FCC Test Report
(Class II Permissive Change)

Product Name	Flat Panel Detector
Model No	8265NGW
FCC ID	2AS4N000001

Applicant	InnoCare Optoelectronics Corp
Address	Rm. B, No. 2, Sec. 2, Huanxi Rd., Southern Taiwan Science Park, Xinshi Dist., Tainan City 741, Taiwan, R.O.C.

Date of Receipt	Aug. 06, 2019
Issued Date	Oct. 04, 2019
Report No.	1990214R-RFUSP08V00
Report Version	V1.0

Testing Laboratory
3023

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.

Test Report

Issued Date: Oct. 04, 2019
Report No.: 1990214R-RFUSP08V00

Product Name	Flat Panel Detector
Applicant	InnoCare Optoelectronics Corp
Address	Rm. B, No. 2, Sec. 2, Huanxi Rd., Southern Taiwan Science Park, Xinshi Dist., Tainan City 741, Taiwan, R.O.C.
Manufacturer	INTEL CORPORATION SAS
Model No.	8265NGW
FCC ID.	2AS4N000001
EUT Rated Voltage	DC 3.3V
EUT Test Voltage	DC 3.3V
Trade Name	Intel
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2018 ANSI C63.4: 2014, ANSI C63.10: 2013 789033 D02 General UNII Test Procedures New Rules v02
Test Result	Complied

Documented By : Leven Huang

(Senior Adm. Specialist / Leven Huang)

Tested By : Jason Tuan

(Engineer / Jason Tuan)

Approved By :

(Director / Vincent Lin)

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Attachment 1: EUT Test Photographs
Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Flat Panel Detector
Trade Name	Intel
FCC ID.	2AS4N000001
Model No.	8265NGW
Frequency Range	802.11a/ n-20MHz: 5180-5320MHz, 5500-5700MHz, 5745-5825MHz 802.11n-40MHz: 5190-5310, 5510-5670MHz, 5755-5795MHz 802.11ac-80MHz: 5210-5290MHz, 5530-5690MHz, 5775MHz
Number of Channels	802.11a /n-20MHz: 25; 802.11n-40MHz: 12 802.11ac-80MHz: 6
Data Rate	802.11a: 6-54Mbps, 802.11n: up to 300Mbps 802.11ac-80MHz: up to 866.7MHz
Type of Modulation	802.11a/n/ac: OFDM, BPSK, QPSK, 16QAM, 64QAM, 256QAM
Antenna type	Slot Antenna
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”
Test Platform	Product name: X-Ray Flat Panel Detector Brand: INCX Model number: Yushan V17G, Yushan V17C
Signal and Power Cable	Non-Shielded, 2.4m
Power Adapter	MFR: MEAN WELL, M/N: GSM60A24 Input: AC 100-240V, 50/60Hz, 1.4-0.7A Output: DC 24V⎓2.5A, 60W MAX. Cable Out: Non-Shielded, 1.4m, with one ferrite core bonded.

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	taoglas	PC142.54.0300A (Main) PC142.54.0500A (Aux)	Slot Antenna	-0.7dBi for 5.150-5.250 GHz -0.7dBi for 5.250-5.350 GHz -0.7dBi for 5.470-5.725 GHz -0.7dBi for 5.725~5.850 GHz

802.11a/n-20MHz Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 036:	5180 MHz	Channel 040:	5200 MHz	Channel 044:	5220 MHz	Channel 048:	5240 MHz
Channel 052:	5260 MHz	Channel 056:	5280 MHz	Channel 060:	5300 MHz	Channel 064:	5320 MHz
Channel 100:	5500 MHz	Channel 104:	5520 MHz	Channel 108:	5540 MHz	Channel 112:	5560 MHz
Channel 116:	5580 MHz	Channel 120:	5600 MHz	Channel 124:	5620 MHz	Channel 128:	5640 MHz
Channel 132:	5660 MHz	Channel 136:	5680 MHz	Channel 140:	5700 MHz	Channel 144:	5720 MHz
Channel 149:	5745 MHz	Channel 153:	5765 MHz	Channel 157:	5785 MHz	Channel 161:	5805 MHz
Channel 165:	5825 MHz						

802.11n-40MHz Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 038:	5190 MHz	Channel 046:	5230 MHz	Channel 054:	5270 MHz	Channel 062:	5310 MHz
Channel 102:	5510 MHz	Channel 110:	5550 MHz	Channel 118:	5590 MHz	Channel 126:	5630 MHz
Channel 134:	5670 MHz	Channel 142:	5710 MHz	Channel 151:	5755 MHz	Channel 159:	5795 MHz

802.11ac-80MHz Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 42:	5210 MHz	Channel 58:	5290 MHz	Channel 106:	5530 MHz	Channel 122:	5610 MHz
Channel 138:	5690 MHz	Channel 155:	5775 MHz				

Note:

1. This device is an Flat Panel Detector with a built-in WLAN (802.11a/b/g/n/ac) transceiver, this report for 5GHz WLAN.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report.
4. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance of transmitter with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.
5. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
6. The model Yushan V17C is similar to model Yushan V17G, except for scintillator material (C stands for CsI; G stands for GOS).The identification of test sample is Yushan V17G.
   (The part of others, as RF module, antenna, power, and software, are the same.)
7. This is to request a Class II permissive change for FCC ID: 2AS4N000001.

The major change filed under this application is:

Change #1: Additional Chassis is added, Product name: X-Ray Flat Panel Detector, Brand: INCX, Model number: Yushan V17G, Yushan V17C.

#2: Addition a new antenna, the antenna type is different from the original application.

#3: Output power is reduced through firmware, and SAR was measured.
(Only reduce Wi-Fi 5G Output Power, Wi-Fi 2.4G Output Power haven't changes).

#4: Trun off BT funtion through firmware.

Test Mode	Mode 1 SISO A: Transmit (802.11a_6Mbps) Mode 1 SISO A: Transmit (802.11n-20BW_7.2Mbps) Mode 1 SISO A: Transmit (802.11n-40BW_15Mbps) Mode 1 SISO A: Transmit (802.11ac-80BW_32.5Mbps) Mode 2 SISO B: Transmit (802.11a_6Mbps) Mode 2 SISO B: Transmit (802.11n-20BW_7.2Mbps) Mode 2 SISO B: Transmit (802.11n-40BW_15Mbps) Mode 2 SISO B: Transmit (802.11ac-80BW_32.5Mbps) Mode 3 MIMO: Transmit (802.11n-20BW_14.4Mbps) Mode 3 MIMO: Transmit (802.11n-40BW_30Mbps) Mode 3 MIMO: Transmit (802.11ac-80BW_65Mbps)

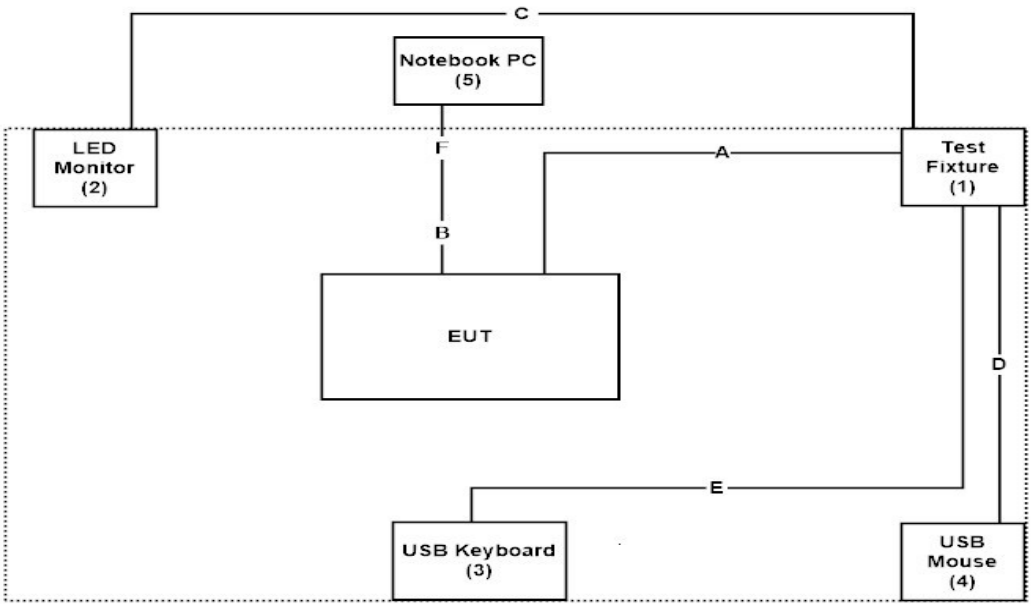
1.3. Tested System Datails

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Test Fixture	InnoCare	N/A	N/A	N/A
2	LED Monitor	ViewSonic	VX2257-mhd	UFY163502150	Non-Shielded, 1.8m
3	USB Keyboard	DELL	SK-8115	MY-0DJ325-71619-6A3-1914	N/A
4	USB Mouse	DELL	M056U0A	F0Y01YEC	N/A
5	Notebook PC	DELL	Latitude E5440	74BTK32	Non-Shielded, 0.8m

Signal Cable Type		Signal cable Description
A	Test Fixture Cable	Non-Shielded, 1.8m
B	Signal and Power Cable	Non-Shielded, 2.4m
C	Display Cable	Non-Shielded, 1.8m, with two ferrite cores bonded.
D	USB Mouse Cable	Non-Shielded, 1.8m
E	USB Keyboard Cable	Non-Shielded, 1.8m
F	LAN Cable	Non-Shielded, 2m

1.4. Configuration of tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown on 1.4
(2) Execute software “DRTU (Ver 11.1803.0-06808)” on the EUT.
(3) Configure the test mode, the test channel, and the data rate.
(4) Start the continuous transmission.
(5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

USA : FCC Registration Number: TW3023

Canada : IC Registration Number: 4075A

Site Description: Accredited by TAF
Accredited Number: 3023

Test Laboratory: DEKRA Testing and Certification Co., Ltd
Address: No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
Phone number: 886-2-8601-3788
Fax number: 886-2-8601-3789
Email address: info.tw@dekra.com
Website: http://www.dekra.com.tw

1.7. List of Test Equipment

For Conducted measurements /CB3/SR8

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Date	Due. Date
	Temperature Chamber	WIT GROUP	TH-1S-B	EQ-201-00146	2019/02/26	2020/02/25
X	Spectrum Analyzer	Agilent	N9010A	MY52220597	2018/10/11	2019/10/10
X	Peak Power Analyzer	Keysight	8990B	MY51000410	2019/08/01	2020/07/31
X	Wideband Power Sensor	Keysight	N1923A	MY56080003	2019/07/25	2020/07/24
X	Wideband Power Sensor	Keysight	N1923A	MY56080004	2019/07/25	2020/07/24
	EMI Test Receiver	R&S	ESCS 30	100369	2018/11/19	2019/11/18
	LISN	R&S	ENV216	101105	2019/03/30	2020/03/29
	LISN	R&S	ESH3-Z5	836679/014	2019/04/02	2020/04/01
	Coaxial Cable	DEKRA	RG 400	LC018-RG	2019/06/21	2020/06/20

For Radiated measurements /Site3/CB8

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Date	Due. Date
X	Spectrum Analyzer	R&S	FSP40	100170	2019/03/11	2020/03/10
X	Loop Antenna	Teseq	HLA6121	37133	2018/10/13	2019/10/12
X	Bilog Antenna	Schaffner Chase	CBL6112B	2707	2019/06/24	2020/06/23
X	Coaxial Cable	DEKRA	RG 214	LC003-RG	2019/06/14	2020/06/13
X	Pre-Amplifier	Jet-Power	JPA-10M1G33	170101000330010	2019/06/14	2020/06/13
X	Horn Antenna	ETS-Lindgren	3117	00135205	2019/05/03	2020/05/02
X	Horn Antenna	SCHWARZBECK	9120D	576	2018/12/18	2019/12/17
X	Pre-Amplifier	EMCI	EMC012630SE	980210	2019/04/10	2020/04/09
X	Horn Antenna	Com-Power	AH-840	101043	2019/01/09	2020/01/08
X	Amplifier + Cable	EMCI	EMC184045SE	980370	2019/03/21	2020/03/20
X	Filter	MICRO-TRONICS	BRM50702	G270	2019/08/06	2020/08/05
X	Filter	MICRO-TRONICS	BRM50716	G196	2019/08/06	2020/08/05

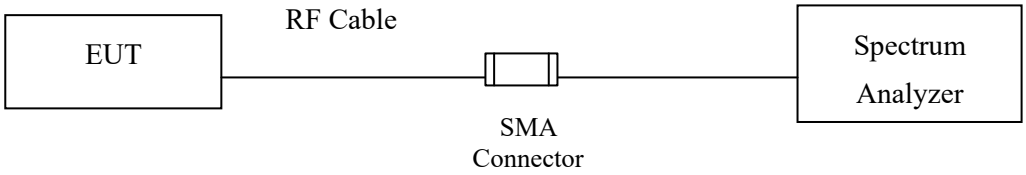
Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version :QuieTek EMI 2.0 V2.1.113.

2. Maximun conducted output power

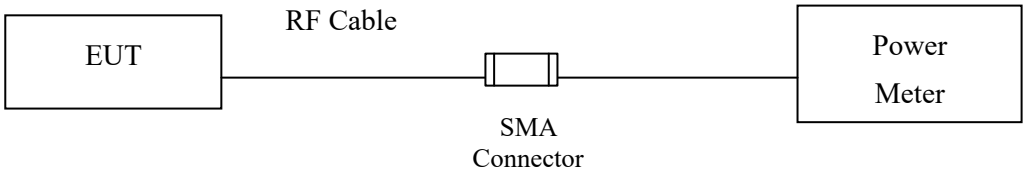
2.1. Test Setup

99% Occupied Bandwidth

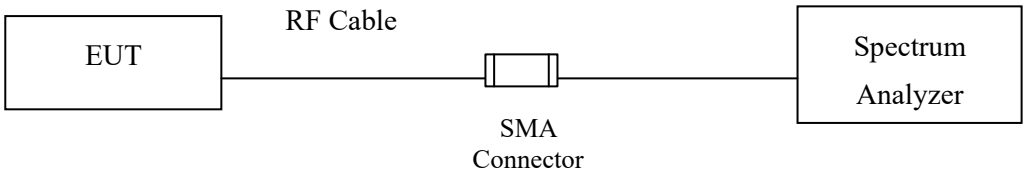


Conduction Power Measurement

Conduction Power Measurement (for 802.11an)



Conduction Power Measurement (for 802.11ac)



2.2. Limits

For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-topoint U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

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

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 99% emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

2.3. Test Procedure

As an alternative to FCC KDB-789033, the EUT maximum conducted output power was measured with an average power meter employing a video bandwidth greater the 6dB BW of the emission under test. Maximum conducted output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.

802.11an (BW≦40MHz) Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter)
Note: the power meter have a video bandwidth that is greater than or equal to the measurement bandwidth.

802.11ac (BW=80MHz) Maximum conducted output power using KDB 789033 section E)2)b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep).

When transmitted signals consist of two or more non-contiguous spectrum segments (e.g., 80+80 MHz mode) or when a single spectrum segment of a transmission crosses the boundary between two adjacent U-NII bands, KDB 644545 D03 section D) procedure is used for measurements.

2.4. Uncertainty

±1.27dB

2.5. Test Result of Maximum conducted output power

Product : Flat Panel Detector
Test Item : Maximum conducted output power
Test Date : 2019/10/04
Test Mode : Mode 1 SISO A: Transmit (802.11a_6Mbps)

		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
		Measurement Level (dBm)							
36	5180	17.21	--	--	--	--	--	--	--
40	5200	20.09	19.99	19.94	19.91	19.82	19.76	19.72	19.61
48	5240	20.23	--	--	--	--	--	--	--
52	5260	21.04	--	--	--	--	--	--	--
56	5280	20.9	20.79	20.66	20.54	20.44	20.36	20.25	20.13
64	5320	17.51	--	--	--	--	--	--	--
100	5500	17.38	--	--	--	--	--	--	--
120	5600	19.87	19.76	19.71	19.68	19.64	19.54	19.48	19.42
140	5700	18.03	--	--	--	--	--	--	--
149	5745	18.46	--	--	--	--	--	--	--
157	5785	18.32	18.20	18.04	17.92	17.82	17.70	17.59	17.45
165	5825	18.44	--	--	--	--	--	--	--

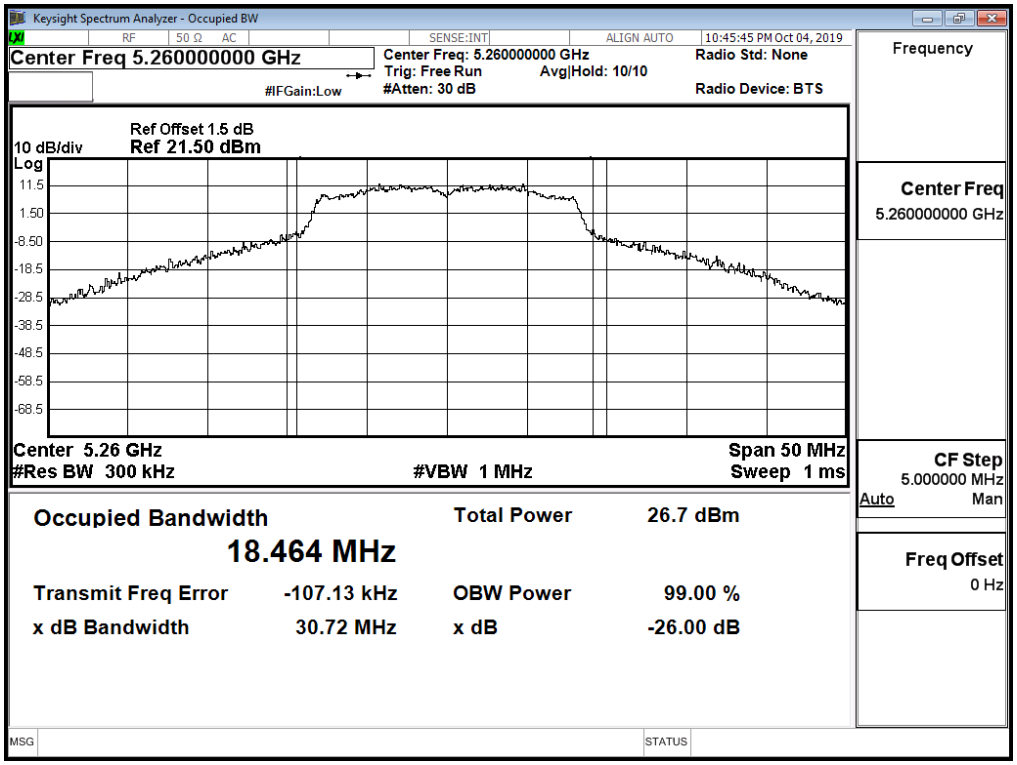
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

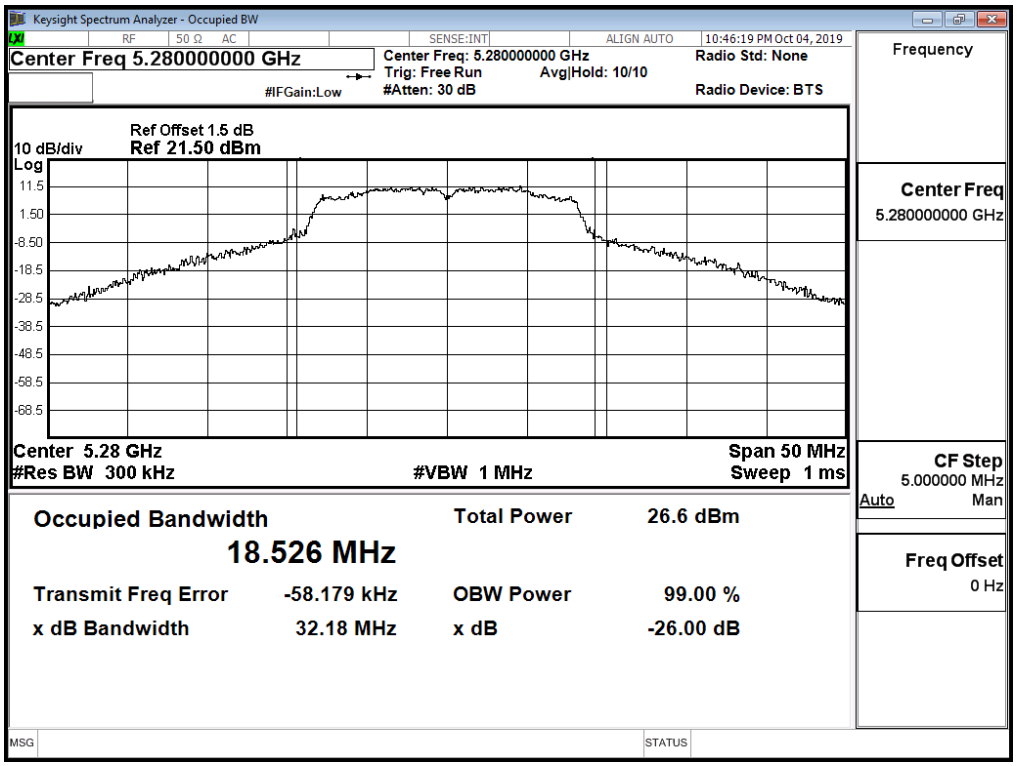
Channel No	Frequency Range (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	17.21	24	--
40	5200	--	20.09	24	--
48	5240	--	20.23	24	--
52	5260	18.464	21.04	24	23.66
56	5280	18.526	20.9	24	23.68
64	5320	16.872	17.51	24	23.27
100	5500	16.908	17.38	24	23.28
120	5600	18.194	19.87	24	23.59
140	5700	16.761	18.03	24	23.24
149	5745	--	18.46	30	--
157	5785	--	18.32	30	--
165	5825	--	18.44	30	--

99% Occupied Bandwidth:

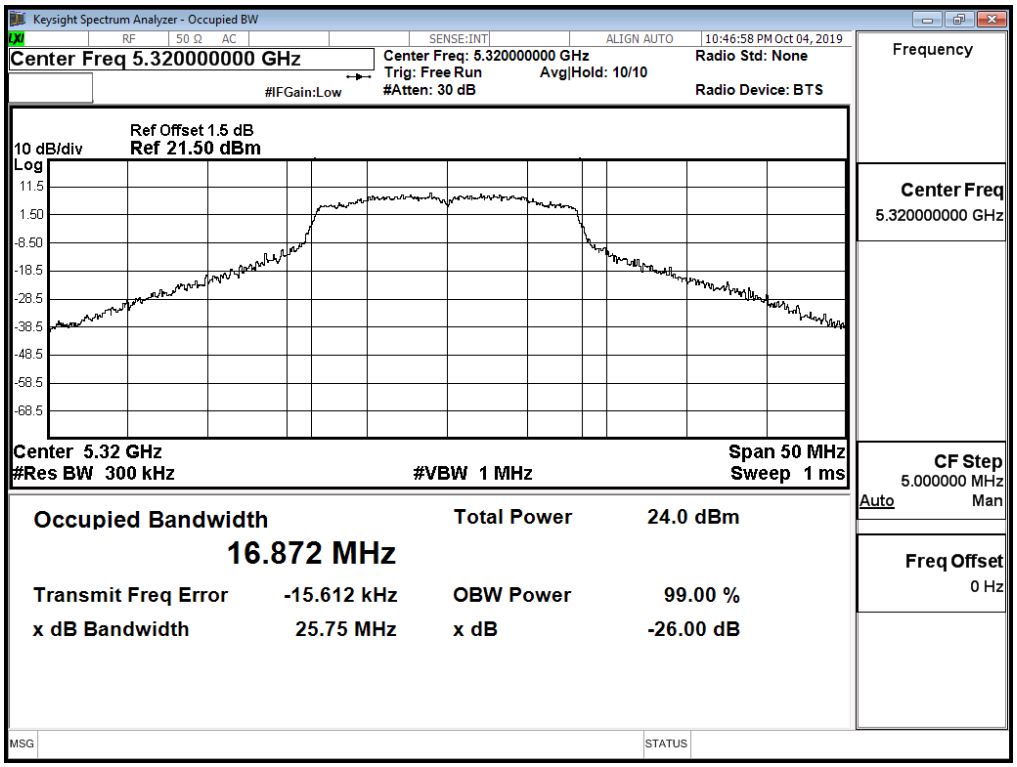
Channel 52:



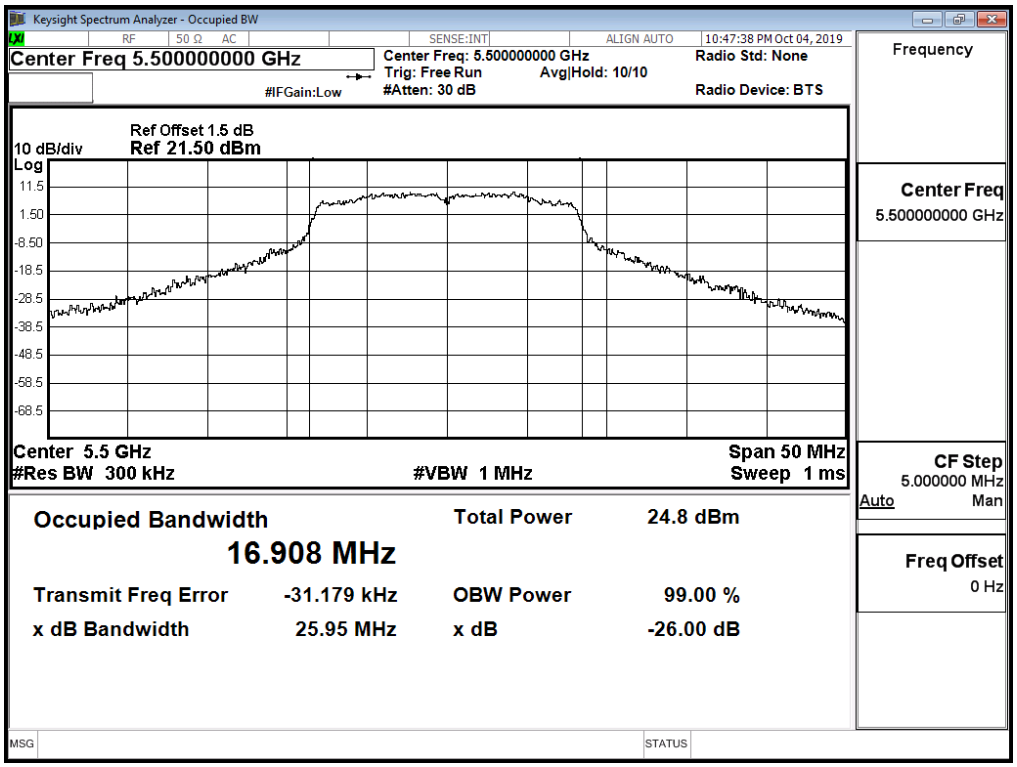
Channel 56:



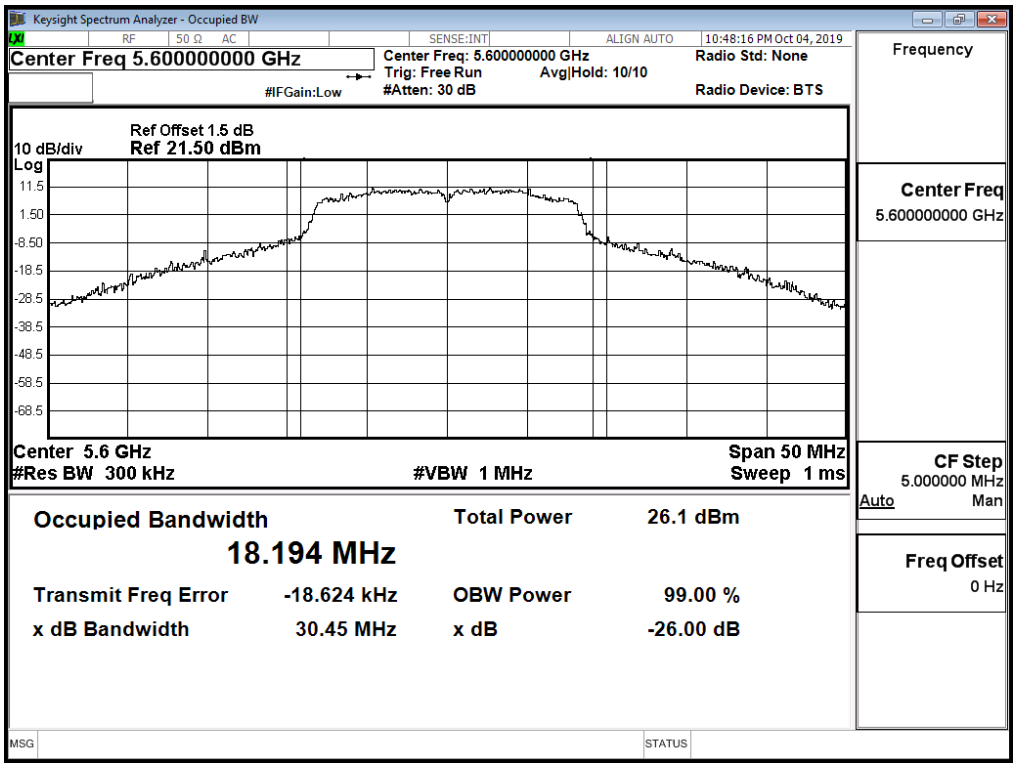
Channel 64:



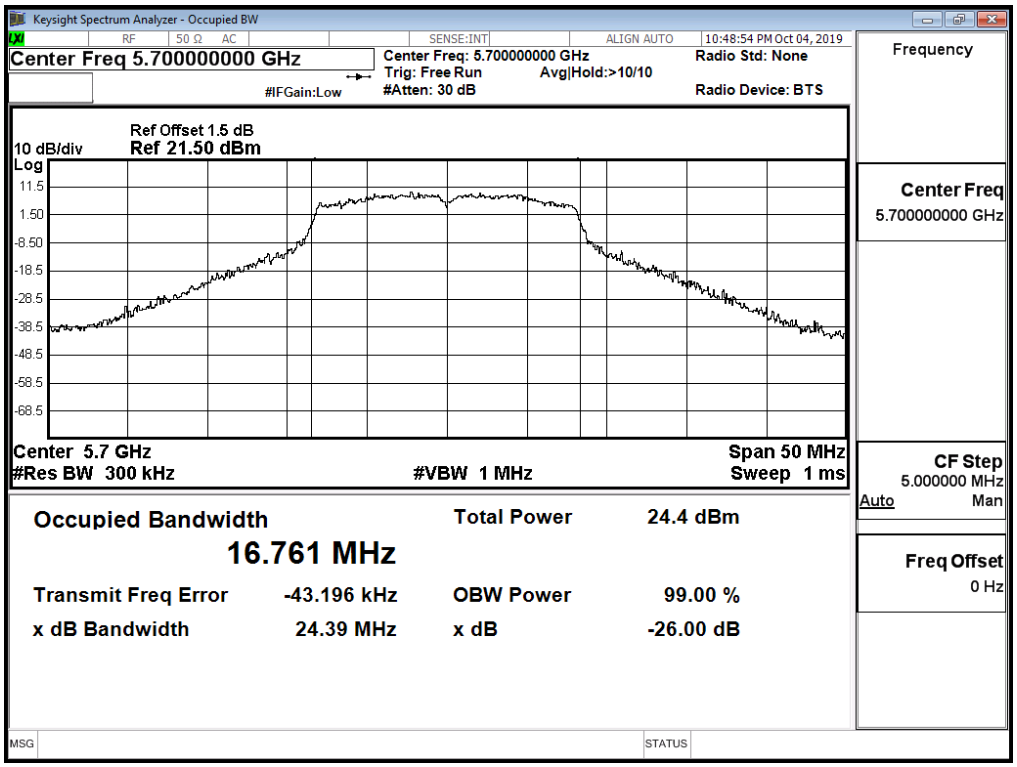
Channel 100:



Channel 120:



Channel 140:



Product : Flat Panel Detector
Test Item : Maximum conducted output power
Test Date : 2019/10/04
Test Mode : Mode 1 SISO A: Transmit (802.11n-20BW_7.2Mbps)

		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2
		Measurement Level (dBm)							
36	5180	17.78	--	--	--	--	--	--	--
40	5200	20.14	20.07	20.01	19.92	19.81	19.69	19.65	19.62
48	5240	20.15	--	--	--	--	--	--	--
52	5260	20.04	--	--	--	--	--	--	--
56	5280	20.04	19.97	19.92	19.85	19.82	19.72	19.62	19.52
64	5320	17.11	--	--	--	--	--	--	--
100	5500	16.6	--	--	--	--	--	--	--
120	5600	19.95	19.85	19.73	19.64	19.54	19.45	19.36	19.30
140	5700	17.08	--	--	--	--	--	--	--
144(U-NII-2C)	5720	18.59	18.56	18.49	18.37	18.29	18.20	18.07	18.01
144(U-NII-3)	5720	11.33	11.22	11.13	11.00	10.97	10.93	10.88	10.85
149	5745	18.43	--	--	--	--	--	--	--
157	5785	18.39	18.25	18.14	18.05	17.95	17.82	17.71	17.60
165	5825	18.29	--	--	--	--	--	--	--

