Motorola Test Report

Applicant: Motorola
5555 N. Beach Street
Fort Worth, TX 76137
USA

Equipment Under Test:
LTE WBR FDD Frame Based Radio @ 700MHz

In Accordance With: FCC PART 27, Subpart B
700MHz Upper Block C
FCC PART 27, Subpart N
700MHz Public/Private Partnership
FCC PART 90, Subpart R
Regulations Governing the Licensing and Use of Frequencies in the 764-776 and 794-806 MHz Bands

Tested By: Motorola
5555 N. Beach Street
Fort Worth, TX 76137
USA

TESTED BY: DATE: 15April2010
Melissa A. VanDrie Test Engineer

APPROVE BY: _____ DATE: 15April2010
Jim Morrison Engineering Manager

Total Pages: 49

Table of Contents

Section 1 **Summary of Test Results**

Manufacturer: Motorola

Model No.: LTE WBR FDD Frame Based Radio @ 700MHz

Serial No.: 550HAA05S2

General: All measurements are traceable to national standards

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 27 and Part 90,

__X__ New Submission ___X__ Production Unit

_____ Class II Permissive Change _____ Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

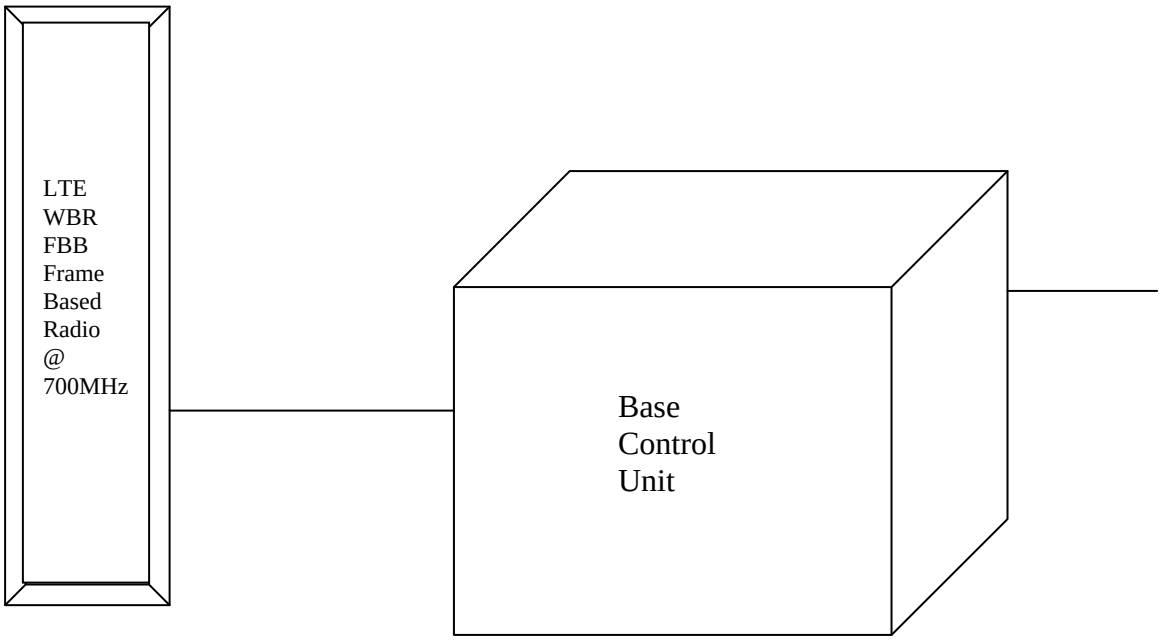
THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE: NONE

NAME OF TEST	PARA. NO.	SPEC. LIMIT	RESULTS
RF Power Output	2.1046	33 dBW + 10log(X/Y) dBW	Complies
Occupied Bandwidth	2.1049	Not Specified	Complies
Spurious Emissions at Antenna Terminals	2.1051	-13 dBm	Complies
Field Strength of Spurious Radiation	2.1053	-13 dBm	Complies
Frequency Stability	2.1055	Must remain within authorized bandwidth	Complies

Section 2	**General Equipment Specification**
Power Supply:	27 VDC
Frequency Range:	749 to 765.5MHz (center to center) for 5MHz
Frequency Range:	751.5 to 763MHz (center to center) for 10MHz
Type(s) of Modulation:	F3E (Voice) ____ F1D ___ F2D ___ W7D _X_ F9W ___
Emissions Designator:	10M0W7D and 5M00W7D
Output Impedance:	50 ohms
RF Power Output:	46dBm Conducted
Selection of Operating Frequency:	Selectable by operator
Power Output Adjustment Capability:	28dBm minimum power

Description of EUT
The LTE WBR FBB Frame Based Radio @ 700MHz is a Base Station transceiver.

System Diagram



Section 3 RF Power Output

NAME OF TEST: RF Power Output	PARA. NO.: 2.1046
TESTED BY: Morrison Jim	DATE: April 14, 2010

Test Result: Complies

Measurement Data: See Tables

Test Equipment: 13, 15, 16

MAX RF POWER OUTPUT

10MHz Mode		
Frequency (MHz)	RMS Power (dBm)	RMS Power (Watts)
751.5	46.12	40.93
763	46.38	43.45

5MHz Mode		
Frequency (MHz)	RMS Power (dBm)	RMS Power (Watts)
749	46.12	40.92
754	45.49	35.40
765.5	45.66	36.81

Section 4 **Occupied Bandwidth**

NAME OF TEST: Occupied Bandwidth	PARA. NO.: 2.1049
TESTED BY: Morrison Jim	DATE: April 14, 2010

Test Result: Complies

Measurement Data: See Attached Tables and Plots

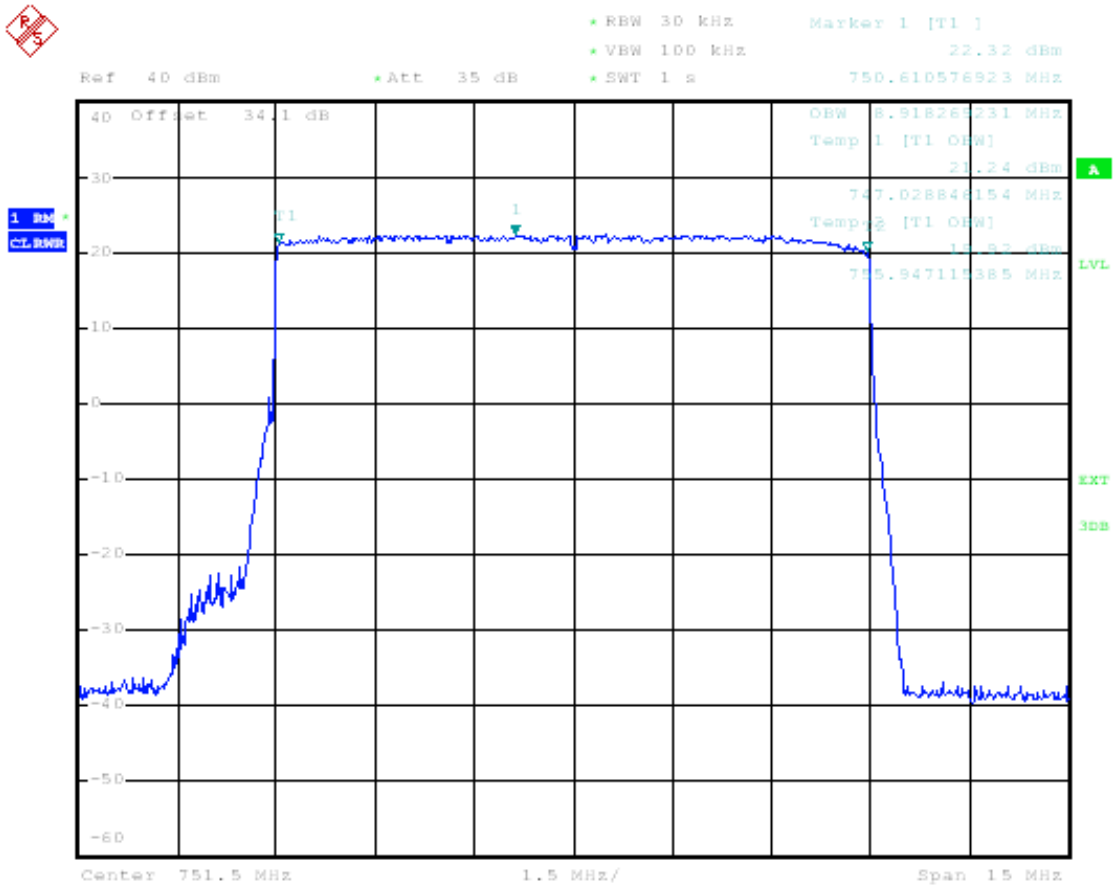
Test Equipment: 13, 15, 16

OCCUPIED BANDWIDTH

10MHz Mode		
Frequency (MHz)	Occupied BW (MHz)	Maximum Limit (MHz)
751.5	8.92	10
763	8.91	10

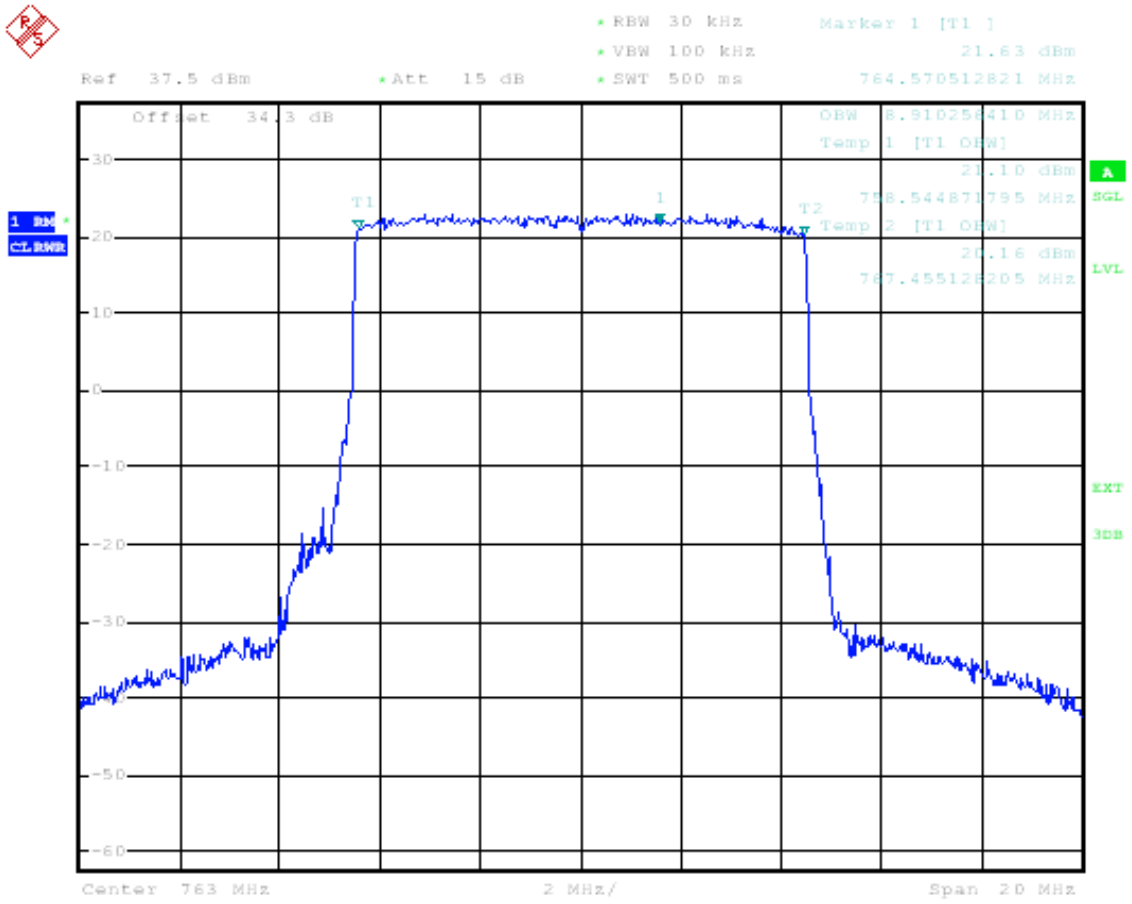
5MHz Mode		
Frequency (MHz)	Occupied BW (MHz)	Maximum Limit (MHz)
749	4.49	5
754	4.23	5
765.5	4.38	5

