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FCC PART 90

UHF/ 700/ 800 MHz

TEST REPORT

APPLICANT	**EF JOHNSON COMPANY**
ADDRESS	**37121 Knoll Street Waseca Minnesota 56093 USA**
FCC ID	**ATH2425795**
MODEL NUMBER	**242-578A-BCDEFG**
PRODUCT DESCRIPTION	DUAL BAND UHF + 700/800 MHZ PORTABLE RADIO
DATE SAMPLE RECEIVED	1/19/2016
FINAL TEST DATE	2/29/2016
TESTED BY	Cory Leverett
APPROVED BY	Tim Royer
TEST RESULTS	☒ PASS ☐ FAIL

Report Number	Version Number	Description	Issue Date
133AUT16TestReport_	Rev1	Initial Issue	2/26/2016
	Rev2	Updated component on filer	3/04/2016

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GENERAL REMARKS

The attached report shall not be reproduced except in full without the written permission of Timco Engineering Inc.

Summary

The device under test does:

☒ Fulfill the general approval requirements as identified in this test report
☐ Not fulfill the general approval requirements as identified in this test report

Attestations

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.

I attest that the necessary measurements were made at:

Timco Engineering Inc.
849 NW State Road 45
Newberry, FL 32669

Authorized Signatory Name:

Authorized Signatory Name: 

Project Manager/Testing Technician

Date: 3/04/2016

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GENERAL INFORMATION

EUT Specification

EUT Description	**DUAL BAND UHF + 700/800 MHZ PORTABLE RADIO**
FCC ID	**ATH2425795**
Model Number	**242-578A-BCDEFG**
Operating Frequency	470 -512, 769-775, 799-805, 806-824, 851-869 MHz
Test Frequencies	470.05, 491.05, 511.95, 769.05, 772.05, 774.95, 799.05, 802.05, 804.95, 806.05, 815.05, 823.95, 851.05, 860.05, 868.95 MHz
Type of Emission	16K0F3E, 14K0F3E, 11K0F3E, 8K10F1E, 8K10F1D, 8K10F7E
Modulation	FM
EUT Power Source	☐ 110–120Vac/50– 60Hz
	☒ DC Power 12V
	☐ Battery Operated Exclusively
Test Item	☐ Prototype
	☒ Pre-Production
	☐ Production
Type of Equipment	☐ Fixed
	☐ Mobile
	☒ Portable
Test Conditions	Temperature: 24-26ºC Relative Humidity: 50 - 65%.
Modification to the EUT	None
Test Exercise	The EUT was operated in a normal mode.
Regulatory Standard	FCC CFR 47 Part 90, 90R, 90S
Measurement Standard	ANSI/TIA 603-D:2010 ANSI C63.4 – 2014 ANSI C63.4 – 2009 (TEST SITE VALIDATION)
Test Facility	**Timco Engineering Inc. at 849 NW State Road 45 Newberry, FL 32669 USA.**

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TEST RESULTS SUMMARY

Test Description	FCC RULE PART NO.	RESULT
Modulation Characteristics	2.1047(a)(b)	Pass
RF Power Output	2.1046(a), 90.541(d), 90.542(a)(7), 90.635(b)	Pass
Occupied Bandwidth	2.1049(c)(h), 90.210(b)(g)(h), 90.691	Pass
Adjacent Channel Power	90.543(a)	Pass
Spurious Emissions at Antenna Terminal	2.1051(a), 90.210(b)(g)(h), 90.691, 90.543(c)	Pass
Field Strength of Spurious Radiation	2.1053, 90.210(b)(g)(h), 90.691, 90.543(c)	Pass
Frequency Stability	2.1055, 90.213, 90.539(c)	Pass
Transient Frequency Response	90.214	Pass

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RF POWER OUTPUT

Rule Part No.: Part 2.1046(a), Part 90.541(d), 90.635(b)

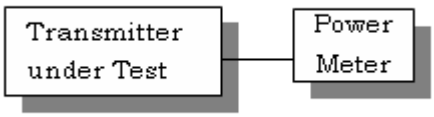
Test Requirements:

769-775 MHz and 799-805 MHz frequency bands
The maximum output power of the transmitter for mobile stations is 100 watts

806-824 and 851-869 MHz frequency bands.
The maximum output power of the transmitter for mobile stations is 100 watts

Method of Measurement: RF power is measured by using a 50-ohm, resistive wattmeter to the RF output connector. With a nominal battery voltage (if battery operated), or a properly adjusted power supply (if not battery operated), and the transmitter properly adjusted the RF output measures:

Test Setup Diagram:



Test Data: Conducted Power Output Table

	RF POWER	
Tuned Frequency (MHz)	(W)	(dBm)
470.05	4.2	36.2
491.05	4.3	36.3
511.95	4.3	36.4
769.05	2.8	34.4
772.05	2.8	34.5
774.95	2.8	34.5
799.05	2.8	34.5
802.05	2.8	34.4
804.95	2.8	34.5
806.05	3.3	35.2
815.05	3.3	35.2
823.95	3.3	35.1
851.05	3.4	35.3
860.05	3.5	35.4
868.95	3.4	35.3

Part 2.1033 (C) (8) DC Input into the final amplifier

FOR HIGH POWER SETTING INPUT POWER: (7.4V) (1.5A) = 11.1 Watts

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MODULATION CHARACTERISTICS

Requirements: Part 2.1033(c), 2.1033(c) (4), 2.1047(a)(b), 90.209, 90.207

BANDWIDTH CALCUATION

Type of Emission: 11K0F3E
Bn = 2M + 2DK
M = 3000
D = 2500
K=1
Bn = 2(3000) +2(2500) = 11.0k

Type of Emission: 14K0F3E
Bn = 2M + 2DK
M = 3000
D = 2500
K=1
Bn = 2(3000) +2(4000) = 14.0k

Type of Emission: 16K0F3E
Bn = 2M + 2DK
M = 3000
D = 5000
K=1
Bn = 2(3000) +2(5000) = 16.0k

APCO 25 modulation phase 1 and phase 2 as defined in ANSI/ TIA-102.BABA.

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MODULATION CHARACTERISTICS

AUDIO FREQUENCY RESPONSE

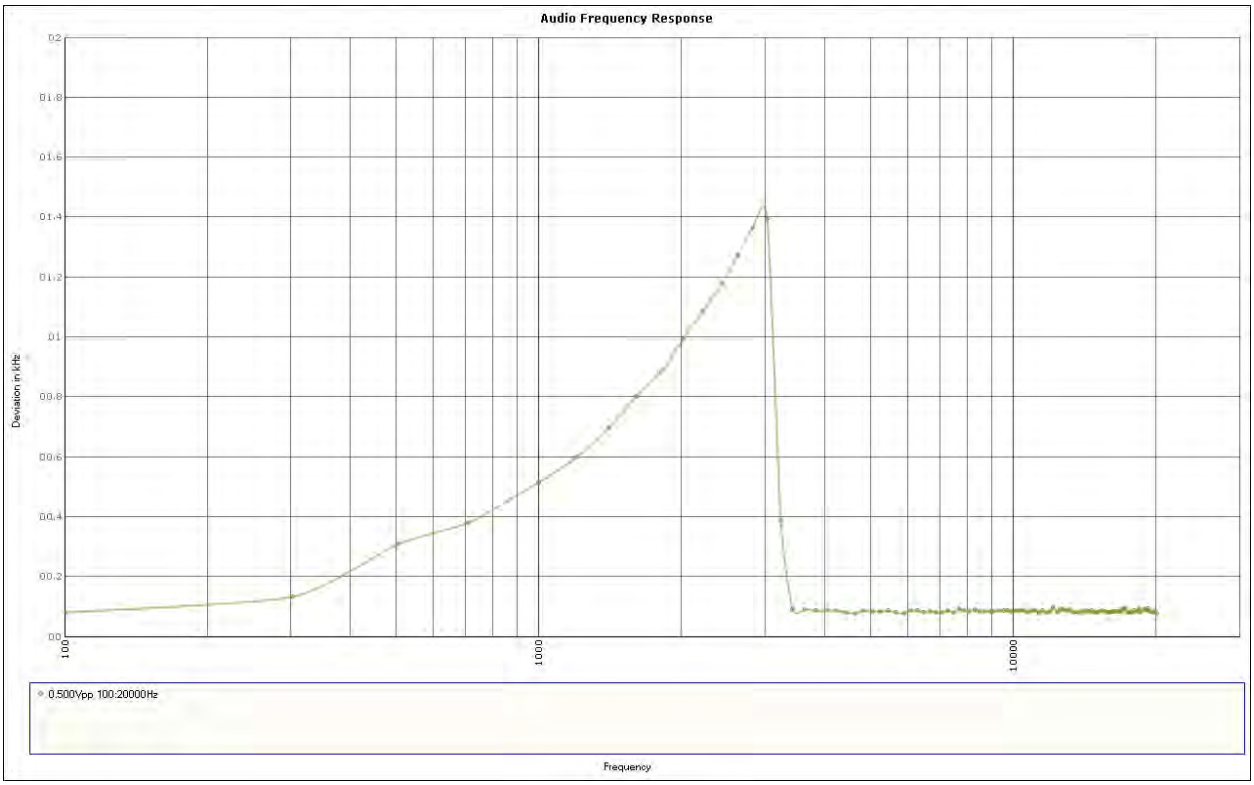
Rule Part No.: Part 2.1047(a) (b)

Test Requirements: Reporting Only

Method of Measurement: ANSI/TIA-603 § 2.2.6 Audio Frequency Response

TEST DATA:

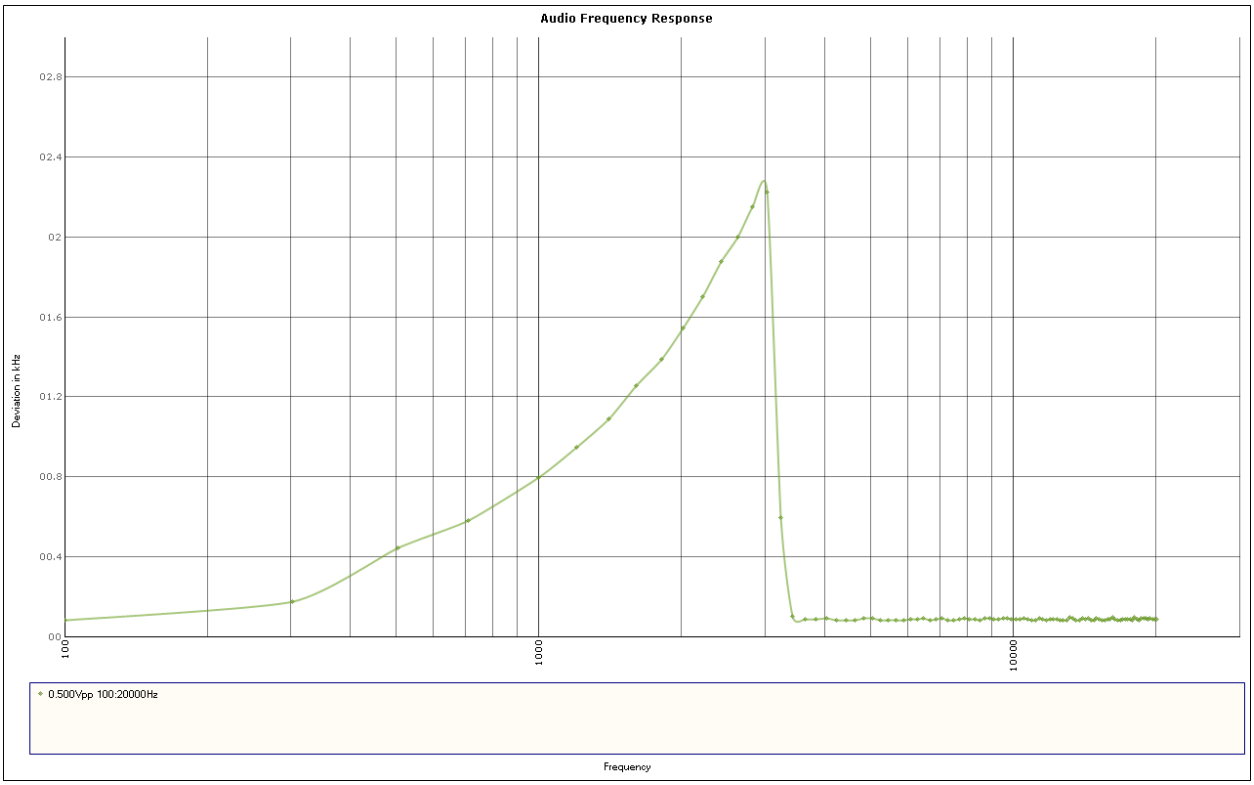
AUDIO FREQUENCY RESPONSE – 12.5 kHz



PLOT
MODULATION CHARACTERISTICS

AUDIO FREQUENCY RESPONSE

AUDIO FREQUENCY RESPONSE – 20 kHz



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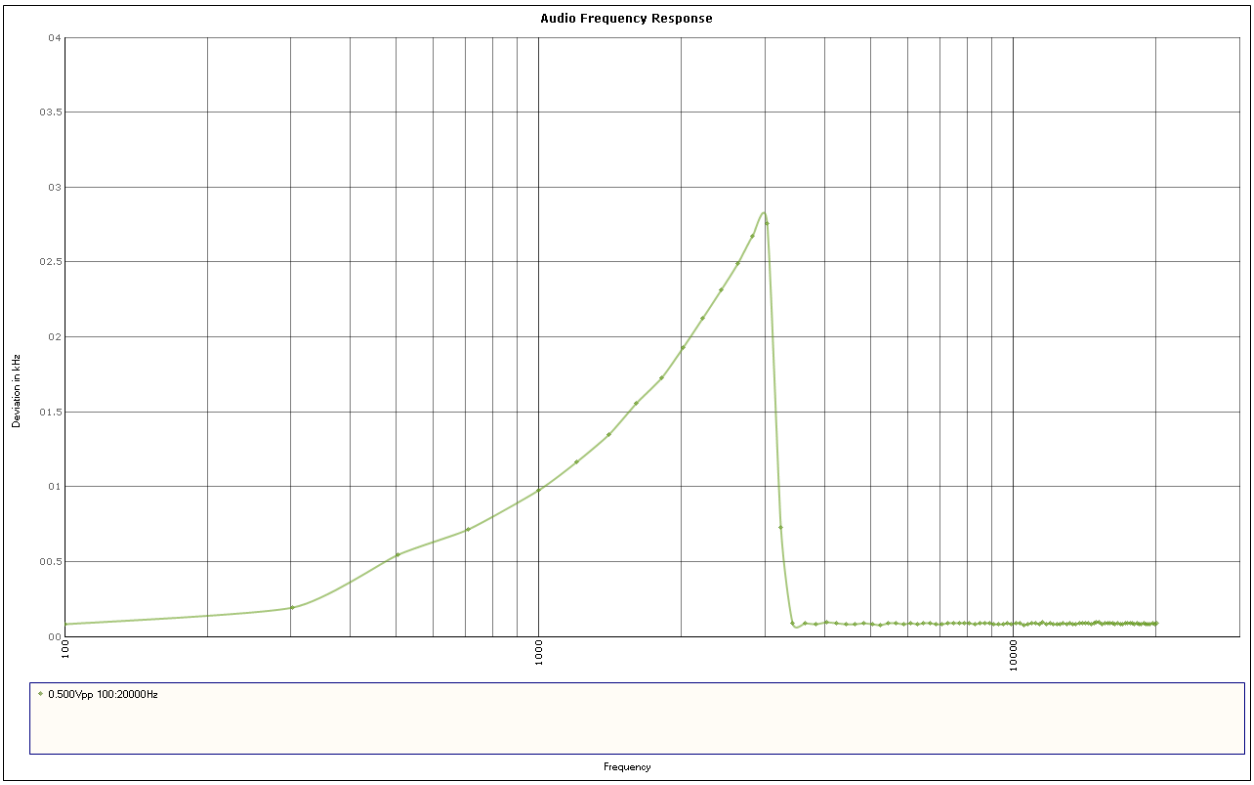
PLOT
MODULATION CHARACTERISTICS

AUDIO FREQUENCY RESPONSE

AUDIO FREQUENCY RESPONSE – 25 kHz



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MODULATION CHARACTERISTICS

AUDIO LOW PASS FILTER

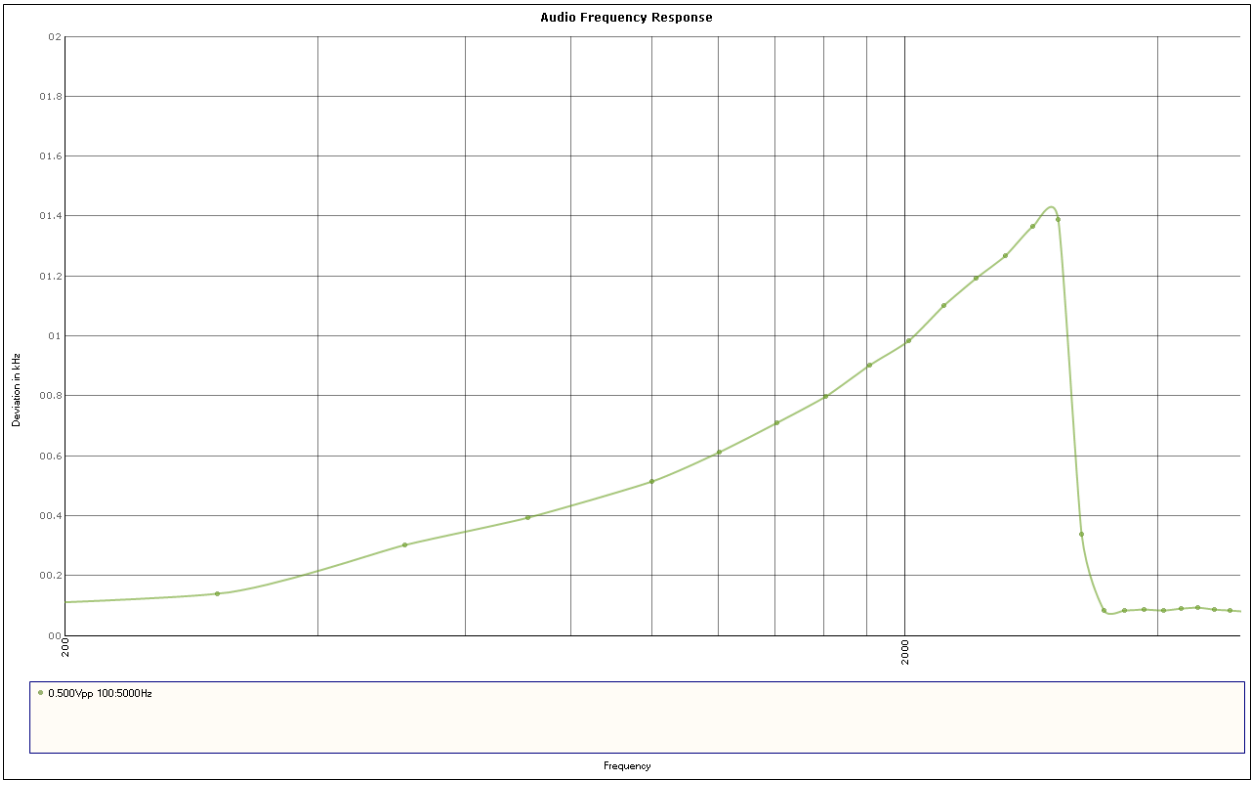
Rule Part No.: Part 2.1047(a) (b)

Test Requirements: For equipment required to have an audio low-pass filter, a curve showing the frequency response of the filter or of all the circuitry installed between the modulation limiter and the modulated stage shall be submitted.

Method of Measurement: ANSI/TIA-603 § 2.2.15 Audio Low pass filter Response

TEST DATA:

AUDIO LOW PASS FILTER 12.5 kHz



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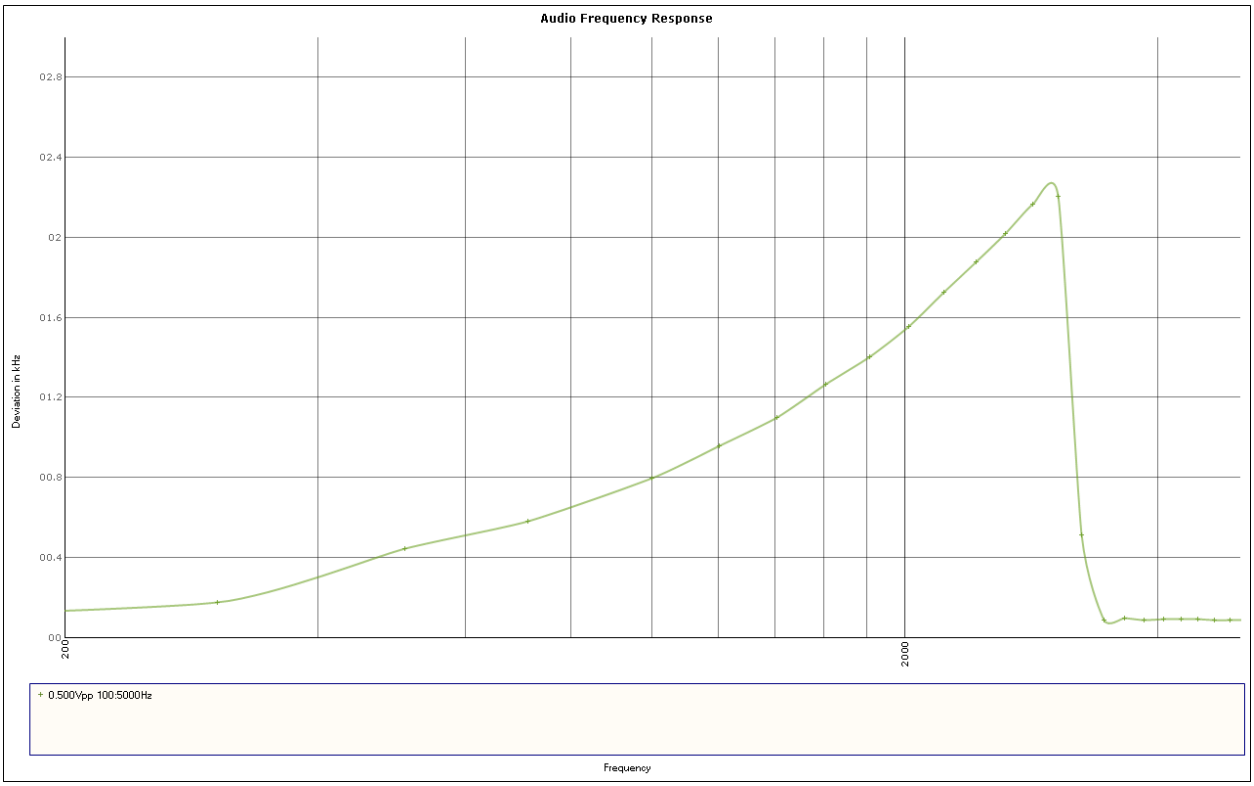
MODULATION CHARACTERISTICS

AUDIO LOW PASS FILTER 20 kHz



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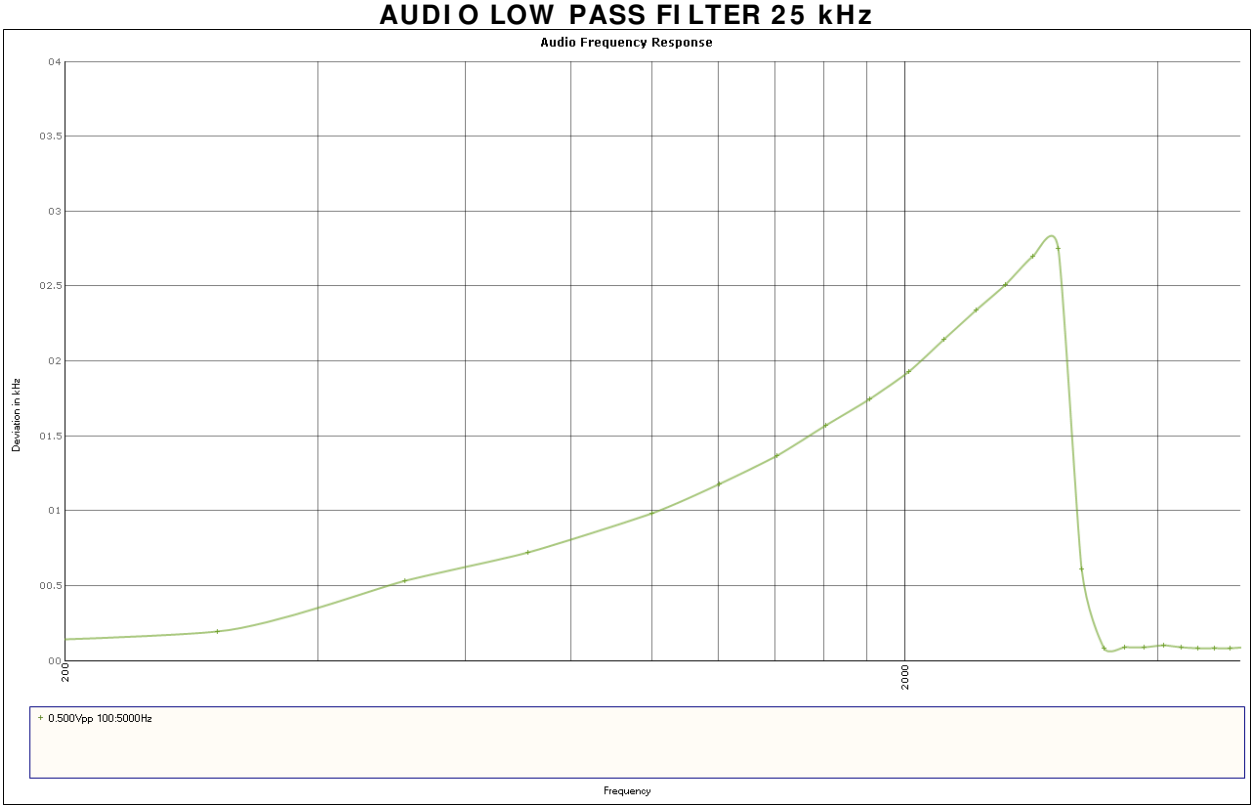
MODULATION CHARACTERISTICS

