TEST REPORT

Product Name	:	Toucan Surveillance Kit 2.0
Trade mark	:	Toucan
Model/Type reference	:	TC200KU
Serial Number	:	N/A
Report Number	:	EED32I00271803
FCC ID	:	2ABT4TC200KU
Date of Issue	:	Jan. 09, 2017
Test Standards	:	47 CFR Part 15 Subpart E (2015)
Test result	:	PASS

Prepared for:

Sky Light Imaging Limited
Rm. 1009 Kwong Sang Hong Centre, 151-153 Hoi Bun Road,
Kwun Tong, Kowloon, Hong Kong

Prepared by:

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Tested By:	Tom chen (Test Project)	Compiled by:	Kevin yang (Project Engineer)
Reviewed by:	Kevin Ian (Reviewer)	Approved by:	Sheek Luo (Lab supervisor)
Date:	Jan. 09, 2017		Check No.: 2457551382

2 Version

Version No.	Date	Description
00	Jan. 09, 2017	Original

3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203	ANSI C63.10-2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart E Section 15.407 (b)(6)	ANSI C63.10-2013	PASS
Conducted Output Power and transmit power control mechanism	47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)(4)(h)(1)	ANSI C63.10-2013	PASS
Emission Bandwidth	47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)	ANSI C63.10-2013	PASS
Peak Power Spectral Density	47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)(5)	ANSI C63.10-2013	PASS
Frequency stability	47 CFR Part 15 Subpart E Section 15.407 (g)	ANSI C63.10-2013	PASS
Operation in the absence of information to the transmit	47 CFR Part 15 Subpart E Section 15.407 (c)	47 CFR Part 15 Subpart E	PASS
Unwanted Emissions that fall Outside of the Restricted Bands	47 CFR Part 15 Subpart E Section 15.407 (b)(1)(2)(3)(5)	ANSI C63.10-2013	PASS
Unwanted Emissions in the Restricted Bands	47 CFR Part 15 Subpart E Section 15.407 (b)(6)(7)(8)	ANSI C63.10-2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15 Subpart E Section 15.407 (b)(6)(7)(8)	ANSI C63.10-2013	PASS

Remark:

The tested sample and the sample information are provided by the client.

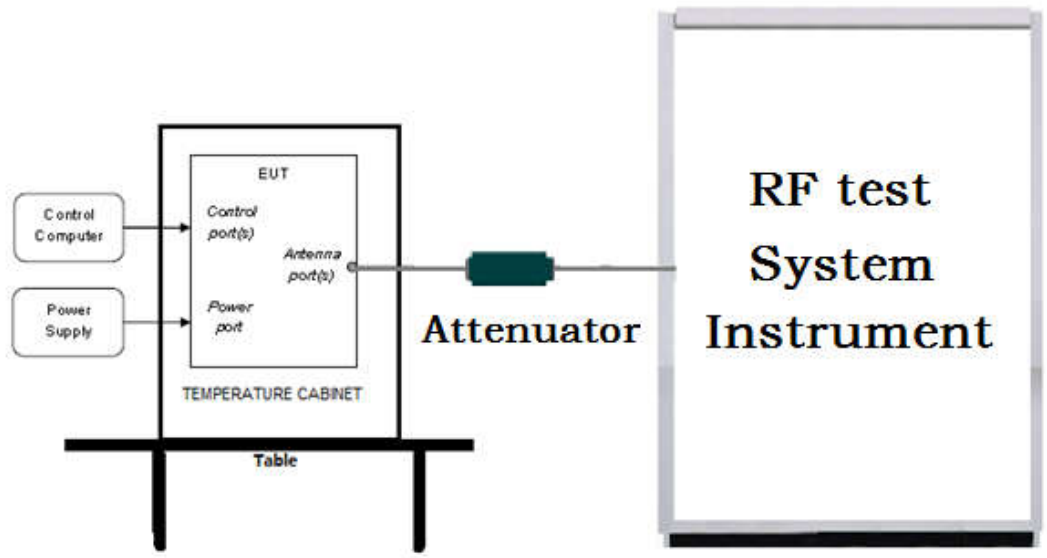
Tx: In this whole report Tx (or tx) means Transmitter.
Rx: In this whole report Rx (or rx) means Receiver.
RF: In this whole report RF means Radiated Frequency.
CH: In this whole report CH means channel.
Volt: In this whole report Volt means Voltage.
Temp: In this whole report Temp means Temperature.
Humid: In this whole report Humid means humidity.
Press: In this whole report Press means Pressure.
N/A: In this whole report not application.

4 Content

5 Test Requirement

5.1 Test setup

5.1.1 For Conducted test setup



5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

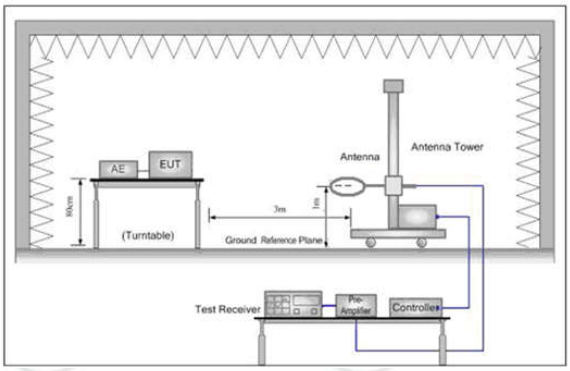


Figure 1. Below 30MHz

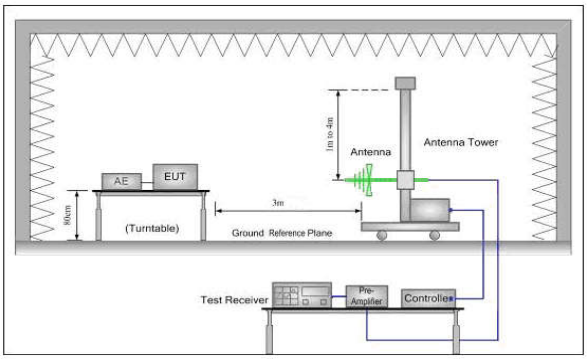


Figure 2. 30MHz to 1GHz

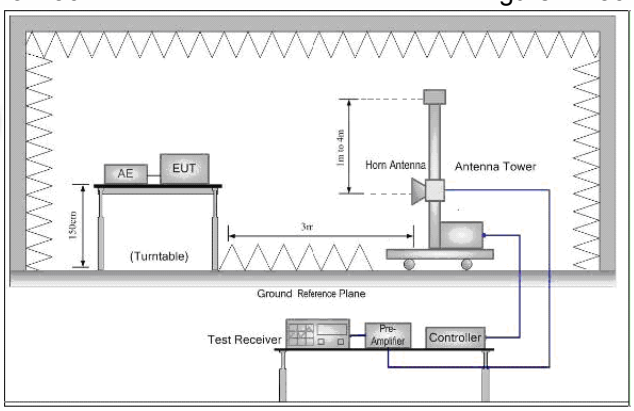
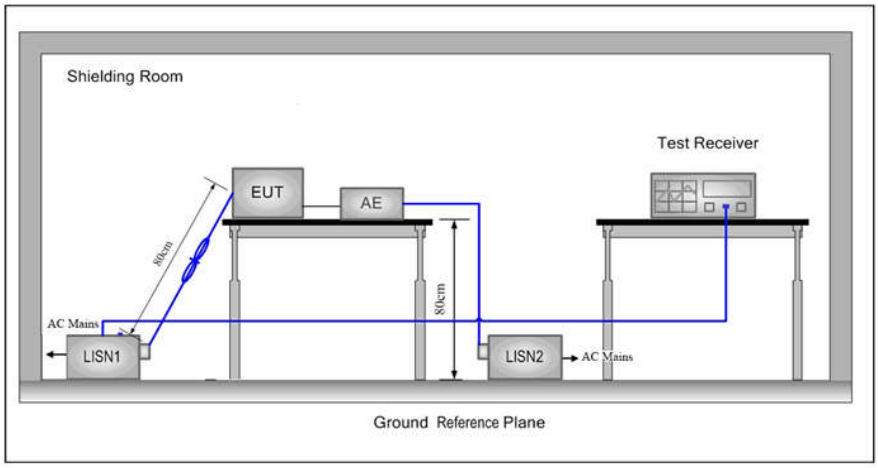


Figure 3. Above 1GHz

5.1.3 For Conducted Emissions test setup

Conducted Emissions setup



5.2 Test Environment

Operating Environment:	
Temperature:	22°C
Humidity:	53% RH
Atmospheric Pressure:	1010 mbar

5.3 Test Condition

Test channel:

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
802.11a/n/ac(20M)	5150MHz ~5250 MHz	Channel 36	Channel 44	Channel 48
		5180MHz	5220MHz	5240MHz
802.11n/ac(40M)	5150MHz ~5250 MHz	Channel 38	N/A	Channel 46
		5190MHz	N/A	5230MHz
802.11ac(80M)	5150MHz ~5250 MHz	N/A	Channel 42	N/A
		N/A	5210MHz	N/A
802.11a/n/ac(20M)	5250MHz ~5350 MHz	Channel 52	Channel 60	Channel 64
		5260MHz	5300MHz	5320MHz
802.11n/ac(40M)	5250MHz ~5350 MHz	Channel54	N/A	Channel62
		5270MHz	N/A	5310MHz
802.11ac(80M)	5250MHz ~5350 MHz	N/A	Channel 58	N/A
		N/A	5290MHz	N/A
802.11a/n/ac(20M)	5470MHz ~5725 MHz	Channel 100	Channel116	Channel140
		5500MHz	5580MHz	5700MHz
802.11n/ac(40M)	5470MHz ~5725 MHz	Channel 102	Channel110	Channel 134
		5510MHz	5550MHz	5670MHz
802.11ac(80M)	5470MHz ~5725 MHz	Channel 106	N/A	N/A

		5530MHz	N/A	N/A
802.11a/n/ac(20M)	5725MHz ~5850 MHz	Channel 149	Channel 157	Channel 165
		5745MHz	5785MHz	5825MHz
802.11n/ac(40M)	5725MHz ~5850 MHz	Channel 151	N/A	Channel 159
		5755MHz	N/A	5795MHz
802.11ac(80M)	5725MHz ~5850 MHz	N/A	Channel 155	N/A
		N/A	5775MHz	N/A

Test mode:

Pre-scan under all rate at lowest channel 1

Mode	**802.11a for 5150MHz ~5250 MHz**							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	9.24	9.11	9.08	9.07	8.96	8.90	9.03	9.07
Mode	**802.11n (20M) for 5150MHz ~5250 MHz**							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	9.27	9.16	9.09	9.15	8.93	8.86	9.05	9.10
Mode	**802.11ac (20M) for 5150MHz ~5250 MHz**							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	9.25	9.14	9.12	9.07	9.12	9.05	8.94	8.95
Mode	**802.11n(40M) for 5150MHz ~5250 MHz**							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	9.19	9.15	9.06	9.14	8.90	8.54	8.62	8.95
Mode	**802.11ac (40M) for 5150MHz ~5250 MHz**							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	9.17	9.03	8.85	8.80	8.62	8.54	8.67	8.53
Mode	**802.11ac(80M)for 5150MHz ~5250 MHz**							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	10.27	10.20	10.23	10.20	10.13	10.16	10.22	10.25
Mode	**802.11a for** 5250MHz ~5350 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	11.44	11.30	11.25	11.17	11.08	11.05	10.78	10.93
Mode	**802.11n (20M) for** 5250MHz ~5350 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	11.31	11.29	11.14	11.08	11.06	11.12	10.85	10.57
Mode	**802.11ac (20M) for** 5250MHz ~5350 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	11.30	11.25	11.17	11.05	10.83	10.62	10.98	10.80
Mode	**802.11n (40M) for** 5250MHz ~5350 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	11.47	11.15	11.32	11.16	11.20	11.08	10.90	10.83
Mode	**802.11ac (40M) for** 5250MHz ~5350 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	11.39	11.22	11.24	11.16	11.08	10.85	10.83	10.64
Mode	**802.11ac(80M)for** 5250MHz ~5350 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	12.31	12.17	12.05	12.30	12.08	12.06	11.86	12.05

Mode	802.11a for 5470MHz ~5725 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	10.36	10.24	10.11	10.08	9.78	9.65	9.54	9.52
Mode	802.11n (20M) for 5470MHz ~5725 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	10.18	10.06	10.12	9.95	9.83	9.76	9.82	9.64
Mode	802.11ac (20M) for 5470MHz ~5725 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	10.36	10.27	10.12	10.08	9.95	9.62	9.58	9.52
Mode	802.11n(40M) for 5470MHz ~5725 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	10.31	10.28	10.26	10.12	10.05	9.96	9.85	9.82
Mode	802.11ac (40M) for 5470MHz ~5725 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	10.11	10.08	10.05	9.98	9.92	9.96	9.83	9.84
Mode	802.11ac(80M)for 5470MHz ~5725 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	10.97	10.86	10.88	10.75	10.30	10.34	10.26	10.28
Mode	802.11a for 5725MHz ~5850 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	10.23	10.02	9.96	10.14	9.43	9.85	9.32	10.20
Mode	802.11n (20M) for 5725MHz ~5850 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	10.00	9.34	9.47	9.45	9.82	9.53	9.47	9.90
Mode	802.11ac (20M) for 5725MHz ~5850 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	10.27	10.13	10.04	10.22	9.93	9.57	10.14	10.18
Mode	802.11n (40M) for 5725MHz ~5850 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	9.73	9.42	9.15	9.32	9.44	9.20	9.18	9.36
Mode	802.11ac (40M) for 5725MHz ~5850 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	10.11	9.80	9.63	9.84	9.95	9.82	9.76	9.95
Mode	802.11ac(80M)for 5725MHz ~5850 MHz							
Data Rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Power(dBm)	10.07	9.80	9.75	9.78	9.74	9.65	9.63	9.76

Through Pre-scan, MCS0 is the worst case of 802.11a (20M) for 5150MHz ~5250 MH;MCS0 is the worst case of 802.11n (20M) for 5150MHz ~5250 MHz;MCS0 is the worst case of 802.11ac (20M) for 5150MHz ~5250 MH;MCS0 is the worst case of 802.11n(40M) for 5150MHz ~5250 MHz;MCS0 is the worst case of 802.11ac (40M) for 5150MHz ~5250 MHz;MCS0 is the worst case of 802.11ac(80M)for 5150MHz ~5250 MHz;
MCS0 is the worst case of 802.11a (20M) for 5250MHz ~5350 MHz;MCS0 is the worst case of 802.11n (20M) for 5250MHz ~5350 MH;MCS0 is the worst case of 802.11ac (20M) for 5250MHz ~5350;MCS0 is the worst case of 802.11n (40M) for 5250MHz ~5350 MHz;MCS0 is the worst case of 802.11ac (40M) for5250MHz ~5350 MHz;MCS0 is the worst case of 802.11ac(80M)for 5250MHz ~5350 MHz;
MCS0 is the worst case of 802.11a (20M) for 5470MHz ~5725 MHz;MCS0 is the worst case of 802.11n (20M) for 5470MHz ~5725 MH;MCS0 is the worst case of 802.11ac (20M) for 5470MHz ~5725 MHz;MCS0 is the worst case of 802.11n (40M) for 5470MHz ~5725 MHz;MCS0 is the worst case of 802.11ac (40M) for 5470MHz

~5725 MHz;MCS0 is the worst case of 802.11ac(80M)for 5470MHz ~5725 MHz;
MCS0 is the worst case of 802.11a (20M) for 5725MHz ~5850 MHz;MCS0 is the worst case of 802.11n (20M) for 5725MHz ~5850 MH;MCS0 is the worst case of 802.11ac (20M) for 5725MHz ~5850 MHz;MCS0 is the worst case of 802.11n (40M) for 5725MHz ~5850 MHz;MCS0 is the worst case of 802.11ac (40M) for 5725MHz ~5850 MHz;MCS0 is the worst case of 802.11ac(80M)for 5725MHz ~5850 MHz;

6 General Information

6.1 Client Information

Applicant:	Sky Light Imaging Limited
Address of Applicant:	Rm. 1009 Kwong Sang Hong Centre, 151-153 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong
Manufacturer:	Sky Light Imaging Limited
Address of Manufacturer:	Rm. 1009 Kwong Sang Hong Centre, 151-153 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong
Factory:	Sky Light Electronic (ShenZhen) Limited
Address of Factory:	No.1,5 and 6 Building, JinBi Industrial Area,HuangTian, BaoAn, Shenzhen, China.

6.2 General Description of EUT

Product Name:	Toucan Surveillance Kit 2.0
Model No.:	TC200KU
Test Model No.:	TC200KU
Trade Mark:	Toucan
EUT Supports Radios application:	Bluetooth V4.0: 2402-2480MHz, Wlan 2.4GHz 802.11b/g/n(HT20): 2412MHz ~2462 MHz 5G: U-NII-1: 5.15-5.25GHz; U-NII-2A: 5.250-5.350GHz; U-NII-2C: 5.470-5.725GHz; U-NII-3: 5.725-5.850GHz; 802.11a; 802.11n(20MHz/40MHz); 802.11ac(20MHz/40MHz/80MHz) (EUT can't operation in 2.4 GHz and 5 GHz simultaneous, the hardware and software limited to prevent simultaneous operation in the 2.4 GHz and 5GHz bands)
Power Supply:	DC 5V, 1A
Sample Received Date:	Oct. 23, 2016
Sample tested Date:	Oct. 23, 2016 to Jan. 09, 2017

6.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11a/n/ac(20M): 5150MHz ~5250 MHz IEEE802.11n/ac(40M): 5150MHz ~5250 MHz IEEE802.11ac(80M): 5150MHz ~5250 MHz IEEE 802.11a/n/ac(20M): 5250MHz ~5350 MHz IEEE802.11n/ac(40M): 5250MHz ~5350 MHz IEEE802.11ac(80M): 5250MHz ~5350 MHz IEEE 802.11a/n/ac(20M): 5470MHz ~5725 MHz IEEE802.11n/ac(40M): 5470MHz ~5725 MHz IEEE802.11ac(80M): 5470MHz ~5725 MHz IEEE 802.11a/n/ac(20M): 5725MHz ~5850 MHz IEEE802.11n/ac(40M): 5725MHz ~5850 MHz IEEE802.11ac(80M): 5725MHz ~5850 MHz
Channel Numbers:	IEEE 802.11a/n/ac(20M): 5150MHz ~5250MHz/ 4 channel IEEE 802.11n/ac(40M): 5150MHz ~5250MHz/ 2 channel IEEE 802.11ac(80M): 5150MHz ~5250MHz/ 1 channel IEEE 802.11a/n/ac(20M): 5250MHz ~5350 MHz/ 4 channel IEEE802.11n/ac(40M): 5250MHz ~5350 MHz/ 2 channel IEEE802.11ac(80M): 5250MHz ~5350 MHz/ 1 channel

	IEEE 802.11a/n/ac(20M): 5470MHz ~5725 MHz/ 8 channel IEEE802.11n/ac(40M): 5470MHz ~5725 MHz/ 3 channel IEEE802.11ac(80M): 5470MHz ~5725 MHz/ 2 channel IEEE 802.11a/n/ac(20M): 5725MHz ~5850MHz/ 5 channel IEEE 802.11n/ac(40M): 5725MHz ~5850MHz/ 2 channel IEEE 802.11ac(80M): 5725MHz ~5850MHz/ 1 channel
Type of Modulation:	OFDM (64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 802.11ac only)
Sample Type:	Fixed production
Test Power Grade:	N/A (manufacturer declare)
Test Software of EUT:	Secure GRT (manufacturer declare)
Antenna Type and Gain:	PIFA Antenna and 3dBi
Test Voltage:	AC 120V/60Hz

Operation Frequency each of channel

For 802.11a/n/ac(20M) Operation in the 5150MHz ~5250 MHz band			
Channel	Frequency	Channel	Frequency
36	5180MHz	44	5220MHz
40	5200MHz	48	5240MHz
For 802.11a/n/ac(20M) Operation in the 5250MHz ~5350 MHz band			
Channel	Frequency	Channel	Frequency
52	5260MHz	60	5300MHz
56	5280MHz	64	5320MHz
For 802.11a/n/ac(20M) Operation in the 5470MHz ~5725 MHz band			
Channel	Frequency	Channel	Frequency
100	5500MHz	116	5580MHz
104	5520MHz	132	5660MHz
108	5540MHz	136	5680MHz
112	5560MHz	140	5700MHz
For 802.11a/n/ac(20M) Operation in the 5725MHz ~5850 MHz band			
Channel	Frequency	Channel	Frequency
149	5745MHz	162	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz	NA	NA

For 802.11n/ac(40M) Operation in the 5150MHz ~5250 MHz band			
Channel	Frequency	Channel	Frequency
38	5190MHz	46	5230MHz
For 802.11n/ac(40M) Operation in the 5250MHz ~5350 MHz band			

Channel	Frequency	Channel	Frequency
54	5270MHz	62	5310MHz
For 802.11n/ac(40M) Operation in the 5470MHz ~5725 MHz band			
Channel	Frequency	Channel	Frequency
102	5510MHz	134	5670MHz
110	5550MHz	NA	NA
For 802.11n/ac(40M) Operation in the 5725MHz ~5850 MHz band			
Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

For 802.11ac(80M) Operation in the 5150MHz ~5250 MHz band			
Channel	Frequency	Channel	Frequency
42	5210MHz	NA	NA
For 802.11ac(80M) Operation in the 5250MHz ~5350 MHz band			
Channel	Frequency	Channel	Frequency
58	5290MHz	NA	NA
For 802.11ac(80M) Operation in the 5470MHz ~5725 MHz band			
Channel	Frequency	Channel	Frequency
106	5530MHz	138	5690MHz
For 802.11ac(80M) Operation in the 5725MHz ~5850 MHz band			
Channel	Frequency	NA	NA
155	5775MHz	NA	NA

6.4 Description of Support Units

The EUT has been tested with associated equipment below.

support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
Toucan smart socket	Sky Light Imaging	TS100WU	FCC ID	Client

6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd.

Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China 518101

Telephone: +86 (0) 755 3368 3668 Fax:+86 (0) 755 3368 3385

No tests were sub-contracted.

6.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1910

Centre Testing International Group Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories..

A2LA-Lab Cert. No. 3061.01

Centre Testing International Group Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 886427

Centre Testing International Group Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 886427.

IC-Registration No.: 7408A-2

The 3m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408A-2 .

IC-Registration No.: 7408B-1

The 10m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408B-1.

NEMKO-Aut. No.: ELA503

Centre Testing International Group Co., Ltd. has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10.

VCCI

The Radiation 3 &10 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-4096.

Main Ports Conducted Interference Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-4563.

Telecommunication Ports Conducted Disturbance Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-2146.

The Radiation 3 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-758

6.7 Deviation from Standards

None.

6.8 Abnormalities from Standard Conditions

None.

6.9 Other Information Requested by the Customer

None.

6.10 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.31dB (30MHz-1GHz)
		0.57dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-12.75GHz)
4	Conduction emission	3.6dB (9kHz to 150kHz)
		3.2dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	2.8%
7	DC power voltages	0.025%

7 Equipment List

RF test system					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. Date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Signal Generator	Keysight	E8257D	MY53401106	04-01-2016	03-31-2017
Communication test set test set	Agilent	N4010A	MY51400230	04-01-2016	03-31-2017
Spectrum Analyzer	Keysight	N9010A	MY54510339	04-01-2016	03-31-2017
Signal Generator	Keysight	N5182B	MY53051549	04-01-2016	03-31-2017
High-pass filter	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-12-2016	01-11-2017
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-12-2016	01-11-2017
DC Power	Keysight	E3642A	MY54436035	04-01-2016	03-31-2017
PC-1	Lenovo	R4960d	---	04-01-2016	03-31-2017
BT&WI-FI Automatic control	R&S	OSP120	101374	04-01-2016	03-31-2017
RF control unit	JS Tonscend	JS0806-2	158060006	04-01-2016	03-31-2017
BT&WI-FI Automatic test software	JS Tonscend	JS1120-2	---	04-01-2016	03-31-2017

Conducted disturbance Test					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Receiver	R&S	ESCI	100009	06-16-2016	06-15-2017
Temperature/ Humidity Indicator	TAYLOR	1451	1905	04-27-2016	04-26-2017
Communication test set	Agilent	E5515C	GB47050534	04-01-2016	03-31-2017
Communication test set	R&S	CMW500	152394	04-01-2016	03-31-2017
LISN	R&S	ENV216	100098	06-16-2016	06-15-2017
LISN	schwarzbeck	NNLK8121	8121-529	06-16-2016	06-15-2017
Voltage Probe	R&S	ESH2-Z3	--	07-09-2014	07-07-2017
Current Probe	R&S	EZ17	100106	06-16-2016	06-15-2017
ISN	TESEQ GmbH	ISN T800	30297	01-29-2015	01-27-2017

3M Semi/full-anechoic Chamber					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
3M Chamber & Accessory Equipment	TDK	SAC-3	---	06-05-2016	06-05-2019
TRILOG Broadband Antenna	SCHWARZBECK	VULB9163	9163-484	05-23-2016	05-22-2017
Microwave Preamplifier	Agilent	8449B	3008A02425	02-04-2016	02-03-2017
Horn Antenna	ETS-LINDGREN	3117	00057407	07-20-2015	07-18-2018
Loop Antenna	ETS	6502	00071730	07-30-2015	07-28-2017
Microwave Preamplifier	A.H.SYSTEMS	PAP-1840-60	6041.6042	06-30-2015	06-28-2018
Horn Antenna	A.H.SYSTEMS	SAS-574	374	06-30-2015	06-28-2018
Microwave Preamplifier	A.H.SYSTEMS	PAP-1840-60	6041.6042	06-30-2015	06-28-2018
Horn Antenna	A.H.SYSTEMS	SAS-574	374	06-30-2015	06-28-2018
Spectrum Analyzer	R&S	FSP40	100416	06-16-2016	06-15-2017
Receiver	R&S	ESCI	100435	06-16-2016	06-15-2017
Multi device Controller	maturo	NCD/070/10711112	---	01-12-2016	01-11-2017
LISN	schwarzbeck	NNBM8125	81251547	06-16-2016	06-15-2017
LISN	schwarzbeck	NNBM8125	81251548	06-16-2016	06-15-2017
Signal Generator	Agilent	E4438C	MY45095744	04-01-2016	03-31-2017
Signal Generator	Keysight	E8257D	MY53401106	04-01-2016	03-31-2017
Temperature/ Humidity Indicator	TAYLOR	1451	1905	04-27-2016	04-26-2017
Cable line	Fulai(7M)	SF106	5219/6A	01-12-2016	01-11-2017
Cable line	Fulai(6M)	SF106	5220/6A	01-12-2016	01-11-2017
Cable line	Fulai(3M)	SF106	5216/6A	01-12-2016	01-11-2017
Cable line	Fulai(3M)	SF106	5217/6A	01-12-2016	01-11-2017
High-pass filter	Sinoscite	FL3CX03WG18NM12-0398-002	---	01-12-2016	01-11-2017
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX01CA09CL12-0395-001	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX01CA08CL12-0393-001	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX02CA04CL12-0396-002	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX02CA03CL12-0394-001	---	01-12-2016	01-11-2017

8 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15E (2015)	Subpart E—Unlicensed National Information Infrastructure
2	ANSI C63.10-2013	American National Standard for Testing Unlicesed Wireless Devices
3	KDB789033 D02 General UNII Test Procedures New Rules v01r03	Guidelines for compliance testing of unlicensed national information infrastructure (U-NII) device part 15 subpart E
4	KDB 644545 D03 v01	Guidance for IEEE 802.11ac

Test Results List:

Test Requirement	Test method	Test item	Verdict	Note
Part15E Section 15.407 (a)(1)(2)	KDB789033	Emission Bandwidth and Occupied Bandwidth	PASS	Appendix B)
Part15E Section 15.407 (a)(1)(2)(4)(h)(1)	KDB789033	Conducted Output Power and transmit power control mechanism	PASS	Appendix C)
Part15E Section 15.407 (a)(1)(2)(5)	KDB789033	Power Spectral Density	PASS	Appendix D)
Part15E Section 15.407 (b)(1)to(6)	KDB789033	Band Edge Measurements	PASS	Appendix E)
Part15E Section 15.407 (g)	KDB789033	Frequency stability	PASS	Appendix F)
Part15C Section 15.203	ANSI C63.10	Antenna Requirement	PASS	Appendix G)
Part15E Section 15.407 (c)	Section 15.407	Operation in the absence of information to the transmit	PASS	Appendix H)
Part15E Section 15.407 (b)(6)	ANSI C63.10	AC Power Line Conducted Emission	PASS	Appendix I)
Part15E Section 15.407 (b)(6)(7)(8)	KDB789033	Restricted bands around fundamental frequency (Radiated Emission)	PASS	Appendix J)
Part15E Section 15.407 (b)(6)(7)(8)	KDB789033	Unwanted Emissions in the Restricted Bands	PASS	Appendix K)
Part15E Section 15.407 (b)(1)(2)(3)(5)	KDB789033	Unwanted Emissions that fall Outside of the Restricted Bands	PASS	Appendix L)

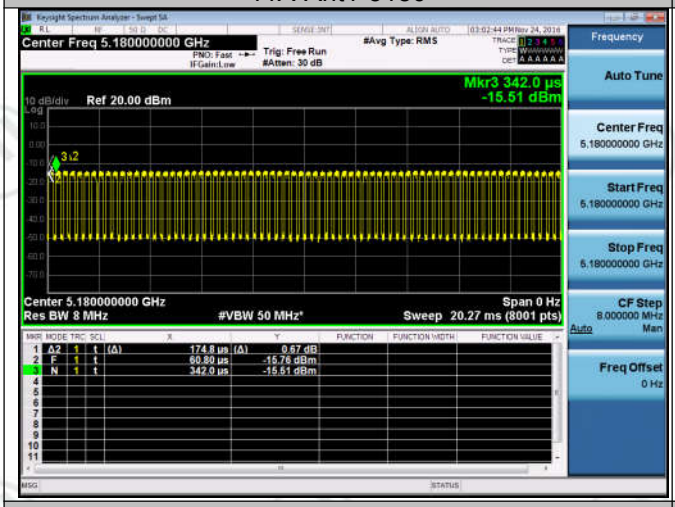
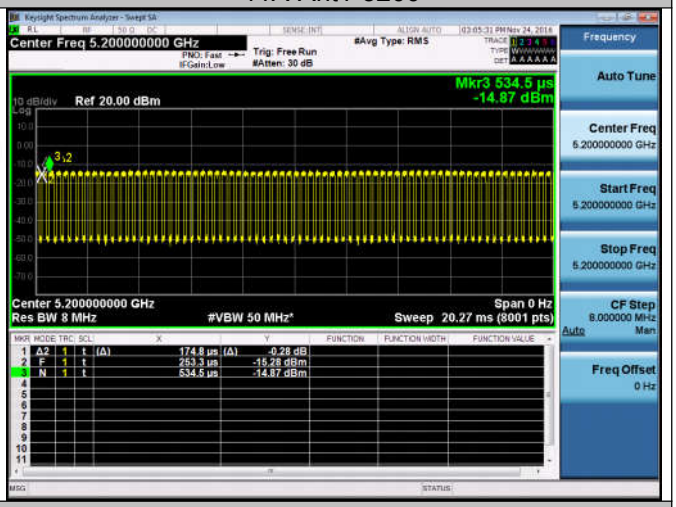
Appendix A): Duty Cycle

Result Table

Test Mode	Antenna	Channel	Duty Cycle[%]	Verdict
11A	Ant1	5180	62.16	PASS
11A	Ant1	5200	62.16	PASS
11A	Ant1	5240	62.16	PASS
11A	Ant1	5260	62.16	PASS
11A	Ant1	5280	62.16	PASS
11A	Ant1	5320	62.16	PASS
11A	Ant1	5500	62.16	PASS
11A	Ant1	5580	62.16	PASS
11A	Ant1	5700	62.16	PASS
11A	Ant1	5745	62.16	PASS
11A	Ant1	5785	62.16	PASS
11A	Ant1	5825	62.16	PASS
11N20SISO	Ant1	5180	92.59	PASS
11N20SISO	Ant1	5200	92.43	PASS
11N20SISO	Ant1	5240	92.59	PASS
11N20SISO	Ant1	5260	92.43	PASS
11N20SISO	Ant1	5280	92.61	PASS
11N20SISO	Ant1	5320	92.59	PASS
11N20SISO	Ant1	5500	92.59	PASS
11N20SISO	Ant1	5580	92.59	PASS
11N20SISO	Ant1	5700	92.59	PASS
11N20SISO	Ant1	5745	92.43	PASS
11N20SISO	Ant1	5785	92.59	PASS
11N20SISO	Ant1	5825	92.59	PASS
11N40SISO	Ant1	5190	86.09	PASS
11N40SISO	Ant1	5230	86.09	PASS
11N40SISO	Ant1	5270	86.09	PASS
11N40SISO	Ant1	5310	86.09	PASS
11N40SISO	Ant1	5510	86.09	PASS
11N40SISO	Ant1	5550	86.09	PASS
11N40SISO	Ant1	5670	86.09	PASS
11N40SISO	Ant1	5755	86.09	PASS
11N40SISO	Ant1	5795	86.09	PASS
11AC20SISO	Ant1	5180	92.64	PASS
11AC20SISO	Ant1	5200	92.63	PASS
11AC20SISO	Ant1	5240	92.64	PASS
11AC20SISO	Ant1	5260	92.63	PASS
11AC20SISO	Ant1	5280	92.63	PASS
11AC20SISO	Ant1	5320	92.64	PASS
11AC20SISO	Ant1	5500	92.64	PASS
11AC20SISO	Ant1	5580	92.63	PASS
11AC20SISO	Ant1	5700	92.64	PASS

11AC20SISO	Ant1	5745	92.64	PASS
11AC20SISO	Ant1	5785	92.63	PASS
11AC20SISO	Ant1	5825	92.64	PASS
11AC40SISO	Ant1	5190	86.18	PASS
11AC40SISO	Ant1	5230	86.14	PASS
11AC40SISO	Ant1	5270	86.14	PASS
11AC40SISO	Ant1	5310	86.18	PASS
11AC40SISO	Ant1	5510	86.14	PASS
11AC40SISO	Ant1	5550	86.14	PASS
11AC40SISO	Ant1	5670	86.18	PASS
11AC40SISO	Ant1	5755	86.18	PASS
11AC40SISO	Ant1	5795	86.14	PASS
11AC80SISO	Ant1	5210	75.44	PASS
11AC80SISO	Ant1	5290	75.44	PASS
11AC80SISO	Ant1	5530	75.44	PASS
11AC80SISO	Ant1	5775	75.44	PASS

Test Graph

11A-Ant1-5180	11A-Ant1-5200
	
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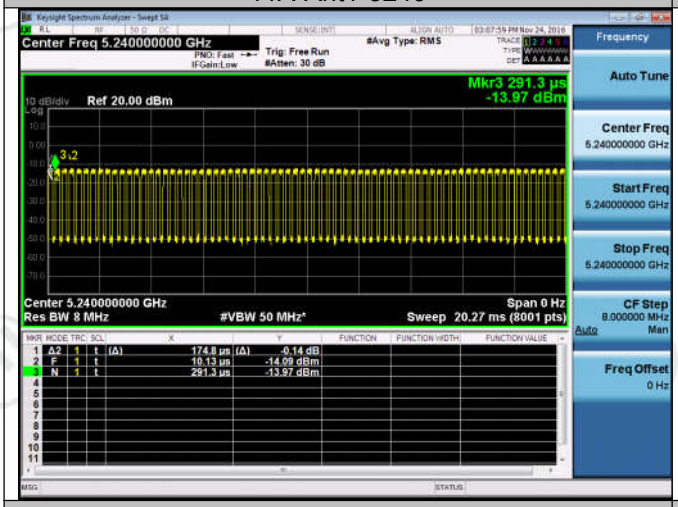	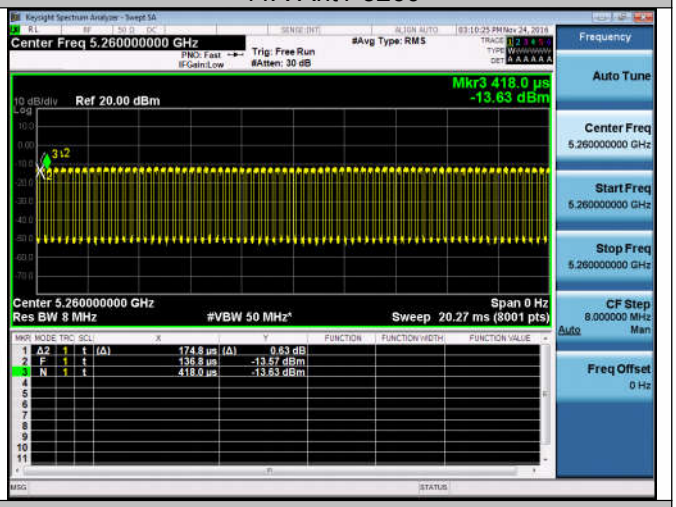
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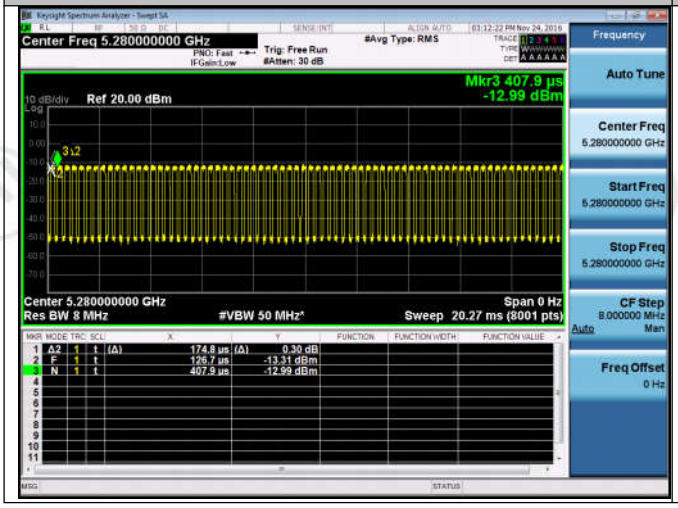	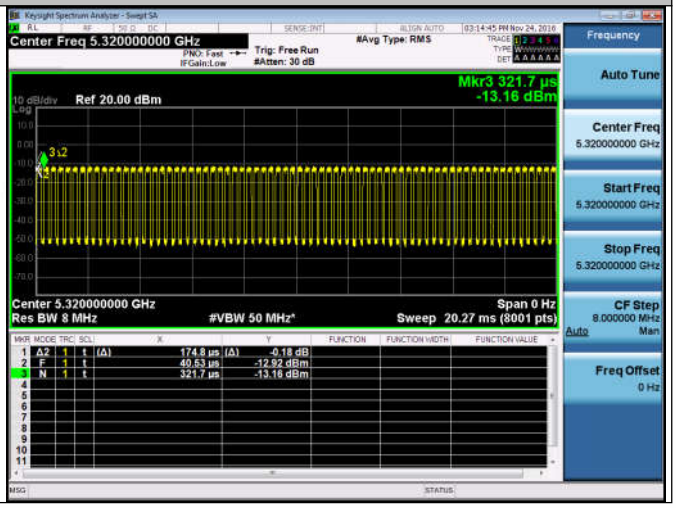

