



FCC 47 CFR PART 15 SUBPART C

CERTIFICATION TEST REPORT

For

CDMA/LTE PHABLET + BLUETOOTH, & DTS/UNII a/b/g/n

MODEL NUMBER: LG-LS770, LS770, LGLS770

FCC ID: ZNFLS770

REPORT NUMBER: 15I19834-E2 REVISION A

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Prepared for

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NVLAP LAB CODE 200065-0

Revision History

Issue			
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--	02/11/15	Initial Issue	D. Corona
A	02/20/15	Update antenna gain information page 8	D. Corona

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC
EUT DESCRIPTION: CDMA/LTE PHABLET + BLUETOOTH, & DTS/UNII a/b/g/n
MODEL: LG-LS770, LS770, LGLS770
SERIAL NUMBER: 804AA215 (RADIATED), 00431 (CONDUCTED)
DATE TESTED: JANUARY 21-22, 29 & FEBRUARY 11, 2015

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.

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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 CDMA/LTE PHABLET + BLUETOOTH, & DTS/UNII a/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	7.94	6.22
2402 - 2480	Enhanced 8PSK	8.38	6.89

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 showing 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 -3.84dBi.

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-02WR	RA4Y1031433	N/A
Earphone	LG	N/A	N/A	N/A

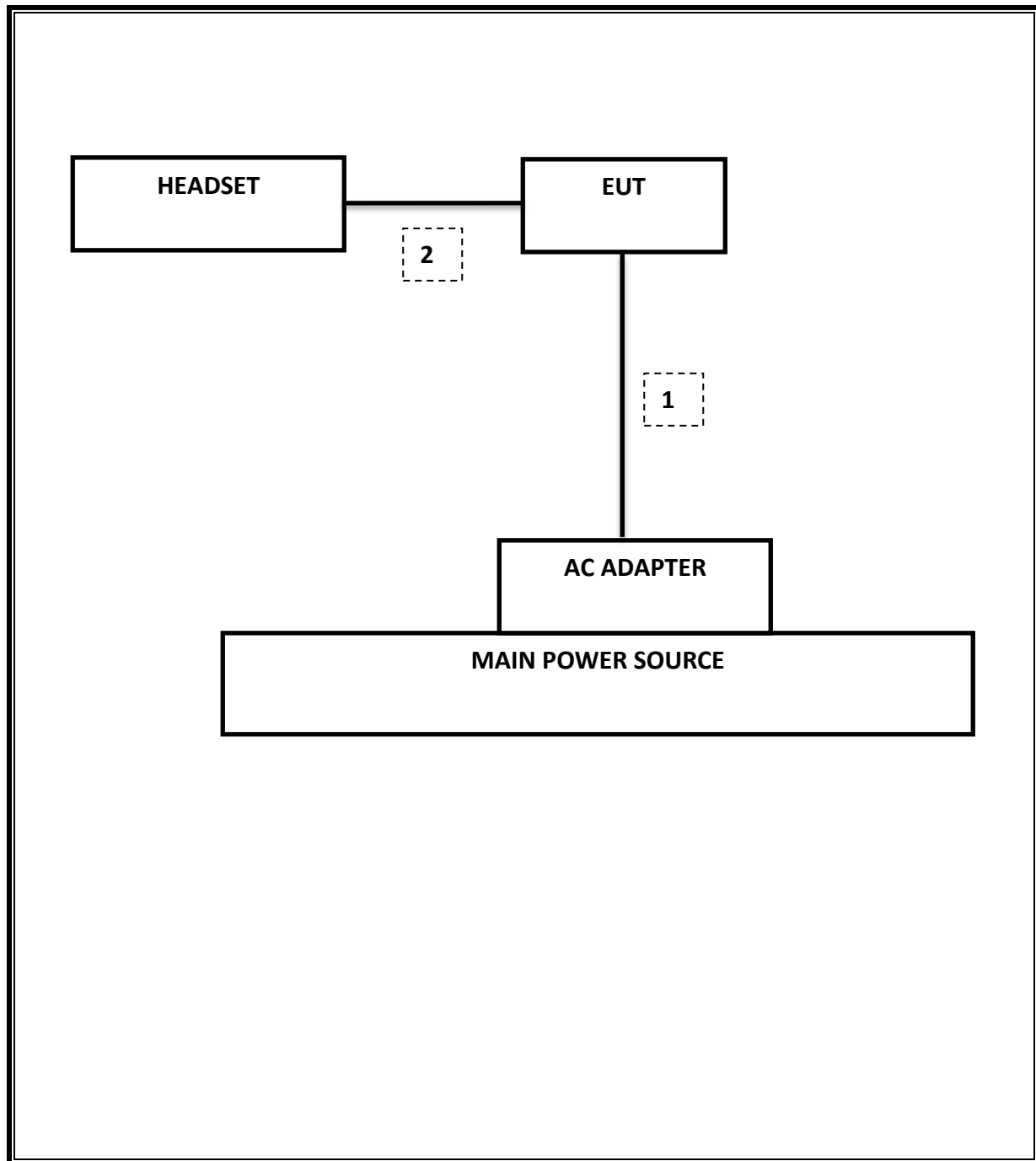
I/O CABLES

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

The EUT is continuously communicating to the Bluetooth tester during the tests.

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
CBT Bluetooth Tester	R & S	CBT	None	07/12/15
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

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Version 9.5, 07/22/14
Conducted Software	UL	UL EMC	Version 9.5, 05/17/14
CLT Software	UL	UL RF	Version 1.0, 02/02/15
Antenna Port Software	UL	UL RF	Version 2.1.1.1, 1/20/15

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	1.18 MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-41.9 dBm
15.247 (b)(1)	RSS-210 A8.4	TX conducted output power	<21dBm		Pass	8.4 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 channels
15.247 (a)(1)(iii)	RSS-210 A8.1(d)	Avg Time of Occupancy	< 0.4sec		Pass	0.286 s
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	49.4 dBuV (AV)
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	39.56 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	0.9294	0.8979
Middle	2441	0.9307	0.8976
High	2480	0.9294	0.8967
Worst		0.9307	0.8979

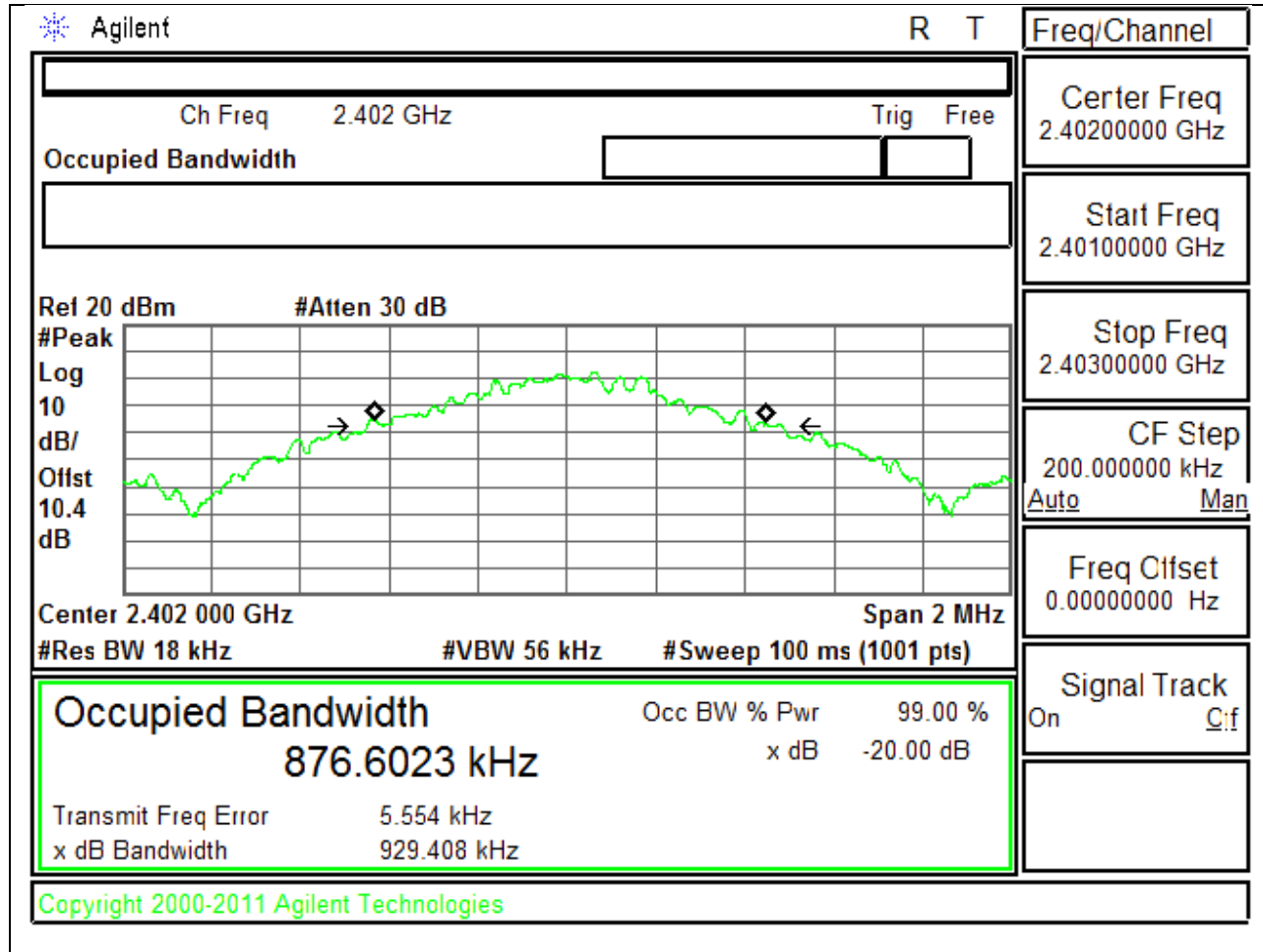
8.1.2. ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	2402	1.27	1.176
Middle	2441	1.255	1.173
High	2480	1.27	1.179
Worst		1.27	1.179

