TEST REPORT

Report Number: 14523740-E10V2

Applicant	:	APPLE INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.
Model	:	A2848
Brand	:	APPLE
FCC ID	:	BCG-E8435A
EUT Description	:	SMARTPHONE
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART E

Date Of Issue:
2023/07/31

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538 U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888

ACCREDITED
CERT #0751.05

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	7/19/2023	Initial Issue	Francisco deAnda
V2	7/31/2023	Addressed TCB Questions on Section 2, 3, 6, 8, 9	Tony Li

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE INC.
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A

EUT DESCRIPTION: SMART PHONE

MODEL: A2848

BRAND: APPLE

SERIAL NUMBER: C07GQU0010S00003PJ (Conducted)
C07GTH0012C00003PJ (Conducted)
LVMPXQW46R (Radiated)

SAMPLE RECEIPT DATE: FEBRUARY 14, 2023

DATE TESTED: MARCH 23, 2023 – JULY 25, 2023

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Complies

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released For
UL Verification Services Inc. By:

Francisco deAnda
Staff Engineer
Consumer Technology Division
UL Verification Services Inc.

Prepared By:

Tony Li
Senior Test Engineer
Consumer Technology Division
UL Verification Services Inc.

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2. TEST RESULT SUMMARY

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for the validity of results after the integration of the data provided by the customer.

Below is a list of the data provided by the customer:

1. Antenna gain and type (see section 6.3)
2. Cable loss (see section 6.3)

FCC Clause	Requirement	Result	Comment
See Comment	Duty Cycle	Reporting purposes only	ANSI C63.10 Section 12.2 ...
See Comment	99% BW	Reporting purposes only	ANSI C63.10 Section 6.9.3
See Comment	26dB BW	Reporting purposes only	None.
§15.407 (a) (7), (8)	Output Power e.i.r.p.	Compliant	Dual Client.
§15.407 (a) (7), (8)	PSD e.i.r.p	Compliant	Dual Client.
§15.407 (b) (6)	Emissions outside 5.925-7.125 GHz band	Compliant	None
§15.407 (b) (7)	Emissions within 5.925-7.125 GHz Band(Emissions Mask)	Compliant	None
§15.205	Unwanted emissions in restricted bands	Compliant	None
§15.209	Radiated Spurious Emissions	Compliant	None
§15.207	AC Mains Conducted Emissions	Compliant	None

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3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with:
- FCC CFR 47 Part 2
- FCC CFR 47 Part 15
- FCC KDB 662911 D01 v02r01
- FCC KDB 789033 D02 v02r01
- FCC KDB 987594 D01 General Requirements v01r03
- FCC KDB 987594 D02 EMC Measurement v01r01
- KDB 414788 D01 Radiated Test Site v01r01
- ANSI C63.10-2013

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☐	Building 3: 843 Auburn Court, Fremont, CA 94538 USA			
☐	Building 4: 47658 Kato Rd, Fremont, CA 94538 USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538 USA			

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5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U_{Lab}
Conducted Antenna Port Emission Measurement	1.940 dB
Power Spectral Density	2.466 dB
Time Domain Measurements Using SA	3.39 %
RF Power Measurement Direct Method Using Power Meter	0.450 dB (Peak) 1.300 dB (Ave)
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22%
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 db
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 db
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 db
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 db
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 db
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 db
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 db

Uncertainty figures are valid to a confidence level of 95%.

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5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:
Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:
Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
36.5 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

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6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The Apple iPhone is a smartphone with cellular GSM, GPRS, EGPRS, UMTS, LTE, 5GNR1, 5GNR2, IEEE 802.11a/b/g/n/ac/ax, Bluetooth (BT), Ultra-Wideband (UWB), GPS, NFC, NB UNII, 802.15.4, 802.15.4ab-NB and MSS technologies. The rechargeable battery is not user accessible.

This report covers 6E 802.11 ax Wifi radio.

6.1.1. EUT DEVICE CLASS

Dual Client (6CD)	U-NII Bands of Operation			
	5	6	7	8
Indoor Client	☒	☒	☒	☒
Standard Client	☒	☐	☒	☐

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6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum EIRP output power as follows:

6.2.1. LP

UNII-5 BAND

Frequency Range (MHz)	Mode	Output Power EIRP (dBm)	Output Power EIRP (mW)
UNII-5 Band, 1TX			
5955-6415	802.11ax HE20	8.95	7.85
5965-6405	802.11ax HE40	11.90	15.49
5985-6385	802.11ax HE80	14.41	27.61
6025-6345	802.11ax HE160	17.45	55.59
UNII-5 Band, 2TX			
5955-6415	802.11ax HE20 OFDMA	5.98	3.96
5955-6415	802.11ax HE20 OFDMA, SDM	8.97	7.89
5965-6405	802.11ax HE40 OFDMA	8.90	7.76
5965-6405	802.11ax HE40 OFDMA, SDM	11.95	15.67
5985-6385	802.11ax HE80 OFDMA	11.48	14.06
5985-6385	802.11ax HE80 OFDMA, SDM	14.43	27.73
6025-6345	802.11ax HE160 OFDMA	14.47	27.99
6025-6345	802.11ax HE160 OFDMA, SDM	17.47	55.85

UNII-6 BAND

Frequency Range (MHz)	Mode	Output Power EIRP (dBm)	Output Power EIRP (mW)
UNII-6 Band, 1TX			
6435 - 6515	802.11ax HE20	8.96	7.87
6445 - 6525	802.11ax HE40	11.97	15.74
6465	802.11ax HE80	14.48	28.05
6505	802.11ax HE160, Straddle Channel	17.38	54.70
UNII-6 band, 2TX			
6435 - 6515	802.11ax HE20 OFDMA	5.90	3.89
6435 - 6515	802.11ax HE20 OFDMA, SDM	8.72	7.45
6445 - 6525	802.11ax HE40 OFDMA	9.57	9.06
6445 - 6525	802.11ax HE40 OFDMA, SDM	12.04	16.00
6465	802.11ax HE80 OFDMA	11.46	14.00
6465	802.11ax HE80 OFDMA, SDM	14.27	26.73
6505	802.11ax HE160 OFDMA, Straddle	15.07	32.14
6505	802.11ax HE160 OFDMA, SDM Straddle	17.55	56.89

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UNII-7 BAND

Frequency Range (MHz)	Mode	Output Power EIRP (dBm)	Output Power EIRP (mW)
UNII-7 Band 1TX			
6535 - 6875	802.11ax HE20	8.89	7.74
6565 - 6845	802.11ax HE40	11.87	15.38
6545 - 6865	802.11ax HE80	14.34	27.16
6665 - 6825	802.11ax HE160	17.36	54.45
UNII-7 Band 2TX			
6535-6875	802.11ax HE20 OFDMA	6.24	4.21
6535-6875	802.11ax HE20 OFDMA, SDM	8.73	7.46
6565-6845	802.11ax HE40 OFDMA	9.22	8.36
6565-6845	802.11ax HE40 OFDMA, SDM	11.73	14.89
6545-6865	802.11ax HE80 OFDMA	12.03	15.96
6545-6865	802.11ax HE80 OFDMA, SDM	14.56	28.58
6665-6825	802.11ax HE160 OFDMA	14.72	29.65
6665-6825	802.11ax HE160 OFDMA, SDM	17.21	52.60

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UNII-8 BAND

Frequency Range (MHz)	Mode	Output Power EIRP (dBm)	Output Power EIRP (mW)
UNII-8 Band 1TX			
6895-7115	802.11ax HE20	8.76	7.52
6885-7085	802.11ax HE40	11.88	15.42
6945-7025	802.11ax HE80	14.25	26.61
6985	802.11ax HE160	15.93	39.17
UNII-8 Band 2TX			
6895-7115	802.11ax HE20 OFDMA	6.15	4.12
6895-7115	802.11ax HE20 OFDMA, SDM	8.93	7.82
6885-7085	802.11ax HE40 OFDMA	9.25	8.41
6885-7085	802.11ax HE40 OFDMA, SDM	11.92	15.56
6945-7025	802.11ax HE80 OFDMA	11.57	14.35
6945-7025	802.11ax HE80 OFDMA, SDM	14.45	27.86
6985	802.11ax HE160 OFDMA	14.66	29.24
6985	802.11ax HE160 OFDMA, SDM	17.13	51.64

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6.2.2. SP

UNII-5 BAND

Frequency Range (MHz)	Mode	Output Power EIRP (dBm)	Output Power EIRP (mW)
UNII-5 Band, 1TX			
5955-6415	802.11ax HE20	17.95	62.37
5965-6405	802.11ax HE40	17.95	62.37
5985-6385	802.11ax HE80	17.91	61.80
6025-6345	802.11ax HE160	17.97	62.66
UNII-5 Band, 2TX			
5955-6415	802.11ax HE20 OFDMA	19.73	93.97
5955-6415	802.11ax HE20 SDM	Covered by 802.11ax HE20 OFDMA	
5965-6405	802.11ax HE40 OFDMA	19.84	96.38
5955-6405	802.11ax HE40 SDM	Covered by 802.11ax HE40 OFDMA	
5985-6385	802.11ax HE80 OFDMA	19.79	95.28
5985-6385	802.11ax HE80 SDM	Covered by 802.11ax HE80 OFDMA	
6025-6345	802.11ax HE160 OFDMA	22.46	176.20
6025-6345	802.11ax HE160 SDM	Covered by 802.11ax HE160 OFDMA	

UNII-7 BAND

Frequency Range (MHz)	Mode	Output Power EIRP (dBm)	Output Power EIRP (mW)
UNII-7 Band 1TX			
6535-6855	802.11ax HE20	17.52	56.49
6565-6845	802.11ax HE40	17.53	56.62
6625-6785	802.11ax HE80	17.51	56.36
6665	802.11ax HE160	17.53	56.62
UNII-7 Band 2TX			
6535-6855	802.11ax HE20 OFDMA	18.75	74.99
6535-6855	802.11ax HE20 SDM	Covered by 802.11ax HE20 OFDMA	
6565-6845	802.11ax HE40 OFDMA	18.74	74.82
6565-6845	802.11ax HE40 SDM	Covered by 802.11ax HE40 OFDMA	
6625-6785	802.11ax HE80 OFDMA	18.74	74.82
6625-6785	802.11ax HE80 SDM	Covered by 802.11ax HE80 OFDMA	
6665	802.11ax HE160 OFDMA	18.74	74.82
6665	802.11ax HE160 SDM	Covered by 802.11ax HE160 OFDMA	

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6.3. DESCRIPTION OF AVAILABLE ANTENNAS AND CABLE LOSS

The antenna(s) gain and type, cable loss as provided by the manufacturer' are as follows:

Antenna Gain					
Frequency Range	**Sub-band**	**Antenna 6**	**Antenna 5**	**Uncorrelated Chains**	**Correlated Chains**
(MHz)	**(MHz)**	**Gain (dBi)**	**Gain (dBi)**	**Directional Gain (dBi)**	**Directional Gain (dBi)**
5925 - 6425 UNII-5	Sub-band 1 (5955 - 6095)	-3.10	-4.70	-3.83	-0.85
	Sub-band 2 (6115 - 6255)	-1.50	-4.20	-2.64	0.26
	Sub-band 3 (6275 - 6415)	-2.40	-4.40	-3.29	-0.33
6425 - 6525 UNII-6	N/A	-1.80	-4.70	-3.01	-0.12
UNII-6/7 (Straddle Channel)	N/A	-0.90	-4.70	-2.40	0.42
6525 - 6875 UNII-7	N/A	-0.90	-5.90	-2.72	-0.03
UNII-7/8 (Straddle Channel)	N/A	-0.90	-5.90	-2.72	-0.03
6875 - 7125 UNII-8	N/A	-2.50	-7.50	-4.32	-1.63

Cable Loss		
Frequency Range (MHz)	**Antenna 6 (dBi)**	**Antenna 5 (dBi)**
5925-6105	2.93	3.20
6105-6265	2.93	3.20
6265-6425	2.98	3.40
6425-6525	3.03	3.45
6525-6875	3.08	3.60
6875-7125	3.08	3.50

The cables were used for RF antenna port tests that had been offset to the test equipment during testing.

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6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 23_10_663

6.5. WORST-CASE CONFIGURATION AND MODE

This device is classified as dual client and programmed with two output power levels: indoor client mode (LP) & standard client mode (SP) and only indoor client mode supports straddle channels.

For rf conducted tests, indoor client mode has been tested with SISO and 2TX CDD and SDM MIMO modes; Standard client mode was done with SISO and 2TX CDD modes as it has same output power levels in 2TX CDD and SDM modes and 2TX CDD mode was set for all antenna port tests after investigation.

The 802.11a mode 20MHz covered by the 802.11ax mode since both have the same power.

Radiated was performed at the higher of the LP and SP power levels. The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that Z (Portrait) orientation was worst-case orientation for ANT6 and Y (Landscape) was the worst-case orientation for ANT5 and 2TX.

With same power on Full RU and SU higher data rate, investigations were performed on both for band edge to determine the worst case, and SU mode was determined to be the worst case. Radiated emissions below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario. There were no emissions found below 30MHz within 20dB of the limit.

For radiated harmonics spurious below 1GHz, 1-18GHz L/M/H channels, 18-26GHz, 26-40GHz and power line conducted emissions were performed with the EUT set at the 2TX CDD mode among the CDD/SDM modes and 2TX HE mode with power setting equal or higher than SISO modes as worst-case scenario.

For radiated band edge test, all test modes have been investigated with power setting equal or higher than conducted SISO modes as the worst-case scenario.

Below 1GHz tests were performed with EUT connected to AC power adapter as the worst case; and for above 1GHz tests, the worst-case configuration reported was with EUT only. For AC line conducted emission, test was investigated with AC power adapter and with laptop.

The output power and psd for the 802.11 ax mode were investigated between all different tones, and we found that SU mode had the highest output power and the lowest tone had the highest PSD readings. And after investigation, antenna port conducted tests were performed on both SU and lowest tones; radiated spurious emission and radiated band edge tests were performed on SU and lowest tones.

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For conducted testing - all tests perform on both SU (highest output power) and lowest tones (highest PSD reading).

Low data rate was used to test on antenna port conducted tests and radiated spurious emissions since it has the highest maximum power. For the radiated band edge on UNII-5 (low channel) & UNII-8 (high channel), following are the worst-case data rates set for test:

802.11ax HE20/HE40/HE80/HE160 RU 26 Tones and SU modes: MCS0 & MCS11 (report MCS11 only as worst-case mode).
802.11ax HE20 Channel 233: supports SU Mode only per Client.

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6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT						
Description		**Manufacturer**	**Model**	**Serial Number**		**FCC ID/ DoC**
Laptop		Apple	Macbook Pro	C02VD7SAHV22		BCGA1708
Laptop AC/DC adapter		Liteon Technology	A1424	NSW25679		DoC
EUT AC/DC adapter		Apple	A1720	C3D8417A7R93KVPA8		DoC
Conducted Switch Box		UL	n/a	208281		N/A
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz		Pasternack Enterprises	PE7024-10	236358		N/A
I/O CABLES (RF CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	SMA	1	SMA	Shielded	0.75	To spectrum Analyzer
2	Antenna	2	SMA	Un-shielded	0.2	To Conducted Switch Box
3	USB-C	1	USB-C	Shielded	1.0	N/A
4	AC	1	AC	Un-shielded	2	N/A
I/O CABLES (RF RADIATED AND AC LINE CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	AC	Un-shielded	2	N/A
2	USB	1	USB	Shielded	1	N/A

TEST SETUP

The EUT setup is shown as below. Test software exercised the radio card.

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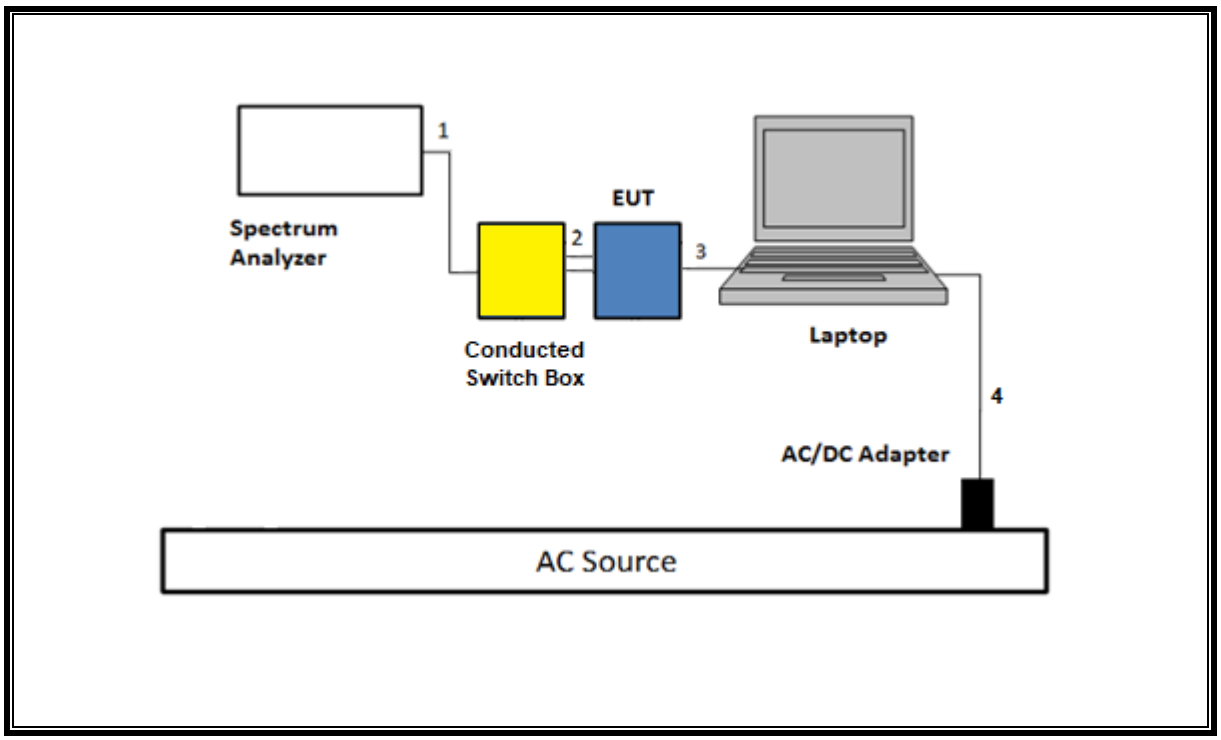
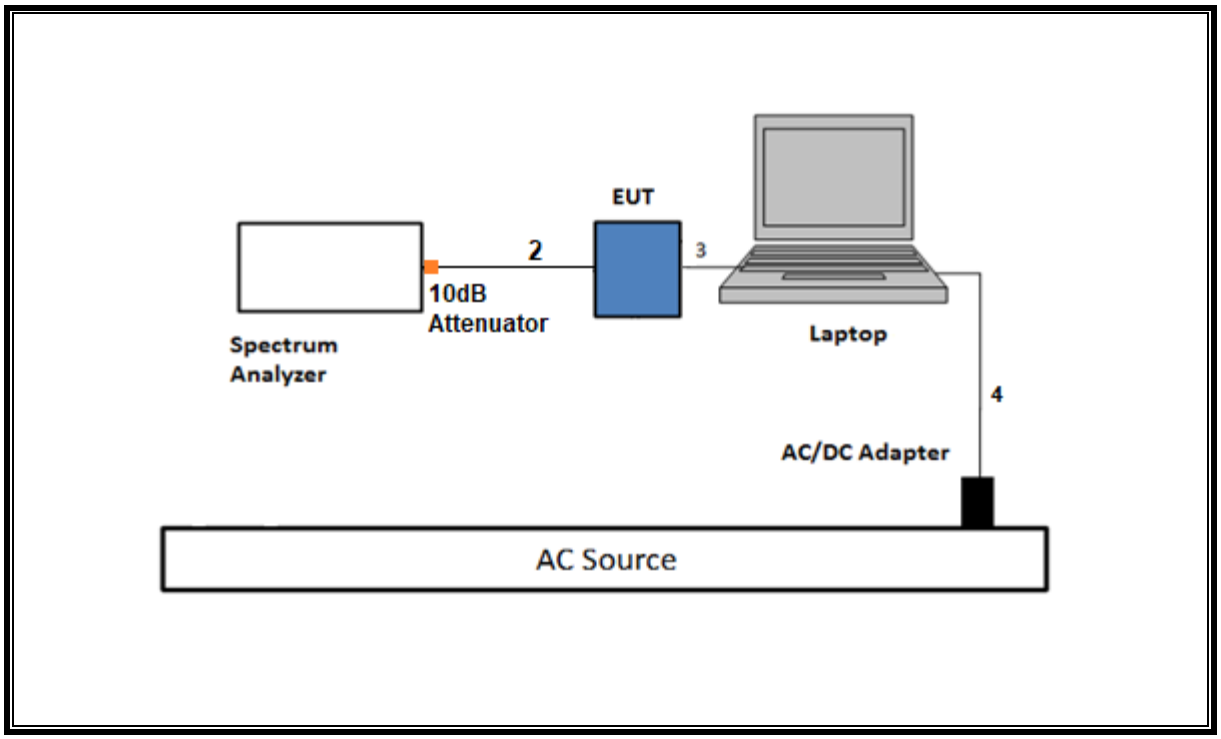
SETUP DIAGRAM FOR CONDUCTED TESTS





