

FCC ID:2A64B-DLX71

IC:28593-DLX71

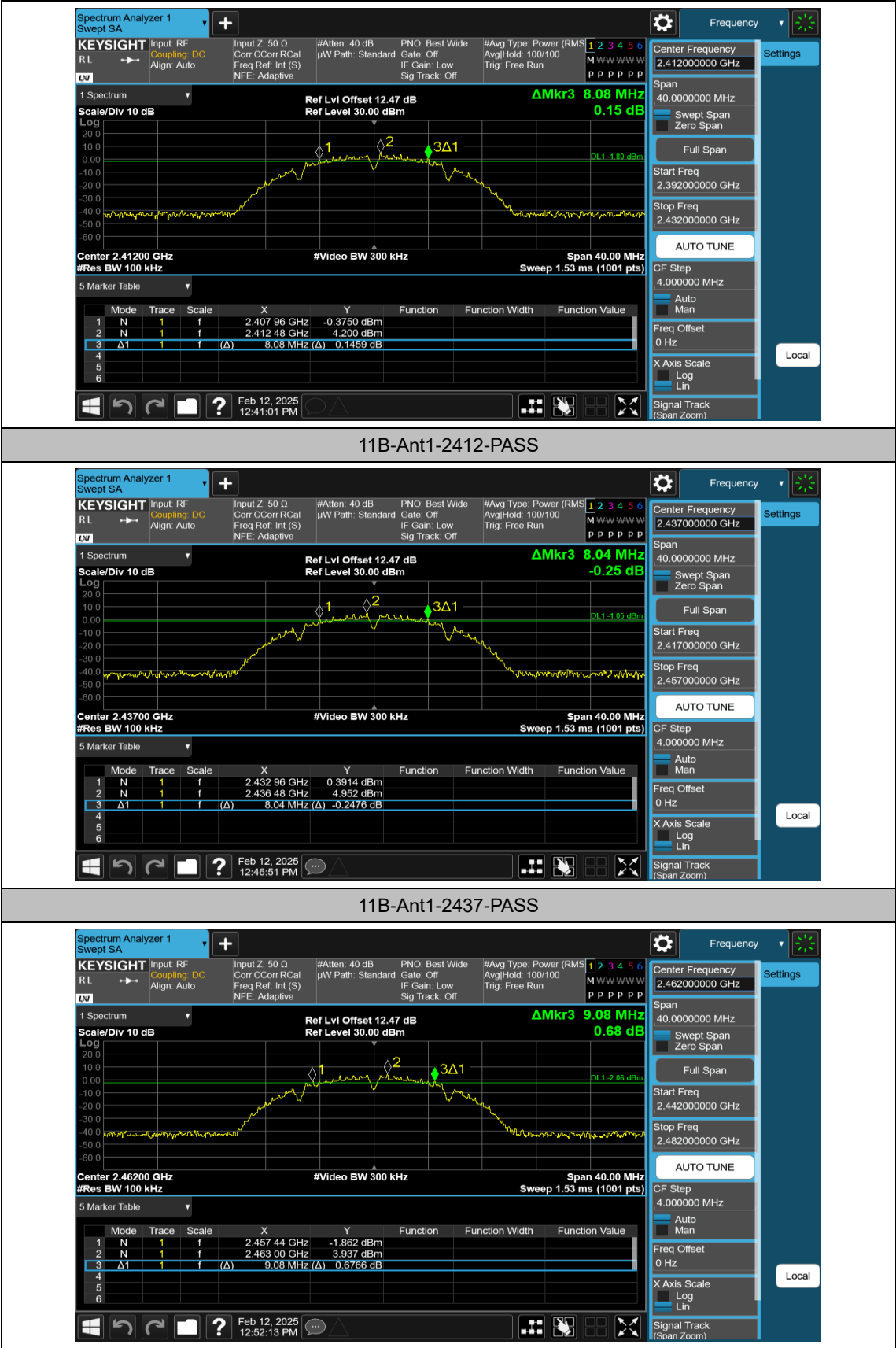
Appendix A of 2.4G WIFI

DTS Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.080	2407.960	2416.040	0.5	PASS
11B	Ant1	2437	8.040	2432.960	2441.000	0.5	PASS
11B	Ant1	2462	9.080	2457.440	2466.520	0.5	PASS
11G	Ant1	2412	16.400	2403.800	2420.200	0.5	PASS
11G	Ant1	2437	16.320	2428.840	2445.160	0.5	PASS
11G	Ant1	2462	16.320	2453.840	2470.160	0.5	PASS
11N20SISO	Ant1	2412	17.160	2403.600	2420.760	0.5	PASS
11N20SISO	Ant1	2437	17.520	2428.240	2445.760	0.5	PASS
11N20SISO	Ant1	2462	17.520	2453.240	2470.760	0.5	PASS
11N40SISO	Ant1	2422	35.200	2404.400	2439.600	0.5	PASS
11N40SISO	Ant1	2437	35.680	2419.480	2455.160	0.5	PASS
11N40SISO	Ant1	2452	35.120	2434.400	2469.520	0.5	PASS

Test Graphs



11B-Ant1-2412-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

Gate: Off

IF Gain: Low

Sig Track: Off

PNO: Best Wide

Avg/Hold: 100/100

Trig: Free Run

#Avg Type: Power (RMS)

M W W W W W

P P P P P P

Center Frequency

2.437000000 GHz

Span

40.00000000 MHz

Swept Span

Zero Span

Full Span

Start Freq

2.417000000 GHz

Stop Freq

2.457000000 GHz

AUTO TUNE

CF Step

4.000000 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 30.00 dBm

Δ Mkr3 8.04 MHz

-0.25 dB

OL1 -1.05 dBm

Center 2.43700 GHz

#Res BW 100 kHz

#Video BW 300 kHz

Span 40.00 MHz

Sweep 1.53 ms (1001 pts)

5 Marker Table

	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.43296 GHz	0.3914 dBm			
2	N	1	f	2.43648 GHz	4.952 dBm			
3	Δ 1	1	f (Δ)	8.04 MHz (Δ)	-0.2476 dB			
4								
5								
6								

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11B-Ant1-2437-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

Gate: Off

IF Gain: Low

Sig Track: Off

PNO: Best Wide

Avg/Hold: 100/100

Trig: Free Run

#Avg Type: Power (RMS)