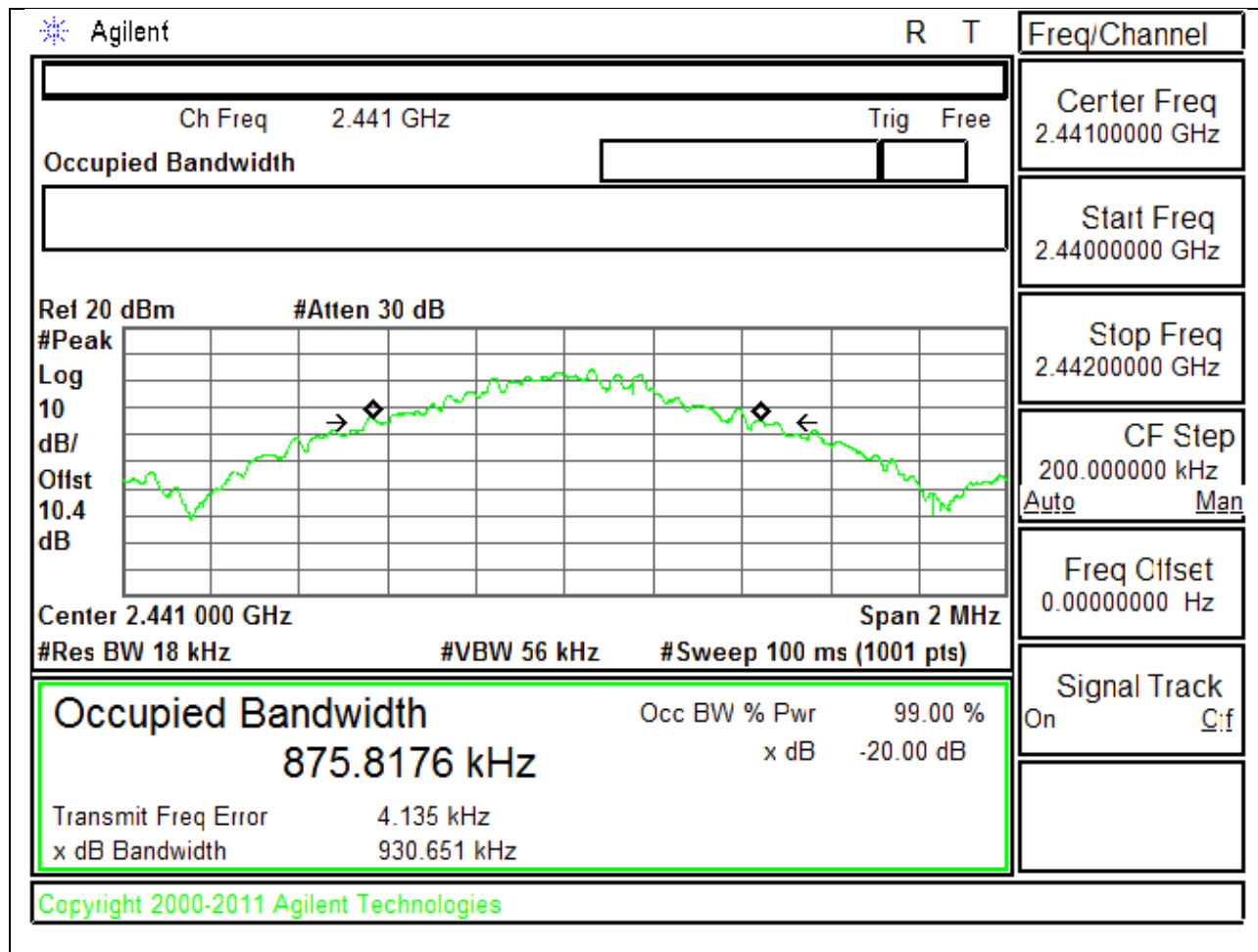
8.1.3. 20 dB AND 99% BANDWIDTH PLOTS

GFSK 20 dB BANDWIDTH

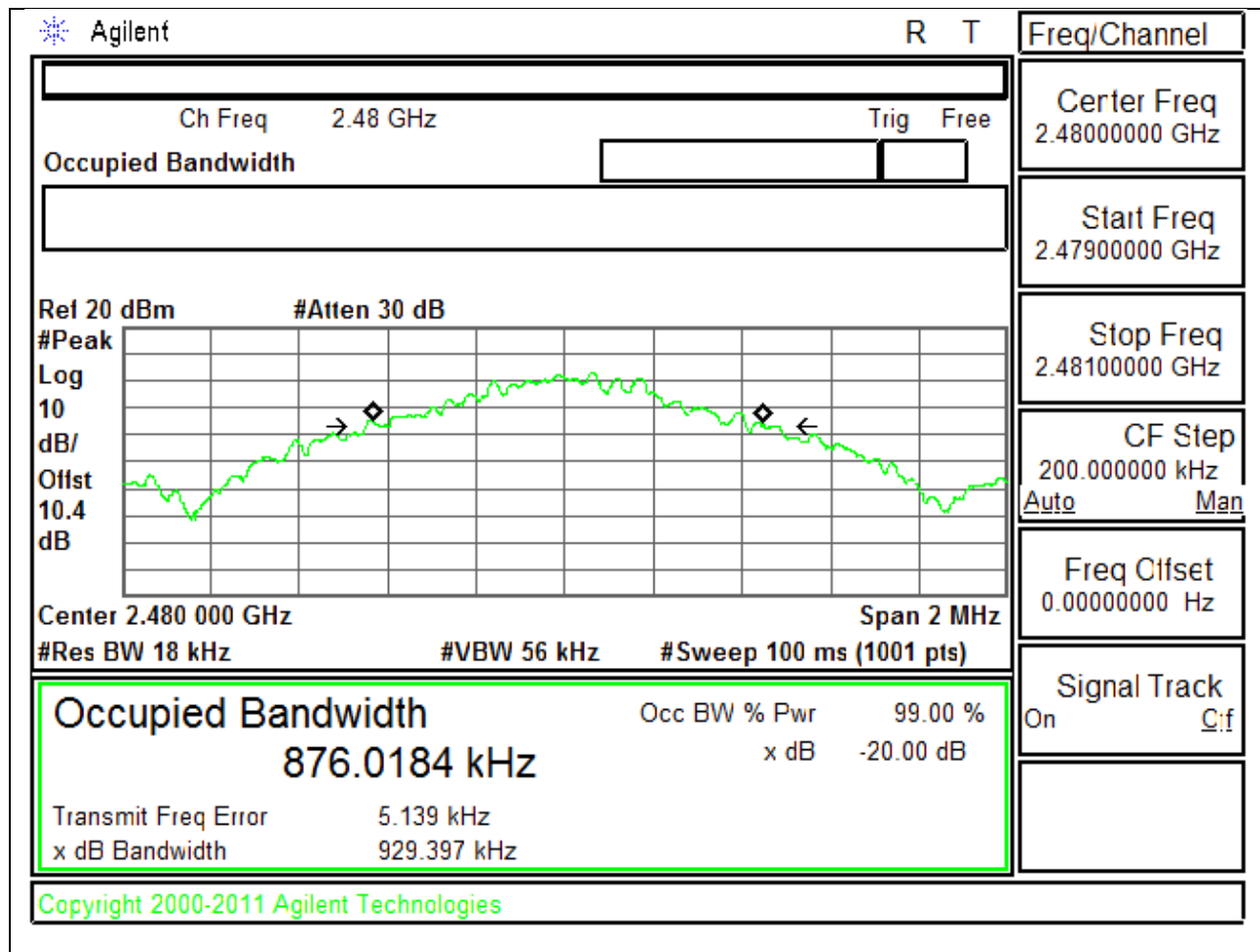
LOW CHANNEL



MID CHANNEL

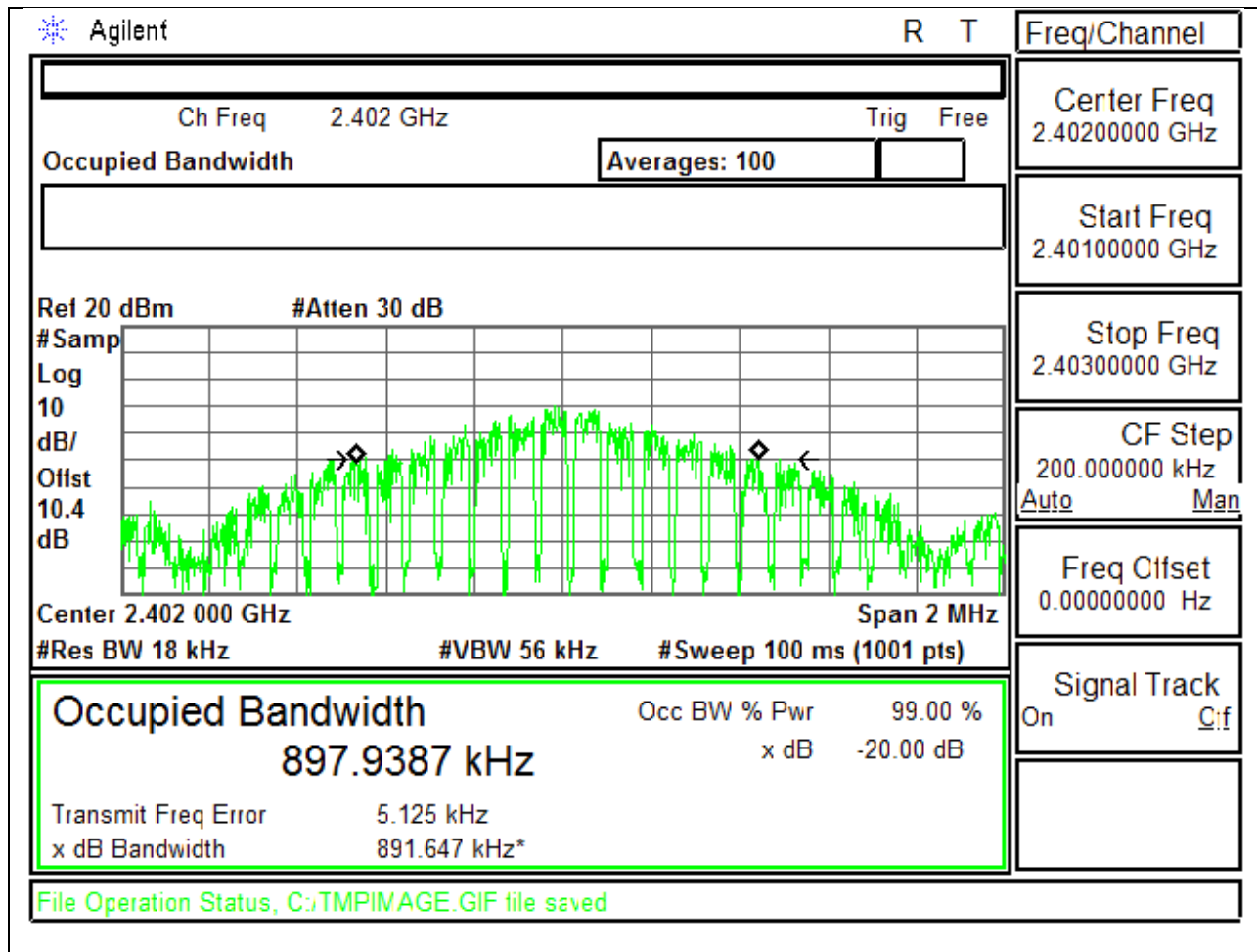


HIGH CHANNEL

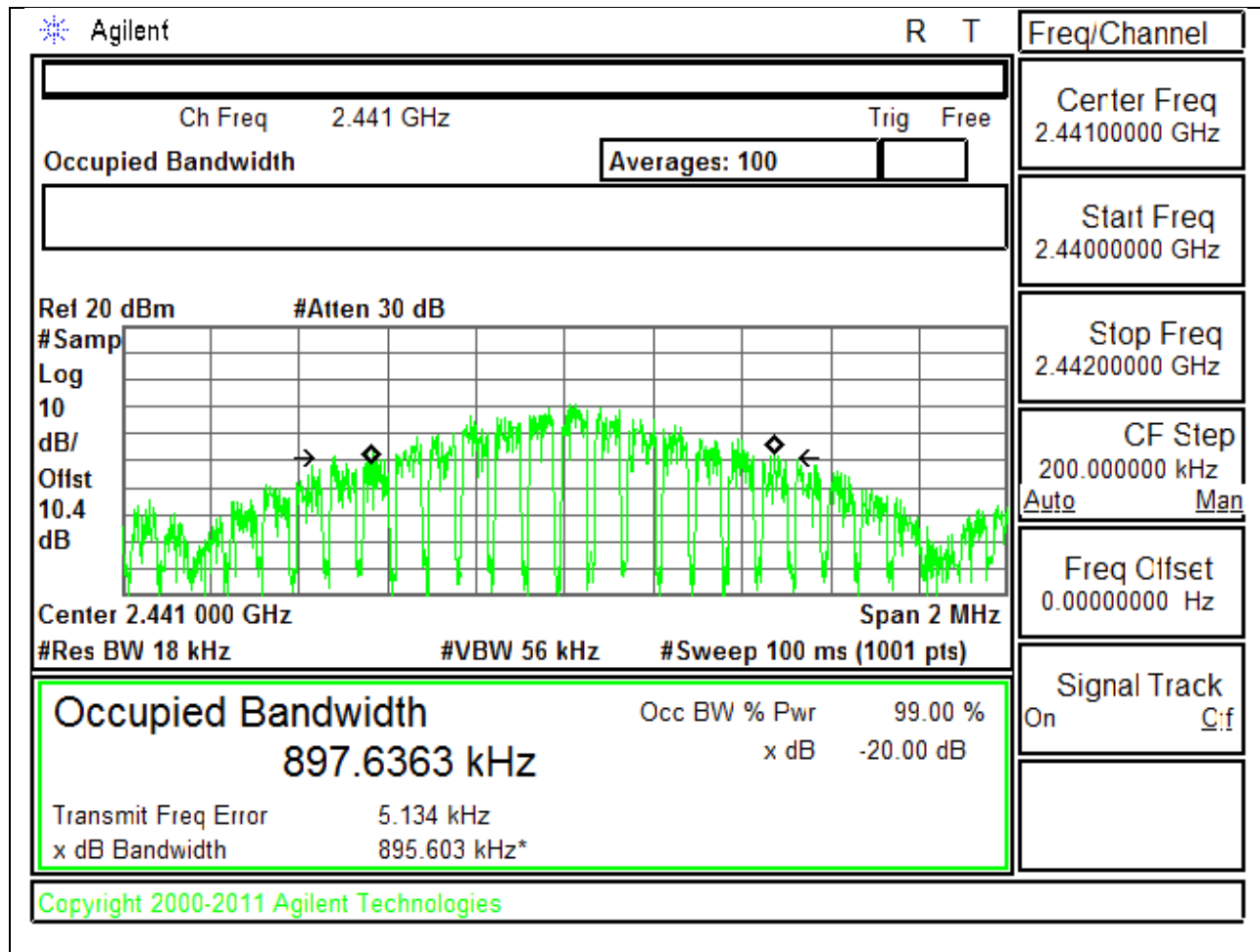


GFSK 99% BANDWIDTH

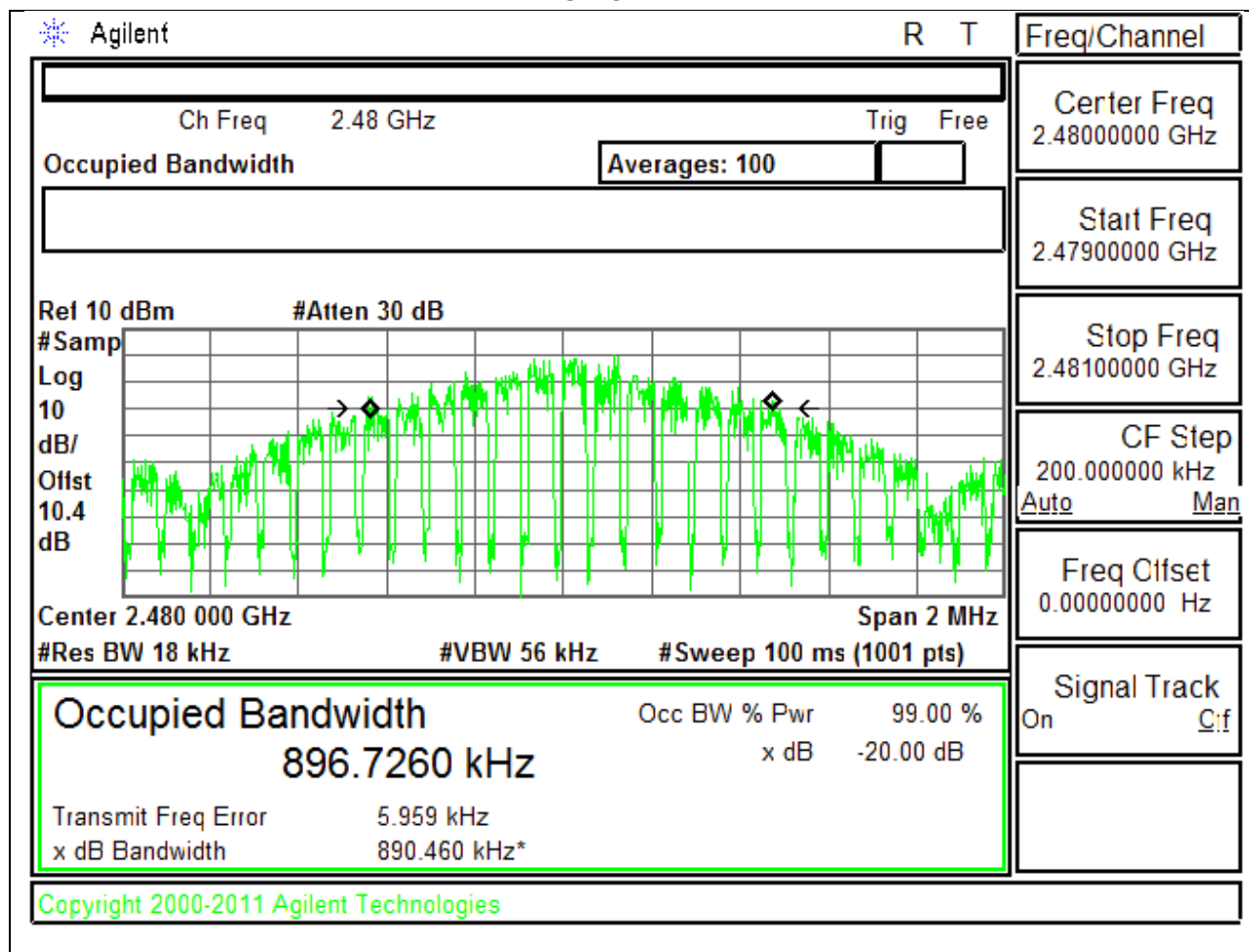
LOW CHANNEL



MID CHANNEL

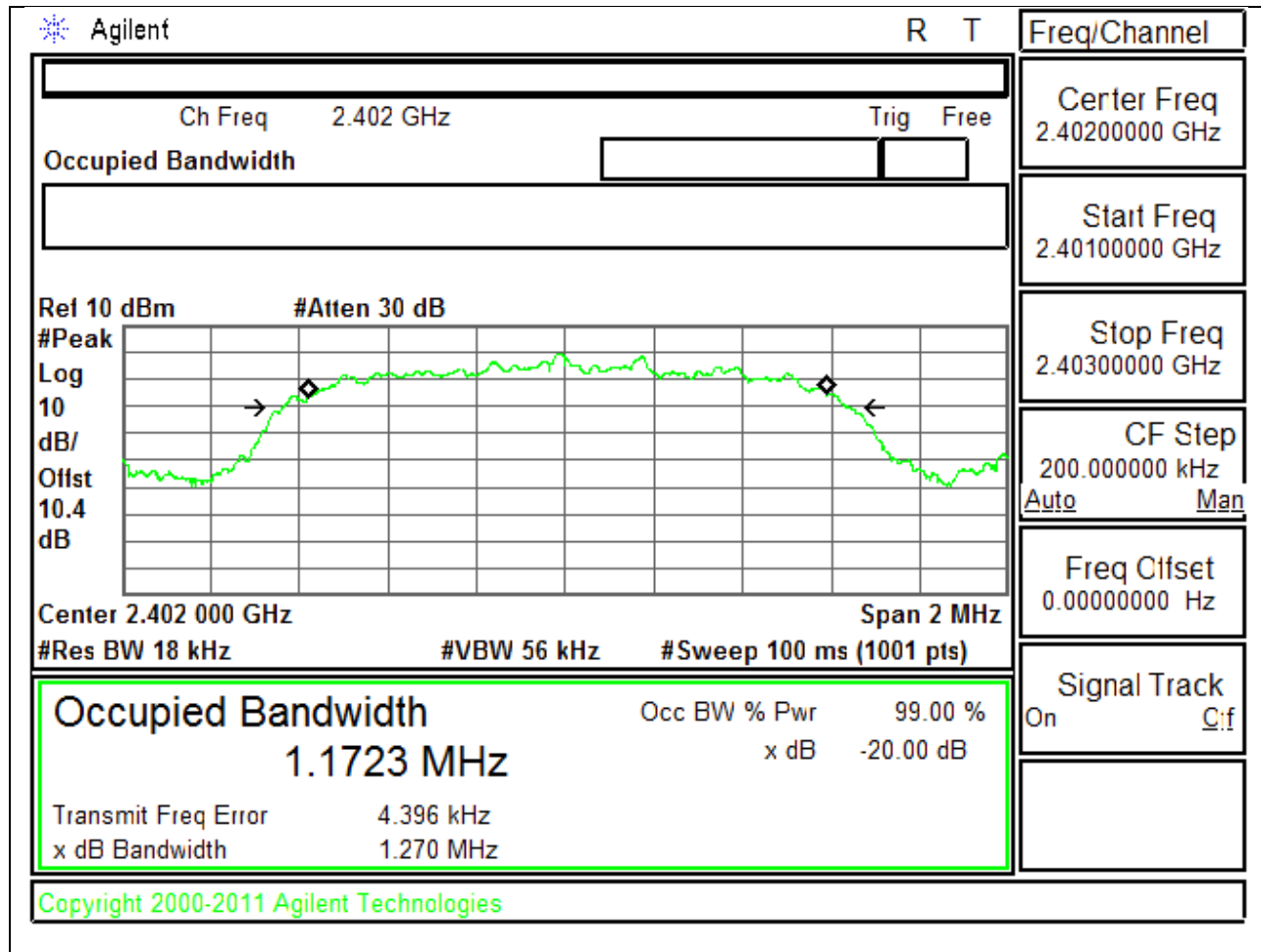


HIGH CHANNEL

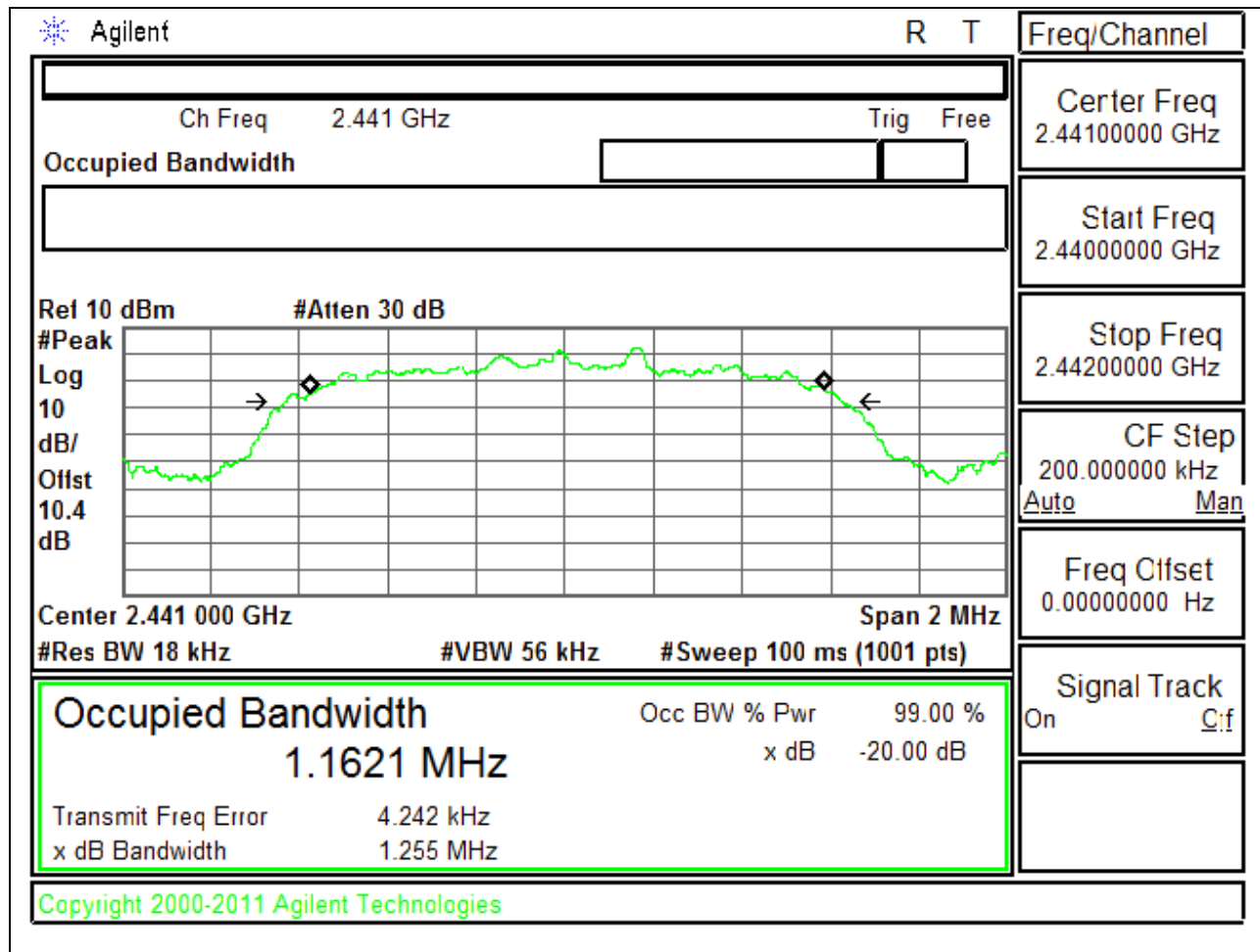


8PSK 20 dB BANDWIDTH

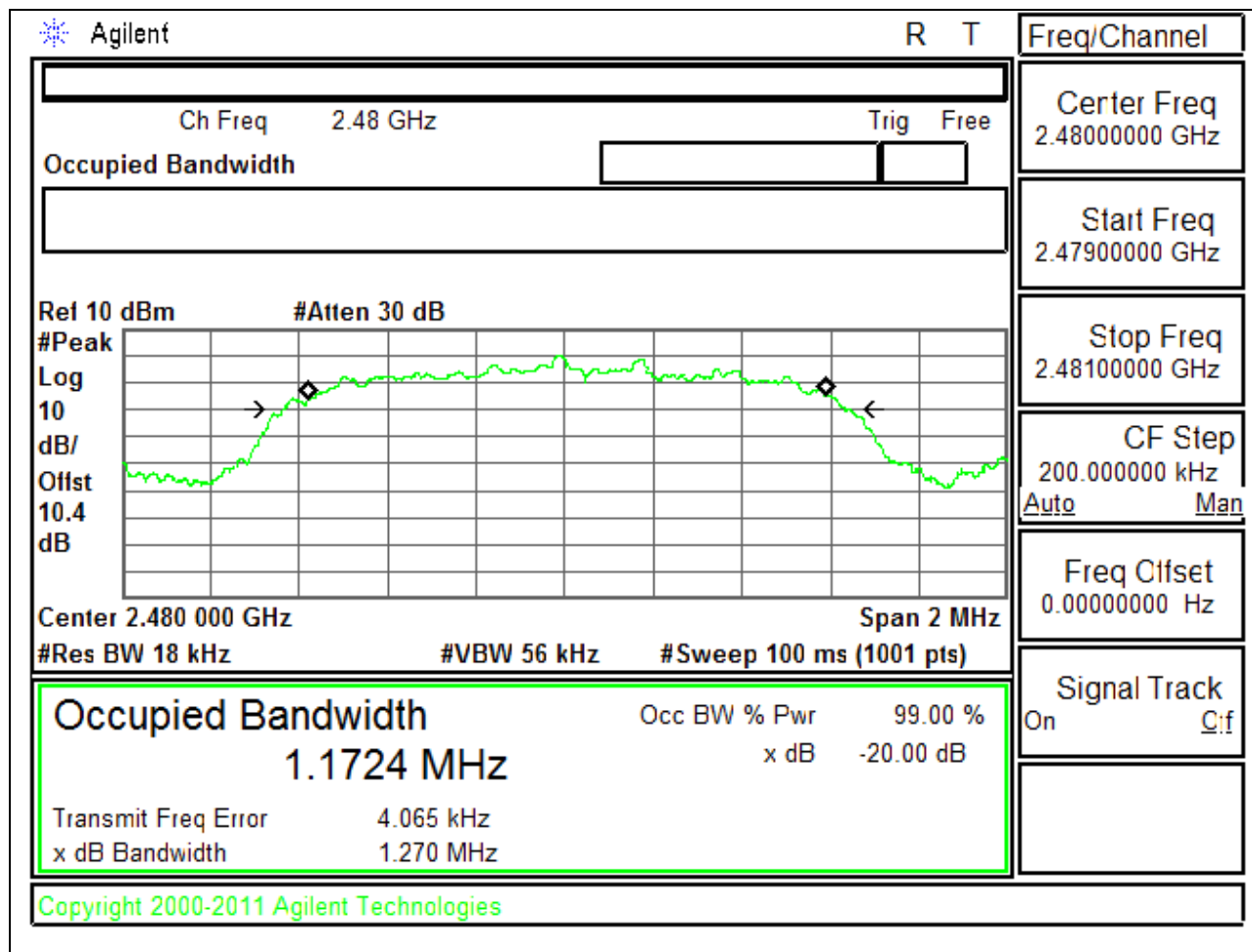
LOW CHANNEL



MID CHANNEL

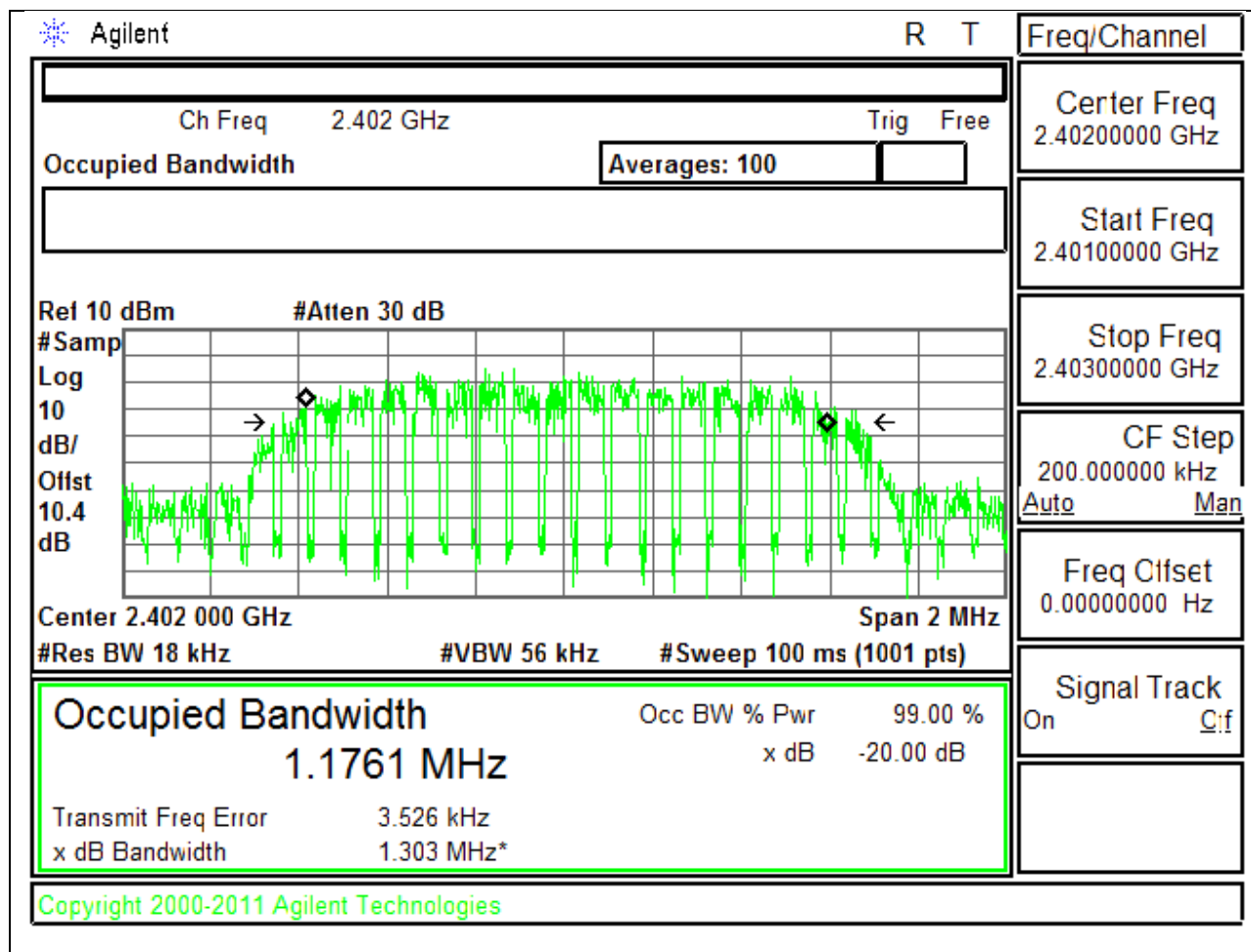


HIGH CHANNEL

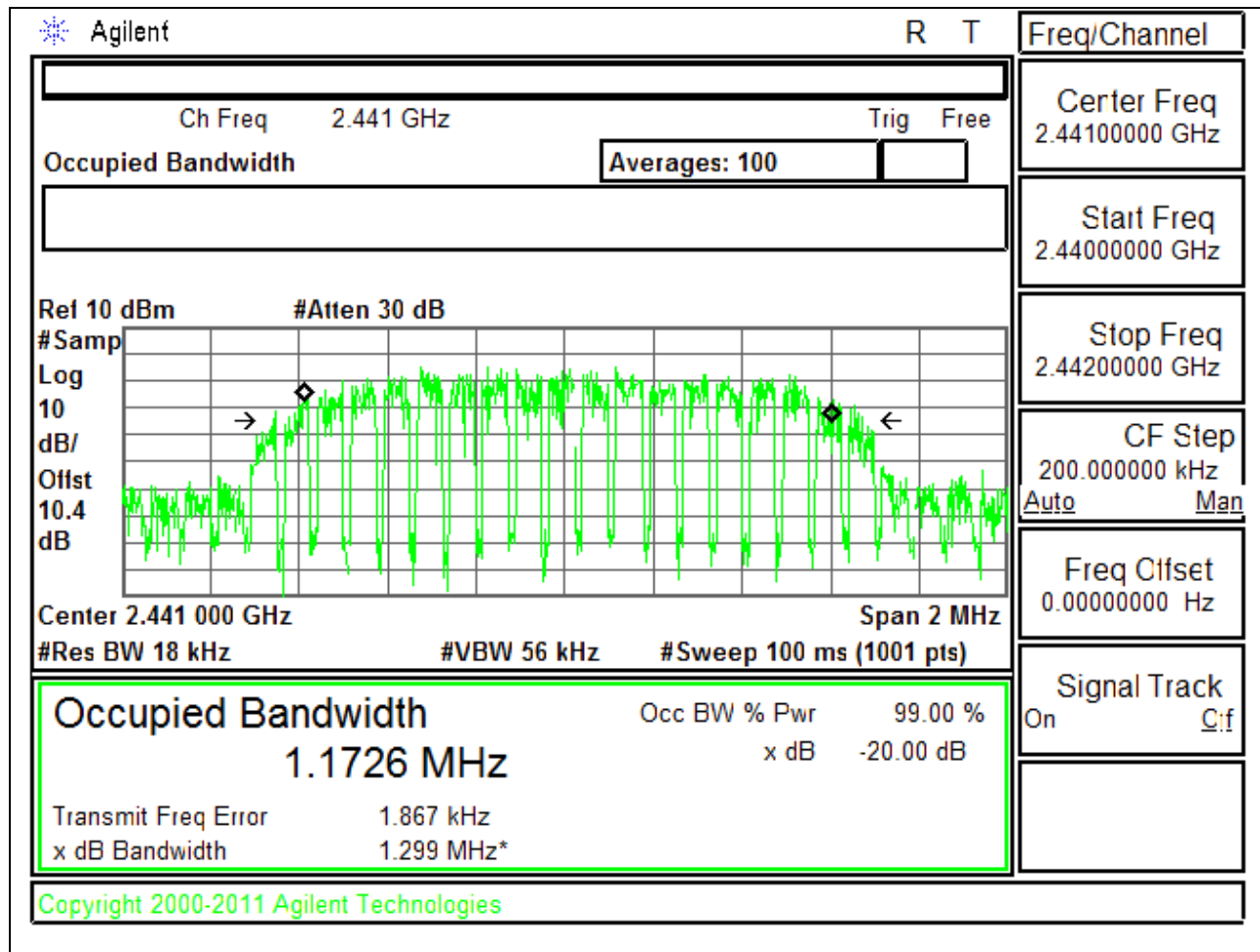


8PSK 99% BANDWIDTH

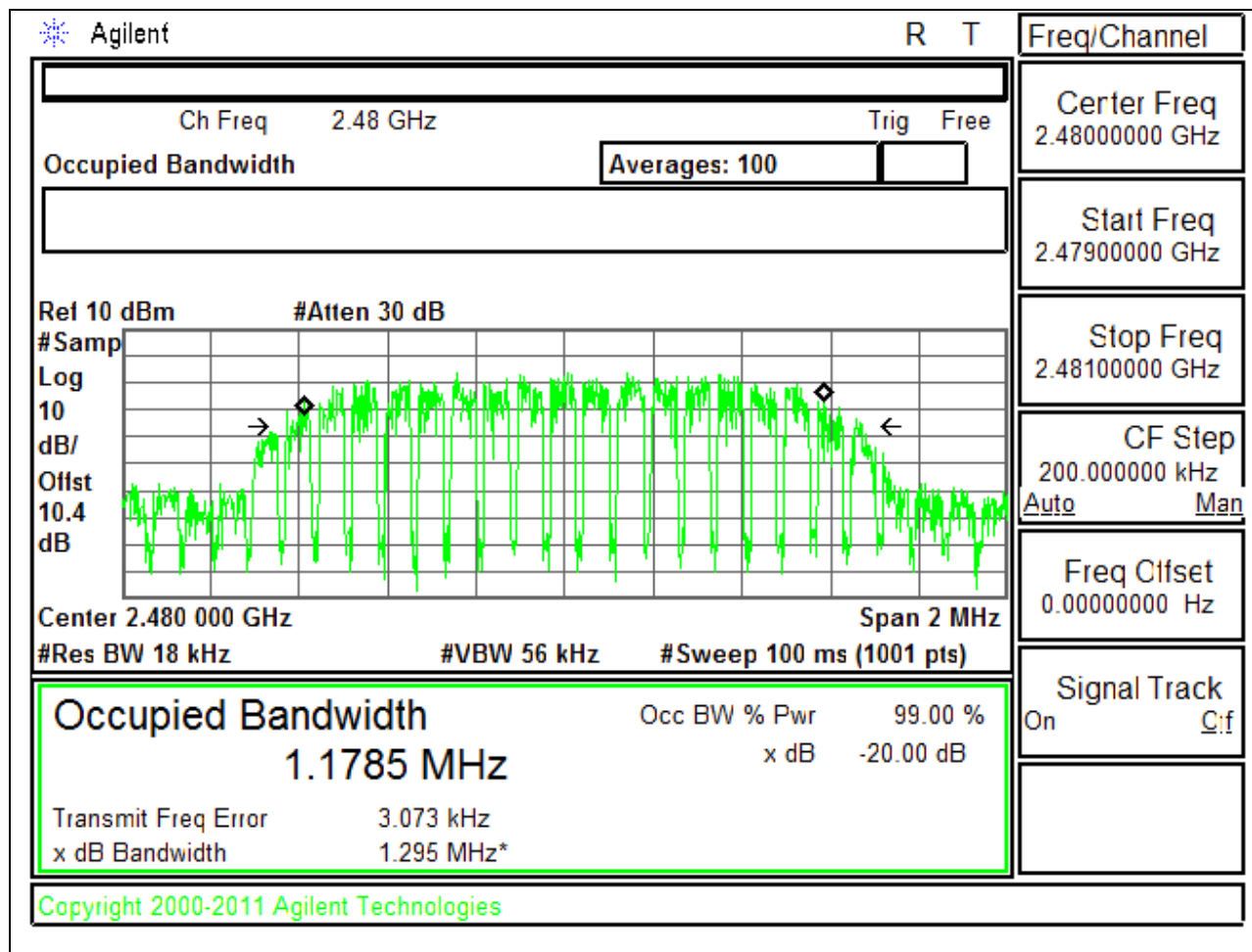
LOW CHANNEL



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.

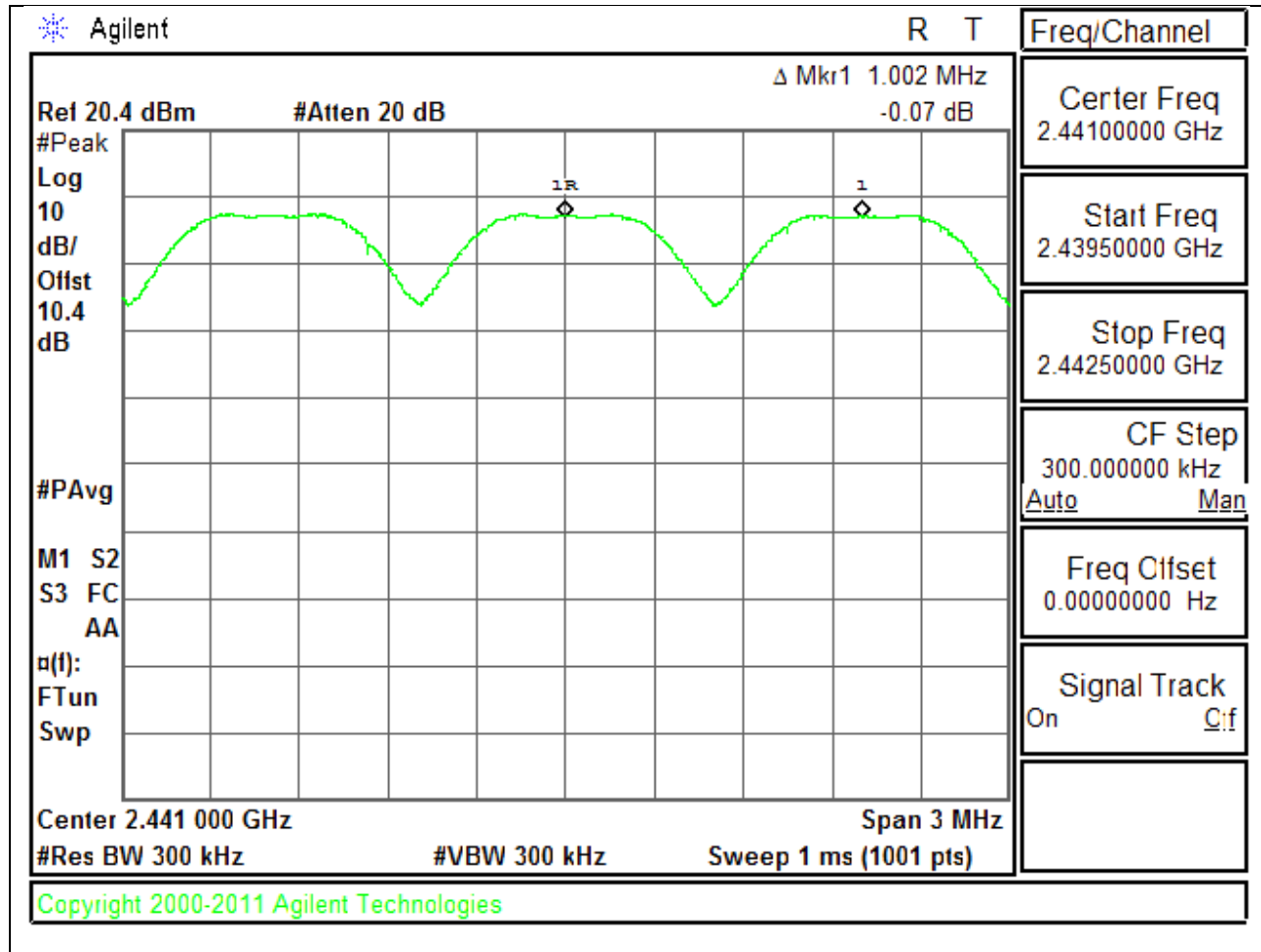
Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than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

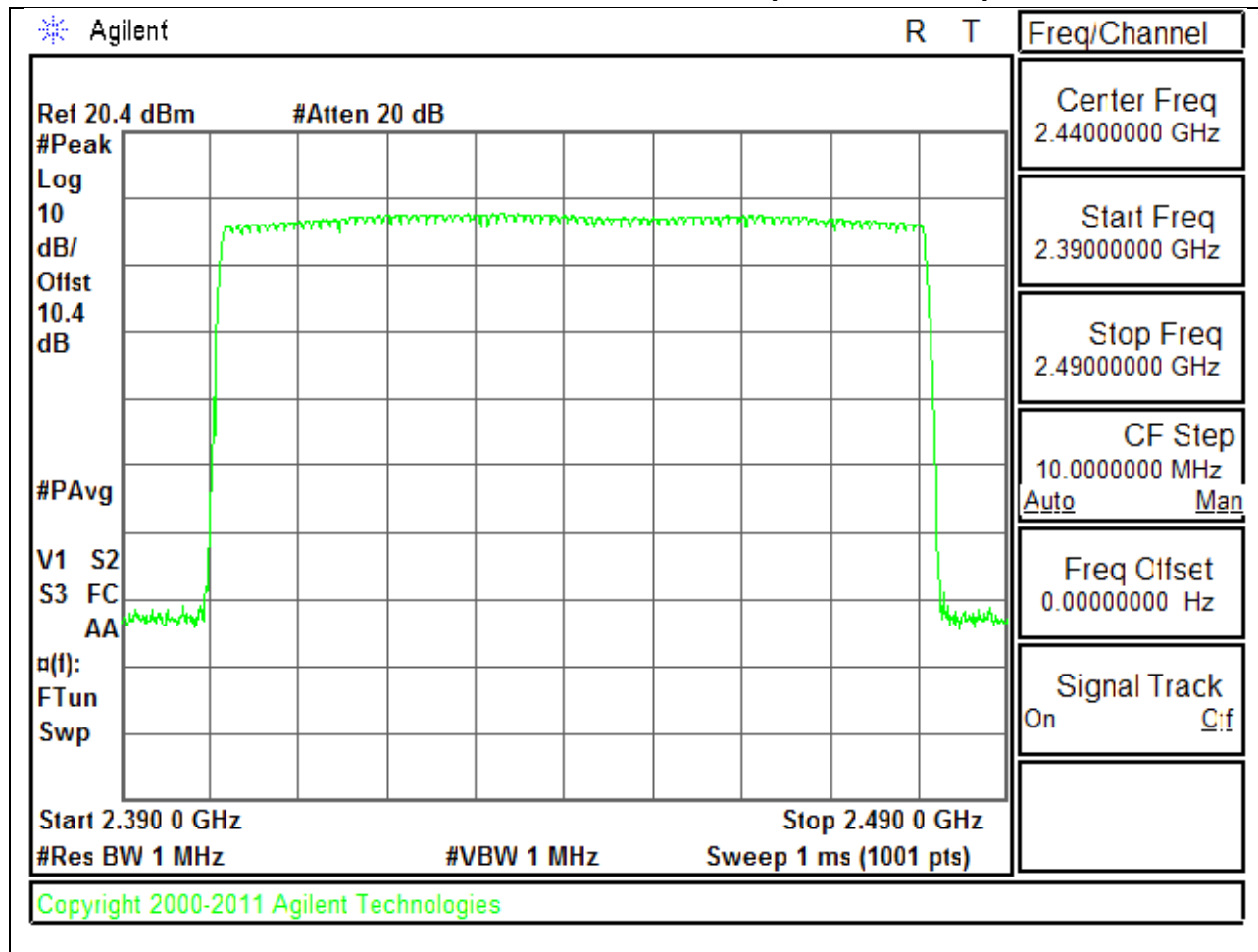
DA 00-705: The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

RESULTS

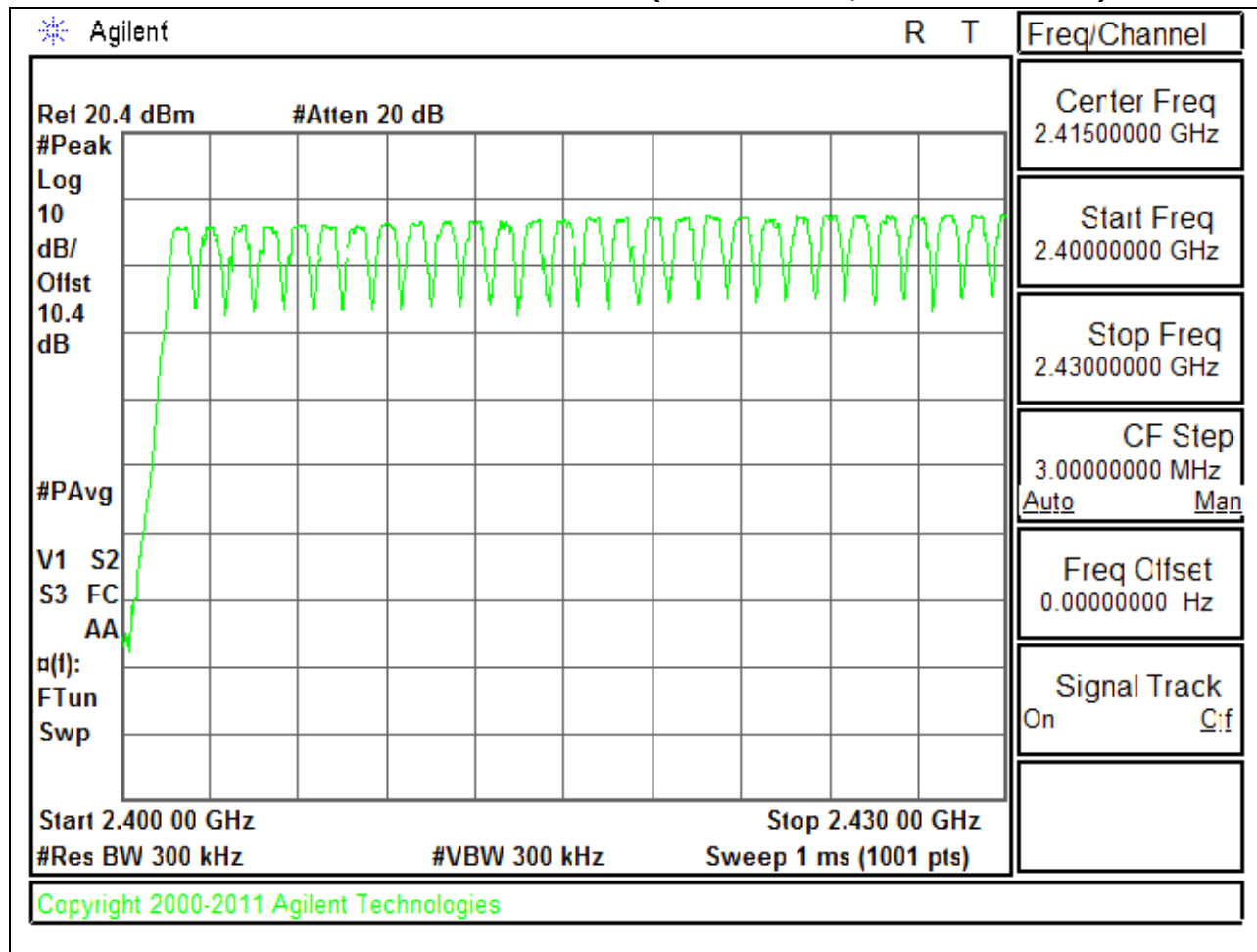
Normal Mode: 79 Channels observed.

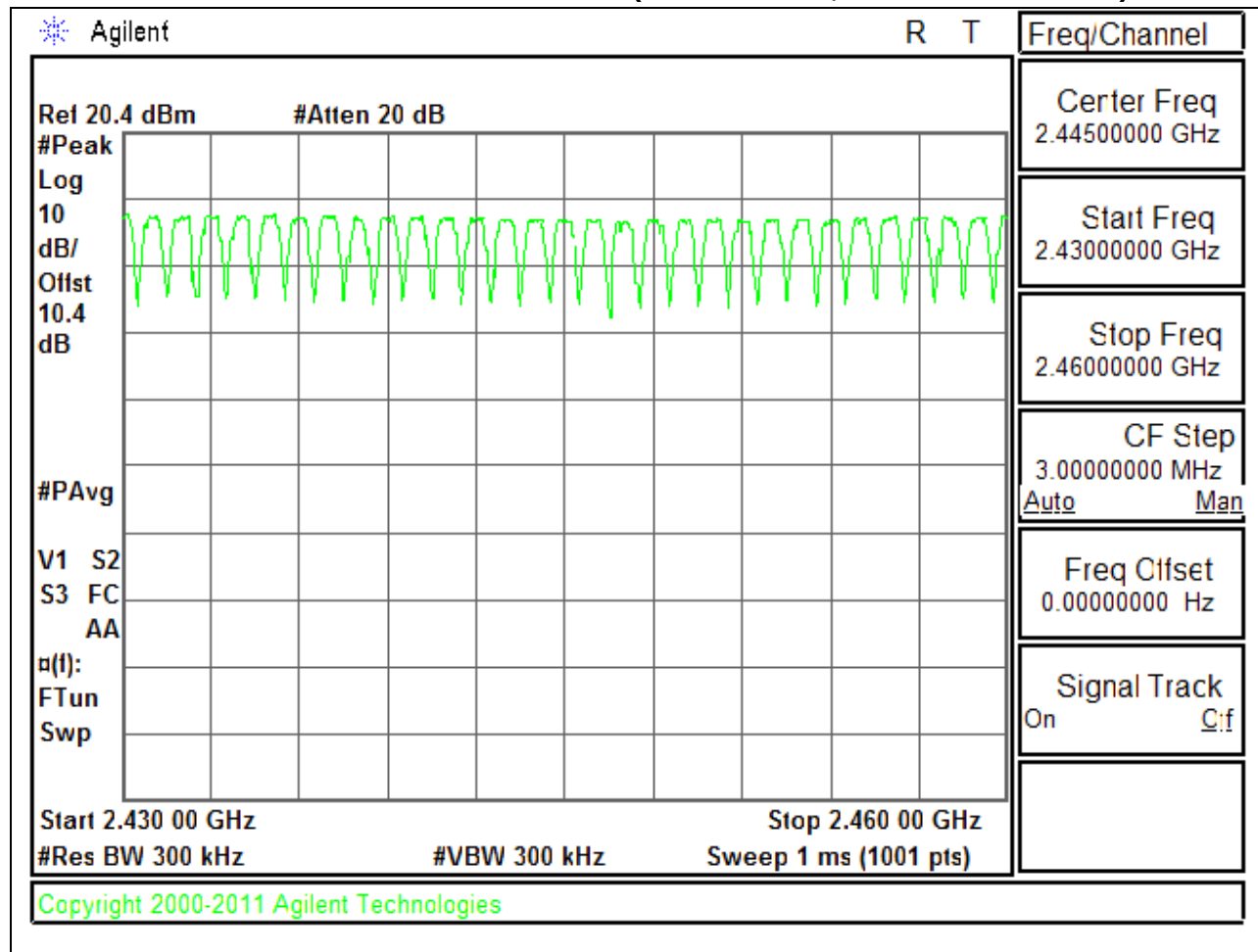
NUMBER OF HOPPING CHANNELS PLOTS

NUMBER OF HOPPING CHANNELS (100 MHZ SPAN)

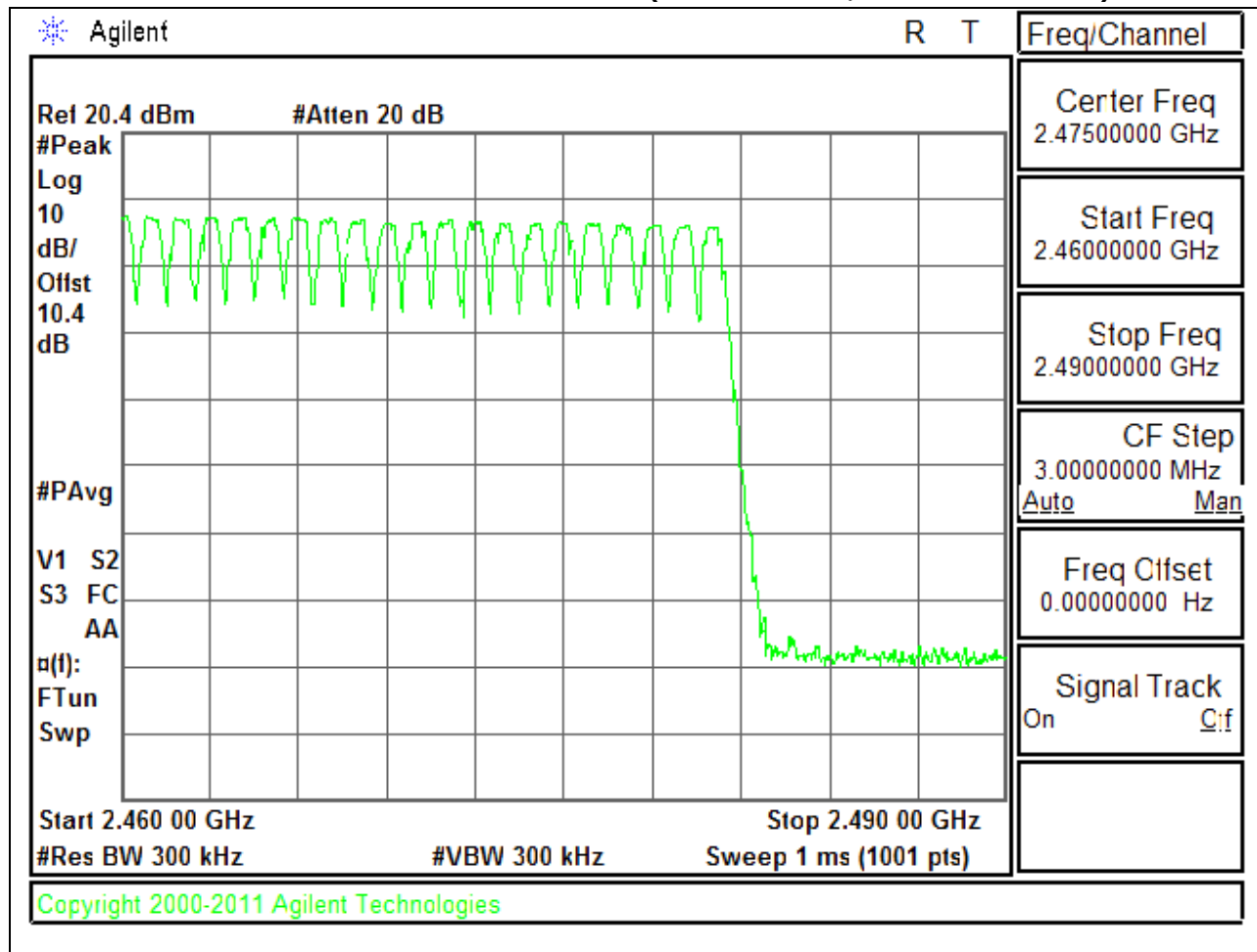


NUMBER OF HOPPING CHANNELS (30 MHZ SPAN, FIRST SEGMENT)



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.

