



FCC 47 CFR PART 15 SUBPART C

**CERTIFICATION TEST REPORT
FOR
GSM/WCDMA/LTE PHONE + BLUETOOTH & 2.4GHz DTS b/g/n**

MODEL NUMBER: LG-L33L, LGL33L, L33L

FCC ID: ZNFL33L

REPORT NUMBER: 14I19561-E2

ISSUE DATE: JANUARY 2, 2015

Prepared for
LG ELECTRONICS MOBILECOMM U.S.A., INC
1000 SYLVAN AVENUE
ENGLEWOOD CLIFFS,
NEW JERSEY, 07632, U.S.A

Prepared by
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888



NVLAP LAB CODE 200065-0

Revision History

Issue			
Rev.	Date	Revisions	Revised By
--	01/02/15	Initial Issue	D. Corona

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	5
2. TEST METHODOLOGY	6
3. FACILITIES AND ACCREDITATION	6
4. CALIBRATION AND UNCERTAINTY	6
4.1. MEASURING INSTRUMENT CALIBRATION	6
4.2. SAMPLE CALCULATION	6
4.3. MEASUREMENT UNCERTAINTY	7
5. EQUIPMENT UNDER TEST	8
5.1. DESCRIPTION OF EUT	8
5.2. MAXIMUM OUTPUT POWER.....	8
5.3. DESCRIPTION OF AVAILABLE ANTENNAS	8
5.4. WORST-CASE CONFIGURATION AND MODE	9
5.5. DESCRIPTION OF TEST SETUP.....	10
6. TEST AND MEASUREMENT EQUIPMENT	12
7. SUMMARY TABLE	13
8. ANTENNA PORT TEST RESULTS	14
8.1. 20 dB AND 99% BANDWIDTH	14
8.1.1. BASIC DATA RATE GFSK MODULATION	14
8.1.2. ENHANCED DATA RATE 8PSK MODULATION	14
20 dB AND 99% BANDWIDTH PLOTS	15
8.2. HOPPING FREQUENCY SEPARATION	27
8.3. NUMBER OF HOPPING CHANNELS	29
8.4. AVERAGE TIME OF OCCUPANCY	34
8.5. OUTPUT POWER	41
8.5.1. BASIC DATA RATE GFSK MODULATION	41
8.5.2. ENHANCED DATA RATE 8PSK MODULATION	41
8.5.3. OUTPUT POWER PLOTS	42
8.6. AVERAGE POWER	48
8.6.1. BASIC DATA RATE GFSK MODULATION	48
8.6.2. ENHANCED DATA RATE 8PSK MODULATION	48
8.7. CONDUCTED SPURIOUS EMISSIONS	49
8.7.1. BASIC DATA RATE GFSK MODULATION	50
ENHANCED DATA RATE 8PSK MODULATION	58

9. RADIATED TEST RESULTS.....	66
9.1. LIMITS AND PROCEDURE	66
9.2. TRANSMITTER ABOVE 1 GHz	67
9.2.1. BASIC DATA RATE GFSK MODULATION	67
9.2.2. ENHANCED DATA RATE 8PSK MODULATION	80
9.3. WORST-CASE BELOW 1 GHz.....	93
10. AC POWER LINE CONDUCTED EMISSIONS	96
11. SETUP PHOTOS	101

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC
EUT DESCRIPTION: GSM/WCDMA/LTE PHONE + BLUETOOTH & 2.4GHz DTS b/g/n
MODEL: LG-L33L, LGL33L, L33L
SERIAL NUMBER: 1HRKA (CONDUCTED), 1HRK9 (RADIATED)
DATE TESTED: DECEMBER 12-31, 2014

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Verification Services Inc. By:



DAN CORONIA
CONSUMER TECHNOLOGY DIVISION
PROJECT LEAD
UL VERIFICATION SERVICES INC

Tested By:



STEVEN TRAN
CONSUMER TECHNOLOGY DIVISION
LAB ENGINEER
UL VERIFICATION SERVICES INC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2009, FCC CFR 47 Part 2, and FCC CFR 47 Part 15C.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A(IC: 2324B-1)	☐ Chamber D(IC: 2324B-4)
☒ Chamber B(IC: 2324B-2)	☐ Chamber E(IC: 2324B-5)
☒ Chamber C(IC: 2324B-3)	☐ Chamber F(IC: 2324B-6)
	☐ Chamber G(IC: 2324B-7)
	☐ Chamber H(IC: 2324B-8)

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://ts.nist.gov/standards/scopes/2000650.htm>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned}\text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable} \\ &\text{Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m}\end{aligned}$$

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 18000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE PHONE + BLUETOOTH & 2.4GHz DTS b/g/n

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	Basic GFSK	7.91	6.18
2402 - 2480	Enhanced 8PSK	8.22	6.64

Note: GFSK, Pi/4-DQPSK, 8PSK average Power are all investigated, The GFSK & 8PSK Power are the worst case. Testing is based on this mode to show compliance. For average power data please refer to section 8.6.

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of 2.9dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y, Z, it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	MCS-01WR	RD4X0891946	N/A
Earphone	LG	LG-L33L	N/A	N/A

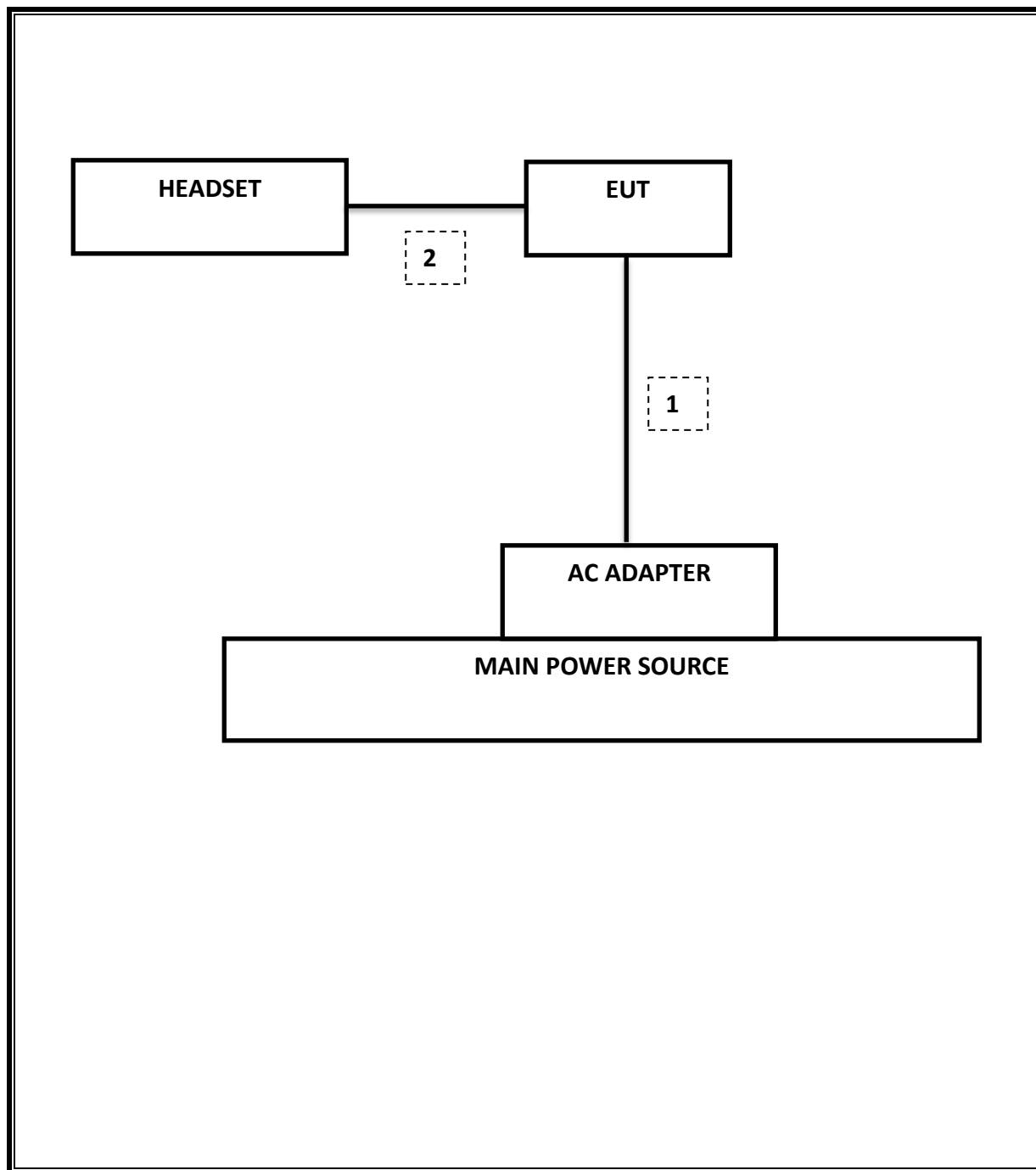
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini-USB	Shielded	1.2m	N/A
2	Audio	1	Mini-Jack	Unshielded	1m	N/A

TEST SETUP

EUT was set in the Hidden menu mode to enable BT communications.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	Manufacturer	Model	Asset	Cal Due
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	C01171	02/13/15
Antenna, Horn, 18GHz	EMCO	3115	C00783	10/25/15
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00980	11/14/15
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	01/28/15
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	10/22/15
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/15
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/15
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/15
LISN, 30 MHz	FCC	50/250-25-2	C00626	01/14/15
Reject Filter, 2.4GHz	Micro-Tronics	BRM50702	N02684	CNR
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/15
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/15

7. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
2.1049	RSS-GEN 4.6	Occupied Band width (99%)	N/A	Conducted	Pass	1.193 MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-42.74 dBm
15.247 (b)(1)	RSS-210 A8.4	TX conducted output power	<21dBm		Pass	8.22 dBm
15.247 (a)(1)	RSS-210 A8.1(b)	Hopping frequency separation	> 25KHz		Pass	1 MHz
15.247 (a)(1)(iii)	RSS-210 A8.1(d)	Number of Hopping channels	More than 15 non-overlapping channels		Pass	79 ch
15.247 (a)(1)(iii)	RSS-210 A8.1(d)	Avg Time of Occupancy	< 0.4sec		Pass	0.27 s
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	50.62 dBuV(AV)
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	41.06 dBuV/m

8. ANTENNA PORT TEST RESULTS

8.1. 20 dB AND 99% BANDWIDTH

LIMIT

None; for reporting purposes only.

TEST PROCEDURE

DA 00-705: The transmitter output is connected to a spectrum analyzer. The RBW is set to $\geq 1\%$ of the 20 dB bandwidth. The VBW is set to $\geq$ RBW. The sweep time is coupled.

RESULTS

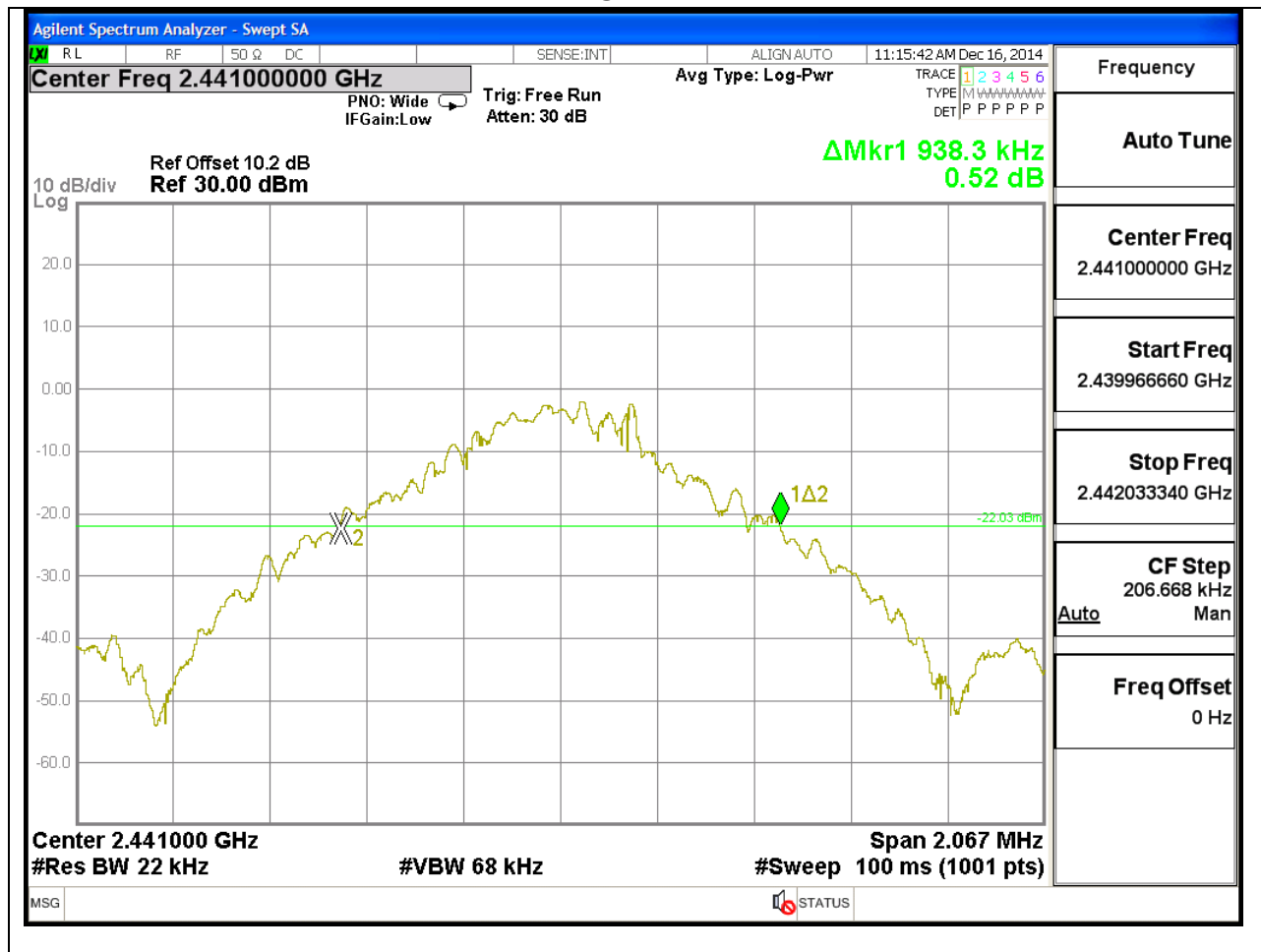
8.1.1. BASIC DATA RATE GFSK MODULATION

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	2402	0.940	0.899
Middle	2441	0.938	0.899
High	2480	0.940	0.900
Worst		0.940	0.899

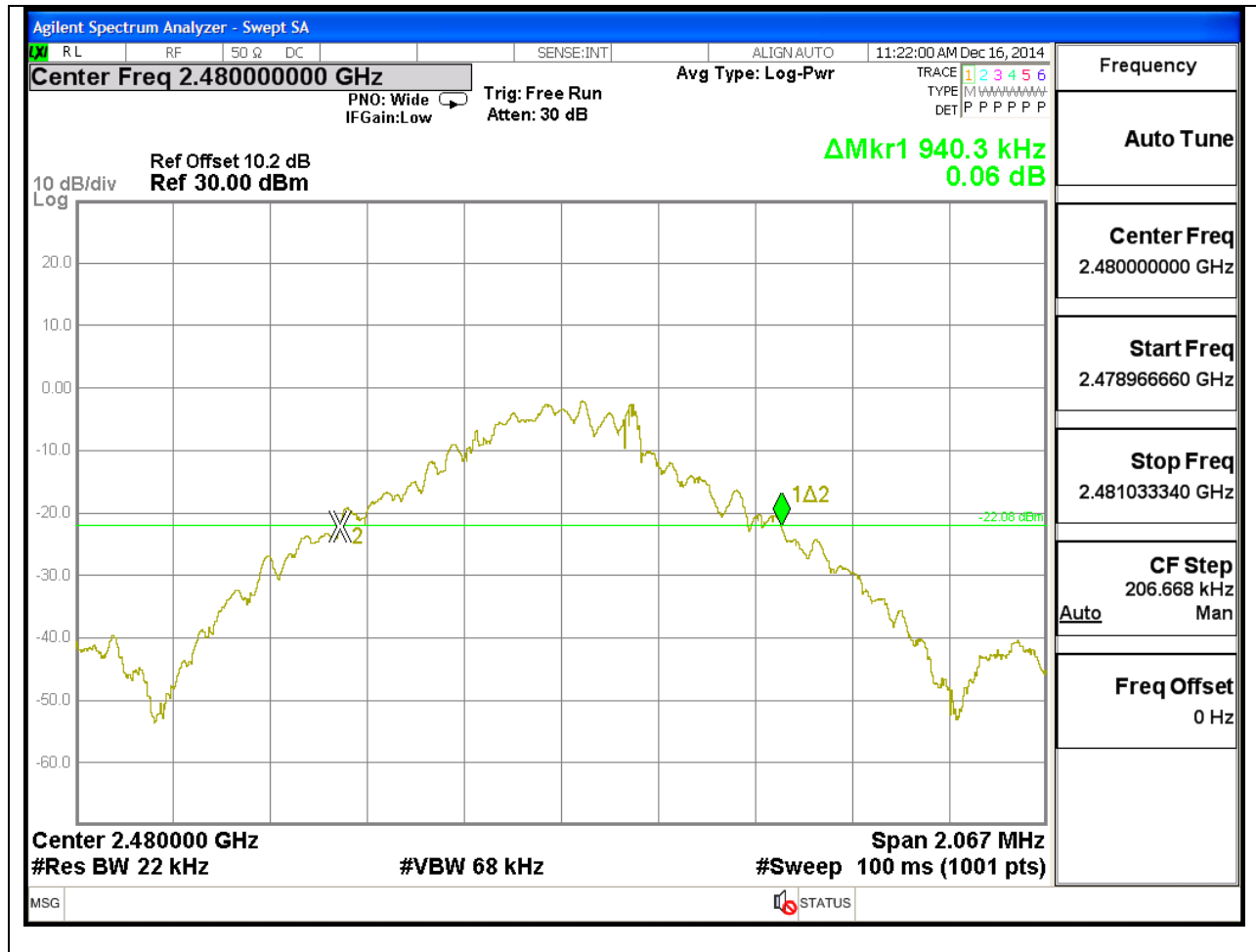
8.1.2. ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	2402	1.275	1.193
Middle	2441	1.284	1.187
High	2480	1.279	1.187
Worst		1.284	1.193

