



September 25, 2023

Cisco Systems, Inc. Richfield, OH Electromagnetics Lab

By Jonathan M. Cyphert

Brand: CISCO

Model NO.: CW-ANT-D1-NS-00

Type : patch

Manufacture : Cisco systems, Inc.

*Address : 170 West Tasman Dr. San
Jose, CA 95134 USA.*

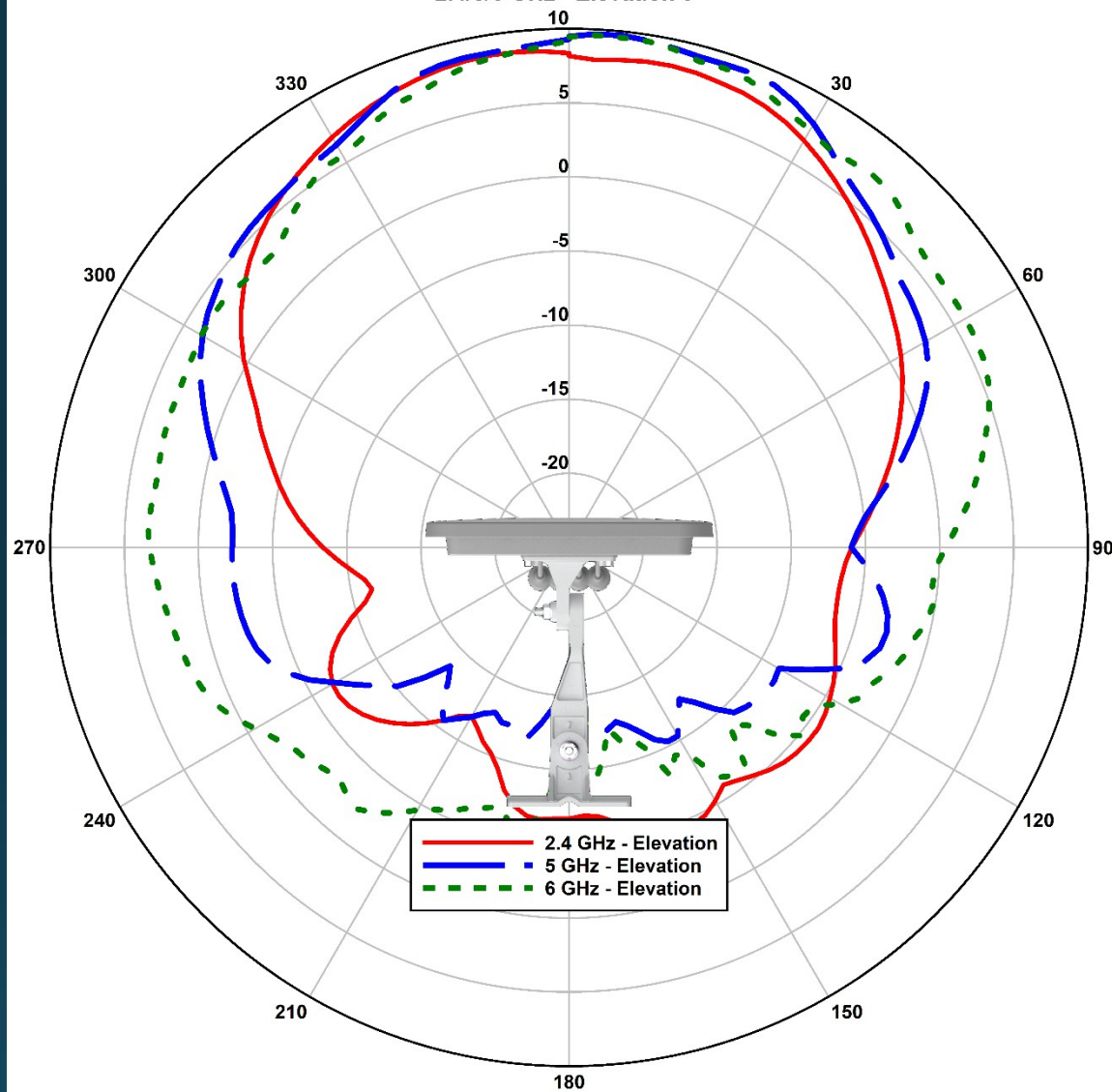
Modification History			
Rev	Date	Originator	Description of Changes
1	9/20/2023	Jonathan Cyphert	Initial Release
2	9/25/2023	Jonathan Cyphert	Updated slides

