12 AC power-line conducted emissions

12.1 Definition

Line-to-ground radio-noise voltage that is conducted from all of the EUT current-carrying power input terminals that are directly (or indirectly via separate transformers or power supplies) connected to a public power network.

12.2 Test Parameters

Test Location:	Element Hull
Test Chamber:	Screen Room 2
Test Standard and Clause:	ANSI C63.10-2013, Clause 6.2
EUT Channels:	5250 MHz
Deviations From Standard:	None
Measurement Detectors:	Quasi-Peak and Average

Environmental Conditions (Normal Environment)

Temperature: 21 °C	+15 ºC to +35 ºC (as declared)
Humidity: 40 % RH	20 % RH to 75 % RH (as declared)

12.3 Test Limit

A radio apparatus that is designed to be connected to the public utility (AC) power line shall ensure that the radio frequency voltage, which 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 Table 3.

Table 3 – AC Power Line Conducted Emission Limits

Frequency (MHz)	*Conducted limit (dBµV)*	
	Quasi-Peak	*Average***
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50

*The level decreases linearly with the logarithm of the frequency.
**A linear average detector is required.

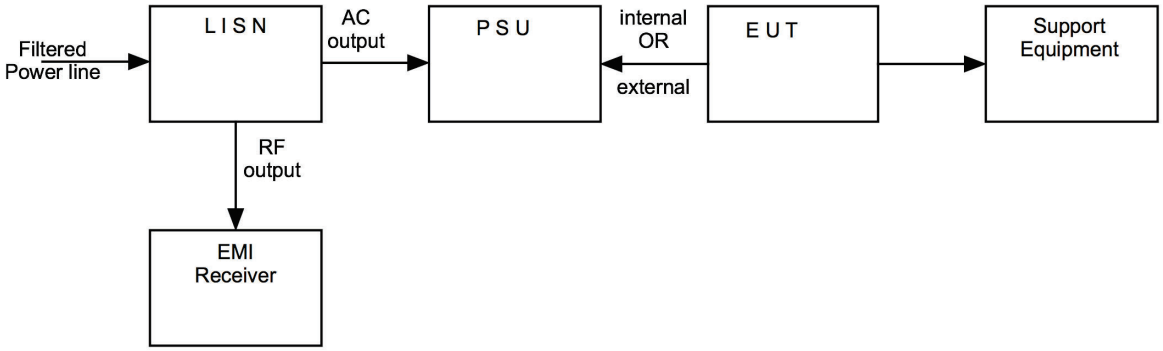
12.4 Test Method

With the EUT setup in a screened room, as per section 9 of this report and connected as per Figure ii, the power line emissions were measured on a spectrum analyzer / EMI receiver.

AC power line conducted emissions from the EUT are checked first by preview scans with peak and average detectors covering both live and neutral lines. A spectrum analyzer is used to determine if any periodic emissions are present.

Formal measurements using the correct detector(s) and bandwidth are made on frequencies identified from the preview scans. Final measurements were performed with EUT set at its maximum duty in transmit and receive modes.

Figure ii Test Setup



12.5 Test Set-up Photograph

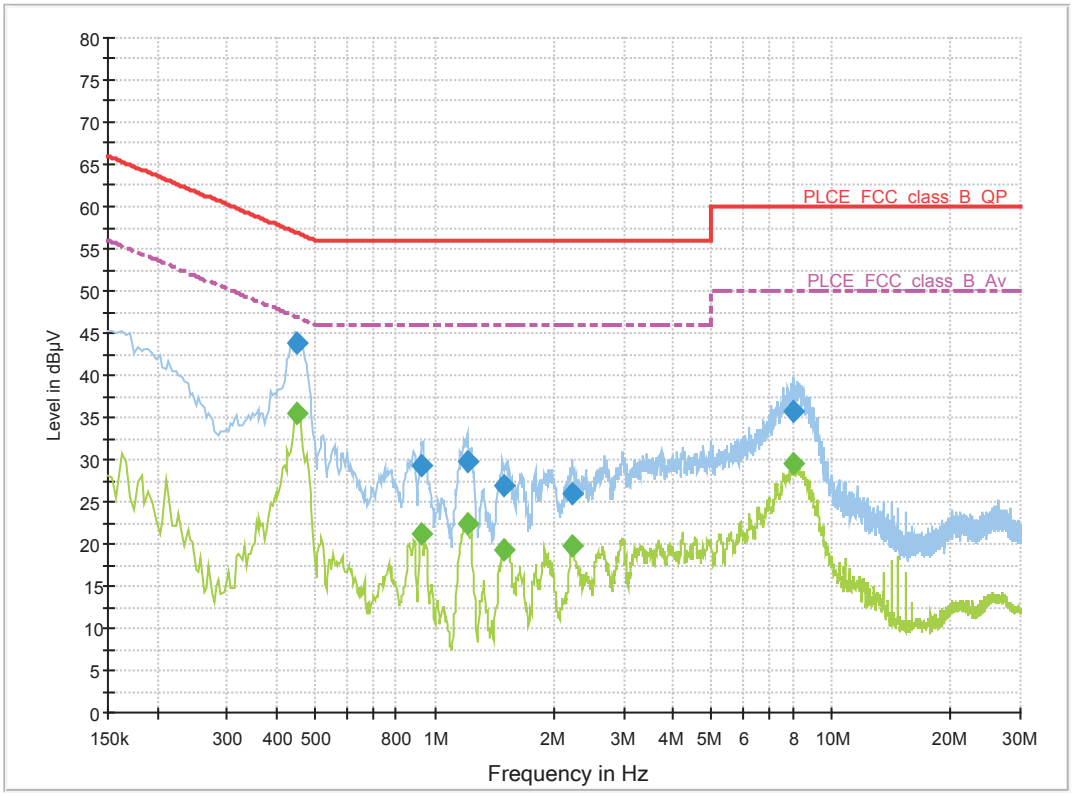
12.6 Test Equipment

Equipment Type	Manufacturer	Equipment Description	Element No	Due For Calibration
Measuring Receiver	R&S	ESHS10	RFG125	2022-03-29
LISN	R&S	ESH3-Z5	RFG732	2021-05-18
Pulse Limiter	R&S	ESH3-Z2	RFG680	2021-06-09

12.7 Test Results

AC power-line conducted emissions, Transmit mode						
Results measured using the average detector						
Reference Number	***Frequency (MHz)***	***Conductor***	***Result (dBuV)***	***Specification Limit (dBuV)***	***Margin (dB)***	***Result Summary***
1	0.449	L1	35.5	46.9	11.4	PASS
2	0.929	L1	21.2	46.0	24.8	PASS
3	1.209	L1	22.5	46.0	23.6	PASS
4	1.501	L1	19.3	46.0	26.7	PASS
5	2.229	L1	19.8	46.0	26.2	PASS
6	8.005	L1	29.6	50.0	20.4	PASS

Results measured using the quasi-peak detector						
Reference Number	***Frequency (MHz)***	***Conductor***	***Result (dBuV)***	***Specification Limit (dBuV)***	***Margin (dB)***	***Result Summary***
1	0.449	L1	43.8	56.9	13.1	PASS
2	0.929	L1	29.3	56.0	26.7	PASS
3	1.209	L1	29.7	56.0	26.3	PASS
4	1.501	L1	26.9	56.0	29.1	PASS
5	2.229	L1	26.1	56.0	29.9	PASS
6	8.005	L1	35.7	60.0	24.3	PASS


PLCE_FCC_class_B_QP
PLCE_FCC_class_B_Av
Level in dBµV
Frequency in Hz
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
150k
300
400
500
800
1M
2M
3M
4M
5M
6
8
10M
20M
30M

13 Occupied Bandwidth

13.1 Definition

The emission bandwidth (x dB) is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated x dB below the maximum in-band spectral density of the modulated signal.

13.2 Test Parameters

Test Location:	Element Hull
Test Chamber:	Wireless Laboratory 1
Test Standard and Clause:	ANSI C63.10-2013, Clause 6.9
EUT Channel Bandwidths:	20 MHz, 40 MHz & 80 MHz
EUT Test Modulations:	802.11a/n/ac
Deviations From Standard:	None
Measurement BW:	390 kHz / 510 kHz / 1 MHz
Spectrum Analyzer Video BW:	4 MHz / 5 MHz / 8 MHz
Measurement Span:	40 MHz / 80 MHz / 160 MHz
Measurement Detector:	Peak

Environmental Conditions (Normal Environment)

Temperature: 21 °C	+15 ºC to +35 ºC (as declared)
Humidity: 42 %RH	20%RH to 75%RH (as declared)

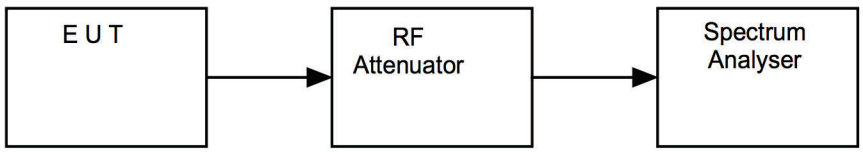
Test Limits

No limits are defined in the standard. Bandwidth is required to calculate the power limits.

13.3 Test Method

With the EUT connected as per Figure iii, the bandwidth of the EUT was measured on a spectrum analyser. The measurements were performed with EUT set at its maximum duty. All modulation schemes, data rates and power settings were used to observe the worst-case configuration in each bandwidth.

Figure iii Test Setup

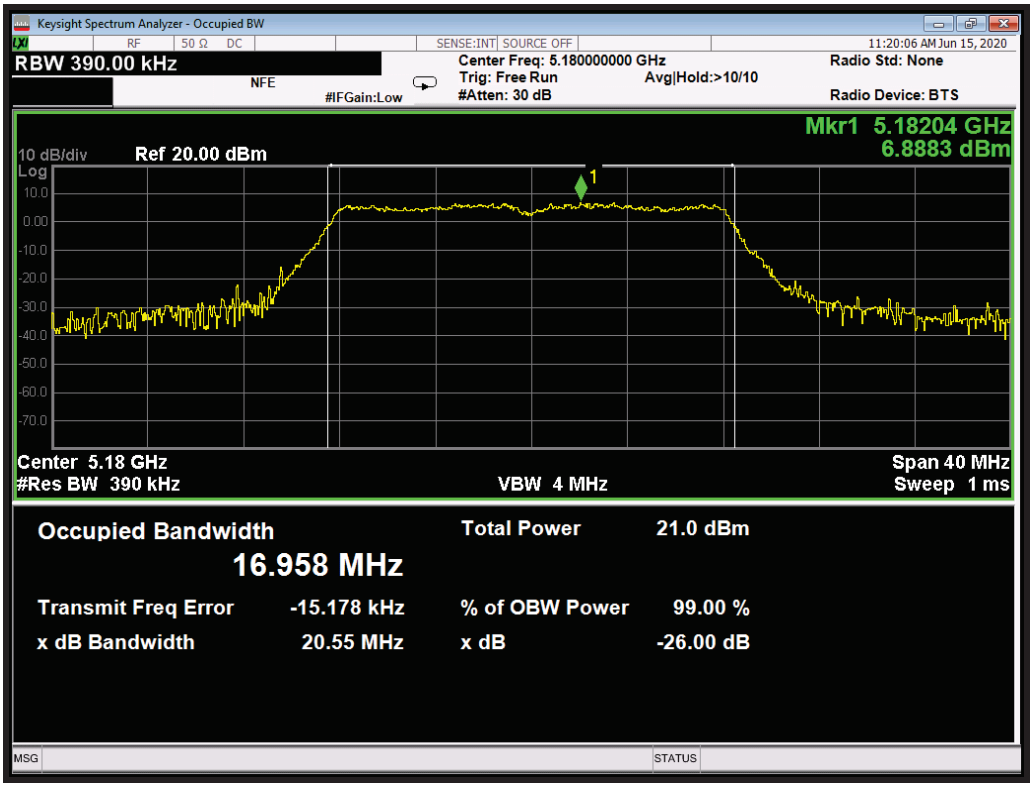


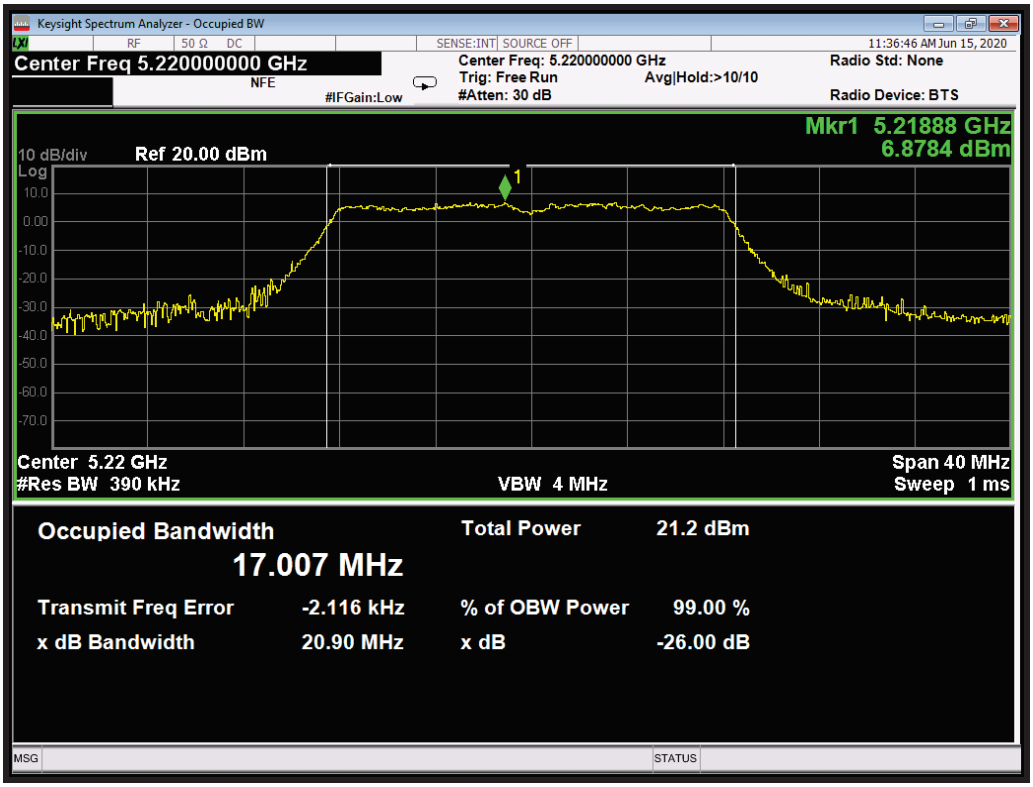
13.4 Test Equipment

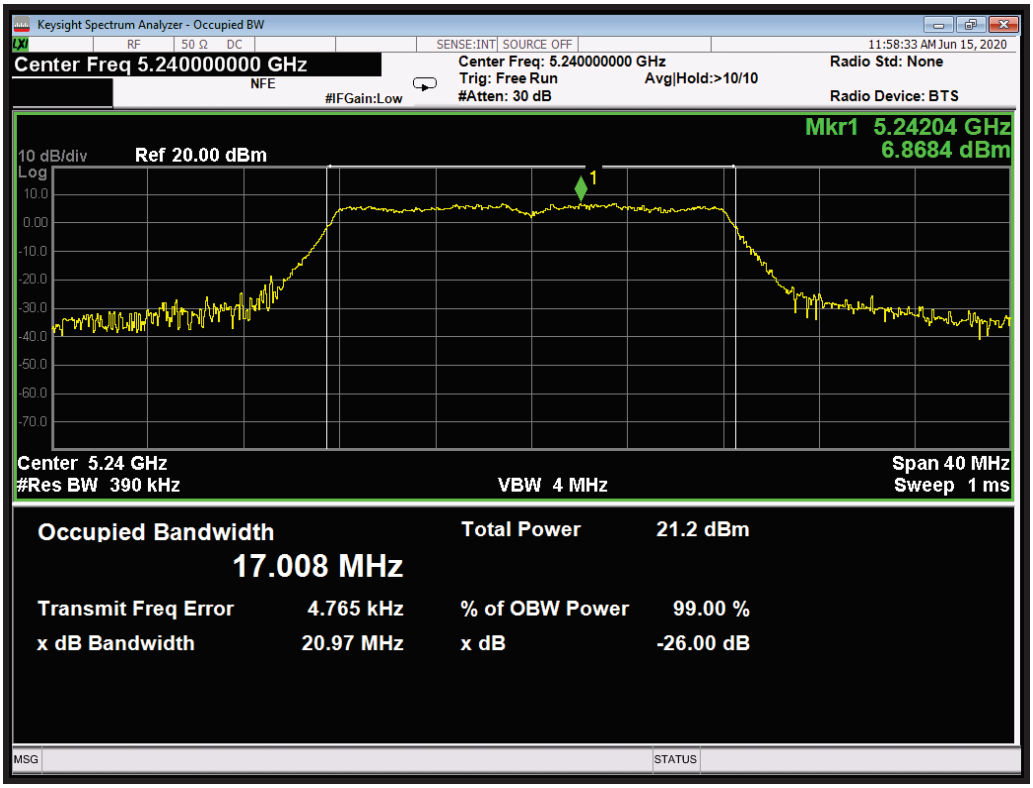
Equipment Description	*Manufacturer*	*Equipment Type*	*Element No*	*Due For Calibration*
Spectrum Analyser	Agilent	N9030A	REF2167	2021-08-19
Power Supply	Farnell	LT30-2	RFG035	Cal with REF887
Multimeter	Agilent	34405A	REF887	2021-10-12

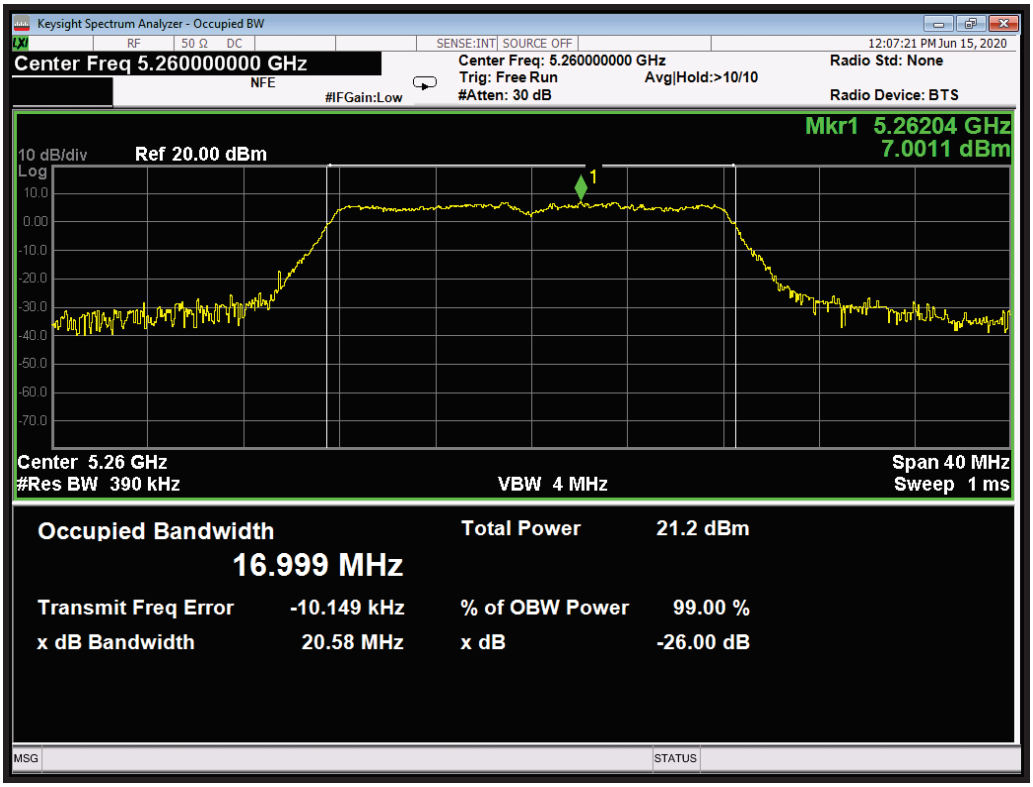
13.5 Test Results

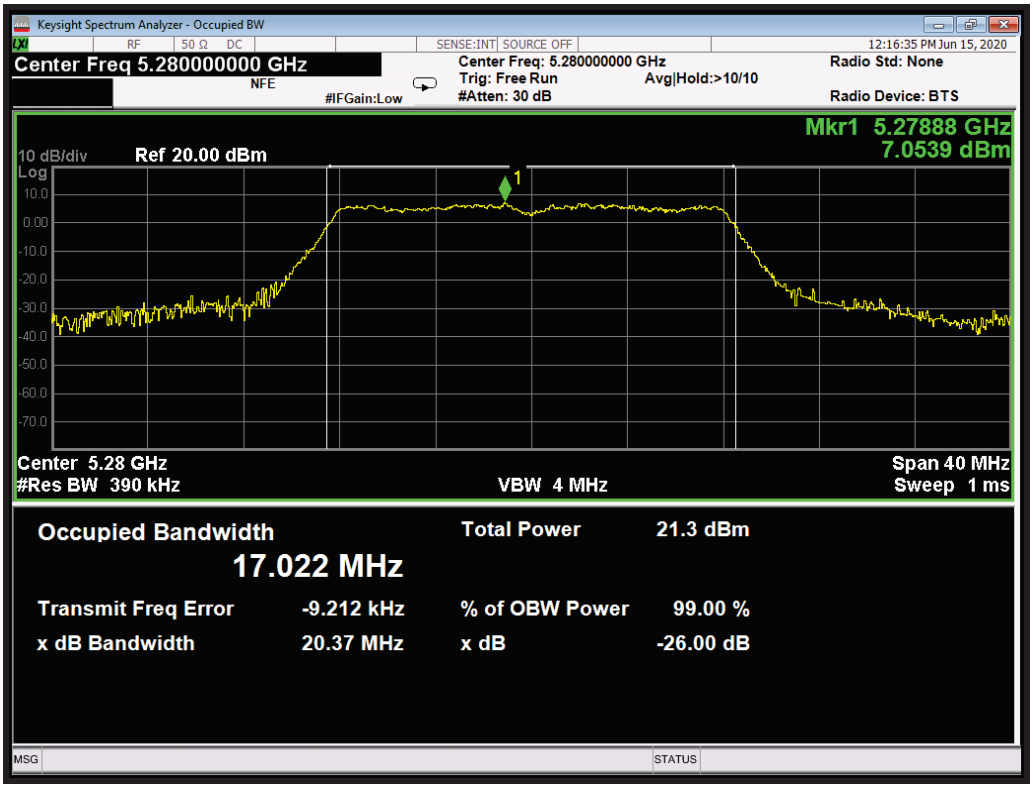
Modulation: 802.11a; Data rate: 6 Mbit/s; Main Antenna			
Channel Frequency (MHz)	26dB bandwidth (MHz)	99% bandwidth (MHz)	Result
5180	20.55	16.958	N/A
5220	20.90	17.007	N/A
5240	20.97	17.008	N/A
5260	20.58	16.999	N/A
5280	20.37	17.022	N/A
5320	22.16	17.031	N/A

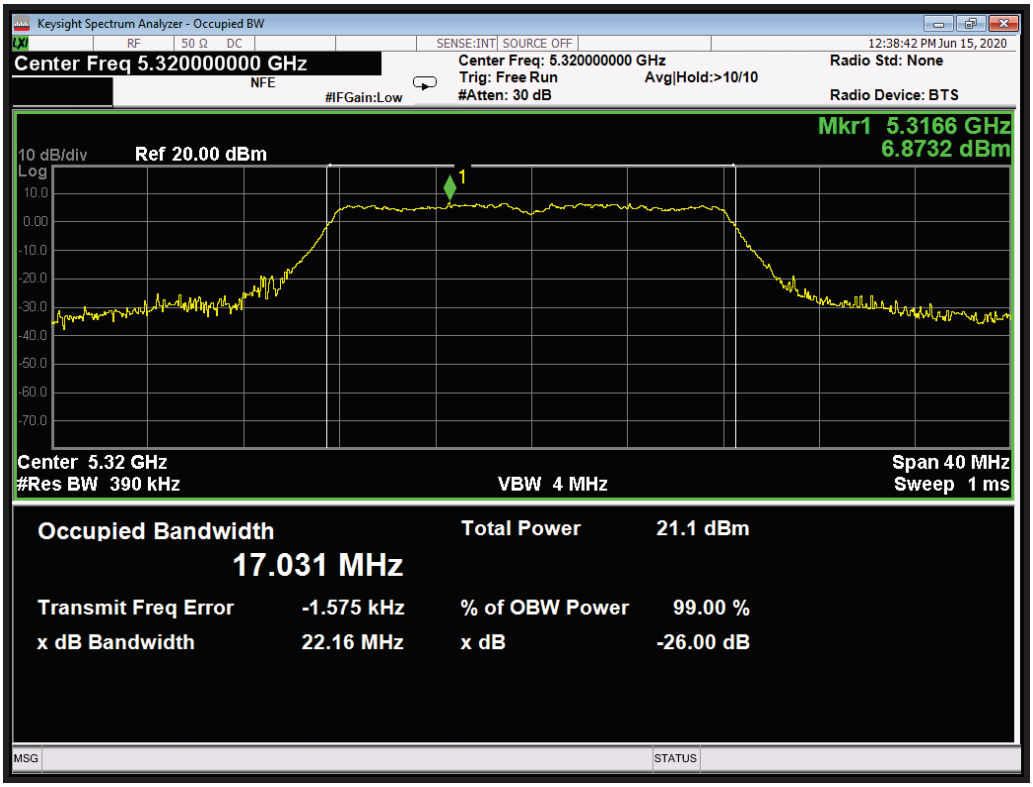



Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
11:36:46 AM Jun 15, 2020
Center Freq 5.220000000 GHz
NFE
#IFGain:Low
Center Freq: 5.220000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.21888 GHz
6.8784 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.22 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.007 MHz
Total Power 21.2 dBm
Transmit Freq Error -2.116 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.90 MHz
x dB -26.00 dB
MSG
STATUS

