Test Report Serial Number:	45461373R1.0
Test Report Date:	17 November 2016
Project Number:	1363

EMC Test Report - New Filing

Applicant:

Uniden America Corporation
3001 Gateway Drive
Suite 130
Irving, Tx, 75063, USA

FCC ID:	IC Registration Number
AMWUT392	513C-UT392
Product Model Number / HVIN	**Product Name / PMN**
CMX560	CMX560

In Accordance With:

FCC 47 CFR Part 95 Subpart D, Part 15 Subpart B
Licensed Non-Broadcast Station Transmitter (TNB)

SS-GEN, RSS-236 Issue 1
Citizen Band (26.960 to 27.410 MHz)

Approved By:

Ben Hewson, President
Celltech Labs Inc.
21-364 Lougheed Rd.
Kelowna, BC, V1X 7R8
Canada

Test Lab Certificate: 2470.01 **IC Registration 3874A-1** **FCC Registration: 714830**

Table of Contents

1.0 DOCUMENT CONTROL

Tested By:	**Art Voss**
Prepared By:	**Art Voss**
Reviewed By:	**Ben Hewson**

Issue Number	Description	By	Issue Date
1.0	Initial Release	Art Voss	17 November 2016

2.0 TEST RESULT SUMMARY

TEST SUMMARY

Referenced Standard(s): FCC CFR Title 47 Parts 2, 95D, 15B

Section	Description of Test	Procedure Reference	Applicable Rule Part(s) FCC	Applicable Rule Part(s) ISEDC	Test Date	Result
8	Conducted Power (Fundemental)	ANSI/TIA/EIA-382-A ANSI C63.4:2014	§2.1046 §95.639	RSS-Gen RSS-236 5.2	15 Nov 2016	Pass
9	Modulation Response	ANSI/TIA/EIA-603-D ANSI C63.4:2014	§2.1047 §95.637	RSS-Gen	15 Nov 2016	Pass
10	Occupied Bandwidth	ANSI/TIA/EIA-603-D ANSI C63.4:2014	§2.1049 §95.633	RSS-Gen RSS-236 5.3.2	15 Nov 2016	Pass
	Emission Mask	ANSI/TIA/EIA-603-D ANSI C63.4:2014	§2.1049 §95.635	RSS-Gen RSS-236 5.4.4	15 Nov 2016	Pass
11	Conducted TX Spurious Emissions	ANSI/TIA/EIA-603-D ANSI C63.4:2014	§2.1051 §95.635	RSS-Gen RSS-236 5.4.4	15 Nov 2016	Pass
12	Radiated TX Spurious Emissions	ANSI/TIA/EIA-603-D ANSI C63.4:2014	§2.1053 §95.635	RSS-Gen RSS-236 5.4.4	16 Nov 2016	Pass
13	Radiated Receiver Emissions	ANSI C63.4:2014	§15 Subpart B	§15 Subpart B	16 Nov 2016	Pass
14	Frequency Stability	ANSI/TIA/EIA-603-D ANSI C63.4:2014	§2.1055 §95.625	RSS-Gen	16 Nov 2016	Pass

3.0 PASS/FAIL CRITERIA

Pass / Fail Criteria
Unless otherwise noted in the Appendices, the pass/fail criteria is the limit set forth in the reference standards. The DUT is considered to have passed the requirements if the measurement and test results obtained during the described measurement procedure is no greater than the specified limits as defined. The pass/fail statements made in this report only apply to the unit tested.

I attest that the data reported herein is true and accurate within the tolerance of the Measurement Instrument Uncertainty; that all tests and measurements were performed in accordance with accepted practices or procedures; and that all tests and measurements were performed by me or by trained personnel under my direct supervision. The results of this investigation are based solely on the test sample(s) provided by the client which were not adjusted, modified or altered in any manner whatsoever, except as required to carry out specific tests or measurements. This test report has been completed in accordance with ISO/IEC 17025.	Art Voss, P.Eng. Technical Manager Celltech Labs Inc. 17 November 2016 Date

4.0 SCOPE

Scope
This report outlines the measurements made and results collected during electromagnetic emissions testing of the: **Uniden America Corporation, Model CMX560, FCC ID: AMWUT392, ISEDC ID: 513C-UT392** The measurement results were applied against the applicable EMC requirements and limits outlined in the technical rules and regulations set forth in the Federal Communication's Commission Code of Federal Regulations Title 47 Part 2, Part 15 Subpart B and Part 95D and Industry Canada Spectrum Management & Telecommunications Policy RSS-Gen and RSS-236.

5.0 NORMATIVE REFERENCES

Normative References	
ANSI / ISO 17025:2005	General Requirements for competence of testing and calibration laboratories
IEEE/ANSI C63.4:2014	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI/TIA/EIA-382-A	Minimum Standards - Citizens Band Radion Service Amplitude Modulated (AM) Transceivers Operating in the 27MHz Band
CFR Title 47 Part 2	Code of Federal Regulations Title 47: Telecommunication Part 2: Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
CFR Title 47 Part 95D	Code of Federal Regulations Title 47: Telecommunication Part 95D: Citizens Band (CB) Radio Service
CFR Title 47 Part 15	Code of Federal Regulations Title 47: Telecommunication Part 15: Radio Frequency Devices Subpart B: Unintensional Radiators
Industry Canada Spectrum Management & Telecommunications Policy RSS-Gen Issue 4:	General Requirements and Information for the Certification of Radiocommunication Equipment
Industry Canada Spectrum Management & Telecommunications Policy RSS-236 Issue 1:	General Radio Service Equipment Operating in the Band 26.960 to 27.410 MHz (Citizens Band)

6.0 FACILITIES AND ACCREDITATIONS

Facility and Accreditation
The facilities used to evaluate this device outlined in this report are located at 21-364 Lougheed Road, Kelowna, British Columbia, Canada V1X 7R8. The radiated emissions site conforms to the requirements set forth in ANSI C63.4 and is filed and listed with the FCC under Test Firm Registration Number 714830 and Industry Canada under Test Site File Number IC 3874A-1. Celltech is accredited to ISO 17025, through accrediting body A2LA and with certificate 2470.01.

7.0 CLIENT AND DEVICE INFORMATION

Client Information	
Applicant Name	**Uniden America Corporation**
Applicant Address	3001 Gateway Drive, Suite 130
	Irving, TX, 75063
	USA
DUT Information	
Device Identifier(s):	**FCC ID:** AMWUT392
	ISEDC ID: 513C-UT392
Device Type:	Mobile CB Radio Transceiver
Type of Equipment:	Analog Transceiver
Device Model(s) / HVIN:	CMX560
Device Marketing Name / PMN:	CMX560
Firmware Version ID Number / FVIN:	n/a
Host Marketing Name / HMN:	n/a
Test Sample Serial No.:	T/A Sample - Identical Prototype
Transmit Frequency Range:	26.965 - 27.405 MHz (Chan. 1-40)
Number of Channels:	40
Manuf. Max. Rated Output Power:	4.0W AM
Manuf. Max. Rated BW/Data Rate:	n/a
Antenna Make and Model:	n/a
Antenna Type and Gain:	External Whip, 0dBi nominal (3dBi maximum).
Modulation:	AM
Mode:	n/a
Emission Designator:	5K50A3E
DUT Power Source:	12 VDC External
Deviation(s) from standard/procedure:	None
Modification of DUT:	None

8.0 CONDUCTED POWER

8.1 Test Equipment and Setup

Test Conditions	
Normative Reference	FCC 47 CFR §2.1046, §95D, RSS-236

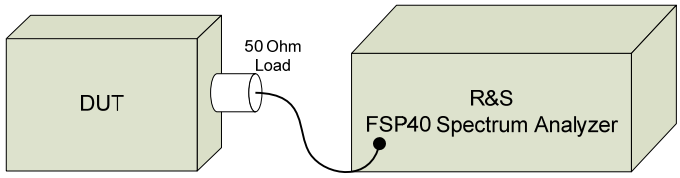
Limits	
47 CFR §65.639	No CB transmitter, under any condition of modulation, shall exceed: (1) 4 W Carrier power when transmitting emission type A1D or A3E;

Environmental Conditions (Typical)	
Temperature	25°C
Humidity	<60%
Barometric Pressure	101 +/- 3kPa

Equipment List

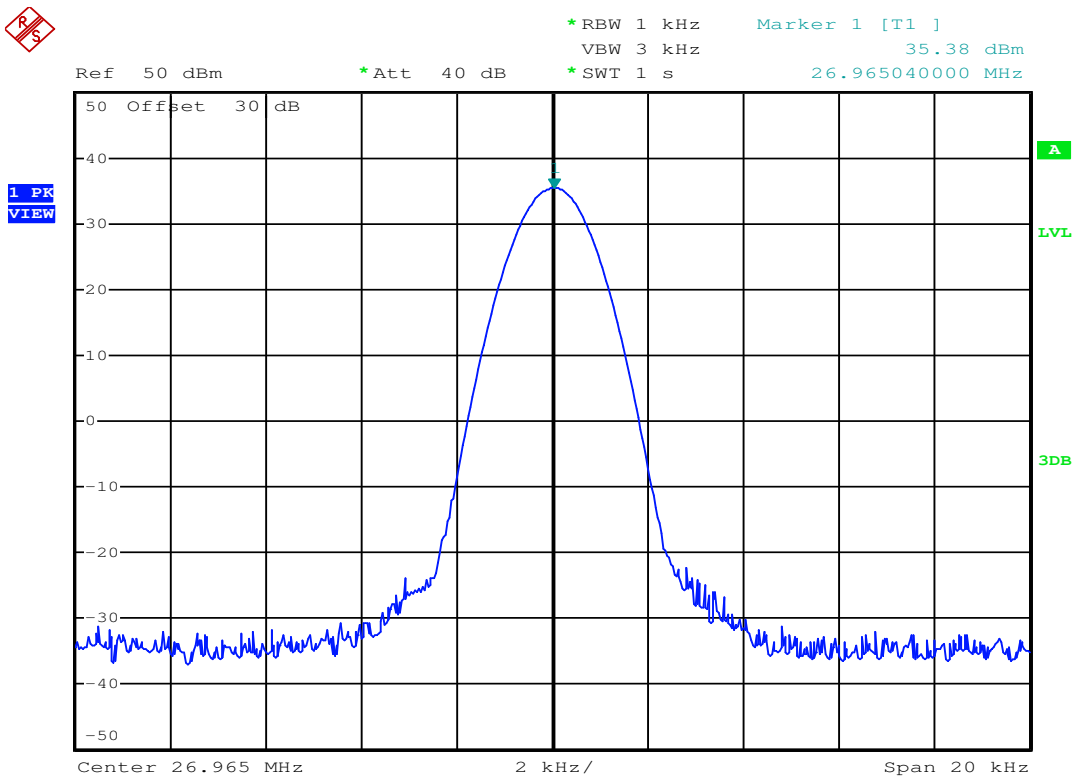
Asset Number	Manufacturer	Model Number	Description
00241	R&S	FSU40	Spectrum Analyzer

