

FCC ID: 2A64B-WG891
IC: 28593-WG891

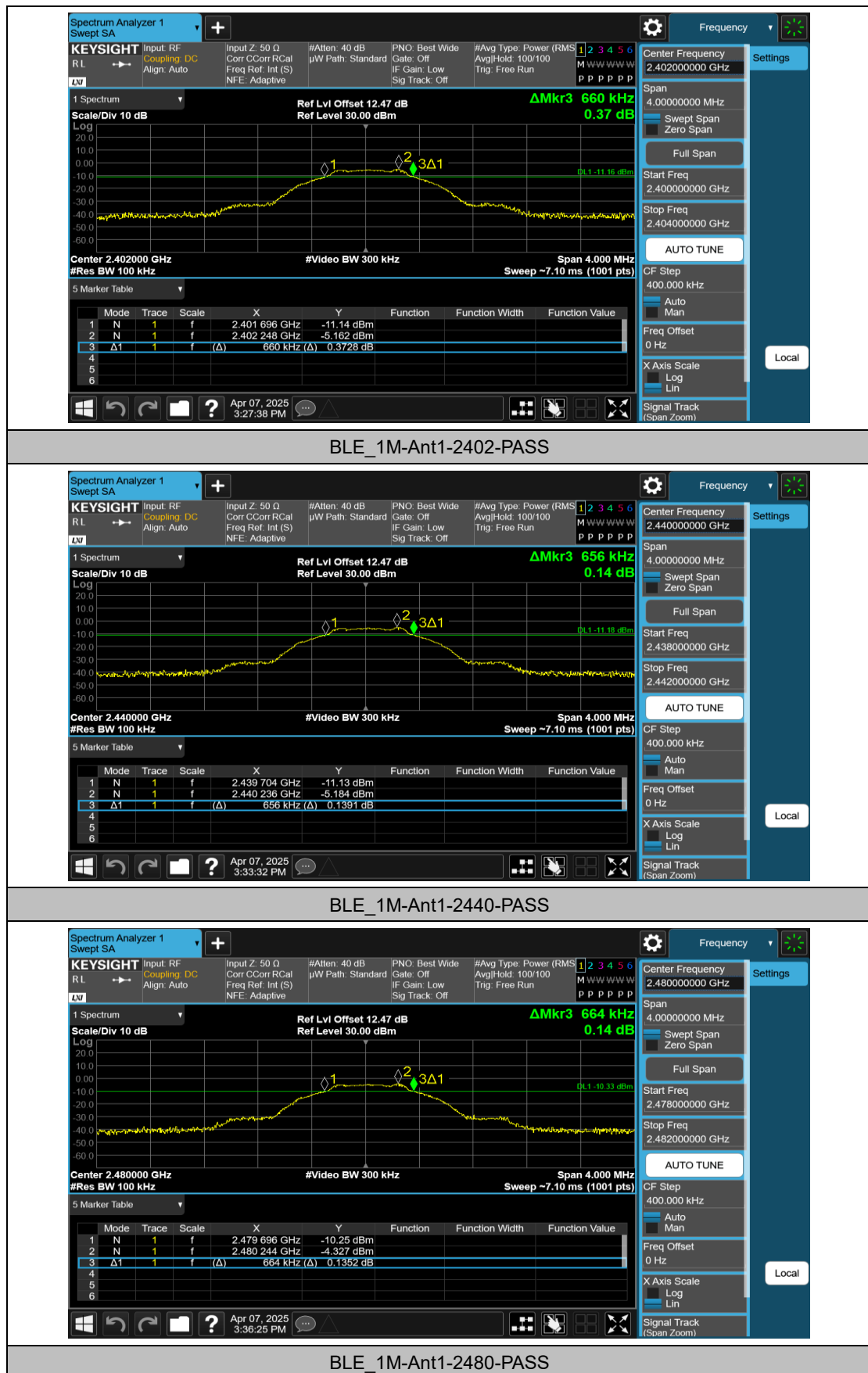
Appendix A of 2504B0012SHA-001

DTS Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.660	2401.696	2402.356	0.5	PASS
BLE_1M	Ant1	2440	0.656	2439.704	2440.360	0.5	PASS
BLE_1M	Ant1	2480	0.664	2479.696	2480.360	0.5	PASS