Description & Observations

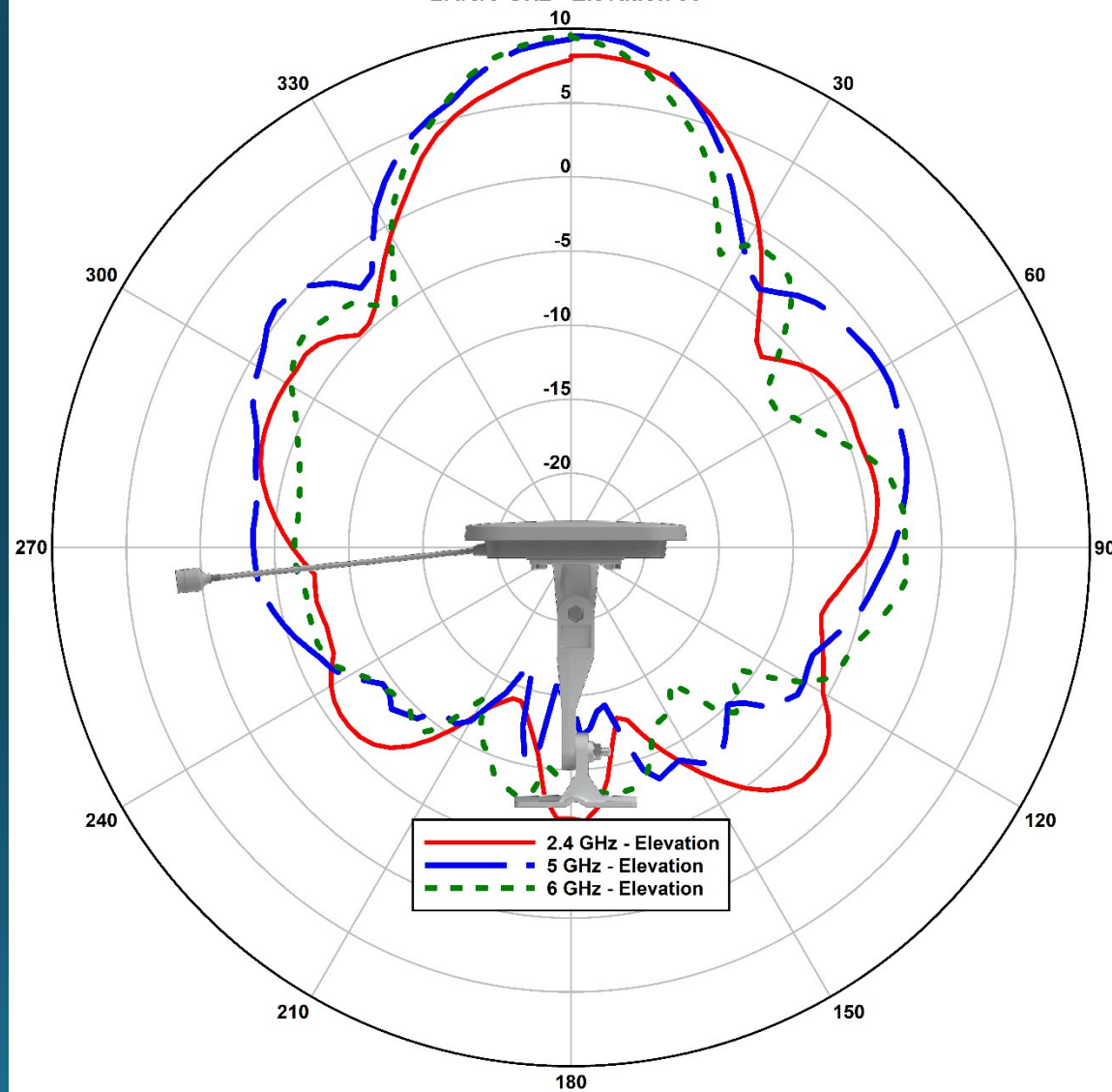
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- The data shows good correlation between units:
 - Peak gain values vary within ~0.5 dB
 - Efficiencies are within ~2%
 - Elevation gains above 30° are within ~1 dB
- One unit (WCC233500H7) will be used for representing the antenna specification summary, elevation gain above 30°, and radiation patterns.

