



# RF Test Report

**Product Name: Videoconferencing Endpoint**

**Product Model: HUAWEI TE60**

**Report Number: SYBH(R)01597133EB-1**

**FCC ID: QISHW-TE60**

**IC: 6369A-TE60**

**Reliability Laboratory of Huawei Technologies Co., Ltd.**

Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District,  
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## Notice

1. The laboratory has Passed the accreditation by China National Accreditation Service for Conformity Assessment (CNAS). The accreditation number is L0310.
2. The laboratory has Passed the accreditation by The American Association for Laboratory Accreditation (A2LA). The accreditation number is 2174.01.
3. The laboratory has been listed by the US Federal Communications Commission to perform electromagnetic emission measurements.
  - The recognition number for the test site located in Shenzhen is 97456.
  - The recognition number for the test site located in Shanghai is 684868.
  - The recognition number for the test site located in Chengdu is 216797.
4. The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements.
  - The recognition number for the test site located in Shenzhen is 6369A, which contains 6369A-1 (3m chamber in G2), 6369A-2 (3m chamber in K3) and 6369A-3 (10m chamber in K3).
  - The recognition numbers for the test site located in Shanghai is 6369D, which contains 6369D-1 (3m chamber) and 6369D-2 (10m chamber).
  - The recognition number for the test site located in Chengdu is 6369E-1.
5. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
6. The test report is invalid if there is any evidence of erasure and/or falsification.
7. The test report is only valid for the test samples.
8. Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.



**Applicant:** Huawei Technologies Co., Ltd.  
**Address:** Administration Building, Headquarters of Huawei Technologies Co., Ltd.,  
 Bantian, Longgang District, Shenzhen, 518129, P.R.C  
**Product Name:** Videoconferencing Endpoint  
**Product Model:** HUAWEI TE60

**Date of Receipt Sample:** 2013-09-22      2014-12-03  
**Start Date of Test:** 2013-09-22      2014-12-03  
**End Date of Test:** 2013-10-30      2014-12-11

**Test Result:** Pass

<b>Approved by Senior Engineer:</b>	2015-01-20	Zhang Xinghai	<i>Zhang Xing hai</i>
	Date	Name	Signature

<b>Prepared by:</b>	2015-01-20	Zhang Weimin	<i>Zhang Weimin</i>
	Date	Name	Signature



### Modification Record

No.	Last Report No.	Modification Description
1	---	First report.
2	SYBH(R)011289 25EB-1 (FCC ID: QIS-TE60; IC: 6369A-TE60)	<input checked="" type="checkbox"/> Substituted Modification (The last report is withdrawn):  The present product/model (#New) utilizes the same or similar radio design, shielding, interface, physical layout and so on as another product/model (#Ref). The differences and modifications between these two products/models are declared by the applicant and showed as below: <ul style="list-style-type: none"><li>● Name of some boards is changed.</li><li>● The WLAN module is directly welded on the board VC83TCBCA, but the RF specifications are not changed.</li><li>● Modifications to some small non-RF components.</li><li>● All others are identical and not changed.</li></ul> Considering the differences and modifications as mentioned above, the re-assessments and/or additional measurements should be required, as follows, to demonstrate that the #New also comply with the relevant standard(s): <ul style="list-style-type: none"><li>● The measurement of “Maximum Peak Conducted Output Power” is updated (due to new version FCC KDB test method modifications).</li><li>● The measurement of “Unwanted Emissions into Restricted Frequency Bands” is added (for worse-case EUT conf. considerations for #New against #Ref).</li><li>● The measurement of “AC Power Line Conducted Emissions” is added.</li><li>● All other test results for the #New are directly derived from the test results for the #Ref.</li></ul> <input type="checkbox"/> Coexistence Modification (The last report is reserved):



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## 1 General Information

### 1.1 **Applied Standard**

Applied Rules: 47 CFR FCC Part 2, Subpart J (10-1-13 Edition)  
47 CFR FCC Part 15, Subpart C (10-1-13 Edition)  
IC RSS-Gen (Issue 3, December 2010)  
IC RSS-210 (Issue 8, December 2010)

Test Method: FCC KDB 558074 D01 DTS Meas Guidance v03r02  
ANSI C63.10-2009, American National Standard for Testing Unlicensed Wireless Devices  
FCC KDB 662911 D01 Multiple Transmitter Output v01r02 (if applicable)  
FCC KDB 662911 D02 MIMO with Cross-Polarized Antennas v01 (if applicable)

### 1.2 **Test Location**

Test Location 1 (TL1): Reliability Laboratory of Huawei Technologies Co., Ltd.  
Address: Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian,  
Longgang District, Shenzhen, 518129, P.R.C

### 1.3 **Test Environment Condition**

Ambient Temperature: 15 to 30 °C  
Ambient Relative Humidity: 20 to 85 %  
Atmospheric Pressure: Not applicable



## 2 Test Summary

### 2.1 Measurement Technical Requirements

Test Item	FCC Rule	IC Rule	Requirements	Test Result	Verdict (NOTE 1)	Test Location
DTS (6 dB Bandwidth)	15.247(a)(2)	RSS-210,A8.2(a)	≥ 500 kHz.	Annex A	Pass	TL1
Occupied Bandwidth	---	RSS-210,2.1 RSS-Gen,4.6.1	No limit.	Annex B	Pass	TL1
Maximum Peak Conducted Output Power	15.247(b)(3)	RSS-210,A8.4(4)	<30dBm-IF{G[dBi]>6dBi, G[dBi]-6dB,0dB}. (Peak)	Annex C	Pass	TL1
Maximum Power Spectral Density Level	15.247(e)	RSS-210,A8.2(b)	<8dBm/3kHz-IF{G[dBi]>6dBi,G[dBi]-6dB,0dB}. (Peak)	Annex D	Pass	TL1
Unwanted Emissions into Non-Restricted Frequency Bands	15.247(d)	RSS-210,A8.5	<-20dBc/100kHz.	Annex E	Pass	TL1
Unwanted Emissions into Restricted Frequency Bands (NOTE 2)	15.247(d) 15.209	RSS-210,A8.5 RSS-210,2.2 RSS-Gen,7.2.2 RSS-Gen,7.2.5	§15.209/§7.2.5 limit.	Annex F	Pass	TL1
AC Power Line Conducted Emissions	15.207	RSS-Gen,7.2.4	§15.207/§7.2.4 limit.	Annex G	Pass	TL1
Photos of Test Setups	---	---	---	Annex H	---	---
<p>NOTE 1: For the verdict, the "N/A" denotes "not applicable", the "N/T" denotes "not tested".</p> <p>NOTE 2: According to KDB558074, antenna-port conducted measurements (Cond.) are acceptable as an alternative to radiated measurements (Rad.) for demonstrating compliance to the limits in the restricted frequency bands. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case emissions will also be required.</p>						

## 2.2 Non-measurement Technical Requirements

Item	FCC Rule	IC Rule	Requirements	Evidence	Verdict (NOTE)
Antenna use	§15.203	RSS-Gen,7.1.2	Permanently attached antenna. User manual notices required (see detailed for RSS-Gen, 7.1.2) .	See user's manual.	Comply
User manual notice for licence-exempt radio apparatus	---	RSS-Gen,7.1.3	User manual notice for licence-exempt radio apparatus is required (see detailed for RSS-Gen, 7.1.3).	See user's manual.	Comply
Radio apparatus containing digital circuits	15 subpart B	RSS-Gen,7.1.4 ICES-003	FCC: §15 subpart B. IC: ICES-003.	See separate test EMC report.	Comply
Radiation exposure	§15.247(i) §1.1307(b) §2.1091 §2.1093	RSS-Gen,5.6 RSS-102	General population/uncontrolled limit.	See separate test MPE/EMF report or declaration.	Comply
NOTE: For the verdict, the "N/A" denotes "not applicable", the "N/T" denotes "not tested".					



### 3 Description of the Equipment under Test (EUT)

#### 3.1 General Description

The HUAWEI TE60 videoconferencing endpoint (TE60 for short) is a high-performance HD conferencing device. The TE60 features the industry's most powerful H.264 1080p60 video encoding and decoding technology, and supports MPEG-4 Low Delay Audio Coder (AAC-LD) and HD data transmission. The TE60 incorporates a multipoint control unit (MCU) that can be used to hold multipoint conferences containing up to six sites. It supports multiple video encoding and decoding protocols such as H.264 Scalable Video Coding (SVC), H.264 High Profile (HP), and Internet Protocol version 6 (IPv6), as well as Wi-Fi wireless access mode.

#### 3.2 EUT Identity

NOTE: Unless otherwise noted in the report, the functional boards installed in the units shall be selected from the below list, but not means all the functional boards listed below shall be installed in one unit.

##### 3.2.1 Board

Board	
Board Name	Description
VC83TPPB	Terminal Video Process Board B
VC83TEDB	Terminal Video Encode/Decode Board B
VC83TCBCA	Manufactured Board, TE60, VC83TCBCA
VC41ET1AA	4*E1 Interface Board
VC41ET1BA	1*E1 Interface Board
VC41POEA	Packet Over E1 Board A
VC83TTIA	Terminal Infrared Received Unit Board A
VC83TVIFA	Manufactured Board, TE60, VC83TVIFA, Terminal Video Interface Board F, RoHS, 1*2
VC41TCOBA	Terminal Communication Board

##### 3.2.2 Sub-Assembly

Sub-Assembly			
Sub-Assembly Name	Model	Manufacturer	Description
---	---	---	---

### 3.3 Technical Description

Characteristics	Description			
IEEE 802.11 WLAN Mode Supported	<input checked="" type="checkbox"/> 802.11b (20 MHz channel bandwidth), <input checked="" type="checkbox"/> 802.11g (20 MHz channel bandwidth) <input checked="" type="checkbox"/> 802.11n (20 MHz channel bandwidth), <input checked="" type="checkbox"/> 802.11n (40 MHz channel bandwidth)			
TX/RX Operating Range	2400-2483.5 MHz band	$fc = 2407 \text{ MHz} + N * 5 \text{ MHz}$ , where: <ul style="list-style-type: none"> <li>● <math>fc</math> = "Operating Frequency" in MHz,</li> <li>● <math>N</math> = "Channel Number" with the range from 1 to 11 with step of 1 for the 20 MHz channel bandwidth, or 3 to 9 with step of 1 for the 40 MHz channel bandwidth.</li> </ul>		
Data Rate	802.11b	1 Mbps, 2 Mbps, 5.5 Mbps, 11 Mbps		
	802.11g	6 Mbps, 9 Mbps, 12 Mbps, 18 Mbps, 24 Mbps, 36 Mbps, 48 Mbps, 54 Mbps		
	802.11n (SISO)	MCS 0 to MCS 7		
	802.11n (MIMO)	(Not supported)		
Modulation Type	DBPSK/DQPSK/CCK (DSSS), BPSK/QPSK/16QAM/64QAM (OFDM).			
Emission Designator	14M4G1D (for 802.11b mode), 16M5G7D (for 802.11g mod), 35M7G7D (for 802.11n mode)			
Antenna	Model/ID	51622118		
	Type	<input type="checkbox"/> External, <input checked="" type="checkbox"/> Integrated		
	Ports	<input checked="" type="checkbox"/> Ant 1, <input type="checkbox"/> Ant 2, <input type="checkbox"/> Ant 3, <input type="checkbox"/> Ant 4		
	Smart System	<input checked="" type="checkbox"/> SISO (for 802.11b/g/n), <input type="checkbox"/> MIMO (for 802.11n): 2 Tx & 2 Rx, <input type="checkbox"/> Diversity (for 802.11b/g) :           Tx &           Rx		
	Gain	3 dBi (per antenna port, max.)		
	Remark	When the EUT is put into service, the practical maximum antenna gain should NOT exceed the value as described above.		
Power Supply	Type	<input type="checkbox"/> AC/DC Adapter	<input type="checkbox"/> PoE	<input checked="" type="checkbox"/> Other: AC mains
	Model/ID			---
	Specification			~100-240V AC, 50/60Hz

## 4 General Test Conditions / Configurations

### 4.1 EUT Configurations

#### 4.1.1 General Configurations

Configuration	Description
Test Antenna Ports	Until otherwise specified, <ul style="list-style-type: none"> <li>All TX tests are performed at all TX antenna ports of the EUT, and</li> <li>All RX tests are performed at all RX antenna ports of the EUT.</li> </ul>
Multiple RF Sources	Other than the tested RF source of the EUT, other RF source(s) are disabled or shutdown during measurements.

#### 4.1.2 Customized Configurations

# EUT Conf.	Test Mode	Ant. Port	TX/RX Freq. [MHz]	Power Conf. per Port	Duty Cycle
11B1-B-Ant1	Tx, 802.11b, 1 Mbps, SISO.	Ant 1	2412 (Ch.1)	ATETXPOW0=13	0.97
11B1-M-Ant1	Tx, 802.11b, 1 Mbps, SISO.	Ant 1	2437 (Ch.6)	ATETXPOW0=13	0.97
11B1-T-Ant1	Tx, 802.11b, 1 Mbps, SISO.	Ant 1	2462 (Ch.11)	ATETXPOW0=13	0.97
11G6-B-Ant1	Tx, 802.11g, 6 Mbps, SISO.	Ant 1	2412 (Ch.1)	ATETXPOW0=10	0.87
11G6-M-Ant1	Tx, 802.11g, 6 Mbps, SISO.	Ant 1	2437 (Ch.6)	ATETXPOW0=10	0.87
11G6-T-Ant1	Tx, 802.11g, 6 Mbps, SISO.	Ant 1	2462 (Ch.11)	ATETXPOW0=10	0.87
11N0-20B-Ant1	Tx, 802.11n, 20 MHz, MCS0, SISO.	Ant 1	2412 (Ch.1)	ATETXPOW0=10	0.86
11N0-20M-Ant1	Tx, 802.11n, 20 MHz, MCS0, SISO.	Ant 1	2437 (Ch.6)	ATETXPOW0=10	0.86
11N0-20T-Ant1	Tx, 802.11n, 20 MHz, MCS0, SISO.	Ant 1	2462 (Ch.11)	ATETXPOW0=10	0.86
11N0-40B-Ant1	Tx, 802.11n, 40 MHz, MCS0, SISO.	Ant 1	2422 (Ch.3)	ATETXPOW0=4	0.75
11N0-40M-Ant1	Tx, 802.11n, 40 MHz, MCS0, SISO.	Ant 1	2437 (Ch.6)	ATETXPOW0=4	0.75
11N0-40T-Ant1	Tx, 802.11n, 40 MHz, MCS0, SISO.	Ant 1	2452 (Ch.9)	ATETXPOW0=4	0.75



## 4.2 Test Environments

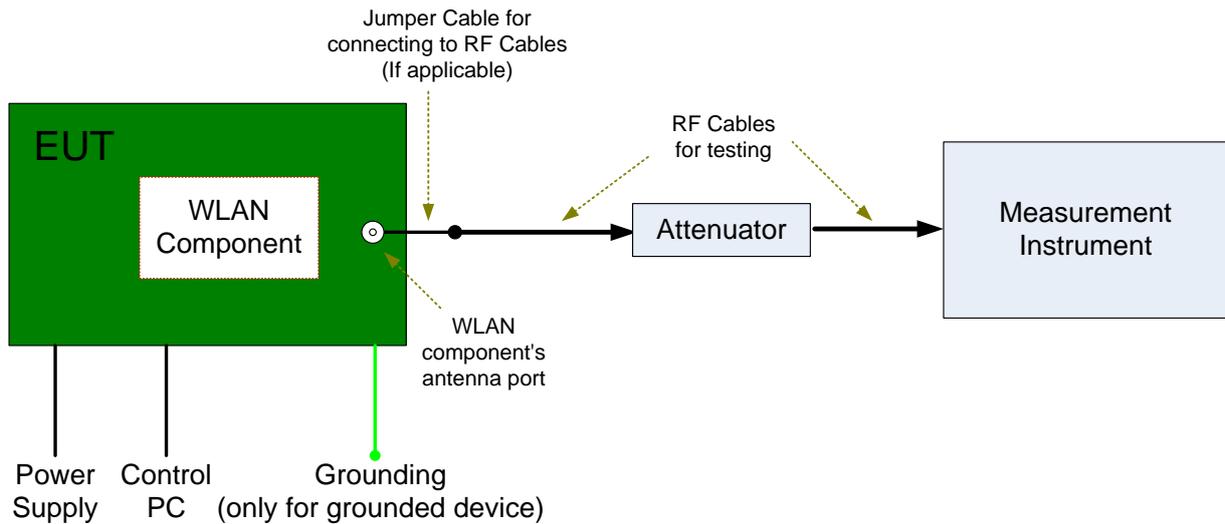
NOTE: The values used in the test report may be stringent than the declared.

Environment Parameter	Selected Values During Tests		
	Temperature	Voltage	Relative Humidity
NTNV	Ambient	120 VAC, 60 Hz.	Ambient

### 4.3 Test Setups

#### 4.3.1 Test Setup 1

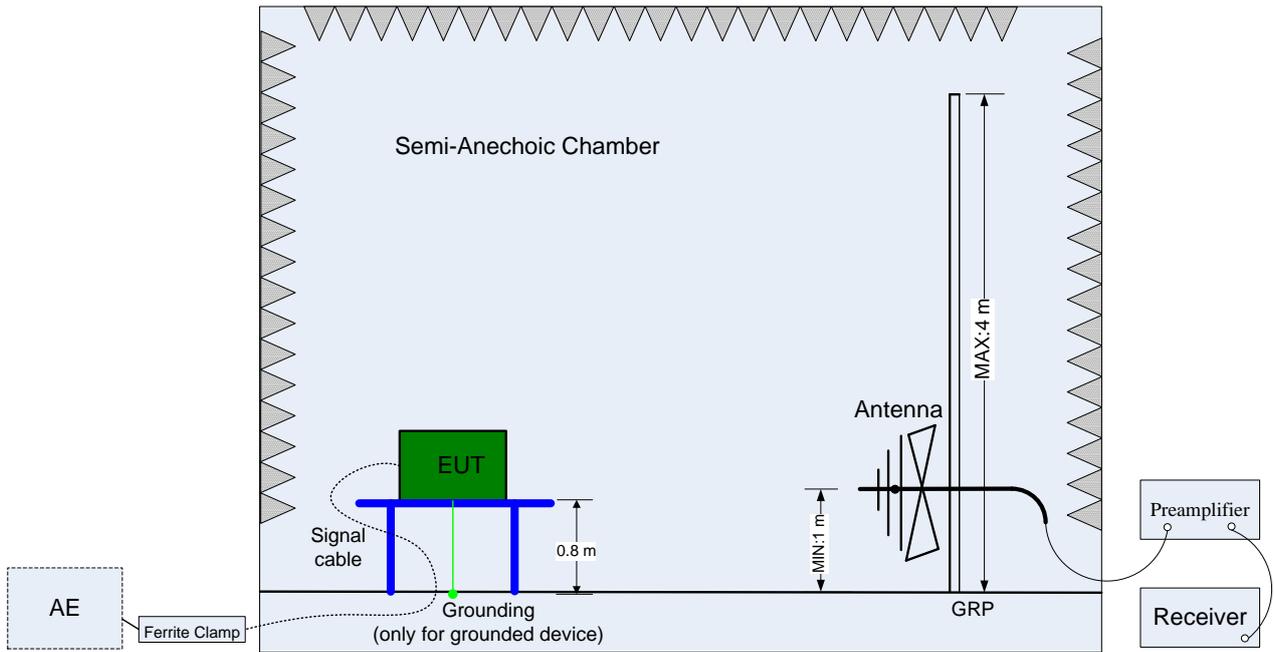
The WLAN component's antenna ports(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by PC/software to emit the specified signals for the purpose of measurements.



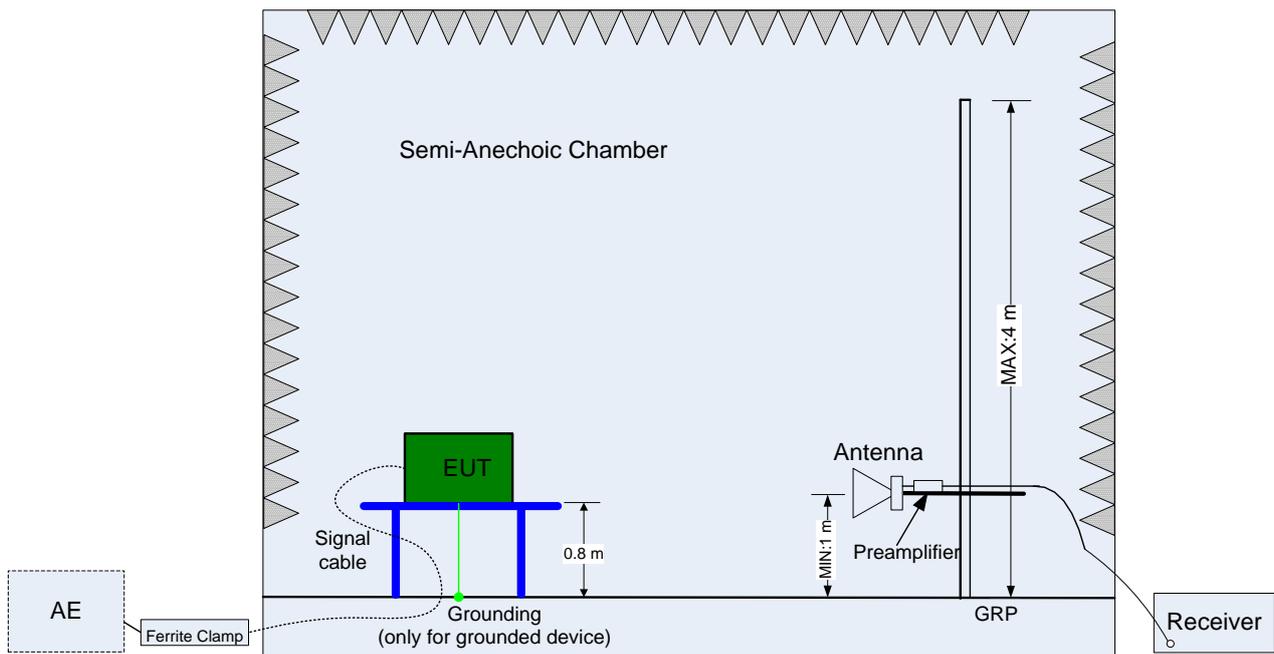
#### 4.3.2 Test Setup 2

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.4. The test distance is 3 m. The setup is according to ANSI C63.10, ANSI C63.4 and CAN/CSA-CEI/IEC CISPR 22.

The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).



(Below 1 GHz)

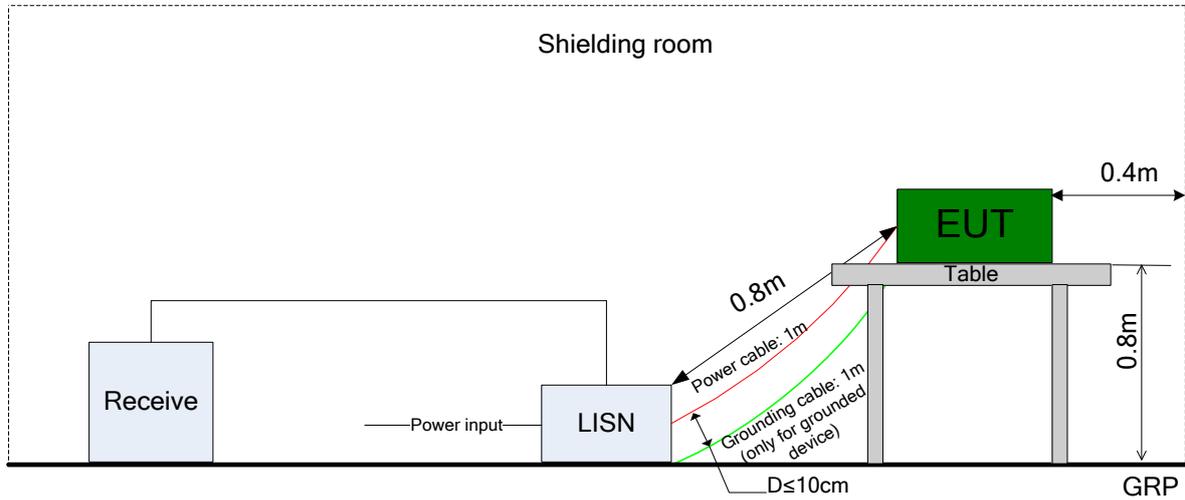


(Above 1 GHz)

### 4.3.3 Test Setup 3

The mains cable of the EUT (maybe per AC/DC Adapter) must be connected to LISN. The LISN shall be placed 0.8 m from the boundary of EUT and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance is between the closest points of the LISN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8m from the LISN.

Ground connections, where required for safety purposes, shall be connected to the reference ground point of the LISN and, where not otherwise provided or specified by the manufacturer, shall be of same length as the mains cable and run parallel to the mains connection at a separation distance of not more than 0.1 m.





#### 4.4 Test Conditions

Configuration	Description	
DTS (6 dB) Bandwidth		
Test Method	FCC KDB 558074 §8.1 Option 1.	
Test Env.	NTNV	
Test Setup	Test Setup 1	
EUT Conf.	All EUT conf. with Tx modes.	
Occupied Bandwidth		
Test Method	RSS-Gen, §4.6.1.	
Test Env.	NTNV	
Test Setup	Test Setup 1	
EUT Conf.	All EUT conf. with Tx modes.	
Maximum Peak Conducted Output Power		
Test Method	FCC KDB 558074 §9.1.2 Integrated Band Power Method.	
Test Env.	NTNV	
Test Setup	Test Setup 1	
EUT Conf.	All EUT conf. with Tx modes.	
Maximum Power Spectral Density Level		
Test Method	FCC KDB 558074 §10.2 Method PKPSD (peak PSD).	
Test Env.	NTNV	
Test Setup	Test Setup 1	
EUT Conf.	All EUT conf. with Tx modes.	
Unwanted Emissions into Non-Restricted Frequency Bands		
Test Method	FCC KDB 558074 §11.	
Test Env.	NTNV	
Test Setup	Test Setup 1	
EUT Conf.	All EUT conf. with Tx modes.	
Unwanted Emissions into Restricted Frequency Bands		
Test Method	Cond.	FCC KDB 558074 §12.2, Conducted (antenna-port).
	Radt.	ANSI C63.10; FCC KDB 558074 §12, Radiated (Radt_A: whole device emissions; Radt_B: cabinet/case emissions with impedance matching for antenna-port). [30 MHz to 1 GHz]: Pre: RBW=100kHz; VBW=300kHz; Det=Peak. Final: RBW=120kHz; Det=CISPR Quasi-Peak. [1 GHz to 40 GHz]: Average: RBW=1MHz; VBW=3MHz; Det.=RMS; SPAN/Sweep-point≤RBW/2; Sweep-time=Auto; Trace≥RMS*100; Add-Transd.=10*Ig(1/X). Peak: RBW=1MHz; VBW=3MHz; Det.=Peak; Sweep-time=Auto; Trace=Max Hold.
Test Env.	Cond.	NTNV
	Radt.	NTNV



Configuration	Description		
Test Setup	Cond.	Test Setup 1	
	Radt.	Test Setup 2	
EUT Conf.	Cond.	All ranges	---
	Radt	30M-1GHz	Worst Case (11B/1_T@1) Worst Case (11B/1_T@1) (new added)
		1G-3GHz	Worse Case (11B/1_B@1) Worse Case (11B/1_M@1) Worse Case (11B/1_T@1) Worse Case (11G/6_B@1) Worse Case (11G/6_M@1) Worse Case (11G/6_T@1) Worse Case (11N20/0_B@1) Worse Case (11N20/0_M@1) Worse Case (11N20/0_T@1) Worse Case (11N40/0_B@1) Worse Case (11N40/0_M@1) Worse Case (11N40/0_T@1) Worse Case (11G/6_M@1) (new added) Worse Case (11N20/0_M@1) (new added)
		3G-18GHz	Worse Case (11B/1_T@1) Worse Case (11G/6_T@1)
	18G-26.5GHz	Worst Case (11G/6_T@1)	
AC Power Line Conducted Emissions			
Test Method	AC mains conducted. Pre: RBW = 10 kHz; Det. = Peak. Final: RBW = 9 kHz; Det. = CISPR Quasi-Peak & Average.		
Test Env.	NTNV		
Test Setup	Test Setup 3		
EUT Conf.	11B/1_B@1 11B/1_B@1 (new added)		



## 5 Main Test Instruments

NOTE: Unless otherwise specified, the calibration intervals for test instruments were Annual (per year). The other intervals, if applicable, are marked with (##y), which denotes ## years calibration interval.

Equipment Name	Manufacturer	Model	Serial Number	Cal. Due
Test Setup 1				
Spectrum Analyzer	Agilent	N9020A	MY51240619	2014-02-03
Test Setup 1 (new updated)				
Power Sensor	Agilent	N1921A	MY45240282	2014-07-21
Test Setup 2				
EMI Test Receiver	R&S	ESU26	100150	2014-05-14
Bilog Antenna (30M-1GHz)	SCHWARZBECK	VULB 9163	9163-357	2014-05-27 (2y)
Horn Antenna (1G-18GHz)	R&S	HF906	100683	2014-02-01 (2y)
Horn Antenna (18G-26.5GHz)	ETS	3160-9	053215-21874	2014-12-24 (2y)
Test Setup 2 (new added)				
EMI Test Receiver	R&S	ESU26	100150	2015-05-09
Bilog Antenna (30M-1GHz)	SCHWARZBECK	VULB 9163	9163-491	2015-02-02 (2y)
Horn Antenna (1G-18GHz)	R&S	HF906	100683	2015-02-02 (2y)
Horn Antenna (18G-26.5GHz)	ETS	3160-9	053215-21874	2015-12-24 (2y)
Test Setup 3				
EMI Test Receiver	R&S	ESCI	101163	2014-01-28
Artificial Mains Network	R&S	ENV4200	100134	2014-01-28
Test Setup 3 (new added)				
EMI Test Receiver	R&S	ESCI	101163	2015-11-04
Artificial Mains Network	R&S	ENV216	100382	2015-11-04

END



# Annex A: DTS (6 dB) Bandwidth



For measurements on devices with multiple transmit chains, the test is performed at each chain, and is used as respective result for each chain.

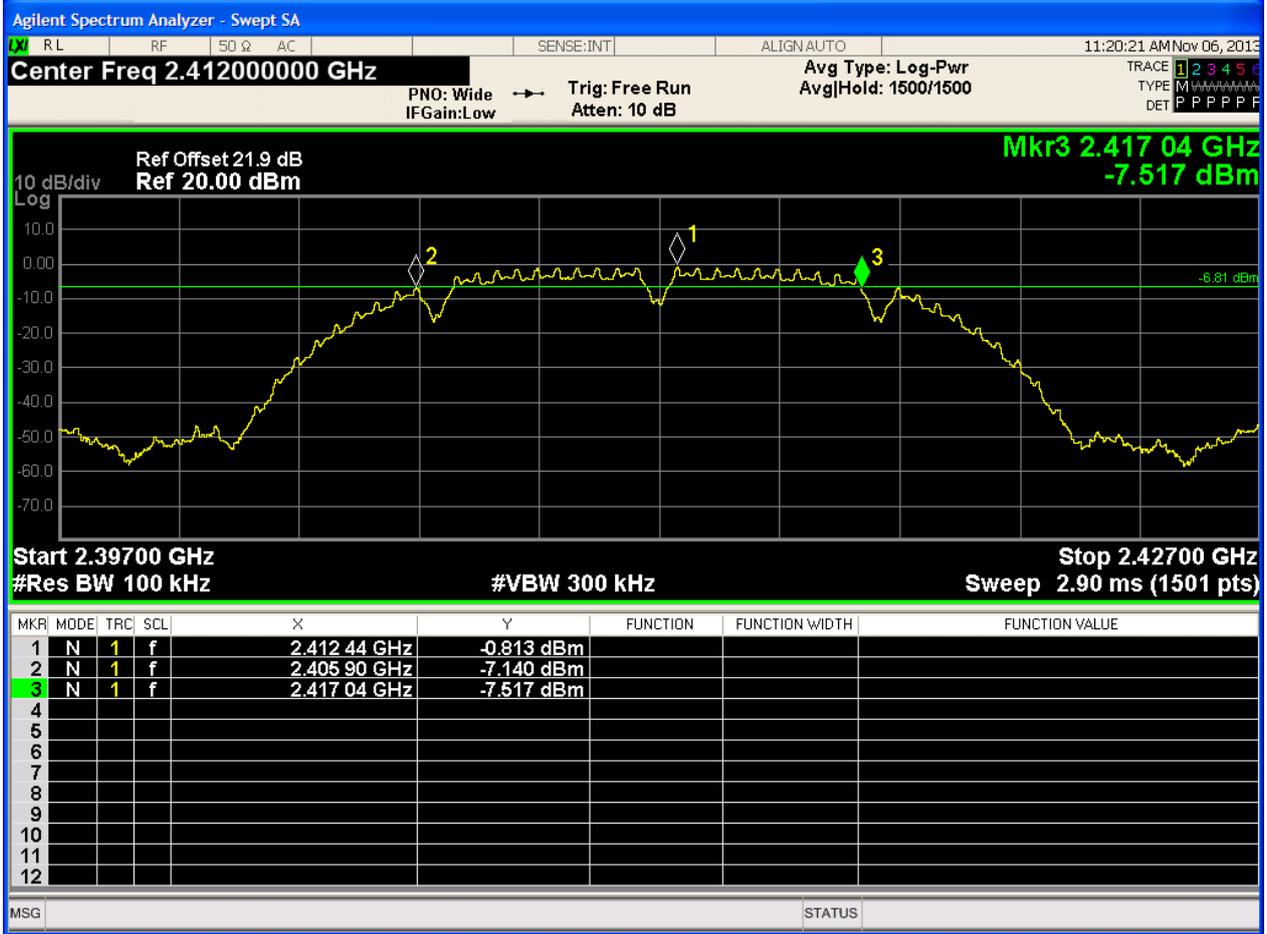
## 1 Result Table

EUT Conf.	Ant.	DTS (6 dB) Bandwidth [MHz]	Verdict
11B1-B-Ant1	Ant 1	11.14	Pass
11B1-M-Ant1	Ant 1	11.12	Pass
11B1-T-Ant1	Ant 1	11.12	Pass
11G6-B-Ant1	Ant 1	15.68	Pass
11G6-M-Ant1	Ant 1	15.7	Pass
11G6-T-Ant1	Ant 1	15.7	Pass
11N0-20B-Ant1	Ant 1	15.74	Pass
11N0-20M-Ant1	Ant 1	15.74	Pass
11N0-20T-Ant1	Ant 1	15.38	Pass
11N0-40B-Ant1	Ant 1	35.12	Pass
11N0-40M-Ant1	Ant 1	35.12	Pass
11N0-40T-Ant1	Ant 1	35.12	Pass

