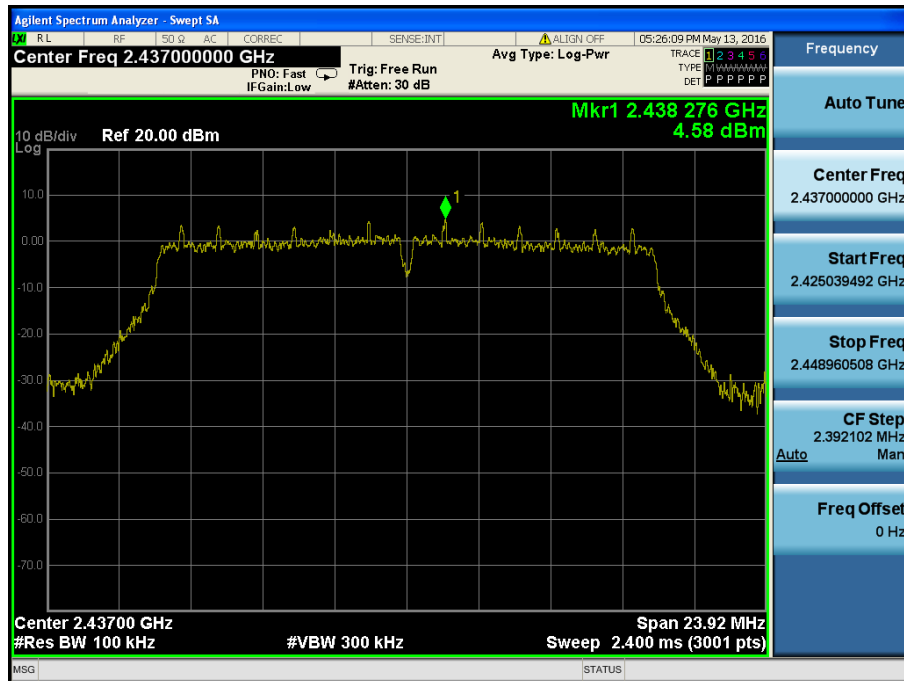
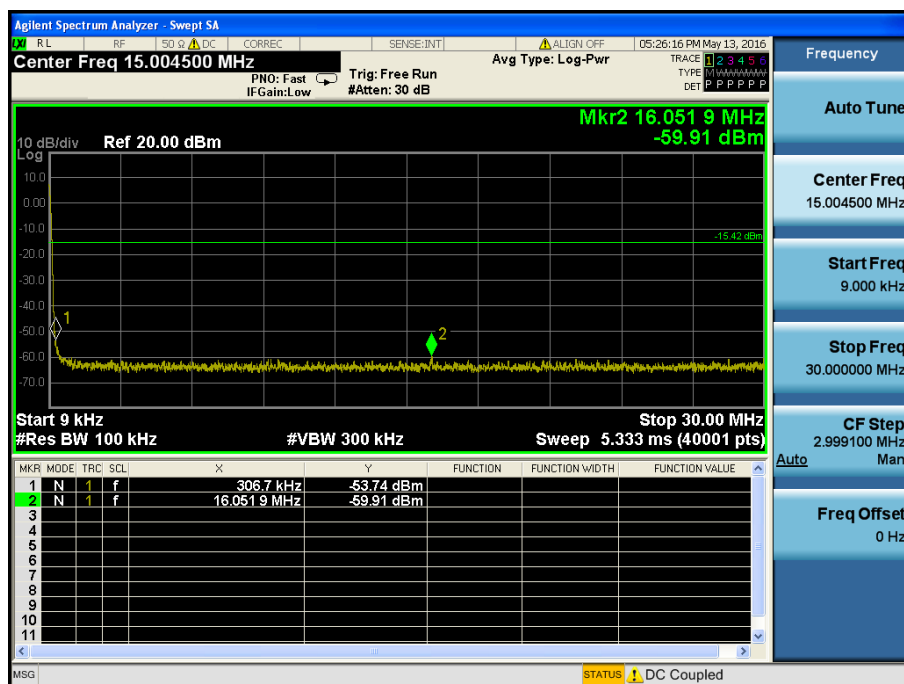


TM 5 & ANT 2 & Middle

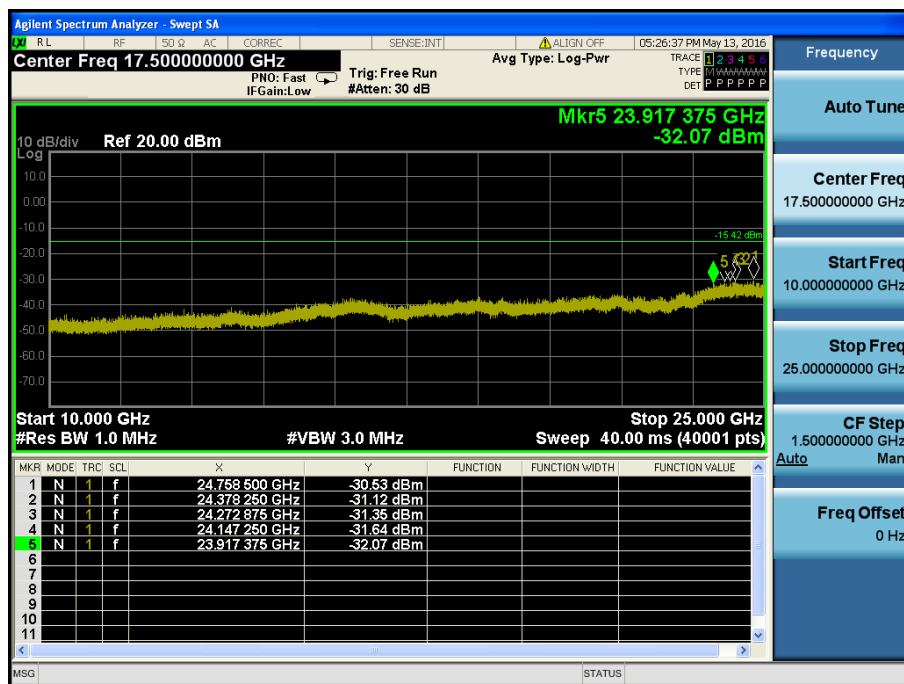
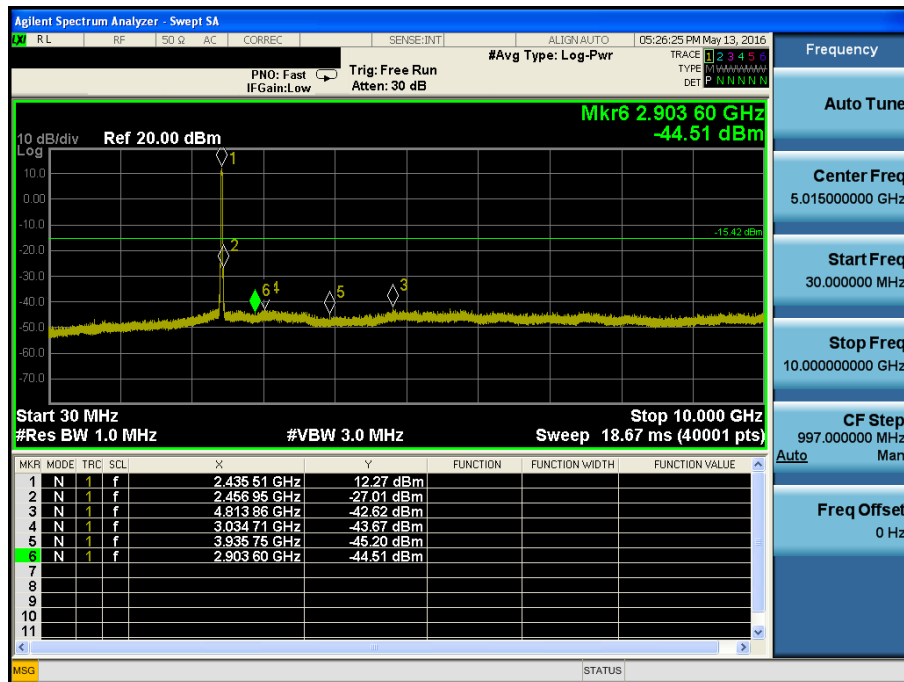
Reference



Conducted Spurious Emissions

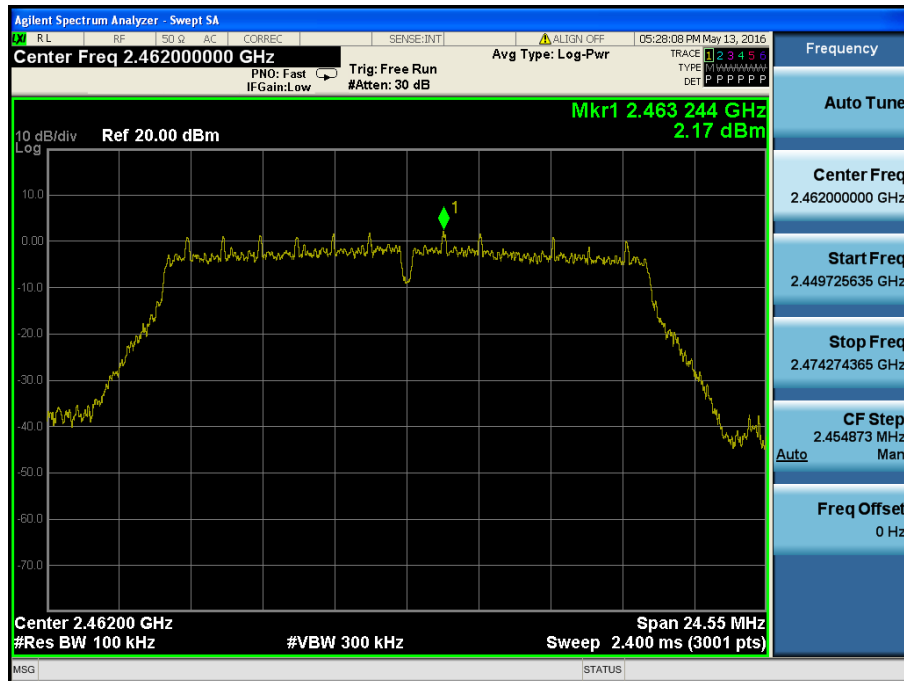


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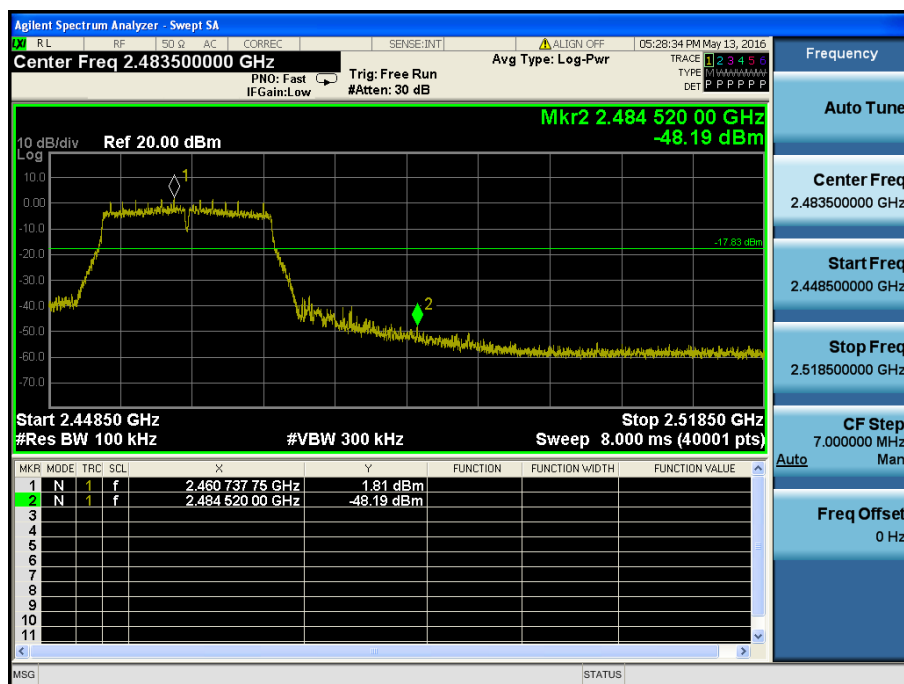


TM 5 & ANT 2 & Highest

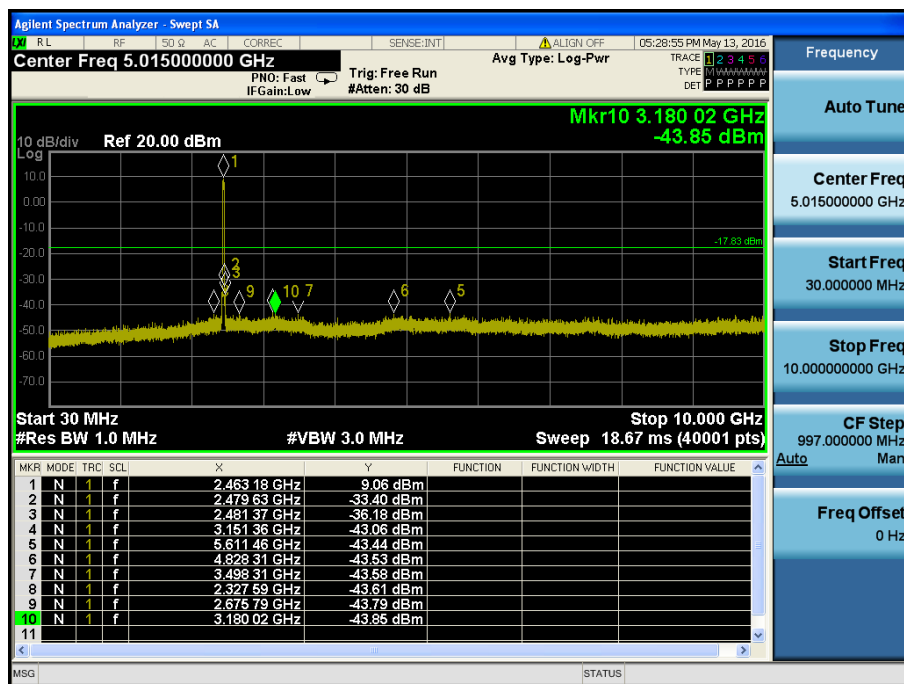
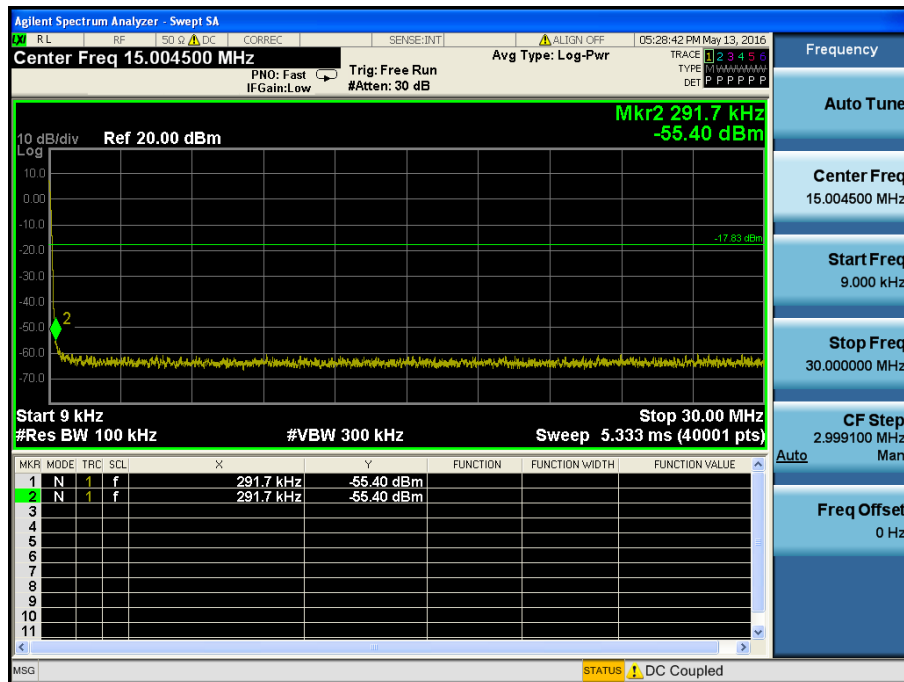
Reference



High Band-edge



Conducted Spurious Emissions

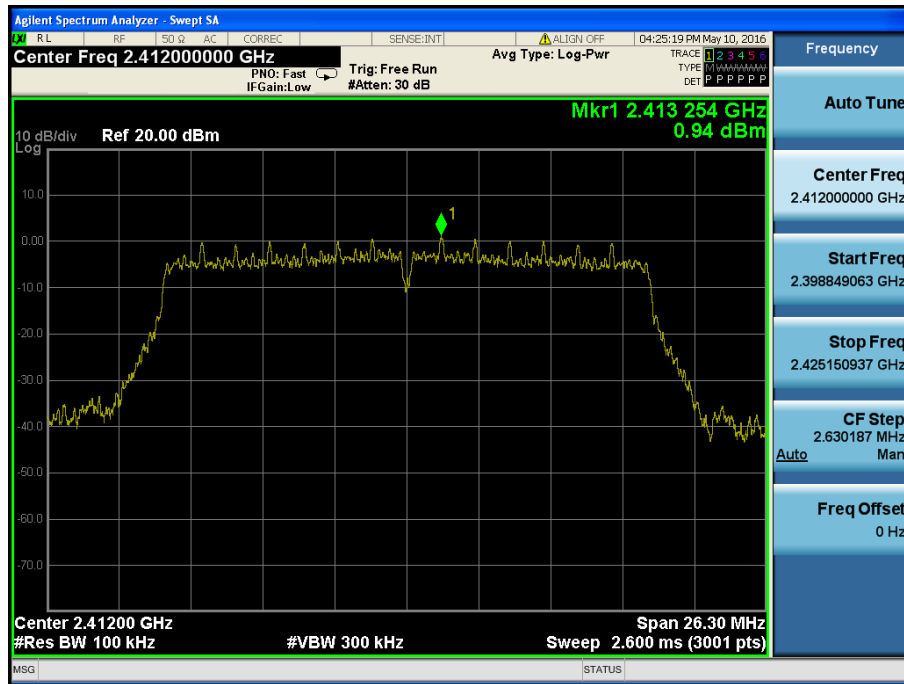


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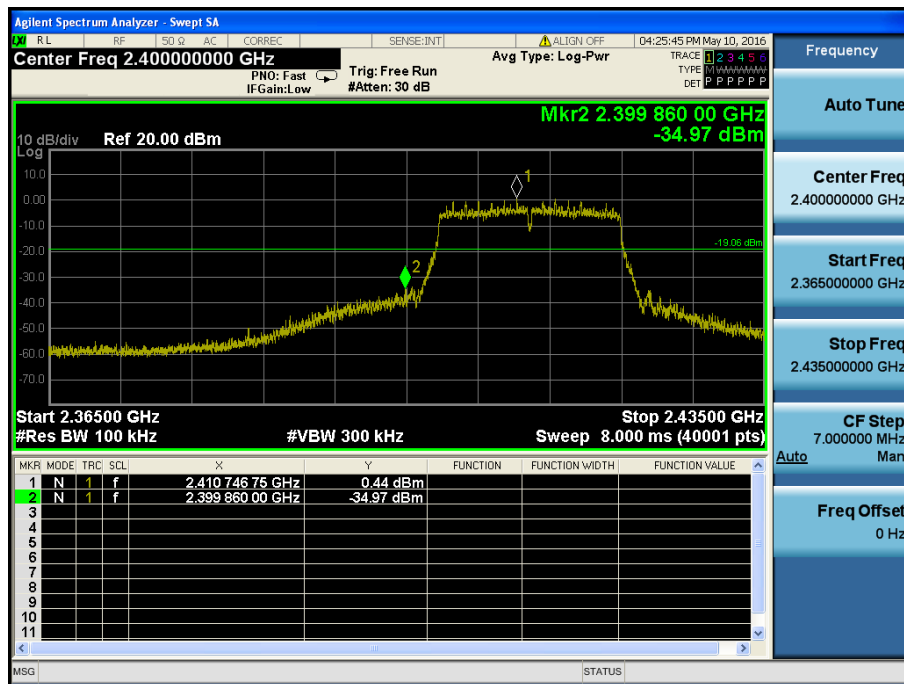


