7.2.2.2. TEST INSTRUMENTS

Radiated Emission Test Site 966（2）					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	02/21/2016	02/20/2017
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/21/2016	02/20/2017
Amplifier	EMEC	EM330	060661	03/18/2016	03/17/2017
High Noise Amplifier	Agilent	8449B	3008A01838	02/21/2016	02/20/2017
Loop Antenna	COM-POWER	AL-130	121044	09/25/2015	09/24/2016
Bilog Antenna	SCHAFFNER	CBL6143	5082	02/21/2016	02/20/2017
Horn Antenna	SCHWARZBECK	BBHA9120	D286	02/28/2016	02/27/2017
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	02/28/2016	02/27/2017
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/21/2016	02/20/2017
Test S/W	FARAD	LZ-RF / CCS-SZ-3A2			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The FCC Site Registration number is 101879.

3. N.C.R = No Calibration Required.

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7.2.2.3. Measuring Instruments and Setting

The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 2.4kHz for Average
RB / VB (Emission in non-restricted band)	1MHz / 1MHz for Peak, 1 MHz / 2.4kHz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP/AVG
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP/AVG
Start ~ Stop Frequency	30MHz~1000MHz / RB 100kHz for QP

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7.2.2.4. TEST PROCEDURE (please refer to measurement standard)

1) Sequence of testing 9 kHz to 30 MHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions.

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna height is 0.8 meter.

--- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

--- Identified emissions during the premeasurement the software maximizes by rotating the turntable position (0° to 360°) and by rotating the elevation axes (0° to 360°).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QPK detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

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2) Sequence of testing 30 MHz to 1 GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 3 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position (± 45°) and antenna movement between 1 and 4 meter.

--- The final measurement will be done with QP detector with an EMI receiver.

--- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

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3) Sequence of testing 1 GHz to 18 GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna is polarized vertical and horizontal.

--- The antenna height scan range is 1 meter to 2.5 meter.

--- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position (± 45°) and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.

--- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

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4) Sequence of testing above 18 GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 1 meter.

--- The EUT was set into operation.

Pre measurement:

--- The antenna is moved spherical over the EUT in different polarisations of the antenna.

Final measurement:

--- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.

--- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

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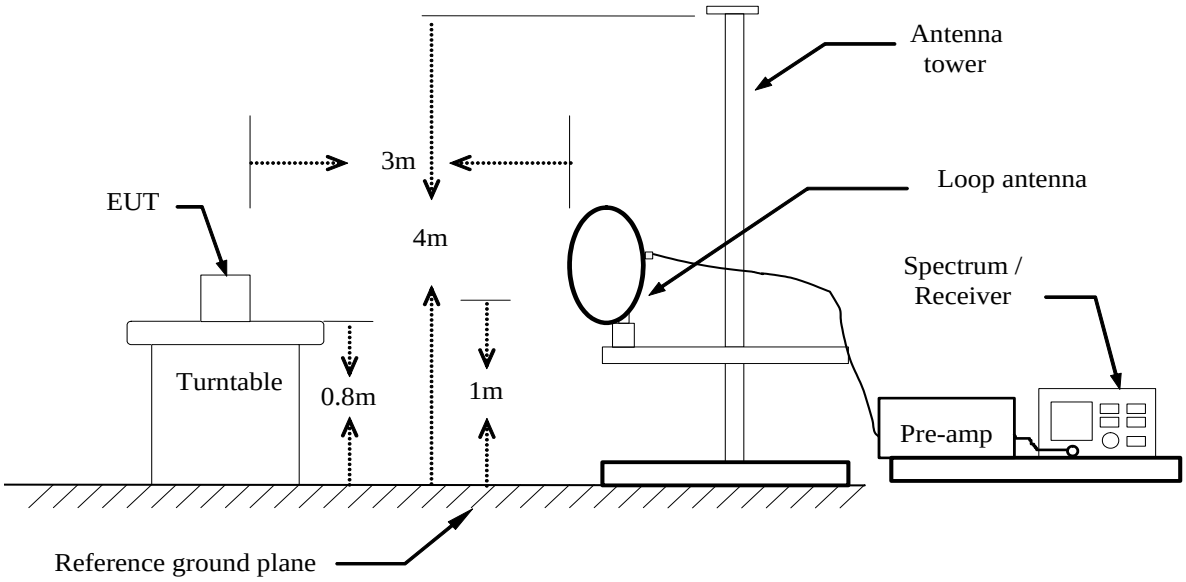
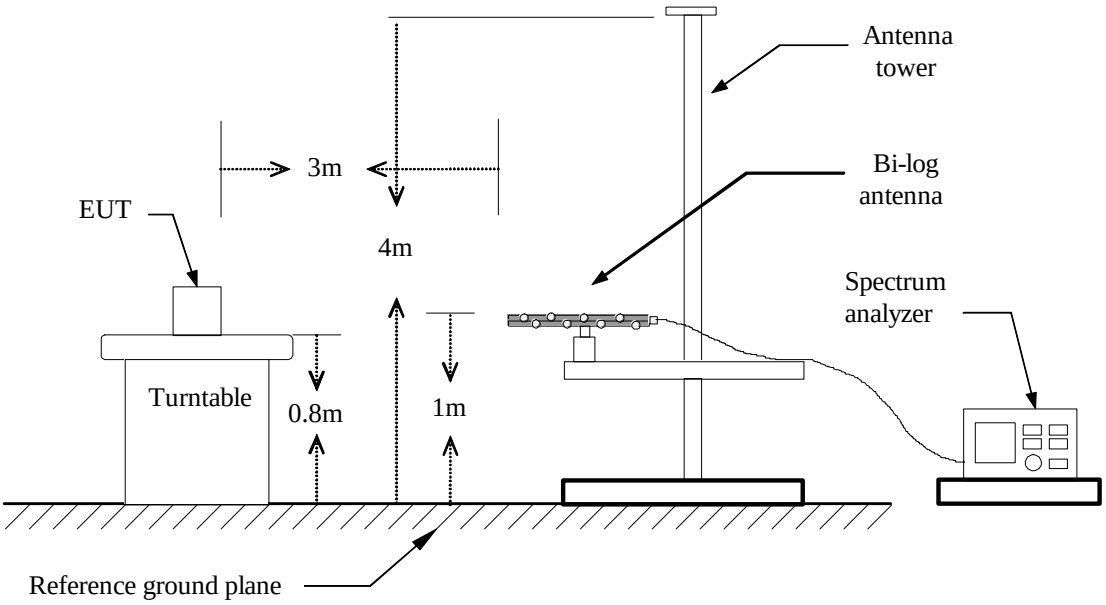
7.2.2.5. TEST SETUP

Below 30MHz



Below 1 GHz



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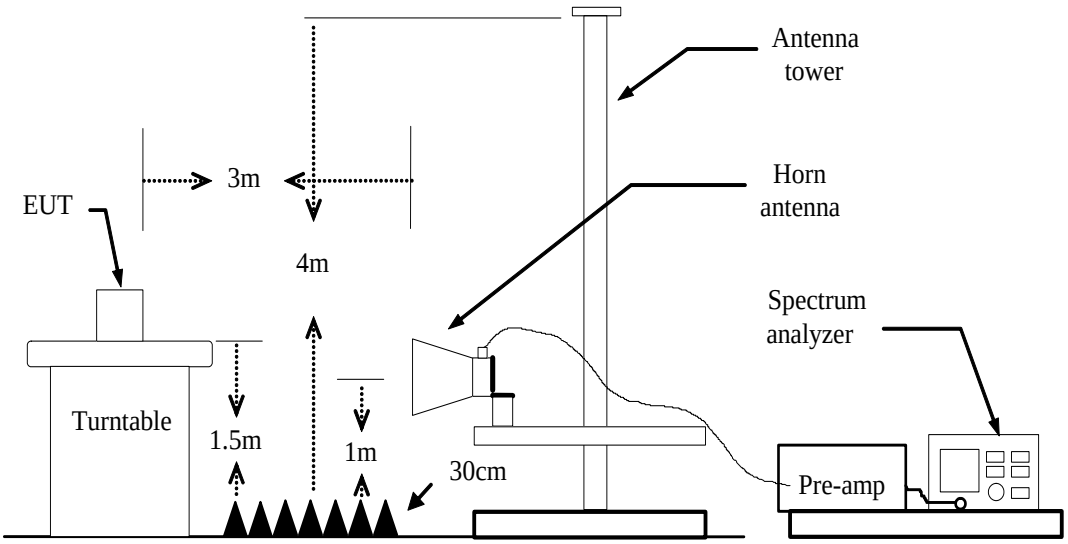
Above 1 GHz



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

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7.2.2.6. DATA SAPLE

Below 1GHz

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
XXX.XXXX	36.37	-12.20	24.17	40.00	-15.83	V	QP

Frequency (MHz) = Emission frequency in MHz
Reading (dBuV) = Uncorrected Analyzer / Receiver reading
Correct Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain
Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)
Limit (dBuV/m) = Limit stated in standard
Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)
Q.P. = Quasi-peak Reading

Above 1GHz

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
XXXX.XXXX	62.09	-11.42	50.67	74.00	-23.33	V	Peak
XXXX.XXXX	49.78	-11.42	38.36	54.00	-15.64	V	AVG