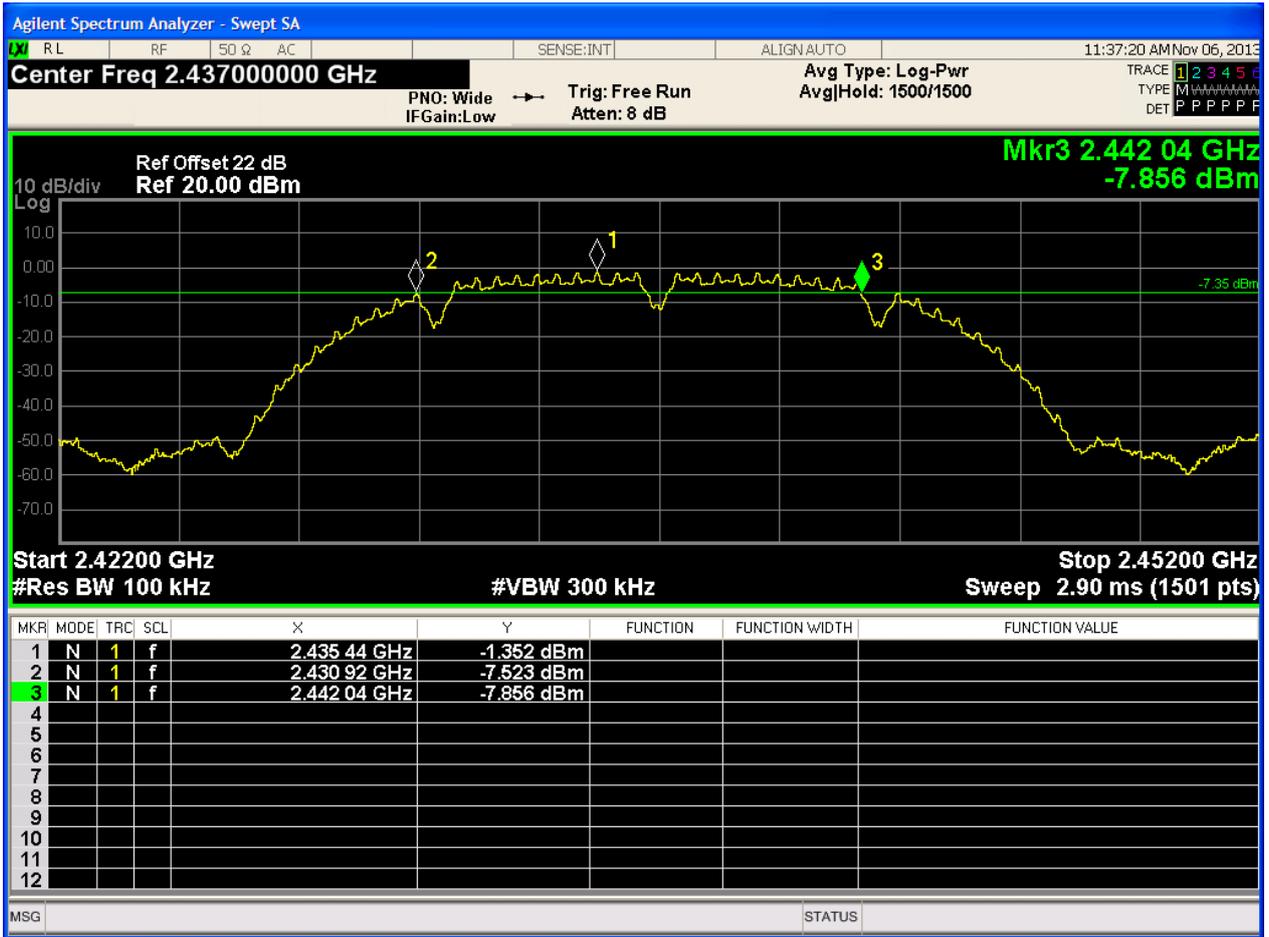


## 2 Test Plot

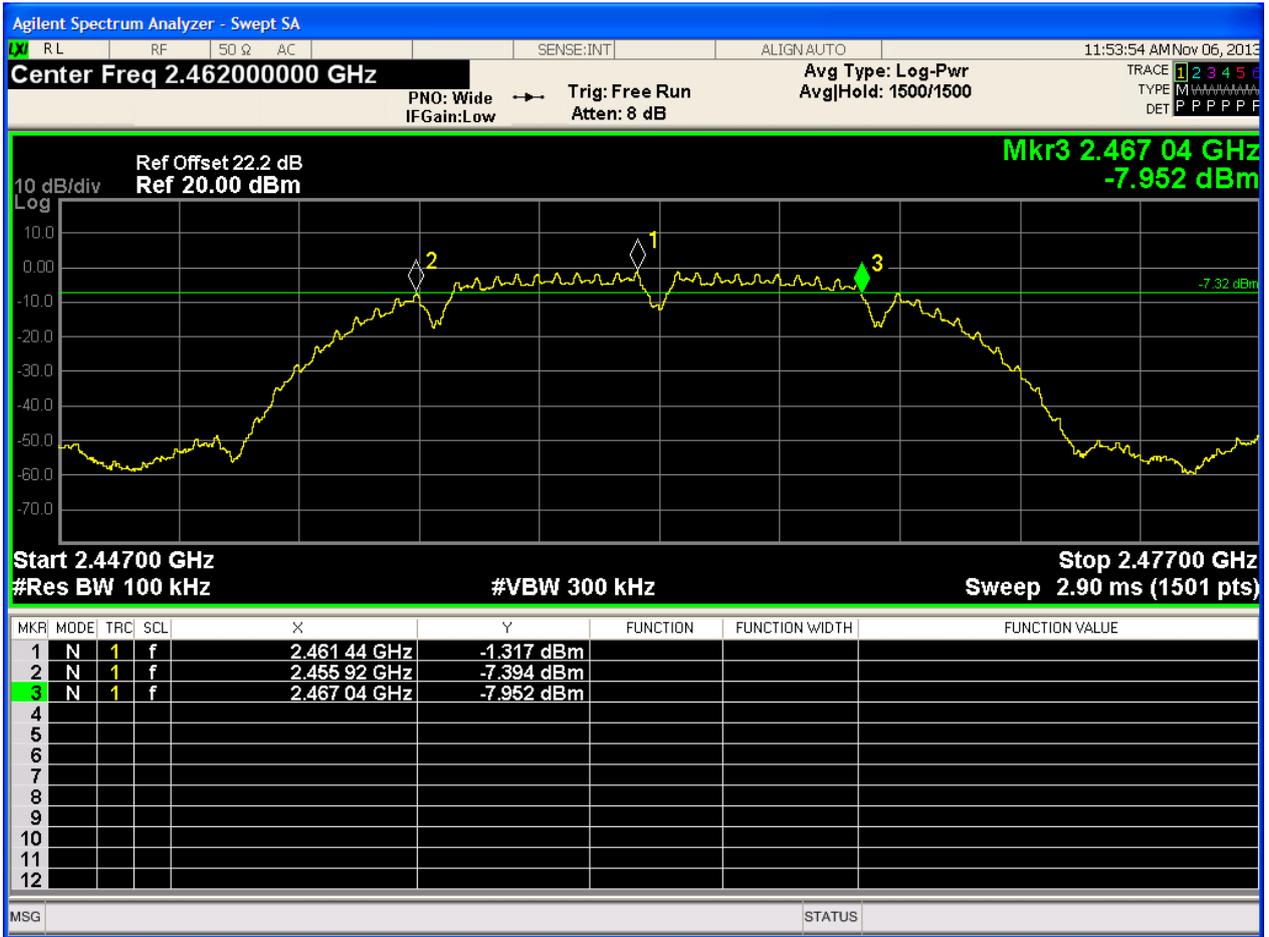
### 2.1 11B/1\_B@1



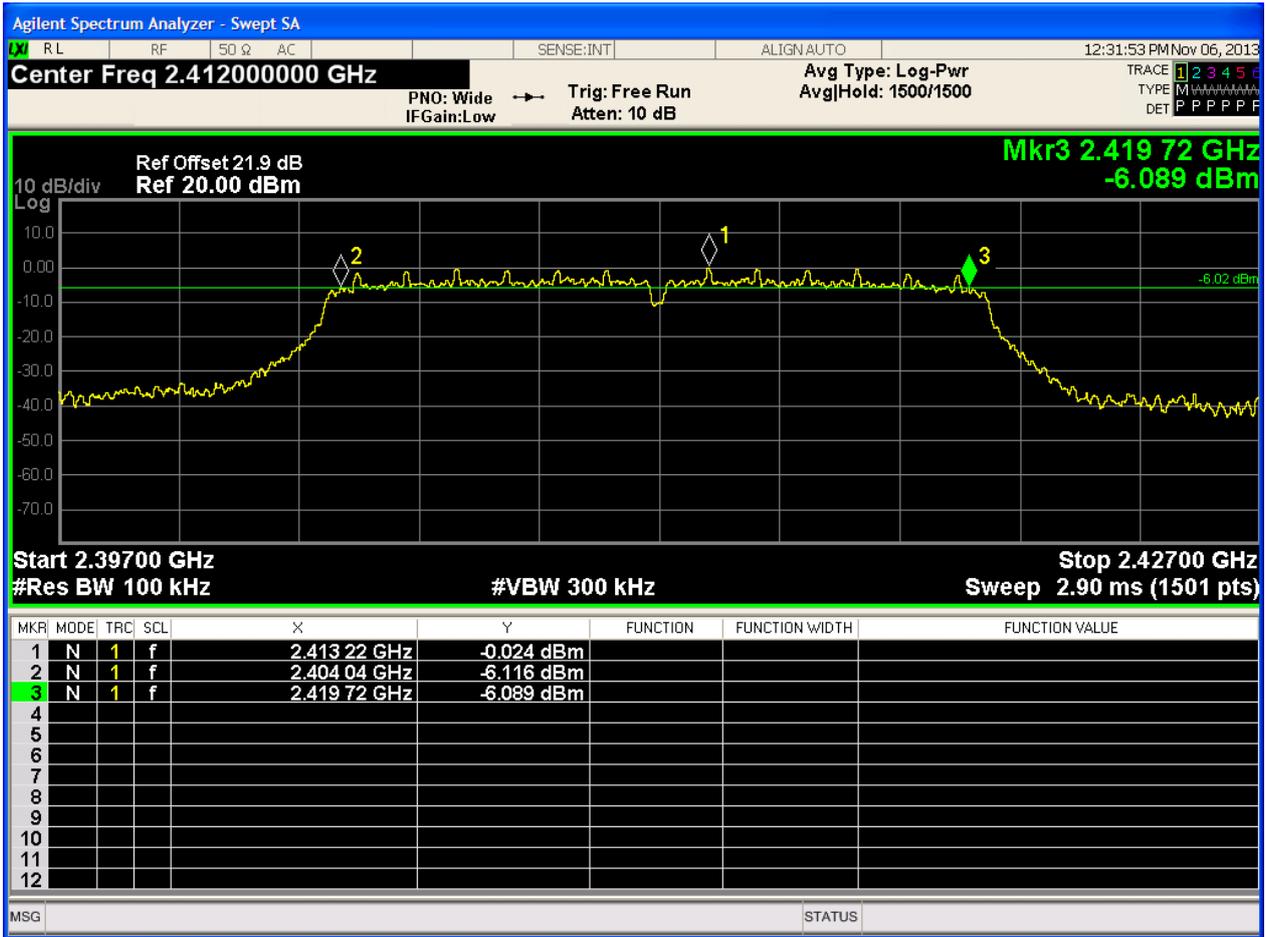
### 2.2 11B/1\_M@1



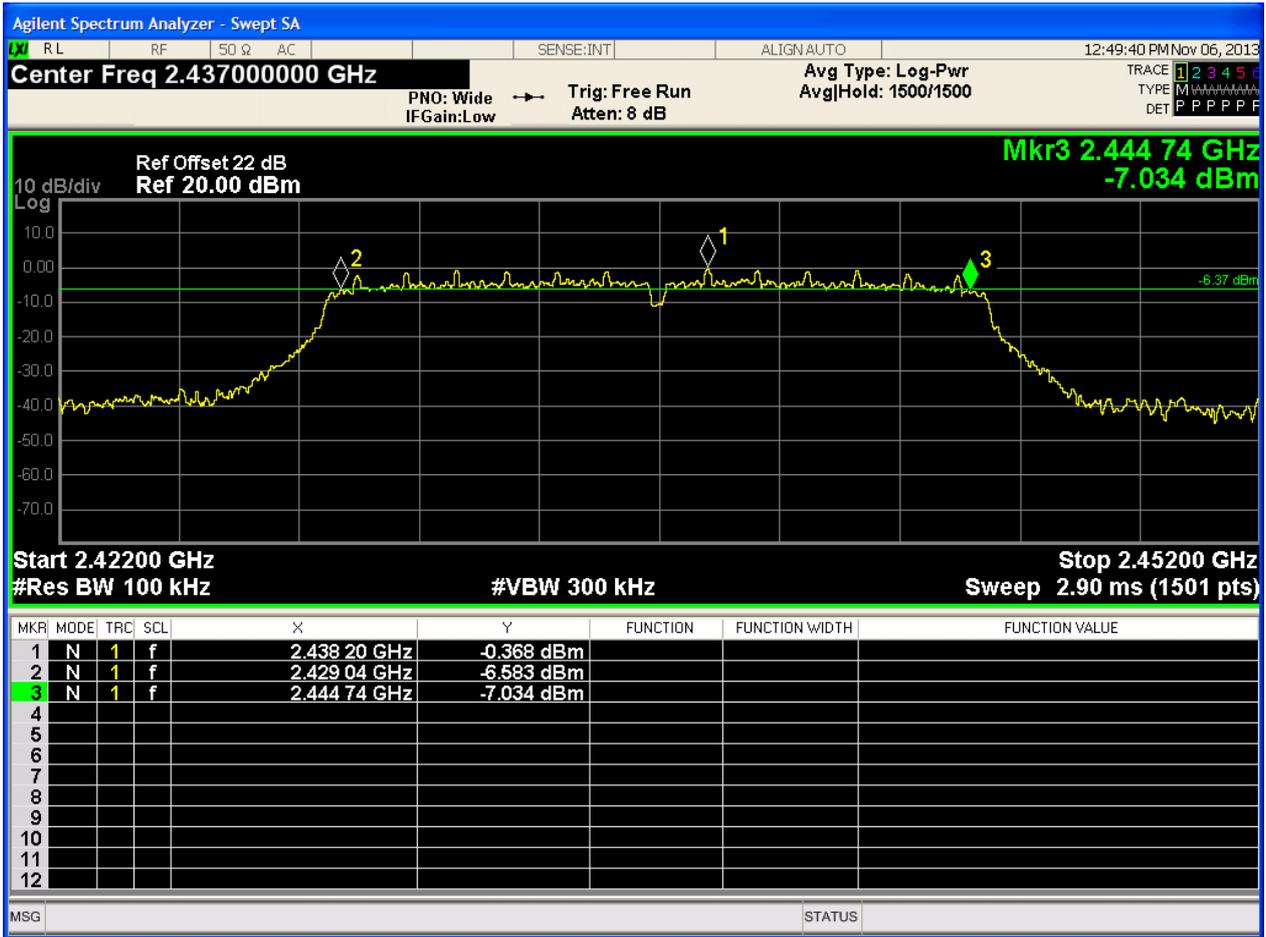
2.3 11B/1\_T@1



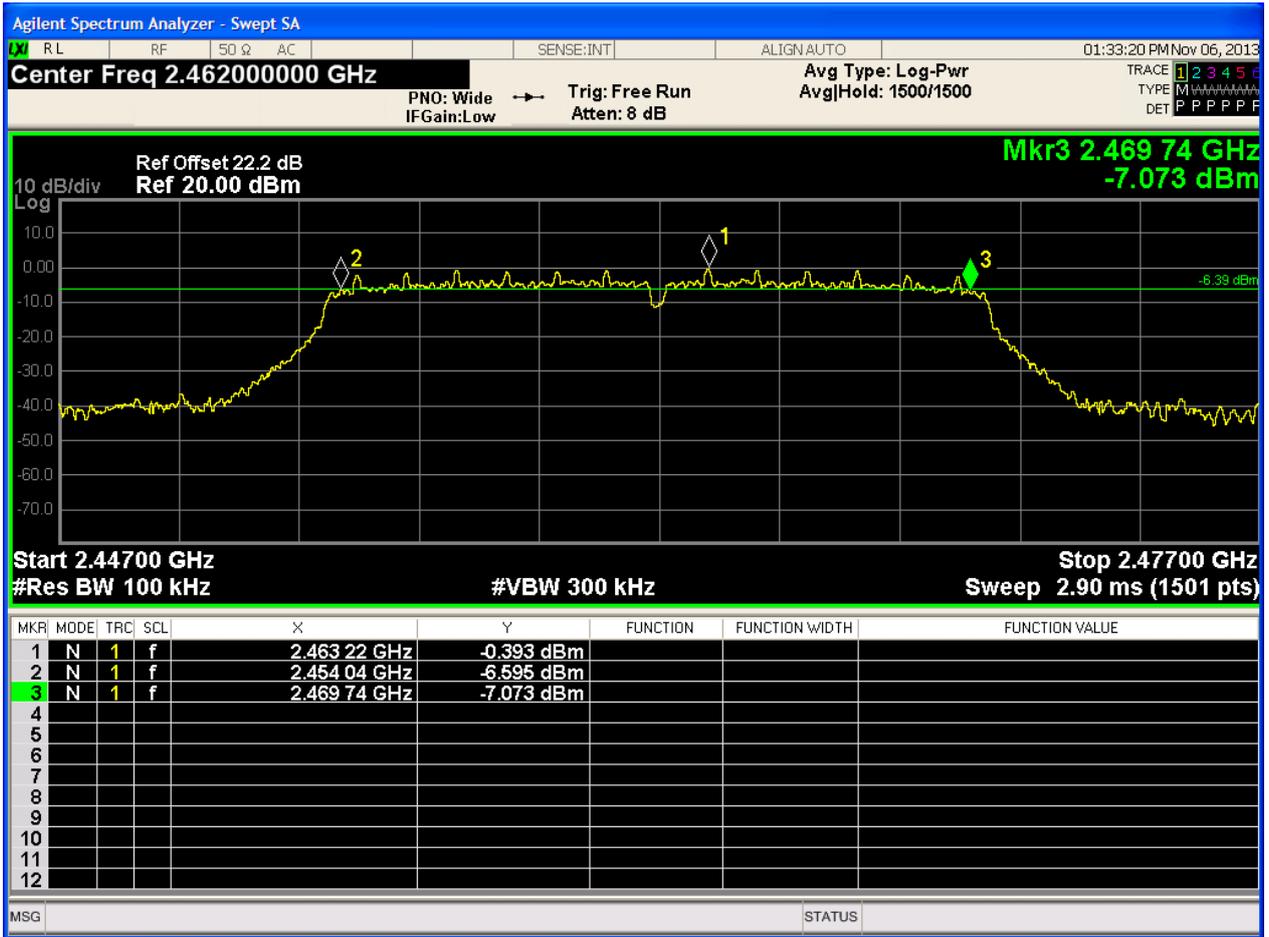
2.4 11G/6\_B@1



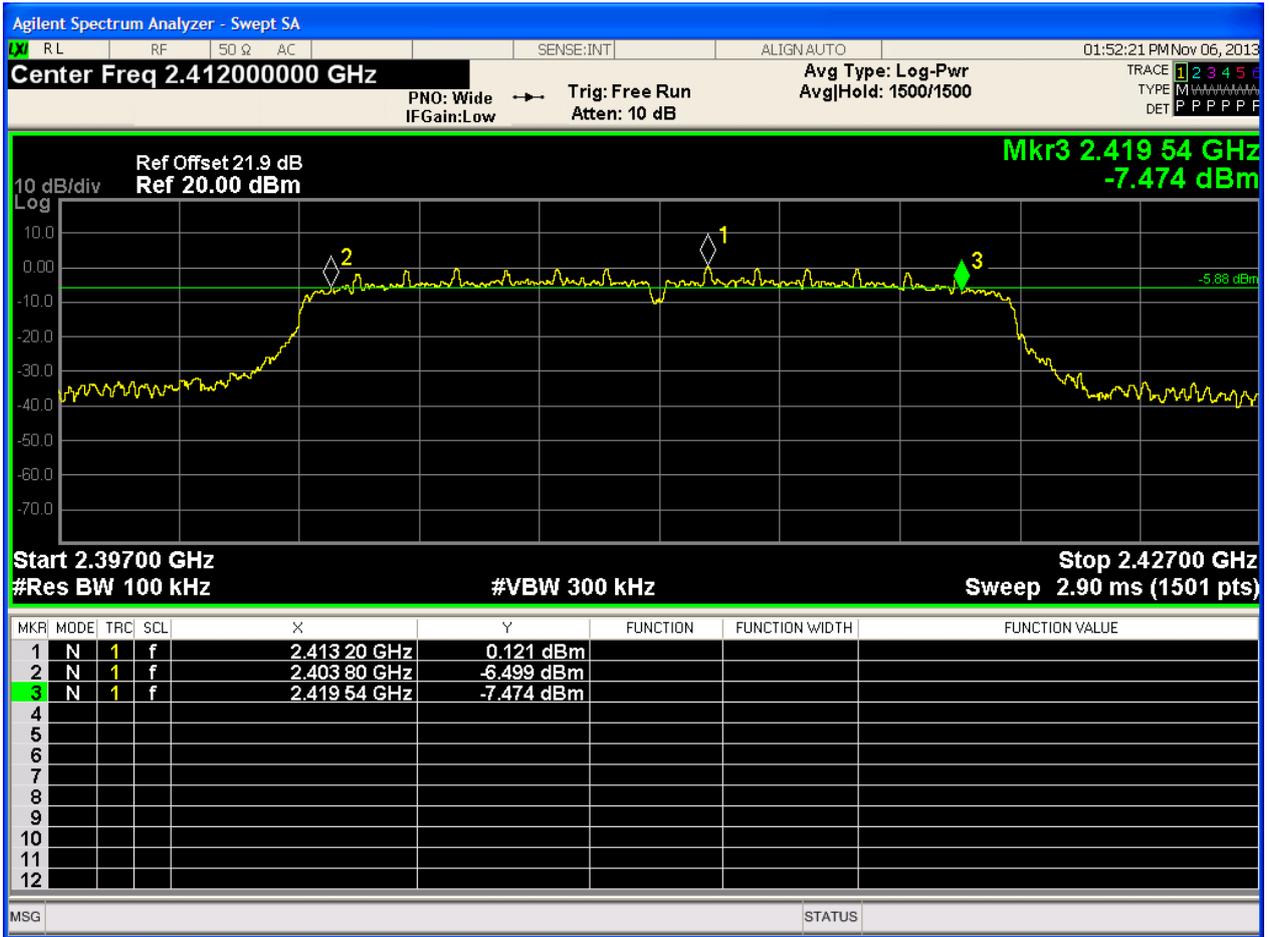
2.5 11G/6\_M@1



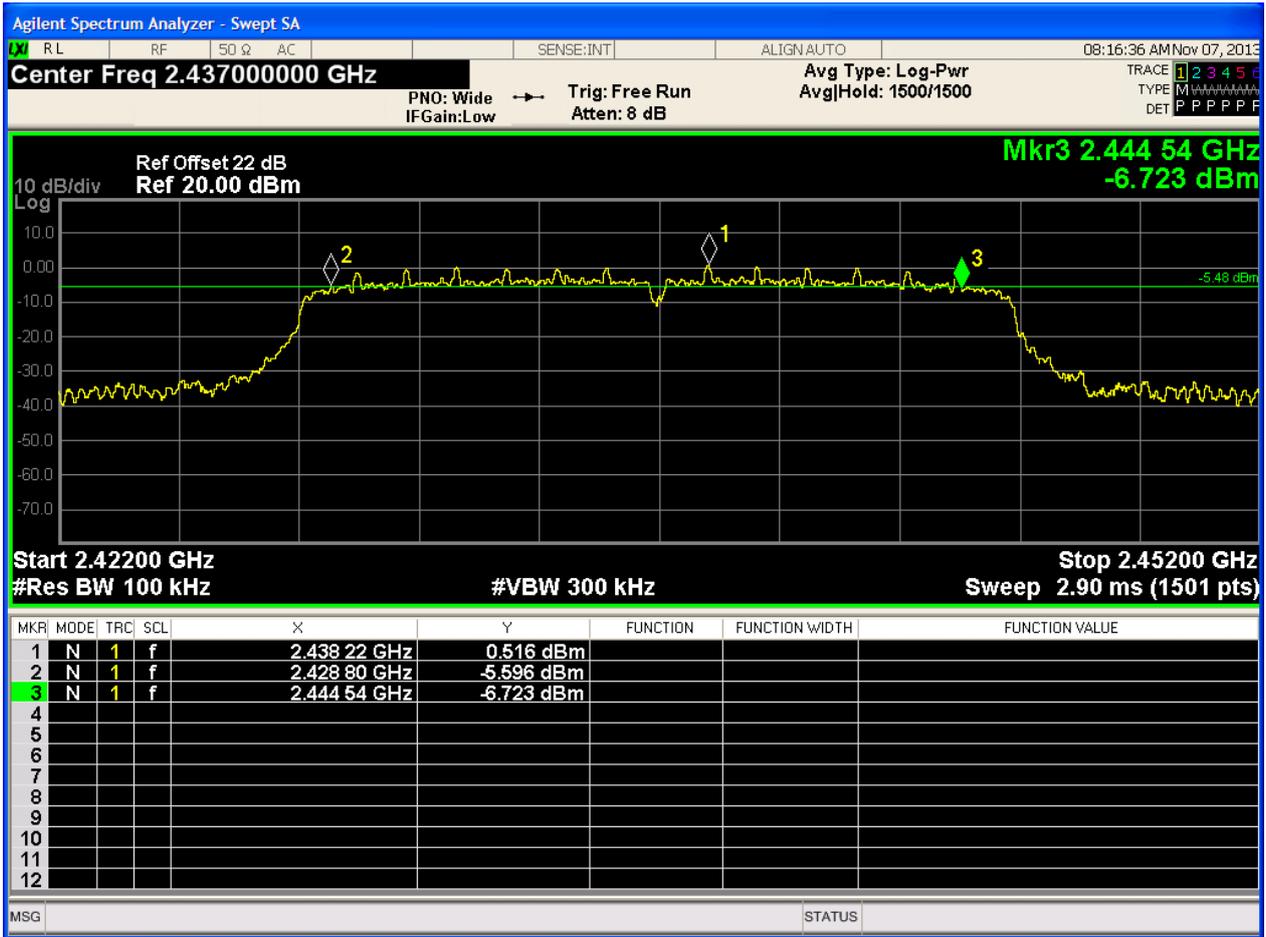
2.6 11G/6\_T@1



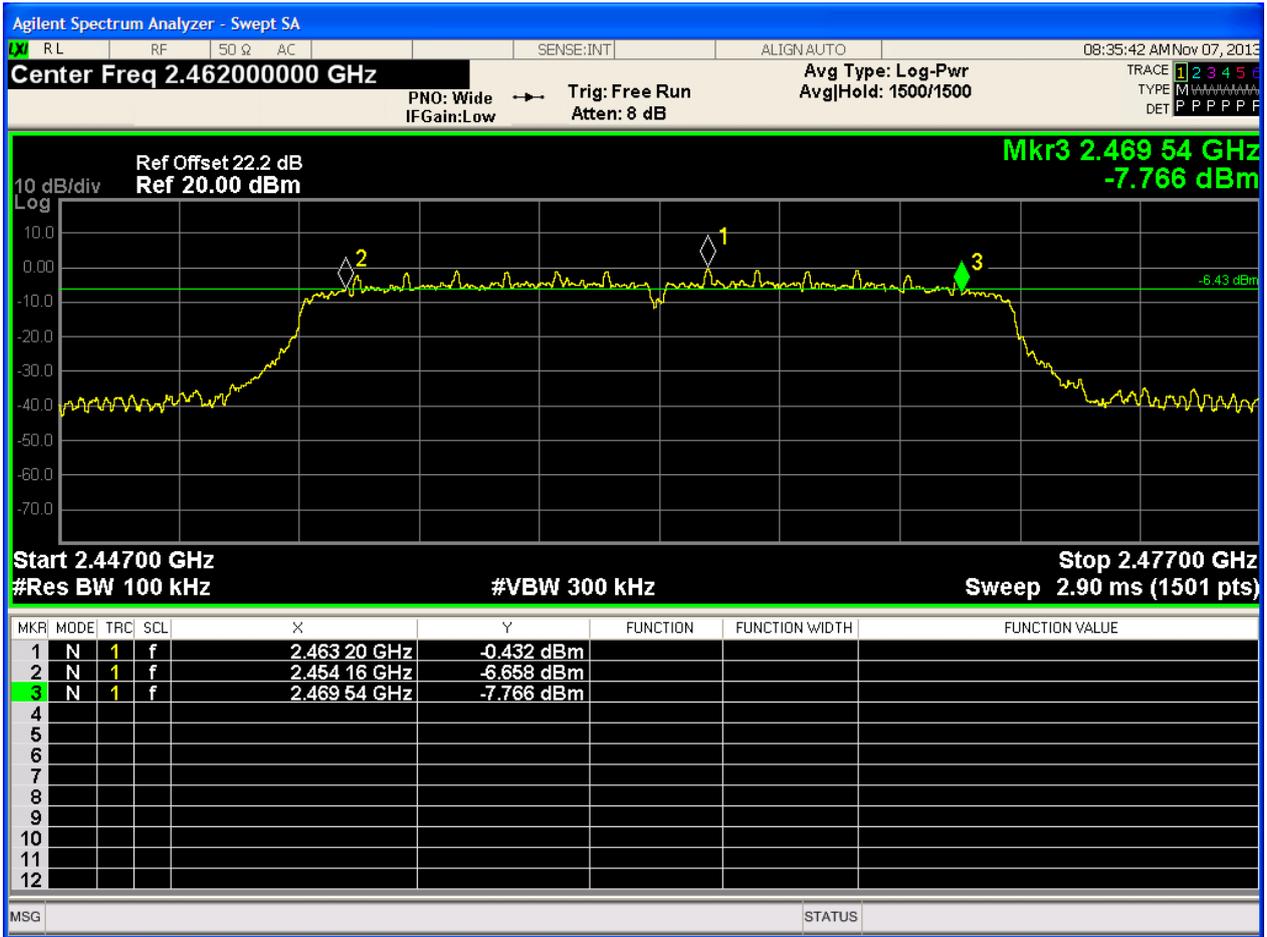
2.7 11N20/0\_B@1



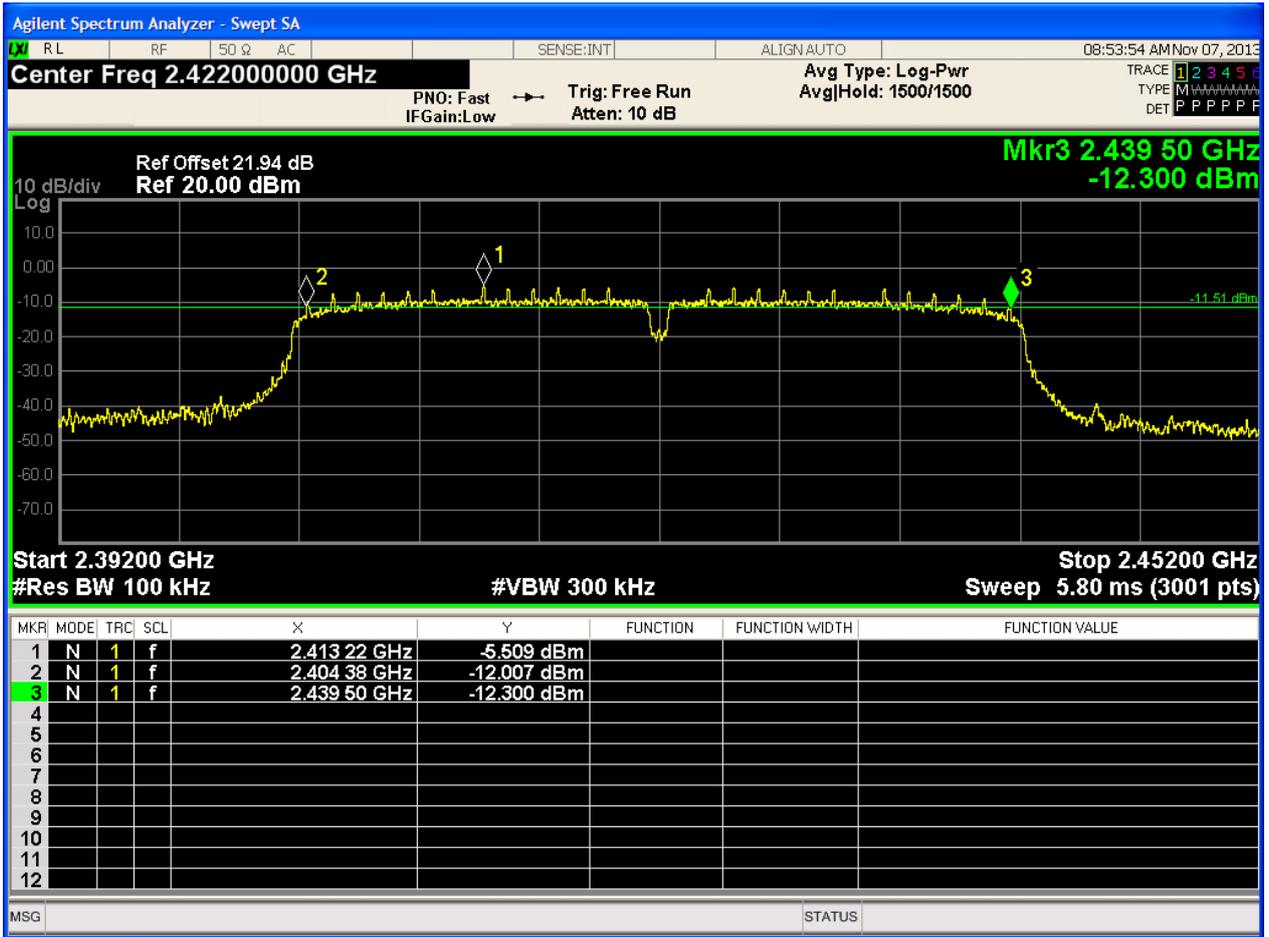
2.8 11N20/0\_M@1



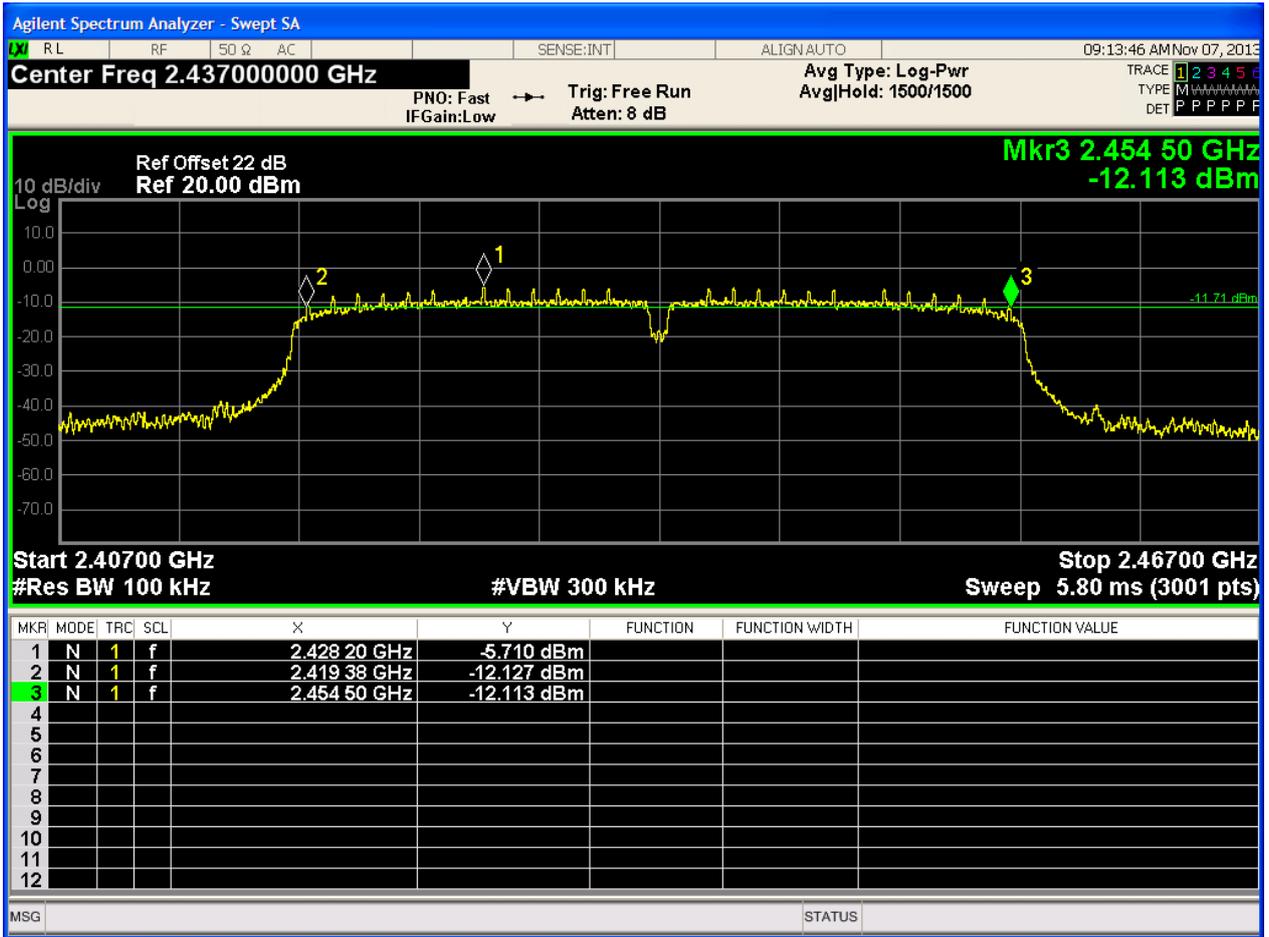
2.9 11N20/0\_T@1



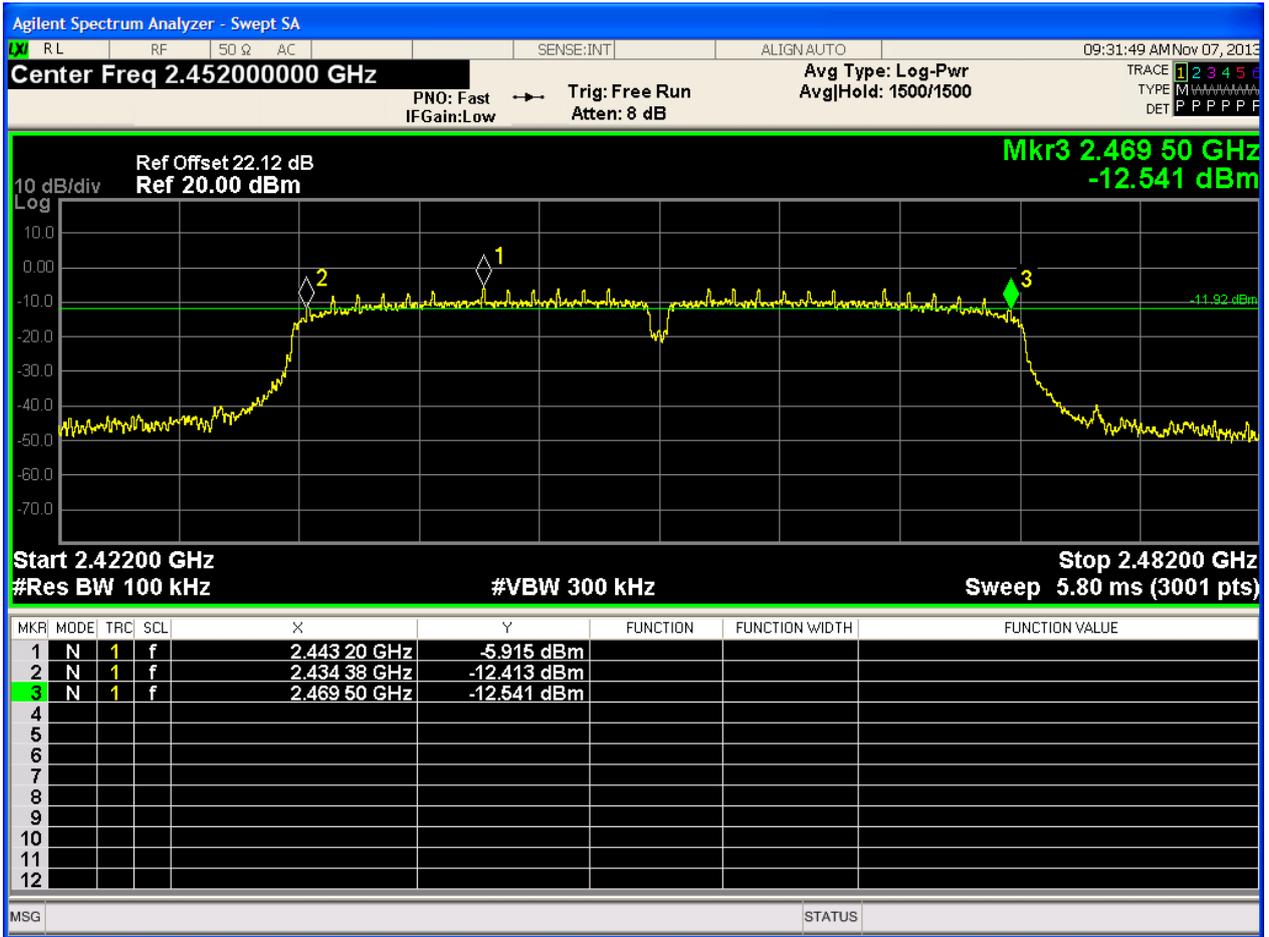
2.1011N40/0\_B@1



2.1111N40/0\_M@1



2.1211N40/0\_T@1





# Annex B: Occupied Bandwidth



For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

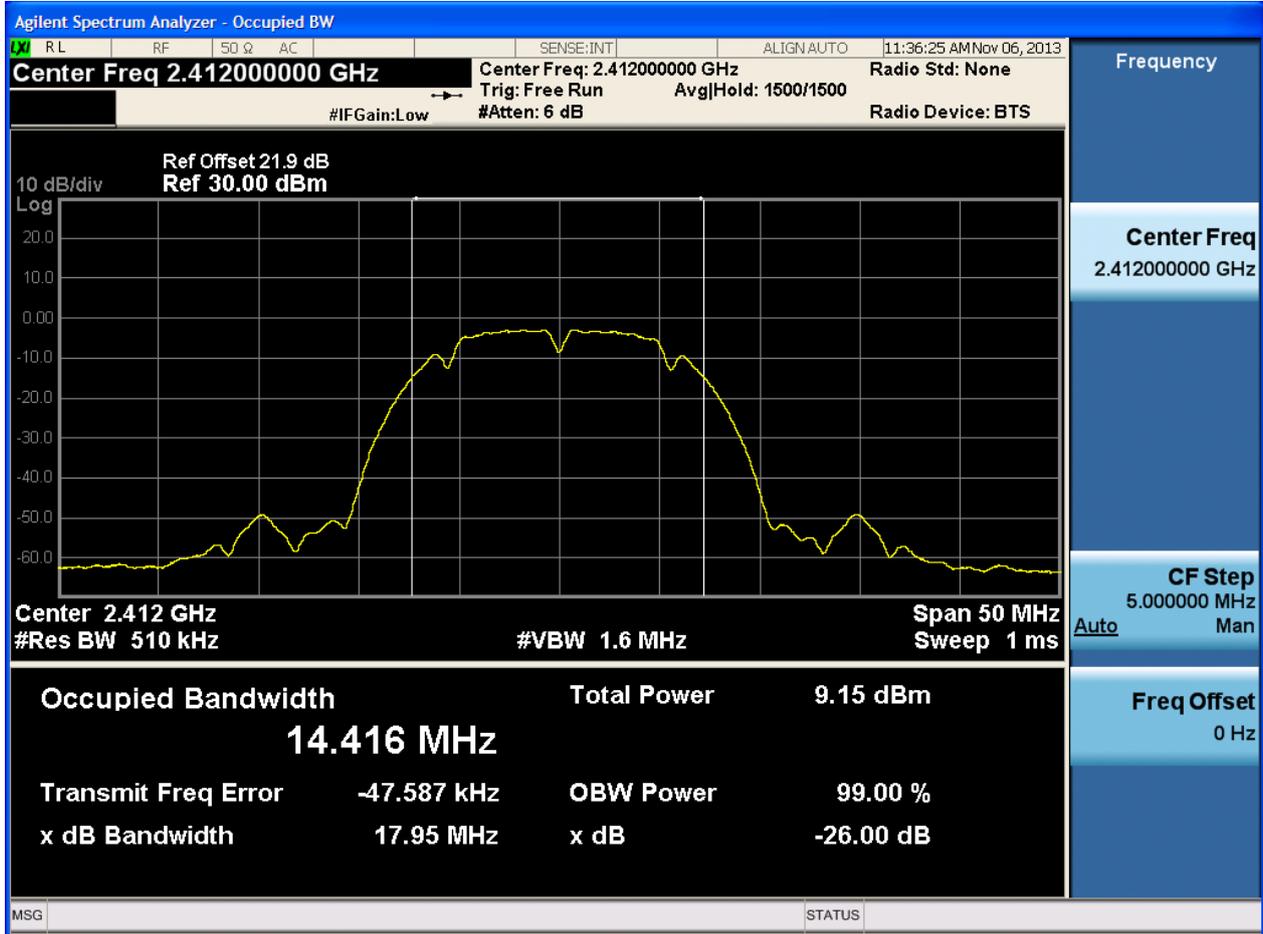
## 1 Result Table

EUT Conf.	Ant.	Occupied Bandwidth [MHz]	Verdict
11B1-B-Ant1	Ant 1	14.41614	Pass
11B1-M-Ant1	Ant 1	14.4006	Pass
11B1-T-Ant1	Ant 1	14.38025	Pass
11G6-B-Ant1	Ant 1	16.48424	Pass
11G6-M-Ant1	Ant 1	16.47448	Pass
11G6-T-Ant1	Ant 1	16.46839	Pass
11N0-20B-Ant1	Ant 1	17.53461	Pass
11N0-20M-Ant1	Ant 1	17.53425	Pass
11N0-20T-Ant1	Ant 1	17.51876	Pass
11N0-40B-Ant1	Ant 1	35.71172	Pass
11N0-40M-Ant1	Ant 1	35.68359	Pass
11N0-40T-Ant1	Ant 1	35.68688	Pass