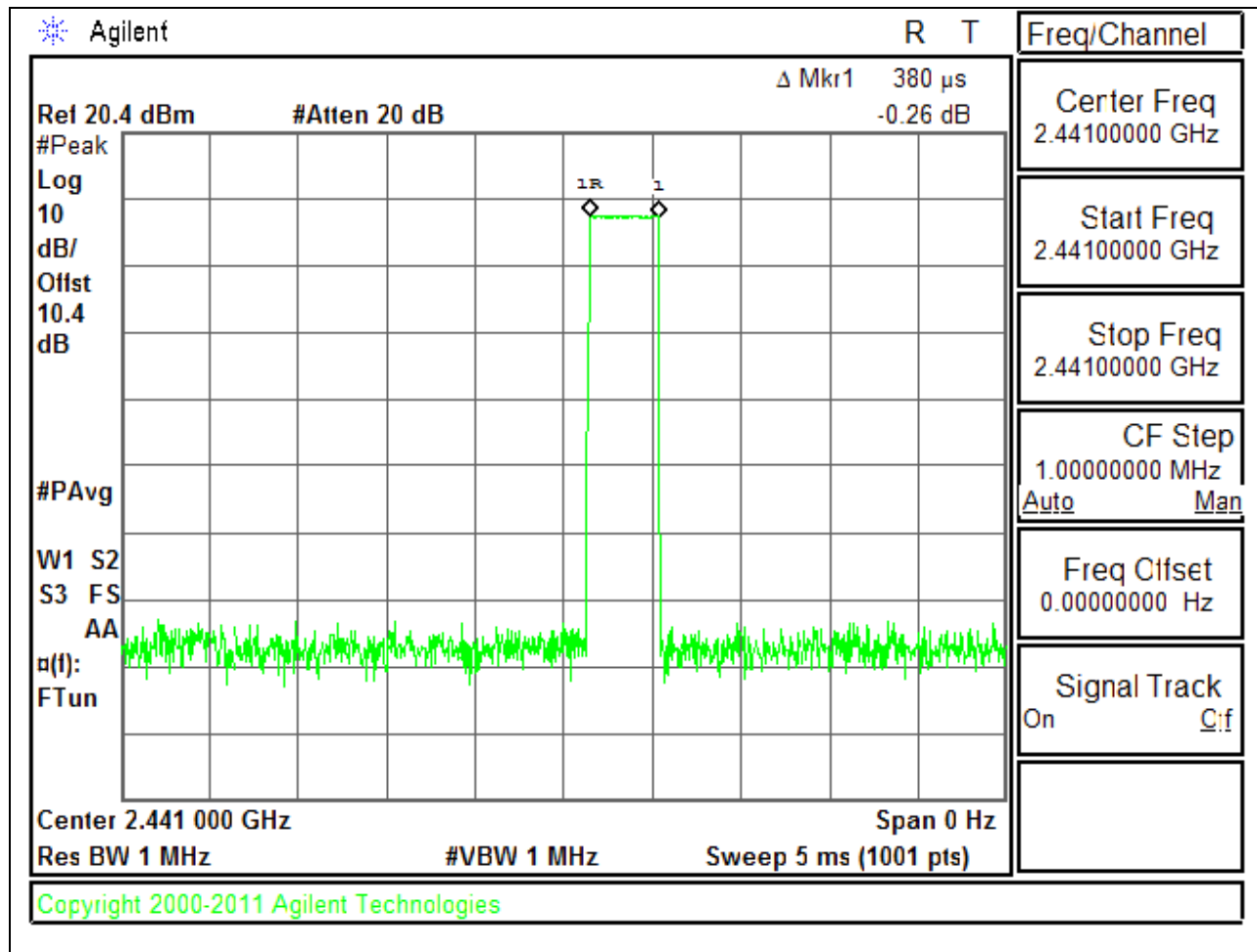
The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to $10 * (\# \text{ of pulses in } 3.16 \text{ s}) * \text{pulse width}$.

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

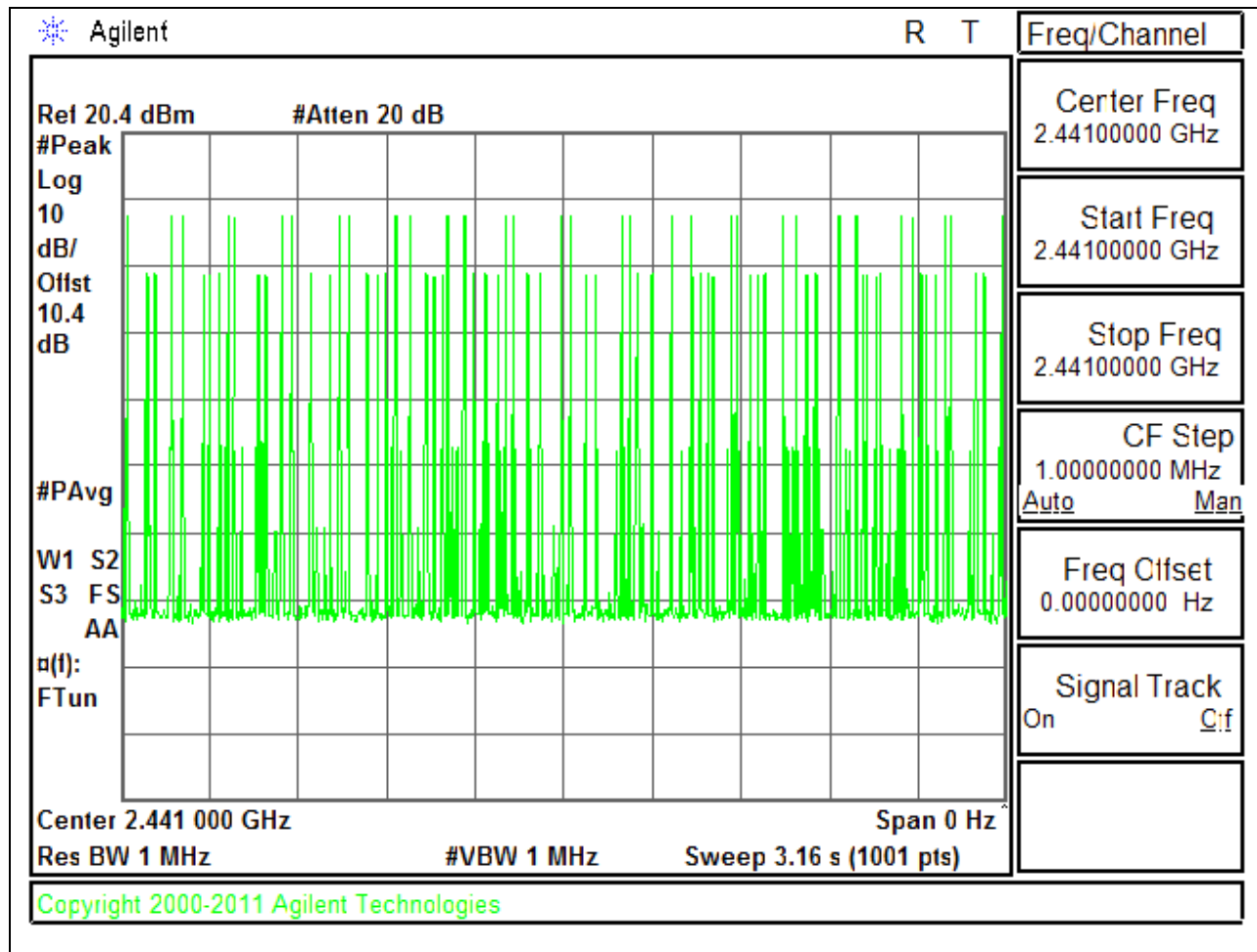
RESULTS

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	0.38	31	0.118	0.4	-0.282
DH3	1.63	14	0.228	0.4	-0.172
DH5	2.86	10	0.286	0.4	-0.114
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	0.38	7.75	0.0295	0.4	-0.3706
DH3	1.63	3.5	0.0571	0.4	-0.3430
DH5	2.86	2.5	0.0715	0.4	-0.3285

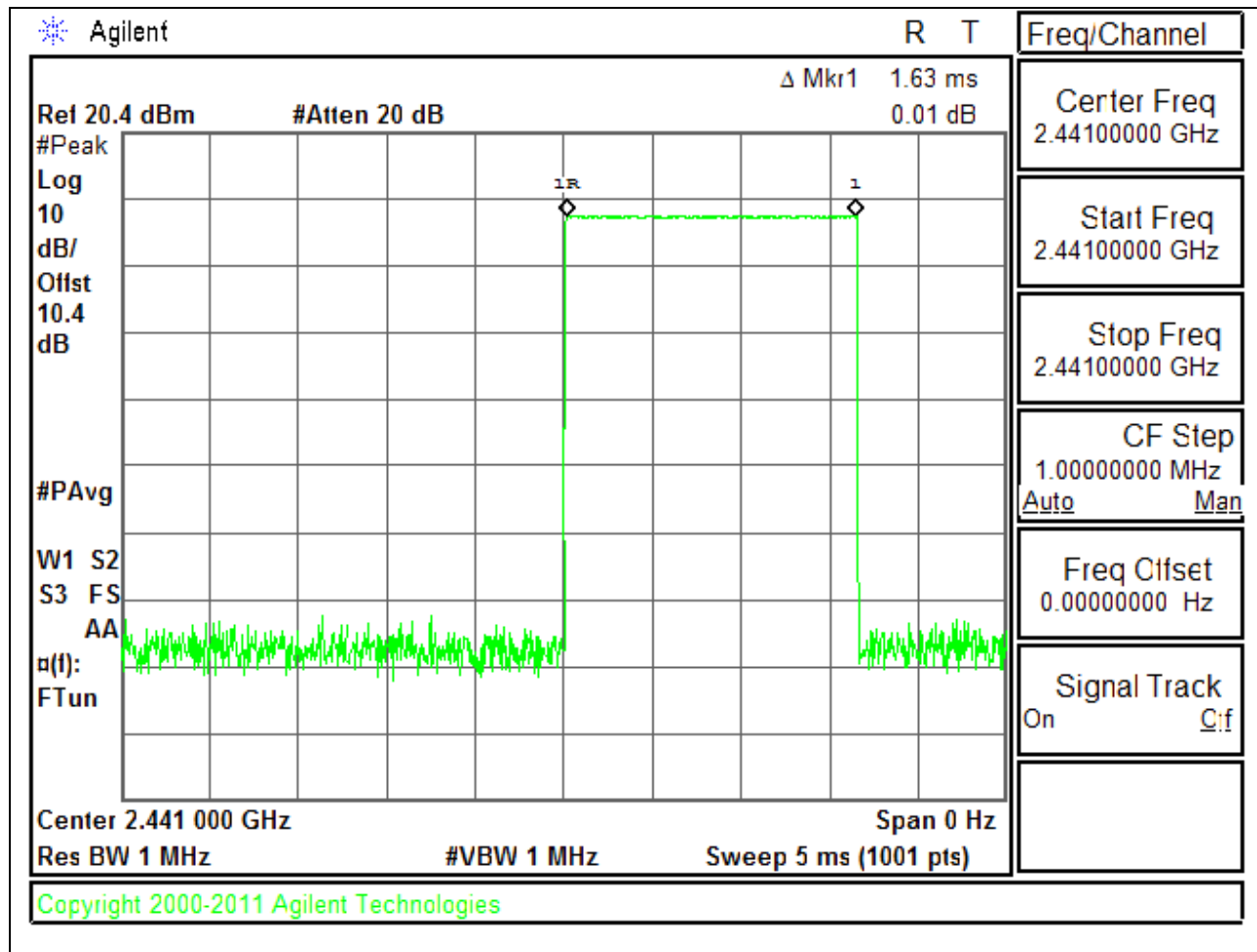
PULSE WIDTH - DH1



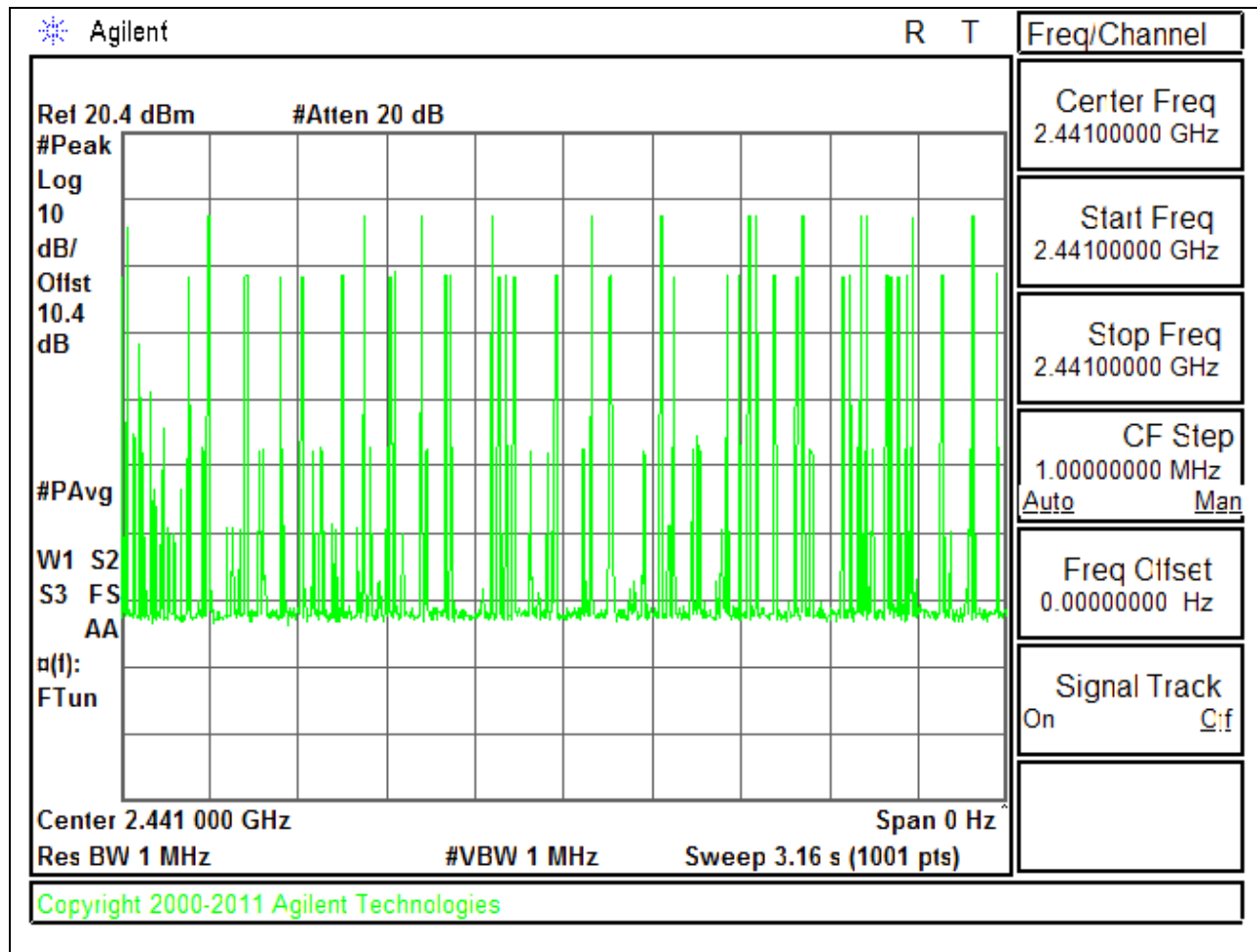
NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD - DH1



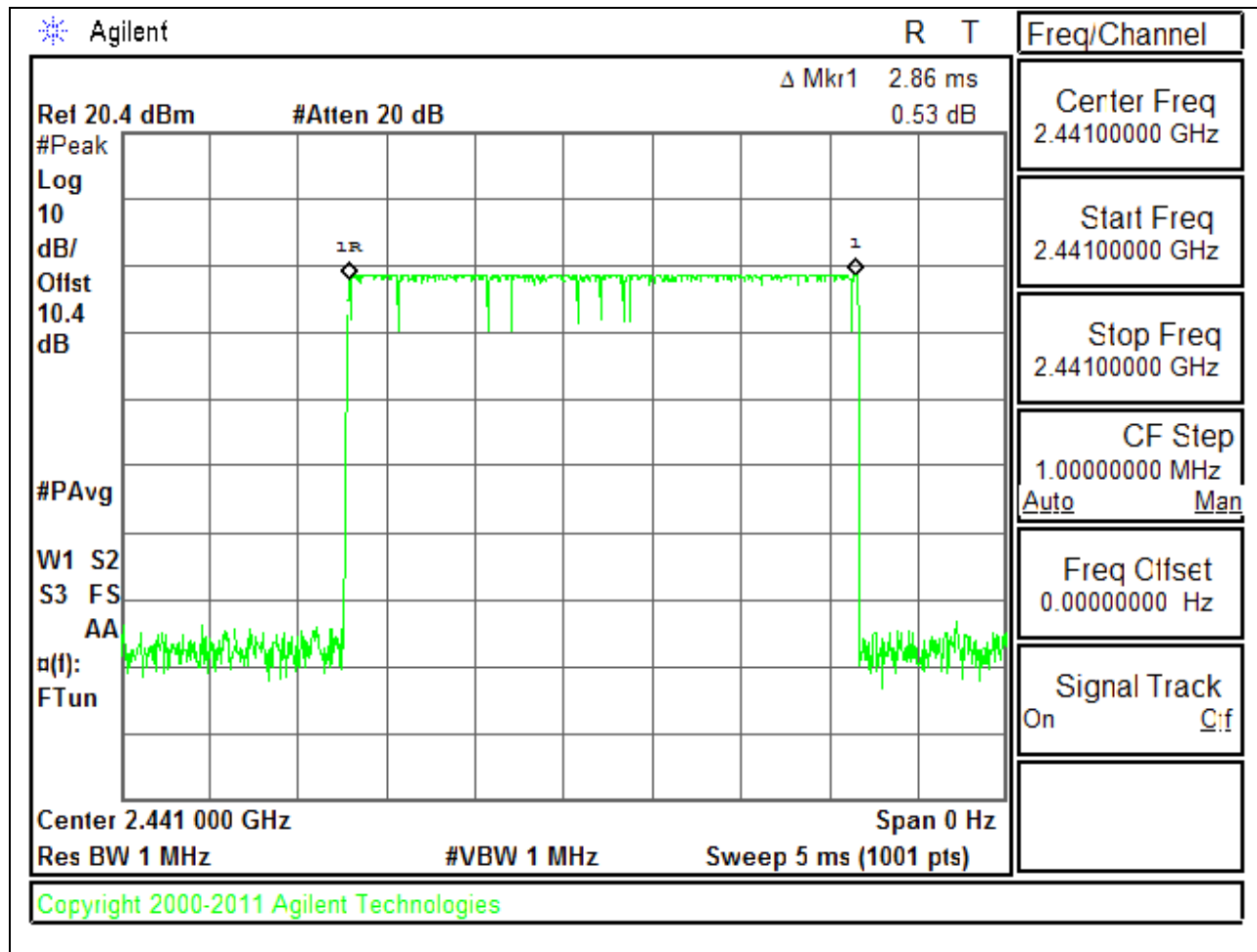
PULSE WIDTH - DH3



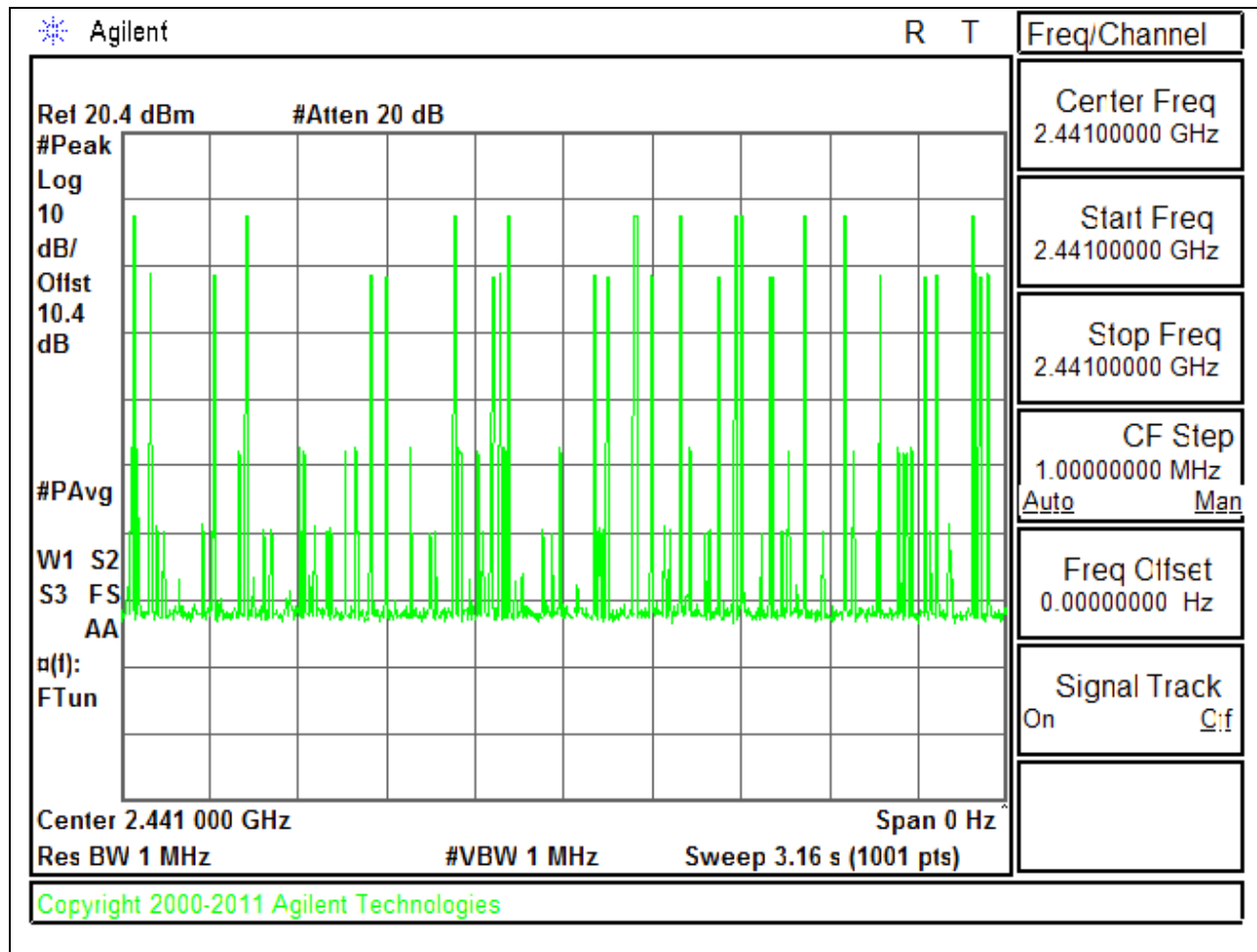
NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD - DH3



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 21dBm.

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	6.45	21	-14.55
Middle	2441	7.94	21	-13.06
High	2480	6.76	21	-14.24
Worst		7.94		-13.06

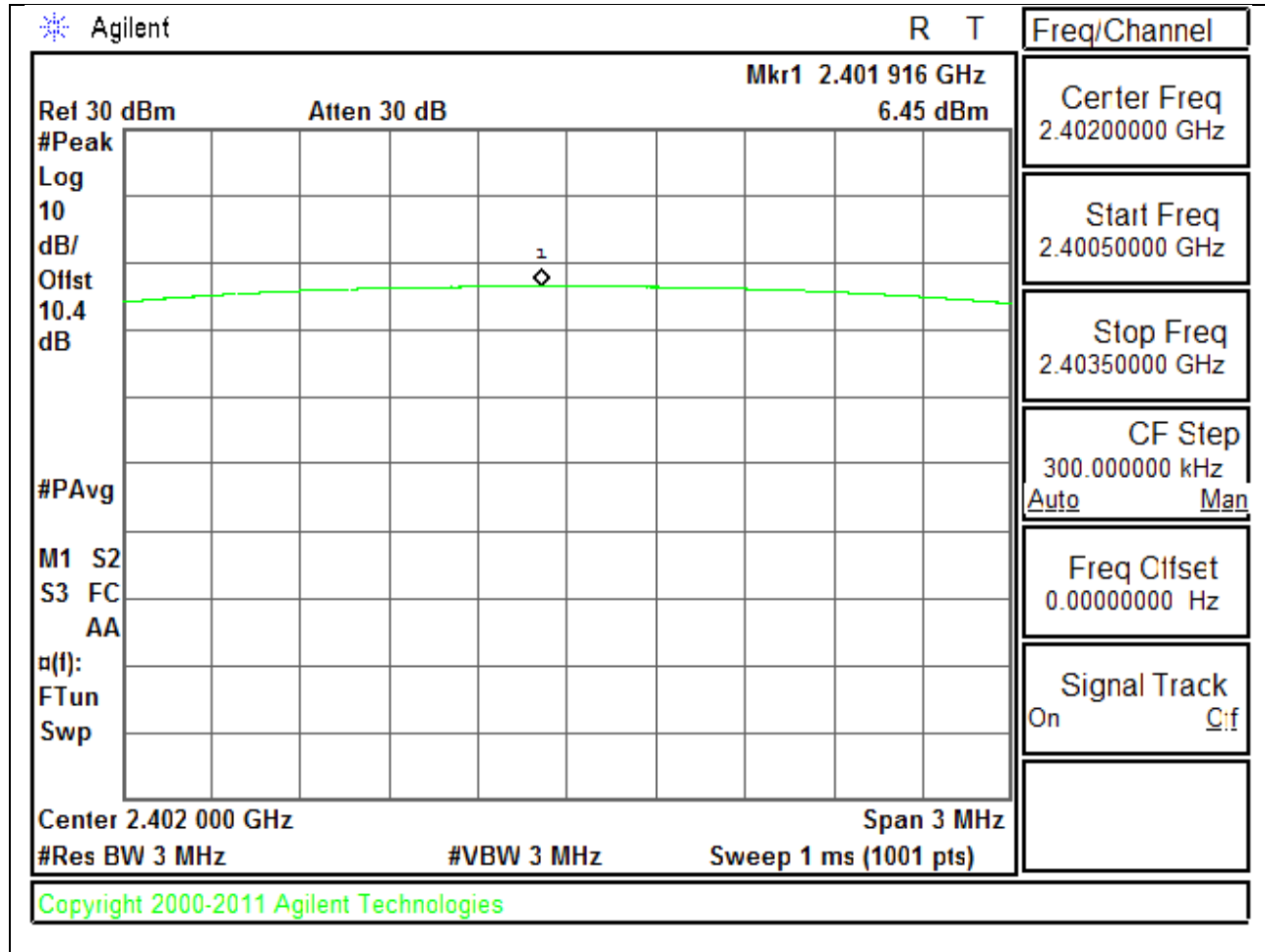
8.5.2. ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	6.76	21	-14.24
Middle	2441	8.38	21	-12.62
High	2480	7.19	21	-13.81
Worst		8.38		-12.62