Occupied Bandwidth 751.5 MHz in 10MHz mode



Date: 15.APR.2010 14:26:21

Occupied Bandwidth 763 MHz in 10MHz mode



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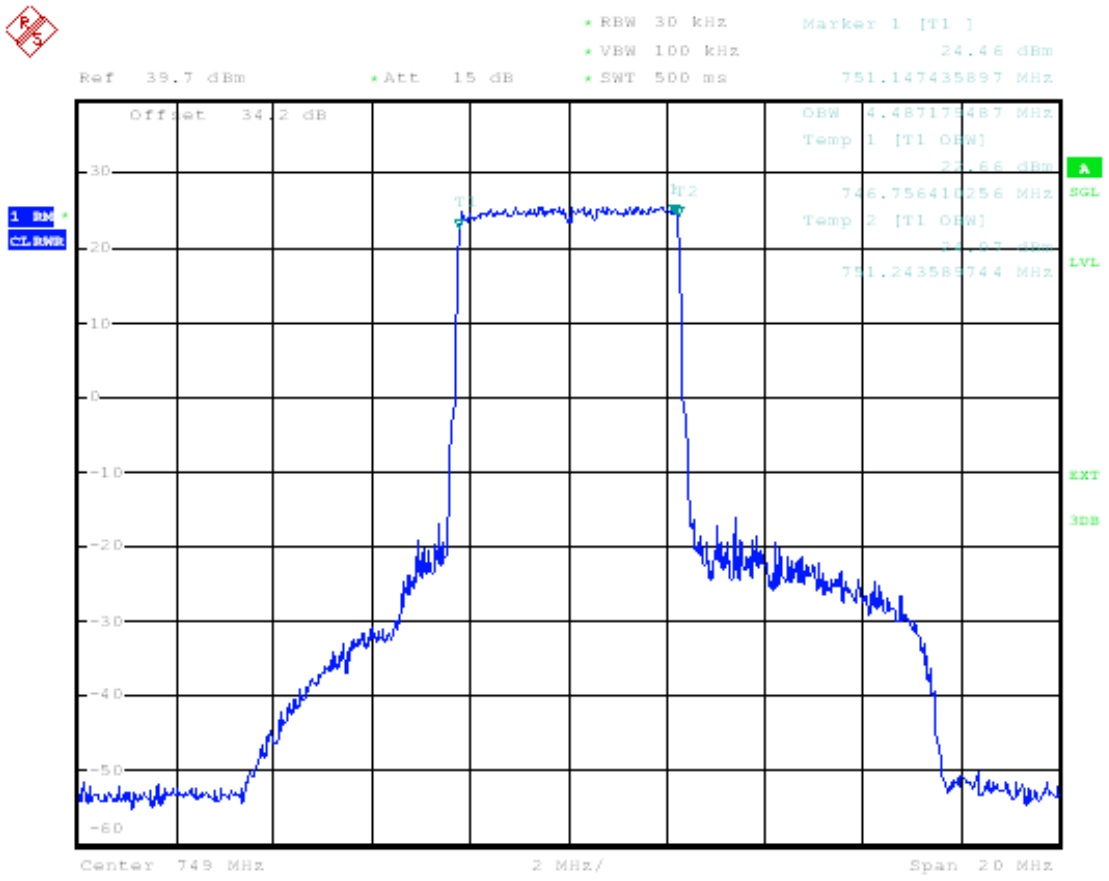
Occupied Bandwidth 749 MHz in 5MHz mode



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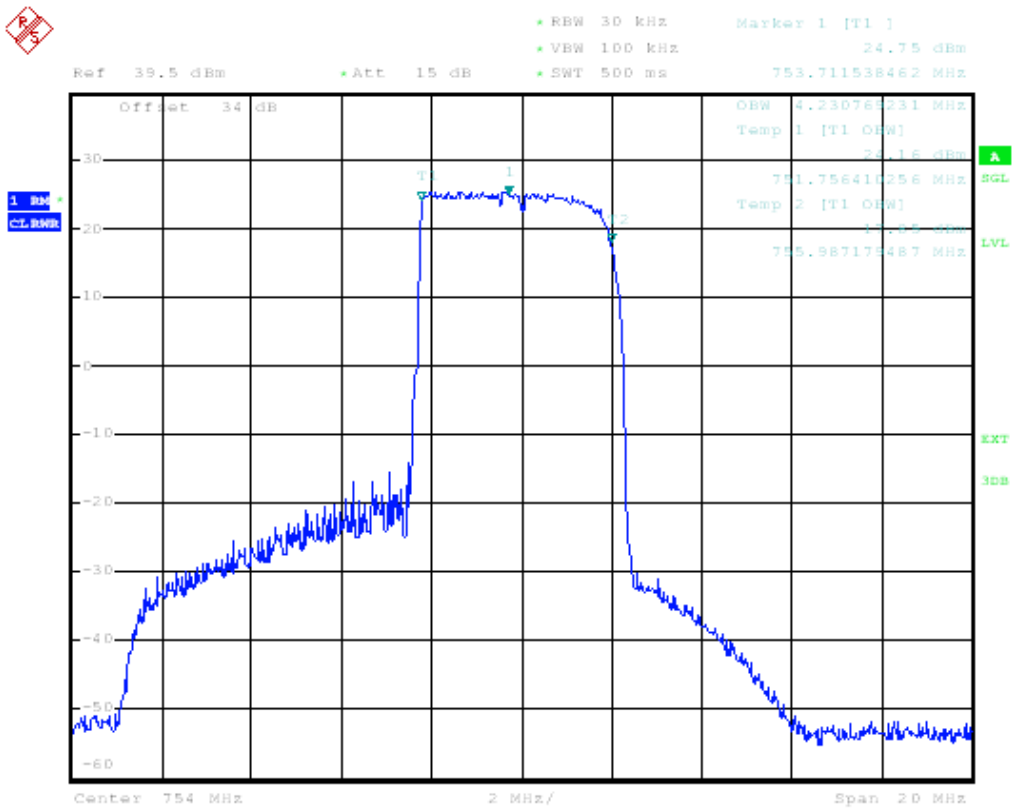
Occupied Bandwidth 754 MHz in 5MHz mode



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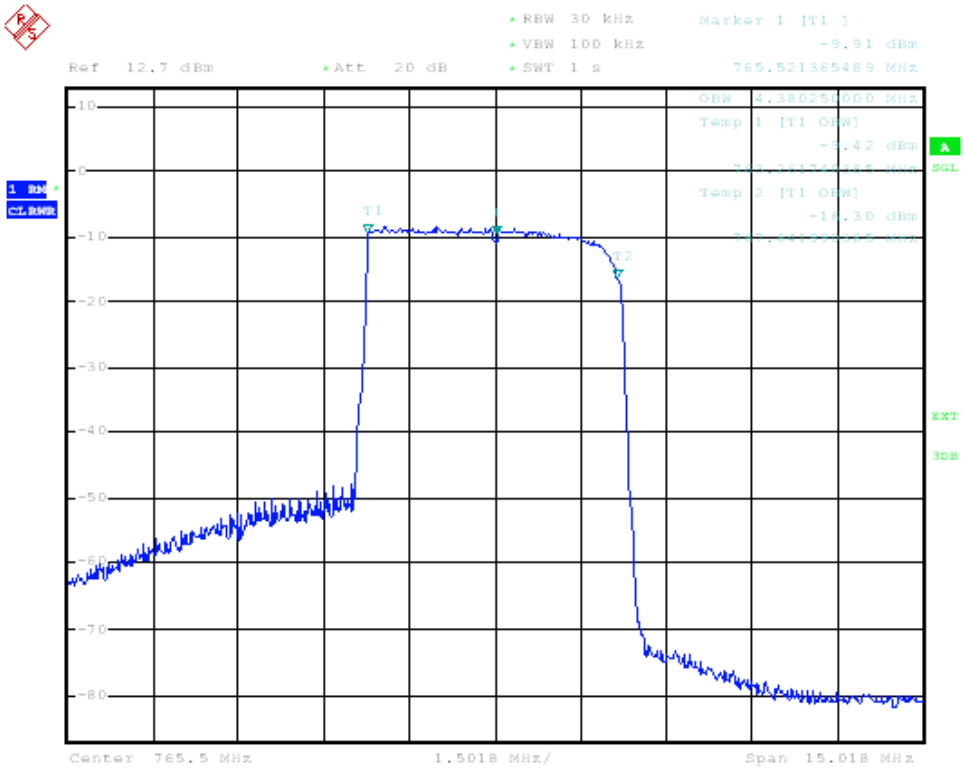
Occupied Bandwidth 765.5 MHz in 5MHz mode



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Section 5 Spurious Emissions at Antenna Terminals

NAME OF TEST: Spurious Emissions at Antenna Terminals	PARA. NO.: 2.1051
TESTED BY: Morrison Jim	DATE: April 14, 2010

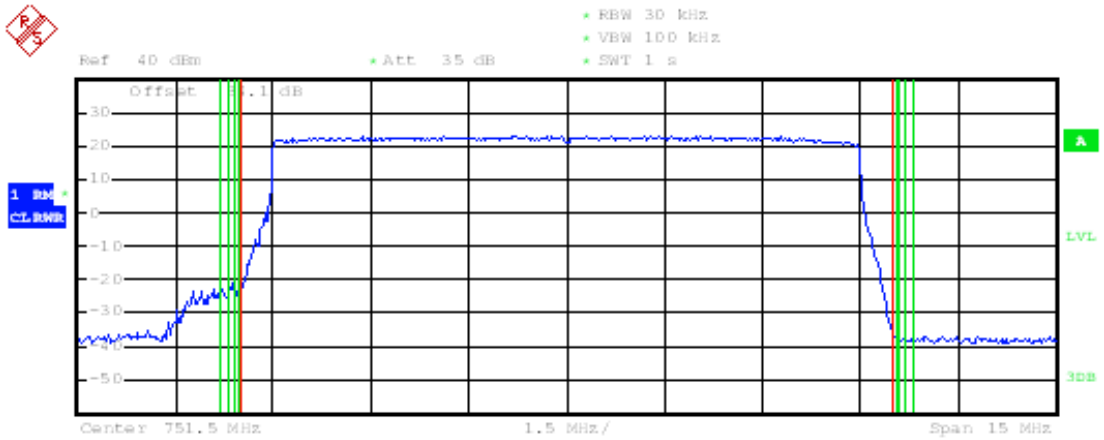
Test Result: Complies

Measurement Data: See Attached Plots

Test Equipment: 13, 15, 16, 17

SPURIOUS EMISSIONS AT ANTENNA TERMINALS

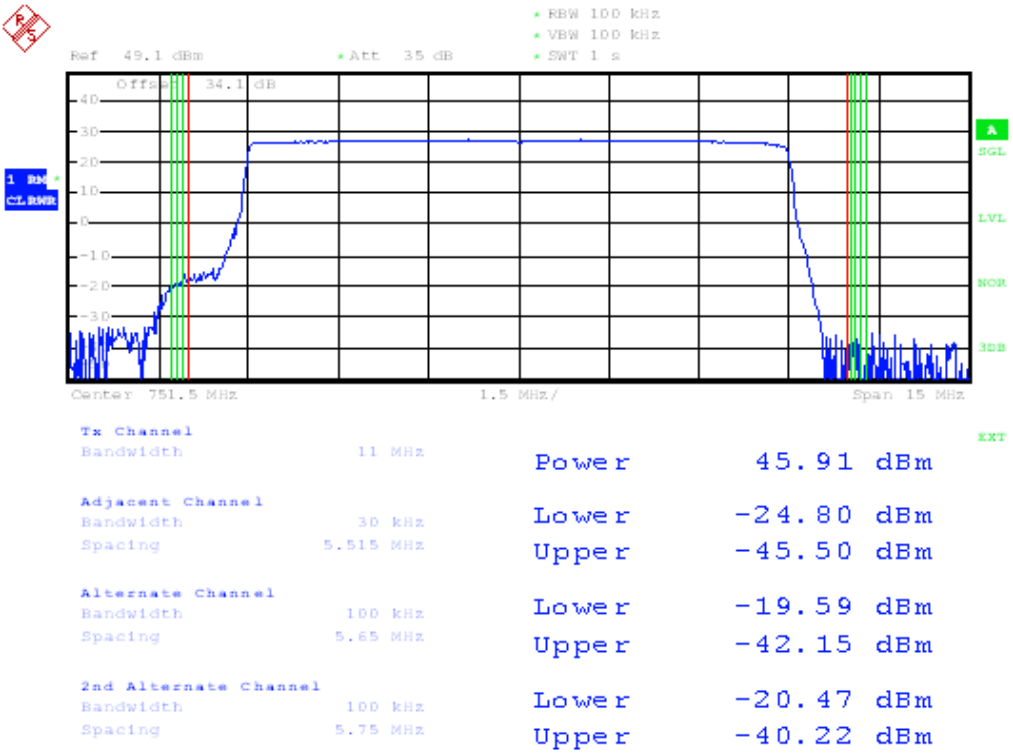
Lower Band Edge 10MHz



Tx Channel		
Bandwidth	10 MHz	
	Power	46.11 dBm
Adjacent Channel		
Bandwidth	30 kHz	
Spacing	5.015 MHz	
	Lower	-23.14 dBm
	Upper	-37.68 dBm
Alternate Channel		
Bandwidth	100 kHz	
Spacing	5.15 MHz	
	Lower	-18.19 dBm
	Upper	-33.50 dBm
2nd Alternate Channel		
Bandwidth	100 kHz	
Spacing	5.25 MHz	
	Lower	-19.56 dBm
	Upper	-33.63 dBm

Date: 15.APR.2010 14:25:48

Additional Band Edge 10MHz



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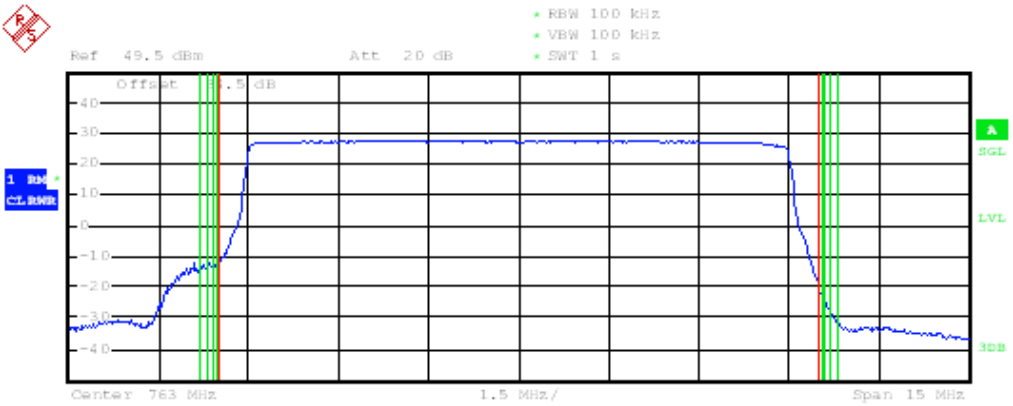
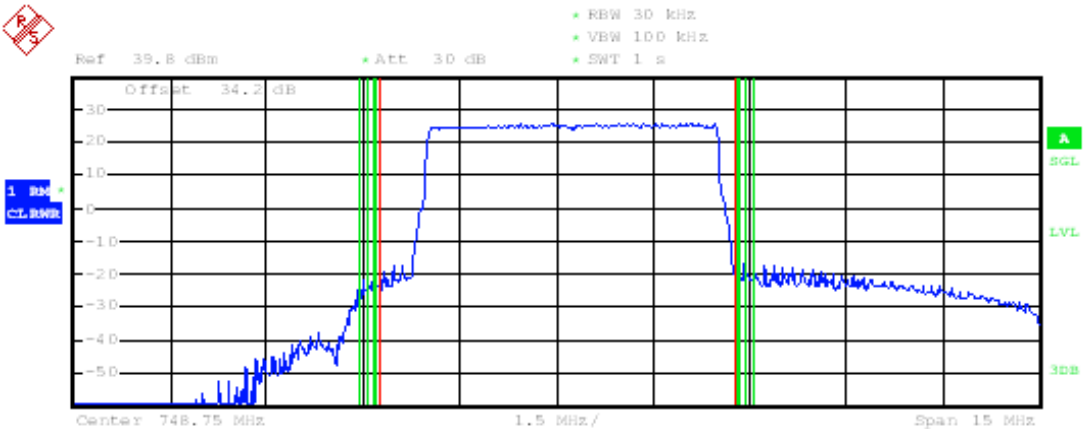
Upper Band Edge 10MHz