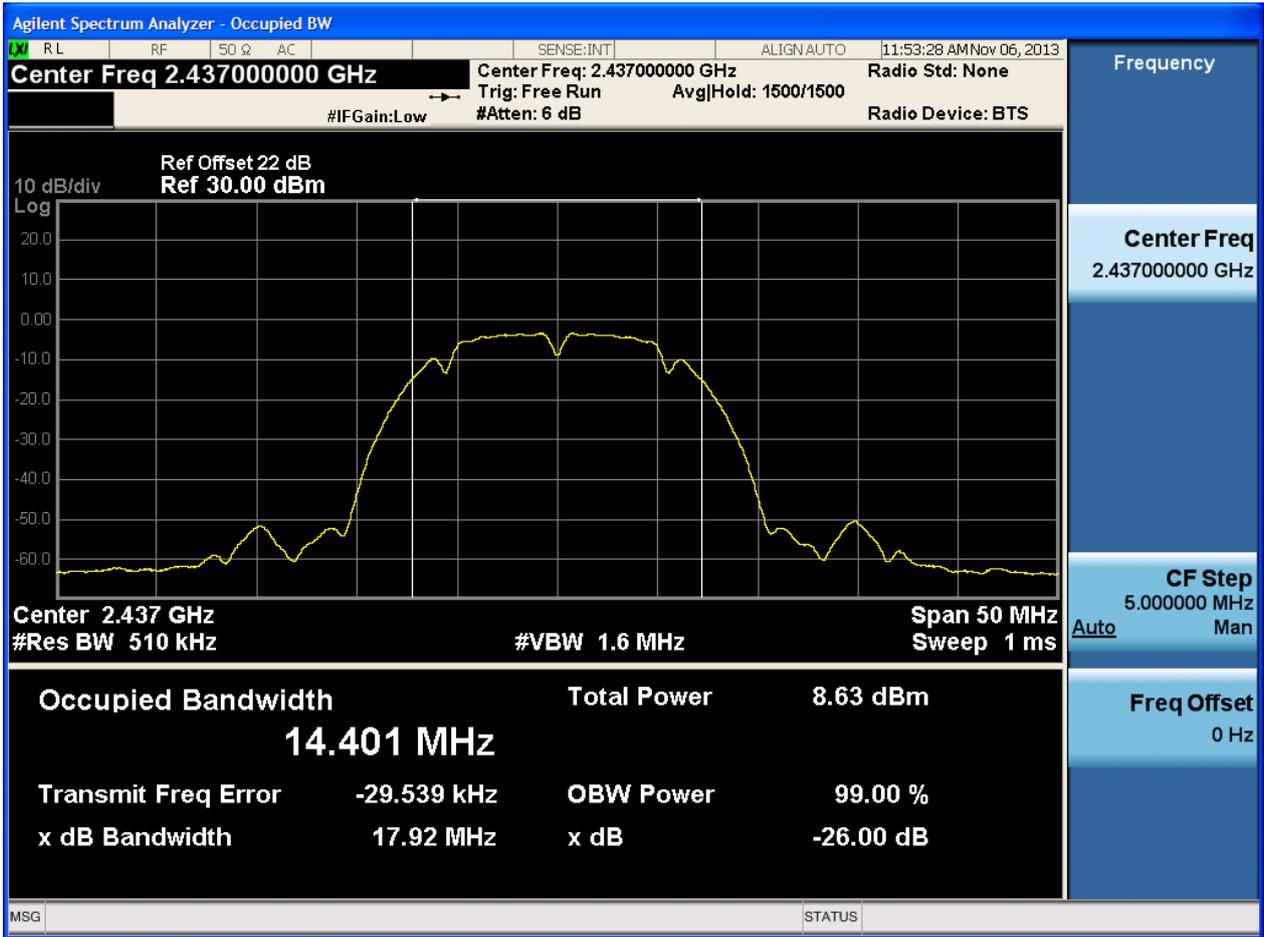


## 2 Test Plot

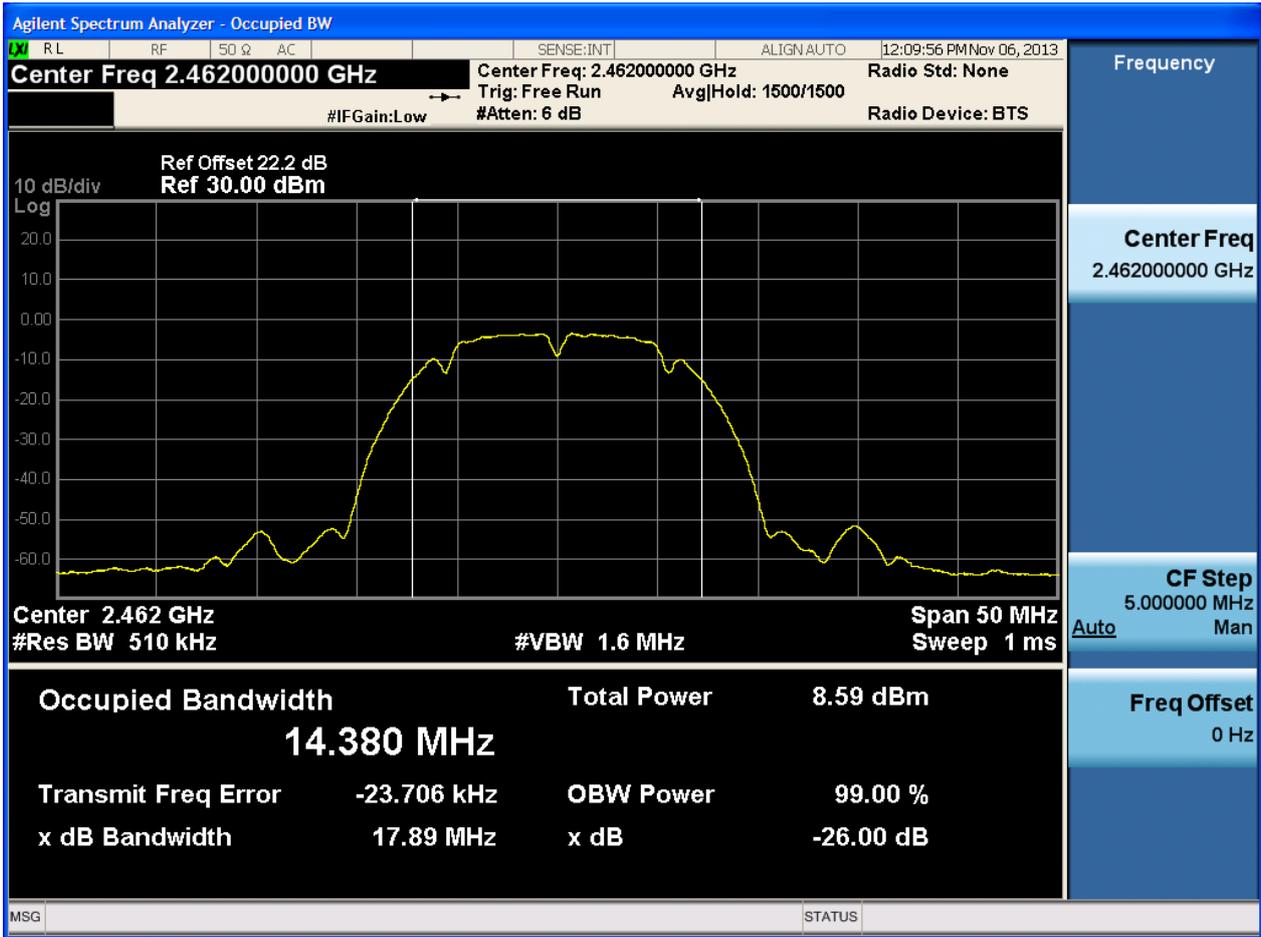
### 2.1 11B/1\_B@1



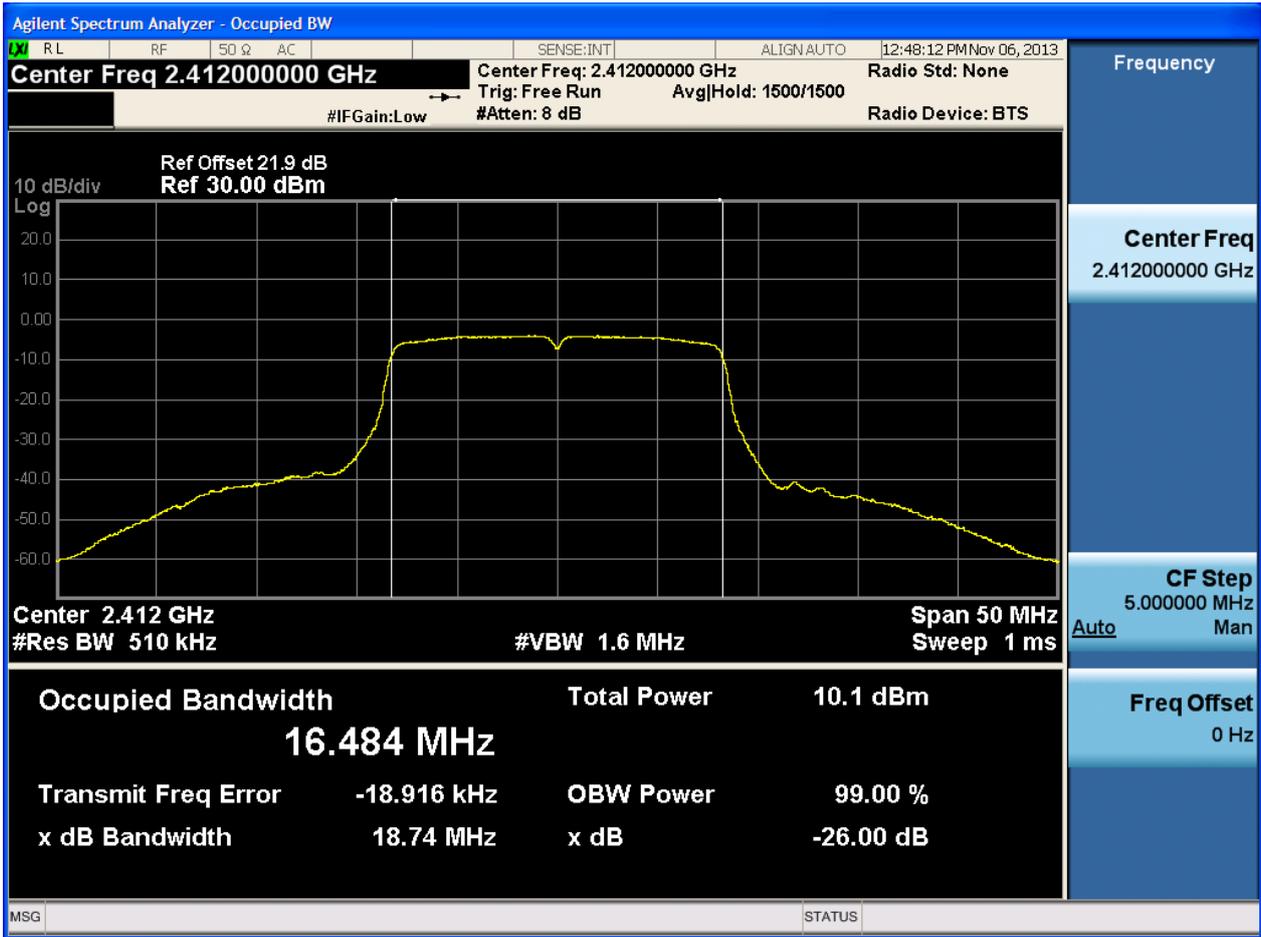
### 2.2 11B/1\_M@1



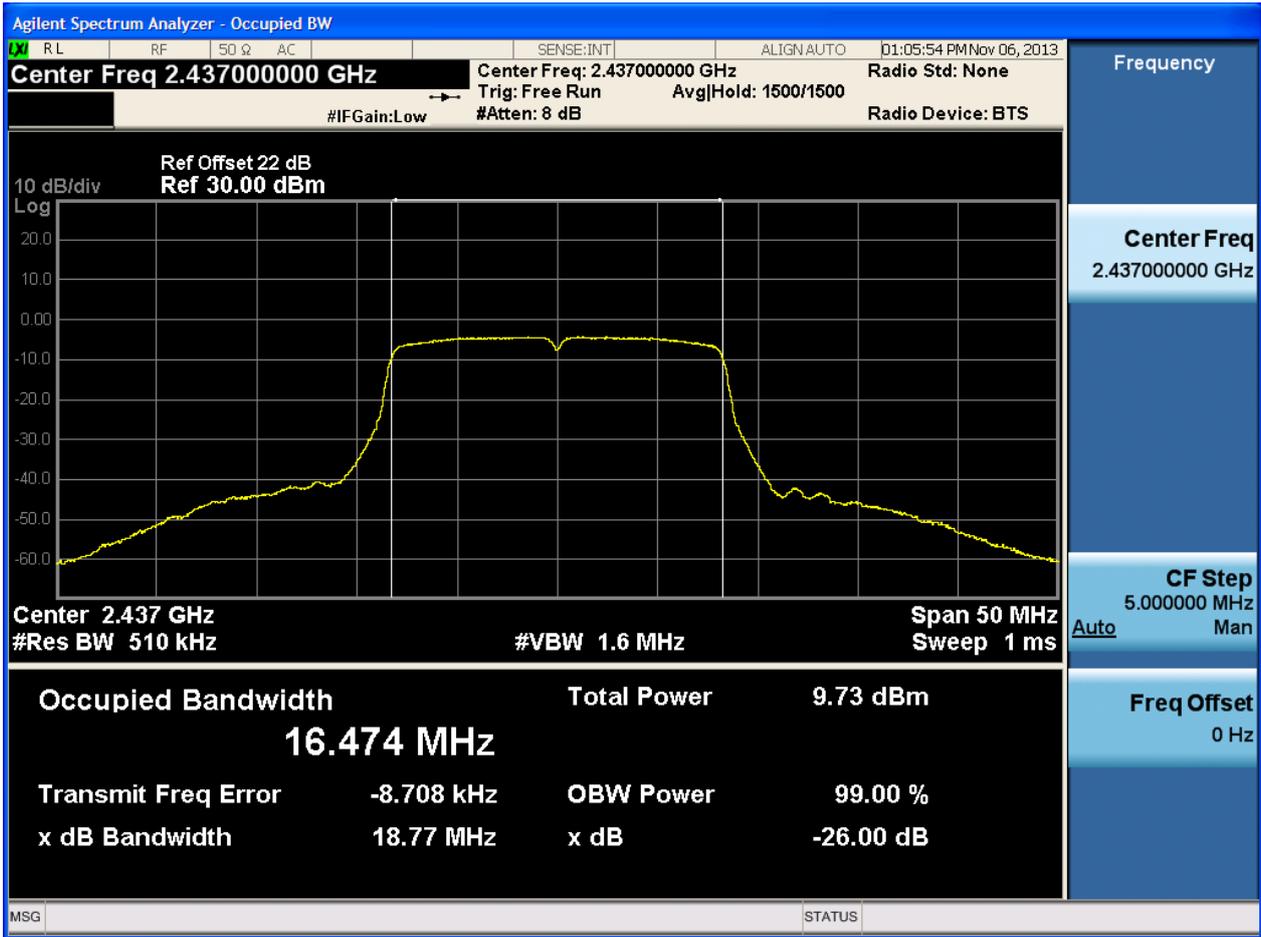
### 2.3 11B/1\_T@1



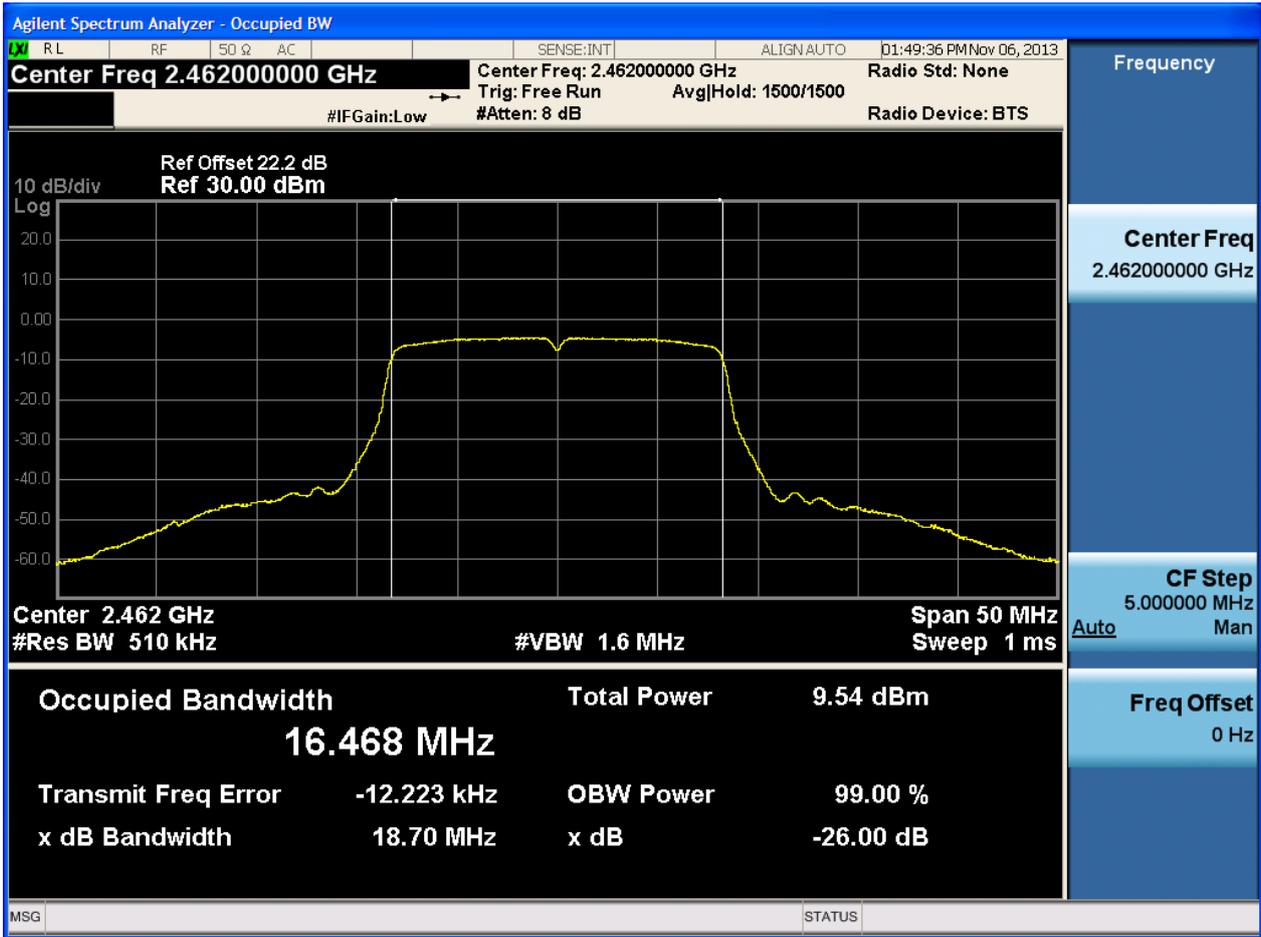
2.4 11G/6\_B@1



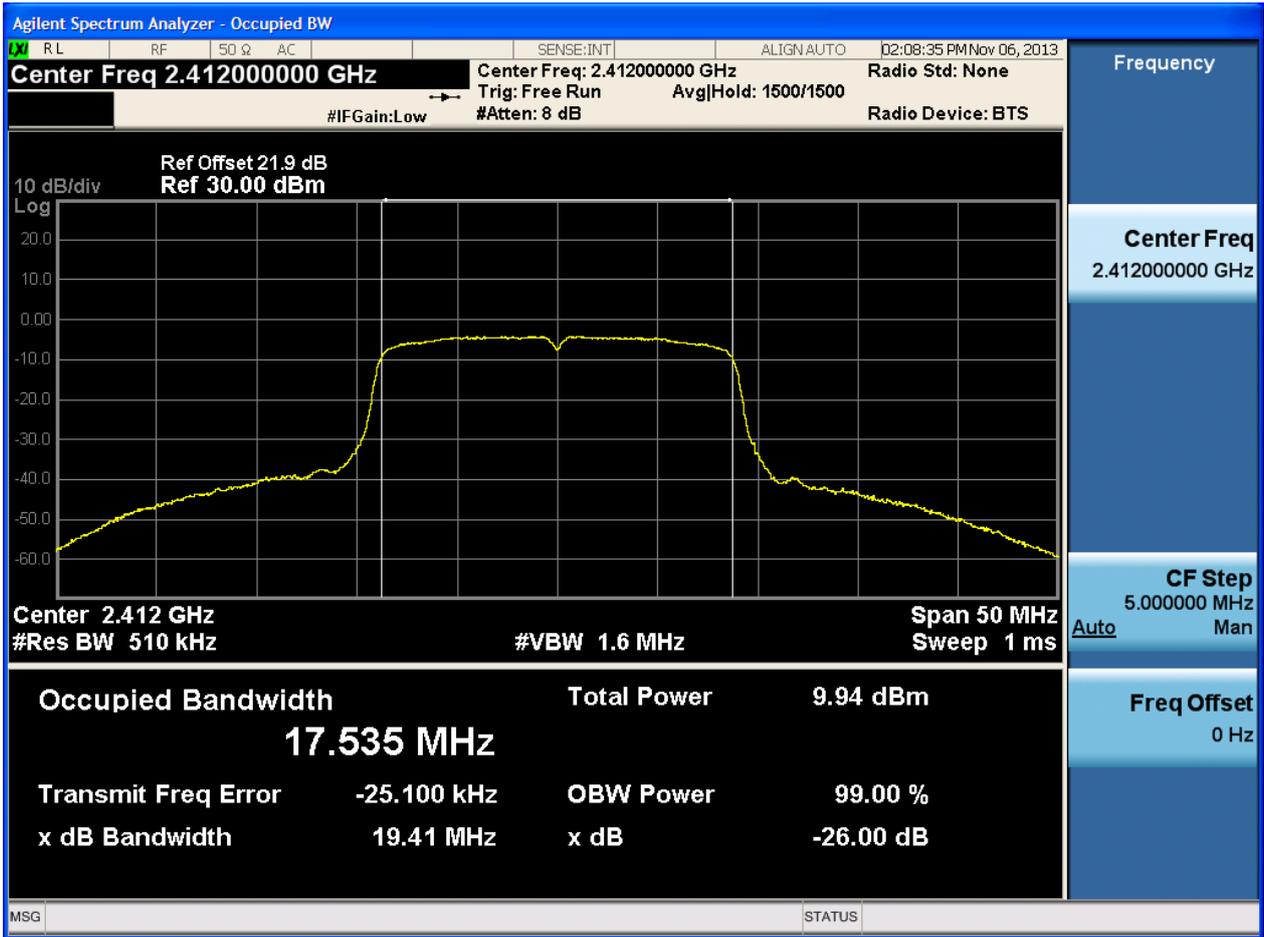
2.5 11G/6\_M@1



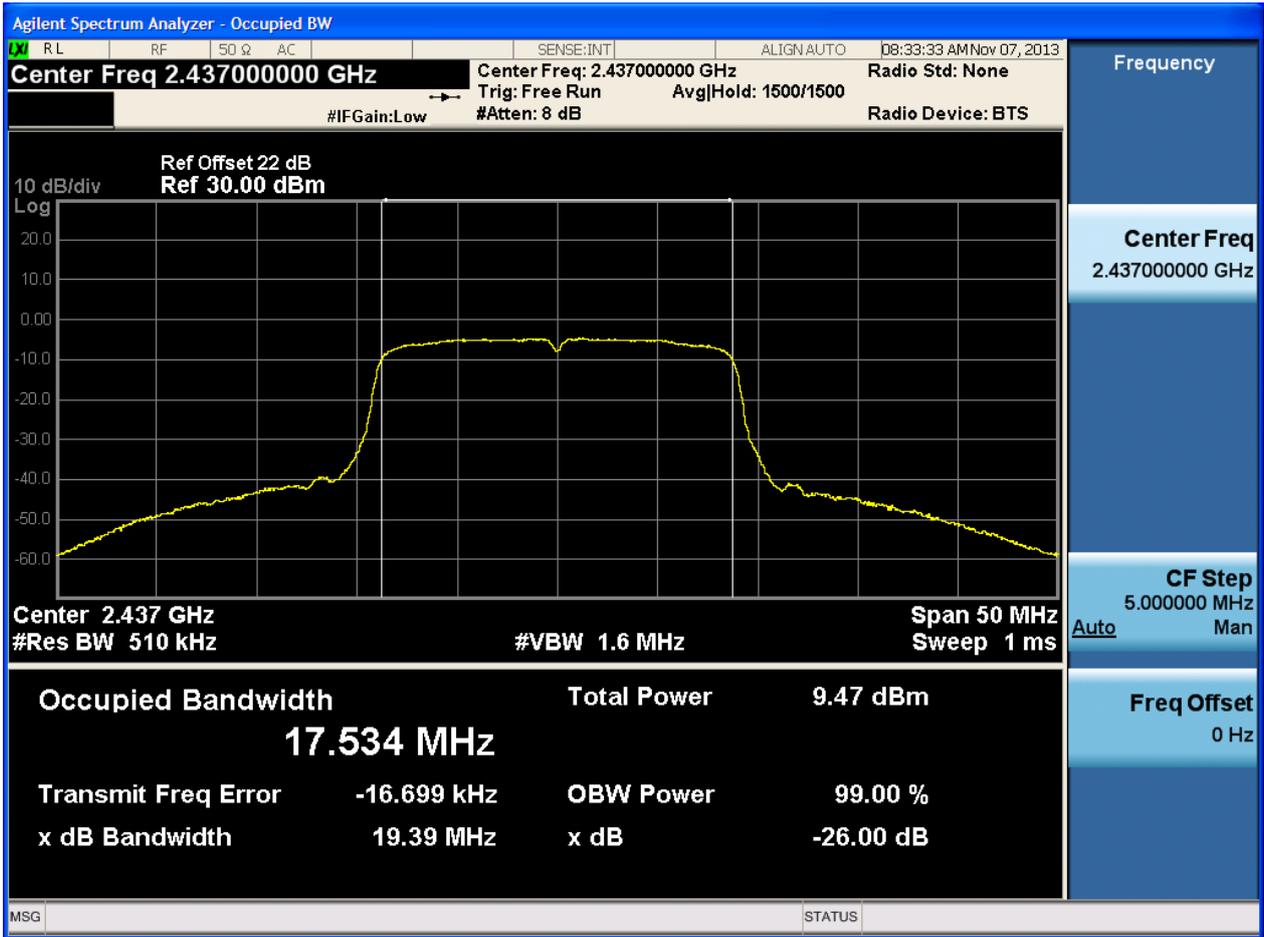
2.6 11G/6\_T@1



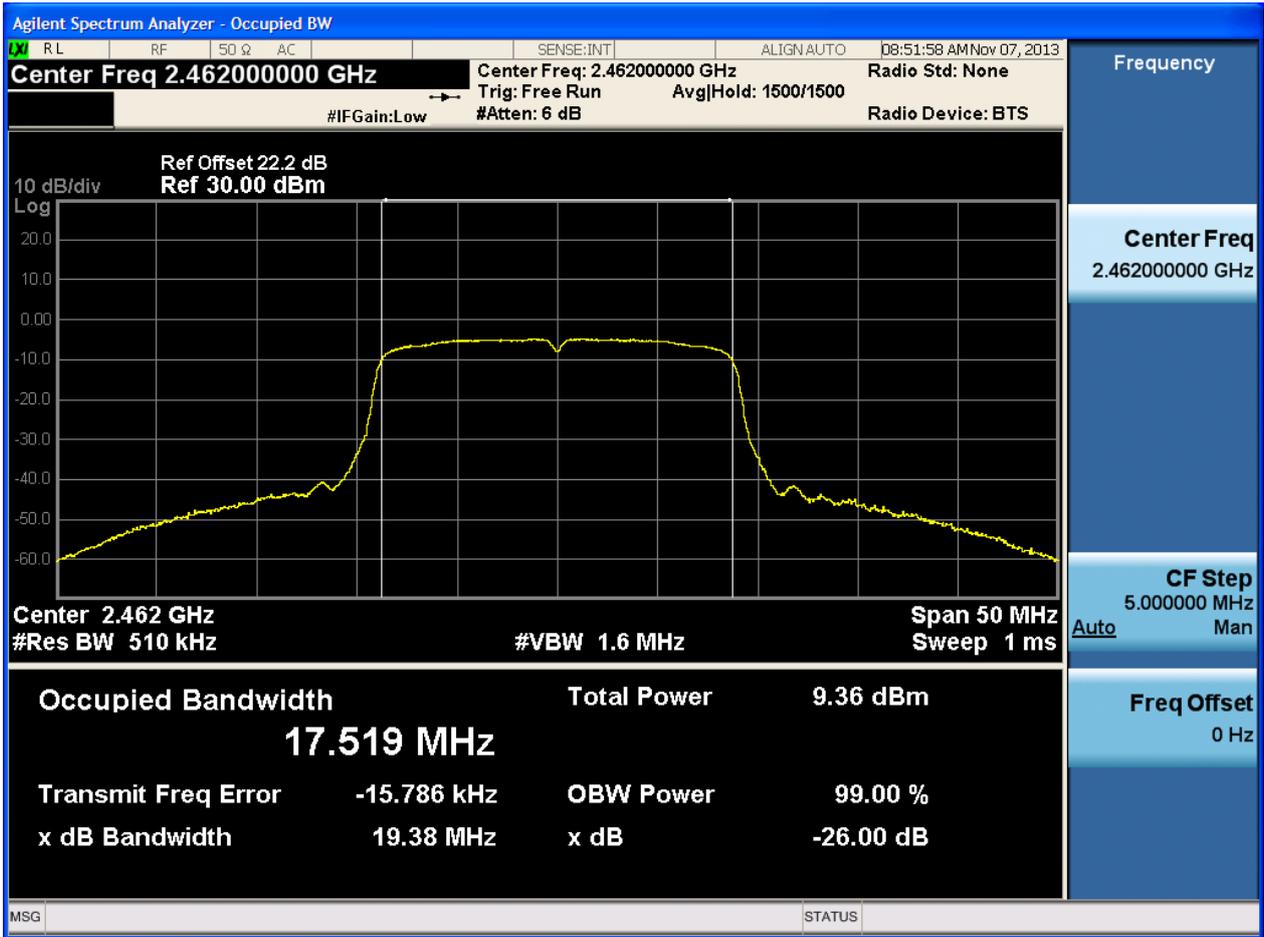
2.7 11N20/0\_B@1



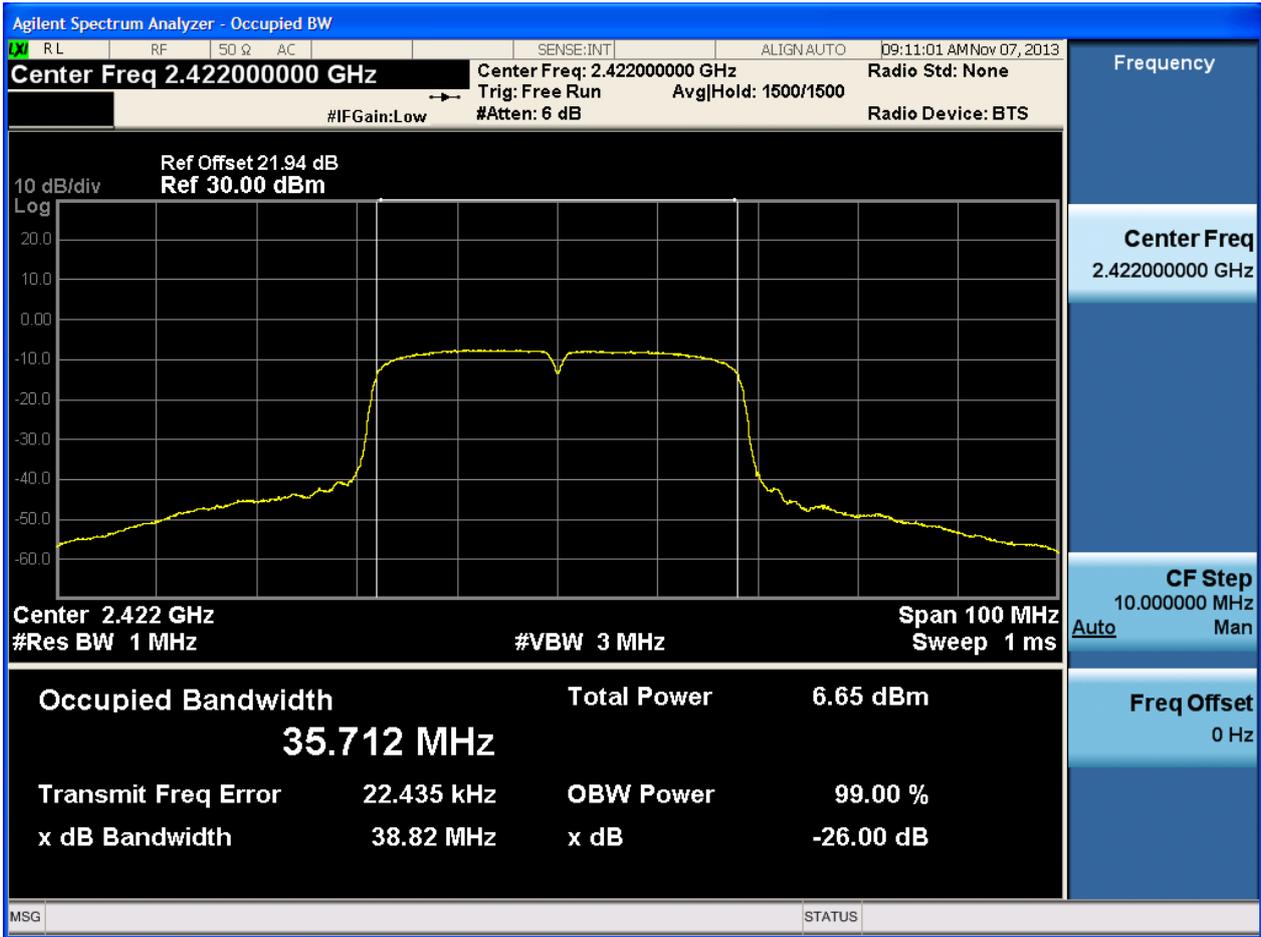
2.8 11N20/0\_M@1



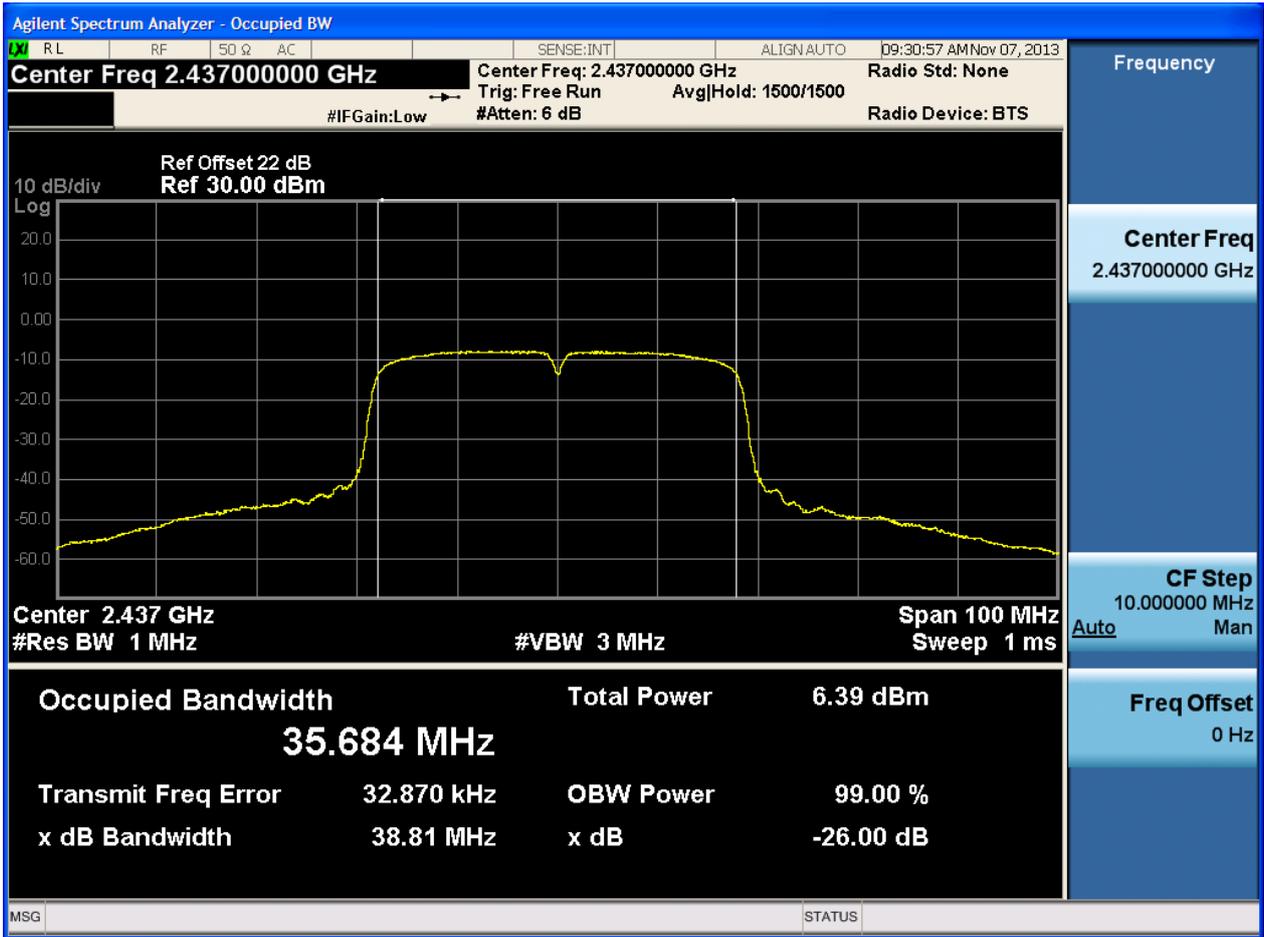
2.9 11N20/0\_T@1



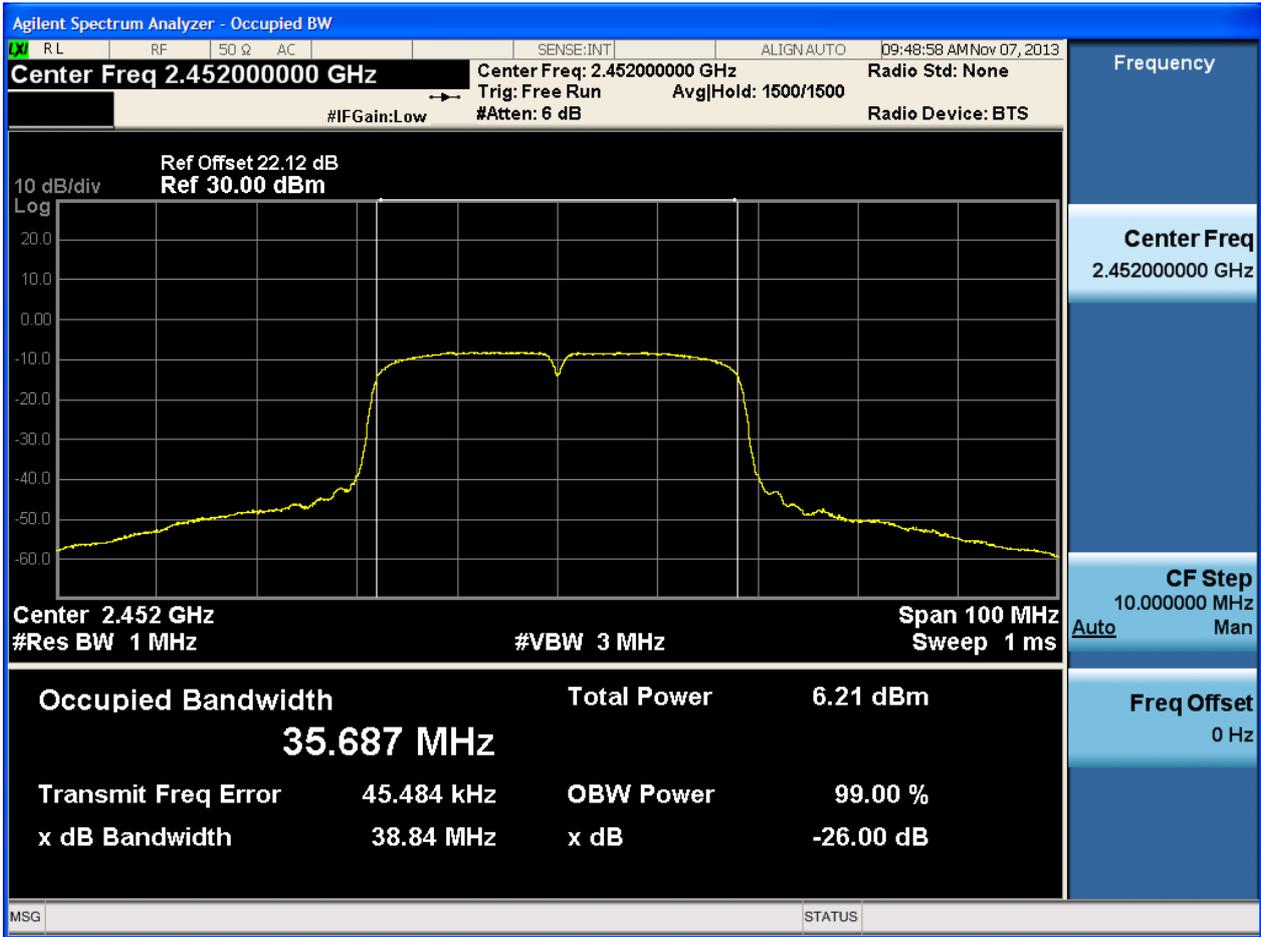
2.1011N40/0\_B@1



2.1111N40/0\_M@1



2.1211N40/0\_T@1





# Annex C: Maximum Peak Conducted Output Power



For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain (respectively as Ant 1, Ant 2, ..., Ant N) and then combined into the final result (as Ant Sum) to compare with the limit. The result for Ant Sum equals the linear power sum of results for Ant 1 to Ant N (the N denotes the antenna chains used by smart antenna systems).

## 1 Result Table

EUT Conf.	Ant.	Maximum Peak Conducted Output Power [dBm]	Verdict
11B1-B-Ant1	Ant 1	13.66	Pass
11B1-M-Ant1	Ant 1	12.12	Pass
11B1-T-Ant1	Ant 1	11.18	Pass
11G6-B-Ant1	Ant 1	18.82	Pass
11G6-M-Ant1	Ant 1	18.17	Pass
11G6-T-Ant1	Ant 1	16.88	Pass
11N0-20B-Ant1	Ant 1	19.43	Pass
11N0-20M-Ant1	Ant 1	18.60	Pass
11N0-20T-Ant1	Ant 1	17.53	Pass
11N0-40B-Ant1	Ant 1	17.21	Pass
11N0-40M-Ant1	Ant 1	16.58	Pass
11N0-40T-Ant1	Ant 1	16.17	Pass



## 2 Test Plot

(No plot due to power meter measurements)



# Annex D: Maximum Power Spectral Density Level



For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain (respectively as Ant 1, Ant 2, ..., Ant N) and then combined into the final result (as Ant Sum) to compare with the limit. The result for Ant Sum equals the linear power sum of results for Ant 1 to Ant N (the N denotes the antenna chains used by smart antenna systems). NOTE that the method is a stringent but convenient consideration, because the measured maximum value for each chain may be located at different frequency occurrence. For the ultimate judgment, the combination of the final result (Trace Sum) should be performed frequency-by-frequency on the measured spectrum trace for each chain (Trace 1, Trace 2, ..., Trace N). Unless otherwise specified, the method for ultimate judgment will not be used.

## 1 Result Table

EUT Conf.	Ant.	Maximum Power Spectral Density Level [dBm]	Verdict
11B1-B-Ant1	Ant 1	< -5.61	Pass
11B1-M-Ant1	Ant 1	< -6.13	Pass
11B1-T-Ant1	Ant 1	< -6.13	Pass
11G6-B-Ant1	Ant 1	< -4.44	Pass
11G6-M-Ant1	Ant 1	< -4.92	Pass
11G6-T-Ant1	Ant 1	< -4.45	Pass
11N0-20B-Ant1	Ant 1	< -4.38	Pass
11N0-20M-Ant1	Ant 1	< -4.59	Pass
11N0-20T-Ant1	Ant 1	< -4.59	Pass
11N0-40B-Ant1	Ant 1	< -10.36	Pass
11N0-40M-Ant1	Ant 1	< -10.85	Pass
11N0-40T-Ant1	Ant 1	< -10.62	Pass

