

FCC RF Test Report

(BLE)

Report No.: JYTSZ-R12-2301608
Applicant: TECNO MOBILE LIMITED
Address of Applicant: FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE
19-25 SHAN MEI STREET FOTAN NT HONGKONG

Equipment Under Test (EUT)

Product Name: Mobile Phone
Model No.: KJ7s
Trade Mark: TECNO
FCC ID: 2ADYY-KJ7S
Applicable Standards: FCC CFR Title 47 Part 15C (§15.247)
Date of Sample Receipt: 17 Nov., 2023
Date of Test: 18 Nov., to 28 Nov., 2023
Date of Report Issued: 29 Nov., 2023
Test Result: PASS

Project by: _____

Date: _____

29 Nov., 2023

Reviewed by: _____

Date: _____

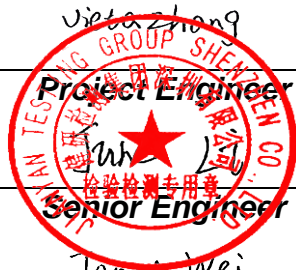
29 Nov., 2023

Approved by: _____

Date: _____

29 Nov., 2023

Manager



This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

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1 Version

Version No.	Date	Description
00	29 Nov., 2023	Original

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3 General Information

3.1 Client Information

Applicant:	TECNO MOBILE LIMITED
Address:	FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG
Manufacturer:	TECNO MOBILE LIMITED
Address:	FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG
Factory:	SHENZHEN TECNO TECHNOLOGY CO., LTD.
Address:	101, Building 24, Waijing Industrial Park, Fumin Community, Fucheng Street, Longhua District, Shenzhen City, P.R.China

3.2 General Description of E.U.T.

Product Name:	Mobile Phone
Model No.:	KJ7s
Operation Frequency:	2402 MHz - 2480 MHz
Channel Numbers:	40
Channel Separation:	2MHz
Modulation Technology:	GFSK
Data Speed:	1 Mbps (LE 1M PHY), 2 Mbps (LE 2M PHY), 125 kbps (LE Coded PHY, S=8), 500 kbps (LE Coded PHY, S=2)
Antenna Type:	Internal Antenna
Antenna Gain:	ANT12: -4.12 dBi (declare by applicant) ANT14: -3.37 dBi (declare by applicant)
Antenna transmit mode:	SISO (1TX, 1RX) (with ANT 12 and ANT 14, and they stand alone to transmit)
Power Supply:	Rechargeable Li-ion Polymer Battery DC3.87V, 4900mAh
AC Adapter:	Model: U330TSB Input: AC100-240V, 50/60Hz, 1.5A Output: DC 5.0V, 3.0A 15.0W or 5.0-10.0V, 3.3A or 11.0V, 3.0A 33.0W MAX
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

3.3 Test Mode and Test Environment

Please refer to FCC ID: 2ADYY-KJ7, report No.: JYTSZ-R12-2301381.

3.4 Description of Test Auxiliary Equipment

Please refer to FCC ID: 2ADYY-KJ7, report No.: JYTSZ-R12-2301381.

3.5 Measurement Uncertainty

Please refer to FCC ID: 2ADYY-KJ7, report No.: JYTSZ-R12-2301381.

3.6 Additions to, Deviations, or Exclusions from the Method

No

3.7 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

- **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

3.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website: <http://jyt.lets.com>

3.9 Test Instruments List

Please refer to FCC ID: 2ADYY-KJ7, report No.: JYTSZ-R12-2301381.

4 Measurement Setup and Procedure

4.1 Test Channel

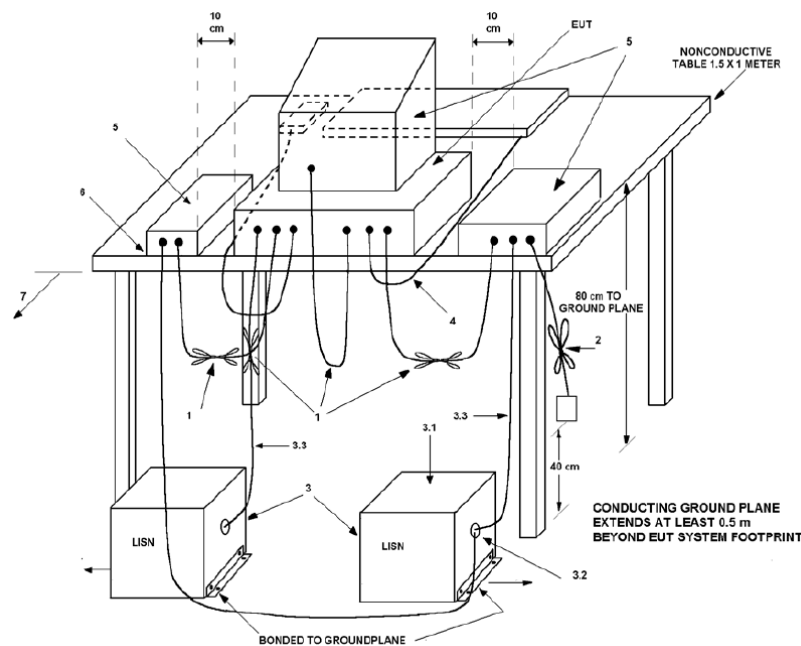
According to ANSI C63.10-2013 chapter 5.6.1 Table 4 requirement, select lowest channel, middle channel, and highest channel in the frequency range in which device operates for testing. The detailed frequency points are as follows:

Lowest channel		Middle channel		Highest channel	
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
0	2402	20	2442	39	2480
1	2404	20	2442	38	2478

Note: For LE 2M PHY, channels 1, 12, 39 have been removed. Therefore, at LE 2M PHY, channels 1, 20, and 38 were selected to correspond to the lowest, middle, and highest channels respectively for testing

4.2 Test Setup

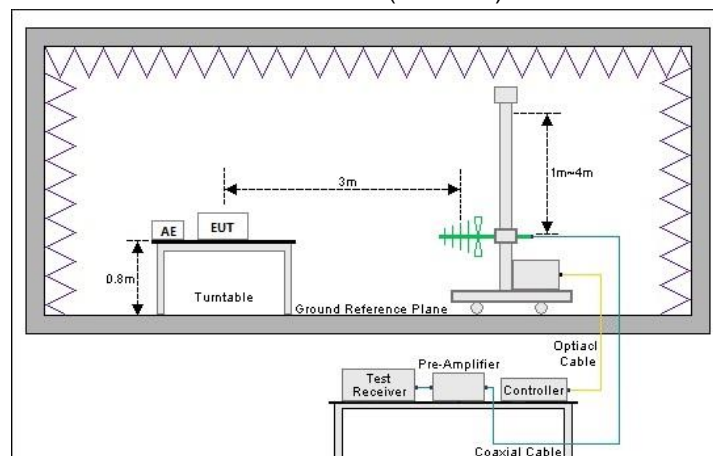
1) Conducted emission measurement:



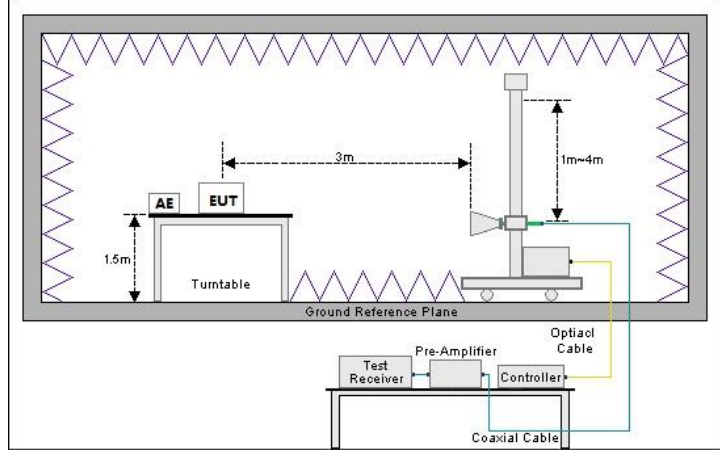
Note: The detailed descriptions please refer to Figure 8 of ANSI C63.4:2014.

2) Radiated emission measurement:

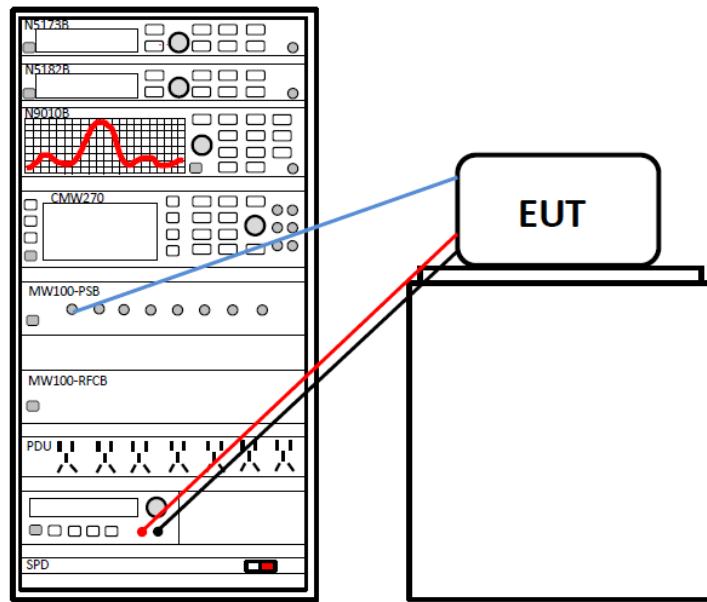
Below 1GHz (3m SAC)



Above 1GHz (3m FAR)



3) Conducted test method



4.3 Test Procedure

Test method	Test step
Conducted emission	<ol style="list-style-type: none"> 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
Radiated emission	<p>For below 1GHz:</p> <ol style="list-style-type: none"> 1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m. 2. EUT works in each mode of operation that needs to be tested , and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data. <p>For above 1GHz:</p> <ol style="list-style-type: none"> 1. The EUT was placed on the tabletop of a rotating table 1.5 m the ground at a 3 m fully anechoic room. The measurement distance from the EUT to the receiving antenna is 3 m. 2. EUT works in each mode of operation that needs to be tested , and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.
Conducted test method	<ol style="list-style-type: none"> 1. The BLE antenna port of EUT was connected to the test port of the test system through an RF cable. 2. The EUT is keeping in continuous transmission mode and tested in all modulation modes. 3. Open the test software, prepare a test plan, and control the system through the software. After the test is completed, the test report is exported through the test software.

5 Test Results

5.1 Summary

5.1.1 Clause and Data Summary

This report is revised according to the JYTSZ-R12-2301381 report, FCC ID: 2ADYY-KJ7 issued by JianYan Testing Group Shenzhen Co., Ltd. Differences: Dual card to single card, change the SIM card seat, by replacing the software and card to achieve, PCBA has not changed. And model update, so need to spot-check Conducted Output Power.