Test Graphs



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Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0862	2401.4845	2402.5707	---	---
BLE_1M	Ant1	2440	1.0978	2439.4776	2440.5754	---	---
BLE_1M	Ant1	2480	1.1046	2479.4758	2480.5804	---	---

Test Graphs



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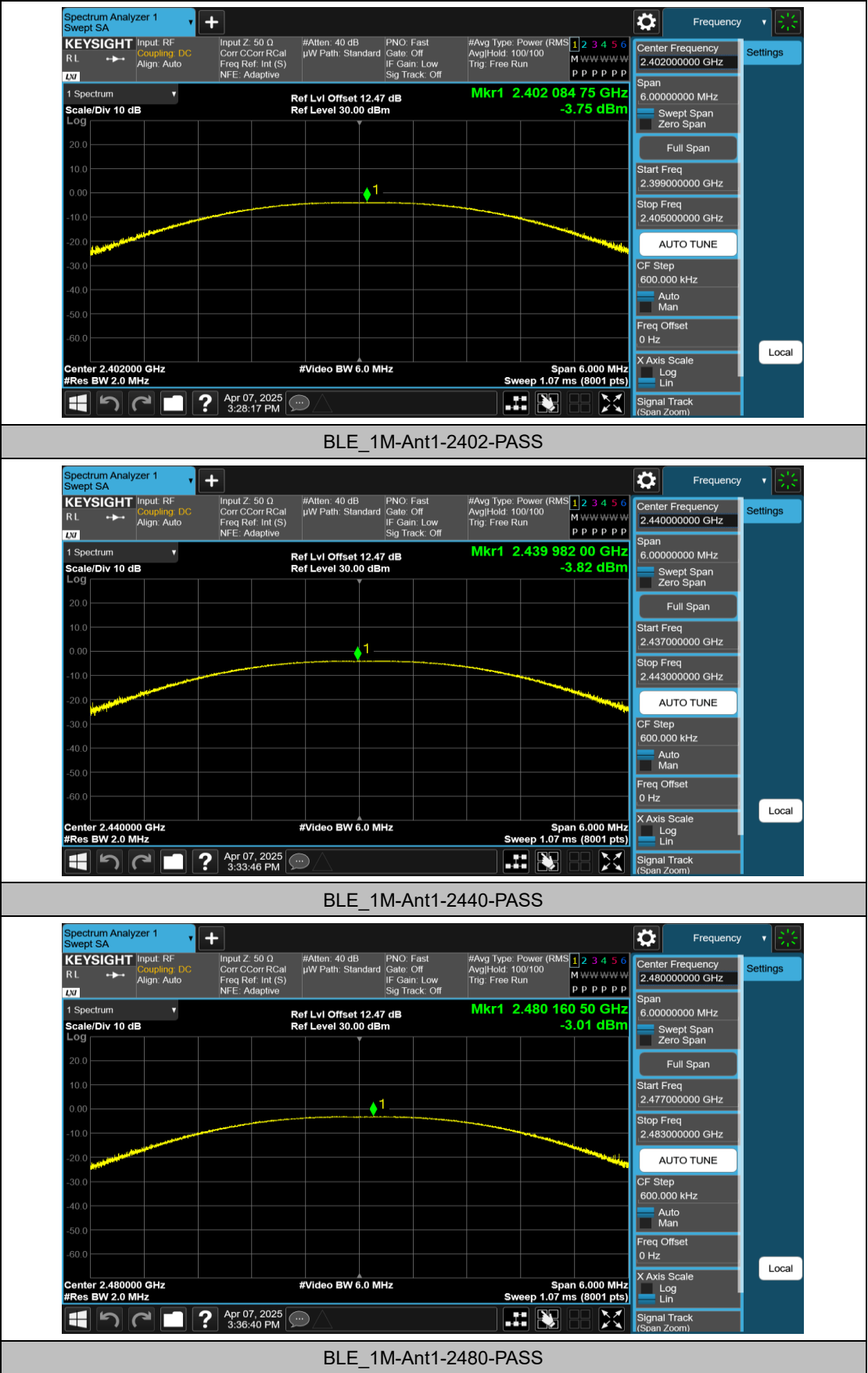
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Maximum conducted output power