Tx Channel			
Bandwidth	10 MHz	Power	46.18 dBm
Adjacent Channel			
Bandwidth	30 kHz	Lower	-18.04 dBm
Spacing	5.015 MHz	Upper	-27.23 dBm
Alternate Channel			
Bandwidth	100 kHz	Lower	-13.44 dBm
Spacing	5.15 MHz	Upper	-26.50 dBm
2nd Alternate Channel			
Bandwidth	100 kHz	Lower	-14.12 dBm
Spacing	5.25 MHz	Upper	-30.33 dBm

Date: 14.APR.2010 17:08:29

Lower Band Edge 5MHz



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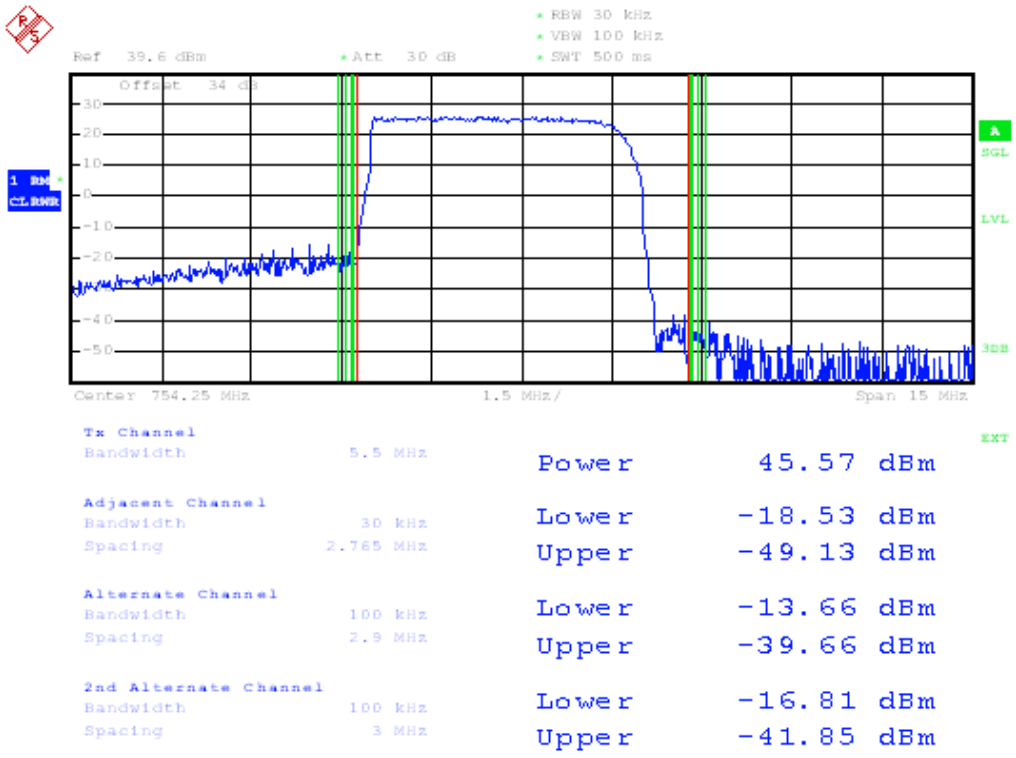
Additional Band Edge 5MHz



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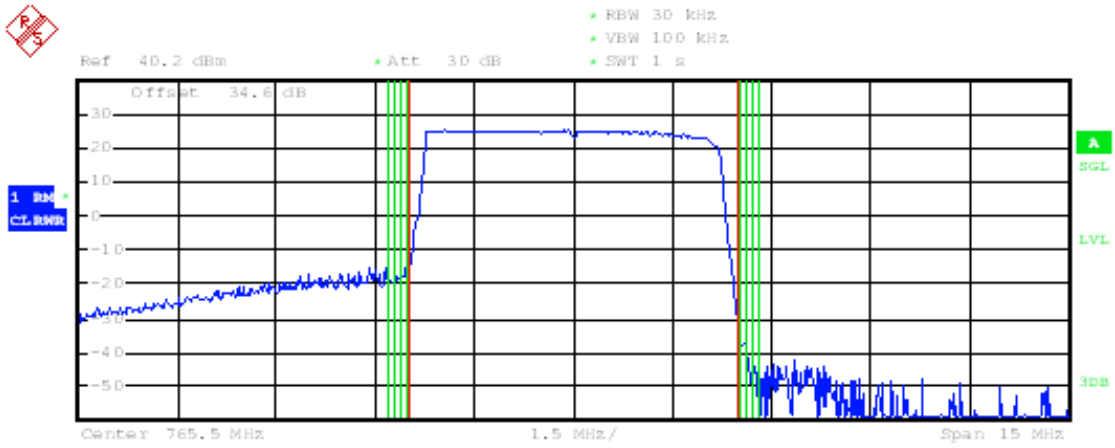
Upper Band Edge 5MHz



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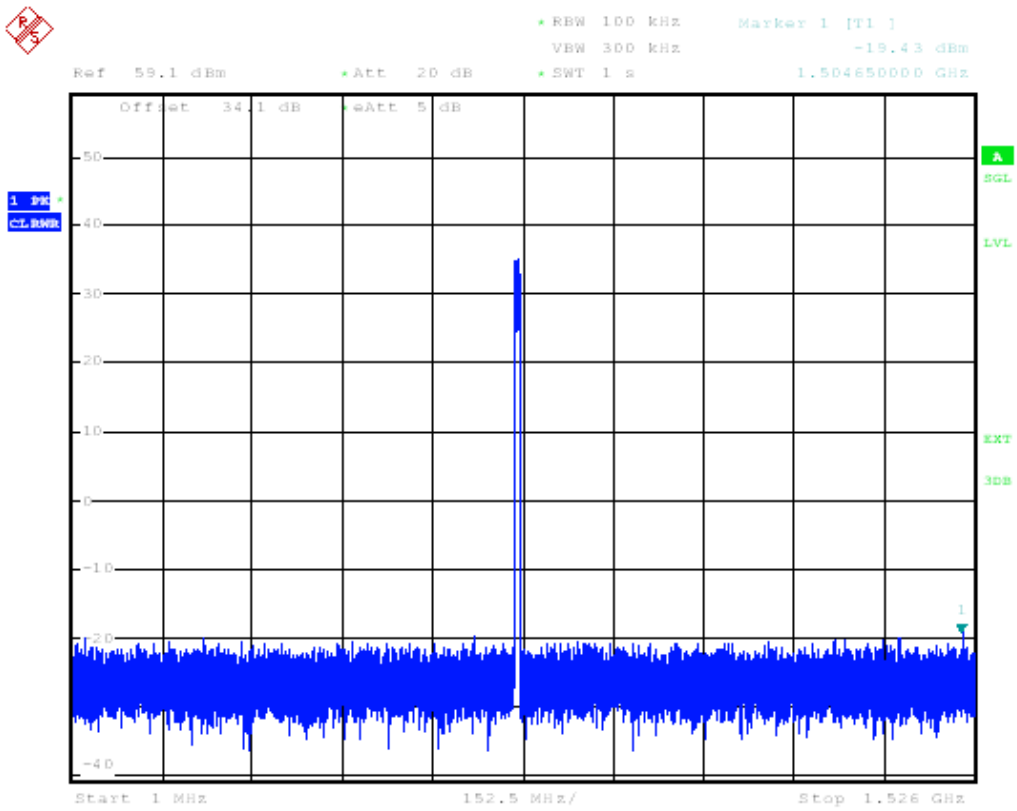
Low Channel 10MHz Spurious 1MHz to 1.526GHz



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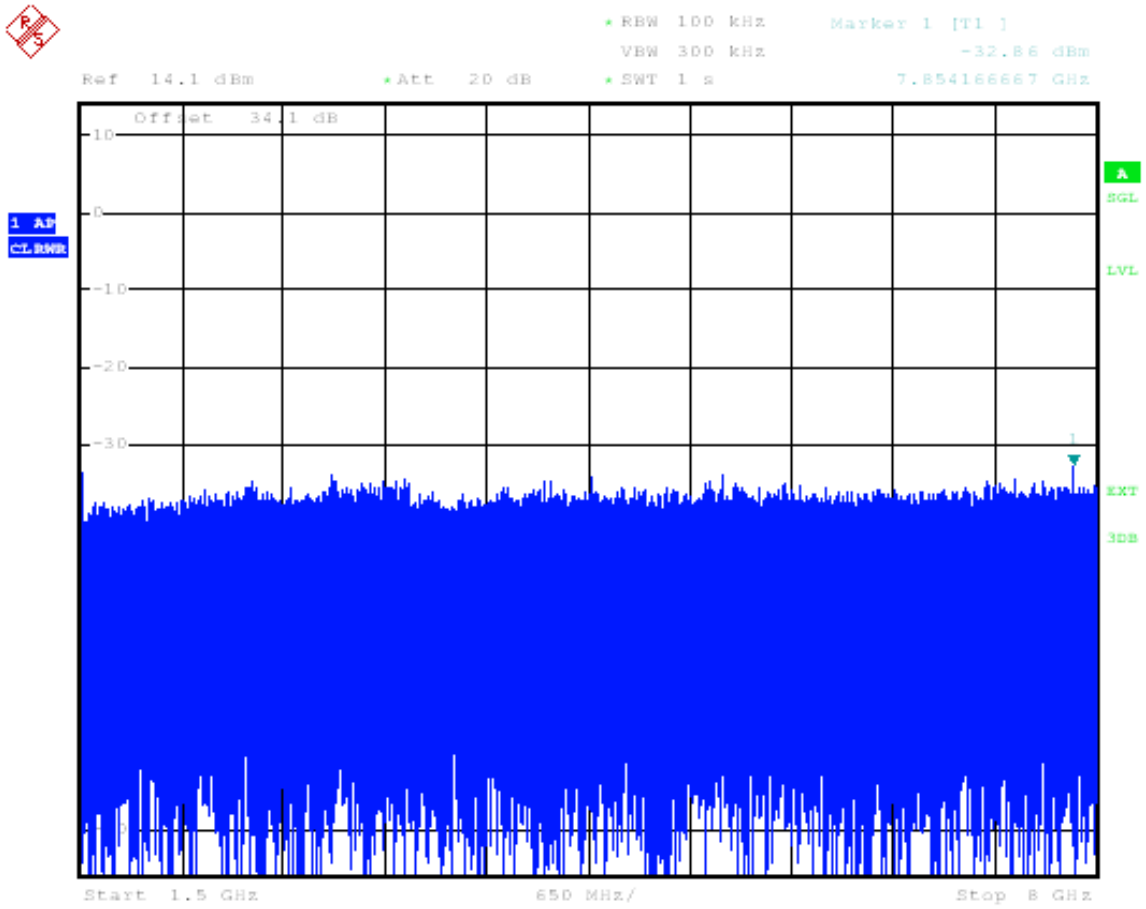
Low Channel 10MHz Spurious 1.5GHz to 8GHz



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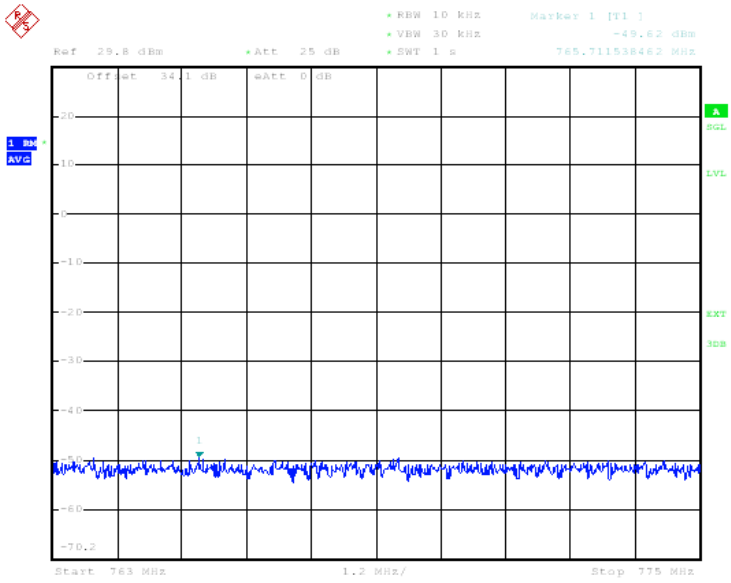
Low Channel 10MHz Public Safety