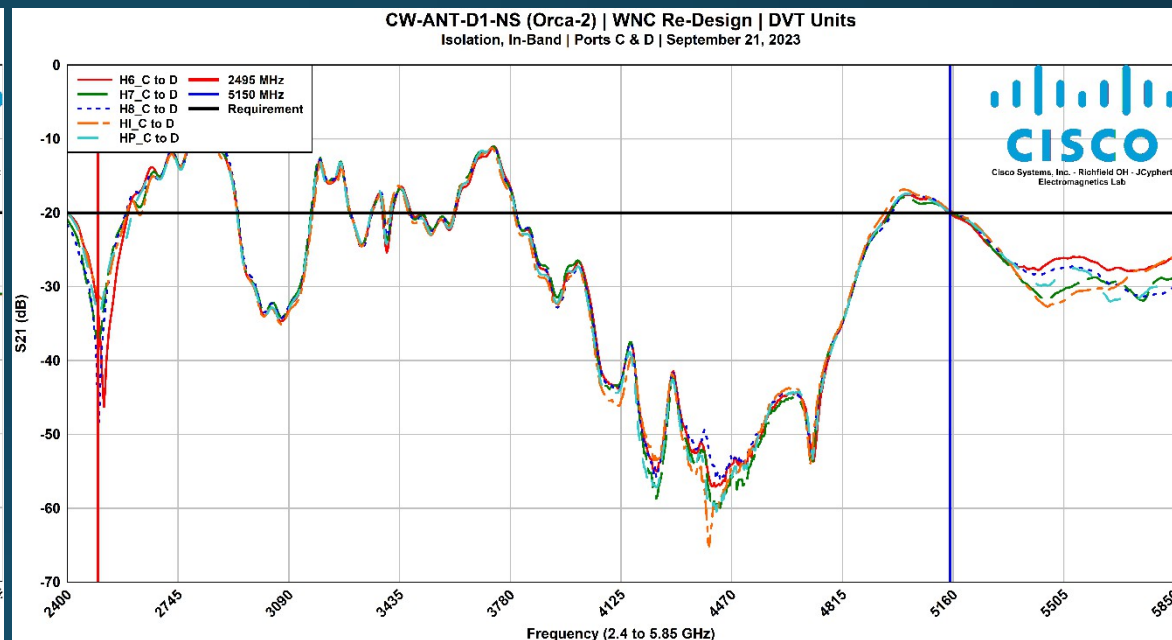
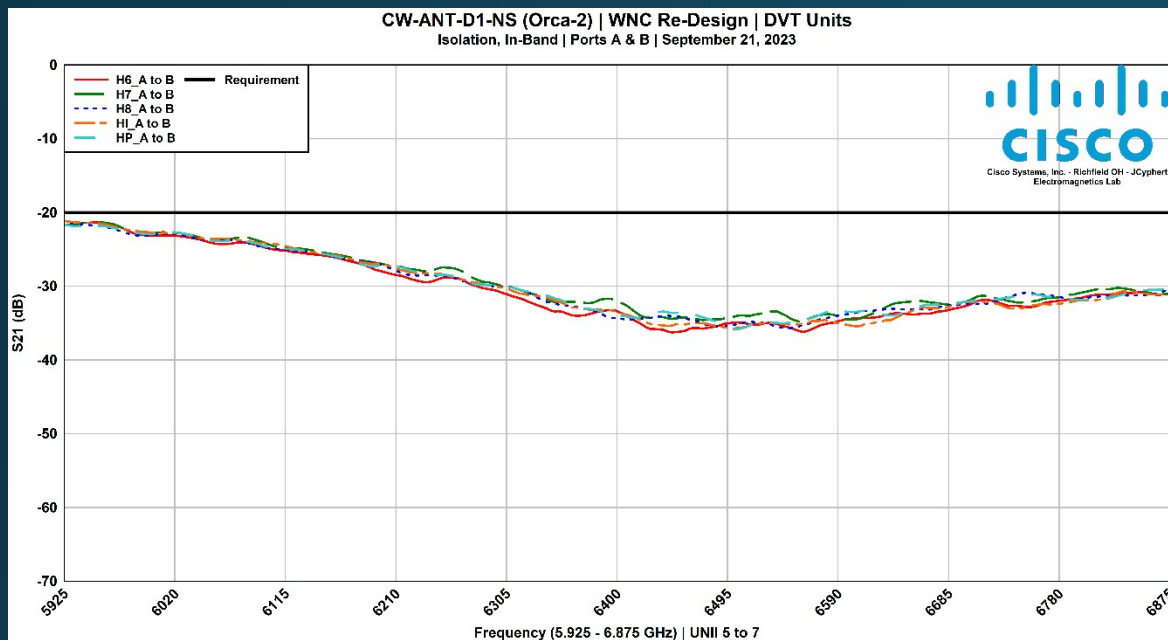
Specification	2401-2495	5150-5850	5925-6875
Gain (max)	8 dB	9 dB	9 dB
Gain Variation Over Frequency	<2.9 dB		
3 dB Beamwidth Elevation 0°	70°		
3 dB Beamwidth Elevation 90°	30°		
Isolation, In-Band	20 dB		
Isolation, Cross-Band	X	40 dB	
Efficiency	>50%		
VSWR	<2:1		
Elevation Gain Above 30°	X	- 1.64 dB	- 2.22 dB
Side Lobe Level Below Carrier	12 dBc	10 dBc	9 dBc
Front to Back Ratio	15 dB	22 dB	19 dB