MID CHANNEL

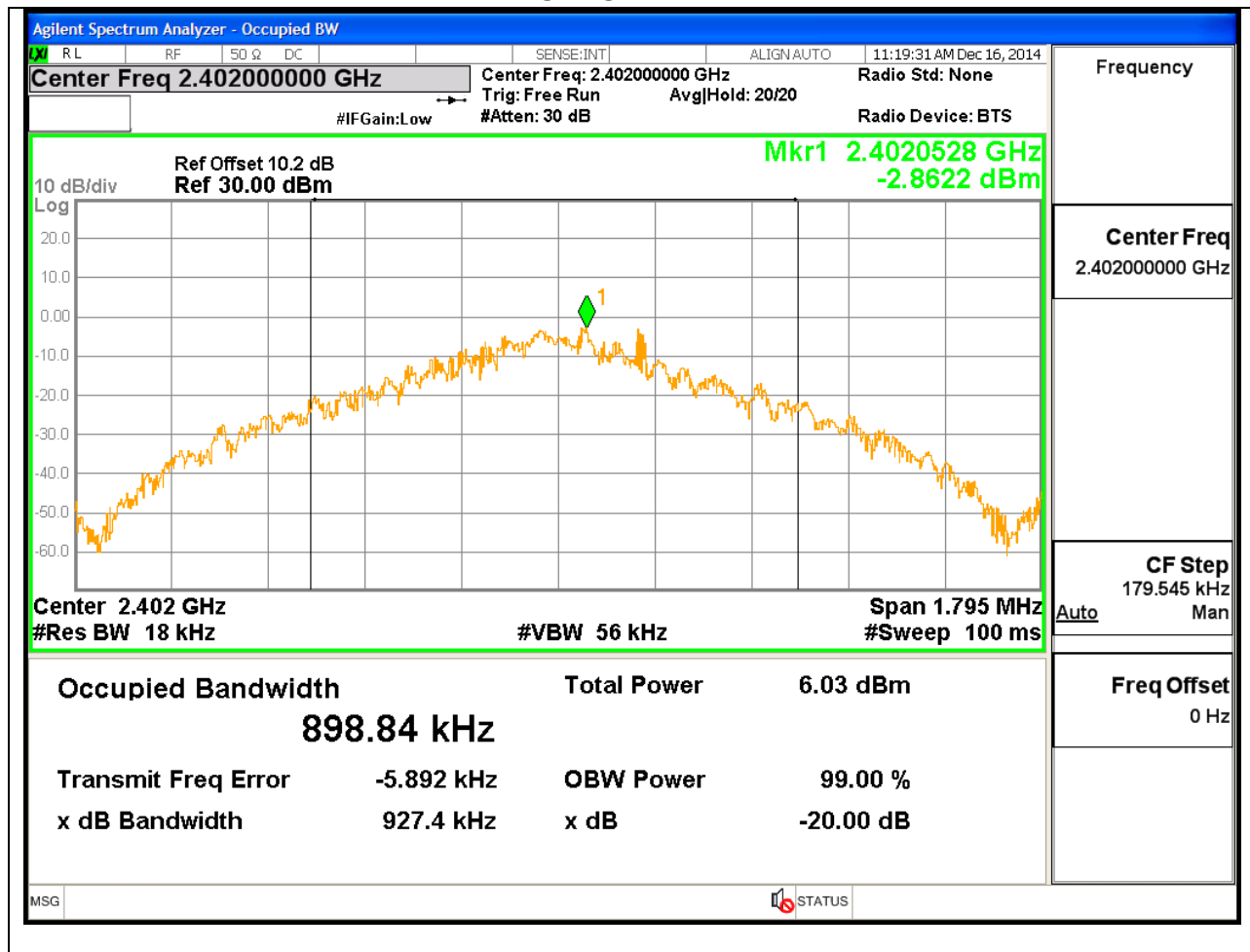


HIGH CHANNEL

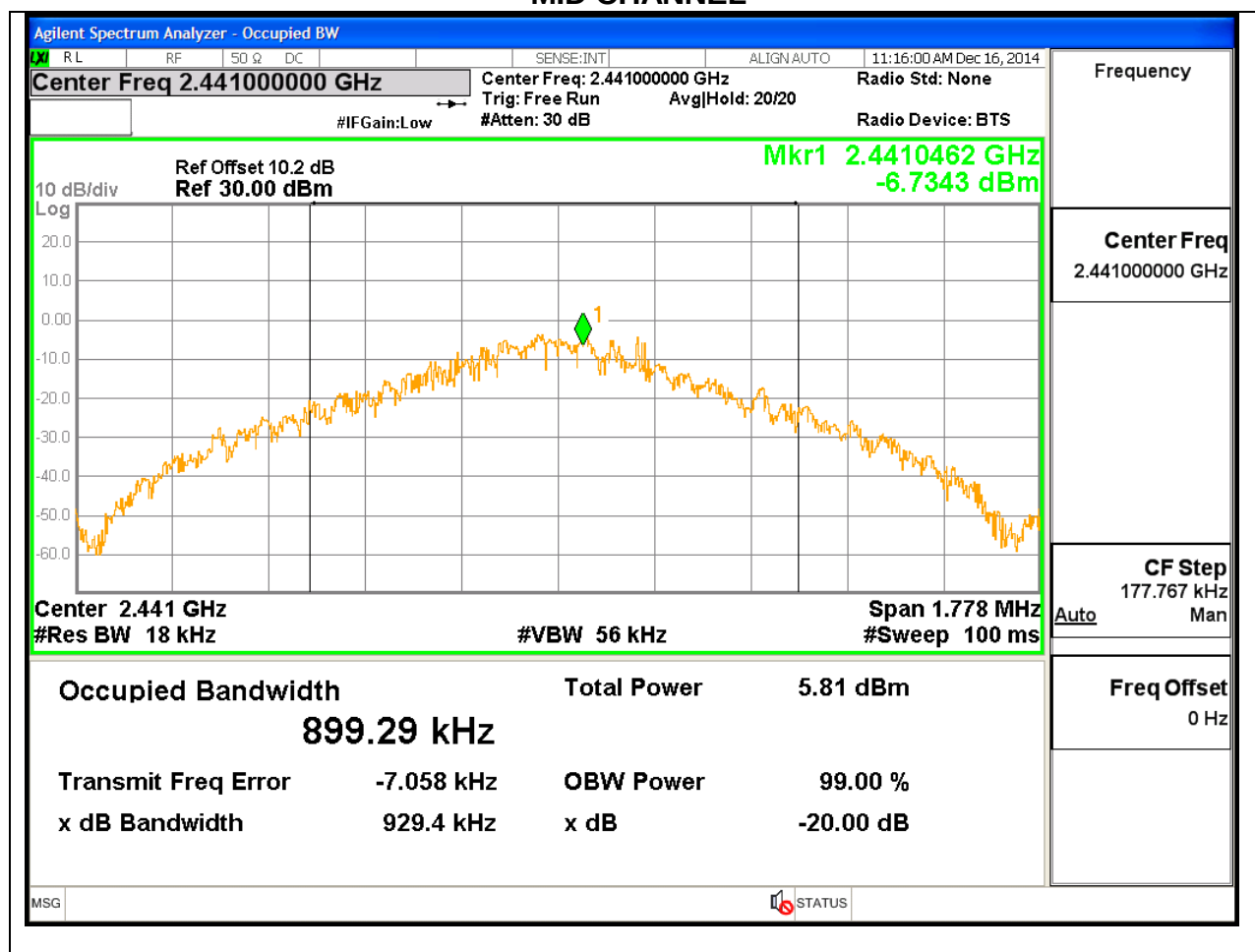


GFSK 99% BANDWIDTH

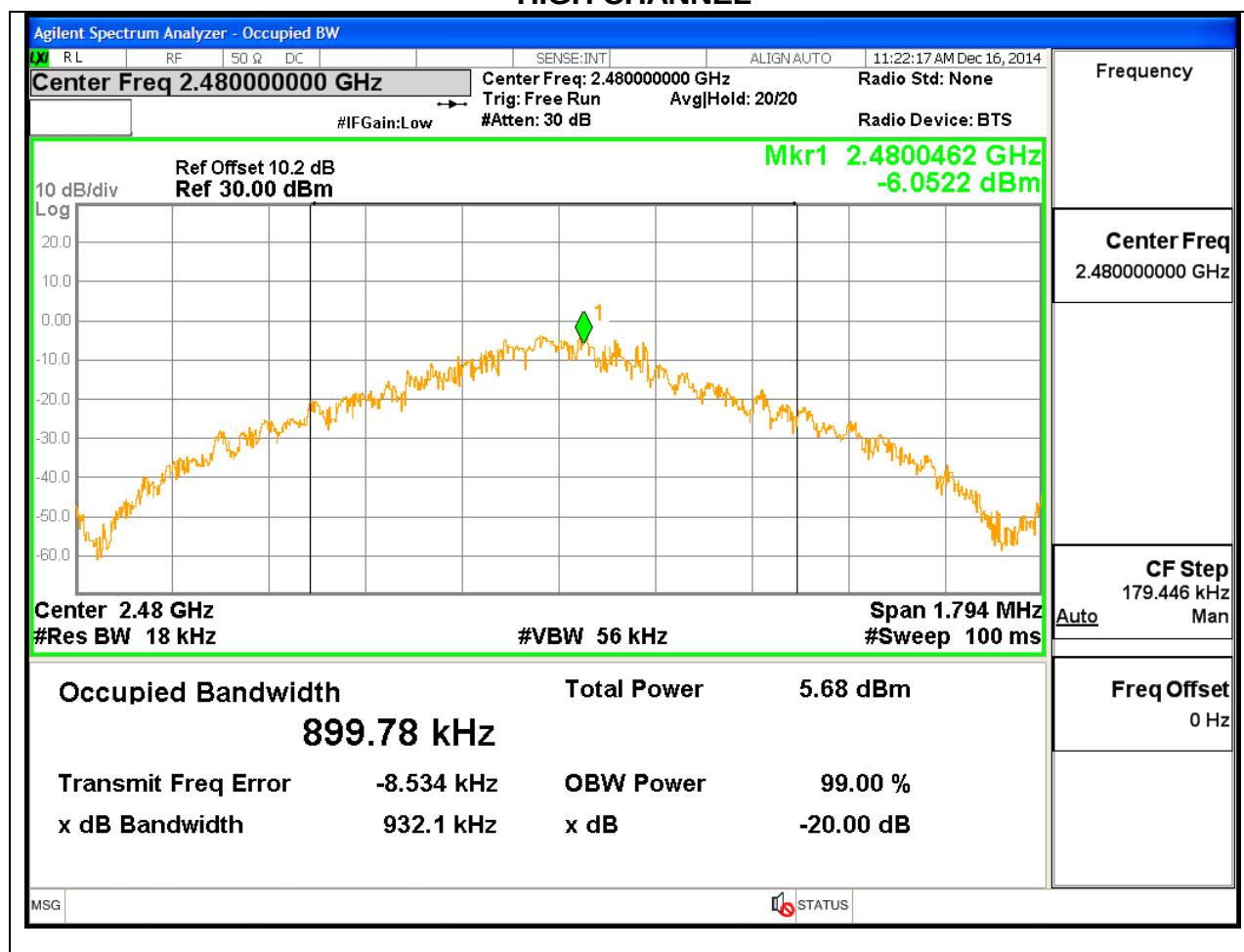
LOW CHANNEL



MID CHANNEL

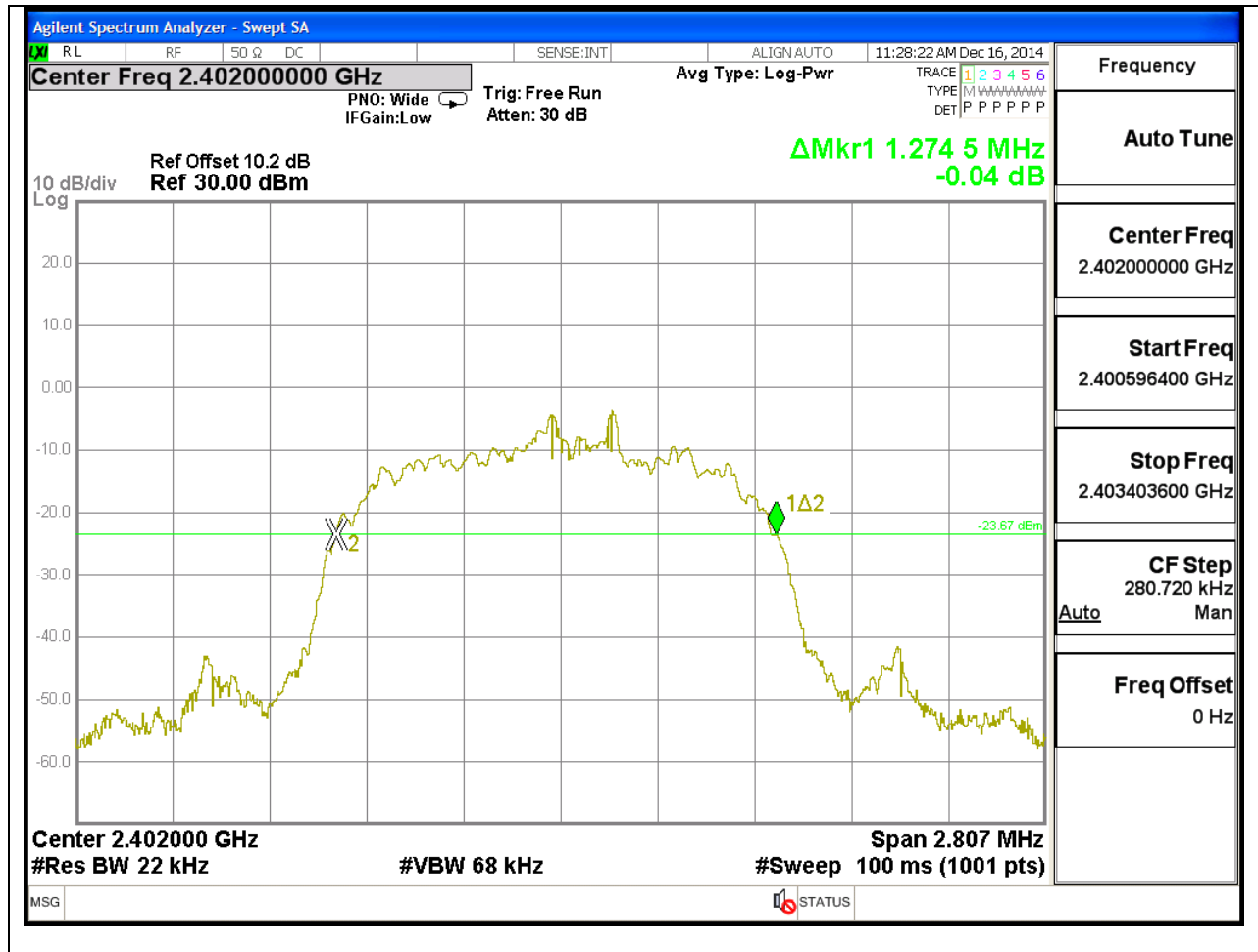


HIGH CHANNEL

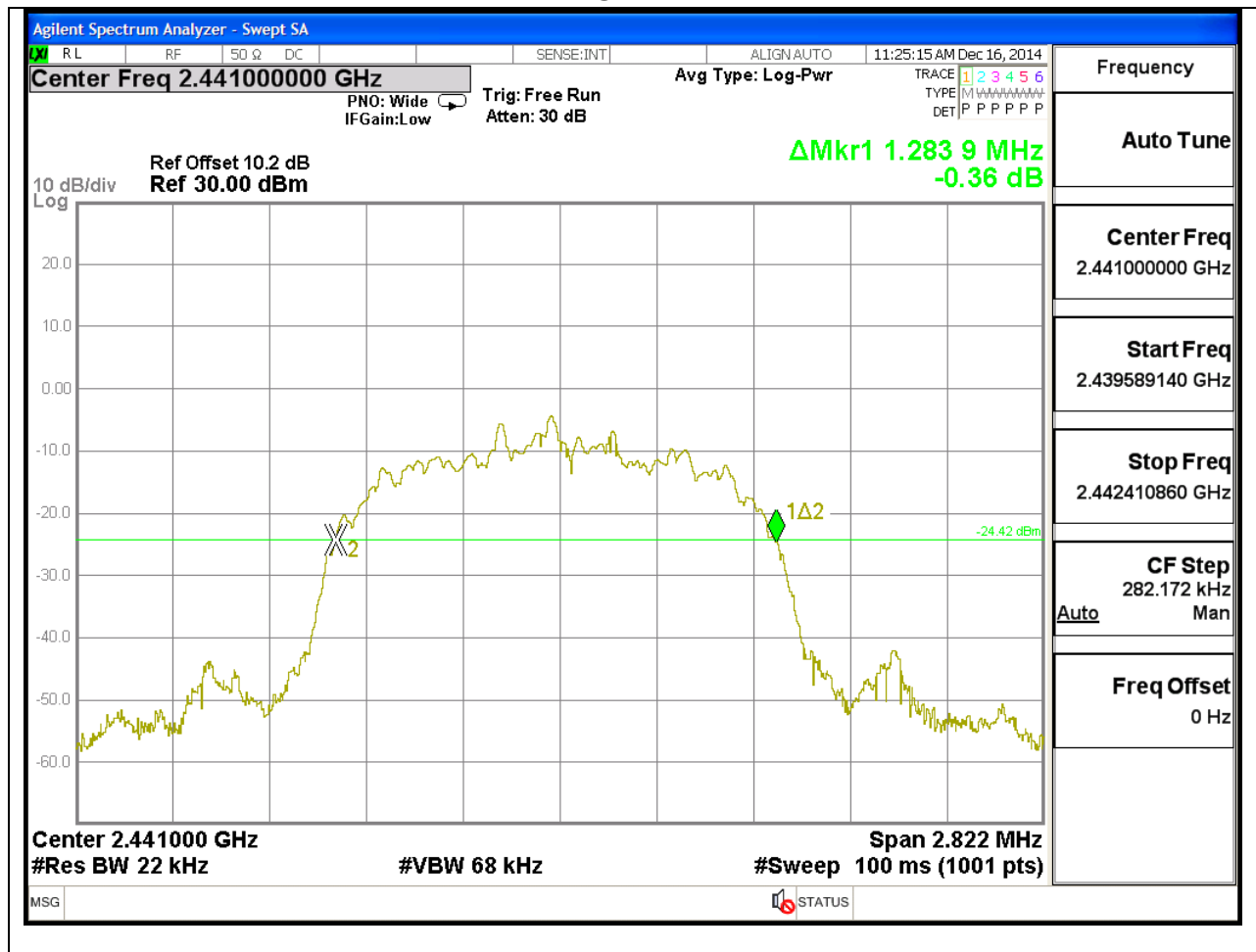


8PSK 20 dB BANDWIDTH

LOW CHANNEL



MID CHANNEL

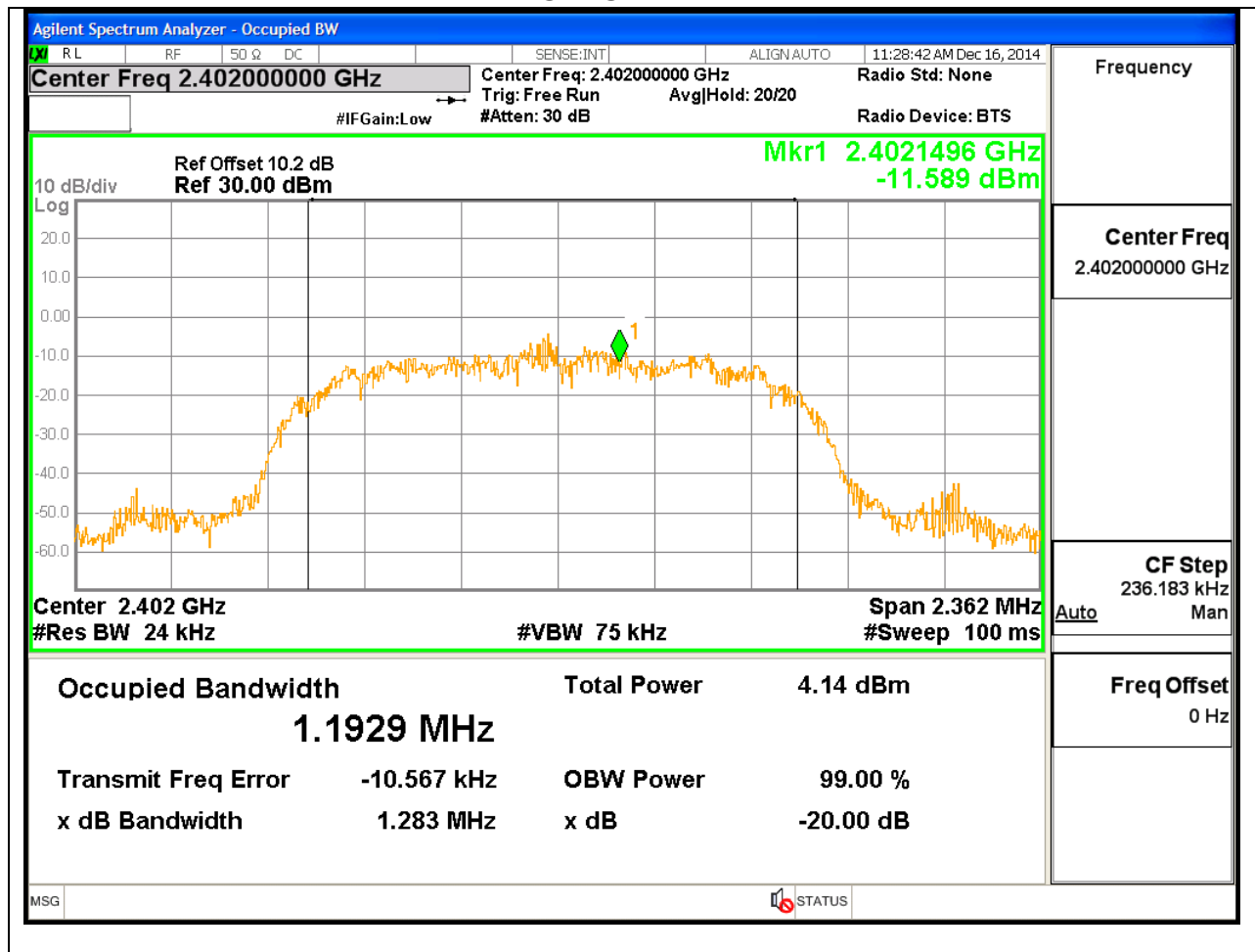


HIGH CHANNEL

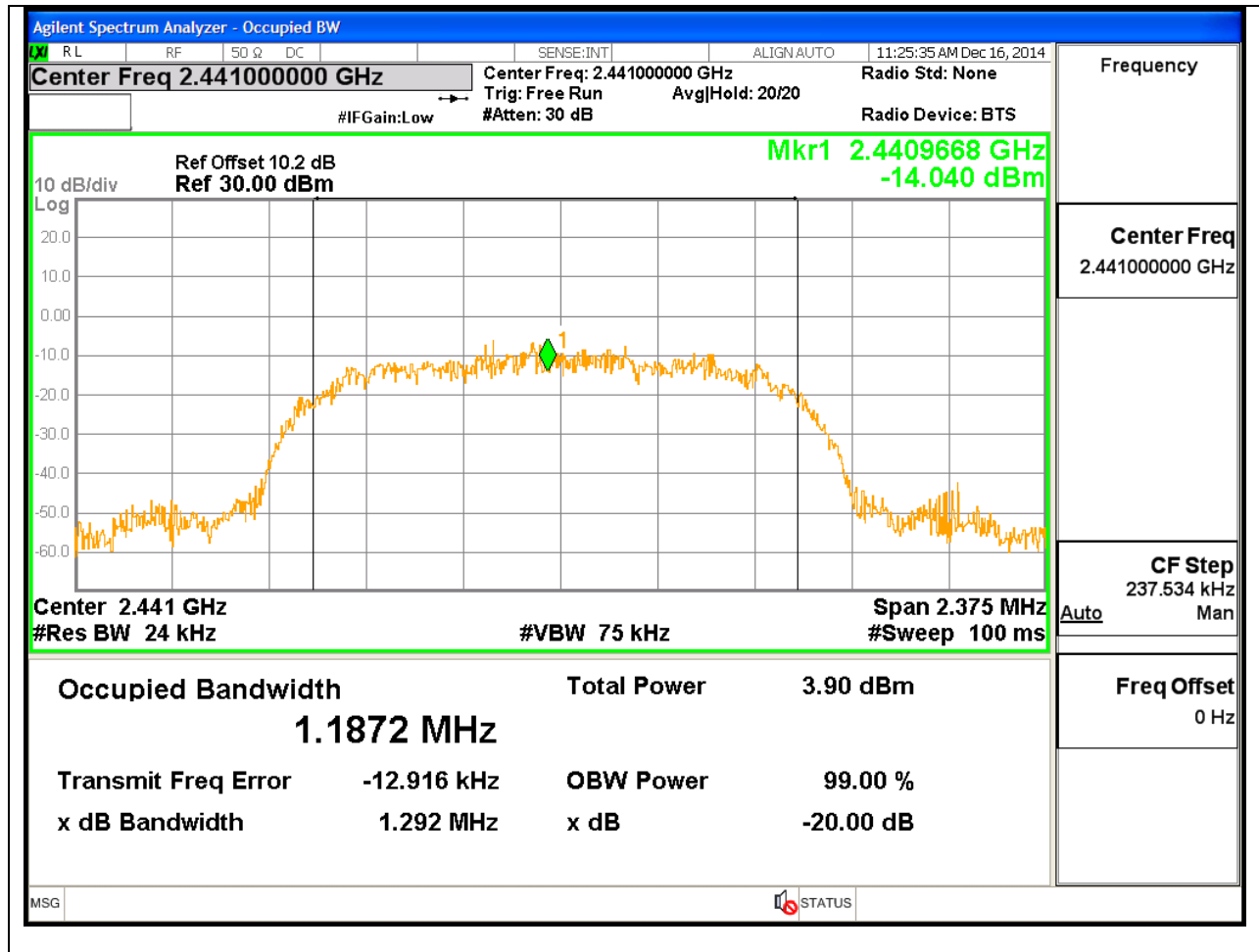


8PSK 99% BANDWIDTH

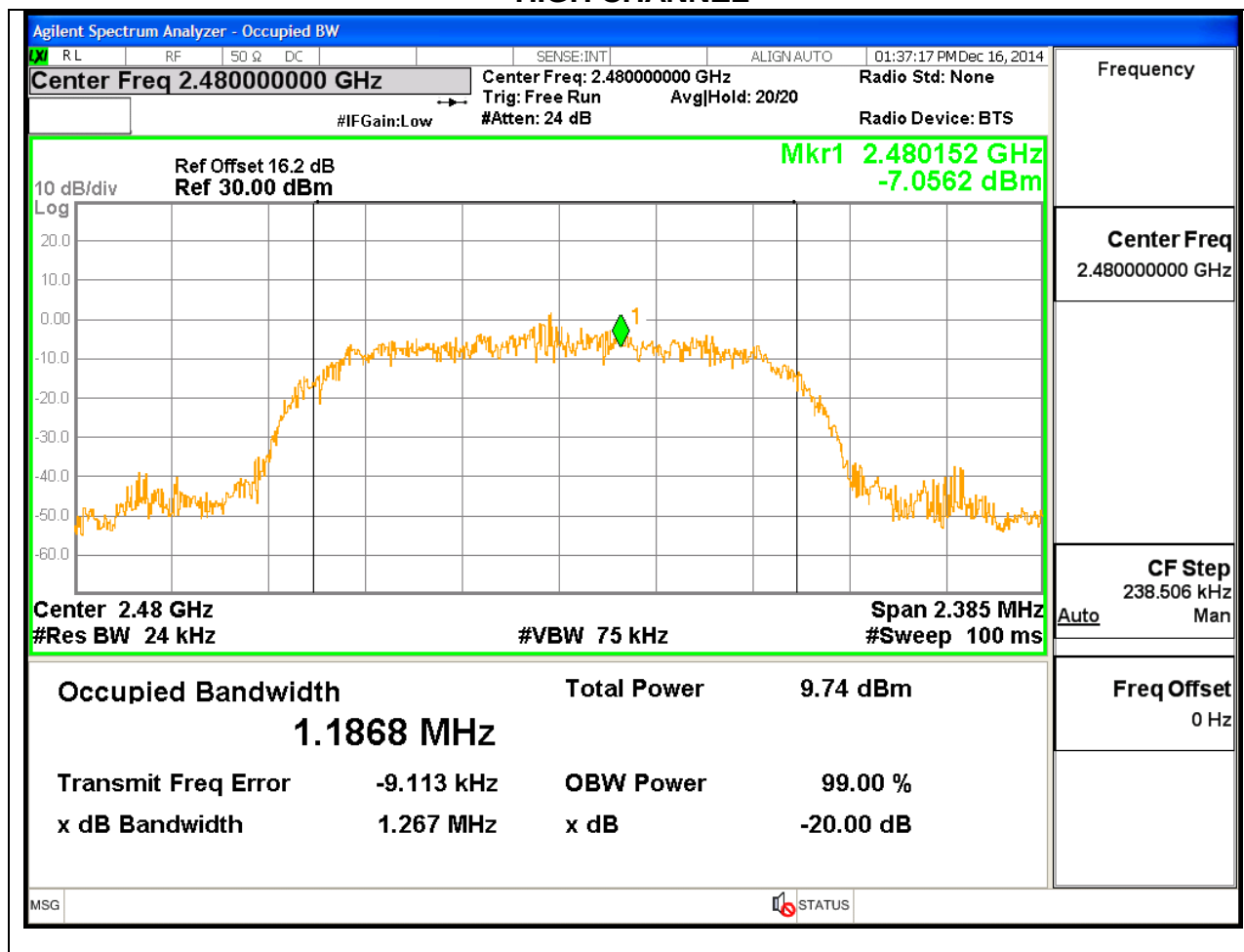
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.2. HOPPING FREQUENCY SEPARATION

LIMIT

FCC §15.247 (a) (1)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

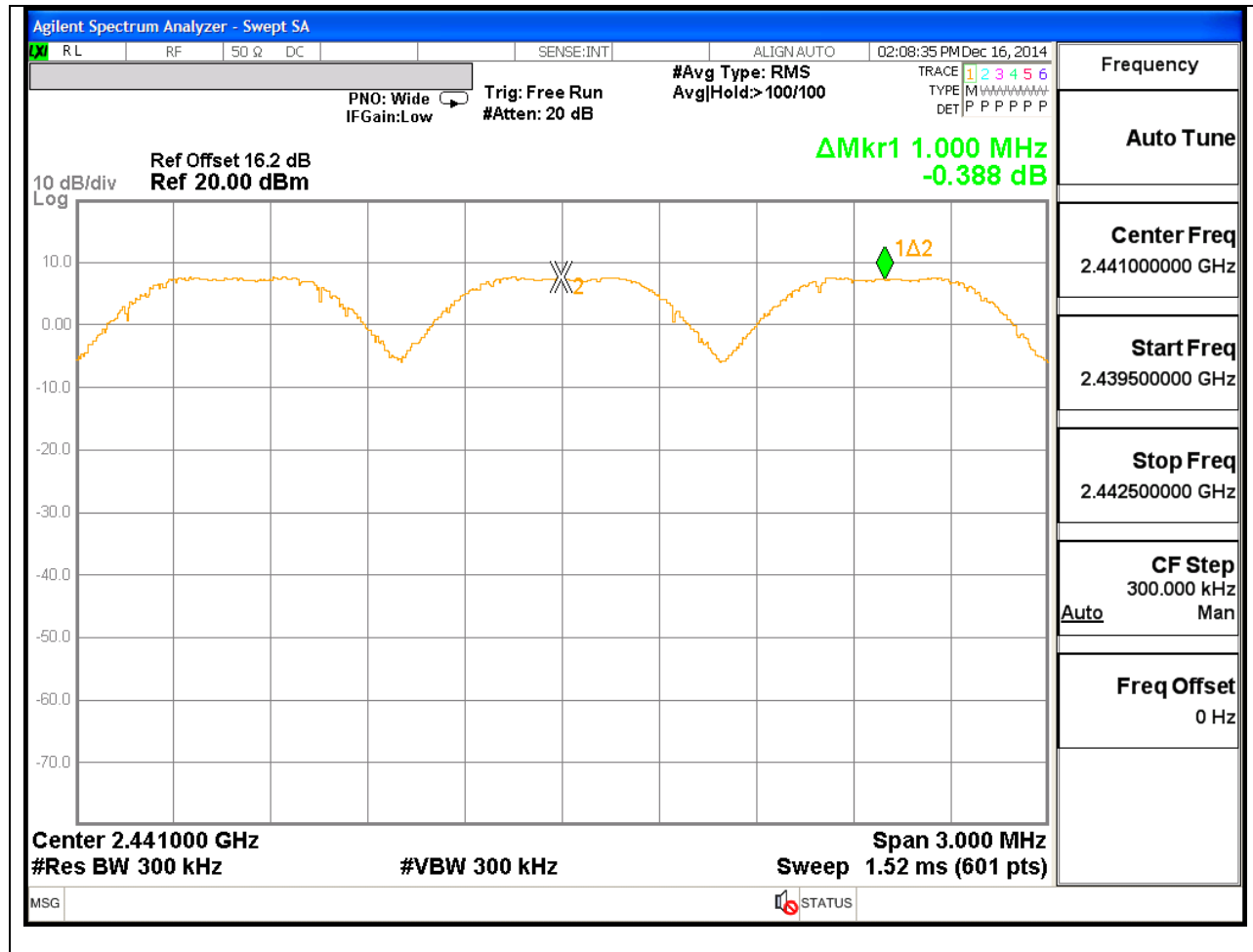
Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

TEST PROCEDURE

DA 00-705: The transmitter output is connected to a spectrum analyzer. The RBW is set to 300 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

RESULTS

HOPPING FREQUENCY SEPARATION PLOT



8.3. NUMBER OF HOPPING CHANNELS

LIMIT

FCC §15.247 (a) (1) (iii)

Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 15 non-overlapping channels.

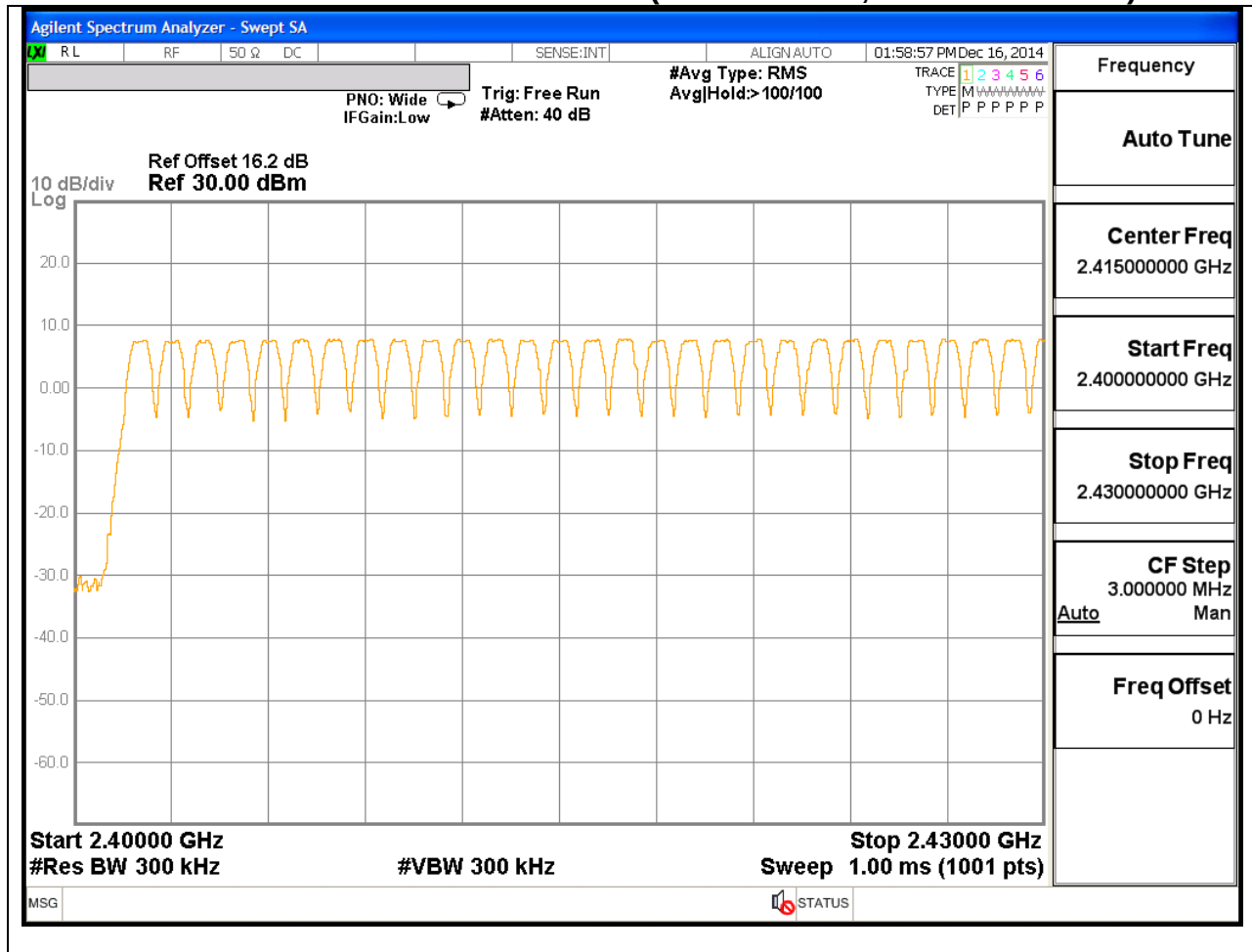
TEST PROCEDURE

DA 00-705: The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

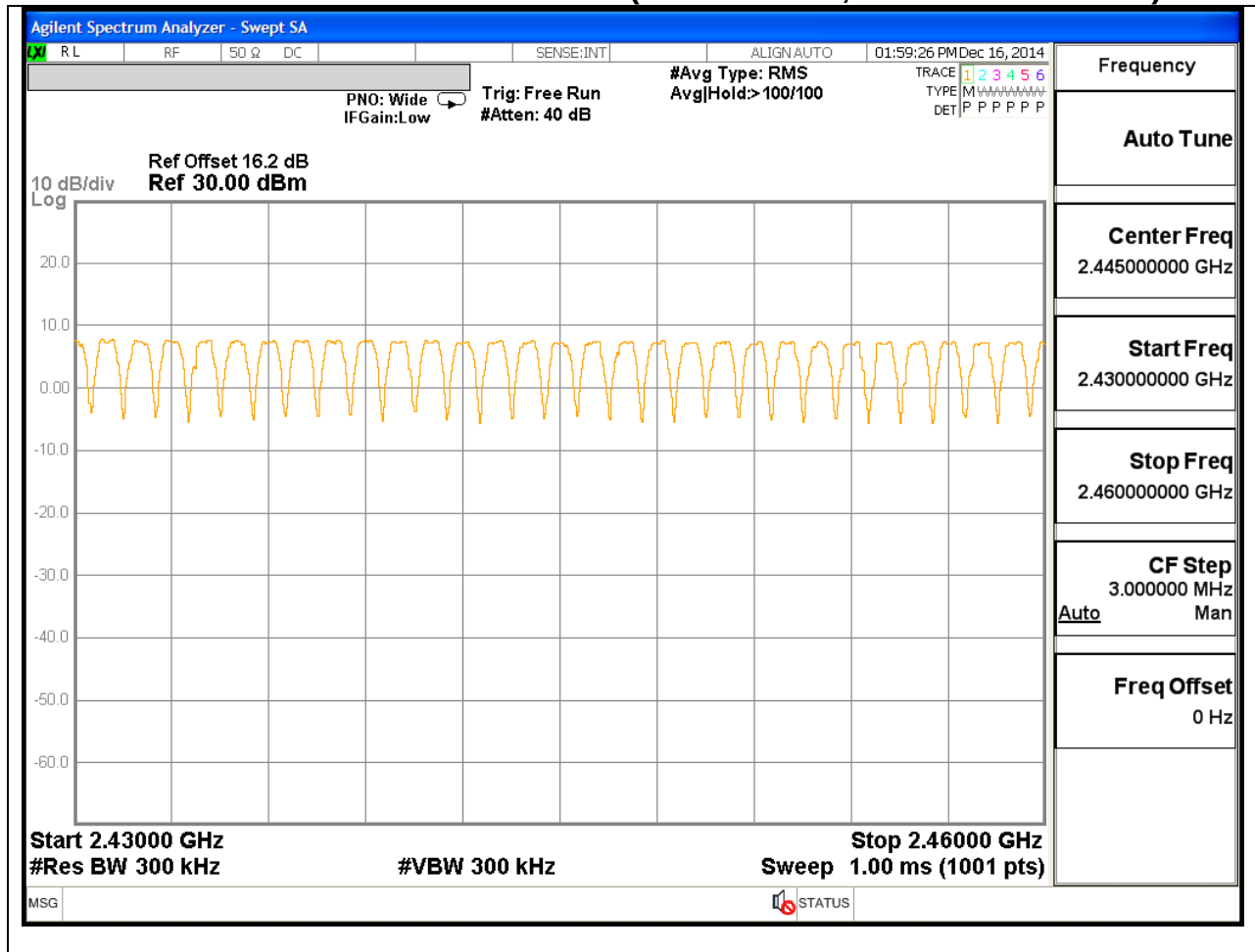
RESULTS

Normal Mode: 79 Channels observed.