Test items	Standard clause	Test data	Result
Antenna Requirement	15.203 15.247 (b)(4)	Please refer to report No.: JYTSZ-R12-2301381.	Please refer to report No.: JYTSZ-R12-2301381.
AC Power Line Conducted Emission	15.207	Please refer to report No.: JYTSZ-R12-2301381.	Please refer to report No.: JYTSZ-R12-2301381.
Conducted Output Power	15.247 (b)(3)	Please refer to report No.: JYTSZ-R12-2301381.	Please refer to report No.: JYTSZ-R12-2301381.
6dB Emission Bandwidth 99% Occupied Bandwidth	15.247 (a)(2)	Please refer to report No.: JYTSZ-R12-2301381.	Please refer to report No.: JYTSZ-R12-2301381.
Power Spectral Density	15.247 (e)	Please refer to report No.: JYTSZ-R12-2301381.	Please refer to report No.: JYTSZ-R12-2301381.
Band-edge Emission Conduction Spurious Emission	15.247 (d)	Please refer to report No.: JYTSZ-R12-2301381.	Please refer to report No.: JYTSZ-R12-2301381.
Emissions in Restricted Frequency Bands	15.205 15.247 (d)	Please refer to report No.: JYTSZ-R12-2301381.	Please refer to report No.: JYTSZ-R12-2301381.
Emissions in Non-restricted Frequency Bands	15.209 15.247(d)	Please refer to report No.: JYTSZ-R12-2301381.	Please refer to report No.: JYTSZ-R12-2301381.
Remark:			
<ol style="list-style-type: none"> 1. Please refer to FCC ID: 2ADYY-KJ7, report No.: JYTSZ-R12-2301381 issue by JianYan Testing Group Shenzhen Co., Ltd. 2. N/A: Not Applicable. 3. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer). 			
Test Method:	ANSI C63.10-2013 KDB 558074 D01 15.247 Meas Guidance v05r02		

5.1.2 Test Limit

Test items	Limit																														
AC Power Line Conducted Emission	<table border="1"> <thead> <tr> <th rowspan="2">Frequency (MHz)</th> <th colspan="2">Limit (dBμV)</th> </tr> <tr> <th>Quasi-Peak</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15 – 0.5</td> <td>66 to 56 <small>Note 1</small></td> <td>56 to 46 <small>Note 1</small></td> </tr> <tr> <td>0.5 – 5</td> <td>56</td> <td>46</td> </tr> <tr> <td>5 – 30</td> <td>60</td> <td>50</td> </tr> </tbody> </table> <p>Note 1: The limit level in dBμV decreases linearly with the logarithm of frequency. Note 2: The more stringent limit applies at transition frequencies.</p>	Frequency (MHz)	Limit (dB μ V)		Quasi-Peak	Average	0.15 – 0.5	66 to 56 <small>Note 1</small>	56 to 46 <small>Note 1</small>	0.5 – 5	56	46	5 – 30	60	50																
Frequency (MHz)	Limit (dB μ V)																														
	Quasi-Peak	Average																													
0.15 – 0.5	66 to 56 <small>Note 1</small>	56 to 46 <small>Note 1</small>																													
0.5 – 5	56	46																													
5 – 30	60	50																													
Conducted Output Power	For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.																														
6dB Emission Bandwidth	The minimum 6 dB bandwidth shall be at least 500 kHz.																														
99% Occupied Bandwidth	N/A																														
Power Spectral Density	For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.																														
Band-edge Emission Conduction Spurious Emission	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).																														
Emissions in Restricted Frequency Bands Emissions in Non-restricted Frequency Bands	<table border="1"> <thead> <tr> <th rowspan="2">Frequency (MHz)</th> <th colspan="2">Limit (dBμV/m)</th> <th rowspan="2">Detector</th> </tr> <tr> <th>@ 3m</th> <th>@ 10m</th> </tr> </thead> <tbody> <tr> <td>30 – 88</td> <td>40.0</td> <td>30.0</td> <td>Quasi-peak</td> </tr> <tr> <td>88 – 216</td> <td>43.5</td> <td>33.5</td> <td>Quasi-peak</td> </tr> <tr> <td>216 – 960</td> <td>46.0</td> <td>36.0</td> <td>Quasi-peak</td> </tr> <tr> <td>960 – 1000</td> <td>54.0</td> <td>44.0</td> <td>Quasi-peak</td> </tr> </tbody> </table> <p>Note: The more stringent limit applies at transition frequencies.</p> <table border="1"> <thead> <tr> <th rowspan="2">Frequency</th> <th colspan="2">Limit (dBμV/m) @ 3m</th> </tr> <tr> <th>Average</th> <th>Peake</th> </tr> </thead> <tbody> <tr> <td>Above 1 GHz</td> <td>54.0</td> <td>74.0</td> </tr> </tbody> </table> <p>Note: The measurement bandwidth shall be 1 MHz or greater.</p>	Frequency (MHz)	Limit (dB μ V/m)		Detector	@ 3m	@ 10m	30 – 88	40.0	30.0	Quasi-peak	88 – 216	43.5	33.5	Quasi-peak	216 – 960	46.0	36.0	Quasi-peak	960 – 1000	54.0	44.0	Quasi-peak	Frequency	Limit (dB μ V/m) @ 3m		Average	Peake	Above 1 GHz	54.0	74.0
Frequency (MHz)	Limit (dB μ V/m)		Detector																												
	@ 3m	@ 10m																													
30 – 88	40.0	30.0	Quasi-peak																												
88 – 216	43.5	33.5	Quasi-peak																												
216 – 960	46.0	36.0	Quasi-peak																												
960 – 1000	54.0	44.0	Quasi-peak																												
Frequency	Limit (dB μ V/m) @ 3m																														
	Average	Peake																													
Above 1 GHz	54.0	74.0																													