Frequency (MHz) = Emission frequency in MHz
Reading (dBuV) = Uncorrected Analyzer / Receiver reading
Correction Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain
Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)
Limit (dBuV/m) = Limit stated in standard
Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)
Peak = Peak Reading
AVG = Average Reading

Calculation Formula

Margin (dB) = Result (dBuV/m) – Limits (dBuV/m)
Result (dBuV/m) = Reading (dBuV) + Correction Factor

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7.2.2.7. TEST RESULTS

Below 1 GHz

Test Mode: TX **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 24, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
37.7600	47.70	-15.48	32.22	40.00	-7.78	V	QP
61.0400	55.38	-24.15	31.23	40.00	-8.77	V	QP
320.0300	42.96	-18.93	24.03	46.00	-21.97	V	QP
557.6800	40.01	-13.22	26.79	46.00	-19.21	V	QP
624.6100	41.91	-12.73	29.18	46.00	-16.82	V	QP
762.3500	39.29	-11.05	28.24	46.00	-17.76	V	QP
37.7600	49.76	-15.48	34.28	40.00	-5.72	H	QP
77.5300	63.44	-26.44	37.00	40.00	-3.00	H	QP
250.1900	48.52	-21.06	27.46	46.00	-18.54	H	QP
448.0700	39.74	-15.50	24.24	46.00	-21.76	H	QP
500.4500	39.39	-14.35	25.04	46.00	-20.96	H	QP
874.8700	39.02	-10.14	28.88	46.00	-17.12	H	QP

*****Remark:*** *No emission found between lowest internal used/generated frequency to 30MHz.*

Notes:

1. *Radiated emissions measured in frequency range from 9kHz to 1GHz were made with an instrument using Quasi-peak detector mode.*
2. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
3. *The IF bandwidth of Receiver between 30MHz to 1GHz was 120kHz.*
4. *Frequency (MHz). = Emission frequency in MHz*
   Reading (dBμV/m) = Receiver reading
   Correction Factor (dB) = Antenna factor + Cable loss – Amplifier gain
   Limit (dBμV/m) = Limit stated in standard
   Margin (dB) = Measured (dBμV/m) – Limits (dBμV/m)
   Antenna Pol e(H/V) = Current carrying line of reading

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Above 1 GHz
Antenna 0
Test Mode: TX / IEEE 802.11b(CH Low) **Tested by:** Jack Chen
Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 24, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
3808.0000	43.43	0.78	44.21	74.00	-29.79	V	peak
4825.0000	43.20	4.41	47.61	74.00	-26.39	V	peak
6130.0000	41.77	6.29	48.06	74.00	-25.94	V	peak
6949.0000	41.68	7.62	49.30	74.00	-24.70	V	peak
7741.0000	41.30	9.14	50.44	74.00	-23.56	V	peak
8218.0000	41.41	9.53	50.94	74.00	-23.06	V	peak
4384.0000	43.02	2.94	45.96	74.00	-28.04	H	Peak
4825.0000	48.34	4.41	52.75	74.00	-21.25	H	Peak
4825.0000	46.82	4.41	51.23	54.00	-2.77	H	AVG
5347.0000	42.62	5.60	48.22	74.00	-25.78	H	peak
6940.0000	41.52	7.60	49.12	74.00	-24.88	H	peak
7417.0000	41.58	8.51	50.09	74.00	-23.91	H	Peak
7750.0000	41.85	9.16	51.01	74.00	-22.99	H	Peak

***REMARKS**:*

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Test Mode: TX / IEEE 802.11b (CH Mid) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 24, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
4870.0000	43.72	4.56	48.28	74.00	-25.72	V	Peak
5635.0000	44.12	5.93	50.05	74.00	-23.95	V	Peak
6589.0000	41.26	7.03	48.29	74.00	-25.71	V	Peak
6976.0000	41.31	7.66	48.97	74.00	-25.03	V	Peak
7786.0000	41.67	9.23	50.90	74.00	-23.10	V	Peak
8353.0000	41.54	9.46	51.00	74.00	-23.00	V	Peak
4870.0000	50.74	4.56	55.30	74.00	-18.70	H	Peak
4870.0000	46.11	4.56	50.67	54.00	-3.33	H	AVG
6211.0000	42.76	6.42	49.18	74.00	-24.82	H	Peak
6949.0000	42.31	7.62	49.93	74.00	-24.07	H	Peak
7696.0000	40.91	9.06	49.97	74.00	-24.03	H	Peak
8326.0000	40.70	9.47	50.17	74.00	-23.83	H	Peak
9361.0000	40.65	10.14	50.79	74.00	-23.21	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Test Mode: TX / IEEE 802.11b (CH High) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
4924.000	44.95	4.73	49.68	74.00	-24.32	V	Peak
6085.000	42.39	6.22	48.61	74.00	-25.39	V	Peak
6940.000	41.18	7.60	48.78	74.00	-25.22	V	Peak
7984.000	40.81	9.62	50.43	74.00	-23.57	V	Peak
8560.000	41.36	9.34	50.70	74.00	-23.30	V	Peak
8812.000	41.82	9.20	51.02	74.00	-22.98	V	Peak
4348.000	42.11	2.81	44.92	74.00	-29.08	H	Peak
4924.000	49.69	4.73	54.42	74.00	-19.58	H	Peak
4924.000	46.63	4.73	51.36	54.00	-2.64	H	AVG
5698.000	41.95	5.95	47.90	74.00	-26.10	H	Peak
6832.000	41.72	7.43	49.15	74.00	-24.85	H	Peak
7606.000	41.43	8.88	50.31	74.00	-23.69	H	Peak
8353.000	41.86	9.46	51.32	74.00	-22.68	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Antenna 1

Test Mode: TX / IEEE 802.11b(CH Low) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
4825.000	51.06	4.41	55.47	74.00	-18.53	V	peak
4825.000	46.36	4.41	50.77	54.00	-3.23	V	AVG
5680.000	41.39	5.95	47.34	74.00	-26.66	V	peak
6013.000	40.55	6.10	46.65	74.00	-27.35	V	peak
6670.000	41.30	7.17	48.47	74.00	-25.53	V	peak
7237.000	41.94	8.16	50.10	74.00	-23.90	V	peak
8452.000	41.37	9.40	50.77	74.00	-23.23	V	peak
3745.000	43.93	0.51	44.44	74.00	-29.56	H	Peak
4825.000	48.00	4.41	52.41	74.00	-21.59	H	Peak
4825.000	47.01	4.41	51.42	54.00	-2.58	H	AVG
5743.000	41.59	5.97	47.56	74.00	-26.44	H	peak
6697.000	41.57	7.21	48.78	74.00	-25.22	H	peak
7237.000	41.72	8.16	49.88	74.00	-24.12	H	peak
8362.000	41.19	9.45	50.64	74.00	-23.36	H	peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Test Mode: TX / IEEE 802.11b (CH Mid) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1954.000	53.23	-5.29	47.94	74.00	-26.06	V	Peak
4870.000	48.62	4.56	53.18	74.00	-20.82	V	Peak
4870.000	46.70	4.56	51.26	54.00	-2.74	V	AVG
5752.000	42.23	5.98	48.21	74.00	-25.79	V	Peak
6256.000	41.27	6.49	47.76	74.00	-26.24	V	Peak
7615.000	41.12	8.90	50.02	74.00	-23.98	V	Peak
7921.000	40.85	9.50	50.35	74.00	-23.65	V	Peak
4231.000	42.70	2.40	45.10	74.00	-28.90	H	Peak
4870.000	45.48	4.56	50.04	74.00	-23.96	H	Peak
6157.000	42.15	6.33	48.48	74.00	-25.52	H	Peak
7183.000	41.36	8.06	49.42	74.00	-24.58	H	Peak
7975.000	41.20	9.60	50.80	74.00	-23.20	H	Peak
8677.000	41.21	9.28	50.49	74.00	-23.51	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Test Mode: TX / IEEE 802.11b (CH High) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
3880.000	43.93	1.08	45.01	74.00	-28.99	V	Peak
4924.000	48.75	4.73	53.48	74.00	-20.52	V	Peak
4924.000	46.55	4.73	51.28	54.00	-2.72	V	AVG
5644.000	42.79	5.93	48.72	74.00	-25.28	V	Peak
6958.000	41.64	7.63	49.27	74.00	-24.73	V	Peak
7966.000	40.88	9.58	50.46	74.00	-23.54	V	Peak
9586.000	40.99	10.79	51.78	74.00	-22.22	V	Peak
3898.000	43.07	1.16	44.23	74.00	-29.77	H	Peak
4303.000	43.08	2.66	45.74	74.00	-28.26	H	Peak
4924.000	46.76	4.73	51.49	74.00	-22.51	H	Peak
5635.000	42.08	5.93	48.01	74.00	-25.99	H	Peak
6922.000	41.88	7.57	49.45	74.00	-24.55	H	Peak
7696.000	41.82	9.06	50.88	74.00	-23.12	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Antenna 0

