



## TEST DATA

Test Data Number: 100099259MIN-001  
Project Number: G100099259

Testing performed on the  
Prism Module, 700MHz Upper C-Band  
to

47 CFR, Part 27:2009

For  
ADC Telecommunications Inc.

Test Performed by:  
Intertek Testing Services NA, Inc.  
7250 Hudson Blvd., Suite 100  
Oakdale, MN 55128

Test Authorized by:  
ADC Telecommunications Inc.  
PO. BOX 1101  
Minneapolis, MN 55440-1101

Prepared by: *U. Spector*  
Uri Spector

Date: April 27, 2010

Reviewed by: *N. Shpilsher*  
Norman Shpilsher

Date: April 27, 2010



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## 1.0 DESCRIPTION OF THE SAMPLE (EUT)

<b>Model:</b>	Prism Module, 700MHz Upper C-Band, FWP-U416000MOD
<b>Type of EUT:</b>	Indoor / Outdoor Repeater
<b>Serial Number:</b>	N/A
<b>Company:</b>	ADC Telecommunications Inc.
<b>Customer:</b>	Mr. Joshua Wittman
<b>Address:</b>	ADC Telecommunications Inc. PO. Box 1101 Minneapolis, MN 55440-1101
<b>Phone:</b>	952-403-8322
<b>Fax:</b>	
<b>Test Standards:</b>	<input type="checkbox"/> EN 55022:2006 +A1:2007, Class █ <input type="checkbox"/> EN 55011:2007, Group █, Class █ <input checked="" type="checkbox"/> 47 CFR, Part 27:2009 <input type="checkbox"/> EN 55014-1:2006 <input type="checkbox"/> EN 61326-1:2006 <input type="checkbox"/> Class █ for Radiated and Conducted Emissions <input type="checkbox"/> EN 60601-1-2:2001 +A1:2006 <input type="checkbox"/> Class █ Radiated and Conducted Emissions <input type="checkbox"/> EN 61000-6-3:2007 <input type="checkbox"/> EN 61000-6-4:2007 <input type="checkbox"/> EN 61000-3-2:2006 <input type="checkbox"/> EN 61000-3-3:1995 +A1:2001 +A2:2006 <input type="checkbox"/> Other █

## 2.0 TEST SUMMARY

Referring to the performance criteria and the operating mode during the tests specified in this report, the equipment complies with the requirements according to the following standards.

TEST STANDARD	TEST	RESULT
Part 27	Spurious Enclosure Radiated Emissions	Pass

### 2.1 Statement of the Measurement Uncertainty

**Note:** The measured result in this report is within the specification limits by more than the measurement uncertainty; the measured result indicates that the product tested complies with the specification limit.

The expanded uncertainty ( $k = 2$ ) for radiated emissions from 30 to 1000 MHz has been determined to be:  $\pm 4$  dB at 10m and  $\pm 5.4$  dB at 3m

The expanded uncertainty ( $k = 2$ ) for conducted emissions from 150 kHz to 30 MHz has been determined to be:  
 $\pm 2.6$  dB

General notes:

1. Test was performed with the EUT tuned to the low frequency (747MHz), middle frequency (751MHz), and upper frequency (755MHz) of the operating band.

2. Testing was performed in frequency range from 30MHz to 8GHz. EUT tuned frequencies 747MHz, 751MHz, and 755MHz were excluded from the table 2.

3. The Spurious Radiated Power limits of -13dBm was correlated with field strength reference level of 82.2dB $\mu$ V/m during field strength measurements at 3m measurement distance



### **3.0 TEST RESULTS**

Tables 1-2 show detected Radiated Emissions.

Graphs 1 to 18 show the EUT peak Radiated Emissions.

No emissions were chosen for substitution measurements as the maximum emission is more than 20dB below the reference limit.



TILE Instrument Control System EMI Measurement Software

**Radiated Emissions from 30MHz to 1GHz**

**Date:** 04-27-2010

**Company:** ADC Telecommunications Inc.  
**Model:** Prism Module, 700MHz Upper C-Band  
**Test Engineer:** Uri Spector  
**Standard:** FCC Part 27  
**Test Site:** 3m Anechoic Chamber, 3m measurement distance  
**Note:** The table shows the worst case radiated emissions  
 Measurements were taken using a Peak detector

**Table # 1**

Frequency	Ant. Polarity	Peak Reading dB $\mu$ V	Ant.Factor dB1/m	Total at 3m dB $\mu$ V/m	QP Limit dB $\mu$ V/m	Margin dB
<b>Operating Frequency 747MHz</b>						
30.047 MHz	V	20.7	20.7	41.4	82.2	-40.8
41.161 MHz	V	29.7	14.9	44.6	82.2	-37.6
337.82 MHz	V	25.9	16.8	42.6	82.2	-39.6
937.89 MHz	V	23.3	25.3	48.6	82.2	-33.6
<b>Operating Frequency 751MHz</b>						
167.08 MHz	H	34.2	11.5	45.7	82.2	-36.5
437.76 MHz	H	22.6	19.6	42.2	82.2	-40.0
525.08 MHz	H	21.1	20.8	41.9	82.2	-40.3
937.89 MHz	H	18.2	25.3	43.4	82.2	-38.8
<b>Operating Frequency 755MHz</b>						
30.814 MHz	V	17.6	20.3	37.9	82.2	-44.3
41.199 MHz	V	25.7	14.9	40.6	82.2	-41.6
437.81 MHz	V	19.9	19.6	39.5	82.2	-42.7
937.8 MHz	V	21.0	25.3	46.3	82.2	-35.9
950.02 MHz	V	18.6	25.3	43.9	82.2	-38.3
30.084 MHz	H	15.3	20.7	36.0	82.2	-46.2
166.35 MHz	H	29.8	11.6	41.4	82.2	-40.8
437.81 MHz	H	20.7	19.6	40.3	82.2	-41.9
937.8 MHz	H	17.9	25.3	43.2	82.2	-39.0
30.842 MHz	V	21.1	20.3	41.4	82.2	-40.8
41.171 MHz	V	30.7	14.9	45.6	82.2	-36.6
48.154 MHz	V	33.6	11.2	44.8	82.2	-37.4
937.8 MHz	V	23.4	25.3	48.7	82.2	-33.5
950.02 MHz	V	18.5	25.3	43.8	82.2	-38.4
167.39 MHz	H	34.8	11.5	46.3	82.2	-36.0
525.21 MHz	H	21.0	20.8	41.8	82.2	-40.4
687.45 MHz	H	19.5	23.1	42.6	82.2	-39.6
937.8 MHz	H	18.7	25.3	44.0	82.2	-38.2



TILE Instrument Control System EMI Measurement Software

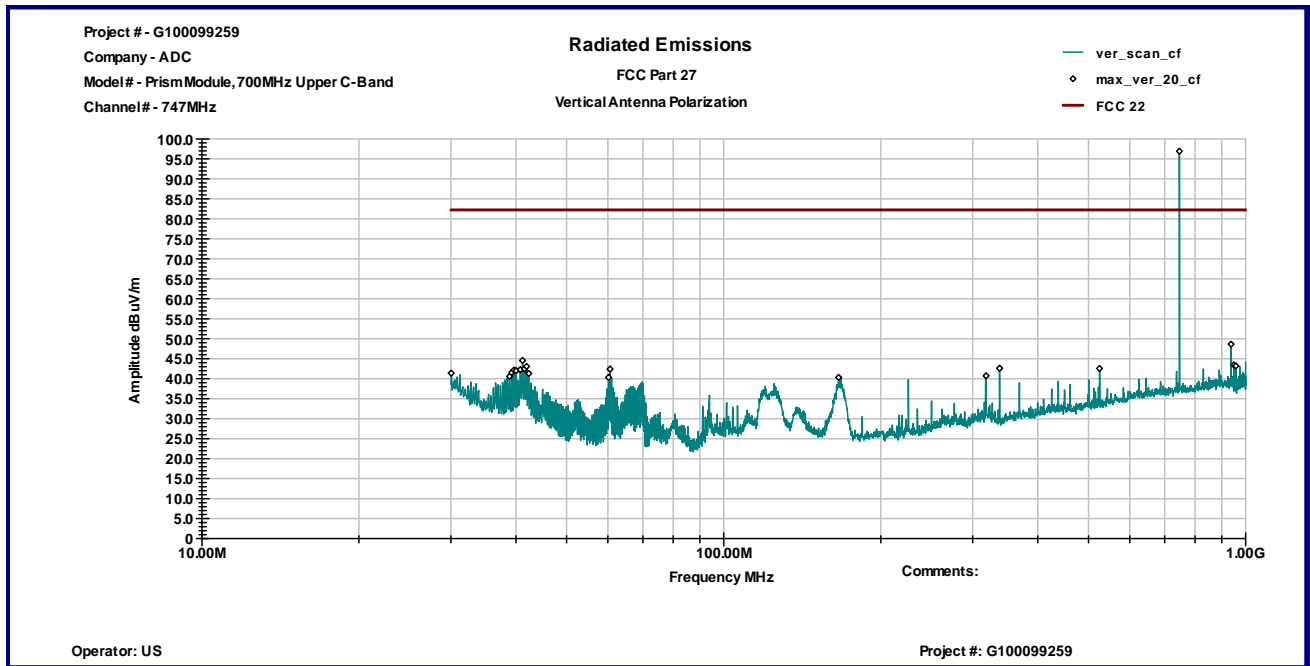
**Radiated Emissions from 1GHz to 8GHz**

**Date:** 04-27-2010

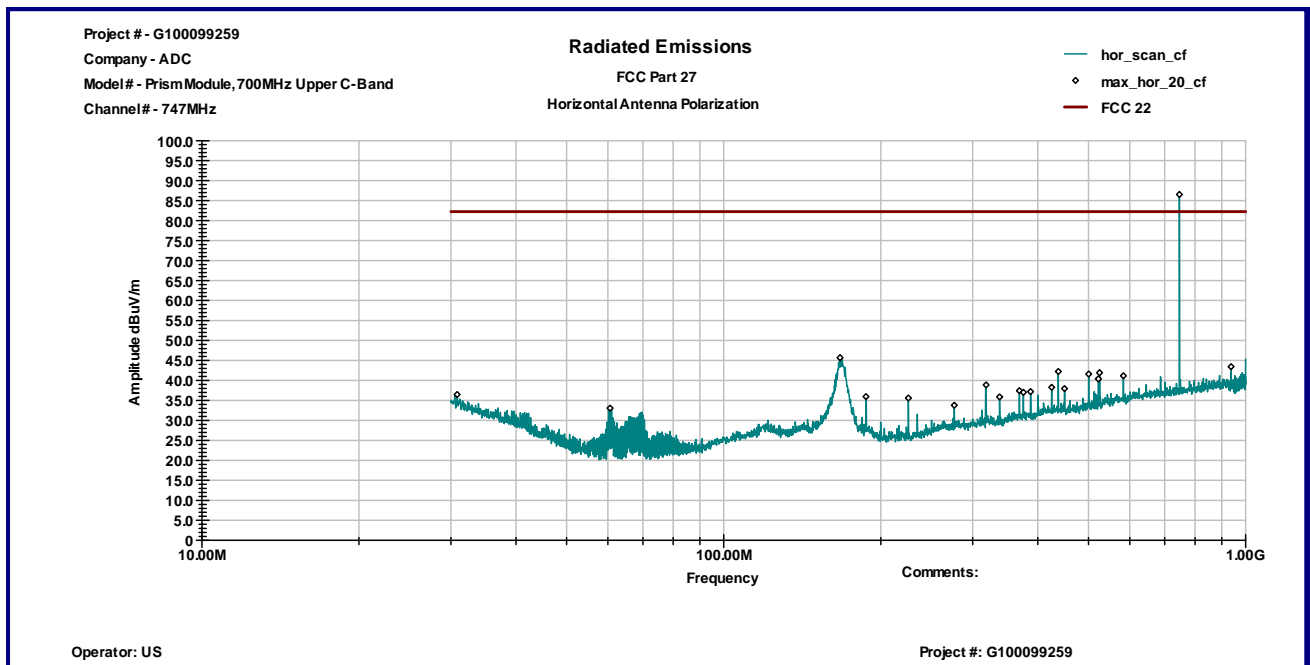
**Company:** ADC Telecommunications Inc.  
**Model:** Prism Module, 700MHz Upper C-Band  
**Test Engineer:** Uri Spector  
**Standard:** FCC Part 27  
**Test Site:** 3m Anechoic Chamber, 3m measurement distance  
**Note:** The table shows the worst case radiated emissions  
 All measurements were taken using a Peak detector

**Table # 2**

Frequency MHz	Antenna Polarity	Reading dBμV	Total C.F. dB1/m	Pre-Amp. Gain (dB)	Total at 3m dBμV/m	QP Limit dBμV/m	Margin dB
<b>Operating Frequency 747MHz</b>							
1.2485 GHz	V	65.7	26.9	42.6	50.0	82.2	-32.2
1.4935 GHz	V	71.5	27.9	42.7	56.6	82.2	-25.6
2.2425 GHz	V	66.8	30.7	43.2	54.3	82.2	-27.9
7.349 GHz	V	41.1	42.0	41.2	41.8	82.2	-40.4
<b>Operating Frequency 751MHz</b>							
1.0735 GHz	H	51.5	26.2	42.5	35.2	82.2	-47.0
1.1855 GHz	H	58.6	26.6	42.5	42.7	82.2	-39.5
1.2485 GHz	H	67.8	26.9	42.6	52.1	82.2	-30.1
1.5005 GHz	H	58.6	27.9	42.7	43.8	82.2	-38.4
2.463 GHz	H	54.2	31.4	43.1	42.5	82.2	-39.7
7.4365 GHz	H	41.1	42.1	41.0	42.1	82.2	-40.1
<b>Operating Frequency 755MHz</b>							
1.2485 GHz	V	65.9	26.9	42.6	50.2	82.2	-32.0
2.001 GHz	V	53.0	29.8	43.3	39.6	82.2	-42.6
2.2495 GHz	V	50.9	30.7	43.2	38.4	82.2	-43.8
7.349 GHz	V	41.6	42.0	41.2	42.4	82.2	-39.8
<b>Operating Frequency 755MHz</b>							
1.105 GHz	H	56.7	26.3	42.5	40.5	82.2	-41.7
1.1855 GHz	H	58.9	26.6	42.5	42.9	82.2	-39.3
1.2485 GHz	H	67.9	26.9	42.6	52.2	82.2	-30.0
1.5005 GHz	H	59.1	27.9	42.7	44.3	82.2	-37.9
7.566 GHz	H	40.5	42.2	40.9	41.8	82.2	-40.4
<b>Operating Frequency 755MHz</b>							
1.2485 GHz	V	66.2	26.9	42.6	50.5	82.2	-31.7
1.511 GHz	V	71.6	27.9	42.7	56.8	82.2	-25.4
2.267 GHz	V	54.0	30.8	43.2	41.6	82.2	-40.7
7.405 GHz	V	41.4	42.0	41.1	42.3	82.2	-39.9
<b>Operating Frequency 755MHz</b>							
1.1855 GHz	H	58.4	26.6	42.5	42.5	82.2	-39.7
1.2485 GHz	H	67.7	26.9	42.6	52.1	82.2	-30.2
1.5005 GHz	H	58.8	27.9	42.7	44.0	82.2	-38.2
2.6275 GHz	H	52.0	32.0	43.2	40.8	82.2	-41.4
3.8735 GHz	H	47.7	36.2	43.0	40.9	82.2	-41.3
7.6255 GHz	H	40.5	42.2	40.8	41.9	82.2	-40.3