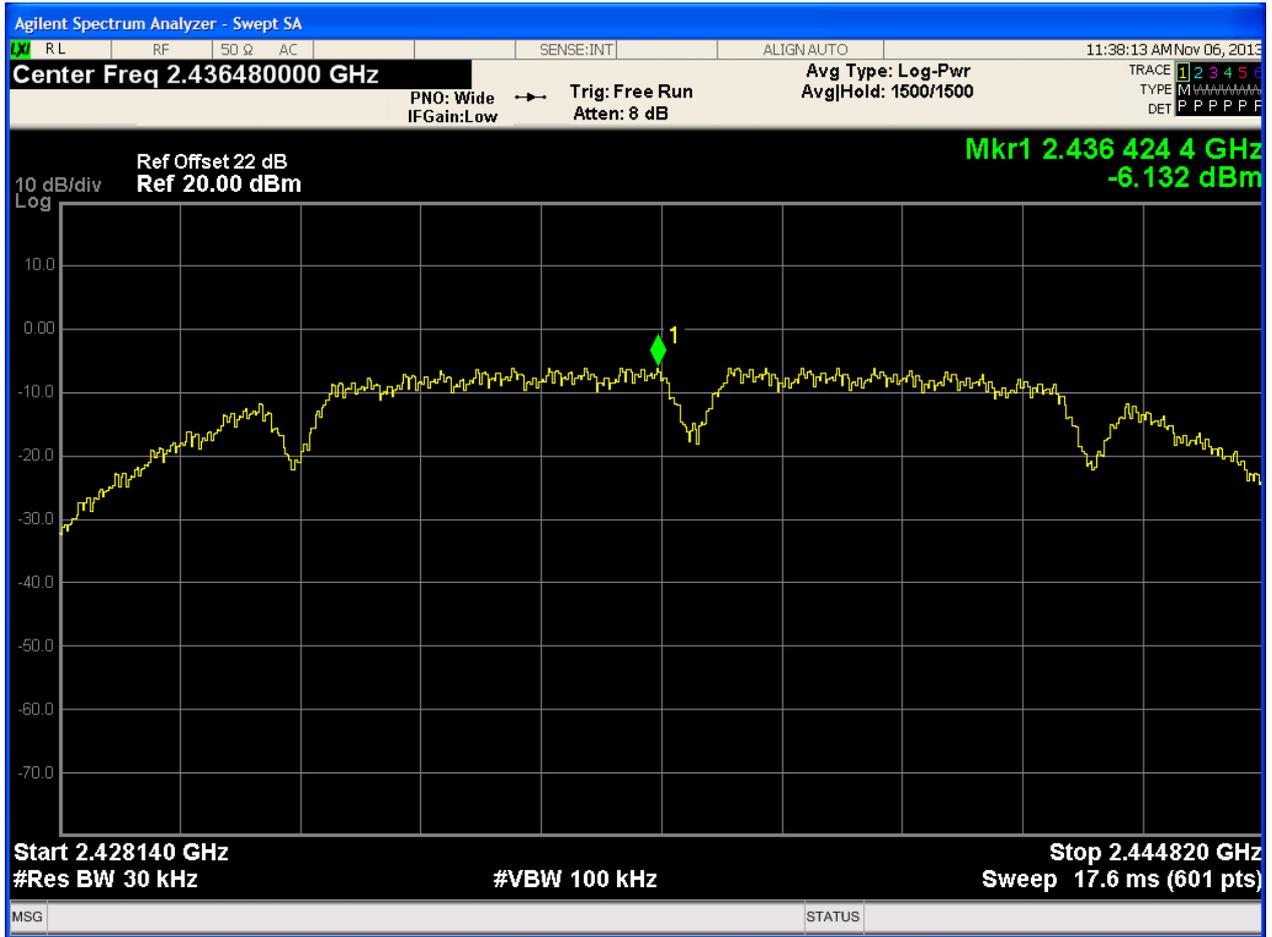


## 2 Test Plot

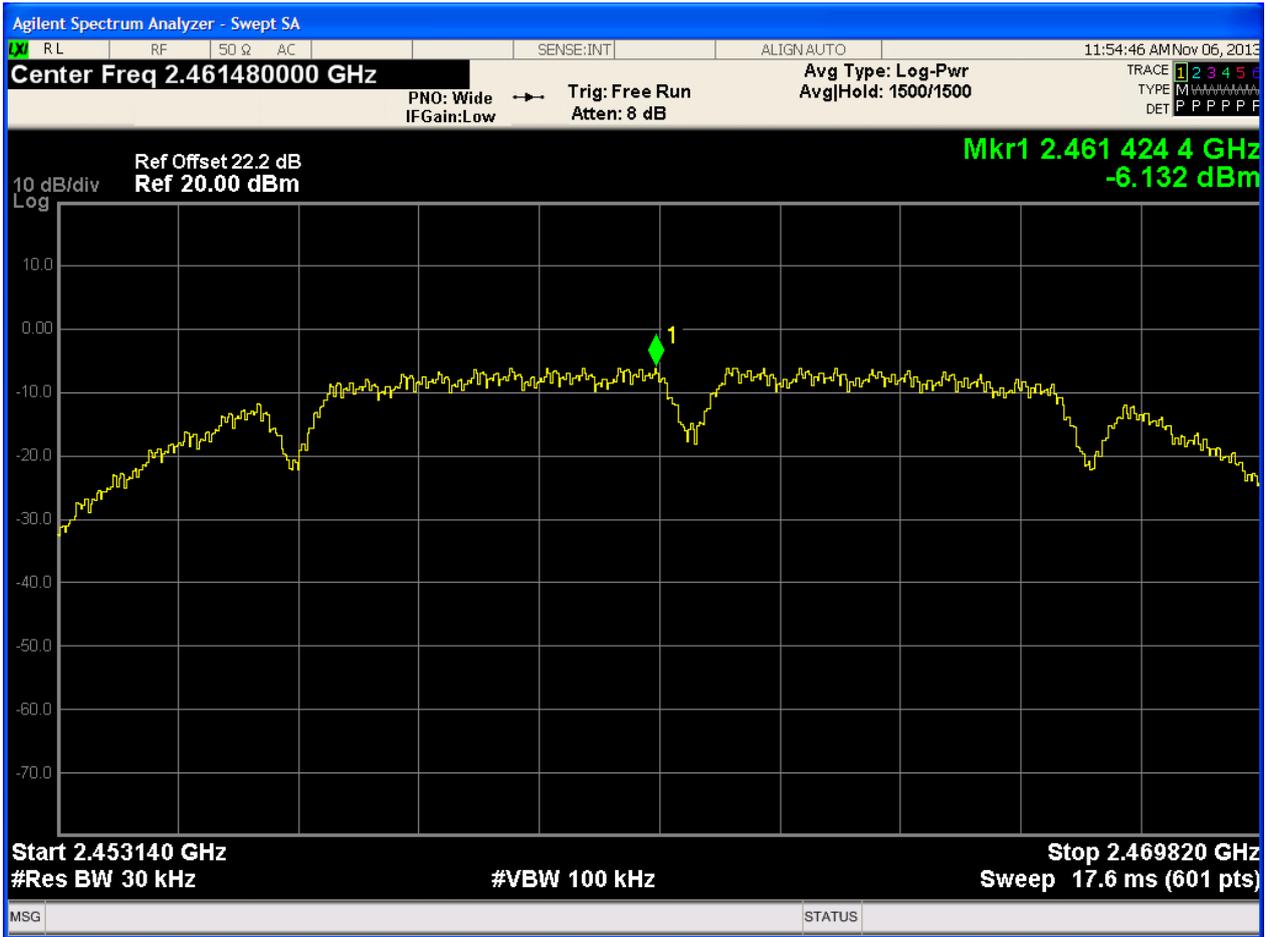
### 2.1 11B/1\_B@1



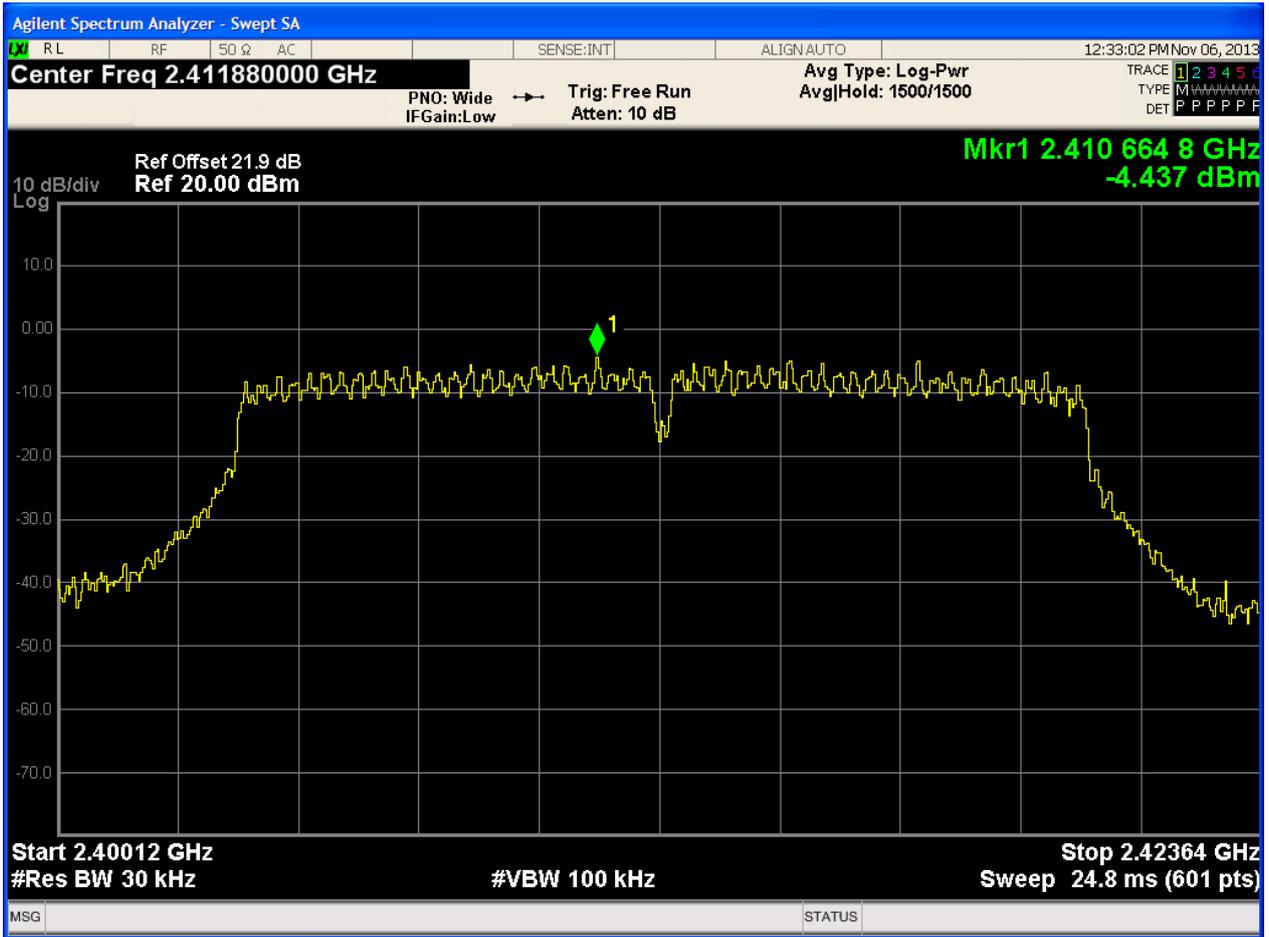
### 2.2 11B/1\_M@1



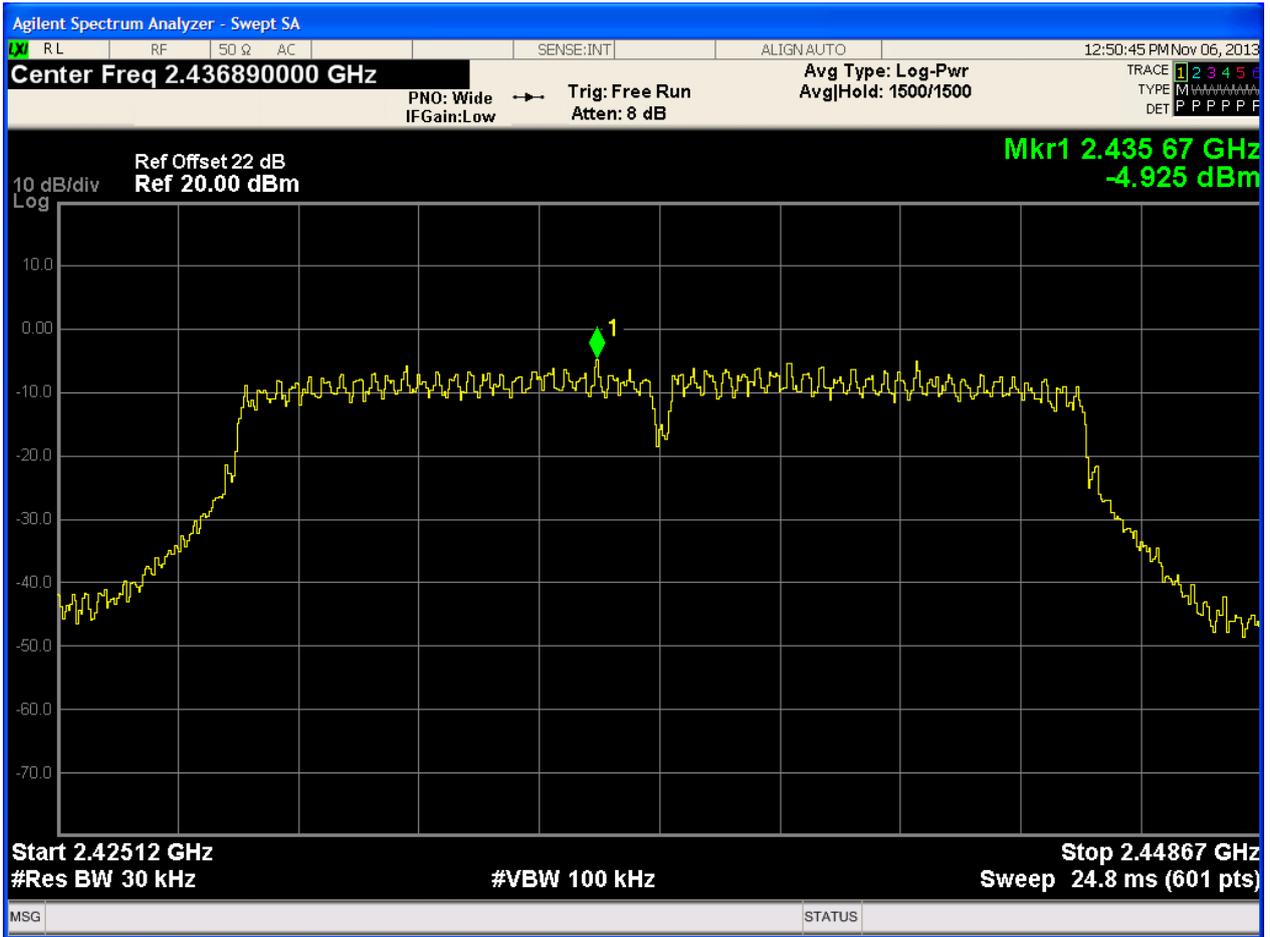
### 2.3 11B/1\_T@1



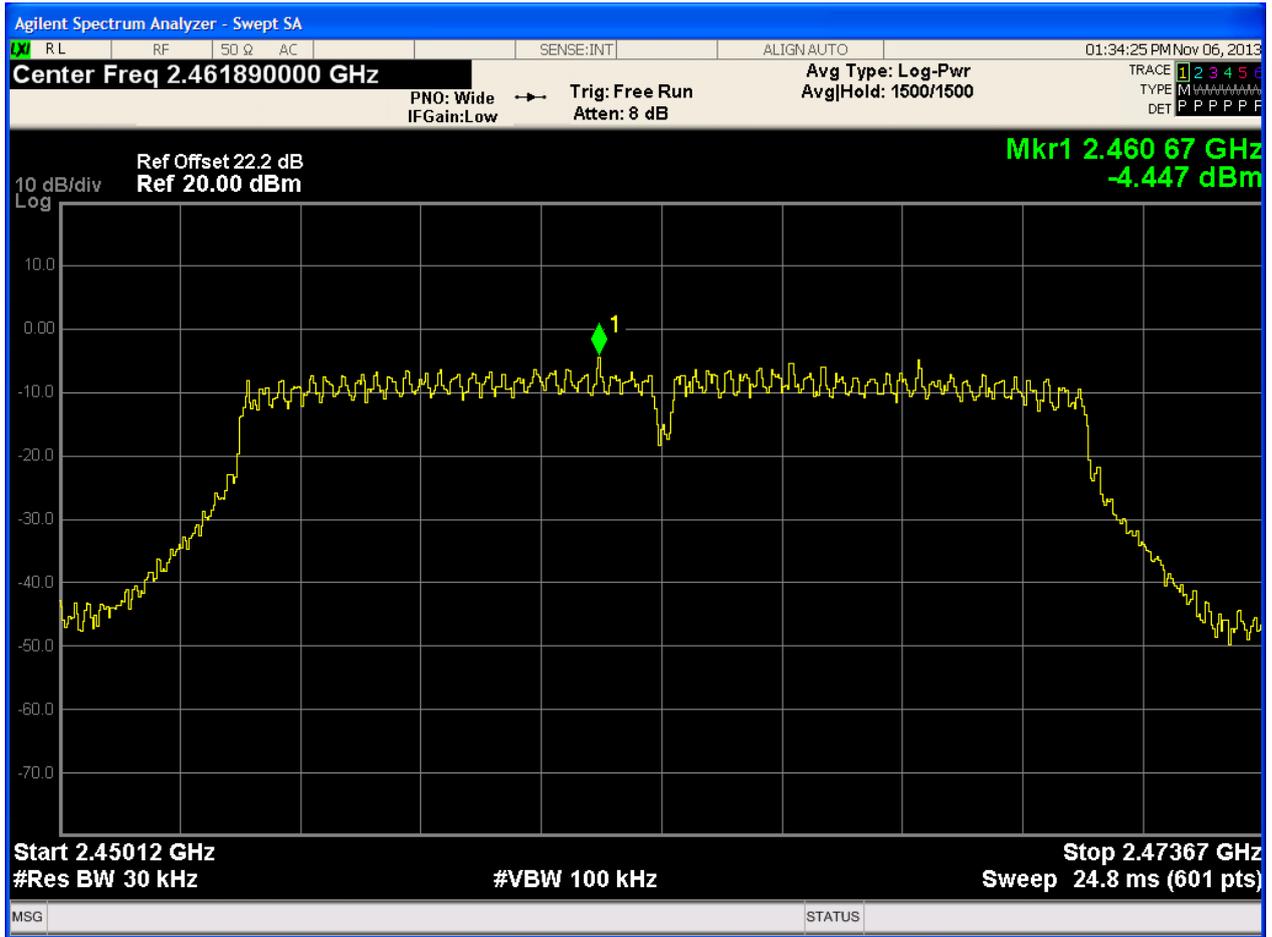
## 2.4 11G/6\_B@1



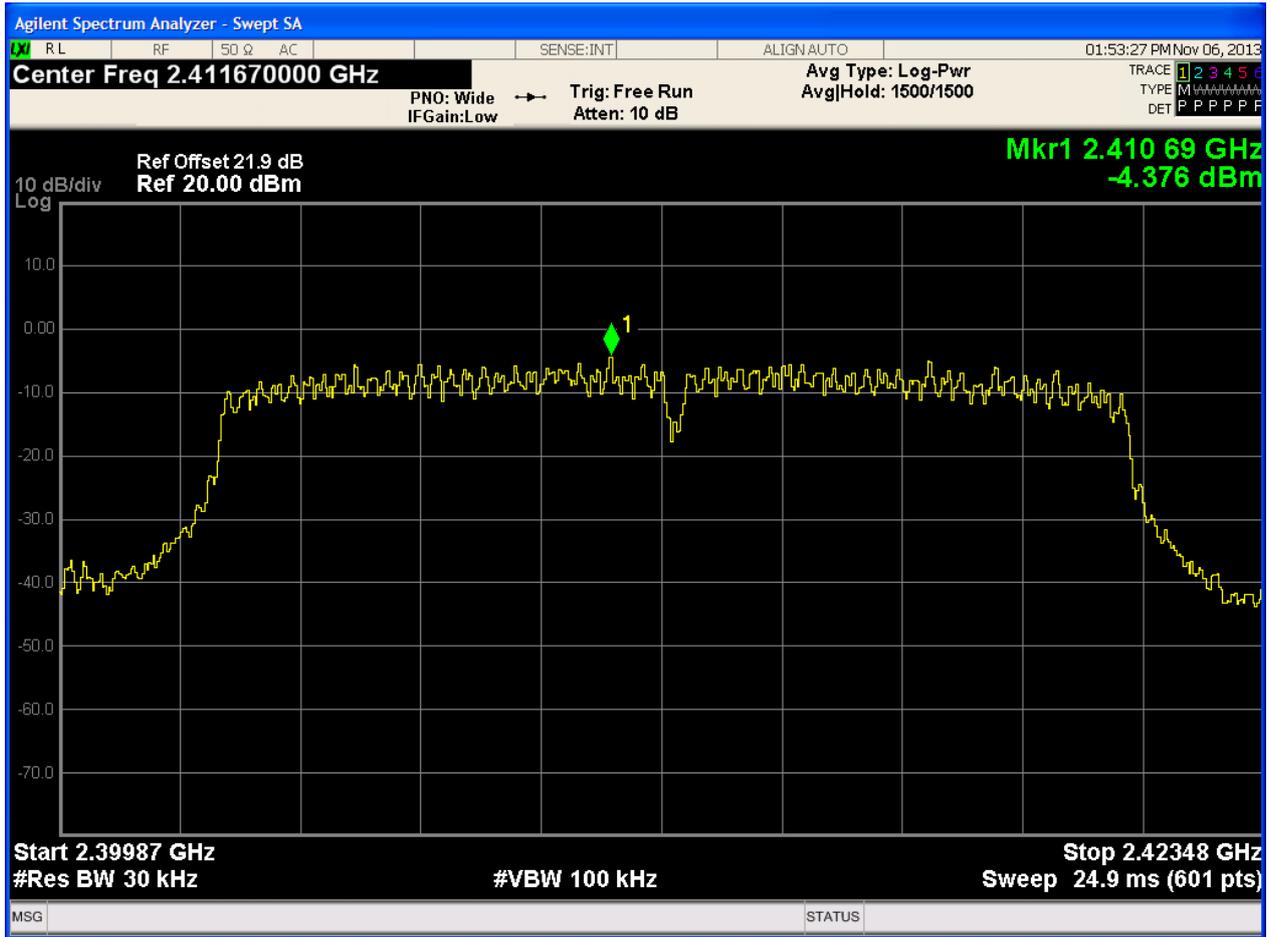
## 2.5 11G/6\_M@1



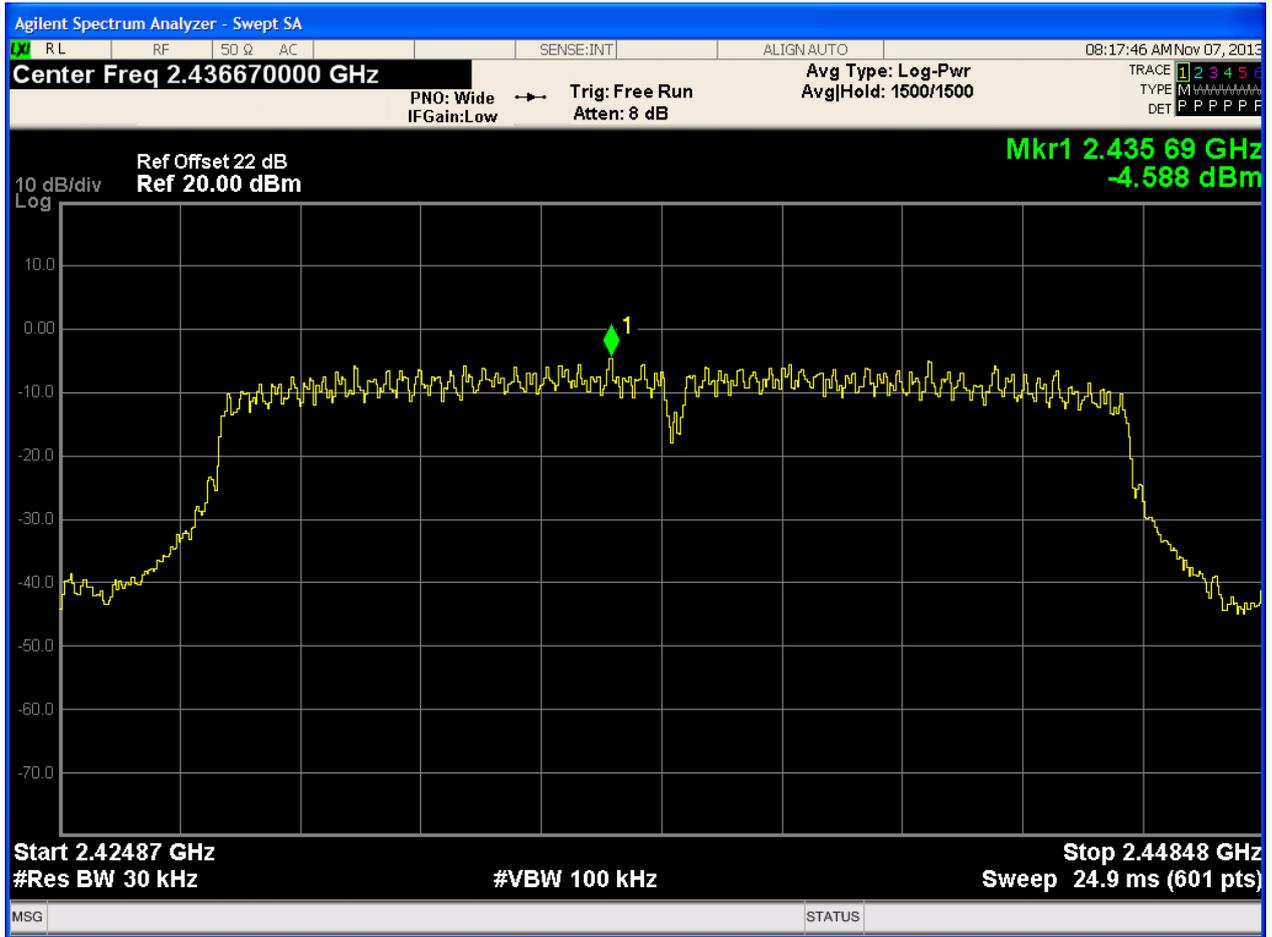
## 2.6 11G/6\_T@1



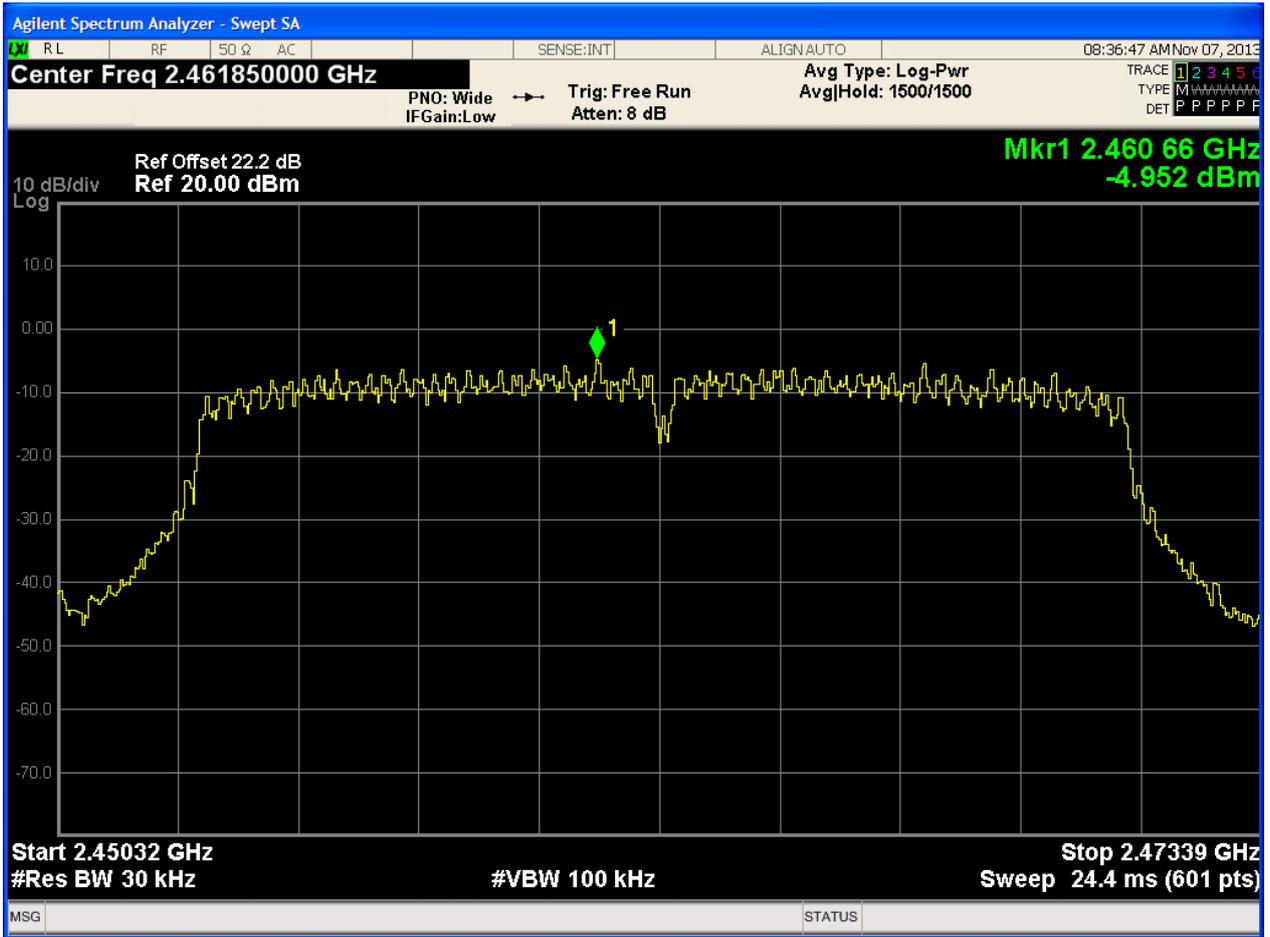
## 2.7 11N20/0\_B@1



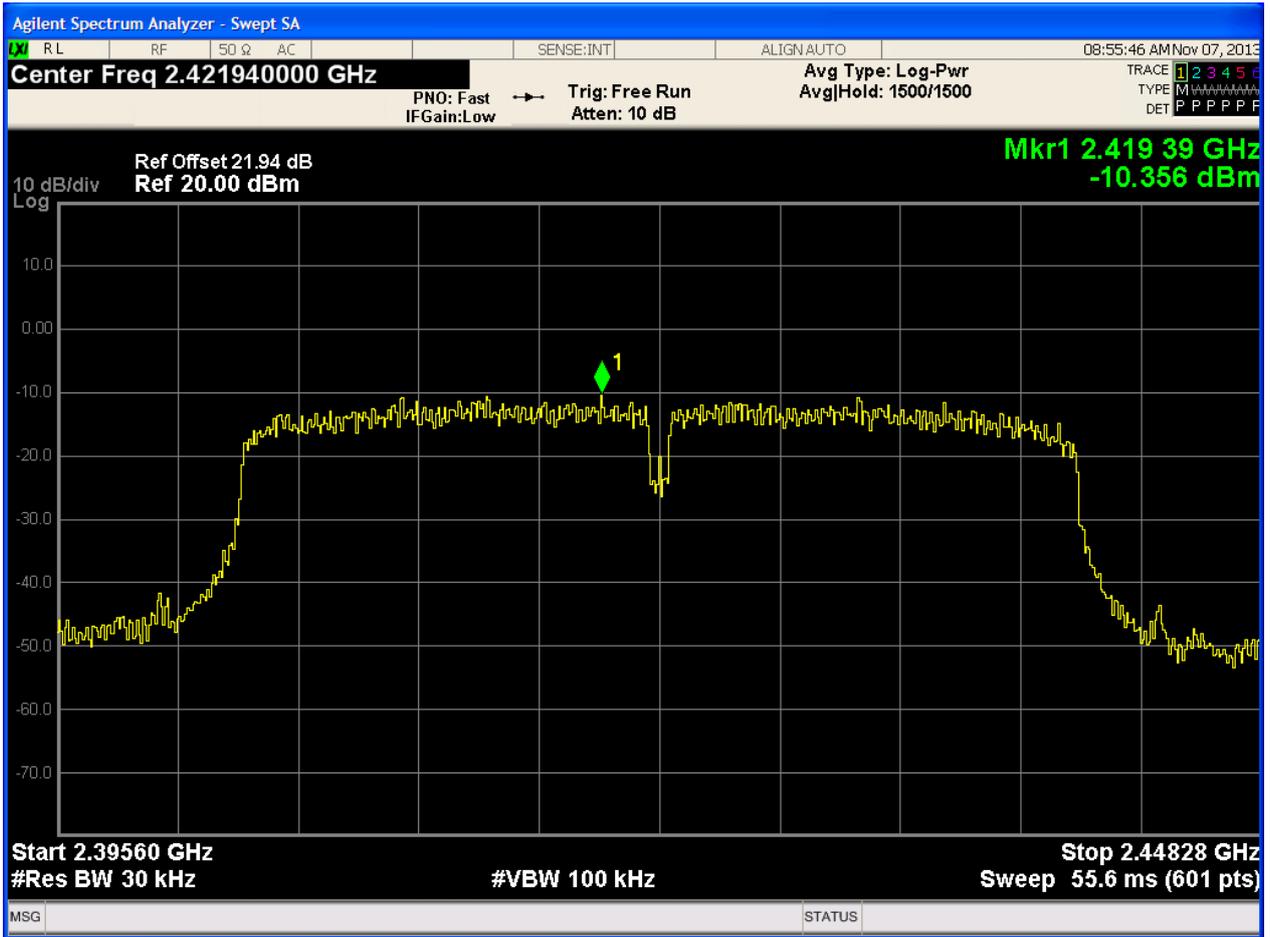
## 2.8 11N20/0\_M@1



## 2.9 11N20/0\_T@1

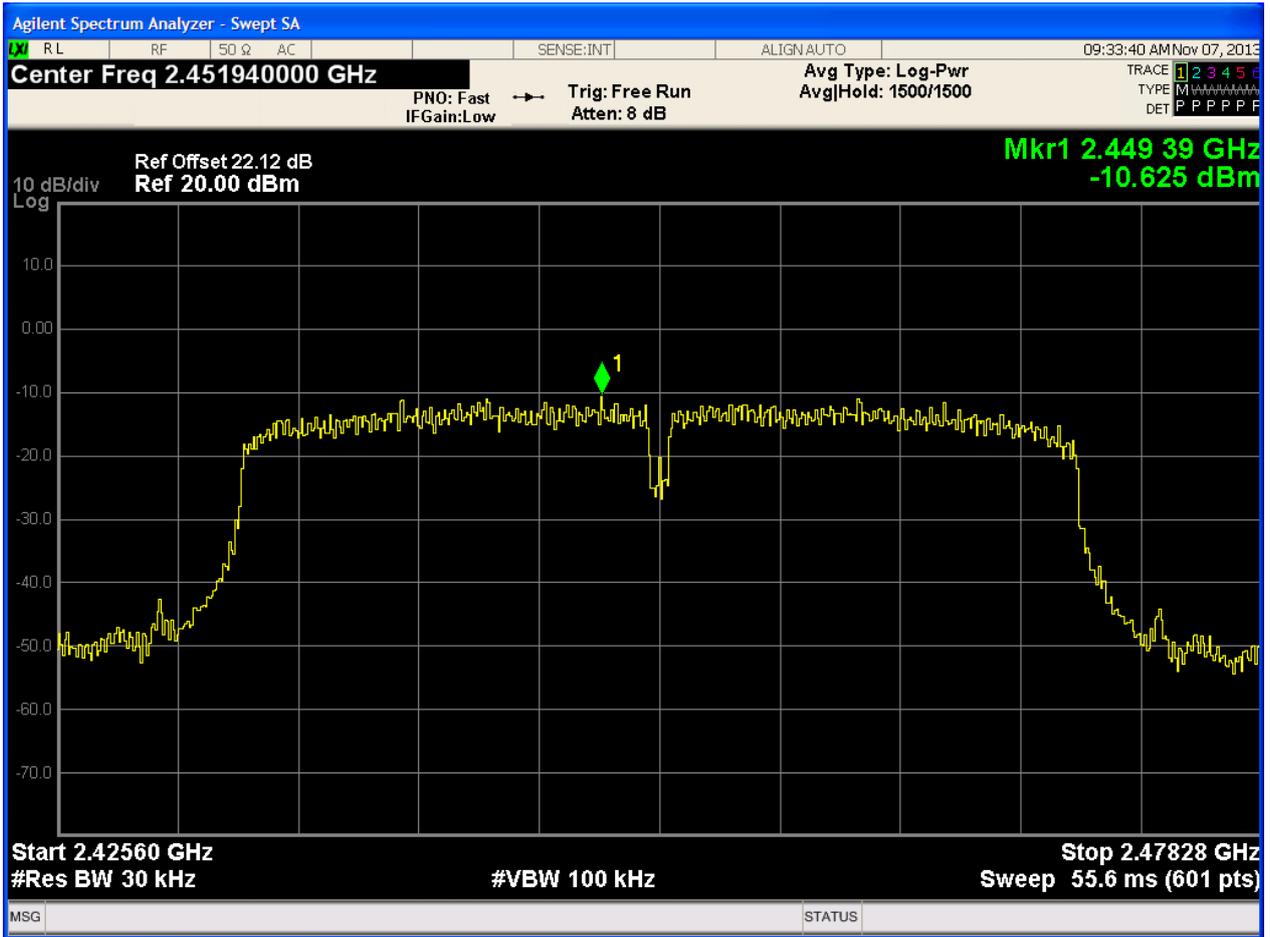


2.1011N40/0\_B@1



2.1111N40/0\_M@1







# **Annex E: Unwanted Emissions into Non-Restricted Frequency Bands**

In this Annex, the “Pref”, which is used as the reference level, refers to the peak power level in any 100 kHz bandwidth within the fundamental emission, the “Puw” refers to the maximum emission power in 100 kHz band segments outside of the authorized frequency band.

Considering that the higher ratio of RBW to the span for the frequency ranges below 30 MHz makes the results determination be complicated, a narrower RBW other than 100 kHz is used for these ranges. The measured value should add a RBW correction factor (RBWCF) where  $RBWCF [dB] = 10 \times \lg(100 [kHz]/\text{narrower RBW [kHz]})$ . As to this Annex, the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain and used as respective results for each chain, due to the relative-limit requirement.

In the result table, the “< Limit” denotes that “The Puw [dBm] is less than Pref [dBm] – 20 [dB], see test plots for detailed”.

## 1 Result Table

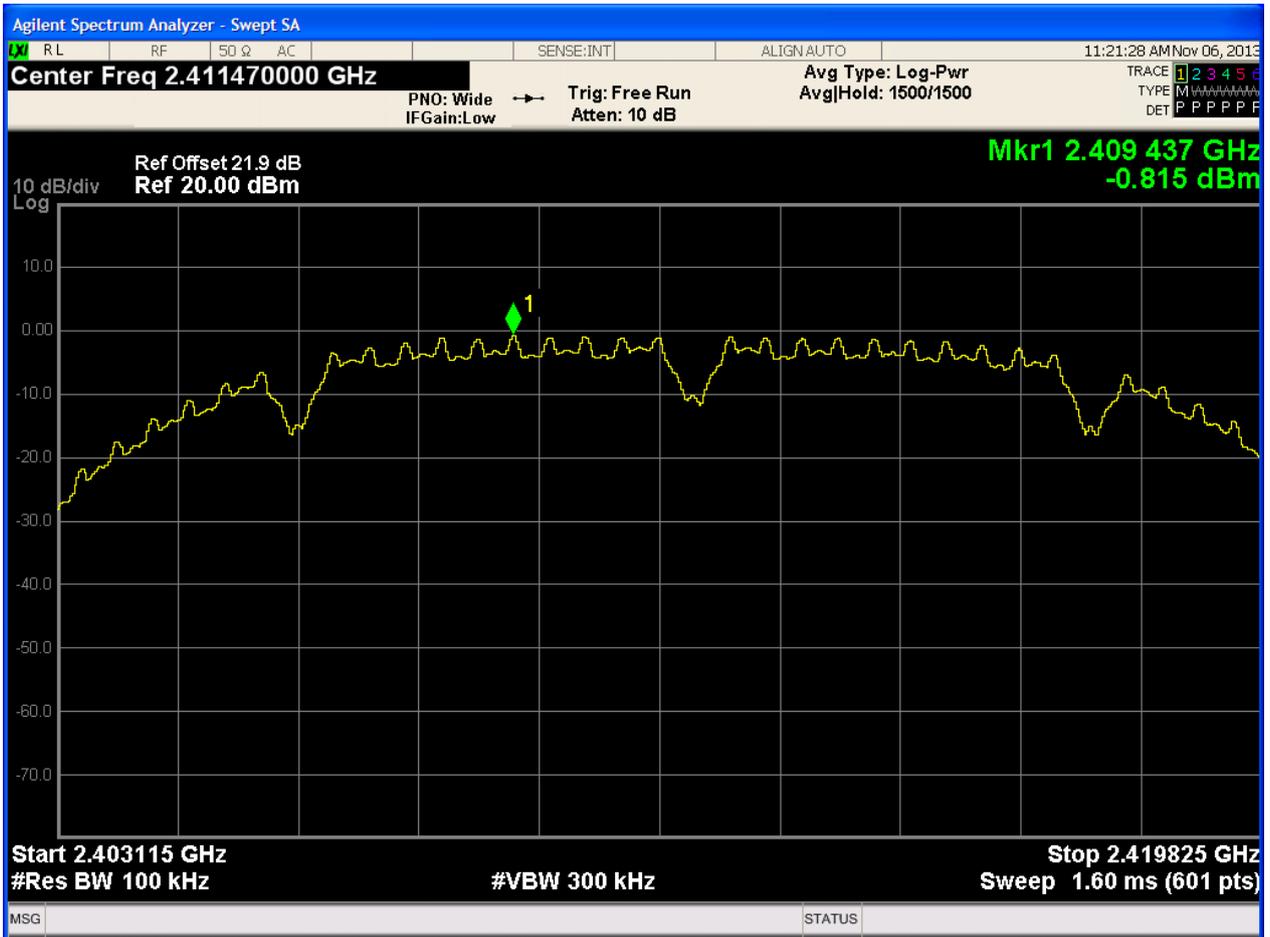
EUT Conf.	Ant.	Pref [dBm]	Puw [dBm]	Verdict
11B/1_B@1	Ant 1	-0.82	< Limit	Pass
11B/1_M@1	Ant 1	-1.32	< Limit	Pass
11B/1_T@1	Ant 1	-1.39	< Limit	Pass
11G/6_B@1	Ant 1	0.01	< Limit	Pass
11G/6_M@1	Ant 1	-0.35	< Limit	Pass
11G/6_T@1	Ant 1	-0.42	< Limit	Pass
11N20/0_B@1	Ant 1	0.1	< Limit	Pass
11N20/0_M@1	Ant 1	-0.18	< Limit	Pass
11N20/0_T@1	Ant 1	-0.44	< Limit	Pass
11N40/0_B@1	Ant 1	-5.45	< Limit	Pass
11N40/0_M@1	Ant 1	-5.75	< Limit	Pass
11N40/0_T@1	Ant 1	-5.93	< Limit	Pass