M W W W W W

P P P P P P

Center Frequency

2.462000000 GHz

Span

40.00000000 MHz

Swept Span

Zero Span

Full Span

Start Freq

2.442000000 GHz

Stop Freq

2.482000000 GHz

AUTO TUNE

CF Step

4.000000 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 30.00 dBm

Δ Mkr3 9.08 MHz

0.68 dB

OL1 -2.06 dBm

Center 2.46200 GHz

#Res BW 100 kHz

#Video BW 300 kHz

Span 40.00 MHz

Sweep 1.53 ms (1001 pts)

5 Marker Table

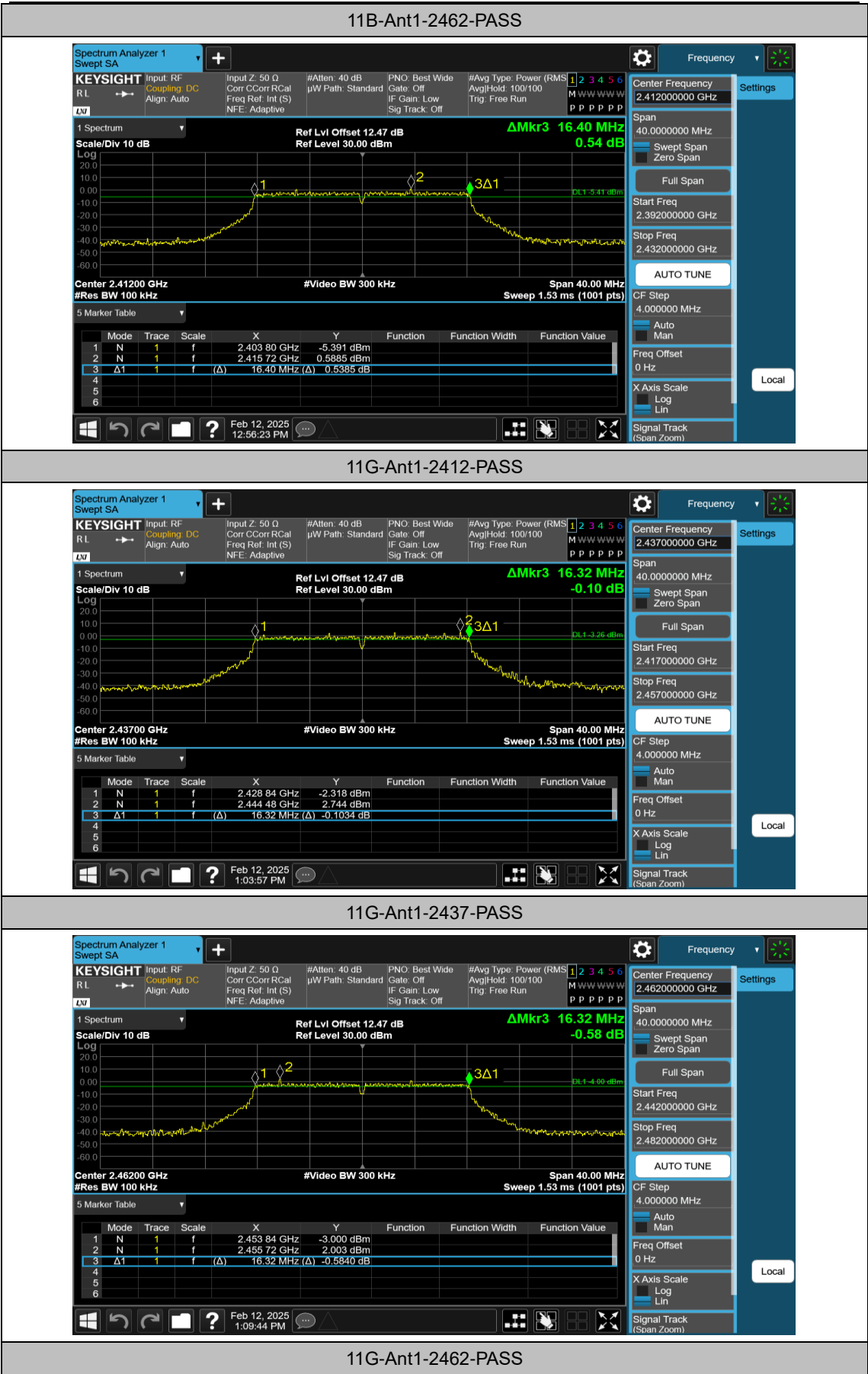
	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.45744 GHz	-1.862 dBm			
2	N	1	f	2.46300 GHz	3.937 dBm			
3	Δ 1	1	f (Δ)	9.08 MHz (Δ)	0.6766 dB			
4								
5								
6								

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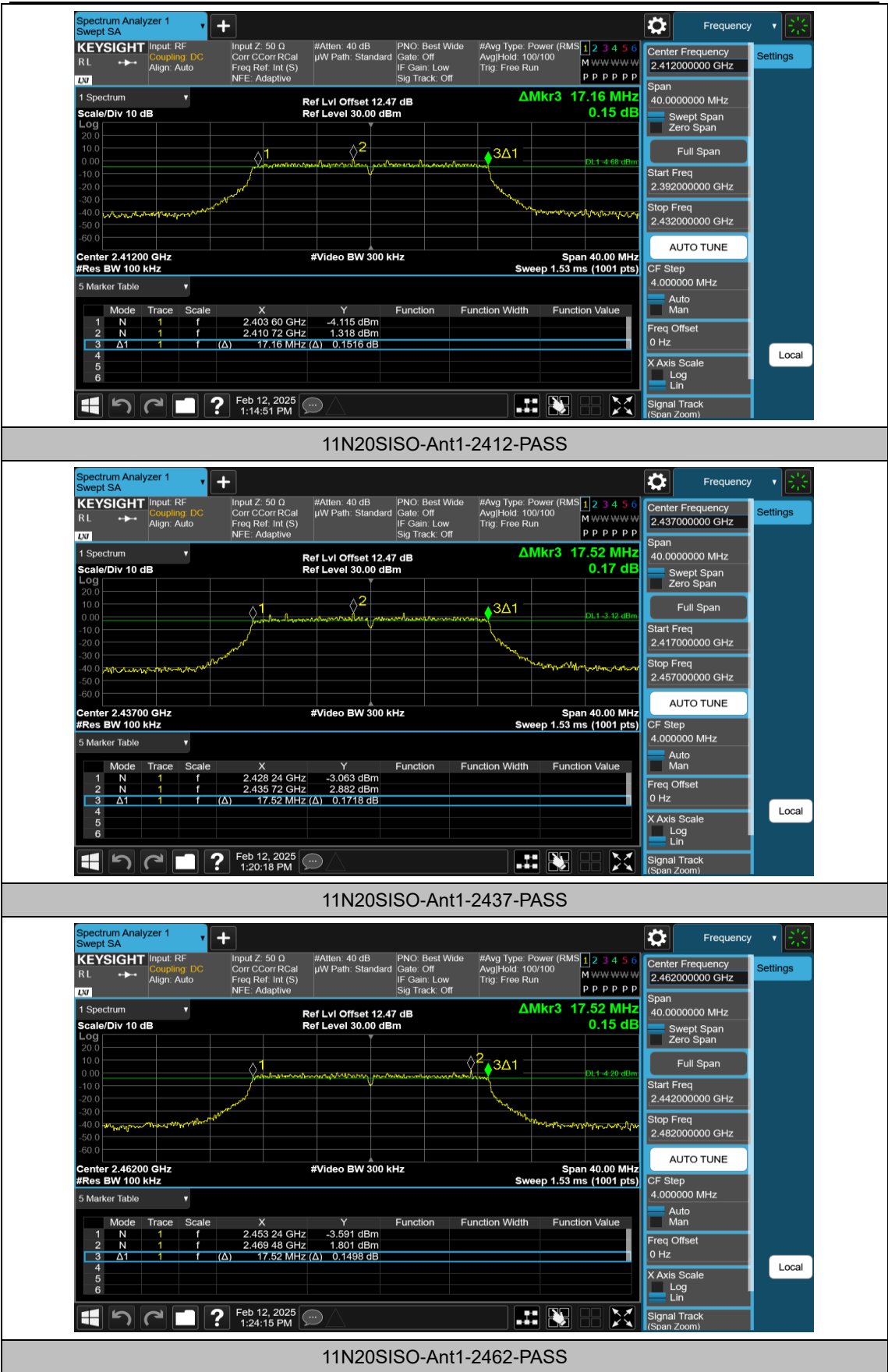
FCC ID:2A64B-DLX71

