



FCC 47 CFR PART 15 SUBPART C

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

MODEL NUMBER: SM-J110M and SM-J110M_DS

FCC ID: A3LSMJ110M

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Revision History

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION: GSM/WCDMA/LTE Phone + Bluetooth and WLAN 2.4GHz b/g/n
MODEL: SM-J110M and SM-J110M_DS
SERIAL NUMBER: 2152666(Conducted), R38G60H3CJZ(Radiated)
DATE TESTED: JULY 17 – 28, 2015

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

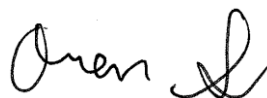
UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement 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.

Approved & Released For

UL Verification Services Inc. By:

Tested By:



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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009 for, FCC CFR 47 Part 2, FCC CFR 47 Part 15.

Deviation -Radiated spurious emission above 1GHz EUT height is 1.5m not 0.8m.

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:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable
Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

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 and WLAN 2.4GHz 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	8.67	7.36
2402 - 2480	Enhanced 8PSK	8.56	7.18

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 1.28 dBi.

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 Y 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	Samsung	ETA0U10EBE	N/A	N/A
Earphone	Samsung	N/A	N/A	N/A

I/O CABLES

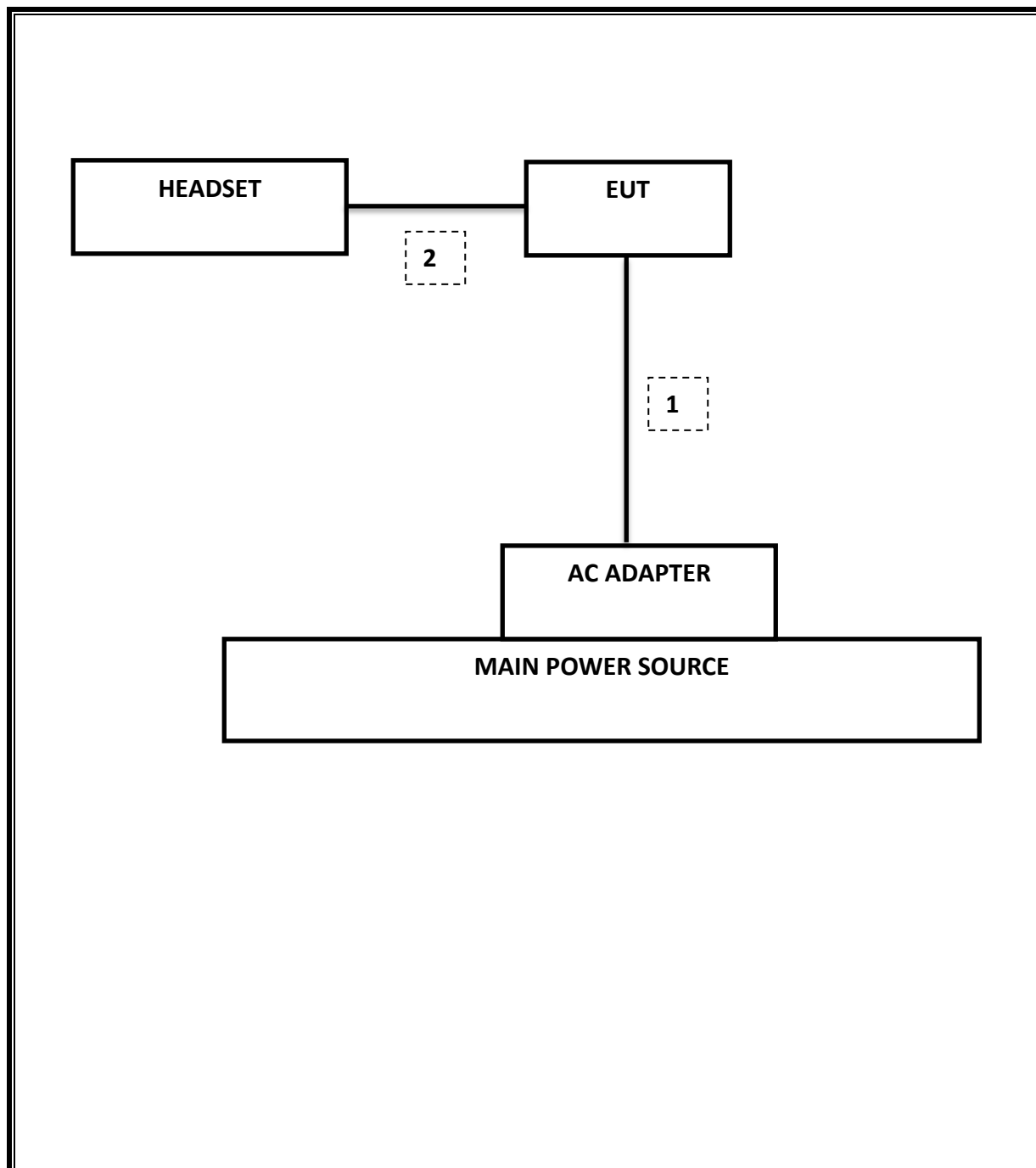
I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini-USB	Shielded	1.2m	N/A
2	Audio	1	Mini-Jack	Unshielded	1m	N/A

TEST SETUP

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

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	02/13/16
Antenna, Horn, 18GHz	EMCO	3115	C00783	10/25/15
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00980	11/14/15
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/16
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/16
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/16
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/15
CBT Bluetooth Tester	R & S	CBT	None	07/12/16
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	01/14/16
Reject Filter, 2.4GHz	Micro-Tronics	BRM50702	N02684	CNR
Radiated Software	UL	UL EMC	Ver 9.5, July 22, 2014	
Conducted Software	UL	UL EMC	Ver 9.5, May 17 2012	
CLT Software	UL	UL RF	Ver 1.0, Feb 2 2015	
Antenna Port Software	UL	UL RF	Ver 2.1.1.1, Jan 20 2015	

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	1.2013 MHz
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-31.83 dBm
15.247 (b)(1)	RSS-247 5.4.2	TX conducted output power	<21dBm		Pass	8.67 dBm
15.247 (a)(1)	RSS-247 5.1.2	Hopping frequency separation	> 25KHz		Pass	1 MHz
15.247 (a)(1)(iii)	RSS-247 5.1.4	Number of Hopping channels	More than 15 non-overlapping channels		Pass	79
15.247 (a)(1)(iii)	RSS-247 5.1.4	Avg Time of Occupancy	< 0.4sec		Pass	0.34536 s
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	49.74 dBuV
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m		Pass	39.85 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	0.942	0.85652
Middle	2441	0.938	0.85668
High	2480	0.944	0.8486
Worst		0.944	0.85668

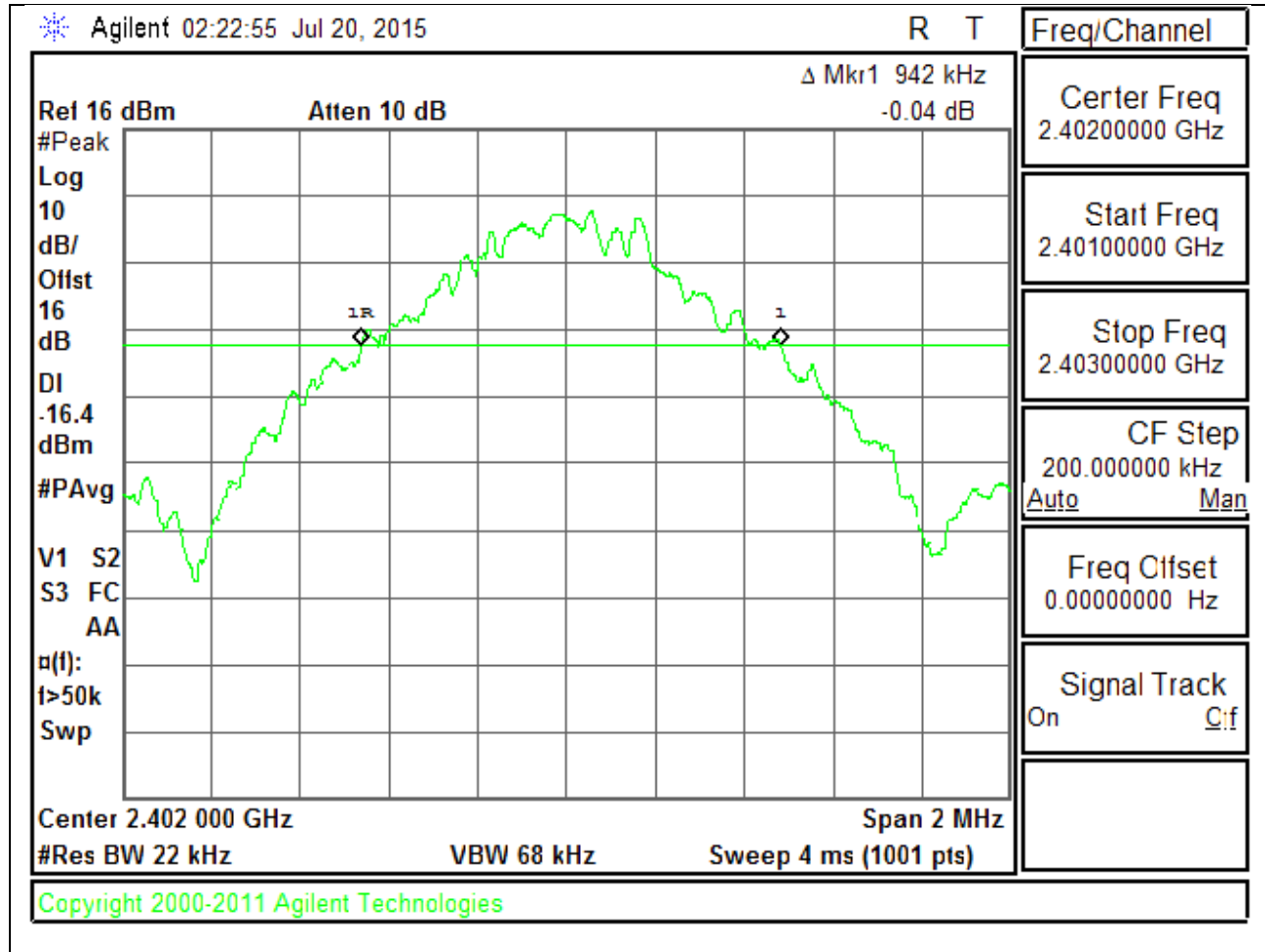
8.1.2. ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	2402	1.332	1.2013
Middle	2441	1.296	1.18
High	2480	1.302	1.1716
Worst		1.332	1.2013

