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FCC Certification Test Report
For the
Etymotic Research
Companion Mic Product

FCC ID: RWT-ER84

WLL JOB# **13970-01 Rev 1**
May 30, 2015
Revised September 2, 2015

Prepared for:

Etymotic Research
61 Martin Lane
Elk Grove Village, IL 60007

Prepared By:

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ACLASS ACCREDITED TESTING

Testing Certificate AT-1448

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Prepared by:

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Reviewed by:

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Vice President

Abstract

This report has been prepared on behalf of Etymotic Research to support the attached Application for Equipment Authorization. The test report and application are submitted for a Digital Transmission System (DTS) Transmitter under Part 15.247 (10/2013) of the FCC Rules. This Certification Test Report documents the test configuration and test results for the Etymotic Research Companion Mic Product.

Testing was performed on an Open Area Test Site (OATS) of Washington Laboratories, Ltd, 7560 Lindbergh Drive, Gaithersburg, MD 20879. Site description and site attenuation data have been placed on file with the FCC's Sampling and Measurements Branch at the FCC laboratory in Columbia, MD. The Industry OATS numbers are 3035A-1 and 3035A-2 for Washington Laboratories, Ltd. Site 1 and Site 2, respectively. Washington Laboratories, Ltd. has been accepted by the FCC and approved by ACLASS under Certificate AT-1448 as an independent FCC test laboratory.

The Etymotic Research Companion Mic Product complies with the limits for a Digital Transmission System (DTS) Transmitter device under FCC Part 15.247.

Revision History	Description of Change	Date
Rev 0	Initial Release	May 30, 2015
Rev 1	Corrected power levels in Table 8	September 2, 2015

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1 Introduction

1.1 Compliance Statement

The Etymotic Research Companion Mic Product complies with the limits for a Digital Transmission System (DTS) Transmitter device under FCC Part 15.247 (10/2013). Even though this unit has hopping capabilities to avoid interference FCC rules allow this digitally modulated unit to be tested exclusively as a Digital Transmission System.

1.2 Test Scope

Tests for radiated and conducted (at antenna terminal) emissions were performed. All measurements were performed in accordance with "558074 D01 DTS Meas Guidance v03r02" June 5 2014 and ANSI C63.10-2009 "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices".

1.3 Contract Information

Customer:	TEM Consulting LP 140 River Road Georgetown, TX 78628
On Behalf of:	Etymotic Research 61 Martin Lane Elk Grove Village, IL 60007
Purchase Order Number:	Visa
Quotation Number:	68711

1.4 Test Dates

Testing was performed on the following date(s): 5/14/2015- 5/21/2015

1.5 Test and Support Personnel

Washington Laboratories, LTD	James Ritter
Client Representative	Stephen Berger

1.6 Abbreviations

A	**A**mpere
ac	**a**lternating **c**urrent
AM	Amplitude Modulation
Amps	**Amp**ere**s**
b/s	**b**its per **s**econd
BW	**B**and**W**idth
CE	**C**onducted **E**mission
cm	**c**enti**m**eter
CW	**C**ontinuous **W**ave
dB	**d**eci**B**el
dc	**d**irect **c**urrent
EMI	**E**lectro**m**agnetic **I**nterference
EUT	**E**quipment **U**nder **T**est
FM	**F**requency **M**odulation
G	**g**iga – prefix for 10^9 multiplier
Hz	**H**ertz
IF	**I**ntermediate **F**requency
k	**k**ilo – prefix for 10^3 multiplier
LISN	**L**ine **I**mpedance **S**tabilization **N**etwork
M	**M**ega – prefix for 10^6 multiplier
m	**m**eter
µ	**m**icro – prefix for 10^{-6} multiplier
NB	**N**arrow**b**and
QP	**Q**uasi-**P**eak
RE	**R**adiated **E**missions
RF	**R**adio **F**requency
rms	**r**oot-**m**ean-**s**quare
SN	**S**erial **N**umber
S/A	**S**pectrum **A**nalyzer
V	**V**olt

2 Equipment Under Test

2.1 EUT Identification & Description

The Etymotic Research Companion Mic Product implements a low power RF transmitter to combine audio input from up to 4 devices to provide a composite audio to the user. The RF transmitter uses a digital modulation.

Table 1: Device Summary

ITEM	DESCRIPTION
Manufacturer:	Etymotic Research
FCC ID:	RWT-ER84
Model:	CM4
EUT Name:	Companion Mic
FCC Rule Parts:	§15.247
Frequency Range:	2404-2480MHz
Maximum Output Power:	2.04mW (3.1dBm)
Modulation:	Digital modulation
Occupied Bandwidth:	876.4kHz
Keying:	Automatic, Manual
Type of Information:	audio
Number of Channels:	39
Power Output Level	Fixed
Antenna Connector	NA
Antenna Type	Internal Chip Antenna (0dBi)
Interface Cables:	Charging/Microphone
Power Source & Voltage:	3.7VDC Internal Battery

2.2 Test Configuration

The Etymotic Research's Companion Mic Product was operated with the 3.7VDC shipped with the unit. A temporary antenna connector was used for conducted test at the output of the transmitter.

2.3 Testing Algorithm

Etymotic Research's Companion Mic Product was programmed for DTS operation in a test mode using the volume up down buttons to set the appropriate channel.

Worst case emission levels are provided in the test results data.

2.4 Test Location

All measurements herein were performed at Washington Laboratories, Ltd. test center in Gaithersburg, MD. Site description and site attenuation data have been placed on file with the FCC's Sampling and Measurements Branch at the FCC laboratory in Columbia, MD. The Industry Canada OATS numbers are 3035A-1 and 3035A-2 for Washington Laboratories, Ltd. Site 1 and Site 2, respectively. Washington Laboratories, Ltd. has been accepted by the FCC and approved by ACLASS under Certificate AT-1448 as an independent FCC test laboratory.

2.5 Measurements

2.5.1 References

D01 DTS Meas Guidance v03r02" June 5 2014 Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247.

ANSI C63.4-2009 Methods of Measurement of Radio Noise from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

ANSI C63.10-2009 "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices"

2.6 Measurement Uncertainty

All results reported herein relate only to the equipment tested. The basis for uncertainty calculation uses ANSI/NCSL Z540-2-1997 with a type B evaluation of the standard uncertainty. Elements contributing to the standard uncertainty are combined using the method described in Equation 1 to arrive at the total standard uncertainty. The standard uncertainty is multiplied by the coverage factor to determine the expanded uncertainty which is generally accepted for use in commercial, industrial, and regulatory applications and when health and safety are concerned (see

Equation 2). A coverage factor was selected to yield a 95% confidence in the uncertainty estimation.

Equation 1: Standard Uncertainty

$$u_c = \pm\sqrt{\frac{a^2}{div_a{}^2} + \frac{b^2}{div_b{}^2} + \frac{c^2}{div_c{}^2} + ...}$$

Where u_c = standard uncertainty

a, b, c,.. = individual uncertainty elements

$Div_{a, b, c}$ = the individual uncertainty element divisor based on the probability distribution

Divisor = 1.732 for rectangular distribution

Divisor = 2 for normal distribution

Divisor = 1.414 for trapezoid distribution

Equation 2: Expanded Uncertainty

$$U = ku_c$$

Where U = expanded uncertainty

k = coverage factor

k ≤ 2 for 95% coverage (ANSI/NCSL Z540-2 Annex G)

u_c = standard uncertainty

The measurement uncertainty complies with the maximum allowed uncertainty from CISPR 16-4-2. Measurement uncertainty is not used to adjust the measurements to determine compliance. The expanded uncertainty values for the various scopes in the WLL accreditation are provided in Table 2 below.

Table 2: Expanded Uncertainty List

Scope	Standard(s)	Expanded Uncertainty
Conducted Emissions	CISPR11, CISPR22, CISPR14, FCC Part 15	2.63 dB
Radiated Emissions	CISPR11, CISPR22, CISPR14, FCC Part 15	4.55 dB

3 Test Equipment

Table 3 shows a list of the test equipment used for measurements along with the calibration information.

Table 3: Test Equipment

Test Name: **Bench Conducted RF Tests**		Test Date: : **5/15/2015**	
Asset #	**Manufacturer/Model**	**Description**	**Cal. Due**
823	AGILENT - N9010A	EXA SPECTRUM ANALYZER	6/6/2015

Test Name: **Radiated Emissions**		Test Date: **05/21/2015**	
Asset #	**Manufacturer/Model**	**Description**	**Cal. Due**
823	AGILENT - N9010A	EXA SPECTRUM ANALYZER	6/6/2015
644	SUNOL SCIENCES CORPORATION - JB1 925-833-9936	BICONALOG ANTENNA	1/17/2016
559	HP - 8447D	AMPLIFIER	2/20/2016
823	AGILENT - N9010A	EXA SPECTRUM ANALYZER	6/6/2015
66	B&Z - BZ-01002650-401545-282525	PRE-AMPLIFIER RF. 1-26.5GHZ	10/23/2015
281	ITC - 21A-3A1	WAVEGUIDE 4.51-10.0GHZ	8/1/2016
282	ITC - 21X-3A1	WAVEGUIDE 6.8-15GHZ	10/22/2016
283	ITC - 21KU-3A1	WAVEGUIDE 9.8-20.5GHZ	8/1/2016

4 Test Summary

The Table Below shows the results of testing for compliance with a Digital Transmission System in accordance with FCC Part 15.247 10/2013. Full results are shown in section 5.

Table 4: Test Summary Table

TX Test Summary (Digital Transmission System (DTS))		
FCC Rule Part	**Description**	**Result**
15.247 (2)	6dB Bandwidth	Pass
15.247 (2)(b)(3)	Transmit Output Power	Pass
15.247 (e)	Power Spectral Density	Pass
15.247 (d)	Occupied BW / Out-of-Band Emissions (Band Edge @ 20dB below)	Pass
15.205 15.209	General Field Strength Limits (Restricted Bands & RE Limits)	Pass
15.207	AC Conducted Emissions	NA (unit does not transmit when charging)

5 Test Results

5.1 Occupied Bandwidth:

Occupied bandwidth was performed by coupling the output of the EUT to the input of a spectrum analyzer.

For Direct Sequence Spread Spectrum Systems, FCC Part 15.247 requires the minimum 6 dB bandwidth be at least 500 kHz.

D01 DTS Meas Guidance v03r02 DTS Bandwidth 8.1 Option 1 was used for the test method.

Table 5: Occupied Bandwidth Spectrum Analyzer Settings

Resolution Bandwidth	Video Bandwidth
100kHz	300kHz

At full modulation, the occupied bandwidth was measured as shown:

Table 6 provides a summary of the Occupied Bandwidth Results.

Table 6: Occupied Bandwidth Results

Frequency	Bandwidth	Limit	Pass/Fail
Low Channel: 2404MHz	876.4kHz	>500kHz	Pass
Mid Channel: 2440MHz	861.4kHz	>500kHz	Pass
High Channel: 2480MHz	843.4kHz	>500kHz	Pass

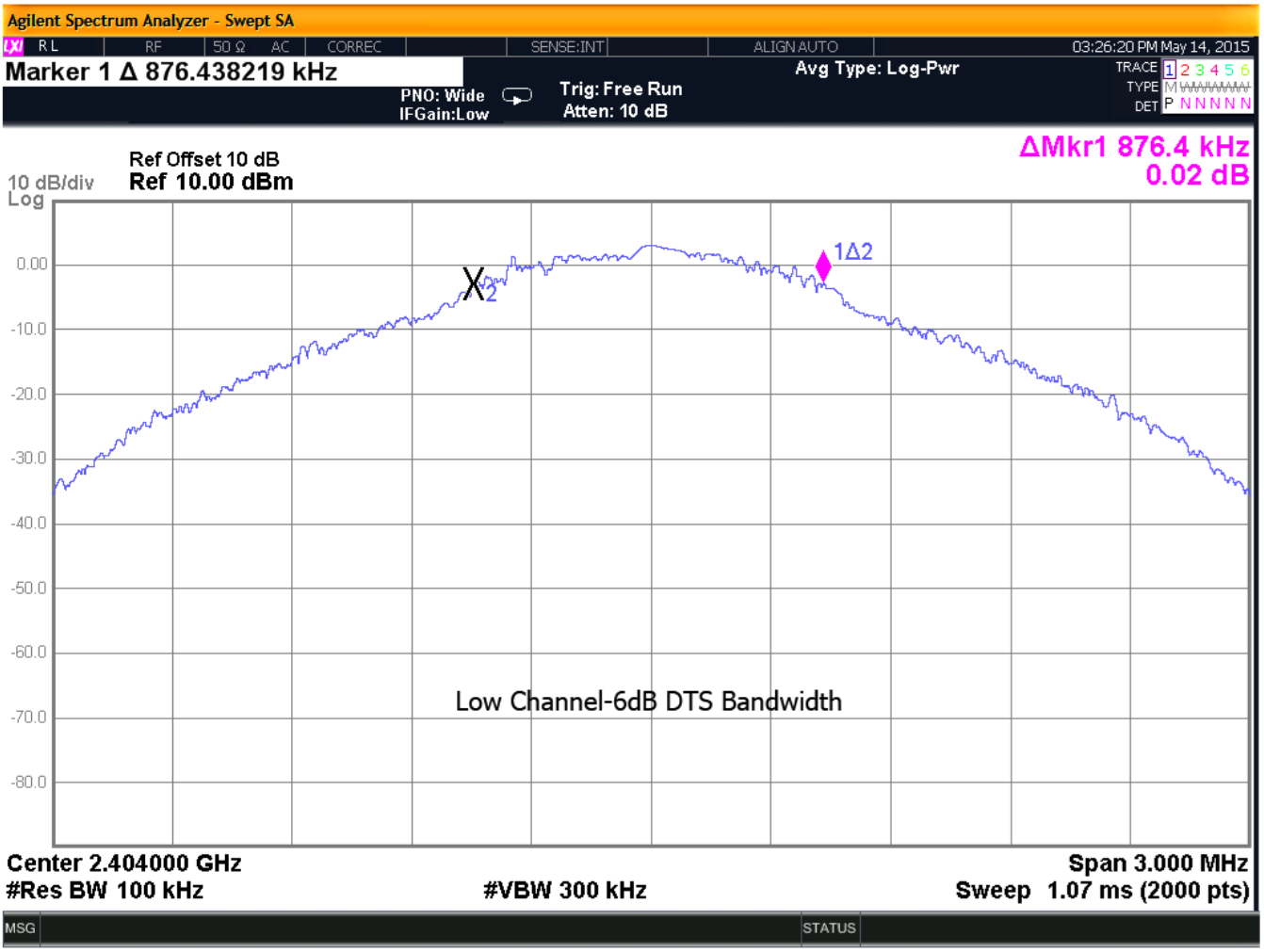

Figure 1: Occupied Bandwidth, Low Channel

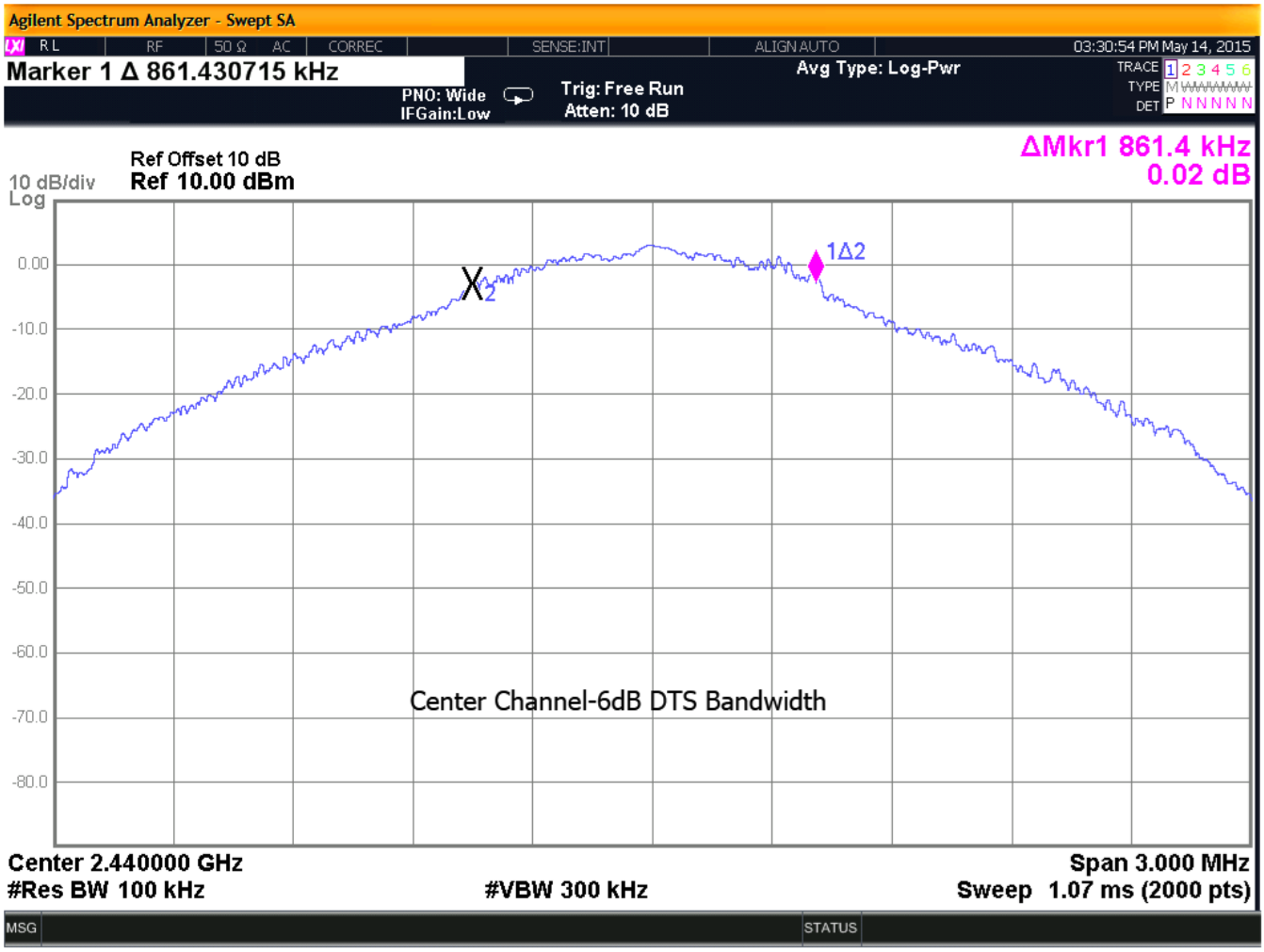

Figure 2: Occupied Bandwidth, Mid Channel

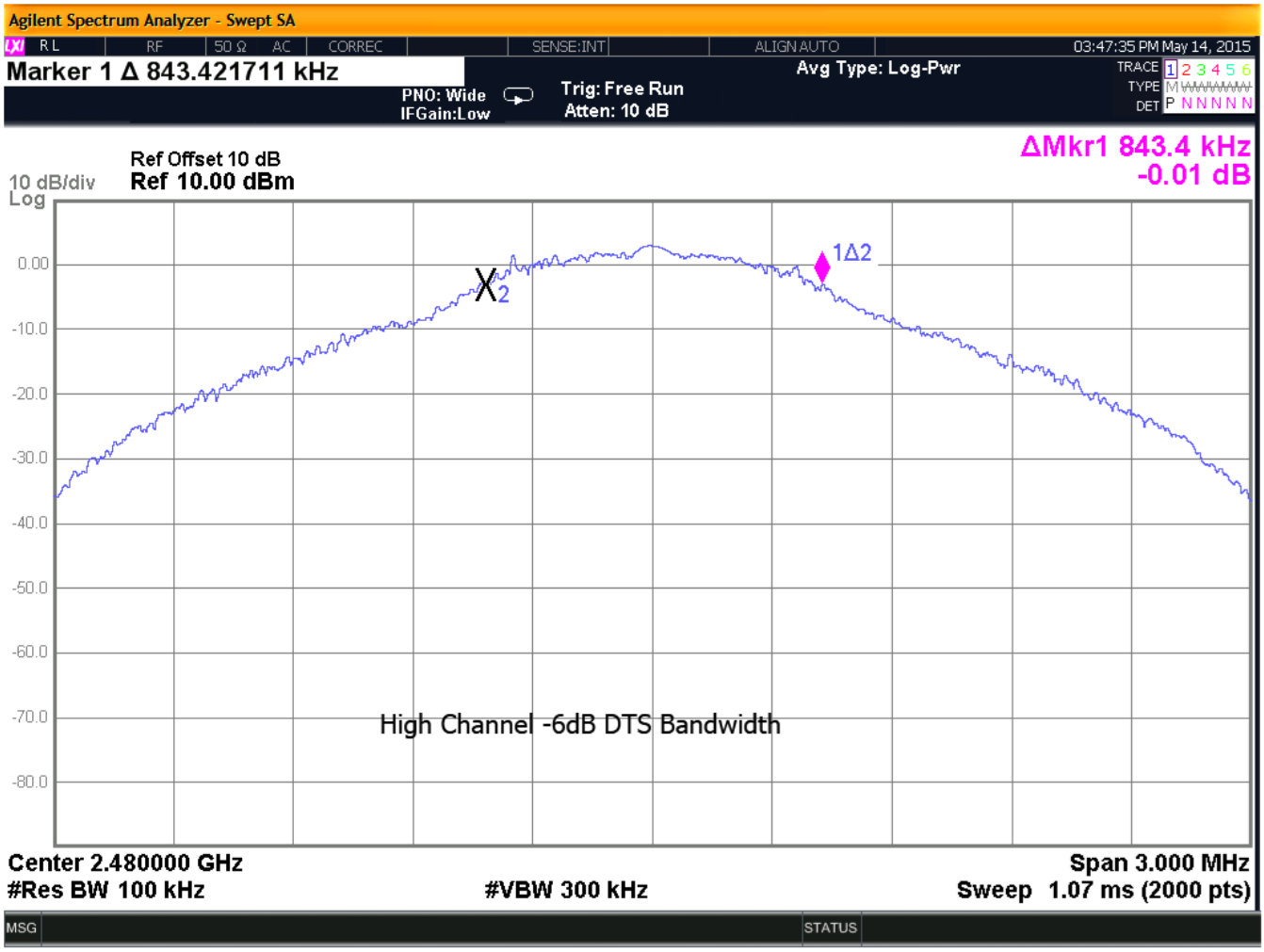

Figure 3: Occupied Bandwidth, High Channel

5.2 RF Power Output:

To measure the output power the frequency dwelled on a low, high and middle channel. The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum Analyzer. The analyzer offset was adjusted to compensate for the attenuator and other losses in the system.