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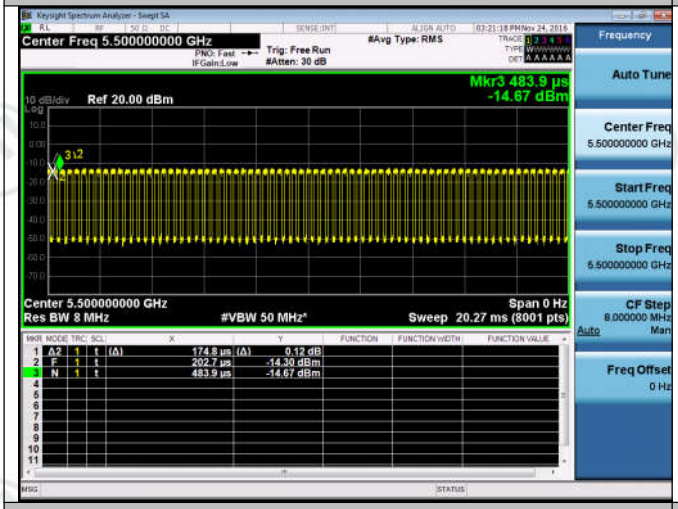	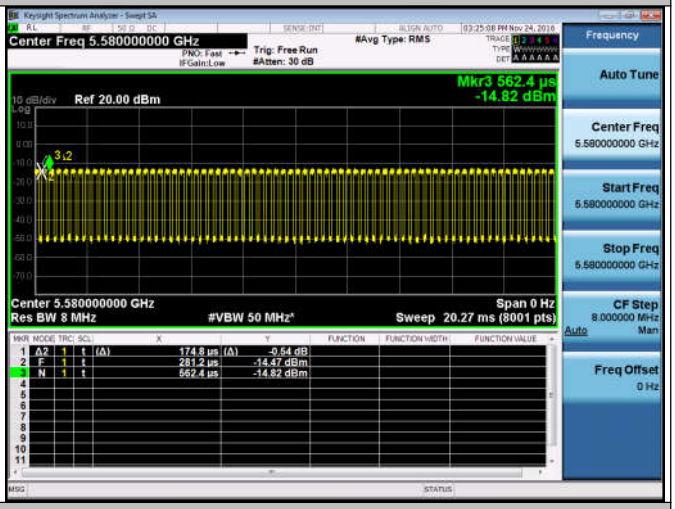
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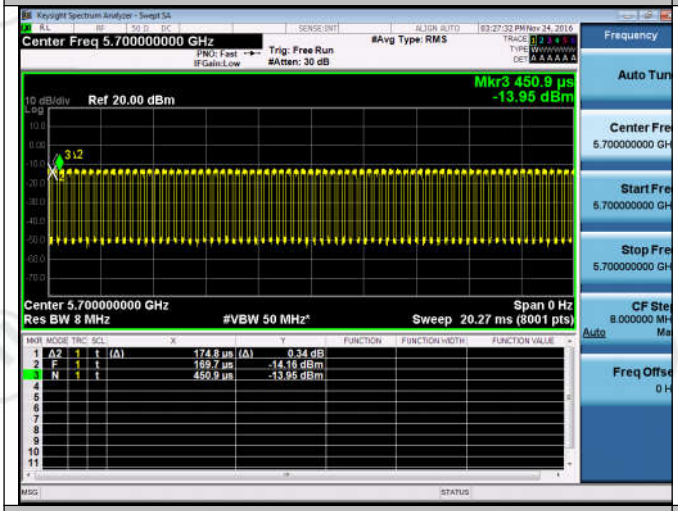	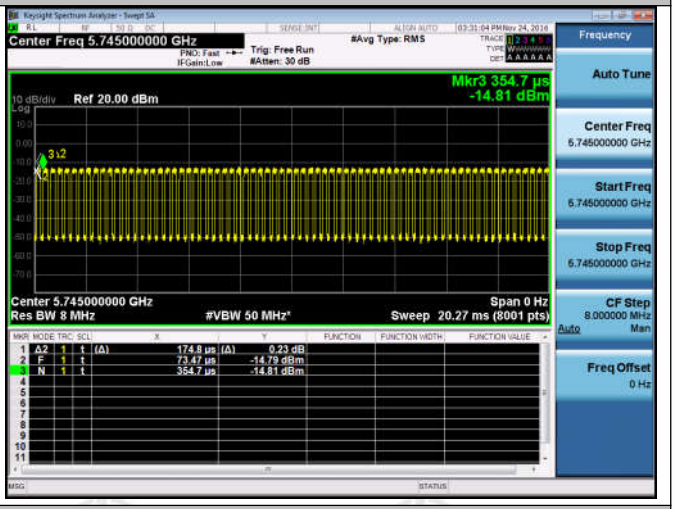
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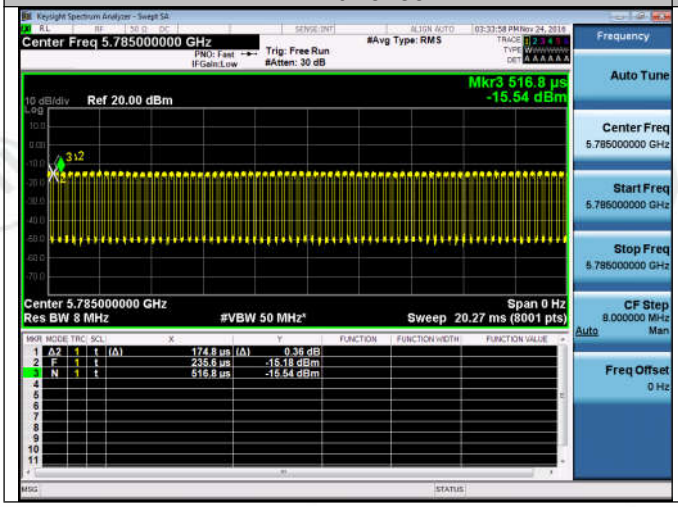	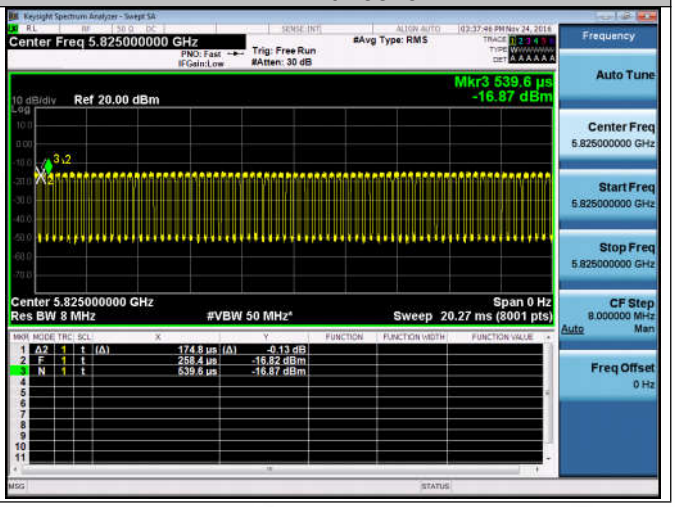

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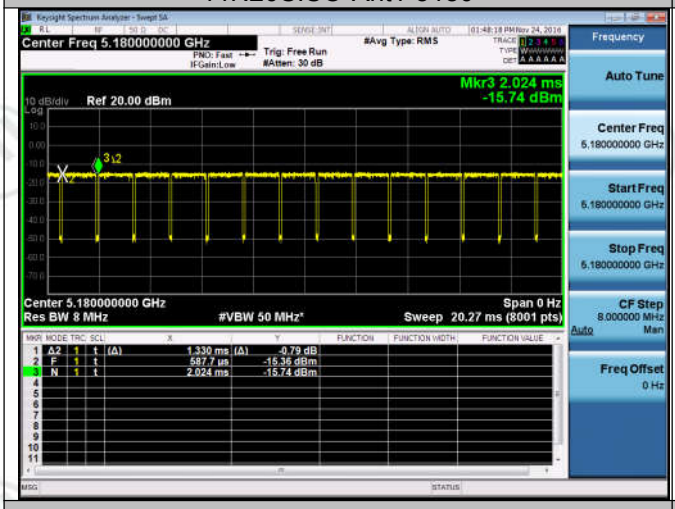	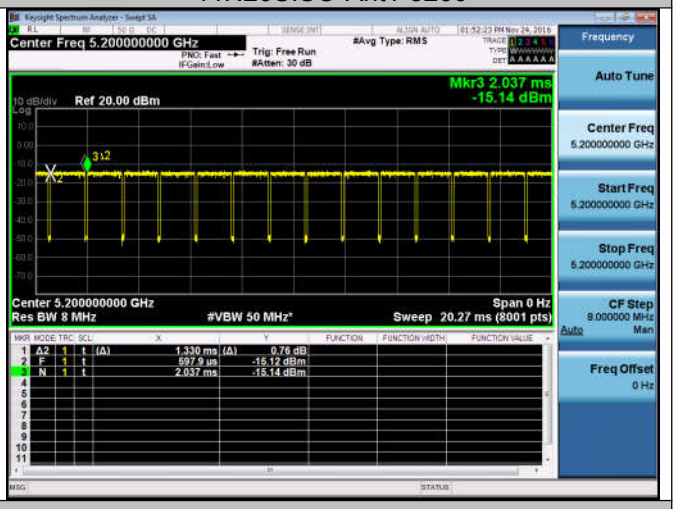
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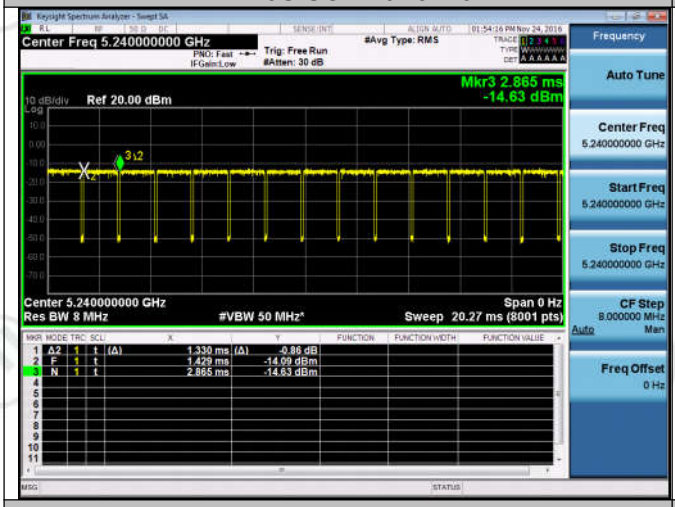	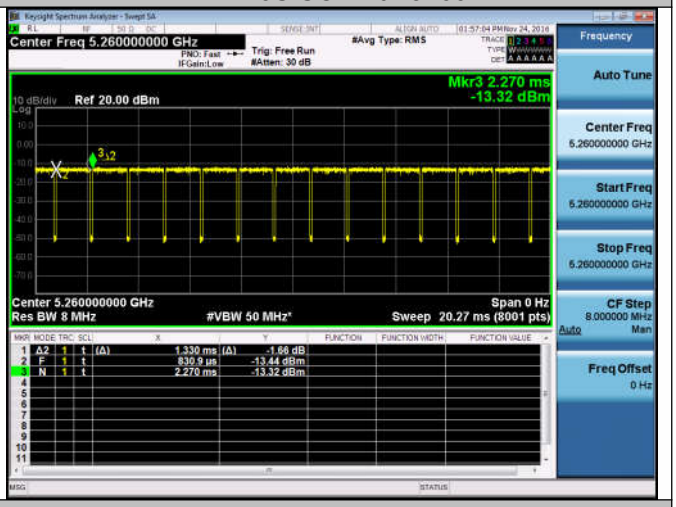
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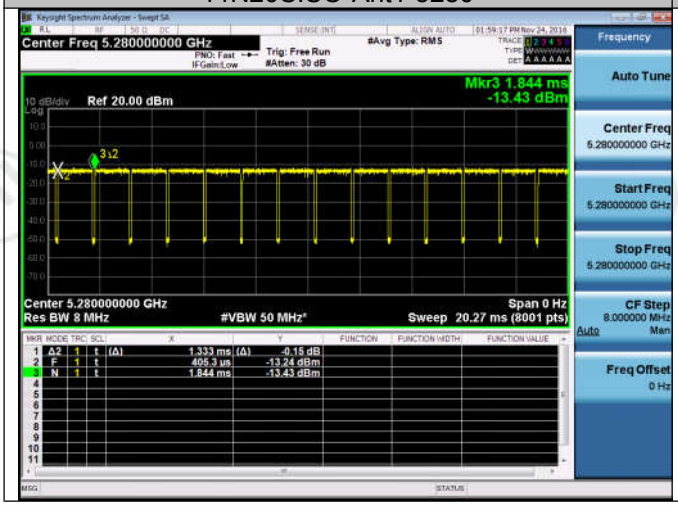	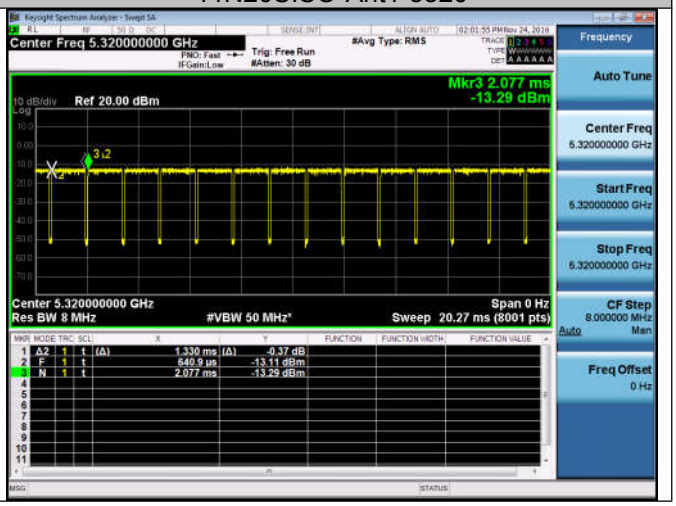

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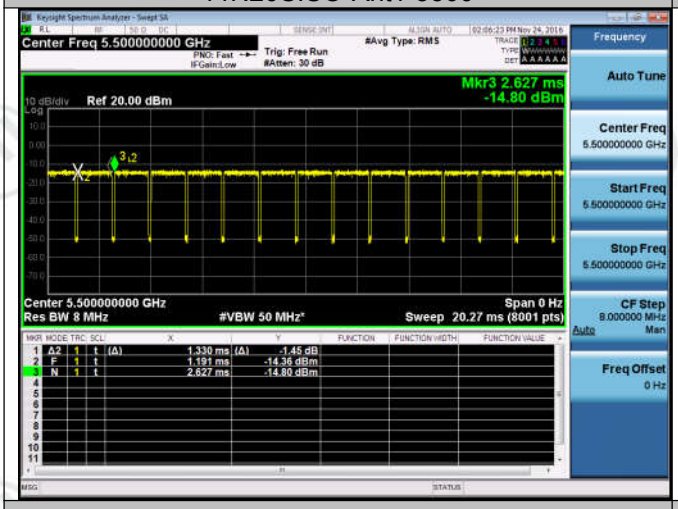	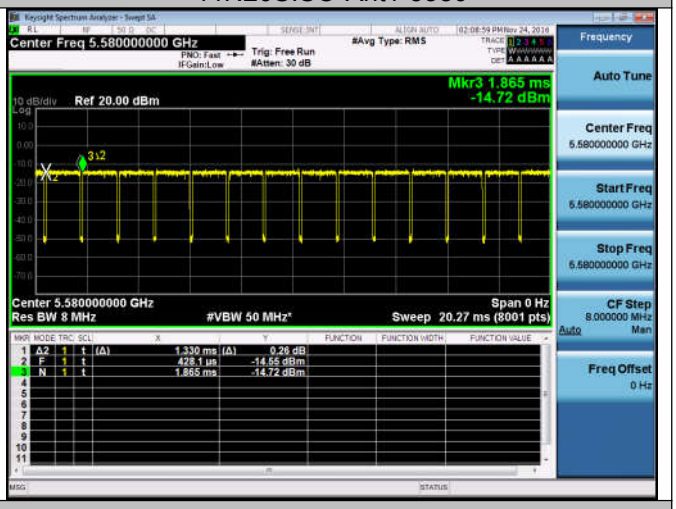
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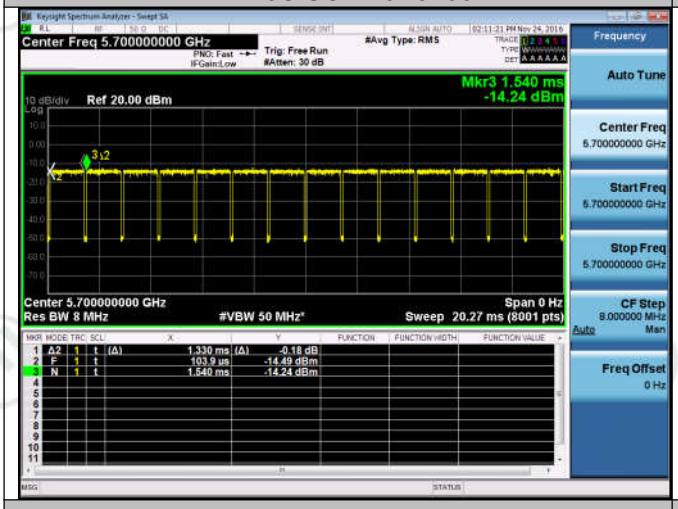	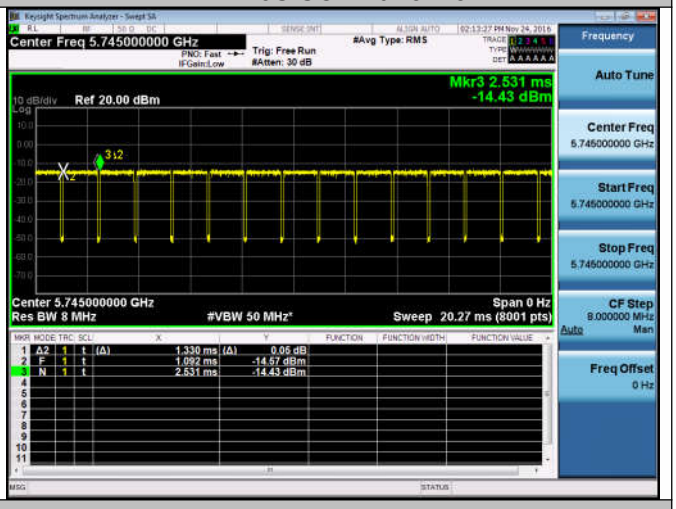
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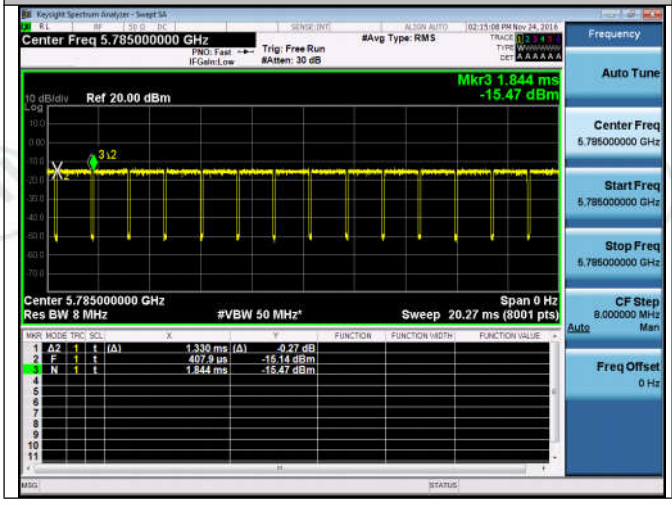	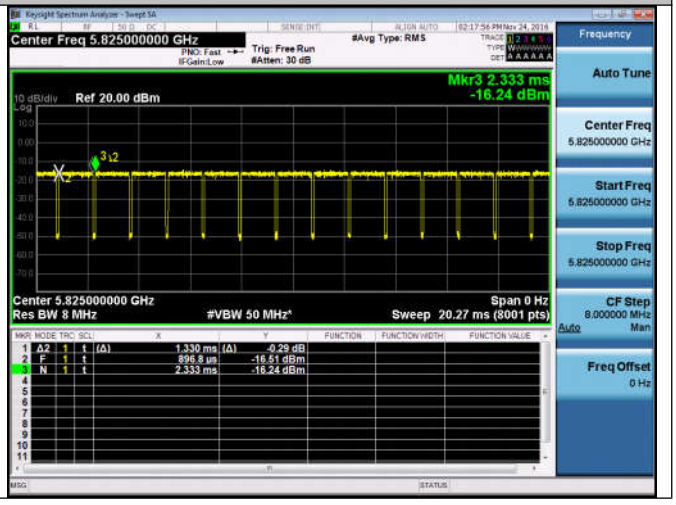