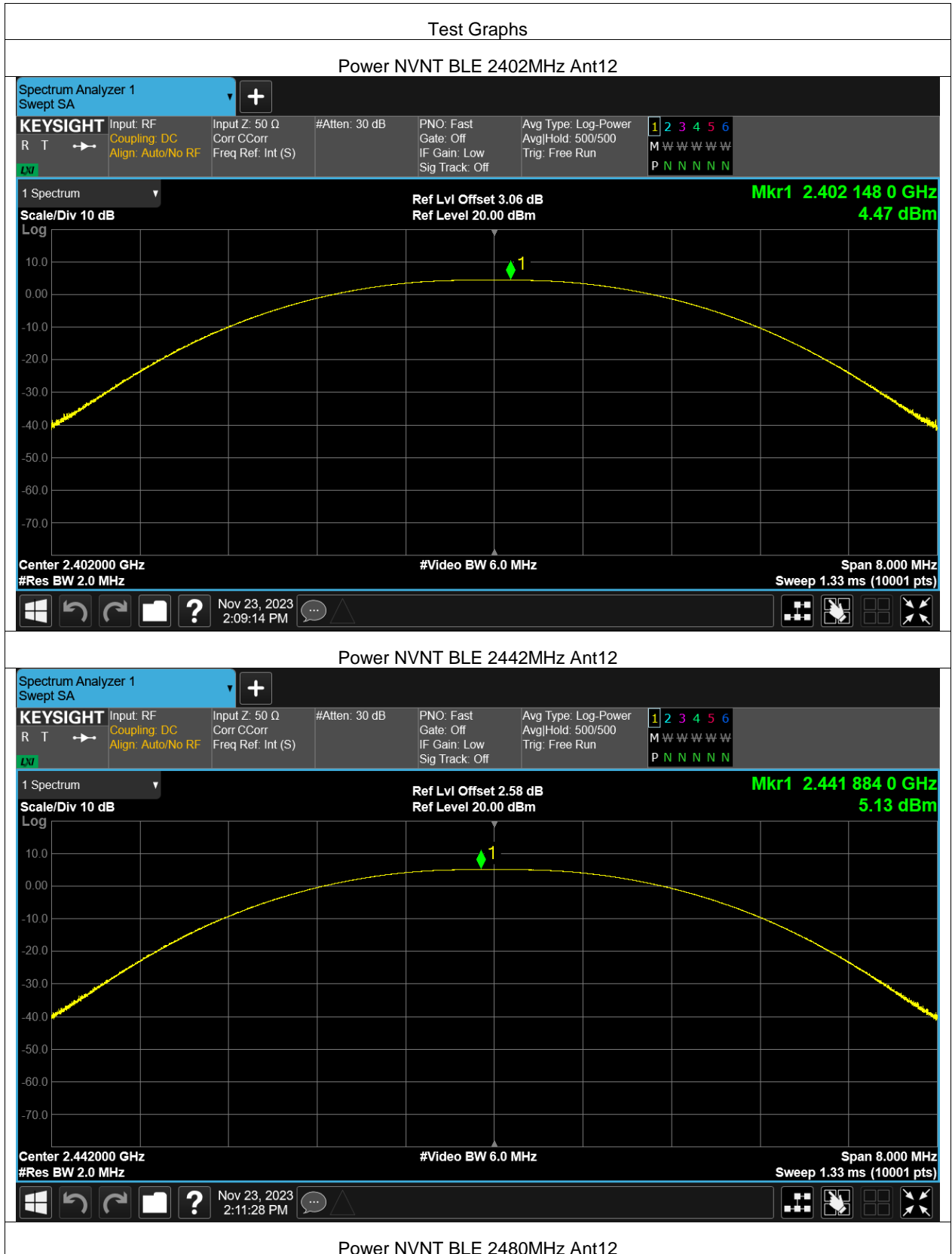
5.2 Conducted Output Power Spot-check

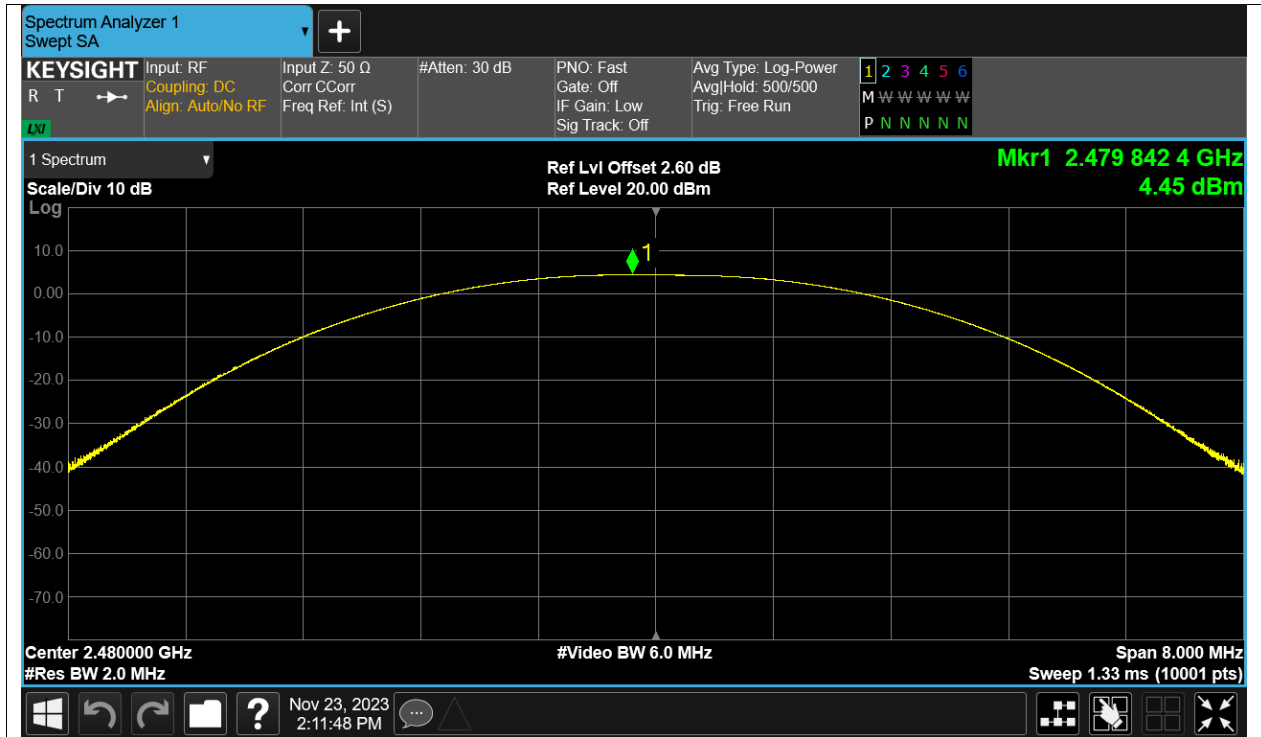
ANT12:

Appendix A – BLE-1M PHY

Maximum Conducted Output Power

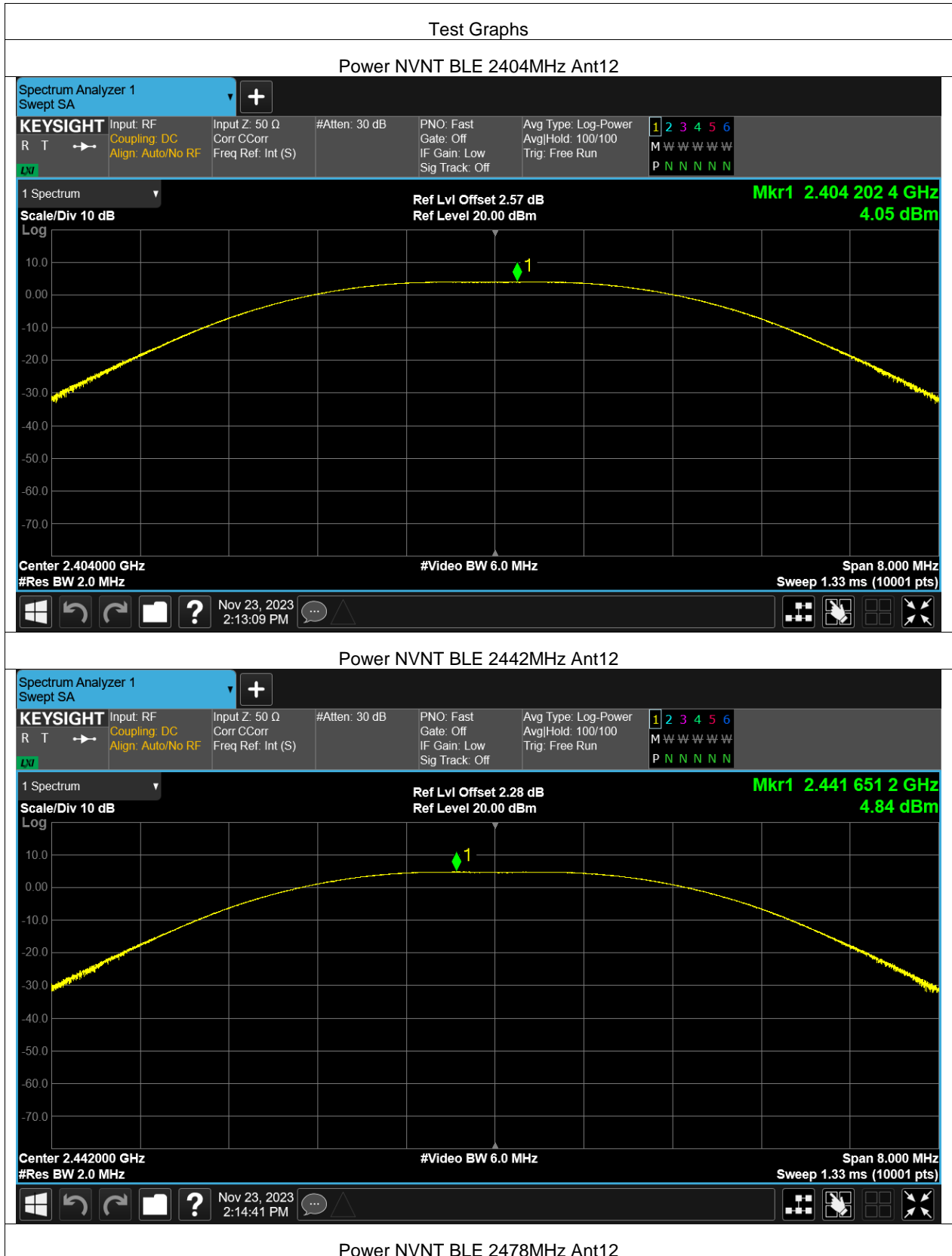
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2402	Ant12	4.466	30	Pass
NVNT	BLE	2442	Ant12	5.128	30	Pass
NVNT	BLE	2480	Ant12	4.454	30	Pass

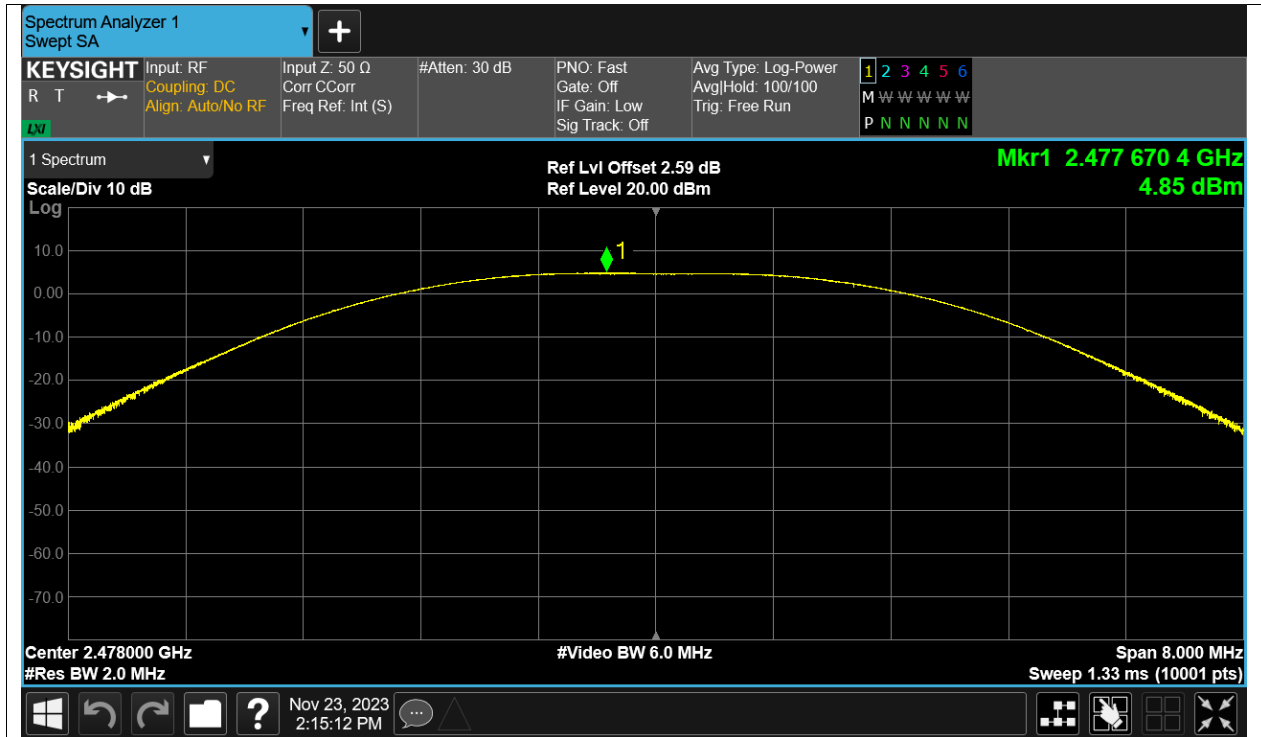




Appendix B – BLE-2M PHY**Maximum Conducted Output Power**

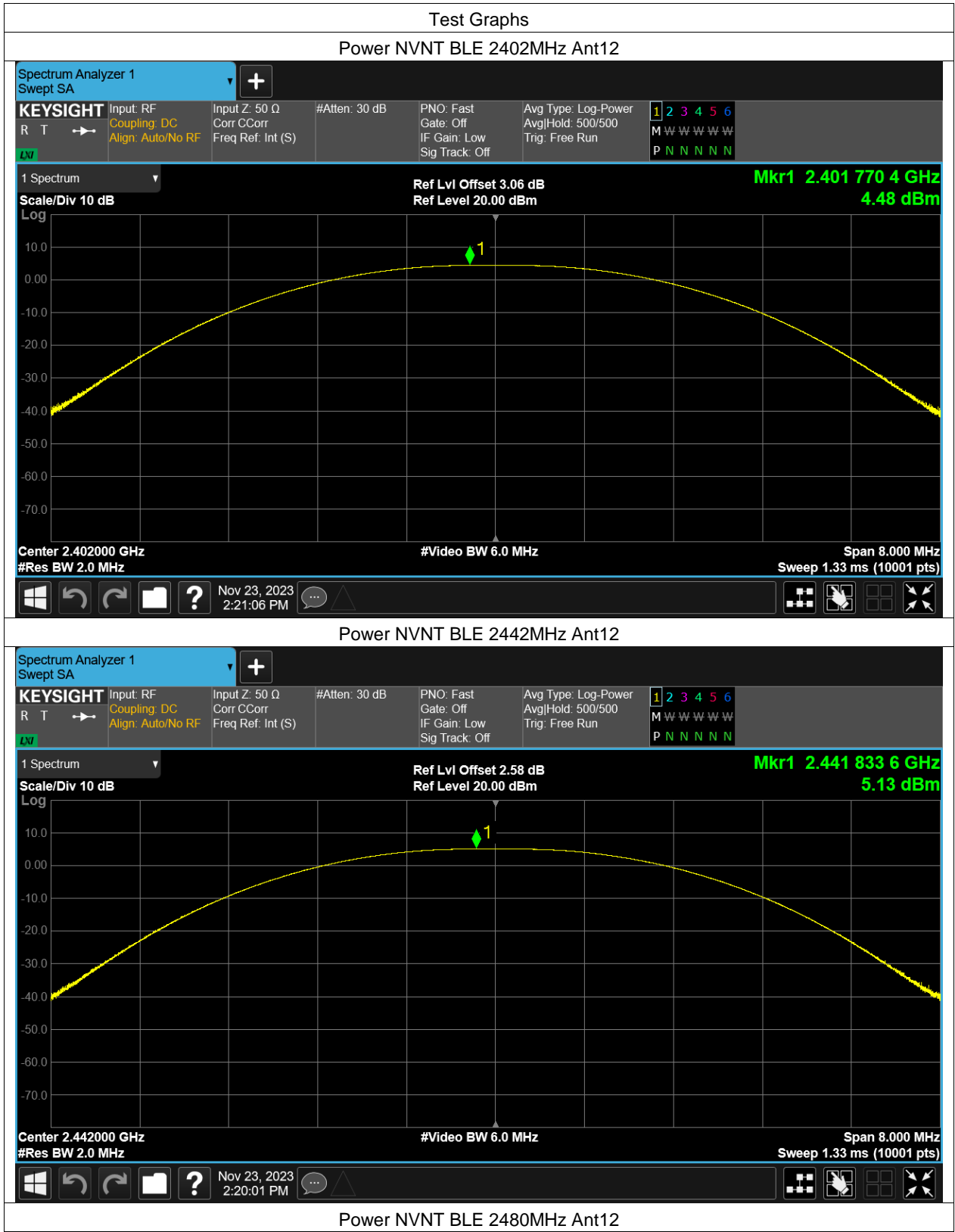
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2404	Ant12	4.045	30	Pass
NVNT	BLE	2442	Ant12	4.836	30	Pass
NVNT	BLE	2478	Ant12	4.853	30	Pass