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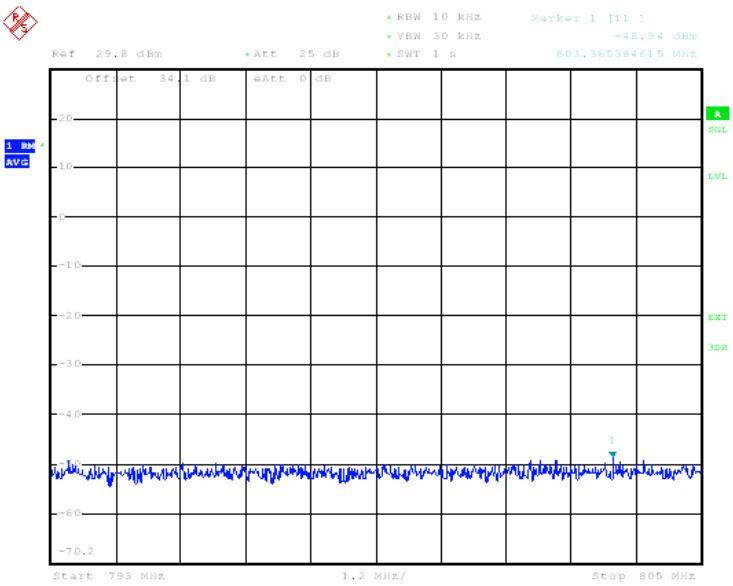

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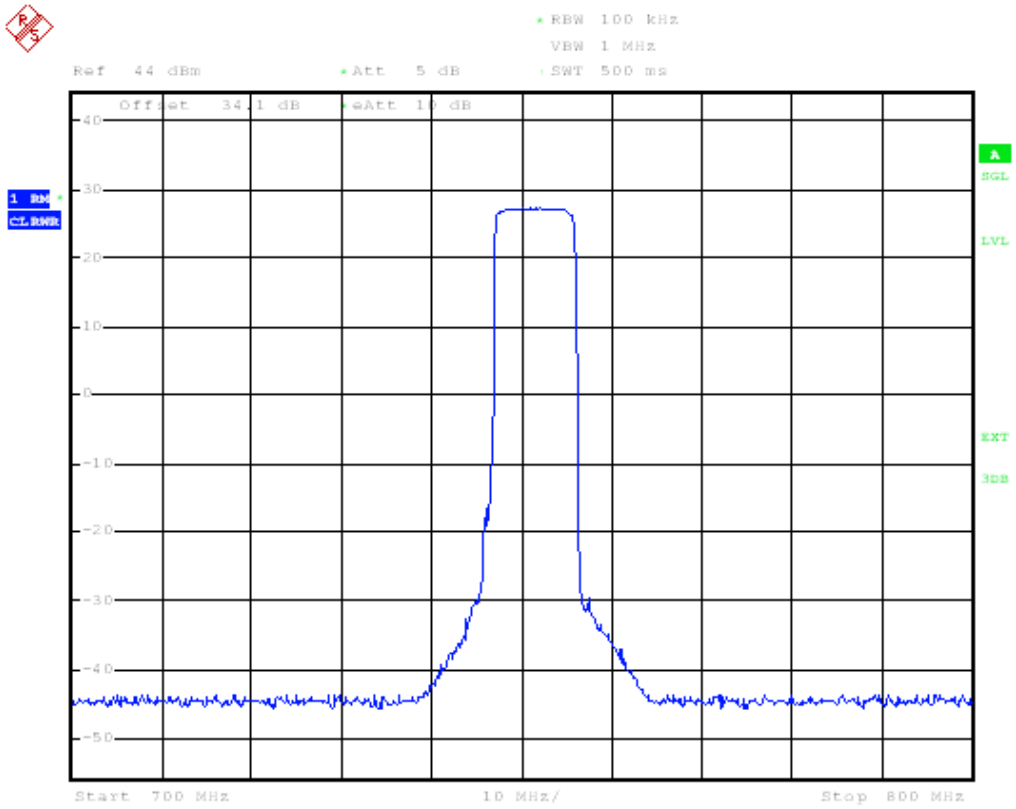
Additional Channel 10MHz Spurious 700MHz - 800MHz



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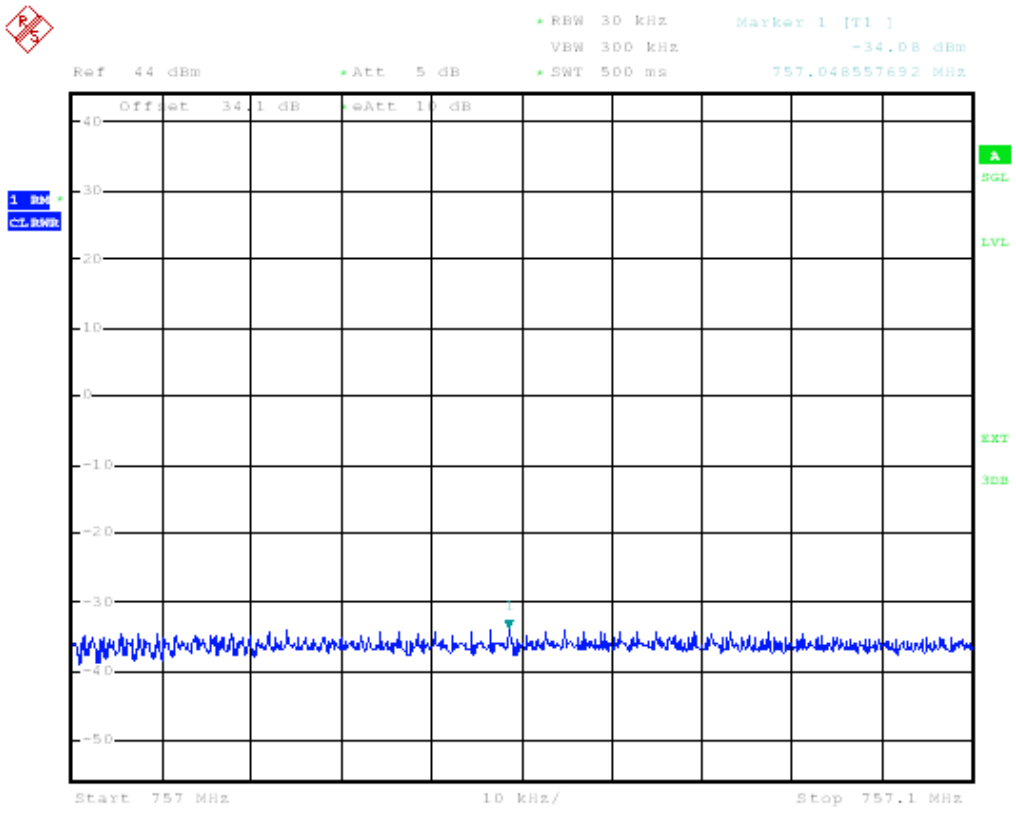
Additional Channel 10MHz Zoom 757MHz (30k RBW)



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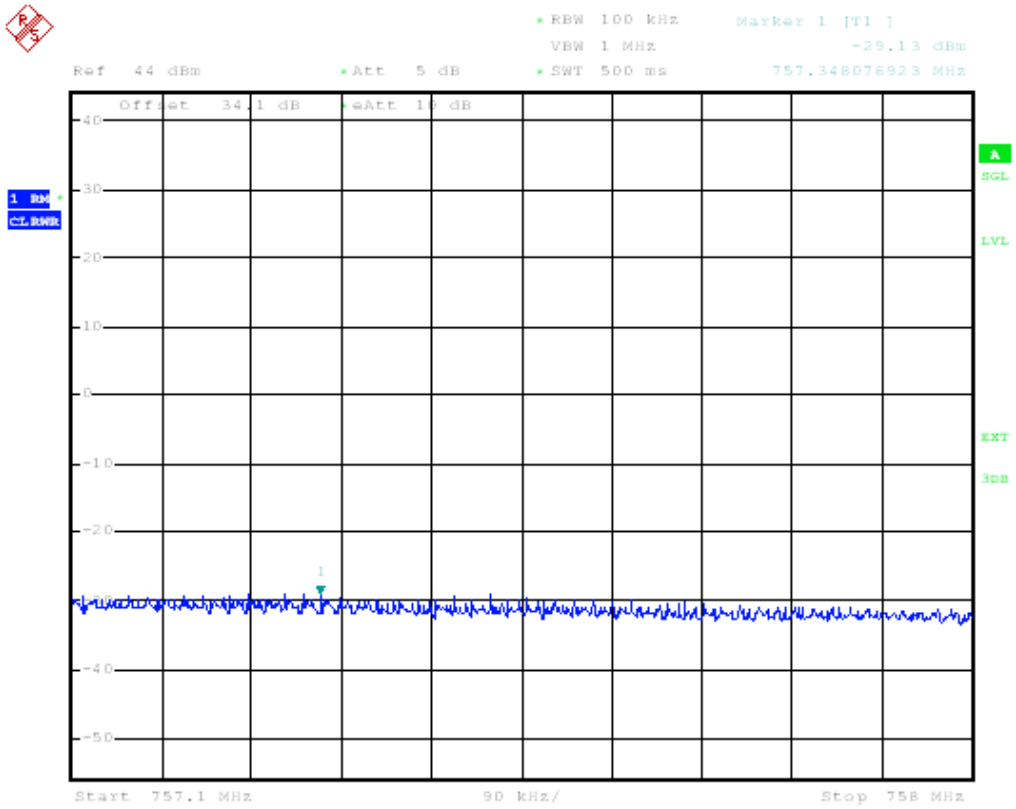
Additional Channel 10MHz 757MHz – 758MHz (100k RBW)



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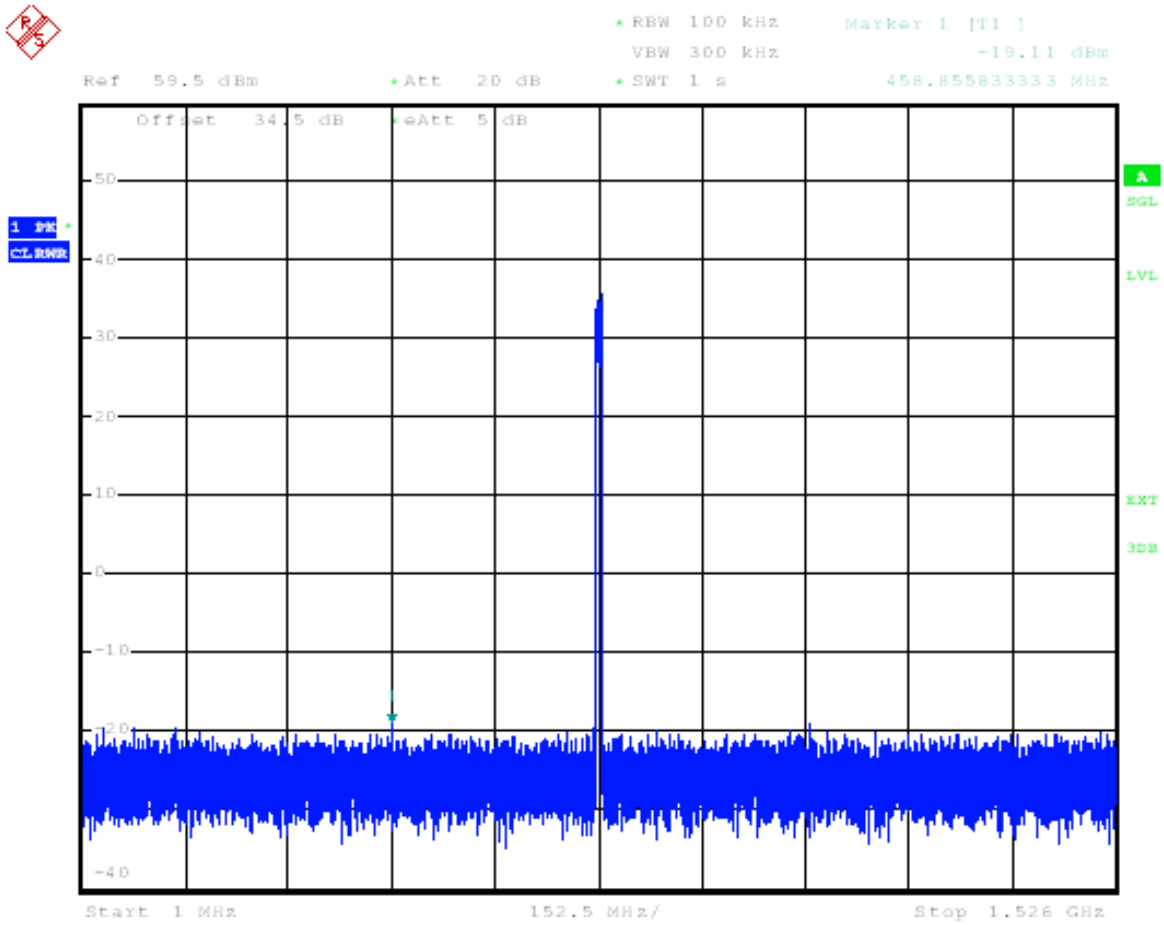
High Channel 10MHz Spurious 1MHz to 1.526GHz



