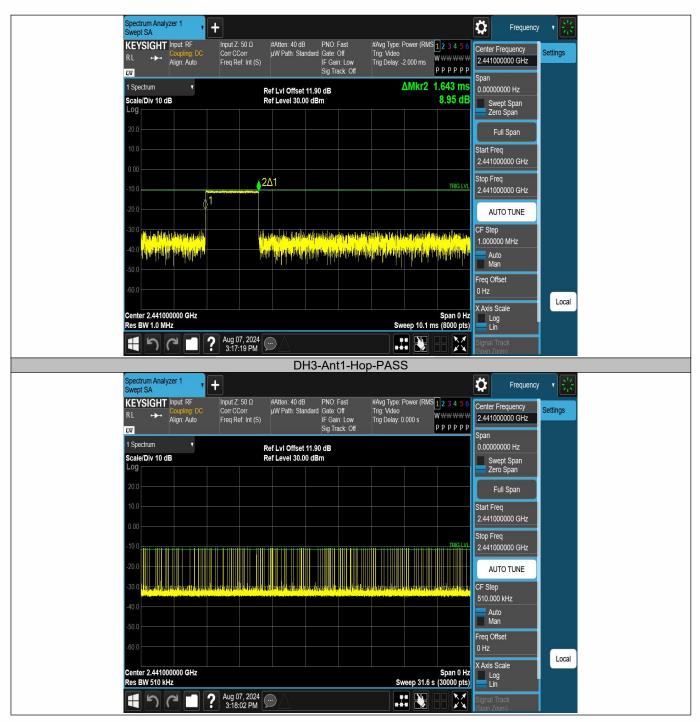


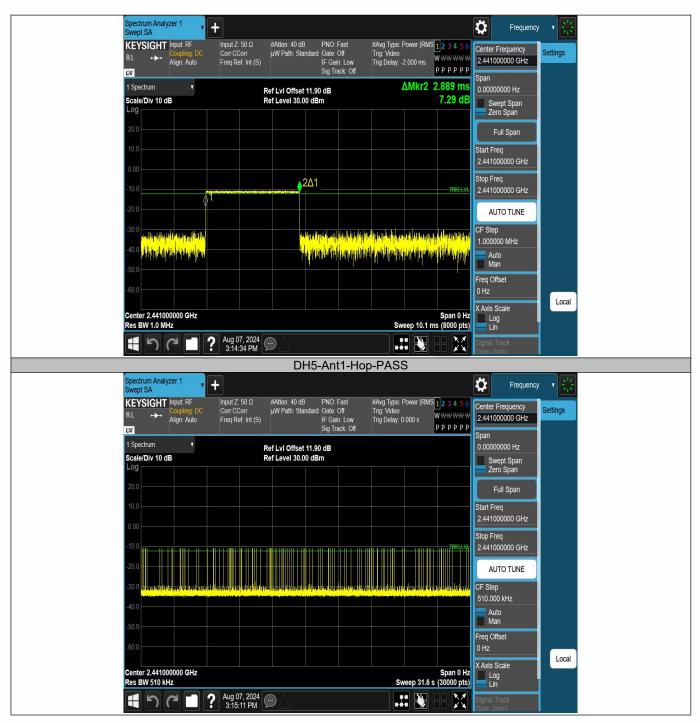
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