D01 DTS Meas Guidance v03r02 Fundamental emission output power 9.1.1 RBW ≥ DTS bandwidth was used for the test method.

Table 7: Spectrum Analyzer Settings

Resolution Bandwidth	Video Bandwidth
2MHz	8MHz

Table 8: RF Power Output

Frequency	Level	Limit	Pass/Fail
Low Channel: 2404MHz	3.10 dBm	30 dBm	Pass
Mid Channel: 2440MHz	3.07 dBm	30 dBm	Pass
High Channel: 2480MHz	2.92 dBm	30 dBm	Pass

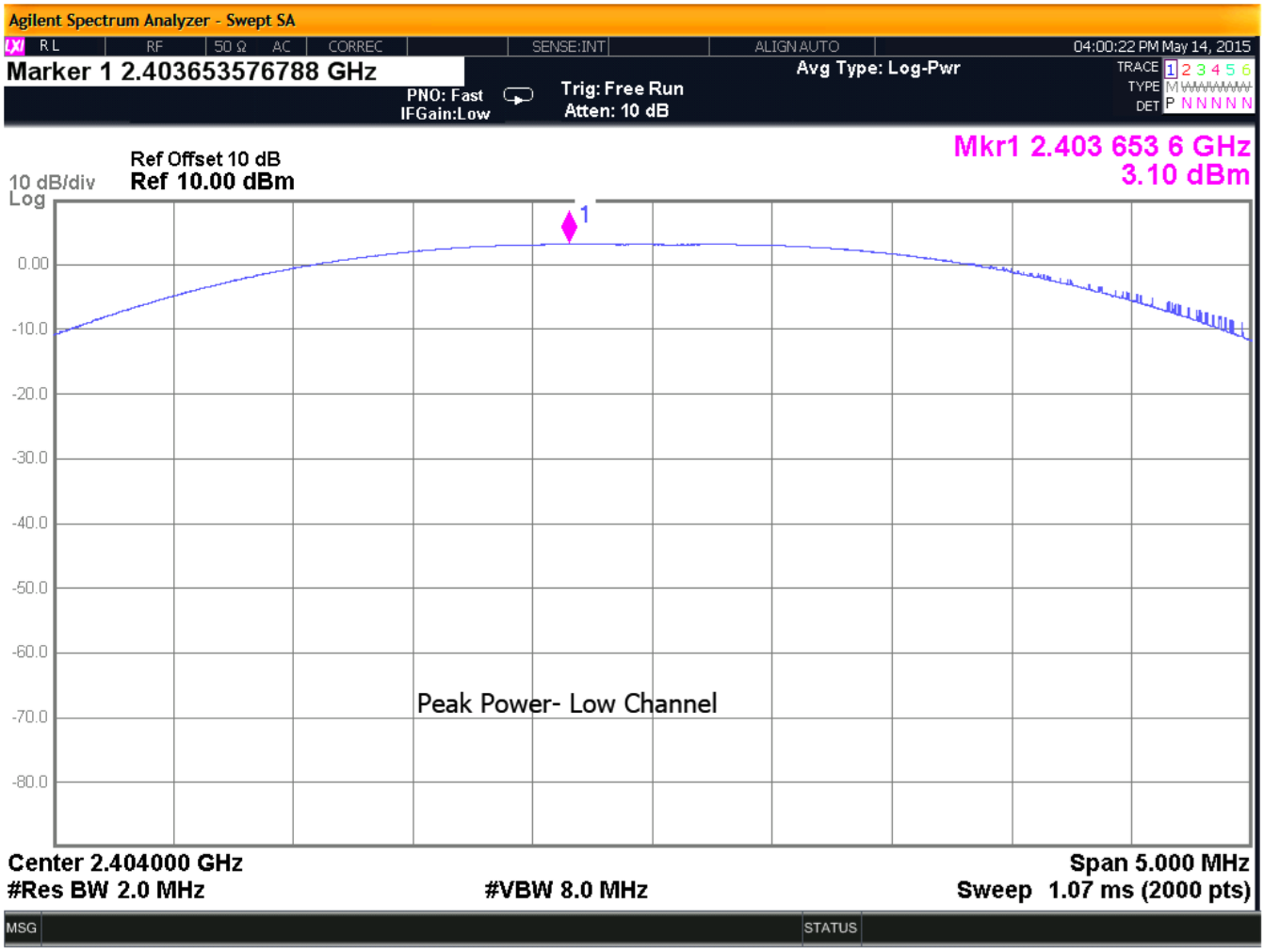

Figure 4: RF Peak Power, Low Channel

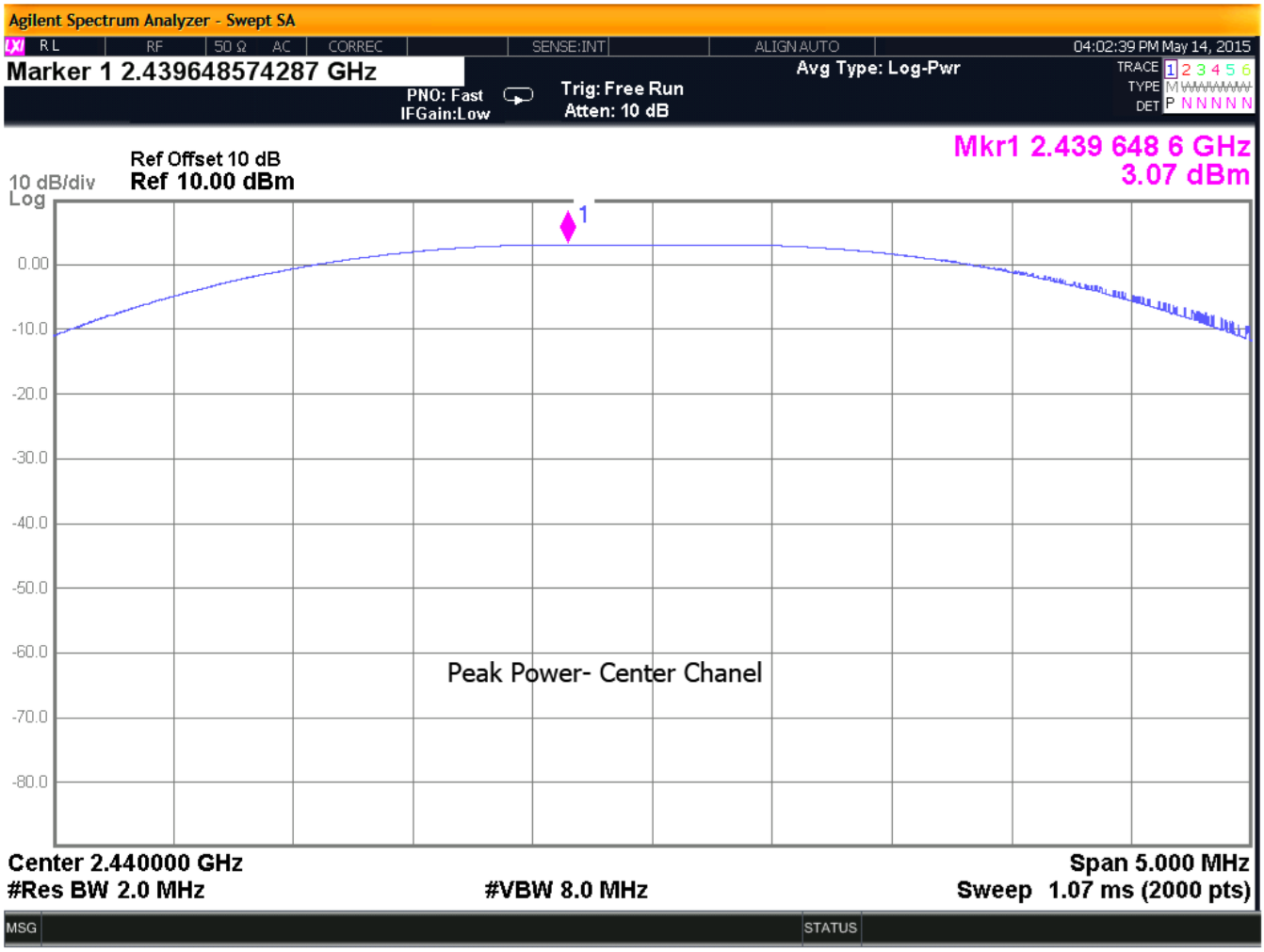

Figure 5: RF Peak Power, Mid Channel

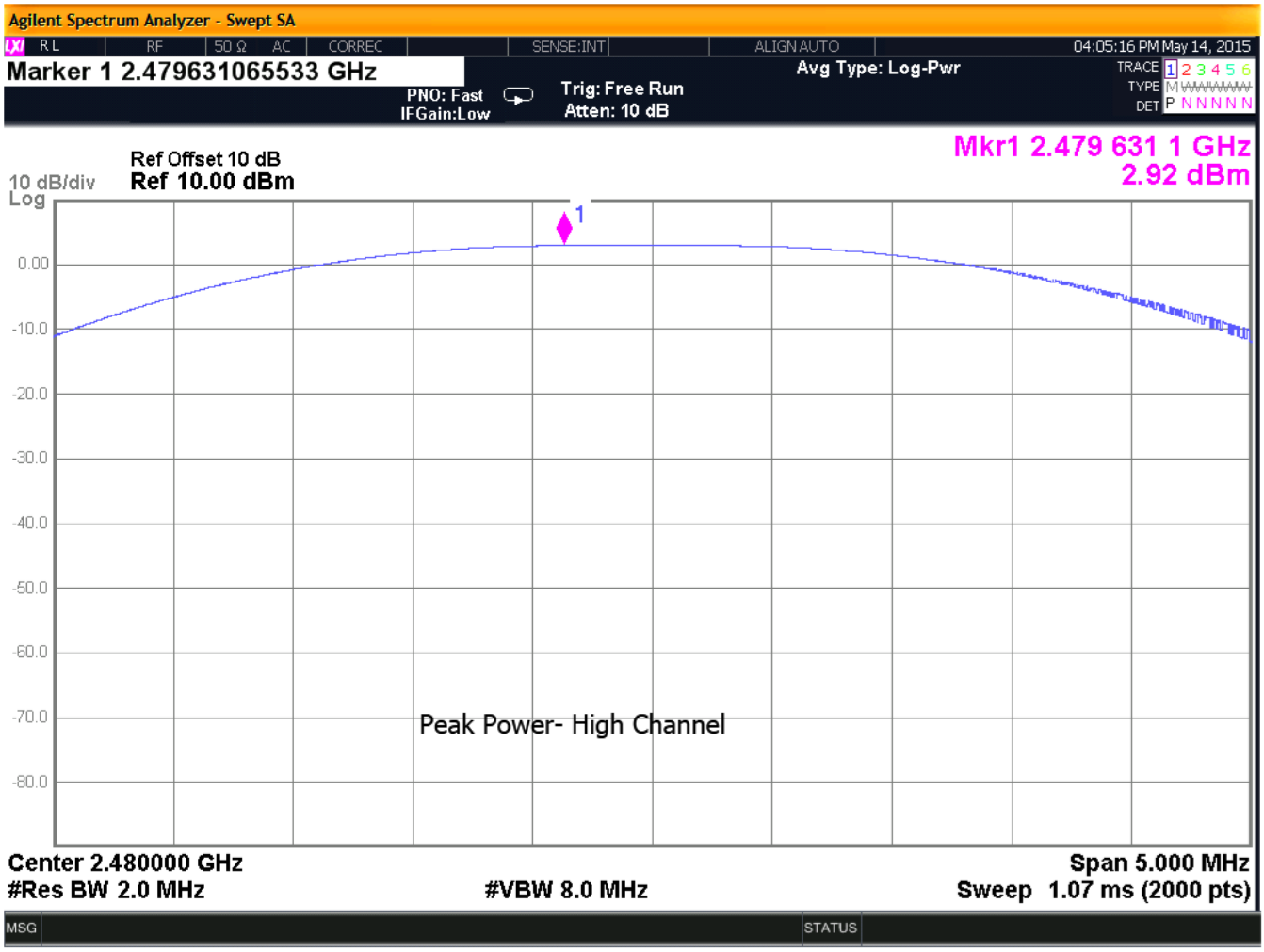

Figure 6: RF Peak Power, High Channel

5.3 Power Spectral Density

The spectrum analyzer was set to peak detect mode with a RBW of 100kHz ,VBW of 300kHz across a 1.32MHz span using an auto sweeptime. The frequency dwelled on a low, high and middle channel. The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum Analyzer. The analyzer offset was adjusted to compensate for the attenuator and other losses in the system. The highest level detected was then recorded and compared to the limit of 8dBm. The following table and plots give the results for power spectral density testing.

The measurements were performed using D01 DTS Meas Guidance v03r02 Option 10.2 Method PKPSD (peak PSD).

Table 9: Spectrum Analyzer Settings

Resolution Bandwidth	Video Bandwidth
100kHz	300kHz

Table 10: Power Spectral Density

Frequency	Peak Level	Limit	Pass/Fail
Low Channel: 2404MHz	2.86dBm	8 dBm	Pass
Mid Channel: 2440MHz	2.91dBm	8 dBm	Pass
High Channel: 2480MHz	2.75dBm	8 dBm	Pass

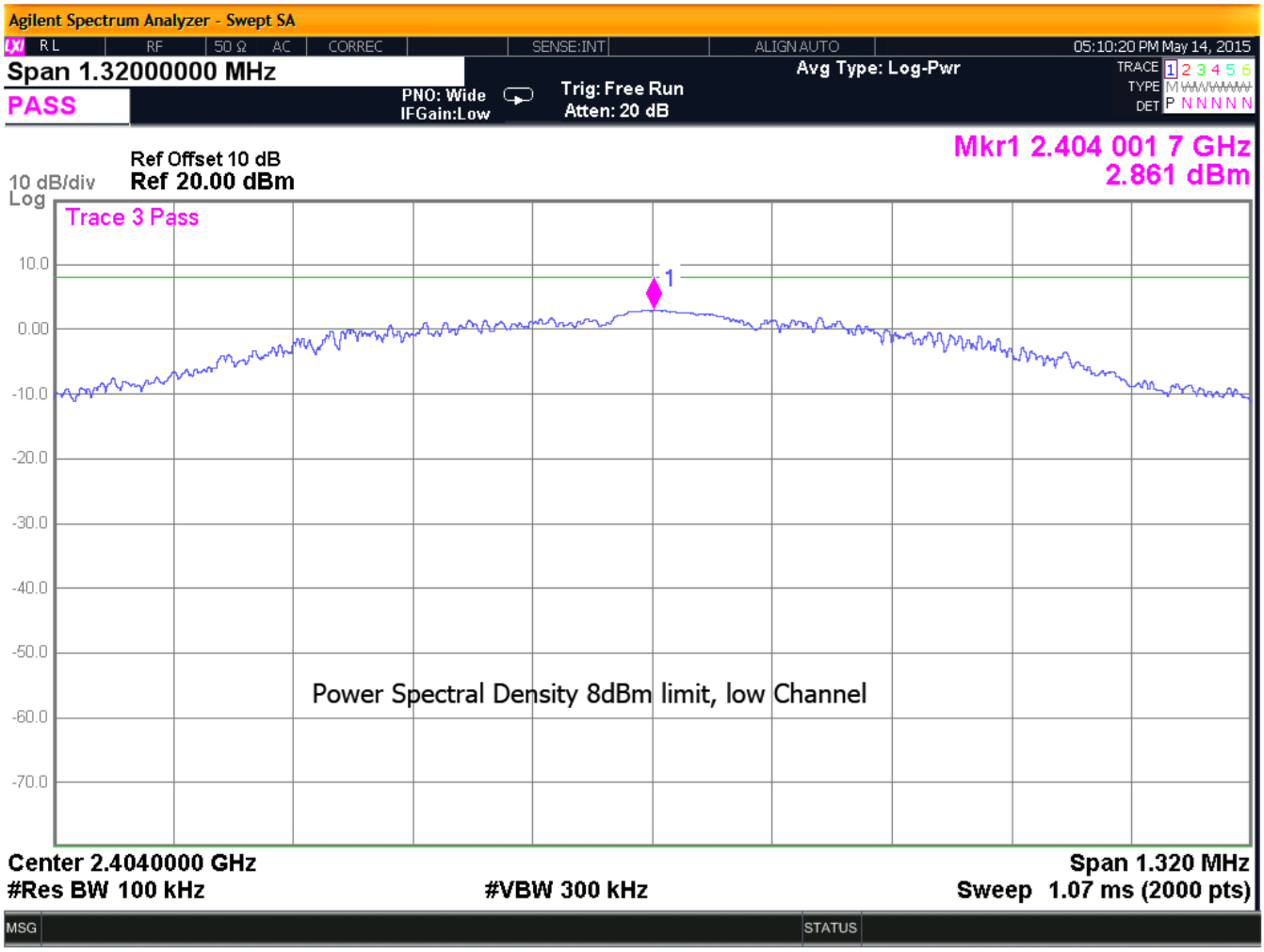

Figure 7: Power Spectral Density, Low Channel

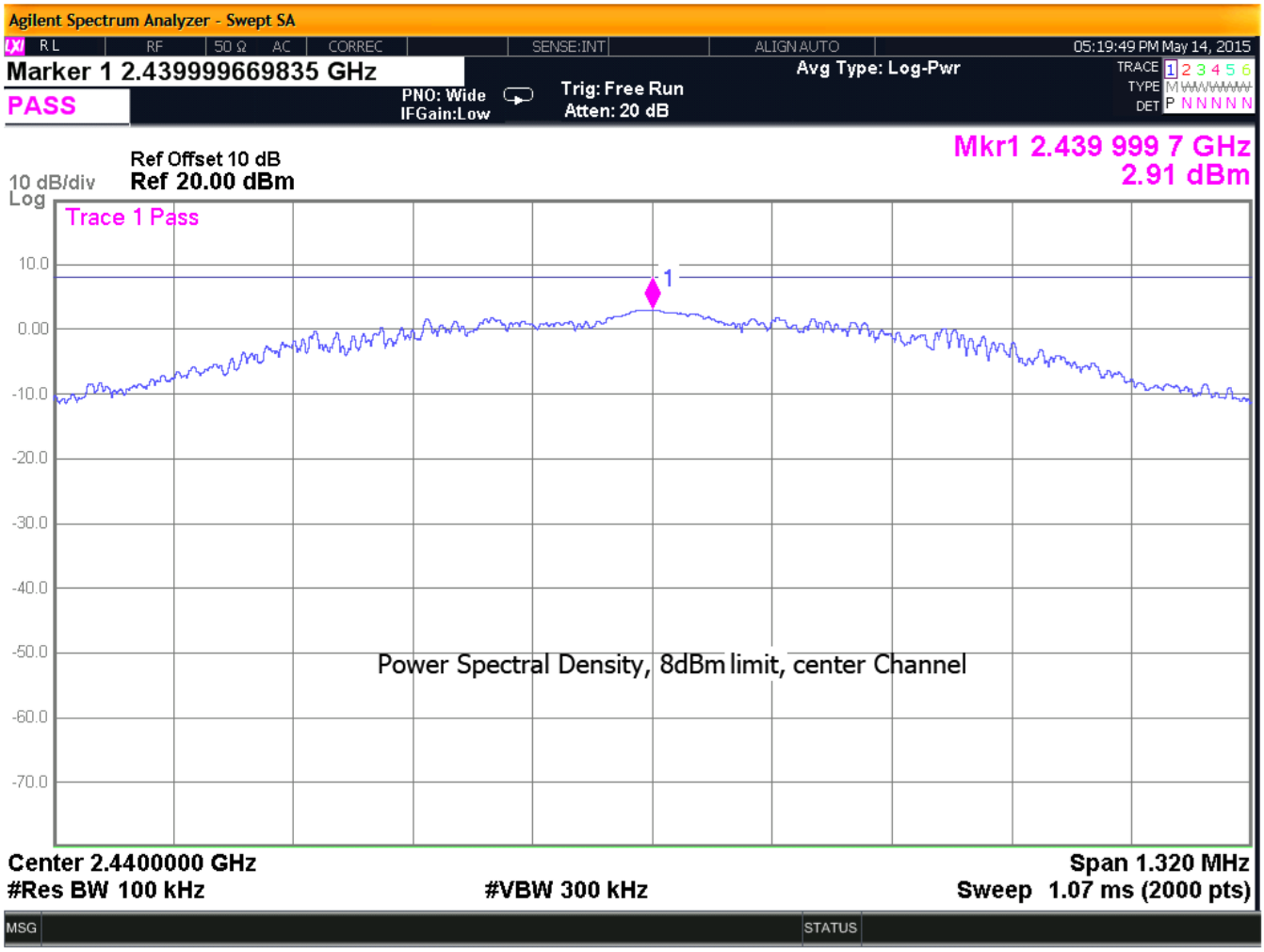

Figure 8: Power Spectral Density, Center Channel

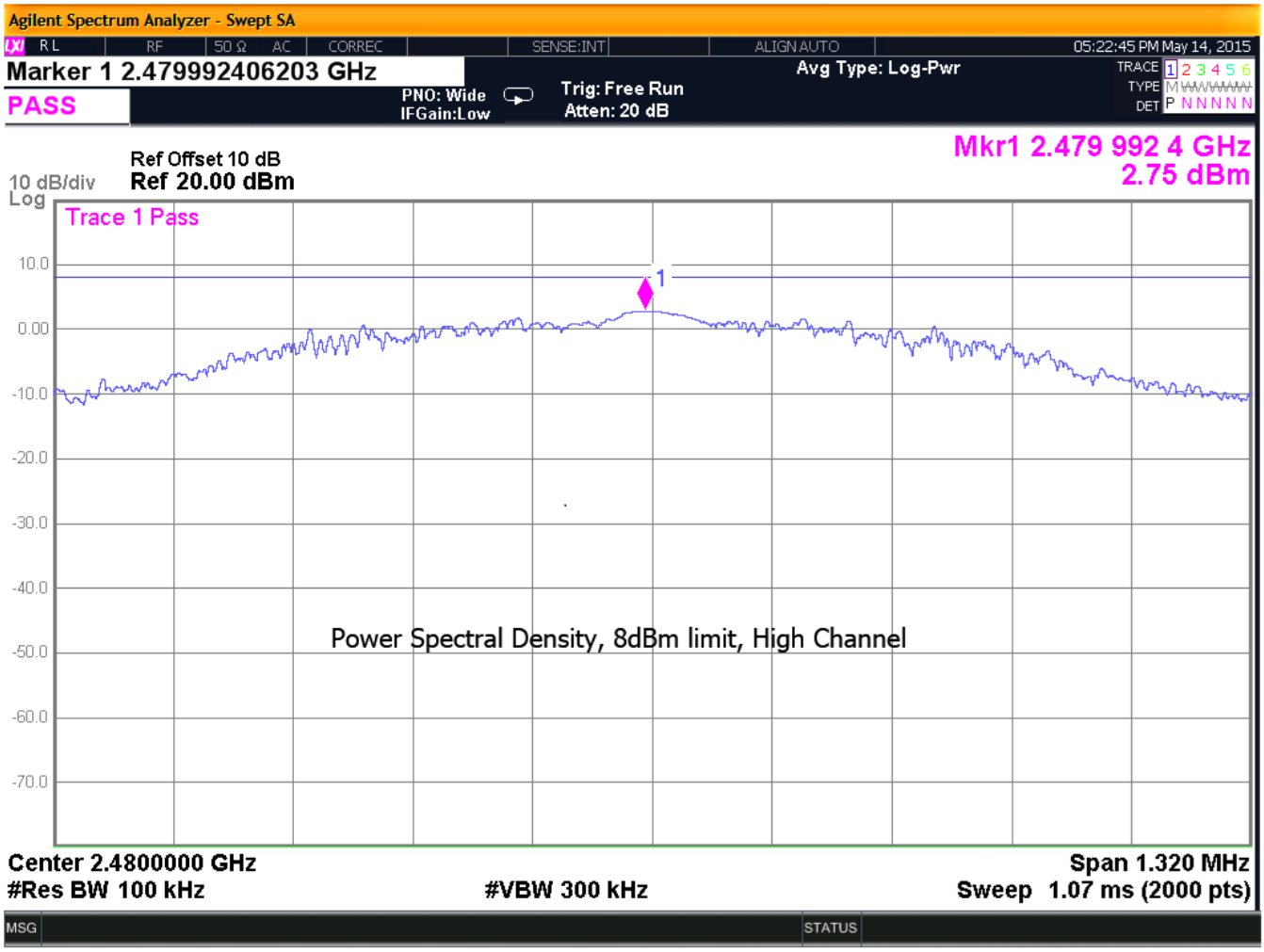

Figure 9: Power Spectral Density, High Channel

5.4 Conducted Spurious Emissions at Antenna Terminals

The EUT must comply with requirements for spurious emissions at antenna terminals. Per §15.247(d) all spurious emissions in any 100 kHz bandwidth outside the frequency band in which the spread spectrum device is operating shall be attenuated 20 dB below the highest power level in a 100 kHz bandwidth within the band containing the highest level of the desired power.

