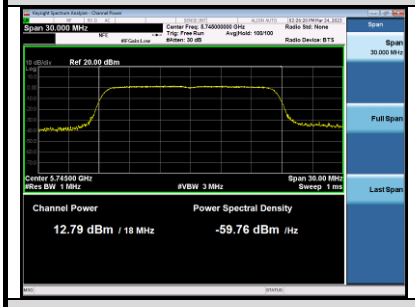
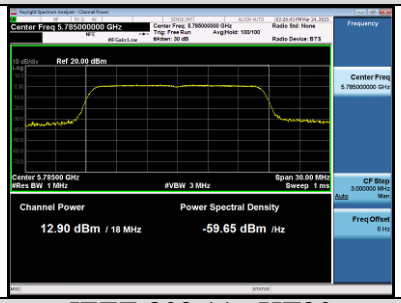
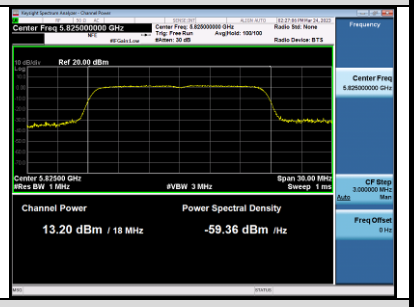
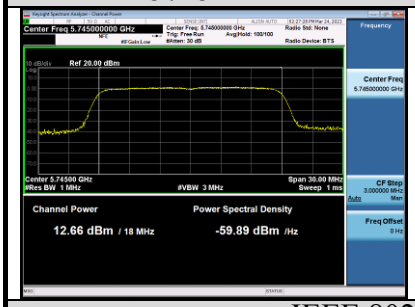
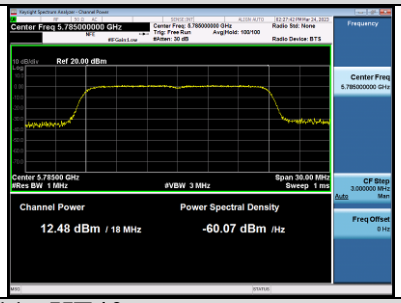
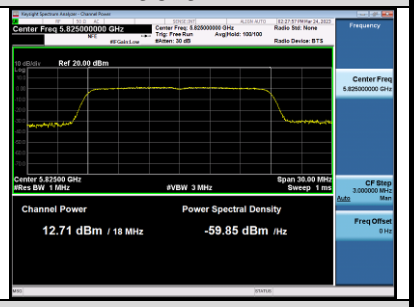
ANT0:

U-NII-3 Band:		
IEEE 802.11a		
5745MHz	5785MHz	5825MHz
		
IEEE 802.11n HT20		
5745MHz	5785MHz	5825MHz
		
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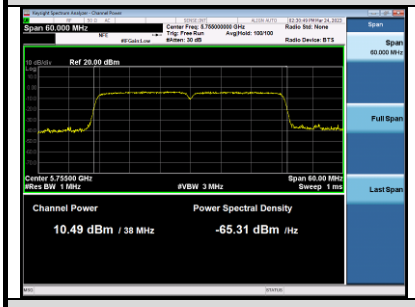
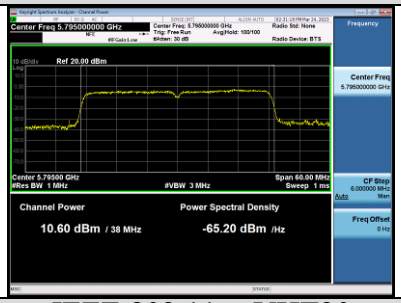
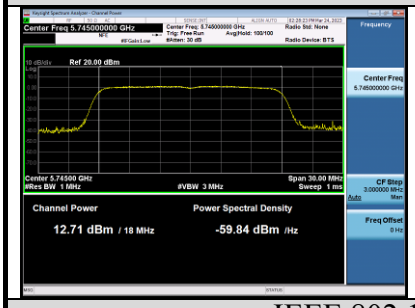
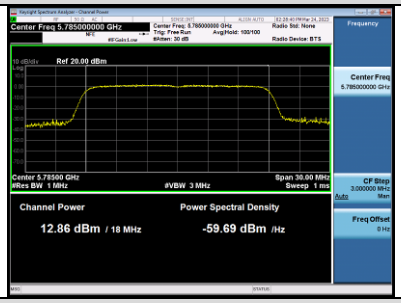
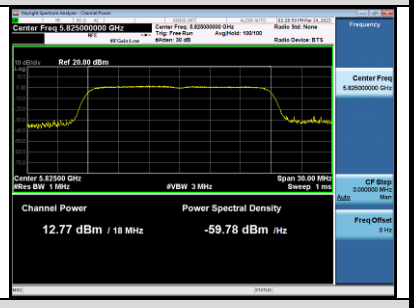
5755MHz	5795MHz	---
		---
IEEE 802.11ac VHT20		
5745MHz	5785MHz	5825MHz
		