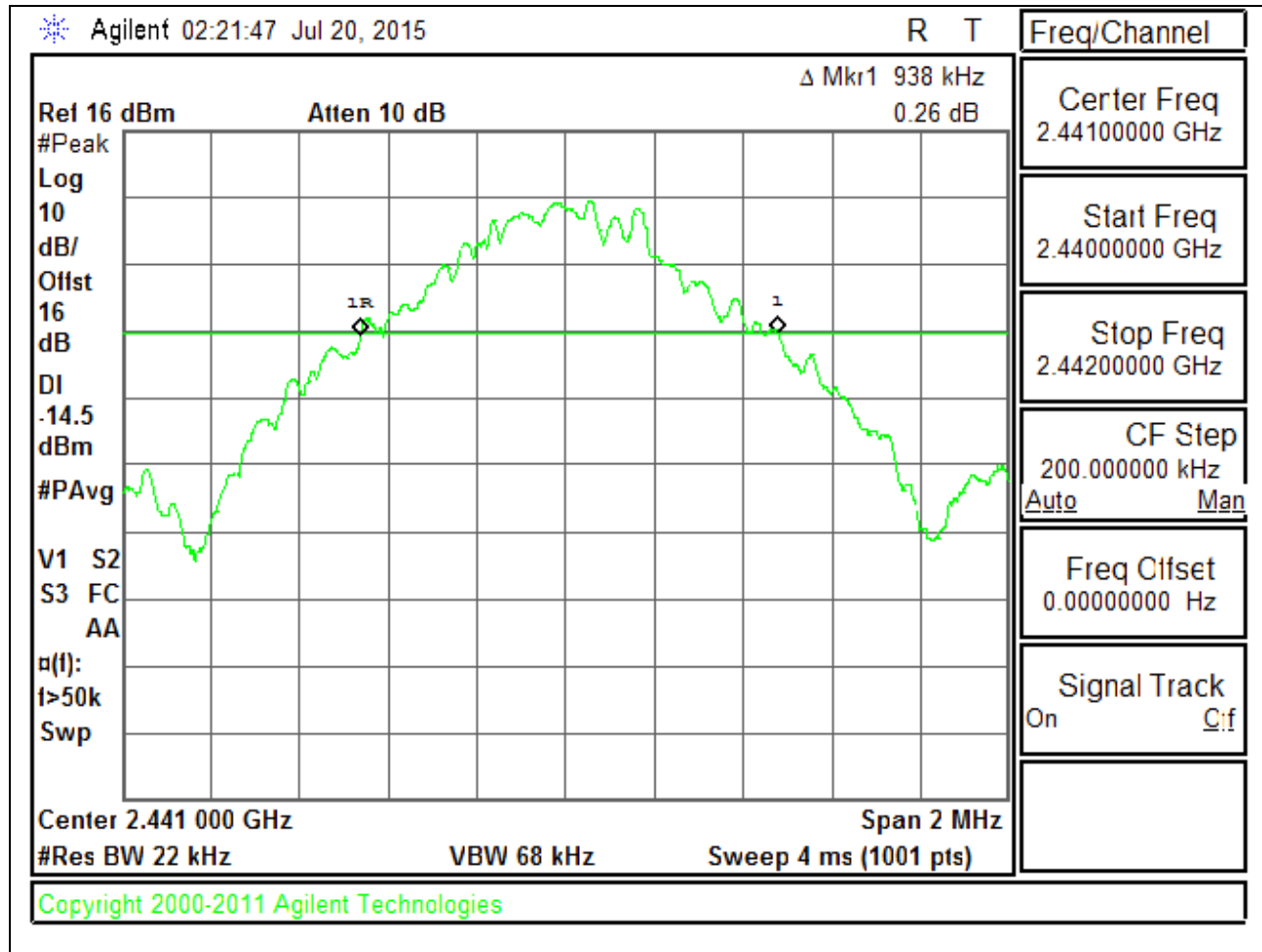
20 dB AND 99% BANDWIDTH PLOTS

GFSK 20 dB BANDWIDTH

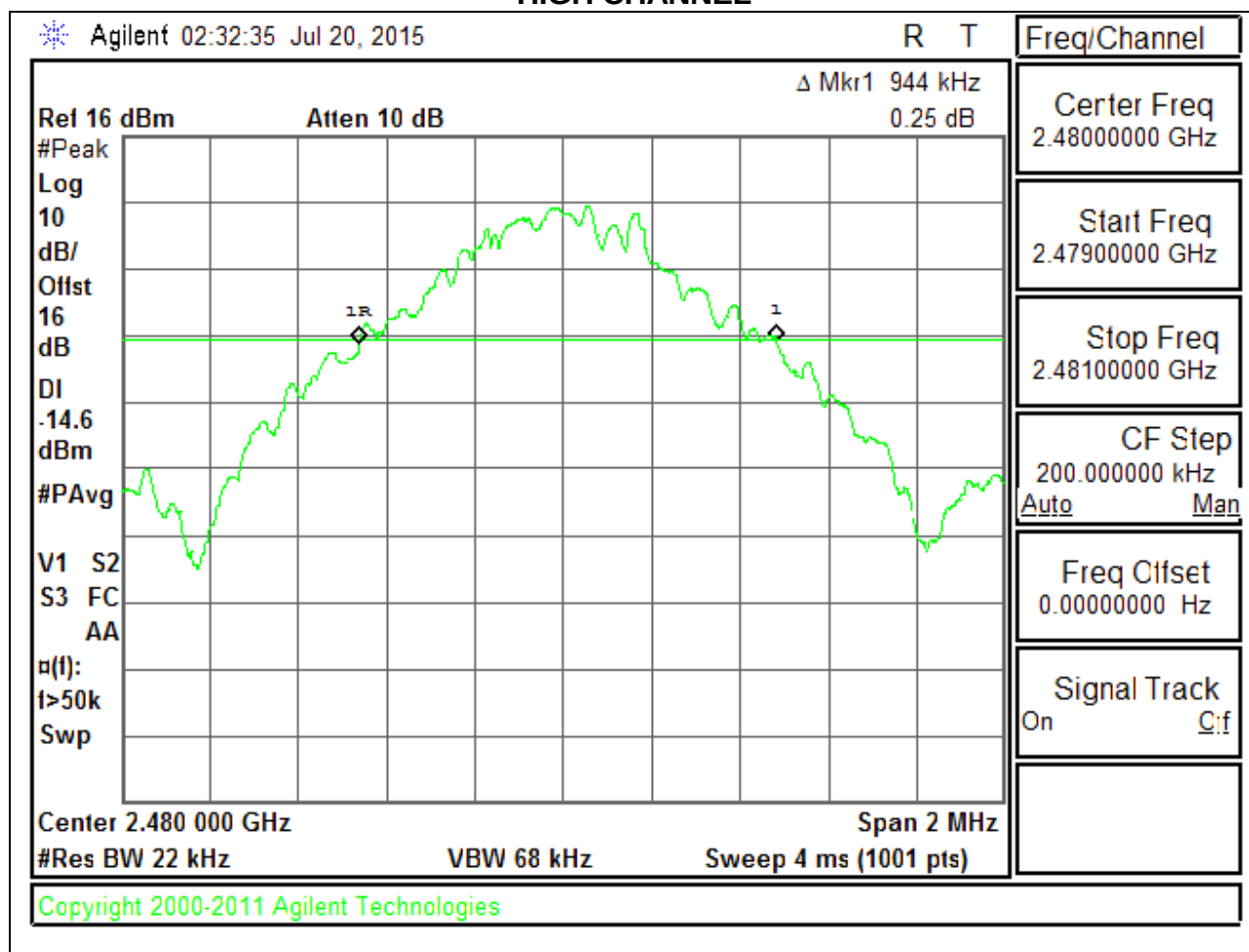
LOW CHANNEL



MID CHANNEL

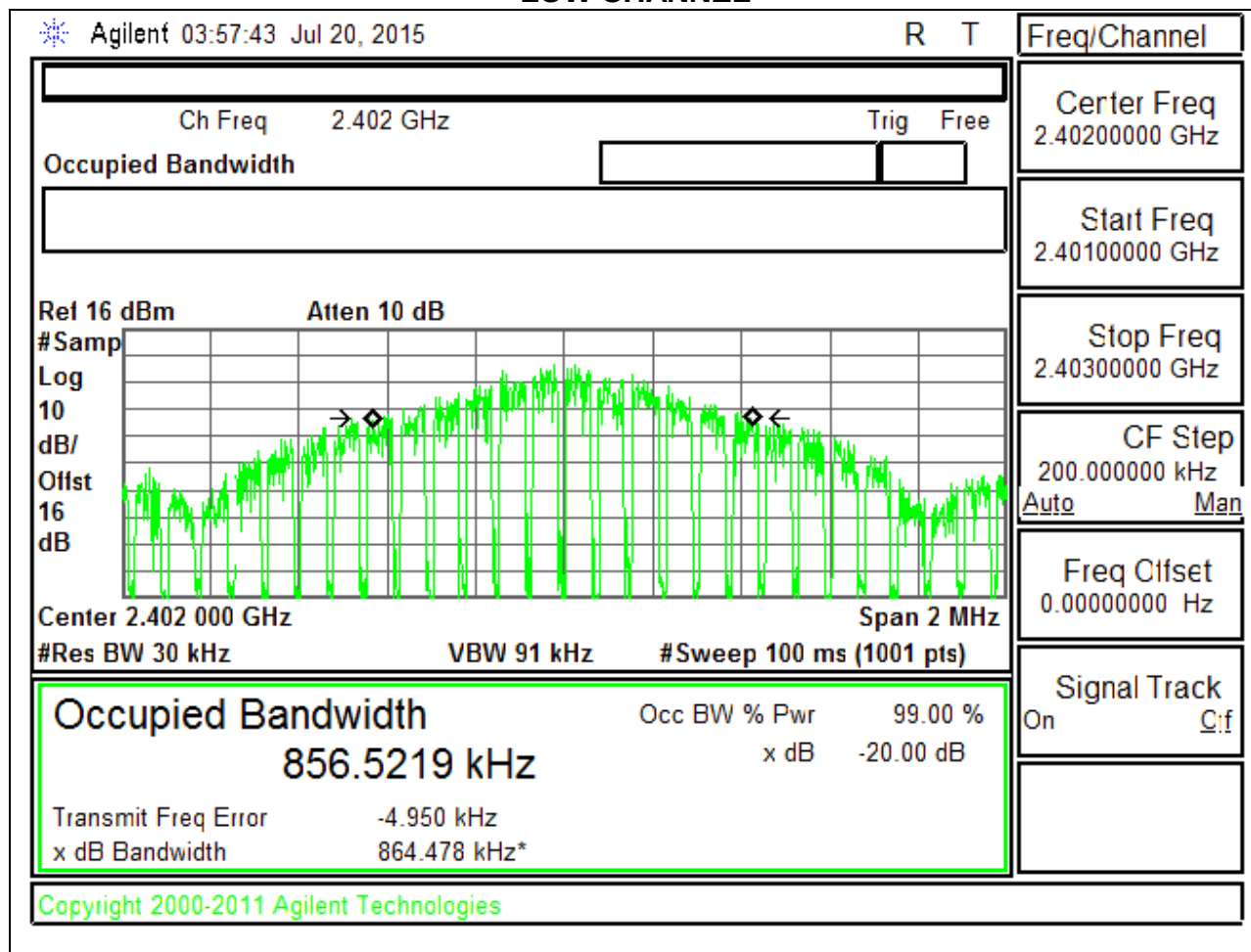


HIGH CHANNEL

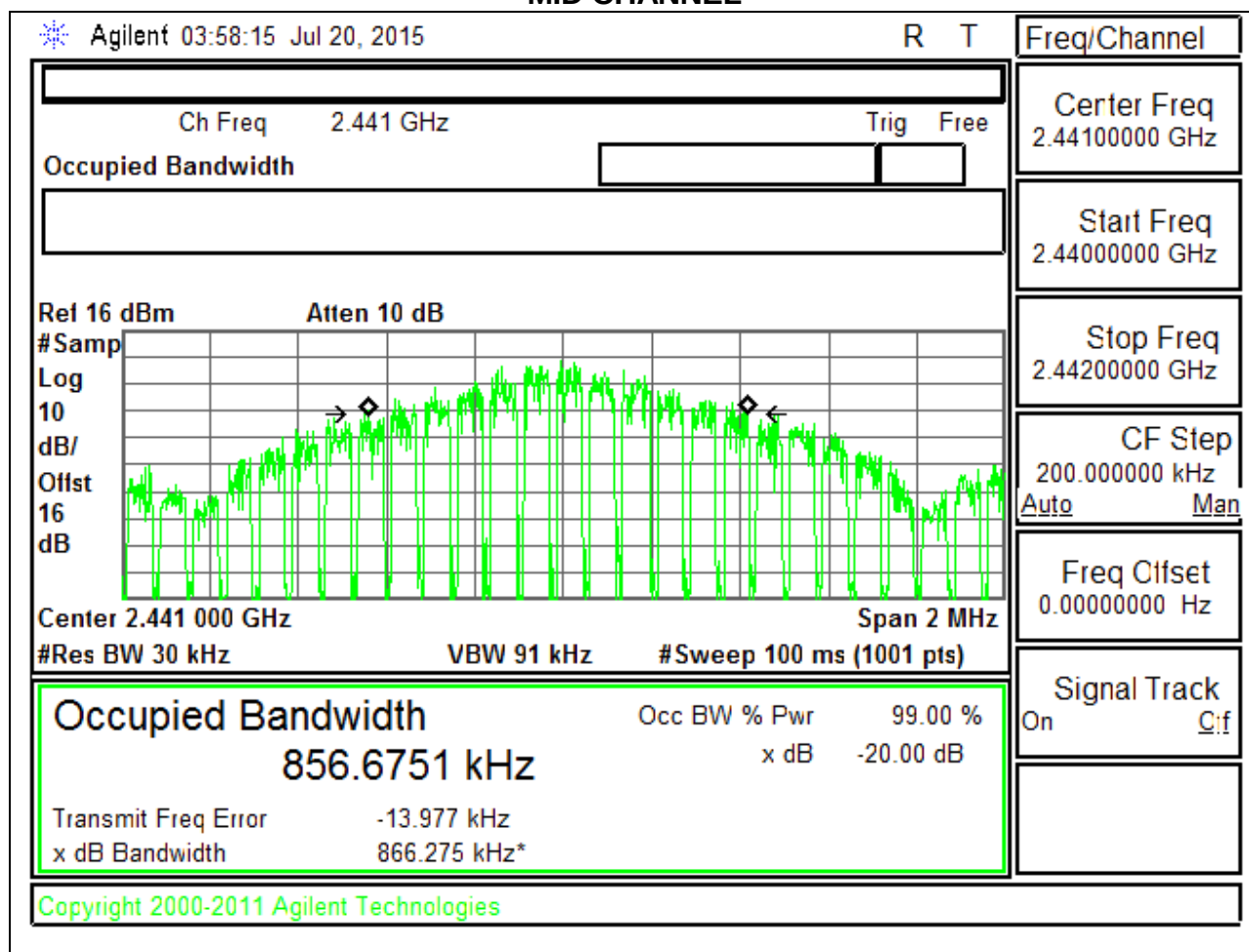


GFSK 99% BANDWIDTH

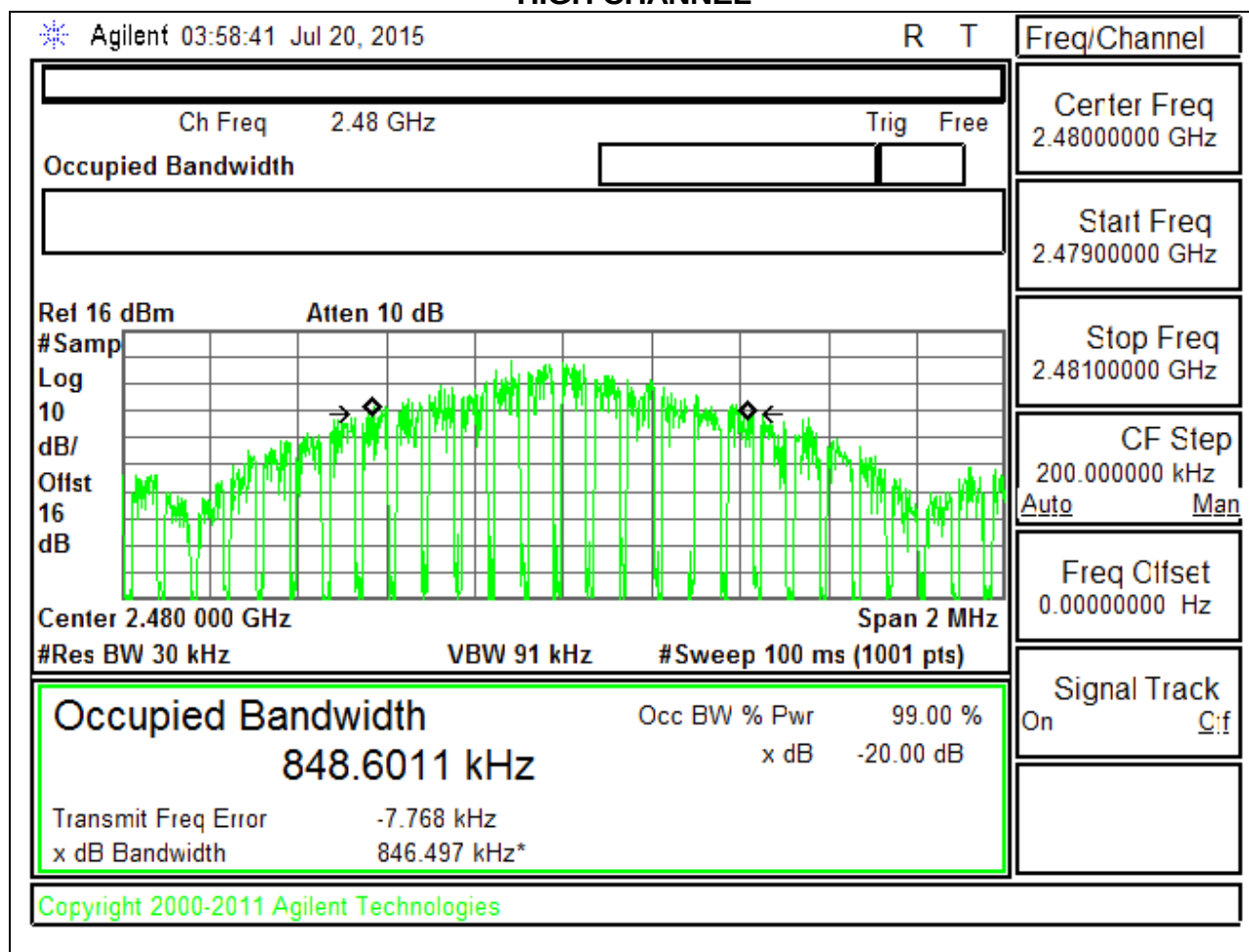
LOW CHANNEL



MID CHANNEL

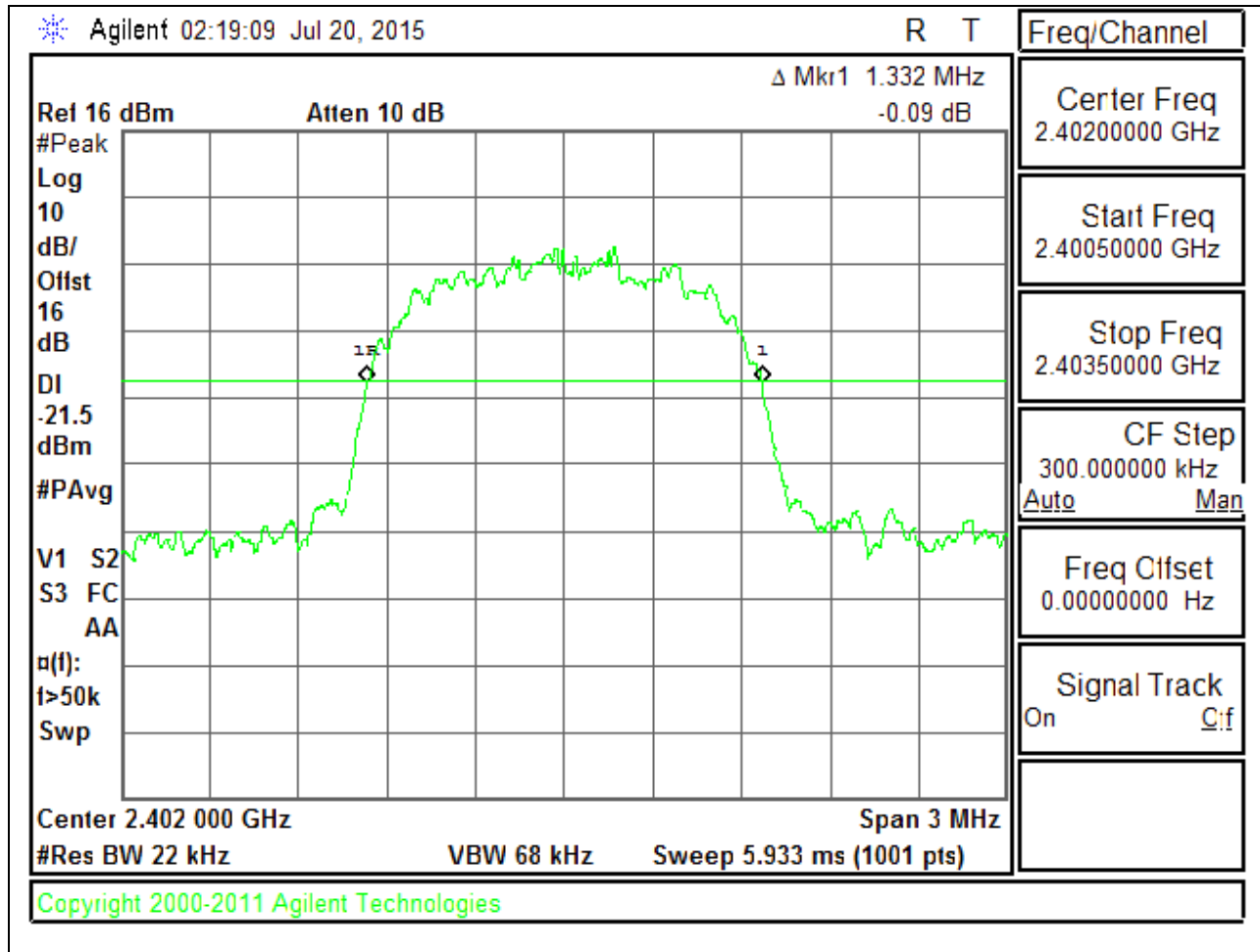


HIGH CHANNEL

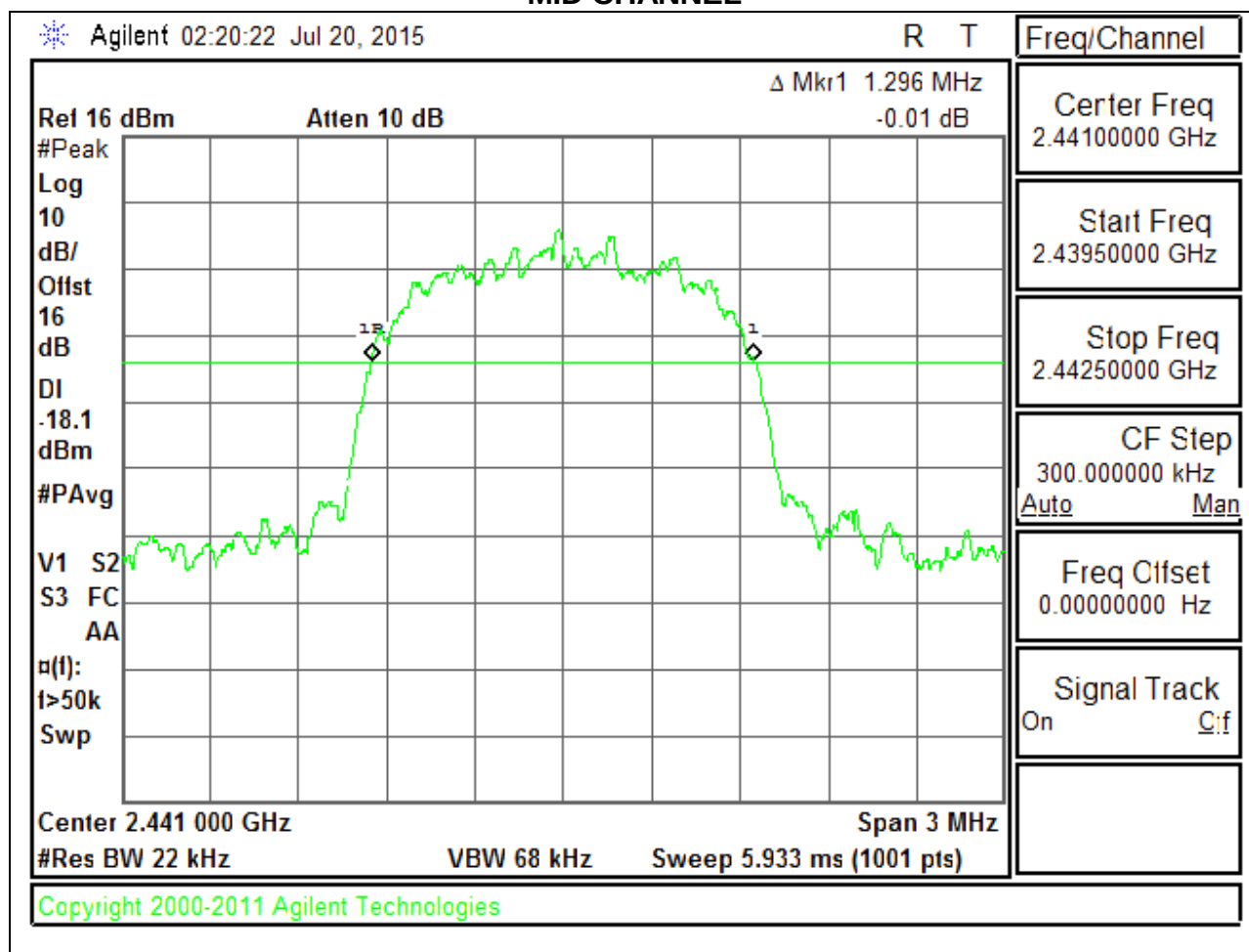


8PSK 20 dB BANDWIDTH

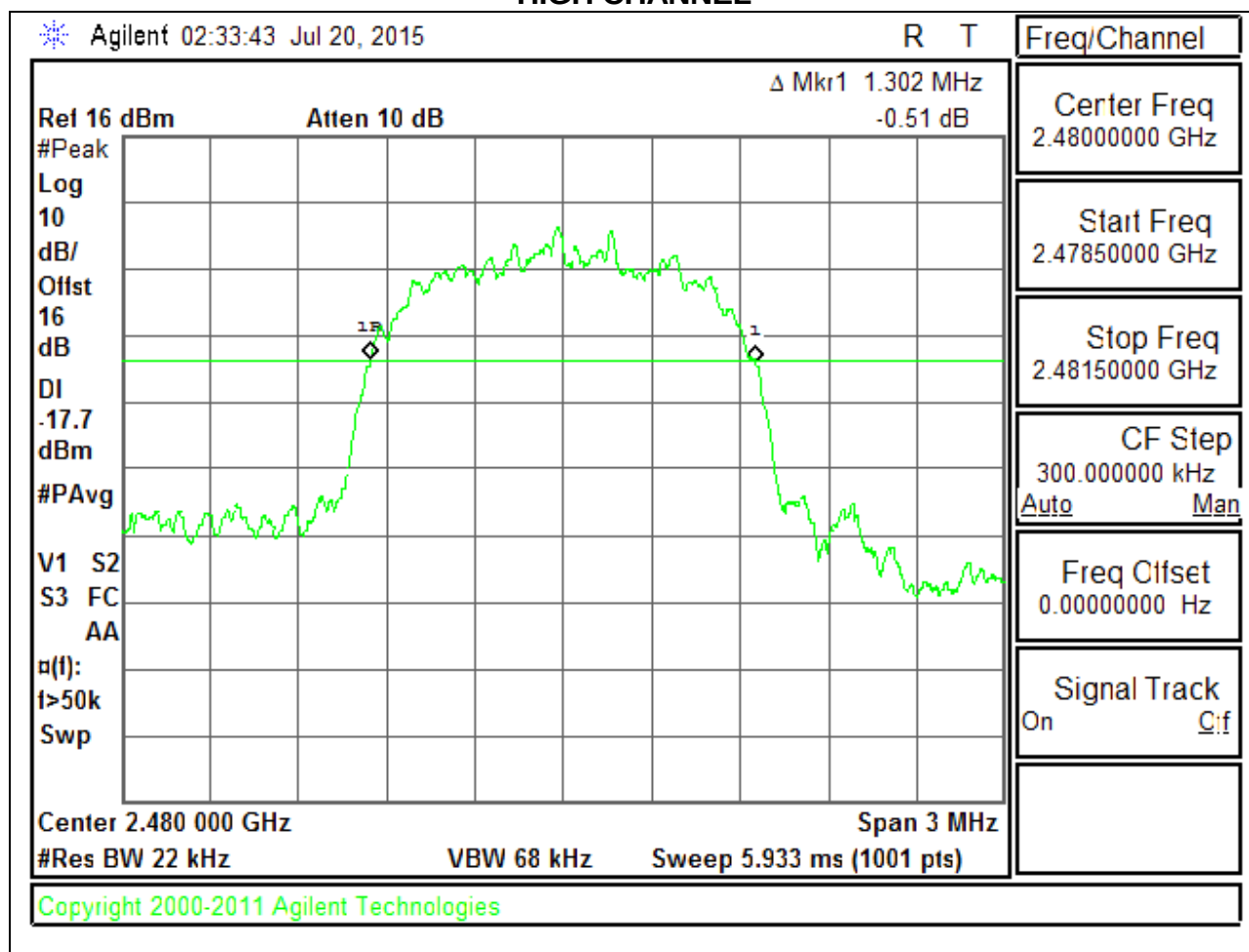
LOW CHANNEL



MID CHANNEL

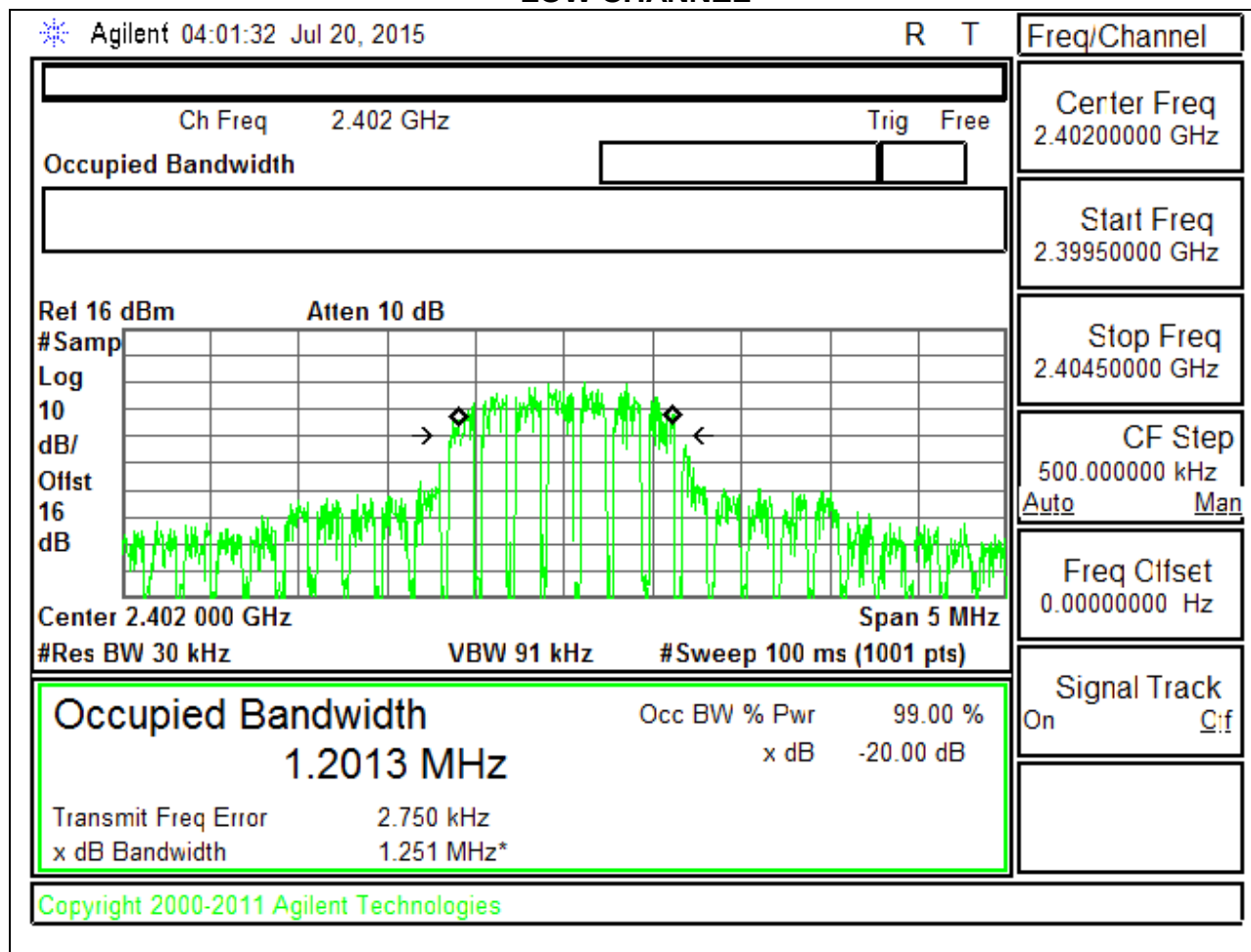


HIGH CHANNEL

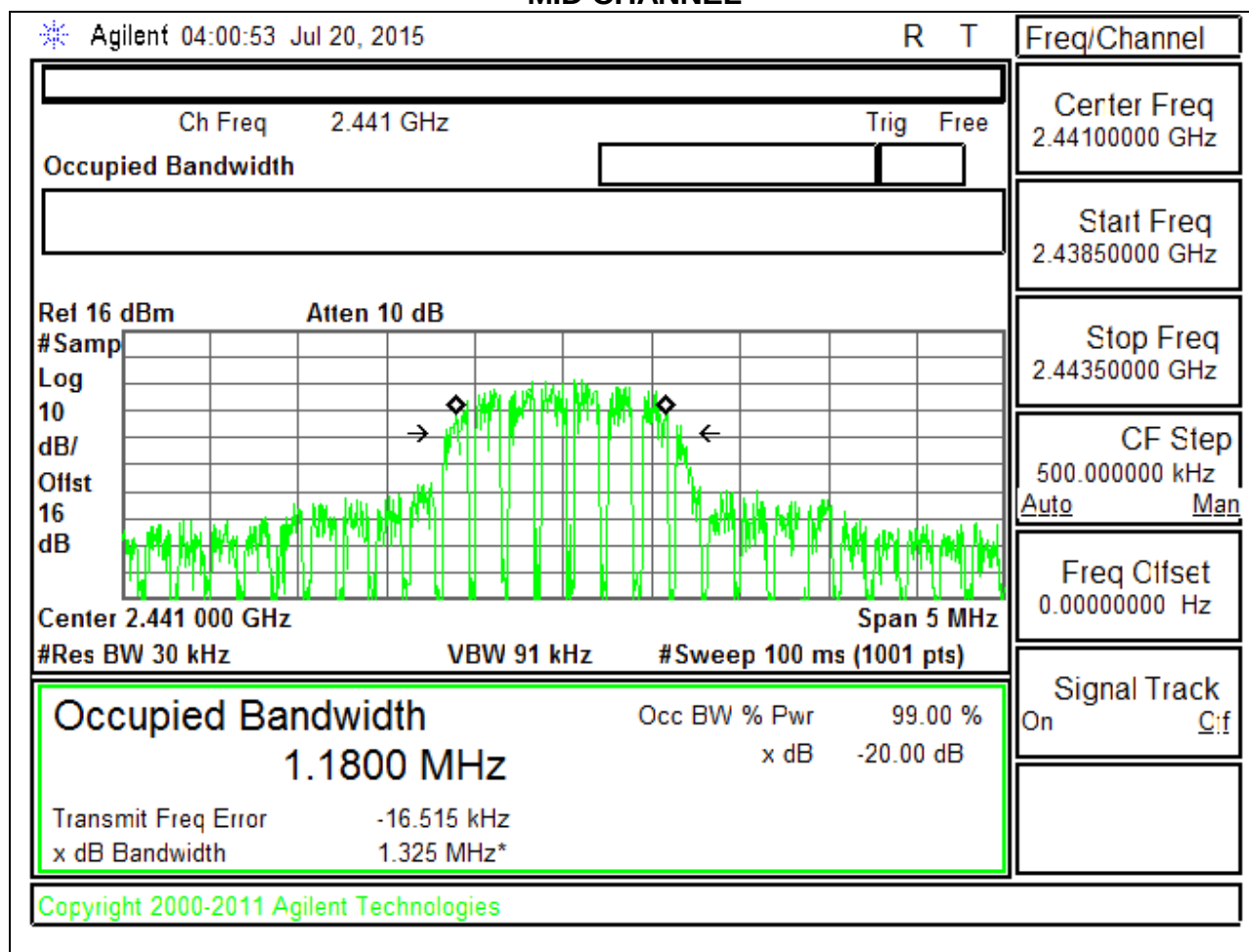


8PSK 99% BANDWIDTH

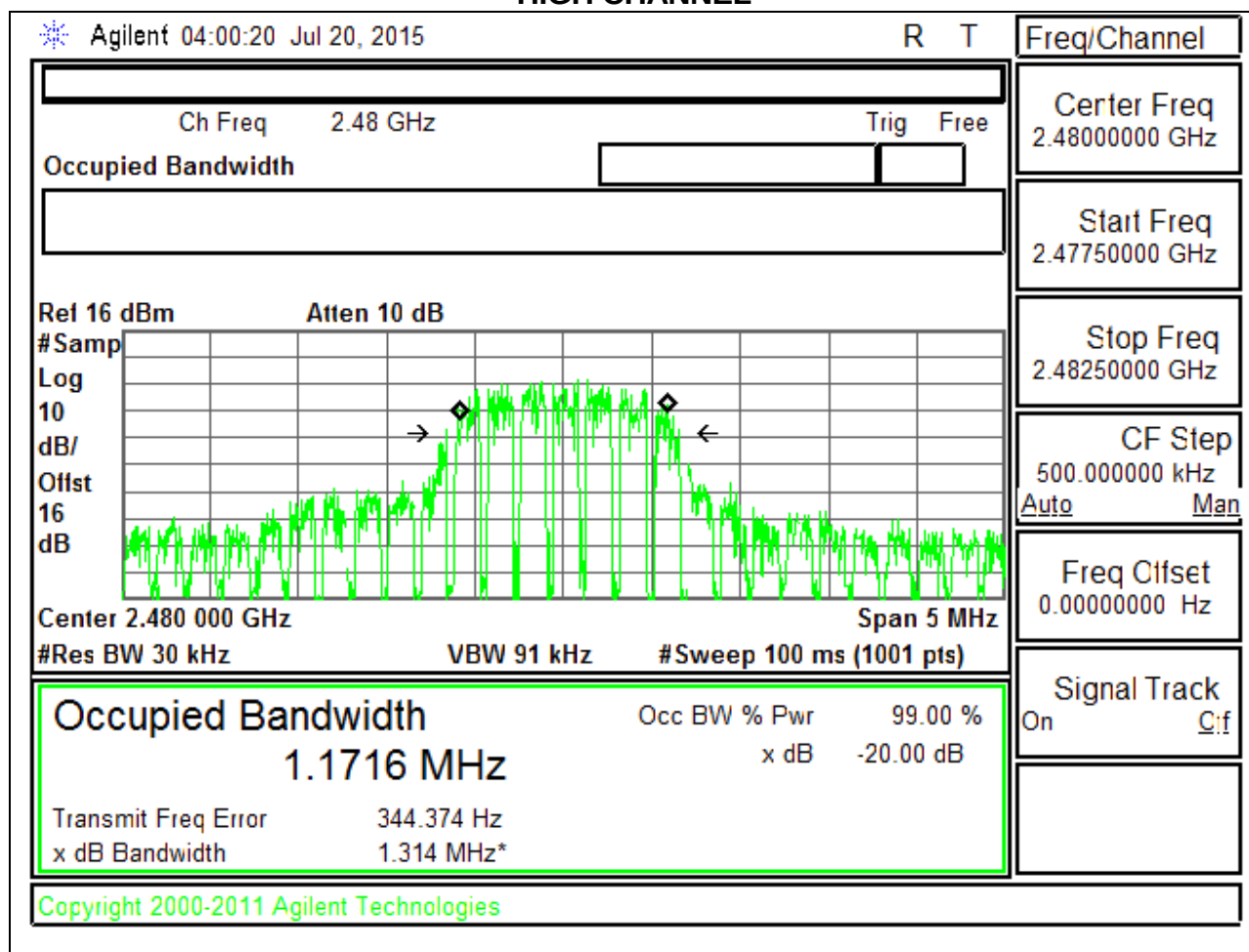
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.2. HOPPING FREQUENCY SEPARATION

LIMIT

FCC §15.247 (a) (1)

IC RSS-247 5.1.2

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.

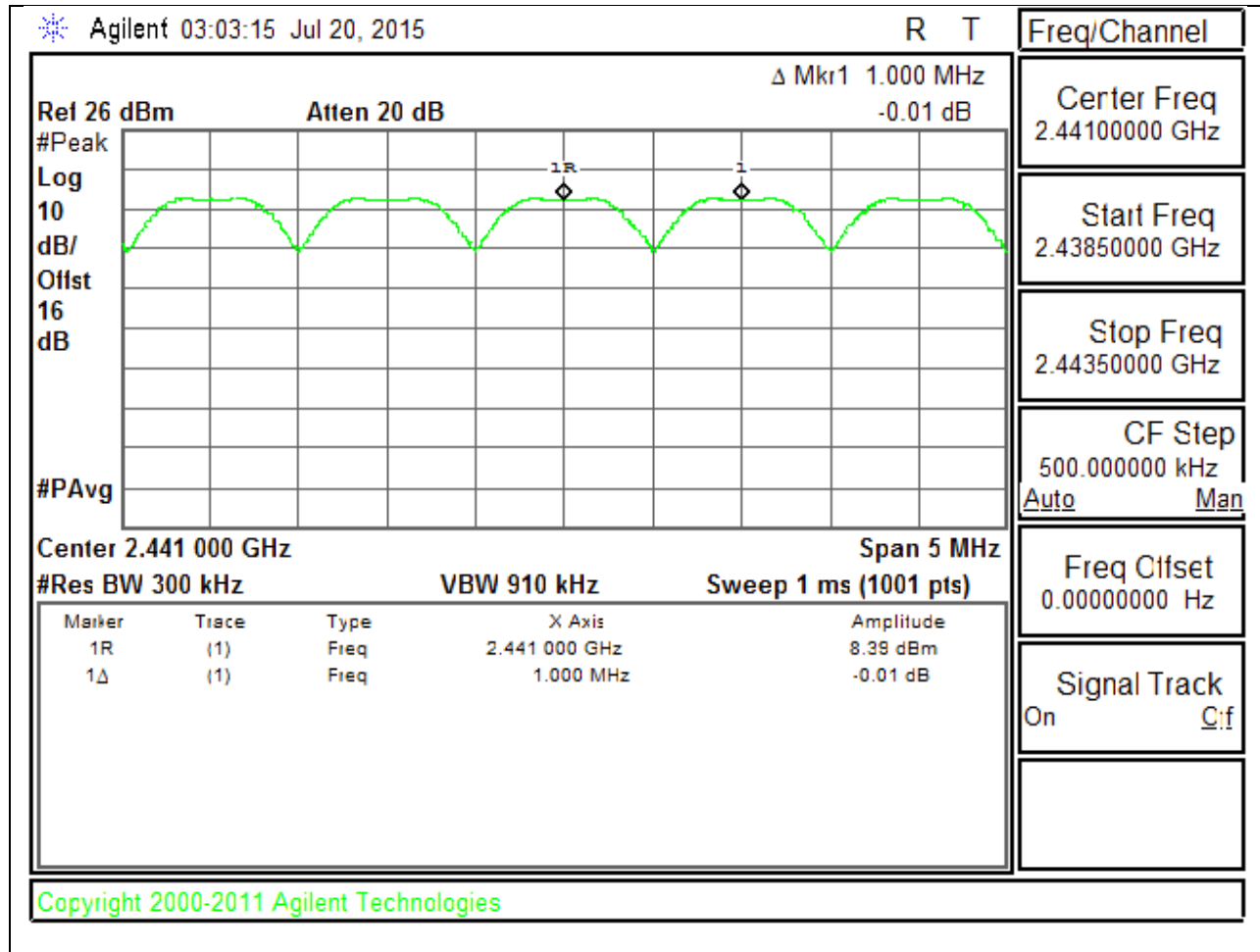
Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than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

IC RSS-247 5.1.4

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

TEST PROCEDURE

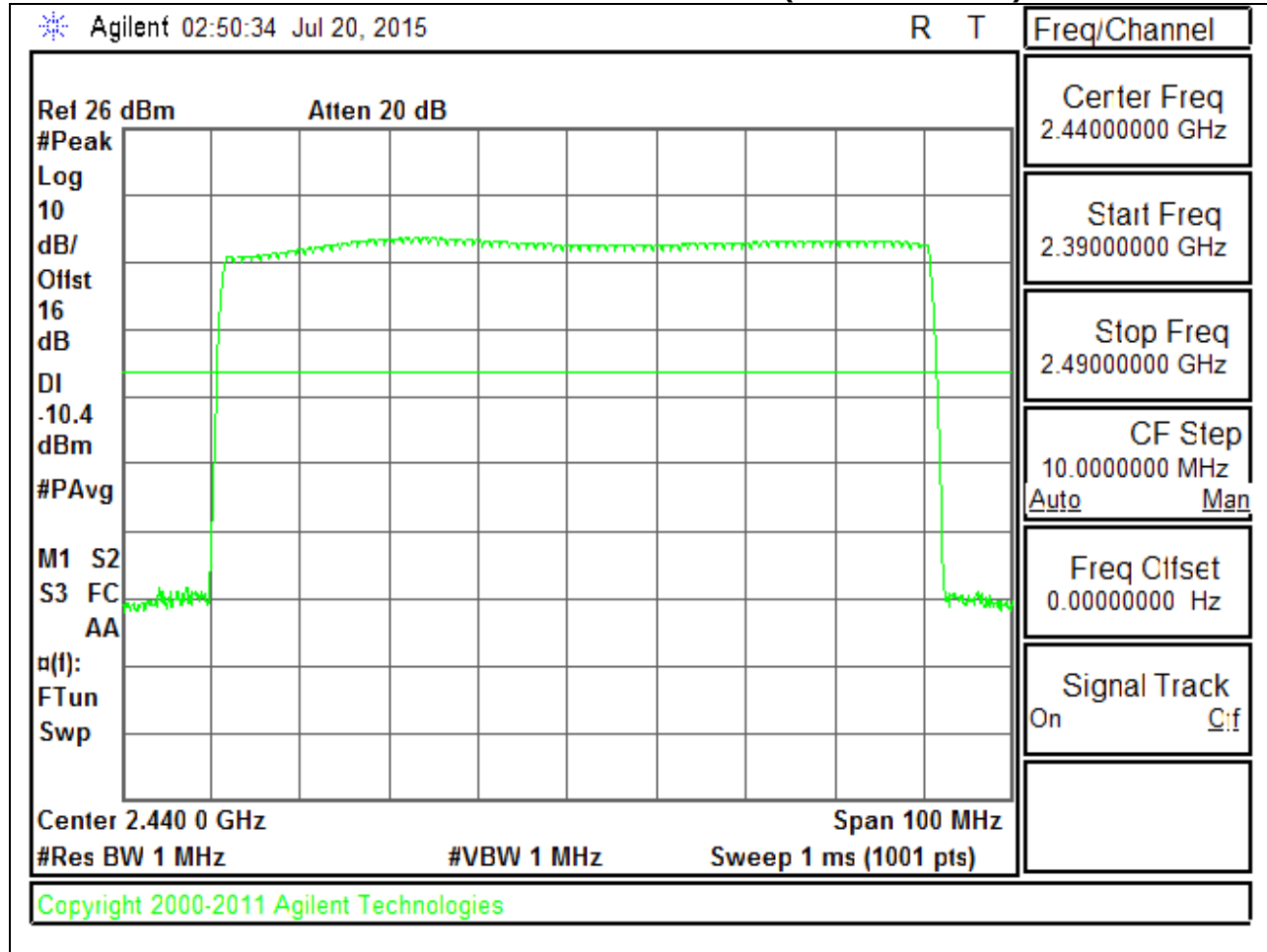
DA 00-705: The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

RESULTS

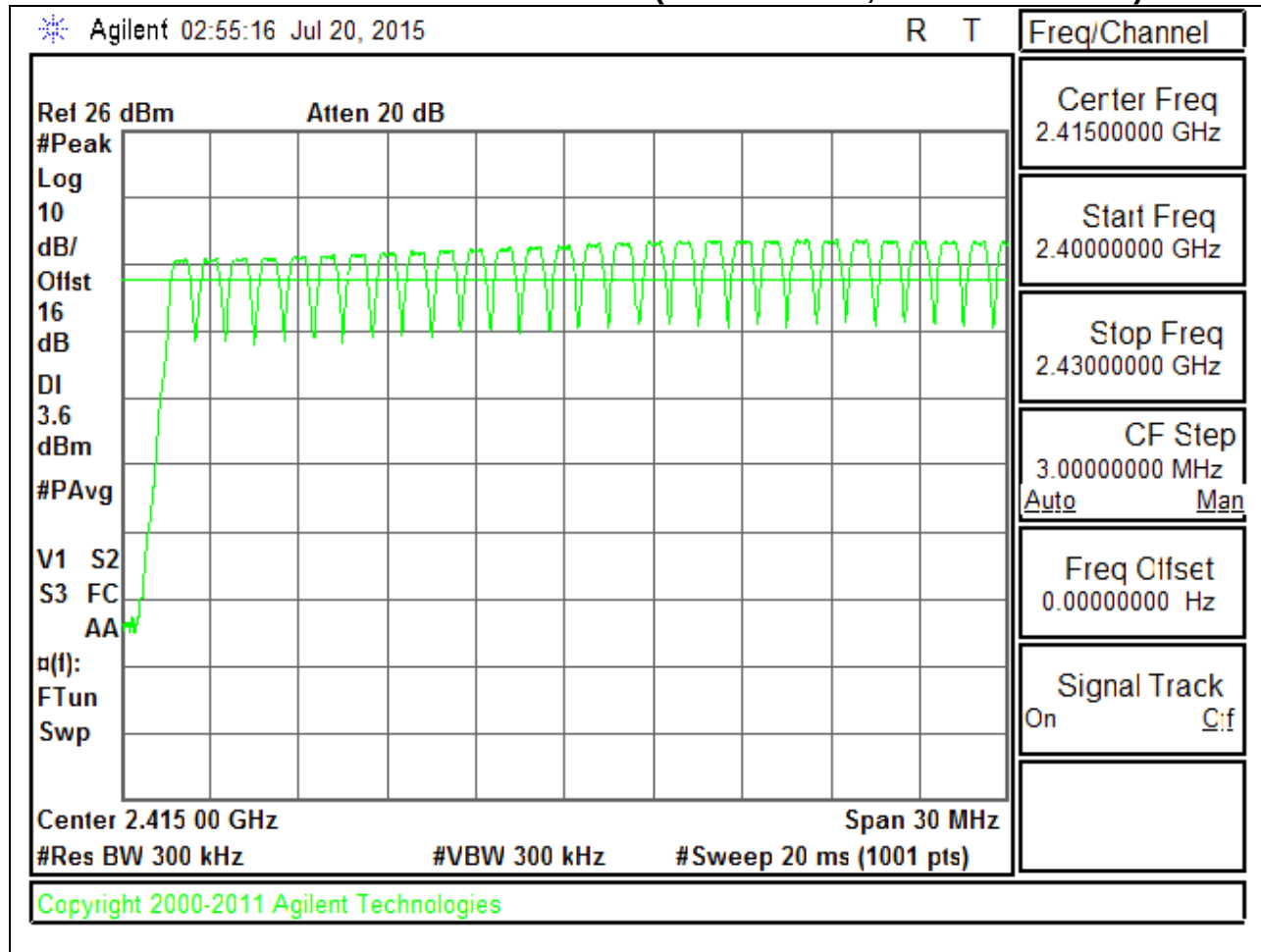
Normal Mode: 79 Channels observed.