The EUT antenna was removed and the cable was connected directly into a spectrum analyzer through a 10 dB attenuator. An offset was programmed into the spectrum analyzer to compensate for the loss of the external attenuator. The spectrum analyzer resolution bandwidth was set to 100 kHz and the video bandwidth was set to 100 kHz. The amplitude of the EUT carrier frequency was measured to determine the emissions limit (20 dB below the carrier frequency amplitude). The emissions outside of the allocated frequency band were then scanned from 30 MHz up to the tenth harmonic of the carrier.

The measurements were performed using D01 DTS Meas Guidance v03r02 section 11.0 Emissions in non-restricted frequency bands.

The following are plots of the conducted spurious emissions data.

Table 11: Conducted Spurious Spectrum Analyzer Settings

Resolution Bandwidth	Video Bandwidth
100kHz	300kHz

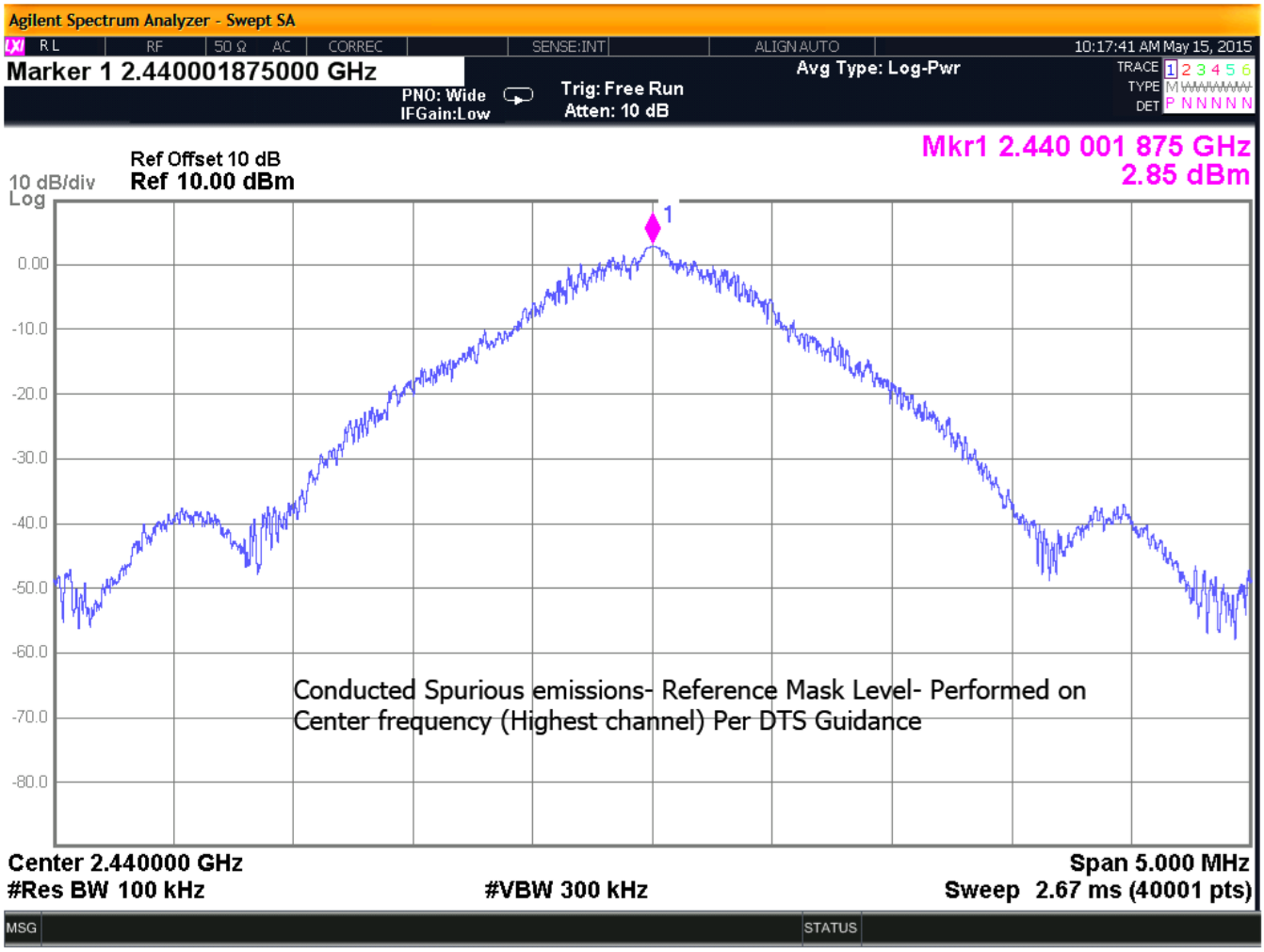

Figure 10: Reference level of Channel with Highest PSD for Mask

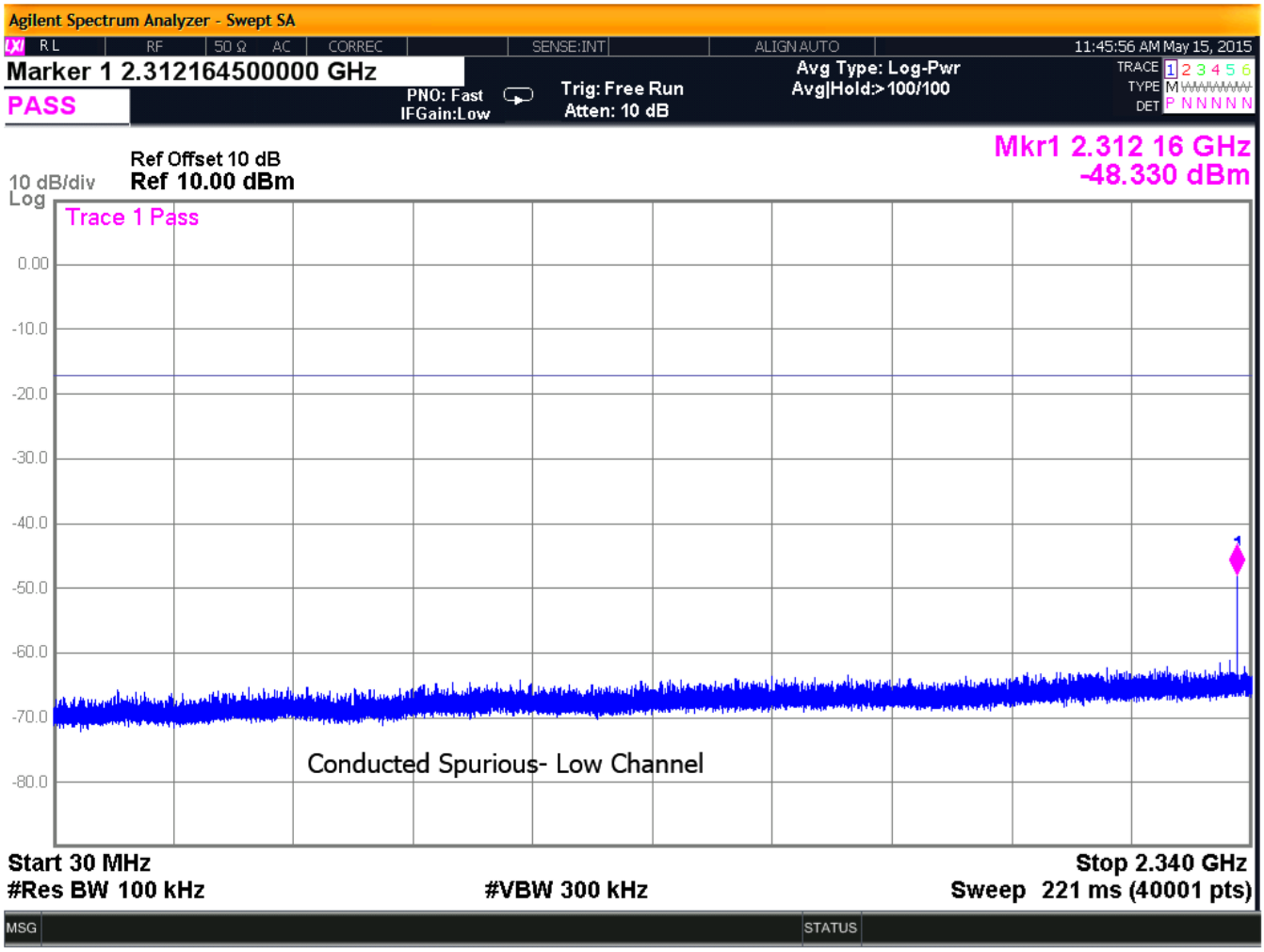

Figure 11: Conducted Spurious Emissions, Low Channel 30 - 2340MHz

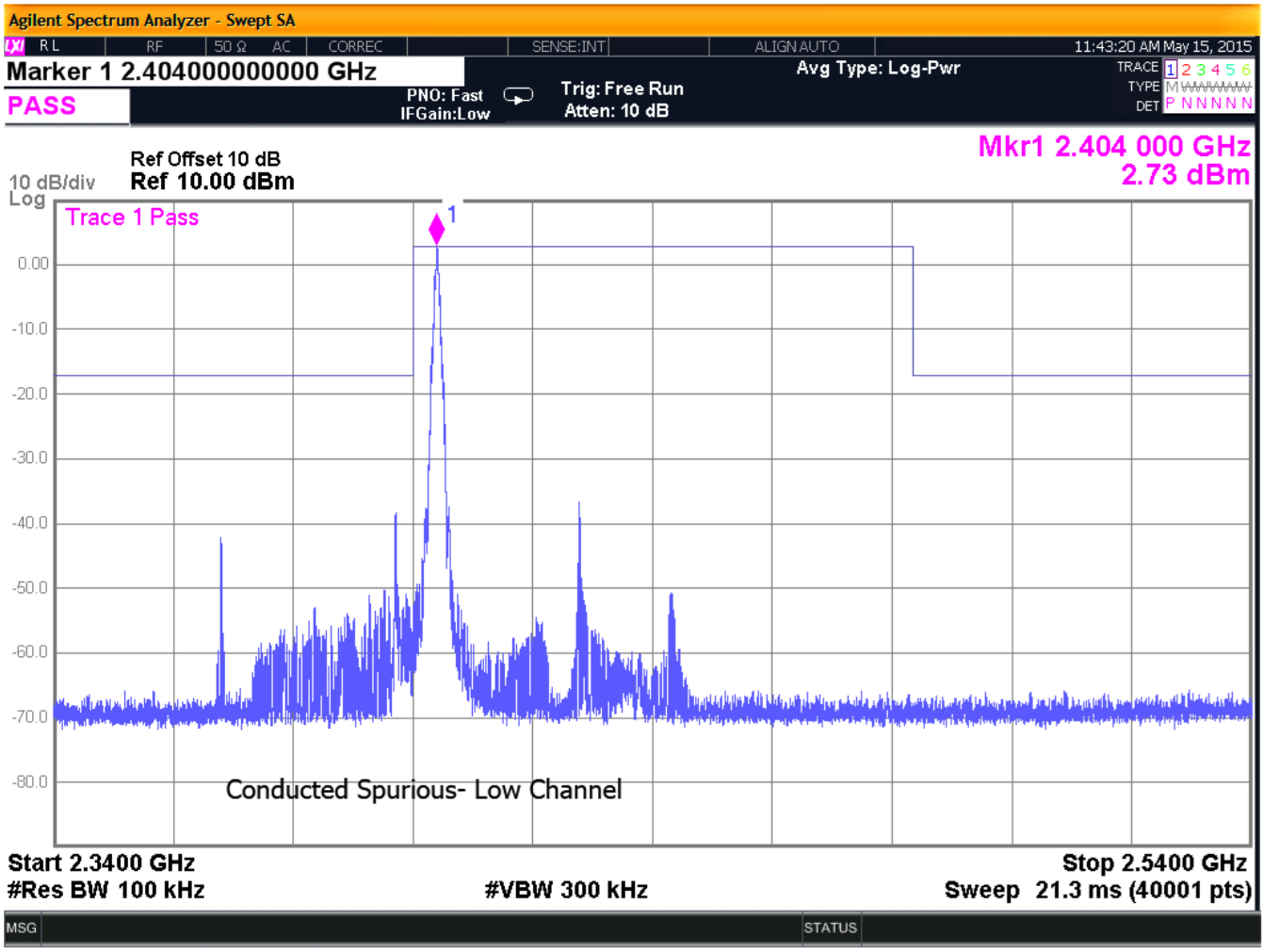

Figure 12: Conducted Spurious Emissions, Low Channel 2.54 – 2.54GHz

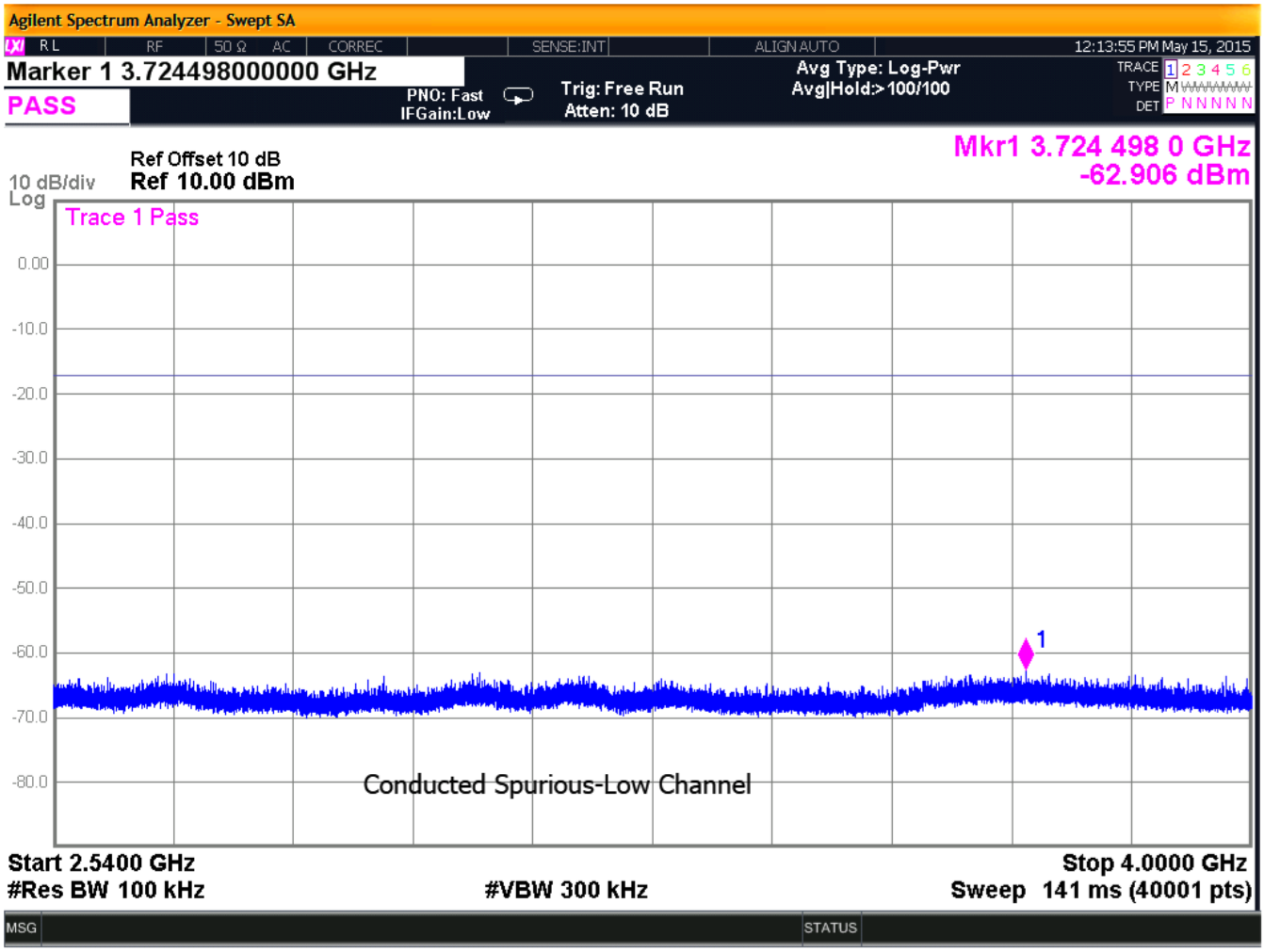

Figure 13: Conducted Spurious Emissions, Low Channel 2.54 – 4GHz

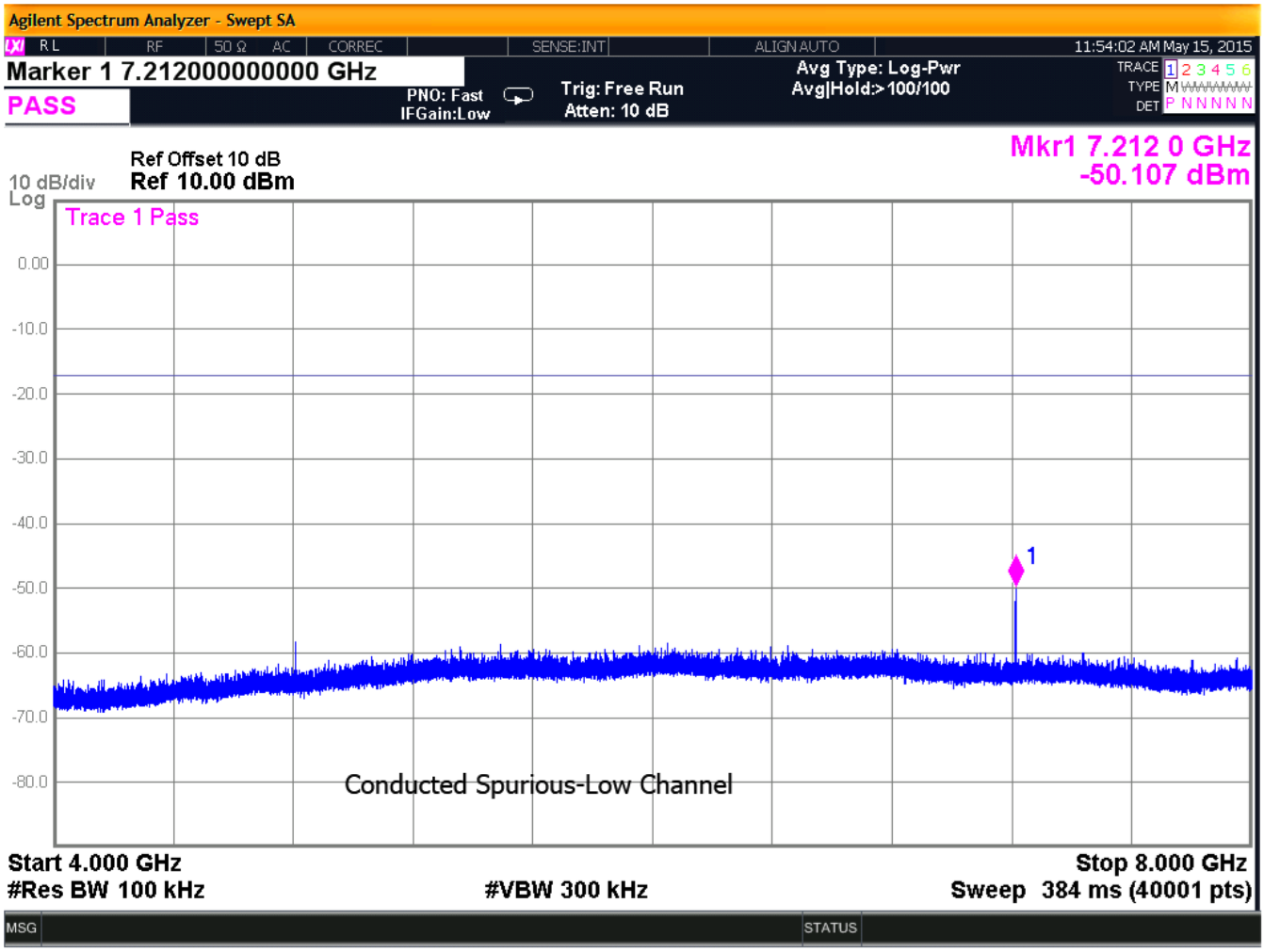

Figure 14: Conducted Spurious Emissions, Low Channel 4 - 8GHz

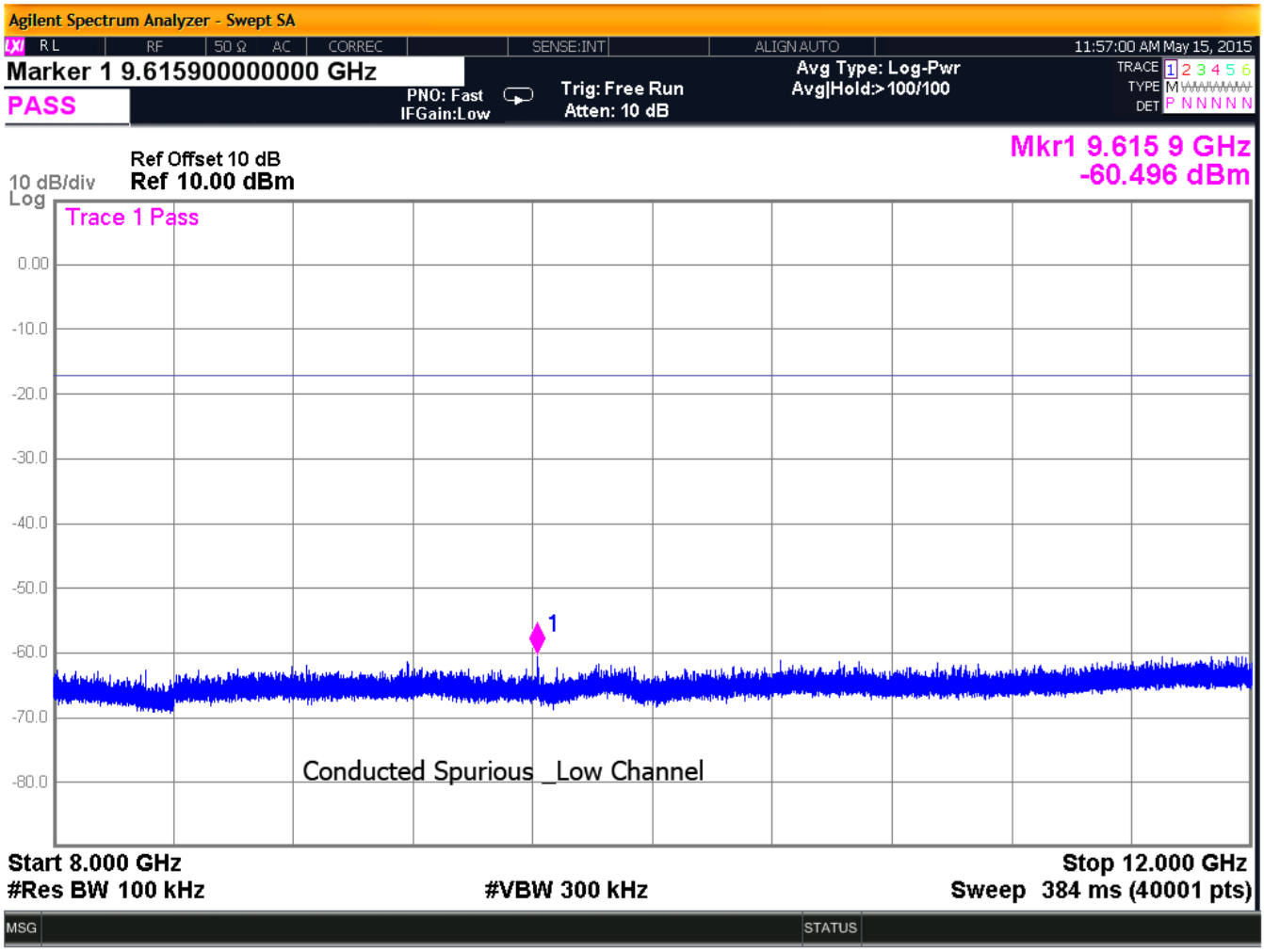

Figure 15: Conducted Spurious Emissions, Low Channel 8 - 12GHz

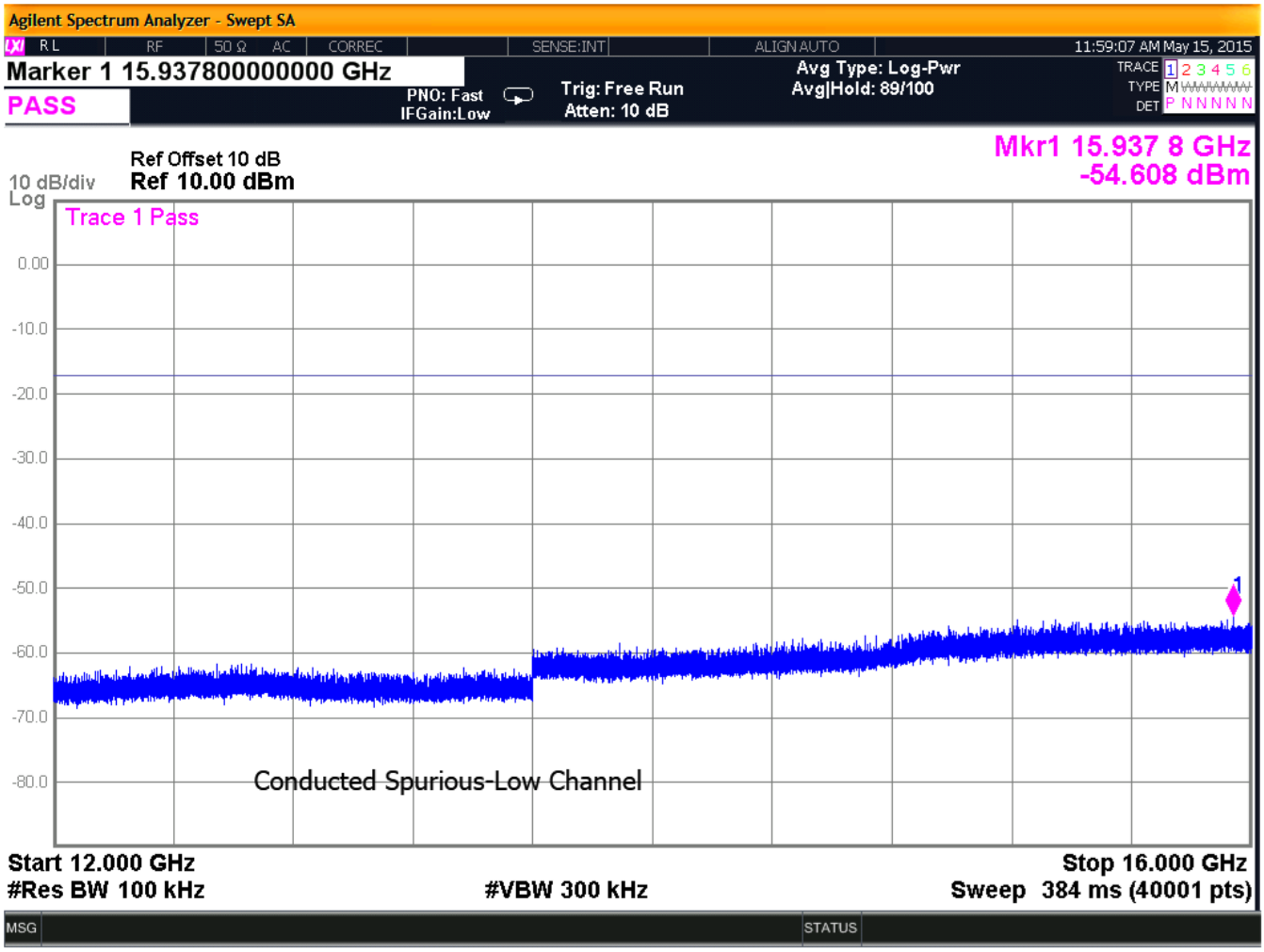

Figure 16: Conducted Spurious Emissions, Low Channel 12 - 16GHz