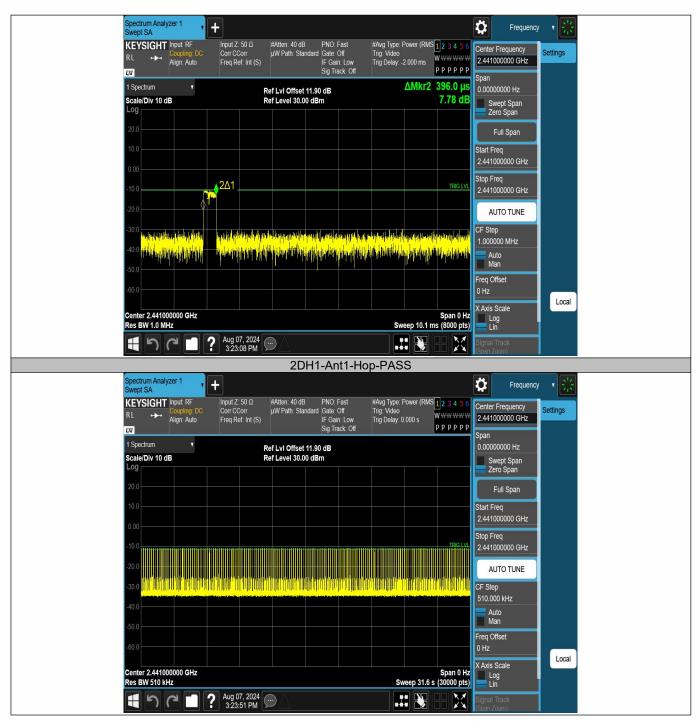
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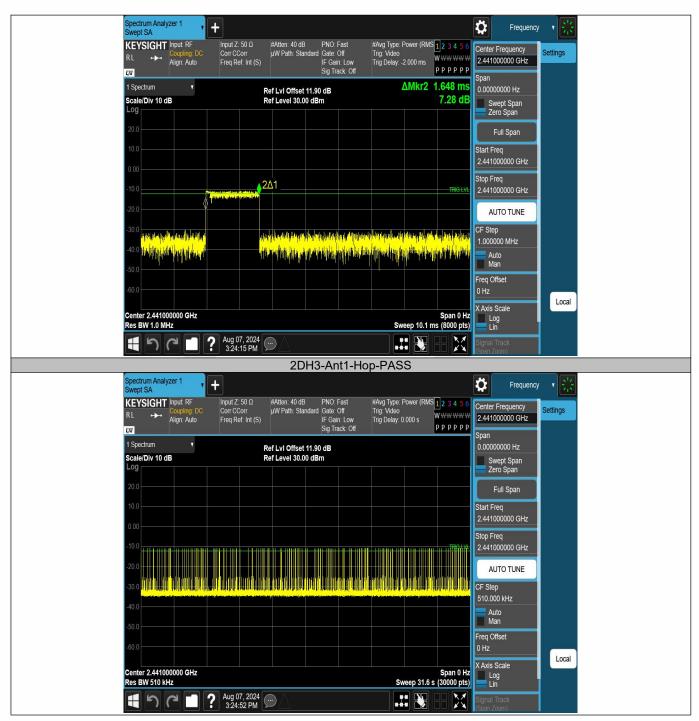






