CERTIFICATION TEST REPORT

Report Number: R12935938-E9

Applicant	:	Microsoft Corporation One Microsoft Way Redmond, WA 98052-6399, USA
Model	:	1868
FCC ID	:	C3K1868
IC	:	3048A-1868
EUT Description	:	Portable Computing Device
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART E (Except DFS) ISED RSS-247 ISSUE 2 ISED RSS-GEN ISSUE 5

Date Of Issue:
2019-09-16

Prepared by:
UL LLC
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NVLAP TESTING
NVLAP Lab code: 200246-0

REPORT REVISION HISTORY

Ver.	Issue Date	Revisions	Revised By
1	2019-08-29	Initial Issue	Brian T. Kiewra
2	2019-09-12	Added AC power adaptor to support equipment. Added justification for waiving SISO in Section 6.6. Revised straddle channel BW for power. Added model similarity explanation to Section 4. Revised 802.11ax HE40 SU, 484T RU65, and 26T RU8 99%BW results in Section 9.1. Revised 802.11ax HE160 52T RU37 PSD results in Section 9.1.7	Brian T. Kiewra
3	2019-09-16	Revised radiated spurious emissions reduction statement in Section 6.3, added 160 MHz power data for ISED Canada.	Brian T. Kiewra

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399, USA

EUT DESCRIPTION: Portable Computing Device

MODEL: 1868

SERIAL NUMBER: See Section 6.5

DATE TESTED: 2019-07-07 to 2019-09-10

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E (Except DFS)	Complies
ISED RSS-247 Issue 2	Complies
ISED RSS-GEN Issue 5	Complies

UL LLC 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 LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC 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 NVLAP, NIST, or any agency of the U.S. government.

Approved & Released
For UL LLC By:

Jeff Moser
Operations Leader
UL – Consumer Technology Division

Prepared By:

Brian T. Kiewra
Project Engineer
UL – Consumer Technology Division

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 14-30, FCC KDB 662911 D01 v02r01, FCC KDB 789033 D02 v02r01, ANSI C63.10-2013, FCC 06-96, FCC KDB 905462 D02 and D03, RSS-GEN Issue 5, and RSS-247 Issue 2.

This report pertains to the 802.11ax mode requirements of EUT 1868.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 12 Laboratory Drive, Research Triangle Park, NC 27709, USA and 2800 Perimeter Park Dr., Suite B, Morrisville, NC 27590, USA. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

12 Laboratory Dr.	2800 Perimeter Park Dr.
Site Code: 2180C	
☐ Chamber A RTP	☒ North Chamber
☐ Chamber C RTP	☒ South Chamber

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4. SCOPE OF REPORT

This test report covers the radiated emissions and antenna port conducted emissions for model 1868 for 5.6 GHz 802.11ax HE20, HE40, HE80, and HE160. Antenna port conducted emissions data in this report is leveraged by model 1867. For model 1867, radiated emissions can be found in UL report number R12922855-E9. For model 1868, AC mains line conducted emissions and worst-case radiated emisisons can be found in UL report number R12935938-E11.

For the antenna port conducted emissons portion of this report, the worst-case antenna gain across both models was used to represent a worst-case scenario. Both models will be implemented with the same power.

Models 1867 and 1868 are electrically and RF equivalent as they use the same motherboard, radio module and on-board RF components. Both models share a common WiFi and BT power table. The radio-related firmware and driver versions are the same for the two models. The peak antenna gains are in the antenna gain section of the report. Antenna port conducted emissions measurements are done on model 1868 (FCC ID: C3K1868, IC: 3048A-1868) and the data is leveraged for model 1867 (FCC ID: C3K1867, IC: 3048A-1867). Highest antenna gain across the two models in each band has been considered while doing the conducted emissions measurements. Separate radiated & SAR measurements are done on each model.

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5. CALIBRATION AND UNCERTAINTY

5.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

5.2. 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

5.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Radio Frequency (Spectrum Analyzer)	141.2 Hz
Occupied Channel Bandwidth	2.00%
RF output power, conducted	1.3 dB (PK) 0.45 dB (AV)
RF output power, radiated (SAC)	4.52 dB
Power Spectral Density, conducted	2.47 dB
All emissions, radiated	5.17 dB
Temperature	2.26°C
Humidity	6.79%
DC Supply voltages	1.70%
Time	3.39%

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

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6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a Portable Computing Device that contains 802.11 a/ac/ax/b/g/n 20/40/80/160MHz 2x2 dual band and BT/BLE.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5.6 GHz band, 2TX			
5500-5720	802.11ax HE20 OFDMA, 242-Tones	18.88	77.27
5510-5710	802.11ax HE40 OFDMA, 242-Tones	20.92	123.59
5530-5690	802.11ax HE80 OFDMA, 242-Tones	21.51	141.58
5570	802.11ax HE160 OFDMA, 242-Tones	21.30	134.90

SISO and MIMO per chain power are set to the same level.

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6.3. TEST REDUCTIONS CASES

99% bandwidth:

- The narrowest (a representative RU) and widest modes were tested.

26dB bandwidth:

- The narrowest (a representative RU) and widest modes were tested.

Power measurements:

- All tones were tested for each bandwidth.
- Low, middle, and high RU allocation were tested.

Power spectral density:

- All tones were tested for each bandwidth.
- Low, middle, and high RU allocation were tested.

Radiated band edge:

- All tones and bandwdiths were tested.
- The RU allocations closest to the band edge was tested to cover all other RU allocations.

Radiated and conducted spurious emissions:

- For 5.6GHz band, multiple modes were investigated and for final measurements HE20 26T was used. The output power for this mode was set to a power setting that represented both the highest output power and highest PSD across all production power settings for all bandwidth / RU configurations.

6.4. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency Range (GHz)	Antenna Type	Peak Gain (dBi) Chain 0 (Right)	Peak Gain (dBi) Chain 1 (Left)
Model 1867			
2.4 to 2.48	PIFA	0.7	2.6
5.15 to 5.25		4.9	4.4
5.25 to 5.35		6.1	5.0
5.47 to 5.72		7.2	5.5
5.725 to 5.85		9.4	5.6
Model 1868			
2.4 to 2.48	PIFA	0.4	1.0
5.15 to 5.25		3.6	2.2
5.25 to 5.35		5.2	3.5
5.47 to 5.72		6.4	4.7
5.725 to 5.85		7.8	4.5

The 5 GHz WLAN radio utilizes Chain 0 and chain 1.

NOTE: Antenna 1 = Chain 0
Antenna 2 = Chain 1

Antenna gains from model 1867 were used as these are considered worst-case.

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6.5. SOFTWARE AND FIRMWARE

EUT	Serial Number	DRTU Version	OS Version	BT Driver Version	WiFi Driver Version	EUT's Power Supply (s/n)
R-557-1868-FCC-CONDUCTED-02	005210692757	11.1916.0-09531	MTEOS 1.652.0	21.0.19157.20088	99.0.43.8	0D130P01P9596
R-557-1868-FCC-CONDUCTED-03	005216792757	11.1916.0-09531	MTEOS 1.652.0	21.0.19157.20088	99.0.43.8	0D130P03GE596
R-557-1868-FCC-RADIATED-10	013886292757	11.1916.0-09531	MTEOS 1.652.0	21.0.19157.20088	99.0.43.8	0D130P02KC596
R-557-1868-FCC-RADIATED-11	013891692757	11.1916.0-09531	MTEOS 1.652.0	21.0.19157.20088	99.0.43.8	0D130P01S7596

6.6. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, and power line conducted emissions were performed in worst-case test report R12935938-E11.

Band edge and radiated emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the highest power on low, middle and high channels.

The EUT has one intended orientations, X; therefore, all final radiated testing was performed with the EUT in X orientation.

Worst-case data rates as provided by the client were:

802.11ax HE20 mode: MCS0 NSS2
802.11ax HE40 mode: MCS0 NSS2
802.11ax HE80 mode: MCS0 NSS2
8092.11ax HE160 mode: MCS0 NSS2

All radios that can transmit simultaneously have been evaluated for radiated for all possible combinations of transmission and found to be in compliance.

MIMO and SISO power are same setting per chain, therefore MIMO mode tested as worst-case to cover SISO mode.

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6.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
USB Hub	J5 Create	JCA374	AY2A1904000477 / AY6A1903004261	N/A
Earbuds	Sony	MDR-EX14AP	Non-Serialized	N/A
AC Adaptor	Microsoft	1706	0D130P02KC596	N/A
USB Flash Drive	Kingston	Data Traveler G4	Non-Serialized	N/A

I/O CABLES

I/O Cable List						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	Mains	1	12-pin	Mains	<3m	None
2	USB-A	1	USB-A	USB	<3m	None
3	USB-C	1	USB-C	USB	<3m	None
4	Aux	1	Aux	Aux	<3m	None

TEST SETUP

The test utility software was installed on the laptop during the tests and was used to exercised the radios.

SETUP DIAGRAMS

Please refer to 12935938-EP1 for setup diagrams

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7. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville - North Chamber)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
1-18 GHz					
AT0067	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2019-03-22	2020-03-22
Gain-Loss Chains					
N-SAC03	Gain-loss string: 1-18GHz	Various	Various	2019-03-15	2020-03-15
Receiver & Software					
SA0026	Spectrum Analyzer	Agilent	N9030A	2019-03-19	2020-03-19
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
Additional Equipment used					
s/n 181474341	Environmental Meter	Fisher Scientific	15-077-963	2018-07-27	2020-07-27

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville - South Chamber)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
1-18 GHz					
AT0072	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2019-04-22	2020-04-22
Gain-Loss Chains					
S-SAC03	Gain-loss string: 1-18GHz	Various	Various	2019-03-13	2020-03-13
Receiver & Software					
SA0025	Spectrum Analyzer	Agilent	N9030A	2019-02-28	2020-02-28
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
Additional Equipment used					
s/n 181474409	Environmental Meter	Fisher Scientific	15-077-963	2018-07-27	2020-07-27

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Test Equipment Used – Antenna Port Conducted Testing (Morrisville)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
SA0027	PXA Signal Analyzer	Keysight Technologies	MY54490254	2019-05-15	2020-05-15
s/n 160938893	Environmental Meter	Fisher Scientific	14-650-118	2019-06-17	2020-06-17
224604-002	Coaxial Testing Cable	Uti-flex	UFA147A-0-0180-200200	NA	NA
Antenna Port	Antenna Port Software	Antenna	Version 10.0.1	NA	NA
126431 (PRE0128068)	RF Power Meter	Anritsu	ML2495A	2019-04-30	2020-04-30
126430 (PRE0128067)	Pulse Power Sensor, 300MHz to 40GHz	Anritsu	MA2411B	2019-04-30	2020-04-30
PWM001 (PRE0136343)	RF Power Meter	Keysight Technologies	N1912A	2019-06-14	2020-06-14
PWS001 (PRE0137347)	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2019-05-06	2020-05-06
T177	PSA Signal Analyzer	Keysight Technologies	E4446A	2019-04-22	2020-04-22
HI0090	Environmental Meter	Fisher Scientific	17-E670X-80-1	2019-06-17	2020-06-17
Antenna Port	Antenna Port Software	Antenna	Version 10.0.1	NA	NA

Notes:
1. For equipment listed above that was calibrated during the testing period, please note the equipment was used for testing after the calibration.

2. For equipment listed above that has a calibration date during the testing period, the testing was completed before equipment expiration date.

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8. MEASUREMENT METHOD

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

26 dB Emission BW: KDB 789033 D02 v02r01, Section II C.1

99% Occupied BW: 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: KDB 789033 D02 v02r01, Section II F

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

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

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9. ANTENNA PORT TEST RESULTS FOR 11ax 5.6 GHz

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

789033 D02 Zero-Span Spectrum Analyzer Method.

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 OFDMA, SU	3.967	4.016	0.988	98.78%	0.00	0.010
802.11ax HE20 OFDMA, RU size 242T	3.977	4.026	0.988	98.78%	0.00	0.010
802.11ax HE20 OFDMA, RU size 106T	3.977	4.026	0.988	98.78%	0.00	0.010
802.11ax HE20 OFDMA, RU size 52T	3.977	4.026	0.988	98.78%	0.00	0.010
802.11ax HE20 OFDMA, RU size 26T	3.977	4.026	0.988	98.78%	0.00	0.010
802.11ax HE40 OFDMA, SU	3.967	4.012	0.989	98.88%	0.00	0.010
802.11ax HE40 OFDMA, RU size 484T	3.975	4.022	0.988	98.83%	0.00	0.010
802.11ax HE40 OFDMA, RU size 242T	3.977	4.027	0.988	98.76%	0.00	0.010
802.11ax HE40 OFDMA, RU size 106T	3.977	4.027	0.988	98.76%	0.00	0.010
802.11ax HE40 OFDMA, RU size 52T	3.975	4.024	0.988	98.78%	0.00	0.010
802.11ax HE40 OFDMA, RU size 26T	3.975	4.024	0.988	98.78%	0.00	0.010
802.11ax HE80 OFDMA, SU	3.980	4.027	0.988	98.83%	0.00	0.010
802.11ax HE80 OFDMA, RU size 996T	3.977	4.024	0.988	98.83%	0.00	0.010
802.11ax HE80 OFDMA, RU size 484T	3.977	4.024	0.988	98.83%	0.00	0.010
802.11ax HE80 OFDMA, RU size 242T	3.977	4.024	0.988	98.83%	0.00	0.010
802.11ax HE80 OFDMA, RU size 106T	3.977	4.024	0.988	98.83%	0.00	0.010
802.11ax HE80 OFDMA, RU size 52T	3.977	4.024	0.988	98.83%	0.00	0.010
802.11ax HE80 OFDMA, RU size 26T	3.977	4.024	0.988	98.83%	0.00	0.010
802.11ax HE160 OFDMA, SU	2.280	2.327	0.980	97.98%	0.09	0.439
802.11ax HE160 OFDMA, RU size 2x996T	3.975	4.029	0.987	98.66%	0.00	0.010
802.11ax HE160 OFDMA, RU size 996T	3.975	4.029	0.987	98.66%	0.00	0.010
802.11ax HE160 OFDMA, RU size 484T	3.975	4.029	0.987	98.66%	0.00	0.010
802.11ax HE160 OFDMA, RU size 242T	3.975	4.029	0.987	98.66%	0.00	0.010
802.11ax HE160 OFDMA, RU size 106T	3.975	4.029	0.987	98.66%	0.00	0.010
802.11ax HE160 OFDMA, RU size 52T	3.975	4.029	0.987	98.66%	0.00	0.010
802.11ax HE160 OFDMA, RU size 26T	3.975	4.029	0.987	98.66%	0.00	0.010

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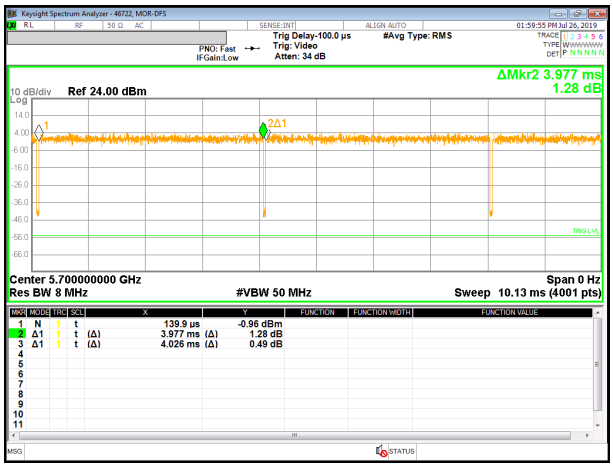
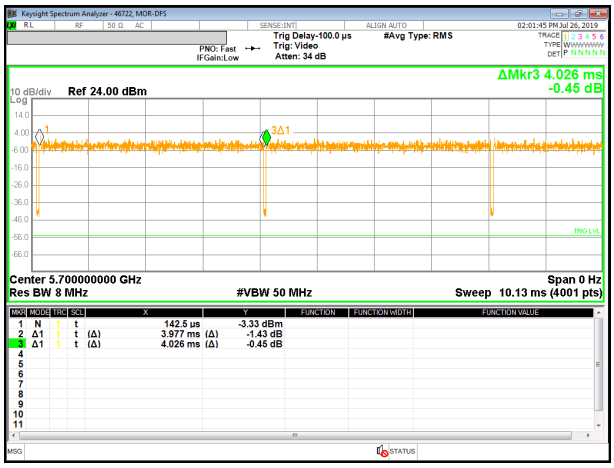
DUTY CYCLE PLOTS

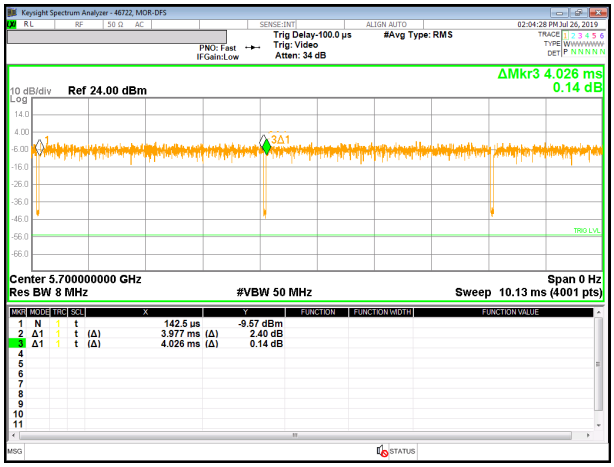


802.11ax HE20 OFDMA, RU size 242T MODE



802.11ax HE20 OFDMA, RU size 106T MODE

802.11ax HE20 OFDMA, RU size 52T MODE



802.11ax HE20 OFDMA, RU size 26T MODE

802.11ax HE20 OFDMA, SU MODE

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802.11ax HE40 OFDMA, RU size 484T MODE

802.11ax HE40 OFDMA, RU size 242T MODE

802.11ax HE40 OFDMA, RU size 106T MODE

802.11ax HE40 OFDMA, RU size 52T MODE

802.11ax HE40 OFDMA, RU size 26T MODE

802.11ax HE40 OFDMA, SU MODE

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802.11ax HE80 OFDMA, RU size 996T MODE

802.11ax HE80 OFDMA, RU size 484T MODE

802.11ax HE80 OFDMA, RU size 242T MODE

802.11ax HE80 OFDMA, RU size 106T MODE

802.11ax HE80 OFDMA, RU size 52T MODE

802.11ax HE80 OFDMA, RU size 26T MODE

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802.11ax HE80 OFDMA, SU

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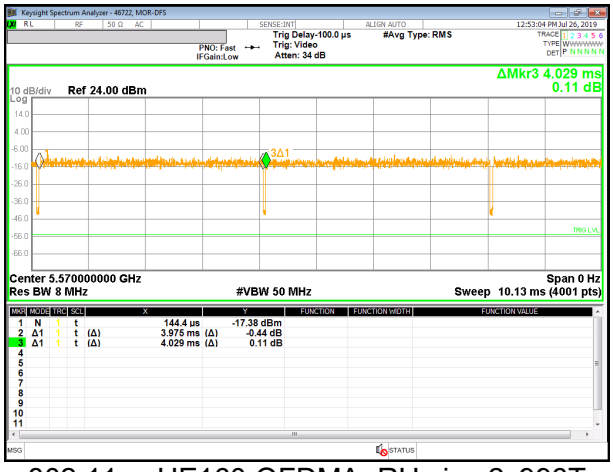
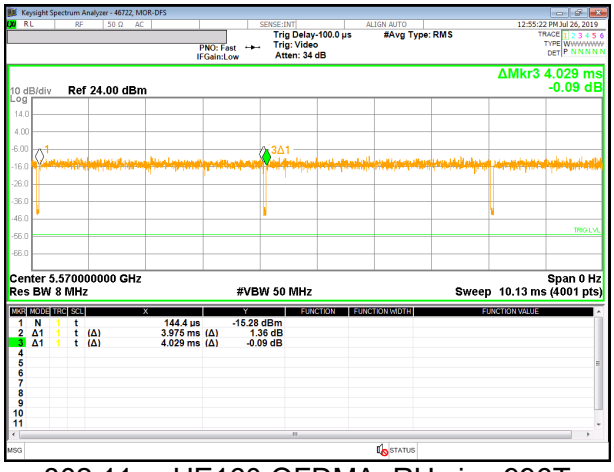


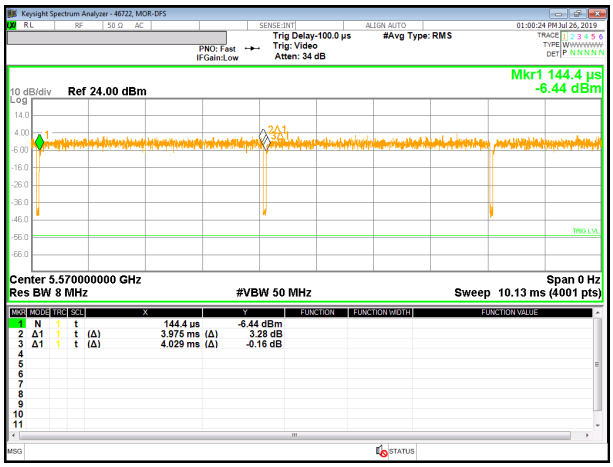
802.11ax HE160 OFDMA, RU size 2x996T MODE



802.11ax HE160 OFDMA, RU size 996T MODE

802.11ax HE160 OFDMA, RU size 484T MODE

802.11ax HE160 OFDMA, RU size 242T MODE



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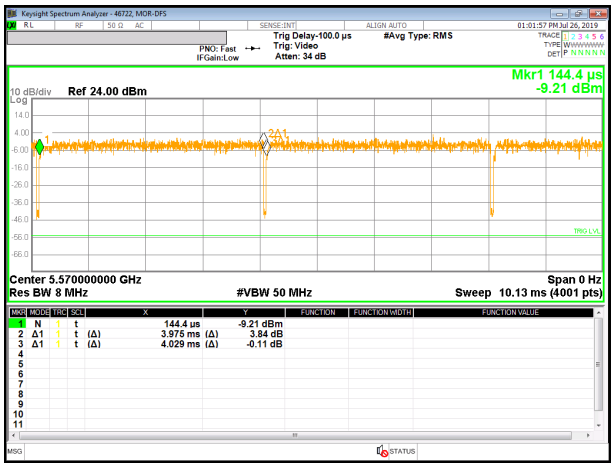

802.11ax HE160 OFDMA, RU size 52T MODE

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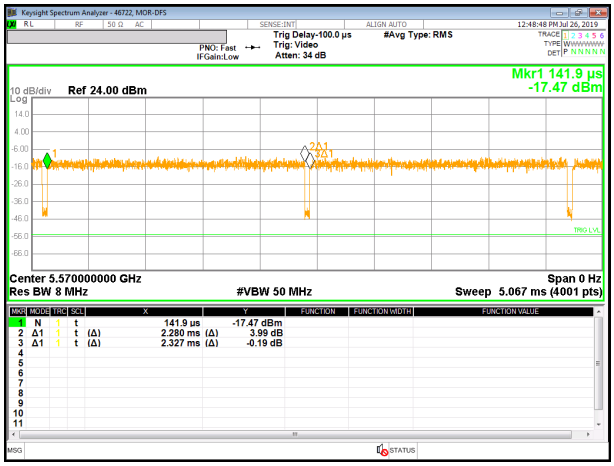
802.11ax HE160 OFDMA, RU size 26T MODE



802.11ax HE160 OFDMA, SU MODE

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9.2. 26 dB BANDWIDTH

LIMITS

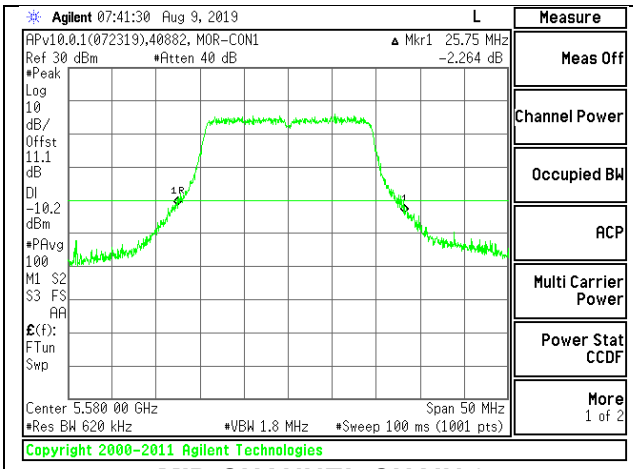
None; for reporting purposes only.

9.2.1. 802.11ax HE20 MODE IN THE 5.6 GHz BAND

2TX Antenna 1 + Antenna 2 SU MODE

	(MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5500	25.10	25.45
Mid	5580	25.75	25.50
High	5700	25.30	25.10
144	5720	17.75	17.43

MID CHANNEL



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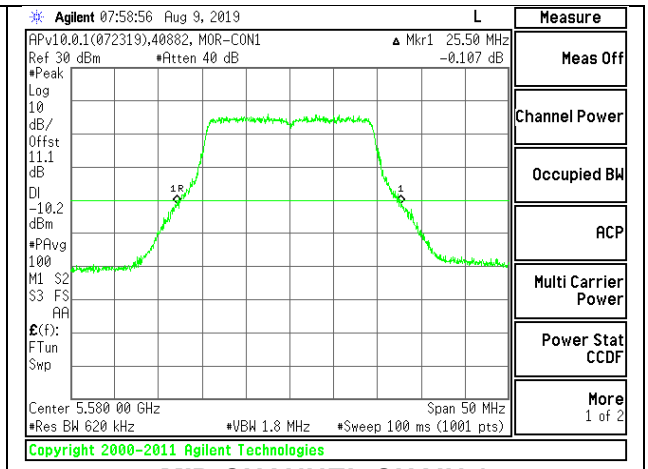

MID CHANNEL CHAIN 1

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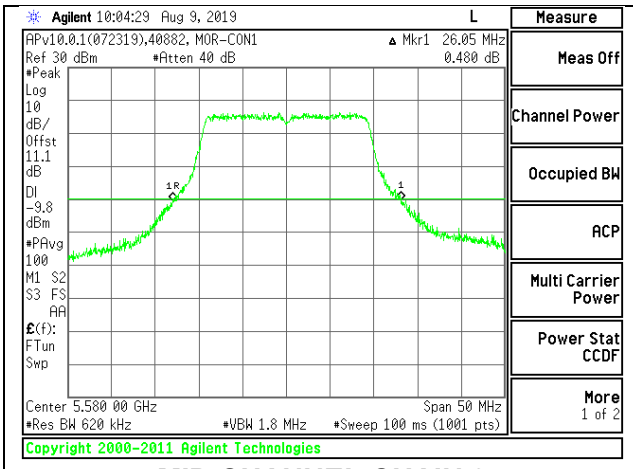
2TX Antenna 1 + Antenna 2 OFDMA MODE – 242-Tones, RU Index 61

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5500	25.35	25.30
Mid	5580	26.05	25.10
High	5700	26.60	25.35
144	5720	17.85	17.55

MID CHANNEL



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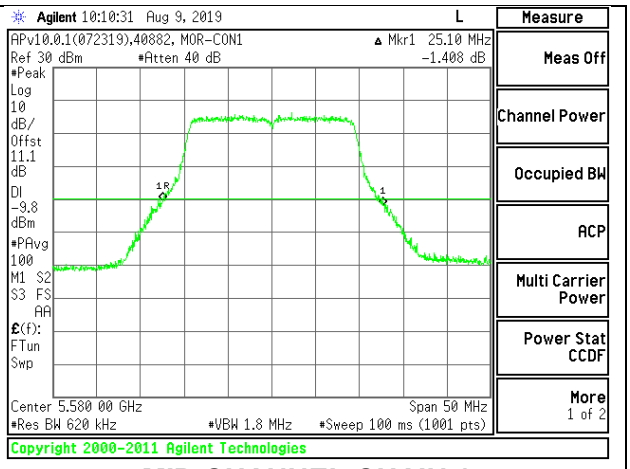

MID CHANNEL CHAIN 1

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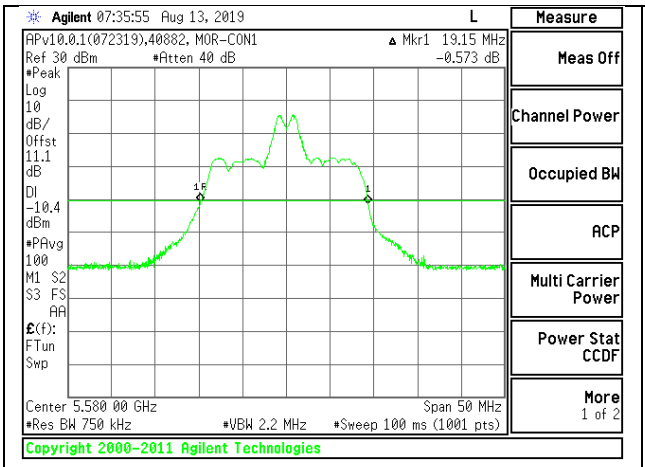
2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5500	19.10	18.85
Mid	5580	19.15	19.00
High	5700	18.95	18.95
144	5720	14.475	14.45

MID CHANNEL



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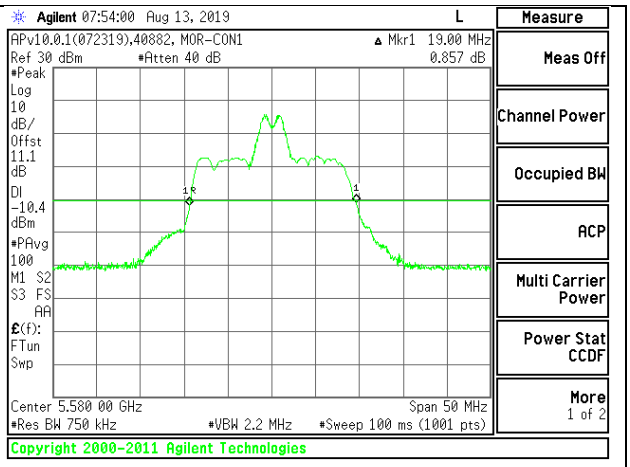

MID CHANNEL CHAIN 1

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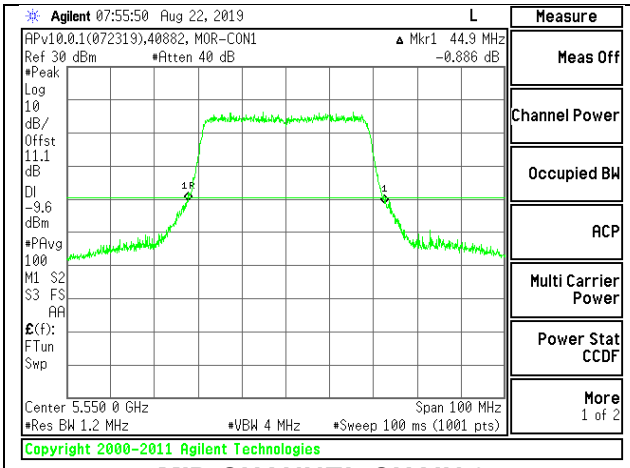
9.2.1. 802.11ax HE40 MODE IN THE 5.6 GHz BAND

2TX Antenna 1 + Antenna 2 SU MODE

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5510	45.00	44.90
Mid	5550	44.90	45.00
High	5670	45.40	45.00
142	5710	37.15	37.90

MID CHANNEL



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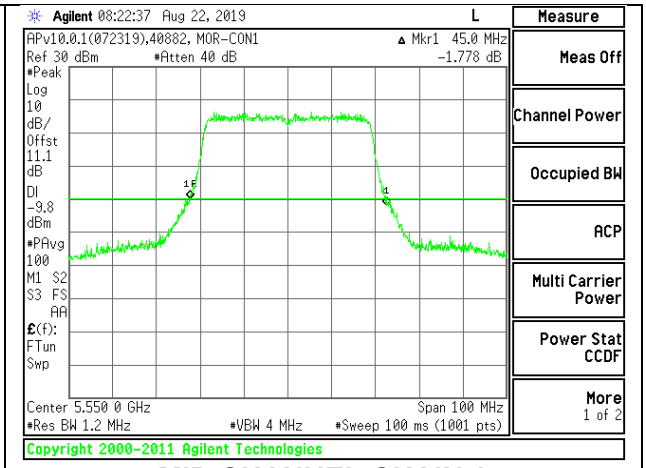

MID CHANNEL CHAIN 1

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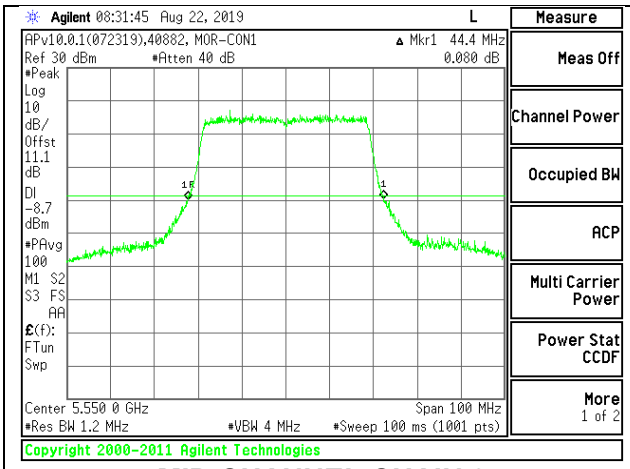
2TX Antenna 1 + Antenna 2 OFDMA MODE – 484-Tones, RU Index 65

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5510	46.10	45.40
Mid	5550	44.40	45.20
High	5670	45.90	45.20
142	5710	37.20	37.60

MID CHANNEL



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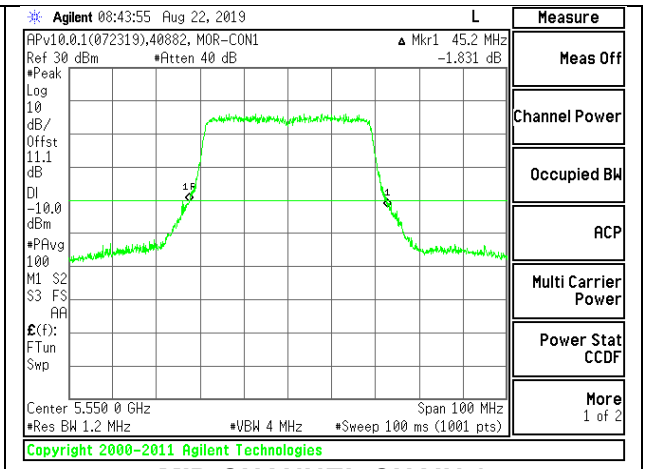

MID CHANNEL CHAIN 1

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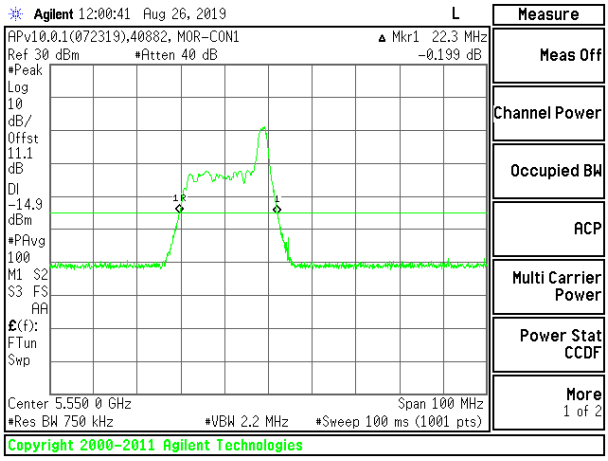
2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 8

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5510	21.40	21.60
Mid	5550	22.30	21.30
High	5670	22.50	21.50
142	5710	22.50	21.50

MID CHANNEL



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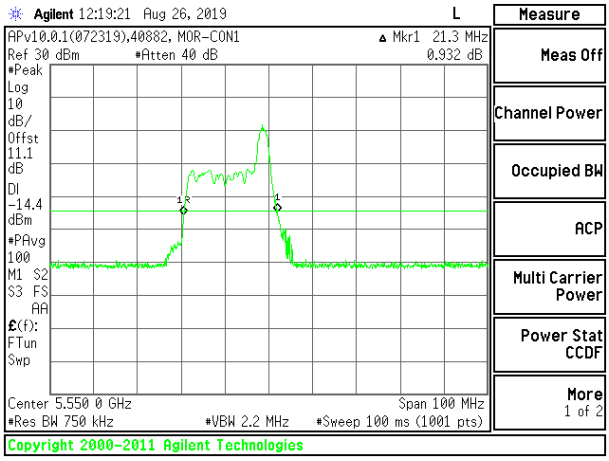

MID CHANNEL CHAIN 1

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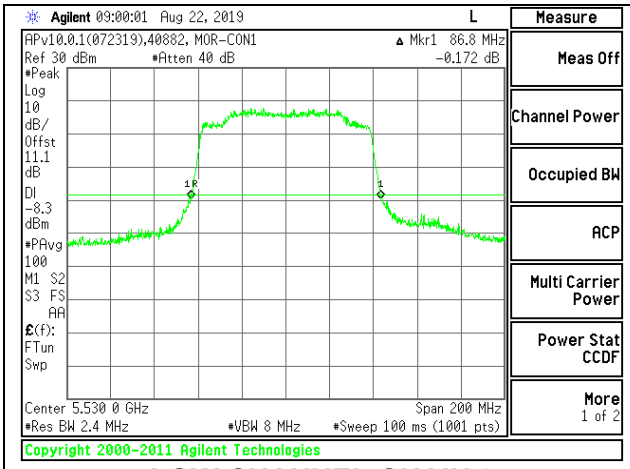
9.2.2. 802.11ax HE80 MODE IN THE 5.6 GHz BAND

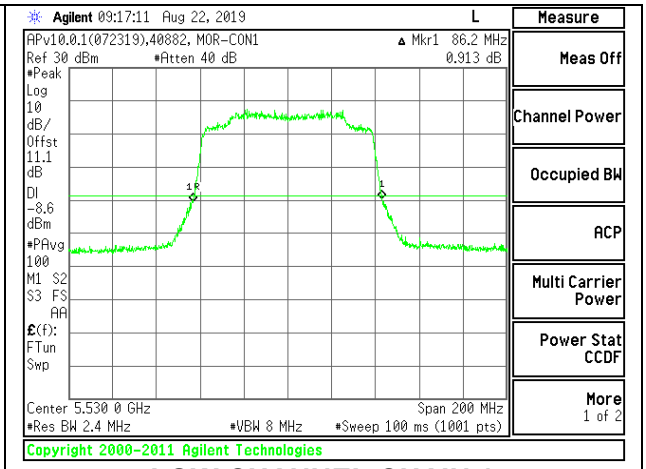
2TX Antenna 1 + Antenna 2 SU MODE

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5530	86.80	86.20
High	5610	87.00	86.40
138	5690	78.40	78.20

LOW CHANNEL



LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

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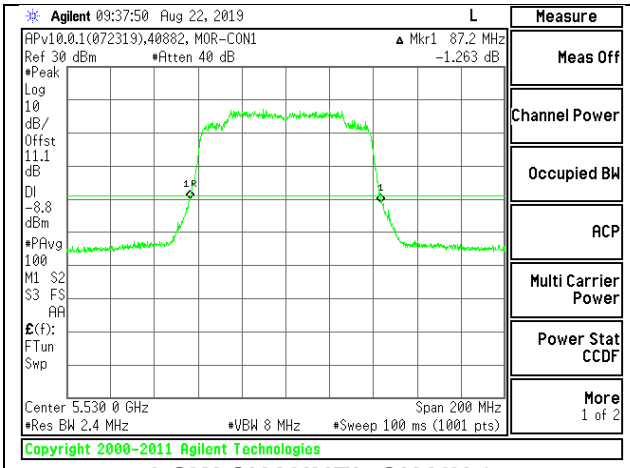
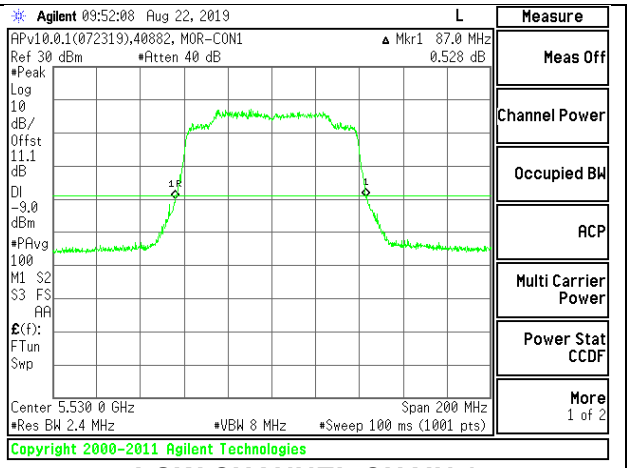
2TX Antenna 1 + Antenna 2 OFDMA MODE – 996-Tones, RU Index 67

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5530	87.20	87.00
High	5610	87.60	86.40
138	5690	78.30	78.20

LOW CHANNEL



LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

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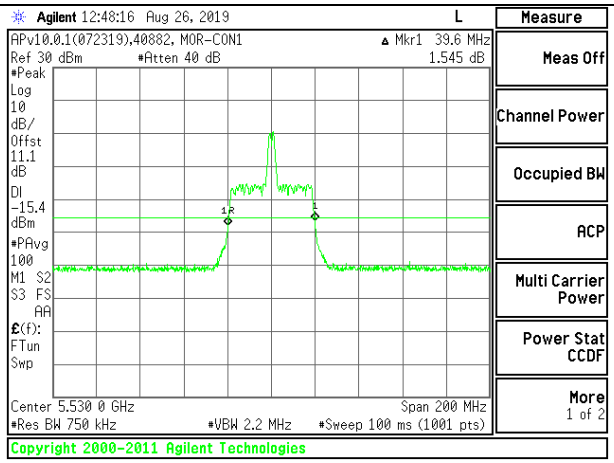
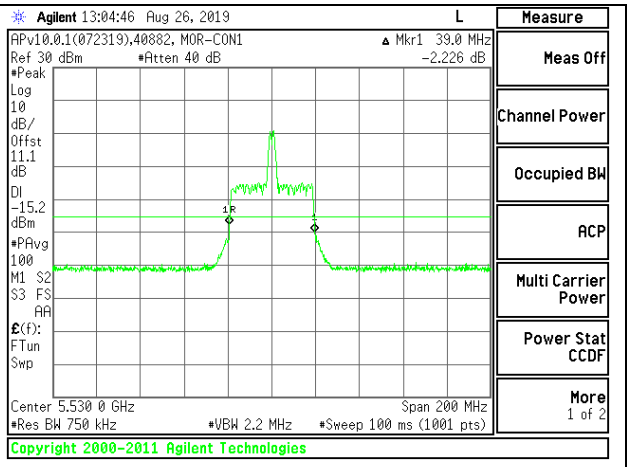
2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 18

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5530	39.60	39.00
High	5610	39.60	39.00
138	5690	39.40	39.00

LOW CHANNEL



LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

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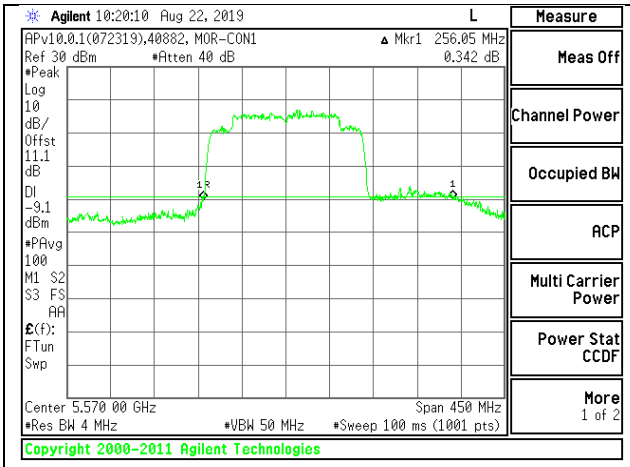
9.2.3. 802.11ax HE160 MODE IN THE 5.6 GHz BAND

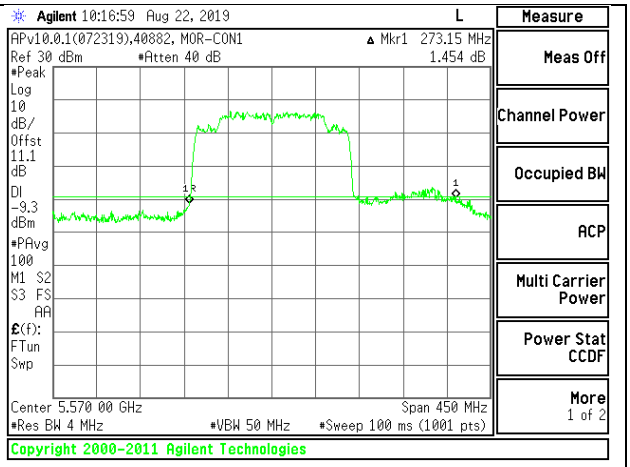
2TX Antenna 1 + Antenna 2 SU MODE

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Mid	5570	256.0500	273.1500

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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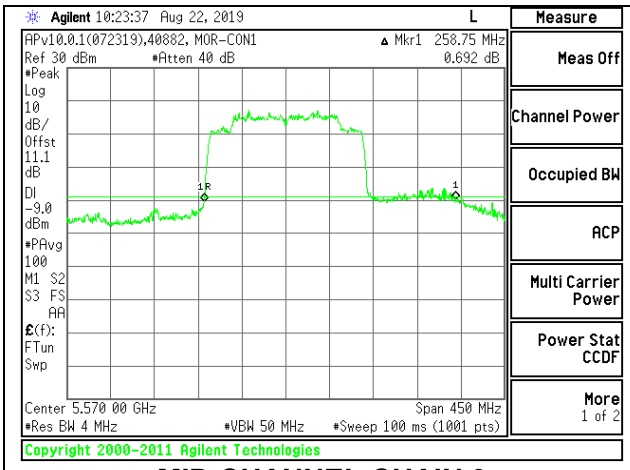
2TX Antenna 1 + Antenna 2 OFDMA MODE – 2x996-Tones, RU Index 68

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Mid	5570	258.7500	262.3500

MID CHANNEL



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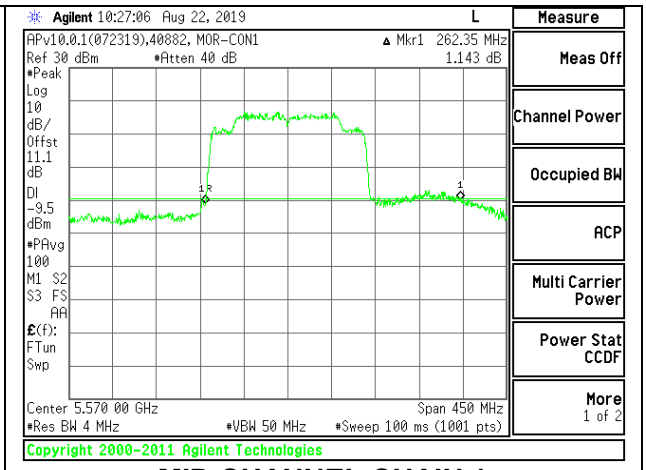

MID CHANNEL CHAIN 1

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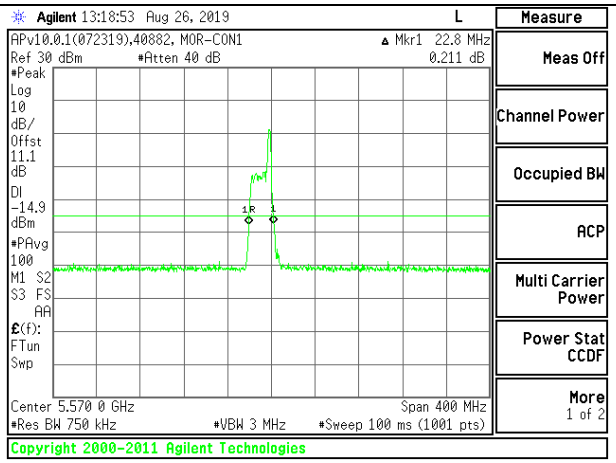
2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 36

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Mid	5570	22.80	22.00

MID CHANNEL



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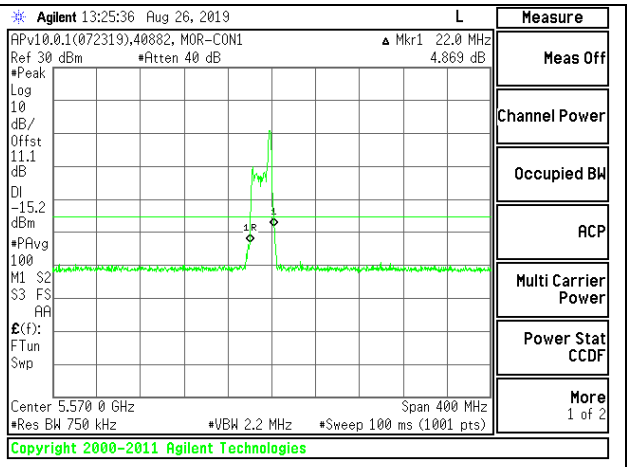

MID CHANNEL CHAIN 1

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9.1. 99% BANDWIDTH

LIMITS

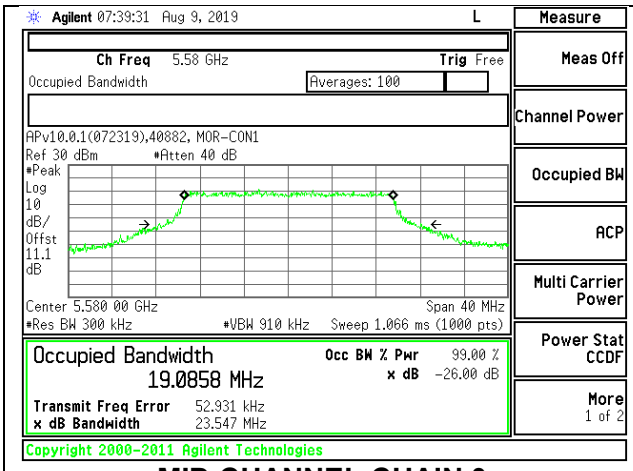
None; for reporting purposes only.