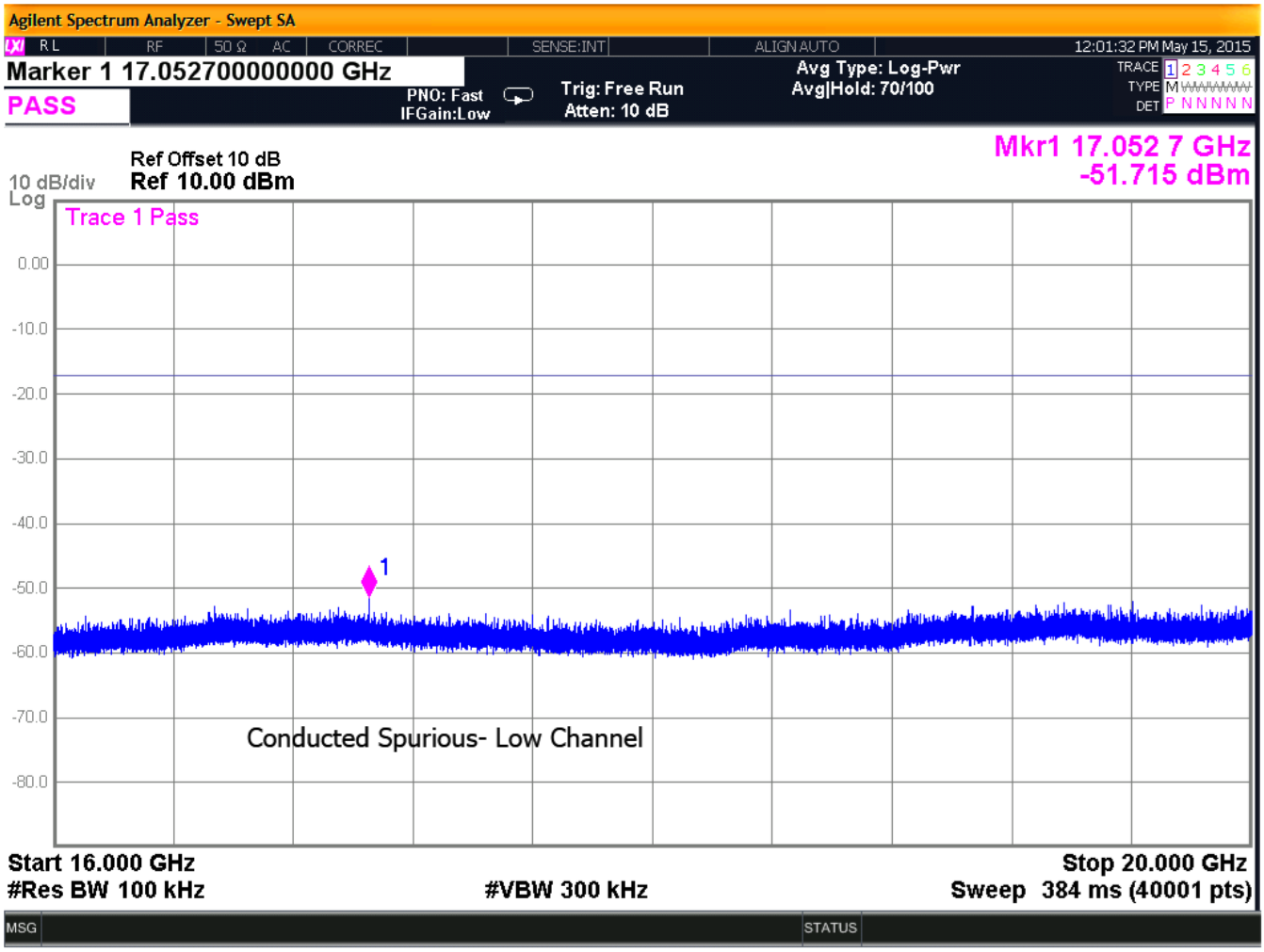

Figure 17: Conducted Spurious Emissions, Low Channel 16 - 20GHz

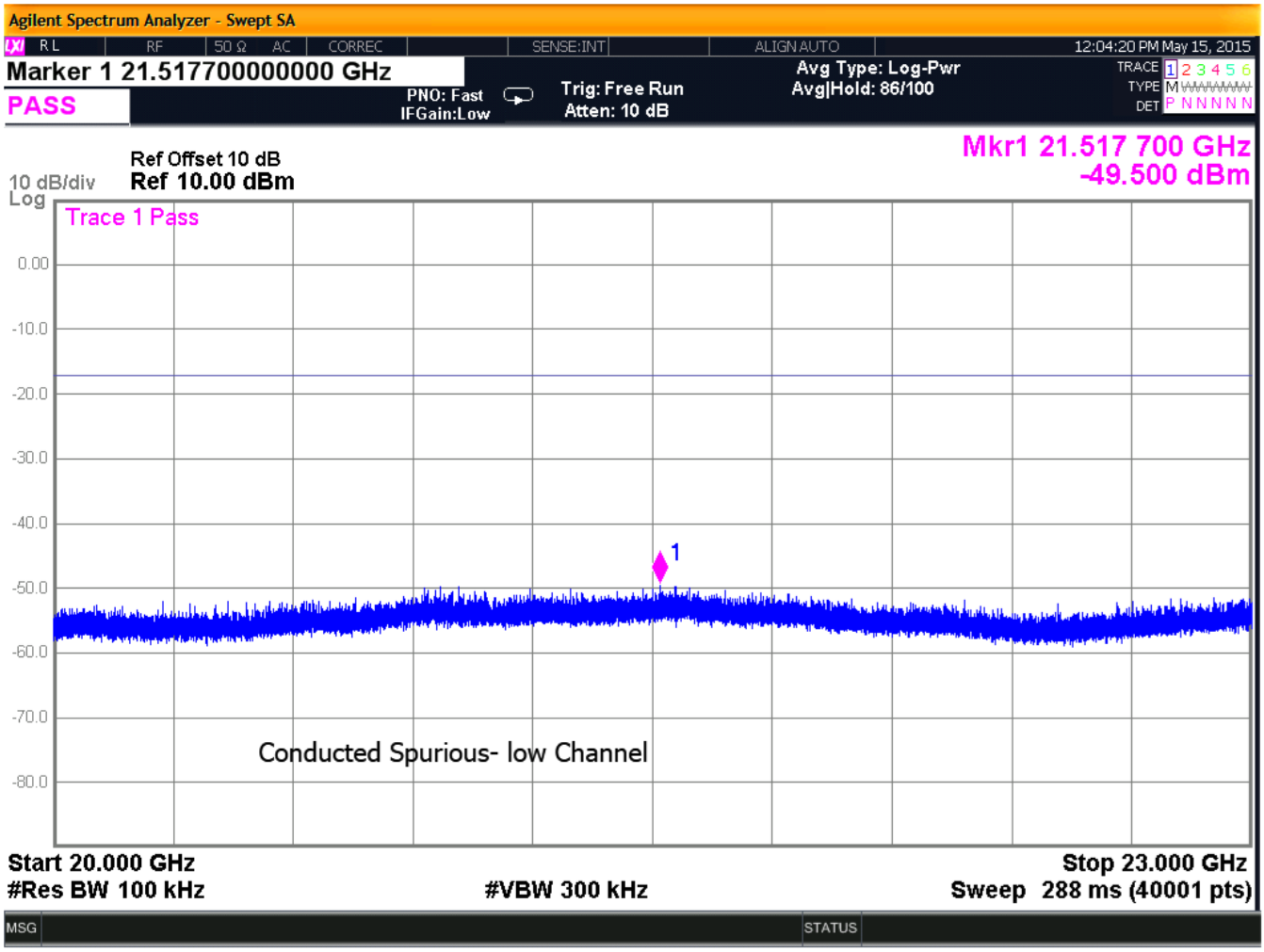

Figure 18: Conducted Spurious Emissions, Low Channel 20 - 23GHz

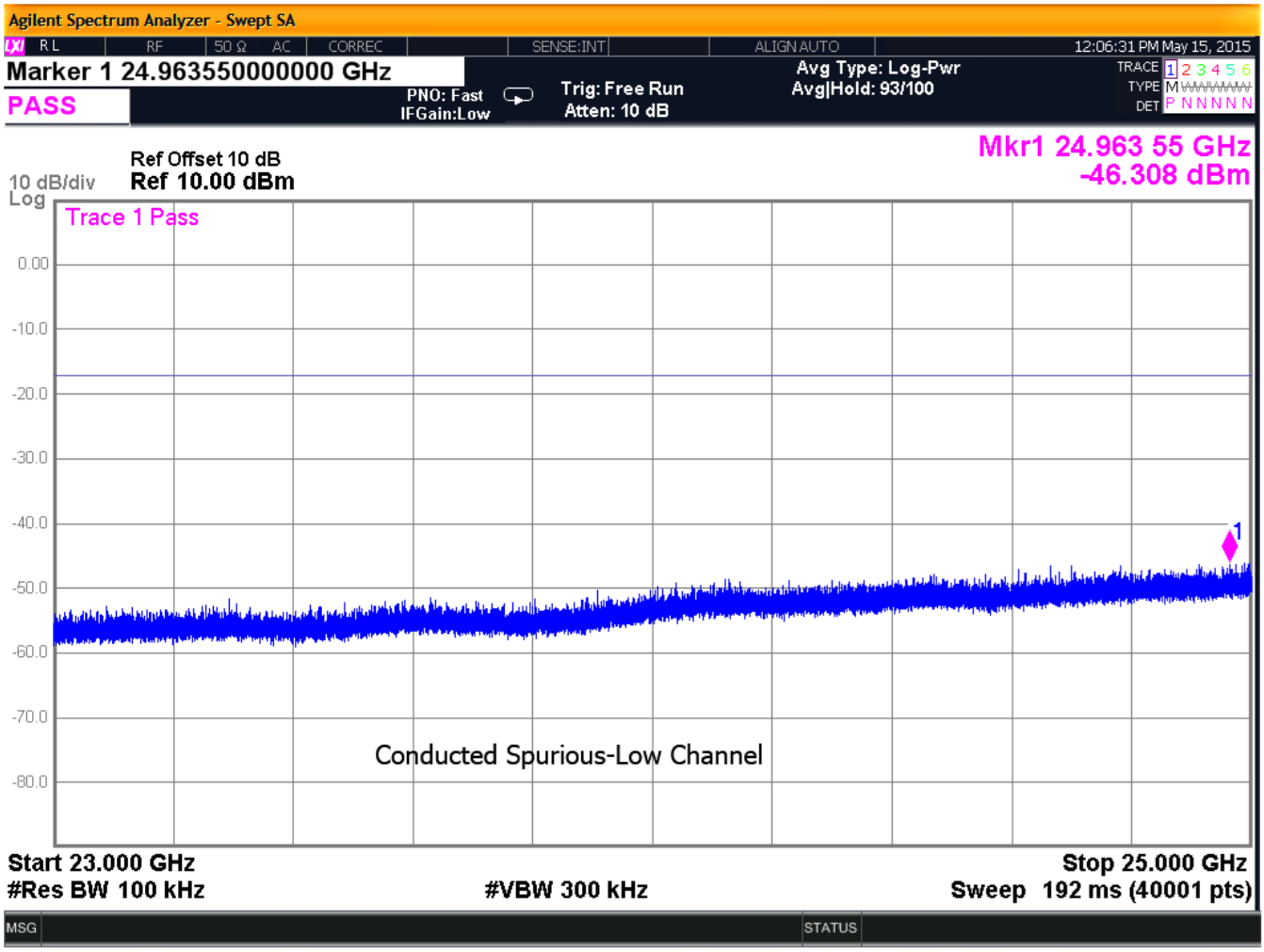

Figure 19: Conducted Spurious Emissions, Low Channel 23-25GHz

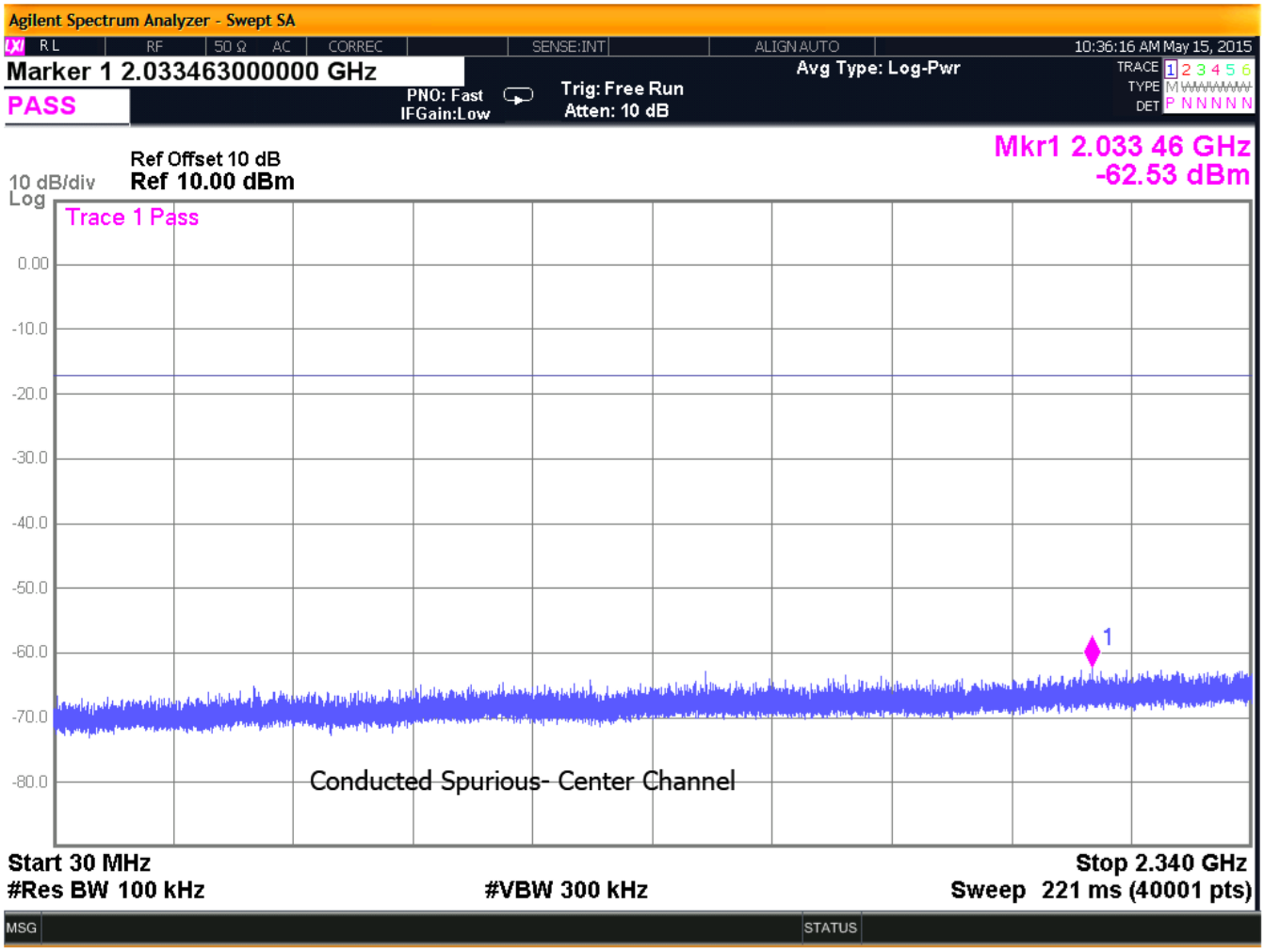

Figure 20: Conducted Spurious Emissions, Center Channel 30 – 2340MHz

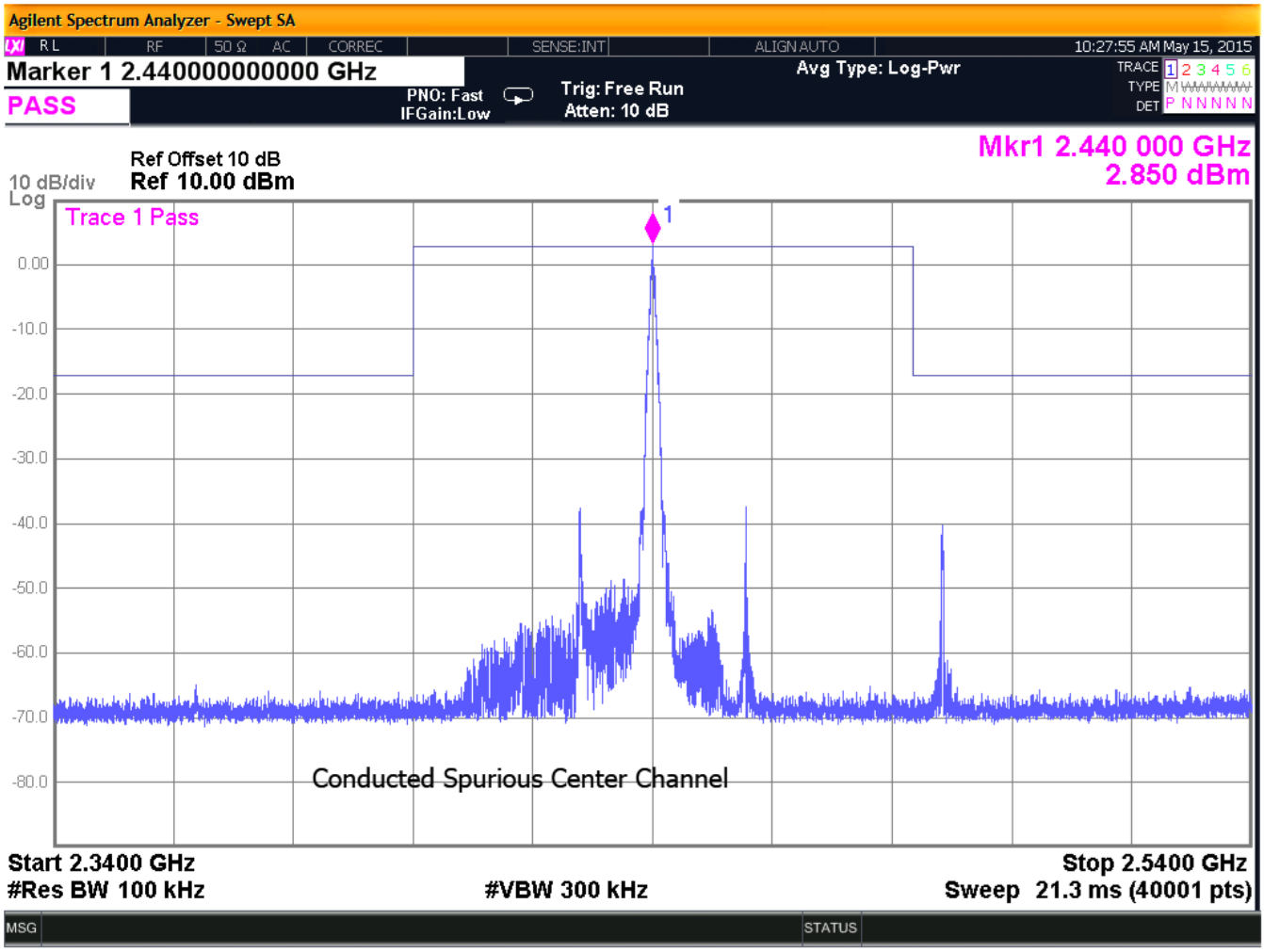

Figure 21: Conducted Spurious Emissions, Center Channel 2.3 – 2.54GHz

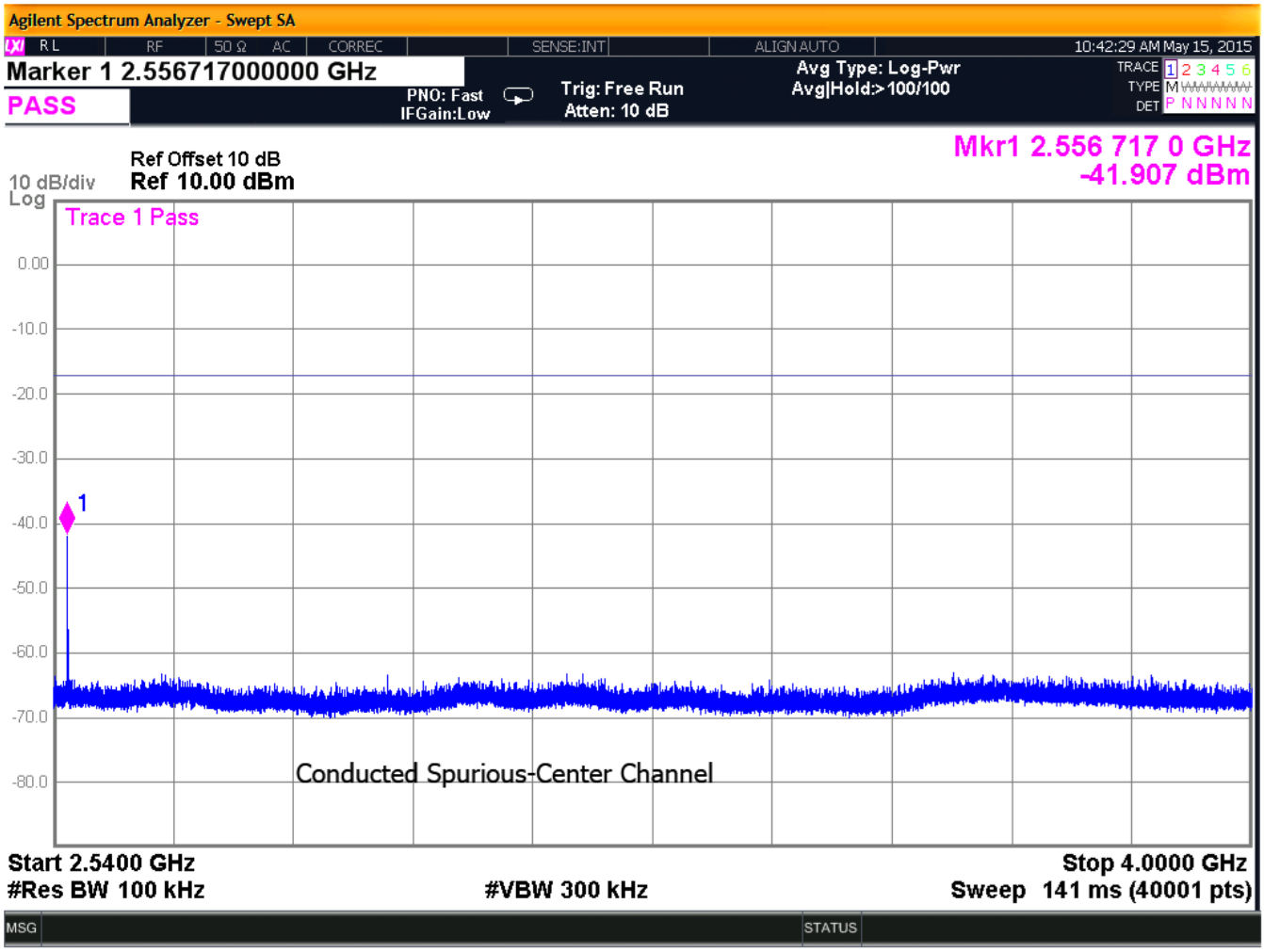

Figure 22: Conducted Spurious Emissions, Center Channel 2.54 – 4GHz

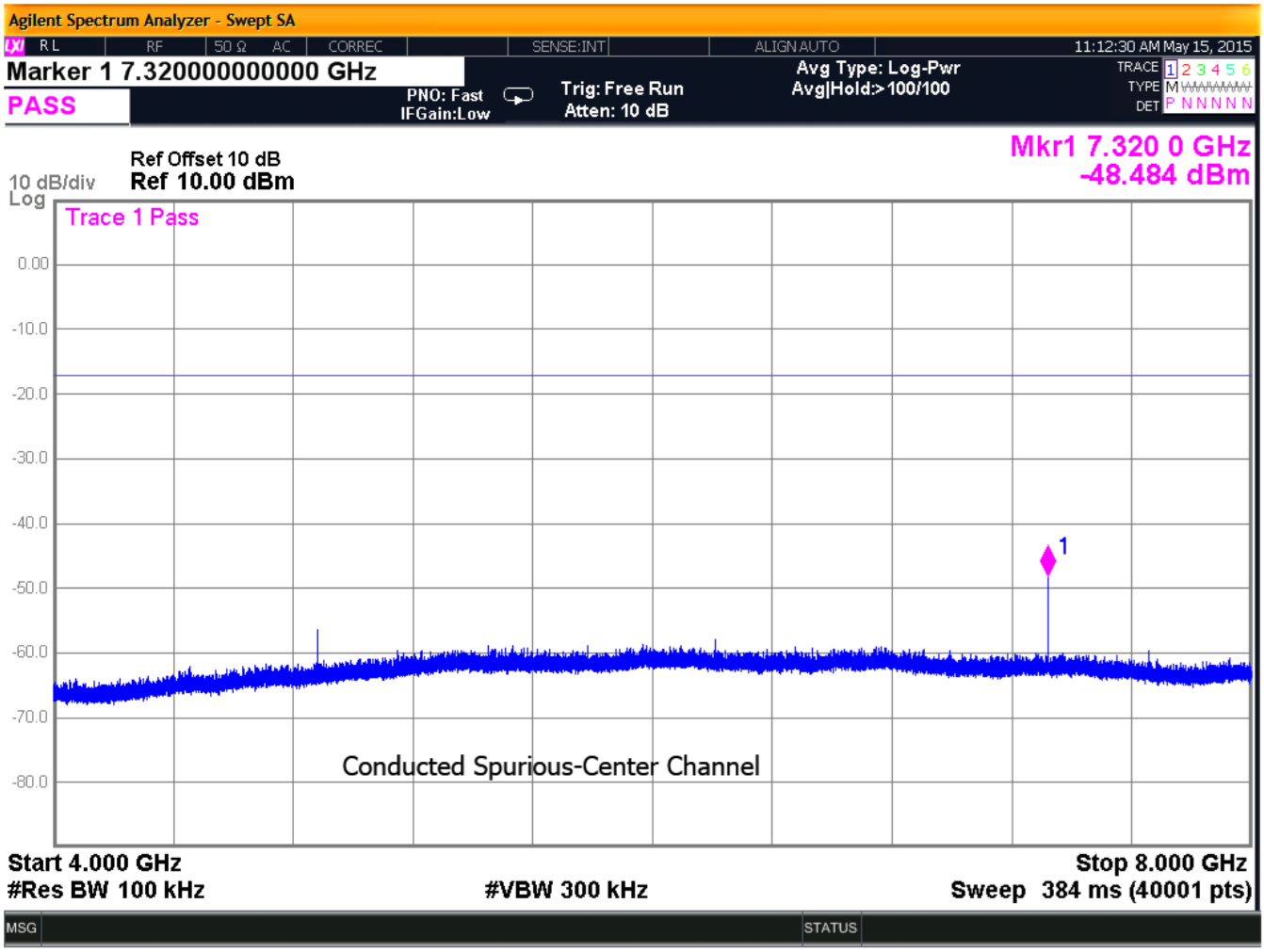

Figure 23: Conducted Spurious Emissions, Center Channel 4 - 8GHz

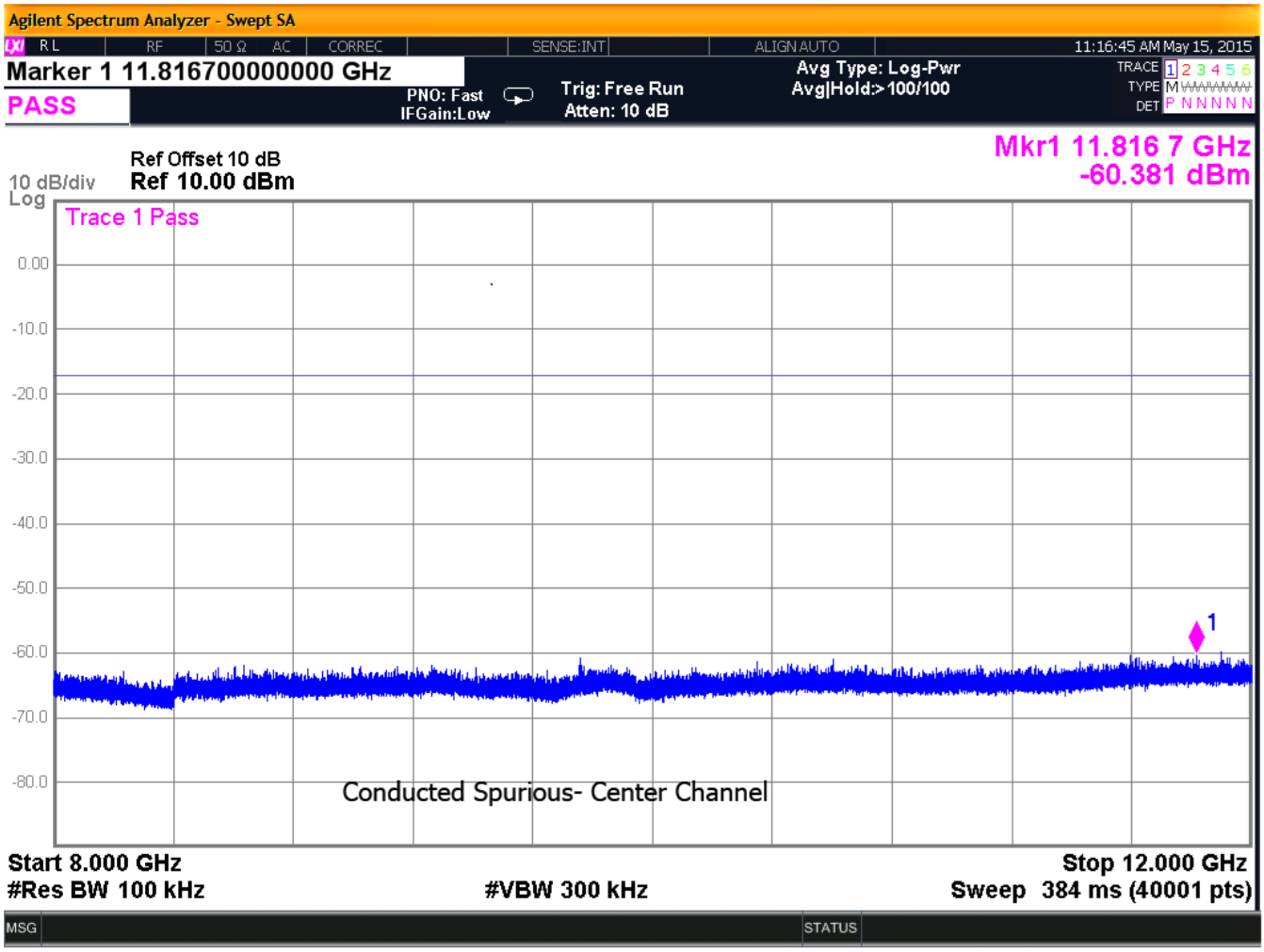

Figure 24: Conducted Spurious Emissions, Center Channel 8-12GHz