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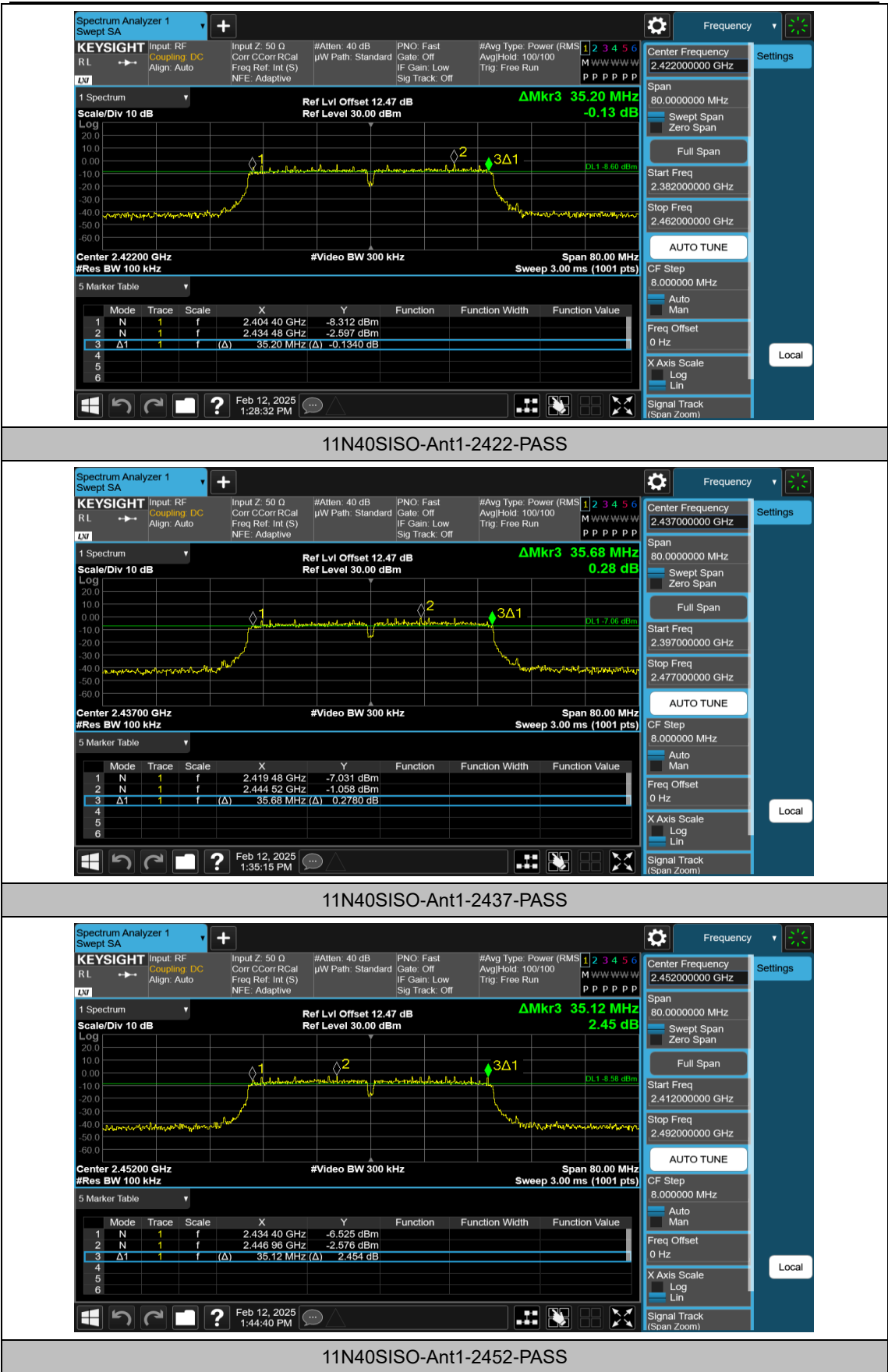
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IC:28593-DLX71



FCC ID:2A64B-DLX71

IC:28593-DLX71



11N40SISO-Ant1-2422-PASS

Spectrum Analyzer 1

Swept SA

KEYSIGHT

Input: RF

RL

Coupling: DC

Align: Auto

Input Z: 50 Ω

Corr: C Corr: R Cal

Freq Ref: Int (S)

NFE: Adaptive

#Atten: 40 dB

μW 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

1 Spectrum

Scale/Div 10 dB

Log

Ref Lvl Offset 12.47 dB

Ref Level 30.00 dBm

ΔMkr3 35.68 MHz

0.28 dB

DL1 -7.06 dBm

Center 2.43700 GHz

#Res BW 100 kHz

#Video BW 300 kHz

Span 80.00 MHz

Sweep 3.00 ms (1001 pts)