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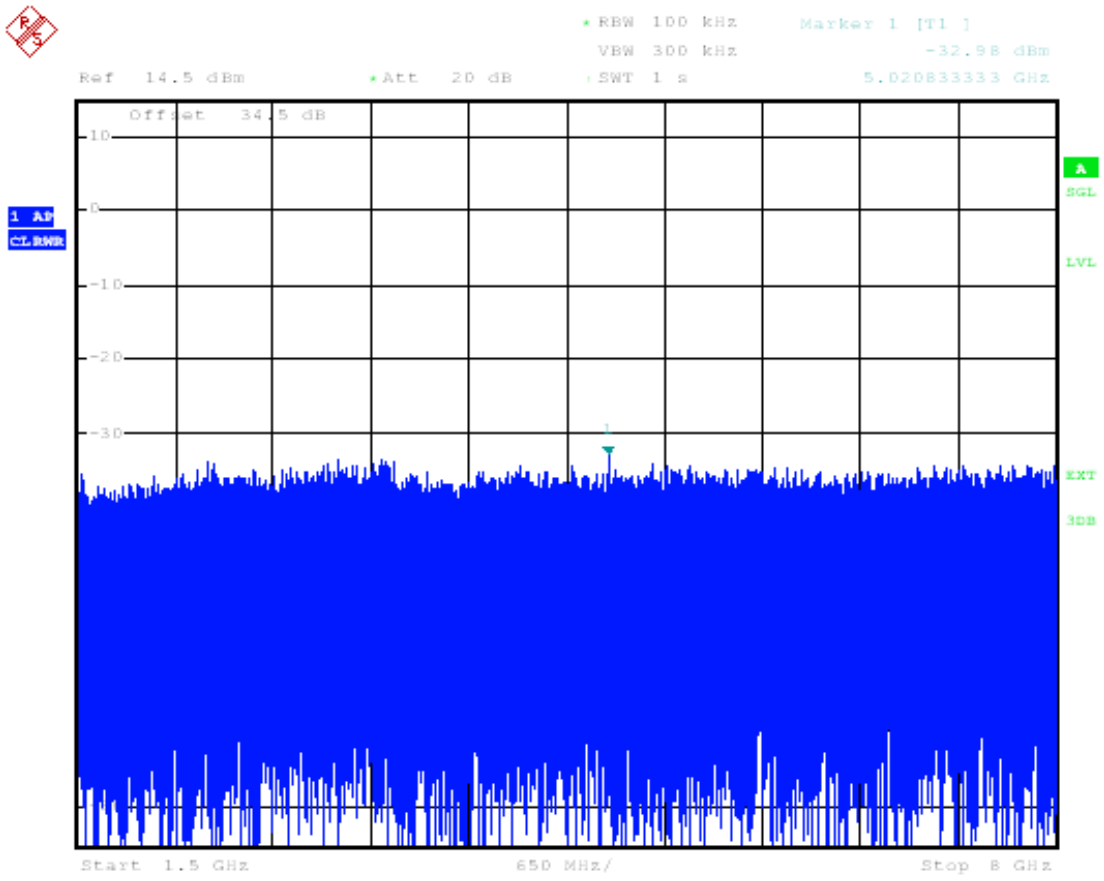
High Channel 10MHz Spurious 1.5GHz to 26GHz



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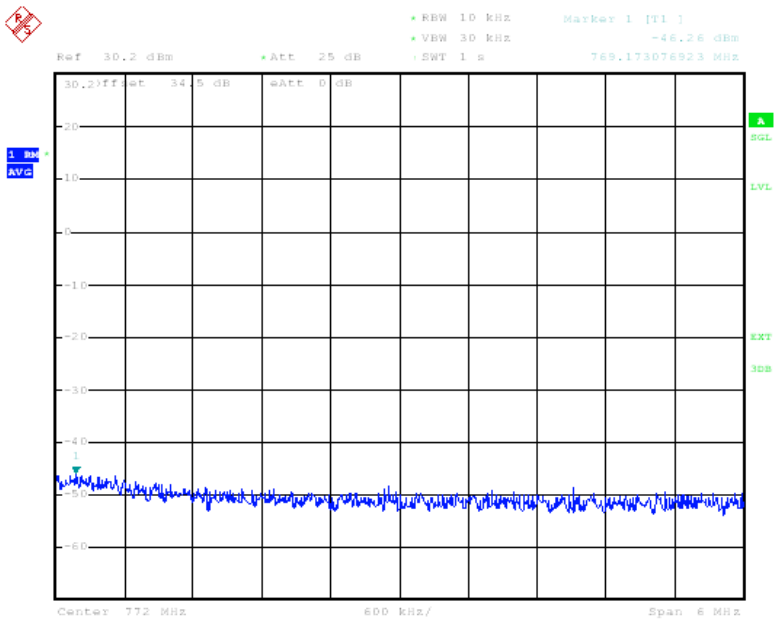
High Channel 10MHz Public Safety



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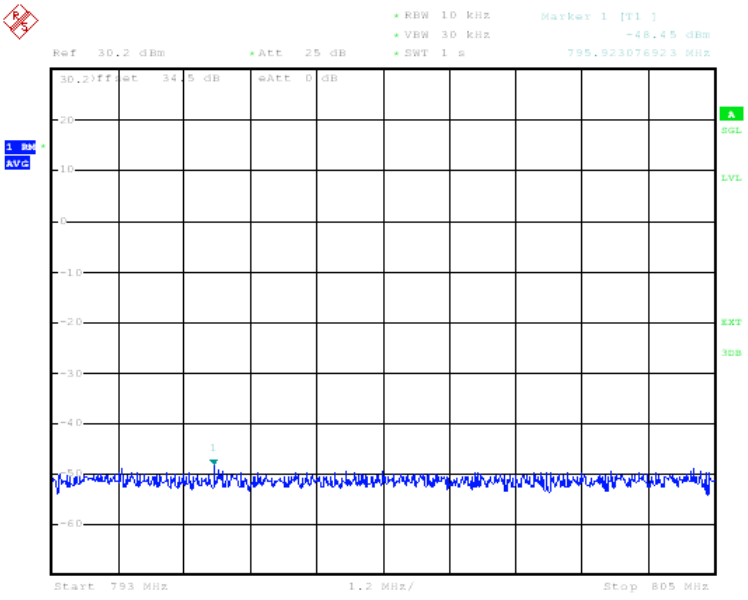

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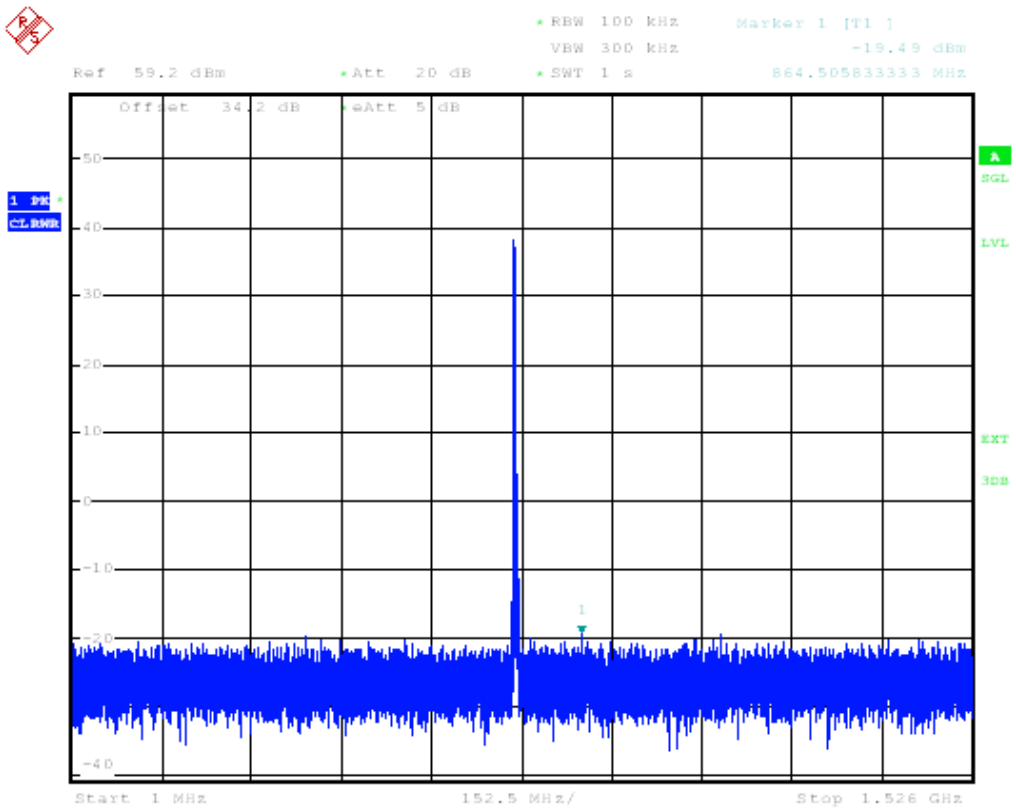
Low Channel 5MHz Spurious 1MHz to 1.526GHz



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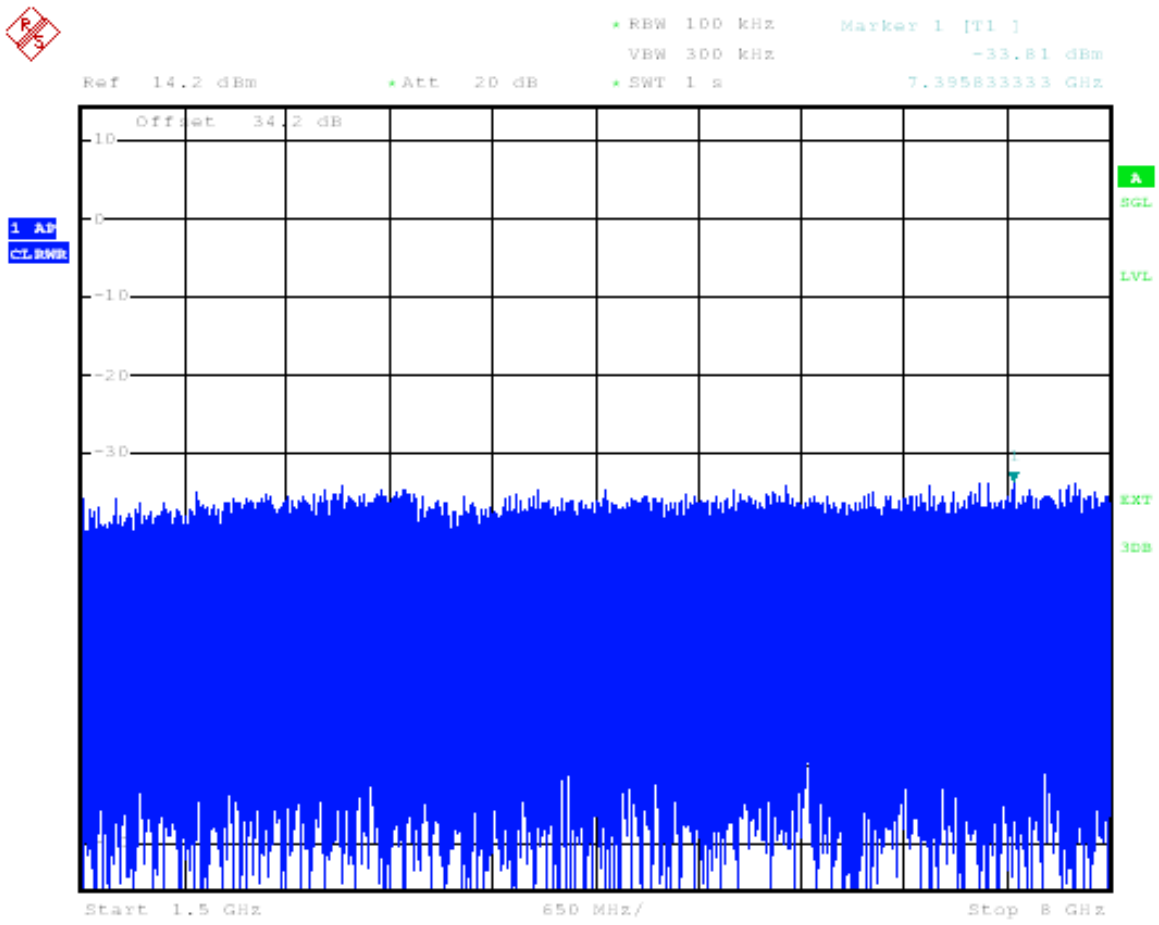
Low Channel 5MHz Spurious 1.5GHz to 8GHz



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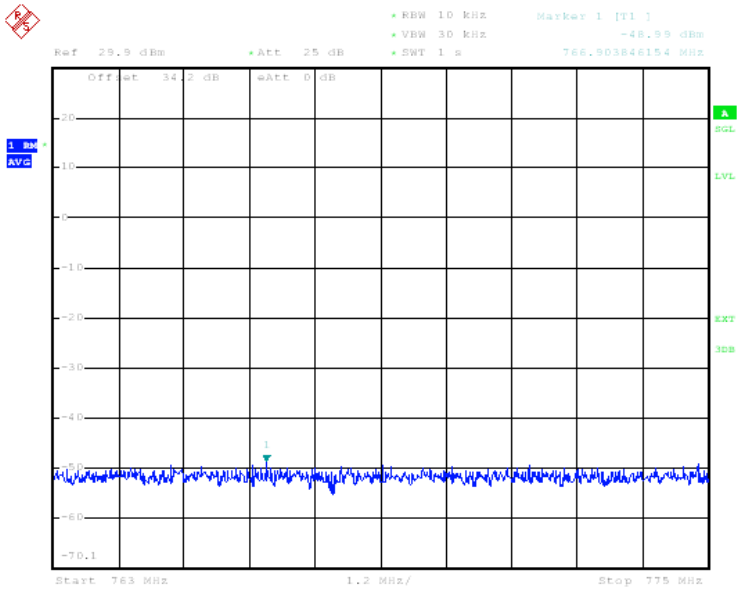
Low Channel 5MHz Public Safety