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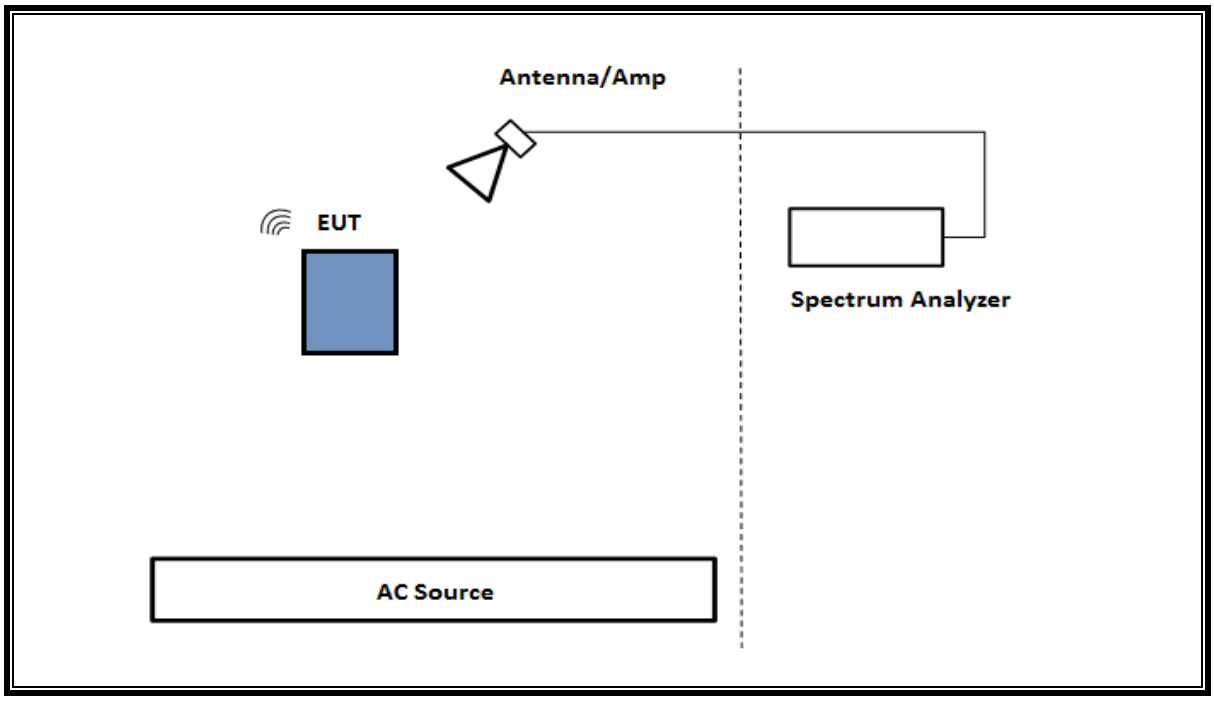
SETUP DIAGRAM FOR RADIATED TESTS Above 1 GHz



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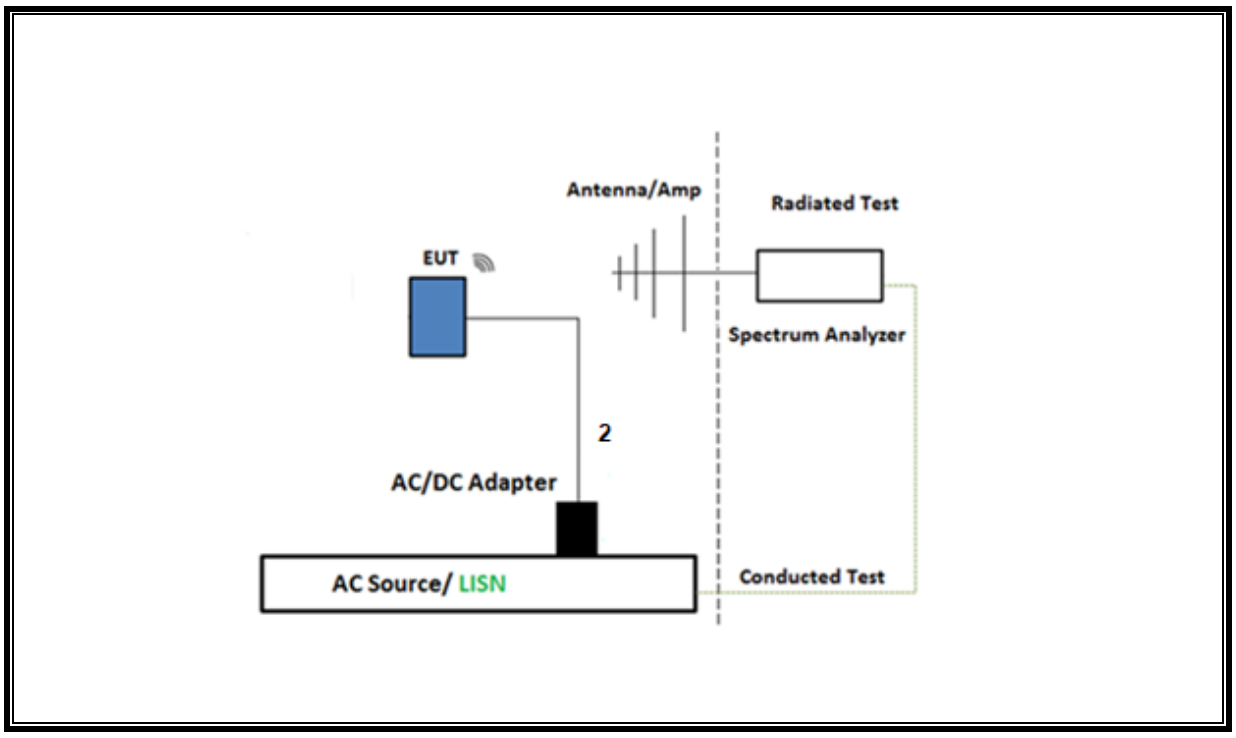
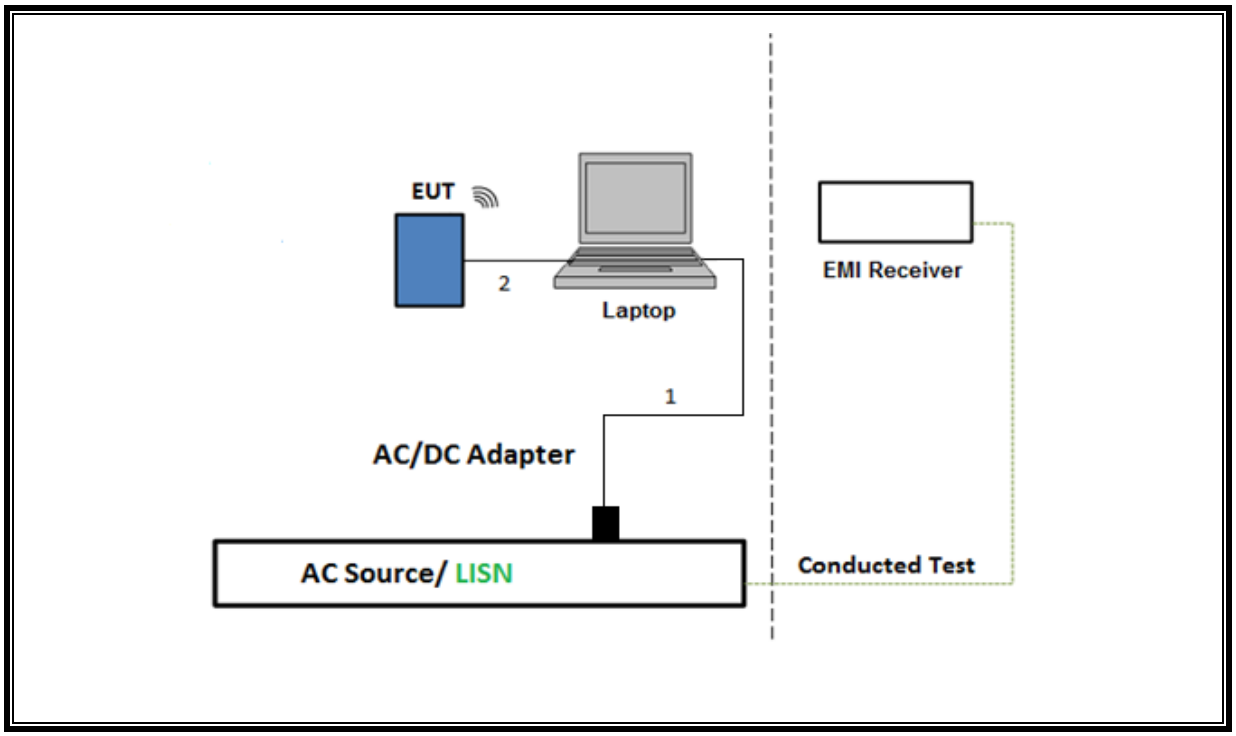
SETUP DIAGRAM FOR Below 1GHz and AC LINE CONDUCTED TEST



TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION



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7. MEASUREMENT METHOD

On Time and Duty Cycle: KDB 789033 D02 v02r01, Section B.

26 dB Emission BW: KDB 789033 D02 v02r01, Section C.

99% Occupied Bandwidth: KDB 789033 D02 v02r01, Section II-D

Conducted Output Power: KDB 789033 D02 v02r01, Section II E.3.b (Method PM-G).

Power Spectral Density (PSD): KDB 789033 D02 v02r01, Section F

Spurious emissions within 5.925-7.125 GHz Band (Emissions Mask): KDB 987594 D02 EMC Measurement Section II-J

Unwanted emissions in restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, and G.5.

AC Power Line Conducted Emissions: ANSI C63.10-2013, Section 6.2.

Radiated Spurious Emissions Below 30MHz: ANSI C63.10-2013 Section 6.4

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8. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST					
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**	**Last Cal**
Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	171862	10/06/2023	10/06/2022
Amplifier, 10KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310N	230310	02/02/2024	02/02/2023
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	80404	08/08/2023	08/08/2022
*RF Filter Box, 1-18GHz	FREMONT	SAC-L1	171013	06/24/2023	06/24/2022
EMI TEST RECEIVER,	Rohde & Schwarz	ESW44	201497	02/29/2024	02/29/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201498	02/29/2024	02/29/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201499	02/29/2024	02/29/2023
Antenna, Horn 18 to 26.5GHz	ARA	MWH-1826/B	172363	01/31/2024	01/31/2023
Antenna, Horn 26 to 40GHz	ARA	MWH-2640/B	172366	01/31/2024	01/31/2023
Amplifier 18-26.5GHz, +5Vdc, -54dBm P1dB	AMPLICAL	AMP18G26.5-60	171583	02/29/2024	02/29/2023
Amplifier 26-40GHz +5Vdc, -62dBm P1dB	AMPLICAL	AMP26G40-65	172346	02/29/2024	02/29/2023
*Antenna, Passive Loop 30Hz - 1MHz	ELECTRO METRICS	EM-6871	170014	07/19/2023	07/19/2022
*Antenna, Passive Loop 100KHz - 30MHz	ELECTRO METRICS	EM-6872	170015	07/28/2023	07/28/2022
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent Technologies	N9030A	80396	01/31/2024	01/31/2023
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	204041	08/24/2023	08/24/2022
Spectrum Analyzer, PSA, 3Hz to 26.5GHz	Keysight Technologies Inc	E4440A	81311	02/29/2024	02/23/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	80397	02/28/2024	02/23/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	85214	02/28/2024	02/23/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A-544	87738	02/28/2024	02/23/2023
*Conducted Switch Box	N/A	CSB	221008	06/21/2023	06/21/2022
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236358	Verified/Characterized before use	
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236355	Verified/Characterized before use	
Power Meter, P-series single channel	Keysight Technologies Inc	N1911A	90756	01/31/2024	01/24/2023
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	90389	01/31/2024	01/24/2023

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AC Line Conducted					
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**	**Last Cal**
EMI Test Receiver	Rohde & Schwarz	ESW44	201501	05/31/2024	05/31/2023
LISN for Conducted Emissions CISPR-16	FISCHER CUSTOM COMMUNICATIONS	FCC-LISN-50/250-25-2-01-480V	175764	01/31/2024	01/31/2023
*Transient Limiter	TE	TBFL1	207996	07/15/2023	07/15/2022
UL AUTOMATION SOFTWARE					
Radiated Software	UL	UL EMC	Ver 9.5, May 1 , 2023		
Conducted Software	UL	UL EMC	2020.8.16		
AC Line Conducted Software	UL	UL EMC	Ver 9.5, Mar 3, 2023		

*Testing was completed before equipment calibration date

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9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
802.11ax HE20 RU26, MCS0	3.992	4.029	0.991	99.08%	0.00	0.010
802.11ax HE20 RU26, MCS11	0.293	0.328	0.893	89.31%	0.49	3.410
802.11ax HE20 SU, MCS0	2.879	2.899	0.993	99.31%	0.00	0.010
802.11ax HE20 SU, MCS11	0.507	0.530	0.957	95.71%	0.19	1.971
802.11ax HE40 RU26, MCS0	3.961	4.029	0.983	98.31%	0.00	0.010
802.11ax HE40 RU26, MCS11	0.292	0.328	0.892	89.15%	0.50	3.420
802.11ax HE40 SU, MCS0	3.792	3.815	0.994	99.40%	0.00	0.010
802.11ax HE40 SU, MCS11	0.281	0.304	0.925	92.49%	0.34	3.561
802.11ax HE80 RU26, MCS0	3.969	4.029	0.985	98.51%	0.00	0.010
802.11ax HE80 RU26, MCS11	0.292	0.382	0.765	76.46%	1.17	3.423
802.11ax HE80 SU, MCS0	1.840	1.862	0.988	98.82%	0.00	0.010
802.11ax HE80 SU, MCS11	0.168	0.189	0.889	88.95%	0.51	5.956
802.11ax HE160 RU26, MCS0	3.961	4.027	0.984	98.36%	0.00	0.010
802.11ax HE160 RU26, MCS11	0.292	0.329	0.889	88.93%	0.51	3.419
802.11ax HE160 SU, MCS0	0.952	0.973	0.978	97.84%	0.09	1.051
802.11ax HE160 SU, MCS11	0.113	0.135	0.840	83.96%	0.76	8.832
802.11ax HE20 RU26 SDM, MCS0	3.992	4.027	0.991	99.13%	0.00	0.010
802.11ax HE20 SU SDM, MCS0	3.803	3.824	0.995	99.45%	0.00	0.010
802.11ax HE40 RU26 SDM, MCS0	1.935	1.956	0.989	98.93%	0.00	0.010
802.11ax HE40 SU SDM, MCS0	1.935	1.956	0.989	98.93%	0.00	0.010
802.11ax HE80 RU26 SDM, MCS0	3.969	4.029	0.985	98.51%	0.00	0.010
802.11ax HE80 SU SDM, MCS0	1.841	1.864	0.988	98.77%	0.00	0.010
802.11ax HE160 RU26 SDM, MCS0	3.959	4.029	0.983	98.26%	0.00	0.010
802.11ax HE160 SU SDM, MCS0	0.515	0.536	0.960	96.04%	0.18	1.943

Note: There are same duty cycle factor on 1TX and 2TX

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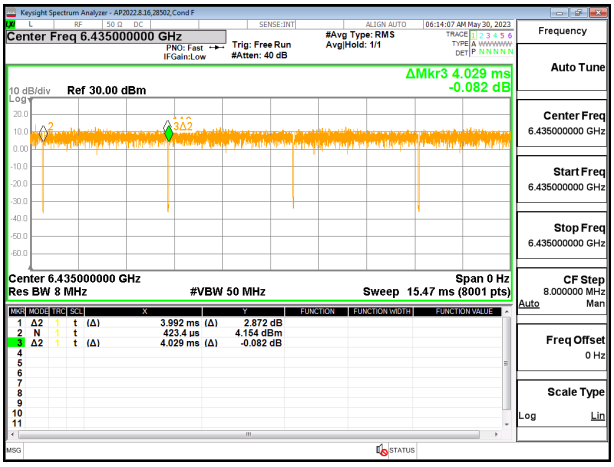
DUTY CYCLE PLOTS



DUTY CYCLE 802.11ax HE20 RU26, MCS0

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9.2. 26 dB AND 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

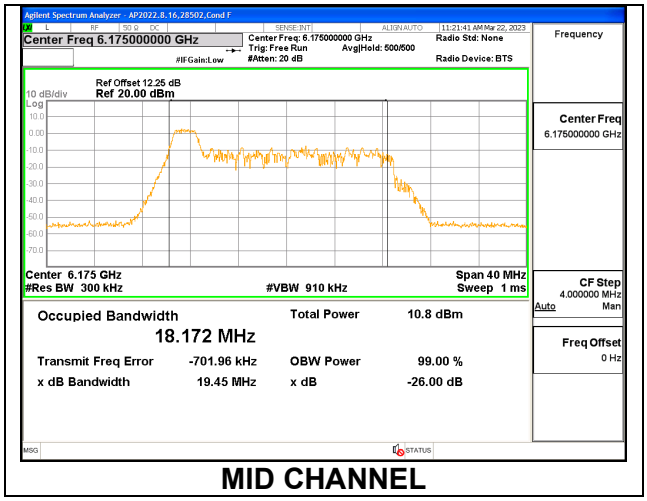
RESULTS

ID:	28502	Date:	6/23/2023

9.2.1. 802.11ax HE20 MODE IN THE UNII-5 BAND

1TX Antenna 6 MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5955	19.63	18.2790
Mid	6175	19.45	18.1720
High	6415	19.59	18.3230



MID CHANNEL

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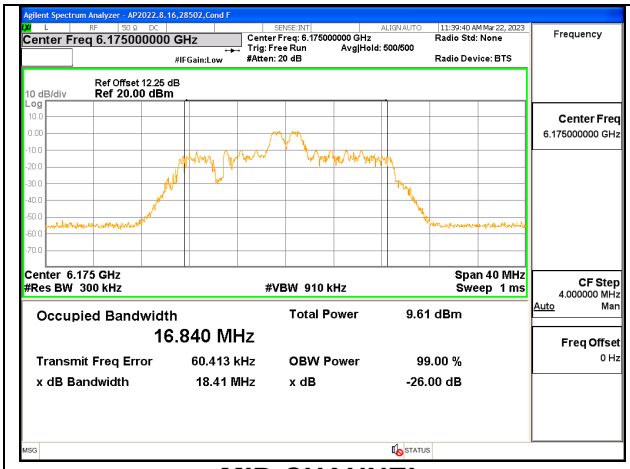
1TX Antenna 6 MODE: 26 Tones, RU Index 4

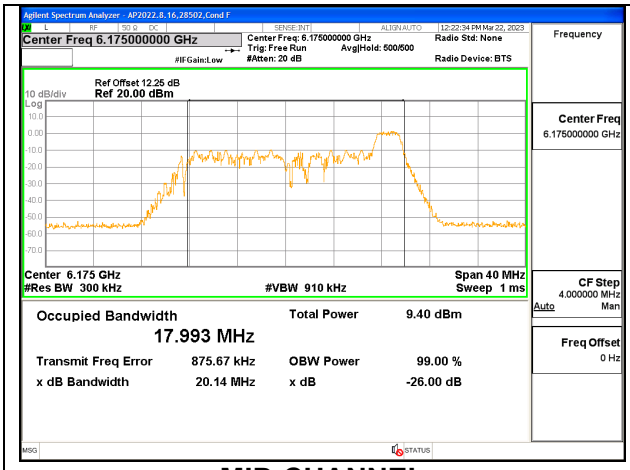
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5955	18.28	16.9210
Mid	6175	18.41	16.8400
High	6415	17.97	16.7390



MID CHANNEL

1TX Antenna 6 MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5955	20.07	18.3780
Mid	6175	20.14	17.9930
High	6415	20.05	18.4020



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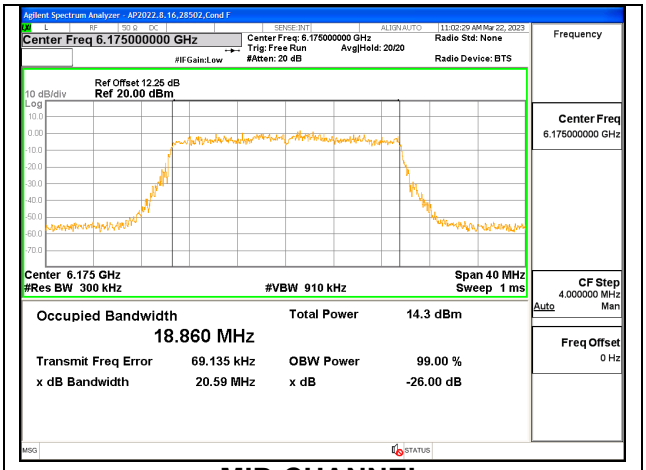
1TX Antenna 6 MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5955	20.49	18.9020
Mid	6175	20.59	18.8600
High	6415	20.40	18.9050