NUMBER OF HOPPING CHANNELS PLOTS

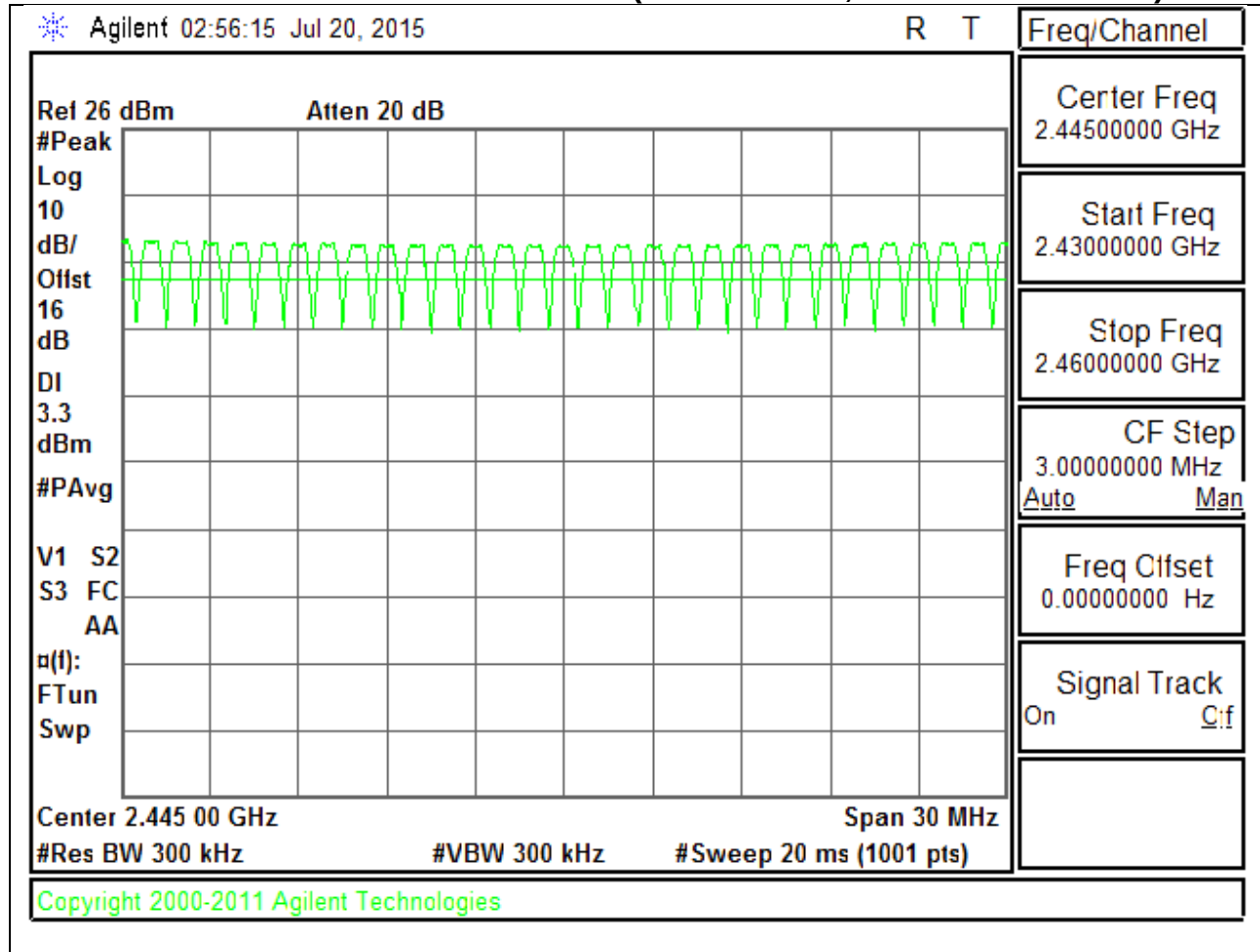
NUMBER OF HOPPING CHANNELS (100 MHZ SPAN)



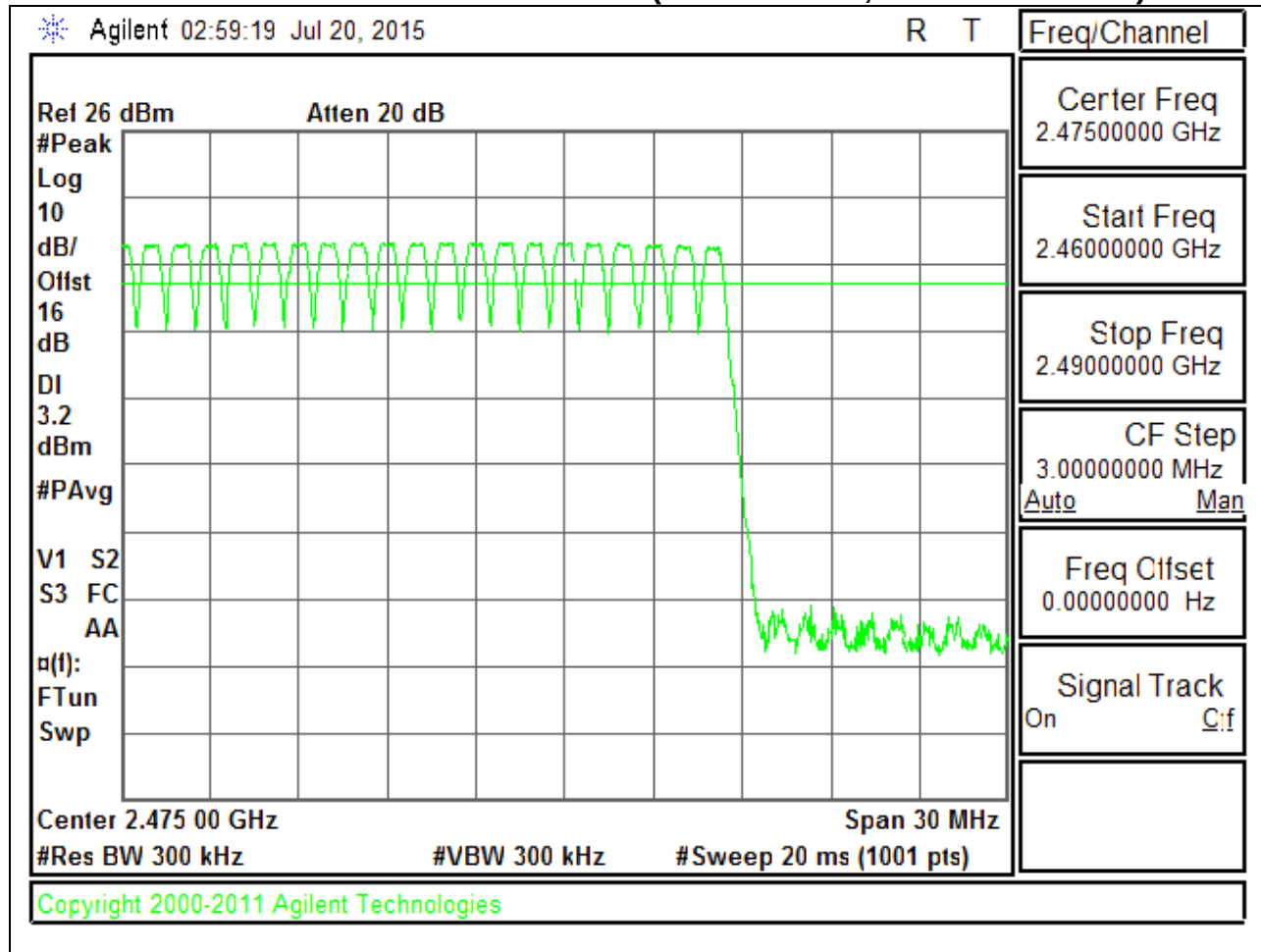
NUMBER OF HOPPING CHANNELS (30 MHZ SPAN, FIRST SEGMENT)



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)

IC RSS-247 5.1.4

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.

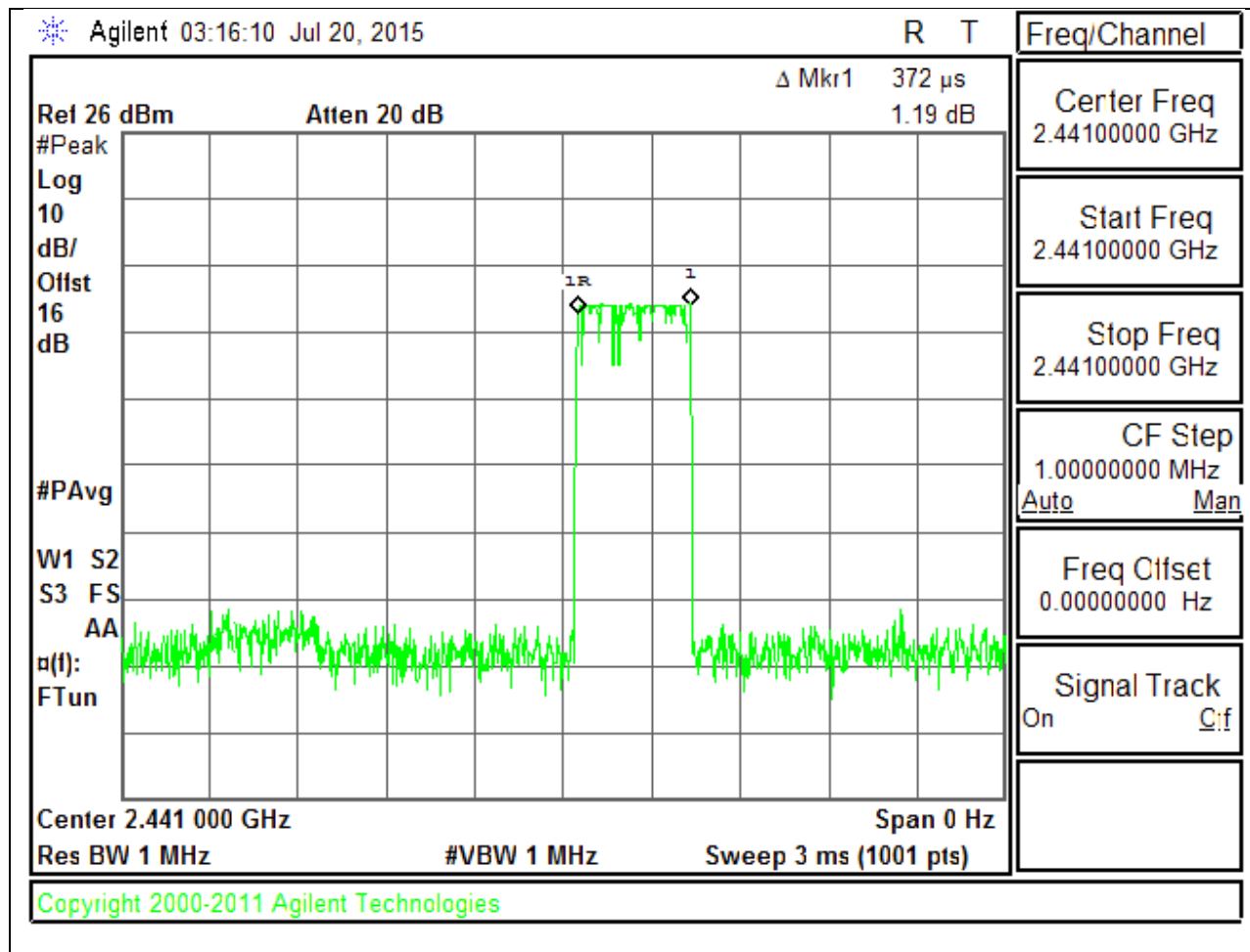
The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to $10 * (\# \text{ of pulses in } 3.16 \text{ s}) * \text{ pulse width}$.

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

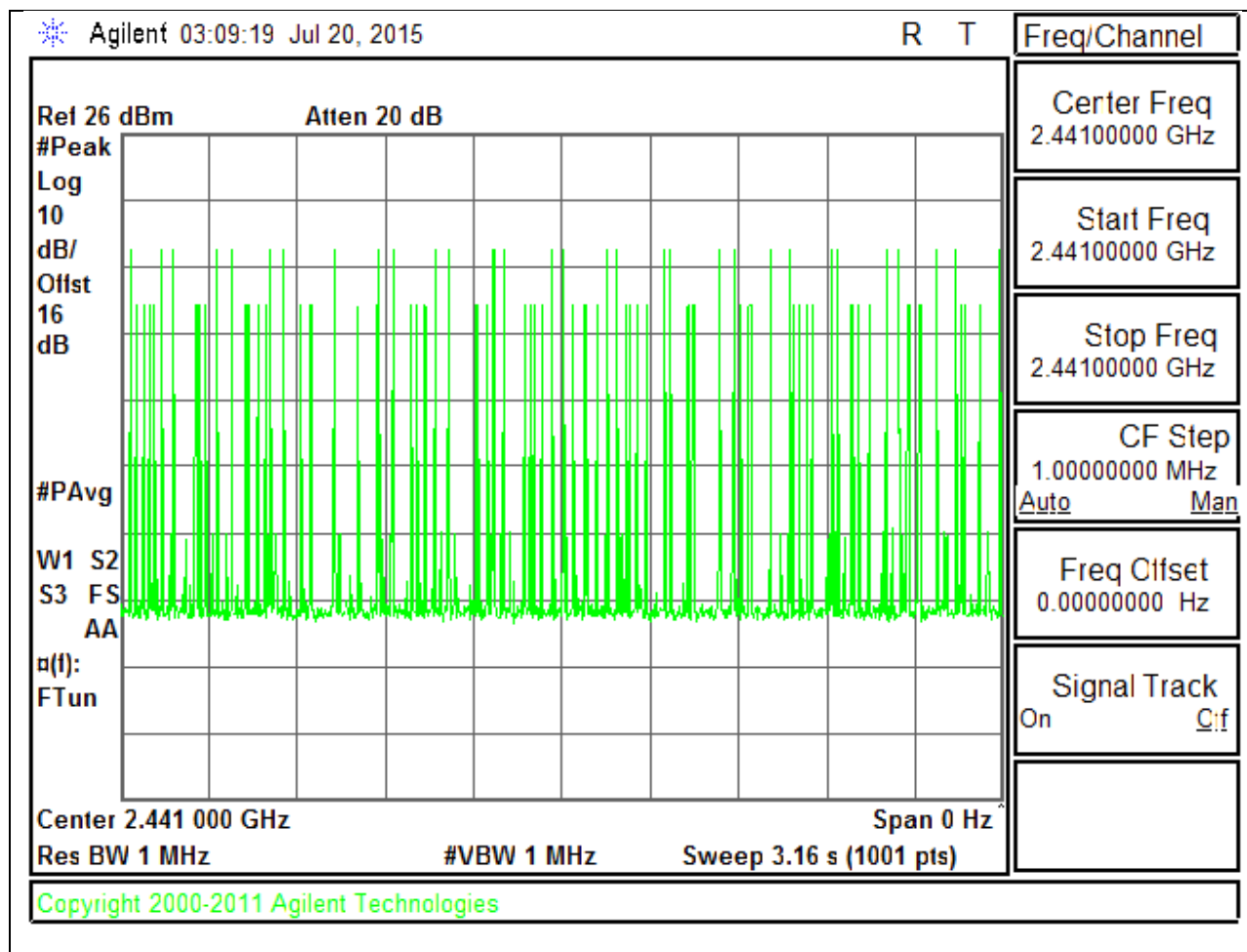
RESULTS

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	0.372	31	0.11532	0.4	-0.28468
DH3	1.625	16	0.26	0.4	-0.14
DH5	2.878	12	0.34536	0.4	-0.05464
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	0.372	7.75	0.02883	0.4	-0.37117
DH3	1.625	4	0.065	0.4	-0.335
DH5	2.878	3	0.08634	0.4	-0.31366

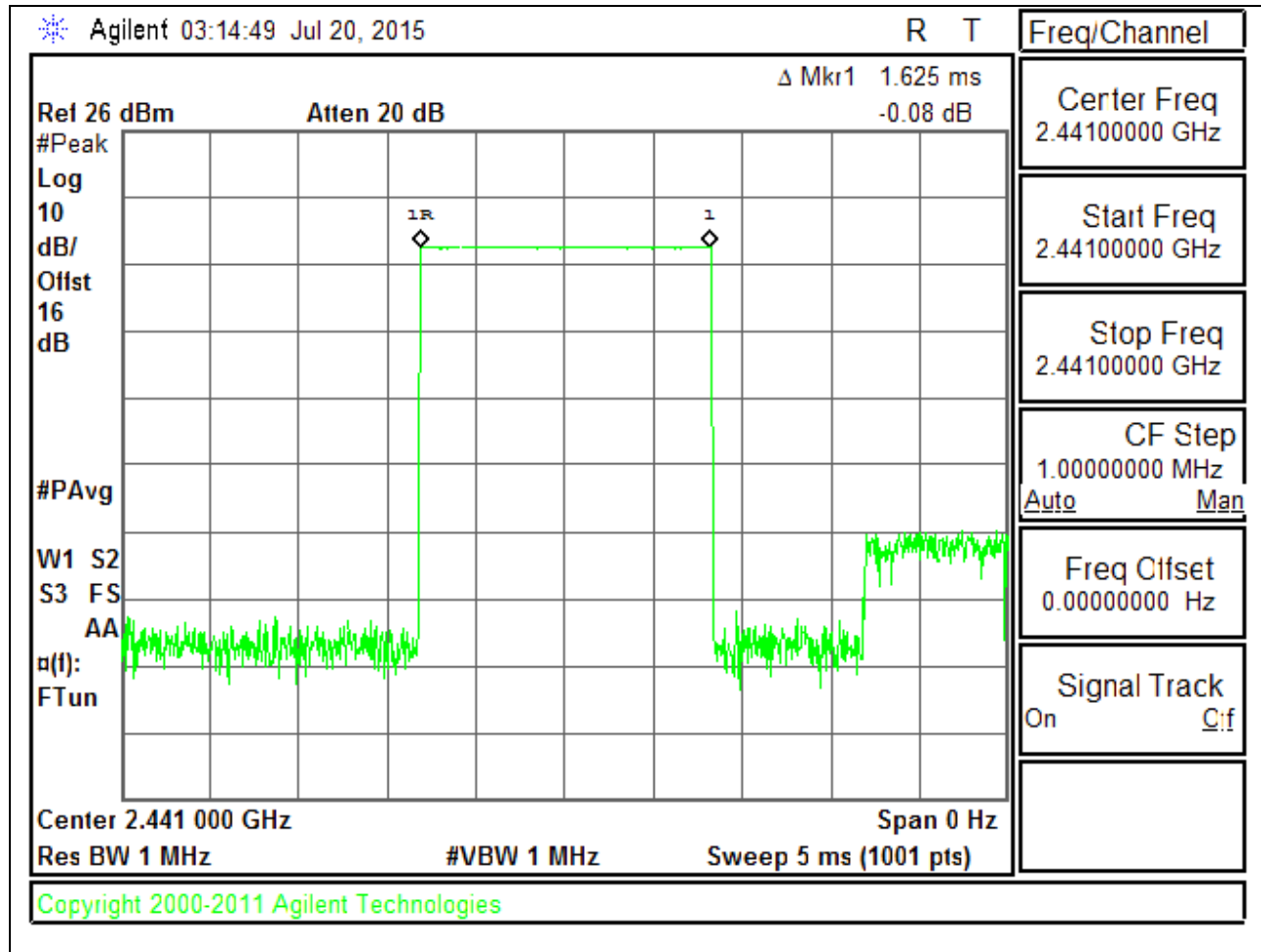
PULSE WIDTH - DH1



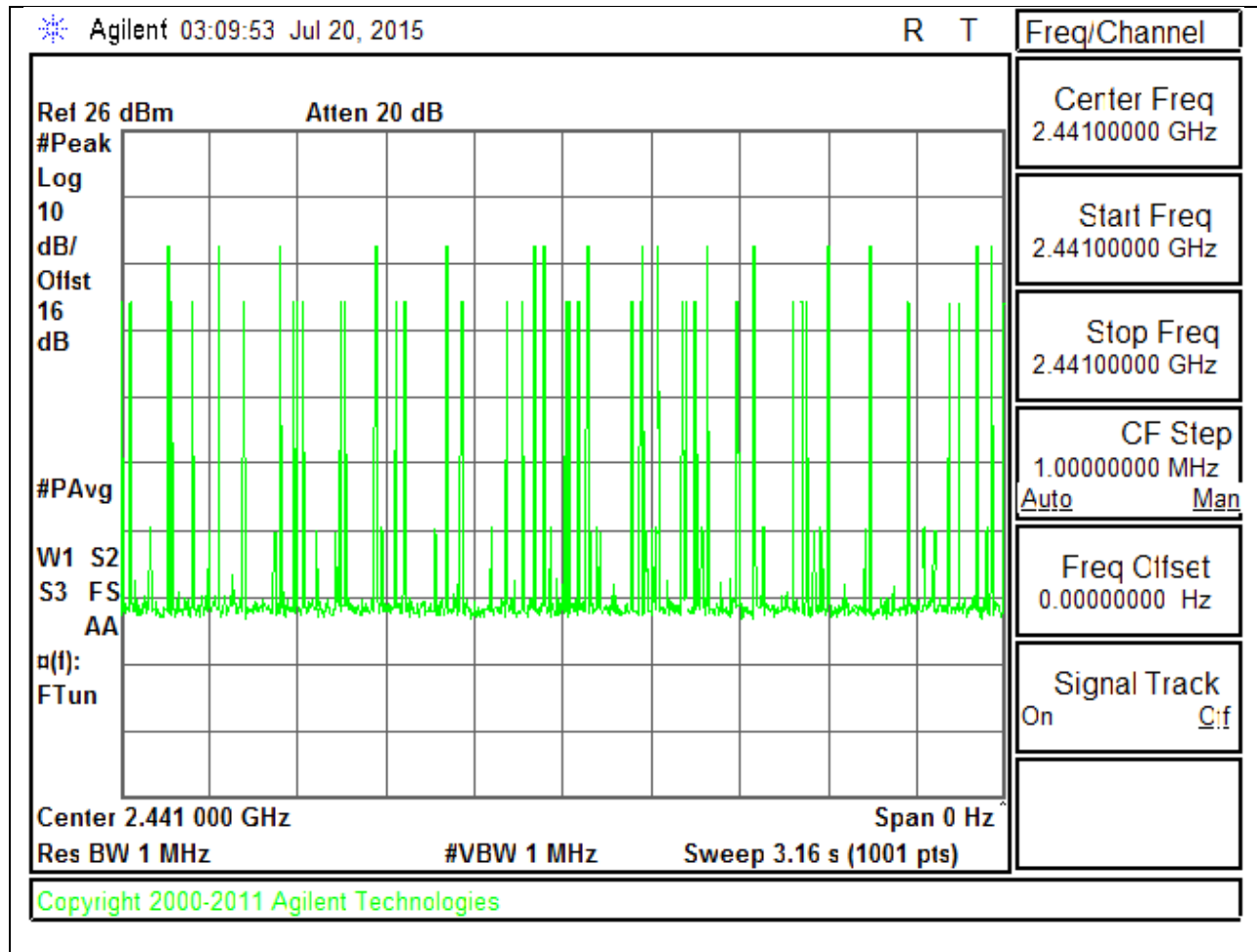
NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD - DH1



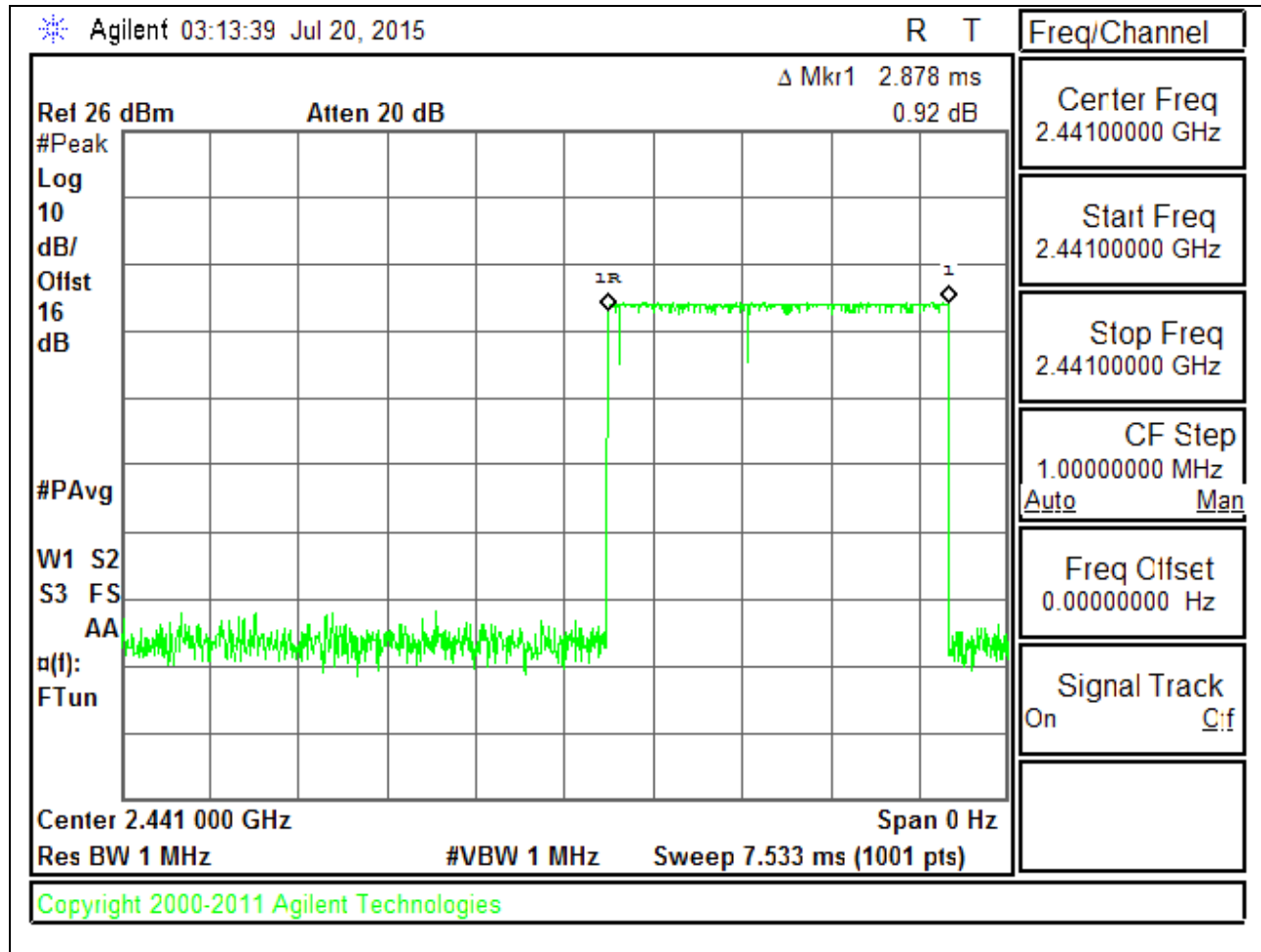
PULSE WIDTH - DH3



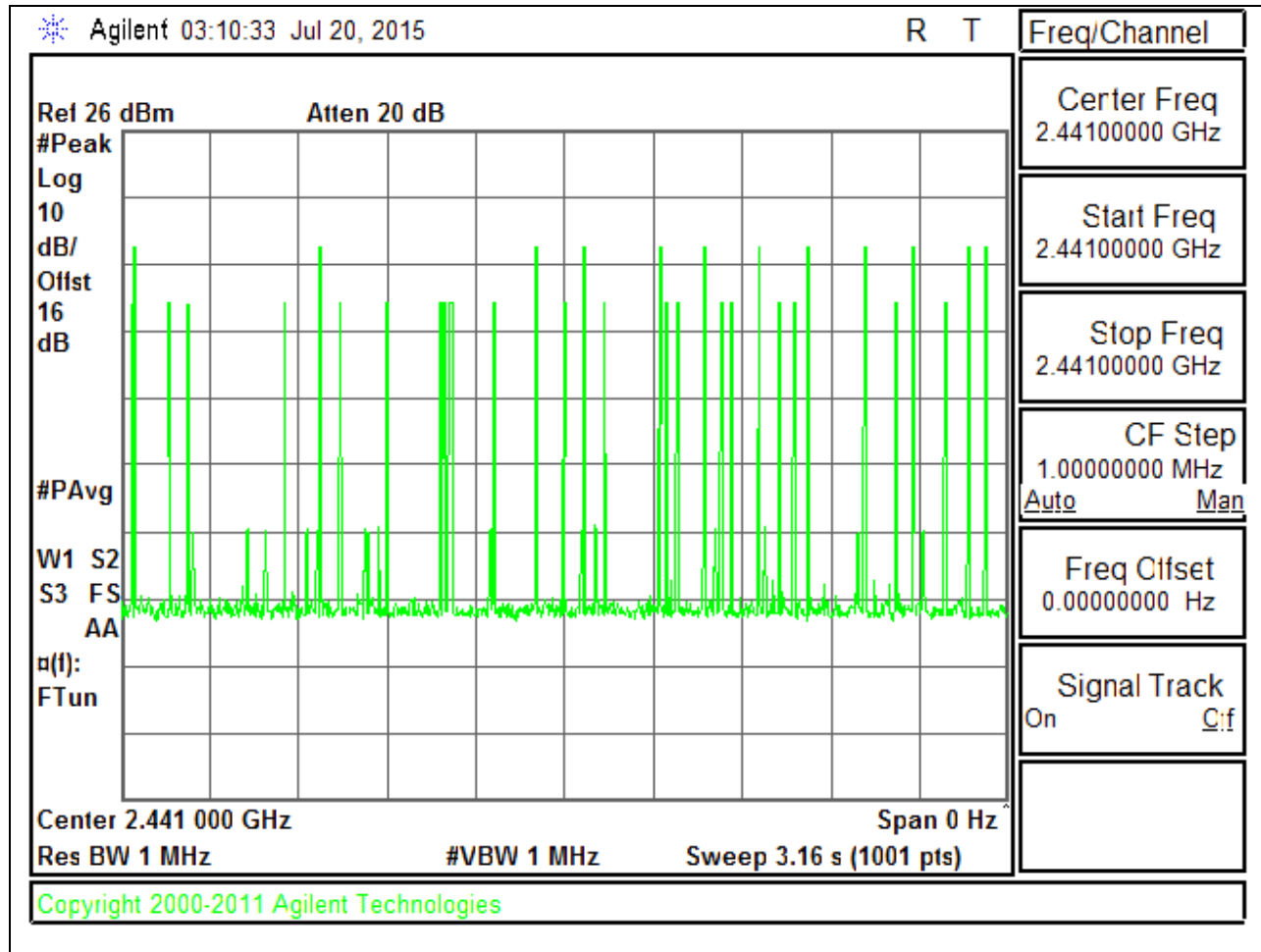
NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD - DH3



PULSE WIDTH - DH5



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD - DH5



8.5. OUTPUT POWER

LIMIT

§15.247 (b) (1)

RSS-247 5.4.2

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	6.78	21	-14.22
Middle	2441	8.65	21	-12.35
High	2480	8.67	21	-12.33
Worst		8.67		-12.33

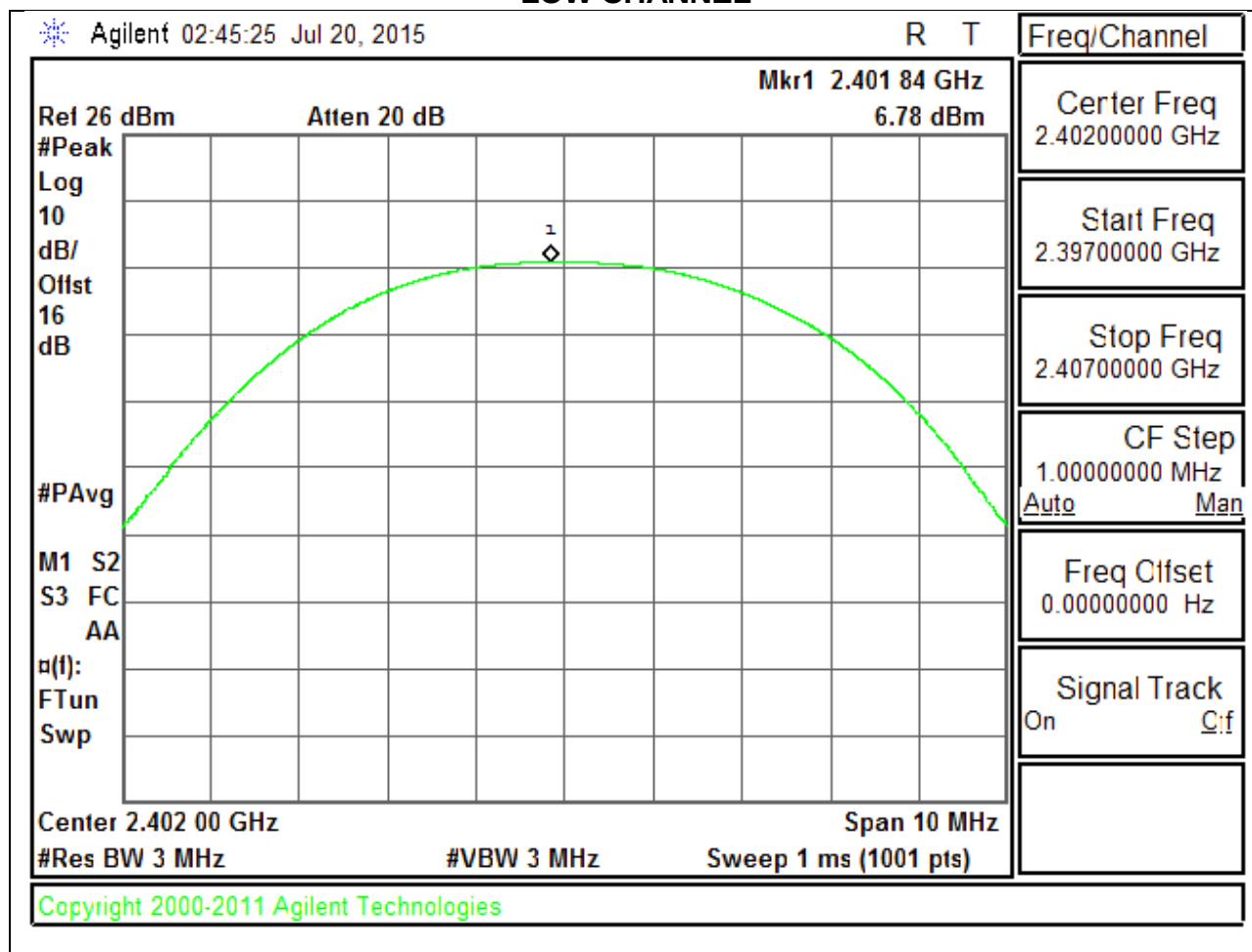
8.5.2. ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	6.61	21	-14.39
Middle	2441	8.45	21	-12.55
High	2480	8.56	21	-12.44
Worst		8.56		-12.44