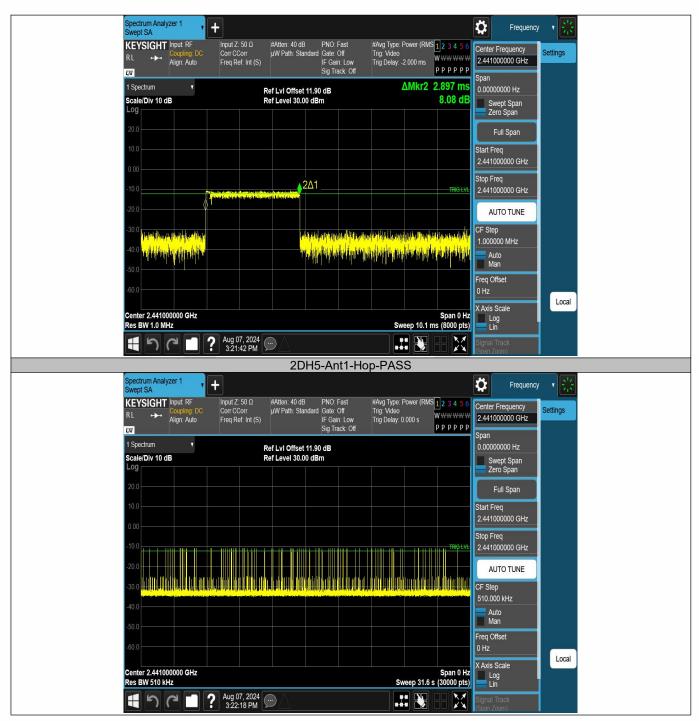






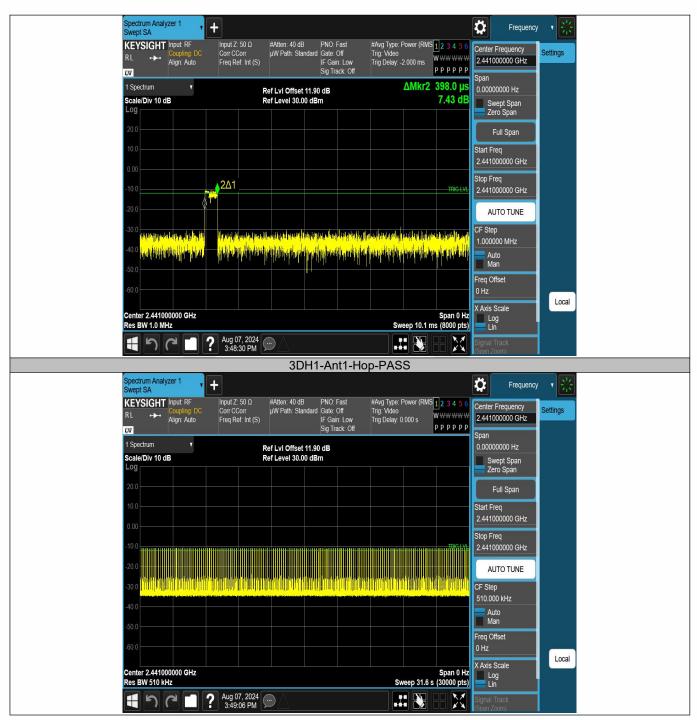






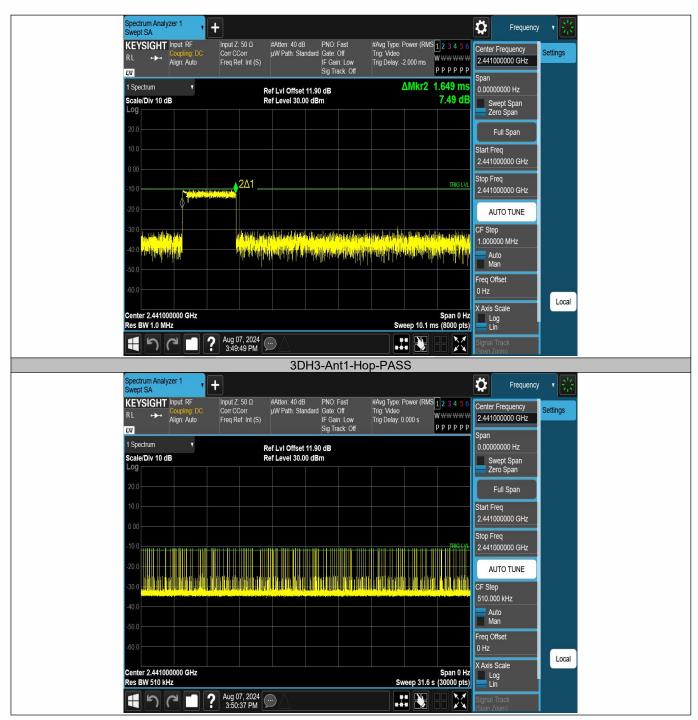






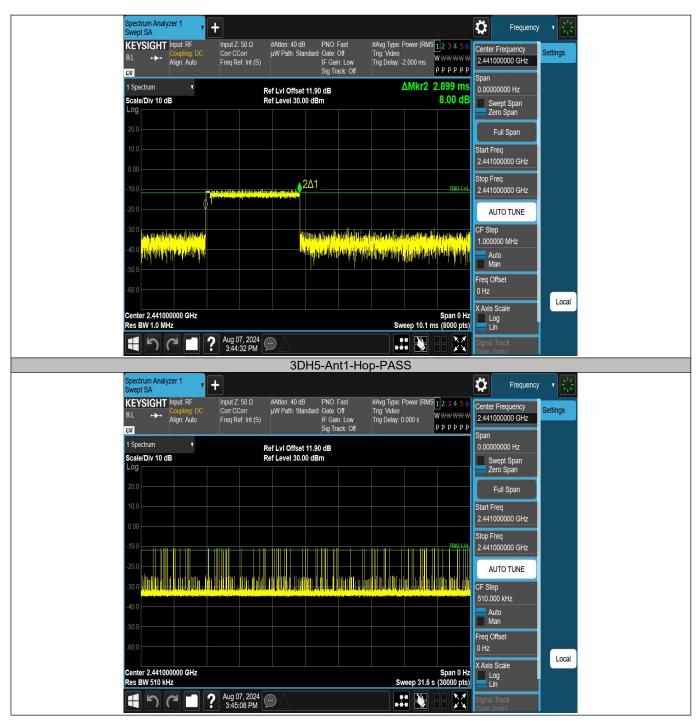














# 9.5 MAXIMUM PEAK CONDUCTED OUTPUT POWER

#### 9.5.1 **Applicable Standard**

According to FCC Part 15.247(b)(1) and KDB 558074 D01 15.247 MEAS GUIDANCE v05r02 According to IC RSS-247.5.4 and RSS-Gen 6.12

#### 9.5.2 **Conformance Limit**

The max For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

#### 9.5.3 **Test Configuration**

Test according to clause 7.1 radio frequency test setup 1

#### 9.5.4 **Test Procedure**

As an alternative to a peak power measurement, compliance with the limit can be based on a measurement of the maximum conducted output power.

Use the following spectrum analyzer settings:

Set Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel (about 8MHz)

Set RBW > the 20 dB bandwidth of the emission being measured (about 3MHz)

Set VBW ≥ RBW

Set Sweep = auto

Set Detector function = peak

Set Trace = max hold

Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission to determine the peak amplitude level.

### **Test Results**

Temperature:	25° C
Relative Humidity:	45%
ATM Pressure:	1011 mbar

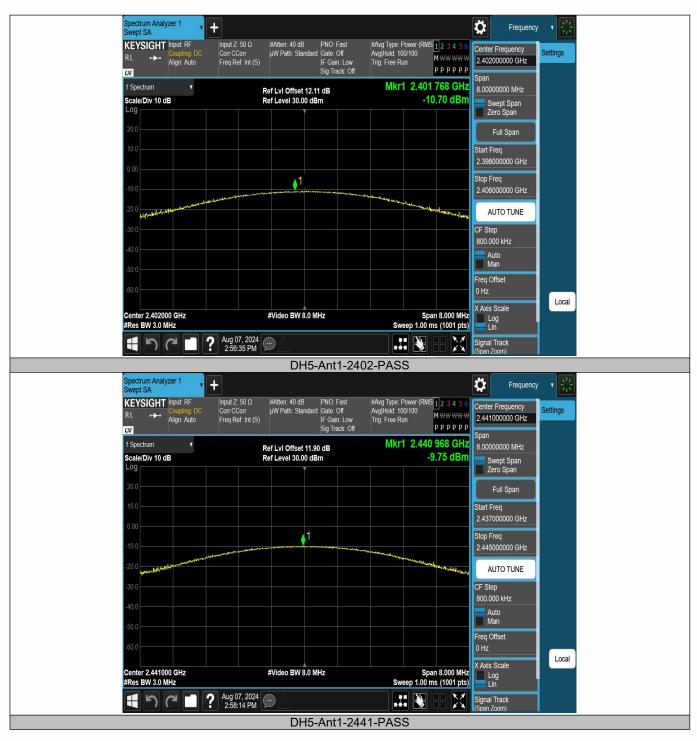
Note: N/A

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	-10.70	≤20.97	PASS
DH5	Ant1	2441	-9.75	≤20.97	PASS
DH5	Ant1	2480	-9.70	≤20.97	PASS
2DH5	Ant1	2402	-10.36	≤20.97	PASS
2DH5	Ant1	2441	-9.31	≤20.97	PASS
2DH5	Ant1	2480	-9.73	≤20.97	PASS
3DH5	Ant1	2402	-10.09	≤20.97	PASS
3DH5	Ant1	2441	-8.97	≤20.97	PASS
3DH5	Ant1	2480	-9.40	≤20.97	PASS