MID CHANNEL

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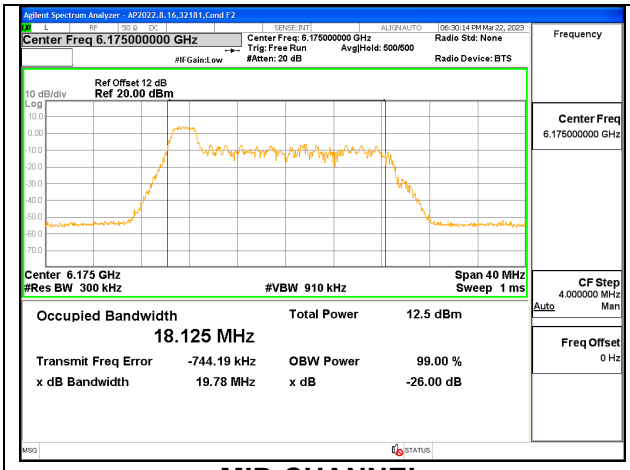
1TX Antenna 5 MODE: 26 Tones, RU Index 0

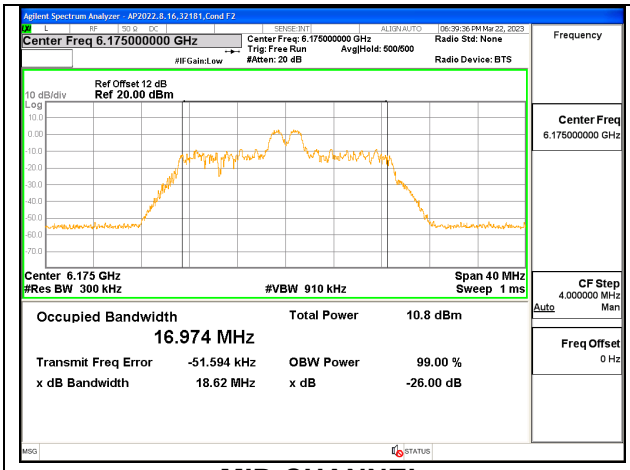
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5955	19.58	18.3410
Mid	6175	19.78	18.1250
High	6415	19.66	18.3200



MID CHANNEL

1TX Antenna 5 MODE: 26 Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5955	18.07	16.8760
Mid	6175	18.62	16.9740
High	6415	18.53	16.8770



MID CHANNEL

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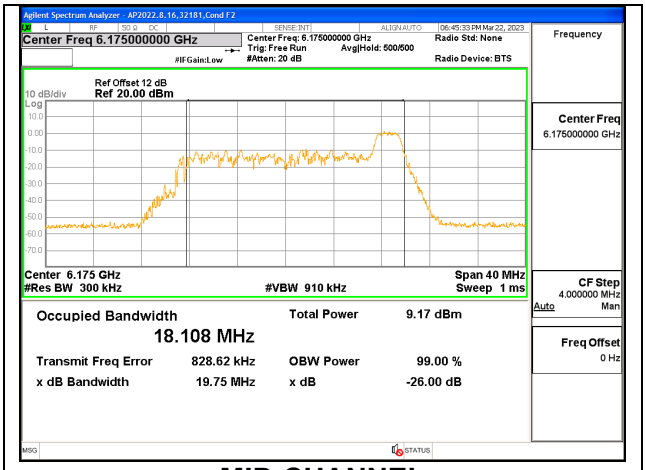
1TX Antenna 5 MODE: 26 Tones, RU Index 8

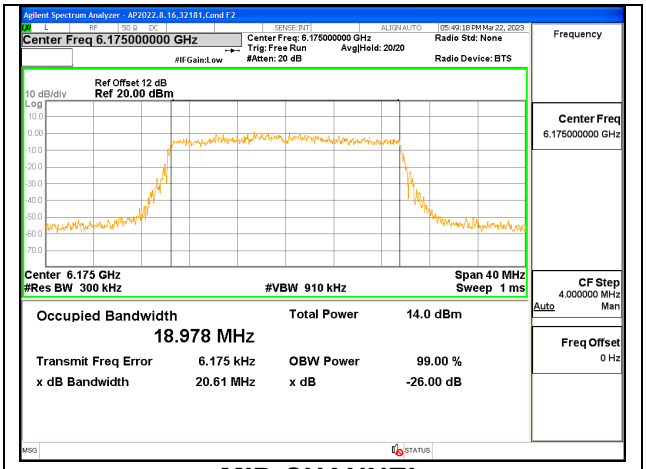
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5955	19.92	18.4880
Mid	6175	19.75	18.1080
High	6415	19.83	18.4850



MID CHANNEL

1TX Antenna 5 MODE: SU Tones

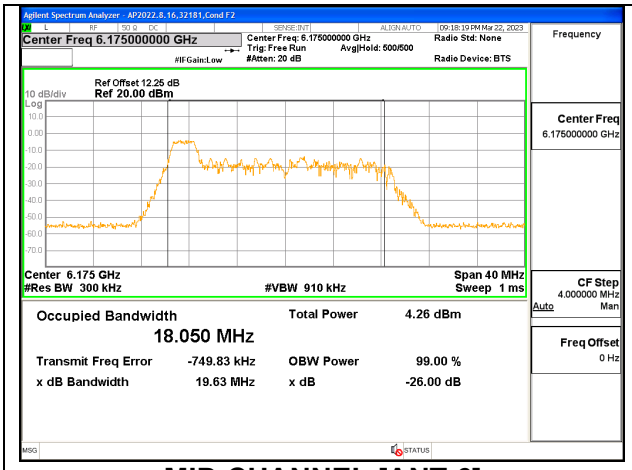
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5955	20.62	18.9100
Mid	6175	20.61	18.9780
High	6415	20.47	18.9680



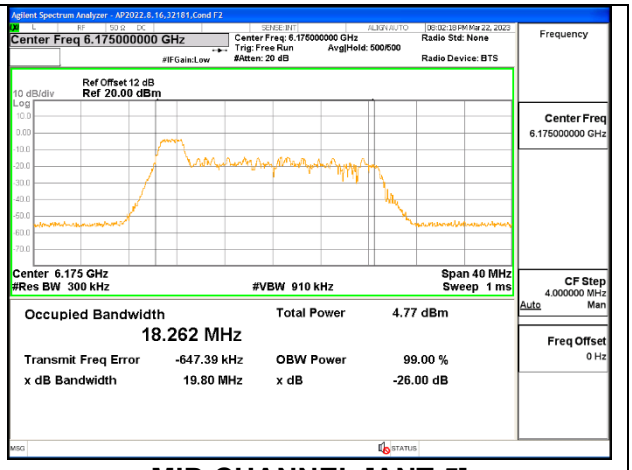
MID CHANNEL

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5955	19.67	19.64	18.2800	18.1400
Mid	6175	19.63	19.80	18.0500	18.2620
High	6415	19.72	19.41	18.2930	18.0400



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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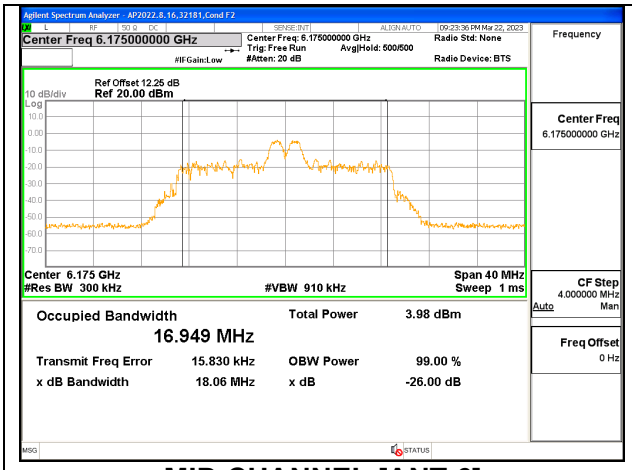
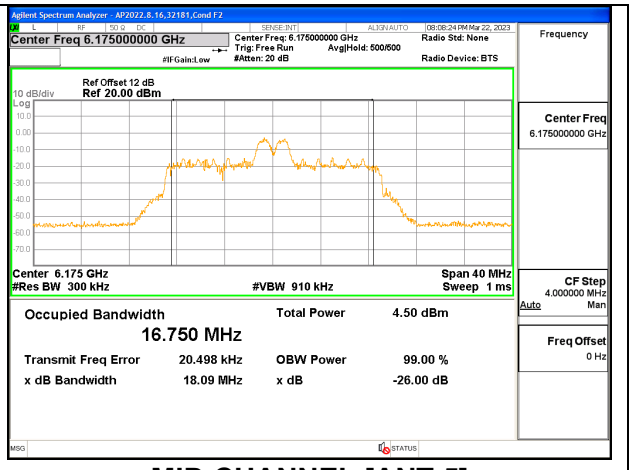
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5955	18.14	18.20	16.4710	16.7240
Mid	6175	18.06	18.09	16.9490	16.7500
High	6415	18.45	18.20	17.0040	16.6080



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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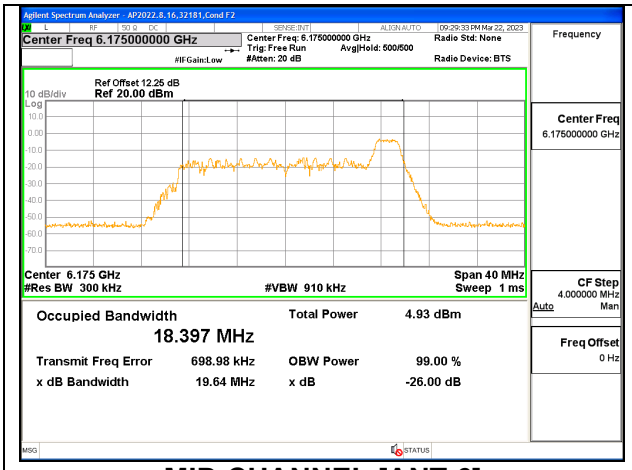
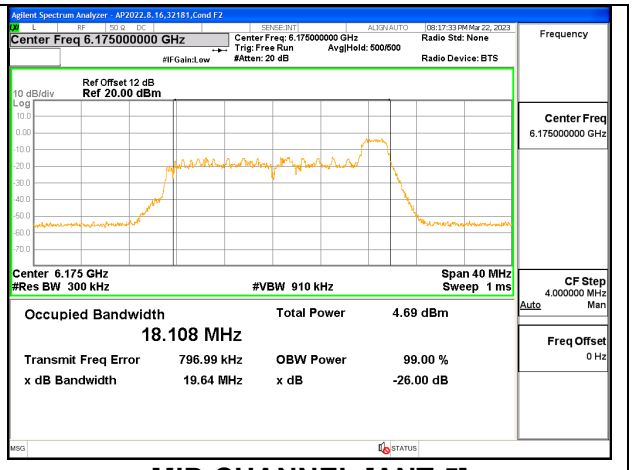
2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5955	19.85	19.59	18.2840	18.2420
Mid	6175	19.64	19.64	18.3970	18.1080
High	6415	19.95	19.61	18.4440	18.3190



MID CHANNEL [ANT 6]



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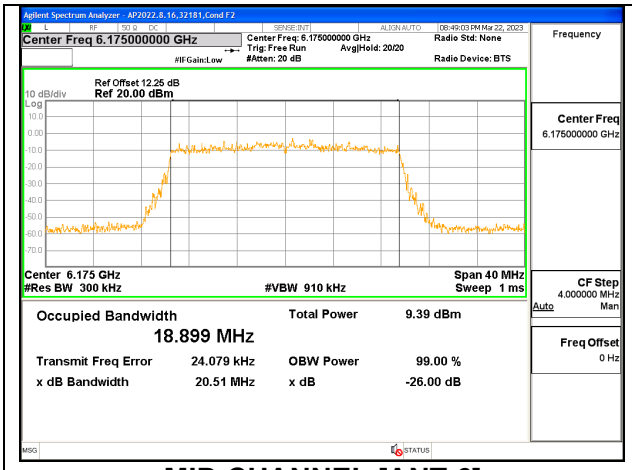
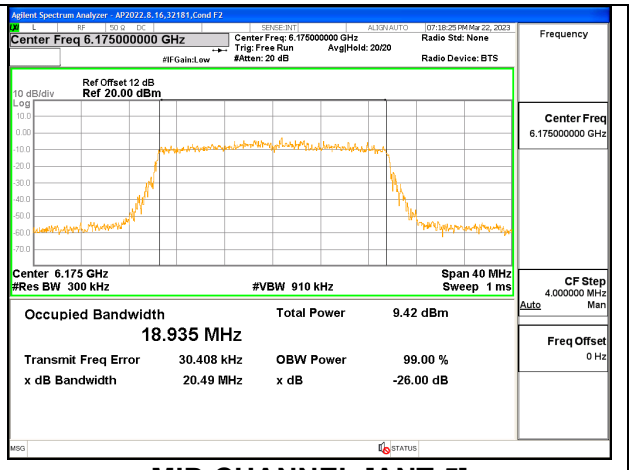
2TX Antenna 6 + Antenna 5 CDD MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5955	20.72	20.33	18.9650	18.9170
Mid	6175	20.51	20.49	18.8990	18.9350
High	6415	20.60	20.48	18.9240	18.9620



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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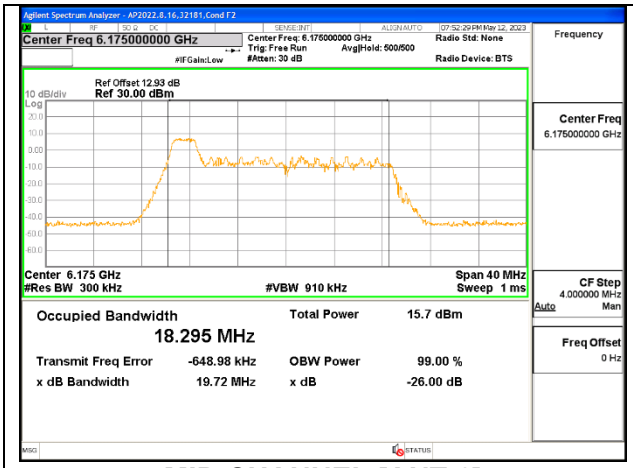
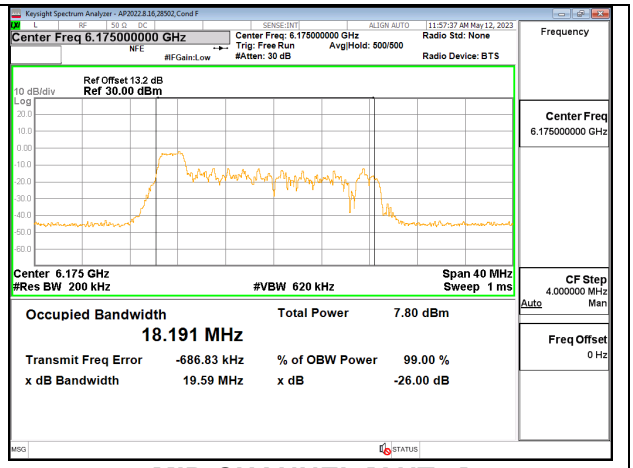
2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5955	19.86	19.76	18.1030	17.5370
Mid	6175	19.72	19.59	18.2950	18.1910
High	6415	19.72	19.58	18.2250	18.2810



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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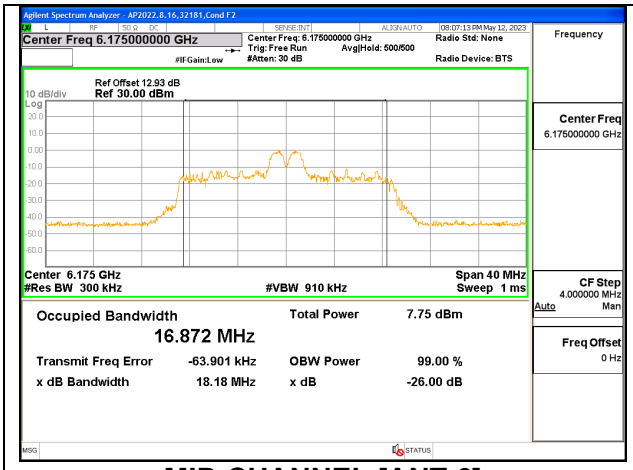
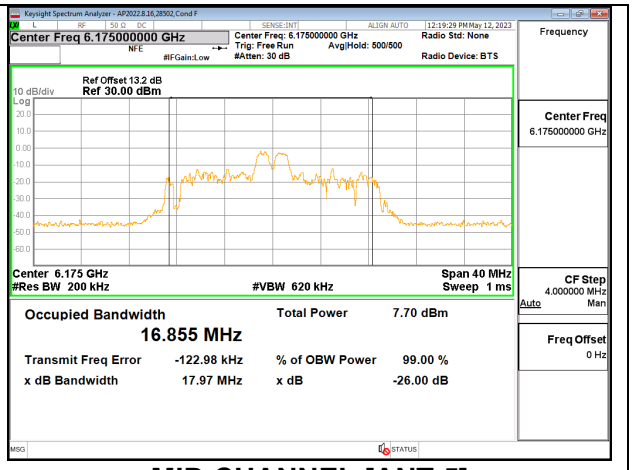
2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5955	18.01	17.72	16.7820	16.7180
Mid	6175	18.18	17.97	16.8720	16.8550
High	6415	18.17	17.38	16.8390	16.4430



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

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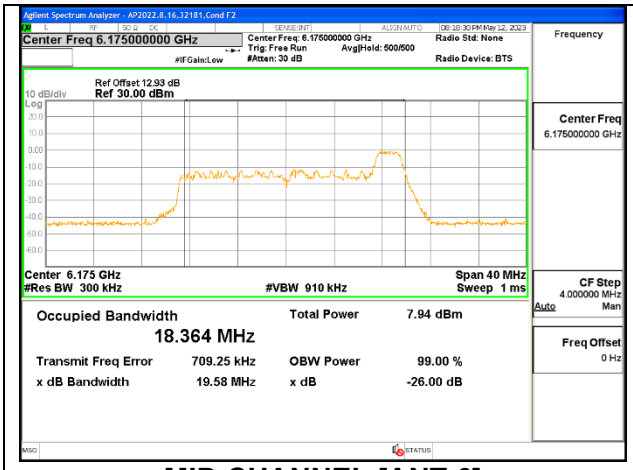
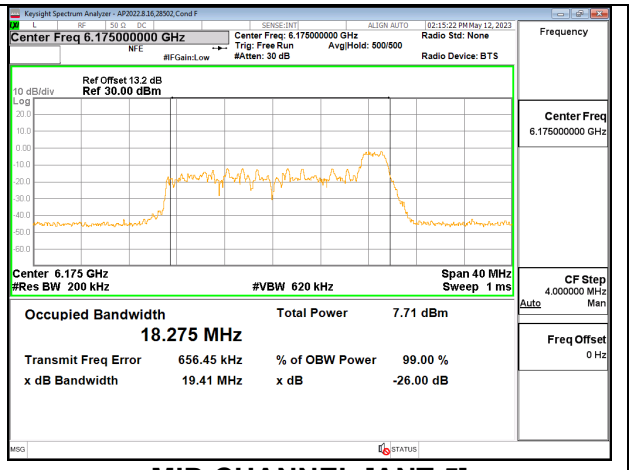
2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5955	19.68	19.42	18.3500	18.3630
Mid	6175	19.58	19.41	18.3640	18.2750
High	6415	19.62	19.43	18.3490	18.2230



MID CHANNEL [ANT 6]

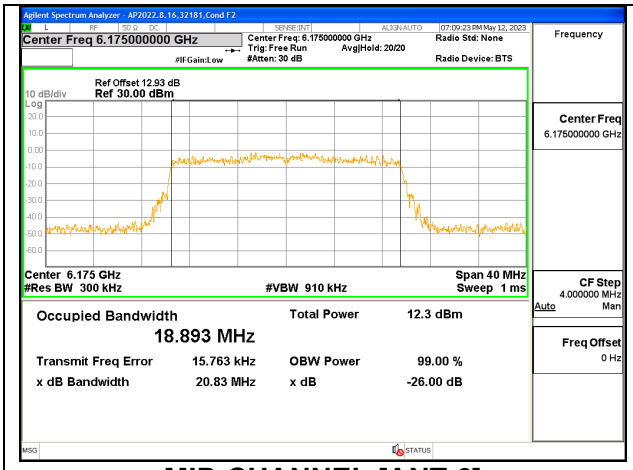


MID CHANNEL [ANT 5]