5 Marker Table

	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.419 48 GHz	-7.031 dBm			
2	N	1	f	2.444 82 GHz	-1.058 dBm			
3	Δ1	1	f (Δ)	35.68 MHz (Δ)	0.2780 dB			
4								
5								
6								

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Frequency

Settings

Center Frequency

2.437000000 GHz

Span

80.00000000 MHz

Swept Span

Zero Span

Full Span

Start Freq

2.397000000 GHz

Stop Freq

2.477000000 GHz

AUTO TUNE

CF Step

8.000000 MHz

Auto

Man

Freq Offset

0 Hz

X Axis Scale

Log

Lin

Signal Track

(Span Zoom)

Local

11N40SISO-Ant1-2437-PASS

Spectrum Analyzer 1

Swept SA

KEYSIGHT

Input: RF

RL

Coupling: DC

Align: Auto

Input Z: 50 Ω

Corr: C Corr: R Cal

Freq Ref: Int (S)

NFE: Adaptive

#Atten: 40 dB

μW 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

1 Spectrum

Scale/Div 10 dB

Log

Ref Lvl Offset 12.47 dB

Ref Level 30.00 dBm

ΔMkr3 35.12 MHz

2.45 dB

DL1 -8.58 dBm

Center 2.45200 GHz

#Res BW 100 kHz

#Video BW 300 kHz

Span 80.00 MHz

Sweep 3.00 ms (1001 pts)

5 Marker Table

	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.434 40 GHz	-6.525 dBm			
2	N	1	f	2.446 96 GHz	-2.576 dBm			
3	Δ1	1	f (Δ)	35.12 MHz (Δ)	2.454 dB			
4								
5								
6								

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Frequency

Settings

Center Frequency

2.452000000 GHz

Span

80.00000000 MHz

Swept Span

Zero Span

Full Span

Start Freq

2.412000000 GHz

Stop Freq

2.492000000 GHz

AUTO TUNE

CF Step

8.000000 MHz

Auto

Man

Freq Offset

0 Hz

X Axis Scale

Log

Lin

Signal Track

(Span Zoom)

Local

11N40SISO-Ant1-2452-PASS

FCC ID: 2A64B-DLX71
IC: 28593-DLX71

Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.399	2405.3312	2418.7302	---	---
11B	Ant1	2437	13.350	2430.3533	2443.7033	---	---
11B	Ant1	2462	13.388	2455.2997	2468.6877	---	---
11G	Ant1	2412	16.980	2403.5560	2420.5360	---	---
11G	Ant1	2437	17.017	2428.4883	2445.5053	---	---
11G	Ant1	2462	17.100	2453.3968	2470.4968	---	---
11N20SISO	Ant1	2412	17.940	2402.9771	2420.9171	---	---
11N20SISO	Ant1	2437	17.927	2428.0931	2446.0201	---	---
11N20SISO	Ant1	2462	18.012	2452.9728	2470.9848	---	---
11N40SISO	Ant1	2422	36.285	2403.8992	2440.1842	---	---
11N40SISO	Ant1	2437	36.089	2419.0062	2455.0952	---	---
11N40SISO	Ant1	2452	36.105	2433.9198	2470.0248	---	---

Test Graphs



11B-Ant1-2412

Spectrum Analyzer 1

Occupied BW

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

Trig: Free Run

Gate: Off

#F Gain: Low

Center Freq: 2.43700000 GHz

Avg/Hold: 100/100

Radio Std: None

Center Frequency

2.43700000 GHz

Settings

Span

40.000 MHz

CF Step

4.000000 MHz

Auto

Man

Freq Offset

0 Hz

Local

1 Graph

Scale/Div 10.0 dB

Log

Ref Lvl Offset 12.47 dB

Ref Value 30.00 dBm

Mkr1 2.437480000 GHz

5.78 dBm

Center 2.43700 GHz

#Res BW 430.00 kHz

#Video BW 1.3000 MHz

Span 40 MHz

Sweep 1.00 ms (1001 pts)

2 Metrics

Occupied Bandwidth

13.350 MHz

Transmit Freq Error

28.286 kHz

x dB Bandwidth

17.28 MHz

Measure Trace

Trace 1

Total Power

16.5 dBm

% of OBW Power

99.00 %

x dB

-26.00 dB

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11B-Ant1-2437

Spectrum Analyzer 1

Occupied BW

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

Trig: Free Run

Gate: Off

#F Gain: Low

Center Freq: 2.46200000 GHz

Avg/Hold: 100/100

Radio Std: None

Center Frequency

2.46200000 GHz

Settings

Span

40.000 MHz

CF Step

4.000000 MHz

Auto

Man

Freq Offset

0 Hz

Local

1 Graph

Scale/Div 10.0 dB

Log

Ref Lvl Offset 12.47 dB

Ref Value 30.00 dBm

Mkr1 2.462480000 GHz

5.44 dBm

Center 2.46200 GHz

#Res BW 430.00 kHz

#Video BW 1.3000 MHz

Span 40 MHz

Sweep 1.00 ms (1001 pts)

