

# 6525-6875MHz Formal Test Report for IW9165DH-B & IW9165DH-ROW

Supports

BLE/4.9GHz/ 5GHz 802.11 a/ac/ax/n and 6 GHz Wi-Fi radio

**FCC ID: LDKIW9165DH**

Against the following Specifications:

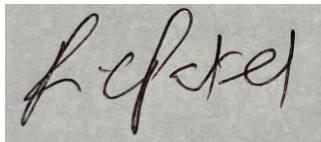

47 CFR 15.205

47 CFR 15.209

47 CFR 15.407



**Cisco Systems, Inc.**  
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|   |  |
|---|--|
|  |                |
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This report replaces any previously entered test report under **EDCS # 24733418**. This test report has been electronically authorized and archived using the CISCO Engineering Document Control system. Test Report Template EDCS# 11644120.

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## **Section 1: Overview**

The samples were assessed against the tests detailed in section 3 under the requirements of the following specifications:

|                        |
|------------------------|
| <b>Specifications:</b> |
| CFR47 Part 15.407      |

## Section 2: Assessment Information

### 2.1: General

This report contains an assessment of an apparatus against Electromagnetic Compatibility Standards based upon tests carried out on the samples submitted. The testing was performed by and for the use of Cisco systems Inc:

With regard to this assessment, the following points should be noted:

- a) The results contained in this report relate only to the items tested and were obtained in the period between the date of the initial assessment and the date of issue of the report. Manufactured products will not necessarily give identical results due to production and measurement tolerances.
- b) The apparatus was set up and exercised using the configuration and modes of operation defined in this report only.
- c) Where relevant, the apparatus was only assessed using the susceptibility criteria defined in this report and the Test Assessment Plan (TAP).
- d) All testing was performed under the following environmental conditions:

|                      |  |
|----------------------|--|
| Temperature          | 15 °C to 35 °C (54 °F to 95 °F)        |
| Atmospheric Pressure | 860 mbar to 1060 mbar (25.4" to 31.3") |
| Humidity             | 10% to 75*%                            |

- e) All AC testing was performed at one or more of the following supply voltages:

110V 60 Hz (+/-20%)

#### Units of Measurement

The units of measurements defined in the appendices are reported in specific terms, which are test dependent. Where radiated measurements are concerned these are defined at a particular distance. Basic voltage measurements are defined in units of [dBuV]

As an example, the basic calculation for all measurements is as follows:

$$\text{Emission level [dBuV]} = \text{Indicated voltage level [dBuV]} + \text{Cable Loss [dB]} + \text{Other correction factors [dB]}$$

The combinations of correction factors are dependent upon the exact test configurations [see test equipment lists for further details] and may include:

Antenna Factors, Pre-Amplifier Gain, LISN Loss, Pulse Limiter Loss and Filter Insertion Loss

Note: To convert the results from dBuV/m to uV/m use the following formula:

$$\text{Level in uV/m} = \text{Common Antilogarithm} [(X \text{ dBuV/m})/20] = Y \text{ uV/m}$$

#### Measurement Uncertainty Values

|                                   |                        |
|-----------------------------------|------------------------|
| voltage and power measurements    | ± 2 dB                 |
| conducted EIRP measurements       | ± 1.4 dB               |
| radiated measurements             | ± 3.2 dB               |
| frequency measurements            | ± 2.4 10 <sup>-7</sup> |
| temperature measurements          | ± 0.54°                |
| humidity measurements             | ± 2.3%                 |
| DC and low frequency measurements | ± 2.5%                 |

Where relevant measurement uncertainty levels have been estimated for tests performed on the apparatus. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

Radiated emissions (expanded uncertainty, confidence interval 95%)

|                    |          |
|--------------------|----------|
| 30 MHz – 300 MHz   | ± 3.8 dB |
| 300 MHz – 1000 MHz | ± 4.3 dB |
| 1 GHz – 10 GHz     | ± 4.0 dB |
| 10 GHz – 18GHz     | ± 8.2 dB |
| 18GHz – 26.5GHz    | ± 4.1 dB |
| 26.5GHz – 40GHz    | ± 3.9 dB |

Conducted emissions (expanded uncertainty, confidence interval 95%)

|                 |           |
|-----------------|-----------|
| 30 MHz – 40 GHz | ± 0.38 dB |
|-----------------|-----------|

A product is considered to comply with a requirement if the nominal measured value is below the limit line. The product is considered to not be in compliance in case the nominal measured value is above the limit line.

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## 2.2: Date of testing

12/1/2023 – 12/21/2023

## 2.3: Report Issue Date

1/22/2024

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## 2.4: Testing facilities

This assessment was performed by: NIST Designated Phase-I and Phase-II Conformity Assessment Body (CAB) for the following economies and regulatory authorities under the terms of the stated MRAs/Treaties: NCC (National Communications Commission) APEC Tel MRA – Phase I.

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Headquarters  
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USA

### Registration Number

| Cisco System Site       | Address                                  | Site Identifier  |
|-------------------------|--|------------------|
| Building P, 10m Chamber | 125 West Tasman Dr<br>San Jose, CA 95134 | Company #: 2461A |

### Test Engineer(s):

Ronak Patel

**2.5: Equipment Assessed (EUT)**

IW9165DH-B

**2.6: EUT Description**

| RF General Information |  |  |  |
|------------------------|--|--|--|
| Evaluation Mode        | Frequency Range (MHz)                            | Operating Frequency (MHz)                        | Modulation Type  |
| 5GHz WLAN              | 5150-5250<br>5250-5350<br>5470-5725<br>5725-5850 | 5180-5250<br>5250-5320<br>5500-5720<br>5745-5825 | 802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)<br>802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) |
| 4.9GHz WLAN            | 4940-4990  | 4945-4985  | OFDM (BPSK, QPSK, 16QAM, 64QAM)  |
| Bluetooth              | 2400-2483.5                                      | 2402-2480  | LE: GFSK   |
| 6GHz WLAN              | 5925-6425MHz<br>6525-6875MHz                     | 5925-6425MHz<br>6525-6875MHz                     | 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)  |

|    |   |   |   |   |   |   |
|----|---|---|---|---|---|---|
| R1 | - | V<br>(AP: 20/40/80)<br>(P2P/P2MP: 20/40/80)         | V | - | - | - |
| R2 | - | V<br>(AP: 20/40/80/160)<br>(P2P/P2MP: 20/40/80/160) | V | - | - | - |
| R3 | - | -   | - | - | V | - |
| R4 | - | -   | - | - | - | V |

**For Radio1 - 5GHz UNII 1~UNII 3 and 4.9GHz:**

**For IEEE 802.11a/n/ac/ax mode (1TX, 2TX/2RX):**

**1TX**

Only Port 1 can be use as transmitting antenna.

**2TX**

Port 1, Port 2 can be use as transmitting antenna. Port 1, Port 2 could transmit simultaneously.

**2RX**

Port 1, Port 2, Port 3, Port 4 can be used as receiving antennas. Port 1 and Port 2 could receive simultaneously.

**For Radio 2 - 5GHz UNII 1~UNII 3, 4.9GHz & UNI 5 ~ UNII 7:**

**For IEEE 802.11a/n/ac/ax mode (1TX, 2TX/2RX):**

**1TX**

Only Port 1 can be use as transmitting antenna.

**2TX**

Port 1, Port 2 can be use as transmitting antenna. Port 1, Port 2 could transmit simultaneously.

**2RX**

Port 1, Port 2, Port 3, Port 4 can be used as receiving antennas. Port 1 and Port 2 could receive simultaneously.

**For Radio 3 - BLE**

**Bluetooth(1TX):**

Only Port 1 can be used as transmitting/receiving antenna.

**For Radio 4 – GNSS (1Rx)**

Only Port 1 can be used as receiving antenna.

The following antennas are supported by this product series. Please note, the antenna information has been provided by the customer (the Cisco business unit). The data included in this report represent the worst-case data for all antennas.

**Magnum IW9165 Supported External Antenna List**

| Product ID         | Family | Description  | Supported by IW9165DHD? | Supported by IW9165E? | Peak Gain 2.4 GHz (dBi) | Peak Gain 4.9 GHz (dBi) | Peak Gain 5 GHz (dBi) | Gain > 30° Elevation UNII-1 (dBi) | Peak Gain 6 GHz (dBi) | Gain > 30° Elevation UNII-5 & 7 | 5 GHz Fixed Point-to-Point? | 5 GHz Point-to-Multipoint? |
|--------------------|--------|--|-------------------------|-----------------------|-------------------------|-------------------------|-----------------------|-----------------------------------|-----------------------|---------------------------------|-----------------------------|----------------------------|
| IW-ANT-OMM-53-N=   | Legacy | 5 GHz 3 dBi Omnidirectional Antenna, Multi-polarized, N Female Connector   | No                      | Yes                   | N/A                     | 3                       | 3                     | 0                                 | N/A                   | N/A                             | No                          | Yes                        |
| AIR-ANT5180V-N=    | Legacy | 5 GHz 8 dBi Omnidirectional Colinear Array Antenna, N Male Connector   | Yes                     | Yes                   | N/A                     | 8                       | 8                     | -3                                | N/A                   | N/A                             | No                          | Yes                        |
| IW-ANT-PNL-59-N=   | Legacy | 5 GHz 9 dBi 2-Element Patch Array Antenna, Slant ±45 Polarized, N Female Connectors                                    | Yes                     | Yes                   | N/A                     | N/A                     | 10                    | 7                                 | N/A                   | N/A                             | Yes                         | Yes                        |
| AIR-ANT5114P2M-N=  | Legacy | 5 GHz 13 dBi 2-Element Patch Array Antenna, N Male Connectors  | Yes                     | Yes                   | N/A                     | N/A                     | 13                    | 4                                 | N/A                   | N/A                             | Yes                         | Yes                        |
| AIR-ANT5114P2M-NS= | SIA    | 5 GHz 13 dBi 2-Element Patch Array Antenna, N Male Connectors  | Yes                     | Yes                   | N/A                     | N/A                     | 13                    | 3                                 | N/A                   | N/A                             | Yes                         | Yes                        |
| IW-ANT-SKD-513-Q=  | Legacy | 5 GHz 14 dBi 2-Element Shark Antenna, Slant ±45 Polarized, QMA Female Connectors                                       | No                      | Yes                   | N/A                     | 13                      | 13                    | 8                                 | N/A                   | N/A                             | No                          | Yes                        |
| IW-ANT-SKS-514-Q=  | Legacy | 5 GHz 14 dBi 2-Element Shark Antenna, Slant ±45 Polarized, QMA Female Connectors                                       | No                      | Yes                   | N/A                     | 13                      | 13                    | 8                                 | N/A                   | N/A                             | No                          | Yes                        |
| AIR-ANT2547V-N=    | Legacy | 2.4 GHz 4 dBi / 5 GHz 7 dBi Omnidirectional Colinear Array Antenna, N male connector                                   | Yes                     | Yes                   | 4                       | N/A                     | 7                     | -3                                | N/A                   | N/A                             | No                          | Yes                        |
| AIR-ANT2547VG-N=   | Legacy | 2.4 GHz 4 dBi / 5 GHz 7 dBi Omnidirectional Colinear Array   | Yes                     | Yes                   | 4                       | N/A                     | 7                     | -3                                | N/A                   | N/A                             | No                          | Yes                        |
| AIR-ANT2547VG-NS=  | SIA    | 2.4 GHz 4 dBi / 5 GHz 7 dBi Omnidirectional Colinear Array   | Yes                     | Yes                   | 4                       | N/A                     | 7                     | -3                                | N/A                   | N/A                             | No                          | Yes                        |
| AIR-ANT2588VG-N=   | Legacy | 2.4 GHz 6 dBi / 5 GHz 8 dBi Omnidirectional Antenna, N Male  | Yes                     | Yes                   | 6                       | N/A                     | 8                     | 3                                 | N/A                   | N/A                             | No                          | Yes                        |
| AIR-ANT2588VG-NS=  | SIA    | 2.4 GHz 6 dBi / 5 GHz 8 dBi Omnidirectional Antenna, N Male  | Yes                     | Yes                   | 6                       | N/A                     | 8                     | 3                                 | N/A                   | N/A                             | No                          | Yes                        |
| AIR-ANT2588P4M-NS= | SIA    | 2.4 GHz 8 dBi / 5 GHz 8 dBi 4-Element Dual-Polarized Patch Antenna, N  | No                      | Yes                   | 8                       | N/A                     | 8                     | -2                                | N/A                   | N/A                             | No                          | Yes                        |
| AIR-ANT2513P4M-N=  | Legacy | 2.4 GHz 13 dBi / 5 GHz 13 dBi Polarization Diverse Patch Array   | No                      | Yes                   | 13                      | N/A                     | 13                    | 1                                 | N/A                   | N/A                             | Yes                         | Yes                        |
| AIR-ANT2513P4M-NS= | SIA    | 2.4 GHz 13 dBi / 5 GHz 13 dBi Polarization Diverse Patch Array   | No                      | Yes                   | 13                      | N/A                     | 13                    | 1                                 | N/A                   | N/A                             | Yes                         | Yes                        |
| IW-ANT-OMV-2567-N  | SIA    | Tri-band 2.4 GHz 4 dBi, 5/6 GHz 7 dBi Omnidirectional Colinear Array Antenna, Vertically Polarized, N Male Connector   | Yes                     | Yes                   | 4                       | 7                       | 7                     | -7                                | 7                     | -6                              | No                          | Yes                        |
| IW-ANT-OMH-2567-N  | SIA    | Tri-band 2.4 GHz 4 dBi, 5/6 GHz 7 dBi Omnidirectional Colinear Array Antenna, Horizontally Polarized, N Male Connector | Yes                     | Yes                   | 4                       | 7                       | 7                     | -6                                | 7                     | -4                              | No                          | Yes                        |
| IW-ANT-PNL-515-N=  | SIA    | Tri-band 5 GHz 15dBi Panel Antenna   | Yes                     | Yes                   |                         | 15                      | 15                    | 3                                 |                       |                                 | Yes                         | Yes                        |