TM 6 & ANT 2 & Lowest

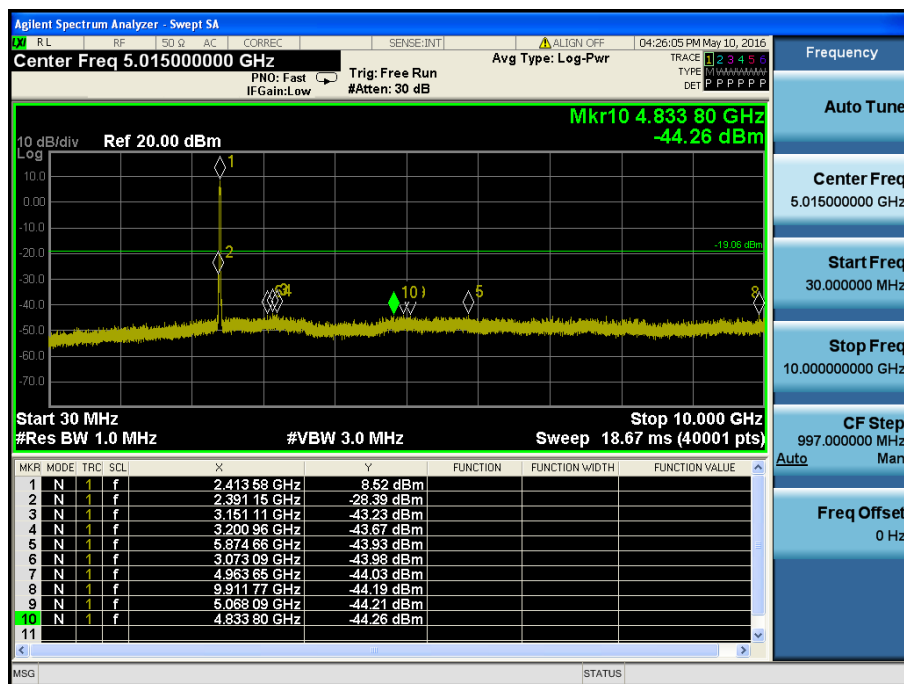
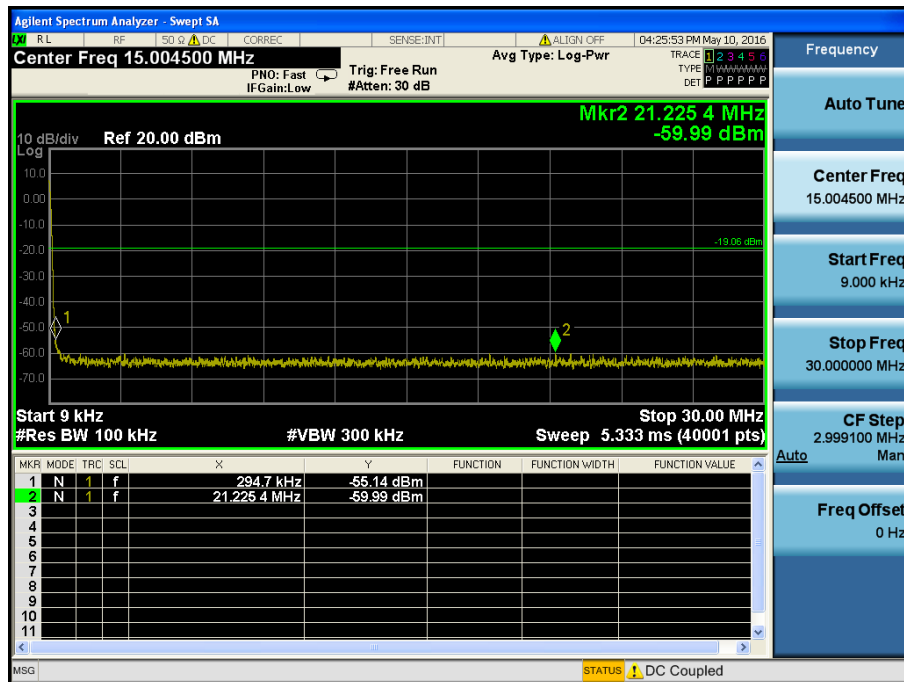
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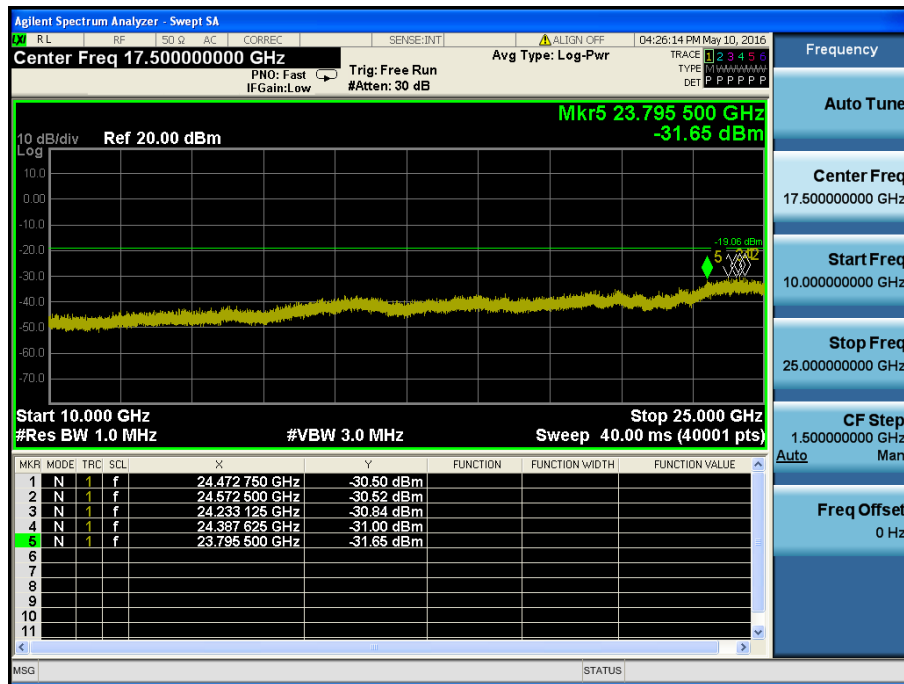
Low Band-edge



Conducted Spurious Emissions

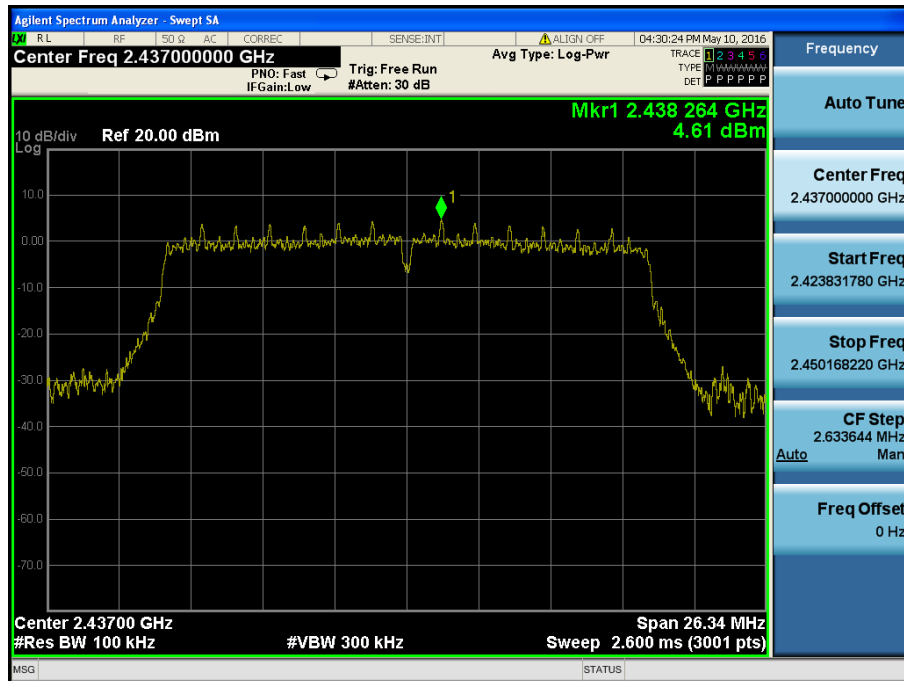


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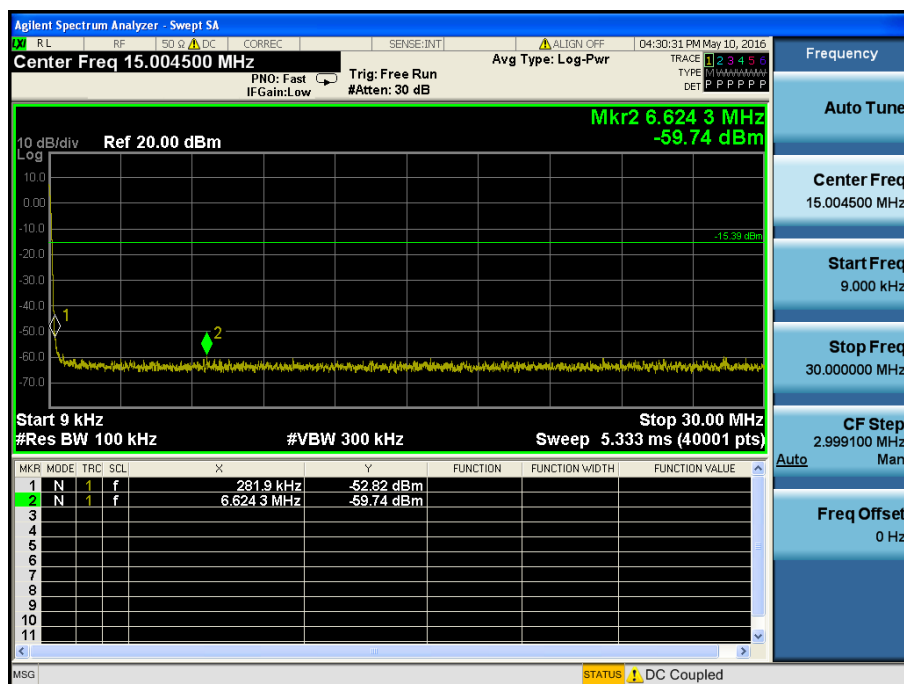


TM 6 & ANT 2 & Middle

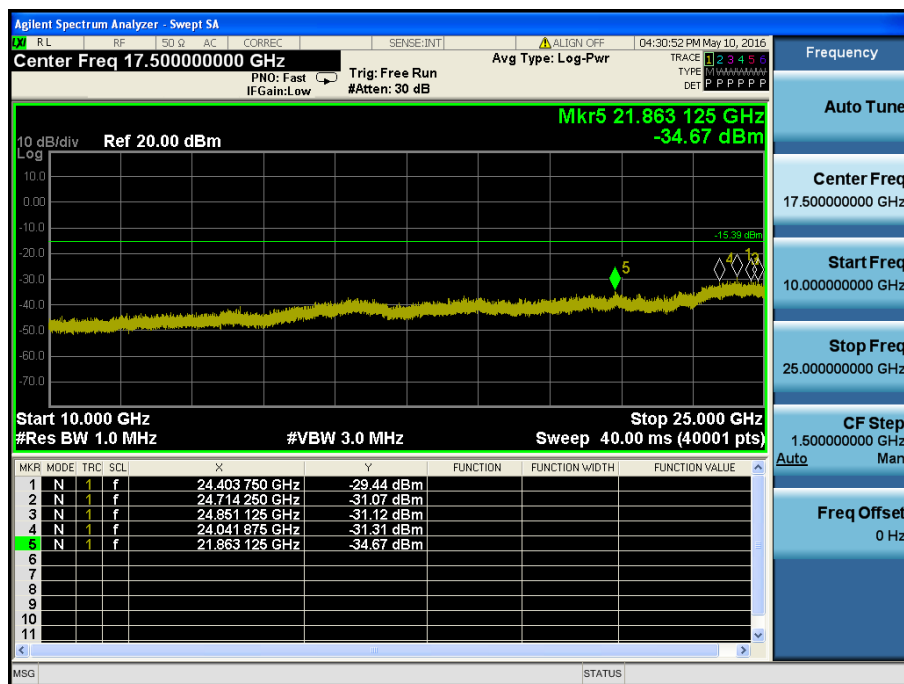
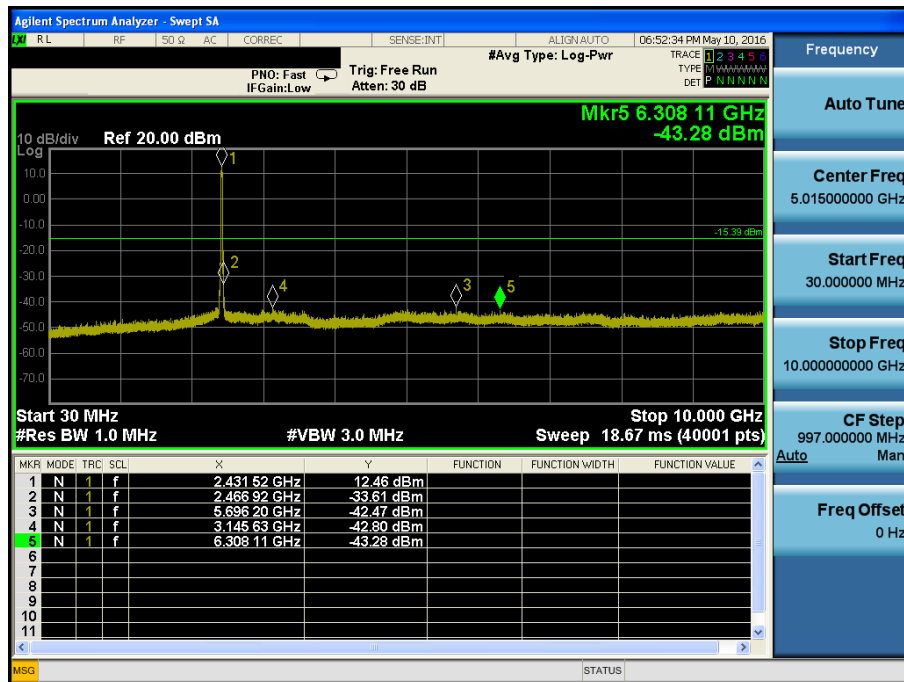
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Conducted Spurious Emissions

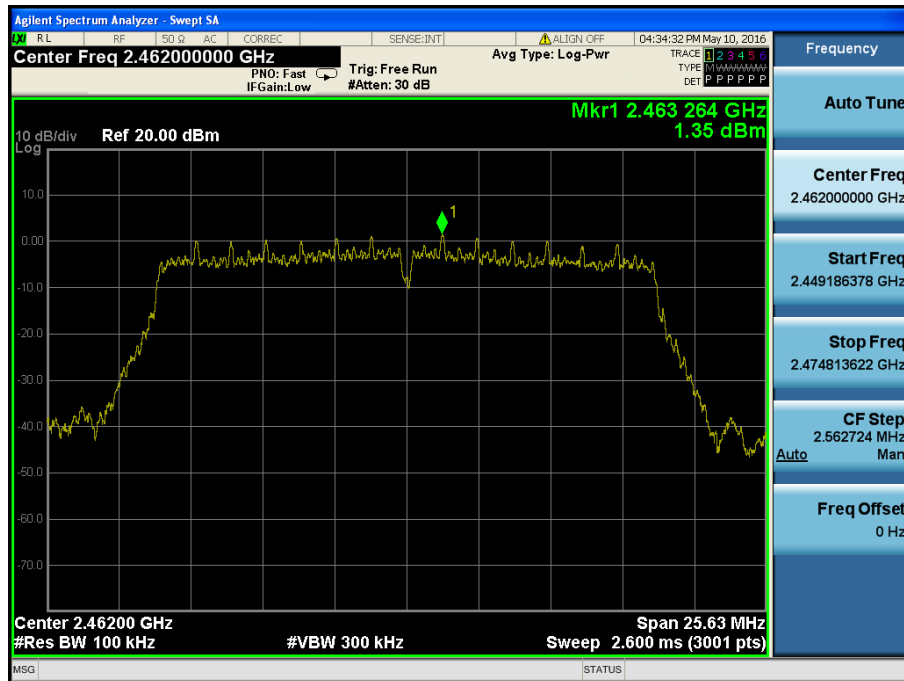


Conducted Spurious Emissions

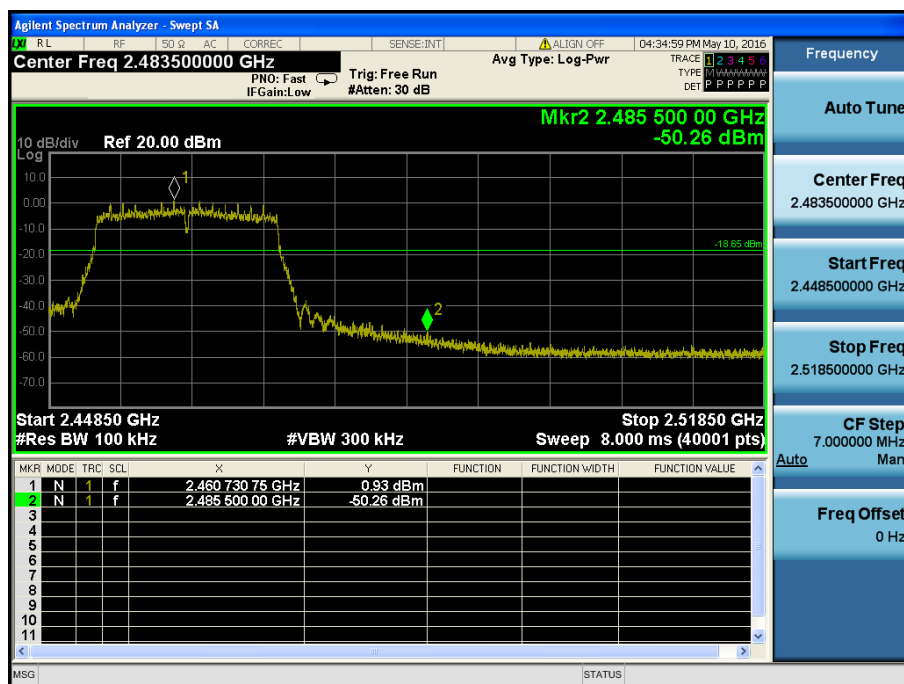


TM 6 & ANT 2 & Highest

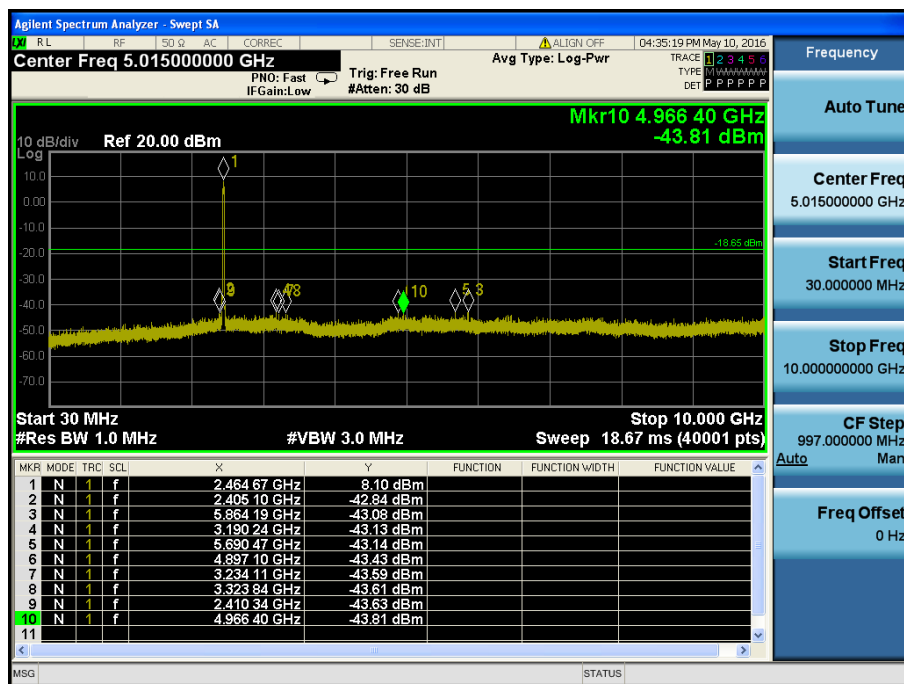
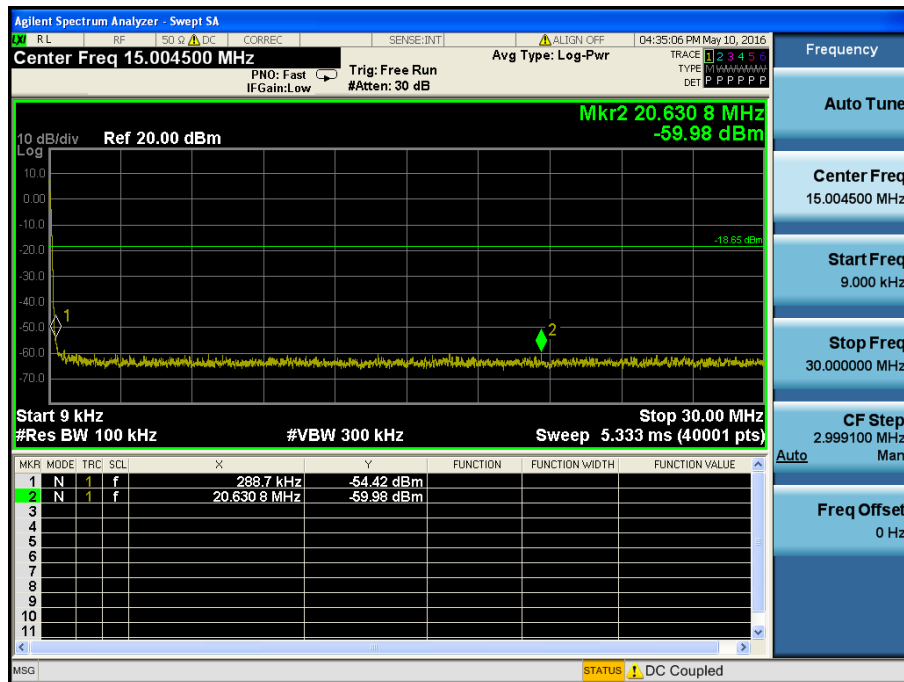
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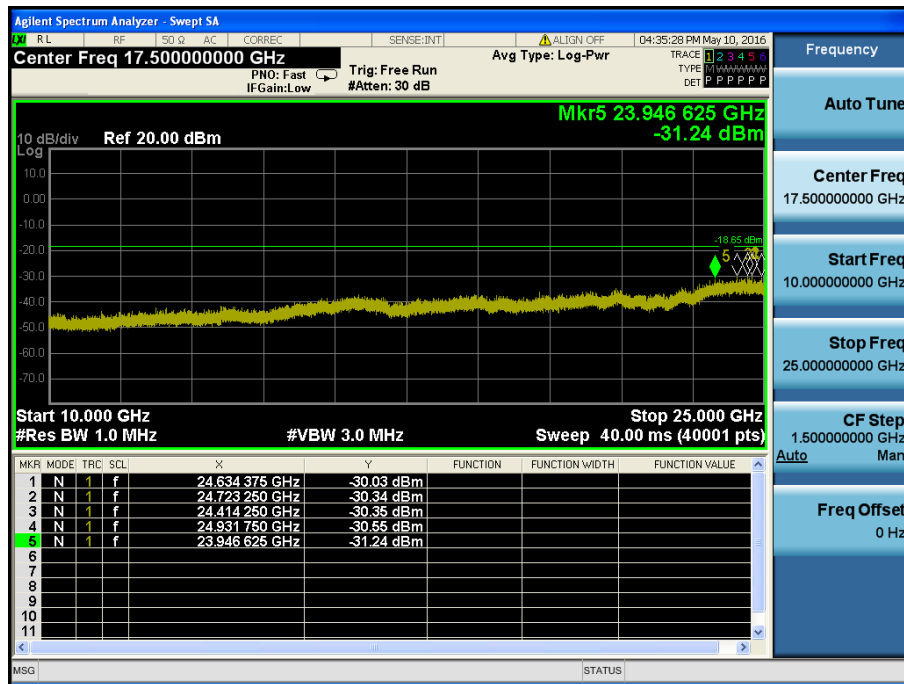
High Band-edge