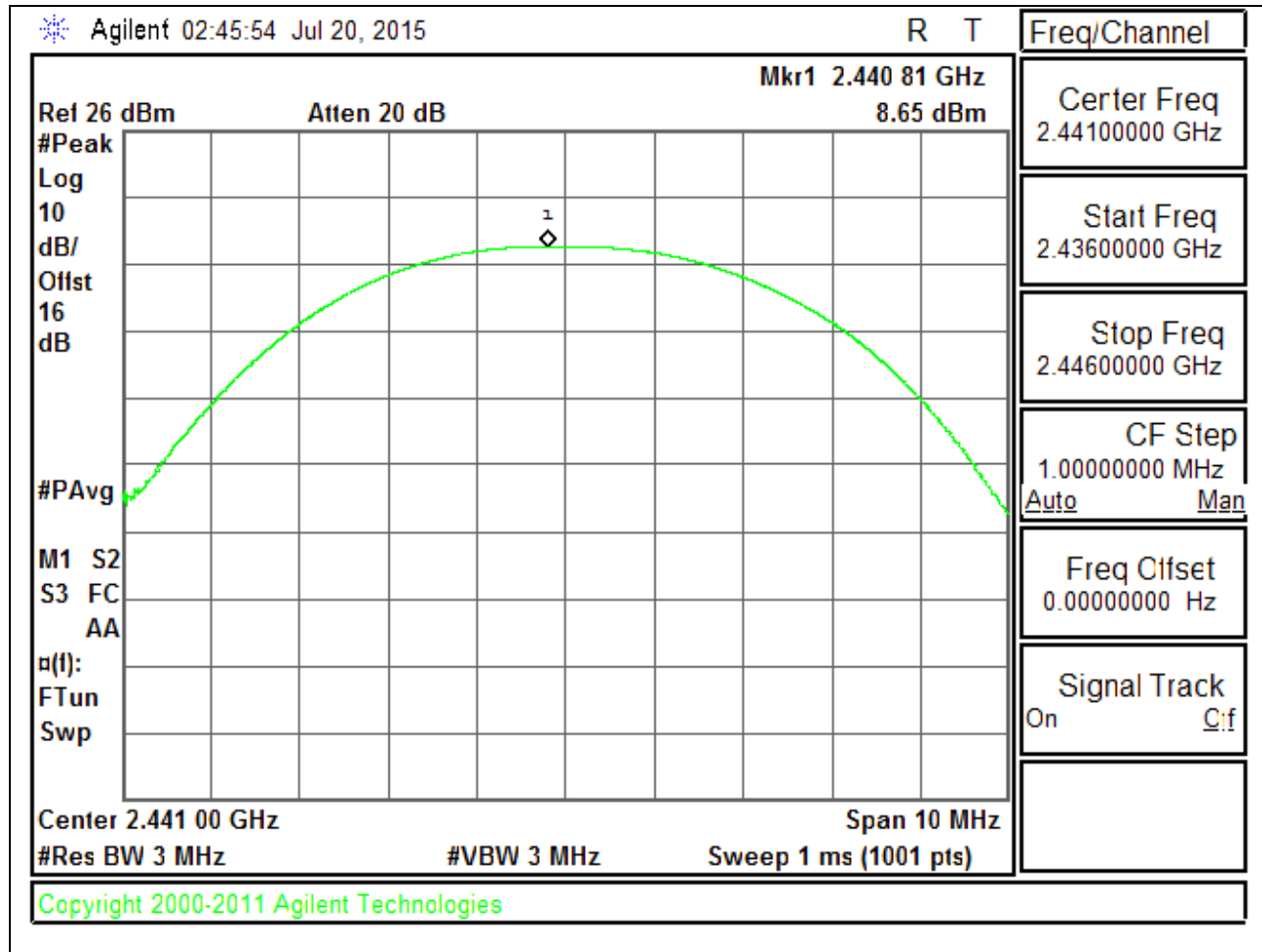
8.5.3. OUTPUT POWER PLOTS

GFSK OUTPUT POWER

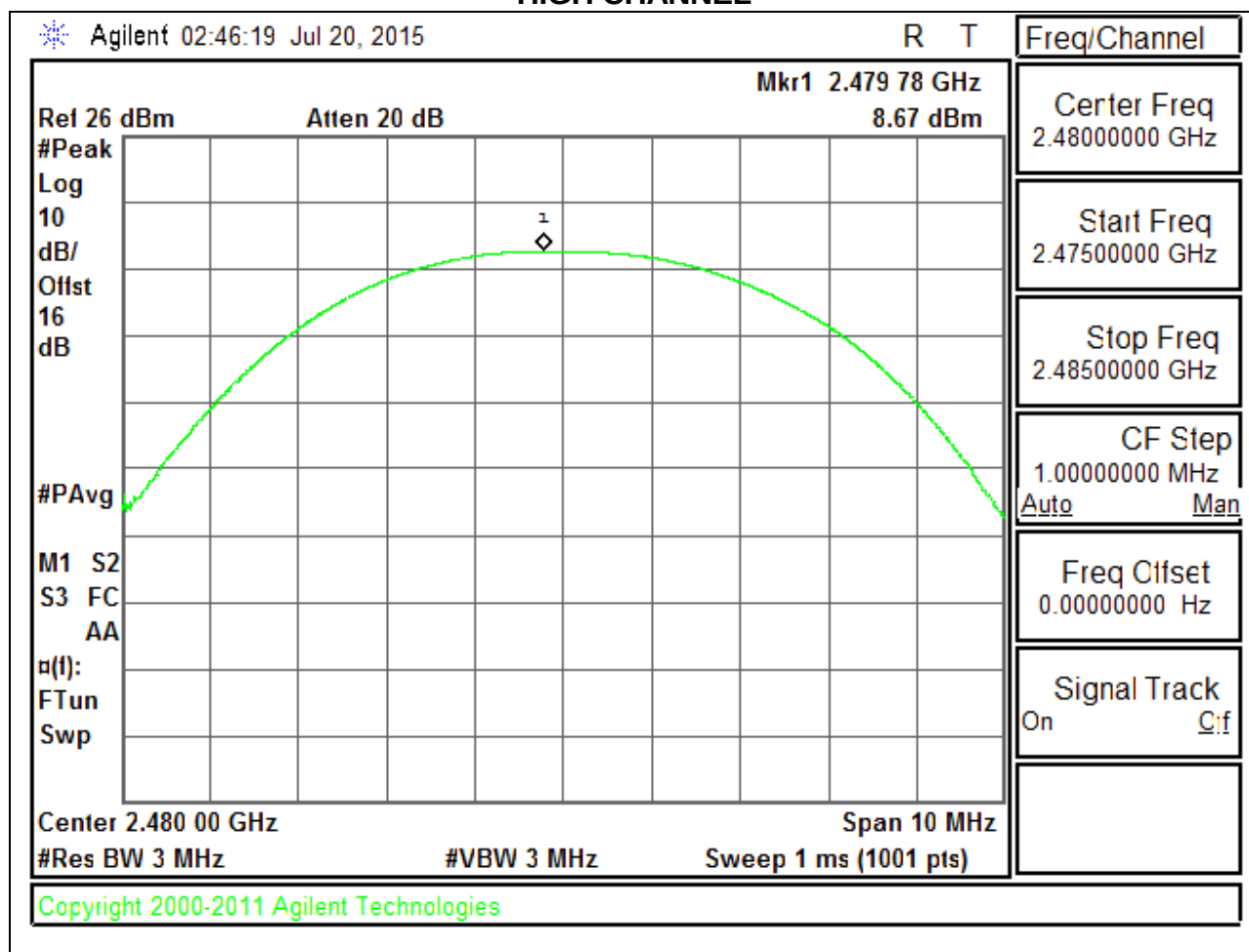
LOW CHANNEL



MID CHANNEL

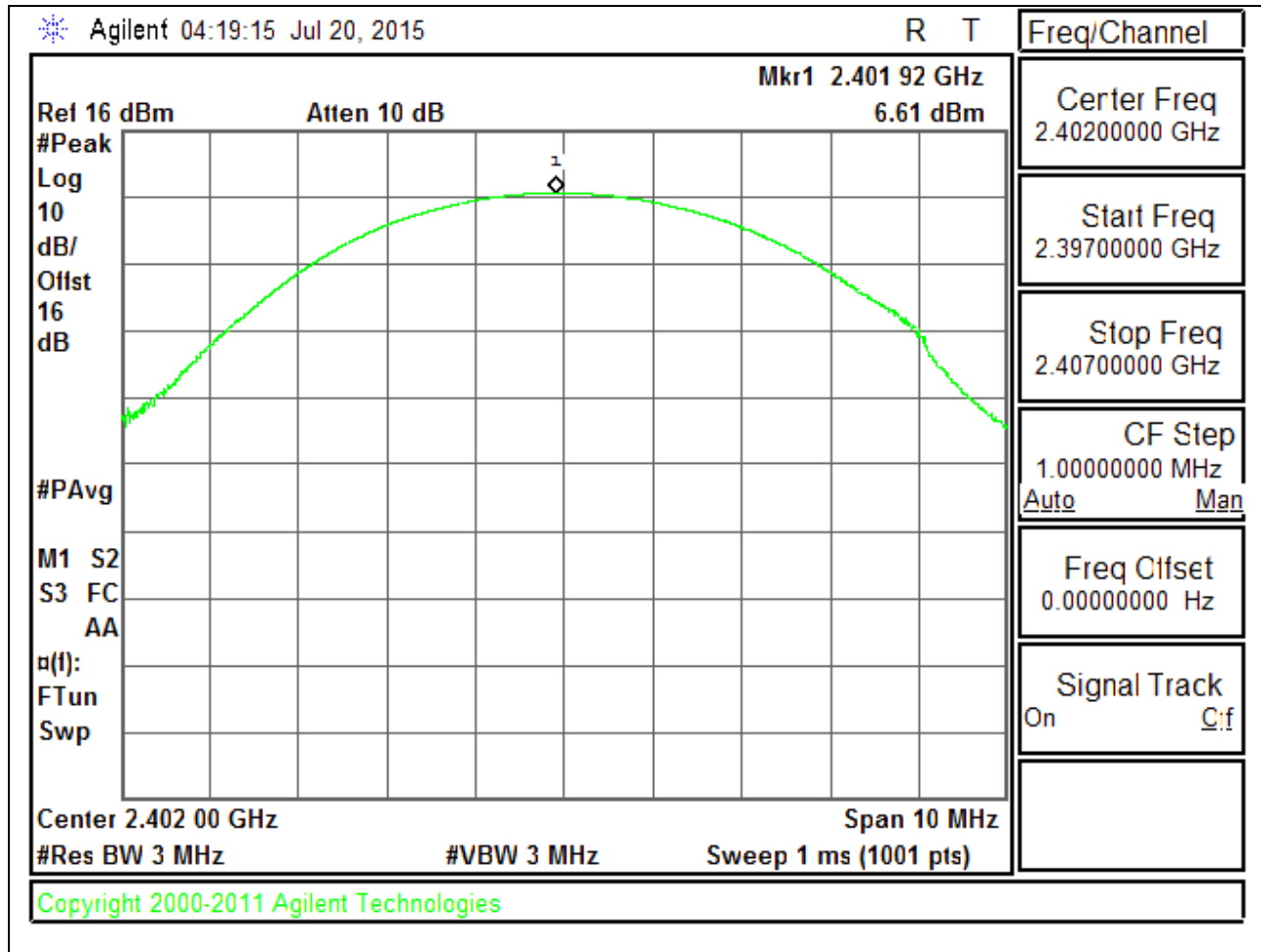


HIGH CHANNEL

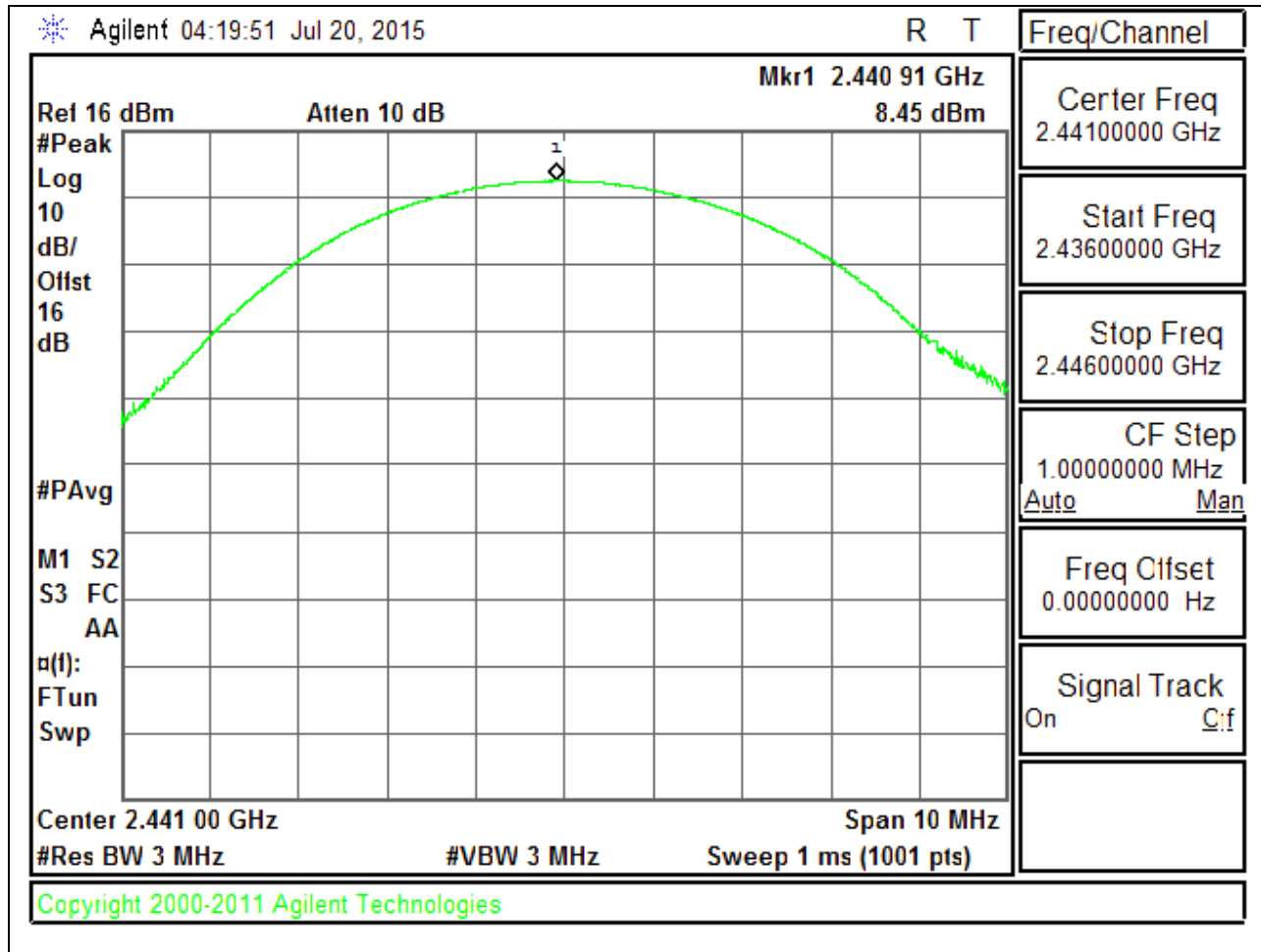


8PSK OUTPUT POWER

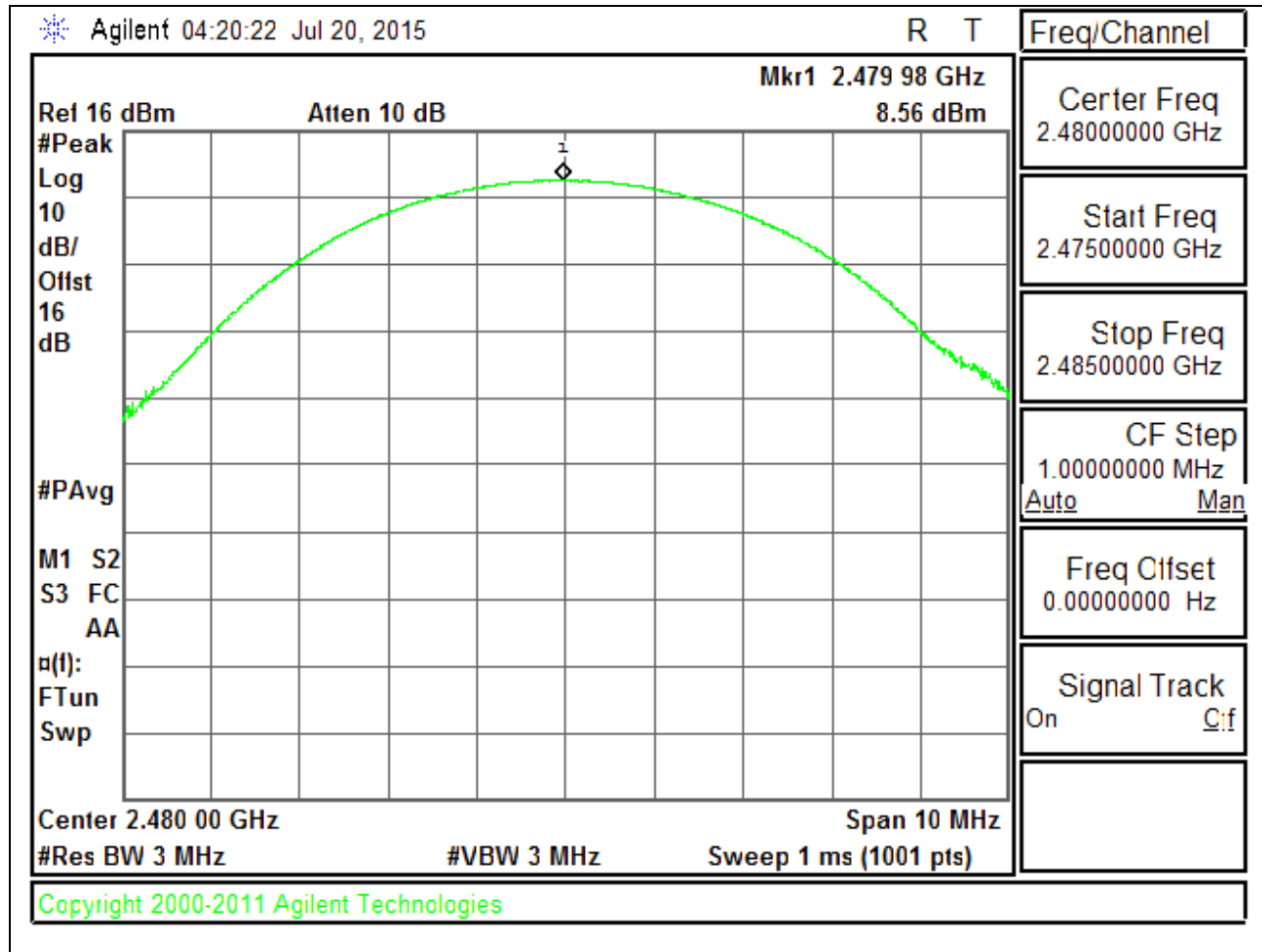
LOW CHANNEL



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	6.7
Middle	2441	8.5
High	2480	8.4
Worst		8.5

8.6.2. DATA RATE PI/4-DQPSK MODULATION

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	6.00
Middle	2441	5.90
High	2480	4.30
Worst		6.00

8.6.3. ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	4
Middle	2441	5.7
High	2480	5.8
Worst		5.8

8.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-247 5.5

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.

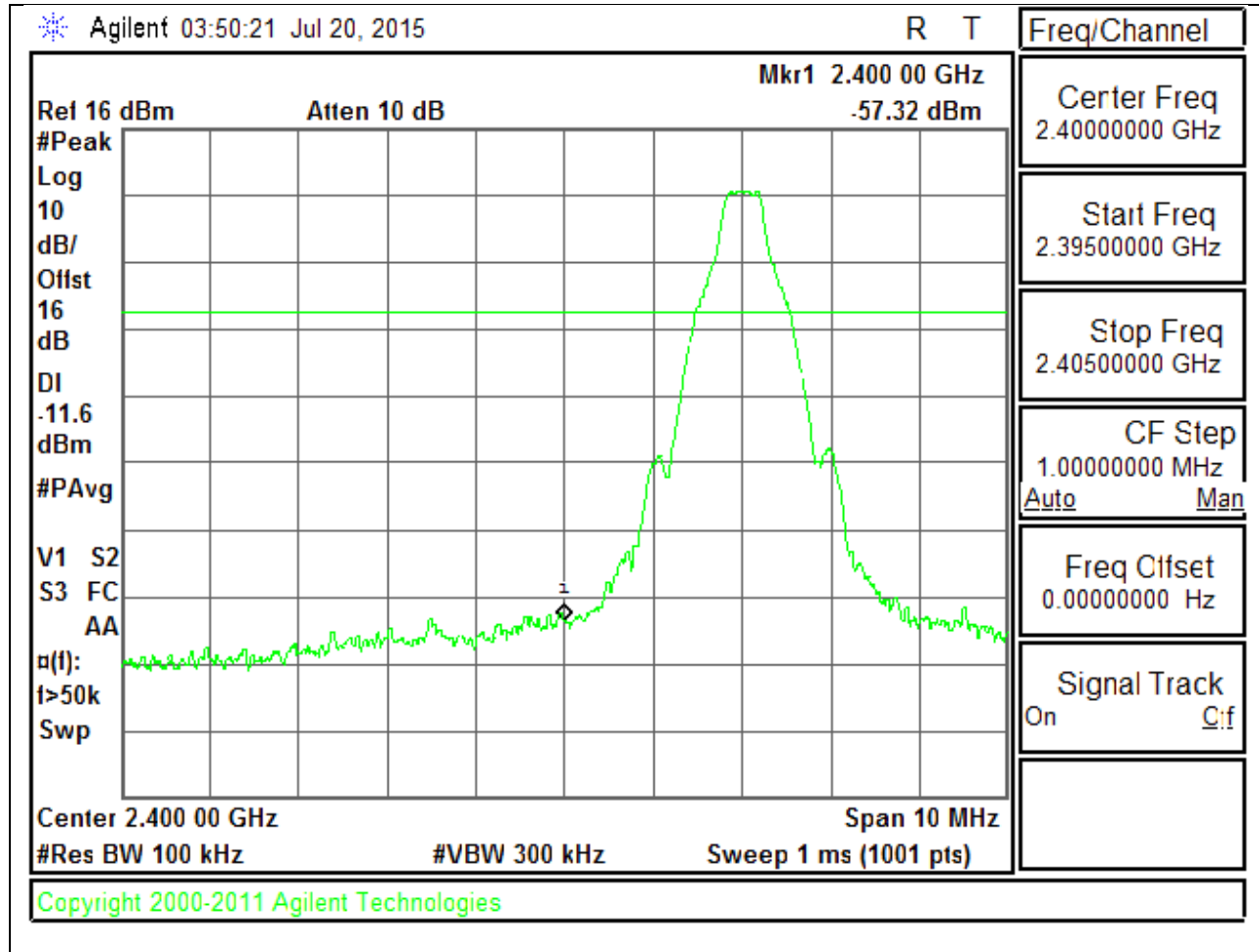
The bandedges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

RESULTS

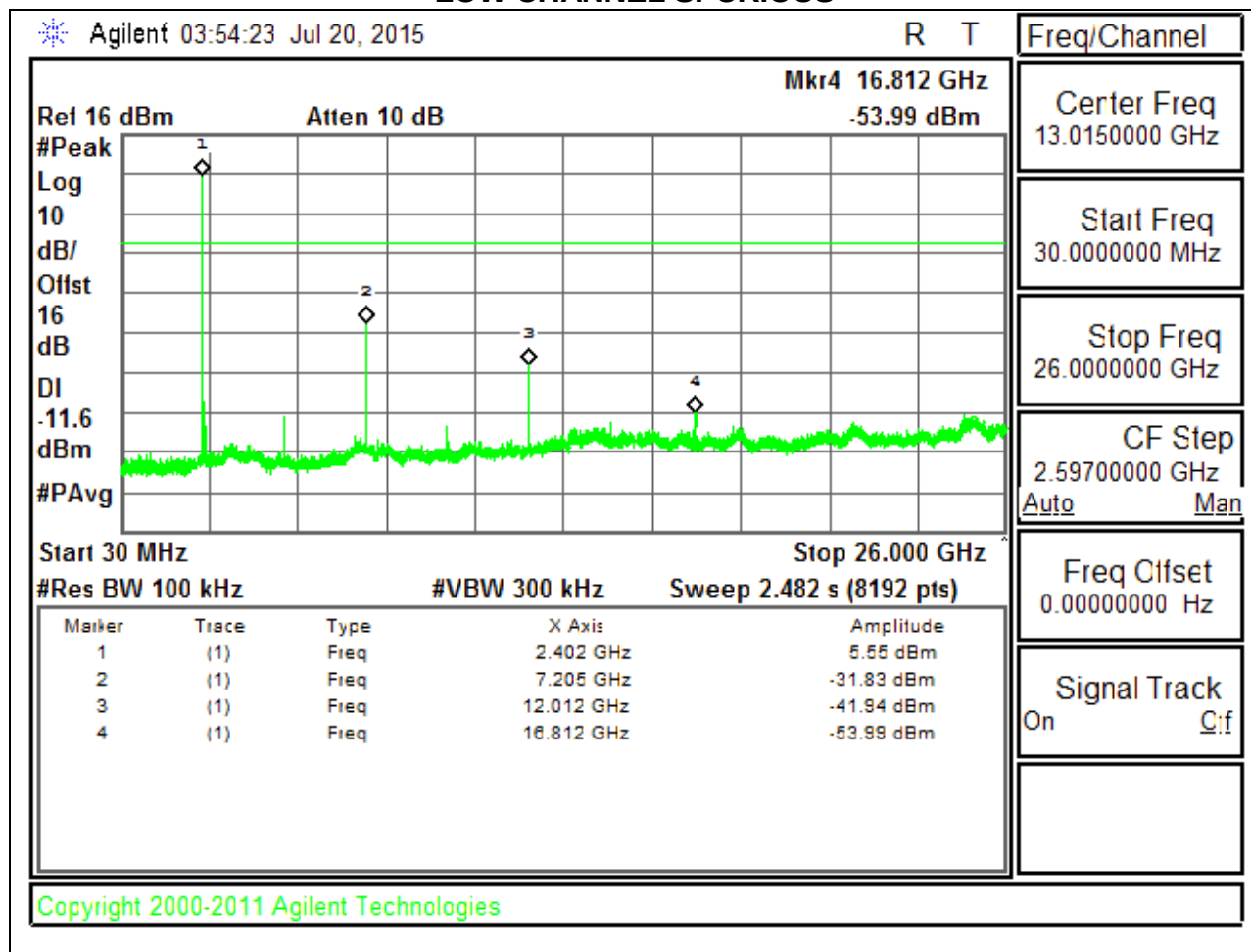
8.7.1. BASIC DATA RATE GFSK MODULATION

SPURIOUS EMISSIONS, LOW CHANNEL

LOW CHANNEL BANDEDGE



LOW CHANNEL SPURIOUS

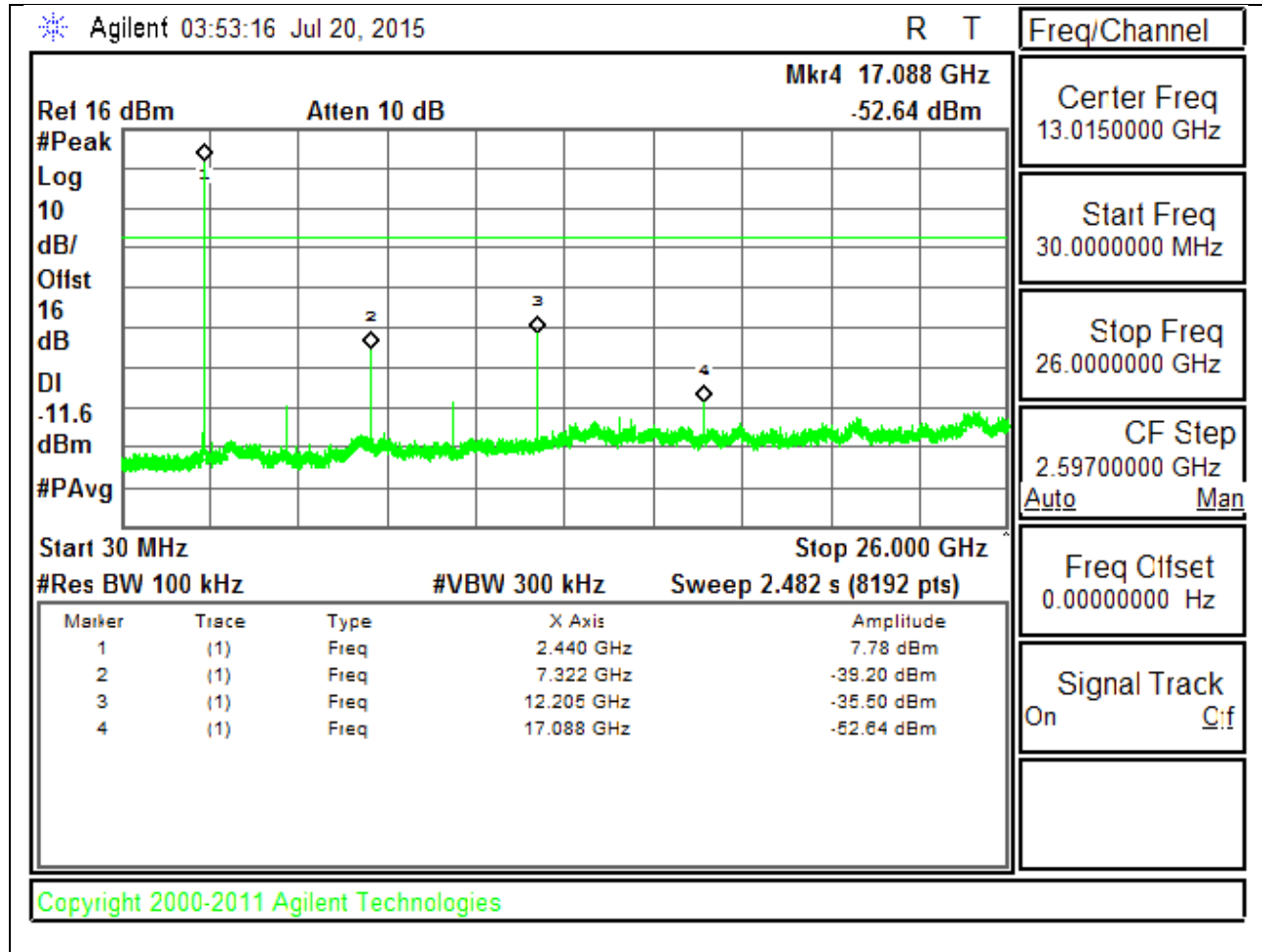


SPURIOUS EMISSIONS, MID CHANNEL

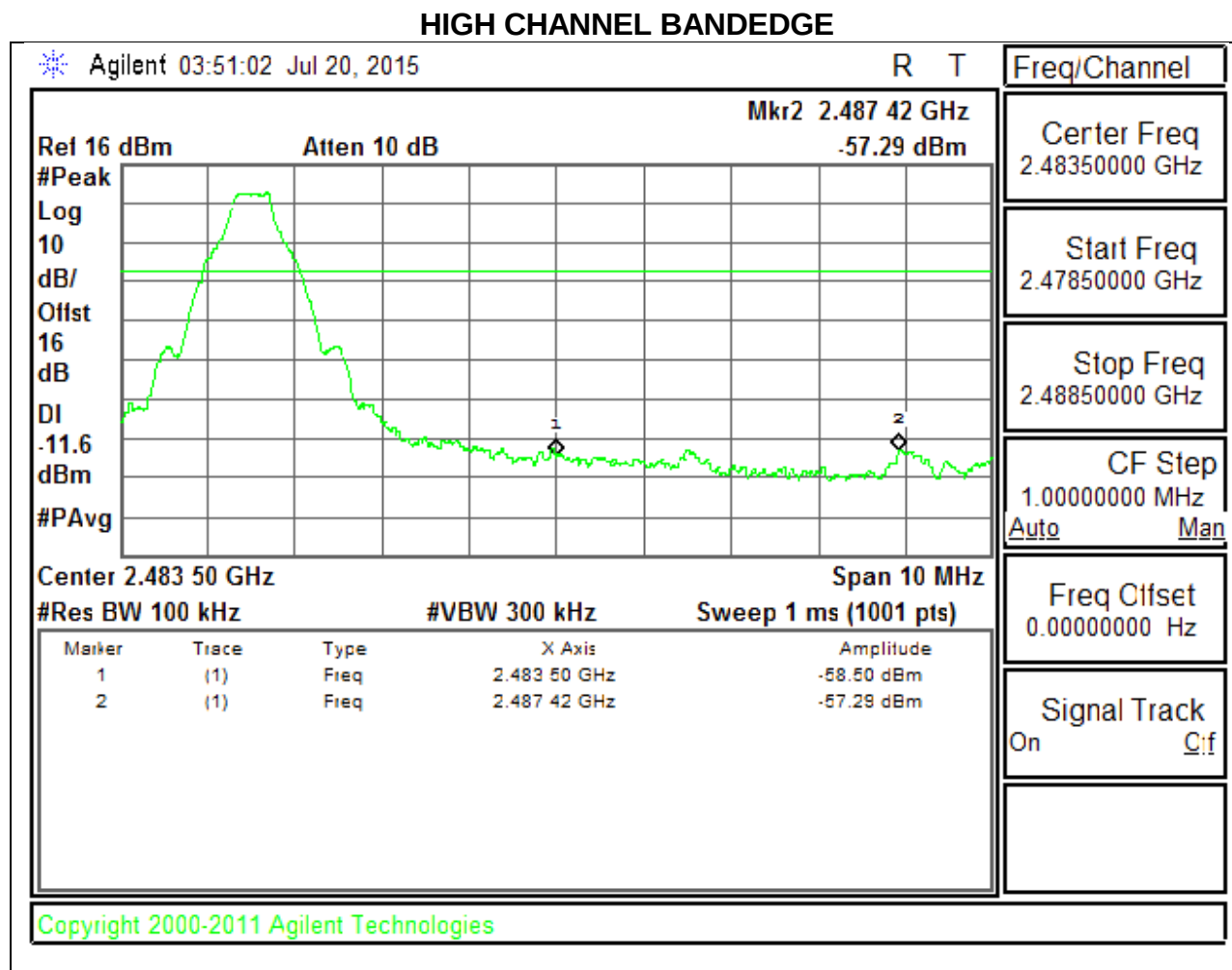
MID CHANNEL BANDEDGE

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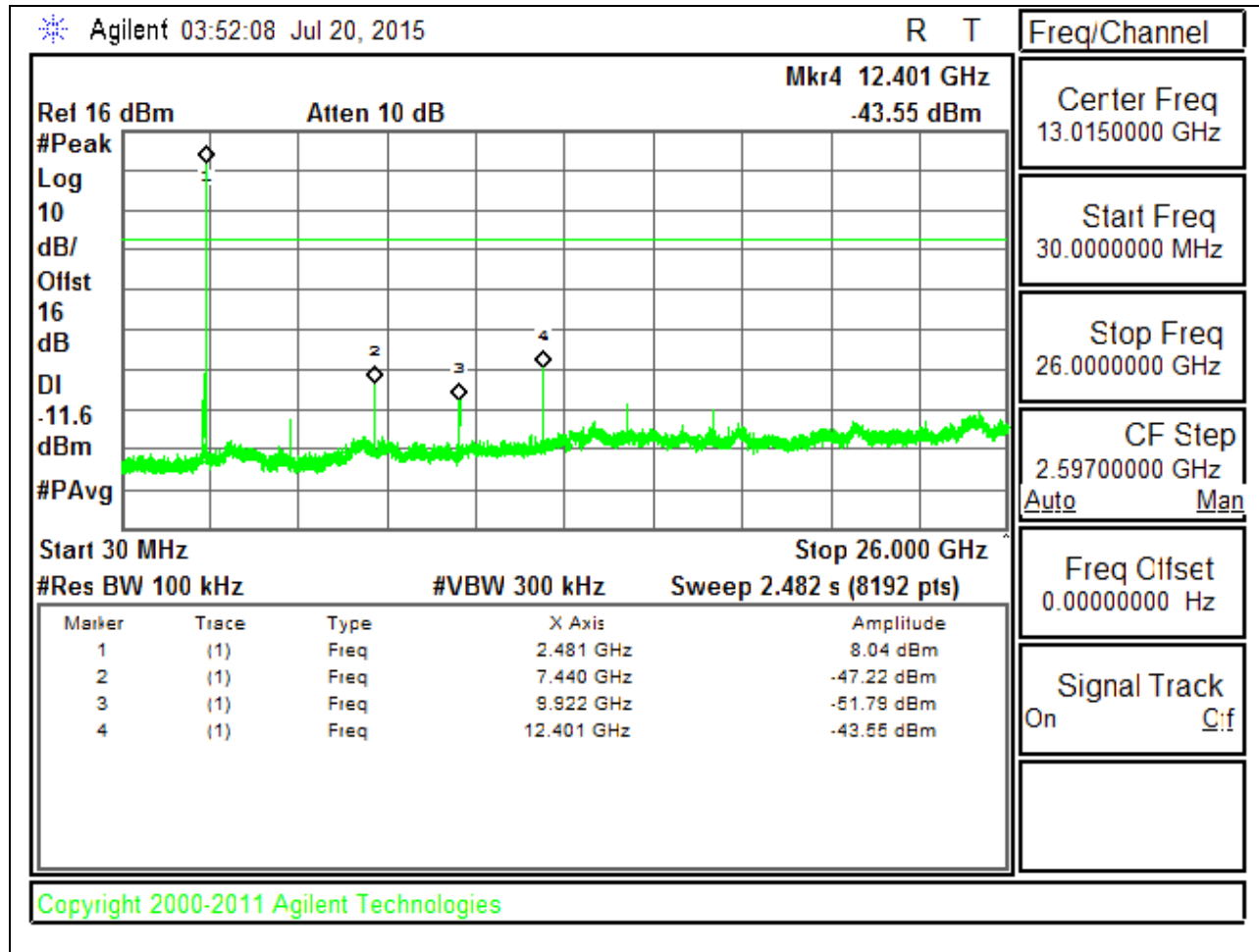
MID CHANNEL SPURIOUS