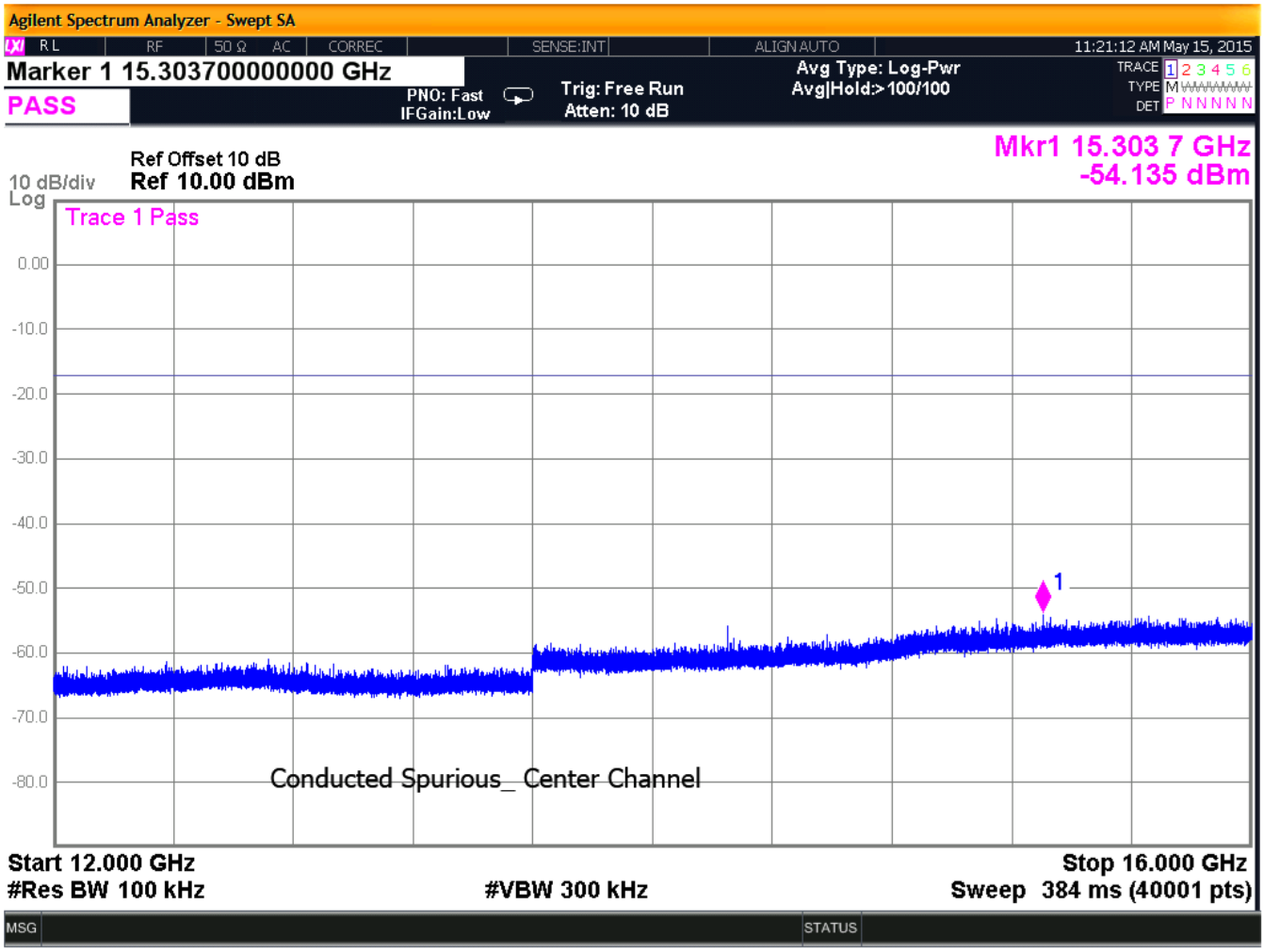

Figure 25: Conducted Spurious Emissions, Center Channel 12 - 16GHz

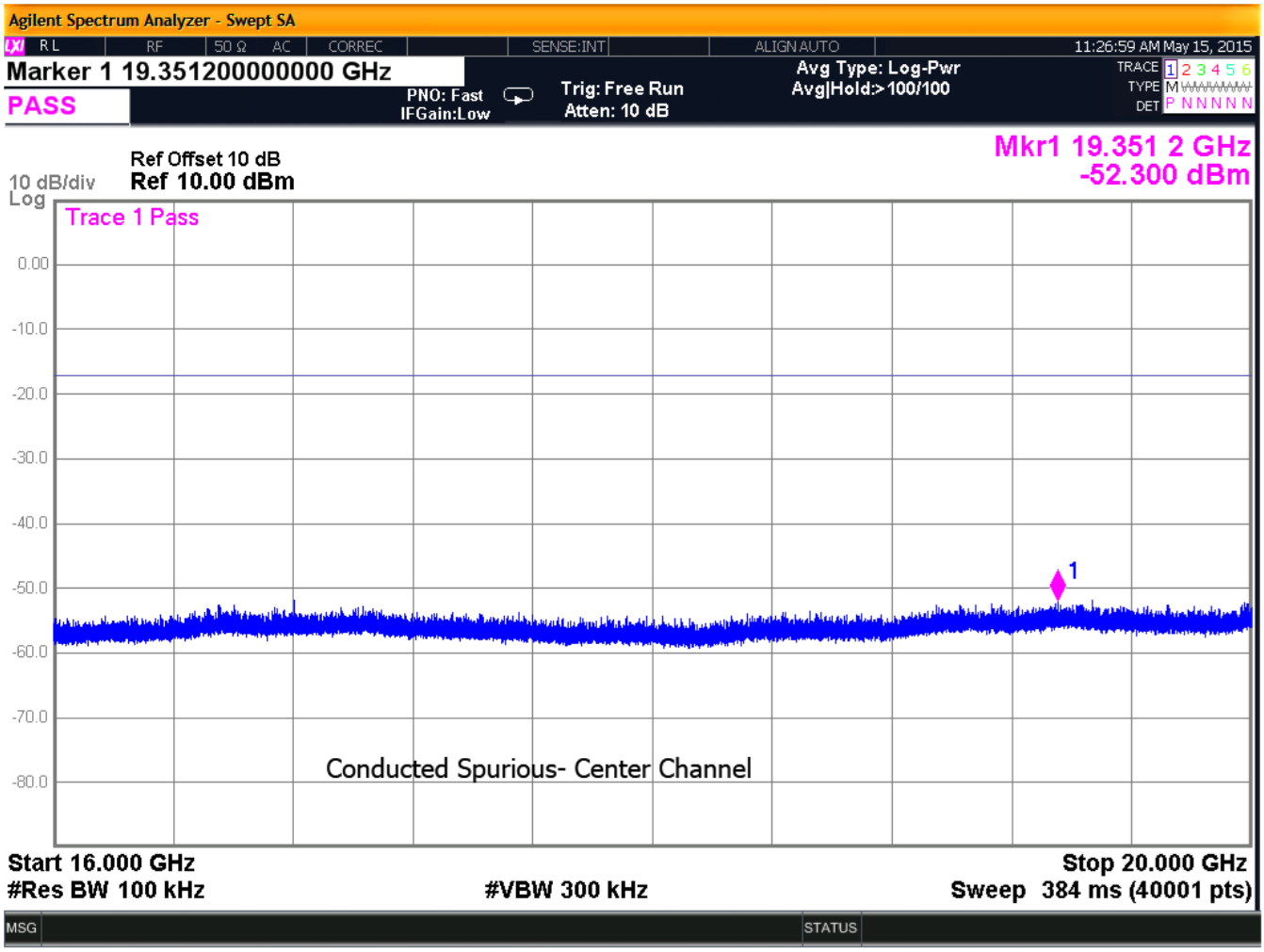

Figure 26: Conducted Spurious Emissions, Center Channel 16 - 20GHz

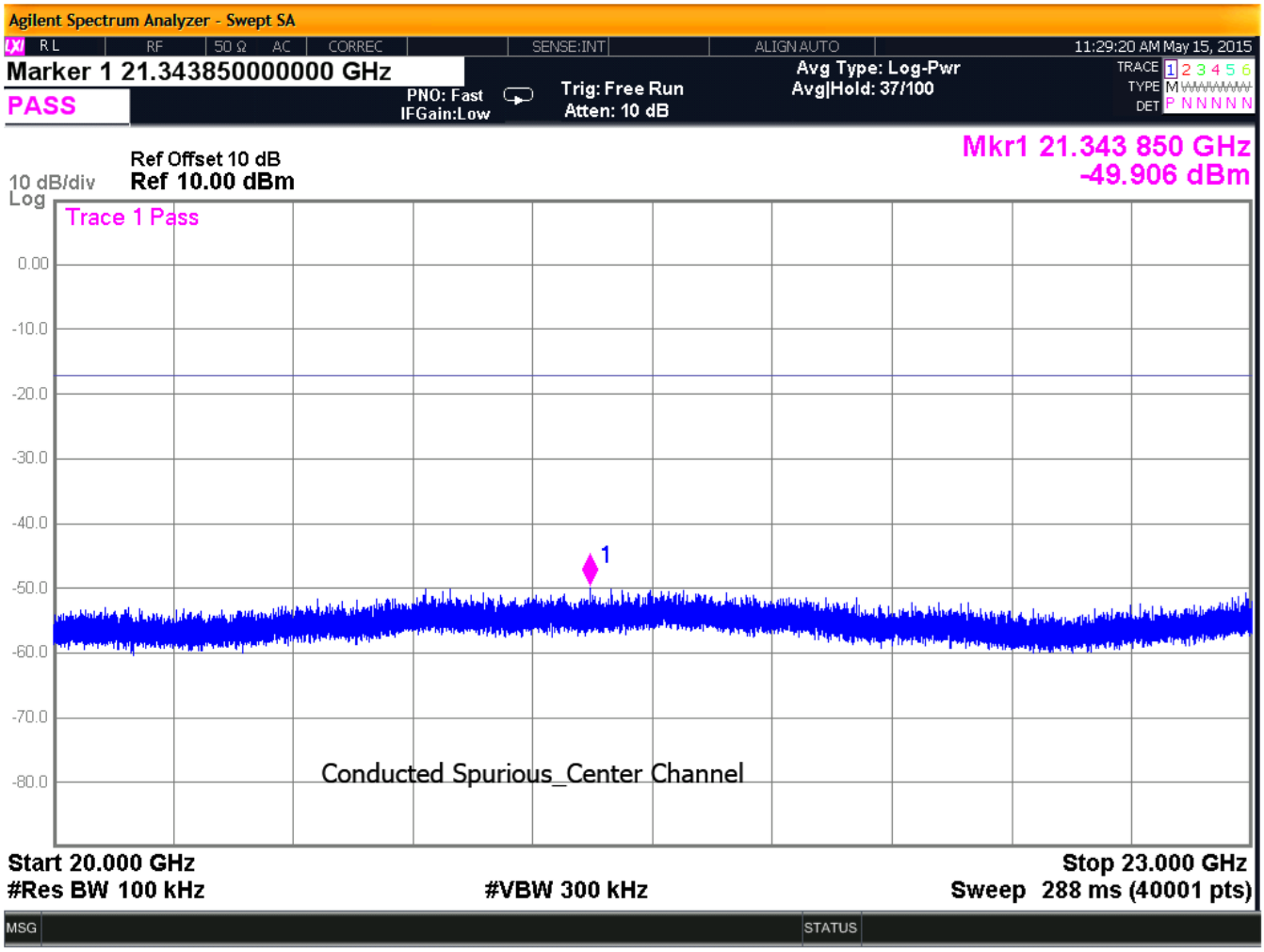

Figure 27: Conducted Spurious Emissions, Center Channel 20-23GHz

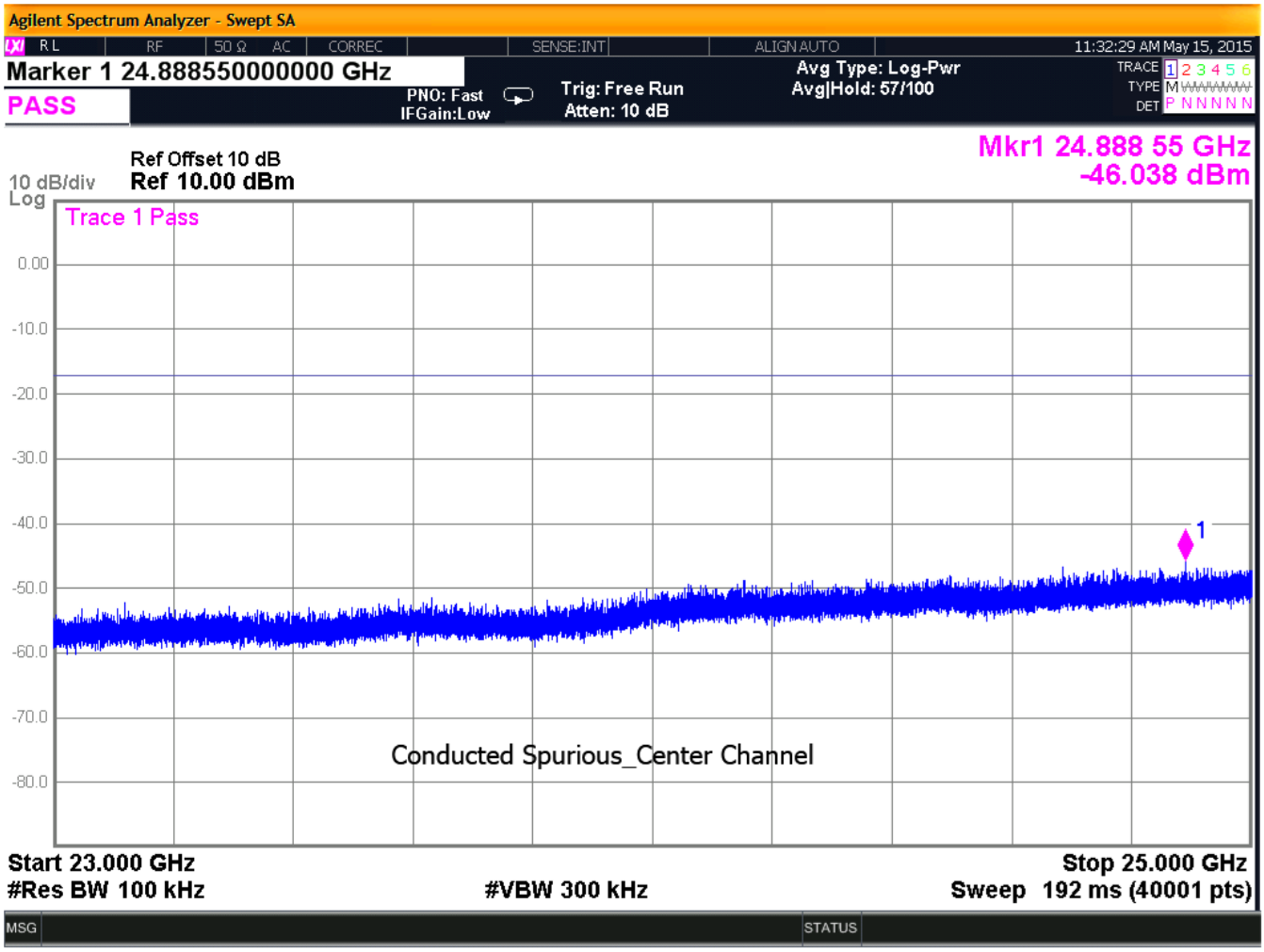

Figure 28: Conducted Spurious Emissions, Center Channel 23-25GHz

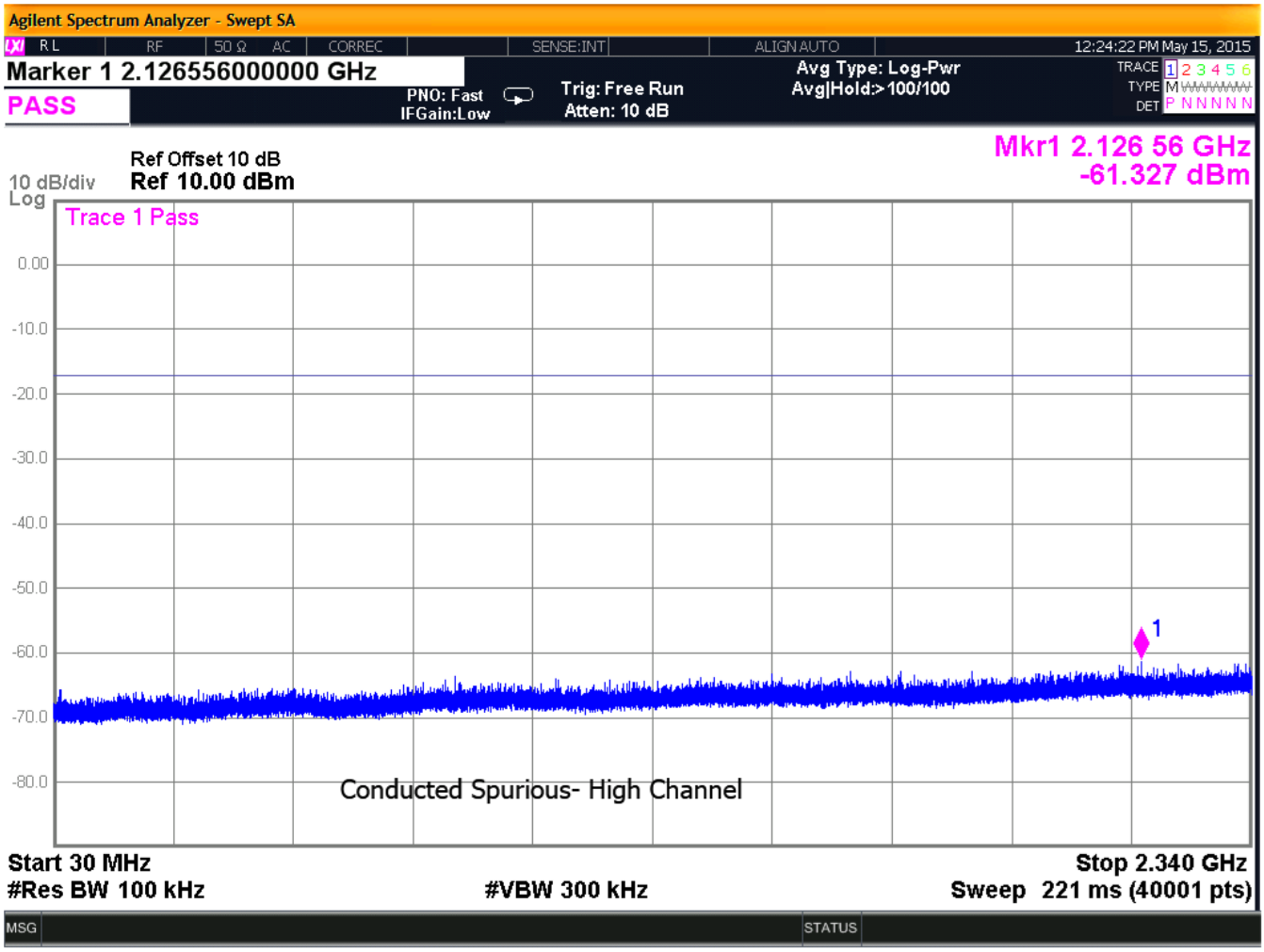

Figure 29: Conducted Spurious Emissions, High Channel 30 - 2340MHz

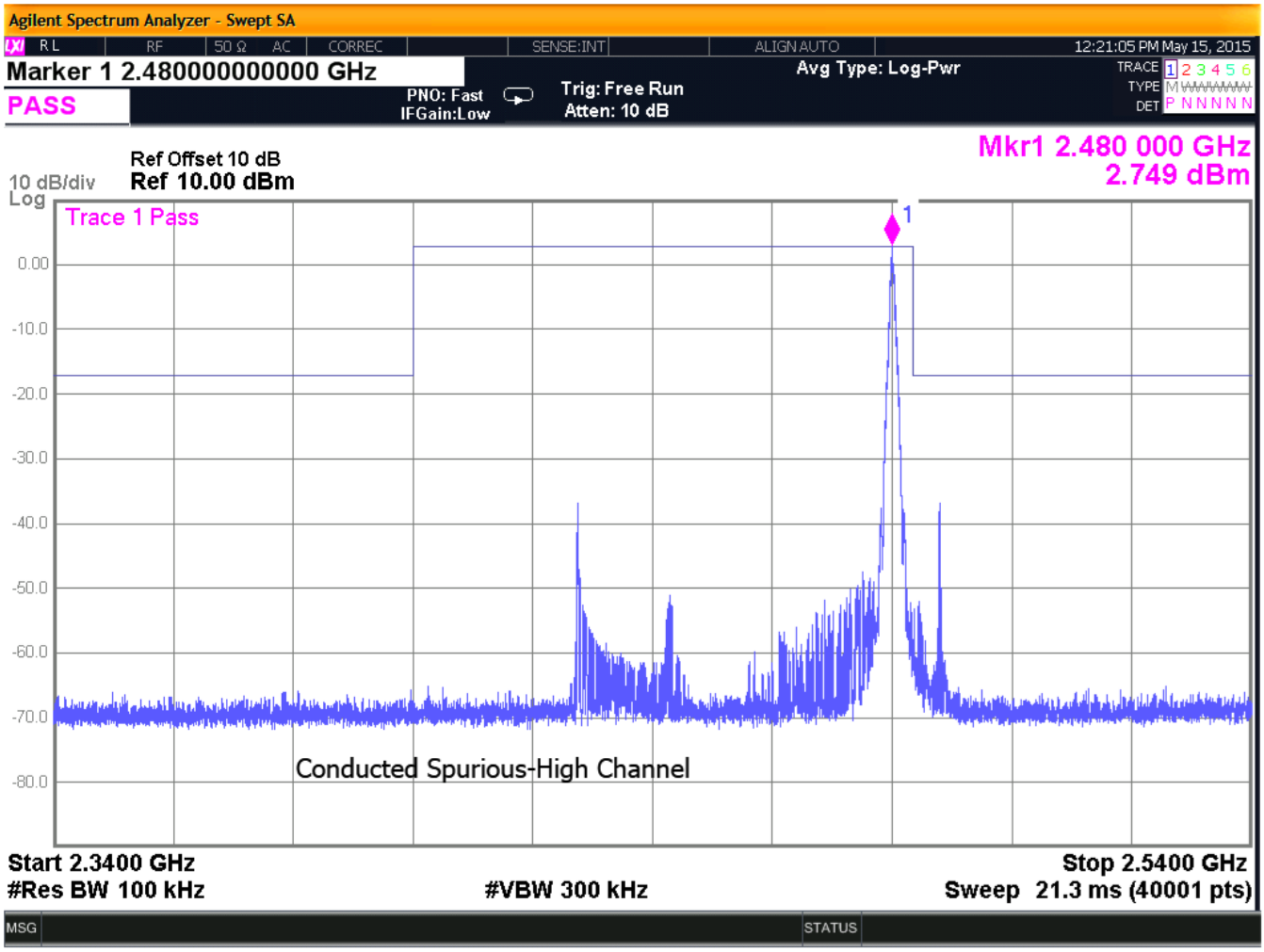

Figure 30: Conducted Spurious Emissions, High Channel 2.34 - 2.54GHz

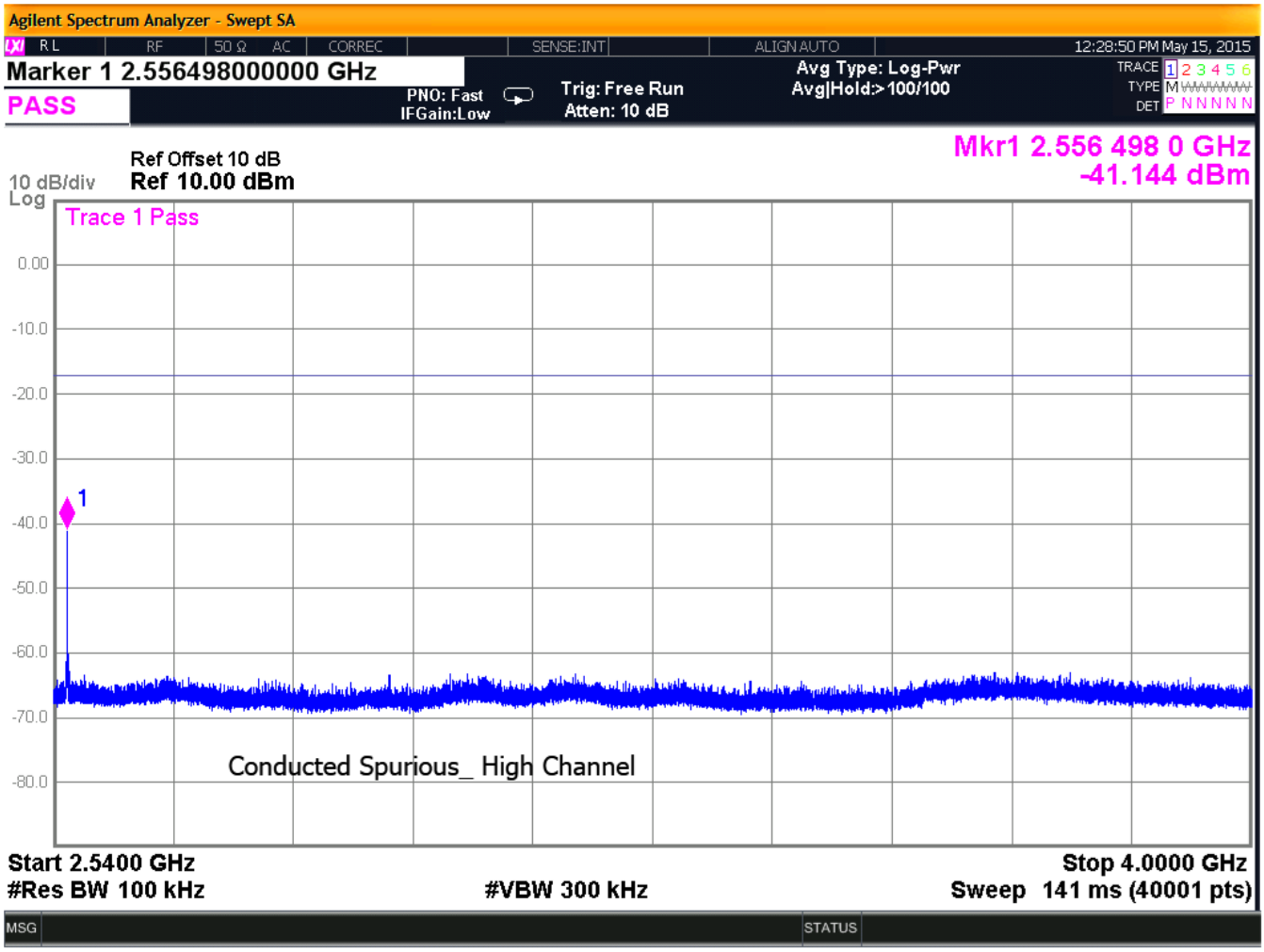

Figure 31: Conducted Spurious Emissions, High Channel 2.54 – 4GHz

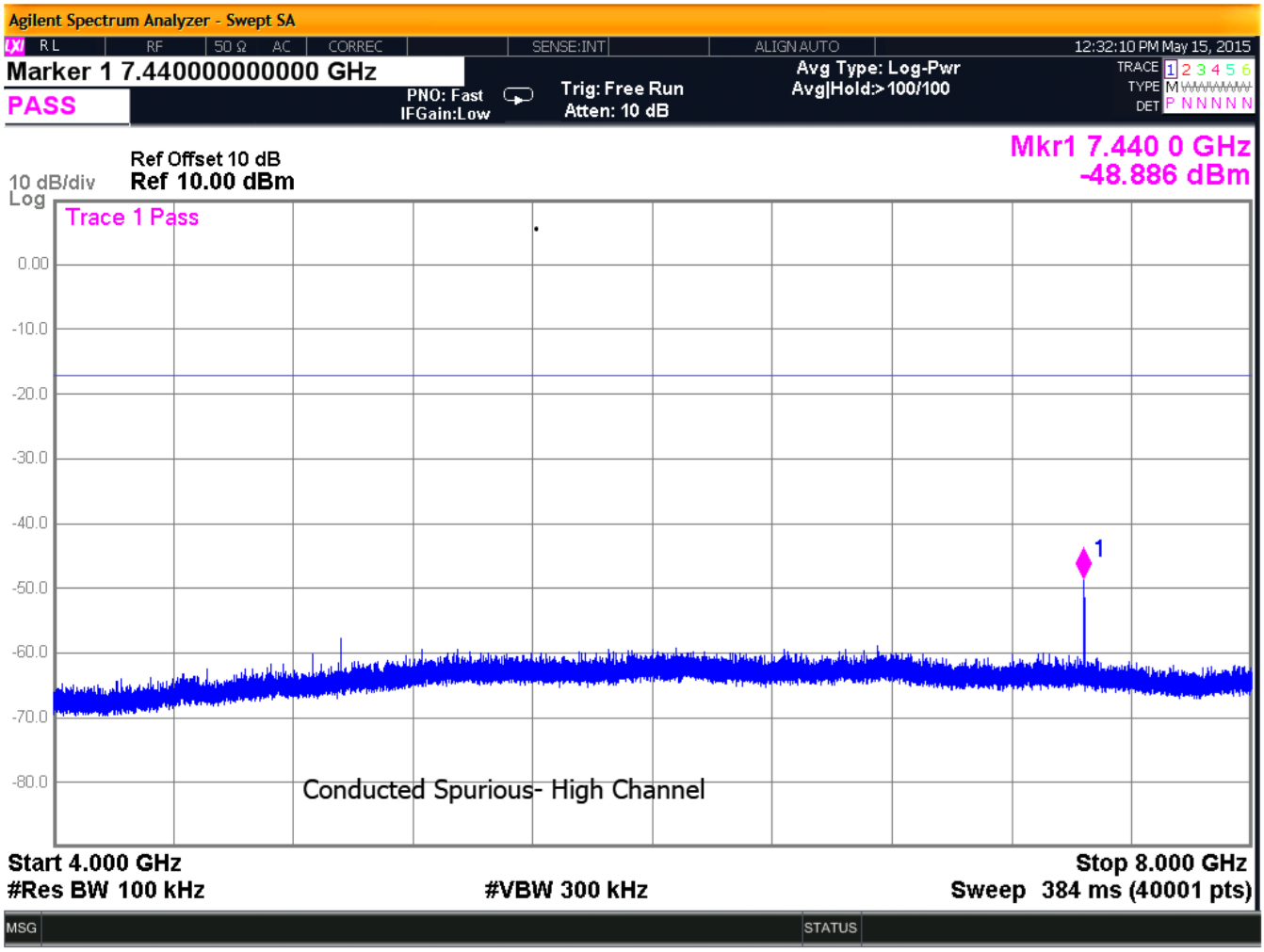