Conducted Spurious Emissions



Conducted Spurious Emissions



8.5 Radiated spurious emissions

■ Test Requirements and limit, §15.247(d), §15.205, §15.209

In any 100 kHz bandwidth outside the operating frequency band, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 KHz bandwidth within the band. In case the emission fall within the restricted band specified on 15.205(a) and (b), then the 15.209(a) limit in the table below has to be followed

▪ FCC Part 15.209(a) and (b)

Frequency (MHz)	Limit (uV/m)	Measurement Distance (meter)
0.009 – 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 – 30.0	30	30
30 ~ 88	100 **	3
88 ~ 216	150 **	3
216 ~ 960	200 **	3
Above 960	500	3

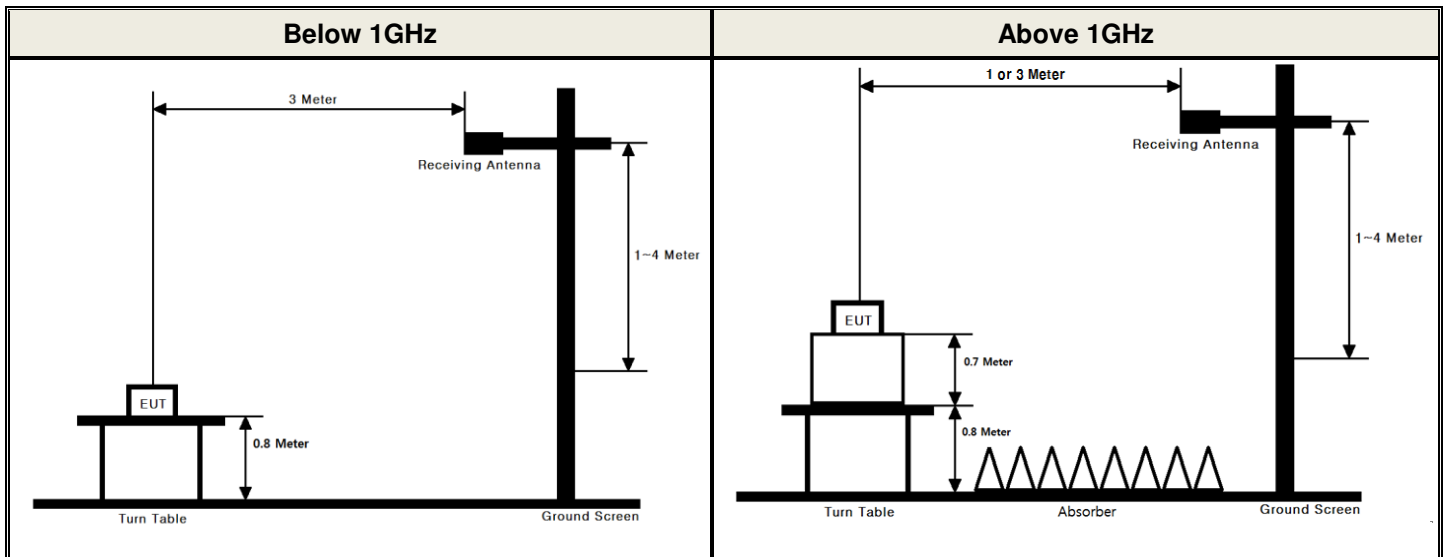
** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

▪ FCC Part 15.205 (a): Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	MHz	GHz	GHz
0.009 ~ 0.110	8.41425 ~ 8.41475	108 ~ 121.94	1300 ~ 1427	4.5 ~ 5.15	14.47 ~ 14.5
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1435 ~ 1626.5	5.35 ~ 5.46	15.35 ~ 16.2
2.1735 ~ 2.1905	12.51975 ~ 12.52025	149.9 ~ 150.05	1645.5 ~ 1646.5	7.25 ~ 7.75	17.7 ~ 21.4
4.125 ~ 4.128	12.57675 ~ 12.57725	156.52475 ~	1660 ~ 1710	8.025 ~ 8.5	22.01 ~ 23.12
4.17725 ~ 4.17775	13.36 ~ 13.41	156.52525	1718.8 ~ 1722.2	9.0 ~ 9.2	23.6 ~ 24.0
4.20725 ~ 4.20775	16.42 ~ 16.423	156.7 ~ 156.9	2200 ~ 2300	9.3 ~ 9.5	31.2 ~ 31.8
6.215 ~ 6.218	16.69475 ~ 16.69525	162.0125 ~ 167.17	2310 ~ 2390	10.6 ~ 12.7	36.43 ~ 36.5
6.26775 ~ 6.26825	16.80425 ~ 16.80475	167.72 ~ 173.2	2483.5 ~ 2500	13.25 ~ 13.4	Above 38.6
6.31175 ~ 6.31225	25.5 ~ 25.67	240 ~ 285	2655 ~ 2900		
8.291 ~ 8.294	37.5 ~ 38.25	322 ~ 335.4	3260 ~ 3267		
8.362 ~ 8.366	73 ~ 74.6	399.90 ~ 410	3332 ~ 3339		
8.37625 ~ 8.38675	74.8 ~ 75.2	608 ~ 614	3345.8 ~ 3358		
		960 ~ 1240	3600 ~ 4400		

▪ **FCC Part 15.205(b):** The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

■ Test Configuration



■ Test Procedure

1. The EUT is placed on a non-conductive table, emission measurements at below 1 GHz, the table height is 80 cm and above 1 GHz, the table height is 1.5 m.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 1 or 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

■ Measurement Instrument Setting for Radiated Emission Measurements.

The radiated emission was tested according to the section 6.3, 6.4, 6.5 and 6.6 of the ANSI C63.10-2013 with following settings.

Peak Measurement

RBW = As specified in below table, VBW $\geq 3 \times$ RBW, Sweep = Auto, Detector = Peak, Trace mode = Max Hold until the trace stabilizes.

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

Average Measurement:

1. RBW = 1 MHz (unless otherwise specified).
2. VBW $\geq 3 \times$ RBW.
3. Detector = RMS (Number of points $\geq 2 \times$ Span / RBW)
4. Averaging type = power. (i.e., RMS)
5. Sweep time = auto.
6. Perform a trace average of at least 100 traces.
7. A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:
 - 1) If power averaging (RMS) mode was used in step 4, then the applicable correction factor is $10 \log(1/x)$, where x is the duty cycle.
 - 2) If linear voltage averaging mode was used in step 4, then the applicable correction factor is $20 \log(1/x)$, where x is the duty cycle.
 - 3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

Duty Cycle Corrections (Refer to appendix II for duty cycle measurement procedure and plots)

Test Mode	Date rate	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
TM 1	1 Mbps	97.64	0.10
TM 2	6 Mbps	87.54	0.58
TM 3	MCS 0	86.50	0.63
TM 4	1 Mbps	97.63	0.10
TM 5	6 Mbps	87.54	0.58
TM 6	MCS 8	77.08	1.14

Note: Please refer to Appendix I for detailed information.

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : Test Mode 1(TM 1)

Tested Frequency	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Test Ant of Worst data ^{Note2}
Lowest	2387.54	V	Y	PK	60.05	-2.27	N/A	N/A	57.78	74.00	16.22	Ant 1
	2387.54	V	Y	AV	53.11	-2.27	0.10	N/A	50.94	54.00	3.06	Ant 1
	4823.91	H	X	PK	46.81	6.64	N/A	N/A	53.45	74.00	20.55	Ant 1
	4824.01	H	X	AV	39.92	6.64	0.10	N/A	46.66	54.00	7.34	Ant 1
Middle	4874.20	H	X	PK	47.58	6.65	N/A	N/A	54.23	74.00	19.77	Ant 1
	4873.98	H	X	AV	41.53	6.65	0.10	N/A	48.28	54.00	5.72	Ant 1
Highest	2485.05	V	Y	PK	60.08	-2.09	N/A	N/A	57.99	74.00	16.01	Ant 1
	2485.05	V	Y	AV	52.87	-2.09	0.10	N/A	50.88	54.00	3.12	Ant 1
	4924.03	V	Z	PK	48.14	6.66	N/A	N/A	54.80	74.00	19.20	Ant 1
	4923.92	V	Z	AV	42.27	6.66	0.10	N/A	49.03	54.00	4.97	Ant 1

Note.

- No other spurious and harmonic emissions were found greater than listed emissions on above table.
- This device was tested under single transmitting(Ant 1, 2) and multiple transmitting(Ant 1+2) and the worst case data are reported in the table above.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Measurement Distance = 3 m for below 10 GHz, Measurement Distance = 1 m for above 10 GHz.
Therefore Distance Correction Factor(DCF) : - 9.54 dB = $20 \cdot \log(1\text{m}/3\text{m})$

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : Test Mode 5(TM 5)

Tested Frequency	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Test Ant of Worst data ^{Note2}
Lowest	2389.40	V	Y	PK	65.04	-2.26	N/A	N/A	62.78	74.00	11.22	Ant 1+Ant 2
	2389.24	V	Y	AV	52.48	-2.26	0.58	N/A	50.80	54.00	3.20	Ant 1+Ant 2
	4824.44	V	Z	PK	54.77	6.64	N/A	N/A	61.41	74.00	12.59	Ant 1+Ant 2
	4824.92	V	Z	AV	43.18	6.64	0.58	N/A	50.40	54.00	3.60	Ant 1+Ant 2
Middle	4874.29	H	X	PK	48.70	6.65	N/A	N/A	55.35	74.00	18.65	Ant 1+Ant 2
	4873.95	H	X	AV	37.77	6.65	0.58	N/A	45.00	54.00	9.00	Ant 1+Ant 2
Highest	2484.38	V	Y	PK	65.51	-2.08	N/A	N/A	63.43	74.00	10.57	Ant 1+Ant 2
	2484.01	V	Y	AV	52.14	-2.08	0.58	N/A	50.64	54.00	3.36	Ant 1+Ant 2
	4924.66	H	X	PK	50.81	6.66	N/A	N/A	57.47	74.00	16.53	Ant 1+Ant 2
	4924.98	H	X	AV	37.30	6.66	0.58	N/A	44.54	54.00	9.46	Ant 1+Ant 2

Note.

- No other spurious and harmonic emissions were found greater than listed emissions on above table.
- This device was tested under single transmitting(Ant 1, 2) and multiple transmitting(Ant 1+2) and the worst case data are reported in the table above.
- Sample Calculation.
 $\text{Margin} = \text{Limit} - \text{Result}$ / $\text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF}$ / $\text{T.F} = \text{AF} + \text{CL} - \text{AG}$
 Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
 DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Measurement Distance = 3 m for below 10 GHz, Measurement Distance = 1 m for above 10 GHz.
 Therefore Distance Correction Factor(DCF) : - 9.54 dB = $20 \cdot \log(1\text{m}/3\text{m})$

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : Test Mode 6(TM 6)

Tested Frequency	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCF (dB)	Distance F (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Test Ant of Worst data ^{Note2}
Lowest	2389.43	H	Z	PK	65.97	-2.26	N/A	N/A	63.71	74.00	10.29	Ant 1+Ant 2
	2389.49	H	Z	AV	52.07	-2.26	1.14	N/A	50.95	54.00	3.05	Ant 1+Ant 2
	4825.12	H	Z	PK	50.03	6.64	N/A	N/A	56.67	74.00	17.33	Ant 1+Ant 2
	4825.46	H	Z	AV	38.90	6.64	1.14	N/A	46.68	54.00	7.32	Ant 1+Ant 2
Middle	4874.38	H	X	PK	51.64	6.65	N/A	N/A	58.29	74.00	15.71	Ant 1+Ant 2
	4875.25	H	X	AV	41.11	6.65	1.14	N/A	48.90	54.00	5.10	Ant 1+Ant 2
Highest	2484.34	H	Z	PK	64.76	-2.08	N/A	N/A	62.68	74.00	11.32	Ant 1+Ant 2
	2484.04	H	Z	AV	51.51	-2.08	1.14	N/A	50.57	54.00	3.43	Ant 1+Ant 2
	4924.36	H	X	PK	45.80	6.66	N/A	N/A	52.46	74.00	21.54	Ant 1+Ant 2
	4923.45	H	X	AV	35.36	6.66	1.14	N/A	43.16	54.00	10.84	Ant 1+Ant 2

Note.

- No other spurious and harmonic emissions were found greater than listed emissions on above table.
- This device was tested under single transmitting(Ant 1, 2) and multiple transmitting(Ant 1+2) and the worst case data are reported in the table above.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Measurement Distance = 3 m for below 10 GHz, Measurement Distance = 1 m for above 10 GHz.
Therefore Distance Correction Factor(DCF) : - 9.54 dB = $20 \cdot \log(1\text{m}/3\text{m})$

8.6 Power-line conducted emissions

■ Test Requirements and limit, §15.207

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 uH/50 ohm line impedance stabilization network(LISN).

Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

■ Test Procedure

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to the test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.

■ Test Results: **Comply**(Refer to next page.)

The worst data was reported.

■ RESULT PLOTS

AC Line Conducted Emissions (Graph)

Test mode 3(TM 3) & Middle

Results of Conducted Emission

DTNC

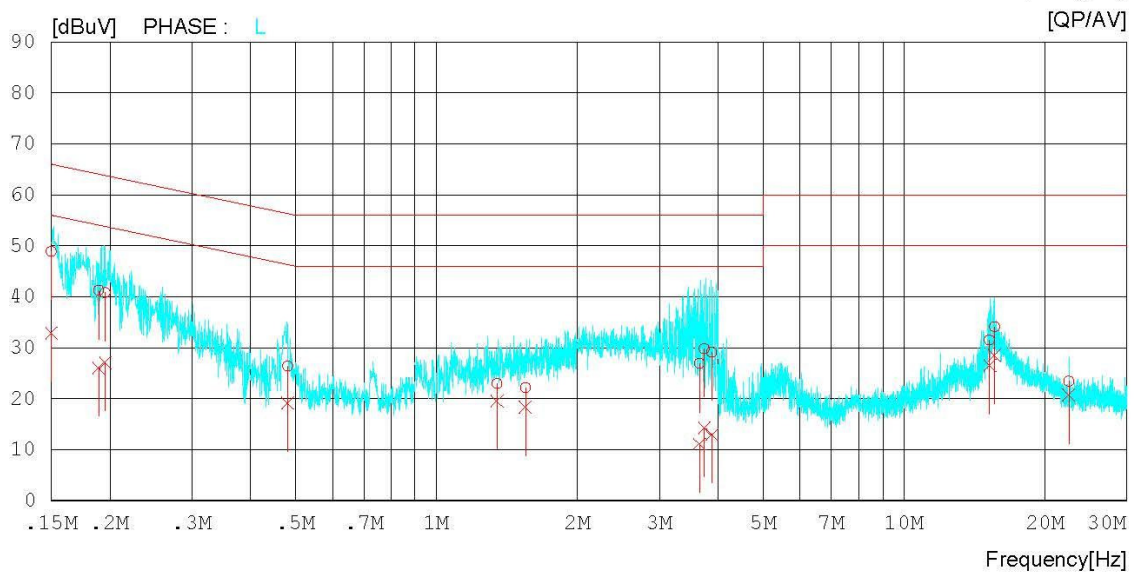
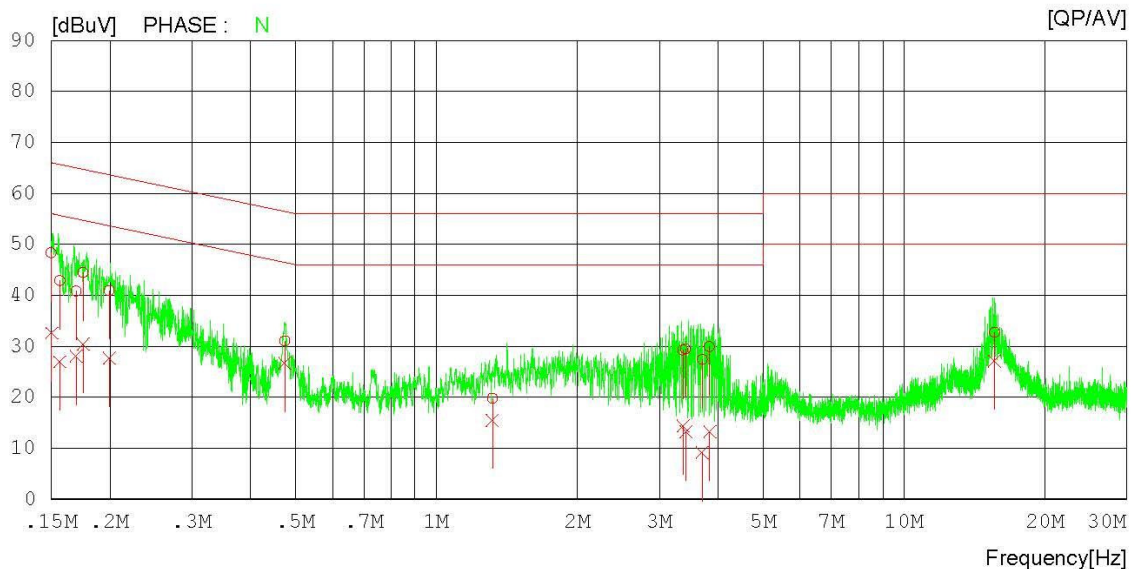
Date : 2016-05-05

Order No. :
Model No. : LGSBWAC72
Serial No. :
Test Condition : 802.11n(HT20)

Reference No. :
Power Supply :
Temp/Humi. : 24 'C 44 % R.H.
Operator : D.H.KANG

Memo : 2.4GHz_802.11n(HT20)_ANT1

LIMIT : FCC P15.207 QP
FCC P15.207 AV



AC Line Conducted Emissions (List)

Test mode 3(TM 3) & Middle

Results of Conducted Emission

DTNC

Date : 2016-05-05

Order No.	:		Reference No.	:	
Model No.	:	LGSBWAC72	Power Supply	:	
Serial No.	:		Temp/Humi.	:	24 'C 44 % R.H.
Test Condition	:	802.11n(HT20)	Operator	:	D.H.KANG

Memo : 2.4GHz_802.11n(HT20)_ANT1

LIMIT : FCC P15.207 QP
FCC P15.207 AV

NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.15018	38.2	22.5	10.1	48.3	32.6	66.0	56.0	17.7	23.4	N
2	0.15640	32.7	16.8	10.1	42.8	26.9	65.7	55.7	22.9	28.8	N
3	0.16950	30.7	17.9	10.1	40.8	28.0	65.0	55.0	24.2	27.0	N
4	0.17550	34.4	20.3	10.1	44.5	30.4	64.7	54.7	20.2	24.3	N
5	0.19971	30.8	17.6	10.1	40.9	27.7	63.6	53.6	22.7	25.9	N
6	0.47382	20.9	16.6	10.1	31.0	26.7	56.4	46.4	25.4	19.7	N
7	1.31720	9.5	5.3	10.2	19.7	15.5	56.0	46.0	36.3	30.5	N
8	3.41440	19.3	3.0	10.2	29.5	13.2	56.0	46.0	26.5	32.8	N
9	3.36640	19.1	4.2	10.2	29.3	14.4	56.0	46.0	26.7	31.6	N
10	3.70440	17.2	-1.0	10.2	27.4	9.2	56.0	46.0	28.6	36.8	N
11	3.84080	19.7	3.0	10.2	29.9	13.2	56.0	46.0	26.1	32.8	N
12	15.63800	22.1	16.5	10.6	32.7	27.1	60.0	50.0	27.3	22.9	N
13	0.15000	38.8	22.8	10.1	48.9	32.9	66.0	56.0	17.1	23.1	L
14	0.18950	31.1	15.9	10.1	41.2	26.0	64.1	54.1	22.9	28.1	L
15	0.19564	30.7	16.9	10.1	40.8	27.0	63.8	53.8	23.0	26.8	L
16	0.48057	16.2	9.0	10.1	26.3	19.1	56.3	46.3	30.0	27.2	L
17	1.34760	12.7	9.3	10.2	22.9	19.5	56.0	46.0	33.1	26.5	L
18	1.54940	11.9	8.1	10.2	22.1	18.3	56.0	46.0	33.9	27.7	L
19	3.65160	16.7	0.9	10.2	26.9	11.1	56.0	46.0	29.1	34.9	L
20	3.73920	19.5	4.0	10.2	29.7	14.2	56.0	46.0	26.3	31.8	L
21	3.88640	18.9	2.7	10.2	29.1	12.9	56.0	46.0	26.9	33.1	L
22	15.25900	20.6	15.7	10.8	31.4	26.5	60.0	50.0	28.6	23.5	L
23	15.64120	23.3	17.8	10.8	34.1	28.6	60.0	50.0	25.9	21.4	L
24	22.52800	12.3	9.6	11.1	23.4	20.7	60.0	50.0	36.6	29.3	L