AUDIO LOW PASS FILTER 25 kHz



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MODULATION CHARACTERISTICS –

AUDIO INPUT VERSUS MODULATION

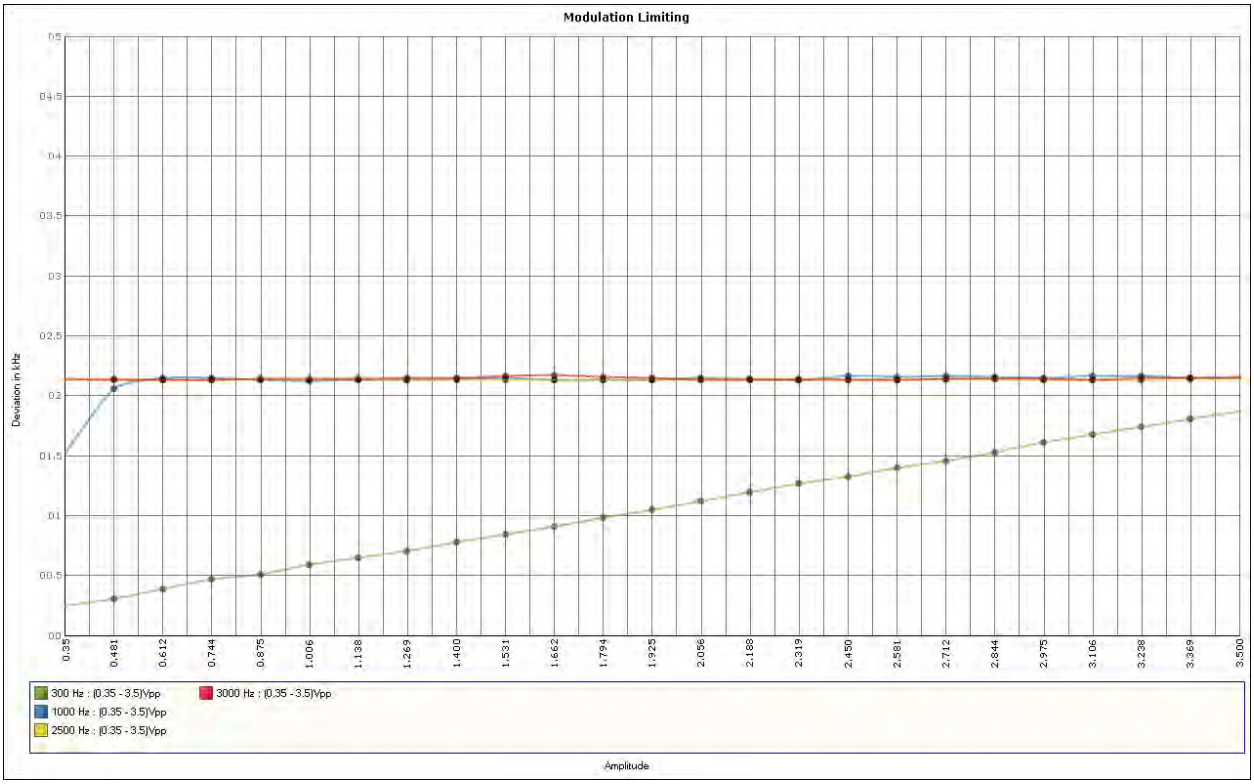
RULE PART NO: **Part 2.1047(b) & 90**

REQUIREMENT Modulation cannot exceed 100% of the rated FM deviation.

Method of Measurement: ANSI/TIA-603 § 2.2.3

Test data:

MODULATION LIMITING 12.5 kHz



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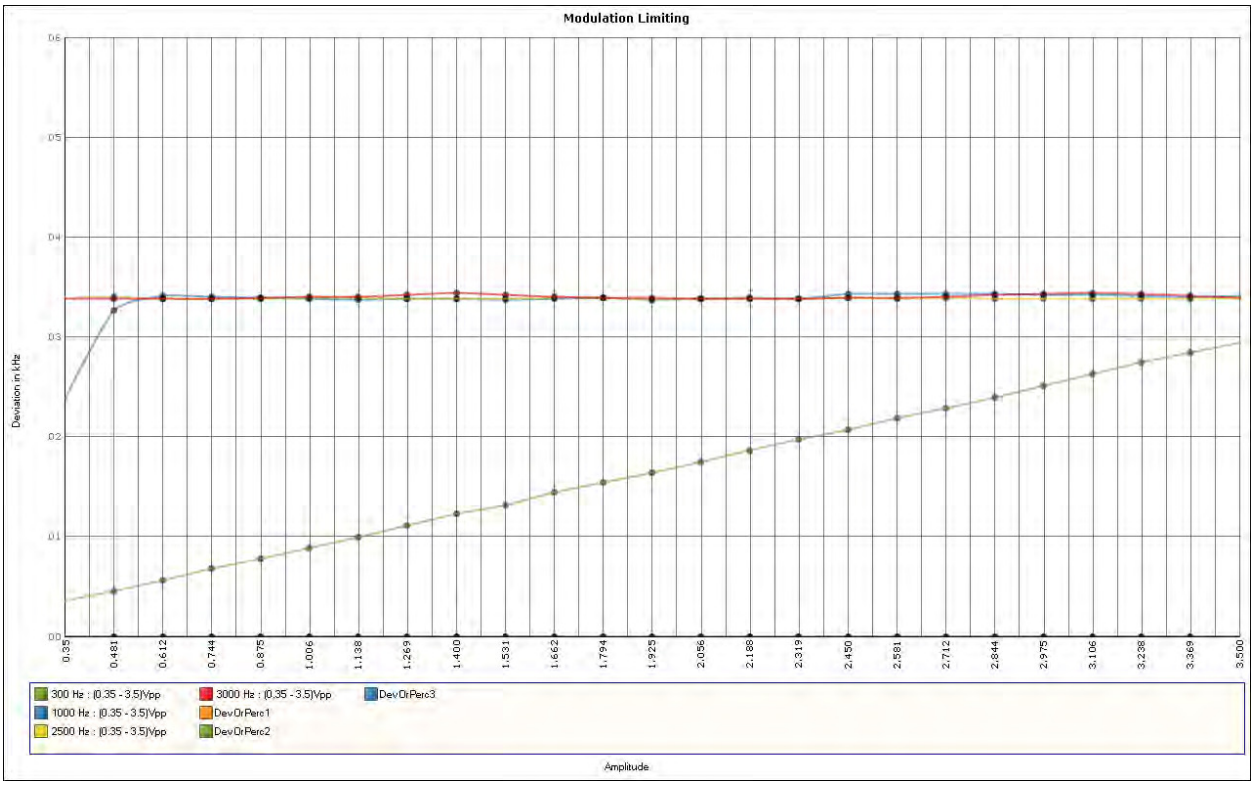
MODULATION CHARACTERISTICS

AUDIO INPUT VERSUS MODULATION

MODULATION LIMITING 20 kHz



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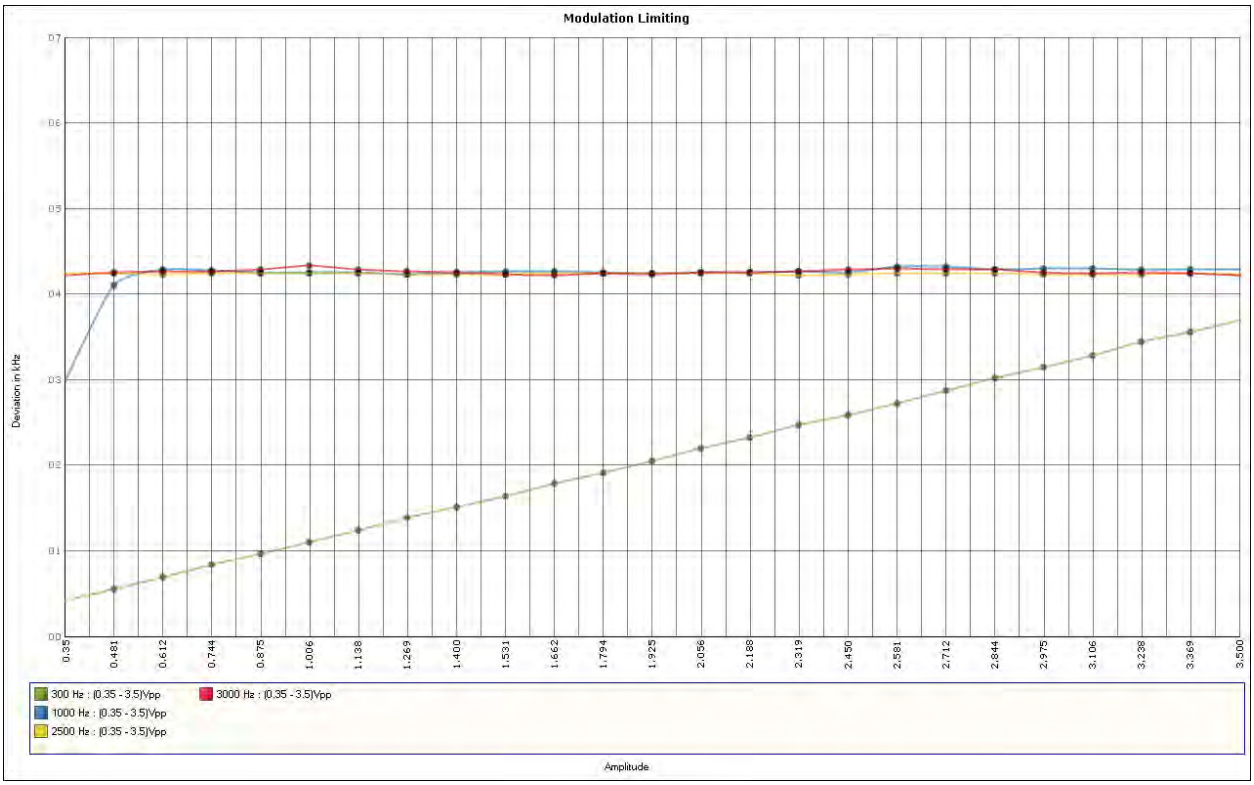
MODULATION CHARACTERISTICS

AUDIO INPUT VERSUS MODULATION

MODULATION LIMITING 25 kHz



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OCCUPIED BANDWIDTH

RULE PART NO.: 2.1049(c) & 90.210

REQUIREMENTS: Applicable Emission Masks

Frequency band (MHz)	Mask for equipment with audio low pass filter	Mask for equipment without audio low pass filter
421 - 5122 [5]	B, D or E	C, D or E
806-809/851-854	B	H
809-824/854-869 [3 5]	B	G

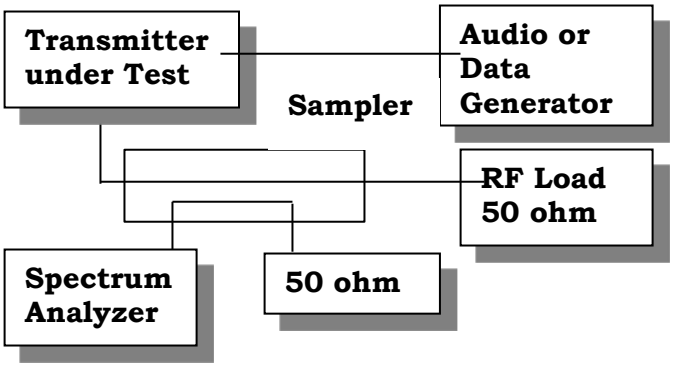
2Equipment designed to operate with a 25 kHz channel bandwidth must meet the requirements of Emission Mask B or C, as applicable. Equipment designed to operate with a 12.5 kHz channel bandwidth must meet the requirements of Emission Mask D, and equipment designed to operate with a 6.25 kHz channel bandwidth must meet the requirements of Emission Mask E.

[3]Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of §90.691 of this chapter.

[5]Equipment may alternatively meet the Adjacent Channel Power limits of §90.221.

METHOD OF MEASUREMENT: ANSI/TIA-603 § 2.2.11 Sideband Spectrum

SETUP DIAGRAM:



TEST DATA: See the plots on following pages.

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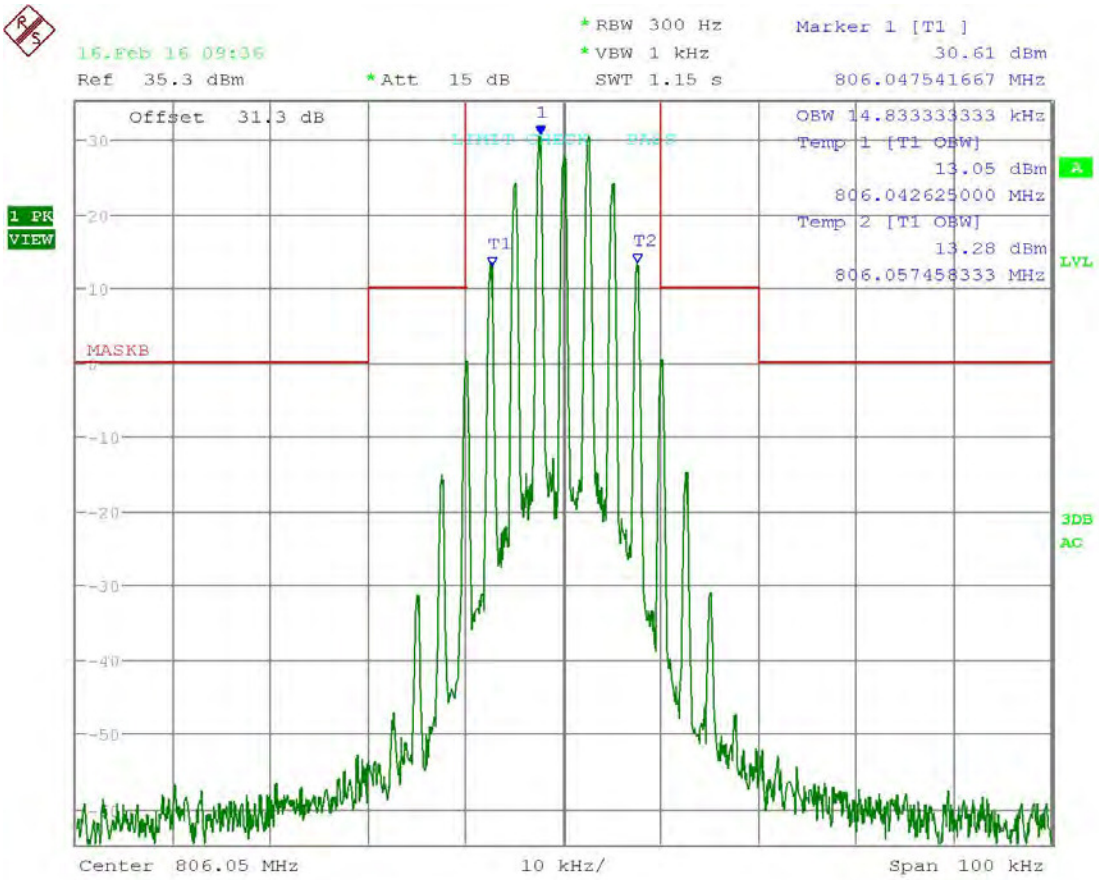
OCCUPIED BANDWIDTH

TEST FREQ. 806.05 MHz–16k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter



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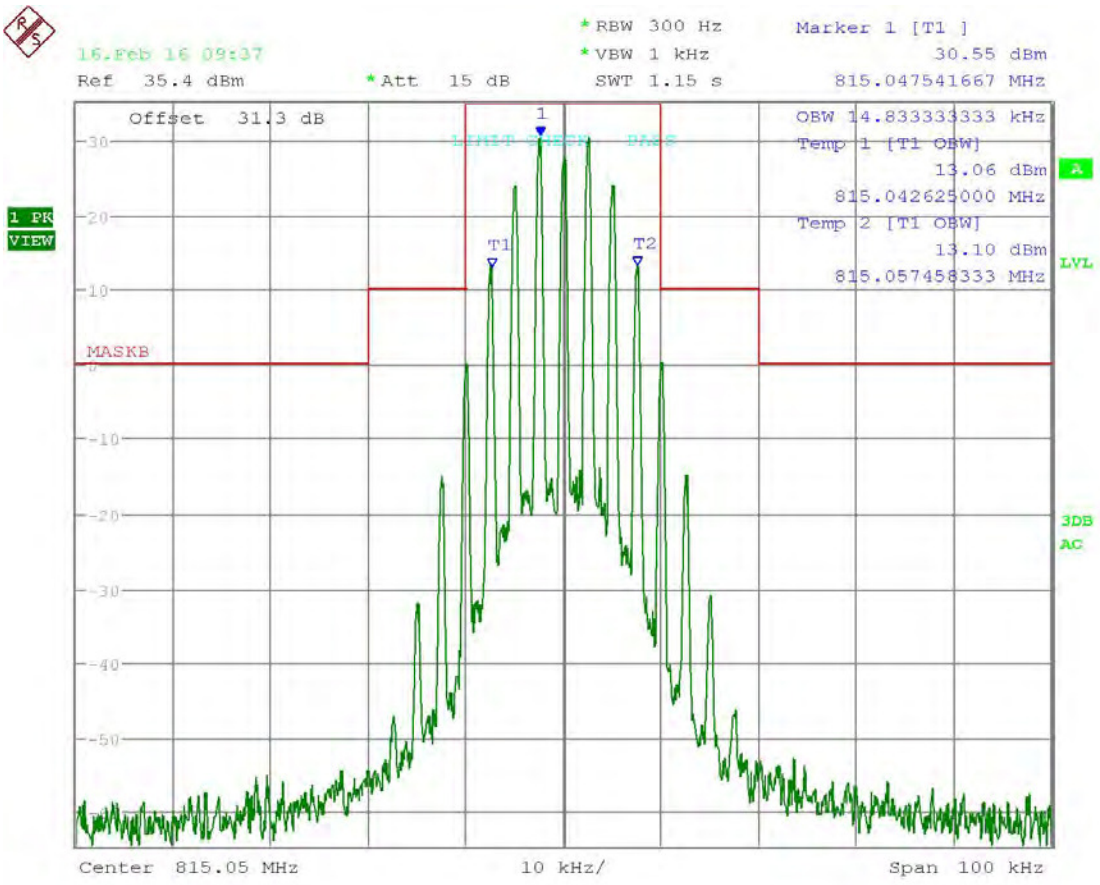
OCCUPIED BANDWIDTH

TEST FREQ. 815.05 MHz–16k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter



Date: 16.FEB.2016 09:37:12

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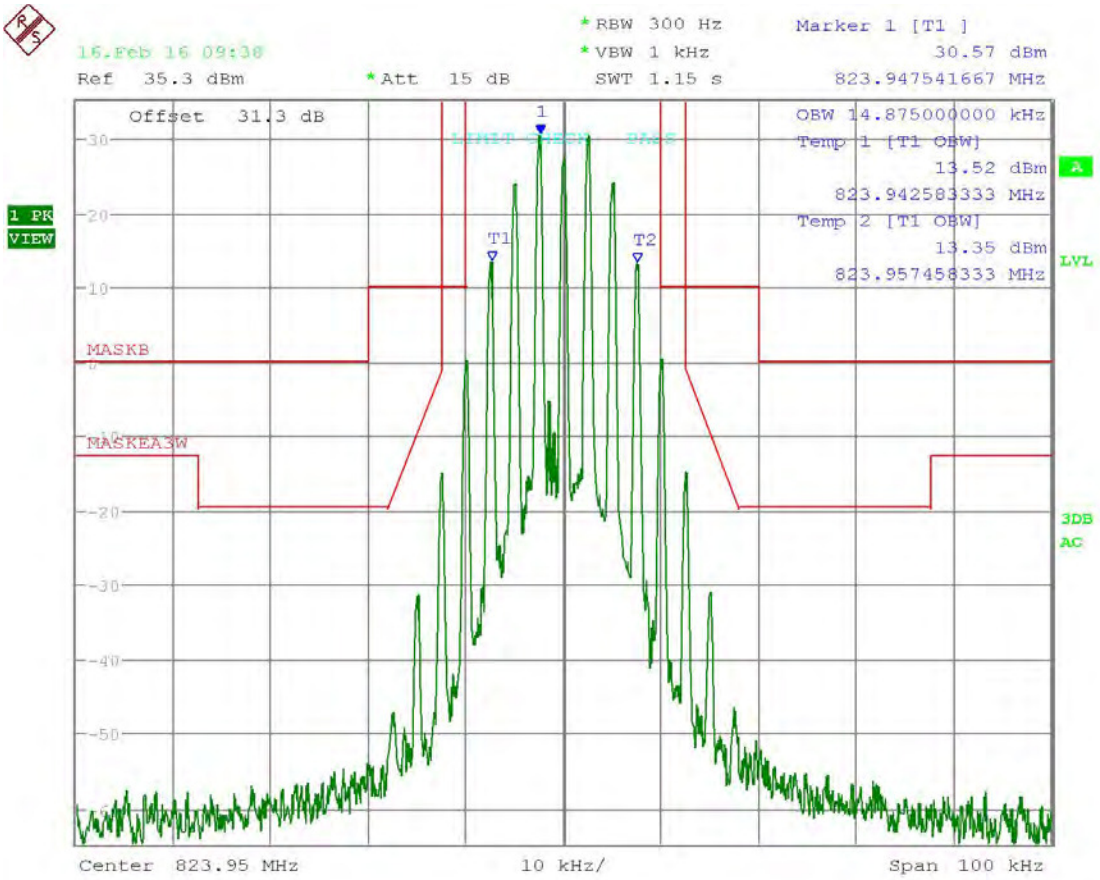
OCCUPIED BANDWIDTH

TEST FREQ. 823.95 MHz–16k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter
Part 90.691(a) Emission Mask EA – EA-based systems



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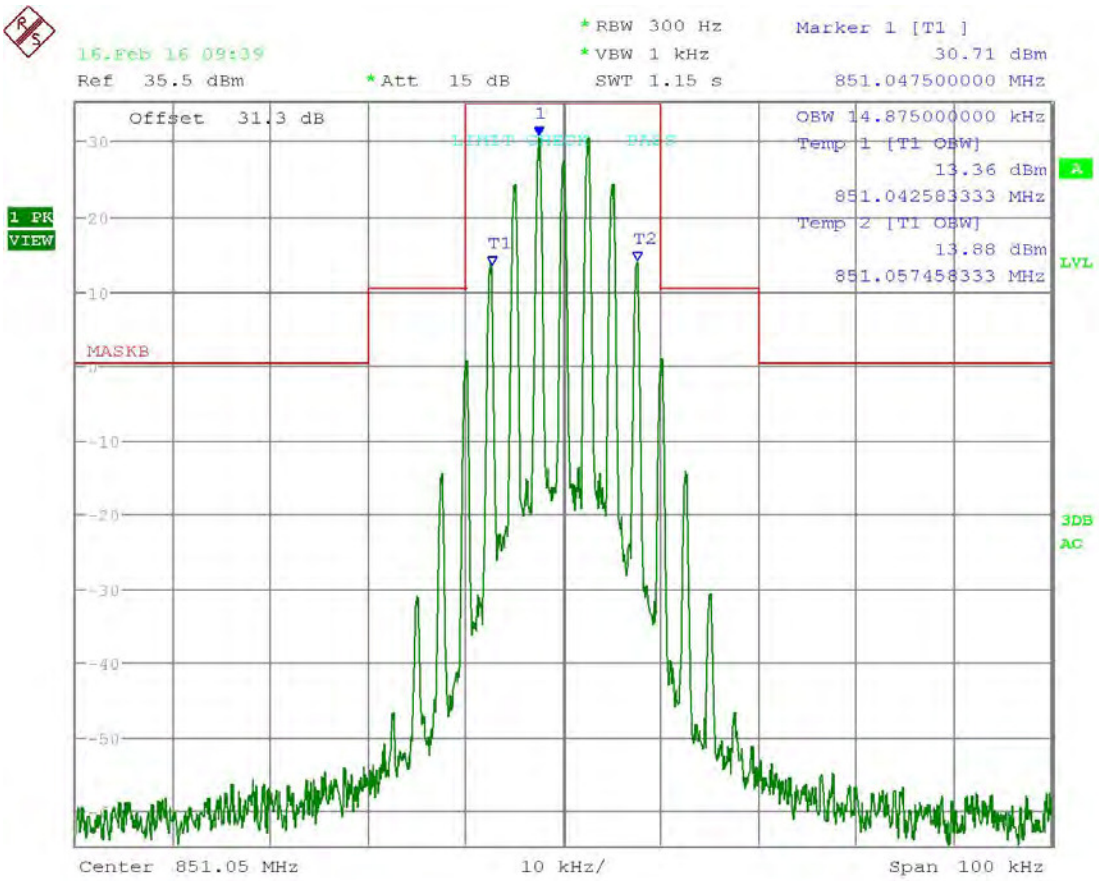
OCCUPIED BANDWIDTH