9.1.1. 802.11ax HE20 MODE IN THE 5.6 GHz BAND

2TX Antenna 1 + Antenna 2 SU MODE

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low	5500	19.09	19.07
Mid	5580	19.09	19.06
High	5700	19.01	19.03
144	5720	14.54	14.50

MID CHANNEL



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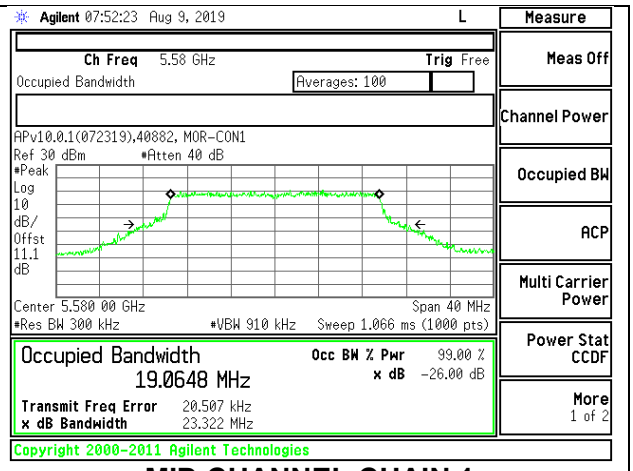

MID CHANNEL CHAIN 1

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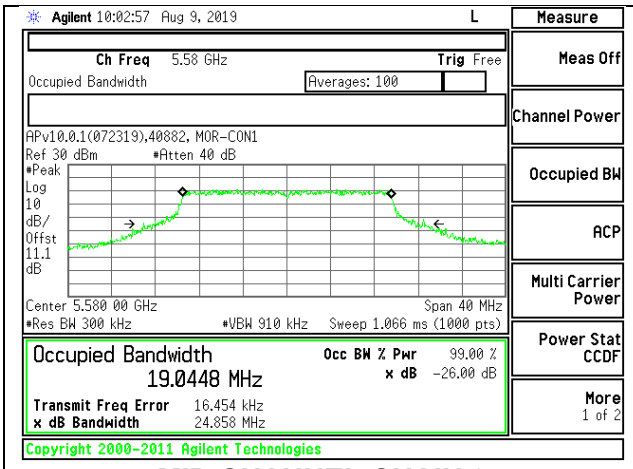
2TX Antenna 1 + Antenna 2 OFDMA MODE – 242-Tones, RU Index 61

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low	5500	19.04	19.05
Mid	5580	19.04	19.04
High	5700	19.03	19.09
144	5720	14.52	14.52

MID CHANNEL



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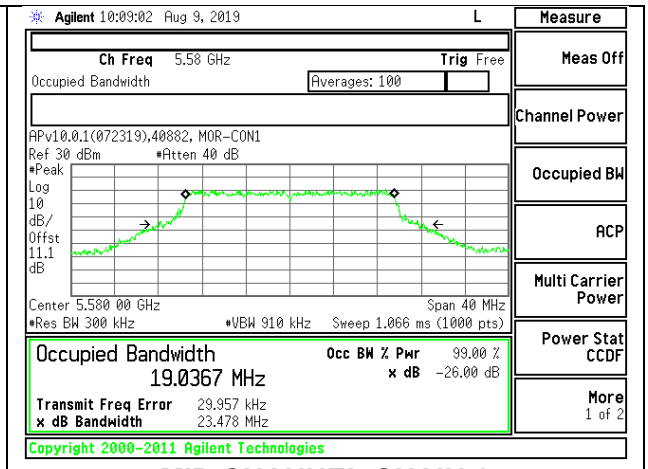

MID CHANNEL CHAIN 1

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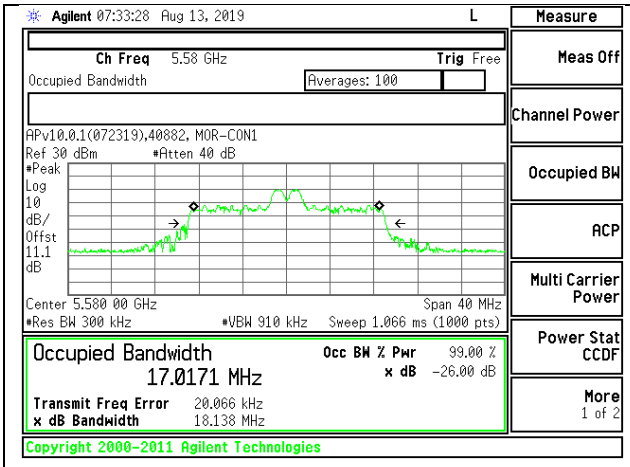
2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 4

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5500	17.03	16.94
Mid	5580	17.02	16.75
High	5700	16.69	16.95
144	5720	13.48	13.50

MID CHANNEL



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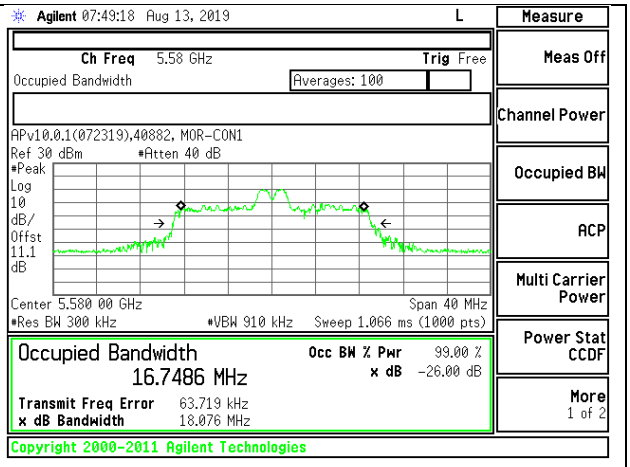

MID CHANNEL CHAIN 1

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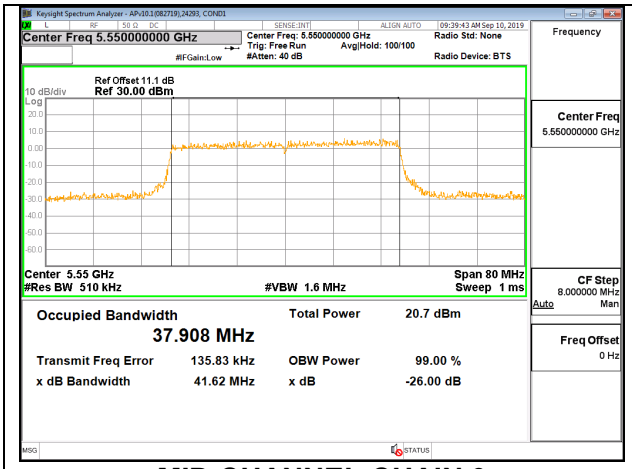
9.1.2. 802.11ax HE40 MODE IN THE 5.6 GHz BAND

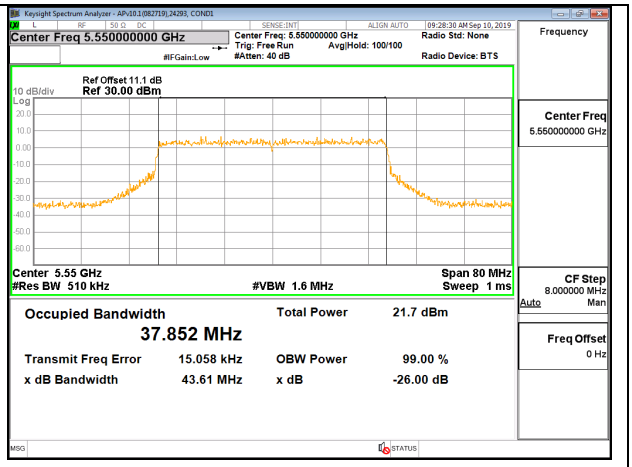
2TX Antenna 1 + Antenna 2 SU MODE

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low	5510	37.873	37.888
Mid	5550	37.908	37.852
High	5670	37.854	37.900
142	5710	33.925	33.922

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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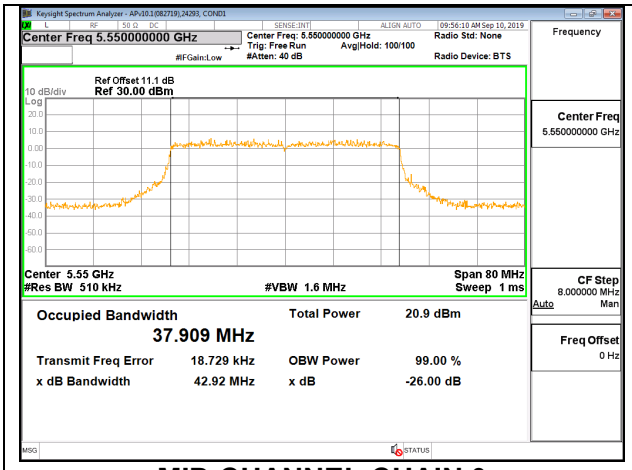
2TX Antenna 1 + Antenna 2 OFDMA MODE – 484-Tones, RU Index 65

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low	5510	37.915	37.921
Mid	5550	37.909	37.920
High	5670	37.879	37.917
142	5710	33.968	33.988

MID CHANNEL



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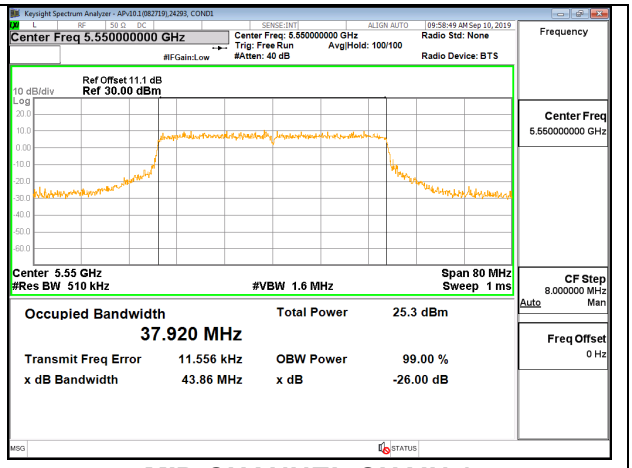

MID CHANNEL CHAIN 1

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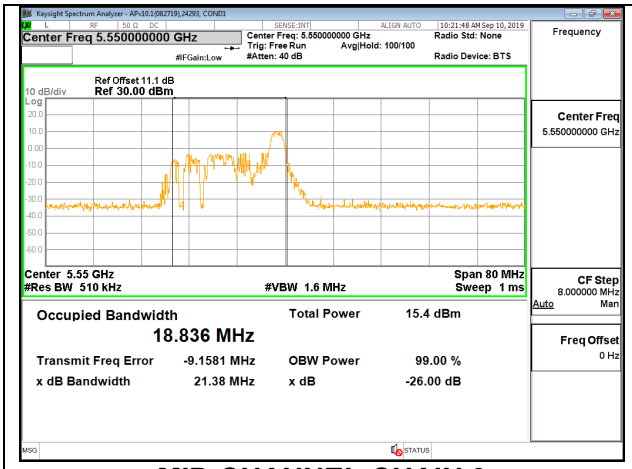
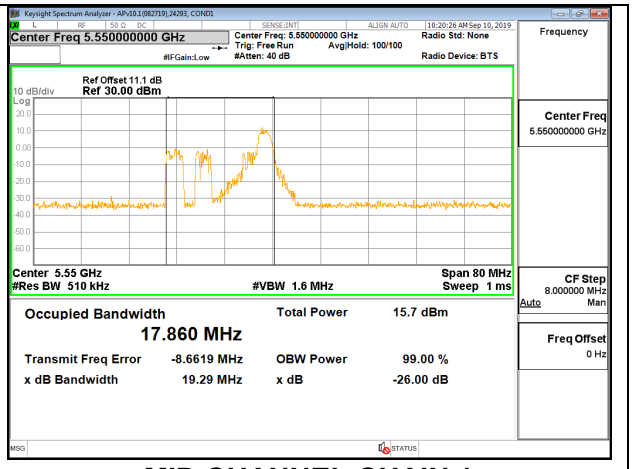
2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 8

	(MHz)	Chain 0 (MHz)	Chain 1 (MHz)
Low	5510	14.007	12.646
Mid	5550	18.836	17.860
High	5670	17.632	14.345
142	5710	18.052	18.951

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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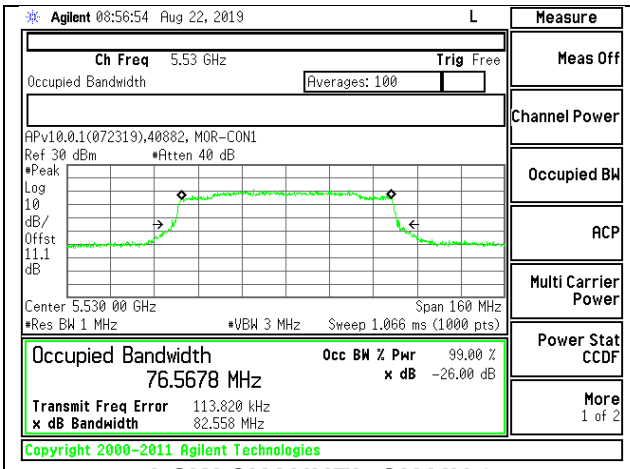
9.1.3. 802.11ax HE80 MODE IN THE 5.6 GHz BAND

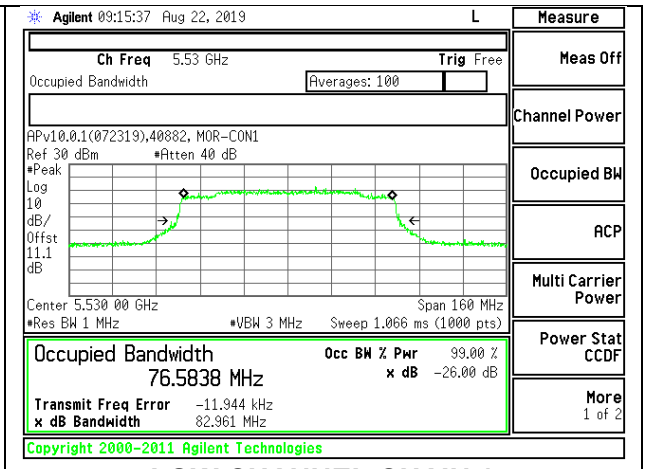
2TX Antenna 1 + Antenna 2 SU MODE

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low	5530	76.57	76.58
High	5610	76.66	76.61
138	5690	73.22	73.34

LOW CHANNEL



LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

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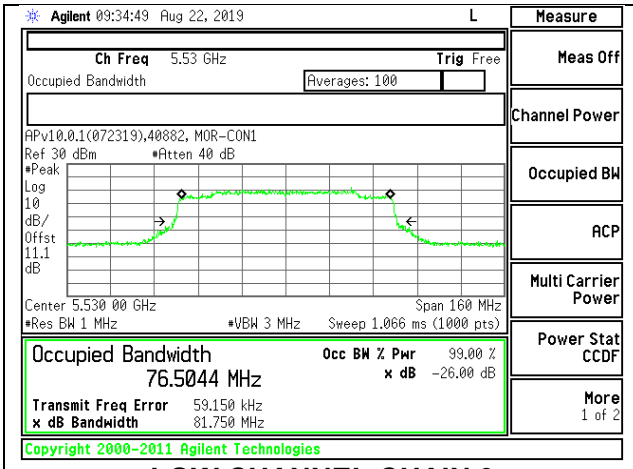
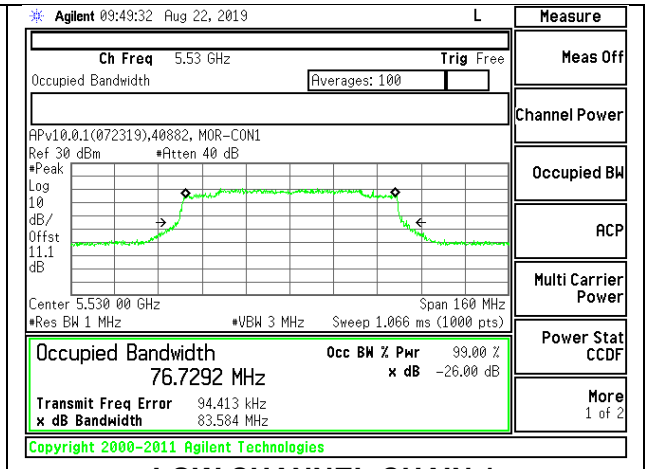
2TX Antenna 1 + Antenna 2 OFDMA MODE – 996-Tones, RU Index 67

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low	5530	76.50	76.73
High	5610	76.54	75.05
138	5690	76.56	76.64

LOW CHANNEL



LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

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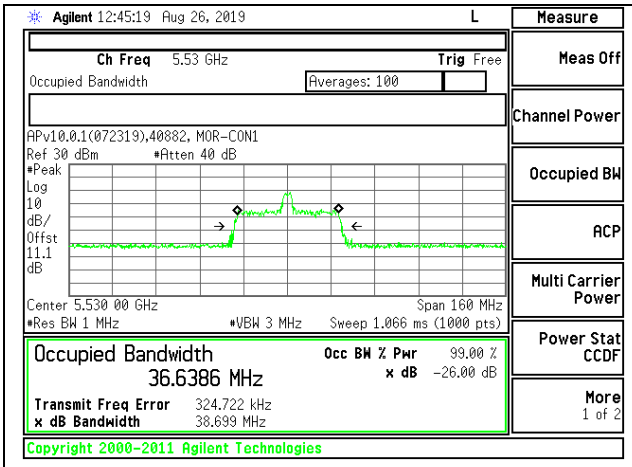
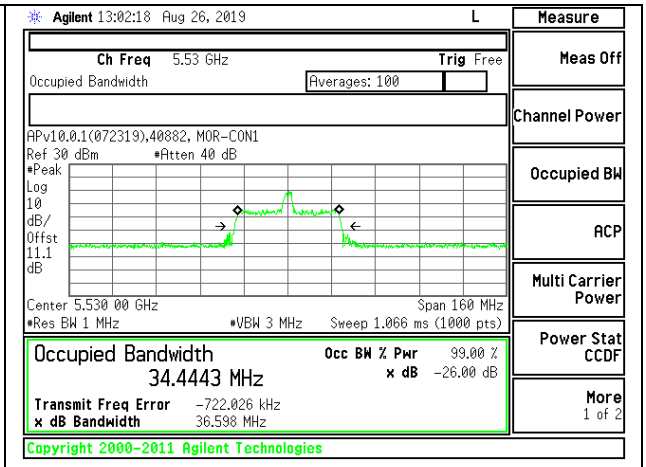
2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 18

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Low	5530	36.6386	34.4443
High	5610	35.1899	32.8489
138	5690	36.0977	33.5913

LOW CHANNEL



LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

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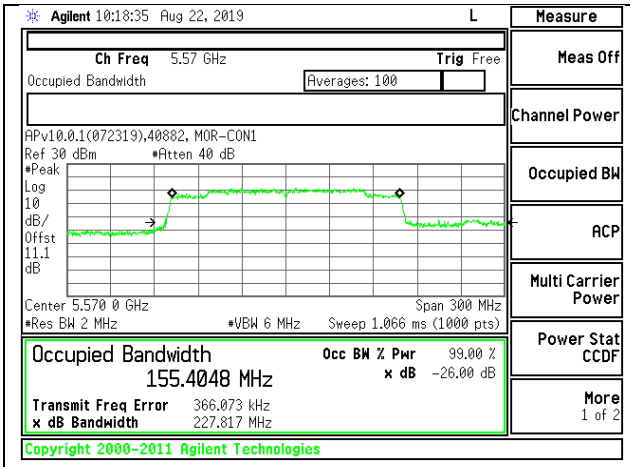
9.1.4. 802.11ax HE160 MODE IN THE 5.6 GHz BAND

2TX Antenna 1 + Antenna 2 OFDMA MODE – SU MODE

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Mid	5570	155.4048	155.1118

MID CHANNEL



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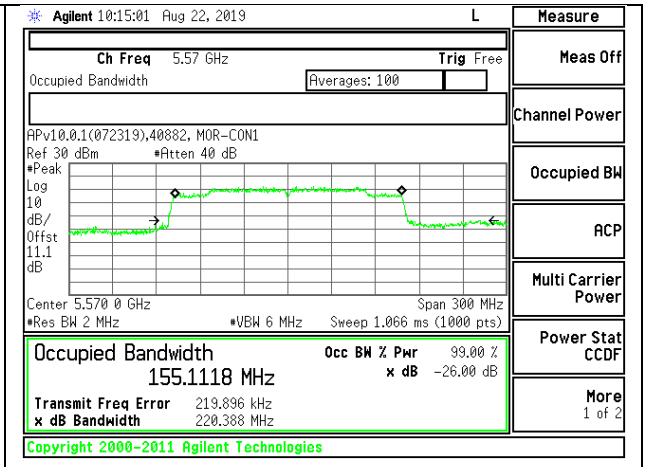

MID CHANNEL CHAIN 1

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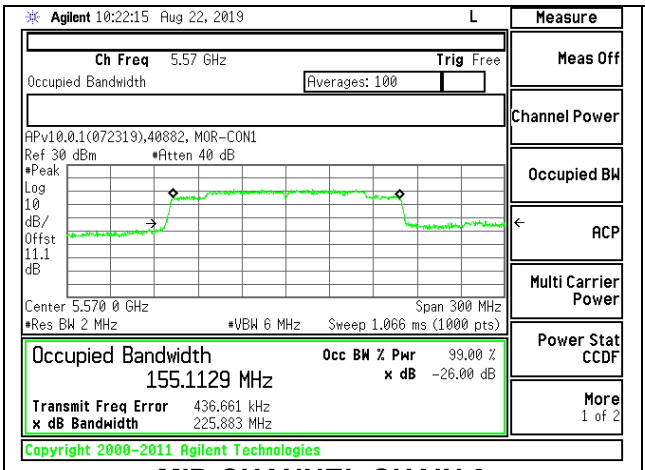
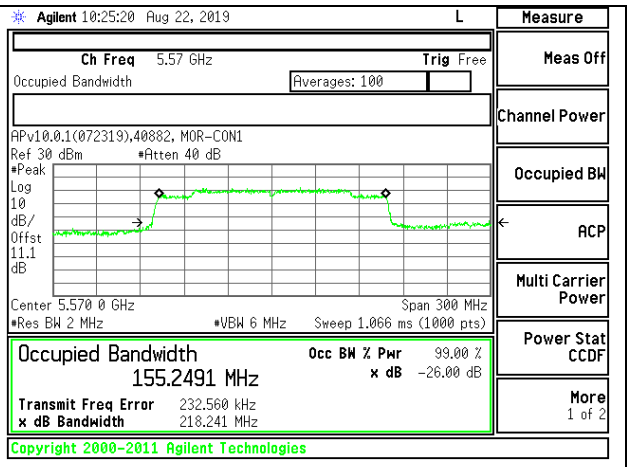
2TX Antenna 1 + Antenna 2 OFDMA MODE – 2x996-Tones, RU Index 68

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Mid	5570	155.1129	155.2491

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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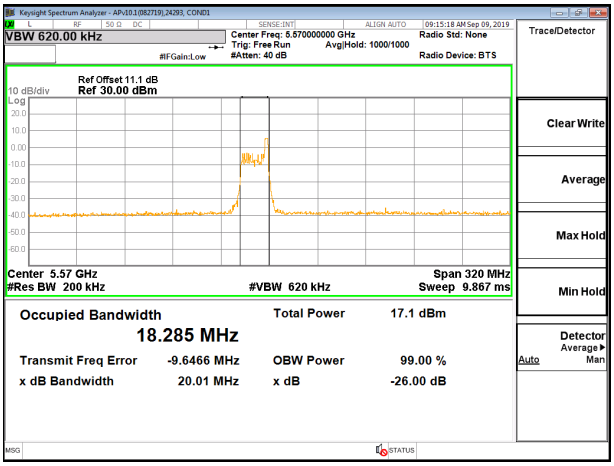
2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 36

Channel	Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	99% Bandwidth Chain 1 (MHz)
Mid	5570	18.285	19.856

MID CHANNEL



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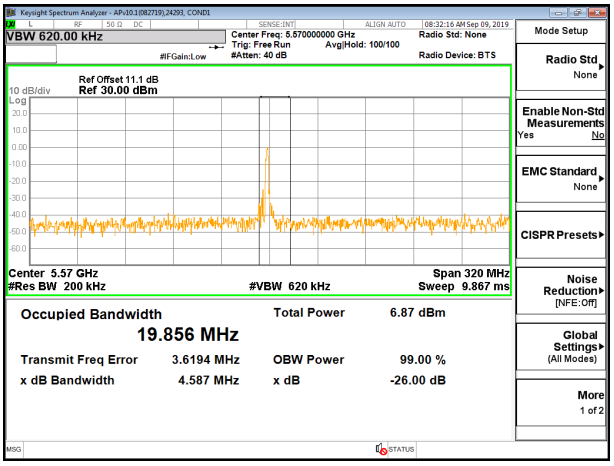

MID CHANNEL CHAIN 1

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9.1. OUTPUT POWER AND PSD

LIMITS

FCC §15.407

Band 5.15–5.25 GHz

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Bands 5.25-5.35 GHz and 5.47-5.725 GHz
The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Band 5.725-5.85 GHz

The maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.

RSS-247

Band 5.15-5.25 GHz
The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

Band 5.25-5.35 GHz
The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

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Bands 5.47-5.6 GHz and 5.65-5.725 GHz
The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Band 5.725-5.85 GHz
The maximum conducted output power shall not exceed 1 W. The power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

TEST PROCEDURE

The measurement method used for output power is KDB 789033 D02 v02r01, Section E.3.b (Method PM-G).

The measurement method used for power spectral density is KDB 789033 D02 v02r01, Section F.

DIRECTIONAL ANTENNA GAIN

For 2 TX:

Tx chains are uncorrelated for power and PSD due to the device supporting SDM in all MIMO modes. The directional gains are as follows:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
7.20	5.50	6.43

Note – Antenna gains from model 1867 were used as these are considered worst-case.

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9.1.1. 802.11ax HE20 MODE IN THE 5.6 GHz BAND (FCC)

2TX Antenna 1 + Antenna 2 SU MODE

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	18.85	6.43	6.43	23.32	10.57
Mid	5580	19.00	6.43	6.43	23.36	10.57
High	5700	18.95	6.43	6.43	23.35	10.57
144	5720	14.45	6.43	6.43	22.17	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	15.28	15.45	18.38	23.32	-4.95
Mid	5580	15.35	15.55	18.46	23.36	-4.90
High	5700	15.40	15.47	18.45	23.35	-4.90
144	5720	15.40	15.34	18.38	22.17	-3.79

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.328	6.413	9.38	10.57	-1.19
Mid	5580	6.380	6.927	9.67	10.57	-0.90
High	5700	7.099	6.853	9.99	10.57	-0.58
144	5720	6.824	7.278	10.07	10.57	-0.50

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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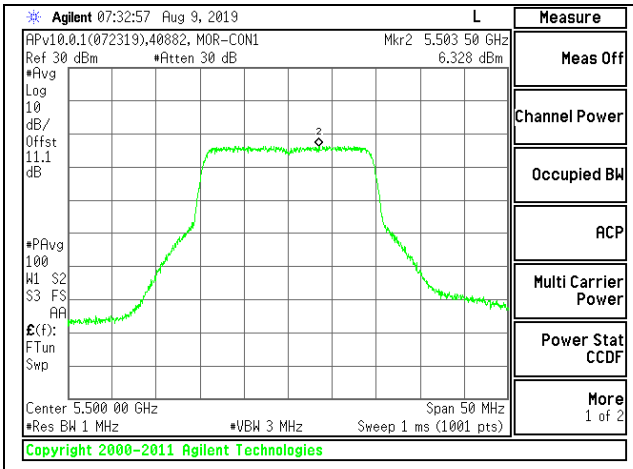
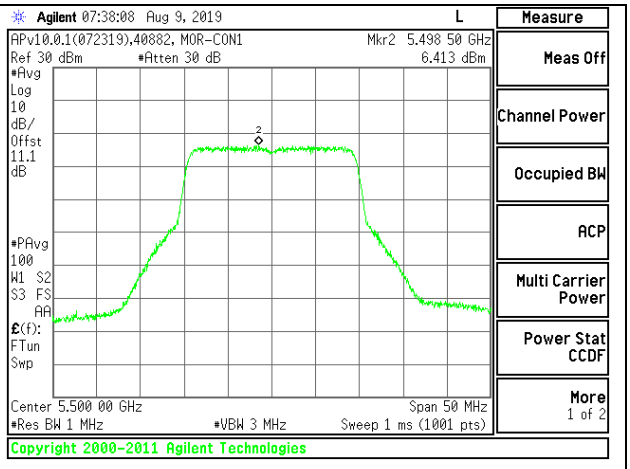
LOW CHANNEL

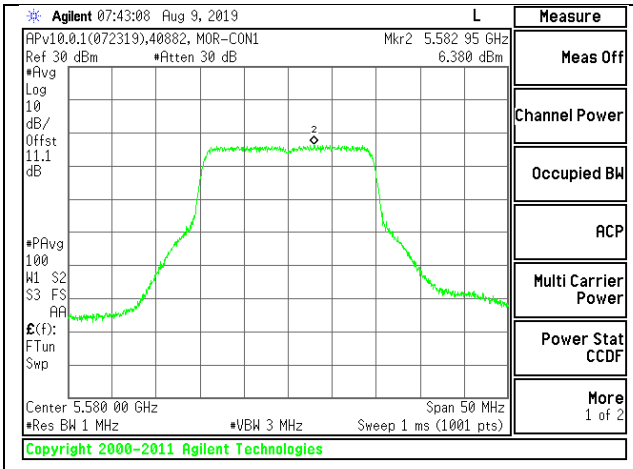


LOW CHANNEL CHAIN 0

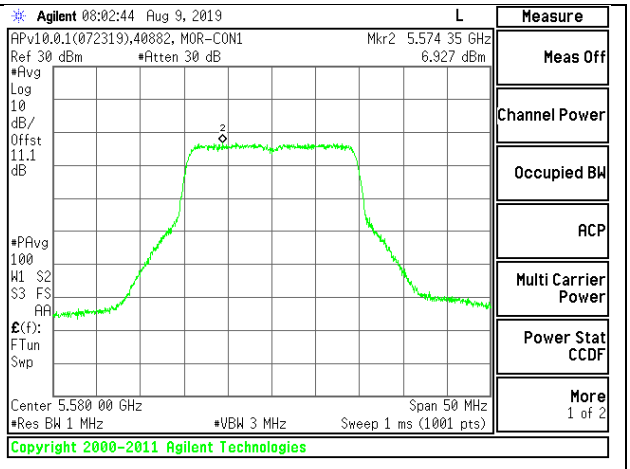


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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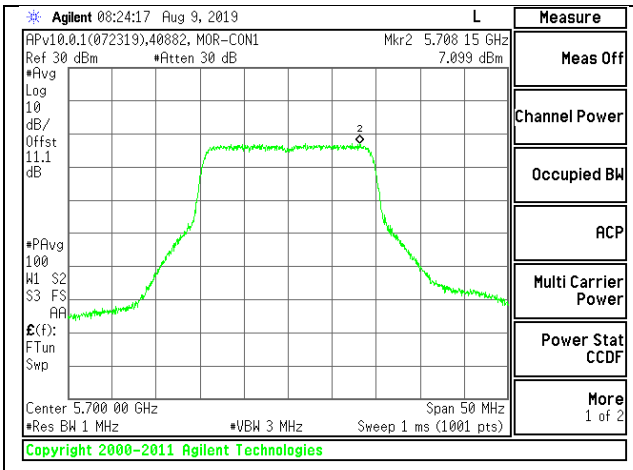
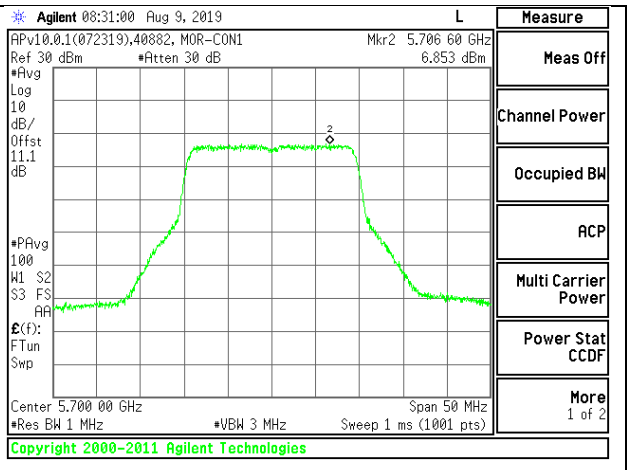
HIGH CHANNEL

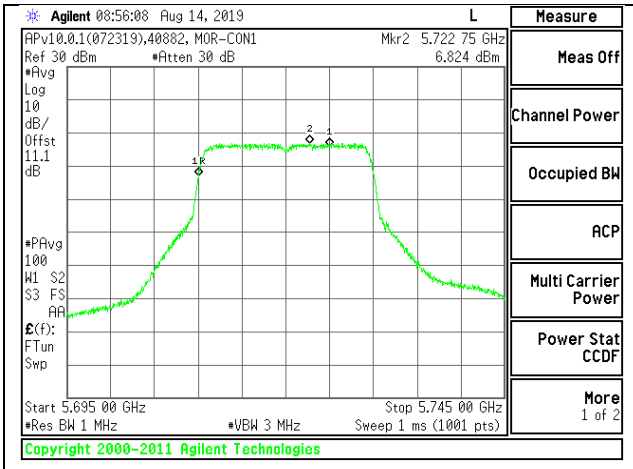


HIGH CHANNEL CHAIN 0

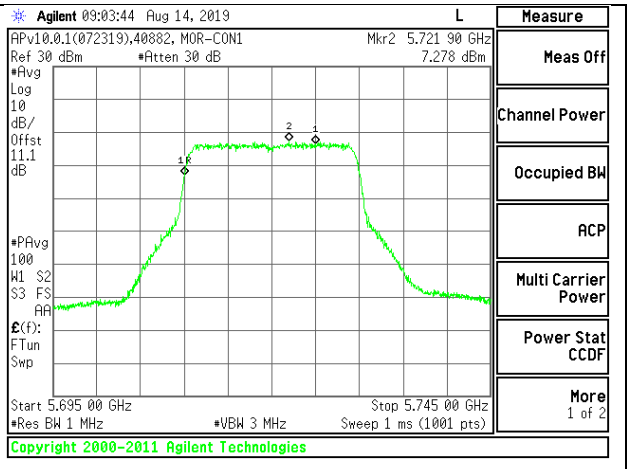


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 242-Tones, RU Index 61

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	18.85	6.43	6.43	23.32	10.57
Mid	5580	19.00	6.43	6.43	23.36	10.57
High	5700	18.95	6.43	6.43	23.35	10.57
144	5720	14.45	6.43	6.43	22.17	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	15.80	15.93	18.88	23.32	-4.45
Mid	5580	15.79	15.84	18.83	23.36	-4.53
High	5700	15.85	15.79	18.83	23.35	-4.52
144	5720	15.76	15.90	18.84	22.17	-3.33

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.508	6.485	9.51	10.57	-1.06
Mid	5580	6.893	6.704	9.81	10.57	-0.76
High	5700	7.018	7.027	10.03	10.57	-0.54
144	5720	6.980	7.042	10.02	10.57	-0.55

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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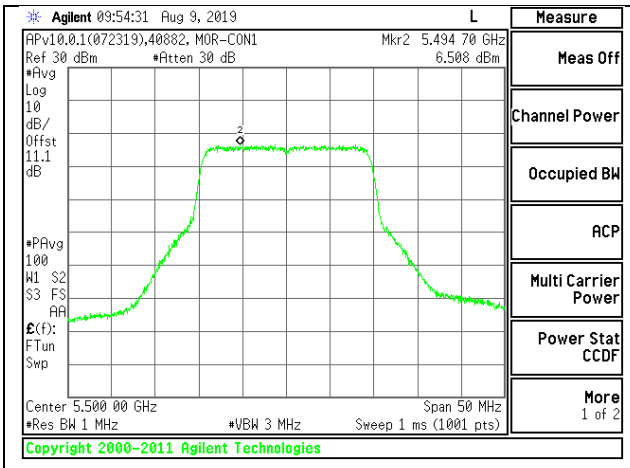
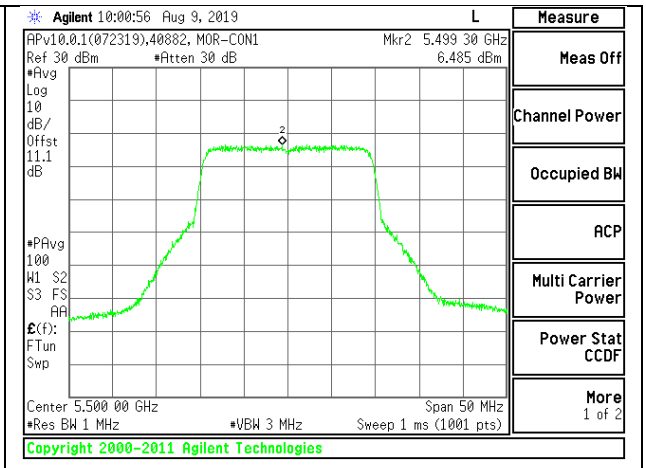
LOW CHANNEL

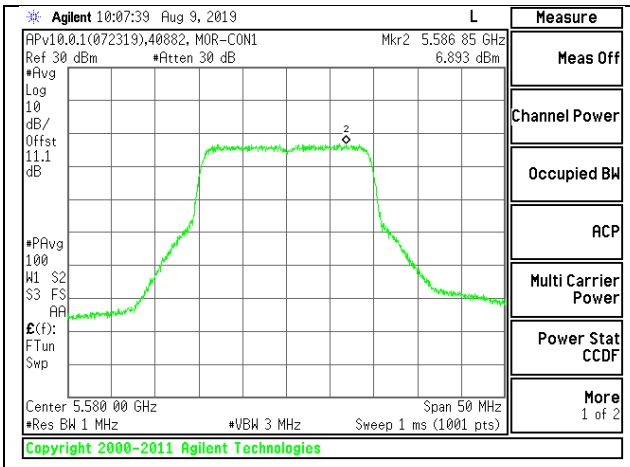


LOW CHANNEL CHAIN 0

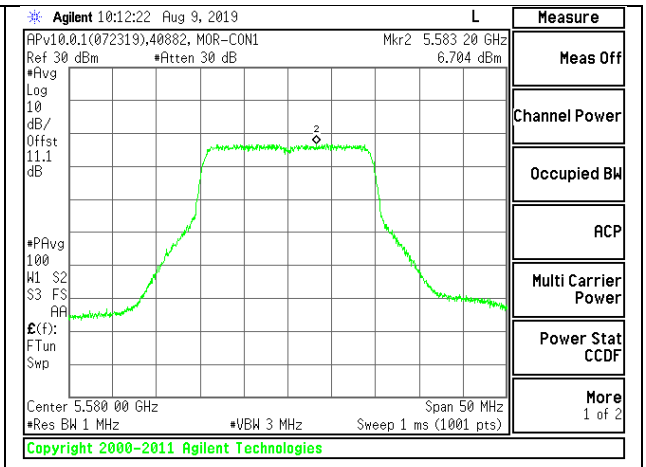


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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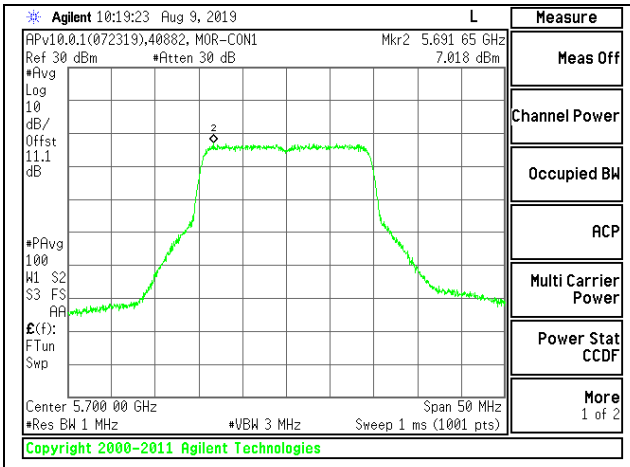
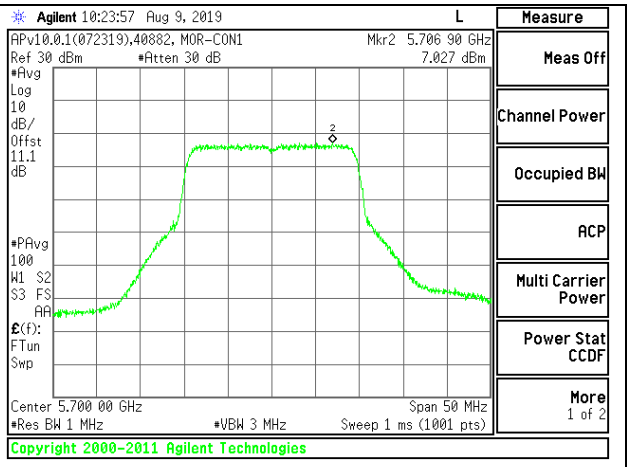
HIGH CHANNEL

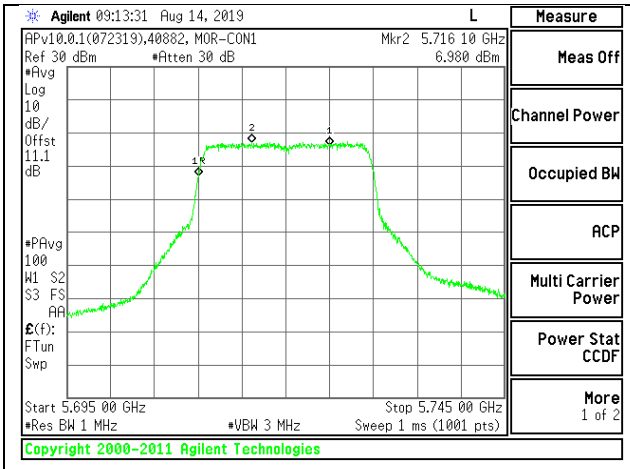


HIGH CHANNEL CHAIN 0

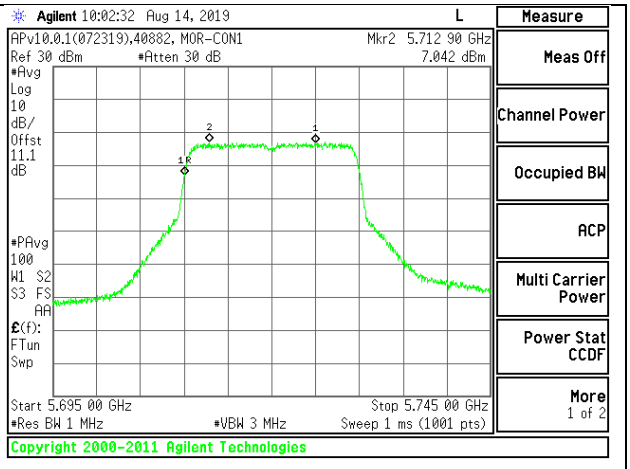


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 106-Tones, RU Index 53

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	18.85	6.43	6.43	23.32	10.57
Mid	5580	19.00	6.43	6.43	23.36	10.57
High	5700	18.95	6.43	6.43	23.35	10.57
144	5720	14.45	6.43	6.43	22.17	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	14.90	15.03	17.98	23.32	-5.35
Mid	5580	15.18	15.19	18.20	23.36	-5.16
High	5700	15.20	15.25	18.24	23.35	-5.11
144	5720	15.10	15.14	18.13	22.17	-4.04

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.311	6.693	9.52	10.57	-1.05
Mid	5580	6.906	7.172	10.05	10.57	-0.52
High	5700	7.176	6.891	10.05	10.57	-0.52
144	5720	6.717	6.276	9.51	10.57	-1.06

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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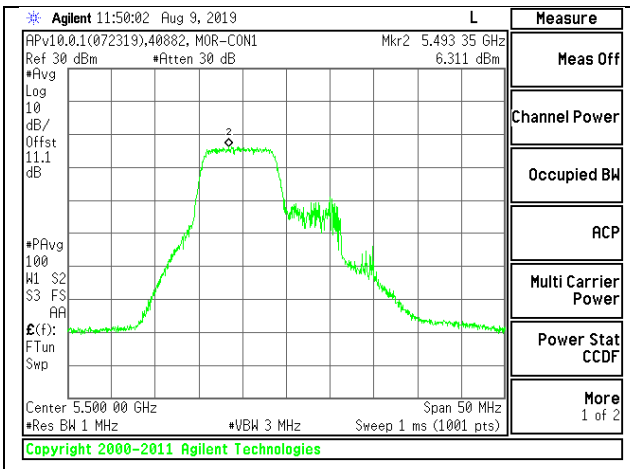
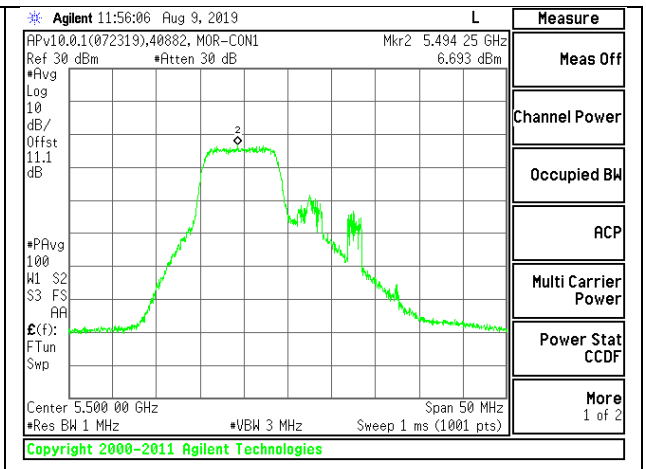
LOW CHANNEL

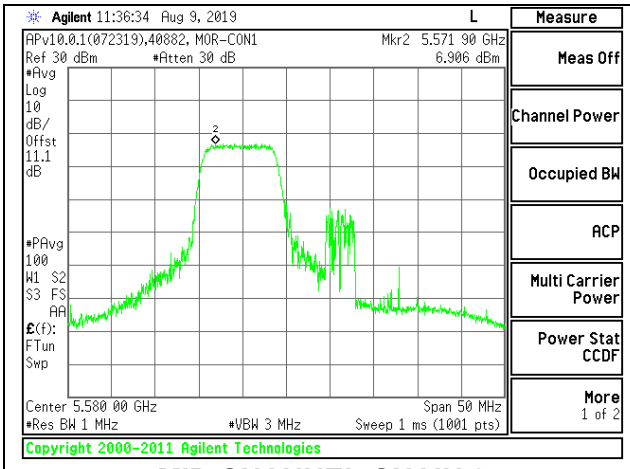


LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

MID CHANNEL



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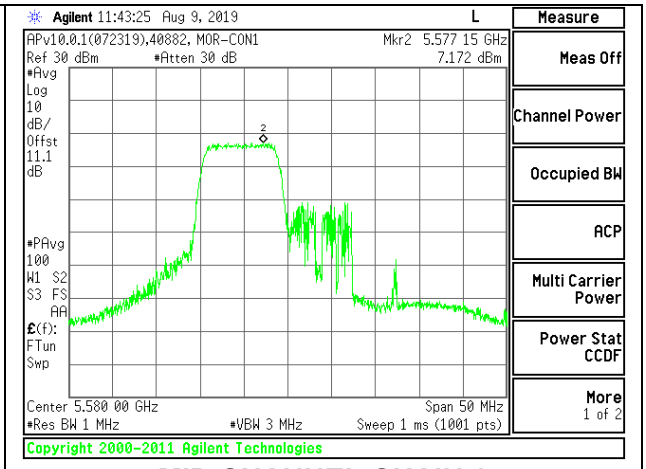

MID CHANNEL CHAIN 1

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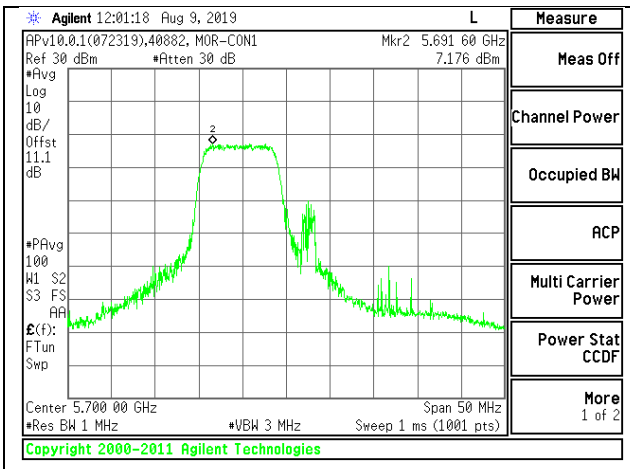
HIGH CHANNEL



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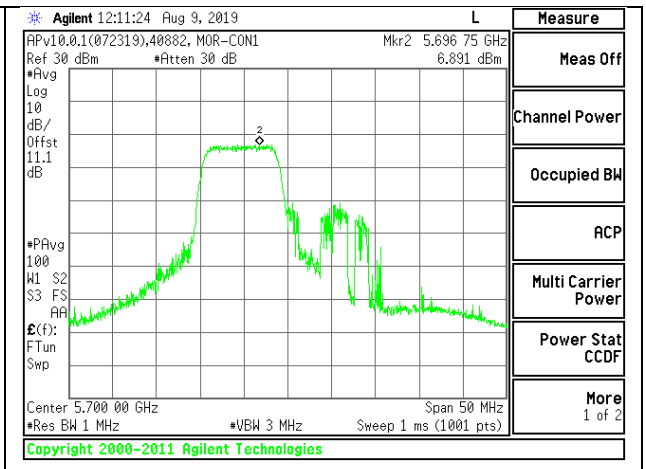
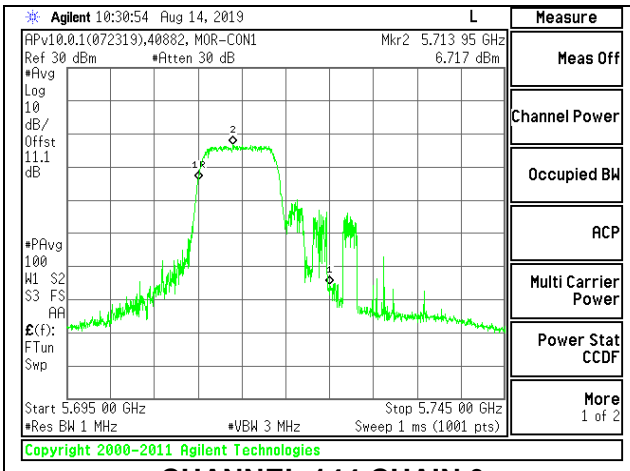
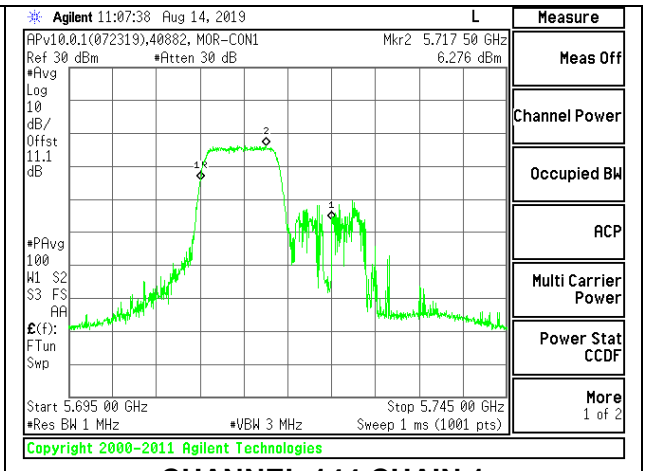