Catalyst CW-ANT-D1-NS
 Tri-Band Directional Antenna, SIA
 2.4/5/6 GHz - Elevation 0°

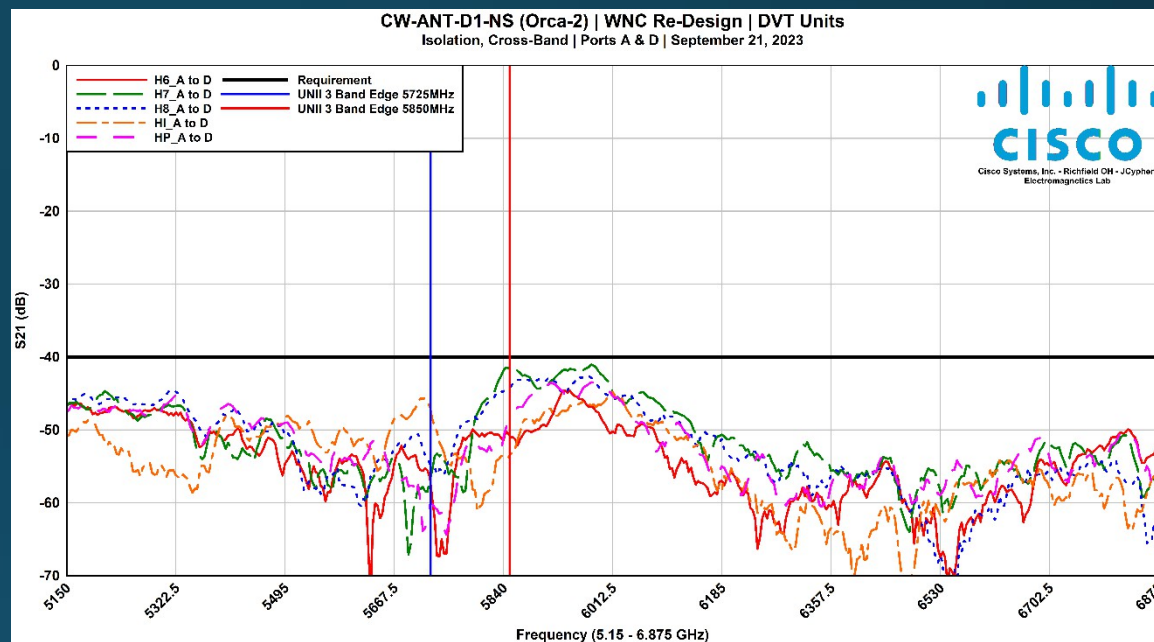
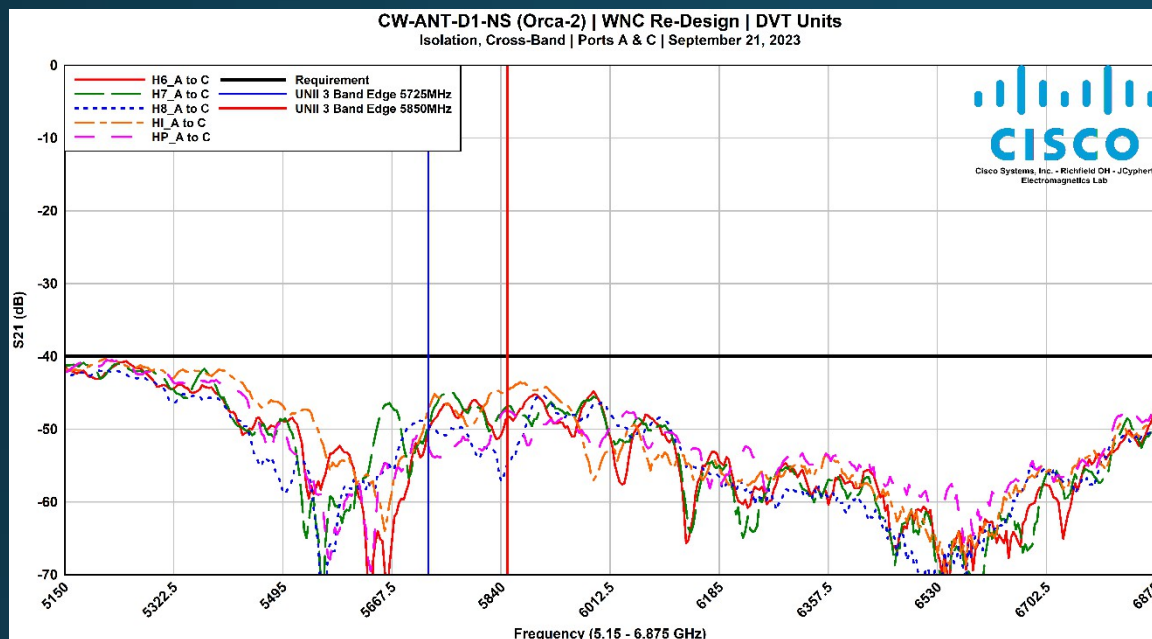