TEST FREQ. 851.05 MHz–16k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter



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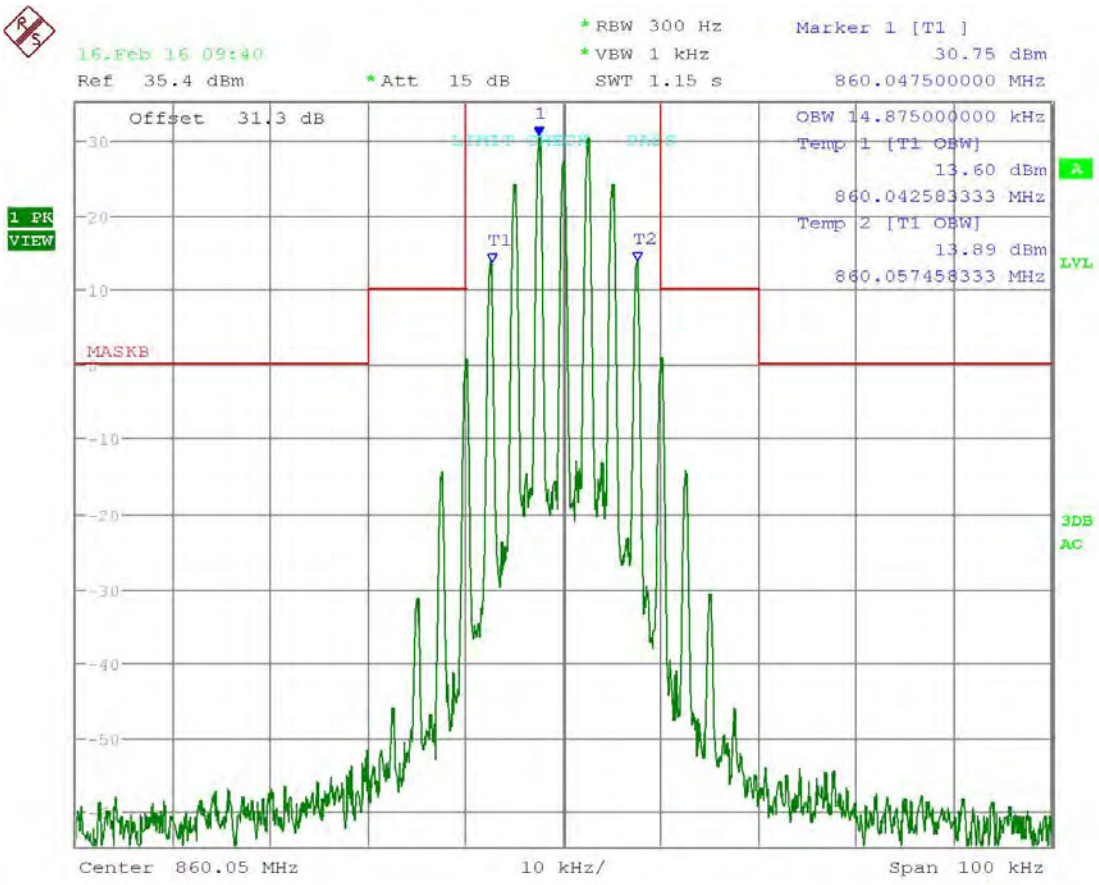
OCCUPIED BANDWIDTH

TEST FREQ. 860.05 MHz–16k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter



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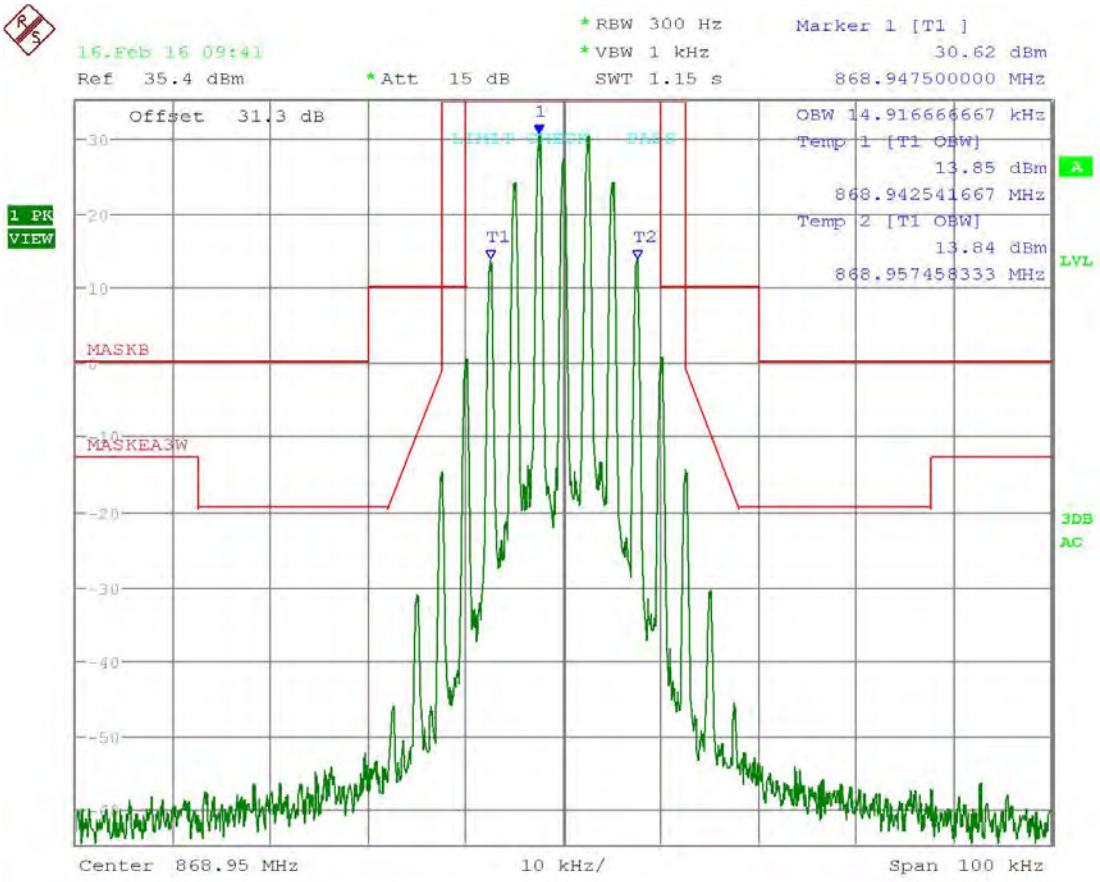
OCCUPIED BANDWIDTH

TEST FREQ. 868.95 MHz–16k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter
Part 90.691(a) Emission Mask EA – EA-based systems



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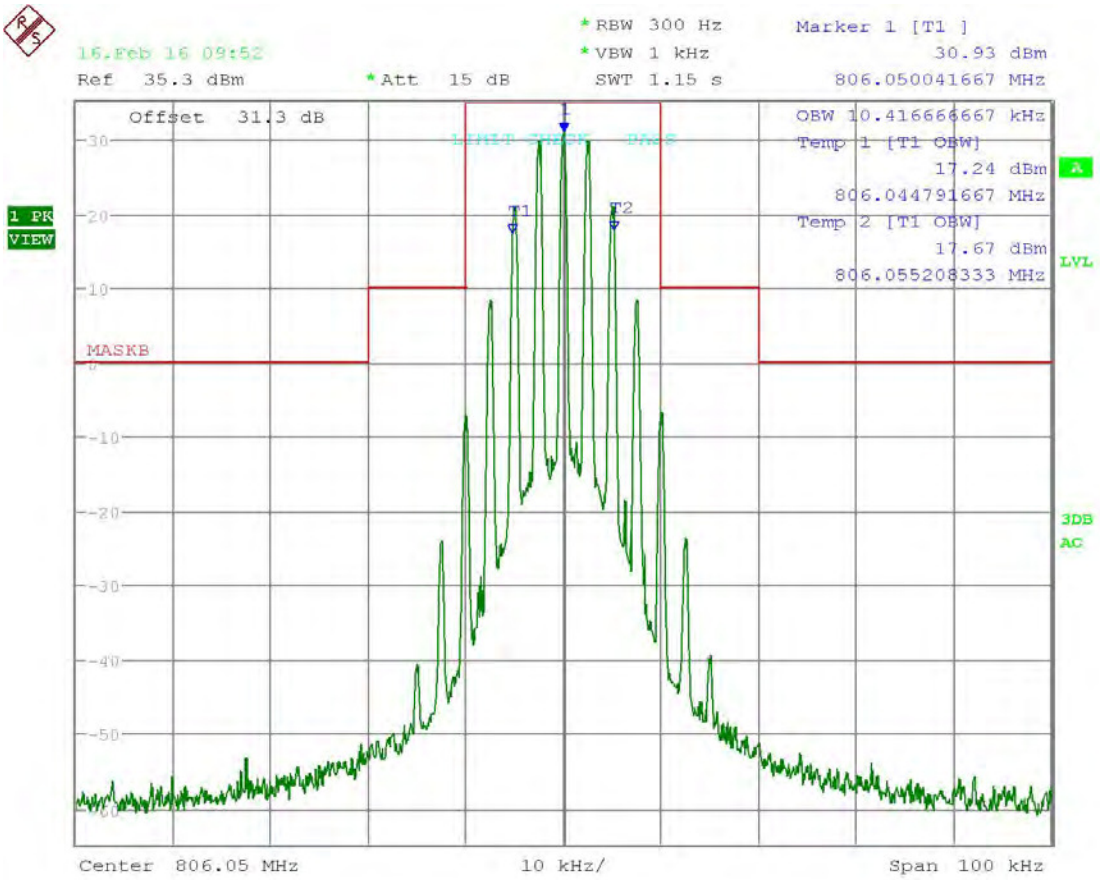
OCCUPIED BANDWIDTH

TEST FREQ. 806.05 MHz–14k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter



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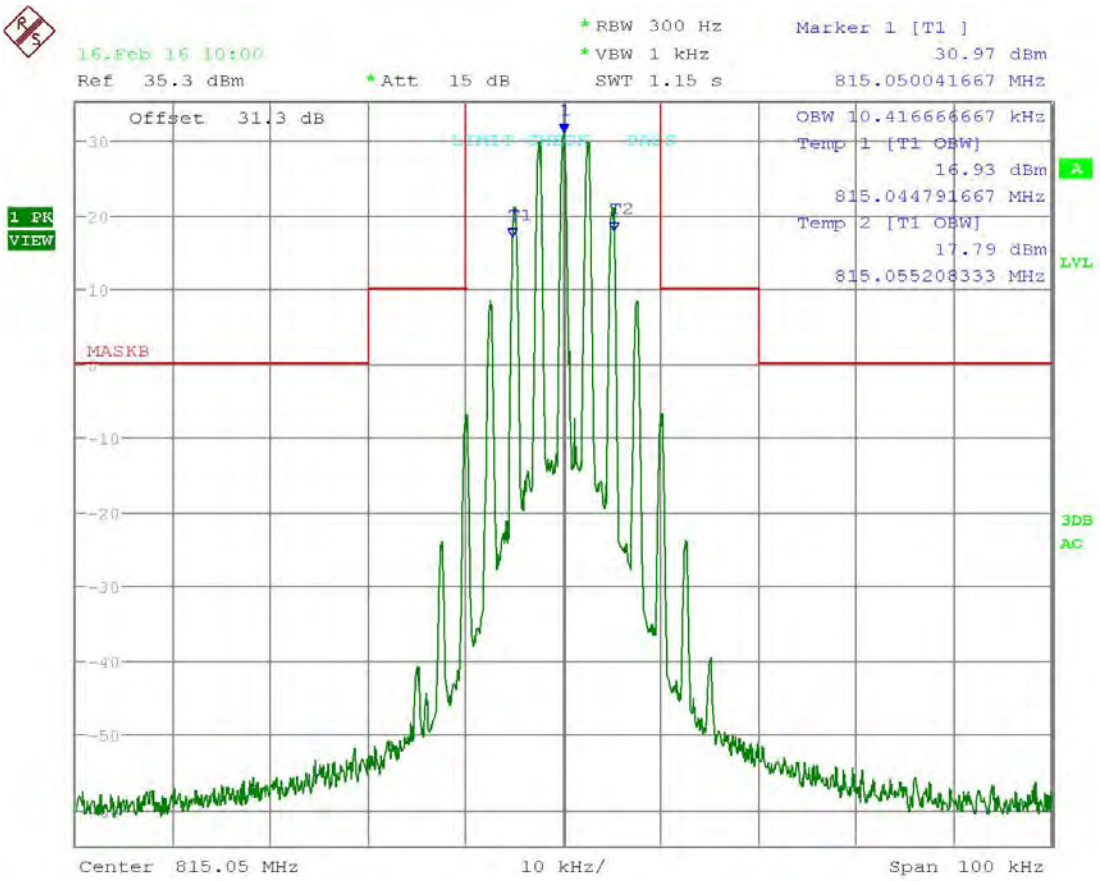
OCCUPIED BANDWIDTH

TEST FREQ. 815.05 MHz–14k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter



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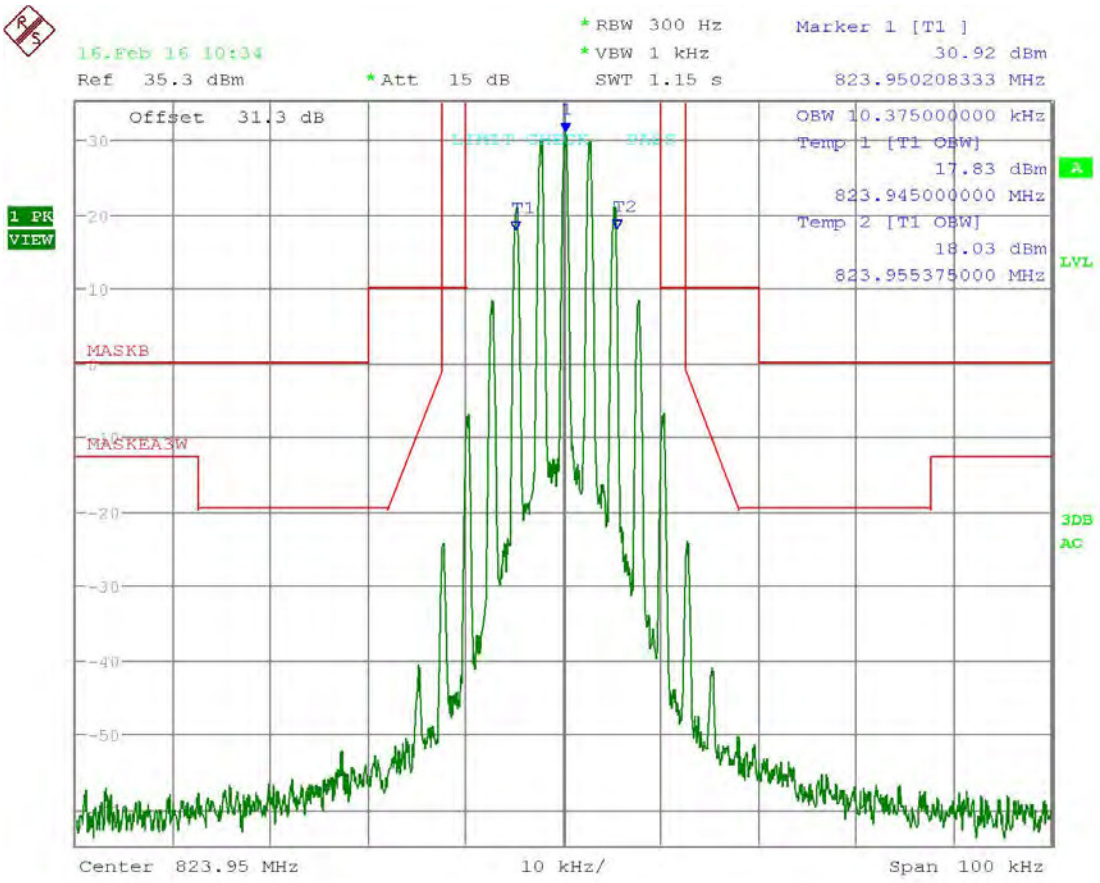
OCCUPIED BANDWIDTH

TEST FREQ. 823.95 MHz–14k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter
Part 90.691(a) Emission Mask EA – EA-based systems



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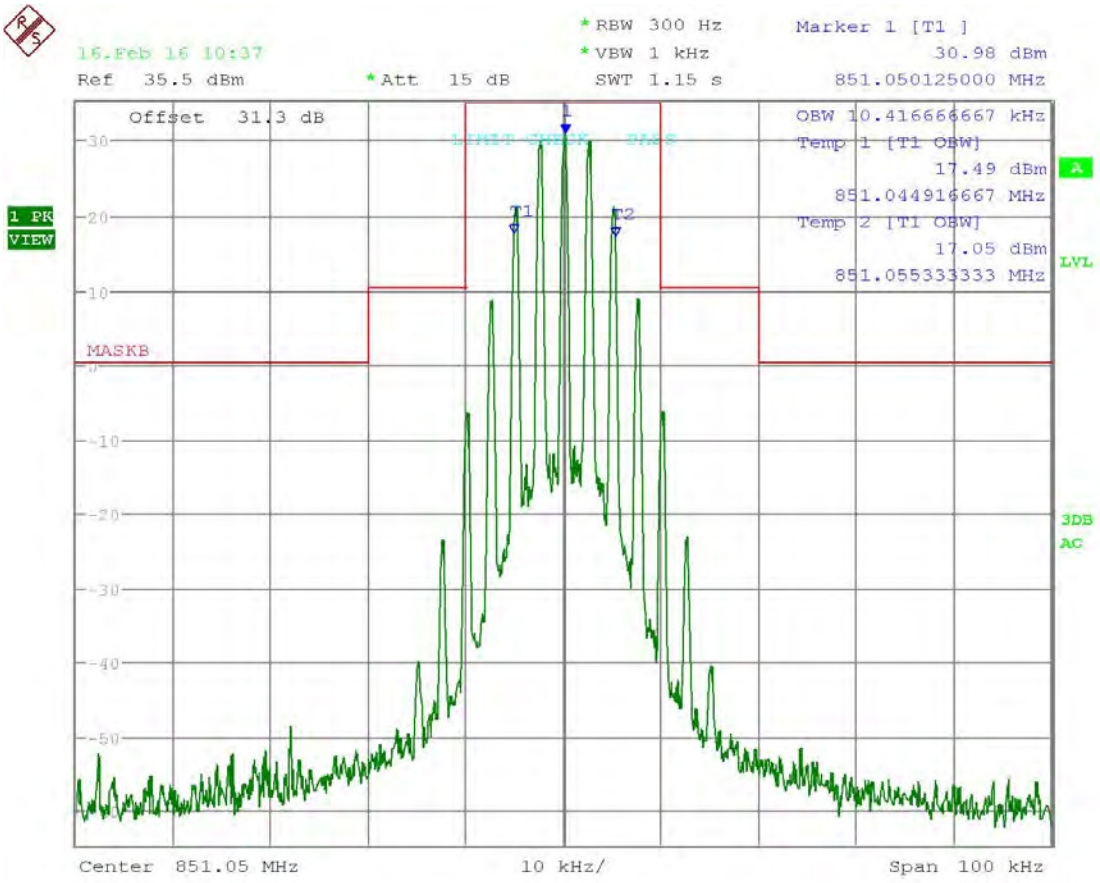
OCCUPIED BANDWIDTH

TEST FREQ. 851.05 MHz–14k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter



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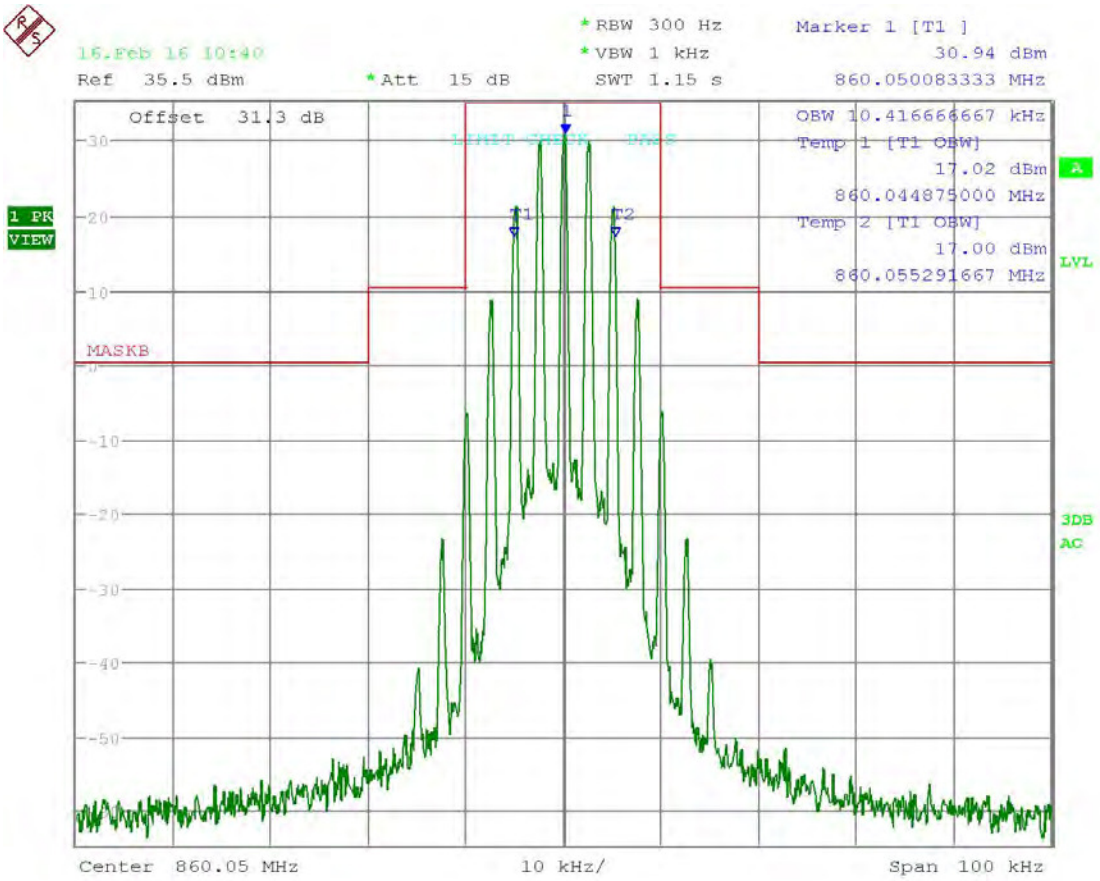
OCCUPIED BANDWIDTH

TEST FREQ. 860.05 MHz–14k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter



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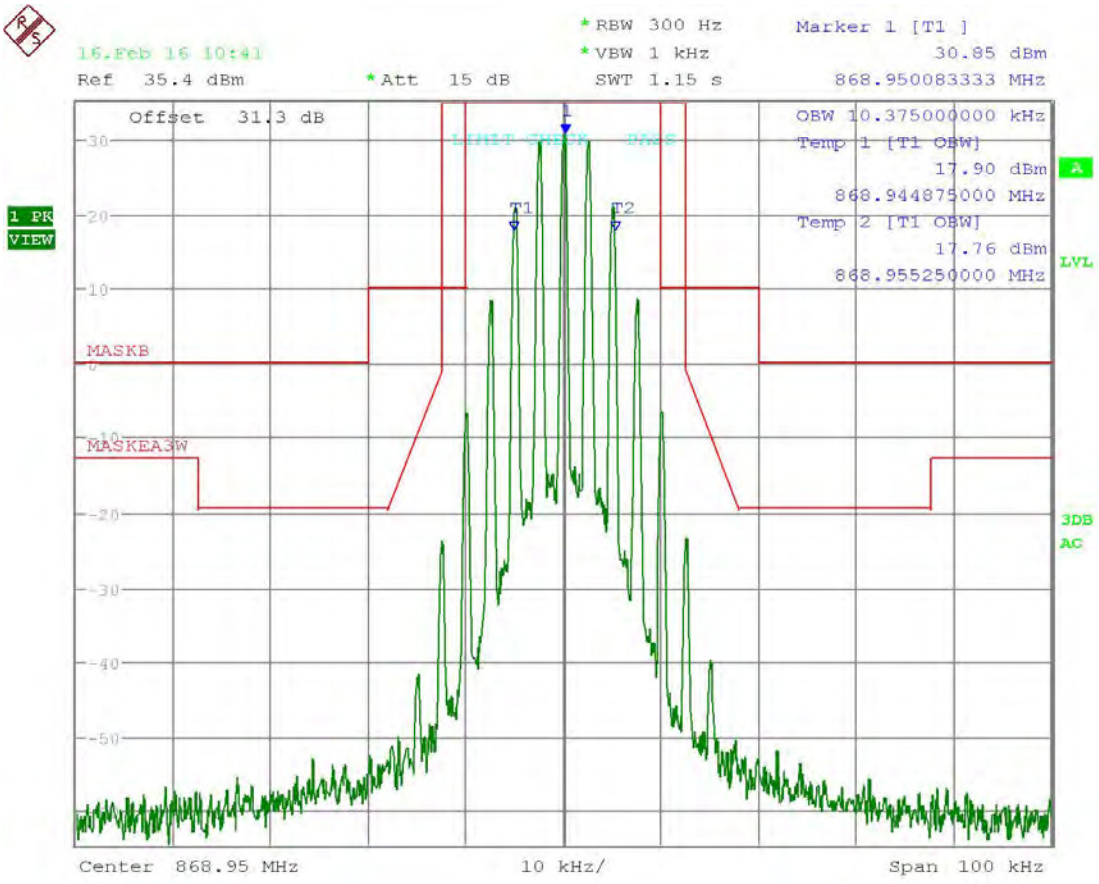
OCCUPIED BANDWIDTH

TEST FREQ. 868.95 MHz–14k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter
Part 90.691(a) Emission Mask EA – EA-based systems



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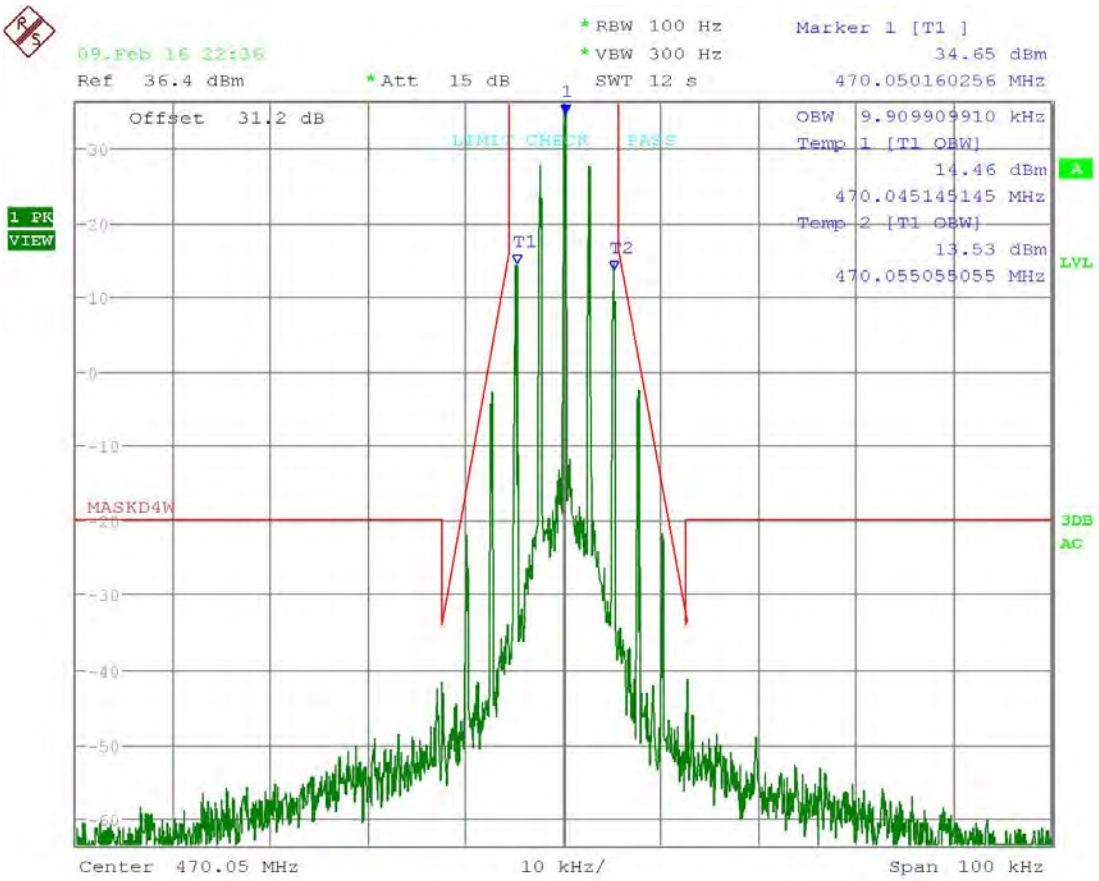
OCCUPIED BANDWIDTH

TEST FREQ. 470.05 MHz–11k0F3E

Part 90.210(d) Emission Mask D – Equipment with audio Low pass filter



Date: 9.FEB.2016 22:36:44

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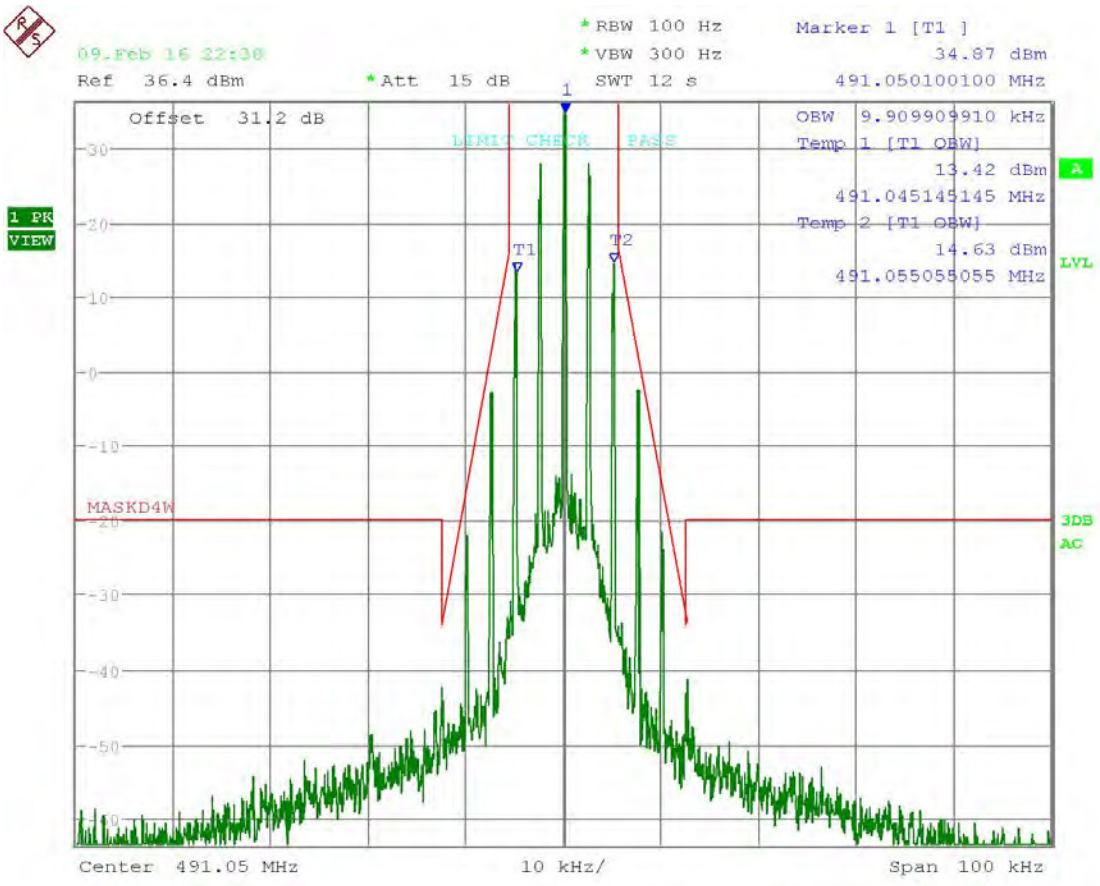
OCCUPIED BANDWIDTH

TEST FREQ. 491.05 MHz–11k0F3E

Part 90.210(d) Emission Mask D – Equipment with audio Low pass filter



Date: 9.FEB.2016 22:38:55

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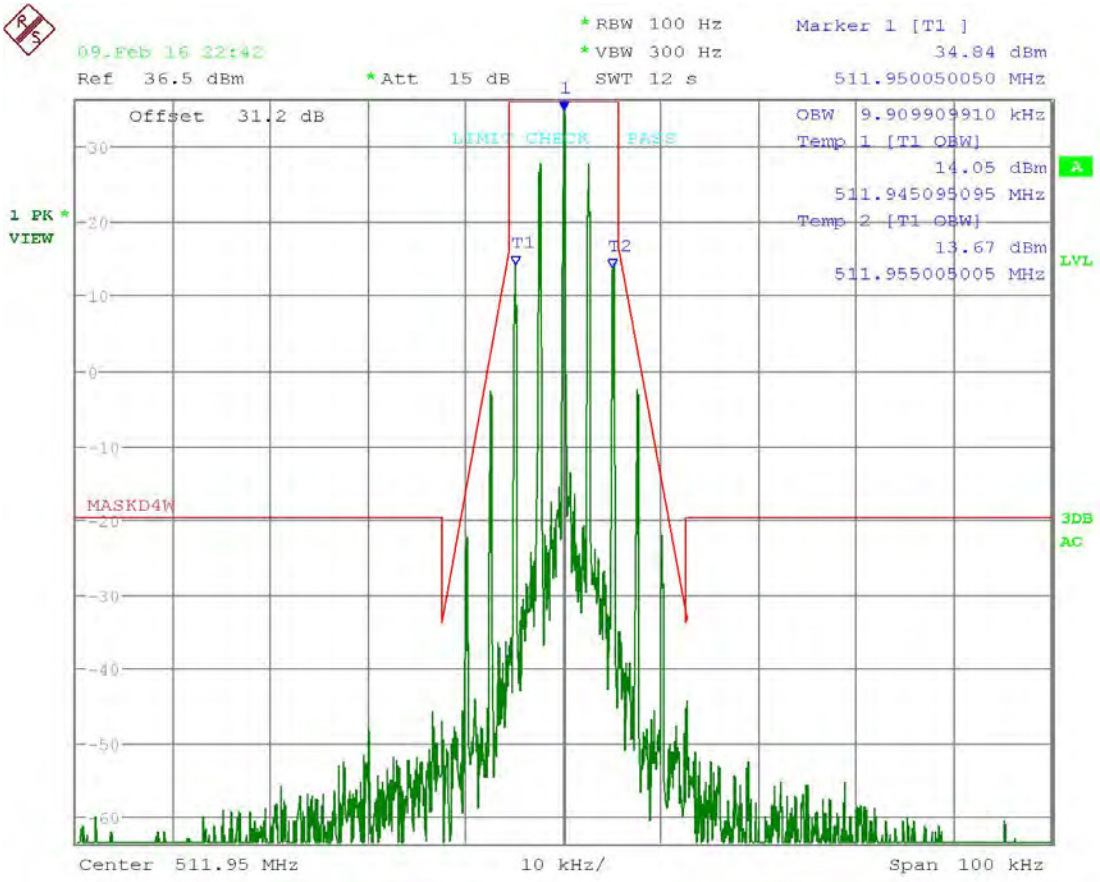
OCCUPIED BANDWIDTH

TEST FREQ. 511.95 MHz–11k0F3E

Part 90.210(d) Emission Mask D – Equipment with audio Low pass filter



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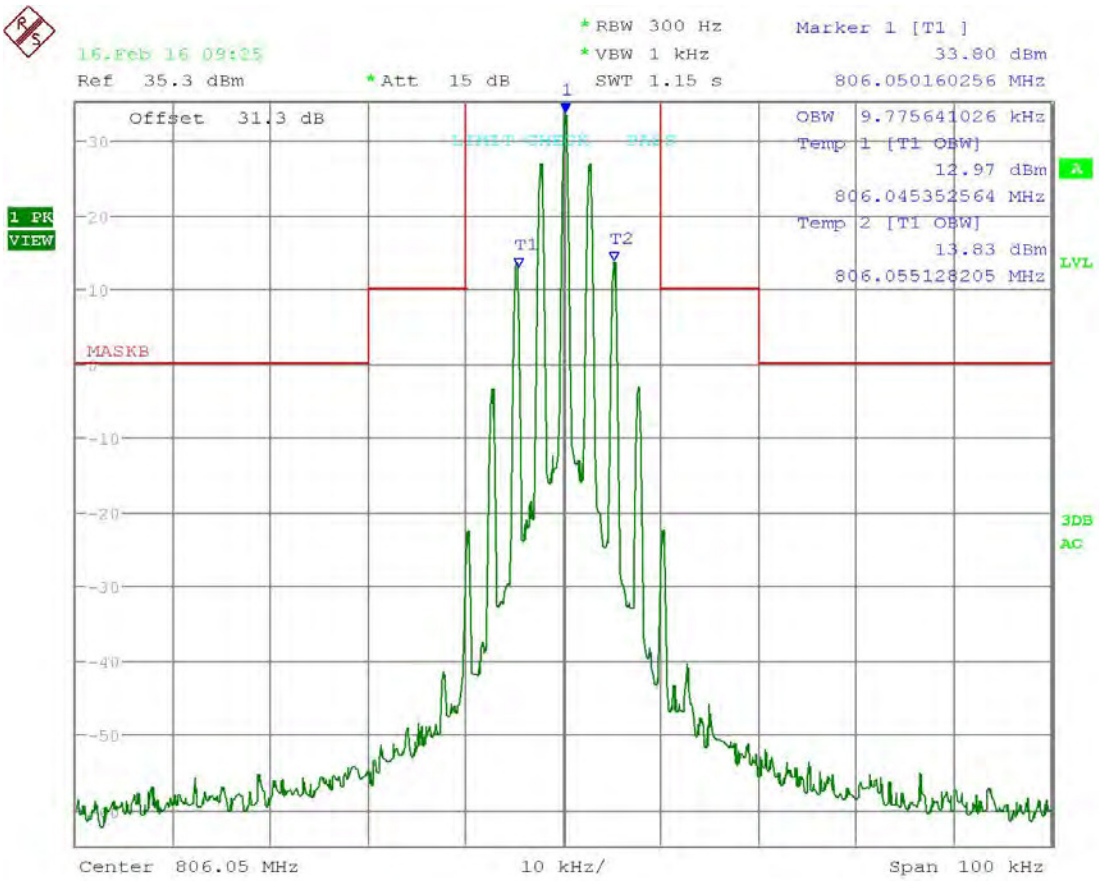
OCCUPIED BANDWIDTH

TEST FREQ. 806.05 MHz–11k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter



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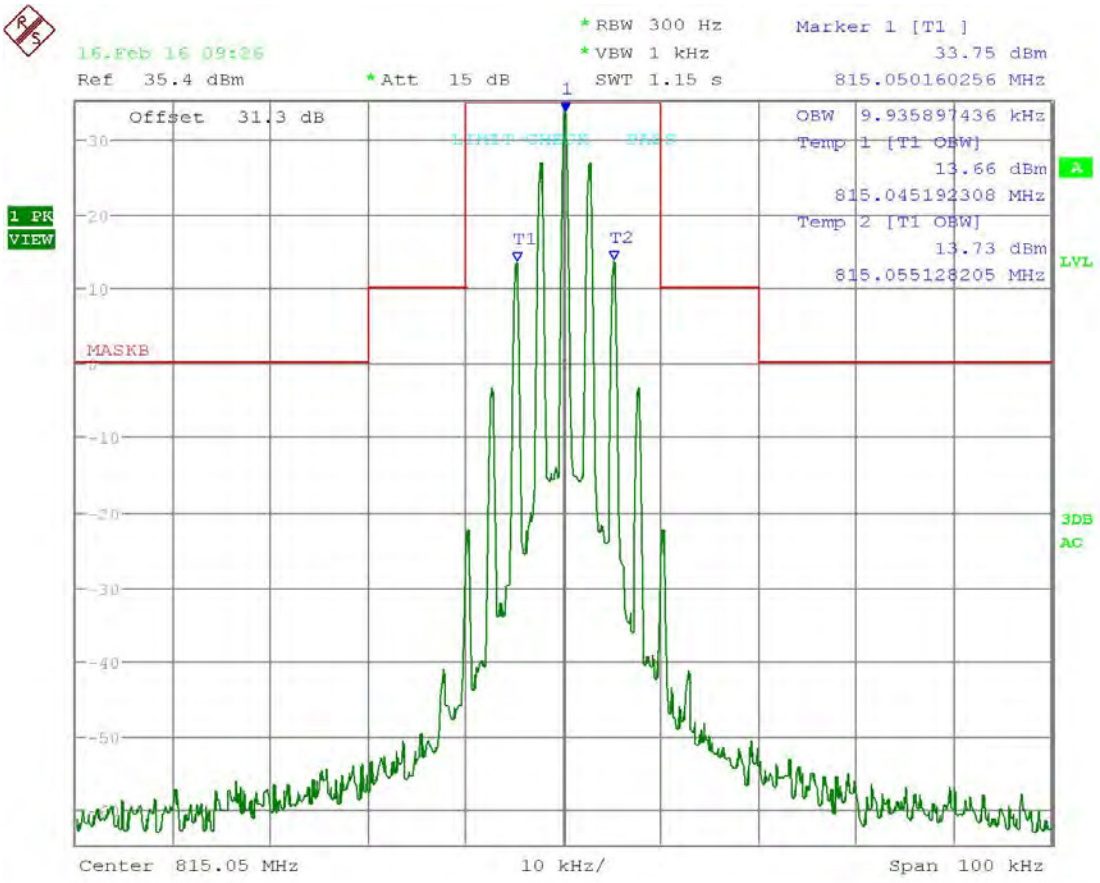
OCCUPIED BANDWIDTH

TEST FREQ. 815.05 MHz–11k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter



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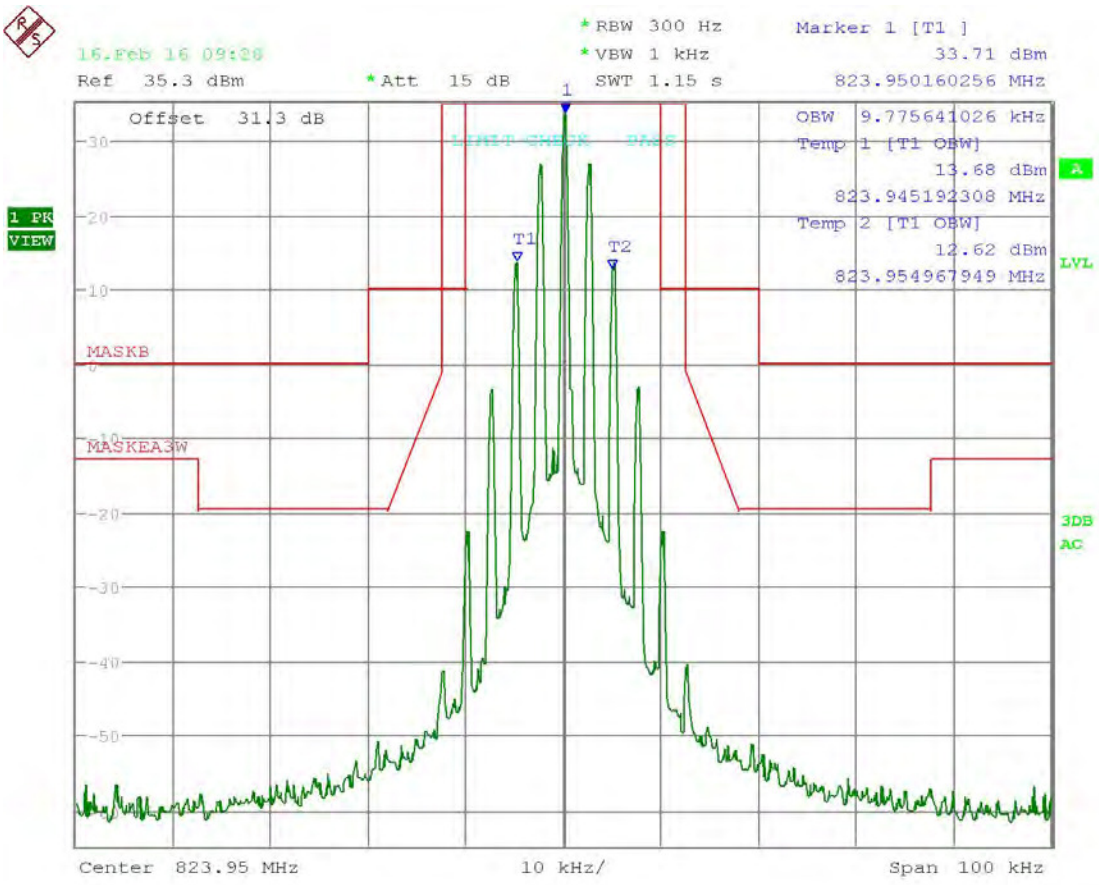
OCCUPIED BANDWIDTH

TEST FREQ. 823.95 MHz–11k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter
Part 90.691(a) Emission Mask EA – EA-based systems



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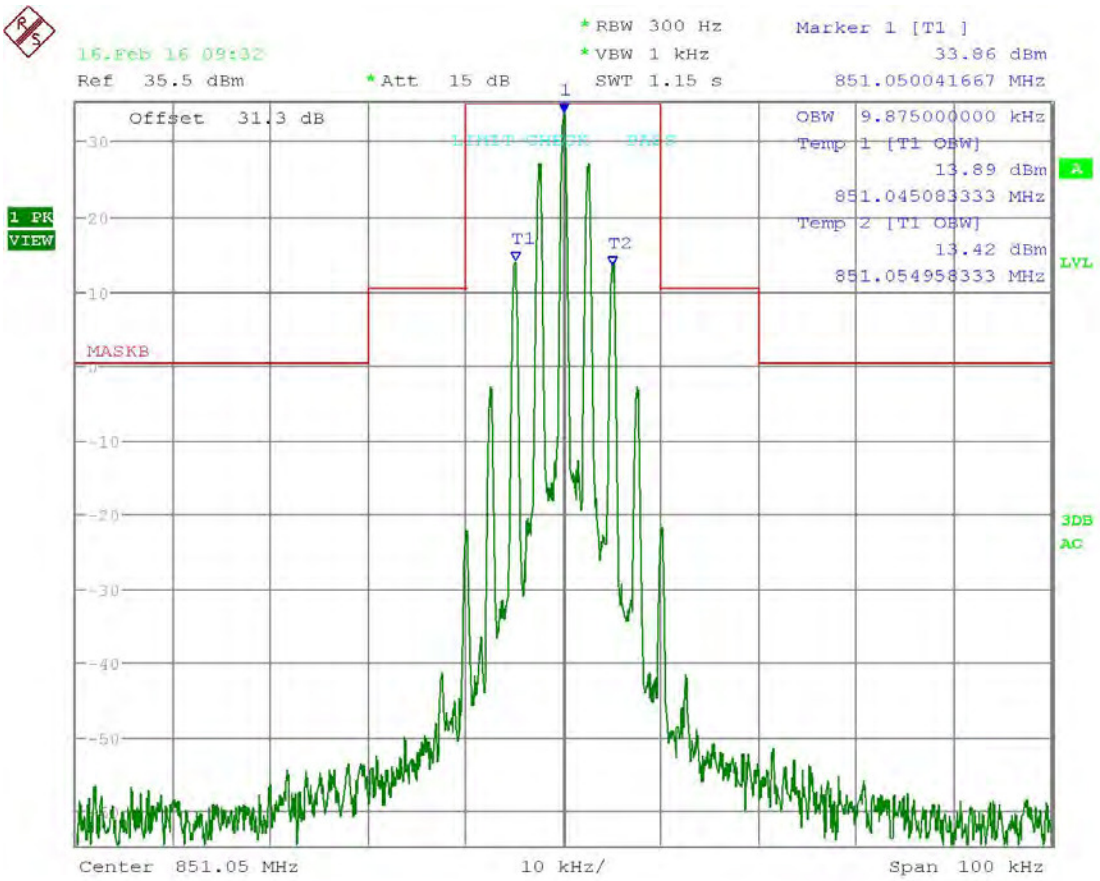
OCCUPIED BANDWIDTH