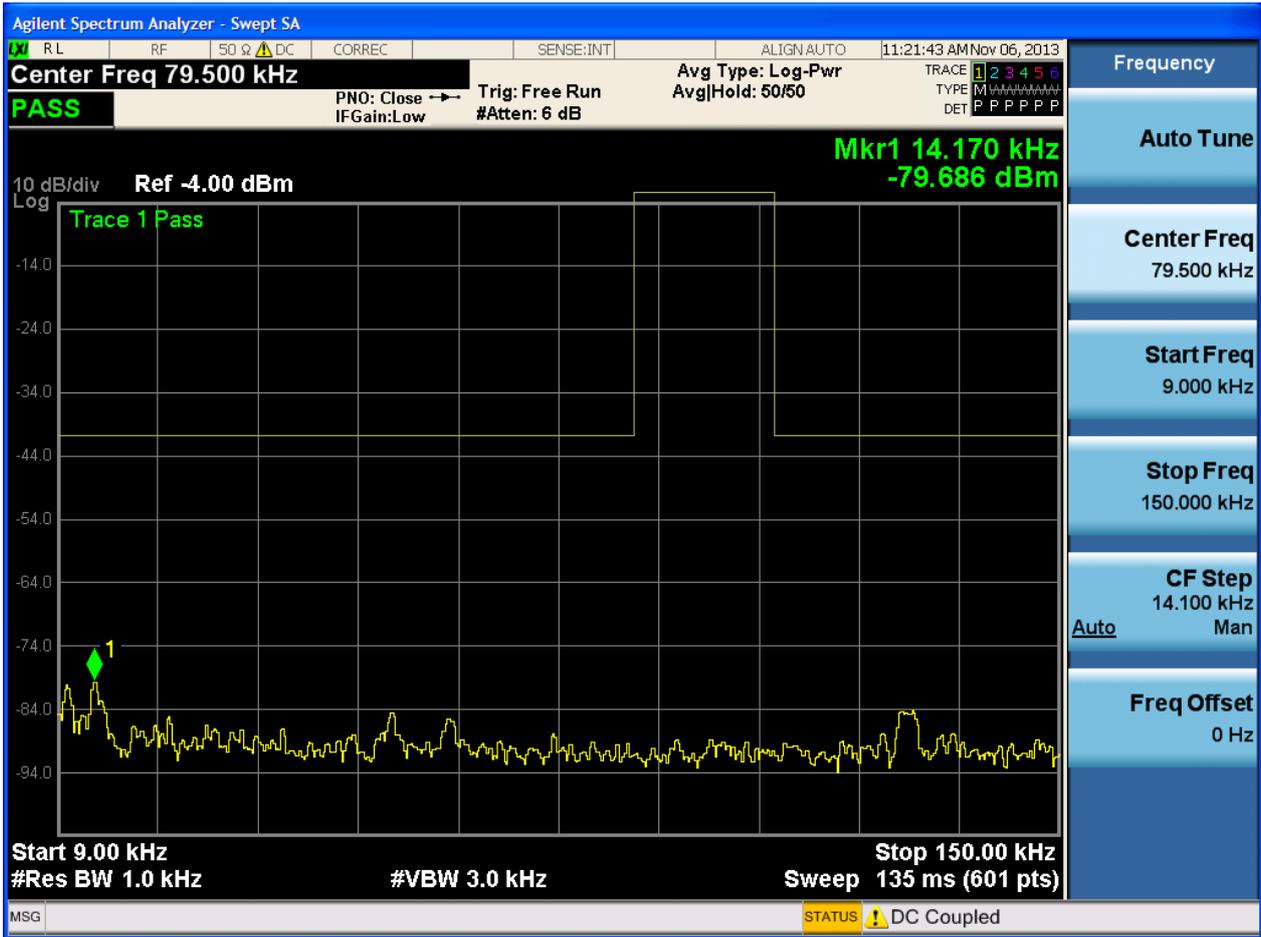
## 2 Test Plot

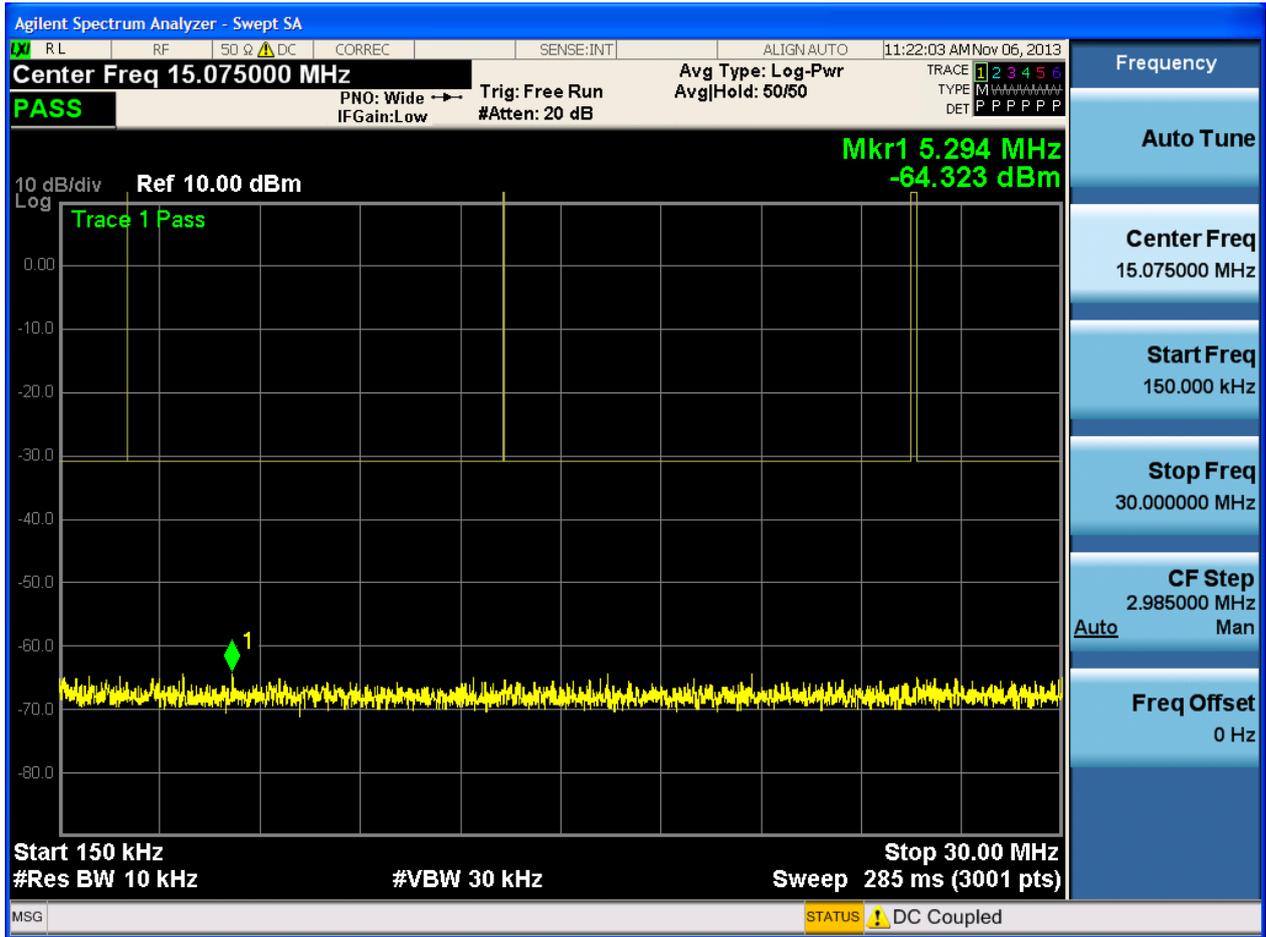
### 2.1 11B/1\_B@1

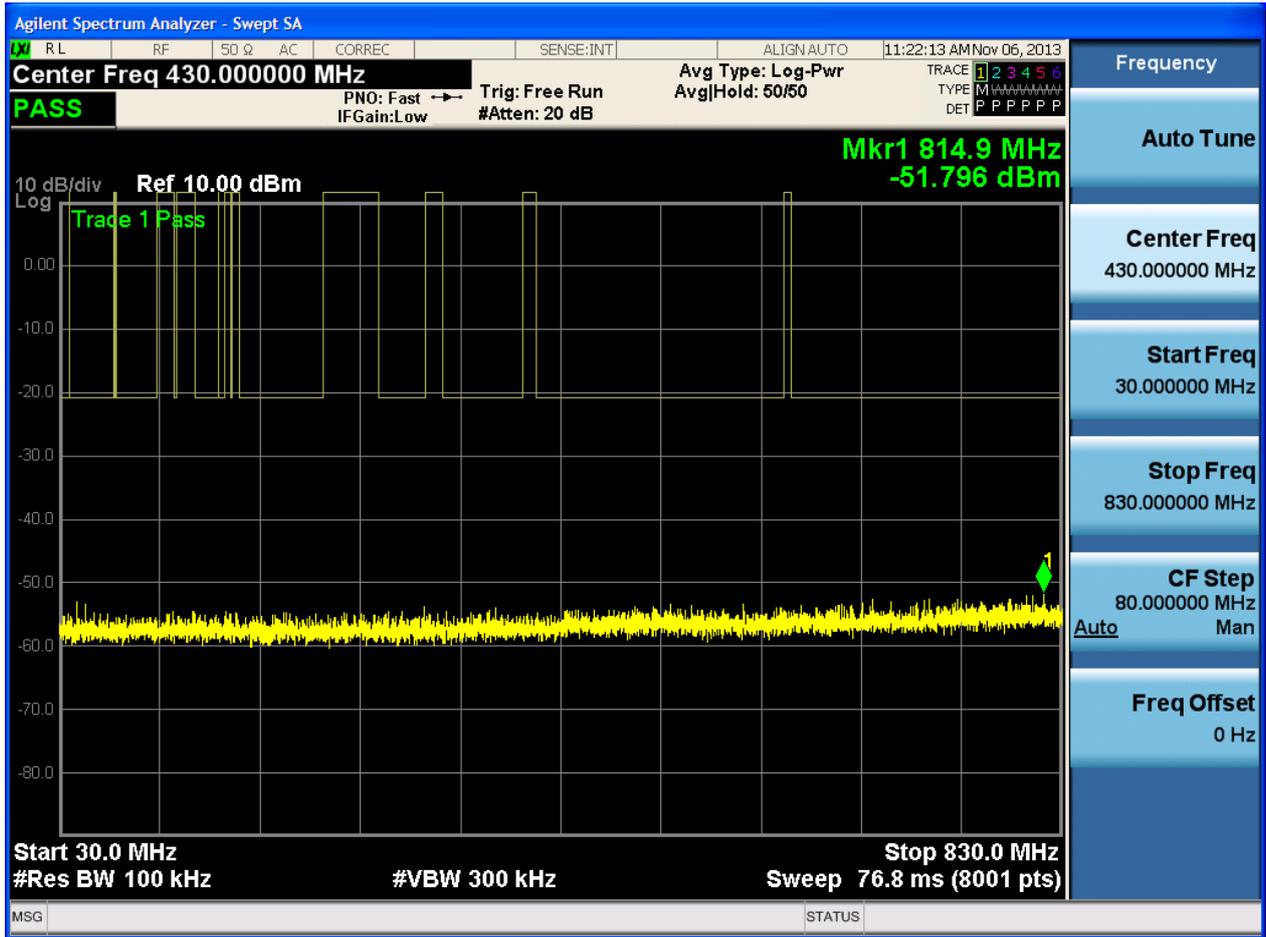
#### 2.1.1 Pref

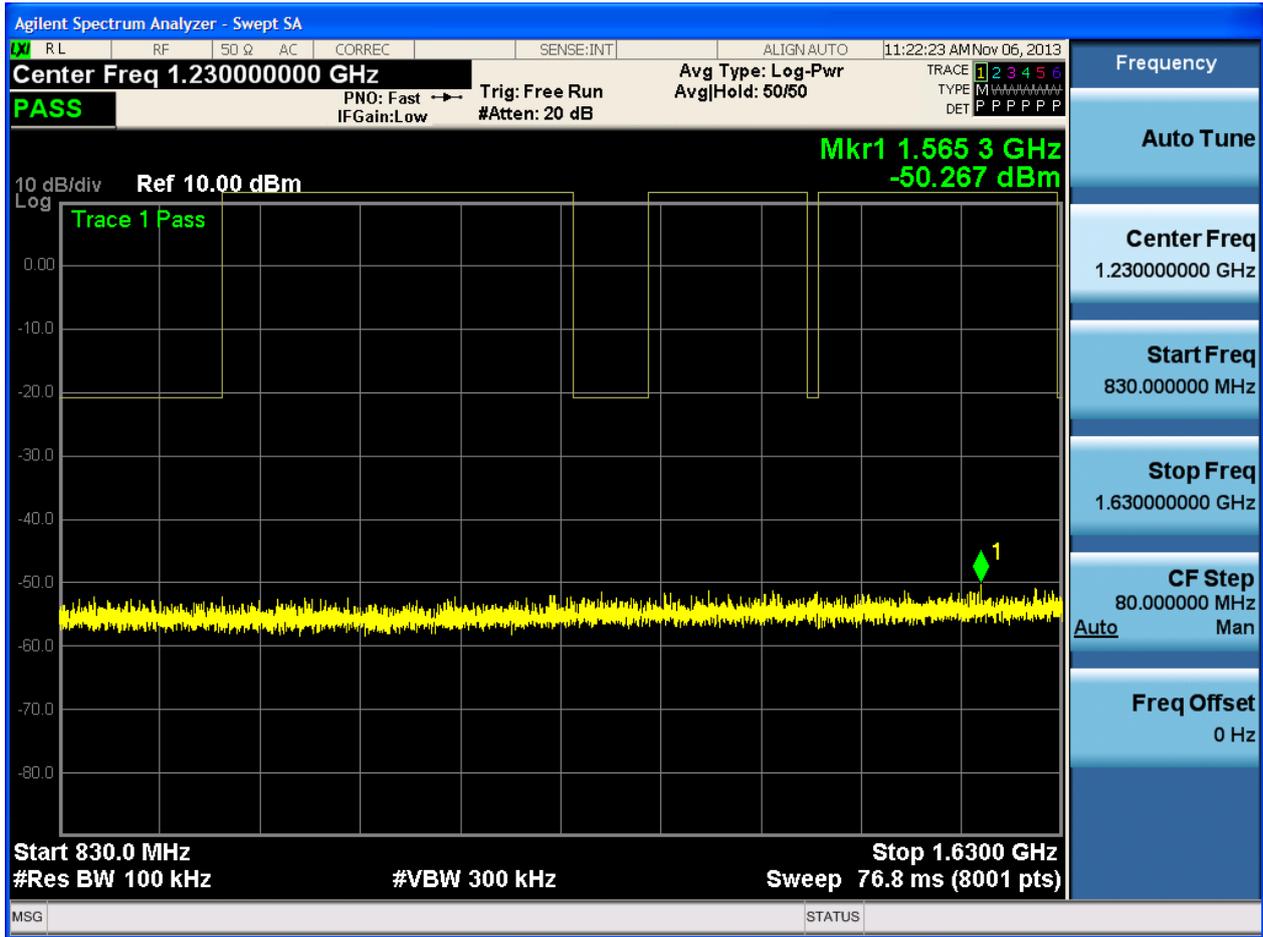


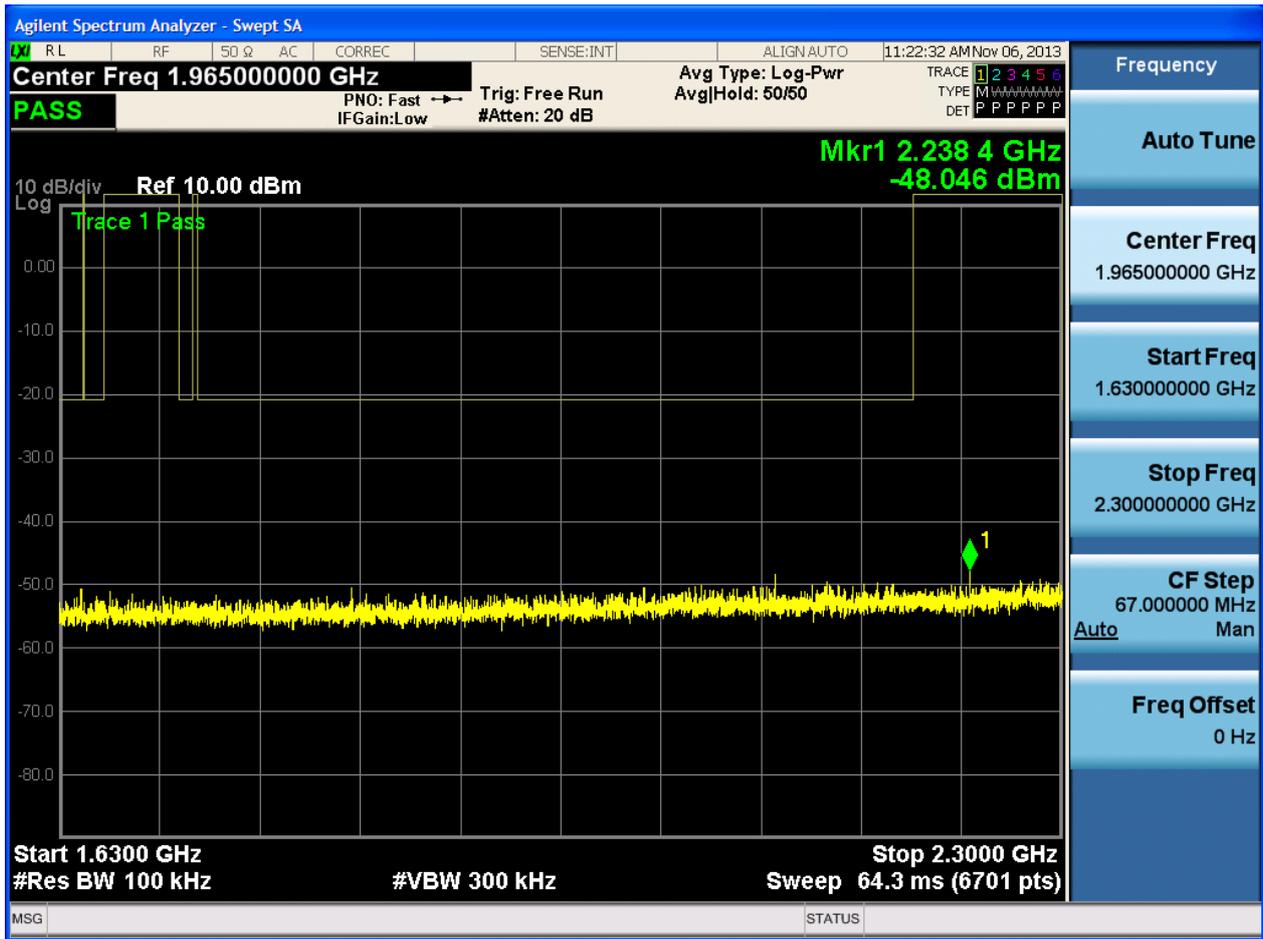
#### 2.1.2 P<sub>uw</sub>

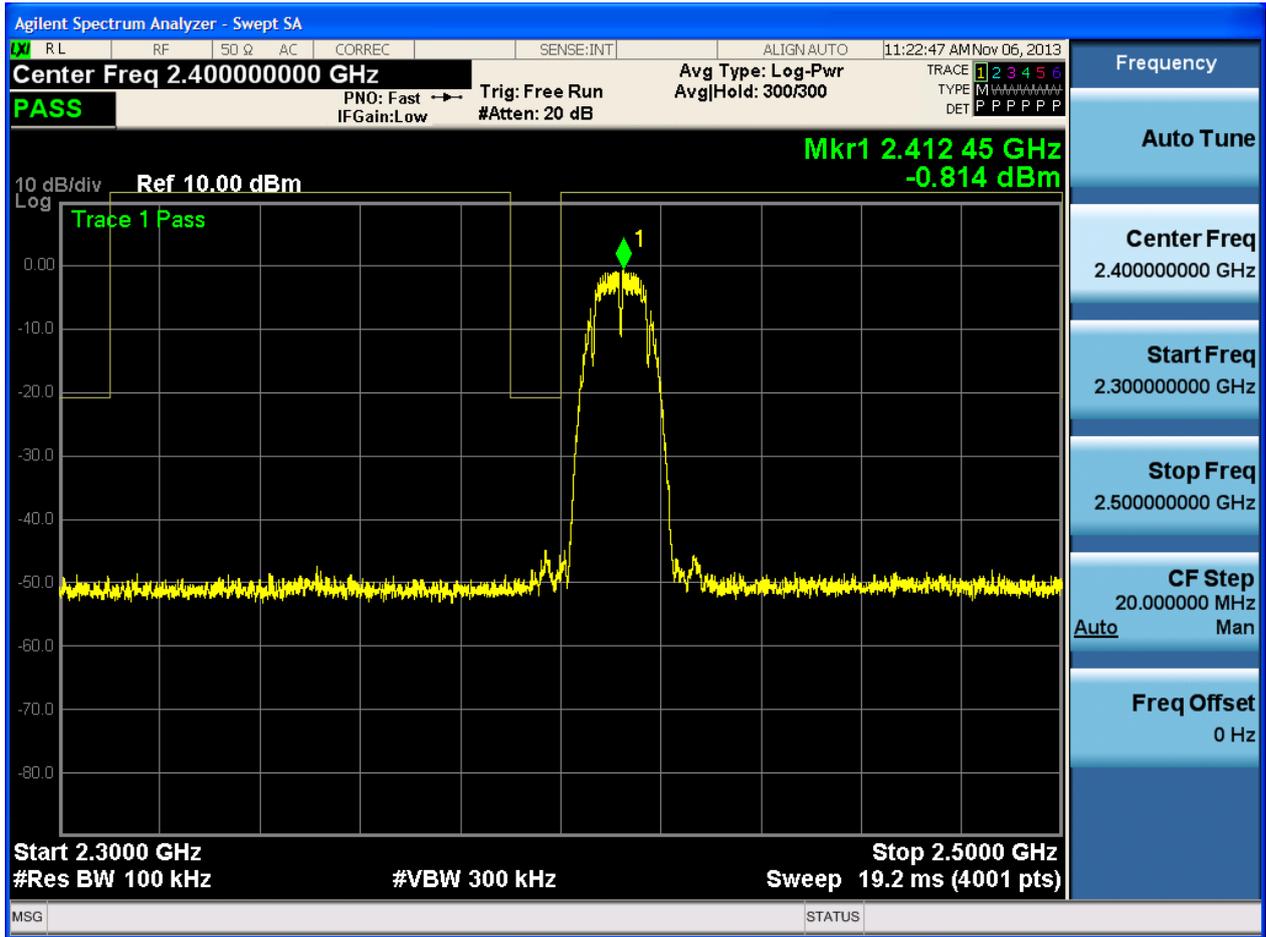


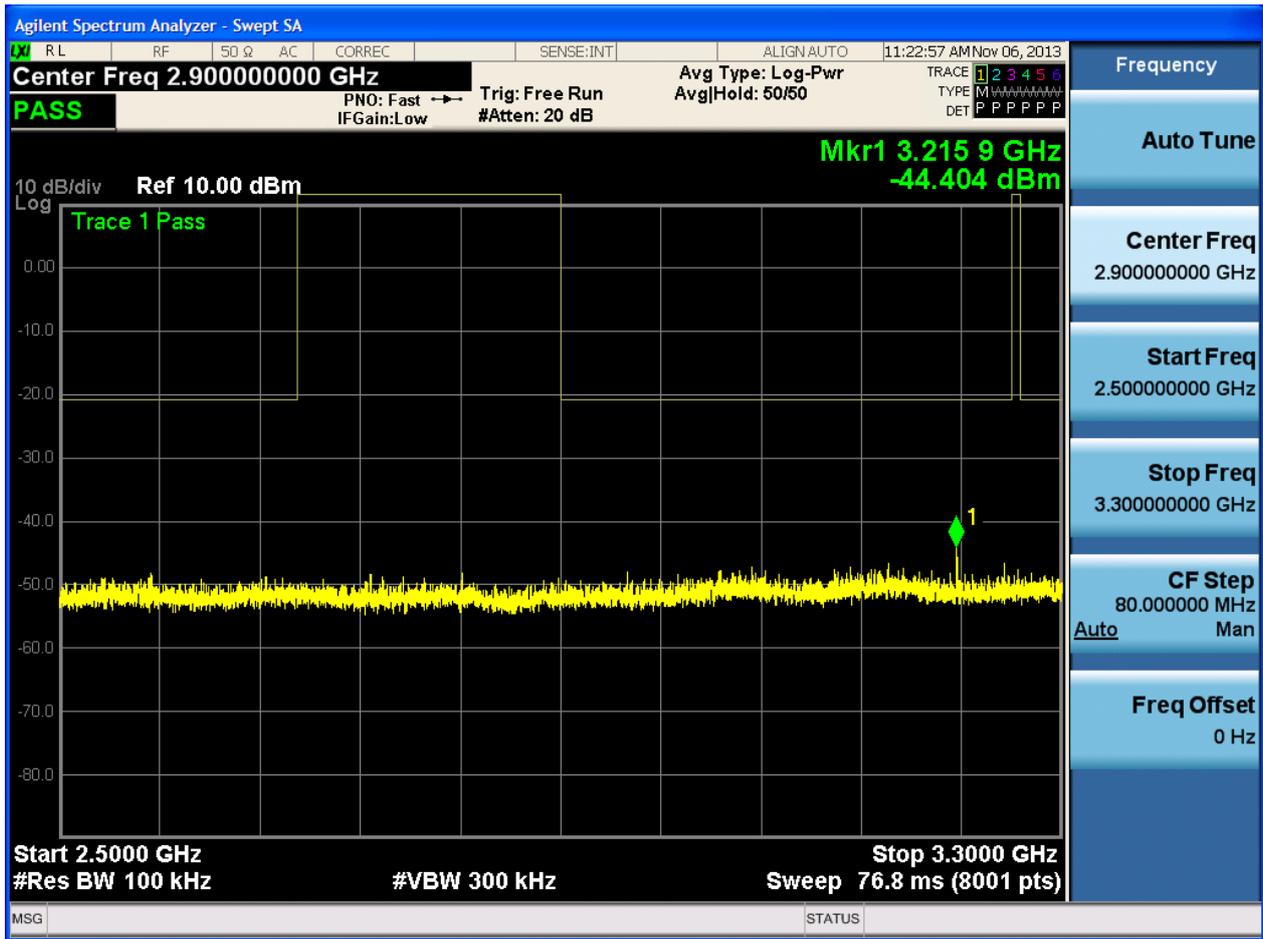


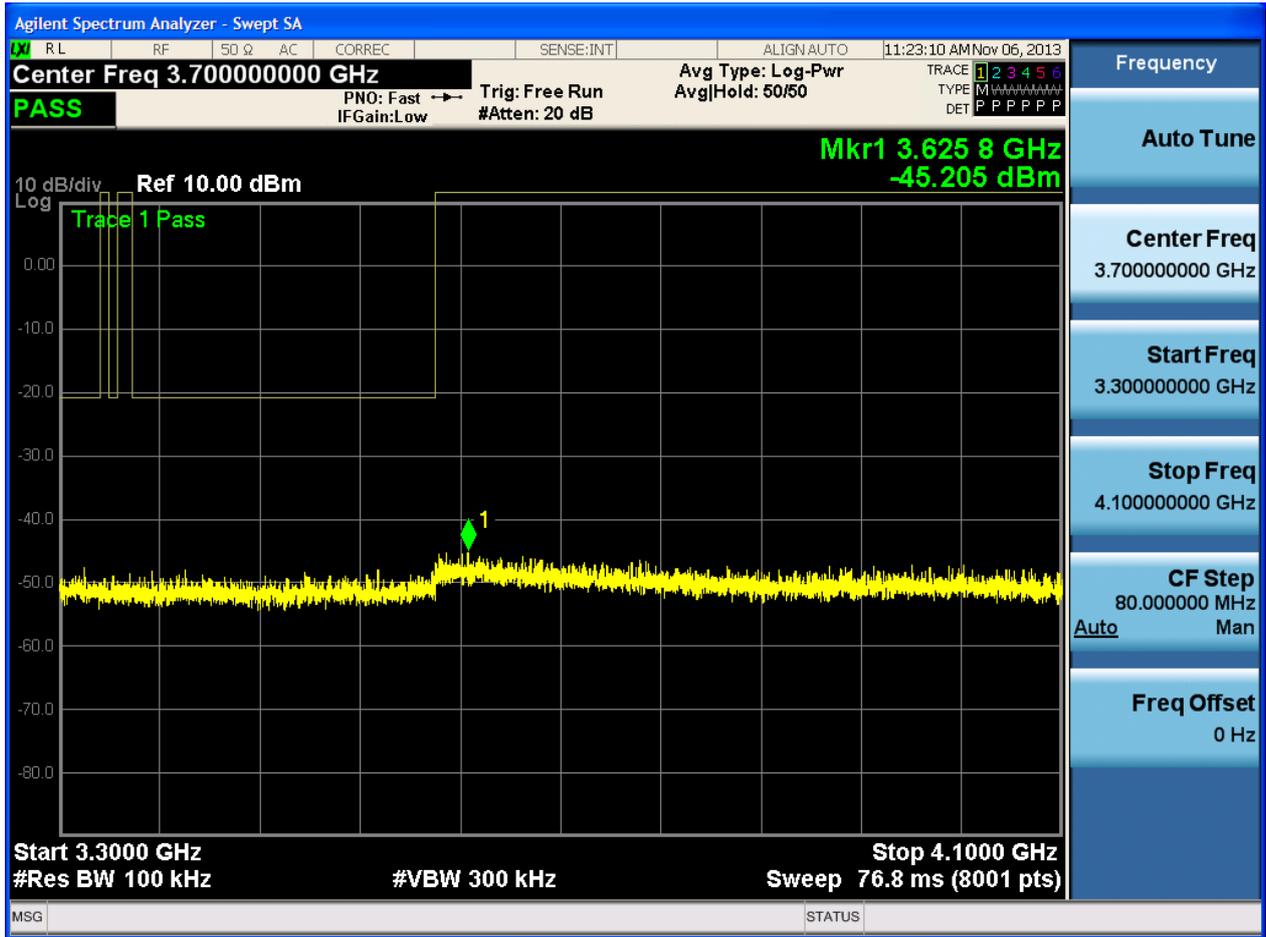