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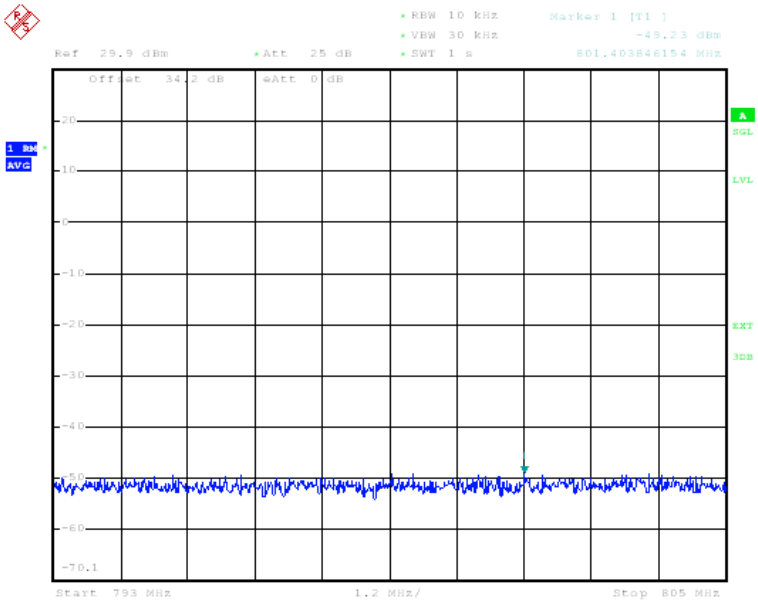

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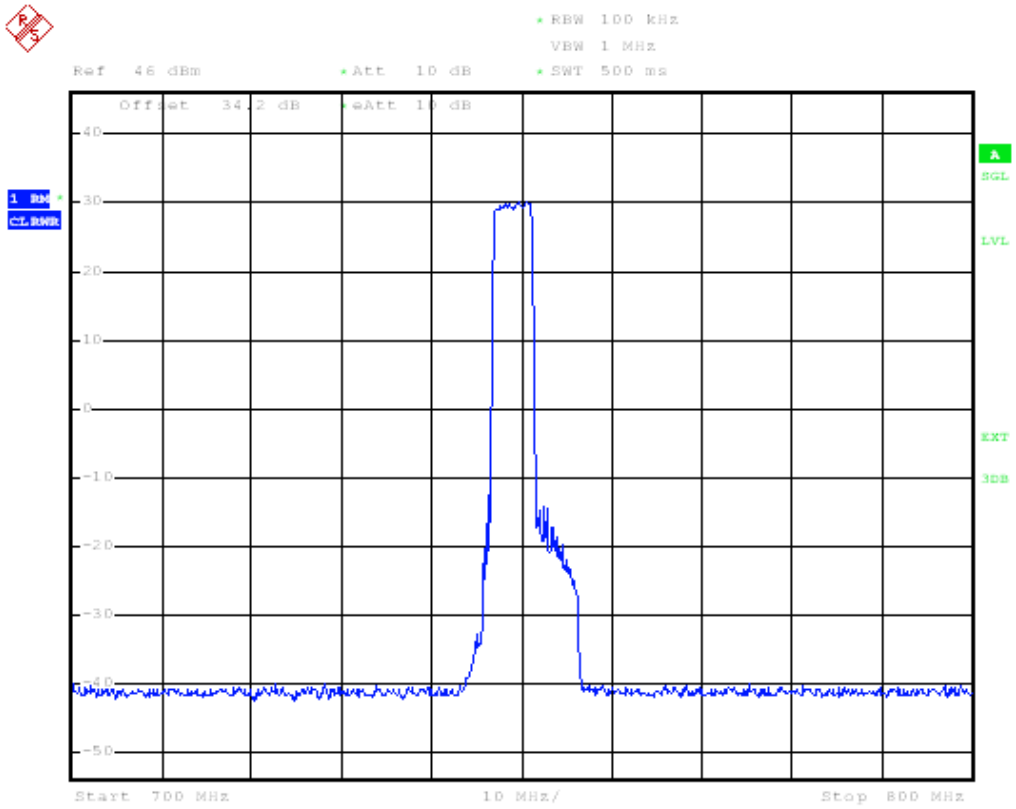
Additional Low Channel 5MHz Spurious 700MHz – 800MHz



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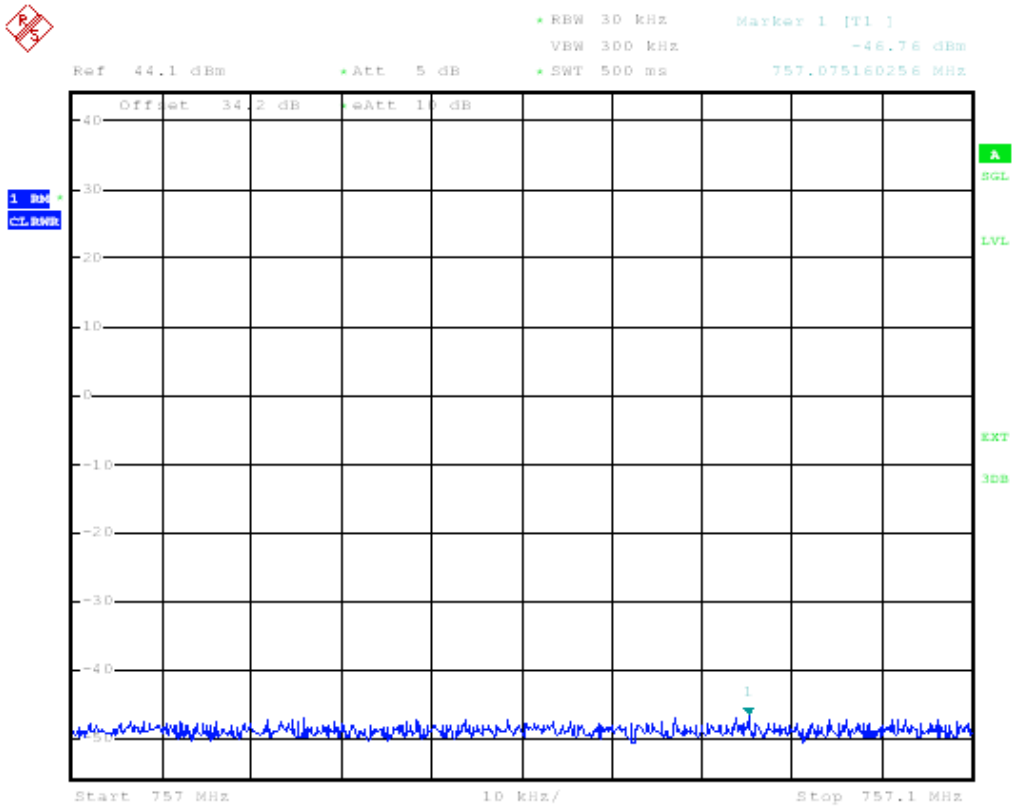
Additional Low Channel 5MHz Spurious 757MHz (30k RBW)



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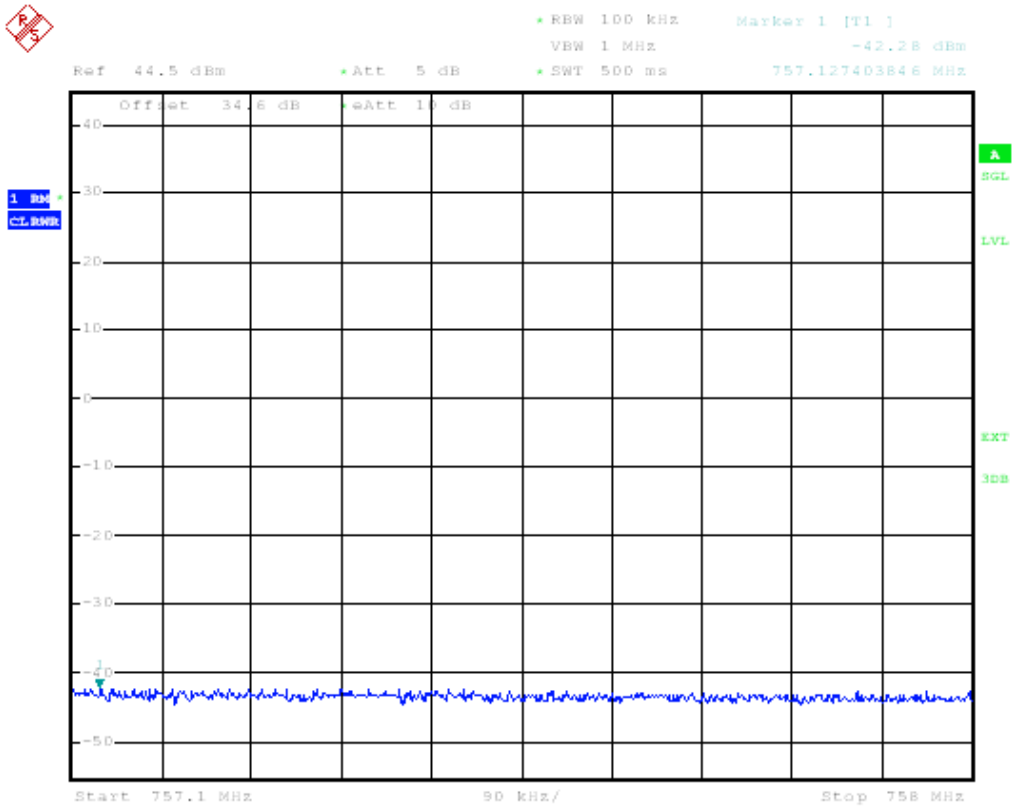
Additional Low Channel 5MHz Spurious 757MHz – 758MHz (100k RBW)



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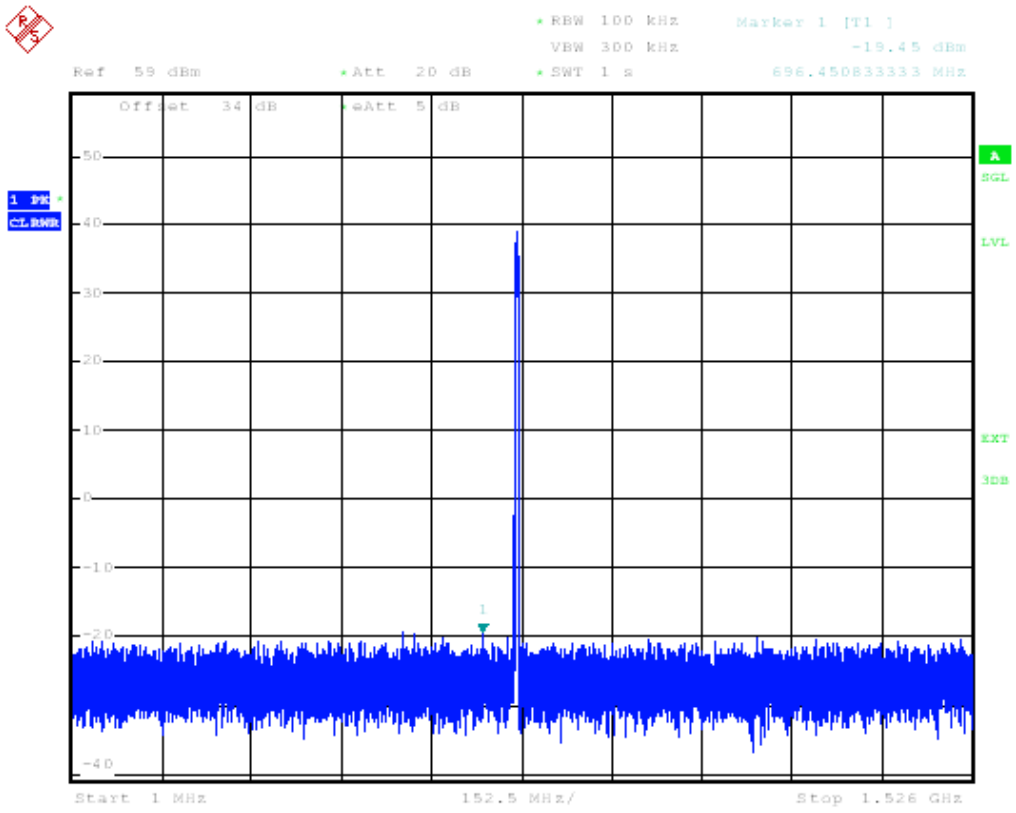
Additional (Mid) Channel 5MHz Spurious 1MHz to 1.526GHz



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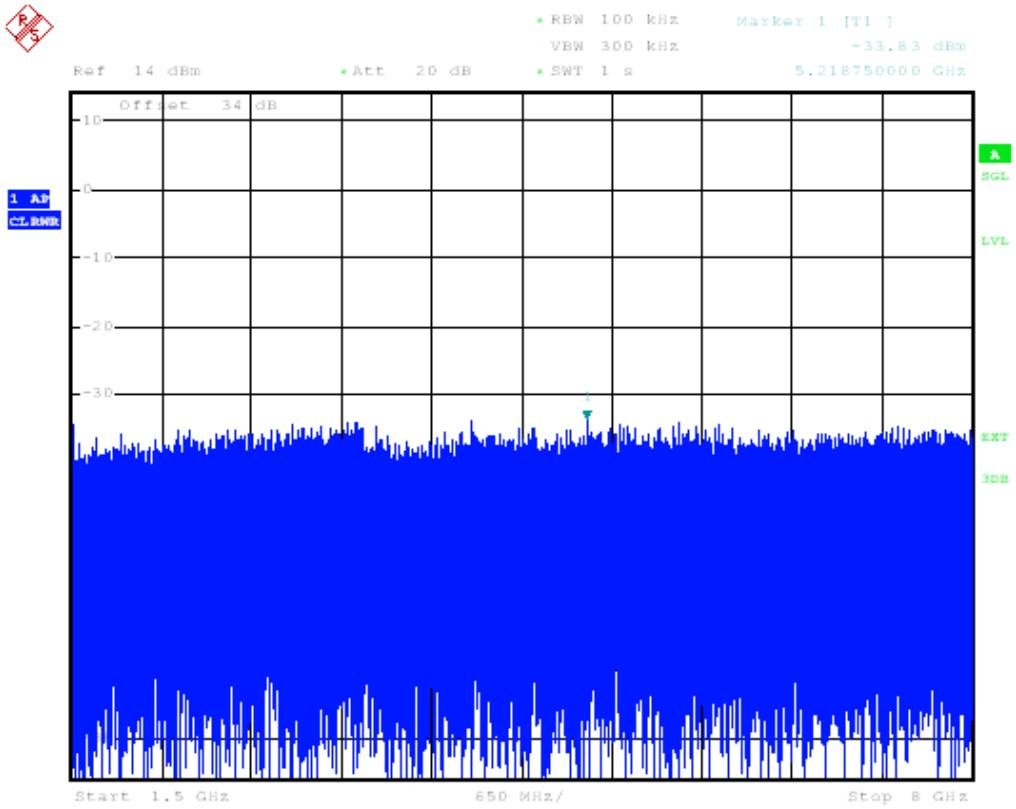
Additional (Mid) Channel 5MHz Spurious 1.5GHz to 8GHz