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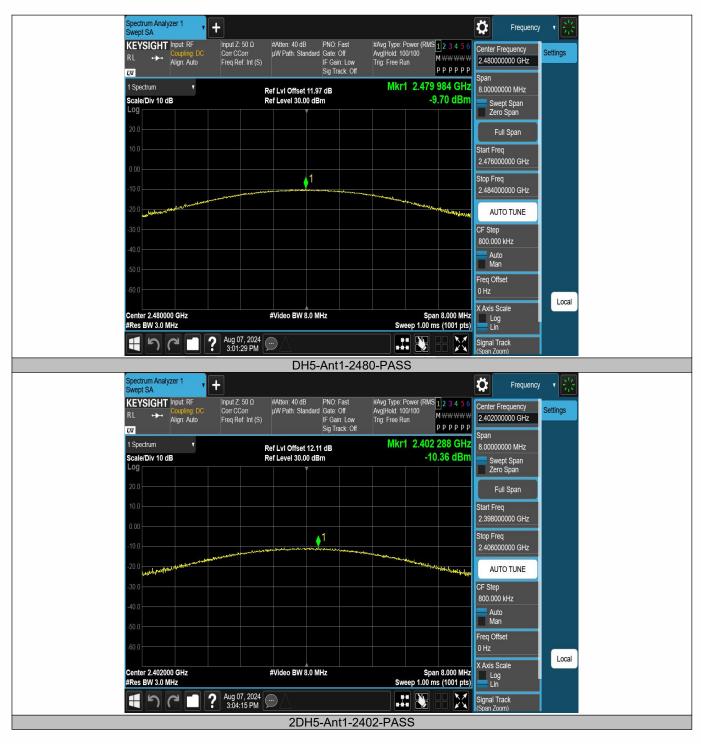






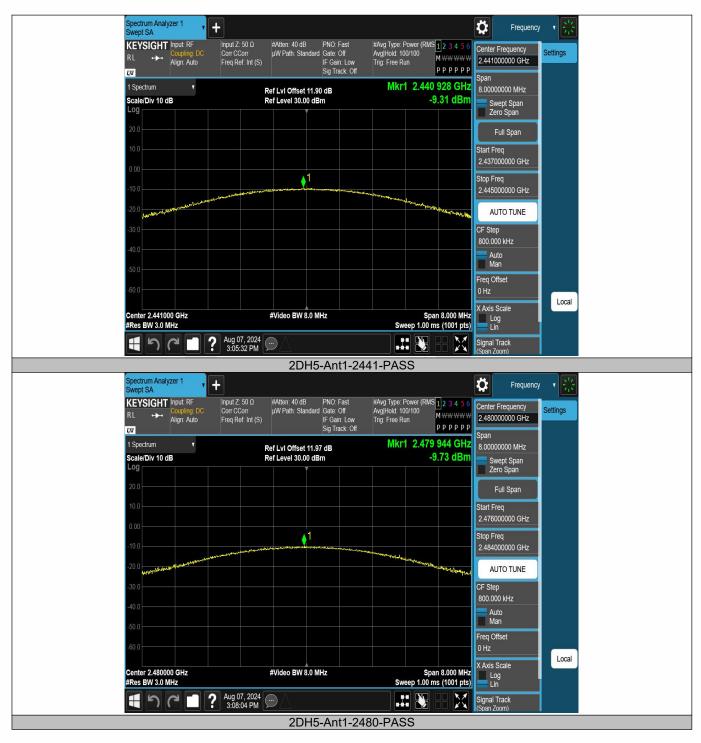










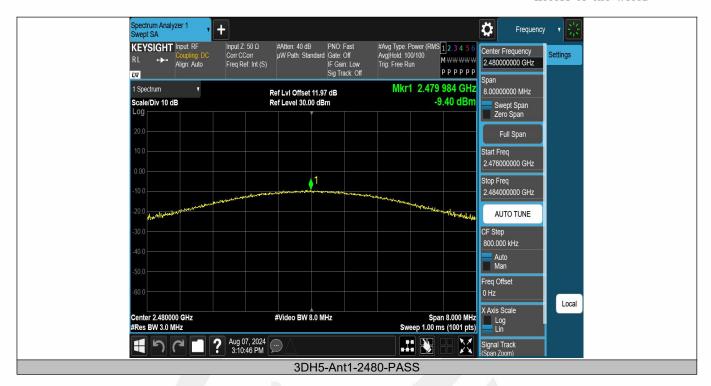














# 9.6 CONDUCTED SUPRIOUS EMISSION

#### 9.6.1 **Applicable Standard**

According to FCC Part 15.247(d) and KDB 558074 D01 15.247 MEAS GUIDANCE v05r02 According to IC RSS-247 5.5

#### 9.6.2 **Conformance Limit**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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, provided the transmitter demonstrates compliance with the peak conducted power limits.