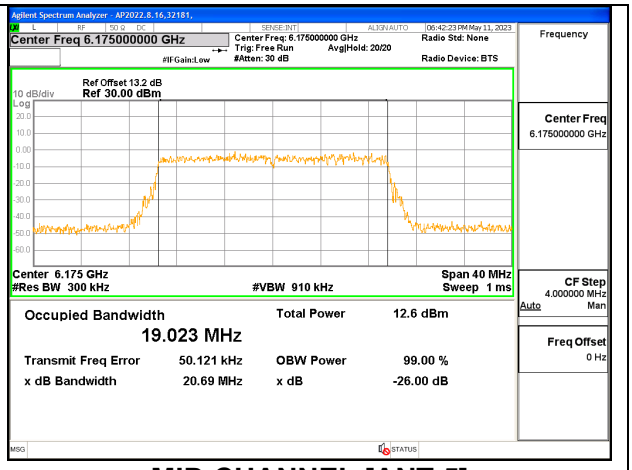
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5955	20.53	20.83	18.9300	18.9070
Mid	6175	20.83	20.69	18.8930	19.0230
High	6415	20.75	20.99	18.9720	18.9730



MID CHANNEL [ANT 6]



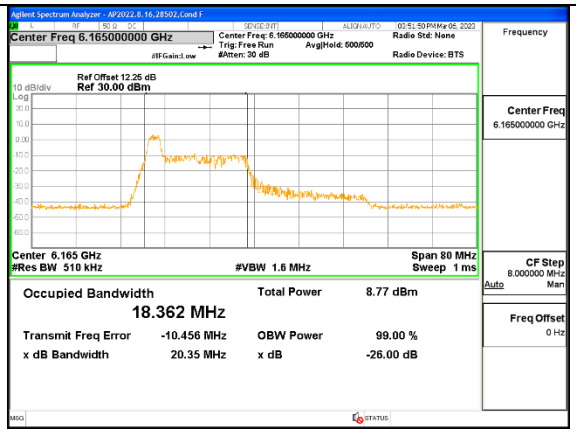
MID CHANNEL [ANT 5]

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.2.2. 802.11ax HE40 MODE IN THE UNII-5 BAND

1TX Antenna 6 MODE: 26 Tones, RU Index 0

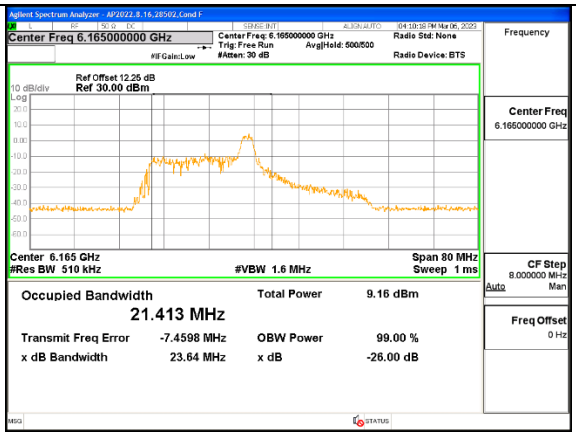
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5965	20.37	18.4150
Mid	6165	20.35	18.3620
High	6405	19.89	18.3070



MID CHANNEL

1TX Antenna 6 MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5965	23.88	21.2550
Mid	6165	23.64	21.4130
High	6405	22.82	21.2360

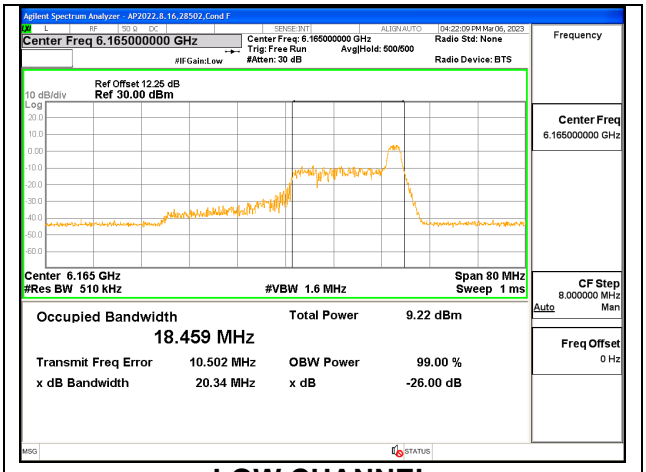


MID CHANNEL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

1TX Antenna 6 MODE: 26 Tones, RU Index 17

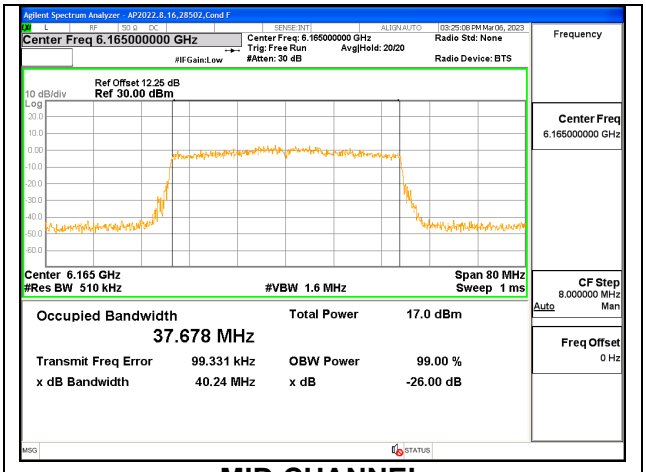
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5965	20.16	17.4260
Mid	6165	20.34	18.4590
High	6405	20.52	18.5890



LOW CHANNEL

1TX Antenna 6 MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5965	40.15	37.6500
Mid	6165	40.24	37.6780
High	6405	40.44	37.6500

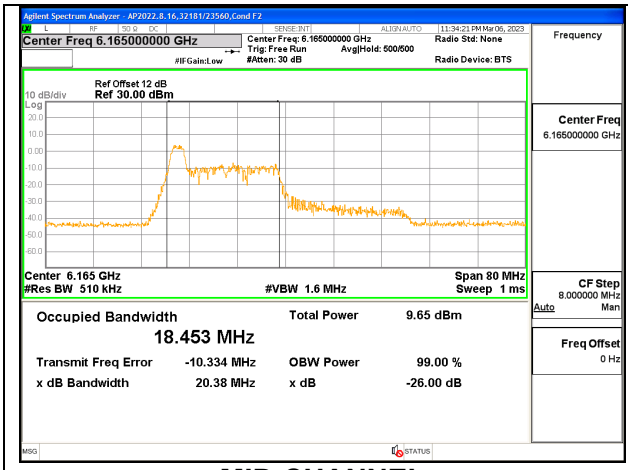


MID CHANNEL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

1TX Antenna 5 MODE: 26 Tones, RU Index 0

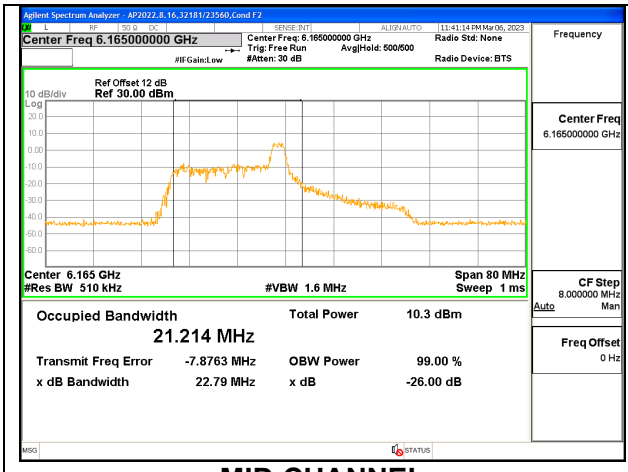
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5965	20.46	18.4860
Mid	6165	20.38	18.4530
High	6405	20.04	18.3550



MID CHANNEL

1TX Antenna 5 MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5965	24.49	21.0110
Mid	6165	22.79	21.2140
High	6405	23.46	21.3540

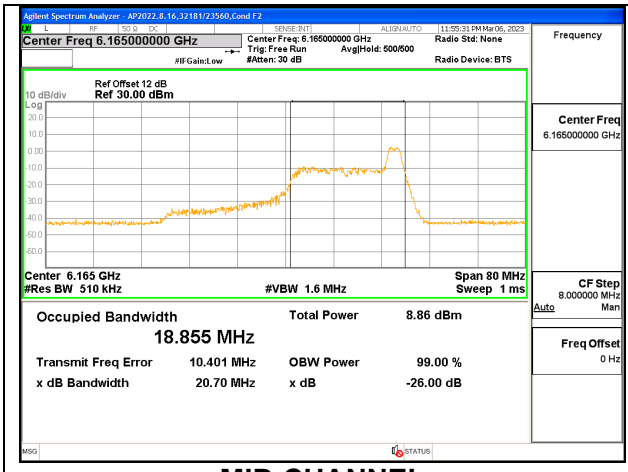


MID CHANNEL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

1TX Antenna 5 MODE: 26 Tones, RU Index 17

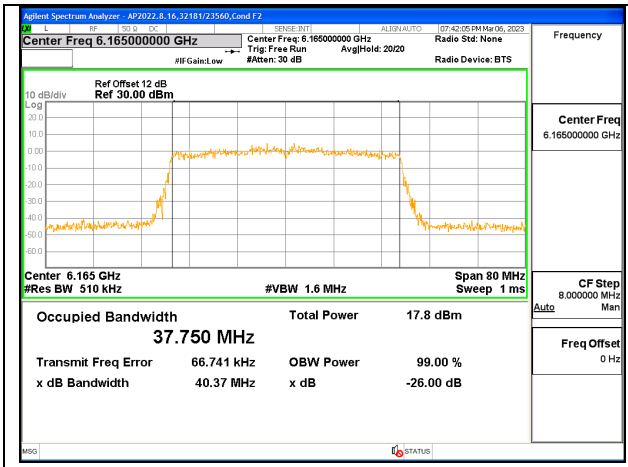
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5965	20.46	18.5300
Mid	6165	20.70	18.8850
High	6405	20.29	18.7670



MID CHANNEL

1TX Antenna 5 MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5965	40.66	37.7800
Mid	6165	40.37	37.7500
High	6405	40.61	37.7210

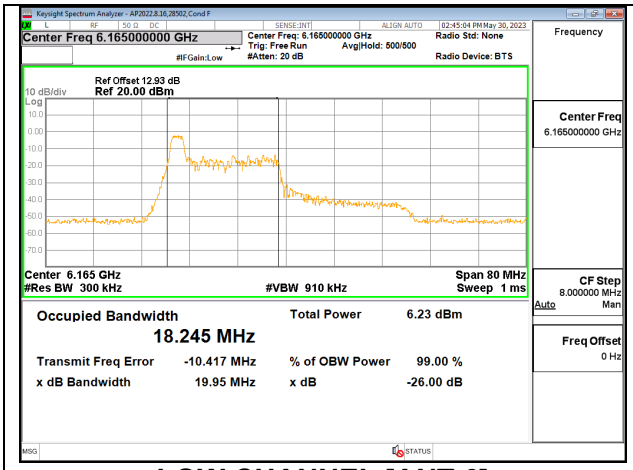


MID CHANNEL

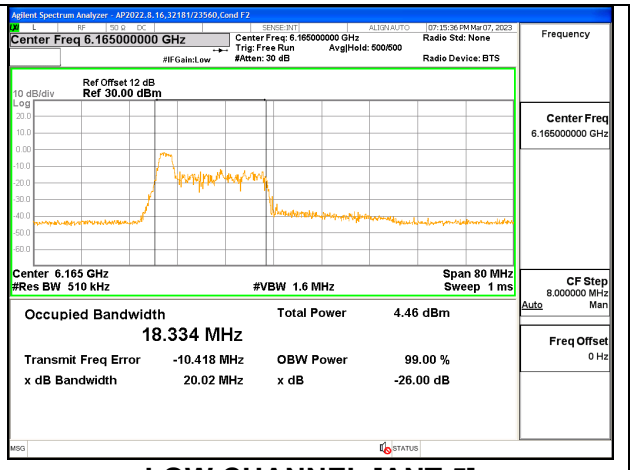
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5965	19.85	19.42	17.8570	17.9380
Mid	6165	19.95	20.02	18.2450	18.3340
High	6405	19.93	19.16	18.5450	17.7620



LOW CHANNEL [ANT 6]

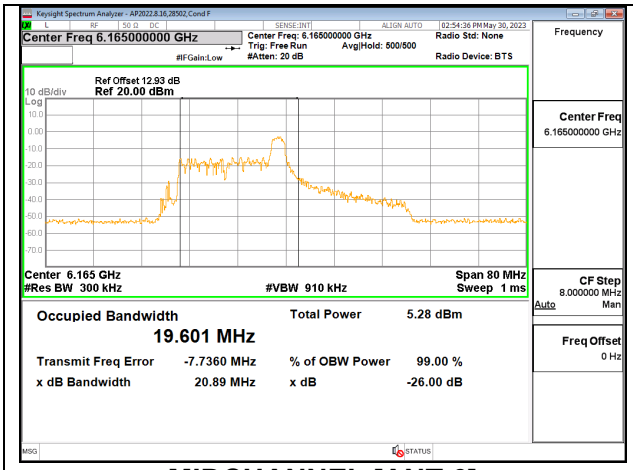


LOW CHANNEL [ANT 5]

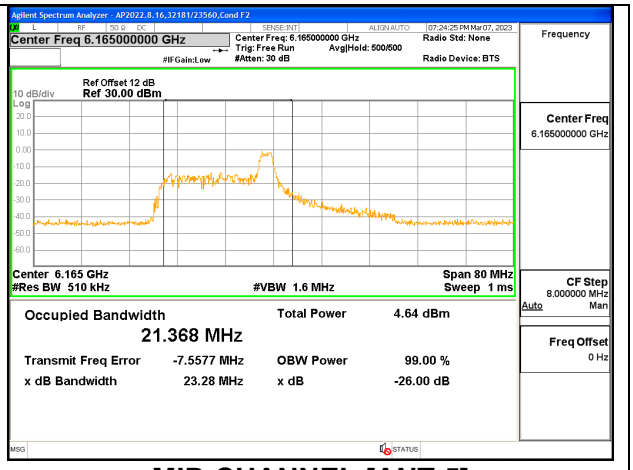
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5965	22.02	23.28	20.5770	21.5440
Mid	6165	20.89	23.28	19.6010	21.3680
High	6405	23.98	22.67	22.1540	20.7150



MIDCHANNEL [ANT 6]

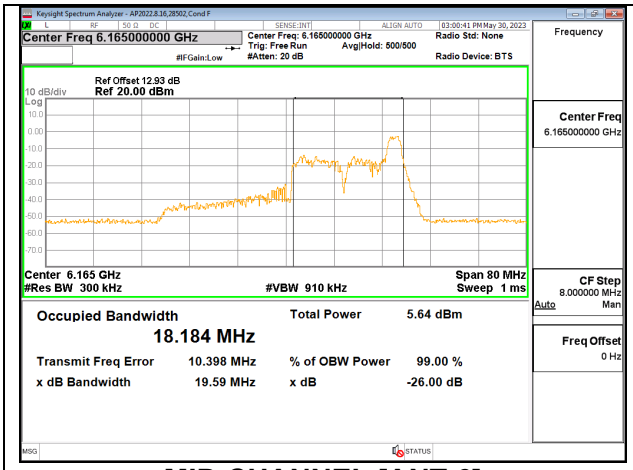


MID CHANNEL [ANT 5]

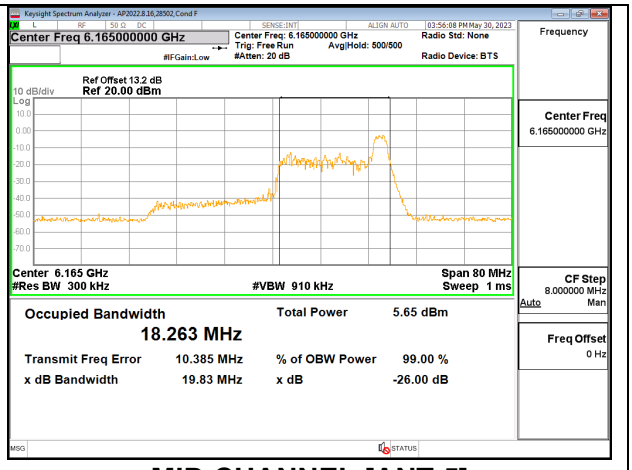
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 17

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5965	20.08	20.05	18.3700	18.2150
Mid	6165	19.59	19.83	18.1840	18.2630
High	6405	20.58	19.84	18.7040	18.2070



MID CHANNEL [ANT 6]

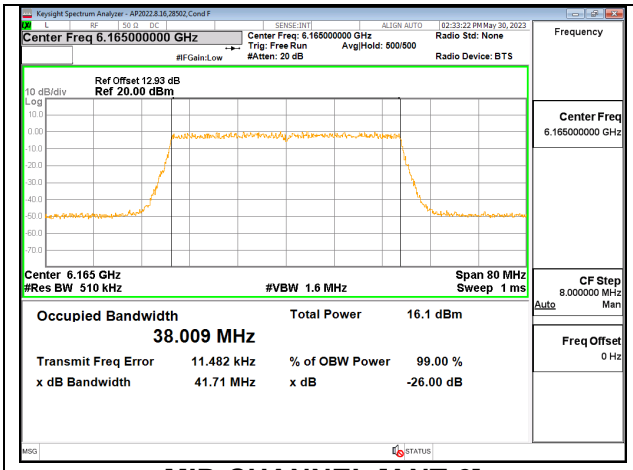


MID CHANNEL [ANT 5]

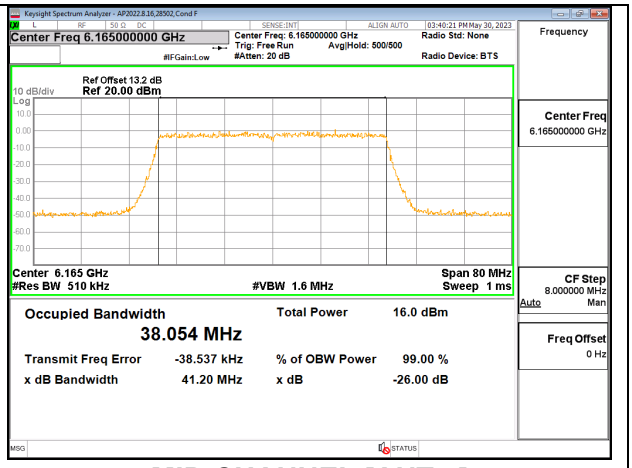
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5965	41.54	41.54	38.0090	38.1070
Mid	6165	41.71	41.20	38.0090	38.0540
High	6405	41.85	41.62	38.0170	38.0330



MID CHANNEL [ANT 6]

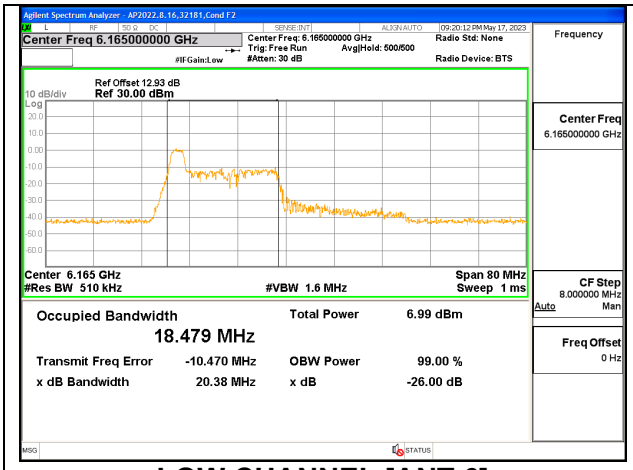


MID CHANNEL [ANT 5]

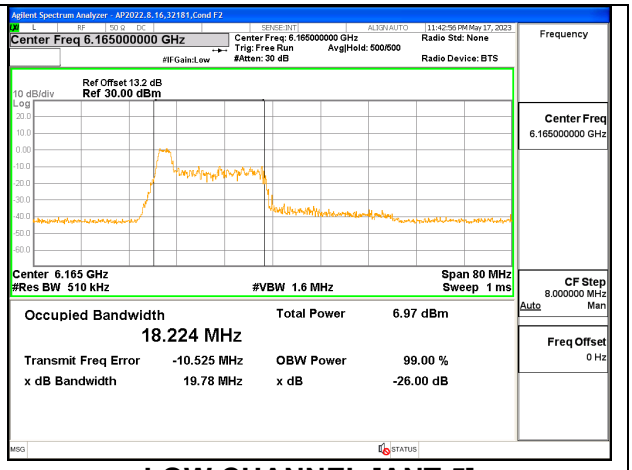
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5965	19.94	19.84	18.3550	18.1440
Mid	6165	20.38	19.78	18.4790	18.2240
High	6405	19.95	19.81	18.4690	18.2960



LOW CHANNEL [ANT 6]