Test Result Peak

TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-3.75	≤30	-4.46	≤36	PASS
BLE_1M	Ant1	2440	-3.82	≤30	-4.53	≤36	PASS
BLE_1M	Ant1	2480	-3.01	≤30	-3.72	≤36	PASS

Test Graphs Peak



BLE_1M-Ant1-2402-PASS

Spectrum Analyzer 1

Swept SA

KEYSIGHT

Input: RF

Coupling: DC

Align: Auto

Input Z: 50 Ω

Corr: CCorr RCal

Freq Ref: Int (S)

NFE: Adaptive

#Atten: 40 dB

μ W Path: Standard

PNO: Fast

Gate: Off

IF Gain: Low

Sig Track: Off

#Avg Type: Power (RMS)

Avg/Hold: 100/100

Trig: Free Run

1 2 3 4 5 6

M W W W W W

P P P P P P

Center Frequency

2.440000000 GHz

Span

6.000000000 MHz

Swept Span

Zero Span

Full Span

Start Freq

2.437000000 GHz

Stop Freq

2.443000000 GHz

AUTO TUNE

CF Step

600.000 kHz

Auto

Man

Freq Offset

0 Hz

X Axis Scale

Log

Lin

Signal Track

(Span Zoom)

Local

1 Spectrum

Scale/Div 10 dB

Log

Ref Lvl Offset 12.47 dB

Ref Level 30.00 dBm

Mkr1 2.439 982 00 GHz

-3.82 dBm

Center 2.440000 GHz

#Res BW 2.0 MHz

#Video BW 6.0 MHz

Span 6.000 MHz

Sweep 1.07 ms (8001 pts)

Apr 07, 2025

3:33:46 PM

BLE_1M-Ant1-2440-PASS

Spectrum Analyzer 1

Swept SA

KEYSIGHT

Input: RF

Coupling: DC

Align: Auto

Input Z: 50 Ω

Corr: CCorr RCal

Freq Ref: Int (S)

NFE: Adaptive

#Atten: 40 dB

μ W Path: Standard

PNO: Fast

Gate: Off

IF Gain: Low

Sig Track: Off

#Avg Type: Power (RMS)

Avg/Hold: 100/100

Trig: Free Run

1 2 3 4 5 6

M W W W W W

P P P P P P

Center Frequency

2.480000000 GHz

Span

6.000000000 MHz

Swept Span

Zero Span

Full Span

Start Freq

2.477000000 GHz

Stop Freq

2.483000000 GHz

AUTO TUNE

CF Step

600.000 kHz

Auto

Man

Freq Offset

0 Hz

X Axis Scale

Log

Lin

Signal Track

(Span Zoom)

Local

1 Spectrum

Scale/Div 10 dB

Log

Ref Lvl Offset 12.47 dB

Ref Level 30.00 dBm

Mkr1 2.480 160 50 GHz

-3.01 dBm

Center 2.480000 GHz

#Res BW 2.0 MHz

#Video BW 6.0 MHz

Span 6.000 MHz

Sweep 1.07 ms (8001 pts)