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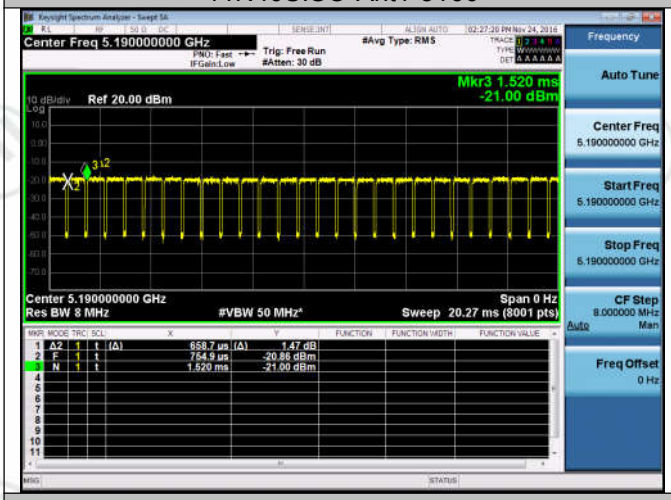	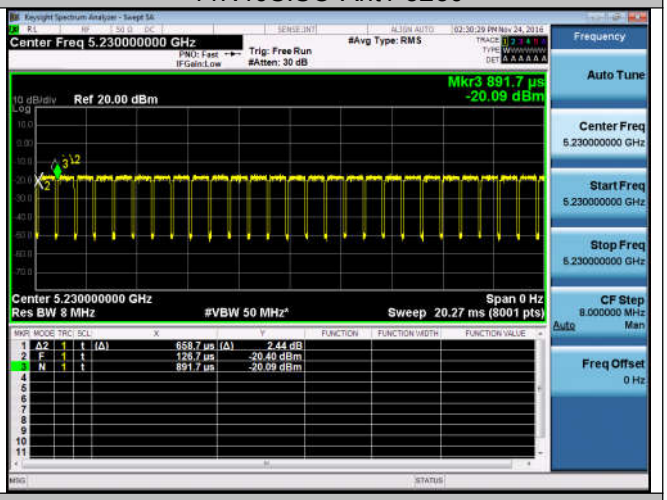
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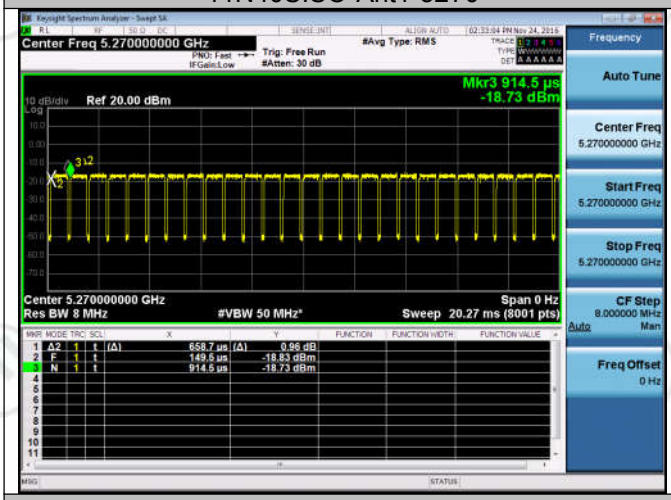	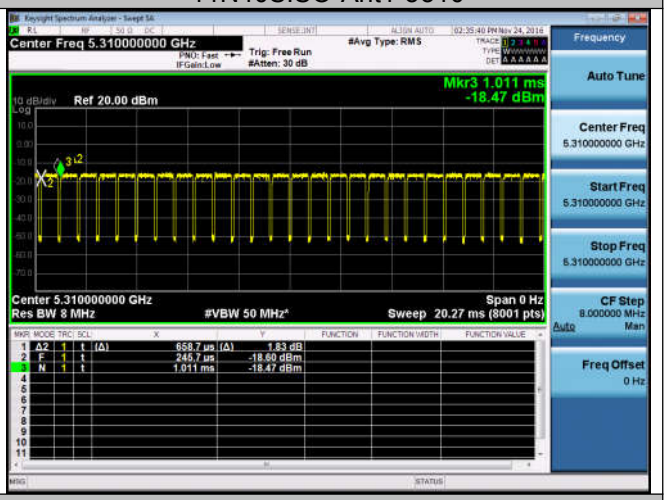
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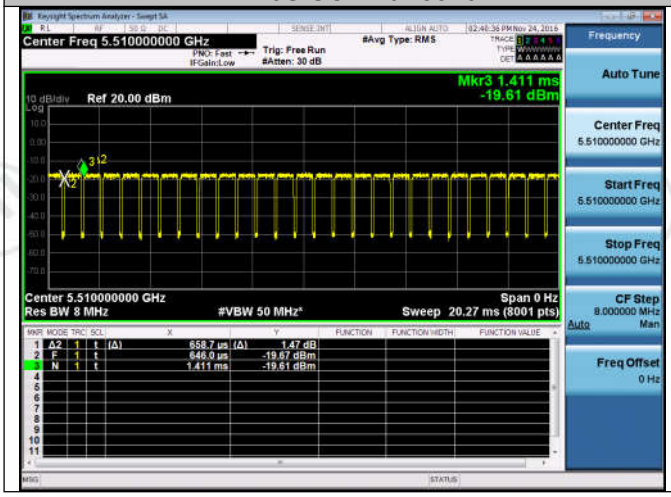	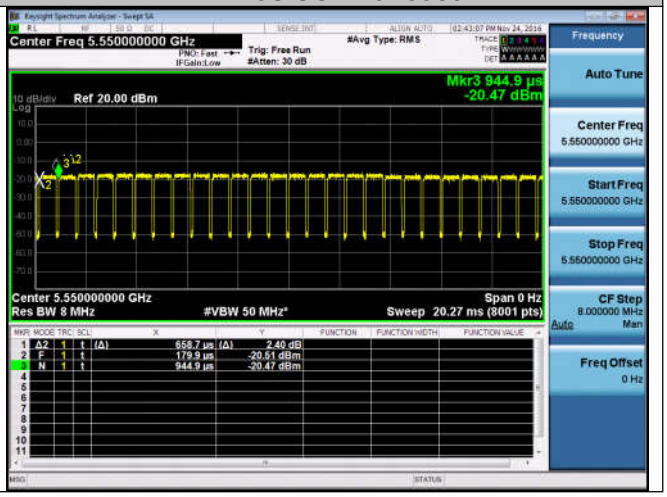

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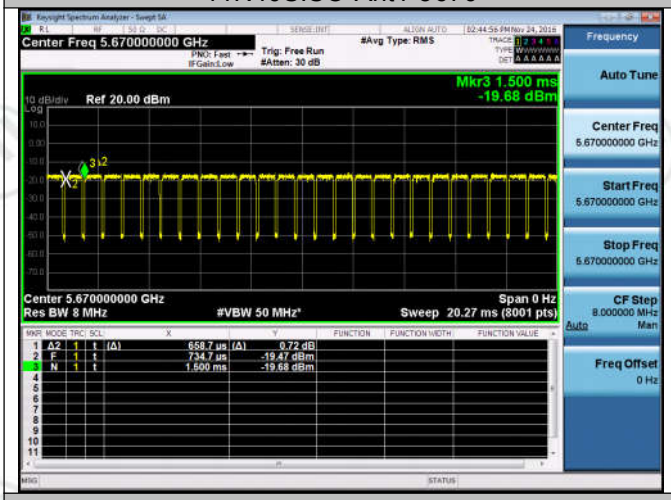	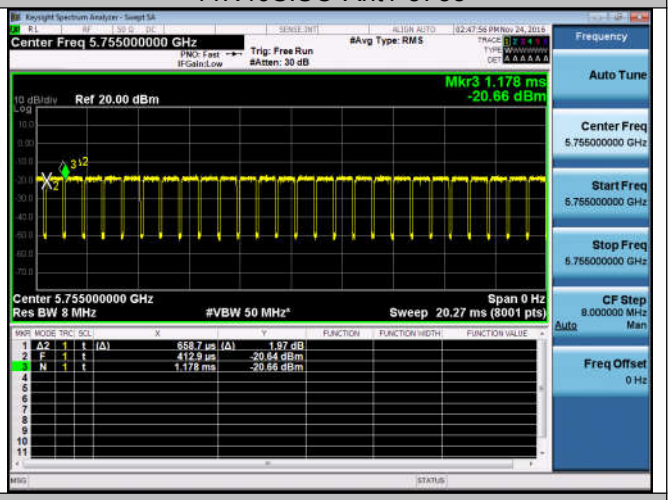
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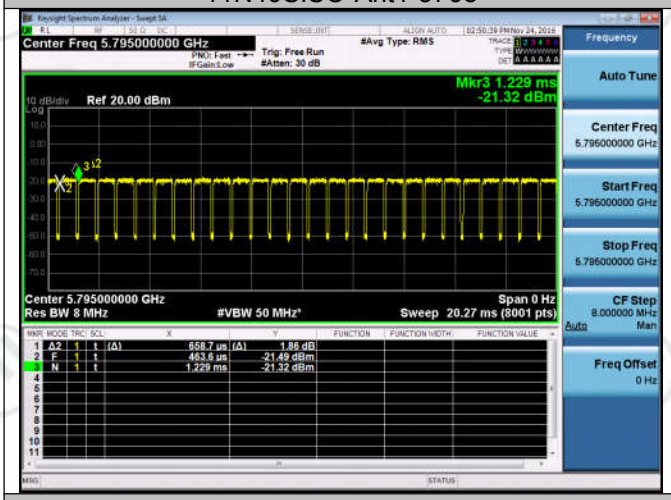	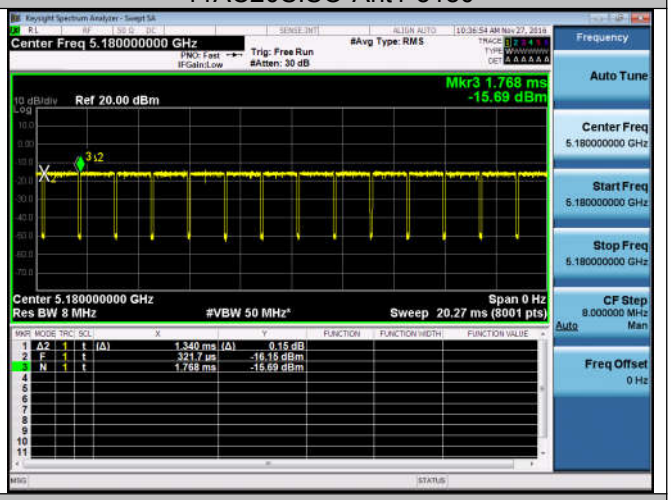
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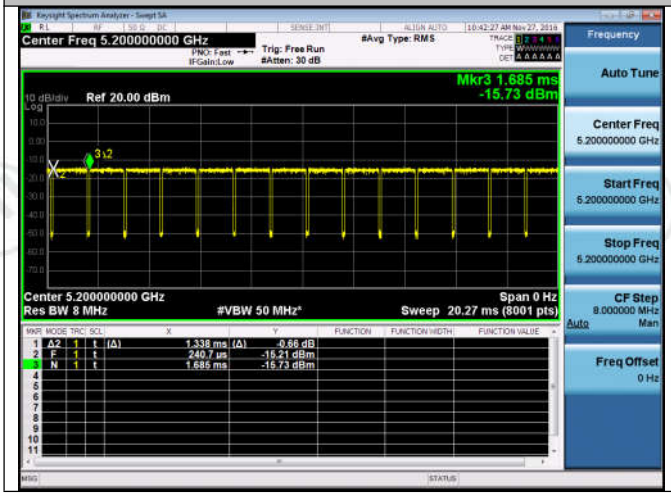	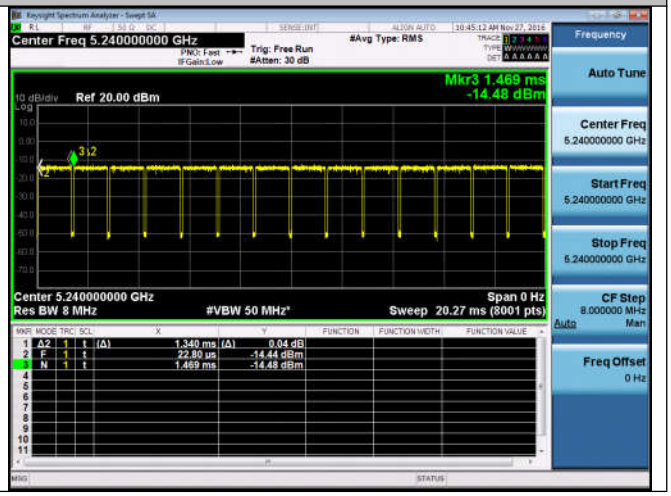

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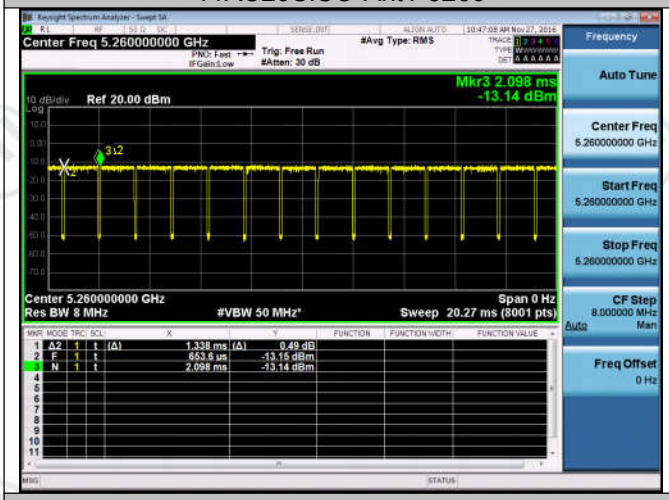	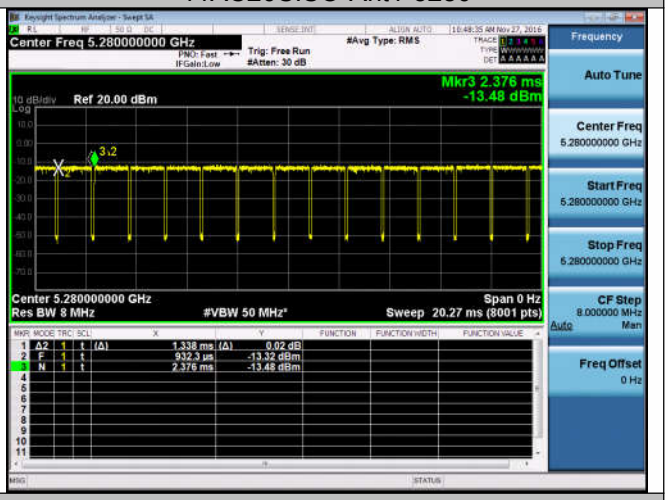
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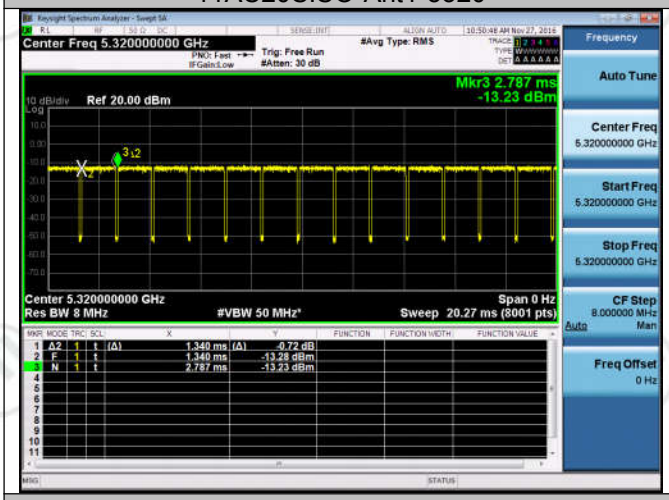	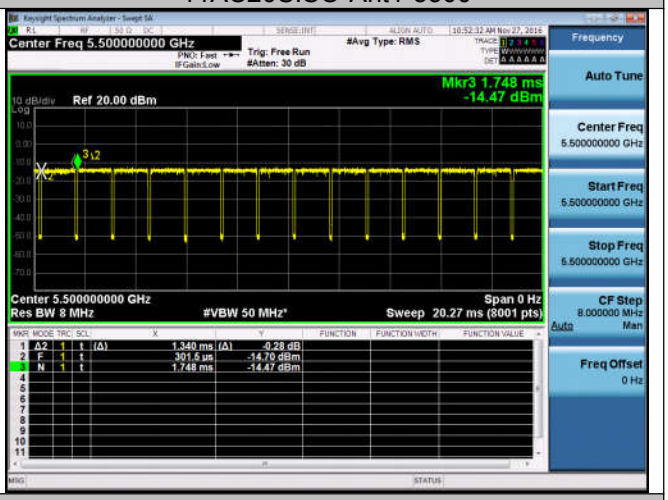
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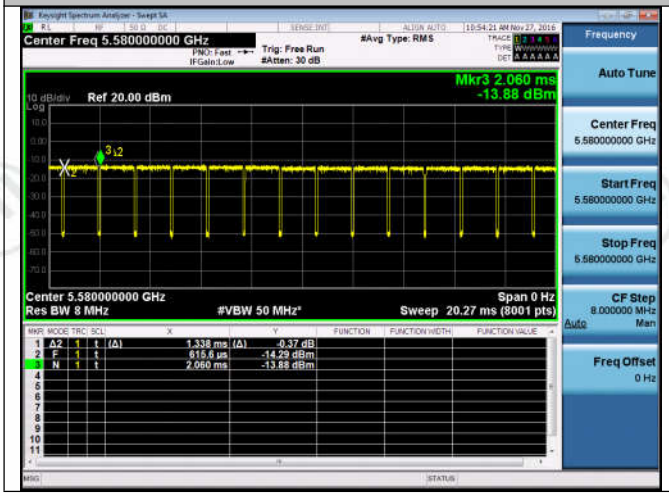	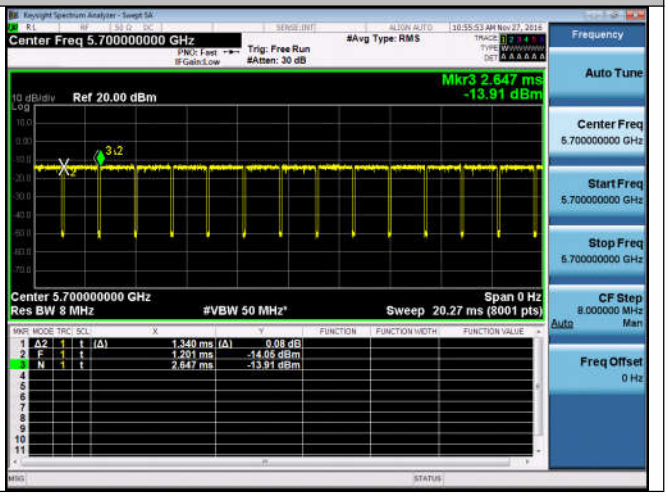