## Section 3: Result Summary

### 3.1: Results Summary Table

#### Conducted test summary.

| Basic Standard  | Technical Requirements / Details  | Result |
|---|---|--------|
| FCC 15.407 Clause (a)(10)                                   | <p><b>99%- &amp; 26-dB Bandwidth:</b><br/>The 99% occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. There is no limit for 99% OBW.</p> <p>The 26 dB emission is the width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum level measured in the fundamental emission.</p> <p>The maximum transmitter channel bandwidth for U-NII devices in the 5.925–7.125 GHz band is 320 megahertz.</p>  | Pass   |
| FCC 15.407 Clause (a)(4)                                    | <p><b>Output Power:</b><br/>For a standard power access point and fixed client device operating in the 5.925–6.425 GHz and 6.525–6.875 GHz bands, the maximum e.i.r.p. over the frequency band of operation must not exceed 36 dBm. For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm)</p>  | Pass   |
| 15.407 Clause (a)(4)  | <p><b>Power Spectral Density:</b><br/>For a standard power access point and fixed client device operating in the 5.925–6.425 GHz and 6.525–6.875 GHz bands, the maximum power spectral density must not exceed 23 dBm e.i.r.p in any 1-megahertz band</p>   | Pass   |
| 15.407 Clause (b)(6)  | <p><b>Conducted Spurious Emissions:</b><br/>For transmitters operating within the 5.925–7.125 GHz band: Any emissions outside of the 5.925–7.125 GHz band must not exceed an e.i.r.p. of –27 dBm/MHz</p>  | Pass   |
| 15.407 Clause (b)(7)  | <p><b>Conducted Band Edge/ Spectral Mask:</b><br/><br/>For transmitters operating within the 5.925–7.125 GHz bands: Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB</p> |        |
| FCC 15.407<br>FCC 15.209<br>FCC 15.205<br>Clause (b)(9)(10) | <p><b>Restricted band:</b><br/>Unwanted emissions falling within the restricted bands, as defined in FCC 15.205 (a) must also comply with the radiated emission limits specified in FCC 15.209 (a).</p>   | Pass   |



**Radiated Emissions (General requirements)**

| Basic Standard  | Technical Requirements / Details   | Result               |
|---|--|----------------------|
| FCC 15.407<br>FCC 15.205<br>FCC 15.209<br>Clause (b)(9)(10) | <b>TX Spurious Emissions:</b><br>Unwanted emissions must comply with the general field strength limits set forth in §15.209. (7) The provisions of §15.205 apply to intentional radiators operating under this section.  | [EDCS #<br>24733400] |
| FCC 15.207<br>Clause (b)(9)                                 | <b>AC conducted Emissions:</b><br>Except when the requirements applicable to a given device state otherwise, for any radio apparatus equipped to operate from the public utility AC power supply, either directly or indirectly (such as with a battery charger), the radio frequency voltage of emissions conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in the table in these sections. The more stringent limit applies at the frequency range boundaries. | Pass                 |

\* MPE calculation is recorded in a separate report

## Section 4: Sample Details

Note: Each sample was evaluated to ensure that its condition was suitable to be used as a test sample prior to the commencement of testing.

### 4.1: Sample Details

| Sample No. | Equipment Details | Manufacturer  | Hardware Rev. | Firmware Rev.  | Software Rev.                          | Serial Number |
|------------|-------------------|---------------|---------------|--|--|---------------|
| S01        | IW9165DH-B        | Cisco Systems | PILOT         | QC_IMAGE_VERSION_STRING=WLAN.HK.2.4-02142-QCAHKSWPL_SILICONZ-1 | [sjc-ads-5692:/nobackup/zhiyin/m22-ws] | FOC27095C9Z   |
| S02        | IW-PWRADPT-MFIT4P | Cisco Systems | V00           | -  | -                                      | LIN264450C6   |

### 4.2: System Details

| System # | Description       | Samples |
|----------|-------------------|---------|
| 1        | IW9165DH-B        | S01     |
| 2        | IW-PWRADPT-MFIT4P | S02     |

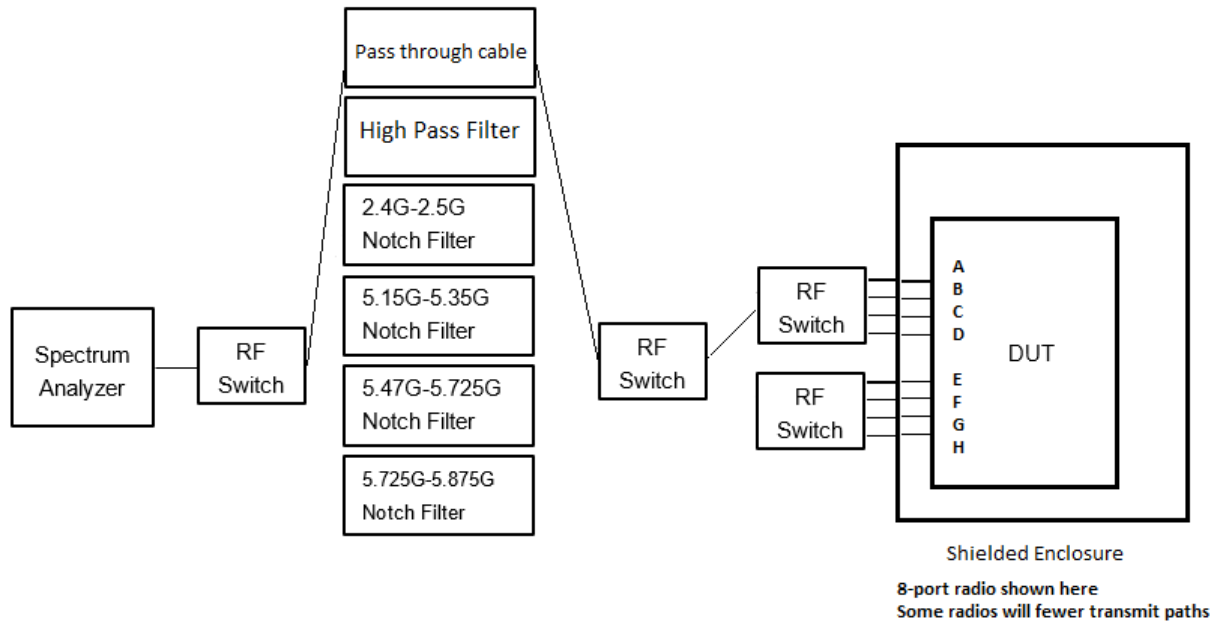
### 4.3: Mode of Operation Details

| Mode# | Description             | Comments |
|-------|-------------------------|----------|
| 1     | Continuous Transmitting |          |

| Function | Support Band           |
|----------|------------------------|
| AP       | BLE,5GHz,6GHz & 4.9GHz |
| P2P/P2MP | 5GHz, 6GHz and 4.9GHz  |

## Appendix A: Emission Test Results

### Conducted Test Setup Diagram



### Test Setup Description

The EUT was placed inside an RF shielded enclosure. RF cables connect to each antenna port on the EUT inside the enclosure. Those cables are routed to RF switch cards in a National Instruments chassis. There are different paths, some paths contain a notch filter or high pass filter as shown above. The signal is then routed to the spectrum analyzer where measurements are made.

Plots listed herein represent the measured worst-case per antenna, frequency, and modulation.

## **A.1: Duty Cycle**

### **Duty Cycle Test Requirement**

**987594 D02 U-NII 6 GHz EMC Measurement v02r01 II (B)**

**From KDB 789033 D02 General UNII Test Procedures New Rules v02r01**

#### **B. Duty Cycle (x), Transmission Duration (T), and Maximum Power Control Level**

1. All measurements are to be performed with the EUT transmitting at 100 percent duty cycle at its maximum power control level; however, if 100 percent duty cycle cannot be achieved, measurements of duty cycle,  $x$ , and maximum-power transmission duration,  $T$ , are required for each tested mode of operation.

### **Duty Cycle Test Method**

**From KDB 789033 D02 General UNII Test Procedures New Rules v02r01:**

#### **B. Duty Cycle (x), Transmission Duration (T), and Maximum Power Control Level**

The zero-span mode on a spectrum analyzer or EMI receiver, if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set  $RBW \geq EBW$  if possible; otherwise, set  $RBW$  to the largest available value. Set  $VBW \geq RBW$ . Set detector = peak or average. The zero-span measurement method shall not be used unless both  $RBW$  and  $VBW$  are  $> 50/T$ , where  $T$  is defined in section II.B.1.a), and the number of sweep points across duration  $T$  exceeds 100. (For example, if  $VBW$  and/or  $RBW$  are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if  $T \leq 16.7$  microseconds.)

### **Duty Cycle Test Information**

|                               |   |
|-------------------------------|---|
| <b>Tested By:</b> Ronak Patel | <b>Date of testing:</b> 12/01/2023 – 12/21/2023 |
| <b>Test Result:</b> PASS      |   |

### **Test Equipment**

See Appendix C for list of test equipment.

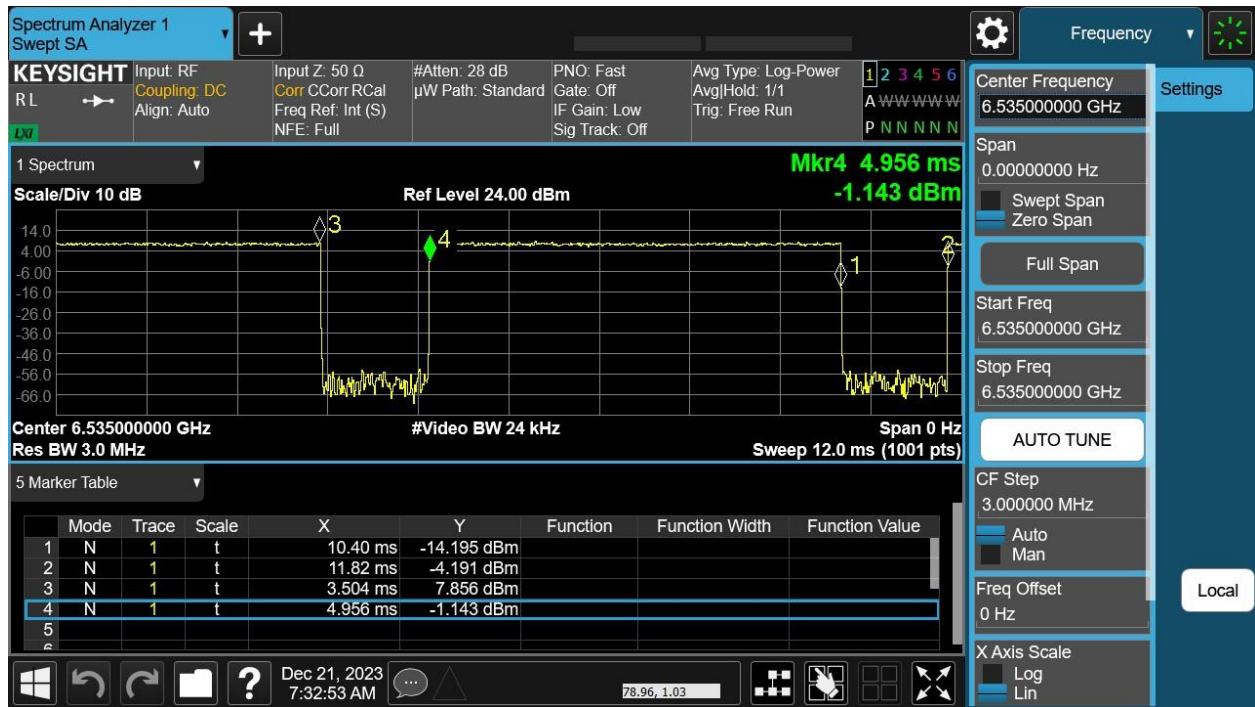
**Duty Cycle Data Table**

Duty Cycle table and screen captures are shown below for Power/PSD modes.

