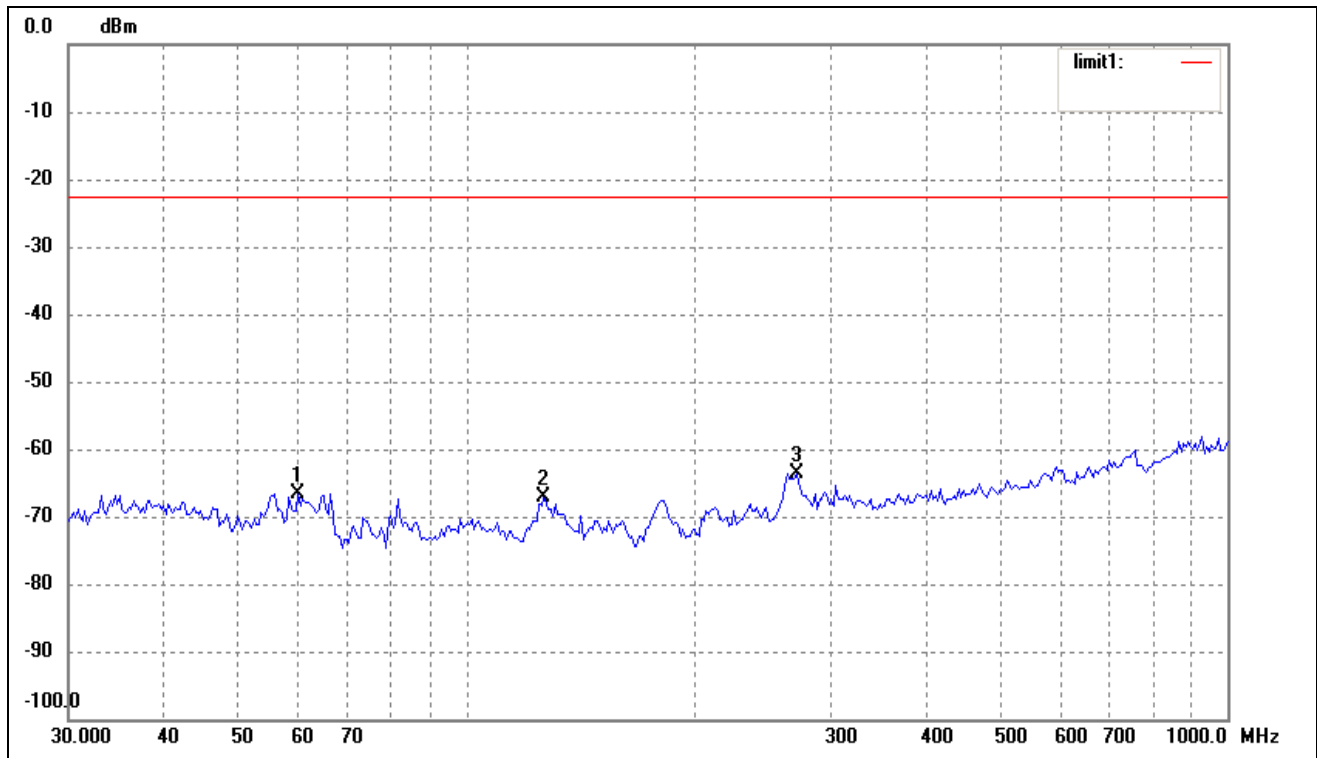


No.	Frequency (MHz)	Reading (dBm)	Correct Factor(dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	55.6094	-81.17	17.57	-63.60	-22.43	-41.17	ERP
2	180.6488	-78.88	14.58	-64.30	-22.43	-41.87	ERP
3	261.9753	-80.30	18.97	-61.33	-22.43	-38.90	ERP