TEST FREQ. 851.05 MHz–11k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter



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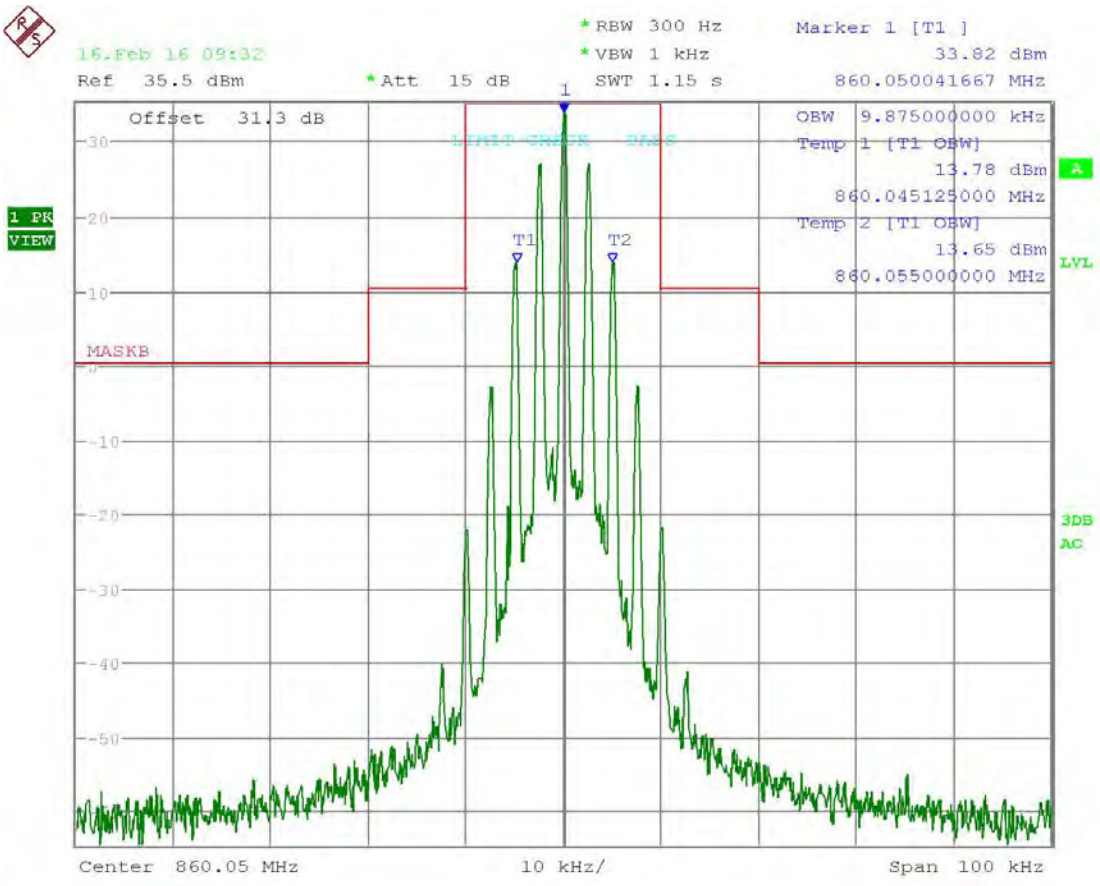
OCCUPIED BANDWIDTH

TEST FREQ. 860.05 MHz–11k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter



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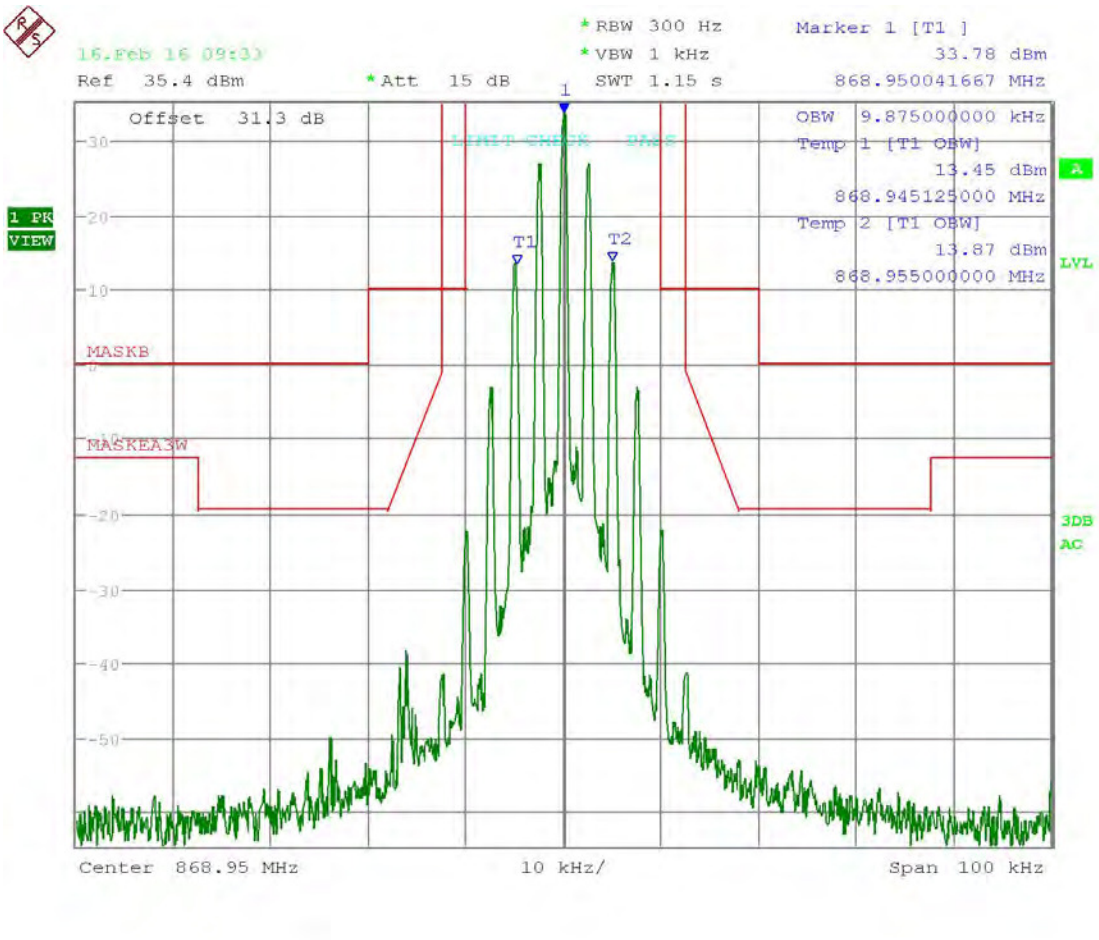
OCCUPIED BANDWIDTH

TEST FREQ. 868.95 MHz–11k0F3E

Part 90.210(b) Emission Mask B – Equipment with audio Low pass filter
Part 90.691(a) Emission Mask EA – EA-based systems



Date: 16.FEB.2016 09:33:53

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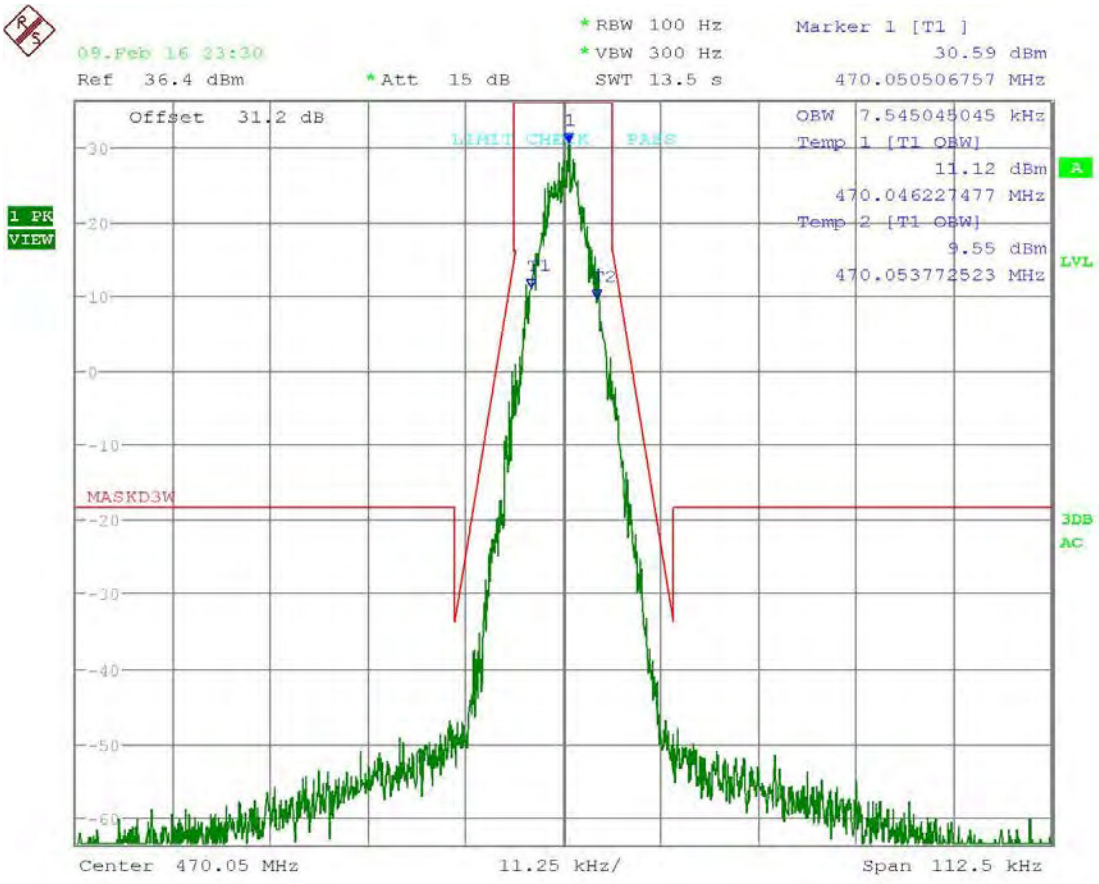
OCCUPIED BANDWIDTH

TEST FREQ. 470.05 MHz–8K10F1E/ 8K10F1D

Part 90.210(d) Emission Mask D – Equipment with audio Low pass filter



Date: 9.FEB.2016 23:30:32

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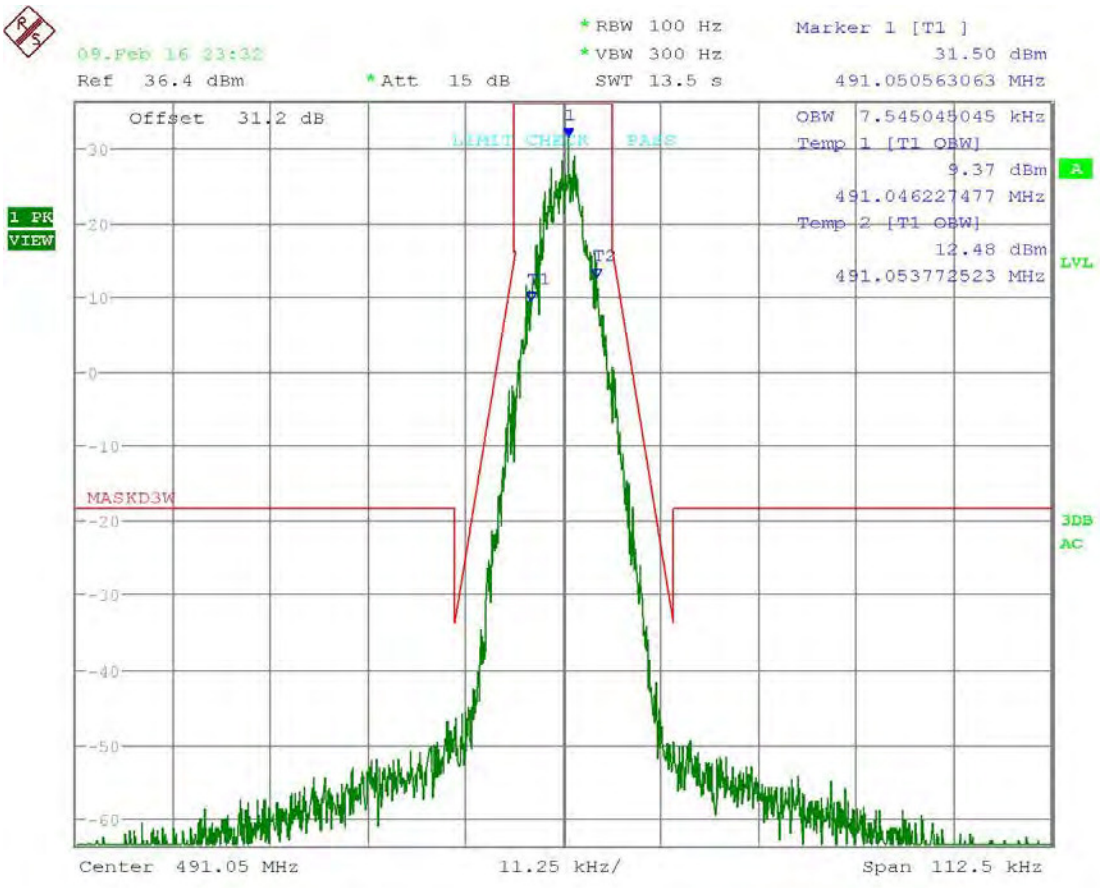
OCCUPIED BANDWIDTH

TEST FREQ. 491.05 MHz–8K10F1E/ 8K10F1D

Part 90.210(d) Emission Mask D – Equipment with audio Low pass filter



Date: 9.FEB.2016 23:32:04

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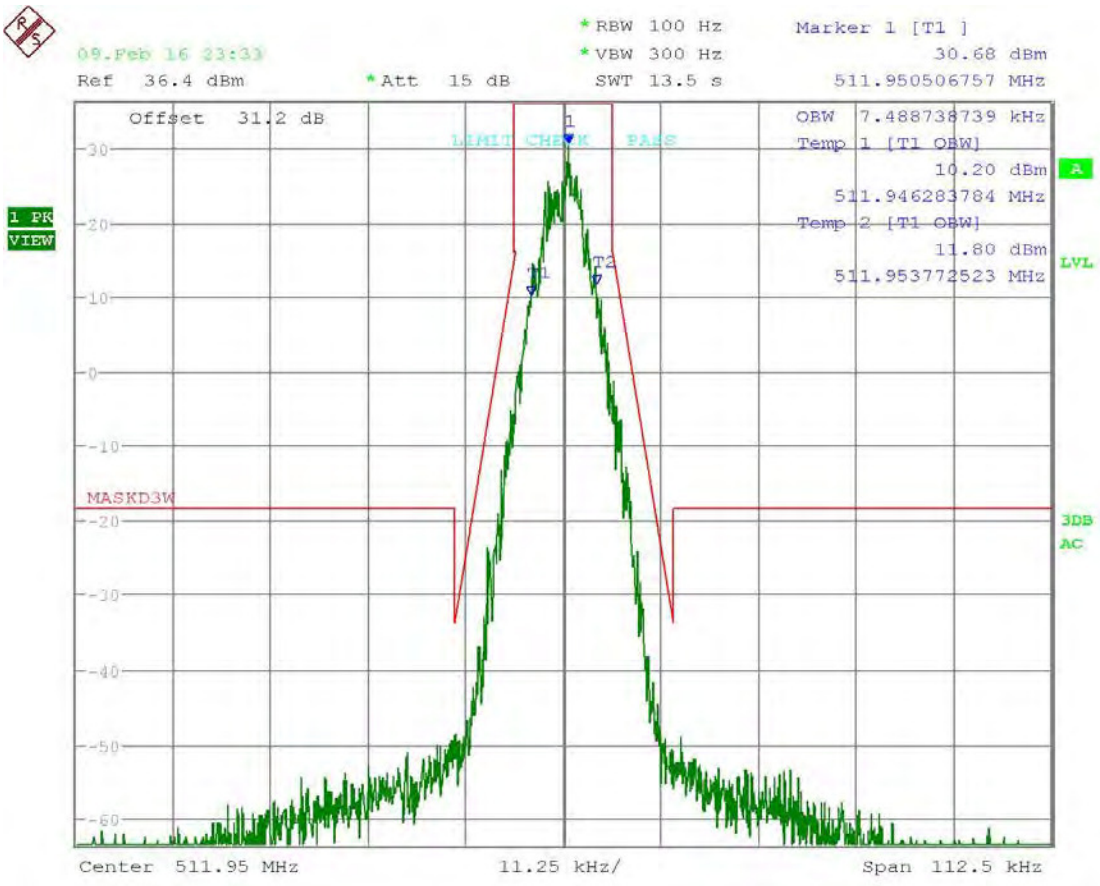
OCCUPIED BANDWIDTH

TEST FREQ. 511.95 MHz–8K10F1E/ 8K10F1D

Part 90.210(d) Emission Mask D – Equipment with audio Low pass filter



Date: 9.FEB.2016 23:33:24

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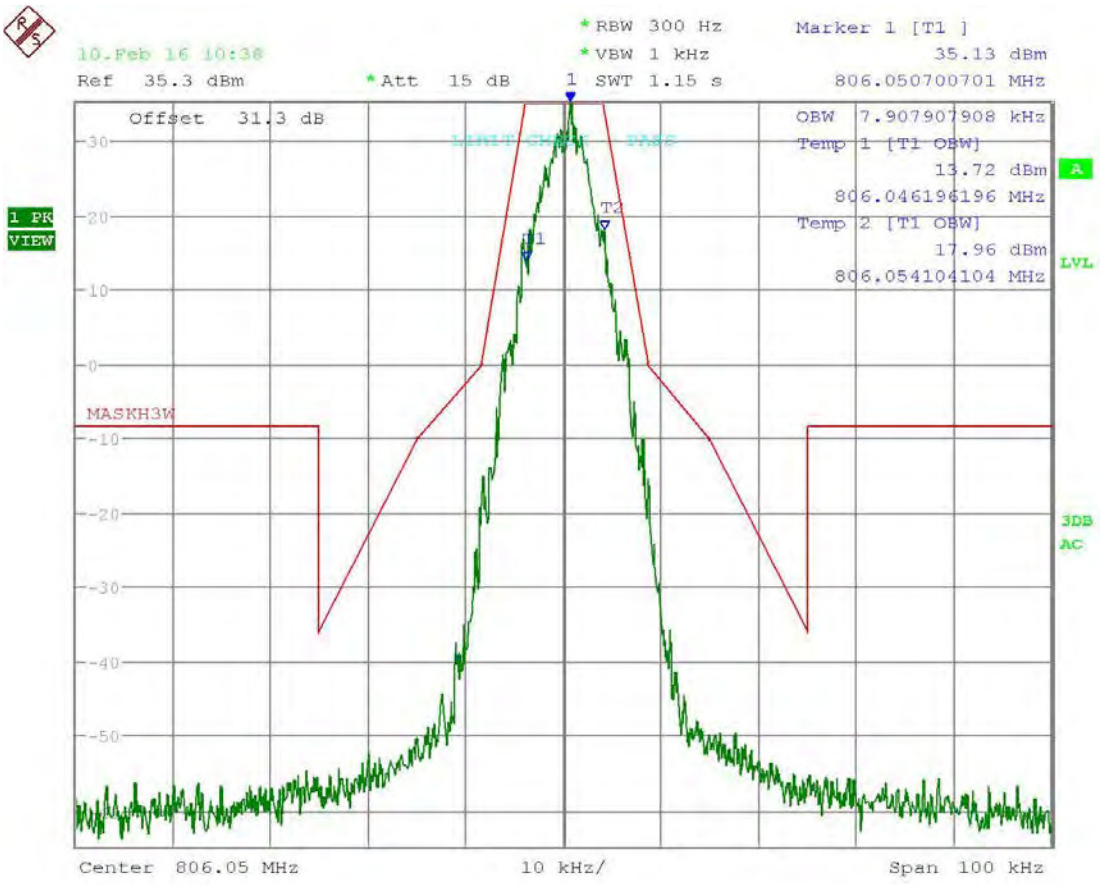
OCCUPIED BANDWIDTH

TEST FREQ. 806.05 MHz–8K10F1E/ 8K10F1D

Part 90.210(h) Emission Mask H – Equipment without Low pass filter



Date: 10.FEB.2016 10:38:48

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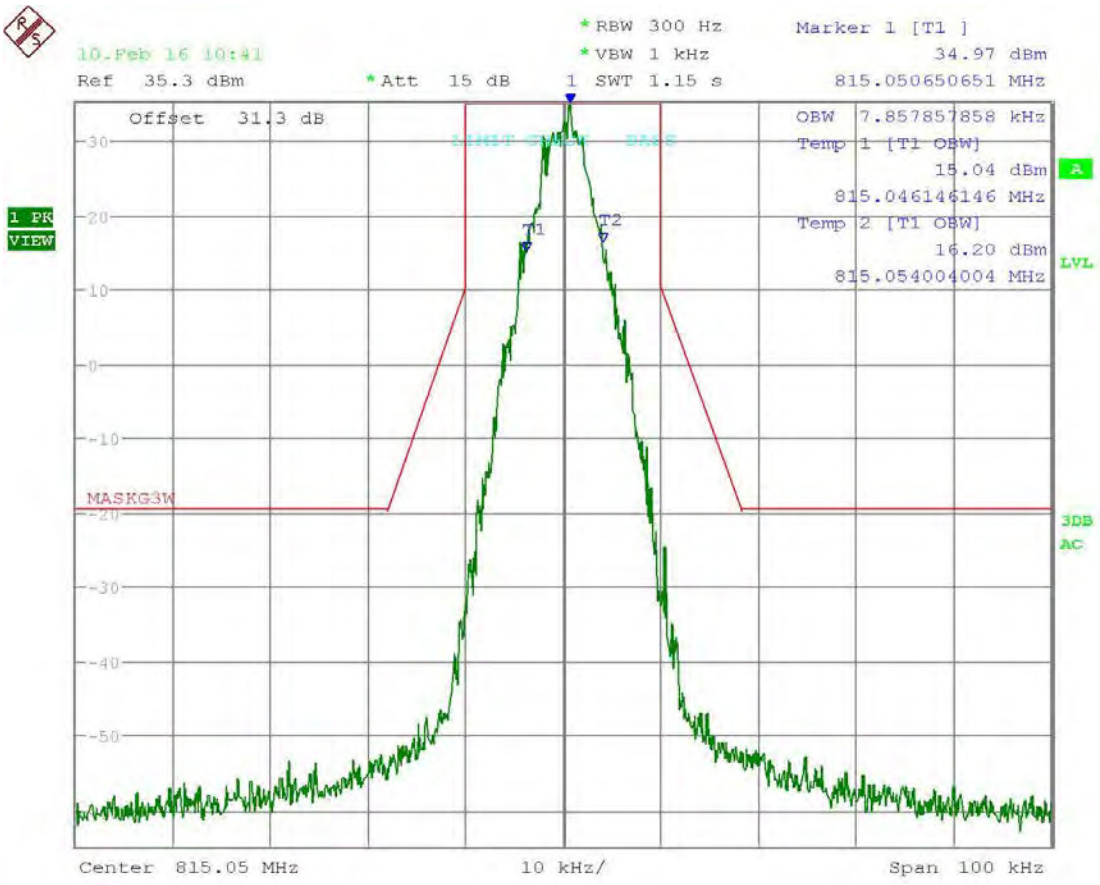
OCCUPIED BANDWIDTH