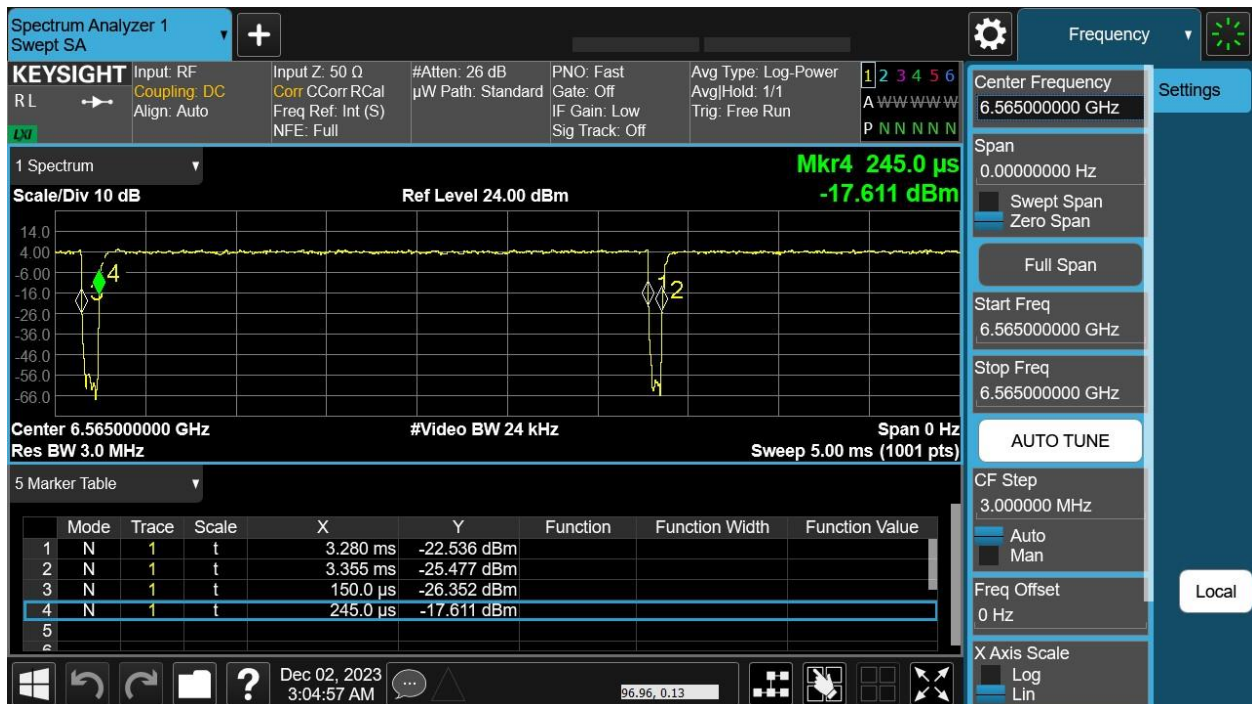
| Frequency (MHz) | Mode                 | Data Rate (Mbps) | Duty Cycle (dB) |
|-----------------|----------------------|------------------|-----------------|
| 6535            | HE20, M0 to M11 1ss  | m0h1             | 1.03            |
| 6565            | HE40, M0 to M11 1ss  | m0h1             | 0.13            |
| 6625            | HE80, M0 to M11 1ss  | m0h1             | 0.23            |
| 6665            | HE160, M0 to M11 1ss | m0h1             | 0.24            |
| 6685            | HE40, M0 to M11 1ss  | m0h1             | 0.13            |
| 6695            | HE20, M0 to M11 1ss  | m0h1             | 1.03            |
| 6705            | HE80, M0 to M11 1ss  | m0h1             | 0.23            |
| 6825            | HE160, M0 to M11 1ss | m0h1             | 0.24            |
| 6845            | HE40, M0 to M11 1ss  | m0h1             | 0.13            |
| 6855            | HE20, M0 to M11 1ss  | m0h1             | 1.03            |
| 6865            | HE80, M0 to M11 1ss  | m0h1             | 0.23            |

## Data Screenshots

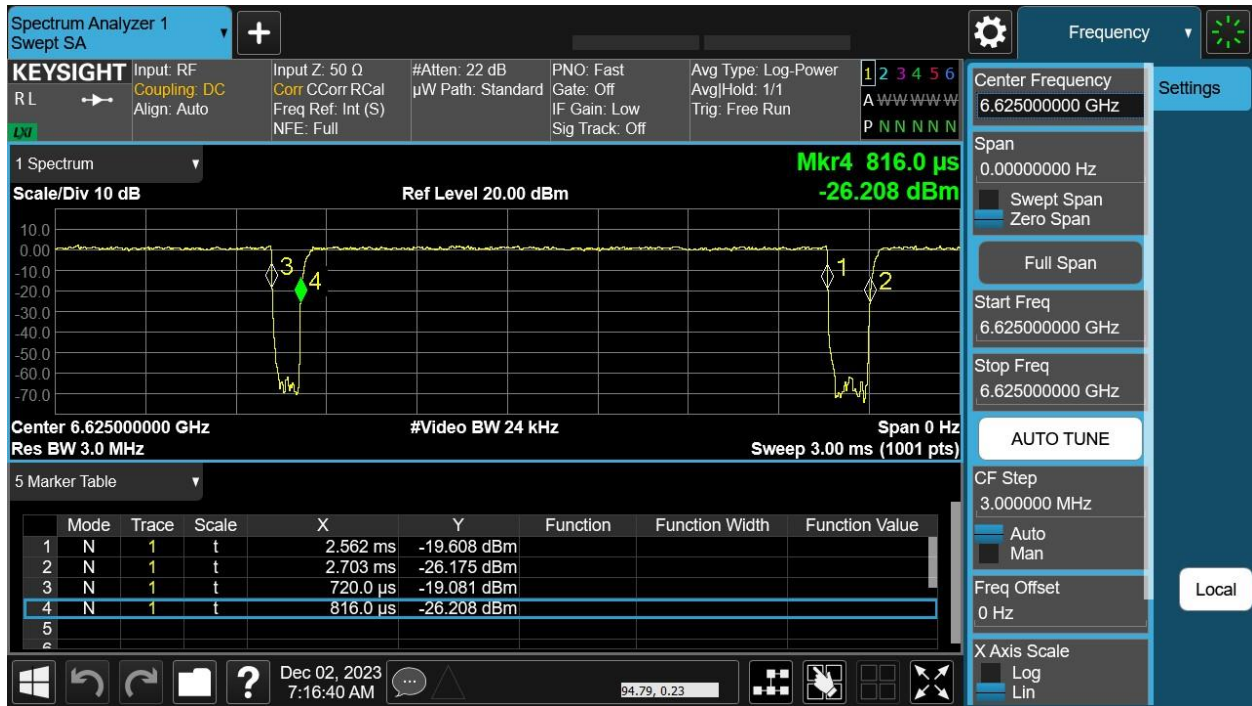
6535 MHz: HE20, M0 to M11 1ss - Antenna A



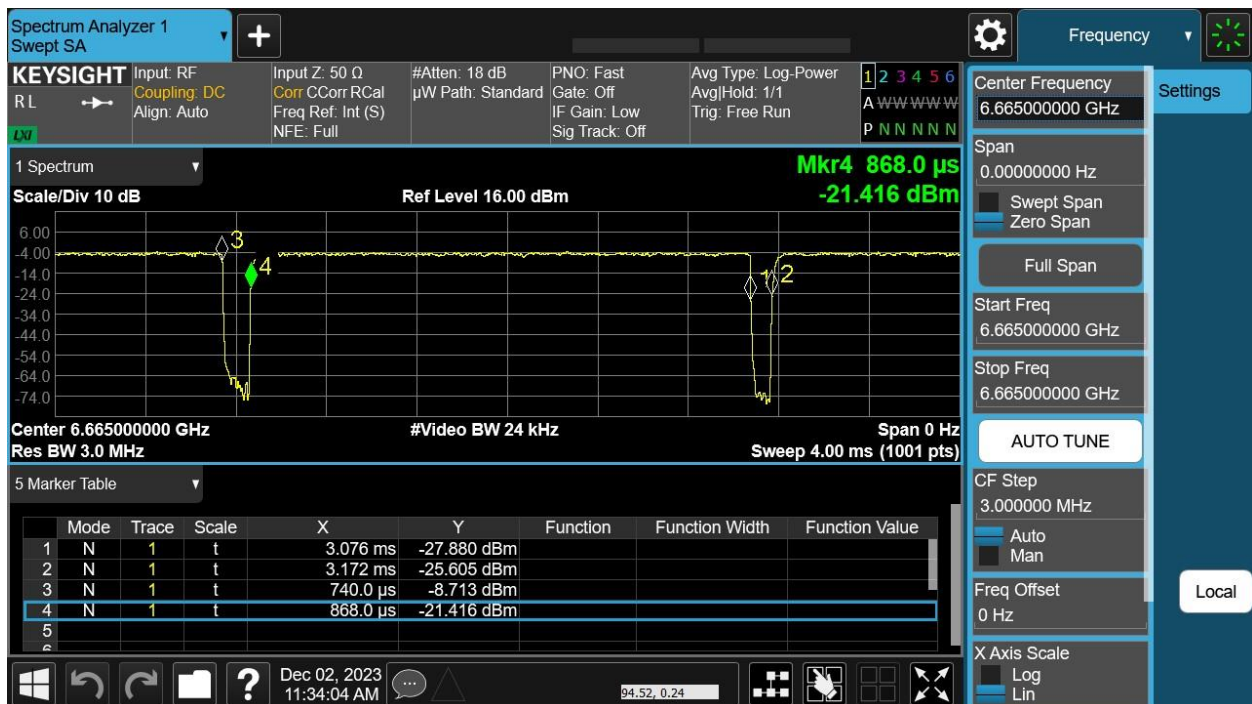
6565 MHz: HE40, M0 to M11 1ss - Antenna A



6625 MHz: HE80, M0 to M11 1ss – Antenna A



6665 MHz: HE160, M0 to M11 1ss – Antenna A



**A.2: 99% and 26dB Bandwidth**

**99% and 26dB Bandwidth Test Requirement**

**FCC 15.407 Clause (a)(10)**

For the FCC:

There is no requirement for the value of bandwidth. The maximum transmitter channel bandwidth for U–NII devices in the 5.925–7.125 GHz band is 320 megahertz.

Power measurements are made using the 99% Bandwidth as the integration bandwidth.

**99% and 26dB Bandwidth Test Procedure**

The 99-percent occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5 % of the total mean power of the given emission. Measurement of the 99-percent occupied bandwidth is required only as a condition for using the optional band-edge measurement techniques described in section II.G.3.d). Measurements of 99-percent occupied bandwidth may also optionally be used in lieu of the EBW to define the minimum frequency range over which the spectrum is integrated when measuring maximum conducted output power as described in section II.E. However, the EBW must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with 15.407(a).

**Ref. KDB 789033 Section D. 99 Percent Occupied Bandwidth**

|  |
|--|
| <b>99% BW</b>  |
| Test Parameters  |
| <ol style="list-style-type: none"> <li>1. Set center frequency to the nominal EUT channel center frequency.</li> <li>2. Set span = 1.5 times to 5.0 times the OBW.</li> <li>3. Set RBW = 1 % to 5 % of the OBW</li> <li>4. Set VBW <math>\geq 3 \cdot</math> RBW5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.6. Use the 99 % power bandwidth function of the instrument (if available).</li> </ol> |

**Ref KDB 789033 in Section C. Measurement Bandwidth, Section 1**

|  |
|--|
| <b>26 BW</b>   |
| Test parameters  |
| <p>X dB BW = -26dB (using the OBW function of the spectrum analyzer)</p> <p>Emission Bandwidth (EBW)</p> <ol style="list-style-type: none"> <li>a) Set RBW = approximately 1% of the emission bandwidth.</li> <li>b) Set the VBW &gt; RBW.</li> <li>c) Detector = Peak.</li> <li>d) Trace mode = max hold.</li> <li>e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.</li> </ol> |

|                               |   |
|-------------------------------|---|
| <b>Tested By:</b> Ronak Patel | <b>Date of testing:</b> 12/01/2023 – 12/21/2023 |
| <b>Test Result:</b> PASS      |   |

**Test Equipment**

See Appendix C for list of test equipment.