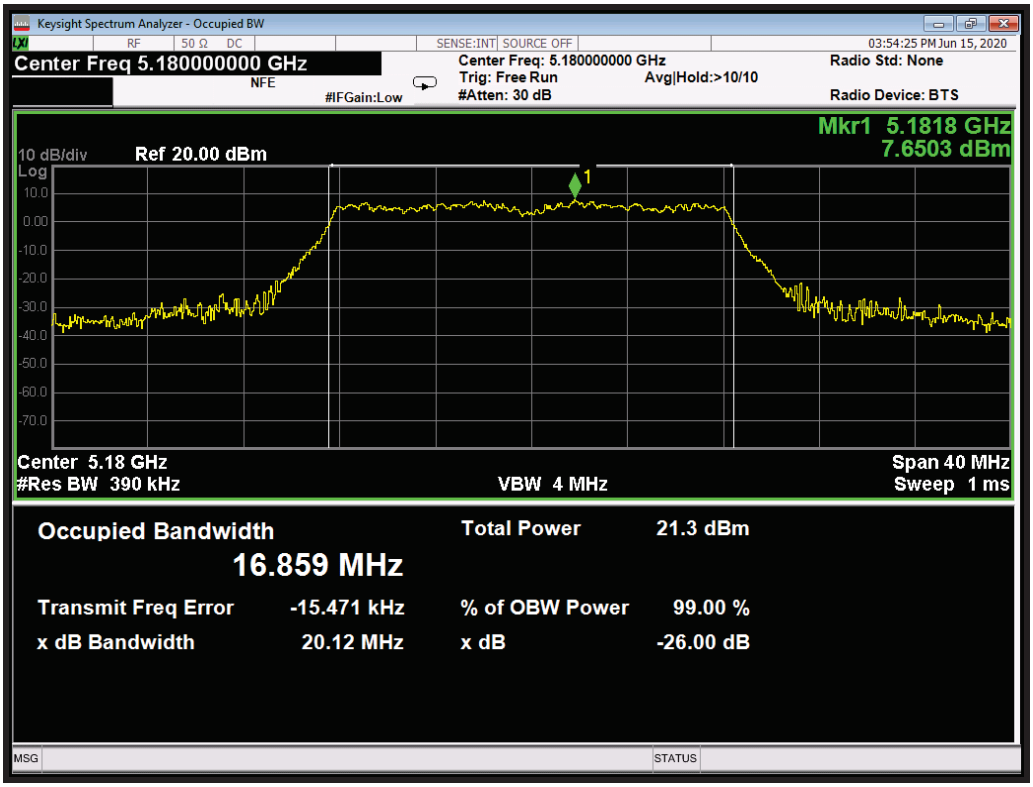

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
11:58:33 AM Jun 15, 2020
Center Freq 5.240000000 GHz
NFE
#IFGain:Low
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.24204 GHz
6.8684 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.24 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.008 MHz
Total Power 21.2 dBm
Transmit Freq Error 4.765 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.97 MHz
x dB -26.00 dB
MSG
STATUS

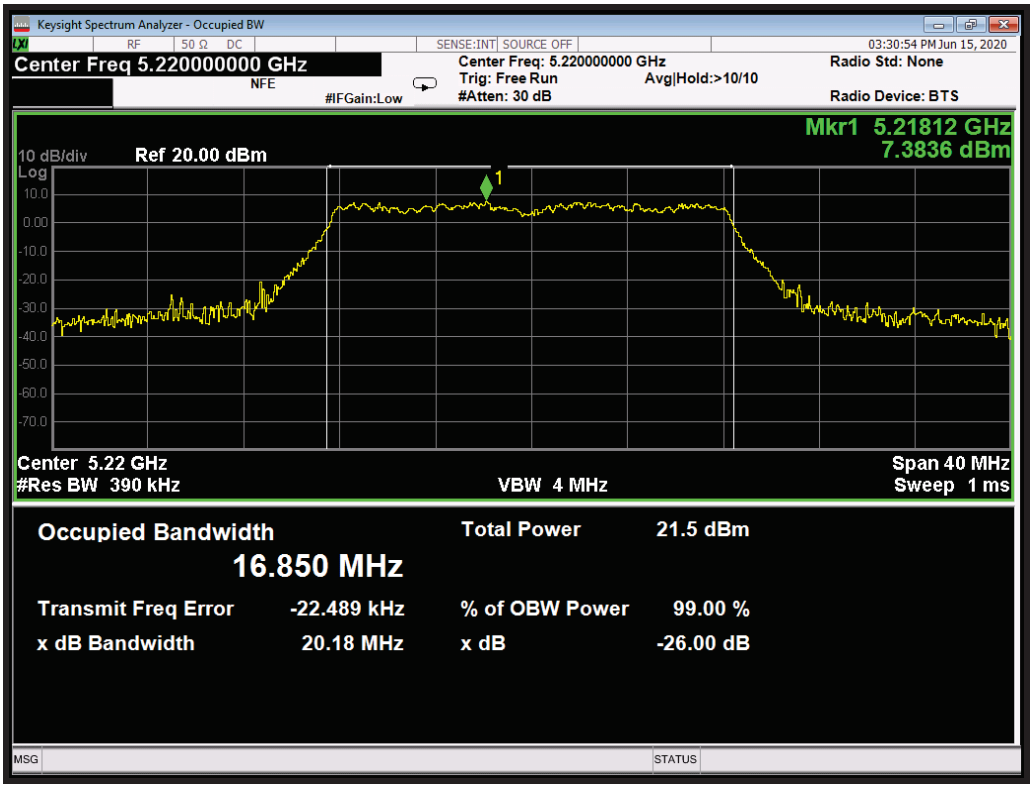

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
12:07:21 PM Jun 15, 2020
Center Freq 5.260000000 GHz
NFE
#IFGain:Low
Center Freq: 5.260000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.26204 GHz
7.0011 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.26 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.999 MHz
Total Power 21.2 dBm
Transmit Freq Error -10.149 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.58 MHz
x dB -26.00 dB
MSG
STATUS

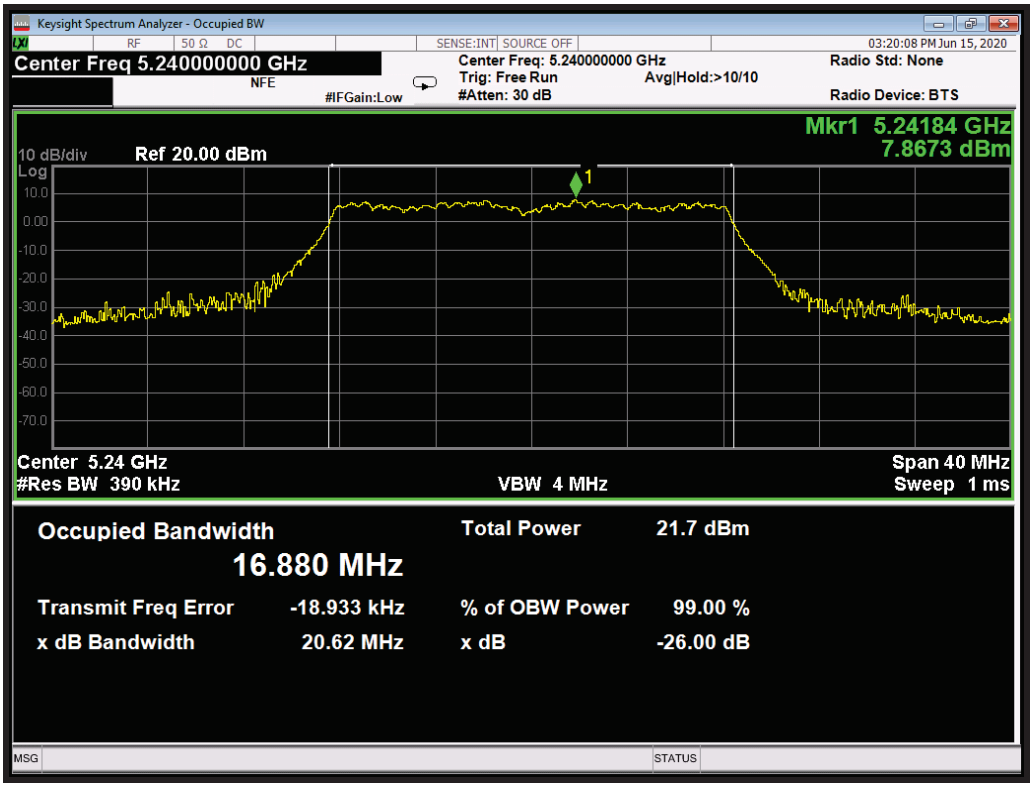

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
12:16:35 PM Jun 15, 2020
Center Freq 5.280000000 GHz
NFE
#IFGain:Low
Center Freq: 5.280000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.27888 GHz
7.0539 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.28 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.022 MHz
Total Power 21.3 dBm
Transmit Freq Error -9.212 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.37 MHz
x dB -26.00 dB
MSG
STATUS

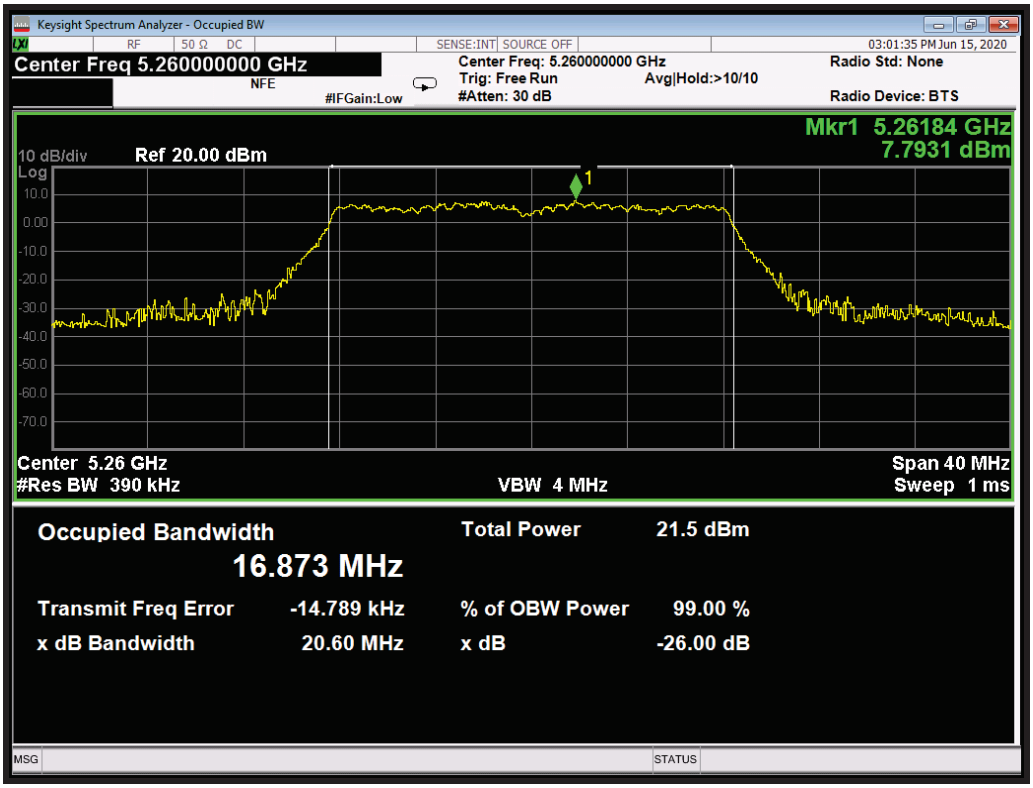


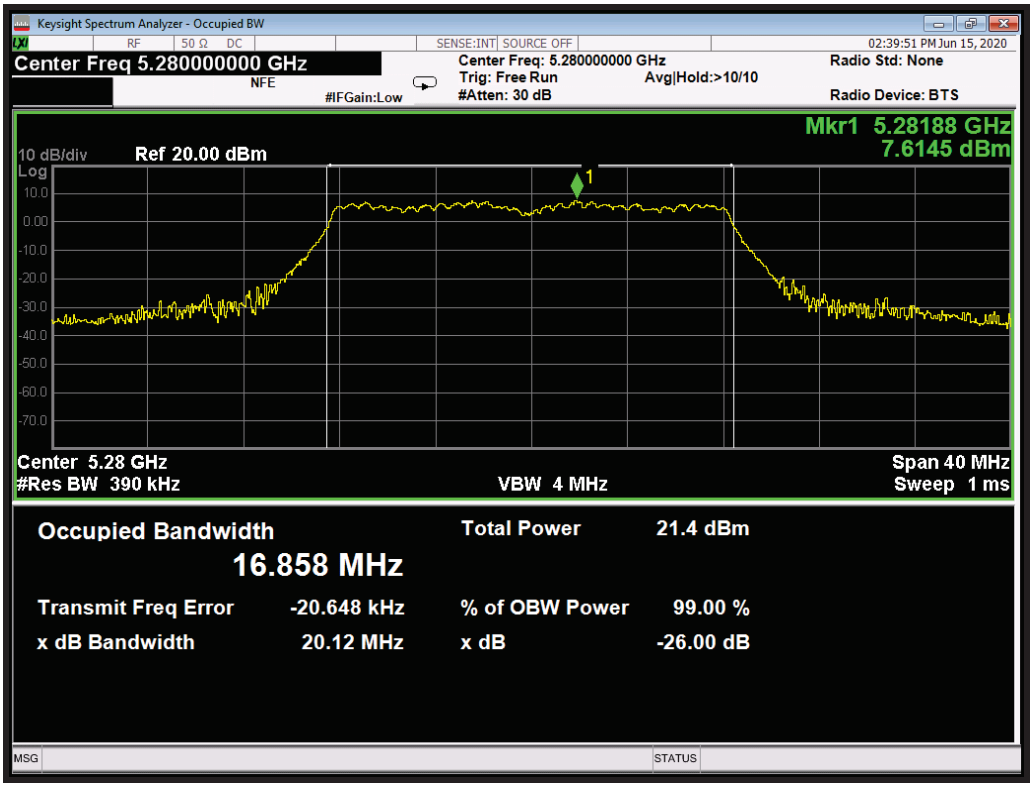
Modulation: 802.11a; Data rate: 6 Mbit/s; Aux Antenna			
Channel Frequency (MHz)	***26dB bandwidth (MHz)***	***99% bandwidth (MHz)***	***Result***
5180	20.12	16.859	N/A
5220	20.18	16.850	N/A
5240	20.62	16.880	N/A
5260	20.60	16.873	N/A
5280	20.12	16.858	N/A
5320	20.04	16.860	N/A

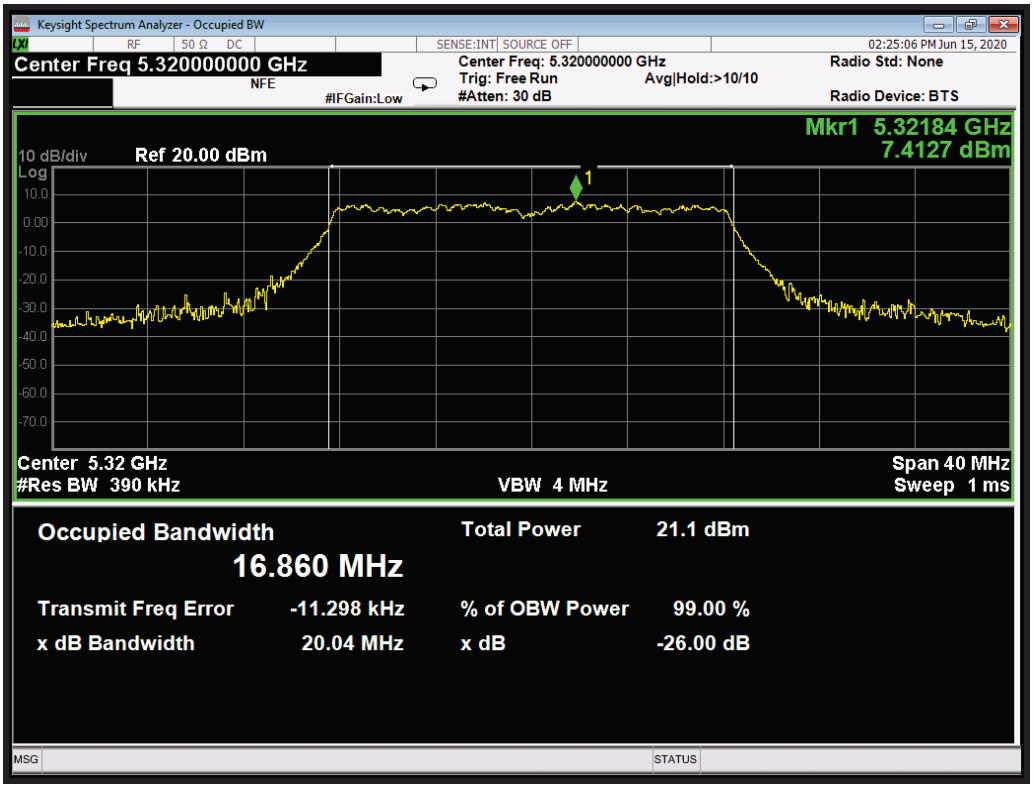

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
03:54:25 PM Jun 15, 2020
Center Freq 5.180000000 GHz
NFE
#IFGain:Low
Center Freq: 5.180000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.1818 GHz
7.6503 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.18 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.859 MHz
Total Power 21.3 dBm
Transmit Freq Error -15.471 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.12 MHz
x dB -26.00 dB
MSG
STATUS


Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
03:30:54 PM Jun 15, 2020
Center Freq 5.220000000 GHz
NFE
#IFGain:Low
Center Freq: 5.220000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.21812 GHz
7.3836 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.22 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.850 MHz
Total Power 21.5 dBm
Transmit Freq Error -22.489 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.18 MHz
x dB -26.00 dB
MSG
STATUS

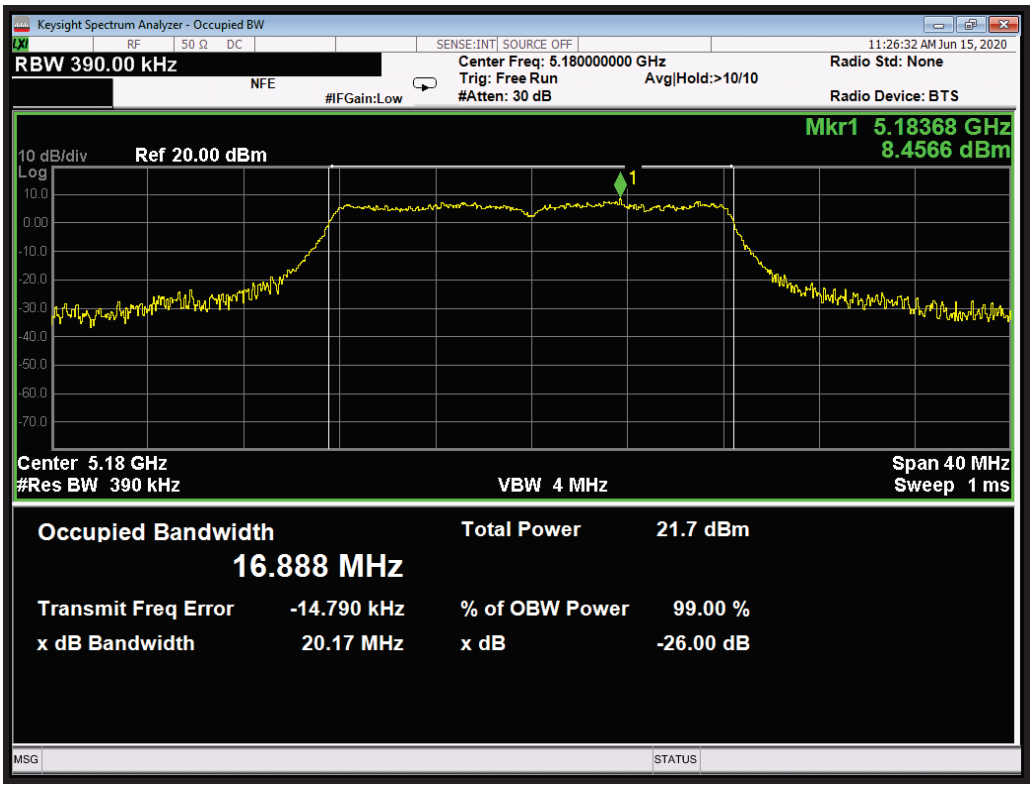

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
03:20:08 PM Jun 15, 2020
Center Freq 5.240000000 GHz
NFE
#IFGain:Low
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.24184 GHz
7.8673 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.24 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.880 MHz
Total Power 21.7 dBm
Transmit Freq Error -18.933 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.62 MHz
x dB -26.00 dB
MSG
STATUS

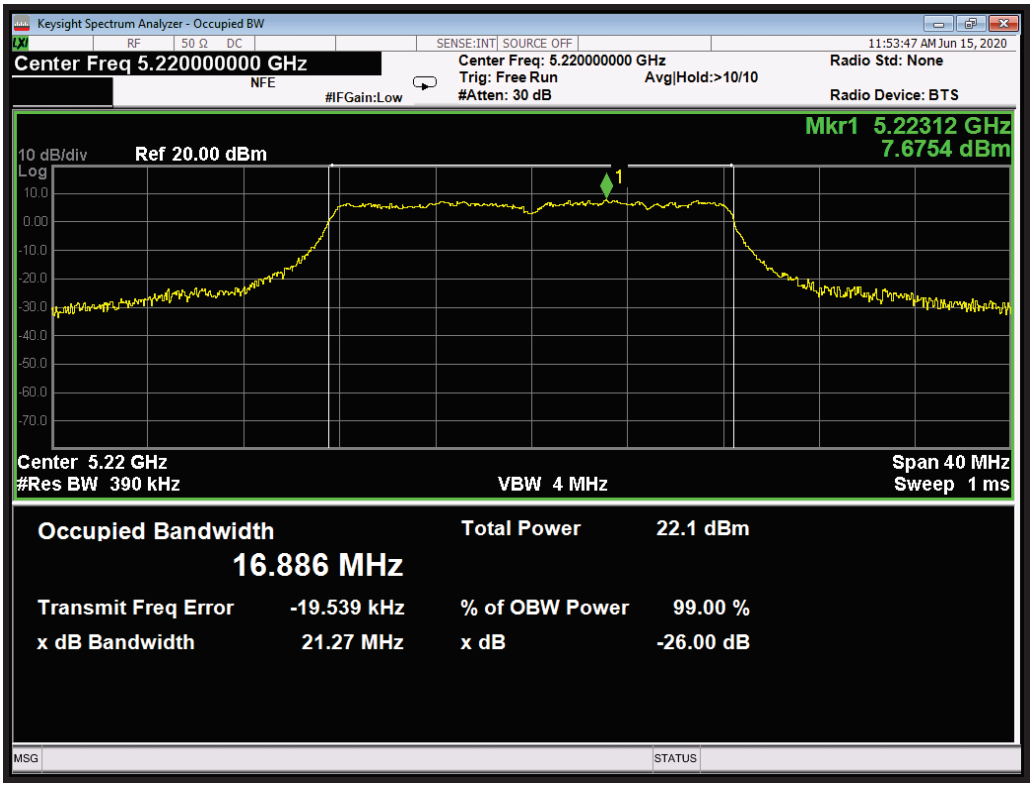

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
03:01:35 PM Jun 15, 2020
Center Freq 5.260000000 GHz
NFE
#IFGain:Low
Center Freq: 5.260000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.26184 GHz
7.7931 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.26 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.873 MHz
Total Power 21.5 dBm
Transmit Freq Error -14.789 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.60 MHz
x dB -26.00 dB
MSG
STATUS

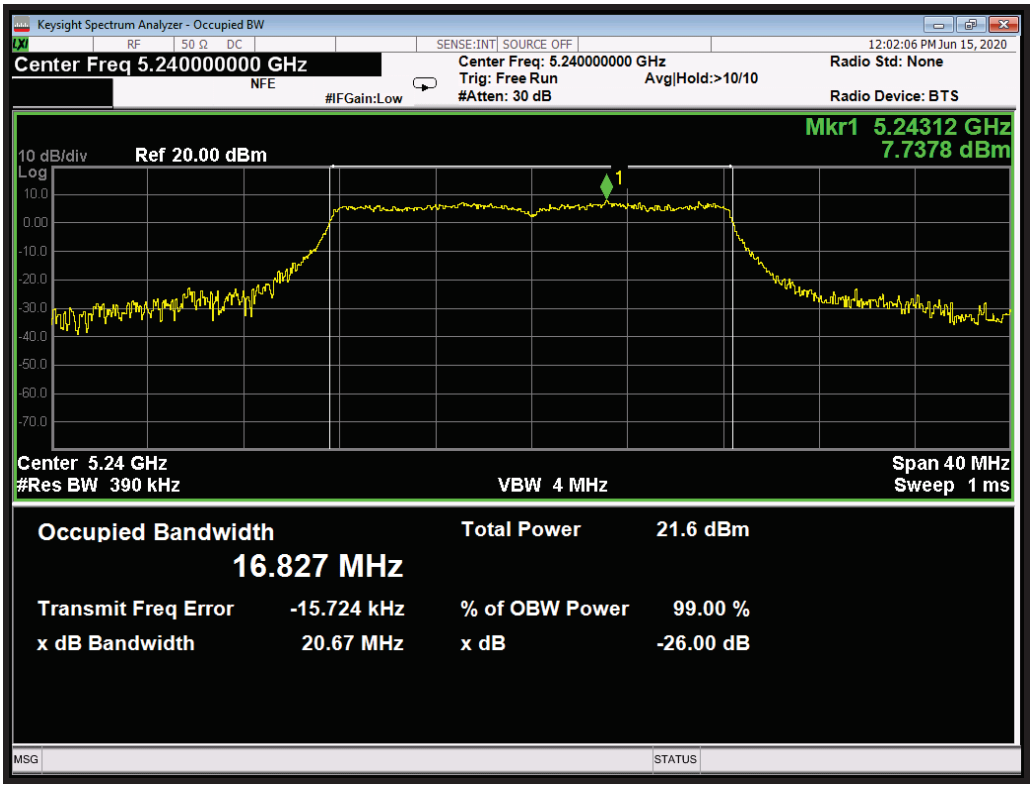

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
02:39:51 PM Jun 15, 2020
Center Freq 5.280000000 GHz
NFE
#IFGain:Low
Center Freq: 5.280000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.28188 GHz
7.6145 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.28 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.858 MHz
Total Power 21.4 dBm
Transmit Freq Error -20.648 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.12 MHz
x dB -26.00 dB
MSG
STATUS