Test Mode: TX / IEEE 802.11g(CH Low) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
4411.000	42.36	3.04	45.40	74.00	-28.60	V	Peak
4816.000	50.47	4.38	54.85	74.00	-19.15	V	Peak
4816.000	36.88	4.38	41.26	54.00	-12.74	V	AVG
6292.000	42.19	6.55	48.74	74.00	-25.26	V	Peak
7228.000	46.24	8.14	54.38	74.00	-19.62	V	Peak
7228.000	34.47	8.14	42.61	54.00	-11.39	V	AVG
7759.000	41.60	9.18	50.78	74.00	-23.22	V	Peak
8596.000	41.61	9.32	50.93	74.00	-23.07	V	Peak
4096.000	42.78	1.93	44.71	74.00	-29.29	H	Peak
4816.000	57.58	4.38	61.96	74.00	-12.04	H	Peak
4816.000	45.98	4.38	50.36	54.00	-3.64	H	AVG
6373.000	41.82	6.68	48.50	74.00	-25.50	H	Peak
7228.000	44.46	8.14	52.60	74.00	-21.40	H	Peak
7228.000	34.04	8.14	42.18	54.00	-11.82	H	AVG
7957.000	40.98	9.57	50.55	74.00	-23.45	H	Peak
8650.000	41.40	9.29	50.69	74.00	-23.31	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*

6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Test Mode: TX / IEEE 802.11g (CH Mid) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
3250.000	46.52	-0.94	45.58	74.00	-28.42	V	Peak
3979.000	42.79	1.50	44.29	74.00	-29.71	V	Peak
4870.000	48.71	4.56	53.27	74.00	-20.73	V	Peak
4870.000	37.80	4.56	42.36	54.00	-11.64	V	AVG
5752.000	41.89	5.98	47.87	74.00	-26.13	V	Peak
6841.000	41.80	7.44	49.24	74.00	-24.76	V	Peak
7309.000	46.28	8.30	54.58	74.00	-19.42	V	Peak
7309.000	42.96	8.30	51.26	54.00	-2.74	V	AVG
4195.000	42.54	2.28	44.82	74.00	-29.18	H	Peak
4870.000	56.48	4.56	61.04	74.00	-12.96	H	Peak
4870.000	39.06	4.56	43.62	54.00	-10.38	H	AVG
6121.000	41.81	6.28	48.09	74.00	-25.91	H	Peak
6697.000	41.02	7.21	48.23	74.00	-25.77	H	Peak
7318.000	46.79	8.32	55.11	74.00	-18.89	H	Peak
7318.000	33.06	8.32	41.38	54.00	-12.62	H	AVG
8146.000	40.78	9.57	50.35	74.00	-23.65	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Test Mode: TX / IEEE 802.11g (CH High) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
4330.000	42.28	2.75	45.03	74.00	-28.97	V	Peak
4924.000	43.73	4.73	48.46	74.00	-25.54	V	Peak
5428.000	42.61	5.74	48.35	74.00	-25.65	V	Peak
6958.000	41.84	7.63	49.47	74.00	-24.53	V	Peak
7390.000	47.29	8.46	55.75	74.00	-18.25	V	Peak
7390.000	35.93	8.46	44.39	54.00	-9.61	V	AVG
8335.000	41.29	9.47	50.76	74.00	-23.24	V	Peak
4447.000	41.91	3.16	45.07	74.00	-28.93	H	Peak
4933.000	53.71	4.76	58.47	74.00	-15.53	H	Peak
4933.000	41.59	4.76	46.35	54.00	-7.65	H	AVG
5410.000	41.71	5.71	47.42	74.00	-26.58	H	Peak
5752.000	41.69	5.98	47.67	74.00	-26.33	H	Peak
6409.000	40.89	6.74	47.63	74.00	-26.37	H	Peak
7381.000	47.77	8.44	56.21	74.00	-17.79	H	Peak
7381.000	36.35	8.44	44.79	54.00	-9.21	H	AVG

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Antenna 1

Test Mode: TX / IEEE 802.11g(CH Low) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
3790.000	43.10	0.70	43.80	74.00	-30.20	V	Peak
4825.000	57.72	4.41	62.13	74.00	-11.87	V	Peak
4825.000	47.46	4.41	51.87	54.00	-2.13	V	AVG
5779.000	41.36	5.99	47.35	74.00	-26.65	V	Peak
6778.000	40.56	7.34	47.90	74.00	-26.10	V	Peak
7228.000	53.72	8.14	61.86	74.00	-12.14	V	Peak
7228.000	42.25	8.14	50.39	54.00	-3.61	V	AVG
8029.000	40.98	9.63	50.61	74.00	-23.39	V	Peak
3664.000	44.89	0.17	45.06	74.00	-28.94	H	Peak
4825.000	55.38	4.41	59.79	74.00	-14.21	H	Peak
4825.000	43.84	4.41	48.25	54.00	-5.75	H	AVG
5491.000	42.03	5.85	47.88	74.00	-26.12	H	Peak
6013.000	42.22	6.10	48.32	74.00	-25.68	H	Peak
7237.000	49.89	8.16	58.05	74.00	-15.95	H	Peak
7237.000	38.96	8.16	47.12	54.00	-6.88	H	AVG
8587.000	41.29	9.33	50.62	74.00	-23.38	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Test Mode: TX / IEEE 802.11g (CH Mid) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
3205.000	44.34	-1.02	43.32	74.00	-30.68	V	Peak
4879.000	60.44	4.59	65.03	74.00	-8.97	V	Peak
4879.000	47.23	4.59	51.82	54.00	-2.18	V	AVG
5590.000	41.71	5.91	47.62	74.00	-26.38	V	Peak
6274.000	41.47	6.52	47.99	74.00	-26.01	V	Peak
7309.000	49.48	8.30	57.78	74.00	-16.22	V	Peak
7309.000	39.09	8.30	47.39	54.00	-6.61	V	AVG
8335.000	41.59	9.47	51.06	74.00	-22.94	V	Peak
4249.000	41.86	2.47	44.33	74.00	-29.67	H	Peak
4870.000	55.54	4.56	60.10	74.00	-13.90	H	Peak
4870.000	44.83	4.56	49.39	54.00	-4.61	H	AVG
5635.000	41.43	5.93	47.36	74.00	-26.64	H	Peak
7309.000	47.45	8.30	55.75	74.00	-18.25	H	Peak
7309.000	37.39	8.30	45.69	54.00	-8.31	H	AVG
7921.000	42.01	9.50	51.51	74.00	-22.49	H	Peak
8092.000	40.93	9.60	50.53	74.00	-23.47	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Test Mode: TX / IEEE 802.11g (CH High) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
3763.000	43.93	0.59	44.52	74.00	-29.48	V	Peak
4933.000	60.24	4.76	65.00	74.00	-9.00	V	Peak
4933.000	47.03	4.76	51.79	54.00	-2.21	V	AVG
5626.000	42.48	5.92	48.40	74.00	-25.60	V	Peak
7390.000	48.86	8.46	57.32	74.00	-16.68	V	Peak
7390.000	39.93	8.46	48.39	54.00	-5.61	V	AVG
8371.000	41.56	9.45	51.01	74.00	-22.99	V	Peak
9847.000	46.85	11.54	58.39	74.00	-15.61	V	Peak
9847.000	37.84	11.54	49.38	54.00	-4.62	V	AVG
3358.000	45.23	-0.76	44.47	74.00	-29.53	H	Peak
4924.000	57.38	4.73	62.11	74.00	-11.89	H	Peak
4924.000	45.63	4.73	50.36	54.00	-3.64	H	AVG
5752.000	42.82	5.98	48.80	74.00	-25.20	H	Peak
6526.000	41.34	6.93	48.27	74.00	-25.73	H	Peak
7381.000	46.85	8.44	55.29	74.00	-18.71	H	Peak
7381.000	33.92	8.44	42.36	54.00	-11.64	H	AVG
8209.000	42.06	9.54	51.60	74.00	-22.40	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Combine with Antenna 0 and Antenna 1