Vertical

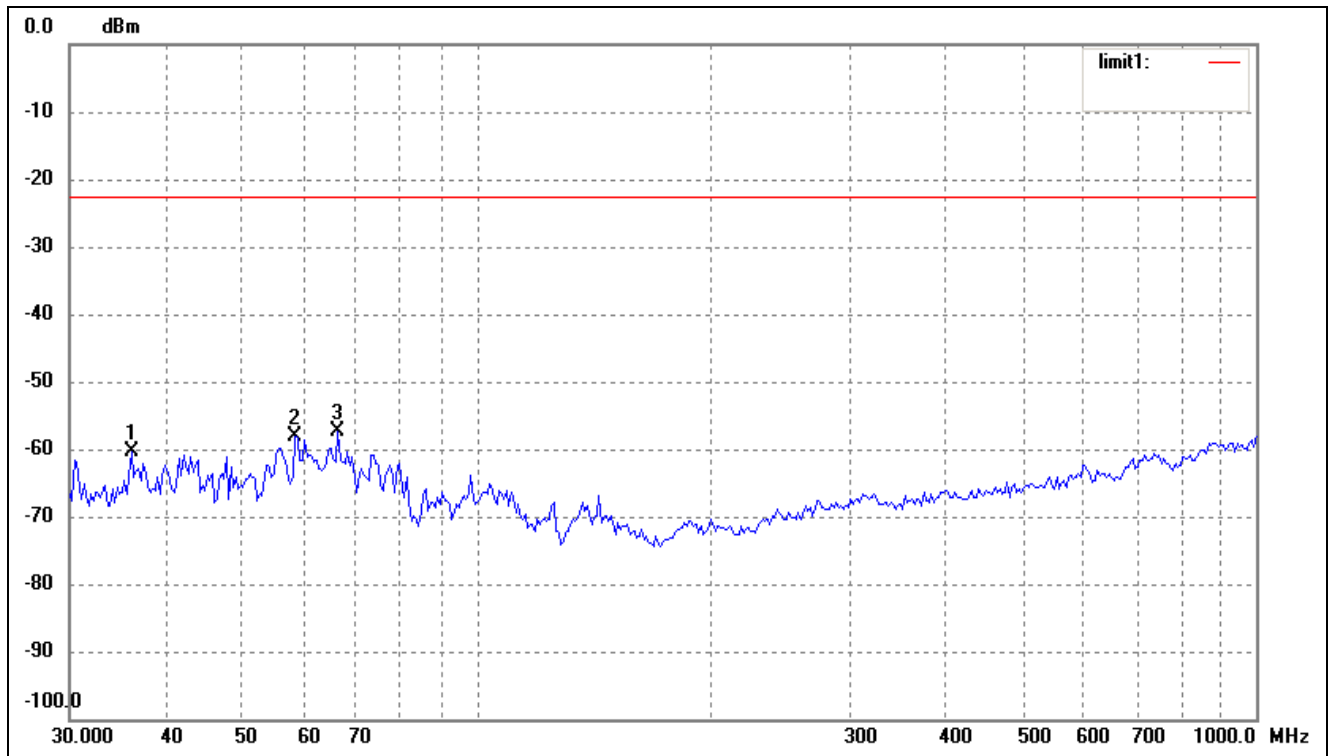


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	Factor(dB)	(dBm)	(dBm)	(dB)	
1	58.8185	-72.74	17.29	-55.45	-22.43	-33.02	ERP
2	55.6094	-73.28	17.57	-55.71	-22.43	-33.28	ERP
3	66.2662	-71.22	15.18	-56.04	-22.43	-33.61	ERP

*Spurious Emission From 30 MHz to 1 GHz**Test mode: Middle Channel 4965MHz**Comment:**Horizontal*

No.	Frequency (MHz)	Reading (dBm)	Correct Factor(dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	60.0691	-83.73	17.16	-66.57	-22.57	-44.00	ERP
2	126.3286	-82.53	15.30	-67.23	-22.57	-44.66	ERP
3	271.3246	-83.19	19.61	-63.58	-22.57	-41.01	ERP