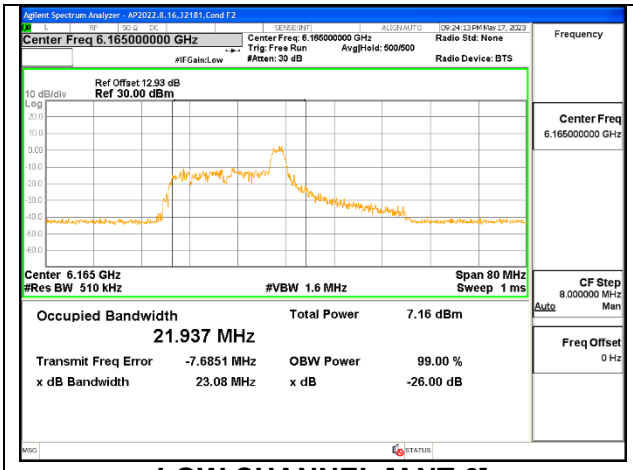


LOW CHANNEL [ANT 5]

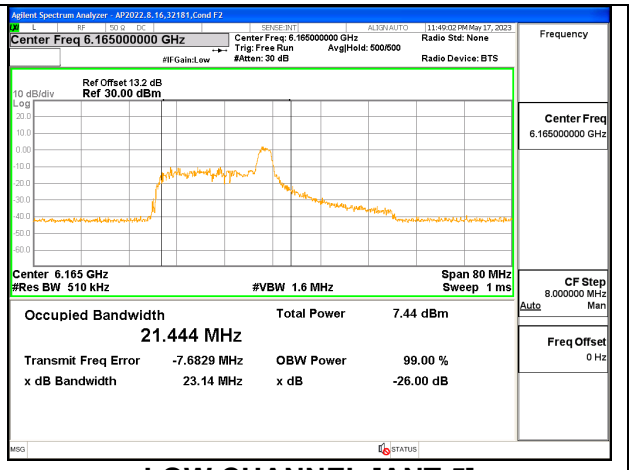
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5965	23.34	22.27	21.5560	21.5850
Mid	6165	23.08	23.14	21.9370	21.4440
High	6405	24.90	22.90	21.8170	21.1600



LOW CHANNEL [ANT 6]

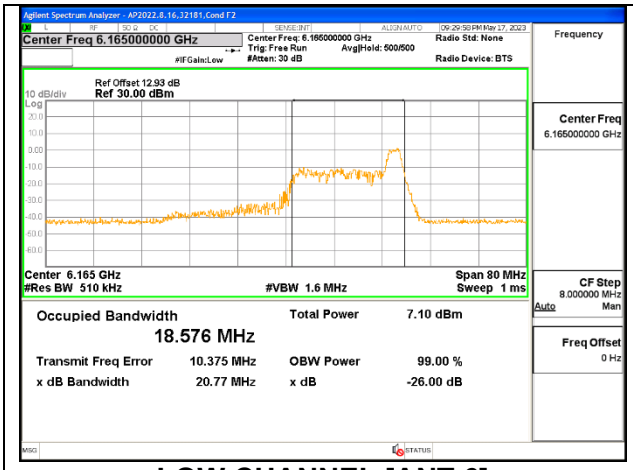


LOW CHANNEL [ANT 5]

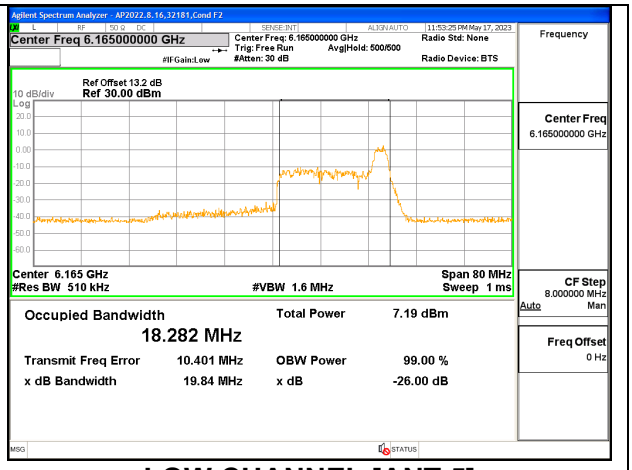
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 17

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5965	20.00	19.66	18.5810	18.4310
Mid	6165	20.77	19.84	18.5760	18.2820
High	6405	20.27	20.08	18.4260	18.4470



LOW CHANNEL [ANT 6]

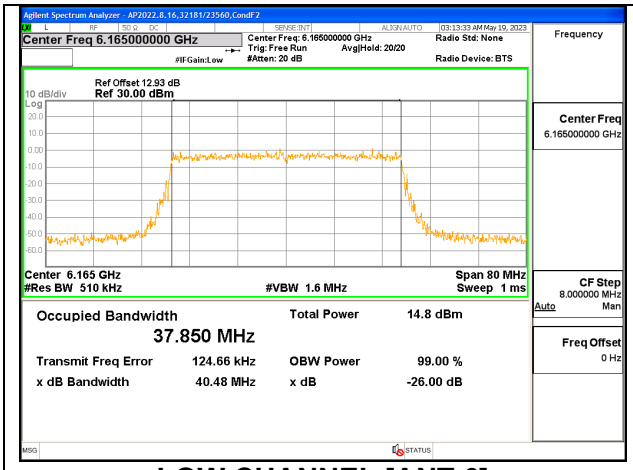


LOW CHANNEL [ANT 5]

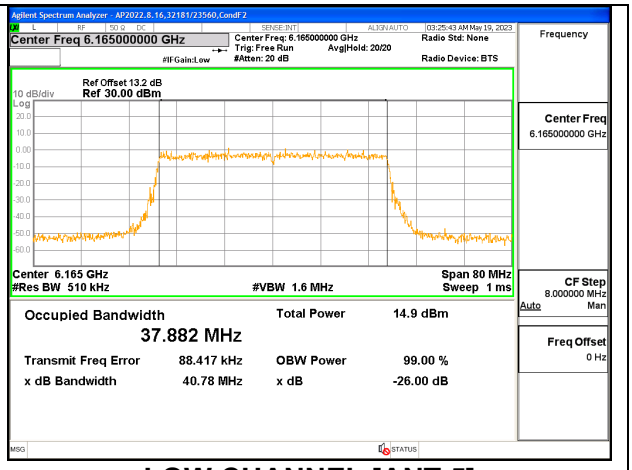
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5965	40.49	40.56	37.9000	37.8730
Mid	6165	40.48	40.78	37.8500	37.8820
High	6405	40.93	40.82	37.9190	37.9550



LOW CHANNEL [ANT 6]



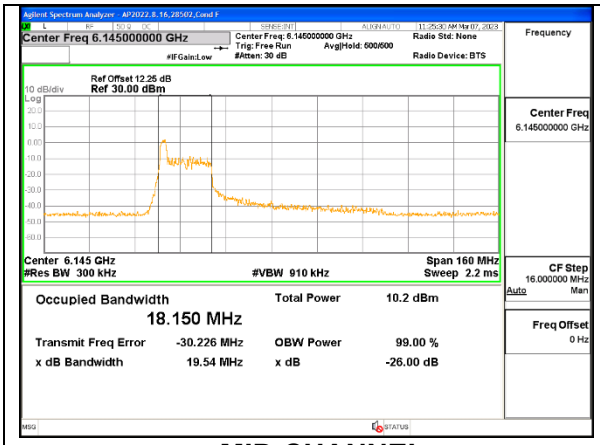
LOW CHANNEL [ANT 5]

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.2.3. 802.11ax HE80 MODE IN THE UNII-5 BAND

1TX Antenna 6 MODE: 26 Tones, RU Index 0

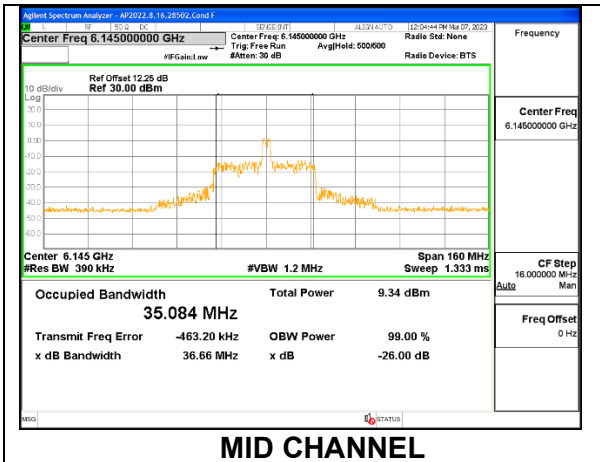
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5985	19.56	18.1780
Mid	6145	19.54	18.1500
High	6385	19.40	18.1250



MID CHANNEL

1TX Antenna 6 MODE: 26 Tones, RU Index 18

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5985	38.09	36.7420
Mid	6145	36.66	35.0840
High	6385	38.16	36.8150

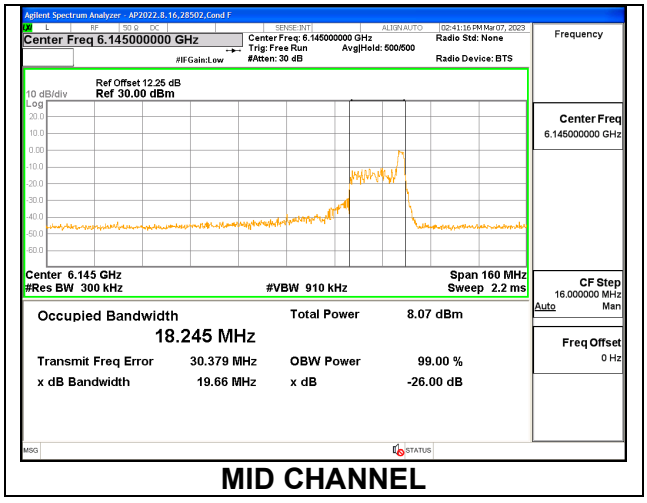


MID CHANNEL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

1TX Antenna 6 MODE: 26 Tones, RU Index 36

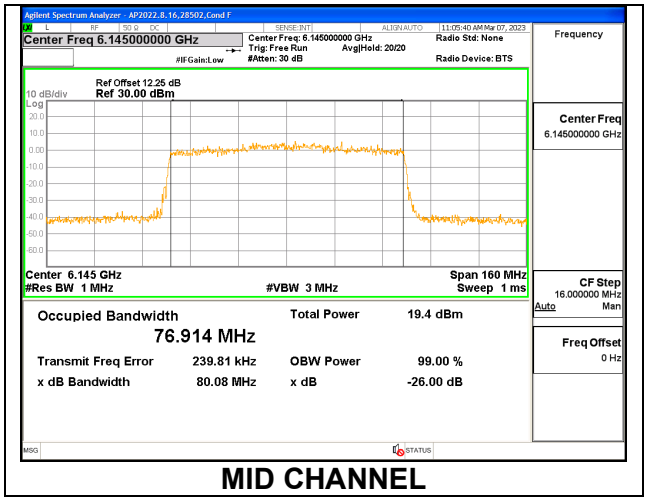
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5985	20.07	18.2570
Mid	6145	19.66	18.2450
High	6385	19.99	18.3130



MID CHANNEL

1TX Antenna 6 MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5985	81.11	76.9520
Mid	6145	80.08	76.9140
High	6385	80.44	76.9650

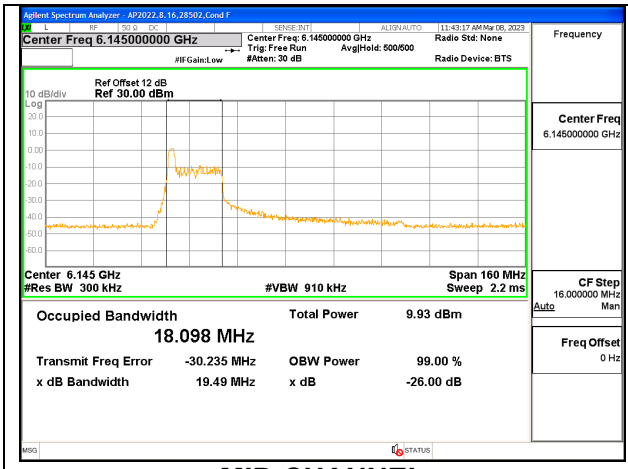


MID CHANNEL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

1TX Antenna 5 MODE: 26 Tones, RU Index 0

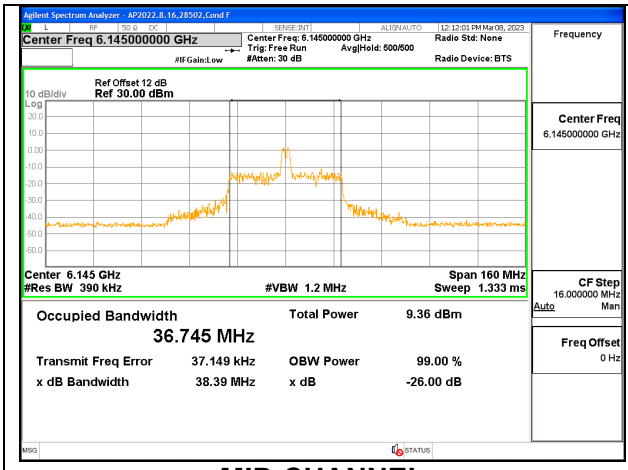
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5985	19.20	18.0750
Mid	6145	19.49	18.0980
High	6385	19.38	18.1050



MID CHANNEL

1TX Antenna 5 MODE: 26 Tones, RU Index 18

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5985	38.13	36.5650
Mid	6145	38.39	36.7450
High	6385	38.07	36.6400

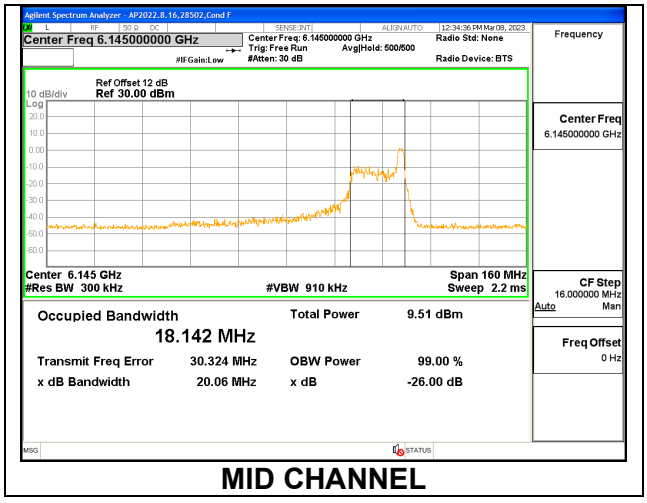


MID CHANNEL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

1TX Antenna 5 MODE: 26 Tones, RU Index 36

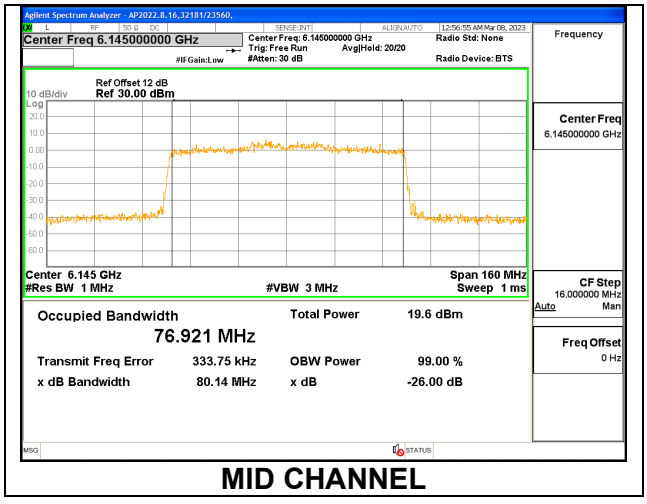
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5985	19.81	18.3930
Mid	6145	20.06	18.1420
High	6385	19.27	18.2010



MID CHANNEL

1TX Antenna 5 MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	5985	80.09	76.9120
Mid	6145	80.14	76.9210
High	6385	80.37	76.7850

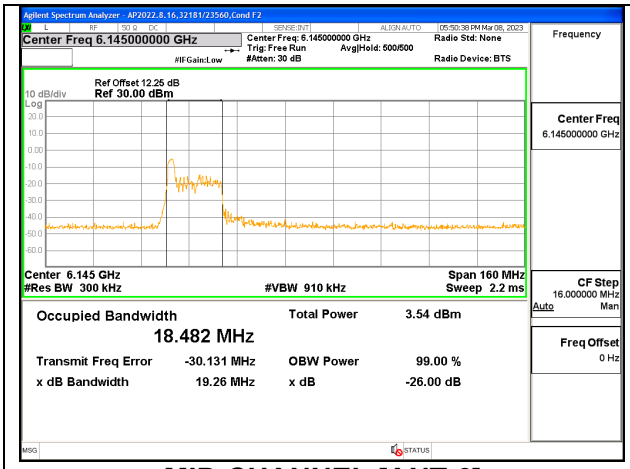


MID CHANNEL

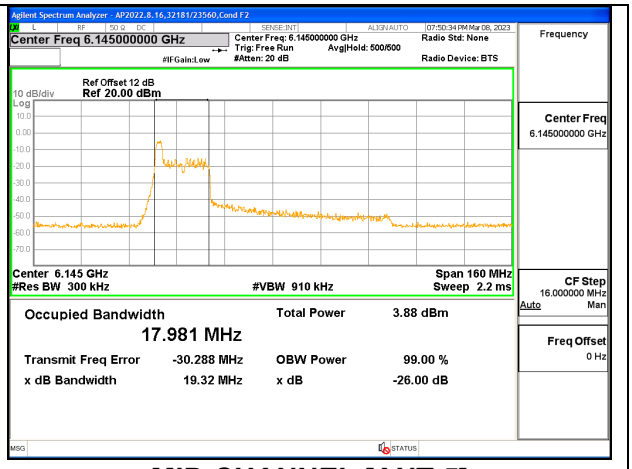
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5985	19.27	19.26	18.5960	17.8130
Mid	6145	19.26	19.32	18.4820	17.9810
High	6385	19.23	19.21	18.0330	17.7400



MID CHANNEL [ANT 6]



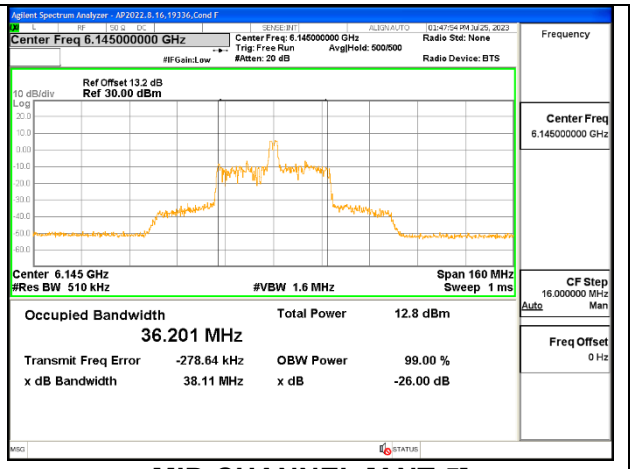
MID CHANNEL [ANT 5]

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 18

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5985	38.25	38.14	36.5730	35.8400
Mid	6145	37.92	38.11	35.9710	36.2010
High	6385	38.33	38.16	36.7110	36.2670

MID CHANNEL [ANT 6]

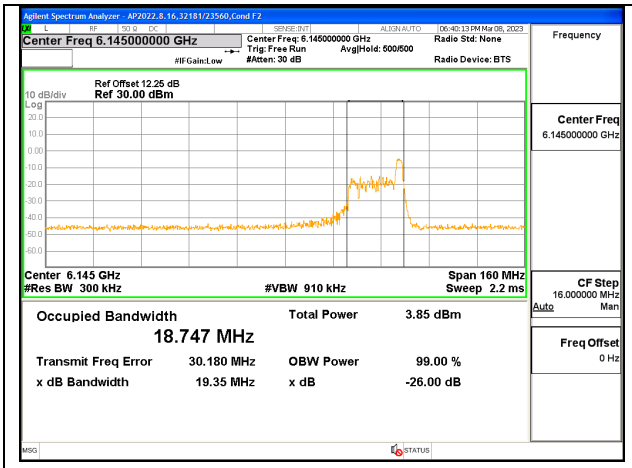


MID CHANNEL [ANT 5]

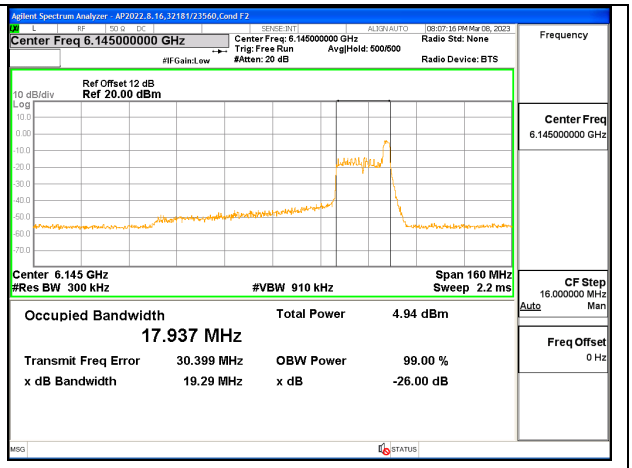
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 36