#### 9.6.3 **Test Configuration**

Test according to clause 7.1 radio frequency test setup 1

#### 9.6.4 **Test Procedure**

The transmitter output (antenna port) was connected to the spectrum analyzer

# **Reference level measurement**

Establish a reference level by using the following procedure:

Set instrument center frequency to DSS channel center frequency.

Set Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel.

Set the RBW = 100 kHz. Set the VBW  $\ge$  3 x RBW.

Set Detector = peak. Set Sweep time = auto couple.

Set Trace mode = max hold. Allow trace to fully stabilize.

Use the peak marker function to determine the maximum Maximum conduceted level.

Note that the channel found to contain the maximum conduceted level can be used to establish the reference level.

#### Band-edge measurement

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the emission operating on the channel closest to the band-edge, as well as any modulation products which fall outside of the authorized band of operation

Set RBW  $\geq$  1% of the span=100kHz Set VBW  $\geq$  3 x RBW

Set Sweep = auto Set Detector function = peak Set Trace = max hold

Allow the trace to stabilize. Set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. The marker-delta value now displayed must comply with the limit specified in this Section.

Now, using the same instrument settings, enable the hopping function of the EUT. Allow the trace to stabilize. Follow the same procedure listed above to determine if any spurious emissions caused by the hopping function also comply with the specified limit.

### **Emission level measurement**

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic.(30MHz to 25GHz). Set RBW = Set VBW ≥ RBW 100 kHz

Set Sweep = auto Set Detector function = peak Set Trace = max hold

Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this Section.



#### 9.6.5 Test Results

Temperature:	25°C
Relative Humidity:	45%
ATM Pressure:	1011 mbar

### Note: N/A

All the antenna and modes mode have been tested, and the worst result recorded was report as below:

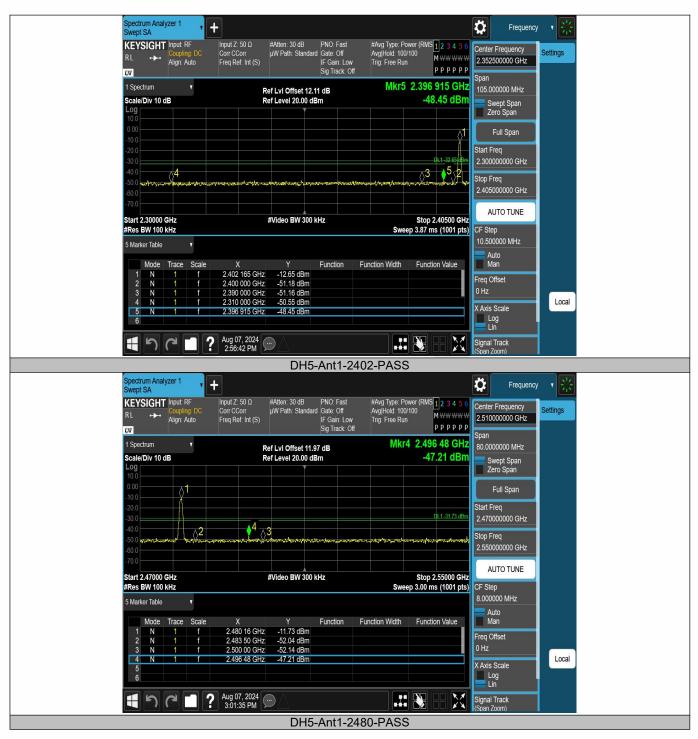
Band edge measurements

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict	
DH5	Ant1	Low	2402	-12.65	-48.46	≤-32.65	PASS	ĺ
DH5	Ant1	High	2480	-11.73	-47.21	≤-31.73	PASS	
DH5	Ant1	Low	Hop_2402	-13.05	-47.29	≤-33.05	PASS	
DH5	Ant1	High	Hop_2480	-11.93	-47.29	≤-31.93	PASS	Ĺ