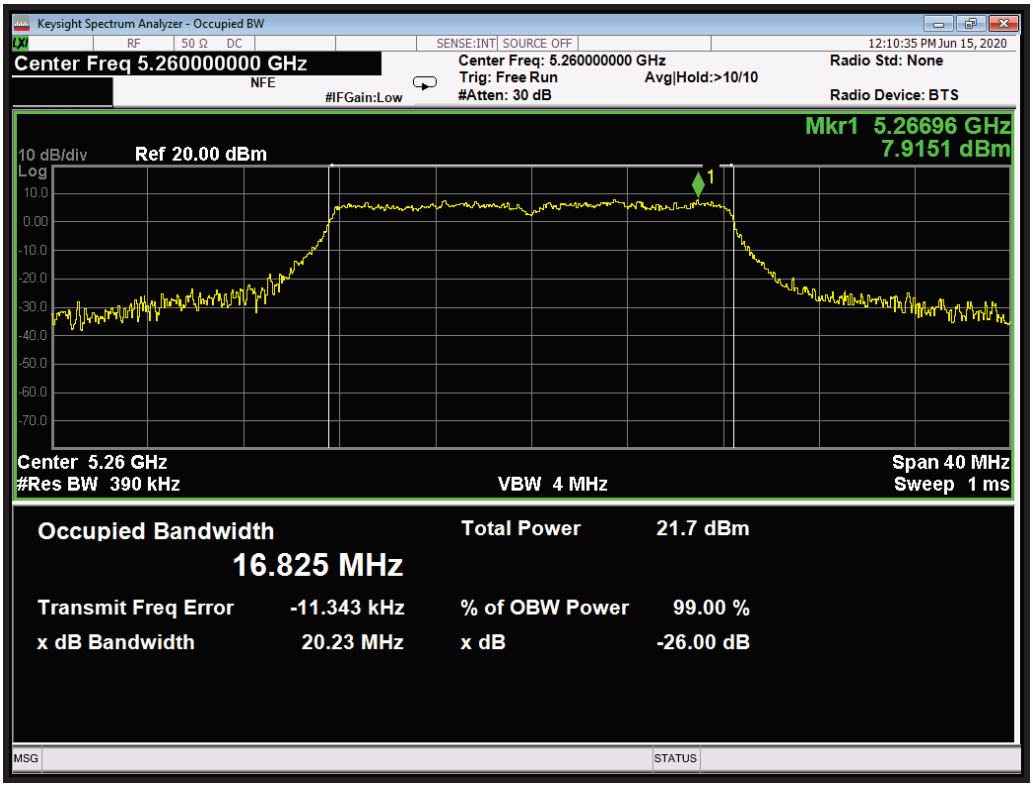

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
02:25:06 PM Jun 15, 2020
Center Freq 5.320000000 GHz
NFE
#IFGain:Low
Center Freq: 5.320000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.32184 GHz
7.4127 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.32 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.860 MHz
Total Power 21.1 dBm
Transmit Freq Error -11.298 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.04 MHz
x dB -26.00 dB
MSG
STATUS

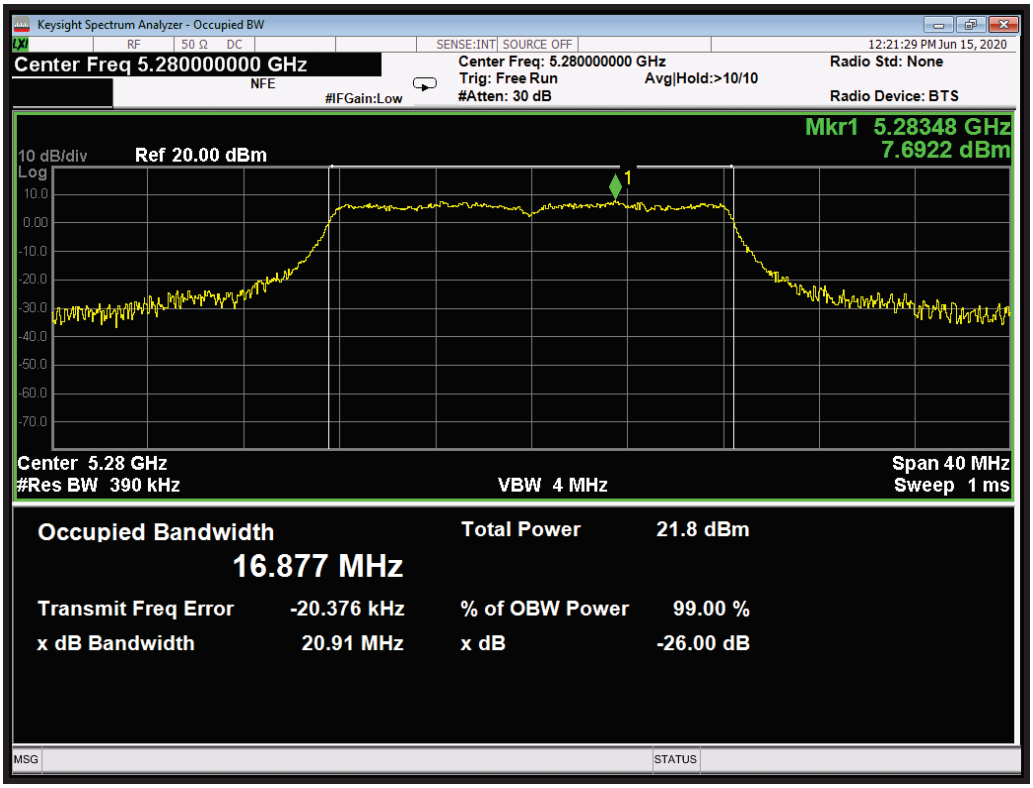
Modulation: 802.11a; Data rate: 54 Mbit/s; Main Antenna			
Channel Frequency (MHz)	26dB bandwidth (MHz)	99% bandwidth (MHz)	Result
5180	20.17	16.888	N/A
5220	21.27	16.886	N/A
5240	20.67	16.827	N/A
5260	20.23	16.825	N/A
5280	20.91	16.877	N/A
5320	21.07	16.853	N/A

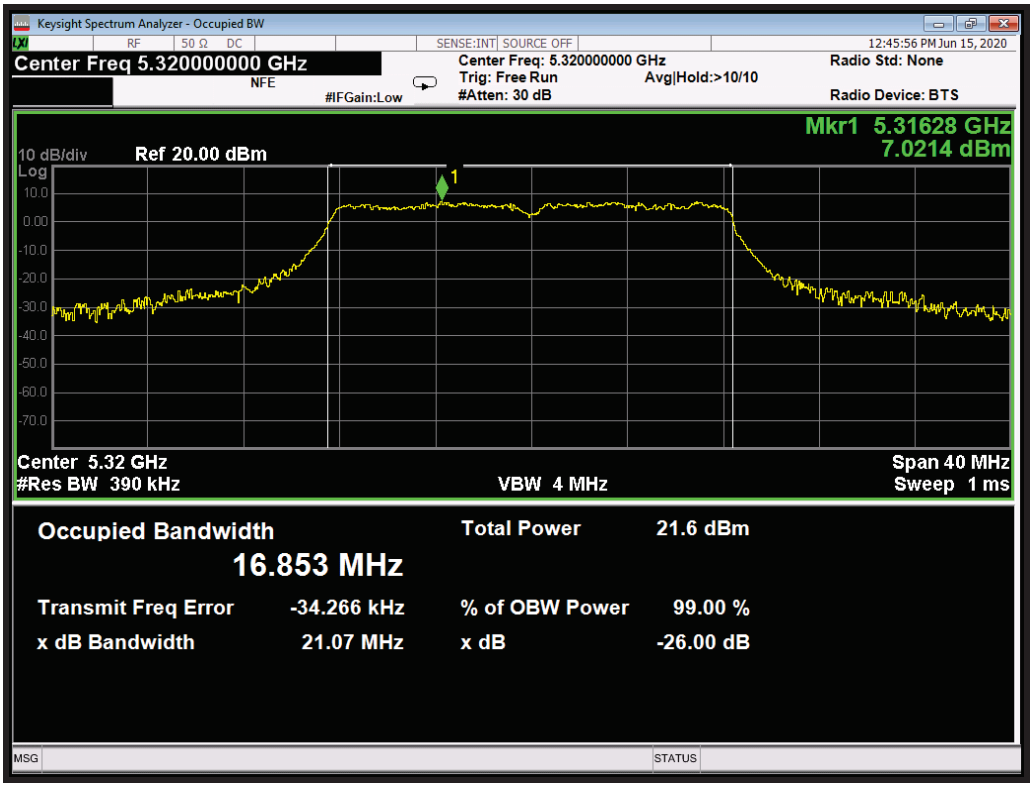



Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
11:53:47 AM Jun 15, 2020
Center Freq 5.220000000 GHz
NFE
#IFGain:Low
Center Freq: 5.220000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.22312 GHz
7.6754 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.22 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.886 MHz
Total Power 22.1 dBm
Transmit Freq Error -19.539 kHz
% of OBW Power 99.00 %
x dB Bandwidth 21.27 MHz
x dB -26.00 dB
MSG
STATUS

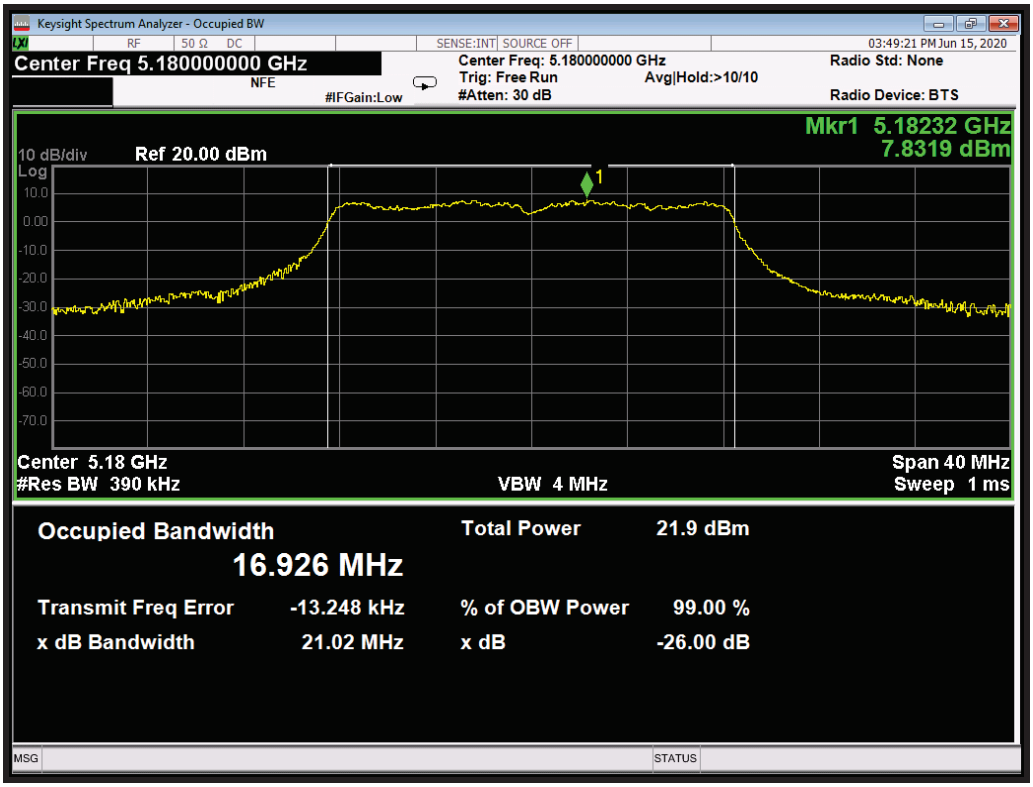

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
12:02:06 PM Jun 15, 2020
Center Freq 5.240000000 GHz
NFE
#IFGain:Low
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.24312 GHz
7.7378 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.24 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.827 MHz
Total Power 21.6 dBm
Transmit Freq Error -15.724 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.67 MHz
x dB -26.00 dB
MSG
STATUS

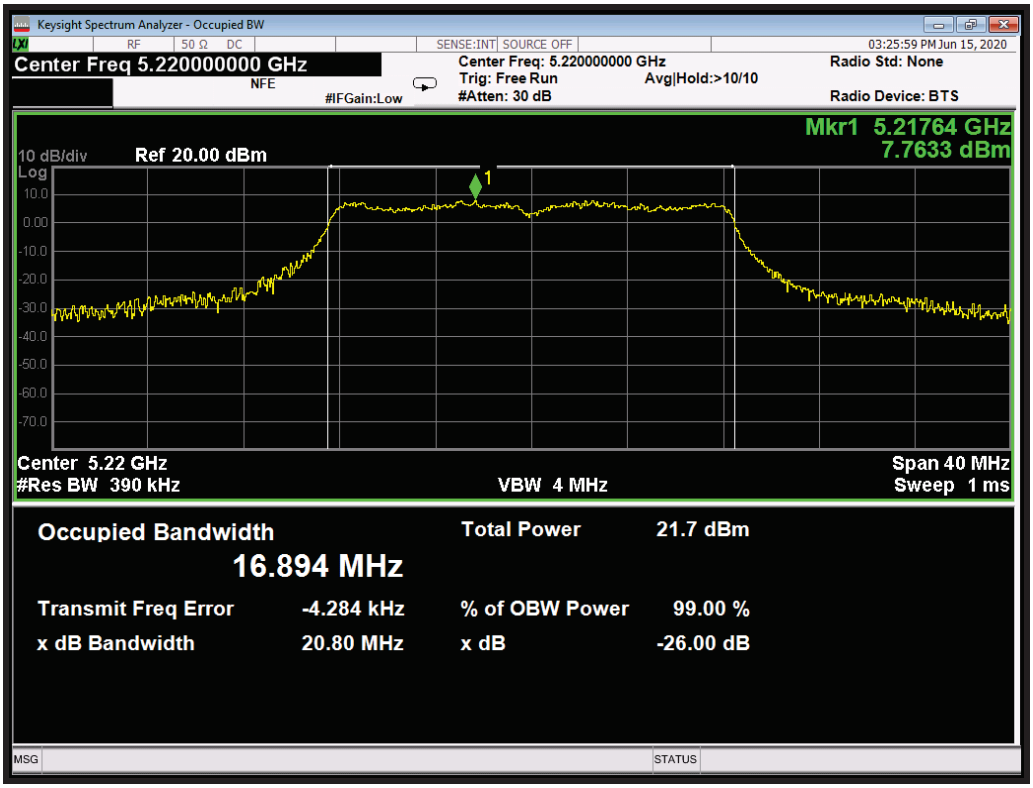

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
12:10:35 PM Jun 15, 2020
Center Freq 5.260000000 GHz
NFE
#IFGain:Low
Center Freq: 5.260000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.26696 GHz
7.9151 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.26 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.825 MHz
Total Power 21.7 dBm
Transmit Freq Error -11.343 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.23 MHz
x dB -26.00 dB
MSG
STATUS

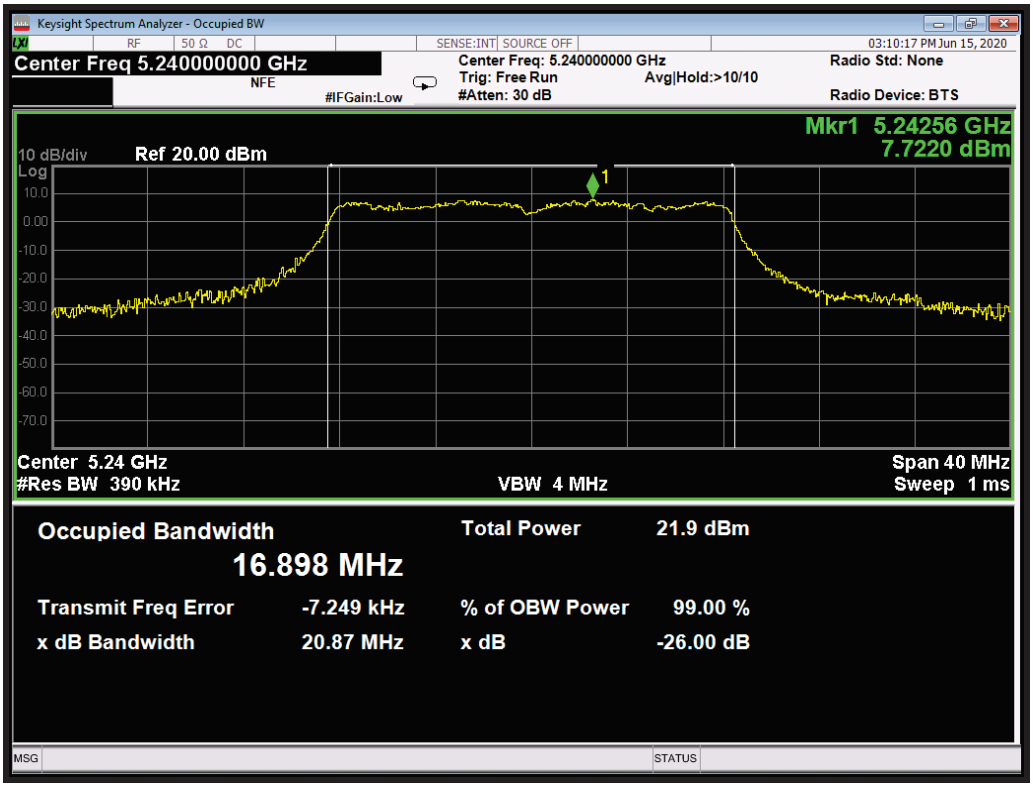

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
12:21:29 PM Jun 15, 2020
Center Freq 5.280000000 GHz
NFE
#IFGain:Low
Center Freq: 5.280000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.28348 GHz
7.6922 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.28 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.877 MHz
Total Power 21.8 dBm
Transmit Freq Error -20.376 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.91 MHz
x dB -26.00 dB
MSG
STATUS

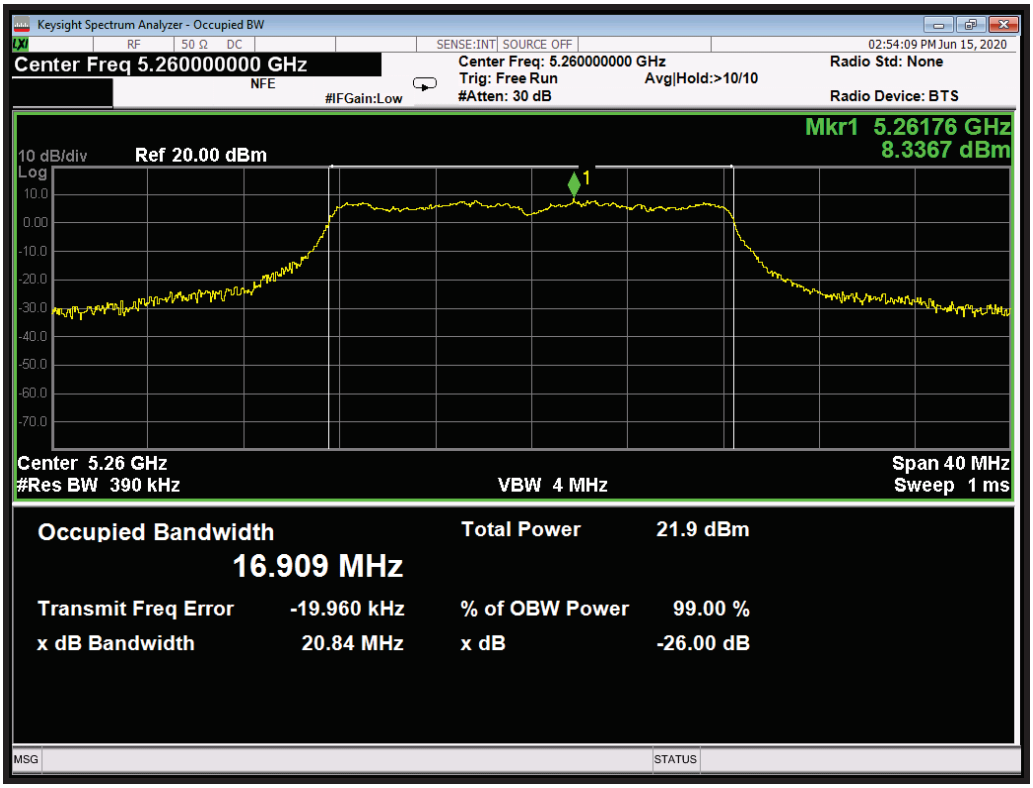


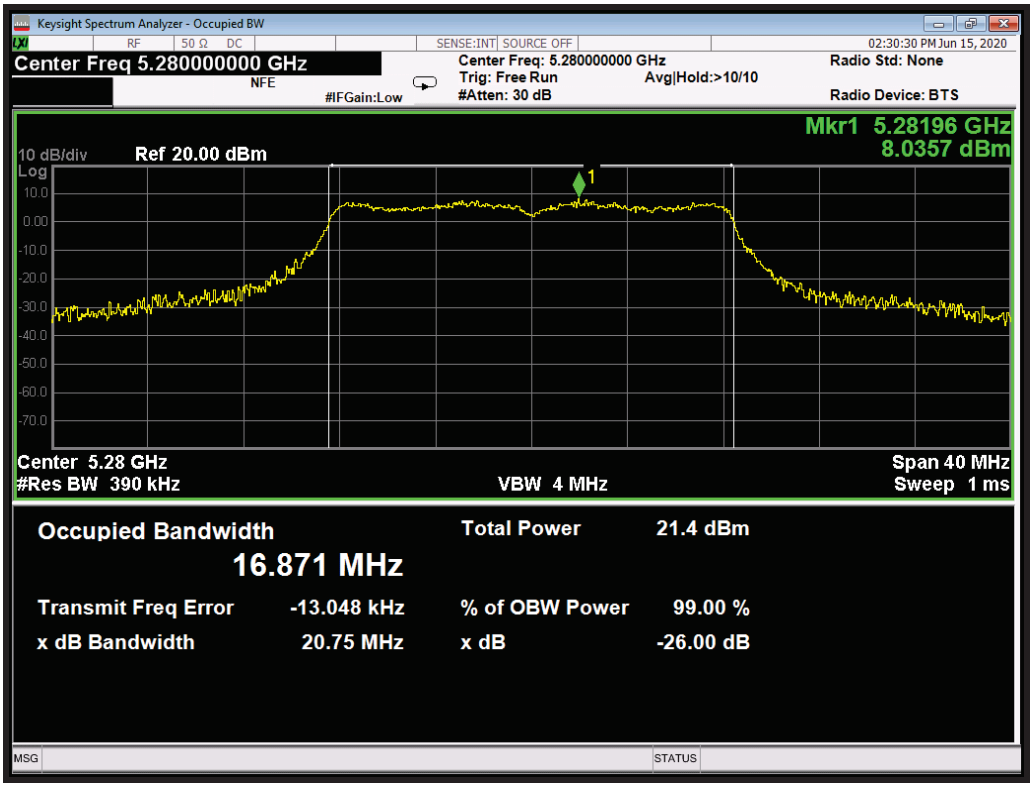
Modulation: 802.11a; Data rate: 54 Mbit/s; Aux Antenna			
Channel Frequency (MHz)	***26dB bandwidth (MHz)***	***99% bandwidth (MHz)***	***Result***
5180	21.02	16.926	N/A
5220	20.80	16.894	N/A
5240	20.87	16.898	N/A
5260	20.84	16.909	N/A
5280	20.75	16.871	N/A
5320	20.31	16.869	N/A

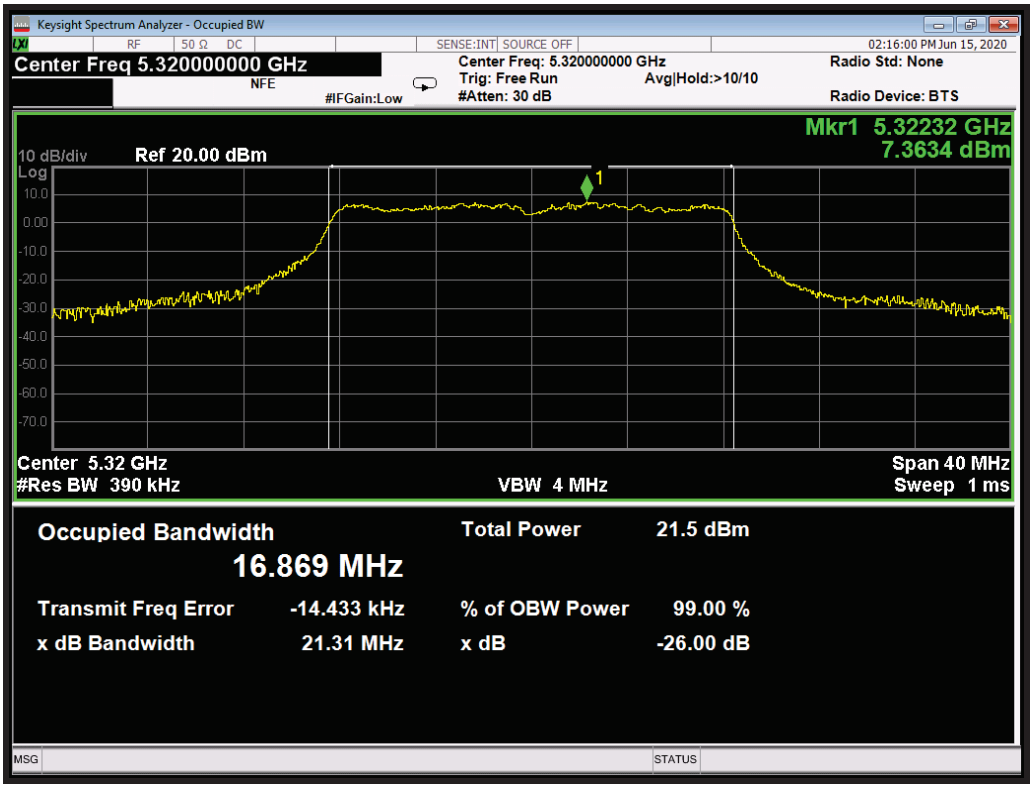

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
03:49:21 PM Jun 15, 2020
Center Freq 5.180000000 GHz
NFE
#IFGain:Low
Center Freq: 5.180000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.18232 GHz
7.8319 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.18 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.926 MHz
Total Power 21.9 dBm
Transmit Freq Error -13.248 kHz
% of OBW Power 99.00 %
x dB Bandwidth 21.02 MHz
x dB -26.00 dB
MSG
STATUS


Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
03:25:59 PM Jun 15, 2020
Center Freq 5.220000000 GHz
NFE
#IFGain:Low
Center Freq: 5.220000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.21764 GHz
7.7633 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.22 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.894 MHz
Total Power 21.7 dBm
Transmit Freq Error -4.284 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.80 MHz
x dB -26.00 dB
MSG
STATUS


Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
03:10:17 PM Jun 15, 2020
Center Freq 5.240000000 GHz
NFE
#IFGain:Low
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.24256 GHz
7.7220 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.24 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.898 MHz
Total Power 21.9 dBm
Transmit Freq Error -7.249 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.87 MHz
x dB -26.00 dB
MSG
STATUS