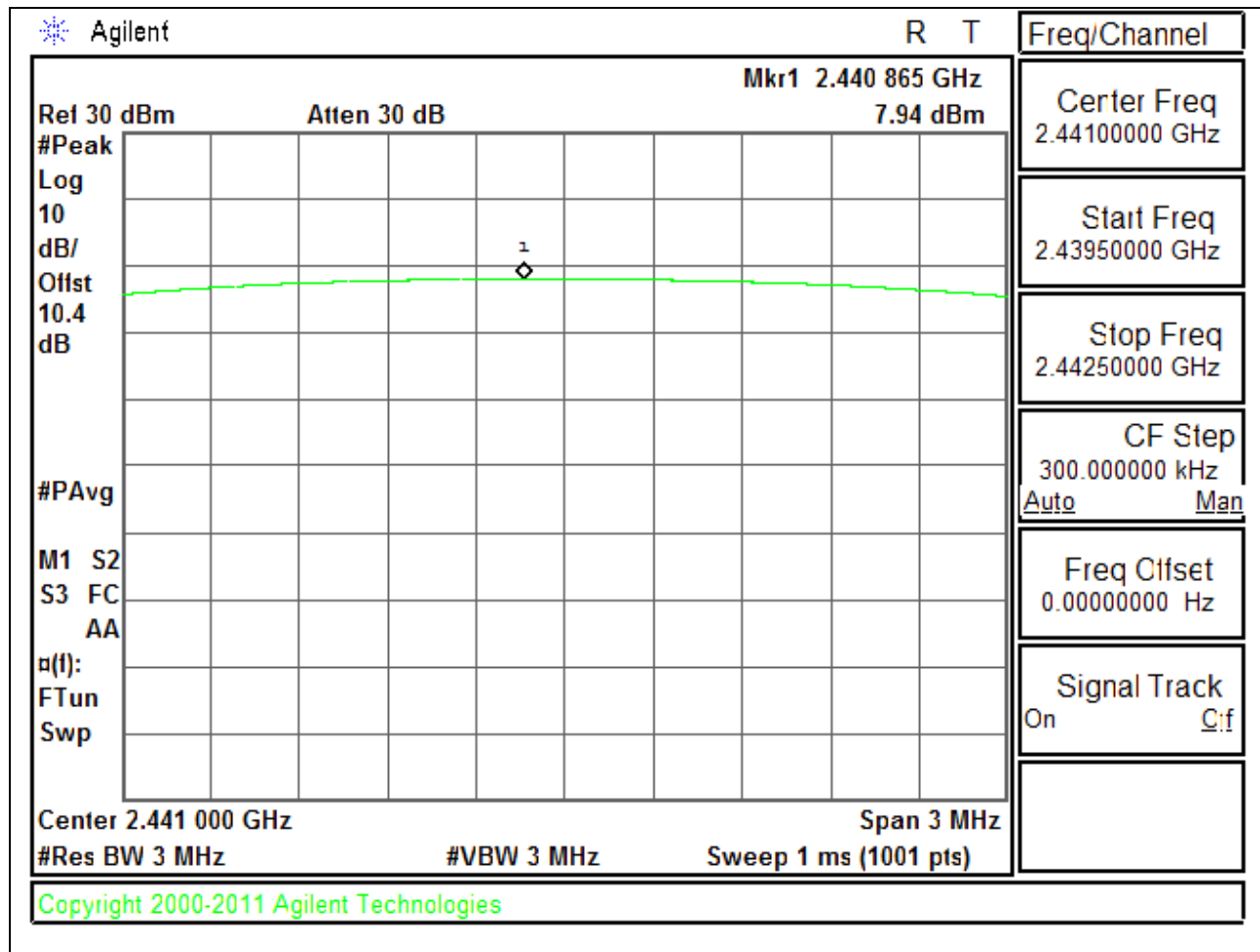
8.5.3. OUTPUT POWER PLOTS

GFSK OUTPUT POWER

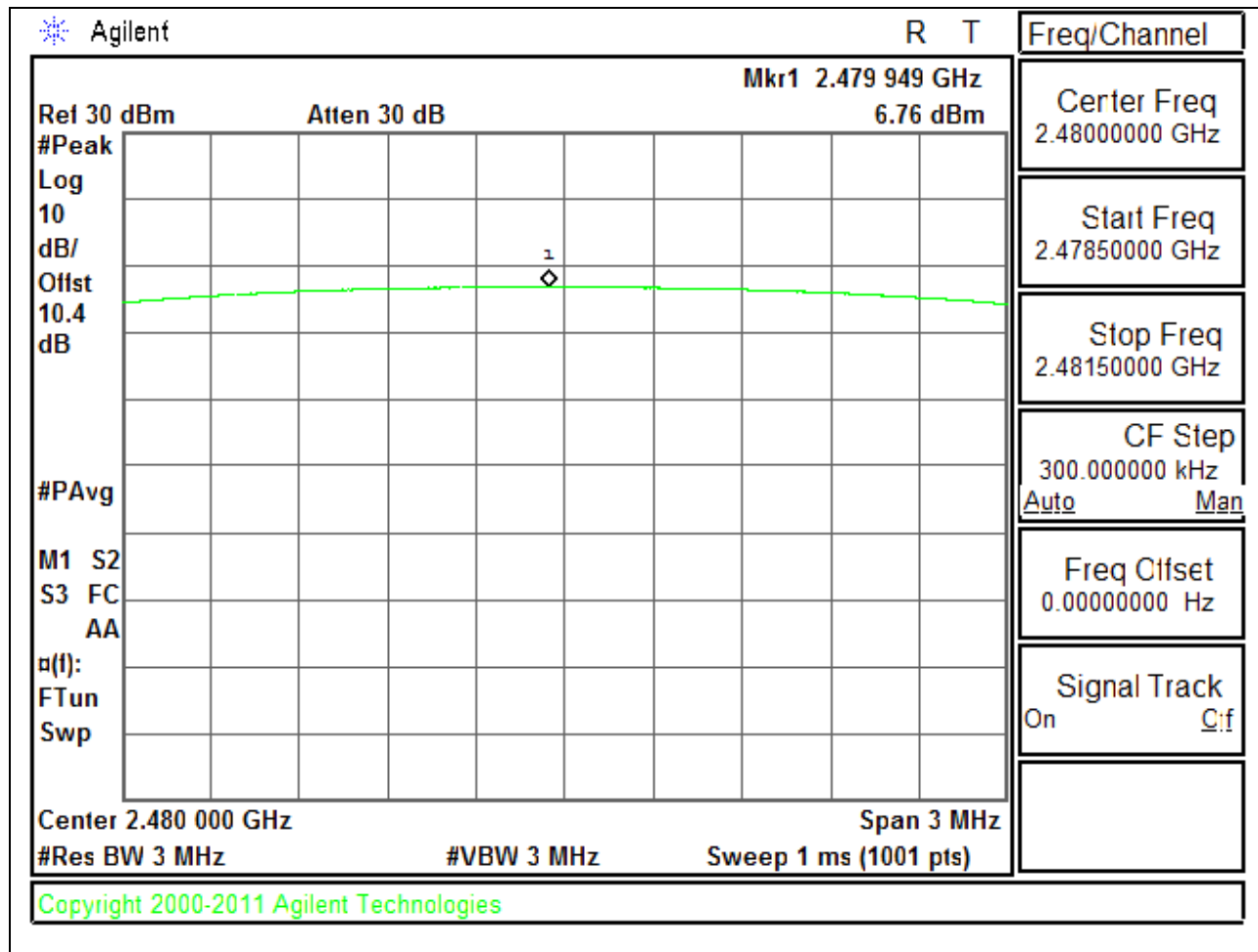
LOW CHANNEL



MID CHANNEL

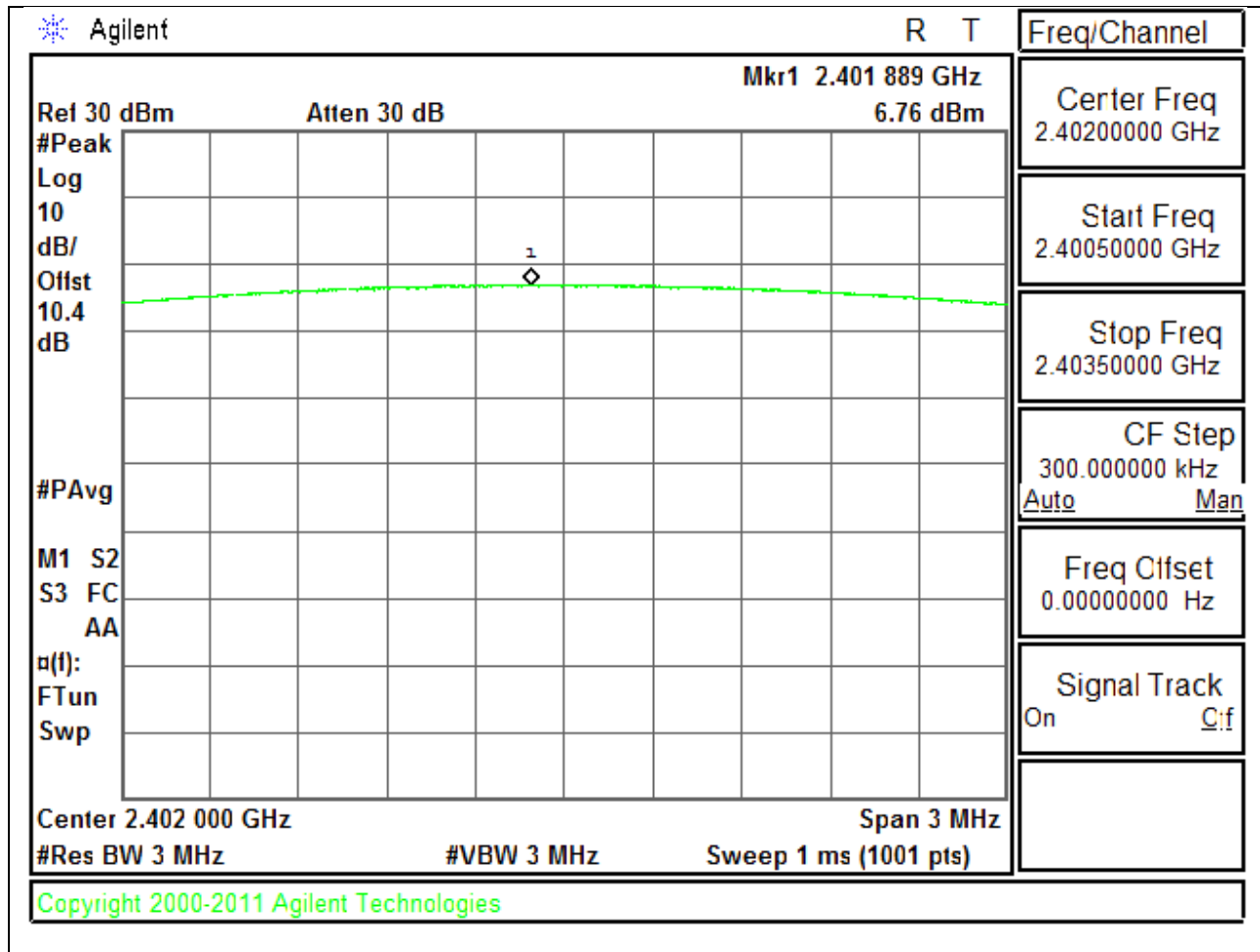


HIGH CHANNEL

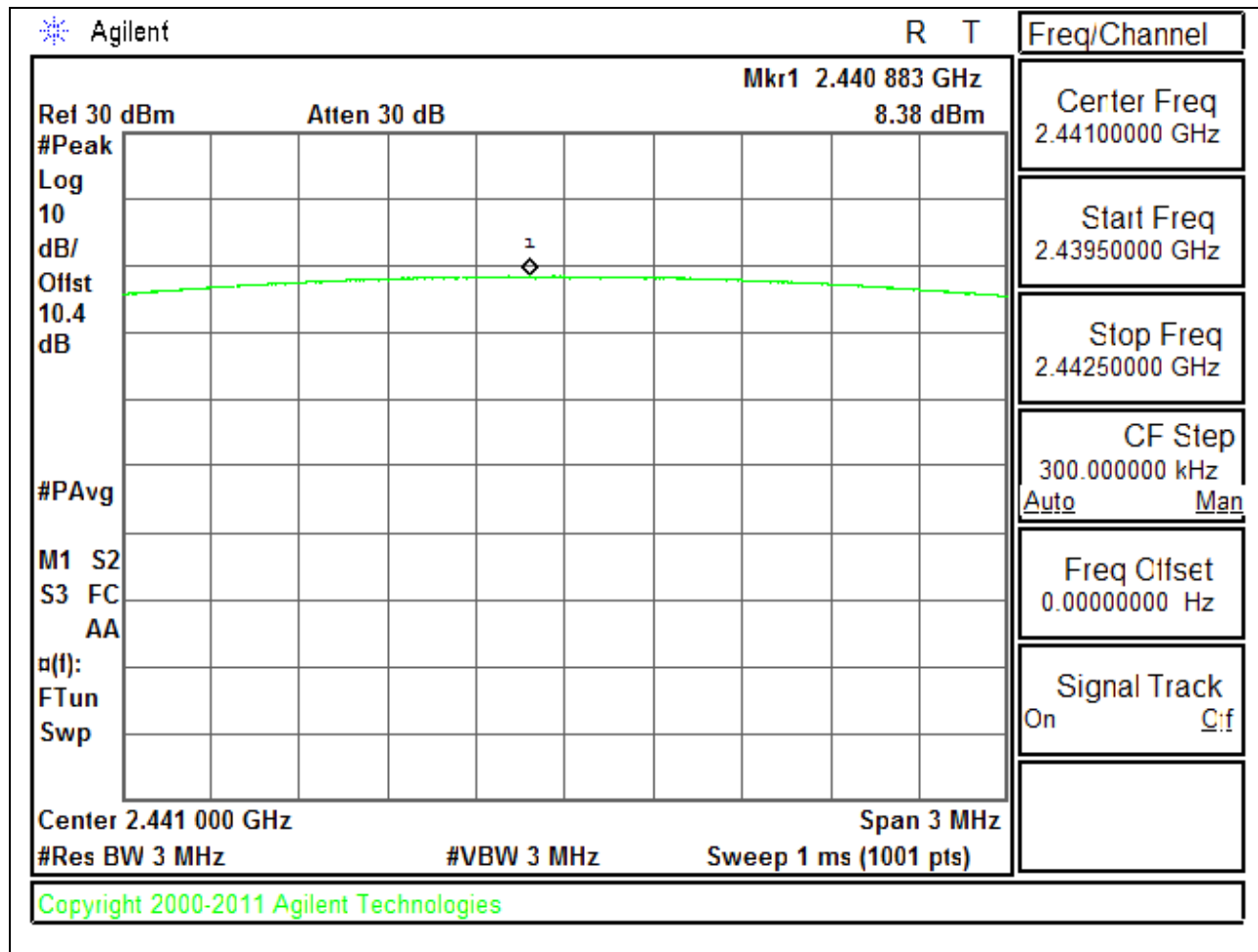


8PSK OUTPUT POWER

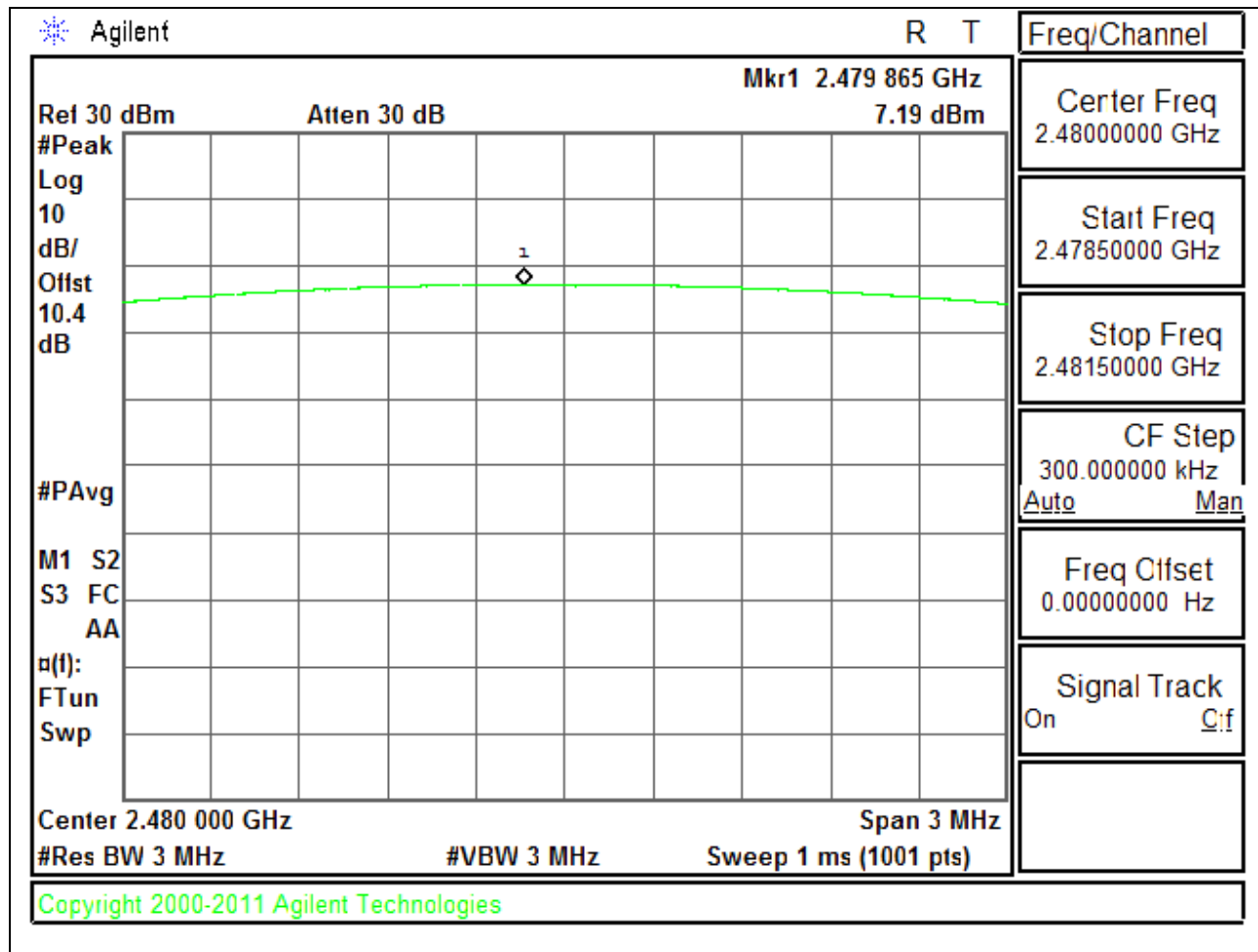
LOW CHANNEL



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.

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.

RESULTS

8.6.1. BASIC DATA RATE GFSK MODULATION

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	7.0
Middle	2441	7.9
High	2480	7.3
Worst		7.9

8.6.2. DATA RATE PI/4-DQPSK MODULATION

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	4.50
Middle	2441	5.50
High	2480	4.90
Worst		5.50

8.6.3. ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	4.5
Middle	2441	5.5
High	2480	4.9
Worst		5.5

8.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

Limit = -20 dBc

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.

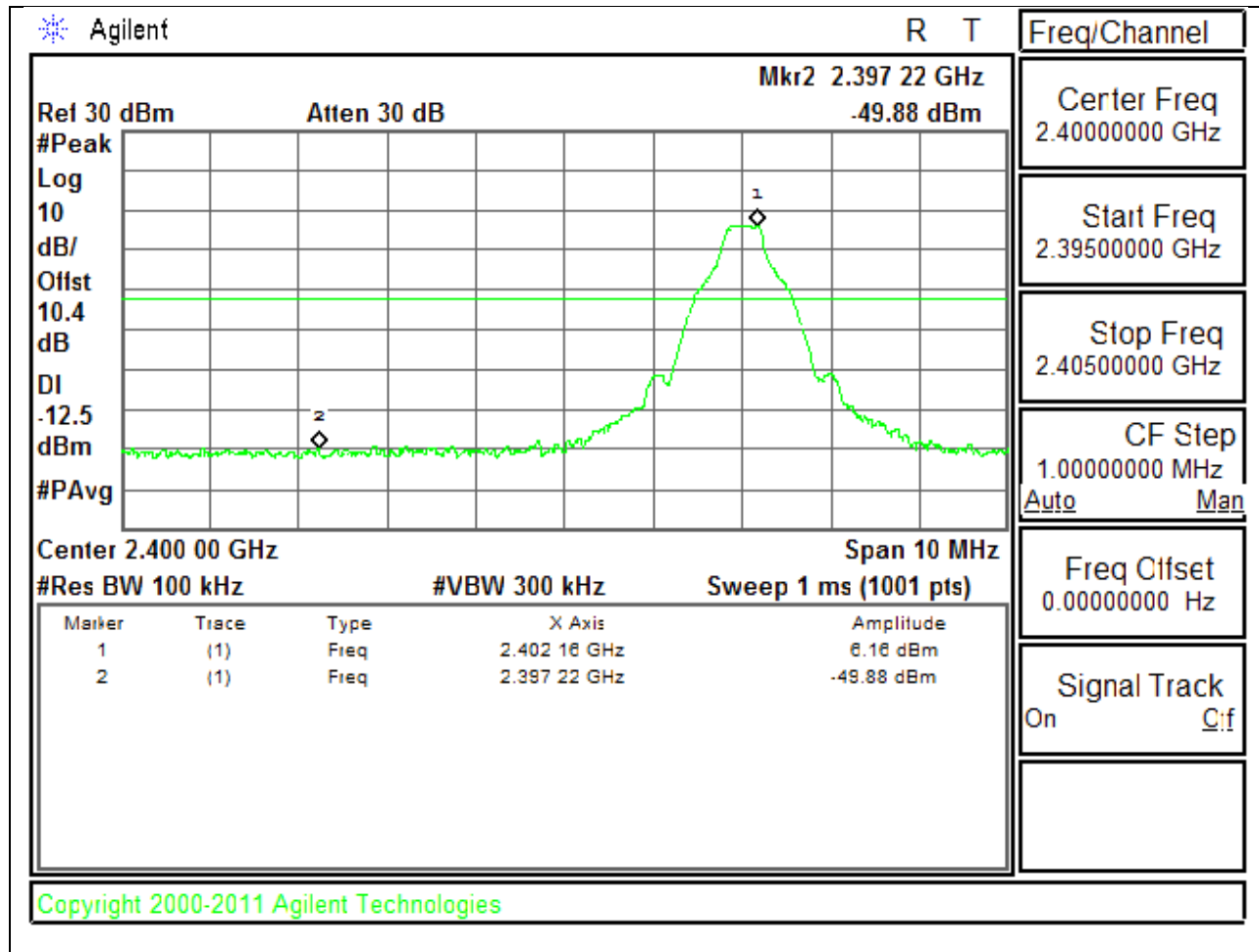
The band edges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