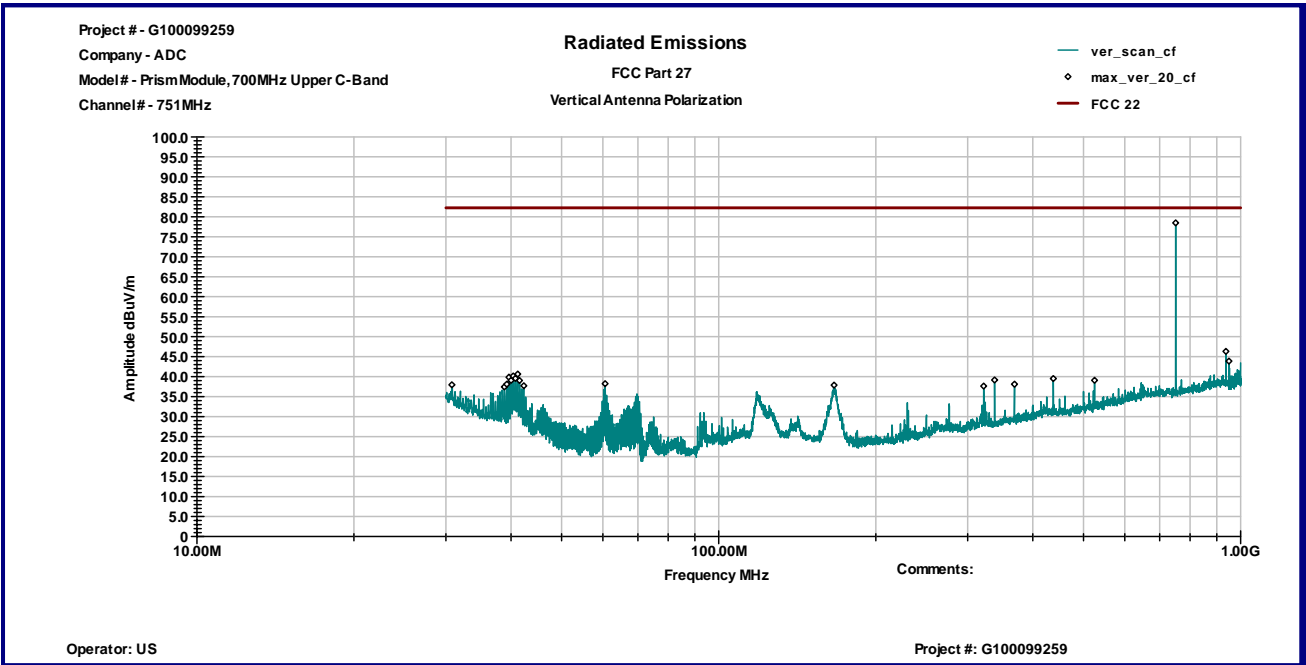


Graph 1

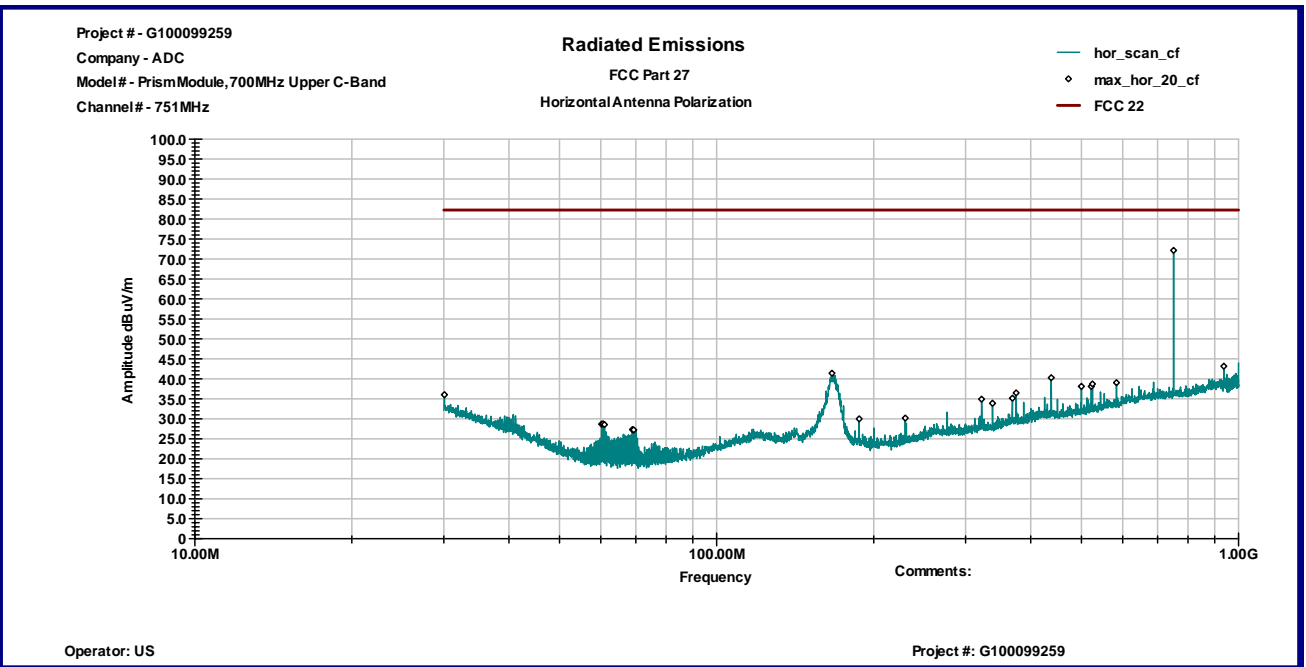


Graph 2

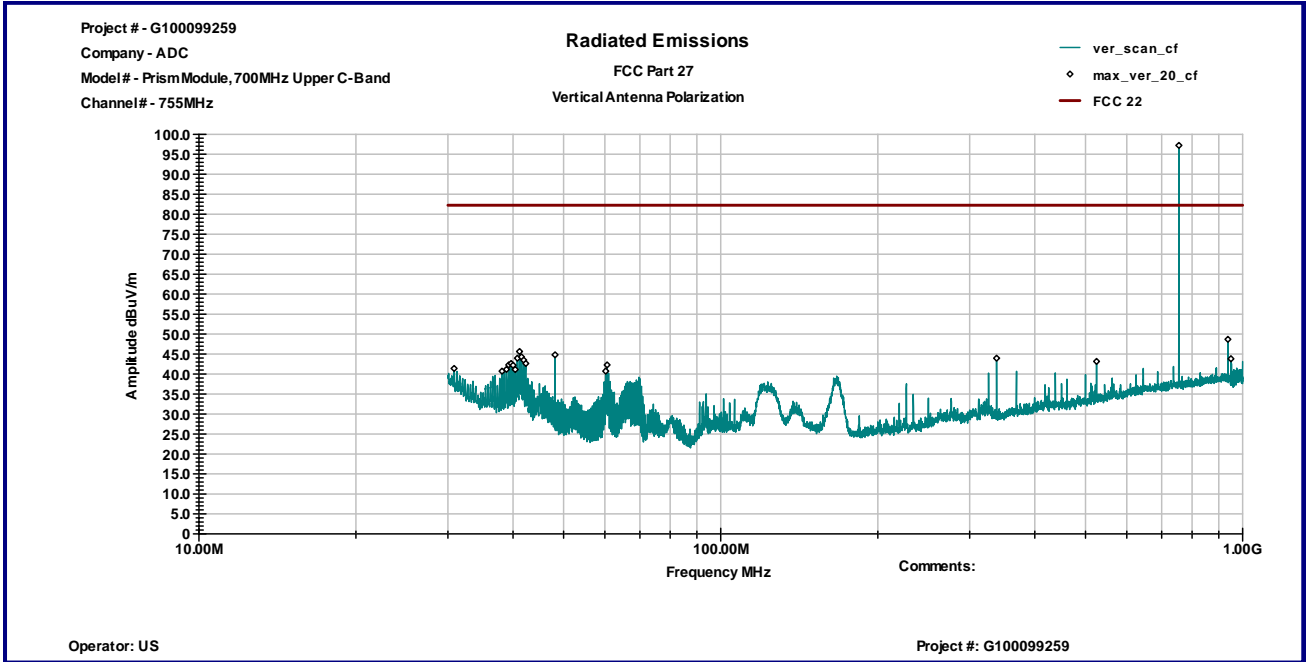




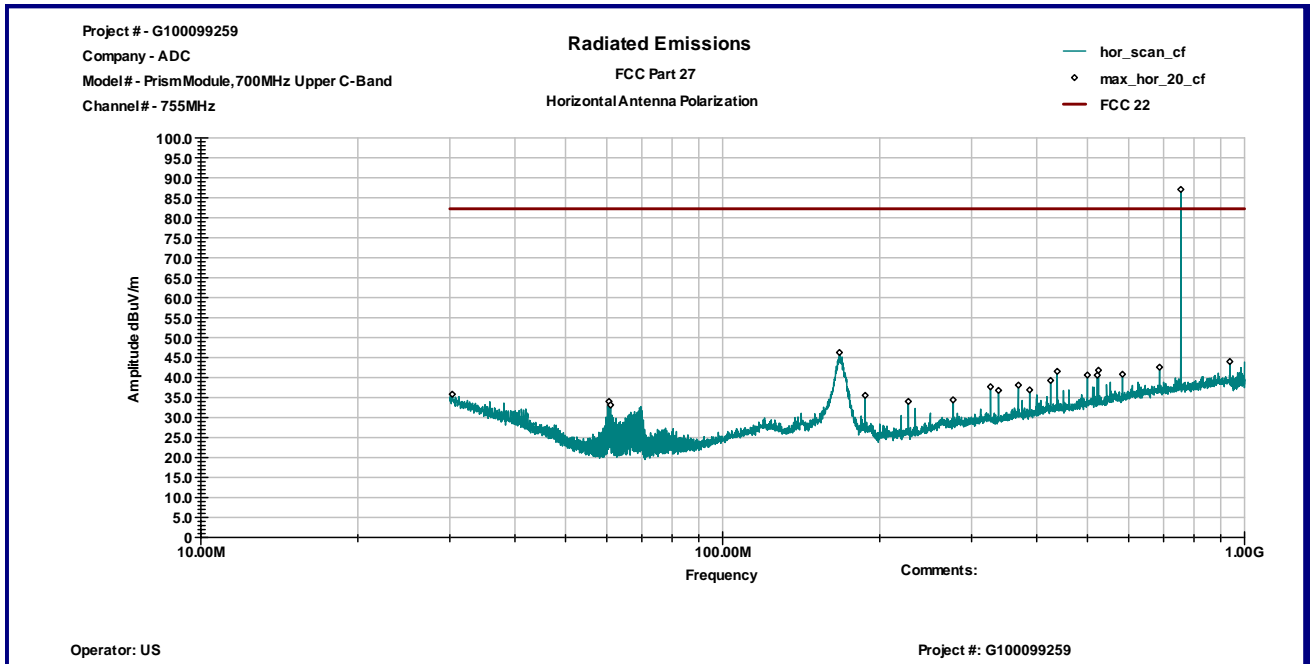
Graph 3



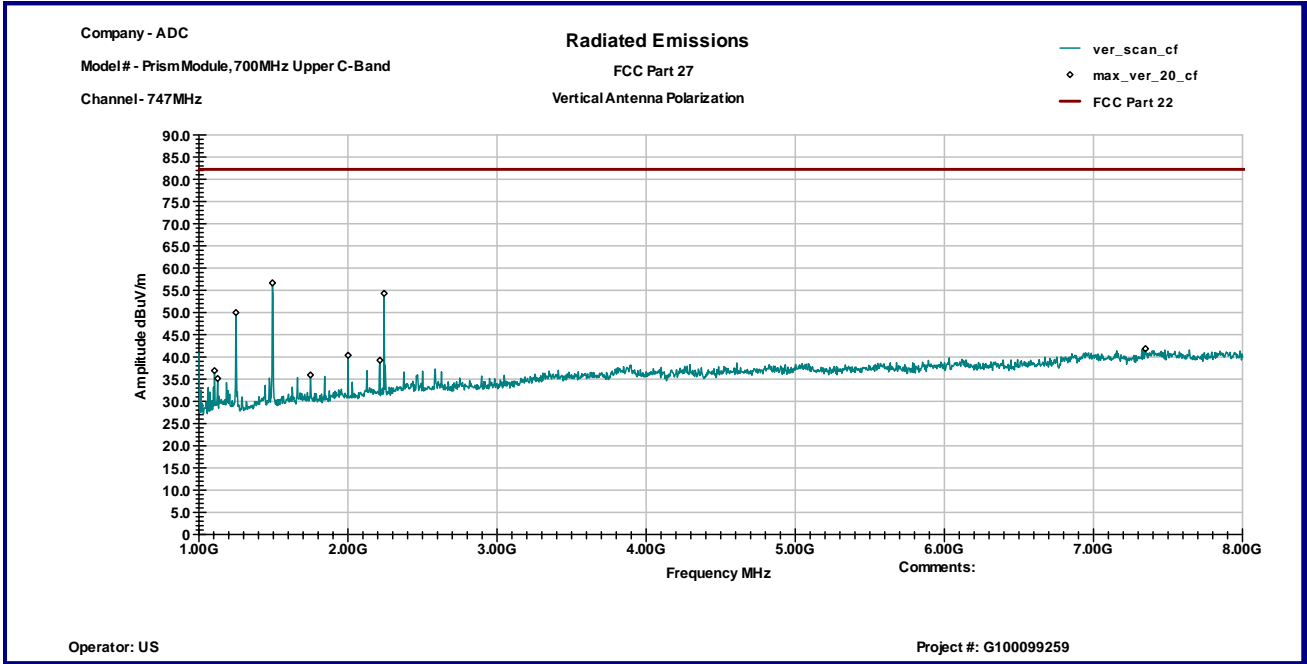
Graph 4



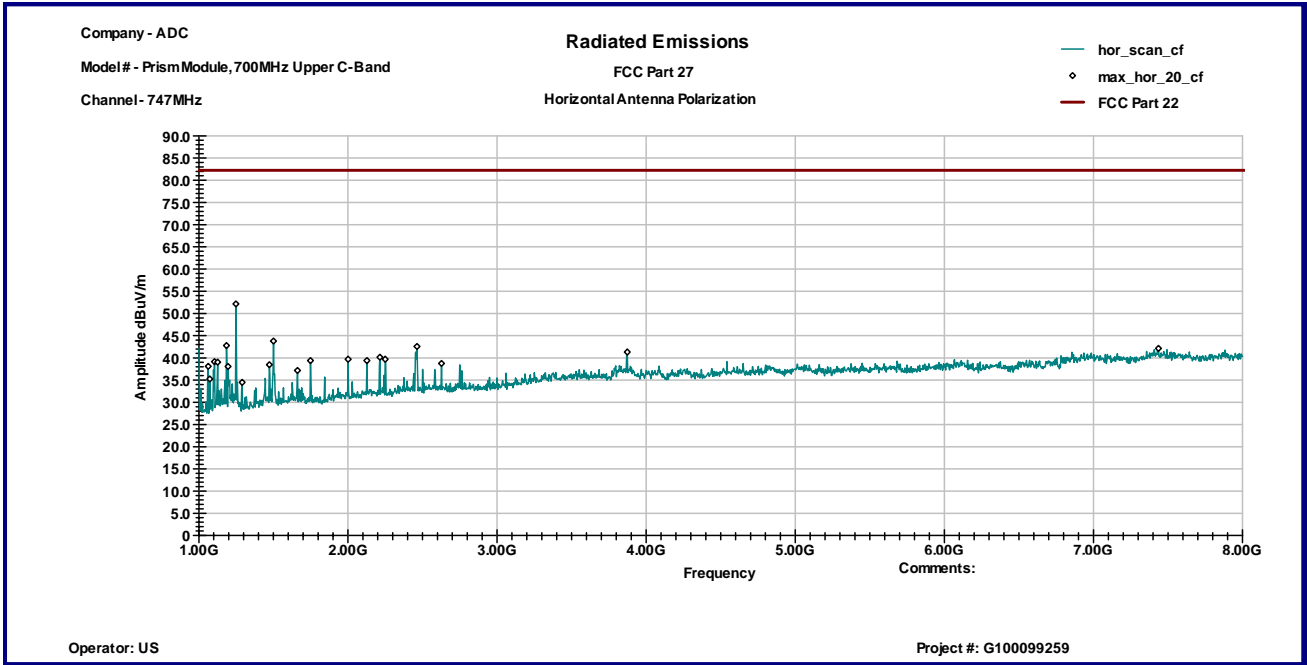
**Graph 5**



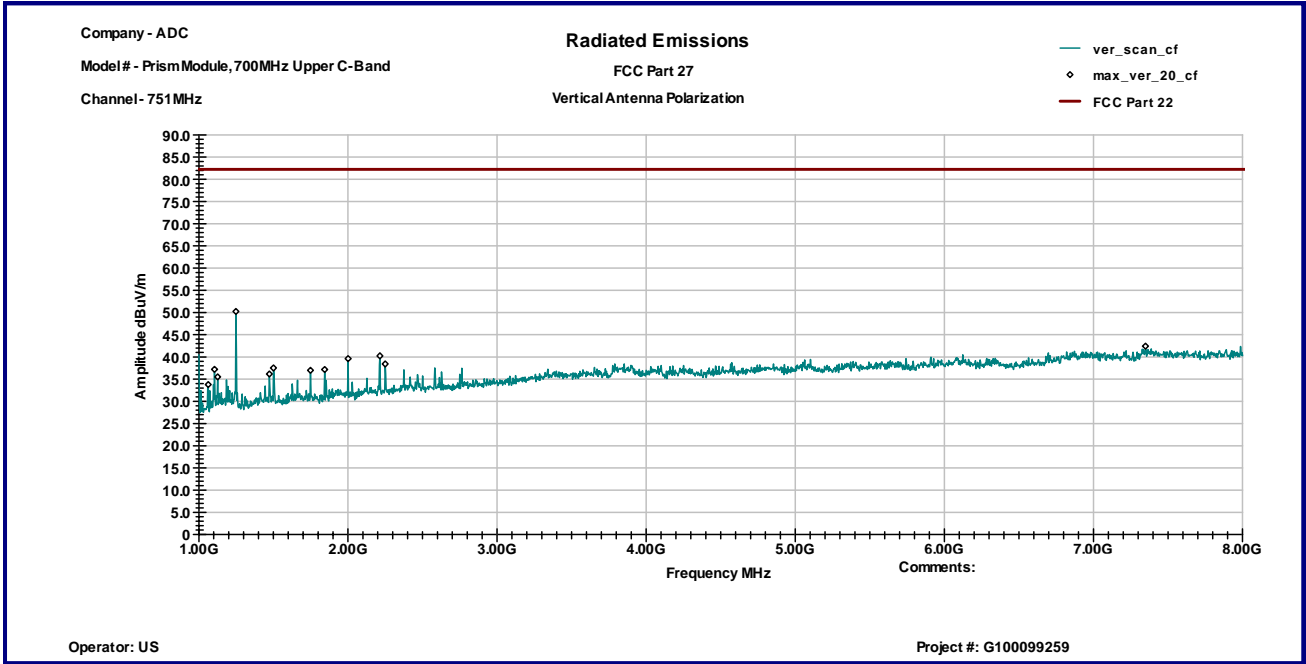
**Graph 6**



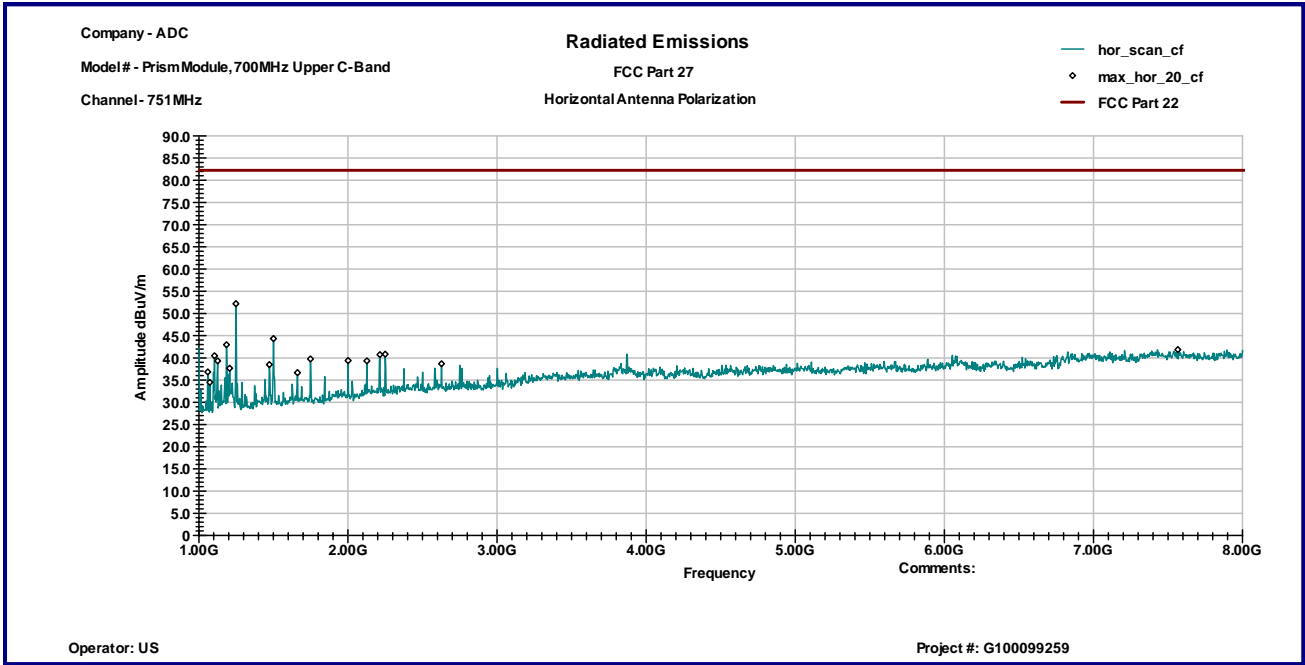
Graph 7



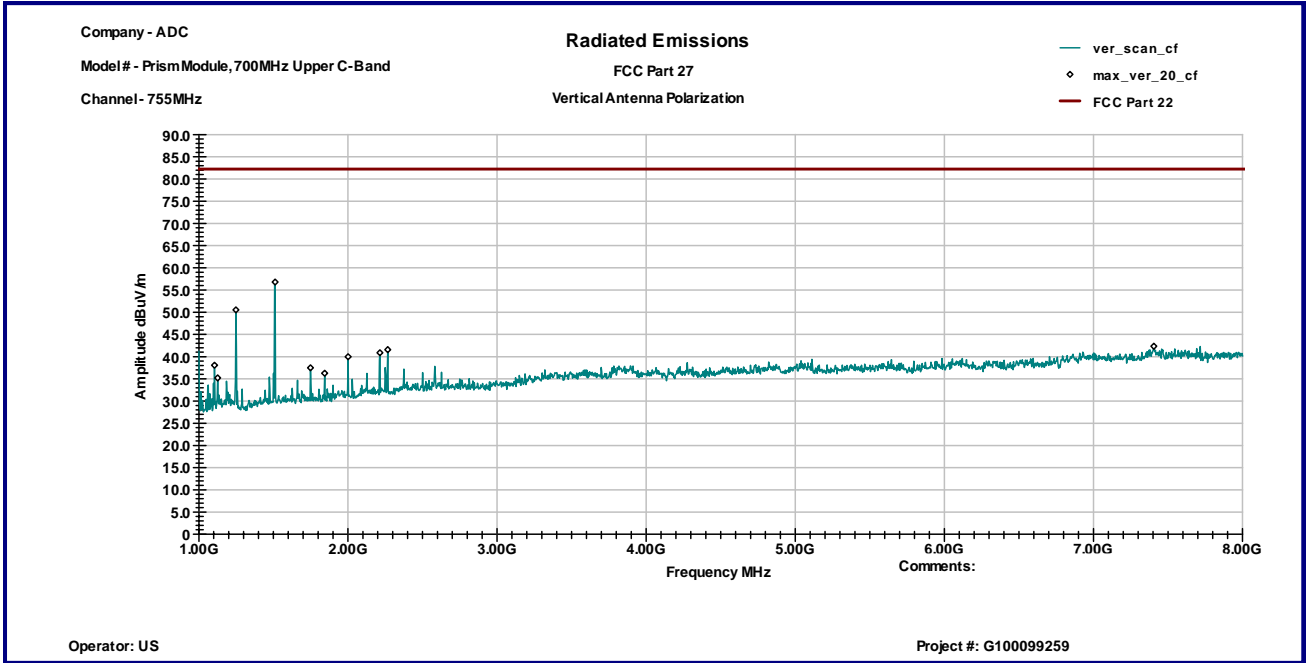
Graph 8



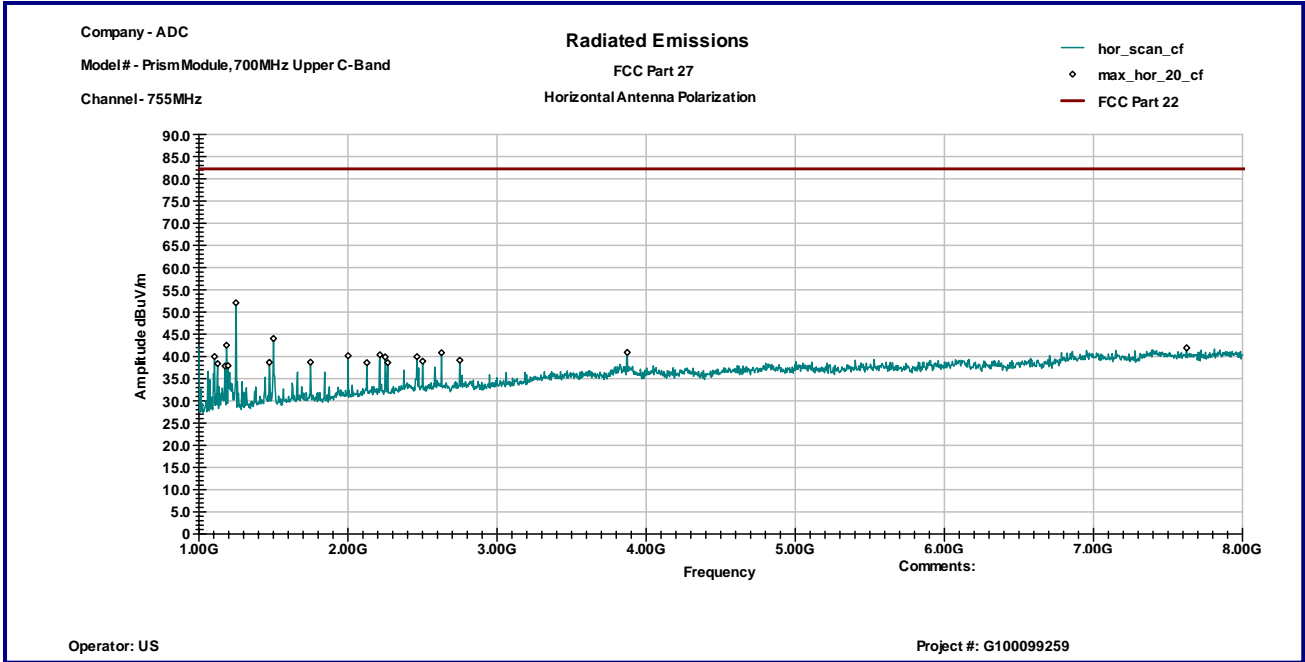
Graph 9



Graph 10



Graph 11



Graph 12

### 3.1 Environmental conditions

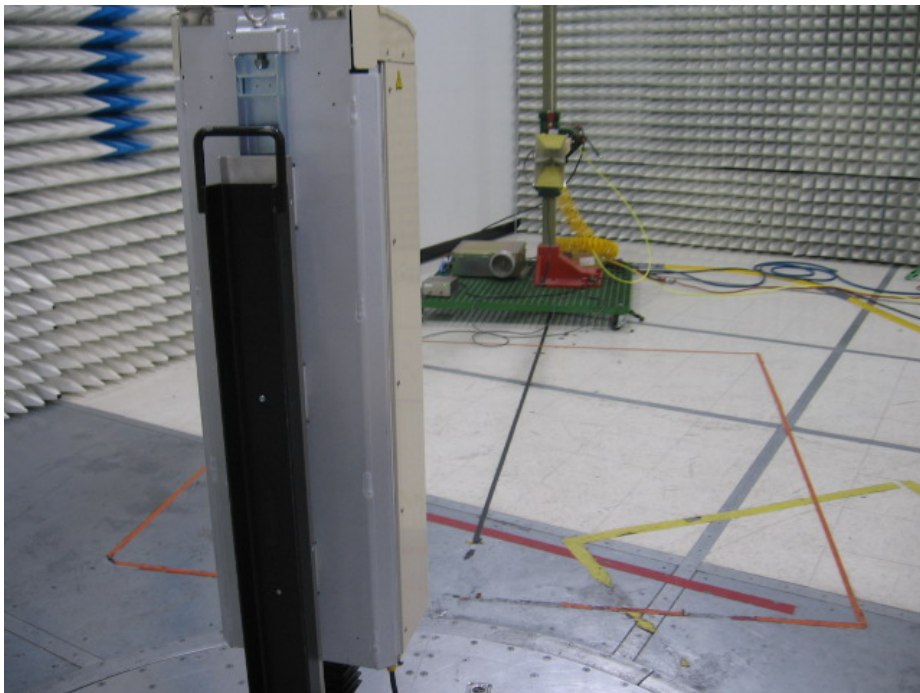
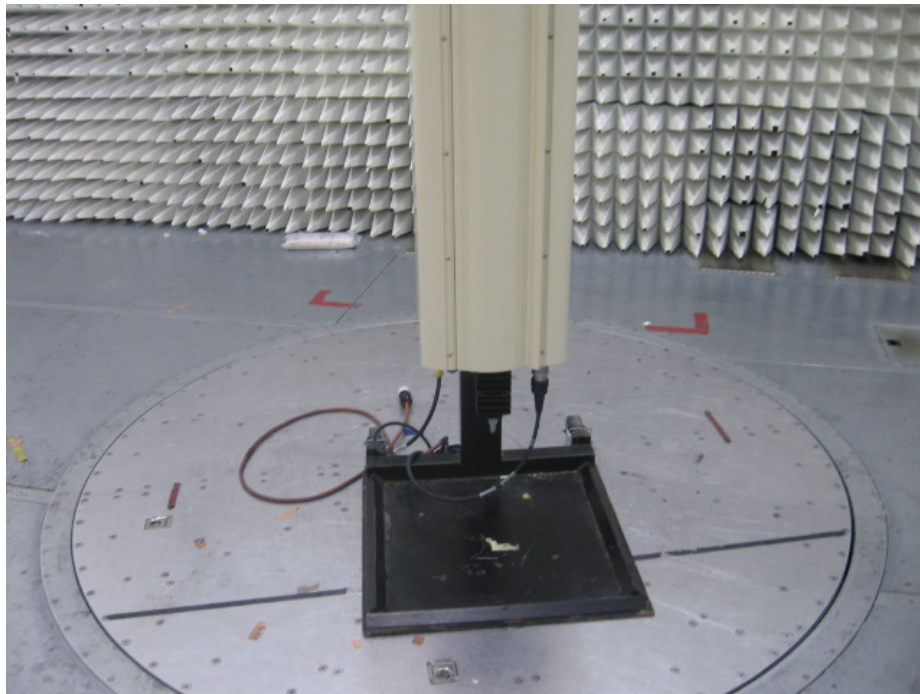
During the measurement the environmental conditions were within the listed ranges:

**Temperature:** 15-35 ° C

**Humidity:** 30-60 %

**Atmospheric pressure:** 86-106 kPa

4.0 PHOTOS





## 5.0 TEST EQUIPMENT

DESCRIPTION	MANUFACTURER	MODEL	SERIAL NO.	INTERTEK ID	CAL DUE	USED
Spectrum Analyzer	R & S	FSP 40	100024	12559	09/10/2010	<input checked="" type="checkbox"/>
Spectrum Analyzer	R & S	ESCI	100358	12909	05/18/2010	<input checked="" type="checkbox"/>
Bicono-Log Antenna	Schaffner-Chase	CBL 6112 B	2468	14459	09/22/2010	<input checked="" type="checkbox"/>
Horn Antenna	EMCO	3115	9507-4513	9936	04/13/2011	<input checked="" type="checkbox"/>