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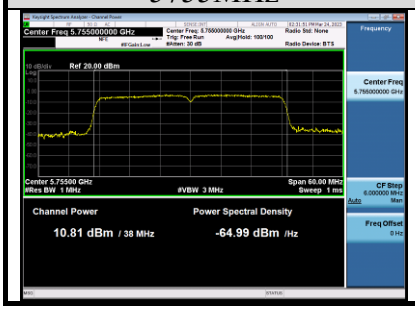
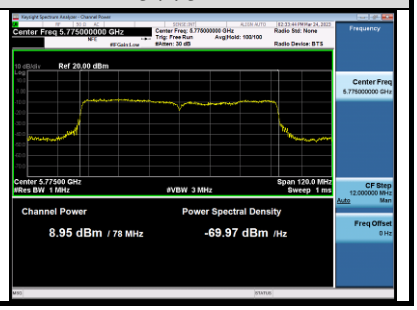
5755MHz	5795MHz	5775MHz
		

U-NII-3 Band:		
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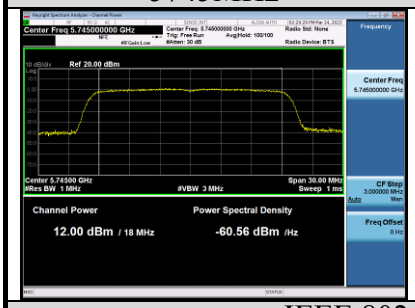	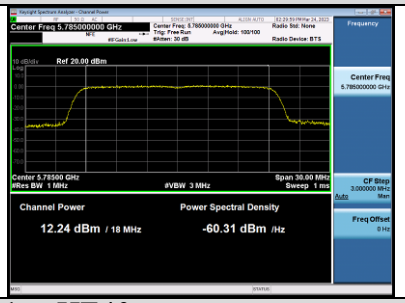	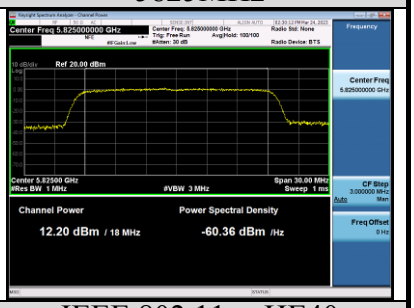
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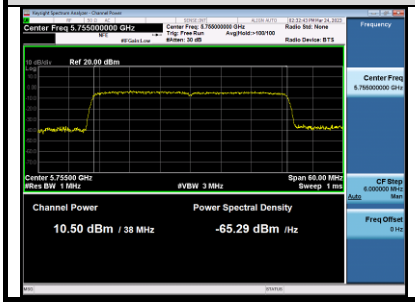
5755MHz	5795MHz	5775MHz
		

ANT1:

U-NII-3 Band:		
IEEE 802.11a		
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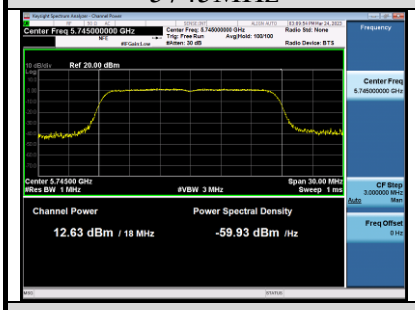	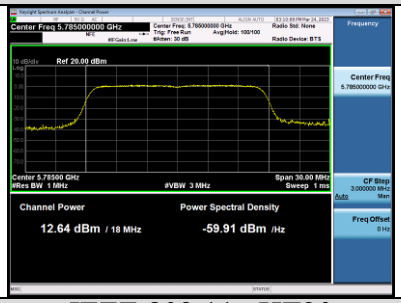	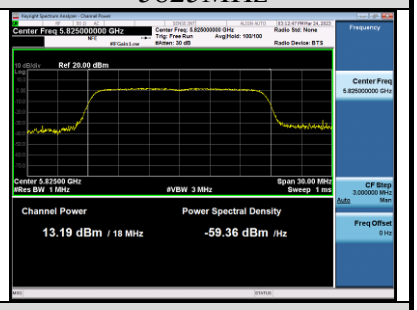
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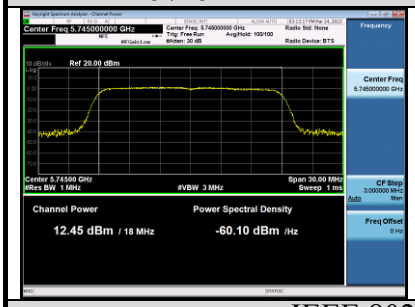
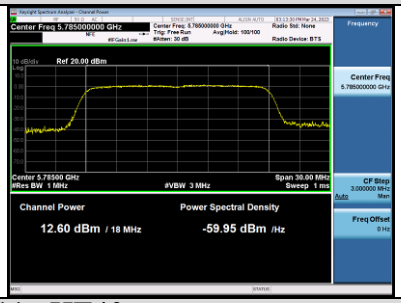
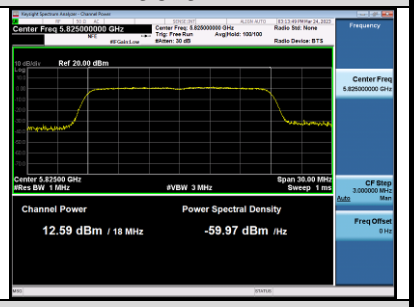
5745MHz	5785MHz	5825MHz
		