RESULTS

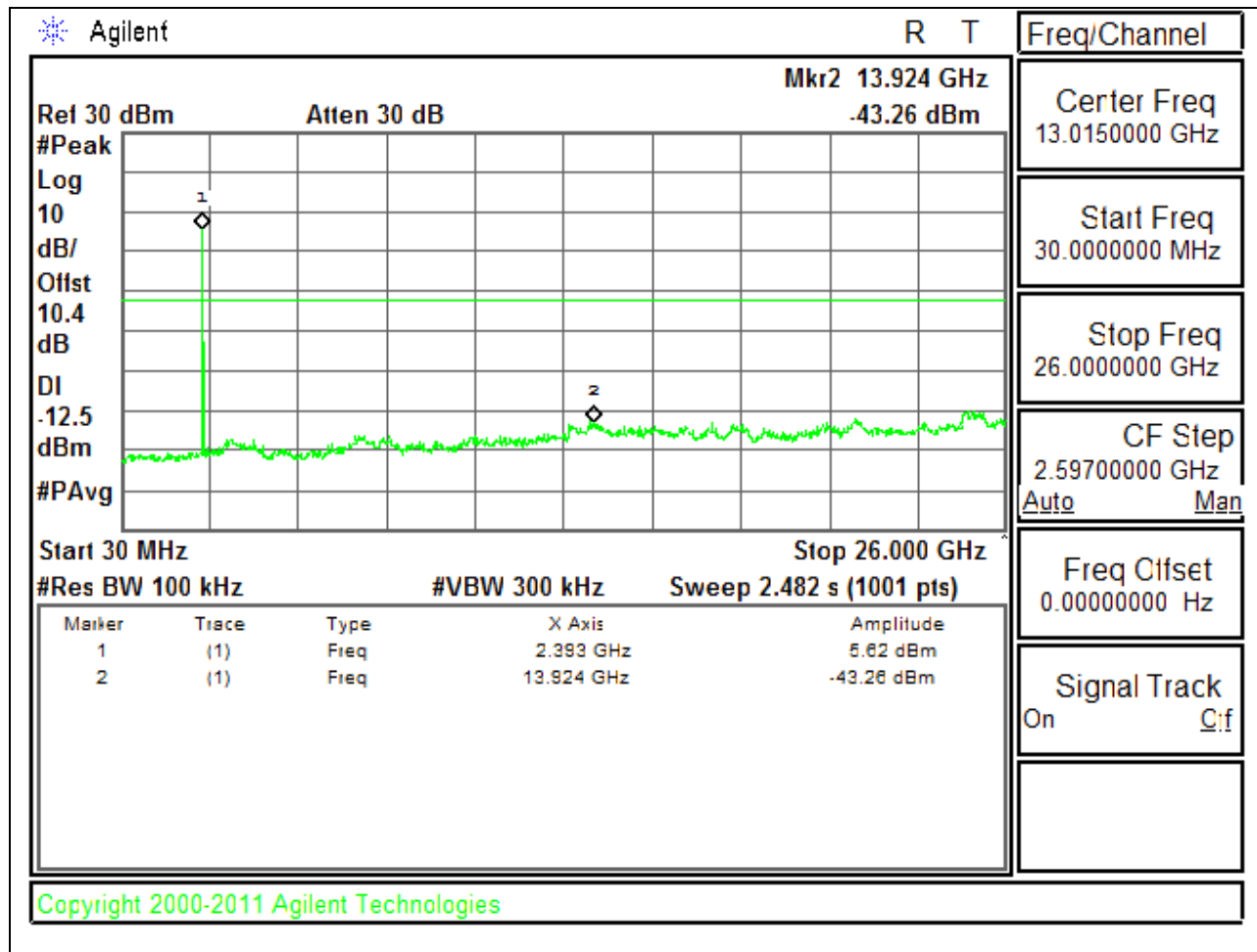
8.7.1. BASIC DATA RATE GFSK MODULATION

SPURIOUS EMISSIONS, LOW CHANNEL

LOW CHANNEL BANDEDGE

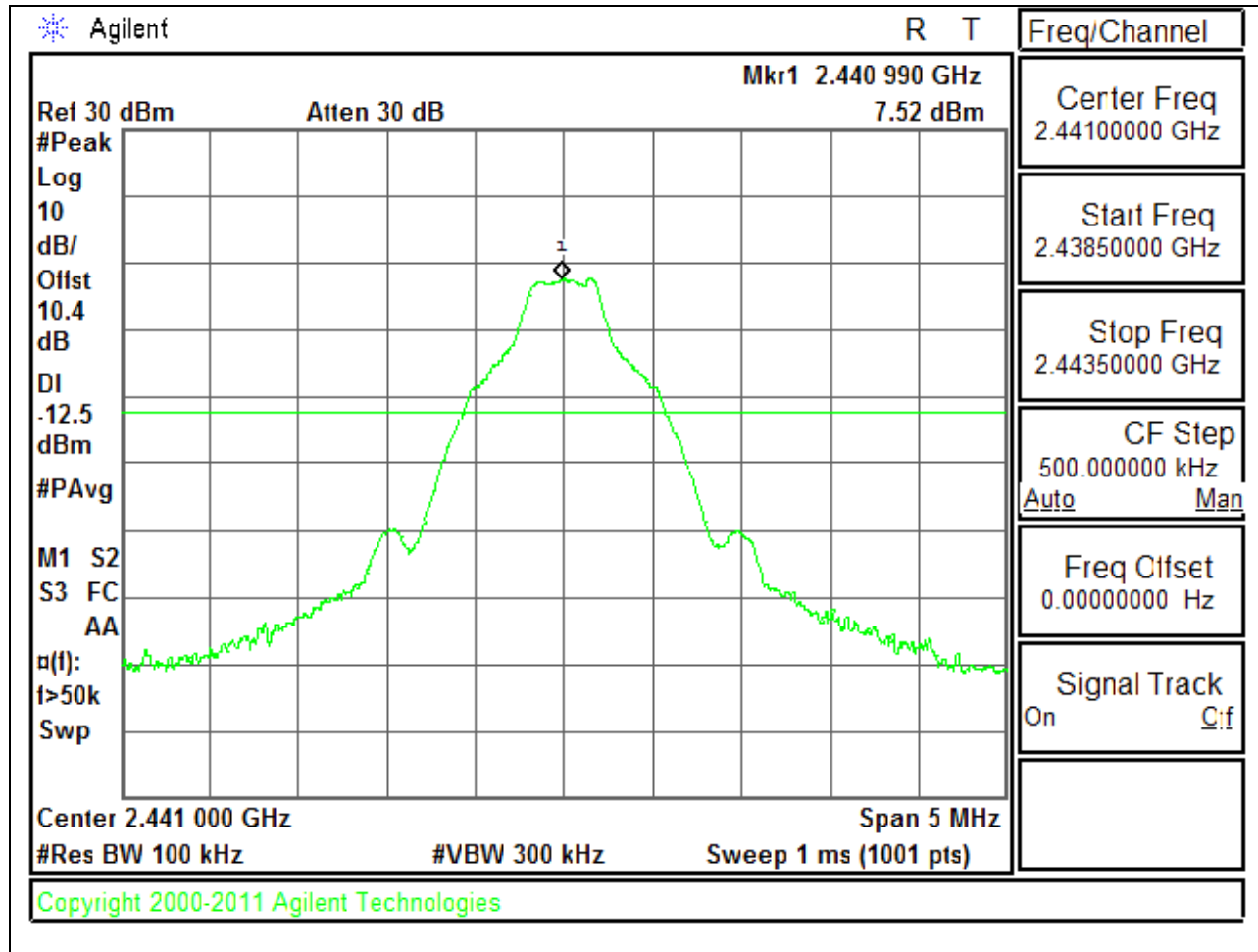


LOW CHANNEL SPURIOUS

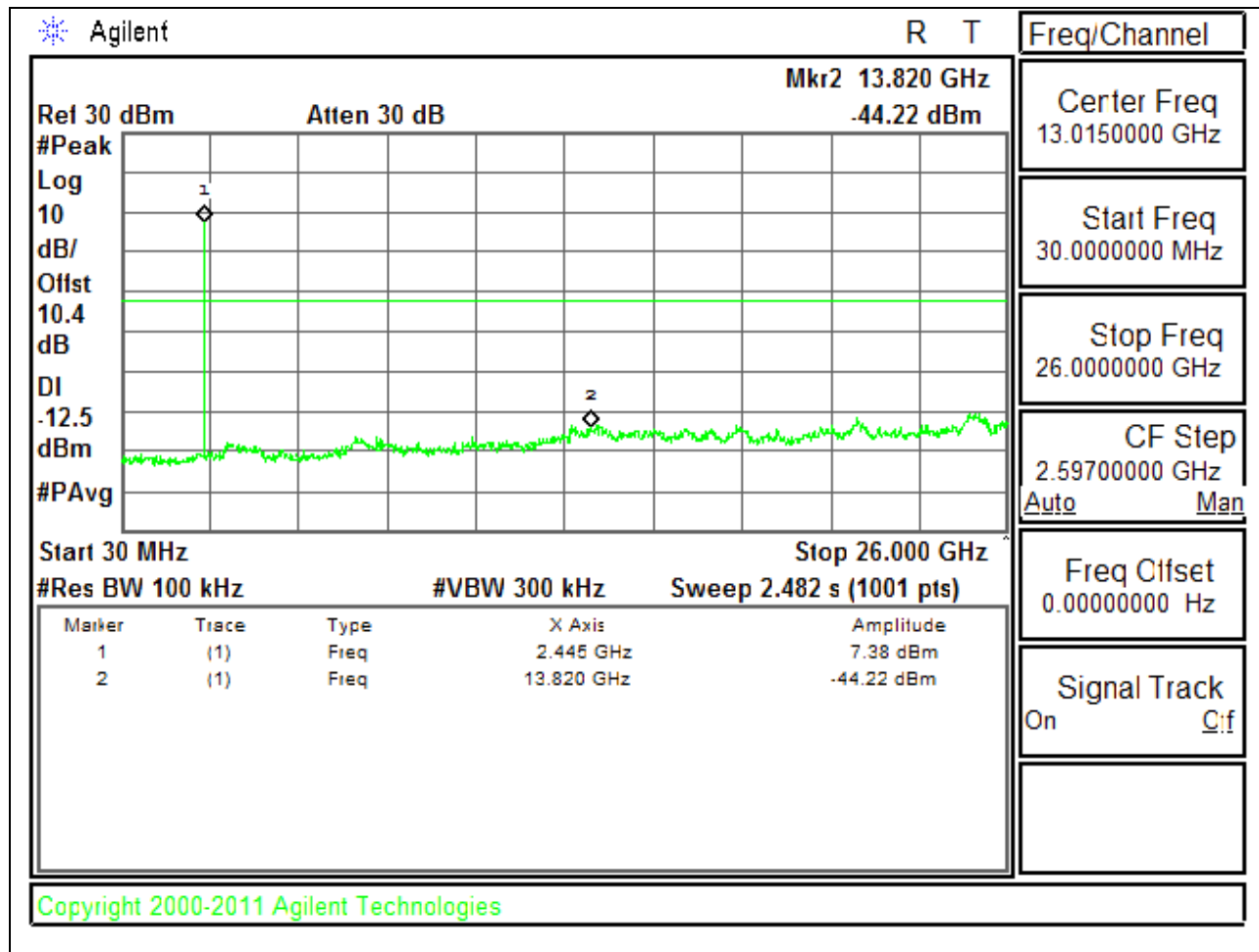


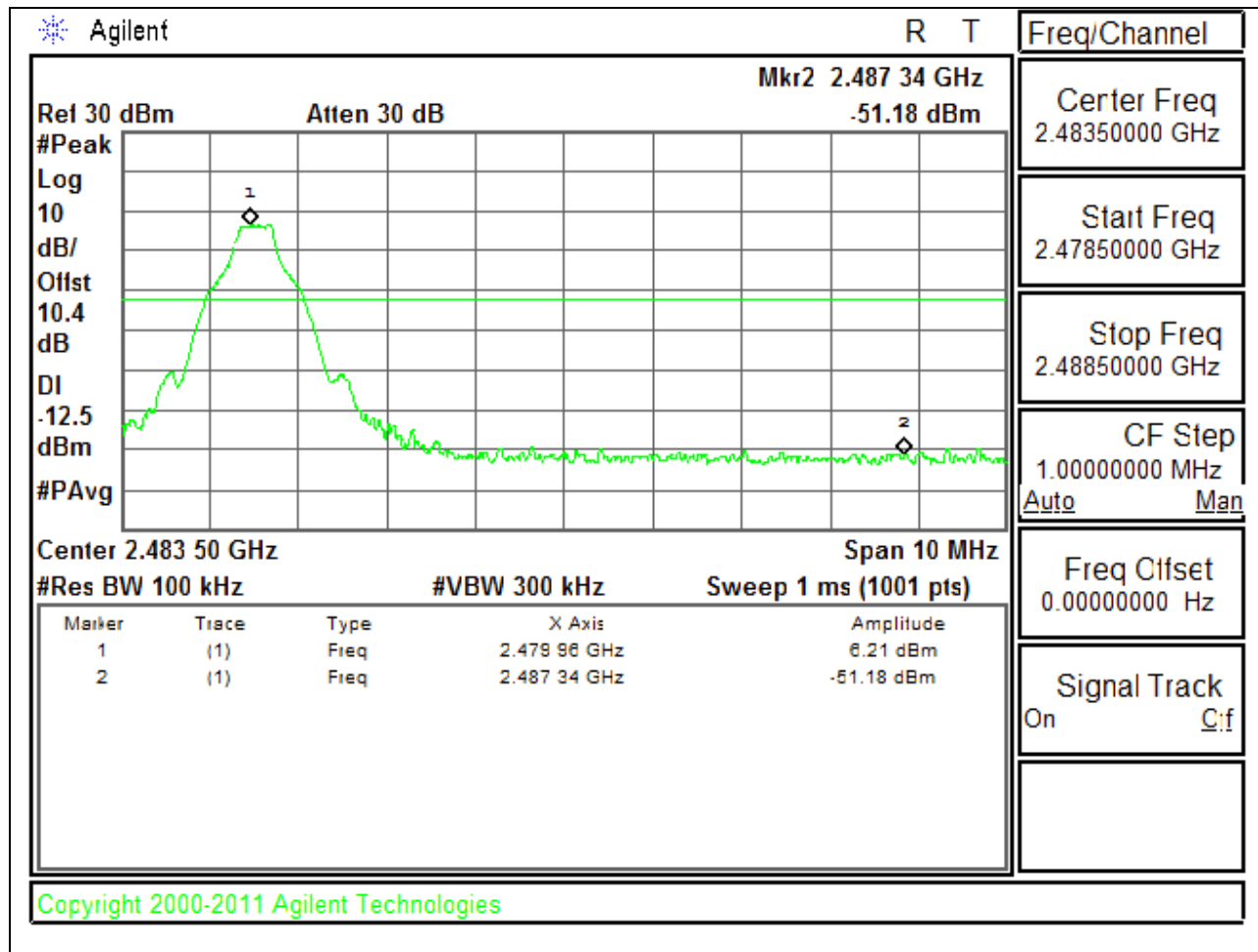
SPURIOUS EMISSIONS, MID CHANNEL

MID CHANNEL BANDEDGE

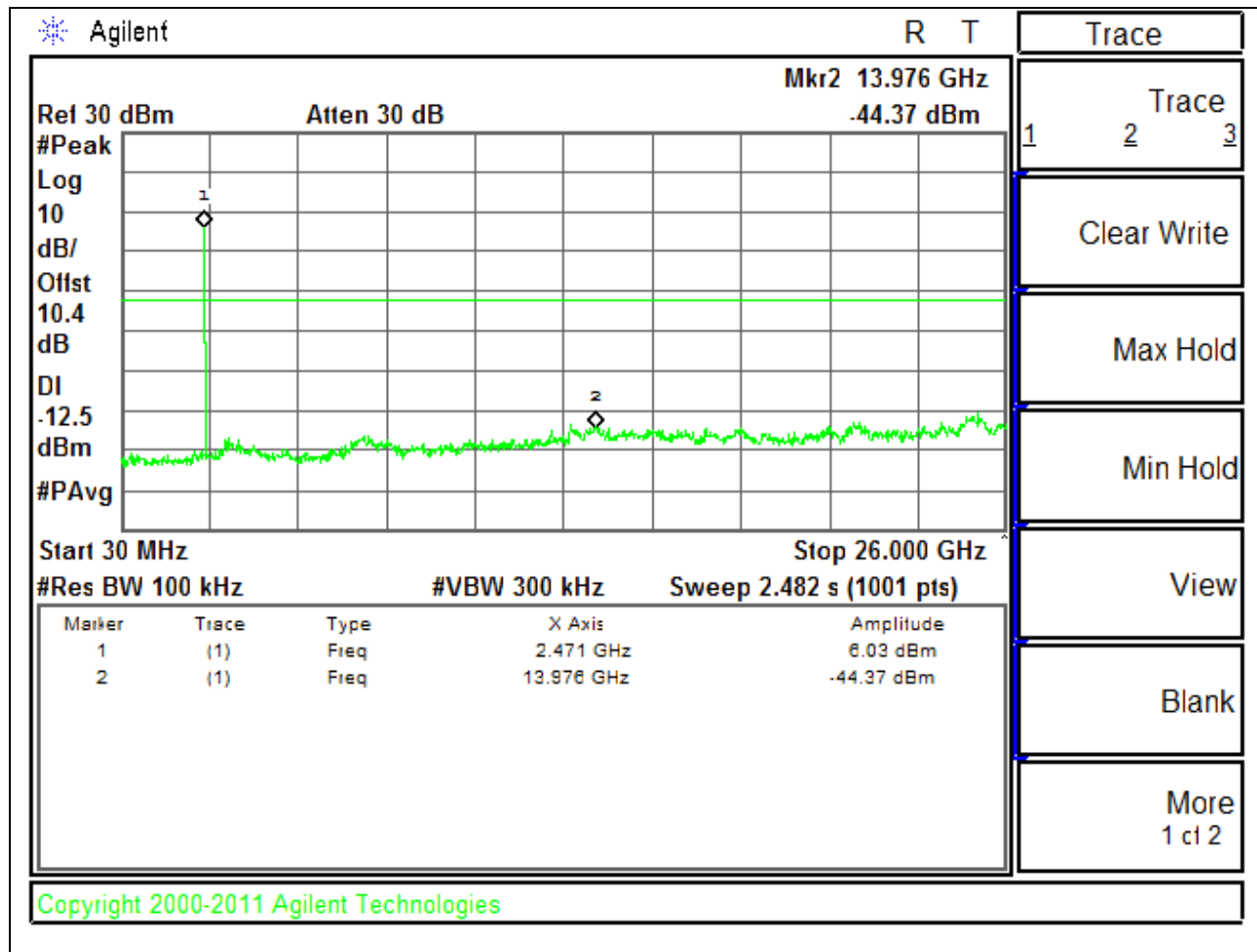


MID CHANNEL SPURIOUS



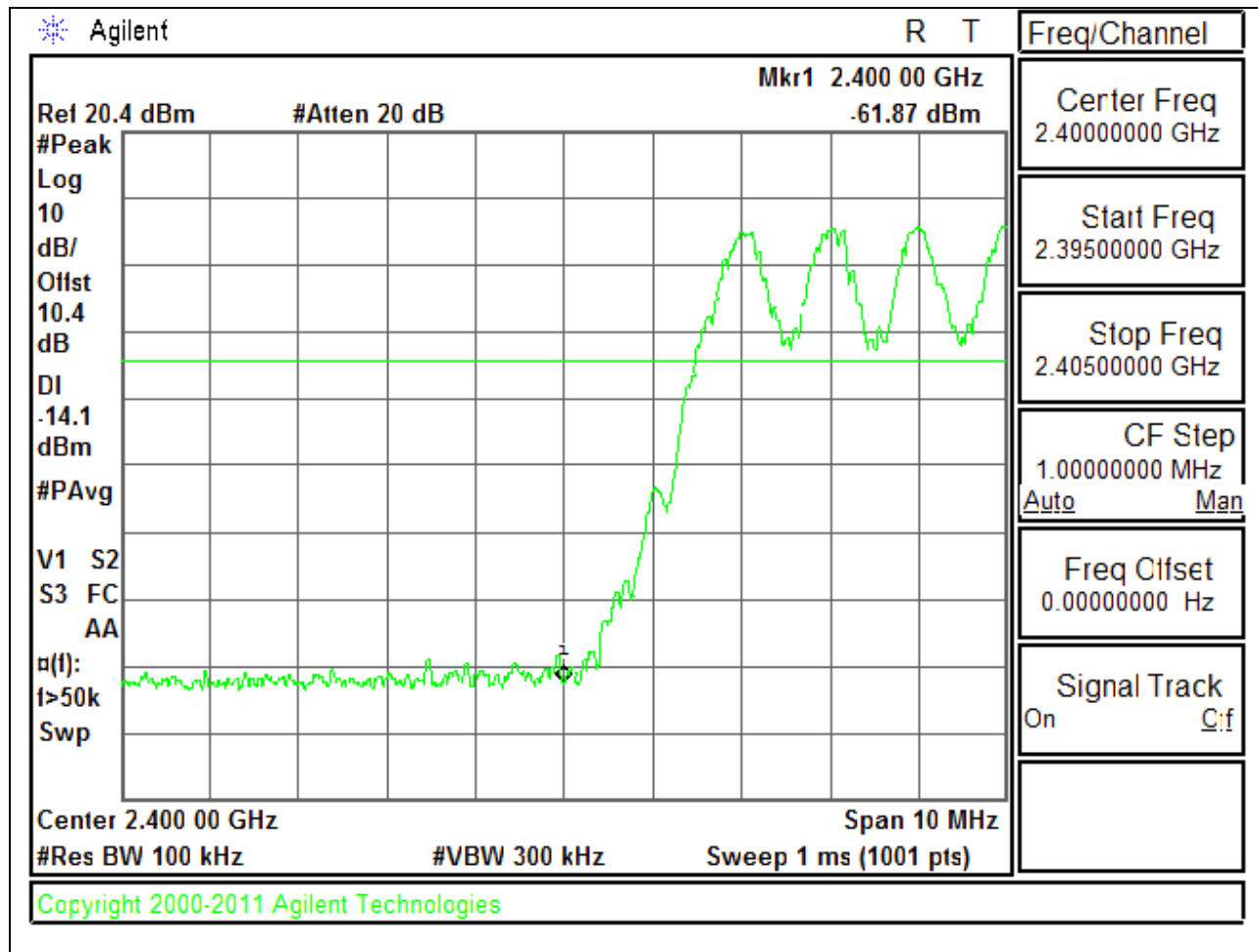
SPURIOUS EMISSIONS, HIGH CHANNEL**HIGH CHANNEL BANDEDGE**

HIGH CHANNEL SPURIOUS

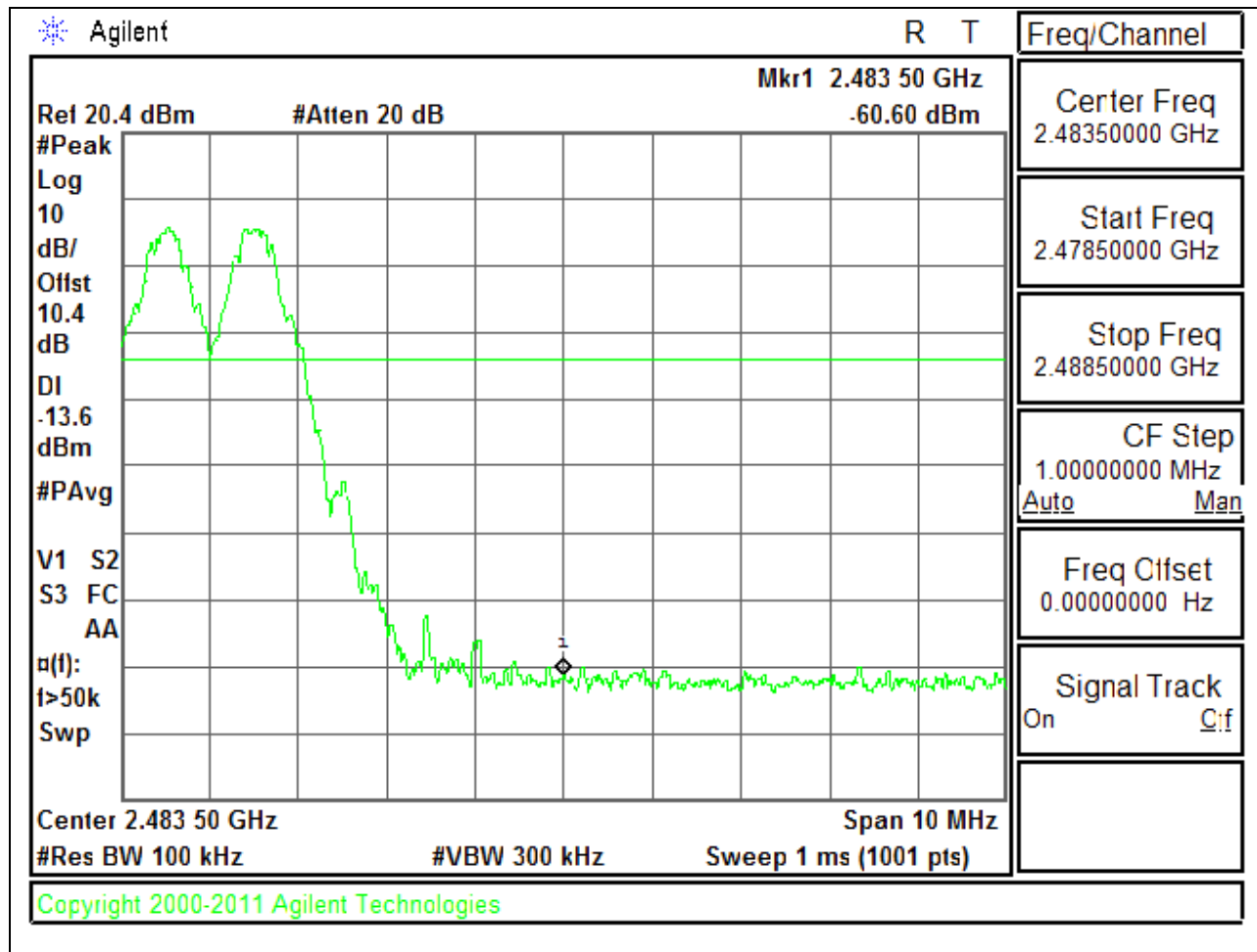


SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

LOW BANDEDGE WITH HOPPING ON



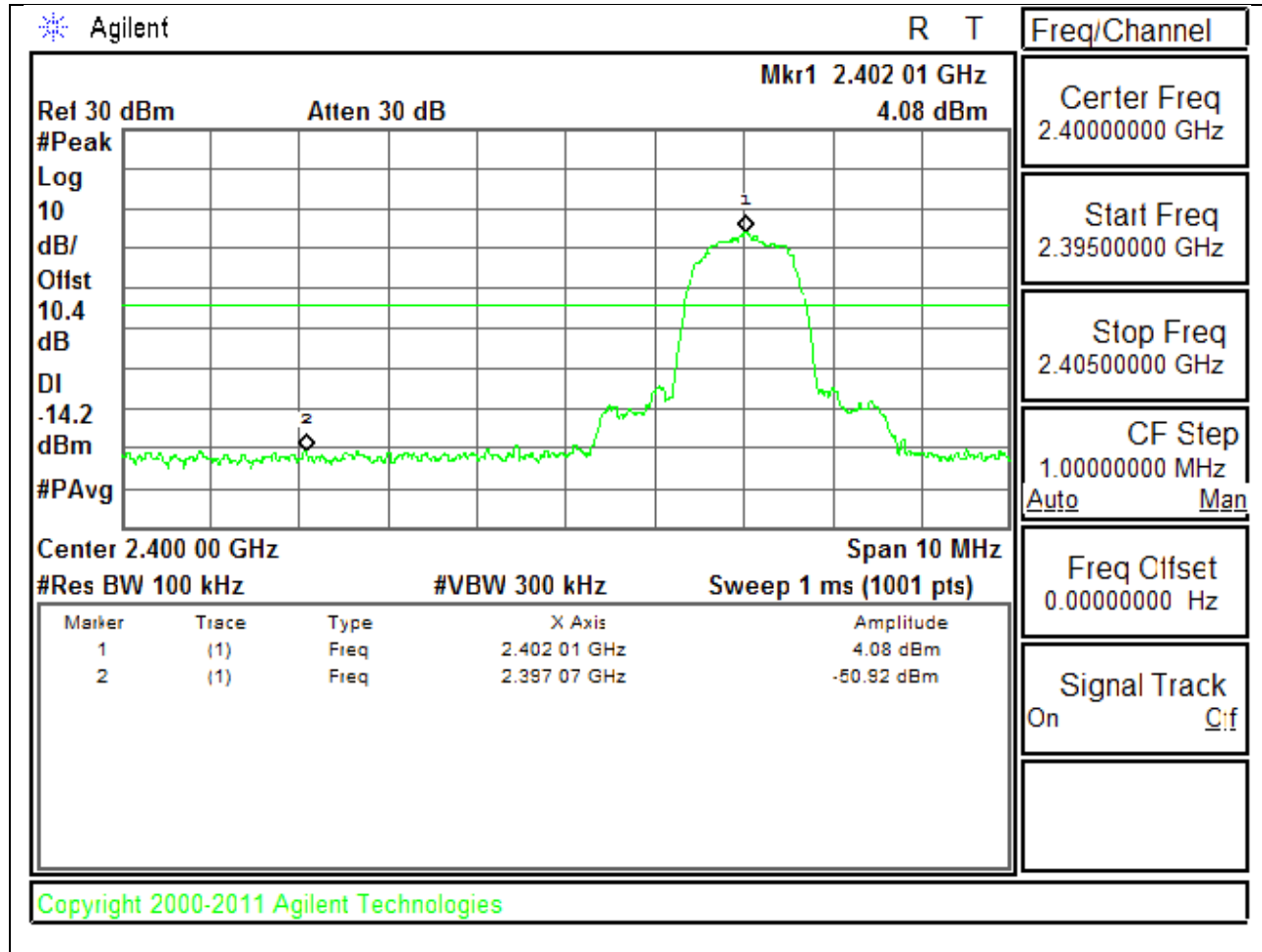
HIGH BANDEDGE WITH HOPPING ON



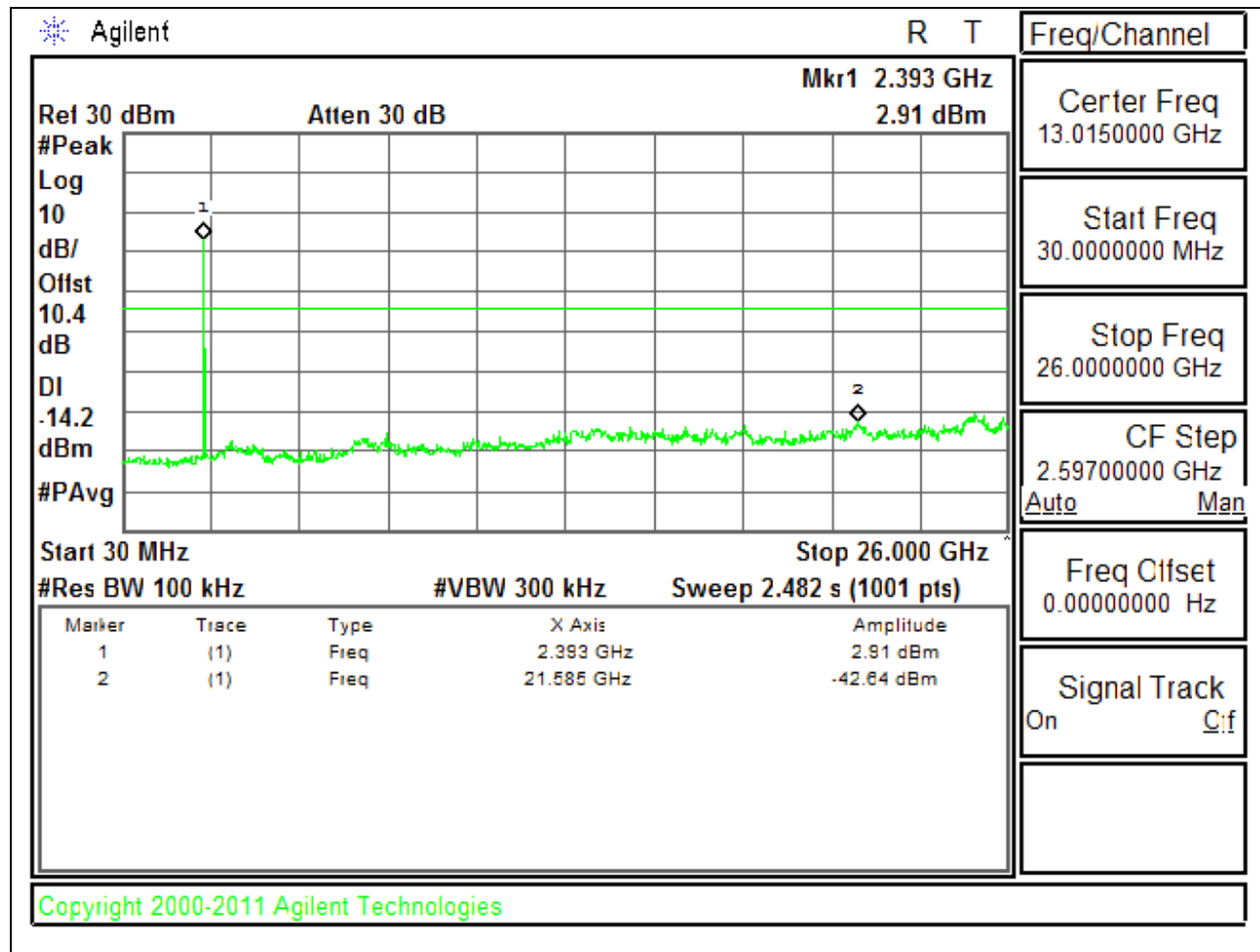
8.7.2. ENHANCED DATA RATE 8PSK MODULATION