2 Metrics

Occupied Bandwidth

13.388 MHz

Transmit Freq Error

-6.343 kHz

x dB Bandwidth

17.33 MHz

Measure Trace

Trace 1

Total Power

16.2 dBm

% of OBW Power

99.00 %

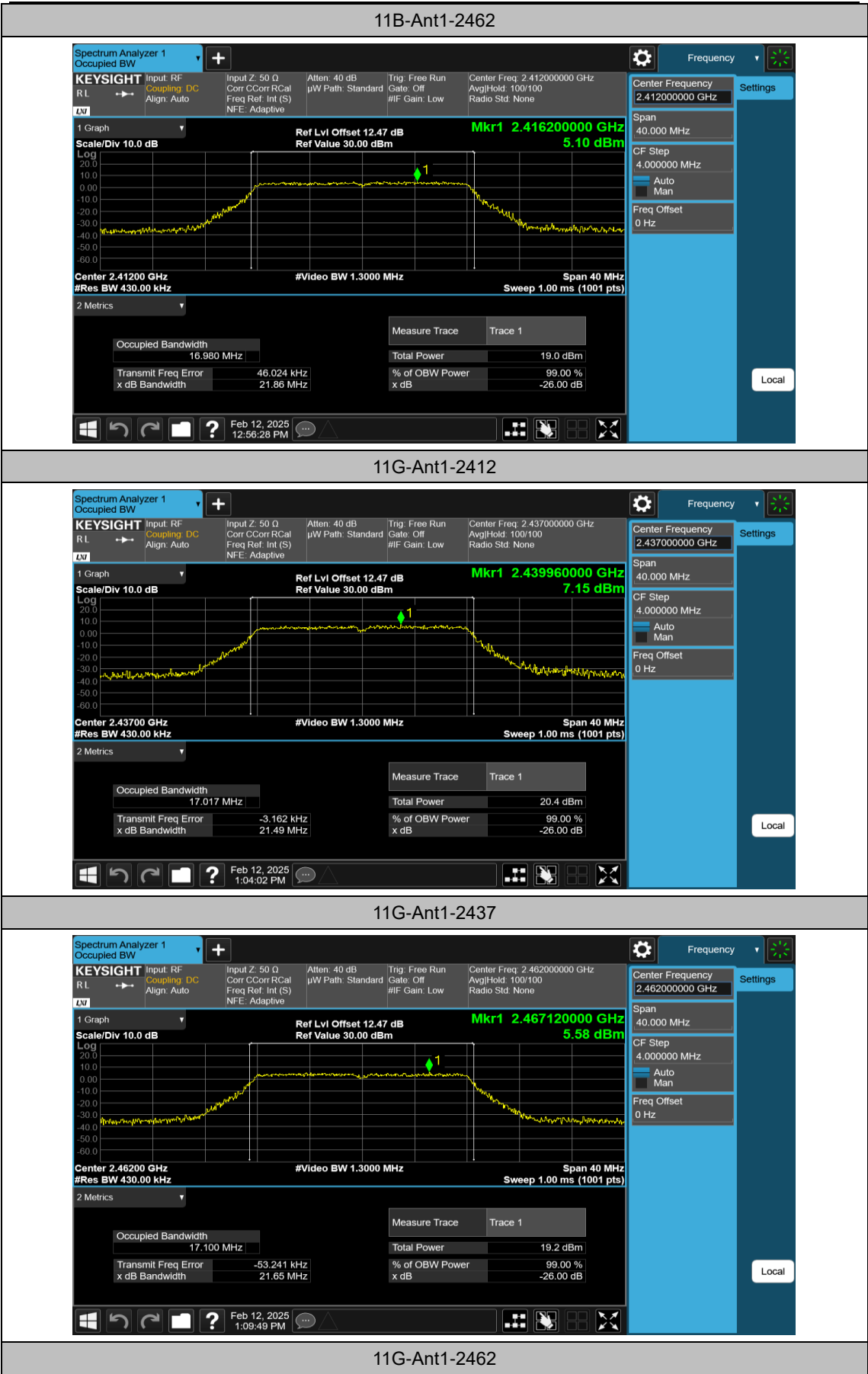
x dB

-26.00 dB

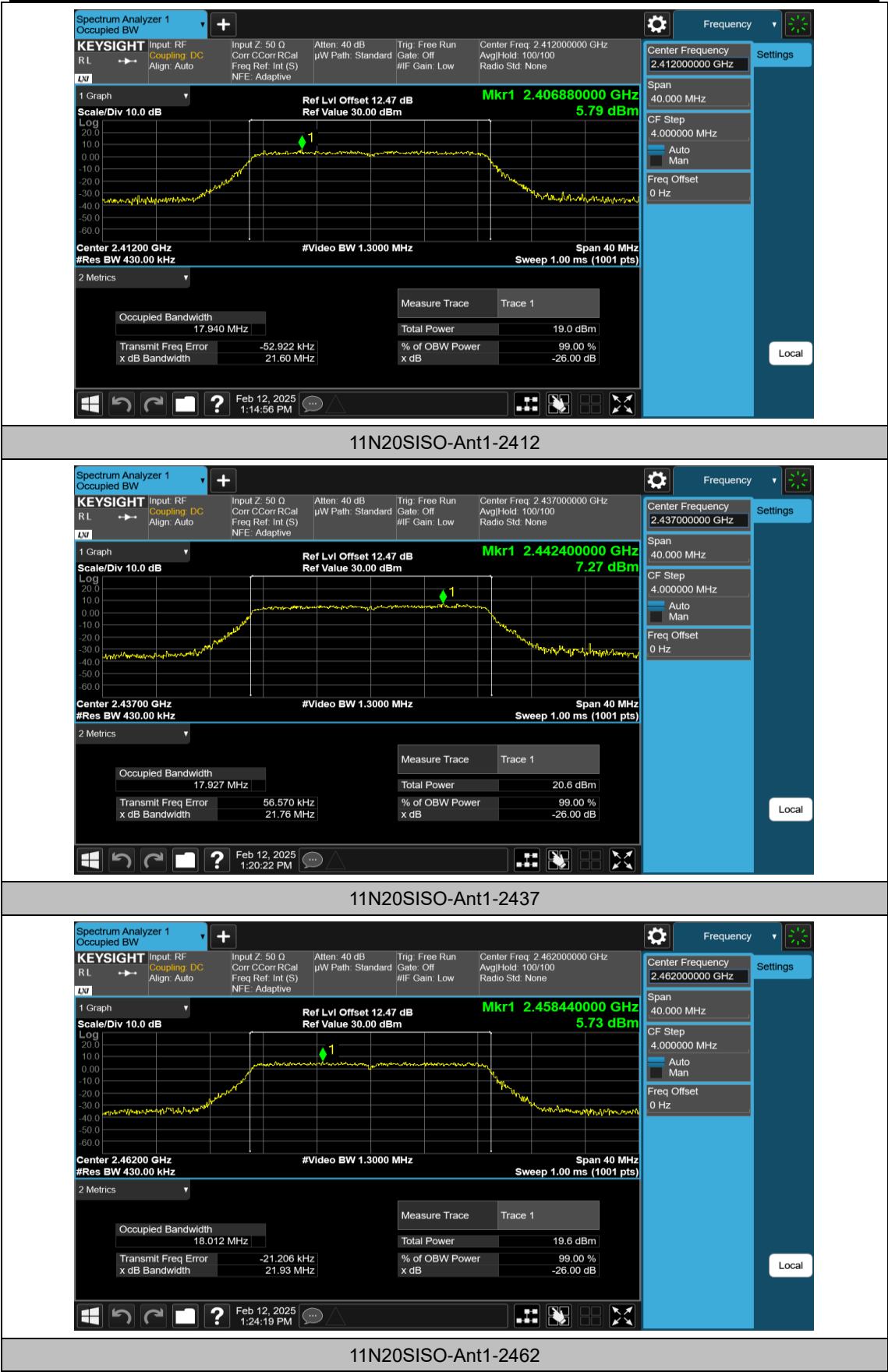
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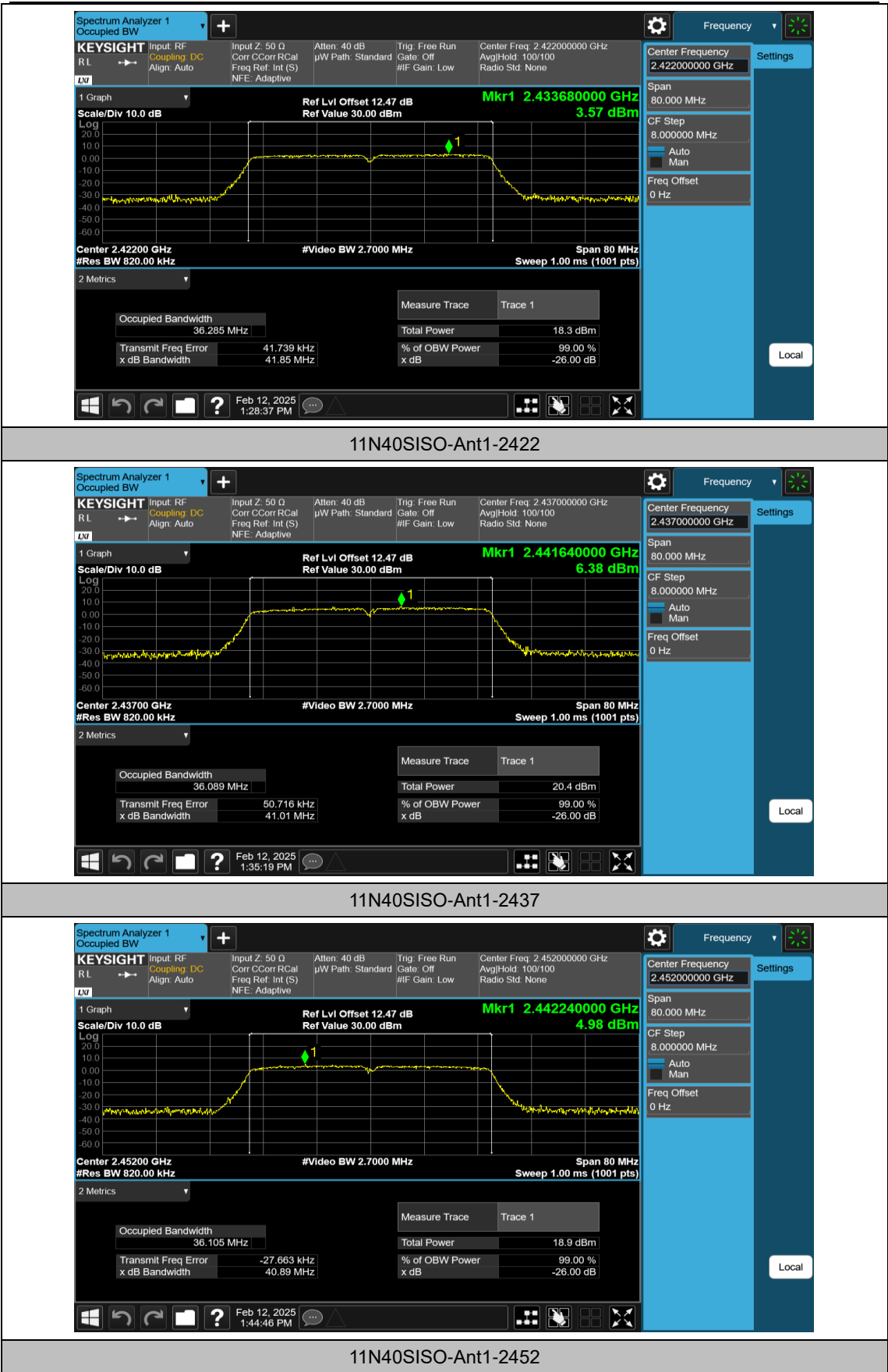