TEST FREQ. 815.05 MHz–8K10F1E/ 8K10F1D

Part 90.210(g) Emission Mask G – Equipment without Low pass filter



Date: 10.FEB.2016 10:41:17

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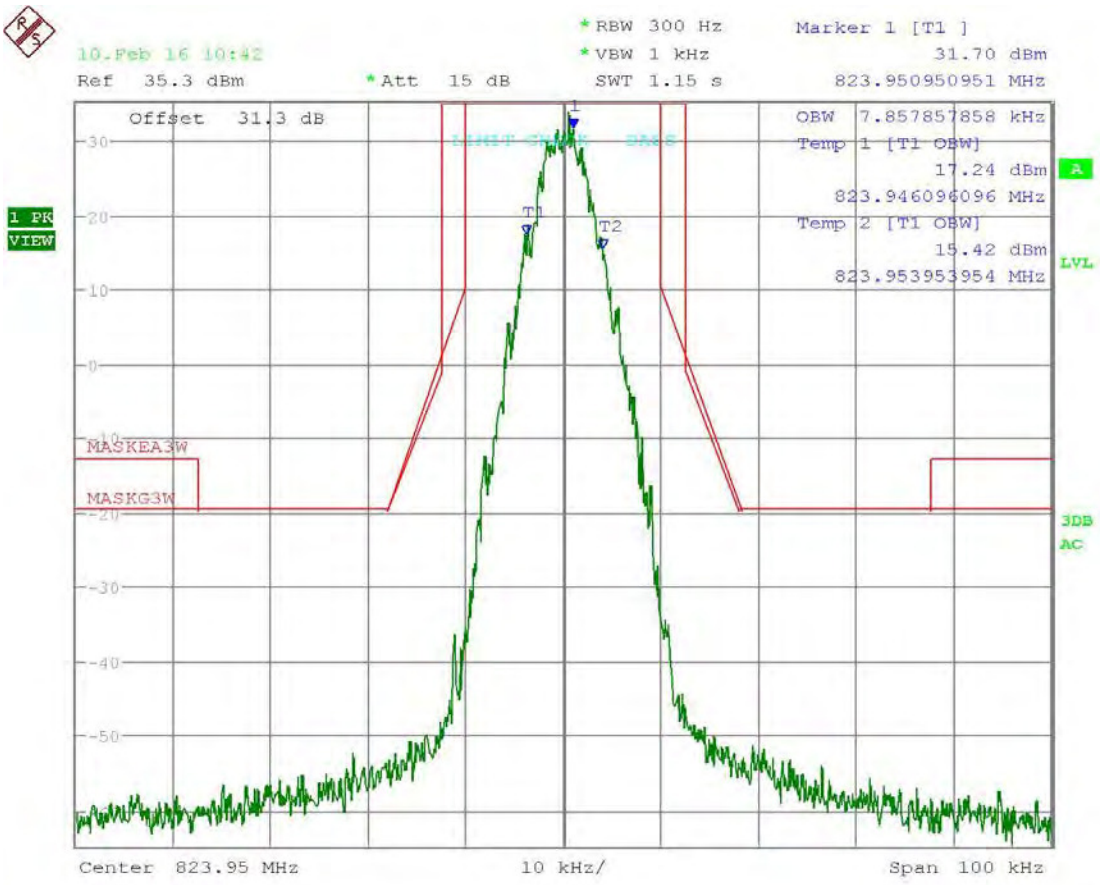
OCCUPIED BANDWIDTH

TEST FREQ. 823.95 MHz–8K10F1E/ 8K10F1D

Part 90.210(g) Emission Mask G – Equipment without Low pass filter
Part 90.691(a) Emission Mask EA – EA-based systems



Date: 10.FEB.2016 10:42:32

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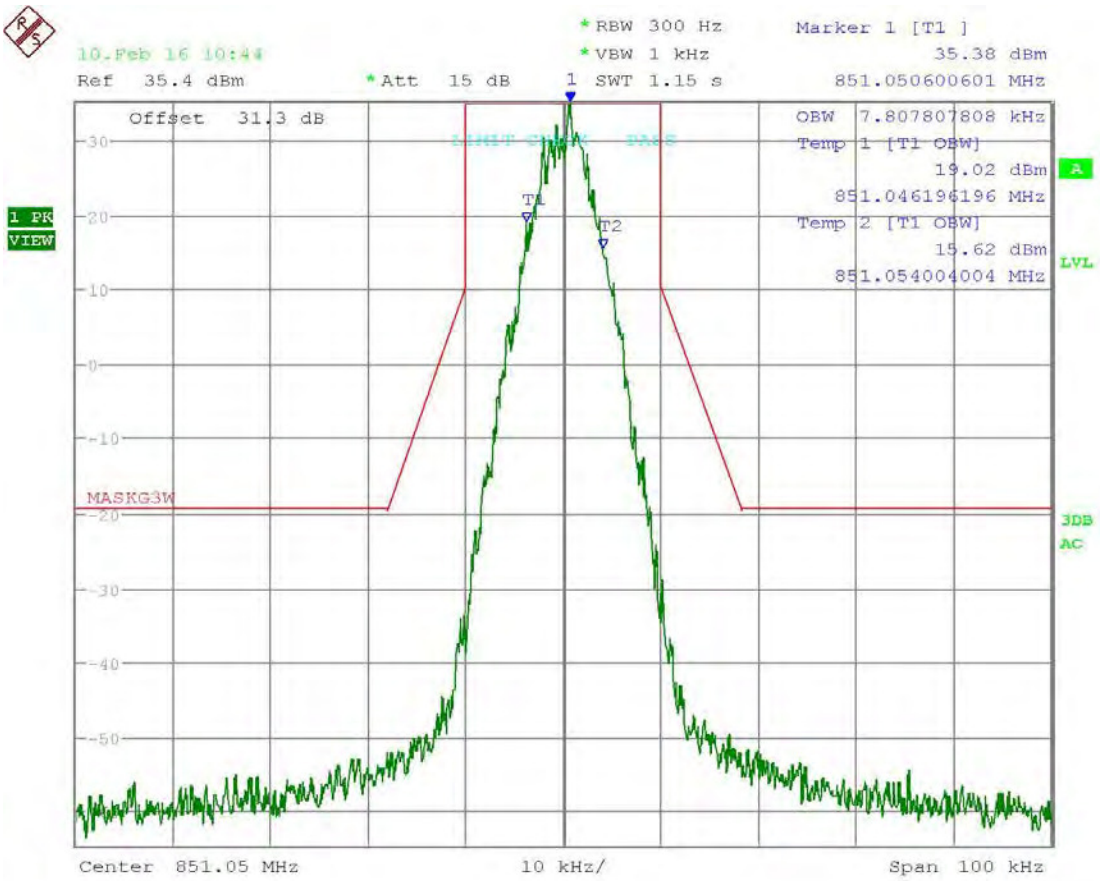
OCCUPIED BANDWIDTH

TEST FREQ. 851.05 MHz–8K10F1E/ 8K10F1D

Part 90.210(g) Emission Mask G – Equipment without Low pass filter



Date: 10.FEB.2016 10:44:14

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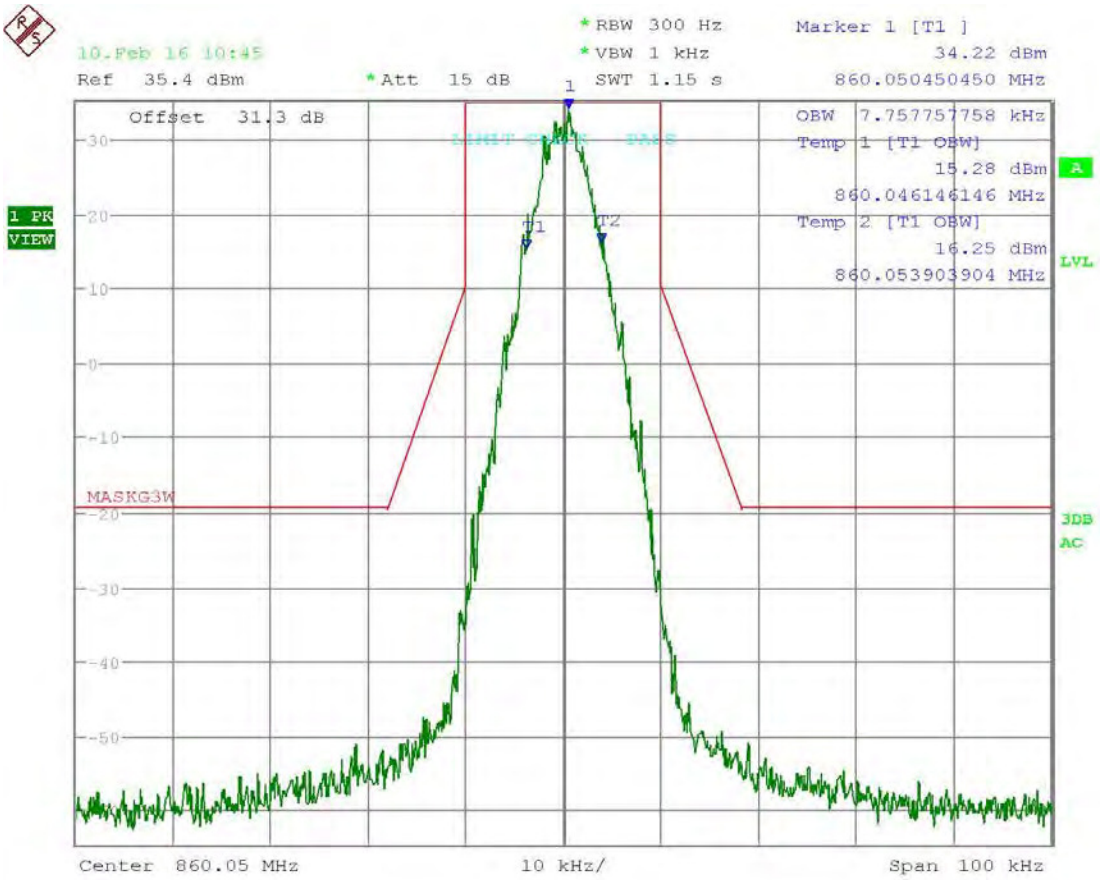
OCCUPIED BANDWIDTH

TEST FREQ. 860.05 MHz–8K10F1E/ 8K10F1D

Part 90.210(g) Emission Mask G – Equipment without Low pass filter



Date: 10.FEB.2016 10:45:52

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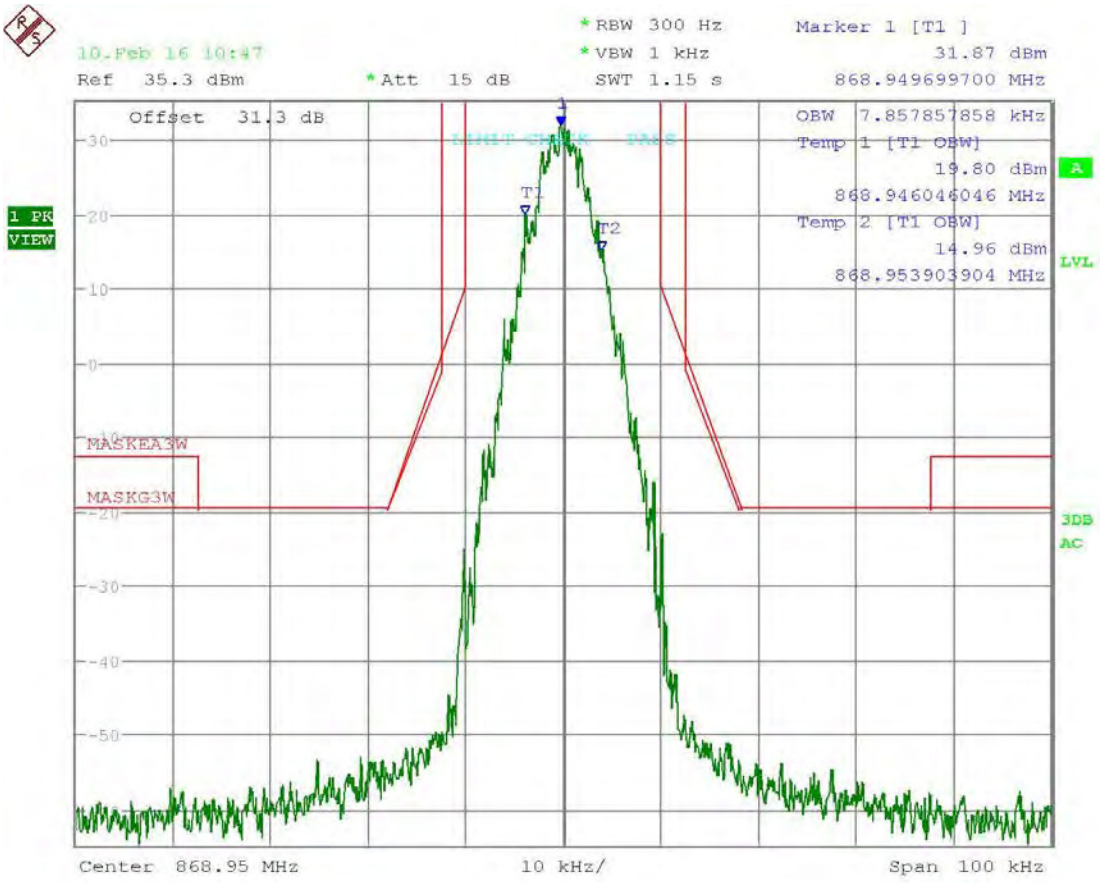
OCCUPIED BANDWIDTH

TEST FREQ. 868.95 MHz–8K10F1E/ 8K10F1D

Part 90.210(g) Emission Mask G – Equipment without Low pass filter
Part 90.691(a) Emission Mask EA – EA-based systems



Date: 10.FEB.2016 10:47:07

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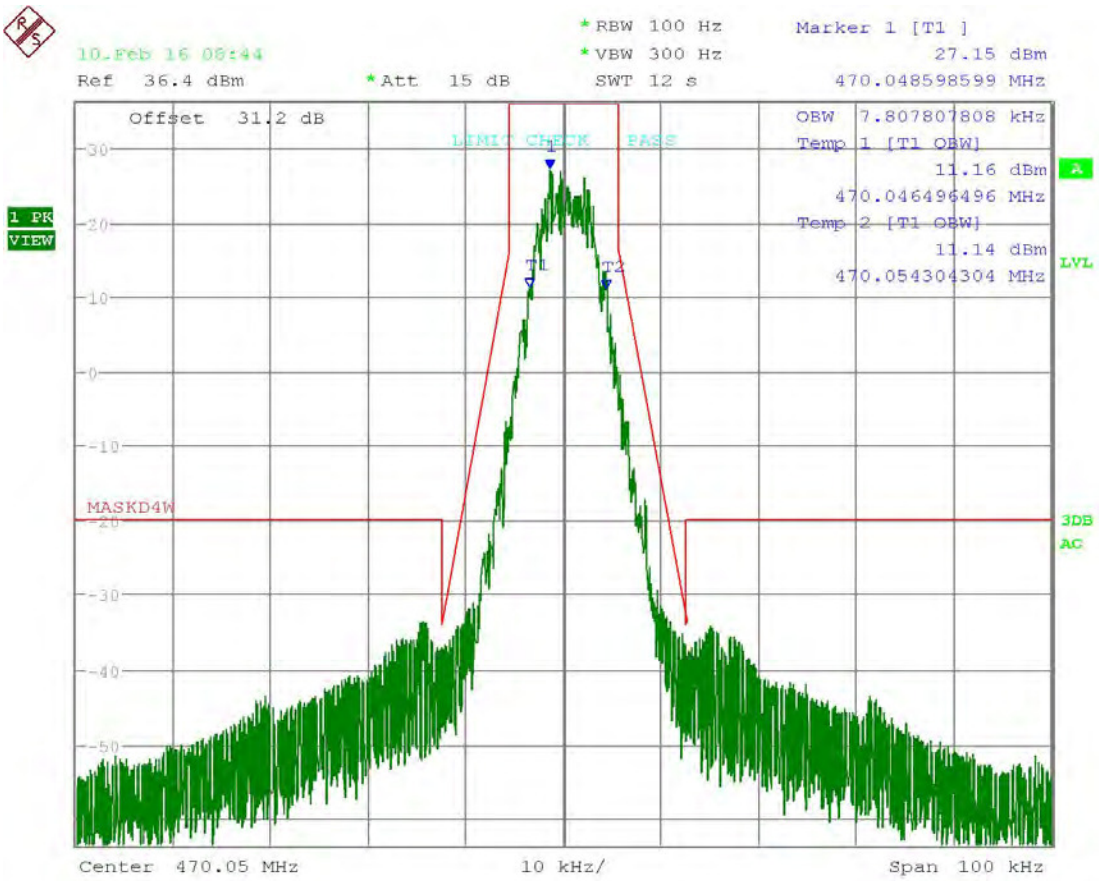
OCCUPIED BANDWIDTH

TEST FREQ. 470.05 MHz–8K10F7E

Part 90.210(d) Emission Mask D – Equipment with audio Low pass filter



Date: 10.FEB.2016 08:44:34

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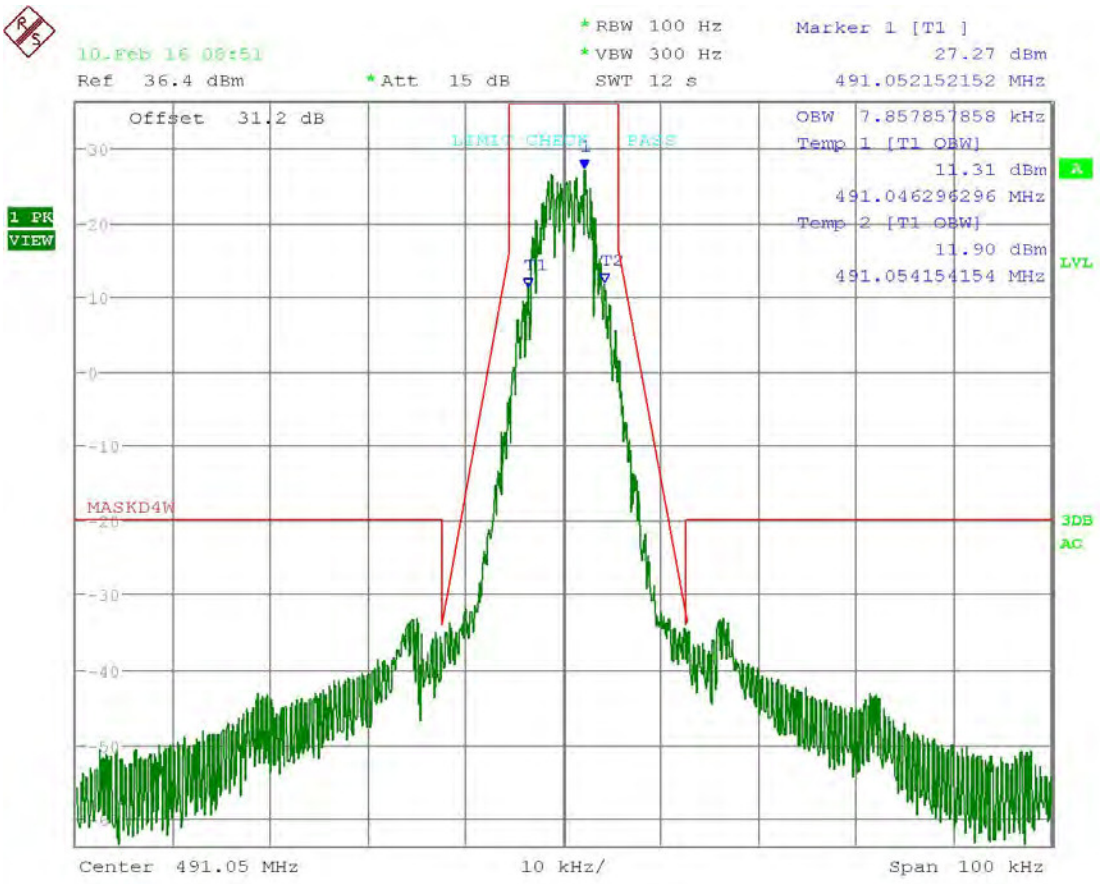
OCCUPIED BANDWIDTH

TEST FREQ. 491.05 MHz–8K10F7E

Part 90.210(d) Emission Mask D – Equipment with audio Low pass filter



Date: 10.FEB.2016 08:51:19

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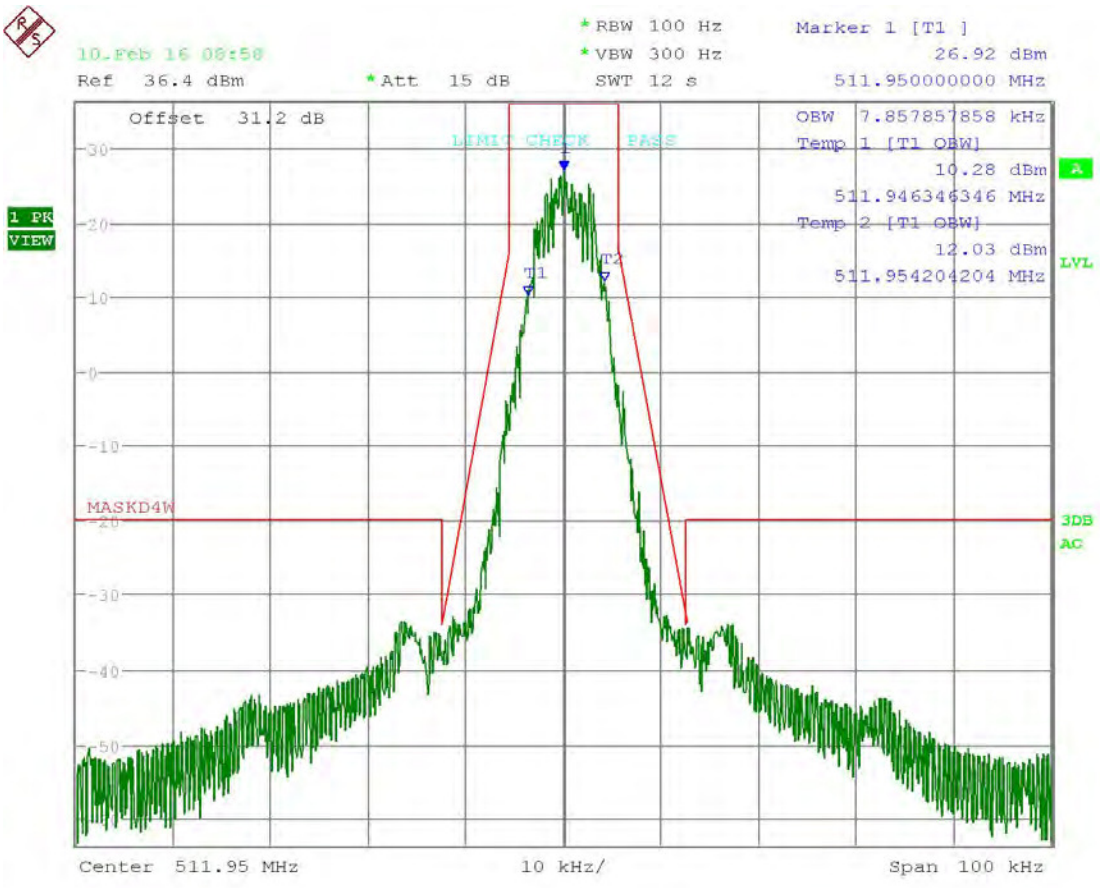
OCCUPIED BANDWIDTH

TEST FREQ. 511.95 MHz–8K10F7E

Part 90.210(d) Emission Mask D – Equipment with audio Low pass filter



Date: 10.FEB.2016 08:58:31

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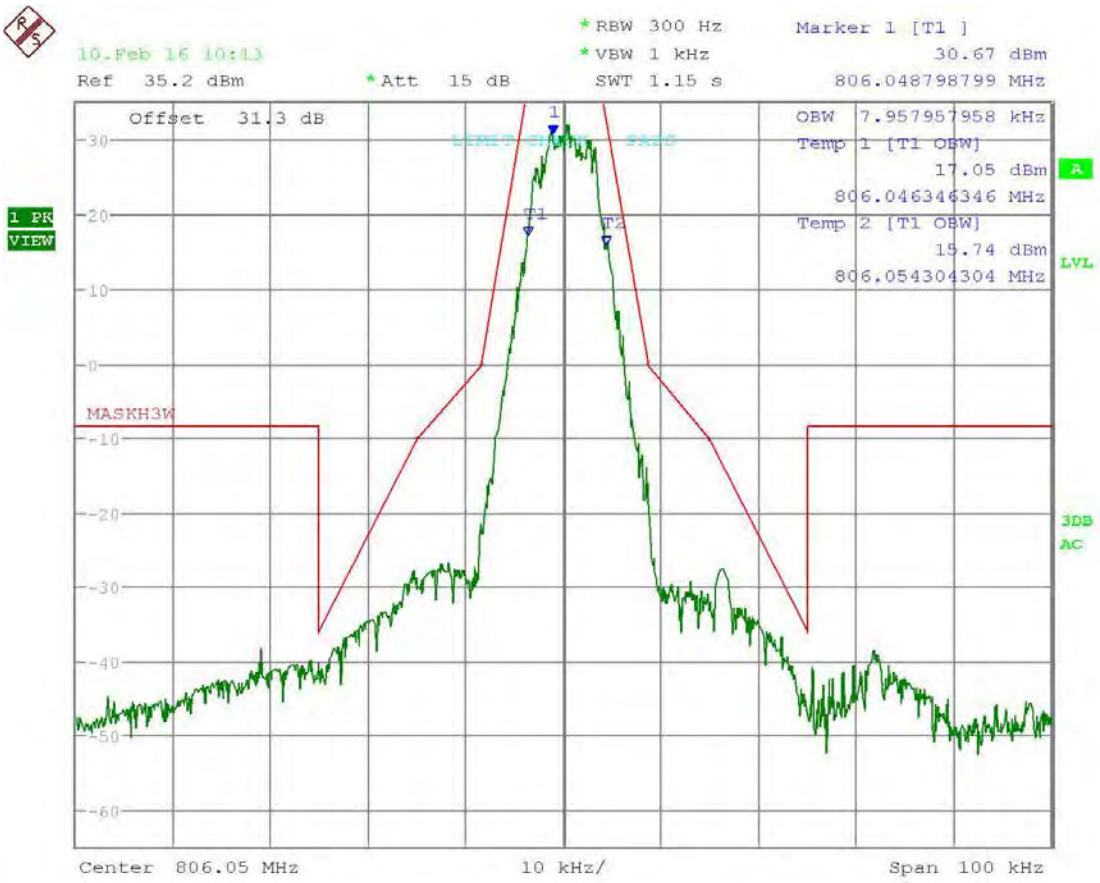
OCCUPIED BANDWIDTH