SPURIOUS EMISSIONS, LOW CHANNEL

LOW CHANNEL BANDEDGE

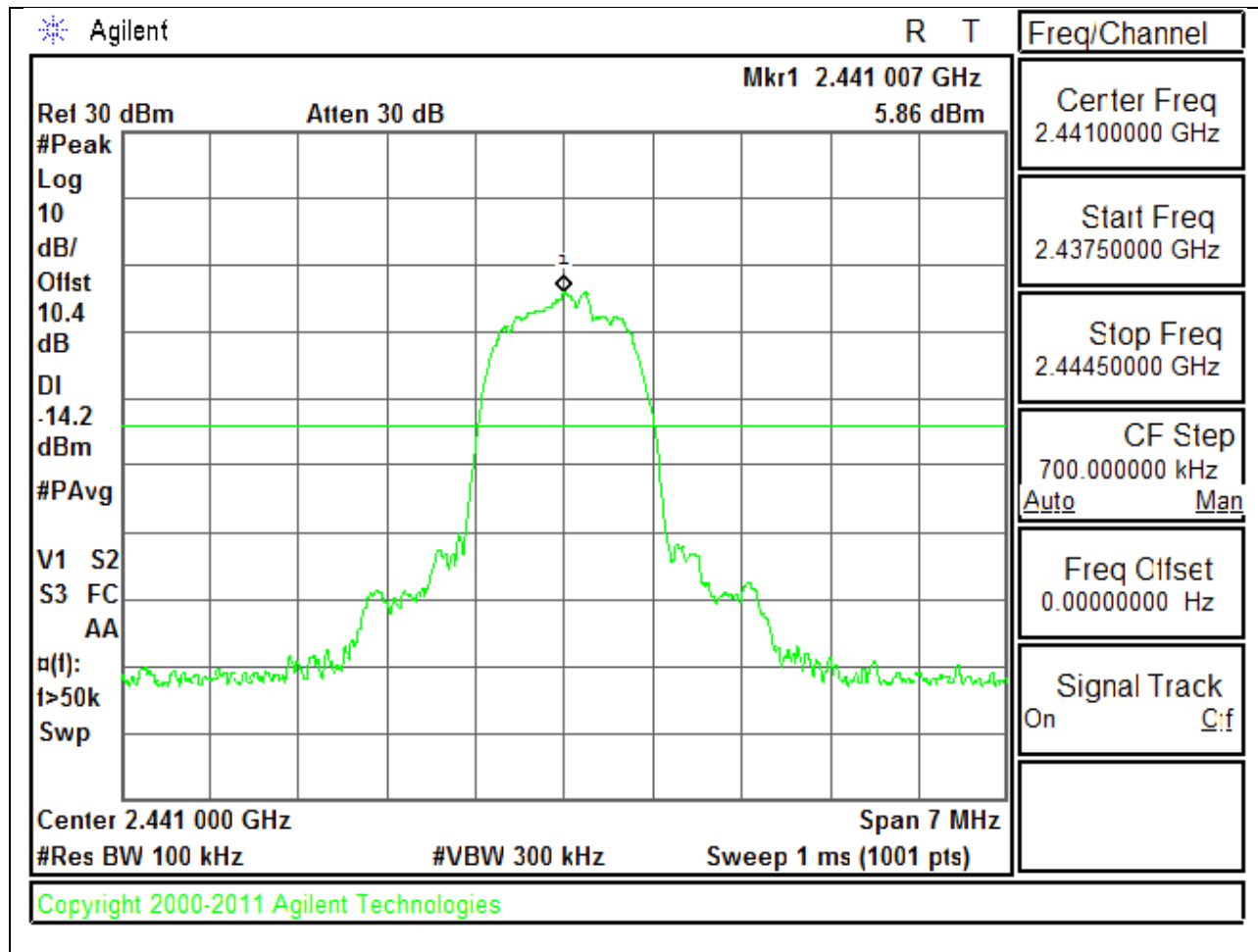


LOW CHANNEL SPURIOUS

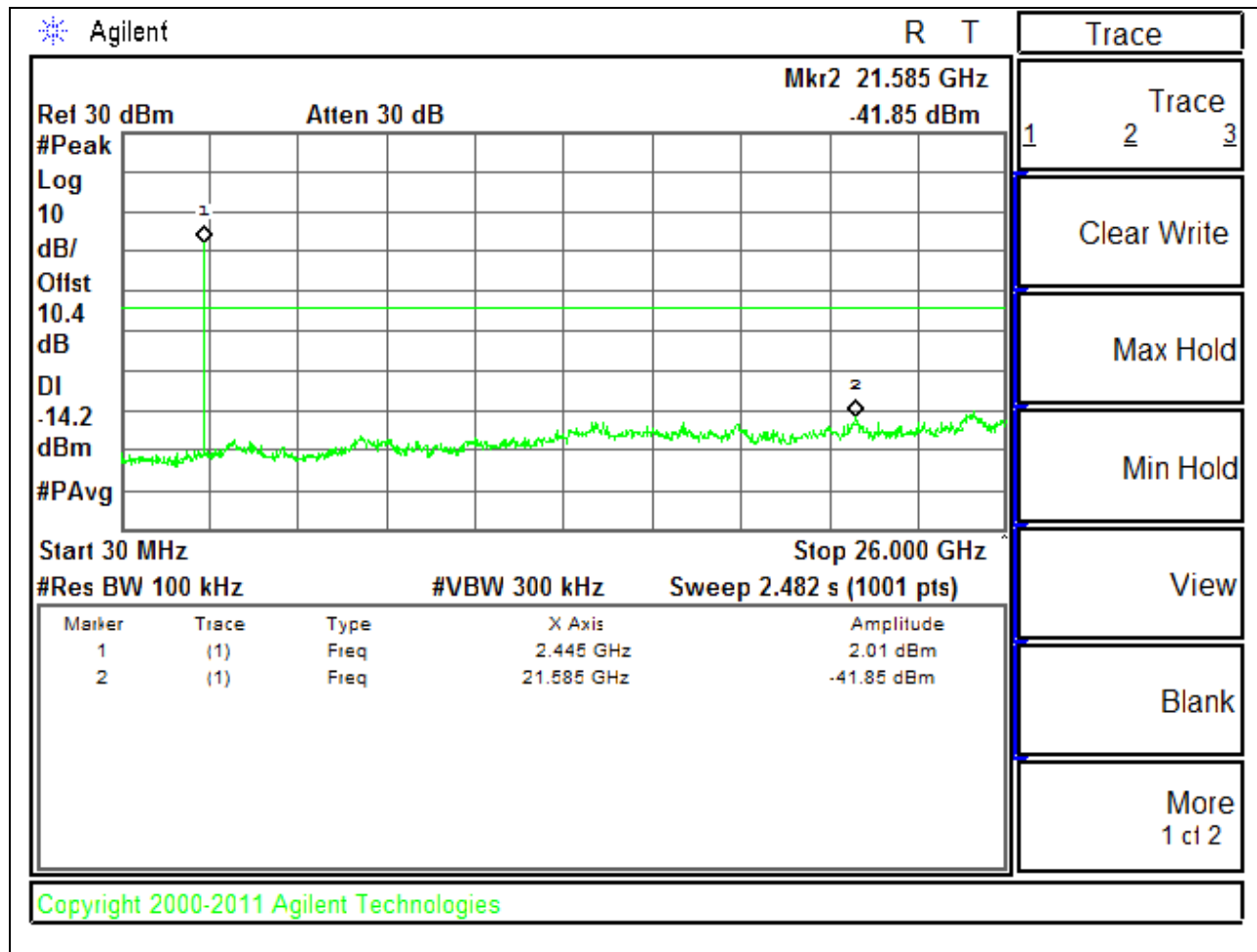


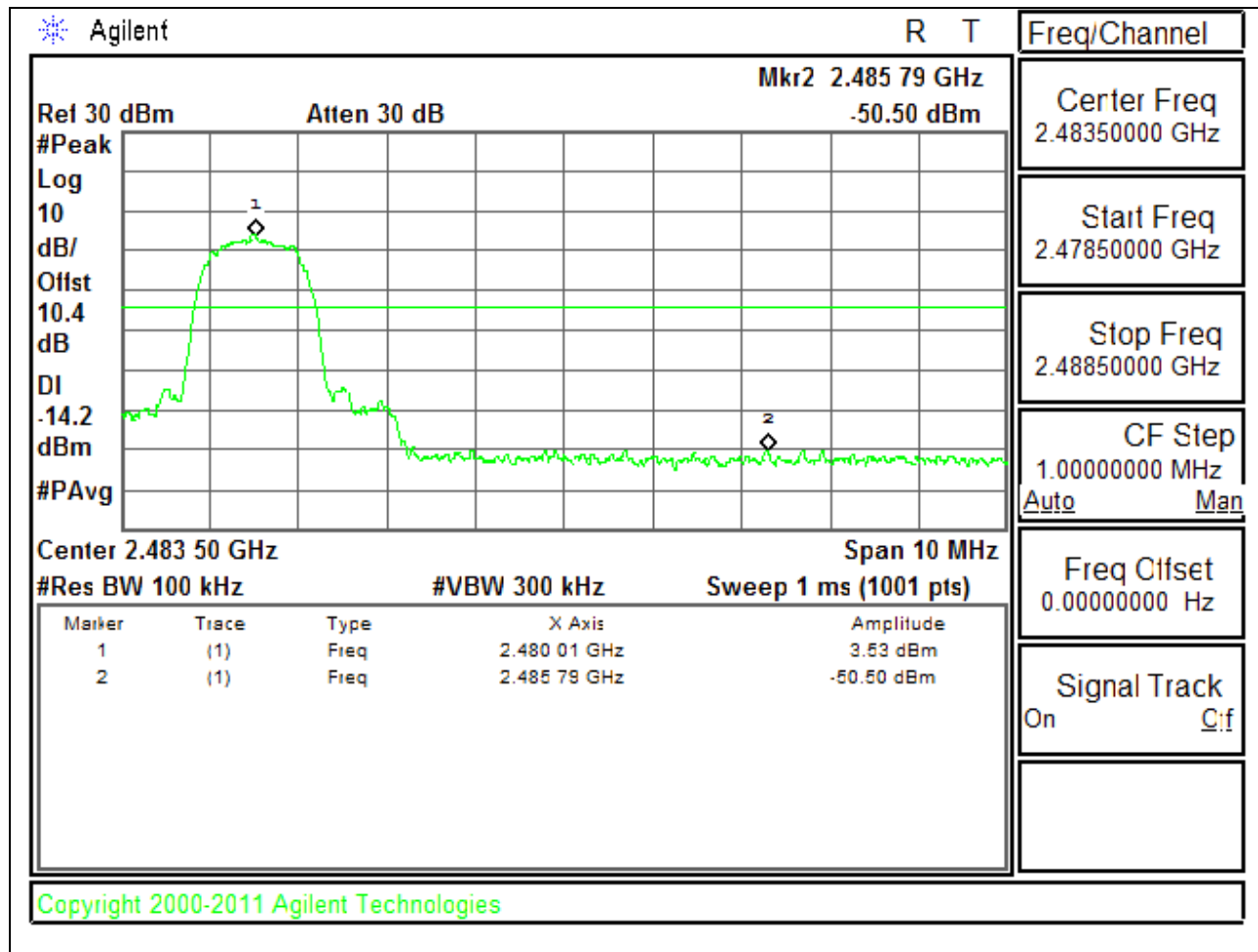
SPURIOUS EMISSIONS, MID CHANNEL

MID CHANNEL BANDEDGE

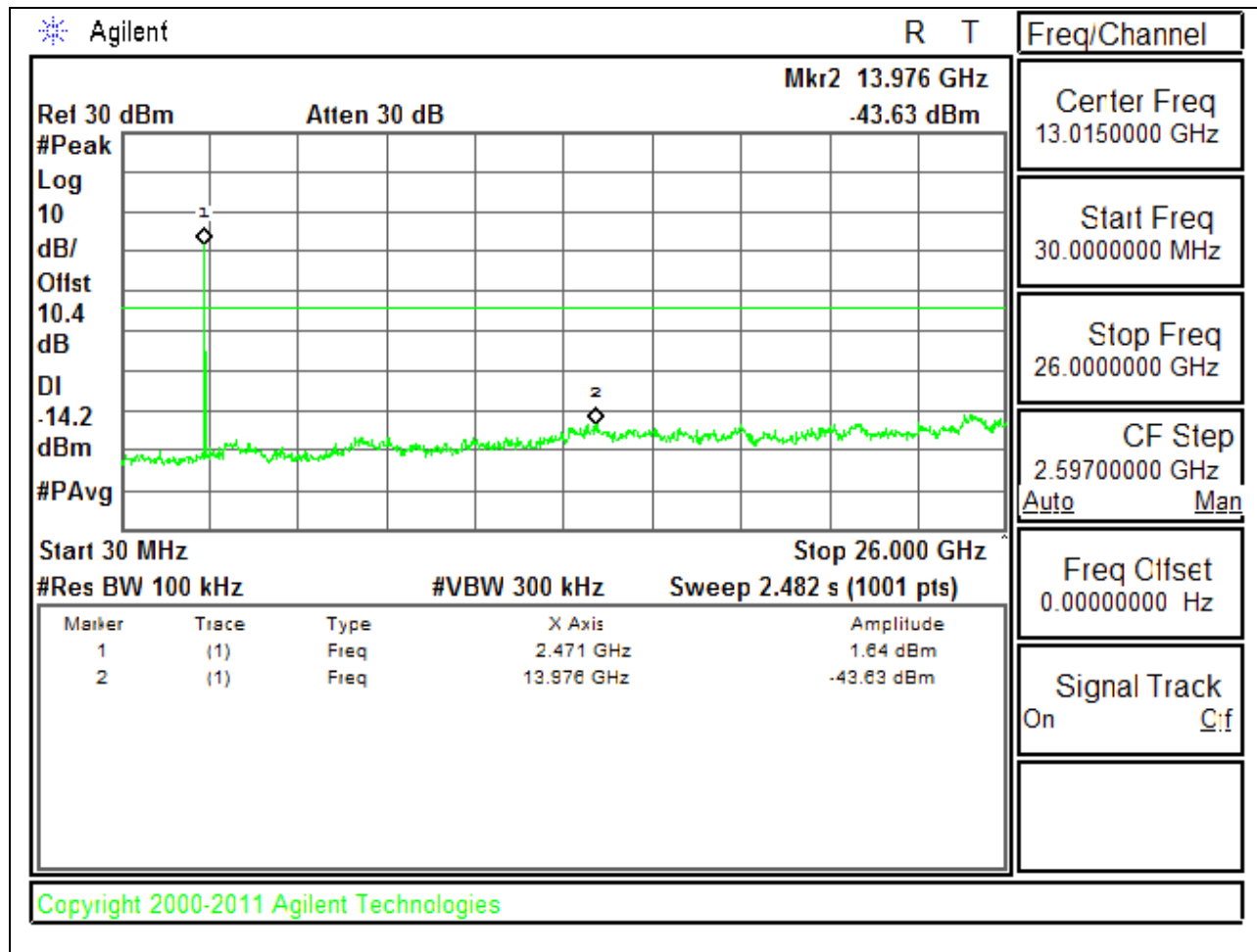


MID CHANNEL SPURIOUS



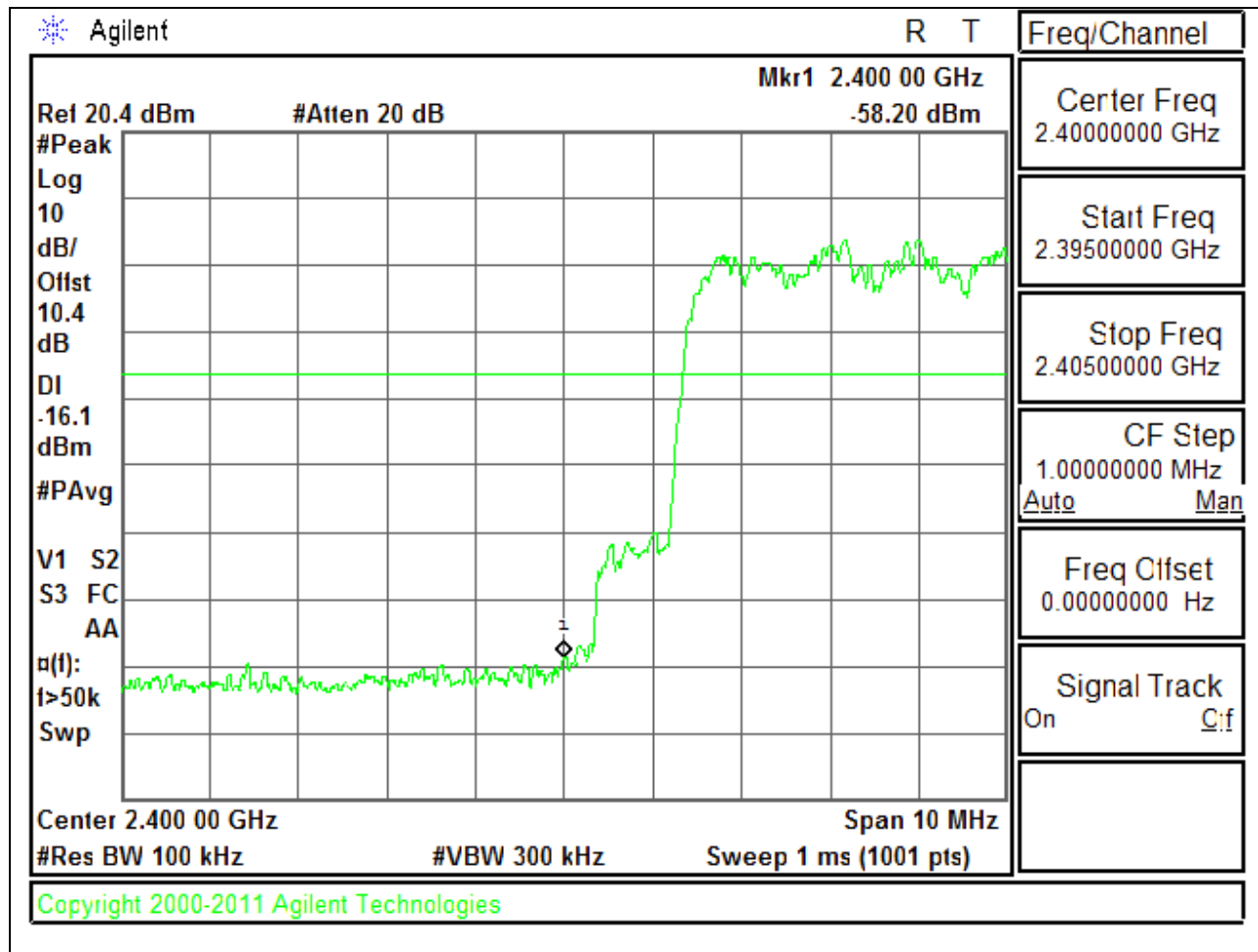
SPURIOUS EMISSIONS, HIGH CHANNEL**HIGH CHANNEL BANDEDGE**

HIGH CHANNEL SPURIOUS

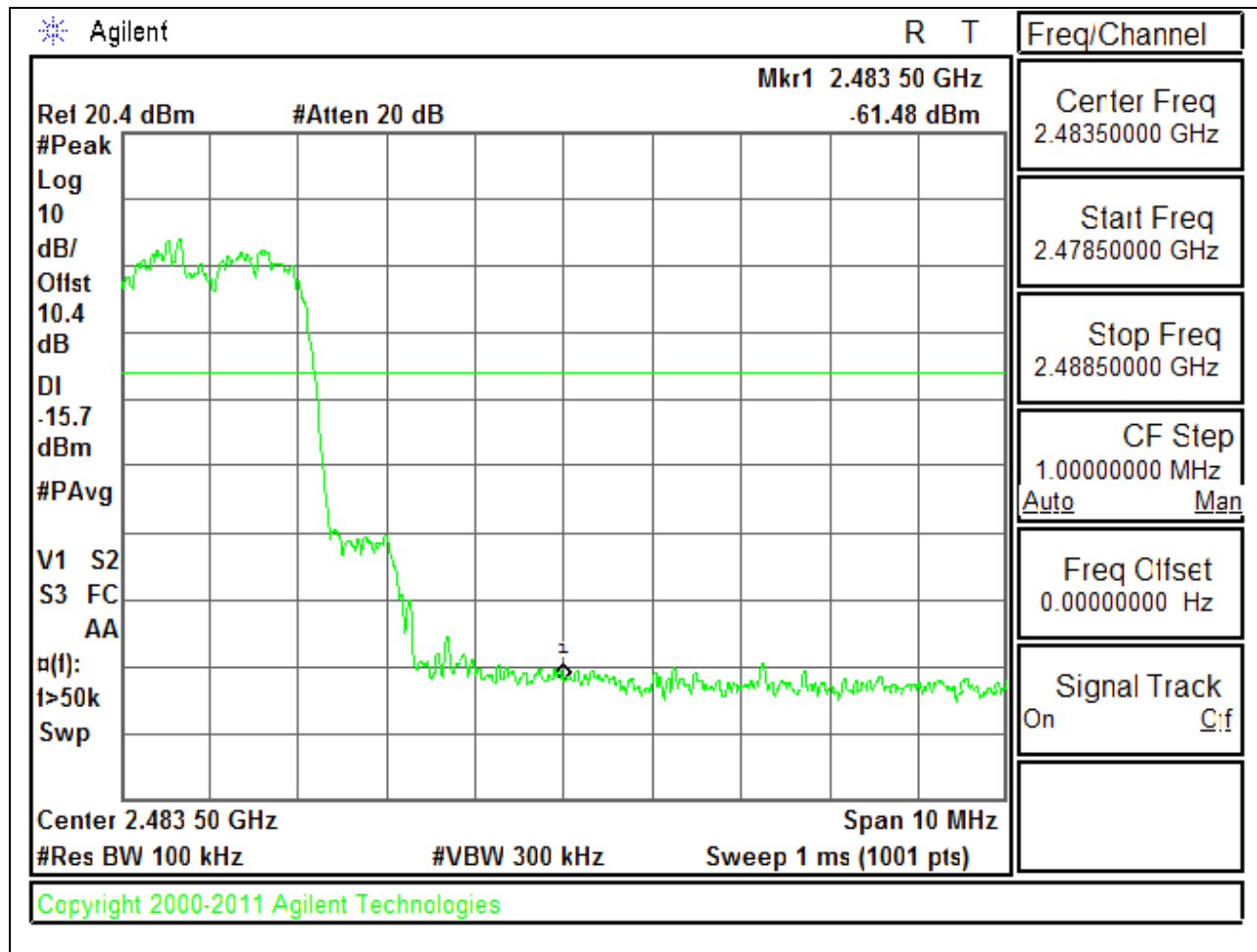


SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

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 (uV/m) at 3 m	Field Strength Limit (dBuV/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.
 $GFSK = 1/T = 1 / 0.00286S = 350Hz$.

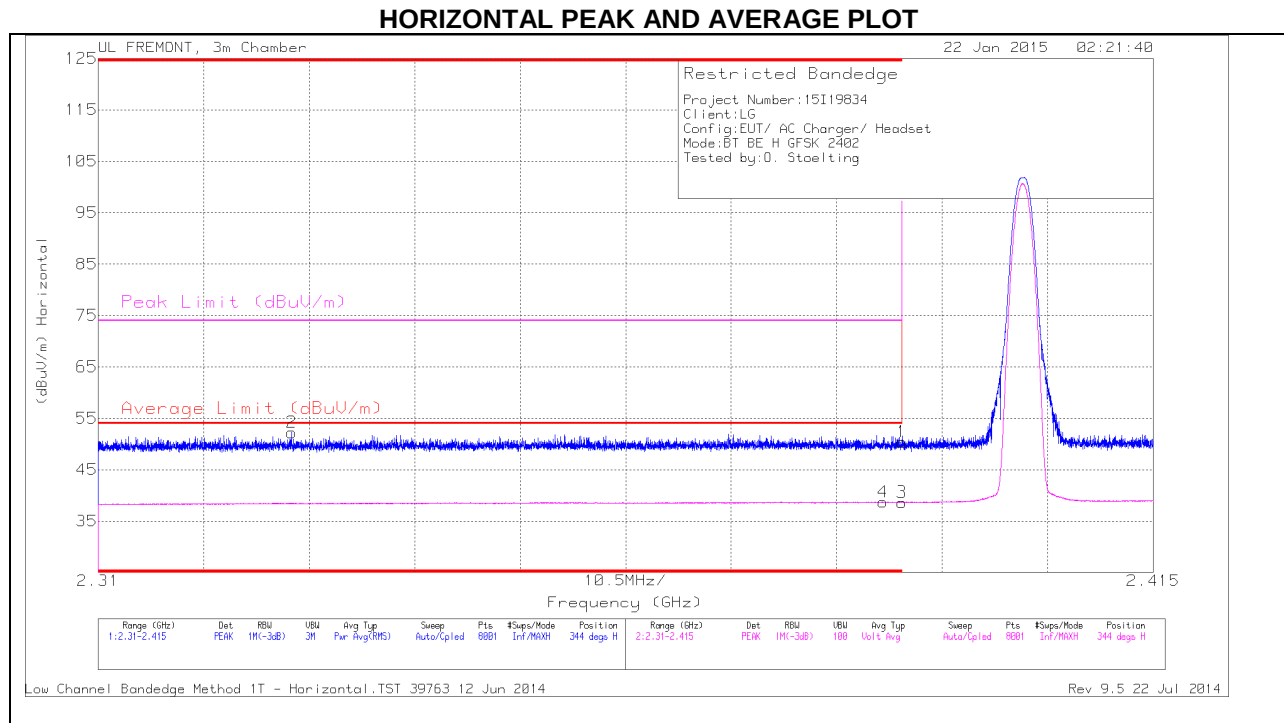
The spectrum from 1GHzHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

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

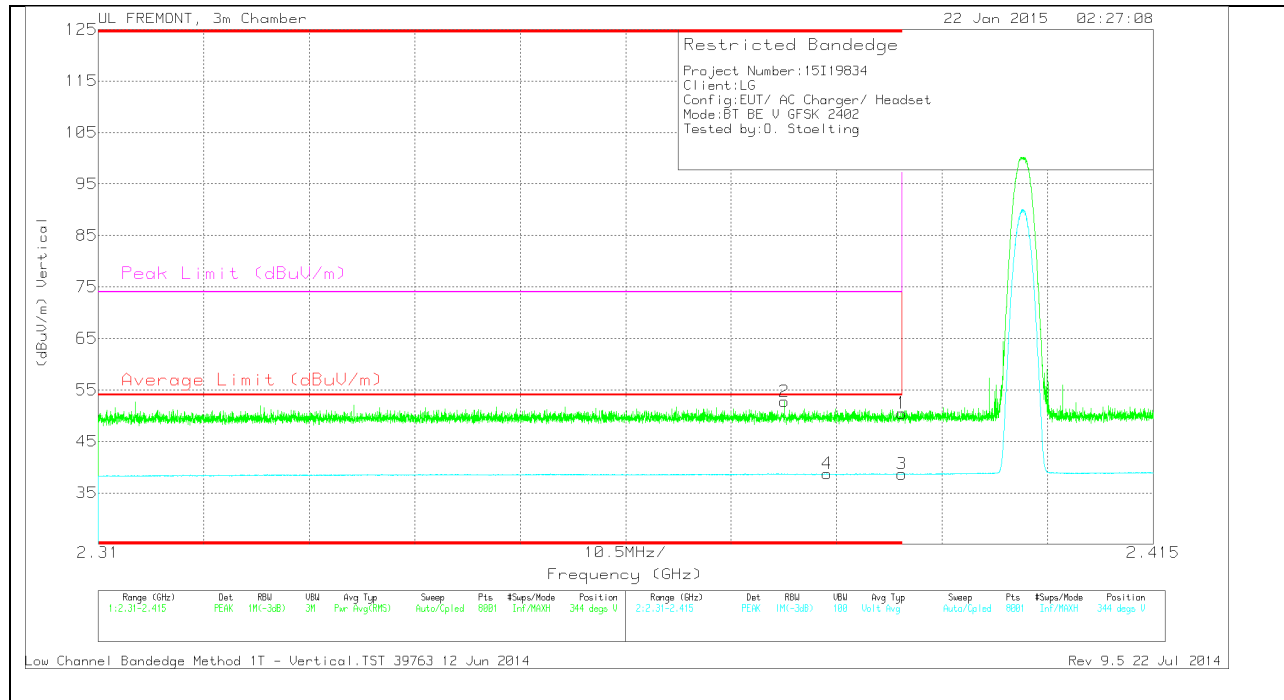
RESTRICTED BANDEDGE (LOW CHANNEL)



HORIZONTAL DATA

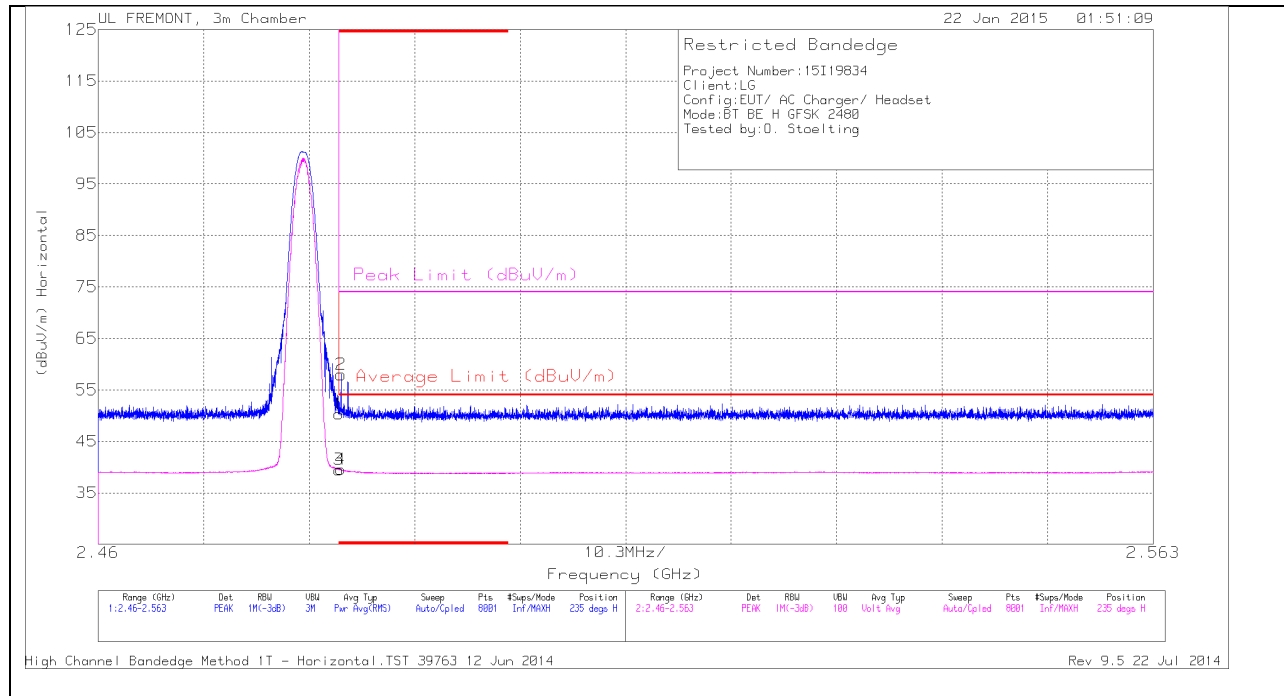
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.329	43.43	PK	31.9	-23.1	52.23	-	-	74	-21.77	344	377	H
4	* 2.388	29.72	VB1T	32.1	-23.1	38.72	54	-15.28	-	-	344	377	H
1	* 2.39	41.41	PK	32.1	-23.1	50.41	-	-	74	-23.59	344	377	H
3	* 2.39	29.63	VB1T	32.1	-23.1	38.63	54	-15.37	-	-	344	377	H

VERTICAL PEAK AND AVERAGE PLOT



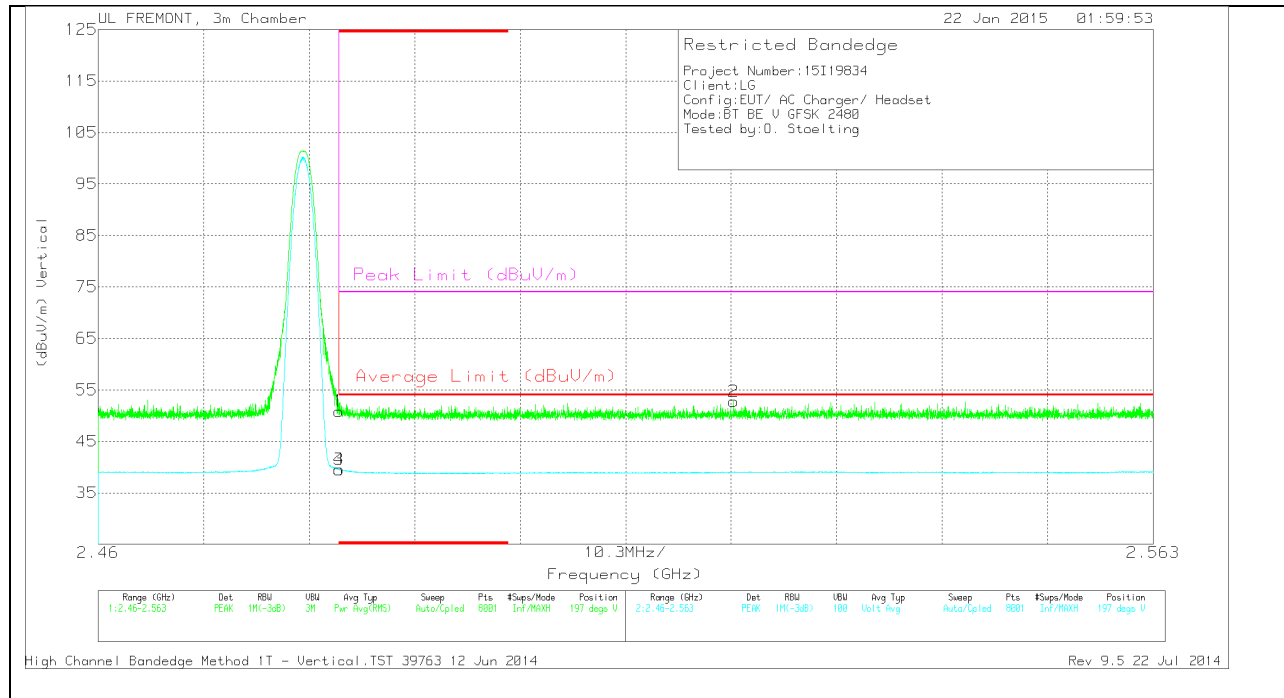
VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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
2	* 2.378	43.76	PK	32.1	-23.1	52.76	-	-	74	-21.24	344	377	V
4	* 2.383	29.75	VB1T	32.1	-23.1	38.75	54	-15.25	-	-	344	377	V
1	* 2.39	41.48	PK	32.1	-23.1	50.48	-	-	74	-23.52	344	377	V
3	* 2.39	29.68	VB1T	32.1	-23.1	38.68	54	-15.32	-	-	344	377	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)**HORIZONTAL PEAK AND AVERAGE PLOT****HORIZONTAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	* 2.484	41.03	PK	32.1	-22.8	50.33	-	-	74	-23.67	235	308	H
2	* 2.484	48.68	PK	32.1	-22.8	57.98	-	-	74	-16.02	235	308	H
3	* 2.484	30.21	VB1T	32.1	-22.8	39.51	54	-14.49	-	-	235	308	H
4	* 2.484	30.26	VB1T	32.1	-22.8	39.56	54	-14.44	-	-	235	308	H

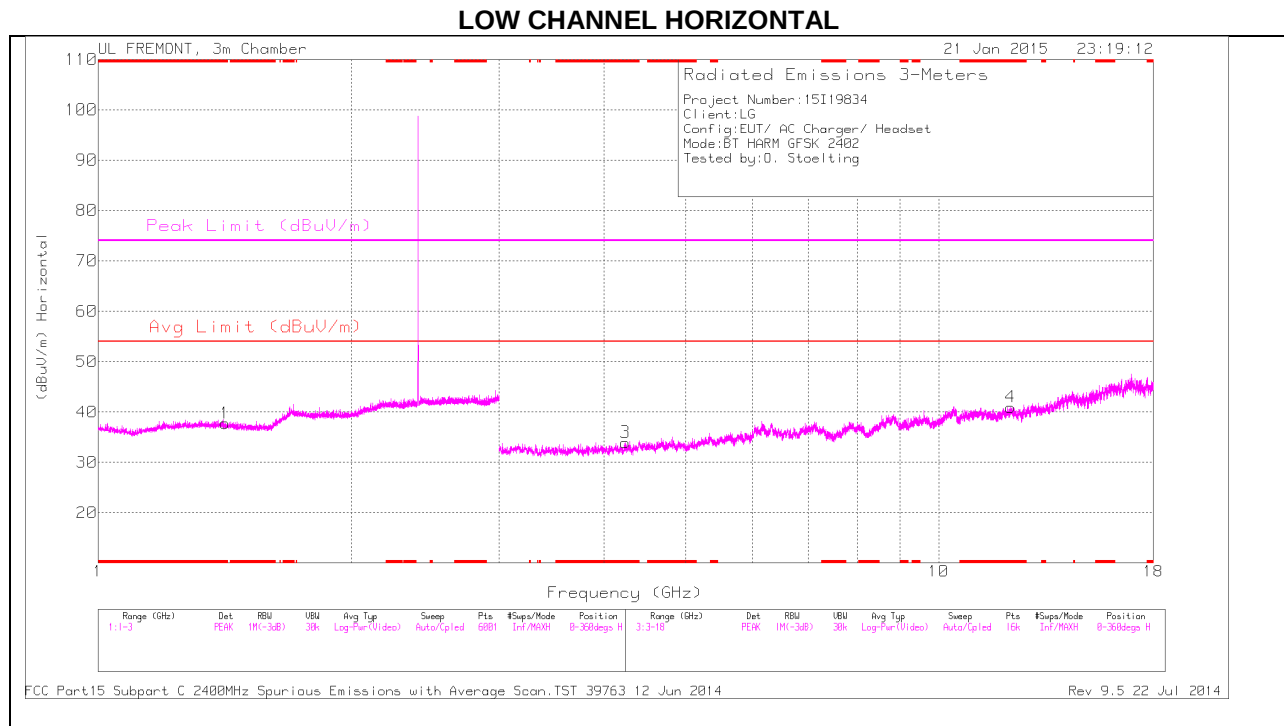
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

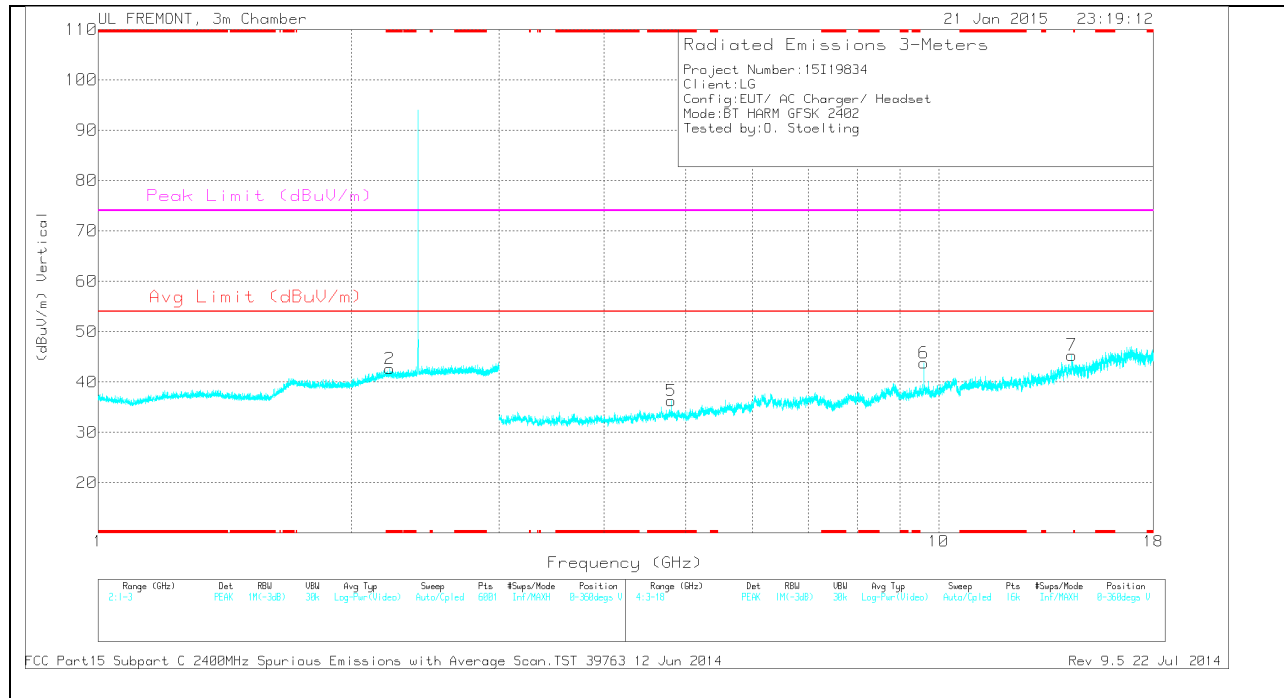
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.55	PK	32.1	-22.8	50.85	-	-	74	-23.15	197	369	V
3	* 2.484	30.22	VB1T	32.1	-22.8	39.52	54	-14.48	-	-	197	369	V
4	* 2.484	30.24	VB1T	32.1	-22.8	39.54	54	-14.46	-	-	197	369	V
2	2.522	43.48	PK	32.1	-22.8	52.78	-	-	74	-21.22	197	369	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.

LOW CHANNEL VERTICAL



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

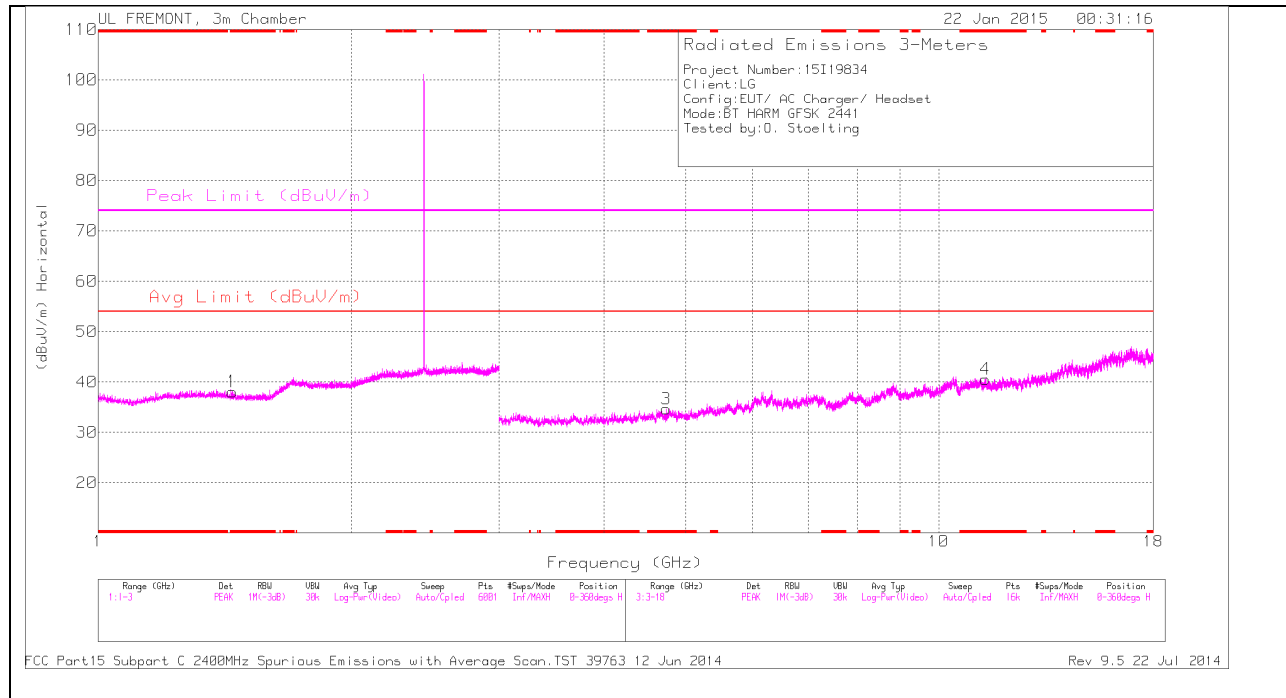
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.416	33.18	PK	28.3	-23.7	37.78	-	-	74	-36.22	0-360	200	H
4	* 12.178	28.76	PK	38.6	-26.4	40.96	-	-	74	-33.04	0-360	100	H
2	* 2.222	33.62	PK	32	-23	42.62	-	-	74	-31.38	0-360	200	V
3	* 4.239	31.35	PK	33.4	-30.8	33.95	-	-	74	-40.05	0-360	100	H
5	* 4.804	32.58	PK	34	-30.3	36.28	-	-	74	-37.72	0-360	200	V
7	14.399	31.52	PK	39.9	-26.1	45.32	-	-	-	-	0-360	100	V
6	9.608	31.96	PK	37.1	-25.3	43.76	-	-	-	-	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

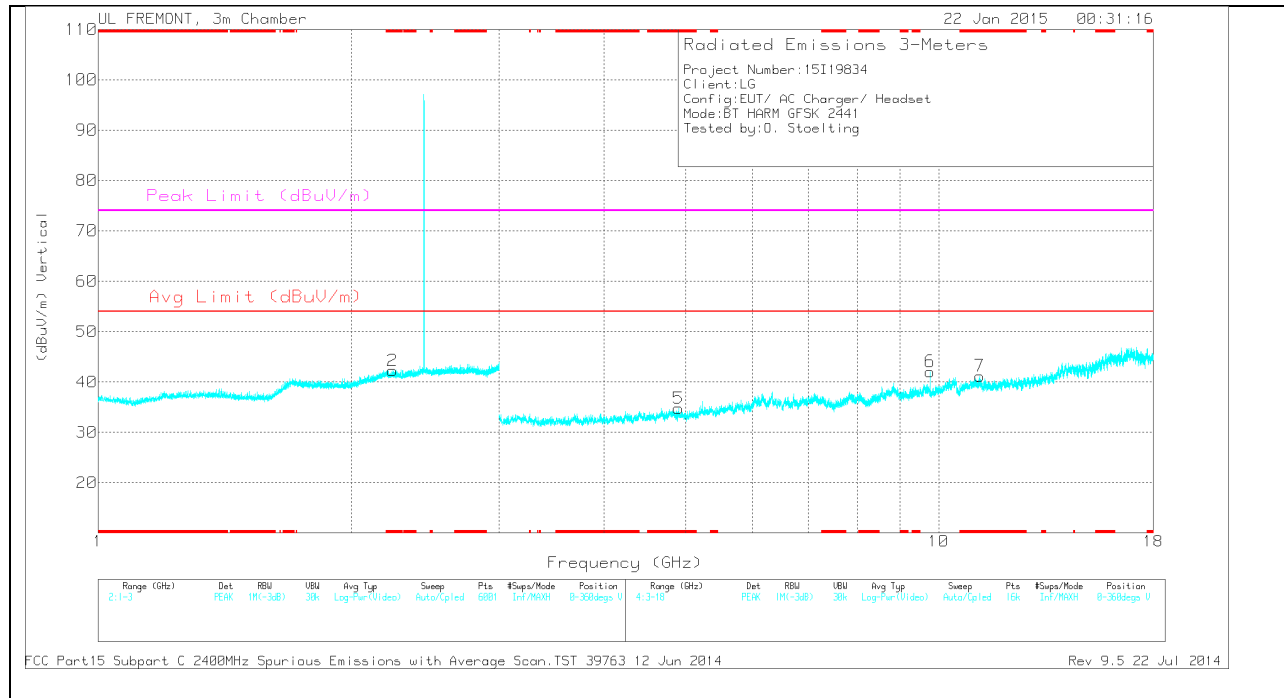
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 2.221	42.76	PK3	32	-23	51.76	-	-	74	-22.24	359	383	V
* 2.221	29.5	VB1T	32	-23	38.5	54	-15.5	-	-	359	383	V
* 12.179	37.99	PK3	38.6	-26.4	50.19	-	-	74	-23.81	3	262	H
* 12.18	25.11	VB1T	38.6	-26.4	37.31	54	-16.69	-	-	3	262	H
9.608	38.4	PK3	37.1	-25.3	50.2	-	-	-	-	16	265	V
9.608	29.12	VB1T	37.1	-25.3	40.92	-	-	-	-	16	265	V