AC Line Conducted Emissions (Graph)

Test mode 5(TM 5) & Middle

Results of Conducted Emission

DTNC

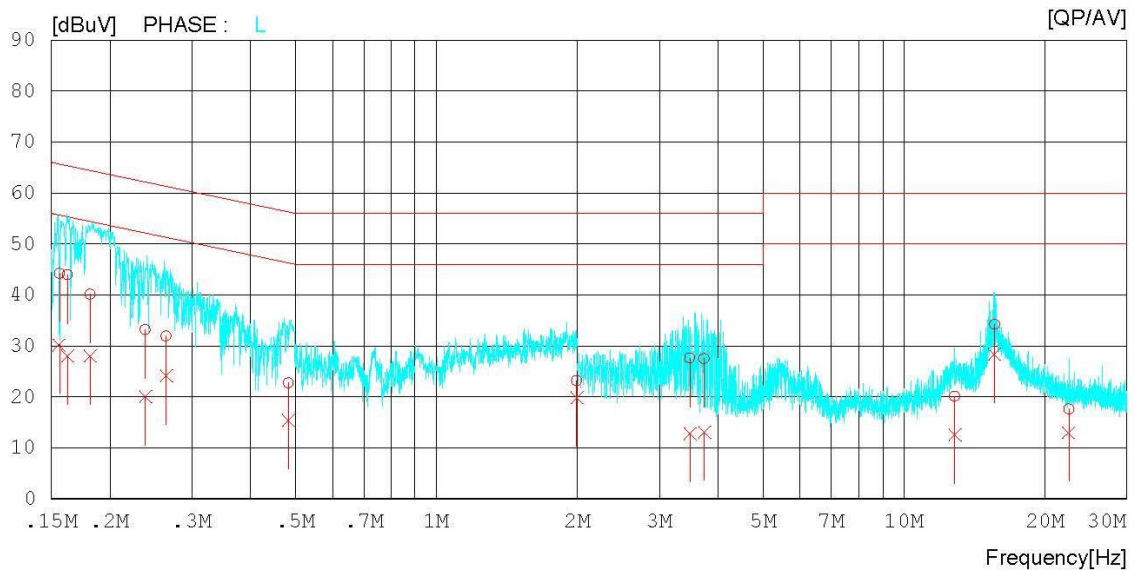
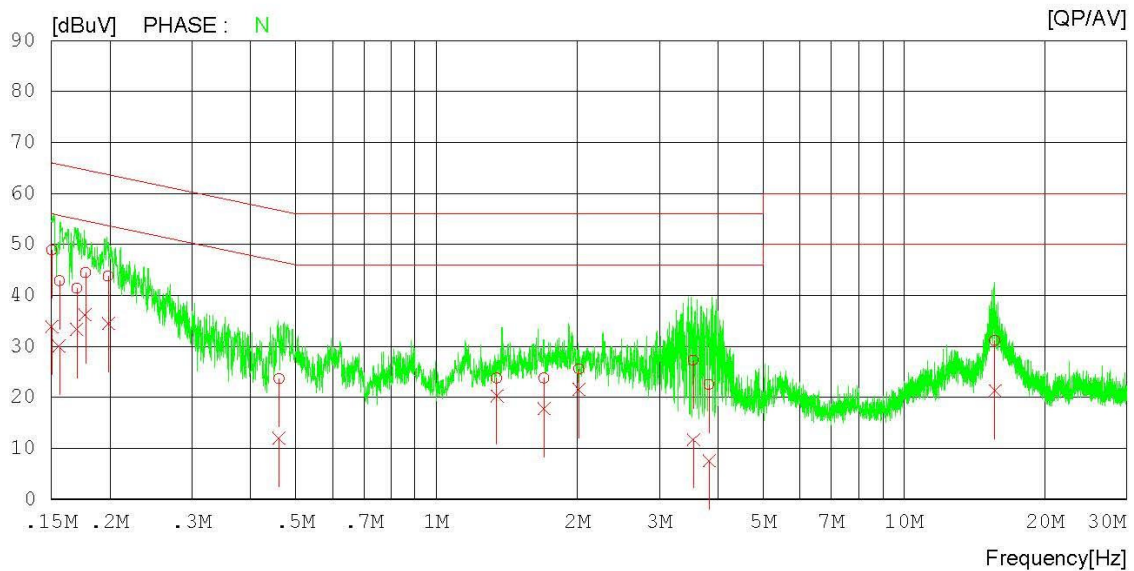
Date : 2016-05-05

Order No. :
Model No. : LGSBWAC72
Serial No. :
Test Condition : 802.11n(HT20)

Reference No. :
Power Supply :
Temp/Humi. : 24 'C 44 % R.H.
Operator : D.H.KANG

Memo : 2.4GHz_802.11n(HT20)_MIMO

LIMIT : FCC P15.207 QP
FCC P15.207 AV



AC Line Conducted Emissions (List)

Test mode 5(TM 5) & Middle

Results of Conducted Emission

DTNC

Date : 2016-05-05

Order No.	:		Reference No.	:	
Model No.	:	LGSBWAC72	Power Supply	:	
Serial No.	:		Temp/Humi.	:	24 'C 44 % R.H.
Test Condition	:	802.11n(HT20)	Operator	:	D.H.KANG

Memo : 2.4GHz_802.11n(HT20)_MIMO

LIMIT : FCC P15.207 QP
FCC P15.207 AV

NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.15032	38.8	23.8	10.1	48.9	33.9	66.0	56.0	17.1	22.1	N
2	0.15601	32.8	19.9	10.1	42.9	30.0	65.7	55.7	22.8	25.7	N
3	0.16987	31.2	23.2	10.1	41.3	33.3	65.0	55.0	23.7	21.7	N
4	0.17734	34.3	26.1	10.1	44.4	36.2	64.6	54.6	20.2	18.4	N
5	0.19869	33.6	24.4	10.1	43.7	34.5	63.7	53.7	20.0	19.2	N
6	0.46033	13.5	1.9	10.1	23.6	12.0	56.7	46.7	33.1	34.7	N
7	1.34640	13.6	10.1	10.2	23.8	20.3	56.0	46.0	32.2	25.7	N
8	1.69940	13.6	7.5	10.2	23.8	17.7	56.0	46.0	32.2	28.3	N
9	2.01740	15.4	11.4	10.2	25.6	21.6	56.0	46.0	30.4	24.4	N
10	3.54360	17.1	1.5	10.2	27.3	11.7	56.0	46.0	28.7	34.3	N
11	3.82840	12.3	-2.7	10.2	22.5	7.5	56.0	46.0	33.5	38.5	N
12	15.65440	20.5	10.7	10.6	31.1	21.3	60.0	50.0	28.9	28.7	N
13	0.15605	34.1	20.1	10.1	44.2	30.2	65.7	55.7	21.5	25.5	L
14	0.16264	33.8	17.8	10.1	43.9	27.9	65.3	55.3	21.4	27.4	L
15	0.18184	30.0	17.9	10.1	40.1	28.0	64.4	54.4	24.3	26.4	L
16	0.23848	23.0	9.9	10.1	33.1	20.0	62.1	52.1	29.0	32.1	L
17	0.26409	21.8	14.0	10.1	31.9	24.1	61.3	51.3	29.4	27.2	L
18	0.48180	12.6	5.3	10.1	22.7	15.4	56.3	46.3	33.6	30.9	L
19	1.99780	12.9	9.6	10.2	23.1	19.8	56.0	46.0	32.9	26.2	L
20	3.48560	17.3	2.5	10.2	27.5	12.7	56.0	46.0	28.5	33.3	L
21	3.74240	17.2	2.8	10.2	27.4	13.0	56.0	46.0	28.6	33.0	L
22	12.84860	9.3	1.8	10.7	20.0	12.5	60.0	50.0	40.0	37.5	L
23	15.63940	23.4	17.5	10.8	34.2	28.3	60.0	50.0	25.8	21.7	L
24	22.53160	6.4	1.8	11.1	17.5	12.9	60.0	50.0	42.5	37.1	L

8.7 Occupied Bandwidth

Test Requirements, RSS-Gen [6.6]

When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99 % emission bandwidth, as calculated or measured.

■ TEST CONFIGURATION

Refer to the APPENDIX I.

■ TEST PROCEDURE

- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.
- The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW.

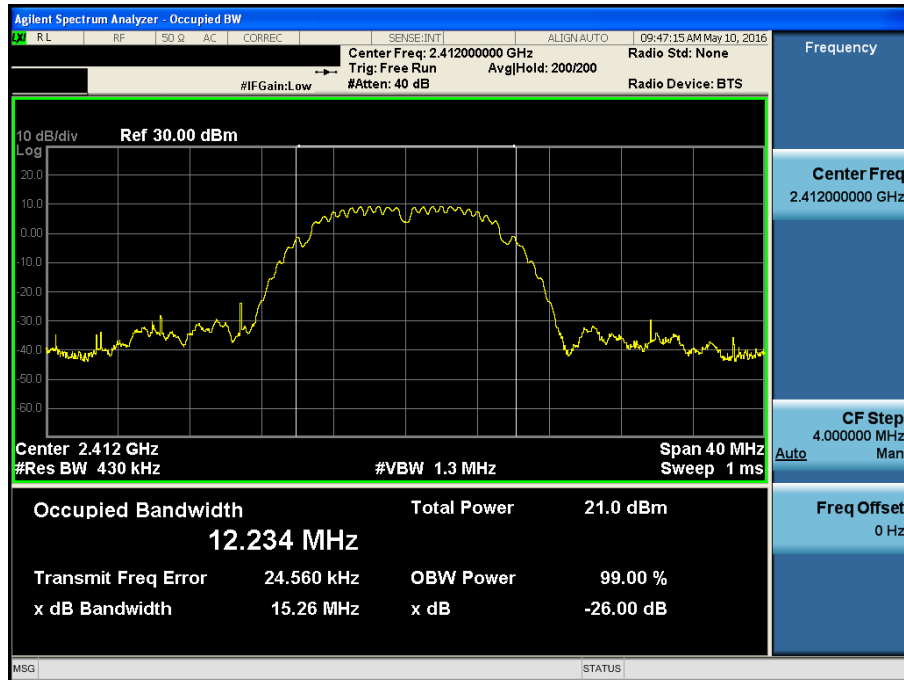
■ TEST RESULTS: **Comply**

Test Mode	Frequency	Test Results[MHz]	
		ANT 1	ANT 2
TM 1	Lowest	12.234	12.210
	Middle	12.239	12.228
	Highest	12.202	12.186
TM 2	Lowest	16.912	16.944
	Middle	16.925	16.946
	Highest	16.850	16.933
TM 3	Lowest	17.820	17.801
	Middle	17.826	17.812
	Highest	17.819	17.806
TM 4	Lowest	12.159	12.184
	Middle	12.217	12.240
	Highest	12.226	12.246
TM 5	Lowest	16.908	16.897
	Middle	16.899	16.913
	Highest	16.892	16.916
TM 6	Lowest	17.797	17.728
	Middle	17.821	17.748
	Highest	17.817	17.724