Set-Up Drawing



8.2 Conducted Power Measurement Plots

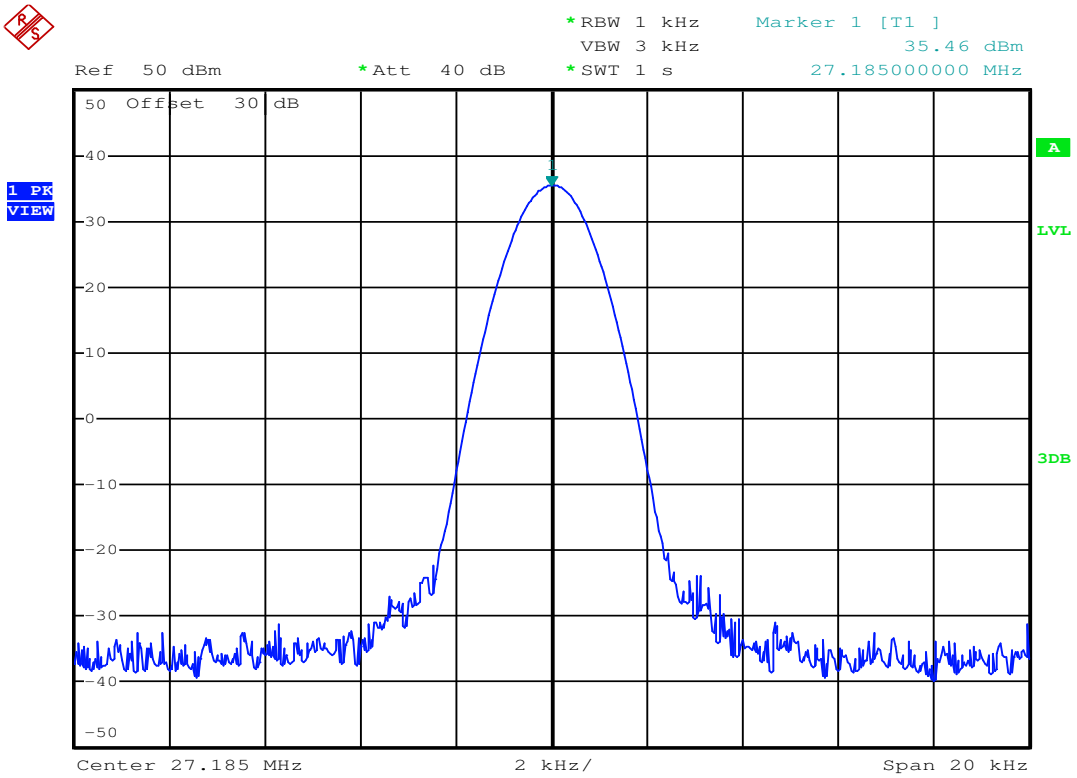
Conducted Power Ch 1



Date: 15.NOV.2016 11:21:59

Channel Frequency:	**26.965MHz**
Modulation:	**CW**
Peak Power:	**35.4dBm**

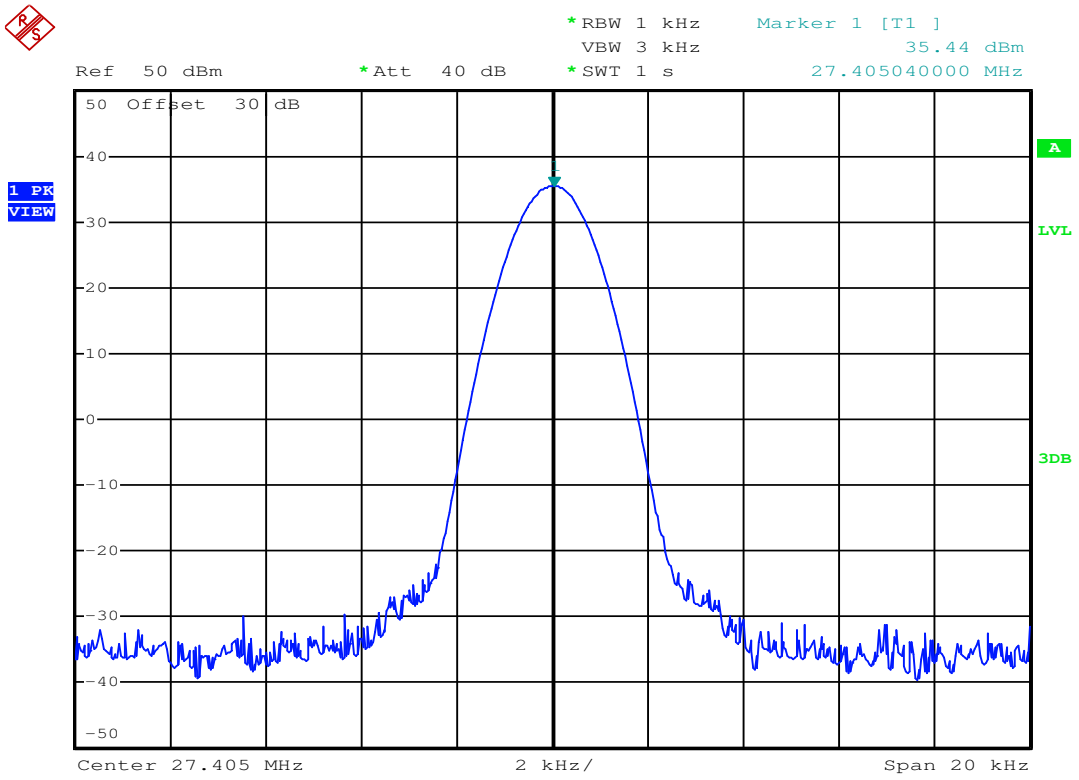
Conducted Power Ch 19



Date: 15.NOV.2016 11:23:01

Channel Frequency:	**27.185MHz**
Modulation:	**CW**
Peak Power:	**35.5dBm**

Conducted Power Ch 40



Date: 15.NOV.2016 11:24:03

Channel Frequency:	**27.405MHz**
Modulation:	**CW**
Peak Power:	**35.4dBm**

8.3 Conducted Power Measurement Summary

Conducted Power Measurement	
Method of Measurement: The RF power is measured with a 50 ohm resistive watt-meter connected at the EUT's RF output connector. Nomiminal DC power of 13.8VDC is applied.	
Measured Output Power (Ch 1):	3.47W (35.4dBm)
Measured Output Power (Ch 19):	3.55W (35.5dBm)
Measured Output Power (Ch 40):	3.47W (35.4dBm)
FCC CFR 47 §2.1033(c)(8): Power to Transmitter:	I_{Rx} = 0.320A, I_{Tx} =1.06A
	$I_{Xmitter}$ = 0.74A
	(13.8VDC)(0.74) = 10.2W
Manufacturer's Rated Output Power:	4.0W
FCC/IC Limit:	4.0W
Result:	**Complies**

9.0 MODULATION CHARACTERISTICS

9.1 Test Equipment and Setup

Test Conditions	
Normative Reference	FCC 47 CFR §2.1047, Part 95D, 95.637, RSS-236, 5.3.2

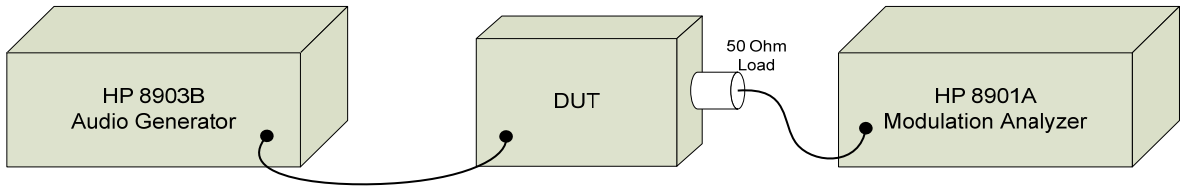
Limits	
FCC §2.1047	a) Voice modulated communication equipment. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted.

Environmental Conditions (Typical)	
Temperature	25°C
Humidity	<60%
Barometric Pressure	101 +/- 3kPa

Equipment List

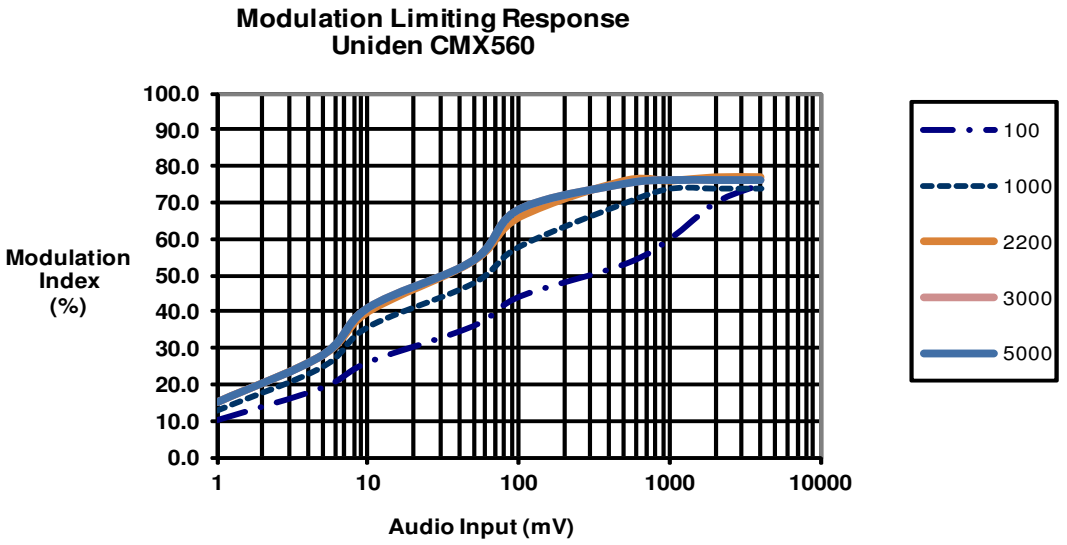
Asset Number	Manufacturer	Model Number	Description
00223	HP	8901A	Modulation Analyzer
00224	HP	8903B	Audio Generator

Set-Up Drawing



9.2 Modulation Limiting Response

Modulation Limiting Response



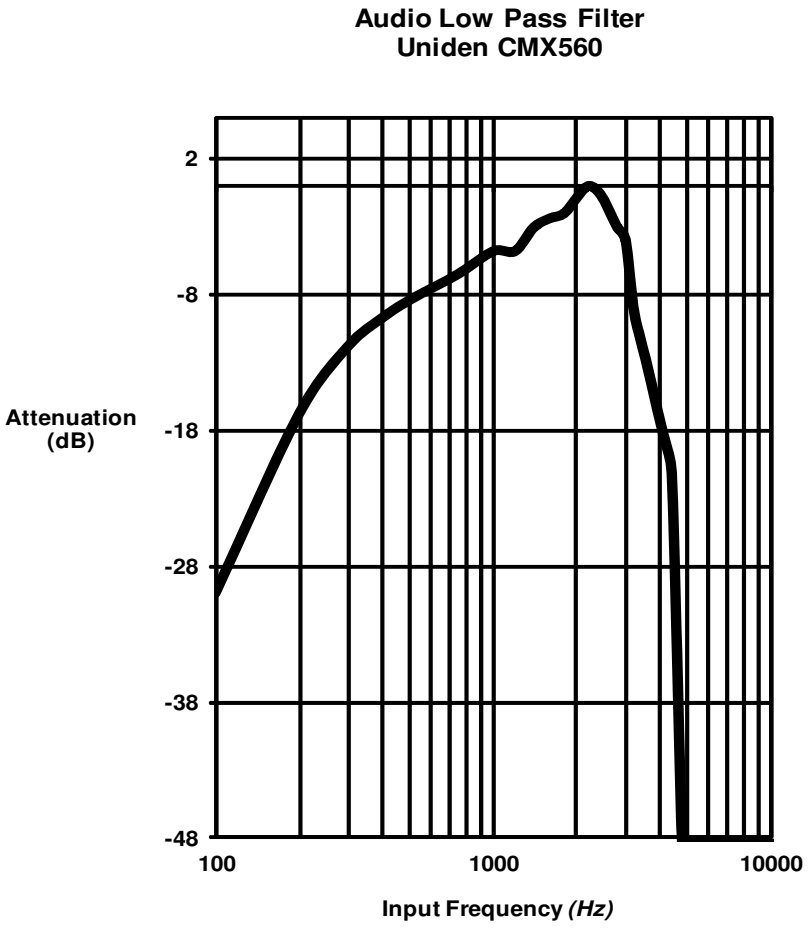
Measured Modulation Response [Modulation Index (%)]									
Freq (Hz)	Audio Input (mV)								
	1	5	10	50	100	500	1000	2000	4000
100	10.0	19.0	26.0	36.0	44.0	53.0	60.0	70.0	75.0
1000	13.0	25.0	36.0	48.0	58.0	70.0	74.0	74.0	74.0
2200	15.0	28.0	40.0	54.0	66.0	76.0	76.0	77.0	77.0
3000	15.0	28.0	41.0	54.0	68.0	75.0	76.0	76.0	76.0
5000	15.0	28.0	41.0	54.0	68.0	75.0	76.0	76.0	76.0

Audio Frequency @ Maximum Audio Response:	2200Hz
Audio Input @ Maximum Audio Response (Reference Level):	1.9mV
Audio Input @ 40dB Above Reference Level:	190mV
Audio Input @ Maximum Modulation Index:	2000mV
Maximum Measured Modulation Index:	77%
Result:	Complies

9.3 Audio and Low Pass Filter Response

Audio Response/Audio Low Pass Filter Response

Measured Audio Response @ 50% Modulation Index		
Freq	Audio Input	Attenuation
(Hz)	*(mV)*	*(dB)*
100	59.8	-30.0
200	13.1	-16.8
300	7.4	-11.8
400	5.8	-9.7
500	5.0	-8.4
750	4.0	-6.5
1000	3.3	-4.8
1200	3.3	-4.8
1400	2.7	-3.1
1600	2.5	-2.4
1800	2.4	-2.0
2000	2.1	-0.9
2200	1.9	0.0
2400	2.0	-0.4
2600	2.3	-1.7
2800	2.7	-3.1
3000	3.0	-4.0
3200	5.3	-8.9
3400	7.0	-11.3
3600	8.8	-13.3
3800	11.2	-15.4
4000	14.1	-17.4
4200	17.0	-19.0
4400	21.5	-21.1
4600	100.0	-34.4
4800	500.0	-48.4
5000	500.0	-48.4
7500	500.0	-48.4
10000	500.0	-48.4
15000	500.0	-48.4
20000	500.0	-48.4
*** Normalize to 2200Hz**		



Note: 50% MI could not be achieved at 4800Hz and above.