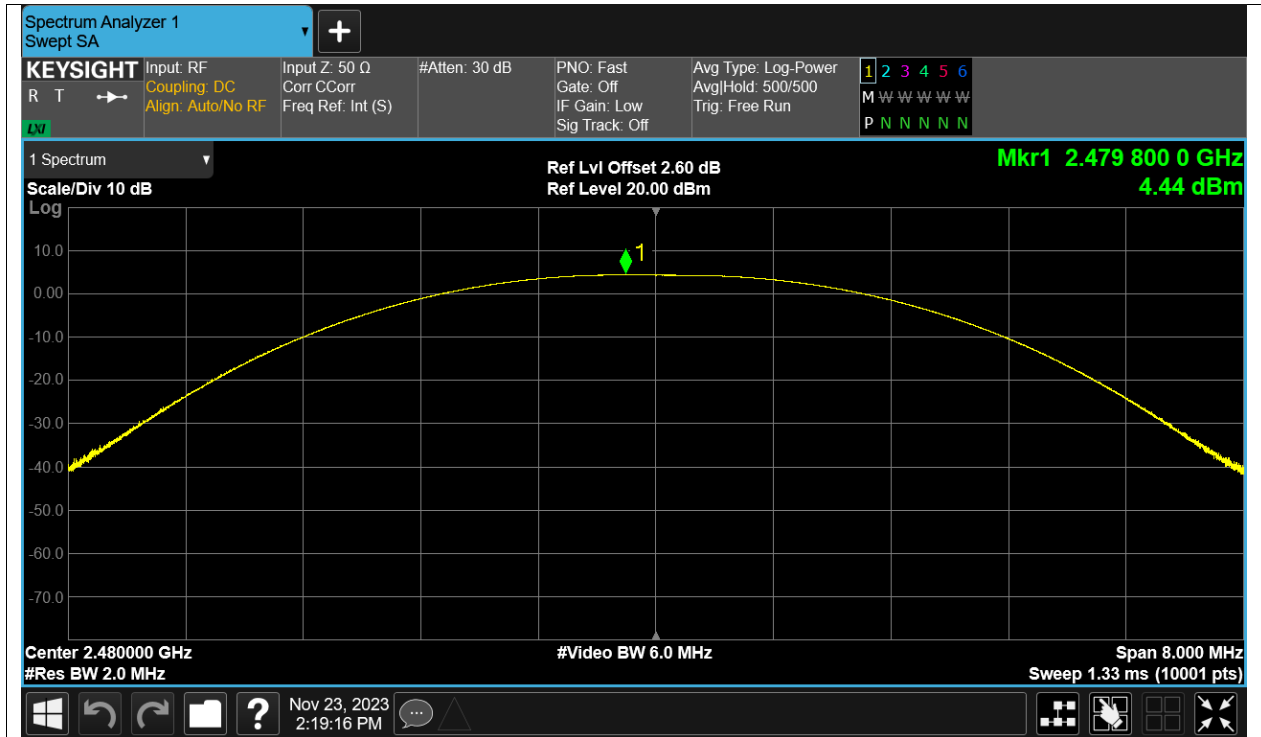




Appendix C – BLE-Coded PHY,S=2 PHY**Maximum Conducted Output Power**

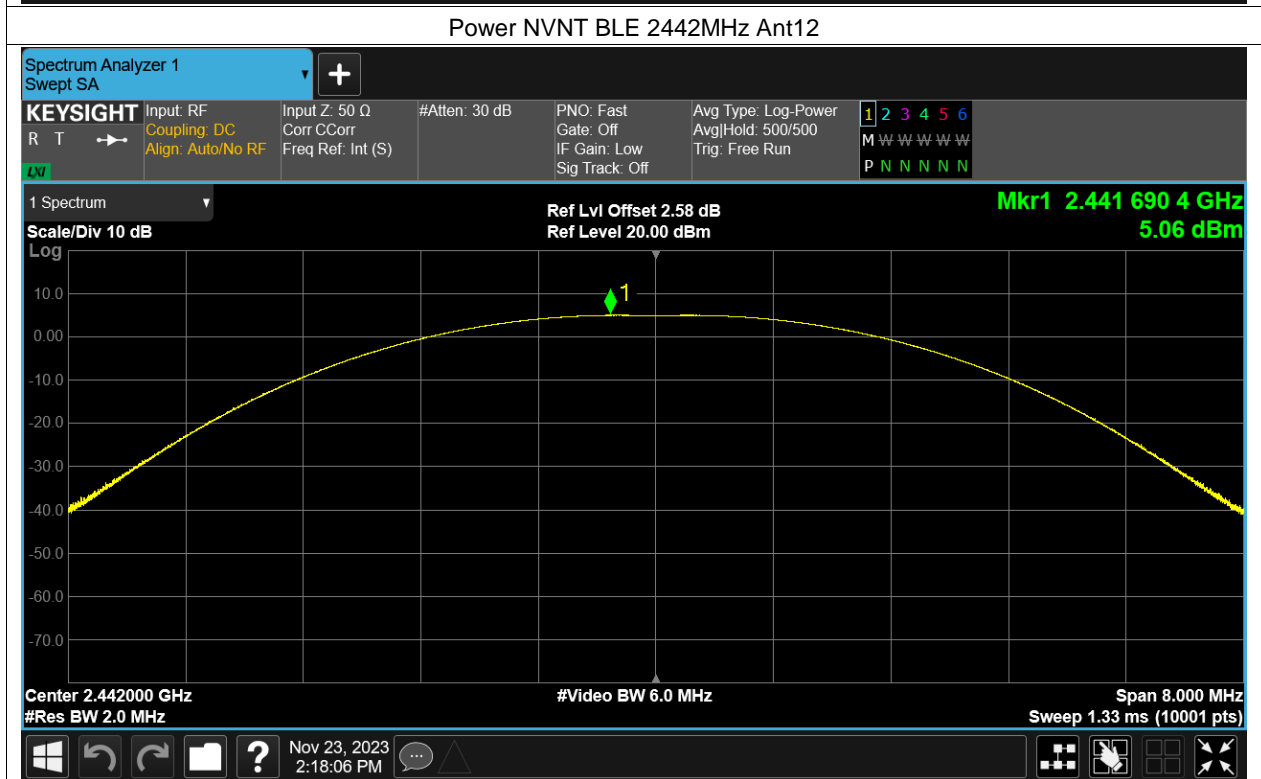
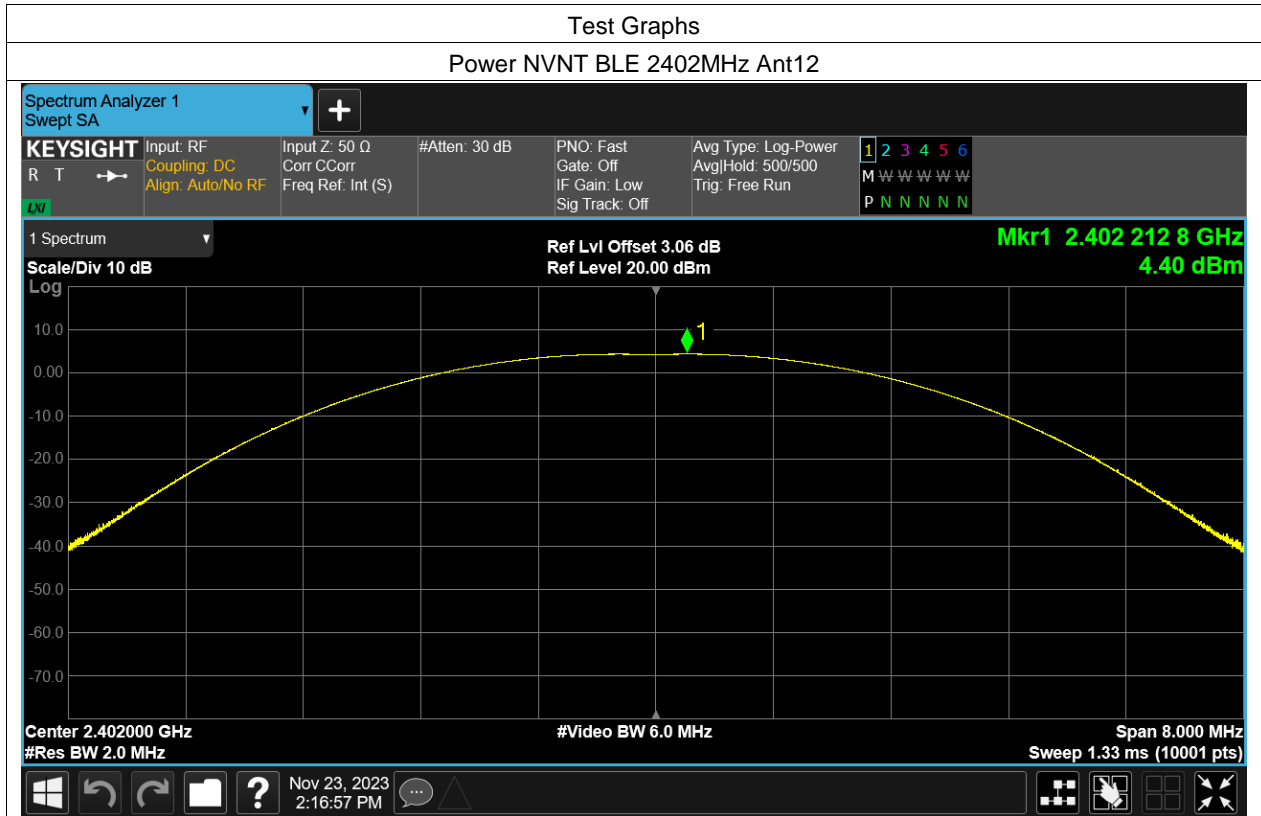
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2402	Ant12	4.481	30	Pass
NVNT	BLE	2442	Ant12	5.126	30	Pass
NVNT	BLE	2480	Ant12	4.436	30	Pass