**99% and 26dB Bandwidth Table**

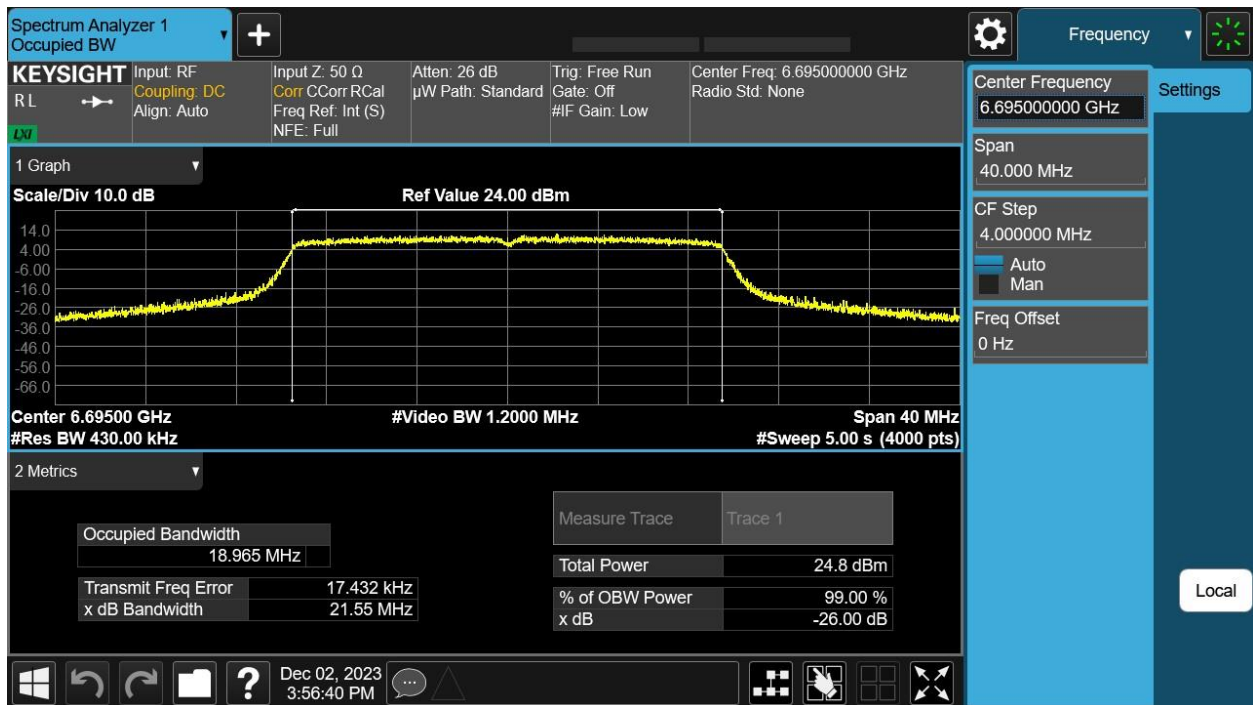
| <b>Frequency (MHz)</b> | <b>Mode</b>          | <b>Data Rate (Mbps)</b> | <b>26dB BW (MHz)</b> | <b>99% BW (MHz)</b> |
|------------------------|----------------------|-------------------------|----------------------|---------------------|
| 6535                   | HE20, M0 to M11 1ss  | m0h1                    | 21.30                | 18.93               |
| 6565                   | HE40, M0 to M11 1ss  | m0h1                    | 41.20                | 37.73               |
| 6625                   | HE80, M0 to M11 1ss  | m0h1                    | 83.90                | 77.31               |
| 6665                   | HE160, M0 to M11 1ss | m0h1                    | 167.70               | 155.03              |
| 6685                   | HE40, M0 to M11 1ss  | m0h1                    | 41.20                | 37.78               |
| 6705                   | HE80, M0 to M11 1ss  | m0h1                    | 84.10                | 77.37               |
| 6695                   | HE20, M0 to M11 1ss  | m0h1                    | 21.60                | 18.97               |
| 6825                   | HE160, M0 to M11 1ss | m0h1                    | 179.30               | 155.53              |
| 6845                   | HE40, M0 to M11 1ss  | m0h1                    | 41.50                | 37.85               |
| 6865                   | HE80, M0 to M11 1ss  | m0h1                    | 106.20               | 77.51               |
| 6855                   | HE20, M0 to M11 1ss  | m0h1                    | 23.80                | 19.00               |

## Data Screenshots

6535 MHz: HE20, M0 to M11 1ss – Antenna A



6695 MHz: HE20, M0 to M11 1ss - Antenna A



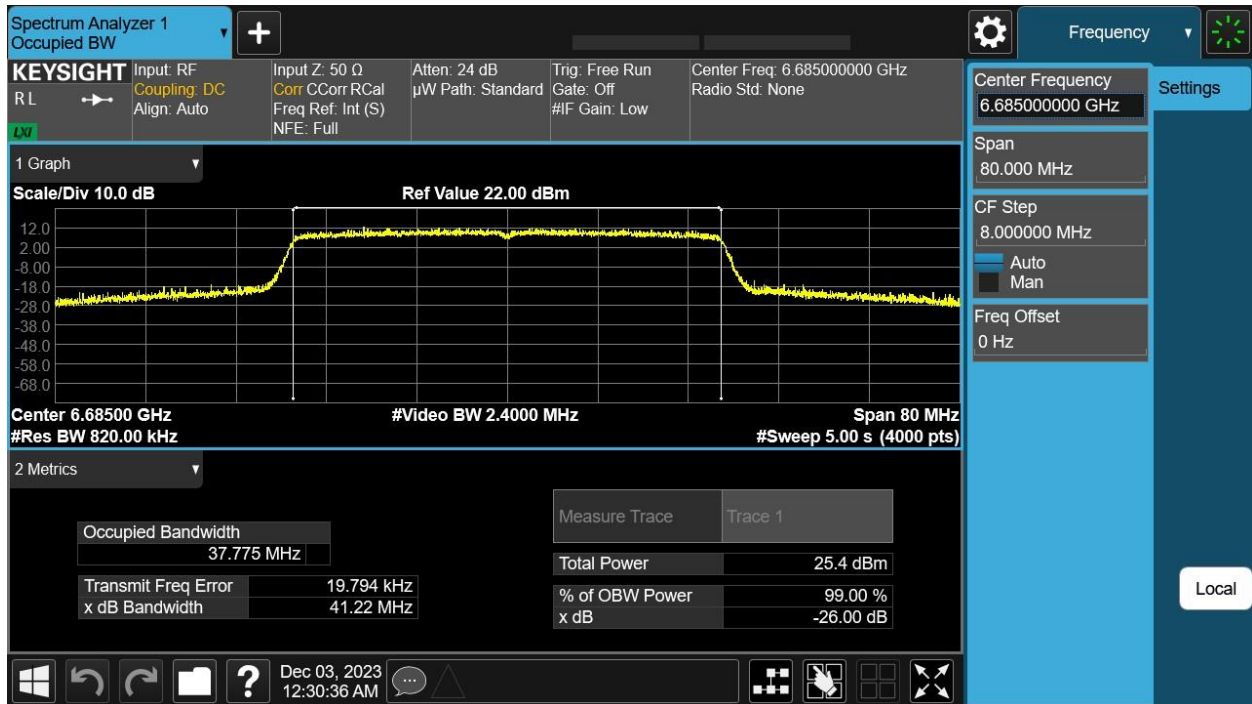
6855 MHz: HE20, M0 to M11 1ss - Antenna A



6565 MHz: HE40, M0 to M11 1ss – Antenna A



6685 MHz: HE40, M0 to M11 1ss – Antenna A



6845 MHz: HE40, M0 to M11 1ss – Antenna A



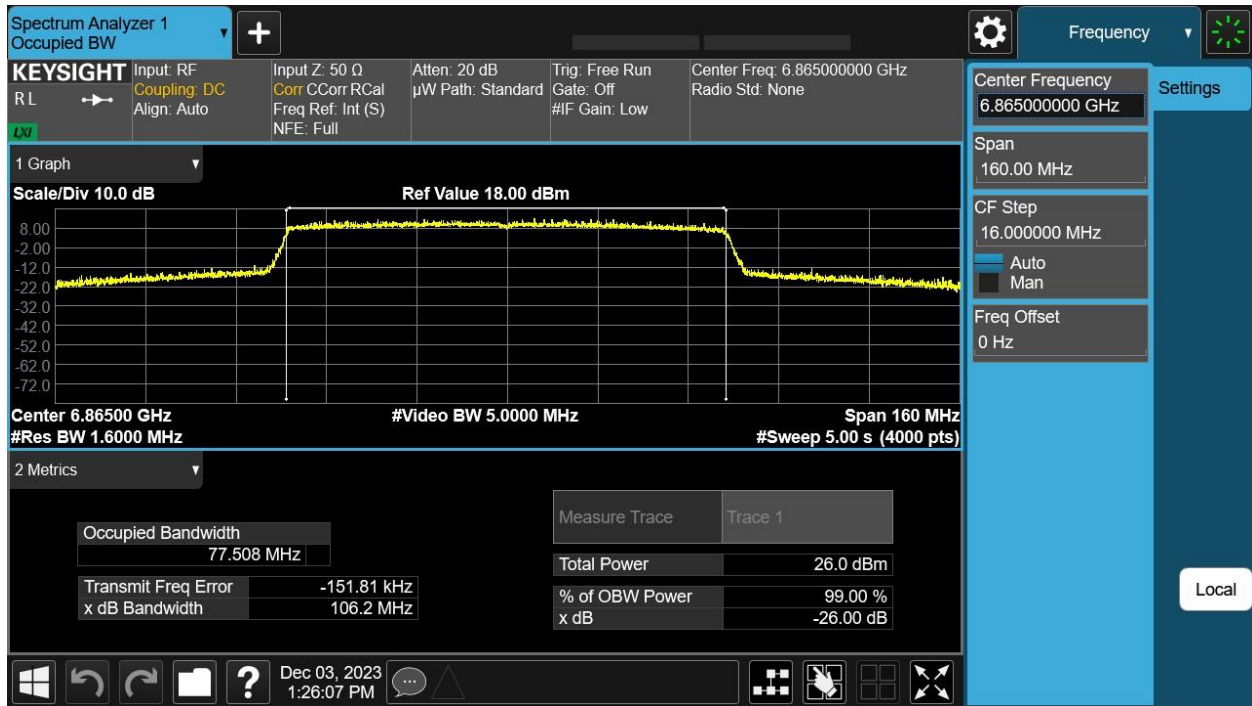
6625 MHz: HE80, M0 to M11 1ss - Antenna A



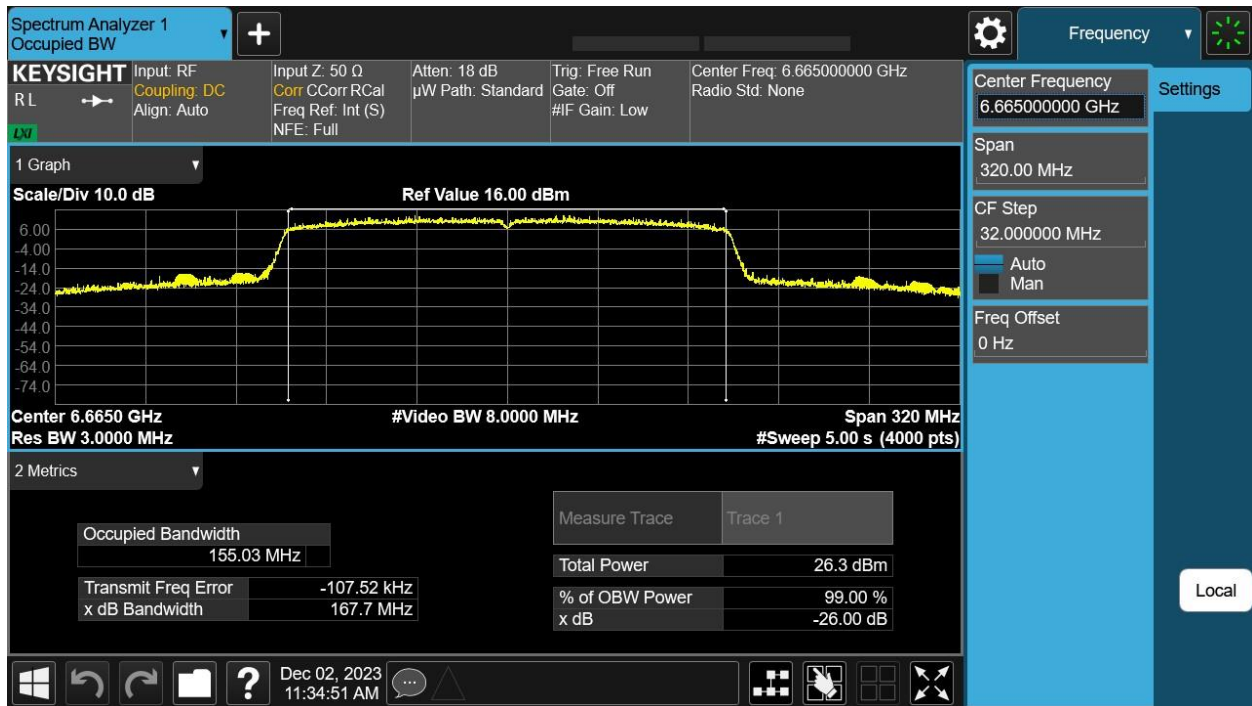
6705 MHz: HE80, M0 to M11 1ss – Antenna A