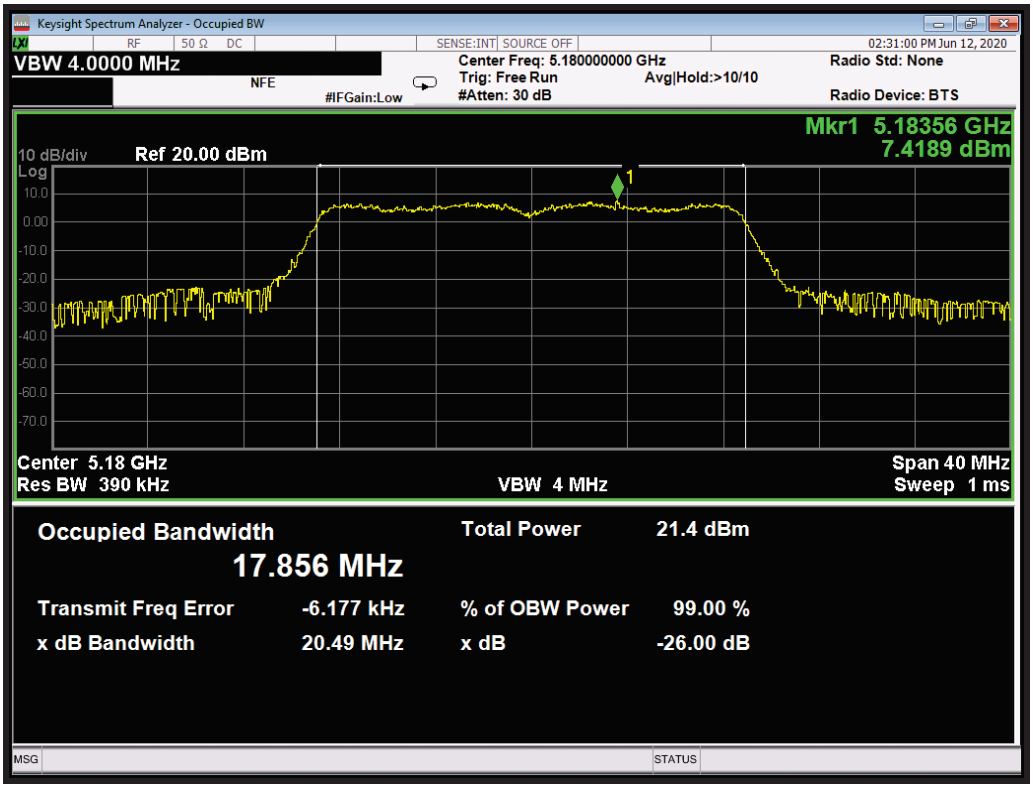

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
02:54:09 PM Jun 15, 2020
Center Freq 5.260000000 GHz
NFE
#IFGain:Low
Center Freq: 5.260000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.26176 GHz
8.3367 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.26 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.909 MHz
Total Power 21.9 dBm
Transmit Freq Error -19.960 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.84 MHz
x dB -26.00 dB
MSG
STATUS

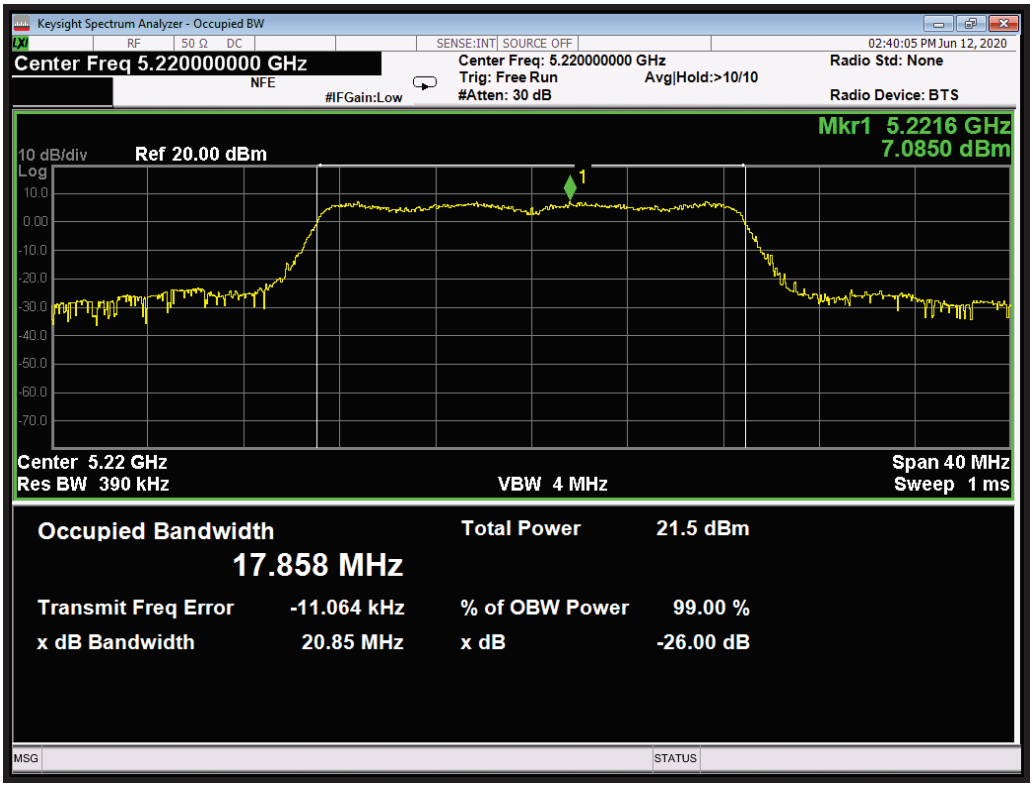

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
02:30:30 PM Jun 15, 2020
Center Freq 5.280000000 GHz
NFE
#IFGain:Low
Center Freq: 5.280000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.28196 GHz
8.0357 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.28 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.871 MHz
Total Power 21.4 dBm
Transmit Freq Error -13.048 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.75 MHz
x dB -26.00 dB
MSG
STATUS

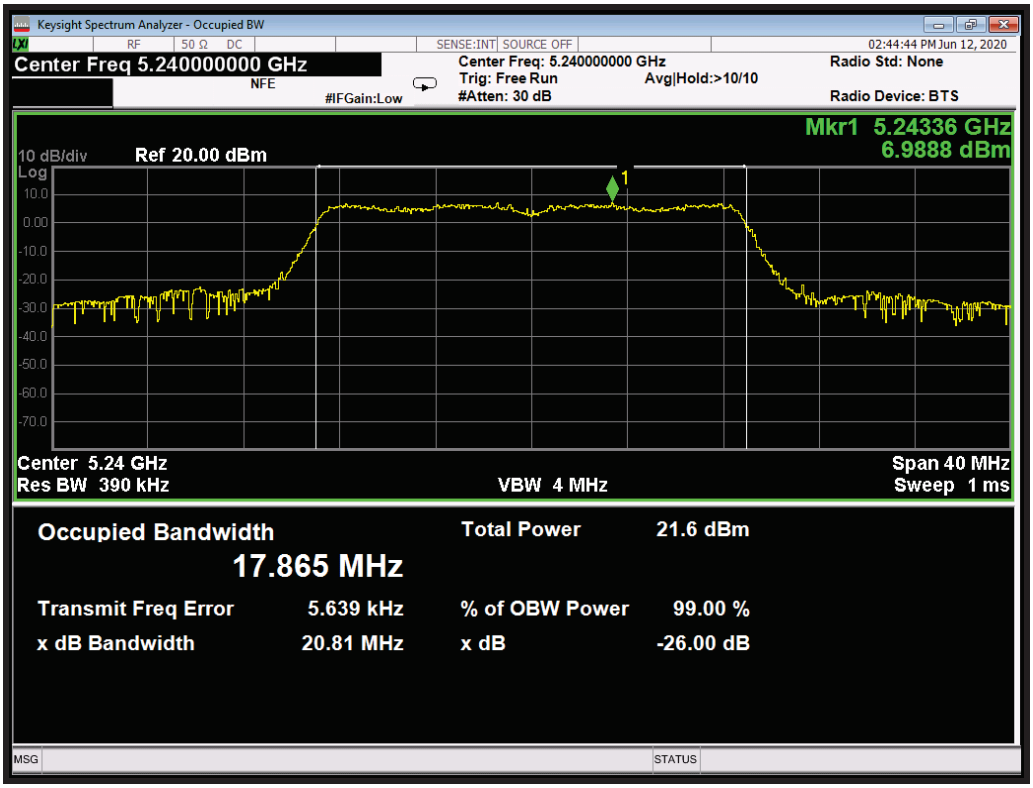

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
02:16:00 PM Jun 15, 2020
Center Freq 5.320000000 GHz
NFE
#IFGain:Low
Center Freq: 5.320000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.32232 GHz
7.3634 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.32 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.869 MHz
Total Power 21.5 dBm
Transmit Freq Error -14.433 kHz
% of OBW Power 99.00 %
x dB Bandwidth 21.31 MHz
x dB -26.00 dB
MSG
STATUS

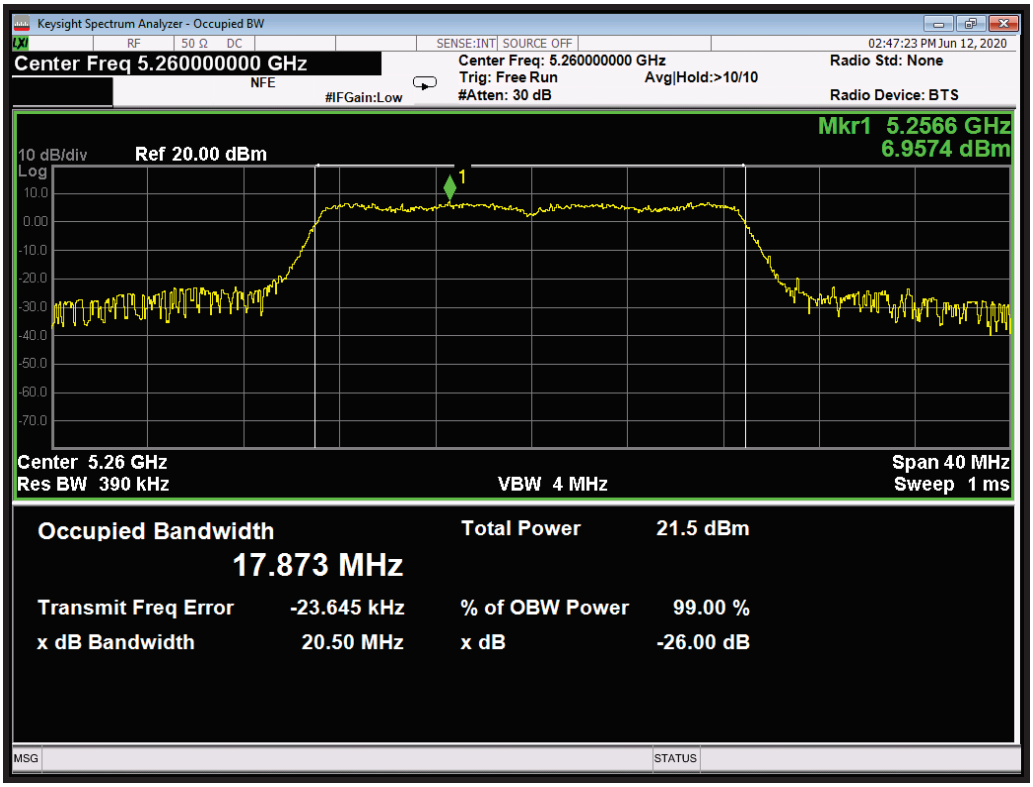
Limited 802.11n mode results are presented. The power setting for MCS0 is higher than for the corresponding 802.11ac modes which are otherwise equivalent. At higher data rates the power setting was the same for both 802.11n and 802.11ac modes so the measurements for the legacy (802.11n) modes have not been repeated.

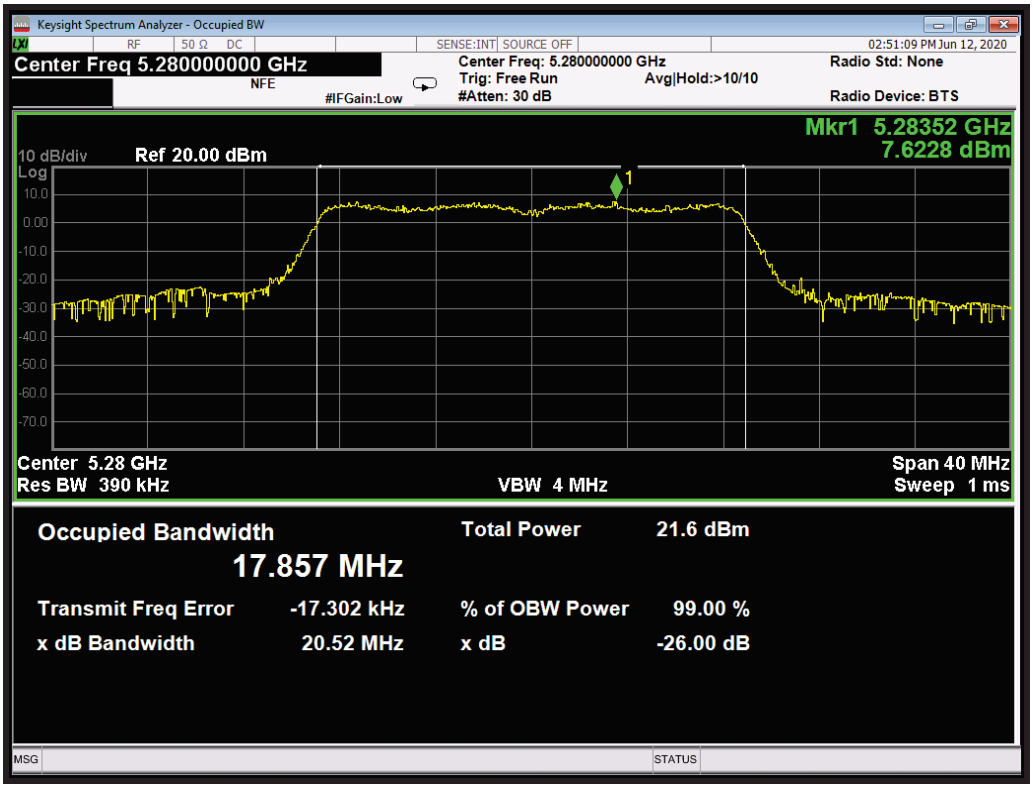
Modulation: 802.11n-20; Data rate: MCS0; Main Antenna			
Channel Frequency (MHz)	***26dB bandwidth (MHz)***	***99% bandwidth (MHz)***	***Result***
5180	20.49	17.856	N/A
5220	20.85	17.858	N/A
5240	20.81	17.865	N/A
5260	20.50	17.873	N/A
5280	20.52	17.857	N/A
5320	20.86	17.873	N/A

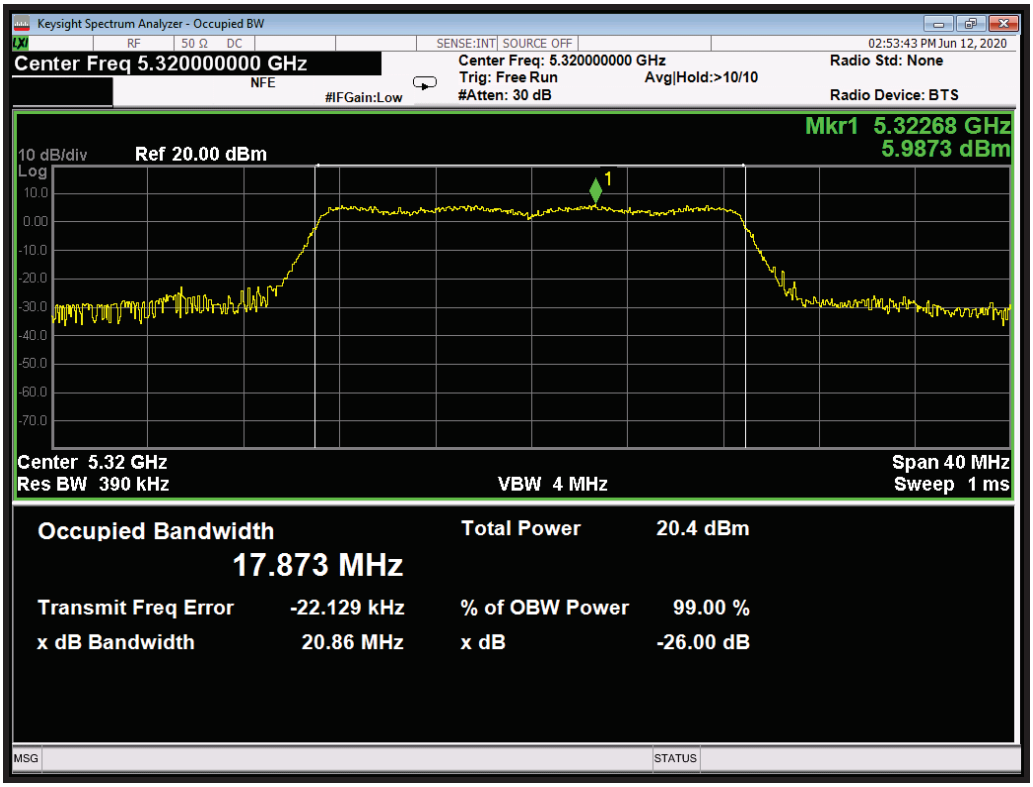



Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
02:40:05 PM Jun 12, 2020
Center Freq 5.220000000 GHz
NFE
#IFGain:Low
Center Freq: 5.220000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.2216 GHz
7.0850 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.22 GHz
Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.858 MHz
Total Power 21.5 dBm
Transmit Freq Error -11.064 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.85 MHz
x dB -26.00 dB
MSG
STATUS

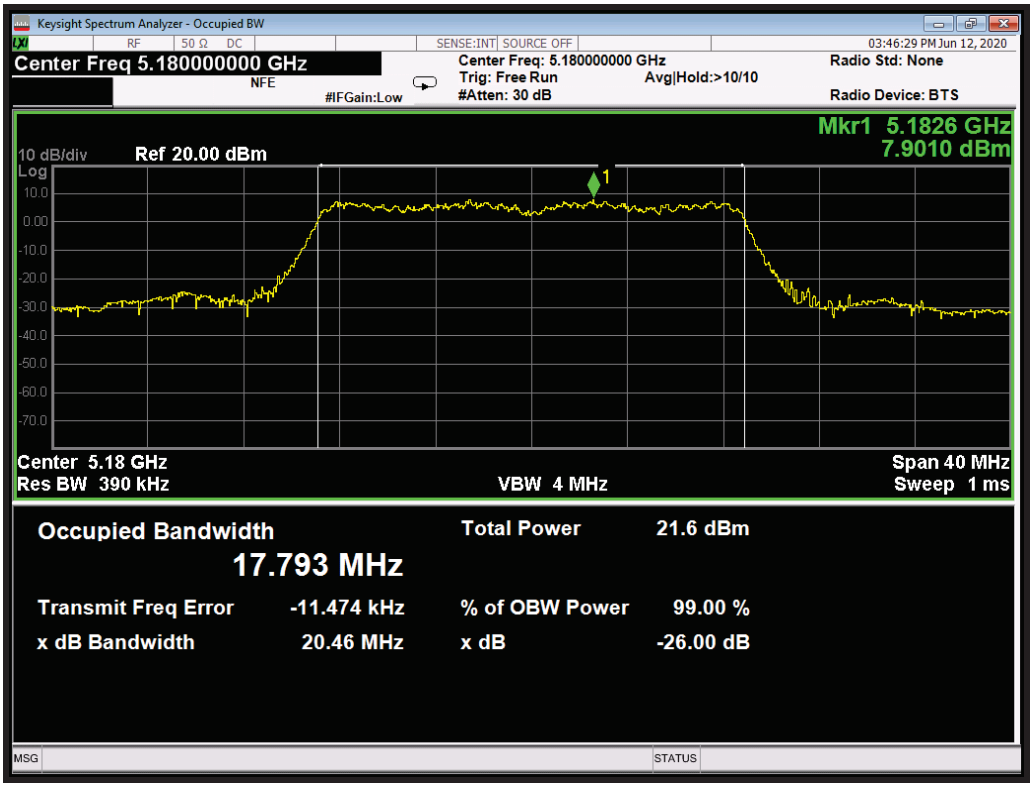

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
02:44:44 PM Jun 12, 2020
Center Freq 5.240000000 GHz
NFE
#IFGain:Low
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.24336 GHz
6.9888 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.24 GHz
Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.865 MHz
Total Power 21.6 dBm
Transmit Freq Error 5.639 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.81 MHz
x dB -26.00 dB
MSG
STATUS

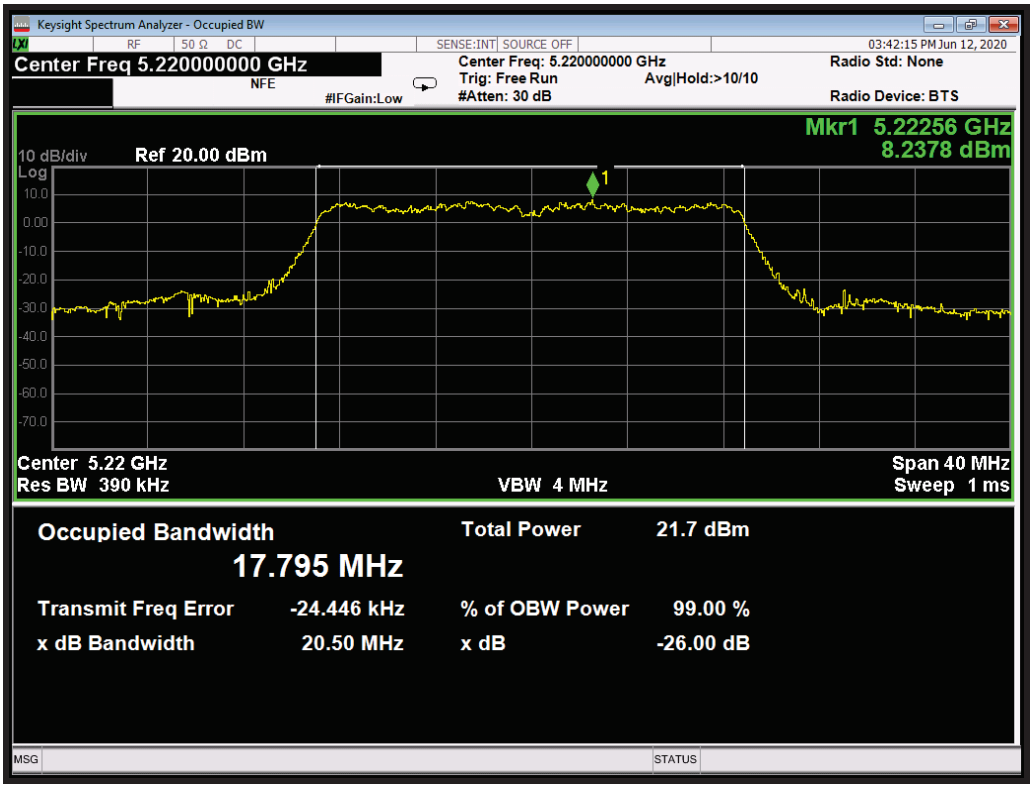

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
02:47:23 PM Jun 12, 2020
Center Freq 5.260000000 GHz
NFE
#IFGain:Low
Center Freq: 5.260000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.2566 GHz
6.9574 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.26 GHz
Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.873 MHz
Total Power 21.5 dBm
Transmit Freq Error -23.645 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.50 MHz
x dB -26.00 dB
MSG
STATUS

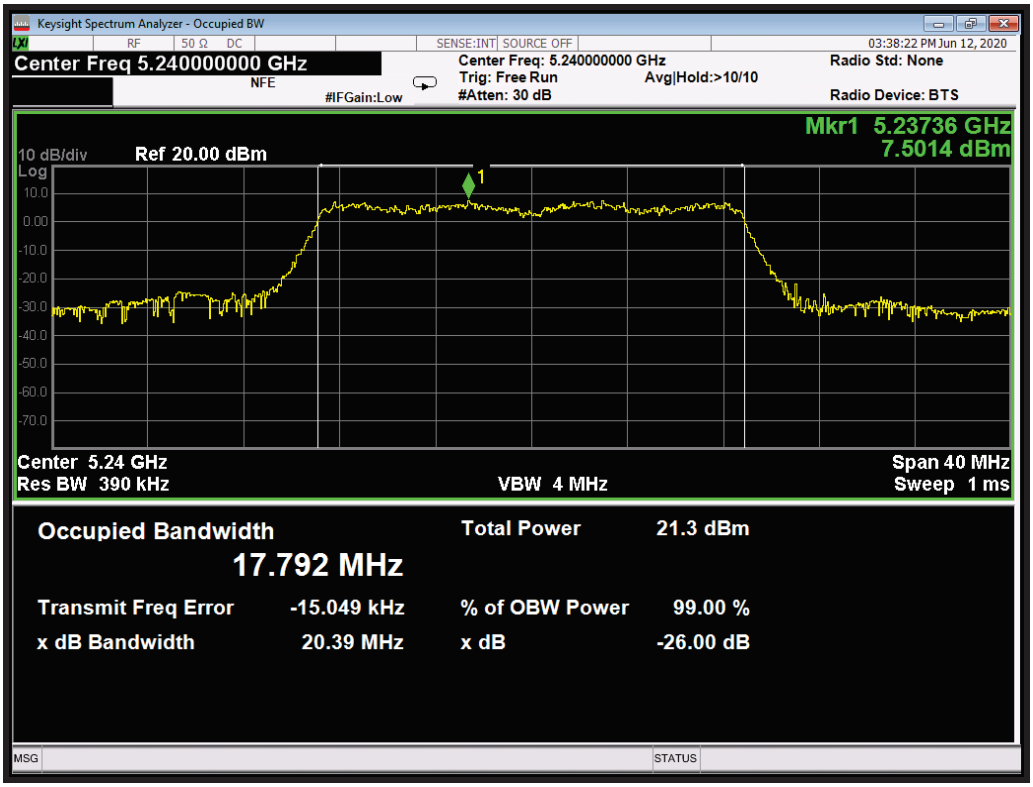

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
02:51:09 PM Jun 12, 2020
Center Freq 5.280000000 GHz
NFE
#IFGain:Low
Center Freq: 5.280000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.28352 GHz
7.6228 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.28 GHz
Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.857 MHz
Total Power 21.6 dBm
Transmit Freq Error -17.302 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.52 MHz
x dB -26.00 dB
MSG
STATUS