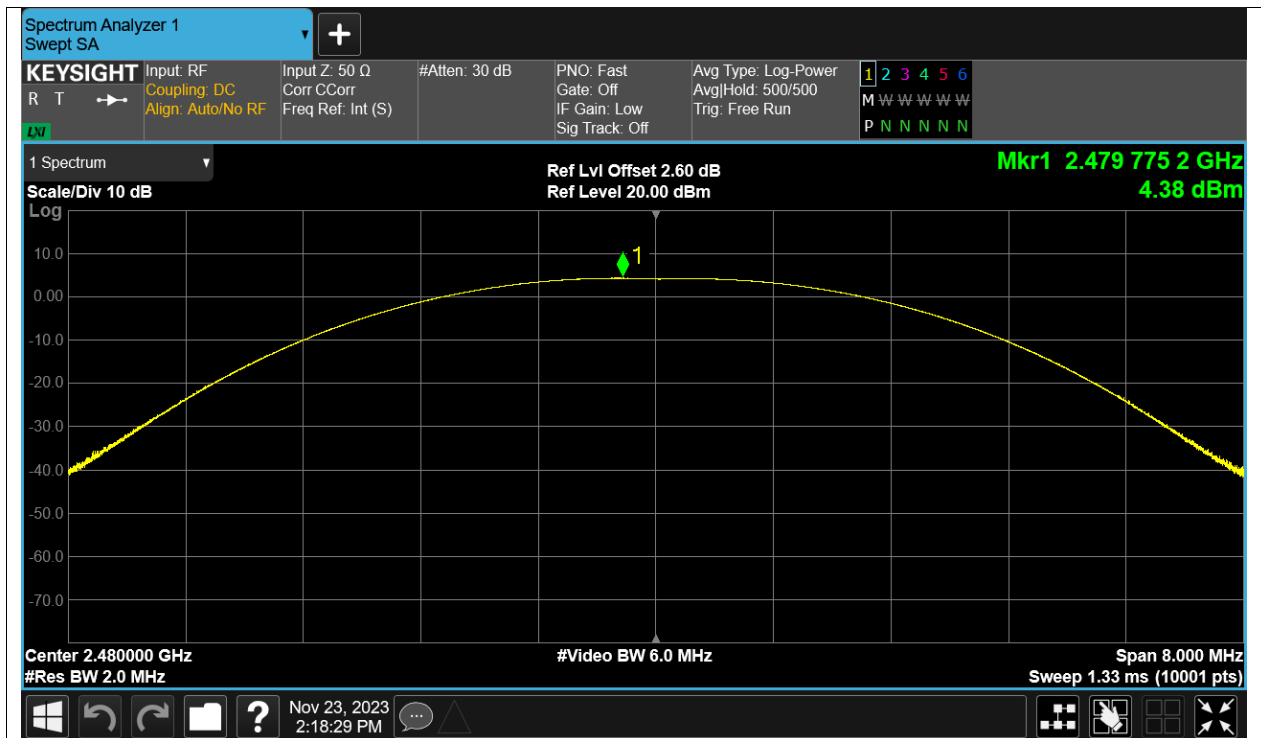


Appendix D – BLE-Coded PHY,S=8 PHY**Maximum Conducted Output Power**

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2402	Ant12	4.401	30	Pass
NVNT	BLE	2442	Ant12	5.06	30	Pass
NVNT	BLE	2480	Ant12	4.383	30	Pass



Power NVNT BLE 2480MHz Ant12

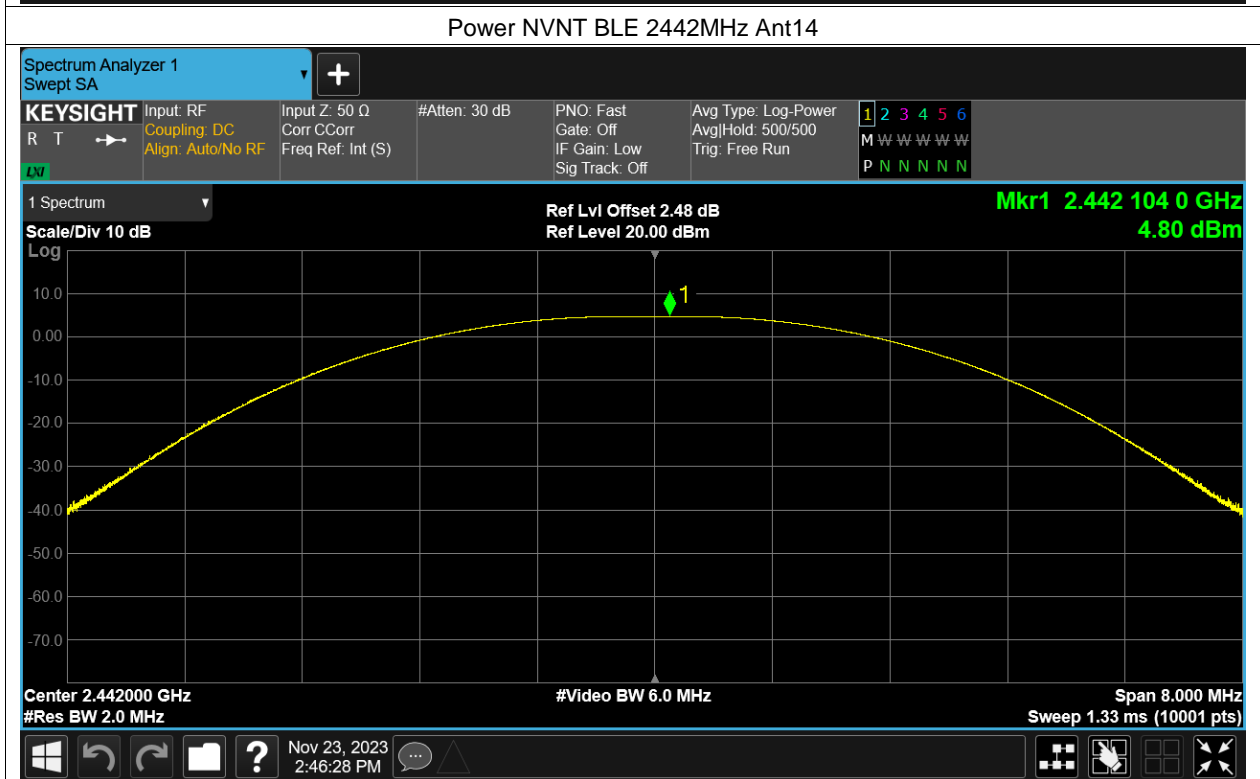
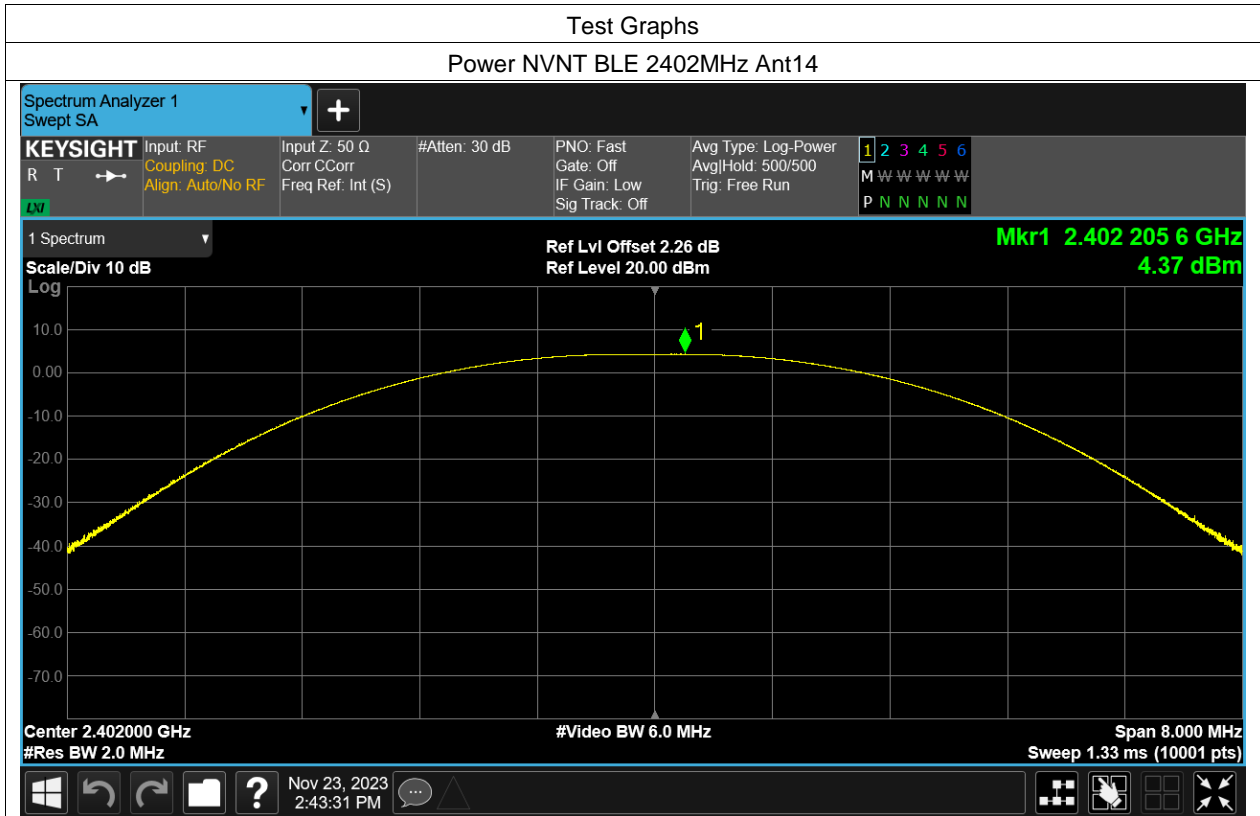


ANT 14:

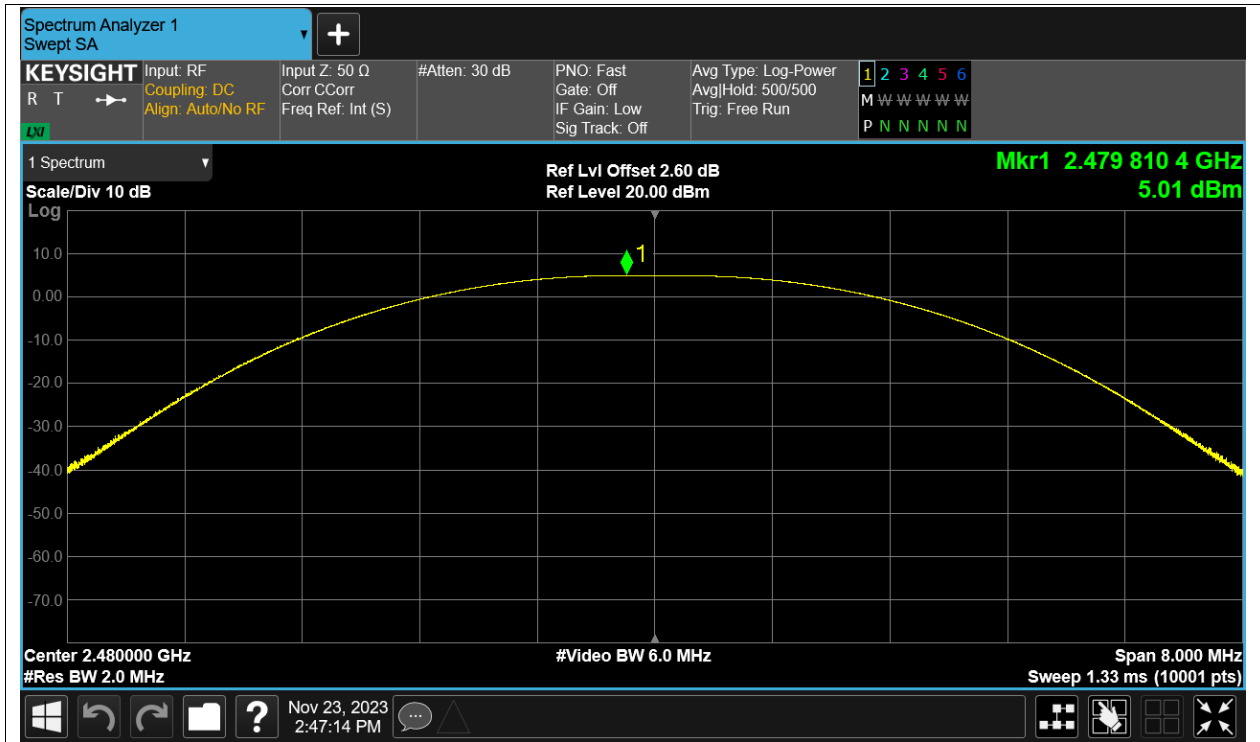
Appendix A – BLE-1M PHY

Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2402	Ant14	4.374	30	Pass
NVNT	BLE	2442	Ant14	4.804	30	Pass
NVNT	BLE	2480	Ant14	5.005	30	Pass



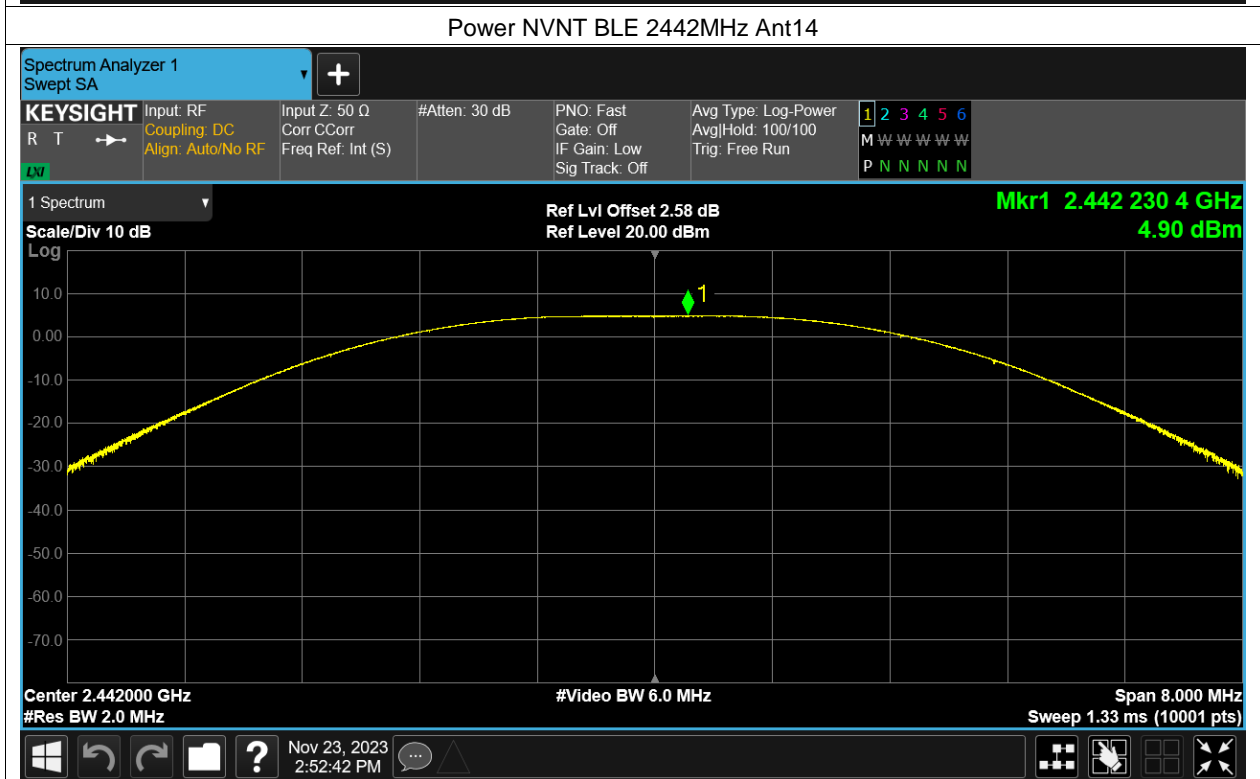
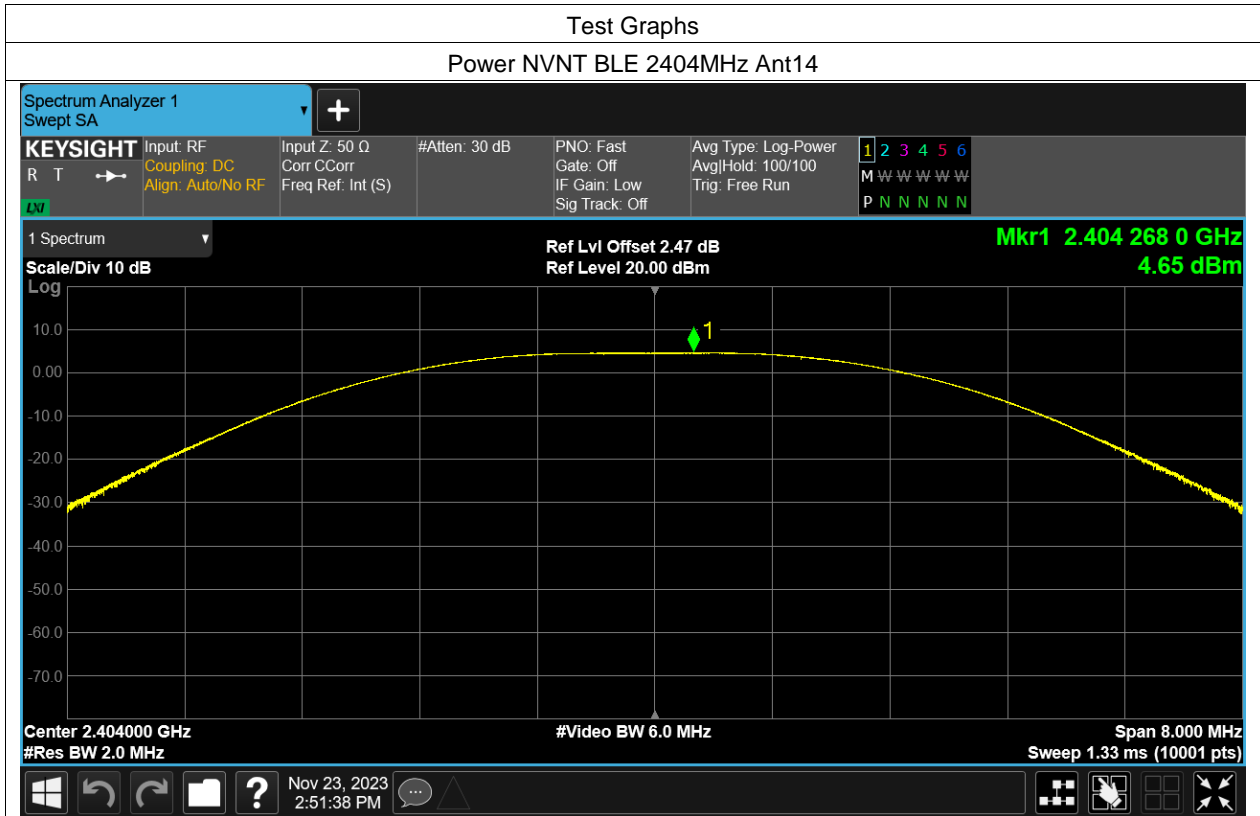
Power NVNT BLE 2480MHz Ant14