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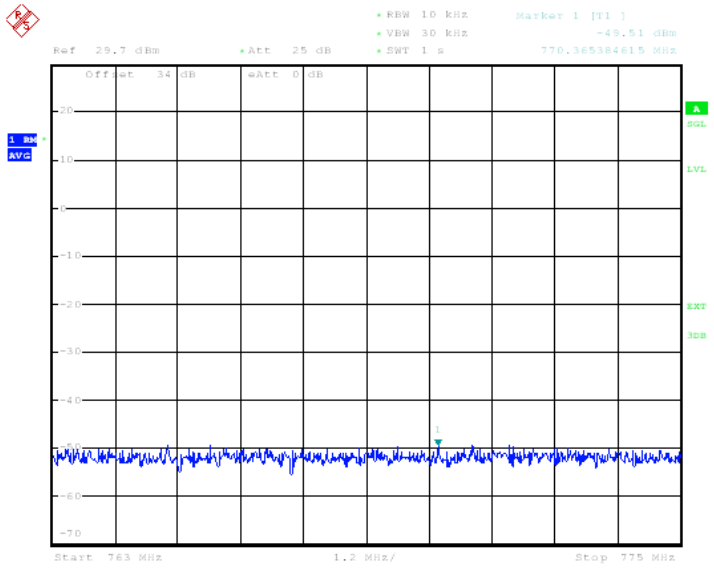
Additional (Mid) Channel 5MHz Public Safety



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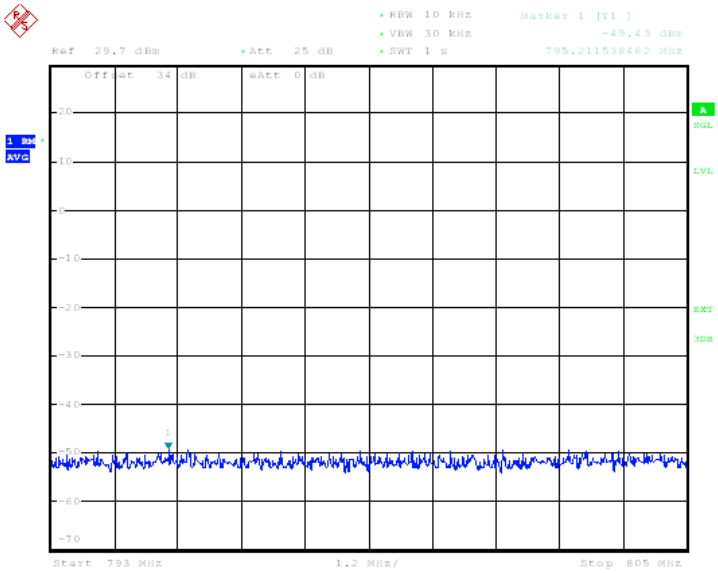

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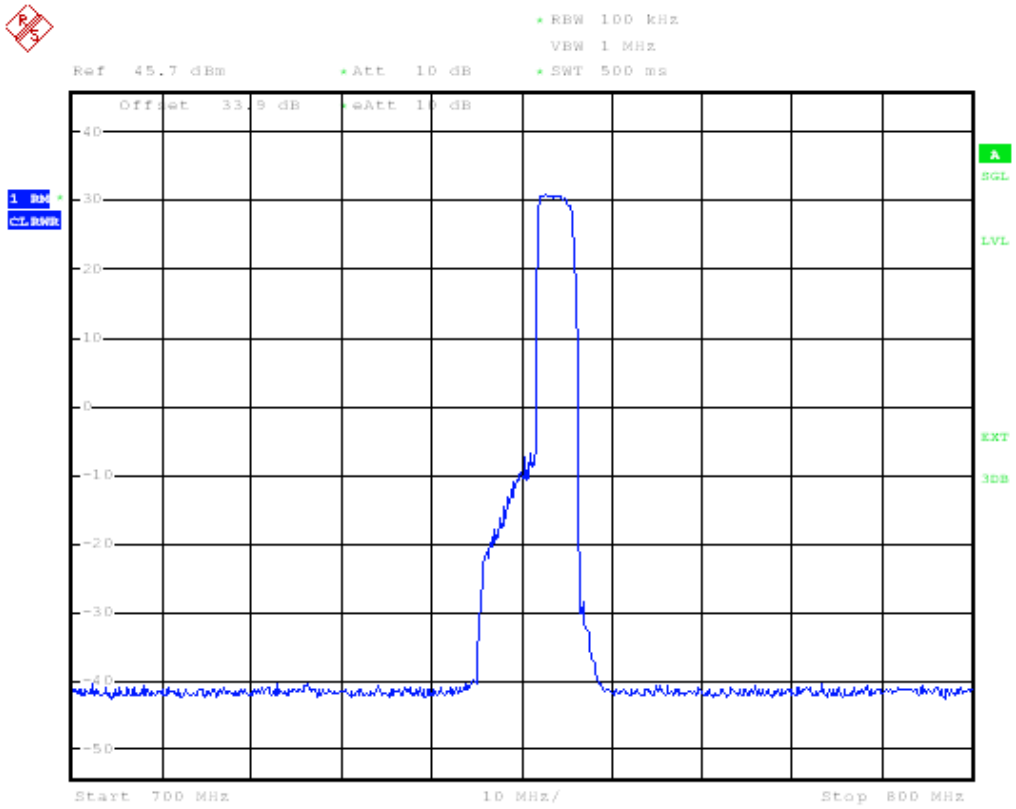
Additional High Channel 5MHz Spurious 700MHz – 800MHz



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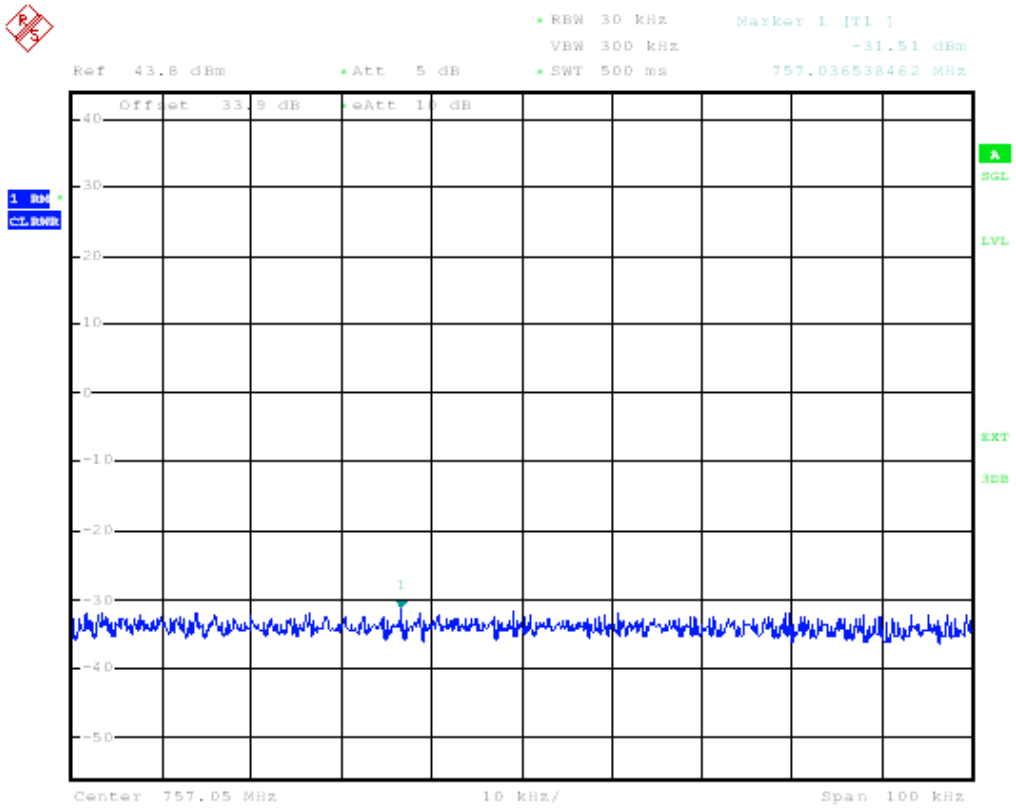
Additional High Channel 5MHz Spurious 757MHz (30k RBW)



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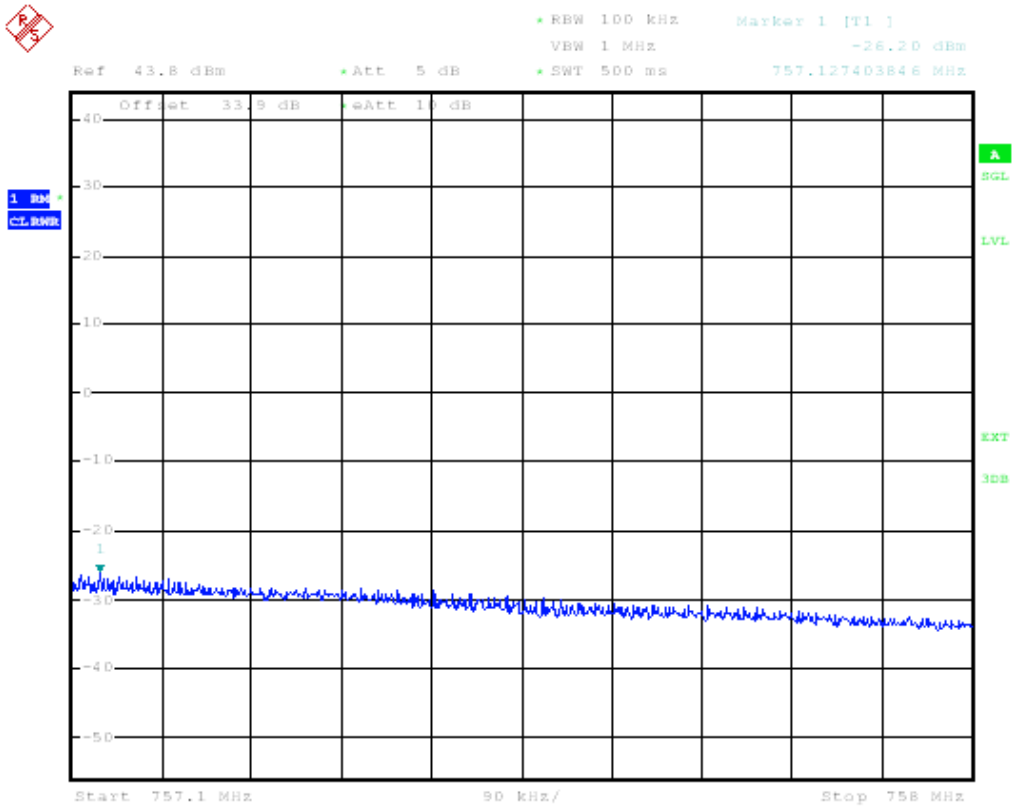
Additional High Channel 5MHz Spurious 757MHz – 758MHz (100k RBW)



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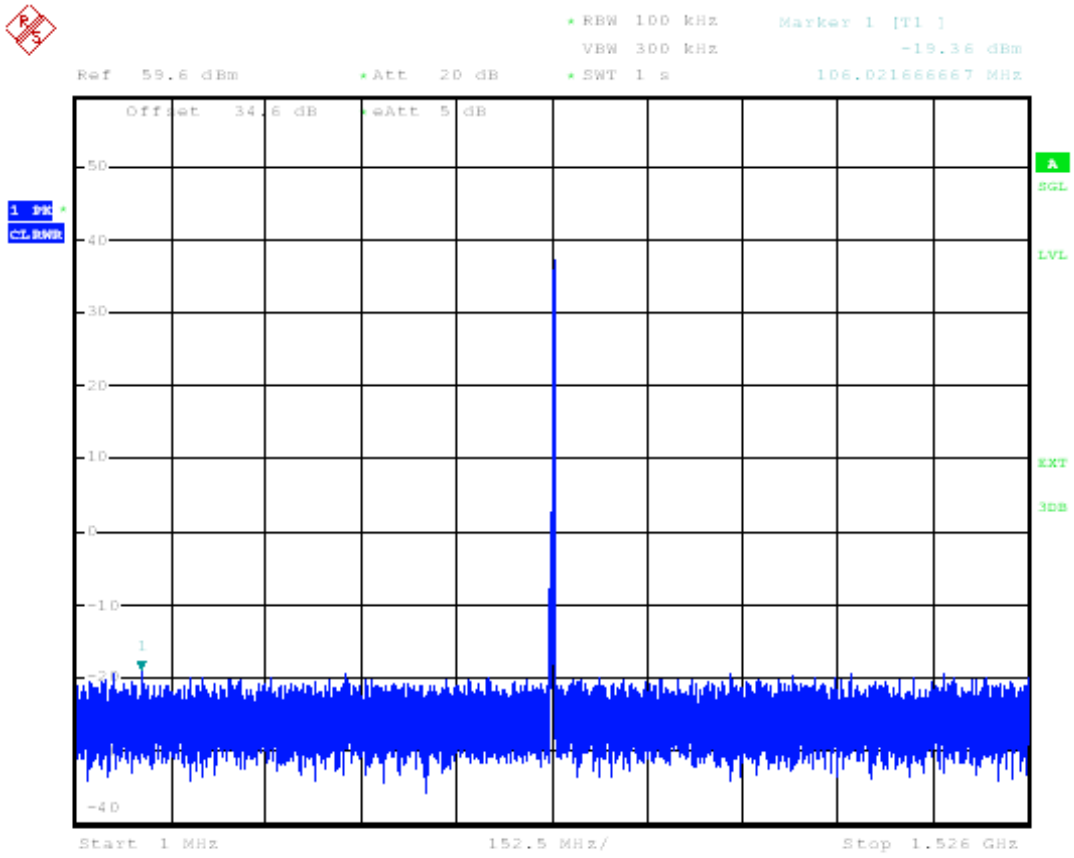
High Channel 5MHz Spurious 1MHz to 1.526GHz