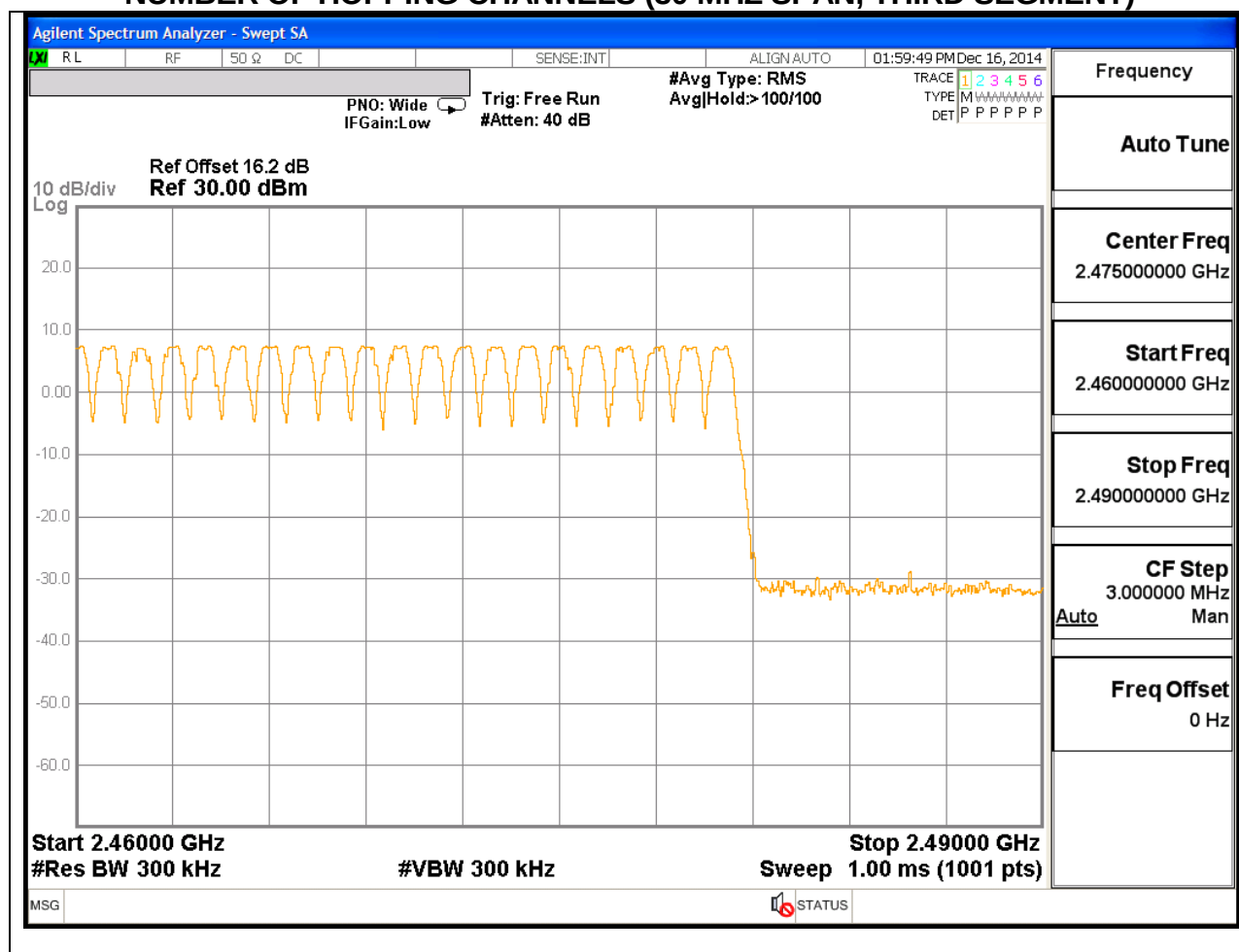
NUMBER OF HOPPING CHANNELS (30 MHZ SPAN, FIRST SEGMENT)



NUMBER OF HOPPING CHANNELS (30 MHZ SPAN, SECOND SEGMENT)



NUMBER OF HOPPING CHANNELS (30 MHZ SPAN, THIRD SEGMENT)



8.4. AVERAGE TIME OF OCCUPANCY LIMIT

FCC §15.247 (a) (1) (iii)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 3.16 second scan, to enable resolution of each occurrence.

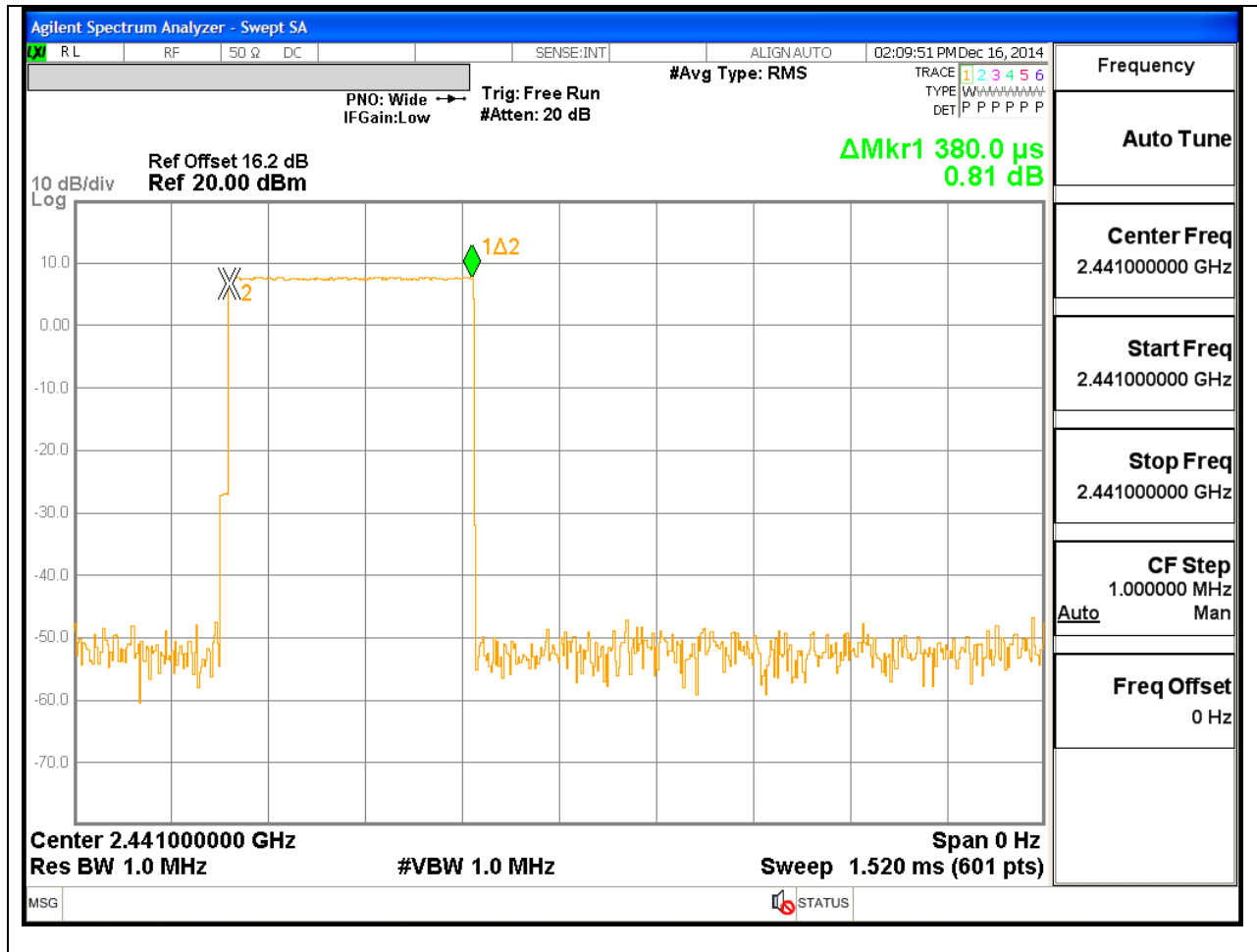
The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to 10 * (# of pulses in 3.16 s) * pulse width.

For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to 10 * (# of pulses in 0.8 s) * pulse width.

RESULTS

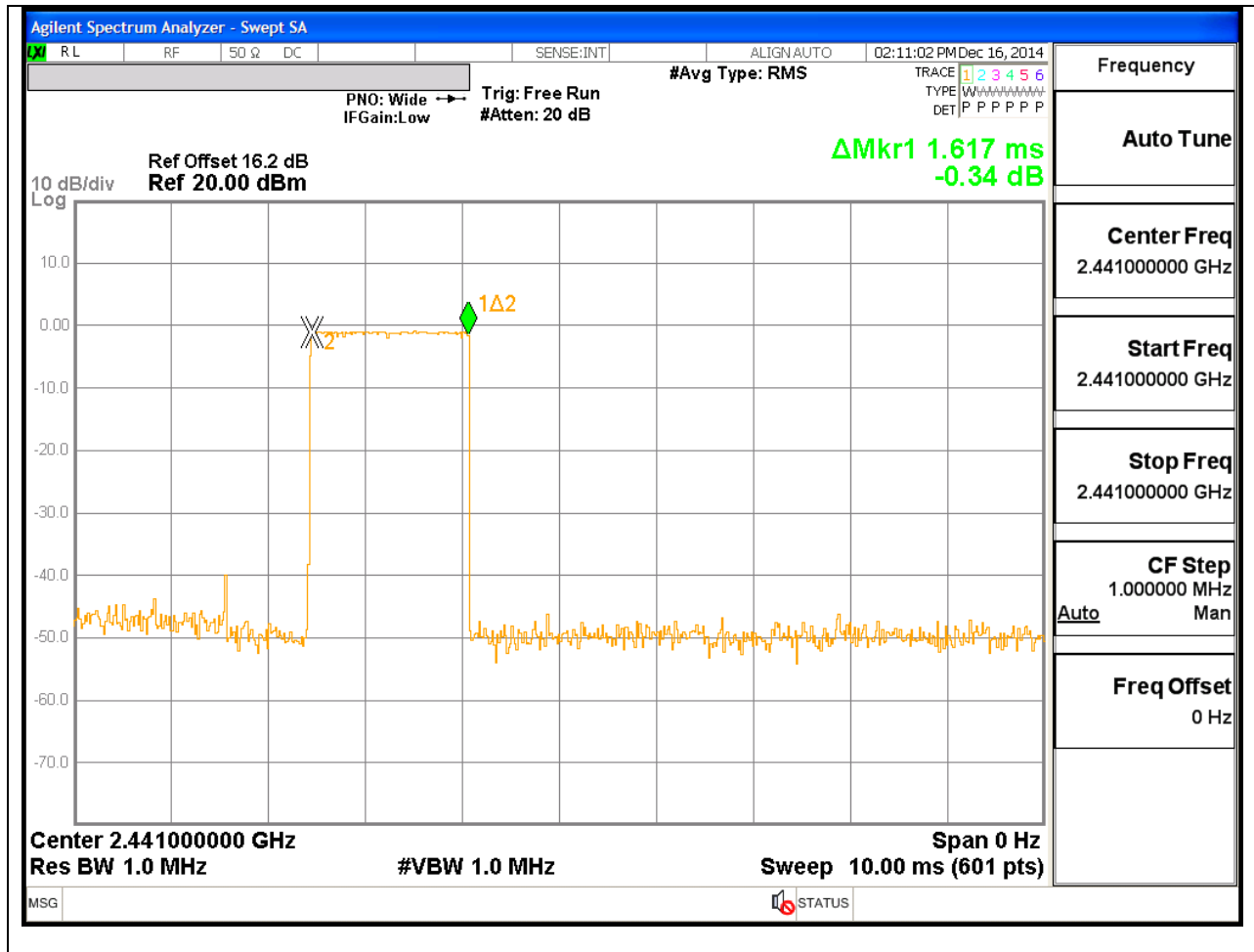
DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK Normal Mode					
DH1	0.380	31	0.1178	0.4	-0.2822
DH3	1.617	17	0.2749	0.4	-0.12511
DH5	2.850	9	0.2565	0.4	-0.1435
DH Packet	Pulse Width (msec)	Number of Pulses in 0.8 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK AFH Mode					
DH1	0.380	7.75	0.0295	0.4	-0.37055
DH3	1.617	4.25	0.0687	0.4	-0.33128
DH5	2.850	2.25	0.0641	0.4	-0.33588

PULSE WIDTH - DH1





PULSE WIDTH - DH3



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω DC SENSE:INT ALIGN: AUTO 02:01:43 PM Dec 16, 2014

PNO: Wide Trg: Free Run
IF Gain: Low #Atten: 20 dB

#Avg Type: RMS

TRACE 1 2 3 4 5 6
TYPE W W W W W W
DET P P P P P P

Ref Offset 16.2 dB
Ref 20.00 dBm

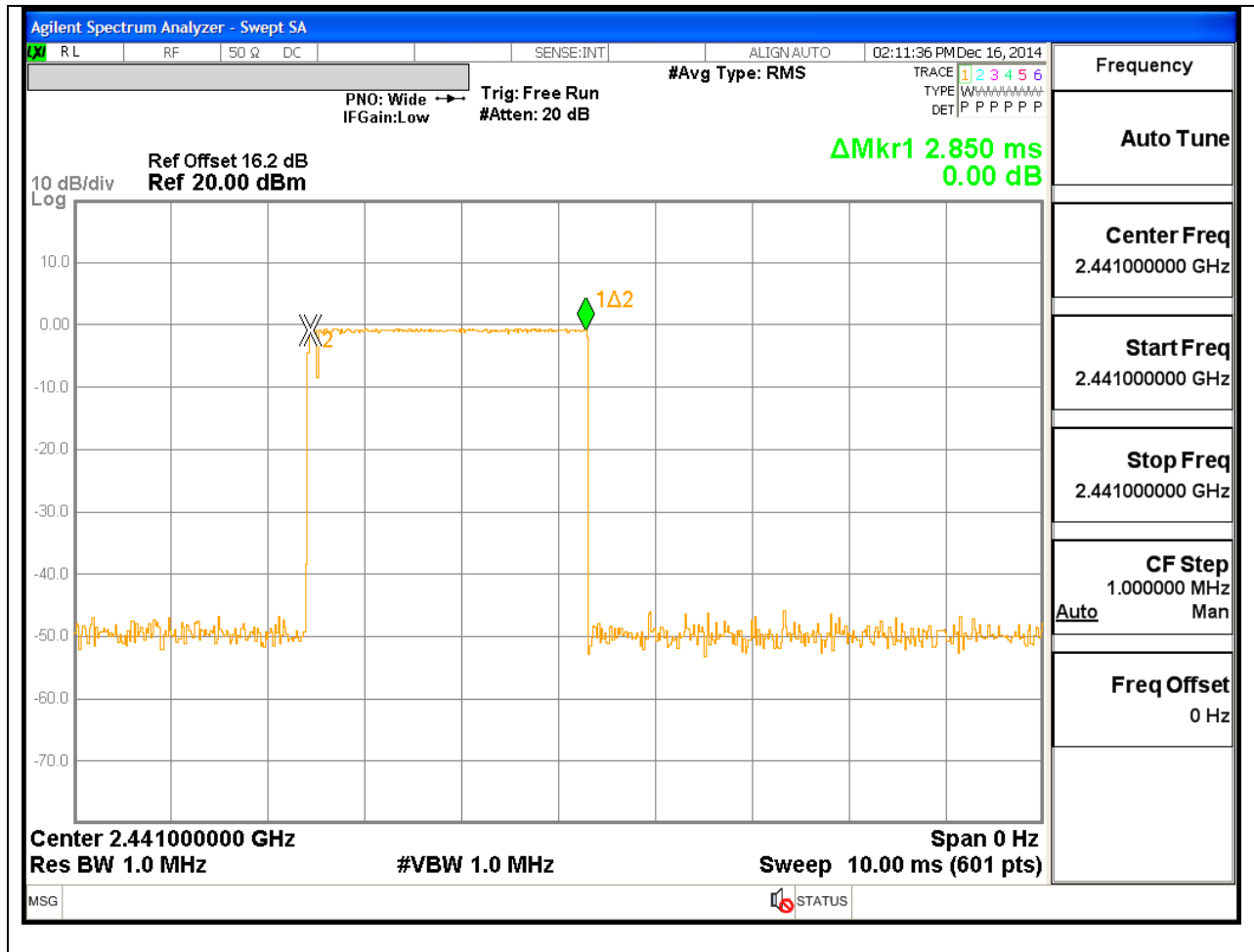
10 dB/div
Log

Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 3.160 s (1001 pts)

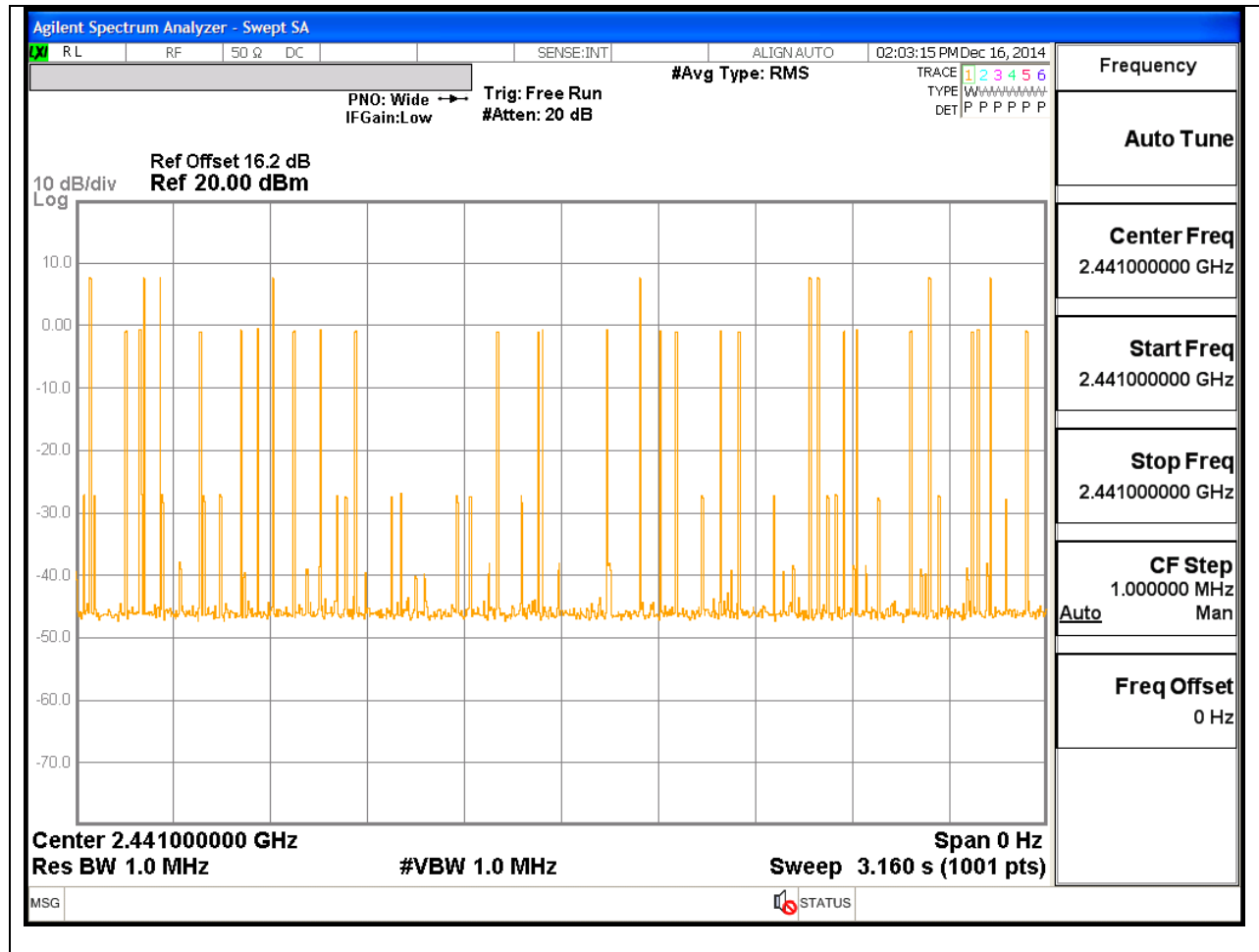
MSG STATUS

Frequency
Auto Tune
Center Freq 2.441000000 GHz
Start Freq 2.441000000 GHz
Stop Freq 2.441000000 GHz
CF Step 1.000000 MHz Auto
Freq Offset 0 Hz

PULSE WIDTH - DH5



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD - DH5



8.5. OUTPUT POWER

LIMIT

§15.247 (b) (1)

The maximum antenna gain is less than 6 dBi, therefore the limit is 21 dBm.

TEST PROCEDURE

DA 00-705: The transmitter output is connected to a spectrum analyzer the analyzer bandwidth is set to a value greater than the 20 dB bandwidth of the EUT.

RESULTS

8.5.1. BASIC DATA RATE GFSK MODULATION

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	7.91	21	-13.09
Middle	2441	7.86	21	-13.14
High	2480	7.27	21	-13.73
Worst		7.91		-13.09

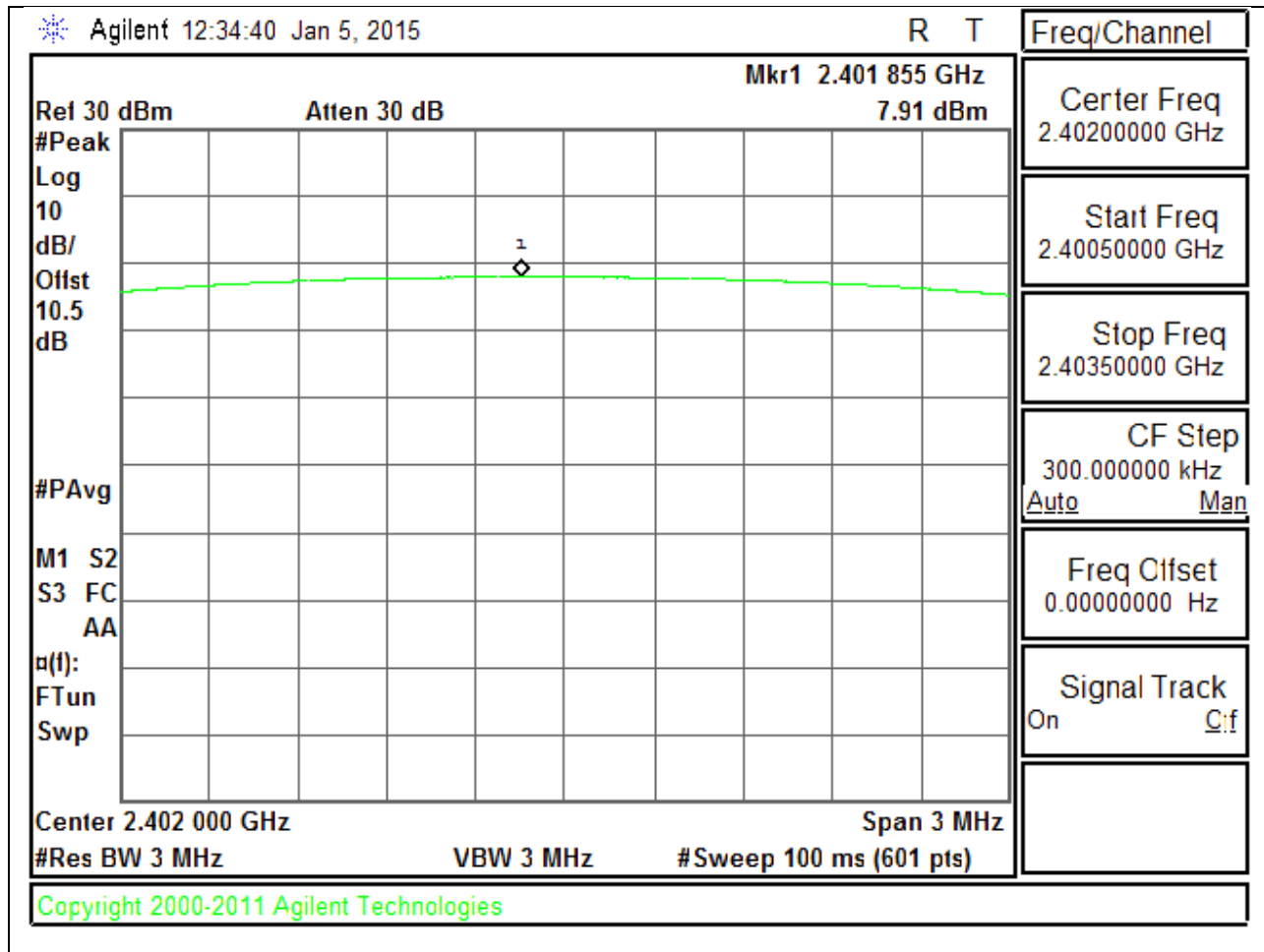
8.5.2. ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	8.22	21	-12.78
Middle	2441	8.19	21	-12.81
High	2480	7.68	21	-13.32
Worst		8.22		-12.78