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 106-Tones, RU Index 54

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	18.85	6.43	6.43	23.32	10.57
Mid	5580	19.00	6.43	6.43	23.36	10.57
High	5700	18.95	6.43	6.43	23.35	10.57
144	5720	14.45	6.43	6.43	22.17	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	15.29	15.30	18.31	23.32	-5.02
Mid	5580	15.24	15.40	18.33	23.36	-5.03
High	5700	15.00	15.02	18.02	23.35	-5.33
144	5720	15.30	15.21	18.27	22.17	-3.90

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	7.062	6.721	9.91	10.57	-0.66
Mid	5580	6.953	7.111	10.04	10.57	-0.53
High	5700	6.724	6.887	9.82	10.57	-0.75
144	5720	7.136	6.615	9.89	10.57	-0.68

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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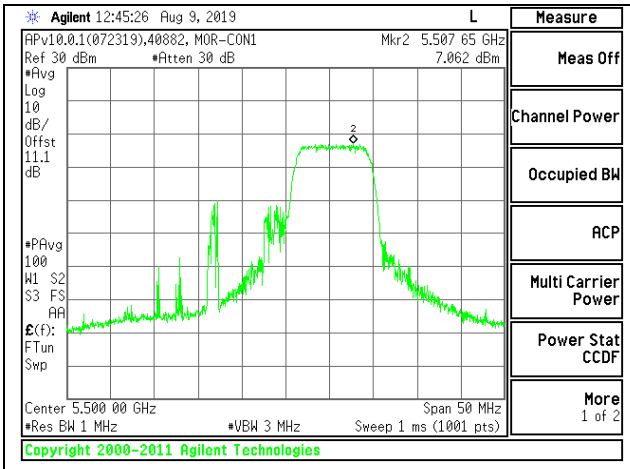
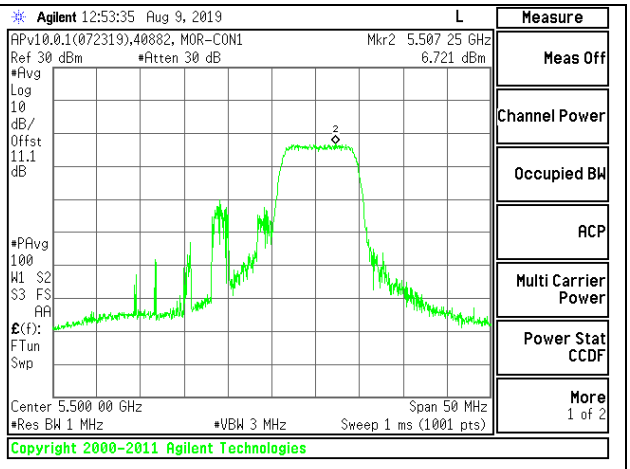
LOW CHANNEL

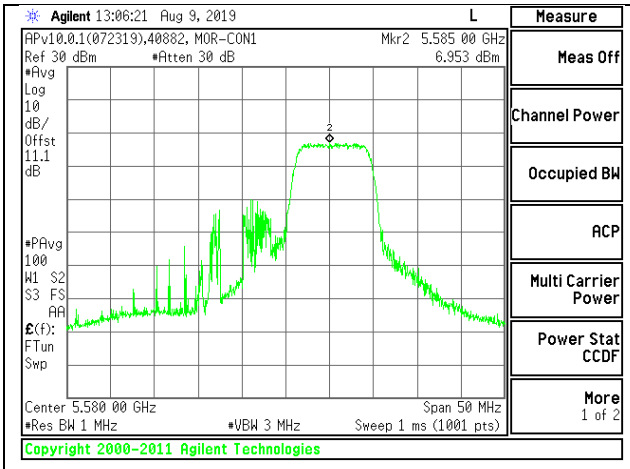


LOW CHANNEL CHAIN 0

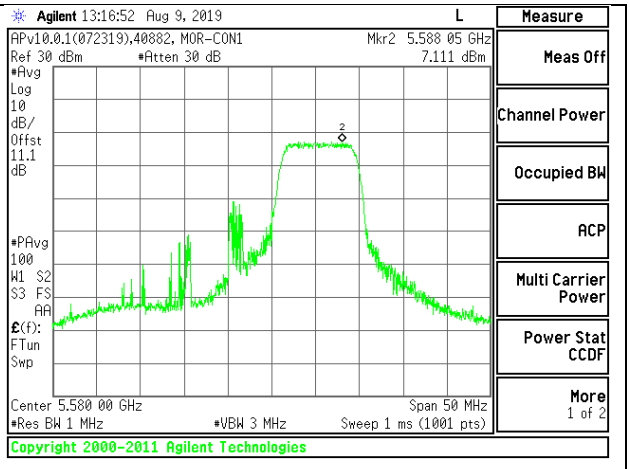


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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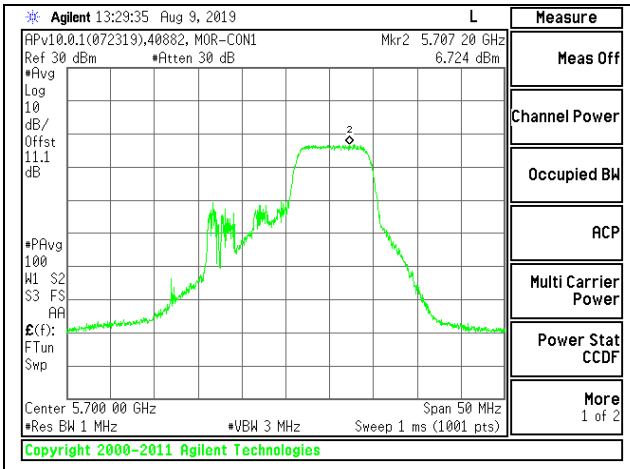
HIGH CHANNEL



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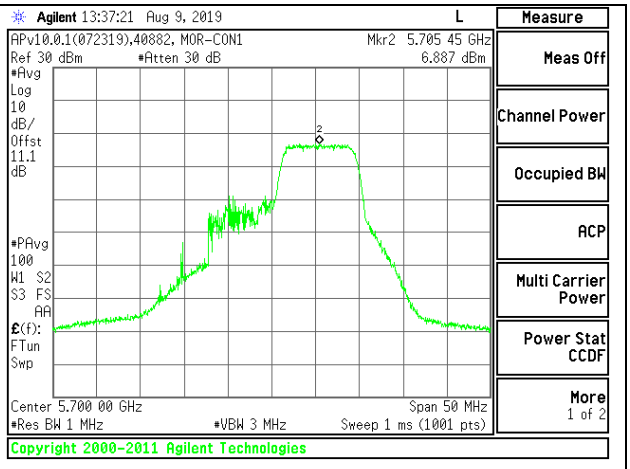
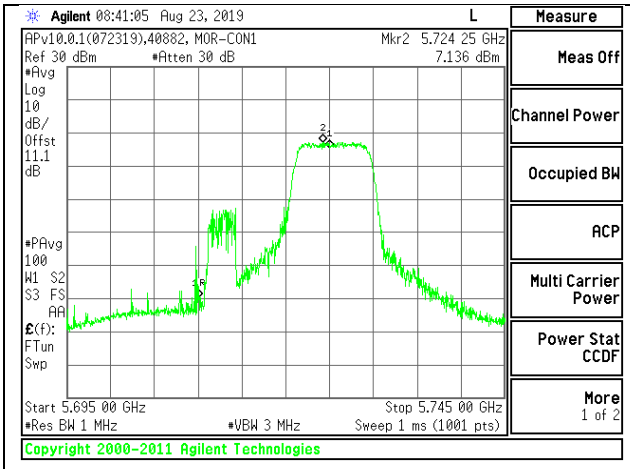


HIGH CHANNEL CHAIN 1

CHANNEL 144



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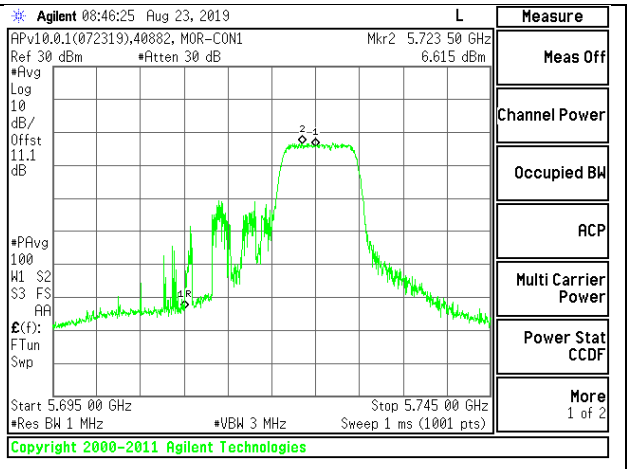

CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 52-Tones, RU Index 37

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	18.85	6.43	6.43	23.32	10.57
Mid	5580	19.00	6.43	6.43	23.36	10.57
High	5700	18.95	6.43	6.43	23.35	10.57
144	5720	14.45	6.43	6.43	22.17	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	11.24	11.53	14.40	23.32	-8.93
Mid	5580	11.70	12.09	14.91	23.36	-8.45
High	5700	11.72	11.96	14.85	23.35	-8.49
144	5720	11.62	11.75	14.70	22.17	-7.47

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	5.995	6.078	9.05	10.57	-1.52
Mid	5580	6.228	6.634	9.45	10.57	-1.12
High	5700	6.246	6.617	9.45	10.57	-1.12
144	5720	6.597	6.450	9.53	10.57	-1.04

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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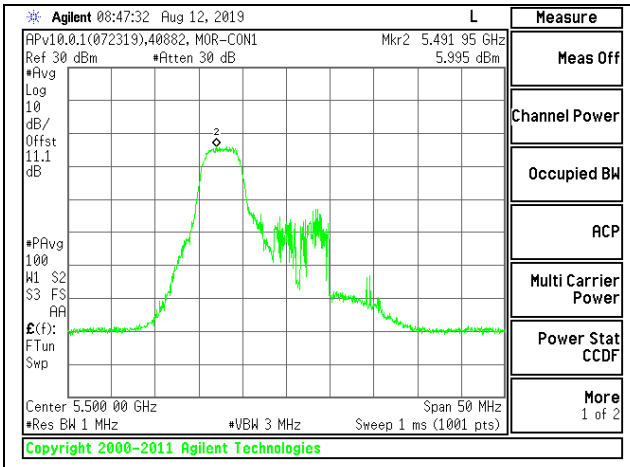
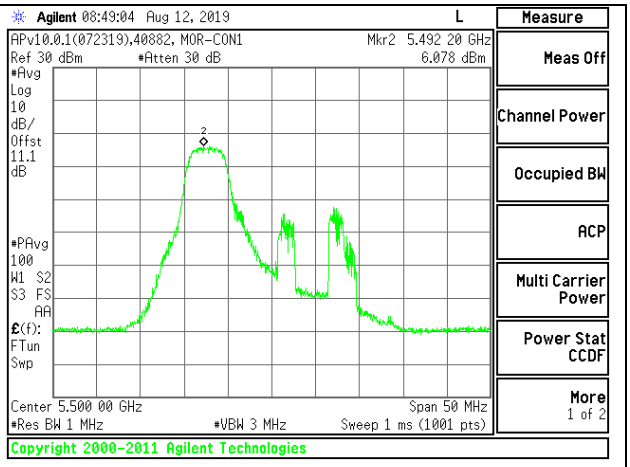
LOW CHANNEL

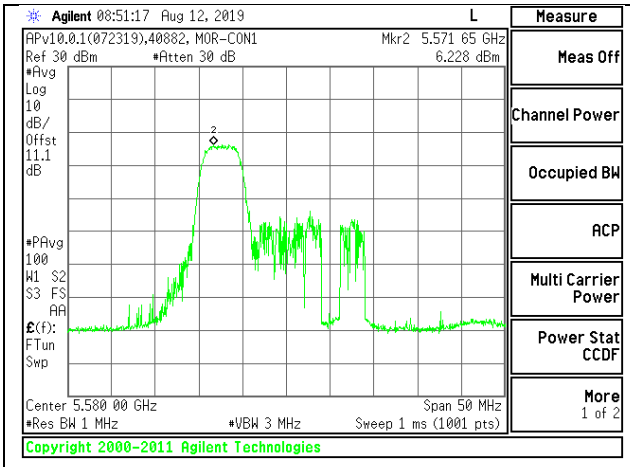


LOW CHANNEL CHAIN 0

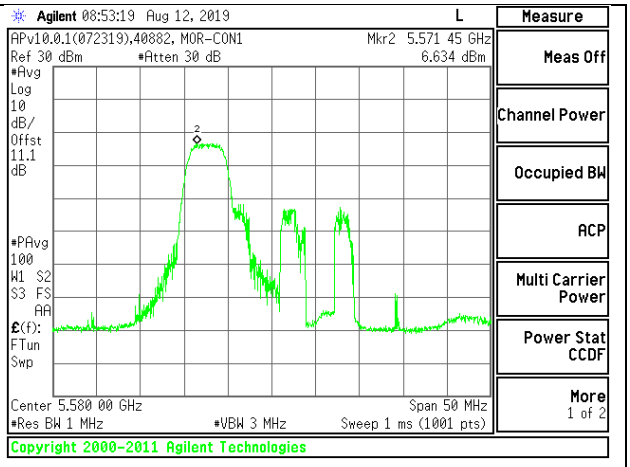


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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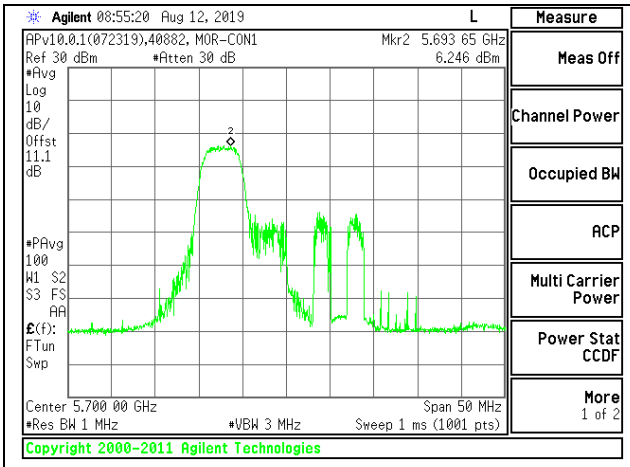
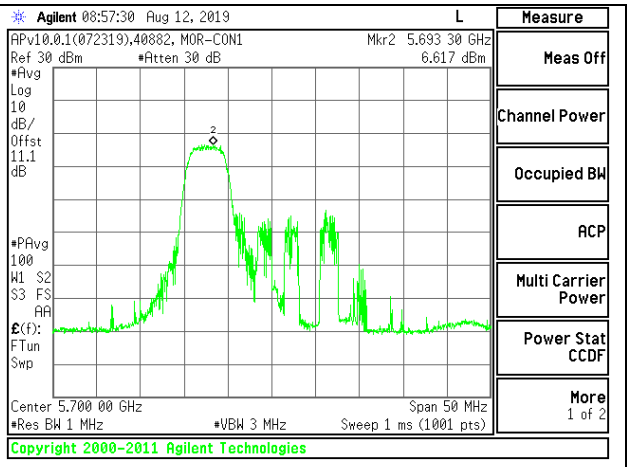
HIGH CHANNEL

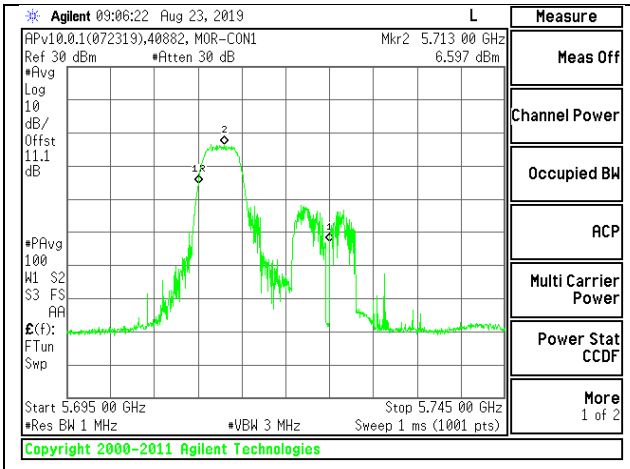


HIGH CHANNEL CHAIN 0

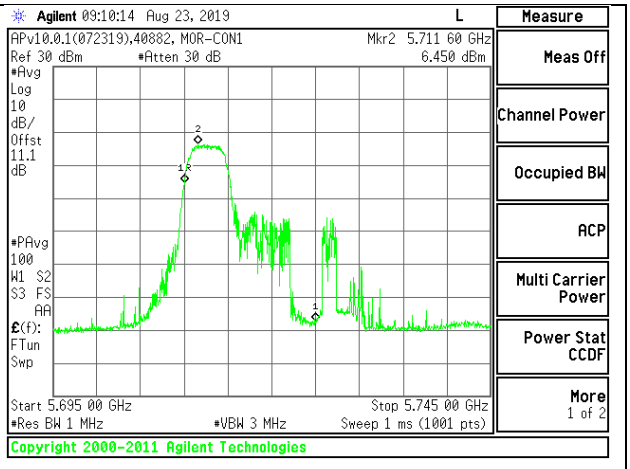


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 52-Tones, RU Index 38

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	18.85	6.43	6.43	23.32	10.57
Mid	5580	19.00	6.43	6.43	23.36	10.57
High	5700	18.95	6.43	6.43	23.35	10.57
144	5720	14.45	6.43	6.43	22.17	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	11.79	11.96	14.89	23.32	-8.44
Mid	5580	11.76	12.10	14.94	23.36	-8.41
High	5700	11.78	12.05	14.93	23.35	-8.42
144	5720	11.73	11.84	14.80	22.17	-7.37

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.699	6.284	9.51	10.57	-1.06
Mid	5580	6.624	6.934	9.79	10.57	-0.78
High	5700	6.785	6.742	9.77	10.57	-0.80
144	5720	6.972	6.718	9.86	10.57	-0.71

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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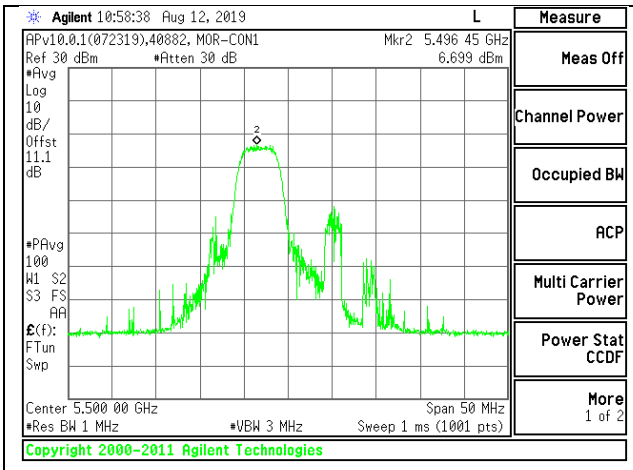
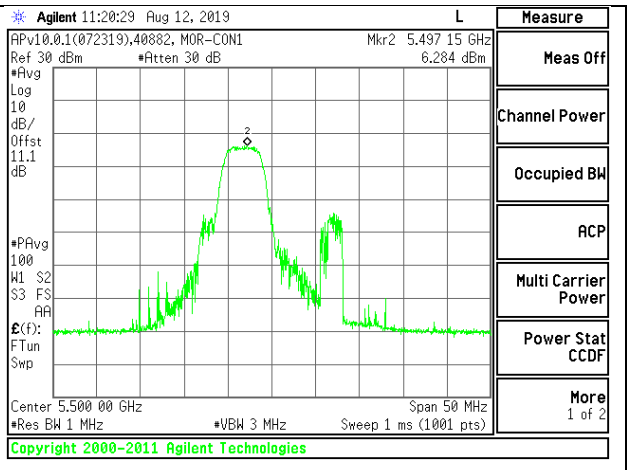
LOW CHANNEL

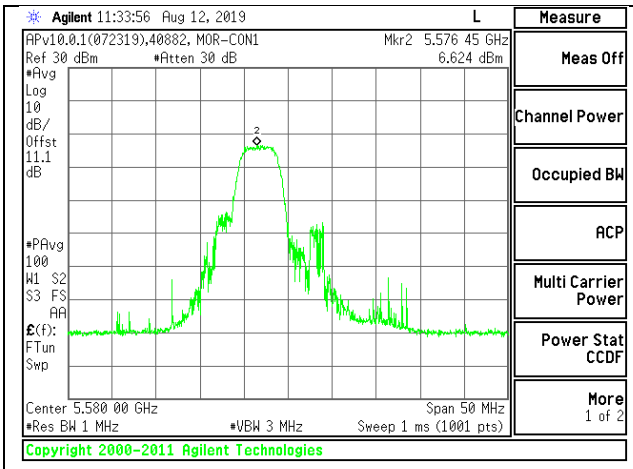


LOW CHANNEL CHAIN 0

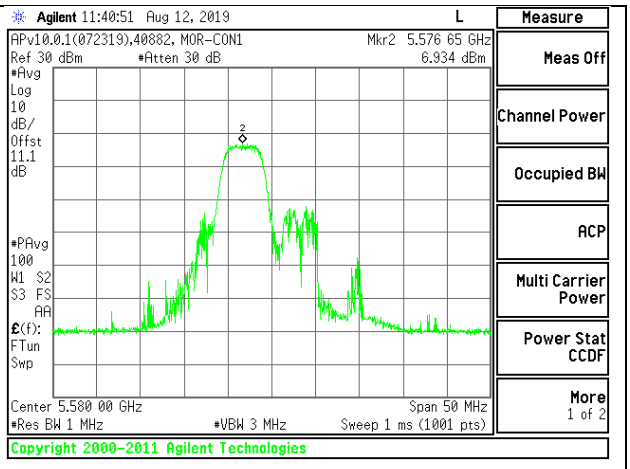


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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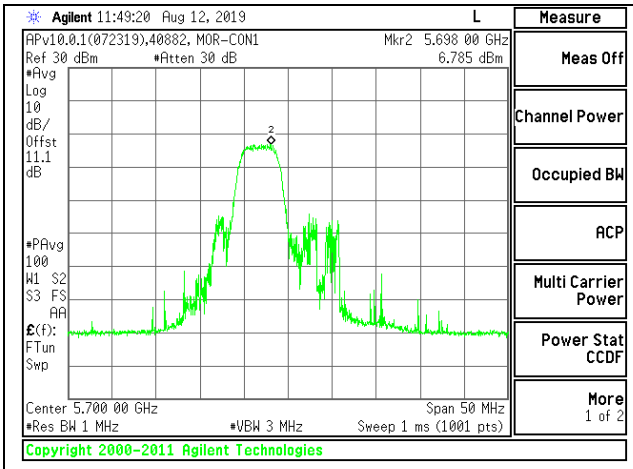
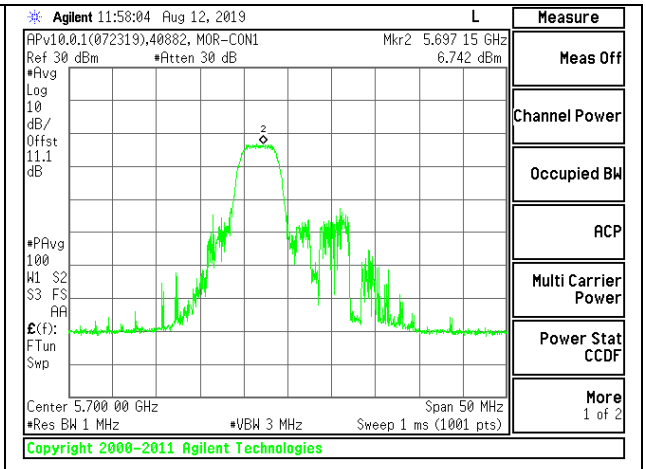
HIGH CHANNEL

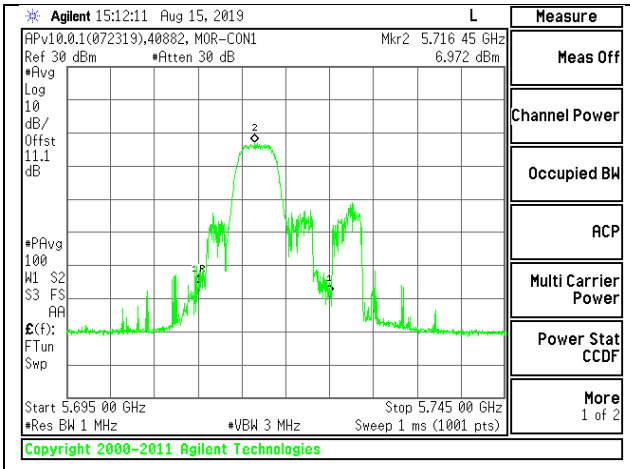


HIGH CHANNEL CHAIN 0

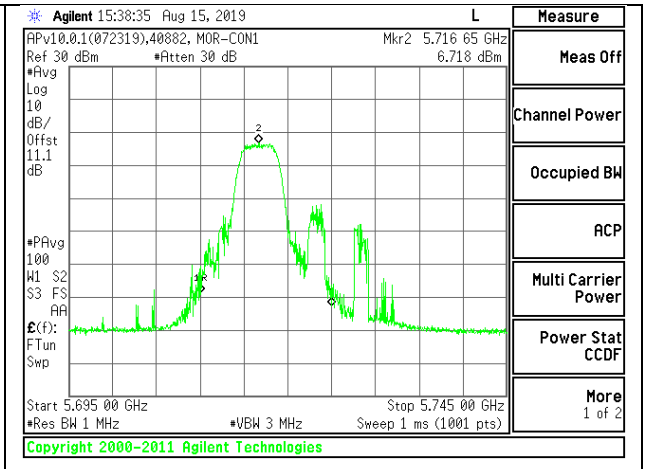


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 52-Tones, RU Index 40

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	18.85	6.43	6.43	23.32	10.57
Mid	5580	19.00	6.43	6.43	23.36	10.57
High	5700	18.95	6.43	6.43	23.35	10.57
144	5720	14.45	6.43	6.43	22.17	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	11.77	11.86	14.83	23.32	-8.50
Mid	5580	11.75	12.03	14.90	23.36	-8.45
High	5700	11.42	11.75	14.60	23.35	-8.75
144	5720	11.72	11.88	14.81	22.17	-7.36

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.647	6.028	9.36	10.57	-1.21
Mid	5580	6.723	6.914	9.83	10.57	-0.74
High	5700	6.292	6.492	9.40	10.57	-1.17
144	5720	-1.607	-2.652	0.91	10.57	-9.66

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

Note – The straddle channel peak emissions is located in the 5.8 GHz band.

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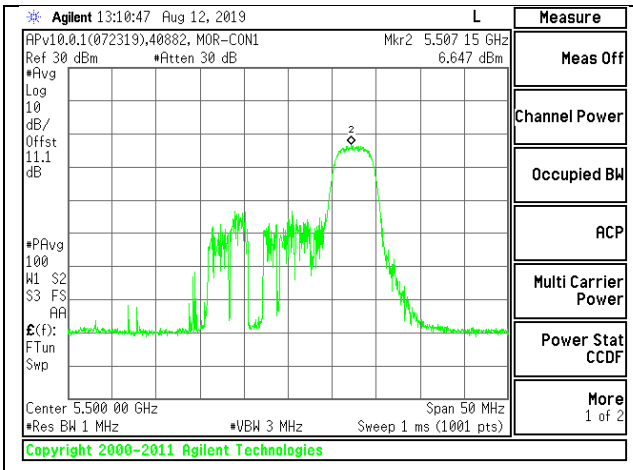
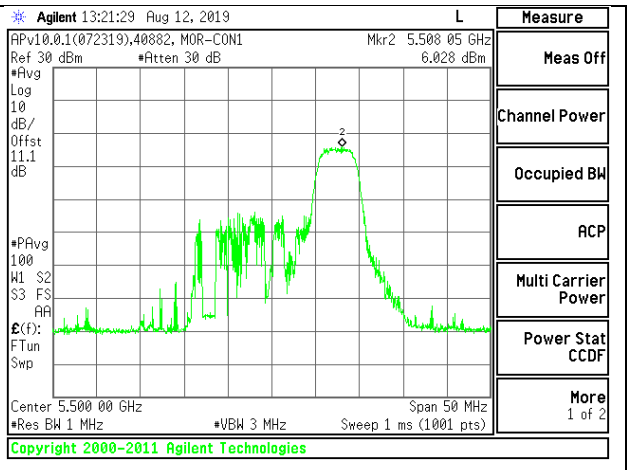
LOW CHANNEL

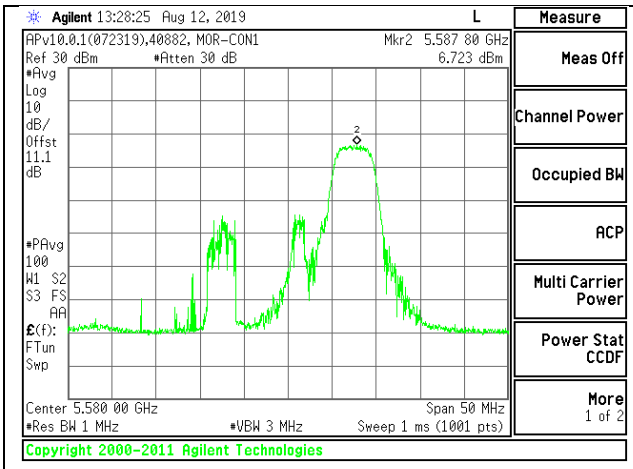


LOW CHANNEL CHAIN 0

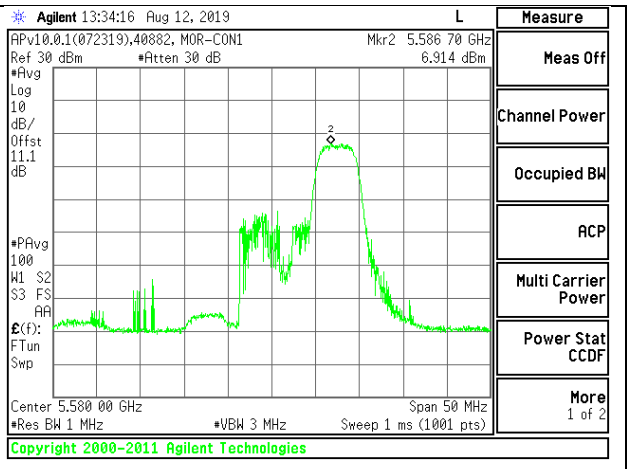


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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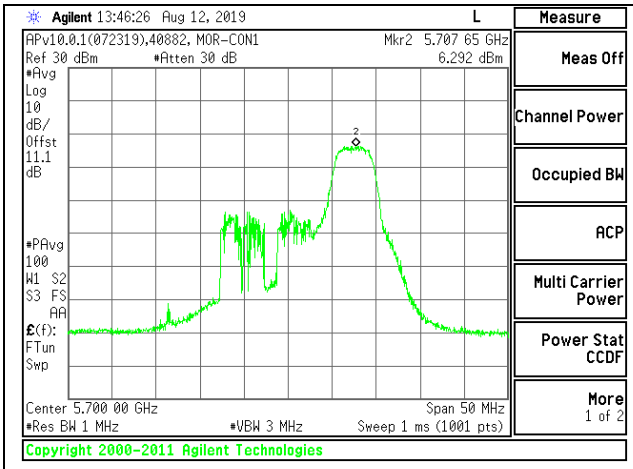
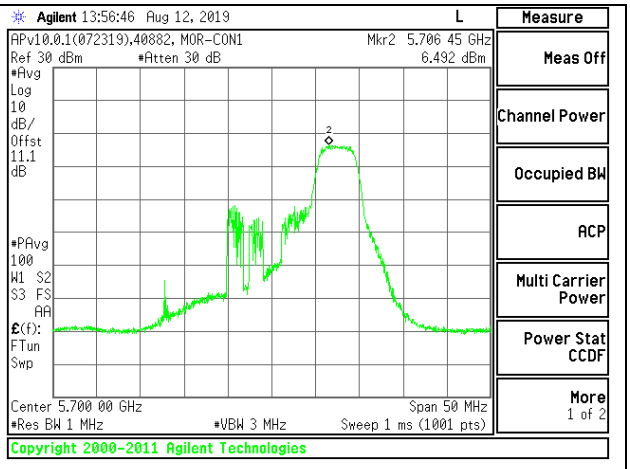
HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 0

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	18.85	6.43	6.43	23.32	10.57
Mid	5580	19.00	6.43	6.43	23.36	10.57
High	5700	18.95	6.43	6.43	23.35	10.57
144	5720	14.45	6.43	6.43	22.17	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	9.15	8.91	12.04	23.32	-11.28
Mid	5580	9.05	9.19	12.13	23.36	-11.23
High	5700	9.06	8.99	12.04	23.35	-11.31
144	5720	9.10	9.11	12.12	22.17	-10.05

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.280	6.361	9.33	10.57	-1.24
Mid	5580	6.619	6.386	9.51	10.57	-1.06
High	5700	6.710	6.920	9.83	10.57	-0.74
144	5720	6.291	6.391	9.35	10.57	-1.22

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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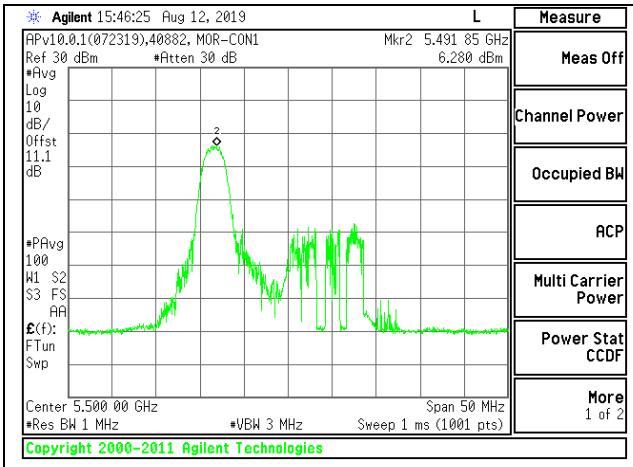
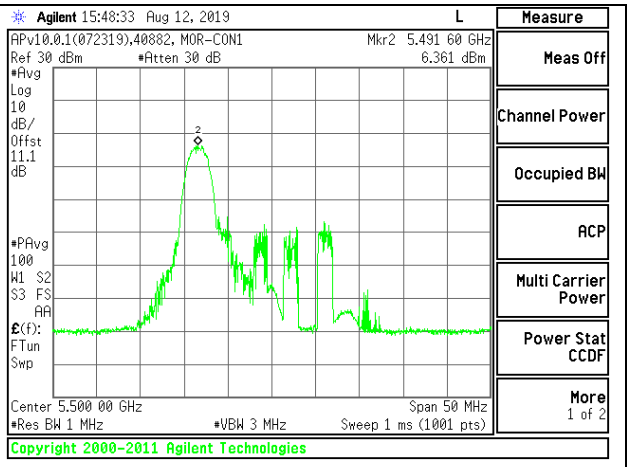
LOW CHANNEL

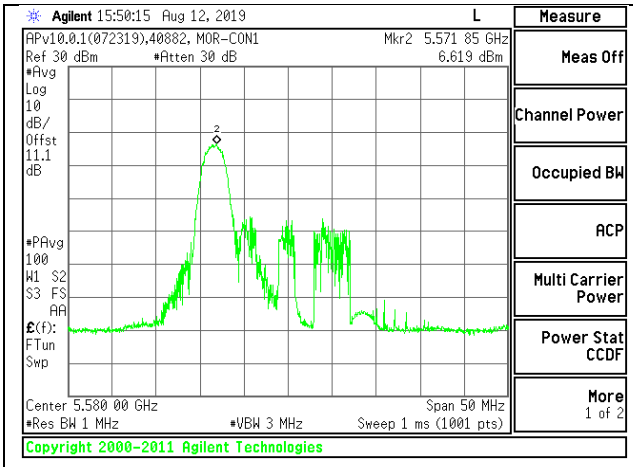


LOW CHANNEL CHAIN 0

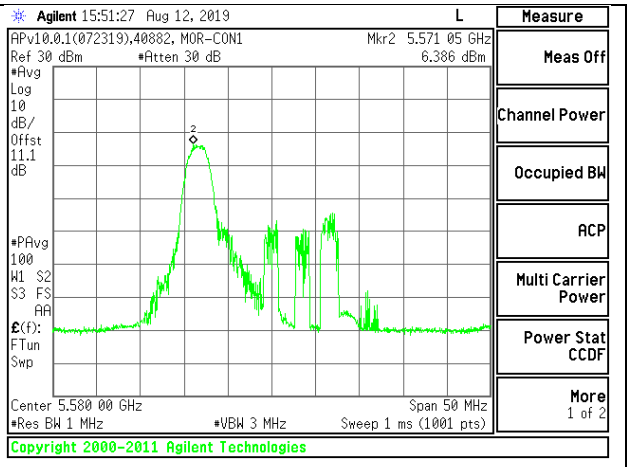


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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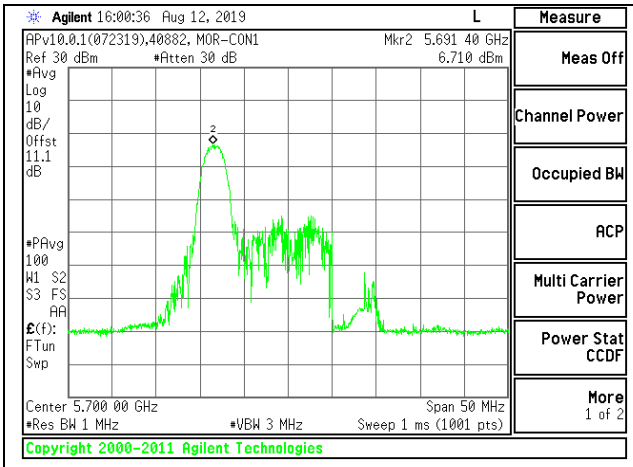
HIGH CHANNEL



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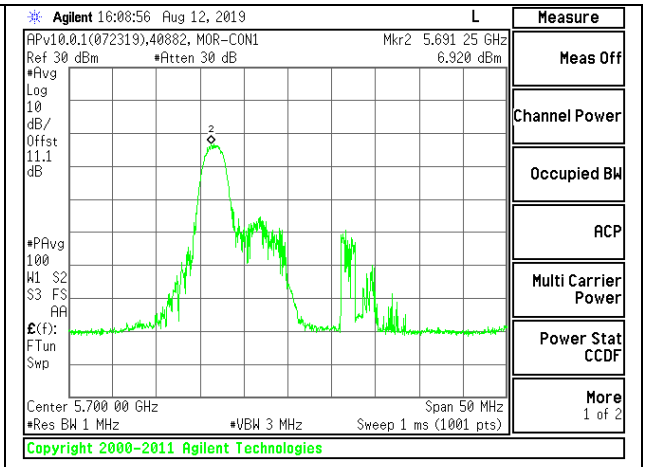
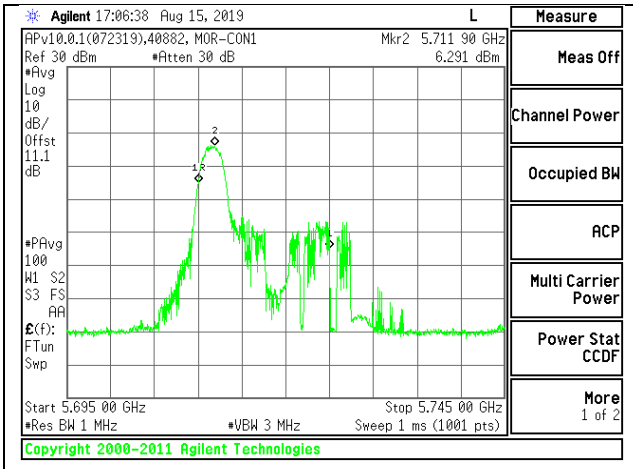
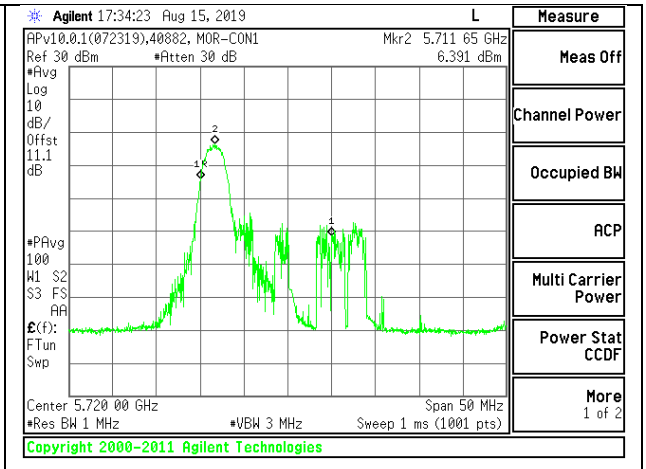


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 4

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	18.85	6.43	6.43	23.32	10.57
Mid	5580	19.00	6.43	6.43	23.36	10.57
High	5700	18.95	6.43	6.43	23.35	10.57
144	5720	14.45	6.43	6.43	22.17	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	9.31	9.12	12.23	23.32	-11.10
Mid	5580	9.32	9.29	12.32	23.36	-11.04
High	5700	9.35	9.21	12.29	23.35	-11.06
144	5720	9.20	9.28	12.25	22.17	-9.92

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	5.621	5.752	8.70	10.57	-1.87
Mid	5580	5.745	5.598	8.68	10.57	-1.89
High	5700	5.480	5.573	8.54	10.57	-2.03
144	5720	5.355	5.790	8.59	10.57	-1.98

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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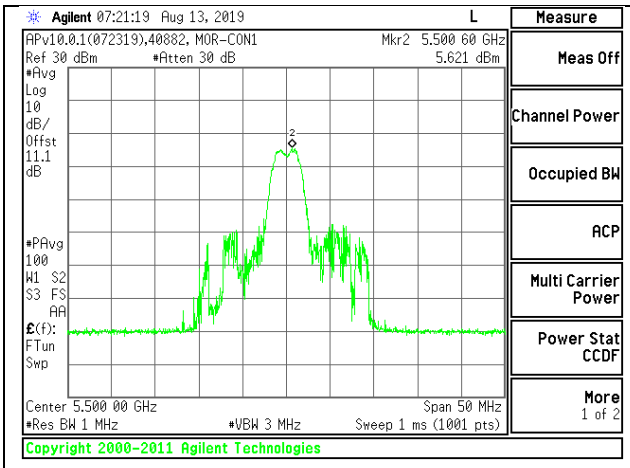
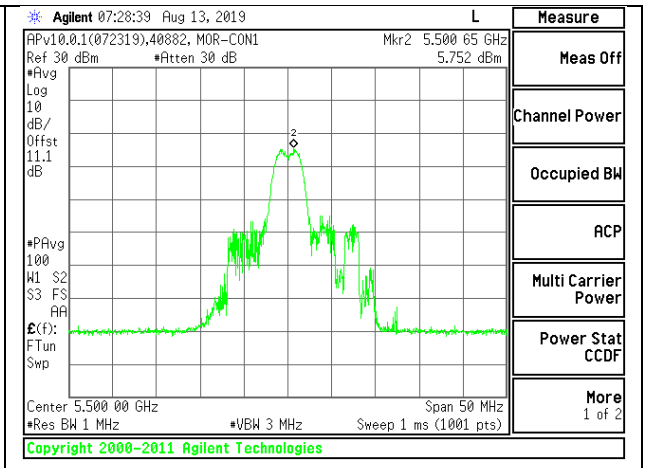
LOW CHANNEL

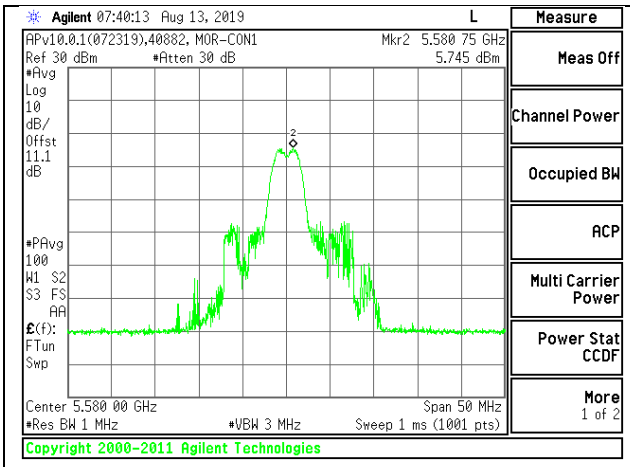


LOW CHANNEL CHAIN 0

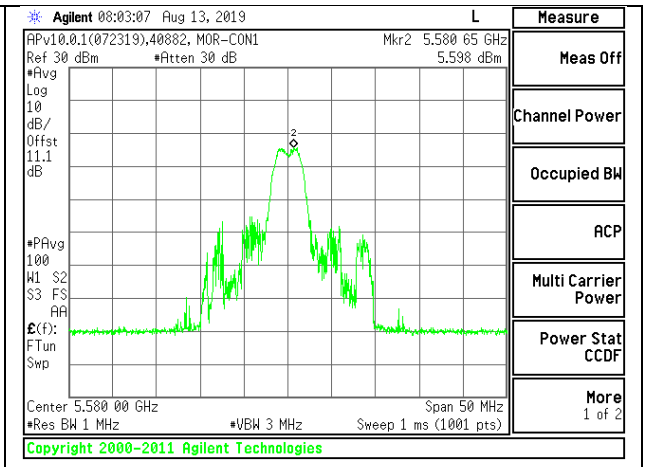


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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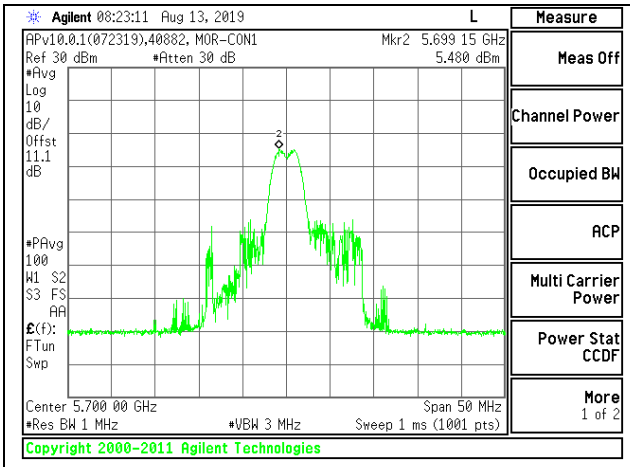
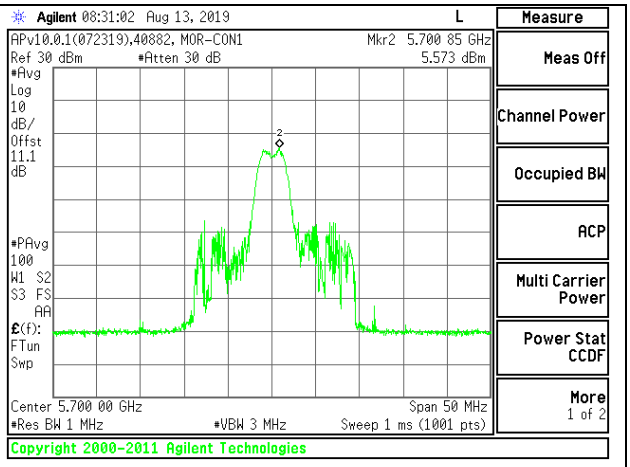
HIGH CHANNEL

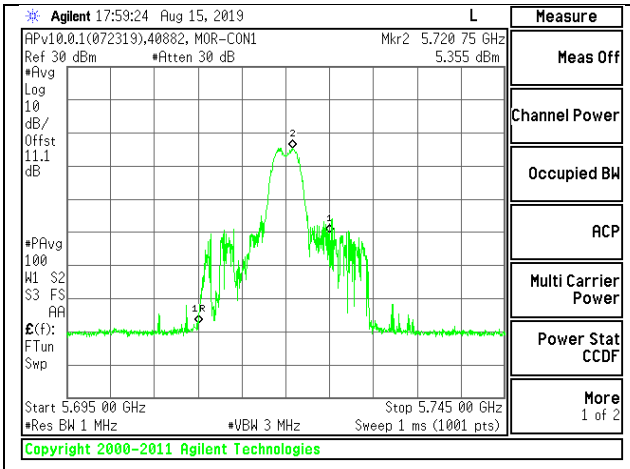


HIGH CHANNEL CHAIN 0

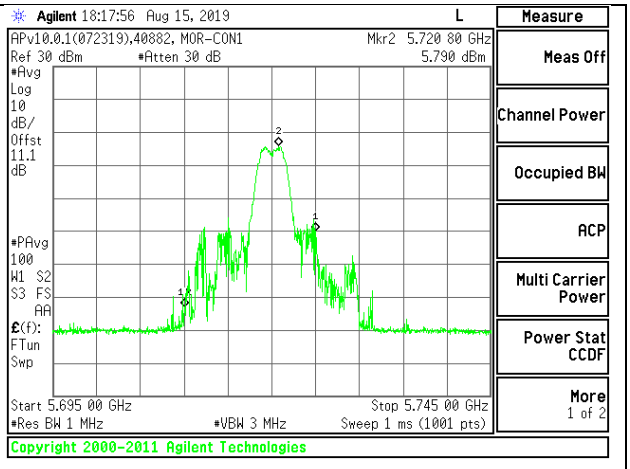


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 8

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	18.85	6.43	6.43	23.32	10.57
Mid	5580	19.00	6.43	6.43	23.36	10.57
High	5700	18.95	6.43	6.43	23.35	10.57
144	5720	14.45	6.43	6.43	22.17	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	9.16	8.81	12.00	23.32	-11.32
Mid	5580	9.16	9.18	12.18	23.36	-11.18
High	5700	9.17	9.15	12.17	23.35	-11.18
144	5720	9.02	9.25	12.15	22.17	-10.02

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.652	6.346	9.51	10.57	-1.06
Mid	5580	6.960	7.027	10.00	10.57	-0.57
High	5700	7.097	6.868	9.99	10.57	-0.58
144	5720	-4.637	-3.290	-0.90	10.57	-11.47

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

Note – The straddle channel peak emissions is located in the 5.8 GHz band.