Vertical



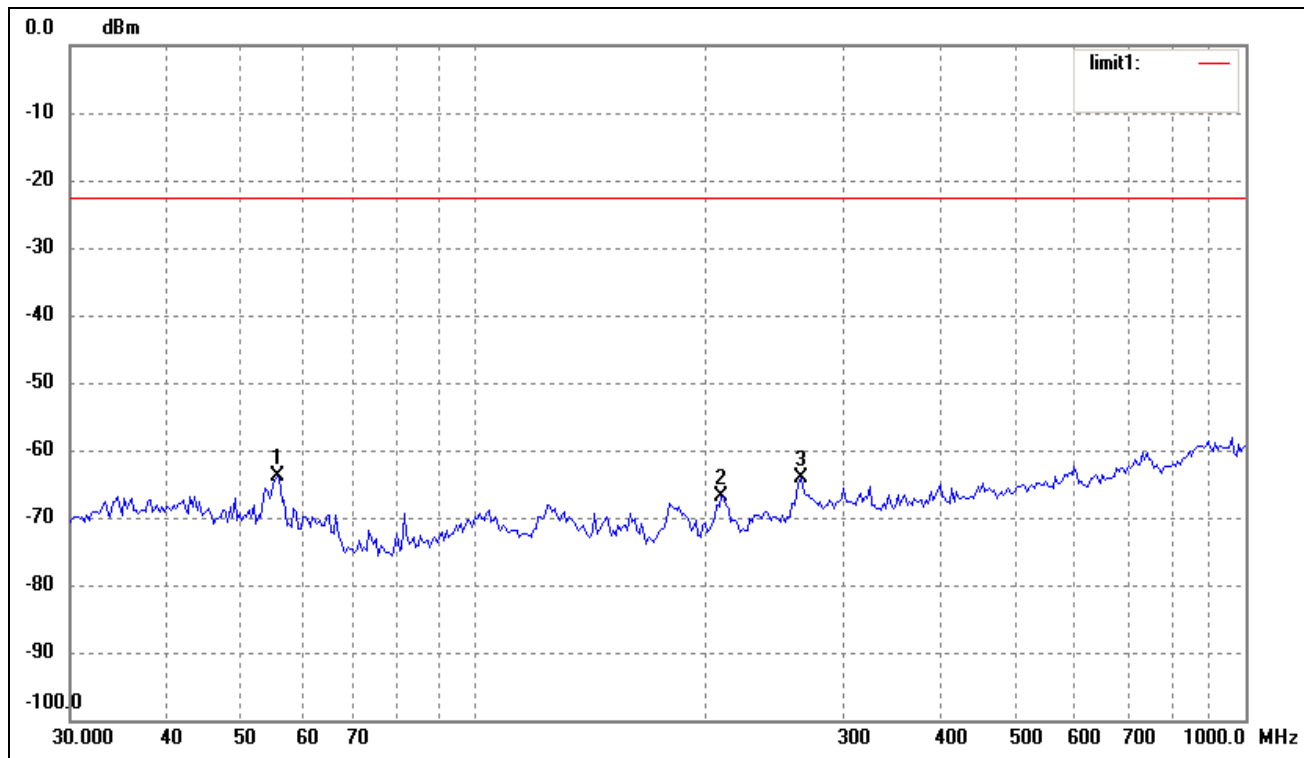
No.	Frequency (MHz)	Reading (dBm)	Correct Factor(dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	36.0007	-80.66	20.36	-60.30	-22.57	-37.73	ERP
2	58.4074	-75.34	17.31	-58.03	-22.57	-35.46	ERP
3	66.2661	-72.52	15.18	-57.34	-22.57	-34.77	ERP