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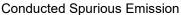


pectrum Analyzer 1 wept SA Ö + Frequency #Atten: 30 dB PNO: Fast µW Path: Standard Gate: Off IF Gain: Low Sig Track: Off Input Z: 50 Ω Corr CCorr KEYSIGHT Input: RF #Avg Type: Power (RMS 1 2 3 4 5 ( Center Frequency Avg|Hold: 1000/1000 Trig: Free Run Settings Align: Auto MWWWW Freq Ref: Int (S) 2.352500000 GHz рррррр L)(I Span Mkr5 2.339 060 GHz 1 Spectrum 105.000000 MHz V Ref LvI Offset 11.87 dB Ref Level 20.00 dBm Scale/Div 10 dB -47.29 dBm Swept Span Zero Span Full Span Start Freq DL1 33.05 2.30000000 GHz 15 **∂**3 ∖4 0<sup>2</sup> Stop Freq 2.405000000 GHz AUTO TUNE Start 2.30000 GHz #Video BW 300 kHz Stop 2.40500 GHz #Res BW 100 kHz Sweep 3.87 ms (1001 pts) CF Step 10.500000 MHz 5 Marker Table ۲ Auto Man Trace Scale V Function Function Width Function Value Mode -13.05 dBm -50.04 dBm -49.09 dBm -49.51 dBm 2.405 000 GHz 2.400 000 GHz 2.390 000 GHz 2.310 000 GHz NNN Freq Offset Local X Axis Scale N 2.339 060 GHz -47.29 dBm Log Lin 4ug 07, 2024 💭 X Signal Track Span Zoor DH5-Ant1-Hop 2402-PASS Spectrum Analyzer 1 Swept SA + Ö Frequency #Atten: 30 dB PNO: Fast µW Path: Standard Gate: Off IF Gain: Low Sig Track: Off Input Z: 50 Ω #Avg Type: Power (RMS 1 2 3 4 5 ( Avg|Hold: 1000/1000 Trig: Free Run KEYSIGHT Input: RF Center Frequency Settings Align: Auto Freq Ref: Int (S) 2.510000000 GHz рррррр DA Span Mkr4 2.510 48 GHz 1 Spectrum ۲ Ref LvI Offset 11.94 dB 80.000000 MHz -47.28 dBm Scale/Div 10 dB Ref Level 20.00 dBm Swept Span Zero Span Full Span ≬1 YANAAAAA Start Freq DL1-31.93 dE 2.470000000 GHz 4 **∆**3 02 Stop Freq 2.550000000 GHz AUTO TUNE Stop 2.55000 GHz Sweep 3.00 ms (1001 pts) CF Step Start 2.47000 GHz #Res BW 100 kHz #Video BW 300 kHz . 8.000000 MHz 5 Marker Table ۷ Auto Man Function Function Width Function Value Trace Scale Mode -11.93 dBm -48.01 dBm -48.30 dBm 2.474 00 GHz NNN Freg Offset 2.483 50 GHz 2.500 00 GHz Local -47.28 dBn Ν 2.510 48 GHz X Axis Scale 5 Log Lin モッマー? Aug 07, 2024 🗩 3:18:26 PM X Signal Track (Span Zoom) DH5-Ant1-Hop 2480-PASS

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#### RefLevel Result FreqRange Limit TestMode Antenna Frequency[MHz] Verdict [MHz] [dBm] [dBm] [dBm] DH5 Ant1 2402 0~Reference -13.12 -13.12 PASS ---DH5 Ant1 2402 30~1000 -13.12 -60.41 ≤-33.12 PASS DH5 Ant1 2402 1000~26500 -13.12 -50.06 ≤-33.12 PASS DH5 Ant1 2441 0~Reference -11.74 -11.74 PASS \_\_\_ DH5 2441 30~1000 -11.74 ≤-31.74 PASS Ant1 -61.31 DH5 Ant1 2441 1000~26500 -11.74 -50.07 ≤-31.74 PASS DH5 Ant1 2480 0~Reference -12.20 -12.20 PASS ---DH5 Ant1 2480 30~1000 -12.20 -60.42 ≤-32.2 PASS DH5 Ant1 2480 1000~26500 -12.20 -49.97 ≤-32.2 PASS





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