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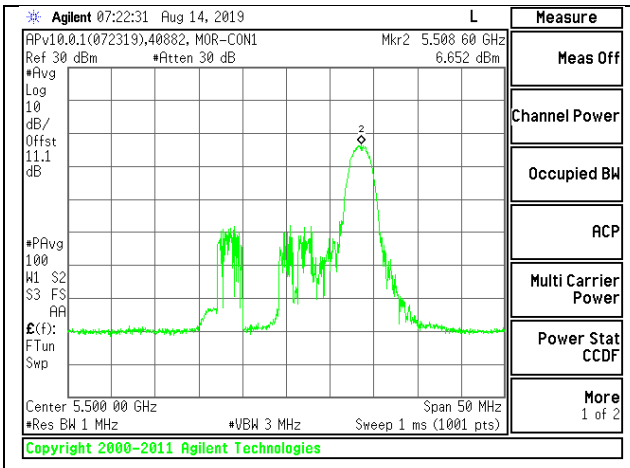
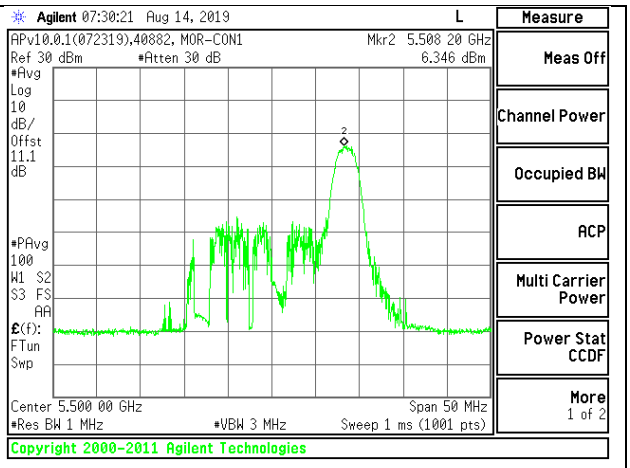
LOW CHANNEL

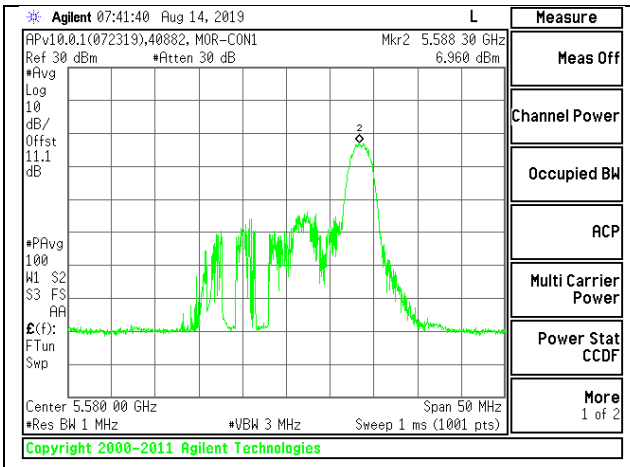


LOW CHANNEL CHAIN 0

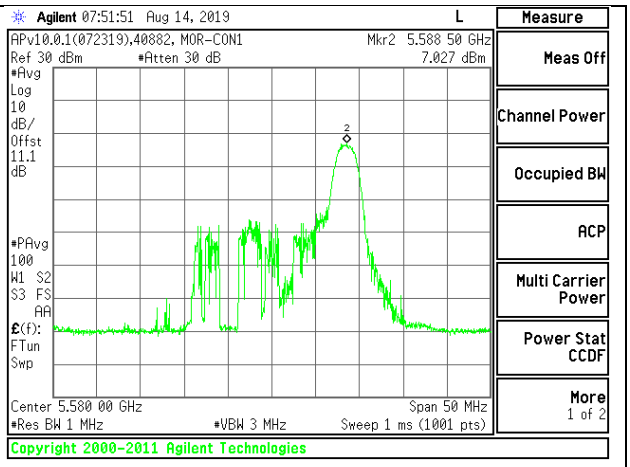


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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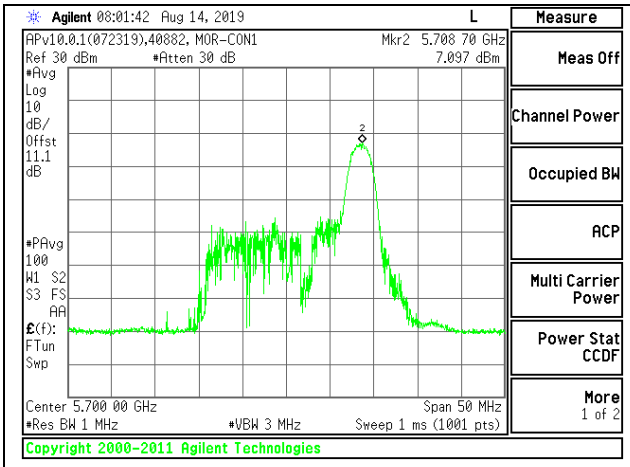
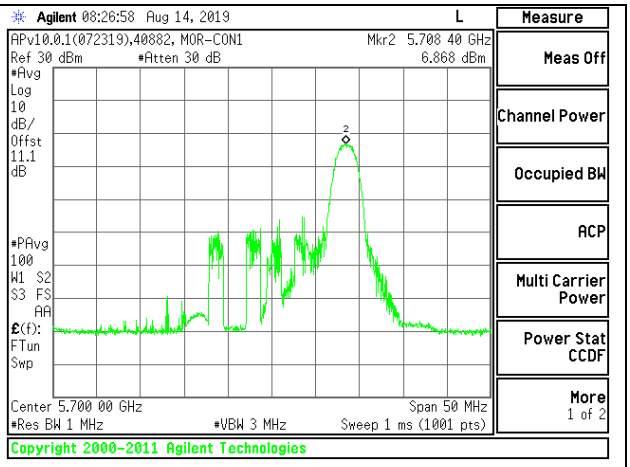
HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

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9.1.2. 802.11ax HE20 MODE IN THE 5.6 GHz BAND (IC)

2TX Antenna 1 + Antenna 2 SU MODE

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	16.94	6.43	6.43	22.86	10.57
Mid	5580	16.75	6.43	6.43	22.81	10.57
High	5700	16.69	6.43	6.43	22.79	10.57
144	5720	13.48	6.43	6.43	21.87	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	15.28	15.45	18.38	22.86	-4.48
Mid	5580	15.35	15.55	18.46	22.81	-4.35
High	5700	15.40	15.47	18.45	22.79	-4.35
144	5720	15.40	15.34	18.38	21.87	-3.48

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.328	6.413	9.38	10.57	-1.19
Mid	5580	6.380	6.927	9.67	10.57	-0.90
High	5700	7.099	6.853	9.99	10.57	-0.58
144	5720	6.824	7.278	10.07	10.57	-0.50

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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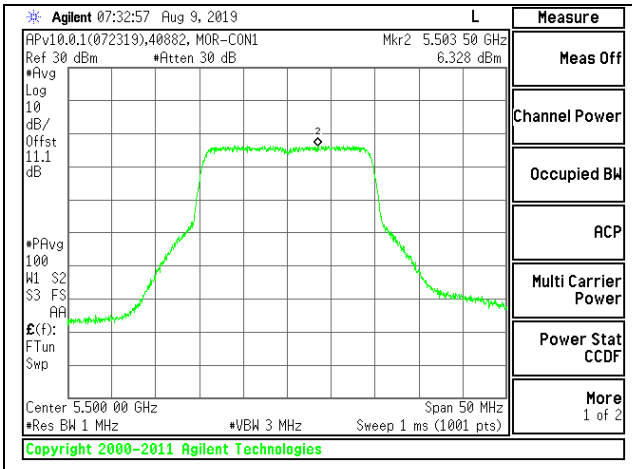
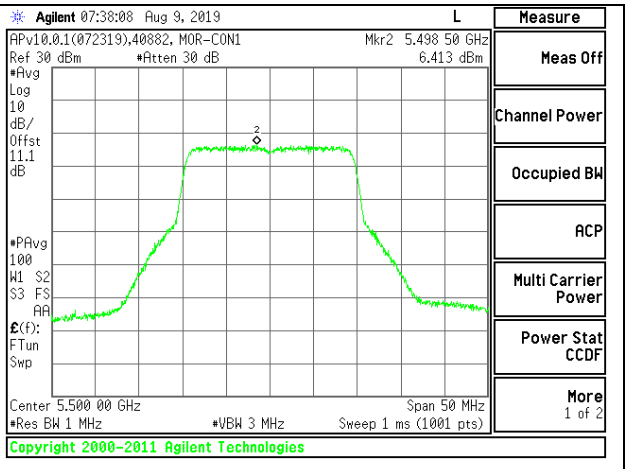
LOW CHANNEL

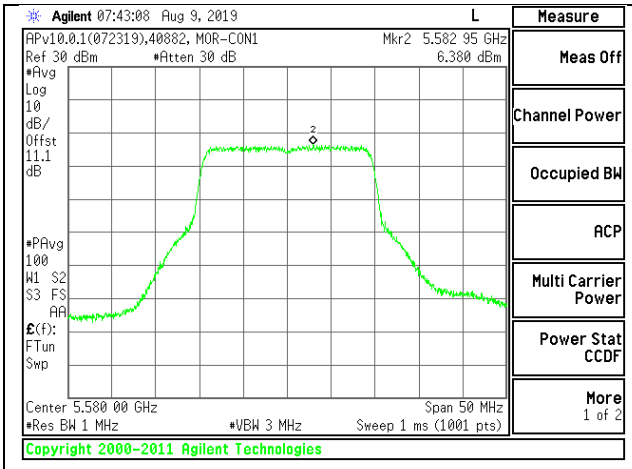


LOW CHANNEL CHAIN 0

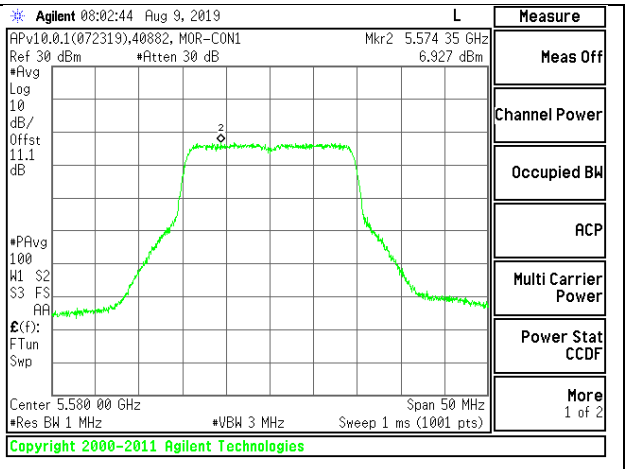


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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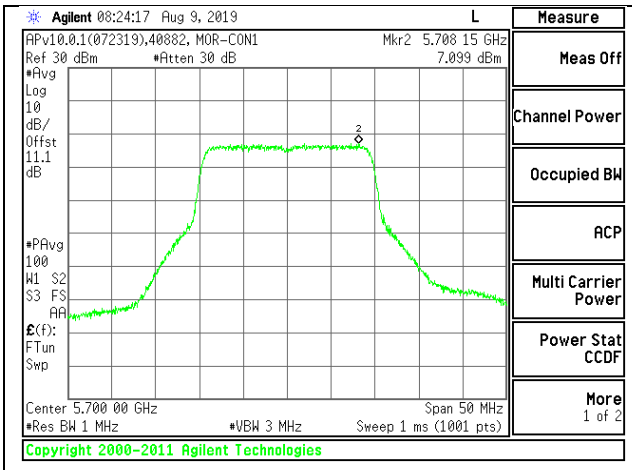
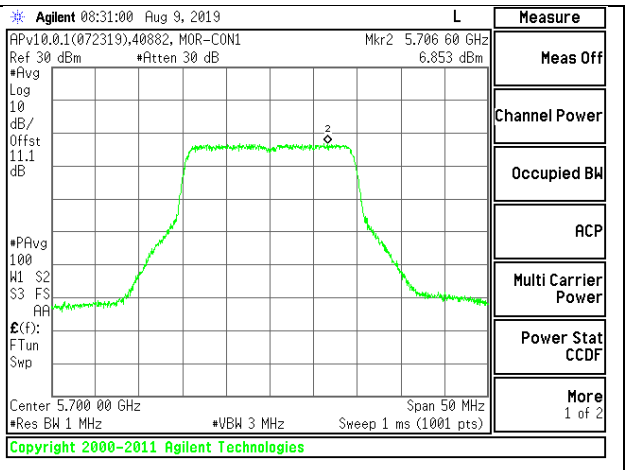
HIGH CHANNEL

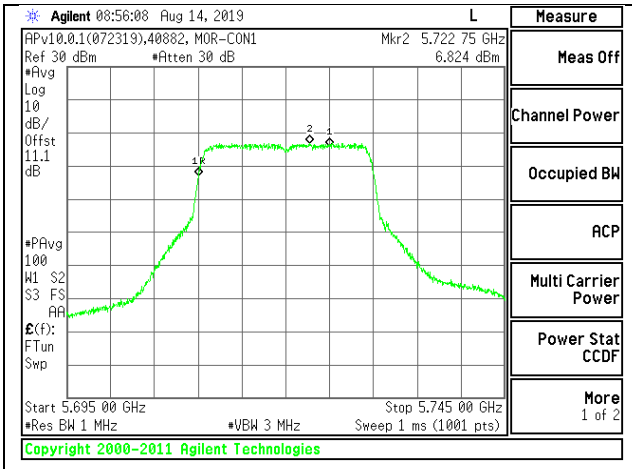


HIGH CHANNEL CHAIN 0

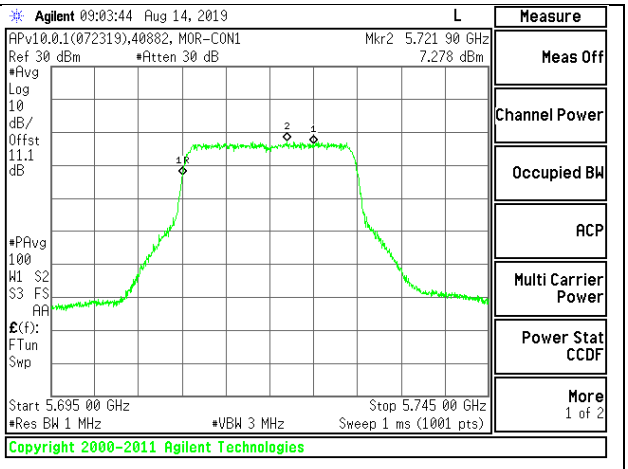


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 242-Tones, RU Index 61

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	16.94	6.43	6.43	22.86	10.57
Mid	5580	16.75	6.43	6.43	22.81	10.57
High	5700	16.69	6.43	6.43	22.79	10.57
144	5720	13.48	6.43	6.43	21.87	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	15.80	15.93	18.88	22.86	-3.98
Mid	5580	15.79	15.84	18.83	22.81	-3.98
High	5700	15.85	15.79	18.83	22.79	-3.96
144	5720	15.76	15.90	18.84	21.87	-3.02

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.508	6.485	9.51	10.57	-1.06
Mid	5580	6.893	6.704	9.81	10.57	-0.76
High	5700	7.018	7.027	10.03	10.57	-0.54
144	5720	6.980	7.042	10.02	10.57	-0.55

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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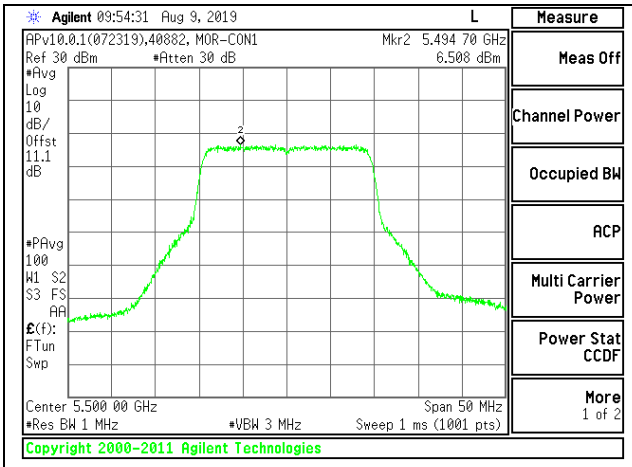
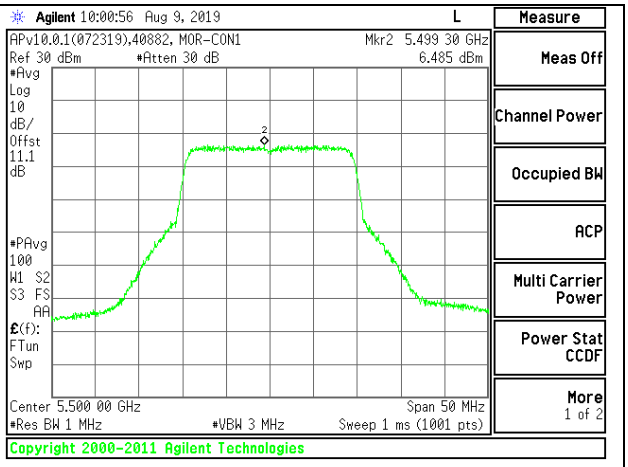
LOW CHANNEL

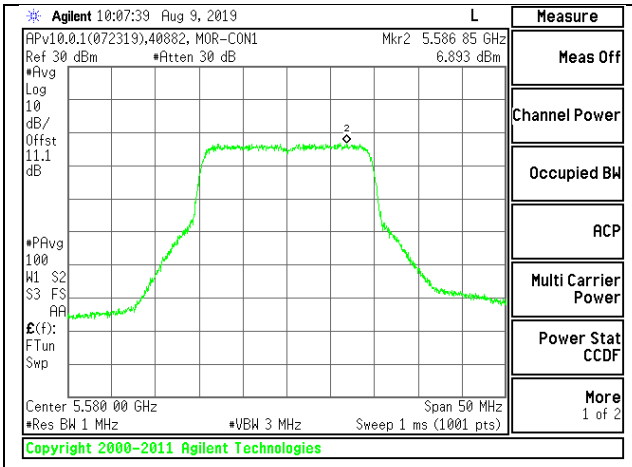


LOW CHANNEL CHAIN 0

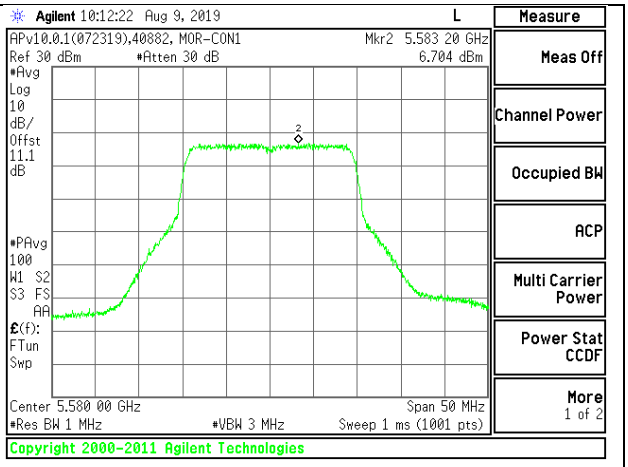


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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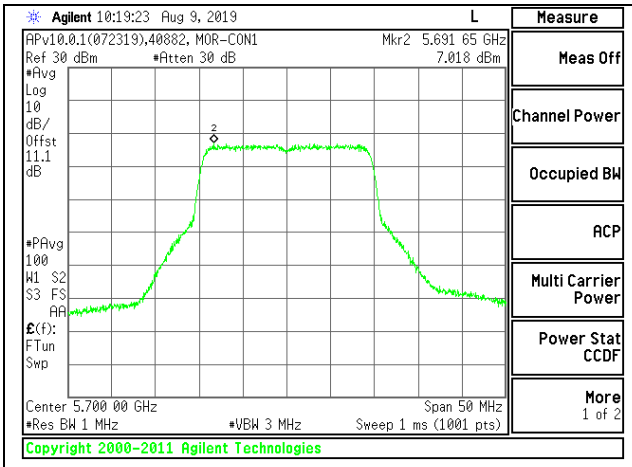
HIGH CHANNEL



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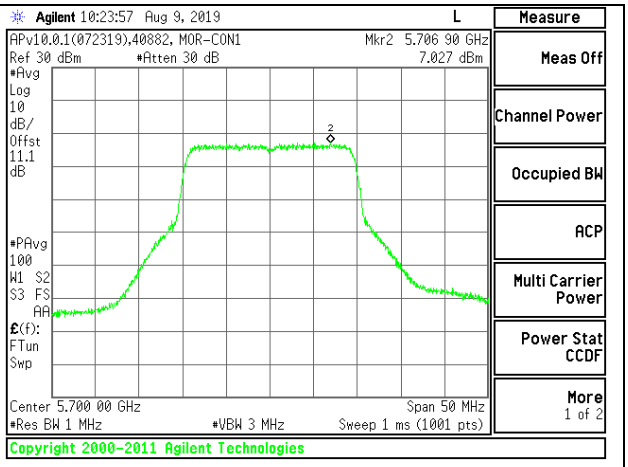
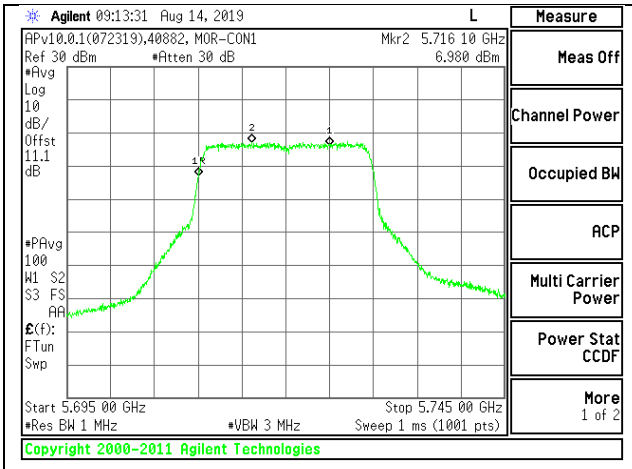
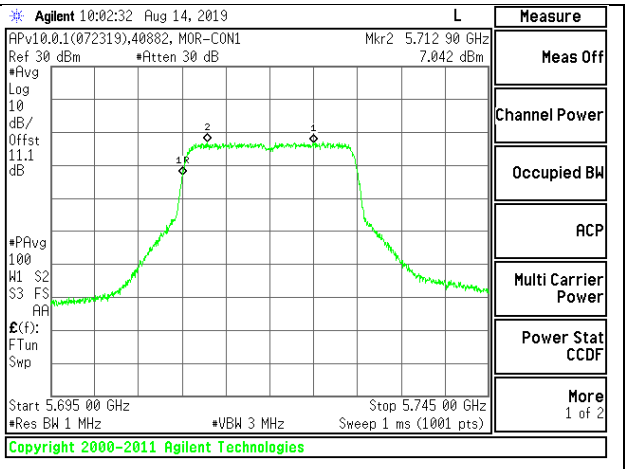


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 106-Tones, RU Index 53

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	16.94	6.43	6.43	22.86	10.57
Mid	5580	16.75	6.43	6.43	22.81	10.57
High	5700	16.69	6.43	6.43	22.79	10.57
144	5720	13.48	6.43	6.43	21.87	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	14.90	15.03	17.98	22.86	-4.88
Mid	5580	15.18	15.19	18.20	22.81	-4.61
High	5700	15.20	15.25	18.24	22.79	-4.56
144	5720	15.10	15.14	18.13	21.87	-3.73

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.311	6.693	9.52	10.57	-1.05
Mid	5580	6.906	7.172	10.05	10.57	-0.52
High	5700	7.176	6.891	10.05	10.57	-0.52
144	5720	6.717	6.276	9.51	10.57	-1.06

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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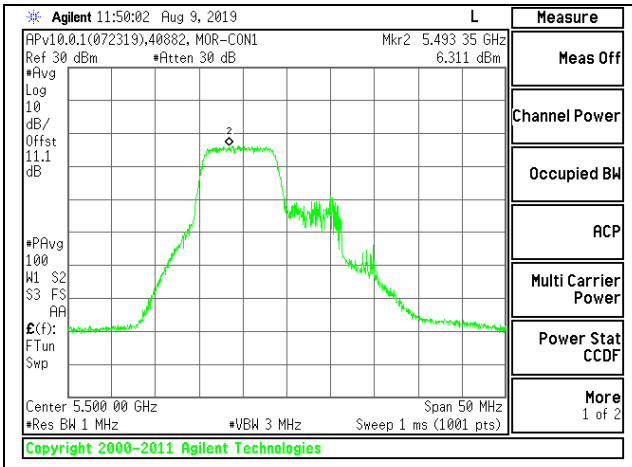
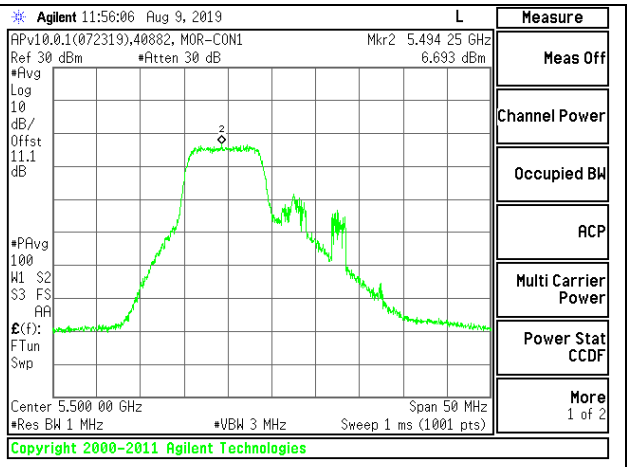
LOW CHANNEL

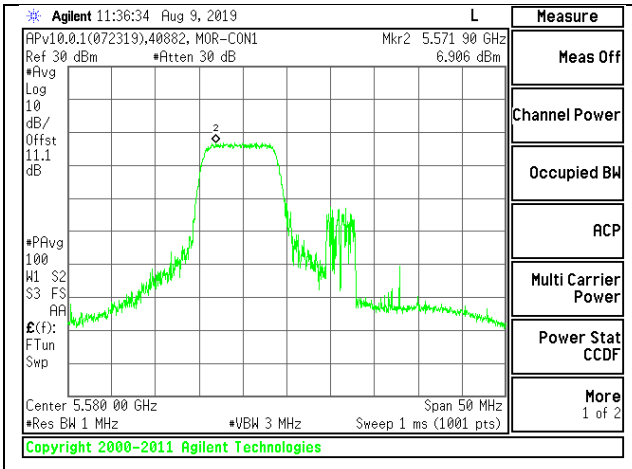


LOW CHANNEL CHAIN 0

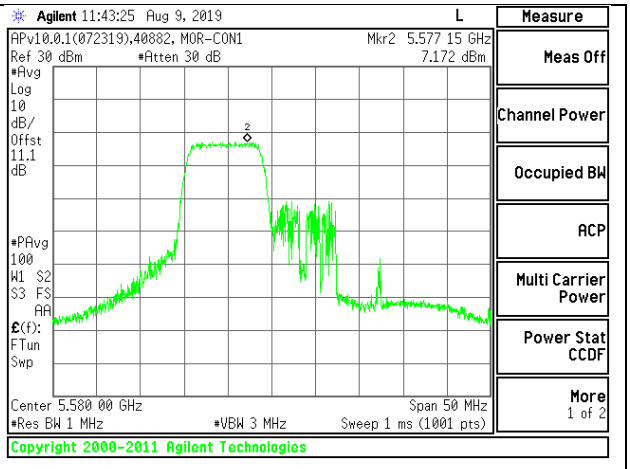


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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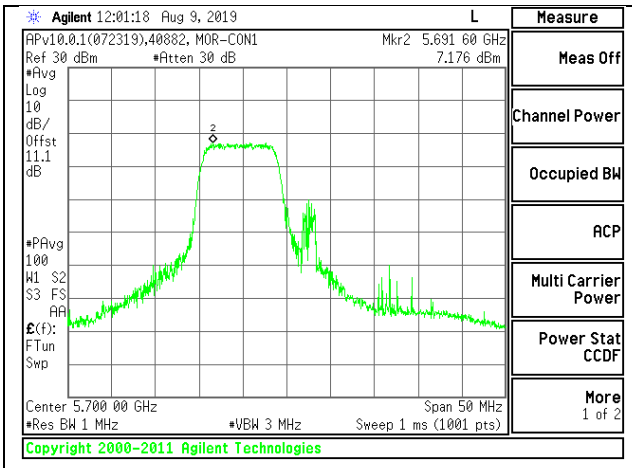
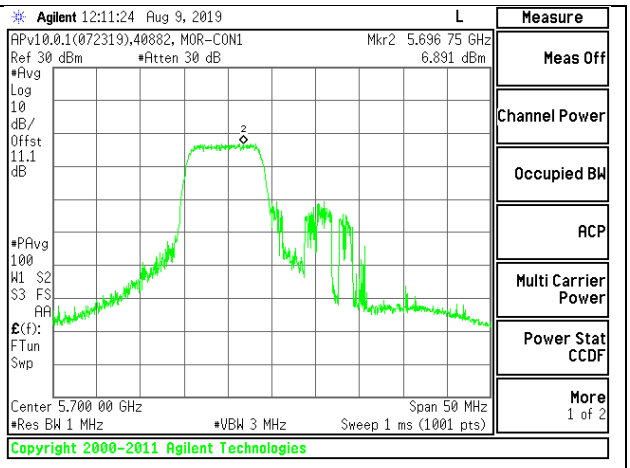
HIGH CHANNEL

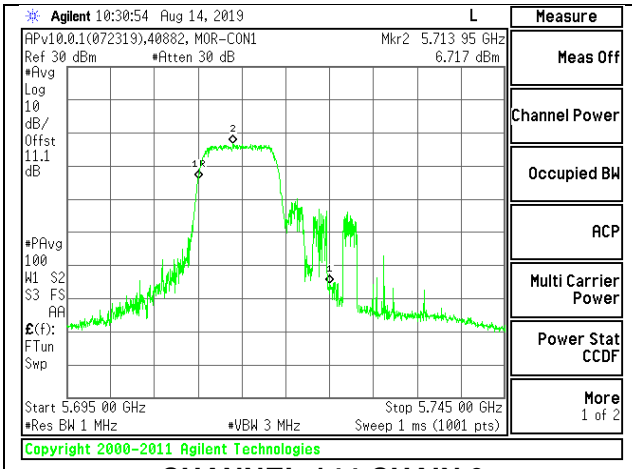


HIGH CHANNEL CHAIN 0

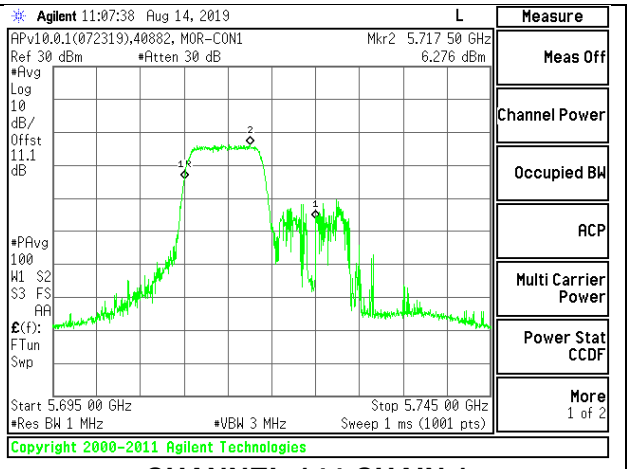


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 106-Tones, RU Index 54

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	16.94	6.43	6.43	22.86	10.57
Mid	5580	16.75	6.43	6.43	22.81	10.57
High	5700	16.69	6.43	6.43	22.79	10.57
144	5720	13.48	6.43	6.43	21.87	10.57

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	15.29	15.30	18.31	22.86	-4.55
Mid	5580	15.24	15.40	18.33	22.81	-4.48
High	5700	15.00	15.02	18.02	22.79	-4.77
144	5720	15.30	15.21	18.27	21.87	-3.60

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	7.062	6.721	9.91	10.57	-0.66
Mid	5580	6.953	7.111	10.04	10.57	-0.53
High	5700	6.724	6.887	9.82	10.57	-0.75
144	5720	7.136	6.615	9.89	10.57	-0.68

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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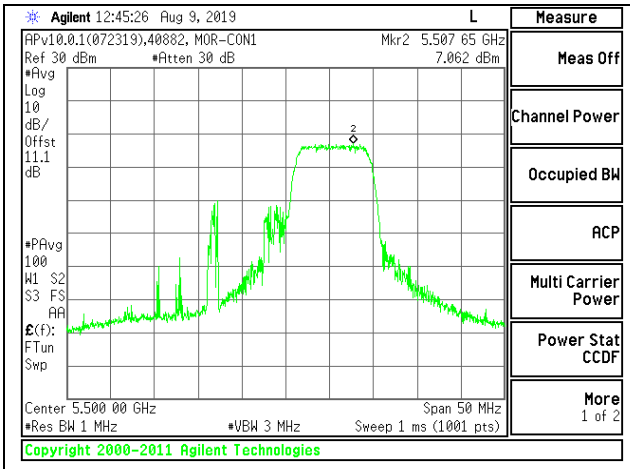
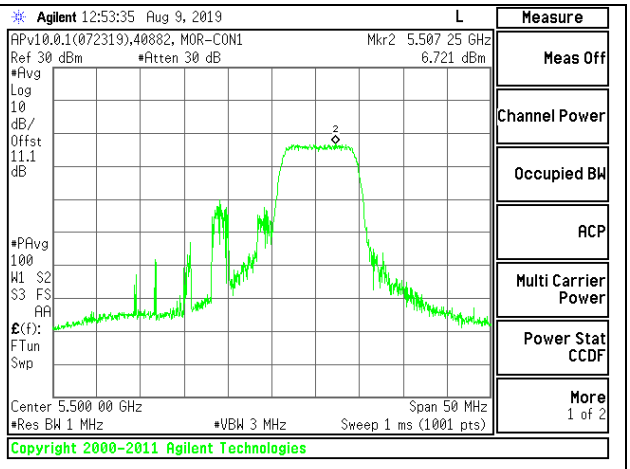
LOW CHANNEL

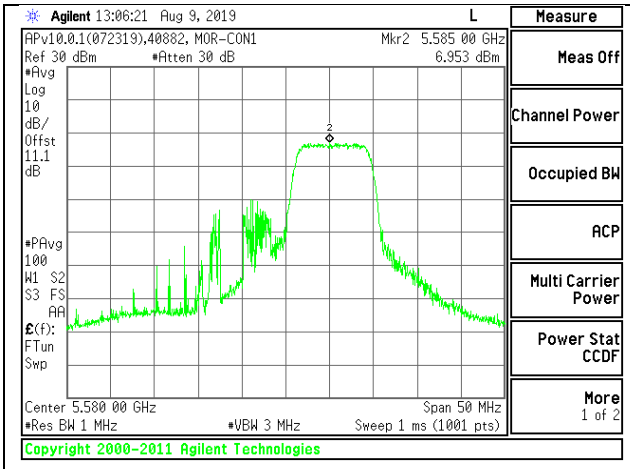


LOW CHANNEL CHAIN 0

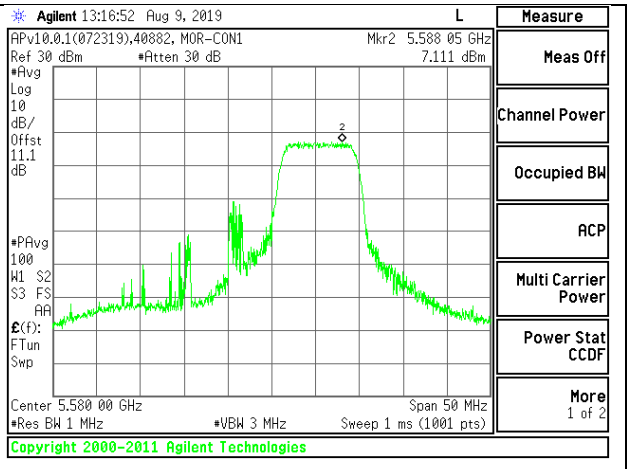


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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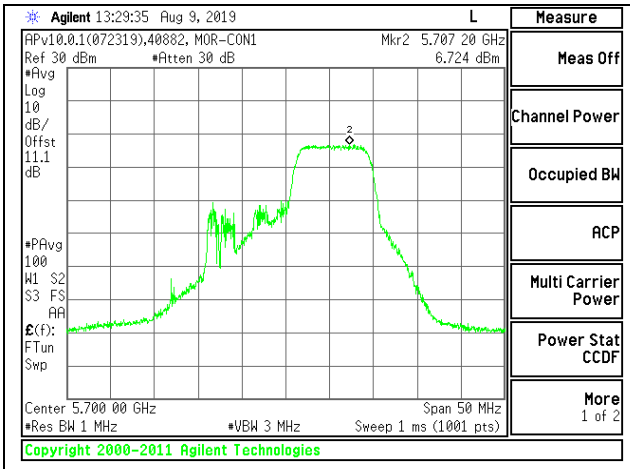
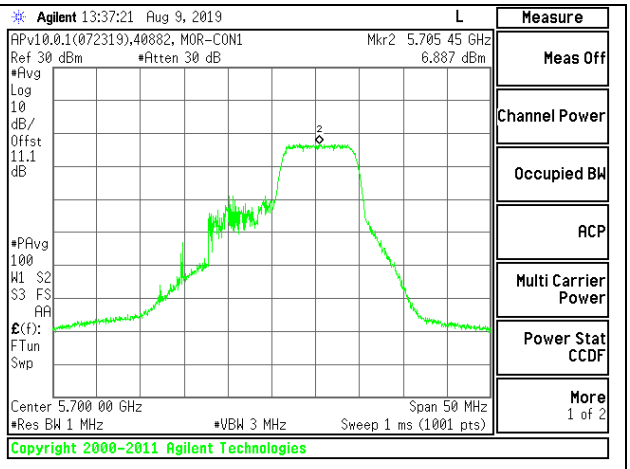
HIGH CHANNEL

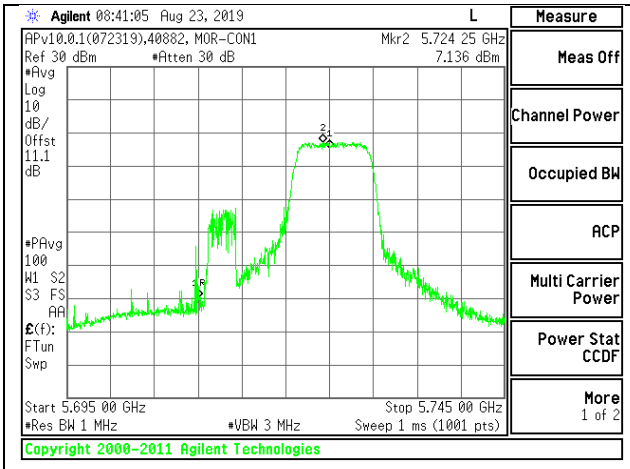


HIGH CHANNEL CHAIN 0

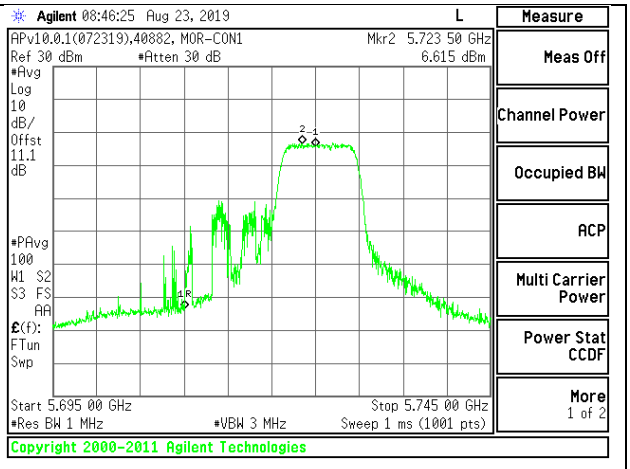


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 52-Tones, RU Index 37

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	16.94	6.43	6.43	22.86	10.57
Mid	5580	16.75	6.43	6.43	22.81	10.57
High	5700	16.69	6.43	6.43	22.79	10.57
144	5720	13.48	6.43	6.43	21.87	10.57

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	11.24	11.53	14.40	22.86	-8.46
Mid	5580	11.70	12.09	14.91	22.81	-7.90
High	5700	11.72	11.96	14.85	22.79	-7.94
144	5720	11.62	11.75	14.70	21.87	-7.17

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	5.995	6.078	9.05	10.57	-1.52
Mid	5580	6.228	6.634	9.45	10.57	-1.12
High	5700	6.246	6.617	9.45	10.57	-1.12
144	5720	6.597	6.450	9.53	10.57	-1.04

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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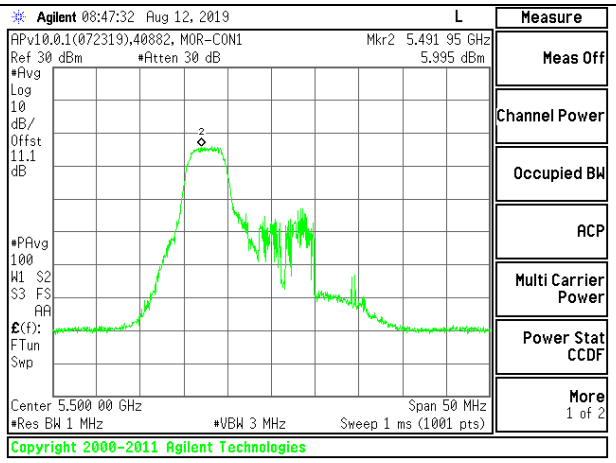
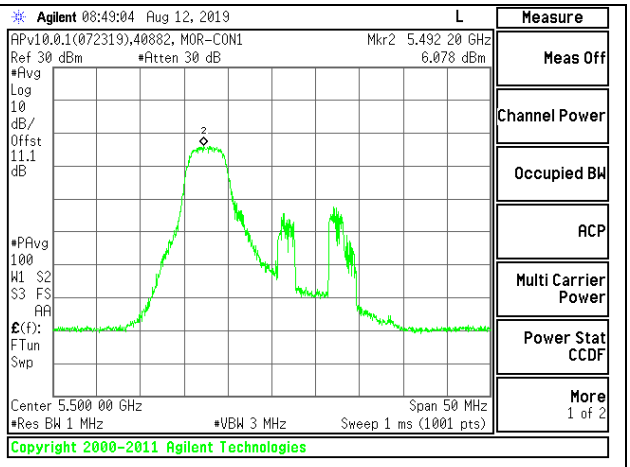
LOW CHANNEL

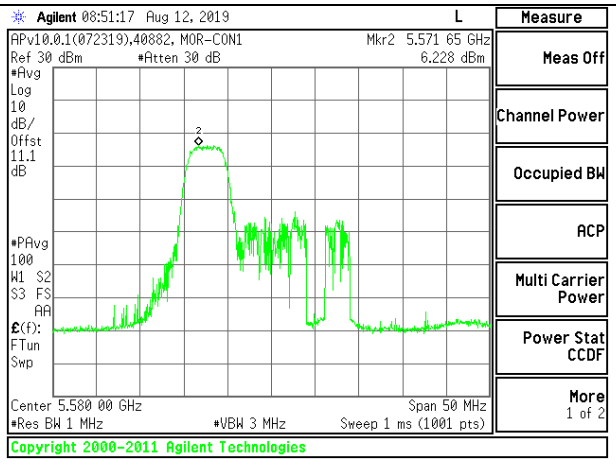


LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

MID CHANNEL



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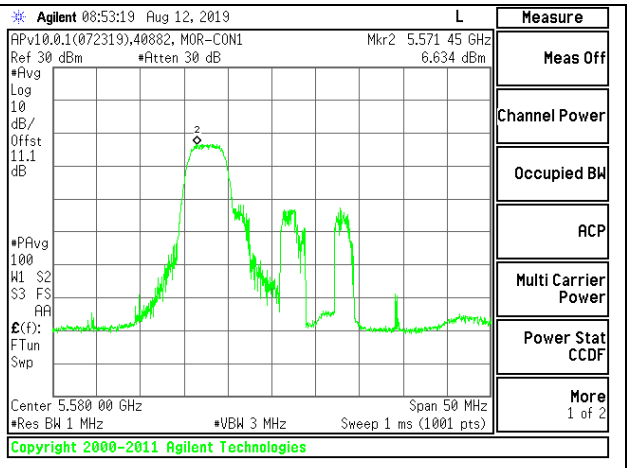

MID CHANNEL CHAIN 1

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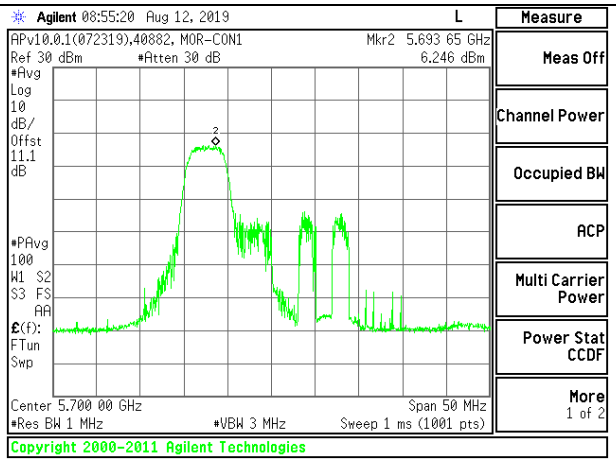
HIGH CHANNEL



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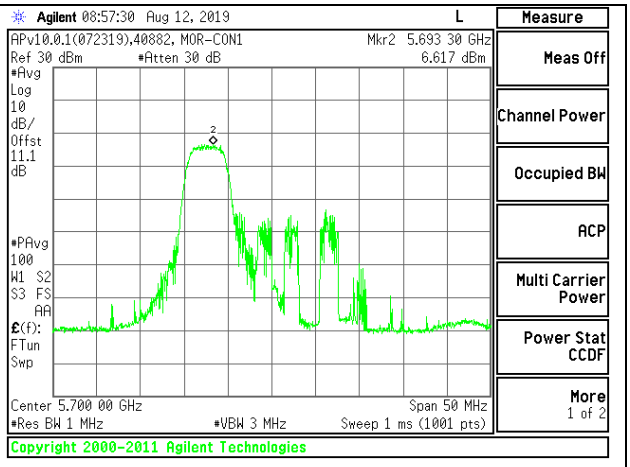
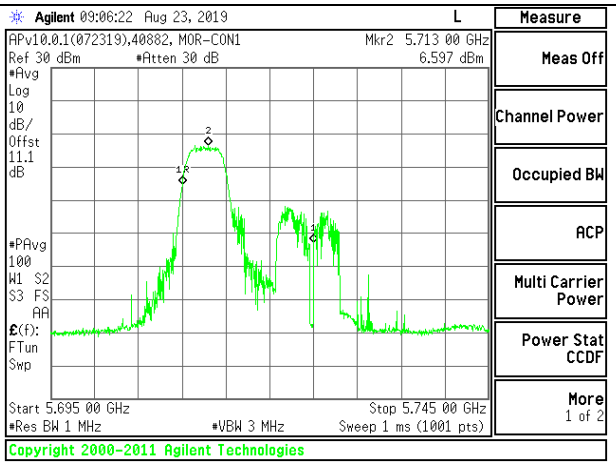
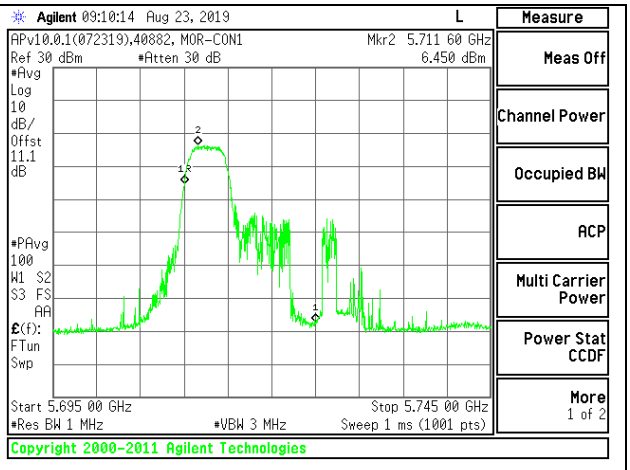


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 52-Tones, RU Index 38

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	16.94	6.43	6.43	22.86	10.57
Mid	5580	16.75	6.43	6.43	22.81	10.57
High	5700	16.69	6.43	6.43	22.79	10.57
144	5720	13.48	6.43	6.43	21.87	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	11.79	11.96	14.89	22.86	-7.97
Mid	5580	11.76	12.10	14.94	22.81	-7.87
High	5700	11.78	12.05	14.93	22.79	-7.87
144	5720	11.73	11.84	14.80	21.87	-7.07

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.699	6.284	9.51	10.57	-1.06
Mid	5580	6.624	6.934	9.79	10.57	-0.78
High	5700	6.785	6.742	9.77	10.57	-0.80
144	5720	6.972	6.718	9.86	10.57	-0.71

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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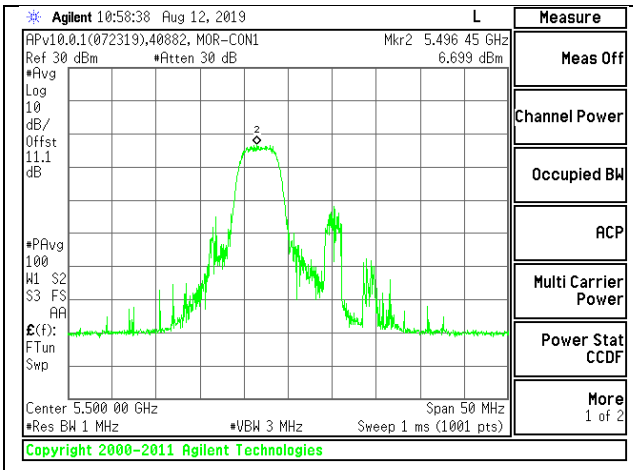
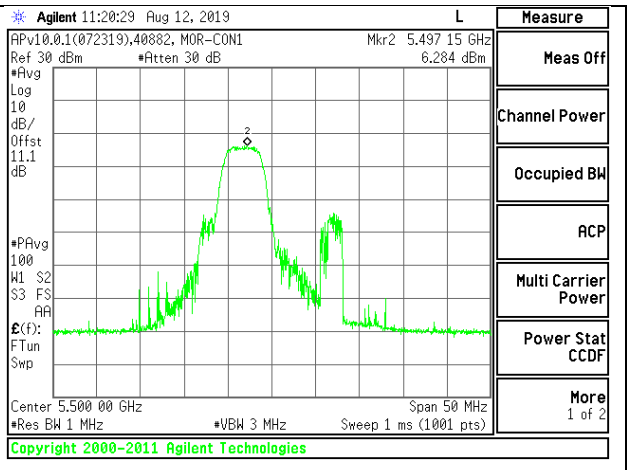
LOW CHANNEL

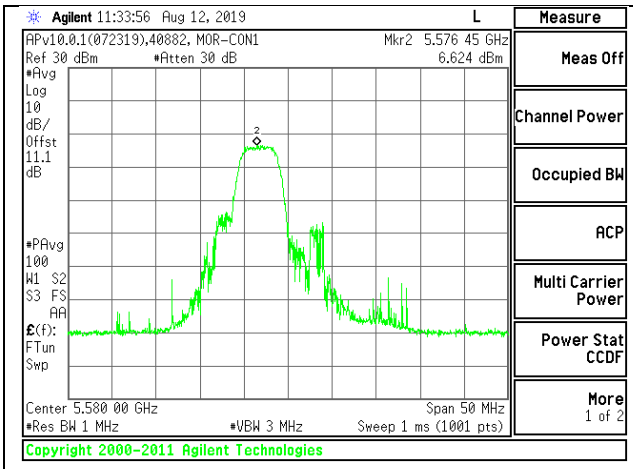


LOW CHANNEL CHAIN 0

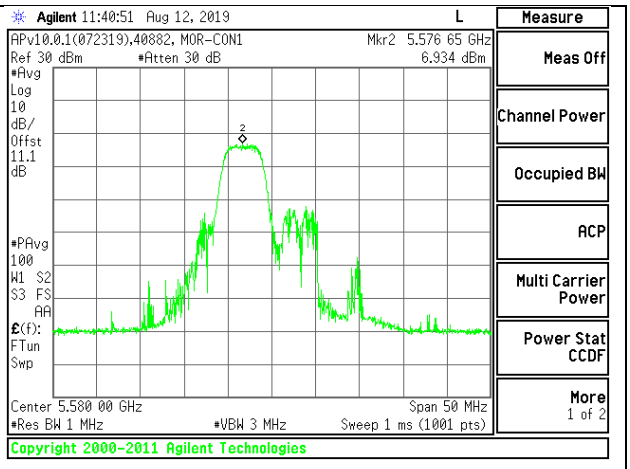


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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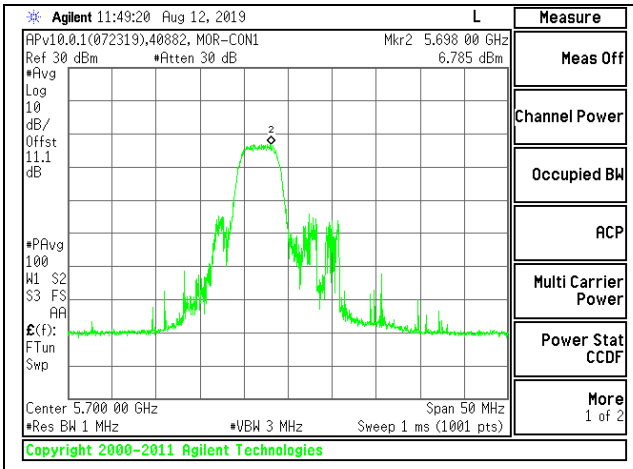
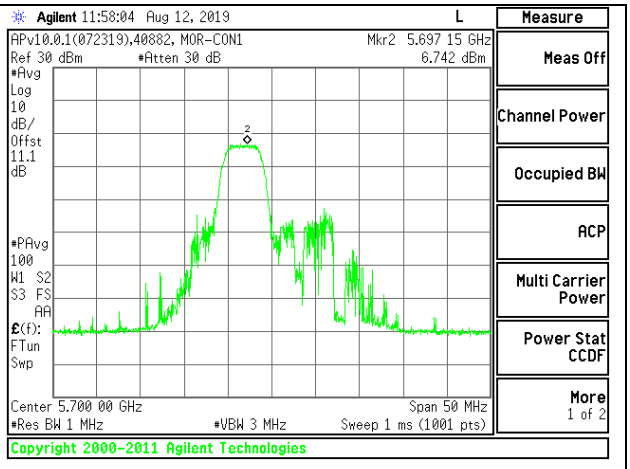
HIGH CHANNEL

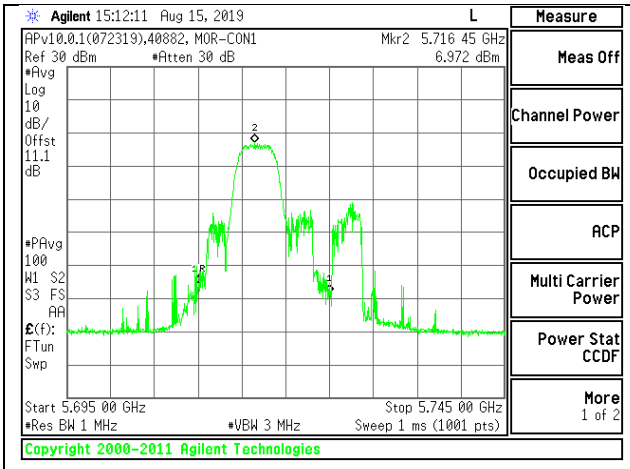


HIGH CHANNEL CHAIN 0

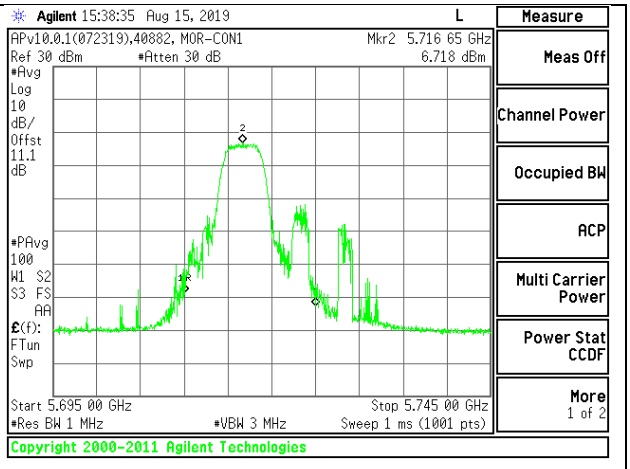


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 52-Tones, RU Index 40

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	16.94	6.43	6.43	22.86	10.57
Mid	5580	16.75	6.43	6.43	22.81	10.57
High	5700	16.69	6.43	6.43	22.79	10.57
144	5720	13.48	6.43	6.43	21.87	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	11.77	11.86	14.83	22.86	-8.03
Mid	5580	11.75	12.03	14.90	22.81	-7.91
High	5700	11.42	11.75	14.60	22.79	-8.20
144	5720	11.72	11.88	14.81	21.87	-7.05

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.647	6.028	9.36	10.57	-1.21
Mid	5580	6.723	6.914	9.83	10.57	-0.74
High	5700	6.292	6.492	9.40	10.57	-1.17
144	5720	-1.607	-2.652	0.91	10.57	-9.66

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

Note – The straddle channel peak emissions is located in the 5.8 GHz band.