■ RESULT PLOTS

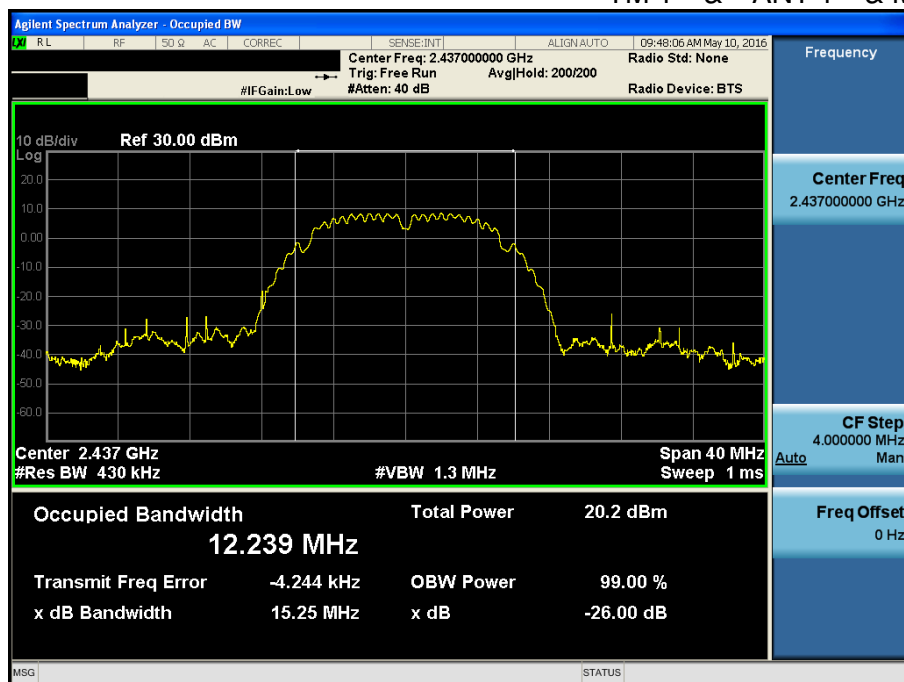
Occupied Bandwidth

TM 1 & ANT 1 & Lowest



Occupied Bandwidth

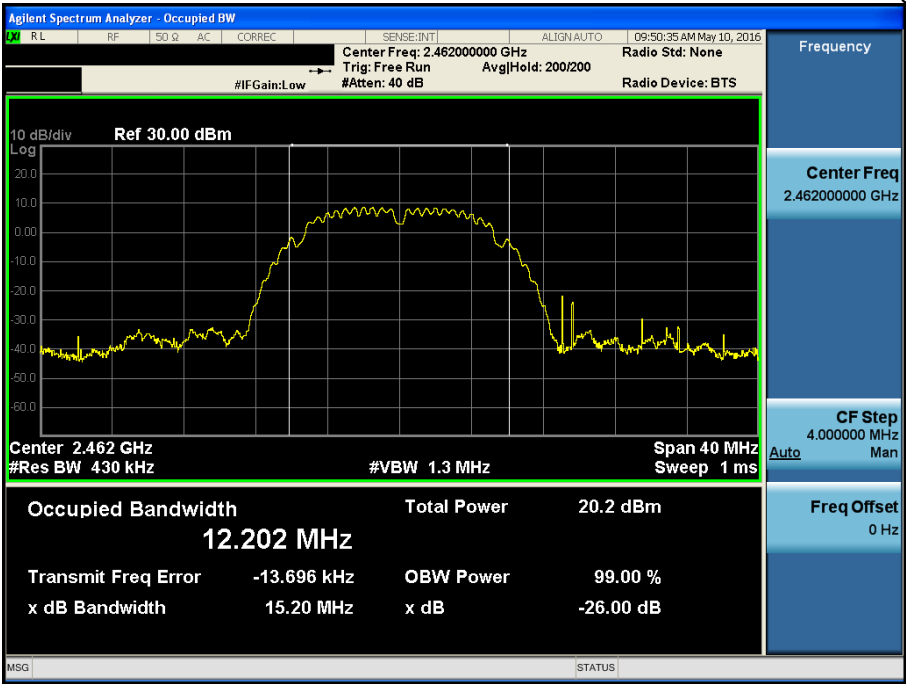
TM 1 & ANT 1 & Middle





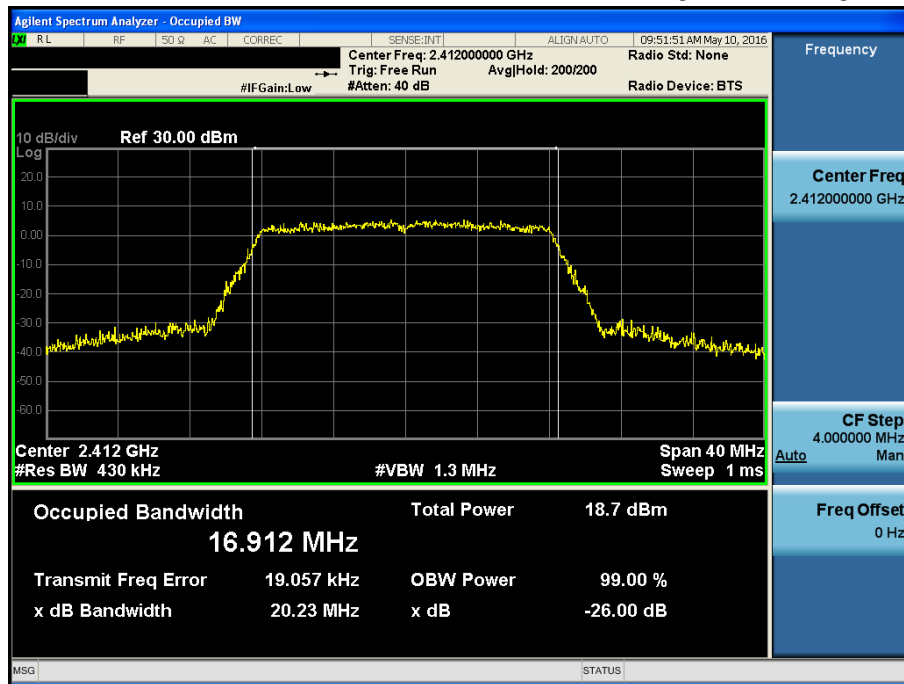
Occupied Bandwidth

TM 1 & ANT 1 & Highest



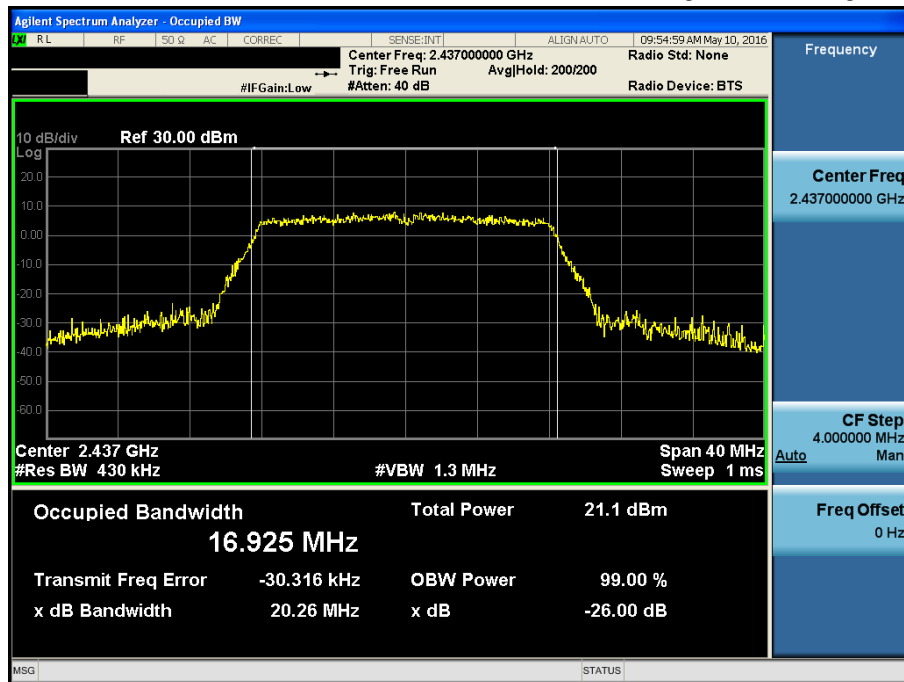
Occupied Bandwidth

TM 2 & ANT 1 & Lowest



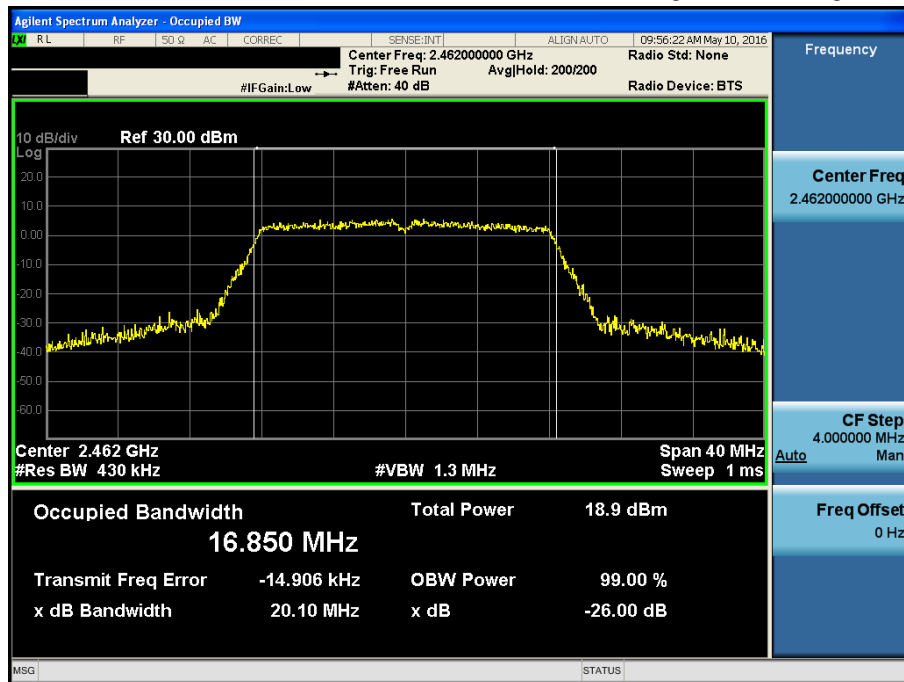
Occupied Bandwidth

TM 2 & ANT 1 & Middle



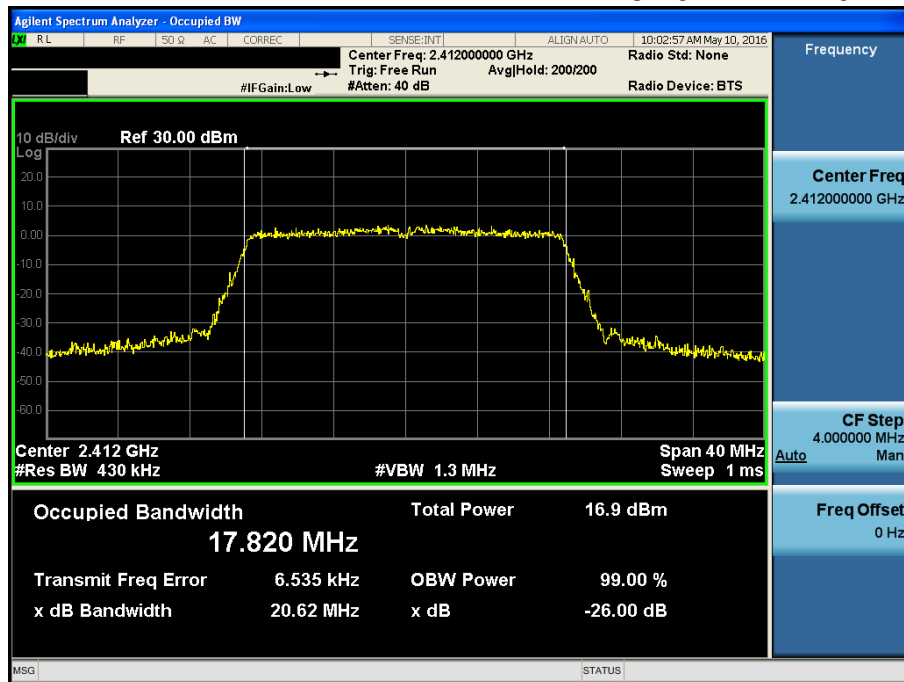
Occupied Bandwidth

TM 2 & ANT 1 & Highest



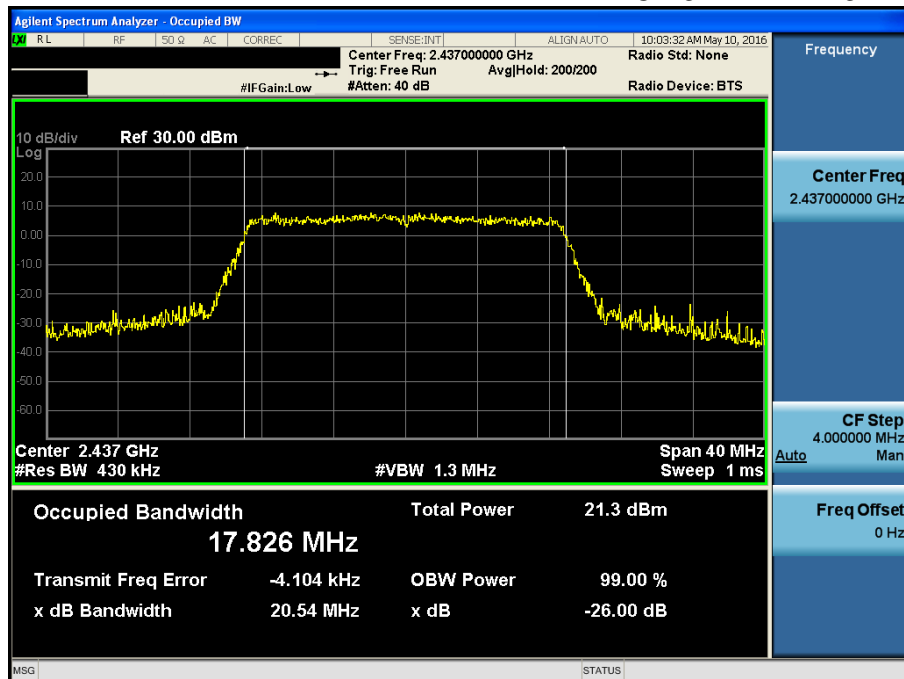
Occupied Bandwidth

TM 3 & ANT 1 & Lowest



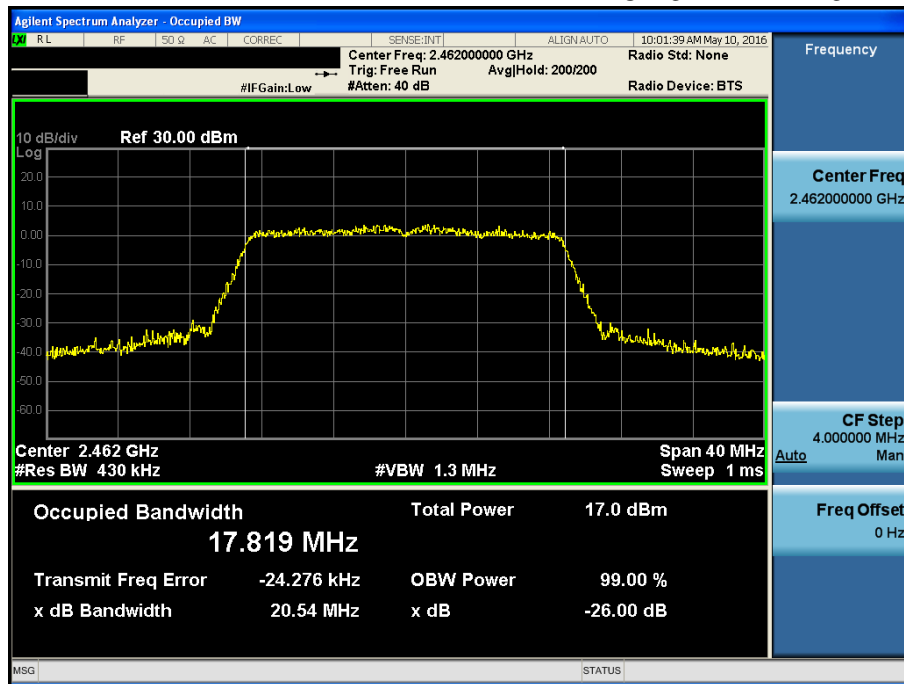
Occupied Bandwidth

TM 3 & ANT 1 & Middle



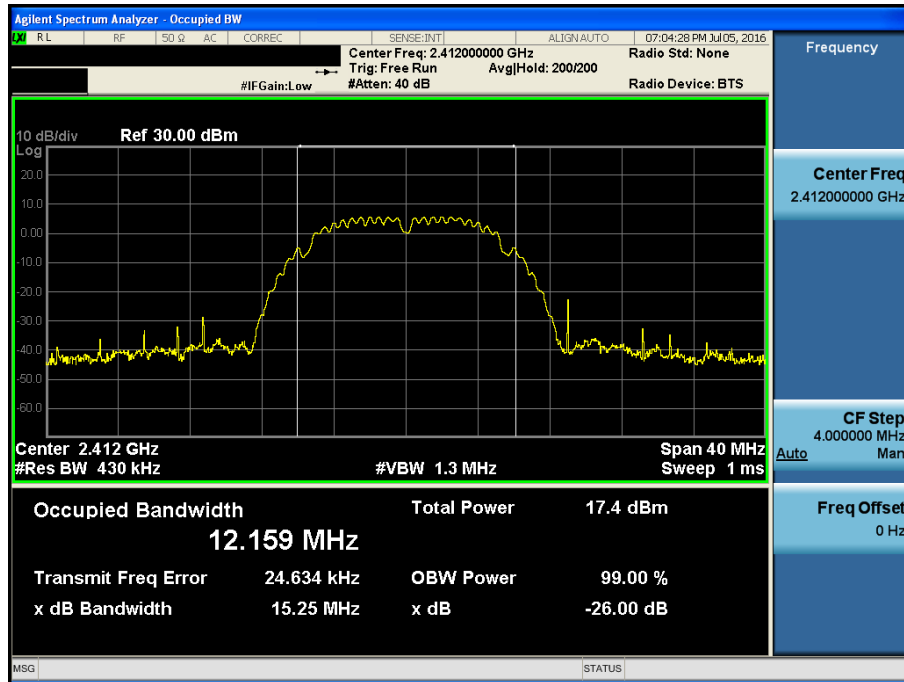
Occupied Bandwidth

TM 3 & ANT 1 & Highest



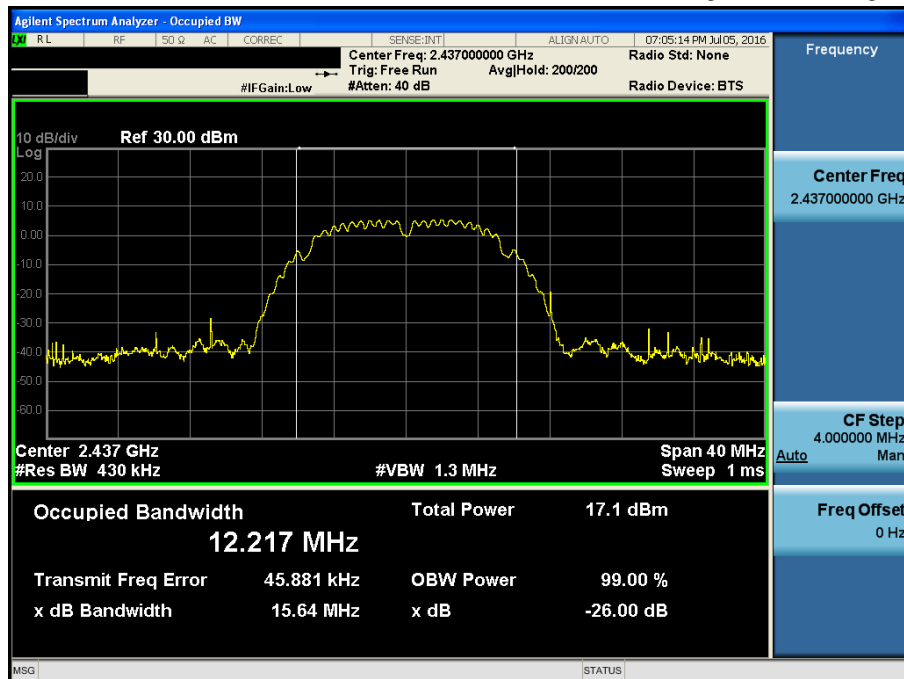
Occupied Bandwidth

TM 4 & ANT 1 & Lowest



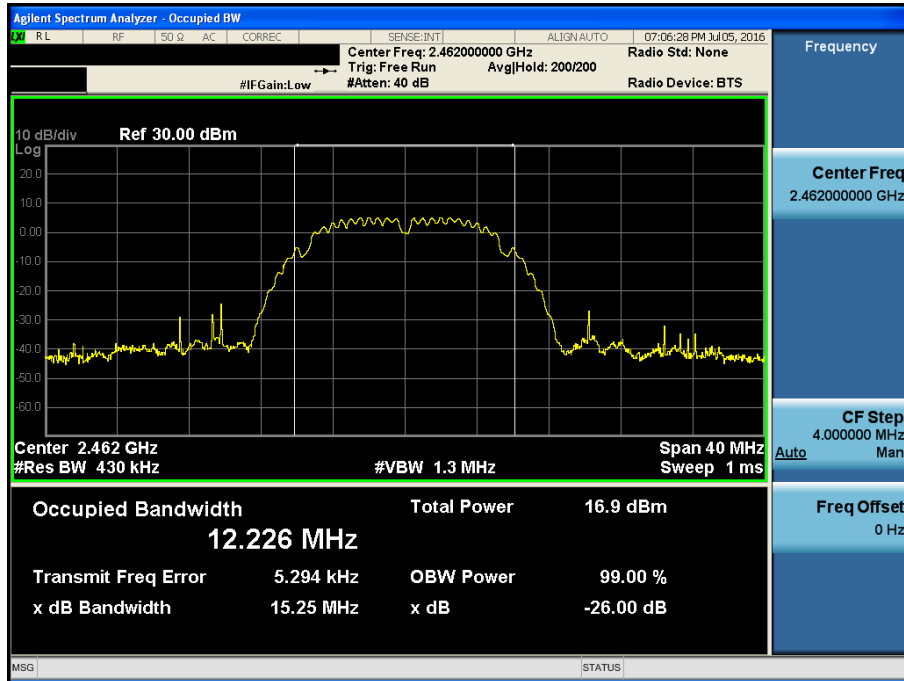
Occupied Bandwidth

TM 4 & ANT 1 & Middle



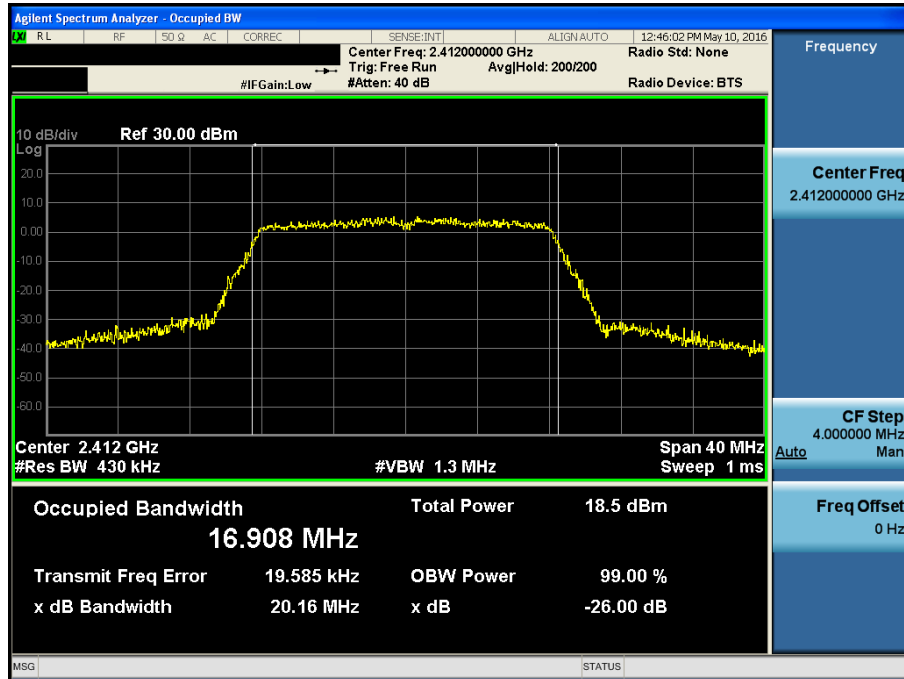
Occupied Bandwidth

TM 4 & ANT 1 & Highest



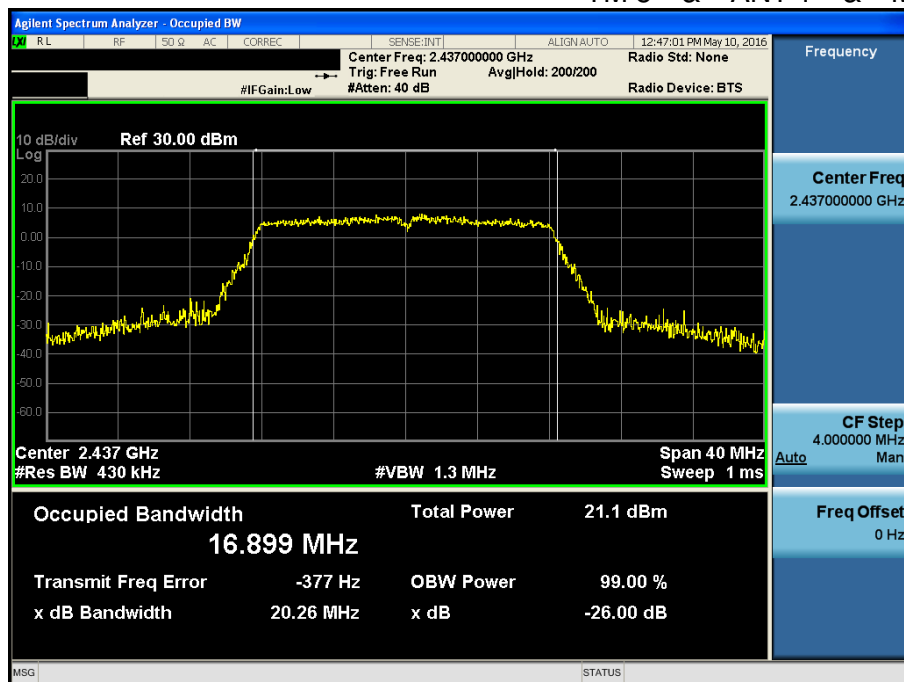
Occupied Bandwidth

TM 5 & ANT 1 & Lowest



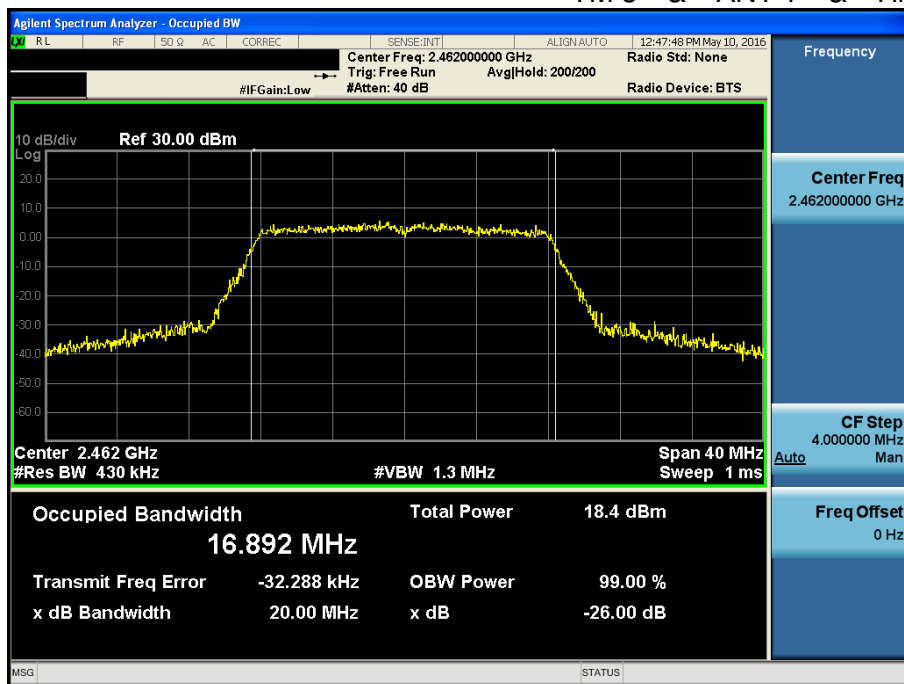
Occupied Bandwidth

TM 5 & ANT 1 & Middle



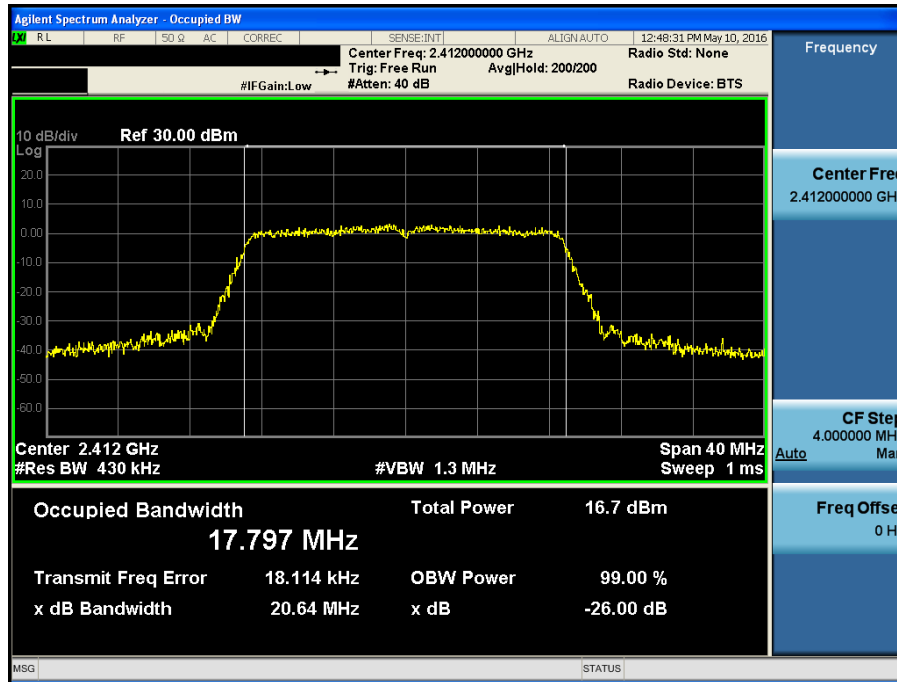
Occupied Bandwidth

TM 5 & ANT 1 & Highest



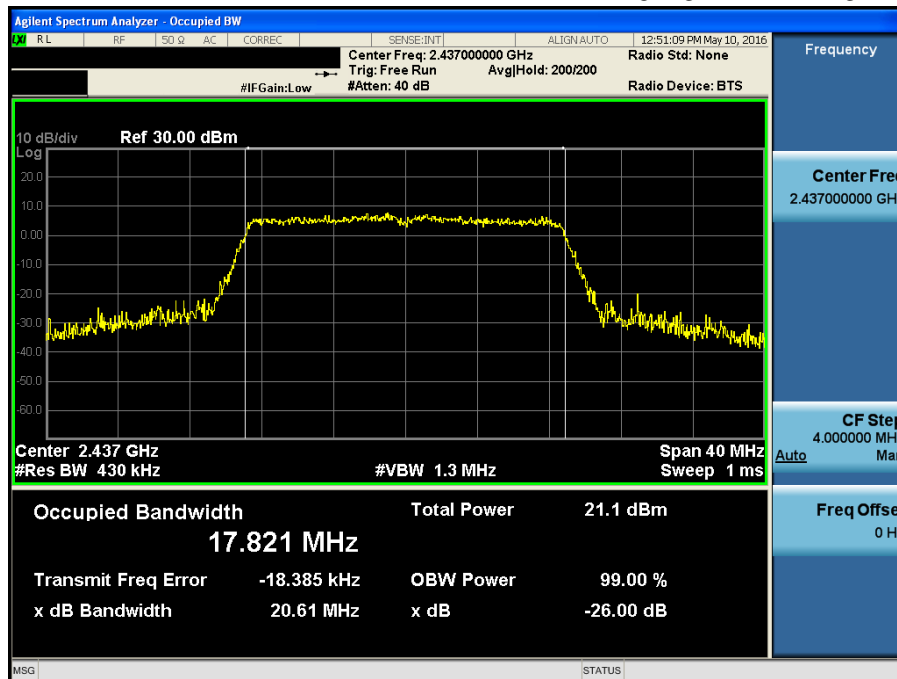
Occupied Bandwidth

TM 6 & ANT 1 & Lowest



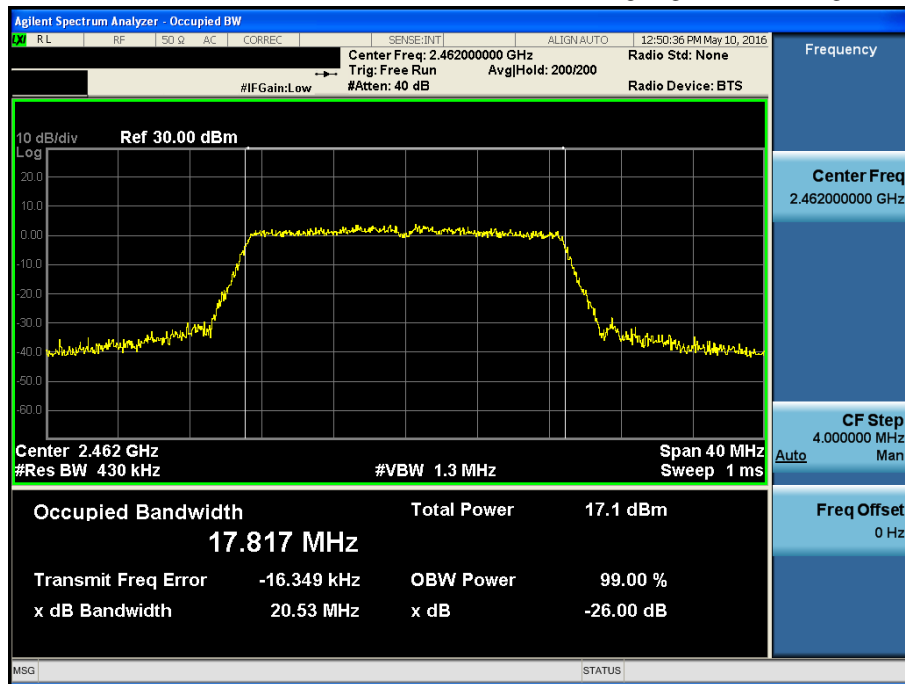
Occupied Bandwidth

TM 6 & ANT 1 & Middle



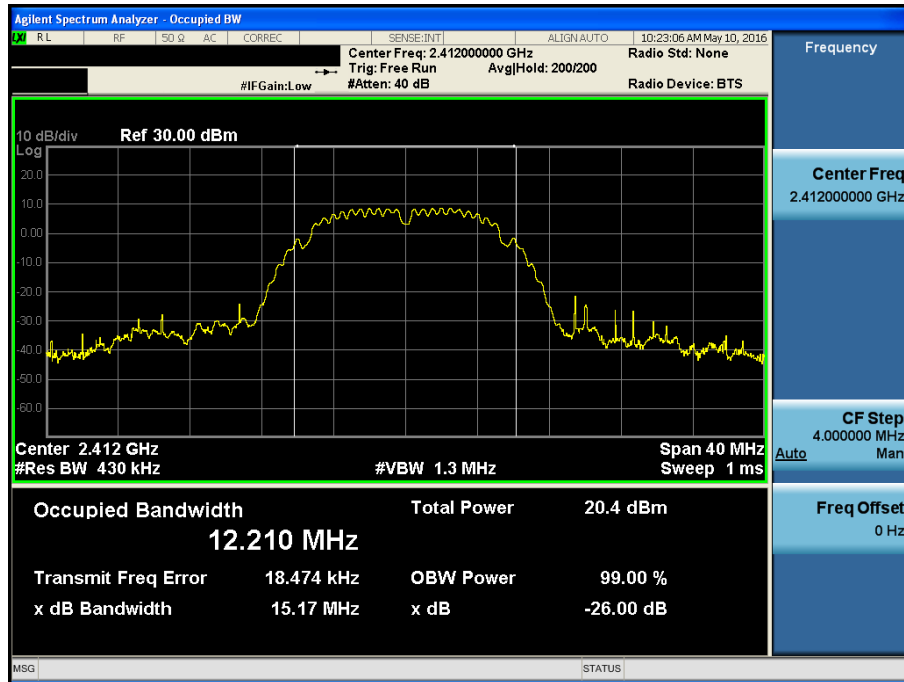
Occupied Bandwidth

TM 6 & ANT 1 & Highest



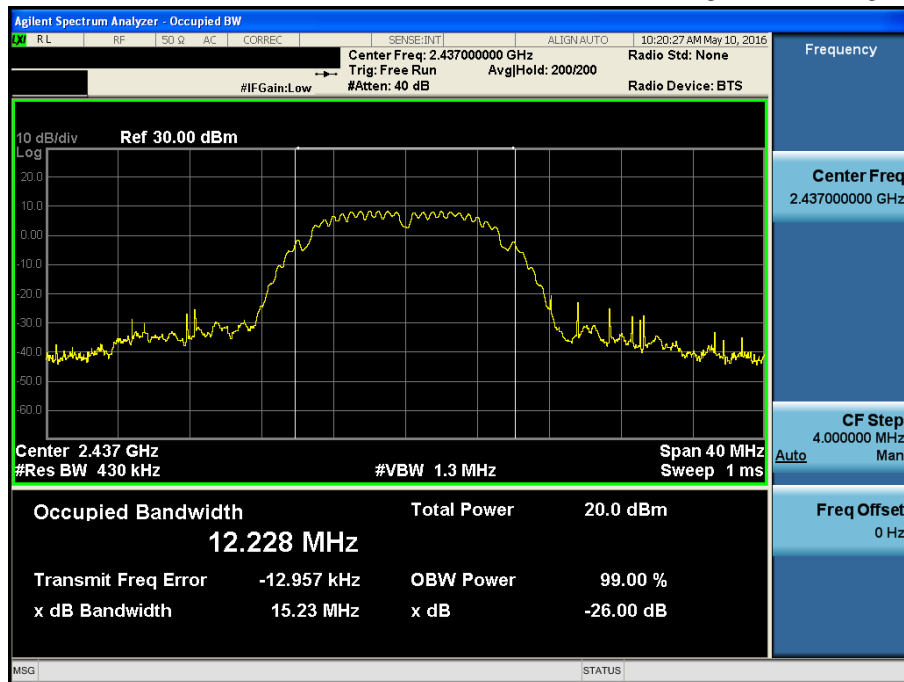
Occupied Bandwidth

TM 1 & ANT 2 & Lowest



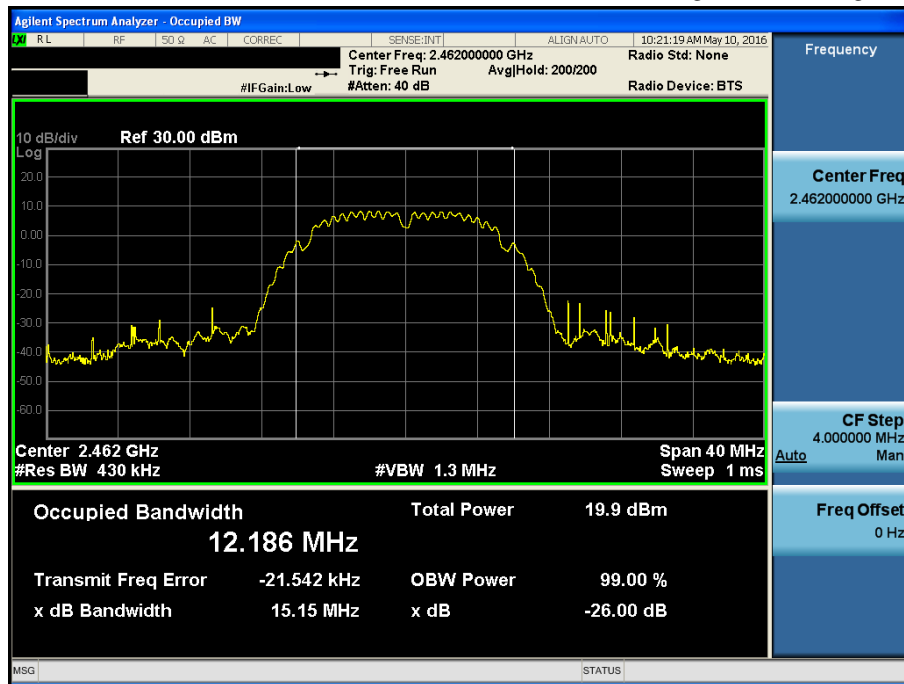
Occupied Bandwidth

TM 1 & ANT 2 & Middle



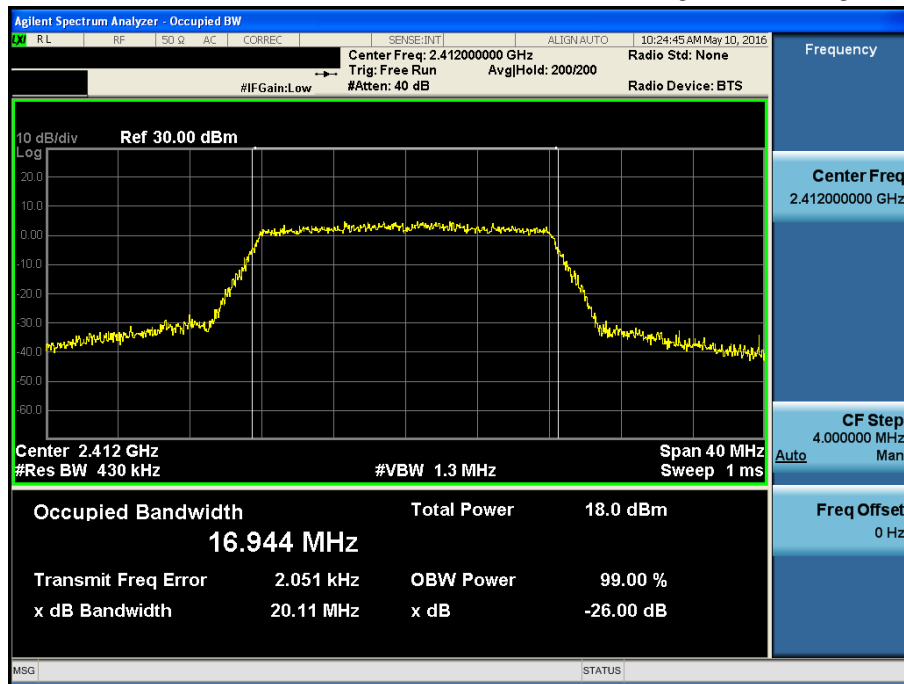