TEST FREQ. 806.05 MHz–8K10F7E

Part 90.210(h) Emission Mask H – Equipment without Low pass filter



Date: 10.FEB.2016 10:13:32

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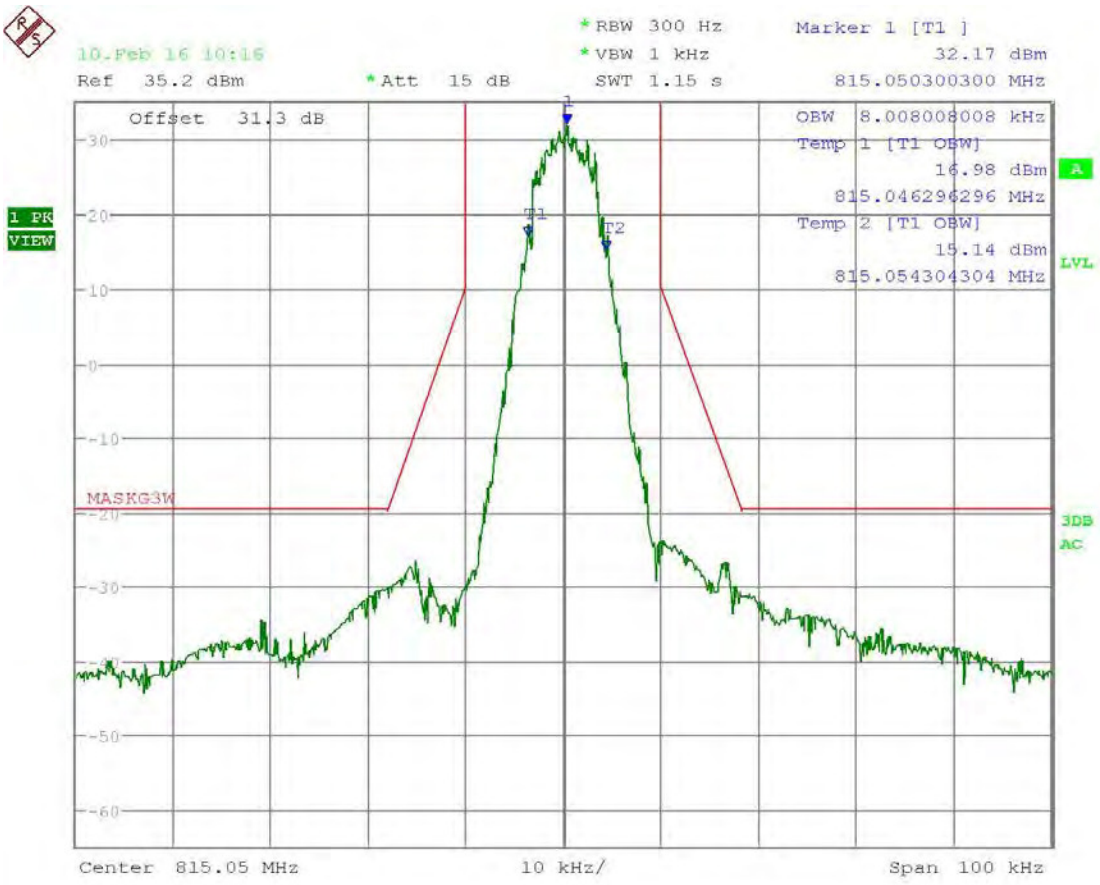
OCCUPIED BANDWIDTH

TEST FREQ. 815.05 MHz–8K10F7E

Part 90.210(g) Emission Mask G – Equipment without Low pass filter



Date: 10.FEB.2016 10:16:44

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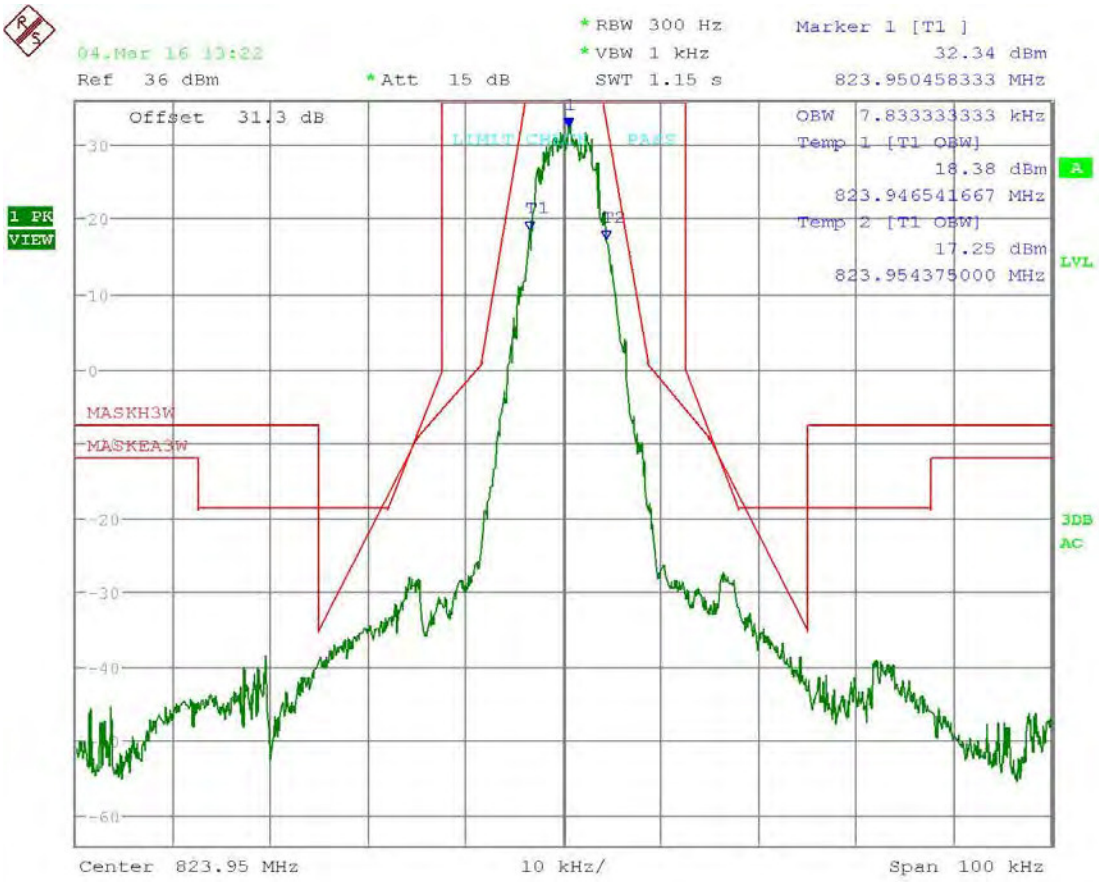
OCCUPIED BANDWIDTH

TEST FREQ. 823.95 MHz–8K10F7E

Part 90.210(g) Emission Mask G – Equipment without Low pass filter
Part 90.691(a) Emission Mask EA – EA-based systems



Date: 4.MAR.2016 13:22:24

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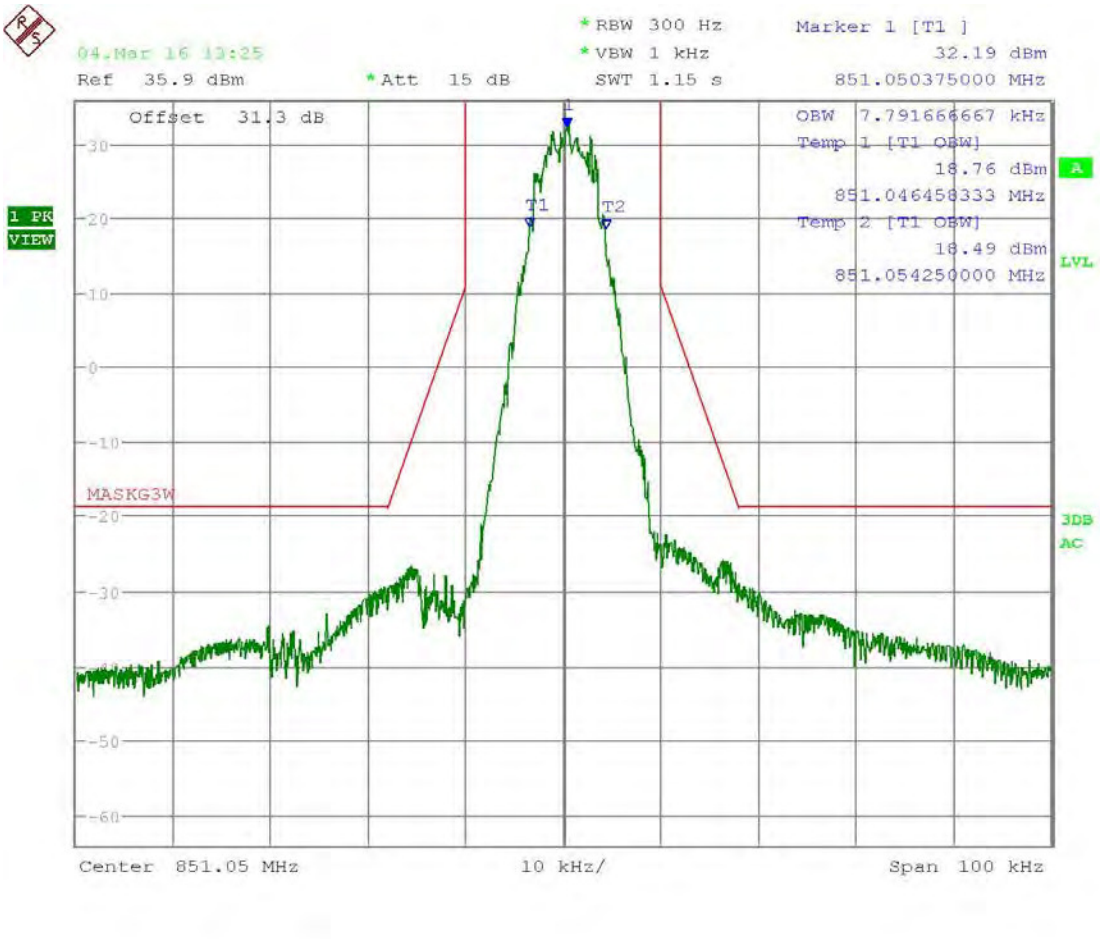
OCCUPIED BANDWIDTH

TEST FREQ. 851.05 MHz–8K10F7E

Part 90.210(g) Emission Mask G – Equipment without Low pass filter



Date: 4.MAR.2016 13:25:45

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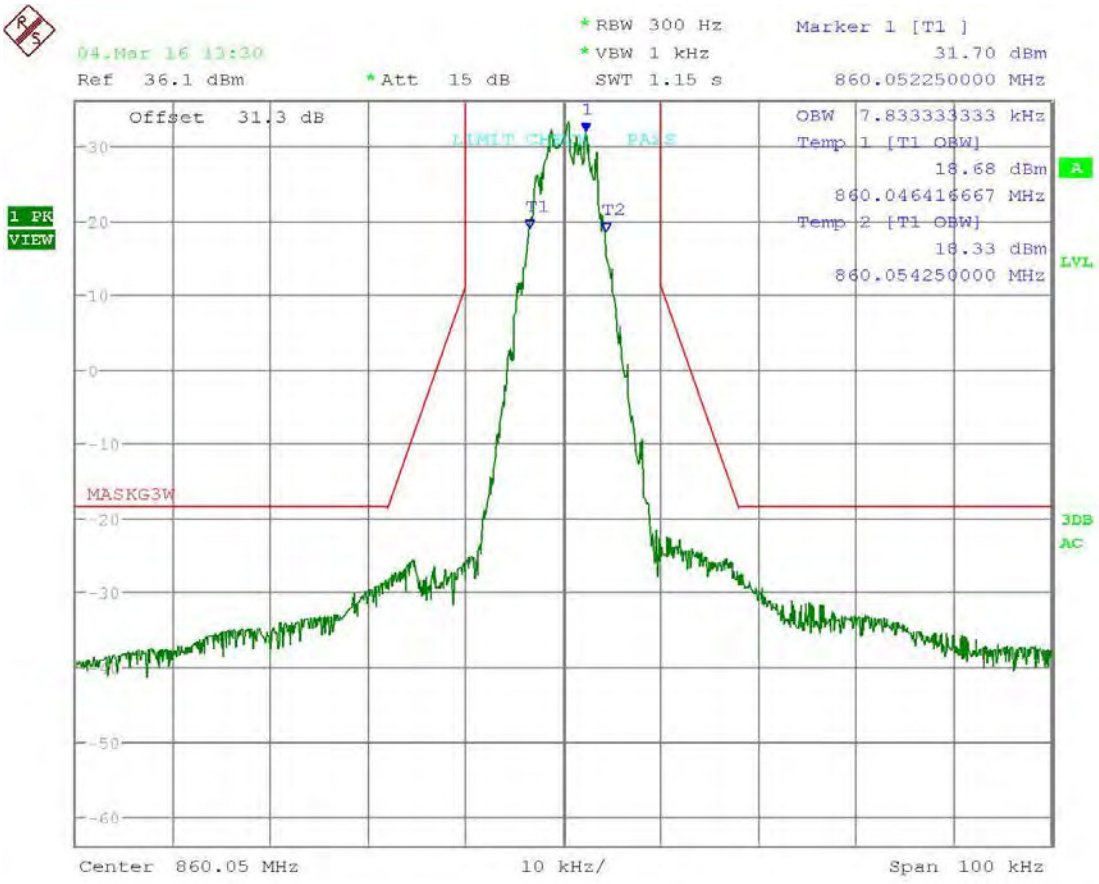
OCCUPIED BANDWIDTH

TEST FREQ. 860.05 MHz–8K10F7E

Part 90.210(g) Emission Mask G – Equipment without Low pass filter



Date: 4.MAR.2016 13:30:37

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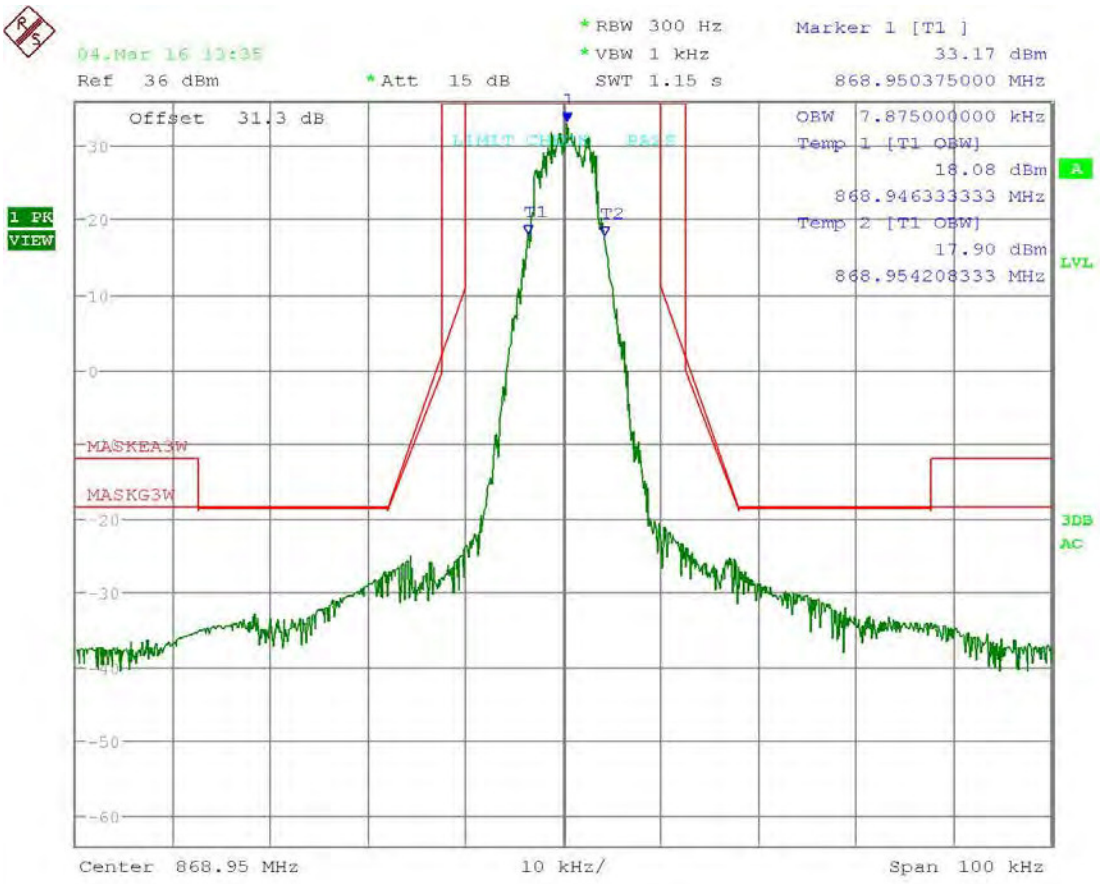
OCCUPIED BANDWIDTH

TEST FREQ. 868.95 MHz–8K10F7E

Part 90.210(g) Emission Mask G – Equipment without Low pass filter
Part 90.691(a) Emission Mask EA – EA-based systems



Date: 4.MAR.2016 13:35:06

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ADJACENT CHANNEL POWER (ACP)

RULE PARTS. NO.: 90.543(a)

REQUIREMENTS: Transmitters designed to operate in the 769-775 MHz and 799-805 MHz frequency bands must meet the emission limitations.

12.5 kHz Mobile Transmitter ACP Requirements		
Offset from center frequency	Measurement bandwidth	Maximum ACP relative
(kHz)	(kHz)	(dBc)
9.375	6.25	−40
15.625	6.25	−60
21.875	6.25	−60
37.5	25	−60
62.5	25	−65
87.5	25	−65
150	100	−65
250	100	−65
350	100	−65
>400 to 12 MHz	30 (s)	−75
12 MHz to paired receive band	30 (s)	−75
In the paired receive band	30 (s)	−100

(s) Indicates that a swept measurement may be used.

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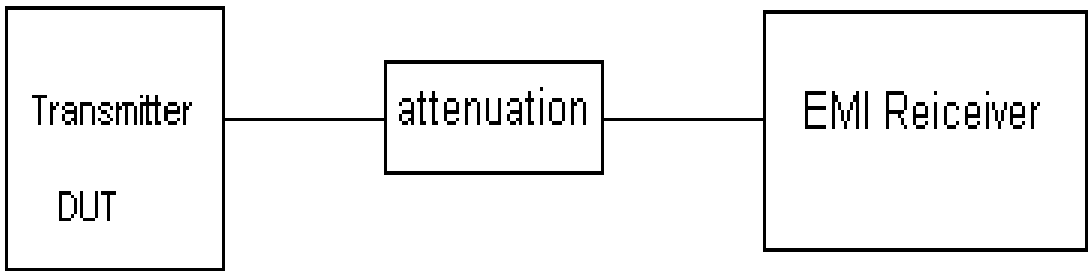
ADJACENT CHANNEL POWER (ACP)

TEST PROCEEDURE: ANSI/TIA-603 § 2.2.14 Adjacent Channel Power Ratio
FCC Part 90.543(b) ACP Measurement Procedure

1. All the measurement are made at the transmitter's antenna port.
2. The ACP was made with the EMI receiver which has a direct ACP function.
3. The Nominal RBW was less than 2% of the measurement BW

TEST SETUP DIAGRAM:



TEST DATA: See the plots on the following pages

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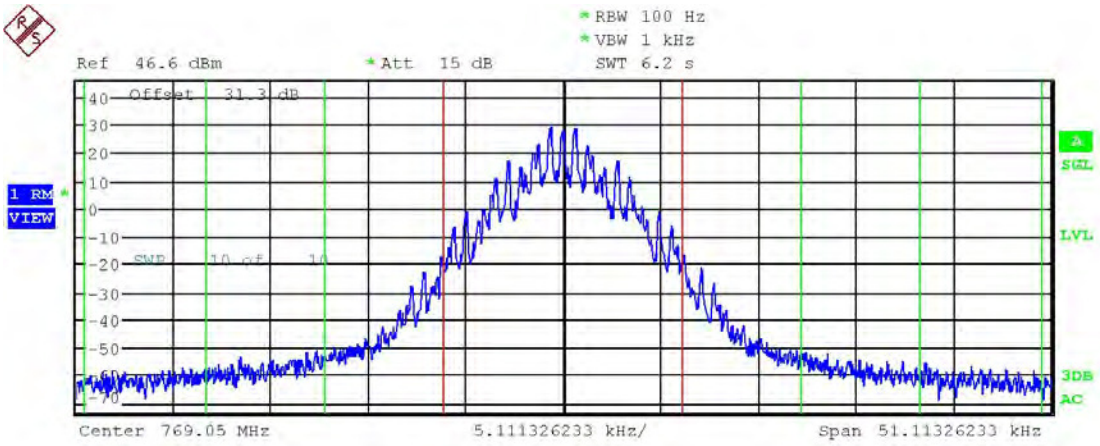
ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 769.05 MHz-11K0F3E

6.25 KHz Measurement Bandwidth



Tx Channel			
Bandwidth	12.5 kHz	Power	36.48 dBm
Adjacent Channel			
Bandwidth	6.25 kHz	Lower	-50.14 dB
Spacing	9.375 kHz	Upper	-50.35 dB
Alternate Channel			
Bandwidth	6.25 kHz	Lower	-76.15 dB
Spacing	15.625 kHz	Upper	-76.62 dB
2nd Alternate Channel			
Bandwidth	6.25 kHz	Lower	-80.57 dB
Spacing	21.875 kHz	Upper	-80.42 dB

Date: 16.FEB.2016 11:44:00

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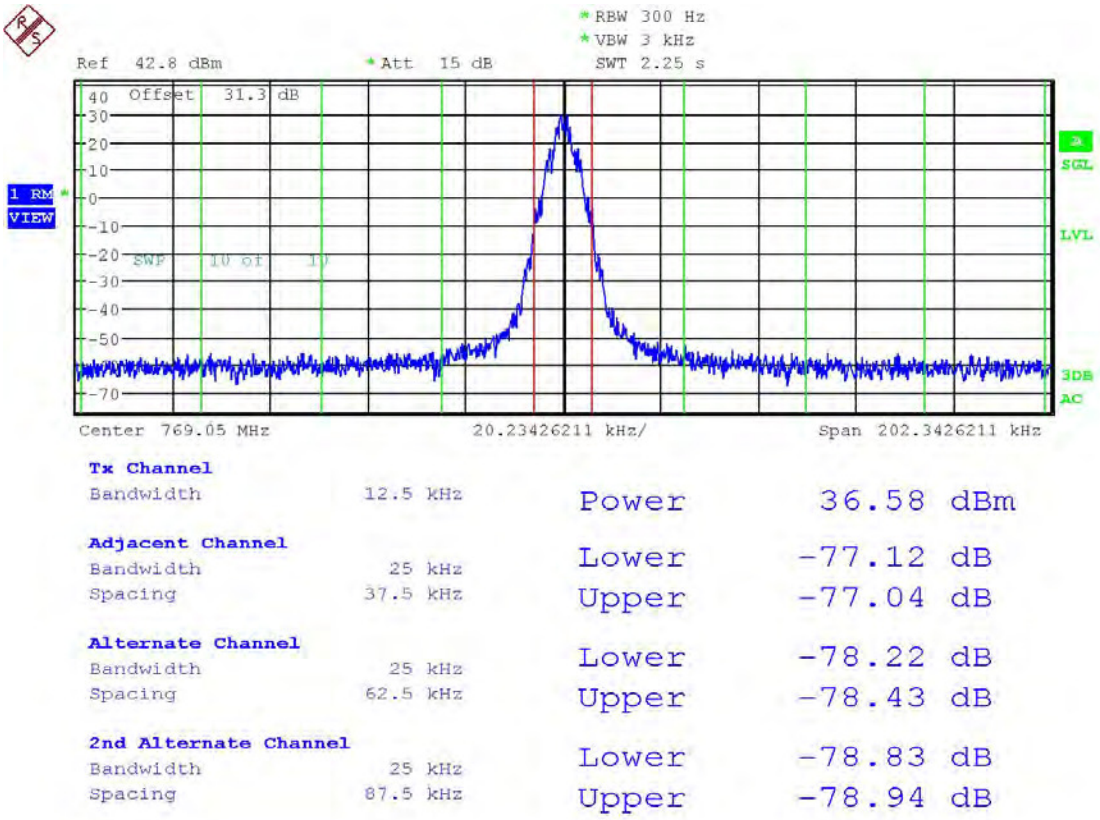
ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 769.05 MHz-11K0F3E