Pre-Amplifier	MITEQ	AMF-5D-00501800-28-13P	1402232	172081	08/07/2010	<input checked="" type="checkbox"/>
System	TILE! Instrument Control		Ver. 3.4.K.29	15259	VBU	<input checked="" type="checkbox"/>





## **Annex 1: Antenna Conducted Emissions**

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## 1.1 Test Regulations

27.50	Power limits
27.53	Emission limits
27.54	Frequency stability

IC RSS-131 Issue 2 Zone Enhancers for the Land Mobile Service

### The emissions tests were performed according to the following regulations:

FCC Part 22

FCC Part 24

#### ■ FCC Part 27

## 1.2 Test Operation Mode

Standby

Test Program

Practice Operation

#### ■ Max composite in and out

## 1.3 Configuration of the Device Under Test:

Normal Operation – AWS - 746 to 756 MHz

## 1.4 Product Options:

None

## 1.5 Cables:

Cable Type	Length	From	To
RF	> 3M	Ancillary Equip	EUT
RF	< 3M	EUT	50 Ohm Load
Power	< 3M	Power	Input Power
Fiber	> 3M	Ancillary Equip	EUT

## 1.6 Support Equipment

Description	Manufacturer	Model #	FCC ID #
Power Meter	HP	EPM-441A	
Signal Generator	Agilent	E4438C	
Attenuator	Aeroflex	86-30-12	

### **1.7 Deviations from Standard:**

Modifications required to pass:

As indicated on the data sheet(s)

■ **None**

Test Specification Deviations; Additions to or Exclusions from:

As indicated in the Test Plan

■ **None**

### **1.8 General Remarks:**

None.