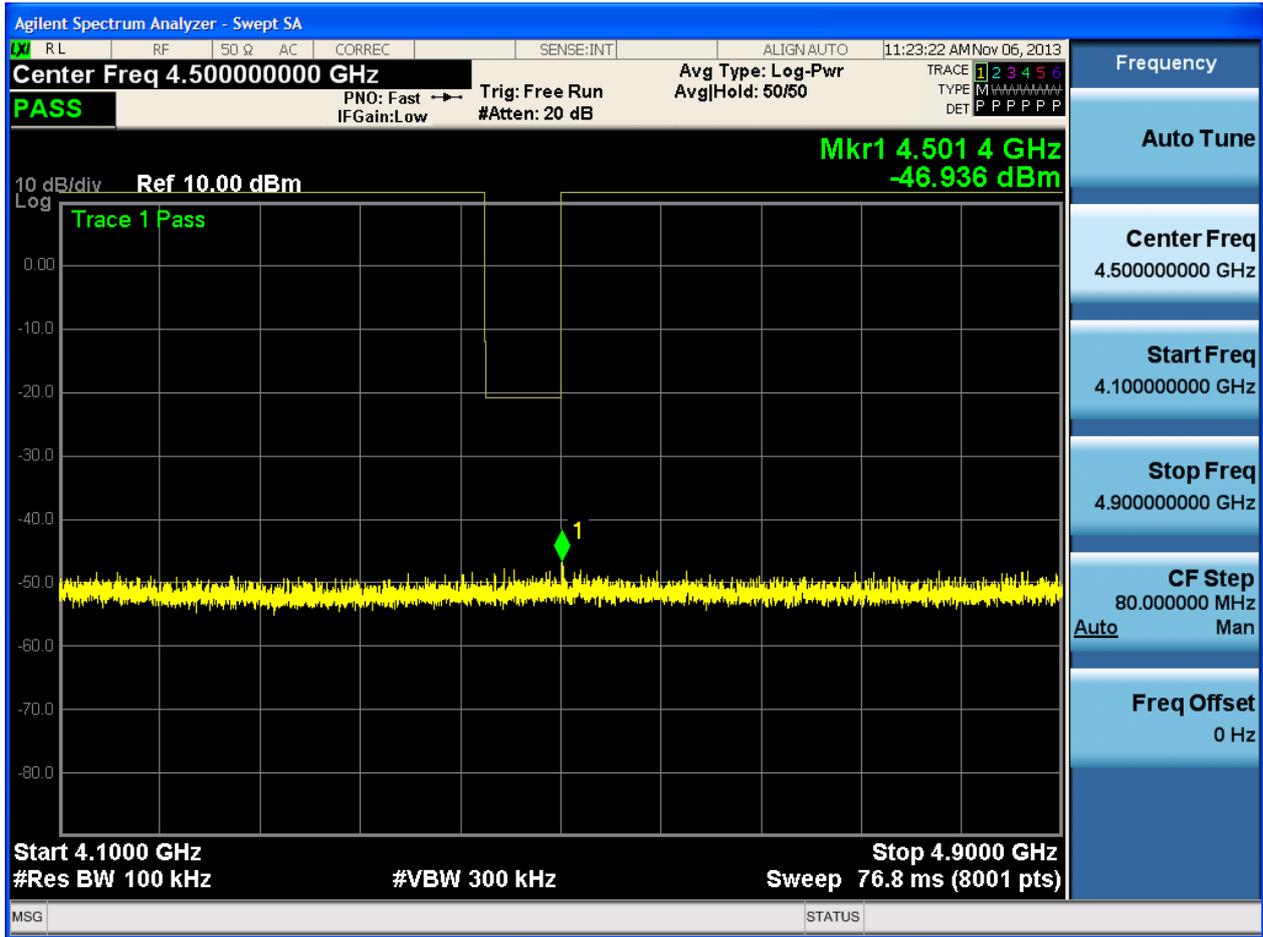


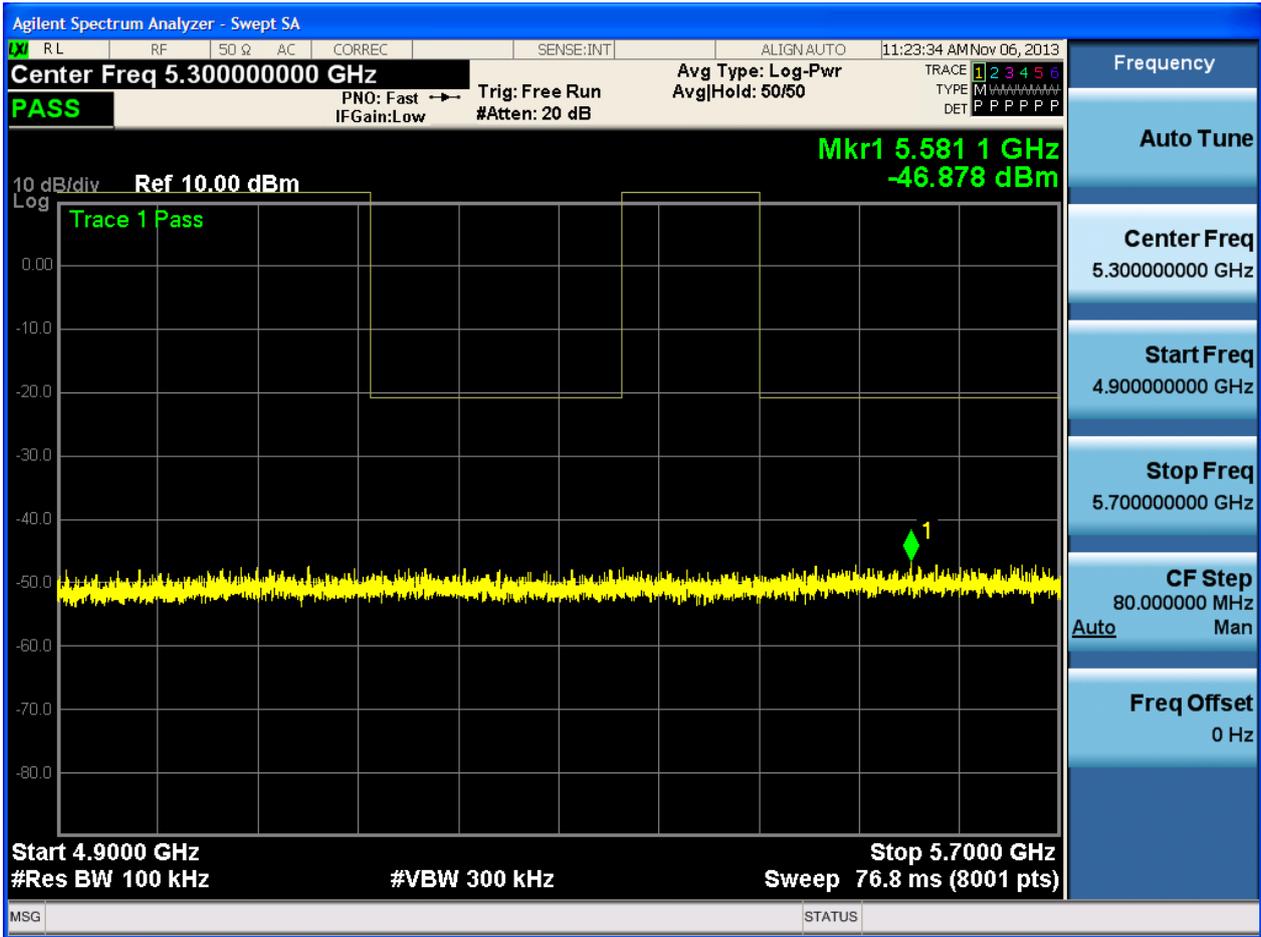


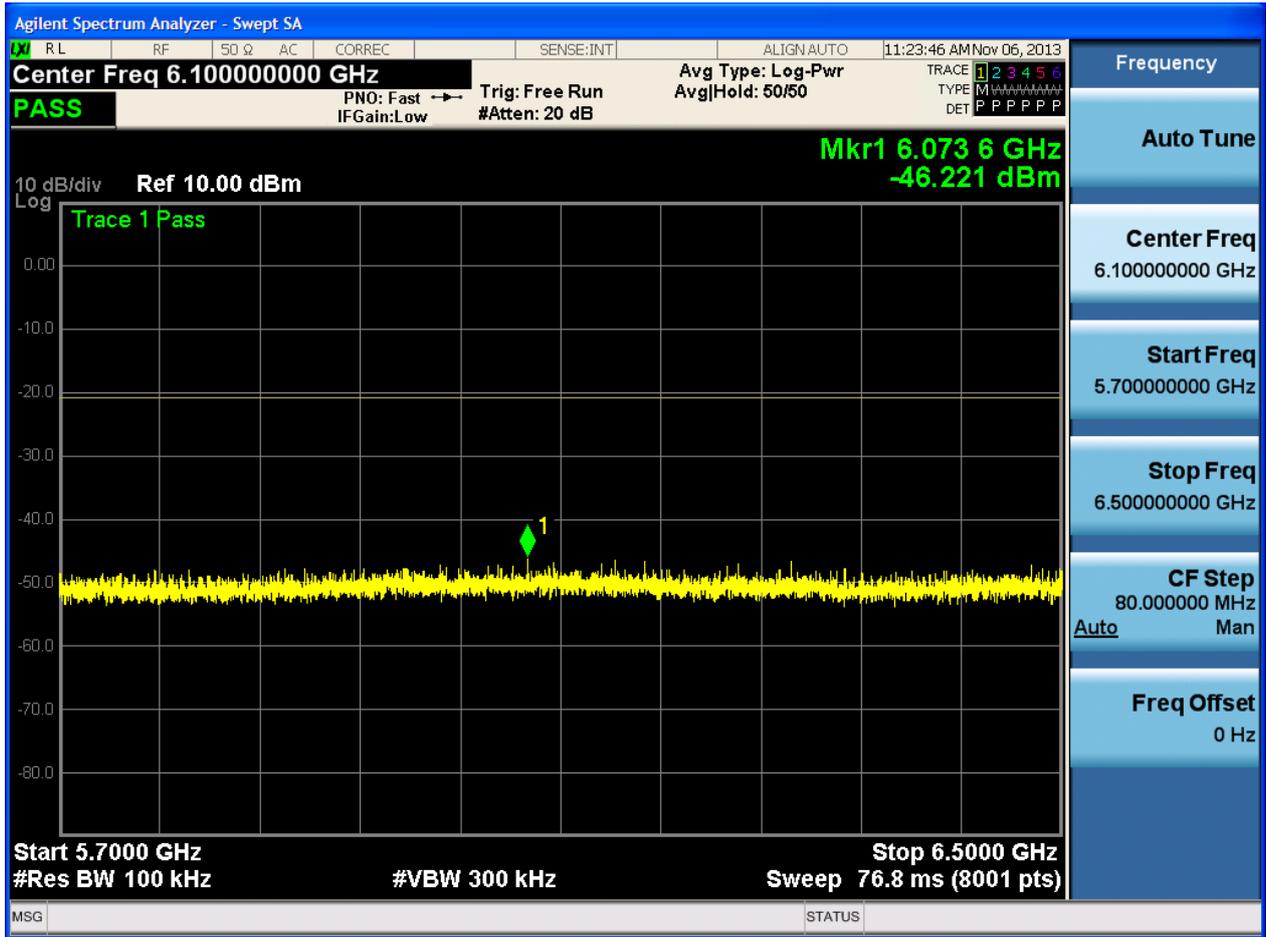


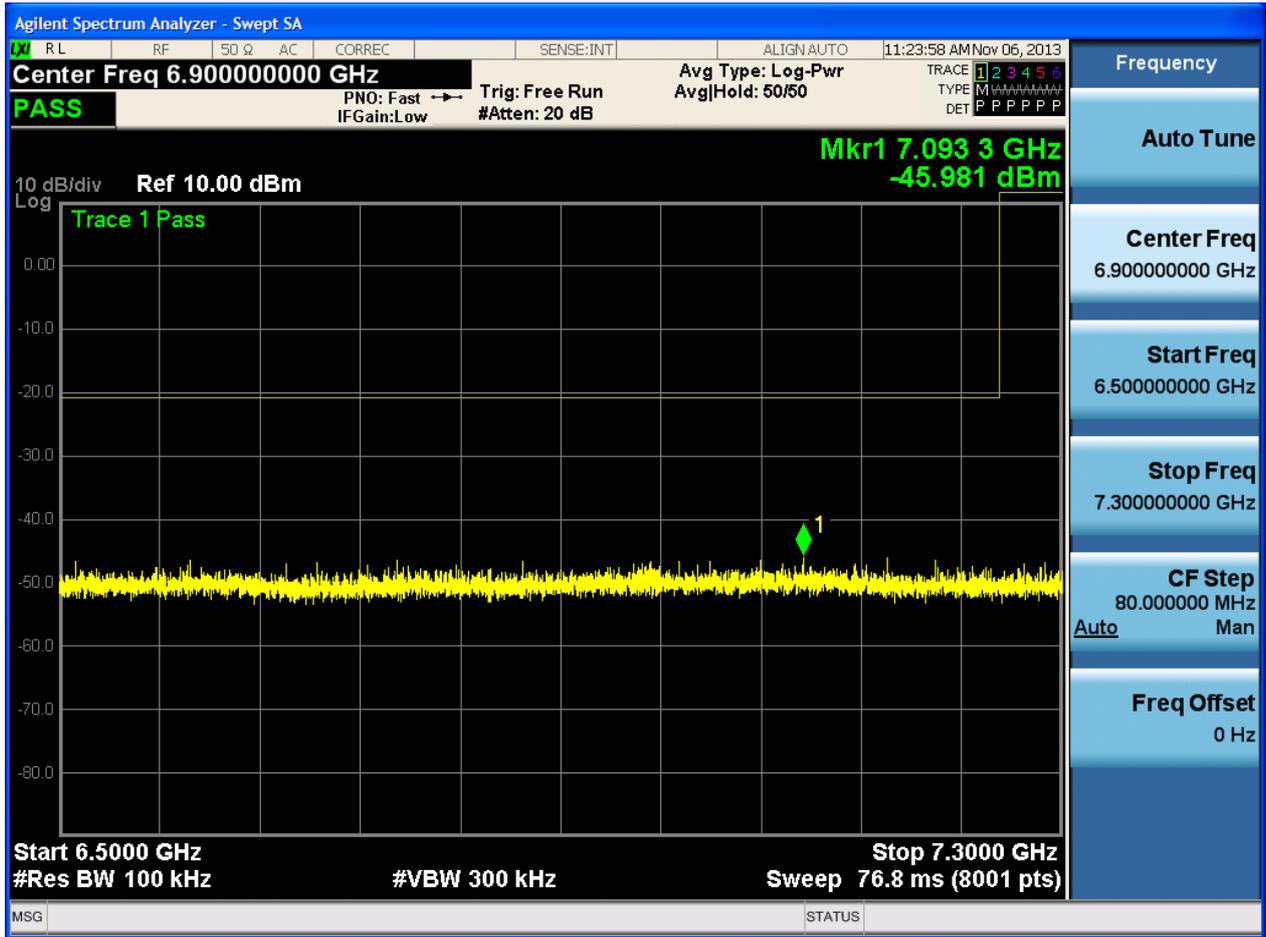


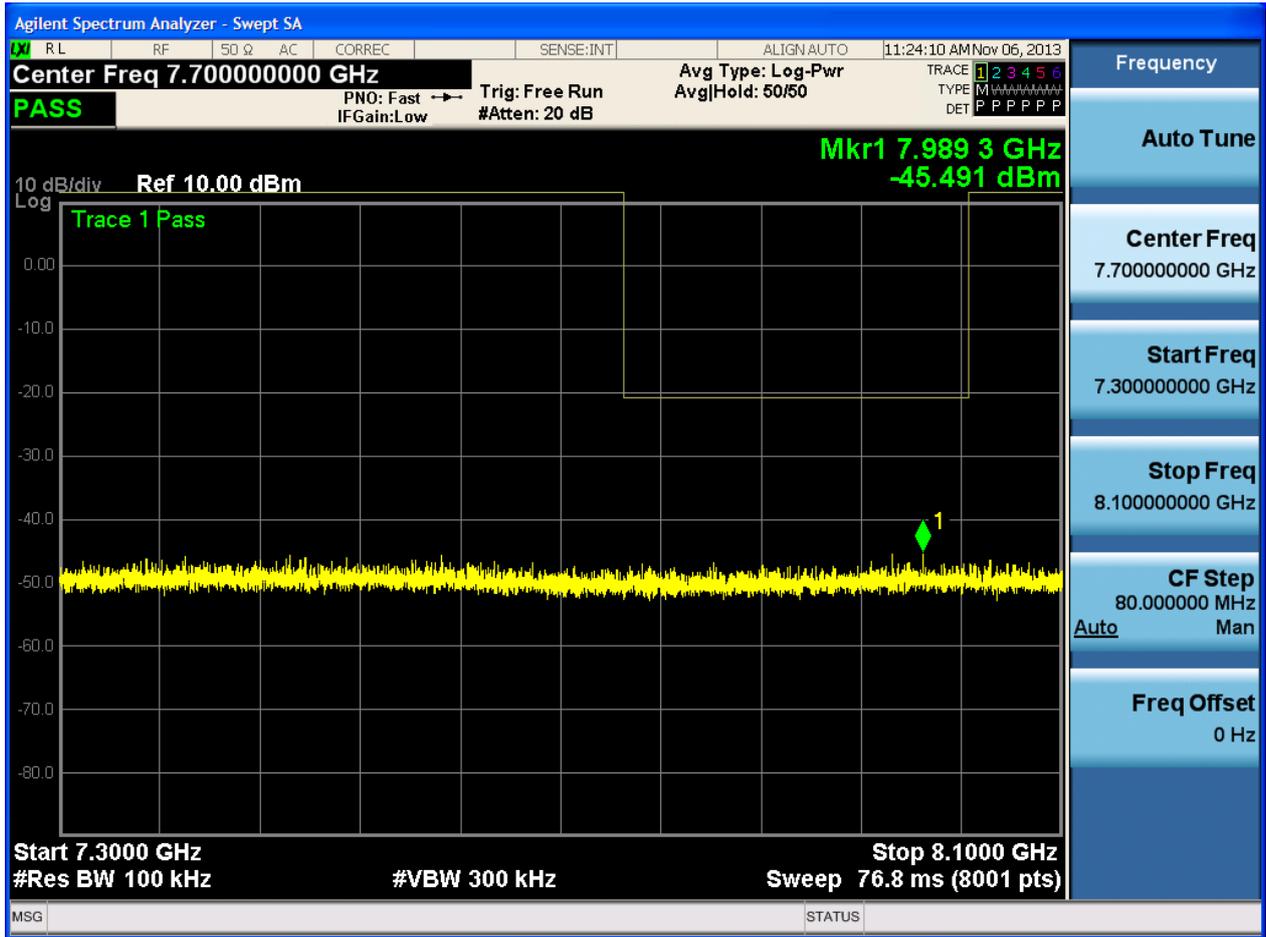


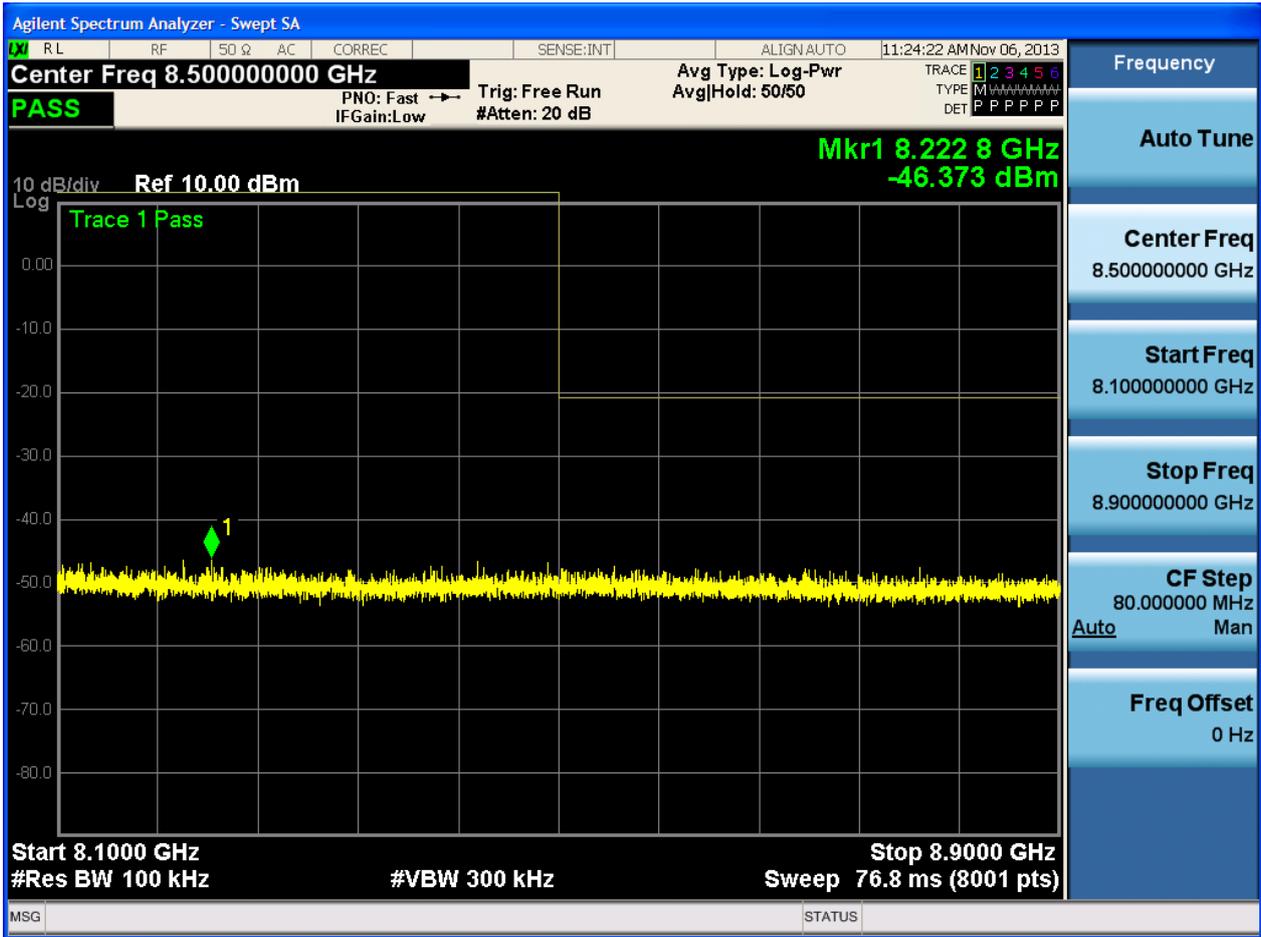


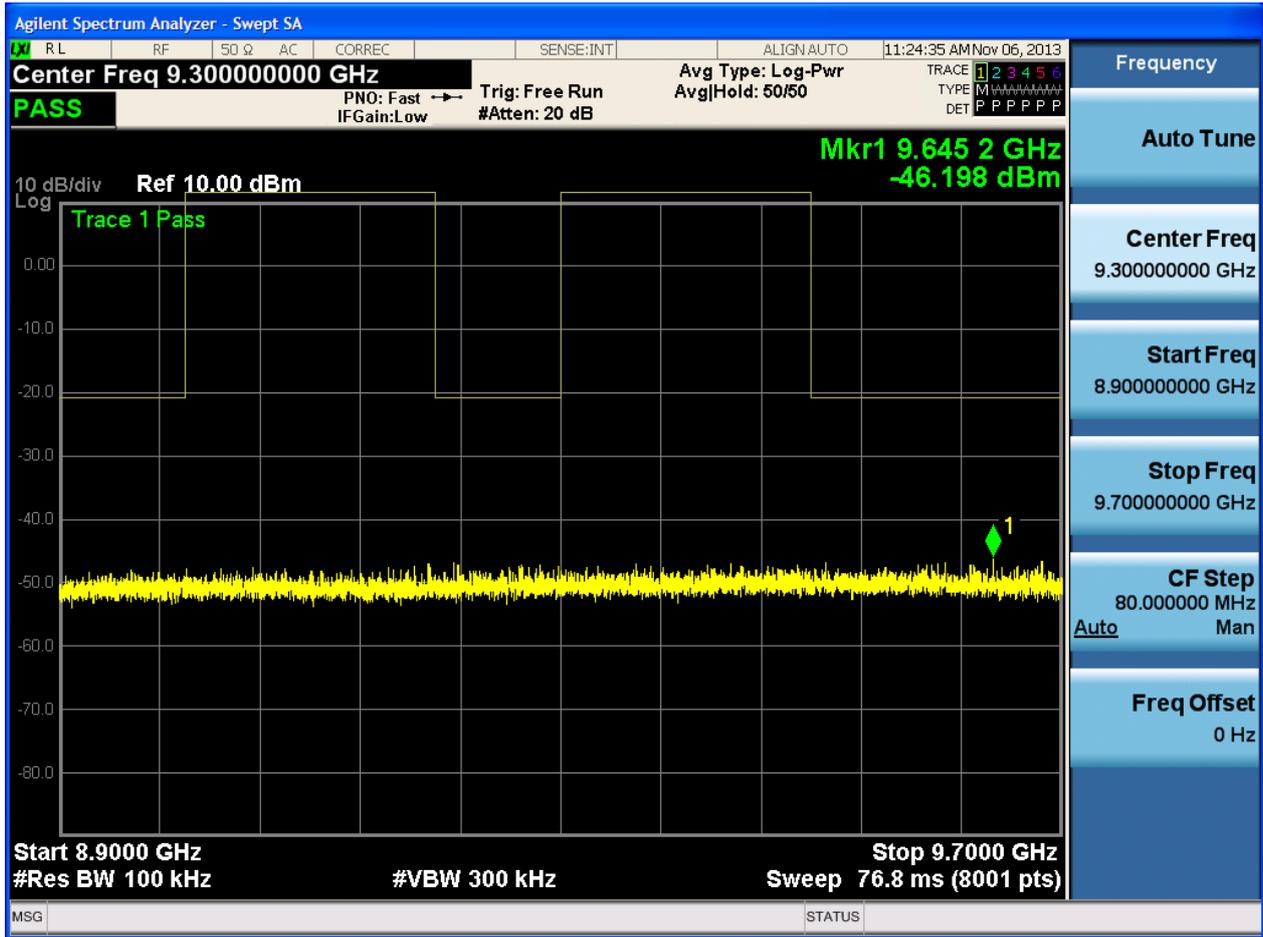


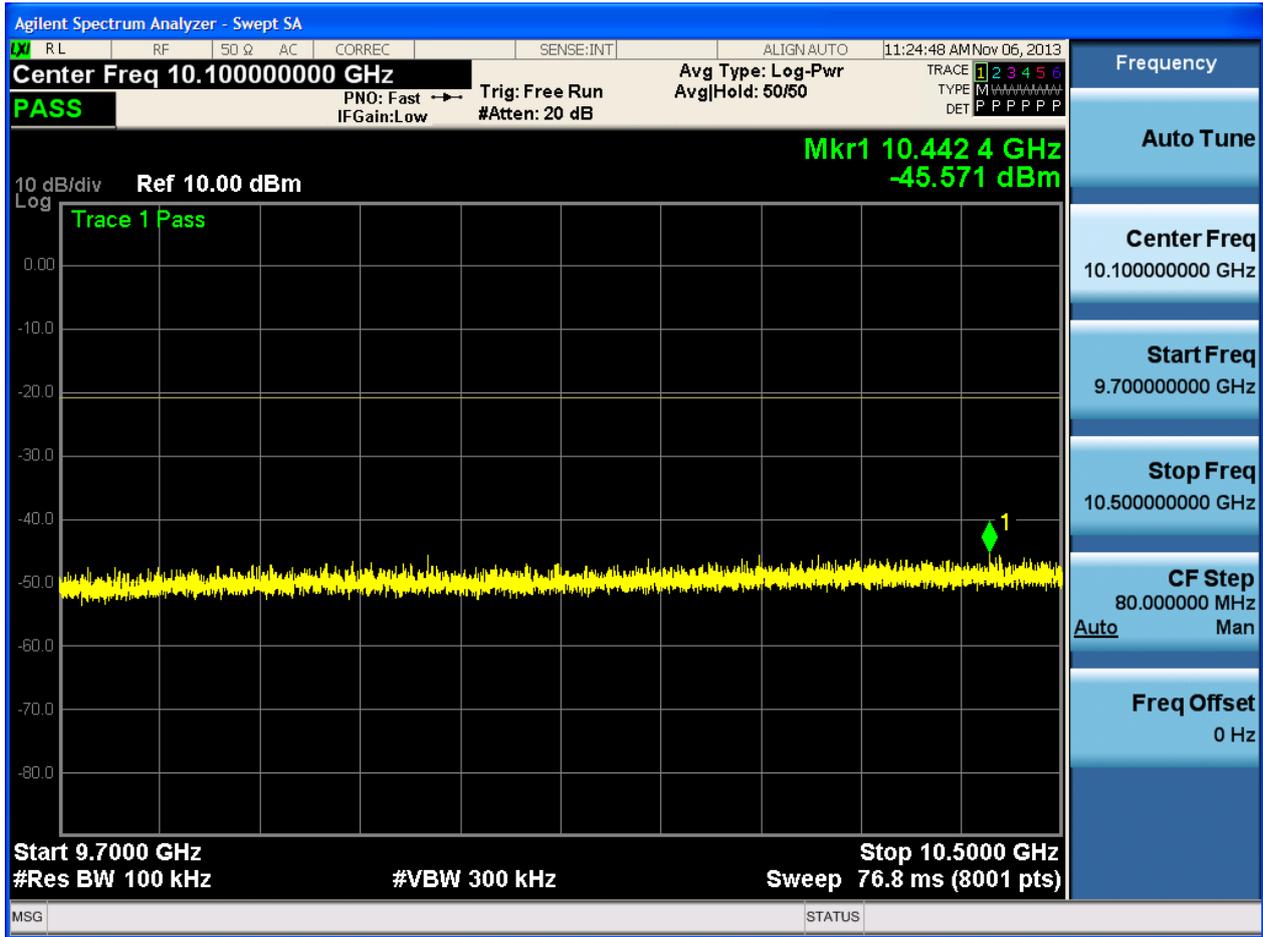


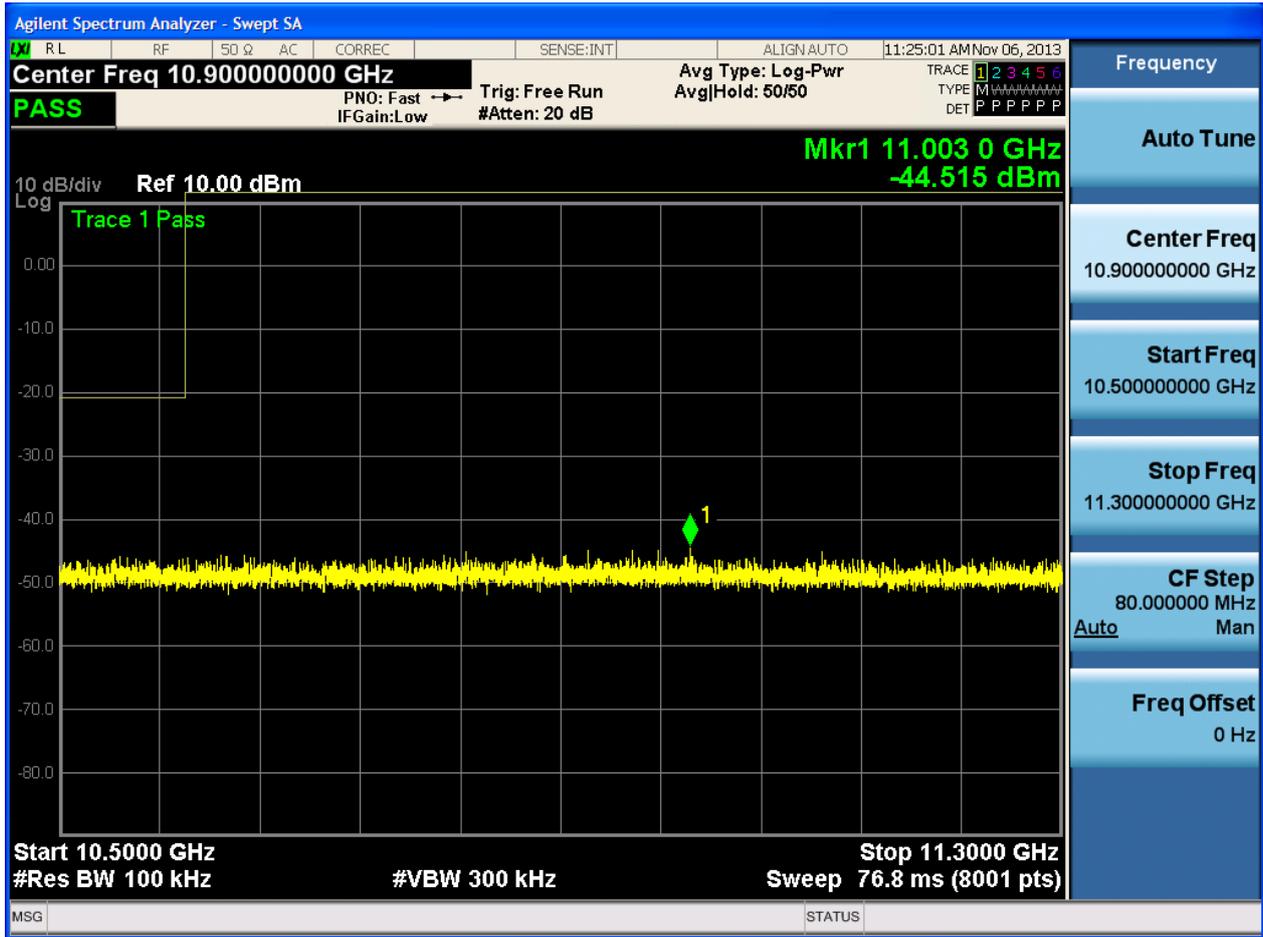


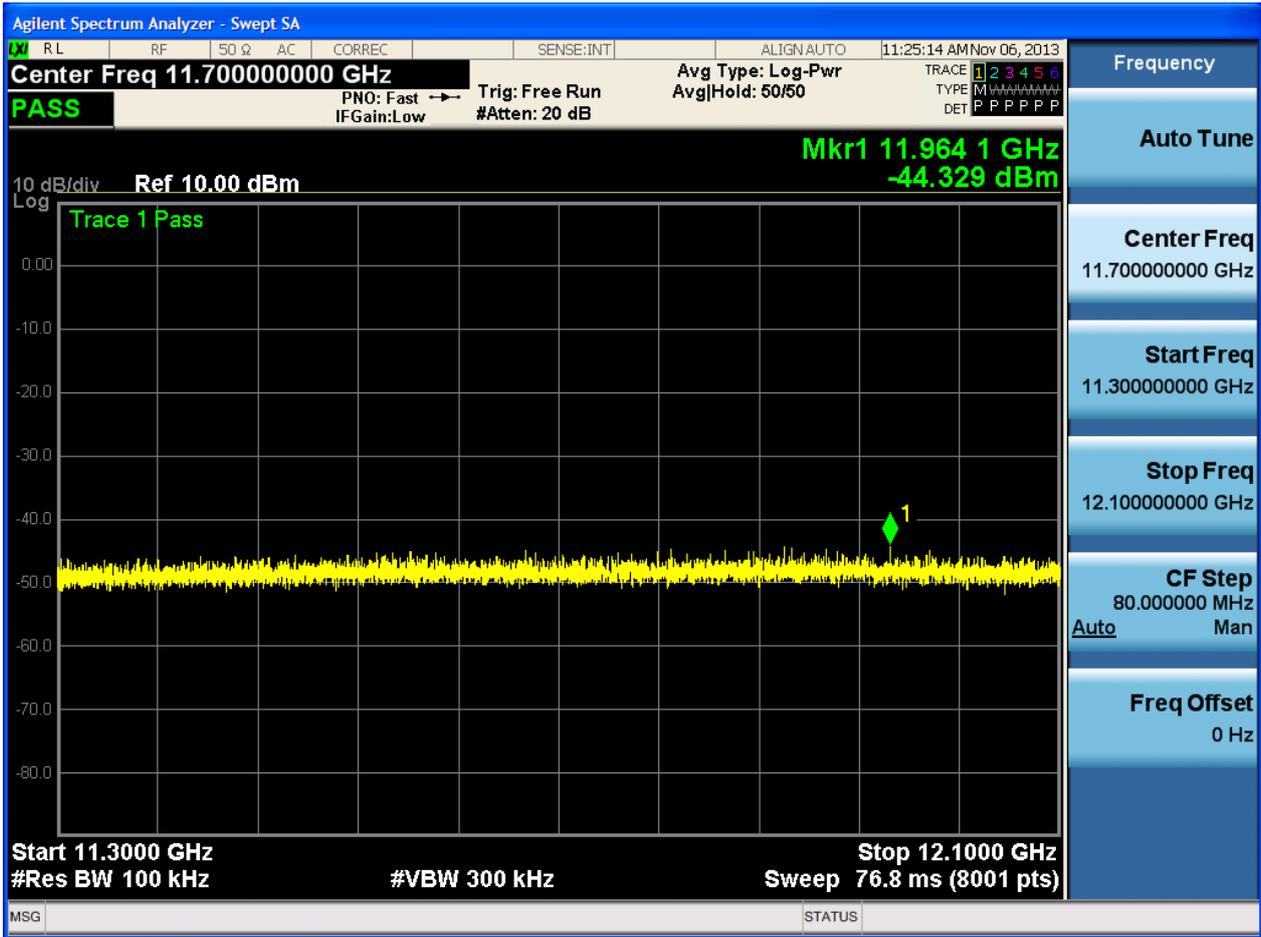