Apr 07, 2025

3:36:40 PM

BLE_1M-Ant1-2480-PASS

FCC ID: 2A64B-WG891

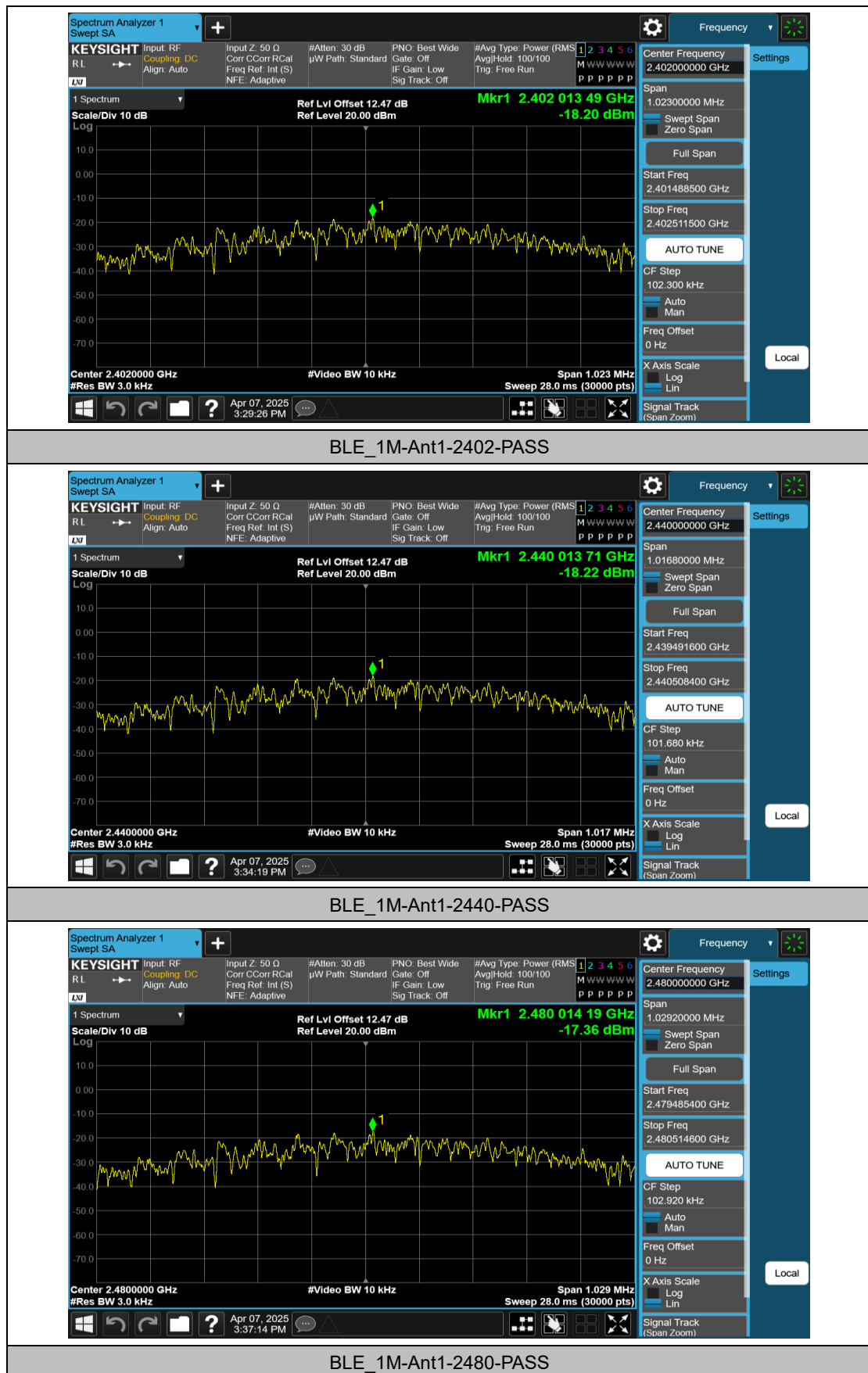
IC: 28593-WG891

Maximum power spectral density

Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-18.20	≤8.00	PASS
BLE_1M	Ant1	2440	-18.22	≤8.00	PASS
BLE_1M	Ant1	2480	-17.36	≤8.00	PASS

Test Graphs



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Band edge measurements

Test Result

TestMode	Antenna	ChName	Frequency [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-5.09	-47.29	≤-25.09	PASS
BLE_1M	Ant1	High	2480	-4.45	-46.36	≤-24.45	PASS

Test Graphs



BLE_1M-Ant1-2402-PASS

Spectrum Analyzer 1

Swept SA

KEYSIGHT

Input: RF

Coupling: DC

Align: Auto

Input Z: 50 Ω

Corr: CCorr

RCal

Freq Ref: Int (S)

NFE: Adaptive

#Atten: 30 dB

μ W Path: Standard

PNO: Fast

Gate: Off

IF Gain: Low

Sig Track: Off

#Avg Type: Power (RMS)

Avg/Hold: 100/100

Trig: Free Run

1 2 3 4 5 6

M W W W W W

P P P P P P

Center Frequency

2.510000000 GHz

Span

80.00000000 MHz

Swept Span

Zero Span

Full Span

Start Freq

2.470000000 GHz

Stop Freq

2.550000000 GHz

AUTO TUNE

CF Step

8.000000 MHz

Auto

Man

Freq Offset

0 Hz

X Axis Scale

Log

Lin

Signal Track

(Span Zoom)