Test Mode: TX / IEEE 802.11n HT20 MHz (CH Low) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
4825.000	55.40	4.41	59.81	74.00	-14.19	V	Peak
4825.000	46.47	4.41	50.88	54.00	-3.12	V	AVG
5617.000	42.07	5.92	47.99	74.00	-26.01	V	Peak
7219.000	49.32	8.13	57.45	74.00	-16.55	V	Peak
7219.000	40.06	8.13	48.19	54.00	-5.81	V	AVG
7741.000	41.76	9.14	50.90	74.00	-23.10	V	Peak
9514.000	41.04	10.58	51.62	74.00	-22.38	V	Peak
9649.000	42.79	10.97	53.76	74.00	-20.24	V	Peak
9649.000	36.34	10.97	47.31	54.00	-6.69	V	AVG
4051.000	43.55	1.77	45.32	74.00	-28.68	H	Peak
4825.000	59.01	4.41	63.42	74.00	-10.58	H	Peak
4825.000	46.65	4.41	51.06	54.00	-2.94	H	AVG
6292.000	41.40	6.55	47.95	74.00	-26.05	H	Peak
7237.000	50.16	8.16	58.32	74.00	-15.68	H	Peak
7237.000	39.23	8.16	47.39	54.00	-6.61	H	AVG
7930.000	41.53	9.51	51.04	74.00	-22.96	H	Peak
8443.000	40.79	9.41	50.20	74.00	-23.80	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Test Mode: TX / IEEE 802.11n HT20 MHz (CH Mid) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
3934.000	43.58	1.31	44.89	74.00	-29.11	V	Peak
4879.000	52.73	4.59	57.32	74.00	-16.68	V	Peak
4879.000	42.39	4.59	46.98	54.00	-7.02	V	AVG
5509.000	41.69	5.87	47.56	74.00	-26.44	V	Peak
6454.000	40.60	6.82	47.42	74.00	-26.58	V	Peak
7318.000	46.52	8.32	54.84	74.00	-19.16	V	Peak
7318.000	40.07	8.32	48.39	54.00	-5.61	V	AVG
7759.000	41.62	9.18	50.80	74.00	-23.20	V	Peak
4870.000	53.06	4.56	57.62	74.00	-16.38	H	Peak
4870.000	43.83	4.56	48.39	54.00	-5.61	H	AVG
6265.000	41.59	6.51	48.10	74.00	-25.90	H	Peak
6769.000	42.04	7.33	49.37	74.00	-24.63	H	Peak
7714.000	41.75	9.09	50.84	74.00	-23.16	H	Peak
8002.000	41.35	9.65	51.00	74.00	-23.00	H	Peak
8587.000	42.06	9.33	51.39	74.00	-22.61	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Test Mode: TX / EEE 802.11n HT20 MHz (CH High) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
4303.000	42.35	2.66	45.01	74.00	-28.99	V	Peak
4924.000	52.90	4.73	57.63	74.00	-16.37	V	Peak
4924.000	44.35	4.73	49.08	54.00	-4.92	V	AVG
5635.000	43.21	5.93	49.14	74.00	-24.86	V	Peak
7093.000	41.41	7.88	49.29	74.00	-24.71	V	Peak
7381.000	44.05	8.44	52.49	74.00	-21.51	V	Peak
7381.000	36.95	8.44	45.39	54.00	-8.61	V	AVG
8020.000	40.35	9.64	49.99	74.00	-24.01	V	Peak
4132.000	42.88	2.05	44.93	74.00	-29.07	H	Peak
4924.000	53.69	4.73	58.42	74.00	-15.58	H	Peak
4924.000	43.66	4.73	48.39	54.00	-5.61	H	AVG
5869.000	42.49	6.02	48.51	74.00	-25.49	H	Peak
6742.000	41.39	7.28	48.67	74.00	-25.33	H	Peak
7399.000	41.76	8.48	50.24	74.00	-23.76	H	Peak
8326.000	41.37	9.47	50.84	74.00	-23.16	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Combine with Antenna 0 and Antenna 1

Test Mode: TX/ IEEE 802.11n HT40 MHz (CH Low) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
3232.000	44.87	-0.97	43.90	74.00	-30.10	V	Peak
4159.000	42.24	2.15	44.39	74.00	-29.61	V	Peak
4843.000	51.18	4.47	55.65	74.00	-18.35	V	Peak
4843.000	39.15	4.47	43.62	54.00	-10.38	V	AVG
7264.000	43.83	8.21	52.04	74.00	-21.96	V	Peak
8560.000	41.97	9.34	51.31	74.00	-22.69	V	Peak
9388.000	42.14	10.22	52.36	74.00	-21.64	V	Peak
4258.000	41.81	2.50	44.31	74.00	-29.69	H	Peak
4843.000	52.18	4.47	56.65	74.00	-17.35	H	Peak
4843.000	41.90	4.47	46.37	54.00	-7.63	H	AVG
5617.000	40.83	5.92	46.75	74.00	-27.25	H	Peak
6301.000	40.60	6.57	47.17	74.00	-26.83	H	Peak
7246.000	42.49	8.18	50.67	74.00	-23.33	H	Peak
8371.000	41.59	9.45	51.04	74.00	-22.96	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Test Mode: TX / IEEE 802.11n HT40 MHz (CH Mid) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
3250.000	45.46	-0.94	44.52	74.00	-29.48	V	Peak
4159.000	42.85	2.15	45.00	74.00	-29.00	V	Peak
4870.000	50.49	4.56	55.05	74.00	-18.95	V	AVG
4870.000	40.13	4.56	44.69	54.00	-9.31	V	Peak
6724.000	41.56	7.25	48.81	74.00	-25.19	V	Peak
7309.000	43.28	8.30	51.58	74.00	-22.42	V	Peak
7741.000	41.85	9.14	50.99	74.00	-23.01	V	Peak
3853.000	42.40	0.97	43.37	74.00	-30.63	H	Peak
4870.000	49.19	4.56	53.75	74.00	-20.25	H	Peak
4870.000	37.83	4.56	42.39	54.00	-11.61	H	AVG
5050.000	42.07	5.07	47.14	74.00	-26.86	H	Peak
6724.000	40.91	7.25	48.16	74.00	-25.84	H	Peak
7561.000	40.64	8.79	49.43	74.00	-24.57	H	Peak
8362.000	40.81	9.45	50.26	74.00	-23.74	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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Test Mode: TX/ IEEE 802.11n HT40 MHz (CH High) **Tested by:** Jack Chen

Ambient temperature: 24°C **Relative humidity:** 52% RH **Date:** June 27, 2016

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
4906.000	49.61	4.67	54.28	74.00	-19.72	V	Peak
4906.000	40.70	4.67	45.37	54.00	-8.63	V	AVG
5383.000	41.81	5.66	47.47	74.00	-26.53	V	Peak
6292.000	40.27	6.55	46.82	74.00	-27.18	V	Peak
7363.000	42.81	8.41	51.22	74.00	-22.78	V	Peak
7651.000	41.66	8.97	50.63	74.00	-23.37	V	Peak
8767.000	41.14	9.23	50.37	74.00	-23.63	V	Peak
4276.000	41.93	2.56	44.49	74.00	-29.51	H	Peak
4906.000	49.69	4.67	54.36	74.00	-19.64	H	Peak
4906.000	46.64	4.67	51.31	54.00	-2.69	H	AVG
6166.000	41.02	6.35	47.37	74.00	-26.63	H	Peak
6751.000	41.26	7.30	48.56	74.00	-25.44	H	Peak
7561.000	41.02	8.79	49.81	74.00	-24.19	H	Peak
7966.000	40.91	9.58	50.49	74.00	-23.51	H	Peak

REMARKS:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.*
3. *Average test would be performed if the peak result were greater than the average limit or as required by the applicant.*
4. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
5. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
6. *Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).*

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7.3. 6dB BANDWIDTH MEASUREMENT

7.3.1. LIMITS

According to §15.247(a)(2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz. The minimum 6 dB bandwidth shall be at least 500 kHz.

7.3.2. TEST INSTRUMENTS

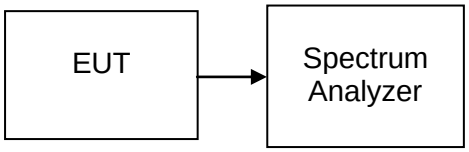
Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	N9010A	MY52221469	02/21/2016	02/20/2017

7.3.3. TEST PROCEDURES (please refer to measurement standard)

8.1 Option 1:

a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 x RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

7.3.4. TEST SETUP



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7.3.5. TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Bandwidth (kHz)		Limit (kHz)	Test Result
		Antenna 0	Antenna 1		
Low	2412	10110	10110	>500	PASS
Mid	2437	10110	10100		PASS
High	2462	10110	10100		PASS

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Bandwidth (kHz)		Limit (kHz)	Test Result
		Antenna 0	Antenna 1		
Low	2412	16340	16350	>500	PASS
Mid	2437	16350	16350		PASS
High	2462	16340	16350		PASS

Test mode: IEEE 802.11n HT20 MHz

Channel	Frequency (MHz)	Bandwidth (kHz)		Limit (kHz)	Test Result
		Antenna 0	Antenna 1		
Low	2412	17570	17560	>500	PASS
Mid	2437	17320	17330		PASS
High	2462	17570	17560		PASS

Test mode: IEEE 802.11n HT40 MHz

Channel	Frequency (MHz)	Bandwidth (kHz)		Limit (kHz)	Test Result
		Antenna 0	Antenna 1		
Low	2422	36380	36410	>500	PASS
Mid	2437	36390	36410		PASS
High	2452	36410	36420		PASS