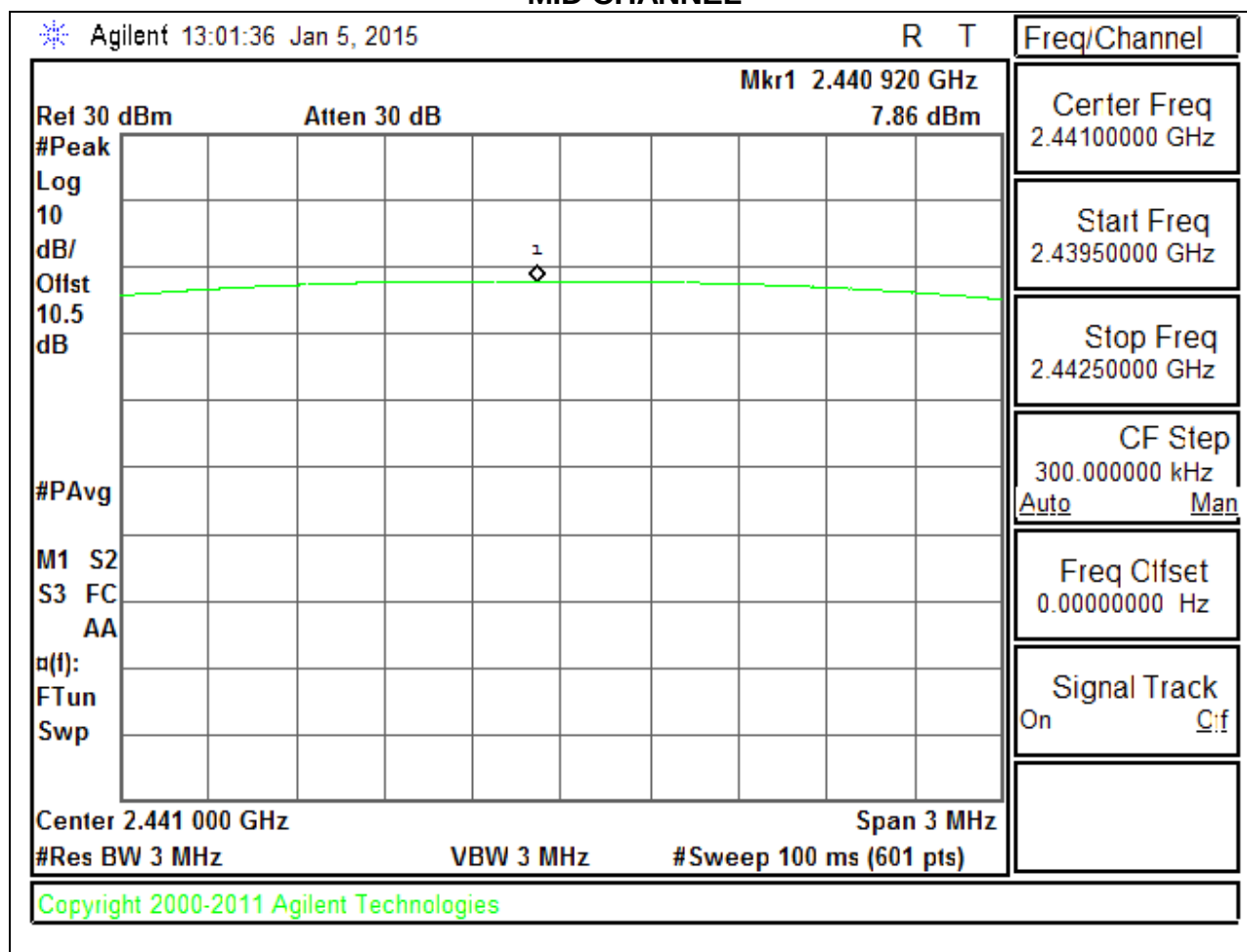
8.5.3. OUTPUT POWER PLOTS

GFSK OUTPUT POWER

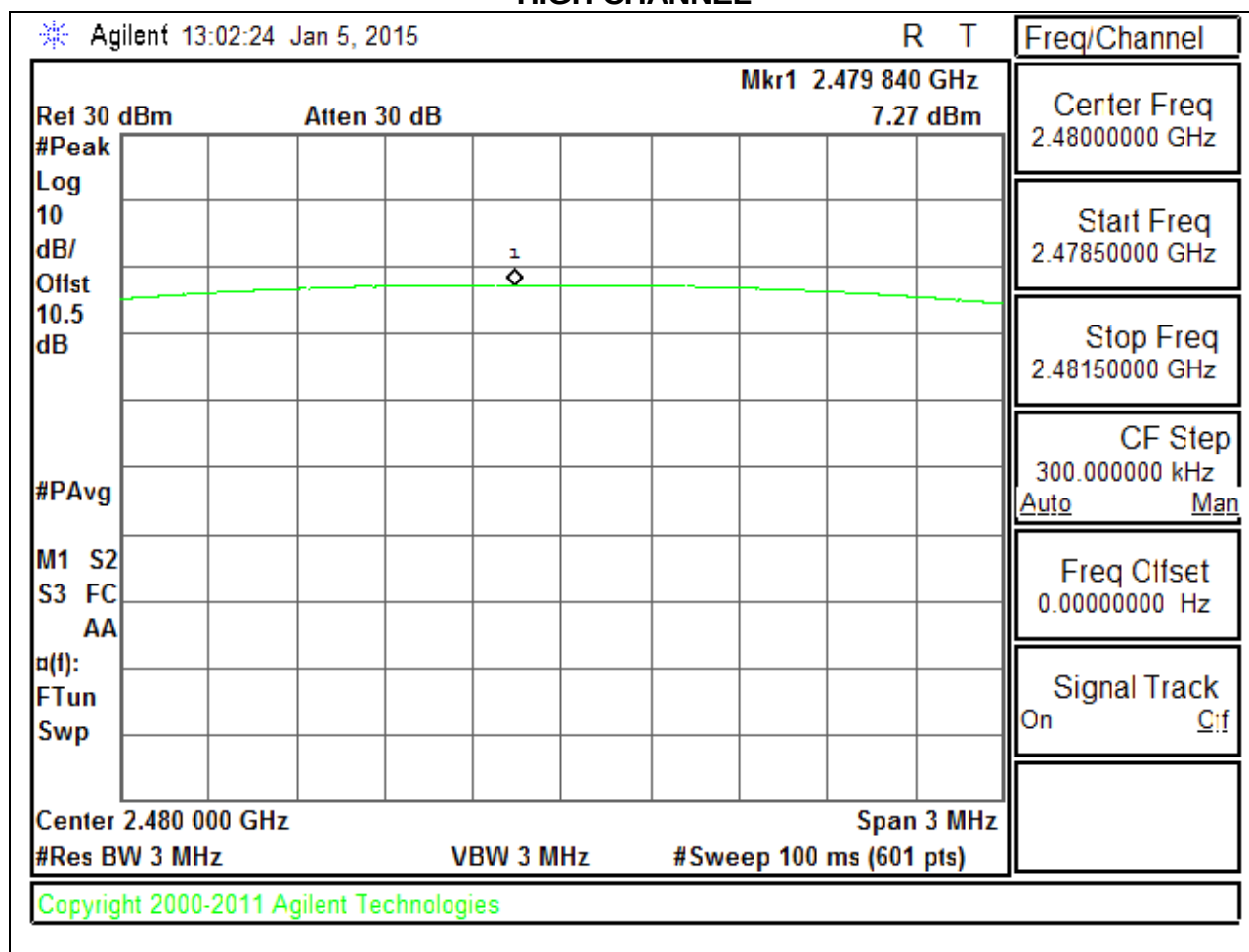
LOW CHANNEL



MID CHANNEL

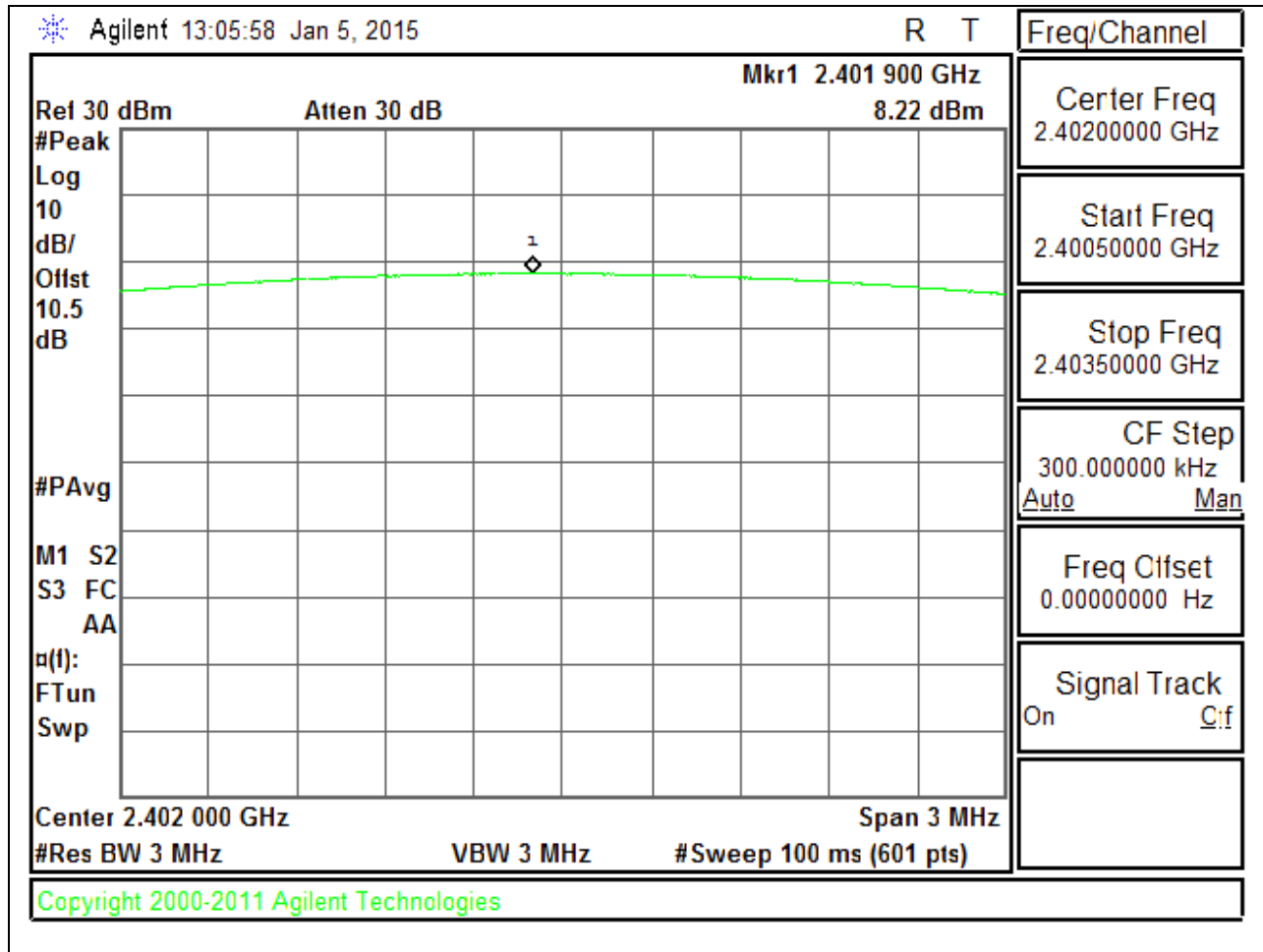


HIGH CHANNEL

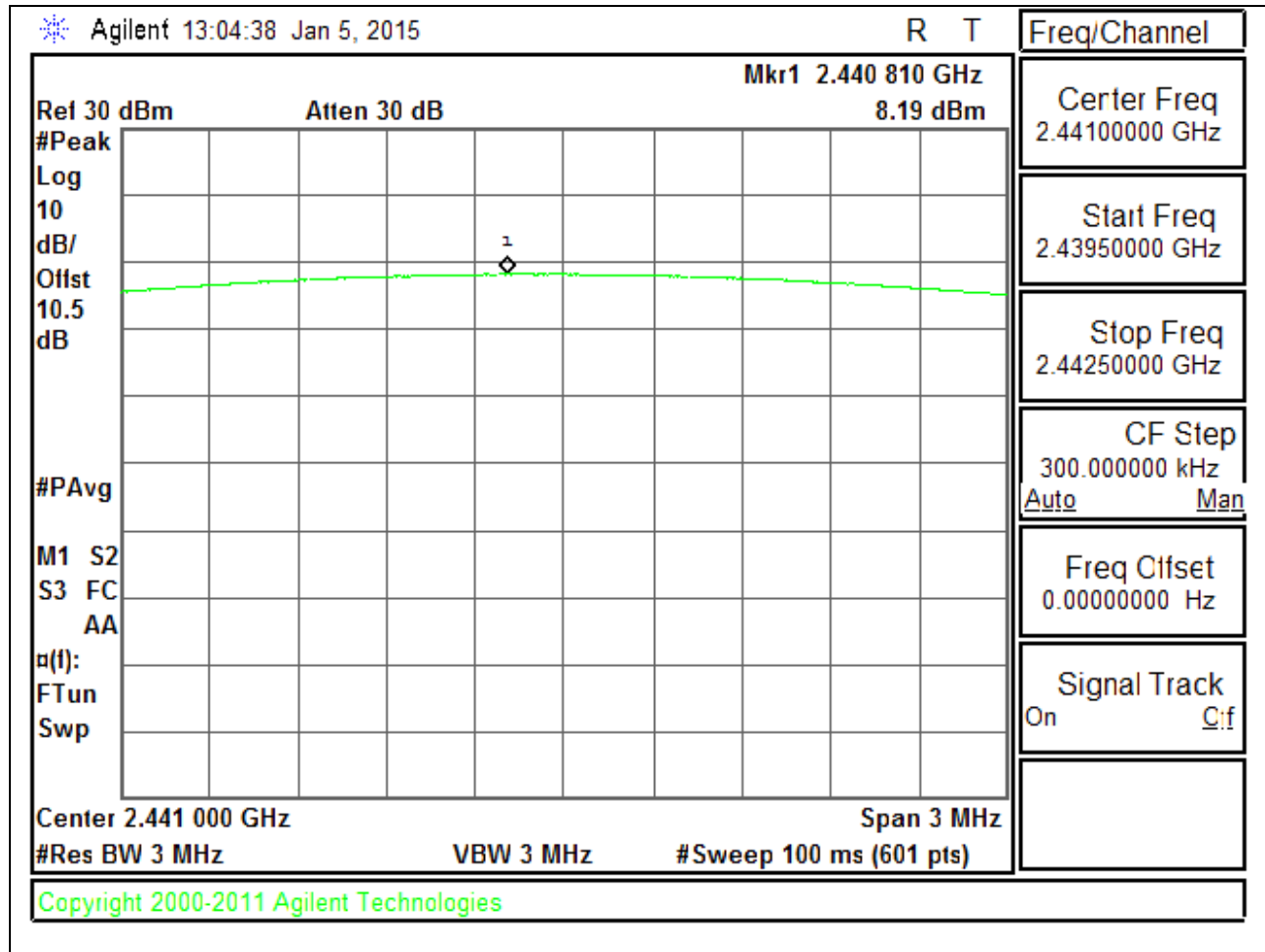


8PSK OUTPUT POWER

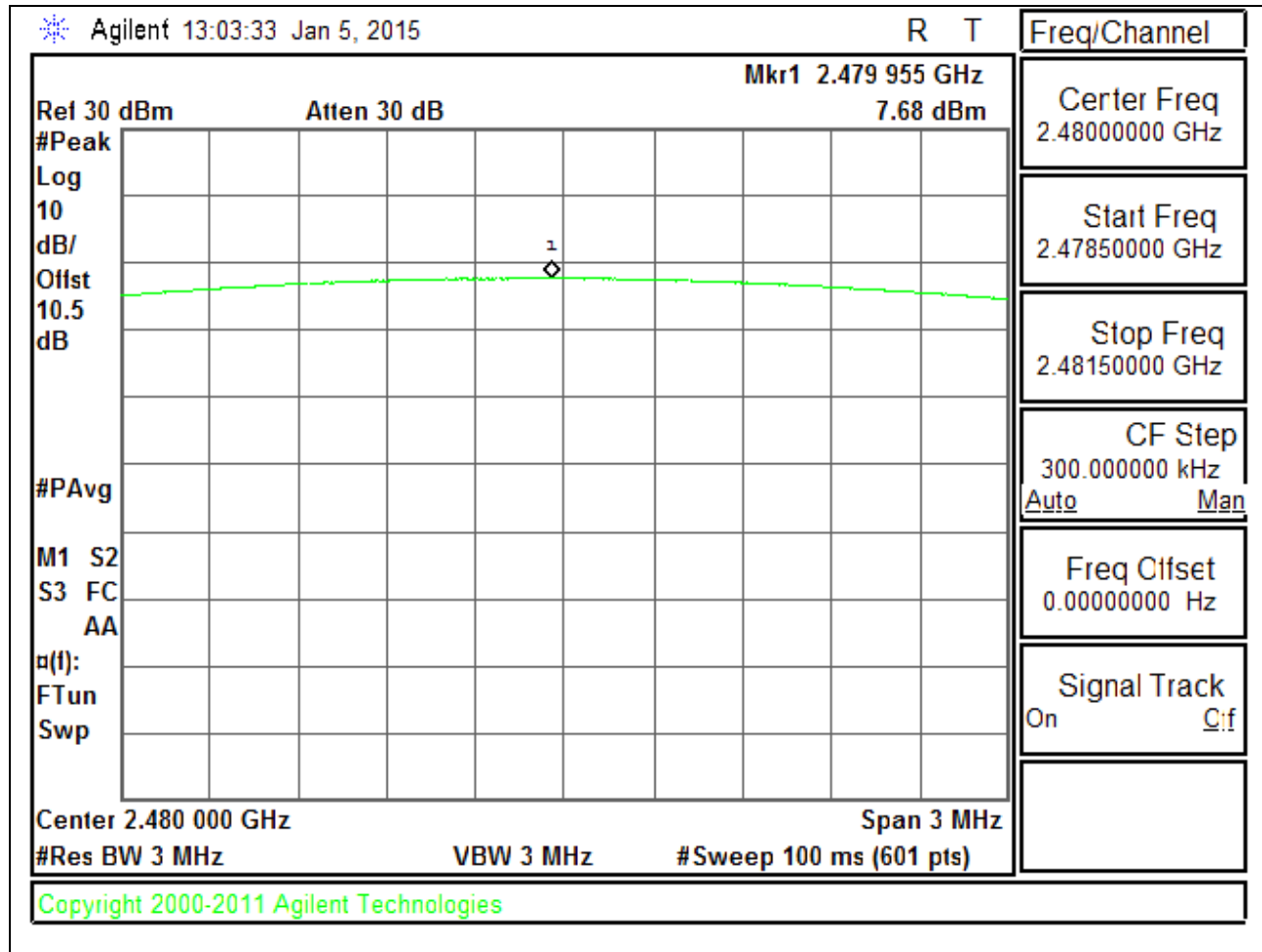
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.6. AVERAGE POWER

LIMIT

None; for reporting purposes only.

TEST PROCEDURE

DA 00-705: The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 10.7 dB (including 10 dB pad and 0.7 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

8.6.1. BASIC DATA RATE GFSK MODULATION

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	6.2
Middle	2441	6.0
High	2480	7.1
Worst		7.1

8.6.2. ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	3.9
Middle	2441	3.6
High	2480	4.7
Worst		4.7

8.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

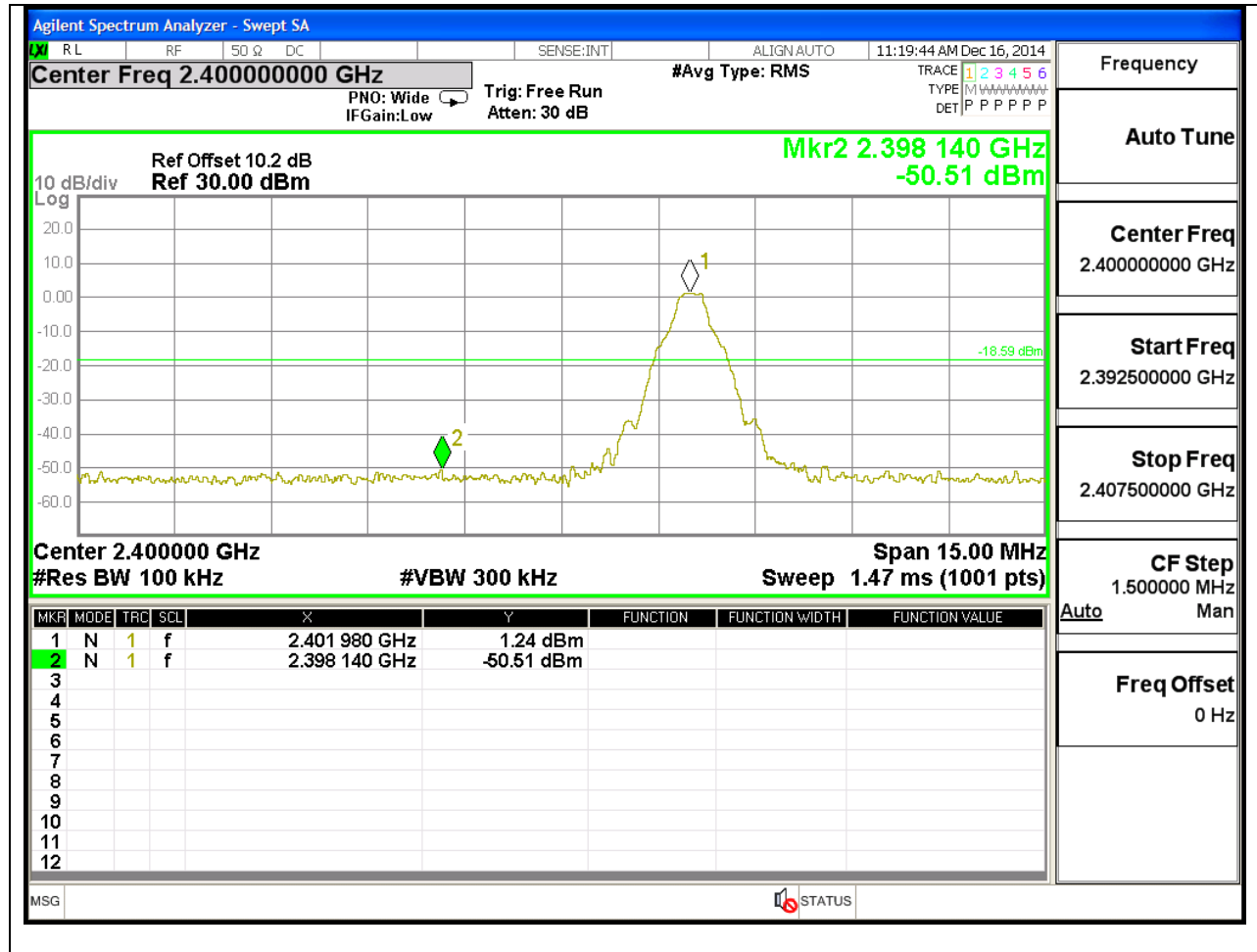
The bandedges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