SPURIOUS EMISSIONS, HIGH CHANNEL

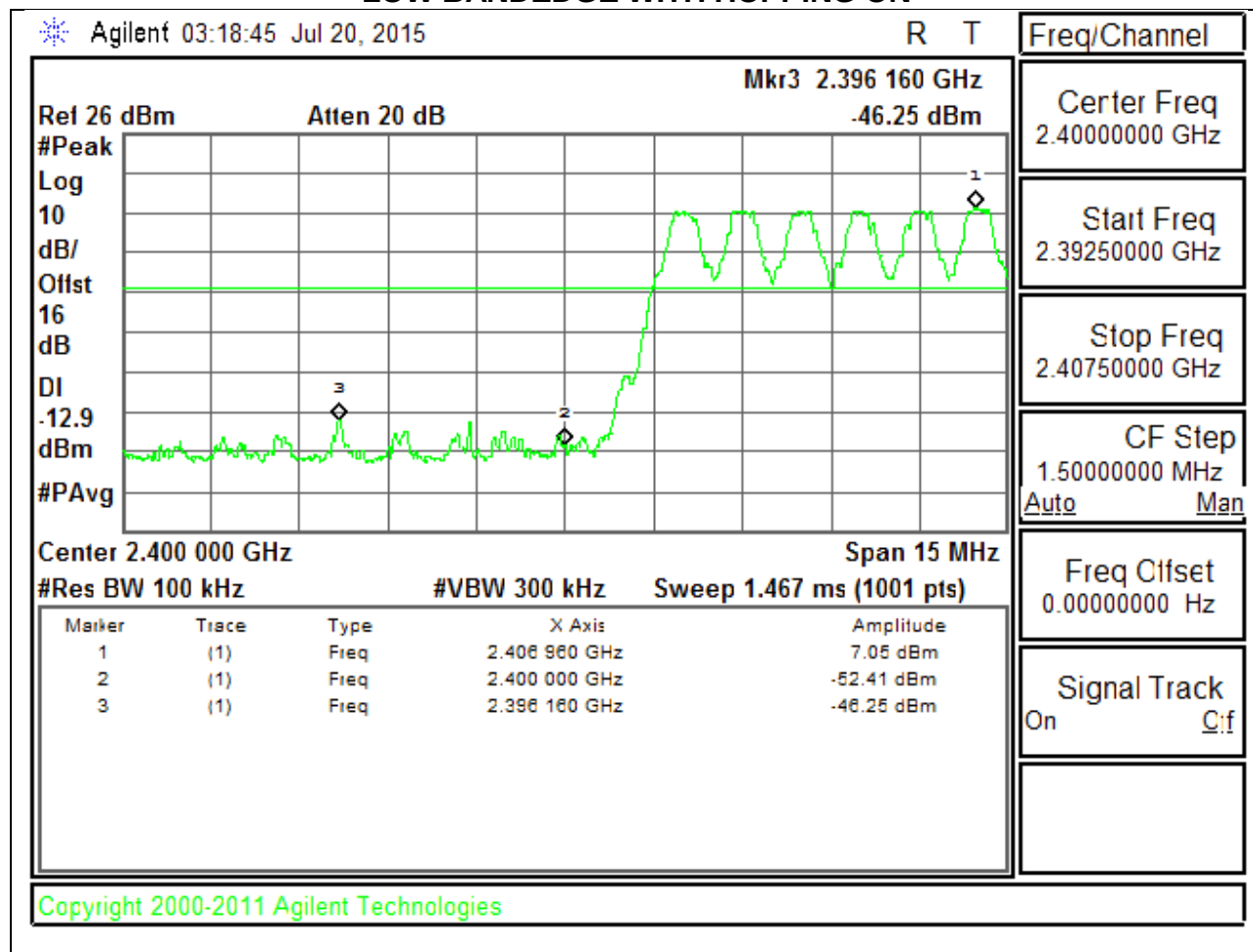


HIGH CHANNEL SPURIOUS

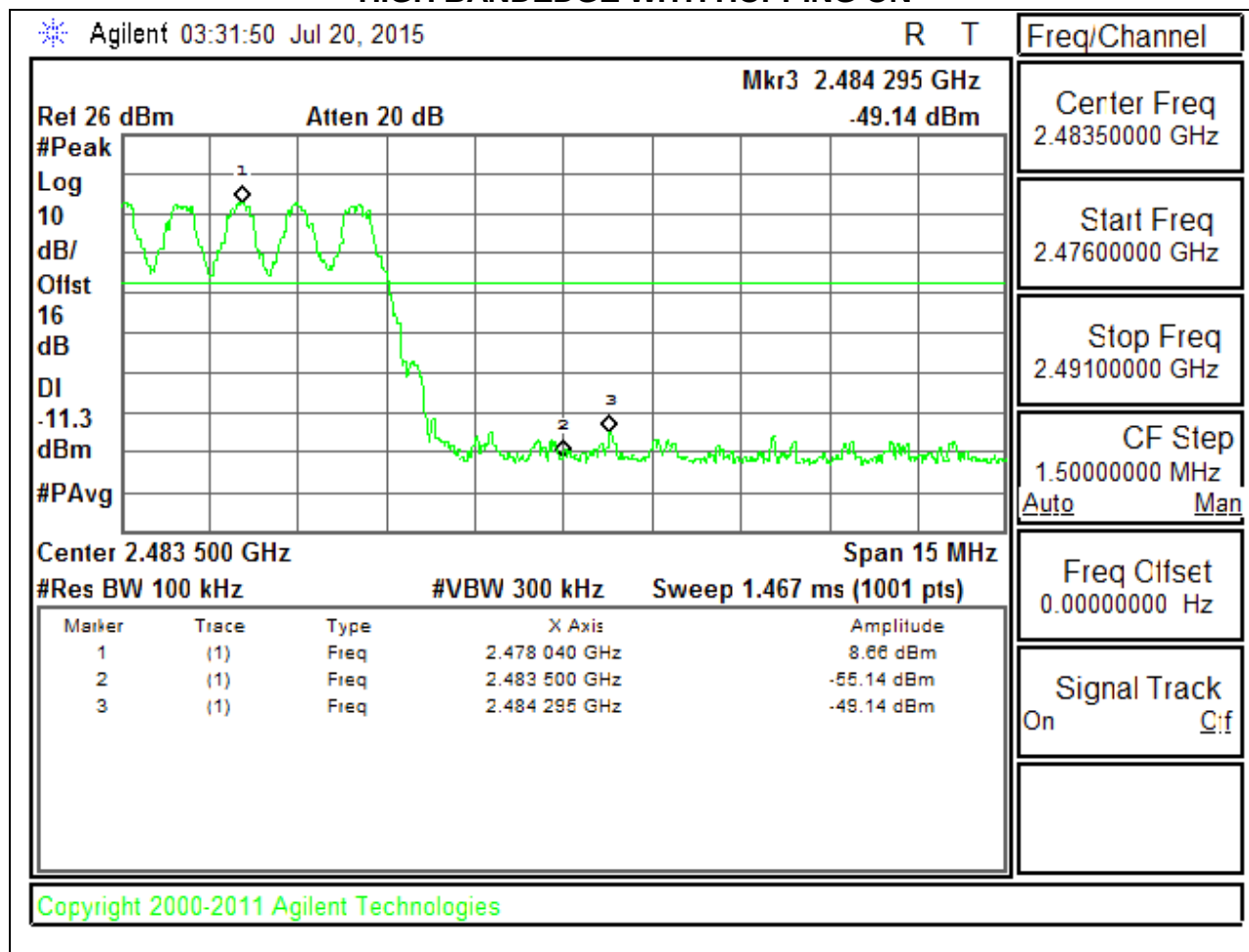


SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

LOW BANDEDGE WITH HOPPING ON



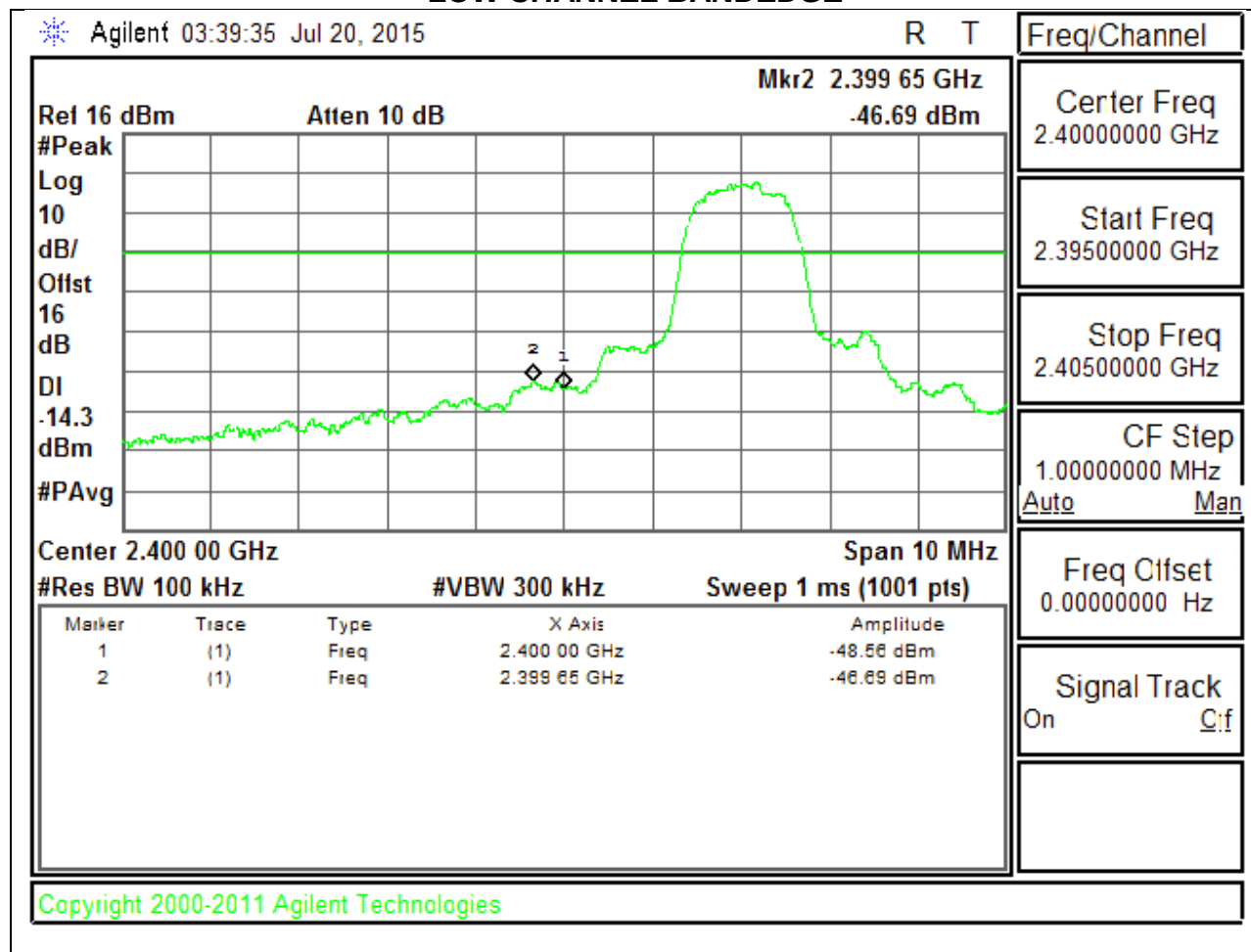
HIGH BANDEDGE WITH HOPPING ON



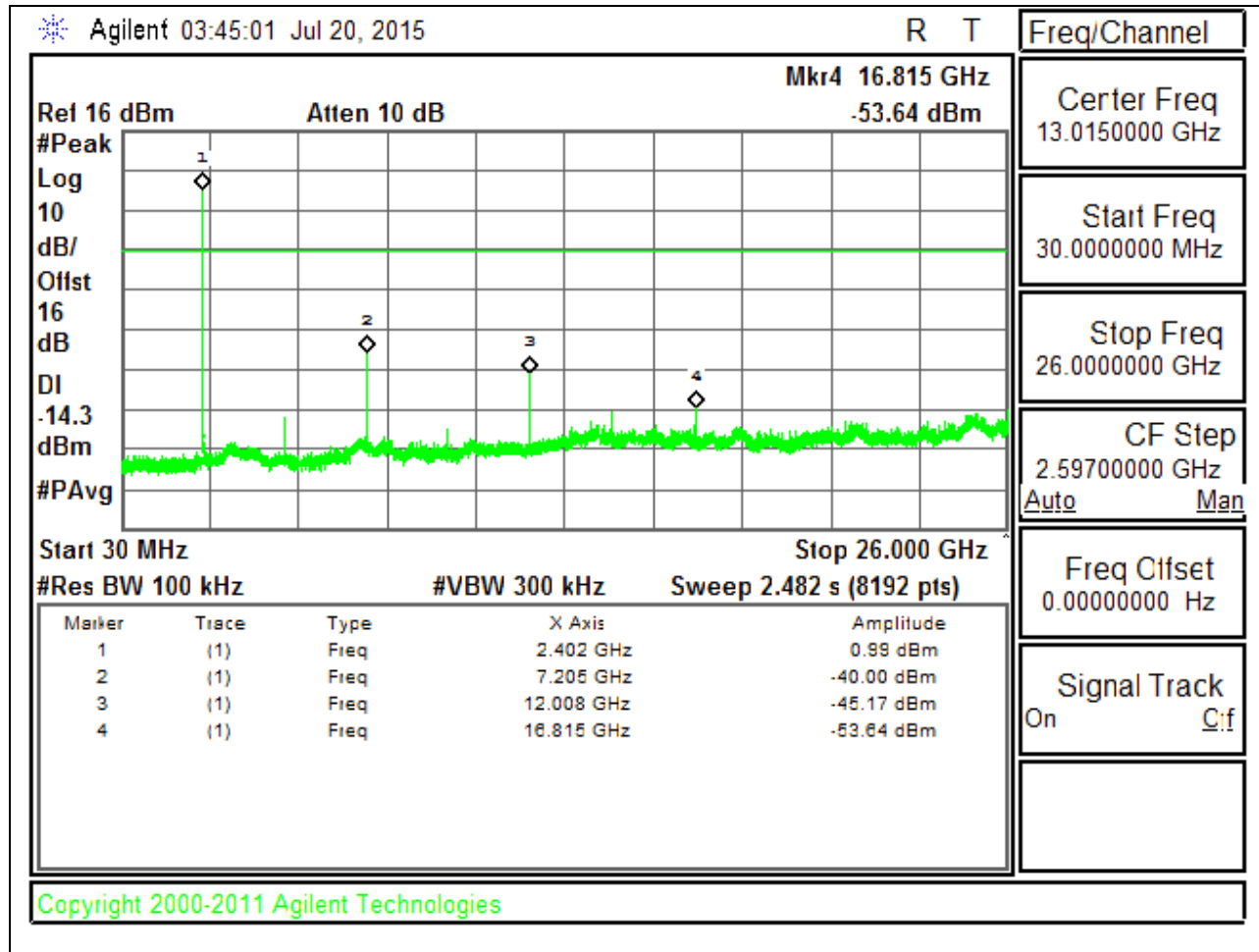
ENHANCED DATA RATE 8PSK MODULATION

SPURIOUS EMISSIONS, LOW CHANNEL

LOW CHANNEL BANDEDGE

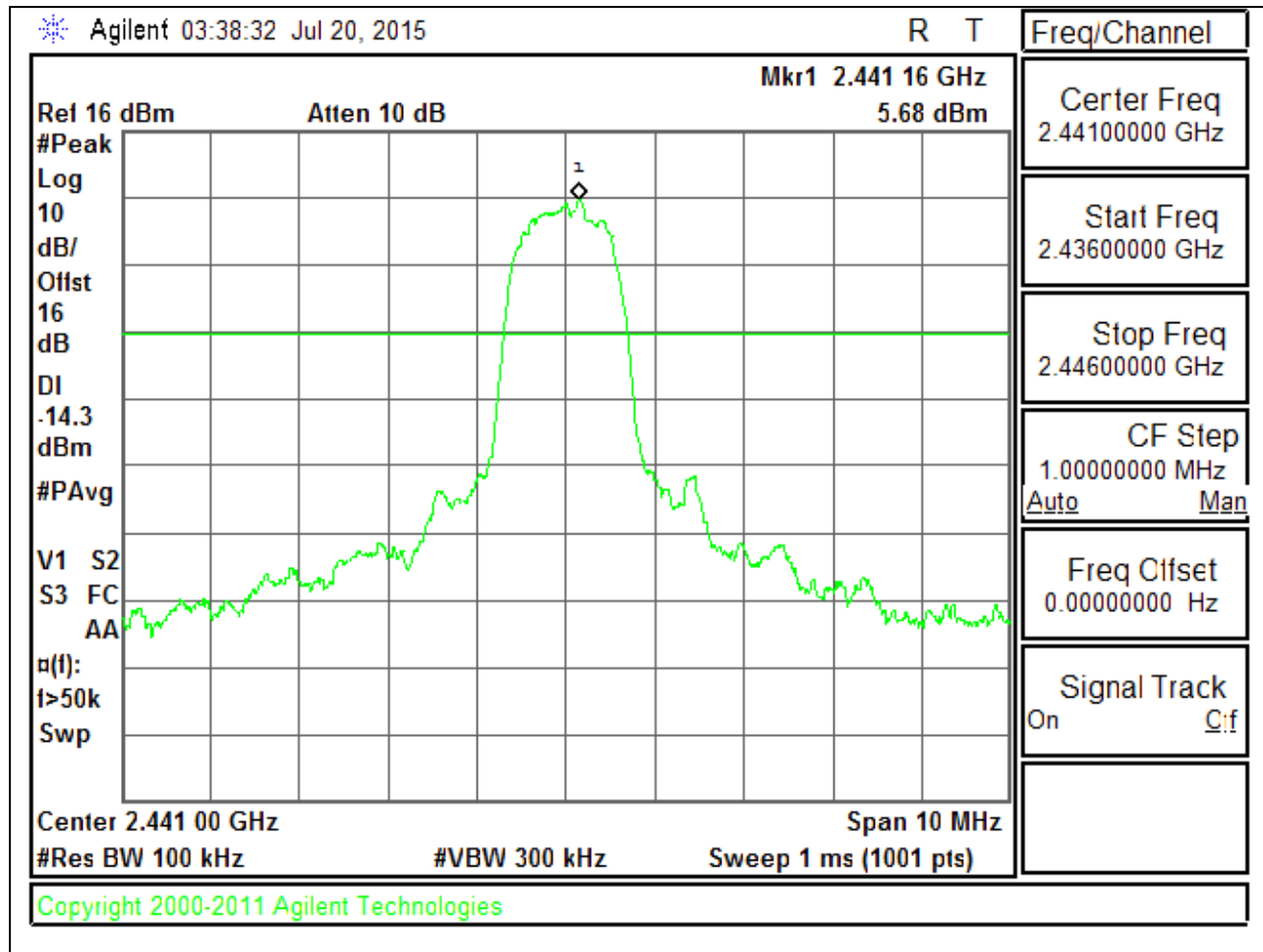


LOW CHANNEL SPURIOUS

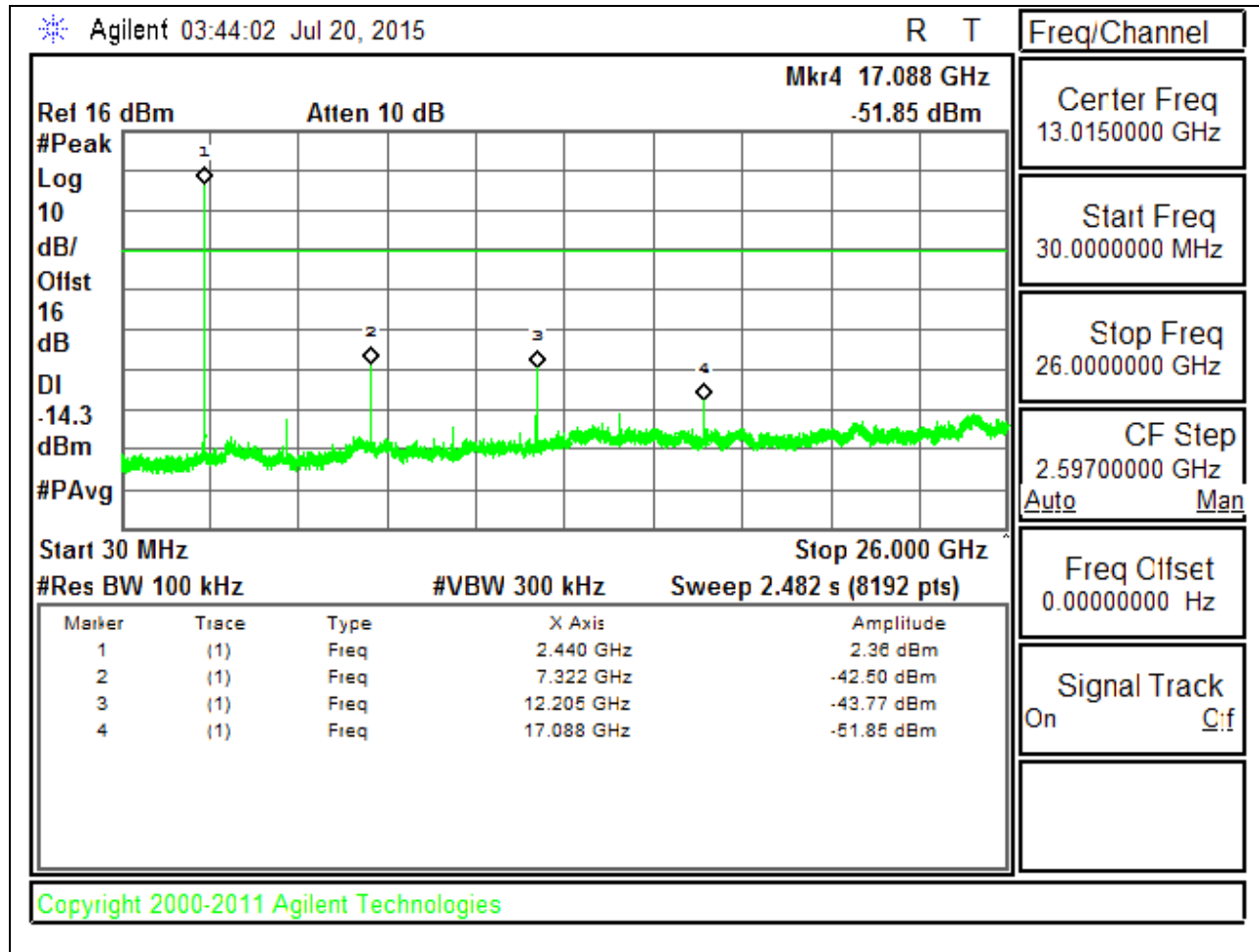


SPURIOUS EMISSIONS, MID CHANNEL

MID CHANNEL BANDEDGE

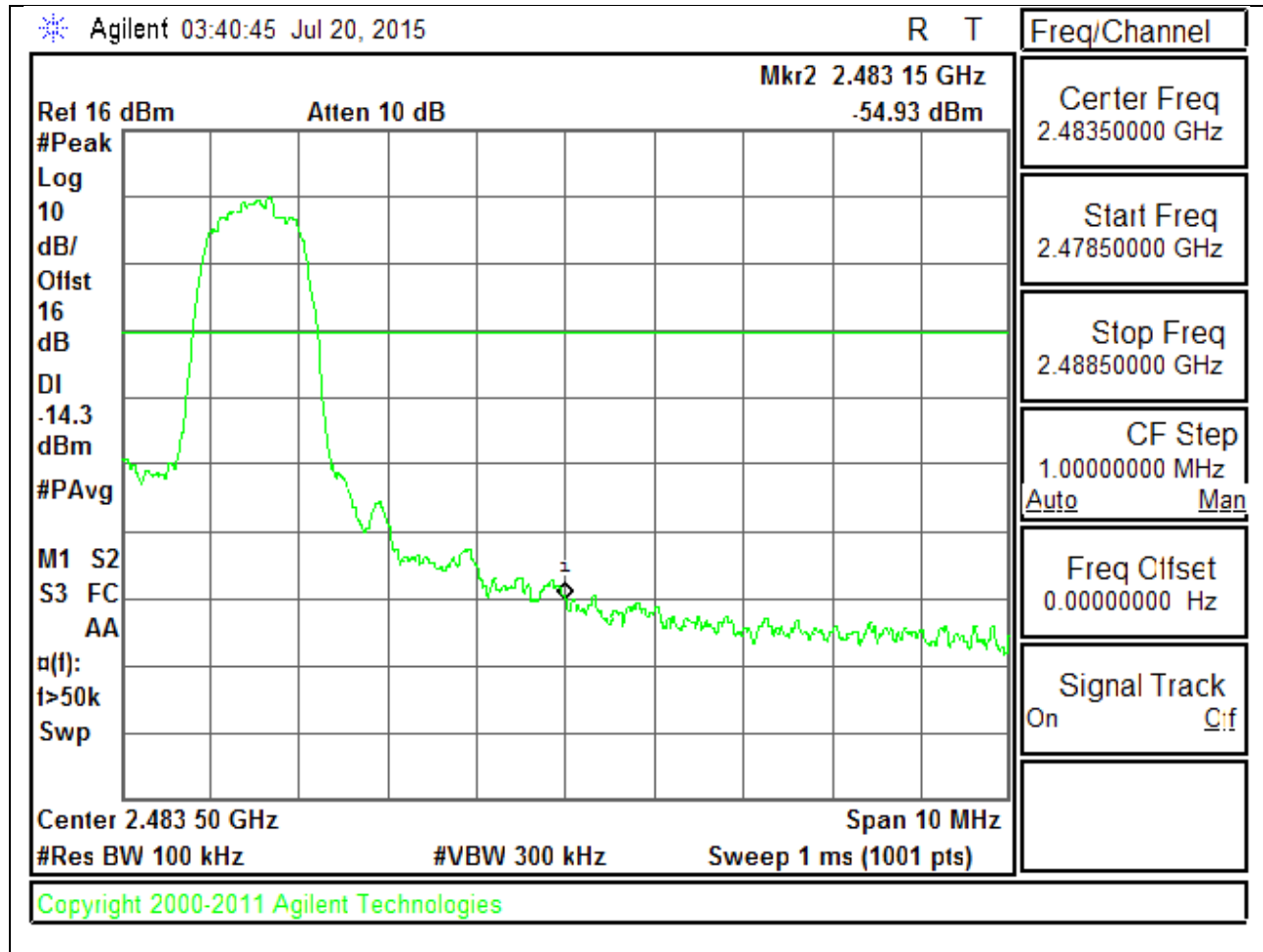


MID CHANNEL SPURIOUS

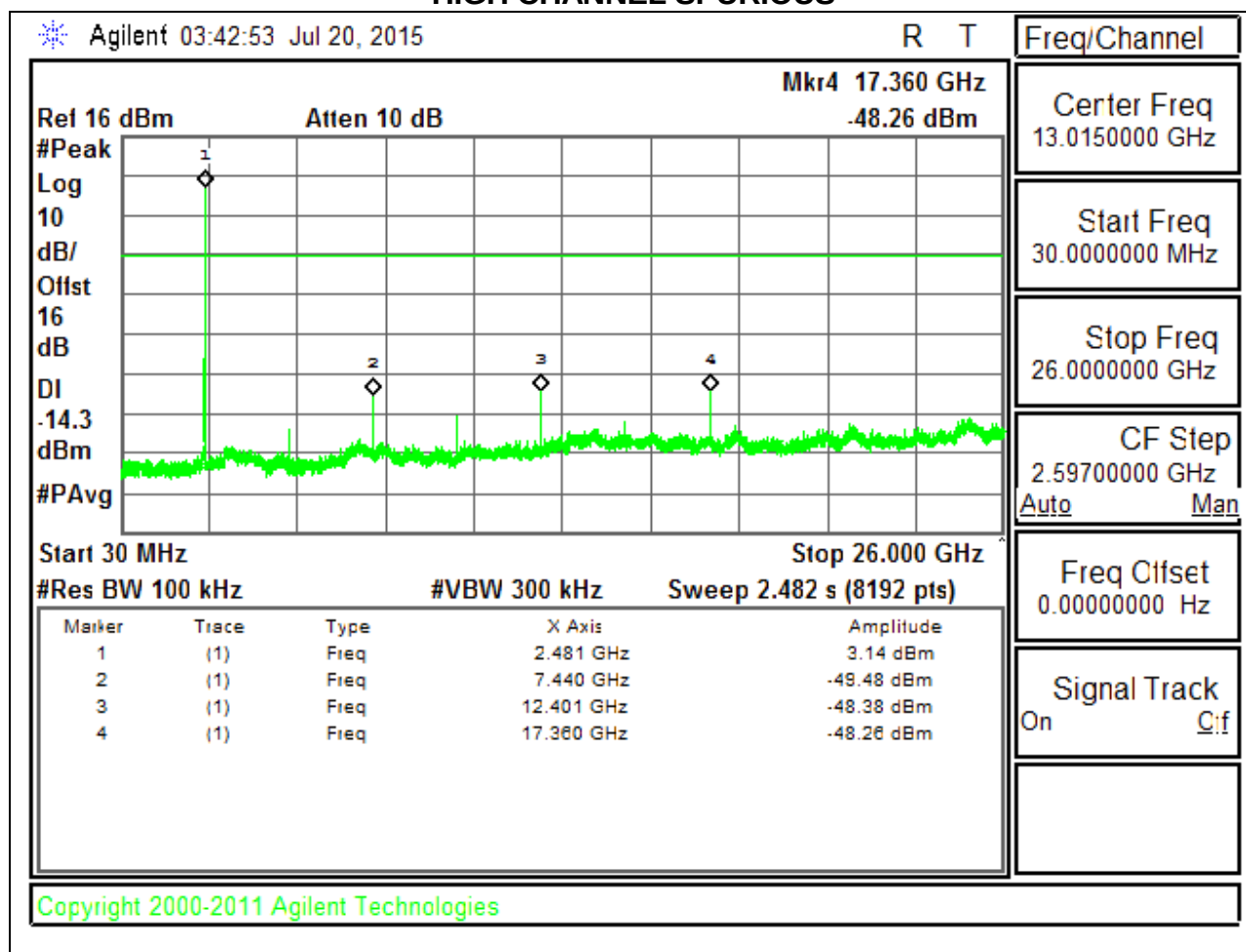


SPURIOUS EMISSIONS, HIGH CHANNEL

HIGH CHANNEL BANDEDGE

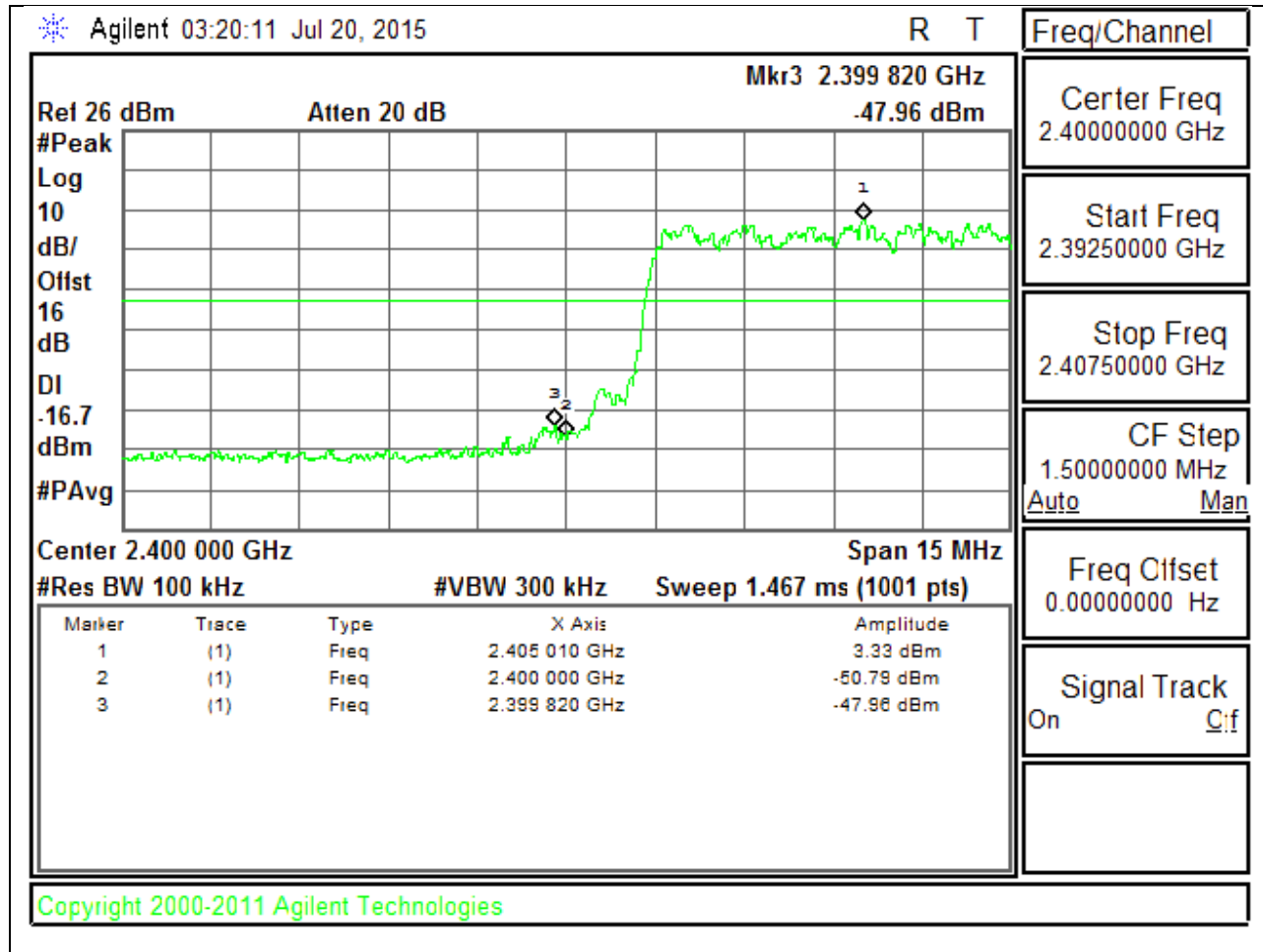


HIGH CHANNEL SPURIOUS

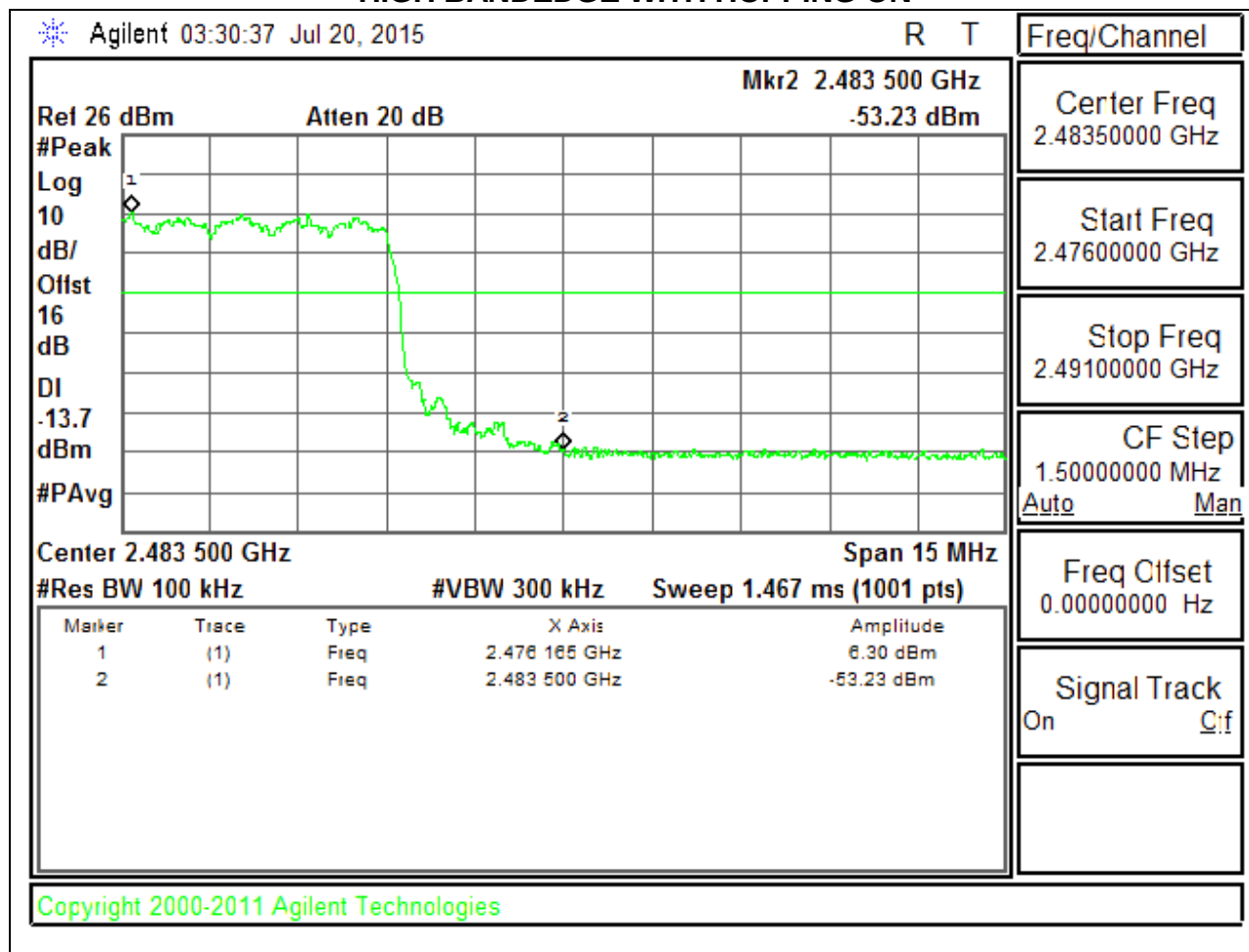


SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

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

IC RSS-GEN Clause 8.9 (Transmitter)

IC RSS-GEN Clause 7 (Receiver)

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 for below 1GHz and 150 cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. 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.

$$GFSK = 1/T = 1 / 0.0028S = 360Hz.$$

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.

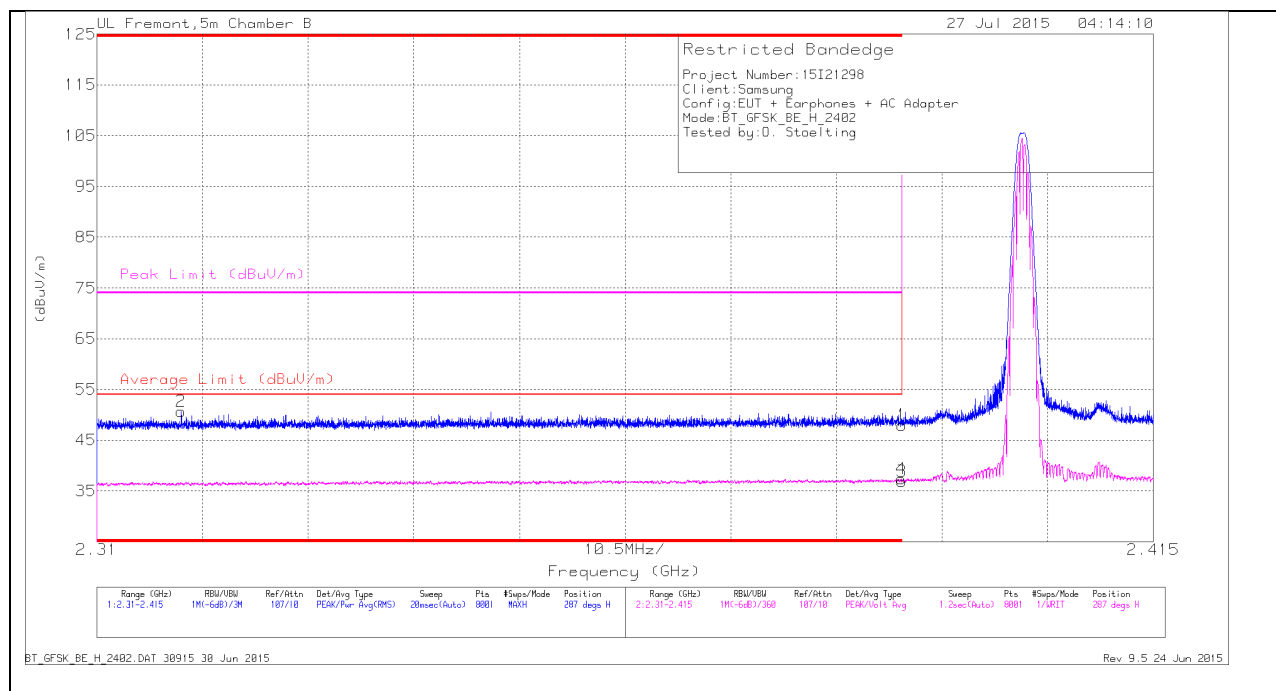
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

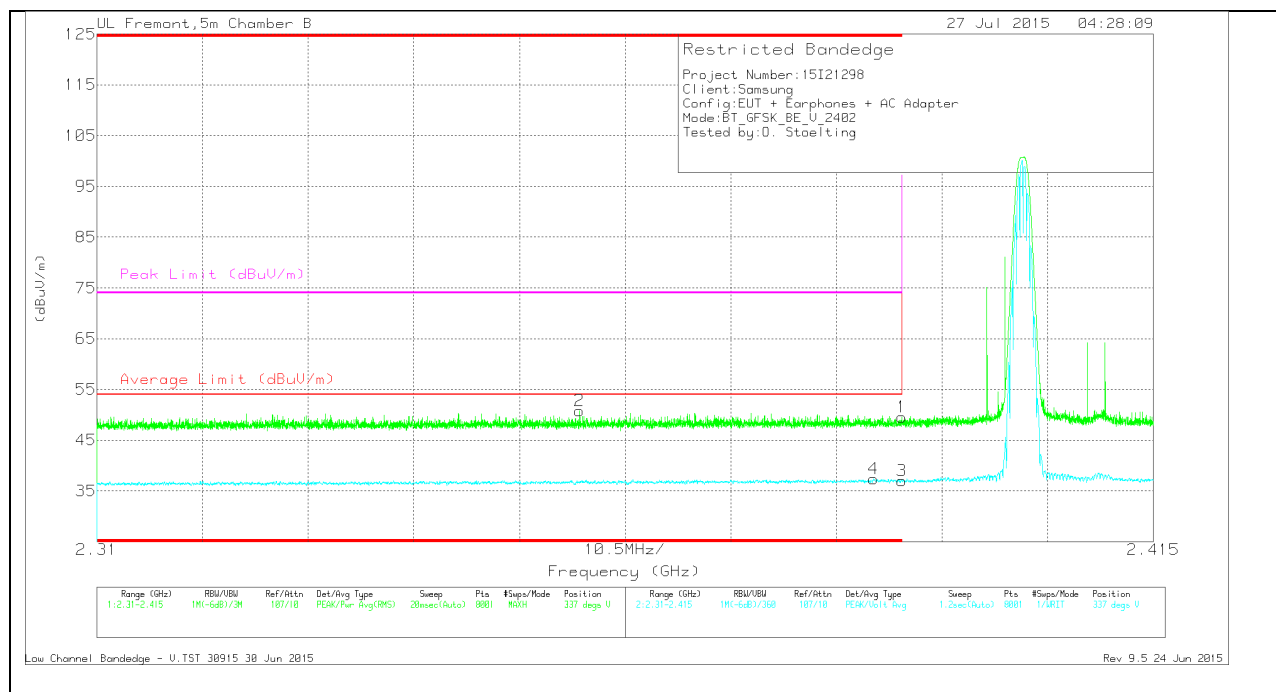
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/ 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	* 2.318	43.31	Pk	31.6	-24.2	50.71	-	-	74	-23.29	287	261	H
1	* 2.39	40.09	Pk	32	-24.1	47.99	-	-	74	-26.01	287	261	H
3	* 2.39	28.93	VA1T	32	-24.1	36.83	54	-17.17	-	-	287	261	H
4	* 2.39	29.52	VA1T	32	-24.1	37.42	54	-16.58	-	-	287	261	H

VERTICAL PEAK AND AVERAGE PLOT

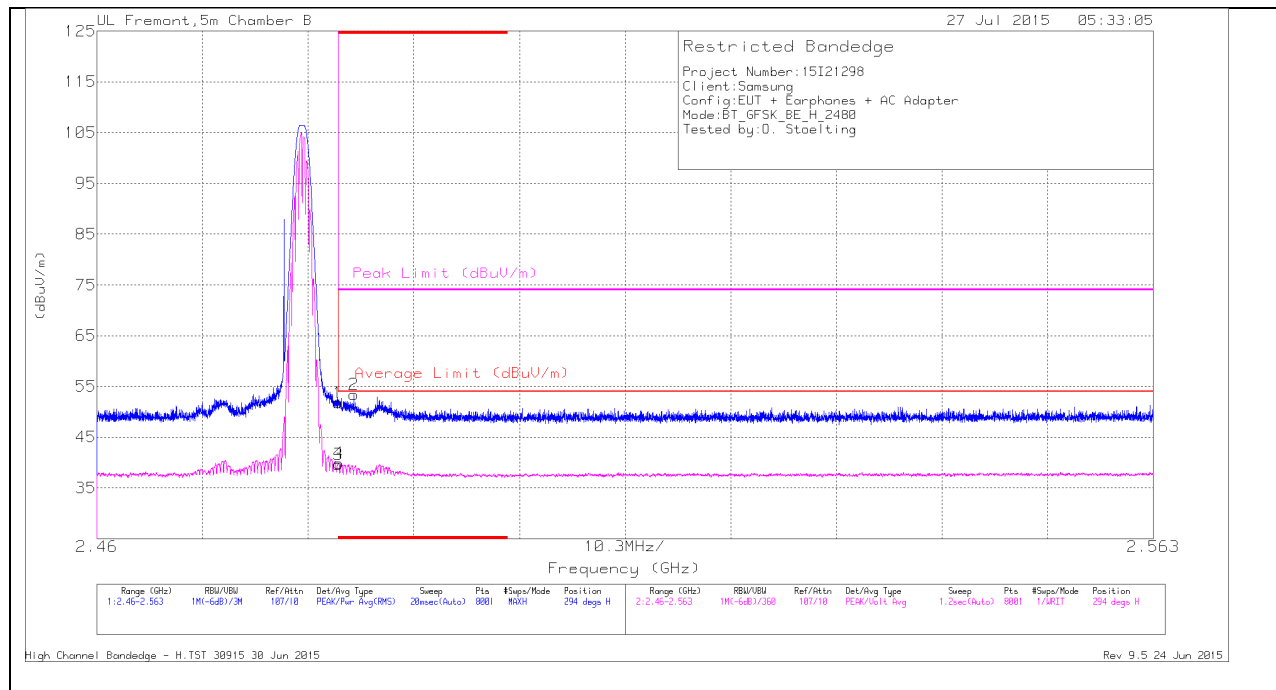


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	* 2.358	43.16	Pk	31.8	-24.2	50.76	-	-	74	-23.24	337	334	V