Audio Frequency @ Maximum Audio Response:	2200Hz
Audio Input @ Maximum Audio Response (Reference Level):	1.9mV
Cut-Off Frequency @ > -6dB:	**3100 Hz**
Result:	**Complies**

10.0 OCCUPIED BANDWIDTH AND EMISSION MASK

10.1 Test Equipment and Setup

Test Conditions	
Normative Reference	FCC 47 CFR §2.1049, §95.633, RSS-210 A6

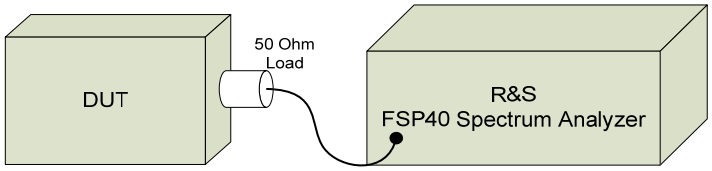
Limits	
47 CFR §2.1049	The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured…

Environmental Conditions (Typical)	
Temperature	25°C
Humidity	<60%
Barometric Pressure	101 +/- 3kPa

Equipment List

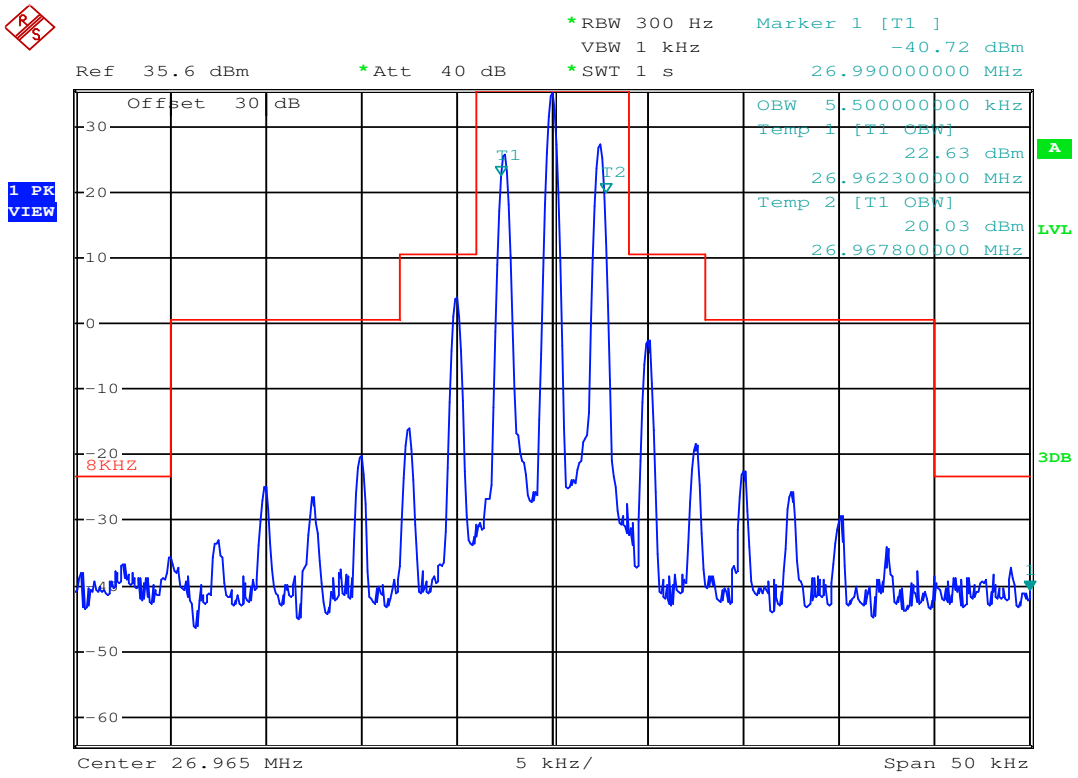
Asset Number	Manufacturer	Model Number	Description
00241	R&S	FSU40	Spectrum Analyzer

Set-Up Drawing



10.2 OBW Measurement Plots

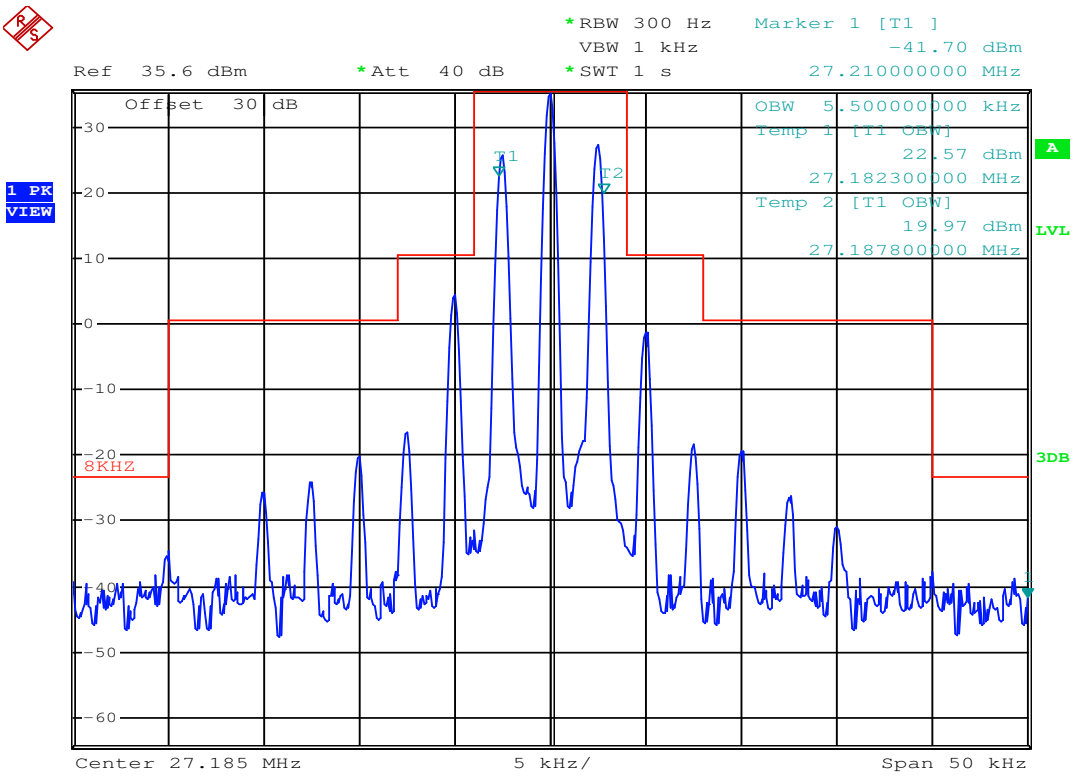
Occupied Bandwidth



Date: 15.NOV.2016 13:13:52

Channel Frequency (Ch 1):	26.965MHz
Modulation:	CW
Audio Input Frequency:	2.5kHz
Audio Input Level: >16dB Level @ 50% Modulation:	15mV
Emission Designator:	A3E
Authorized Bandwidth (§95.633):	8kHz
Measured Occupied Bandwidth (99%):	**5.5kHz**
Result:	**Complies**

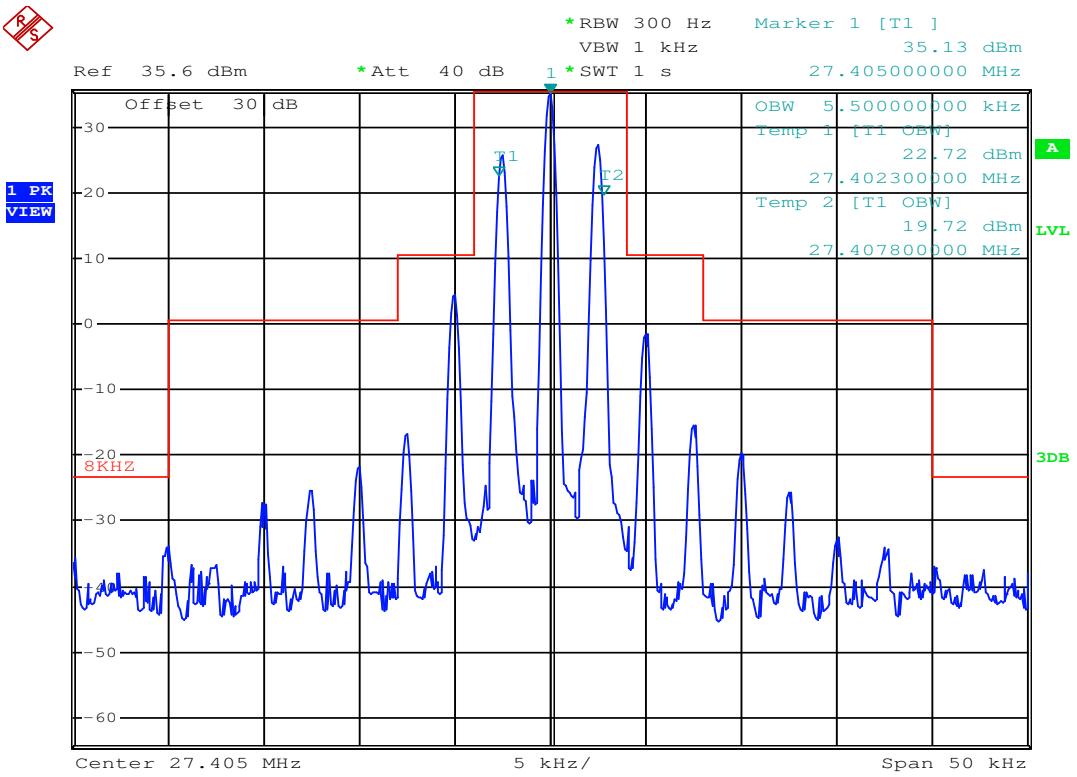
Occupied Bandwidth



Date: 15.NOV.2016 13:13:01

Channel Frequency (Ch 19):	27.185MHz
Modulation:	CW
Audio Input Frequency:	2.5kHz
Audio Input Level: >16dB Level @ 50% Modulation:	15mV
Emission Designator:	A3E
Authorized Bandwidth (§95.633):	8kHz
Measured Occupied Bandwidth (99%):	**5.5kHz**
Result:	**Complies**

Occupied Bandwidth



Date: 15.NOV.2016 13:10:52

Channel Frequency (Ch 40):	27.405MHz
Modulation:	CW
Audio Input Frequency:	2.5kHz
Audio Input Level: >16dB Level @ 50% Modulation:	15mV
Emission Designator:	A3E
Authorized Bandwidth (§95.633):	8kHz
Measured Occupied Bandwidth (99%):	**5.5kHz**
Result:	**Complies**

11.0 CONDUCTED SPURIOUS EMISSIONS

11.1 Test Equipment and Setup

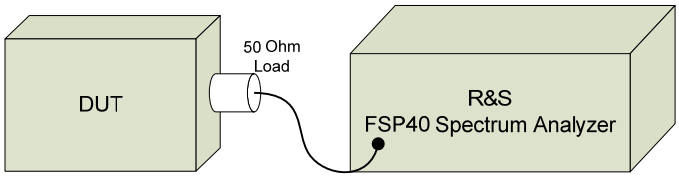
Test Conditions	
Normative Reference	FCC 47 CFR §95.635, RSS-236

Limits	
§95.635(1), (3), (8), (9)	(1) At least 25 dB (decibels) on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 100% of the authorized bandwidth. (2) At least 35 dB on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 150% of the authorized bandwidth. (8) At least 53 + 10 log10 (T) dB on any frequency removed from the center of the authorized bandwidth by more than 250%. (9) At least 60 dB on any frequency twice or greater than twice the fundamental frequency.
Environmental Conditions (Typical)	
Temperature	25°C
Humidity	<60%
Barometric Pressure	101 +/- 3kPa