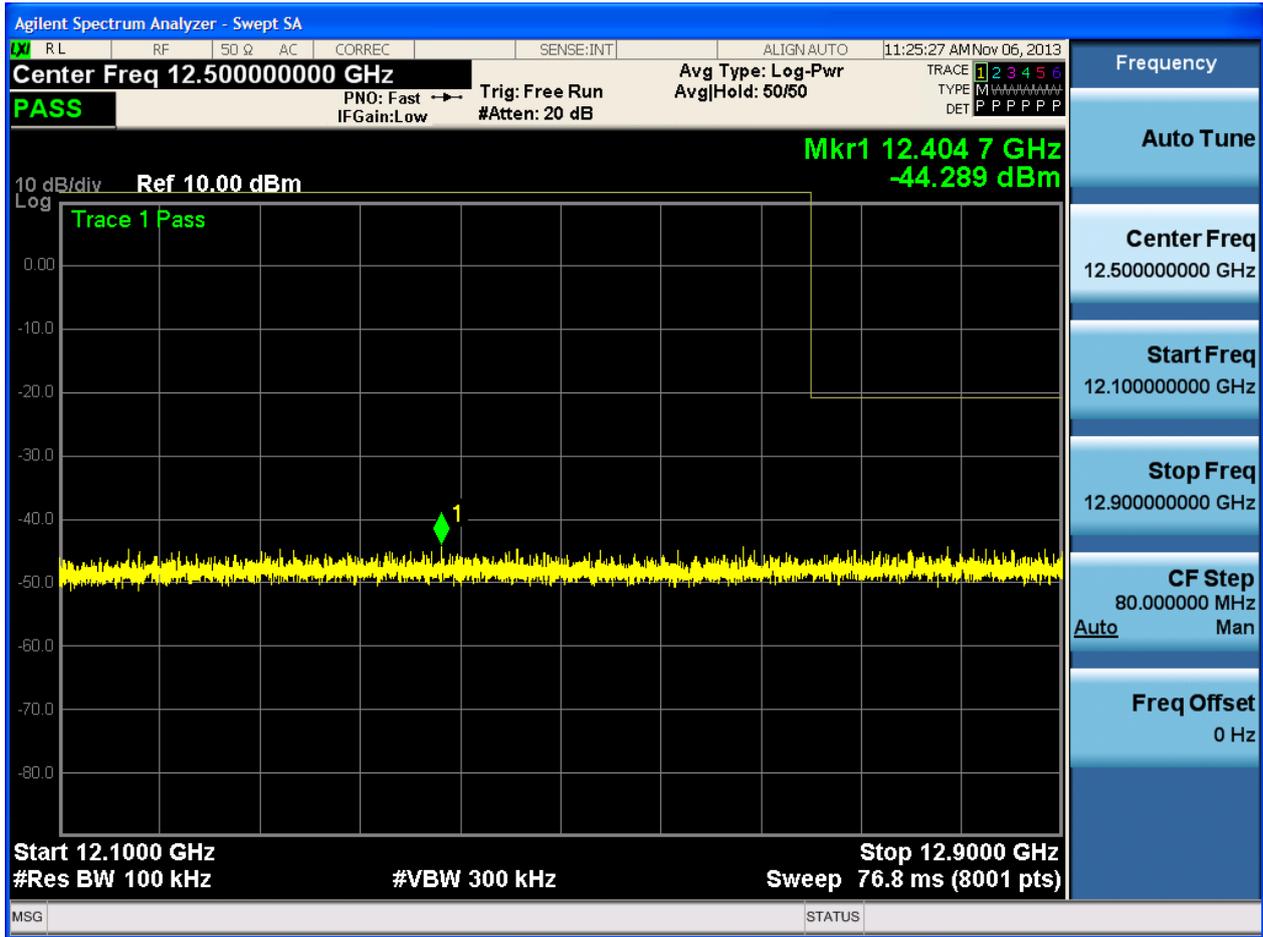


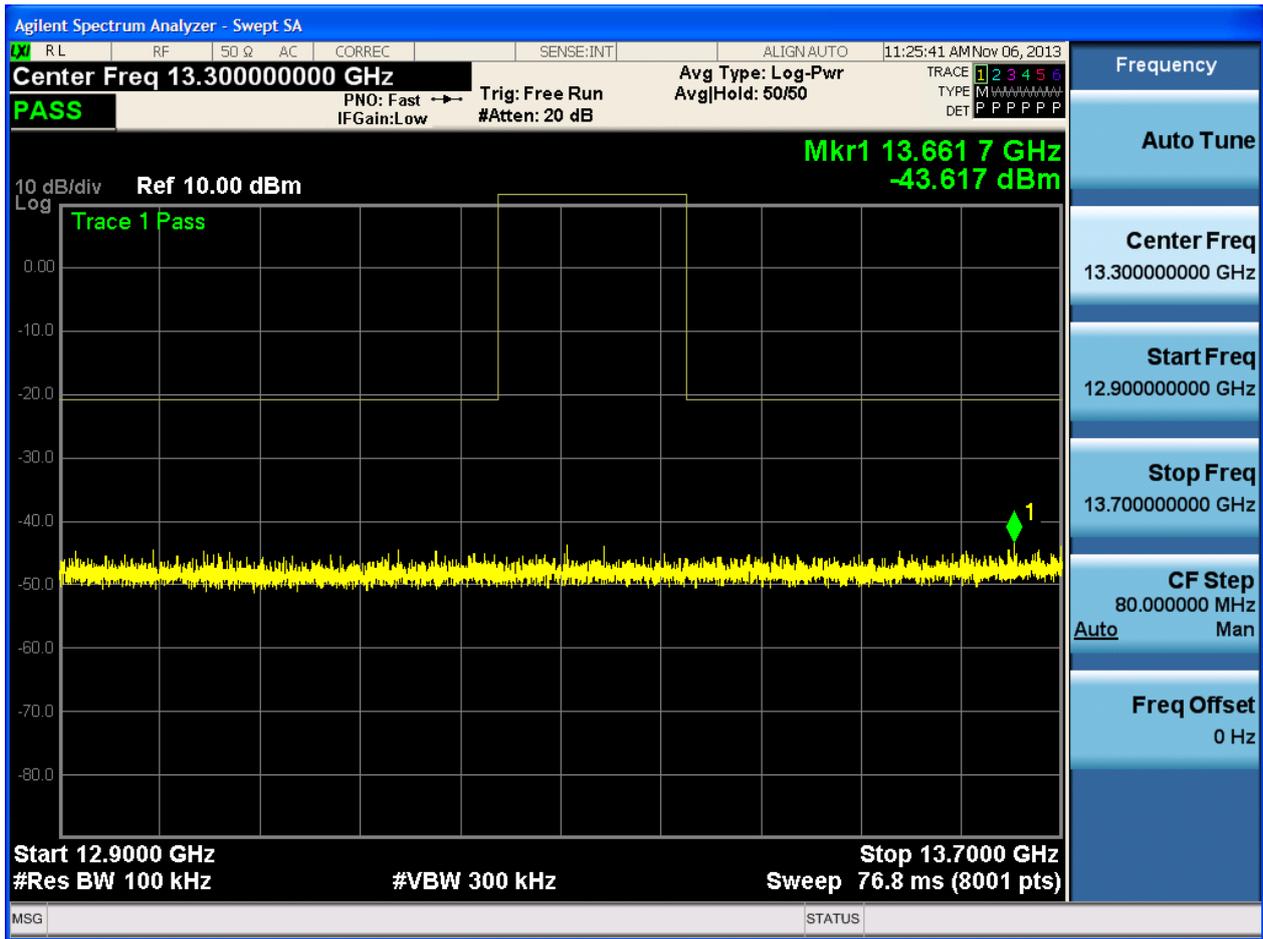


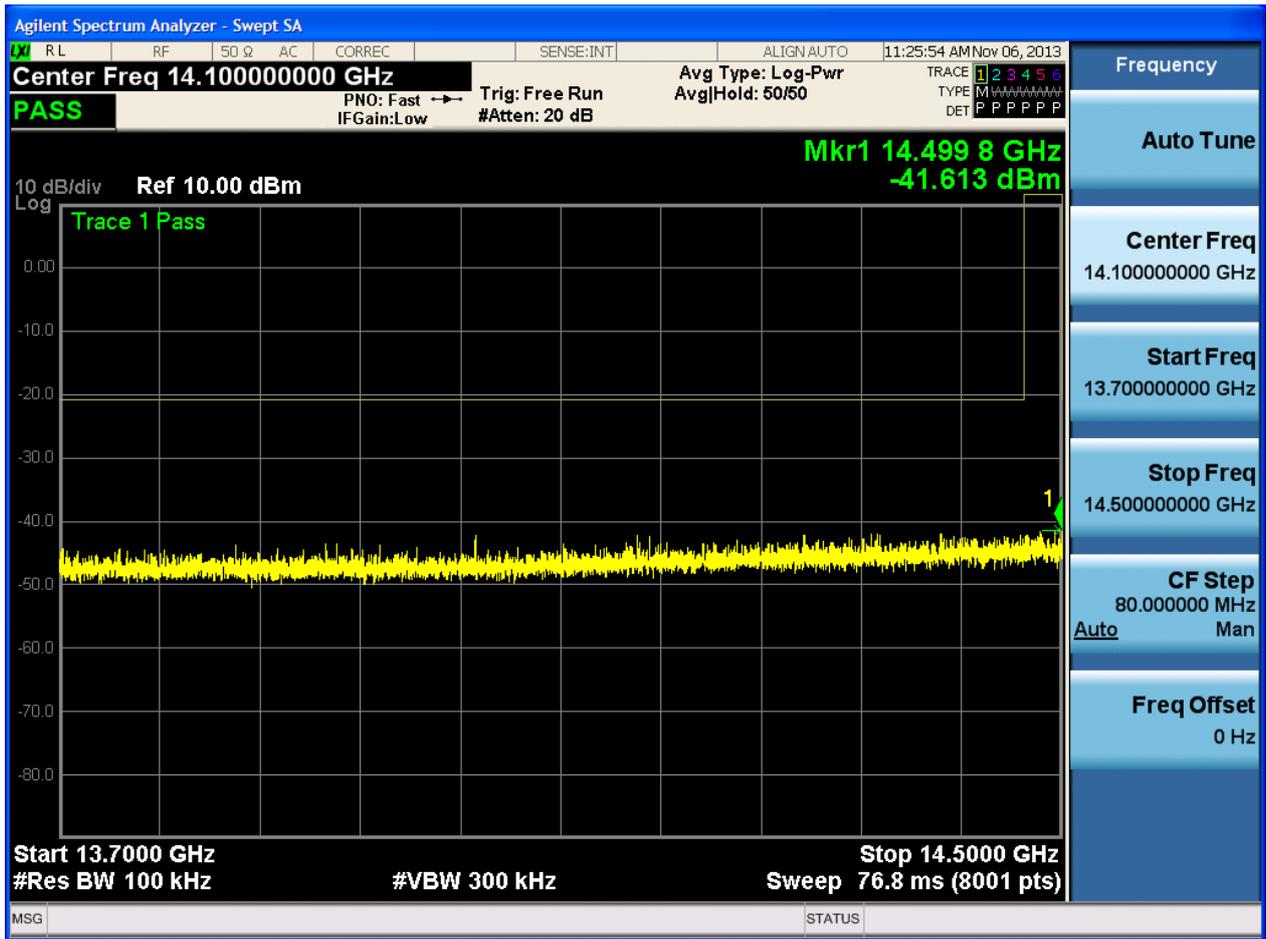


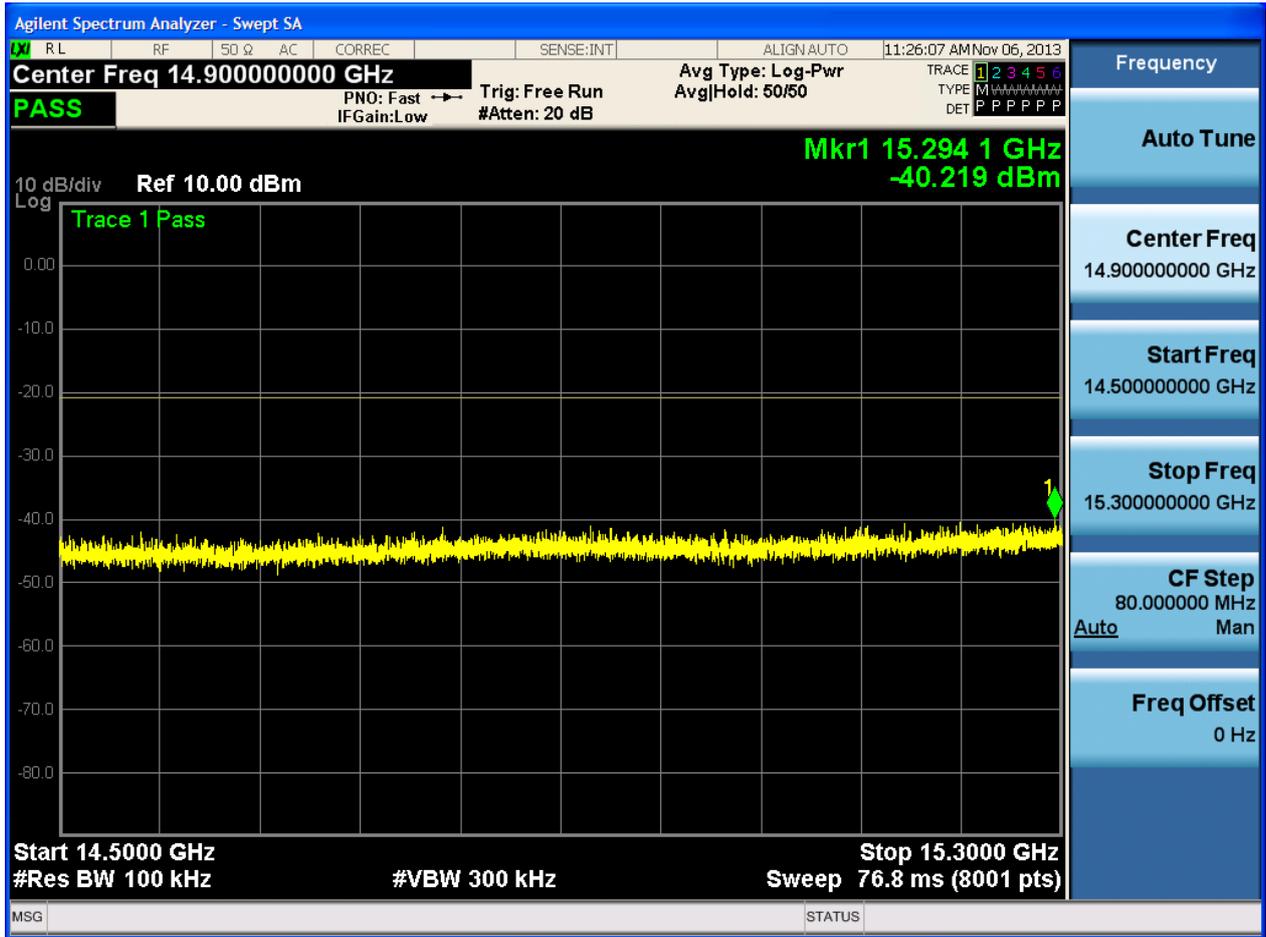




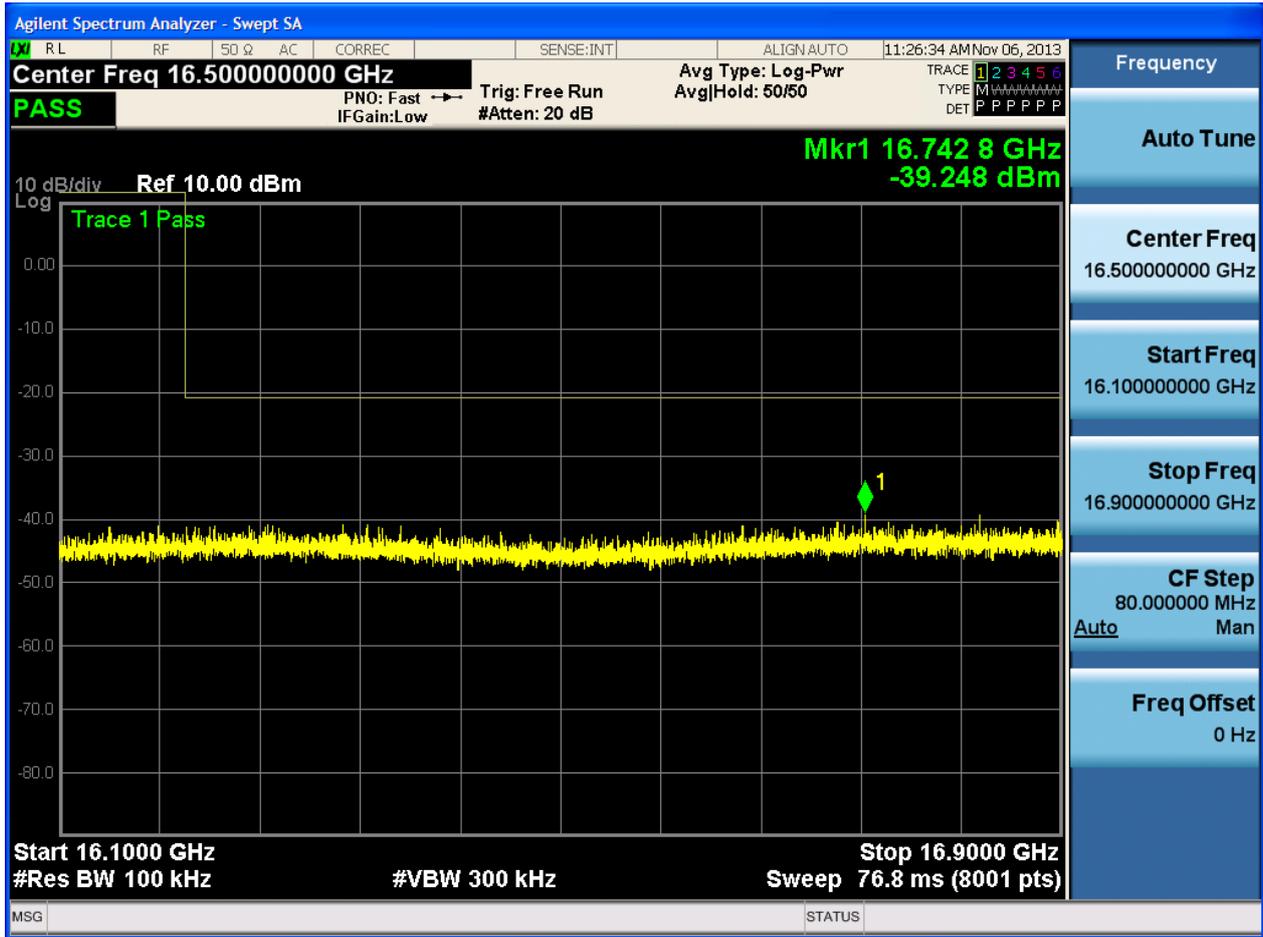


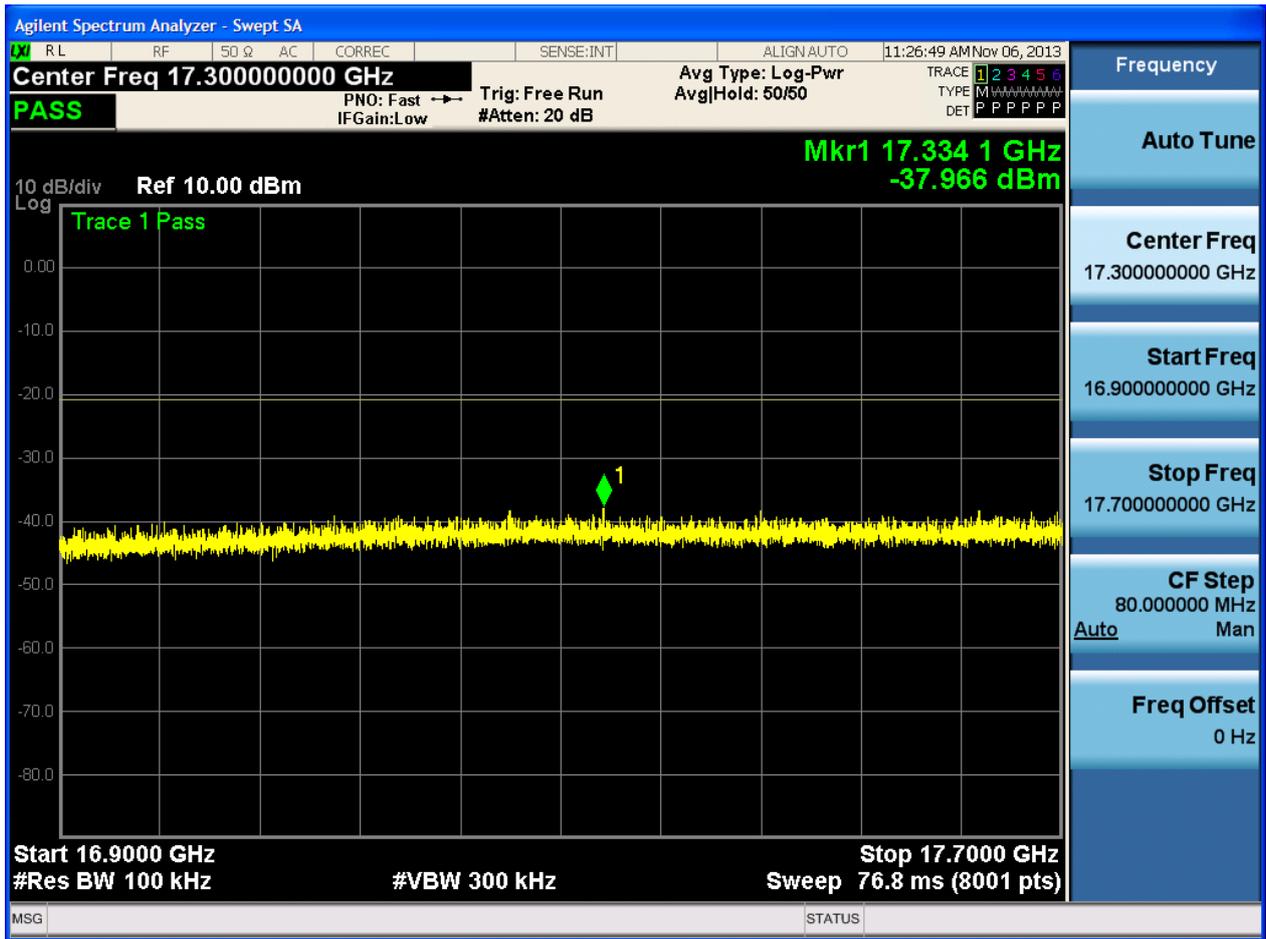


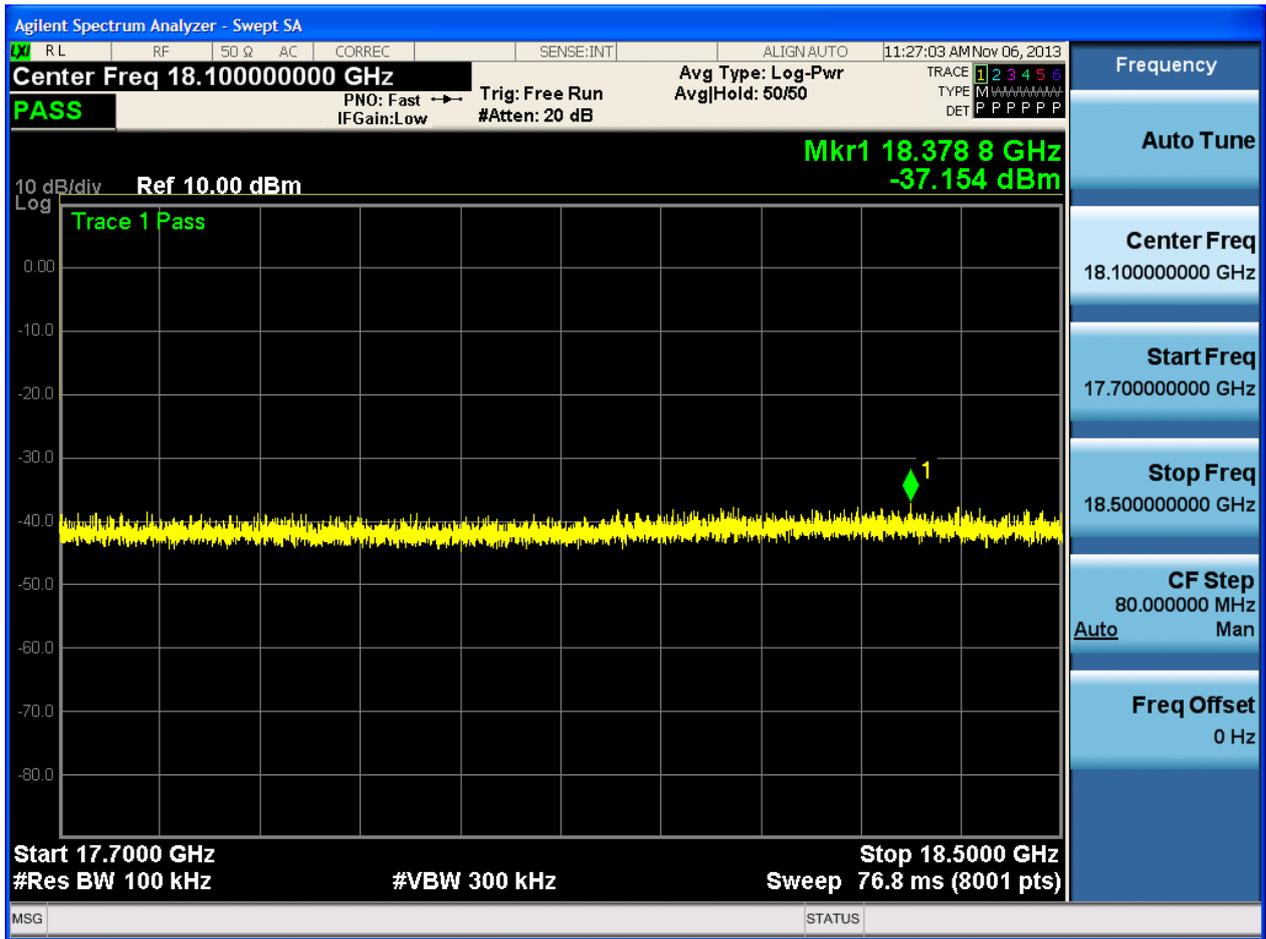


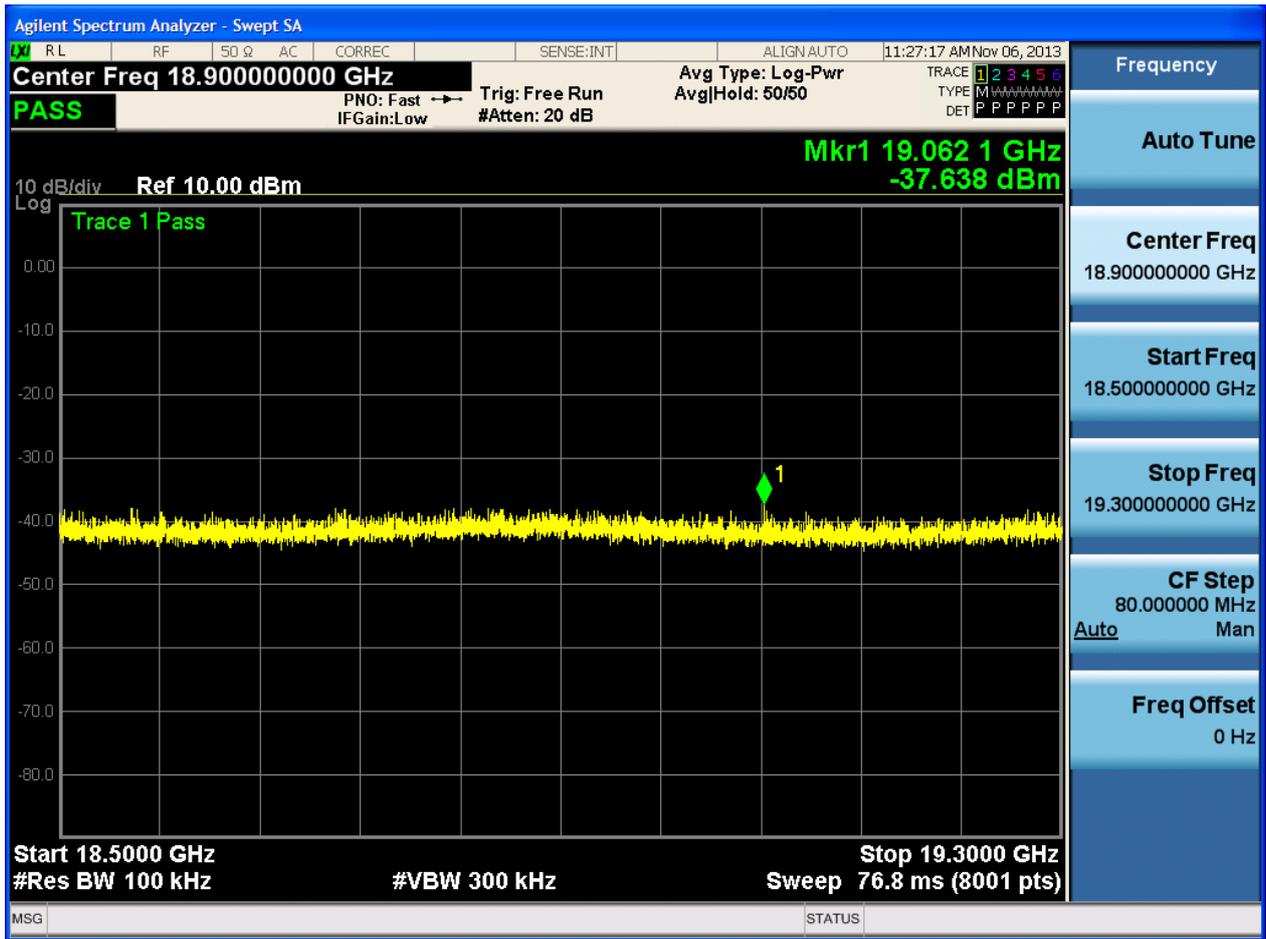


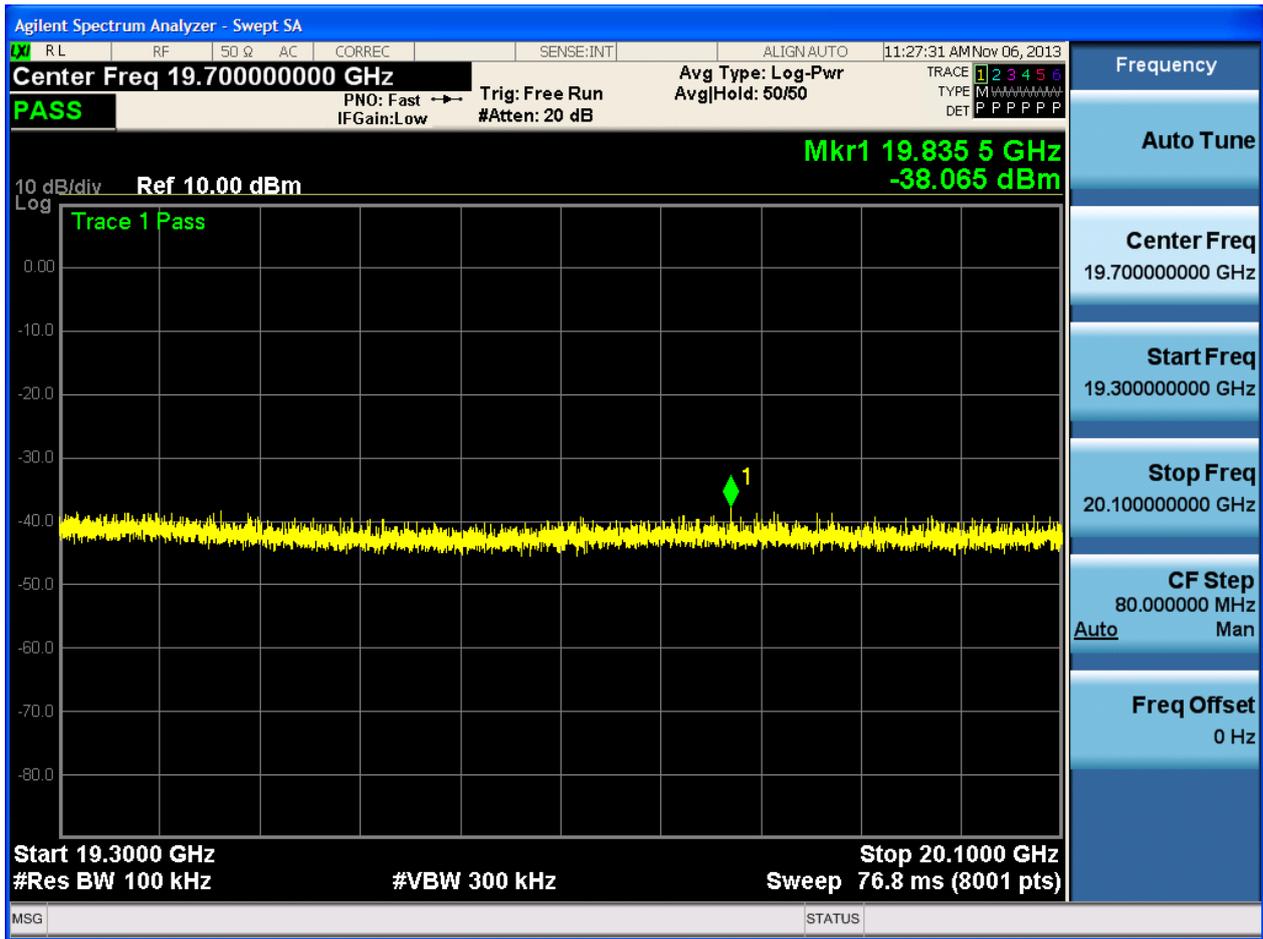


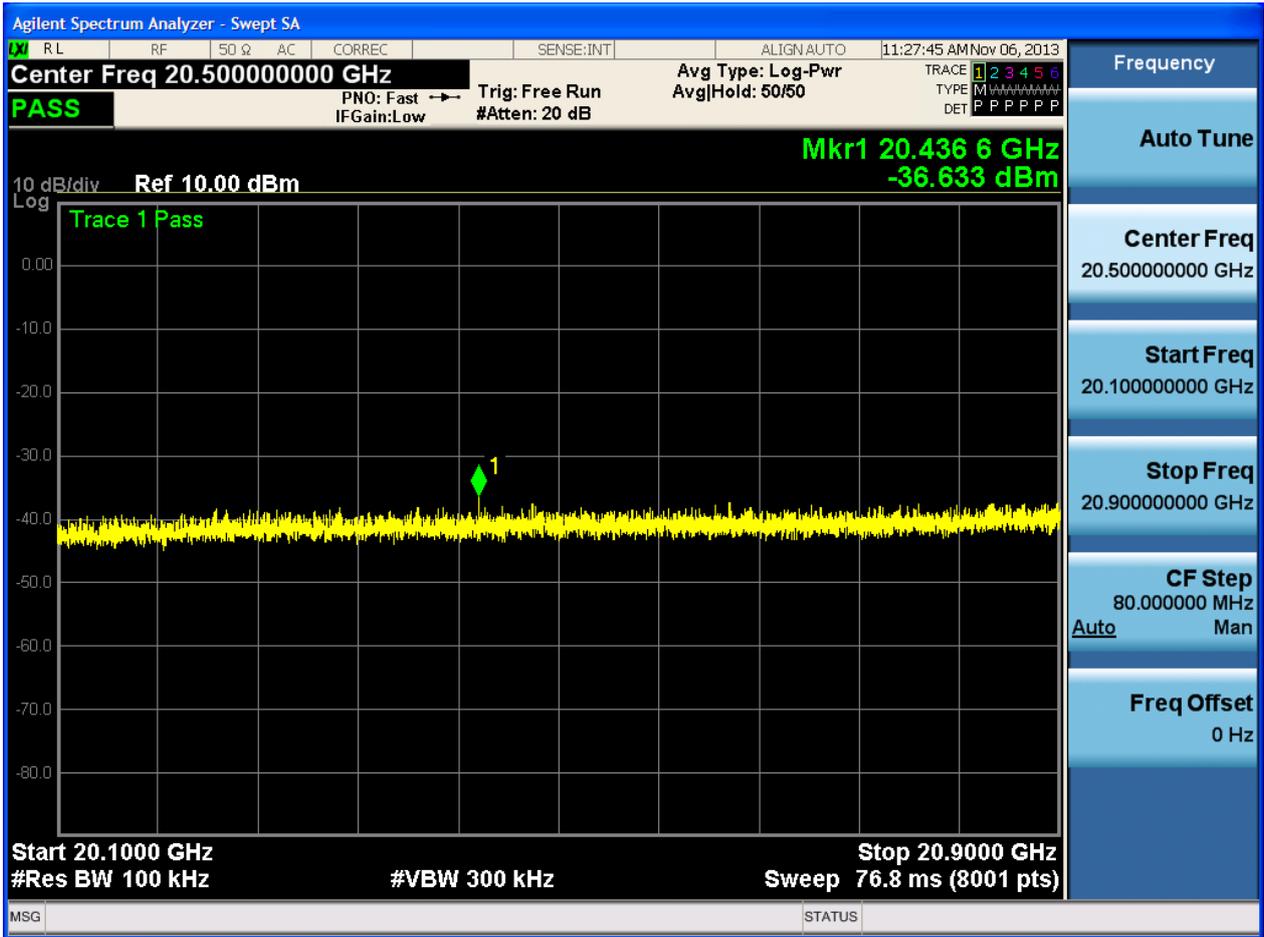