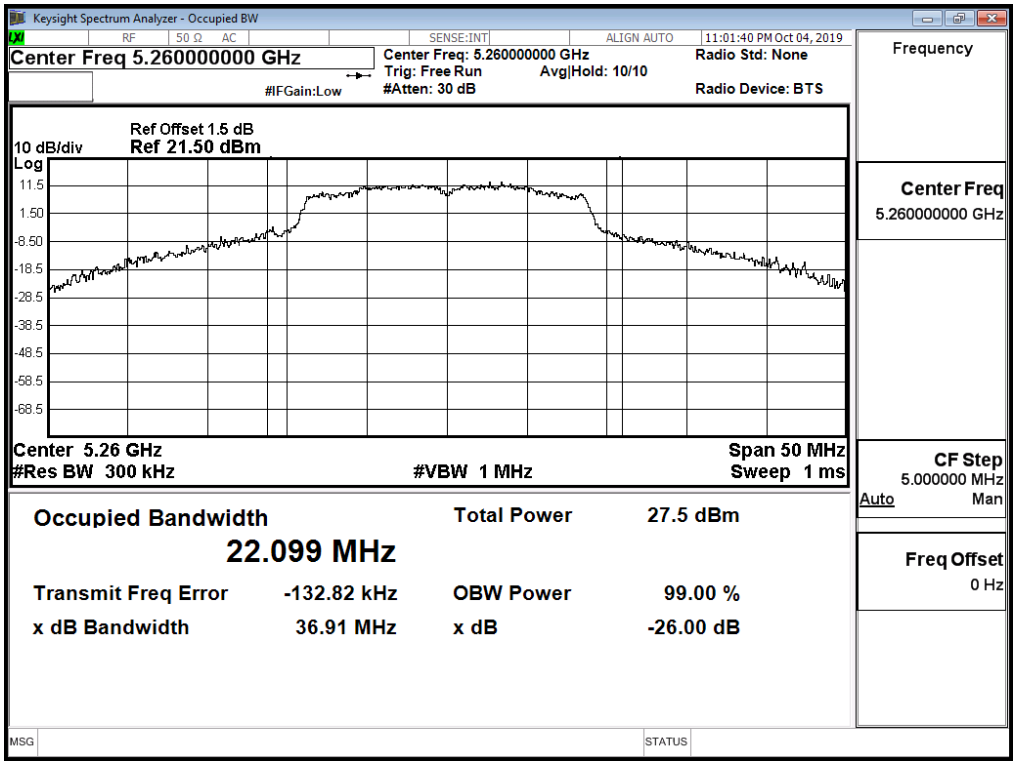
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

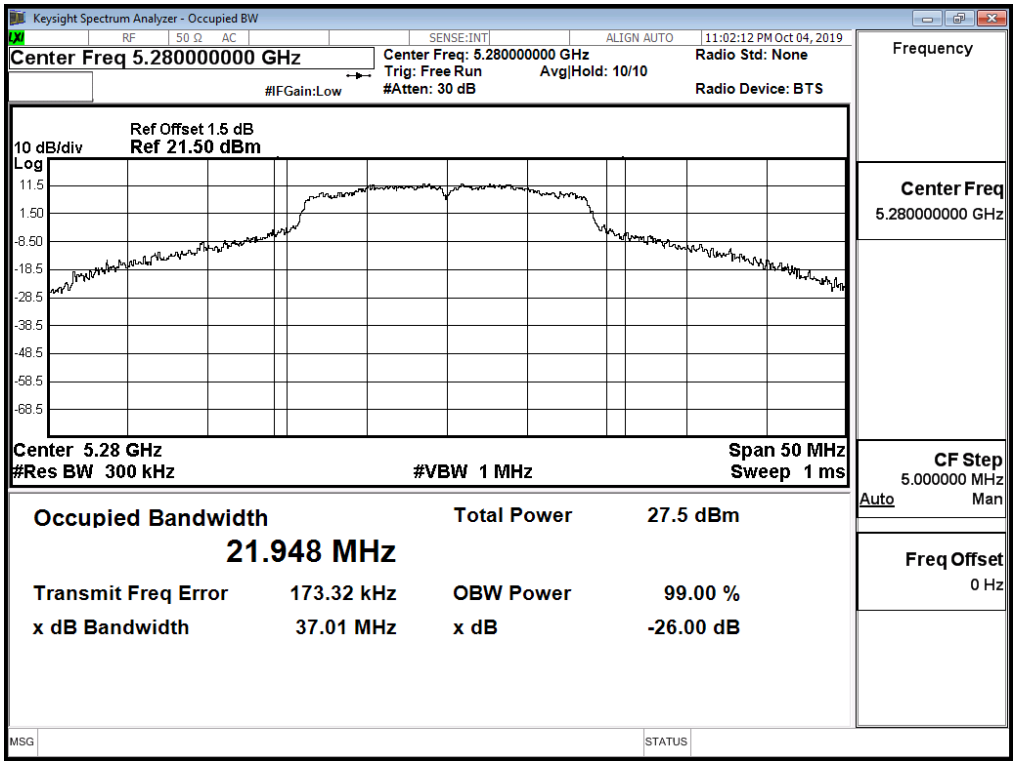
Channel Number	Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	17.78	24	--
40	5200	--	20.14	24	--
48	5240	--	20.15	24	--
52	5260	22.099	20.04	24	24.44
56	5280	21.948	20.04	24	24.41
64	5320	18.059	17.11	24	23.57
100	5500	18.133	16.6	24	23.58
120	5600	19.060	19.95	24	23.80
140	5700	18.255	17.08	24	23.61
144(U-NII-2C)	5720	14.231	18.59	24	22.53
144(U-NII-3)	5720	--	11.33	30	--
149	5745	--	18.43	30	--
157	5785	--	18.39	30	--
165	5825	--	18.29	30	--

99% Occupied Bandwidth:

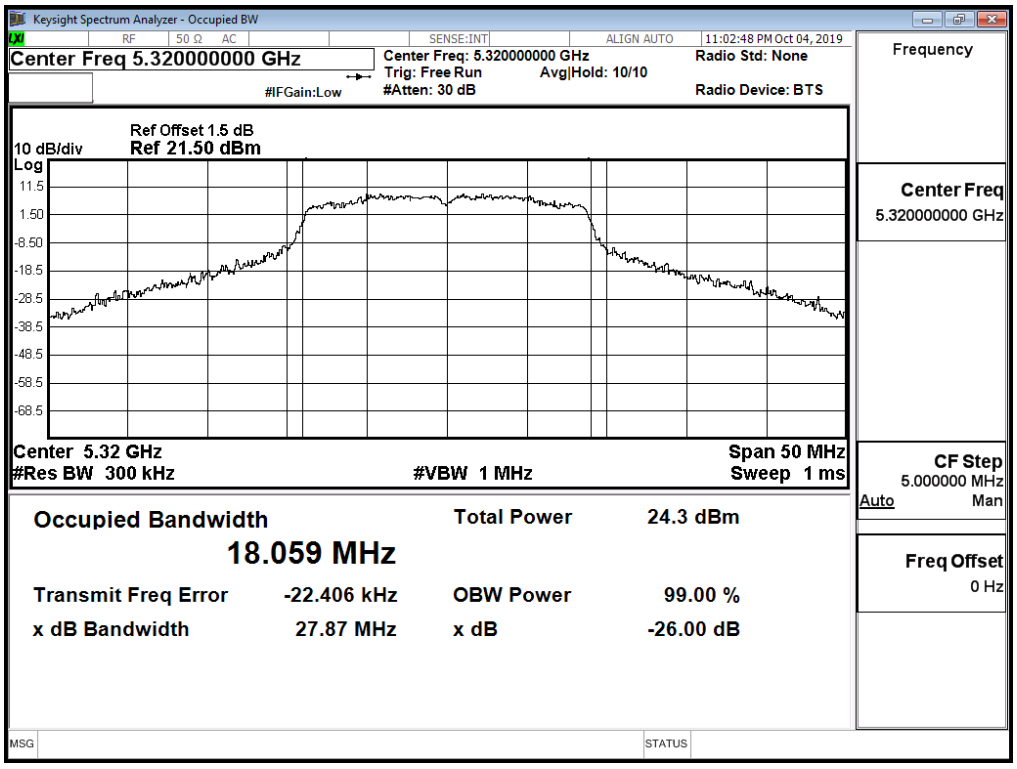
Channel 52



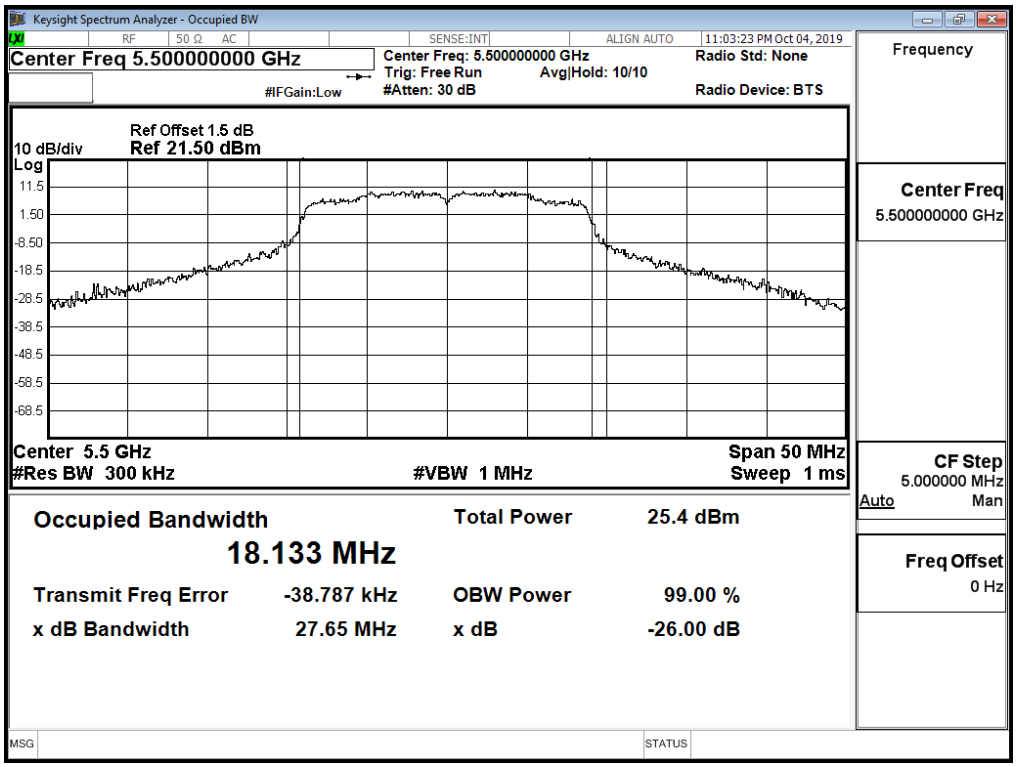
Channel 56



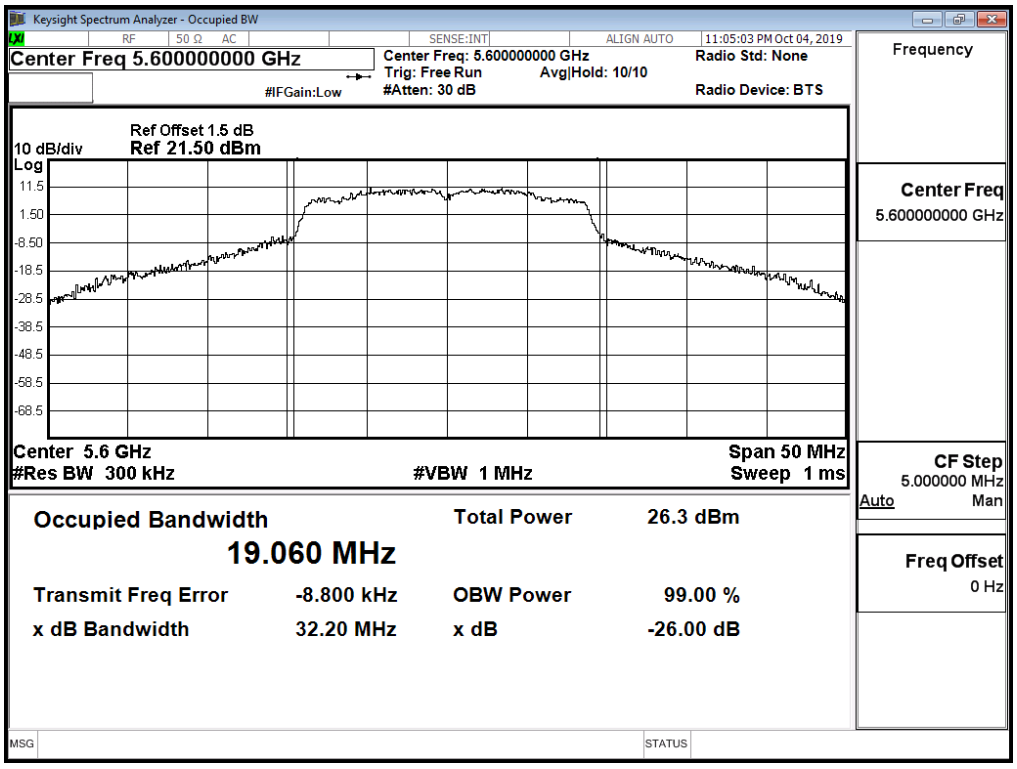
Channel 64



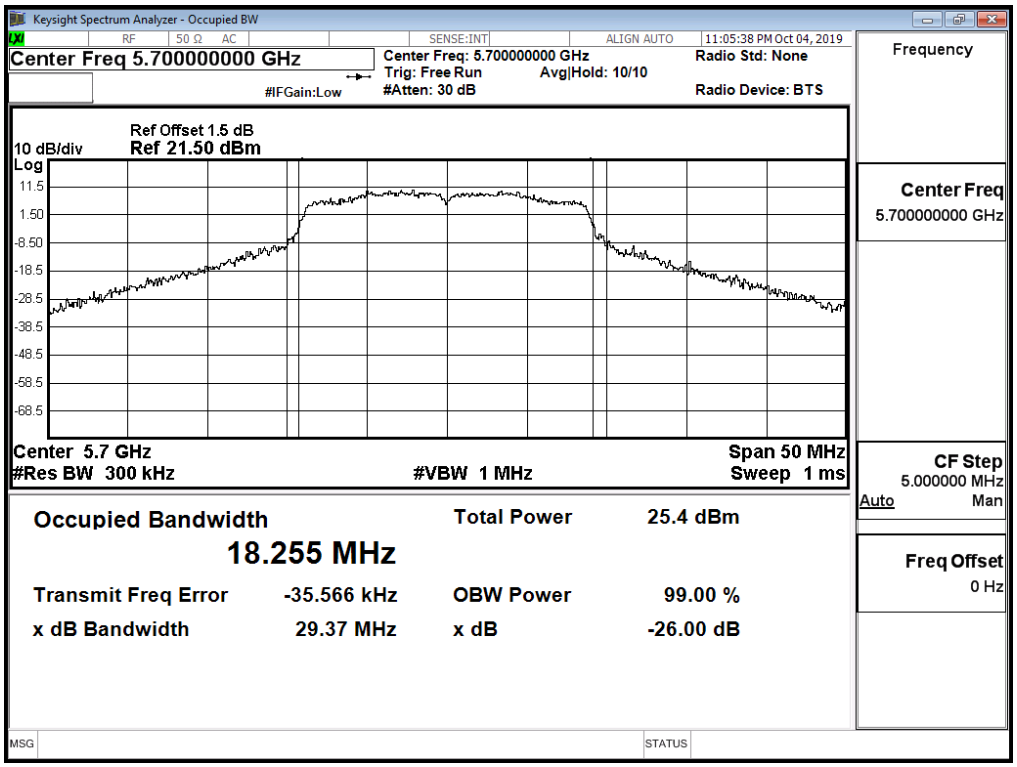
Channel 100



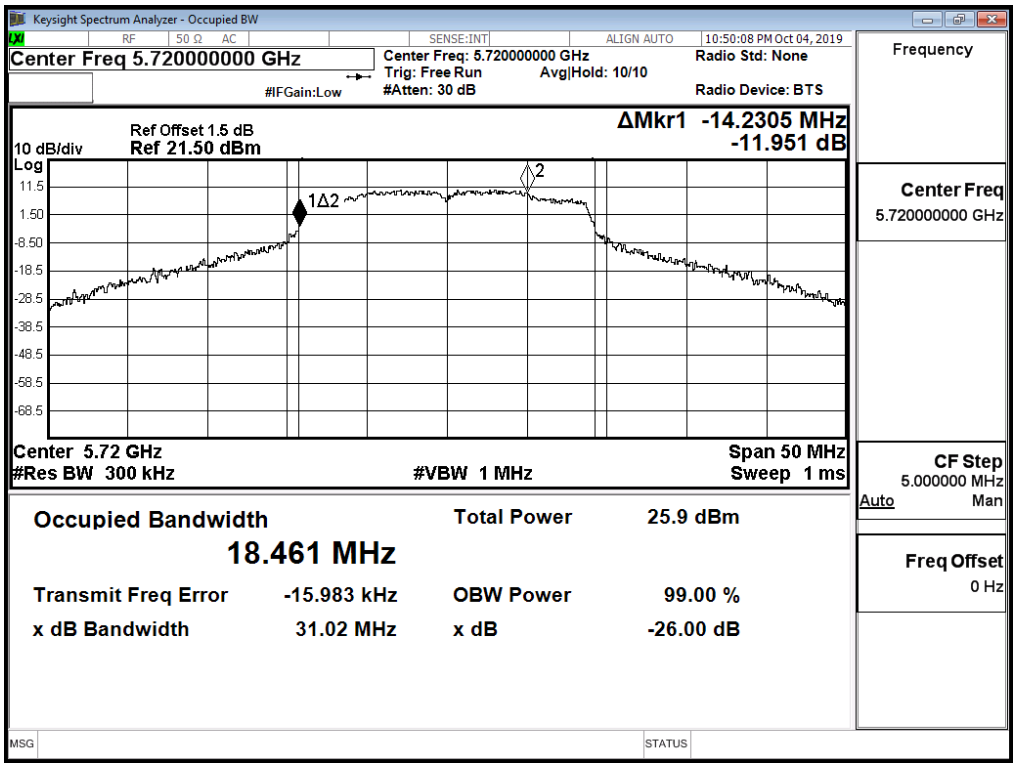
Channel 120



Channel 140

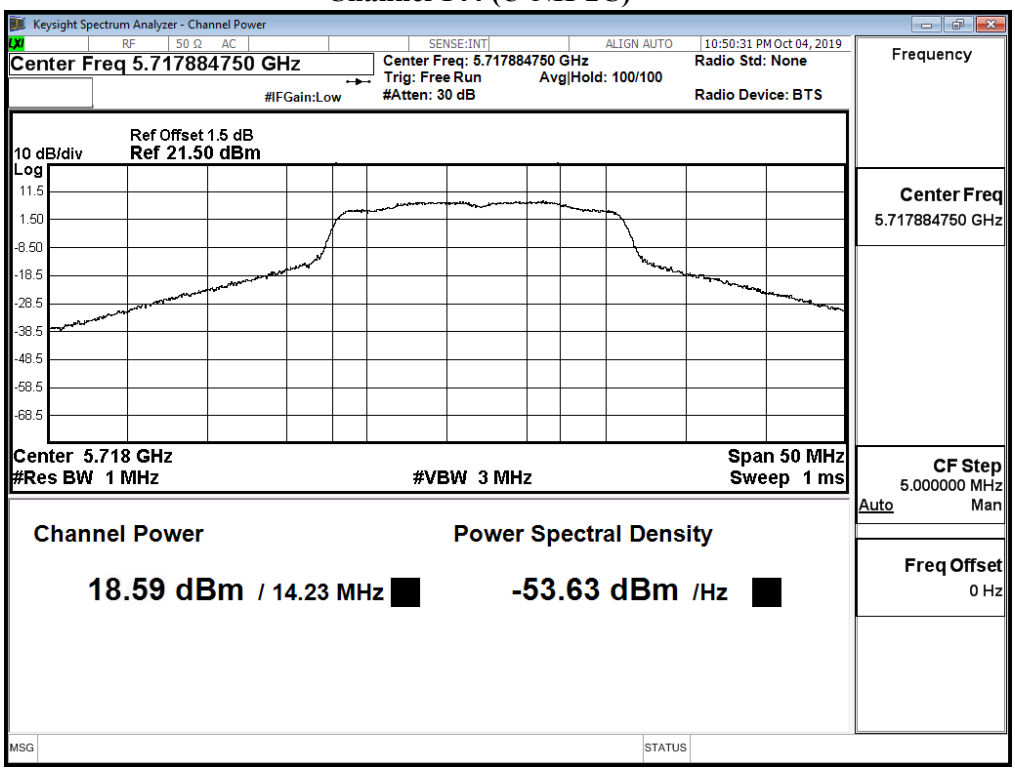


Channel 144


Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
10:50:08 PM Oct 04, 2019
Center Freq 5.720000000 GHz
Center Freq: 5.720000000 GHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 1.5 dB
10 dB/div
Ref 21.50 dBm
Log
ΔMkr1 -14.2305 MHz
-11.951 dB
11.5
1.50
-8.50
-18.5
-28.5
-38.5
-48.5
-58.5
-68.5
1Δ2
2
Center Freq
5.720000000 GHz
Center 5.72 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 50 MHz
Sweep 1 ms
CF Step
5.000000 MHz
Auto
Man
Occupied Bandwidth
18.461 MHz
Total Power 25.9 dBm
Transmit Freq Error -15.983 kHz
OBW Power 99.00 %
x dB Bandwidth 31.02 MHz
x dB -26.00 dB
Freq Offset
0 Hz
MSG
STATUS

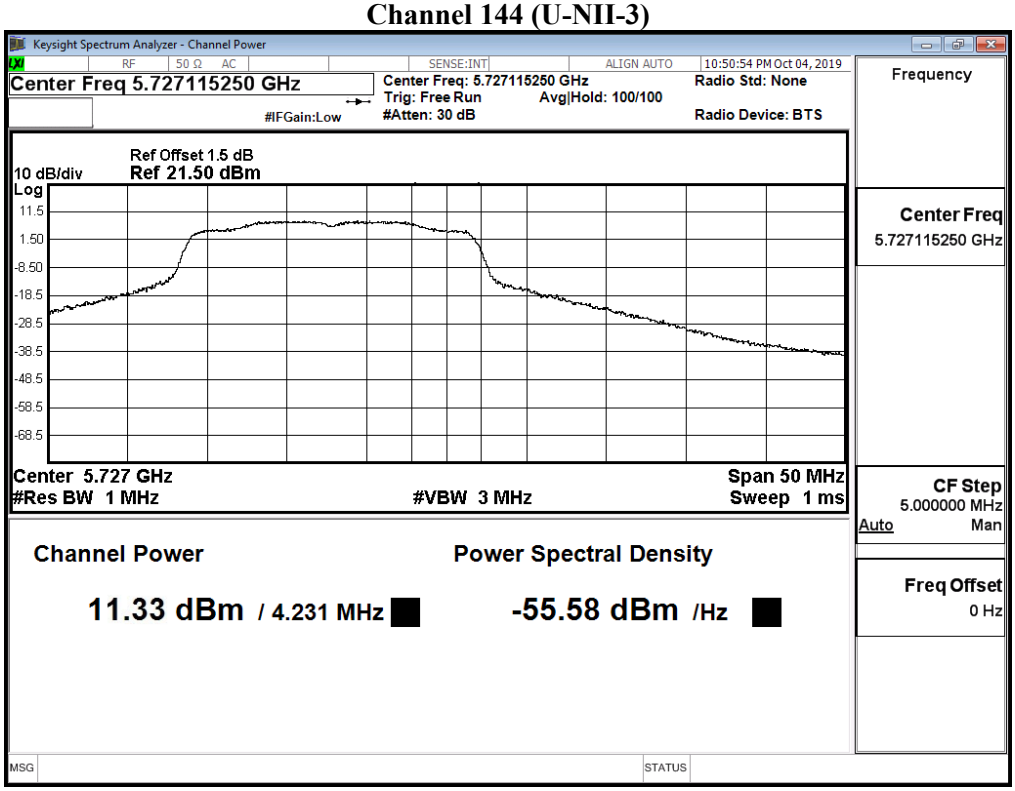
Maximum conducted output power:

Channel 144 (U-NII-2C)



Maximum conducted output power:

Channel 144 (U-NII-3)



Product : Flat Panel Detector
Test Item : Maximum conducted output power
Test Date : 2019/10/04
Test Mode : Mode 1 SISO A: Transmit (802.11n-40BW_15Mbps)

		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		15	30	45	60	90	120	135	150
		Measurement Level (dBm)							
38	5190	16.91	--	--	--	--	--	--	--
46	5230	20.06	20.02	19.89	19.81	19.75	19.64	19.57	19.50
54	5270	20.19	--	--	--	--	--	--	--
62	5310	12.92	12.87	12.83	12.71	12.58	12.50	12.39	12.33
102	5510	16.92	--	--	--	--	--	--	--
118	5590	20.14	20.09	20.00	19.87	19.81	19.78	19.75	19.71
134	5670	18.64	--	--	--	--	--	--	--
142(U-NII-2C)	5710	19.53	19.44	19.36	19.30	19.27	19.17	19.12	19.06
142(U-NII-3)	5710	7.3	7.26	7.18	7.06	6.97	6.91	6.82	6.75
151	5755	18.49	--	--	--	--	--	--	--
159	5795	18.43	18.32	18.15	18.04	17.92	17.81	17.72	17.60

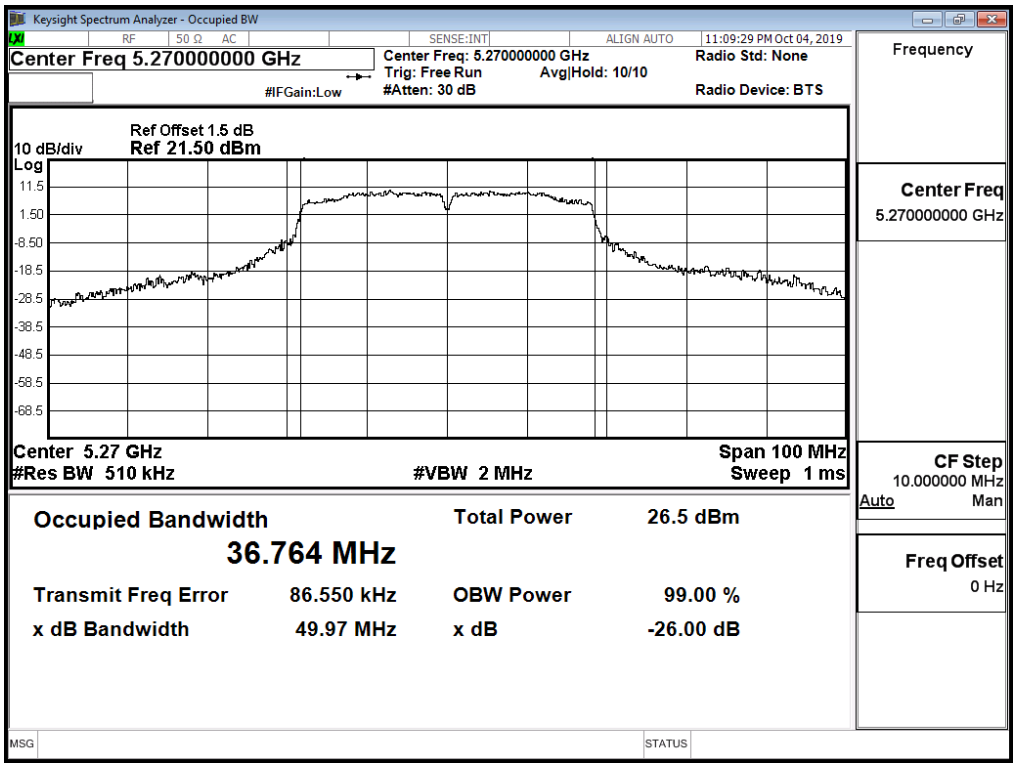
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

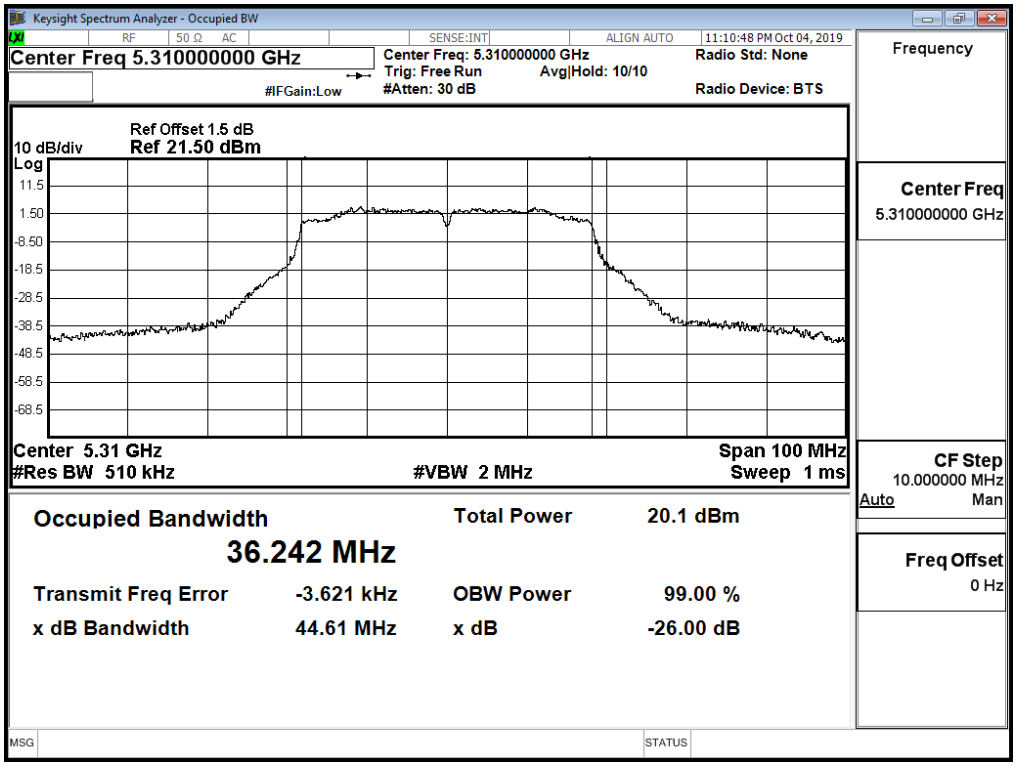
Channel Number	Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
38	5190	--	16.91	24	--
46	5230	--	20.06	24	--
54	5270	36.764	20.19	24	26.65
62	5310	36.242	12.92	24	26.59
102	5510	36.548	16.92	24	26.63
118	5590	43.693	20.14	24	27.40
134	5670	36.388	18.64	24	26.61
142(U-NII-2C)	5710	33.477	19.53	24	26.25
142(U-NII-3)	5710	--	7.3	30	--
151	5755	--	18.49	30	--
159	5795	--	18.43	30	--

99% Occupied Bandwidth:

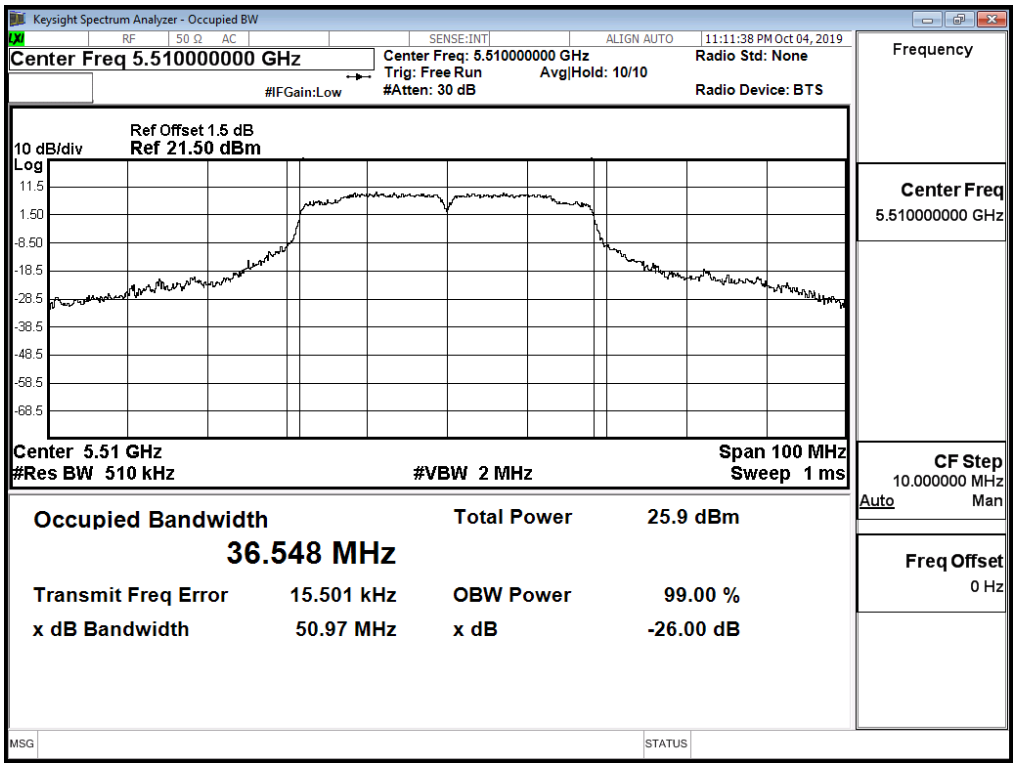
Channel 54



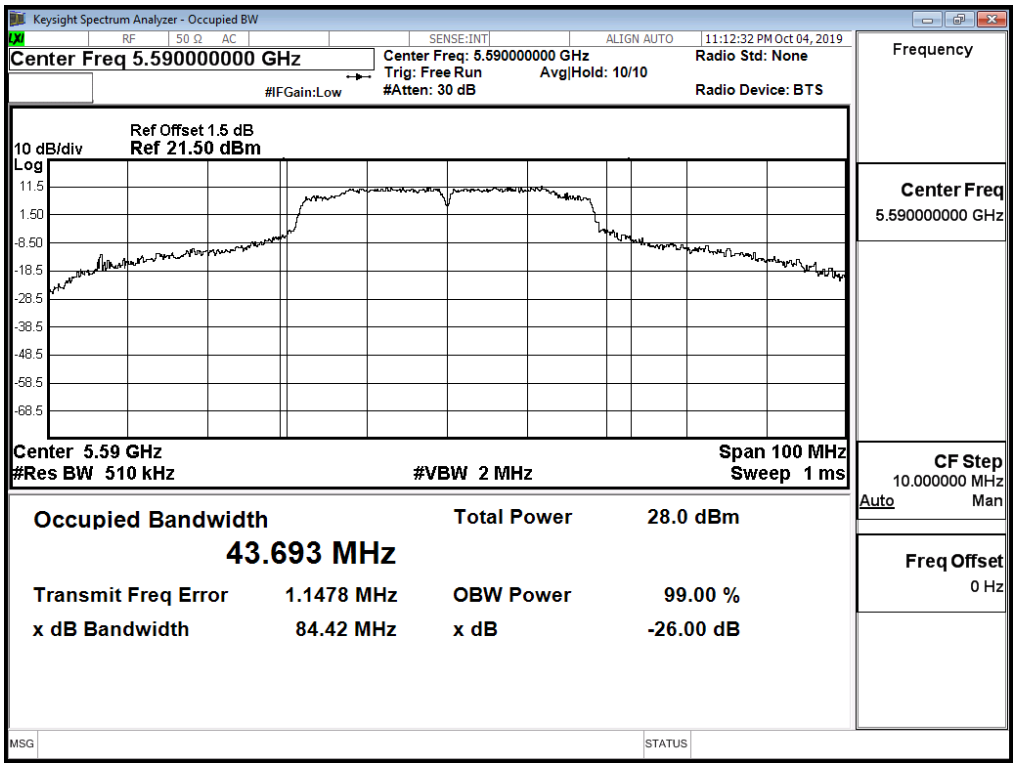
Channel 62



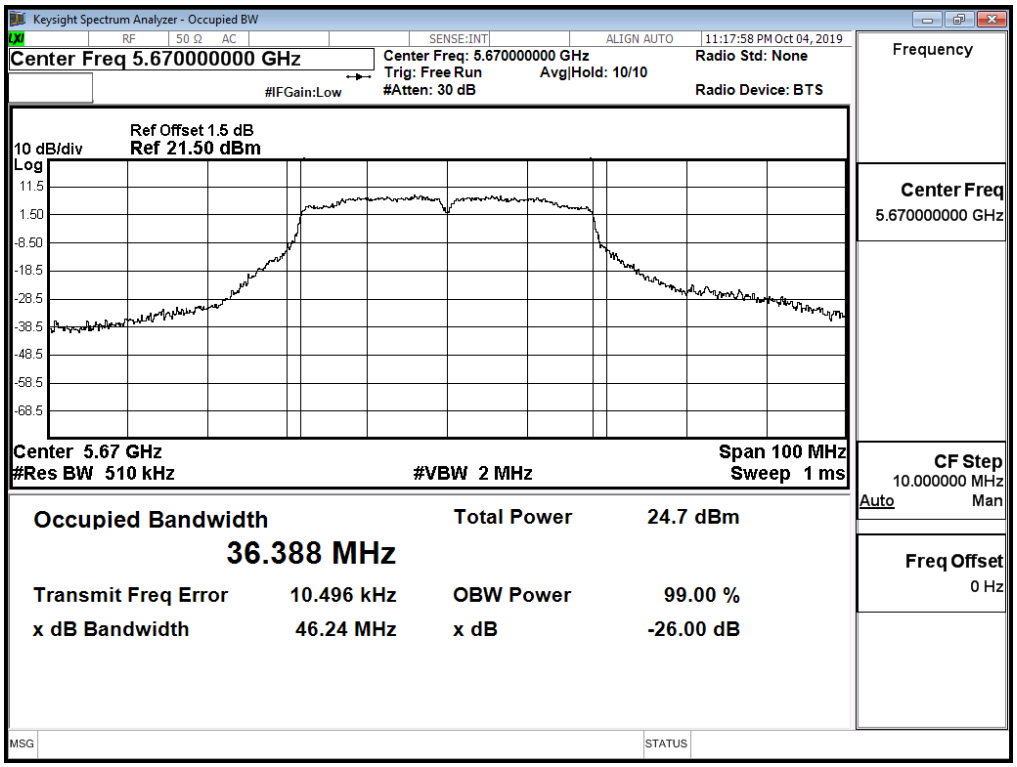
Channel 102



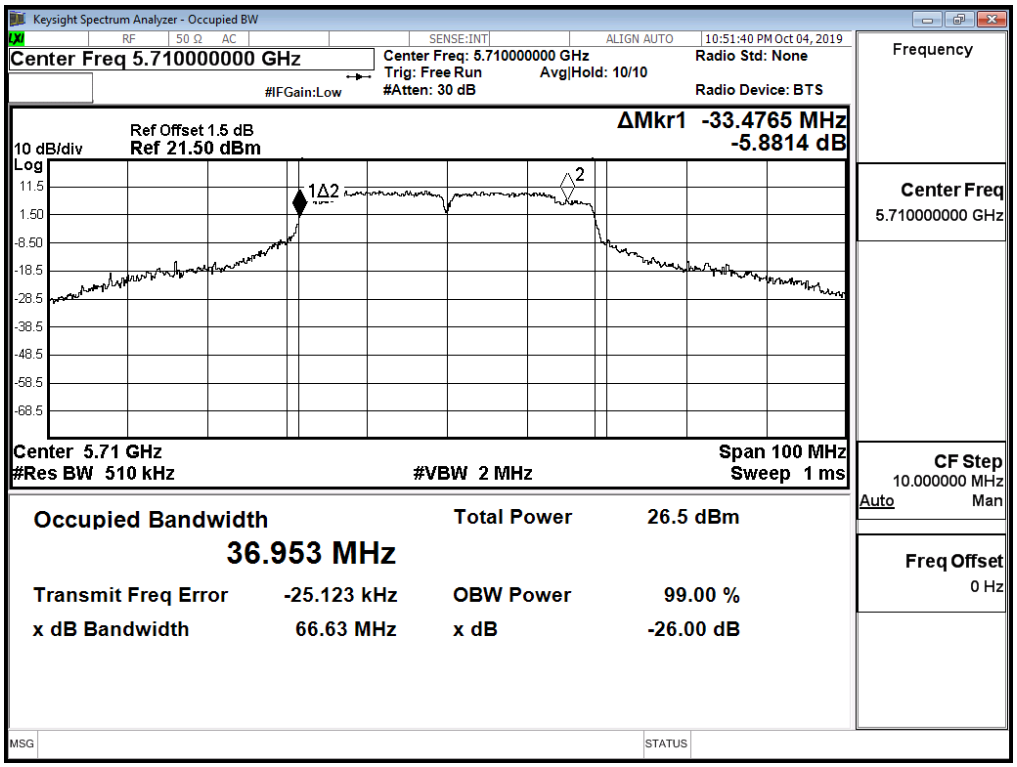
Channel 118



Channel 134

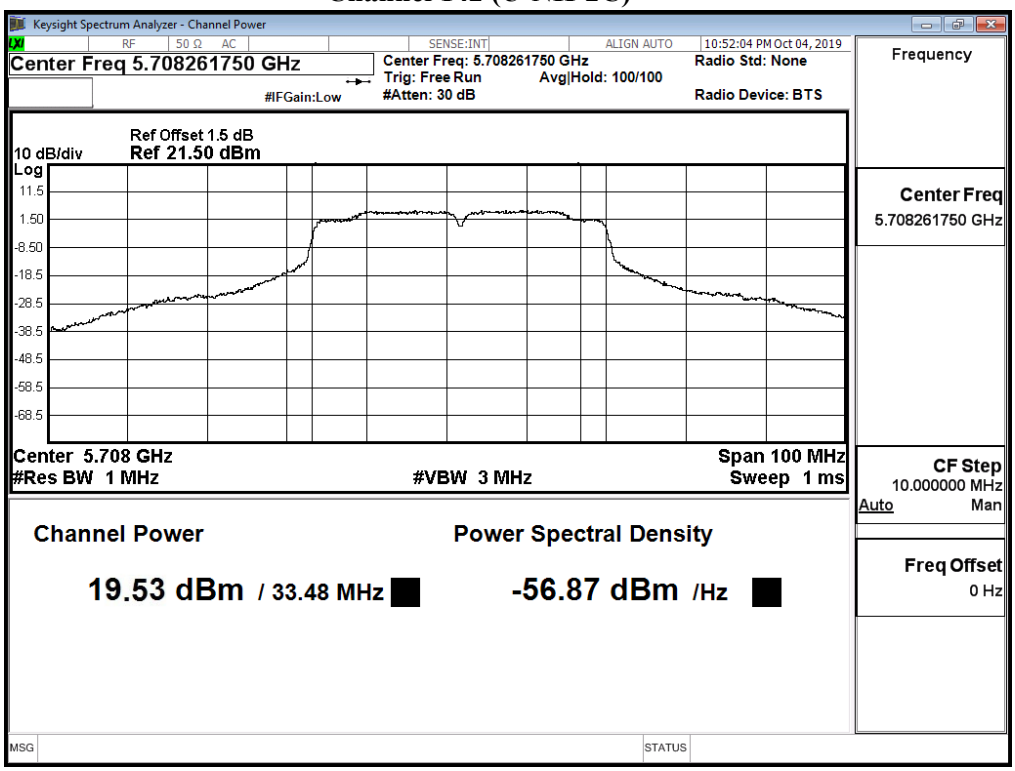


Channel 142



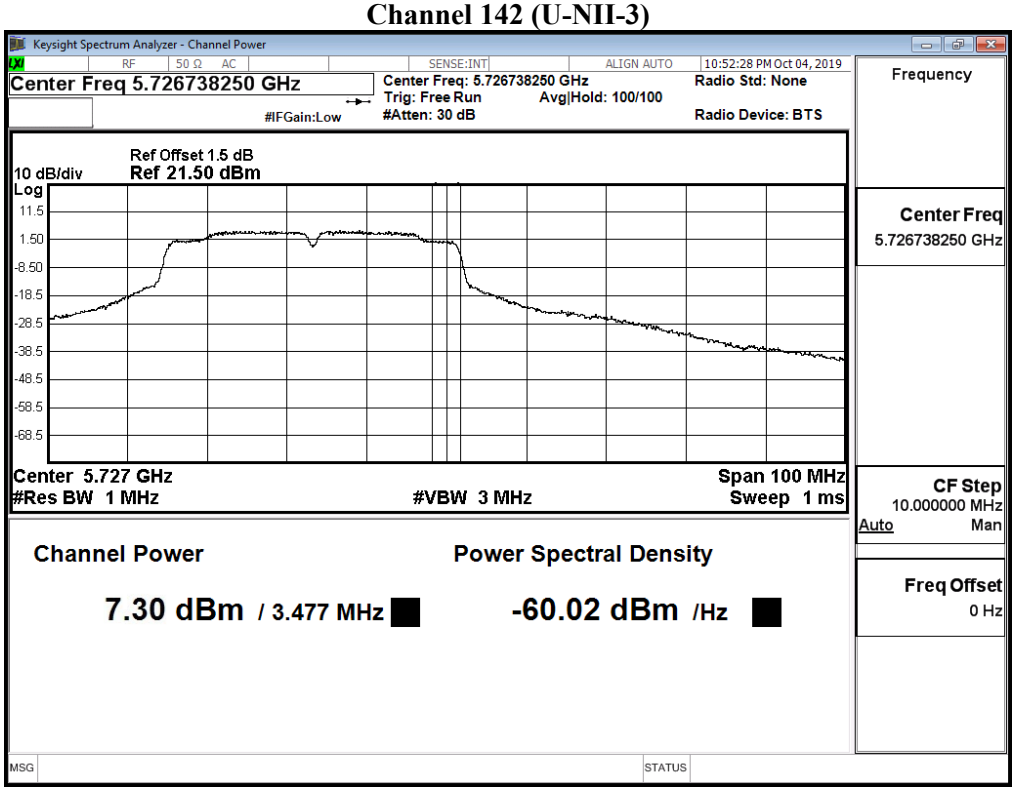
Maximum conducted output power:

Channel 142 (U-NII-2C)



Maximum conducted output power:

Channel 142 (U-NII-3)



Product : Flat Panel Detector
Test Item : Maximum conducted output power
Test Date : 2019/10/04
Test Mode : Mode 1 SISO A: Transmit (802.11ac-80BW_32.5Mbps)

		Maximum conducted output power									
Channel No	Frequency (MHz)	Data Rate (Mbps)									
		32.5	65	97.5	130	195	260	292.5	325	390	433.3
42	5210	12.82	12.72	12.62	12.52	12.45	12.39	12.31	12.21	12.13	12.00
58	5290	11.28	11.25	11.19	11.14	11.04	10.95	10.84	10.79	10.73	10.60
106	5530	12.68	--	--	--	--	--	--	--	--	--
122	5610	19.20	19.14	19.04	19.00	18.88	18.83	18.79	18.72	18.68	18.56
138 (U-NII-2C)	5690	19.12	--	--	--	--	--	--	--	--	--
138 (U-NII-3)	5690	3.00	--	--	--	--	--	--	--	--	--
155	5775	18.16	18.11	18.06	18.03	17.95	17.84	17.73	17.70	17.64	17.57

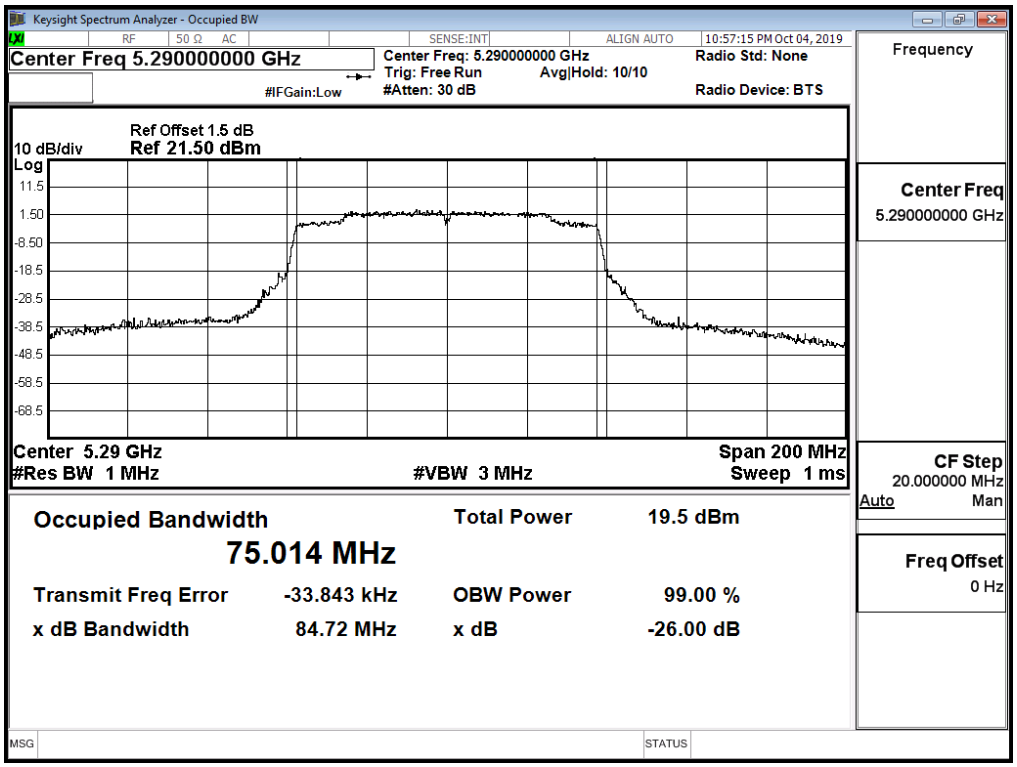
Note: Maximum conducted output power Value =Reading value on Spectrum Analyzer + cable loss

Maximum conducted output power Measurement:

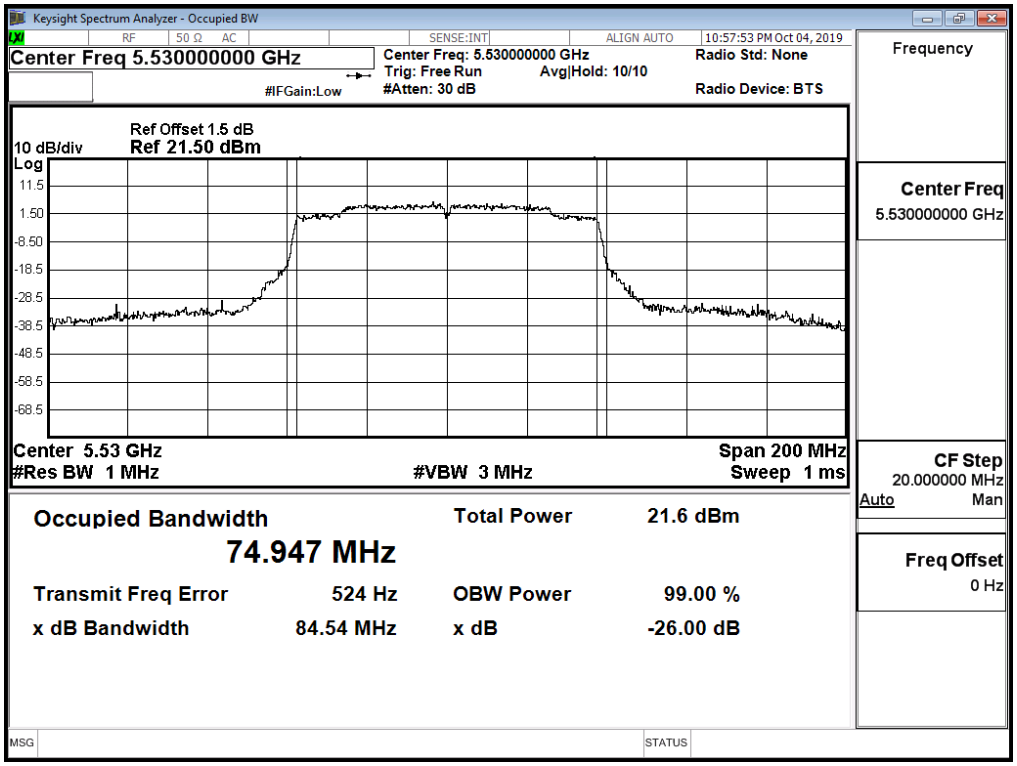
Channel No	Frequency Range (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
42	5210	--	12.82	24	--
58	5290	75.014	11.28	24	29.75
106	5530	74.947	12.68	24	29.75
122	5610	76.874	19.20	24	29.86
138 (U-NII-2C)	5690	73.310	19.12	24	29.65
138 (U-NII-3)	5690	--	3.00	30	--
155	5775	--	18.16	30	--

99% Occupied Bandwidth:

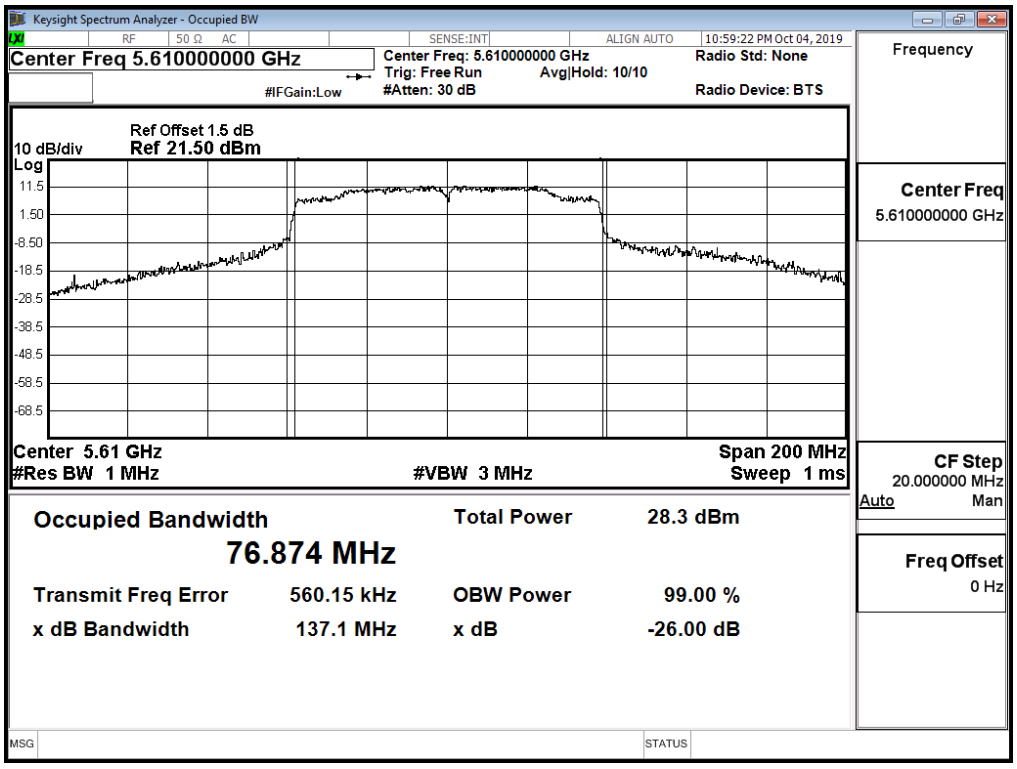
Channel 58



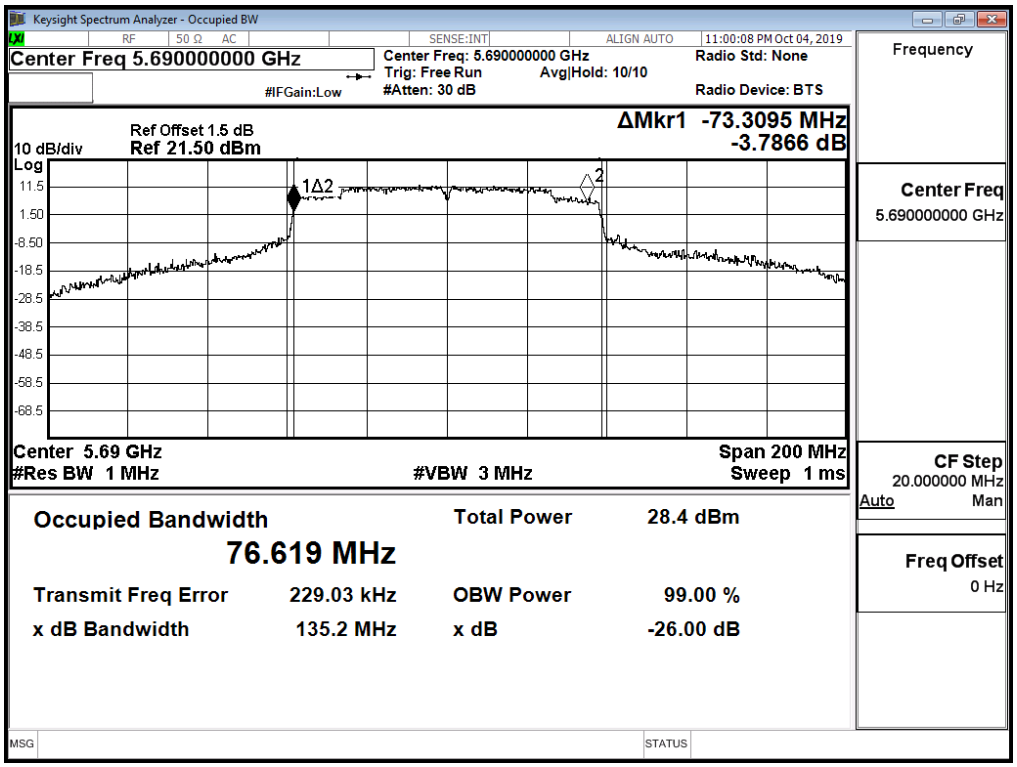
Channel 106



Channel 122

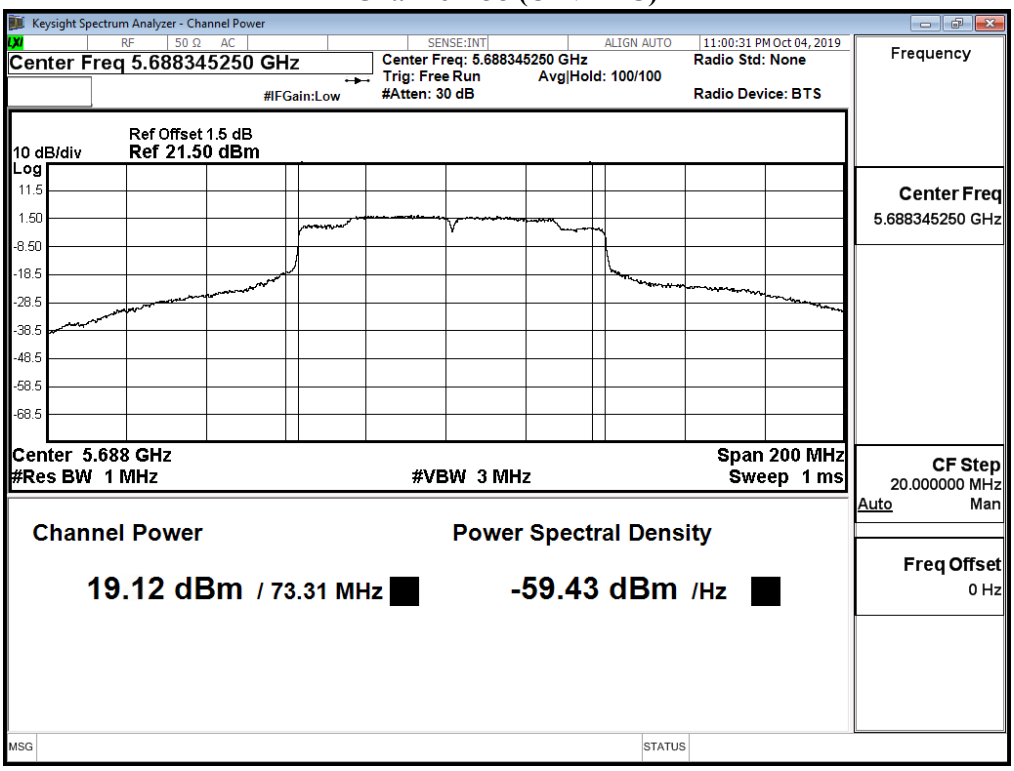


Channel 138



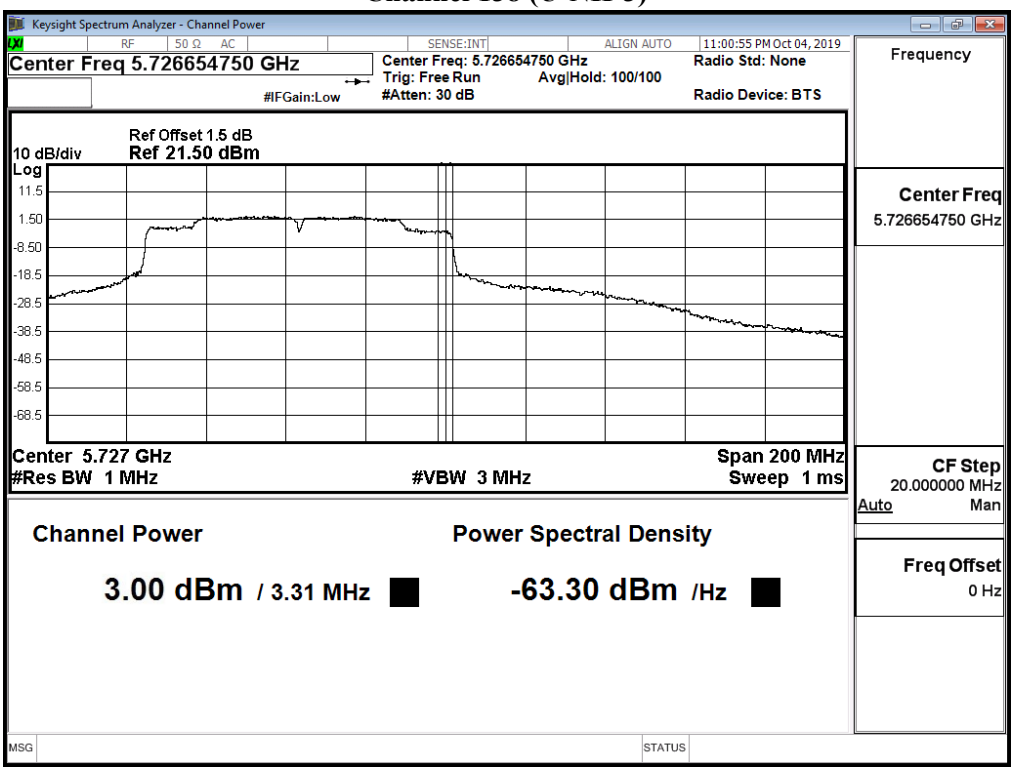
Maximum conducted output power:

Channel 138 (U-NII-2C)



Maximum conducted output power:

Channel 138 (U-NII-3)



Product : Flat Panel Detector
Test Item : Maximum conducted output power
Test Date : 2019/10/04
Test Mode : Mode 2 SISO B: Transmit (802.11a_6Mbps)

		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
		Measurement Level (dBm)							
36	5180	17.94	--	--	--	--	--	--	--
40	5200	20.24	20.14	20.02	19.89	19.82	19.70	19.58	19.45
48	5240	20.09	--	--	--	--	--	--	--
52	5260	19.95	--	--	--	--	--	--	--
56	5280	19.87	19.79	19.76	19.69	19.58	19.47	19.41	19.29
64	5320	17.3	--	--	--	--	--	--	--
100	5500	17.25	--	--	--	--	--	--	--
120	5600	20.11	20.06	20.03	19.99	19.89	19.86	19.77	19.71
140	5700	16.04	--	--	--	--	--	--	--
149	5745	18.43	--	--	--	--	--	--	--
157	5785	18.47	18.32	18.19	18.07	17.95	17.80	17.69	17.54
165	5825	18.35	--	--	--	--	--	--	--

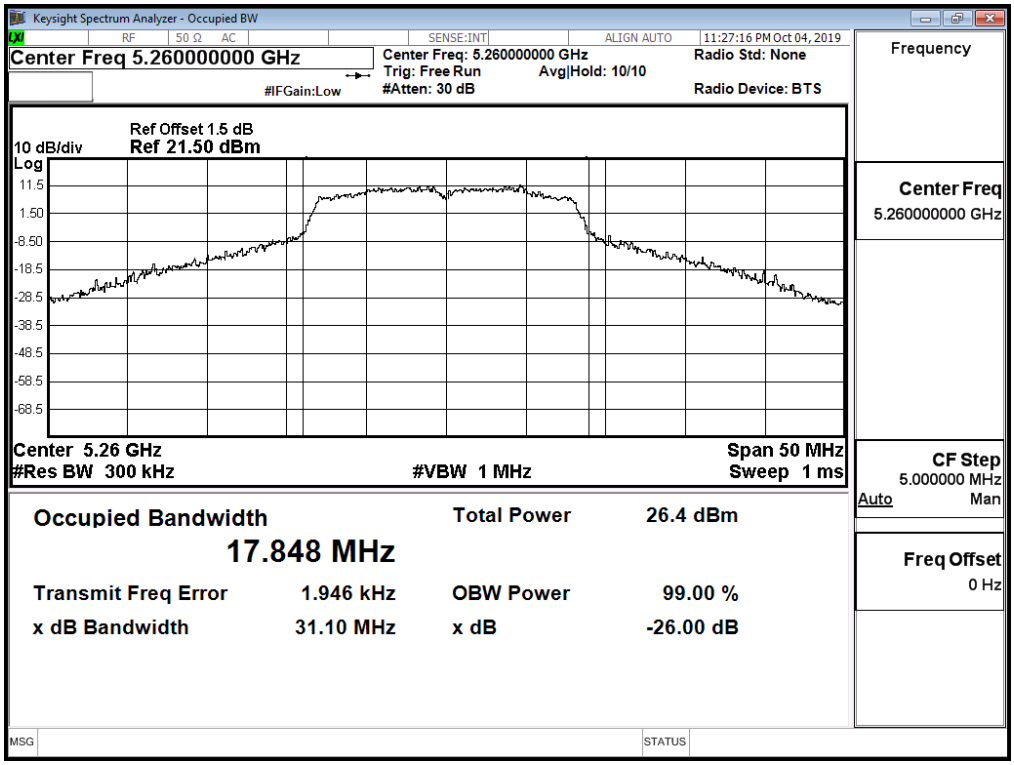
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

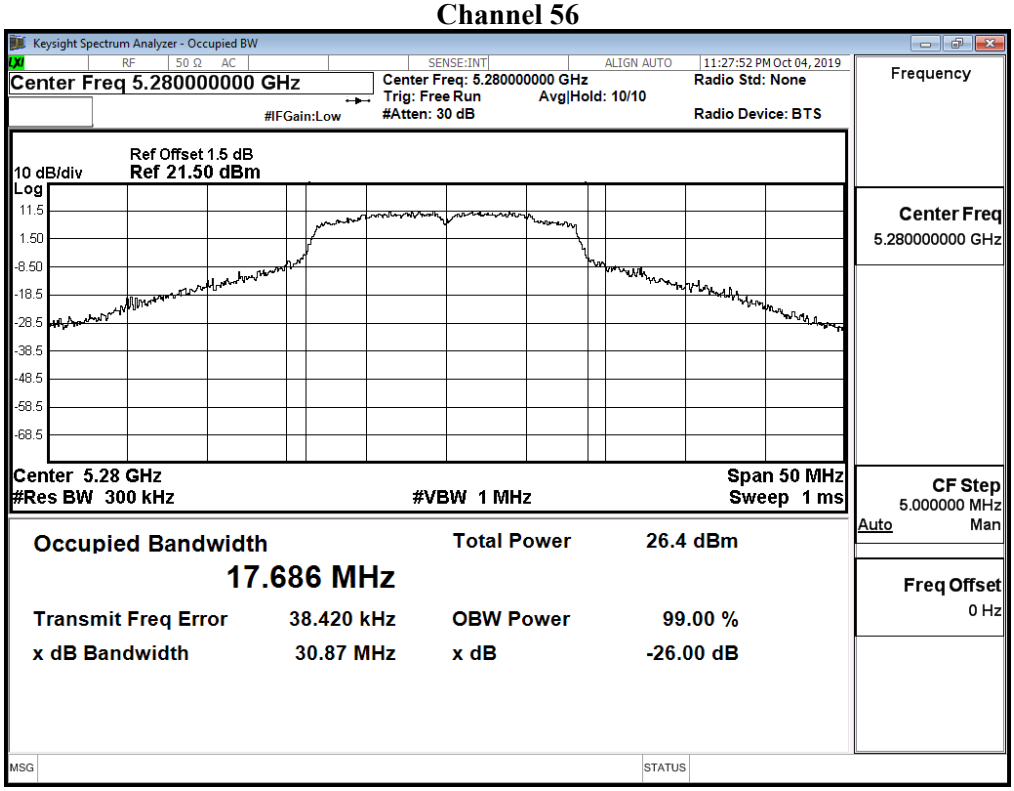
Channel No	Frequency Range (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	17.94	24	--
40	5200	--	20.24	24	--
48	5240	--	20.09	24	--
52	5260	17.848	19.95	24	23.52
56	5280	17.686	19.87	24	23.48
64	5320	17.086	17.3	24	23.33
100	5500	16.776	17.25	24	23.25
120	5600	19.690	20.11	24	23.94
140	5700	16.646	16.04	24	23.21
149	5745	--	18.43	30	--
157	5785	--	18.47	30	--
165	5825	--	18.35	30	--