Equipment List

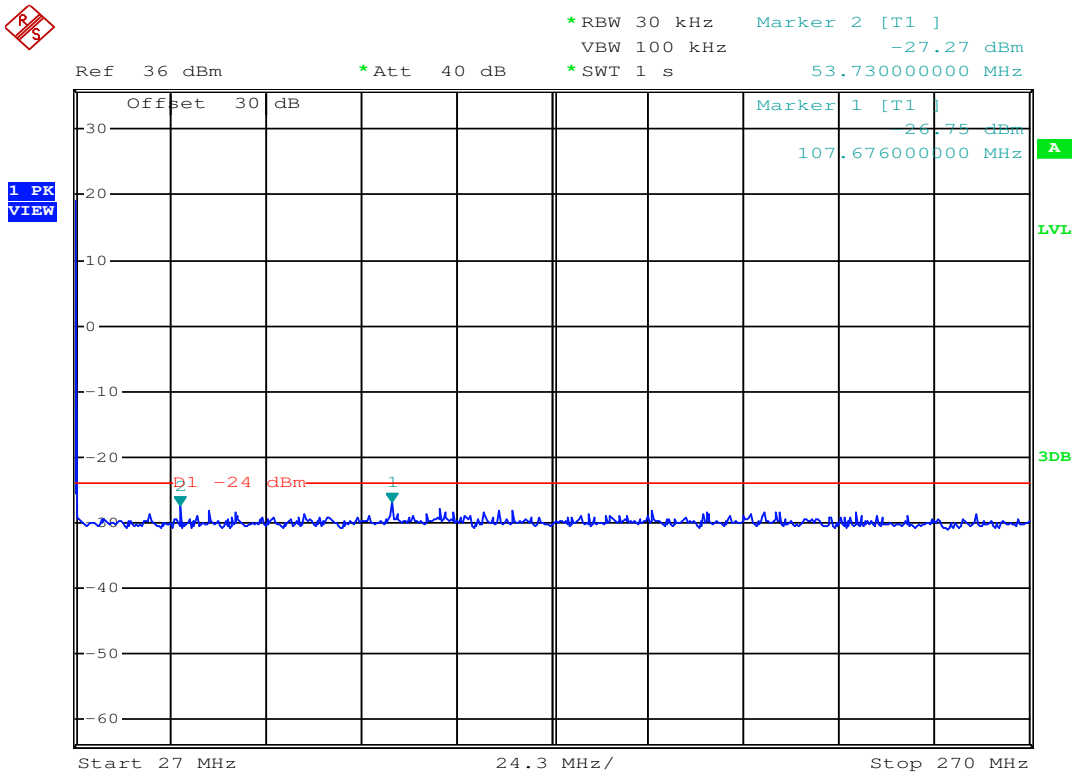
Asset Number	Manufacturer	Model Number	Description
00241	R&S	FSU40	Spectrum Analyzer

Set-Up Drawing



11.2 Conducted Emissions Measurement Plots

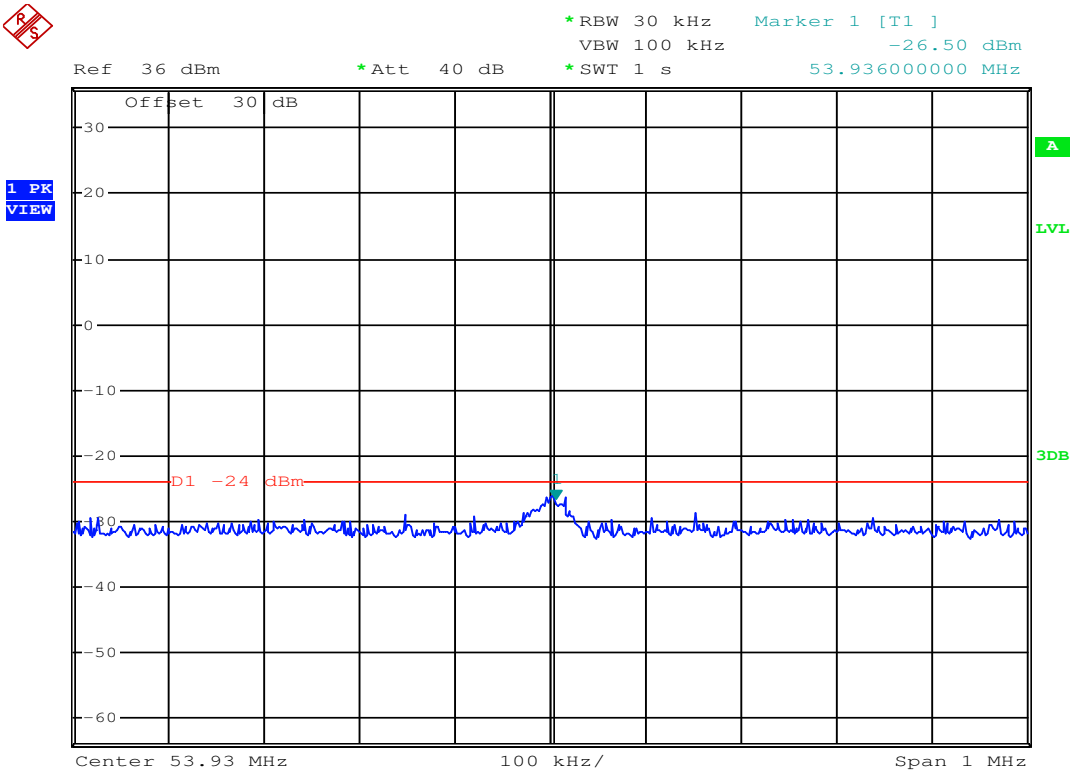
Conducted Spurious Emissions



Date: 15.NOV.2016 15:28:38

Frequency Span (> 10th Harmonic):	27MHz to 270MHz
Channel Frequency (Ch 1):	26.965MHz
Modulation:	None

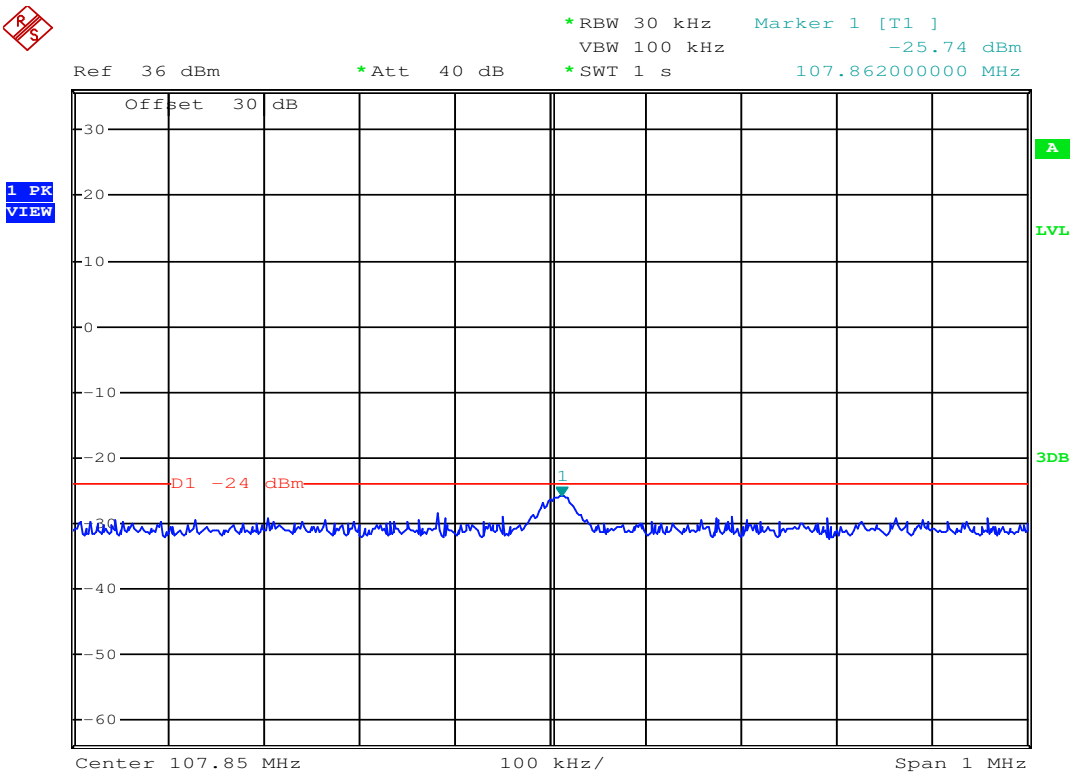
Conducted Spurious Emissions



Date: 15.NOV.2016 15:38:53

Emission Frequency (2nd Harmonic):	53.93MHz
Emission Level:	-26.5dBm
Channel Frequency (Ch 1):	26.965MHz
Modulation:	None

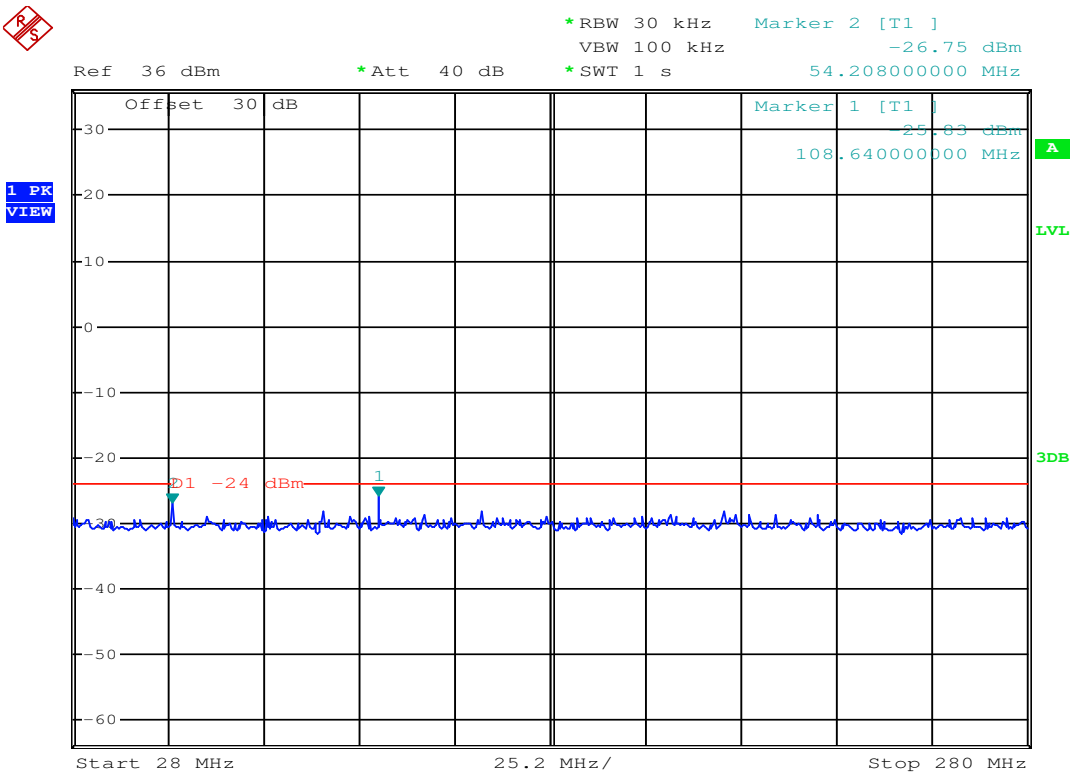
Conducted Spurious Emissions



Date: 15.NOV.2016 15:40:26

Emission Frequency (4th Harmonic):	107.86MHz
Emission Level:	-25.7dBm
Channel Frequency (Ch 1):	26.965MHz
Modulation:	None

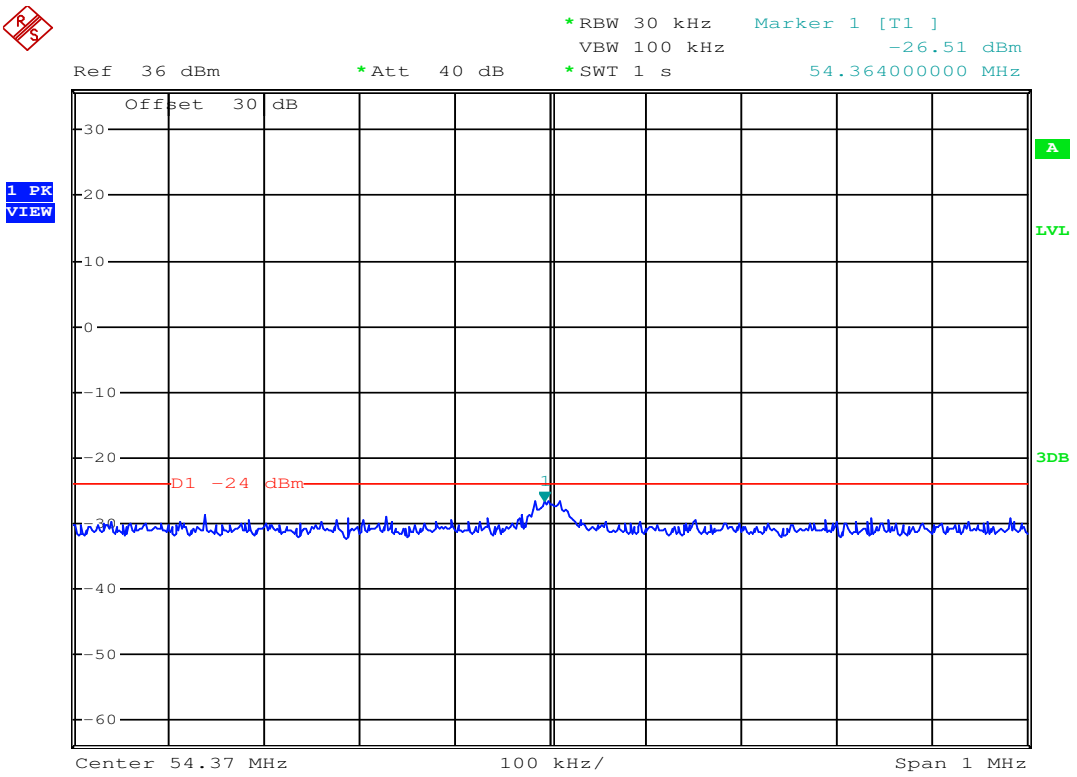
Conducted Spurious Emissions



Date: 15.NOV.2016 15:30:58

Frequency Span (> 10th Harmonic):	28MHz to 280MHz
Channel Frequency (Ch 19):	27.185MHz
Modulation:	None