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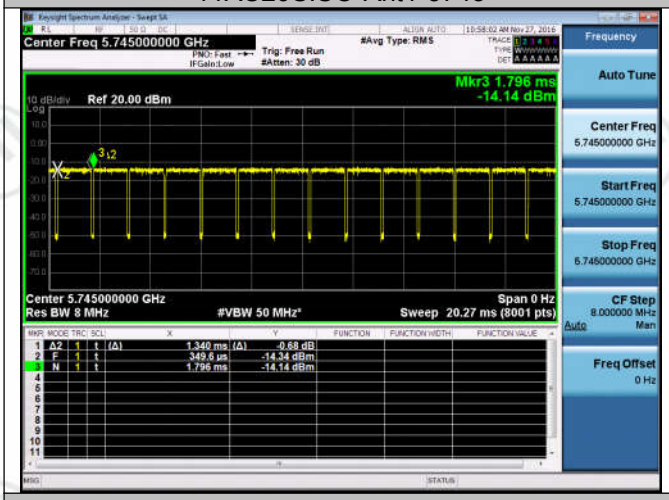	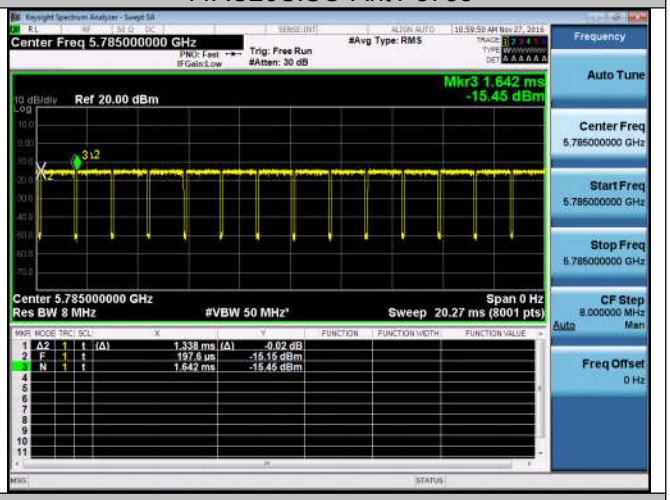
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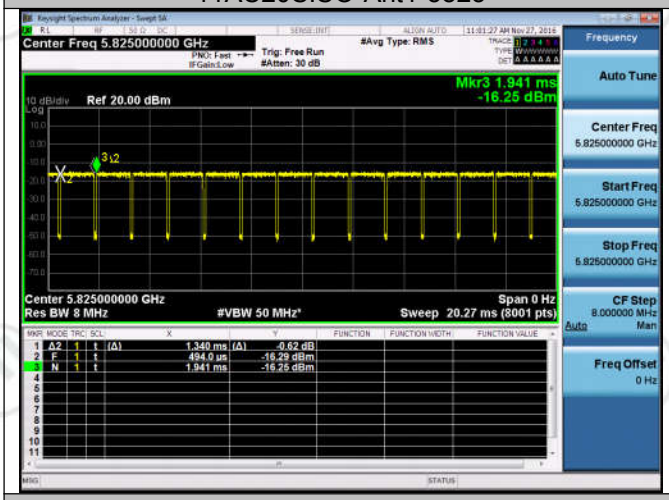	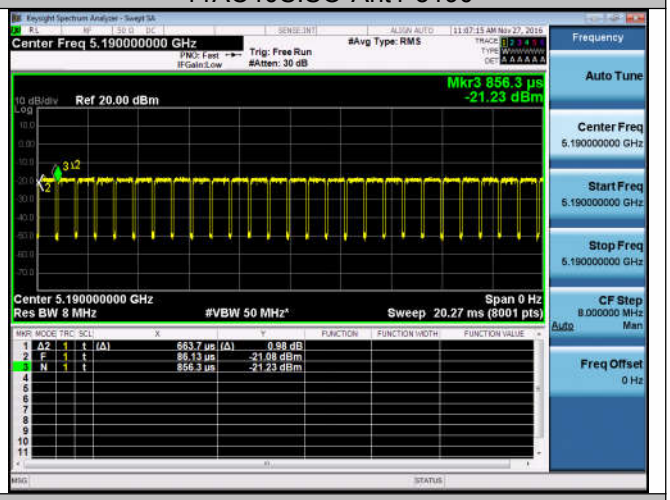
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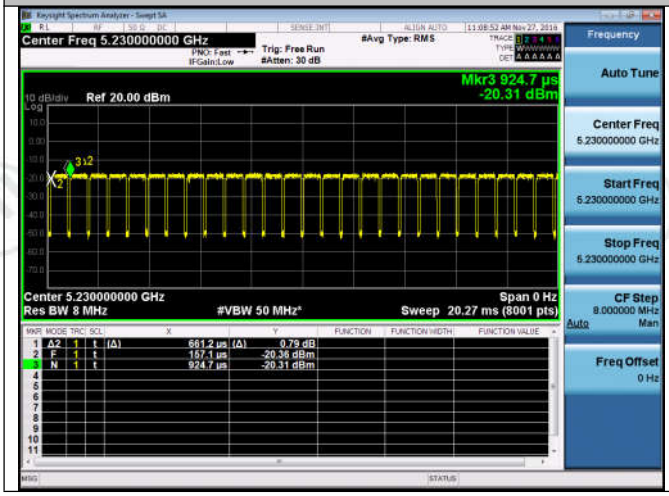	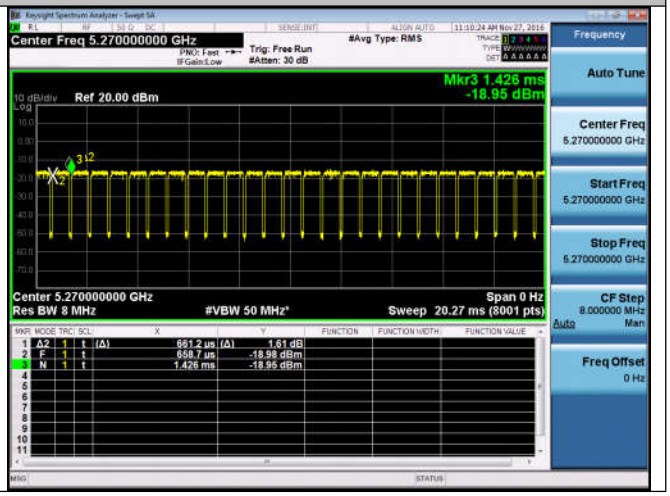

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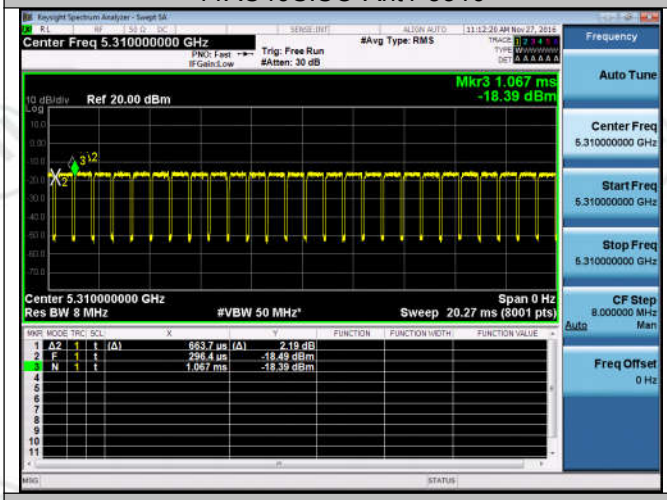	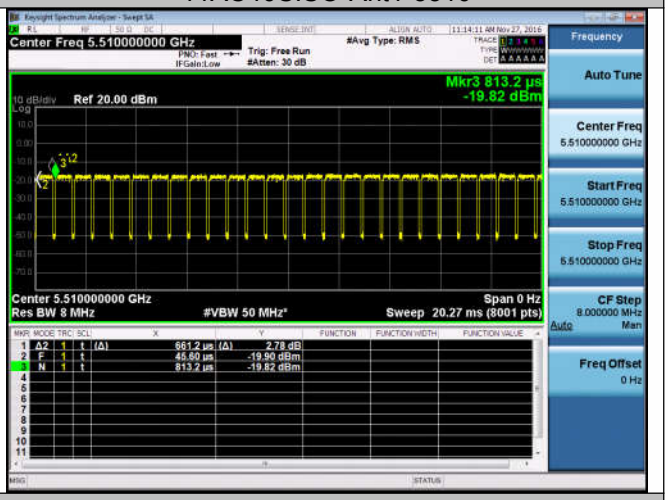
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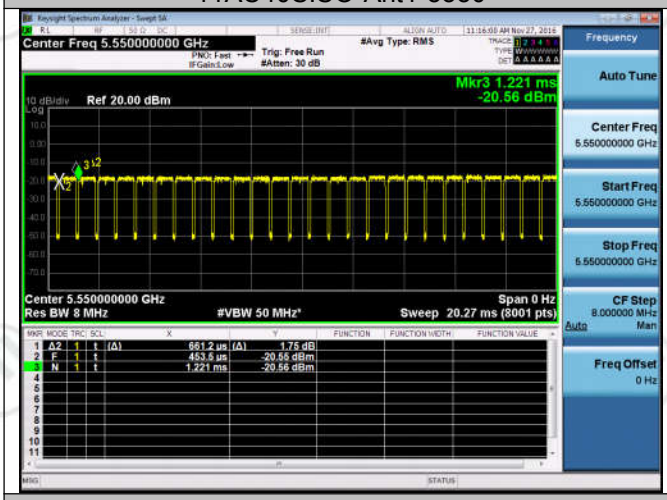	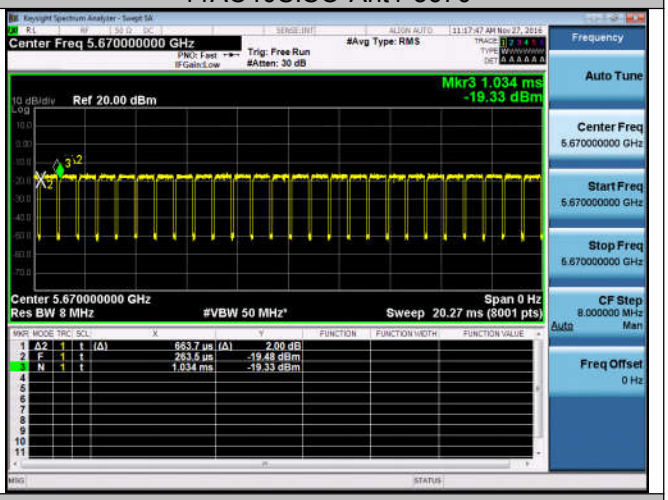
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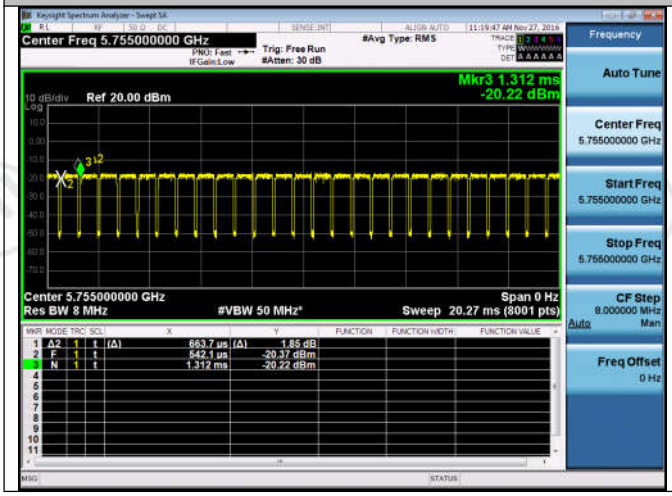	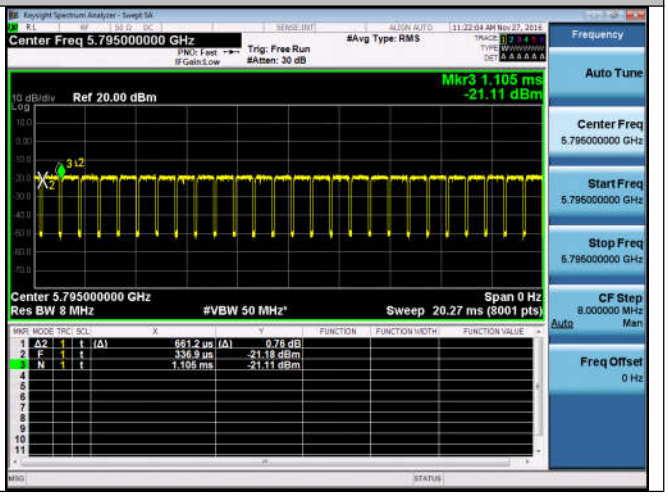

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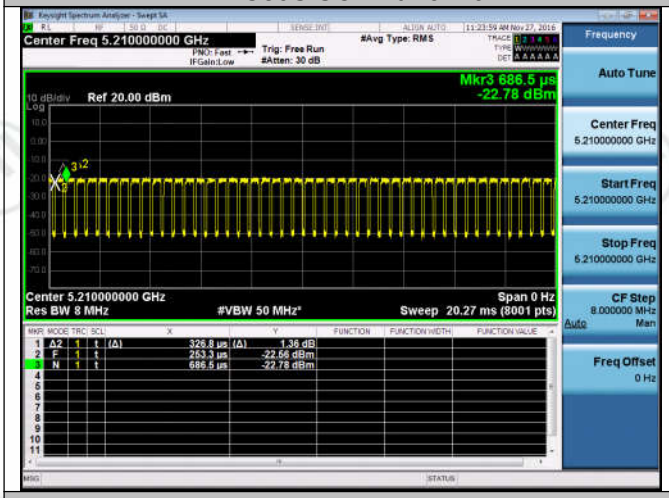	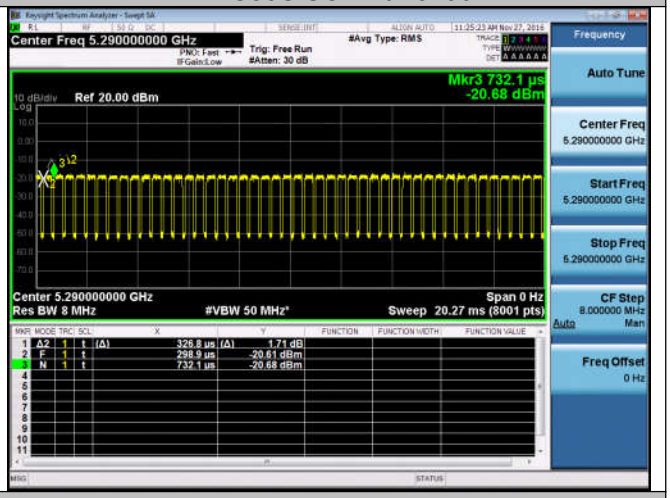
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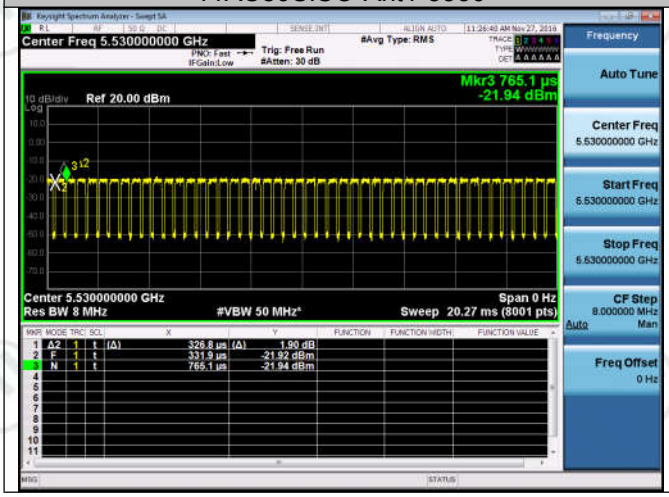
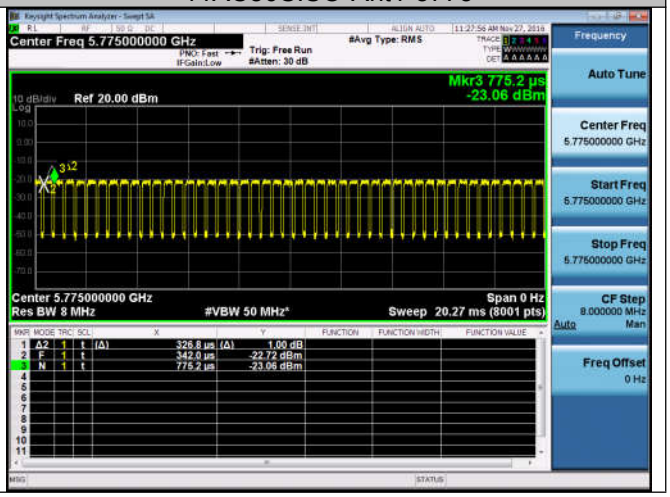
	