Occupied Bandwidth

TM 1 & ANT 2 & Highest



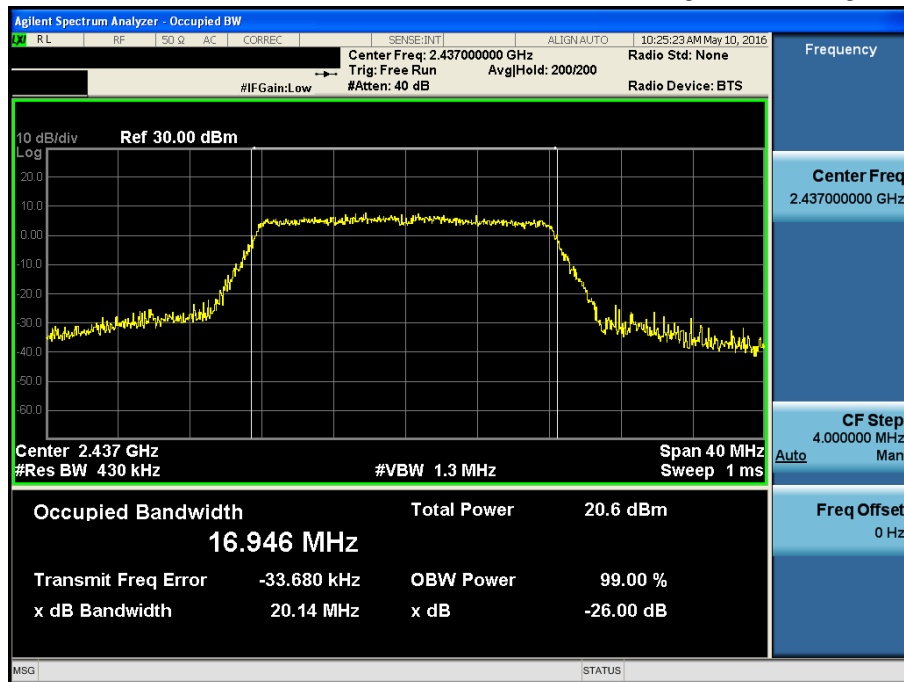
Occupied Bandwidth

TM 2 & ANT 2 & Lowest



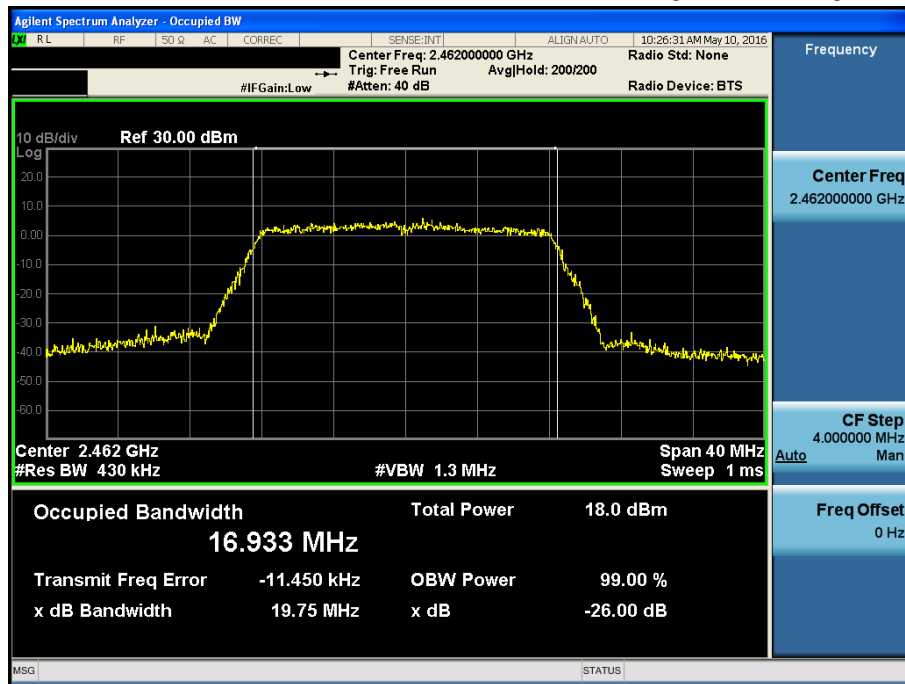
Occupied Bandwidth

TM 2 & ANT 2 & Middle



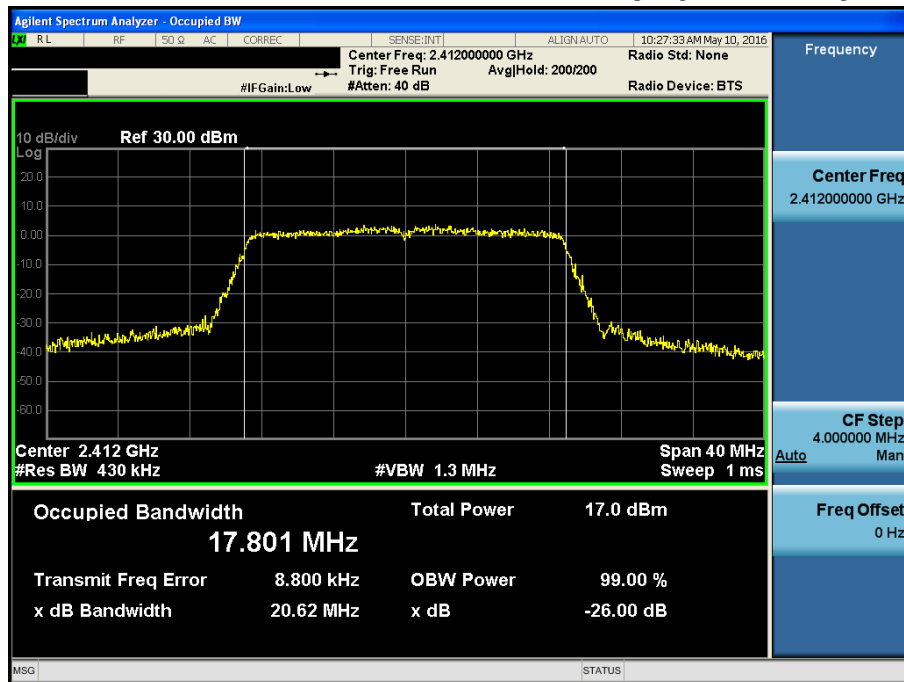
Occupied Bandwidth

TM 2 & ANT 2 & Highest



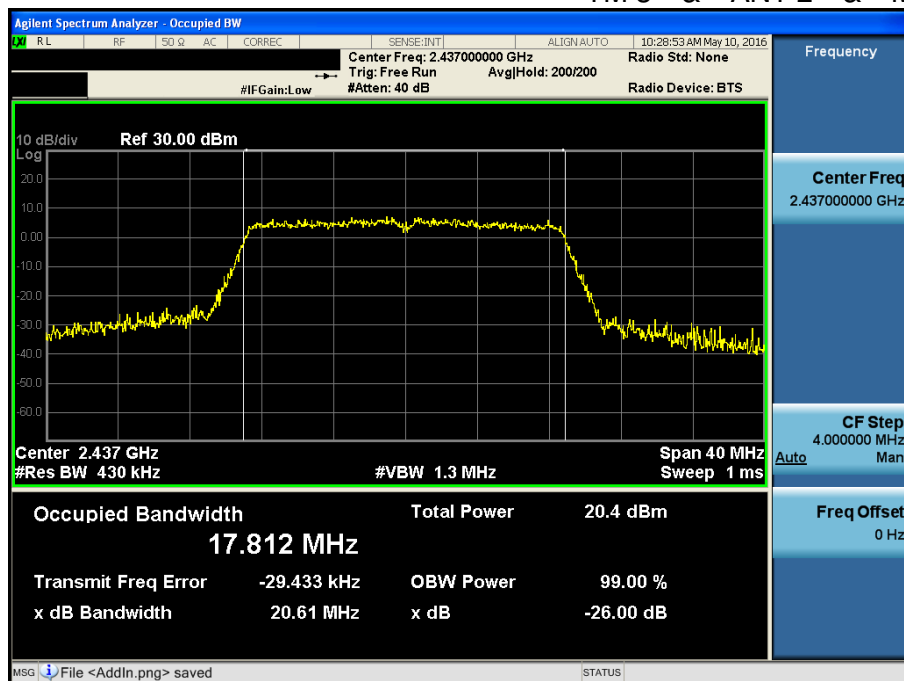
Occupied Bandwidth

TM 3 & ANT 2 & Lowest



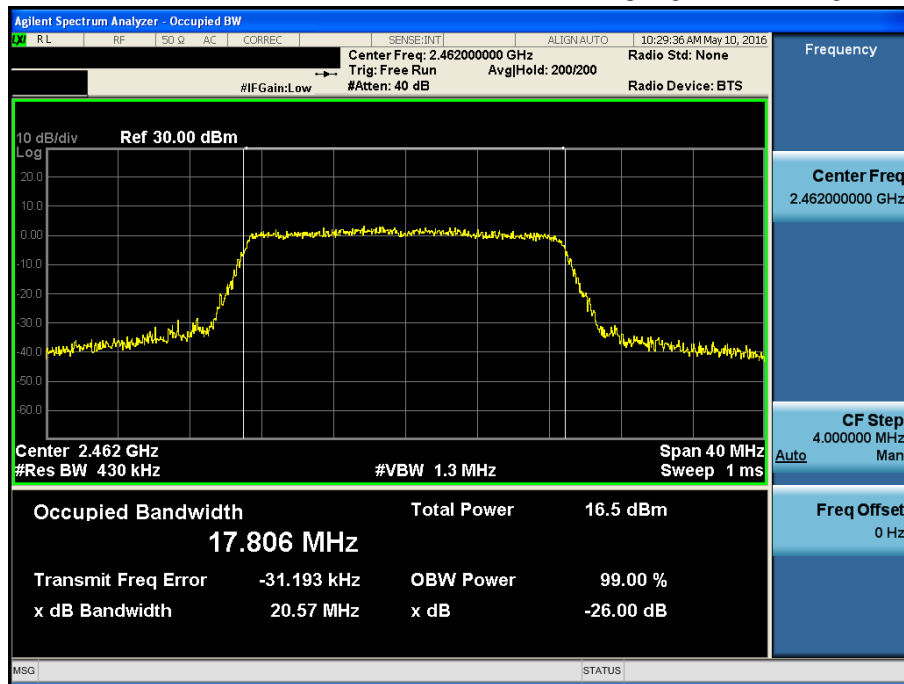
Occupied Bandwidth

TM 3 & ANT 2 & Middle



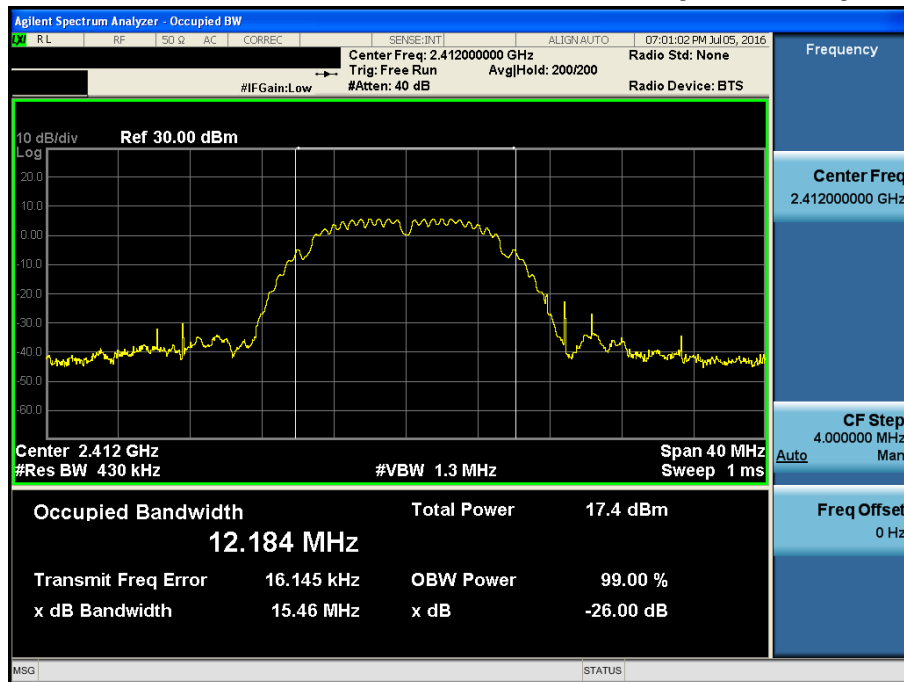
Occupied Bandwidth

TM 3 & ANT 2 & Highest



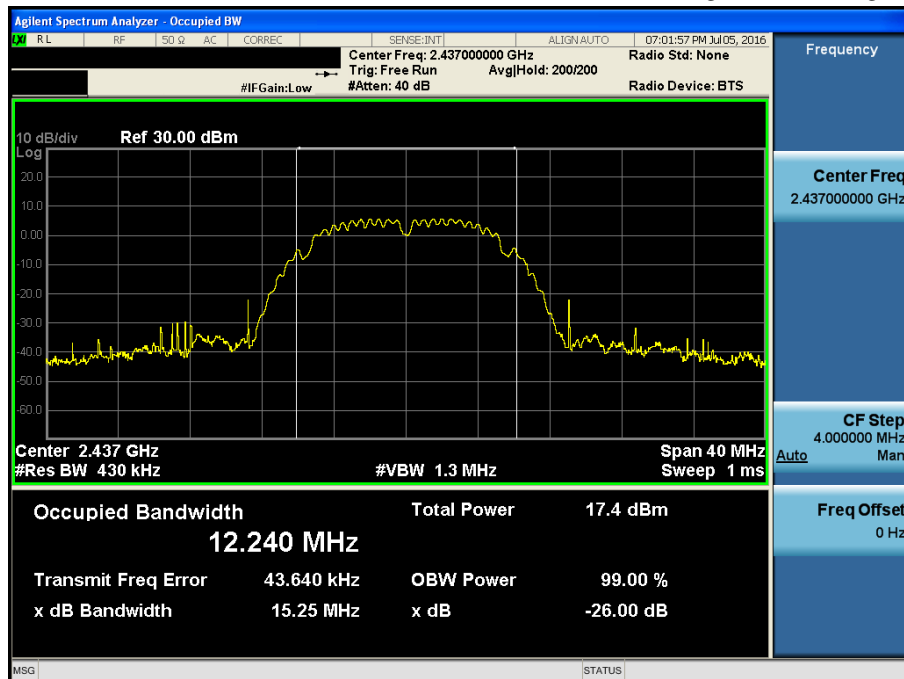
Occupied Bandwidth

TM 4 & ANT 2 & Lowest



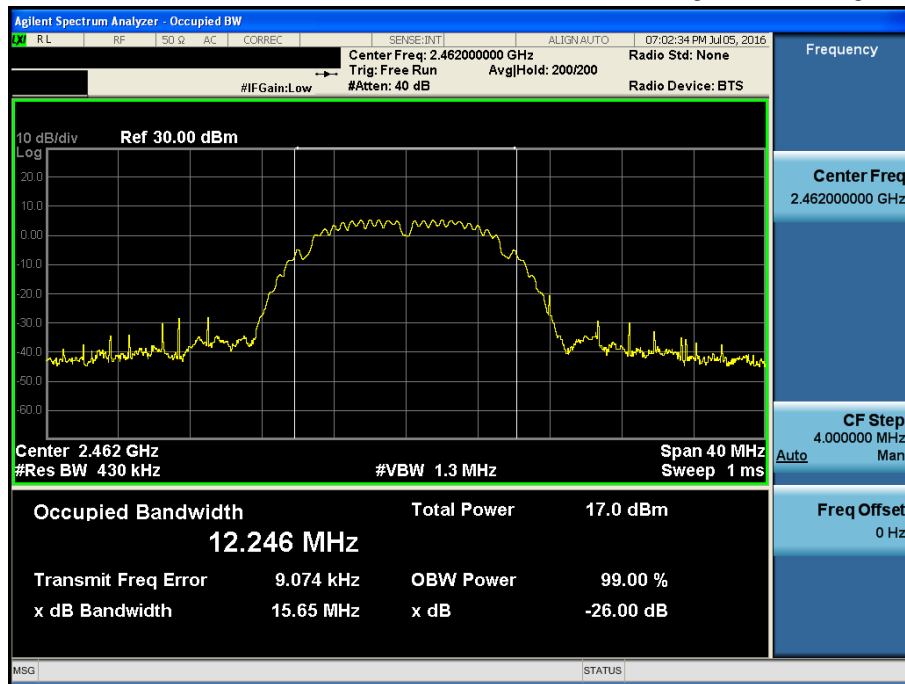
Occupied Bandwidth

TM 4 & ANT 2 & Middle



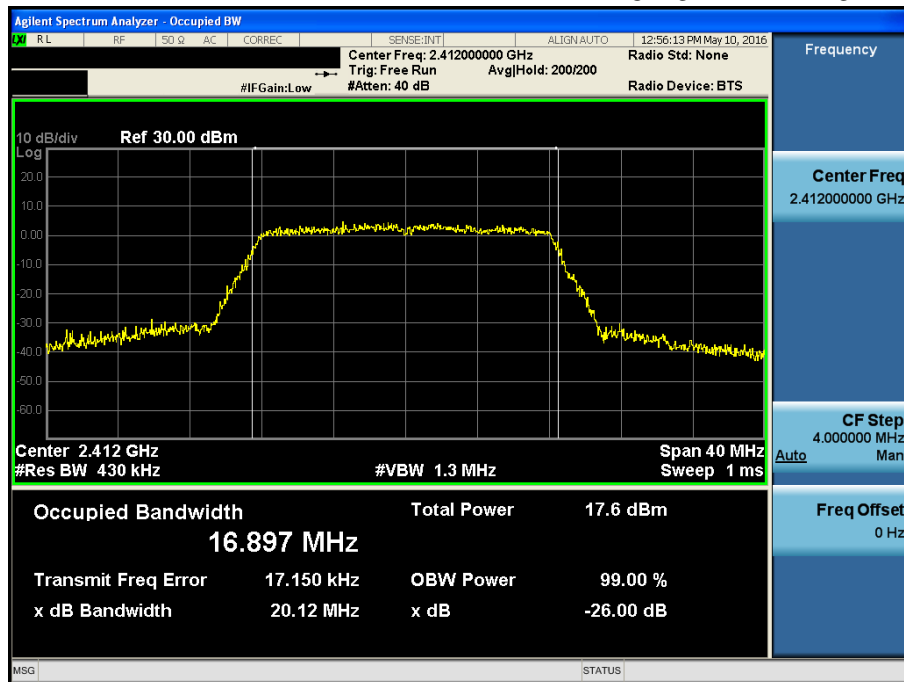
Occupied Bandwidth

TM 4 & ANT 2 & Highest



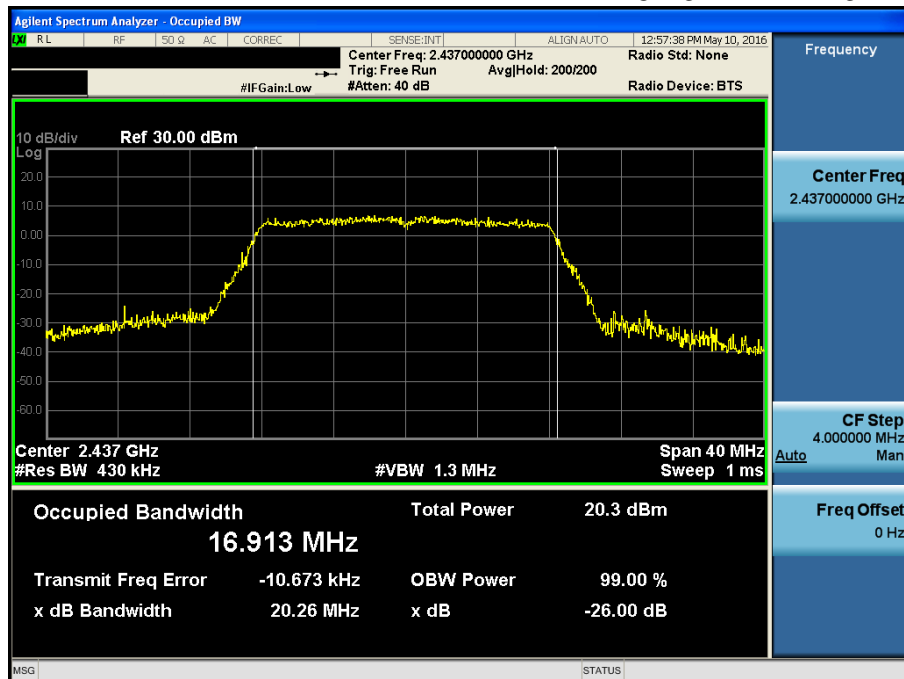
Occupied Bandwidth

TM 5 & ANT 2 & Lowest



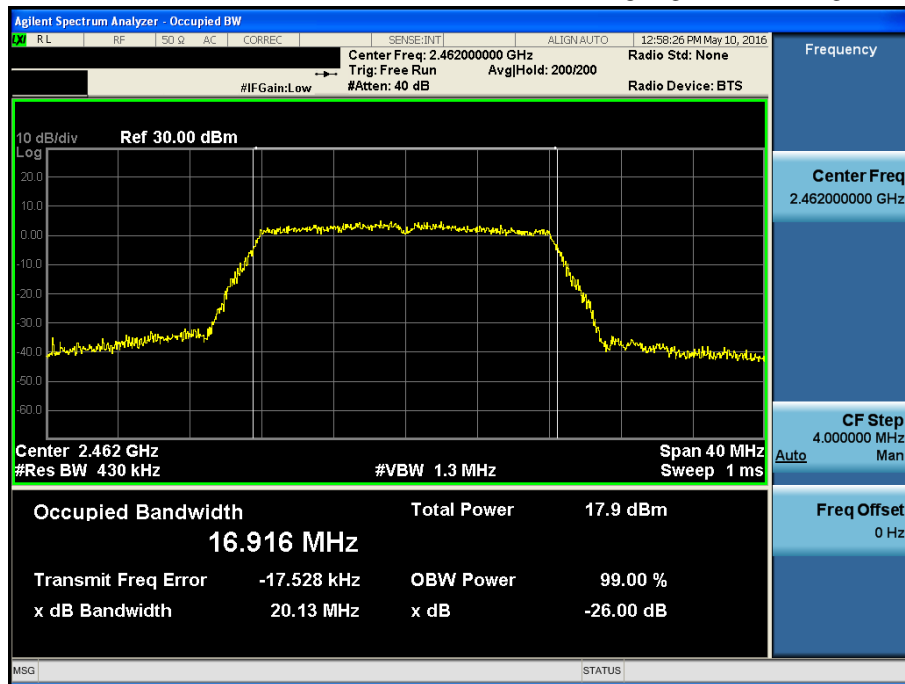
Occupied Bandwidth

TM 5 & ANT 2 & Middle



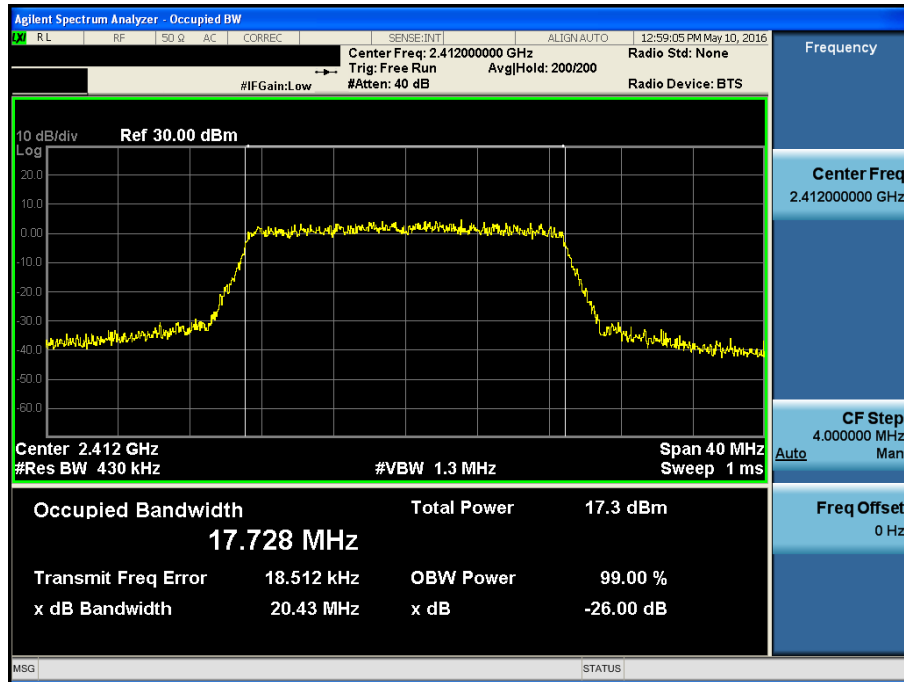
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TM 5 & ANT 2 & Highest



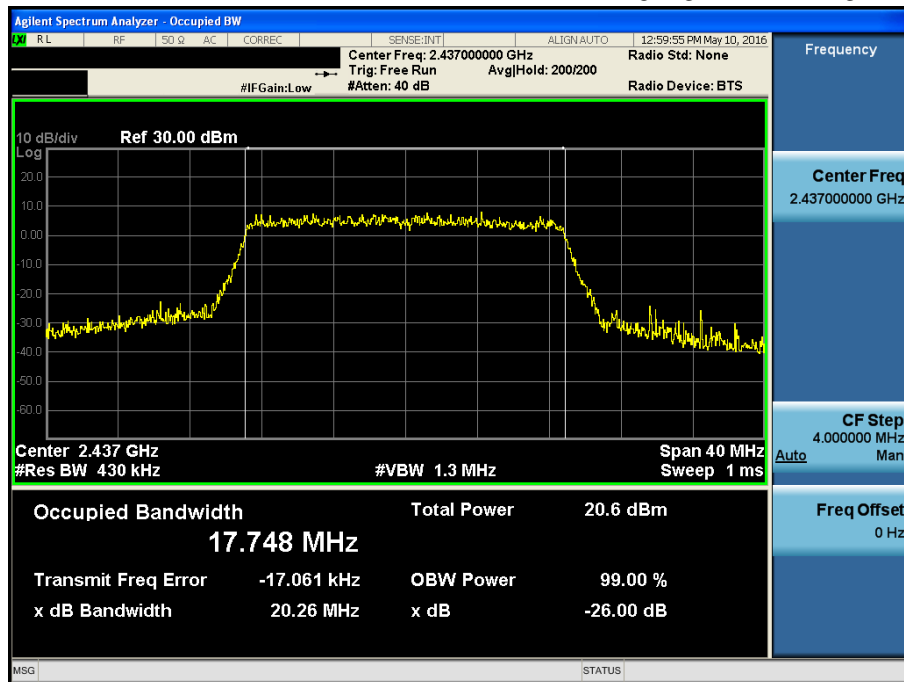
Occupied Bandwidth

TM 6 & ANT 2 & Lowest



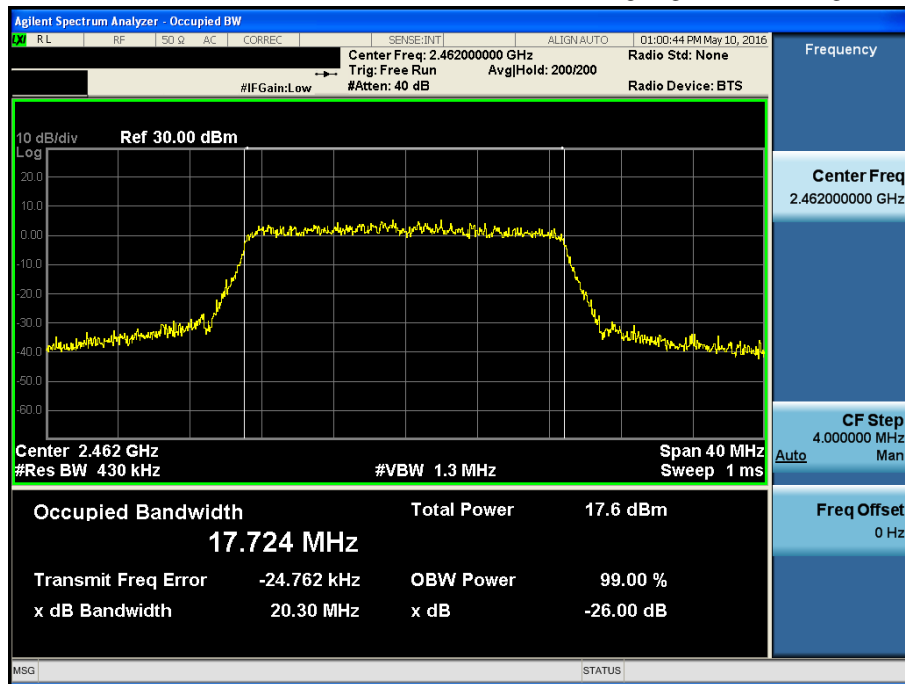
Occupied Bandwidth

TM 6 & ANT 2 & Middle



Occupied Bandwidth

TM 6 & ANT 2 & Highest



9. LIST OF TEST EQUIPMENT

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
MXA Signal Analyzer	Agilent Technologies	N9020A	16/03/11	17/03/11	MY50200828
MXA Signal Analyzer	Agilent Technologies	N9020A	16/01/06	17/01/06	MY46471096
Dynamic Measurement DC Source	Agilent Technologies	66332A	15/09/09	16/09/09	GB42110550
DC Power Supply	SM techno	SDP30-5D	16/04/21	17/04/21	305DKA013
Thermohygrometer	BODYCOM	BJ5478	16/04/22	17/04/22	120612-1