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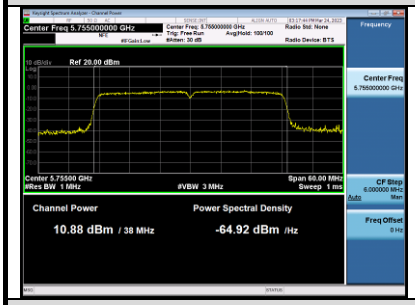
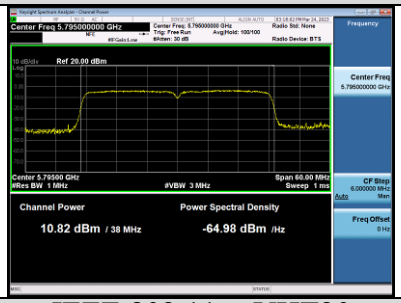
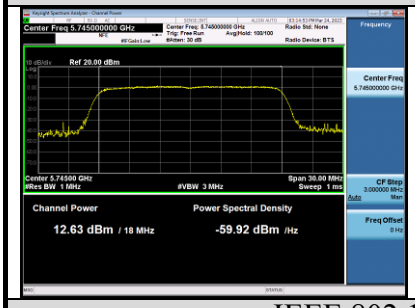
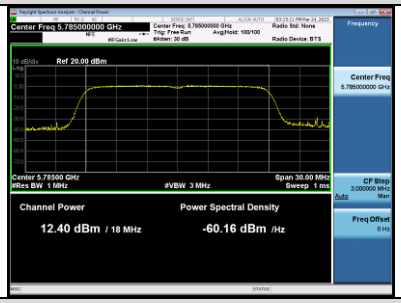
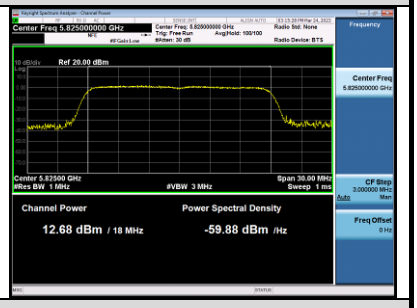
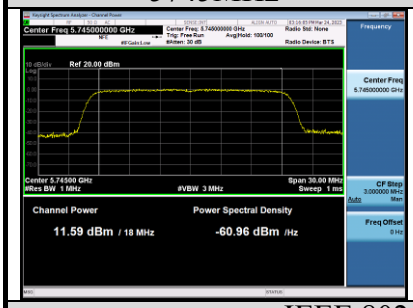
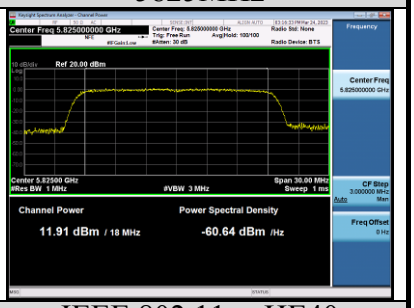
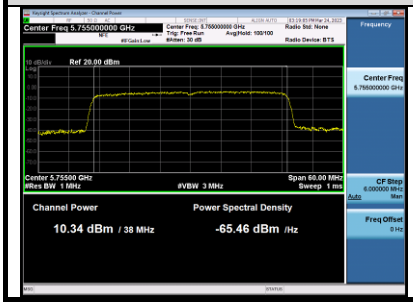
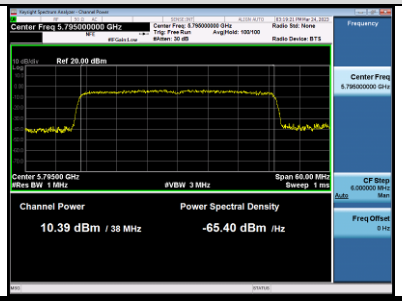
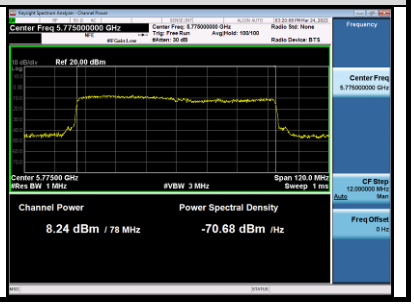
5755MHz	5795MHz	---
		---
IEEE 802.11ac VHT20		
5745MHz	5785MHz	5825MHz
		
IEEE 802.11ac VHT40		IEEE 802.11ac VHT80
5755MHz	5795MHz	5775MHz
		

U-NII-3 Band:		
IEEE 802.11ax HE20		
5745MHz	5785MHz	5825MHz
		
IEEE 802.11ax HE40		IEEE 802.11ax HE40
5755MHz	5795MHz	5775MHz
		

8. SPECTRAL DENSITY TEST

8.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.02,23	1 Year
2.	RF Cable	Mini-Circults	CBL-1M-SMSM+	No.7	Oct.10,22	1 Year

8.2. Limit

Band 5150-5250 MHz:
The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.
Band 5725-5850 MHz:
The power spectral density shall not exceed 30 dBm in any 500 KHz band.

8.3. Test Procedure

For the Band 5.15-5.25GHz:
The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 1MHz RBW and 3MHz VBW; Detector: RMS mode.