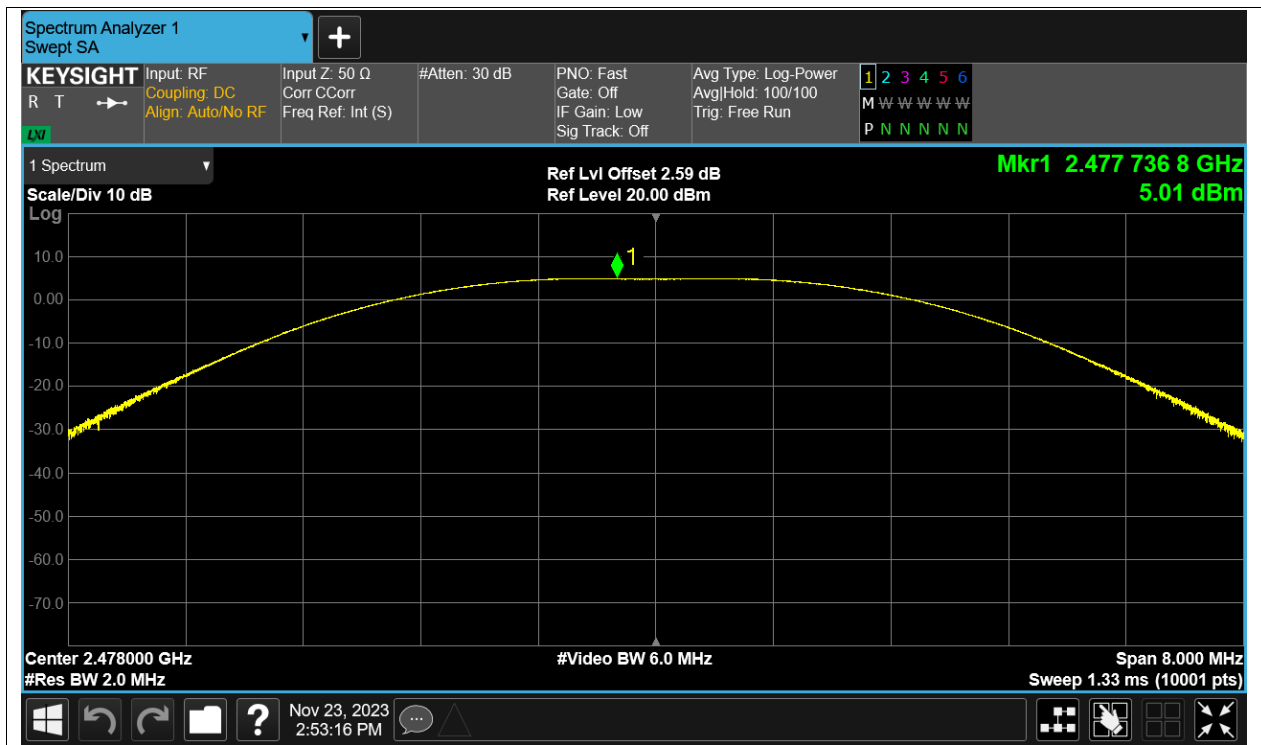
Appendix B – BLE-2M PHY

Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2404	Ant14	4.65	30	Pass
NVNT	BLE	2442	Ant14	4.896	30	Pass
NVNT	BLE	2478	Ant14	5.014	30	Pass

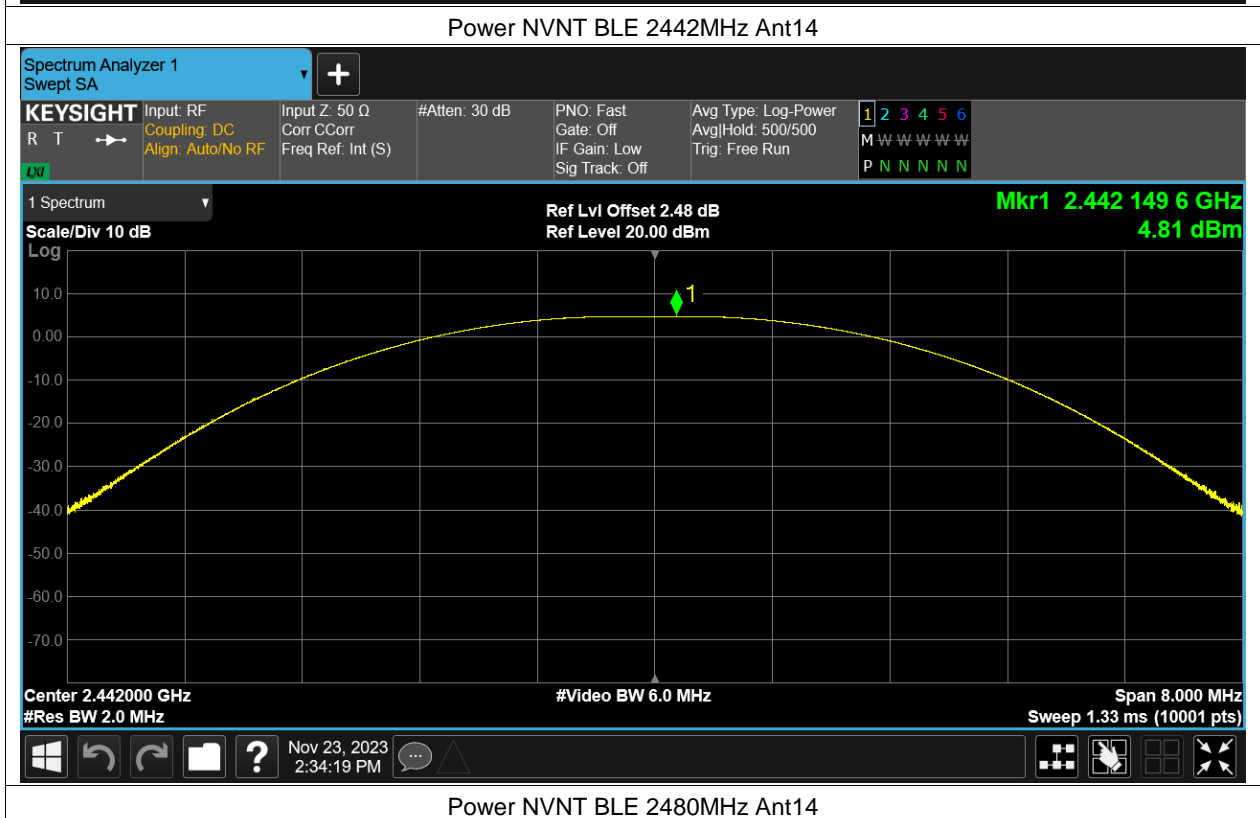
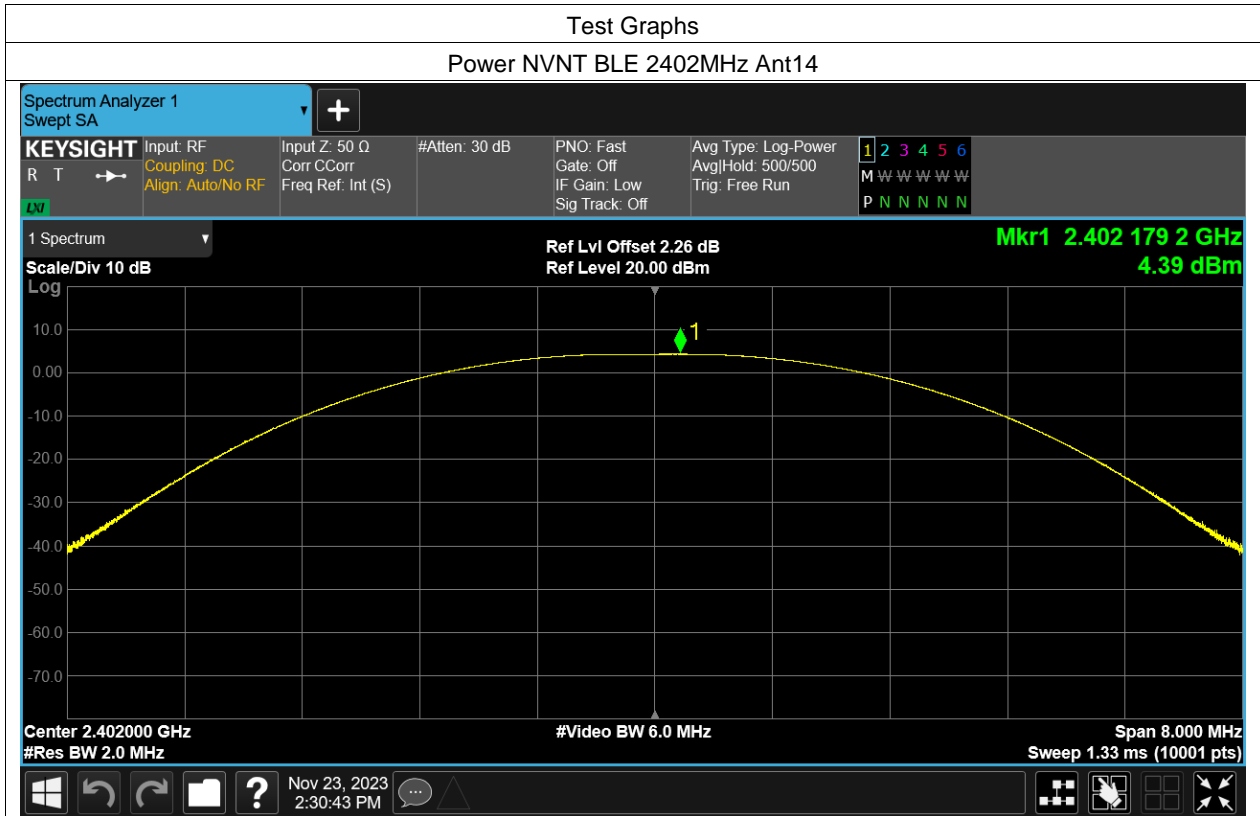