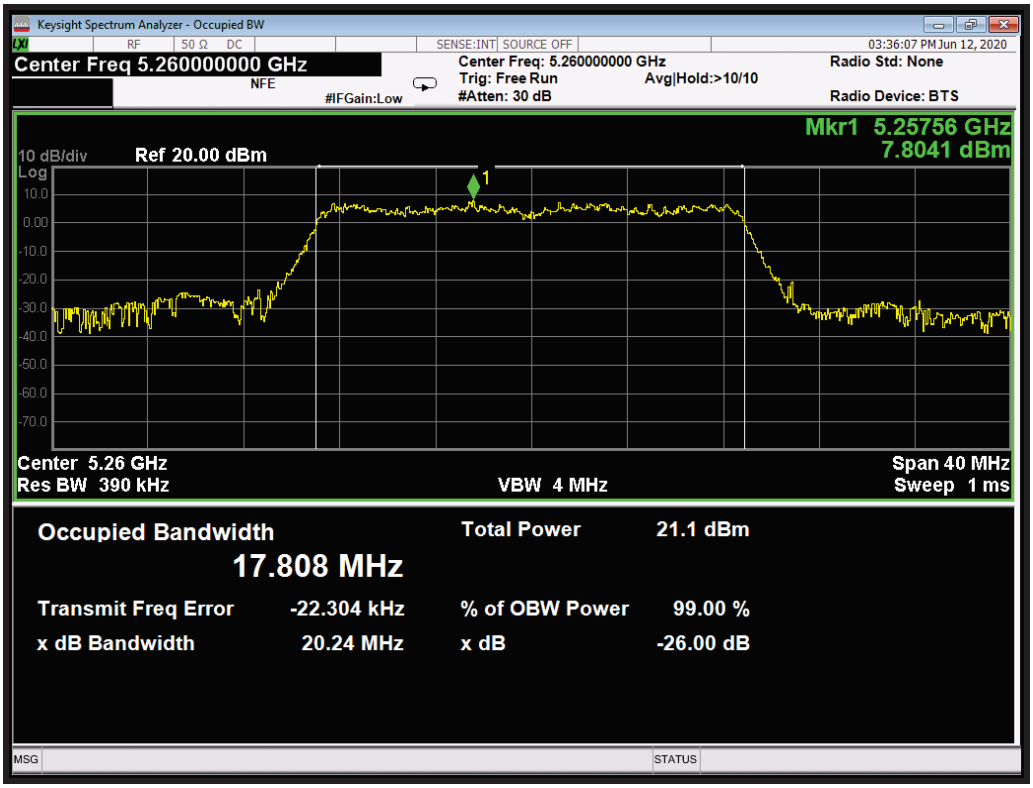


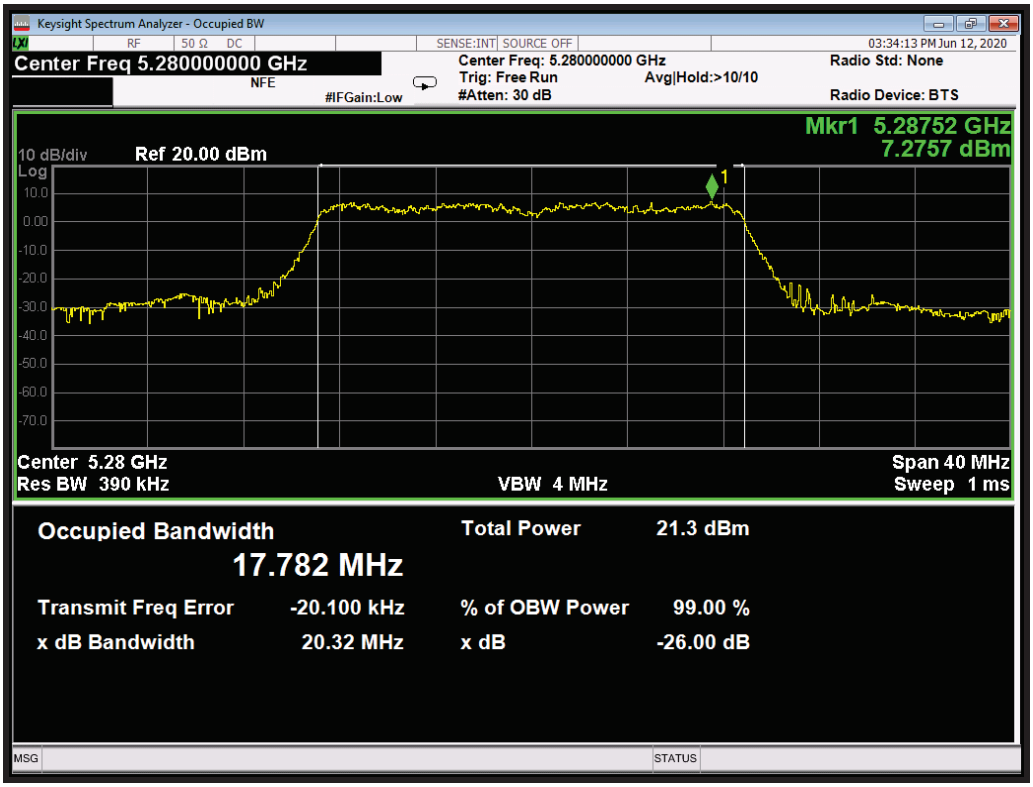
Modulation: 802.11n-20; Data rate: MCS0; Aux Antenna			
Channel Frequency (MHz)	***26dB bandwidth (MHz)***	***99% bandwidth (MHz)***	***Result***
5180	20.46	17.793	N/A
5220	20.50	17.795	N/A
5240	20.39	17.792	N/A
5260	20.24	17.808	N/A
5280	20.32	17.782	N/A
5320	20.59	17.788	N/A

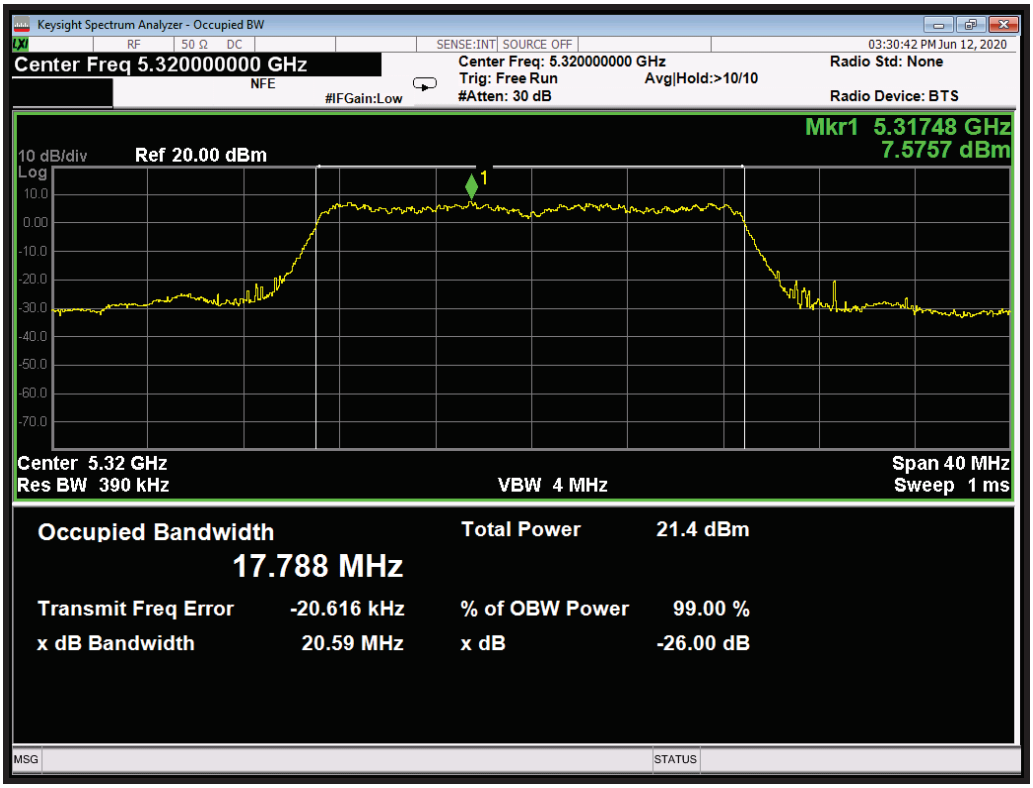

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
03:46:29 PM Jun 12, 2020
Center Freq 5.180000000 GHz
NFE
#IFGain:Low
Center Freq: 5.180000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.1826 GHz
7.9010 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.18 GHz
Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.793 MHz
Total Power 21.6 dBm
Transmit Freq Error -11.474 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.46 MHz
x dB -26.00 dB
MSG
STATUS


Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
03:42:15 PM Jun 12, 2020
Center Freq 5.220000000 GHz
NFE
#IFGain:Low
Center Freq: 5.220000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.22256 GHz
8.2378 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.22 GHz
Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.795 MHz
Total Power 21.7 dBm
Transmit Freq Error -24.446 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.50 MHz
x dB -26.00 dB
MSG
STATUS


Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
03:38:22 PM Jun 12, 2020
Center Freq 5.240000000 GHz
NFE
#IFGain:Low
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.23736 GHz
7.5014 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.24 GHz
Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.792 MHz
Total Power 21.3 dBm
Transmit Freq Error -15.049 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.39 MHz
x dB -26.00 dB
MSG
STATUS

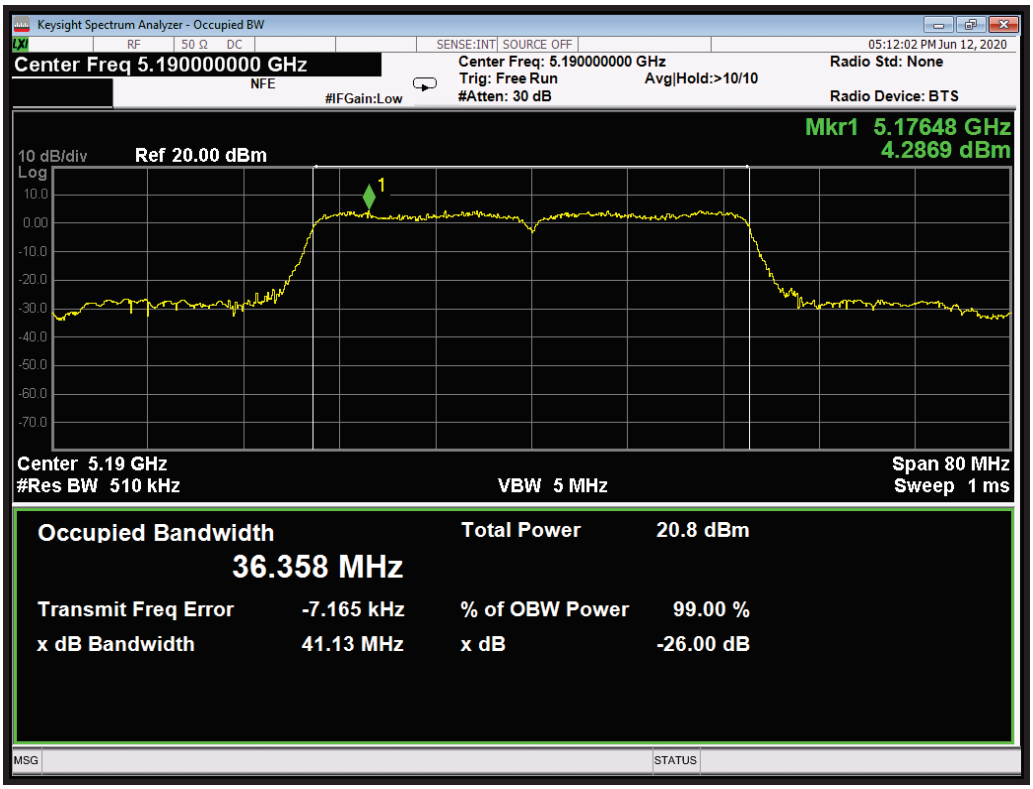

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
03:36:07 PM Jun 12, 2020
Center Freq 5.260000000 GHz
NFE
#IFGain:Low
Center Freq: 5.260000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.25756 GHz
7.8041 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.26 GHz
Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.808 MHz
Total Power 21.1 dBm
Transmit Freq Error -22.304 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.24 MHz
x dB -26.00 dB
MSG
STATUS

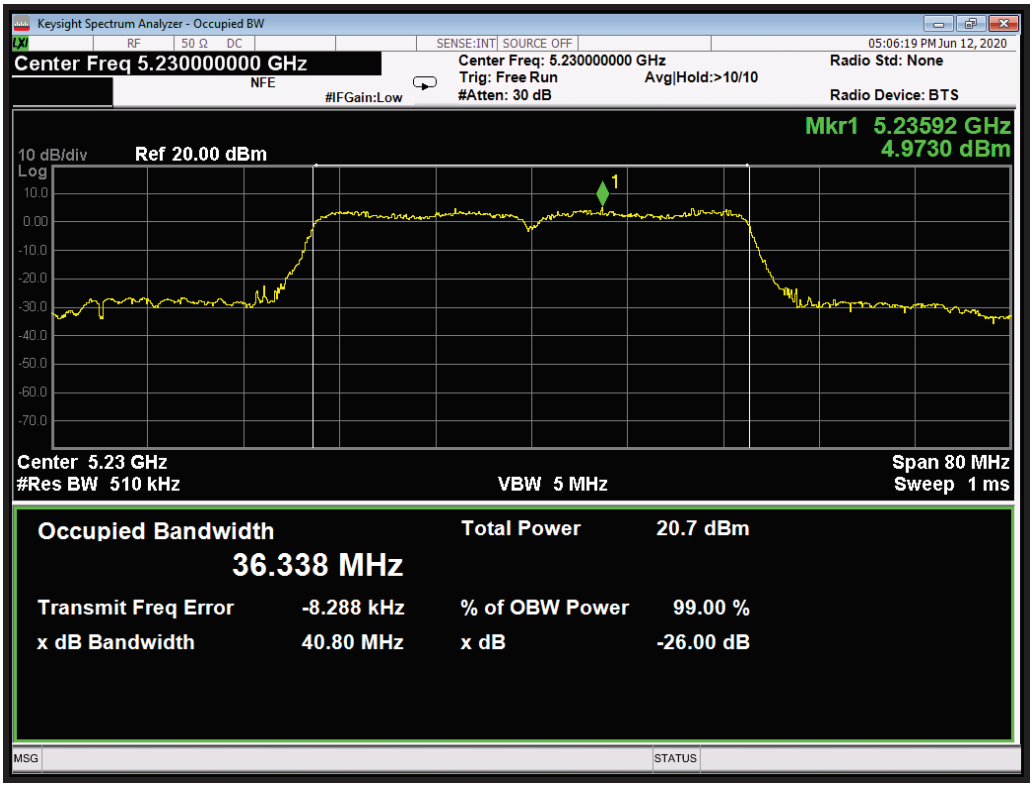

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
03:34:13 PM Jun 12, 2020
Center Freq 5.280000000 GHz
NFE
#IFGain:Low
Center Freq: 5.280000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.28752 GHz
7.2757 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.28 GHz
Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.782 MHz
Total Power 21.3 dBm
Transmit Freq Error -20.100 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.32 MHz
x dB -26.00 dB
MSG
STATUS

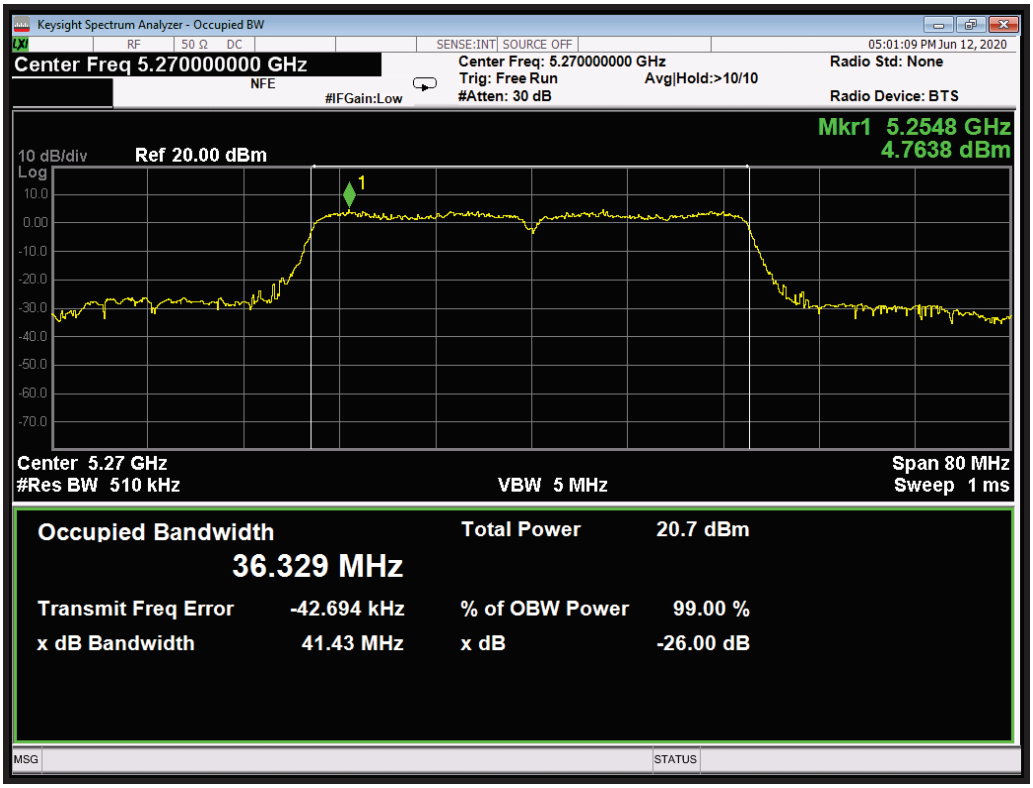

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
03:30:42 PM Jun 12, 2020
Center Freq 5.320000000 GHz
NFE
#IFGain:Low
Center Freq: 5.320000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.31748 GHz
7.5757 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.32 GHz
Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.788 MHz
Total Power 21.4 dBm
Transmit Freq Error -20.616 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.59 MHz
x dB -26.00 dB
MSG
STATUS

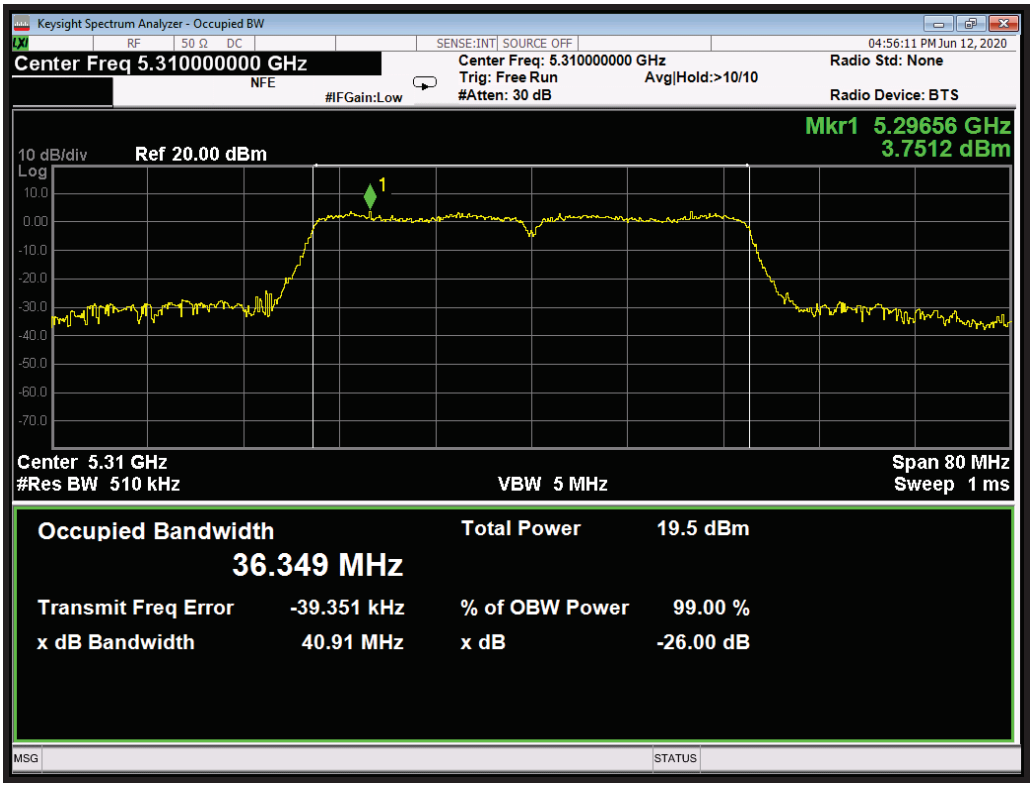
Limited 802.11n mode results are presented. The power setting for MCS0 is higher than for the corresponding 802.11ac modes which are otherwise equivalent. At higher data rates the power setting was the same for both 802.11n and 802.11ac modes so the measurements for the legacy (802.11n) modes have not been repeated.

Modulation: 802.11n-40; Data rate: MCS0; Main Antenna			
Channel Frequency (MHz)	***26dB bandwidth (MHz)***	***99% bandwidth (MHz)***	***Result***
5190	41.13	36.358	N/A
5230	40.80	36.338	N/A
5270	41.43	36.329	N/A
5310	40.91	36.349	N/A

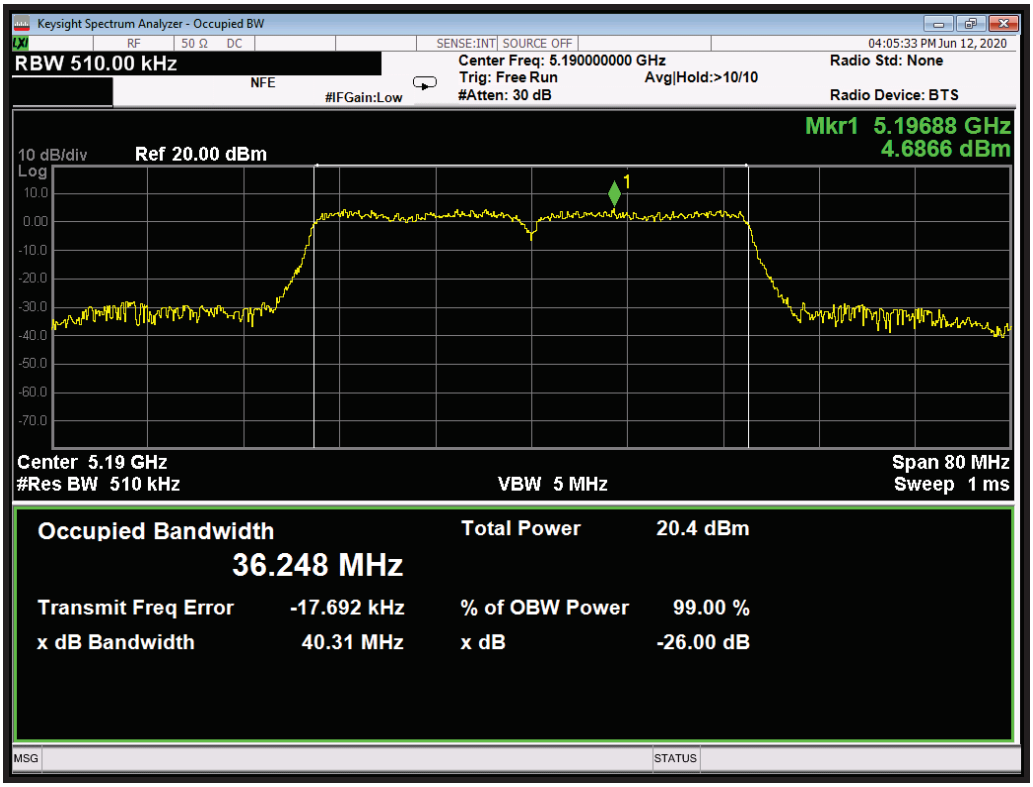


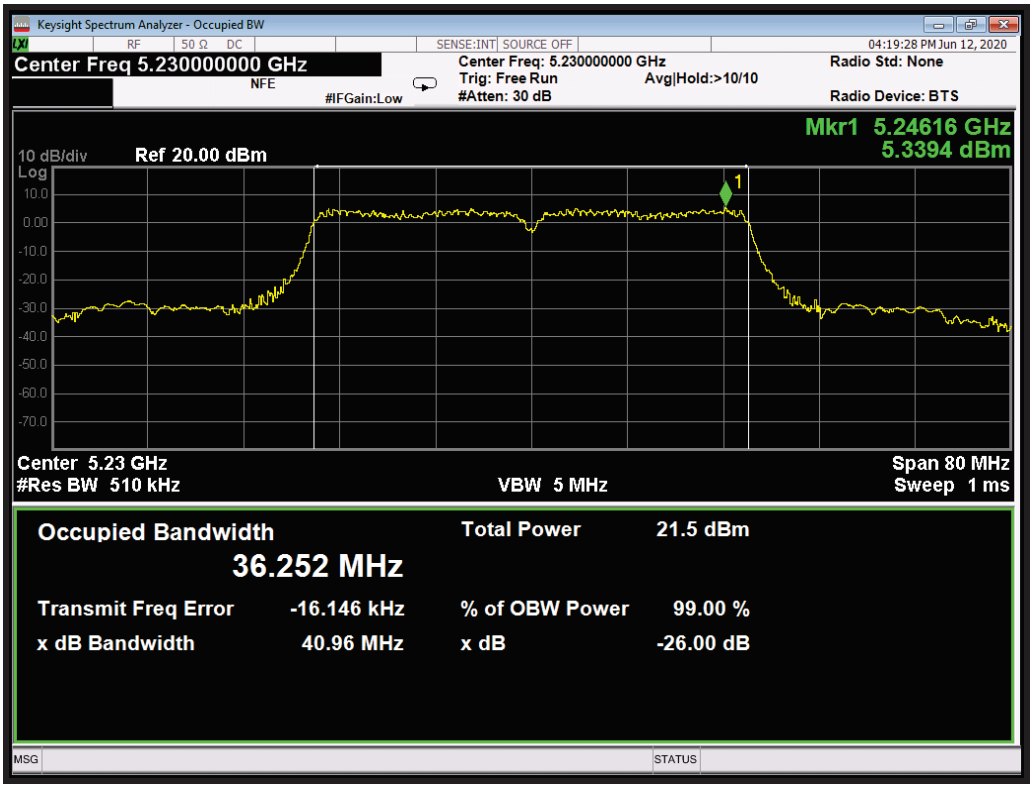

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
05:06:19 PM Jun 12, 2020
Center Freq 5.230000000 GHz
NFE
#IFGain:Low
Center Freq: 5.230000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.23592 GHz
4.9730 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.23 GHz
#Res BW 510 kHz
VBW 5 MHz
Span 80 MHz
Sweep 1 ms
Occupied Bandwidth
36.338 MHz
Total Power 20.7 dBm
Transmit Freq Error -8.288 kHz
% of OBW Power 99.00 %
x dB Bandwidth 40.80 MHz
x dB -26.00 dB
MSG
STATUS