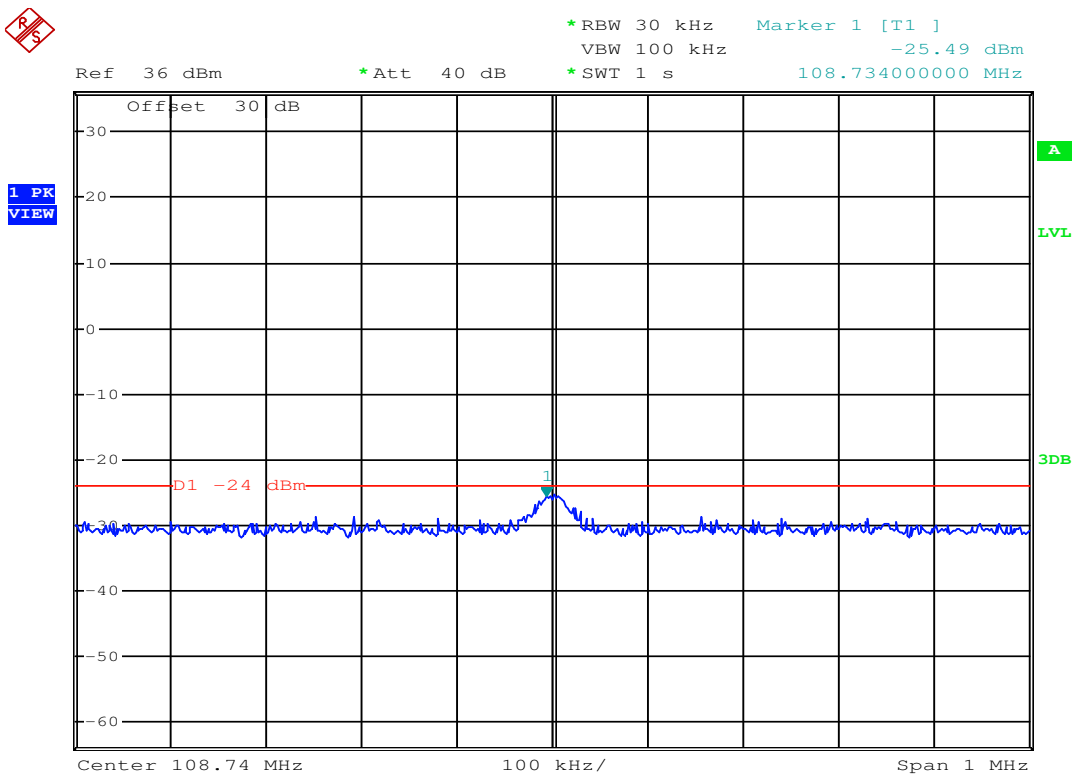
Conducted Spurious Emissions



Date: 15.NOV.2016 15:41:31

Emission Frequency (2nd Harmonic):	54.37MHz
Emission Level:	-26.5dBm
Channel Frequency(Ch 19):	27.185MHz
Modulation:	None

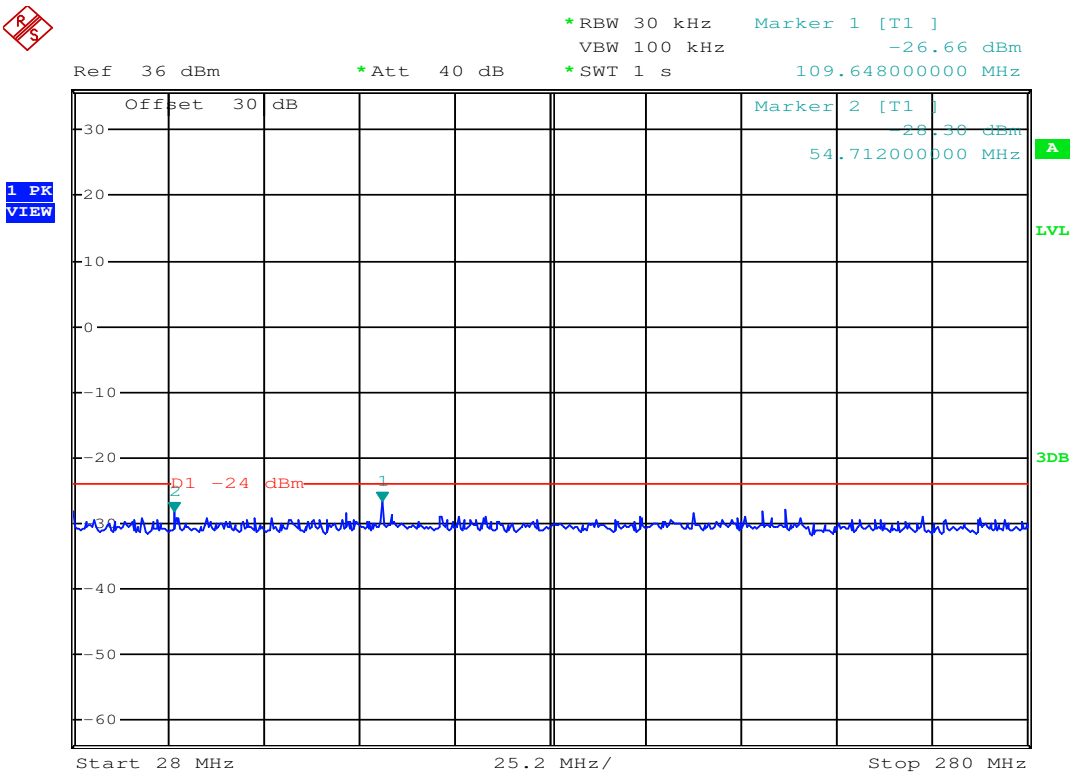
Conducted Spurious Emissions



Date: 15.NOV.2016 15:43:01

Emission Frequency (4th Harmonic):	108.74MHz
Emission Level:	-25.5dBm
Channel Frequency(Ch 19):	27.185MHz
Modulation:	None

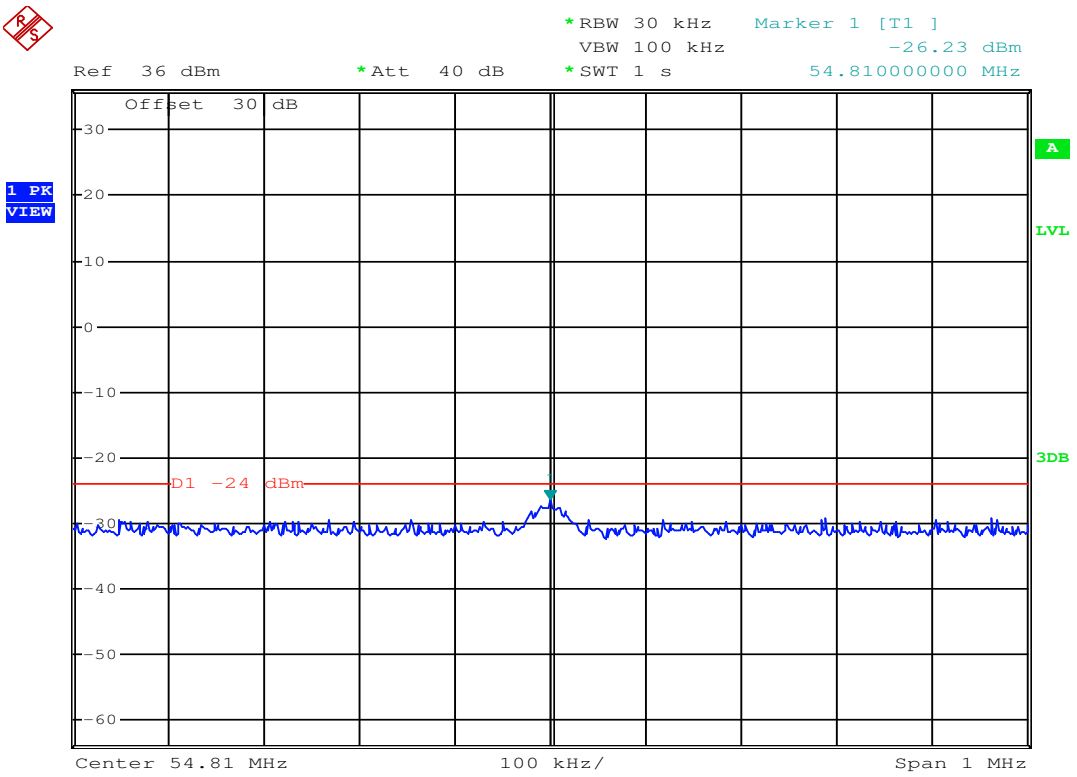
Conducted Spurious Emissions



Date: 15.NOV.2016 15:32:02

Frequency Span (> 10th Harmonic):	28MHz to 280MHz
Channel Frequency (Ch 40):	27.405MHz
Modulation:	None

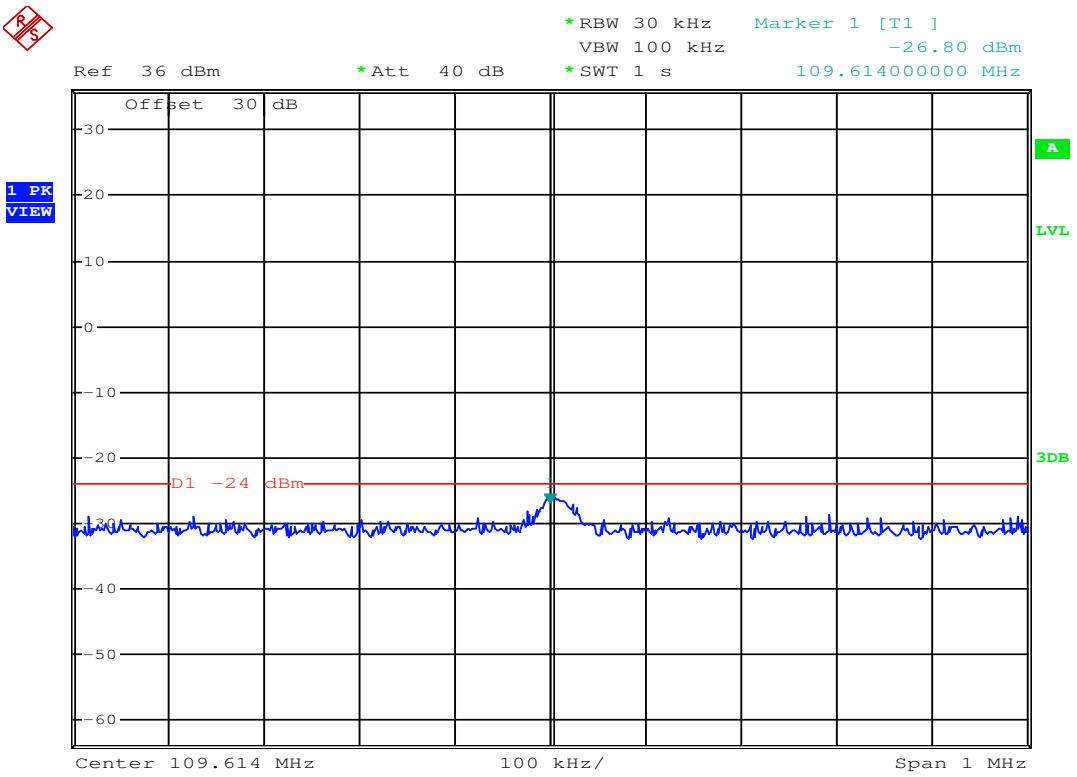
Conducted Spurious Emissions



Date: 15.NOV.2016 15:33:49

Emission Frequency (2nd Harmonic):	54.81MHz
Emission Level:	-26.2dBm
Channel Frequency(Ch 40):	27.405MHz
Modulation:	None

Conducted Spurious Emissions



Date: 15.NOV.2016 15:36:01

Emission Frequency (4th Harmonic):	109.62MHz
Emission Level:	-26.8dBm
Channel Frequency(Ch 40):	27.405MHz
Modulation:	None

11.3 Conducted Emissions Measurement Summary

Conducted Spurious Emissions						
Frequency (MHz)	**DUT Modulation**	**Fundemental Power [P] (dBm)**	**Out of Band Emission [P_E] (dBm)**	**Attenuation [dB]**	**Limit (dB)**	**Margin (dB)**
53.93	None	35.4	-26.5	61.9	60.0	1.90
107.86		35.4	-25.7	61.1	60.0	1.10
54.73		35.5	-26.5	62.0	60.0	2.00
108.74		35.5	-25.5	61.0	60.0	1.00
54.81		35.4	-26.2	61.6	60.0	1.60
109.62		35.4	-26.8	62.2	60.0	2.20
Attenuation = P - P_E						
Margin = Limit - Attenuation						
					Result:	**Complies**

Notes:

All Spurious Emissions were evaluated to the 10th harmonic (270.4MHz). No other emissions were observed.