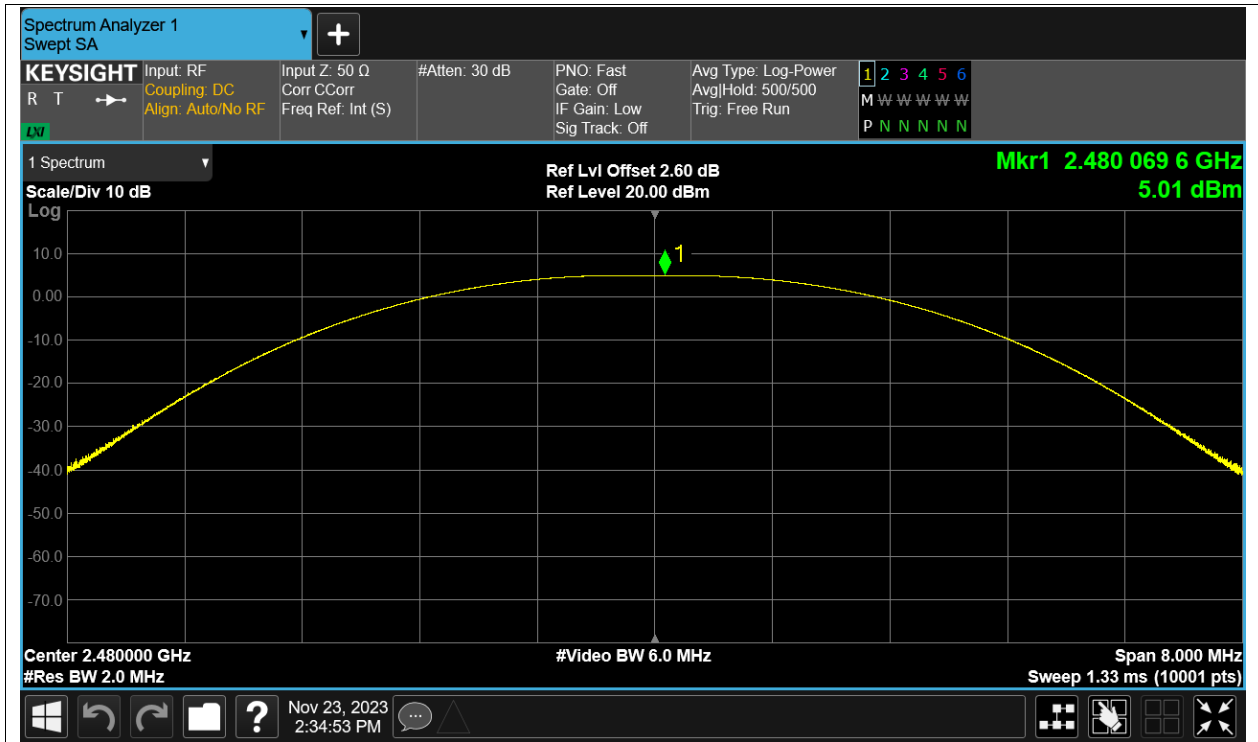
Power NVNT BLE 2478MHz Ant14



Appendix C – BLE-Coded PHY,S=2 PHY**Maximum Conducted Output Power**

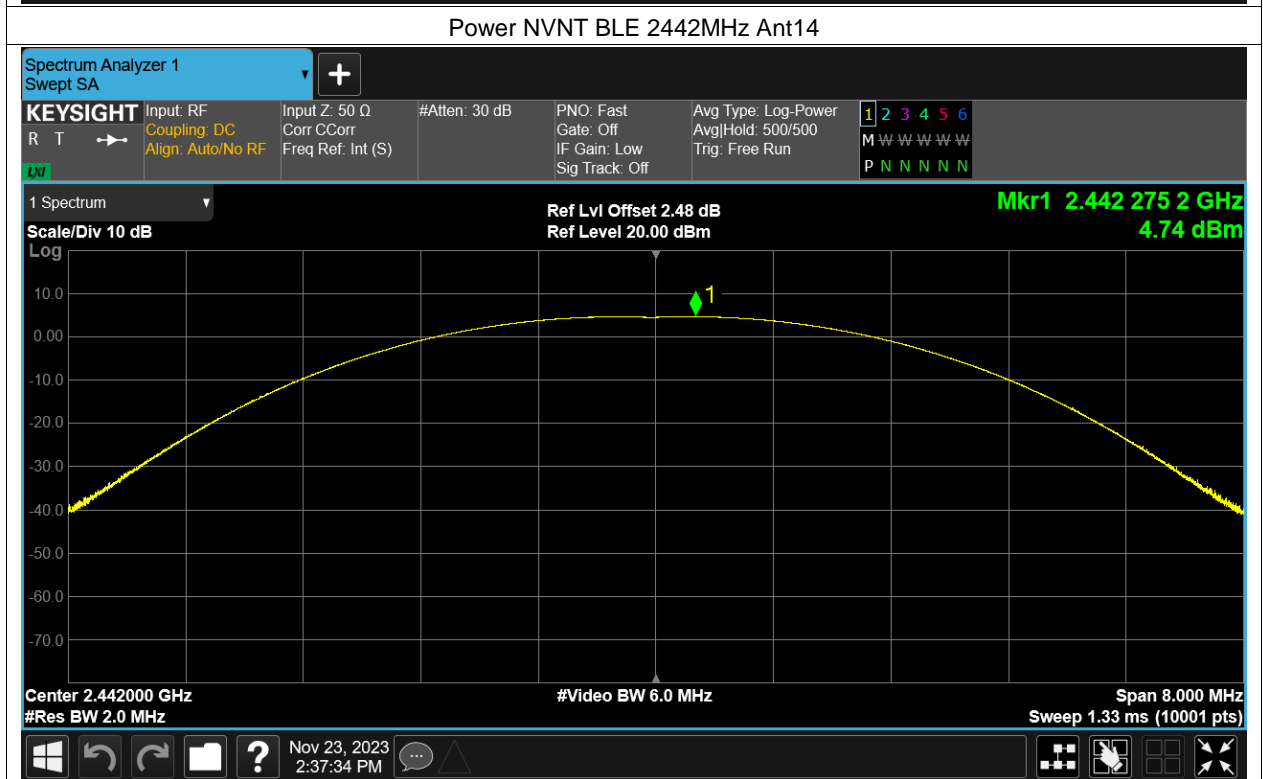
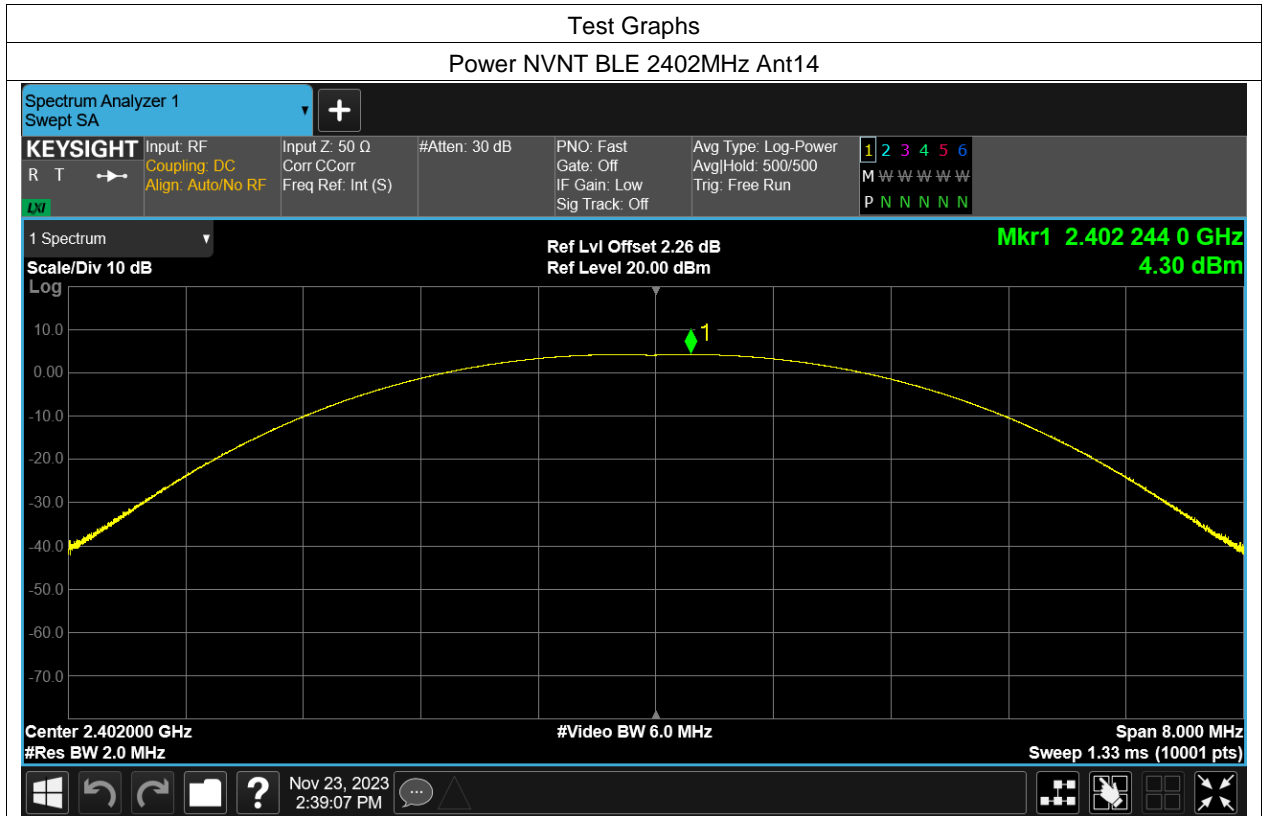
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2402	Ant14	4.387	30	Pass
NVNT	BLE	2442	Ant14	4.813	30	Pass
NVNT	BLE	2480	Ant14	5.01	30	Pass



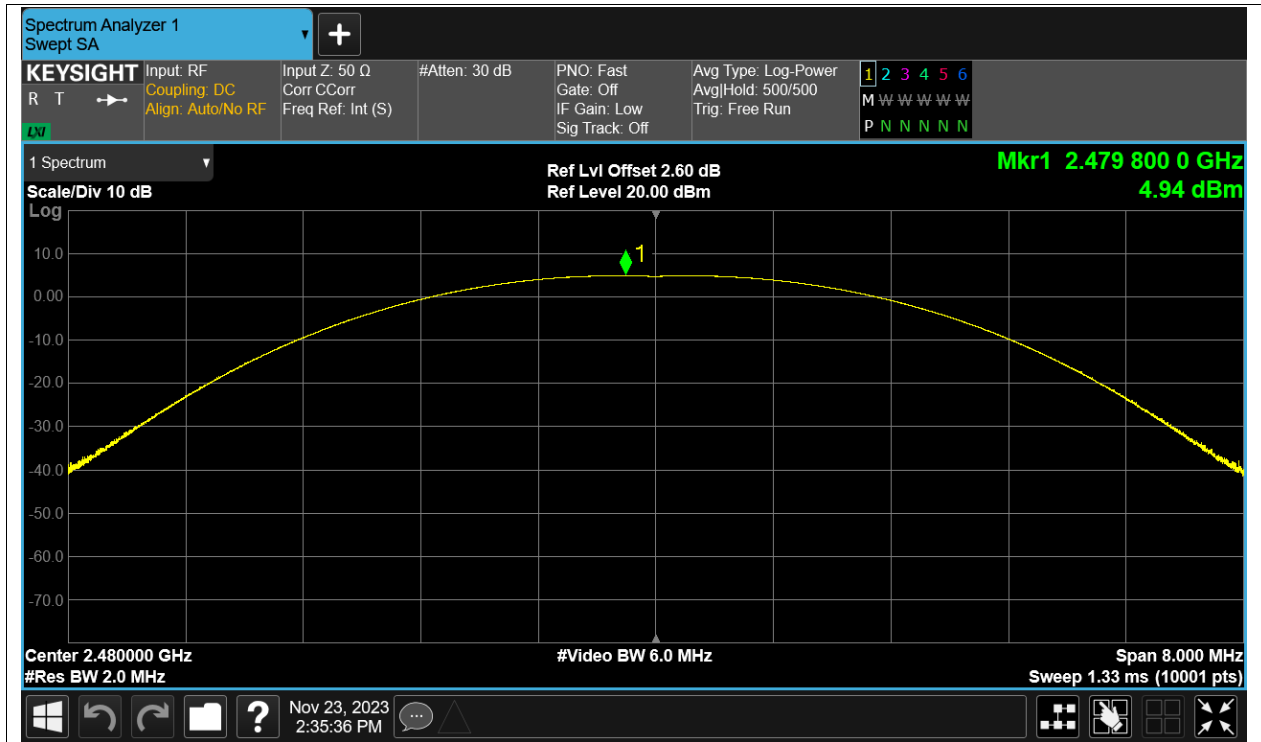


Appendix D – BLE-Coded PHY,S=8 PHY**Maximum Conducted Output Power**

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2402	Ant14	4.302	30	Pass
NVNT	BLE	2442	Ant14	4.736	30	Pass
NVNT	BLE	2480	Ant14	4.942	30	Pass



Power NVNT BLE 2480MHz Ant14



-----End of report-----