RESULTS

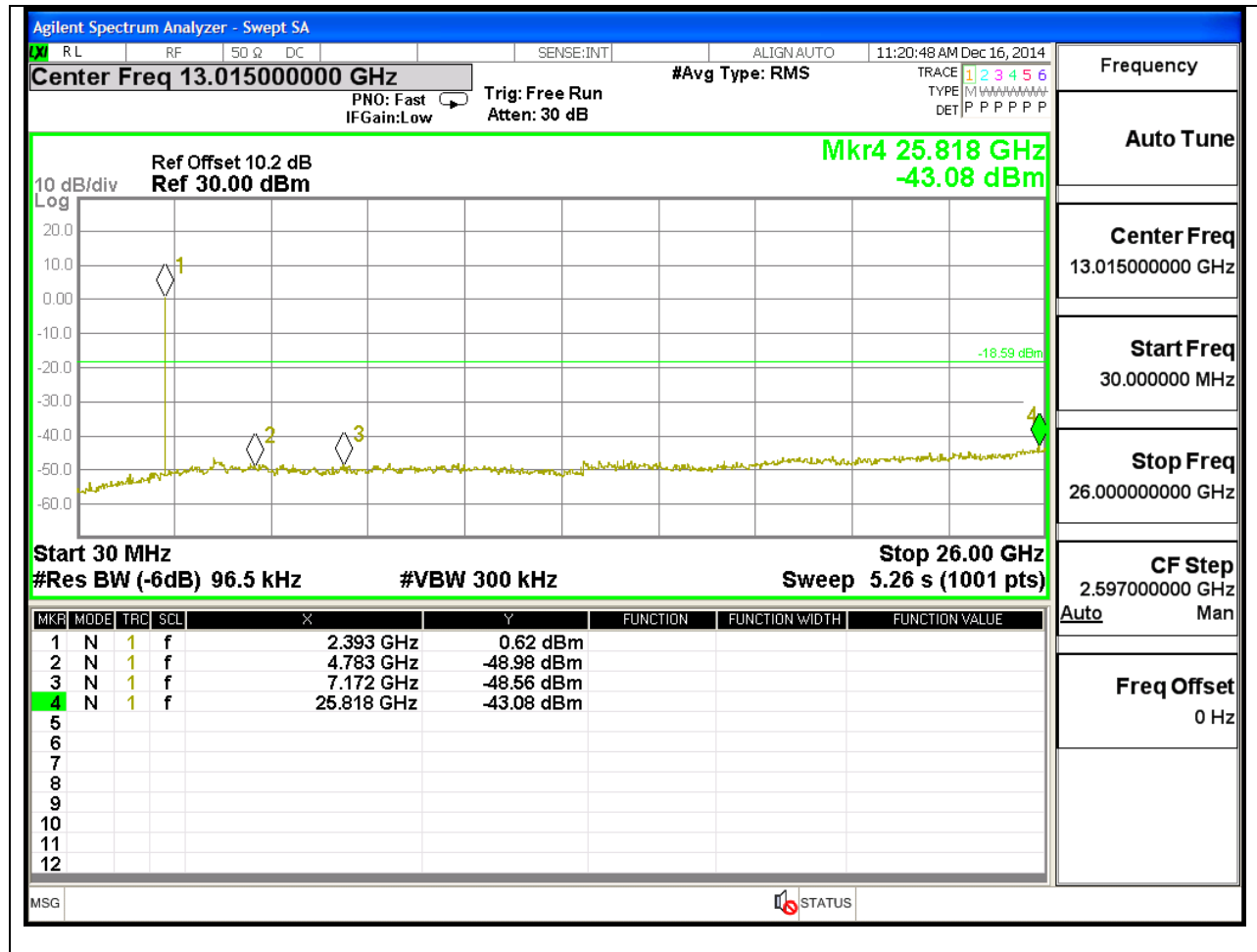
8.7.1. BASIC DATA RATE GFSK MODULATION

SPURIOUS EMISSIONS, LOW CHANNEL

LOW CHANNEL BANDEDGE

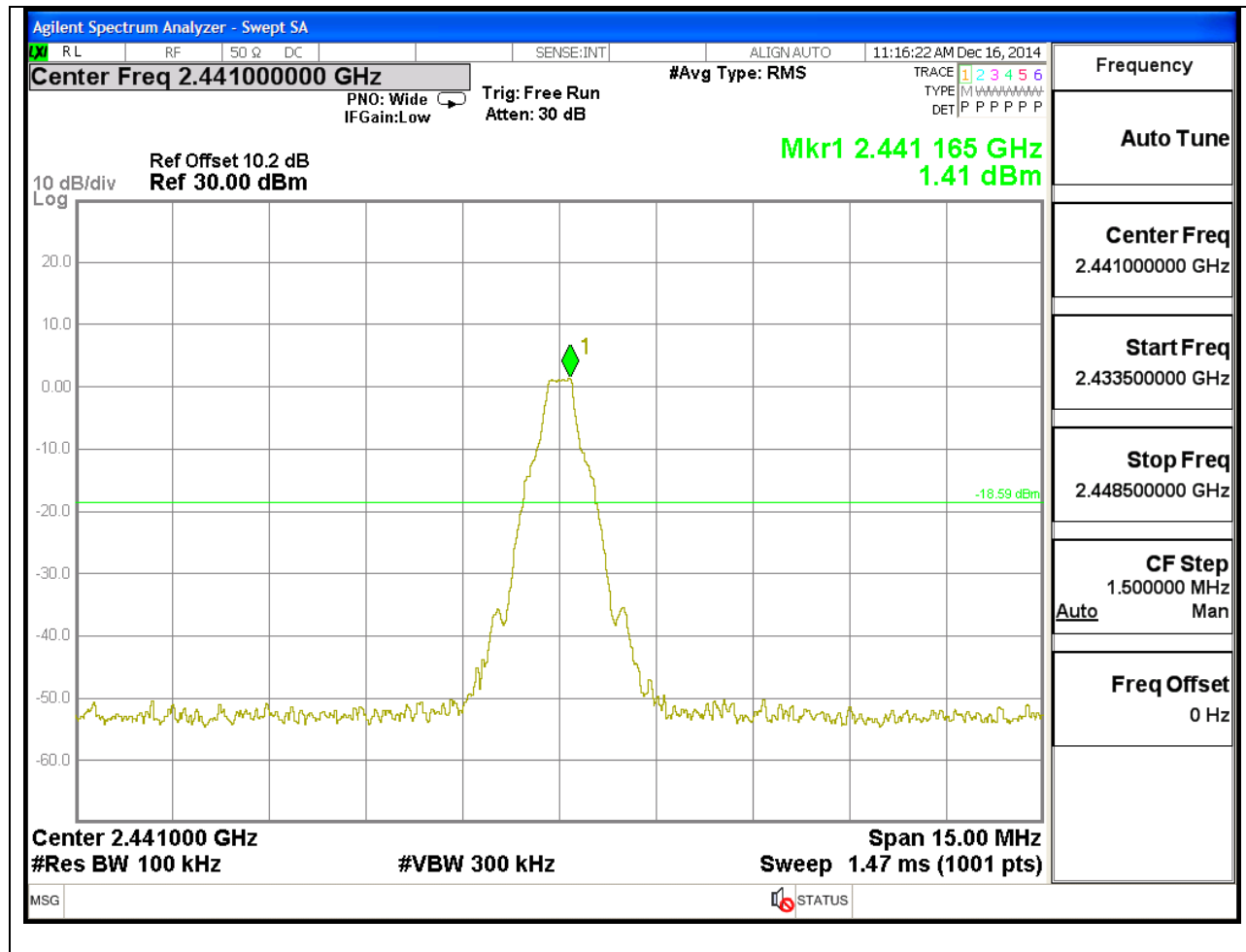


LOW CHANNEL SPURIOUS

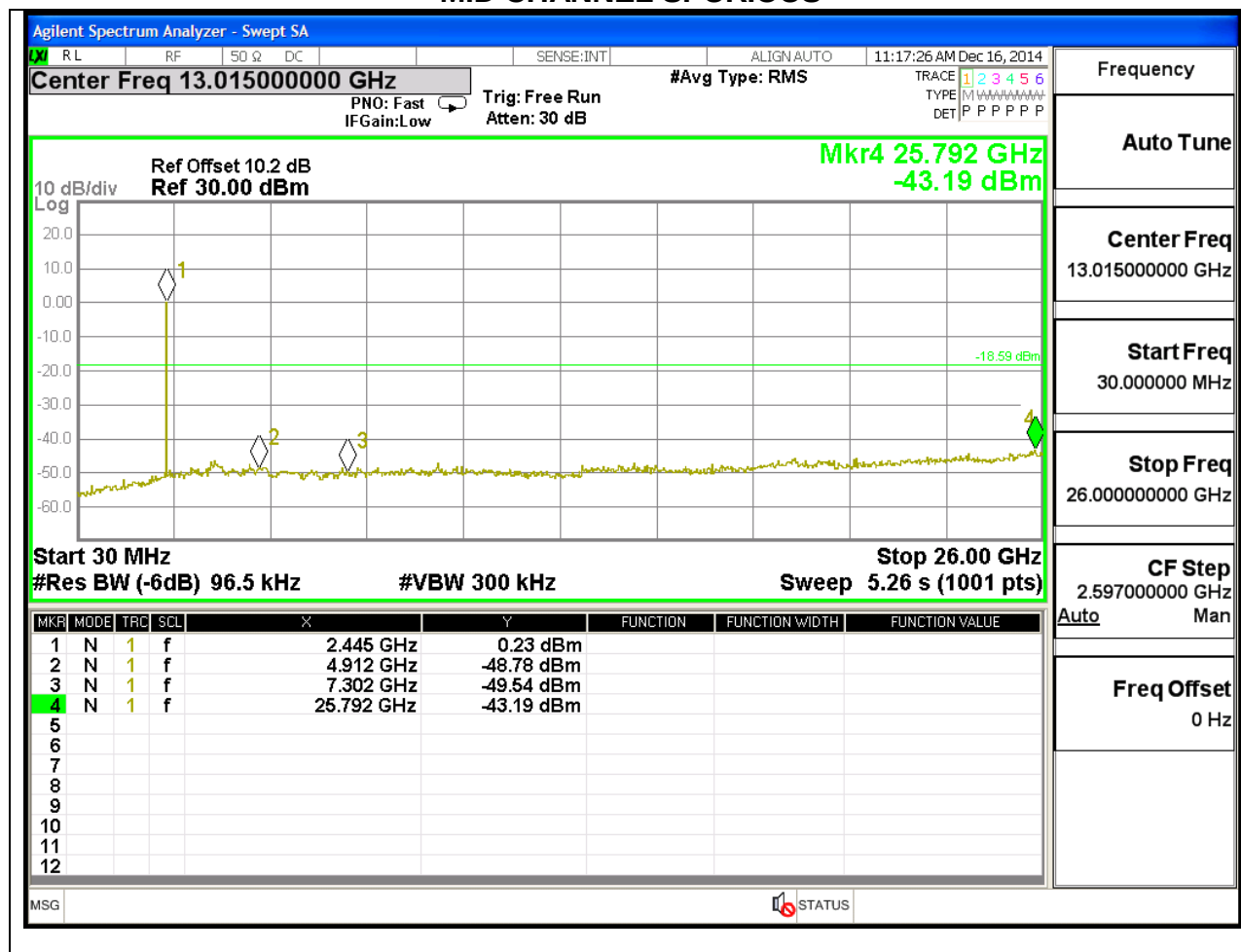


SPURIOUS EMISSIONS, MID CHANNEL

MID CHANNEL REFERENCE

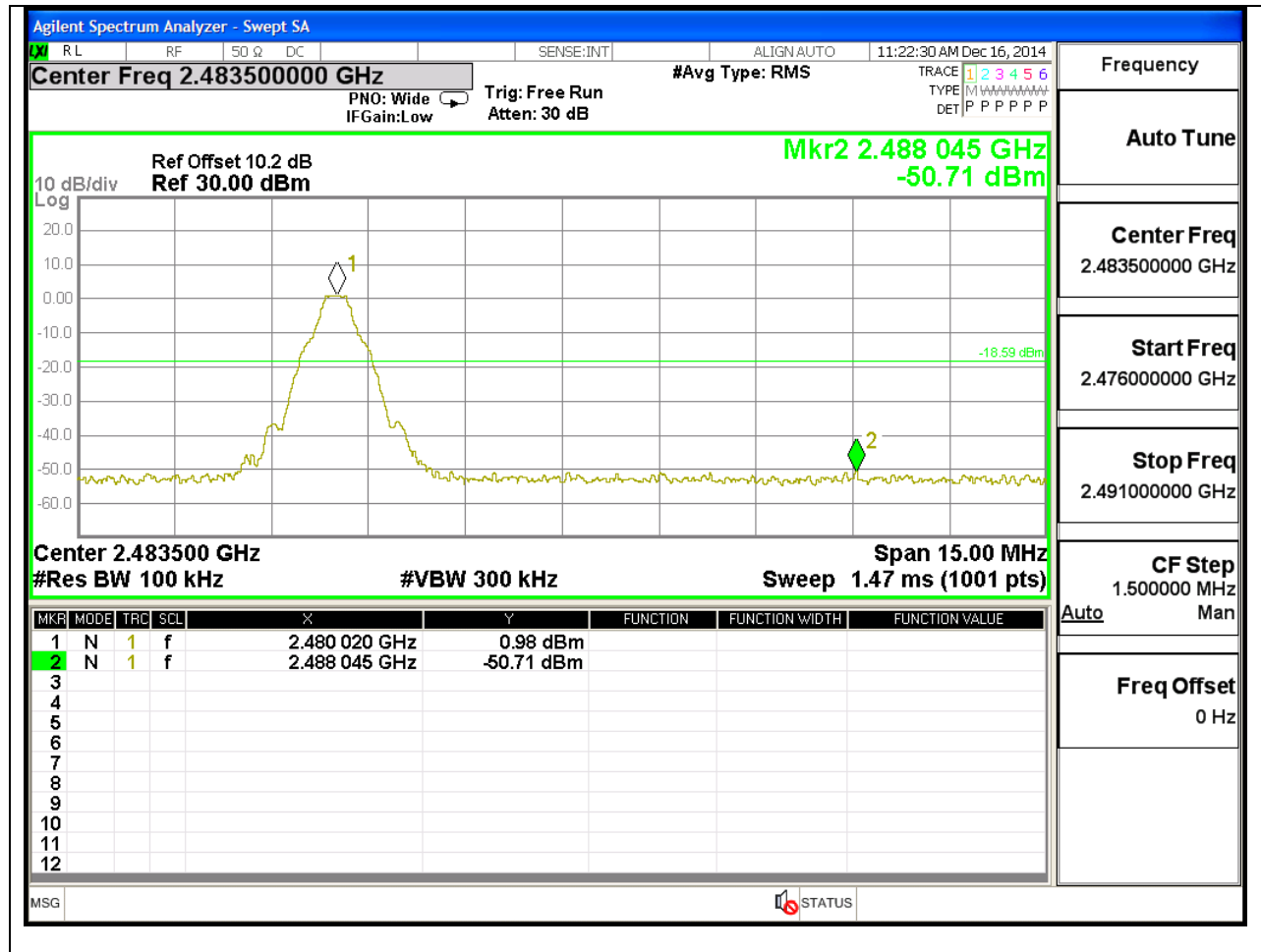


MID CHANNEL SPURIOUS

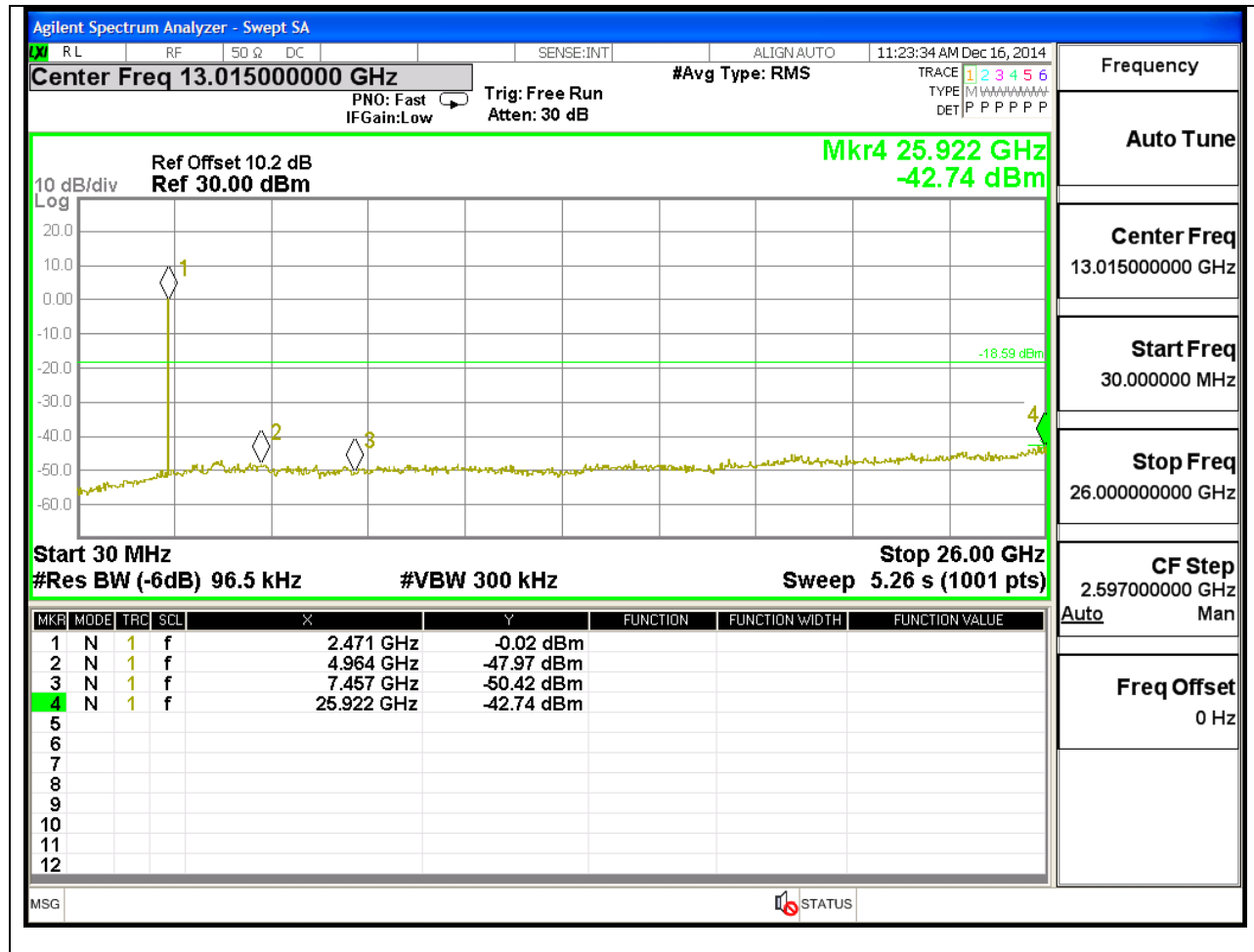


SPURIOUS EMISSIONS, HIGH CHANNEL

HIGH CHANNEL BANDEDGE

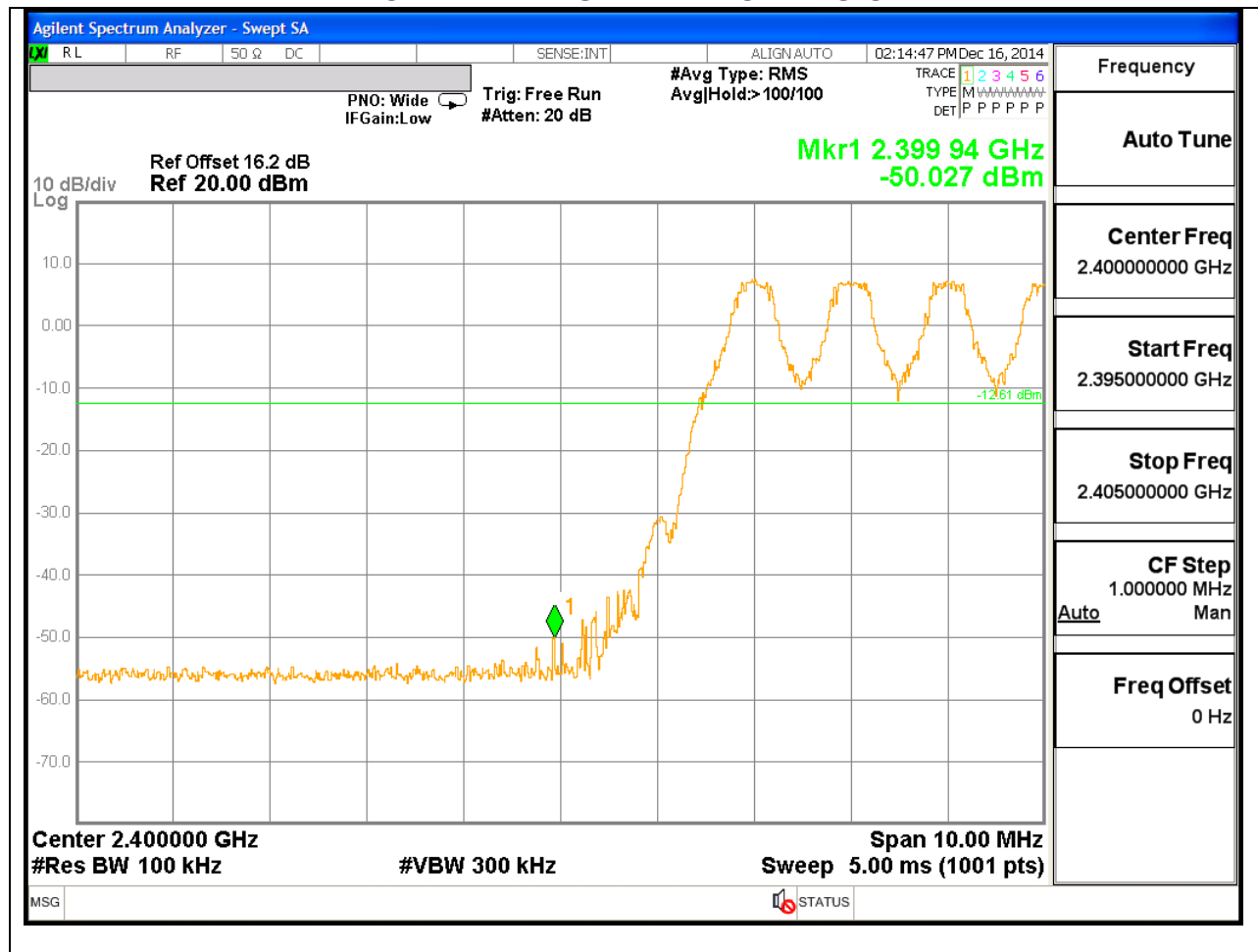


HIGH CHANNEL SPURIOUS

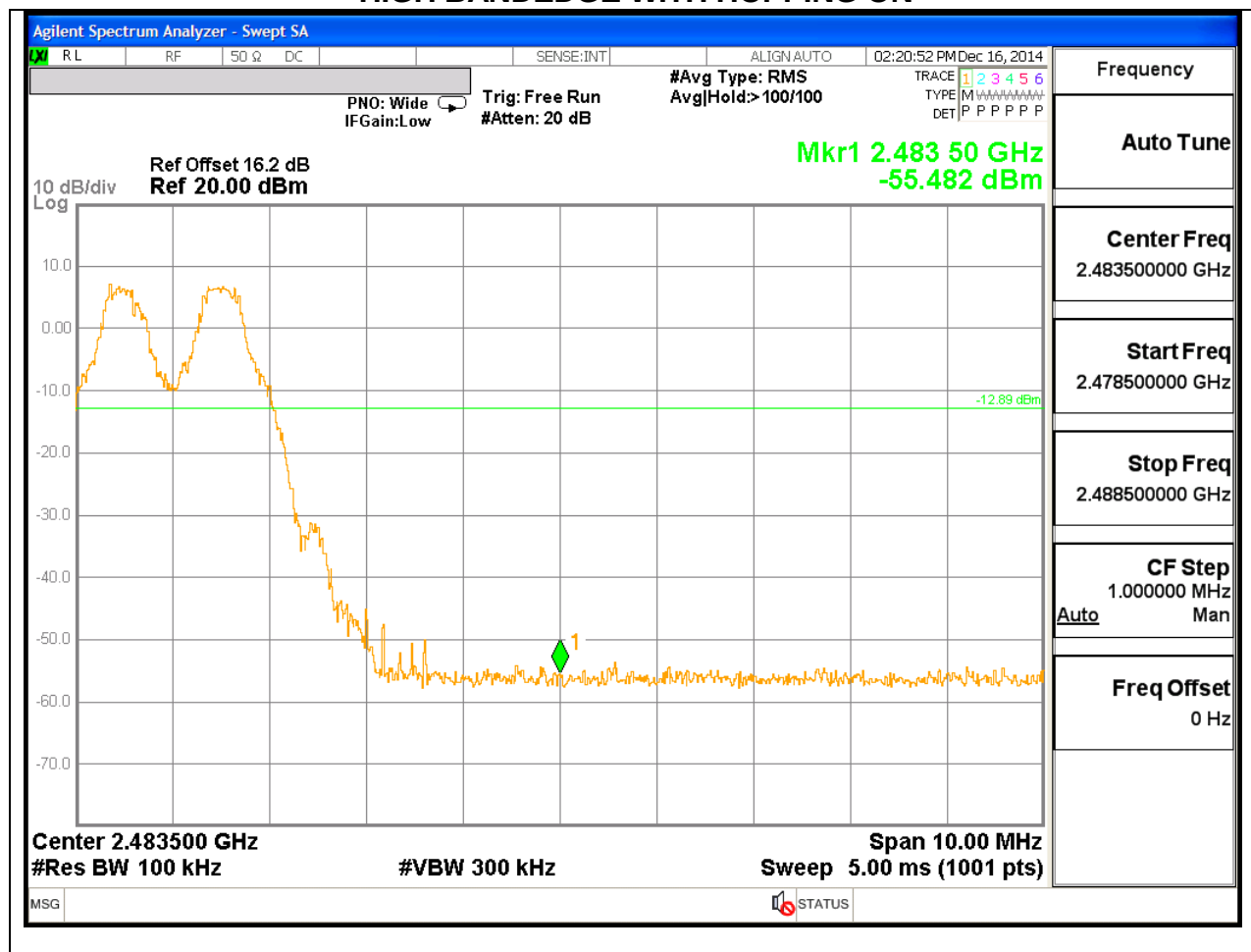


SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

LOW BANDEDGE WITH HOPPING ON



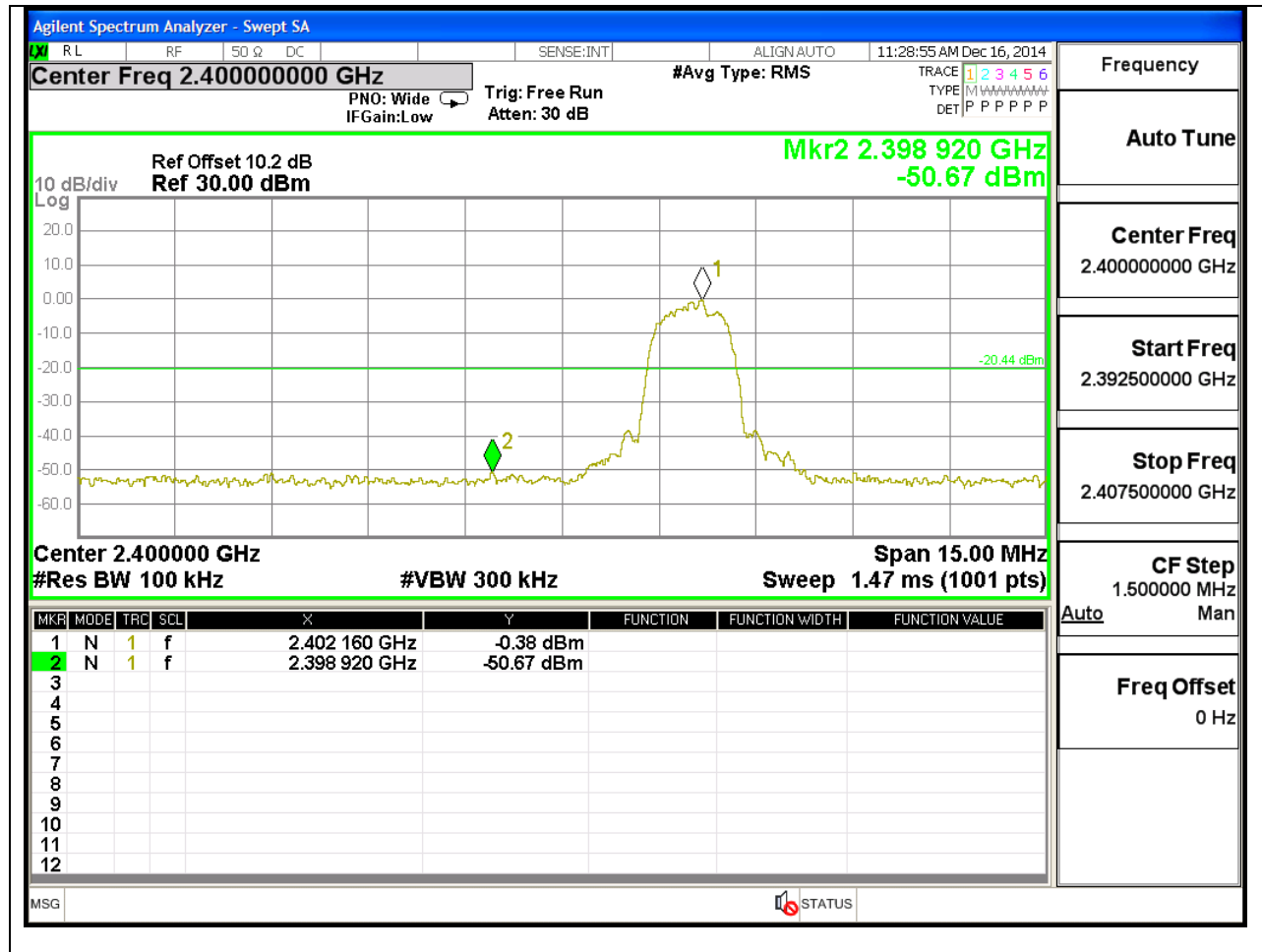
HIGH BANDEDGE WITH HOPPING ON



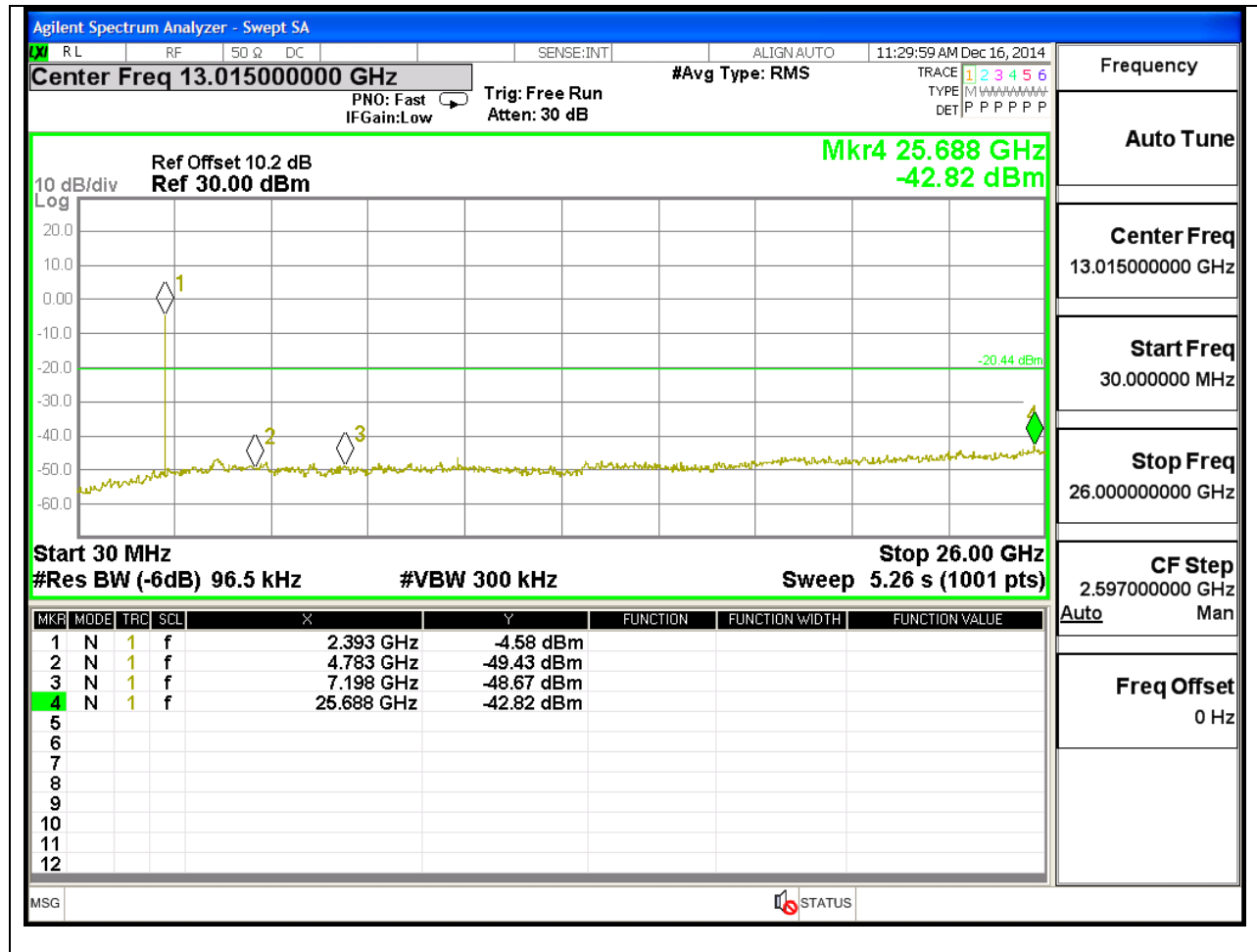
ENHANCED DATA RATE 8PSK MODULATION

SPURIOUS EMISSIONS, LOW CHANNEL

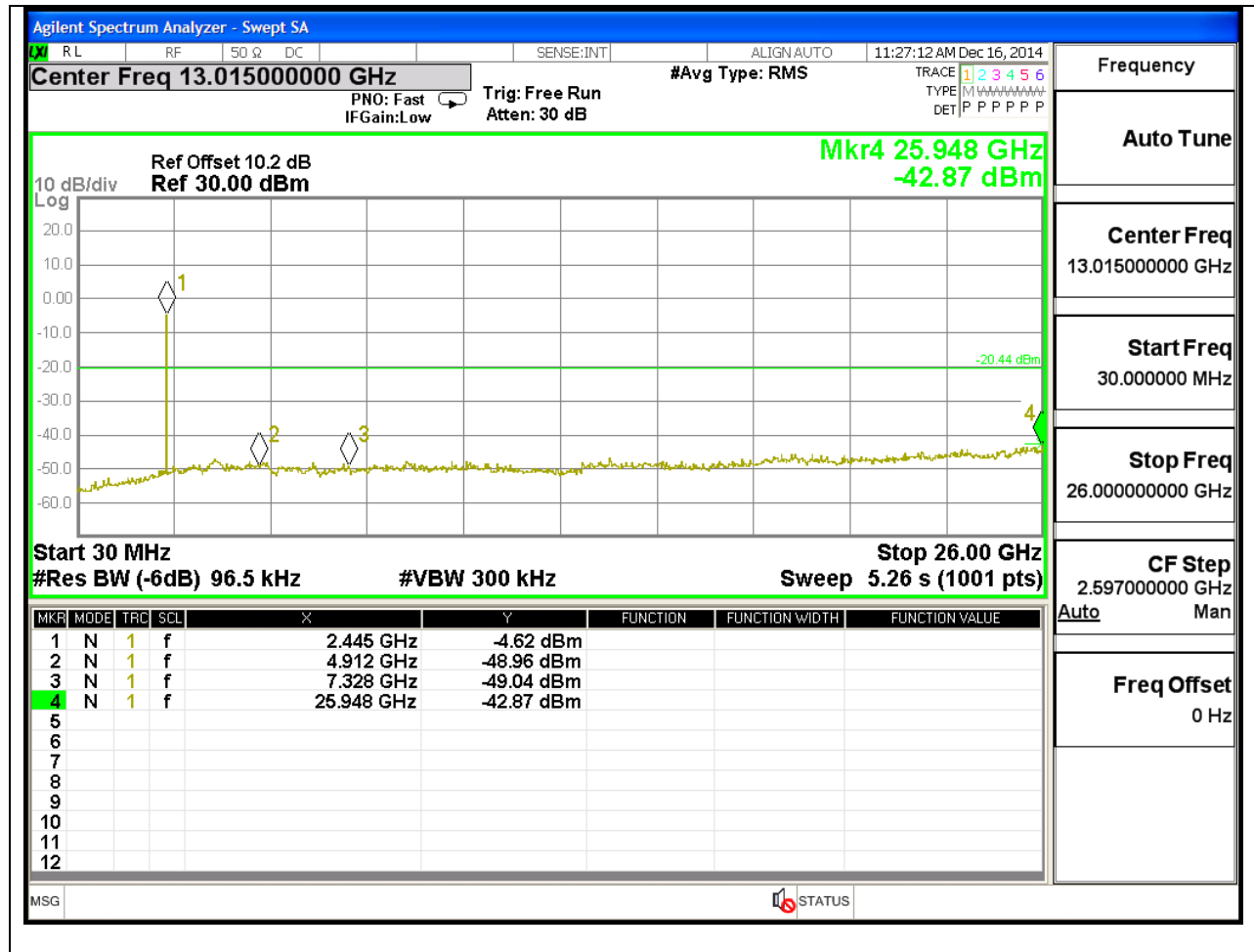
LOW CHANNEL BANDEDGE



LOW CHANNEL SPURIOUS

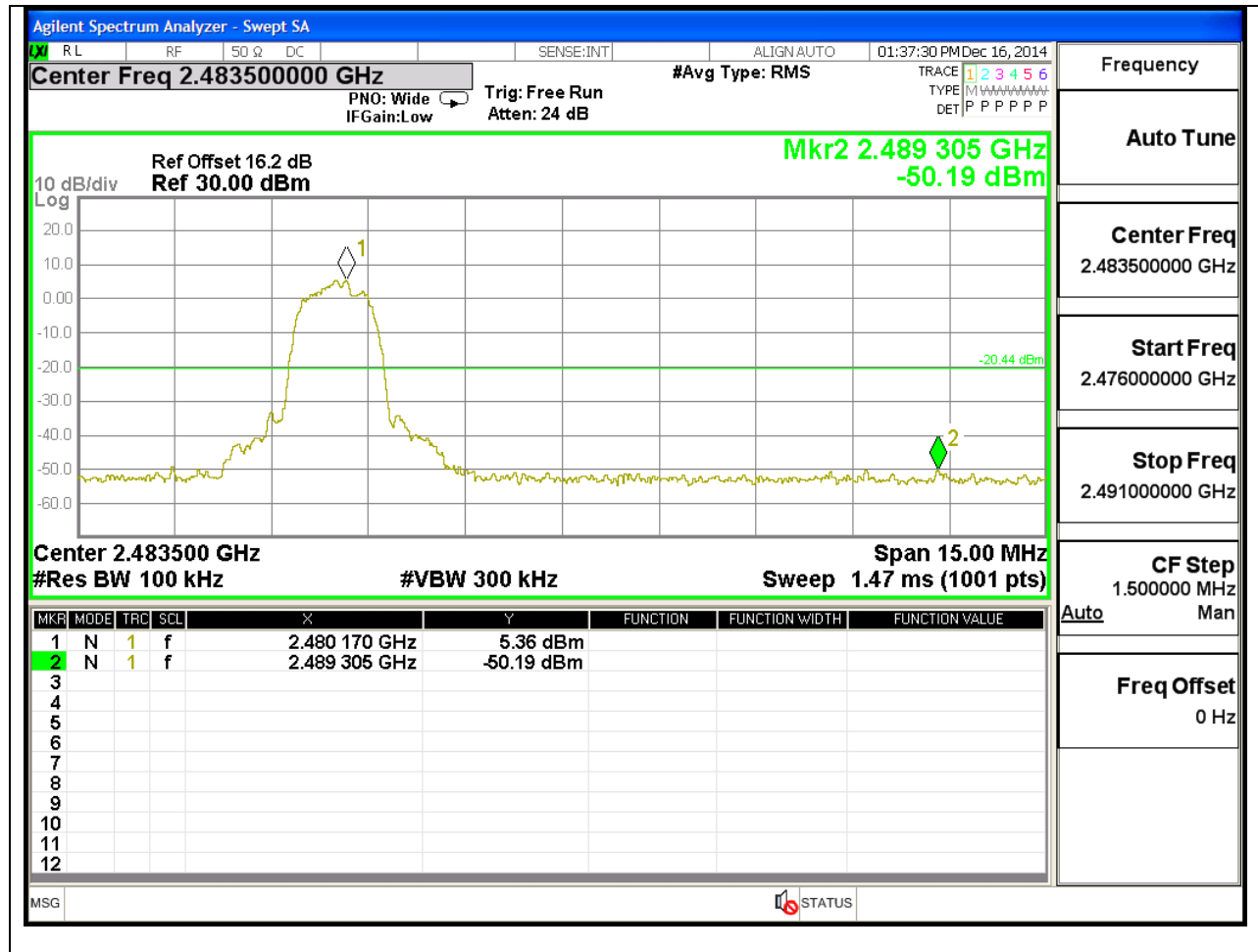


MID CHANNEL SPURIOUS

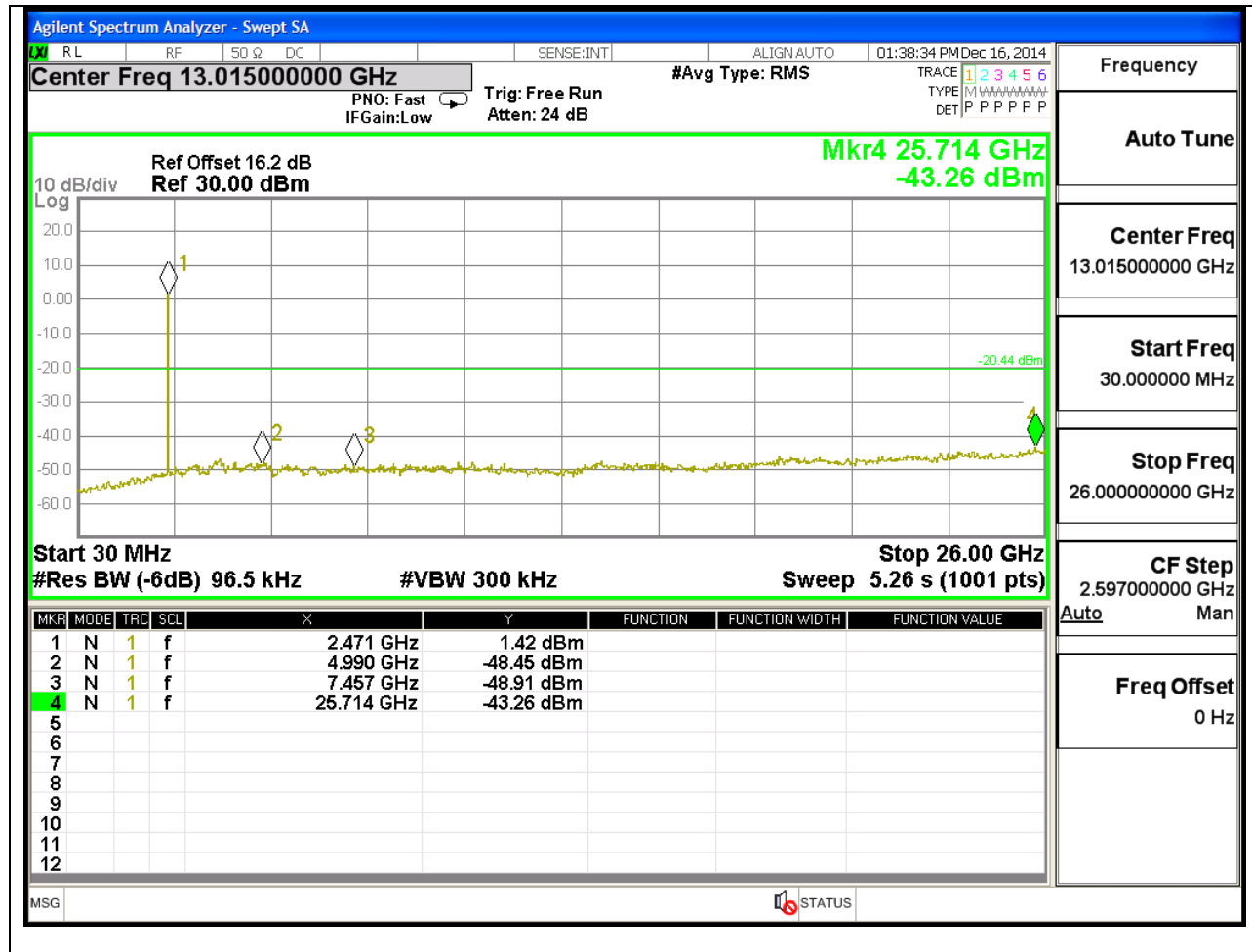


SPURIOUS EMISSIONS, HIGH CHANNEL

HIGH CHANNEL BANDEDGE

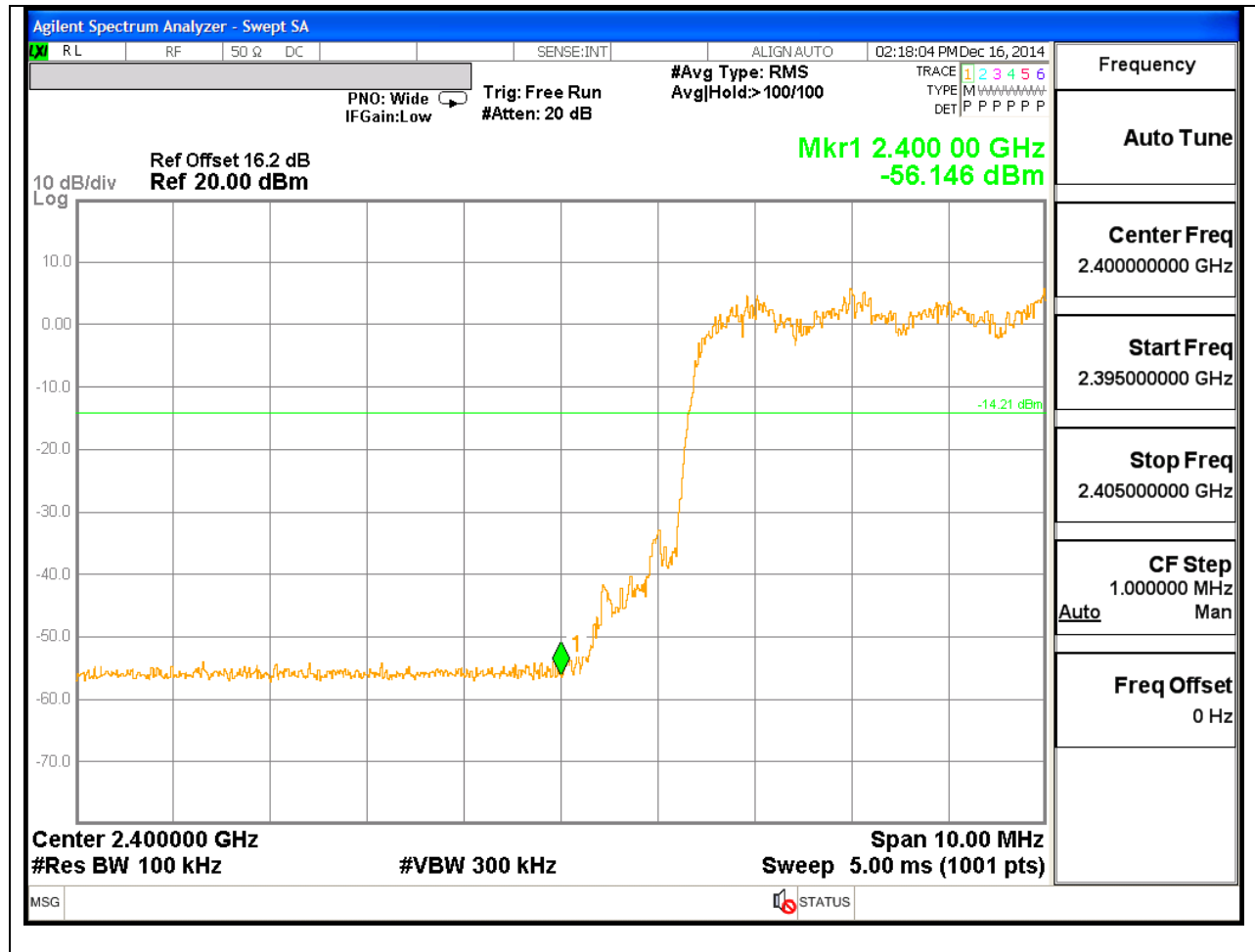


HIGH CHANNEL SPURIOUS

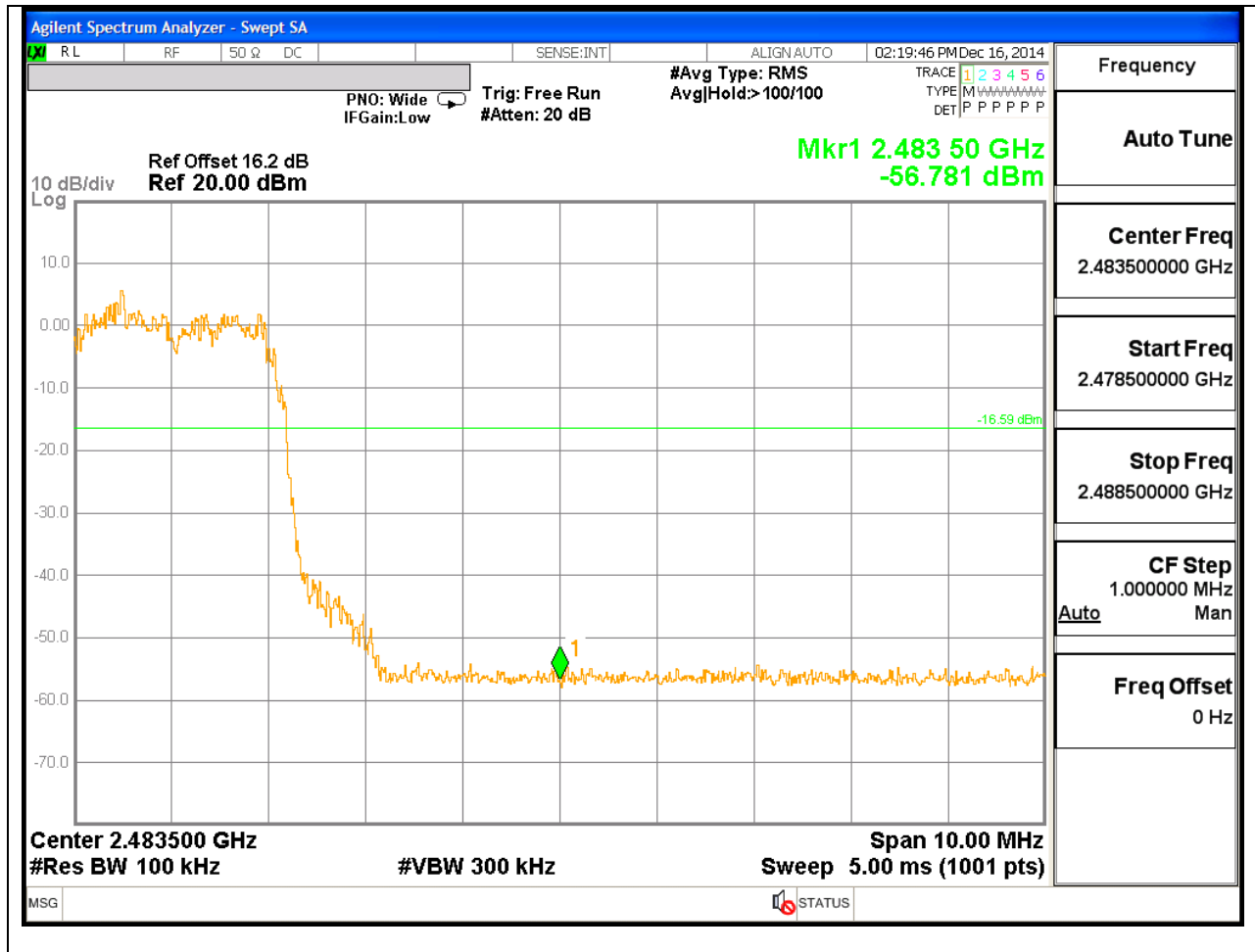


SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

LOW BANDEDGE WITH HOPPING ON



HIGH BANDEDGE WITH HOPPING ON



9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit ($\mu\text{V/m}$) at 3 m	Field Strength Limit (dB $\mu\text{V/m}$) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For band edge measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 1/T (on time) for average measurement.
 $\text{GFSK} = 1/T = 1 / 0.0038\text{s} = 260\text{Hz}$.

The spectrum from 1GHzHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

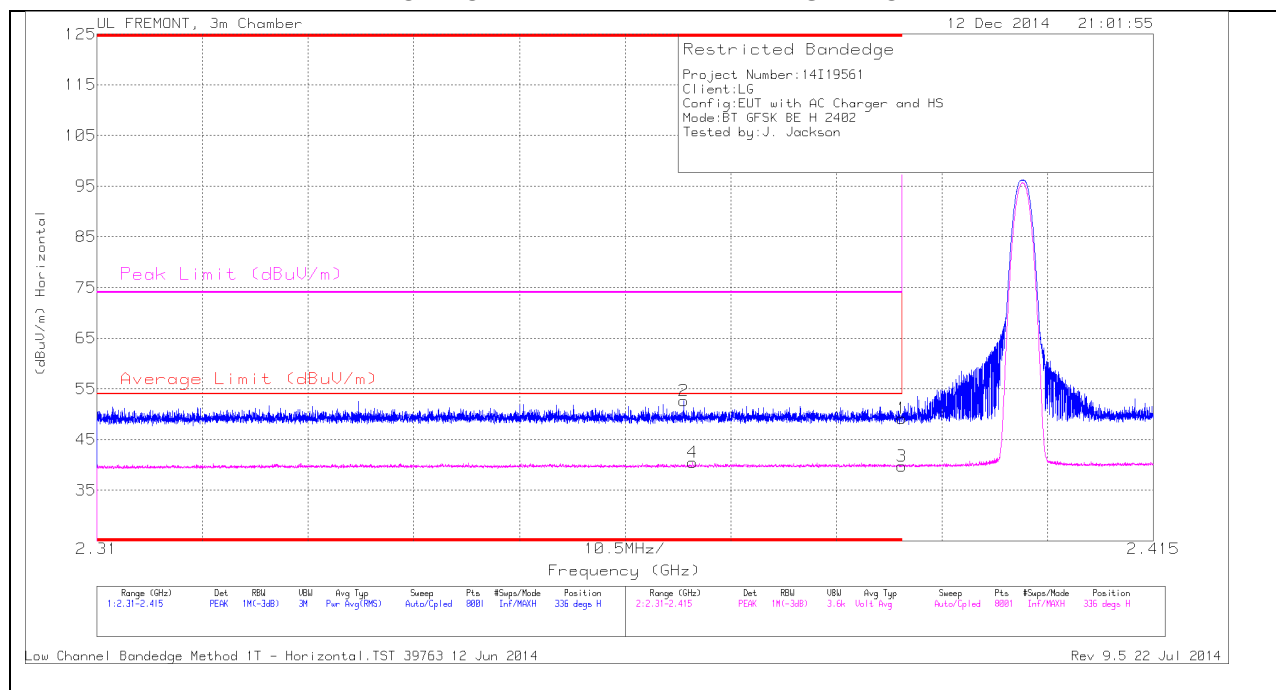
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. BASIC DATA RATE GFSK MODULATION

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT

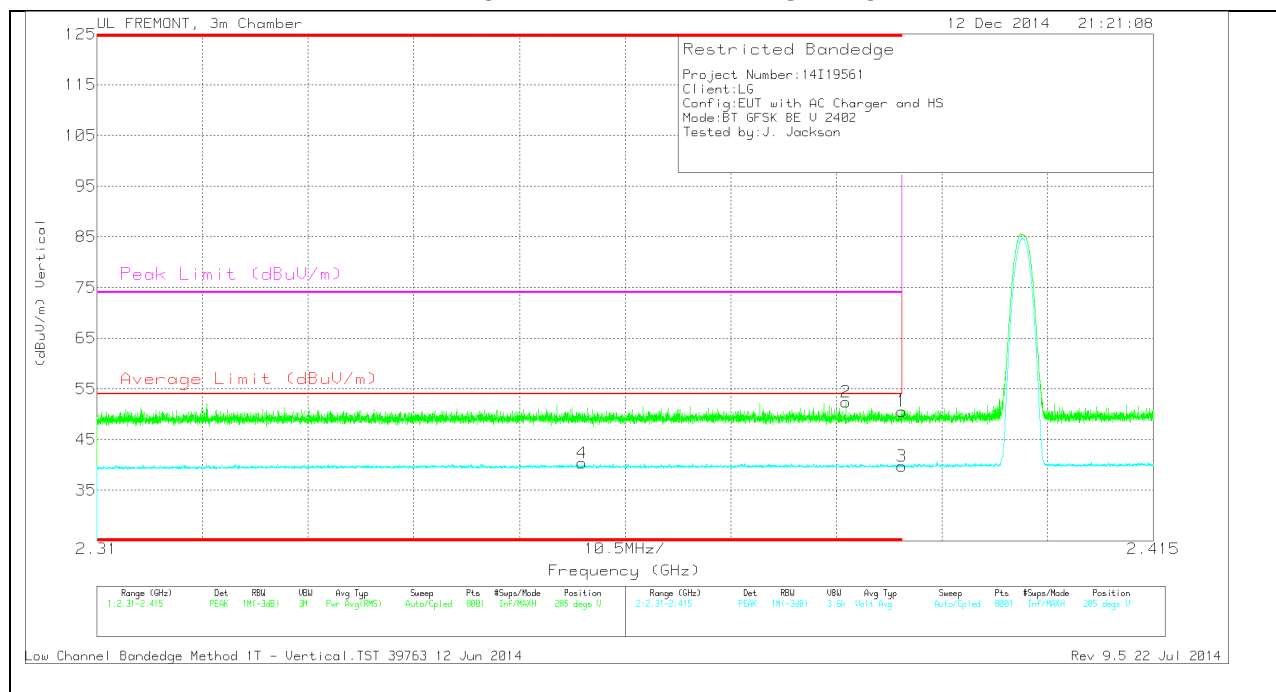


HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	40.2	PK	32.1	-23.1	49.2	-	-	74	-24.8	336	145	H
2	* 2.368	43.75	PK	32	-23.1	52.65	-	-	74	-21.35	336	145	H
3	* 2.39	30.79	VB1T	32.1	-23.1	39.79	54	-14.21	-	-	336	145	H
4	* 2.369	31.57	VB1T	32	-23.1	40.47	54	-13.53	-	-	336	145	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

VERTICAL PEAK AND AVERAGE PLOT



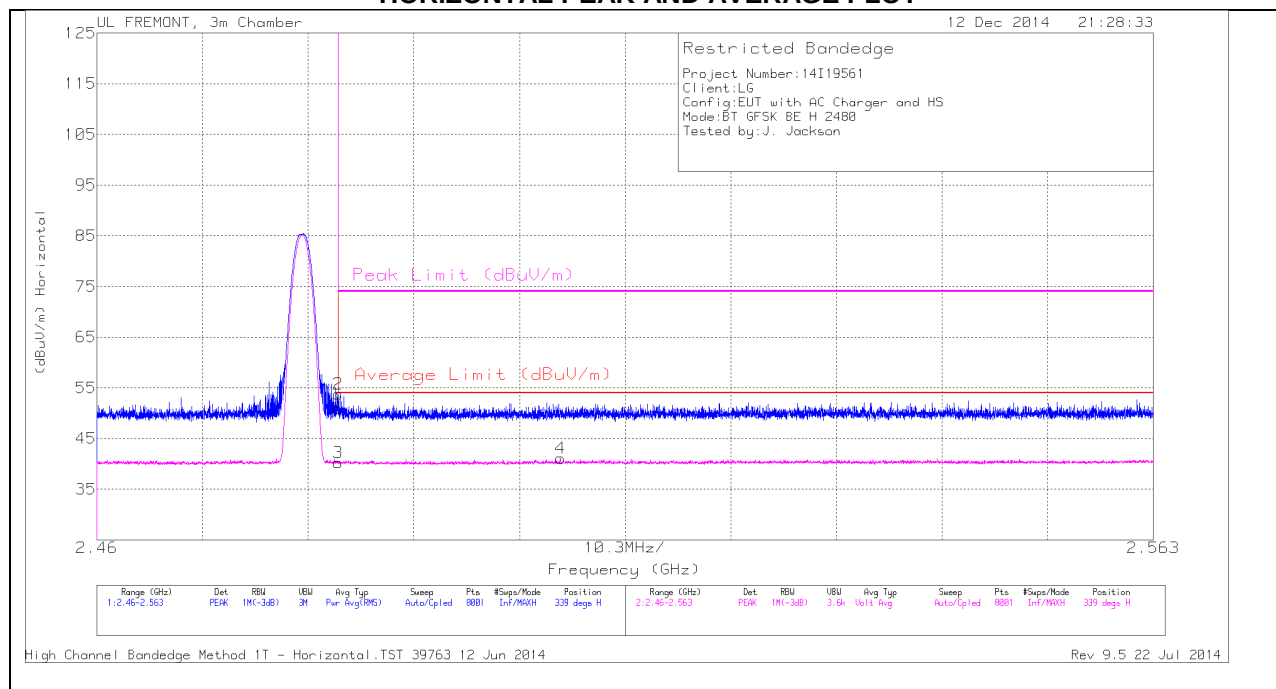
VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.358	31.45	VB1T	32	-23.1	40.35	54	-13.65	-	-	285	392	V
2	* 2.384	43.35	PK	32.1	-23.1	52.35	-	-	74	-21.65	285	392	V
1	* 2.39	41.6	PK	32.1	-23.1	50.6	-	-	74	-23.4	285	392	V
3	* 2.39	30.74	VB1T	32.1	-23.1	39.74	54	-14.26	-	-	285	392	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

AUTHORIZED BANDEDGE (HIGH CHANNEL)

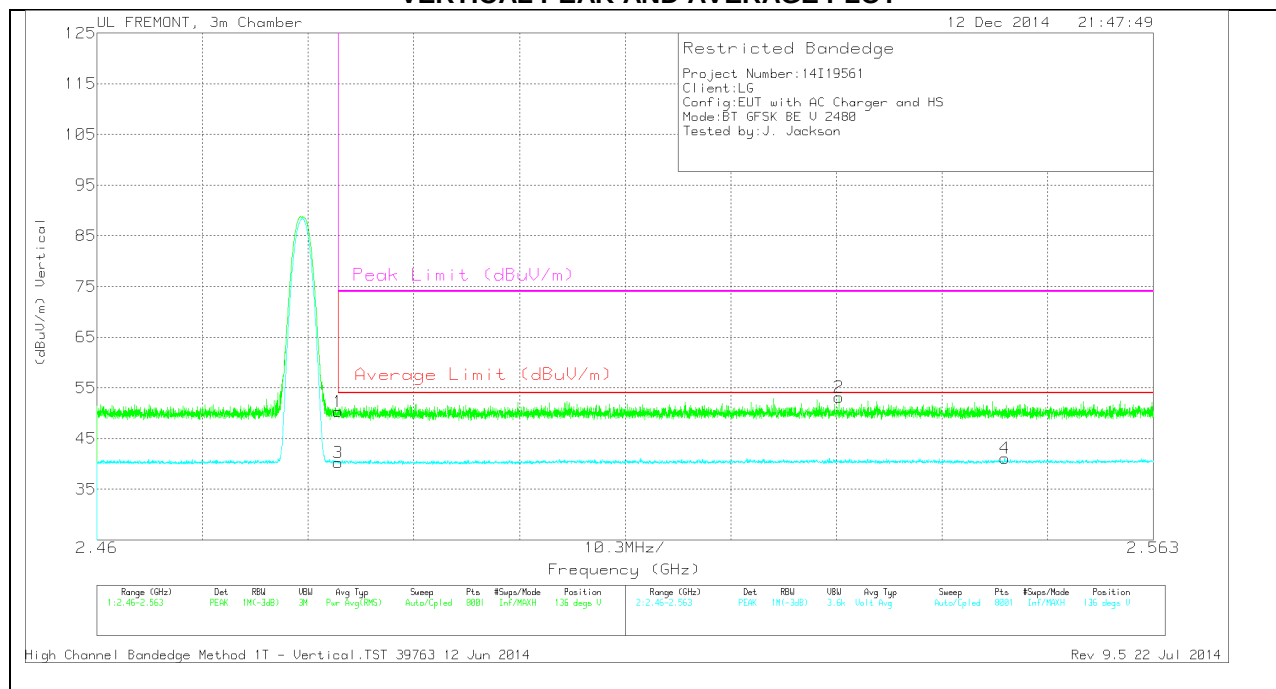
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	41.37	PK	32.3	-22.8	50.87	-	-	74	-23.13	339	382	H
2	2.484	44.23	PK	32.3	-22.8	53.73	-	-	74	-20.27	339	382	H
3	2.484	30.79	VB1T	32.3	-22.8	40.29	54	-13.71	-	-	339	382	H
4	2.505	31.55	VB1T	32.3	-22.8	41.05	54	-12.95	-	-	339	382	H

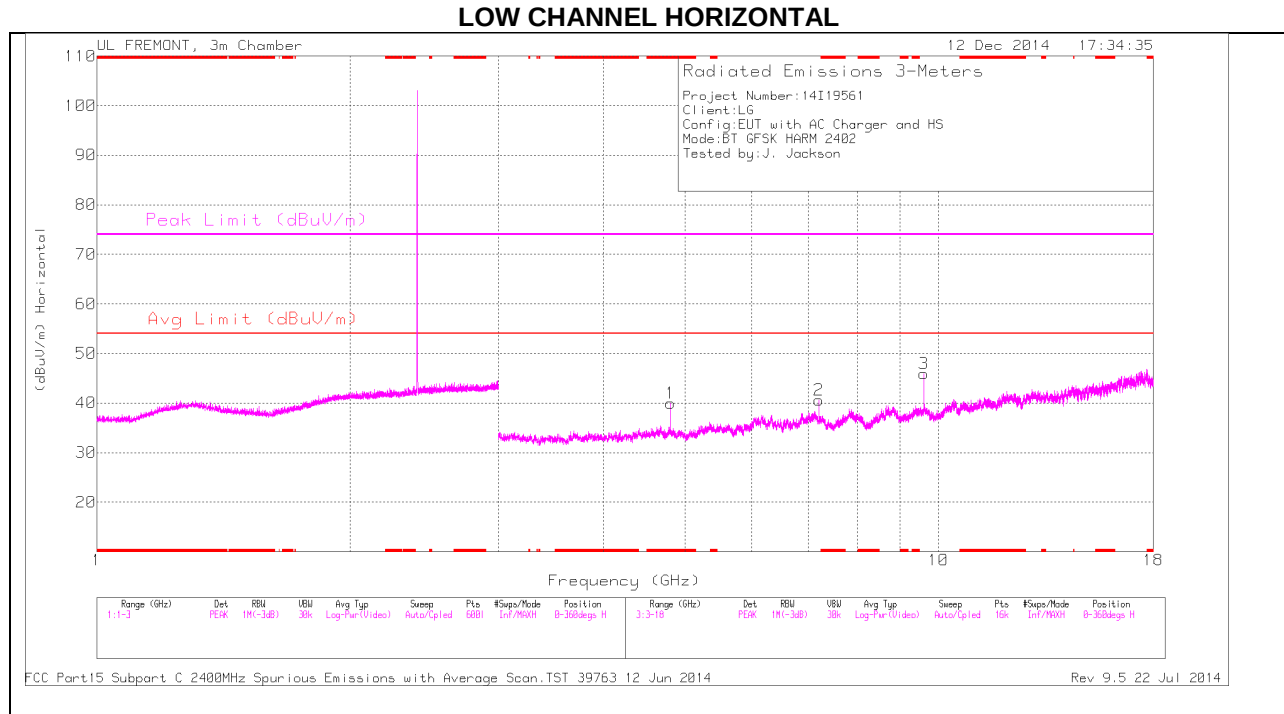
VERTICAL PEAK AND AVERAGE PLOT



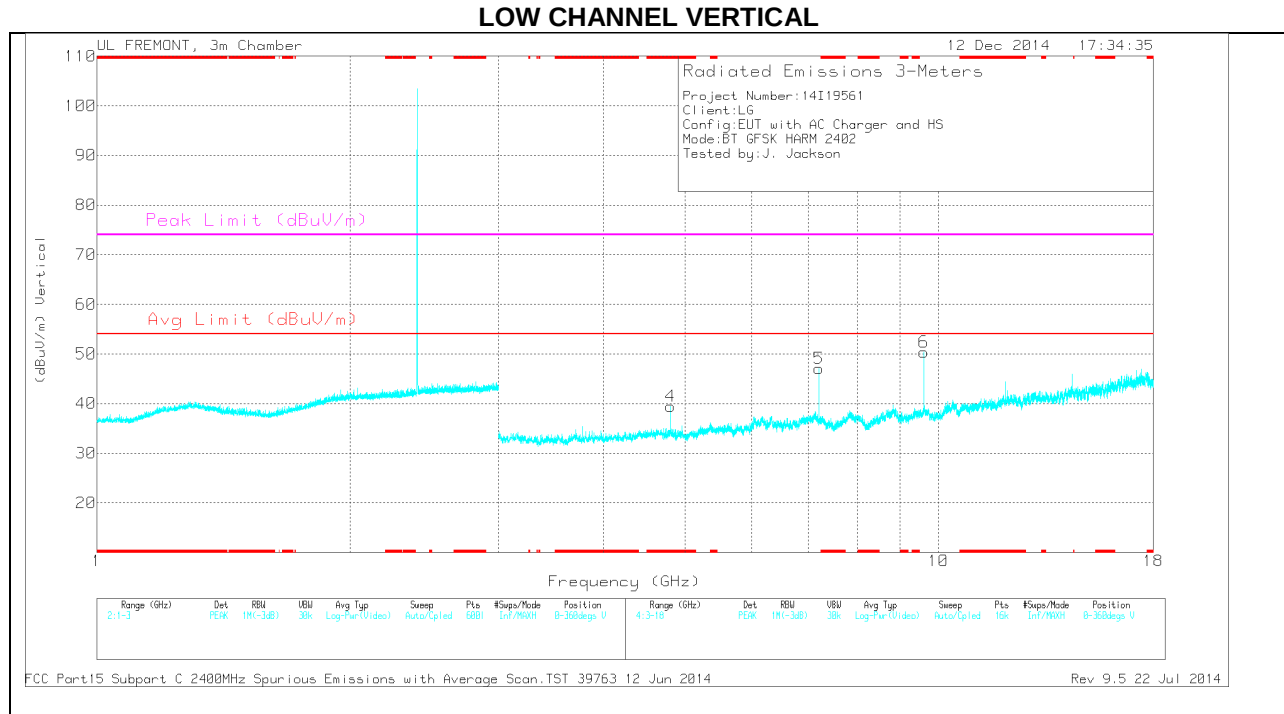
VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	40.76	PK	32.3	-22.8	50.26	-	-	74	-23.74	136	205	V
3	2.484	30.69	VB1T	32.3	-22.8	40.19	54	-13.81	-	-	136	205	V
2	2.532	43.42	PK	32.4	-22.7	53.12	-	-	74	-20.88	136	205	V
4	2.549	31.36	VB1T	32.4	-22.7	41.06	54	-12.94	-	-	136	205	V

HARMONICS AND SPURIOUS EMISSIONS



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.804	36.12	PK	34.1	-30.3	39.92	-	-	74	-34.08	0-360	200	H
4	* 4.804	35.65	PK	34.1	-30.3	39.45	-	-	74	-34.55	0-360	200	V
5	7.205	40.72	PK	35.6	-29.2	47.12	-	-	-	-	0-360	100	V
2	7.206	34.22	PK	35.6	-29.2	40.62	-	-	-	-	0-360	200	H
3	9.607	34.42	PK	36.7	-25.2	45.92	-	-	-	-	0-360	200	H
6	9.608	38.97	PK	36.7	-25.3	50.37	-	-	-	-	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

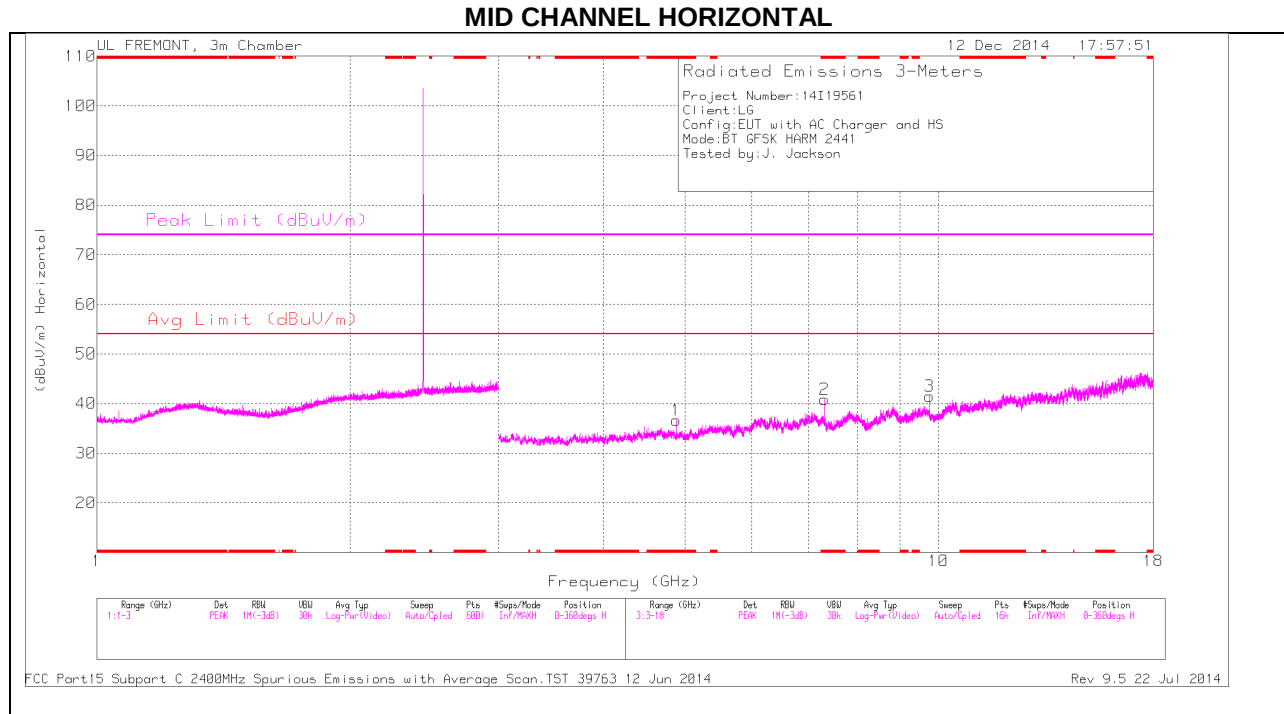
PK - Peak detector

RADIATED EMISSIONS

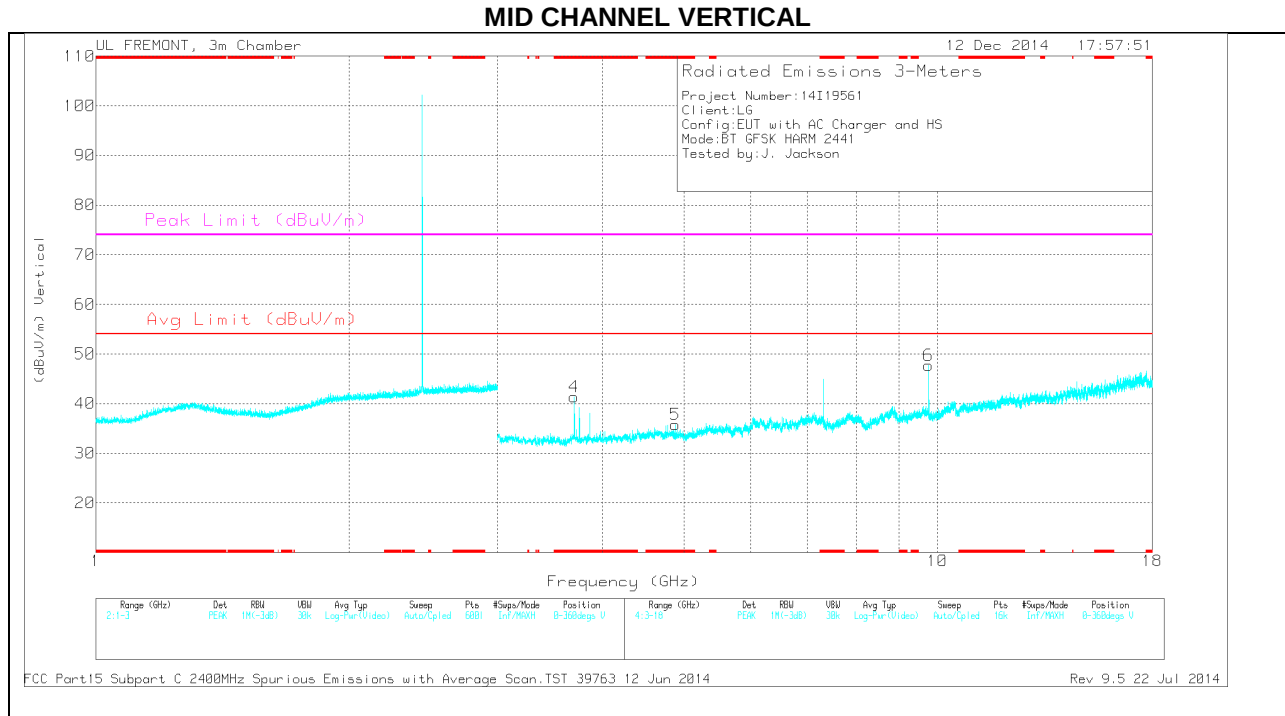
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.804	44.15	PK3	34.1	-30.3	47.95	-	-	74	-26.05	41	275	H
* 4.804	36.73	VB1T	34.1	-30.3	40.53	54	-13.47	-	-	41	275	H
* 4.804	43.73	PK3	34.1	-30.3	47.53	-	-	74	-26.47	163	366	V
* 4.804	35.03	VB1T	34.1	-30.3	38.83	54	-15.17	-	-	163	366	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.881	32.84	PK	34	-30.2	36.64	-	-	74	-37.36	0-360	200	H
2	* 7.323	33.67	PK	35.6	-28.4	40.87	-	-	74	-33.13	0-360	200	H
4	* 3.702	39.01	PK	33.2	-30.8	41.41	-	-	74	-32.59	0-360	200	V
5	* 4.882	31.93	PK	34	-30.1	35.83	-	-	74	-38.17	0-360	200	V
3	9.764	30.64	PK	36.9	-26	41.54	-	-	-	-	0-360	200	H
6	9.764	36.79	PK	36.9	-26	47.69	-	-	-	-	0-360	100	V
1	* 4.881	32.84	PK	34	-30.2	36.64	-	-	74	-37.36	0-360	200	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