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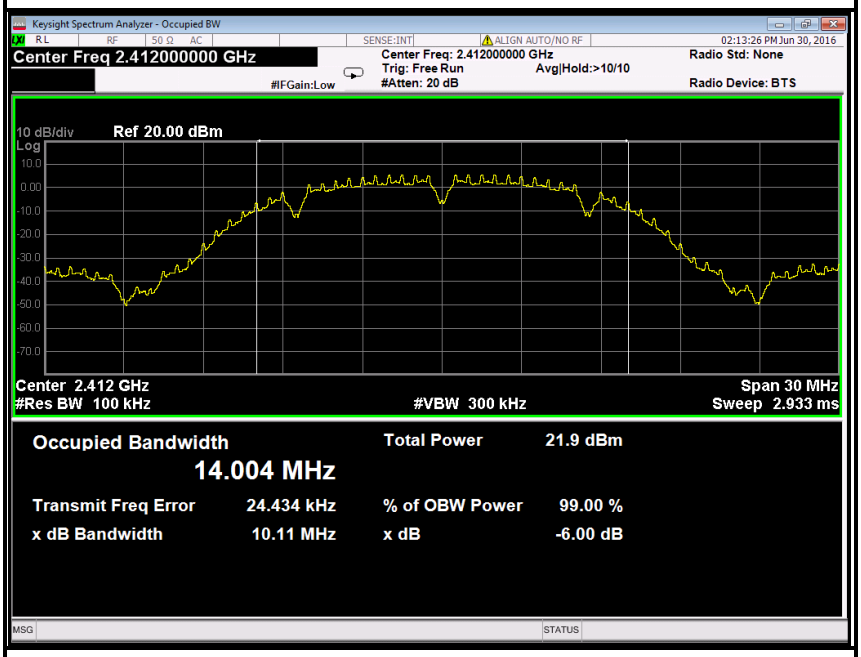
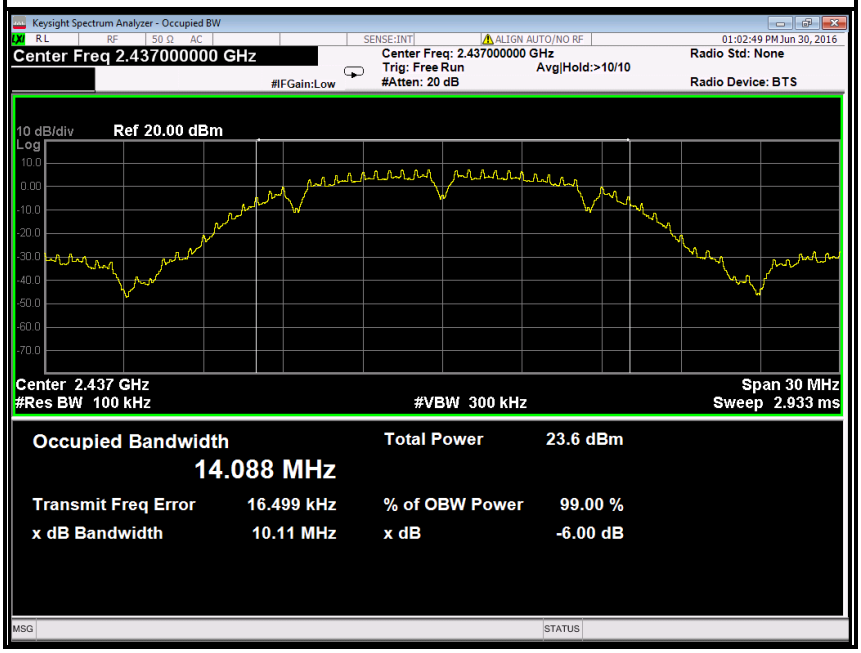
Test Plot

IEEE 802.11b mode (Antenna 0)

6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



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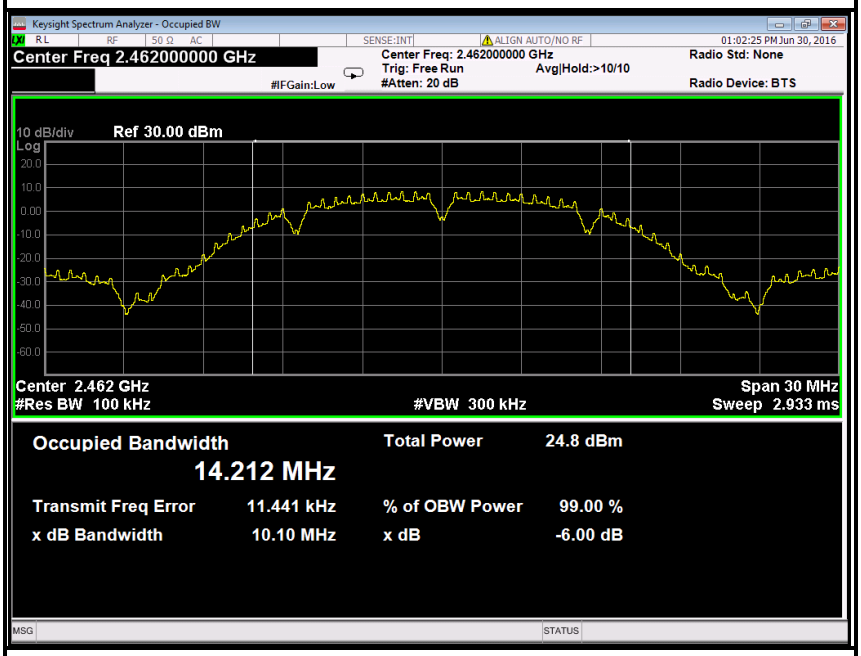
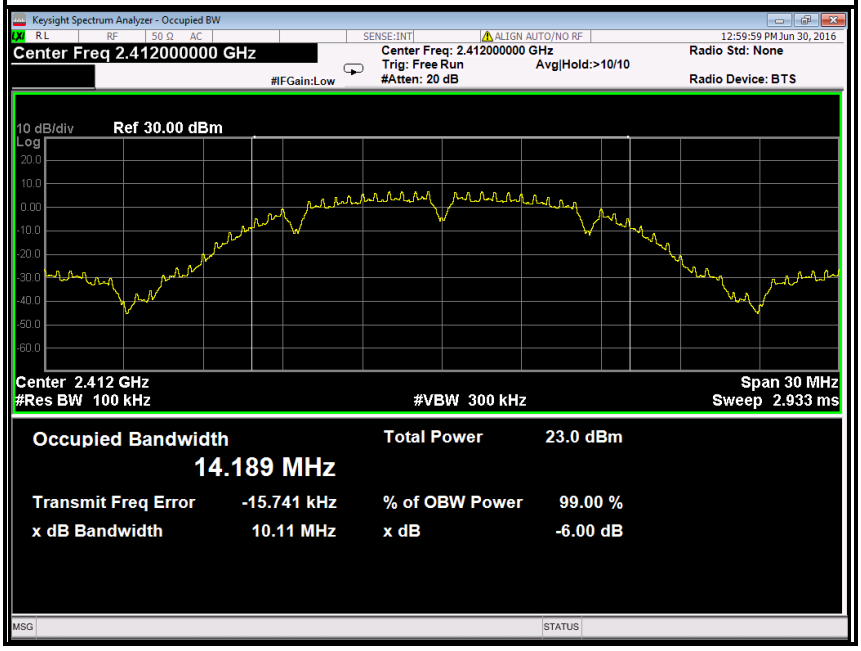
6dB Bandwidth (CH High)



IEEE 802.11b mode (Antenna 1)

6dB Bandwidth (CH Low)



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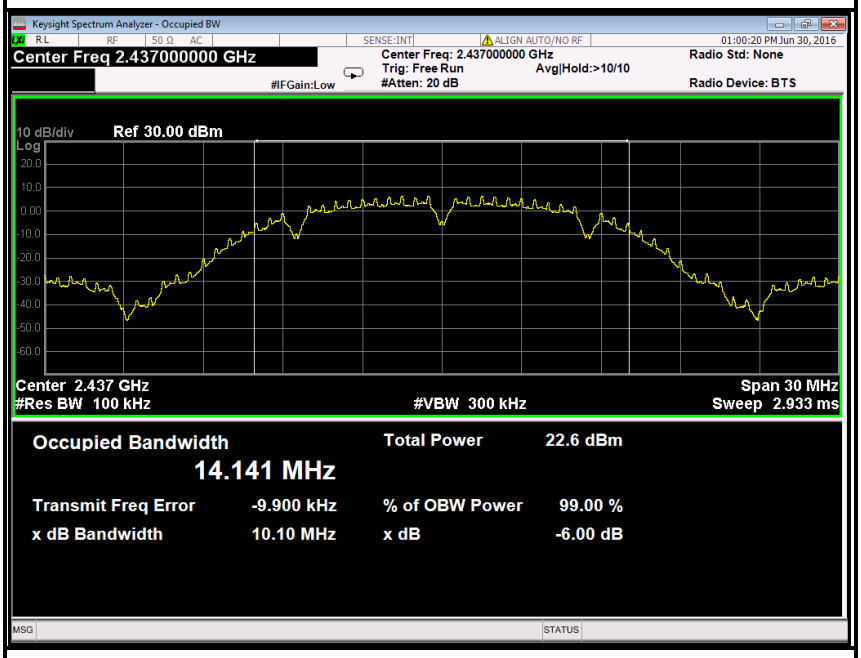
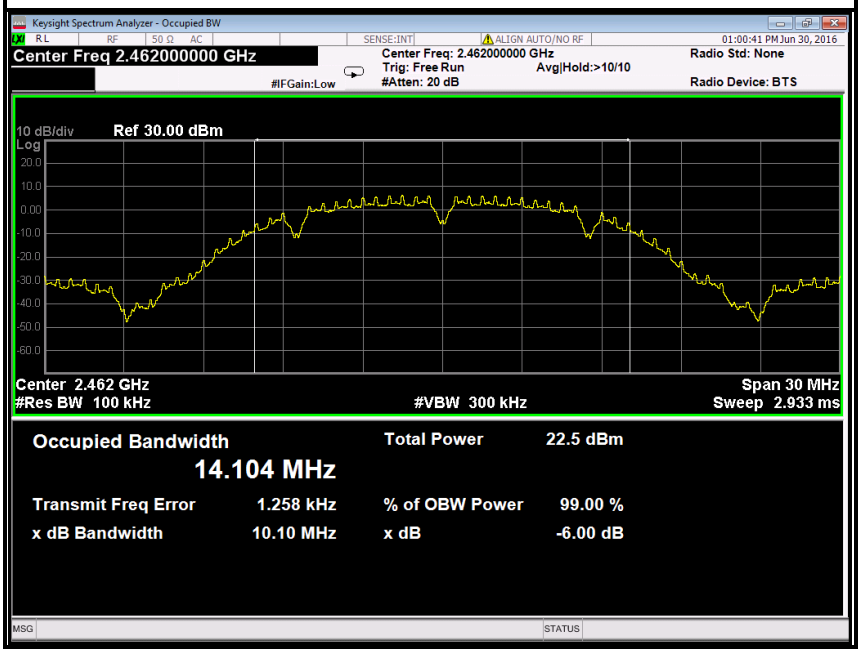
6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High)