6865 MHz: HE80, M0 to M11 1ss – Antenna A



6665 MHz: HE160, M0 to M11 1ss - Antenna A



6825 MHz: HE160, M0 to M11 1ss - Antenna A



**A.3: Maximum Conducted Output Power****Maximum Conducted Output Power Test Requirement****15.407 General technical requirements, (a) Power limits: (4) For the bands 5.925–6.425 GHz and 6.525–6.875 GHz bands.**

For a standard power access point and fixed client device operating in the 5.925–6.425 GHz and 6.525–6.875 GHz bands, the maximum power spectral density must not exceed 23 dBm e.i.r.p in any 1-megahertz band. In addition, the maximum e.i.r.p. over the frequency band of operation must not exceed 36 dBm. For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

**Maximum Conducted Output Power Test Procedure****987594 D02 U-NII 6 GHz EMC Measurement v02r01 Clause II (E).****Ref. KDB 789033 D02 General UNII Test Procedures New Rules v02r01  
ANSI C63.10: 2013**

|   |
|---|
| <b>Maximum Conducted Output Power</b>   |
| Test Procedure  |
| <ol style="list-style-type: none"> <li>1. Set the radio in the continuous transmitting mode at full power</li> <li>2. Compute power by integrating the spectrum across the EBW (or alternatively entire 99% OBW) of the signal using the instrument's band power measurement function. The integration shall be performed using the spectrum analyzer band-power measurement function with band limits set equal to the EBW or the OBW band edges.</li> <li>3. Capture graphs and record pertinent measurement data.</li> </ol> |

**Ref. KDB 789033 D02 General UNII Test Procedures New Rules v02r01****2. Measurement using a Spectrum Analyzer or EMI Receiver (SA), (d) Method SA-2**

|   |
|---|
| <b>Maximum Conducted Output Power</b>   |
| Test parameters   |
| <p>Method SA-2 (trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).</p> <ol style="list-style-type: none"> <li>(i) Measure the duty cycle, <math>x</math>, of the transmitter output signal as described in section II.B.</li> <li>(ii) Set span to encompass the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.</li> <li>(iii) Set RBW = 1 MHz.</li> <li>(iv) Set VBW <math>\geq</math> 3 MHz.</li> <li>(v) Number of points in sweep <math>\geq</math> 2 Span / RBW. (This ensures that bin-to-bin spacing is <math>\leq</math> RBW/2, so that narrowband signals are not lost between frequency bins.)</li> <li>(vi) Sweep time = auto.</li> <li>(vii) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.</li> <li>(viii) Do not use sweep triggering. Allow the sweep to "free run".</li> <li>(ix) Trace average at least 100 traces in power averaging (i.e., RMS) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter.</li> <li>(x) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth)</li> </ol> |

The "measure-and-sum technique" is used for measuring in-band transmit power of a device. In the measure-and-sum approach, the conducted emission level is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in linear power units. ANSI C63.10 section 14.3.2.2

|                               |   |
|-------------------------------|---|
| <b>Tested By:</b> Ronak Patel | <b>Date of testing:</b> 12/01/2023 – 12/21/2023 |
| <b>Test Result:</b> PASS      |   |

**Test Equipment**

See Appendix C for list of test equipment.



**Maximum EIRP – Antenna gain 7dBi – 20MHz.**

6535 MHz

| Mode                             | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|----------------------------------|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE20, M0 to M11 1ss              | 1        | 7.00                          | 15.80                |                      | 1.03            | 23.78                     | 36.00            | 12.22       |
| HE20, M0 to M11 1ss              | 2        | 7.00                          | 15.80                | 15.40                | 1.03            | 26.60                     | 36.00            | 9.40        |
| HE20, M0 to M11 2ss              | 2        | 7.00                          | 15.80                | 15.40                | 1.03            | 26.60                     | 36.00            | 9.40        |
| HE20 Beam Forming, M0 to M11 1ss | 2        | 10.00                         | 15.80                | 15.40                | 1.03            | 29.60                     | 36.00            | 6.40        |
| HE20 Beam Forming, M0 to M11 2ss | 2        | 7.00                          | 15.80                | 15.40                | 1.03            | 26.60                     | 36.00            | 9.40        |
| HE20 STBC, M0 to M11 2ss         | 2        | 7.00                          | 15.80                | 15.40                | 1.03            | 26.60                     | 36.00            | 9.40        |

6695 MHz

| Mode                             | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|----------------------------------|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE20, M0 to M11 1ss              | 1        | 7.00                          | 16.10                |                      | 1.03            | 24.15                     | 36.00            | 11.85       |
| HE20, M0 to M11 1ss              | 2        | 7.00                          | 16.10                | 16.10                | 1.03            | 27.17                     | 36.00            | 8.83        |
| HE20, M0 to M11 2ss              | 2        | 7.00                          | 16.10                | 16.10                | 1.03            | 27.17                     | 36.00            | 8.83        |
| HE20 Beam Forming, M0 to M11 1ss | 2        | 10.00                         | 16.10                | 16.10                | 1.03            | 30.17                     | 36.00            | 5.83        |
| HE20 Beam Forming, M0 to M11 2ss | 2        | 7.00                          | 16.10                | 16.10                | 1.03            | 27.17                     | 36.00            | 8.83        |
| HE20 STBC, M0 to M11 2ss         | 2        | 7.00                          | 16.10                | 16.10                | 1.03            | 27.17                     | 36.00            | 8.83        |

6855 MHz

| Mode                                    | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|---|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE20, M0 to M11 1ss                     | 1        | 7.00                          | 16.20                |                      | 1.03            | 24.20                     | 36.00            | 11.80       |
| HE20, M0 to M11 1ss                     | 2        | 7.00                          | 16.20                | 16.20                | 1.03            | 27.23                     | 36.00            | 8.77        |
| HE20, M0 to M11 2ss                     | 2        | 7.00                          | 16.20                | 16.20                | 1.03            | 27.23                     | 36.00            | 8.77        |
| <b>HE20 Beam Forming, M0 to M11 1ss</b> | <b>2</b> | <b>10.00</b>                  | <b>16.20</b>         | <b>16.20</b>         | <b>1.03</b>     | <b>30.23</b>              | <b>36.00</b>     | <b>5.77</b> |
| HE20 Beam Forming, M0 to M11 2ss        | 2        | 7.00                          | 16.20                | 16.20                | 1.03            | 27.23                     | 36.00            | 8.77        |
| HE20 STBC, M0 to M11 2ss                | 2        | 7.00                          | 16.20                | 16.20                | 1.03            | 27.23                     | 36.00            | 8.77        |

**Maximum EIRP – Antenna gain 7dBi – 40MHz.**  
 6565 MHz

| Mode                                    | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|---|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE40, M0 to M11 1ss                     | 1        | 7.00                          | 16.30                |                      | 0.13            | 23.42                     | 36.00            | 12.58       |
| HE40, M0 to M11 1ss                     | 2        | 7.00                          | 16.30                | 16.90                | 0.13            | 26.76                     | 36.00            | 9.24        |
| HE40, M0 to M11 2ss                     | 2        | 7.00                          | 16.30                | 16.90                | 0.13            | 26.76                     | 36.00            | 9.24        |
| <b>HE40 Beam Forming, M0 to M11 1ss</b> | <b>2</b> | <b>10.00</b>                  | <b>16.30</b>         | <b>16.90</b>         | <b>0.13</b>     | <b>29.76</b>              | <b>36.00</b>     | <b>6.24</b> |
| HE40 Beam Forming, M0 to M11 2ss        | 2        | 7.00                          | 16.30                | 16.90                | 0.13            | 26.76                     | 36.00            | 9.24        |
| HE40 STBC, M0 to M11 2ss                | 2        | 7.00                          | 16.30                | 16.90                | 0.13            | 26.76                     | 36.00            | 9.24        |

## 6685 MHz

| Mode                             | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|----------------------------------|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE40, M0 to M11 1ss              | 1        | 7.00                          | 16.20                |                      | 0.13            | 23.32                     | 36.00            | 12.68       |
| HE40, M0 to M11 1ss              | 2        | 7.00                          | 16.20                | 16.40                | 0.13            | 26.45                     | 36.00            | 9.55        |
| HE40, M0 to M11 2ss              | 2        | 7.00                          | 16.20                | 16.40                | 0.13            | 26.45                     | 36.00            | 9.55        |
| HE40 Beam Forming, M0 to M11 1ss | 2        | 10.00                         | 16.20                | 16.40                | 0.13            | 29.45                     | 36.00            | 6.55        |
| HE40 Beam Forming, M0 to M11 2ss | 2        | 7.00                          | 16.20                | 16.40                | 0.13            | 26.45                     | 36.00            | 9.55        |
| HE40 STBC, M0 to M11 2ss         | 2        | 7.00                          | 16.20                | 16.40                | 0.13            | 26.45                     | 36.00            | 9.55        |

## 6845 MHz

| Mode                             | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|----------------------------------|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE40, M0 to M11 1ss              | 1        | 7.00                          | 16.20                |                      | 0.13            | 23.32                     | 36.00            | 12.68       |
| HE40, M0 to M11 1ss              | 2        | 7.00                          | 16.20                | 16.30                | 0.13            | 26.40                     | 36.00            | 9.60        |
| HE40, M0 to M11 2ss              | 2        | 7.00                          | 16.20                | 16.30                | 0.13            | 26.40                     | 36.00            | 9.60        |
| HE40 Beam Forming, M0 to M11 1ss | 2        | 10.00                         | 16.20                | 16.30                | 0.13            | 29.40                     | 36.00            | 6.60        |
| HE40 Beam Forming, M0 to M11 2ss | 2        | 7.00                          | 16.20                | 16.30                | 0.13            | 26.40                     | 36.00            | 9.60        |
| HE40 STBC, M0 to M11 2ss         | 2        | 7.00                          | 16.20                | 16.30                | 0.13            | 26.40                     | 36.00            | 9.60        |

**Maximum EIRP – Antenna gain 7dBi – 80MHz.**

6625 MHz

| Mode                             | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|----------------------------------|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE80, M0 to M11 1ss              | 1        | 7.00                          | 16.30                |                      | 0.23            | 23.54                     | 36.00            | 12.46       |
| HE80, M0 to M11 1ss              | 2        | 7.00                          | 16.30                | 16.60                | 0.23            | 26.70                     | 36.00            | 9.30        |
| HE80, M0 to M11 2ss              | 2        | 7.00                          | 16.30                | 16.60                | 0.23            | 26.70                     | 36.00            | 9.30        |
| HE80 Beam Forming, M0 to M11 1ss | 2        | 10.00                         | 16.30                | 16.60                | 0.23            | 29.70                     | 36.00            | 6.30        |
| HE80 Beam Forming, M0 to M11 2ss | 2        | 7.00                          | 16.30                | 16.60                | 0.23            | 26.70                     | 36.00            | 9.30        |
| HE80 STBC, M0 to M11 2ss         | 2        | 7.00                          | 16.30                | 16.60                | 0.23            | 26.70                     | 36.00            | 9.30        |

6705 MHz

| Mode                                    | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | Limit (dBm)  | Margin (dB) |
|---|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|--------------|-------------|
| HE80, M0 to M11 1ss                     | 1        | 7.00                          | 16.40                |                      | 0.23            | 23.61                     | 36.00        | 12.39       |
| HE80, M0 to M11 1ss                     | 2        | 7.00                          | 16.40                | 16.70                | 0.23            | 26.79                     | 36.00        | 9.21        |
| HE80, M0 to M11 2ss                     | 2        | 7.00                          | 16.40                | 16.70                | 0.23            | 26.79                     | 36.00        | 9.21        |
| <b>HE80 Beam Forming, M0 to M11 1ss</b> | <b>2</b> | <b>10.00</b>                  | <b>16.40</b>         | <b>16.70</b>         | <b>0.23</b>     | <b>29.79</b>              | <b>36.00</b> | <b>6.21</b> |
| HE80 Beam Forming, M0 to M11 2ss        | 2        | 7.00                          | 16.40                | 16.70                | 0.23            | 26.79                     | 36.00        | 9.21        |
| HE80 STBC, M0 to M11 2ss                | 2        | 7.00                          | 16.40                | 16.70                | 0.23            | 26.79                     | 36.00        | 9.21        |