99% Occupied Bandwidth:

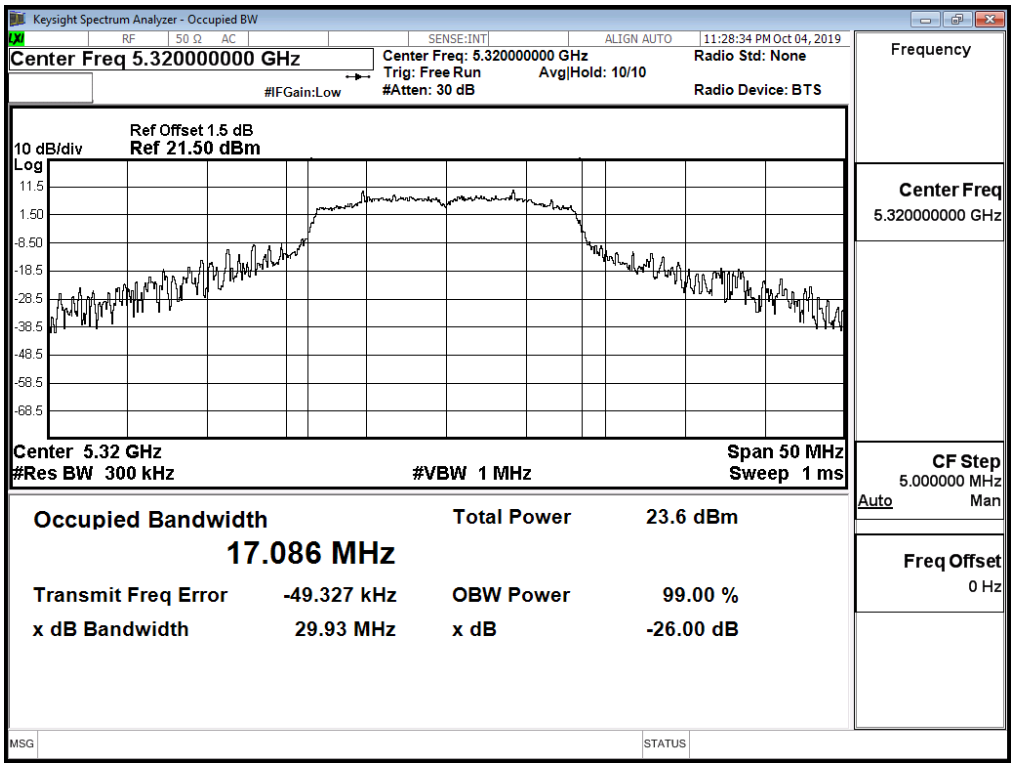
Channel 52



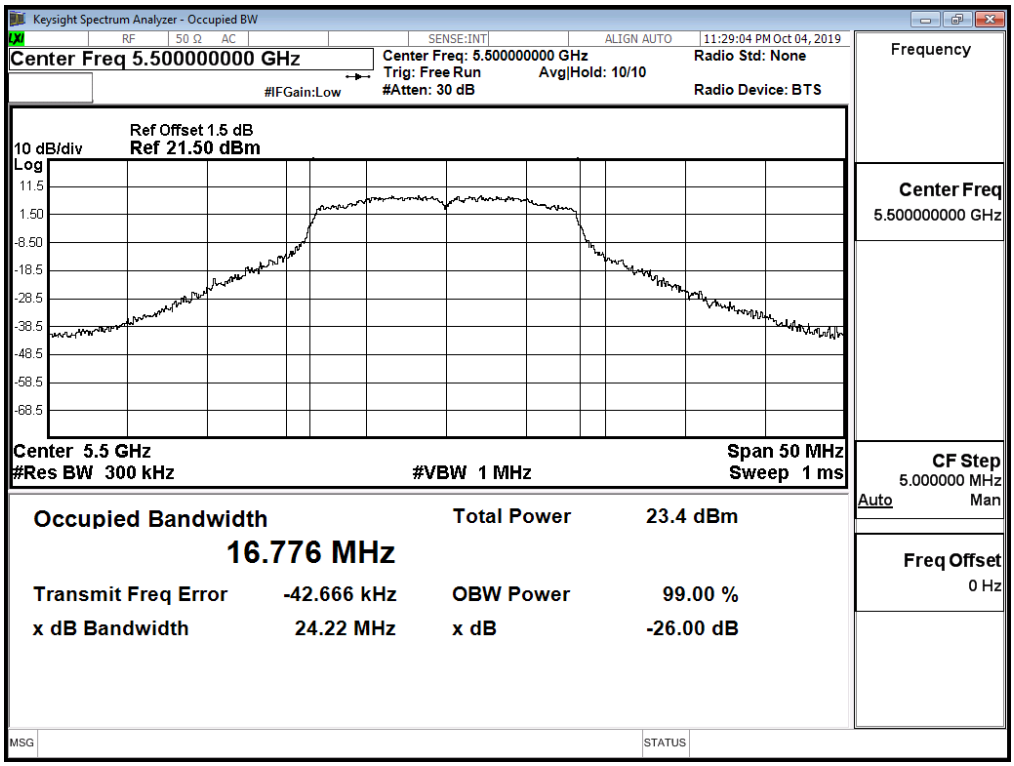
Channel 56



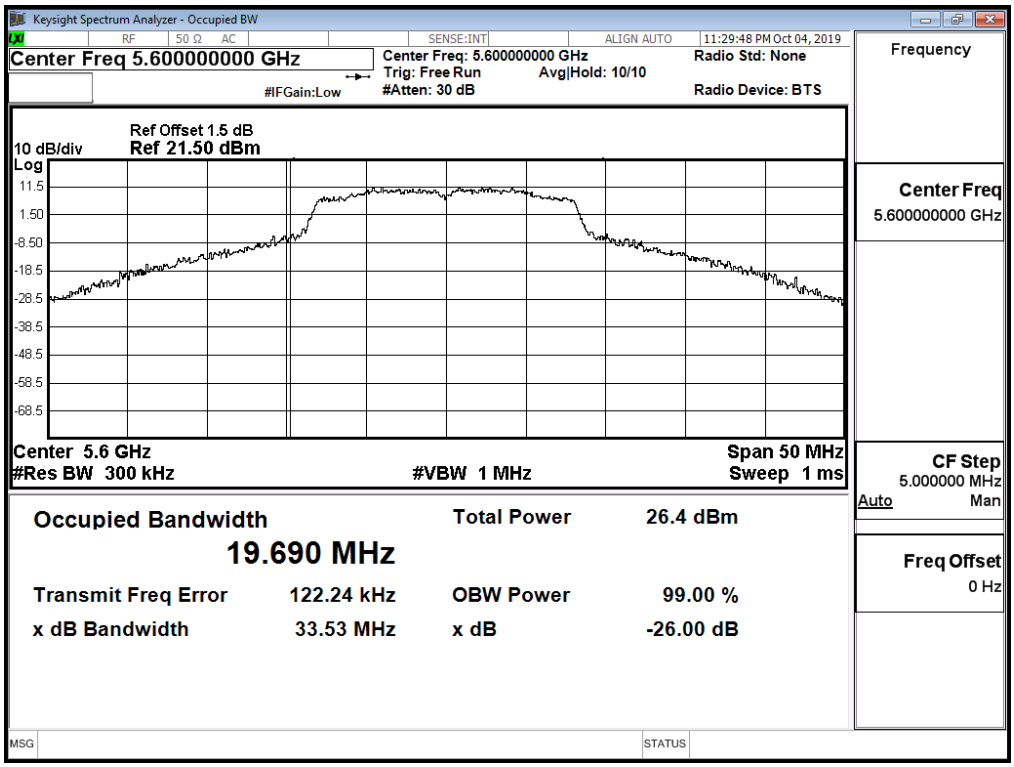
Channel 64



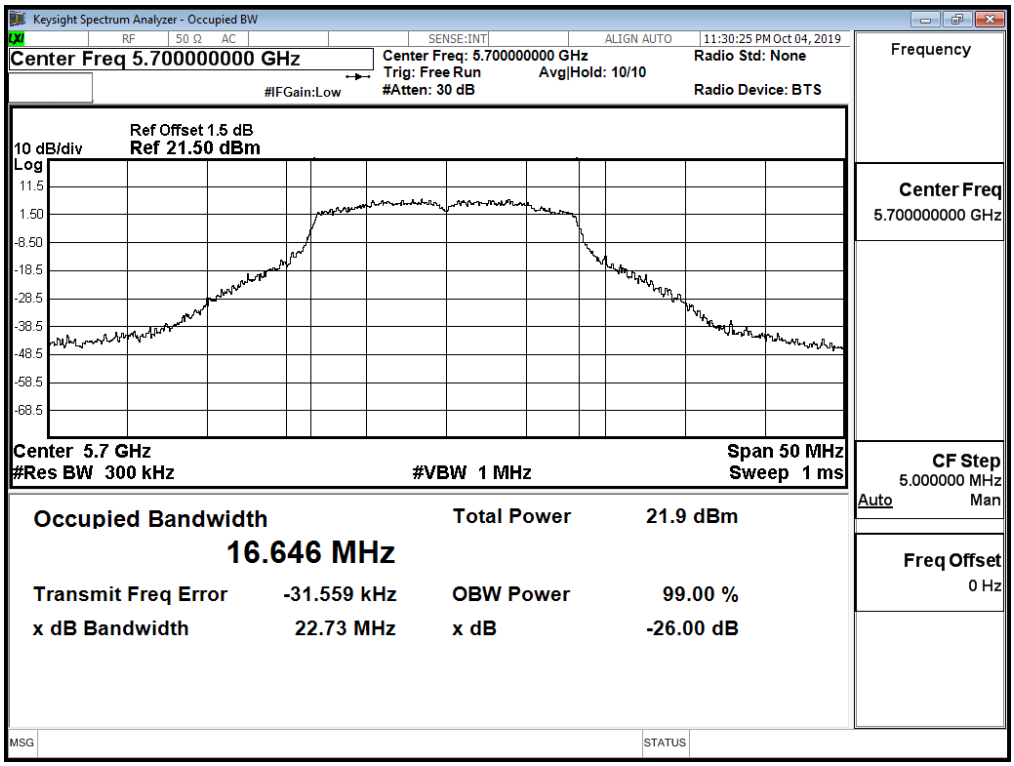
Channel 100



Channel 120



Channel 140



Product : Flat Panel Detector
Test Item : Maximum conducted output power
Test Date : 2019/10/04
Test Mode : Mode 2 SISO B: Transmit (802.11n-20BW_7.2Mbps)

		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2
		Measurement Level (dBm)							
36	5180	15.84	--	--	--	--	--	--	--
40	5200	19.78	19.66	19.58	19.45	19.40	19.33	19.26	19.18
48	5240	20.22	--	--	--	--	--	--	--
52	5260	20.11	--	--	--	--	--	--	--
56	5280	20.03	19.94	19.83	19.71	19.59	19.56	19.52	19.42
64	5320	16.43	--	--	--	--	--	--	--
100	5500	17.25	--	--	--	--	--	--	--
120	5600	20.16	20.06	19.96	19.88	19.85	19.74	19.63	19.50
140	5700	15.96	--	--	--	--	--	--	--
144(U-NII-2C)	5720	19.18	19.15	19.10	18.98	18.91	18.81	18.68	18.61
144(U-NII-3)	5720	11.82	11.74	11.63	11.56	11.46	11.36	11.26	11.15
149	5745	18.44	--	--	--	--	--	--	--
157	5785	18.47	18.35	18.24	18.12	18.07	17.95	17.82	17.71
165	5825	18.42	--	--	--	--	--	--	--

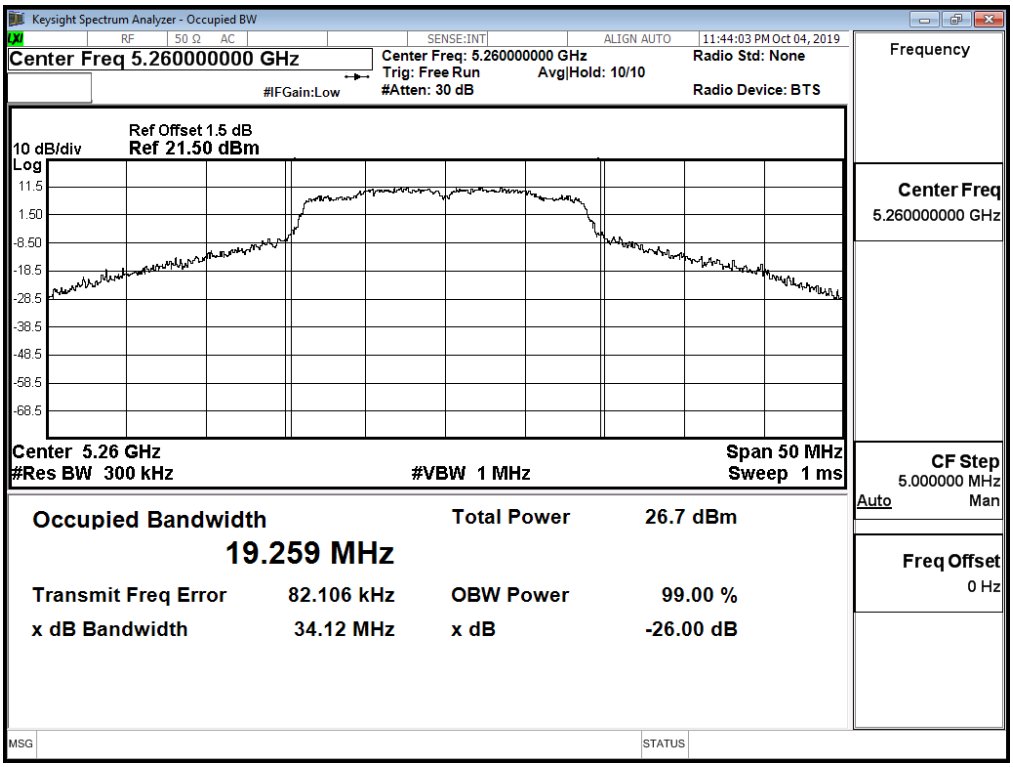
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

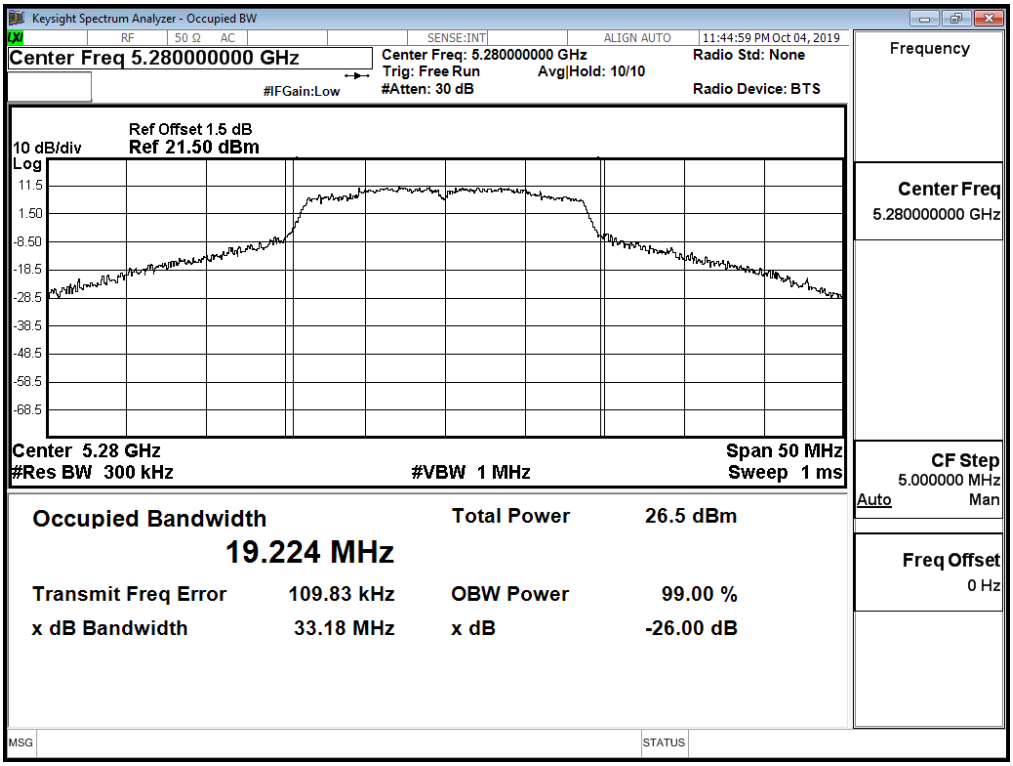
Channel Number	Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	15.84	24	--
40	5200	--	19.78	24	--
48	5240	--	20.22	24	--
52	5260	19.259	20.11	24	23.85
56	5280	19.224	20.03	24	23.84
64	5320	17.859	16.43	24	23.52
100	5500	17.831	17.25	24	23.51
120	5600	20.721	20.16	24	24.16
140	5700	17.803	15.96	24	23.50
144(U-NII-2C)	5720	14.816	19.18	24	22.71
144(U-NII-3)	5720	--	11.82	30	--
149	5745	--	18.44	30	--
157	5785	--	18.47	30	--
165	5825	--	18.42	30	--

99% Occupied Bandwidth:

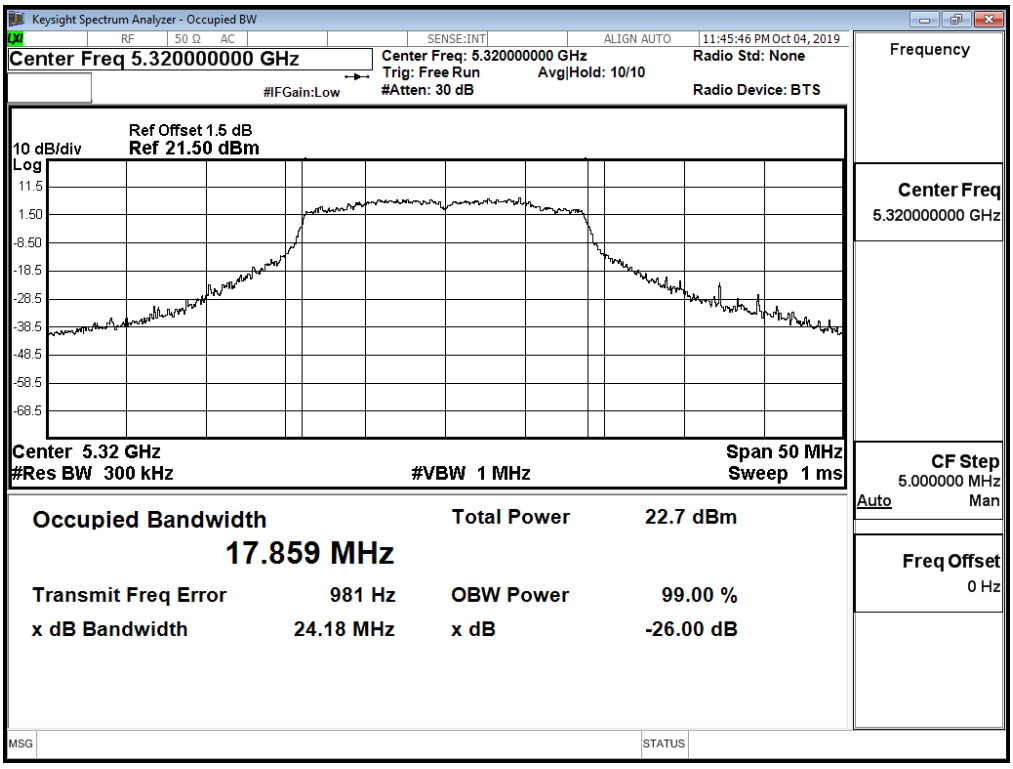
Channel 52



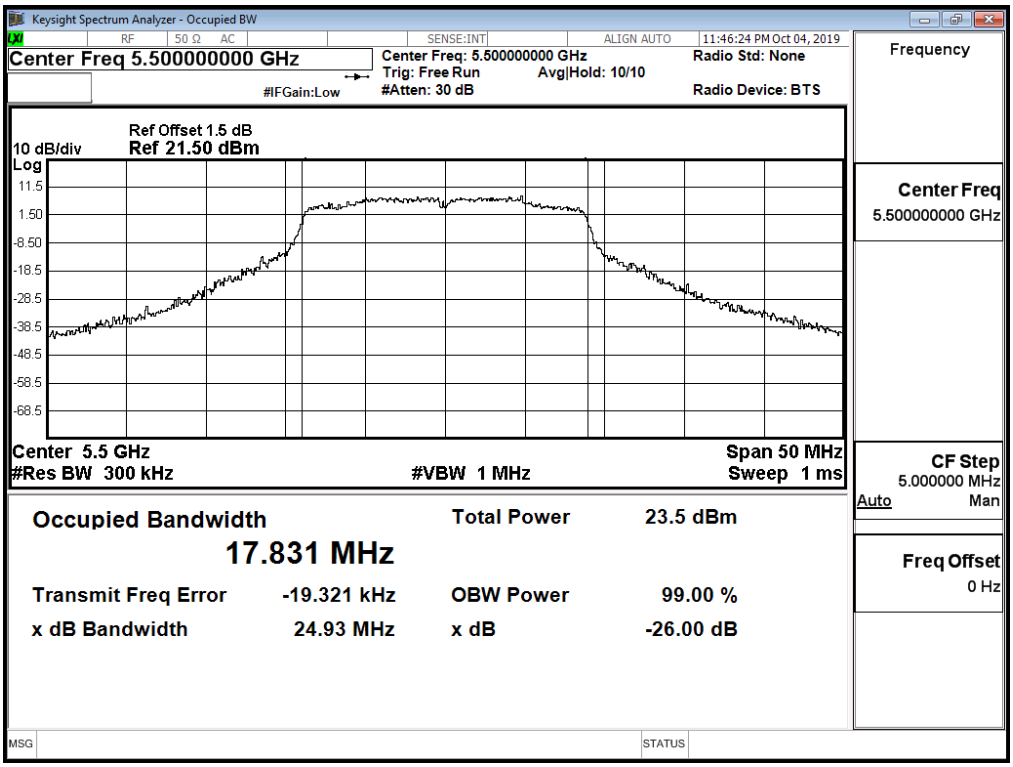
Channel 56



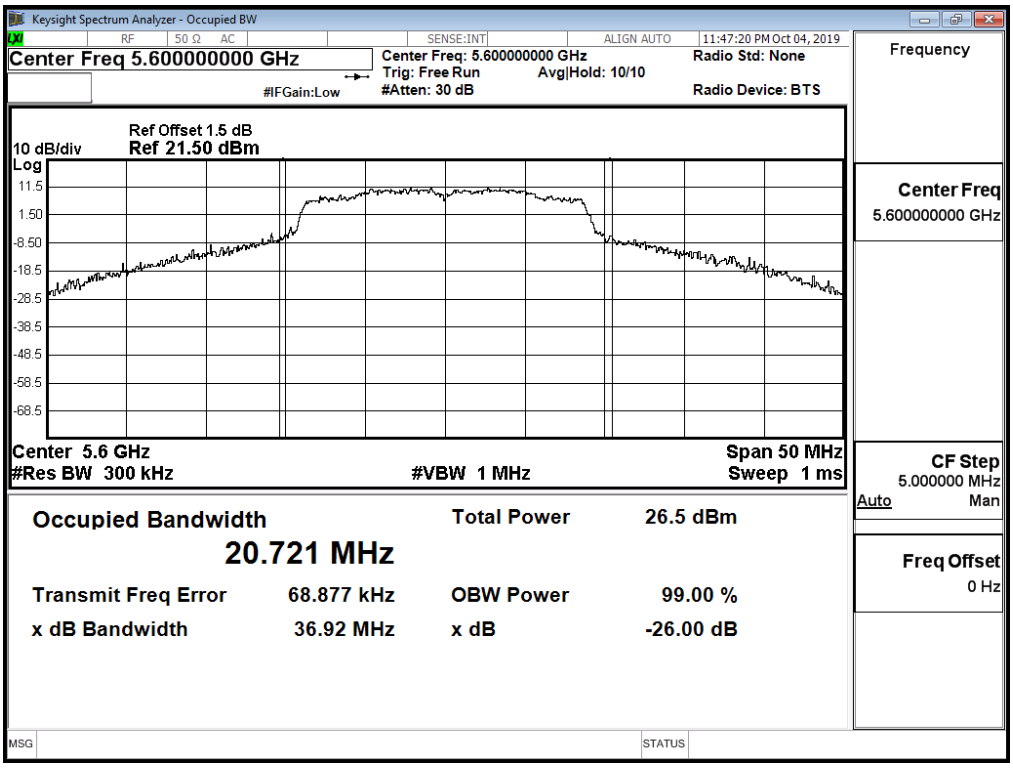
Channel 64



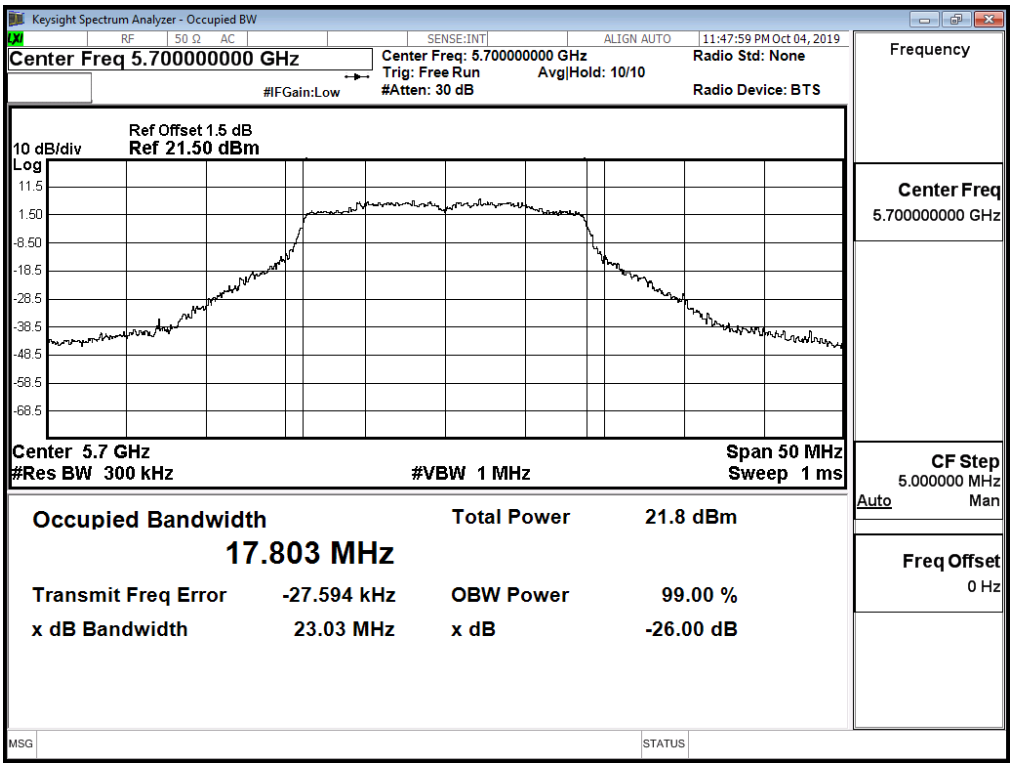
Channel 100



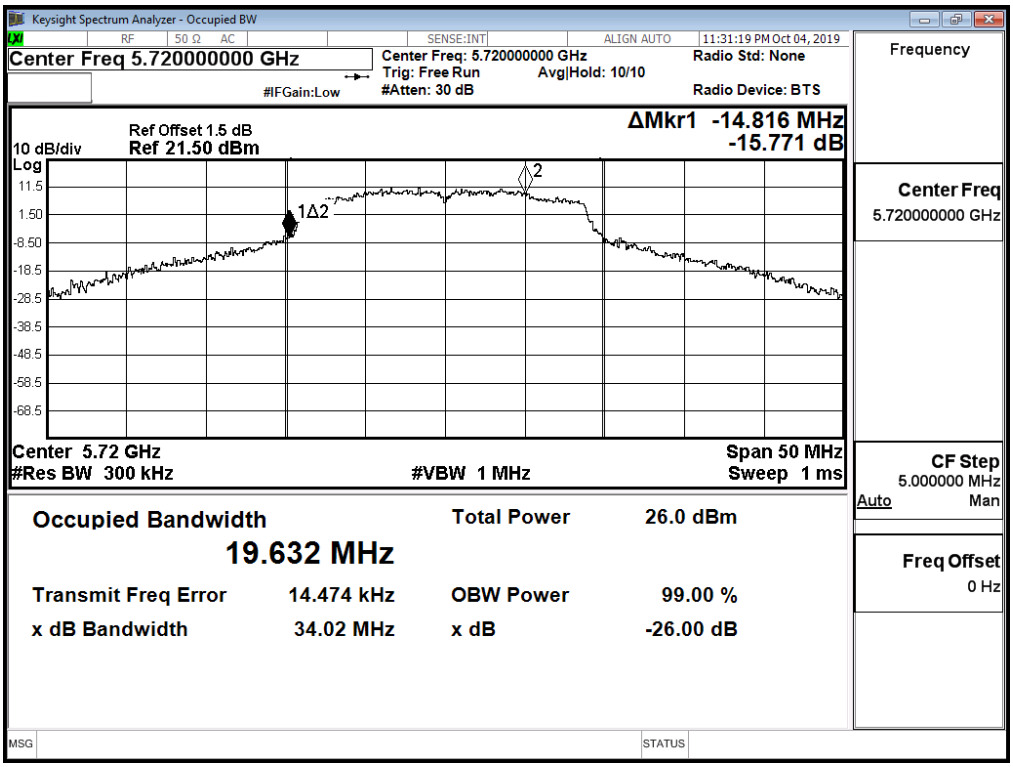
Channel 120



Channel 140

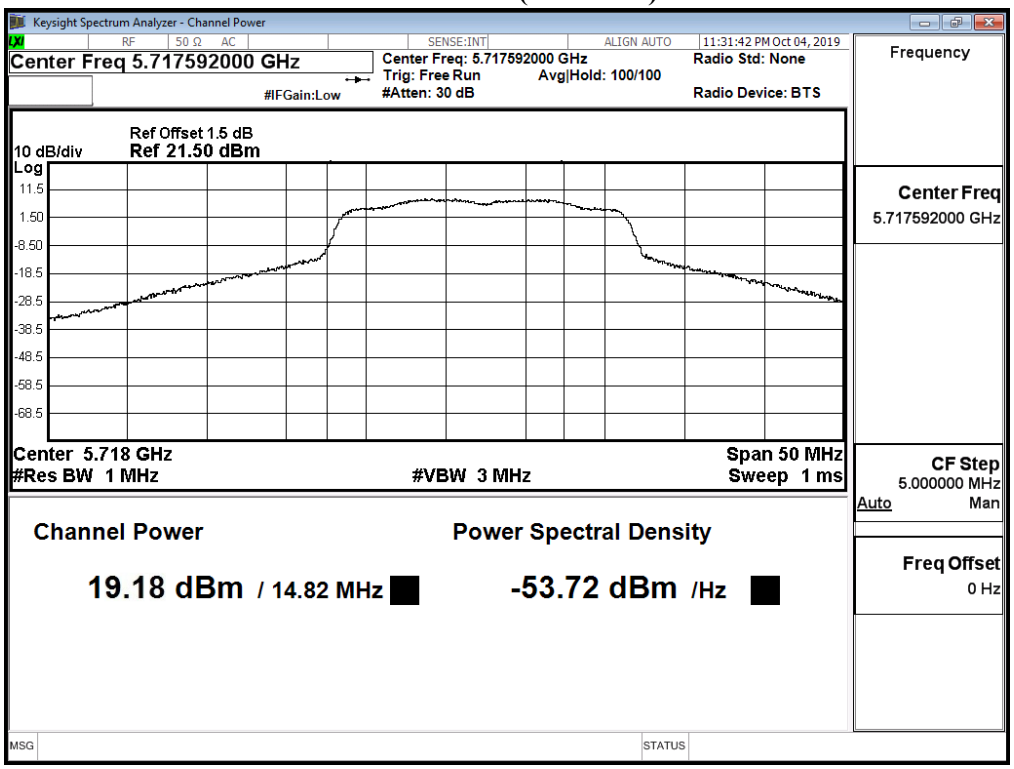


Channel 144


Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
11:31:19 PM Oct 04, 2019
Center Freq 5.720000000 GHz
Center Freq: 5.720000000 GHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 1.5 dB
10 dB/div
Ref 21.50 dBm
Log
ΔMkr1 -14.816 MHz
-15.771 dB
1Δ2
2
Center Freq
5.720000000 GHz
Center 5.72 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 50 MHz
Sweep 1 ms
CF Step
5.000000 MHz
Auto
Man
Occupied Bandwidth
19.632 MHz
Total Power 26.0 dBm
Transmit Freq Error 14.474 kHz
OBW Power 99.00 %
x dB Bandwidth 34.02 MHz
x dB -26.00 dB
Freq Offset
0 Hz
MSG
STATUS