Appendix B): Emission Bandwidth

Result Table

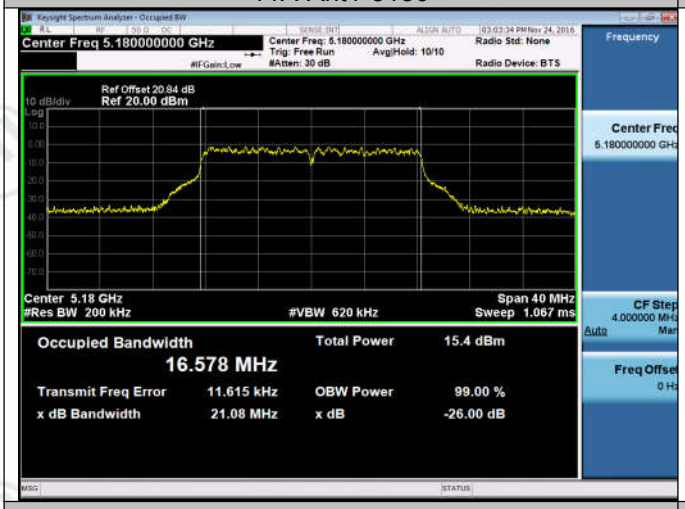
Test Mode	Antenna	Channel	26dB EBW[MHz]	99% OBW[MHz]	Verdict
11A	Ant1	5180	21.08	16.578	PASS
11A	Ant1	5200	20.72	16.545	PASS
11A	Ant1	5240	21.03	16.551	PASS
11A	Ant1	5260	20.71	16.553	PASS
11A	Ant1	5280	20.98	16.567	PASS
11A	Ant1	5320	21.12	16.654	PASS
11A	Ant1	5500	21.20	16.606	PASS
11A	Ant1	5580	20.72	16.529	PASS
11A	Ant1	5700	20.62	16.518	PASS
11N20SISO	Ant1	5180	21.29	17.891	PASS
11N20SISO	Ant1	5200	21.30	17.842	PASS
11N20SISO	Ant1	5240	21.27	17.871	PASS
11N20SISO	Ant1	5260	21.59	17.833	PASS
11N20SISO	Ant1	5280	21.32	17.869	PASS
11N20SISO	Ant1	5320	21.43	17.791	PASS
11N20SISO	Ant1	5500	21.86	17.914	PASS
11N20SISO	Ant1	5580	21.60	17.922	PASS
11N20SISO	Ant1	5700	22.09	17.895	PASS
11N40SISO	Ant1	5190	40.49	36.428	PASS
11N40SISO	Ant1	5230	40.28	36.487	PASS
11N40SISO	Ant1	5270	40.12	36.380	PASS
11N40SISO	Ant1	5310	40.11	36.345	PASS
11N40SISO	Ant1	5510	39.70	36.300	PASS
11N40SISO	Ant1	5550	52.85	36.427	PASS
11N40SISO	Ant1	5670	40.10	36.390	PASS
11AC20SISO	Ant1	5180	21.42	17.801	PASS
11AC20SISO	Ant1	5200	21.29	17.845	PASS
11AC20SISO	Ant1	5240	21.34	17.882	PASS
11AC20SISO	Ant1	5260	21.19	17.833	PASS
11AC20SISO	Ant1	5280	21.10	17.811	PASS
11AC20SISO	Ant1	5320	21.03	17.844	PASS
11AC20SISO	Ant1	5500	21.26	17.872	PASS
11AC20SISO	Ant1	5580	21.54	17.873	PASS
11AC20SISO	Ant1	5700	21.05	17.830	PASS
11AC40SISO	Ant1	5190	39.74	36.390	PASS
11AC40SISO	Ant1	5230	39.86	36.394	PASS
11AC40SISO	Ant1	5270	39.53	36.282	PASS
11AC40SISO	Ant1	5310	39.74	36.328	PASS
11AC40SISO	Ant1	5510	39.91	36.289	PASS
11AC40SISO	Ant1	5550	39.85	36.416	PASS
11AC40SISO	Ant1	5670	39.82	36.398	PASS
11AC80SISO	Ant1	5210	97.06	76.056	PASS

11AC80SISO	Ant1	5290	80.27	75.701	PASS
11AC80SISO	Ant1	5530	81.39	75.878	PASS

Test Mode	Antenna	Channel	6dB EBW[MHz]	99% OBW[MHz]	Verdict
11A	Ant1	5745	16.45	16.476	PASS
11A	Ant1	5785	16.09	16.432	PASS
11A	Ant1	5825	16.13	16.453	PASS
11N20SISO	Ant1	5745	17.59	17.741	PASS
11N20SISO	Ant1	5785	17.59	17.737	PASS
11N20SISO	Ant1	5825	17.61	17.743	PASS
11N40SISO	Ant1	5755	36.15	36.241	PASS
11N40SISO	Ant1	5795	36.30	36.241	PASS
11AC20SISO	Ant1	5745	17.54	17.716	PASS
11AC20SISO	Ant1	5785	17.53	17.722	PASS
11AC20SISO	Ant1	5825	17.61	17.708	PASS
11AC40SISO	Ant1	5755	36.34	36.254	PASS
11AC40SISO	Ant1	5795	36.33	36.220	PASS
11AC80SISO	Ant1	5775	75.69	75.765	PASS

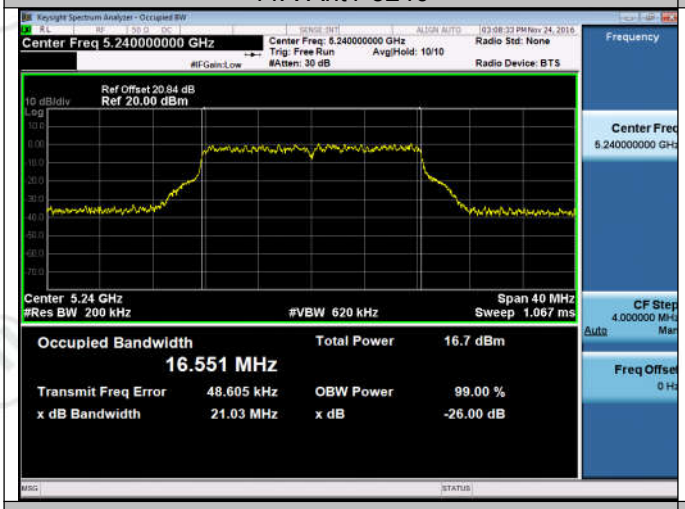
Test Graph

11A-Ant1-5180

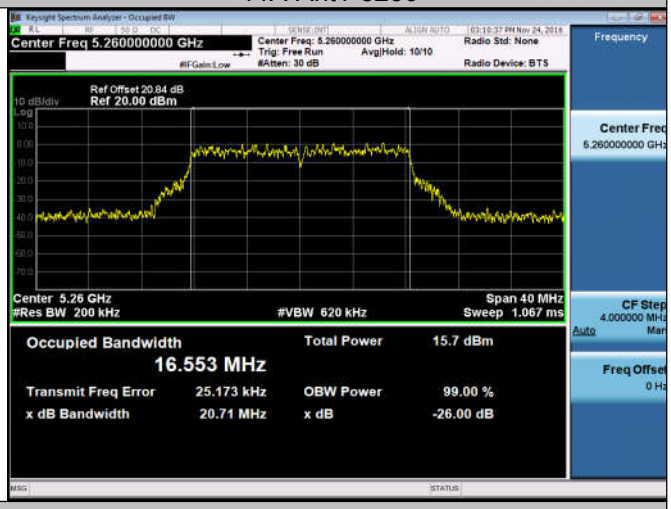


11A-Ant1-5200

11A-Ant1-5240

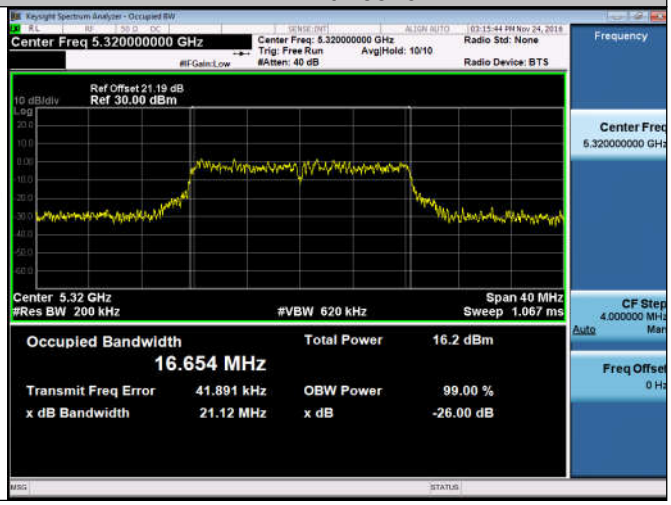


11A-Ant1-5260



11A-Ant1-5280

11A-Ant1-5320



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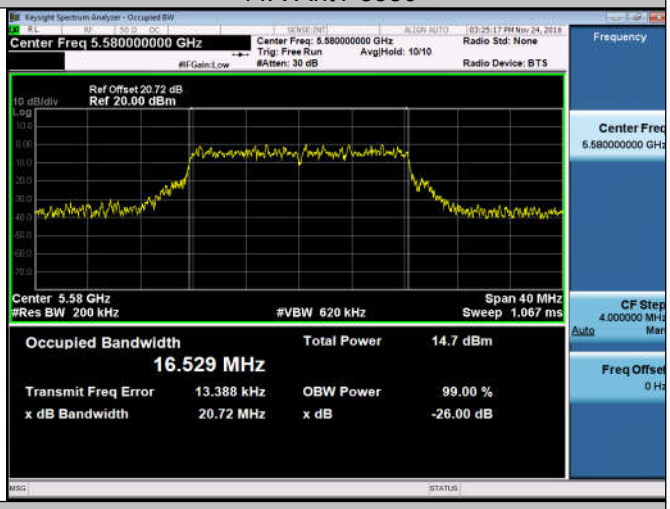
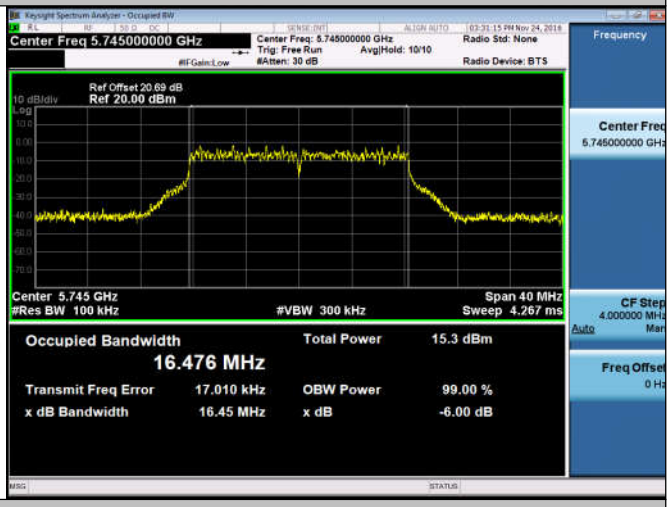


11A-Ant1-5700

11A-Ant1-5745



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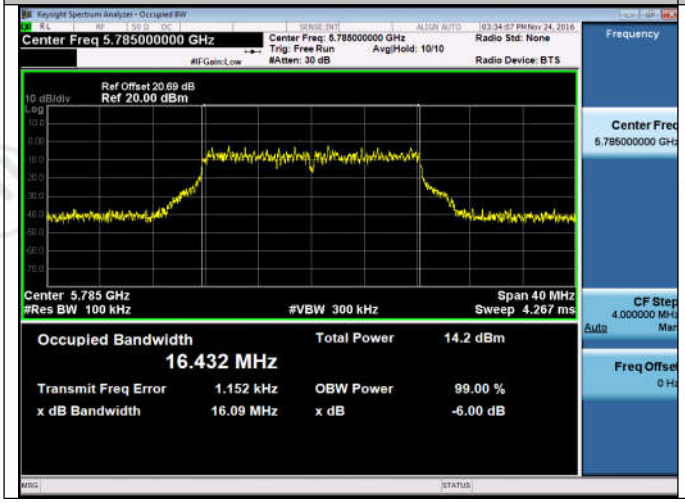

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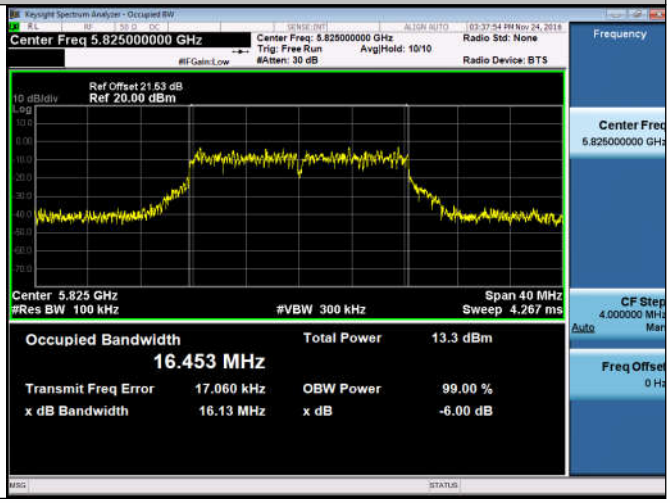

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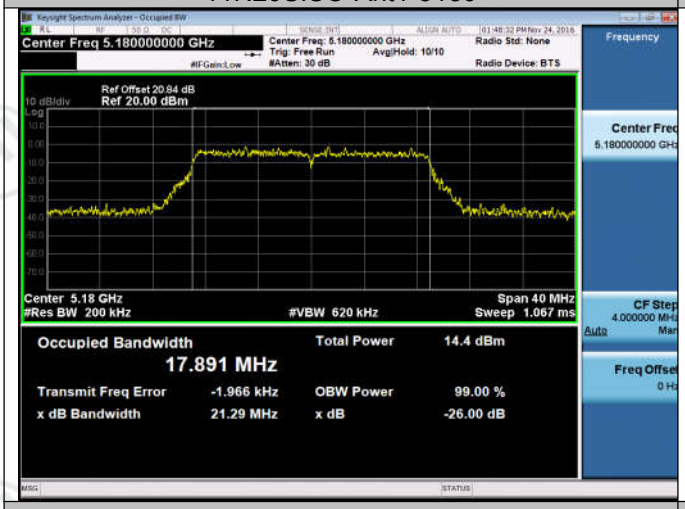

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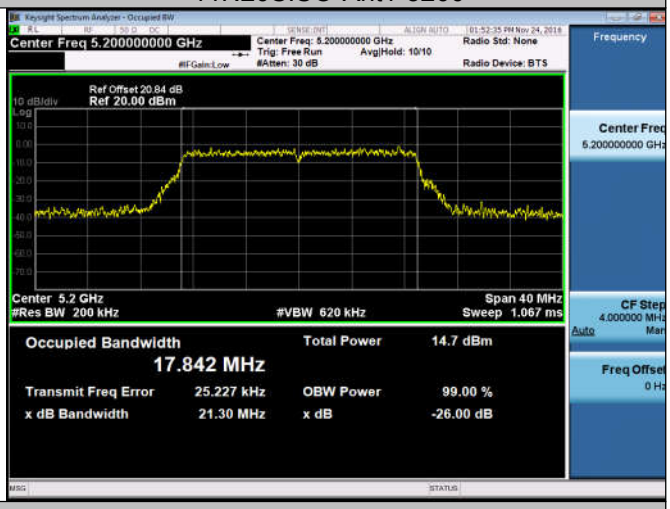

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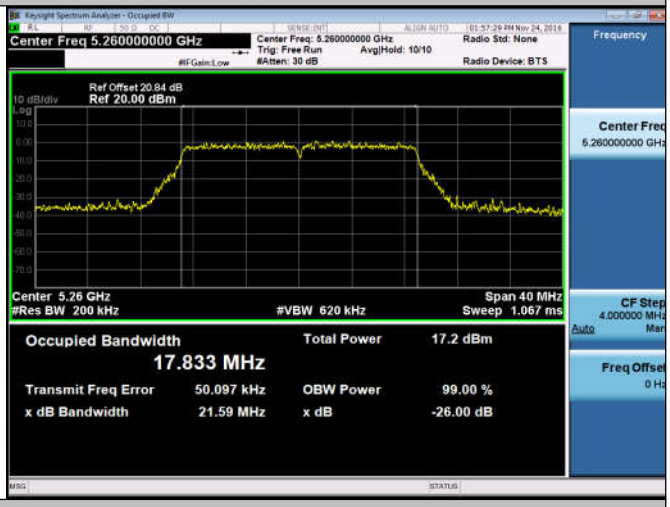

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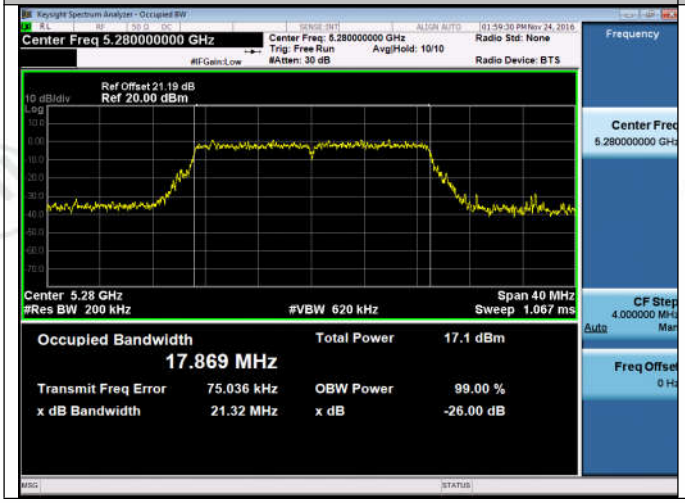

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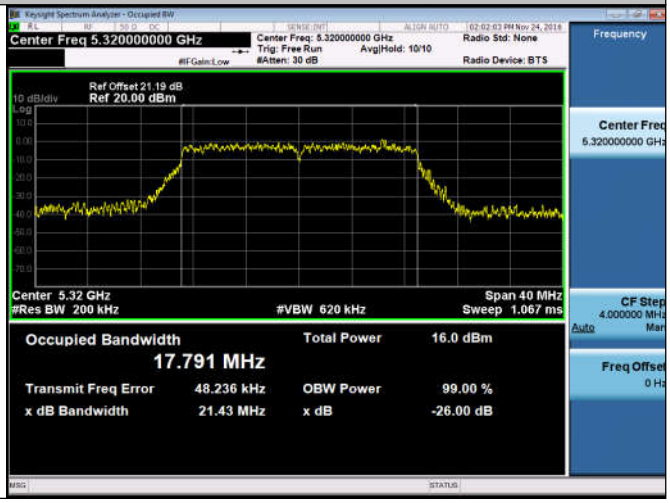