Local

1 Spectrum

Scale/Div 10 dB

Ref Lvl Offset 12.47 dB

Ref Level 20.00 dBm

Mkr4 2.483 92 GHz

-46.36 dBm

Start 2.470000 GHz

#Res BW 100 kHz

#Video BW 300 kHz

Stop 2.550000 GHz

Sweep 3.00 ms (1001 pts)

5 Marker Table

	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.480 24 GHz	-4.447 dBm			
2	N	1	f	2.483 50 GHz	-48.89 dBm			
3	N	1	f	2.500 00 GHz	-52.35 dBm			
4	N	1	f	2.483 92 GHz	-46.36 dBm			
5								
6								

Apr 07, 2025

3:37:20 PM

BLE_1M-Ant1-2480-PASS

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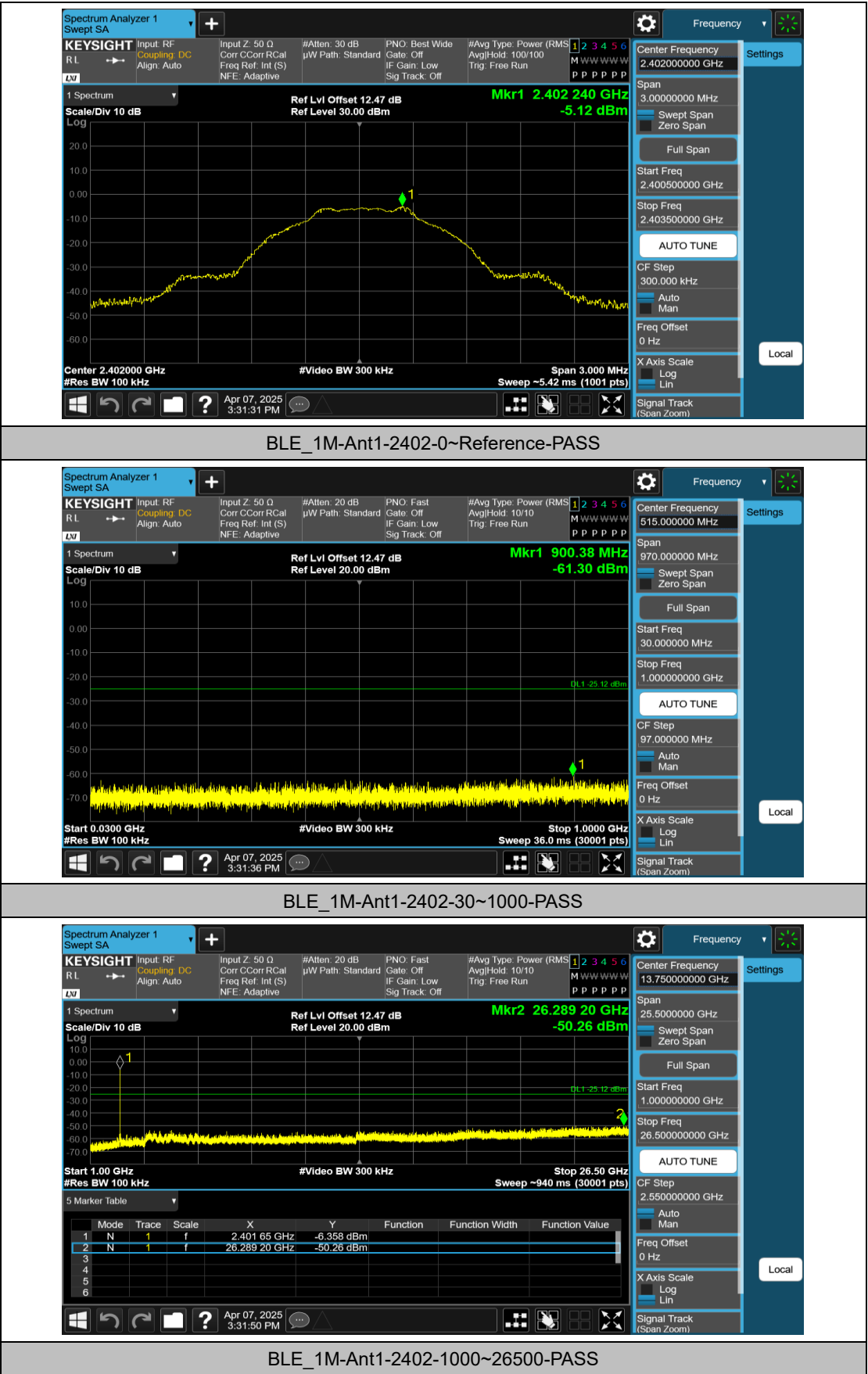
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Conducted Spurious Emission