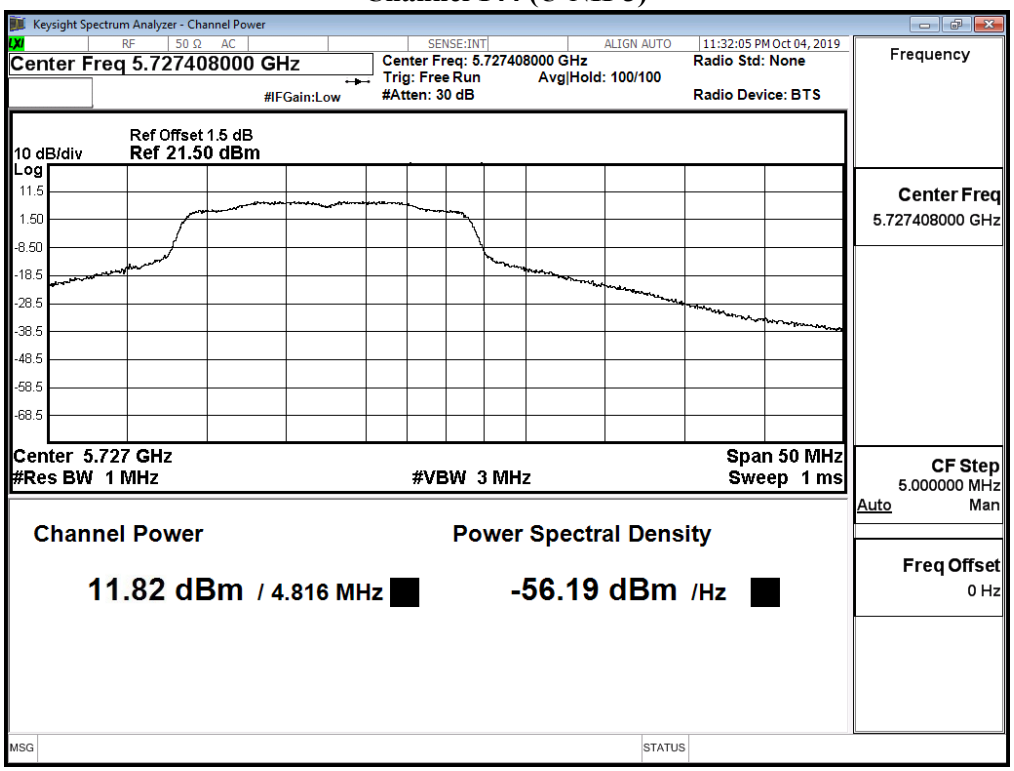
Maximum conducted output power:

Channel 144 (U-NII-2C)



Maximum conducted output power:

Channel 144 (U-NII-3)



Product : Flat Panel Detector
Test Item : Maximum conducted output power
Test Date : 2019/10/04
Test Mode : Mode 2 SISO B: Transmit (802.11n-40BW_15Mbps)

Channel No.	Frequency (MHz)	Maximum conducted output power							
		Data Rate (Mbps)							
		15	30	45	60	90	120	135	150
		Measurement Level (dBm)							
38	5190	11.8	--	--	--	--	--	--	--
46	5230	19.85	19.76	19.68	19.61	19.55	19.47	19.40	19.27
54	5270	19.53	--	--	--	--	--	--	--
62	5310	13.54	13.45	13.41	13.28	13.19	13.06	12.94	12.81
102	5510	15.03	--	--	--	--	--	--	--
118	5590	19.81	19.69	19.57	19.49	19.43	19.31	19.20	19.07
134	5670	16.68	--	--	--	--	--	--	--
142(U-NII-2C)	5710	20.35	20.30	20.18	20.12	19.99	19.96	19.84	19.72
142(U-NII-3)	5710	7.65	7.59	7.50	7.43	7.39	7.35	7.32	7.23
151	5755	18.46	--	--	--	--	--	--	--
159	5795	18.47	18.35	18.24	18.12	18.04	17.90	17.78	17.65

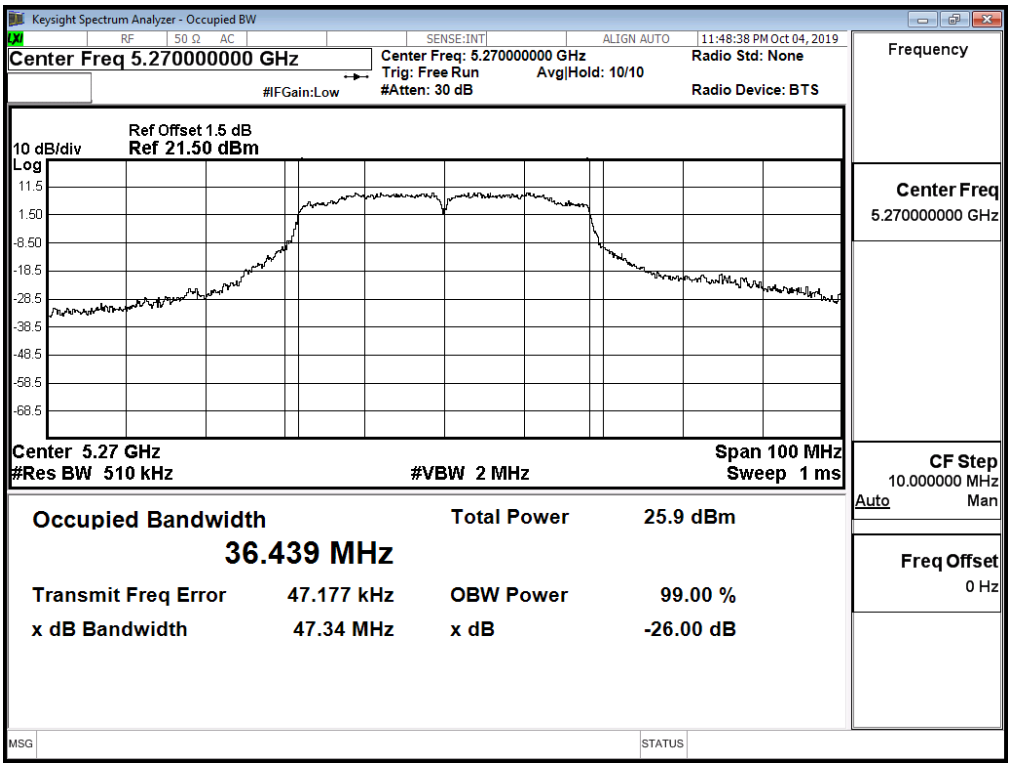
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

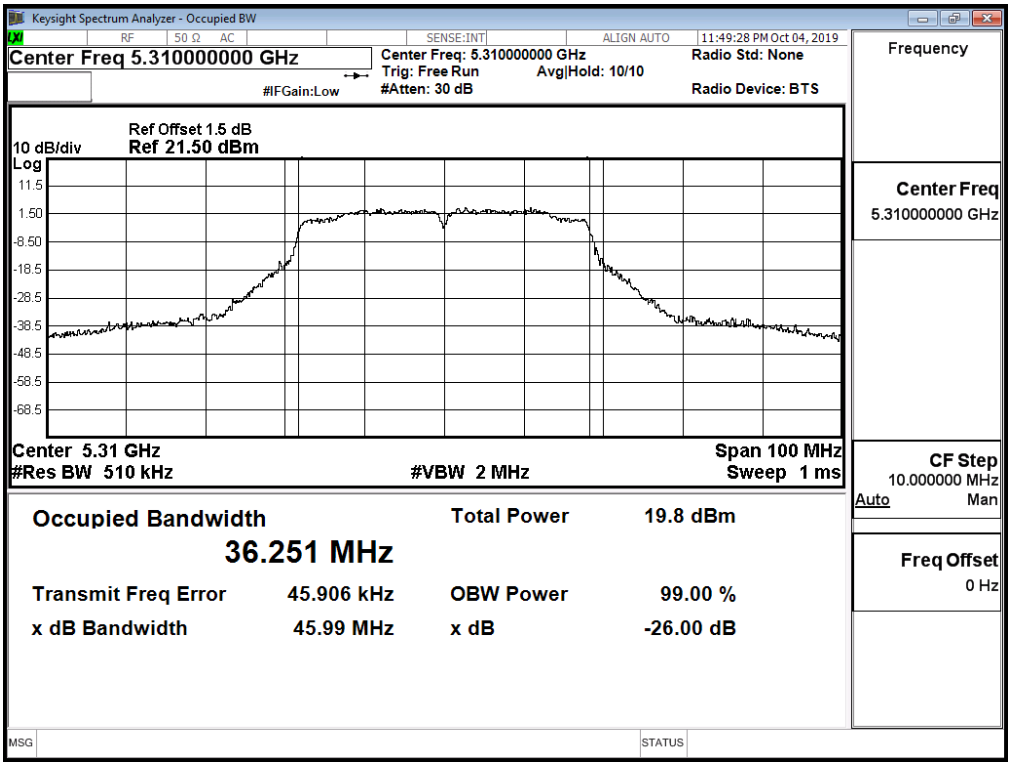
Channel Number	Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
38	5190	--	11.8	24	--
46	5230	--	19.85	24	--
54	5270	36.439	19.53	24	26.62
62	5310	36.251	13.54	24	26.59
102	5510	36.220	15.03	24	26.59
118	5590	36.773	19.81	24	26.66
134	5670	36.211	16.68	24	26.59
142(U-NII-2C)	5710	34.230	20.35	24	26.34
142(U-NII-3)	5710	--	7.65	30	--
151	5755	--	18.46	30	--
159	5795	--	18.47	30	--

99% Occupied Bandwidth:

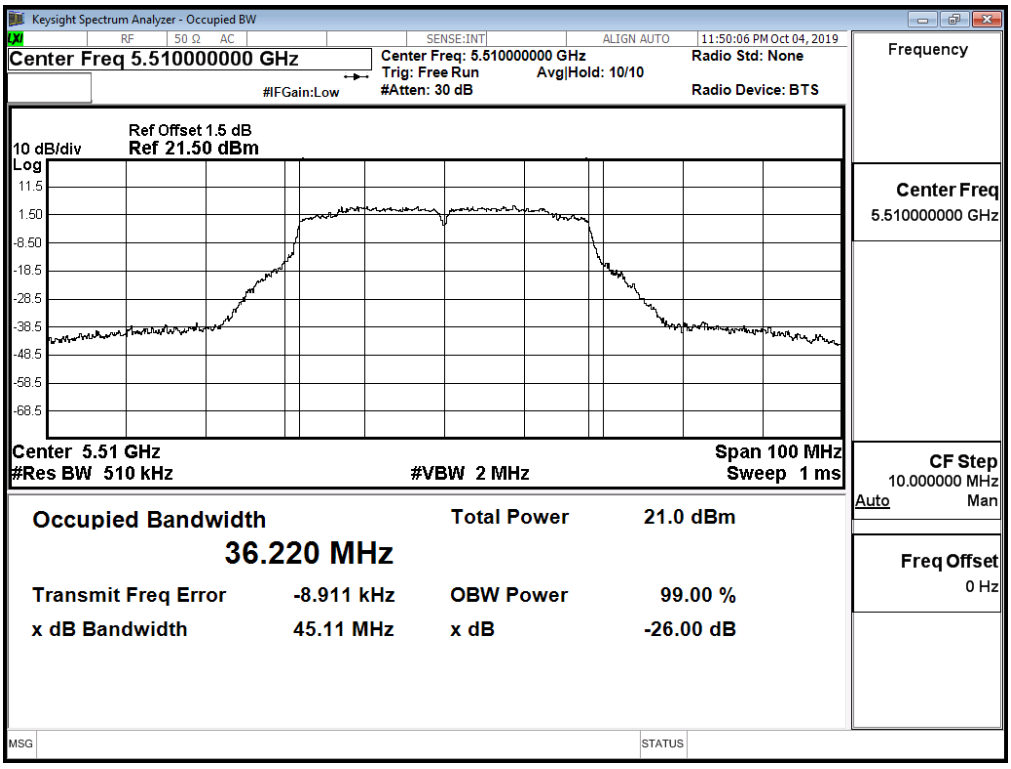
Channel 54



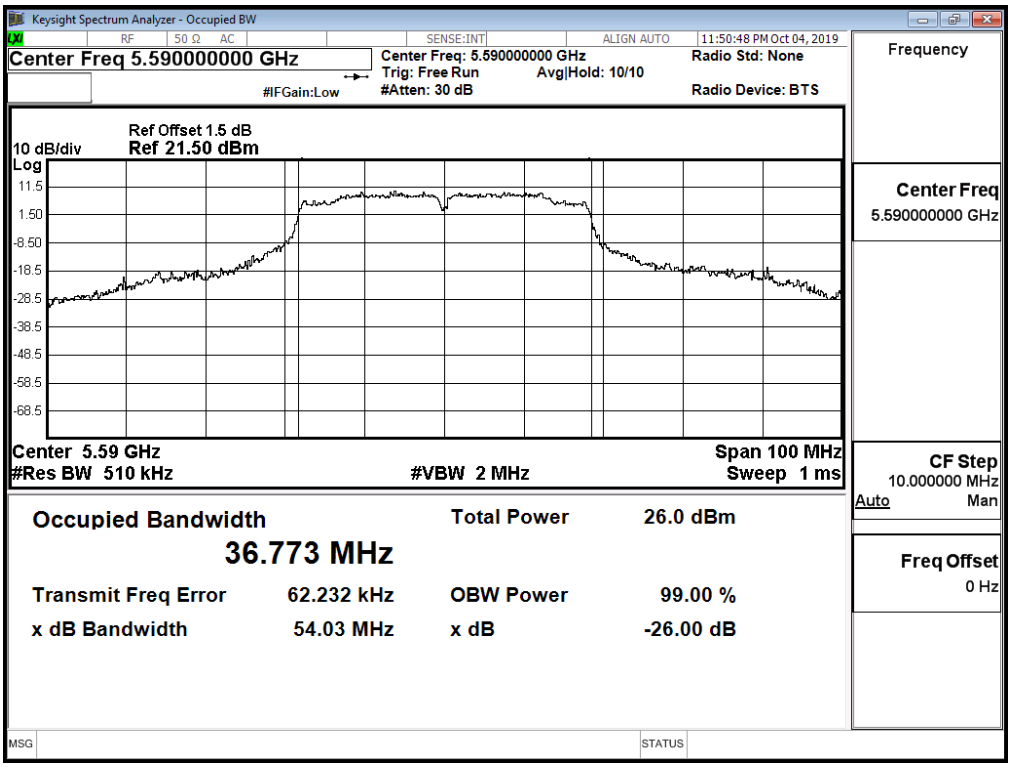
Channel 62



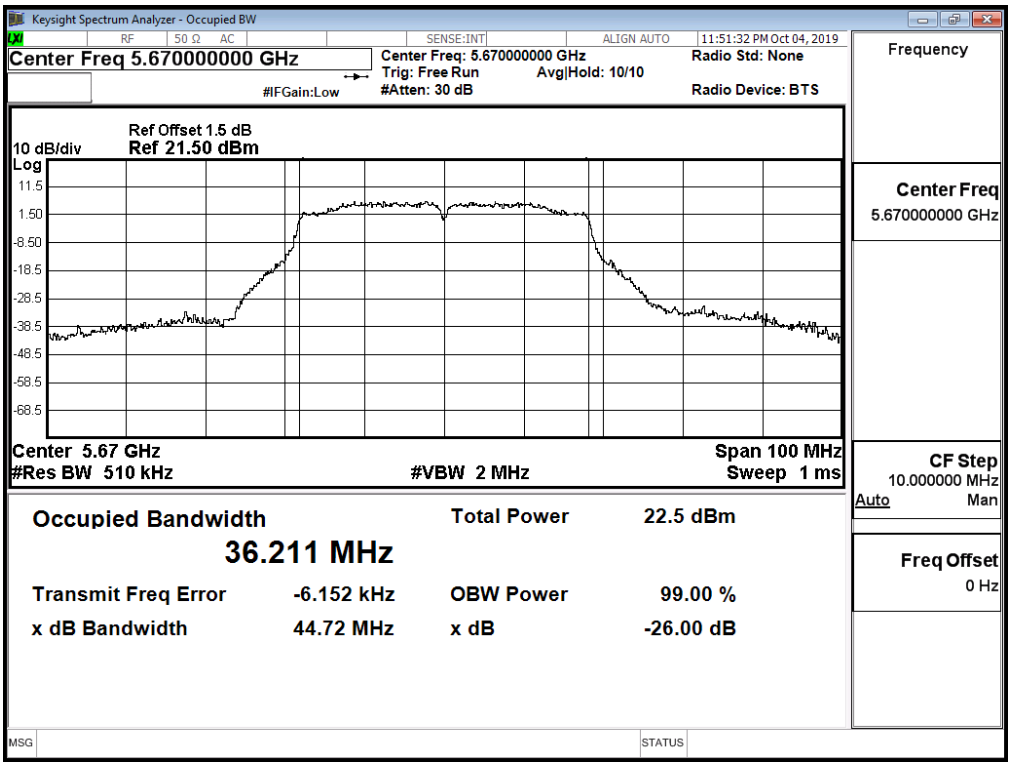
Channel 102



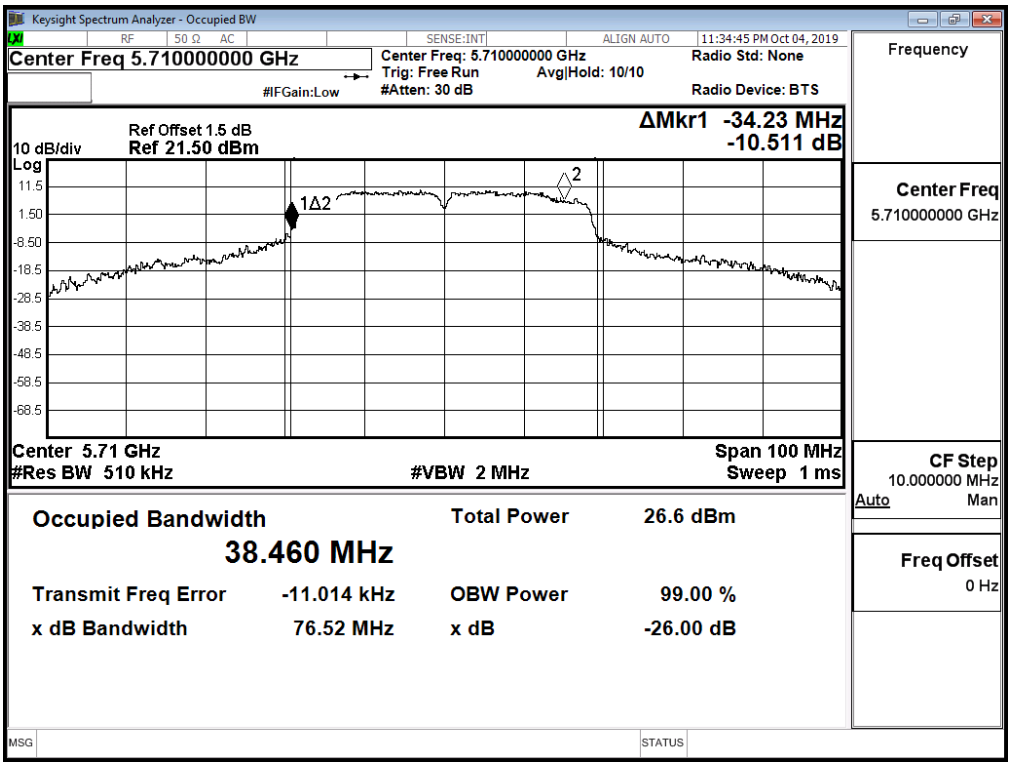
Channel 118



Channel 134

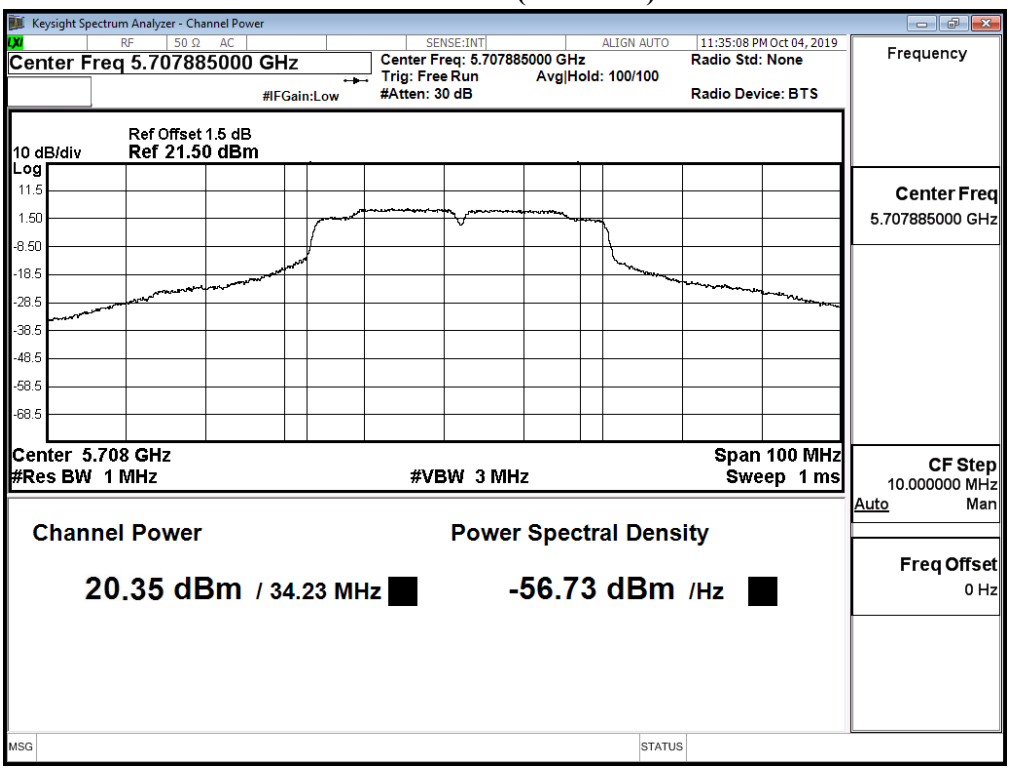


Channel 142



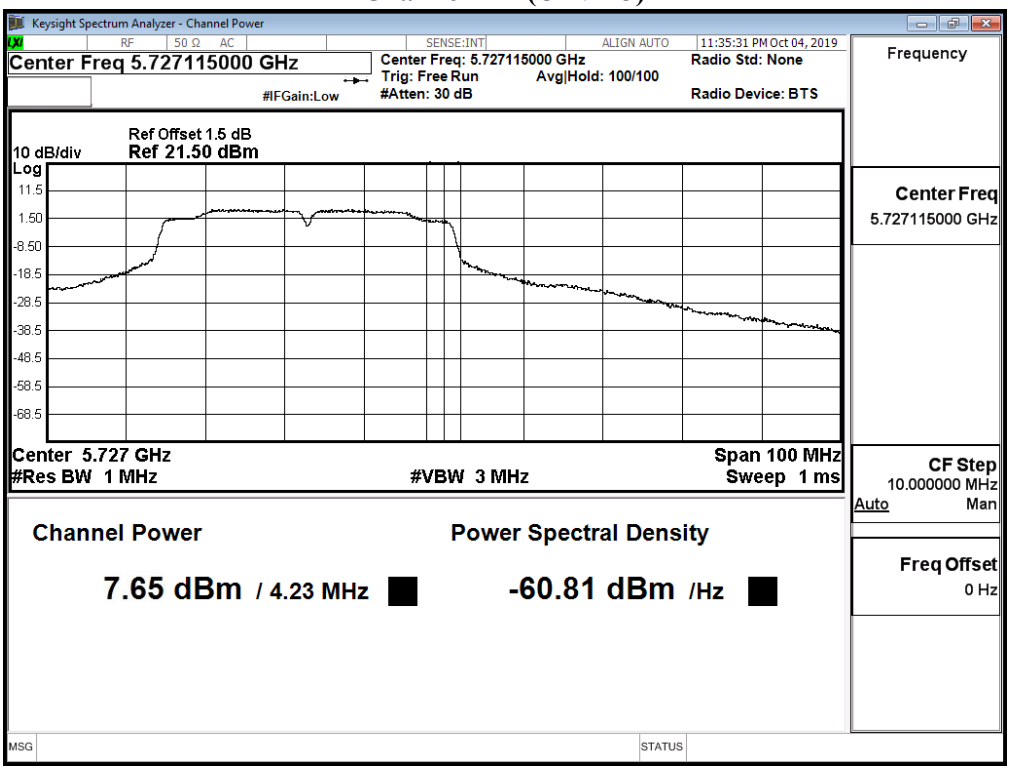
Maximum conducted output power:

Channel 142 (U-NII-2C)



Maximum conducted output power:

Channel 142 (U-NII-3)



Product : Flat Panel Detector
Test Item : Maximum conducted output power
Test Date : 2019/10/04
Test Mode : Mode 2 SISO B: Transmit (802.11ac-80BW_32.5Mbps)

		Maximum conducted output power									
Channel No	Frequency (MHz)	Data Rate (Mbps)									
		32.5	65	97.5	130	195	260	292.5	325	390	433.3
42	5210	12.59	12.56	12.49	12.45	12.42	12.34	12.29	12.21	12.15	12.10
58	5290	12.02	11.89	11.84	11.79	11.69	11.61	11.48	11.39	11.30	11.22
106	5530	13.74	--	--	--	--	--	--	--	--	--
122	5610	17.84	17.72	17.66	17.54	17.49	17.42	17.31	17.19	17.06	16.94
138 (U-NII-2C)	5690	19.96	--	--	--	--	--	--	--	--	--
138 (U-NII-3)	5690	3.06	--	--	--	--	--	--	--	--	--
155	5775	17.51	17.45	17.40	17.33	17.29	17.21	17.15	17.05	16.96	16.90

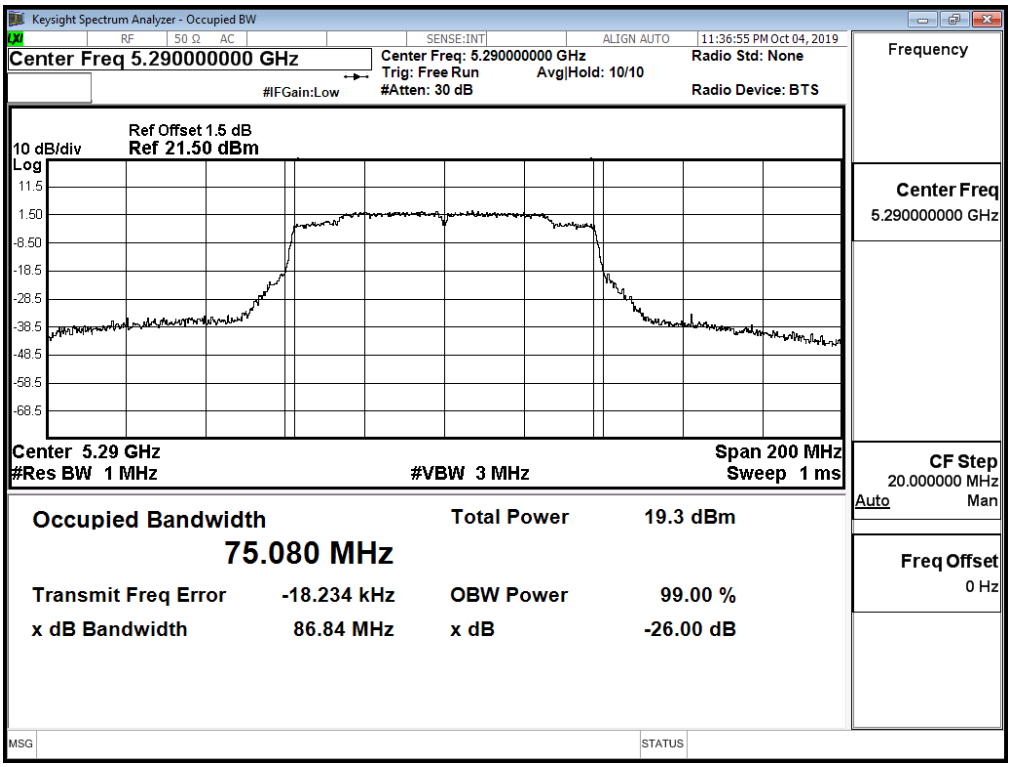
Note: Maximum conducted output power Value =Reading value on Spectrum Analyzer + cable loss

Maximum conducted output power Measurement:

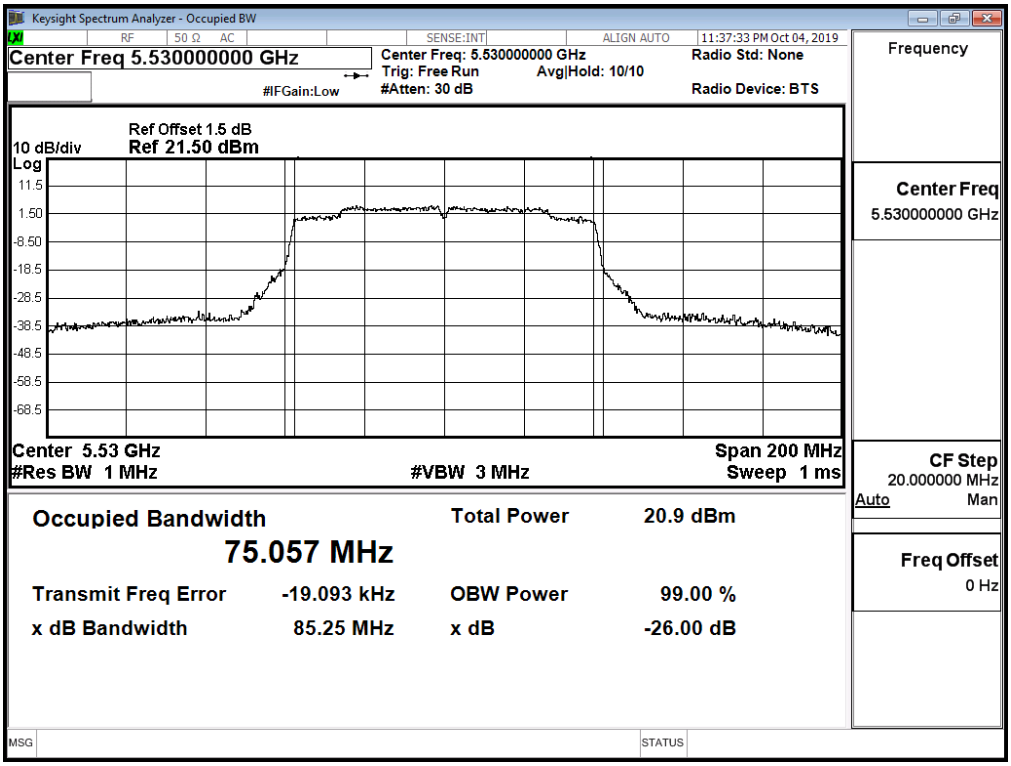
Channel No	Frequency Range (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
42	5210	--	12.59	24	--
58	5290	75.080	12.02	24	29.76
106	5530	75.057	13.74	24	29.75
122	5610	75.116	17.84	24	29.76
138 (U-NII-2C)	5690	72.876	19.96	24	29.63
138 (U-NII-3)	5690	--	3.06	30	--
155	5775	--	17.51	30	--

99% Occupied Bandwidth:

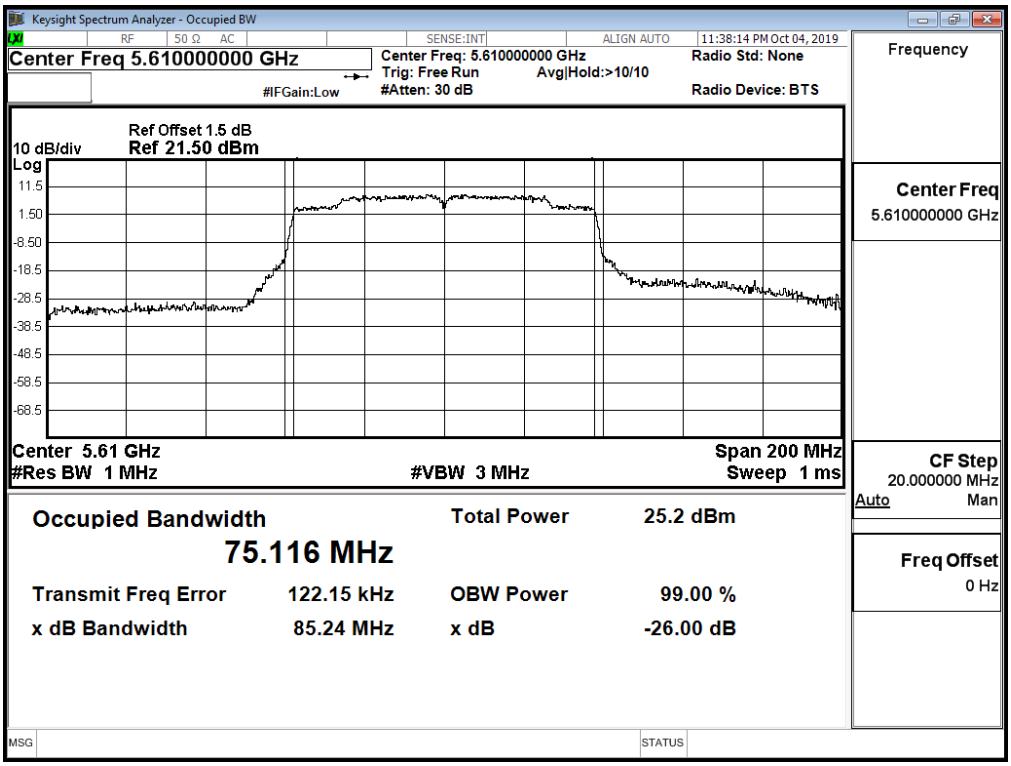
Channel 58



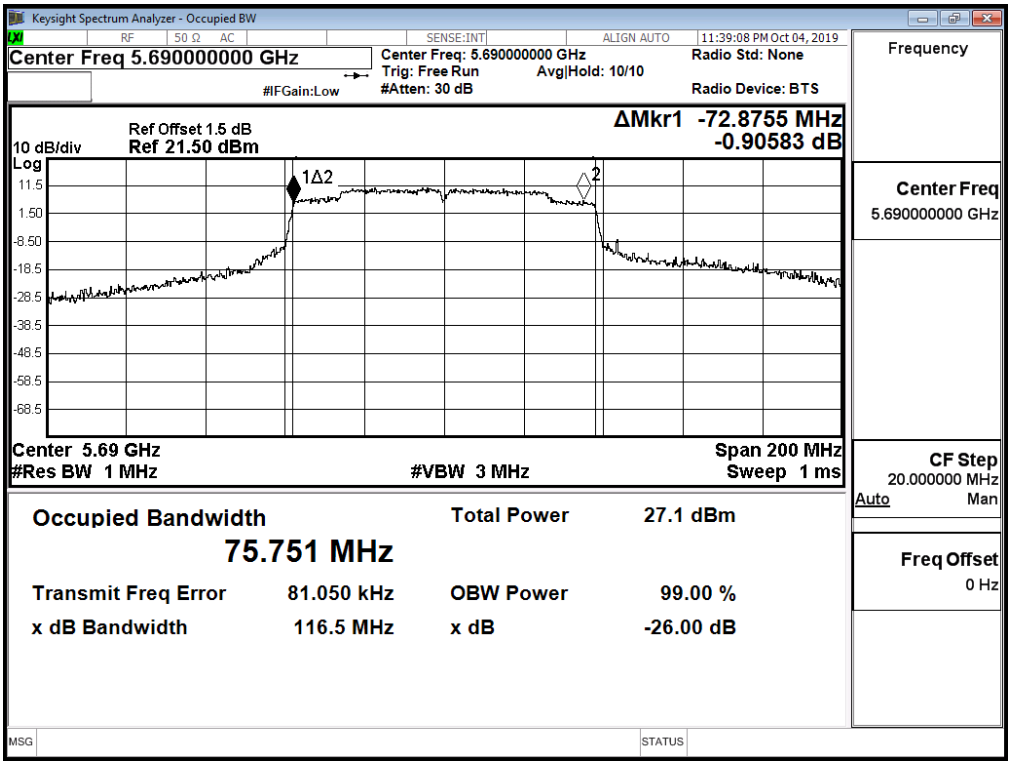
Channel 106



Channel 122

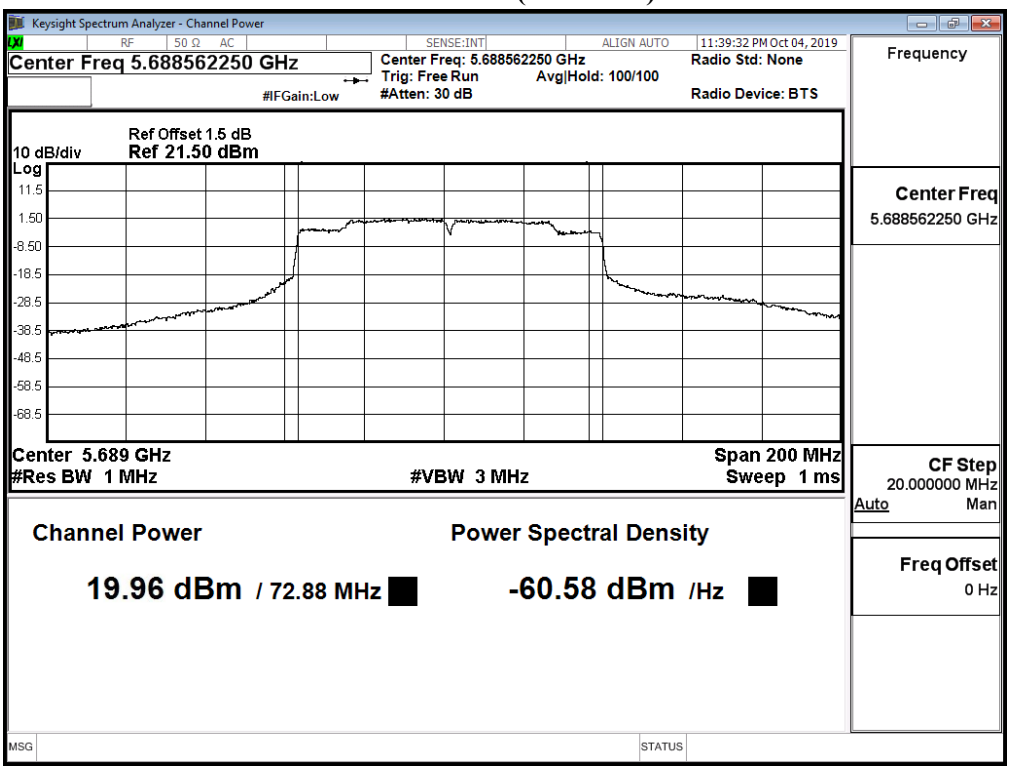


Channel 138



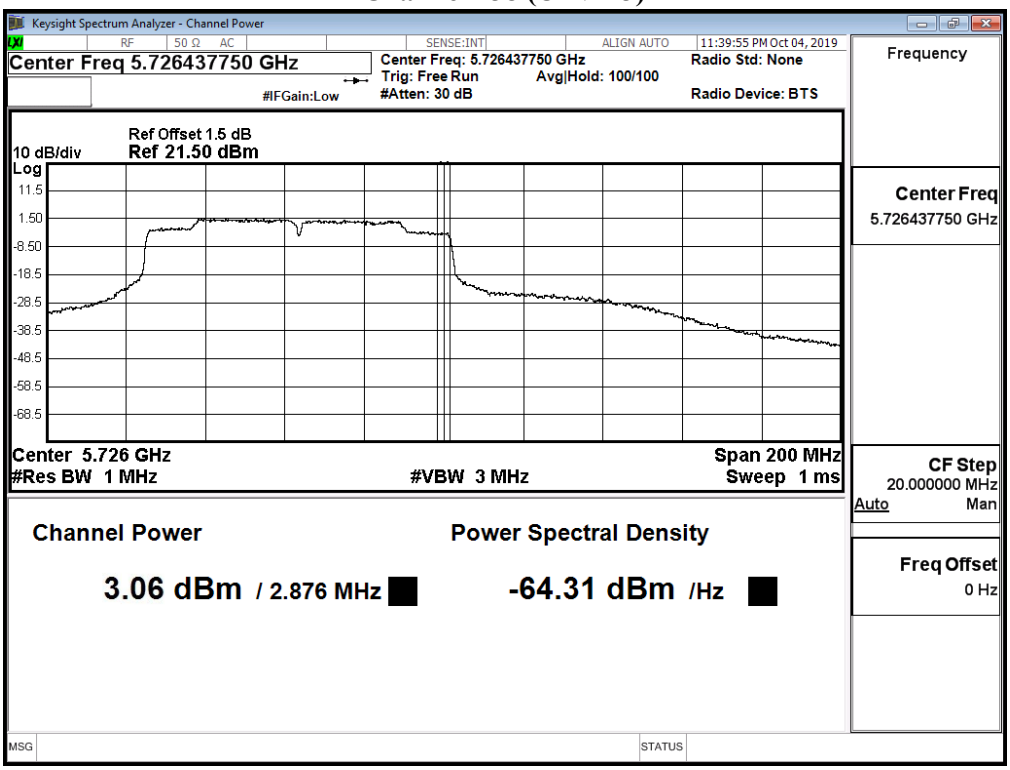
Maximum conducted output power:

Channel 138 (U-NII-2C)



Maximum conducted output power:

Channel 138 (U-NII-3)



Product : Flat Panel Detector
Test Item : Maximum conducted output power
Test Date : 2019/10/04
Test Mode : Mode 3 MIMO: Transmit (802.11n-20BW_14.4Mbps)

Chain A

		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4
36	5180	15.91	--	--	--	--	--	--	--
40	5200	19.63	19.6	19.52	19.49	19.38	19.34	19.26	19.13
48	5240	19.08	--	--	--	--	--	--	--
52	5260	19.02	--	--	--	--	--	--	--
56	5280	19.17	19.12	19.03	19	18.92	18.82	18.72	18.65
64	5320	12.81	--	--	--	--	--	--	--
100	5500	15.74	--	--	--	--	--	--	--
120	5600	18.81	18.74	18.64	18.58	18.55	18.48	18.38	18.33
140	5700	13.83	--	--	--	--	--	--	--
144(U-NII-2C)	5720	18.05	17.95	17.82	17.71	17.61	17.48	17.42	17.34
144(U-NII-3)	5720	10.75	10.62	10.54	10.47	10.38	10.25	10.15	10.06
149	5745	18.43	--	--	--	--	--	--	--
157	5785	18.32	18.22	18.14	18.02	17.9	17.78	17.65	17.52
165	5825	18.32	--	--	--	--	--	--	--

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Chain B

		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4
36	5180	15.85	--	--	--	--	--	--	--
40	5200	18.52	18.41	18.3	18.15	18.02	17.95	17.82	17.69
48	5240	18.23	--	--	--	--	--	--	--
52	5260	18.57	--	--	--	--	--	--	--
56	5280	18.11	18.07	18.04	17.94	17.81	17.72	17.65	17.52
64	5320	12.39	--	--	--	--	--	--	--
100	5500	15.85	--	--	--	--	--	--	--
120	5600	18.76	18.66	18.56	18.53	18.4	18.37	18.31	18.28
140	5700	13.91	--	--	--	--	--	--	--
144(U-NII-2C)	5720	18.14	18.09	18.05	17.96	17.91	17.78	17.66	17.62
144(U-NII-3)	5720	10.85	10.75	10.64	10.59	10.46	10.42	10.34	10.28
149	5745	18.46	--	--	--	--	--	--	--
157	5785	18.47	18.32	18.21	18.04	17.92	17.81	17.7	17.59
165	5825	18.21	--	--	--	--	--	--	--

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

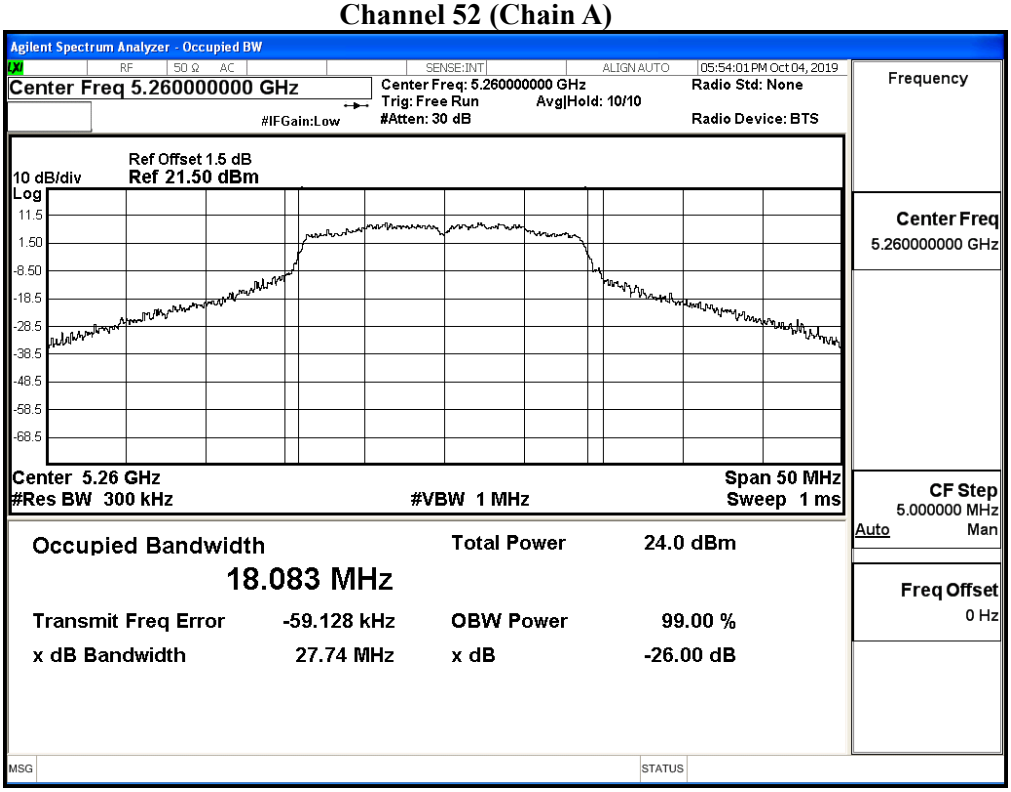
Channel Number	Frequency (MHz)	99% Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
36	5180	--	15.91	15.85	18.89	24	--
40	5200	--	19.63	18.52	22.12	24	--
48	5240	--	19.08	18.23	21.69	24	--
52	5260	17.798	19.02	18.57	21.81	24	23.50
56	5280	17.817	19.17	18.11	21.68	24	23.51
64	5320	17.737	12.81	12.39	15.62	24	23.49
100	5500	17.755	15.74	15.85	18.81	24	23.49
120	5600	17.781	18.81	18.76	21.80	24	23.50
140	5700	17.738	13.83	13.91	16.88	24	23.49
144(U-NII-2C)	5720	14.312	18.05	18.14	21.11	24	22.56
144(U-NII-3)	5720	--	10.75	10.85	13.81	30	--
149	5745	--	18.43	18.46	21.46	30	--
157	5785	--	18.32	18.47	21.41	30	--
165	5825	--	18.32	18.21	21.28	30	--

Note:

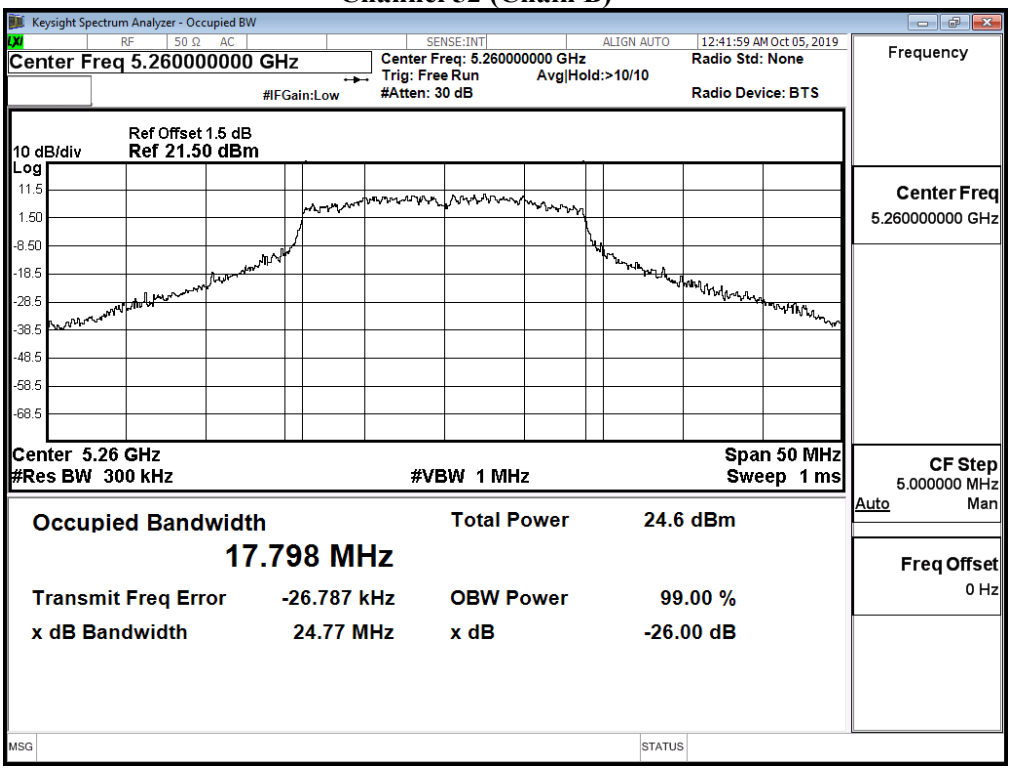
1. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))
2. 99% Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

99% Occupied Bandwidth:

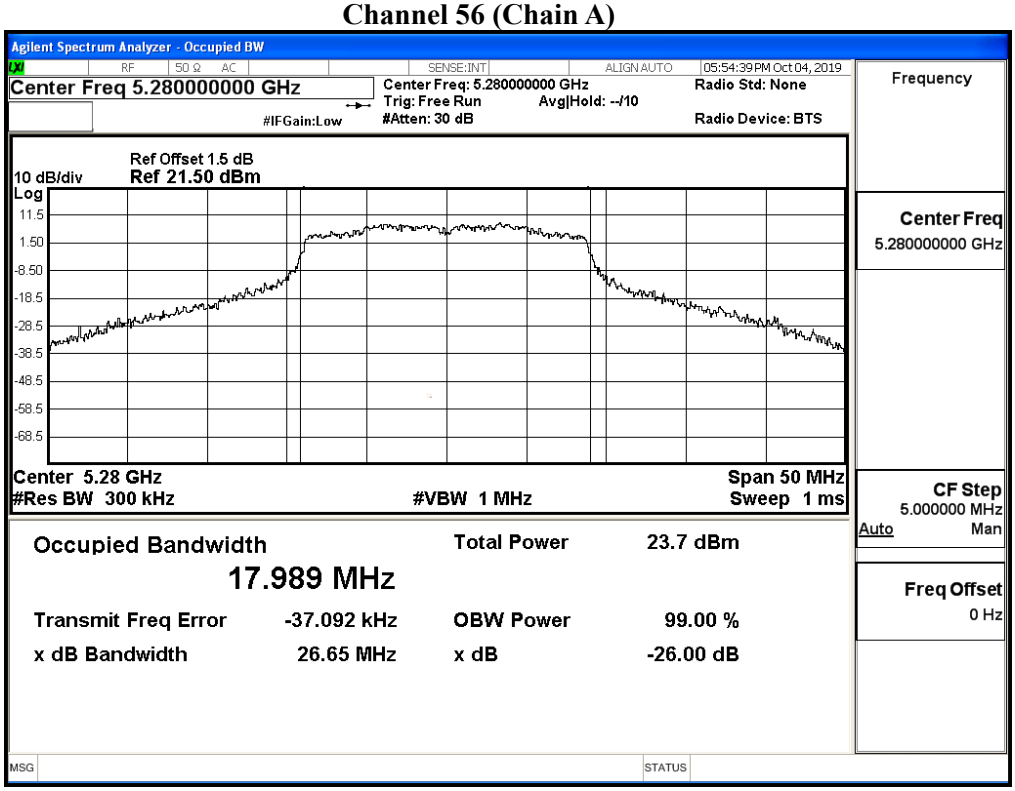
Channel 52 (Chain A)



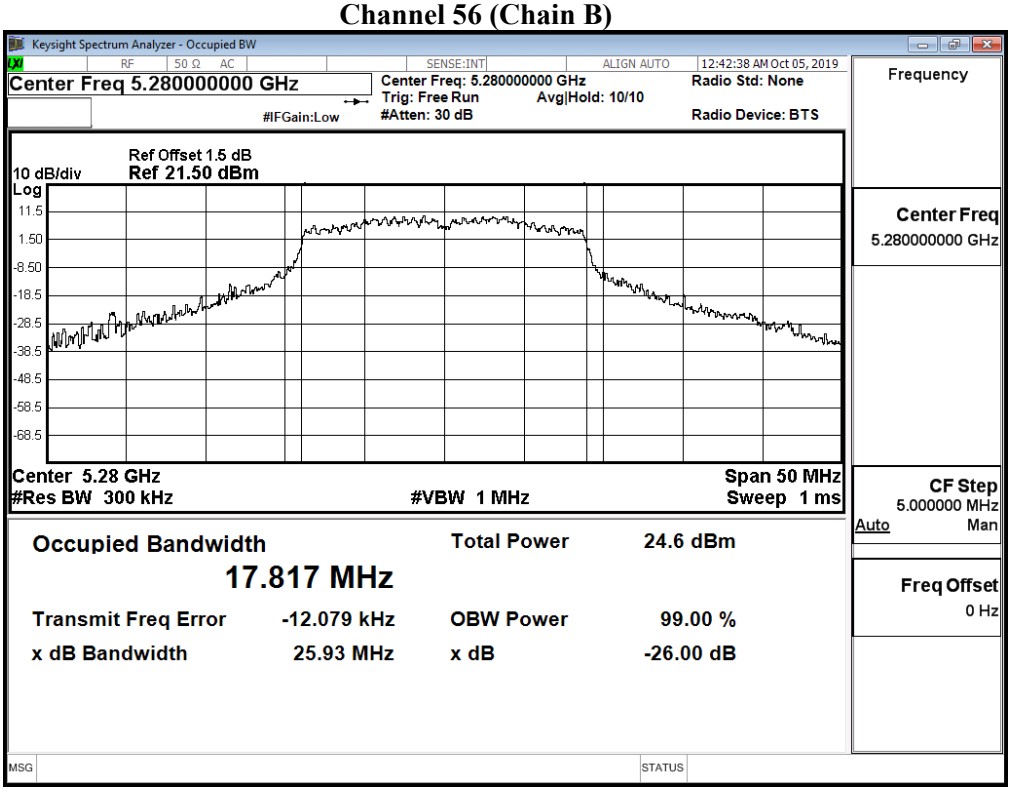
Channel 52 (Chain B)



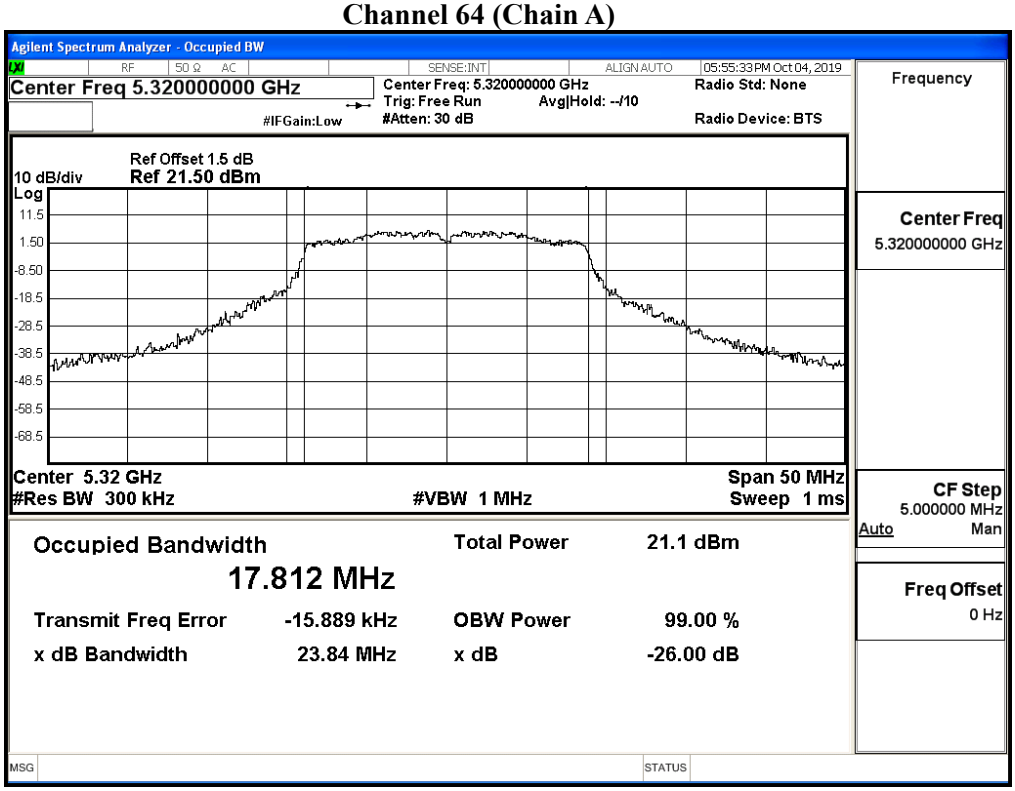
Channel 56 (Chain A)



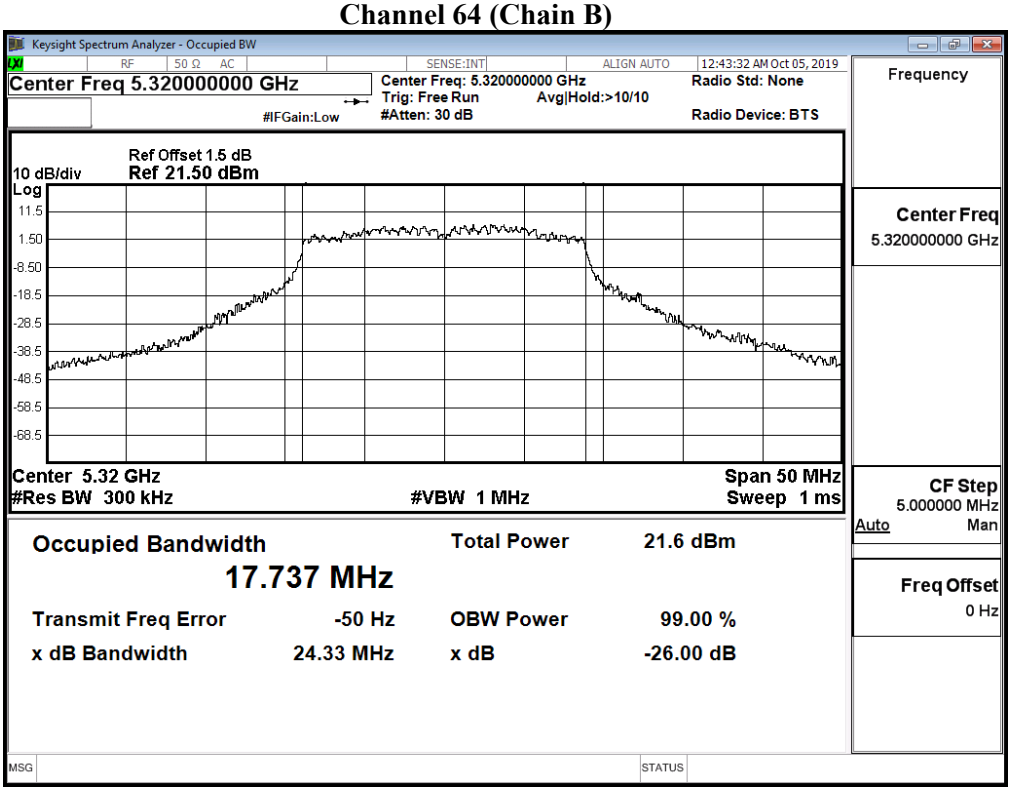
Channel 56 (Chain B)



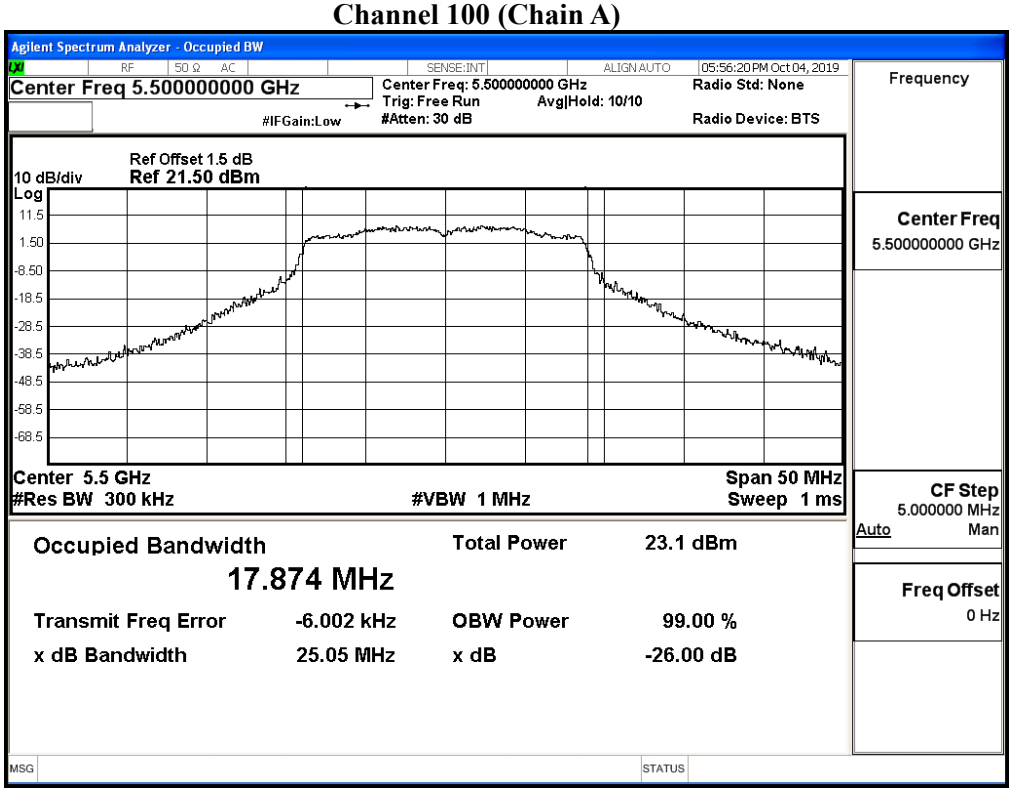
Channel 64 (Chain A)



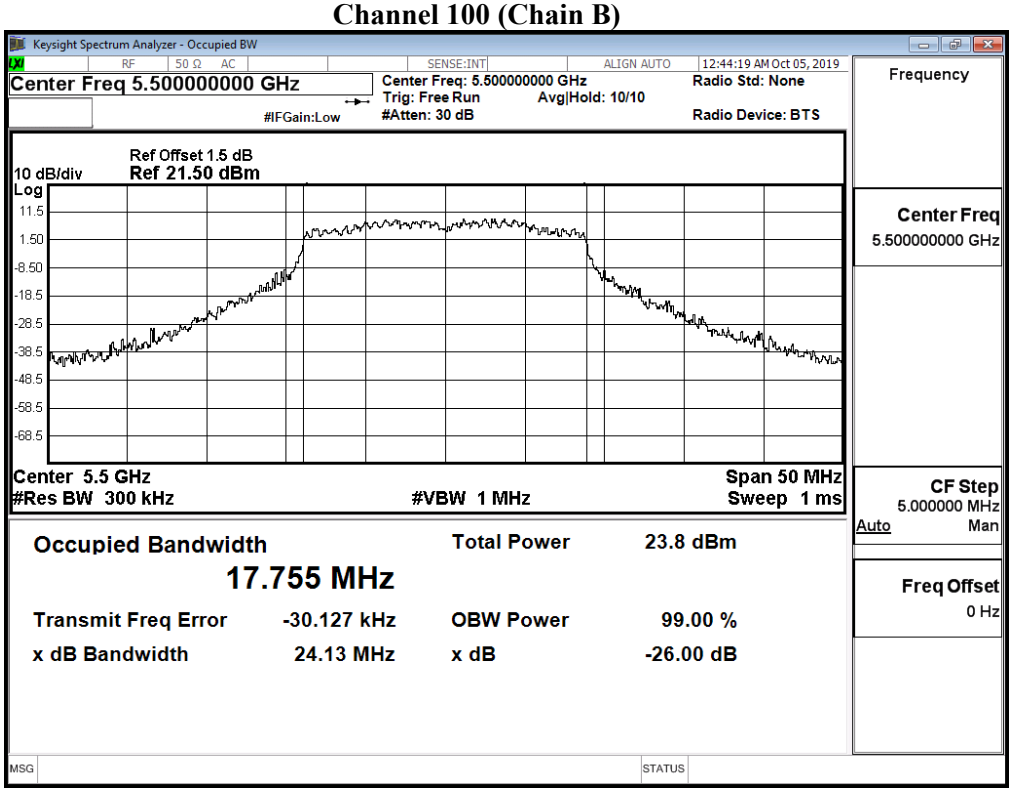
Channel 64 (Chain B)



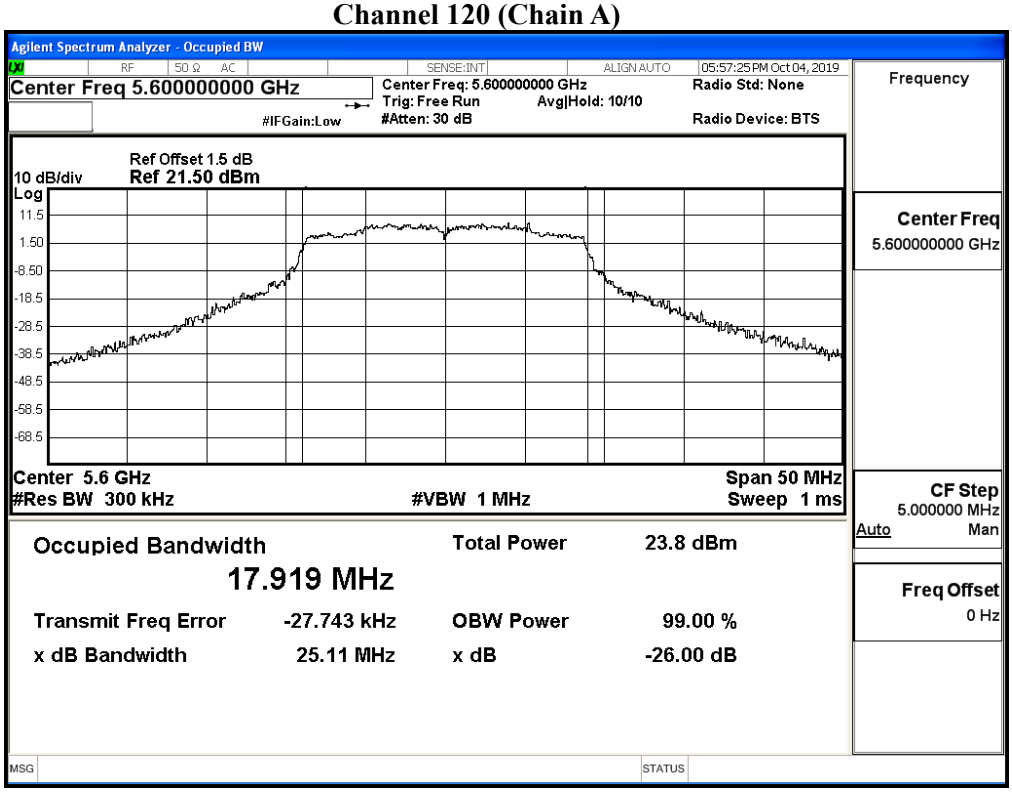
Channel 100 (Chain A)