For the band 5.725-5.85 GHz:
The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 1MHz RBW and 3MHz VBW,RMS Detector.
So use the test method described in KDB789033 clause E

1) Set the RBW=100kHz and VBW ≥3 RBW
2) Number of points in sweep ≥ 2 Span / RBW.(This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
3) Sweep time = auto
4) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
5) Use the “peak search” function of spectrum analyzer find the max value, then add 10log (500kHz/RBW) to the measured result.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

8.4.Test Results

U-NII-1 Band:

EUT: Mini PC		
M/N: A Series		
Test date: 2023-04-12	Pressure: 101.8±1.0 kpa	Humidity: 52.3±3.0%
Tested by: Nier	Test site: RF site	Temperature:22.0±0.6 ℃

Test Mode	Frequency (MHz)	Power Spectral Density(dBm/MHz)			Limit (dBm/MHz)
		ANT0	ANT1	Total	
11a (MIMO)	5180	1.185	1.488	4.349	17
	5200	1.412	1.642	4.539	
	5240	1.483	0.652	4.098	
11n HT20 (MIMO)	5180	0.908	1.468	4.207	17
	5200	1.226	0.798	4.028	
	5240	0.573	0.607	3.600	
11n HT40 (MIMO)	5190	-4.238	-4.412	-1.314	17
	5230	-3.848	-4.658	-1.224	
11ac VHT20 (MIMO)	5180	0.609	1.272	3.963	17
	5200	0.869	0.281	3.595	
	5240	-0.267	0.224	2.996	
11ac VHT40 (MIMO)	5190	-2.614	-4.354	-0.387	17
	5230	-3.627	-4.320	-0.949	
11ac VHT80 (MIMO)	5210	-8.089	-8.543	-5.300	17
11ax HE20 (MIMO)	5180	1.388	0.188	3.840	17
	5200	-0.015	1.438	3.782	
	5240	0.536	0.545	3.551	
11ax HE40 (MIMO)	5190	-3.217	-2.964	-0.078	17
	5230	-4.132	-3.542	-0.817	
11ax HE80 (MIMO)	5210	-8.049	-8.676	-5.341	17
Conclusion:Pass					

Notes: 1. Directional Gain(for antenna NUCBC02)= 10 log($10^{2.47/10}$+$10^{-0.7/10}$/2)dBi=1.17dBi＜6dBi.
Directional Gain(for antenna NUCAL02)= 10 log($10^{3.28/10}$+$10^{4.39/10}$/2)dBi=3.87dBi＜6dBi.
2. The transmit signals are completely uncorrelated.

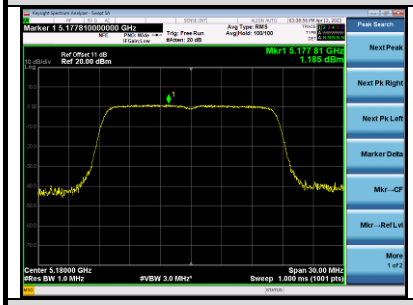
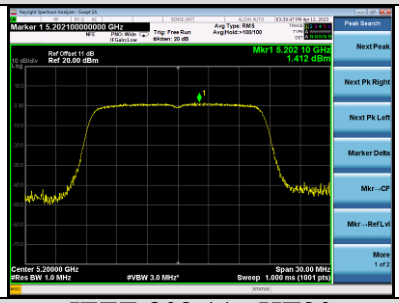
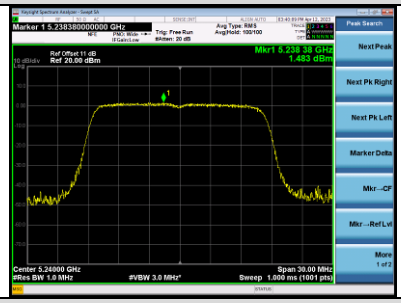
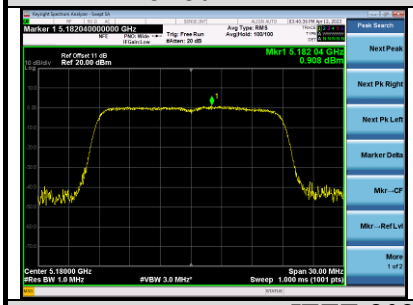
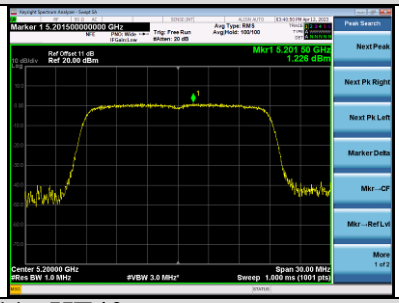
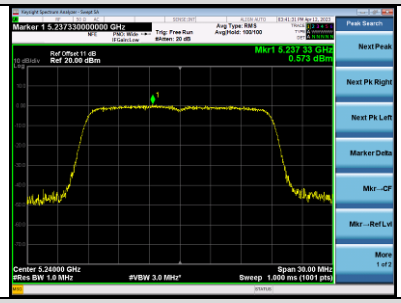
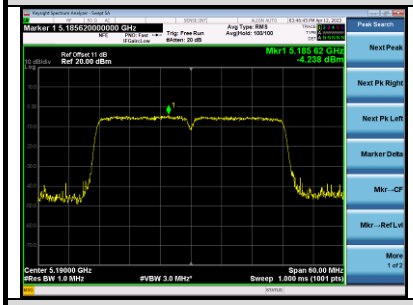
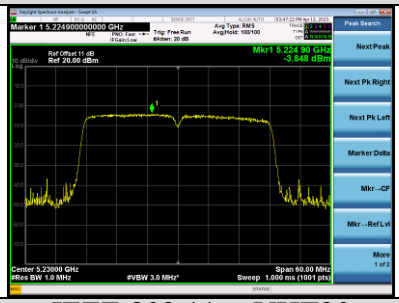
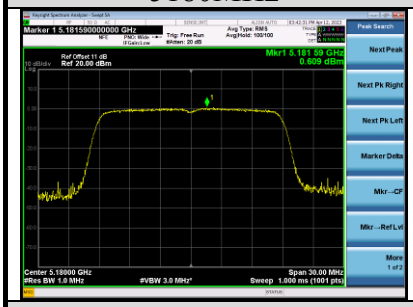
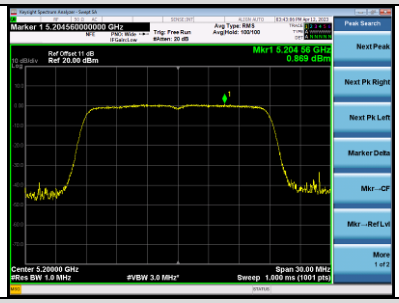
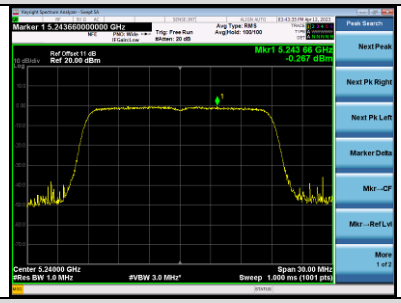
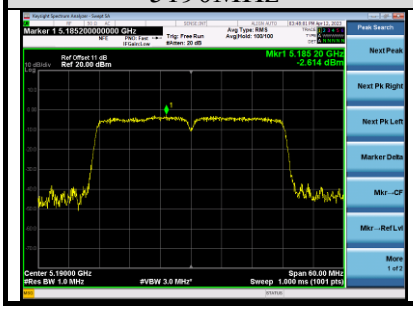
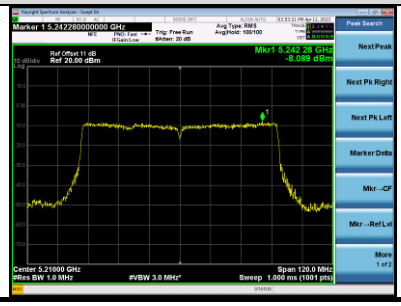
U-NII-3 Band:

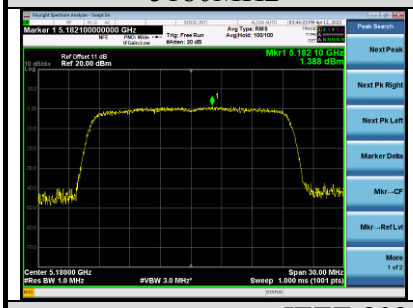
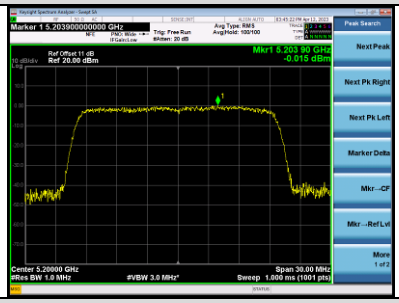
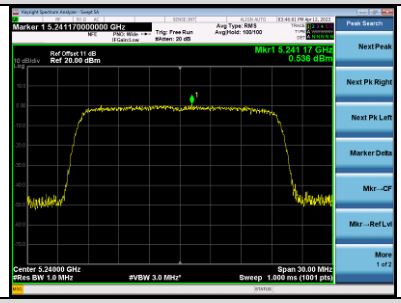
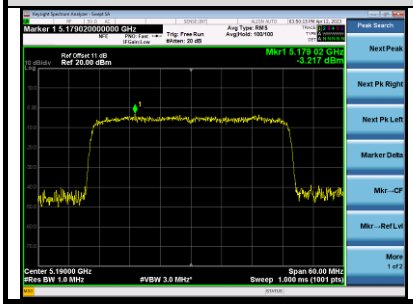
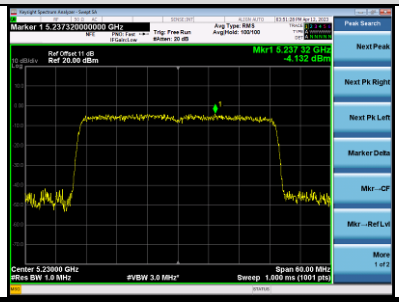
EUT: Mini PC		
M/N: A Series		
Test date: 2023-04-13	Pressure: 102.1±1.0 kpa	Humidity: 53.2±3.0%
Tested by: Nier	Test site: RF site	Temperature:22.3±0.6 ℃