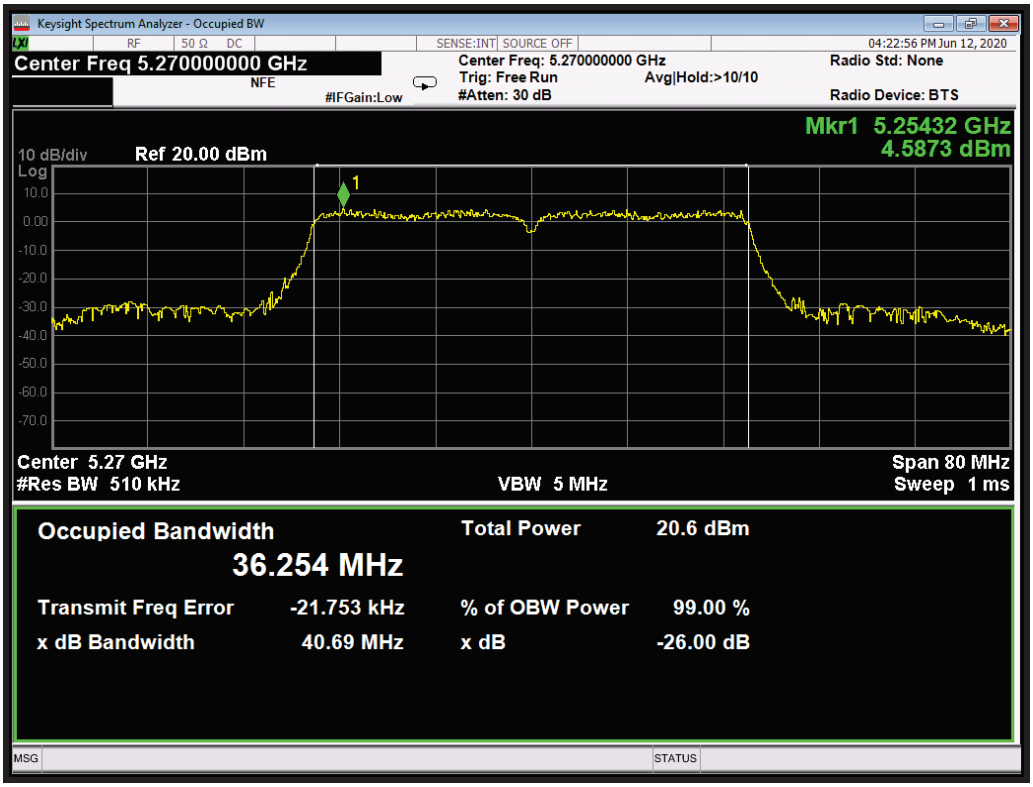

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
05:01:09 PM Jun 12, 2020
Center Freq 5.270000000 GHz
NFE
#IFGain:Low
Center Freq: 5.270000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.2548 GHz
4.7638 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.27 GHz
#Res BW 510 kHz
VBW 5 MHz
Span 80 MHz
Sweep 1 ms
Occupied Bandwidth
36.329 MHz
Total Power 20.7 dBm
Transmit Freq Error -42.694 kHz
% of OBW Power 99.00 %
x dB Bandwidth 41.43 MHz
x dB -26.00 dB
MSG
STATUS

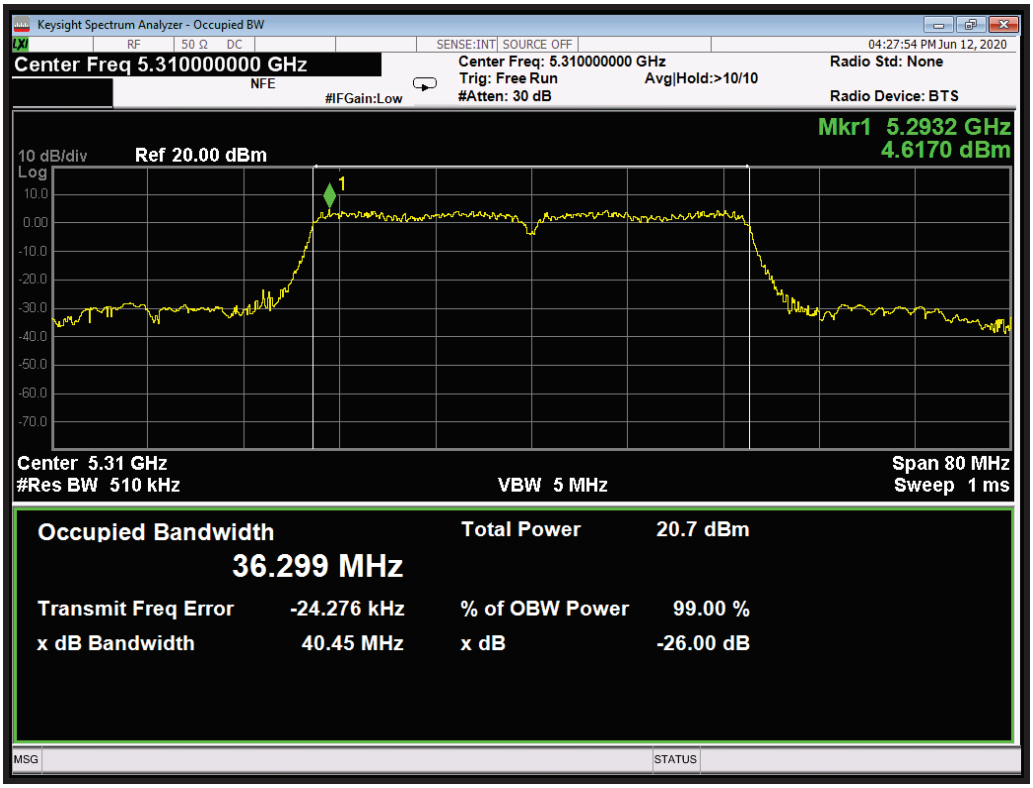


Modulation: 802.11n-40; Data rate: MCS0; Aux Antenna			
Channel Frequency (MHz)	***26dB bandwidth (MHz)***	***99% bandwidth (MHz)***	***Result***
5190	40.31	36.248	N/A
5230	40.96	36.252	N/A
5270	40.69	36.254	N/A
5310	40.45	36.299	N/A

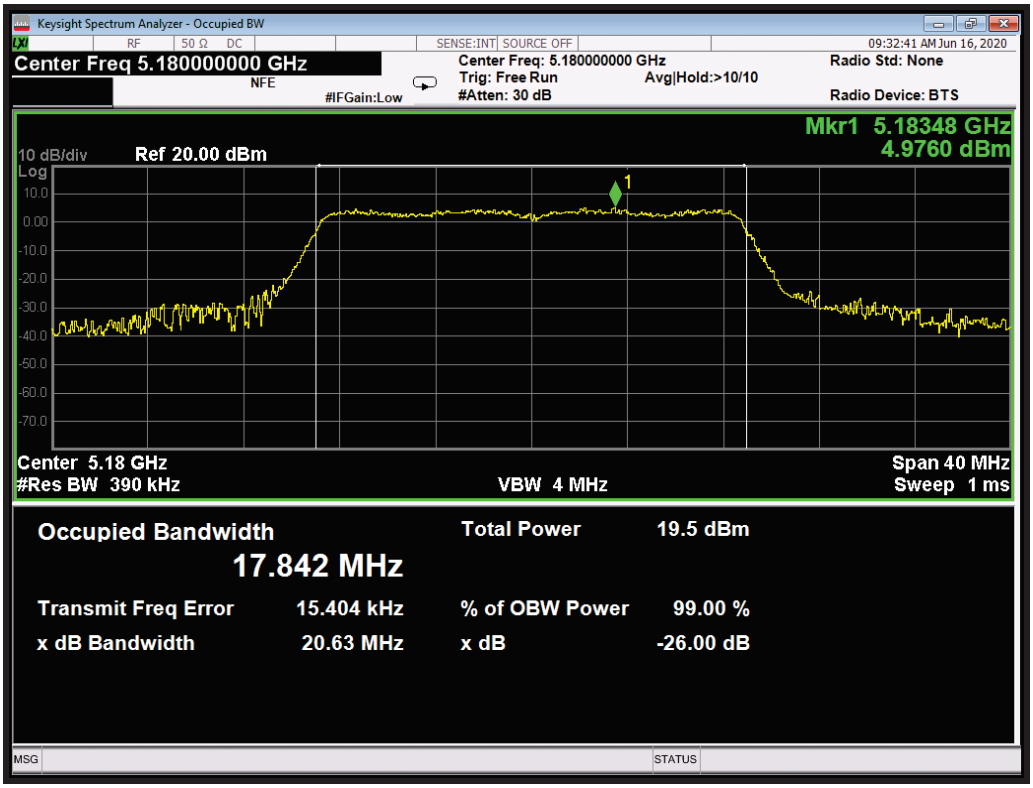

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:05:33 PM Jun 12, 2020
RBW 510.00 kHz
NFE
#IFGain:Low
Center Freq: 5.190000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.19688 GHz
4.6866 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.19 GHz
#Res BW 510 kHz
VBW 5 MHz
Span 80 MHz
Sweep 1 ms
Occupied Bandwidth
36.248 MHz
Total Power 20.4 dBm
Transmit Freq Error -17.692 kHz
% of OBW Power 99.00 %
x dB Bandwidth 40.31 MHz
x dB -26.00 dB
MSG
STATUS

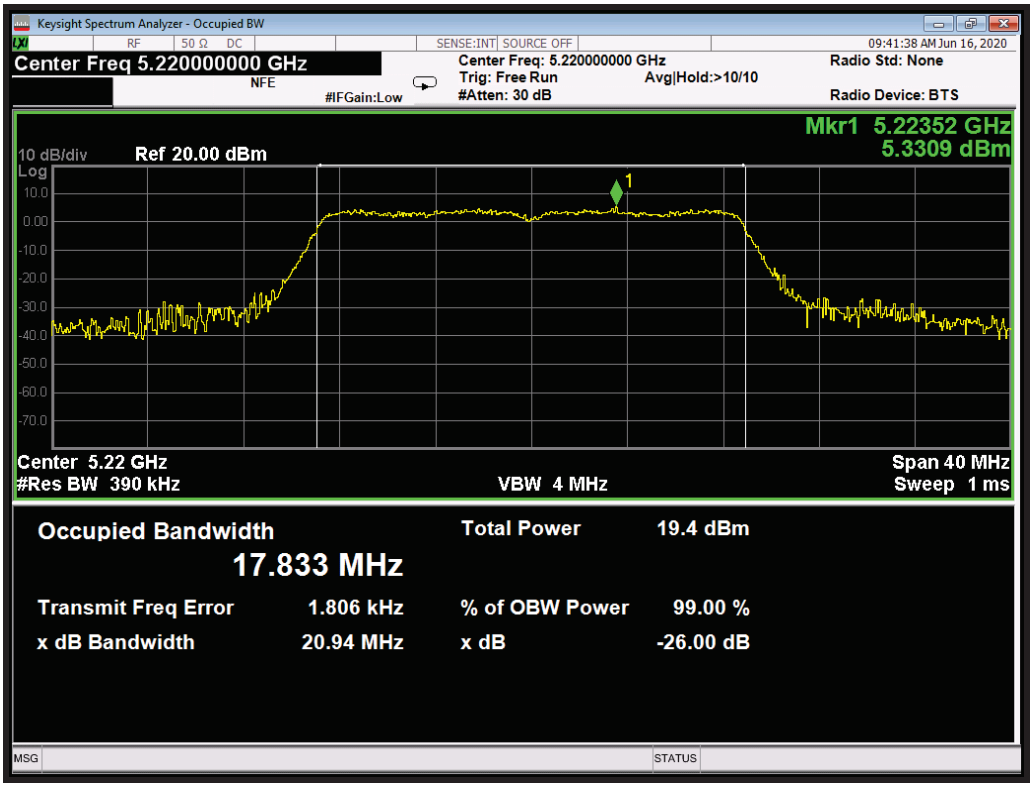

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:19:28 PM Jun 12, 2020
Center Freq 5.230000000 GHz
NFE
#IFGain:Low
Center Freq: 5.230000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.24616 GHz
5.3394 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.23 GHz
#Res BW 510 kHz
VBW 5 MHz
Span 80 MHz
Sweep 1 ms
Occupied Bandwidth
36.252 MHz
Total Power 21.5 dBm
Transmit Freq Error -16.146 kHz
% of OBW Power 99.00 %
x dB Bandwidth 40.96 MHz
x dB -26.00 dB
MSG
STATUS

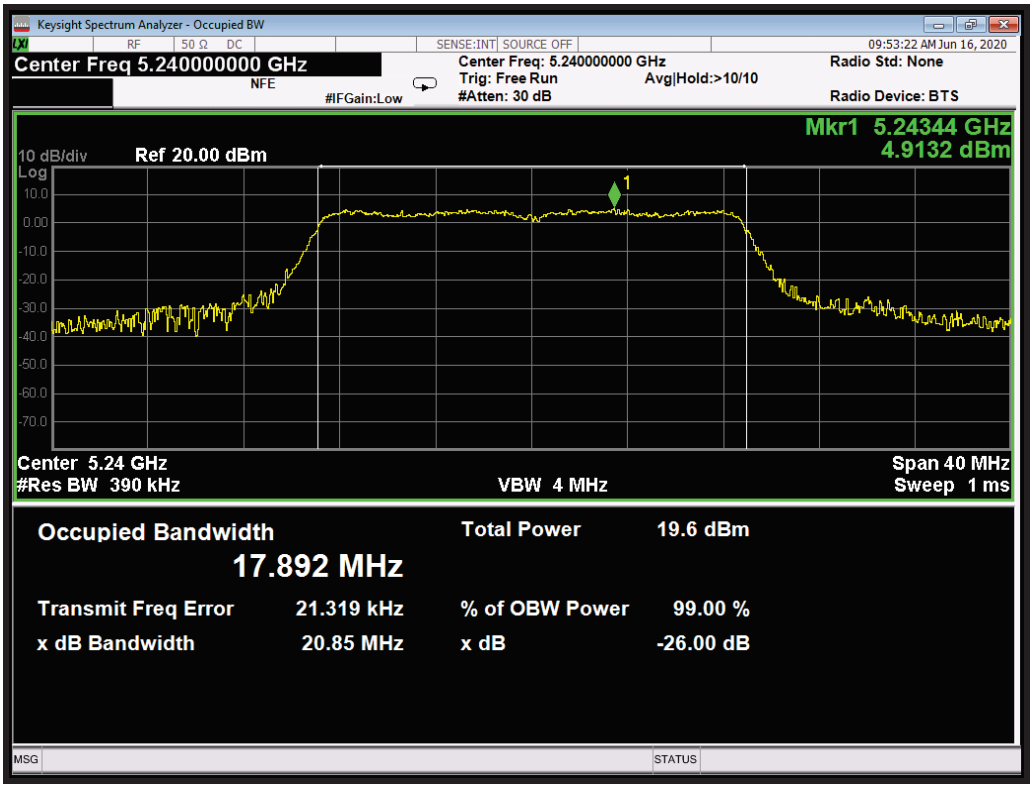

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:22:56 PM Jun 12, 2020
Center Freq 5.270000000 GHz
NFE
#IFGain:Low
Center Freq: 5.270000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.25432 GHz
4.5873 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.27 GHz
#Res BW 510 kHz
VBW 5 MHz
Span 80 MHz
Sweep 1 ms
Occupied Bandwidth
36.254 MHz
Total Power 20.6 dBm
Transmit Freq Error -21.753 kHz
% of OBW Power 99.00 %
x dB Bandwidth 40.69 MHz
x dB -26.00 dB
MSG
STATUS

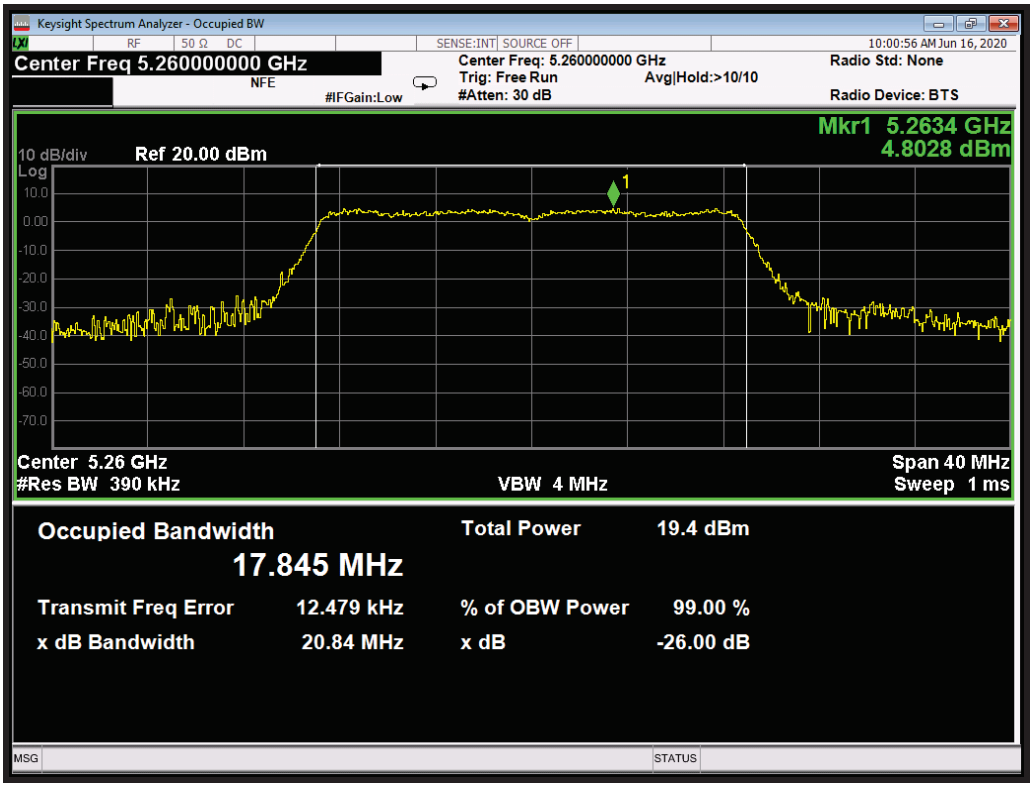

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:27:54 PM Jun 12, 2020
Center Freq 5.310000000 GHz
NFE
#IFGain:Low
Center Freq: 5.310000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.2932 GHz
4.6170 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.31 GHz
#Res BW 510 kHz
VBW 5 MHz
Span 80 MHz
Sweep 1 ms
Occupied Bandwidth
36.299 MHz
Total Power 20.7 dBm
Transmit Freq Error -24.276 kHz
% of OBW Power 99.00 %
x dB Bandwidth 40.45 MHz
x dB -26.00 dB
MSG
STATUS

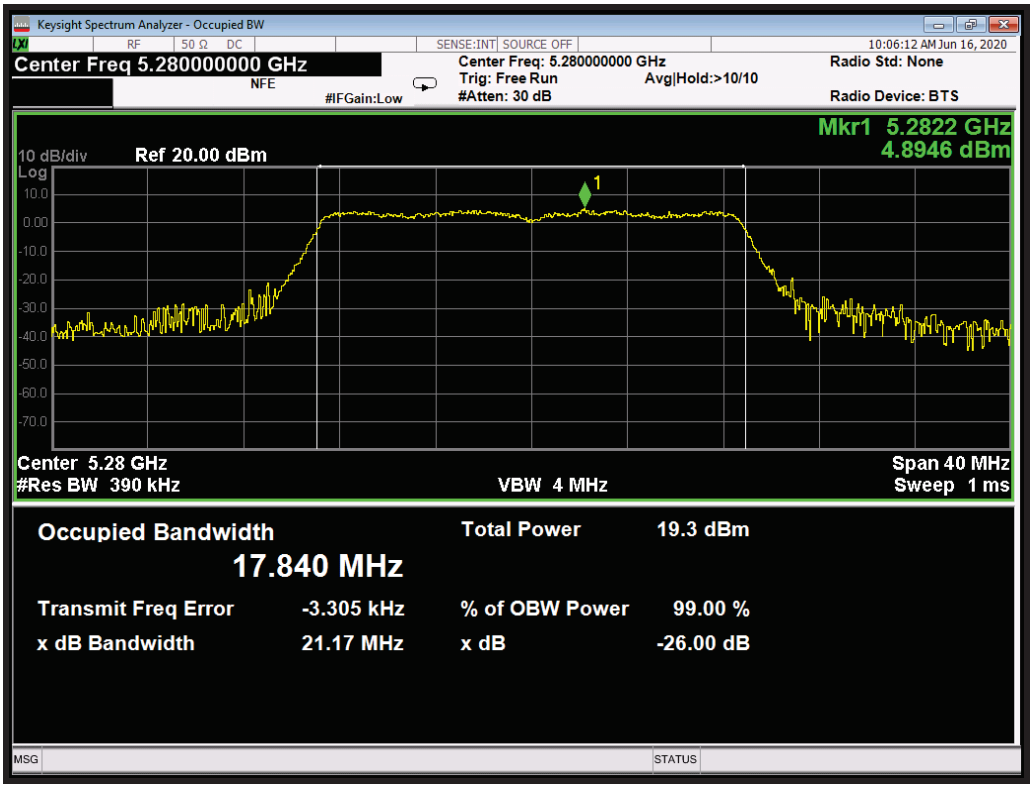
Modulation: 802.11ac-20; Data rate: MCS0 1SS; Main Antenna			
Channel Frequency (MHz)	26dB bandwidth (MHz)	99% bandwidth (MHz)	Result
5180	20.63	17.842	N/A
5220	20.94	17.833	N/A
5240	20.85	17.892	N/A
5260	20.84	17.845	N/A
5280	21.17	17.840	N/A
5320	20.53	17.823	N/A

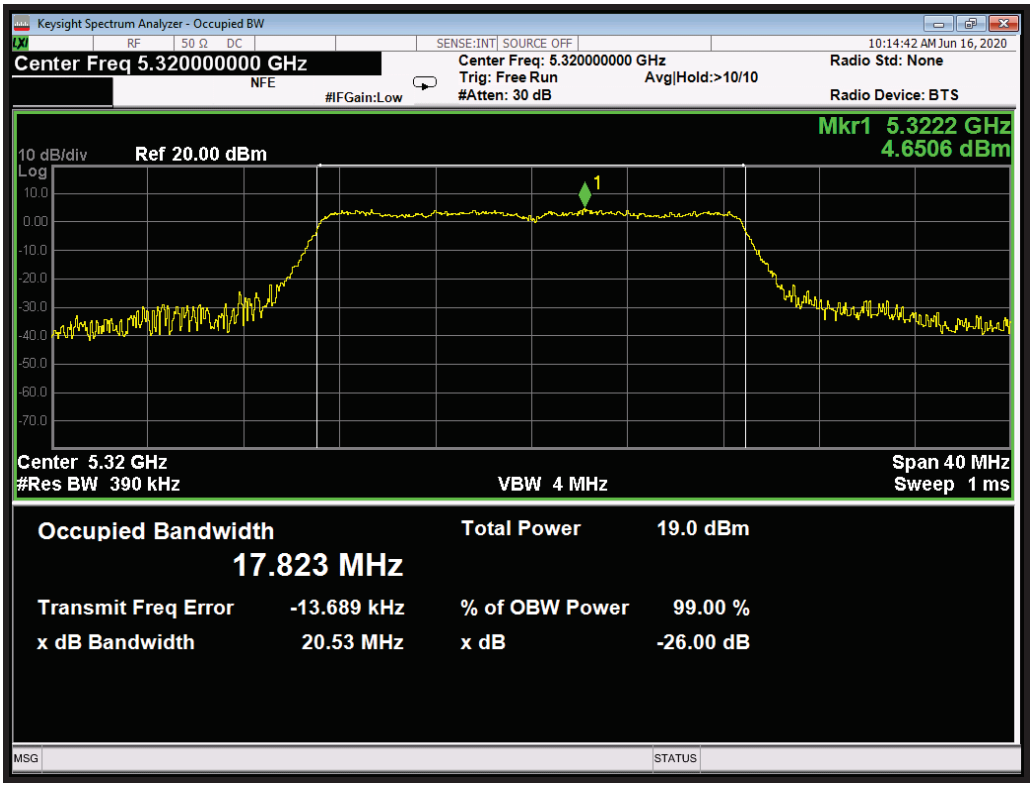



Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
09:41:38 AM Jun 16, 2020
Center Freq 5.220000000 GHz
NFE
#IFGain:Low
Center Freq: 5.220000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.22352 GHz
5.3309 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.22 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.833 MHz
Total Power 19.4 dBm
Transmit Freq Error 1.806 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.94 MHz
x dB -26.00 dB
MSG
STATUS

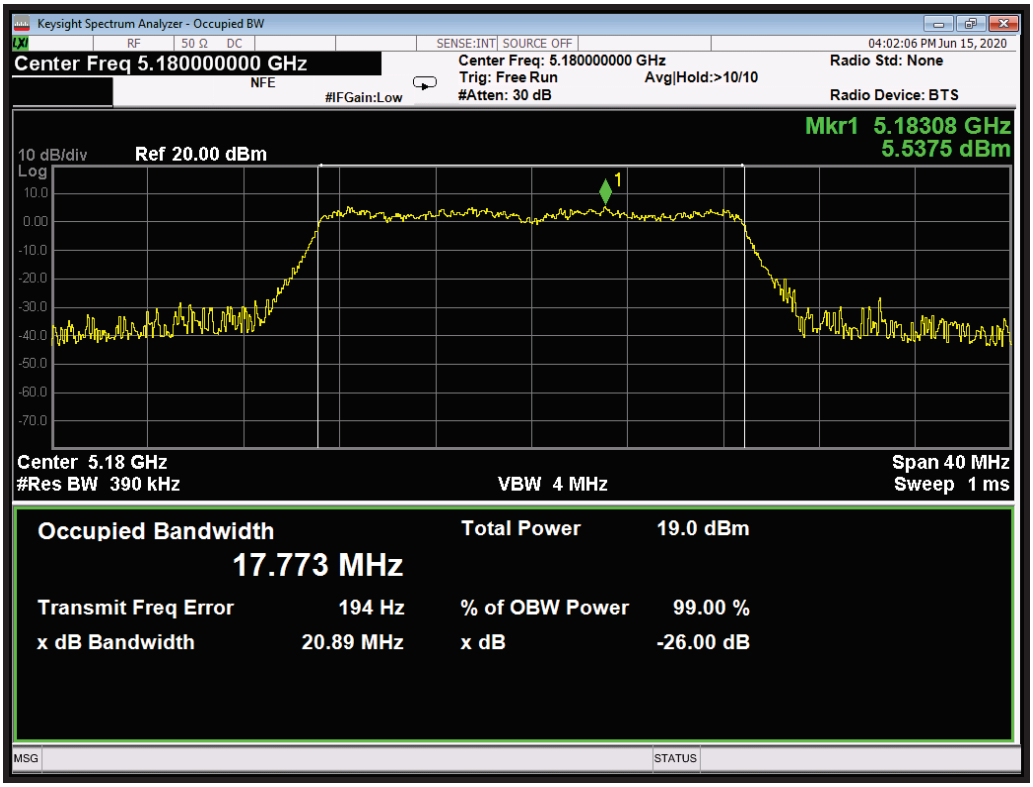

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
09:53:22 AM Jun 16, 2020
Center Freq 5.240000000 GHz
NFE
#IFGain:Low
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.24344 GHz
4.9132 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.24 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.892 MHz
Total Power 19.6 dBm
Transmit Freq Error 21.319 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.85 MHz
x dB -26.00 dB
MSG
STATUS