Test Result

TestMode	Antenna	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	-5.12	-5.12	---	PASS
BLE_1M	Ant1	2402	30~1000	-5.12	-61.3	≤-25.12	PASS
BLE_1M	Ant1	2402	1000~26500	-5.12	-50.26	≤-25.12	PASS
BLE_1M	Ant1	2440	0~Reference	-5.23	-5.23	---	PASS
BLE_1M	Ant1	2440	30~1000	-5.23	-61.64	≤-25.23	PASS
BLE_1M	Ant1	2440	1000~26500	-5.23	-49.36	≤-25.23	PASS
BLE_1M	Ant1	2480	0~Reference	-4.25	-4.25	---	PASS
BLE_1M	Ant1	2480	30~1000	-4.25	-60.6	≤-24.25	PASS
BLE_1M	Ant1	2480	1000~26500	-4.25	-48.9	≤-24.25	PASS

Test Graphs



BLE_1M-Ant1-2402-0~Reference-PASS

Spectrum Analyzer 1

Swept SA

KEYSIGHT

Input: RF

Coupling: DC

Align: Auto

Input Z: 50 Ω

Corr: CCorr RCal

Freq Ref: Int (S)

NFE: Adaptive

#Atten: 20 dB

μ W Path: Standard

PNO: Fast

Gate: Off

IF Gain: Low

Sig Track: Off

#Avg Type: Power (RMS)

Avg/Hold: 10/10

Trig: Free Run

1 2 3 4 5 6

M W W W W W

P P P P P P

Center Frequency

515.0000000 MHz

Span

970.0000000 MHz

Swept Span

Zero Span

Full Span

Start Freq

30.0000000 MHz

Stop Freq

1.000000000 GHz

AUTO TUNE

CF Step

97.0000000 MHz

Auto

Man

Freq Offset

0 Hz

X Axis Scale

Log

Lin

Signal Track

(Span Zoom)

Local

1 Spectrum

Scale/Div 10 dB

Log

Ref Lvl Offset 12.47 dB

Ref Level 20.00 dBm

Mkr1 900.38 MHz

-61.30 dBm

Start 0.0300 GHz

#Res BW 100 kHz

#Video BW 300 kHz

Stop 1.0000 GHz

Sweep 36.0 ms (30001 pts)

Apr 07, 2025 3:31:36 PM

BLE_1M-Ant1-2402-30~1000-PASS

Spectrum Analyzer 1

Swept SA

KEYSIGHT

Input: RF

Coupling: DC

Align: Auto

Input Z: 50 Ω

Corr: CCorr RCal

Freq Ref: Int (S)

NFE: Adaptive

#Atten: 20 dB

μ W Path: Standard

PNO: Fast

Gate: Off

IF Gain: Low

Sig Track: Off

#Avg Type: Power (RMS)

Avg/Hold: 10/10

Trig: Free Run

1 2 3 4 5 6

M W W W W W

P P P P P P

Center Frequency

13.750000000 GHz

Span

25.50000000 GHz

Swept Span

Zero Span

Full Span

Start Freq

1.000000000 GHz

Stop Freq

26.500000000 GHz

AUTO TUNE

CF Step

2.550000000 GHz

Auto

Man

Freq Offset

0 Hz

X Axis Scale

Log

Lin

Signal Track

(Span Zoom)

Local

1 Spectrum

Scale/Div 10 dB

Log

Ref Lvl Offset 12.47 dB

Ref Level 20.00 dBm

Mkr2 26.289 20 GHz

-50.26 dBm

Start 1.00 GHz

#Res BW 100 kHz

#Video BW 300 kHz

Stop 26.50 GHz

Sweep ~940 ms (30001 pts)

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5 Marker Table

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	f	2.401 65 GHz	-6.358 dBm			
2	N	f	26.289 20 GHz	-50.26 dBm			
3							
4							
5							
6							

BLE_1M-Ant1-2402-1000~26500-PASS

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