Figure 32: Conducted Spurious Emissions, High Channel 4 - 8GHz

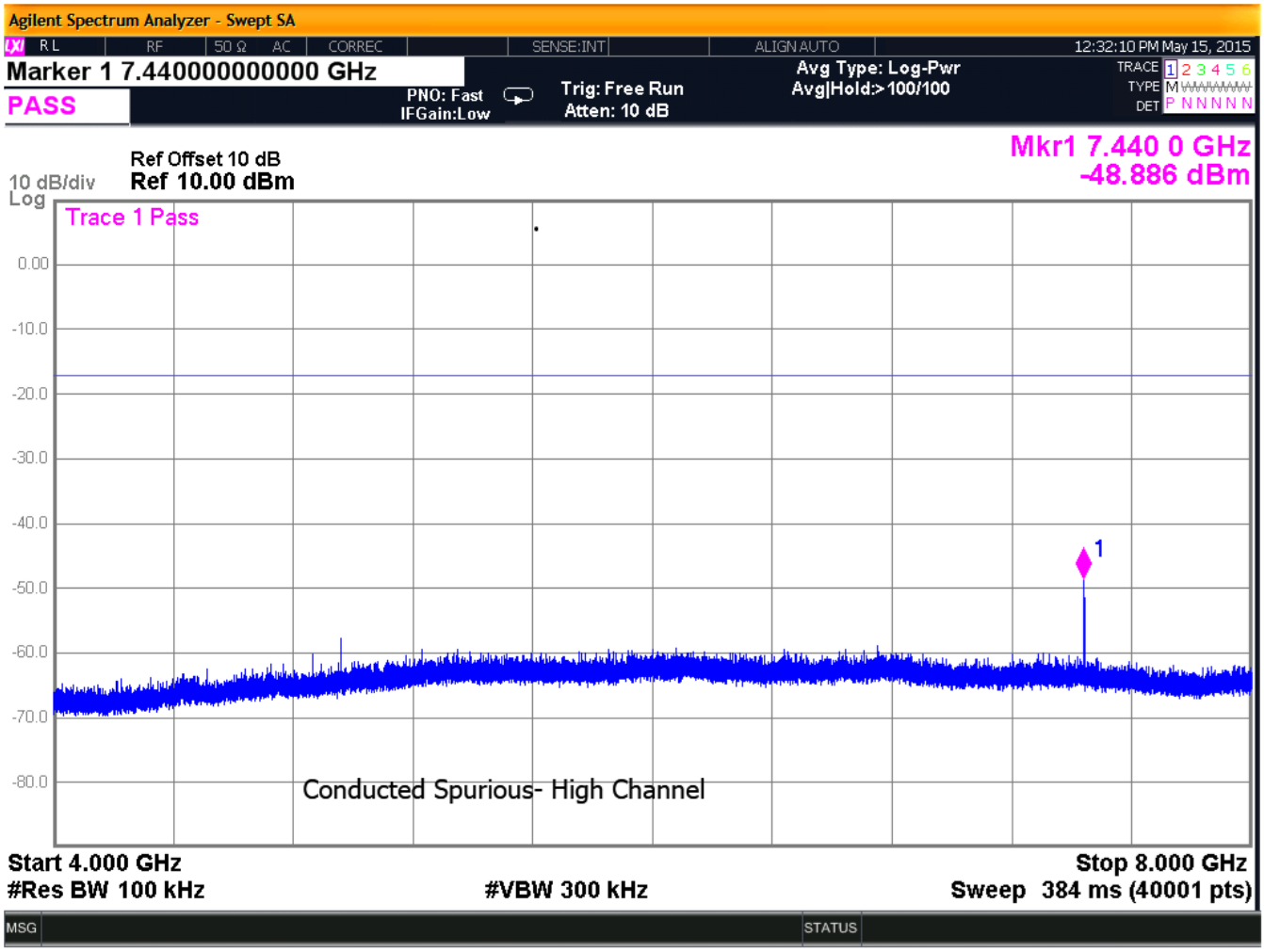

Figure 33: Conducted Spurious Emissions, High Channel 8 - 12GHz

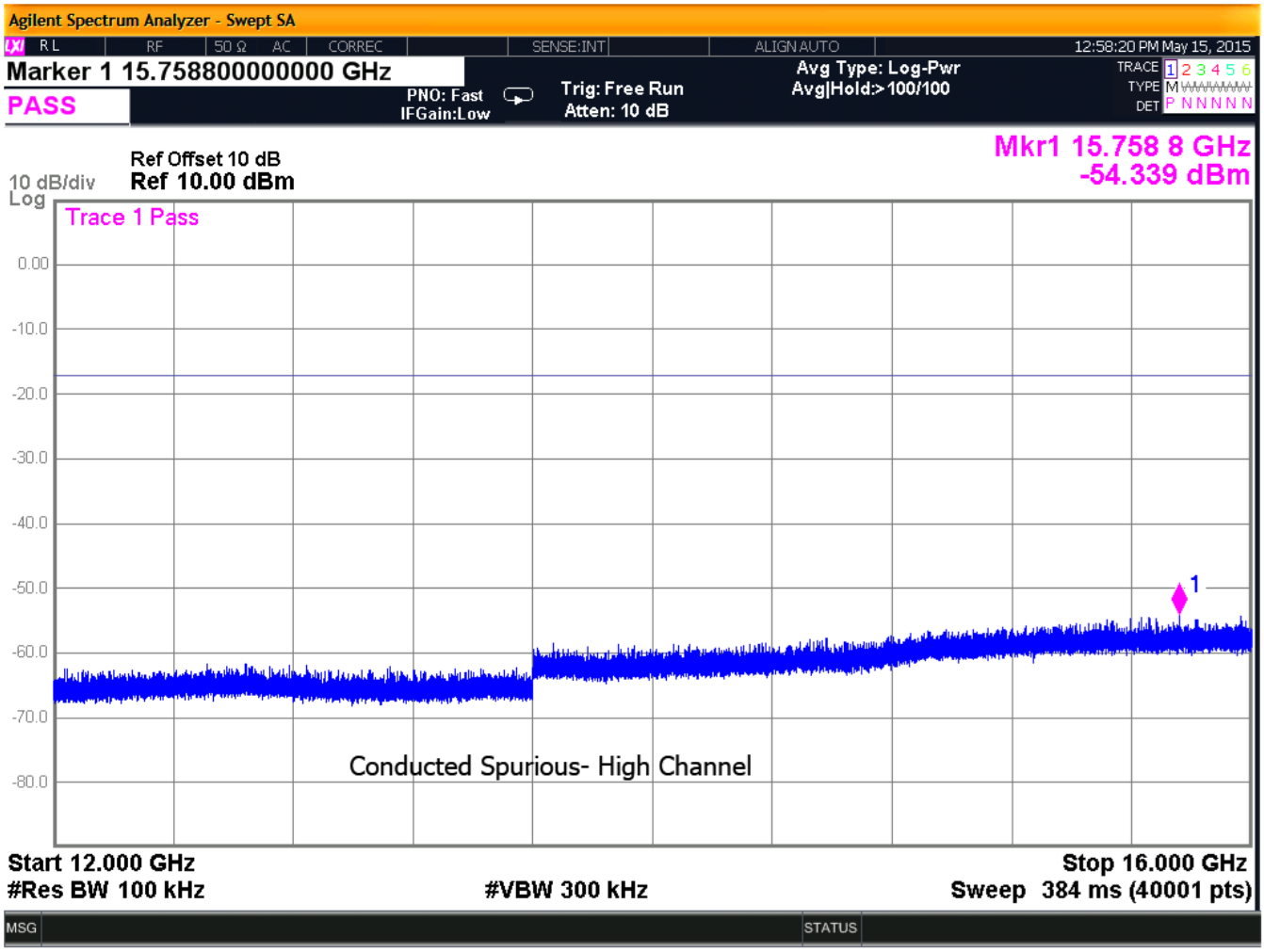

Figure 34: Conducted Spurious Emissions, High Channel 12 - 16GHz

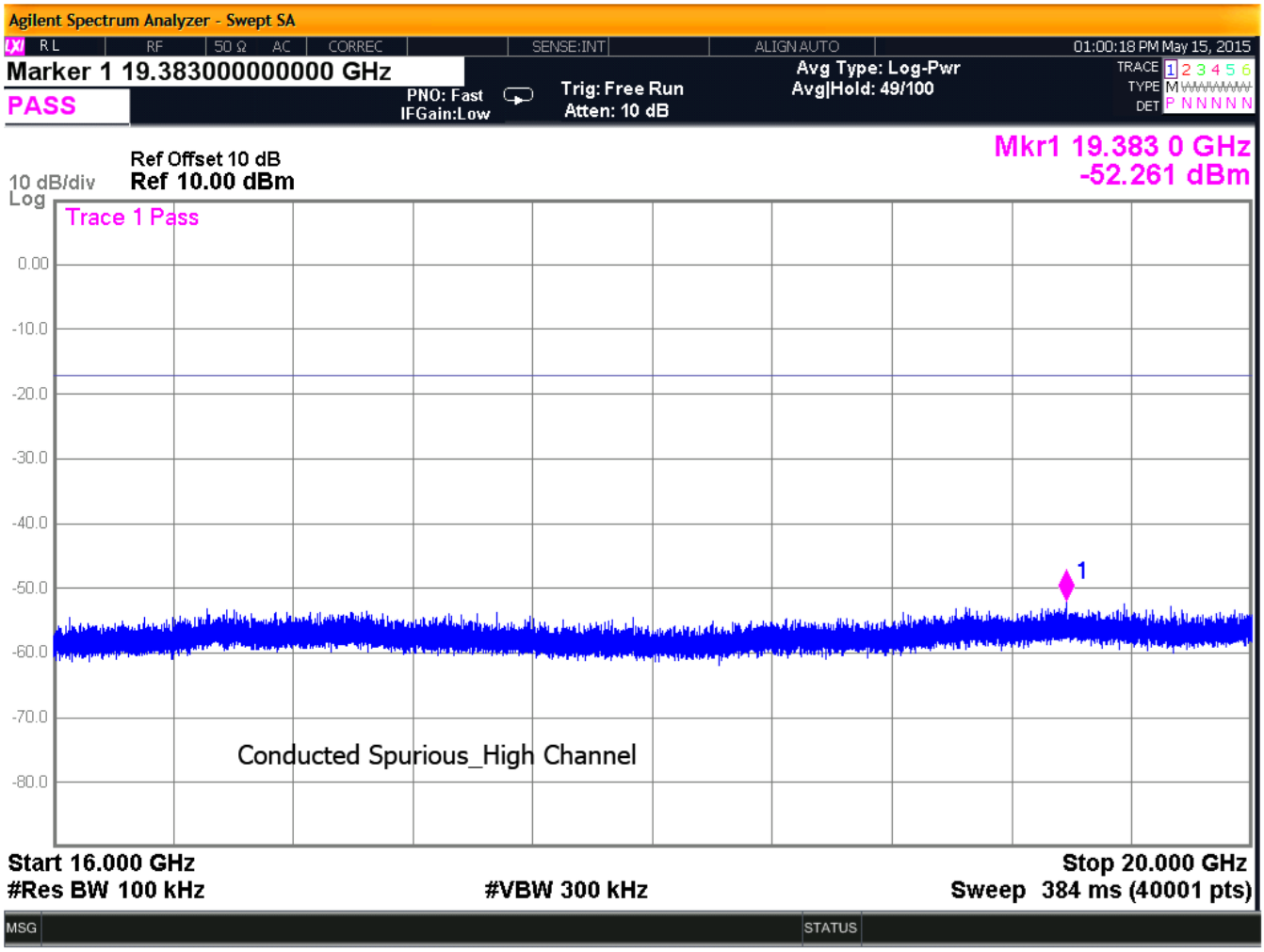

Figure 35: Conducted Spurious Emissions, High Channel 16 - 20GHz

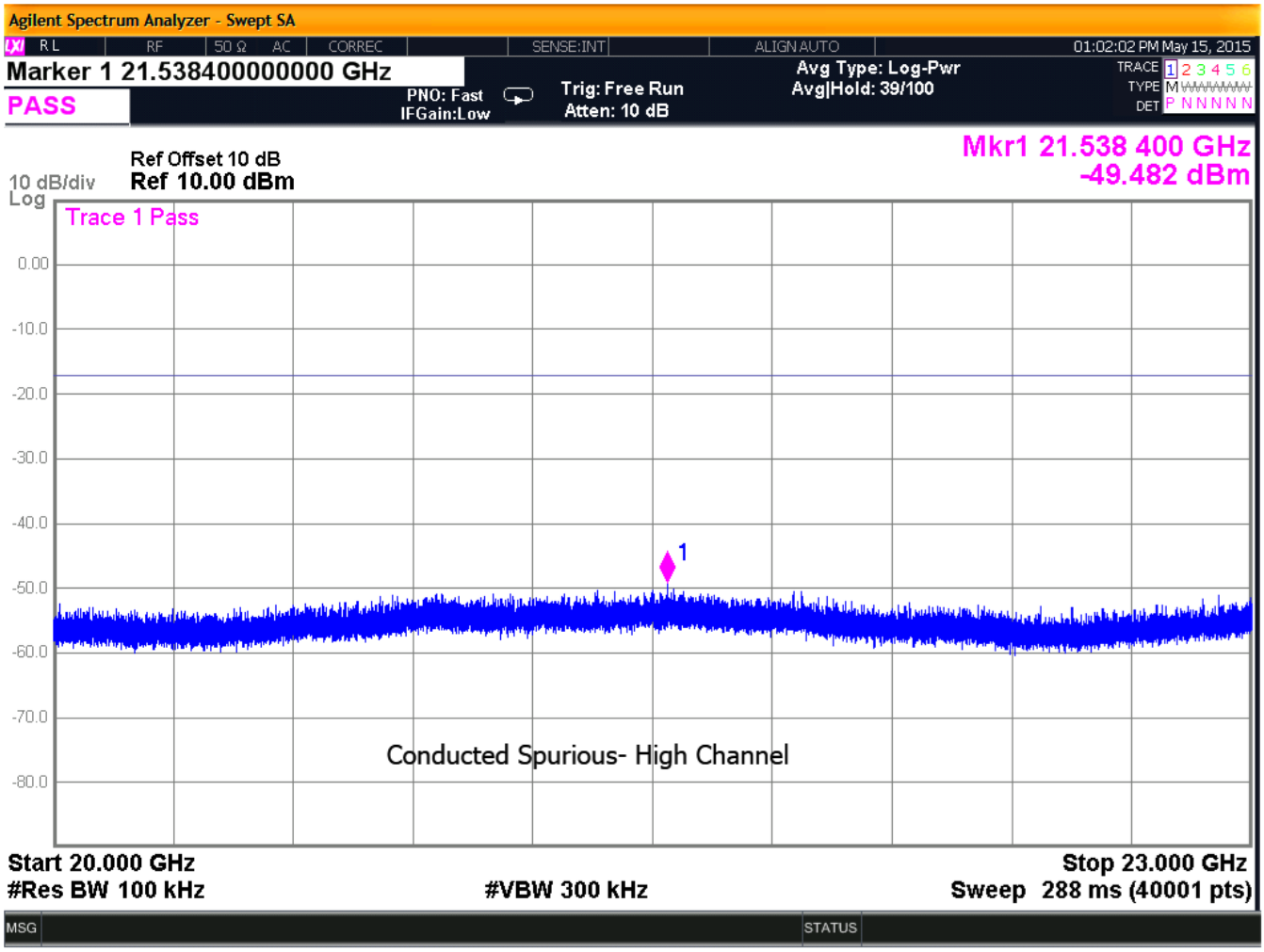

Figure 36: Conducted Spurious Emissions, High Channel 20 - 23GHz

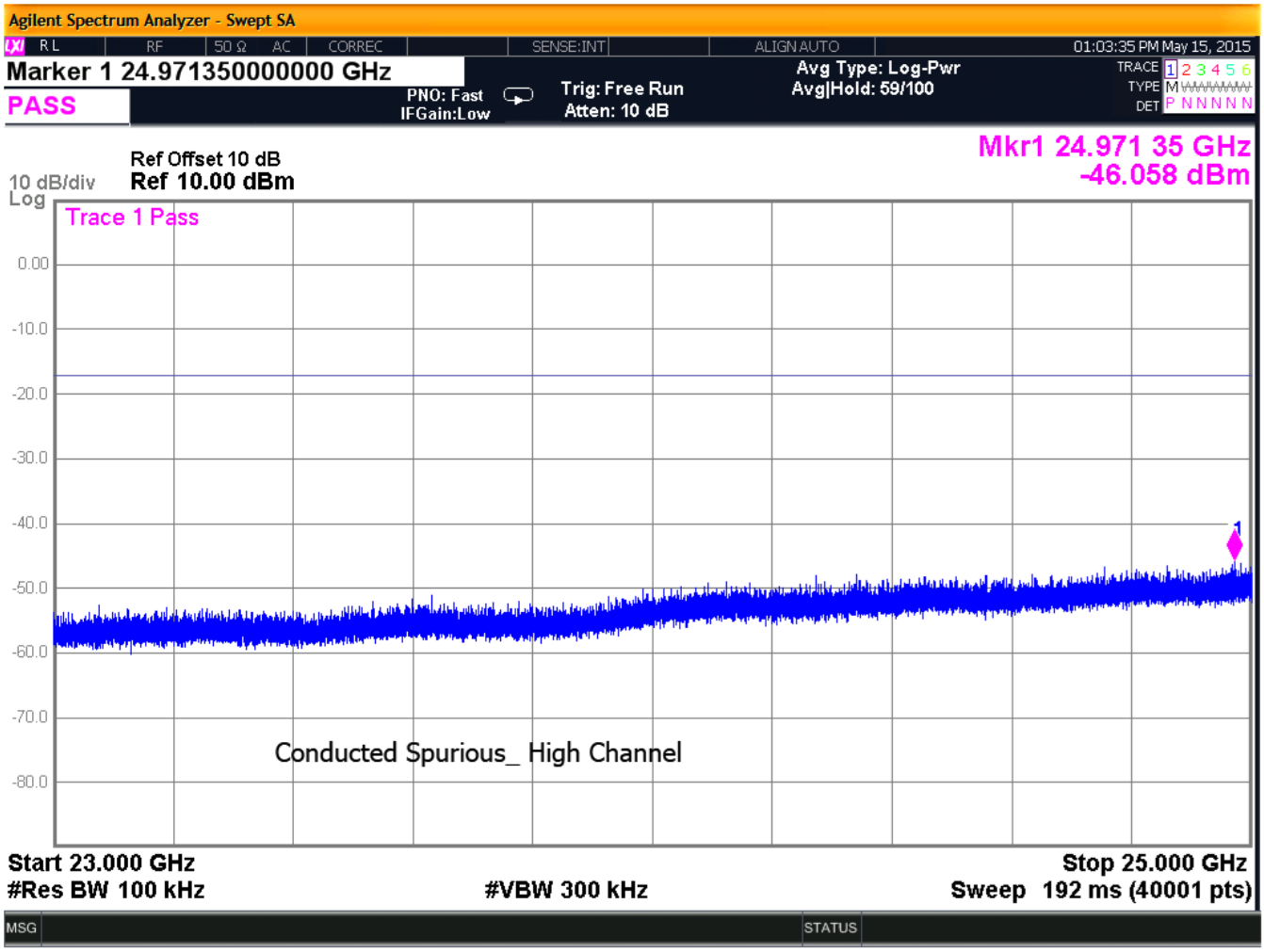

Figure 37: Conducted Spurious Emissions, High Channel 23 - 25GHz

5.4.1 Band Edge Compliance

Close-up plots of the upper and lower channels with respect to the nearest authorized band-edges are provided below. The tests were performed in the same manner as the above conducted spurious emissions tests