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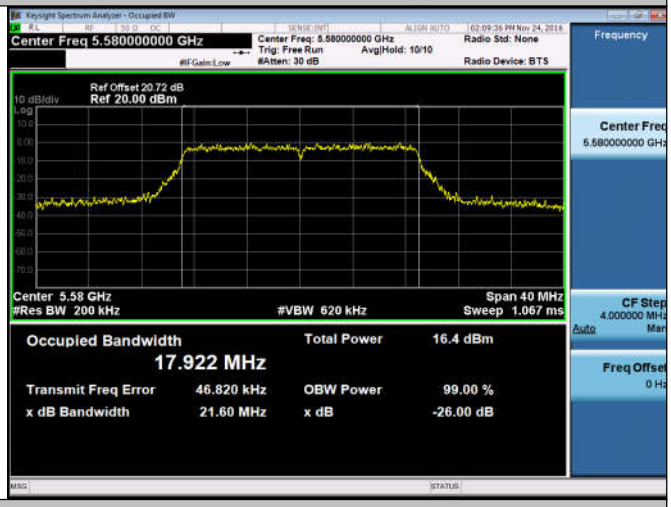

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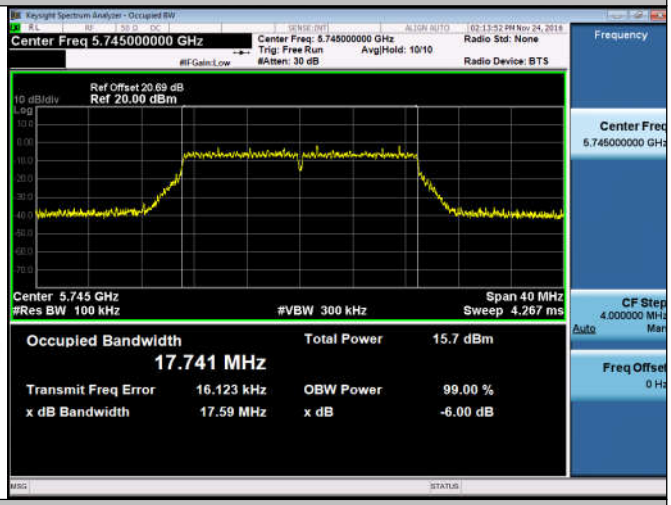

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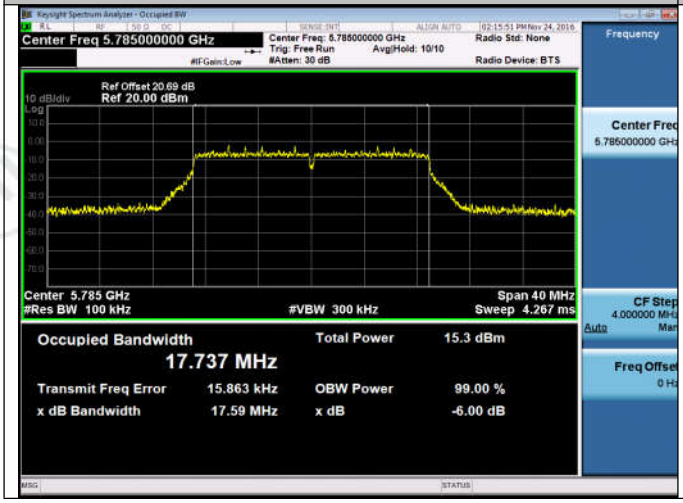

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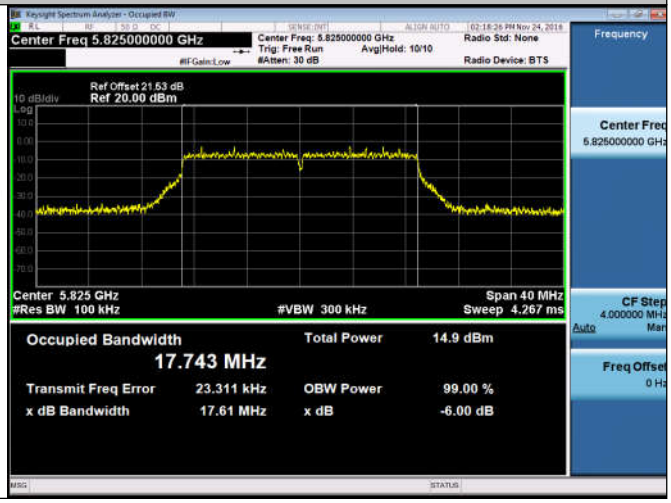

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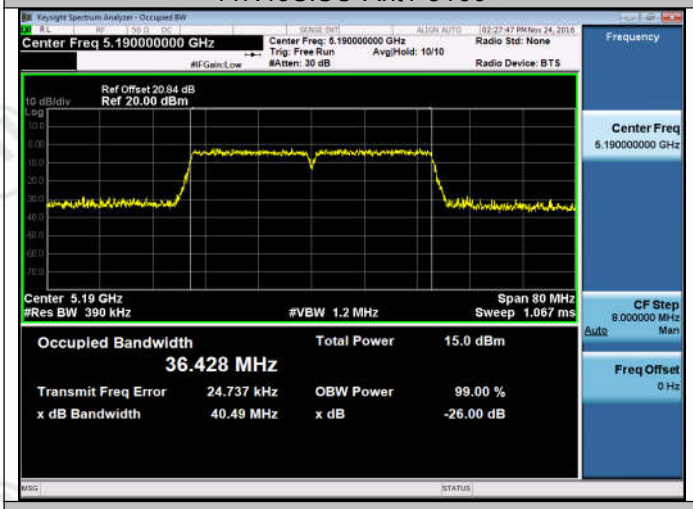

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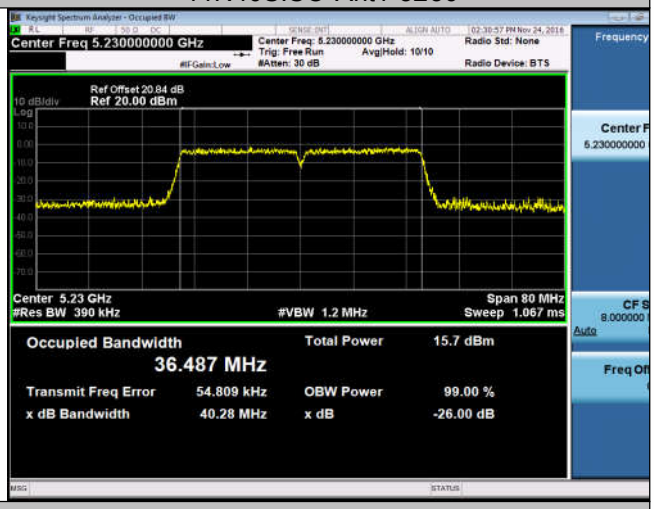

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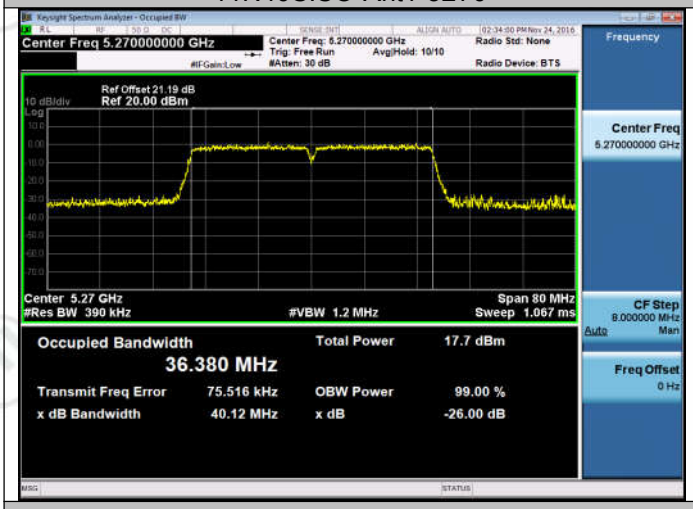

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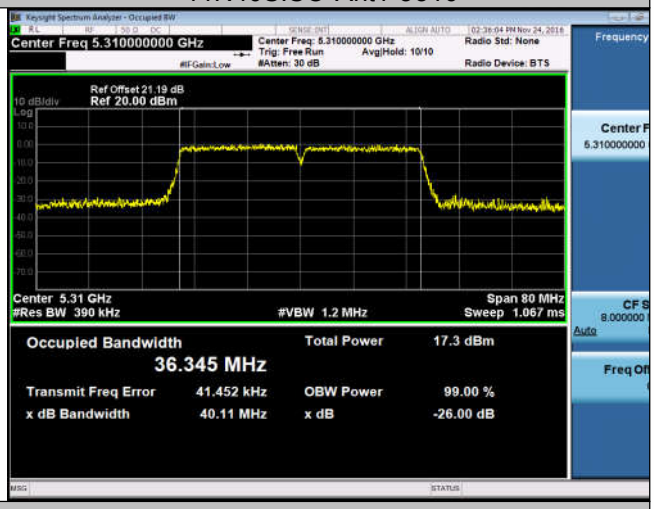

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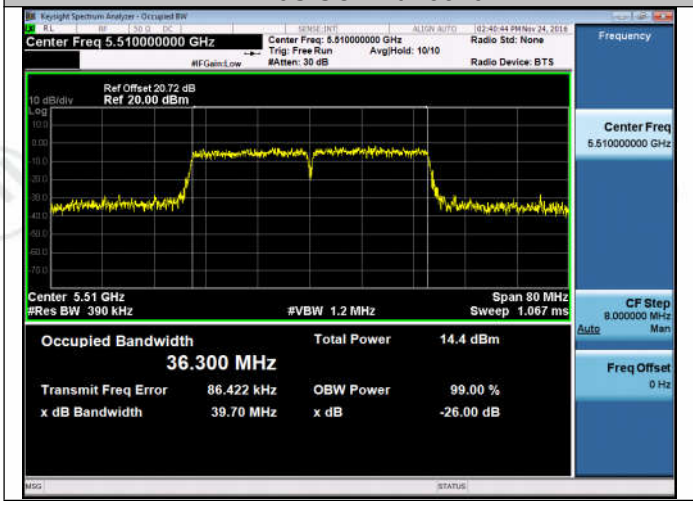

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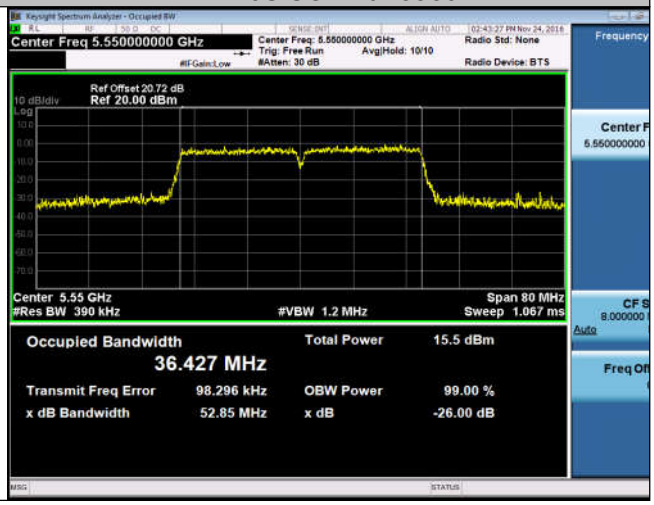

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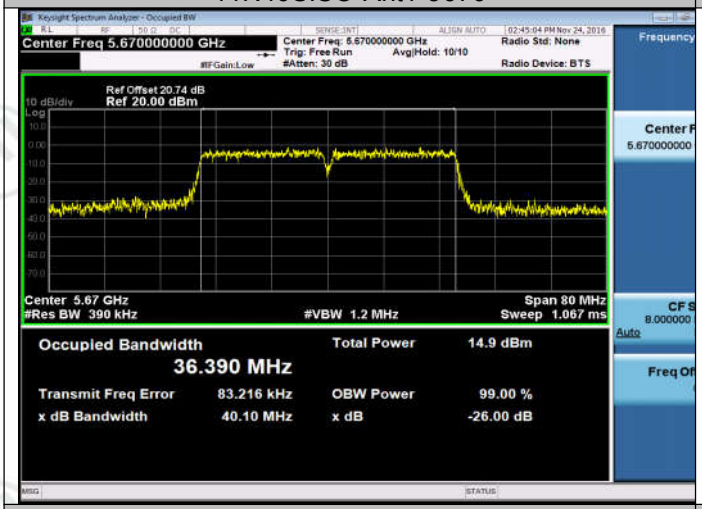

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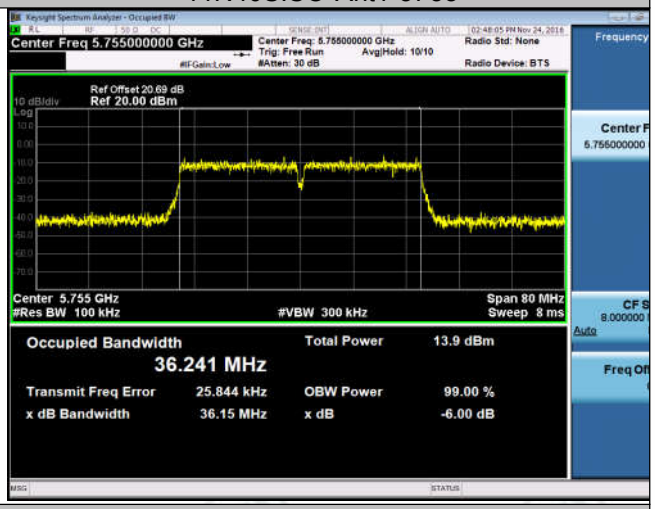

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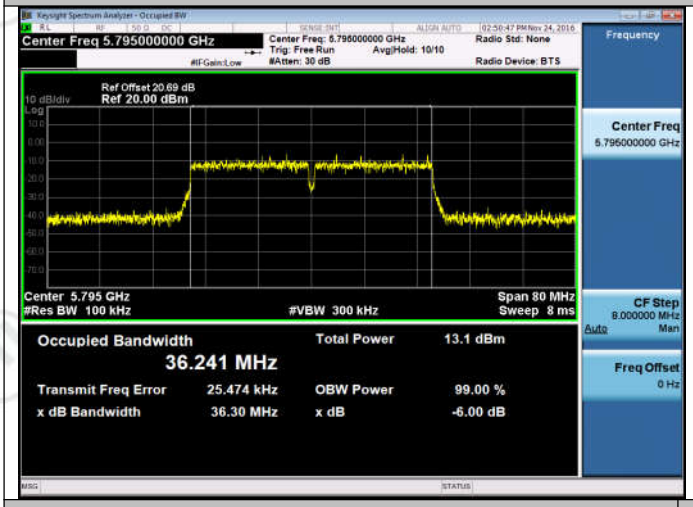

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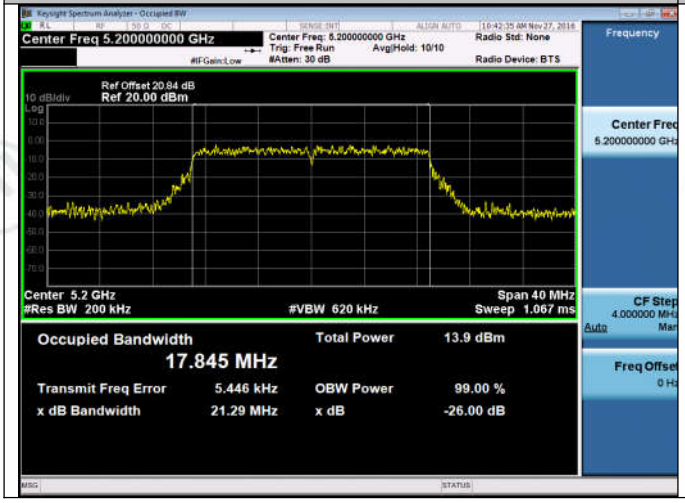

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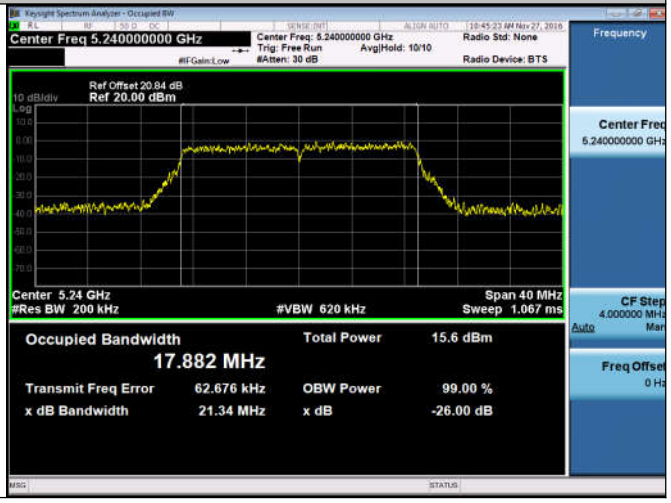

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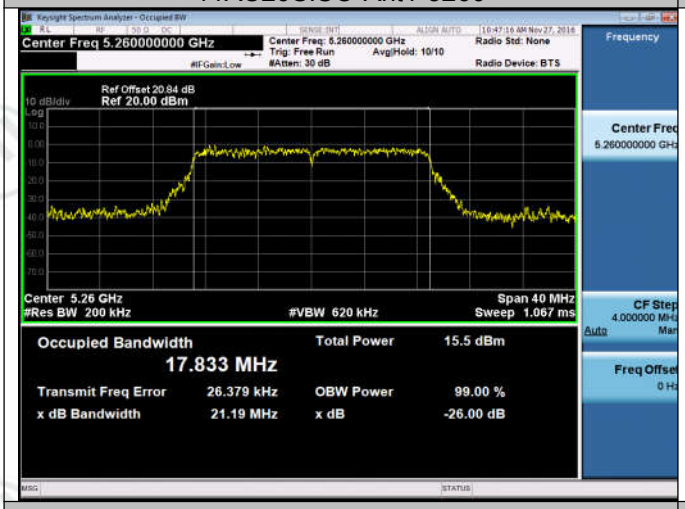

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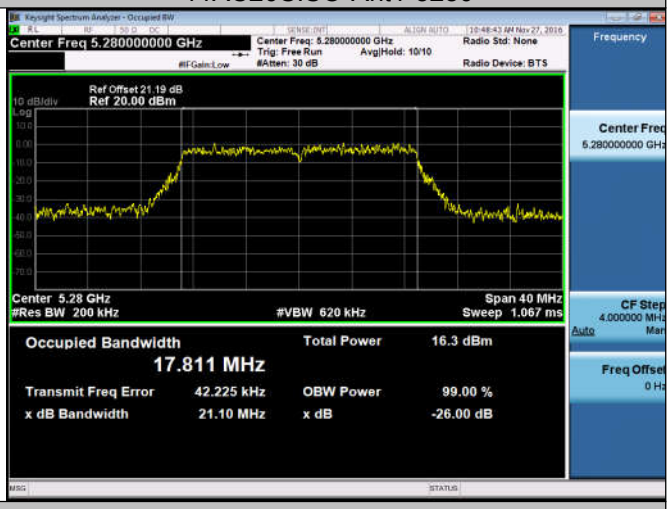