Test Mode	Frequency (MHz)	Power Spectral Density(dBm/500KHz)			Limit (dBm/500KHz)
		ANT0	ANT1	Total	
11a (MIMO)	5745	1.022	0.284	3.679	29.19
	5785	0.886	1.173	4.042	
	5825	-0.015	1.455	3.792	
11n HT20 (MIMO)	5745	-0.284	-0.456	2.641	29.19
	5785	-0.075	0.350	3.153	
	5825	-0.994	0.695	2.942	
11n HT40 (MIMO)	5755	-4.255	-4.761	-1.490	29.19
	5795	-3.846	-5.239	-1.477	
11ac VHT20 (MIMO)	5745	0.262	-0.720	2.809	29.19
	5785	1.014	0.905	3.970	
	5825	-0.353	1.219	3.514	
11ac VHT40 (MIMO)	5755	-3.780	-3.153	-0.445	29.19
	5795	-4.206	-3.486	-0.821	
11ac VHT80 (MIMO)	5775	-8.929	-9.296	-6.098	29.19
11ax HE20 (MIMO)	5745	-0.834	-1.796	1.722	29.19
	5785	-0.133	-1.204	2.375	
	5825	-0.440	-1.233	2.192	
11ax HE40 (MIMO)	5755	-2.870	-3.689	-0.250	29.19
	5795	-4.612	-2.541	-0.444	
11ax HE80 (MIMO)	5775	-8.025	-9.143	-5.538	29.19
Conclusion: Pass					

Notes: 1. Directional Gain(for antenna NUCBC02)= 10 log($10^{2.09/10}$+$10^{0.03/10}$/2)dBi=1.18dBi＜6dBi.
Directional Gain(for antenna NUCAL02)= 10 log($10^{7.53/10}$+$10^{5.95/10}$/2)dBi=6.81dBi＞6dBi.
2. The transmit signals are completely uncorrelated.
3. Result = Reading + 10 log(500kHz/100kHz)

ANT0:

U-NII-1 Band:		
IEEE 802.11a		
5180MHz	5200MHz	5240MHz
		
IEEE 802.11n HT20		
5180MHz	5200MHz	5240MHz
		
IEEE 802.11n HT40		---
5190MHz	5230MHz	---
		---
IEEE 802.11ac VHT20		
5180MHz	5200MHz	5240MHz
		
IEEE 802.11ac VHT40		IEEE 802.11ac VHT80
5190MHz	5230MHz	5210MHz
		

U-NII-1 Band:		
IEEE 802.11ax HE20		
5180MHz	5200MHz	5240MHz
		
IEEE 802.11ax HE40		IEEE 802.11ax HE80
5190MHz	5230MHz	5210MHz
		

ANT1:

U-NII-1 Band:		
IEEE 802.11a		
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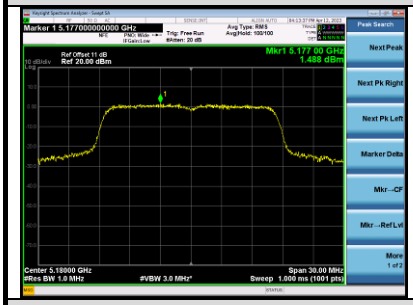
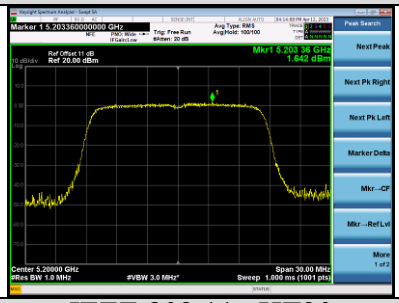
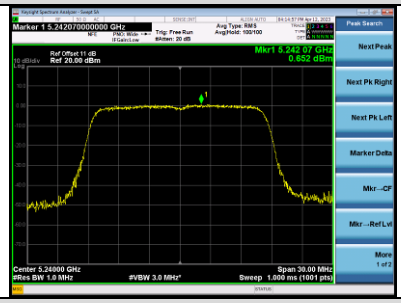
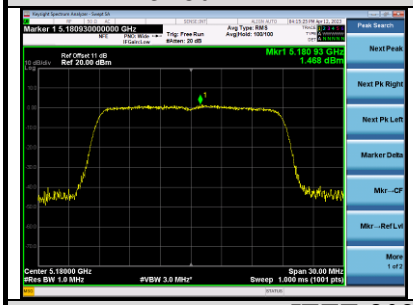
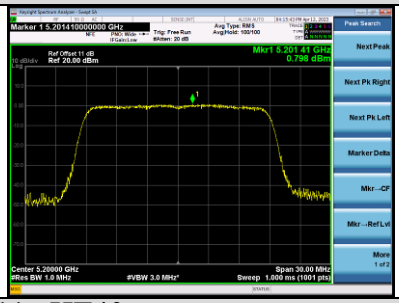
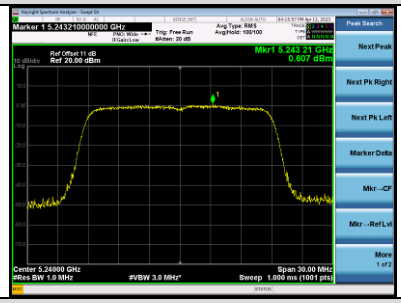
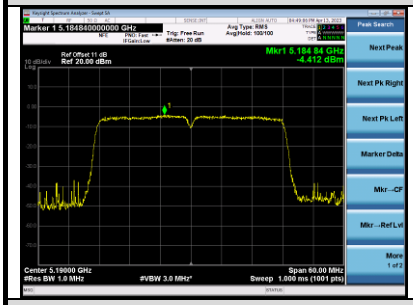
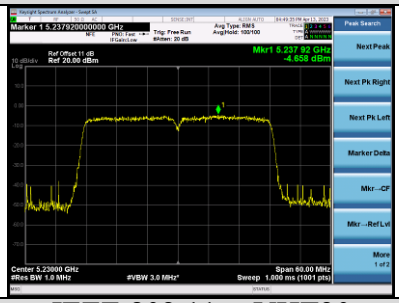
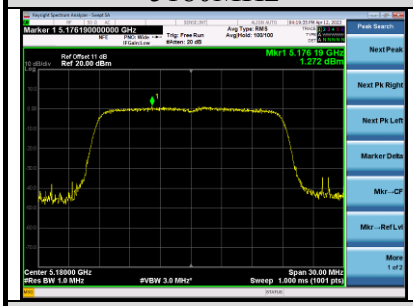
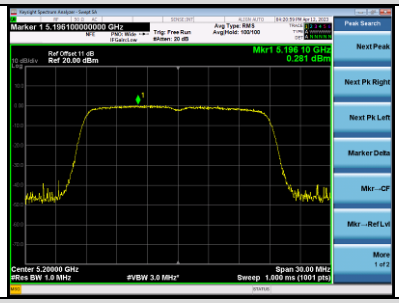
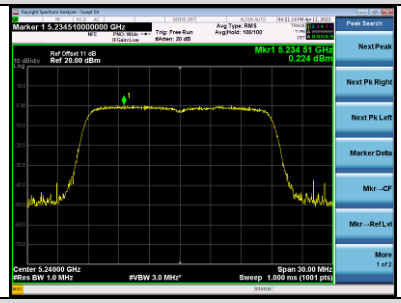
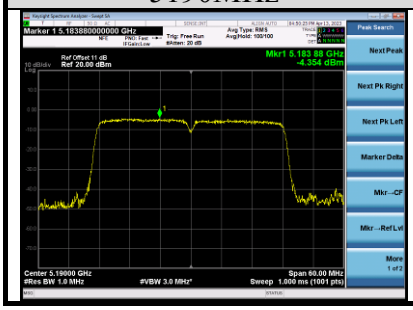
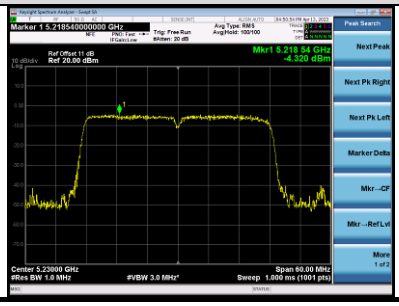
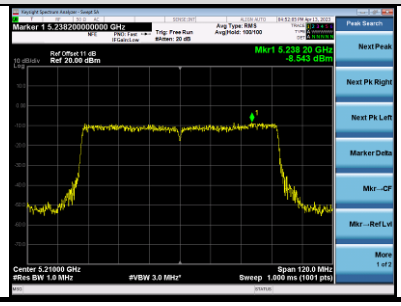
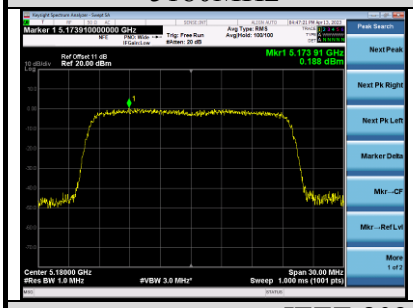
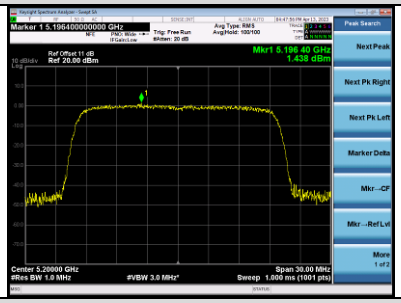
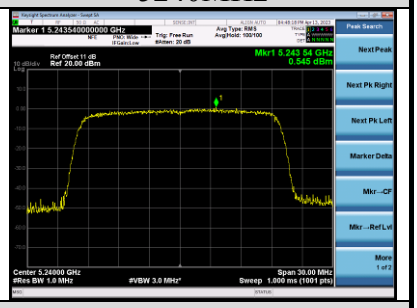
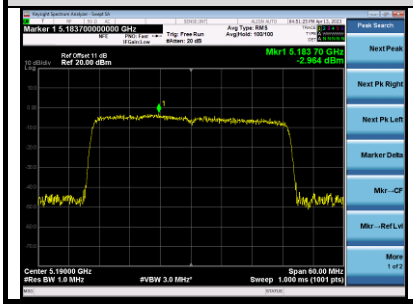
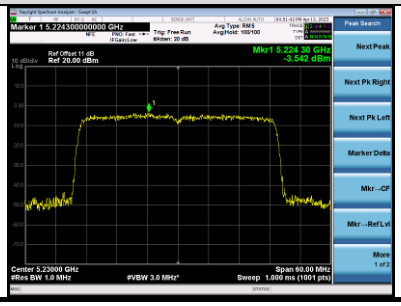
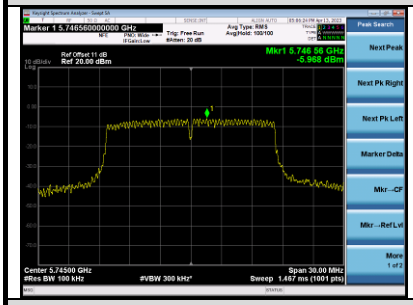
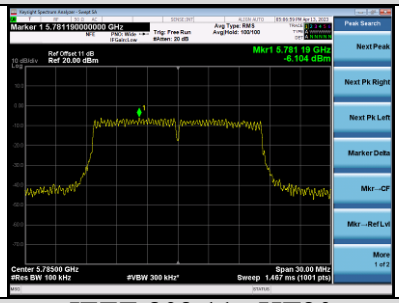
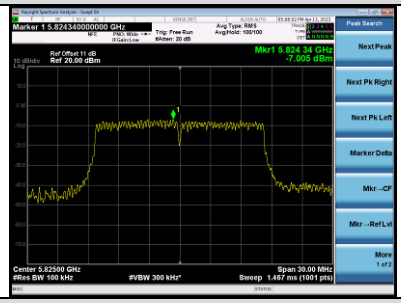