6865 MHz

| Mode                             | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|----------------------------------|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE80, M0 to M11 1ss              | 1        | 7.00                          | 16.30                |                      | 0.23            | 23.55                     | 36.00            | 12.45       |
| HE80, M0 to M11 1ss              | 2        | 7.00                          | 16.30                | 16.40                | 0.23            | 26.61                     | 36.00            | 9.39        |
| HE80, M0 to M11 2ss              | 2        | 7.00                          | 16.30                | 16.40                | 0.23            | 26.61                     | 36.00            | 9.39        |
| HE80 Beam Forming, M0 to M11 1ss | 2        | 10.00                         | 16.30                | 16.40                | 0.23            | 29.61                     | 36.00            | 6.39        |
| HE80 Beam Forming, M0 to M11 2ss | 2        | 7.00                          | 16.30                | 16.40                | 0.23            | 26.61                     | 36.00            | 9.39        |
| HE80 STBC, M0 to M11 2ss         | 2        | 7.00                          | 16.30                | 16.40                | 0.23            | 26.61                     | 36.00            | 9.39        |

**Maximum EIRP – Antenna gain 7dBi – 160MHz.**

6665 MHz

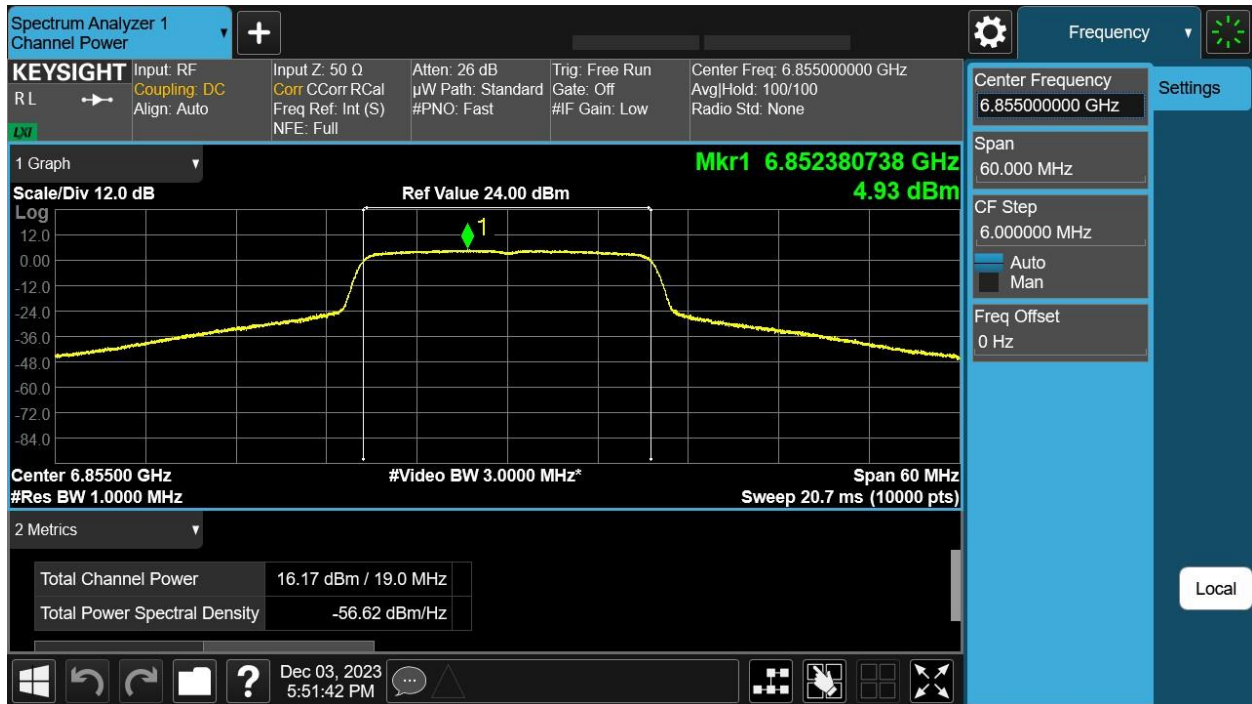
| <b>Mode</b>                       | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Max Power (dBm)</b> | <b>Tx 2 Max Power (dBm)</b> | <b>Duty Cycle (dB)</b> | <b>Total Channel Power (dBm)</b> | <b>EIRP Limit (dBm)</b> | <b>Margin (dB)</b> |
|-----------------------------------|-----------------|--------------------------------------|-----------------------------|-----------------------------|------------------------|----------------------------------|-------------------------|--------------------|
| HE160, M0 to M11 1ss              | 1               | 7.00                                 | 16.30                       |                             | 0.24                   | 23.59                            | 36.00                   | 12.41              |
| HE160, M0 to M11 1ss              | 2               | 7.00                                 | 16.30                       | 16.70                       | 0.24                   | 26.76                            | 36.00                   | 9.24               |
| HE160, M0 to M11 2ss              | 2               | 7.00                                 | 16.30                       | 16.70                       | 0.24                   | 26.76                            | 36.00                   | 9.24               |
| HE160 Beam Forming, M0 to M11 1ss | 2               | 10.00                                | 16.30                       | 16.70                       | 0.24                   | 29.76                            | 36.00                   | 6.24               |
| HE160 Beam Forming, M0 to M11 2ss | 2               | 7.00                                 | 16.30                       | 16.70                       | 0.24                   | 26.76                            | 36.00                   | 9.24               |
| HE160 STBC, M0 to M11 2ss         | 2               | 7.00                                 | 16.30                       | 16.70                       | 0.24                   | 26.76                            | 36.00                   | 9.24               |

6825 MHz

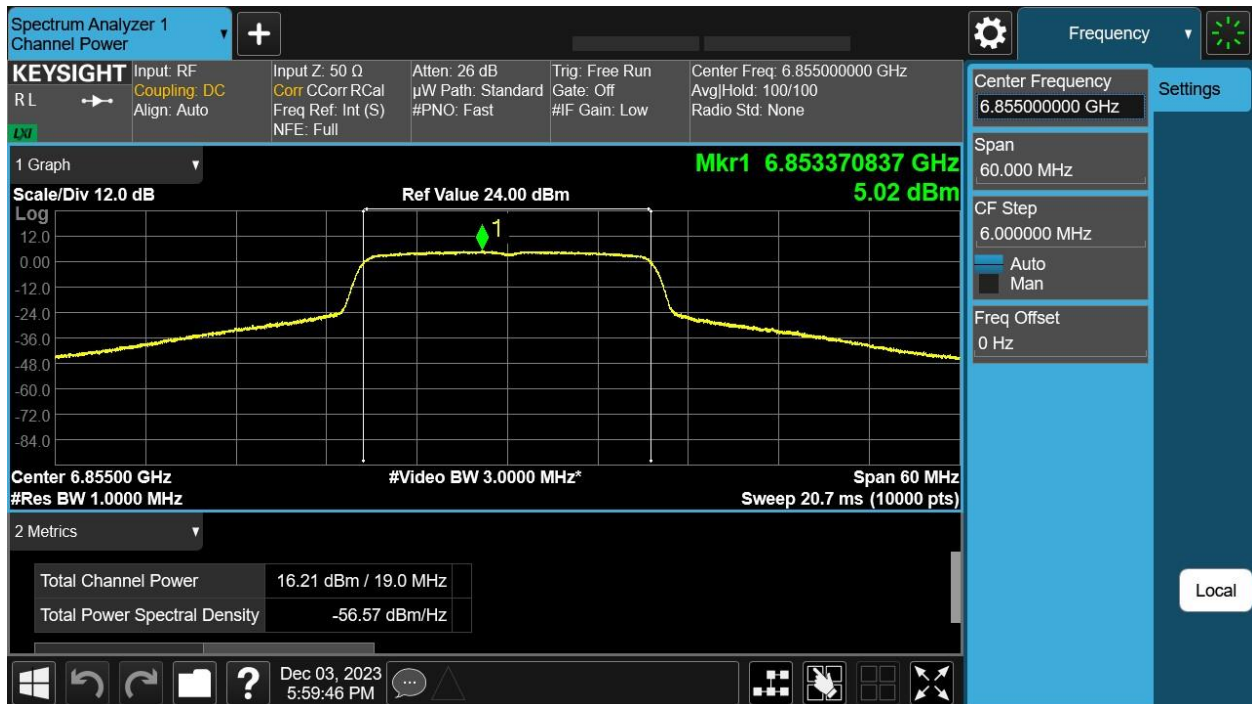
| <b>Mode</b>                              | <b>Tx Paths</b> | <b>Correlated Antenna Gain (dBi)</b> | <b>Tx 1 Max Power (dBm)</b> | <b>Tx 2 Max Power (dBm)</b> | <b>Duty Cycle (dB)</b> | <b>Total Channel Power (dBm)</b> | <b>EIRP Limit (dBm)</b> | <b>Margin (dB)</b> |
|--|-----------------|--------------------------------------|-----------------------------|-----------------------------|------------------------|----------------------------------|-------------------------|--------------------|
| HE160, M0 to M11 1ss                     | 1               | 7.00                                 | 16.80                       |                             | 0.24                   | 24.00                            | 36.00                   | 12.00              |
| HE160, M0 to M11 1ss                     | 2               | 7.00                                 | 16.80                       | 17.10                       | 0.24                   | 27.20                            | 36.00                   | 8.80               |
| HE160, M0 to M11 2ss                     | 2               | 7.00                                 | 16.80                       | 17.10                       | 0.24                   | 27.20                            | 36.00                   | 8.80               |
| <b>HE160 Beam Forming, M0 to M11 1ss</b> | <b>2</b>        | <b>10.00</b>                         | <b>16.80</b>                | <b>17.10</b>                | <b>0.24</b>            | <b>30.20</b>                     | <b>36.00</b>            | <b>5.80</b>        |
| HE160 Beam Forming, M0 to M11 2ss        | 2               | 7.00                                 | 16.80                       | 17.10                       | 0.24                   | 27.20                            | 36.00                   | 8.80               |
| HE160 STBC, M0 to M11 2ss                | 2               | 7.00                                 | 16.80                       | 17.10                       | 0.24                   | 27.20                            | 36.00                   | 8.80               |