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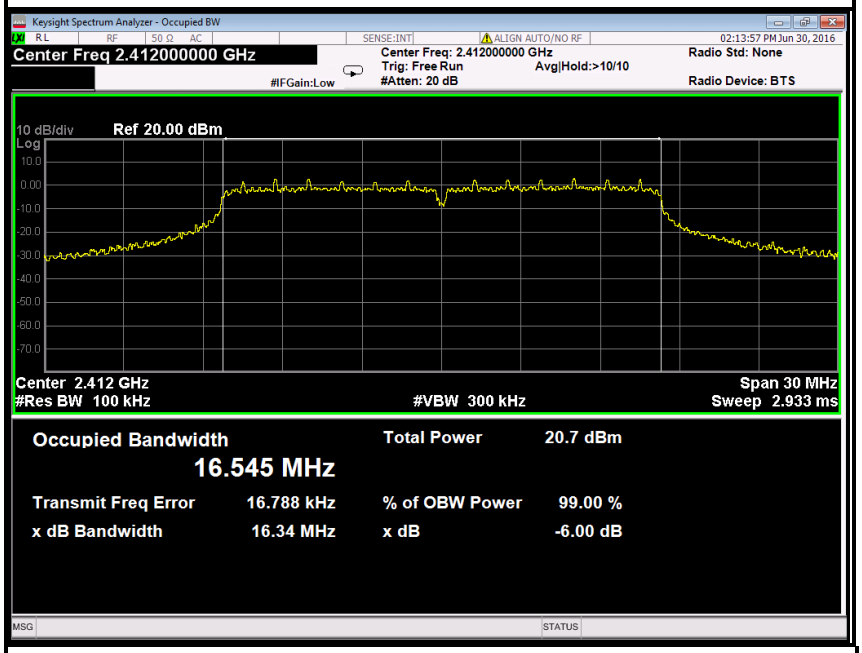
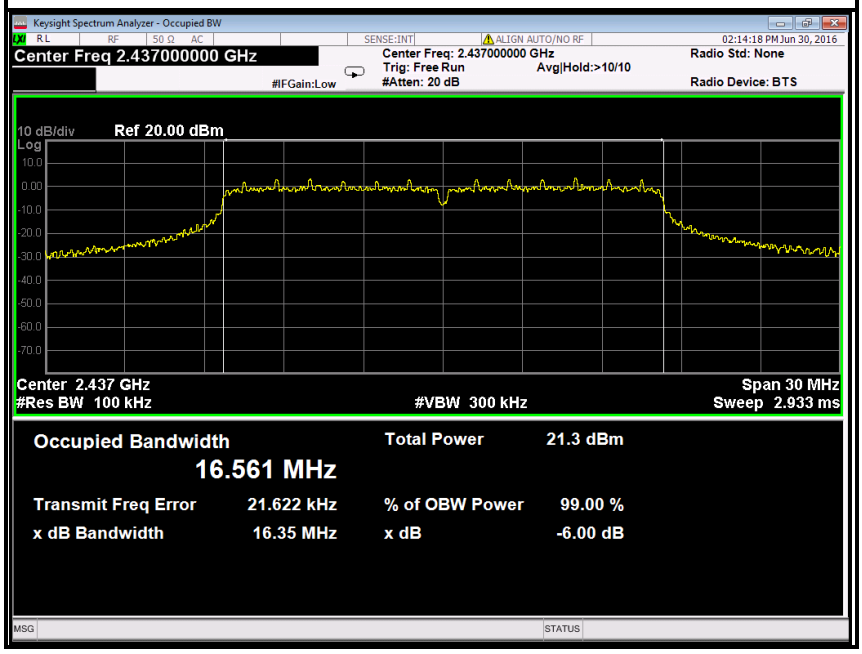
IEEE 802.11g mode (Antenna 0)

6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



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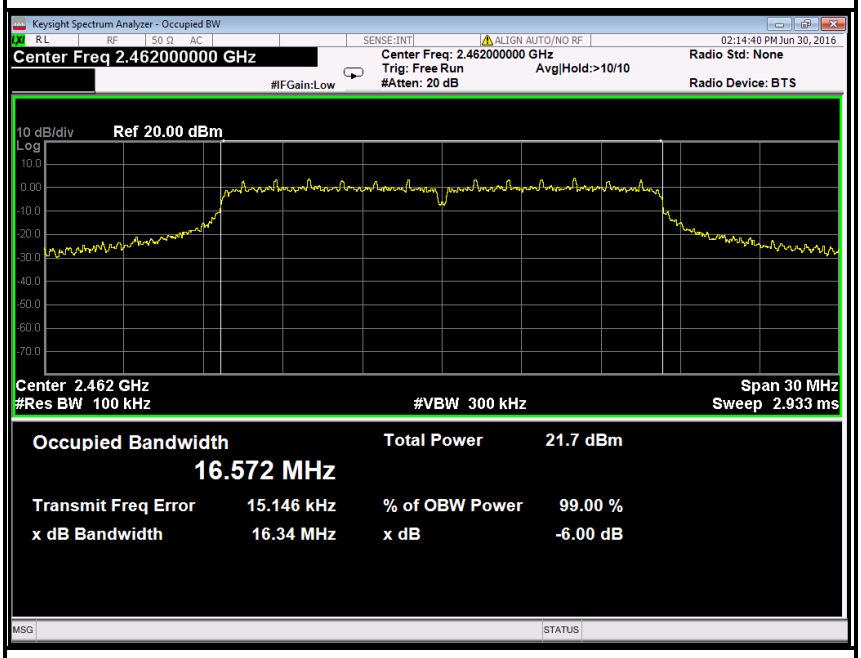
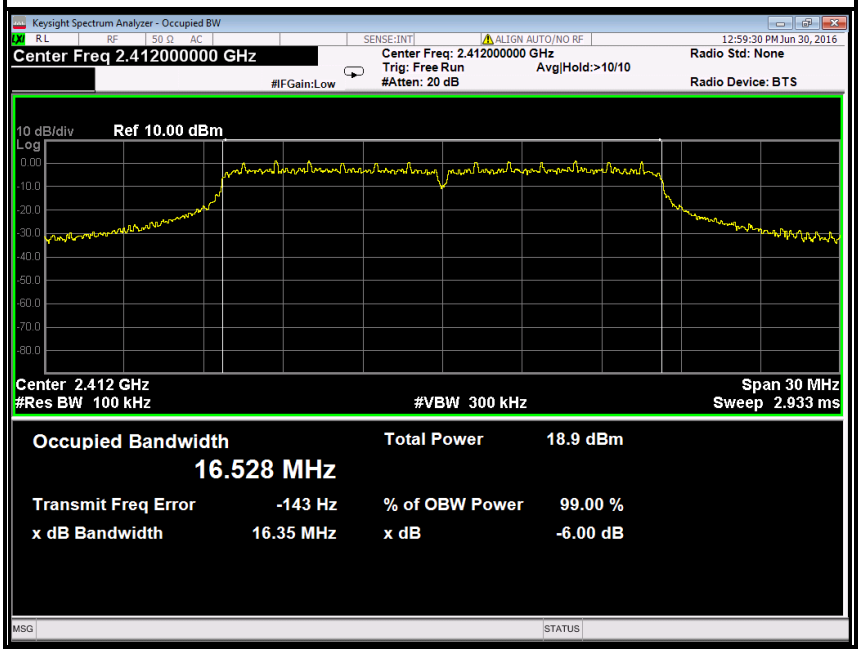
6dB Bandwidth (CH High)



IEEE 802.11g mode (Antenna 1)

6dB Bandwidth (CH Low)