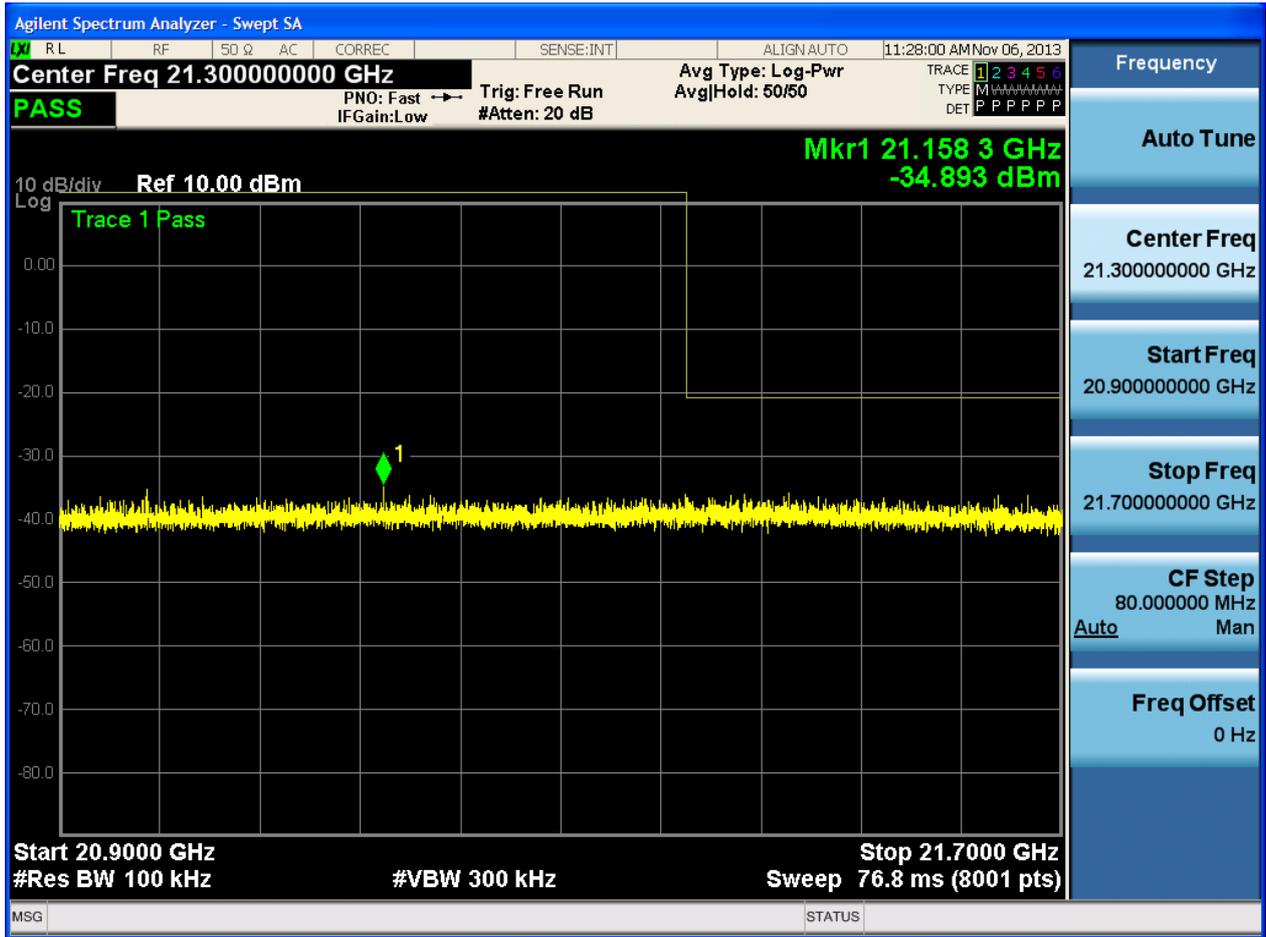


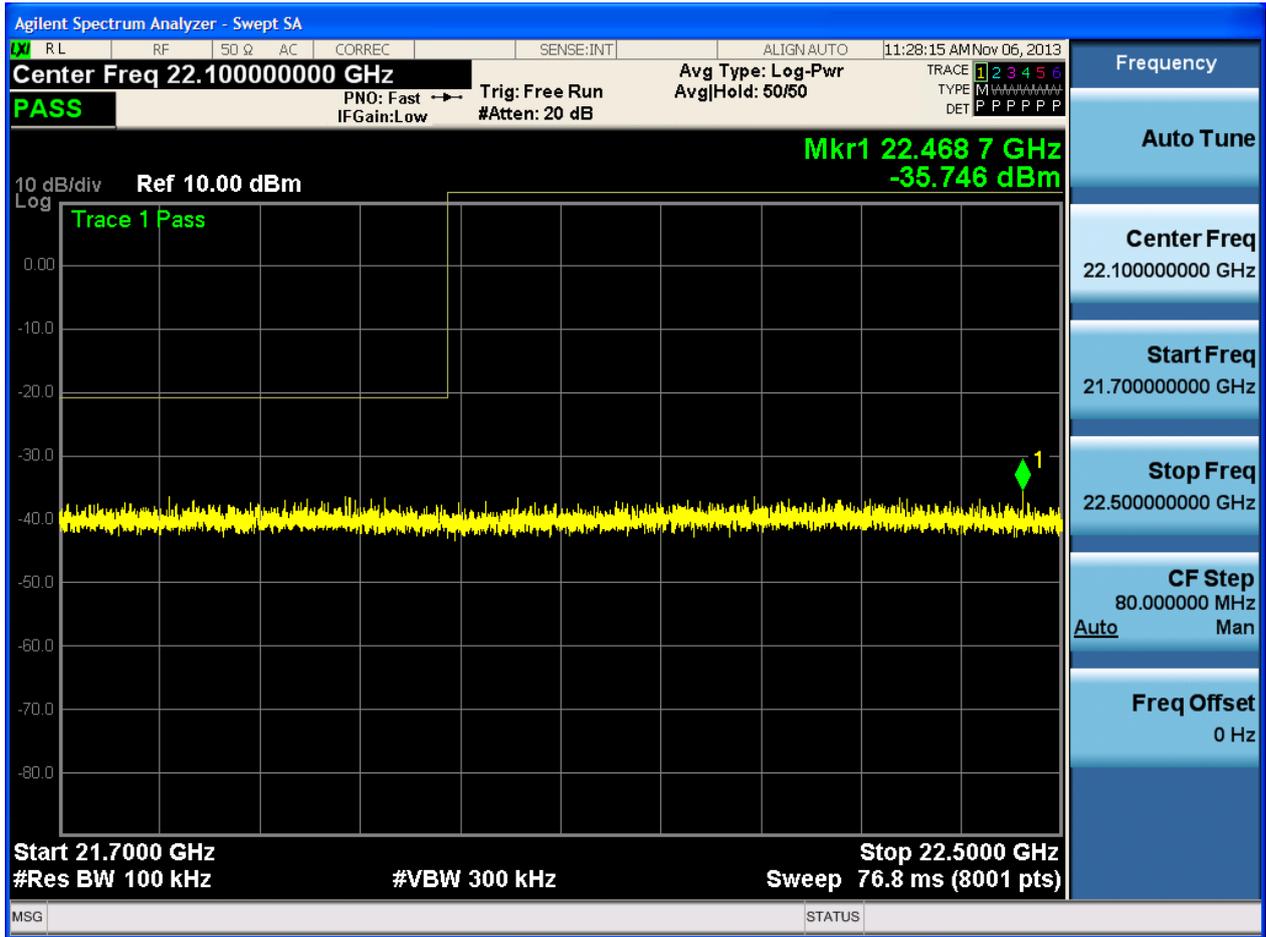


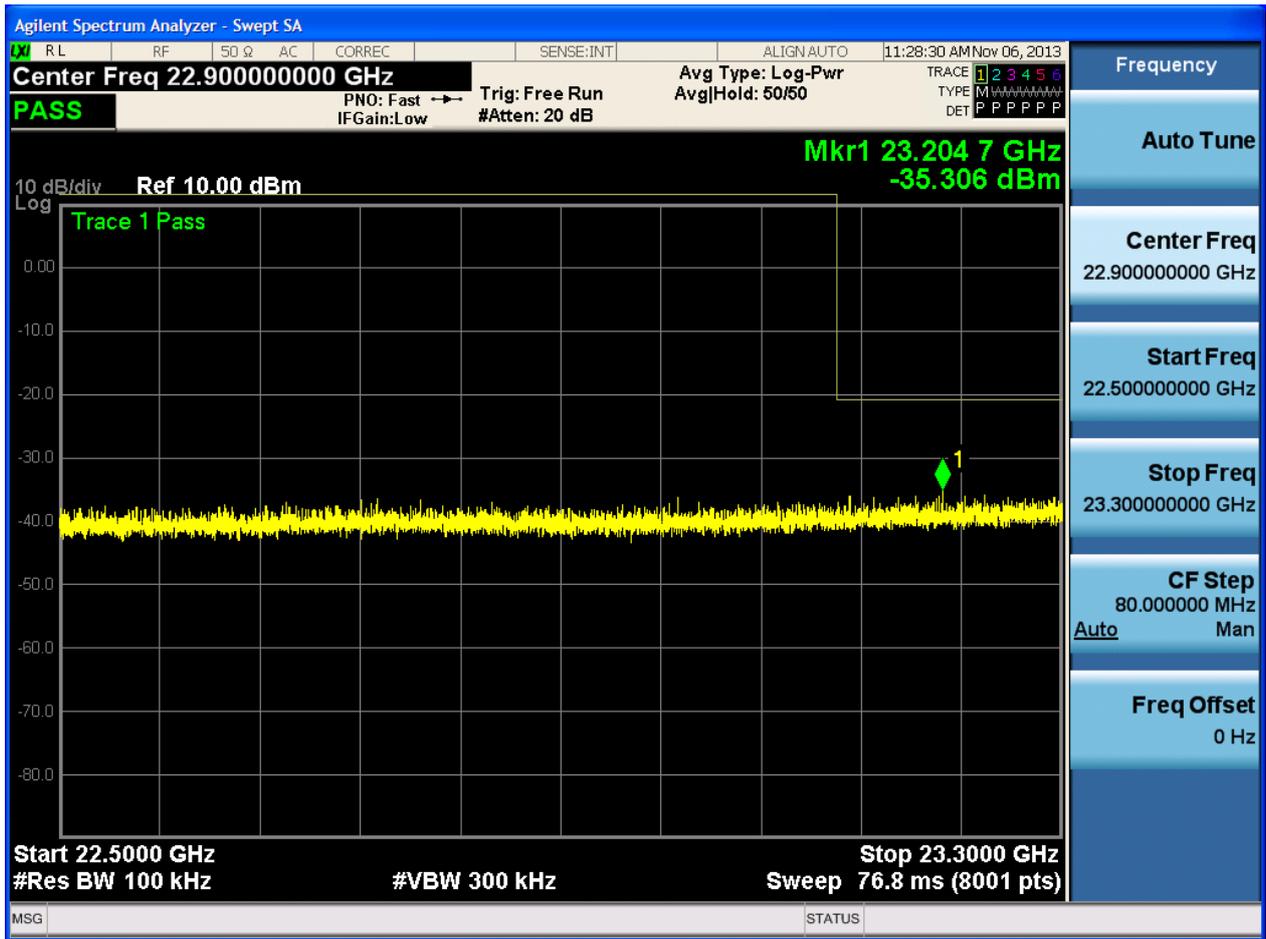


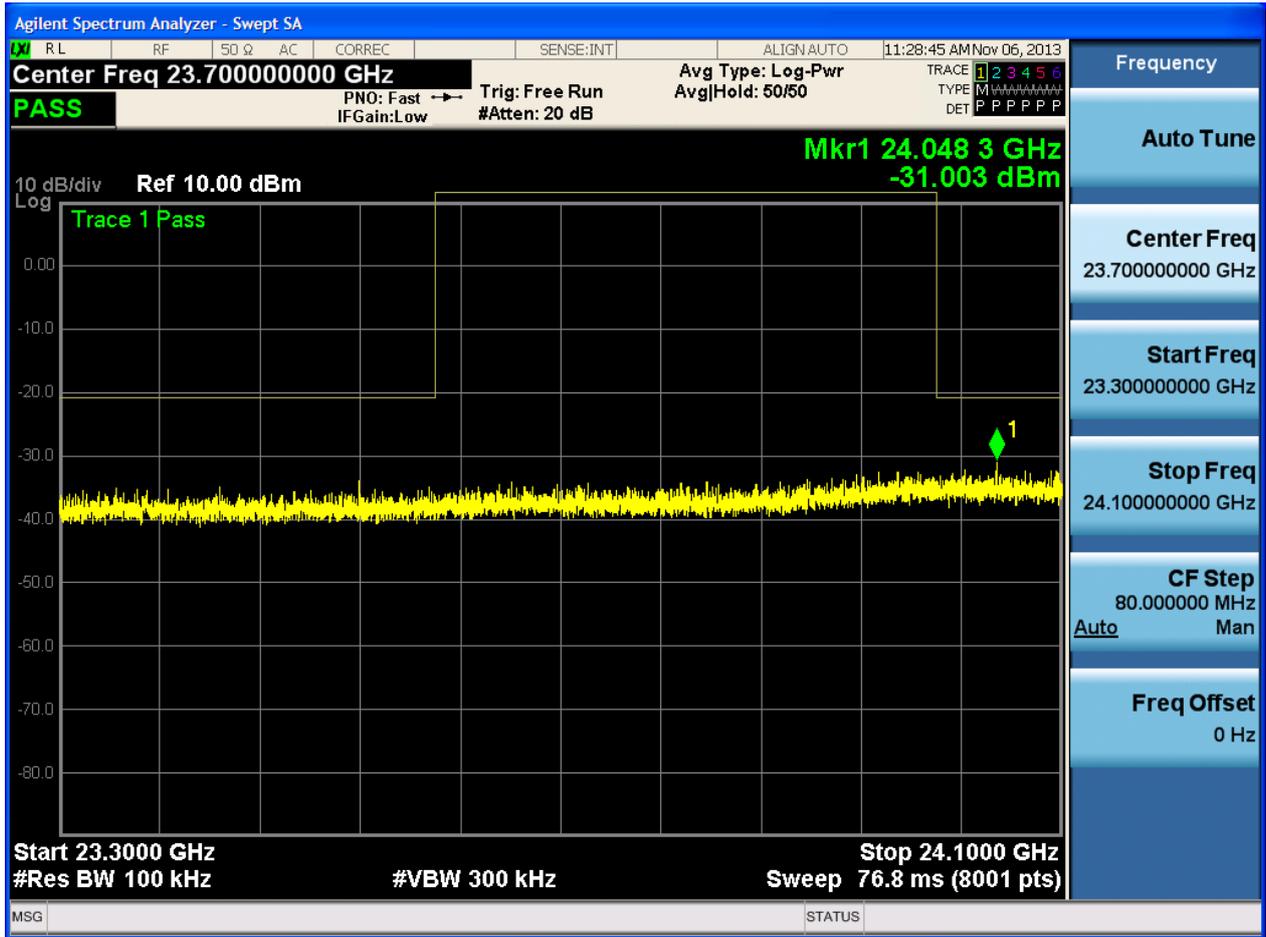


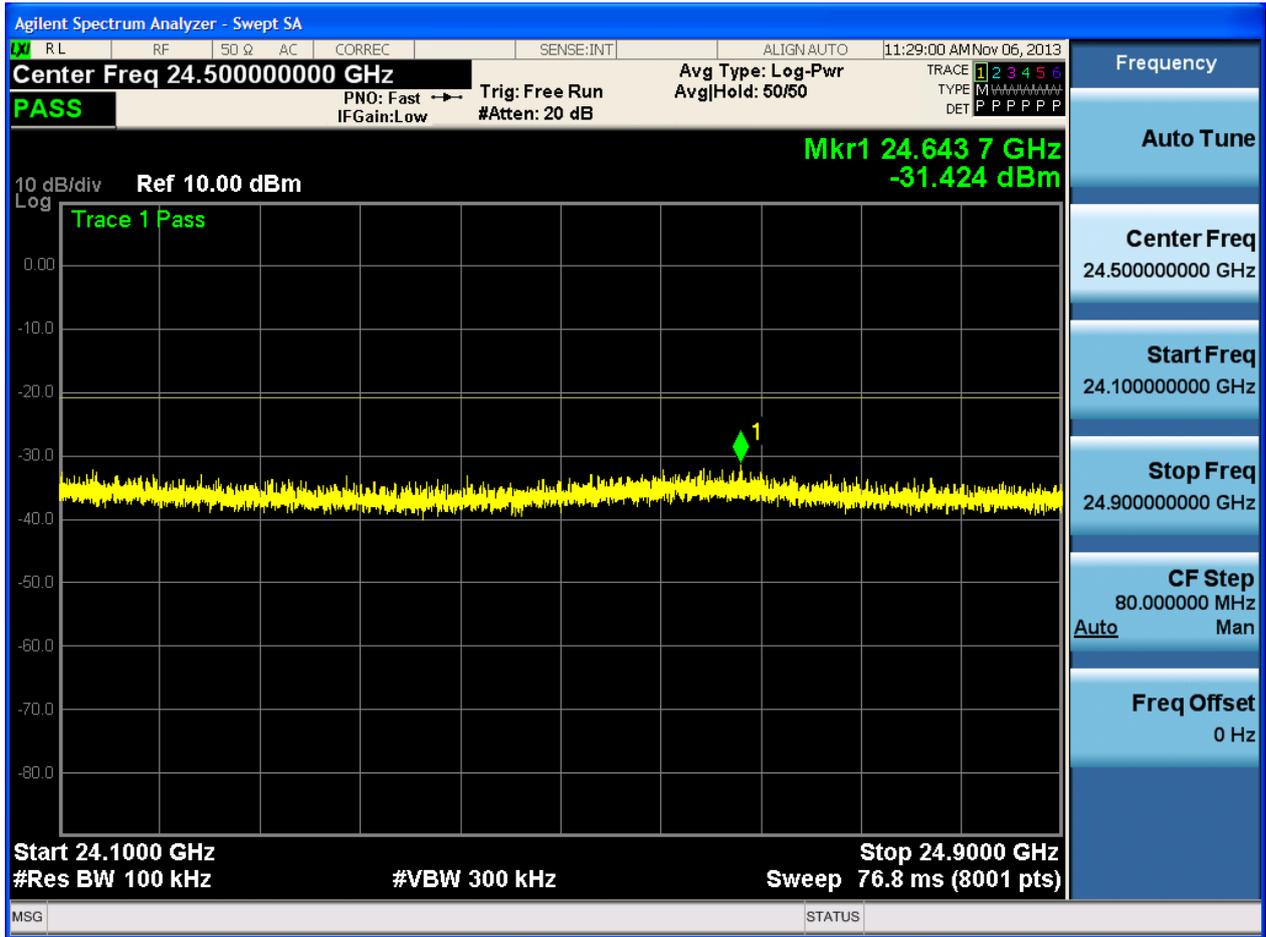


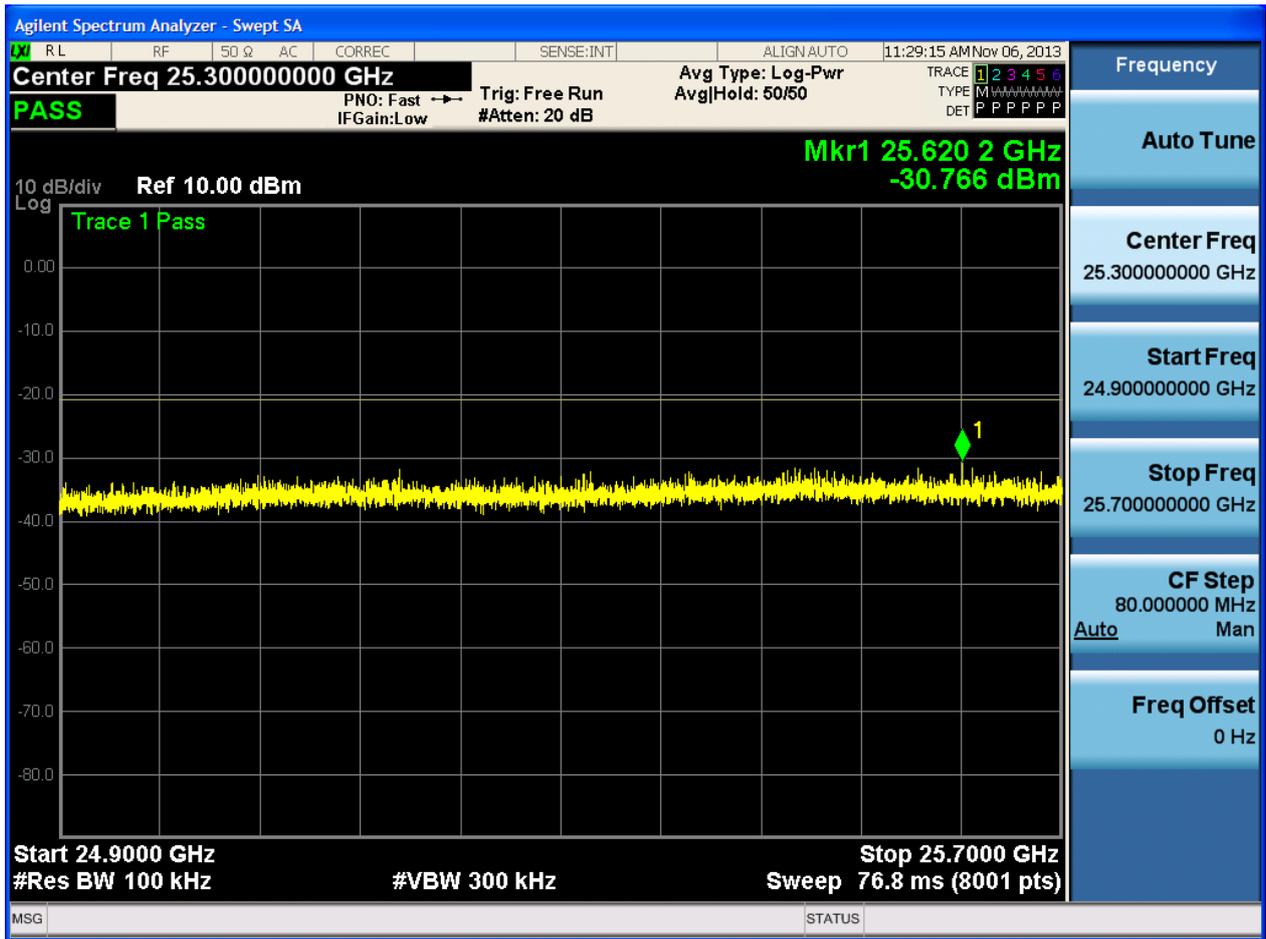


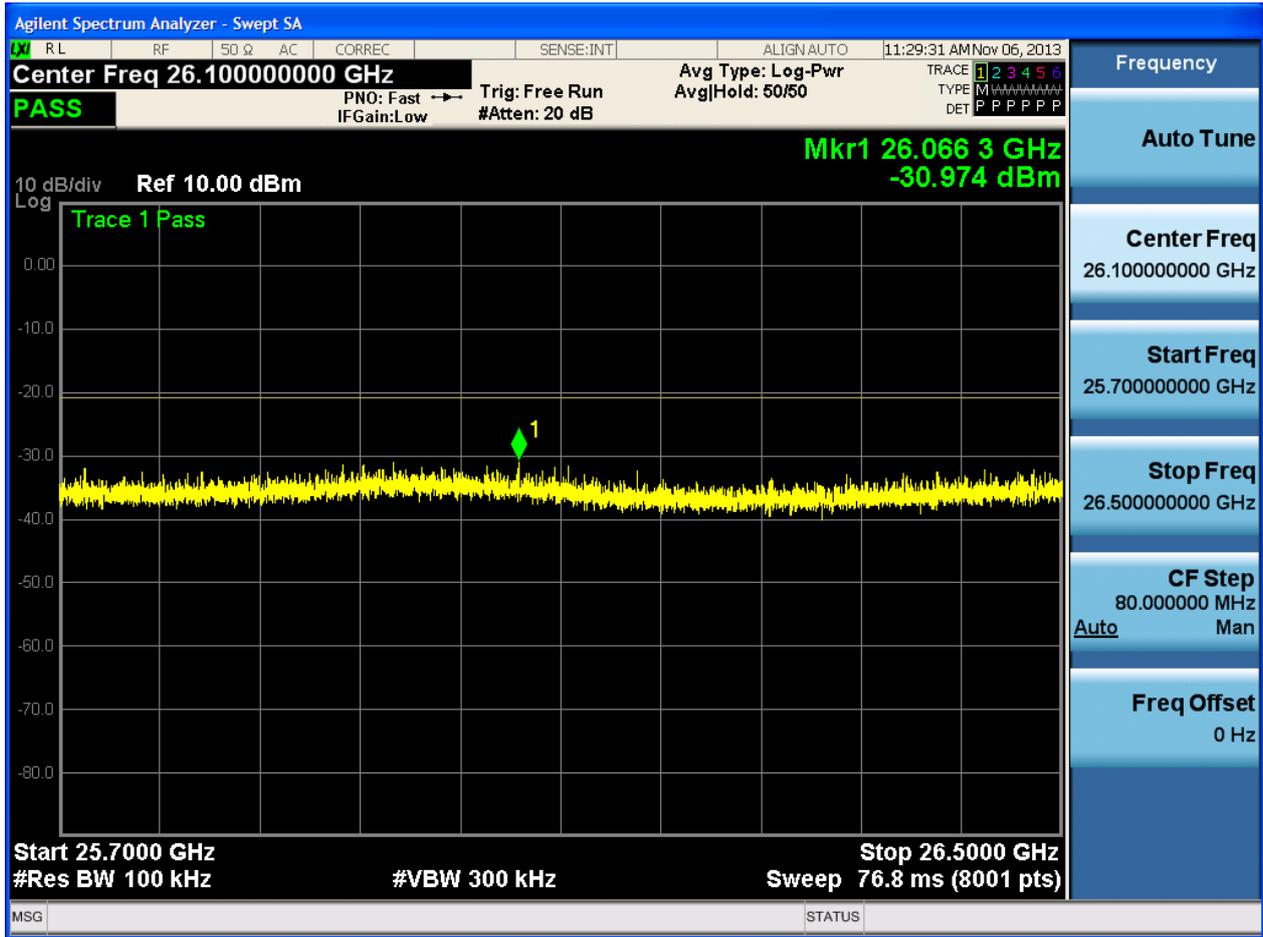






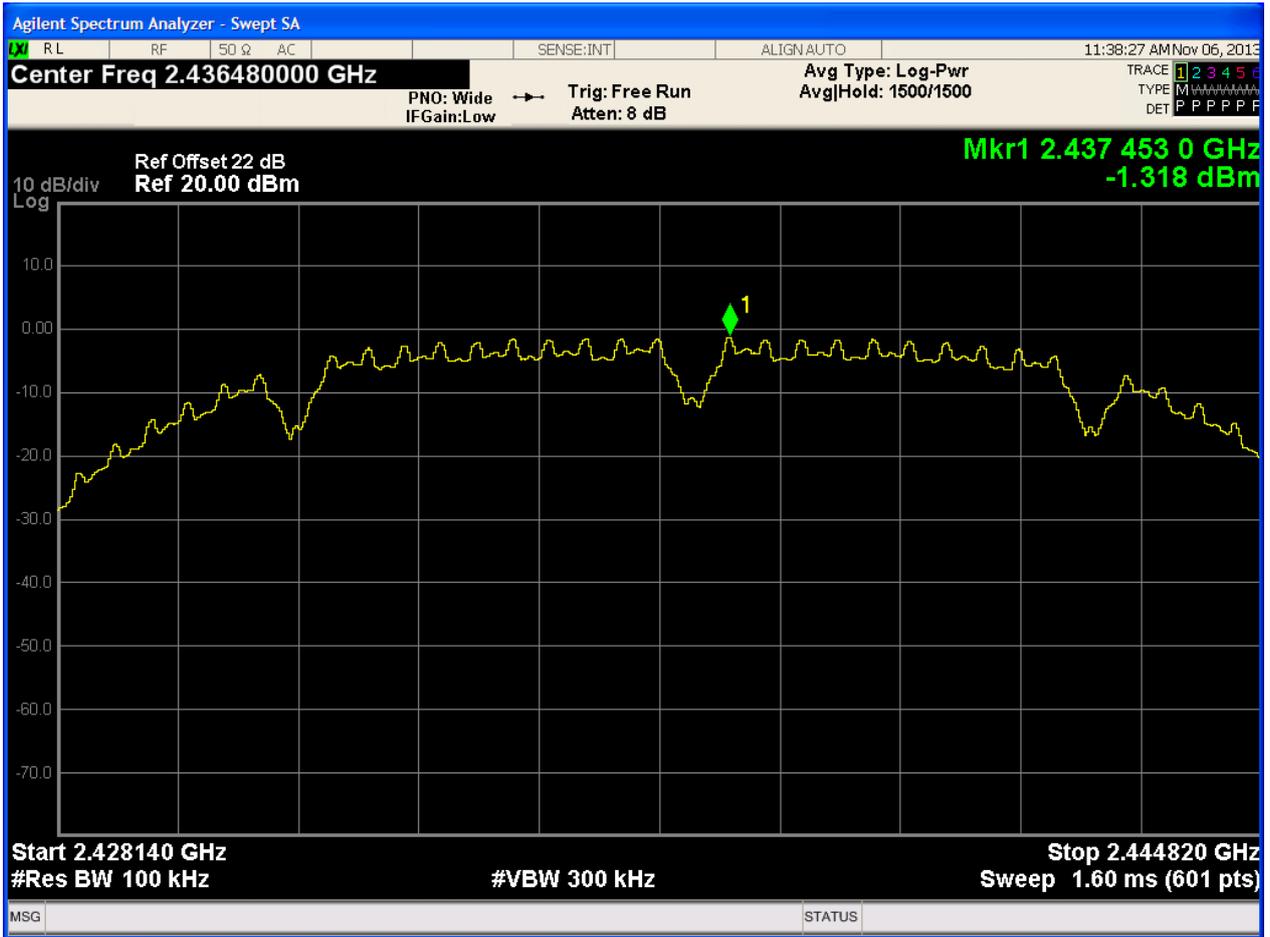






## 2.2 11B/1\_M@1

### 2.2.1 Pref



## 2.2.2 Puw