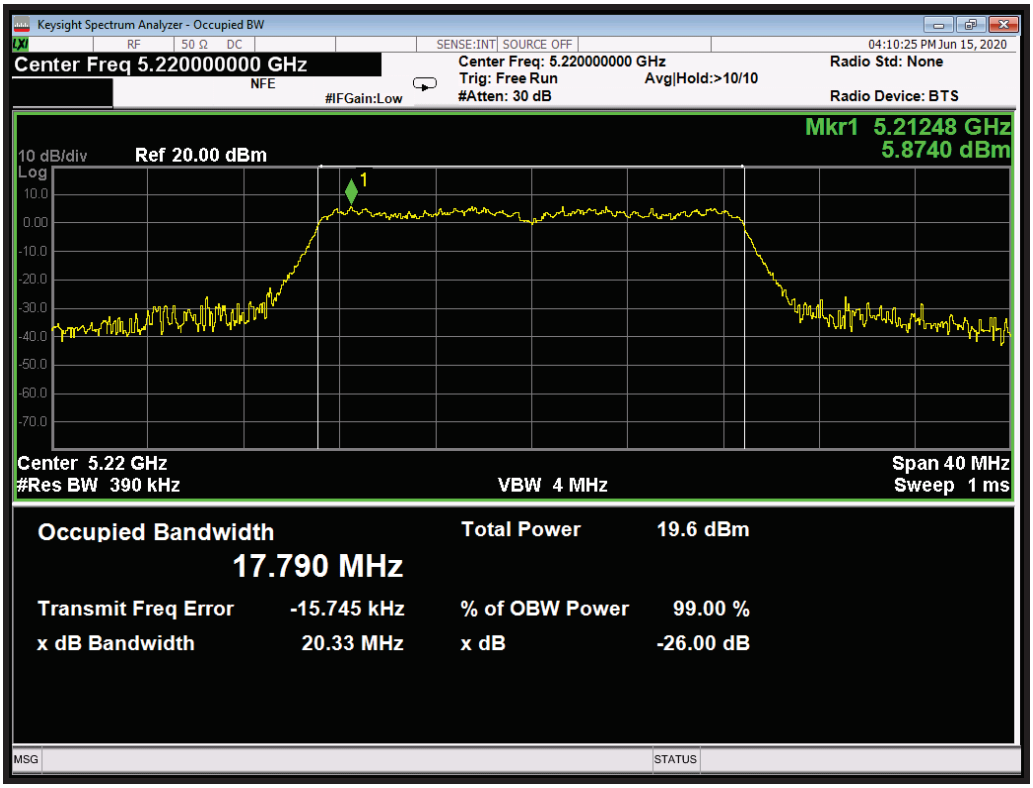

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
10:00:56 AM Jun 16, 2020
Center Freq 5.260000000 GHz
NFE
#IFGain:Low
Center Freq: 5.260000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.2634 GHz
4.8028 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.26 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.845 MHz
Total Power 19.4 dBm
Transmit Freq Error 12.479 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.84 MHz
x dB -26.00 dB
MSG
STATUS

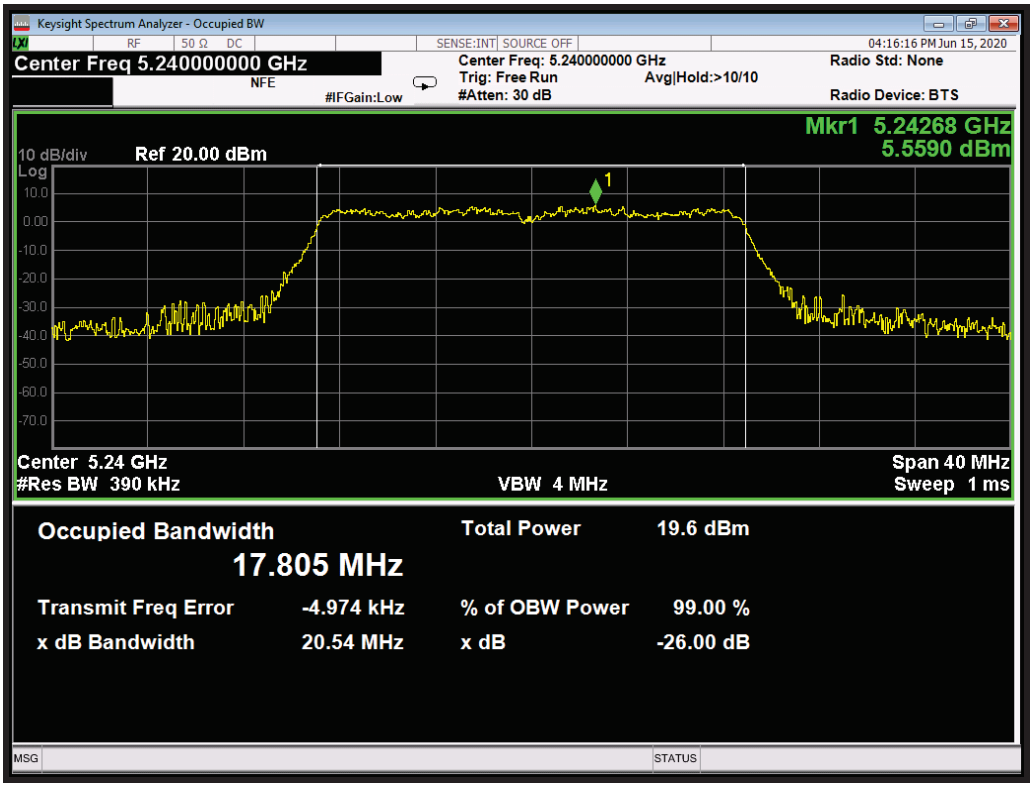

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
10:06:12 AM Jun 16, 2020
Center Freq 5.280000000 GHz
NFE
#IFGain:Low
Center Freq: 5.280000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.2822 GHz
4.8946 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.28 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.840 MHz
Total Power 19.3 dBm
Transmit Freq Error -3.305 kHz
% of OBW Power 99.00 %
x dB Bandwidth 21.17 MHz
x dB -26.00 dB
MSG
STATUS

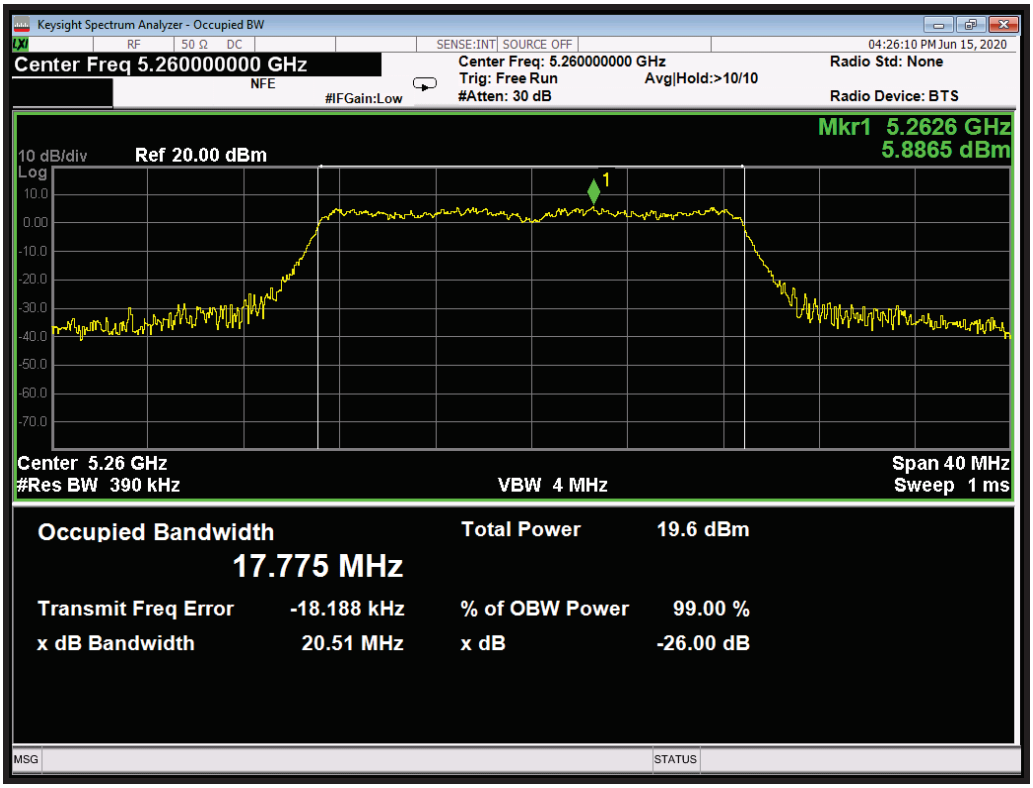


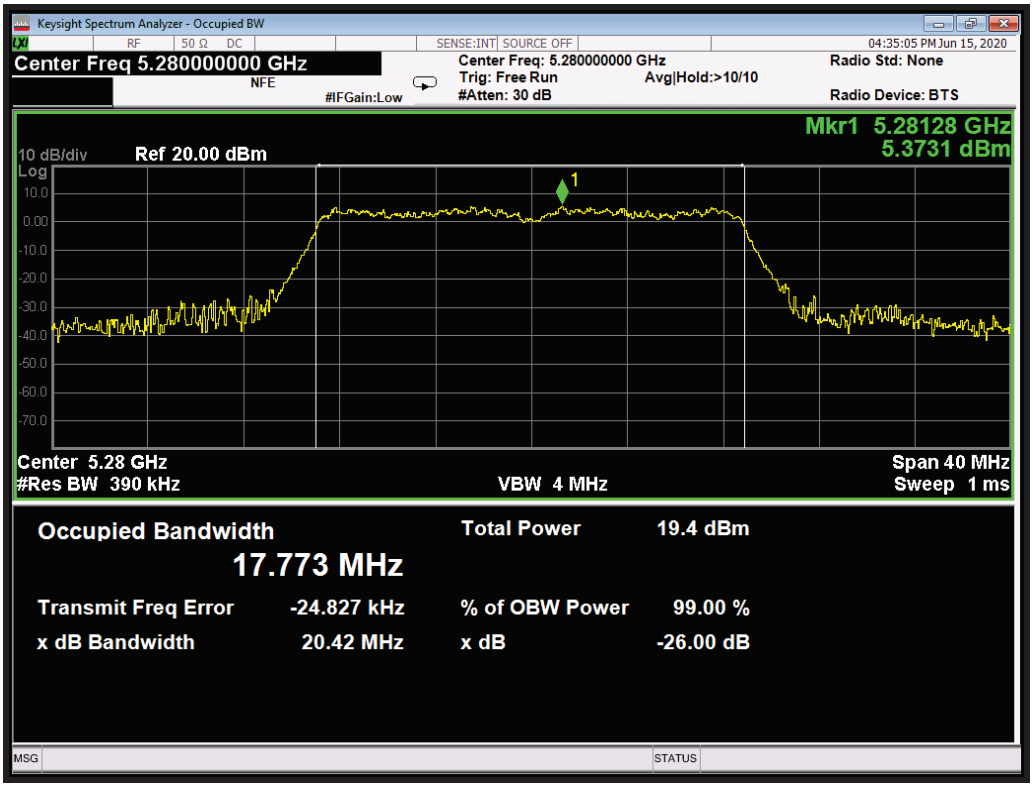
Modulation: 802.11ac-20; Data rate: MCS0 1SS; Aux Antenna			
Channel Frequency (MHz)	***26dB bandwidth (MHz)***	***99% bandwidth (MHz)***	***Result***
5180	20.89	17.773	N/A
5220	20.33	17.790	N/A
5240	20.54	17.805	N/A
5260	20.51	17.775	N/A
5280	20.42	17.773	N/A
5320	21.04	17.774	N/A

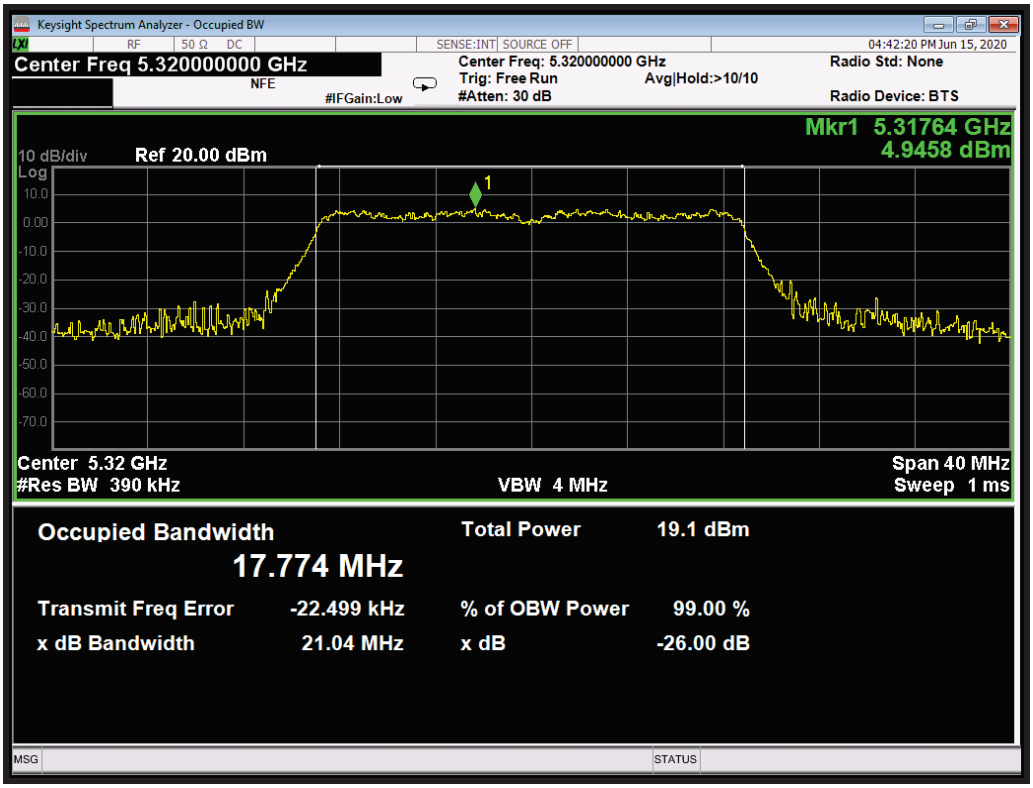

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:02:06 PM Jun 15, 2020
Center Freq 5.180000000 GHz
NFE
#IFGain:Low
Center Freq: 5.180000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.18308 GHz
5.5375 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.18 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.773 MHz
Total Power 19.0 dBm
Transmit Freq Error 194 Hz
% of OBW Power 99.00 %
x dB Bandwidth 20.89 MHz
x dB -26.00 dB
MSG
STATUS


Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:10:25 PM Jun 15, 2020
Center Freq 5.220000000 GHz
NFE
#IFGain:Low
Center Freq: 5.220000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.21248 GHz
5.8740 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.22 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.790 MHz
Total Power 19.6 dBm
Transmit Freq Error -15.745 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.33 MHz
x dB -26.00 dB
MSG
STATUS

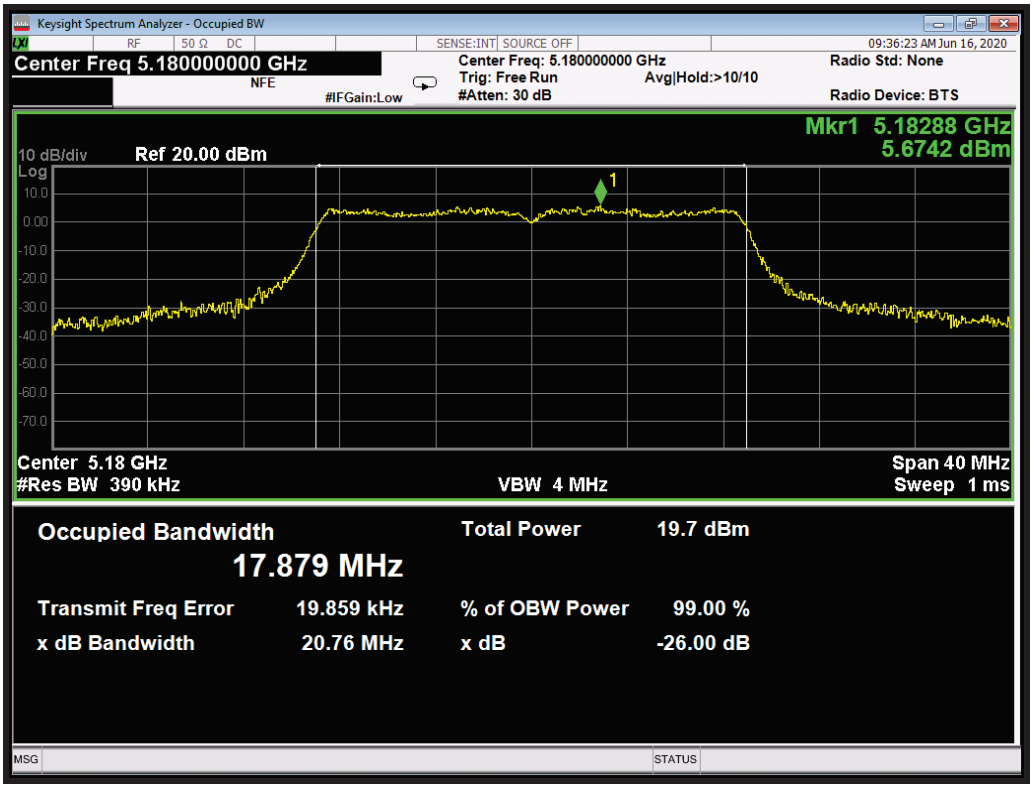

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:16:16 PM Jun 15, 2020
Center Freq 5.240000000 GHz
NFE
#IFGain:Low
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.24268 GHz
5.5590 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.24 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.805 MHz
Total Power 19.6 dBm
Transmit Freq Error -4.974 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.54 MHz
x dB -26.00 dB
MSG
STATUS

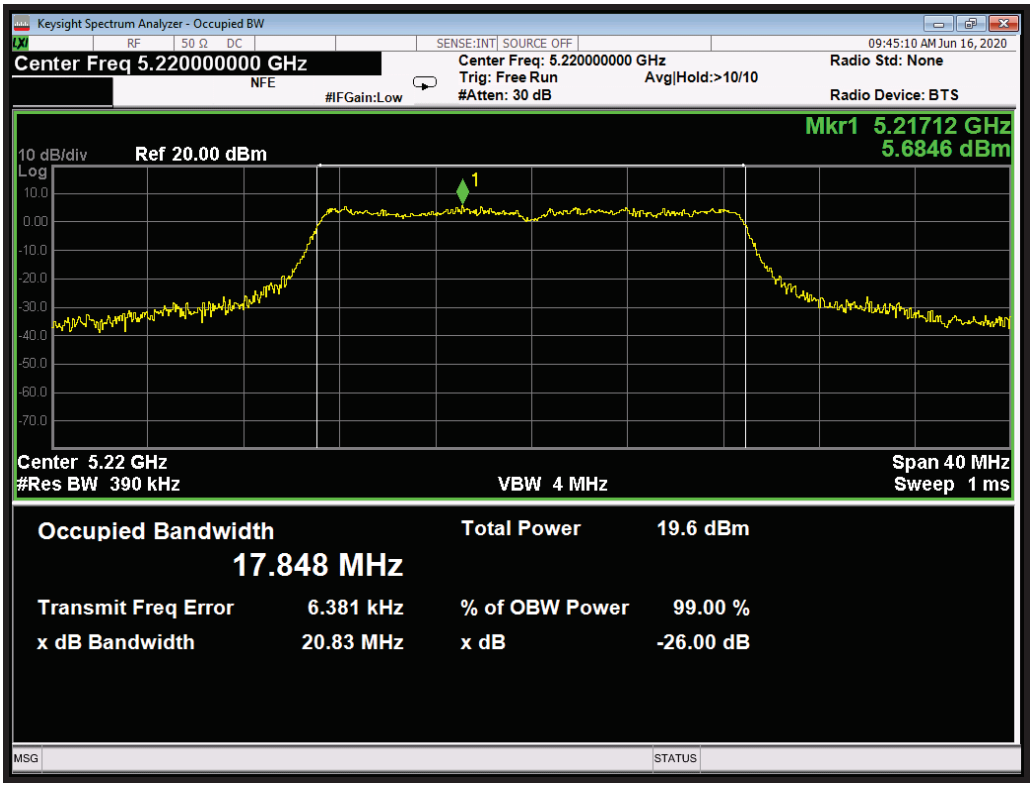

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:26:10 PM Jun 15, 2020
Center Freq 5.260000000 GHz
NFE
#IFGain:Low
Center Freq: 5.260000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.2626 GHz
5.8865 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.26 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.775 MHz
Total Power 19.6 dBm
Transmit Freq Error -18.188 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.51 MHz
x dB -26.00 dB
MSG
STATUS

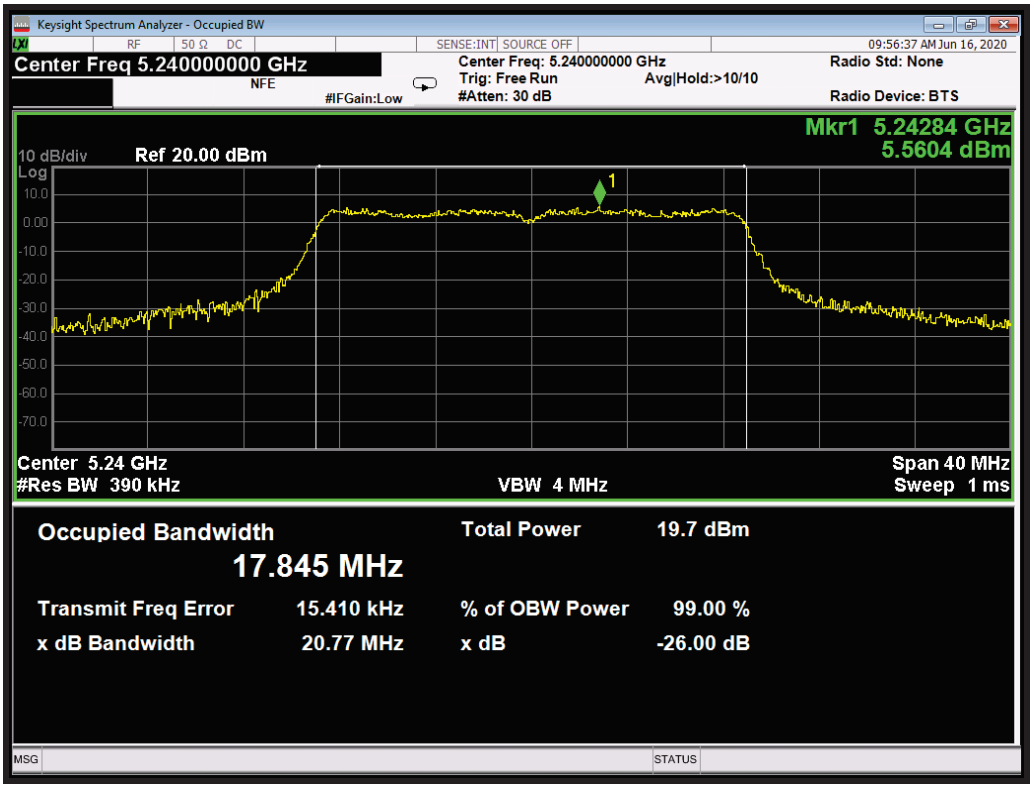

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:35:05 PM Jun 15, 2020
Center Freq 5.280000000 GHz
NFE
#IFGain:Low
Center Freq: 5.280000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.28128 GHz
5.3731 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.28 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.773 MHz
Total Power 19.4 dBm
Transmit Freq Error -24.827 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.42 MHz
x dB -26.00 dB
MSG
STATUS

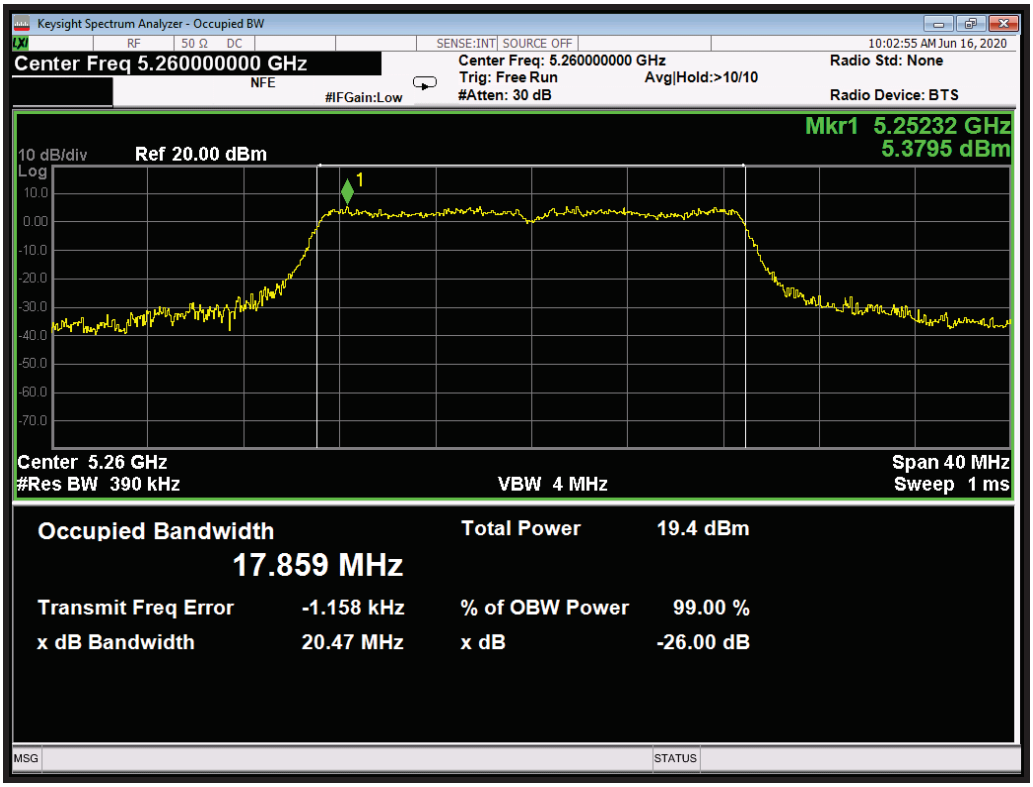

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:42:20 PM Jun 15, 2020
Center Freq 5.320000000 GHz
NFE
#IFGain:Low
Center Freq: 5.320000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.31764 GHz
4.9458 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.32 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.774 MHz
Total Power 19.1 dBm
Transmit Freq Error -22.499 kHz
% of OBW Power 99.00 %
x dB Bandwidth 21.04 MHz
x dB -26.00 dB
MSG
STATUS