### **1.9 Summary:**

The requirements according to the technical regulations are

■ **met**

not Met

## 2.0 FCC TEST RESULTS

### 2.1.1 27.50 RF Power Limits

#### Test Summary:

- The requirements are:  **MET**  NOT MET
- Minimum margin of compliance is 6.2 dB at 754.5 MHz (3 MHz LTE)

#### Test Location:

- Intertek (Oakdale, MN)

#### Test Distance:

- 3 Meters
- 10 Meters

- **Conducted measurement**

#### Test Limit:

100 Watts or 50 dBm Limit

#### Test Data:

Below

**Date:** 28 April, 2010

## Conducted Output Power Test

\*Note: The EUT is a fixed repeater and not a base station.

This measurement was made as a direct conducted emission measurement. The output from the EUT antenna connector was connected to the power meter. The carrier output, below, was conducted using a single 1.4, 3, 5, and 10 MHz LTE signal. The power meter level was offset to compensate for attenuators and cable loss between the EUT and the power meter.

A signal was used at the low, mid and high parts of the selected band. The power meter level was offset by 31.0 dB to compensate for cable loss and attenuator between the EUT and the power meter.

<u>1.4 LTE</u>	<u>23.17 Watts</u>
Carrier Frequency	Carrier Output
746.7 MHz	<u>43.30</u> dBm
751 MHz	<u>43.35</u> dBm
755.3 MHz	<u>43.65</u> dBm

<u>3 LTE</u>	<u>23.99 Watts</u>
Carrier Frequency	Carrier Output
747.5 MHz	<u>43.44</u> dBm
751 MHz	<u>43.75</u> dBm
754.5 MHz	<u>43.80</u> dBm

<u>5 LTE</u>	<u>23.44 Watts</u>
Carrier Frequency	Carrier Output
748.5 MHz	<u>43.53</u> dBm
751 MHz	<u>43.31</u> dBm
753.5 MHz	<u>43.70</u> dBm

<u>10 LTE</u>	<u>23.88 Watts</u>
Carrier Frequency	Carrier Output
751 MHz	<u>43.78</u> dBm

## 2.1.2 27.54 Frequency Stability

### Test Summary:

- The requirements are:  **MET**  NOT MET
- The fundamental emission stays within the limit.
- Frequency measured over a temperature range of  $-30$  to  $50^{\circ}$  C and an input voltage range of 100 to 240 VAC.

### Test Location:

- Intertek (Oakdale, MN)

### Test Distance:

- 3 Meters
- 10 Meters

### ■ Conducted measurement

### Test Limit:

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

### Test Data:

Below

**Date:** 29 April, 2010

# Frequency Tolerance Test

HOST	REMOTE			
Input Voltage	Input Voltage	Carrier Frequency	Measured Frequency	Meets Requirements?
21 VDC	100 VAC	746.200MHz	746.200MHz	Yes
48 VDC	170 VAC	746.200MHz	746.200MHz	Yes
60 VDC	240 VAC	746.200MHz	746.200MHz	Yes
21 VDC	100 VAC	751.000 MHz	751.000 MHz	Yes
48 VDC	170 VAC	751.000 MHz	751.000 MHz	Yes
60 VDC	240 VAC	751.000 MHz	751.000 MHz	Yes
21 VDC	100 VAC	755.800MHz	755.800MHz	Yes
48 VDC	170 VAC	755.800MHz	755.800MHz	Yes
60 VDC	240 VAC	755.800MHz	755.800MHz	Yes
Temperature		Carrier Frequency	Measured Frequency	Meets Requirements?
-30 Deg. C		746.200MHz	746.200MHz	Yes
-20 Deg. C		746.200MHz	746.200MHz	Yes
-10 Deg. C		746.200MHz	746.200MHz	Yes
0 Deg. C		746.200MHz	746.200MHz	Yes
10 Deg. C		746.200MHz	746.200MHz	Yes
20 Deg. C		746.200MHz	746.200MHz	Yes
30 Deg. C		746.200MHz	746.200MHz	Yes
40 Deg. C		746.200MHz	746.200MHz	Yes
50 Deg. C		746.200MHz	746.200MHz	Yes
-30 Deg. C		751.000 MHz	751.000 MHz	Yes
-20 Deg. C		751.000 MHz	751.000 MHz	Yes
-10 Deg. C		751.000 MHz	751.000 MHz	Yes
0 Deg. C		751.000 MHz	751.000 MHz	Yes
10 Deg. C		751.000 MHz	751.000 MHz	Yes
20 Deg. C		751.000 MHz	751.000 MHz	Yes
30 Deg. C		751.000 MHz	751.000 MHz	Yes
40 Deg. C		751.000 MHz	751.000 MHz	Yes
50 Deg. C		751.000 MHz	751.000 MHz	Yes
-30 Deg. C		755.800MHz	755.800MHz	Yes
-20 Deg. C		755.800MHz	755.800MHz	Yes
-10 Deg. C		755.800MHz	755.800MHz	Yes
0 Deg. C		755.800MHz	755.800MHz	Yes
10 Deg. C		755.800MHz	755.800MHz	Yes
20 Deg. C		755.800MHz	755.800MHz	Yes
30 Deg. C		755.800MHz	755.800MHz	Yes
40 Deg. C		755.800MHz	755.800MHz	Yes
50 Deg. C		755.800MHz	755.800MHz	Yes



### 2.1.3 27.53 Emission Limitations

#### **Test Summary:**

- The requirements are:  **MET**  NOT MET
- Out of band emissions were less than  $-13$  dBm.
- Outside the emission bandwidth of the carrier, all emissions are attenuated at least 26 dB below the transmitter power.

#### **Test Location:**

- Intertek (Oakdale, MN)

#### **Test Distance:**

- 3 Meters
- 10 Meters

#### **■ Conducted measurement**

#### **Test Limit:**

Out of band emissions:

Attenuated below the transmitting power (P) by a factor of at least  $43 + 10\log(P)$  dB, or  $-13$  dBm.

Outside of the carrier emissions bandwidth:

26 dB below the transmitter power

#### **Test Data:**

Conducted Emissions  
Intermodulation Test  
Occupied Bandwidth  
Band Edge

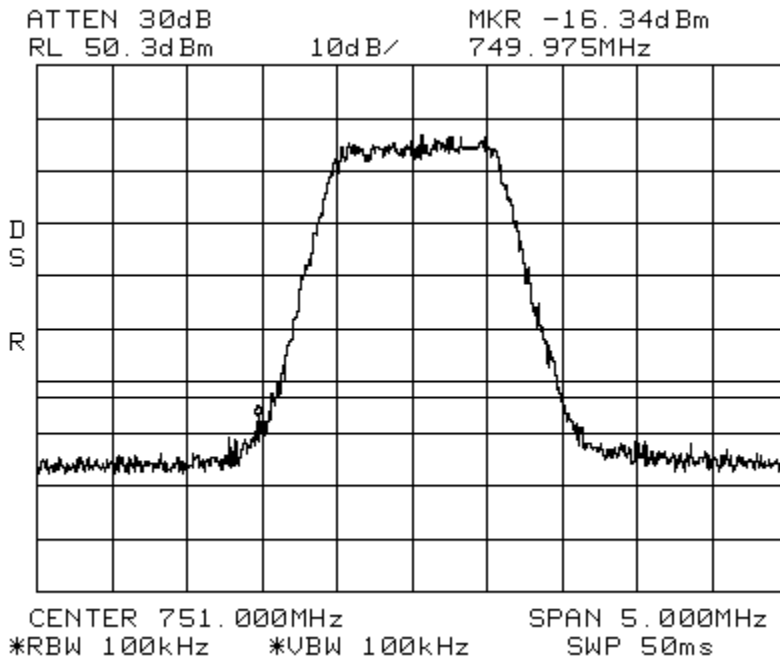
**Date:** 28 April, 2010

Below

Conducted Emissions  
Center: 751 MHz

LTE 1.4 MHz Channel Bandwidth  
Span: 5 MHz

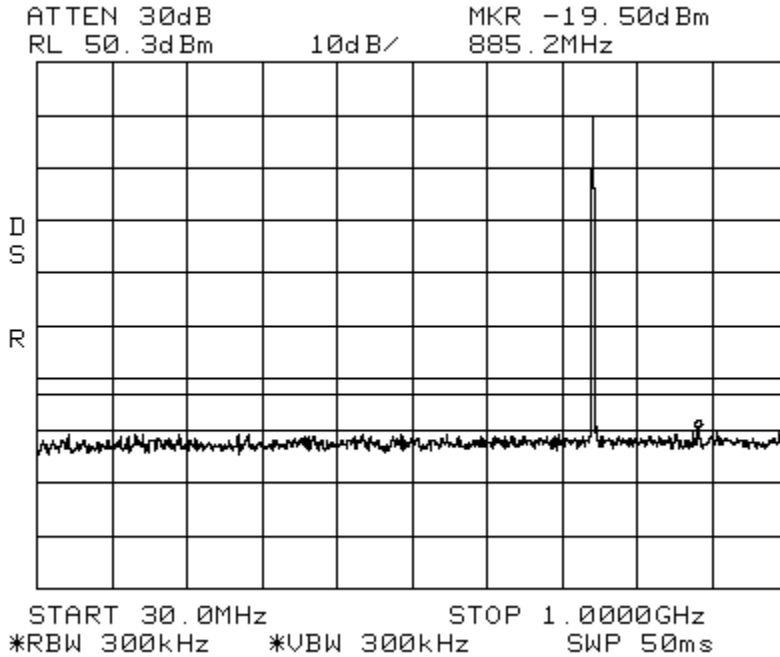
700UpperC  
RBW/VBW: 100 kHz



Conducted Emissions  
Span: 30 MHz to 1 GHz

LTE 1.4 MHz Channel Bandwidth  
RBW/VBW: 300 kHz

700UpperC

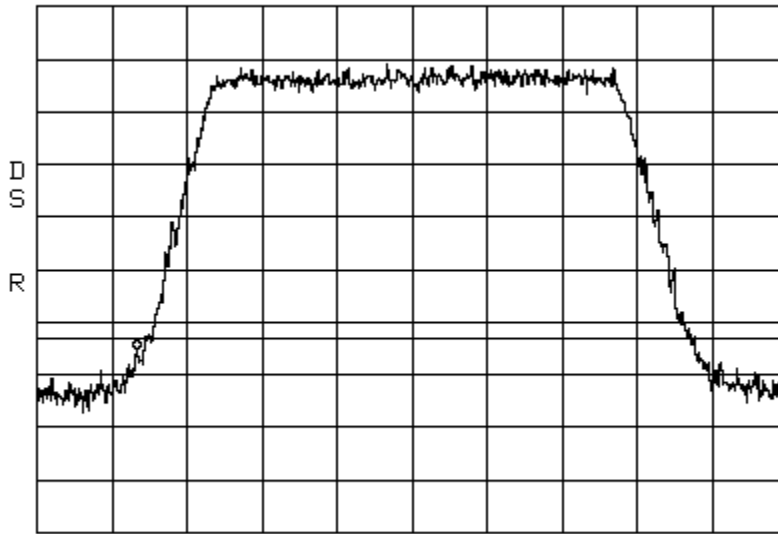




Conducted Emissions

700UpperC

Center: 751 MHz Span: 5 MHz  
ATTEN 30dB MKR -15.00dBm  
RL 50.3dBm 10dB/ 749.167MHz



CENTER 751.000MHz SPAN 5.000MHz  
\*RBW 100kHz \*VBW 100kHz SWP 50ms

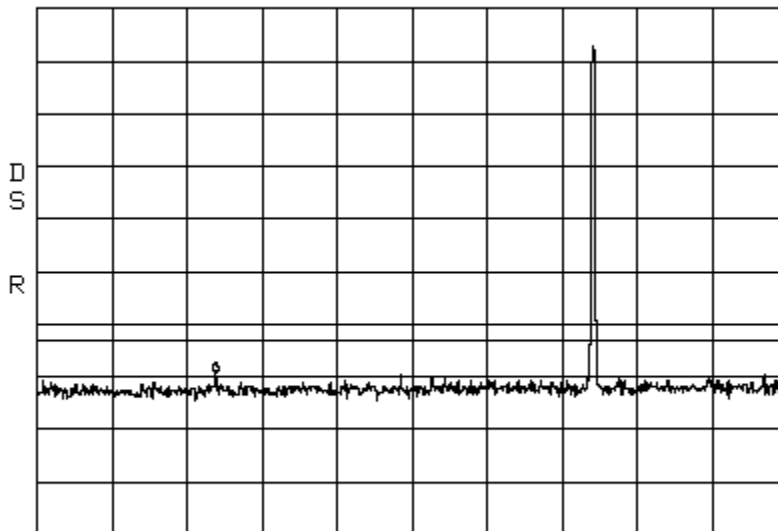
Conducted Emissions

LTE 3 MHz Channel Bandwidth

700UpperC

Span: 30 MHz to 1 GHz RBW/VBW: 300 kHz

ATTEN 30dB MKR -19.00dBm  
RL 50.3dBm 10dB/ 261.2MHz



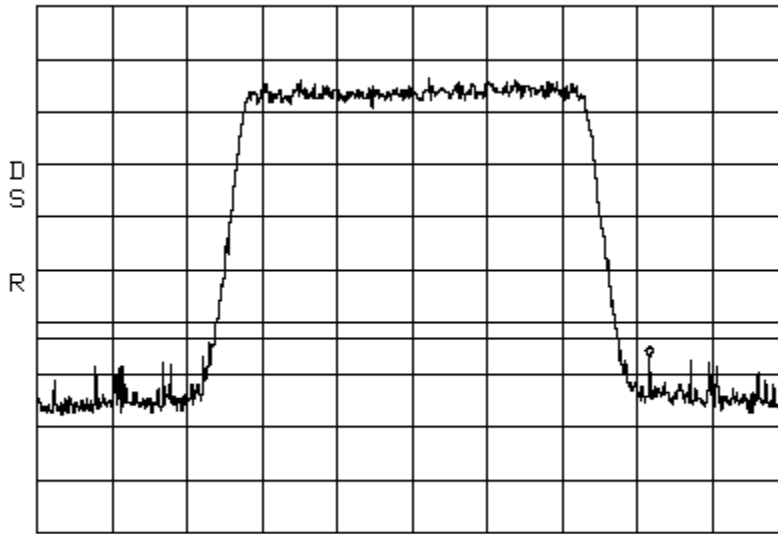
START 30.0MHz STOP 1.0000GHz  
\*RBW 300kHz \*VBW 300kHz SWP 50ms



Conducted Emissions

700UpperC

Center: 751 MHz Span: 10 MHz  
ATTEN 30dB MKR -16.17dBm  
RL 50.3dBm 10dB/ 754.17MHz