4	* 2.387	29.44	VA1T	32	-24.1	37.34	54	-16.66	-	-	337	334	V
1	* 2.39	41.59	Pk	32	-24.1	49.49	-	-	74	-24.51	337	334	V
3	* 2.39	29.08	VA1T	32	-24.1	36.98	54	-17.02	-	-	337	334	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

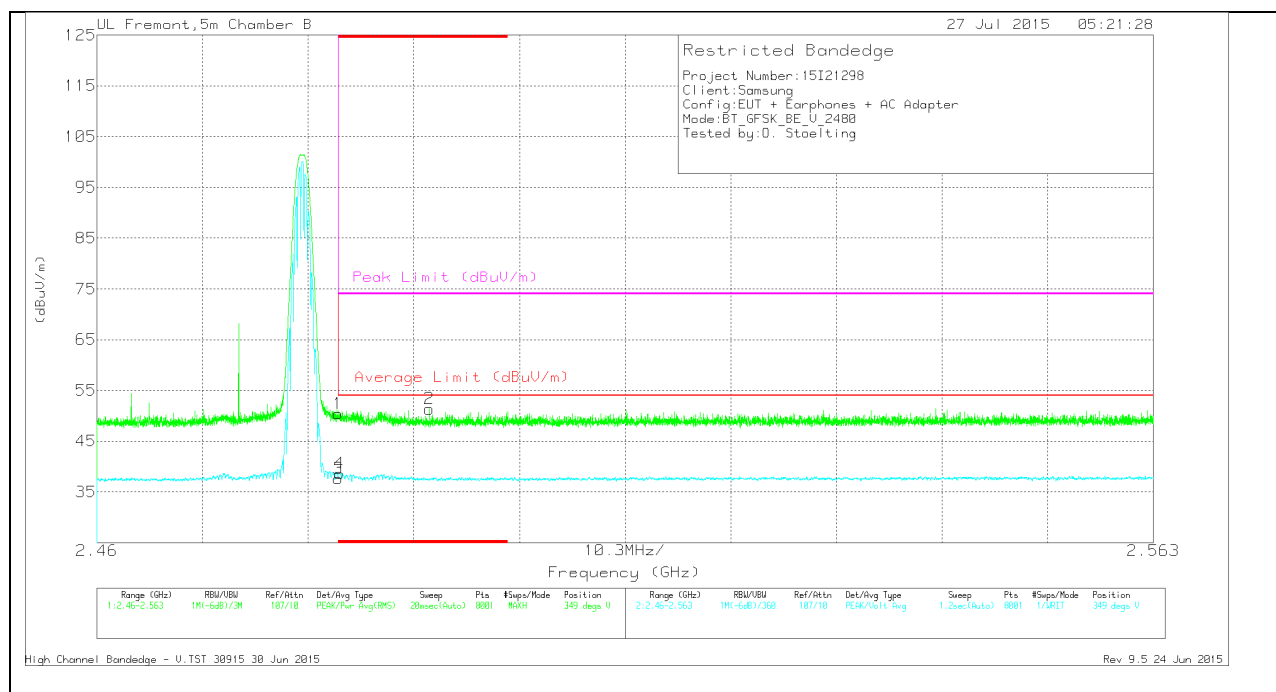
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT345 (dB/m)	Amp/Cbl/Filtr/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	43.3	Pk	32.5	-24	51.8	-	-	74	-22.2	294	393	H
3	* 2.484	31.06	VA1T	32.5	-24	39.56	54	-14.44	-	-	294	393	H
4	* 2.484	31.35	VA1T	32.5	-24	39.85	54	-14.15	-	-	294	393	H
2	* 2.485	44.89	Pk	32.5	-24	53.39	-	-	74	-20.61	294	393	H

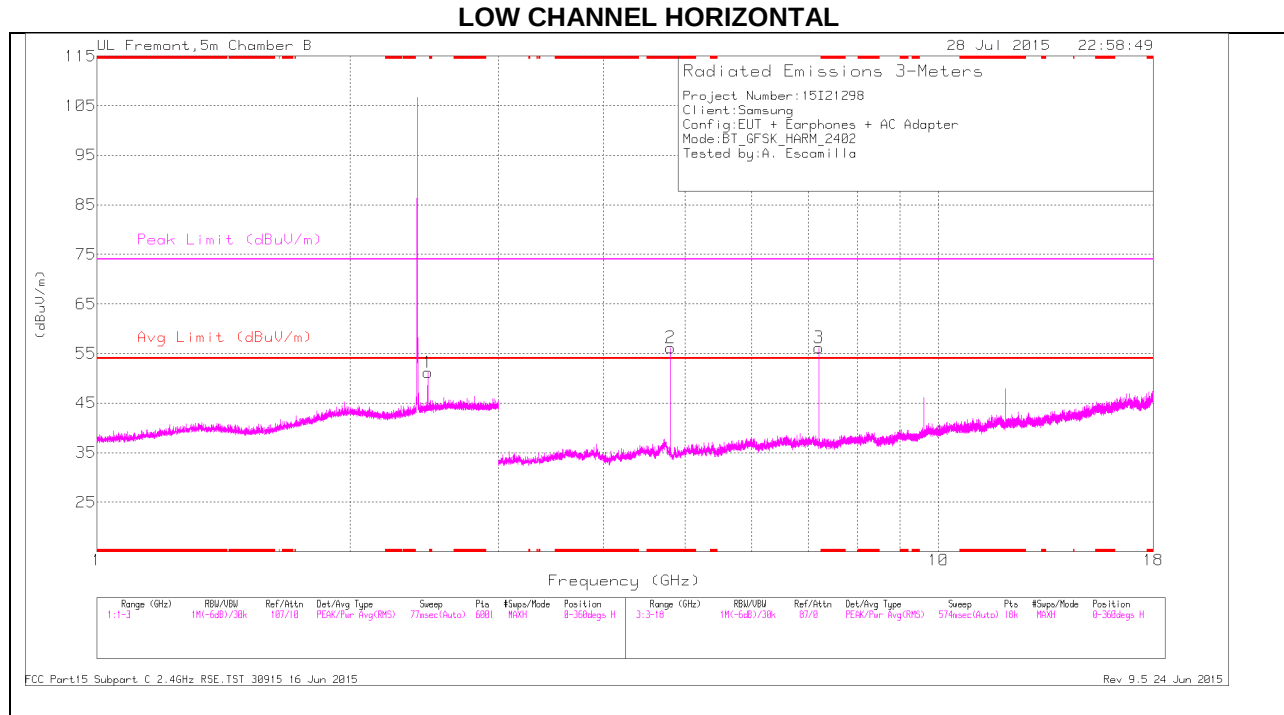
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

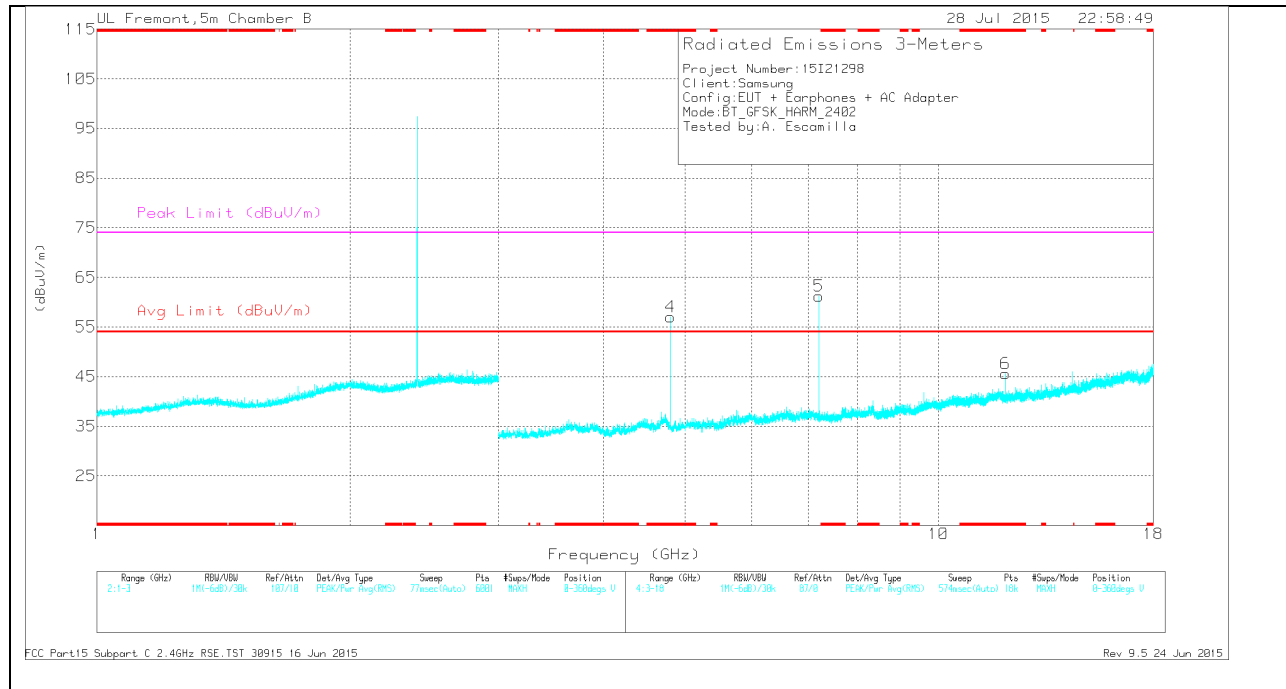
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.96	Pk	32.5	-24	50.46	-	-	74	-23.54	349	392	V
3	* 2.484	29.12	VA1T	32.5	-24	37.62	54	-16.38	-	-	349	392	V
4	* 2.484	30.17	VA1T	32.5	-24	38.67	54	-15.33	-	-	349	392	V
2	* 2.492	42.75	Pk	32.5	-23.9	51.35	-	-	74	-22.65	349	392	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 T345 (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	* 4.804	52.9	Pk	34.3	-31	56.2	-	-	74	-17.8	0-360	102	H
4	* 4.804	53.69	Pk	34.3	-31	56.99	-	-	74	-17.01	0-360	101	V
6	* 12.01	32.17	Pk	38.6	-25.2	45.57	-	-	74	-28.43	0-360	101	V
1	2.473	42.64	Pk	32.4	-23.9	51.14	-	-	-	-	0-360	101	H
3	7.206	50.5	Pk	35.3	-29.6	56.2	-	-	-	-	0-360	102	H
5	7.206	55.46	Pk	35.3	-29.6	61.16	-	-	-	-	0-360	101	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 4.804	55.67	PK-U	34.3	-31	58.97	-	-	74	-15.03	64	104	H
* 4.804	53.49	PK-U	34.3	-31	56.79	-	-	74	-17.21	61	101	V
* 4.804	49.39	VA1T	34.3	-31	52.69	54	-1.31	-	-	61	101	V
* 12.011	38.51	PK-U	38.6	-25.2	51.91	-	-	74	-22.09	120	105	V
* 12.01	28.61	VA1T	38.6	-25.2	42.01	54	-11.99	-	-	120	105	V
2.473	45.2	PK-U	32.4	-23.9	53.7	-	-	-	-	77	117	H
2.473	30.88	VA1T	32.4	-23.9	39.38	-	-	-	-	77	117	H
7.205	53.55	PK-U	35.3	-29.6	59.25	-	-	-	-	131	105	H
7.206	57.52	PK-U	35.3	-29.6	63.22	-	-	-	-	281	103	V