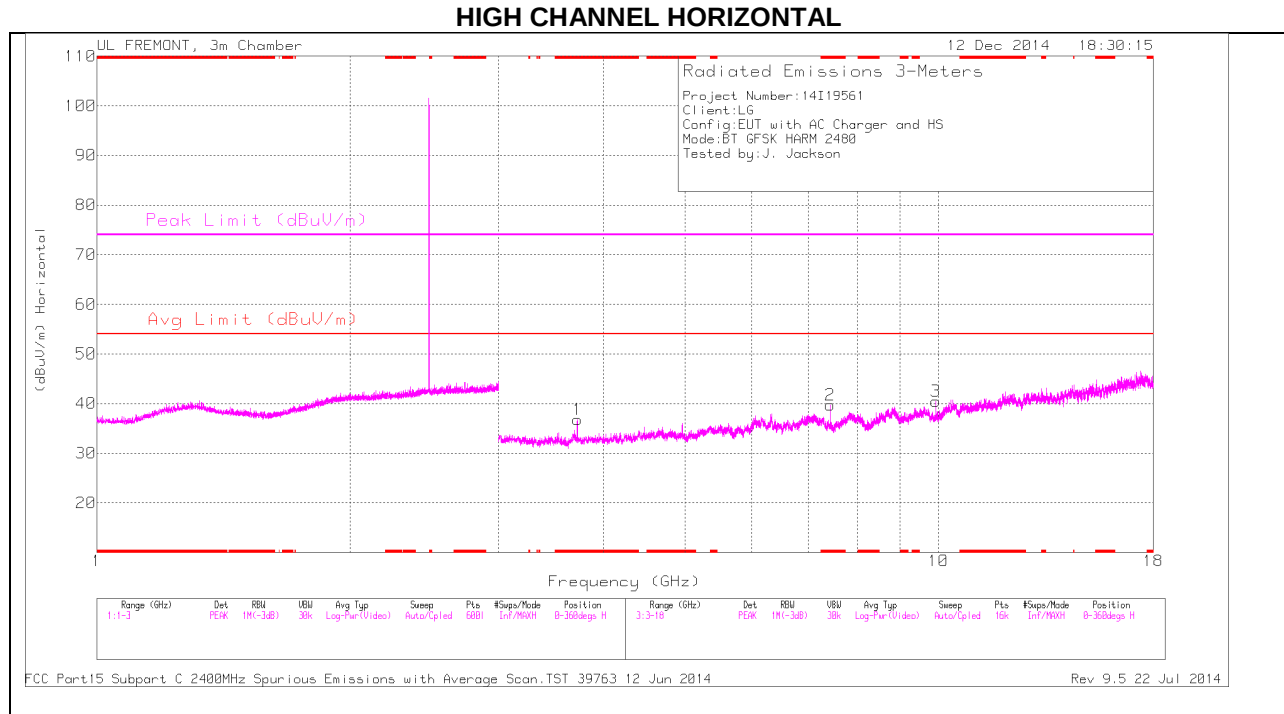
PK - Peak detector

RADIATED EMISSIONS

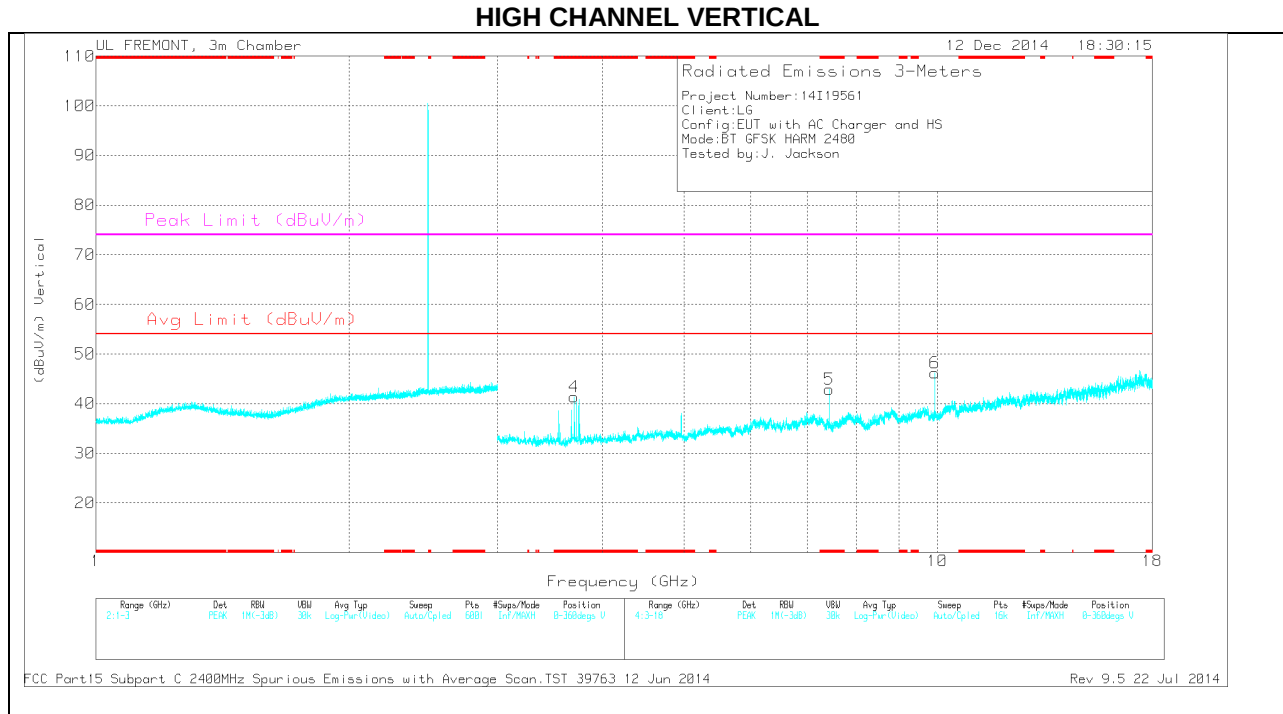
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.882	42.51	PK3	34	-30.1	46.41	-	-	74	-27.59	82	244	H
* 4.882	33.7	VB1T	34	-30.1	37.6	54	-16.4	-	-	82	244	H
* 7.323	44.2	PK3	35.6	-28.4	51.4	-	-	74	-22.6	39	341	H
* 7.323	36.87	VB1T	35.6	-28.4	44.07	54	-9.93	-	-	39	341	H
* 3.702	42.23	PK3	33.2	-30.8	44.63	-	-	74	-29.37	353	115	V
* 3.702	29.35	VB1T	33.2	-30.8	31.75	54	-22.25	-	-	353	115	V
* 4.882	41.74	PK3	34	-30.1	45.64	-	-	74	-28.36	227	287	V
* 4.882	32.85	VB1T	34	-30.1	36.75	54	-17.25	-	-	227	287	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.723	34.52	PK	33.2	-30.9	36.82	-	-	74	-37.18	0-360	200	H
2	* 7.44	32.86	PK	35.7	-28.9	39.66	-	-	74	-34.34	0-360	200	H
4	* 3.701	38.94	PK	33.2	-30.8	41.34	-	-	74	-32.66	0-360	100	V
5	* 7.44	36.12	PK	35.7	-28.9	42.92	-	-	74	-31.08	0-360	200	V
6	9.919	34.89	PK	36.9	-25.6	46.19	-	-	-	-	0-360	100	V
3	9.92	29.18	PK	36.9	-25.6	40.48	-	-	-	-	0-360	200	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RADIATED EMISSIONS

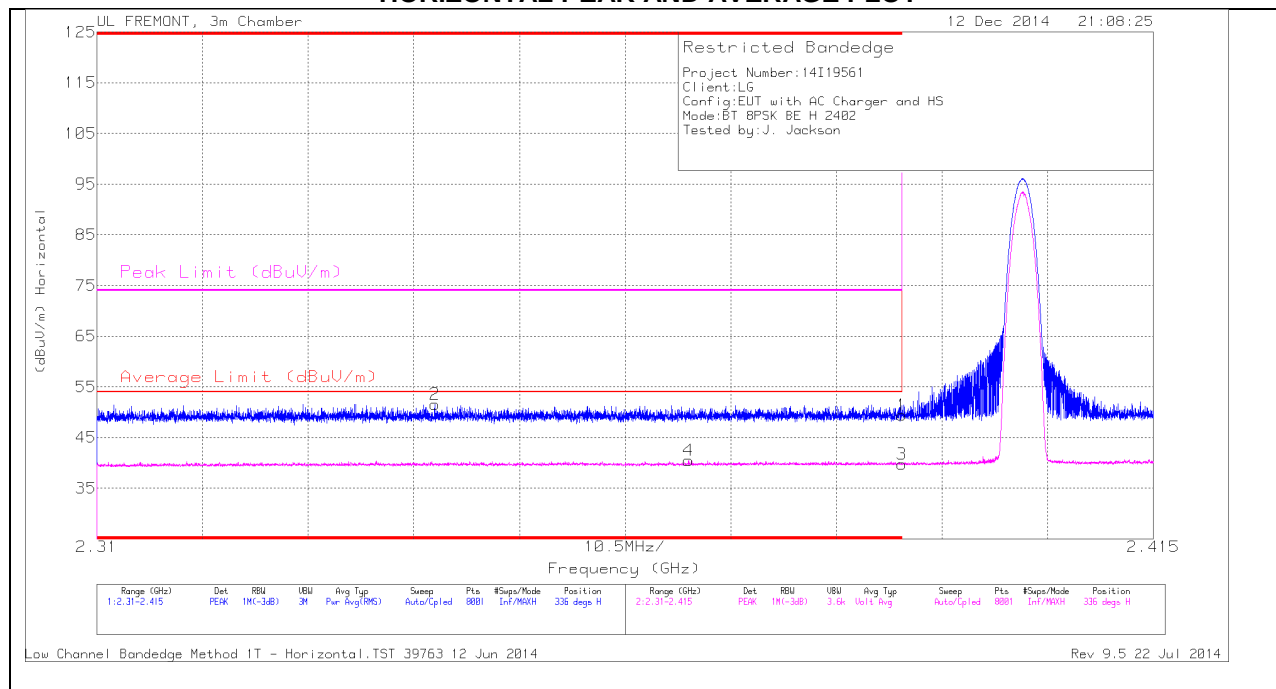
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.719	40.28	PK3	33.2	-30.9	42.58	-	-	74	-31.42	120	200	H
* 7.44	41.87	PK3	35.7	-28.9	48.67	-	-	74	-25.33	213	299	H
* 7.44	32.39	VB1T	35.7	-28.9	39.19	54	-14.81	-	-	213	299	H
* 3.702	40.75	PK3	33.2	-30.8	43.15	-	-	74	-30.85	216	100	V
* 7.44	44.65	PK3	35.7	-28.9	51.45	-	-	74	-22.55	77	226	V
* 7.44	36.19	VB1T	35.7	-28.9	42.99	54	-11.01	-	-	77	226	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013

9.2.2. ENHANCED DATA RATE 8PSK MODULATION RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT

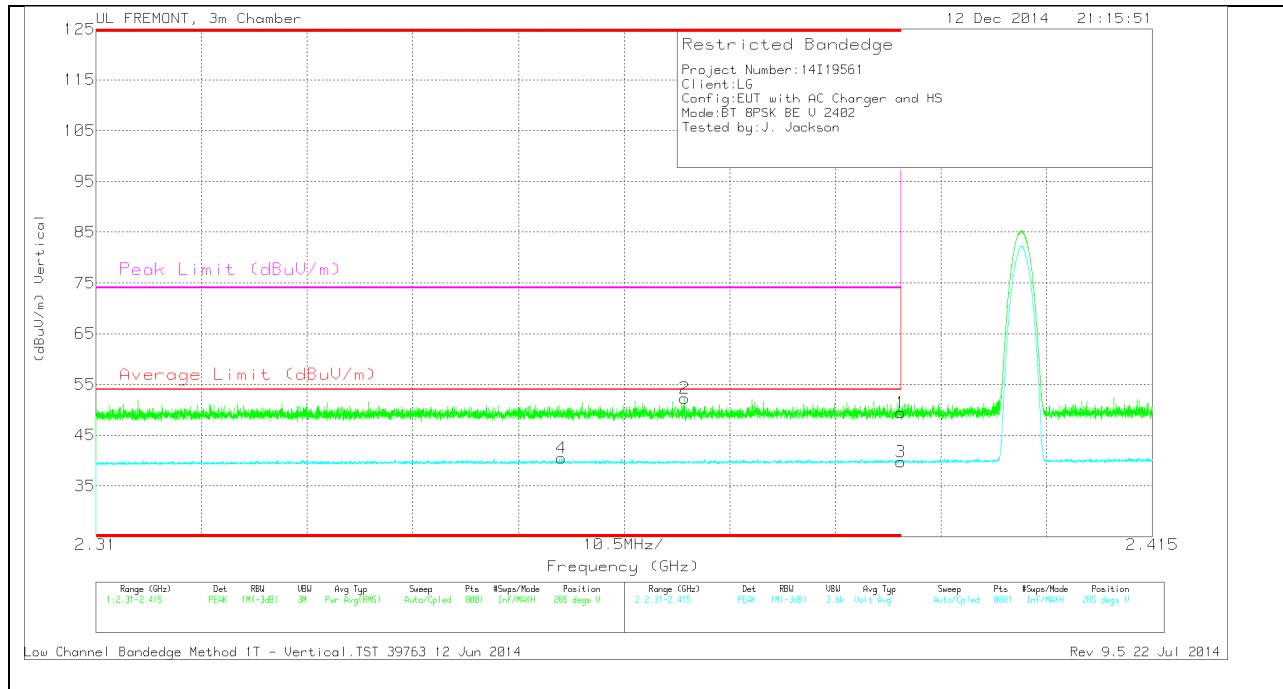


HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.344	42.69	PK	32	-23.1	51.59	-	-	74	-22.41	336	145	H
4	* 2.369	31.58	VB1T	32	-23.1	40.48	54	-13.52	-	-	336	145	H
1	* 2.39	40.44	PK	32.1	-23.1	49.44	-	-	74	-24.56	336	145	H
3	* 2.39	30.71	VB1T	32.1	-23.1	39.71	54	-14.29	-	-	336	145	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

VERTICAL PEAK AND AVERAGE PLOT



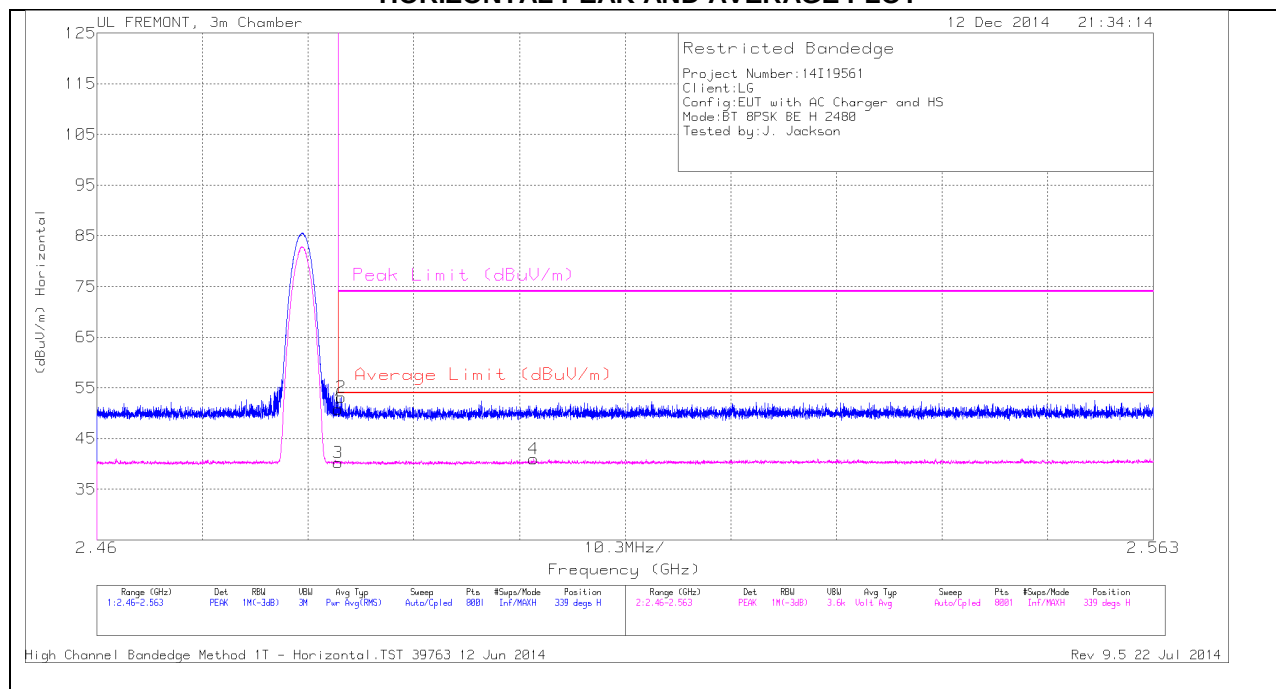
VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT119 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.356	31.54	VB1T	32	-23.1	40.44	54	-13.56	-	-	285	392	V
2	* 2.368	43.36	PK	32	-23.1	52.26	-	-	74	-21.74	285	392	V
1	* 2.39	40.39	PK	32.1	-23.1	49.39	-	-	74	-24.61	285	392	V
3	* 2.39	30.72	VB1T	32.1	-23.1	39.72	54	-14.28	-	-	285	392	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

AUTHORIZED BANDEDGE (HIGH CHANNEL)

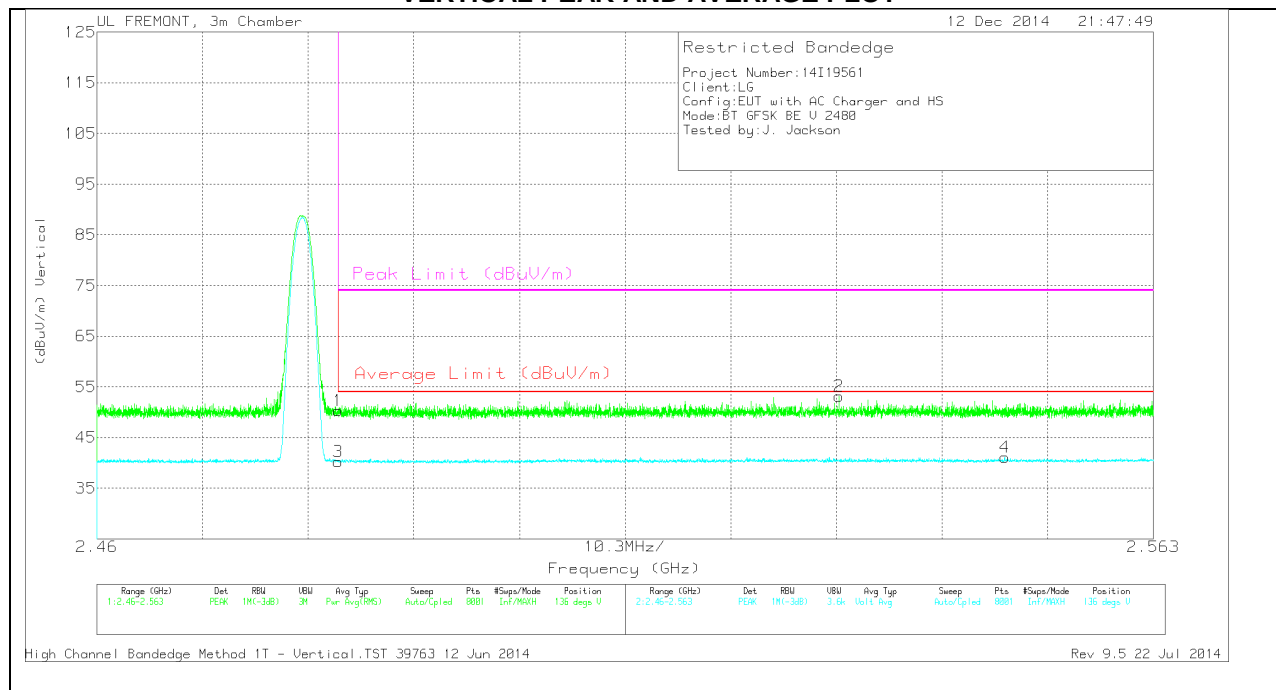
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	41.3	PK	32.3	-22.8	50.8	-	-	74	-23.2	339	382	H
2	2.484	43.63	PK	32.3	-22.8	53.13	-	-	74	-20.87	339	382	H
3	2.484	30.74	VB1T	32.3	-22.8	40.24	54	-13.76	-	-	339	382	H
4	2.503	31.47	VB1T	32.3	-22.8	40.97	54	-13.03	-	-	339	382	H

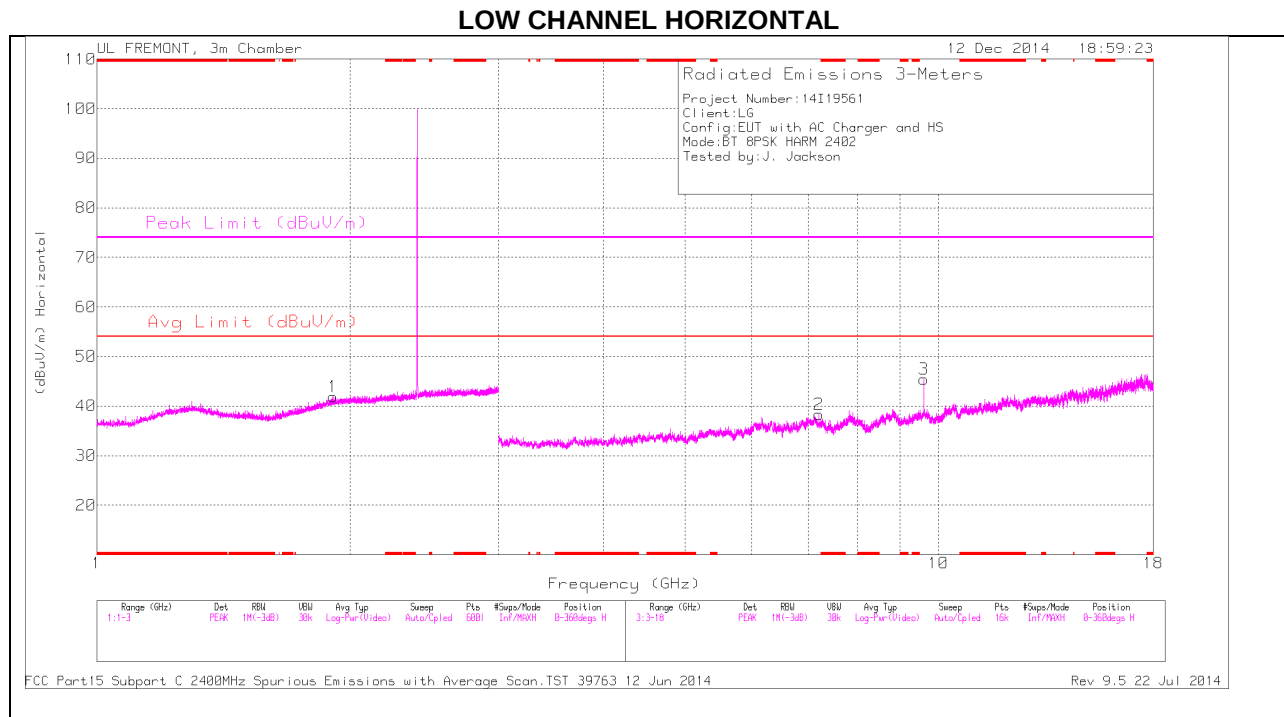
VERTICAL PEAK AND AVERAGE PLOT



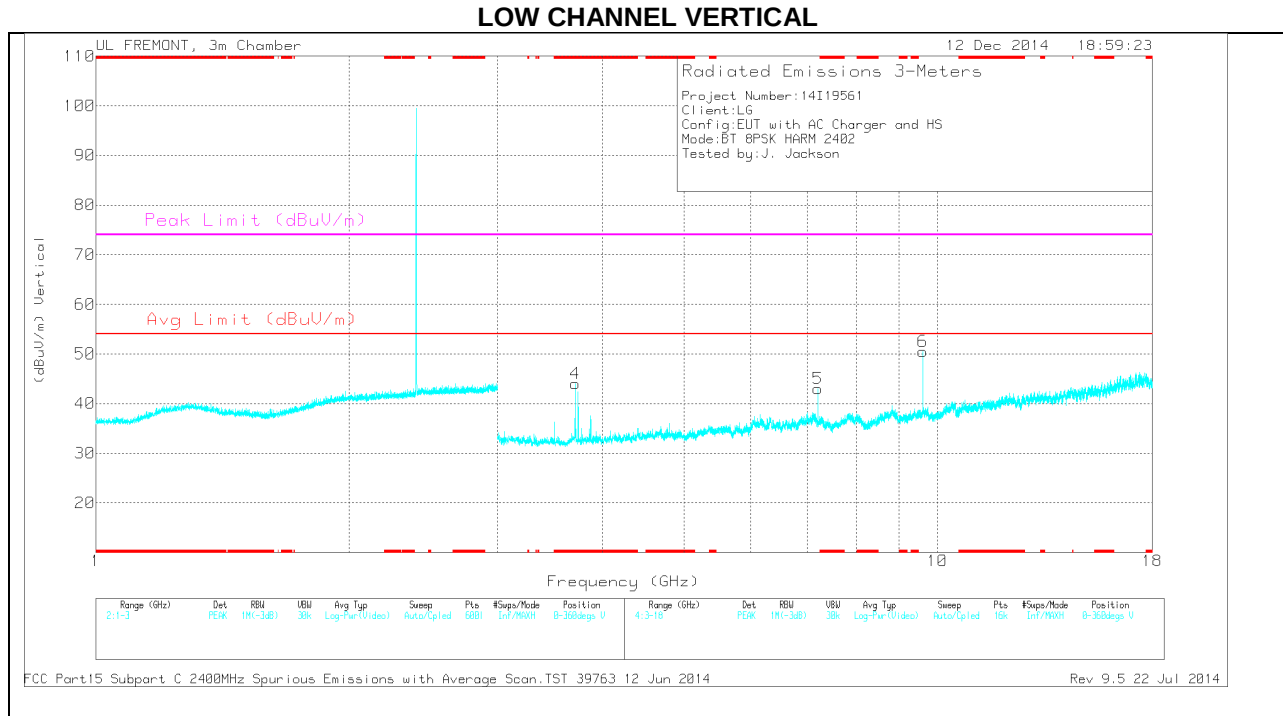
VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	40.76	PK	32.3	-22.8	50.26	-	-	74	-23.74	136	205	V
3	2.484	30.69	VB1T	32.3	-22.8	40.19	54	-13.81	-	-	136	205	V
2	2.532	43.42	PK	32.4	-22.7	53.12	-	-	74	-20.88	136	205	V
4	2.549	31.36	VB1T	32.4	-22.7	41.06	54	-12.94	-	-	136	205	V

HARMONICS AND SPURIOUS EMISSIONS



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 3.713	41.73	PK	33.2	-30.9	44.03	-	-	74	-29.97	0-360	100	V
1	1.909	33.73	PK	31.3	-23.2	41.83	-	-	-	-	0-360	200	H
2	7.205	31.94	PK	35.6	-29.2	38.34	-	-	-	-	0-360	100	H
5	7.206	36.58	PK	35.6	-29.2	42.98	-	-	-	-	0-360	100	V
6	9.607	39.01	PK	36.7	-25.2	50.51	-	-	-	-	0-360	100	V
3	9.608	34.01	PK	36.7	-25.3	45.41	-	-	-	-	0-360	200	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