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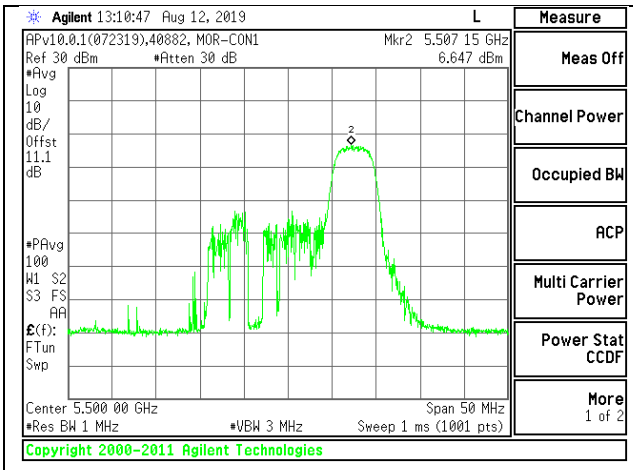
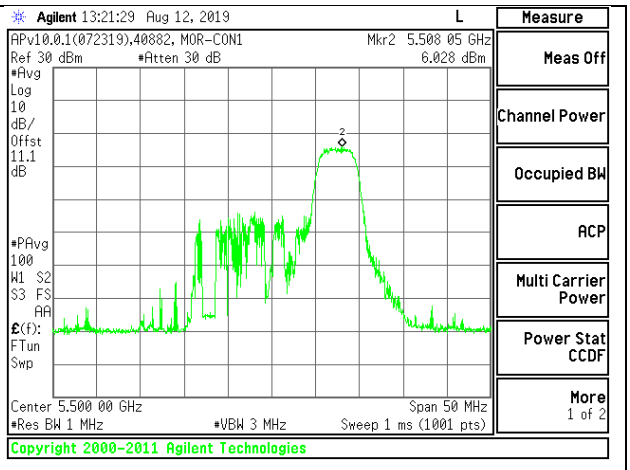
LOW CHANNEL

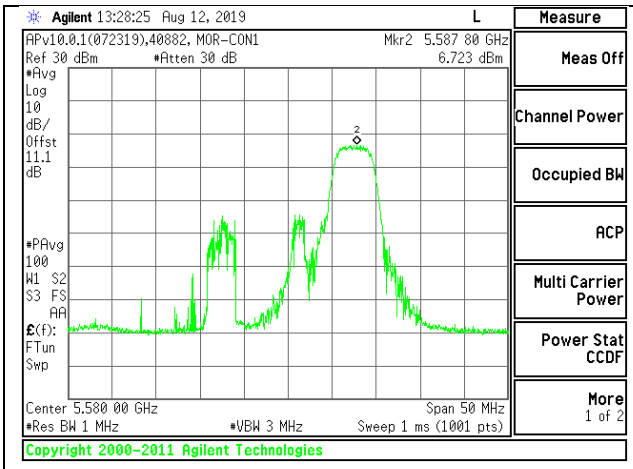


LOW CHANNEL CHAIN 0

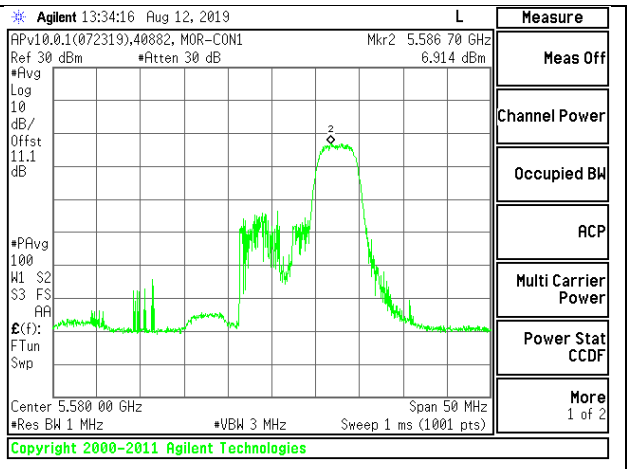


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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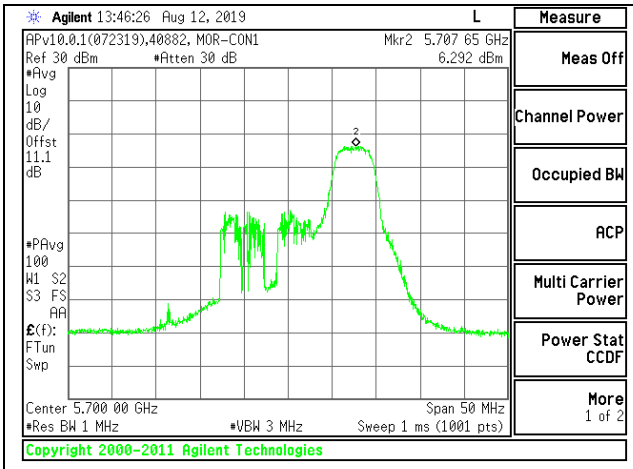
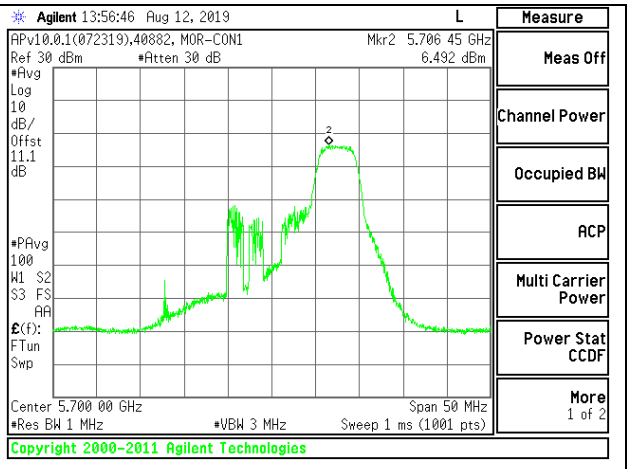
HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 0

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	16.94	6.43	6.43	22.86	10.57
Mid	5580	16.75	6.43	6.43	22.81	10.57
High	5700	16.69	6.43	6.43	22.79	10.57
144	5720	13.48	6.43	6.43	21.87	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	9.15	8.91	12.04	22.86	-10.82
Mid	5580	9.05	9.19	12.13	22.81	-10.68
High	5700	9.06	8.99	12.04	22.79	-10.76
144	5720	9.10	9.11	12.12	21.87	-9.75

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.280	6.361	9.33	10.57	-1.24
Mid	5580	6.619	6.386	9.51	10.57	-1.06
High	5700	6.710	6.920	9.83	10.57	-0.74
144	5720	6.291	6.391	9.35	10.57	-1.22

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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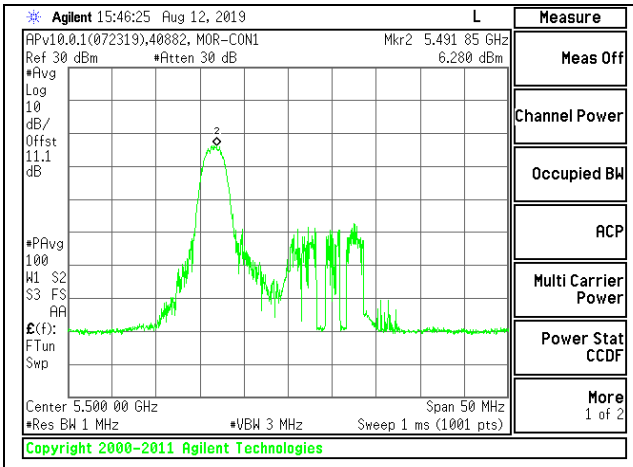
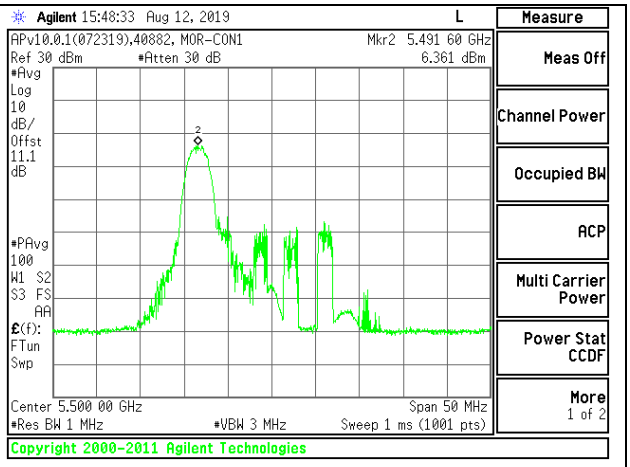
LOW CHANNEL

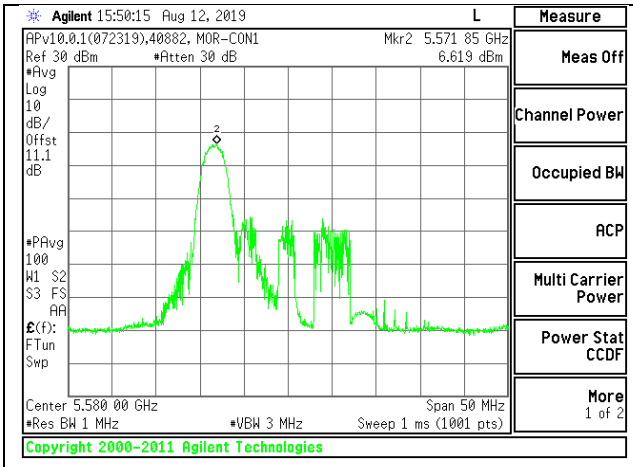


LOW CHANNEL CHAIN 0

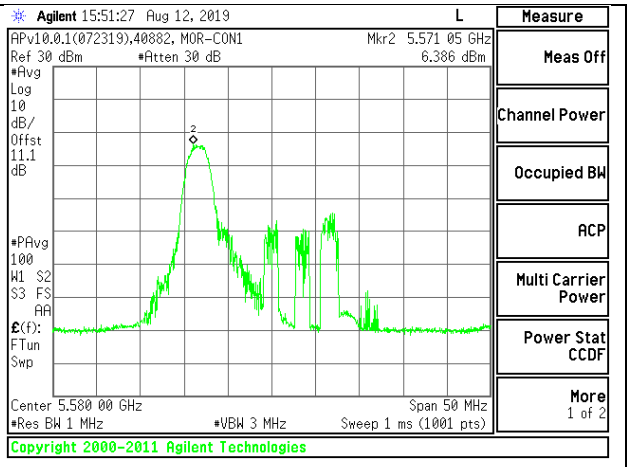


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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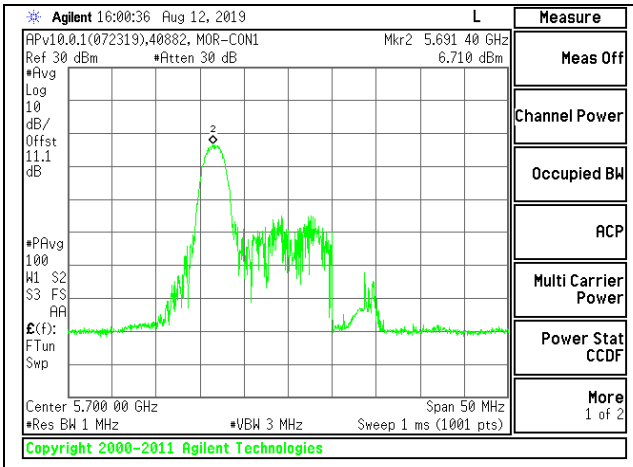
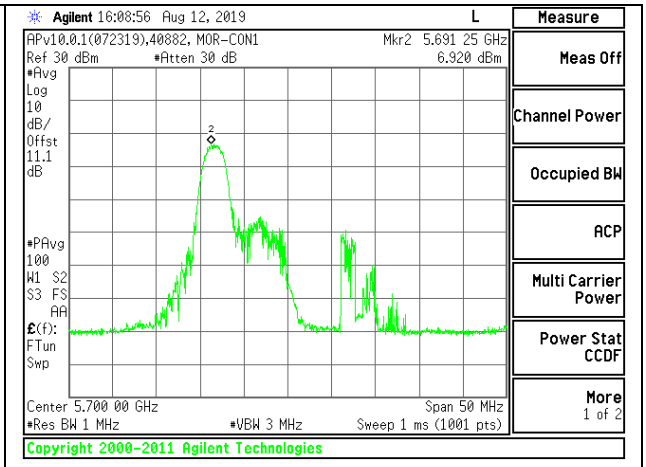
HIGH CHANNEL

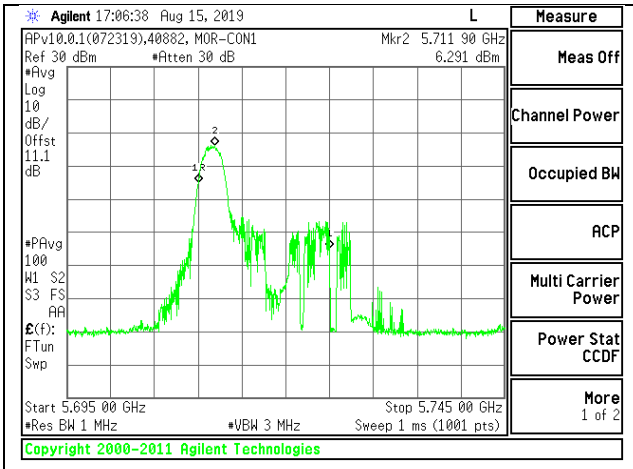


HIGH CHANNEL CHAIN 0

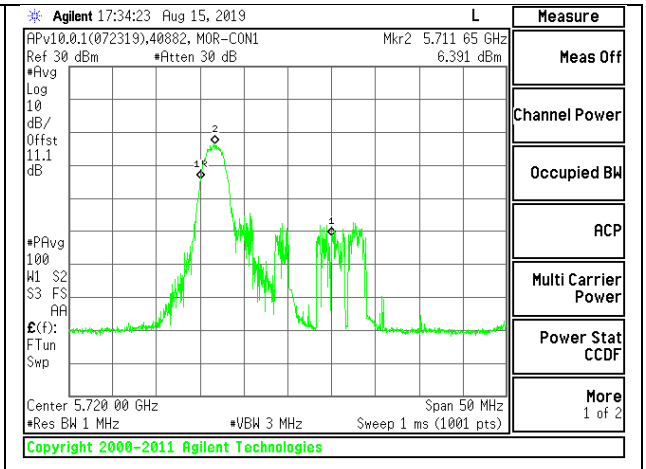


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 4

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	16.94	6.43	6.43	22.86	10.57
Mid	5580	16.75	6.43	6.43	22.81	10.57
High	5700	16.69	6.43	6.43	22.79	10.57
144	5720	13.48	6.43	6.43	21.87	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	9.31	9.12	12.23	22.86	-10.63
Mid	5580	9.32	9.29	12.32	22.81	-10.49
High	5700	9.35	9.21	12.29	22.79	-10.50
144	5720	9.20	9.28	12.25	21.87	-9.61

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	5.621	5.752	8.70	10.57	-1.87
Mid	5580	5.745	5.598	8.68	10.57	-1.89
High	5700	5.480	5.573	8.54	10.57	-2.03
144	5720	5.355	5.790	8.59	10.57	-1.98

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

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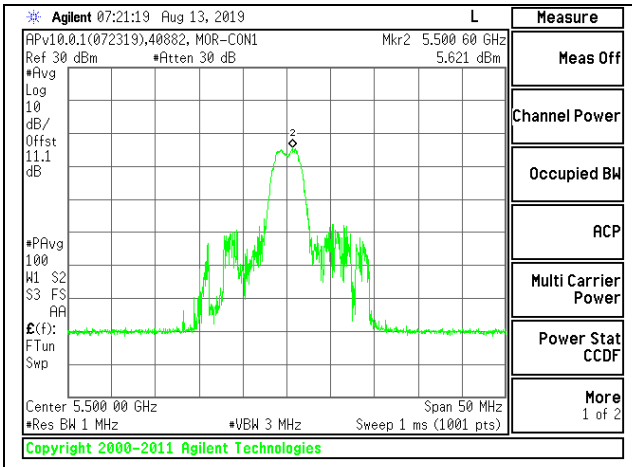
LOW CHANNEL



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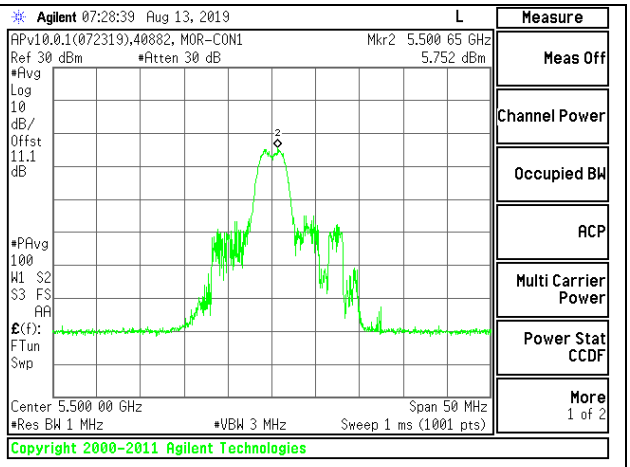
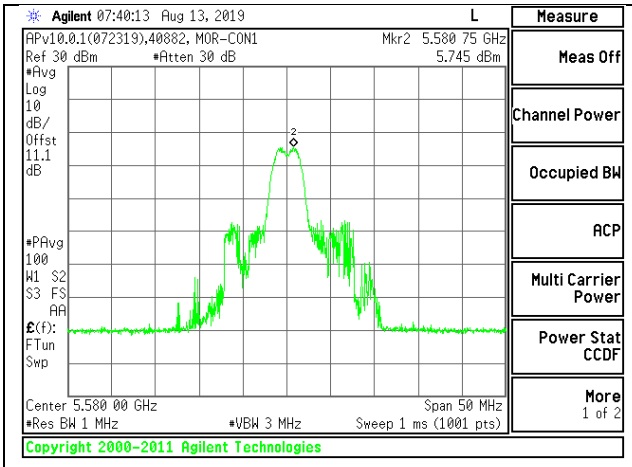


LOW CHANNEL CHAIN 1

MID CHANNEL



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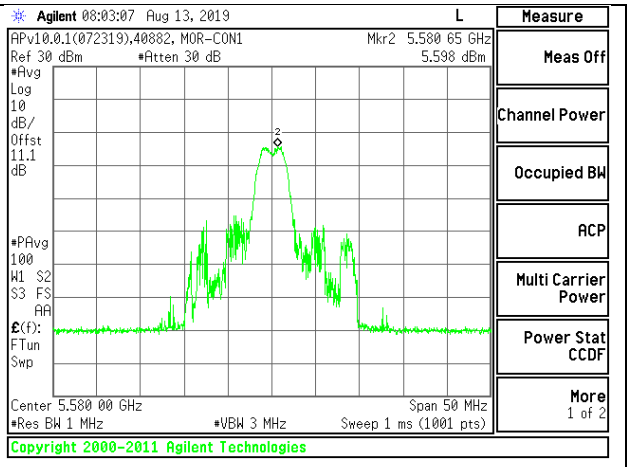

MID CHANNEL CHAIN 1

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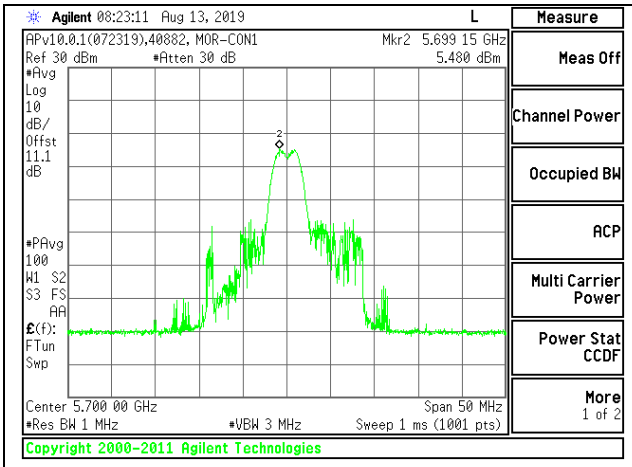
HIGH CHANNEL



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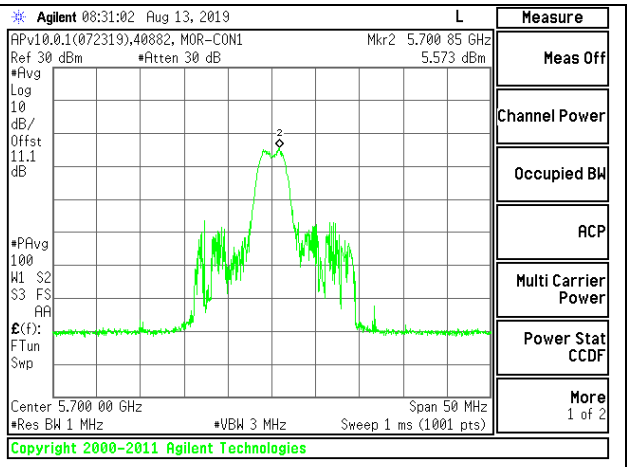
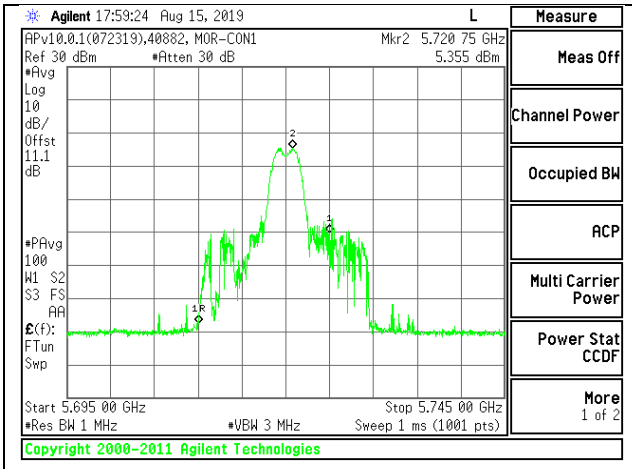
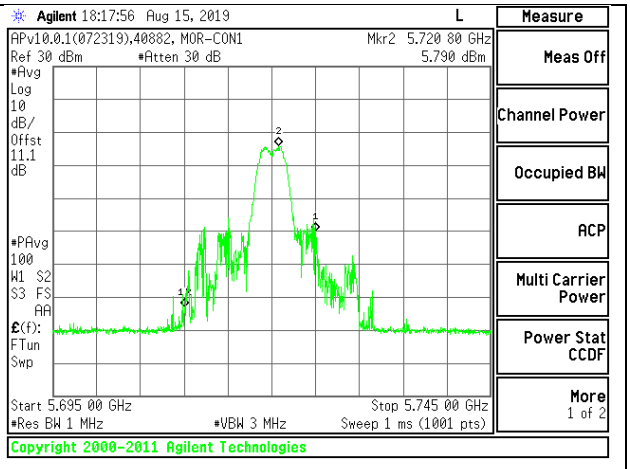


HIGH CHANNEL CHAIN 1

CHANNEL 144



CHANNEL 144 CHAIN 0



CHANNEL 144 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 8

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	16.94	6.43	6.43	22.86	10.57
Mid	5580	16.75	6.43	6.43	22.81	10.57
High	5700	16.69	6.43	6.43	22.79	10.57
144	5720	13.48	6.43	6.43	21.87	10.57

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	9.16	8.81	12.00	22.86	-10.86
Mid	5580	9.16	9.18	12.18	22.81	-10.63
High	5700	9.17	9.15	12.17	22.79	-10.62
144	5720	9.02	9.25	12.15	21.87	-9.72

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	6.652	6.346	9.51	10.57	-1.06
Mid	5580	6.960	7.027	10.00	10.57	-0.57
High	5700	7.097	6.868	9.99	10.57	-0.58
144	5720	-4.637	-3.290	-0.90	10.57	-11.47

Note: As channel 144 (5720MHz) is only in the 5.6 band up to 5725MHz, the actual straddle channel 144 26dB and 99% BW calculated by: (OBW/2) + 5MHz

Note – The straddle channel peak emissions is located in the 5.8 GHz band.

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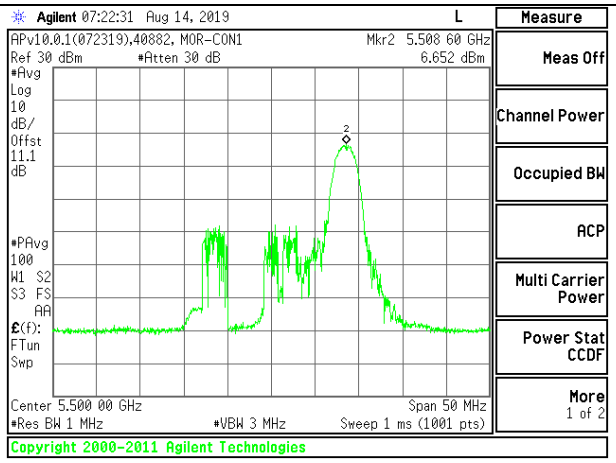
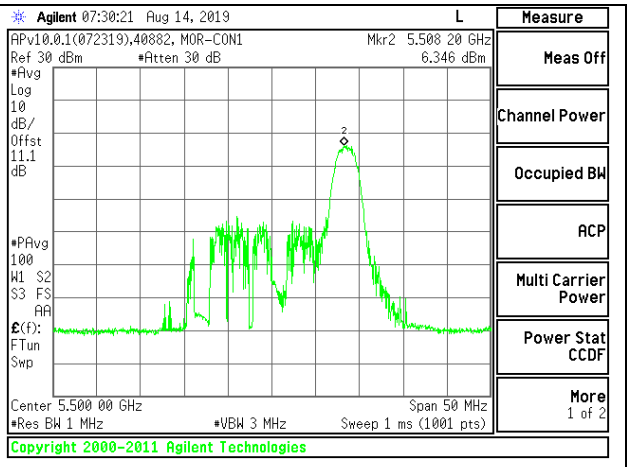
LOW CHANNEL

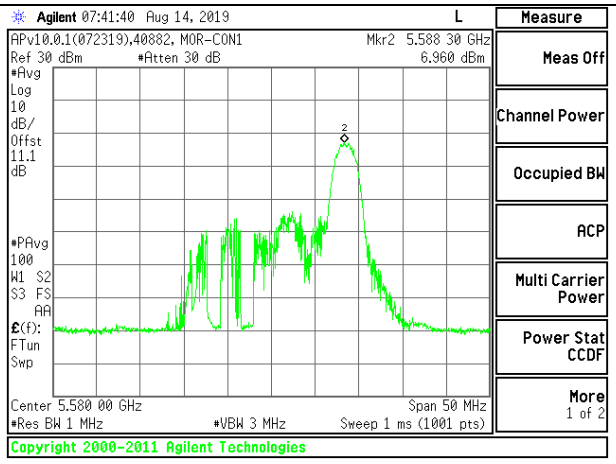


LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

MID CHANNEL



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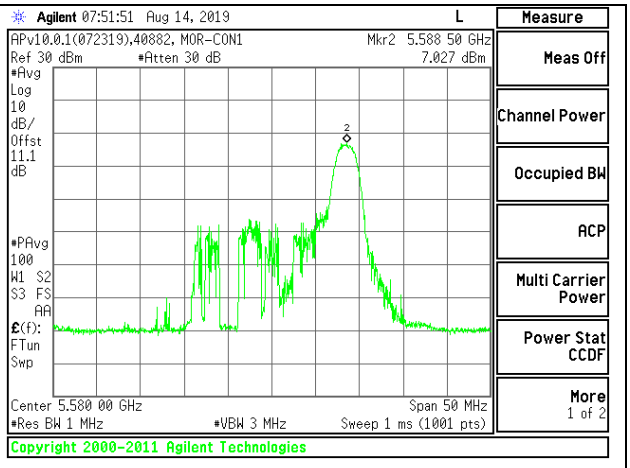

MID CHANNEL CHAIN 1

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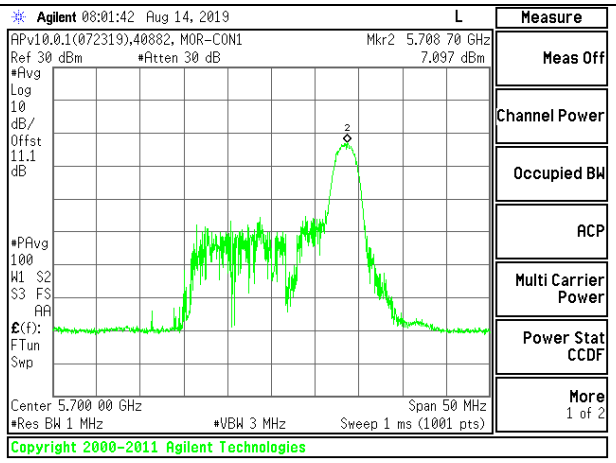
HIGH CHANNEL



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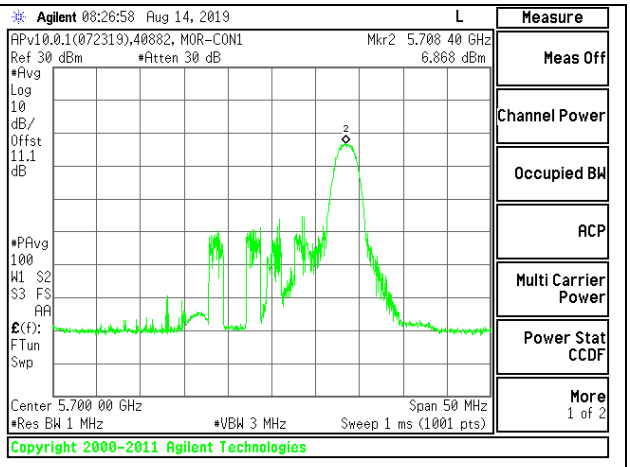

HIGH CHANNEL CHAIN 1

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9.1.3. 802.11ax HE40 MODE IN THE 5.6 GHz BAND (FCC)

2TX Antenna 1 + Antenna 2 SU MODE

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	21.40	6.43	6.43	23.57	10.57
Mid	5550	21.30	6.43	6.43	23.57	10.57
High	5670	21.50	6.43	6.43	23.57	10.57
142	5710	21.50	6.43	6.43	23.57	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	16.69	16.90	19.81	23.57	-3.76
Mid	5550	16.71	16.82	19.78	23.57	-3.79
High	5670	16.81	16.68	19.76	23.57	-3.81
142	5710	16.60	16.69	19.66	23.57	-3.91

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	4.297	3.210	6.80	10.57	-3.77
Mid	5550	4.520	4.856	7.70	10.57	-2.87
High	5670	5.000	4.081	7.58	10.57	-2.99
142	5710	3.607	3.596	6.61	10.57	-3.96

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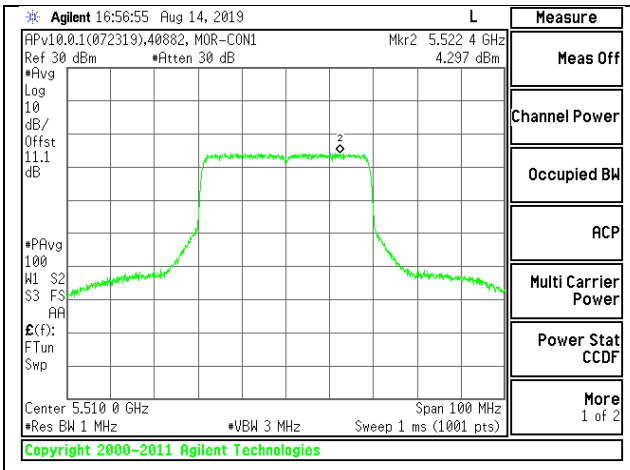
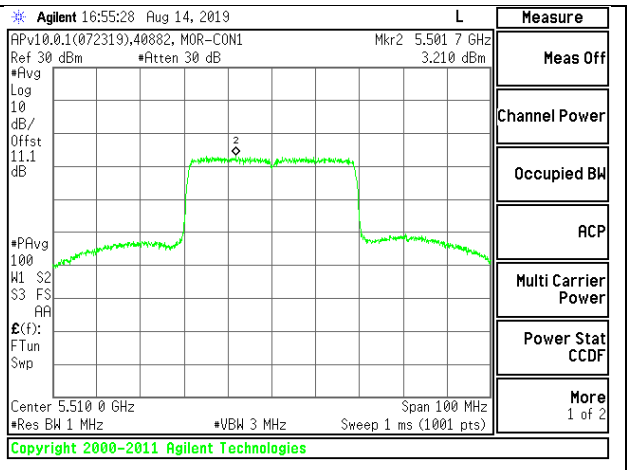
LOW CHANNEL

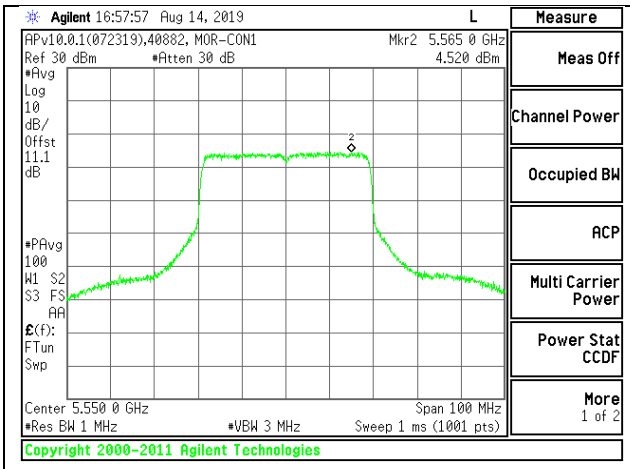


LOW CHANNEL CHAIN 0

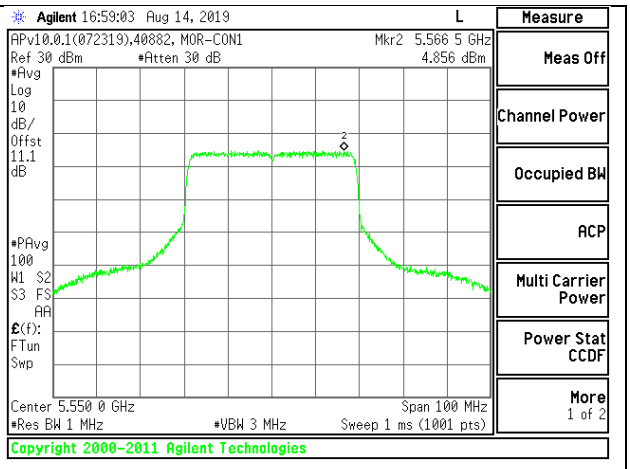


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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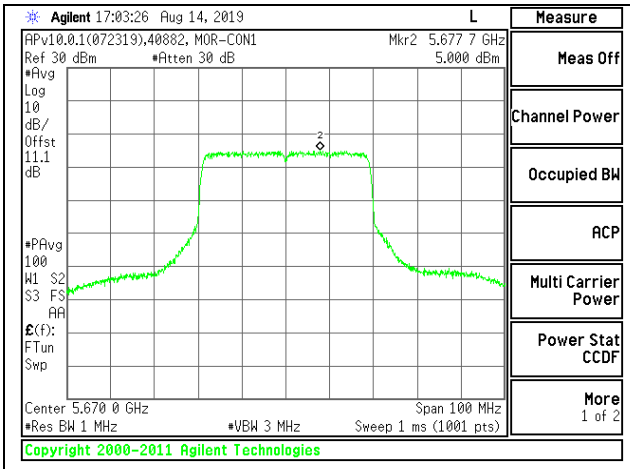
HIGH CHANNEL



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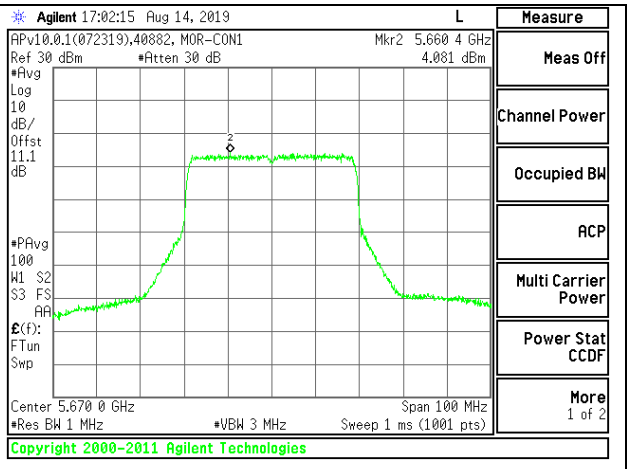
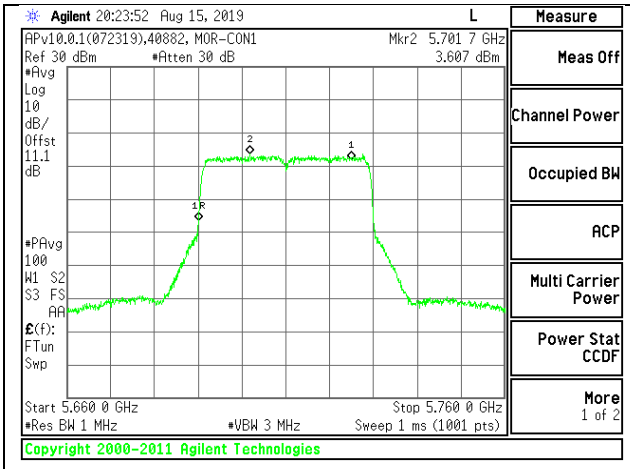
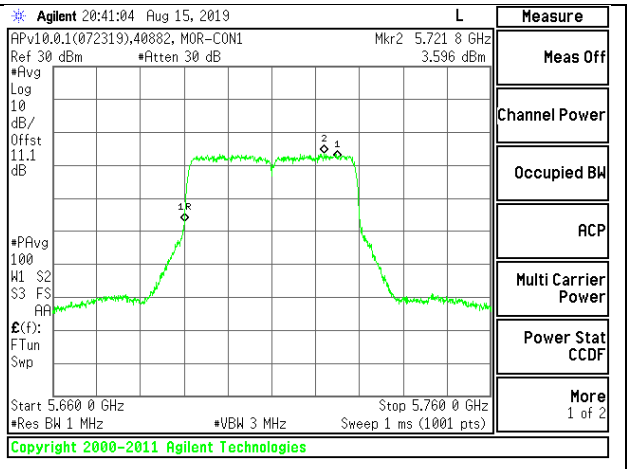


HIGH CHANNEL CHAIN 1

CHANNEL 142



CHANNEL 142 CHAIN 0



CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 484-Tones, RU Index 65

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	21.40	6.43	6.43	23.57	10.57
Mid	5550	21.30	6.43	6.43	23.57	10.57
High	5670	21.50	6.43	6.43	23.57	10.57
142	5710	21.50	6.43	6.43	23.57	10.57

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	16.55	16.93	19.75	23.57	-3.82
Mid	5550	16.83	16.95	19.90	23.57	-3.67
High	5670	16.78	16.70	19.75	23.57	-3.82
142	5710	16.12	16.14	19.14	23.57	-4.43

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	4.260	3.368	6.85	10.57	-3.72
Mid	5550	3.523	4.648	7.13	10.57	-3.44
High	5670	3.900	4.188	7.06	10.57	-3.51
142	5710	3.129	3.954	6.57	10.57	-4.00

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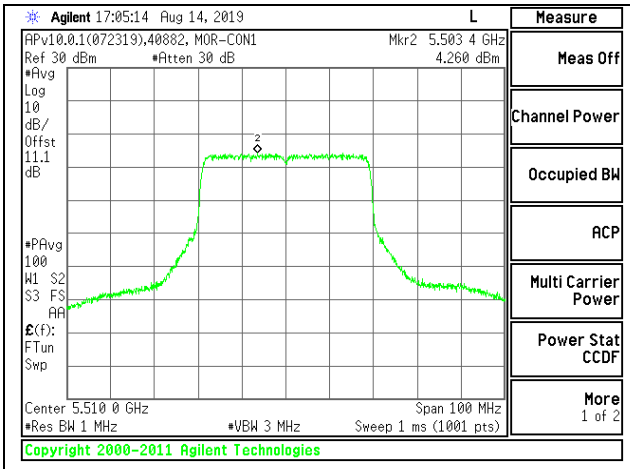
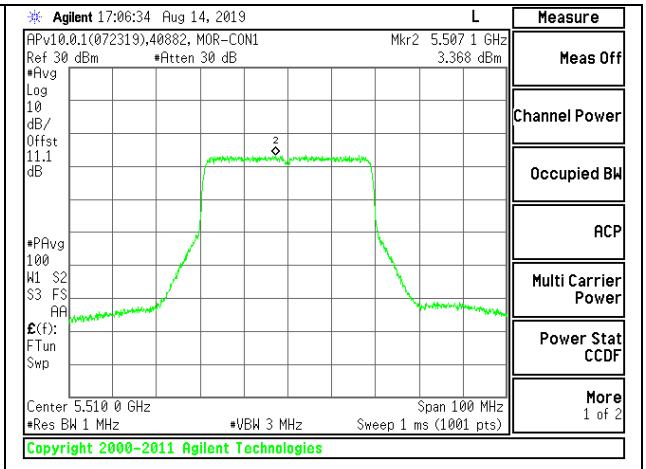
LOW CHANNEL

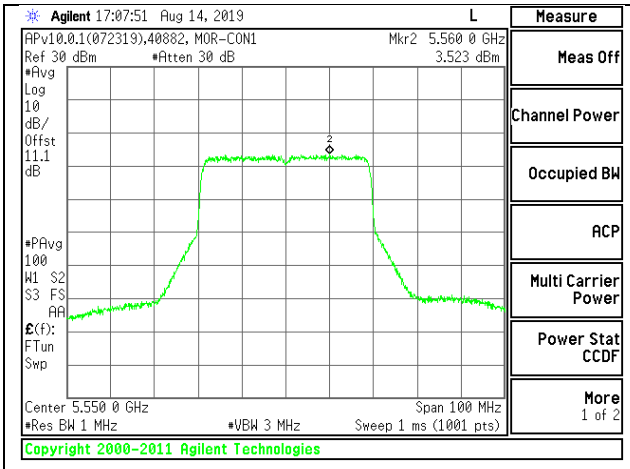


LOW CHANNEL CHAIN 0

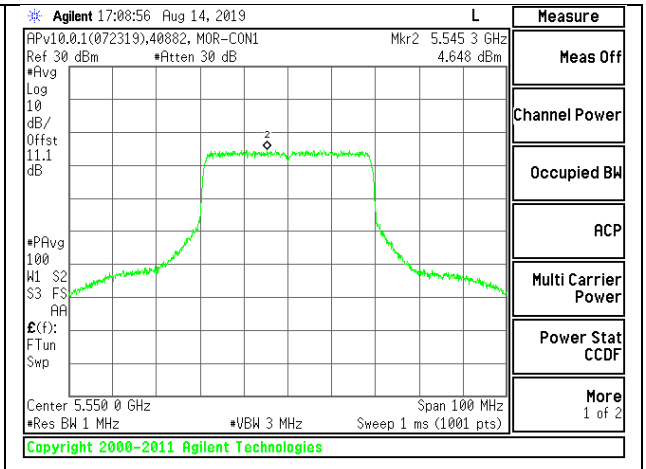


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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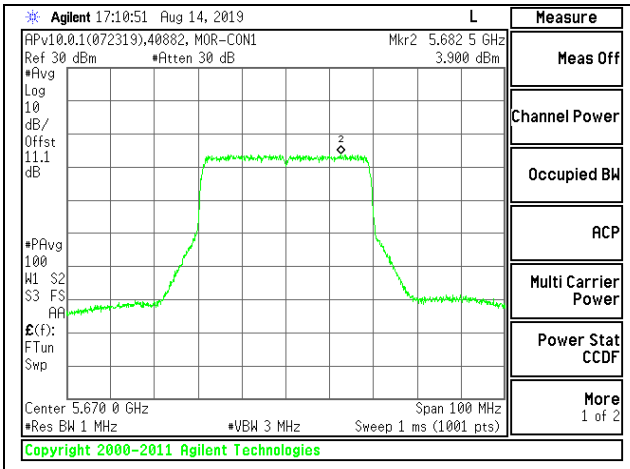
HIGH CHANNEL