Spurious Emission From 30 MHz to 1 GHz

Test mode: High Channel 4980MHz

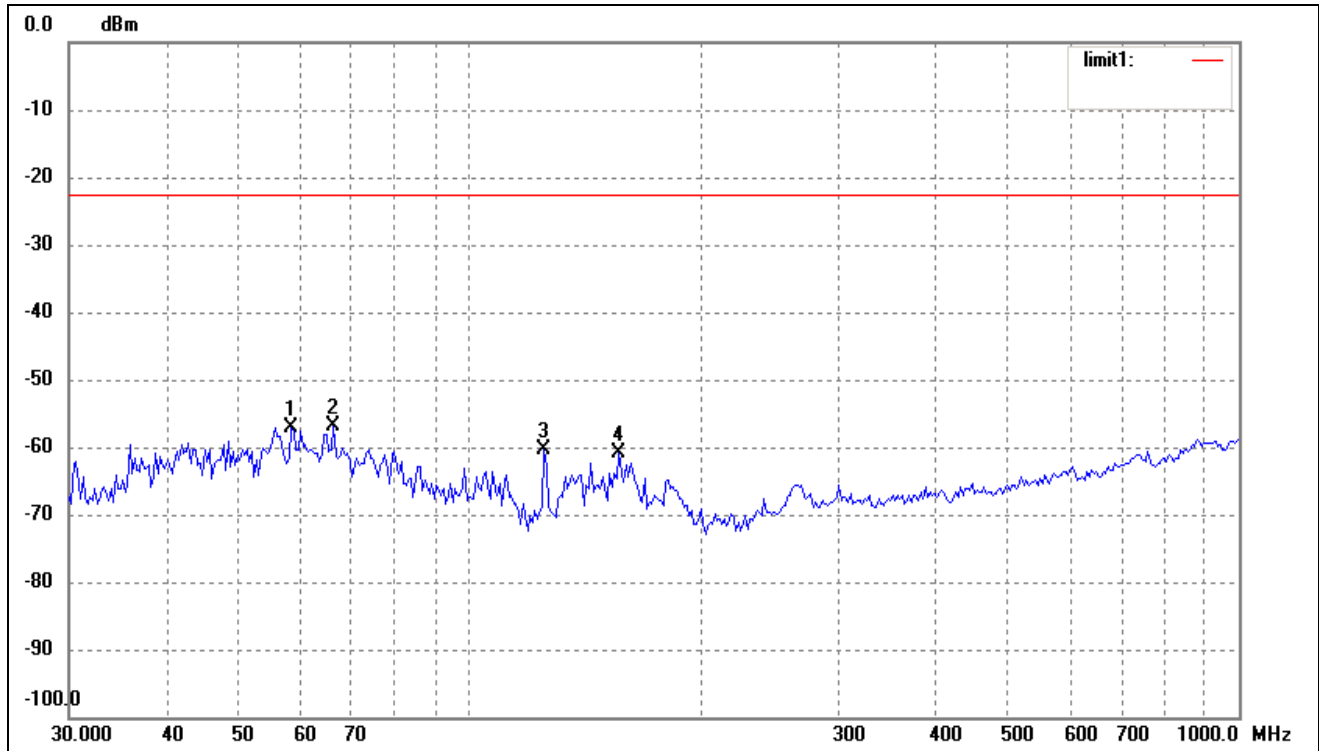
Comment:

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correct Factor(dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	55.6094	-81.41	17.57	-63.84	-22.68	-41.16	ERP
2	209.3129	-83.05	16.15	-66.90	-22.68	-44.22	ERP
3	265.6757	-83.34	19.23	-64.11	-22.68	-41.43	ERP

Vertical



No.	Frequency (MHz)	Reading (dBm)	Correct Factor(dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	58.4074	-74.33	17.31	-57.02	-22.68	-34.34	ERP
2	66.2662	-72.01	15.18	-56.83	-22.68	-34.15	ERP
3	124.5690	-75.94	15.45	-60.49	-22.68	-37.81	ERP
4	155.9101	-75.18	14.37	-60.81	-22.68	-38.13	ERP

Spurious Emission

Frequency	Reading	Correct	Polarization	Result	Limit	Margin
(MHz)	(dBm)	Factor(dB)	H/V	(dBm)	(dBm)	(dB)
Low Channel: 4950MHz						
9900.000	-61.75	21.13	H	-40.62	-22.43	-18.19
14850.000	-68.27	24.72	H	-43.55	-22.43	-21.12
9900.000	-60.71	21.13	V	-39.58	-22.43	-17.15
14850.000	-67.05	24.72	V	-42.33	-22.43	-19.90
Middle Channel: 4965MHz						
9930.000	-61.05	21.18	H	-39.87	-22.57	-17.30
14895.000	-68.08	24.75	H	-43.33	-22.57	-20.76
9930.000	-59.97	21.18	V	-38.79	-22.57	-16.22
14895.000	-66.00	24.75	V	-41.25	-22.57	-18.68
High Channel: 4980MHz						
9960.000	-60.77	21.23	H	-39.54	-22.68	-16.86
14940.000	-68.91	24.79	H	-44.12	-22.68	-21.44
9960.000	-60.85	21.23	V	-39.62	-22.68	-16.94
14940.000	-68.37	24.79	V	-43.58	-22.68	-20.90

*Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
The measurements greater than 20dB below the limit from 9kHz to 30MHz and the data is not report.*

******* END OF REPORT *******