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5985	19.45	19.30	17.7570	17.9460
Mid	6145	19.35	19.29	18.7470	17.9370
High	6385	19.63	19.27	18.1970	17.9480



MID CHANNEL [ANT 6]

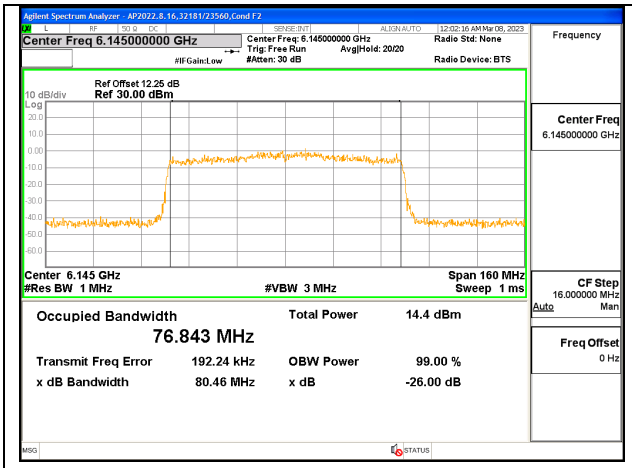


MID CHANNEL [ANT 5]

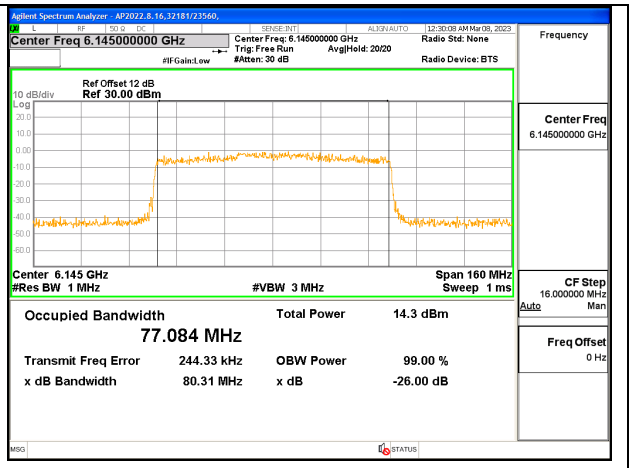
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5985	80.11	80.35	76.8550	76.9400
Mid	6145	80.46	80.31	76.8430	77.0840
High	6385	80.24	80.83	76.8730	76.8990



MID CHANNEL [ANT 6]

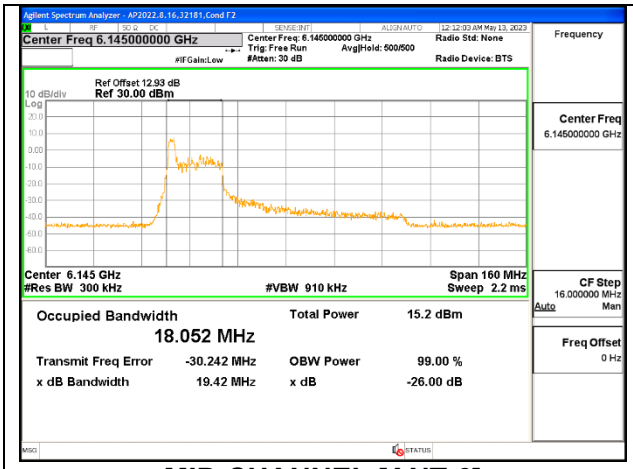


MID CHANNEL [ANT 5]

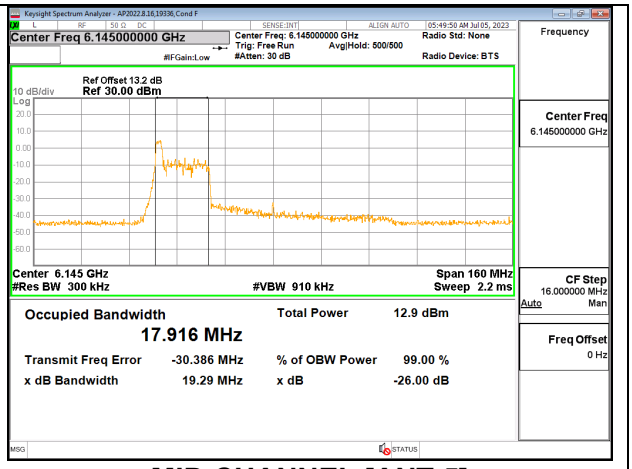
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5985	19.44	19.39	17.9610	17.8360
Mid	6145	19.42	19.29	18.0520	17.9160
High	6385	19.12	19.57	17.8820	18.0180



MID CHANNEL [ANT 6]

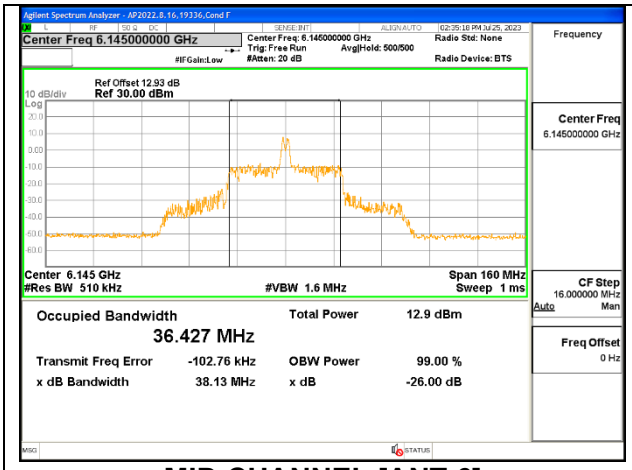


MID CHANNEL [ANT 5]

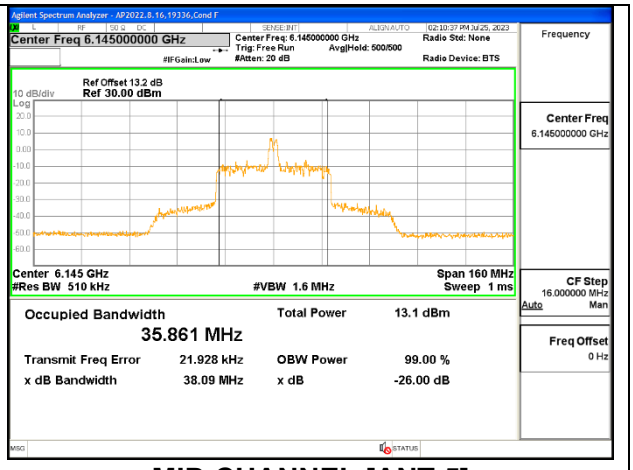
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 18

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5985	38.19	38.17	36.7810	35.9060
Mid	6145	38.13	38.09	36.4270	35.8610
High	6385	38.05	37.76	36.4430	35.7650



MID CHANNEL [ANT 6]

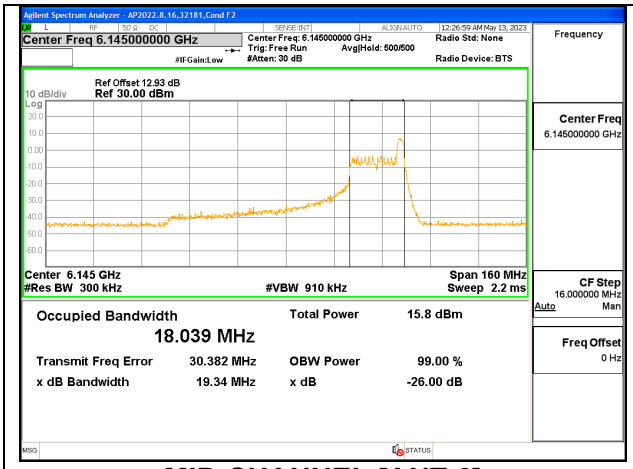


MID CHANNEL [ANT 5]

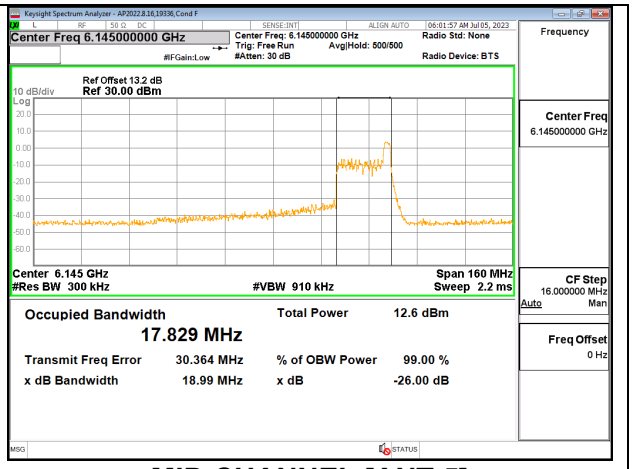
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 36

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5985	19.94	19.42	18.1910	17.7710
Mid	6145	19.34	18.99	18.0390	17.8290
High	6385	19.17	19.03	18.1050	17.9390



MID CHANNEL [ANT 6]

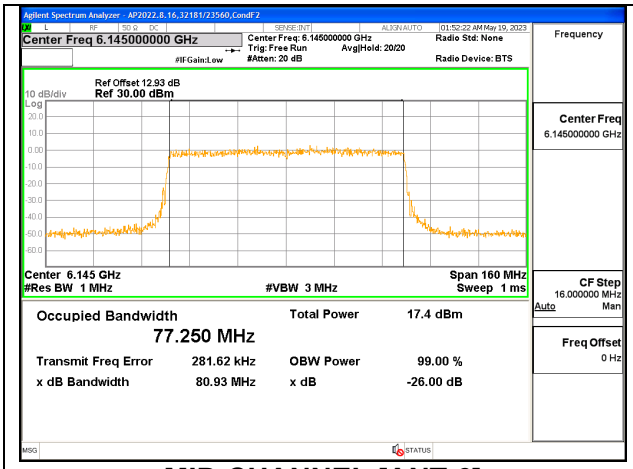


MID CHANNEL [ANT 5]

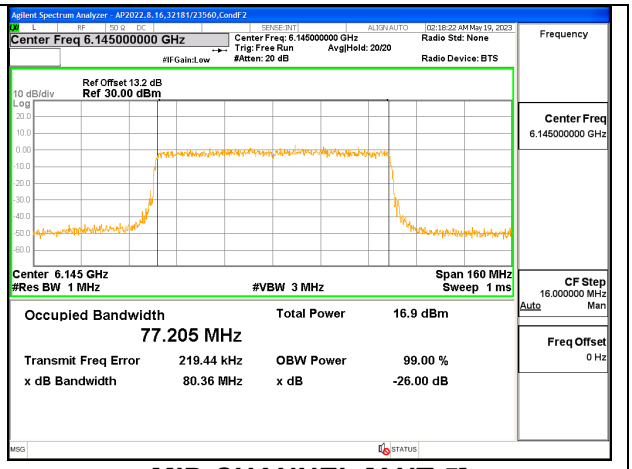
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	5985	80.77	81.18	77.3840	77.2740
Mid	6145	80.93	80.36	77.2500	77.2050
High	6385	80.51	80.24	77.4310	77.2140



MID CHANNEL [ANT 6]



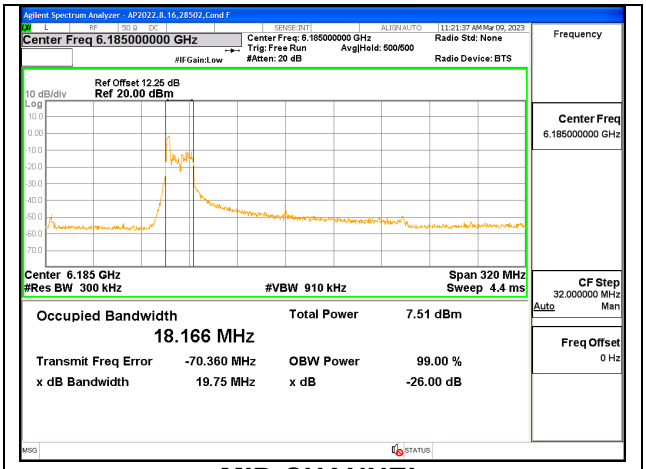
MID CHANNEL [ANT 5]

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.2.4. 802.11ax HE160 MODE IN THE UNII-5 BAND

1TX Antenna 6 MODE: 26 Tones, RU Index 0

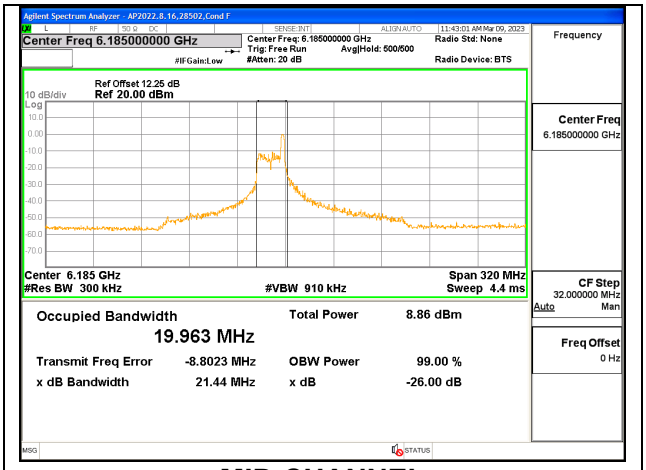
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6025	19.67	18.1200
Mid	6185	19.75	18.1660
High	6345	19.99	18.3010



MID CHANNEL

1TX Antenna 6 MODE: 26 Tones, RU Index 36

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6025	20.97	19.8540
Mid	6185	21.44	19.9630
High	6345	21.51	19.6570

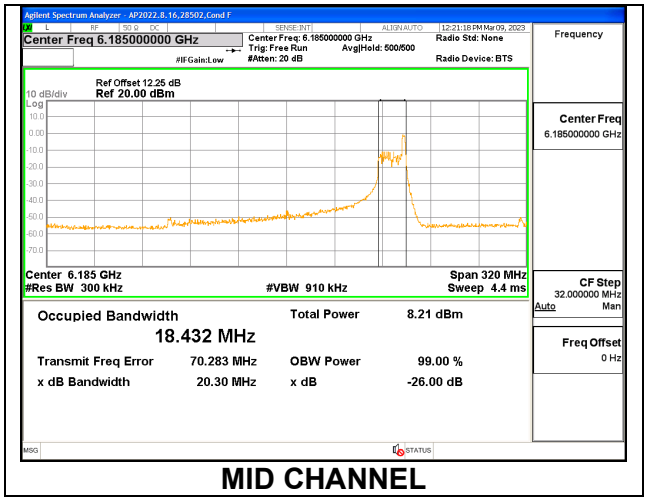


MID CHANNEL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

1TX Antenna 6 MODE: 26 Tones, RU Index S36

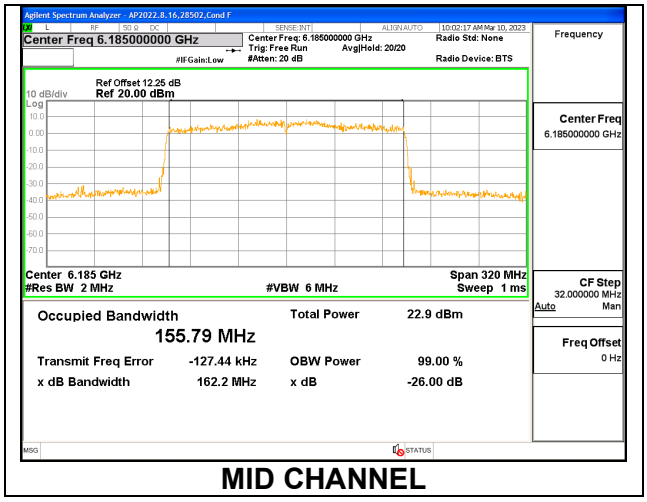
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6025	20.45	18.4000
Mid	6185	20.30	18.4320
High	6345	20.30	18.4690



MID CHANNEL

1TX Antenna 6 MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6025	162.20	155.9600
Mid	6185	162.20	155.7900
High	6345	162.30	155.7200

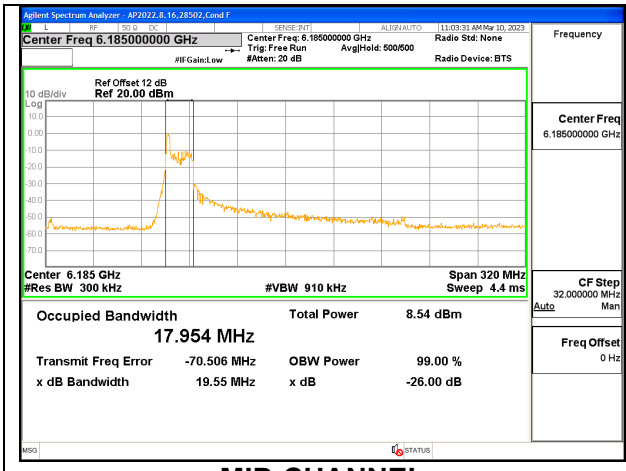


MID CHANNEL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

1TX Antenna 5 MODE: 26 Tones, RU Index 0

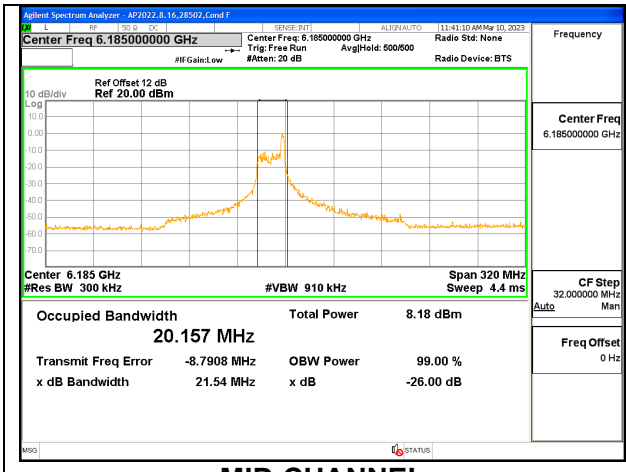
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6025	20.04	18.2630
Mid	6185	19.55	17.9540
High	6345	19.72	18.2940



MID CHANNEL

1TX Antenna 5 MODE: 26 Tones, RU Index 36

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6025	21.60	19.8800
Mid	6185	21.54	20.1570
High	6345	21.98	19.9300

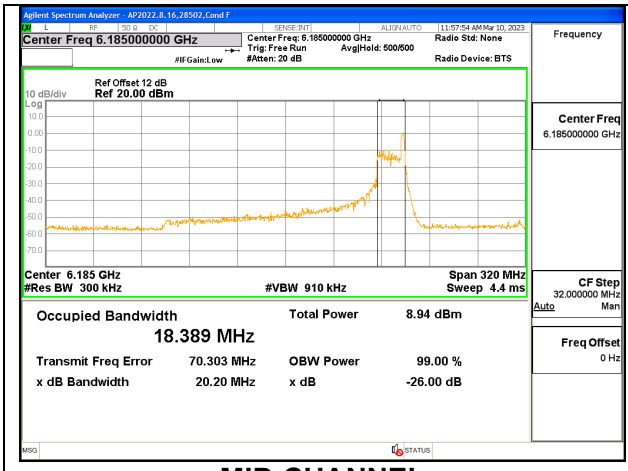


MID CHANNEL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

1TX Antenna 5 MODE: 26 Tones, RU Index S36

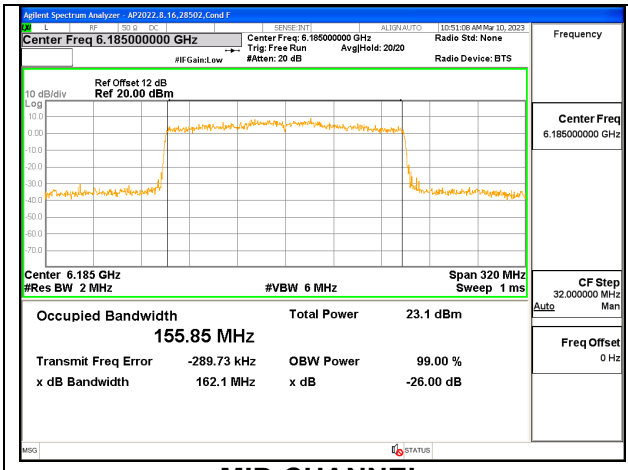
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6025	20.33	18.5140
Mid	6185	20.20	18.3890
High	6345	20.55	18.5140



MID CHANNEL

1TX Antenna 5 MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6025	162.30	156.4600
Mid	6185	162.10	155.8500
High	6345	162.70	155.7400