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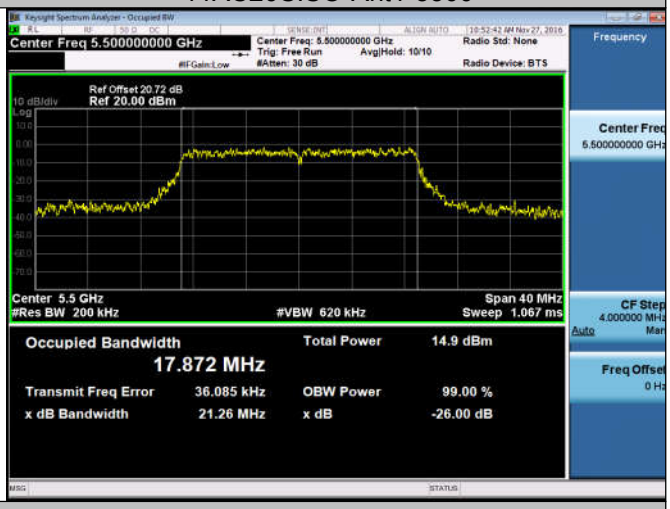

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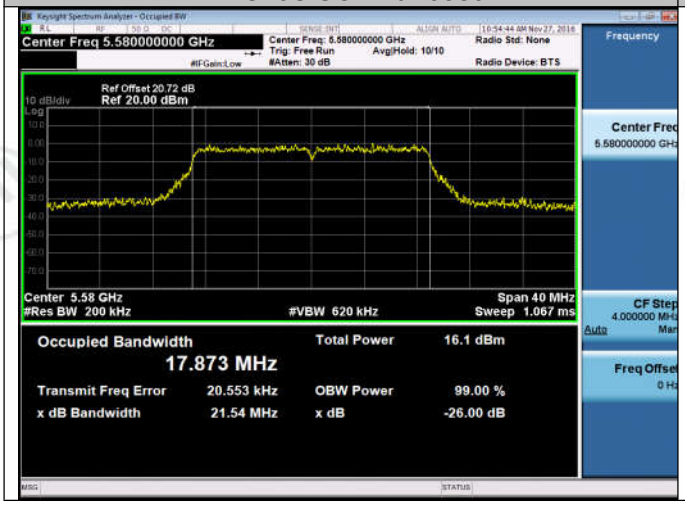

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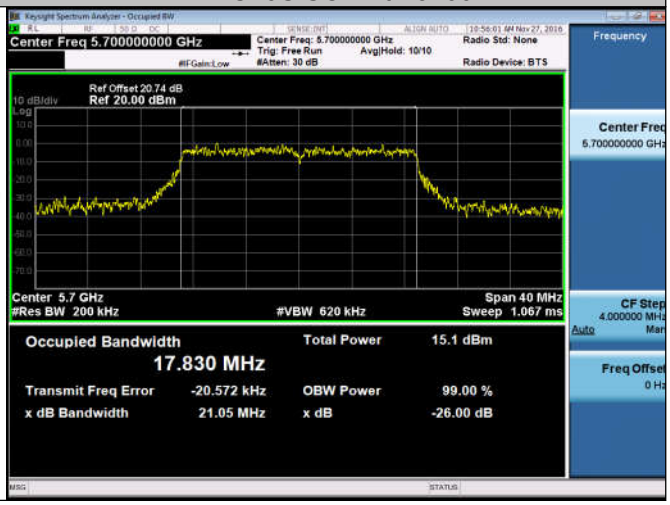

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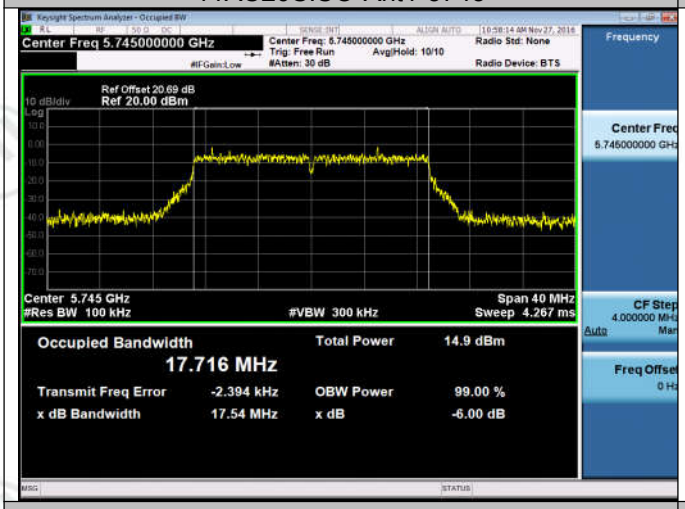

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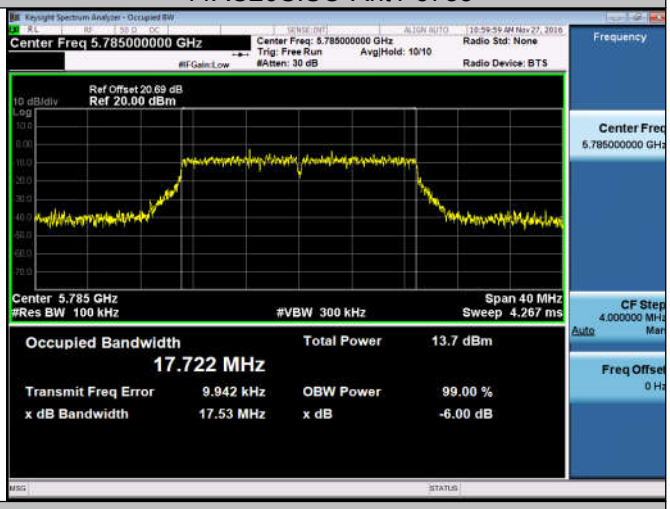

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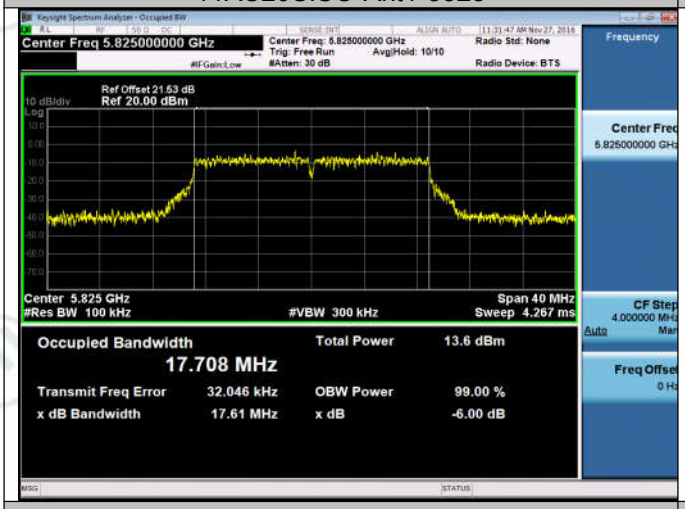

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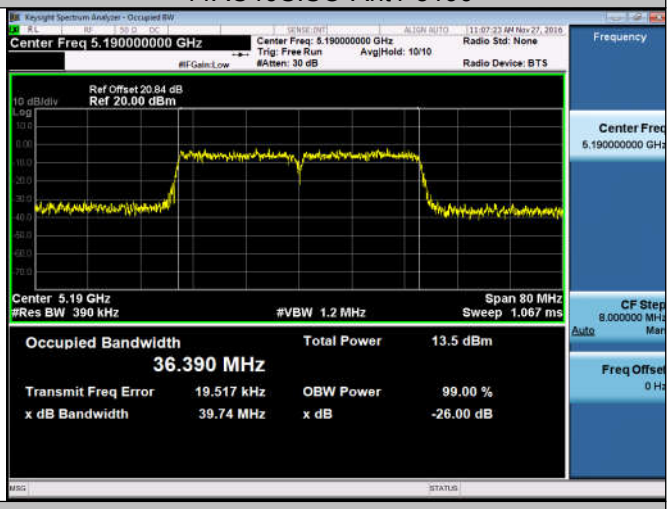

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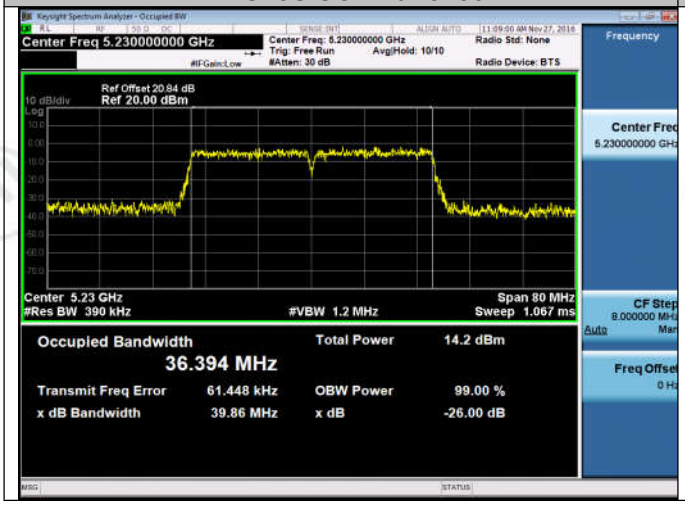

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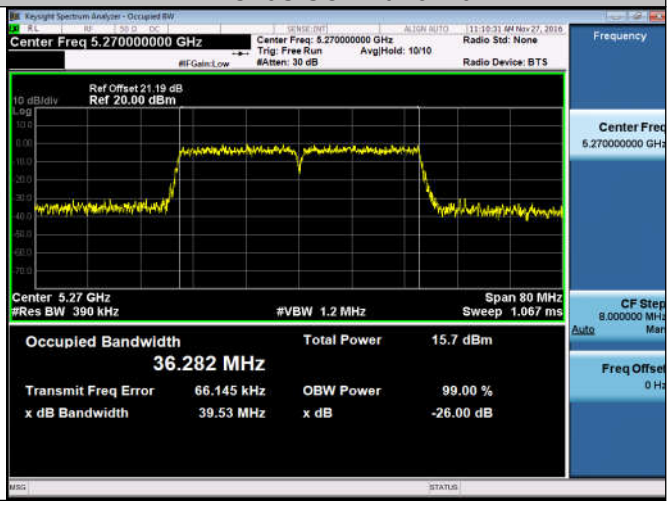

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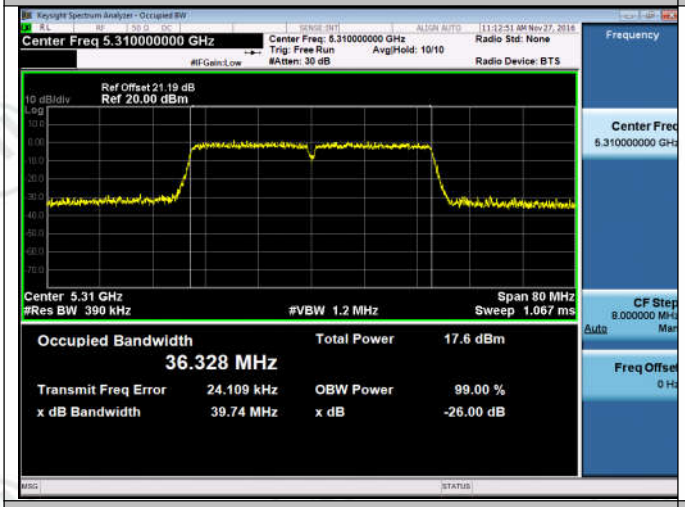

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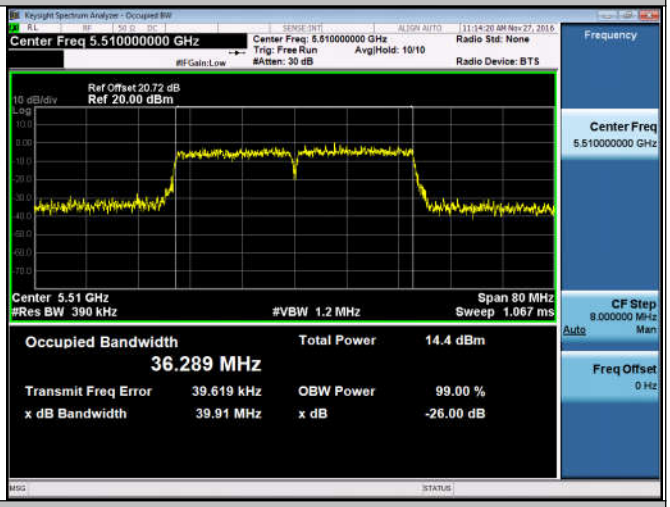

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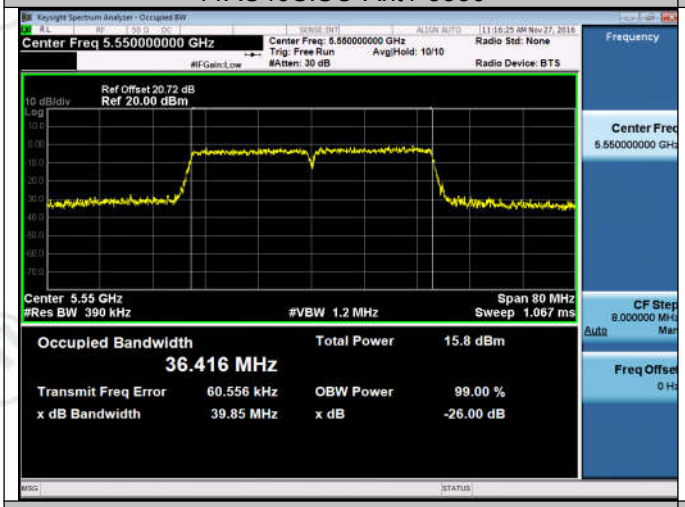

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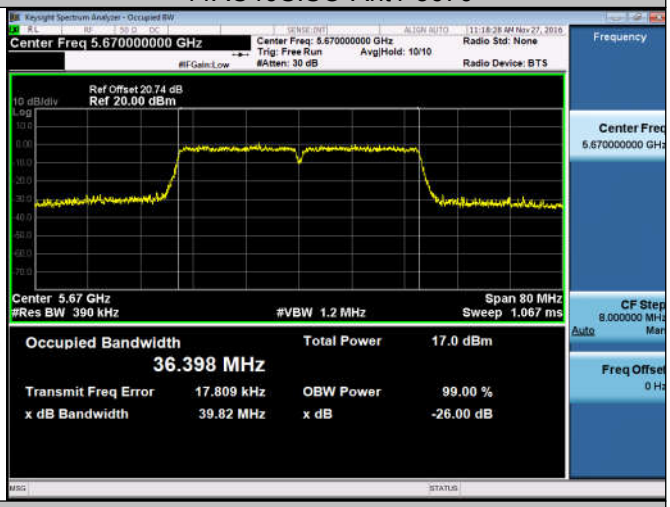

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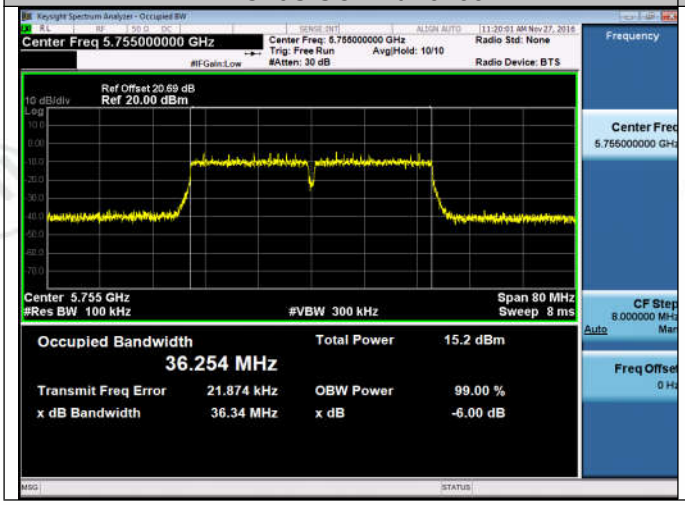

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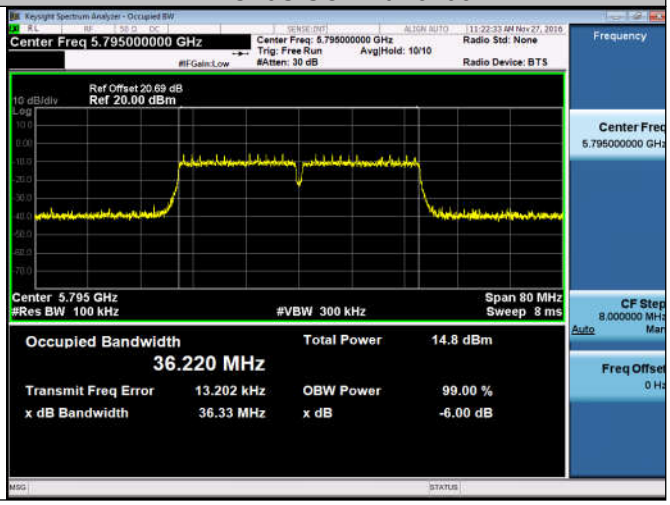

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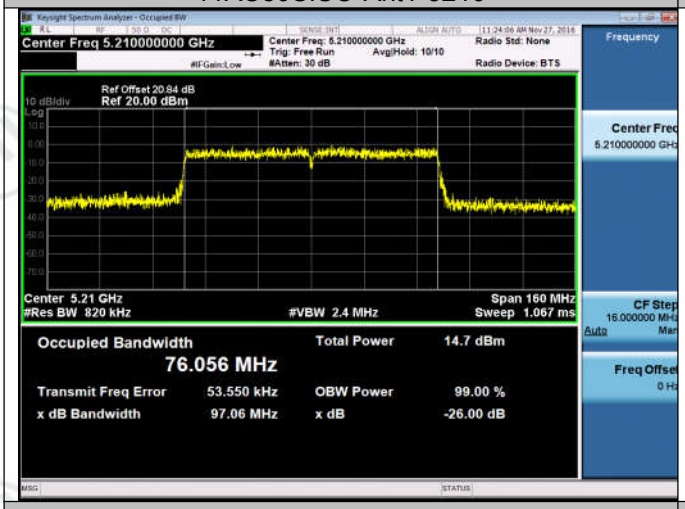	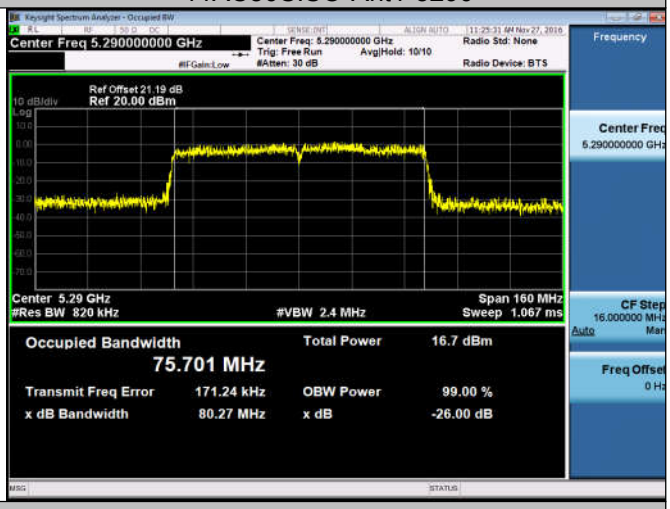
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