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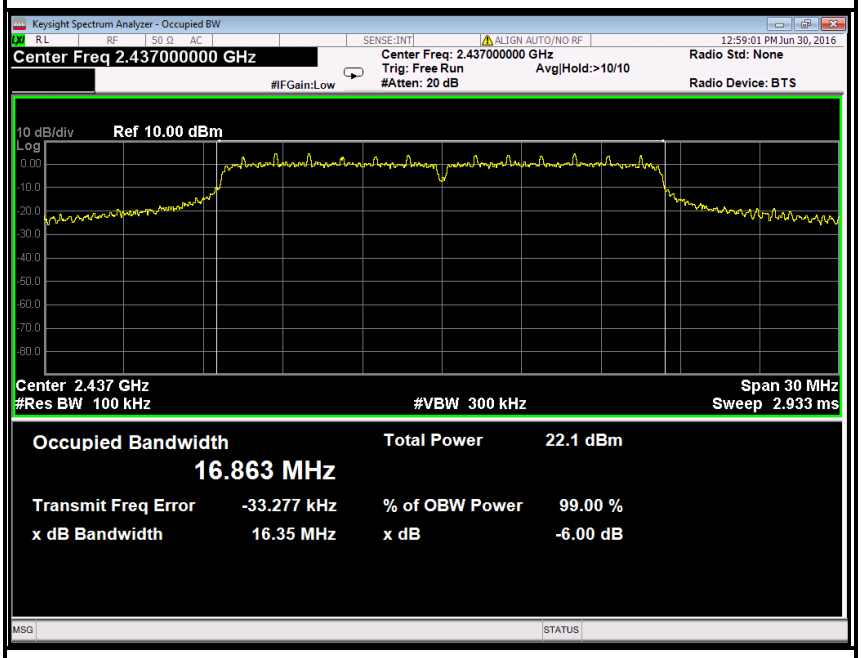
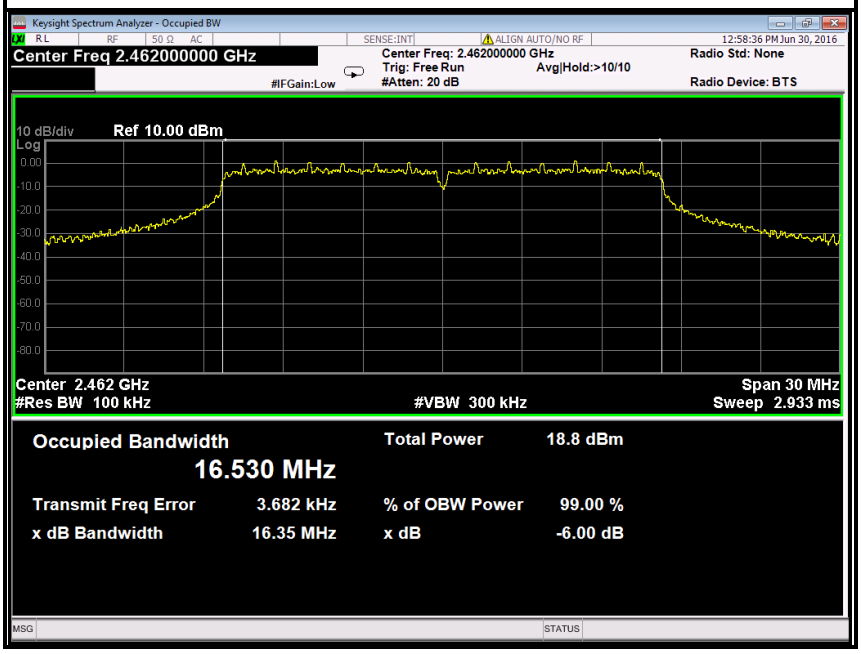
6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High



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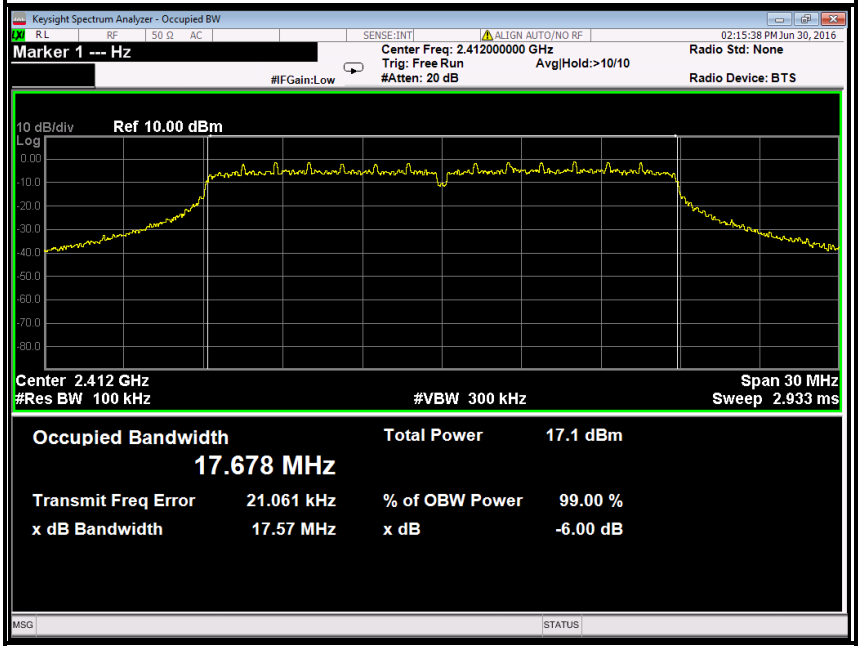
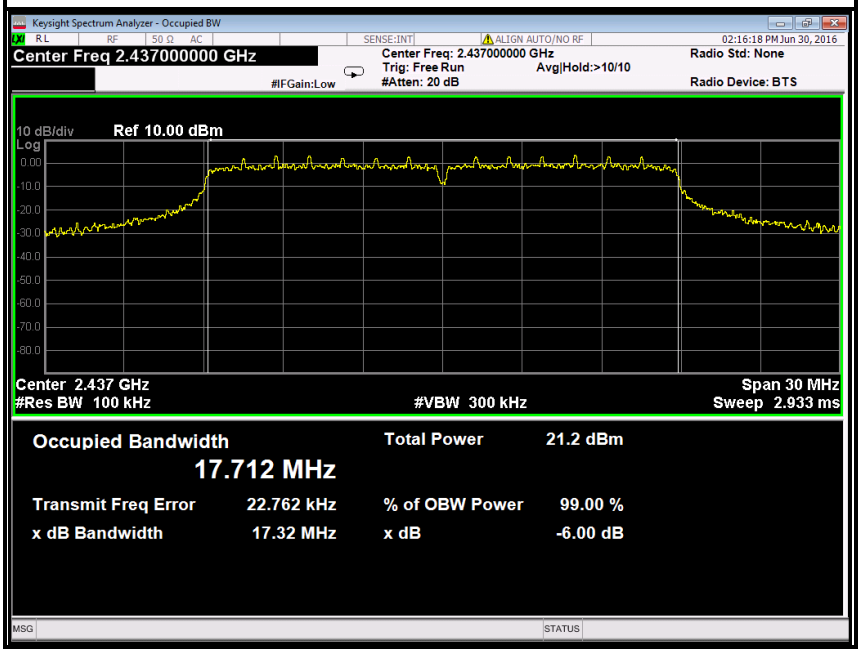
IEEE 802.11n HT20 MHz mode (Antenna 0)

6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



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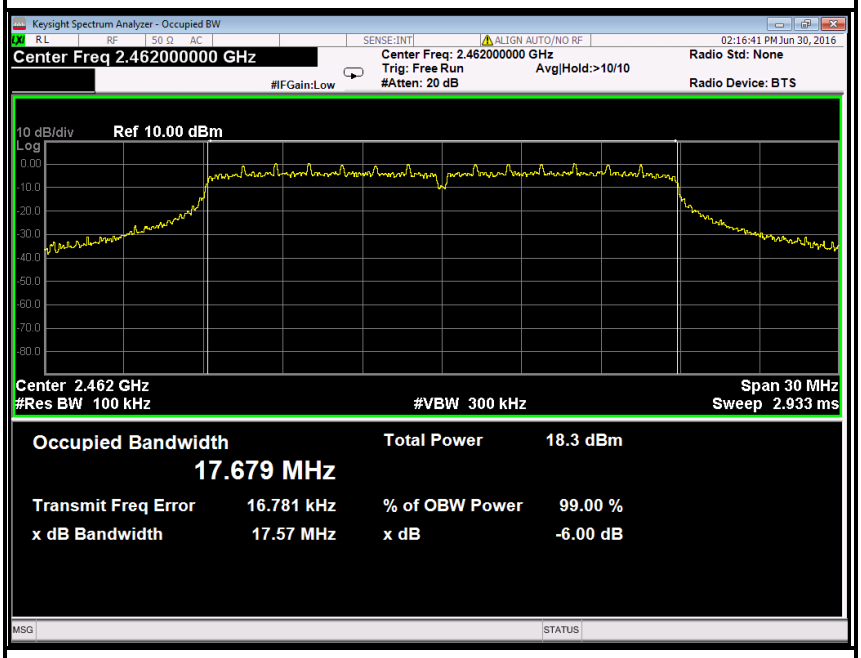
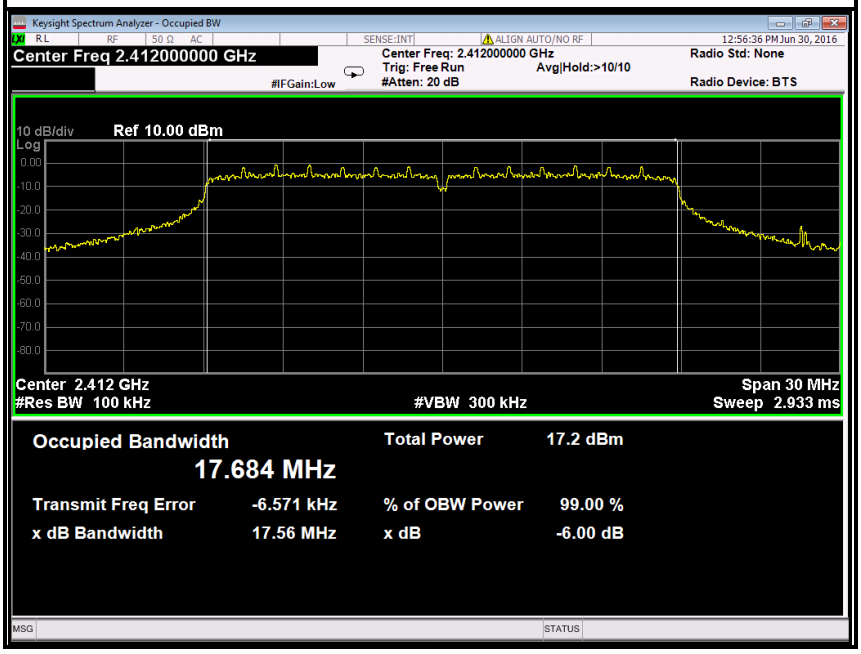
6dB Bandwidth (CH High)