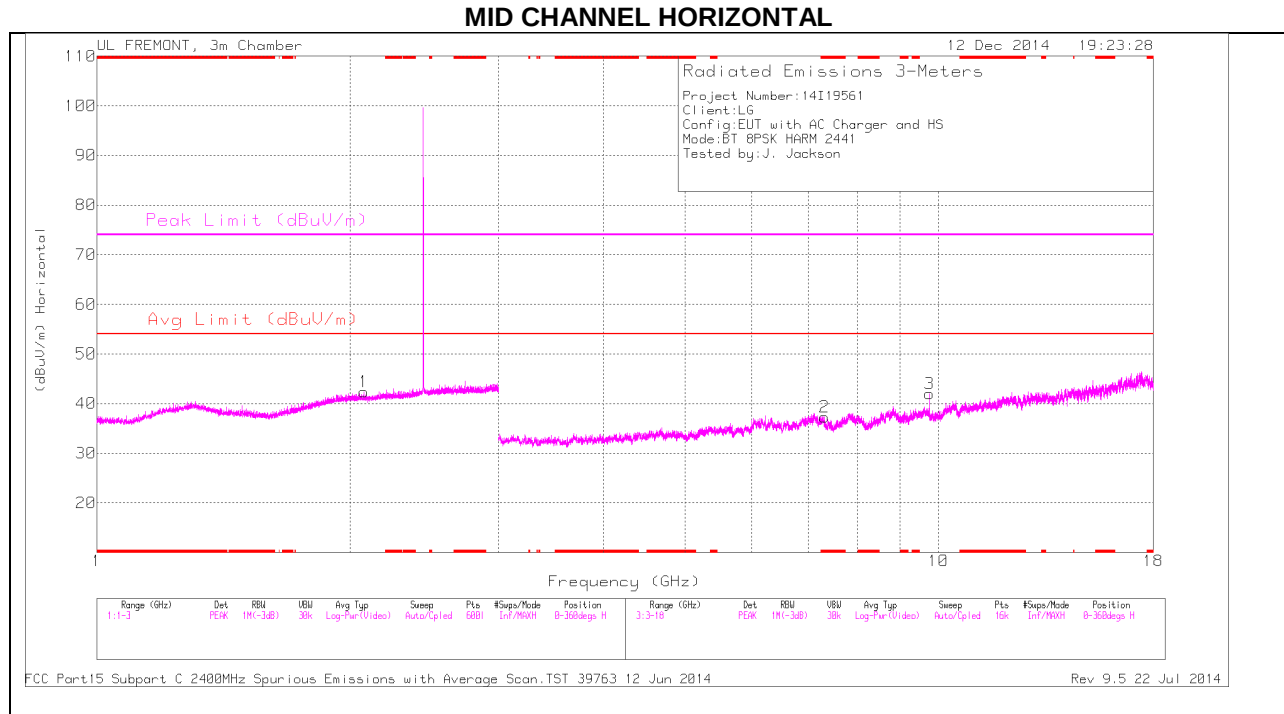
PK - Peak detector

RADIATED EMISSIONS

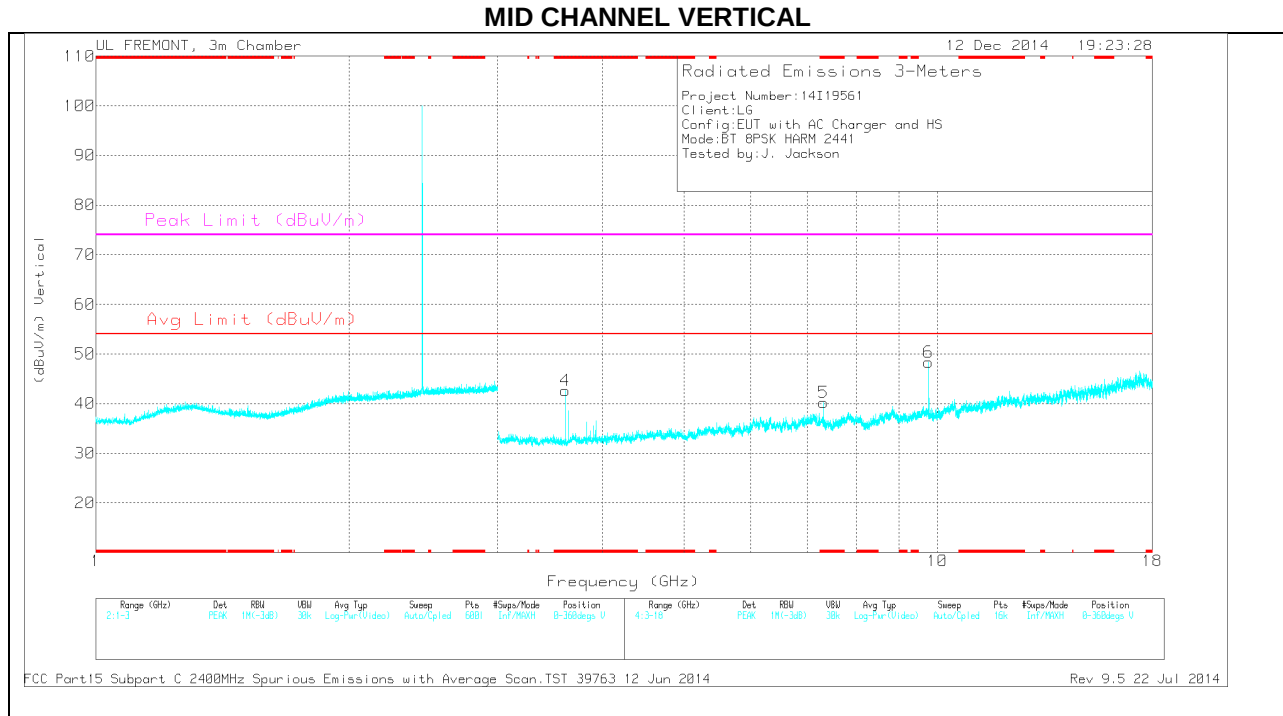
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.714	41.04	PK3	33.2	-31	43.24	-	-	74	-30.76	48	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 7.323	30.13	PK	35.6	-28.4	37.33	-	-	74	-36.67	0-360	200	H
4	* 3.611	41.24	PK	33	-31.6	42.64	-	-	74	-31.36	0-360	200	V
5	* 7.323	33.01	PK	35.6	-28.4	40.21	-	-	74	-33.79	0-360	200	V
1	2.075	33.84	PK	31.6	-23.1	42.34	-	-	-	-	0-360	100	H
3	9.764	31.08	PK	36.9	-26	41.98	-	-	-	-	0-360	200	H
6	9.764	37.49	PK	36.9	-26	48.39	-	-	-	-	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

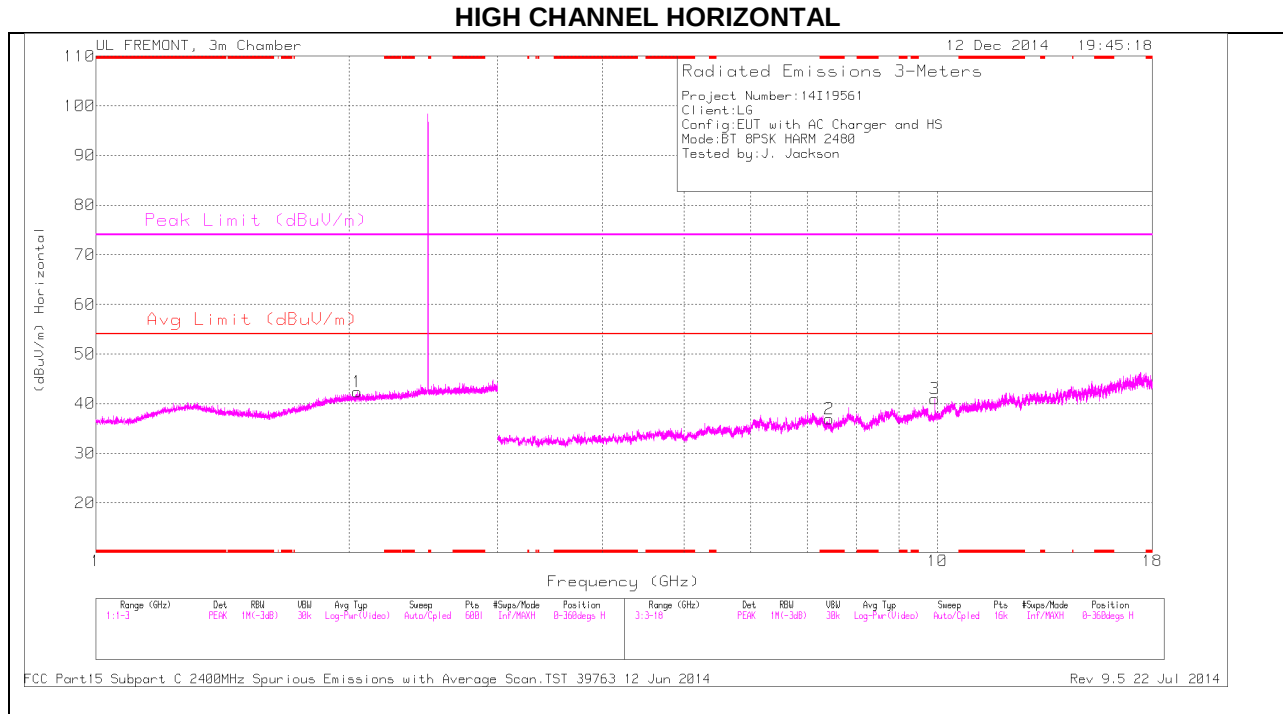
PK - Peak detector

RADIATED EMISSIONS

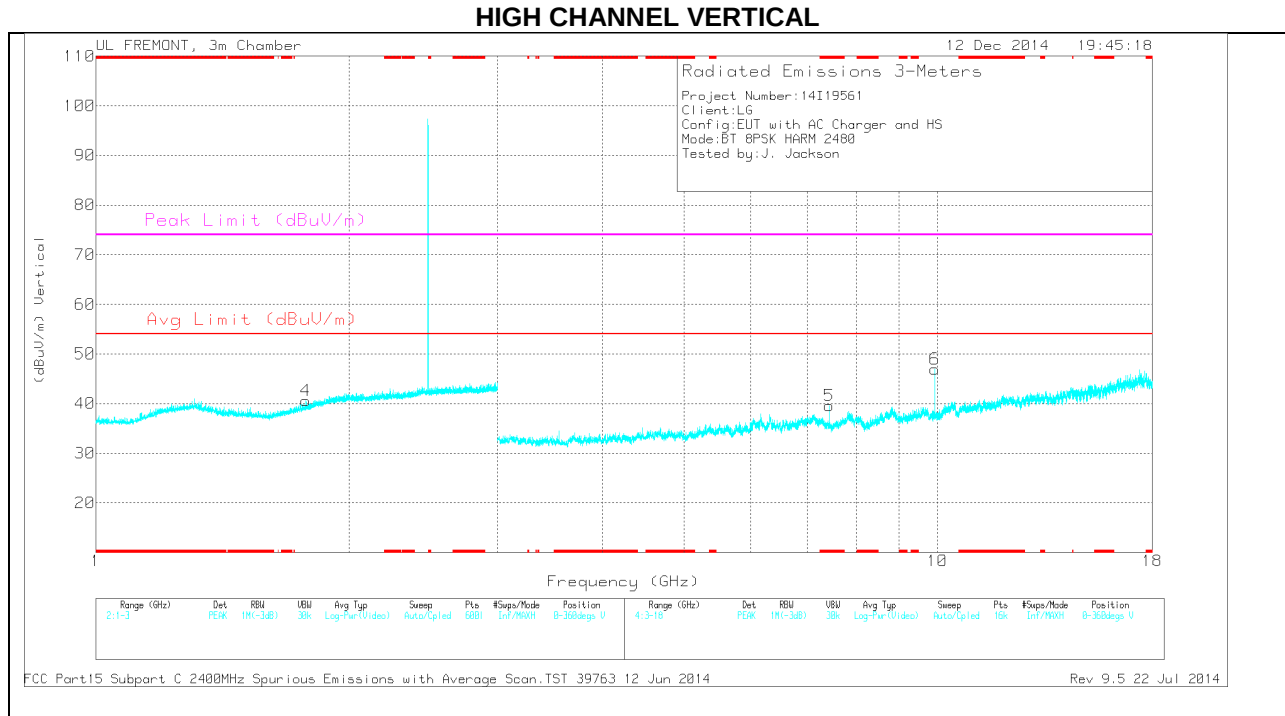
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 7.323	41.87	PK3	35.6	-28.4	49.07	-	-	74	-24.93	72	365	H
* 7.323	31.9	VB1T	35.6	-28.4	39.1	54	-14.9	-	-	72	365	H
* 3.612	40.36	PK3	33	-31.6	41.76	-	-	74	-32.24	72	200	V
* 7.323	43.13	PK3	35.6	-28.4	50.33	-	-	74	-23.67	127	195	V
* 7.323	33.01	VB1T	35.6	-28.4	40.21	54	-13.79	-	-	127	195	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 7.44	30.14	PK	35.7	-28.9	36.94	-	-	74	-37.06	0-360	200	H
5	* 7.44	32.84	PK	35.7	-28.9	39.64	-	-	74	-34.36	0-360	100	V
4	1.775	34.02	PK	29.9	-23.3	40.62	-	-	-	-	0-360	200	V
1	2.046	33.94	PK	31.6	-23.2	42.34	-	-	-	-	0-360	100	H
3	9.919	29.71	PK	36.9	-25.6	41.01	-	-	-	-	0-360	200	H
6	9.919	35.64	PK	36.9	-25.6	46.94	-	-	-	-	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RADIATED EMISSIONS

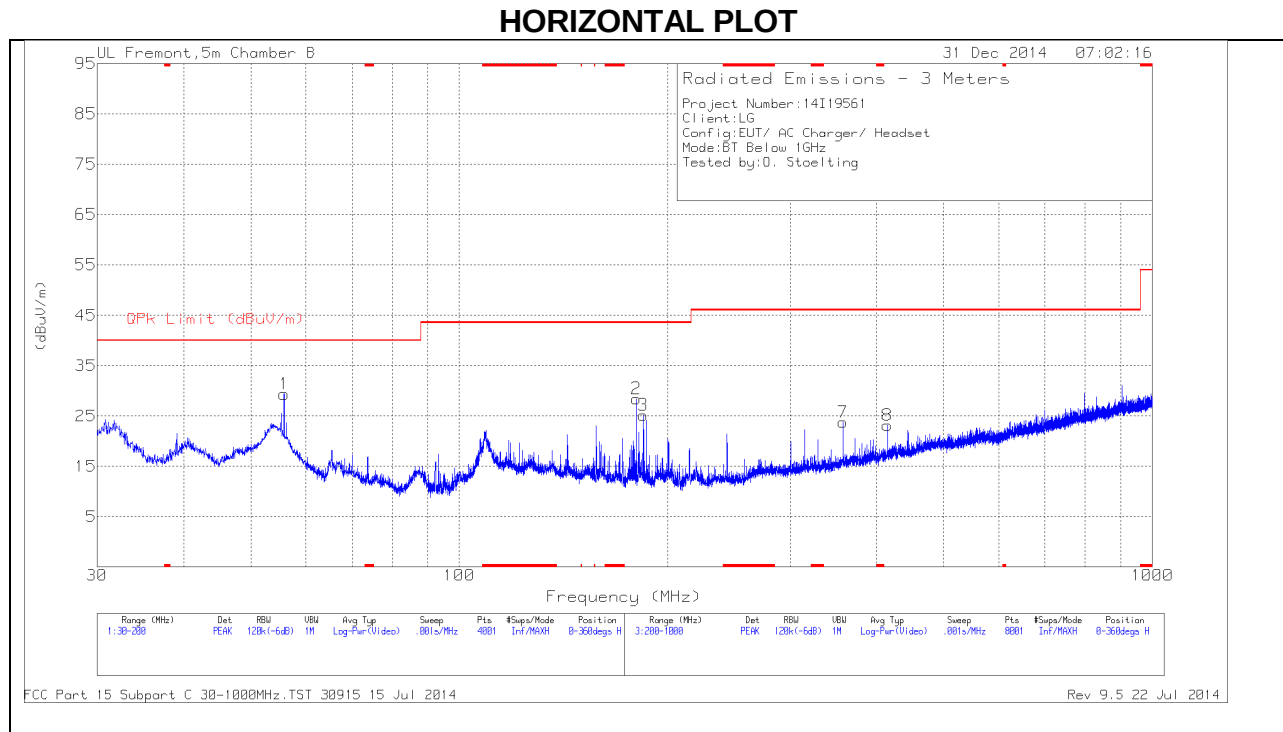
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 7.44	40.86	PK3	35.7	-28.9	47.66	-	-	74	-26.34	360	295	H
* 7.44	30.06	VB1T	35.7	-28.9	36.86	54	-17.14	-	-	360	295	H
* 7.44	41.66	PK3	35.7	-28.9	48.46	-	-	74	-25.54	71	246	V
* 7.44	40.86	PK3	35.7	-28.9	47.66	-	-	74	-26.34	360	295	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

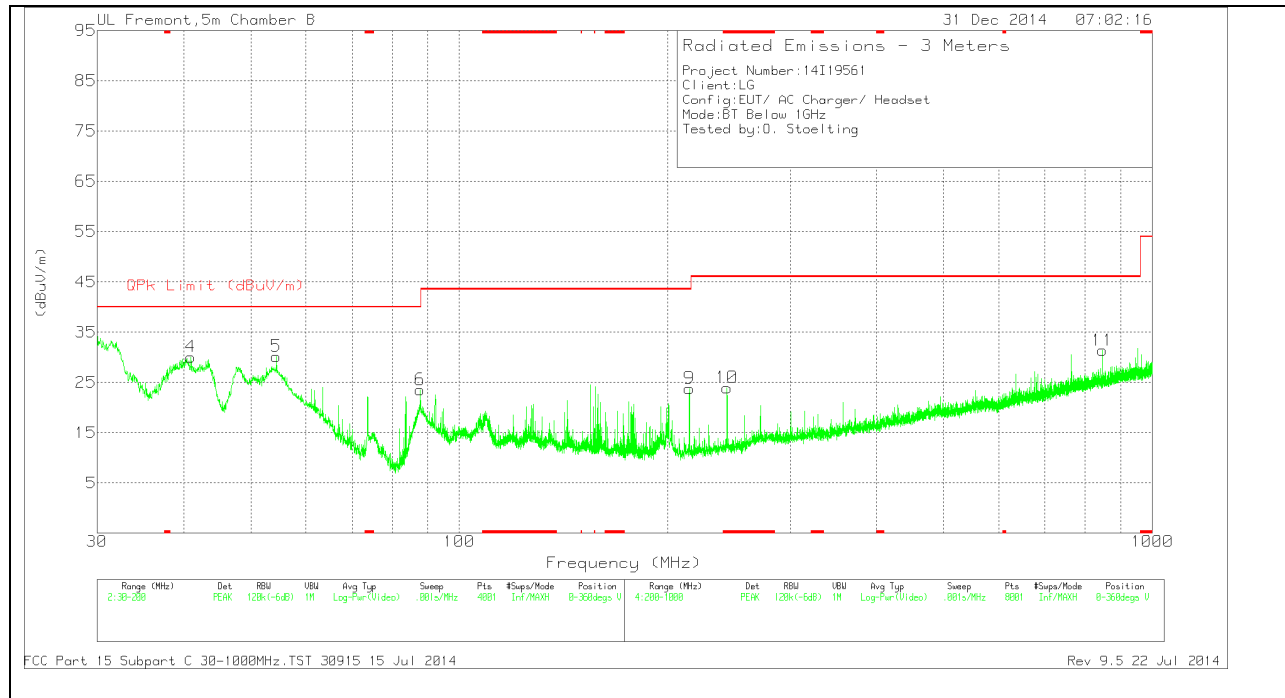
FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013

9.3. WORST-CASE BELOW 1 GHz

GFSK SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)



VERTICAL PLOT



BELOW 1 GHz TABLE

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T185 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10	* 243.4	38.76	PK	11.6	-26.4	23.96	46.02	-22.06	0-360	101	V
4	40.965	45.29	PK	13.4	-28.6	30.09	40	-9.91	0-360	101	V
5	54.4375	51.39	PK	7.4	-28.6	30.19	40	-9.81	0-360	101	V
1	55.8613	50.55	PK	7.3	-28.5	29.35	40	-10.65	0-360	300	H
6	87.8425	44.16	PK	7.5	-28.1	23.56	40	-16.44	0-360	101	V
2	179.9825	44.32	PK	11.2	-27.1	28.42	43.52	-15.1	0-360	200	H
3	184.3175	41.08	PK	11.2	-27.1	25.18	43.52	-18.34	0-360	200	H
9	214.8	40.03	PK	10.6	-26.8	23.83	43.52	-19.69	0-360	200	V
7	357.9	34.76	PK	14.8	-25.8	23.76	46.02	-22.26	0-360	200	H
8	414.7	33.07	PK	16	-25.9	23.17	46.02	-22.85	0-360	101	H
11	847.9	32.79	PK	22	-23.4	31.39	46.02	-14.63	0-360	101	V

PK - Peak detector

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 [*]	56 to 46 [*]
0.5-5	56	46
5-30	60	50

^{*} Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

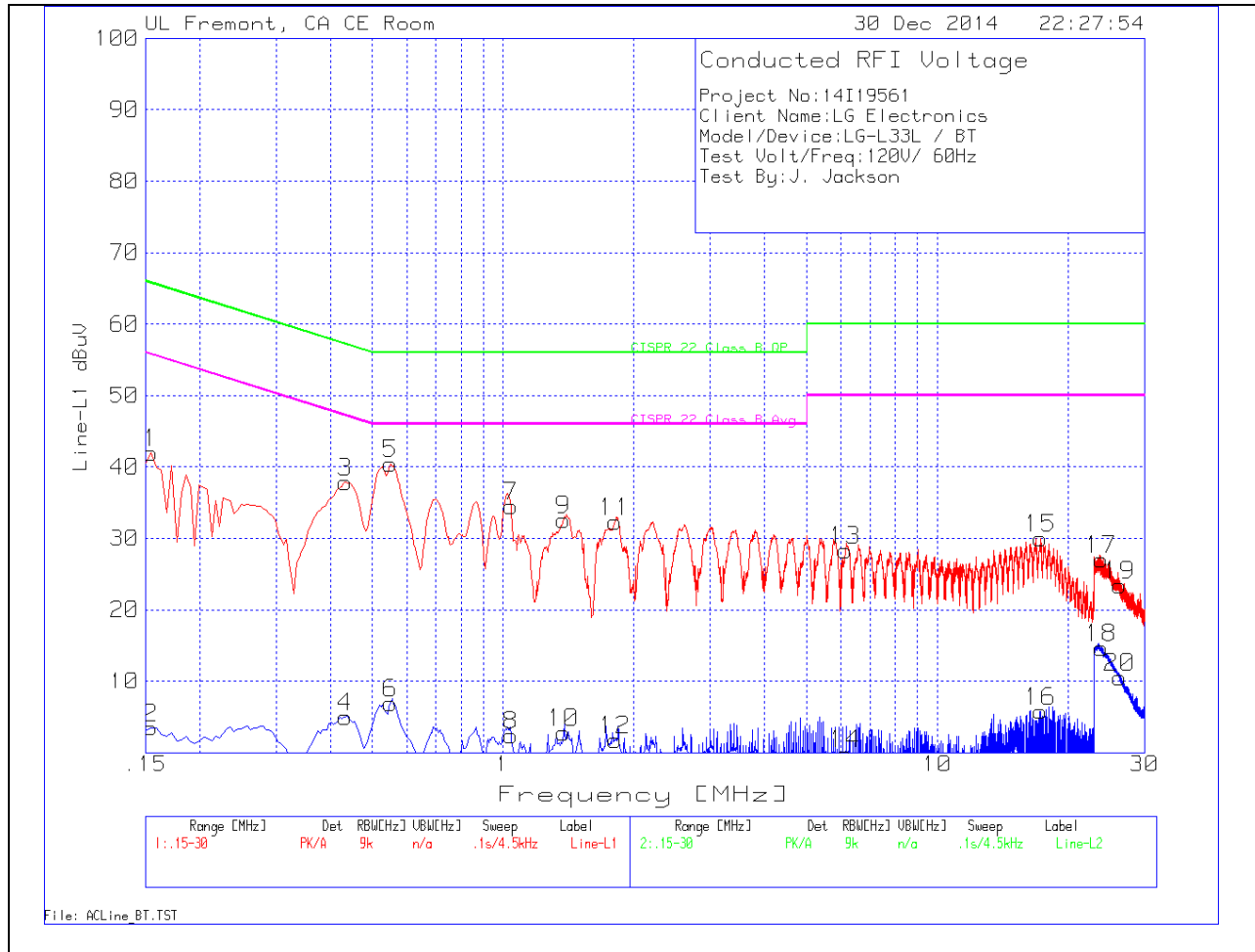
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



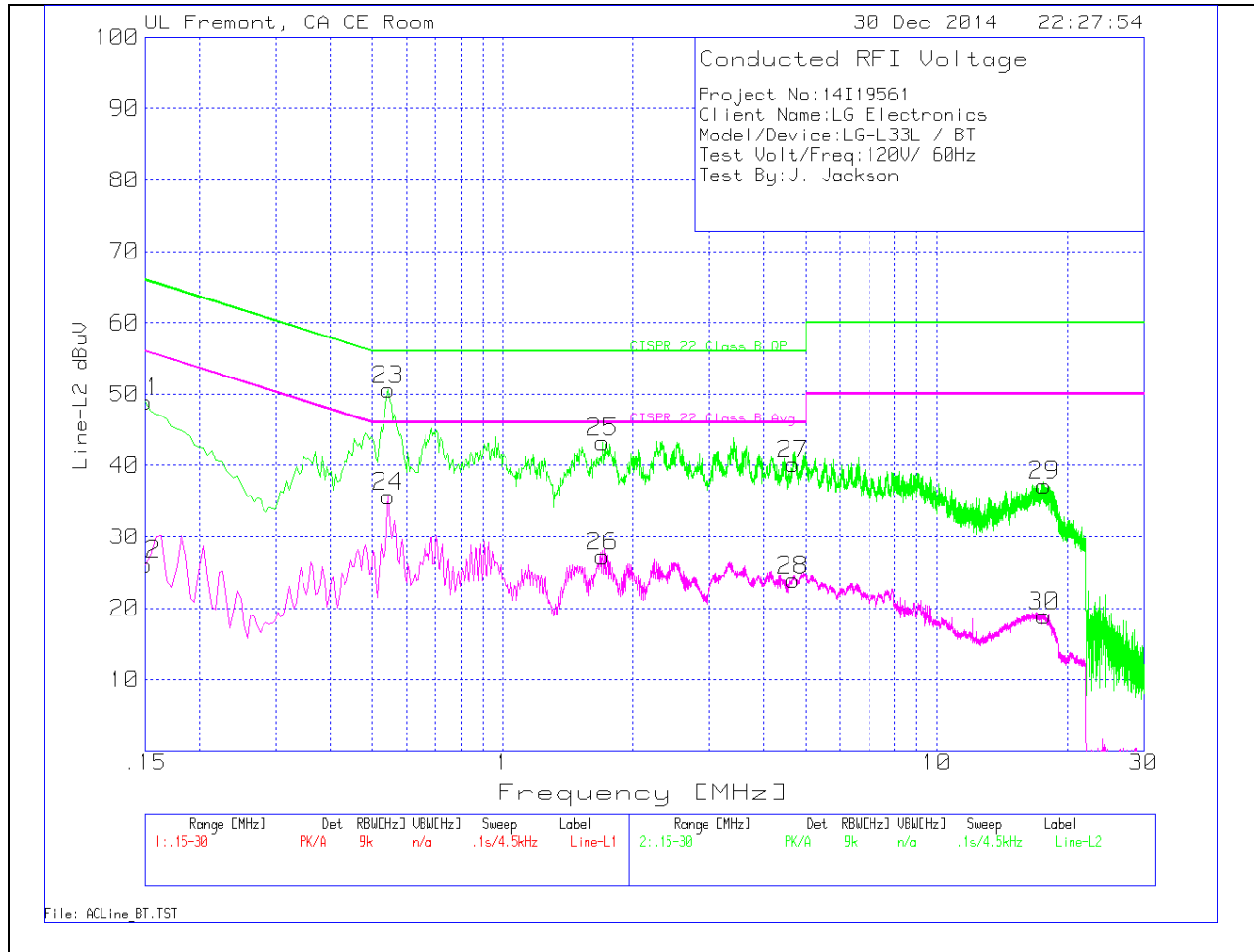
LINE 1 RESULTS

Line-L1 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.1545	40.7	PK	1.3	0	42	65.8	-23.8	-	-
2	.1545	2.2	Av	1.3	0	3.5	-	-	55.8	-52.3
3	.4335	37.43	PK	.4	0	37.83	57.2	-19.37	-	-
4	.4335	4.62	Av	.4	0	5.02	-	-	47.2	-42.18
5	.5505	40.19	PK	.3	0	40.49	56	-15.51	-	-
6	.5505	6.57	Av	.3	0	6.87	-	-	46	-39.13
7	1.041	34.27	PK	.2	0	34.47	56	-21.53	-	-
8	1.041	2.17	Av	.2	0	2.37	-	-	46	-43.63
9	1.3785	32.28	PK	.2	.1	32.58	56	-23.42	-	-
10	1.3785	2.49	Av	.2	.1	2.79	-	-	46	-43.21
11	1.8105	32.07	PK	.2	.1	32.37	56	-23.63	-	-
12	1.8105	1.51	Av	.2	.1	1.81	-	-	46	-44.19
13	6.144	28	PK	.2	.1	28.3	60	-31.7	-	-
14	6.144	-.49	Av	.2	.1	-.19	-	-	50	-50.19
15	17.2815	29.54	PK	.3	.2	30.04	60	-29.96	-	-
16	17.2815	5.32	Av	.3	.2	5.82	-	-	50	-44.18
17	23.8425	26.54	PK	.3	.2	27.04	60	-32.96	-	-
18	23.8425	14.12	Av	.3	.2	14.62	-	-	50	-35.38
19	26.2905	22.8	PK	.3	.3	23.4	60	-36.6	-	-
20	26.2905	9.98	Av	.3	.3	10.58	-	-	50	-39.42

LINE 2 PLOT



LINE 2 RESULTS

Line-L2 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
21	.15	47.48	PK	1.5	0	48.98	66	-17.02	-	-
22	.15	24.6	Av	1.5	0	26.1	-	-	56	-29.9
23	.546	50.32	PK	.3	0	50.62	56	-5.38	-	-
24	.546	35.39	Av	.3	0	35.69	-	-	46	-10.31
25	1.7025	42.95	PK	.2	.1	43.25	56	-12.75	-	-
26	1.7025	26.97	Av	.2	.1	27.27	-	-	46	-18.73
27	4.6635	39.85	PK	.2	.1	40.15	56	-15.85	-	-
28	4.6635	23.58	Av	.2	.1	23.88	-	-	46	-22.12
29	17.7225	36.77	PK	.3	.2	37.27	60	-22.73	-	-
30	17.7225	18.44	Av	.3	.2	18.94	-	-	50	-31.06

PK - Peak detector

Av - average detection