Data for fundamental presented using a peak detector compared to average limits

12.0 RADIATED TX SPURIOUS EMISSIONS

12.1 Test Equipment

Test Conditions	
Normative Reference	FCC 47 CFR §95.635, RSS-236
Procedure Reference	ANSI/TIA/EIA-603-D, ANSI C63.4

Limits	
§95.635(1), (3), (8), (9)	(1) At least 25 dB (decibels) on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 100% of the authorized bandwidth. (2) At least 35 dB on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 150% of the authorized bandwidth. (8) At least 53 + 10 log10 (T) dB on any frequency removed from the center of the authorized bandwidth by more than 250%. (9) At least 60 dB on any frequency twice or greater than twice the fundamental frequency.

Environmental Conditions (Typical)	
Temperature	25°C
Humidity	<60%
Barometric Pressure	101 +/- 3kPa

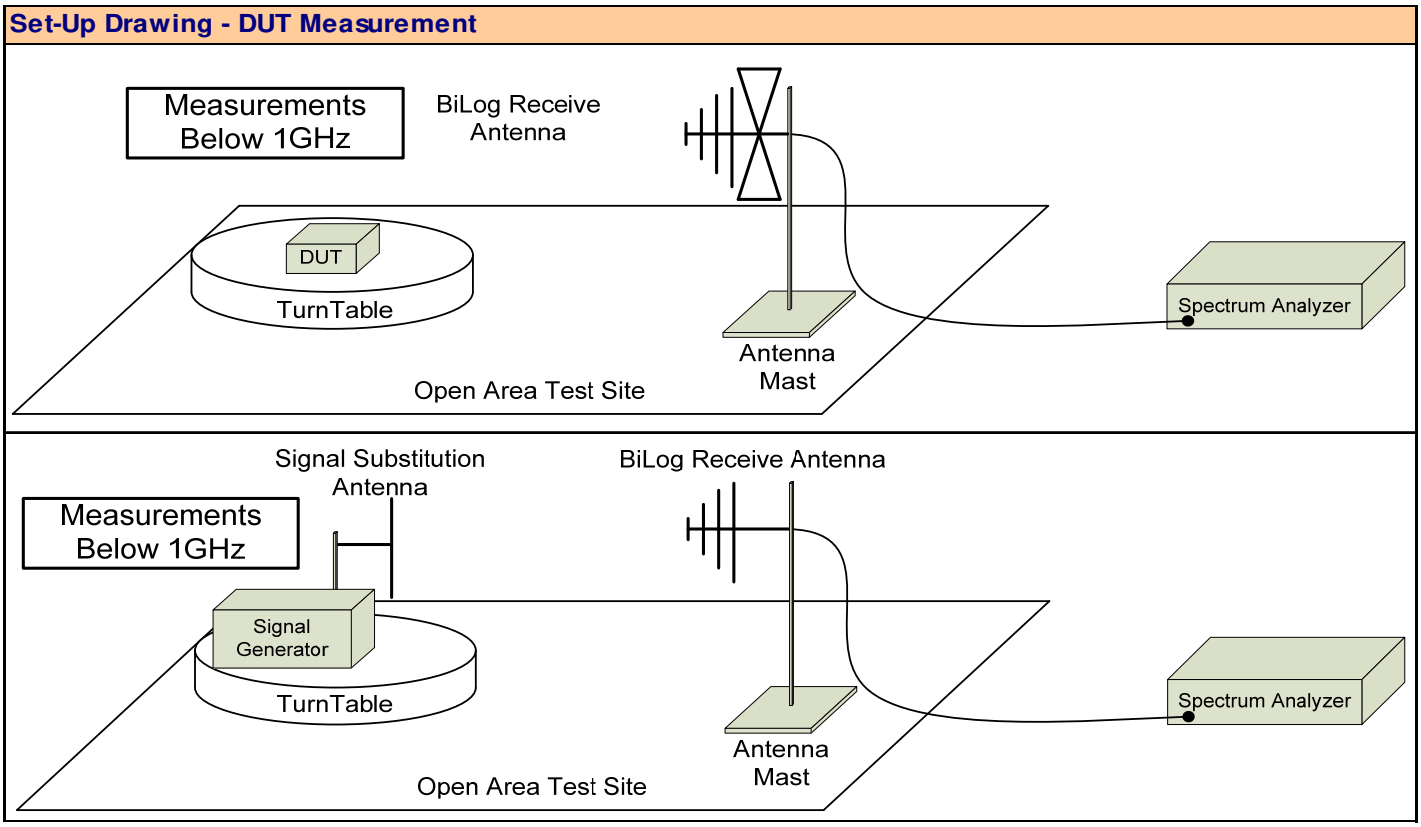
Equipment List

Asset Number	Manufacturer	Model Number	Description
00051	HP	8566B	Spectrum Analyzer
00049	HP	85650A	Quasi-peak Adapter
00047	HP	85685A	RF Preselector
00072	EMCO	2075	Mini-mast
00073	EMCO	2080	Turn Table
00071	EMCO	2090	Multi-Device Controller
00265	Miteq	JS32-00104000-58-5P	Microwave L/N Amplifier
00241	R&S	FSU40	Spectrum Analyzer
00050	Chase	CBL-6111A	Bilog Antenna
00275	Coaxis	LMR400	25m Cable
00276	Coaxis	LMR400	4m Cable
00278	TILE	34G3	TILE Test Software
00034	ETS	3115	Double Ridged Guide Horn

CNR: Calibration Not Required
COU: Calibrate On Use

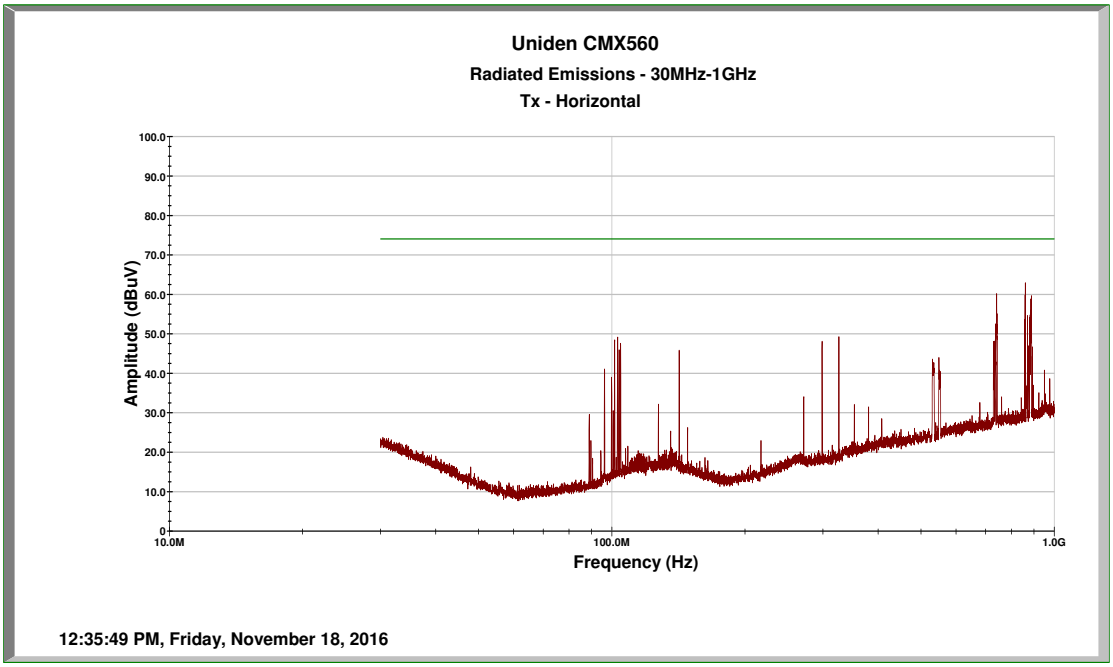
12.2 Test Setup

Set-Up Drawing - DUT Measurement



12.3 Radiated Emissions Measurement Plots

Radiated Spurious Emissions (Tx)

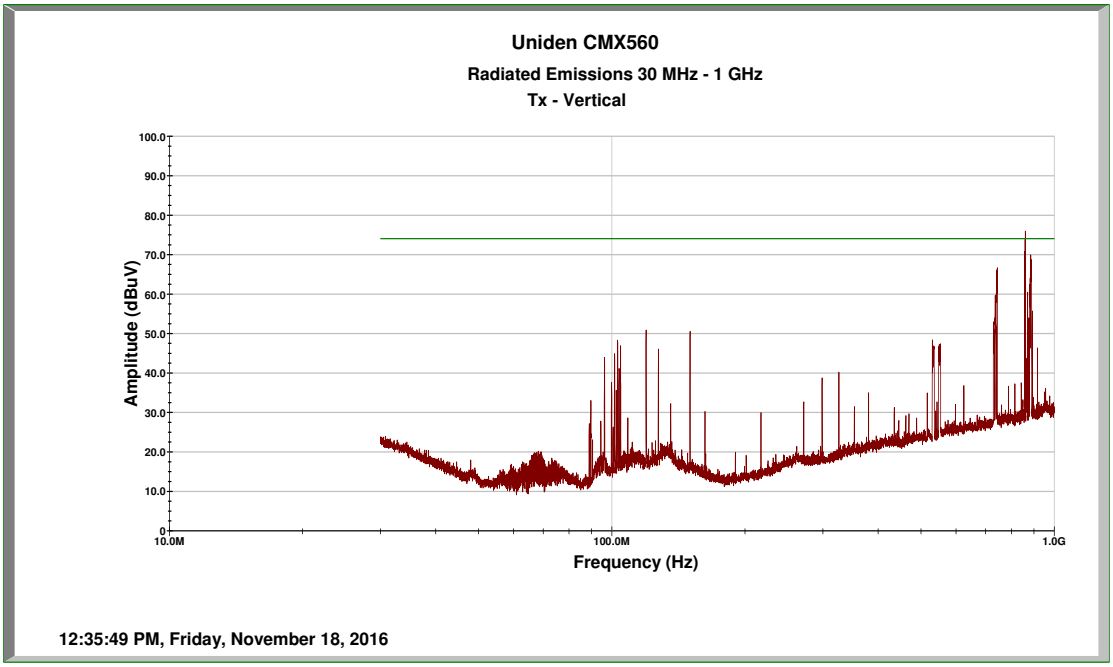


Emissions Indicated are Ambient

Plot for Reference Only

Frequency Range:	30MHz to 1GHz
Channel Frequency (Ch 19):	27.1850
Modulation:	CW
Antenna Polarization:	Horizontal

Radiated Spurious Emissions (Tx)