For marker one, 4804 MHz, used the following method to do averaging:

$$DCCF = 20 * \log(100\text{ms}/\text{Ton})$$

$$\text{Ton} = 2.88\text{ms}$$

$$DCCF = 30.8$$

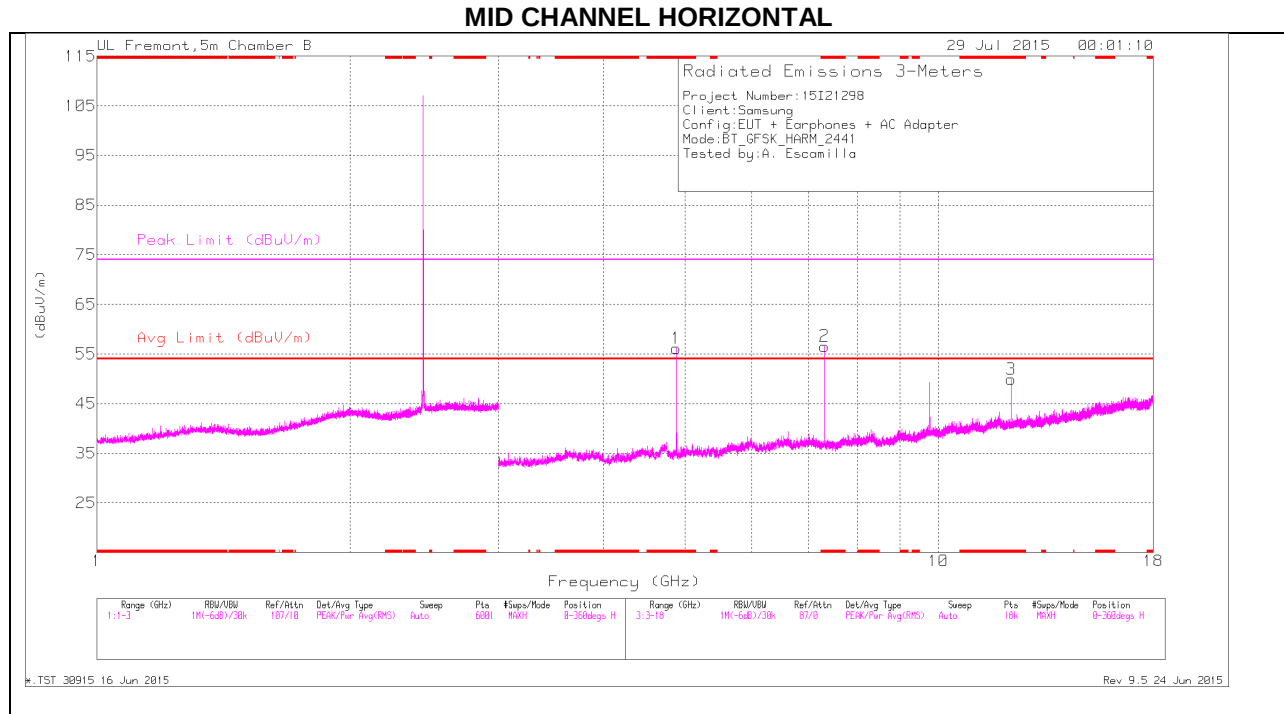
$$\text{Corrected AV reading} = \text{Peak Reading} - DCCF$$

$$= 58.97 - 30.8 = 28.17 \text{ dBuV/m}$$

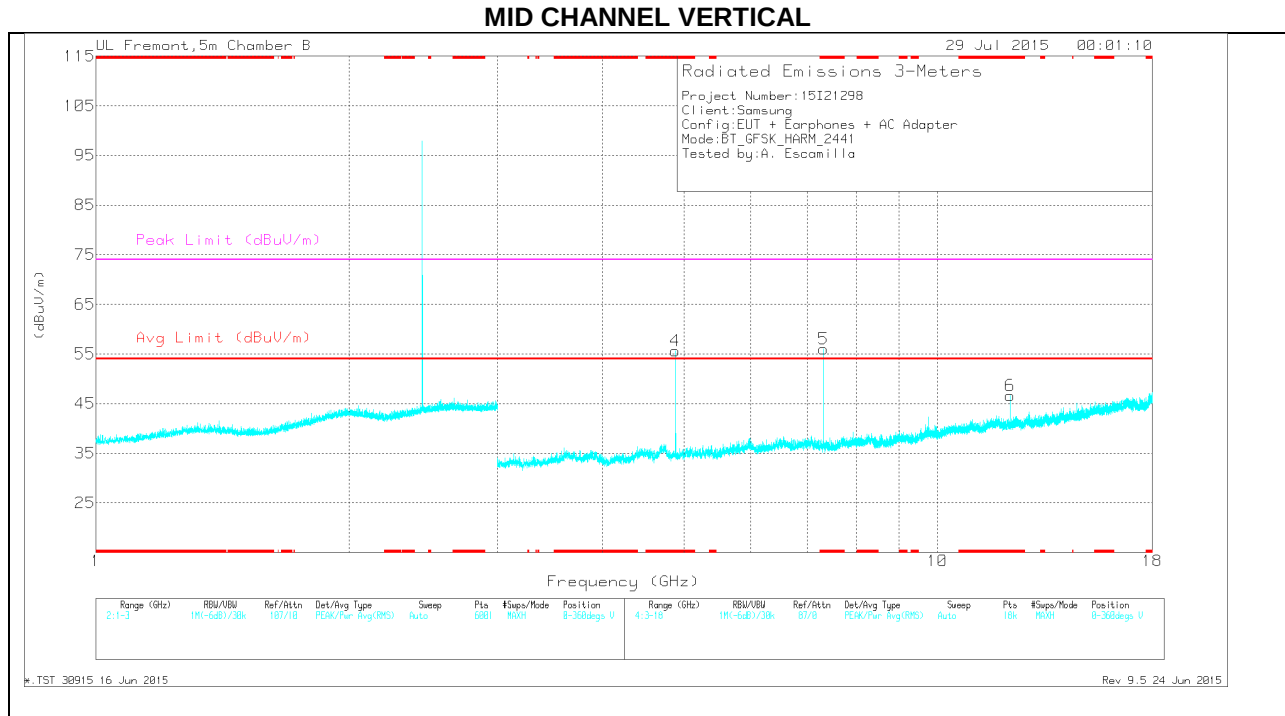
For marker four, 7206 MHz, used the following method to do averaging:

$$\text{Corrected AV reading} = \text{Peak Reading} - DCCF$$

$$= 59.25 - 30.8 = 28.45 \text{ dBuV/m}$$



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 T345 (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
1	* 4.882	54.59	Pk	34.2	-32.6	56.19	-	-	74	-17.81	0-360	101	H
2	* 7.323	51.28	Pk	35.3	-30	56.58	-	-	74	-17.42	0-360	101	H
3	* 12.204	36.16	Pk	38.6	-24.8	49.96	-	-	74	-24.04	0-360	101	H
4	* 4.882	54.02	Pk	34.2	-32.6	55.62	-	-	74	-18.38	0-360	101	V
5	* 7.323	50.69	Pk	35.3	-30	55.99	-	-	74	-18.01	0-360	200	V
6	* 12.205	32.81	Pk	38.6	-24.8	46.61	-	-	74	-27.39	0-360	101	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 4.882	56.56	PK-U	34.2	-32.6	58.16	-	-	74	-15.84	66	109	H
* 7.322	53.44	PK-U	35.3	-30	58.74	-	-	74	-15.26	301	103	H
* 12.205	40.71	PK-U	38.6	-24.8	54.51	-	-	74	-19.49	106	101	H
* 12.205	31.61	VA1T	38.6	-24.8	45.41	54	-8.59	-	-	106	101	H
* 4.882	55.43	PK-U	34.2	-32.6	57.03	-	-	74	-16.97	6	102	V
* 7.323	58.11	PK-U	35.3	-30	63.41	-	-	74	-10.59	271	116	V
* 12.204	39.61	PK-U	38.6	-24.8	53.41	-	-	74	-20.59	125	130	V
* 12.205	29.92	VA1T	38.6	-24.8	43.72	54	-10.28	-	-	125	130	V

For marker 1, 4882 MHz, used the following method to do averaging:

$DCCF = 20 \times \log(100\text{ms}/T_{\text{on}})$

$T_{\text{on}} = 2.88\text{ms}$

$DCCF = 30.8$

Corrected AV reading = Peak Reading – DCCF

$= 58.16 - 30.8 = 27.36 \text{ dBuV/m}$

For marker 2, 7322 MHz, used the following method to do averaging:

$$DCCF=20 \cdot \log(100\text{ms}/T_{\text{on}})$$

$$T_{\text{on}}=2.88\text{ms}$$

$$DCCF=30.8$$

$$\text{Corrected AV reading} = \text{Peak Reading} - DCCF$$

$$= 58.74 - 30.8 = 27.94 \text{ dBuV/m}$$

For marker 5, 7323 MHz, used the following method to do averaging:

$$DCCF=20 \cdot \log(100\text{ms}/T_{\text{on}})$$

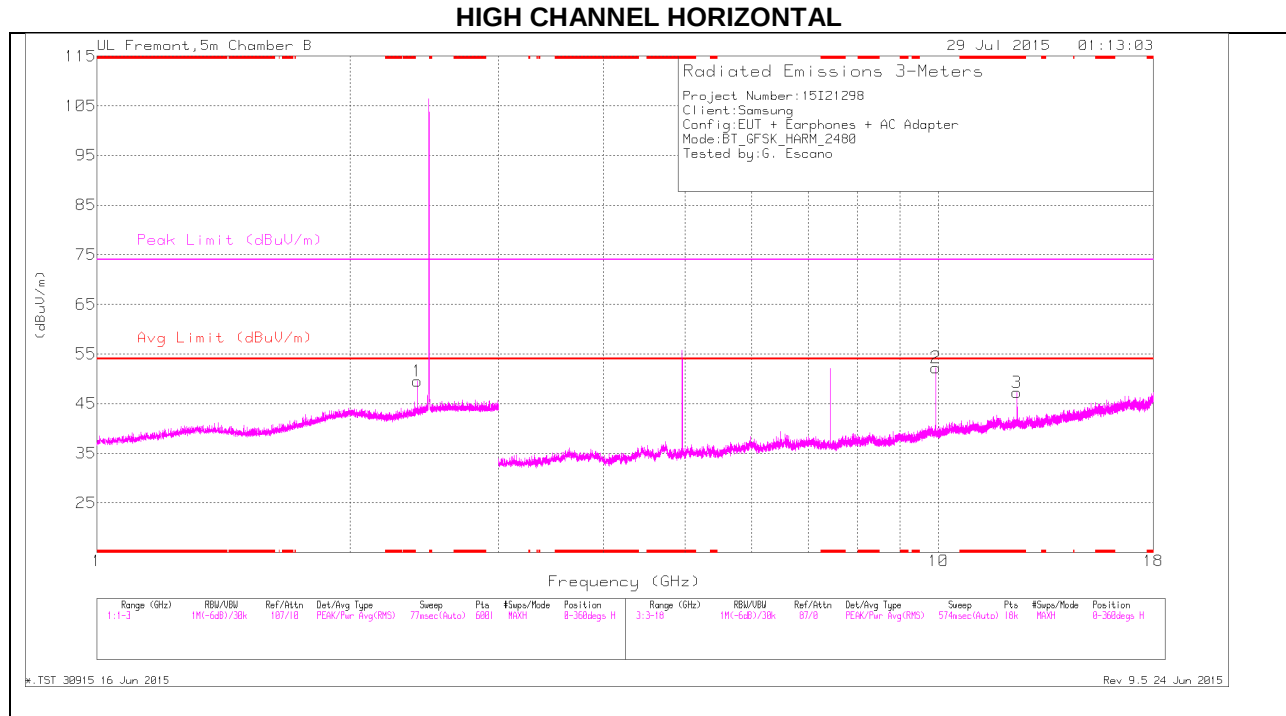
$$T_{\text{on}}=2.88\text{ms}$$

$$DCCF=30.8$$

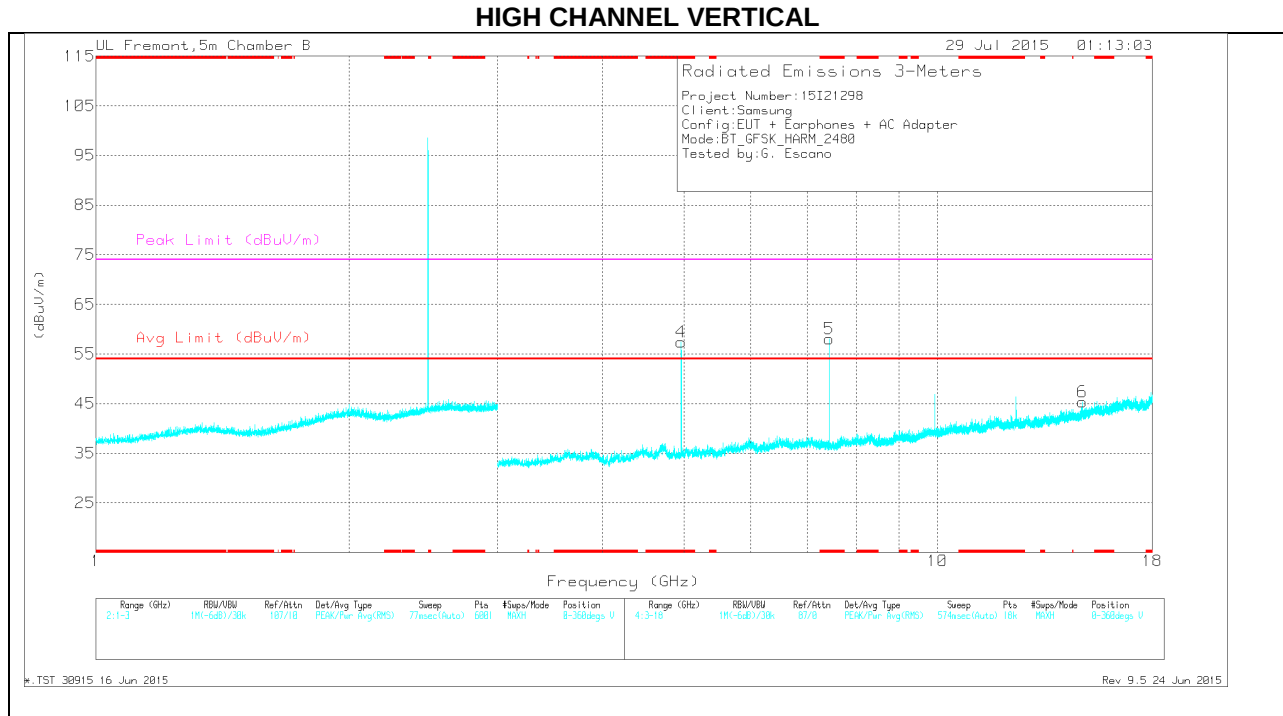
$$\text{Corrected AV reading} = \text{Peak Reading} - DCCF$$

$$= 63.41 - 30.8 = 32.61 \text{ dBuV/m}$$

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 T345 (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	* 12.4	33.17	Pk	38.6	-24.5	47.27	-	-	74	-26.73	0-360	101	H
4	* 4.96	55.22	Pk	34.1	-31.9	57.42	-	-	74	-16.58	0-360	101	V
5	* 7.44	51.96	Pk	35.3	-29.2	58.06	-	-	74	-15.94	0-360	101	V
1	2.402	41.58	Pk	32.1	-24.1	49.58	-	-	-	-	0-360	199	H
2	9.92	41.36	Pk	37.1	-26.2	52.26	-	-	-	-	0-360	101	H
6	14.88	29.08	Pk	39.9	-23.6	45.38	-	-	-	-	0-360	101	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 12.4	41.82	PK-U	38.6	-24.5	55.92	-	-	74	-18.08	106	101	H
* 12.4	31.84	VA1T	38.6	-24.5	45.94	54	-8.06	-	-	106	101	H
* 4.96	57.07	PK-U	34.1	-31.9	59.27	-	-	74	-14.73	244	102	V
* 7.44	54.88	PK-U	35.3	-29.2	60.98	-	-	74	-13.02	264	101	V
2.402	46.06	PK-U	32.1	-24.1	54.06	-	-	-	-	160	364	H
2.402	30.86	VA1T	32.1	-24.1	38.86	-	-	-	-	160	364	H
9.92	45.65	PK-U	37.1	-26.2	56.55	-	-	-	-	101	104	H
9.92	39.81	VA1T	37.1	-26.2	50.71	-	-	-	-	101	104	H
14.879	37.22	PK-U	39.9	-23.6	53.52	-	-	-	-	97	116	V
14.88	25.11	VA1T	39.9	-23.6	41.41	-	-	-	-	97	116	V

For marker 4, 4960 MHz, used the following method to do averaging:

$$DCCF=20 \cdot \log(100\text{ms}/T_{\text{on}})$$

$$T_{\text{on}}=2.88\text{ms}$$

$$DCCF=30.8$$

$$\text{Corrected AV reading} = \text{Peak Reading} - DCCF$$

$$= 59.27 - 30.8 = 28.47 \text{ dBuV/m}$$

For marker 5, 7440 MHz, used the following method to do averaging:

$DCCF = 20 * \log(100\text{ms}/T_{\text{on}})$

$T_{\text{on}} = 2.88\text{ms}$

$DCCF = 30.8$

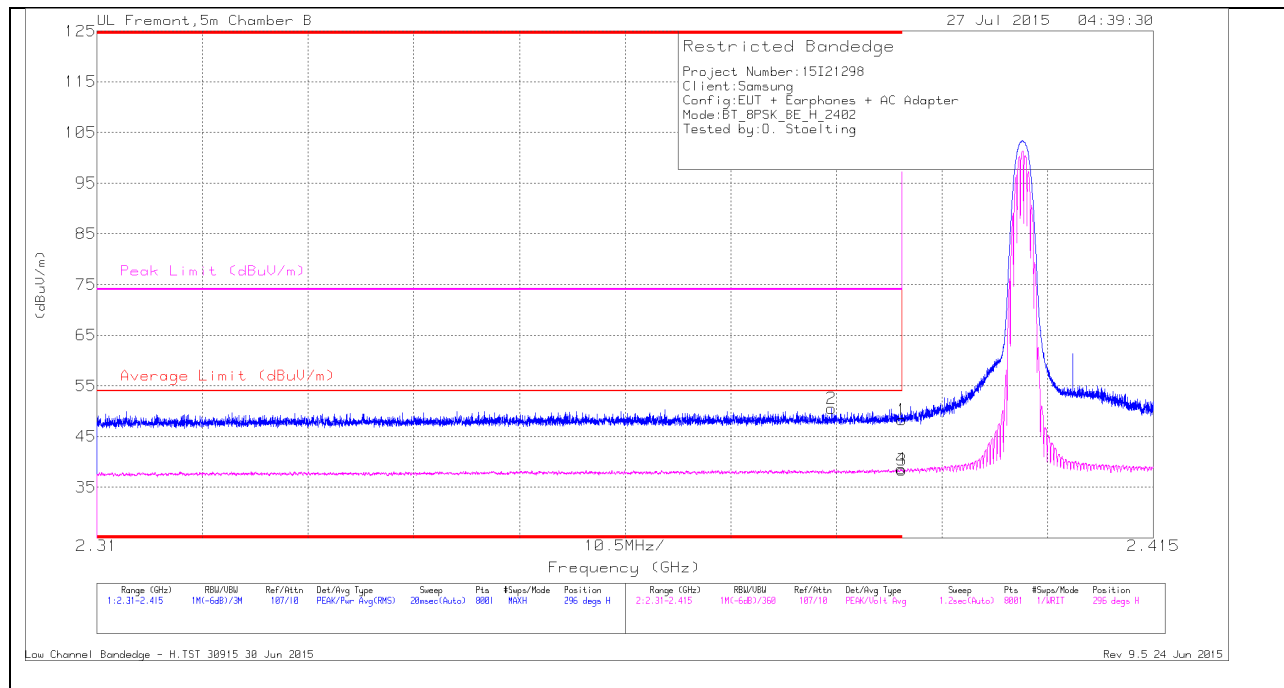
Corrected AV reading = Peak Reading – DCCF

$= 60.98 - 30.8 = 30.18 \text{ dBuV/m}$

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

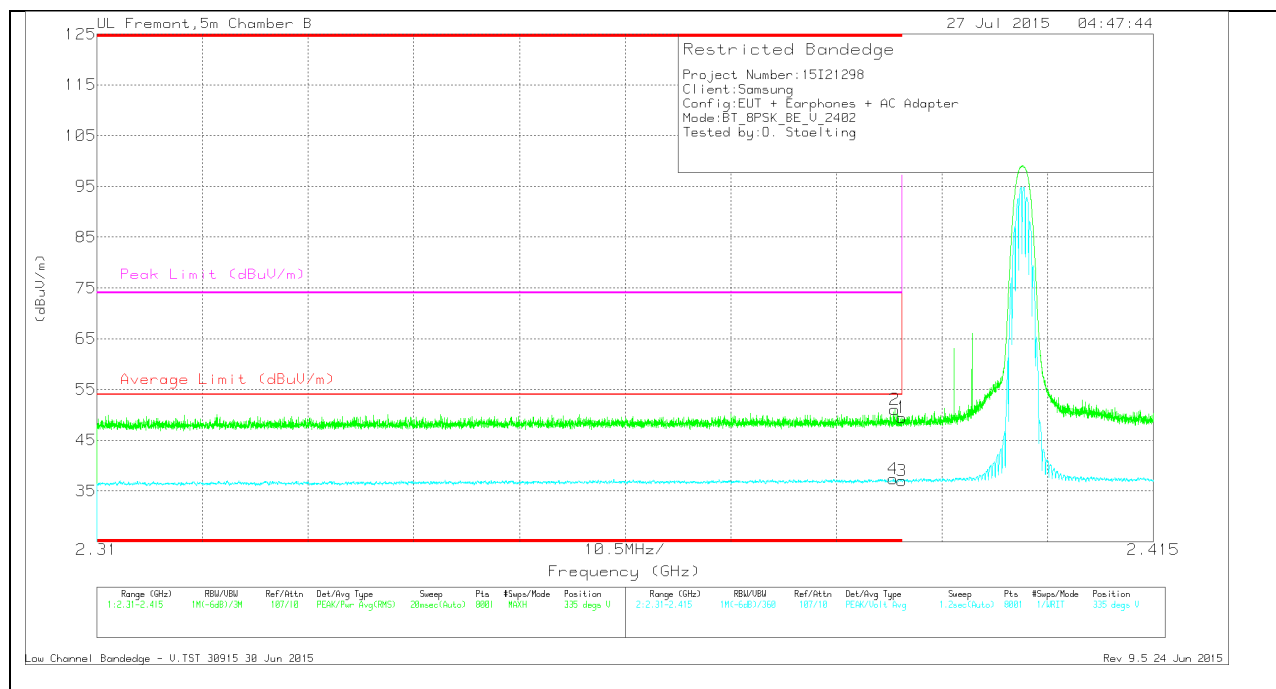
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/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	* 2.383	42.62	Pk	32	-24.1	50.52	-	-	74	-23.48	296	296	H
1	* 2.39	40.44	Pk	32	-24.1	48.34	-	-	74	-25.66	296	296	H
3	* 2.39	29.36	VA1T	32	-24.1	38.41	54	-15.59	-	-	296	296	H
4	* 2.39	29.52	VA1T	32	-24.1	38.57	54	-15.43	-	-	296	296	H

VERTICAL PEAK AND AVERAGE PLOT

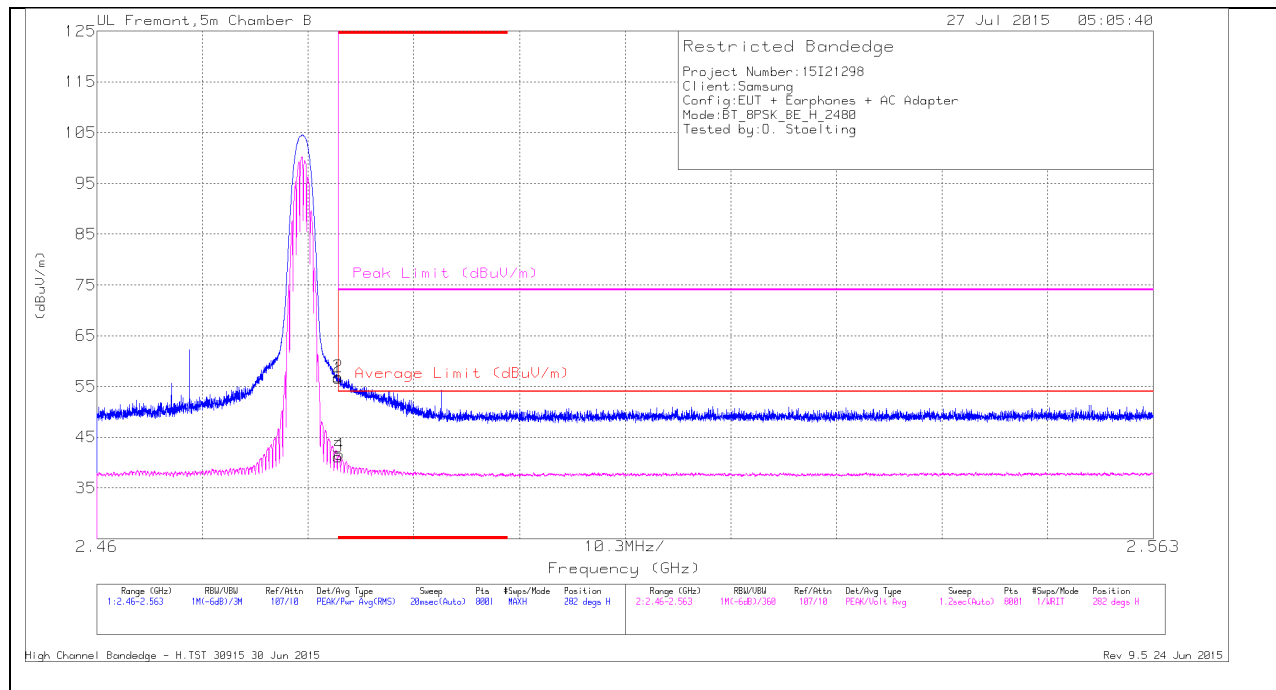


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	* 2.389	43.15	Pk	32	-24.1	51.05	-	-	74	-22.95	335	378	V
4	* 2.389	29.44	VA1T	32	-24.1	37.34	54	-16.66	-	-	335	378	V
1	* 2.39	41.58	Pk	32	-24.1	49.48	-	-	74	-24.52	335	378	V
3	* 2.39	29.1	VA1T	32	-24.1	37	54	-17	-	-	335	378	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

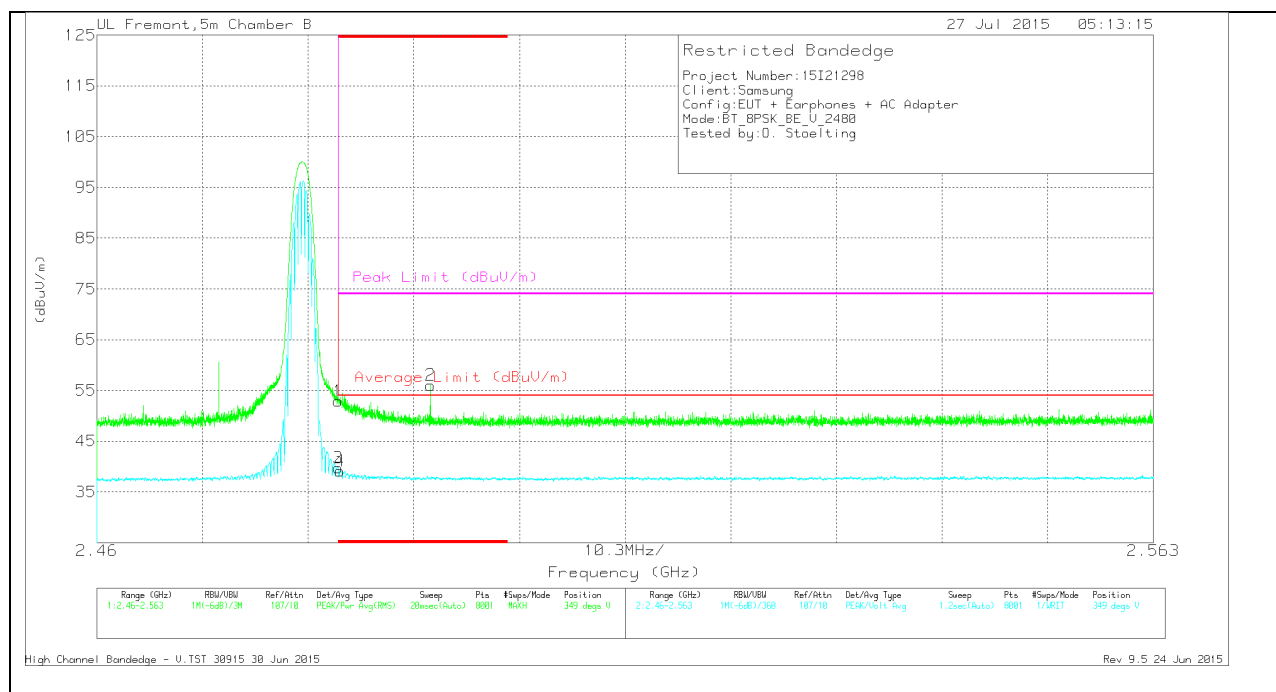
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT345 (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
1	* 2.484	48.16	Pk	32.5	-24	56.66	-	-	74	-17.34	282	169	H
2	* 2.484	48.43	Pk	32.5	-24	56.93	-	-	74	-17.07	282	169	H
3	* 2.484	32.62	VA1T	32.5	-24	41.12	54	-12.88	-	-	282	169	H
4	* 2.484	33.08	VA1T	32.5	-24	41.58	54	-12.42	-	-	282	169	H

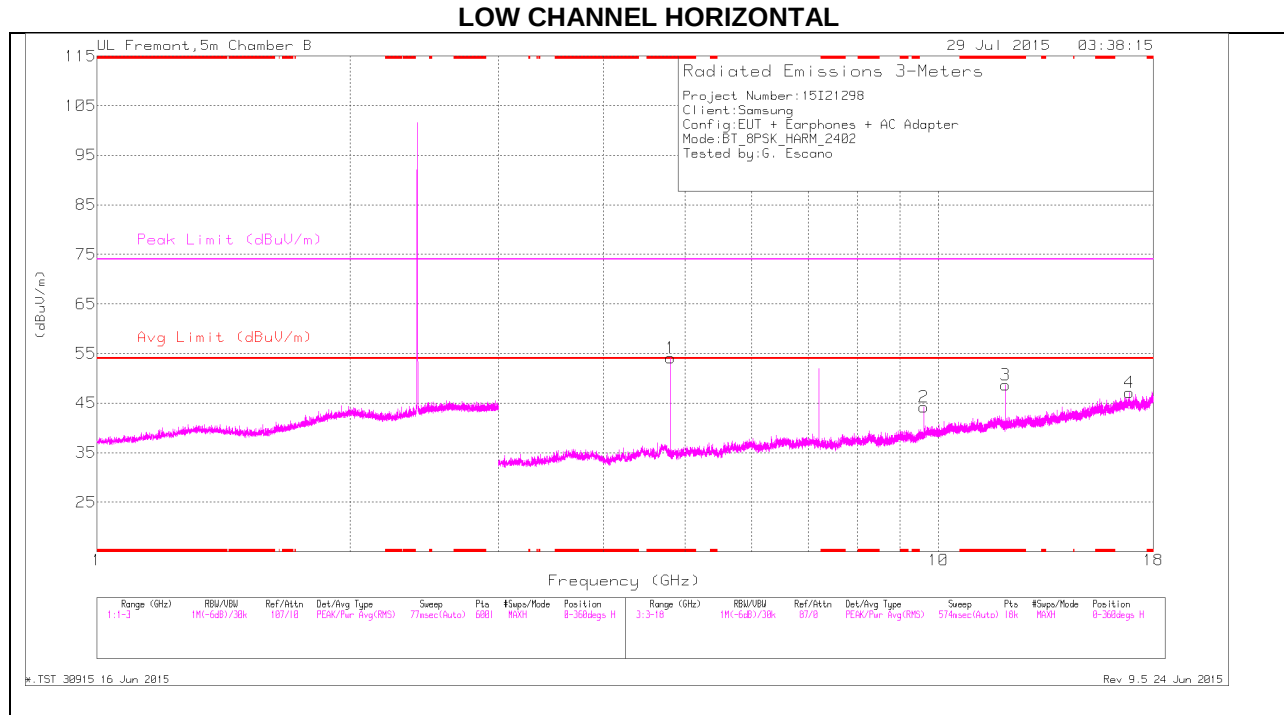
VERTICAL PEAK AND AVERAGE PLOT



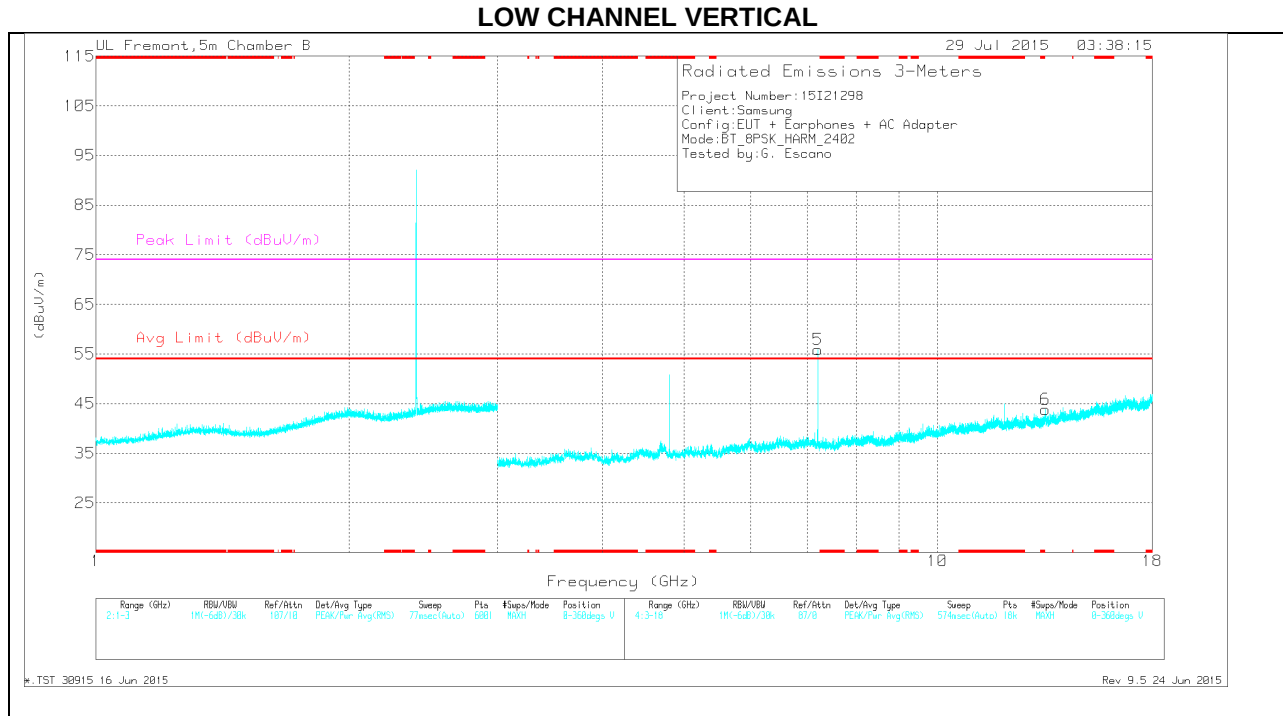
VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	44.35	Pk	32.5	-24	52.85	-	-	74	-21.15	349	392	V
3	* 2.484	31.29	VA1T	32.5	-24	39.79	54	-14.21	-	-	349	392	V
4	* 2.484	30.66	VA1T	32.5	-24	39.16	54	-14.84	-	-	349	392	V
2	* 2.493	47.46	Pk	32.5	-23.9	56.06	-	-	74	-17.94	349	392	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 T345 (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
1	* 4.803	50.79	Pk	34.3	-31	54.09	-	-	74	-19.91	0-360	101	H
3	* 12.009	35.28	Pk	38.6	-25.2	48.68	-	-	74	-25.32	0-360	101	H
5	7.205	50.21	Pk	35.3	-29.6	55.91	-	-	-	-	0-360	101	V
2	9.608	33.93	Pk	36.7	-26.4	44.23	-	-	-	-	0-360	101	H
6	13.429	28.06	Pk	38.9	-23.1	43.86	-	-	-	-	0-360	101	V
4	16.849	25.96	Pk	41.8	-20.6	47.16	-	-	-	-	0-360	200	H