CENTER 751.00MHz SPAN 10.00MHz  
\*RBW 100kHz \*VBW 100kHz SWP 50ms

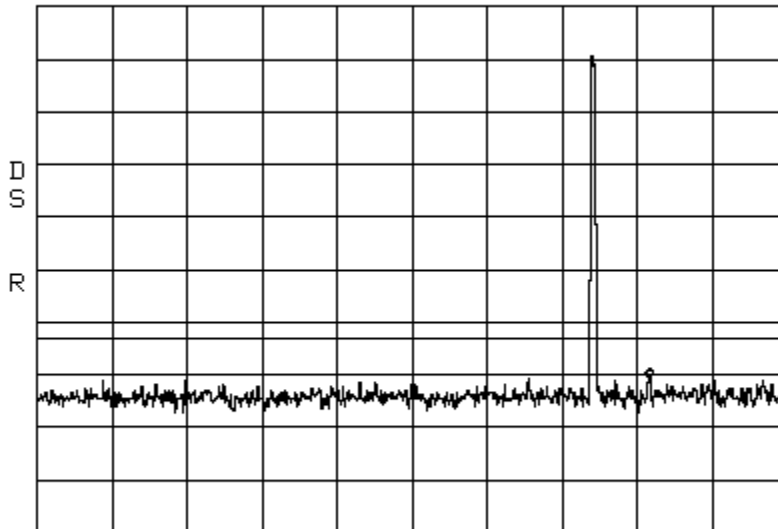
Conducted Emissions

LTE 5 MHz Channel Bandwidth

700UpperC

Span: 30 MHz to 1 GHz RBW/VBW: 300 kHz

ATTEN 30dB MKR -20.34dBm  
RL 50.3dBm 10dB/ 822.2MHz



START 30.0MHz STOP 1.0000GHz  
\*RBW 300kHz \*VBW 300kHz SWP 50ms

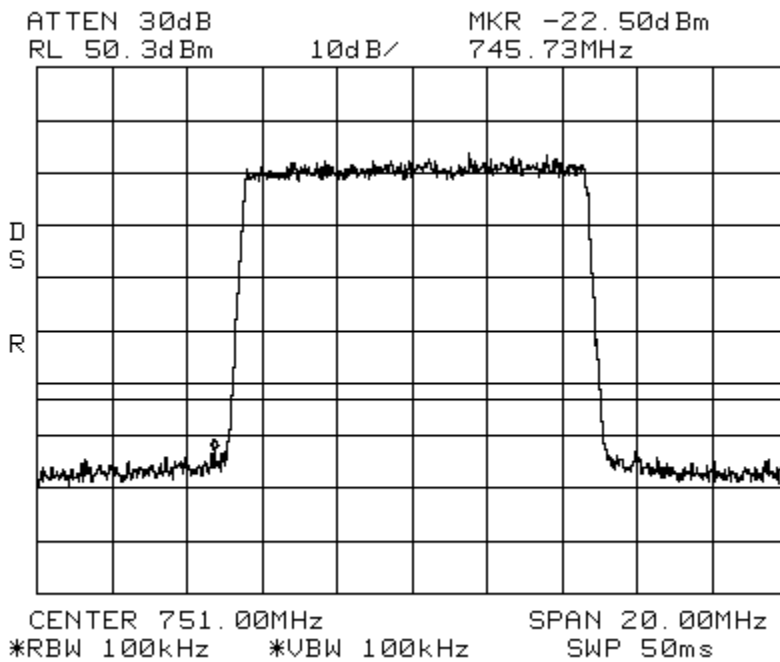


Conducted Emissions

Center: 751 MHz

Span: 20MHz

700UpperC  
RBW/VBW: 100 kHz



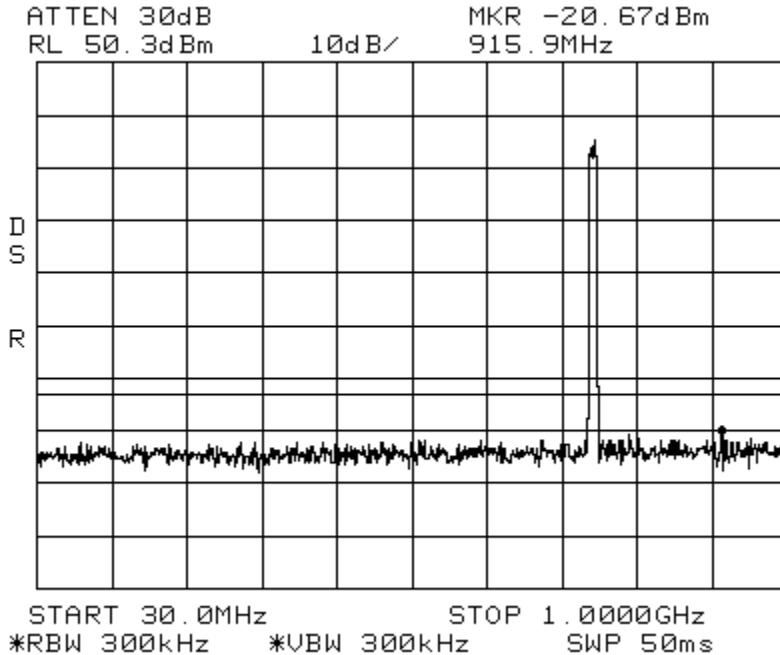
Conducted Emissions

LTE 10 MHz Channel Bandwidth

700UpperC

Span: 30 MHz to 1 GHz

RBW/VBW: 300 kHz





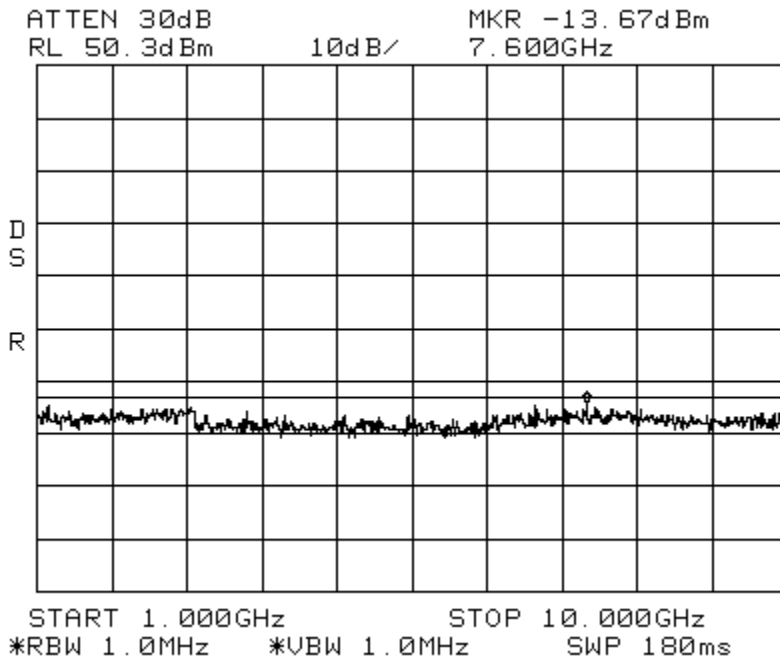
Conducted Emissions

LTE 10 MHz Channel Bandwidth

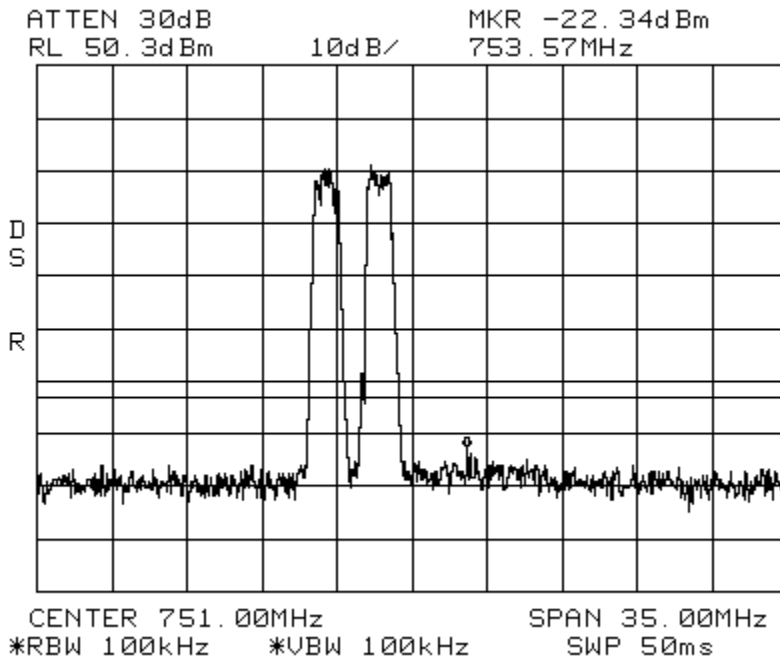
700UpperC

Span: 1 GHz to 10 GHz

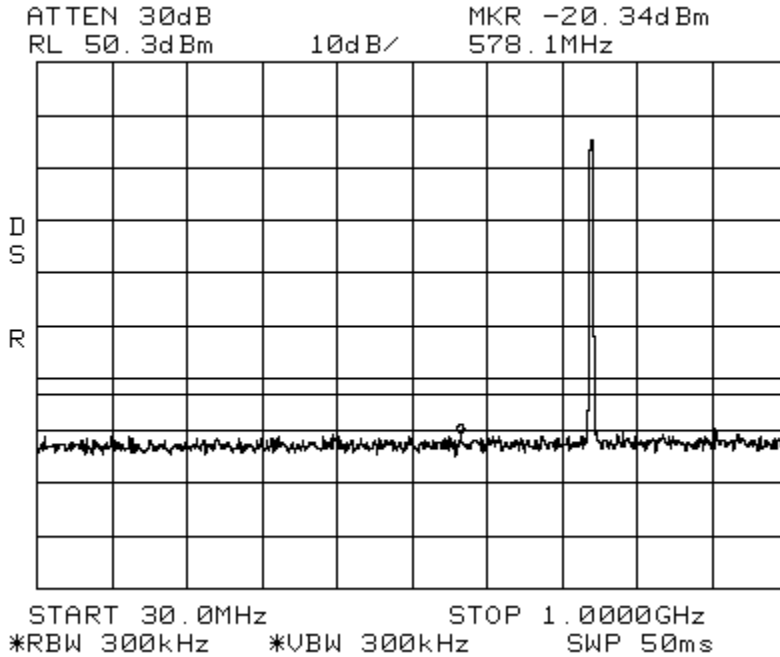
RBW/VBW: 1 MHz



Intermodulation      LTE 1.4 MHz Channel Bandwidth\_Low      700UpperC  
Center: 751 MHz      Span: 35 MHz      RBW/VBW: 100 kHz

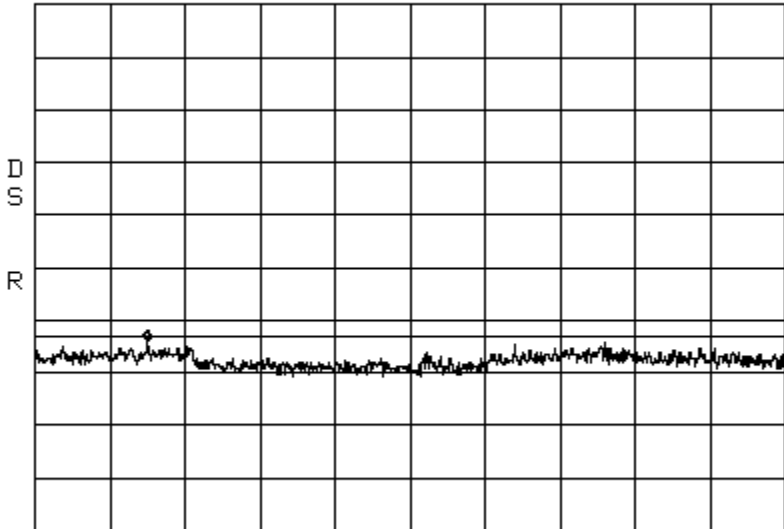


Intermodulation      LTE 1.4 MHz Channel Bandwidth\_Low      700UpperC  
Span: 30 MHz to 1 GHz      RBW/VBW: 300 kHz



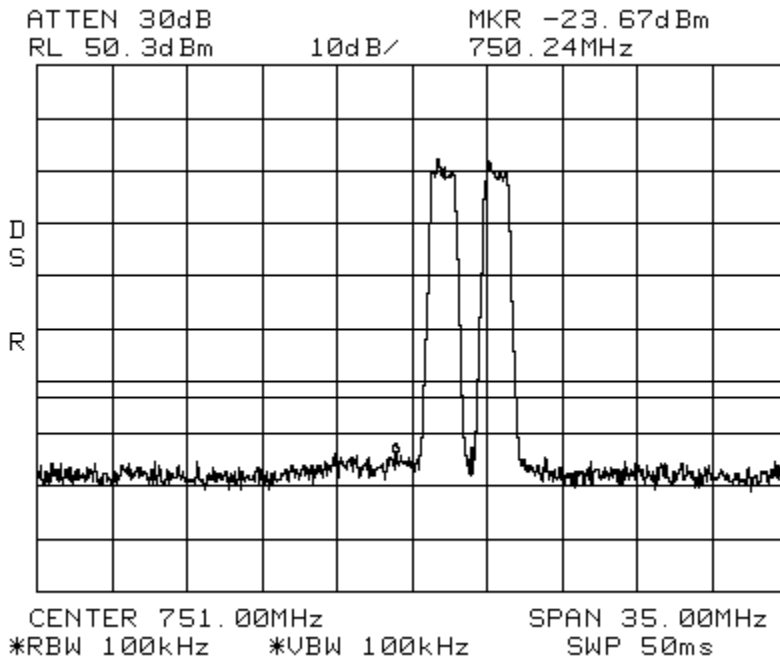
Intermodulation      LTE 1.4 MHz Channel Bandwidth \_Low      700UpperC  
Span: 1 GHz to 10 GHz      RBW/VBW: 1 MHz

ATTEN 30dB      MKR -13.67dBm  
RL 50.3dBm      10dB/      2.350GHz

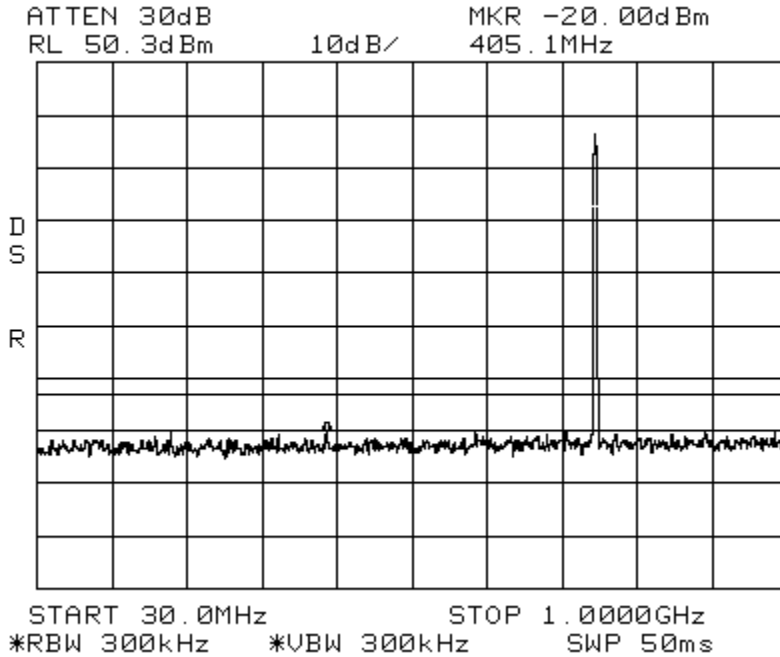


START 1.000GHz      STOP 10.000GHz  
\*RBW 1.0MHz      \*VBW 1.0MHz      SWP 180ms

Intermodulation      LTE 1.4 MHz Channel Bandwidth \_High      700UpperC  
Center: 751 MHz                      Span: 35 MHz                      RBW/VBW: 100 kHz

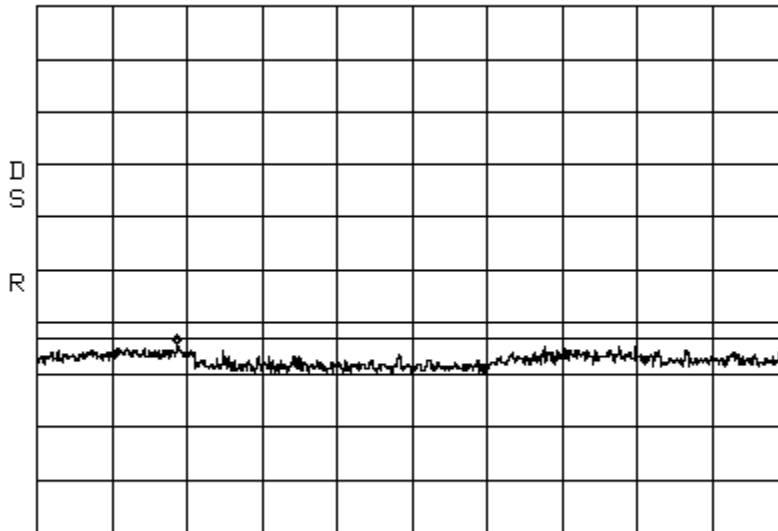


Intermodulation      LTE 1.4 MHz Channel Bandwidth \_High      700UpperC  
Span: 30 MHz to 1 GHz                      RBW/VBW: 300 kHz