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IC: 28593-DLX71



FCC ID:2A64B-DLX71

IC:28593-DLX71



FCC ID:2A64B-DLX71

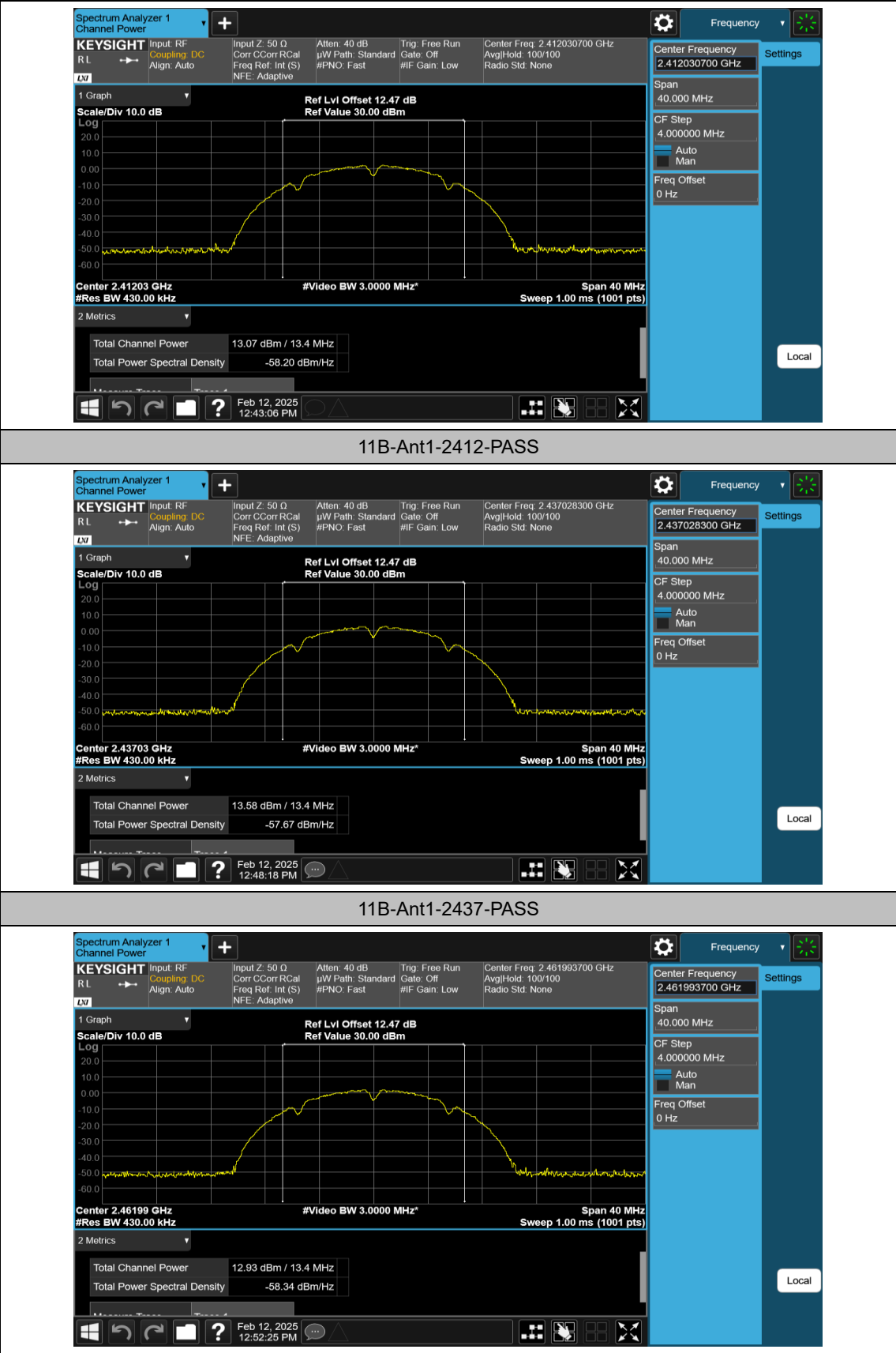
IC:28593-DLX71

Maximum conducted output power

Test Result Average

Test Mode	Antenna	Frequenc y[MHz]	Average power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
11B	Ant1	2412	13.07	98.96	0.05	13.12	≤30.00	2.82	15.94	≤36.00	PASS
11B	Ant1	2437	13.58	100.00	0.00	13.58	≤30.00	2.82	16.40	≤36.00	PASS
11B	Ant1	2462	12.93	98.57	0.06	12.99	≤30.00	2.82	15.81	≤36.00	PASS
11G	Ant1	2412	12.81	97.17	0.12	12.93	≤30.00	2.82	15.75	≤36.00	PASS
11G	Ant1	2437	14.17	92.38	0.34	14.51	≤30.00	2.82	17.33	≤36.00	PASS
11G	Ant1	2462	12.88	94.93	0.23	13.11	≤30.00	2.82	15.93	≤36.00	PASS
11N20SI SO	Ant1	2412	12.69	94.12	0.26	12.95	≤30.00	2.82	15.77	≤36.00	PASS
11N20SI SO	Ant1	2437	13.90	97.96	0.09	13.99	≤30.00	2.82	16.81	≤36.00	PASS
11N20SI SO	Ant1	2462	13.33	91.87	0.37	13.70	≤30.00	2.82	16.52	≤36.00	PASS
11N40SI SO	Ant1	2422	10.95	84.82	0.72	11.67	≤30.00	2.82	14.49	≤36.00	PASS
11N40SI SO	Ant1	2437	13.01	85.45	0.68	13.69	≤30.00	2.82	16.51	≤36.00	PASS
11N40SI SO	Ant1	2452	11.45	88.79	0.52	11.97	≤30.00	2.82	14.79	≤36.00	PASS

Test Graphs Average



11B-Ant1-2412-PASS

Spectrum Analyzer 1

Channel Power

KEYSIGHT

Input: RF

Coupling: DC

Align: Auto

Input Z: 50 Ω

Corr: C

Corr: R

Cal: Int (S)

NFE: Adaptive

Atten: 40 dB

μ W Path: Standard

#PNO: Fast

Trig: Free Run

Gate: Off

#F Gain: Low

Center Freq: 2.437028300 GHz

Avg/Hold: 100/100

Radio Std: None

Center Frequency

2.437028300 GHz

Span

40.000 MHz

CF Step

4.000000 MHz

Auto

Man

Freq Offset

0 Hz

Local

1 Graph

Scale/Div 10.0 dB

Log

Ref Lvl Offset 12.47 dB

Ref Value 30.00 dBm

Center 2.43703 GHz

#Res BW 430.00 kHz

#Video BW 3.0000 MHz

Span 40 MHz

Sweep 1.00 ms (1001 pts)

2 Metrics

Total Channel Power

13.58 dBm / 13.4 MHz

Total Power Spectral Density

-57.67 dBm/Hz

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11B-Ant1-2437-PASS

Spectrum Analyzer 1

Channel Power

KEYSIGHT

Input: RF

Coupling: DC

Align: Auto

Input Z: 50 Ω

Corr: C

Corr: R

Cal: Int (S)

NFE: Adaptive

Atten: 40 dB

μ W Path: Standard

#PNO: Fast

Trig: Free Run

Gate: Off

#F Gain: Low

Center Freq: 2.461993700 GHz

Avg/Hold: 100/100

Radio Std: None

Center Frequency

2.461993700 GHz

Span

40.000 MHz

CF Step

4.000000 MHz

Auto

Man

Freq Offset

0 Hz

Local

1 Graph

Scale/Div 10.0 dB

Log

Ref Lvl Offset 12.47 dB

Ref Value 30.00 dBm

Center 2.46199 GHz

#Res BW 430.00 kHz

#Video BW 3.0000 MHz

Span 40 MHz

Sweep 1.00 ms (1001 pts)