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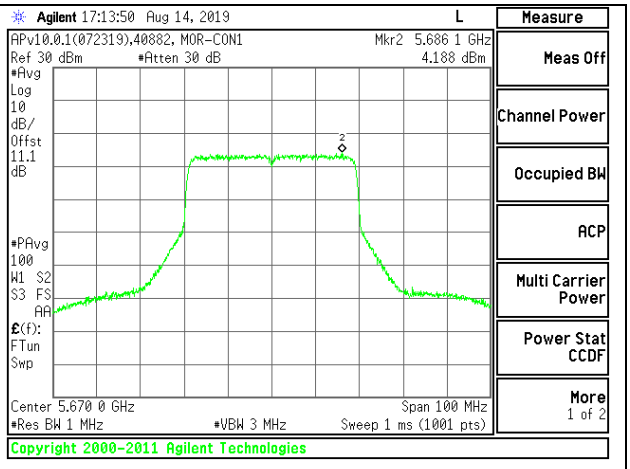
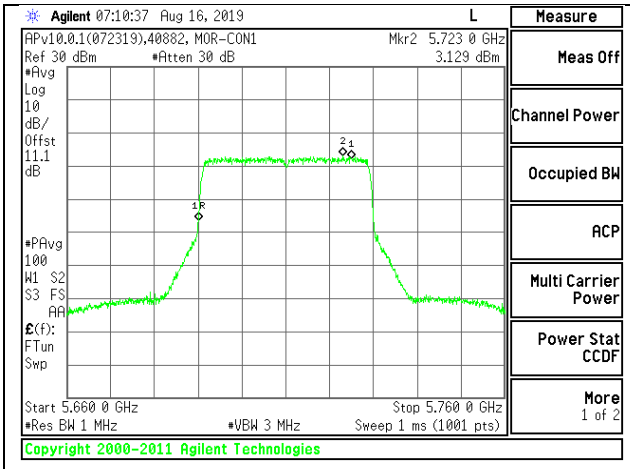
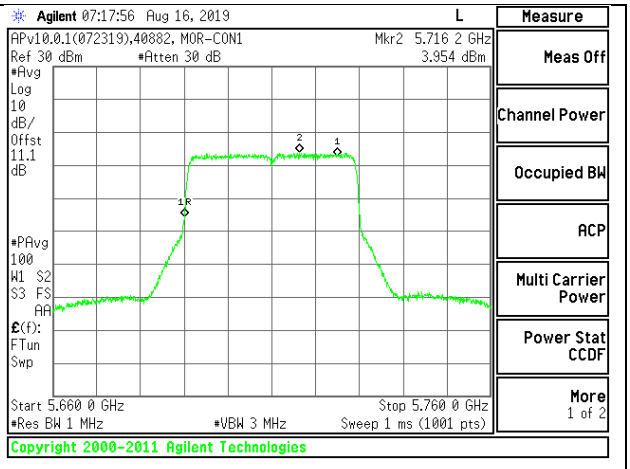


HIGH CHANNEL CHAIN 1

CHANNEL 142



CHANNEL 142 CHAIN 0



CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 242-Tones, RU Index 61

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	21.40	6.43	6.43	23.57	10.57
Mid	5550	21.30	6.43	6.43	23.57	10.57
High	5670	21.50	6.43	6.43	23.57	10.57
142	5710	21.50	6.43	6.43	23.57	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	17.85	17.80	20.84	23.57	-2.73
Mid	5550	17.68	17.85	20.78	23.57	-2.79
High	5670	17.92	17.77	20.86	23.57	-2.71
142	5710	17.67	17.73	20.71	23.57	-2.86

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	6.041	5.933	9.00	10.57	-1.57
Mid	5550	5.947	5.730	8.85	10.57	-1.72
High	5670	6.249	6.226	9.25	10.57	-1.32
142	5710	6.330	6.045	9.20	10.57	-1.37

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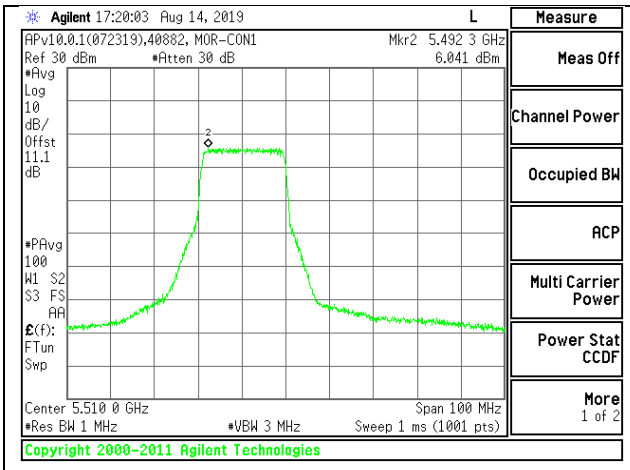
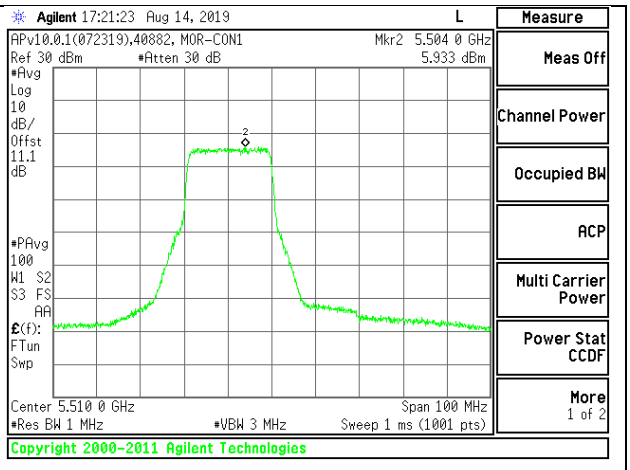
LOW CHANNEL

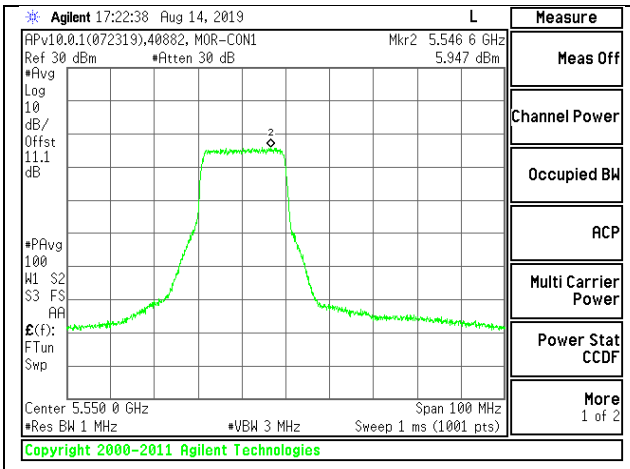


LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

MID CHANNEL



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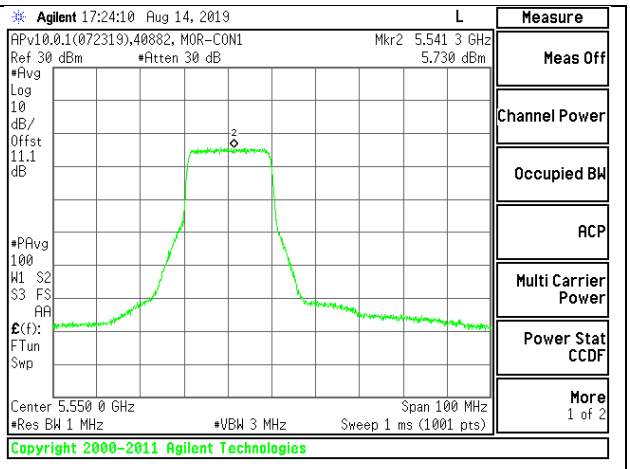

MID CHANNEL CHAIN 1

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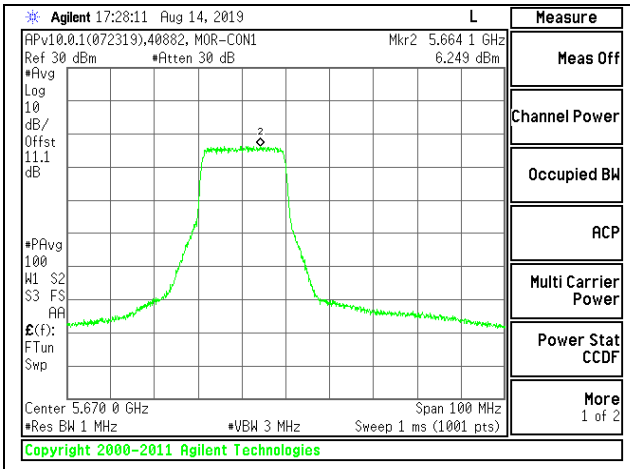
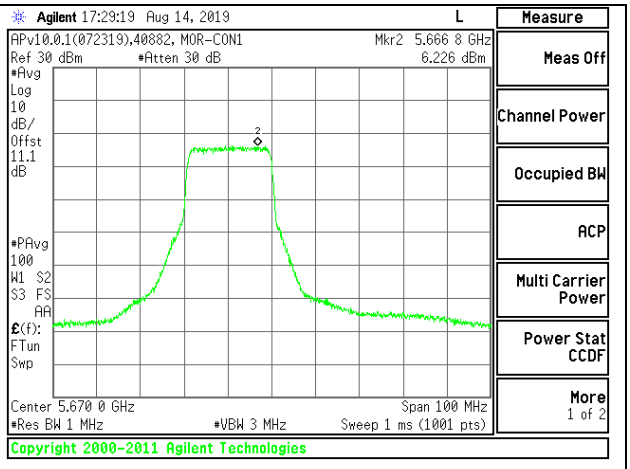
HIGH CHANNEL

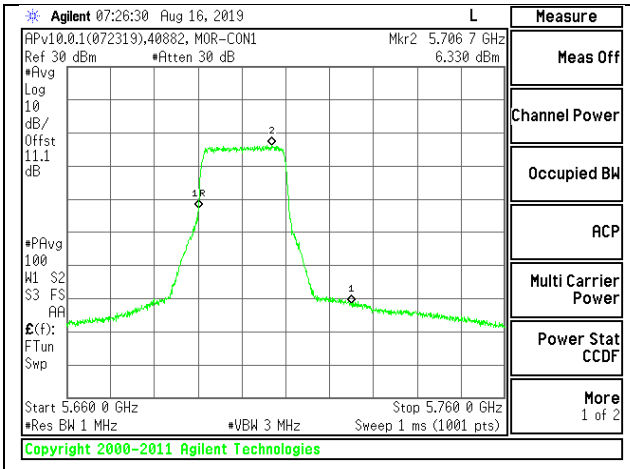


HIGH CHANNEL CHAIN 0

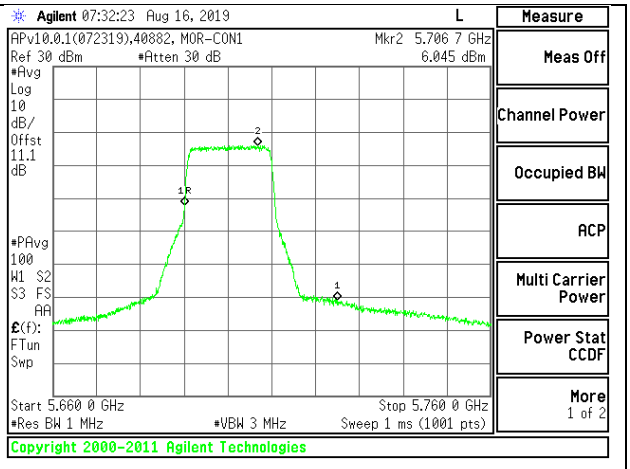


HIGH CHANNEL CHAIN 1

CHANNEL 142



CHANNEL 142 CHAIN 0



CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 242-Tones, RU Index 62

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	21.40	6.43	6.43	23.57	10.57
Mid	5550	21.30	6.43	6.43	23.57	10.57
High	5670	21.50	6.43	6.43	23.57	10.57
142	5710	21.50	6.43	6.43	23.57	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	17.76	17.79	20.79	23.57	-2.78
Mid	5550	17.85	17.90	20.89	23.57	-2.68
High	5670	17.92	17.89	20.92	23.57	-2.65
142	5710	17.76	17.84	20.81	23.57	-2.76

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	6.123	7.395	9.82	10.57	-0.75
Mid	5550	6.431	5.899	9.18	10.57	-1.39
High	5670	7.009	6.456	9.75	10.57	-0.82
142	5710	6.616	6.482	9.56	10.57	-1.01

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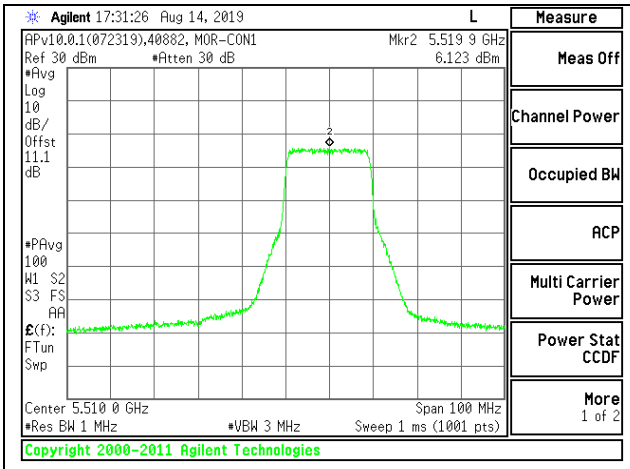
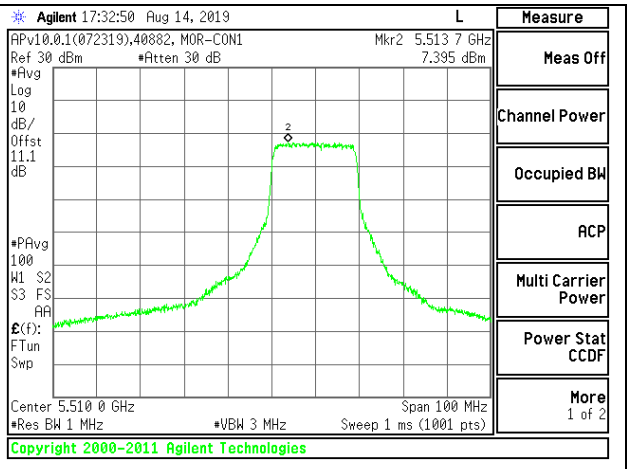
LOW CHANNEL

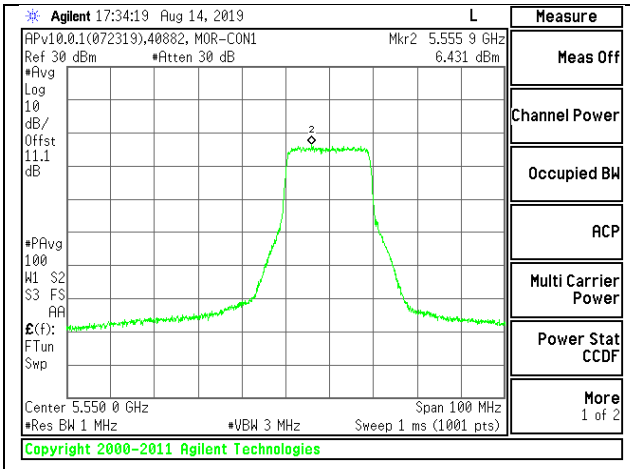


LOW CHANNEL CHAIN 0

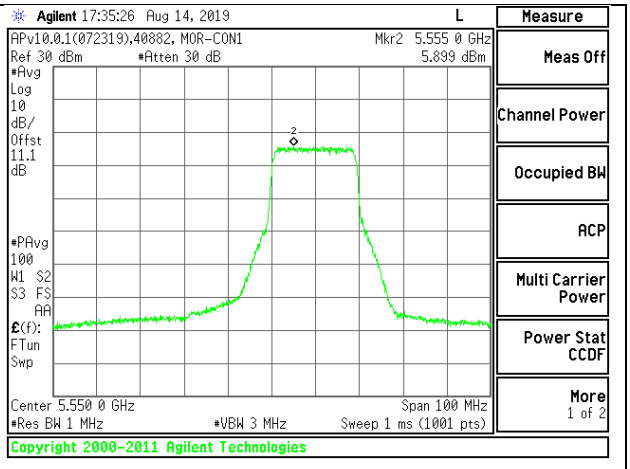


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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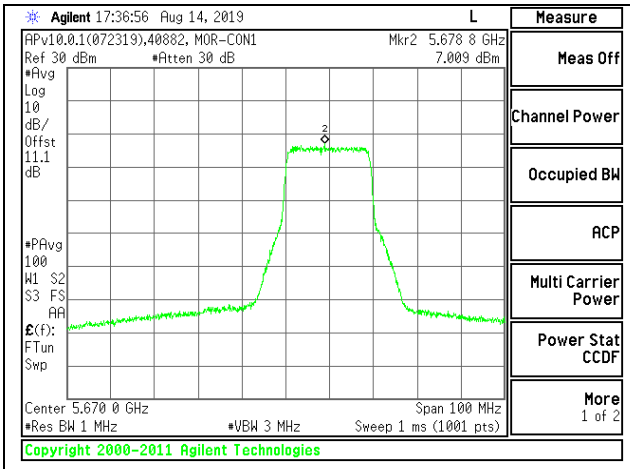
HIGH CHANNEL



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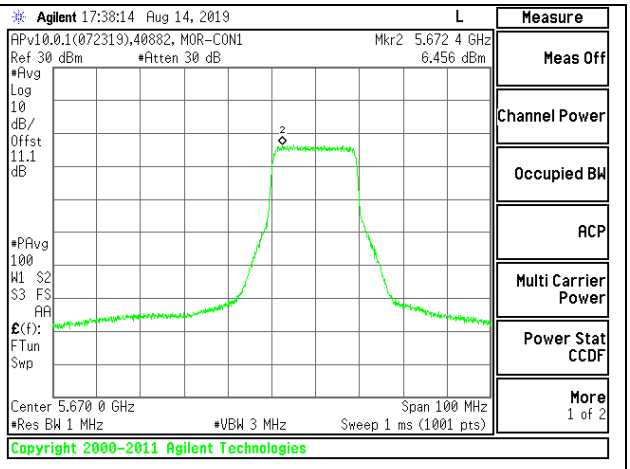
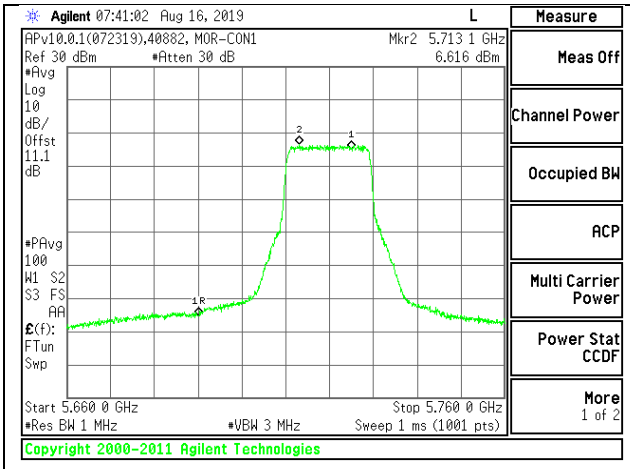


HIGH CHANNEL CHAIN 1

CHANNEL 142



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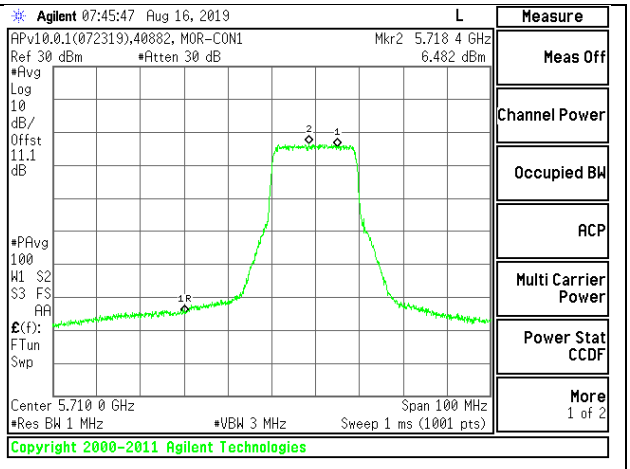

CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 106-Tones, RU Index 53

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	21.40	6.43	6.43	23.57	10.57
Mid	5550	21.30	6.43	6.43	23.57	10.57
High	5670	21.50	6.43	6.43	23.57	10.57
142	5710	21.50	6.43	6.43	23.57	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	15.45	15.45	18.46	23.57	-5.11
Mid	5550	15.33	15.49	18.42	23.57	-5.15
High	5670	15.32	15.49	18.42	23.57	-5.15
142	5710	15.22	15.28	18.26	23.57	-5.31

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	6.509	6.430	9.48	10.57	-1.09
Mid	5550	6.897	6.680	9.80	10.57	-0.77
High	5670	7.107	6.364	9.76	10.57	-0.81
142	5710	7.195	6.785	10.01	10.57	-0.56

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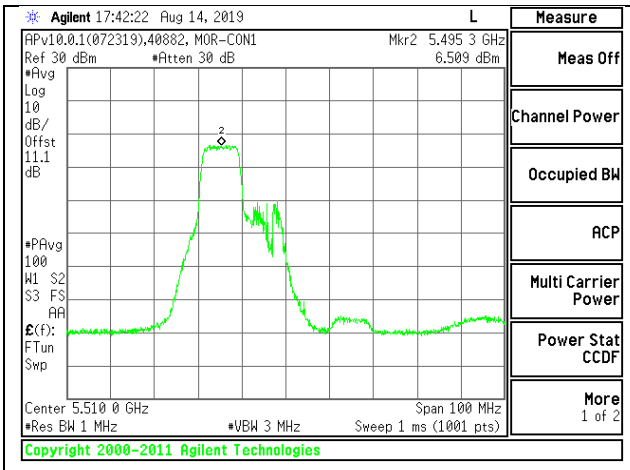
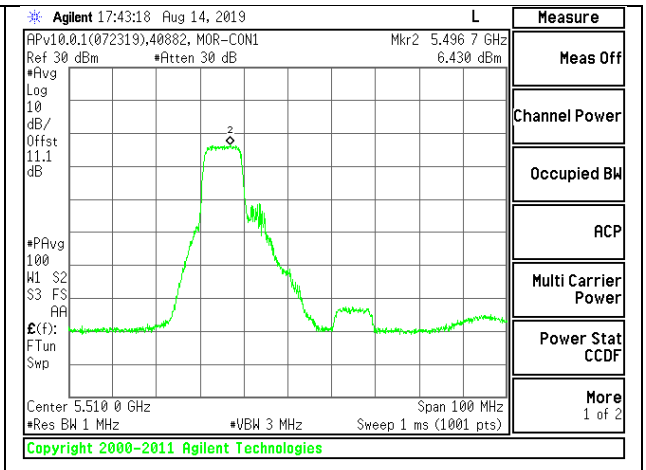
LOW CHANNEL

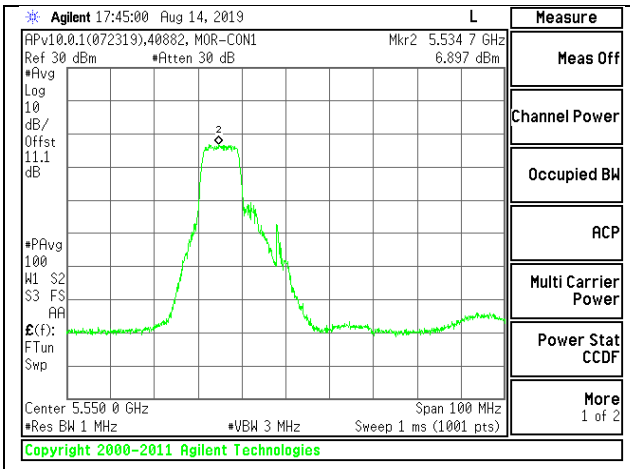


LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

MID CHANNEL



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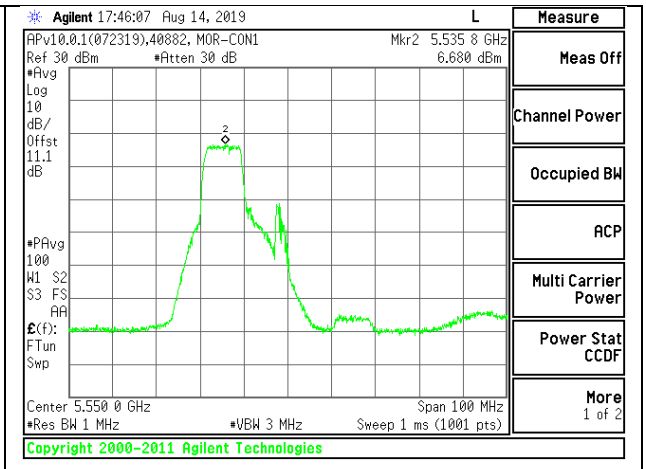

MID CHANNEL CHAIN 1

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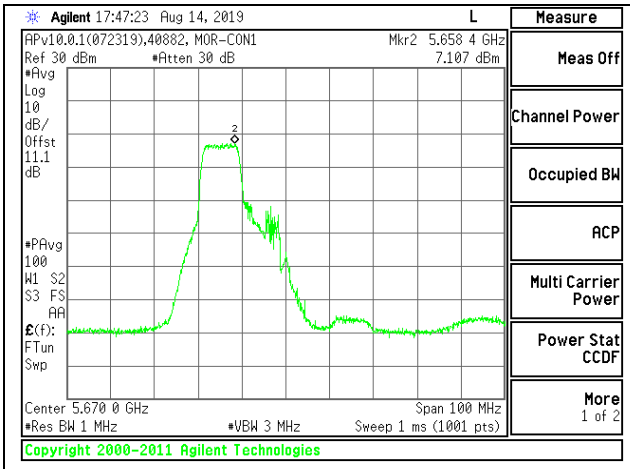
HIGH CHANNEL



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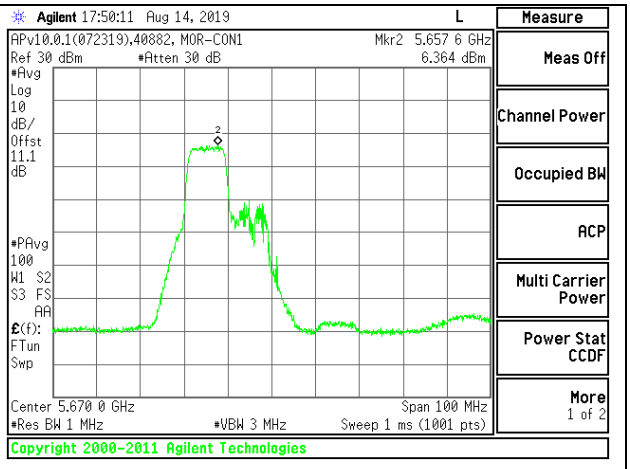
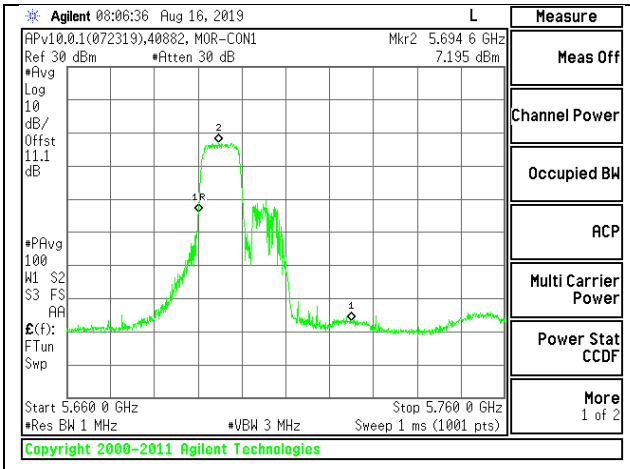
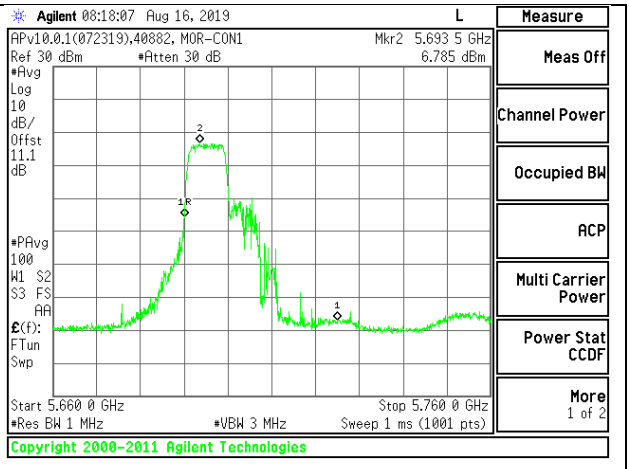


HIGH CHANNEL CHAIN 1

CHANNEL 142



CHANNEL 142 CHAIN 0



CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 106-Tones, RU Index 54

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	21.40	6.43	6.43	23.57	10.57
Mid	5550	21.30	6.43	6.43	23.57	10.57
High	5670	21.50	6.43	6.43	23.57	10.57
142	5710	21.50	6.43	6.43	23.57	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	15.43	15.58	18.52	23.57	-5.05
Mid	5550	15.35	15.55	18.46	23.57	-5.11
High	5670	15.47	15.50	18.50	23.57	-5.07
142	5710	15.30	15.42	18.37	23.57	-5.20

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	6.885	6.603	9.76	10.57	-0.81
Mid	5550	7.001	6.565	9.80	10.57	-0.77
High	5670	7.121	6.200	9.70	10.57	-0.87
142	5710	6.769	6.344	9.57	10.57	-1.00

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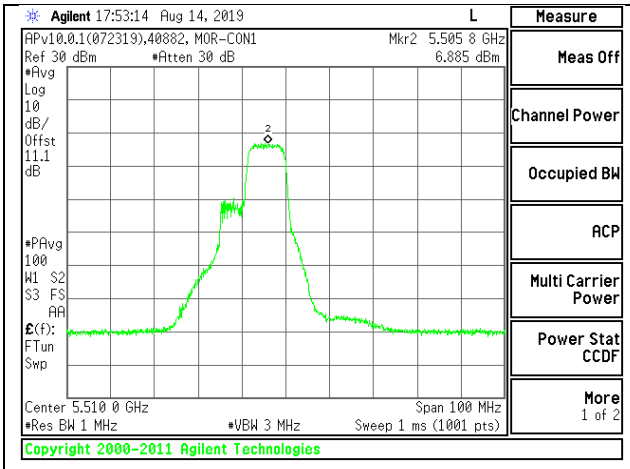
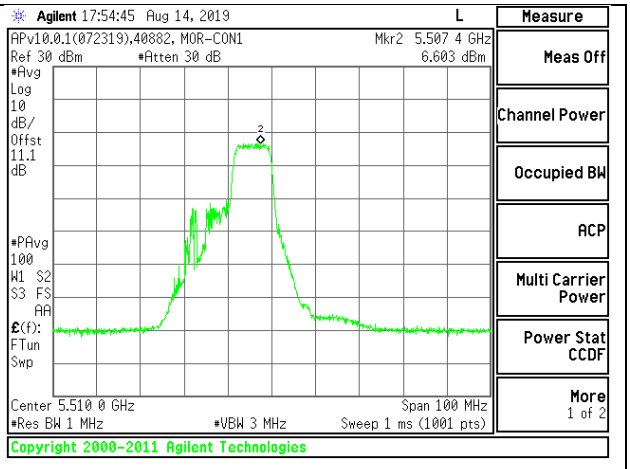
LOW CHANNEL

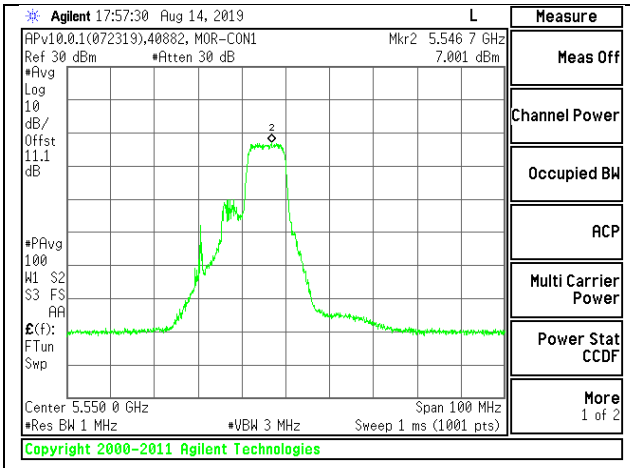


LOW CHANNEL CHAIN 0

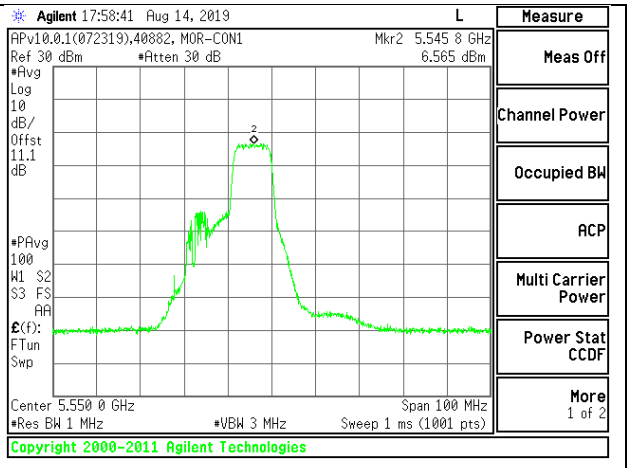


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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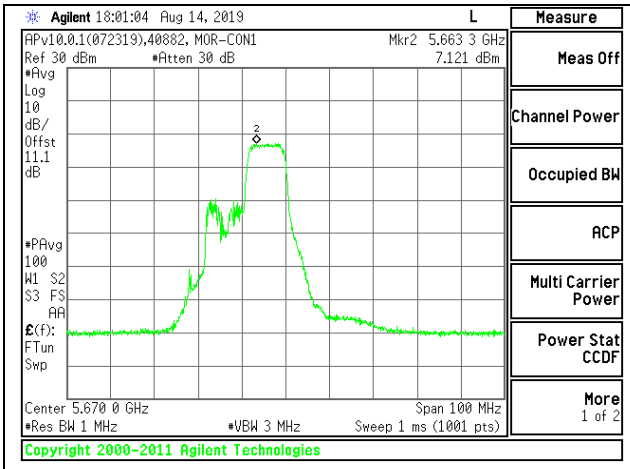
HIGH CHANNEL



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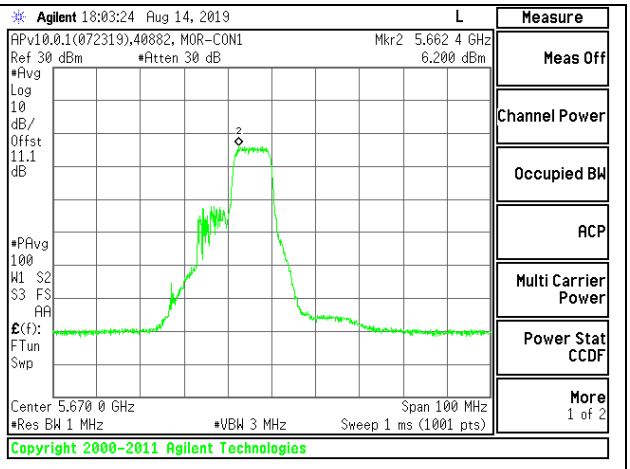
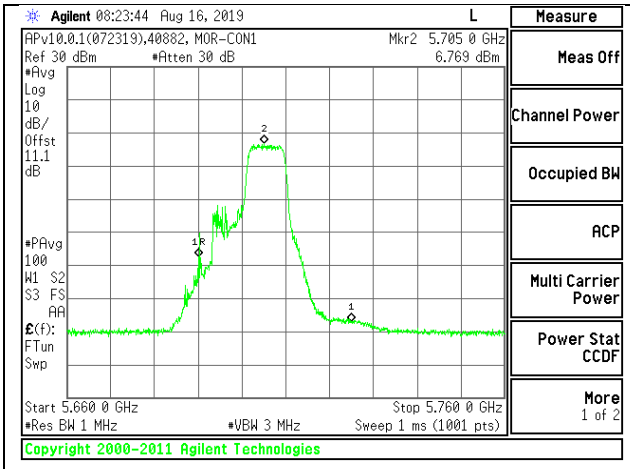
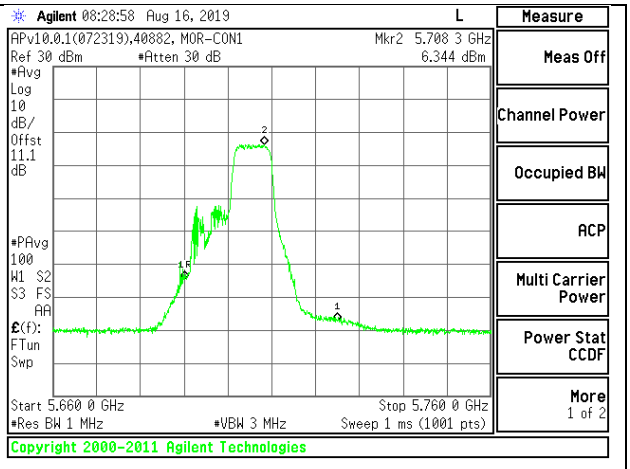


HIGH CHANNEL CHAIN 1

CHANNEL 142



CHANNEL 142 CHAIN 0



CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 106-Tones, RU Index 56

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	21.40	6.43	6.43	23.57	10.57
Mid	5550	21.30	6.43	6.43	23.57	10.57
High	5670	21.50	6.43	6.43	23.57	10.57
142	5710	21.50	6.43	6.43	23.57	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	15.32	15.45	18.40	23.57	-5.17
Mid	5550	15.51	15.51	18.52	23.57	-5.05
High	5670	15.51	15.54	18.54	23.57	-5.03
142	5710	15.45	15.44	18.46	23.57	-5.11

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	6.213	6.241	9.24	10.57	-1.33
Mid	5550	7.169	6.498	9.86	10.57	-0.71
High	5670	6.794	7.317	10.07	10.57	-0.50
142	5710	7.178	6.945	10.07	10.57	-0.50

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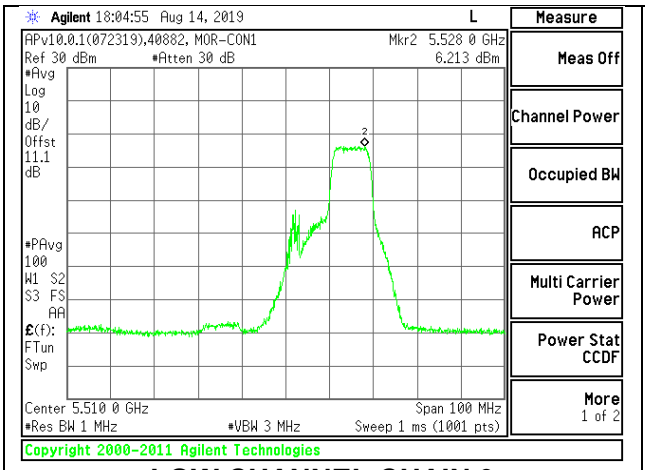
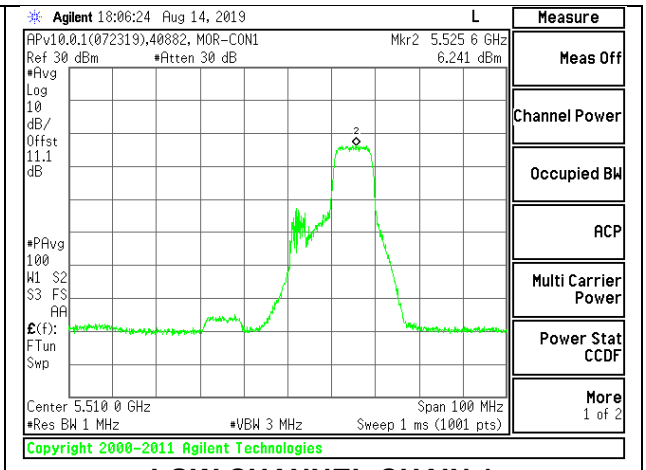
LOW CHANNEL

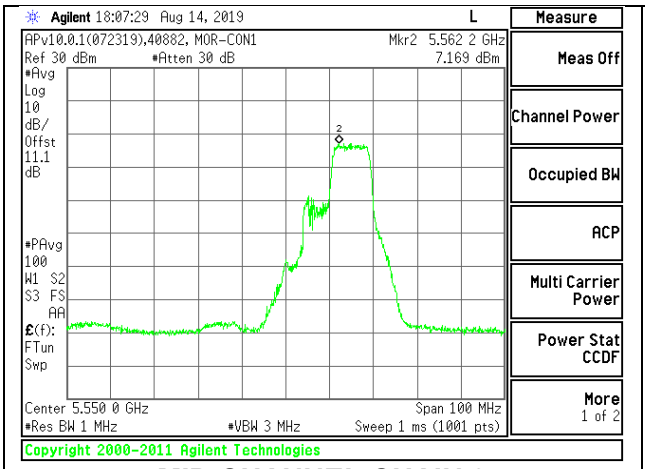


LOW CHANNEL CHAIN 0

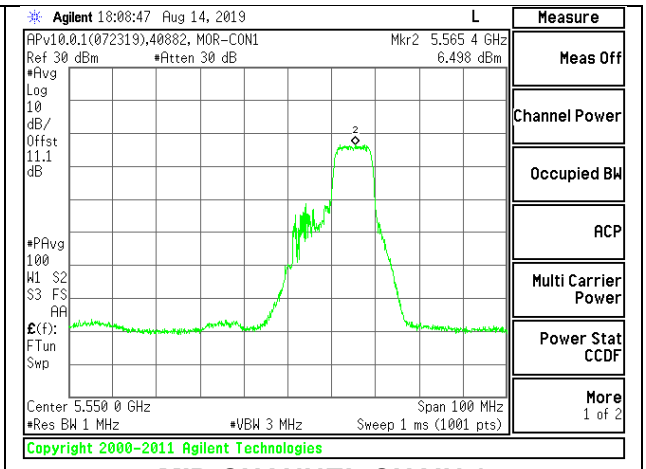


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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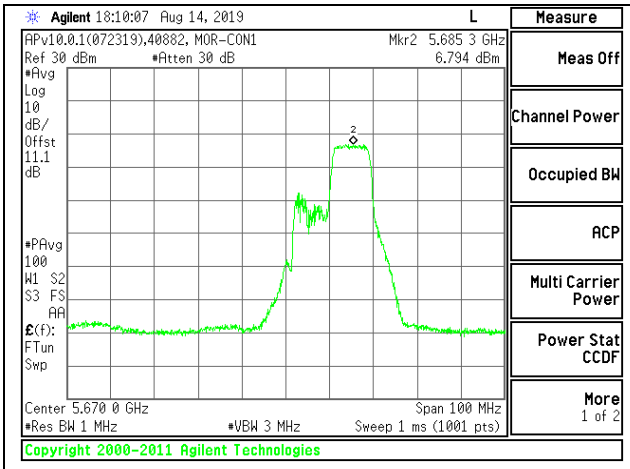
HIGH CHANNEL



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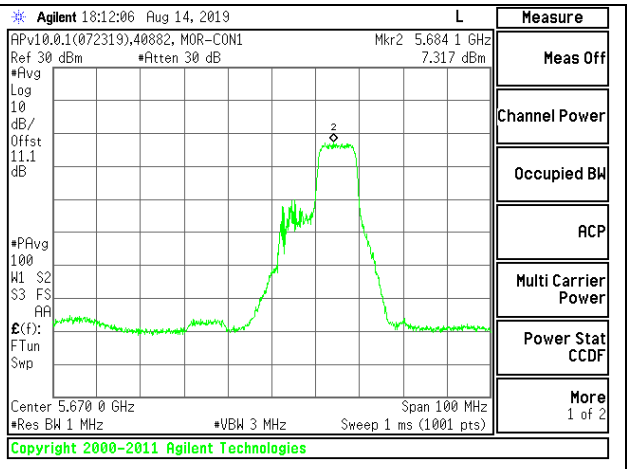
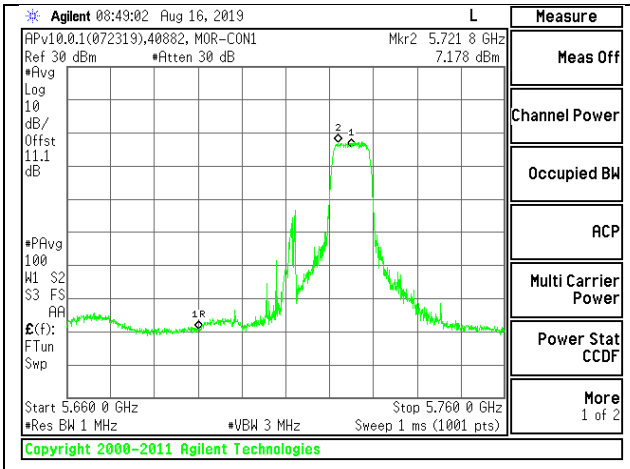
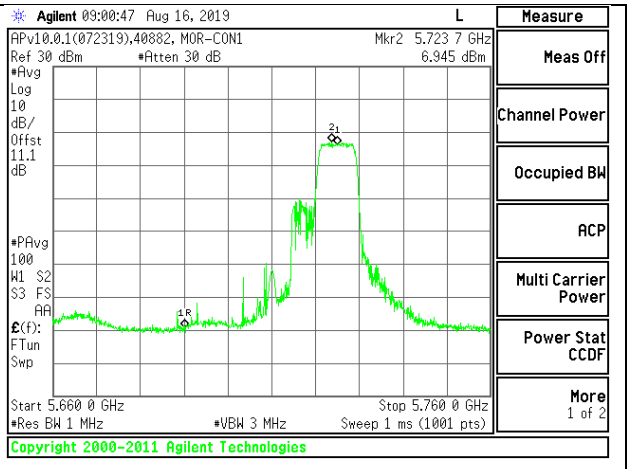


HIGH CHANNEL CHAIN 1

CHANNEL 142



CHANNEL 142 CHAIN 0



CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 52-Tones, RU Index 37

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	21.40	6.43	6.43	23.57	10.57
Mid	5550	21.30	6.43	6.43	23.57	10.57
High	5670	21.50	6.43	6.43	23.57	10.57
142	5710	21.50	6.43	6.43	23.57	10.57

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	12.40	12.60	15.51	23.57	-8.06
Mid	5550	12.71	12.98	15.86	23.57	-7.71
High	5670	12.78	13.03	15.92	23.57	-7.65
142	5710	12.49	12.67	15.59	23.57	-7.98

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	6.670	6.269	9.48	10.57	-1.09
Mid	5550	7.256	6.671	9.98	10.57	-0.59
High	5670	6.629	6.881	9.77	10.57	-0.80
142	5710	7.160	6.872	10.03	10.57	-0.54

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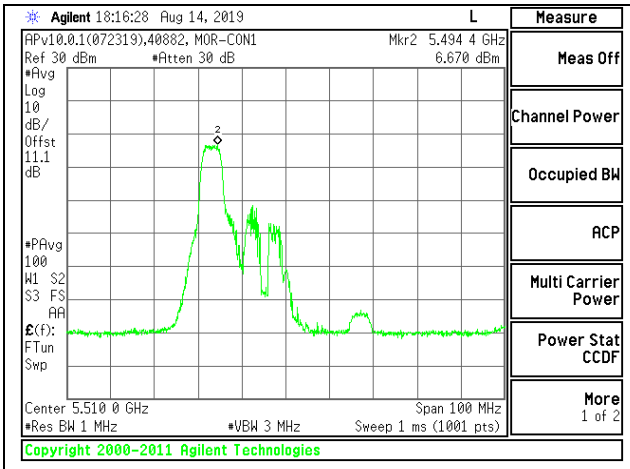
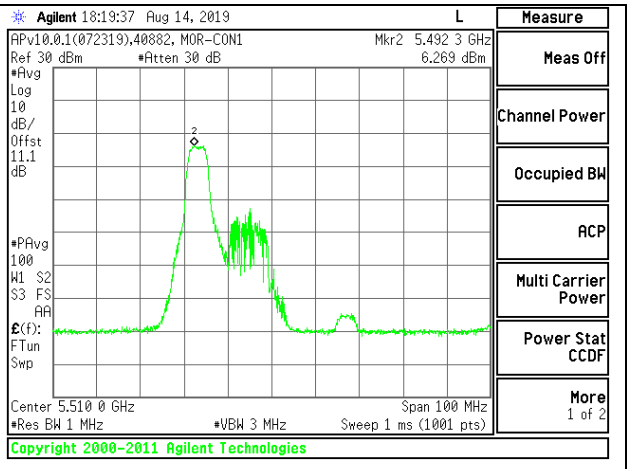
LOW CHANNEL