IEEE 802.11n HT20 MHz mode (Antenna 1)

6dB Bandwidth (CH Low)



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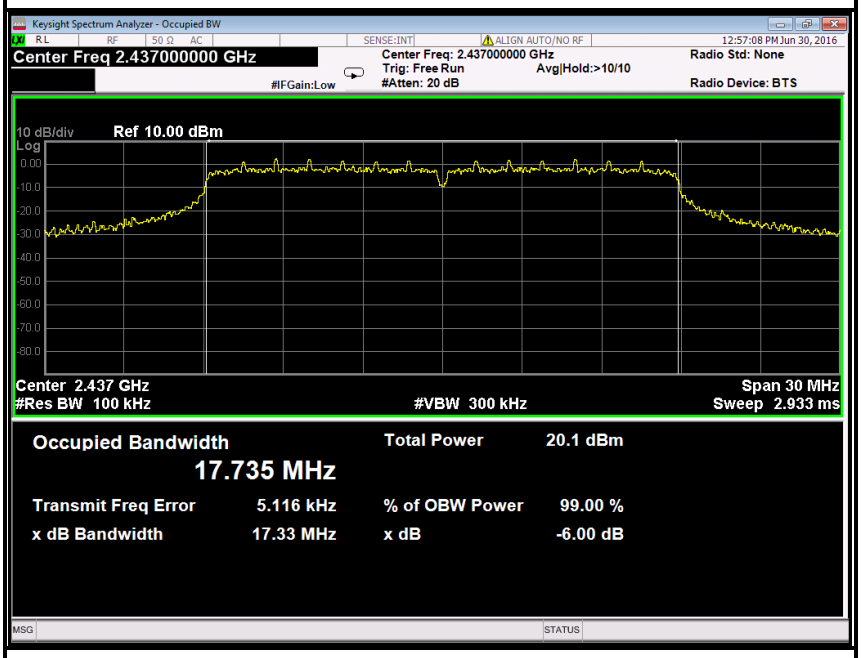
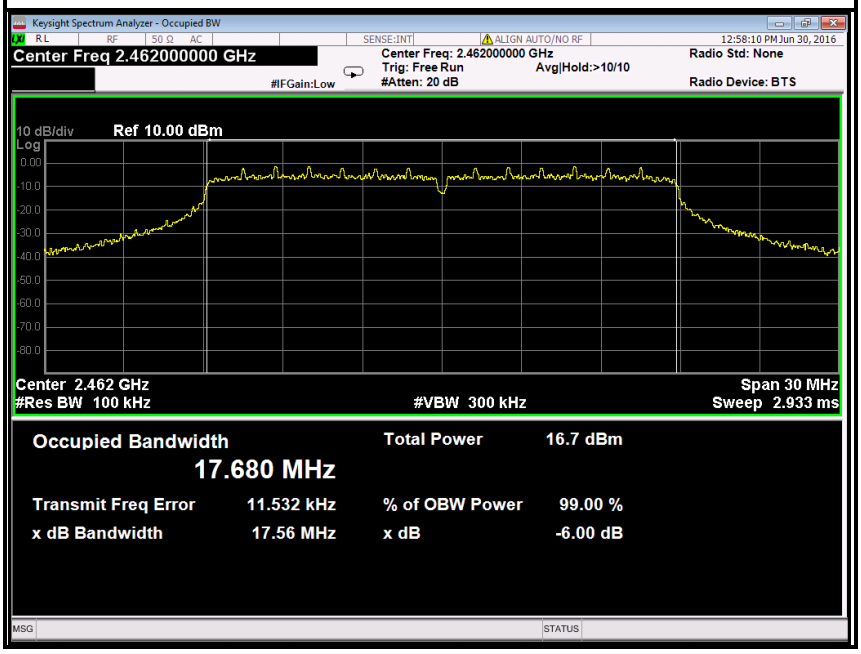
6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High)



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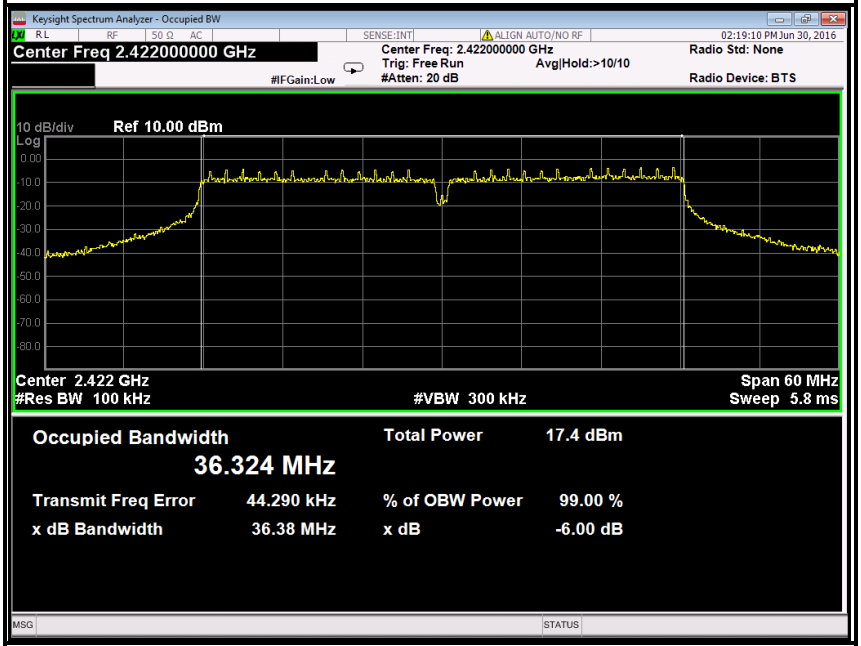
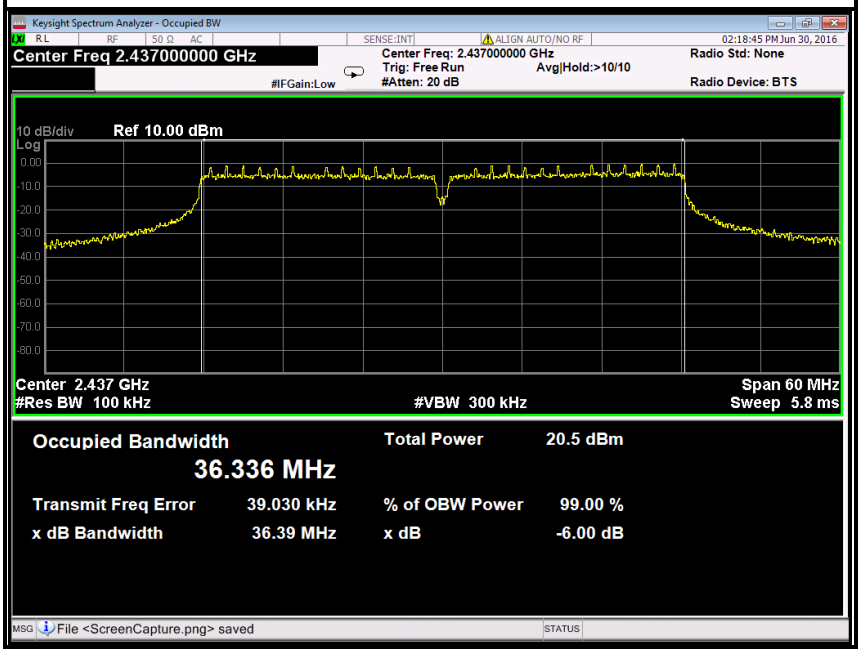
IEEE 802.11n HT40 MHz mode (Antenna 0)

6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



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