Signal Generator	Rohde Schwarz	SMF100A	16/06/23	17/06/23	102341
Multimeter	HP	34401A	16/02/25	17/02/25	3146A13475
Termination	SigaTek	1402	15/10/08	16/10/08	8
Loop Antenna	Schwarzbeck	FMZB1513	16/04/22	18/04/22	1513-128
BILOG ANTENNA	Schwarzbeck	VULB9161	14/07/10	16/07/10	4070
Horn Antenna	ETS-LINDGREN	3115	15/02/09	17/02/09	9202-3820
Horn Antenna	A.H.Systems Inc.	SAS-574	15/04/30	17/04/30	154
Highpass Filter	Wainwright Instruments	WHKX12-2580-3000-18000-80SS	15/09/23	16/09/23	3
Highpass Filter	Wainwright Instruments	WHNX6-6320-8000-26500-40CC	15/09/23	16/09/23	1
PreAmplifier	Agilent	8449B	16/02/24	17/02/24	3008A00370
PreAmplifier	TSJ	MLA-010K01-B01-27	16/03/10	17/03/10	1844539
EMI Test Receiver	Rohde Schwarz	ESU	15/07/14	16/07/14	100469
EMI Test Receiver	Rohde Schwarz	ESCI	16/02/25	17/02/25	100364
Single-Phase Master	NF	4420	15/09/09	16/09/09	3049354420023
Artificial Mains Network	Narda S.T.S / PMM	PMM L2-16B	15/06/26	16/06/26	000WX20305
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2495A MA2490A	15/10/20	16/10/20	1338003 1249304
CABLE	DTNC	CABLE	NA	NA	C-016-2
CABLE	DTNC	CABLE	NA	NA	C-016-3
CABLE	DTNC	CABLE	NA	NA	C-016-4
CABLE	DTNC	CABLE	NA	NA	RF2-106
CABLE	DTNC	CABLE	N/A	N/A	RF1-002

APPENDIX I

Duty cycle information

■ Test Procedure

Duty cycle measured using **section 6.0 b) of KDB 558074 D01 DTS Meas. Guidance v03r5** :

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal.

Set the center frequency of the instrument to the center frequency of the transmission. Set $RBW \geq OBW$ if possible; otherwise, set RBW to the largest available value. Set $VBW \geq RBW$. Set detector = peak or average.

The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$ and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if $T \leq 16.7$ microseconds.)