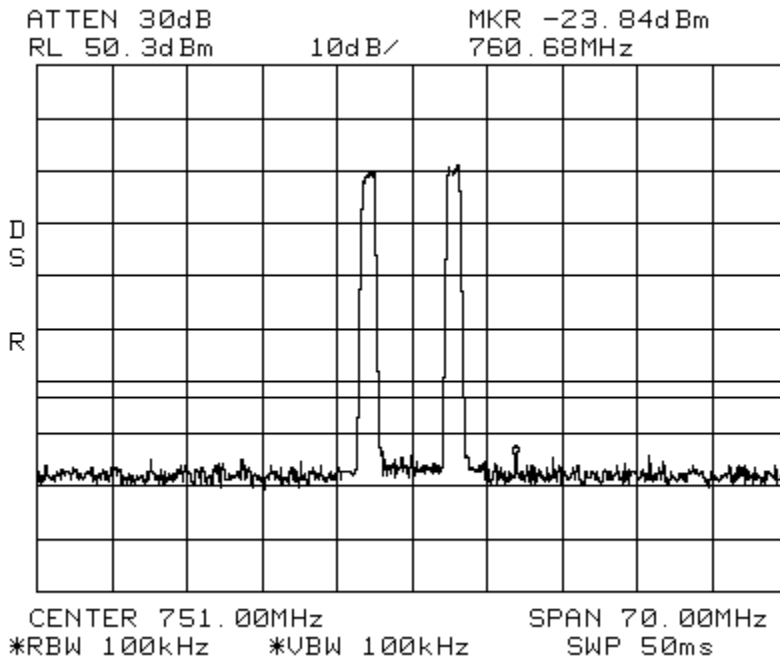
Intermodulation      LTE 1.4 MHz Channel Bandwidth \_High      700UpperC  
Span: 1 GHz to 10 GHz      RBW/VBW: 1 MHz

ATTEN 30dB      MKR -14.00dBm  
RL 50.3dBm      10dB/      2.680GHz

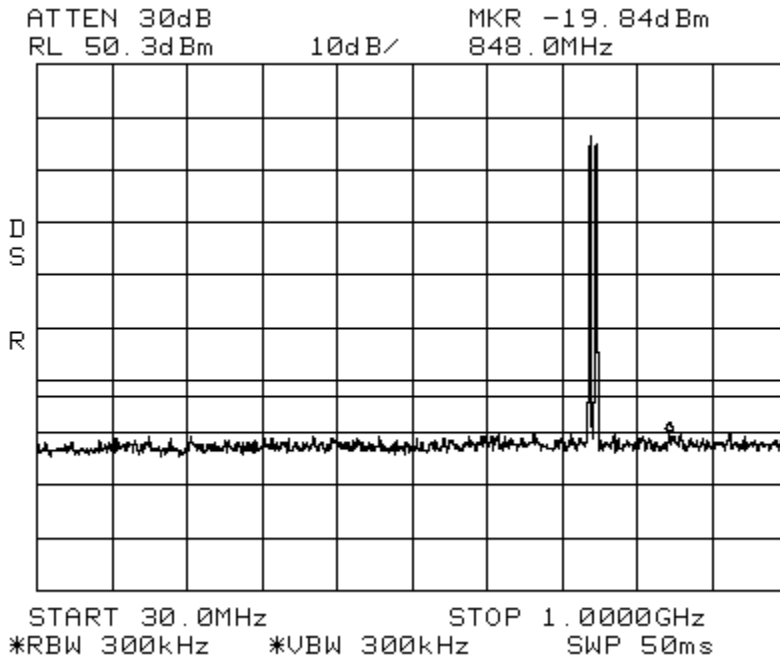


START 1.000GHz      STOP 10.000GHz  
\*RBW 1.0MHz      \*VBW 1.0MHz      SWP 180ms

Intermodulation      LTE 1.4 MHz Channel Bandwidth \_Apart      700UpperC  
Center: 751 MHz                      Span: 70 MHz                      RBW/VBW: 100 kHz

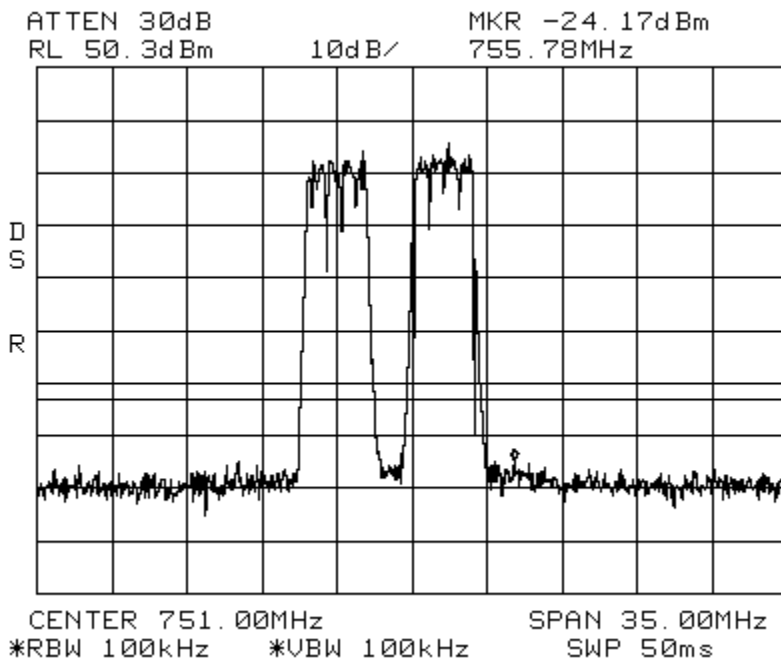


Intermodulation      LTE 1.4 MHz Channel Bandwidth \_Apart      700UpperC  
Span: 30 MHz to 1 GHz                      RBW/VBW: 300 kHz

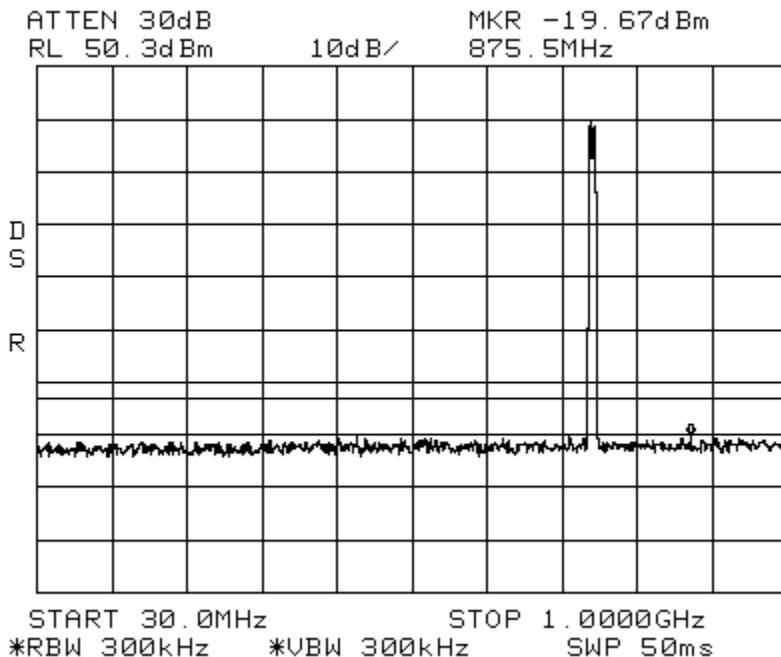




Intermodulation      LTE 3 MHz Channel Bandwidth **Low**      700UpperC  
Center: 751 MHz      Span: 35 MHz      RBW/VBW: 100 kHz



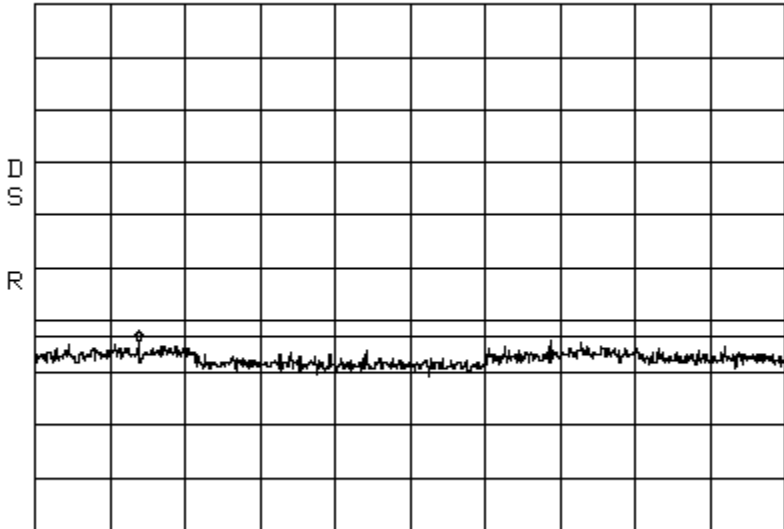
Intermodulation      LTE 3MHz Channel Bandwidth **Low**700UpperC  
Span: 30 MHz to 1 GHz      RBW/VBW: 300 kHz





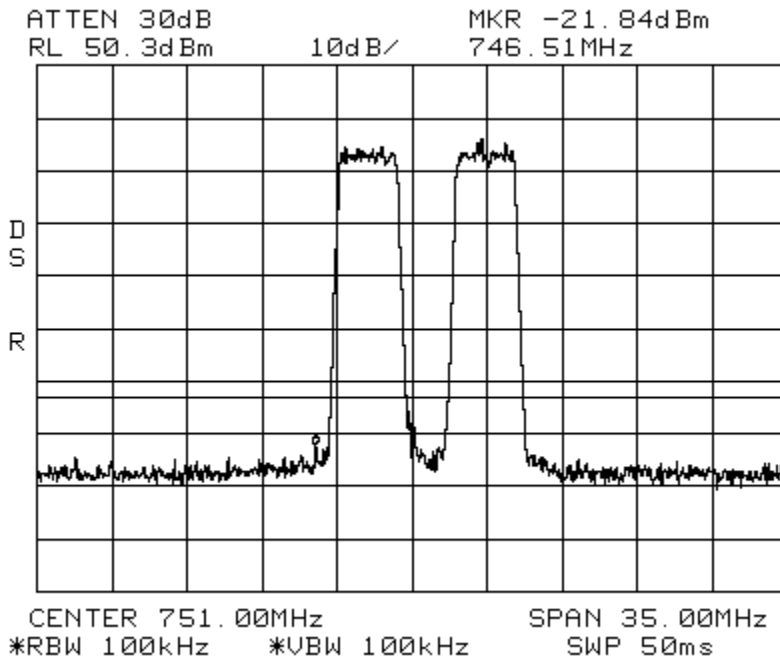
Intermodulation      LTE 3 MHz Channel Bandwidth \_Low      700UpperC  
Span: 1 GHz to 10 GHz      RBW/VBW: 1 MHz

ATTEN 30dB      MKR -13.67dBm  
RL 50.3dBm      10dB/      2.245GHz

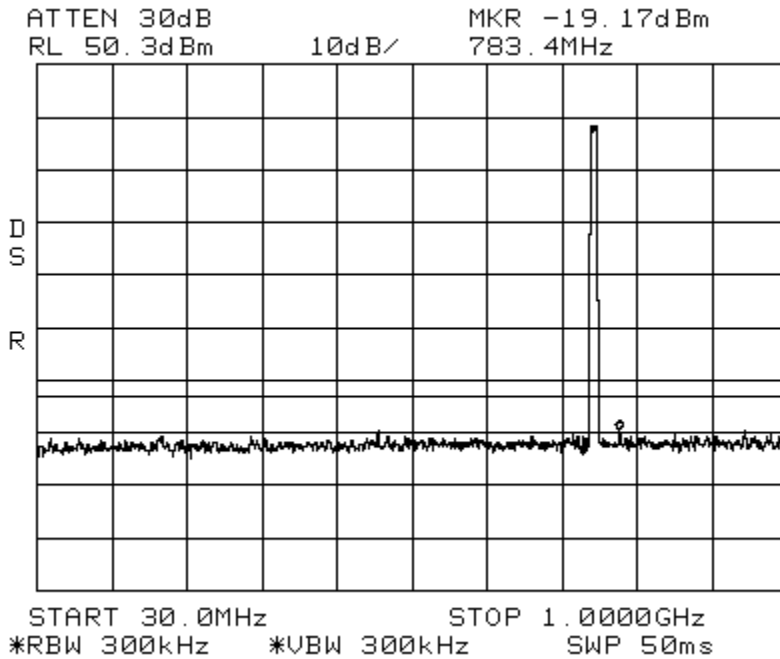


START 1.000GHz      STOP 10.000GHz  
\*RBW 1.0MHz      \*VBW 1.0MHz      SWP 180ms

Intermodulation      LTE 3 MHz Channel Bandwidth \_High      700UpperC  
Center: 751 MHz      Span: 35 MHz      RBW/VBW: 100 kHz

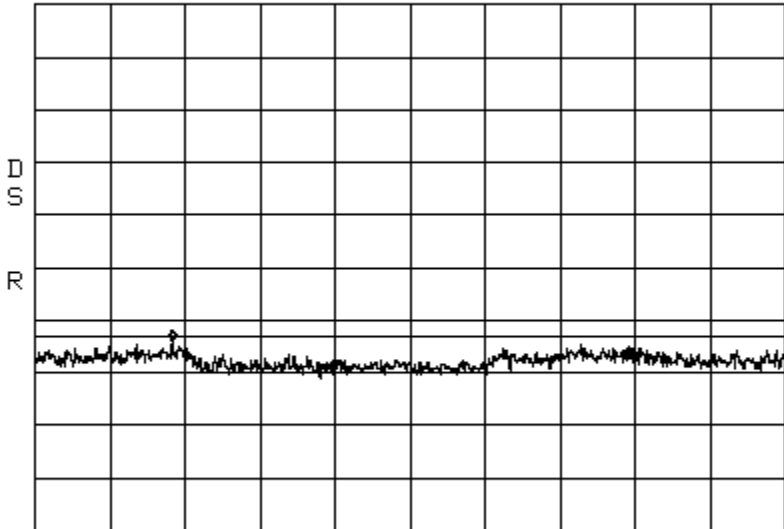


Intermodulation      LTE 3 MHz Channel Bandwidth \_High      700UpperC  
Span: 30 MHz to 1 GHz      RBW/VBW: 300 kHz



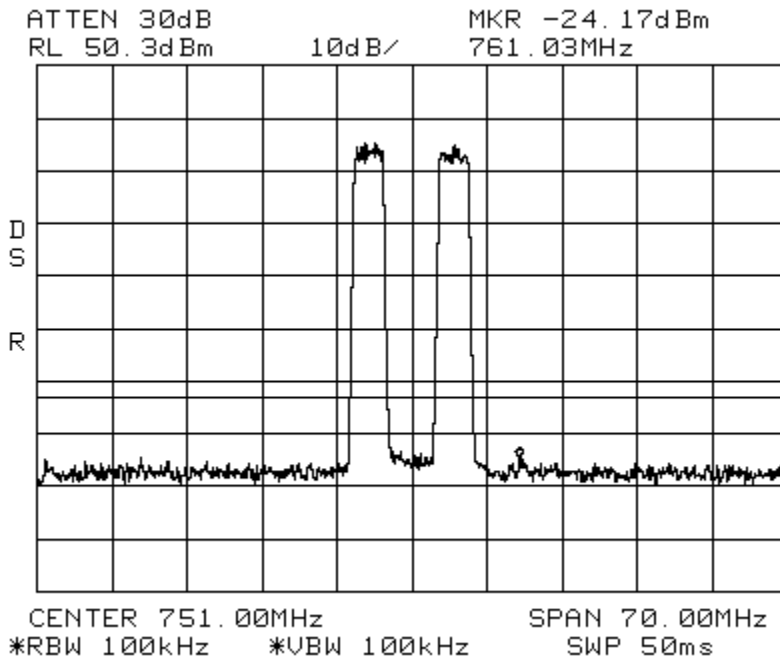
Intermodulation      LTE 3 MHz Channel Bandwidth \_High      700UpperC  
Span: 1 GHz to 10 GHz      RBW/VBW: 1 MHz