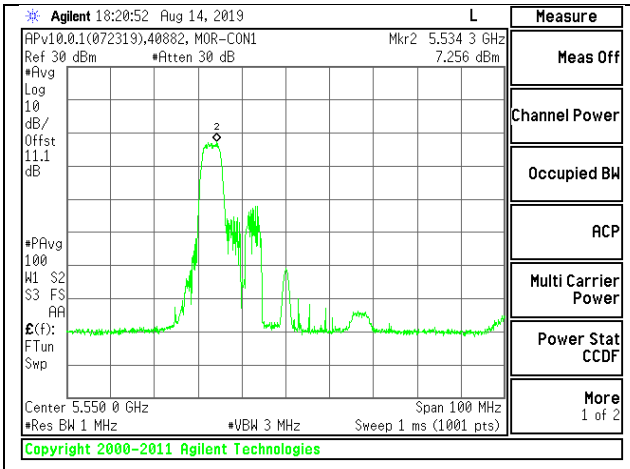


LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

MID CHANNEL



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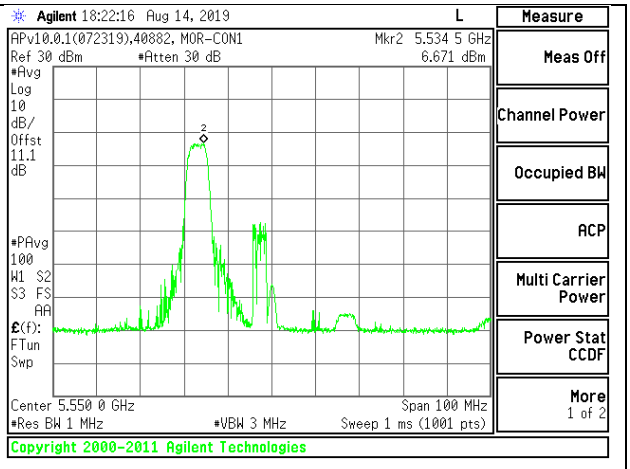

MID CHANNEL CHAIN 1

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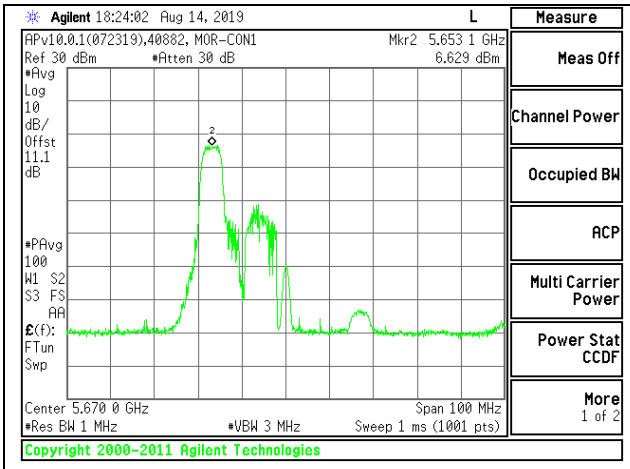
HIGH CHANNEL



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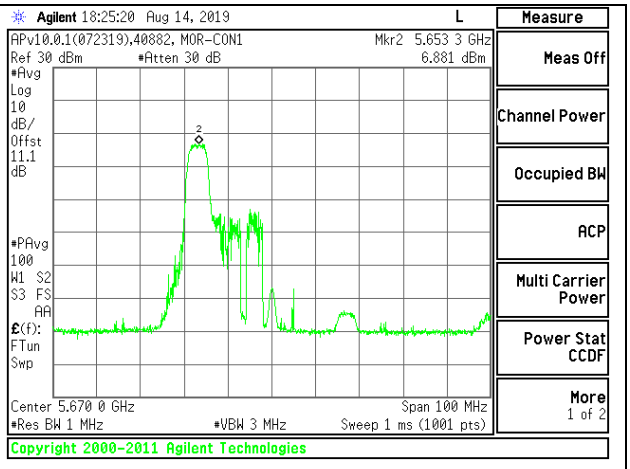
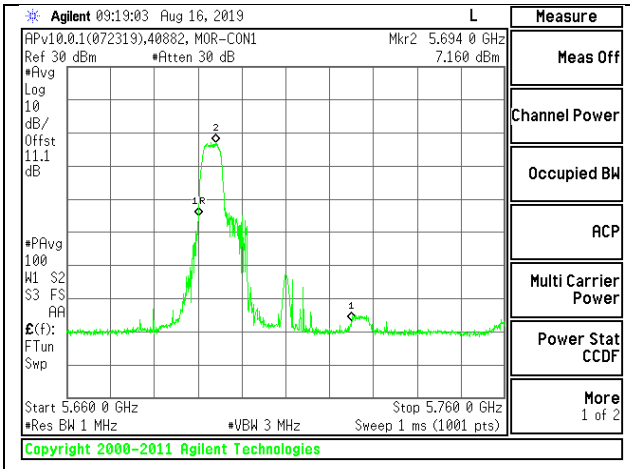
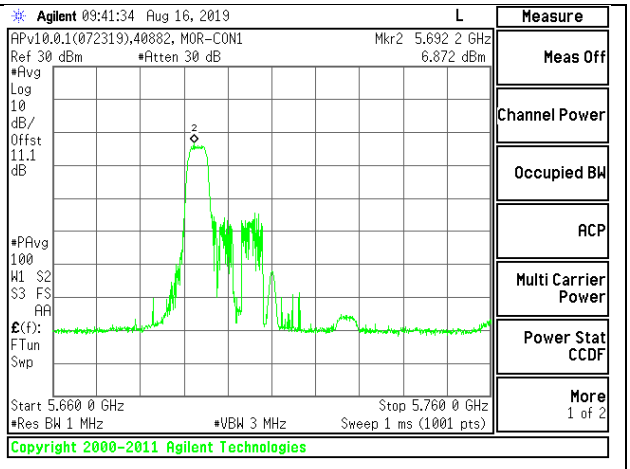


HIGH CHANNEL CHAIN 1

CHANNEL 142



CHANNEL 142 CHAIN 0



CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 52-Tones, RU Index 40

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	21.40	6.43	6.43	23.57	10.57
Mid	5550	21.30	6.43	6.43	23.57	10.57
High	5670	21.50	6.43	6.43	23.57	10.57
142	5710	21.50	6.43	6.43	23.57	10.57

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	12.85	12.85	15.86	23.57	-7.71
Mid	5550	12.67	12.93	15.81	23.57	-7.76
High	5670	12.76	12.93	15.86	23.57	-7.71
142	5710	12.21	12.48	15.36	23.57	-8.21

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	7.015	6.837	9.94	10.57	-0.63
Mid	5550	6.619	6.981	9.81	10.57	-0.76
High	5670	6.992	6.778	9.90	10.57	-0.67
142	5710	6.262	6.390	9.34	10.57	-1.23

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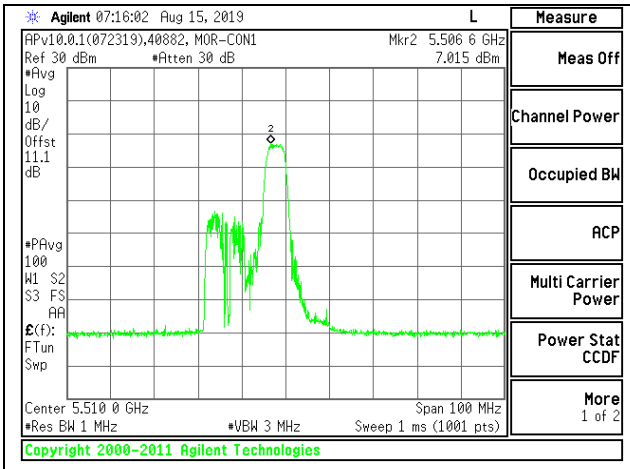
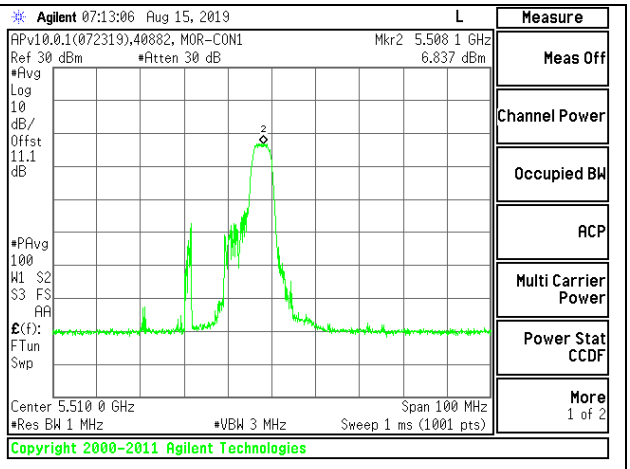
LOW CHANNEL

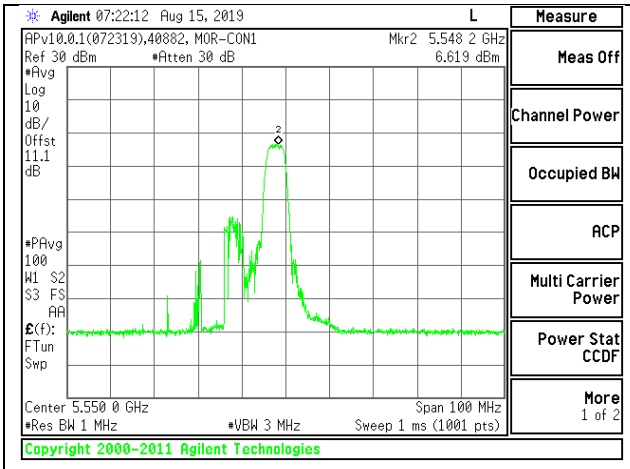


LOW CHANNEL CHAIN 0

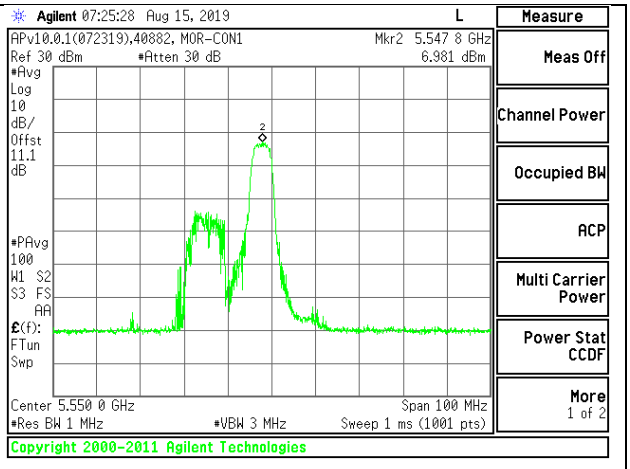


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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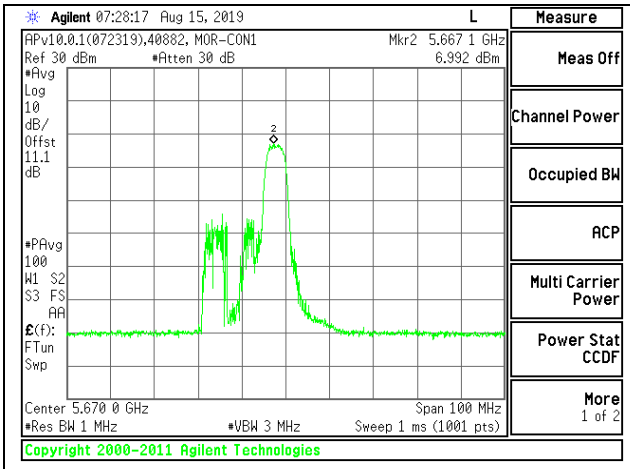
HIGH CHANNEL



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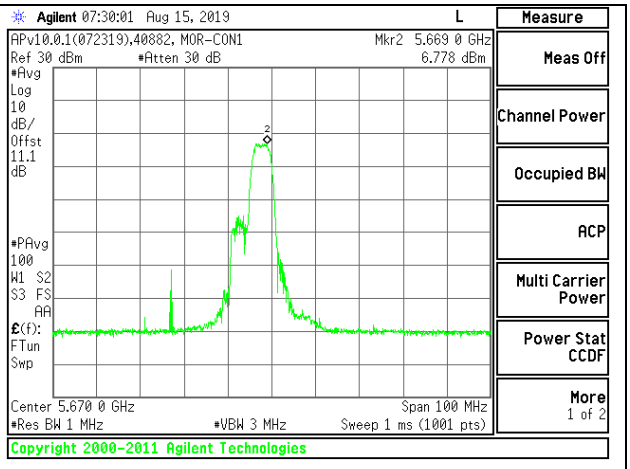
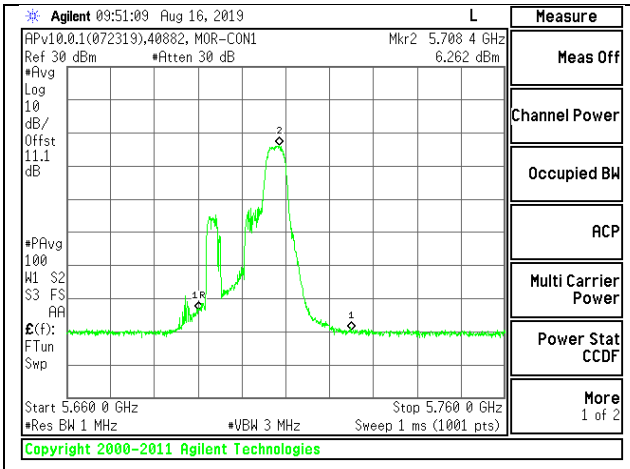
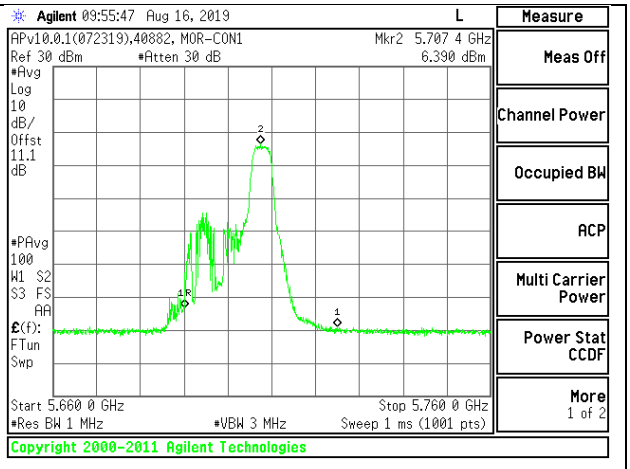


HIGH CHANNEL CHAIN 1

CHANNEL 142



CHANNEL 142 CHAIN 0



CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 52-Tones, RU Index 44

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	21.40	6.43	6.43	23.57	10.57
Mid	5550	21.30	6.43	6.43	23.57	10.57
High	5670	21.50	6.43	6.43	23.57	10.57
142	5710	21.50	6.43	6.43	23.57	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	12.58	12.74	15.67	23.57	-7.90
Mid	5550	12.76	12.86	15.82	23.57	-7.75
High	5670	12.85	12.99	15.93	23.57	-7.64
142	5710	12.76	12.79	15.79	23.57	-7.78

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	6.679	6.879	9.79	10.57	-0.78
Mid	5550	6.559	7.040	9.82	10.57	-0.75
High	5670	6.837	6.094	9.49	10.57	-1.08
142	5710	2.773	3.237	6.02	10.57	-4.55

Note – The straddle channel peak emissions is located in the 5.8 GHz band.

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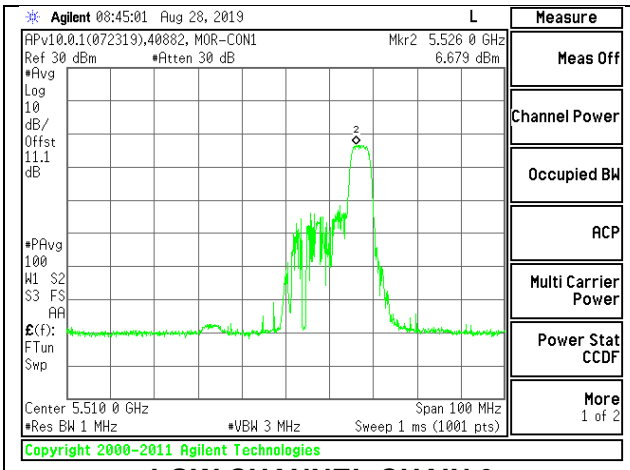
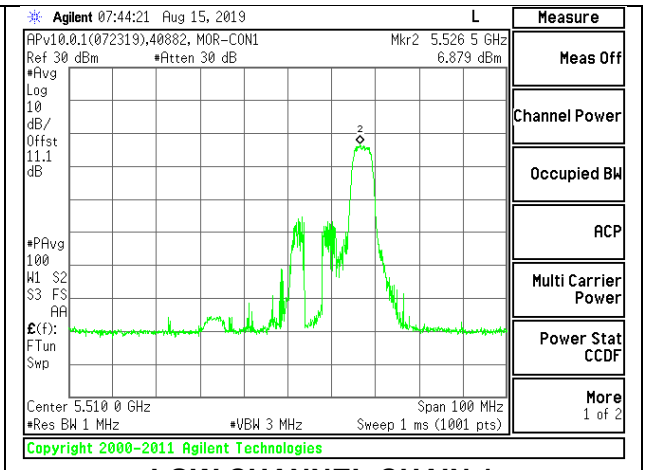
LOW CHANNEL

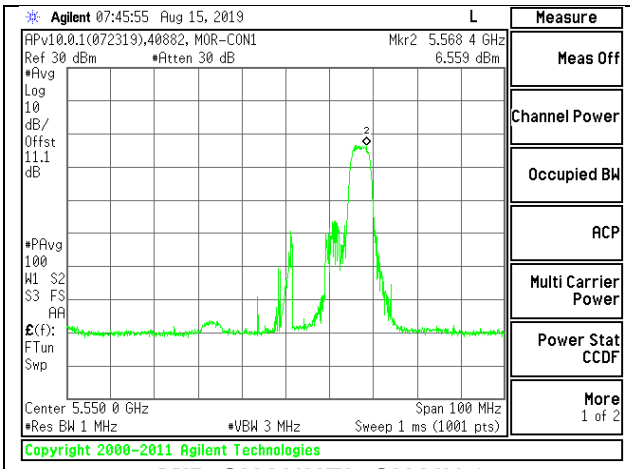


LOW CHANNEL CHAIN 0

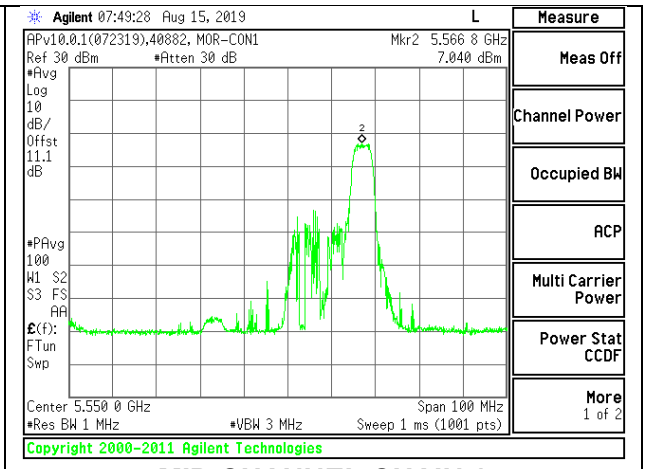


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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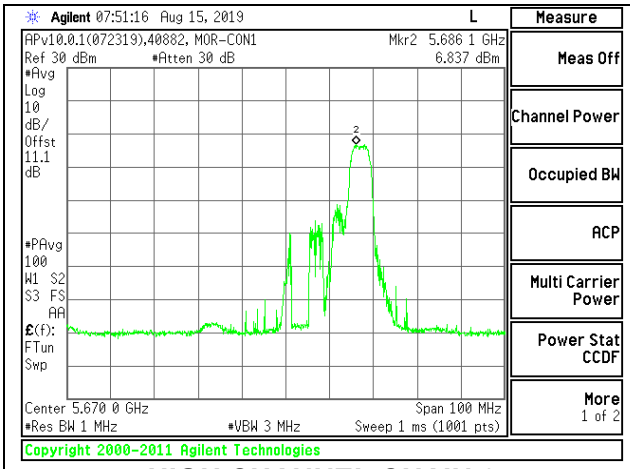
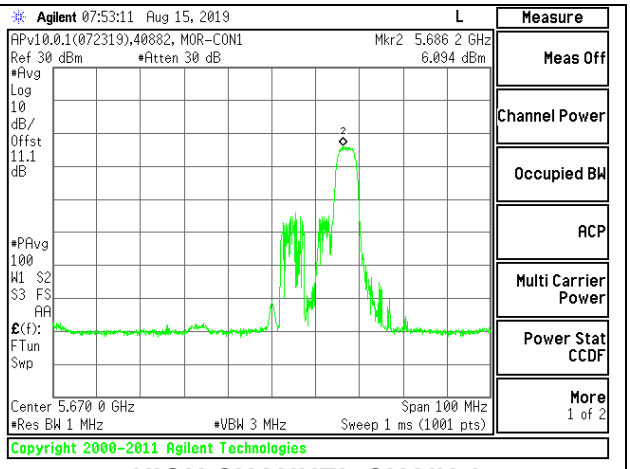
HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 0

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	21.40	6.43	6.43	23.57	10.57
Mid	5550	21.30	6.43	6.43	23.57	10.57
High	5670	21.50	6.43	6.43	23.57	10.57
142	5710	21.50	6.43	6.43	23.57	10.57

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	10.43	10.39	13.42	23.57	-10.15
Mid	5550	10.46	10.53	13.51	23.57	-10.06
High	5670	9.99	10.48	13.25	23.57	-10.32
142	5710	10.05	10.44	13.26	23.57	-10.31

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	6.279	6.423	9.36	10.57	-1.21
Mid	5550	6.886	6.805	9.86	10.57	-0.71
High	5670	6.781	6.843	9.82	10.57	-0.75
142	5710	6.128	6.677	9.42	10.57	-1.15

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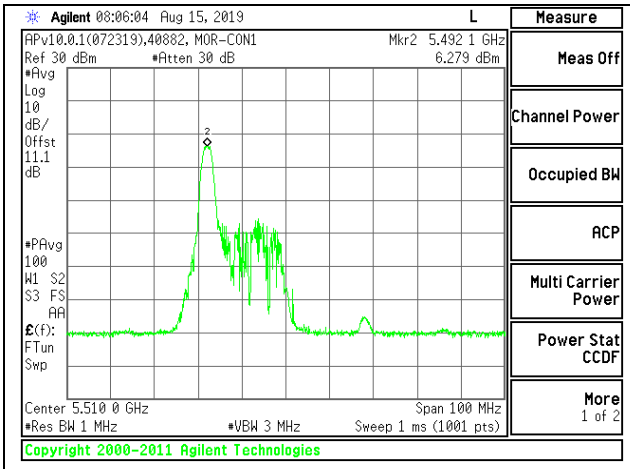
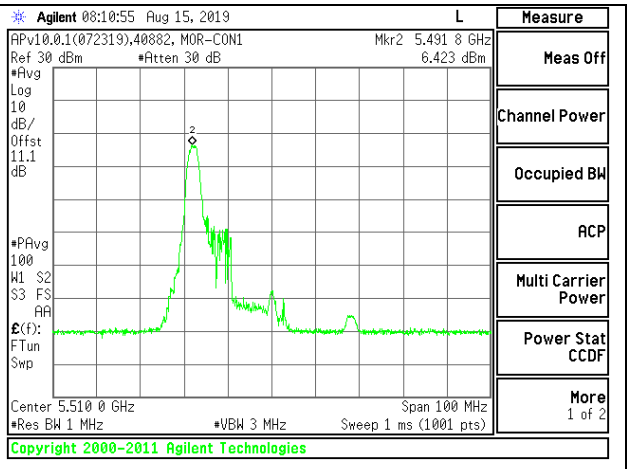
LOW CHANNEL

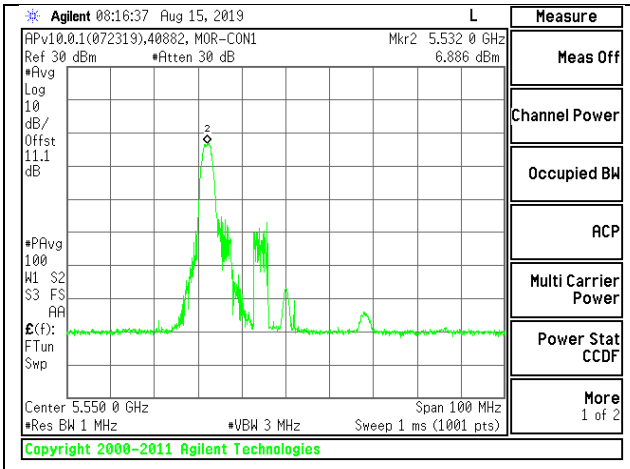


LOW CHANNEL CHAIN 0

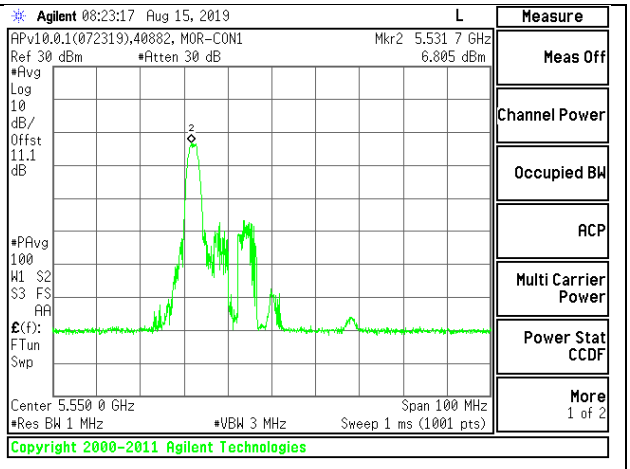


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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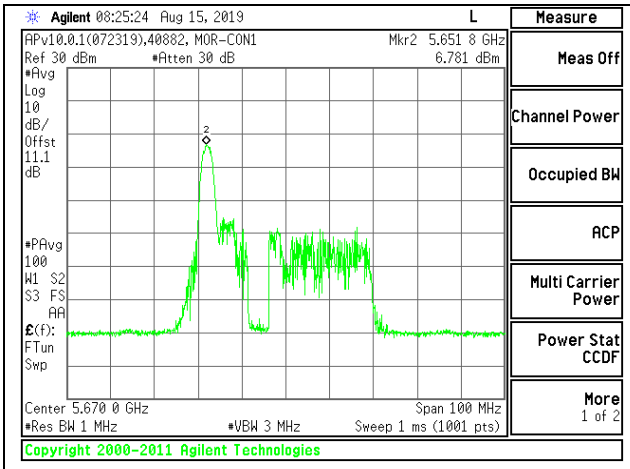
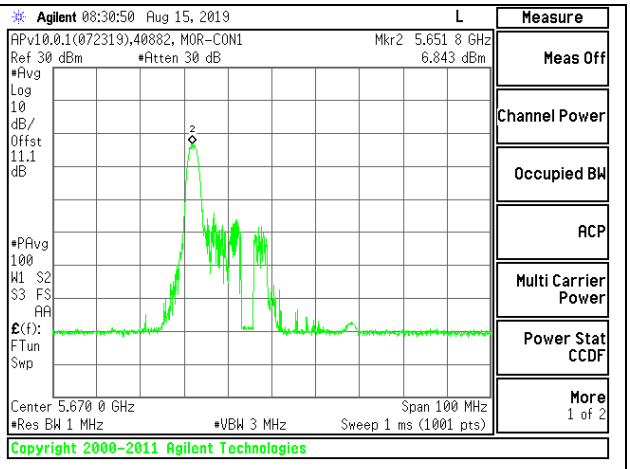
HIGH CHANNEL

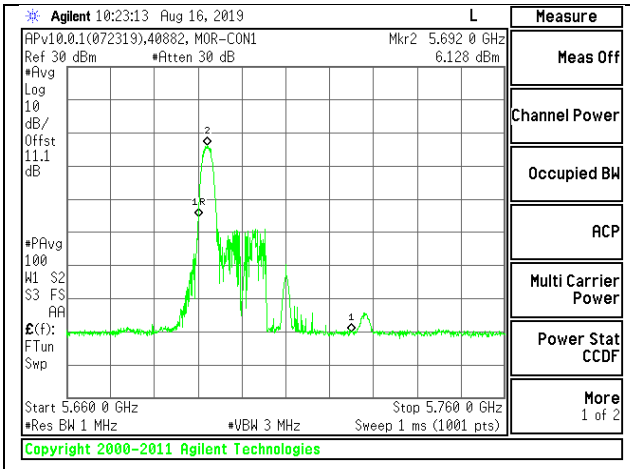


HIGH CHANNEL CHAIN 0

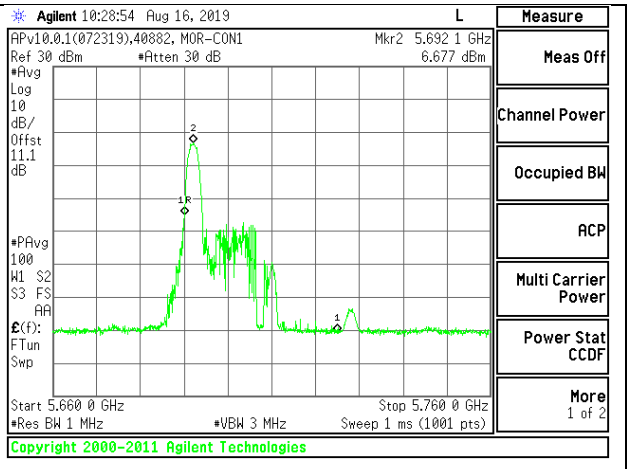


HIGH CHANNEL CHAIN 1

CHANNEL 142



CHANNEL 142 CHAIN 0



CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 8

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	21.40	6.43	6.43	23.57	10.57
Mid	5550	21.30	6.43	6.43	23.57	10.57
High	5670	21.50	6.43	6.43	23.57	10.57
142	5710	21.50	6.43	6.43	23.57	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	10.32	10.25	13.30	23.57	-10.27
Mid	5550	10.42	10.21	13.33	23.57	-10.24
High	5670	10.51	10.15	13.34	23.57	-10.23
142	5710	9.85	9.98	12.93	23.57	-10.64

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	7.070	6.522	9.81	10.57	-0.76
Mid	5550	6.969	6.580	9.79	10.57	-0.78
High	5670	7.098	6.702	9.91	10.57	-0.66
142	5710	5.914	5.858	8.90	10.57	-1.67

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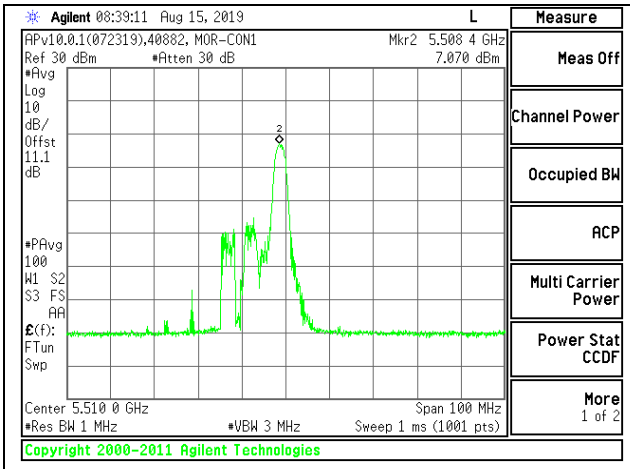
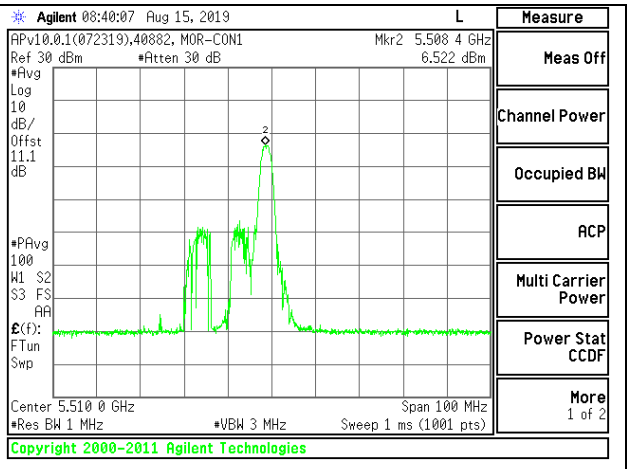
LOW CHANNEL

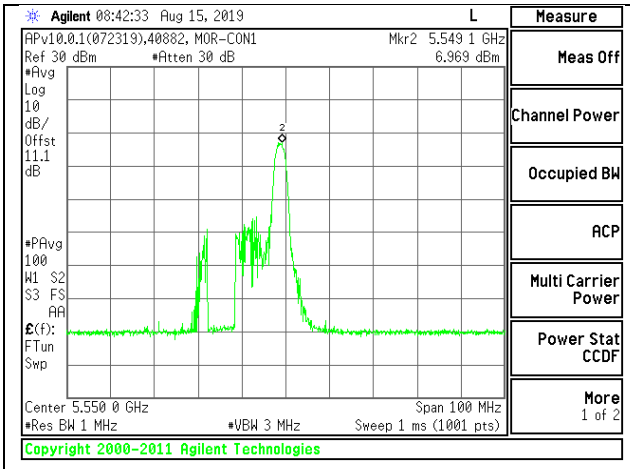


LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

MID CHANNEL



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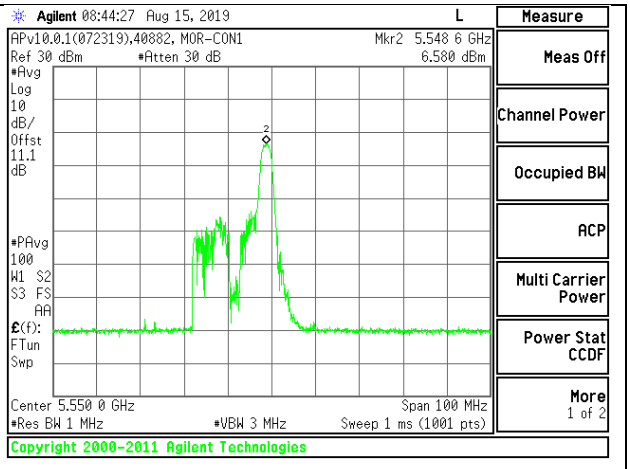

MID CHANNEL CHAIN 1

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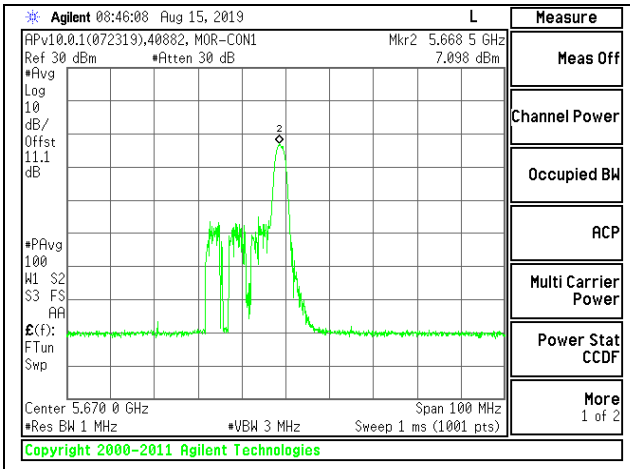
HIGH CHANNEL



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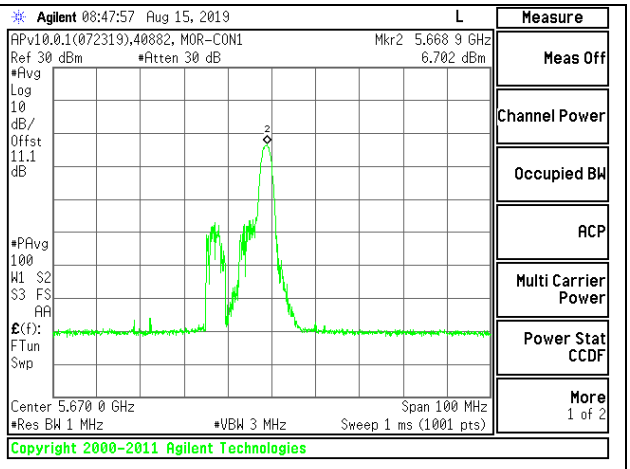
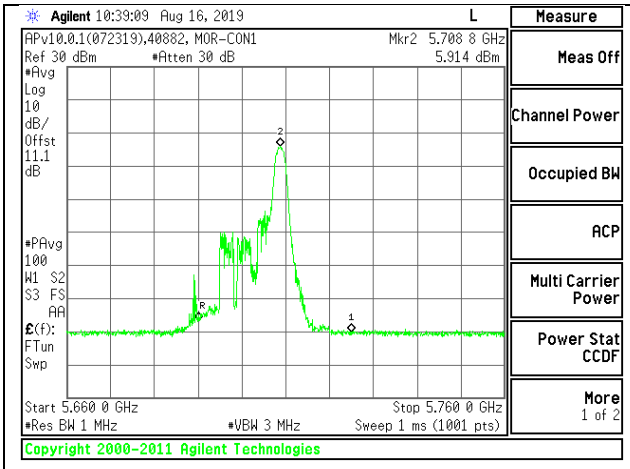
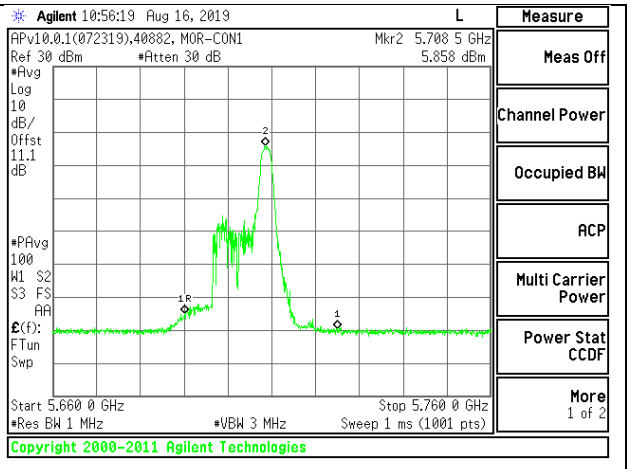


HIGH CHANNEL CHAIN 1

CHANNEL 142



CHANNEL 142 CHAIN 0



CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 26-Tones, RU Index 17

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	21.40	6.43	6.43	23.57	10.57
Mid	5550	21.30	6.43	6.43	23.57	10.57
High	5670	21.50	6.43	6.43	23.57	10.57
142	5710	21.50	6.43	6.43	23.57	10.57

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	10.40	10.21	13.32	23.57	-10.25
Mid	5550	10.59	10.38	13.50	23.57	-10.07
High	5670	10.53	10.32	13.44	23.57	-10.13
142	5710	10.30	10.44	13.38	23.57	-10.19

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	7.022	6.692	9.87	10.57	-0.70
Mid	5550	7.106	6.204	9.69	10.57	-0.88
High	5670	6.917	6.589	9.77	10.57	-0.80
142	5710	-14.303	-15.511	-11.85	10.57	-22.42

Note – The straddle channel peak emissions is located in the 5.8 GHz band.

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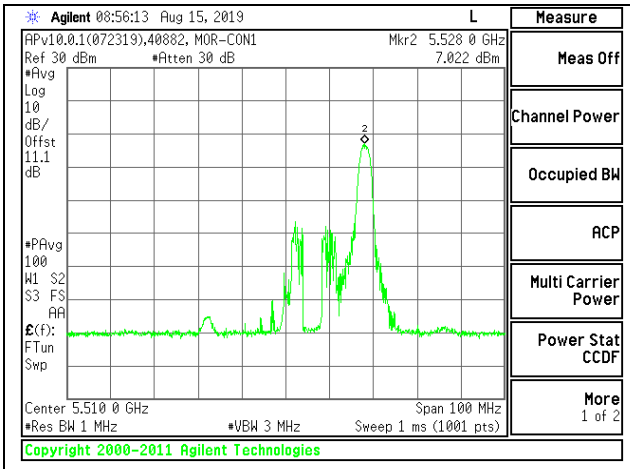
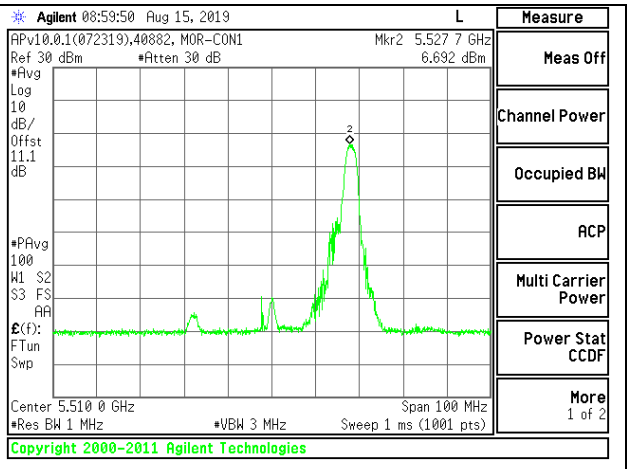
LOW CHANNEL

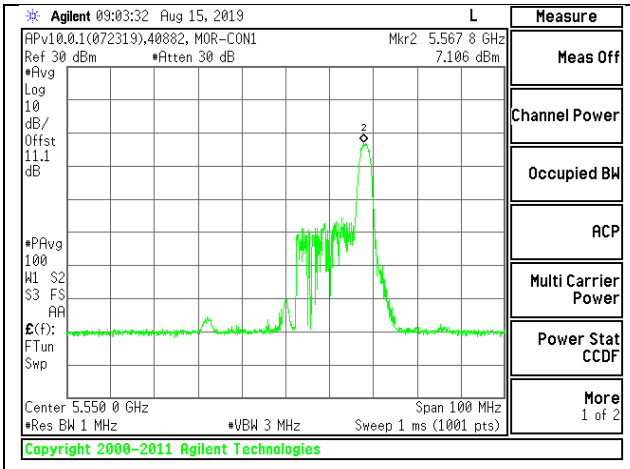


LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

MID CHANNEL



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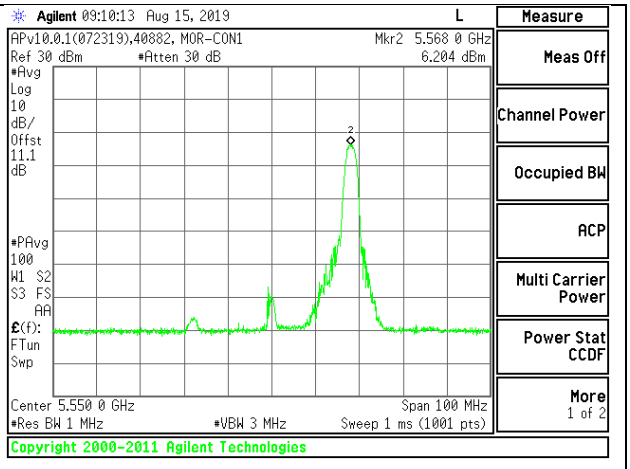

MID CHANNEL CHAIN 1

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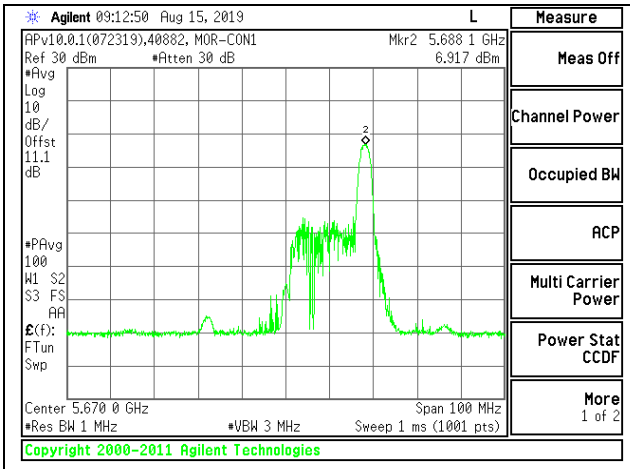
HIGH CHANNEL



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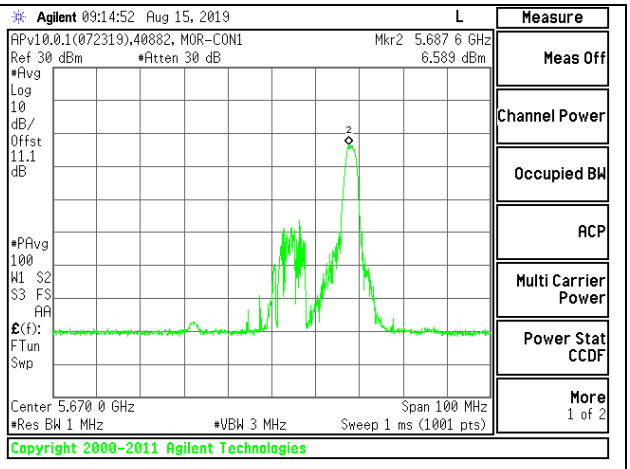

HIGH CHANNEL CHAIN 1

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9.1.4. 802.11ax HE40 MODE IN THE 5.6 GHz BAND (IC)

2TX Antenna 1 + Antenna 2 SU MODE

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	12.646	6.43	6.43	21.59	10.57
Mid	5550	17.860	6.43	6.43	23.09	10.57
High	5670	14.345	6.43	6.43	22.14	10.57
142	5710	18.052	6.43	6.43	23.14	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	16.69	16.90	19.81	21.59	-1.78
Mid	5550	16.71	16.82	19.78	23.09	-3.31
High	5670	16.81	16.68	19.76	22.14	-2.38
142	5710	16.60	16.69	19.66	23.14	-3.48

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	4.297	3.210	6.80	10.57	-3.77
Mid	5550	4.520	4.856	7.70	10.57	-2.87
High	5670	5.000	4.081	7.58	10.57	-2.99
142	5710	3.607	3.596	6.61	10.57	-3.96

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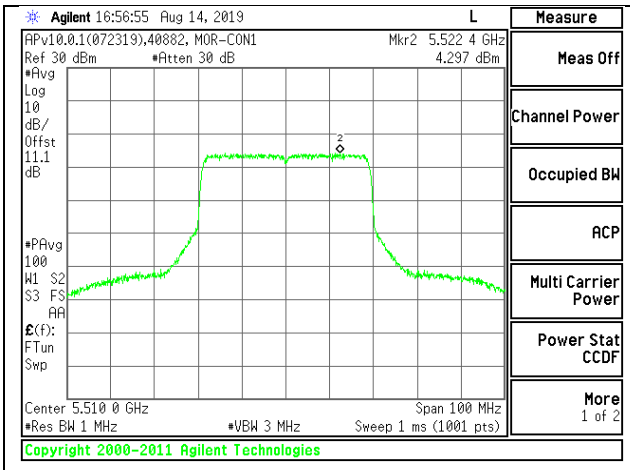
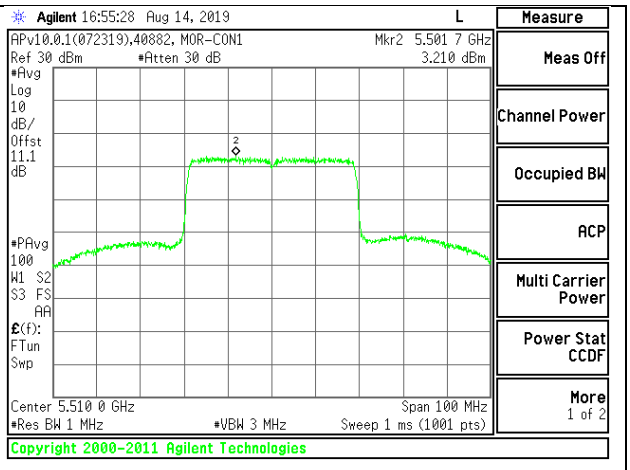
LOW CHANNEL

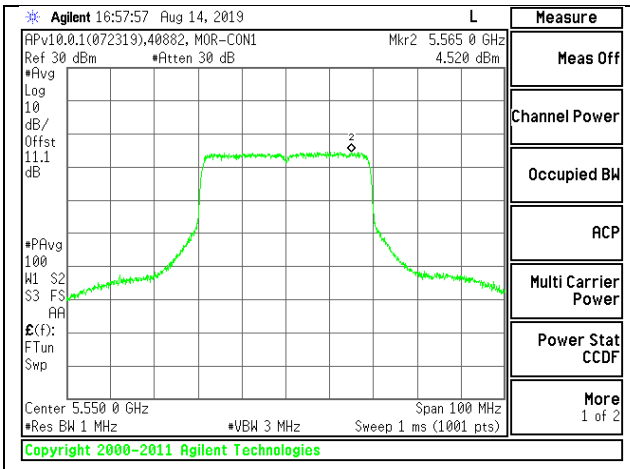


LOW CHANNEL CHAIN 0

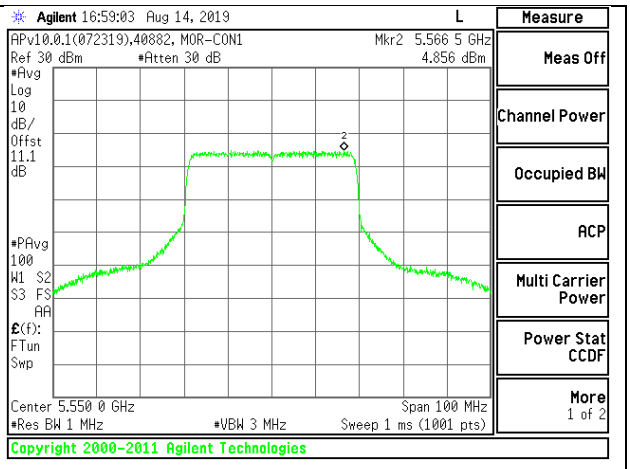


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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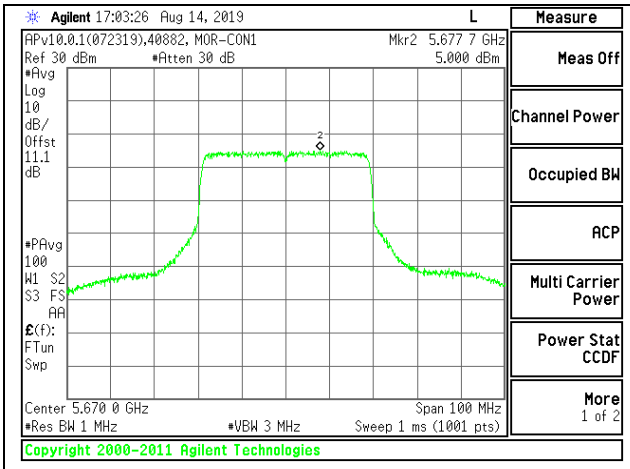
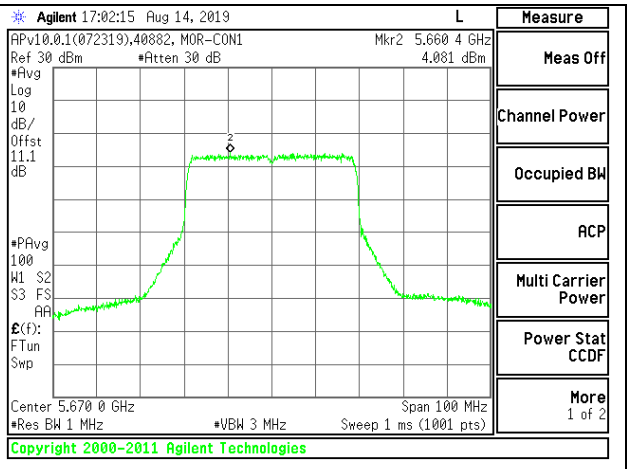
HIGH CHANNEL