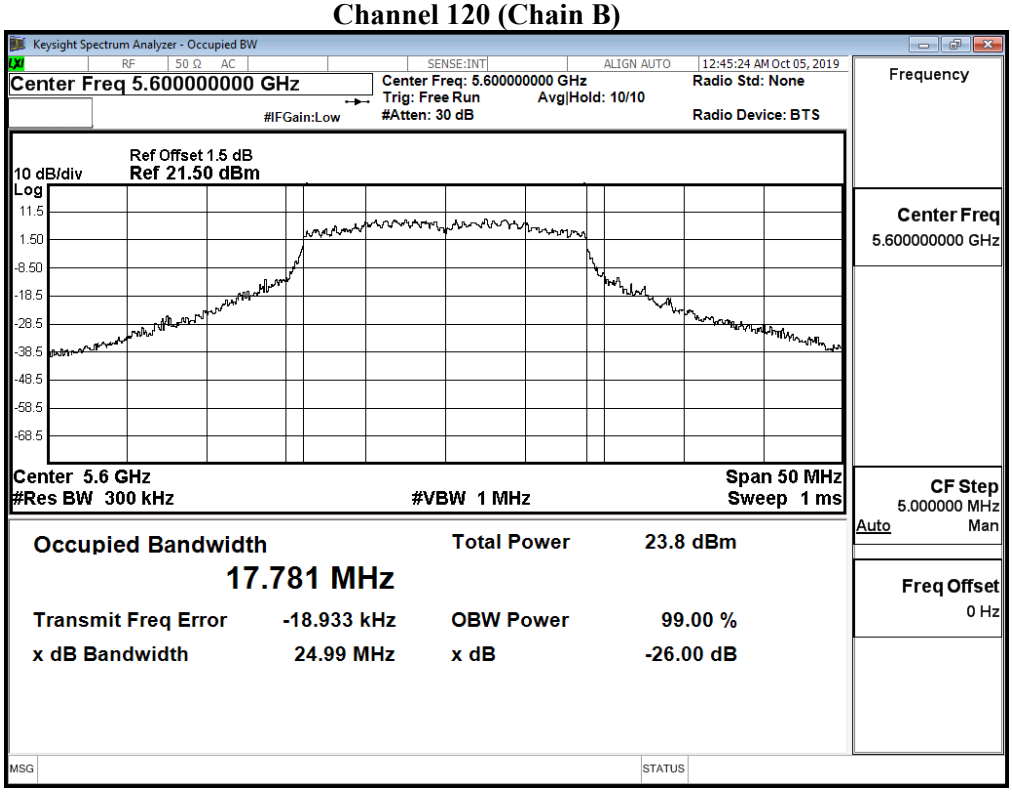
Channel 100 (Chain B)



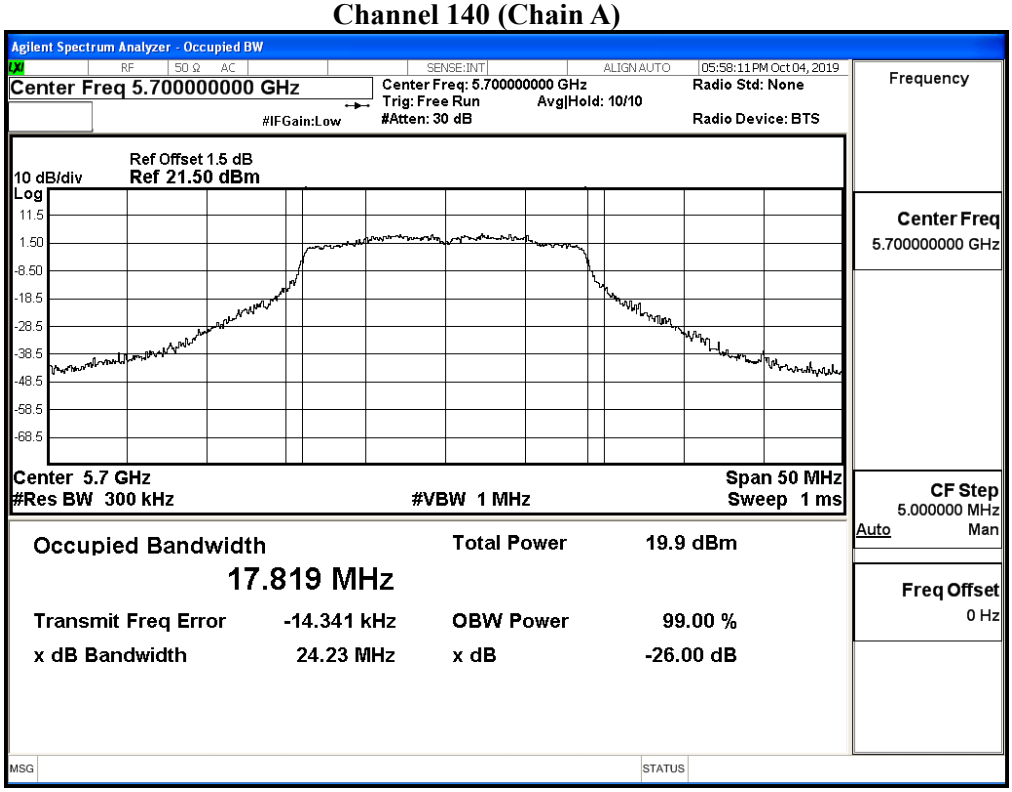
Channel 120 (Chain A)



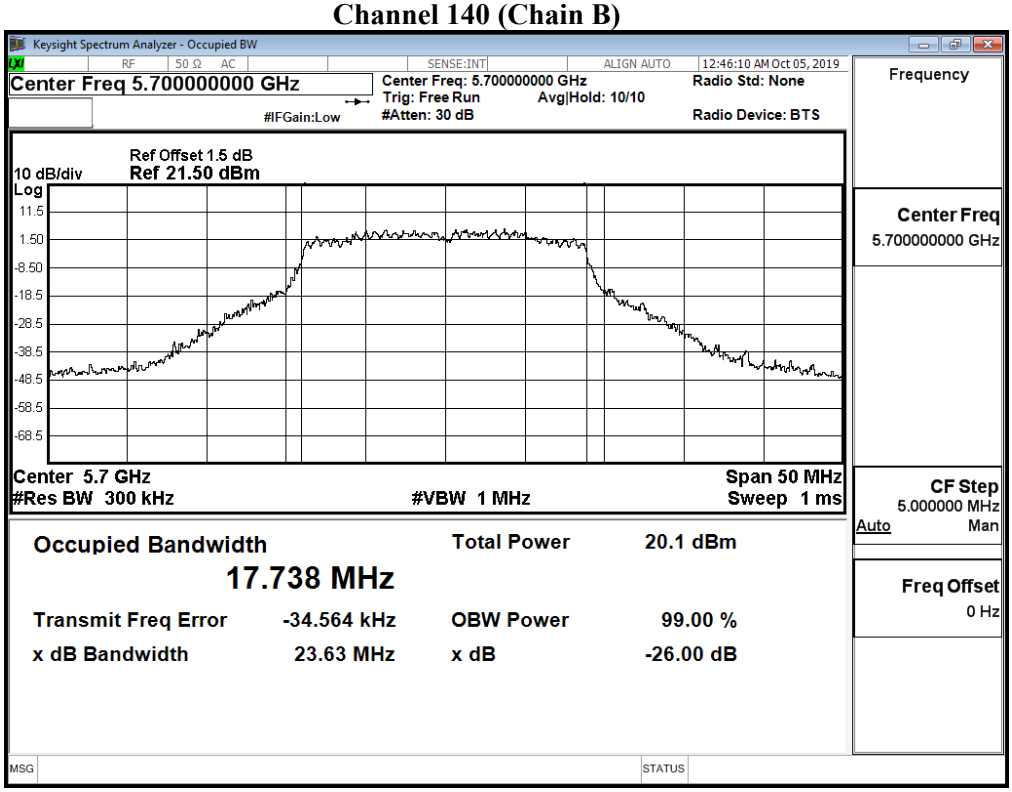
Channel 120 (Chain B)



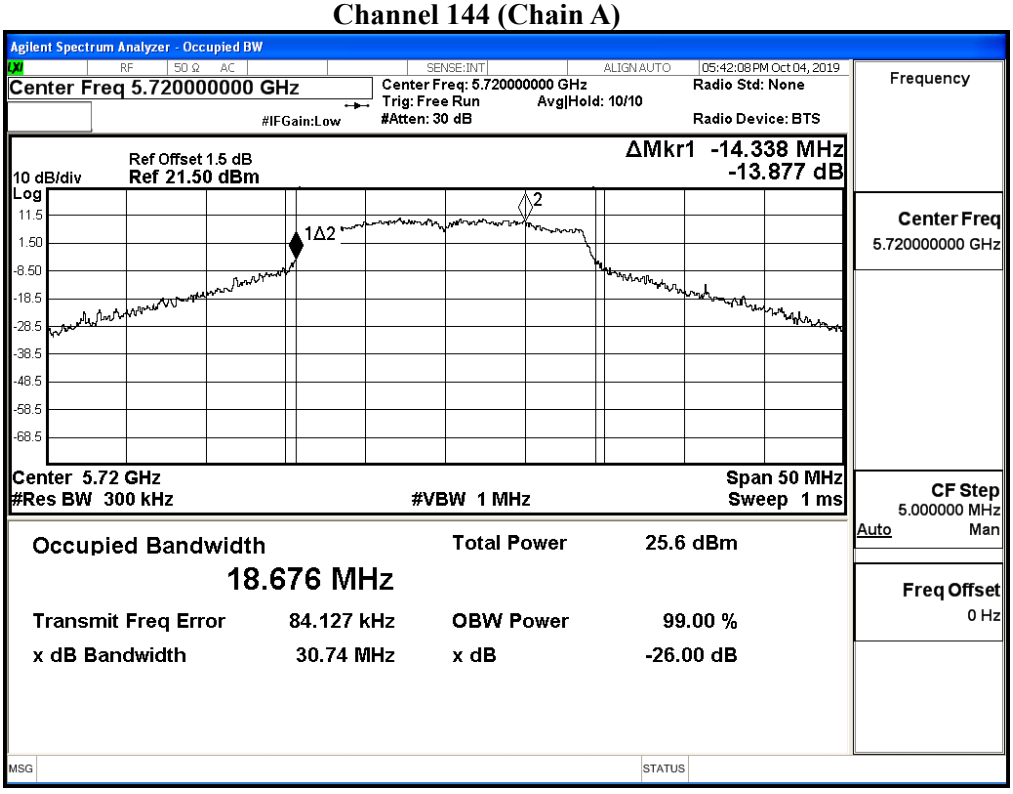
Channel 140 (Chain A)



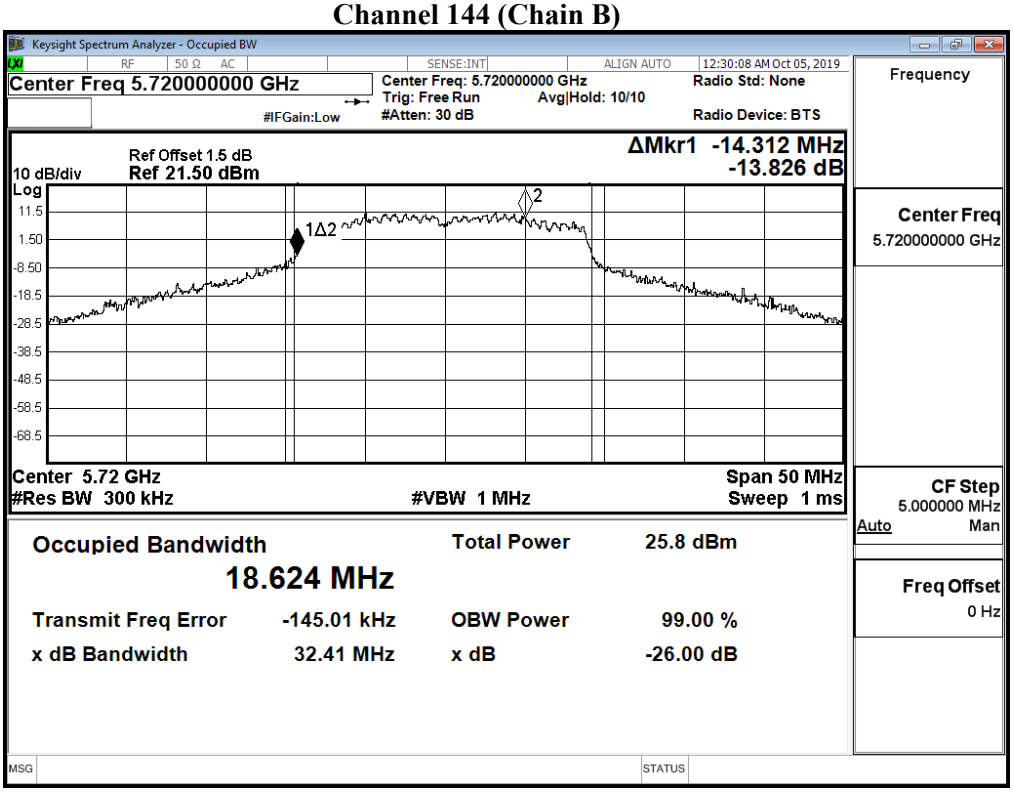
Channel 140 (Chain B)



Channel 144 (Chain A)

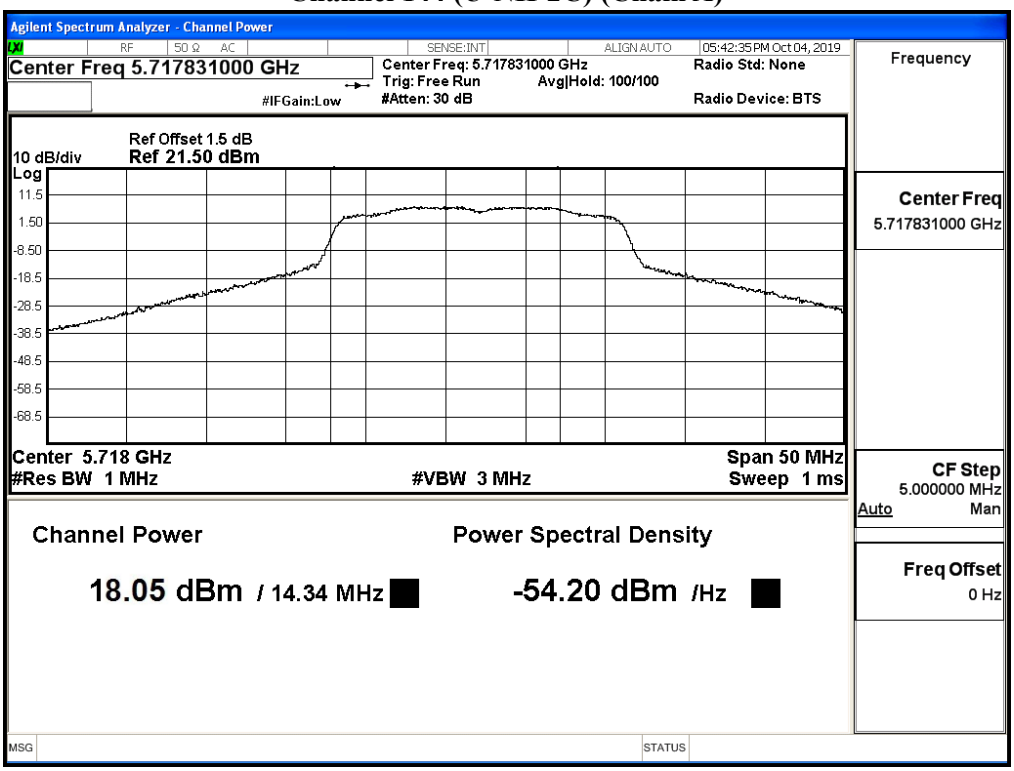


Channel 144 (Chain B)



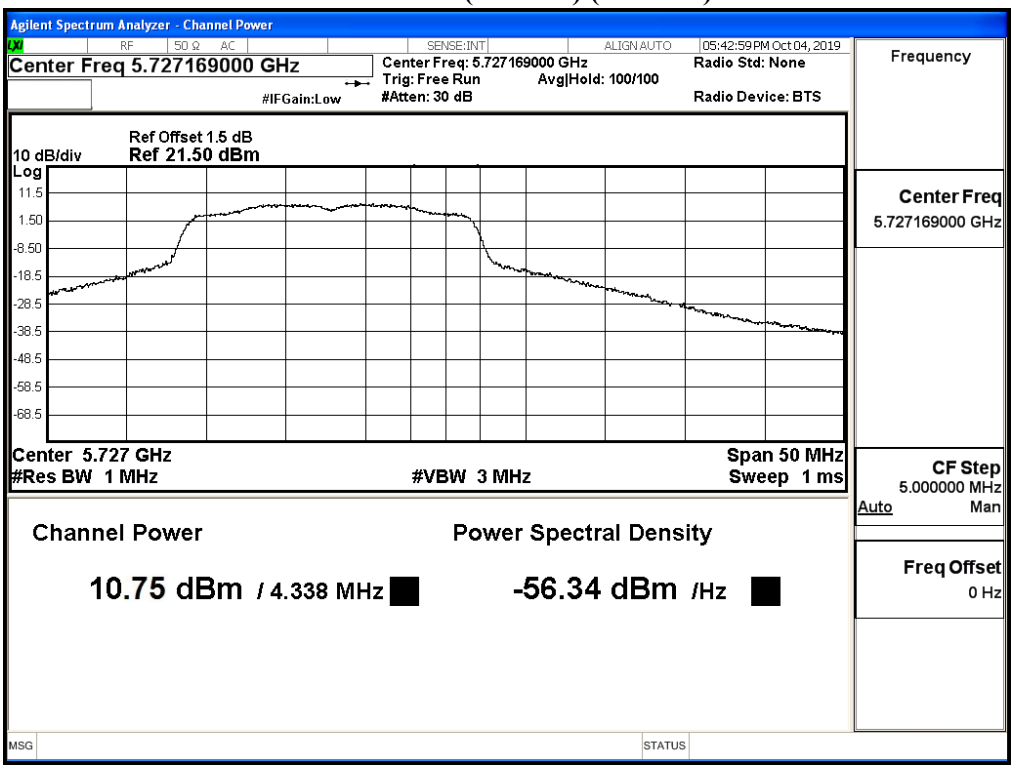
Maximum conducted output power:

Channel 144 (U-NII-2C) (Chain A)



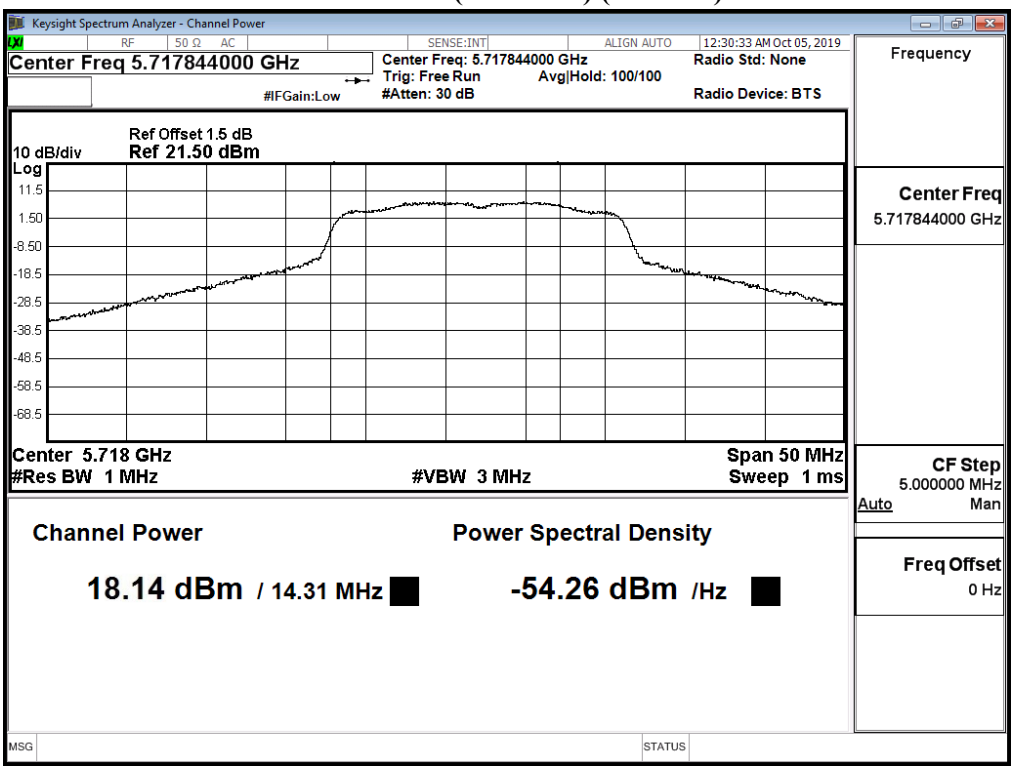
Maximum conducted output power:

Channel 144 (U-NII-3) (Chain A)



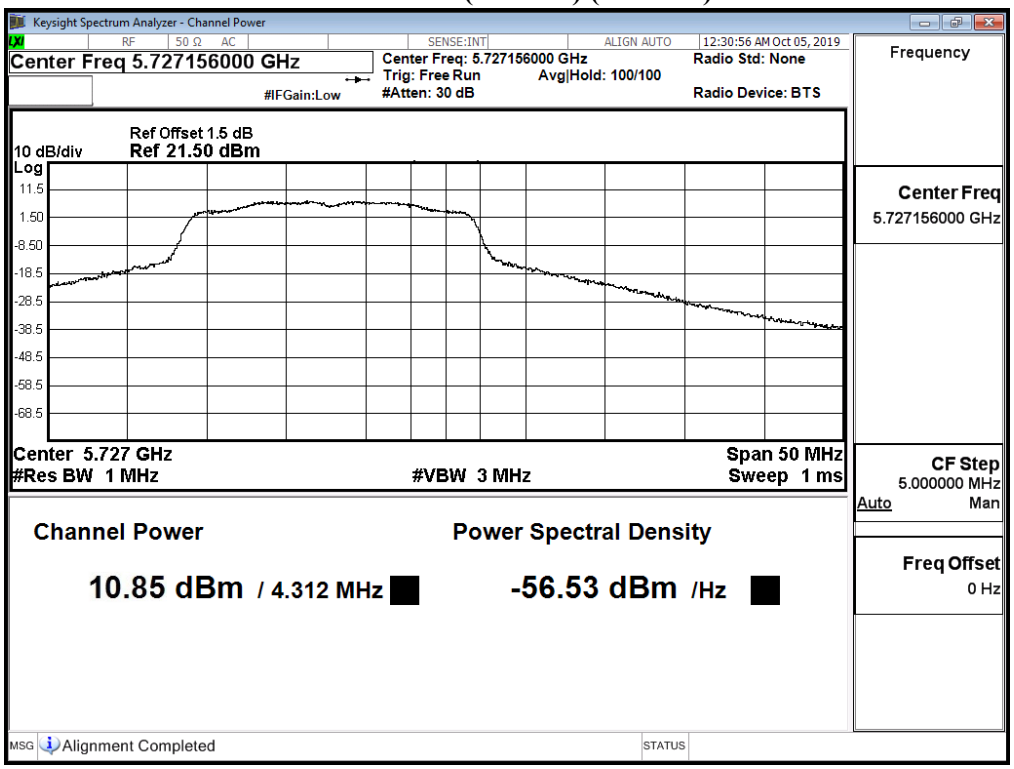
Maximum conducted output power:

Channel 144 (U-NII-2C) (Chain B)



Maximum conducted output power:

Channel 144 (U-NII-3) (Chain B)



Product : Flat Panel Detector
Test Item : Maximum conducted output power
Test Date : 2019/10/04
Test Mode : Mode 3 MIMO: Transmit (802.11n-40BW_30Mbps)

Chain A

Channel No.	Frequency (MHz)	Maximum conducted output power							
		Data Rate (Mbps)							
		30	60	90	120	180	240	270	300
38	5190	11.84	--	--	--	--	--	--	--
46	5230	18.75	18.62	18.5	18.34	18.21	18.1	17.98	17.82
54	5270	19.4	--	--	--	--	--	--	--
62	5310	11.68	11.57	11.54	11.47	11.38	11.35	11.28	11.25
102	5510	12.45	--	--	--	--	--	--	--
118	5590	20.02	19.92	19.8	19.74	19.67	19.59	19.54	19.44
134	5670	17.11	--	--	--	--	--	--	--
142(U-NII-2C)	5710	19.3	19.2	19.15	19.06	18.94	18.88	18.82	18.79
142(U-NII-3)	5710	7.15	7.03	6.96	6.9	6.84	6.77	6.72	6.67
151	5755	18.45	--	--	--	--	--	--	--
159	5795	18.35	18.21	18.1	17.95	17.84	17.72	17.62	17.51

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Chain B

Channel No.	Frequency (MHz)	Maximum conducted output power							
		Data Rate (Mbps)							
		30	60	90	120	180	240	270	300
38	5190	11.28	--	--	--	--	--	--	--
46	5230	18.41	17.51	17.47	17.44	17.34	17.29	17.26	17.23
54	5270	18.58	--	--	--	--	--	--	--
62	5310	10.66	10.31	10.21	10.12	10	9.88	9.79	9.66
102	5510	12.75	--	--	--	--	--	--	--
118	5590	20.42	20.3	20.15	20.04	19.95	19.75	19.6	19.45
134	5670	17.81	--	--	--	--	--	--	--
142(U-NII-2C)	5710	20.46	20.38	20.3	20.18	20.11	20.05	19.95	19.84
142(U-NII-3)	5710	7.75	7.7	7.63	7.58	7.49	7.46	7.4	7.36
151	5755	18.27	--	--	--	--	--	--	--
159	5795	18.46	18.32	18.15	18.02	17.9	17.78	17.65	17.52

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

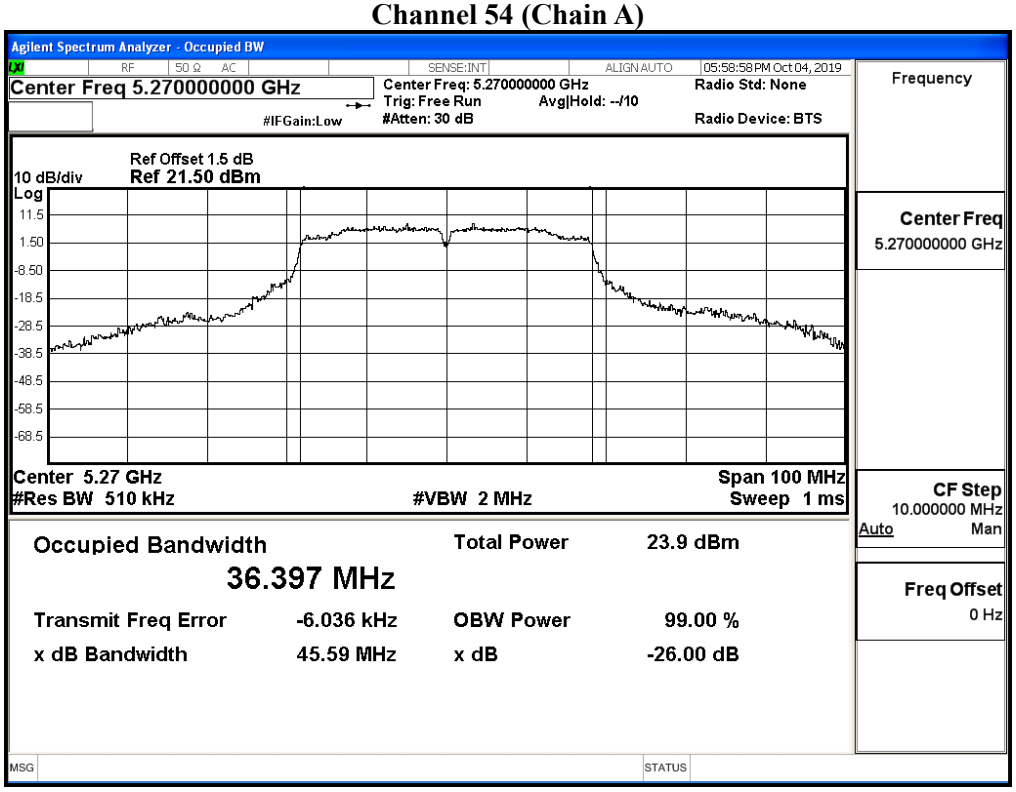
Channel Number	Frequency (MHz)	99% Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
38	5190	--	11.84	11.28	14.58	24	--
46	5230	--	18.75	18.41	21.59	24	--
54	5270	36.193	19.40	18.58	22.02	24	26.59
62	5310	36.138	11.68	10.66	14.21	24	26.58
102	5510	36.184	12.45	12.75	15.61	24	26.59
118	5590	36.148	20.02	20.42	23.23	24	26.58
134	5670	36.161	17.11	17.81	20.48	24	26.58
142(U-NII-2C)	5710	33.685	19.30	20.46	22.93	24	26.27
142(U-NII-3)	5710	--	7.15	7.75	10.47	30	--
151	5755	--	18.45	18.27	21.37	30	--
159	5795	--	18.35	18.46	21.42	30	--

Note:

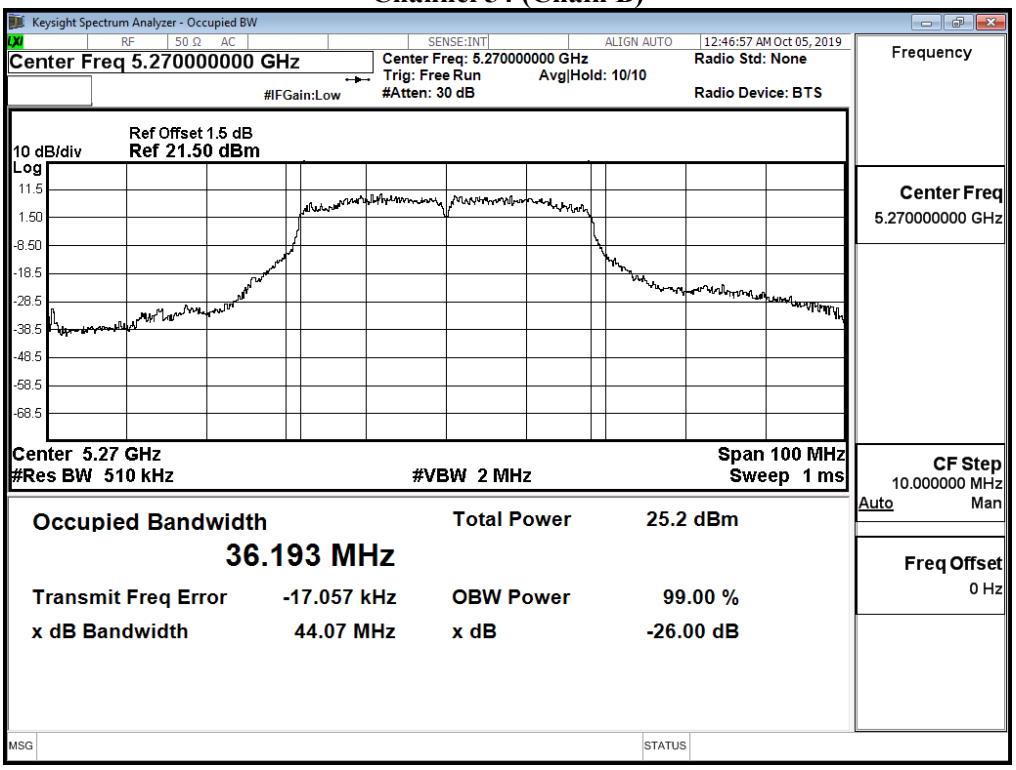
1. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))
2. 99% Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

99% Occupied Bandwidth:

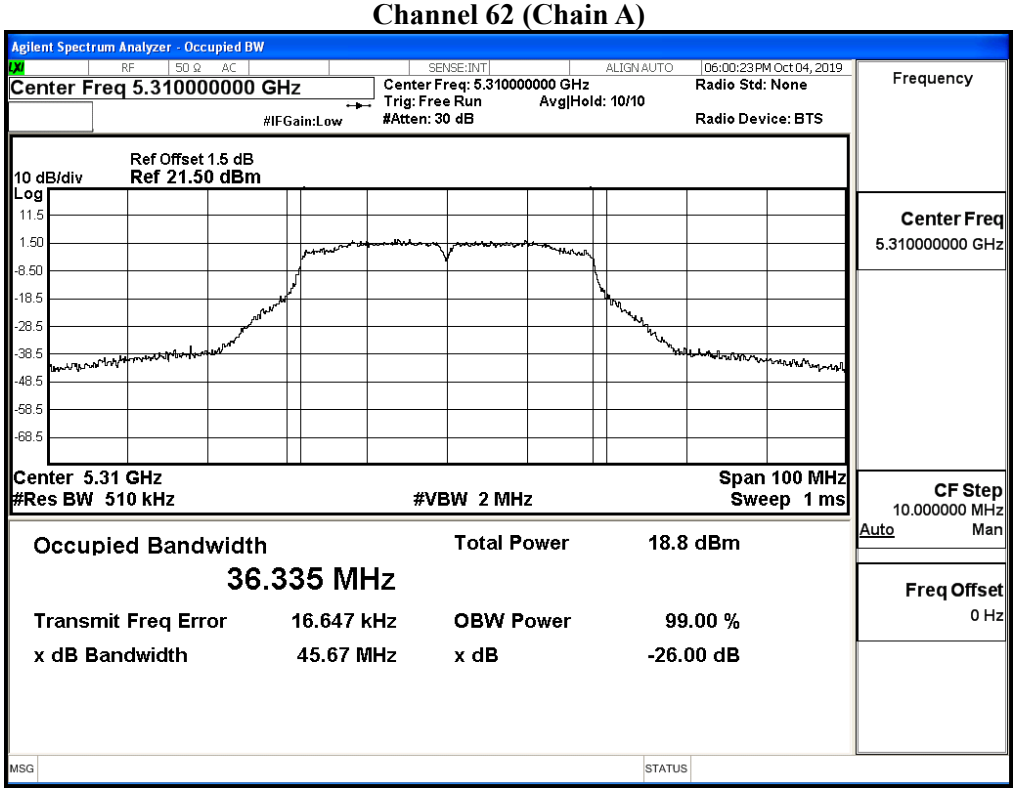
Channel 54 (Chain A)