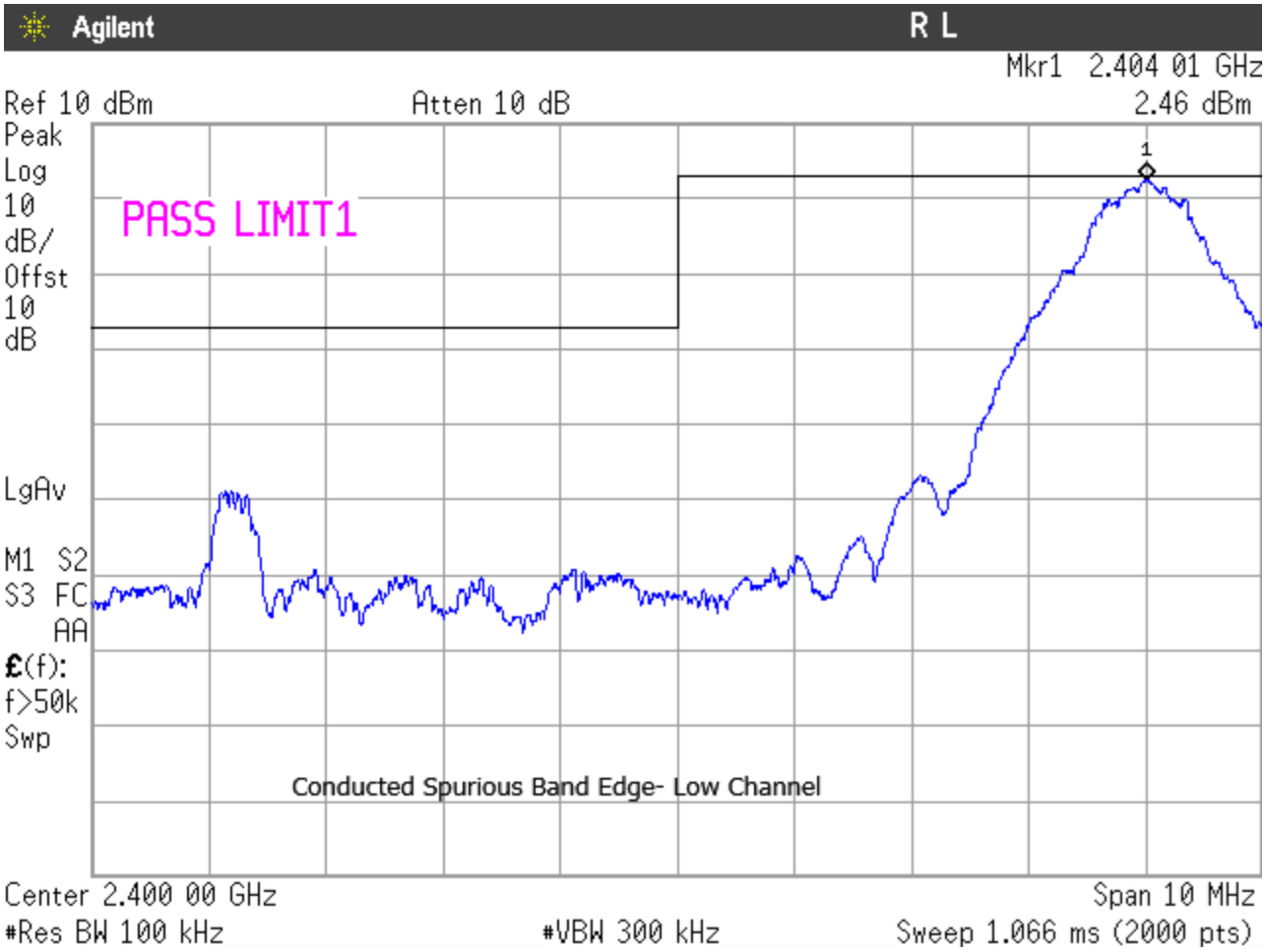

Figure 38: Lower Band-edge, Low Channel

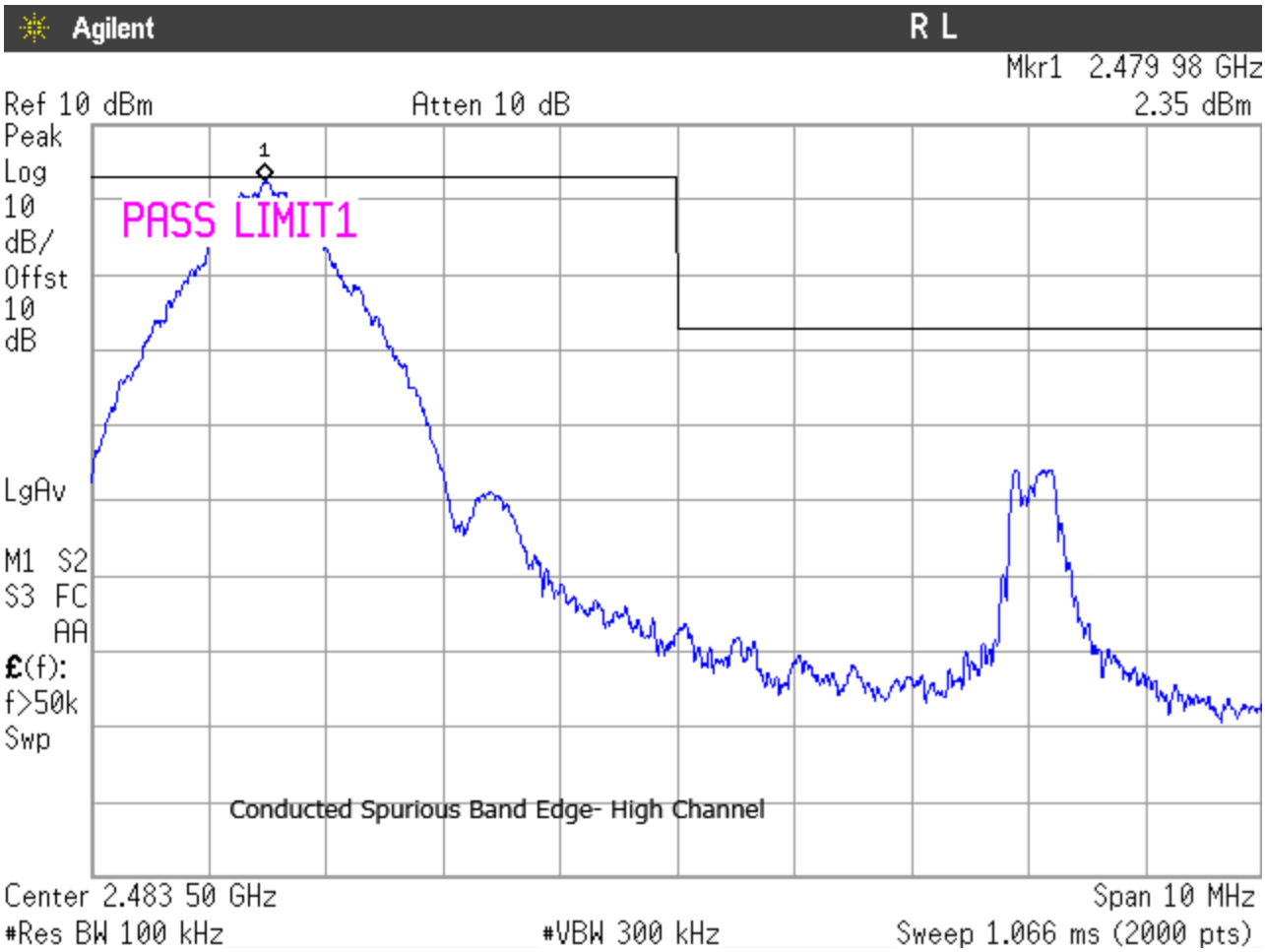

Figure 39: Upper Band-edge, High Channel

5.5 Radiated Spurious Emissions:

The EUT must comply with the requirements for radiated spurious emissions that fall within the restricted bands. These emissions must meet the limits specified in §15.209 and §15.35(b) for peak measurements.

5.5.1 Test Procedure

The EUT was placed on motorized turntable for radiated testing on a 3-meter open field test site. The emissions from the EUT were measured continuously at every azimuth by rotating the turntable. Receiving antennas were mounted on an antenna mast to determine the height of maximum emissions. The height of the antenna was varied between 1 and 4 meters. The peripherals were placed on the table in accordance with ANSI C63.4. Cables were varied in position to produce maximum emissions. Both the horizontal and vertical field components were measured. Correction factors were then applied and the resulting value was compared to the limit.

The emissions were measured using the following resolution bandwidths:

Table 12: Spectrum Analyzer Settings

Frequency Range	Resolution Bandwidth	Video Bandwidth
30MHz-1000 MHz	120kHz	1MHz
>1000 MHz	1 MHz	3MHz

Detected signals above 1 GHz were averaged using an RMS detector with trace averaging and a duty cycle correction of 8.8dB added to the average reading per D01 DTS Meas Guidance v03r02 "12.2.5.2 Trace averaging across on and off times of the EUT transmissions followed by duty cycle correction". Above 1 GHz RF absorbing material was placed on the open air test site between the Antenna and EUT in accordance with ANSI 63.4.

5.5.2 Duty Cycle Correction

DTS Guidance "12.2.5.2 Trace averaging across on and off times of the EUT transmissions followed by duty cycle correction" states that for repetitive pulsing transmissions above 1GHz shall be measured with an RMS detector with trace averaging. For detected signals a duty cycle correction shall then be added to the result. Duty cycle determination was performed according to D01 DTS Meas Guidance v03r02 section 6.0 using method b (spectrum analyzer in zero span mode). D01 DTS Meas Guidance v03r02 section 12.2.5.2 states duty cycle correction using an RMS detector as: If power averaging (RMS) mode was used then the applicable correction factor is 10 log(1/x), where x is the duty cycle.

The duty cycle numbers are as follows:

On time = 327us, On and Off time =2.481ms, Duty cycle =0.132 (13.2%)
10 log(1/x)= 10 log(1/0.132)= 8.8dB correction

Section 6.0 states in order to use this method VBW and RBW must be > than 50/T where T is the tx on time. As T= 327us then 50/T= 153kHz. The utilized RBW used was 1MHz and the VBW was 3MHz.

The following plots show the EUT transmission parameters.

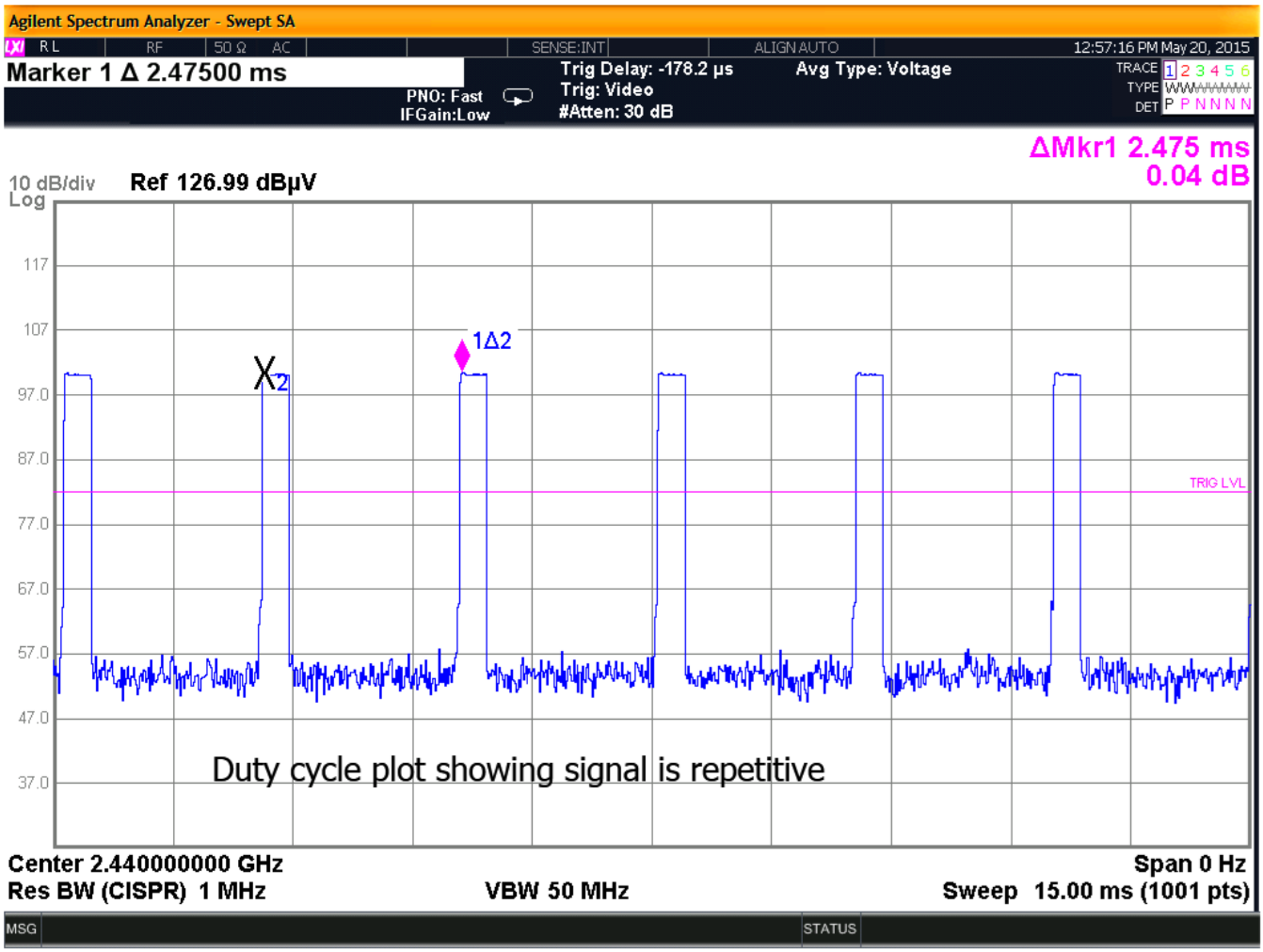

Figure 40: Plot Showing Transmission is Repetitive

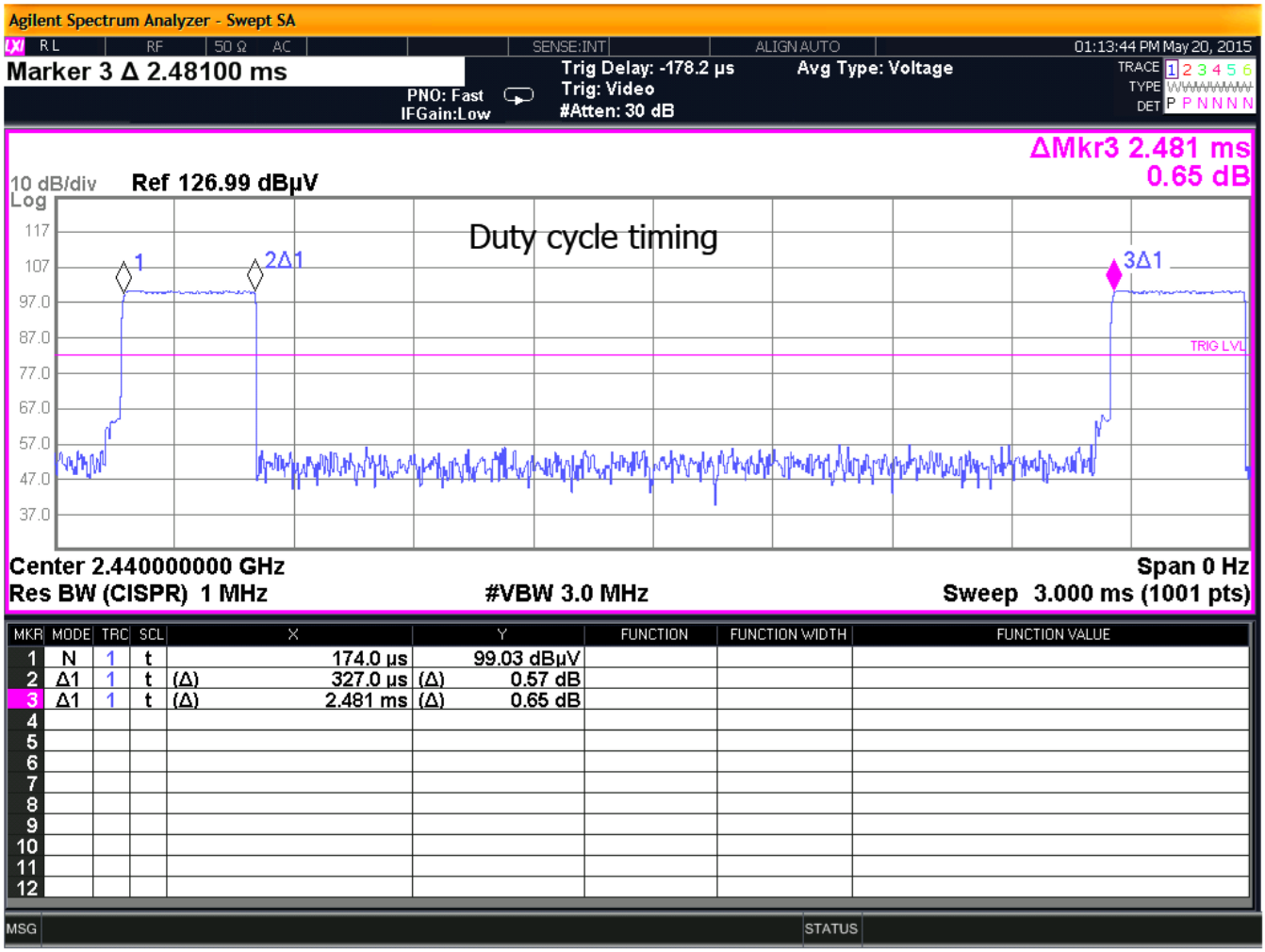

Figure 41: Duty Cycle Timing Plot

Table 13: Radiated Emission Test Data, Low Frequency Data (<1GHz)

Frequency (MHz)	Polarity H/V	Azimuth (Degree)	Ant. Height (m)	SA Level (dBuV)	Corr Factors (dB)	Corr. Level (uV/m)	Limit (uV/m)	Margin (dB)
Flat								
35.19	V	0.00	1.00	33.17	-6.2	22.2	100.0	-13.1
47.68	V	0.00	1.00	32.50	-14.9	7.6	100.0	-22.4
70.35	V	90.00	1.20	42.50	-15.4	22.5	100.0	-12.9
123.43	V	90.00	1.30	26.80	-9.1	7.7	150.0	-25.8
240.01	V	0.00	3.20	25.50	-11.3	5.1	200.0	-31.9
411.34	V	180.00	1.20	19.80	-6.7	4.5	200.0	-33.0
Upright								
35.19	V	350.00	1.00	32.50	-6.2	20.6	100.0	-13.7
47.68	V	0.00	1.00	33.20	-14.9	8.2	100.0	-21.7
70.35	V	350.00	1.00	41.90	-15.4	21.0	100.0	-13.5
123.43	V	0.00	1.40	27.20	-9.1	8.0	150.0	-25.4
240.01	V	0.00	3.00	26.60	-11.3	5.8	200.0	-30.7
411.34	V	0.00	2.90	18.50	-6.7	3.9	200.0	-34.3
On side								
35.19	V	10.00	1.00	33.20	-6.2	22.3	100.0	-13.0
47.68	V	10.00	1.00	34.10	-14.9	9.1	100.0	-20.8
70.35	V	0.00	1.00	40.20	-15.4	17.3	100.0	-15.2
123.43	V	10.00	1.00	26.90	-9.1	7.7	150.0	-25.7
240.01	V	10.00	2.50	26.50	-11.3	5.7	200.0	-30.8
411.34	V	350.00	3.00	19.20	-6.7	4.2	200.0	-33.6
Flat								
35.19	H	0.00	4.00	30.19	-6.2	15.8	100.0	-16.0
49.84	H	10.00	3.80	36.08	-15.8	10.3	100.0	-19.8
70.35	H	90.00	3.50	39.31	-15.4	15.6	100.0	-16.1
123.43	H	10.00	3.40	29.71	-9.1	10.7	150.0	-22.9
240.01	H	10.00	2.30	23.38	-11.3	4.0	200.0	-34.0
411.34	H	320.00	2.40	28.98	-6.7	12.9	200.0	-23.8
324.17	H	90.00	2.50	25.30	-9.1	6.5	200.0	-29.8
Upright								
35.19	H	10.00	4.00	29.50	-6.2	14.6	100.0	-16.7
49.84	H	10.00	4.00	35.20	-15.8	9.3	100.0	-20.6
70.35	H	120.00	4.00	38.20	-15.4	13.7	100.0	-17.2
123.43	H	0.00	3.20	26.80	-9.1	7.7	150.0	-25.8
240.01	H	0.00	2.50	24.50	-11.3	4.6	200.0	-32.8
411.34	H	180.00	2.50	27.50	-6.7	10.9	200.0	-25.3
324.17	H	270.00	2.30	25.80	-9.1	6.9	200.0	-29.3
On side								
35.19	H	0.00	4.00	29.60	-6.2	14.7	100.0	-16.6

49.84	H	0.00	4.00	33.50	-15.8	7.6	100.0	-22.3
70.35	H	45.00	4.00	36.50	-15.4	11.3	100.0	-18.9
123.43	H	10.00	3.80	27.20	-9.1	8.0	150.0	-25.4
240.01	H	0.00	2.80	24.20	-11.3	4.4	200.0	-33.1
411.34	H	190.00	1.90	25.60	-6.7	8.8	200.0	-27.2
324.17	H	90.00	2.50	25.60	-9.1	6.7	200.0	-29.5

Emissions are the same on all channels

Table 14: Radiated Emission Test Data, High Frequency Data (>1GHz)
(Restricted Bands)

Frequency (MHz)	Polarity H/V	Azimuth (Degree)	Ant. Height (m)	SA Level (dBuV)	Duty Cycle Correction (dB)	Corr Factors (dB)	Corr. Level (uV/m)	Limit (uV/m)	Margin (dB)	Comments
2390.00	V	10.00	2.30	72.50	0.00	-17.8	545.2	5000.0	-19.2	pk -bandedge TX at 2404MHz
2390.00	V	10.00	2.30	49.90	8.80	-17.8	111.3	500.0	-13.0	Avg -bandedge TX at 2404MHz
2483.50	V	90.00	2.70	77.25	0.00	-17.0	1025.8	5000.0	-13.8	pk -Bandedge US TX at 2480MHz
2483.50	V	90.00	2.70	54.55	8.80	-17.0	207.0	500.0	-7.7	Avg-bandedge US TX at 2480MHz
2390.00	H	10.00	2.30	72.50	0.00	-17.8	545.2	5000.0	-19.2	pk -bandedge TX at 2404MHz
2390.00	H	10.00	2.30	49.90	8.80	-17.8	111.3	500.0	-13.0	Avg -bandedge TX at 2404MHz
2483.50	H	100.00	3.02	76.50	0.00	-17.0	940.9	5000.0	-14.5	pk -Bandedge US TX at 2480MHz
2483.50	H	100.00	3.02	52.10	8.80	-17.0	156.2	500.0	-10.1	Avg-bandedge US TX at 2480MHz

No Harmonics or spurs were noted above 1GHz on any tested channel.