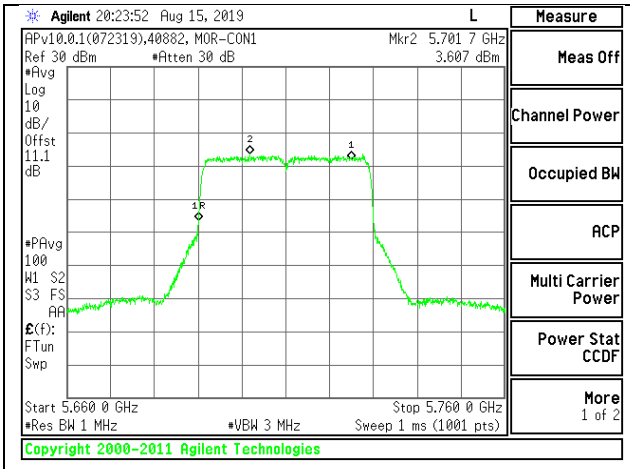


HIGH CHANNEL CHAIN 0

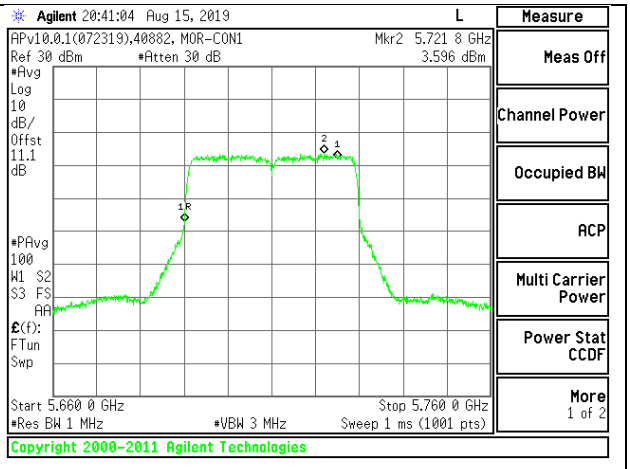


HIGH CHANNEL CHAIN 1

CHANNEL 142



CHANNEL 142 CHAIN 0



CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 484-Tones, RU Index 65

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	12.646	6.43	6.43	21.59	10.57
Mid	5550	17.860	6.43	6.43	23.09	10.57
High	5670	14.345	6.43	6.43	22.14	10.57
142	5710	18.052	6.43	6.43	23.14	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	16.55	16.93	19.75	21.59	-1.84
Mid	5550	16.83	16.95	19.90	23.09	-3.19
High	5670	16.78	16.70	19.75	22.14	-2.39
142	5710	16.12	16.14	19.14	23.14	-3.99

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	4.260	3.368	6.85	10.57	-3.72
Mid	5550	3.523	4.648	7.13	10.57	-3.44
High	5670	3.900	4.188	7.06	10.57	-3.51
142	5710	3.129	3.954	6.57	10.57	-4.00

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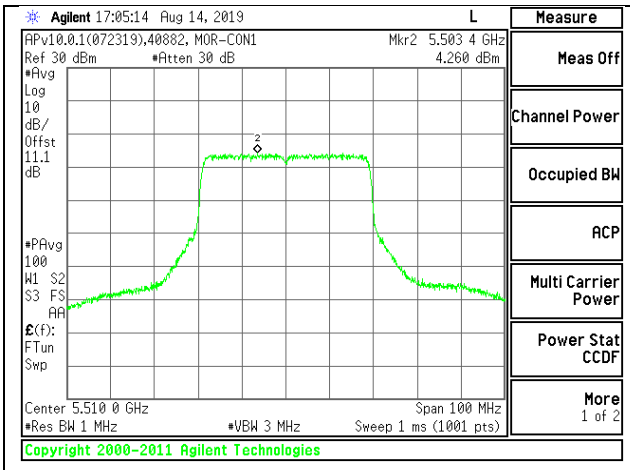
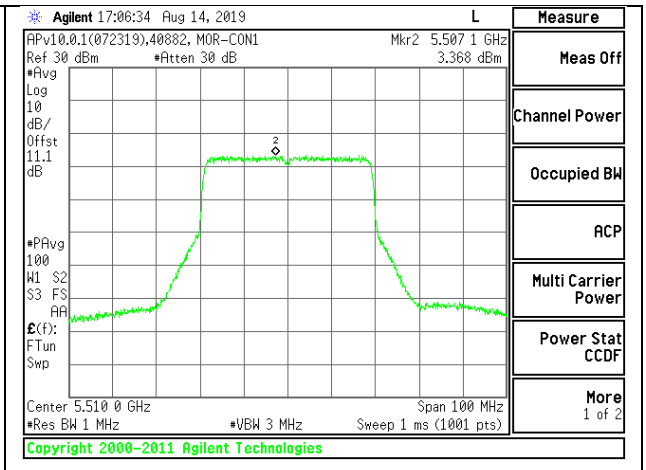
LOW CHANNEL

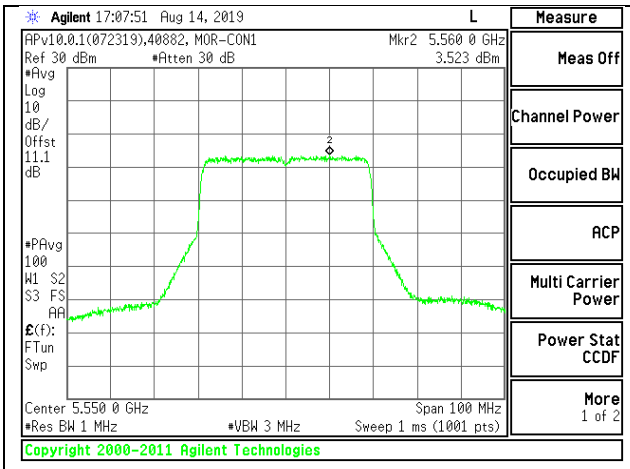


LOW CHANNEL CHAIN 0

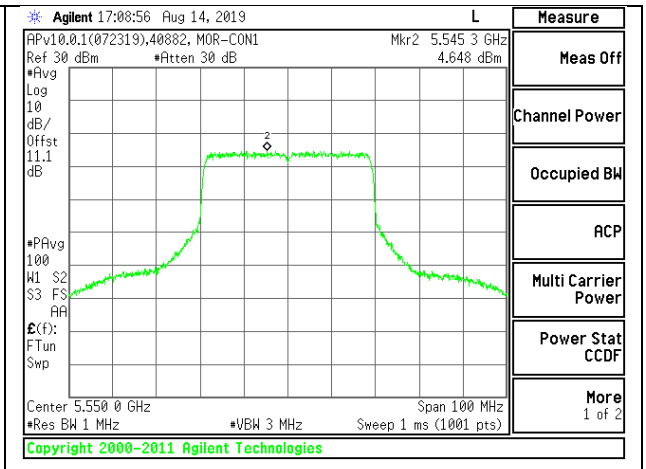


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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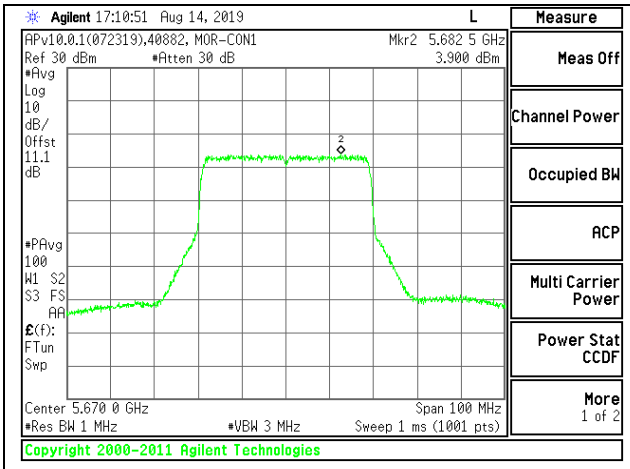
HIGH CHANNEL



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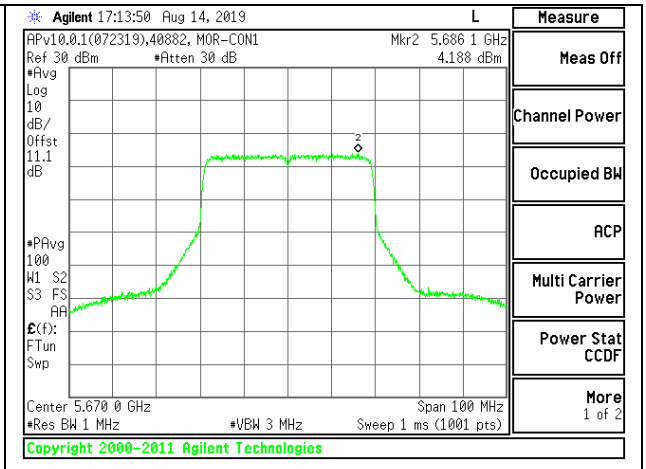
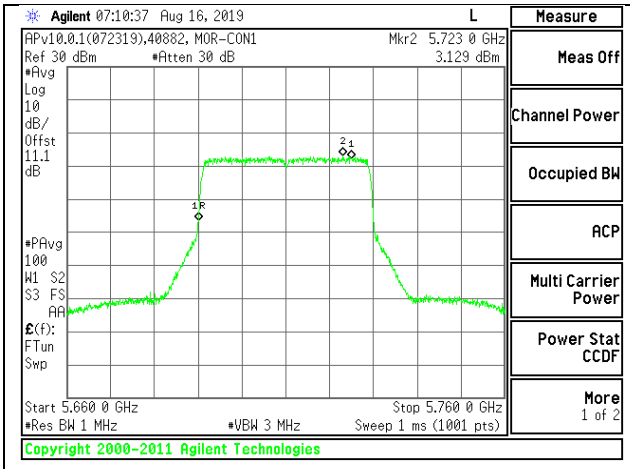


HIGH CHANNEL CHAIN 1

CHANNEL 142



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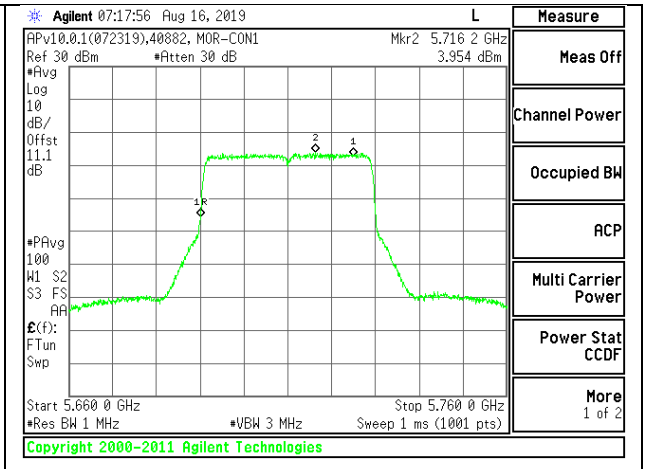

CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 242-Tones, RU Index 61

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	12.646	6.43	6.43	21.59	10.57
Mid	5550	17.860	6.43	6.43	23.09	10.57
High	5670	14.345	6.43	6.43	22.14	10.57
142	5710	18.052	6.43	6.43	23.14	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	17.85	17.80	20.84	21.59	-0.75
Mid	5550	17.68	17.85	20.78	23.09	-2.31
High	5670	17.92	17.77	20.86	22.14	-1.28
142	5710	17.67	17.73	20.71	23.14	-2.42

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	6.041	5.933	9.00	10.57	-1.57
Mid	5550	5.947	5.730	8.85	10.57	-1.72
High	5670	6.249	6.226	9.25	10.57	-1.32
142	5710	6.330	6.045	9.20	10.57	-1.37

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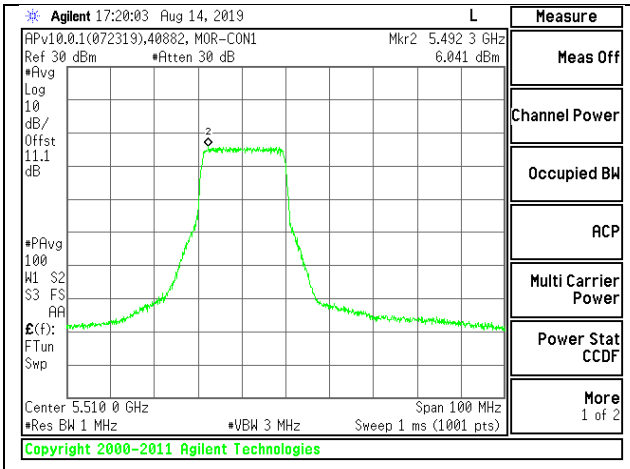
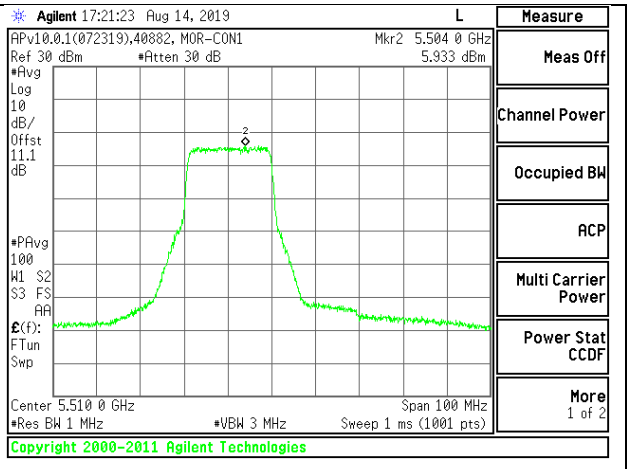
LOW CHANNEL

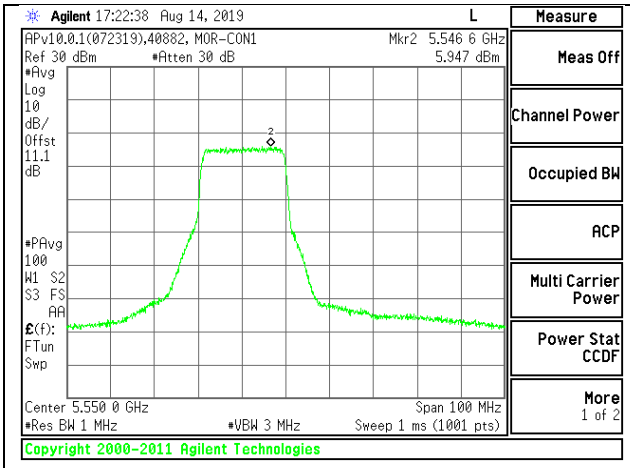


LOW CHANNEL CHAIN 0

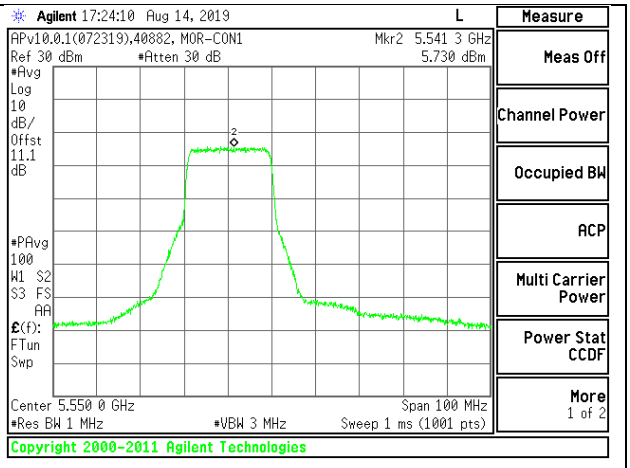


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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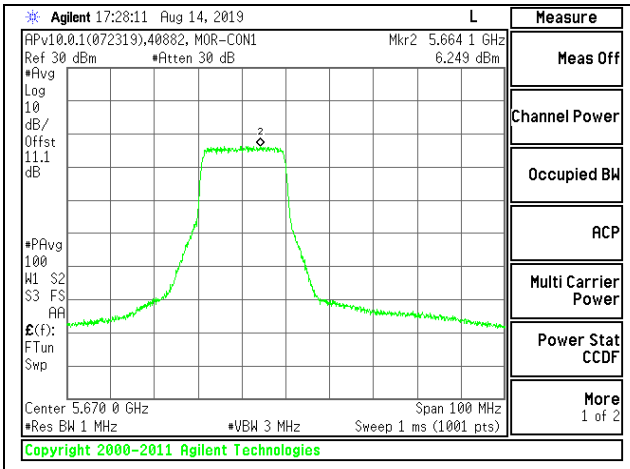
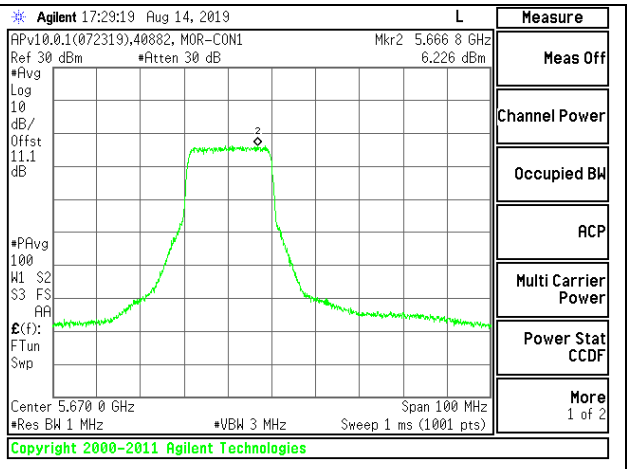
HIGH CHANNEL

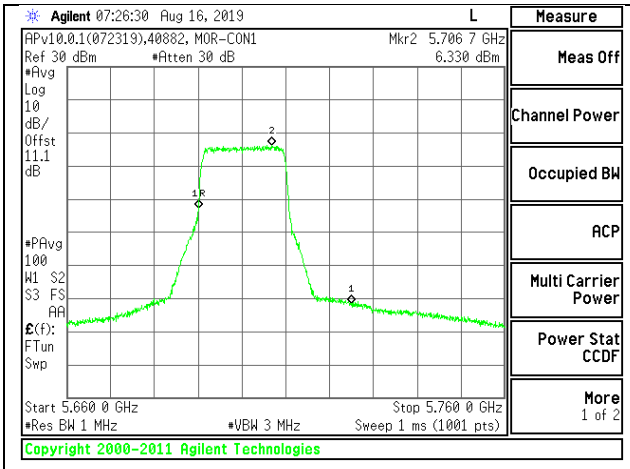


HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

CHANNEL 142



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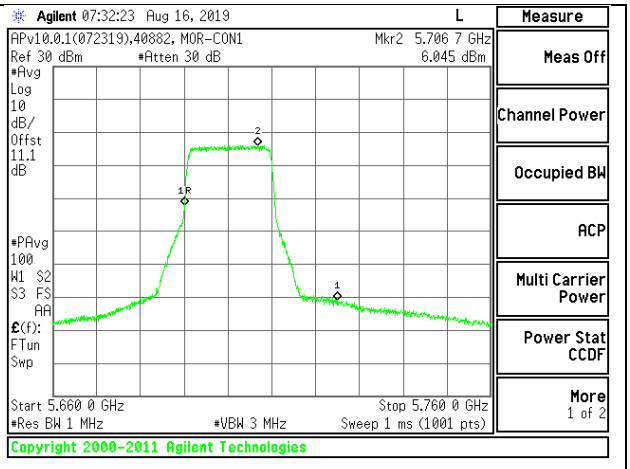

CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 242-Tones, RU Index 62

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	12.646	6.43	6.43	21.59	10.57
Mid	5550	17.860	6.43	6.43	23.09	10.57
High	5670	14.345	6.43	6.43	22.14	10.57
142	5710	18.052	6.43	6.43	23.14	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	17.76	17.79	20.79	21.59	-0.80
Mid	5550	17.85	17.90	20.89	23.09	-2.20
High	5670	17.92	17.89	20.92	22.14	-1.22
142	5710	17.76	17.84	20.81	23.14	-2.32

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	6.123	7.395	9.82	10.57	-0.75
Mid	5550	6.431	5.899	9.18	10.57	-1.39
High	5670	7.009	6.456	9.75	10.57	-0.82
142	5710	6.616	6.482	9.56	10.57	-1.01

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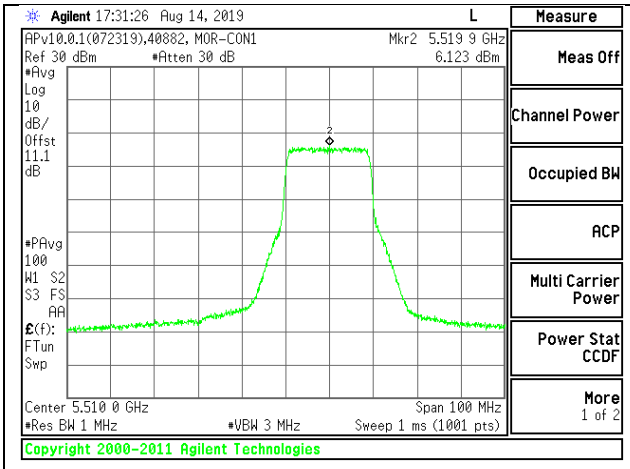
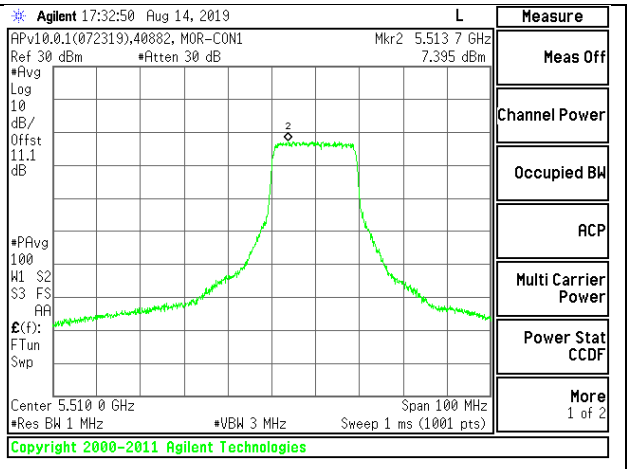
LOW CHANNEL

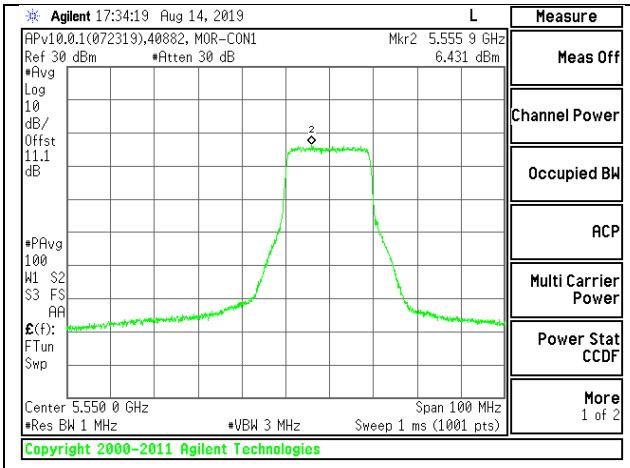


LOW CHANNEL CHAIN 0



LOW CHANNEL CHAIN 1

MID CHANNEL



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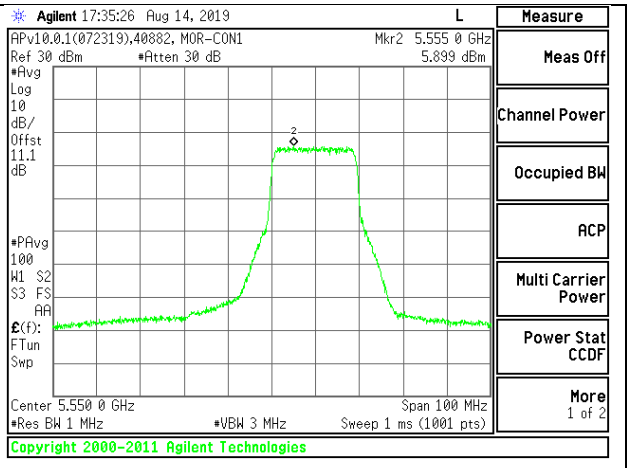

MID CHANNEL CHAIN 1

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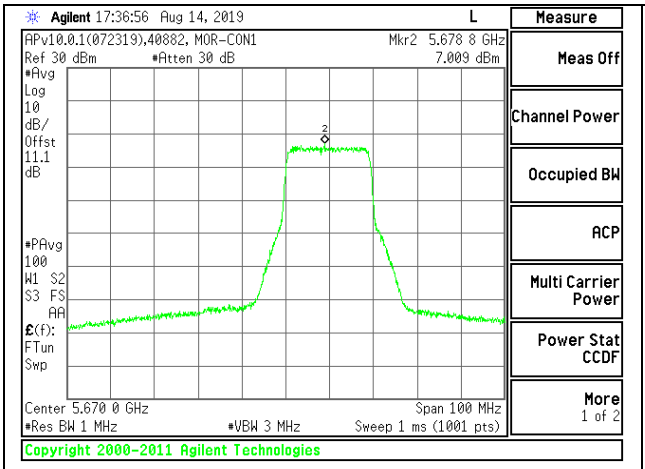
HIGH CHANNEL



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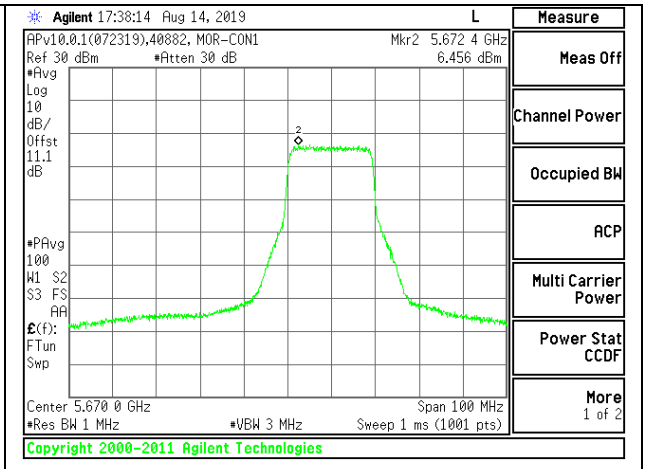
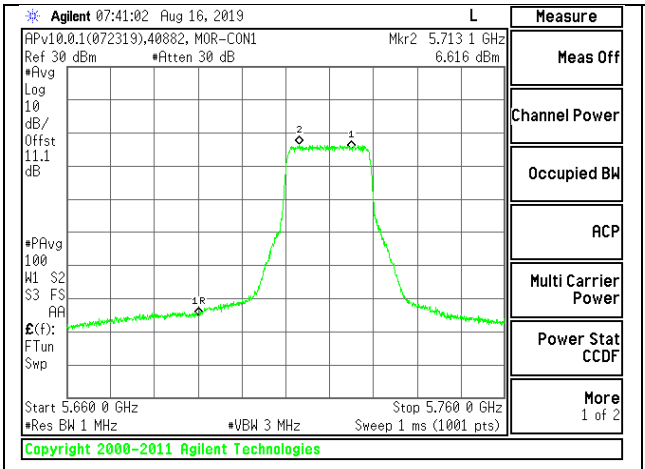


HIGH CHANNEL CHAIN 1

CHANNEL 142



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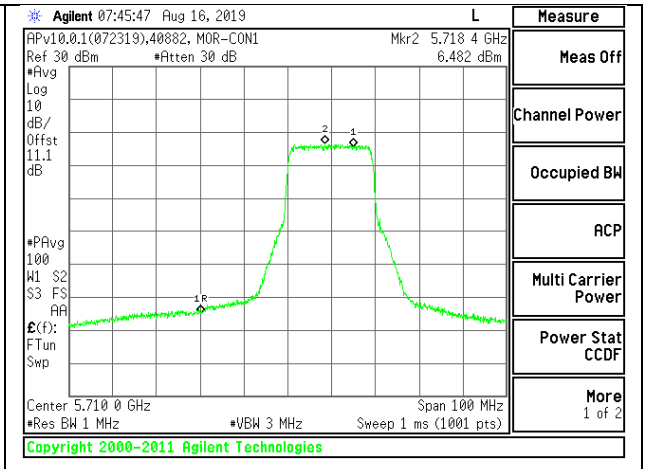

CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 106-Tones, RU Index 53

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	12.646	6.43	6.43	21.59	10.57
Mid	5550	17.860	6.43	6.43	23.09	10.57
High	5670	14.345	6.43	6.43	22.14	10.57
142	5710	18.052	6.43	6.43	23.14	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	15.45	15.45	18.46	21.59	-3.13
Mid	5550	15.33	15.49	18.42	23.09	-4.67
High	5670	15.32	15.49	18.42	22.14	-3.72
142	5710	15.22	15.28	18.26	23.14	-4.87

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	6.509	6.430	9.48	10.57	-1.09
Mid	5550	6.897	6.680	9.80	10.57	-0.77
High	5670	7.107	6.364	9.76	10.57	-0.81
142	5710	7.195	6.785	10.01	10.57	-0.56

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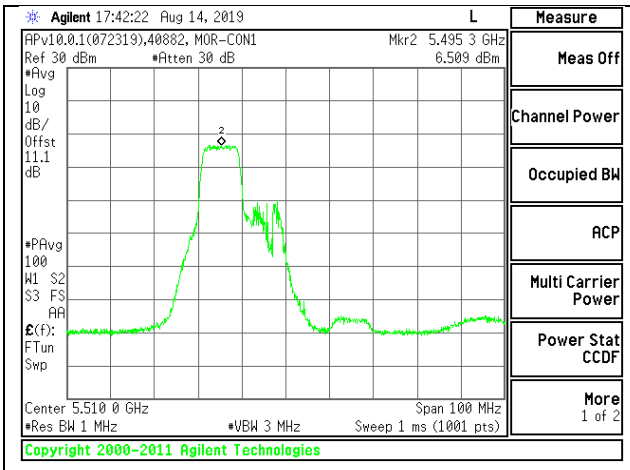
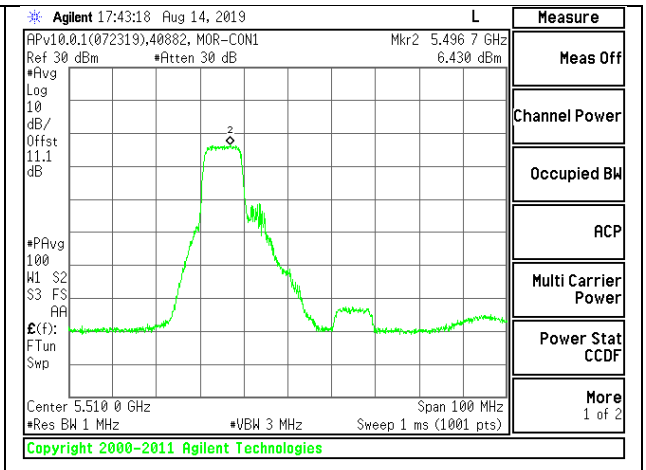
LOW CHANNEL

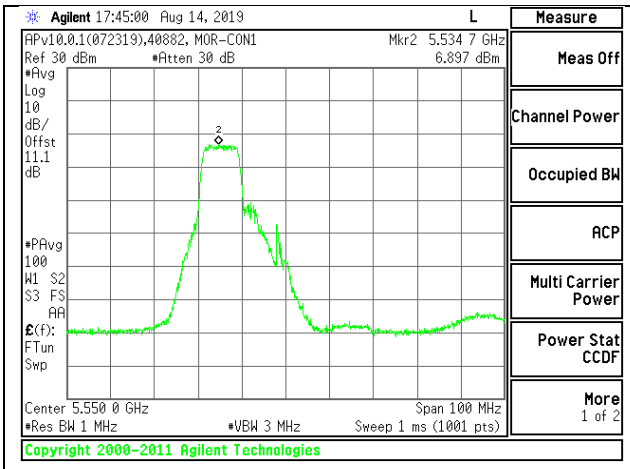


LOW CHANNEL CHAIN 0

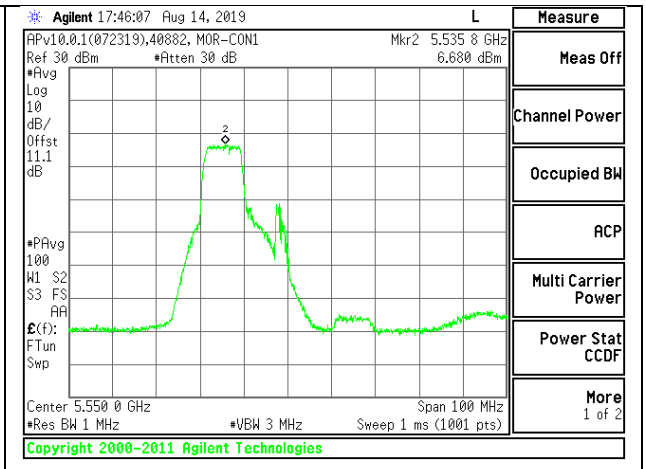


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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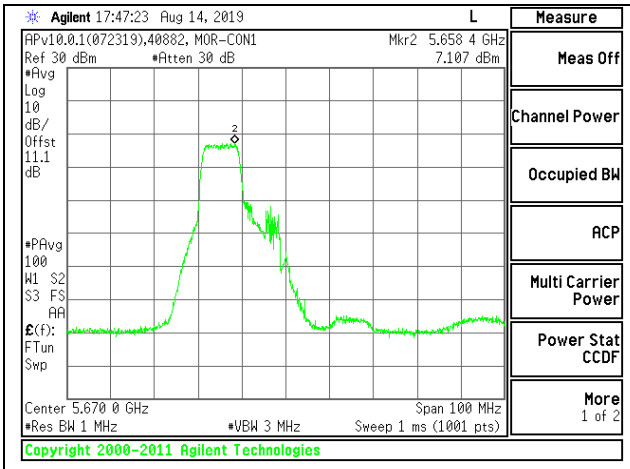
HIGH CHANNEL



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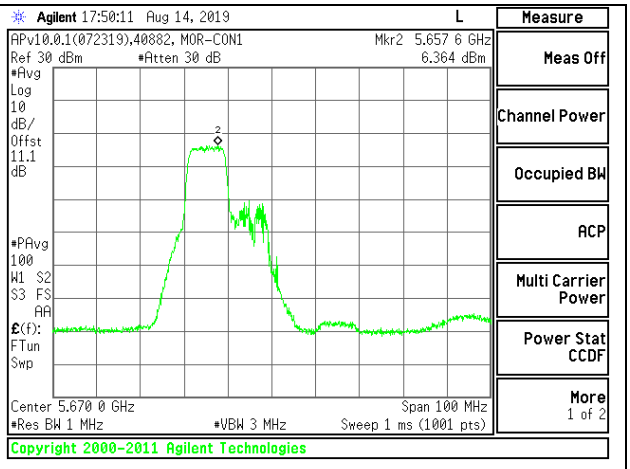
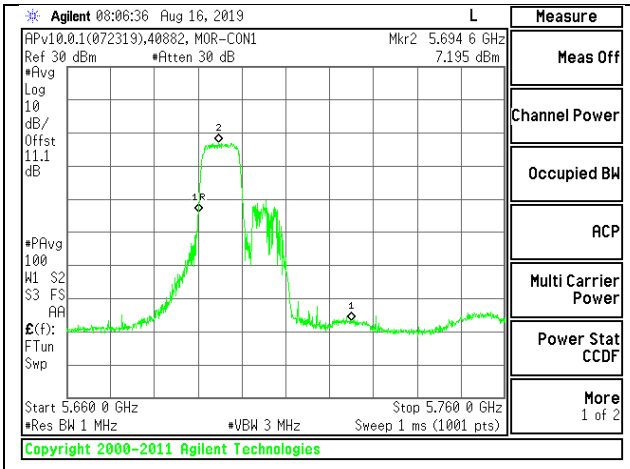
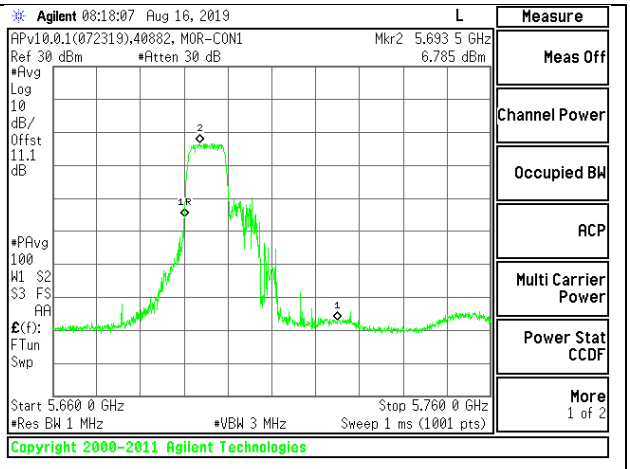


HIGH CHANNEL CHAIN 1

CHANNEL 142



CHANNEL 142 CHAIN 0



CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 106-Tones, RU Index 54

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	12.646	6.43	6.43	21.59	10.57
Mid	5550	17.860	6.43	6.43	23.09	10.57
High	5670	14.345	6.43	6.43	22.14	10.57
142	5710	18.052	6.43	6.43	23.14	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	15.43	15.58	18.52	21.59	-3.07
Mid	5550	15.35	15.55	18.46	23.09	-4.63
High	5670	15.47	15.50	18.50	22.14	-3.64
142	5710	15.30	15.42	18.37	23.14	-4.76

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	6.885	6.603	9.76	10.57	-0.81
Mid	5550	7.001	6.565	9.80	10.57	-0.77
High	5670	7.121	6.200	9.70	10.57	-0.87
142	5710	6.769	6.344	9.57	10.57	-1.00

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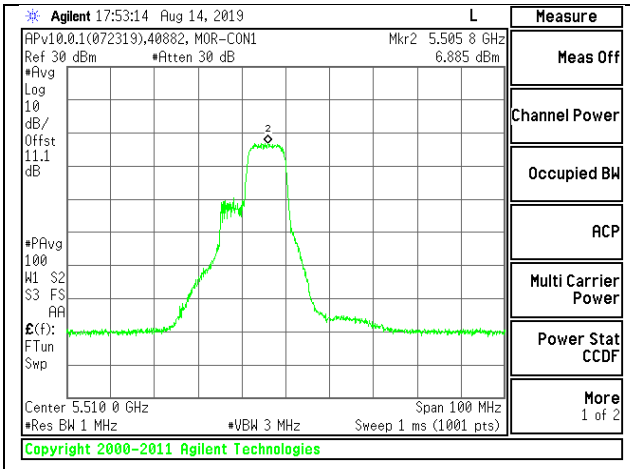
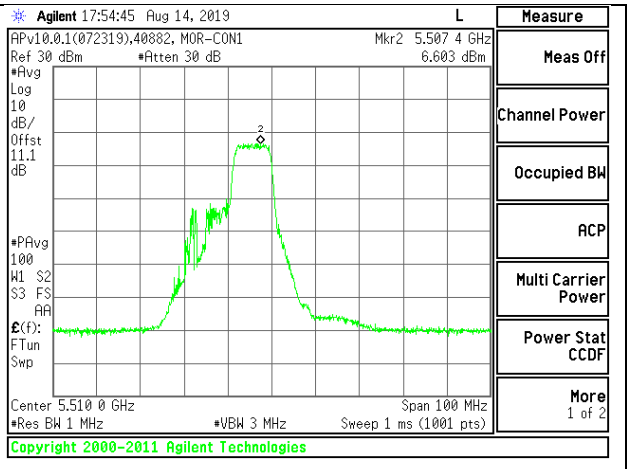
LOW CHANNEL

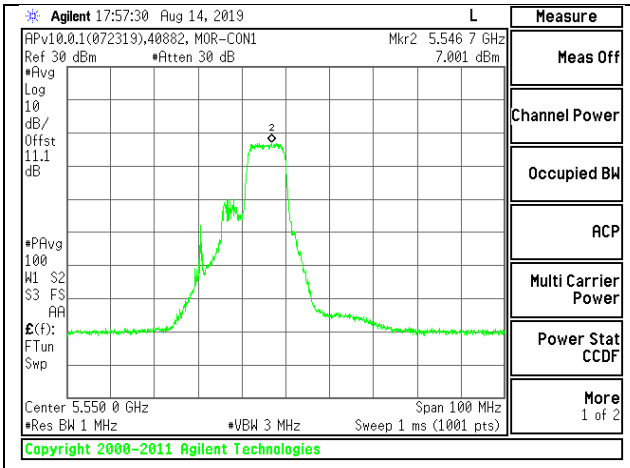


LOW CHANNEL CHAIN 0

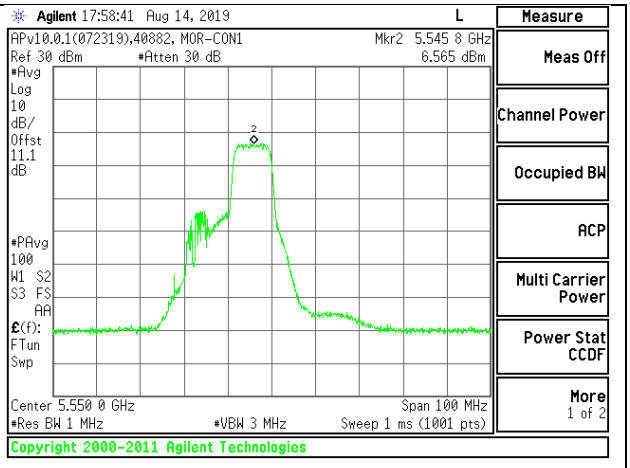


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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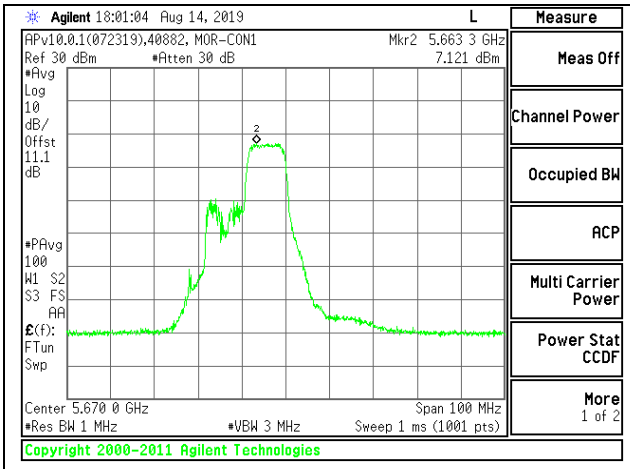
HIGH CHANNEL



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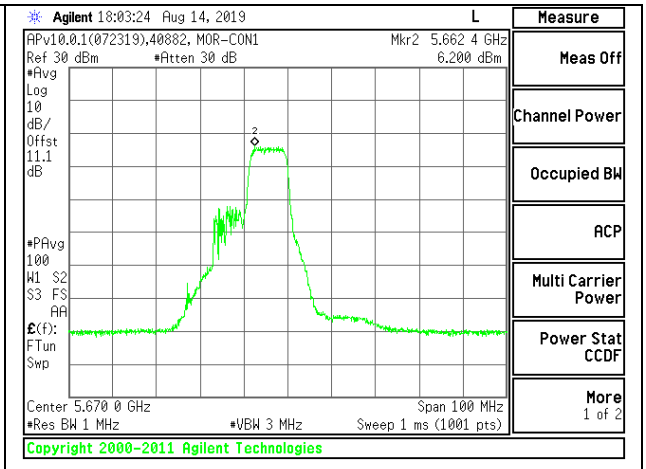
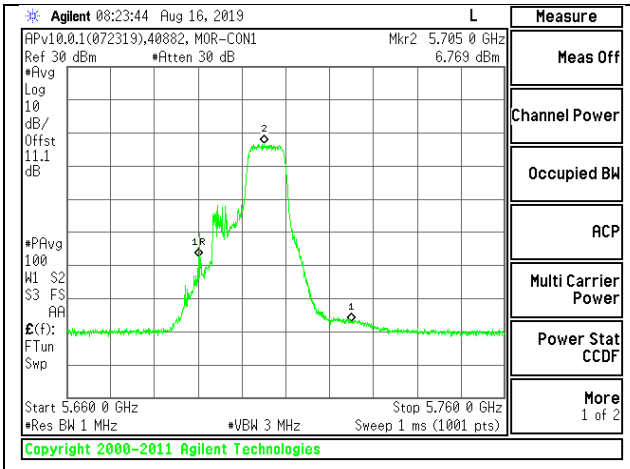
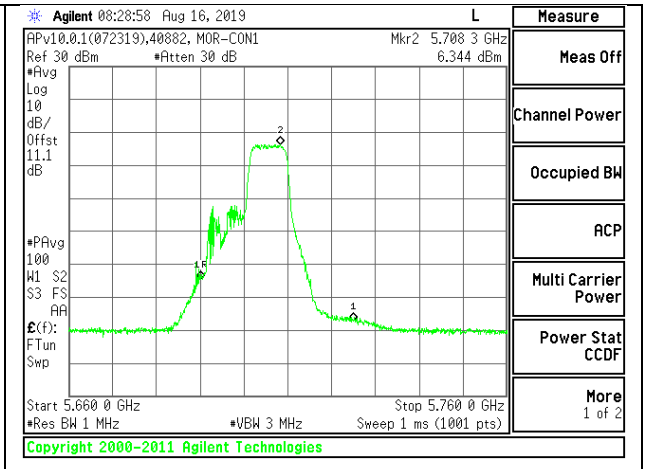


HIGH CHANNEL CHAIN 1

CHANNEL 142



CHANNEL 142 CHAIN 0



CHANNEL 142 CHAIN 1

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2TX Antenna 1 + Antenna 2 OFDMA MODE – 106-Tones, RU Index 56

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	12.646	6.43	6.43	21.59	10.57
Mid	5550	17.860	6.43	6.43	23.09	10.57
High	5670	14.345	6.43	6.43	22.14	10.57
142	5710	18.052	6.43	6.43	23.14	10.57

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	15.32	15.45	18.40	21.59	-3.19
Mid	5550	15.51	15.51	18.52	23.09	-4.57
High	5670	15.51	15.54	18.54	22.14	-3.60
142	5710	15.45	15.44	18.46	23.14	-4.68

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	6.213	6.241	9.24	10.57	-1.33
Mid	5550	7.169	6.498	9.86	10.57	-0.71
High	5670	6.794	7.317	10.07	10.57	-0.50
142	5710	7.178	6.945	10.07	10.57	-0.50

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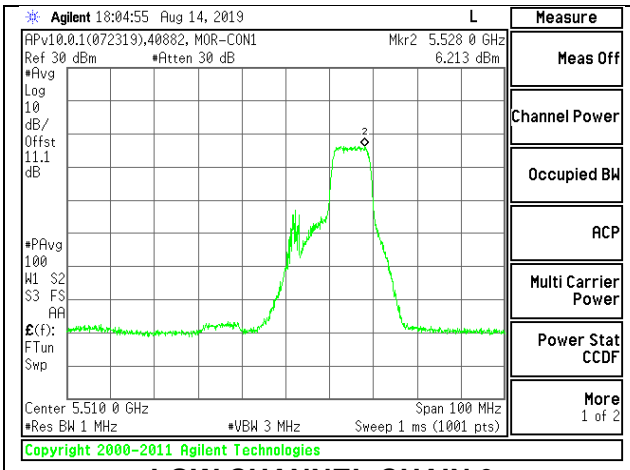
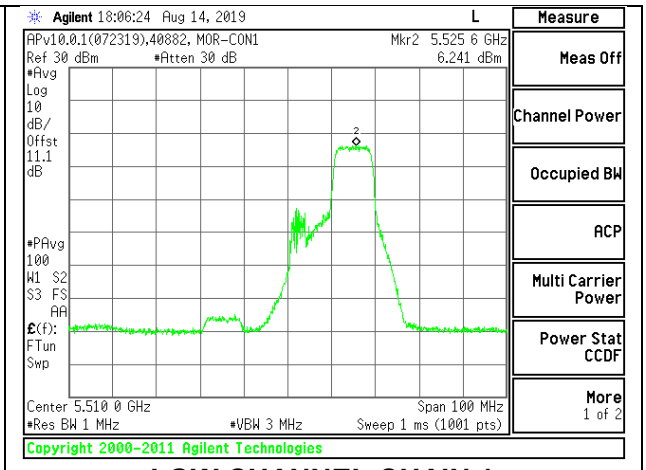
LOW CHANNEL

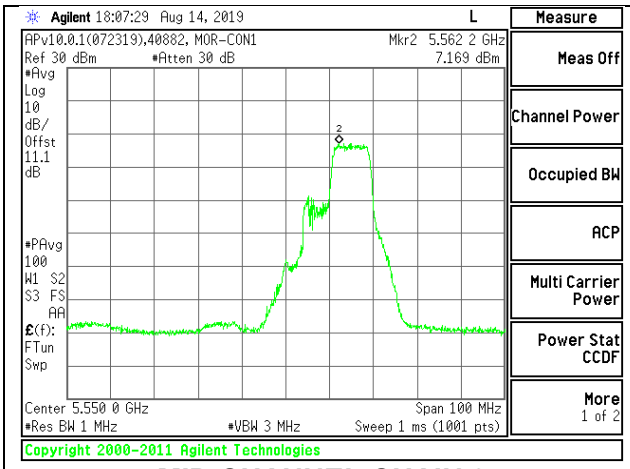


LOW CHANNEL CHAIN 0

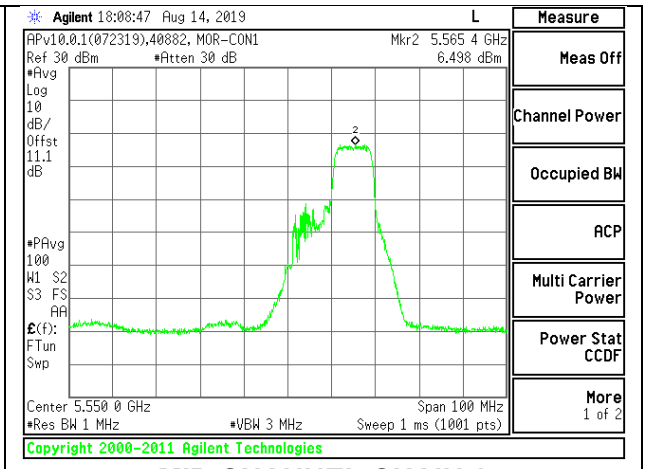


LOW CHANNEL CHAIN 1

MID CHANNEL



MID CHANNEL CHAIN 0



MID CHANNEL CHAIN 1

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