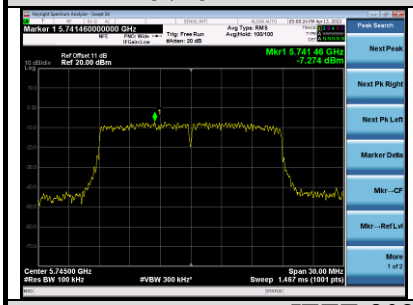
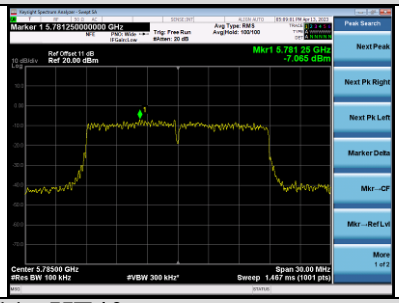
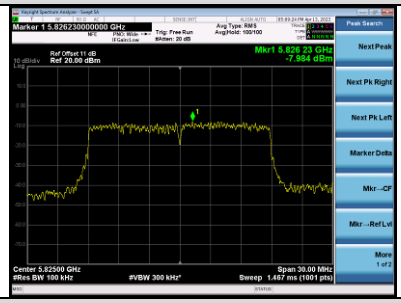
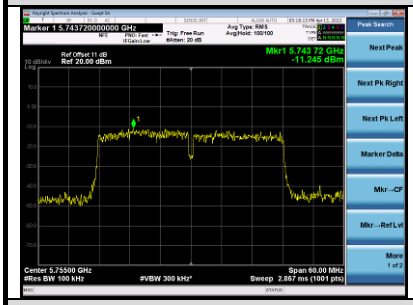
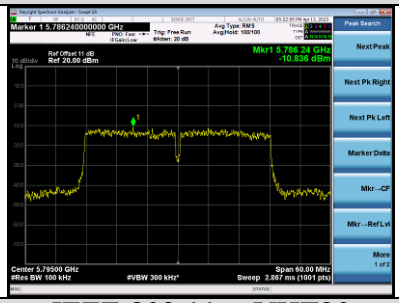
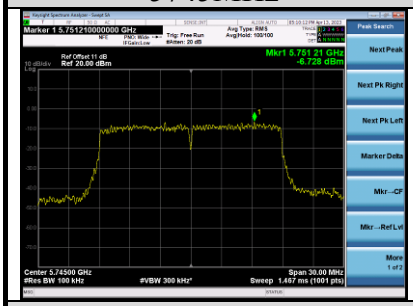
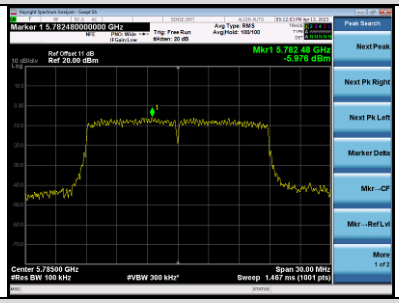
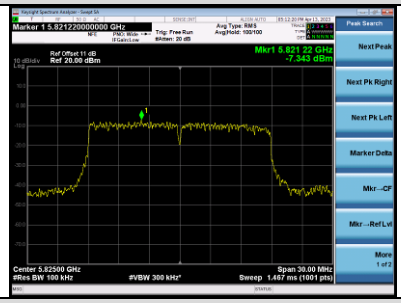
		
IEEE 802.11n HT20		
5180MHz	5200MHz	5240MHz
		
IEEE 802.11n HT40		---
5190MHz	5230MHz	---
		---
IEEE 802.11ac VHT20		
5180MHz	5200MHz	5240MHz
		
IEEE 802.11ac VHT40		IEEE 802.11ac VHT80
5190MHz	5230MHz	5210MHz
		

U-NII-1 Band:		
IEEE 802.11ax HE20		
5180MHz	5200MHz	5240MHz
		
IEEE 802.11ax HE40		IEEE 802.11ax HE80
5190MHz	5230MHz	5210MHz
		

ANT0:

U-NII-3 Band:		
IEEE 802.11a		
5745MHz	5785MHz	5825MHz
		
IEEE 802.11n HT20		
5745MHz	5785MHz	5825MHz
		
IEEE 802.11n HT40		---
5755MHz	5795MHz	---
		---
IEEE 802.11ac VHT20		
5745MHz	5785MHz	5825MHz
		
IEEE 802.11ac VHT40		IEEE 802.11ac VHT80
5755MHz	5795MHz	5775MHz