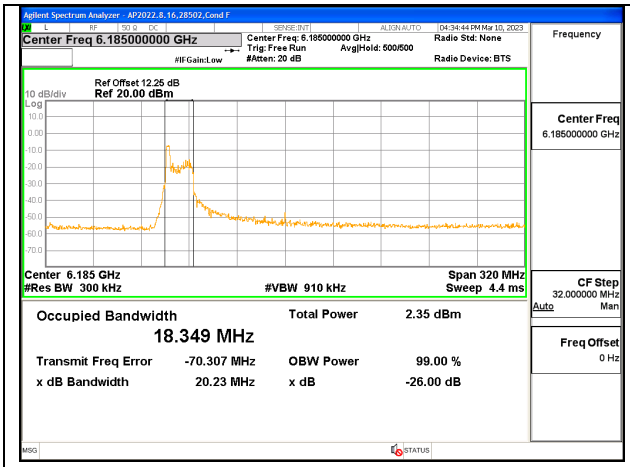


MID CHANNEL

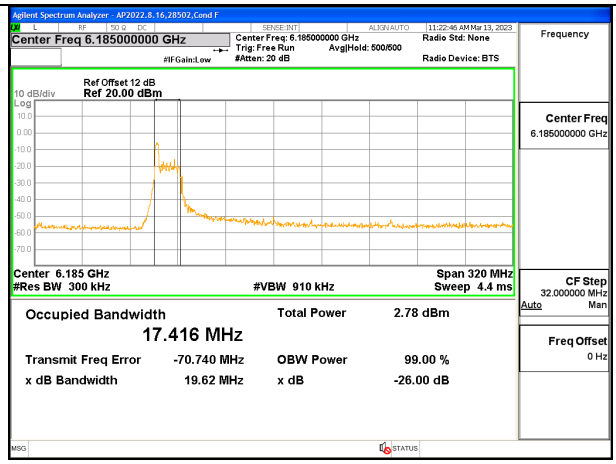
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6025	19.43	19.67	18.2750	18.0940
Mid	6185	20.23	19.62	18.3490	17.4160
High	6345	20.16	19.44	18.2550	18.1820



MID CHANNEL [ANT 6]

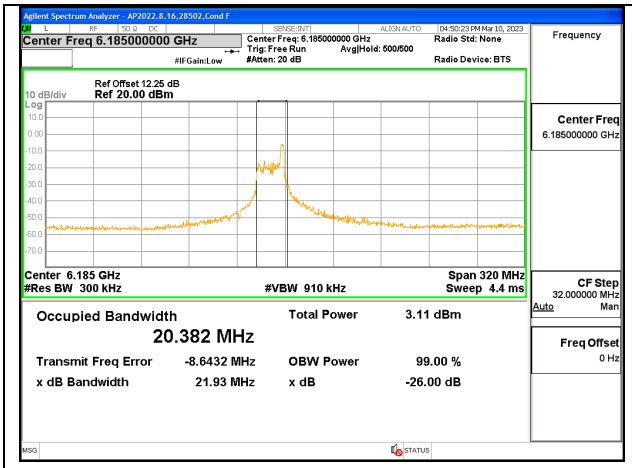


MID CHANNEL [ANT 5]

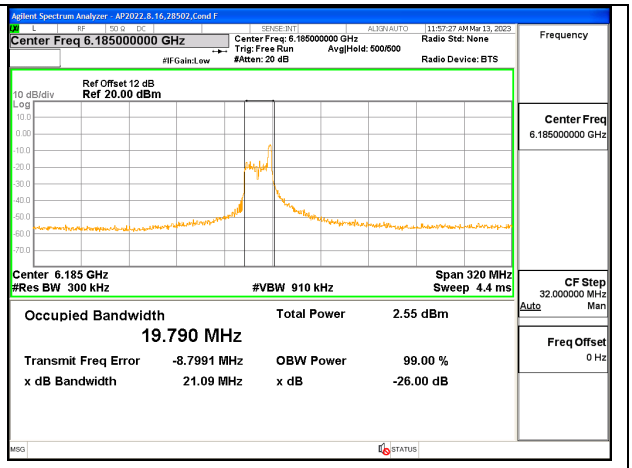
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 36

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6025	20.80	20.85	19.8740	19.1720
Mid	6185	21.93	21.09	20.3820	19.7900
High	6345	21.12	21.27	19.8420	19.3110



MID CHANNEL [ANT 6]

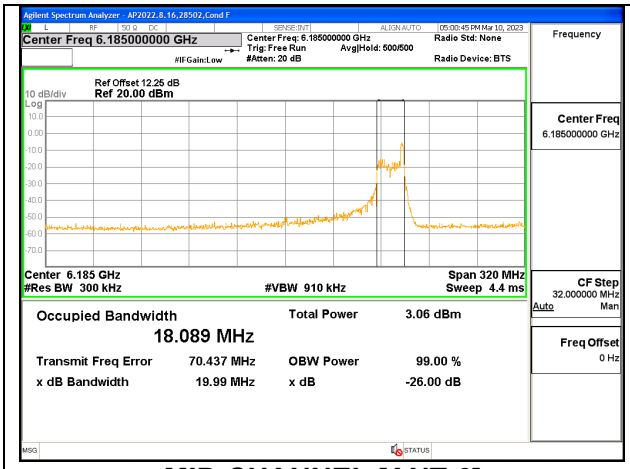


MID CHANNEL [ANT 5]

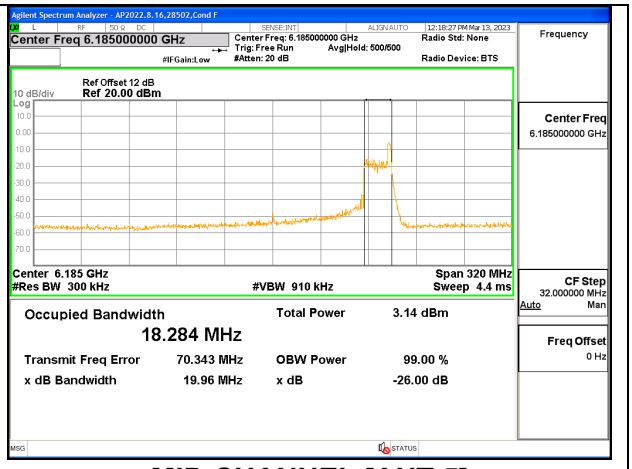
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index S36

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6025	20.43	19.94	18.4940	18.3060
Mid	6185	19.99	19.96	18.0890	18.2840
High	6345	20.51	19.67	18.4110	18.2830



MID CHANNEL [ANT 6]

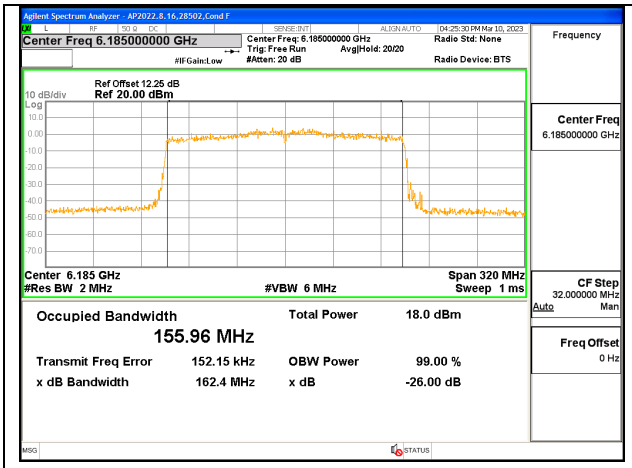


MID CHANNEL [ANT 5]

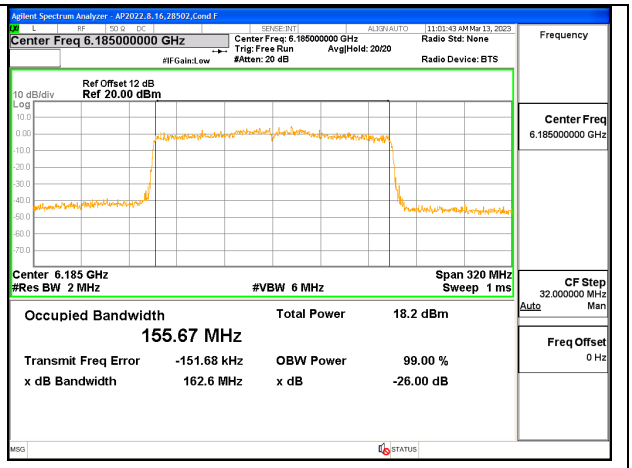
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6025	162.10	162.10	155.8000	155.7000
Mid	6185	162.40	162.60	155.9600	155.6700
High	6345	162.10	162.10	155.9700	155.7200



MID CHANNEL [ANT 6]

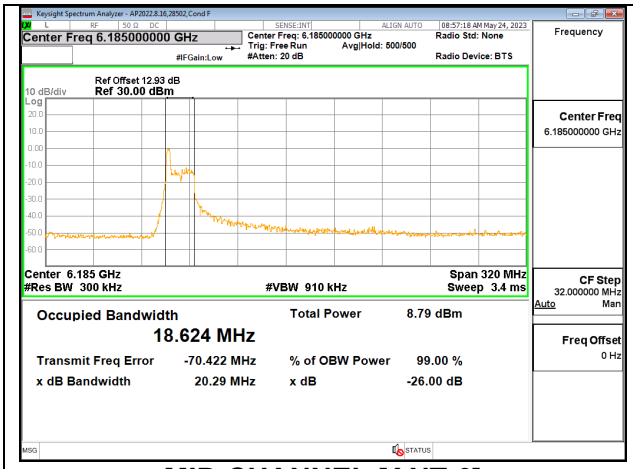


MID CHANNEL [ANT 5]

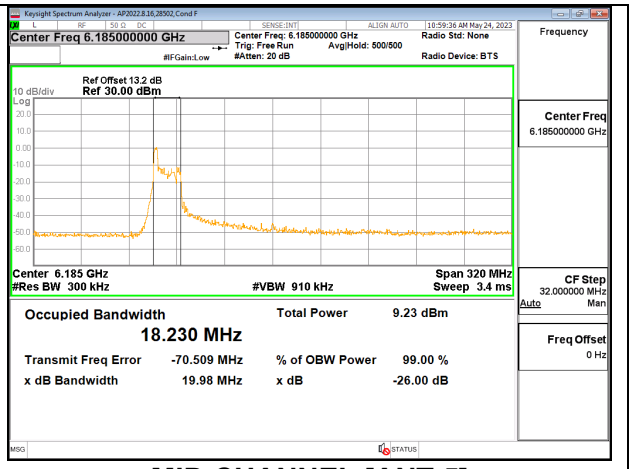
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6025	20.34	19.94	18.6650	18.4080
Mid	6185	20.29	19.98	18.6240	18.2300
High	6345	20.36	20.00	18.6000	18.4310



MID CHANNEL [ANT 6]

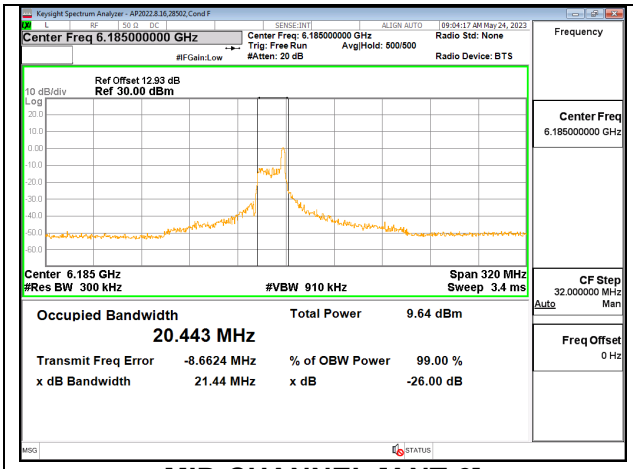


MID CHANNEL [ANT 5]

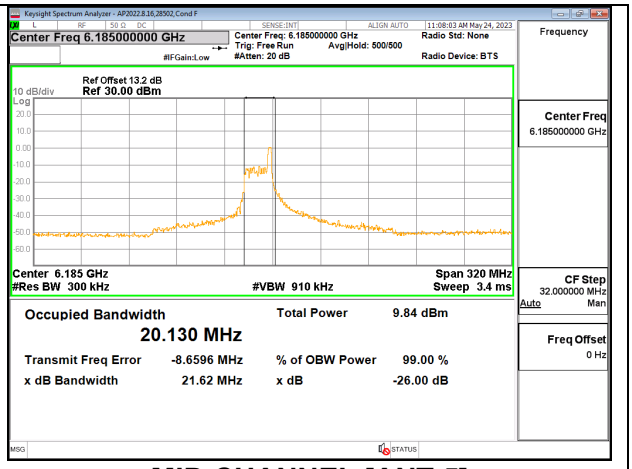
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 36

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6025	22.04	21.90	20.8470	20.5040
Mid	6185	21.44	21.62	20.4430	20.1300
High	6345	22.46	21.39	20.8110	20.0950



MID CHANNEL [ANT 6]

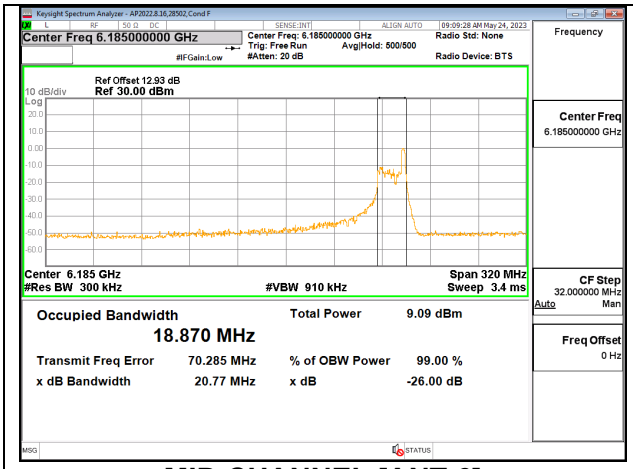


MID CHANNEL [ANT 5]

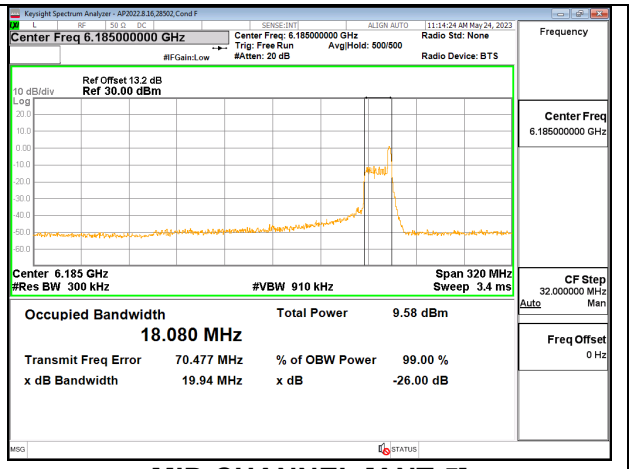
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index S36

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6025	21.00	20.74	18.7470	18.6790
Mid	6185	20.77	19.94	18.8700	18.0800
High	6345	20.64	20.65	18.9820	18.4890



MID CHANNEL [ANT 6]

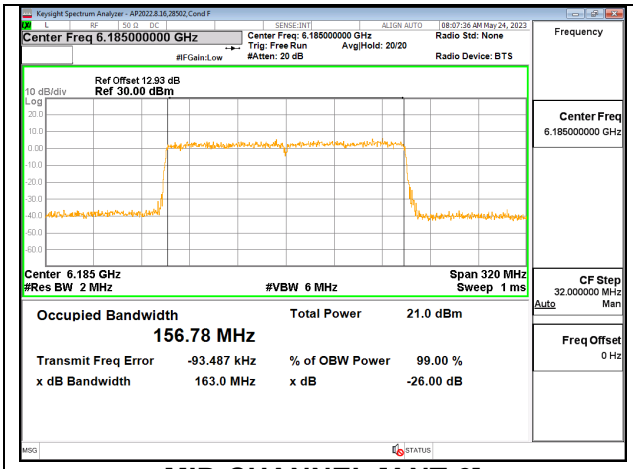


MID CHANNEL [ANT 5]

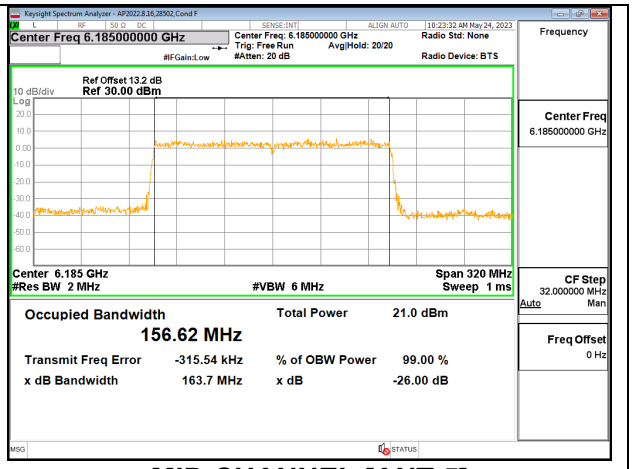
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: SU Mode

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6025	163.80	163.20	156.3200	156.8600
Mid	6185	163.00	163.70	156.7800	156.6200
High	6345	162.70	162.70	156.2100	156.6100



MID CHANNEL [ANT 6]



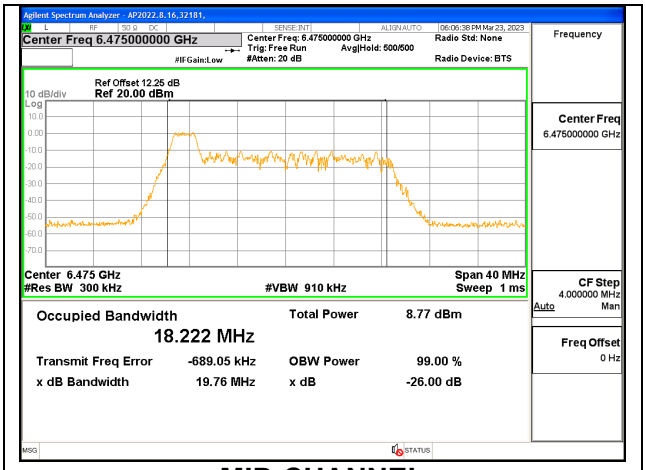
MID CHANNEL [ANT 5]

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.2.5. 802.11ax HE20 MODE IN THE UNII-6 BAND

1TX Antenna 6 MODE: 26 Tones, RU Index 0

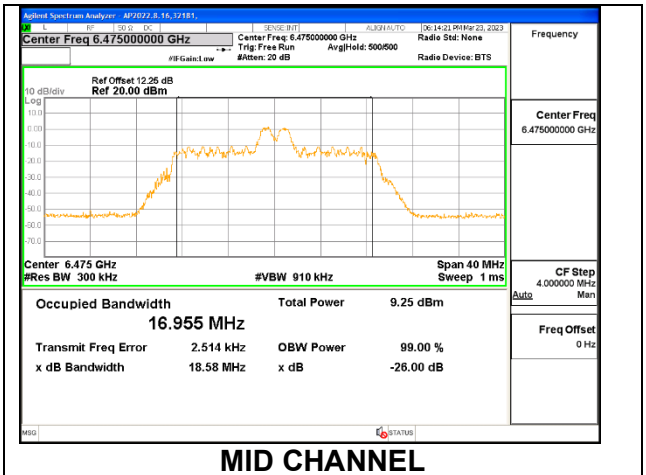
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6435	19.59	18.2340
Mid	6475	19.76	18.2220
High	6515	19.87	18.2430



MID CHANNEL

1TX Antenna 6 MODE: 26 Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6435	18.51	16.4320
Mid	6475	18.58	16.9550
High	6515	18.57	17.1000

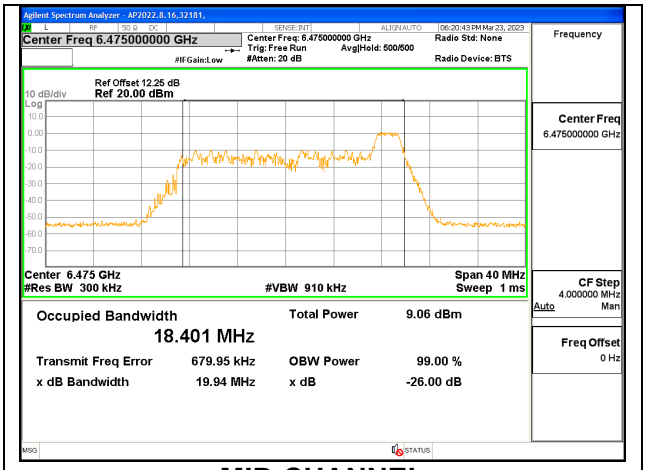


MID CHANNEL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

1TX Antenna 6 MODE: 26 Tones, RU Index 8

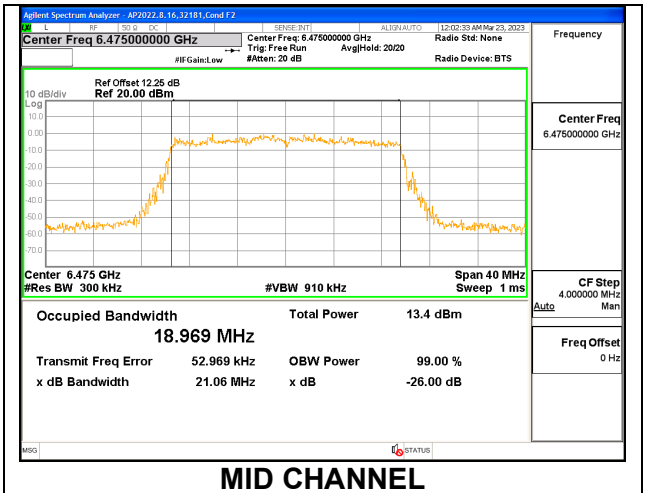
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6435	20.17	18.4560
Mid	6475	19.94	18.4010
High	6515	20.17	18.2960