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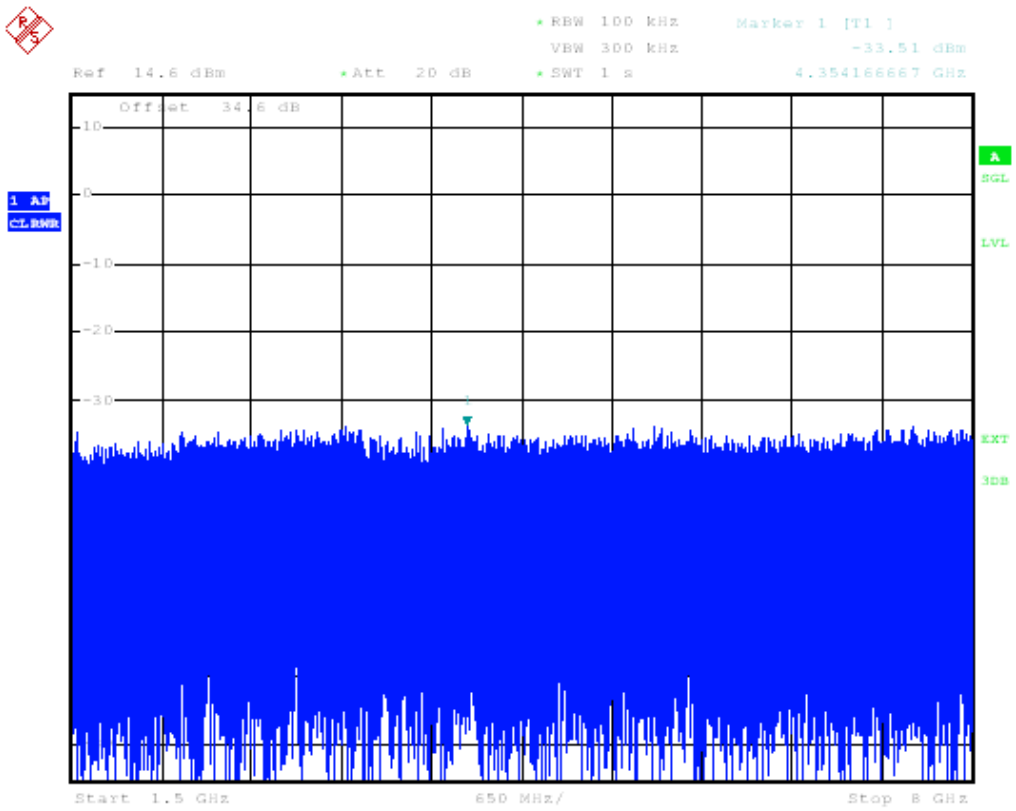
High Channel 5MHz Spurious 1.5GHz to 8GHz



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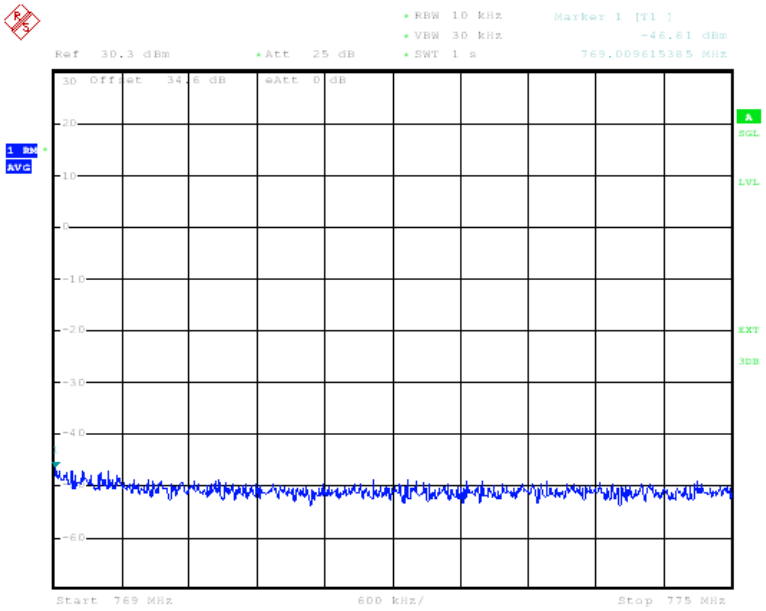
High Channel 5MHz Public Safety



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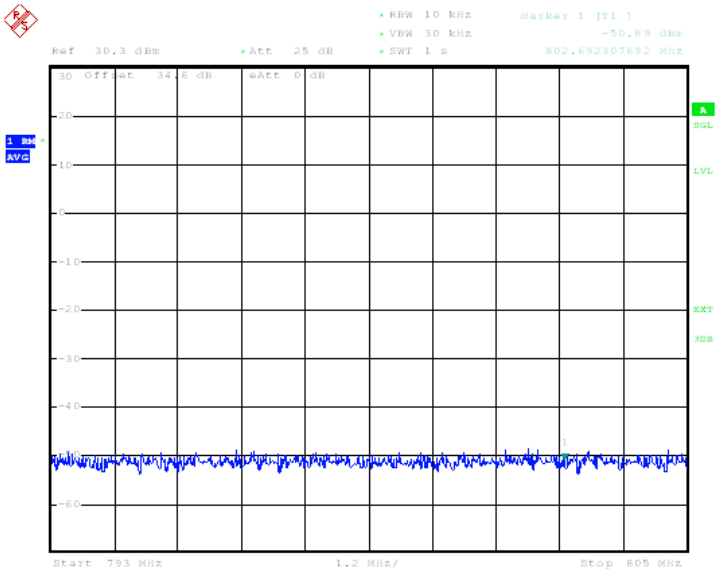

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Section 6 Field Strength of Spurious

NAME OF TEST: Field Strength of Spurious	PARA. NO.: 2.1053
TESTED BY: Morrison, Jim	DATE: 11/22/2009

Test Result: Complies

Measurement Data: See Attached Table

Test Equipment: 1-12,14

FIELD STRENGTH OF SPURIOUS

The spectrum was searched from 30MHz to the 10th harmonic of the carrier

SPUR FREQUENCY (MHz)	DISTANCE MEASURED (meters)	WORST CASE SPUR LEVEL MEASURED (dBuV/meter)	WORST CASE SPUR LEVEL MEASURED (dBm)	FCC MAX LIMIT (dBm)
5323.500 (Vert)	3	61.917	-33.31	-13

Section 7 Frequency Stability

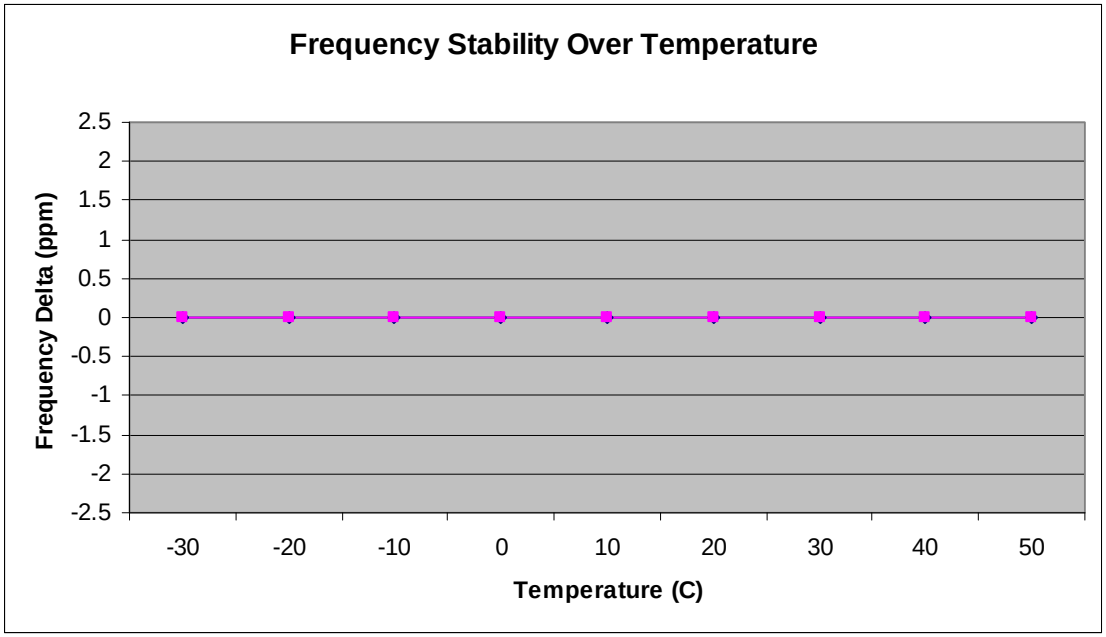
NAME OF TEST: Frequency Stability	PARA. NO.: 2.1055
TESTED BY: VanDrie Melissa	DATE: April 14, 2010

Test Result: Complies

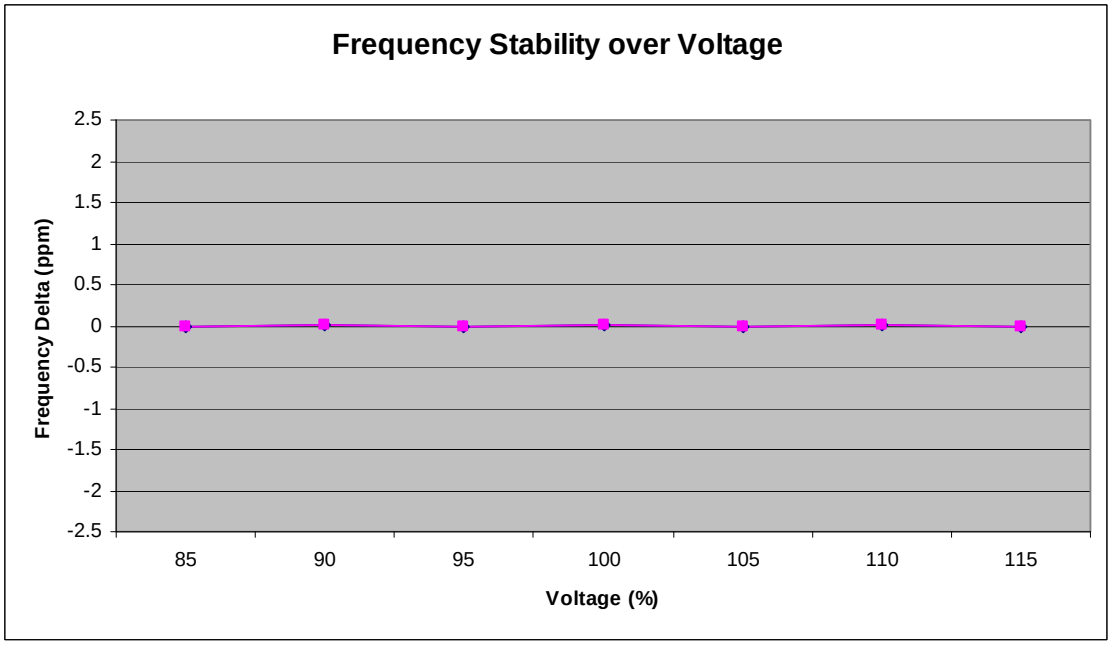
Measurement Data: See Plots

Test Equipment: 13, 15, 16

FREQUENCY STABILITY OVER TEMPERATURE



FREQUENCY STABILITY OVER VOLTAGE



Section 8 Test Equipment List

Item #	Motorola ID	Description	Model	Serial No.	Cal Date	Cal Due Date
1	118938	Pre-Amp	HP83006A	3950M00136	N/A	N/A
2	118937	Pre-Amp	HP83006A	3950M00135	N/A	N/A
3	505082	Antenna, Log Periodic	EMCO 3146	9303-3597	7/13/2009	7/13/2010
4	500301	Antenna, Biconnical	EMCO 3104C	8905-3974	7/13/2009	7/13/2010
5	502512	Antenna, Double Ridged Guide	EMCO 3115	2021	7/13/2009	7/13/2010
6	112019	Spectrum Analyzer	HP8593EM	3628A00164	4/27/2009	4/27/2010
7	508768	Power Meter	HP438A	3513U03967	4/27/2009	4/27/2010
8	116232	Power Sensor	HP8481A	2702A61832	4/27/2009	4/27/2010
9	509002	Signal Generator	HP83712A	3429A00422	4/28/2009	4/28/2010
10	N/A	Cable, Heliax 1/2" - 100 feet	Andrew	N/A	N/A	N/A
11	N/A	Cable, Coax - 6 feet	Microcoax	N/A	N/A	N/A
12	N/A	Cable, Coax - 6 feet	Microcoax	N/A	N/A	N/A
13	N/A	Cable, Coax - 6 feet	Microcoax	N/A	N/A	N/A
14	N/A	Cable, Reel - 20 feet	Emco	N/A	N/A	N/A
15	122804	Spectrum Analyzer	FSQ26	200123	1/19/2010	1/22/2011
16	N/A	Attenuator, 20dB	Wienschel	N/A	N/A	N/A
17	N/A	Low Pass Filter	Teledyne	N/A	N/A	N/A