ATTEN 30dB      MKR -13.67dBm  
RL 50.3dBm      10dB/      2.650GHz

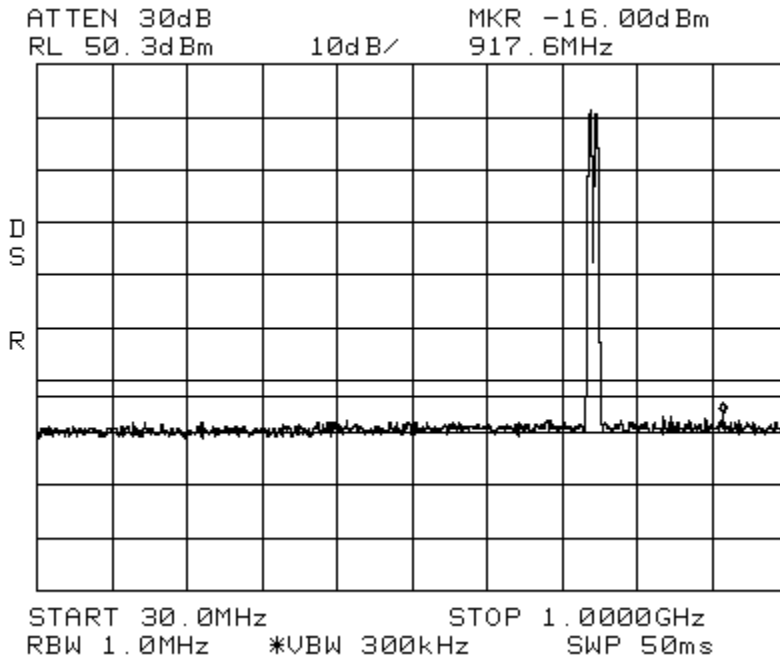


START 1.000GHz      STOP 10.000GHz  
\*RBW 1.0MHz      \*VBW 1.0MHz      SWP 180ms

Intermodulation      LTE 3 MHz Channel Bandwidth \_Apart      700UpperC  
Center: 751 MHz      Span: 70 MHz      RBW/VBW: 100 kHz

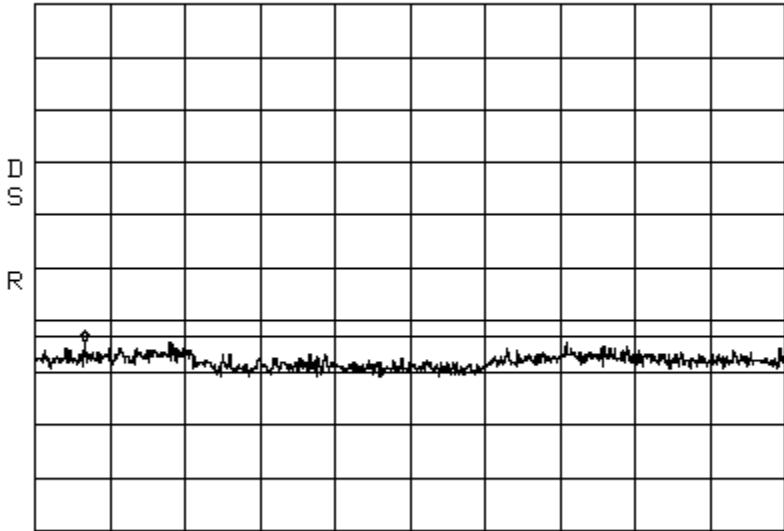


Intermodulation      LTE 3 MHz Channel Bandwidth \_Apart      700UpperC  
Span: 30 MHz to 1 GHz      RBW/VBW: 300 kHz



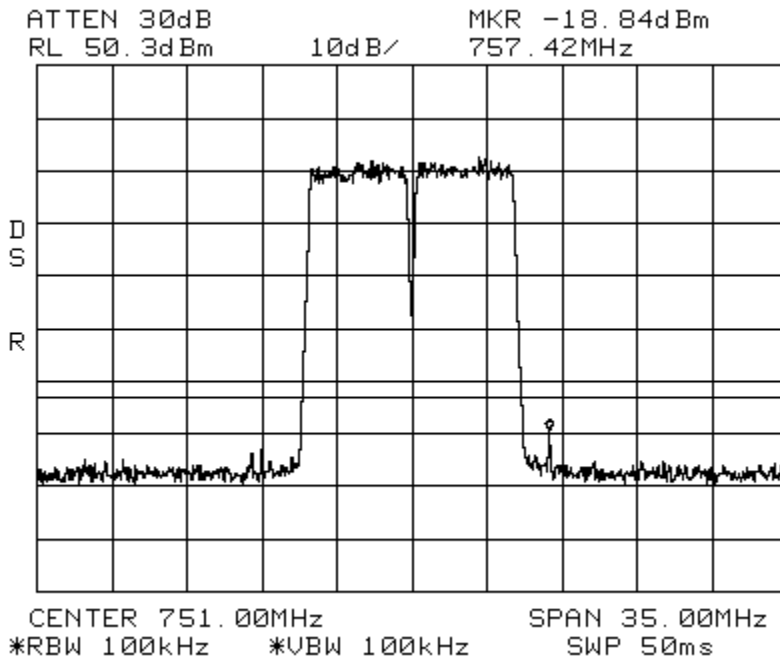
Intermodulation      LTE 3 MHz Channel Bandwidth \_Apart      700UpperC  
Span: 1 GHz to 10 GHz      RBW/VBW: 1 MHz

ATTEN 30dB      MKR -13.67dBm  
RL 50.3dBm      10dB/      1.600GHz

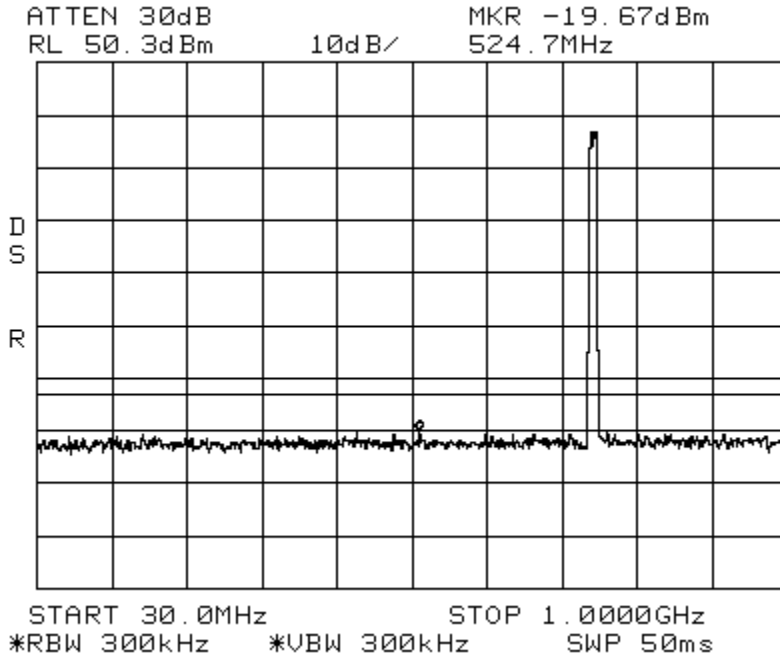


START 1.000GHz      STOP 10.000GHz  
\*RBW 1.0MHz      \*VBW 1.0MHz      SWP 180ms

Intermodulation      LTE 5 MHz Channel Bandwidth **Low**      700UpperC  
Center: 751 MHz      Span: 35 MHz      RBW/VBW: 100 kHz

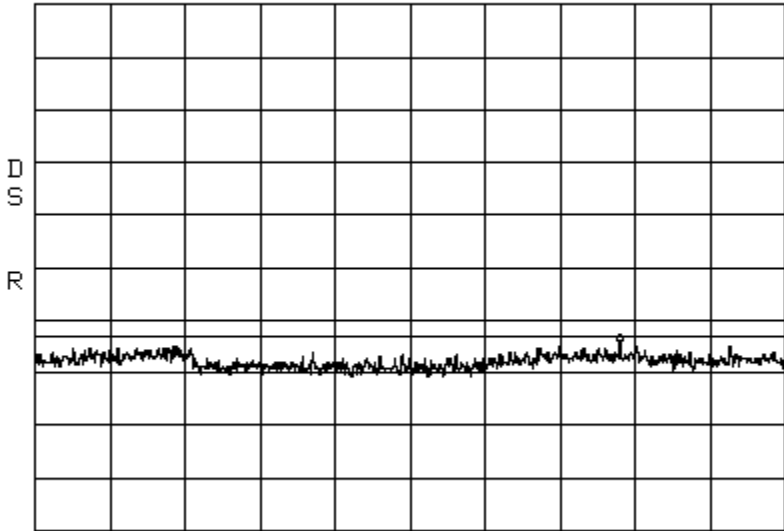


Intermodulation      LTE 5 MHz Channel Bandwidth **Low**      700UpperC  
Span: 30 MHz to 1 GHz      RBW/VBW: 300 kHz



Intermodulation      LTE 5 MHz Channel Bandwidth \_Low      700UpperC  
Span: 1 GHz to 10 GHz      RBW/VBW: 1 MHz