MID CHANNEL HORIZONTAL



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 VERTICAL



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

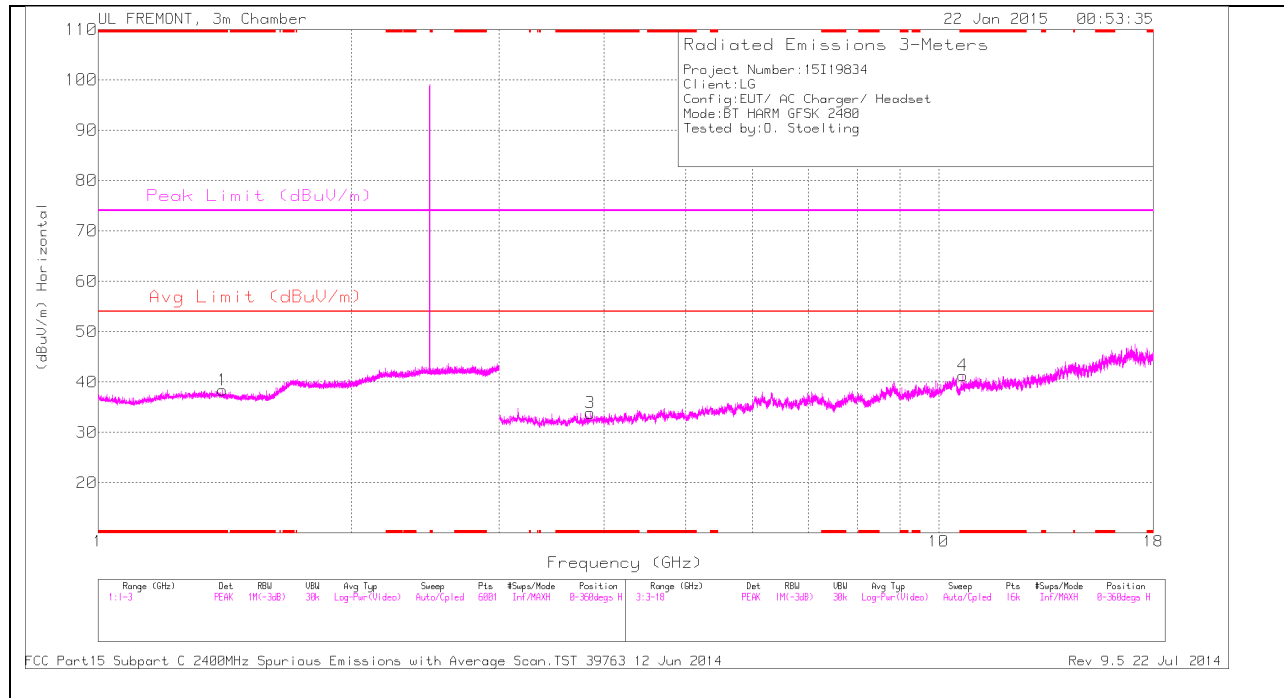
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.444	33.57	PK	28.1	-23.6	38.07	-	-	74	-35.93	0-360	200	H
2	* 2.241	33.25	PK	32	-23	42.25	-	-	74	-31.75	0-360	200	V
3	* 4.742	31.63	PK	33.9	-30.9	34.63	-	-	74	-39.37	0-360	100	H
4	* 11.361	28.34	PK	38.2	-26	40.54	-	-	74	-33.46	0-360	200	H
5	* 4.903	30.85	PK	33.9	-30	34.75	-	-	74	-39.25	0-360	100	V
7	* 11.198	27.99	PK	38.3	-25.1	41.19	-	-	74	-32.81	0-360	100	V
6	9.764	30.87	PK	37.2	-26	42.07	-	-	-	-	0-360	200	V

PK - Peak detector

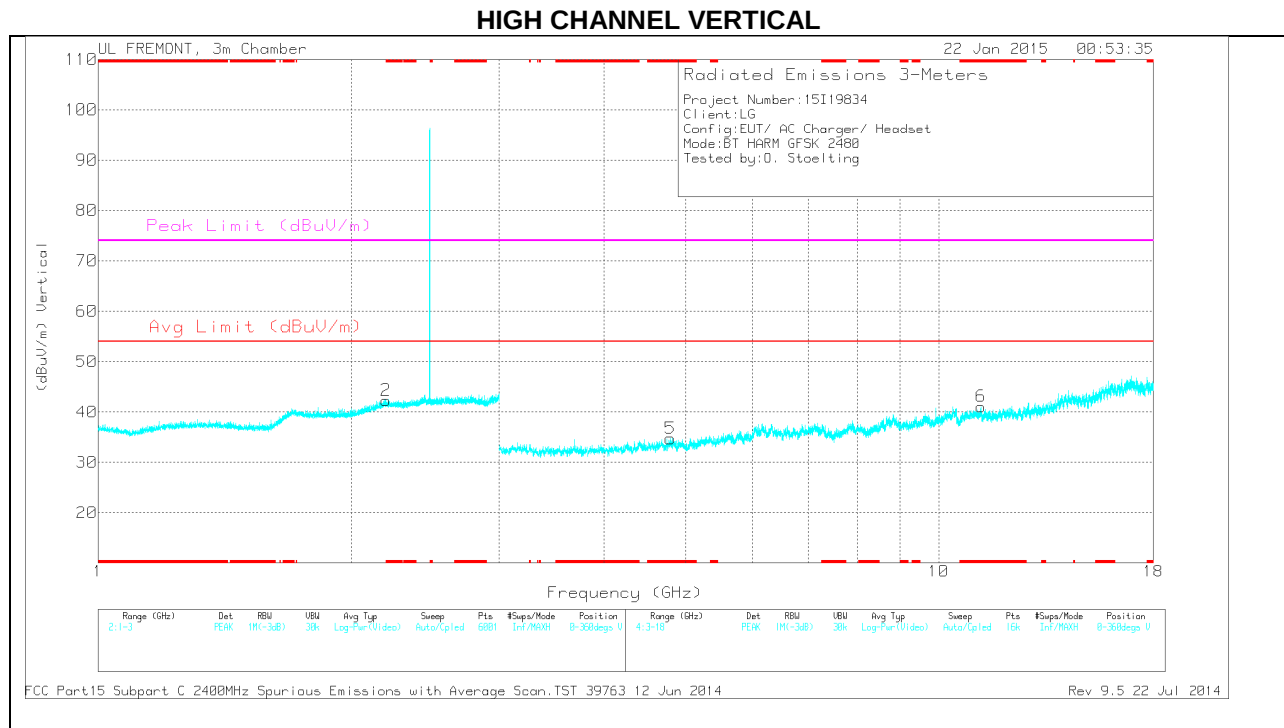
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 2.24	42.97	PK3	32	-23	51.97	-	-	74	-22.03	269	186	V
* 2.241	29.56	VB1T	32	-23	38.56	54	-15.44	-	-	269	186	V
* 11.361	37.58	PK3	38.2	-26	49.78	-	-	74	-24.22	2	313	H
* 11.363	24.89	VB1T	38.2	-26.1	36.99	54	-17.01	-	-	2	313	H
9.764	37.85	PK3	37.2	-26	49.05	-	-	-	-	204	270	V
9.764	27.5	VB1T	37.2	-26	38.7	-	-	-	-	204	270	V

HIGH CHANNEL HORIZONTAL



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 T711 (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	* 1.406	33.71	PK	28.4	-23.7	38.41	-	-	74	-35.59	0-360	100	H
2	* 2.201	33.3	PK	32	-23	42.3	-	-	74	-31.7	0-360	100	V
3	* 3.849	31.97	PK	33	-31.1	33.87	-	-	74	-40.13	0-360	100	H
4	* 10.683	28.19	PK	38.1	-25	41.29	-	-	74	-32.71	0-360	100	H
5	* 4.794	31.13	PK	34	-30.4	34.73	-	-	74	-39.27	0-360	200	V
6	* 11.229	27.88	PK	38.3	-25.1	41.08	-	-	74	-32.92	0-360	100	V

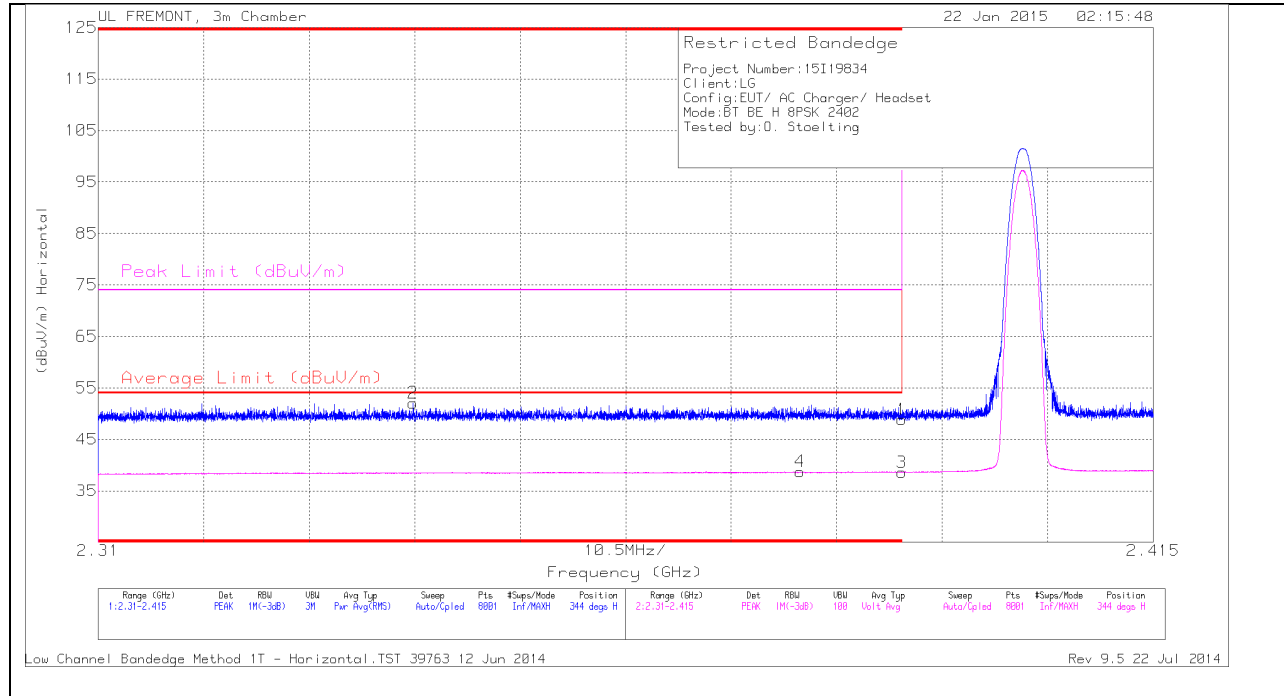
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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
* 2.201	42.93	PK3	32	-23	51.93	-	-	74	-22.07	217	172	V
* 2.201	29.46	VB1T	32	-23	38.46	54	-15.54	-	-	217	172	V
* 10.684	36.82	PK3	38.1	-25	49.92	-	-	74	-24.08	352	399	H
* 10.685	23.57	VB1T	38.1	-25	36.67	54	-17.33	-	-	352	399	H
* 11.229	36.62	PK3	38.3	-25.1	49.82	-	-	74	-24.18	306	293	V
* 11.231	23.87	VB1T	38.3	-25.2	36.97	54	-17.03	-	-	306	293	V

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

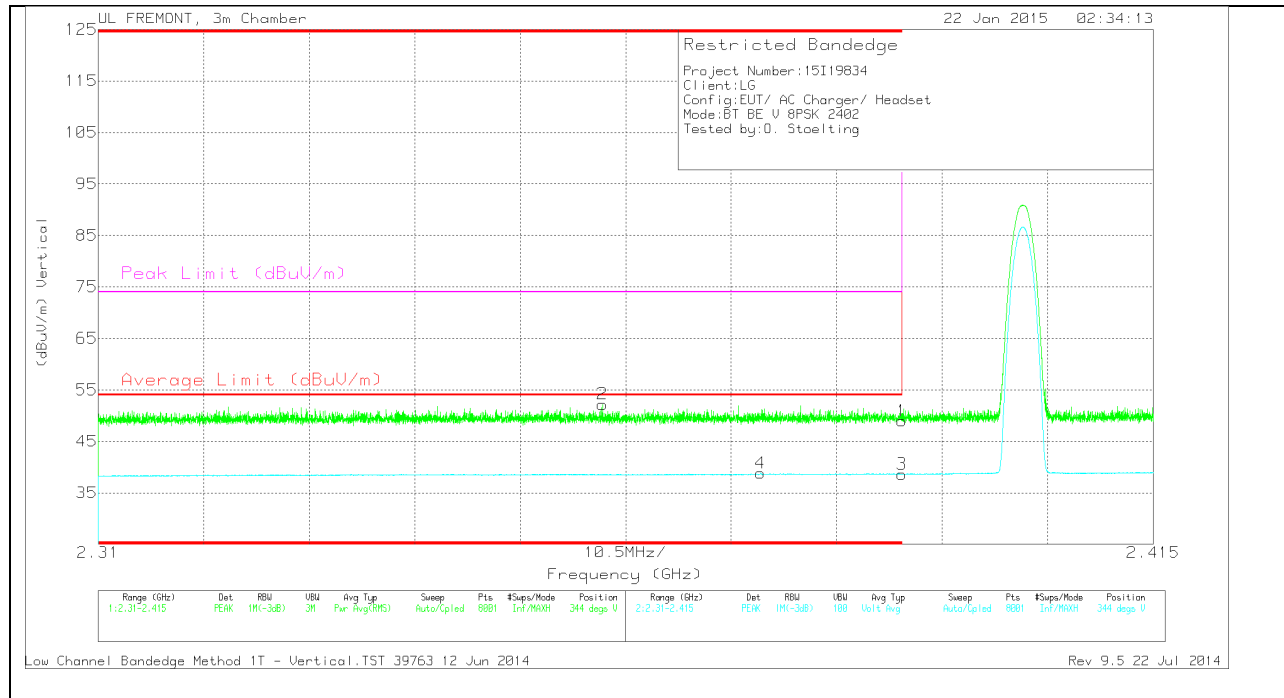
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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
2	* 2.341	43.15	PK	32	-23.1	52.05	-	-	74	-21.95	344	377	H
4	* 2.38	29.75	VB1T	32.1	-23.1	38.75	54	-15.25	-	-	344	377	H
1	* 2.39	39.83	PK	32.1	-23.1	48.83	-	-	74	-25.17	344	377	H
3	* 2.39	29.59	VB1T	32.1	-23.1	38.59	54	-15.41	-	-	344	377	H

VERTICAL PEAK AND AVERAGE PLOT

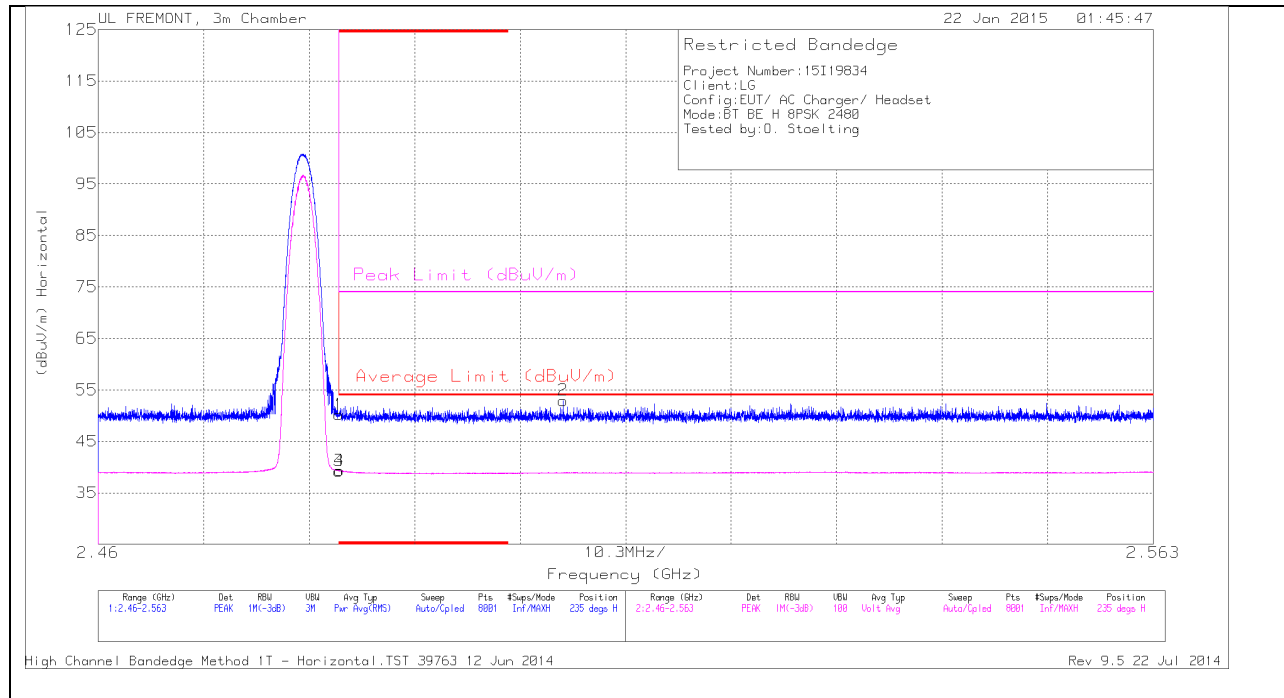


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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
2	* 2.36	43.32	PK	32	-23.1	52.22	-	-	74	-21.78	344	377	V
4	* 2.376	29.82	VB1T	32.1	-23.1	38.82	54	-15.18	-	-	344	377	V
1	* 2.39	39.99	PK	32.1	-23.1	48.99	-	-	74	-25.01	344	377	V
3	* 2.39	29.63	VB1T	32.1	-23.1	38.63	54	-15.37	-	-	344	377	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

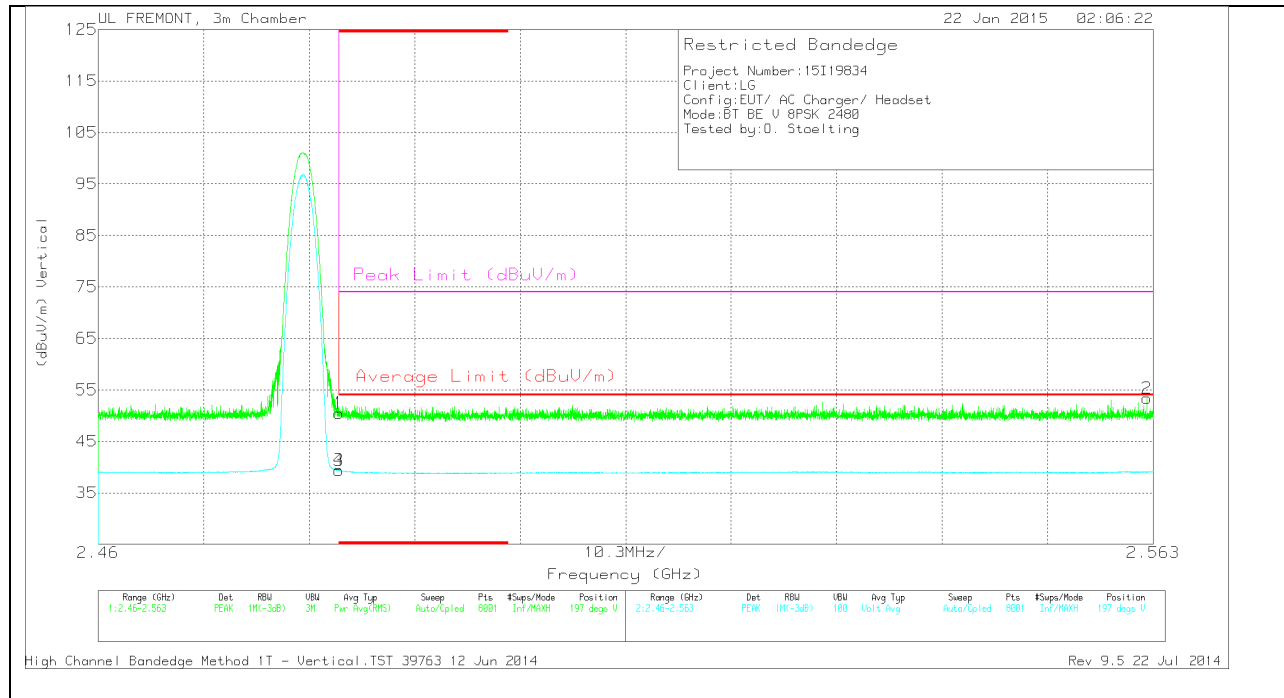
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	* 2.484	40.91	PK	32.1	-22.8	50.21	-	-	74	-23.79	235	308	H
3	* 2.484	29.97	VB1T	32.1	-22.8	39.27	54	-14.73	-	-	235	308	H
4	* 2.484	30.03	VB1T	32.1	-22.8	39.33	54	-14.67	-	-	235	308	H
2	2.505	43.65	PK	32.1	-22.8	52.95	-	-	74	-21.05	235	308	H

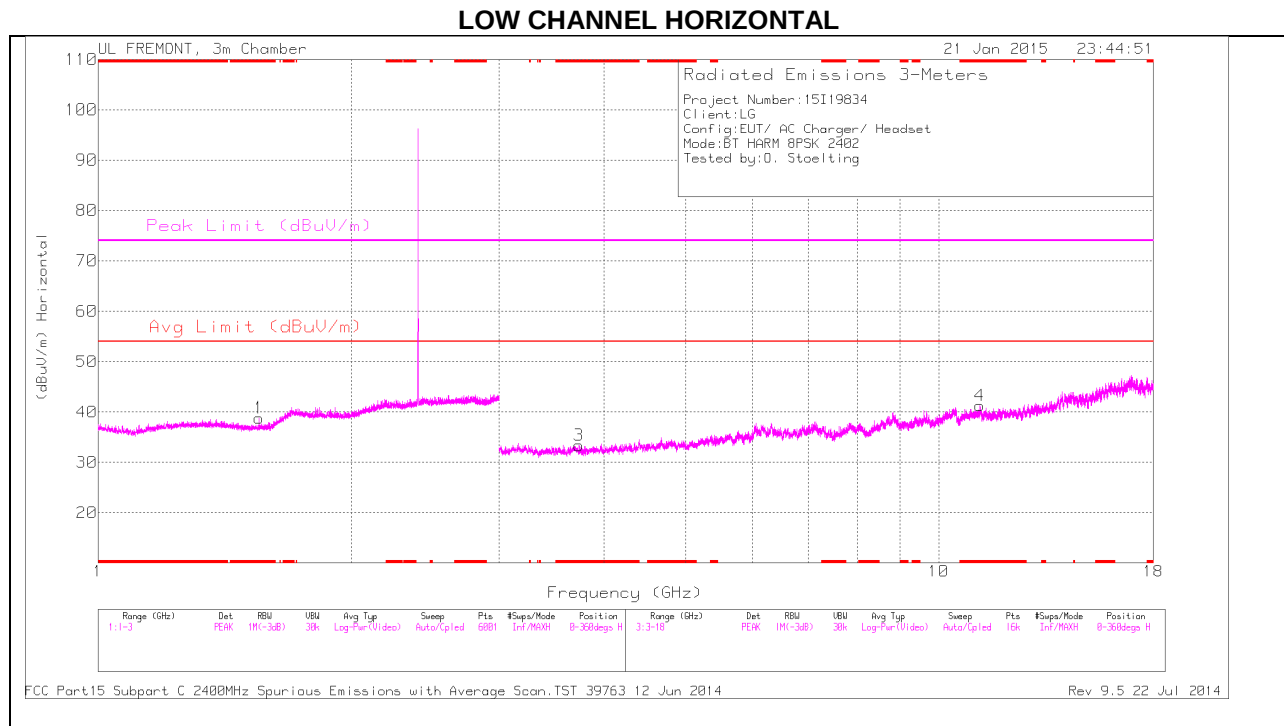
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

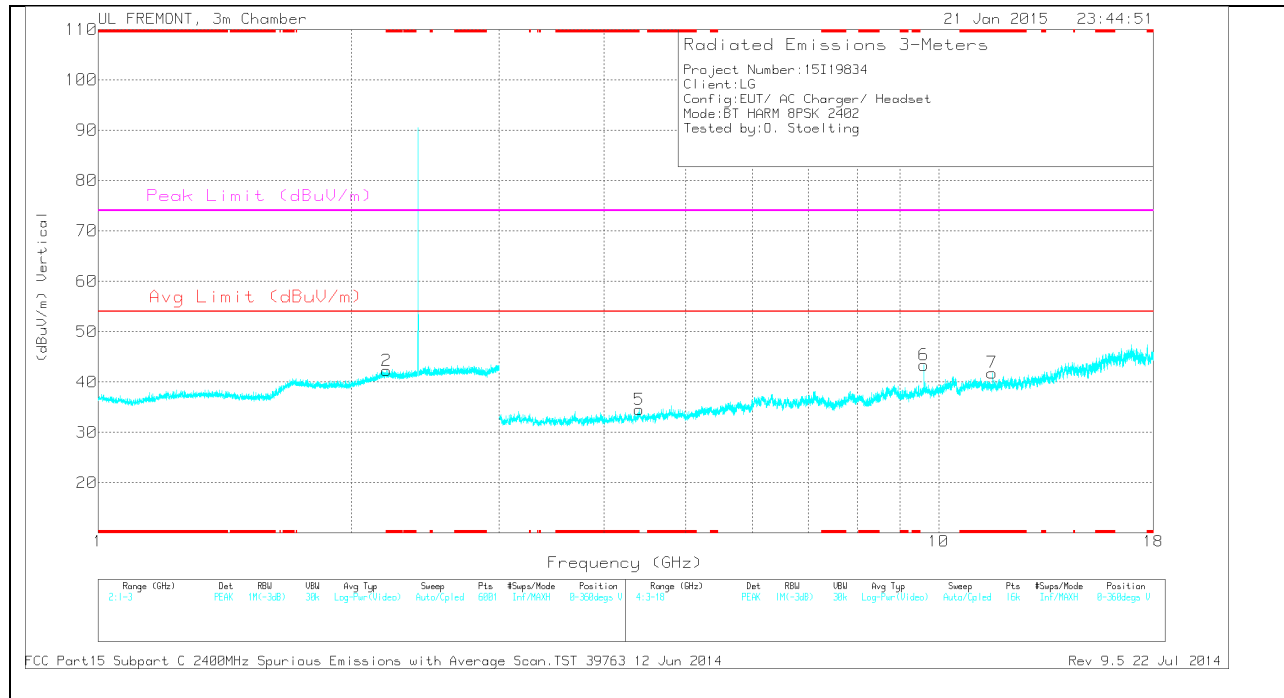
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.2	PK	32.1	-22.8	50.5	-	-	74	-23.5	197	369	V
3	* 2.484	30.06	VB1T	32.1	-22.8	39.36	54	-14.64	-	-	197	369	V
4	* 2.484	30.1	VB1T	32.1	-22.8	39.4	54	-14.6	-	-	197	369	V
2	2.562	43.87	PK	32.2	-22.7	53.37	-	-	74	-20.63	197	369	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.

LOW CHANNEL VERTICAL



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

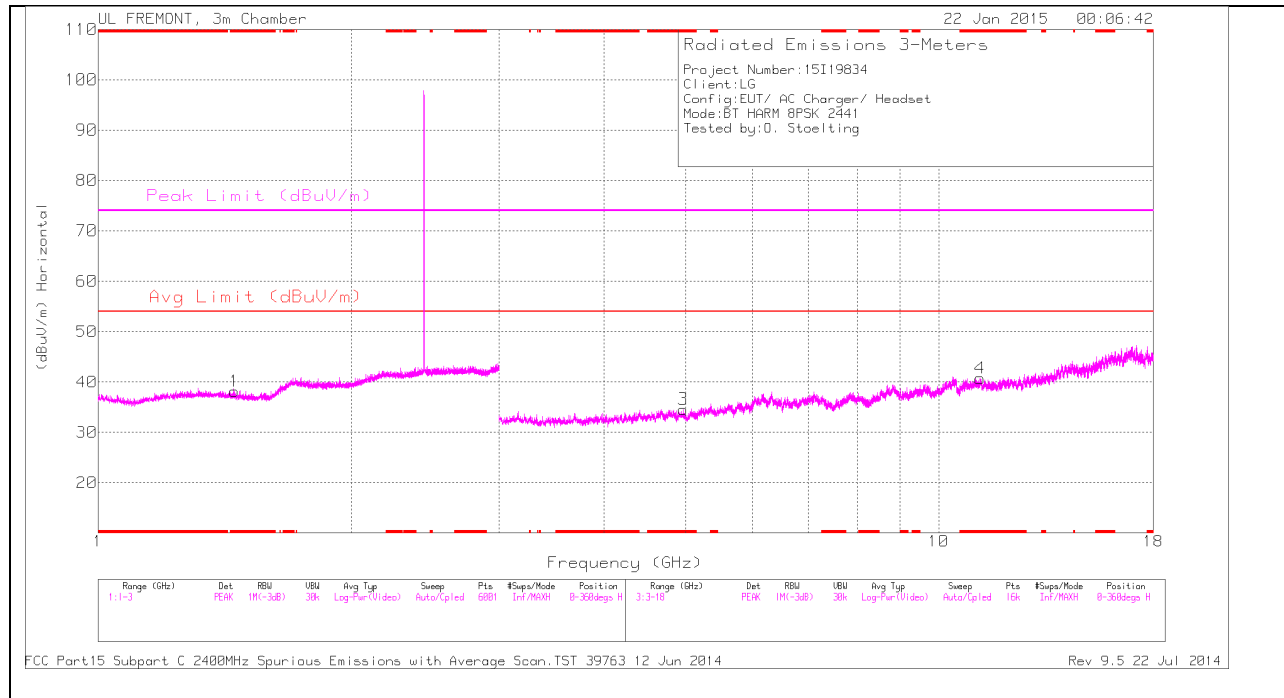
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.554	34.5	PK	27.7	-23.4	38.8	-	-	74	-35.2	0-360	100	H
2	* 2.204	33.18	PK	32	-22.9	42.28	-	-	74	-31.72	0-360	200	V
3	* 3.73	31.37	PK	32.9	-30.9	33.37	-	-	74	-40.63	0-360	200	H
4	* 11.184	28.37	PK	38.3	-25.4	41.27	-	-	74	-32.73	0-360	200	H
7	* 11.575	29.73	PK	38.1	-26	41.83	-	-	74	-32.17	0-360	200	V
5	4.403	31.12	PK	33.5	-30.1	34.52	-	-	-	-	0-360	100	V
6	9.608	31.56	PK	37.1	-25.3	43.36	-	-	-	-	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