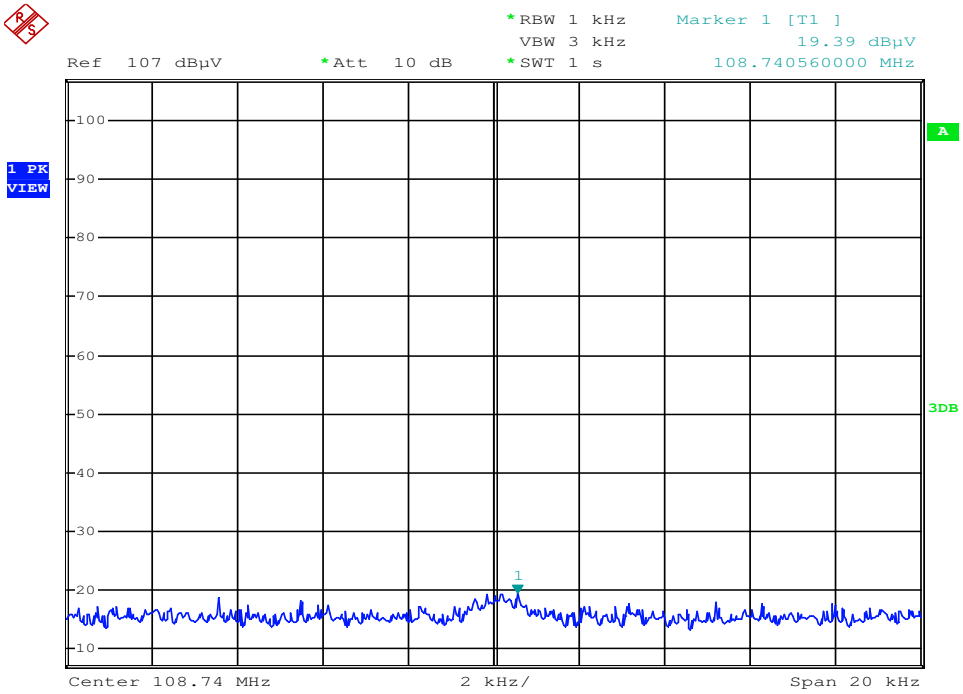


Emissions Indicated are Ambient

Plot for Reference Only

Frequency Range:	30MHz to 1GHz
Channel Frequency (Ch 19):	27.1850
Modulation:	CW
Antenna Polarization:	Vertical

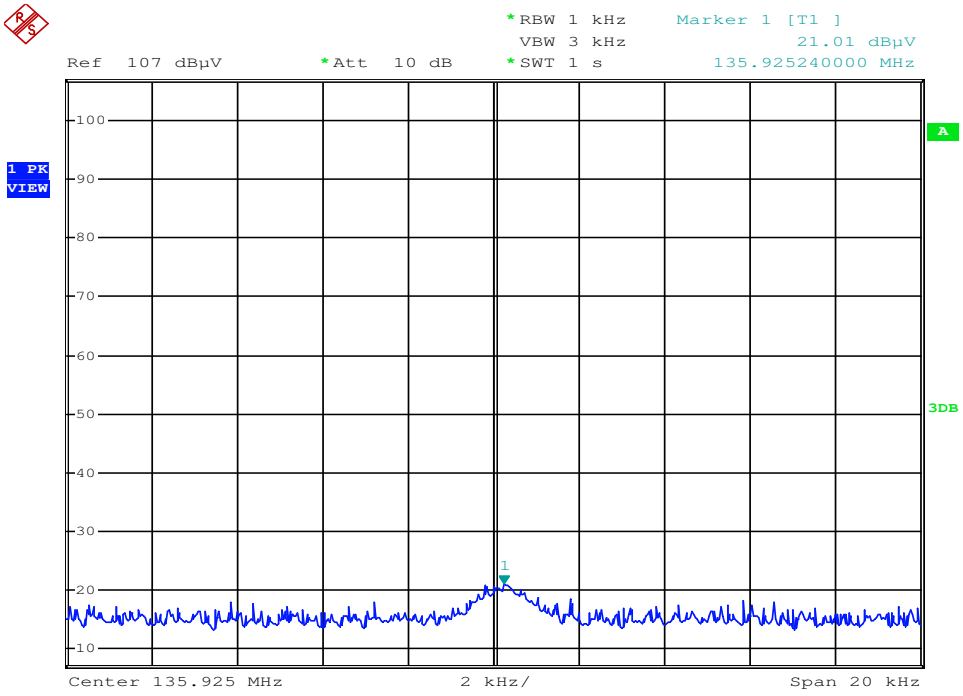
Radiated Spurious Emissions



Date: 16.NOV.2016 15:30:11

Emission Frequency (4th Harmonic):	108.74MHz
Emission Level:	19.4dBuV
Channel Frequency (Ch 19):	27.185MHz
Modulation:	None
Antenna Polarization:	Vertical

Radiated Spurious Emissions



Date: 16.NOV.2016 15:27:47

Emission Frequency (5th Harmonic):	135.925
Emission Level:	21.0dBuV
Channel Frequency (Ch 19):	27.185MHz
Modulation:	None
Antenna Polarization:	Vertical

12.4 Radiated Emissions Measurement Summary

Radiated Spurious Emissions

Margin [M] = Limit - C_E

Corrected Emission [C_E] = P_{SG} - C_S where P_{SG} is the Output Power of the Signal Generator

Corrected Subsitution Level [C_S] = L_C + G_C

Corrected Dipole Gain [G_C] = G_I - G_D where G_I is the Ideal Dipole Gain (2.15) and G_D is the actual Dipole Gain

Corrected Emission to dBuV at 3m [C_e] = [C_E] + [C_d] (For Reference Only)

Freqency	Antenna Polarization	Measured Emission Level @ 3m	Substitution Level [P_{SG}]	Cable Loss [L_C]	Dipole Antenna Gain [G_D]	Corrected Dipole Gain [G_C]	Substitution Level Correction [C_S]	Correction to dBm dBuV/m @3m [C_d]	Corrected Emission Level @3m [C_e]	Corrected Emission Level [C_E]	Limit	Margin [M]
(MHz)		*(dBuV)*	*(dBm)*	*(dB)*	*(dBi)*		*(dB)*	*(dBm)*	*(dBuV)*	*(dBm)*	*(dBm)*	*(dB)*
108.74	V	19.4	-74.0	0.16	1.9	0.3	0.4	97.38	22.97	-74.4	-24.0	50.4
135.93	V	21.0	-71.5	0.16	1.6	0.6	0.7	97.38	25.17	-72.2	-24.0	48.2
												Complies

Notes

No Emissions within 20dB of limit detected
Worst-case emissions shown
The device was searched to the 10th harmonic of the fundamental (270 MHz)
Data presented may use a peak detector and compared to quasi-peak limit
All detected emissions have been reported

13.0 RADIATED RX SPURIOUS EMISSIONS

13.1 Test Equipment

Test Conditions	
Normative Reference	FCC 47 CFR §15.109
Procedure Reference	ANSI/TIA/EIA-603-D, ANSI C63.4

Limits	
FCC §15.109	30-88MHz: 40dBuV/m 88-216MHz: 43.5dBuV/m 216-960MHz: 46dBuV/m > 960MHz: 54dBuV/m

Environmental Conditions (Typical)	
Temperature	25°C
Humidity	<60%
Barometric Pressure	101 +/- 3kPa

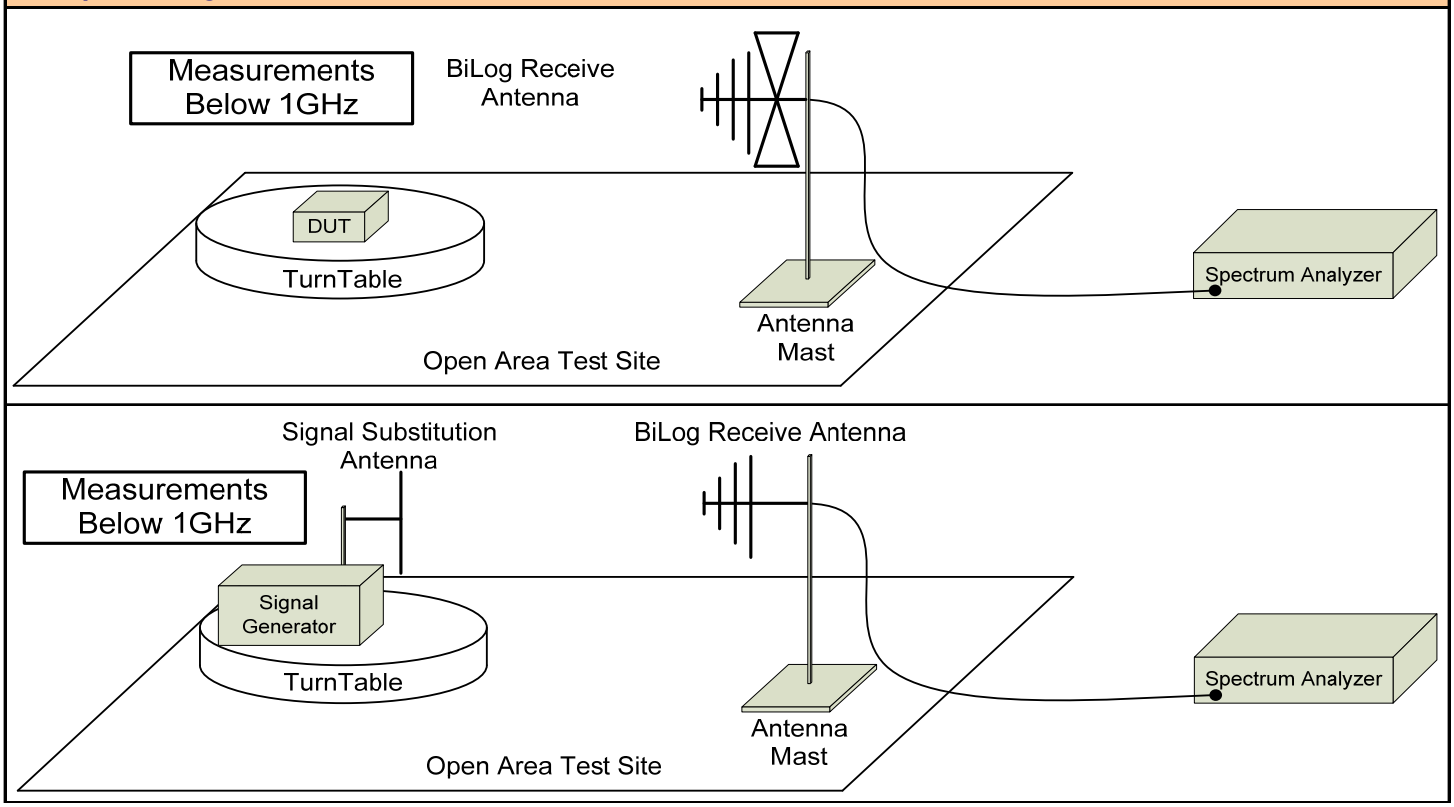
Equipment List

Asset Number	Manufacturer	Model Number	Description
00051	HP	8566B	Spectrum Analyzer
00049	HP	85650A	Quasi-peak Adapter
00047	HP	85685A	RF Preselector
00072	EMCO	2075	Mini-mast
00073	EMCO	2080	Turn Table
00071	EMCO	2090	Multi-Device Controller
00265	Miteq	JS32-00104000-58-5P	Microwave L/N Amplifier
00241	R&S	FSU40	Spectrum Analyzer
00050	Chase	CBL-6111A	Bilog Antenna
00275	Coaxis	LMR400	25m Cable
00276	Coaxis	LMR400	4m Cable
00278	TILE	34G3	TILE Test Software
00034	ETS	3115	Double Ridged Guide Horn

CNR: Calibration Not Required
COU: Calibrate On Use

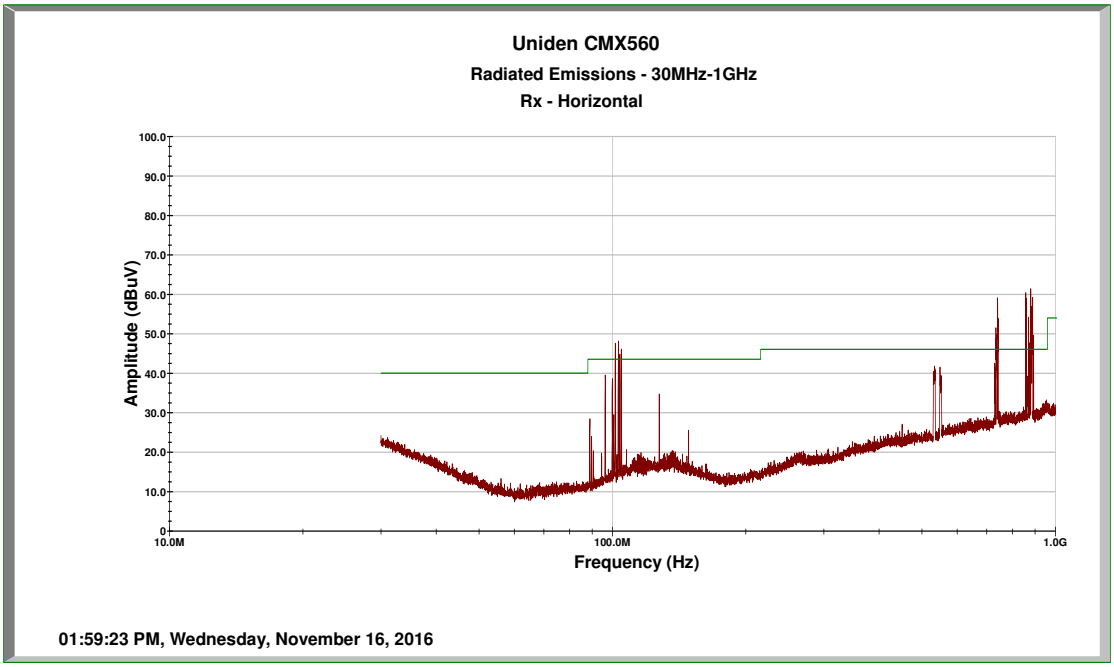
13.2 Test Setup

Set-Up Drawing - DUT Measurement



13.3 Rx Radiated Emissions Measurement Plots

Radiated Spurious Emissions (Rx)