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 4.803	54.67	PK-U	34.3	-31	57.97	-	-	74	-16.03	63	102	H
* 12.009	40.75	PK-U	38.6	-25.2	54.15	-	-	74	-19.85	112	101	H
* 12.01	30.65	VA1T	38.6	-25.2	44.05	54	-9.95	-	-	112	101	H
7.205	55.1	PK-U	35.3	-29.6	60.8	-	-	-	-	281	103	V
7.205	47.36	VA1T	35.3	-29.6	53.06	-	-	-	-	281	103	V
9.607	32.12	VA1T	36.7	-26.4	42.42	-	-	-	-	95	102	H
9.609	42.45	PK-U	36.7	-26.4	52.75	-	-	-	-	95	102	H
13.427	34.86	PK-U	38.9	-23.2	50.56	-	-	-	-	67	103	V
13.431	22.12	VA1T	38.9	-23.1	37.92	-	-	-	-	67	103	V
16.849	33.61	PK-U	41.8	-20.6	54.81	-	-	-	-	112	199	H
16.85	19.93	VA1T	41.8	-20.6	41.13	-	-	-	-	112	199	H

For marker 1, 4804 MHz, used the following method to do averaging:

$DCCF = 20 * \log(100\text{ms}/T_{\text{on}})$

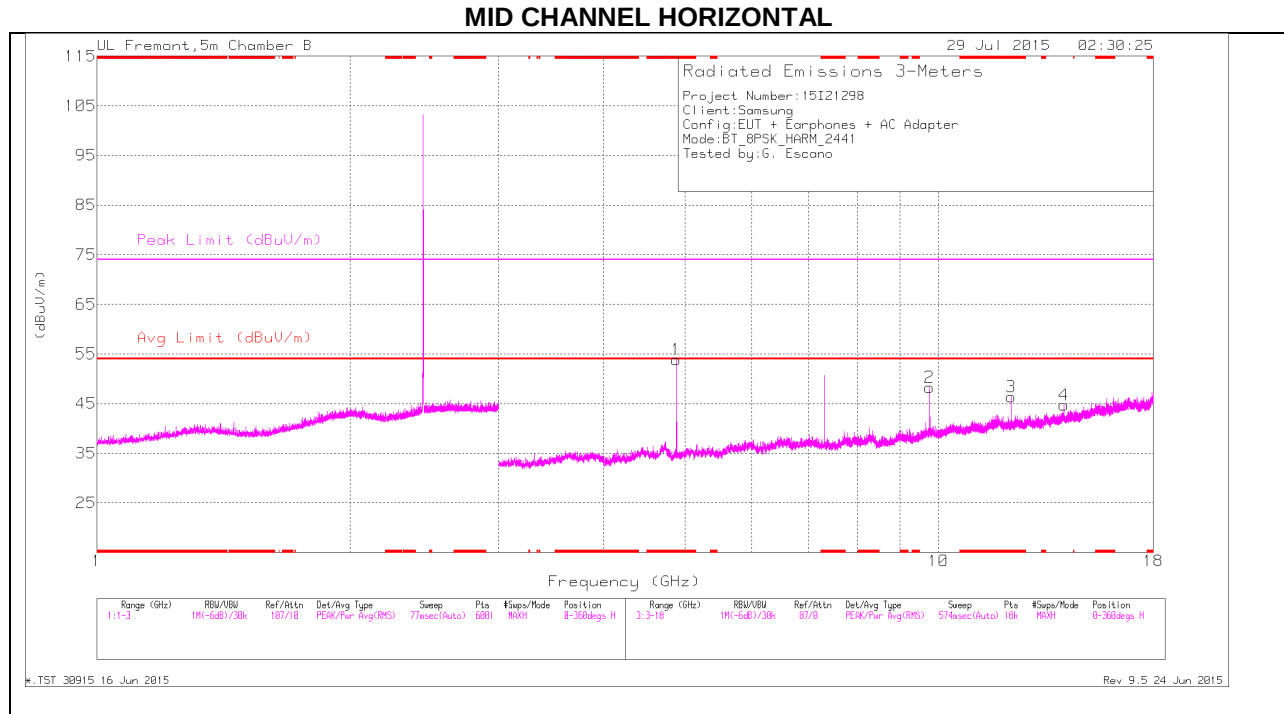
$T_{\text{on}} = 2.88\text{ms}$

$DCCF = 30.8$

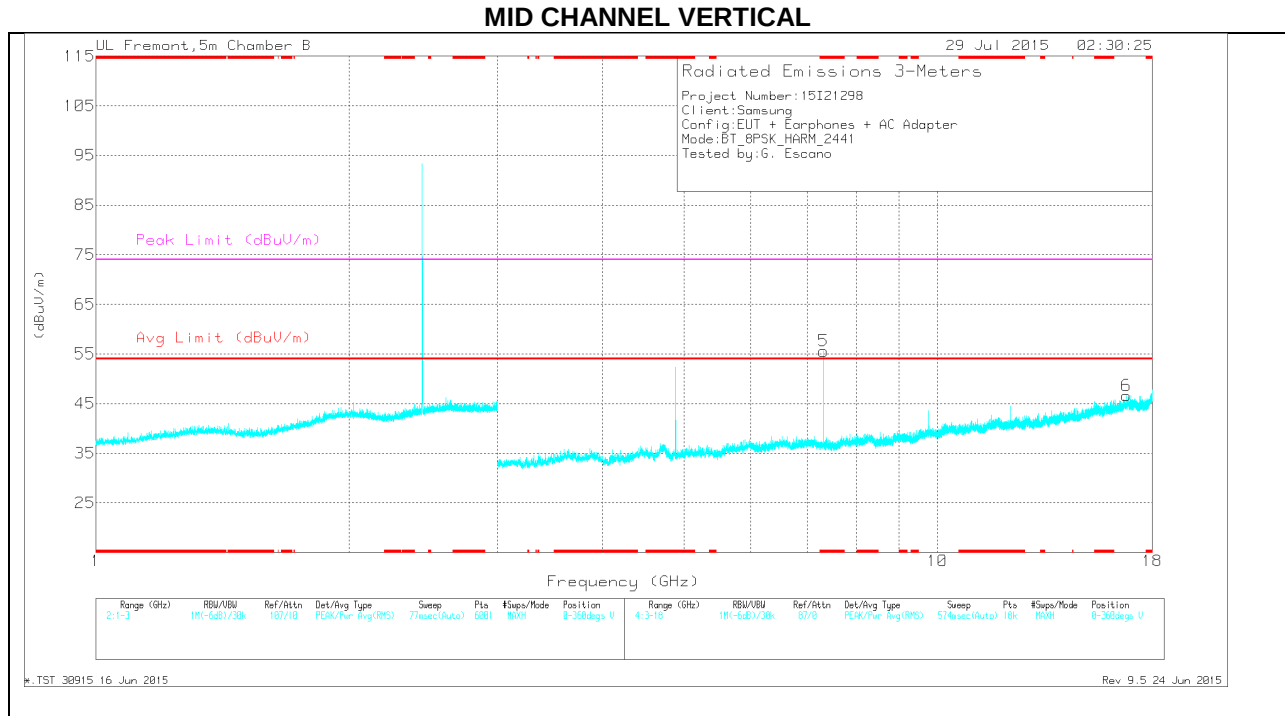
Corrected AV reading = Peak Reading – DCCF

$= 57.97 - 30.8 = 27.17 \text{ dBuV/m}$

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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 T345 (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
1	* 4.882	52.26	Pk	34.2	-32.6	53.86	-	-	74	-20.14	0-360	101	H
3	* 12.205	32.58	Pk	38.6	-24.8	46.38	-	-	74	-27.62	0-360	101	H
5	* 7.322	50.27	Pk	35.3	-30	55.57	-	-	74	-18.43	0-360	101	V
2	9.763	37.51	Pk	36.9	-26.1	48.31	-	-	-	-	0-360	101	H
4	14.094	29.18	Pk	39.1	-23.6	44.68	-	-	-	-	0-360	199	H
6	16.758	26.65	Pk	41.8	-21.8	46.65	-	-	-	-	0-360	199	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 4.882	53.09	PK-U	34.2	-32.6	54.69	-	-	74	-19.31	60	356	H
* 4.882	47.92	VA1T	34.2	-32.6	49.52	54	-4.48	-	-	60	356	H
* 12.204	40.35	PK-U	38.6	-24.8	54.15	-	-	74	-19.85	112	101	H
* 12.205	29.57	VA1T	38.6	-24.8	43.37	54	-10.63	-	-	112	101	H
* 7.323	56.08	PK-U	35.3	-30	61.38	-	-	74	-12.62	270	115	V
9.763	32.71	VA1T	36.9	-26.1	43.51	-	-	-	-	96	117	H
9.765	42.49	PK-U	36.9	-26.1	53.29	-	-	-	-	96	117	H
14.093	22.52	VA1T	39.1	-23.6	38.02	-	-	-	-	112	199	H
14.095	35.27	PK-U	39.1	-23.6	50.77	-	-	-	-	112	199	H
16.757	34.46	PK-U	41.8	-21.8	54.46	-	-	-	-	270	198	V
16.758	20.78	VA1T	41.8	-21.8	40.78	-	-	-	-	270	198	V

For marker 5, 7323 MHz, used the following method to do averaging:

$$DCCF = 20 * \log(100\text{ms}/T_{\text{on}})$$

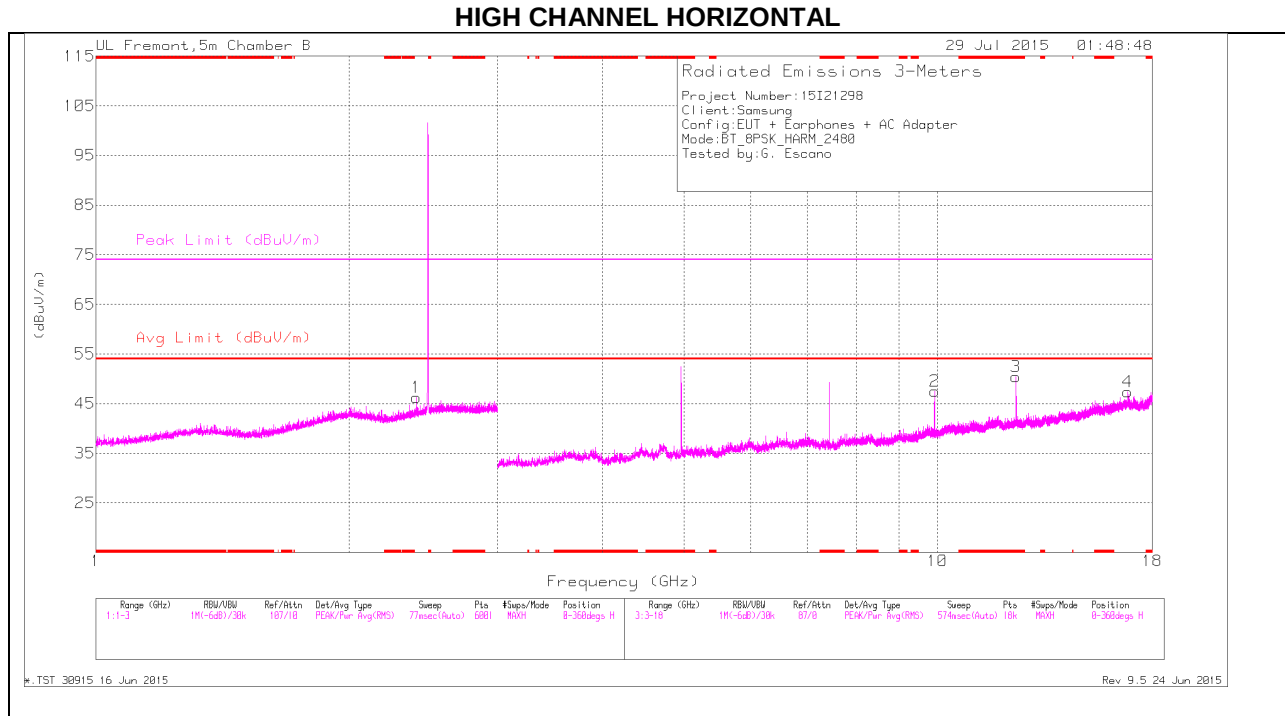
$$T_{\text{on}} = 2.88\text{ms}$$

$$DCCF = 30.8$$

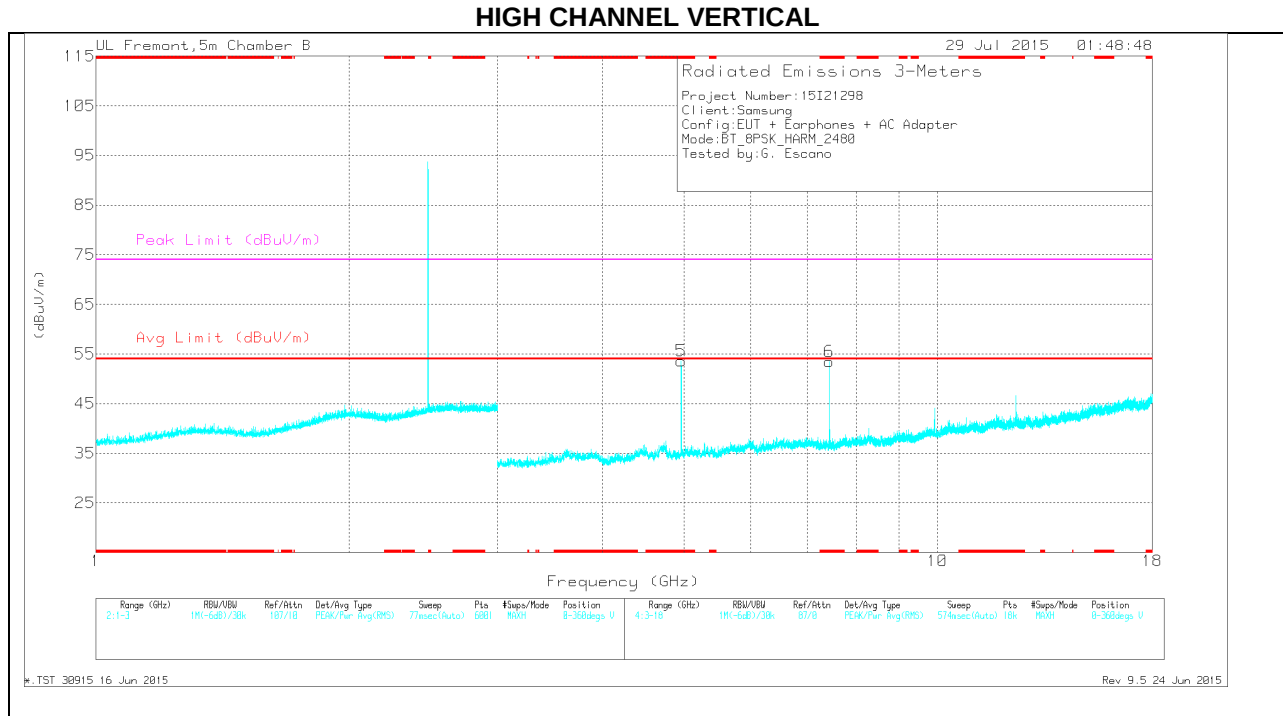
$$\text{Corrected AV reading} = \text{Peak Reading} - DCCF$$

$$= 61.38 - 30.8 = 30.58 \text{ dBuV/m}$$

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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 T345 (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	* 12.401	36.2	Pk	38.6	-24.4	50.4	-	-	74	-23.6	0-360	101	H
5	* 4.96	51.43	Pk	34.1	-31.9	53.63	-	-	74	-20.37	0-360	101	V
6	* 7.439	47.32	Pk	35.3	-29.2	53.42	-	-	74	-20.58	0-360	101	V
1	2.403	38.18	Pk	32.1	-24.1	46.18	-	-	-	-	0-360	199	H
2	9.92	36.59	Pk	37.1	-26.2	47.49	-	-	-	-	0-360	101	H
4	16.814	27.14	Pk	41.8	-21.6	47.34	-	-	-	-	0-360	199	H

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 12.4	41.34	PK-U	38.6	-24.5	55.44	-	-	74	-18.56	108	105	H
* 12.4	30.57	VA1T	38.6	-24.5	44.67	54	-9.33	-	-	108	105	H
* 4.96	55.88	PK-U	34.1	-31.9	58.08	-	-	74	-15.92	243	103	V
* 7.44	52.9	PK-U	35.3	-29.2	59	-	-	74	-15	264	101	V
* 7.44	45.11	VA1T	35.3	-29.2	51.21	54	-2.79	-	-	264	101	V
2.403	45.2	PK-U	32.1	-24.1	53.2	-	-	-	-	159	333	H
2.404	30.78	VA1T	32.1	-24.1	38.78	-	-	-	-	159	333	H
9.919	35.4	VA1T	37.1	-26.2	46.3	-	-	-	-	101	102	H
9.921	44.61	PK-U	37.1	-26.2	55.51	-	-	-	-	101	102	H
16.813	21.2	VA1T	41.8	-21.6	41.4	-	-	-	-	1	305	H
16.814	33.74	PK-U	41.8	-21.6	53.94	-	-	-	-	1	305	H

For marker 5, 4960 MHz, used the following method to do averaging:

$$DCCF = 20 * \log(100\text{ms}/T_{\text{on}})$$

$$T_{\text{on}} = 2.88\text{ms}$$

$$DCCF = 30.8$$

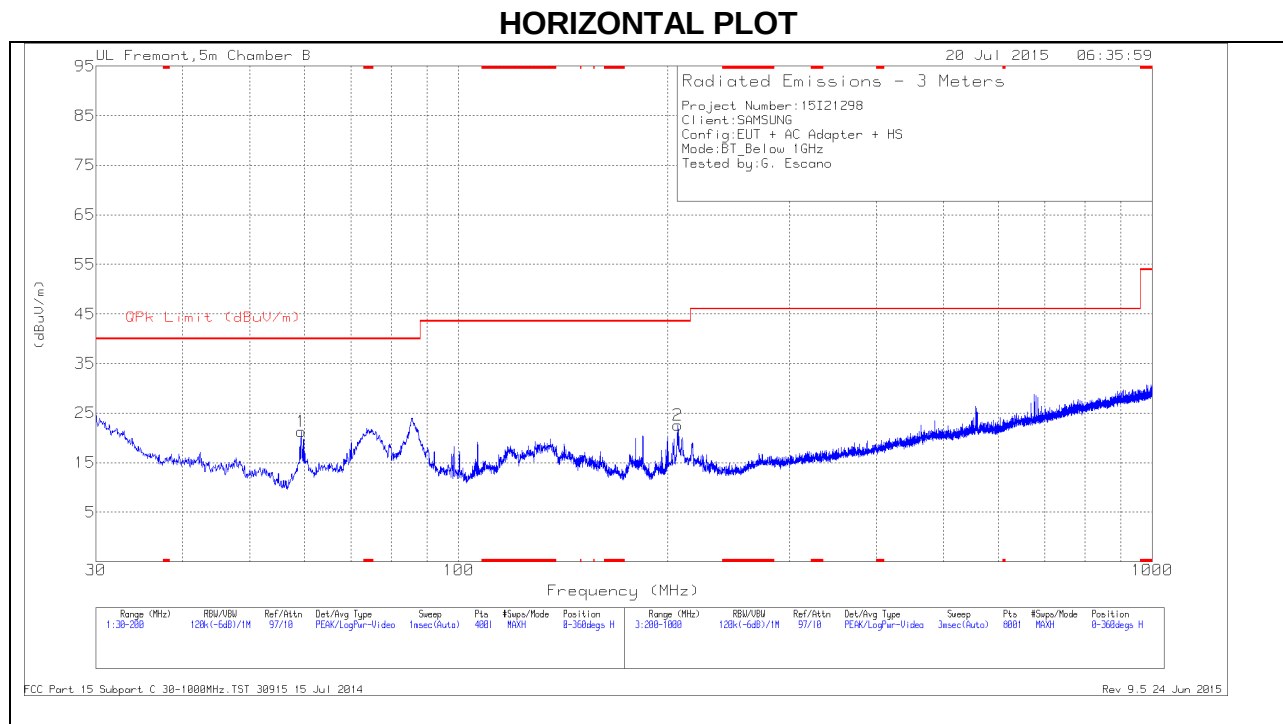
$$\text{Corrected AV reading} = \text{Peak Reading} - DCCF$$

$$= 58.08 - 30.8 = 27.28 \text{ dBuV/m}$$

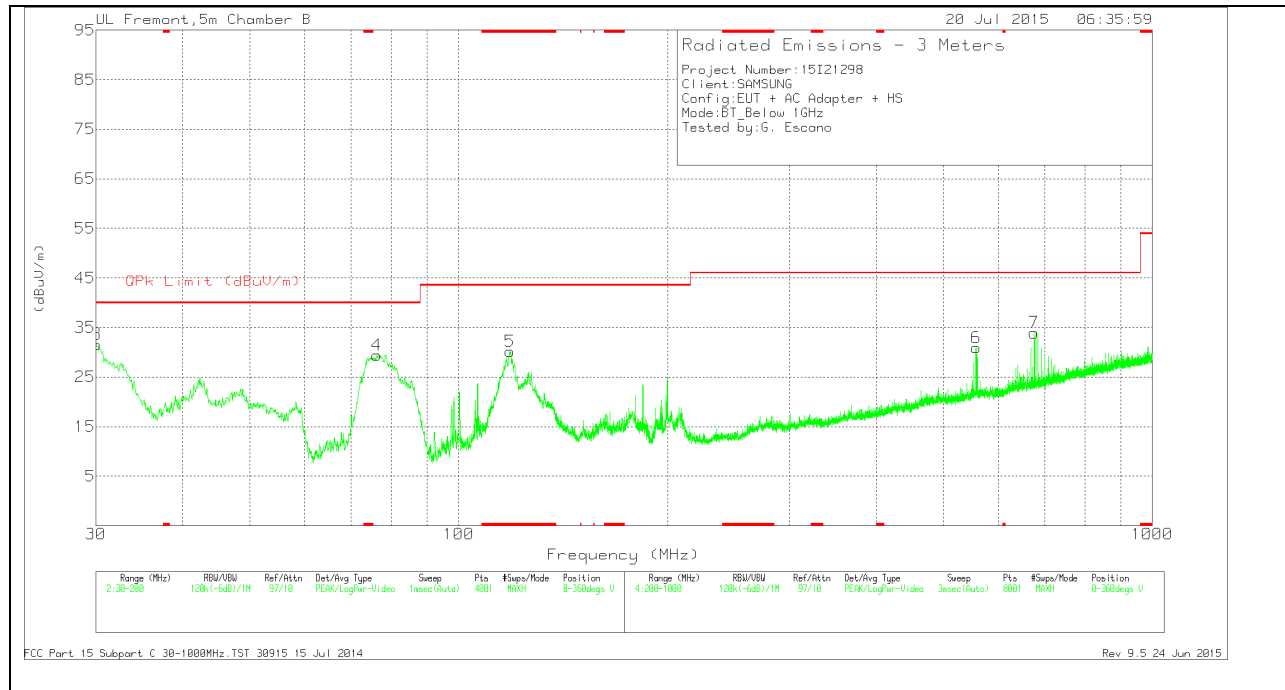
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9.3. WORST-CASE BELOW 1 GHz

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 T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 118.485	44.02	Pk	13.9	-27.8	30.12	43.52	-13.4	0-360	101	V
3	30.0425	39.73	Pk	20.7	-28.8	31.63	40	-8.37	0-360	101	V
1	59.325	42.17	Pk	7.5	-28.4	21.27	40	-18.73	0-360	399	H
4	76.1975	49.84	Pk	7.9	-28.3	29.44	40	-10.56	0-360	101	V
2	206.8	38.7	Pk	10.7	-26.8	22.6	43.52	-20.92	0-360	101	H
6	558	37.74	Pk	18.6	-25.4	30.94	46.02	-15.08	0-360	100	V
7	676	38.62	Pk	19.9	-24.6	33.92	46.02	-12.1	0-360	100	V

PK - Peak detector

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

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 C63.10.

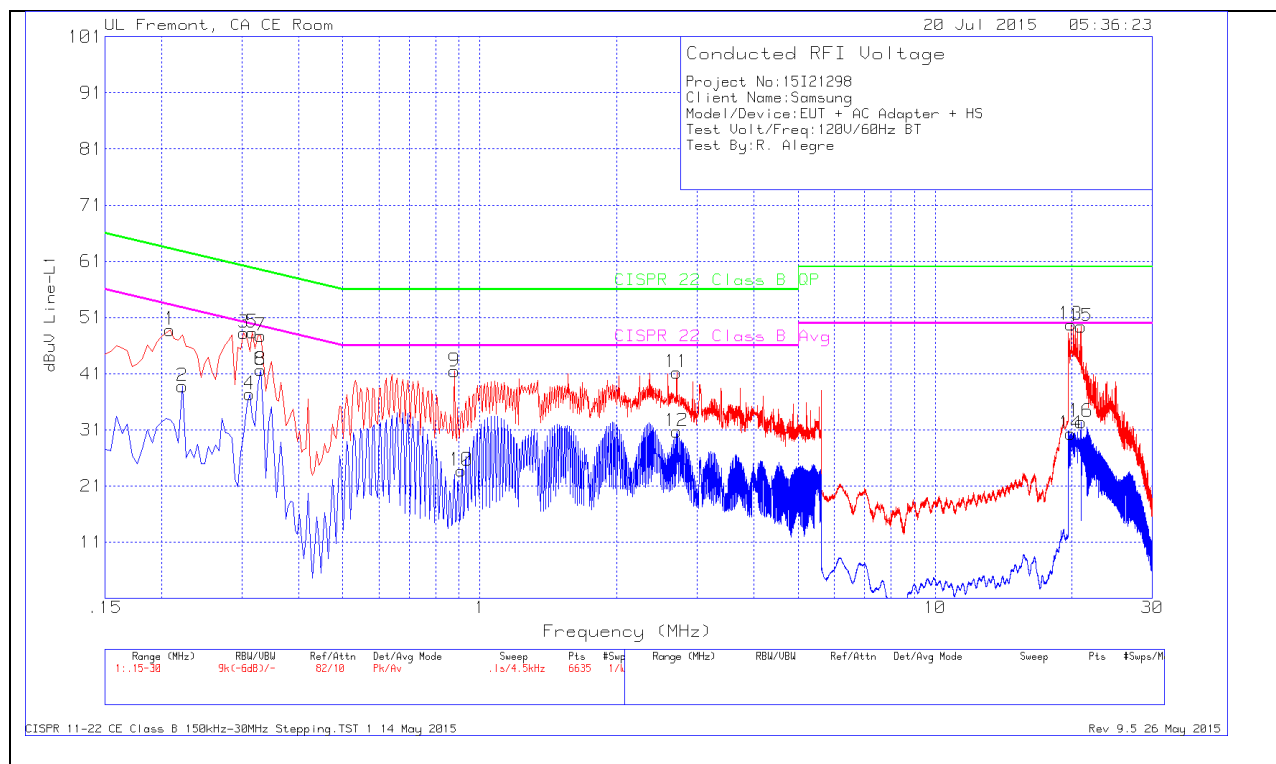
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT

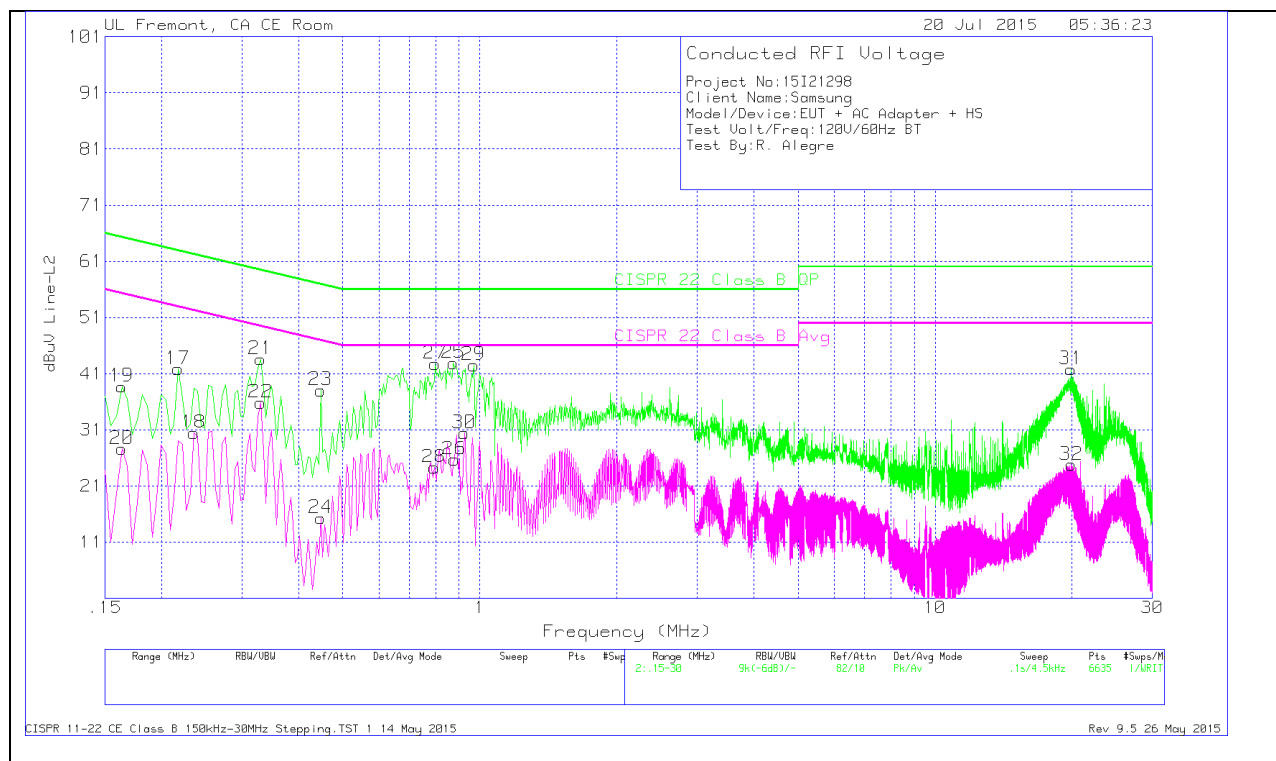


LINE 1 RESULTS

Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
1	.2085	47.92	Pk	.9	0	48.82	63.26	-14.44		
2	.222	37.99	Av	.8	0	38.79	-	-	52.74	-13.95
3	.303	47.79	Pk	.5	0	48.29	60.16	-11.87		
4	.312	36.84	Av	.5	0	37.34	-	-	49.92	-12.58
5	.3165	47.84	Pk	.5	0	48.34	59.8	-11.46		
6	.33	41.17	Av	.5	0	41.67	-	-	49.45	-7.78
7	.33	47.26	Pk	.5	0	47.76	59.45	-11.69		
8	.33	41.17	Av	.5	0	41.67	-	-	49.45	-7.78
9	.879	41.13	Pk	.3	0	41.43	56	-14.57		
10	.9105	23.44	Av	.3	0	23.74	-	-	46	-22.26
11	2.706	40.94	Pk	.2	.1	41.24	56	-14.76		
12	2.706	30.45	Av	.2	.1	30.75	-	-	46	-15.25
13	19.8735	49.24	Pk	.3	.2	49.74	60	-10.26		
14	19.86	29.81	Av	.3	.2	30.31	-	-	50	-19.69
15	20.913	48.93	Pk	.3	.2	49.43	60	-10.57		
16	20.931	31.92	Av	.3	.2	32.42	-	-	50	-17.58

LINE 2 PLOT



LINE 2 RESULTS

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
17	.2175	40.93	Pk	.9	0	41.83	62.91	-21.08		
18	.2355	29.65	Av	.8	0	30.45	-	-	52.25	-21.8
19	.1635	37.41	Pk	1.3	0	38.71	65.28	-26.57		
20	.1635	26.31	Av	1.3	0	27.61	-	-	55.28	-27.67
21	.33	43.08	Pk	.5	0	43.58	59.45	-15.87		
22	.33	35.37	Av	.5	0	35.87	-	-	49.45	-13.58
23	.447	37.66	Pk	.4	0	38.06	56.93	-18.87		
24	.447	14.89	Av	.4	0	15.29	-	-	46.93	-31.64
25	.8745	42.56	Pk	.3	0	42.86	56	-13.14		
26	.879	25.34	Av	.3	.1	25.74	-	-	46	-20.26
27	.798	42.46	Pk	.3	0	42.76	56	-13.24		
28	.7935	24	Av	.3	0	24.3	-	-	46	-21.7
29	.969	42.24	Pk	.3	0	42.54	56	-13.46		
30	.924	30.12	Av	.3	0	30.42	-	-	46	-15.58
31	19.9095	41.28	Pk	.3	.2	41.78	60	-18.22		
32	19.9275	24.28	Av	.3	.2	24.78	-	-	50	-25.22