Catalyst CW-ANT-D1-NS
 Tri-Band Directional Antenna, SIA
 2.4/5/6 GHz - Elevation 90°

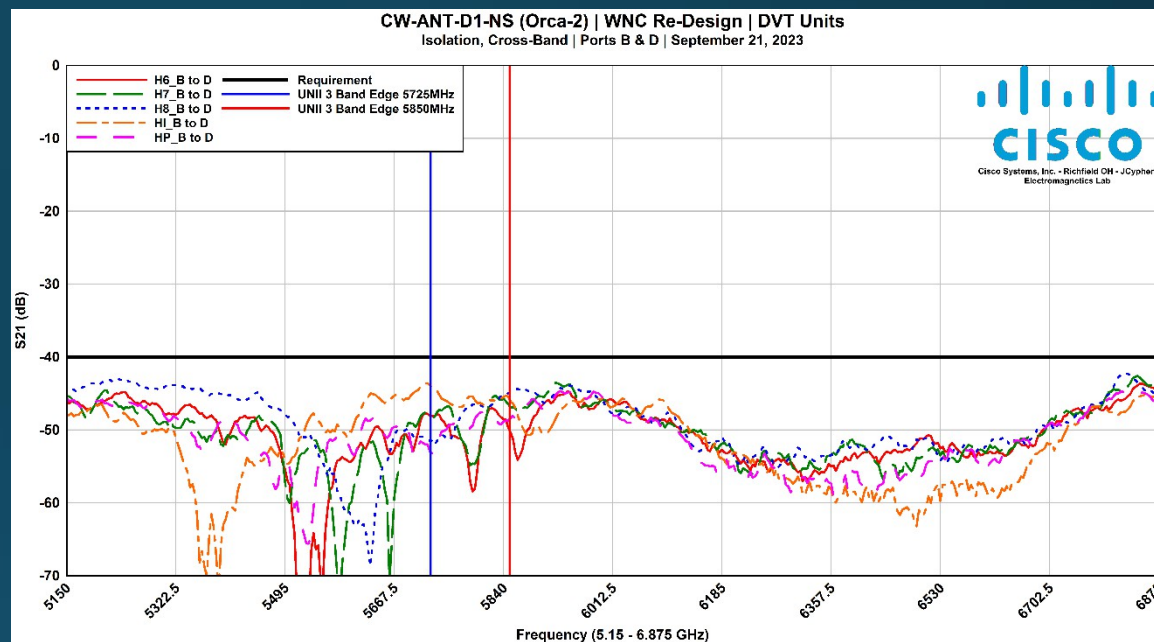
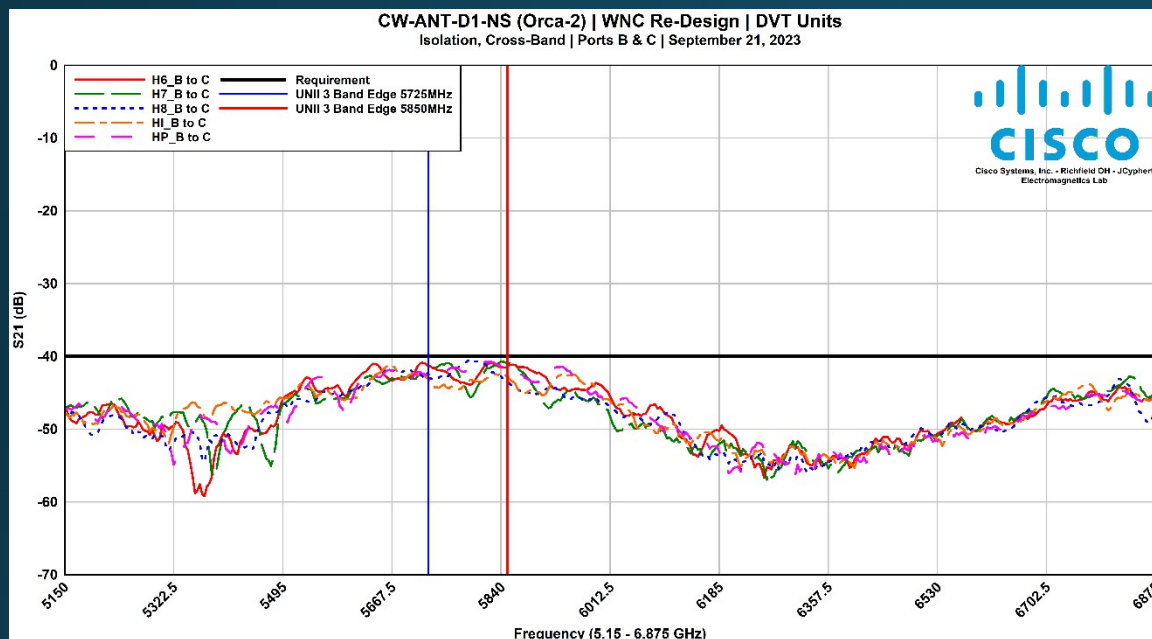