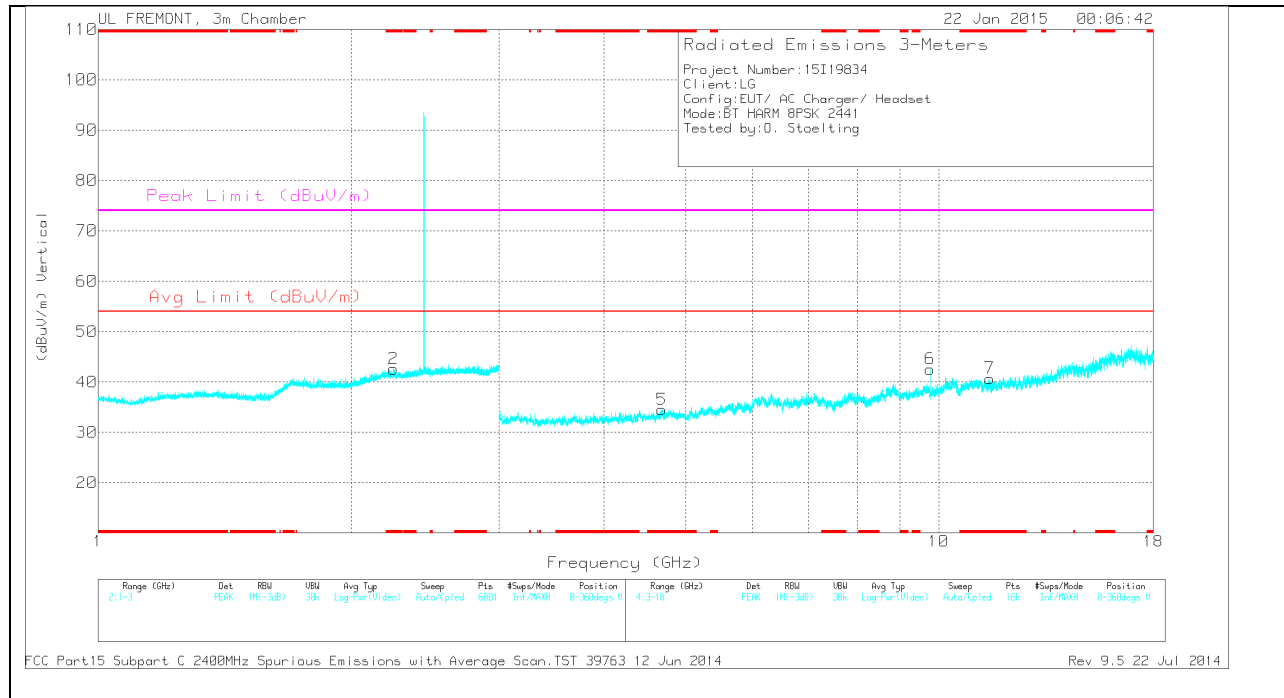
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 2.205	43.68	PK3	32	-22.9	52.78	-	-	74	-21.22	243	145	V
* 2.206	29.39	VB1T	32	-22.9	38.49	54	-15.51	-	-	243	145	V
* 11.574	37.27	PK3	38.1	-26	49.37	-	-	74	-24.63	181	194	V
* 11.576	24.17	VB1T	38.1	-26	36.27	54	-17.73	-	-	181	194	V
9.608	39.13	PK3	37.1	-25.3	50.93	-	-	-	-	26	292	V
9.608	30.98	VB1T	37.1	-25.3	42.78	-	-	-	-	26	292	V

MID CHANNEL HORIZONTAL



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 VERTICAL



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

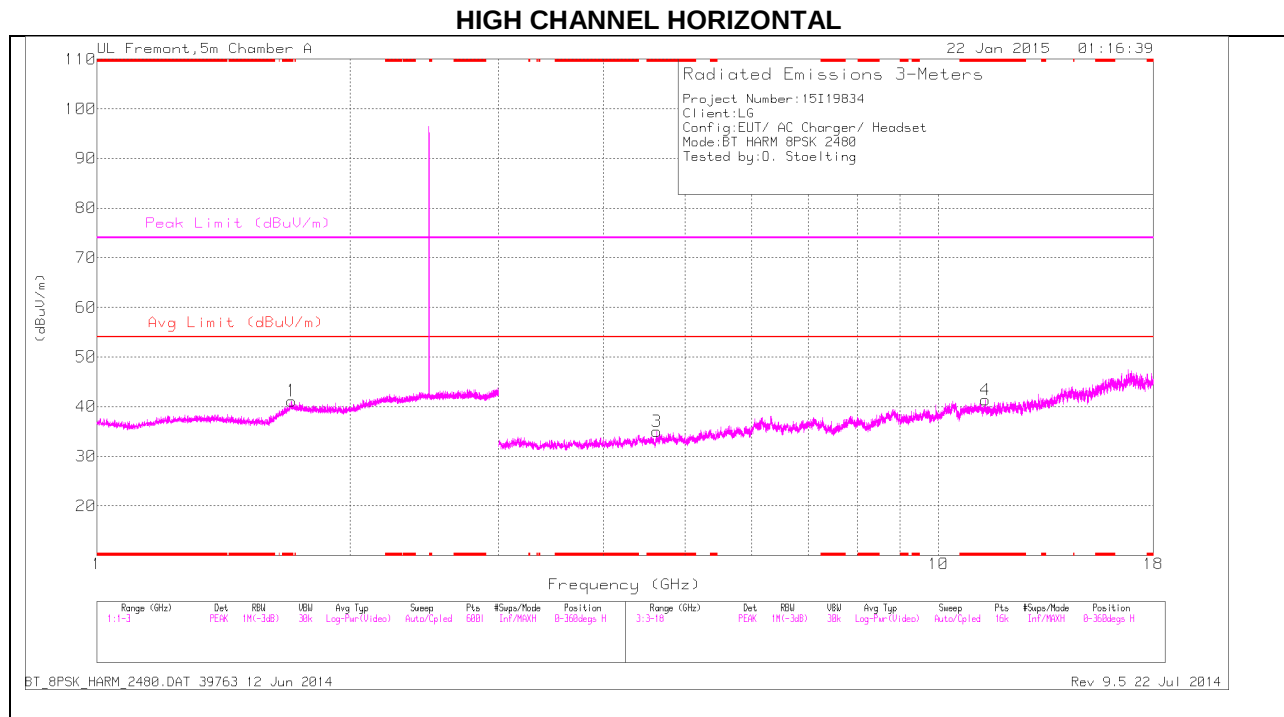
TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	* 1.454	33.72	PK	28	-23.6	38.12	-	-	74	-35.88	0-360	200	H
2	* 2.247	33.7	PK	31.9	-23	42.6	-	-	74	-31.4	0-360	100	V
3	* 4.968	31.67	PK	33.9	-31	34.57	-	-	74	-39.43	0-360	200	H
4	* 11.201	27.42	PK	38.3	-25	40.72	-	-	74	-33.28	0-360	100	H
5	* 4.683	31.41	PK	33.8	-30.7	34.51	-	-	74	-39.49	0-360	200	V
7	* 11.504	28.01	PK	38.1	-25.4	40.71	-	-	74	-33.29	0-360	200	V
6	9.764	31.39	PK	37.2	-26	42.59	-	-	-	-	0-360	200	V

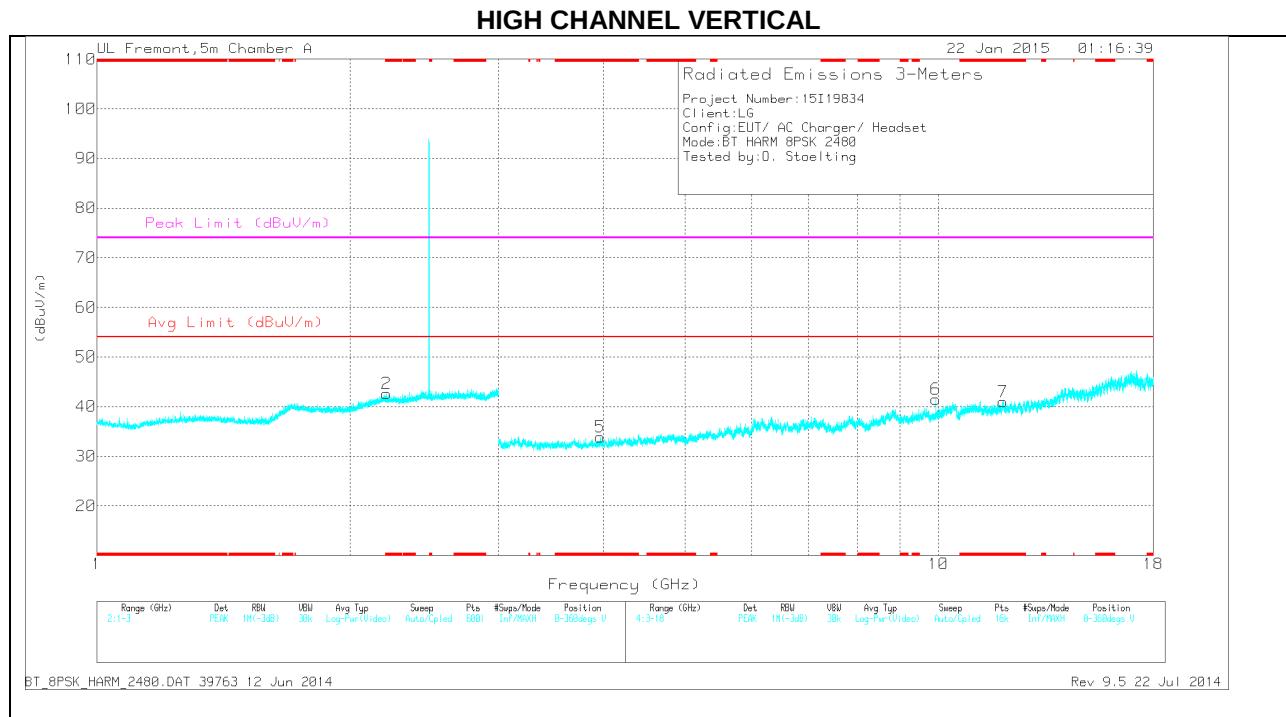
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 2.247	42.51	PK3	31.9	-23	51.41	-	-	74	-22.59	34	245	V
* 2.248	29.57	VB1T	31.9	-23.1	38.37	54	-15.63	-	-	34	245	V
* 11.202	37.65	PK3	38.3	-25	50.95	-	-	74	-23.05	34	393	H
* 11.203	24.06	VB1T	38.3	-25	37.36	54	-16.64	-	-	34	393	H
* 11.505	37.78	PK3	38.1	-25.4	50.48	-	-	74	-23.52	340	123	V
* 11.506	23.99	VB1T	38.1	-25.4	36.69	54	-17.31	-	-	340	123	V
9.764	38.43	PK3	37.2	-26	49.63	-	-	-	-	197	212	V
9.764	30.04	VB1T	37.2	-26	41.24	-	-	-	-	197	212	V



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 T711 (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	* 1.703	33.87	PK	30.7	-23.4	41.17	-	-	74	-32.83	0-360	200	H
2	* 2.209	33.52	PK	32	-22.9	42.62	-	-	74	-31.38	0-360	200	V
3	* 4.627	32.02	PK	33.6	-30.6	35.02	-	-	74	-38.98	0-360	100	H
4	* 11.362	29.23	PK	38.2	-26.1	41.33	-	-	74	-32.67	0-360	100	H
5	* 3.966	31.68	PK	33.2	-31	33.88	-	-	74	-40.12	0-360	100	V
7	* 11.933	28.64	PK	38.4	-26.1	40.94	-	-	74	-33.06	0-360	200	V
6	9.92	29.62	PK	37.5	-25.6	41.52	-	-	-	-	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 T711 (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
* 1.702	42.82	PK3	30.7	-23.4	50.12	-	-	74	-23.88	28	134	H
* 1.701	29.73	VB1T	30.7	-23.4	37.03	54	-16.97	-	-	28	134	H
* 2.21	42.98	PK3	32	-22.9	52.08	-	-	74	-21.92	65	392	V
* 2.207	29.5	VB1T	32	-22.9	38.6	54	-15.4	-	-	65	392	V
* 11.364	37.82	PK3	38.2	-26.1	49.92	-	-	74	-24.08	39	234	H
* 11.364	24.98	VB1T	38.2	-26.1	37.08	54	-16.92	-	-	39	234	H
9.92	39.24	PK3	37.5	-25.6	51.14	-	-	-	-	189	180	V
9.92	30.56	VB1T	37.5	-25.6	42.46	-	-	-	-	189	180	V

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

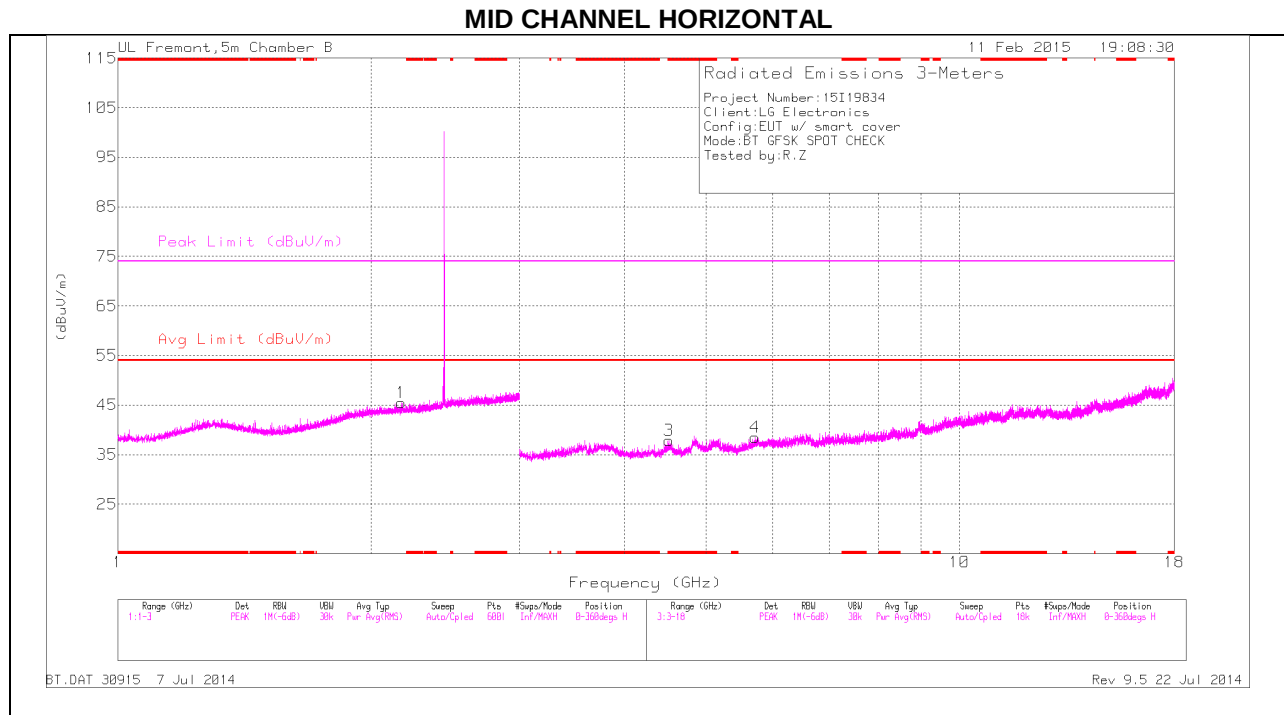
PK3 - FHSS Method: Maximum Peak

VB1T - FHSS Method: VB=1/Ton, Voltage Averaging Max Hold where: Ton is the duration of the packet

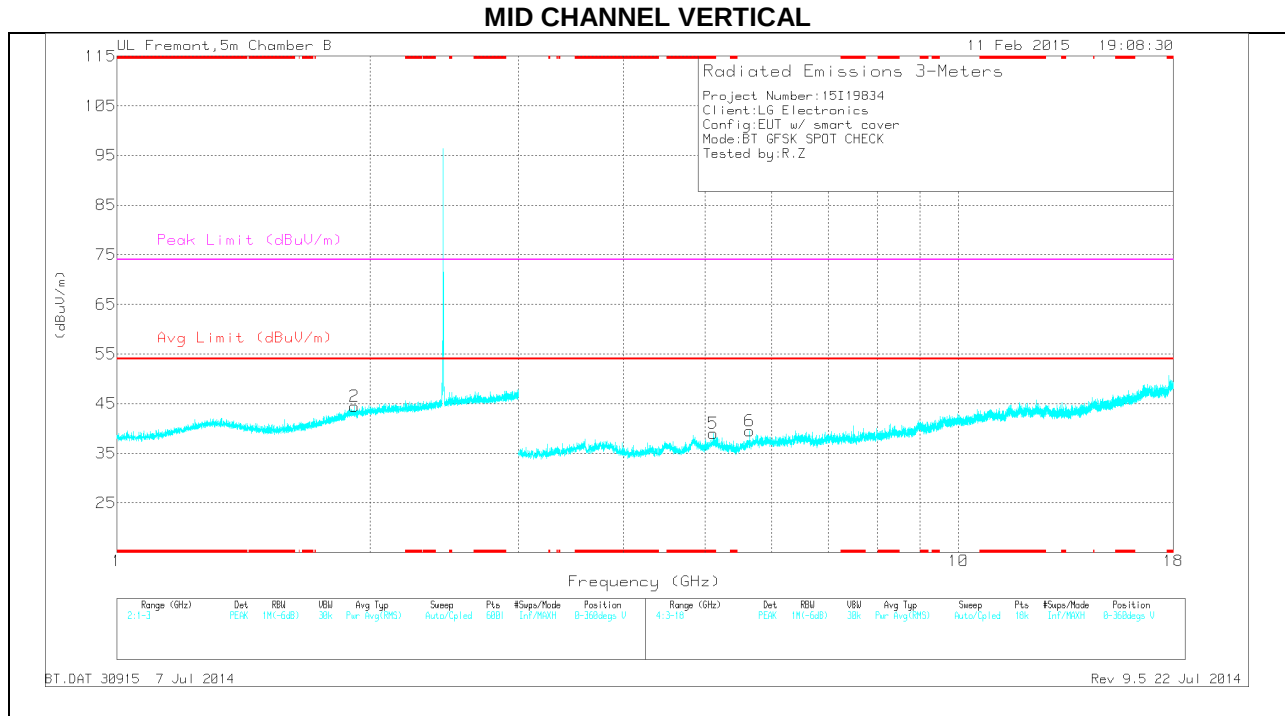
9.3. ADDITIONAL TESTS (Phone with Smart Case and Stylus Pen)

9.3.1. BASIC DATA RATE GFSK MODULATION (Worst case)

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.

MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Filtr/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	* 4.513	31.67	PK	34	-27.8	37.87	-	-	74	-36.13	0-360	100	H
5	* 5.112	31.4	PK	34.3	-26.7	39	-	-	74	-35	0-360	101	V
2	1.914	34.57	PK	31.4	-21.5	44.47	-	-	-	-	0-360	101	V
1	2.172	34.73	PK	31.8	-21.1	45.43	-	-	-	-	0-360	201	H
6	5.645	32.55	PK	34.7	-27.8	39.45	-	-	-	-	0-360	101	V
4	5.712	30.62	PK	34.8	-26.9	38.52	-	-	-	-	0-360	100	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.513	38.29	PK3	34	-27.8	44.49	-	-	74	-29.51	360	100	H
* 4.514	26	VB10	34	-27.8	32.2	54	-21.8	-	-	360	100	H
* 5.113	38.16	PK3	34.3	-26.7	45.76	-	-	74	-28.24	360	100	V
* 5.11	25.38	VB10	34.3	-26.7	32.98	54	-21.02	-	-	360	100	V

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

PK3 - FHSS Method: Maximum Peak

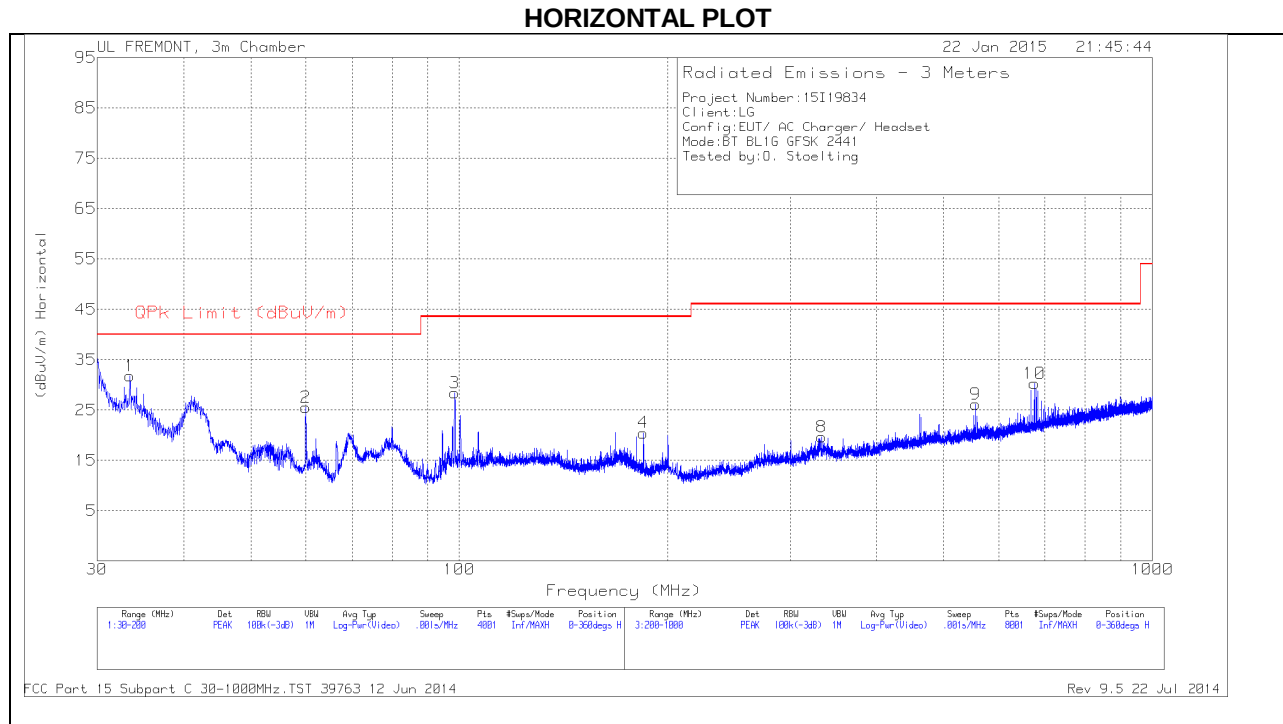
VB10Hz - FHSS Method: 10Hz Video Bandwidth

BT.DAT 30915 7 Jul 2014

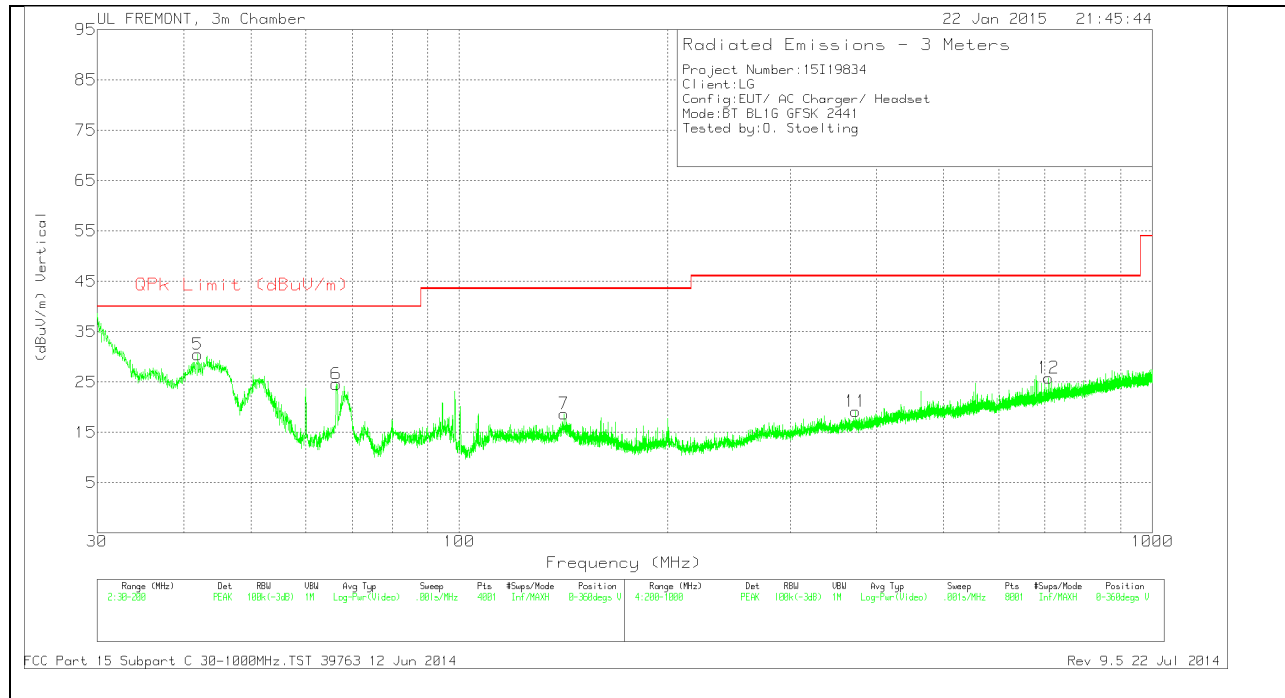
Rev 9.5 22 Jul 2014

9.4. 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
1	33.4425	40.74	PK	18.5	-27.5	31.74	40	-8.26	0-360	300	H
5	41.9	45.78	PK	12.1	-27.4	30.48	40	-9.52	0-360	100	V
2	60.005	45.53	PK	7.1	-27.1	25.53	40	-14.47	0-360	300	H
6	66.4225	44.01	PK	7.7	-27.1	24.61	40	-15.39	0-360	100	V
3	98.4675	45.68	PK	9.5	-26.8	28.38	43.52	-15.14	0-360	300	H
7	141.52	32.28	PK	12.8	-26.4	18.68	43.52	-24.84	0-360	100	V
4	184.3175	35.57	PK	10.8	-25.9	20.47	43.52	-23.05	0-360	200	H
8	333.3	30.86	PK	14	-25.2	19.66	46.02	-26.36	0-360	100	H
11	373.3	29.67	PK	15	-25.5	19.17	46.02	-26.85	0-360	300	V
9	556	33.76	PK	18.2	-25.8	26.16	46.02	-19.86	0-360	100	H
10	676	35.74	PK	19.8	-25.3	30.24	46.02	-15.78	0-360	100	H
12	708	30.52	PK	20.4	-25.1	25.82	46.02	-20.2	0-360	100	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.

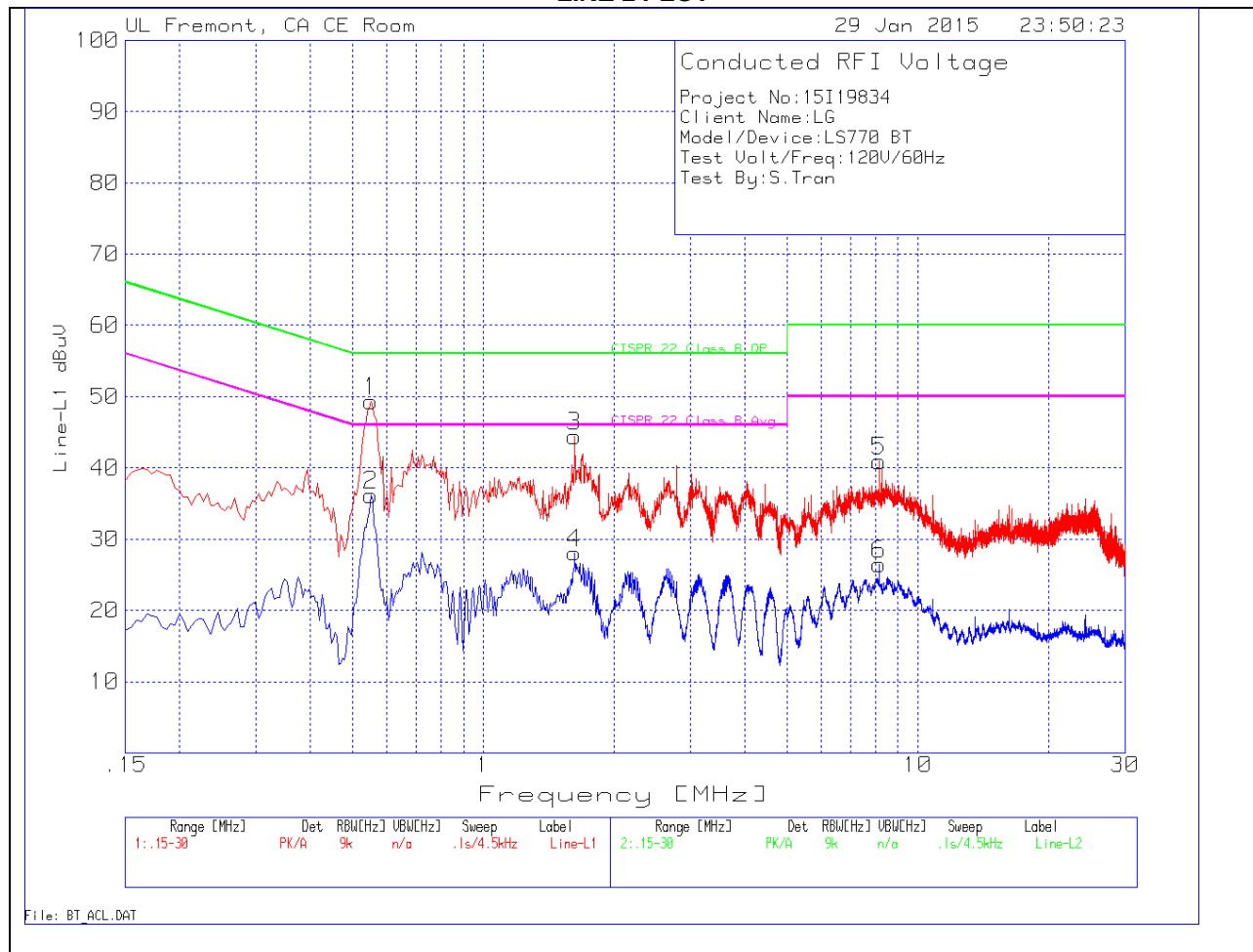
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



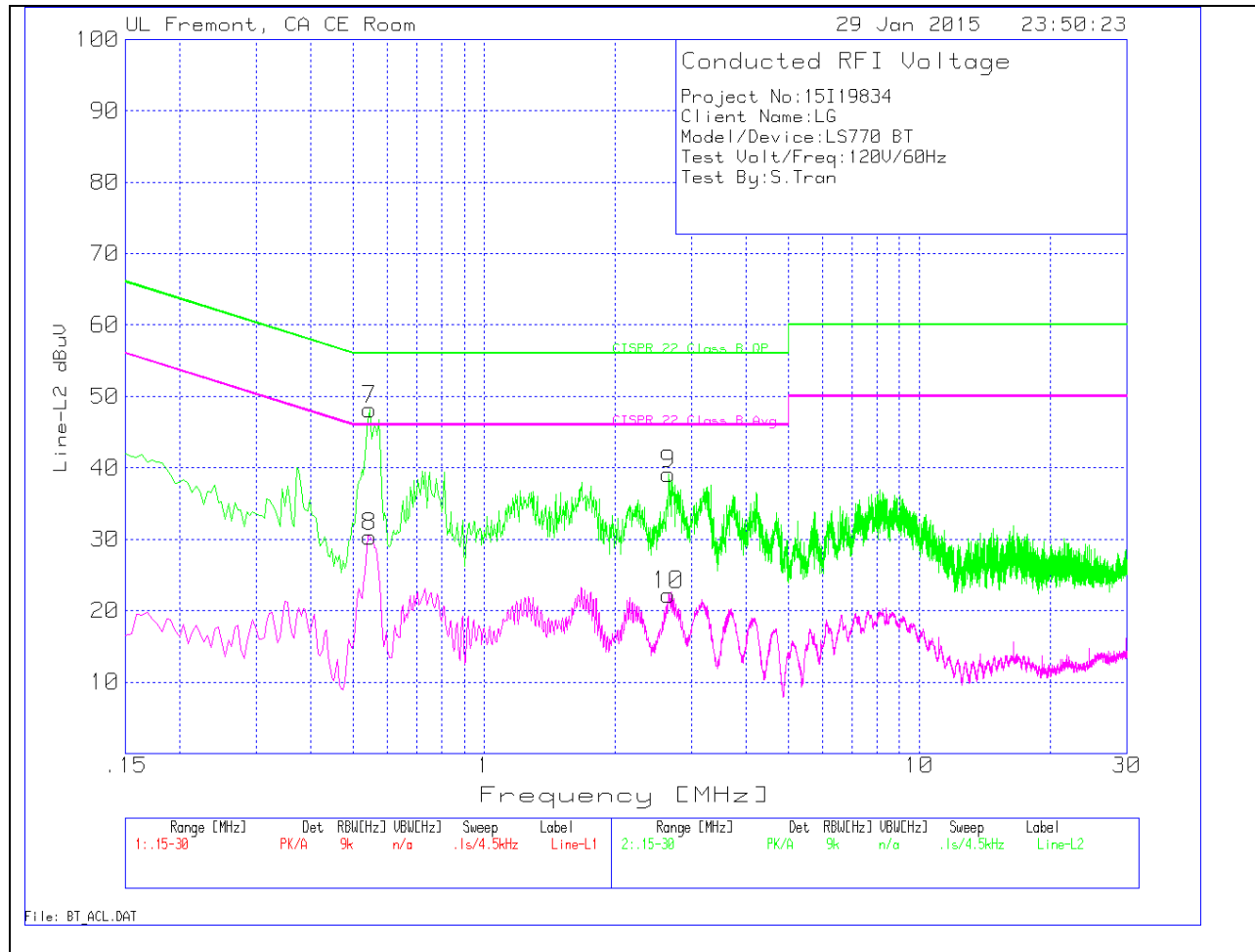
LINE 1 RESULTS

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	.5505	49.07	PK	.3	0	49.37	56	-6.63	-	-
2	.5505	35.92	Av	.3	0	36.22	-	-	46	-9.78
3	1.6215	44.13	PK	.2	.1	44.43	56	-11.57	-	-
4	1.6215	27.79	Av	.2	.1	28.09	-	-	46	-17.91
5	8.142	40.6	PK	.2	.1	40.9	60	-19.1	-	-
6	8.142	26.14	Av	.2	.1	26.44	-	-	50	-23.56

LINE 2 PLOT



LINE 2 RESULTS

11. 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)
7	.546	47.87	PK	.3	0	48.17	56	-7.83	-	-
8	.546	30.03	Av	.3	0	30.33	-	-	46	-15.67
9	2.6565	38.84	PK	.2	.1	39.14	56	-16.86	-	-
10	2.6565	21.91	Av	.2	.1	22.21	-	-	46	-23.79

PK - Peak detector
Av - average detection