MID CHANNEL

1TX Antenna 6 MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6435	20.62	18.9410
Mid	6475	21.06	18.9690
High	6515	20.54	18.9730

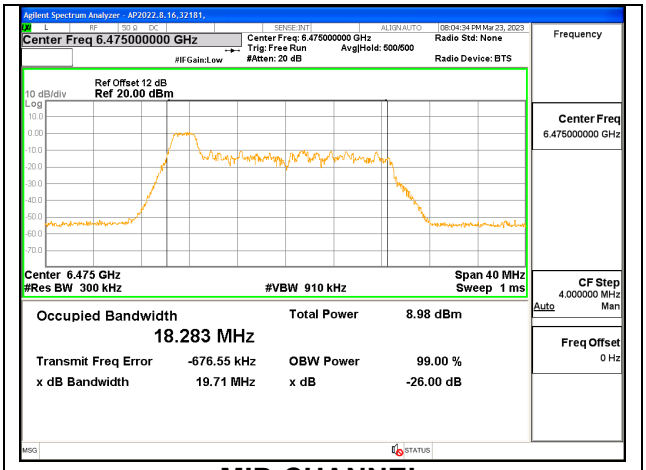


MID CHANNEL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

1TX Antenna 5 MODE: 26 Tones, RU Index 0

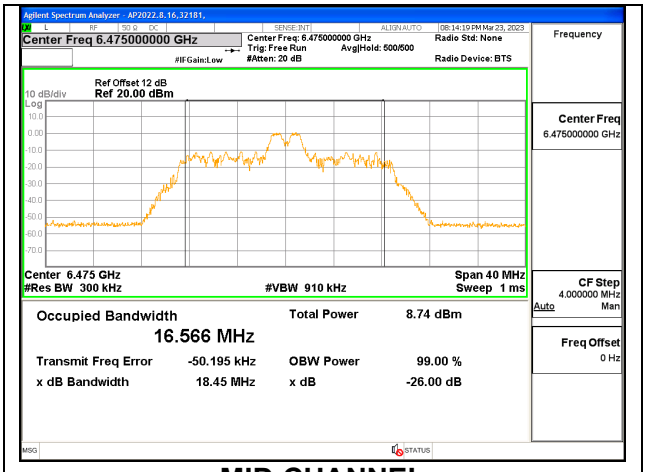
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6435	19.81	18.3180
Mid	6475	19.71	18.2830
High	6515	19.82	18.2140



MID CHANNEL

1TX Antenna 5 MODE: 26 Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6435	18.54	16.8980
Mid	6475	18.45	16.5660
High	6515	18.45	16.5660

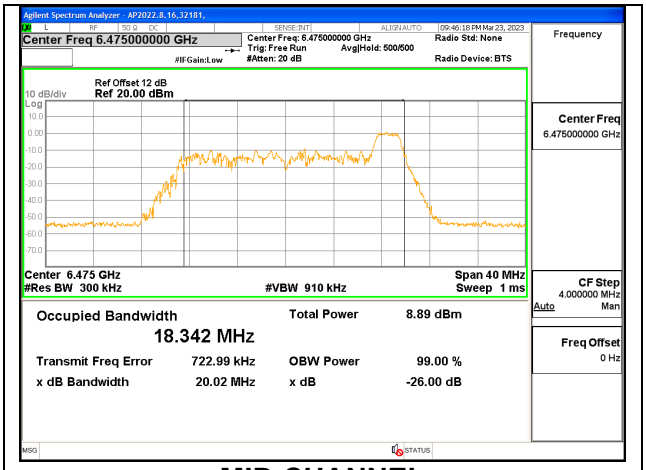


MID CHANNEL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

1TX Antenna 5 MODE: 26 Tones, RU Index 8

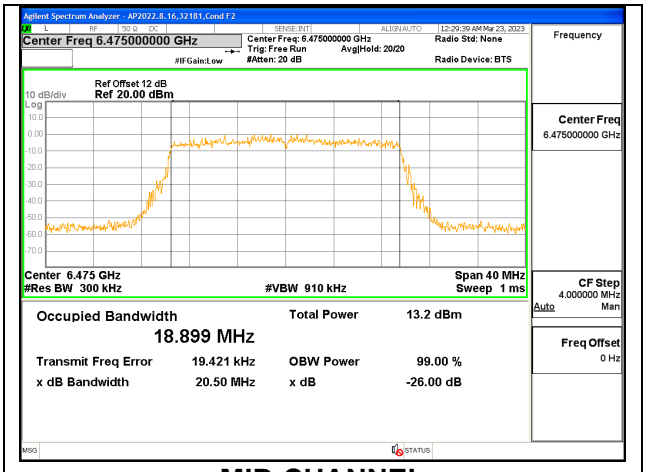
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6435	20.01	18.4450
Mid	6475	20.02	18.3420
High	6515	20.19	18.4260



MID CHANNEL

1TX Antenna 5 MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	6435	20.61	18.9510
Mid	6475	20.50	18.8890
High	6515	20.81	18.9450

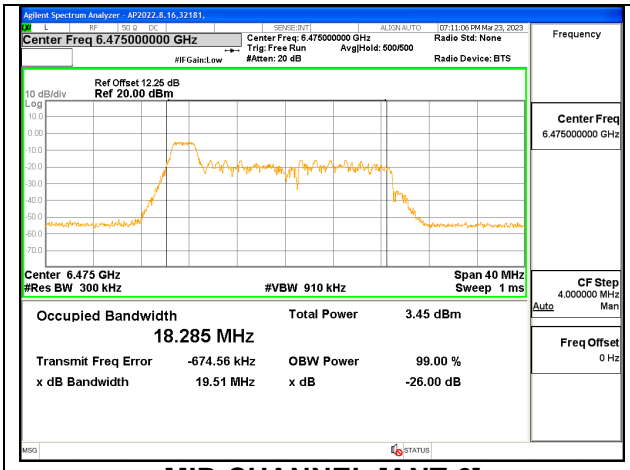


MID CHANNEL

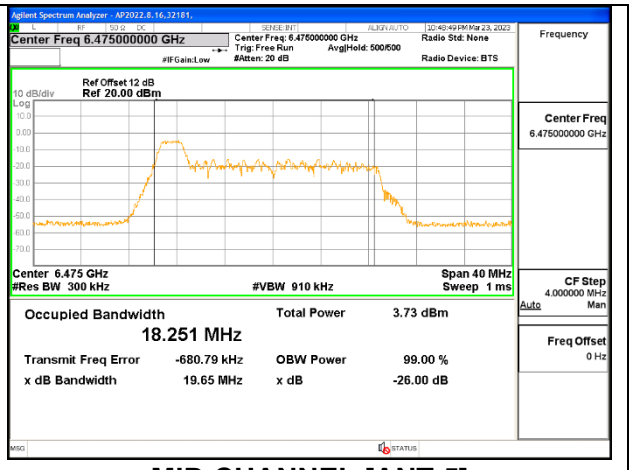
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6435	19.85	19.72	18.0040	18.2430
Mid	6475	19.51	19.65	18.2850	18.2510
High	6515	19.75	19.87	18.2050	18.2690



MID CHANNEL [ANT 6]

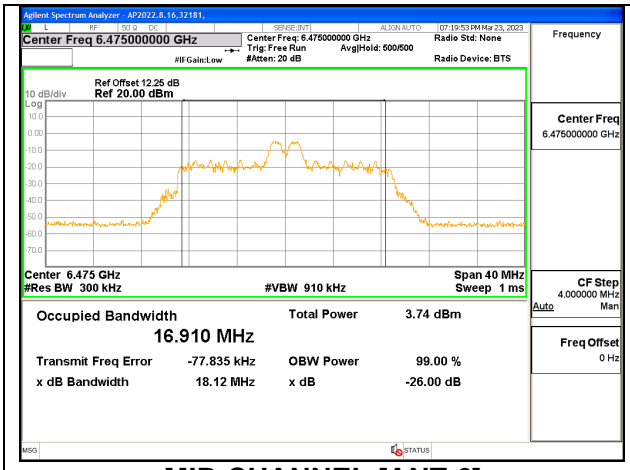


MID CHANNEL [ANT 5]

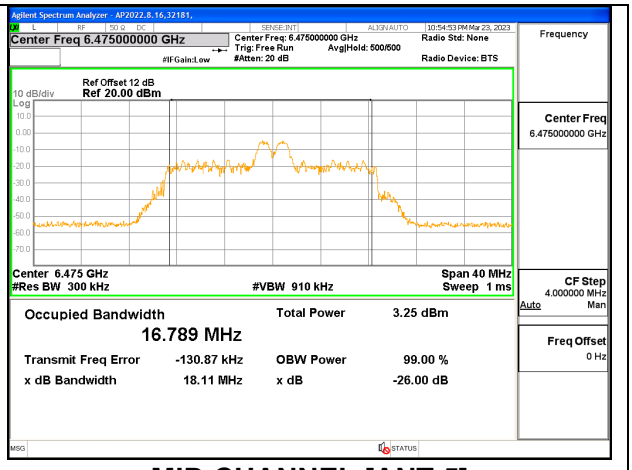
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6435	18.33	18.50	16.8070	17.0490
Mid	6475	18.12	18.11	16.9100	16.7890
High	6515	18.45	18.61	16.9970	16.4440



MID CHANNEL [ANT 6]

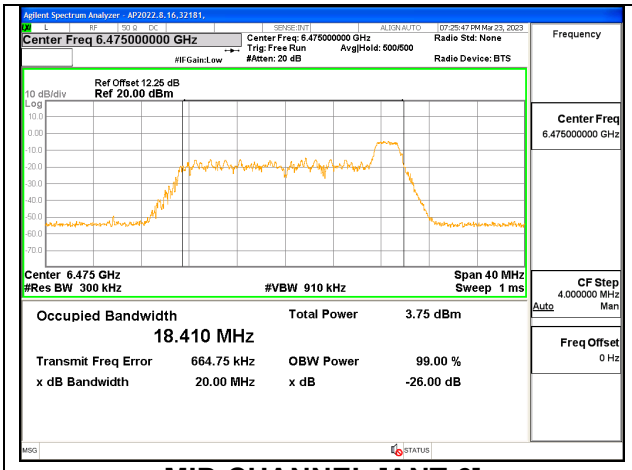


MID CHANNEL [ANT 5]

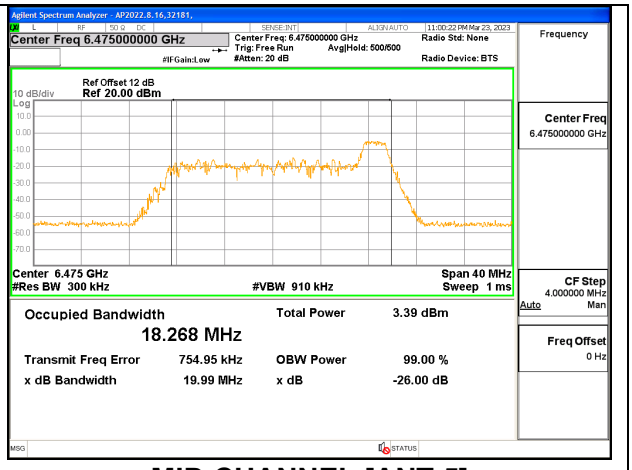
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6435	19.86	20.14	18.4550	18.4630
Mid	6475	20.00	19.99	18.4100	18.2680
High	6515	19.75	20.30	18.3810	18.3340



MID CHANNEL [ANT 6]

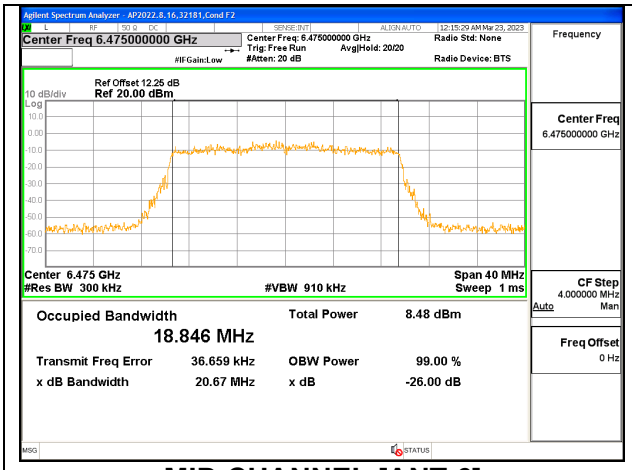


MID CHANNEL [ANT 5]

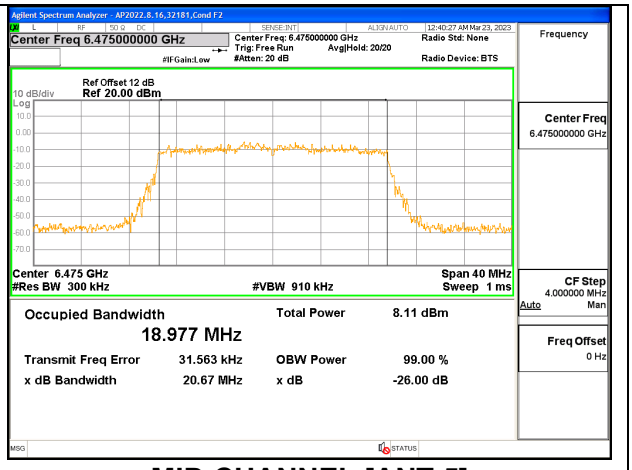
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 CDD MODE: SU Tones

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6435	20.51	20.47	18.9690	18.9480
Mid	6475	20.67	20.67	18.8460	18.9770
High	6515	20.49	20.64	18.9290	18.9250



MID CHANNEL [ANT 6]

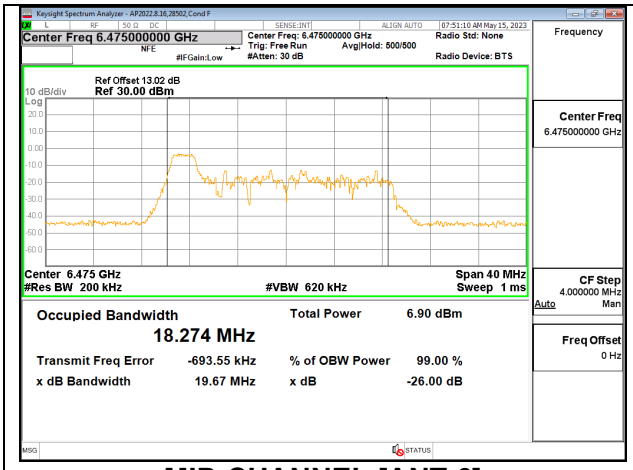


MID CHANNEL [ANT 5]

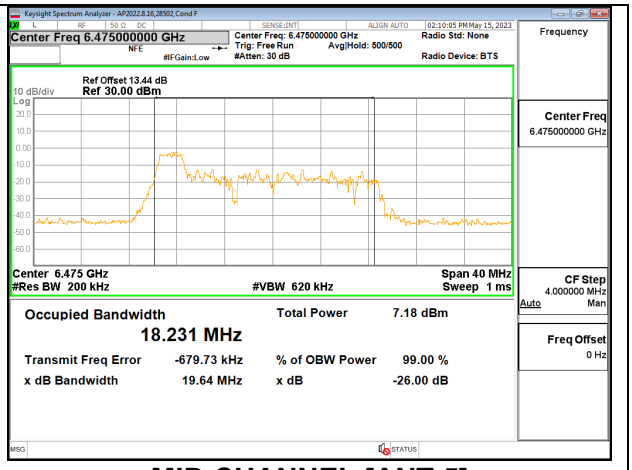
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 0

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6435	19.55	19.47	18.2320	18.1340
Mid	6475	19.67	19.64	18.2740	18.2310
High	6515	19.30	19.50	18.0500	18.0930



MID CHANNEL [ANT 6]

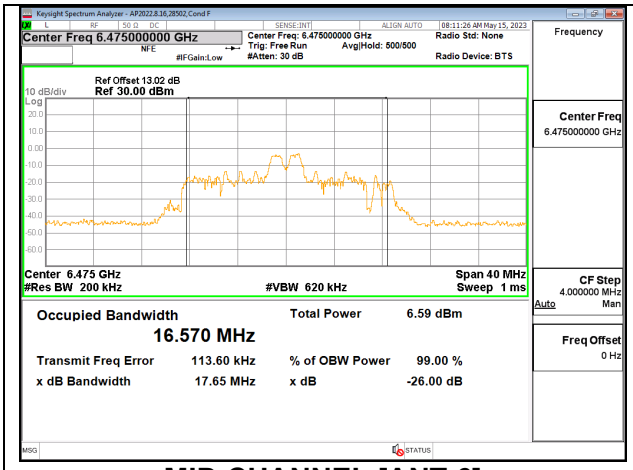


MID CHANNEL [ANT 5]

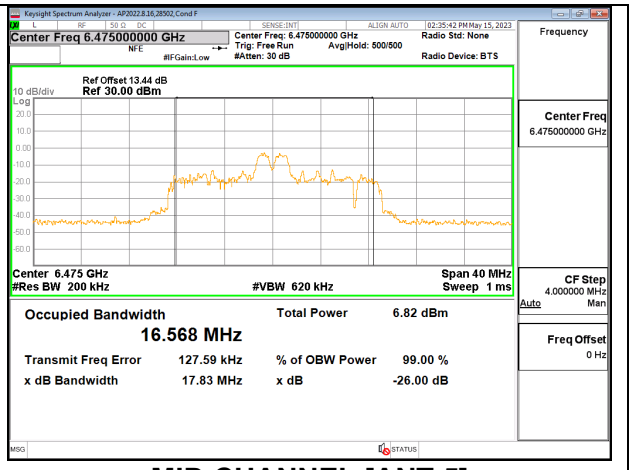
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6435	18.31	17.72	16.9900	16.5880
Mid	6475	17.65	17.83	16.5700	16.5680
High	6515	18.30	18.12	16.7440	16.5640



MID CHANNEL [ANT 6]

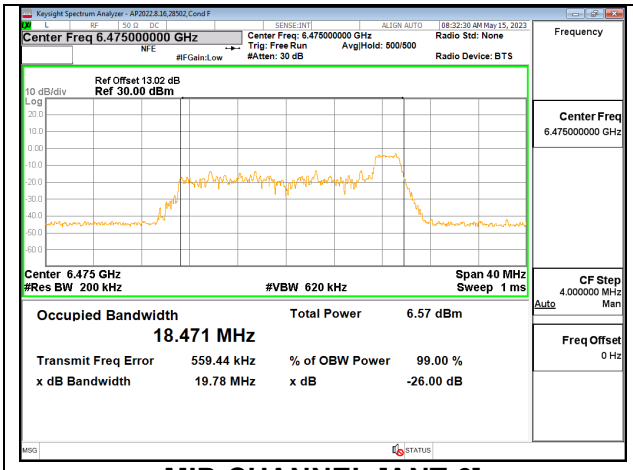


MID CHANNEL [ANT 5]

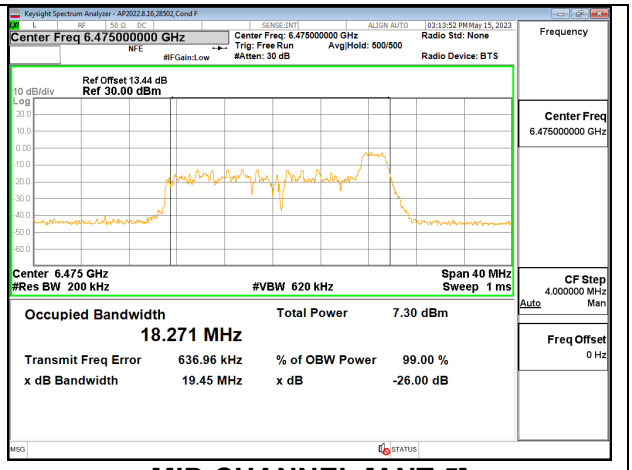
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

2TX Antenna 6 + Antenna 5 SDM MODE: 26 Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 6 (MHz)	26 dB Bandwidth Antenna 5 (MHz)	99% Bandwidth Antenna 6 (MHz)	99% Bandwidth Antenna 5 (MHz)
Low	6435	19.98	19.61	18.3090	18.3740
Mid	6475	19.78	19.45	18.4710	18.2710
High	6515	19.77	19.48	18.4140	18.2450



MID CHANNEL [ANT 6]



MID CHANNEL [ANT 5]

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888