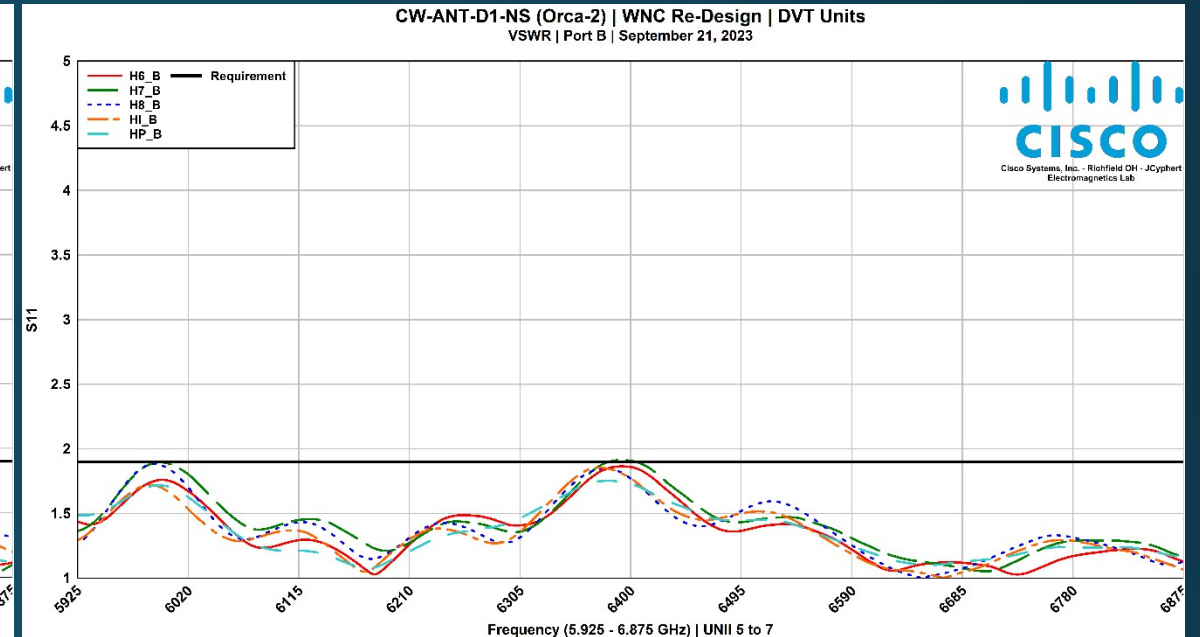
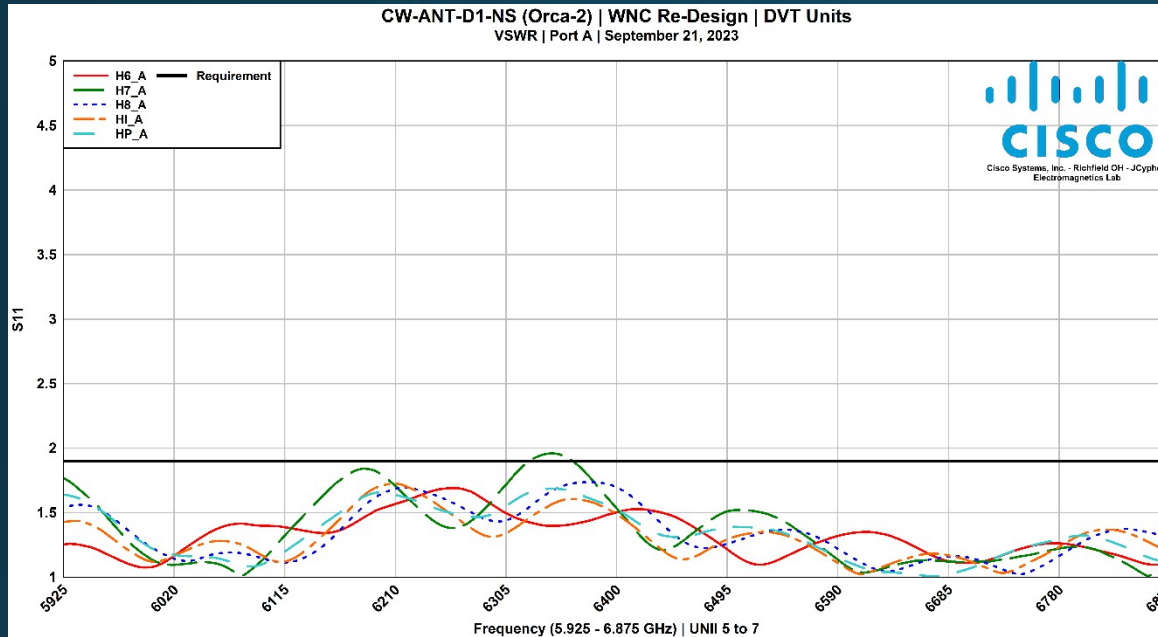
Isolation, In-Band, Worst Case	Maximum
6 GHz	- 21.1 at 5926 MHz (HI)
5 GHz	- 19.6 at 5150 MHz (HI)
2.4 GHz	- 19.9 at 2401 MHz (HP)