25 KHz Measurement Bandwidth



Date: 25.FEB.2016 20:21:19

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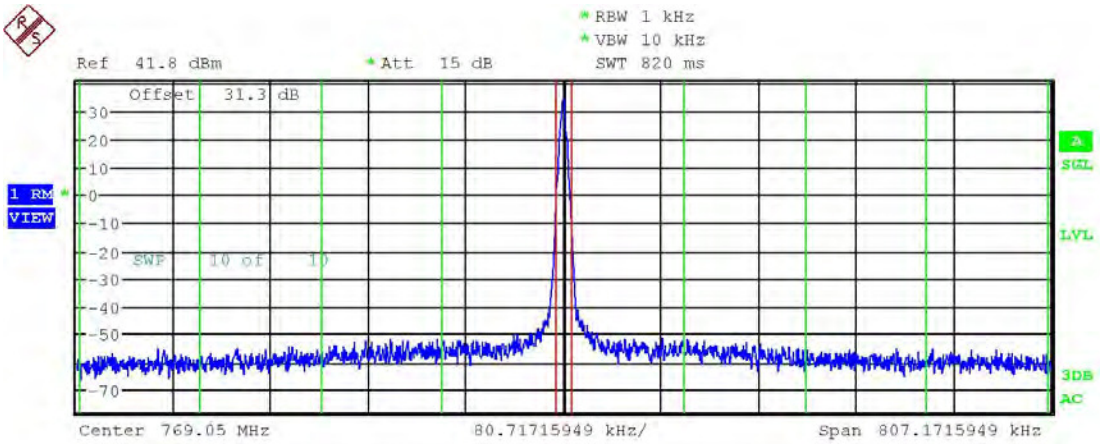
ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 769.05 MHz-11K0F3E

100 KHz Measurement Bandwidth



Tx Channel			
Bandwidth	12.5 kHz	Power	38.56 dBm
Adjacent Channel			
Bandwidth	100 kHz	Lower	-75.62 dB
Spacing	150 kHz	Upper	-75.88 dB
Alternate Channel			
Bandwidth	100 kHz	Lower	-78.33 dB
Spacing	250 kHz	Upper	-78.40 dB
2nd Alternate Channel			
Bandwidth	100 kHz	Lower	-79.72 dB
Spacing	350 kHz	Upper	-78.98 dB

Date: 25.FEB.2016 22:13:20

ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 769.05 MHz-11K0F3E

Swept 30 KHz Bandwidth Measurement

Offset from center frequency	ACP Limit (dBc)	ACP Level (dBc)		Margin (dB)
>400 KHz to 12 MHz	-75	Upper	-79.62	4.6
		Lower	-81.28	6.3
12 MHz to paired rx band	-75		-114.26	39.3
paired rx band	-100		-111.89	11.9

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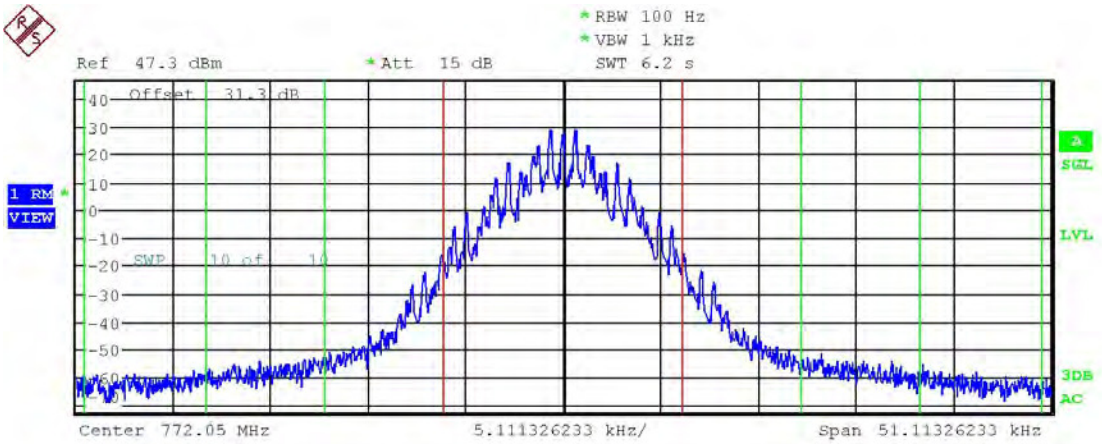
ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 772.05 MHz-11K0F3E

6.25 KHz Measurement Bandwidth



Tx Channel
Bandwidth 12.5 kHz

Power 36.06 dBm

Adjacent Channel
Bandwidth 6.25 kHz
Spacing 9.375 kHz

Lower -48.85 dB
Upper -49.08 dB

Alternate Channel
Bandwidth 6.25 kHz
Spacing 15.625 kHz

Lower -76.37 dB
Upper -76.14 dB

2nd Alternate Channel
Bandwidth 6.25 kHz
Spacing 21.875 kHz

Lower -80.80 dB
Upper -80.72 dB

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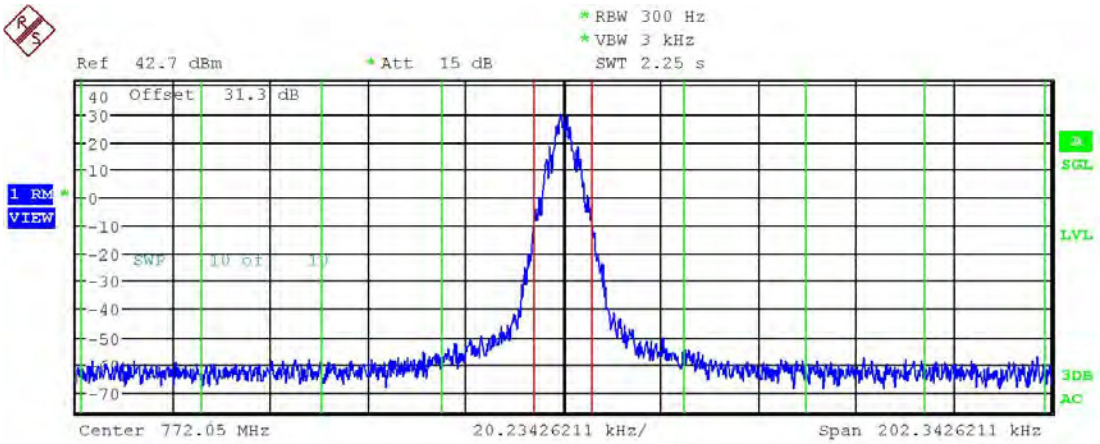
ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 772.05 MHz-11K0F3E

25 KHz Measurement Bandwidth



Tx Channel
Bandwidth 12.5 kHz

Power 36.88 dBm

Adjacent Channel
Bandwidth 25 kHz
Spacing 37.5 kHz

Lower -78.95 dB
Upper -78.83 dB

Alternate Channel
Bandwidth 25 kHz
Spacing 62.5 kHz

Lower -80.79 dB
Upper -80.74 dB

2nd Alternate Channel
Bandwidth 25 kHz
Spacing 87.5 kHz

Lower -80.79 dB
Upper -80.86 dB

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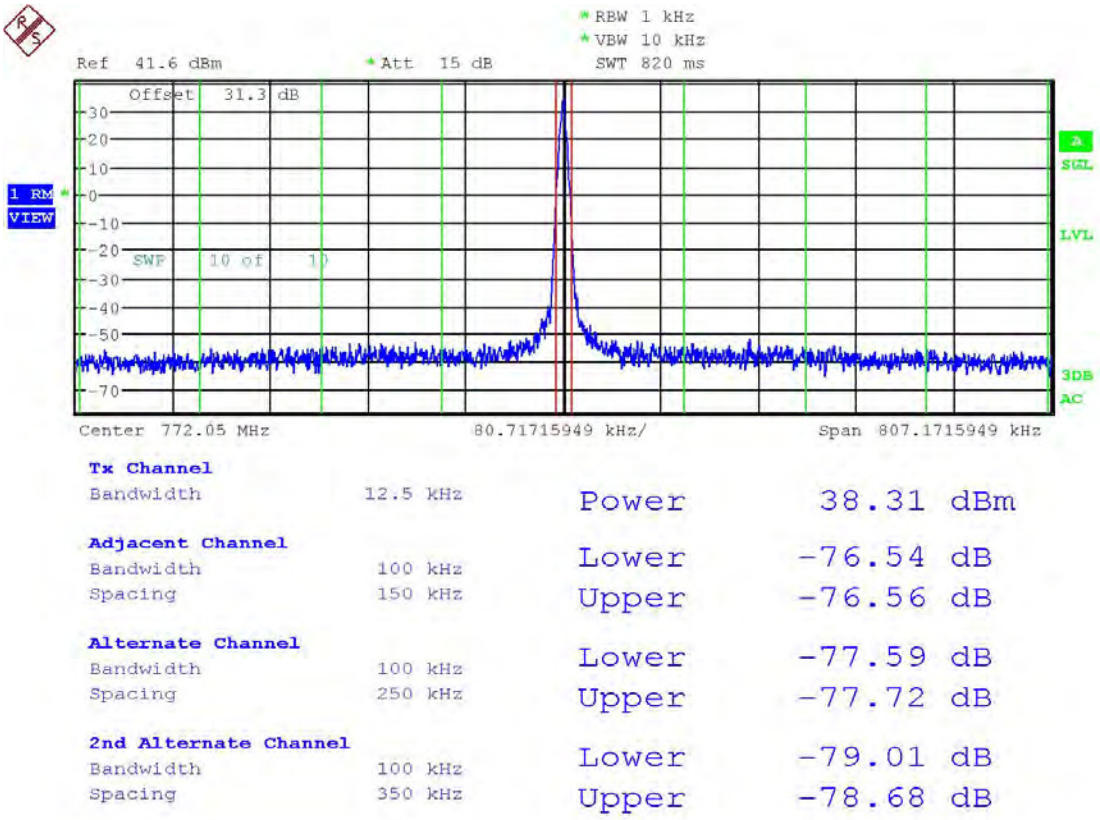
ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 772.05 MHz-11K0F3E

100 KHz Measurement Bandwidth



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ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 772.05 MHz-11K0F3E

Swept 30 KHz Bandwidth Measurement

Offset from center frequency	ACP Limit (dBc)	ACP Level (dBc)		Margin (dB)
>400 KHz to 12 MHz	-75	Upper	-80.68	5.7
		Lower	-81.4	6.4
12 MHz to paired rx band	-75		-116.25	41.3
paired rx band	-100		-117.05	17.1

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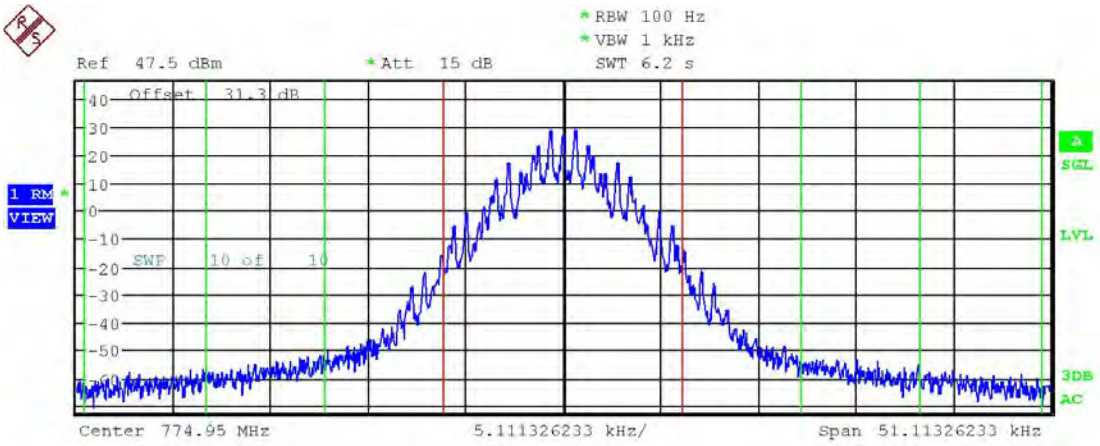
ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 774.95 MHz-11K0F3E

6.25 KHz Measurement Bandwidth



Tx Channel			
Bandwidth	12.5 kHz	Power	36.45 dBm
Adjacent Channel			
Bandwidth	6.25 kHz	Lower	-48.74 dB
Spacing	9.375 kHz	Upper	-48.55 dB
Alternate Channel			
Bandwidth	6.25 kHz	Lower	-76.52 dB
Spacing	15.625 kHz	Upper	-76.80 dB
2nd Alternate Channel			
Bandwidth	6.25 kHz	Lower	-81.30 dB
Spacing	21.875 kHz	Upper	-81.12 dB

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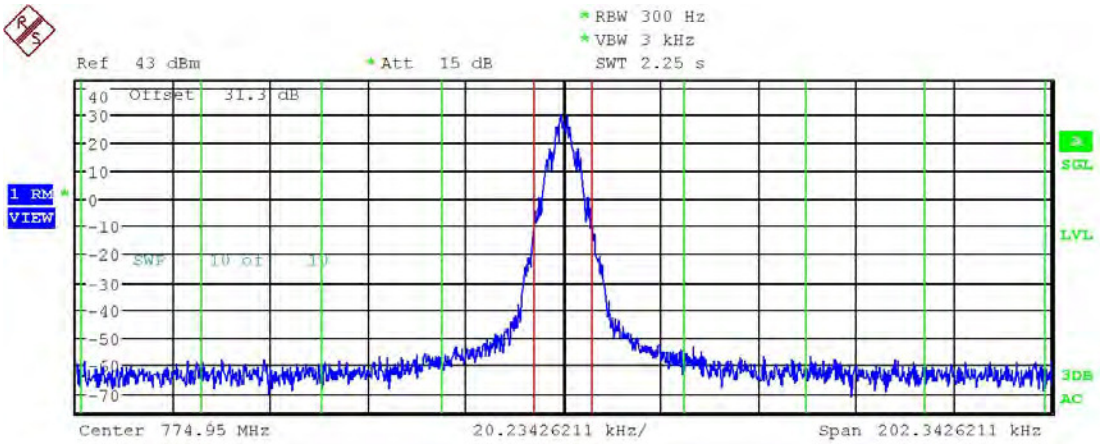
ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 774.95 MHz-11K0F3E

25 KHz Measurement Bandwidth



Tx Channel			
Bandwidth	12.5 kHz	Power	36.94 dBm
Adjacent Channel			
Bandwidth	25 kHz	Lower	-79.13 dB
Spacing	37.5 kHz	Upper	-78.87 dB
Alternate Channel			
Bandwidth	25 kHz	Lower	-81.14 dB
Spacing	62.5 kHz	Upper	-80.76 dB
2nd Alternate Channel			
Bandwidth	25 kHz	Lower	-81.69 dB
Spacing	87.5 kHz	Upper	-81.30 dB

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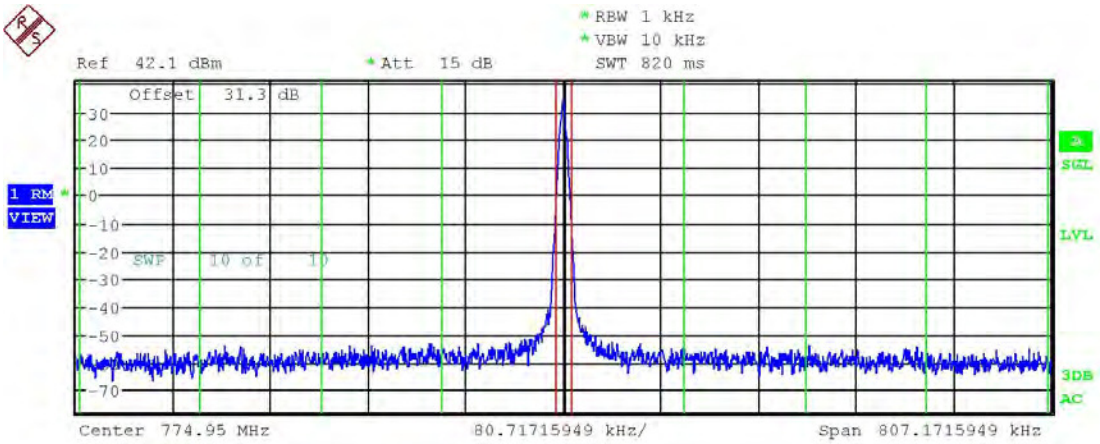
ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 774.95 MHz-11K0F3E

100 KHz Measurement Bandwidth



Tx Channel			
Bandwidth	12.5 kHz	Power	38.60 dBm
Adjacent Channel			
Bandwidth	100 kHz	Lower	-77.06 dB
Spacing	150 kHz	Upper	-77.58 dB
Alternate Channel			
Bandwidth	100 kHz	Lower	-78.11 dB
Spacing	250 kHz	Upper	-78.11 dB
2nd Alternate Channel			
Bandwidth	100 kHz	Lower	-78.94 dB
Spacing	350 kHz	Upper	-78.95 dB

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ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 774.95 MHz-11K0F3E

Swept 30 KHz Bandwidth Measurement

Offset from center frequency	ACP Limit (dBc)	ACP Level (dBc)		Margin (dB)
>400 KHz to 12 MHz	-75	Upper	-81.43	6.4
		Lower	-81.17	6.2
12 MHz to paired rx band	-75		-116.48	41.5
paired rx band	-100		-116.74	16.7

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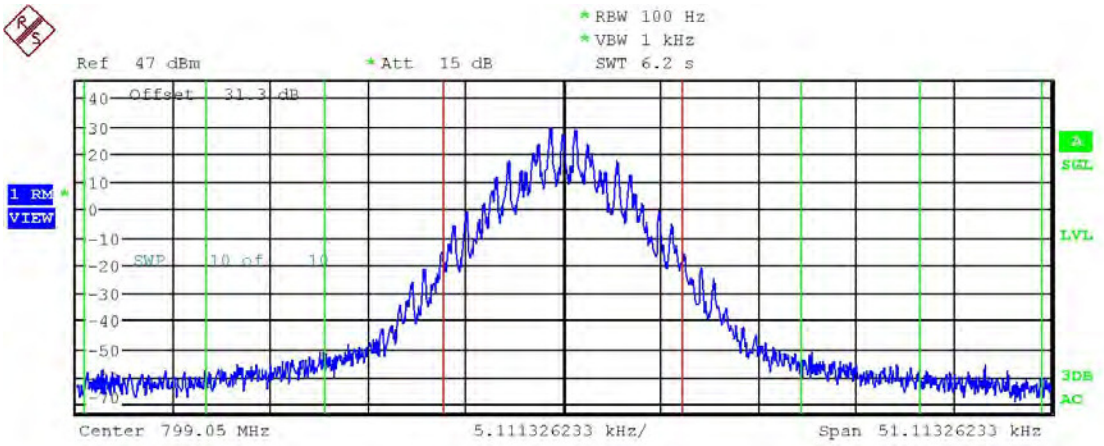
ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 799.05 MHz-11K0F3E

6.25 KHz Measurement Bandwidth



Tx Channel			
Bandwidth	12.5 kHz	Power	36.54 dBm
Adjacent Channel			
Bandwidth	6.25 kHz	Lower	-48.50 dB
Spacing	9.375 kHz	Upper	-48.85 dB
Alternate Channel			
Bandwidth	6.25 kHz	Lower	-76.88 dB
Spacing	15.625 kHz	Upper	-77.41 dB
2nd Alternate Channel			
Bandwidth	6.25 kHz	Lower	-81.05 dB
Spacing	21.875 kHz	Upper	-81.34 dB

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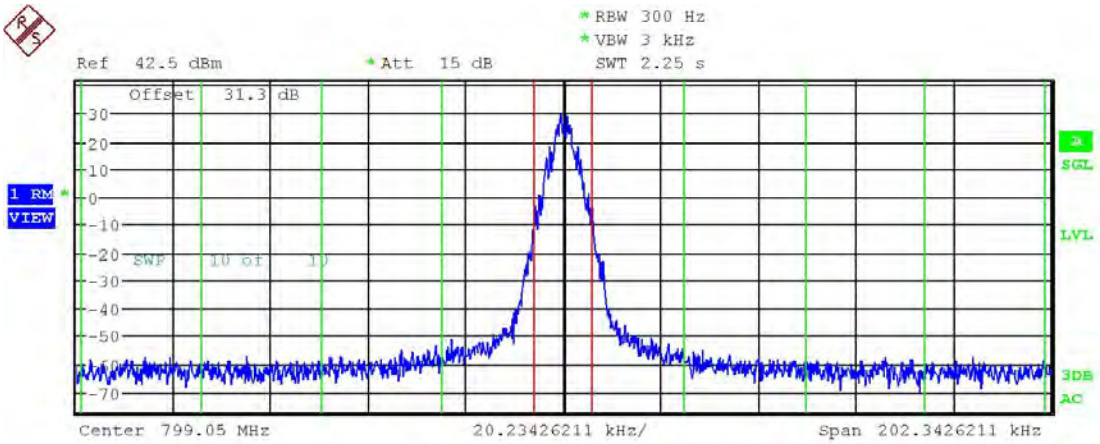
ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 799.05 MHz-11K0F3E

25 KHz Measurement Bandwidth



Tx Channel			
Bandwidth	12.5 kHz	Power	36.61 dBm
Adjacent Channel			
Bandwidth	25 kHz	Lower	-78.13 dB
Spacing	37.5 kHz	Upper	-78.56 dB
Alternate Channel			
Bandwidth	25 kHz	Lower	-80.45 dB
Spacing	62.5 kHz	Upper	-80.45 dB
2nd Alternate Channel			
Bandwidth	25 kHz	Lower	-80.21 dB
Spacing	87.5 kHz	Upper	-80.57 dB

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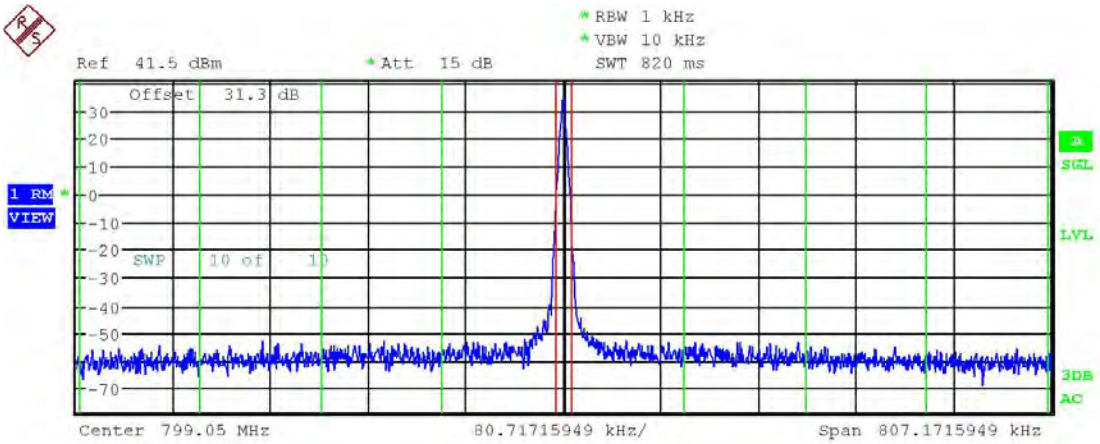
ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 799.05 MHz-11K0F3E

100 KHz Measurement Bandwidth



Tx Channel			
Bandwidth	12.5 kHz	Power	38.16 dBm
Adjacent Channel			
Bandwidth	100 kHz	Lower	-76.32 dB
Spacing	150 kHz	Upper	-76.41 dB
Alternate Channel			
Bandwidth	100 kHz	Lower	-77.72 dB
Spacing	250 kHz	Upper	-78.03 dB
2nd Alternate Channel			
Bandwidth	100 kHz	Lower	-78.49 dB
Spacing	350 kHz	Upper	-78.92 dB

Date: 25.FEB.2016 22:15:27

ADJACENT CHANNEL POWER (ACP)

TEST FREQ. 799.05 MHz-11K0F3E

Swept 30 KHz Bandwidth Measurement

Offset from center frequency	ACP Limit (dBc)	ACP Level (dBc)		Margin (dB)
>400 KHz to 12 MHz	-75	Upper	-81.44	6.4
		Lower	-81.36	6.4
12 MHz to paired rx band	-75		-114.03	39.0
paired rx band	-100		-113.25	13.3

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