## Data Screenshots – Antenna gain 7dBi – 20MHz.

6855 MHz: HE20 Beam Forming, M0 to M11 1ss – Antenna A

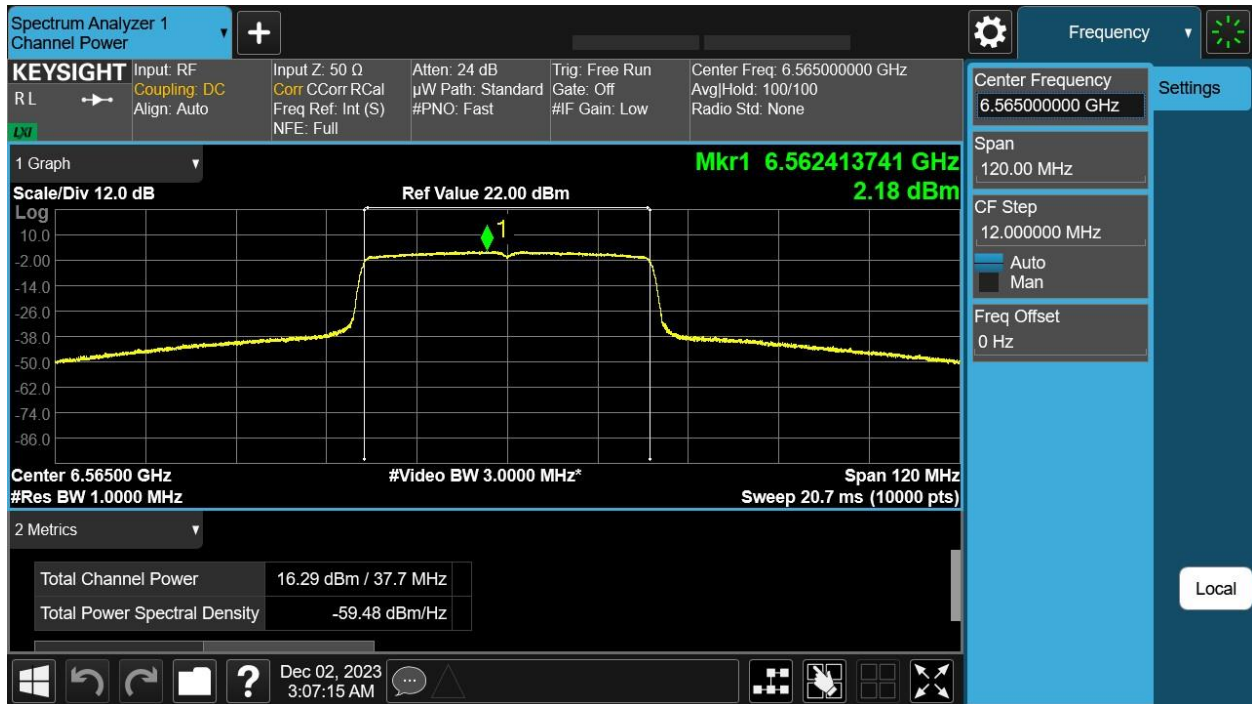


6855 MHz: HE20 Beam Forming, M0 to M11 1ss – Antenna B

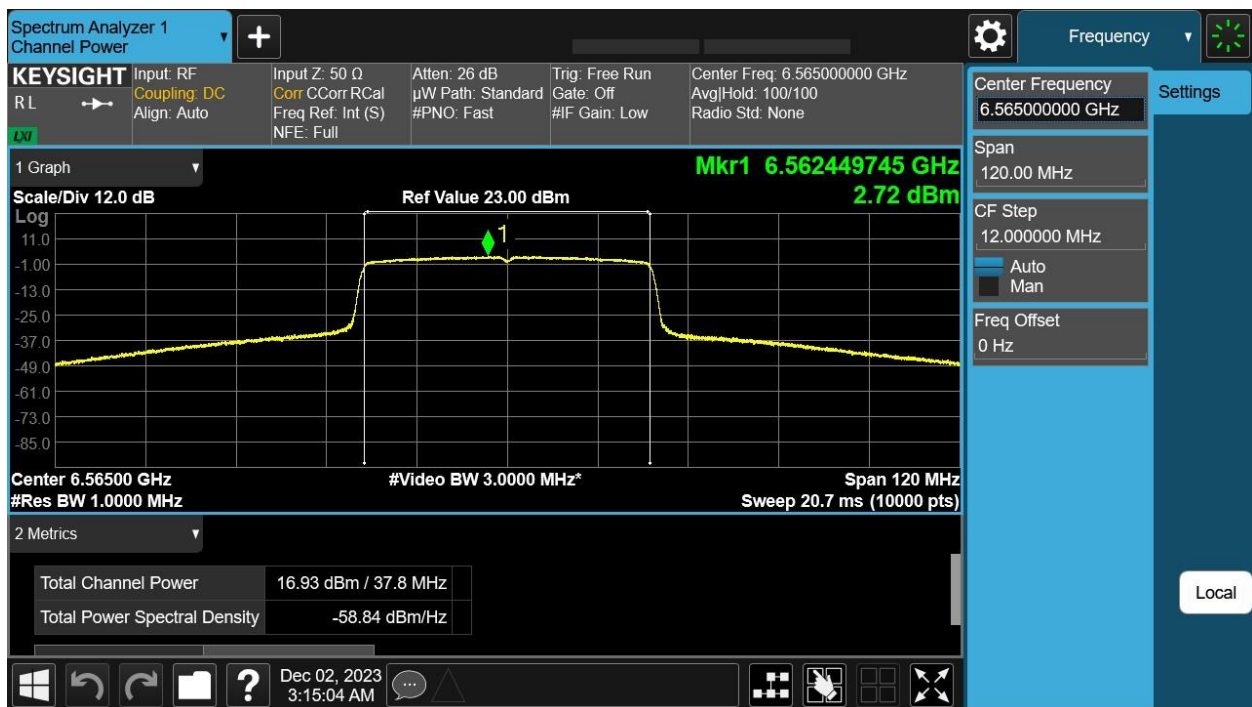


## Data Screenshots – Antenna gain 7dBi – 40MHz.

6565 MHz: HE40 Beam Forming, M0 to M11 1ss – Antenna A

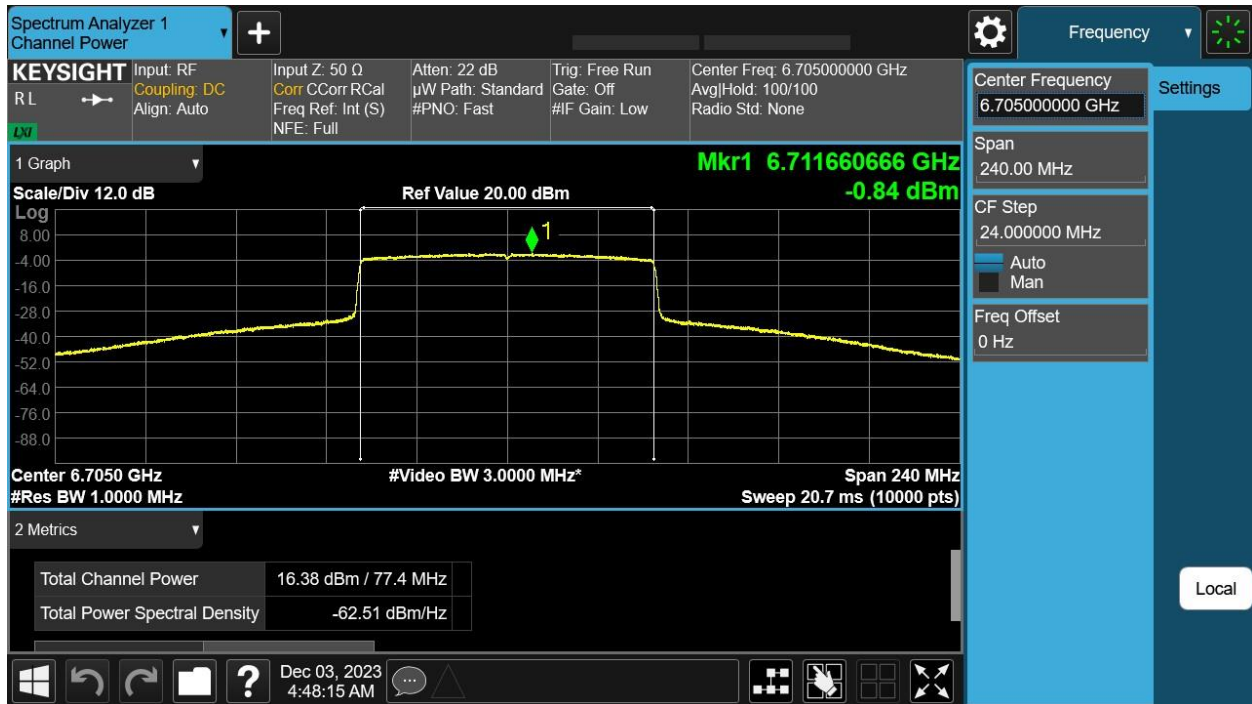


6565 MHz: HE40 Beam Forming, M0 to M11 1ss – Antenna B

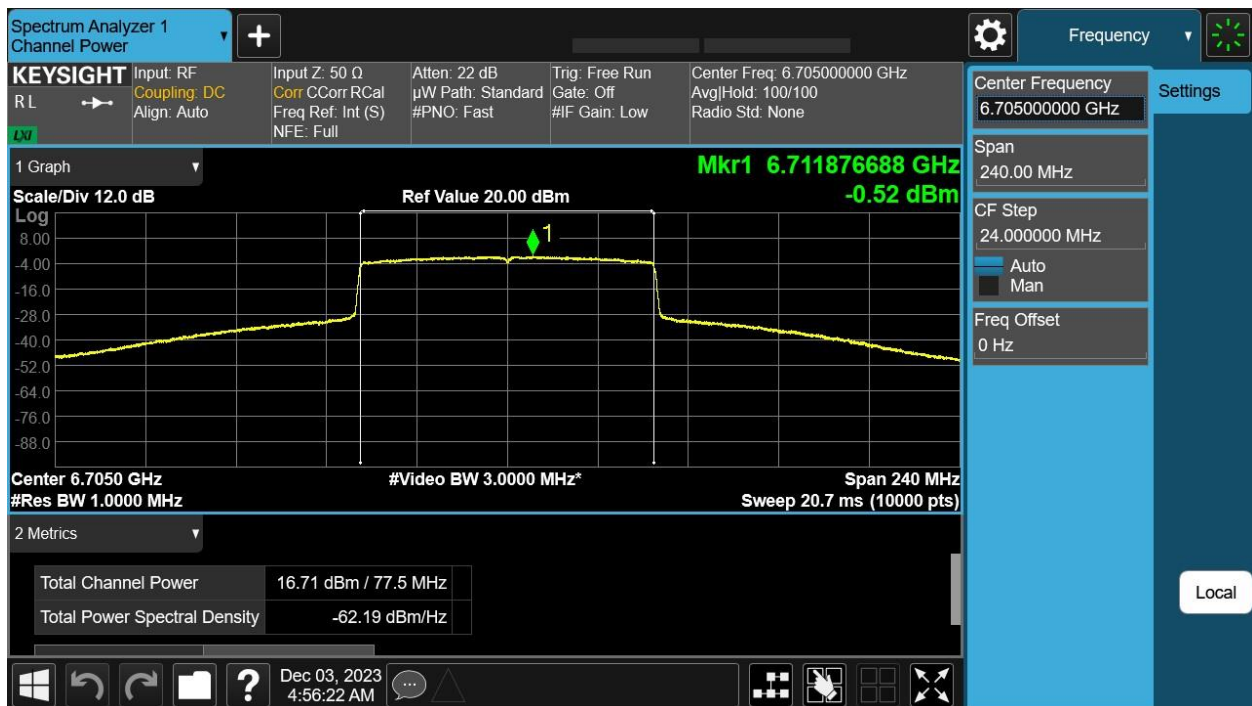


### Data Screenshots – Antenna gain 7dBi – 80MHz.

6705 MHz: HE80 Beam Forming, M0 to M11 1ss – Antenna A

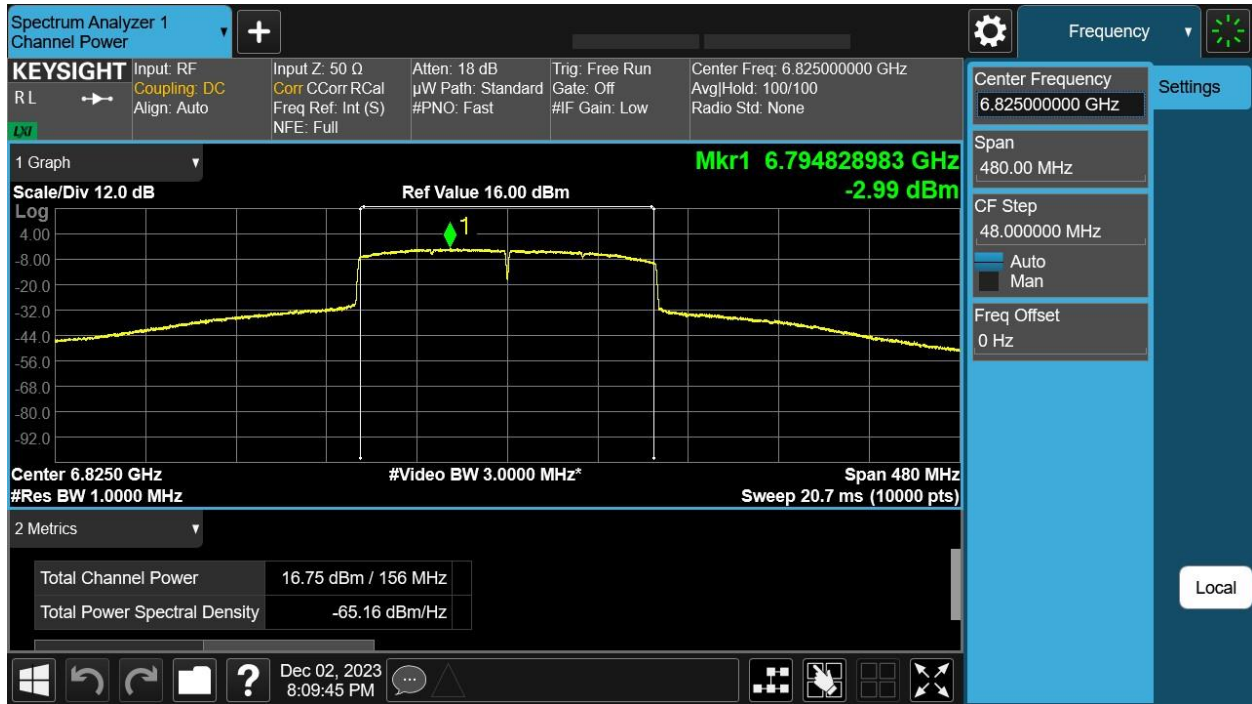


6705 MHz: HE80 Beam Forming, M0 to M11 1ss – Antenna B

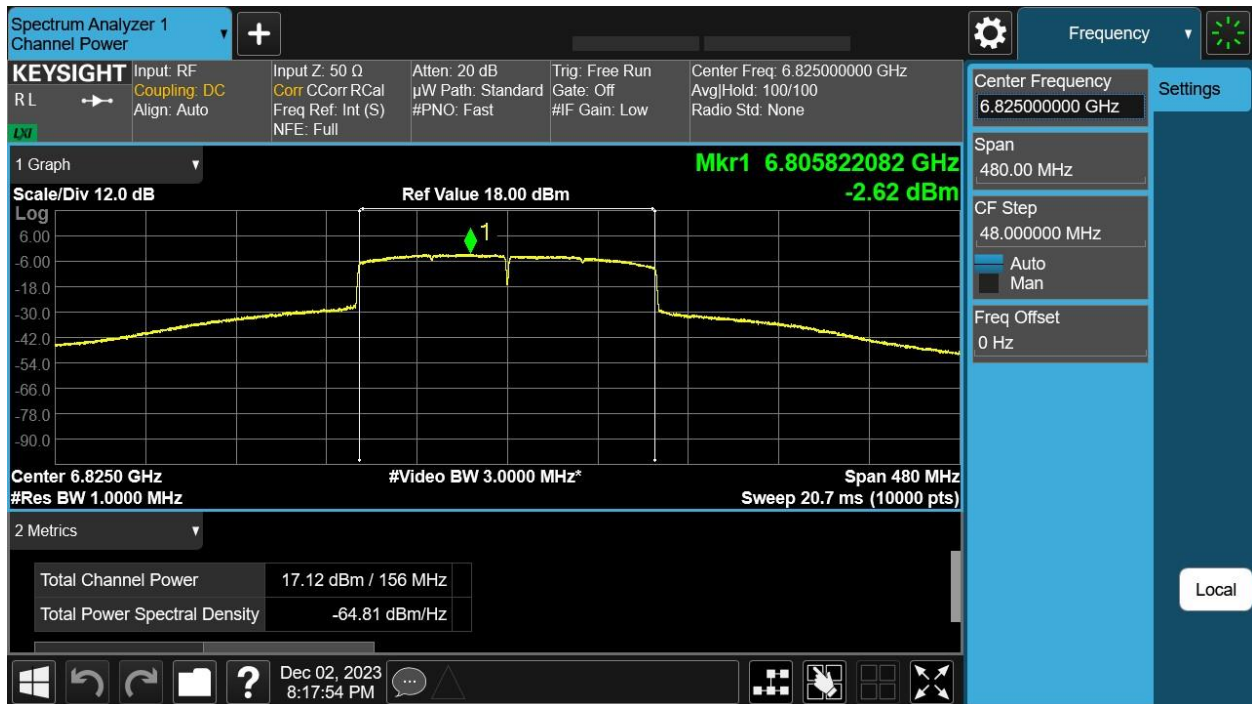


### Data Screenshots – Antenna gain 7dBi – 160MHz.

6825 MHz: HE160 Beam Forming, M0 to M11 1ss – Antenna A



6825 MHz: HE160 Beam Forming, M0 to M11 1ss – Antenna B





**Maximum Transmit Power > 30° - Antenna gain 7dBi (-4dBi) – 20MHz.**

6535 MHz

| Mode                             | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|----------------------------------|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE20, M0 to M11 1ss              | 1        | -4.00                         | 15.80                |                      | 1.03            | 12.78                     | 21.00            | 8.22        |
| HE20, M0 to M11 1ss              | 2        | -4.00                         | 15.80                | 15.40                | 1.03            | 15.60                     | 21.00            | 5.40        |
| HE20, M0 to M11 2ss              | 2        | -4.00                         | 15.80                | 15.40                | 1.03            | 15.60                     | 21.00            | 5.40        |
| HE20 Beam Forming, M0 to M11 1ss | 2        | -1.00                         | 15.80                | 15.40                | 1.03            | 18.60                     | 21.00            | 2.40        |
| HE20 Beam Forming, M0 to M11 2ss | 2        | -4.00                         | 15.80                | 15.40                | 1.03            | 15.60                     | 21.00            | 5.40        |
| HE20 STBC, M0 to M11 2ss         | 2        | -4.00                         | 15.80                | 15.40                | 1.03            | 15.60                     | 21.00            | 5.40        |

6695 MHz

| Mode                             | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|----------------------------------|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE20, M0 to M11 1ss              | 1        | -4.00                         | 16.10                |                      | 1.03            | 13.15                     | 21.00            | 7.85        |
| HE20, M0 to M11 1ss              | 2        | -4.00                         | 16.10                | 16.10                | 1.03            | 16.17                     | 21.00            | 4.83        |
| HE20, M0 to M11 2ss              | 2        | -4.00                         | 16.10                | 16.10                | 1.03            | 16.17                     | 21.00            | 4.83        |
| HE20 Beam Forming, M0 to M11 1ss | 2        | -1.00                         | 16.10                | 16.10                | 1.03            | 19.17                     | 21.00            | 1.83        |
| HE20 Beam Forming, M0 to M11 2ss | 2        | -4.00                         | 16.10                | 16.10                | 1.03            | 16.17                     | 21.00            | 4.83        |
| HE20 STBC, M0 to M11 2ss         | 2        | -4.00                         | 16.10                | 16.10                | 1.03            | 16.17                     | 21.00            | 4.83        |

6855 MHz

| Mode                                    | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|---|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE20, M0 to M11 1ss                     | 1        | -4.00                         | 16.20                |                      | 1.03            | 13.20                     | 21.00            | 7.80        |
| HE20, M0 to M11 1ss                     | 2        | -4.00                         | 16.20                | 16.20                | 1.03            | 16.23                     | 21.00            | 4.77        |
| HE20, M0 to M11 2ss                     | 2        | -4.00                         | 16.20                | 16.20                | 1.03            | 16.23                     | 21.00            | 4.77        |
| <b>HE20 Beam Forming, M0 to M11 1ss</b> | <b>2</b> | <b>-1.00</b>                  | <b>16.20</b>         | <b>16.20</b>         | <b>1.03</b>     | <b>19.23</b>              | <b>21.00</b>     | <b>1.77</b> |
| HE20 Beam Forming, M0 to M11 2ss        | 2        | -4.00                         | 16.20                | 16.20                | 1.03            | 16.23                     | 21.00            | 4.77        |
| HE20 STBC, M0 to M11 2ss                | 2        | -4.00                         | 16.20                | 16.20                | 1.03            | 16.23                     | 21.00            | 4.77        |

## Maximum Transmit Power &gt; 30° - Antenna gain 7dBi (-4dBi) – 40MHz.

6565 MHz

| Mode                                    | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|---|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE40, M0 to M11 1ss                     | 1        | -4.00                         | 16.30                |                      | 0.13            | 12.42                     | 21.00            | 8.58        |
| HE40, M0 to M11 1ss                     | 2        | -4.00                         | 16.30                | 16.90                | 0.13            | 15.76                     | 21.00            | 5.24        |
| HE40, M0 to M11 2ss                     | 2        | -4.00                         | 16.30                | 16.90                | 0.13            | 15.76                     | 21.00            | 5.24        |
| <b>HE40 Beam Forming, M0 to M11 1ss</b> | <b>2</b> | <b>-1.00</b>                  | <b>16.30</b>         | <b>16.90</b>         | <b>0.13</b>     | <b>18.76</b>              | <b>21.00</b>     | <b>2.24</b> |
| HE40 Beam Forming, M0 to M11 2ss        | 2        | -4.00                         | 16.30                | 16.90                | 0.13            | 15.76                     | 21.00            | 5.24        |
| HE40 STBC, M0 to M11 2ss                | 2        | -4.00                         | 16.30                | 16.90                | 0.13            | 15.76                     | 21.00            | 5.24        |

6685 MHz

| Mode                             | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|----------------------------------|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE40, M0 to M11 1ss              | 1        | -4.00                         | 16.20                |                      | 0.13            | 12.32                     | 21.00            | 8.68        |