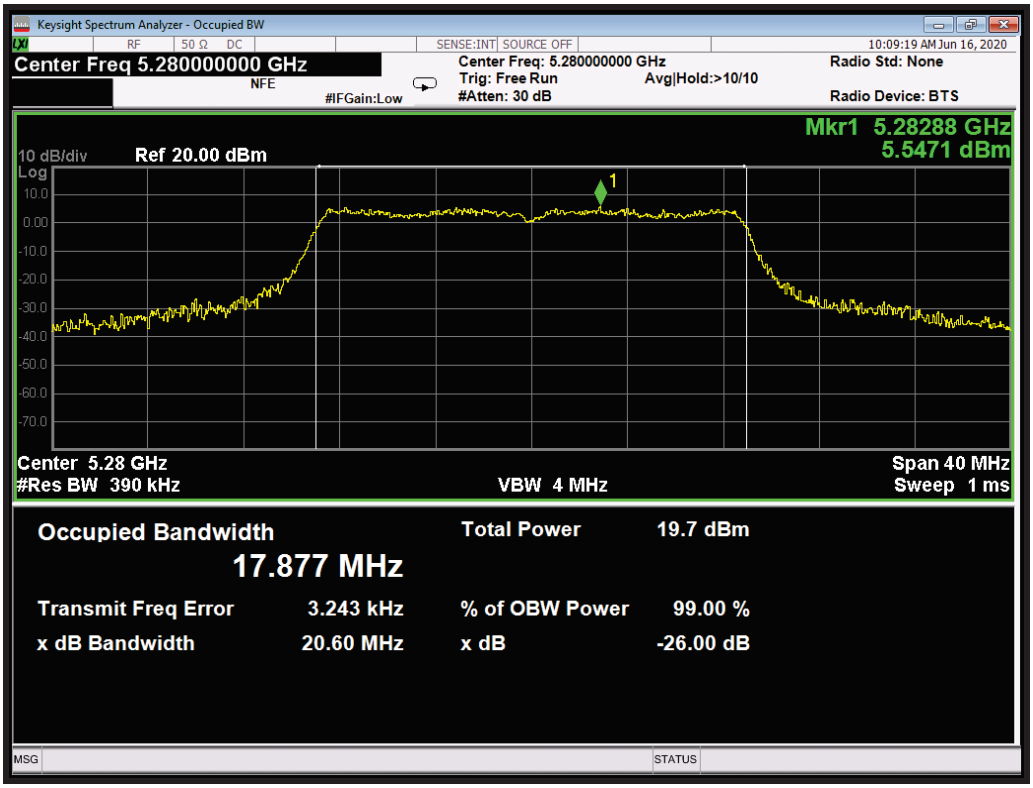
Modulation: 802.11ac-20; Data rate: MCS8 1SS; Main Antenna			
Channel Frequency (MHz)	26dB bandwidth (MHz)	99% bandwidth (MHz)	Result
5180	20.76	17.879	N/A
5220	20.83	17.848	N/A
5240	20.77	17.845	N/A
5260	20.47	17.859	N/A
5280	20.60	17.877	N/A
5320	20.78	17.844	N/A

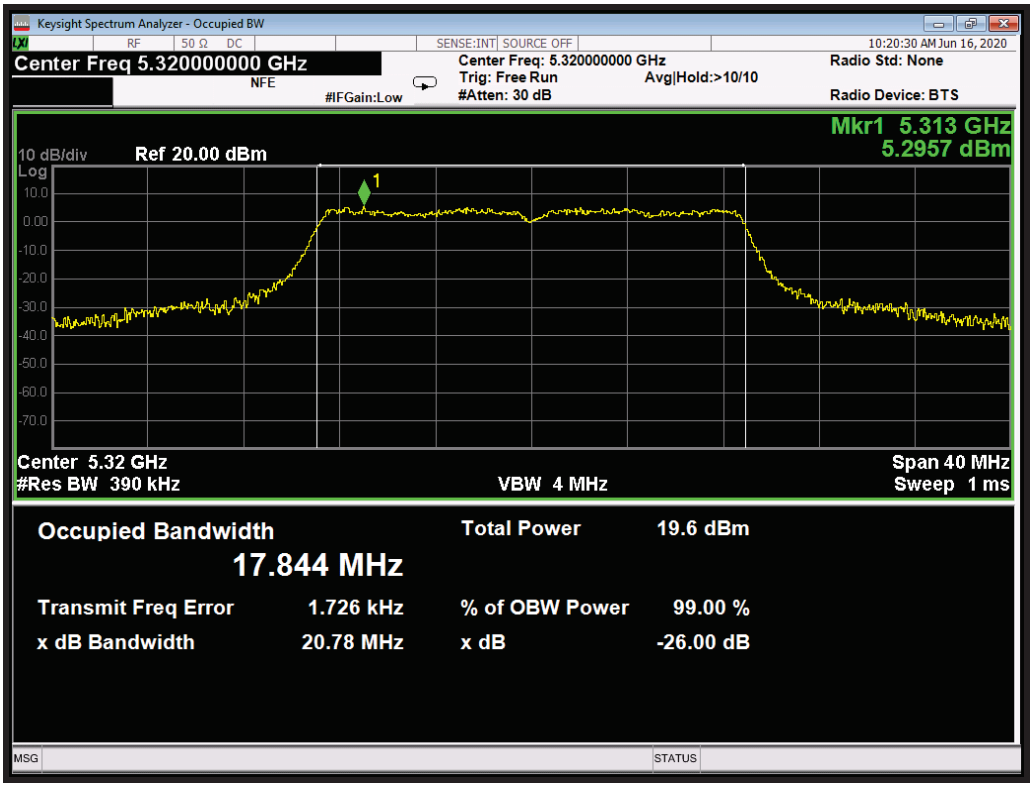



Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
09:45:10 AM Jun 16, 2020
Center Freq 5.220000000 GHz
NFE
#IFGain:Low
Center Freq: 5.220000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.21712 GHz
5.6846 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.22 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.848 MHz
Total Power 19.6 dBm
Transmit Freq Error 6.381 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.83 MHz
x dB -26.00 dB
MSG
STATUS

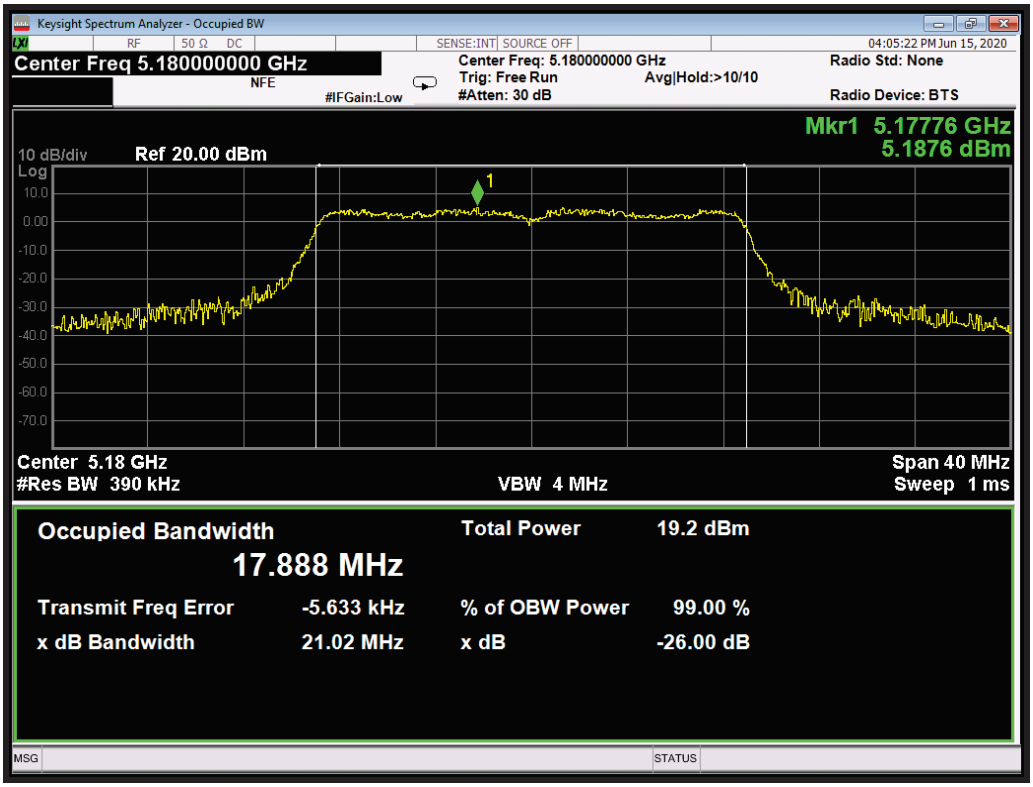

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
09:56:37 AM Jun 16, 2020
Center Freq 5.240000000 GHz
NFE
#IFGain:Low
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.24284 GHz
5.5604 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.24 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.845 MHz
Total Power 19.7 dBm
Transmit Freq Error 15.410 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.77 MHz
x dB -26.00 dB
MSG
STATUS

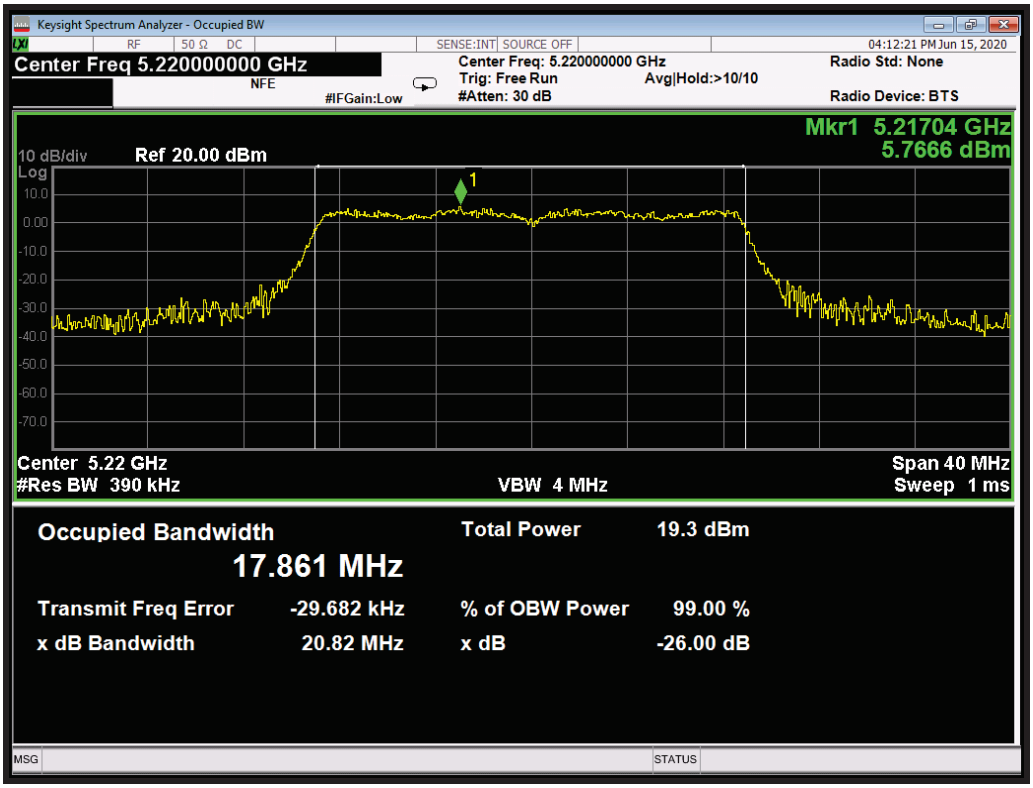

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
10:02:55 AM Jun 16, 2020
Center Freq 5.260000000 GHz
NFE
#IFGain:Low
Center Freq: 5.260000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.25232 GHz
5.3795 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.26 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.859 MHz
Total Power 19.4 dBm
Transmit Freq Error -1.158 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.47 MHz
x dB -26.00 dB
MSG
STATUS

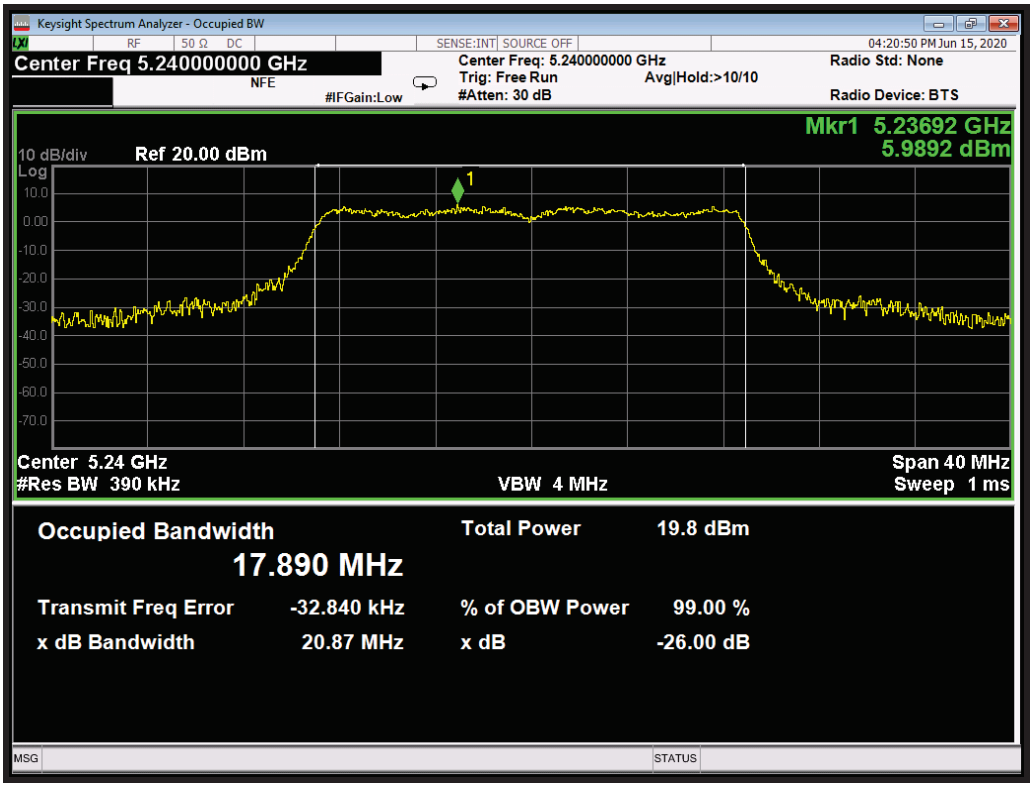

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
10:09:19 AM Jun 16, 2020
Center Freq 5.280000000 GHz
NFE
#IFGain:Low
Center Freq: 5.280000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.28288 GHz
5.5471 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.28 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.877 MHz
Total Power 19.7 dBm
Transmit Freq Error 3.243 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.60 MHz
x dB -26.00 dB
MSG
STATUS

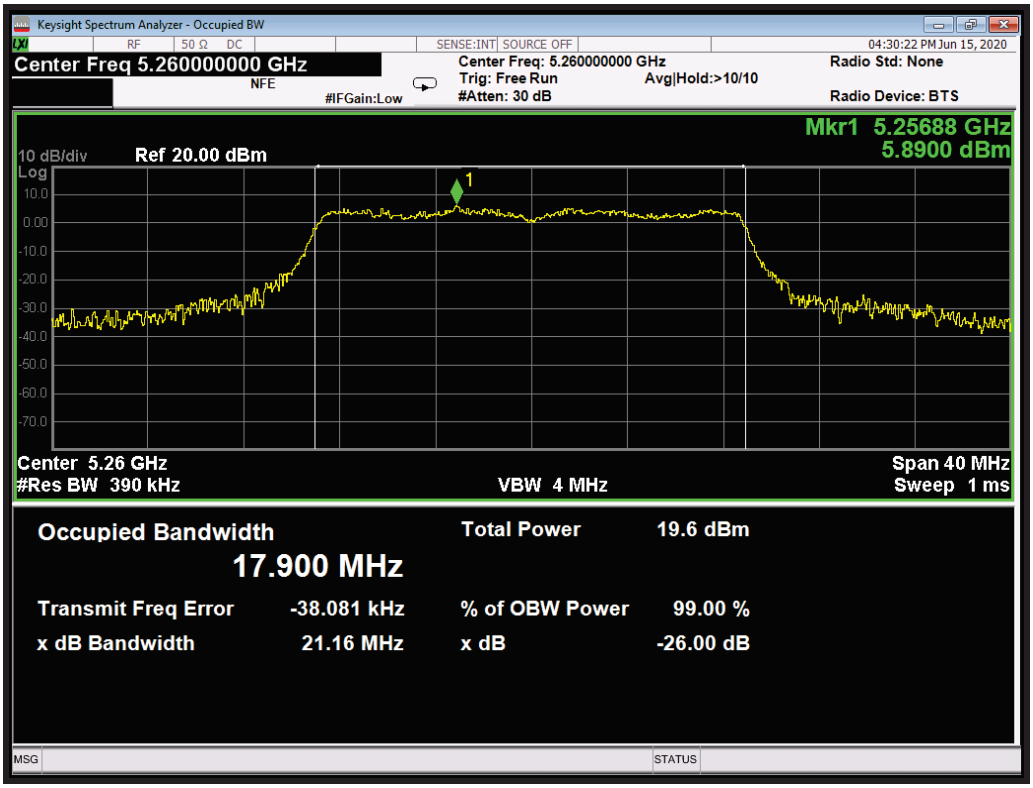


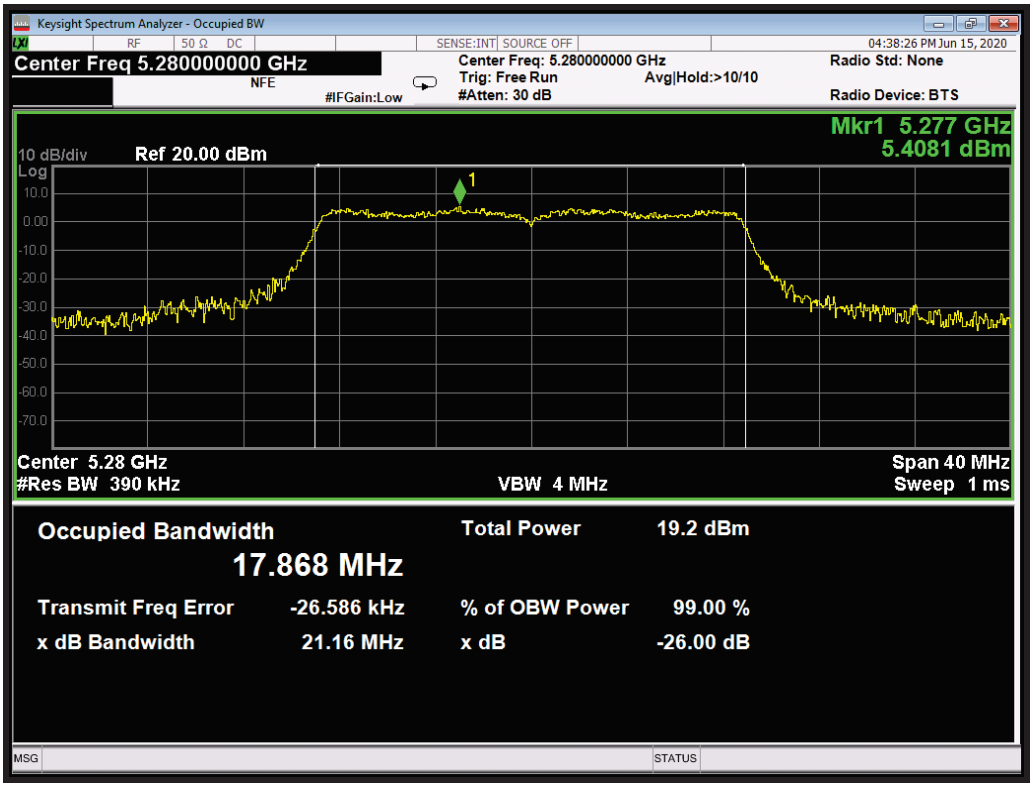
Modulation: 802.11ac-20; Data rate: MCS8 1SS; Aux Antenna			
Channel Frequency (MHz)	***26dB bandwidth (MHz)***	***99% bandwidth (MHz)***	***Result***
5180	21.02	17.888	N/A
5220	20.82	17.861	N/A
5240	20.87	17.890	N/A
5260	21.16	17.900	N/A
5280	21.16	17.868	N/A
5320	20.65	17.892	N/A

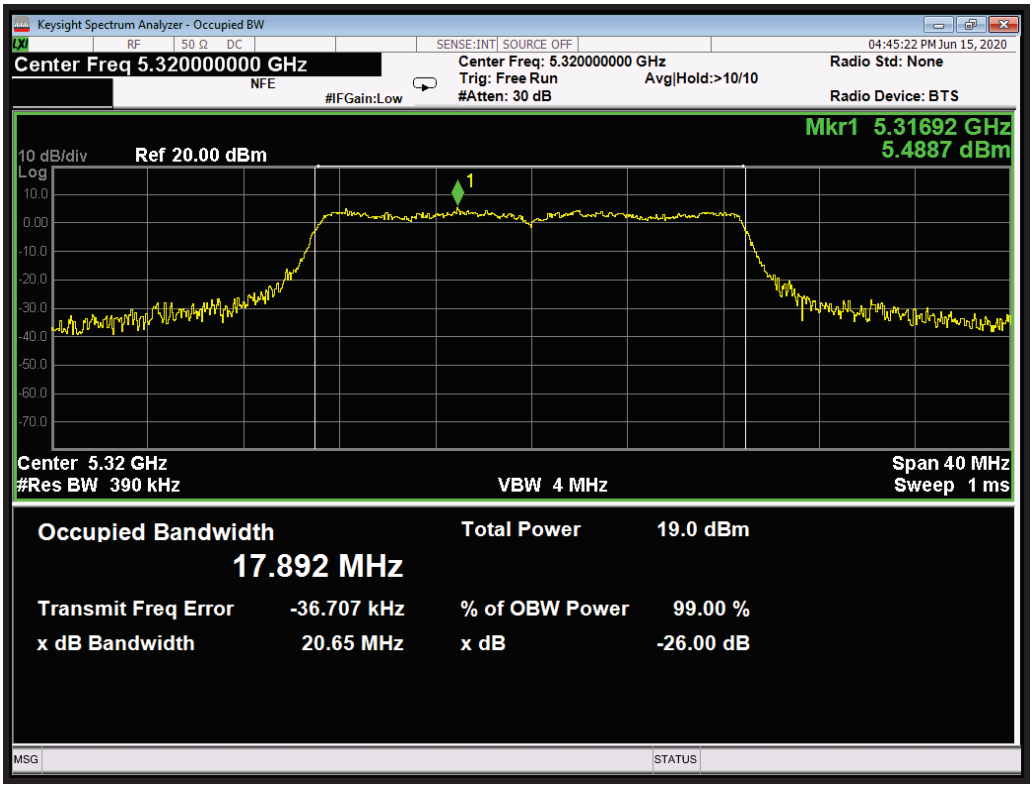

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:05:22 PM Jun 15, 2020
Center Freq 5.180000000 GHz
NFE
#IFGain:Low
Center Freq: 5.180000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.17776 GHz
5.1876 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.18 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.888 MHz
Total Power 19.2 dBm
Transmit Freq Error -5.633 kHz
% of OBW Power 99.00 %
x dB Bandwidth 21.02 MHz
x dB -26.00 dB
MSG
STATUS


Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:12:21 PM Jun 15, 2020
Center Freq 5.220000000 GHz
NFE
#IFGain:Low
Center Freq: 5.220000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.21704 GHz
5.7666 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.22 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.861 MHz
Total Power 19.3 dBm
Transmit Freq Error -29.682 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.82 MHz
x dB -26.00 dB
MSG
STATUS


Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:20:50 PM Jun 15, 2020
Center Freq 5.240000000 GHz
NFE
#IFGain:Low
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.23692 GHz
5.9892 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.24 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.890 MHz
Total Power 19.8 dBm
Transmit Freq Error -32.840 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.87 MHz
x dB -26.00 dB
MSG
STATUS


Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:30:22 PM Jun 15, 2020
Center Freq 5.260000000 GHz
NFE
#IFGain:Low
Center Freq: 5.260000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.25688 GHz
5.8900 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.26 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.900 MHz
Total Power 19.6 dBm
Transmit Freq Error -38.081 kHz
% of OBW Power 99.00 %
x dB Bandwidth 21.16 MHz
x dB -26.00 dB
MSG
STATUS


Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:38:26 PM Jun 15, 2020
Center Freq 5.280000000 GHz
NFE
#IFGain:Low
Center Freq: 5.280000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.277 GHz
5.4081 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.28 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.868 MHz
Total Power 19.2 dBm
Transmit Freq Error -26.586 kHz
% of OBW Power 99.00 %
x dB Bandwidth 21.16 MHz
x dB -26.00 dB
MSG
STATUS


Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT SOURCE OFF
04:45:22 PM Jun 15, 2020
Center Freq 5.320000000 GHz
NFE
#IFGain:Low
Center Freq: 5.320000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Mkr1 5.31692 GHz
5.4887 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.32 GHz
#Res BW 390 kHz
VBW 4 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.892 MHz
Total Power 19.0 dBm
Transmit Freq Error -36.707 kHz
% of OBW Power 99.00 %
x dB Bandwidth 20.65 MHz
x dB -26.00 dB
MSG
STATUS