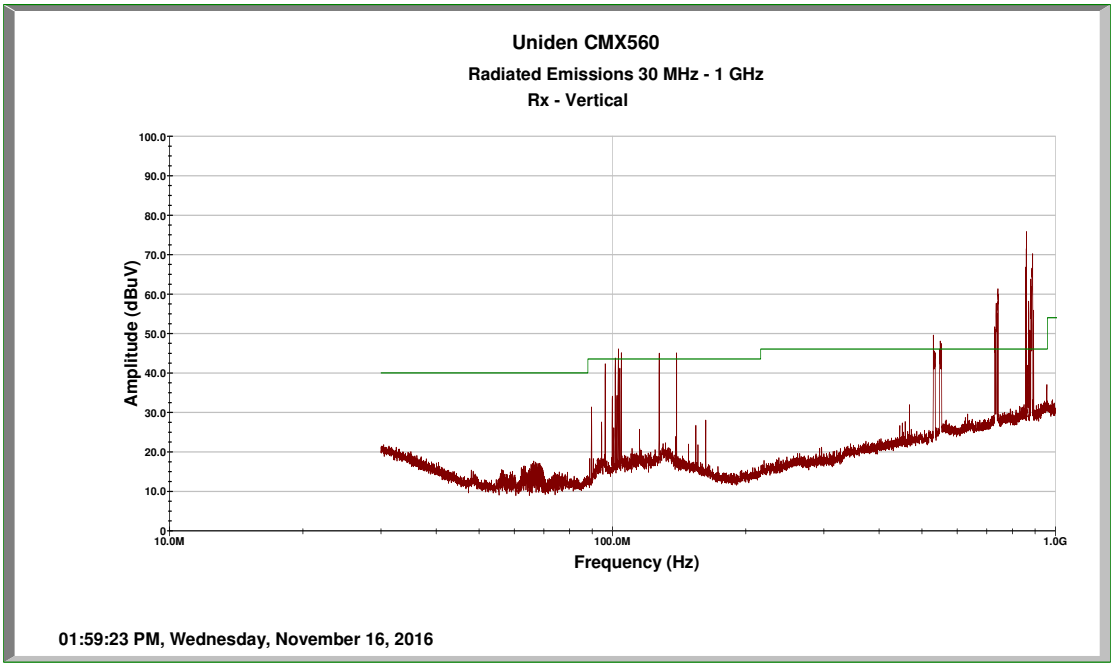


Emissions Indicated are Ambient

Plot for Reference Only

Frequency Range:	30MHz to 1GHz
Channel Frequency (Ch 19):	27.1850
Modulation:	CW
Antenna Polarization:	Horizontal

Radiated Spurious Emissions (Rx)



Emissions Indicated are Ambient

Plot for Reference Only

Frequency Range:	30MHz to 1GHz
Channel Frequency (Ch 19):	27.1850
Modulation:	CW
Antenna Polarization:	Vertical

13.4 Rx Radiated Emissions Measurement Summary

Radiated Spurious Emissions (Rx)								
Freqency	Antenna Polarization	Emission Level @ 3m [E_{Meas}]	Antenna Factor [AF]	Cable Loss [L_{Cable}]	Substitution Method Correction [L_{Sub}]	Corrected Emission @ 3m [E_{Corr}]	Limit @ 3m [E_{Lim}]	Margin
(MHz)		*(dBuV/m)*	*(dB)*	*(dB)*	*(dB)*	*(dBuV/m)*	*(dBuV/m)*	*(dB)*
$E_{Corr} = E_{Meas} + AF + L_{Cable} + L_{Sub}$ Margin = $E_{Lim} - E_{Corr}$								
							Result:	**Complies**

Notes

No Emission were detected.

Data presented may use a peak detector and compared to quasi-peak limit

All detected emissions have been reported

14.0 FREQUENCY STABILITY

14.1 Test Equipment and Setup

Test Conditions	
Normative Reference	FCC 47 CFR §2.1055, §95.625, RSS-Gen

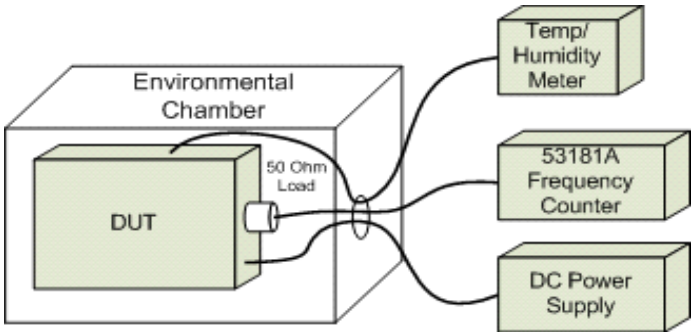
Limits	
FCC §95.625(b)	Each CB transmitter must be maintained within a frequency tolerance of 0.005%.

Test Conditions	
Temperature	-40°C to +50°C at 10°C Increments
Humidity	<100% Non Condensating
Voltage (VDC)	10.2(85%) - 13.8 - 27.6VDC(115%)

Equipment List

Asset Number	Manufacturer	Model Number	Description
00081	ESPEC	ECT-2	Environmental Chamber
00003	HP	53181A	Frequency Counter
00201	HP	E3611A	Power Supply
00234	VWR	61161-378	Temp/Humidity Meter

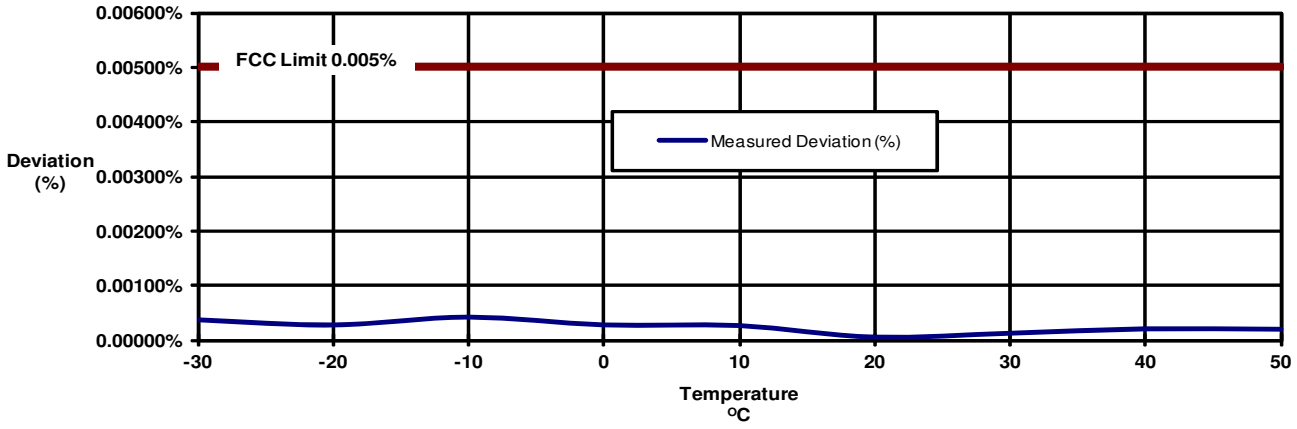
Set-Up Drawing



14.2 Frequency Stability Measurement Summary

Frequency Stability

Nominal Frequency (MHz):	27.185
Nominal Channel BW (KHz):	8.0
Nominal Voltage (VDC):	13.8
Nominal Temperature (°C):	25



Frequency Stability Measurements (Temperature)

Temp (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Deviation (Hz)	Deviation (%)
-30	27.185000	27.185102	102	0.00038%
-20	27.185000	27.185076	76	0.00028%
-10	27.185000	27.185116	116	0.00043%
0	27.185000	27.185076	76	0.00028%
10	27.185000	27.185073	73	0.00027%
20	27.185000	27.185014	14	0.00005%
30	27.185000	27.184966	34	0.00013%
40	27.185000	27.184944	56	0.00021%
50	27.185000	27.184946	54	0.00020%
			Maximum Deviation:	0.00043%
			Maximum Limit:	0.00500%
			Result:	Complies

Frequency Stability Measurements (Voltage)

Voltage (VDC)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Deviation (Hz)	Deviation (%)
15.9 (115%)	27.185000	27.184982	18	0.00007%
13.8 (100%)	27.185000	27.185014	14	0.00005%
11.7(85%)	27.185000	27.184973	27	0.00010%
		Maximum Deviation:		0.00010%
		Maximum Limit:		0.00500%
		Result:		Complies

15.0 EQUIPMENT LIST AND CALIBRATION

Equipment List

Asset Number	Manufacturer	Model Number	Serial Number	Description	Last Calibrated	Calibration Interval
00003	HP	53181A	3736A05175	Frequency Counter	28 Apr 2014	Triennial
00034	ETS	3115	6267	Double Ridged Guide Horn	02 Dec 2015	Triennial
00047	HP	85685A	2837A00826	RF Preselector	30 Apr 2014	Triennial
00049	HP	85650A	2043A00162	Quasi-peak Adapter	30 Apr 2014	Triennial
00050	Chase	CBL-6111A	1607	Bilog Antenna	25 Apr 2014	Triennial
00051	HP	8566B	2747A05510	Spectrum Analyzer	30 Apr 2014	Triennial
00071	EMCO	2090	9912-1484	Multi-Device Controller	n/a	n/a
00072	EMCO	2075	0001-2277	Mini-mast	n/a	n/a
00073	EMCO	2080	0002-1002	Turn Table	n/a	n/a
00081	ESPEC	ECT-2	0510154-B	Environmental Chamber	CNR	n/a
00110	Gigatronics	8652A	1875801	Power Meter	29 Feb 2016	Triennial
00224	HP	8903B	3729A18691	Audio Analyzer	22 Dec 2014	Triennial
00234	VWR	61161-378	140320430	Temp/Humidity Meter	New	Triennial
00241	R&S	FSU40	100500	Spectrum Analyzer	23 Apr 2015	Triennial
00237	Gigatronics	80334A	1837001	Power Sensor	23 Jun 2014	Triennial
00265	Miteq	JS32-00104000-58-5P	1939850	Microwave L/N Amplifier	COU	n/a
00275	Coaxis	LMR400	n/a	25m Cable	COU	n/a
00276	Coaxis	LMR400	n/a	4m Cable	COU	n/a
00278	TILE	34G3	n/a	TILE Test Software	NCR	n/a

CNR: Calibration Not Required
COU: Calibrate On Use

16.0 MEASUREMENT INSTRUMENT UNCERTAINTY

CISPR 16-4 Measurement Uncertainty (U_{LAB})	
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence interval using a coverage factor of k=2	
30MHz - 200MHz	
U_{LAB} = 5.14dB U_{CISPR} = 6.3dB	
200MHz - 1000MHz	
U_{LAB} = 5.90dB U_{CISPR} = 6.3dB	
1GHz - 6GHz	
U_{LAB} = 4.80dB U_{CISPR} = 5.2dB	
6GHz - 18GHz	
U_{LAB} = 5.1dB U_{CISPR} = 5.5dB	
If the calculated uncertainty U_{lab} is **less** than U_{CISPR} then:	
1	Compliance is deemed to occur if **NO** measured disturbance exceeds the disturbance limit
2	Non-Compliance is deemed to occur if **ANY** measured disturbance **EXCEEDS** the disturbance limit
If the calculated uncertainty U_{lab} is **greater** than U_{CISPR} then:	
3	Compliance is deemed to occur if **NO** measured disturbance, increased by (U_{lab} **-** U_{CISPR}), exceeds the disturbance limit
4	Non-Compliance is deemed to occur if **ANY** measured disturbance, increased by (U_{lab} **-** U_{CISPR}), **EXCEEDS** the disturbance limit

22.3 End of Document

End of Document