ATTEN 30dB      MKR -14.34dBm  
RL 50.3dBm      10dB/      8.020GHz



START 1.000GHz      STOP 10.000GHz  
\*RBW 1.0MHz      \*VBW 1.0MHz      SWP 180ms

Occupied Bandwidth

LTE 1.4 MHz Channel Bandwidth\_Signal\_In

700UpperC

Span: 1.50 MHz

RBW: 30 kHz VBW: 100 kHz

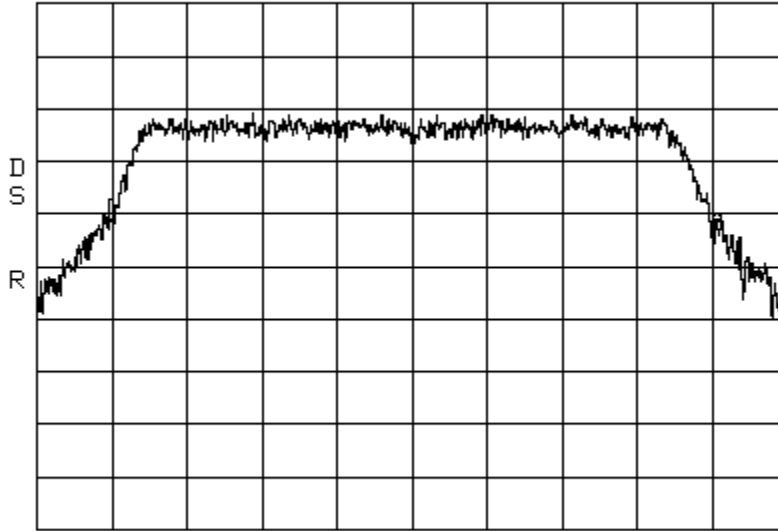
ATTEN 10dB

$\Delta$ MKR .50dB

RL 10.3dBm

10dB/

1.220MHz



CENTER 751.000MHz

SPAN 1.500MHz

\*RBW 30kHz

\*VBW 100kHz

SWP 50ms

Occupied Bandwidth

LTE 1.4 MHz Channel Bandwidth\_Signal\_Out

700UpperC

Span: 1.50 MHz

RBW: 30 kHz VBW: 100 kHz

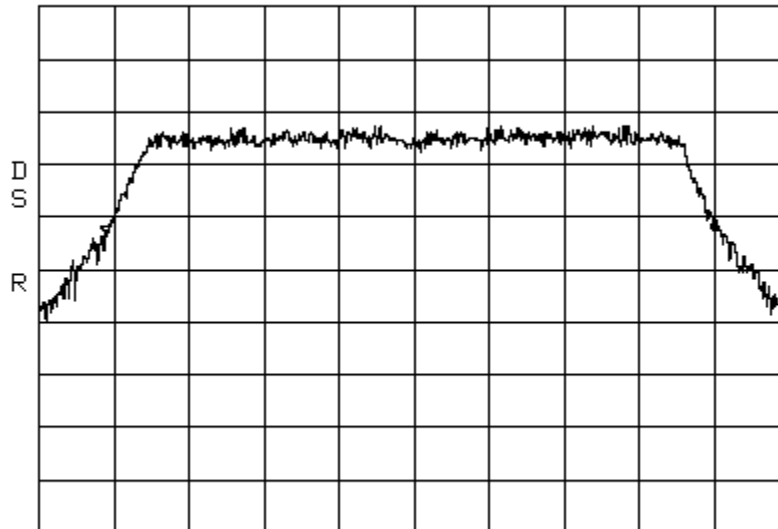
ATTEN 30dB

$\Delta$ MKR .50dB

RL 50.3dBm

10dB/

1.218MHz



CENTER 751.000MHz

SPAN 1.500MHz

\*RBW 30kHz

\*VBW 100kHz

SWP 50ms



Occupied Bandwidth

LTE 3 MHz Channel Bandwidth\_Signal\_In

700UpperC

Span: 3 MHz

RBW: 30kHz VBW: 100 kHz

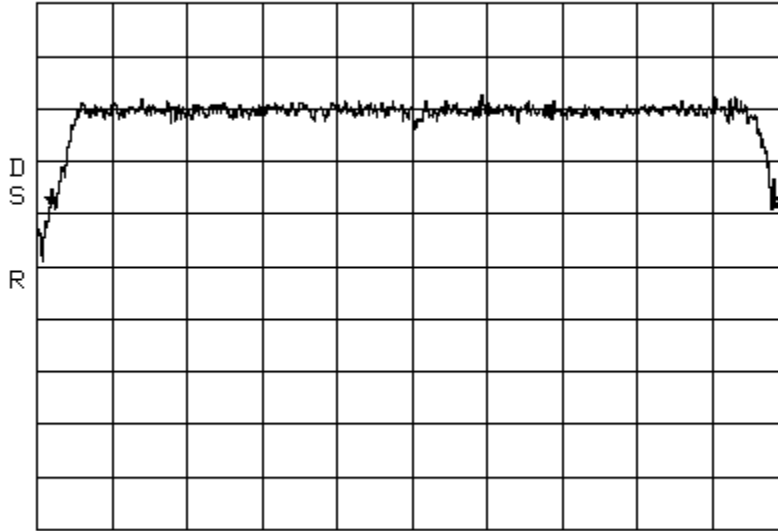
ATTEN 10dB

$\Delta$ MKR -.50dB

RL 10.3dBm

10dB/

2.900MHz



CENTER 751.000MHz

SPAN 3.000MHz

\*RBW 30kHz

\*VBW 100kHz

SWP 50ms

Occupied Bandwidth

LTE 3 MHz Channel Bandwidth\_Signal\_Out

700UpperC

Span: 3 MHz

RBW: 30 kHz VBW: 100 kHz

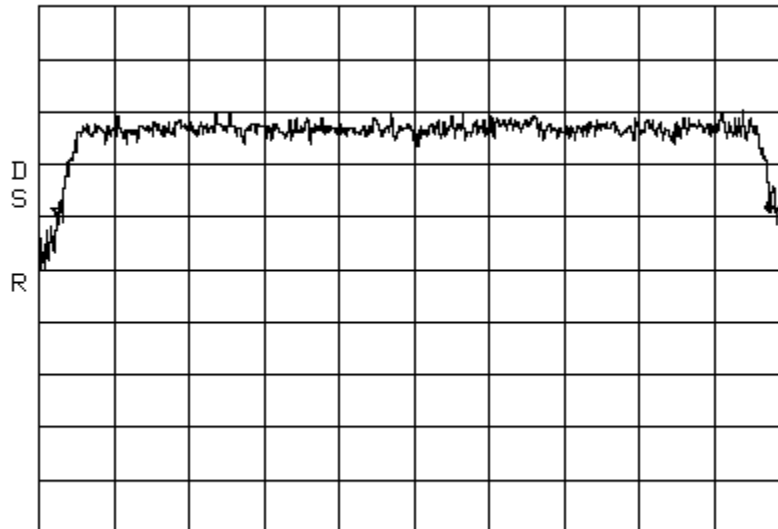
ATTEN 30dB

$\Delta$ MKR .50dB

RL 50.3dBm

10dB/

2.850MHz



CENTER 751.000MHz

SPAN 3.000MHz

\*RBW 30kHz

\*VBW 100kHz

SWP 50ms

Occupied Bandwidth

LTE 5 MHz Channel Bandwidth\_Signal\_In

700UpperC

Span: 5 MHz

RBW: 30 kHz VBW: 100 kHz

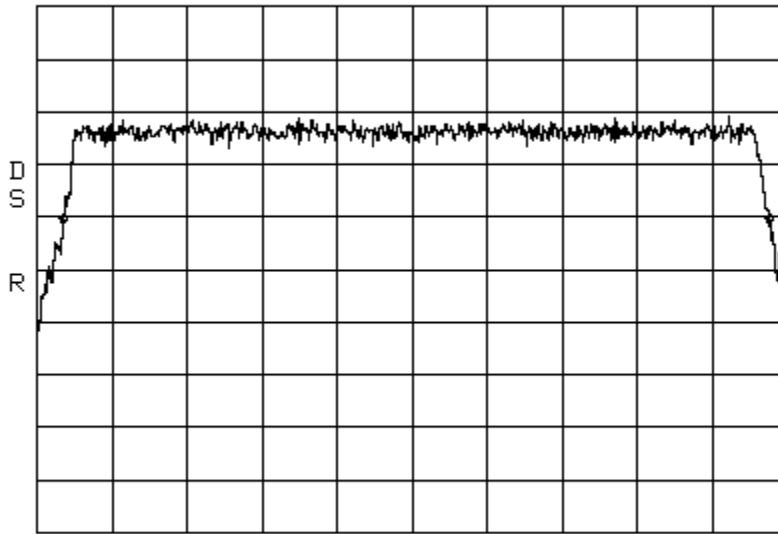
ATTEN 10dB

$\Delta$ MKR 0dB

RL 10.3dBm

10dB/

4.708MHz



CENTER 751.000MHz

SPAN 5.000MHz

\*RBW 30kHz

\*VBW 100kHz

SWP 50ms

Occupied Bandwidth

LTE 5 MHz Channel Bandwidth\_Signal\_Out

700UpperC

Span: 5 MHz

RBW: 30 kHz VBW: 100 kHz

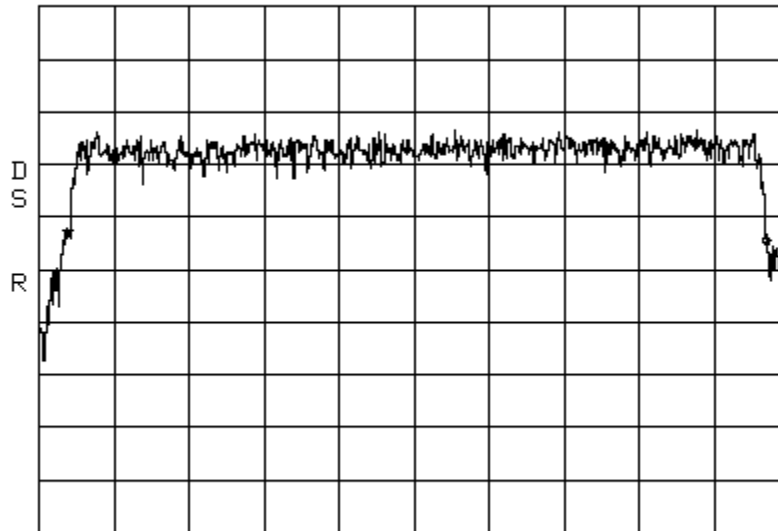
ATTEN 30dB

$\Delta$ MKR -1.67dB

RL 50.3dBm

10dB/

4.658MHz



CENTER 751.000MHz

SPAN 5.000MHz

\*RBW 30kHz

\*VBW 100kHz

SWP 50ms

Occupied Bandwidth

LTE 10 MHz Channel Bandwidth\_Signal\_In

700UpperC

Span: 10 MHz

RBW: 30 kHz VBW: 100 kHz

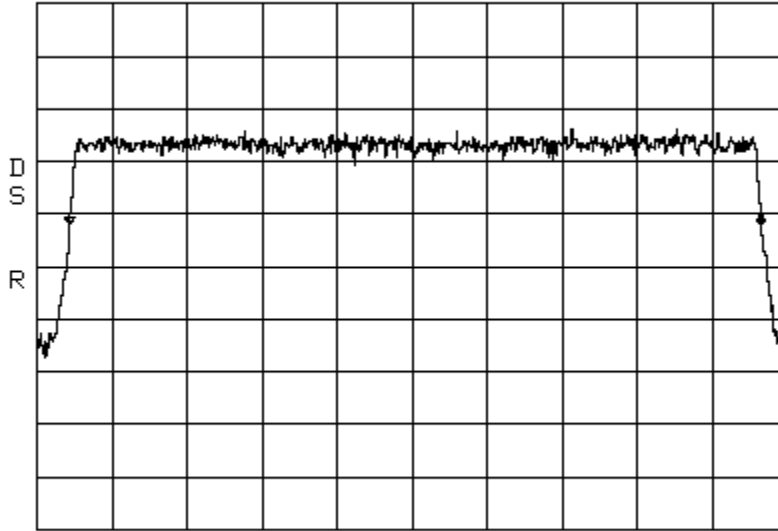
ATTEN 10dB

$\Delta$ MKR - .17dB

RL 10.3dBm

10dB/

9.22MHz



CENTER 751.00MHz

SPAN 10.00MHz

\*RBW 30kHz

\*VBW 100kHz

SWP 50ms

Occupied Bandwidth

LTE 10 MHz Channel Bandwidth\_Signal\_Out

700UpperC

Span: 10 MHz

RBW: 30 kHz VBW: 100 kHz

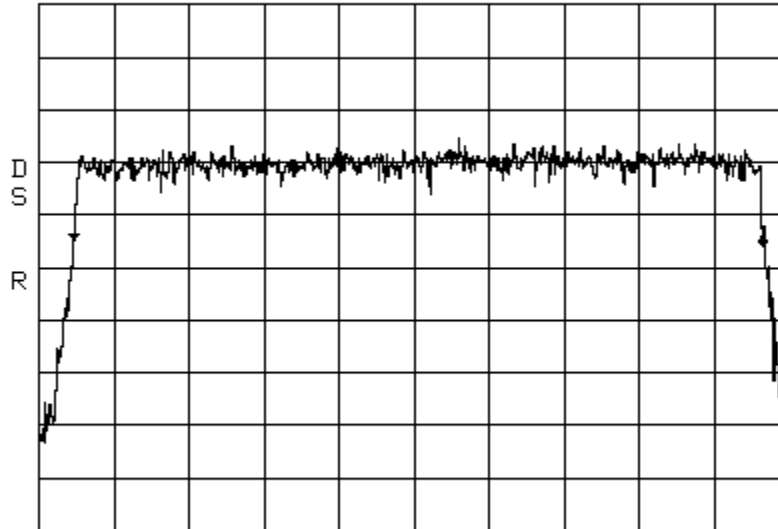
ATTEN 30dB

$\Delta$ MKR -1.17dB

RL 50.3dBm

10dB/

9.18MHz



CENTER 751.00MHz

SPAN 10.00MHz

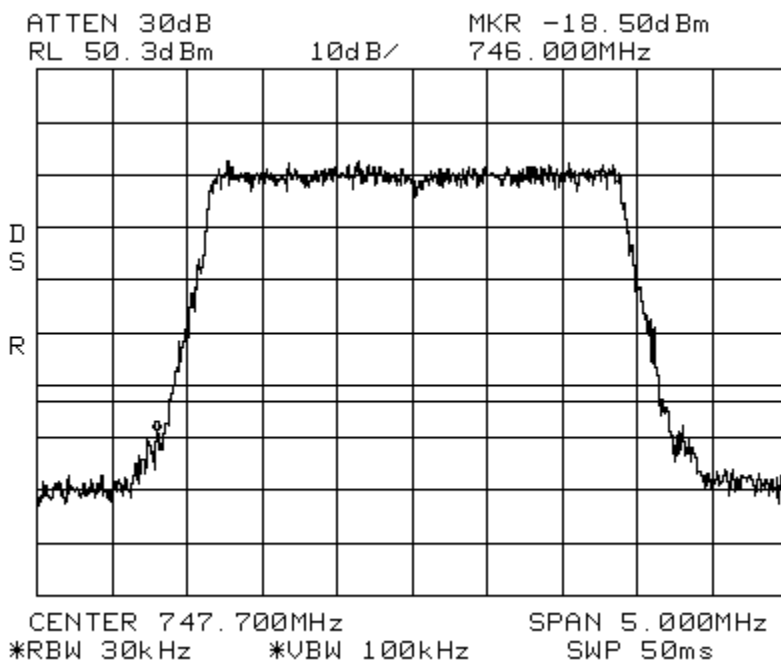
\*RBW 30kHz

\*VBW 100kHz

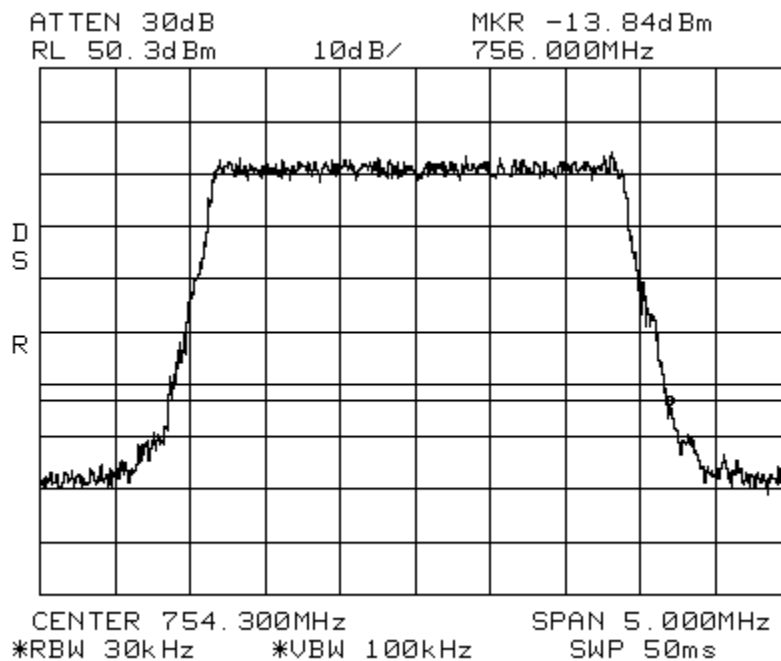
SWP 50ms



Band\_Edge            LTE 3 MHz Channel Bandwidth            700UpperC  
Center: 747.7 MHz    Span: 5 MHz            RBW: 30 kHz VBW: 100 kHz

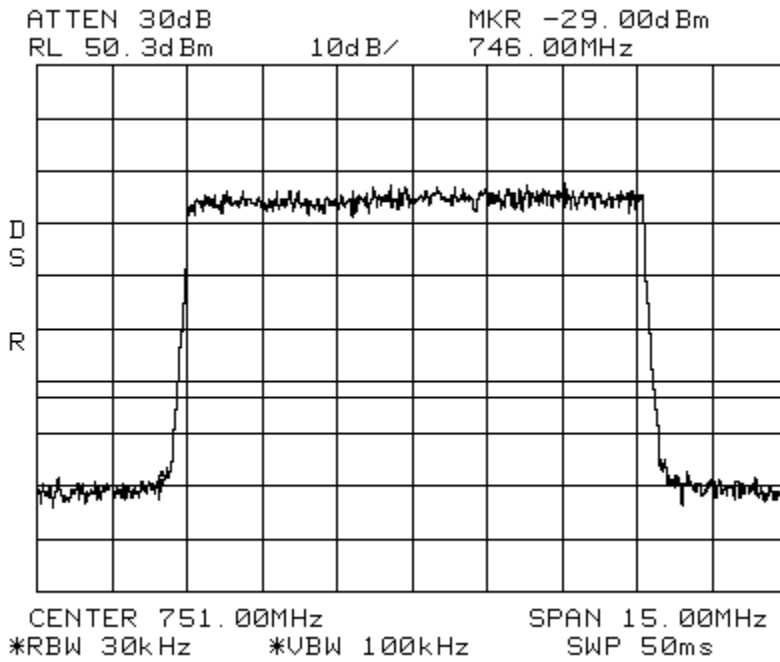


Band\_Edge            LTE 3MHz Channel Bandwidth            700UpperC  
Center: 754.3 MHz    Span: 5 MHz            RBW: 30 kHz VBW: 100 kHz

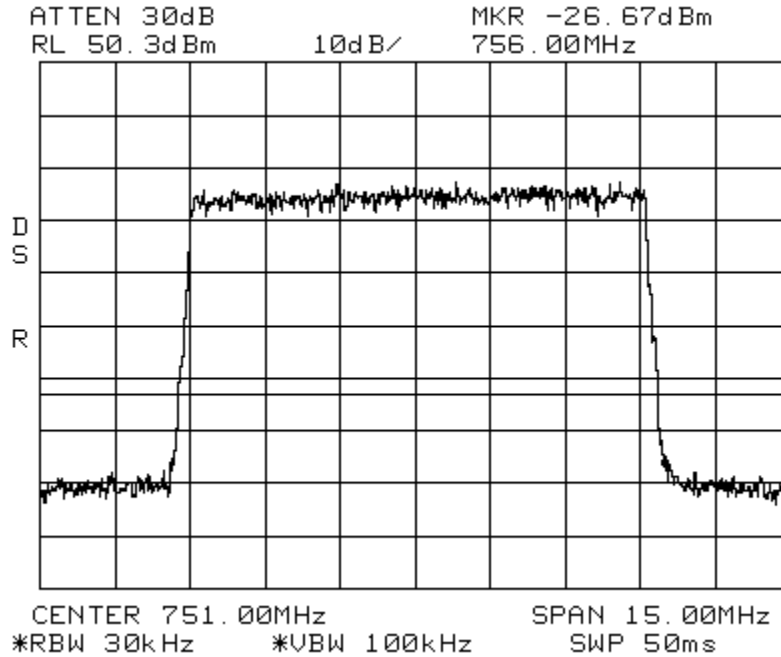




Band\_Edge            LTE 10 MHz Channel Bandwidth            700UpperC  
Center: 751 MHz            Span: 15 MHz            RBW: 30 kHz VBW: 100 kHz



Band\_Edge            LTE 10 MHz Channel Bandwidth            700UpperC  
Center: 751 MHz            Span: 15 MHz            RBW: 30 kHz VBW: 100 kHz



### 3.0 TEST EQUIPMENT

Number	Description	Manufacturer	Model	ADC Serial Number	Cal Due	Used
1	Spectrum Analyzer	HP	8563E	MC27690	12-23-10	<input checked="" type="checkbox"/>
2	Power Meter	HP	437B	MC27754	5-29-10	<input checked="" type="checkbox"/>
3	Multimeter	Fluke	79	MC18758	6-15-11	<input checked="" type="checkbox"/>
4	Frequency Counter	HP	5347A	MC27548	5-19-10	<input checked="" type="checkbox"/>
5	Temperature Chamber	Thermotron	ESPEC PSL-4G	MC10075	7-22-10	<input checked="" type="checkbox"/>
6	Signal Generator	Aeroflex	3413	MC57343	5-21-10	<input checked="" type="checkbox"/>
7	Signal Generator	Aeroflex	3414	NA	1-16-11	<input checked="" type="checkbox"/>
8	RF Power Sensor	Agilent	8482H	MC27519	7-14-10	<input checked="" type="checkbox"/>
9	Variable Auto Transformer	Staco	1520CT	MC44655	CNR	<input checked="" type="checkbox"/>
10	Attenuator	Aeroflex	86-30-12	369	CNR	<input checked="" type="checkbox"/>

Equipment with a Calibration Not Required (CNR) listing is verified and compensated for with NIST traceable calibrated equipment.