■ Test Data

Test Mode	Date rate	Tested frequency	T _{ON} (ms)	T _{ON+OFF} (ms)	Duty Cycle (%)	Duty Cycle Correction Factor(dB)
TM 1	1 Mbps	Middle	8.700	8.910	97.64	0.10
TM 2	6 Mbps	Middle	1.440	1.645	87.54	0.58
TM 3	MCS 0	Middle	1.345	1.555	86.50	0.63
TM 4	1 Mbps	Middle	8.64	8.85	97.63	0.11
TM 5	6 Mbps	Middle	1.44	1.645	87.54	0.58
TM 6	MCS 8	Middle	0.696	0.903	77.08	1.14

Result Plots

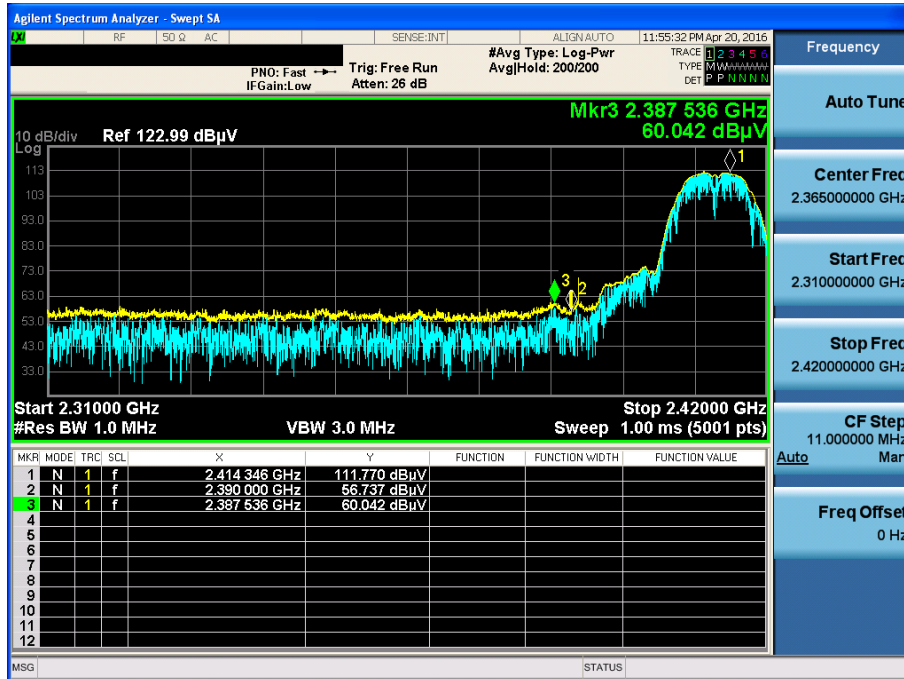


APPENDIX II

Unwanted Emissions (Radiated) Test Plot

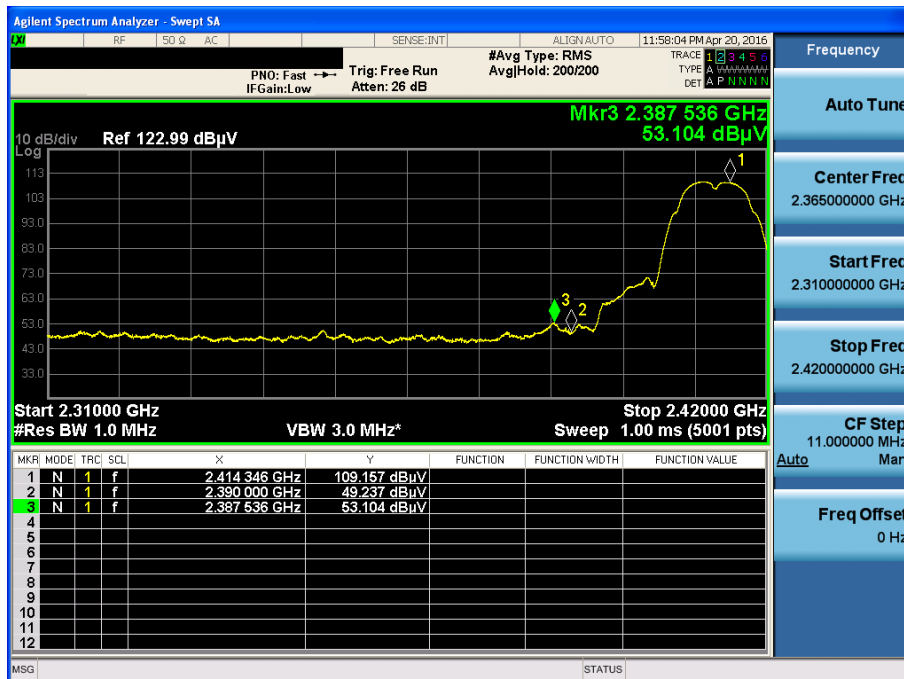
TM 1 & Lowest & Y axis & Ver & ANT 1

Detector Mode : PK



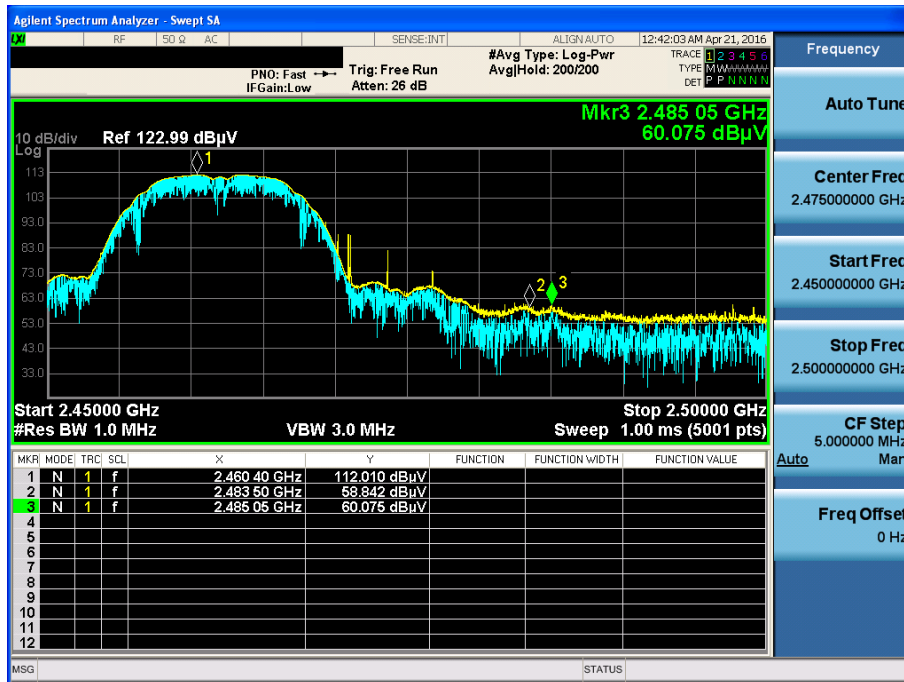
TM 1 & Lowest & Y axis & Ver & ANT 1

Detector Mode : AV



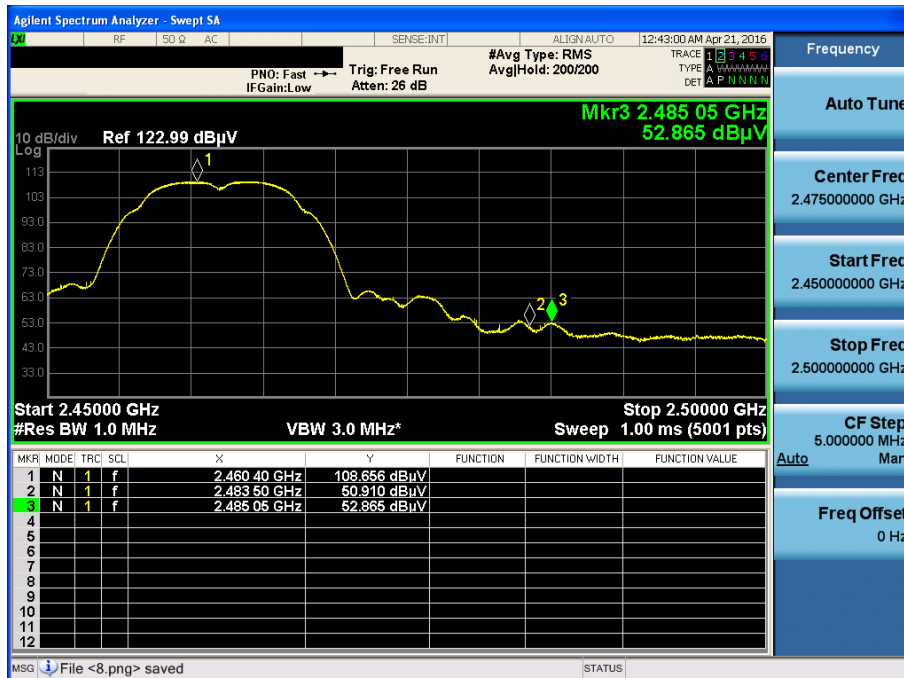
TM 1 & Highest & Y axis & Ver & ANT 1

Detector Mode : PK



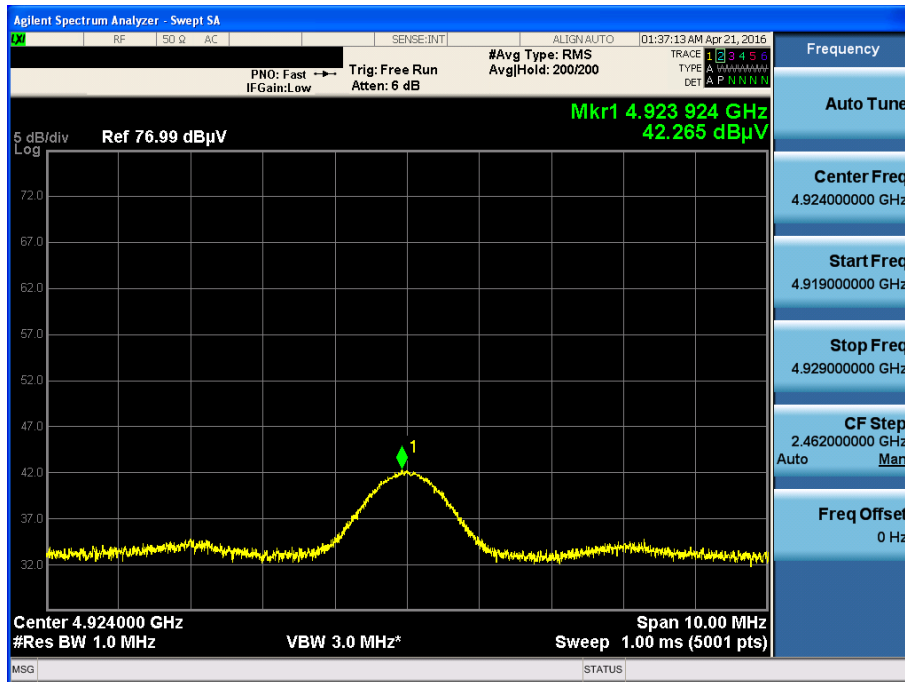
TM 1 & Highest & Y axis & Ver & ANT 1

Detector Mode : AV



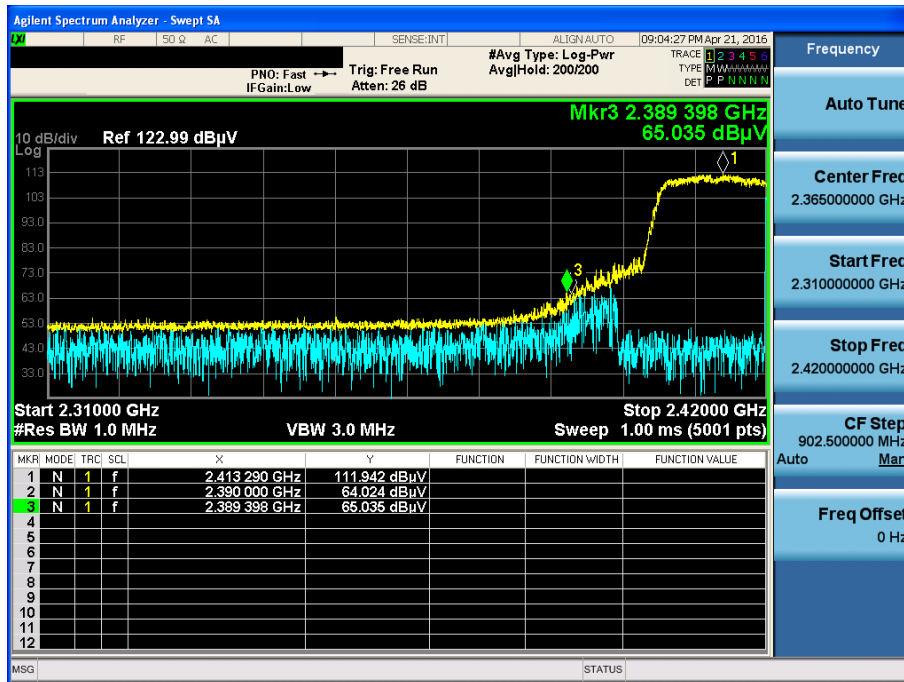
TM 1 & Highest & Z axis & Ver

Detector Mode : AV



TM 4 & Lowest & Y axis & Ver & ANT 1

Detector Mode : PK



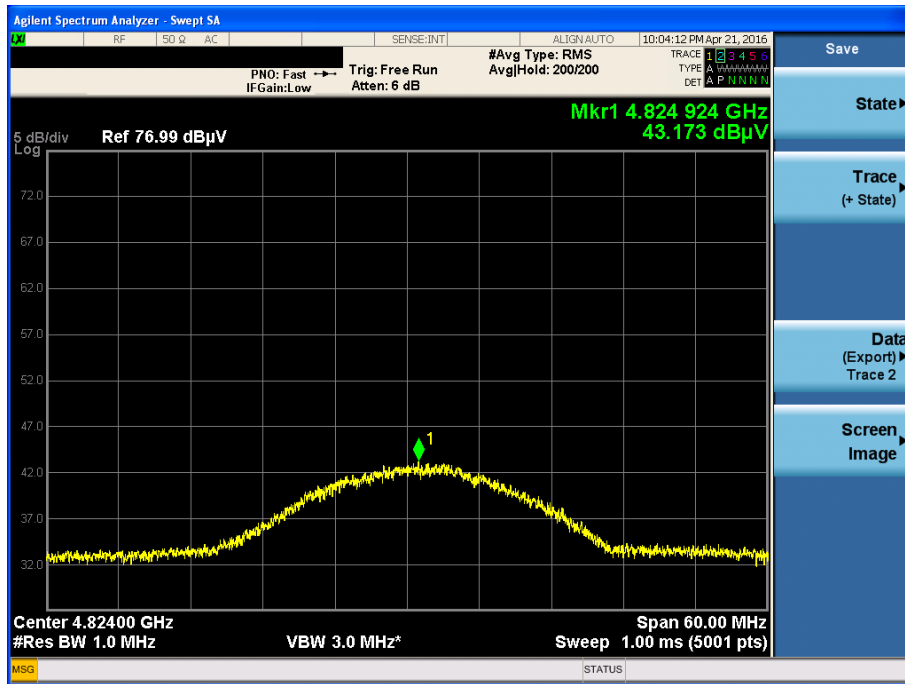
TM 4 & Lowest & Y axis & Ver & ANT 1

Detector Mode : AV



TM 4 & Lowest & Z axis & Ver

Detector Mode : AV



TM 4 & Highest & Y axis & Ver & ANT 1

Detector Mode : PK



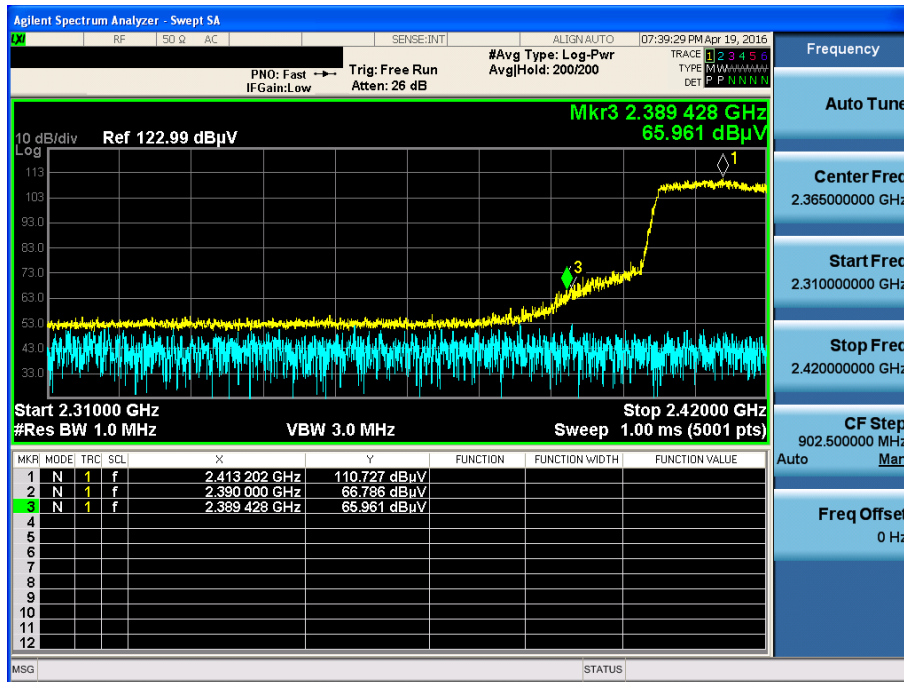
TM 4 & Highest & Y axis & Ver & ANT 1

Detector Mode : AV



TM 5 & Lowest & Z axis & Hor

Detector Mode : PK



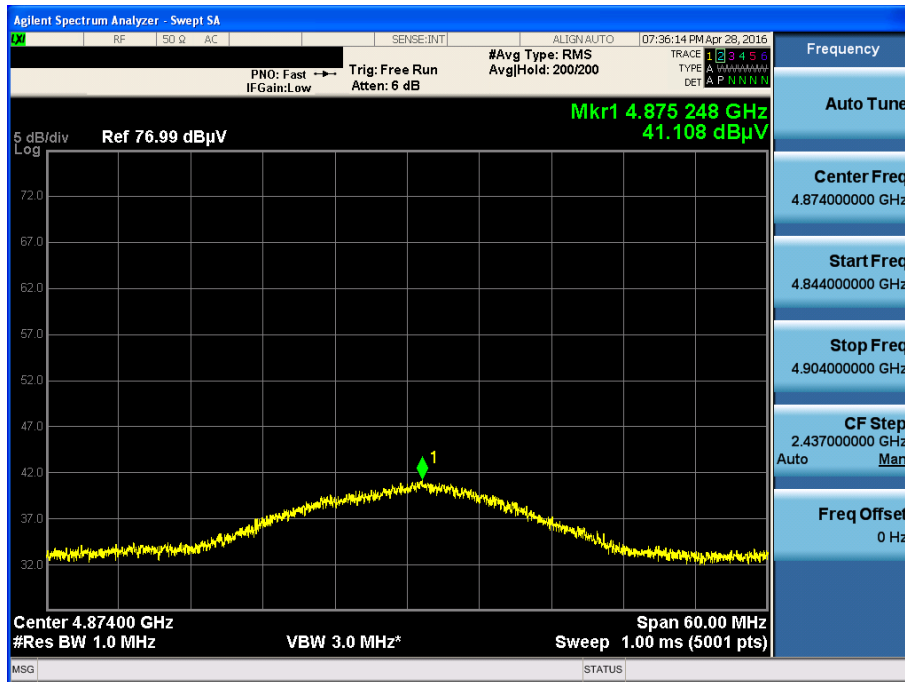
TM 5 & Lowest & Z axis & Hor

Detector Mode : AV



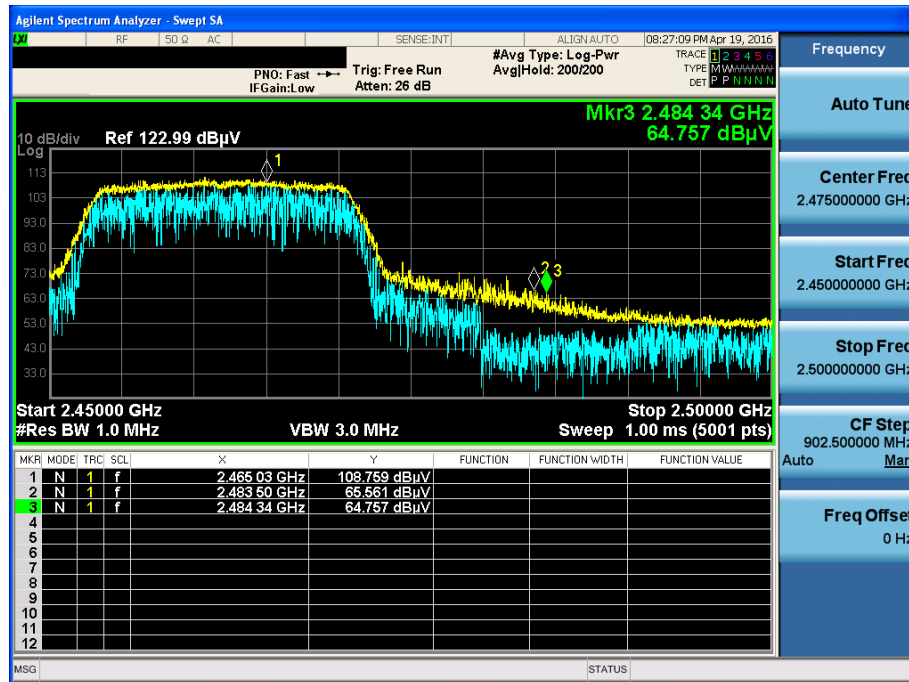
TM 5 & Middle & X axis & Hor

Detector Mode : AV



TM 5 & Highest & Z axis & Hor

Detector Mode : PK



TM 5 & Highest & Z axis & Hor

Detector Mode : AV