| HE40, M0 to M11 1ss              | 2        | -4.00                         | 16.20                | 16.40                | 0.13            | 15.45                     | 21.00            | 5.55        |
| HE40, M0 to M11 2ss              | 2        | -4.00                         | 16.20                | 16.40                | 0.13            | 15.45                     | 21.00            | 5.55        |
| HE40 Beam Forming, M0 to M11 1ss | 2        | -1.00                         | 16.20                | 16.40                | 0.13            | 18.45                     | 21.00            | 2.55        |
| HE40 Beam Forming, M0 to M11 2ss | 2        | -4.00                         | 16.20                | 16.40                | 0.13            | 15.45                     | 21.00            | 5.55        |
| HE40 STBC, M0 to M11 2ss         | 2        | -4.00                         | 16.20                | 16.40                | 0.13            | 15.45                     | 21.00            | 5.55        |

6845 MHz

| Mode                             | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|----------------------------------|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE40, M0 to M11 1ss              | 1        | -4.00                         | 16.20                |                      | 0.13            | 12.32                     | 21.00            | 8.68        |
| HE40, M0 to M11 1ss              | 2        | -4.00                         | 16.20                | 16.30                | 0.13            | 15.40                     | 21.00            | 5.60        |
| HE40, M0 to M11 2ss              | 2        | -4.00                         | 16.20                | 16.30                | 0.13            | 15.40                     | 21.00            | 5.60        |
| HE40 Beam Forming, M0 to M11 1ss | 2        | -1.00                         | 16.20                | 16.30                | 0.13            | 18.40                     | 21.00            | 2.60        |
| HE40 Beam Forming, M0 to M11 2ss | 2        | -4.00                         | 16.20                | 16.30                | 0.13            | 15.40                     | 21.00            | 5.60        |
| HE40 STBC, M0 to M11 2ss         | 2        | -4.00                         | 16.20                | 16.30                | 0.13            | 15.40                     | 21.00            | 5.60        |

**Maximum Transmit Power > 30° - Antenna gain 7dBi (-4dBi) – 80MHz.**

6625 MHz

| Mode                                    | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|---|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE80, M0 to M11 1ss                     | 1        | -4.00                         | 16.30                |                      | 0.23            | 12.54                     | 21.00            | 8.46        |
| HE80, M0 to M11 1ss                     | 2        | -4.00                         | 16.30                | 16.60                | 0.23            | 15.70                     | 21.00            | 5.30        |
| HE80, M0 to M11 2ss                     | 2        | -4.00                         | 16.30                | 16.60                | 0.23            | 15.70                     | 21.00            | 5.30        |
| <b>HE80 Beam Forming, M0 to M11 1ss</b> | <b>2</b> | <b>-1.00</b>                  | <b>16.30</b>         | <b>16.60</b>         | <b>0.23</b>     | <b>18.70</b>              | <b>21.00</b>     | <b>2.30</b> |
| HE80 Beam Forming, M0 to M11 2ss        | 2        | -4.00                         | 16.30                | 16.60                | 0.23            | 15.70                     | 21.00            | 5.30        |
| HE80 STBC, M0 to M11 2ss                | 2        | -4.00                         | 16.30                | 16.60                | 0.23            | 15.70                     | 21.00            | 5.30        |

6705 MHz

| Mode                                    | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | Limit (dBm)  | Margin (dB) |
|---|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|--------------|-------------|
| HE80, M0 to M11 1ss                     | 1        | -4.00                         | 16.40                |                      | 0.23            | 12.61                     | 21.00        | 8.39        |
| HE80, M0 to M11 1ss                     | 2        | -4.00                         | 16.40                | 16.70                | 0.23            | 15.79                     | 21.00        | 5.21        |
| HE80, M0 to M11 2ss                     | 2        | -4.00                         | 16.40                | 16.70                | 0.23            | 15.79                     | 21.00        | 5.21        |
| <b>HE80 Beam Forming, M0 to M11 1ss</b> | <b>2</b> | <b>-1.00</b>                  | <b>16.40</b>         | <b>16.70</b>         | <b>0.23</b>     | <b>18.79</b>              | <b>21.00</b> | <b>2.21</b> |
| HE80 Beam Forming, M0 to M11 2ss        | 2        | -4.00                         | 16.40                | 16.70                | 0.23            | 15.79                     | 21.00        | 5.21        |
| HE80 STBC, M0 to M11 2ss                | 2        | -4.00                         | 16.40                | 16.70                | 0.23            | 15.79                     | 21.00        | 5.21        |

6865 MHz

| Mode                             | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Duty Cycle (dB) | Total Channel Power (dBm) | EIRP Limit (dBm) | Margin (dB) |
|----------------------------------|----------|-------------------------------|----------------------|----------------------|-----------------|---------------------------|------------------|-------------|
| HE80, M0 to M11 1ss              | 1        | -4.00                         | 16.30                |                      | 0.23            | 12.55                     | 21.00            | 8.45        |
| HE80, M0 to M11 1ss              | 2        | -4.00                         | 16.30                | 16.40                | 0.23            | 15.61                     | 21.00            | 5.39        |
| HE80, M0 to M11 2ss              | 2        | -4.00                         | 16.30                | 16.40                | 0.23            | 15.61                     | 21.00            | 5.39        |
| HE80 Beam Forming, M0 to M11 1ss | 2        | -1.00                         | 16.30                | 16.40                | 0.23            | 18.61                     | 21.00            | 2.39        |
| HE80 Beam Forming, M0 to M11 2ss | 2        | -4.00                         | 16.30                | 16.40                | 0.23            | 15.61                     | 21.00            | 5.39        |
| HE80 STBC, M0 to M11 2ss         | 2        | -4.00                         | 16.30                | 16.40                | 0.23            | 15.61                     | 21.00            | 5.39        |