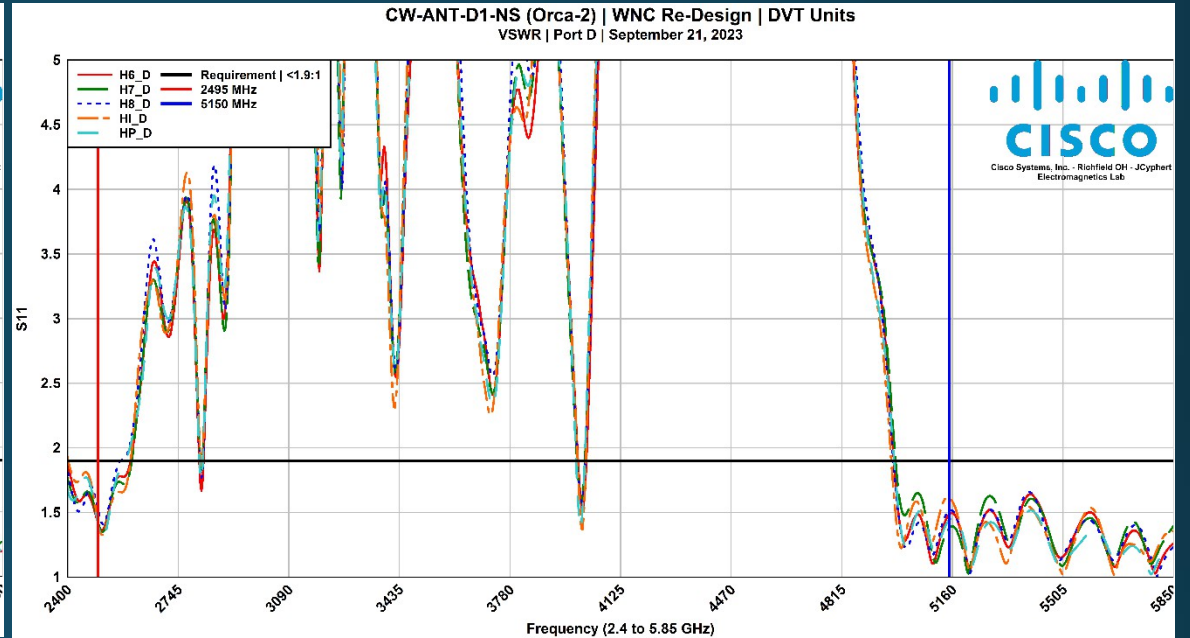
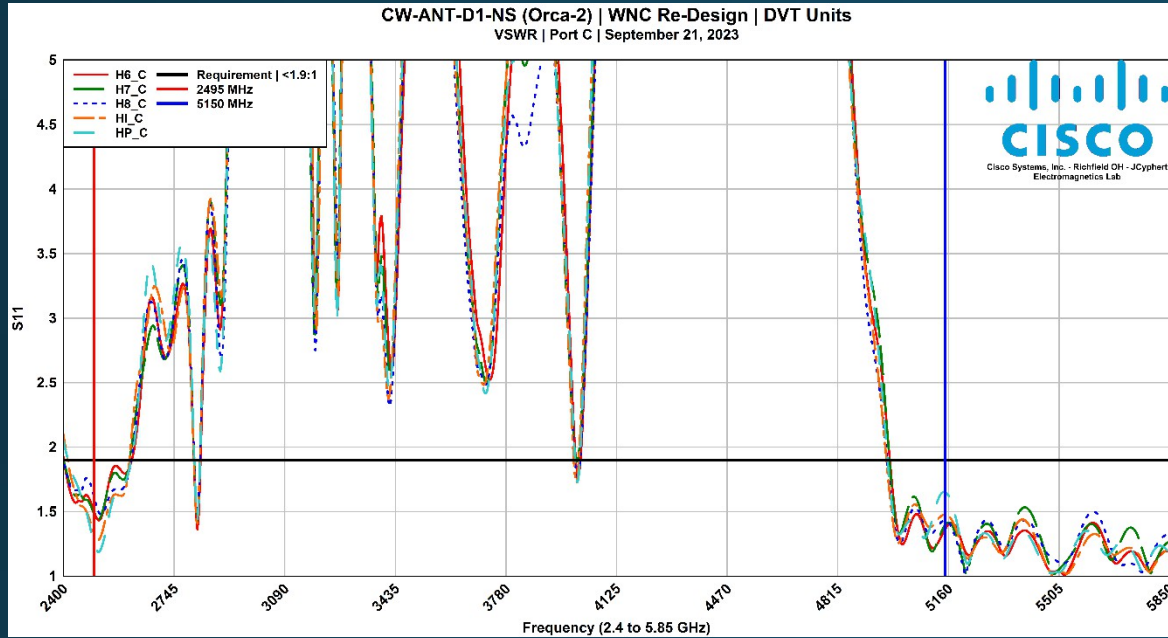
Isolation, Cross-Band, Worst Case	Maximum
A to C	- 40.2 dB at 5213 MHz (UNII 1, H1)
A to D	- 41 dB at 5978 MHz (UNII 5, H7)



Isolation, Cross-Band, Worst Case	Maximum
B to C	- 40.5 dB at 5795 MHz (UNII 3, H8)
B to D	- 42.1 dB at 6818 MHz (UNII 7, H8)



VSWR, Worst Case	6 GHz
Port A	1.95:1 (H7)
Port B	1.91:1 (H7)



VSWR, Worst Case	5 GHz	2.4 GHz
Port C	1.65:1 (HP)	2.07:1 (H1)
Port D	1.66:1 (H8)	1.90:1 (H1)



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