2 Metrics

Total Channel Power

12.93 dBm / 13.4 MHz

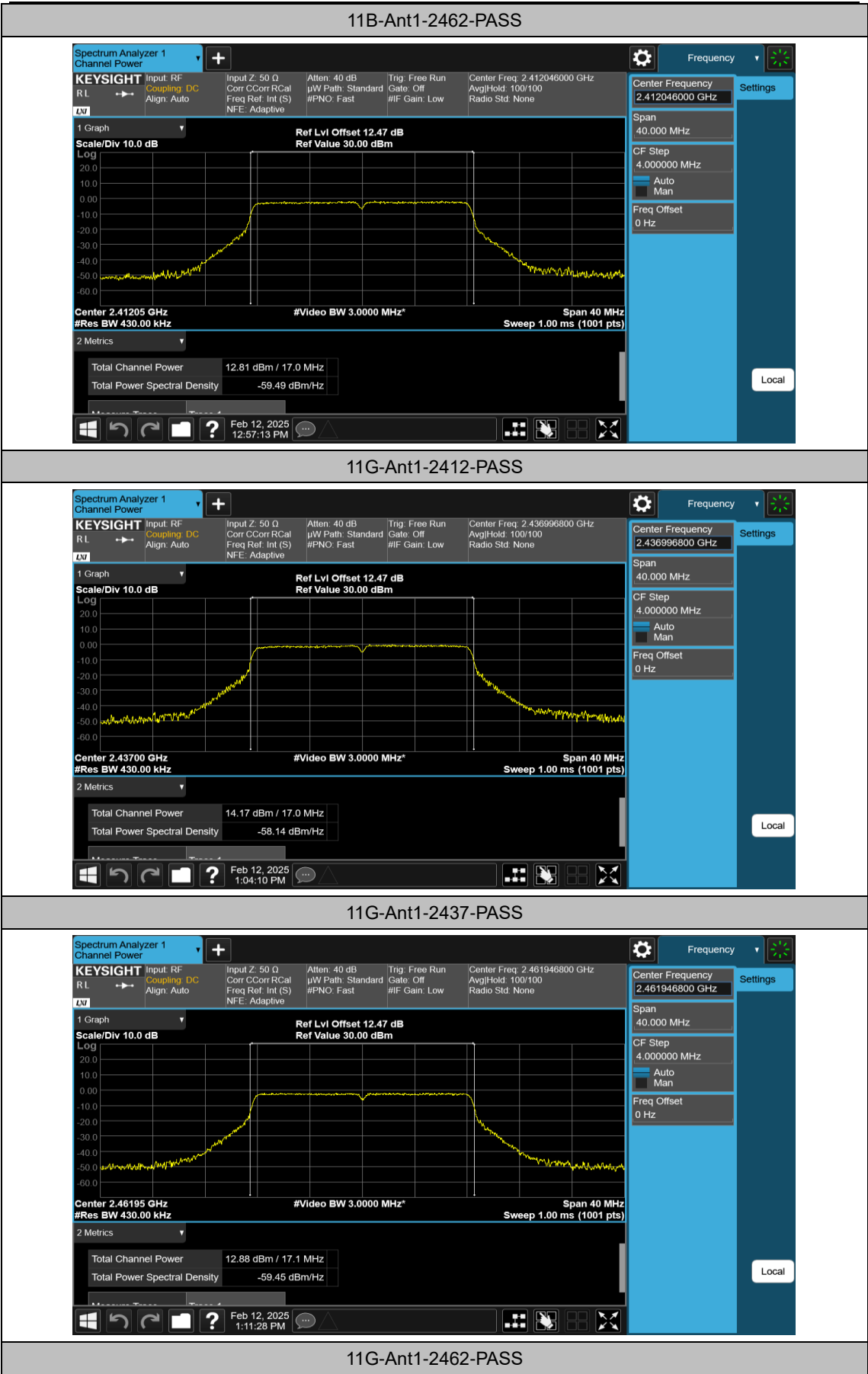
Total Power Spectral Density

-58.34 dBm/Hz

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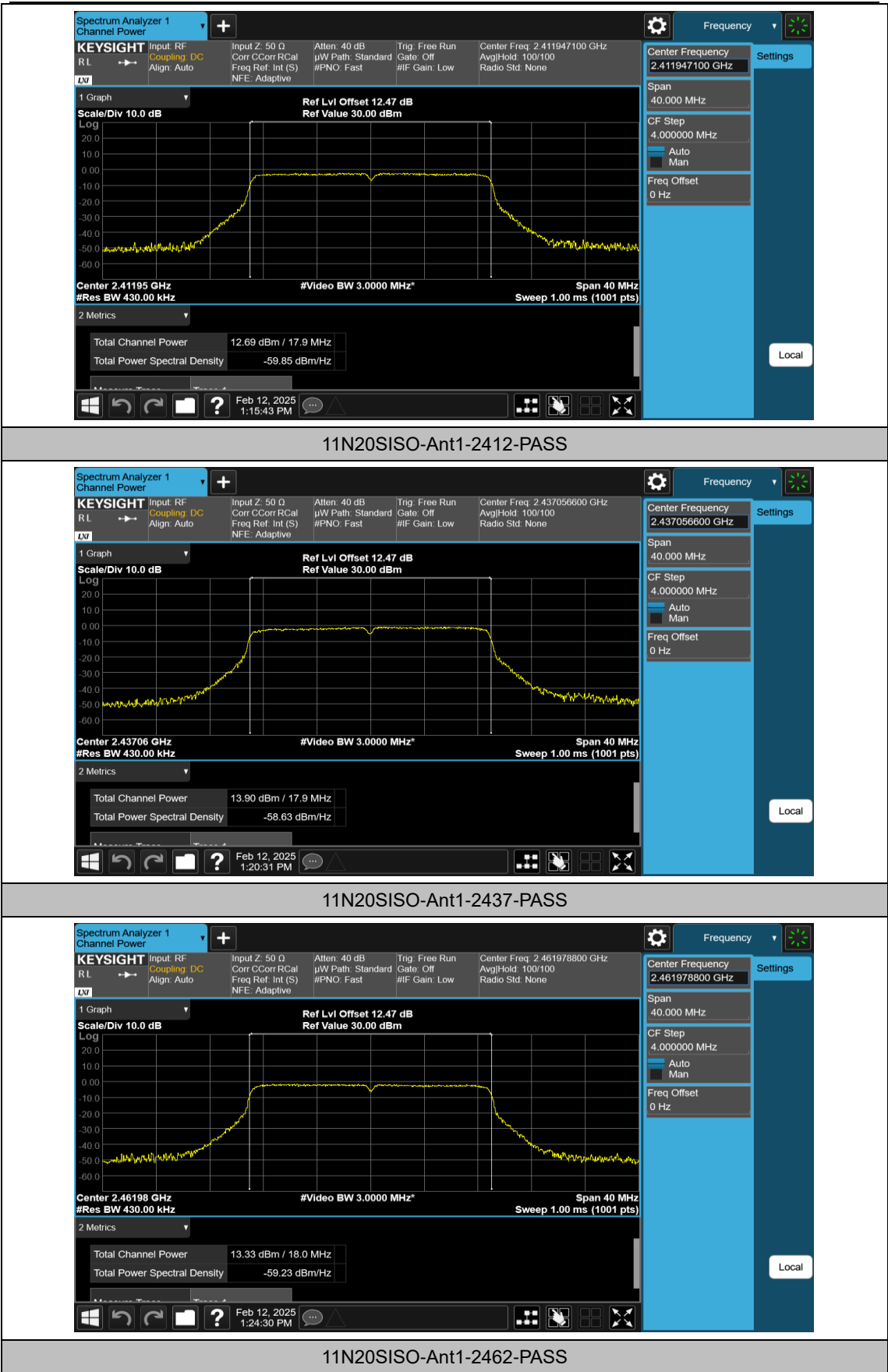
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FCC ID:2A64B-DLX71

IC:28593-DLX71