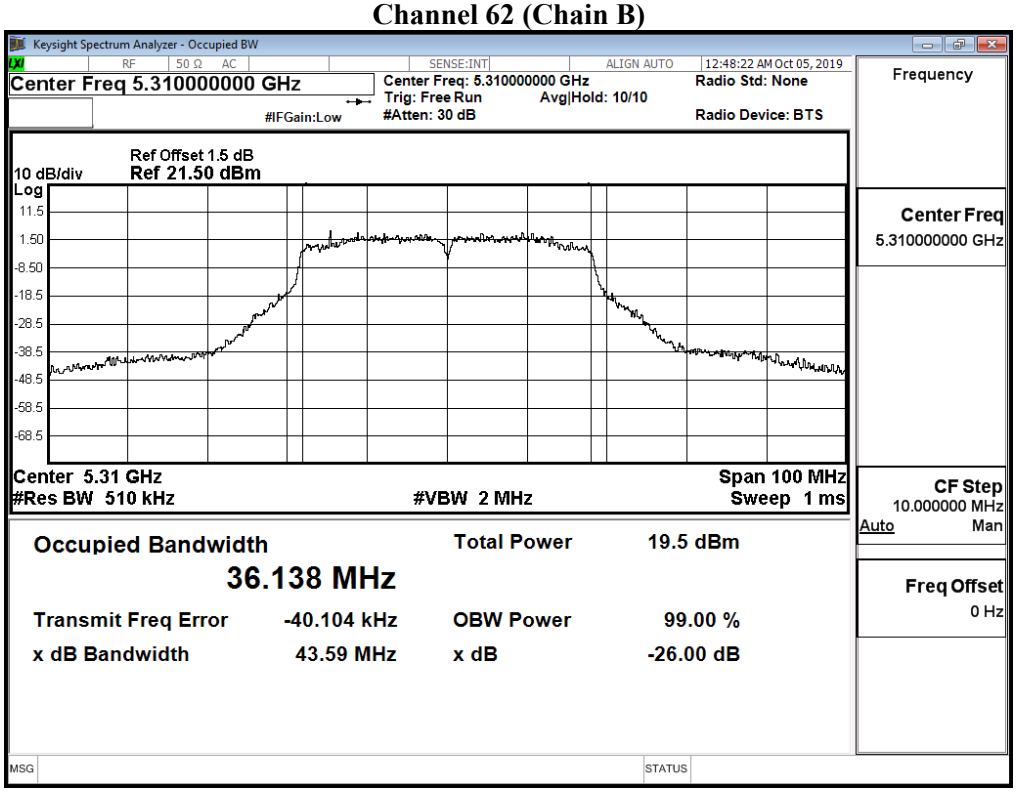
Channel 54 (Chain B)



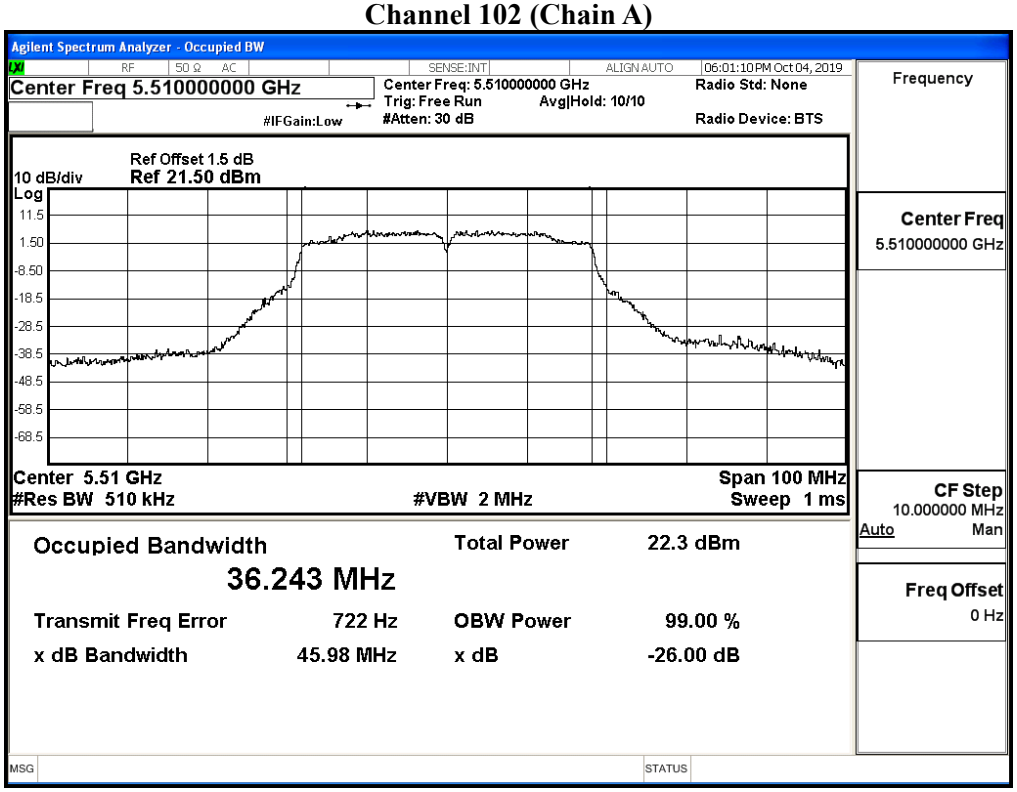
Channel 62 (Chain A)



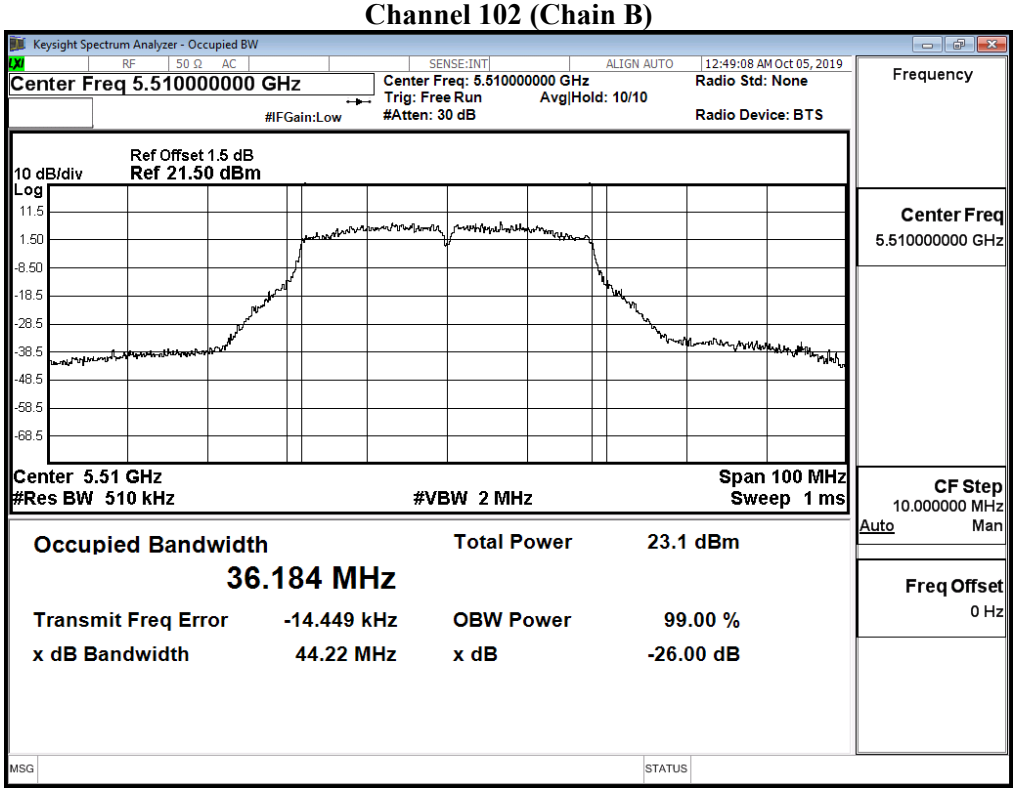
Channel 62 (Chain B)



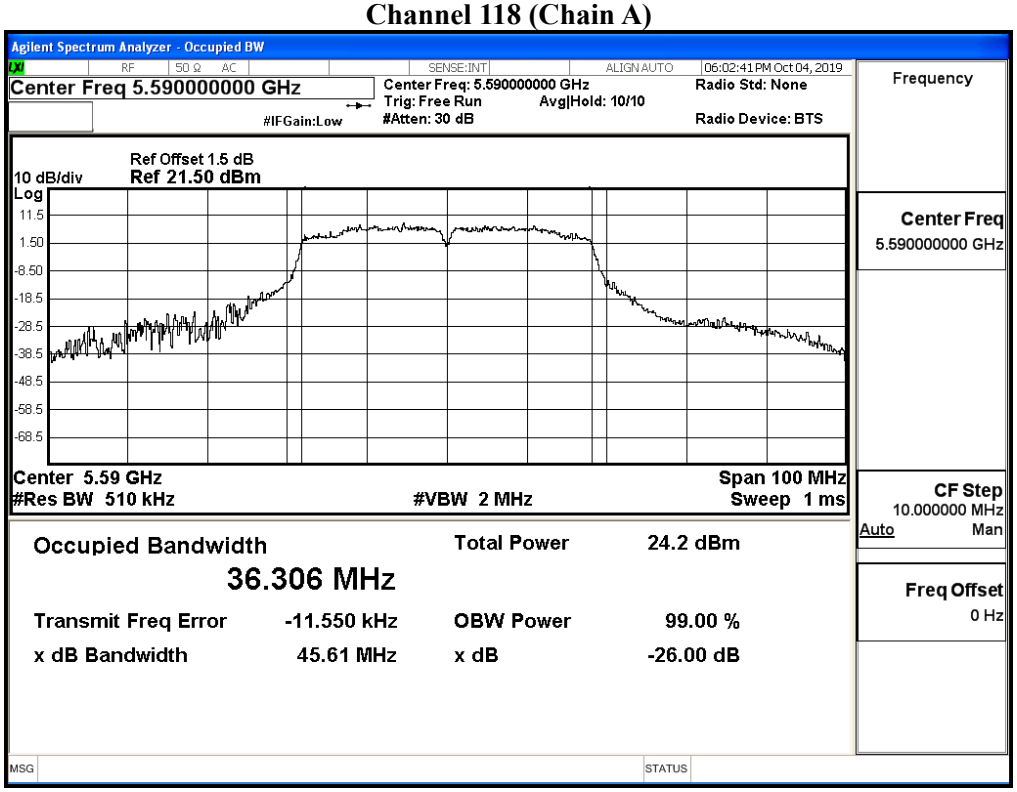
Channel 102 (Chain A)



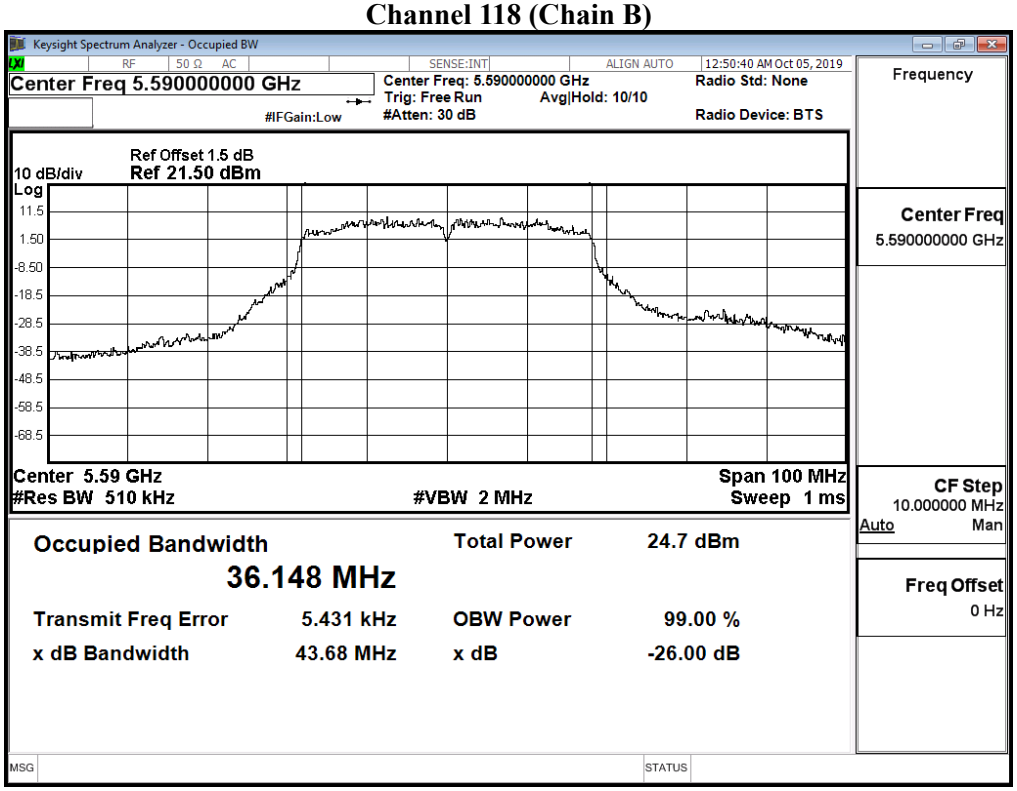
Channel 102 (Chain B)



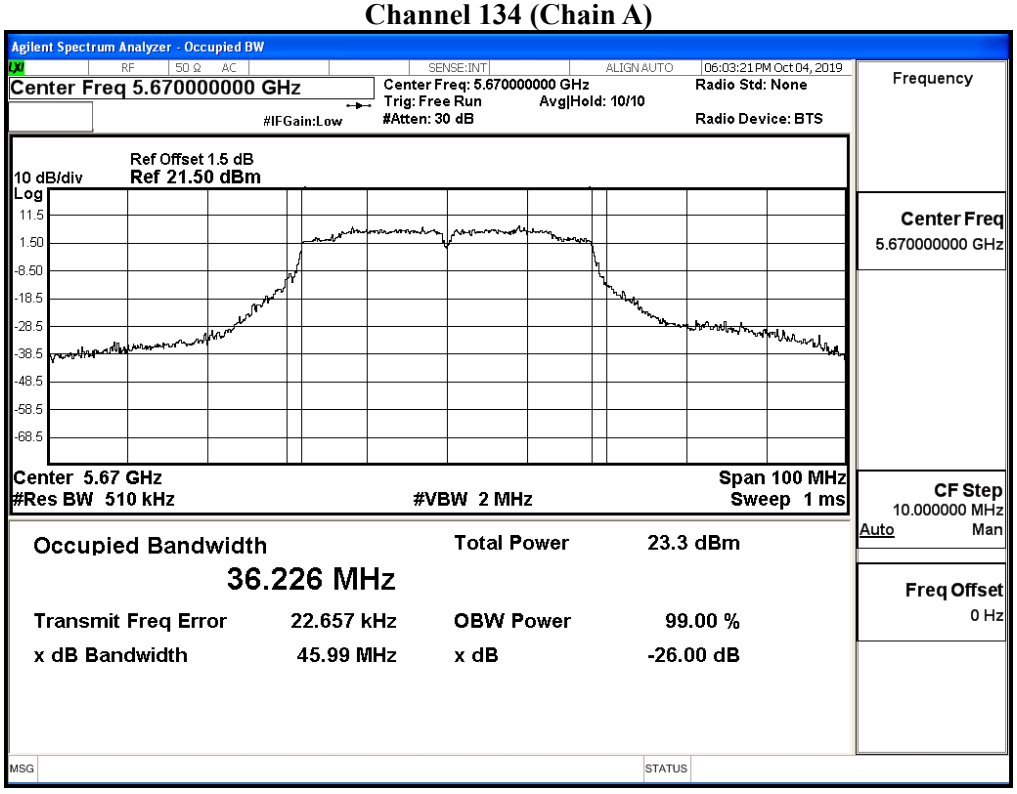
Channel 118 (Chain A)



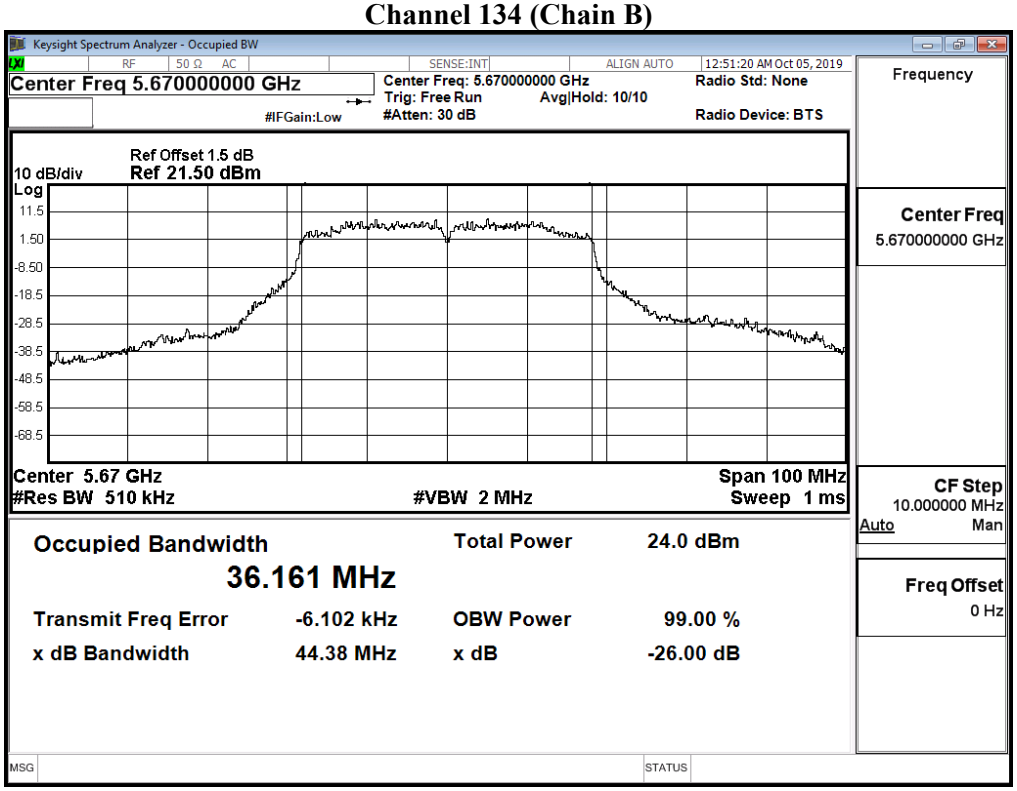
Channel 118 (Chain B)



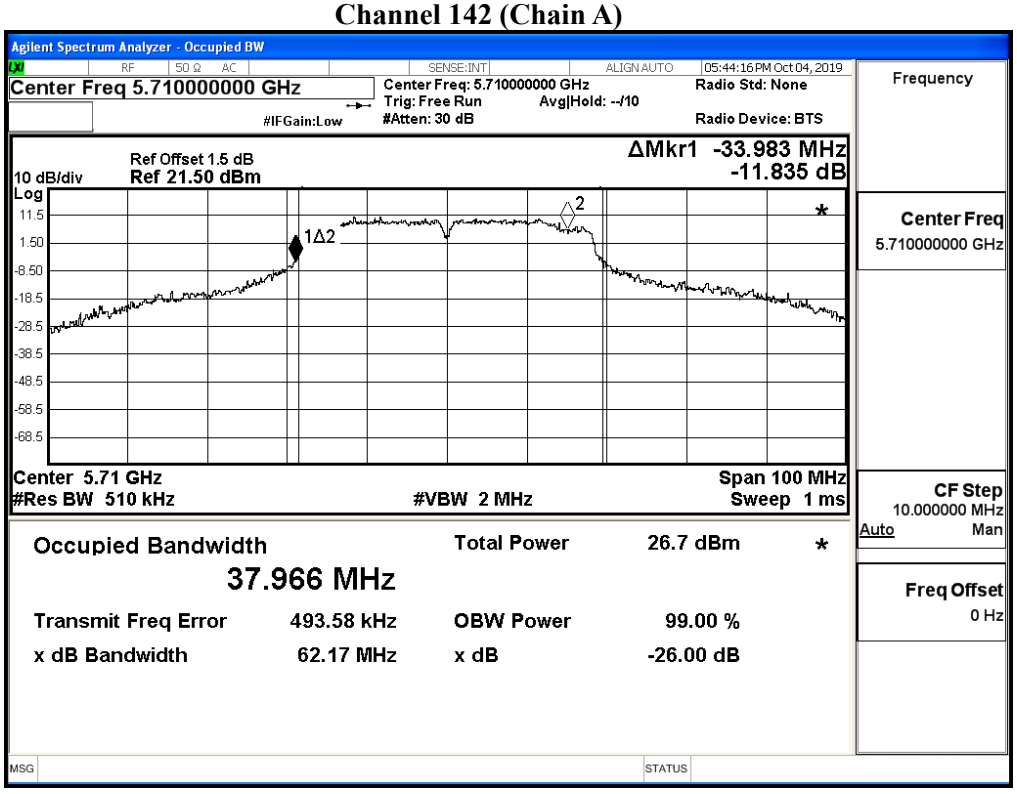
Channel 134 (Chain A)



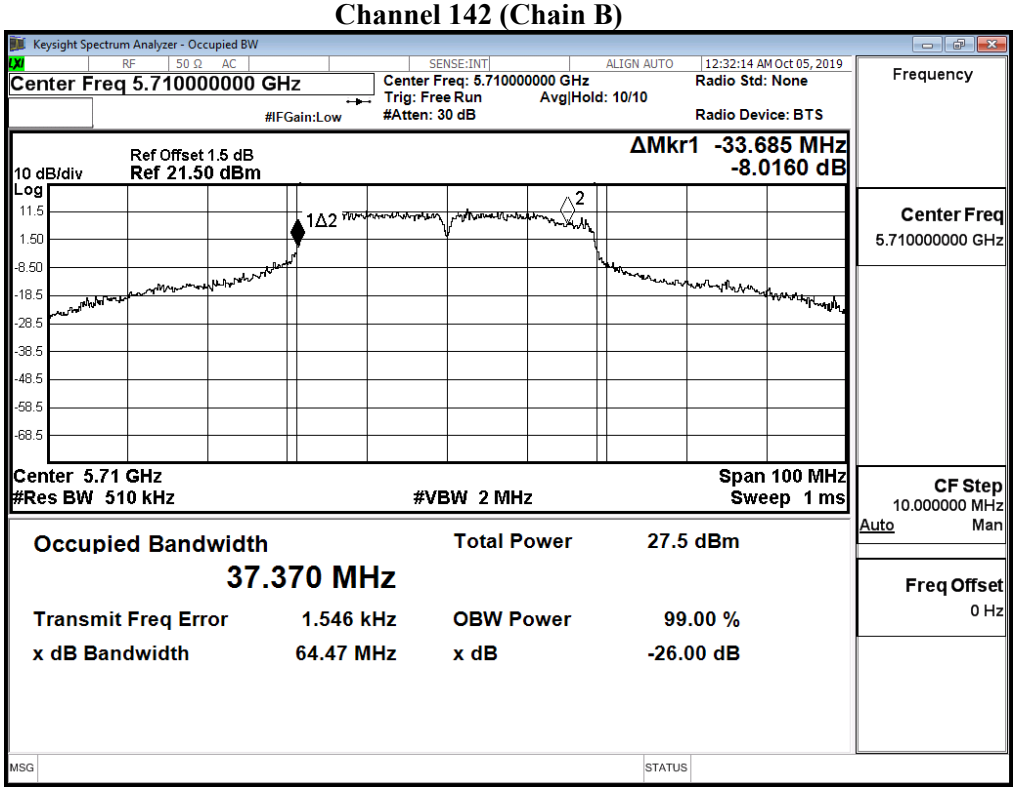
Channel 134 (Chain B)



Channel 142 (Chain A)

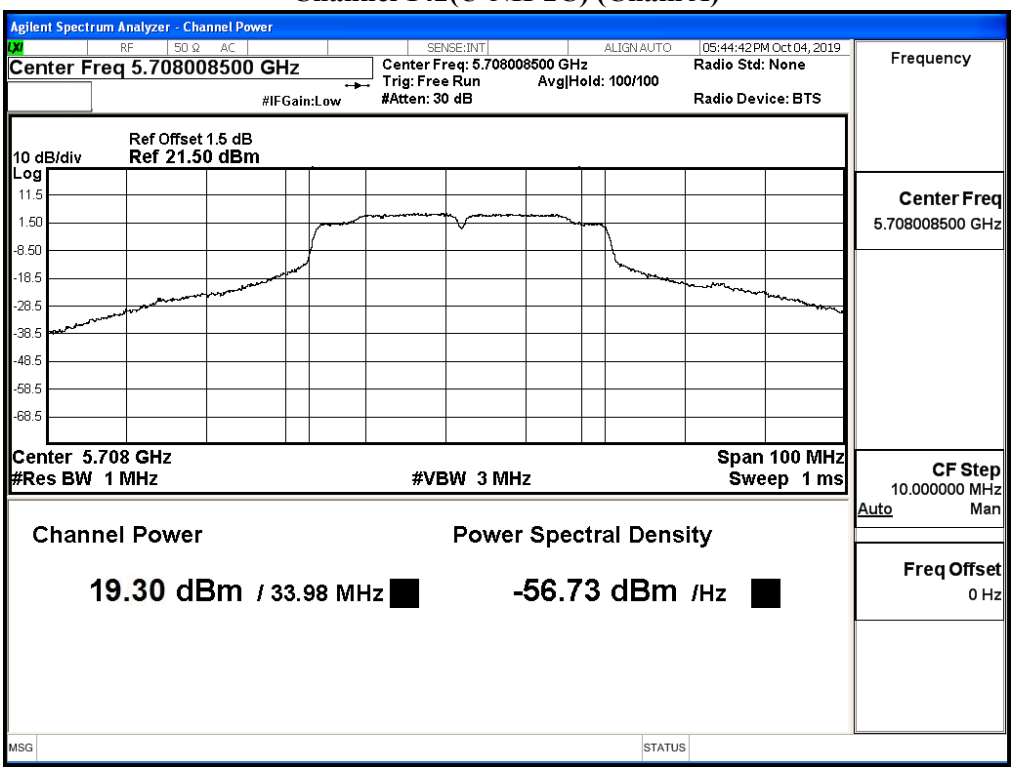


Channel 142 (Chain B)



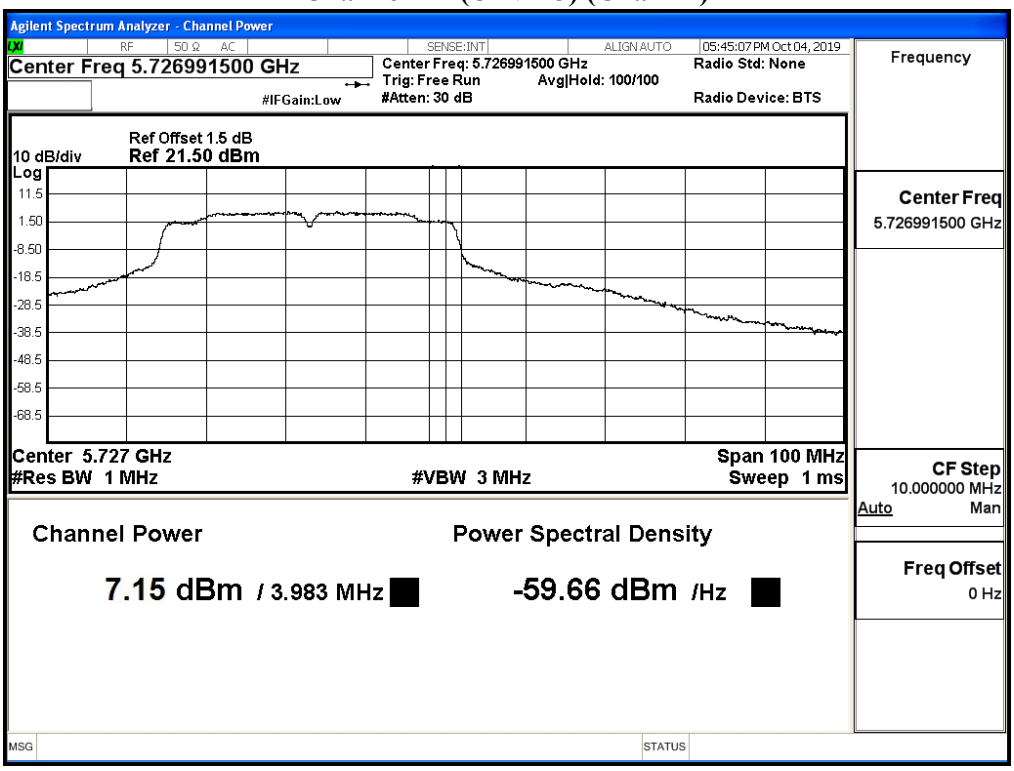
Maximum conducted output power:

Channel 142(U-NII-2C) (Chain A)



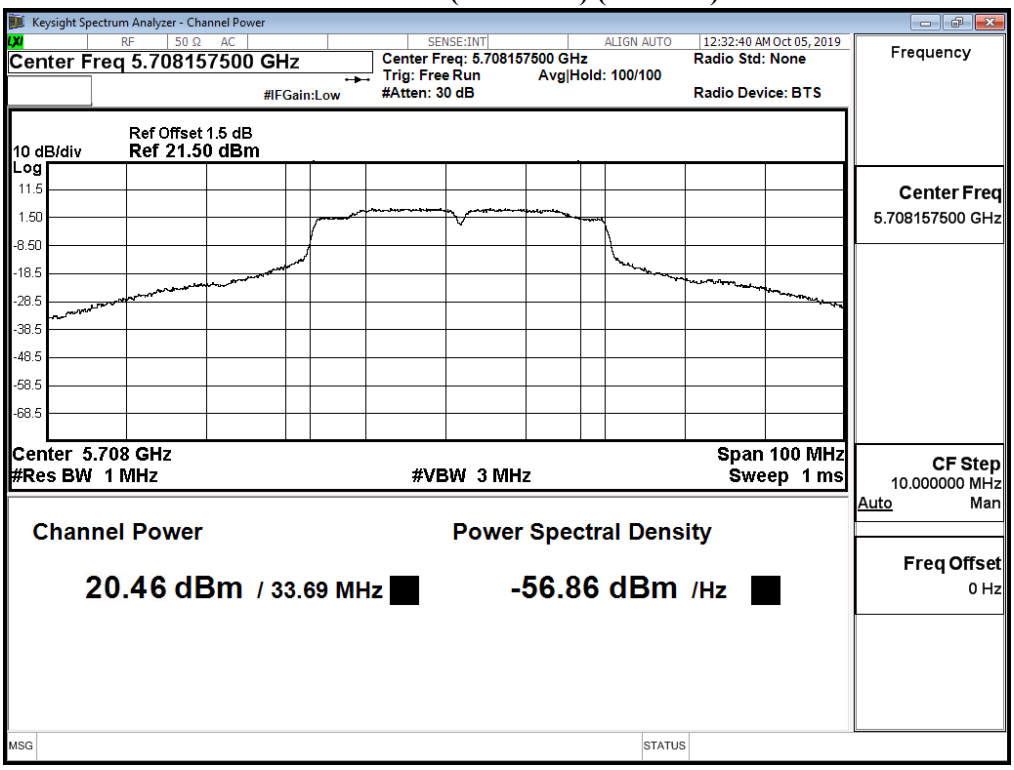
Maximum conducted output power:

Channel 142(U-NII-3) (Chain A)



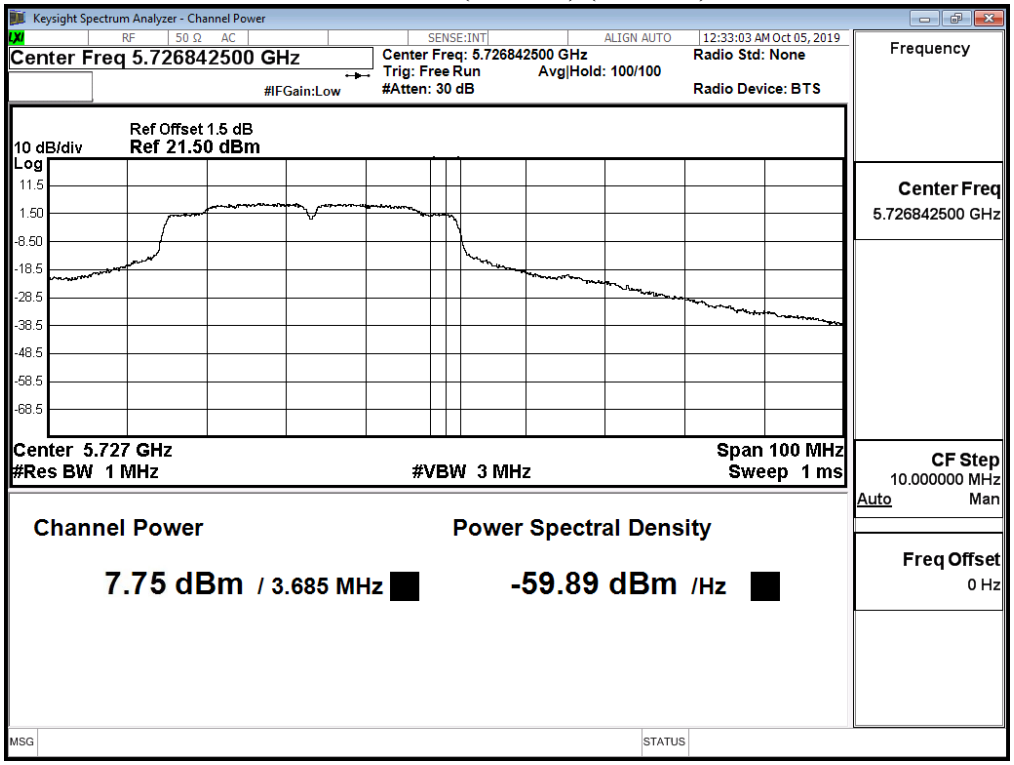
Maximum conducted output power:

Channel 142(U-NII-2C) (Chain B)



Maximum conducted output power:

Channel 142(U-NII-3) (Chain B)



Product : Flat Panel Detector
Test Item : Maximum conducted output power
Test Date : 2019/10/04
Test Mode : Mode 3 MIMO: Transmit (802.11ac-80BW_65Mbps)

Chain A

		Maximum conducted output power									
Channel No	Frequency (MHz)	Data Rate (Mbps)									
		65	130	1965	260	390	520	585	650	780	866.7
42	5210	10.13	10.02	9.91	9.79	9.65	9.54	9.43	9.31	9.15	9.05
58	5290	9	8.9	8.79	8.65	8.54	8.41	8.3	8.15	8.02	7.92
106	5530	10.55	--	--	--	--	--	--	--	--	--
122	5610	17.83	17.75	17.66	17.59	17.55	17.52	17.46	17.36	17.29	17.2
138 (U-NII-2C)	5690	19.7	--	--	--	--	--	--	--	--	--
138 (U-NII-3)	5690	3.45	--	--	--	--	--	--	--	--	--
155	5775	16.24	16.11	16	15.9	15.78	15.65	15.45	15.32	15.17	15.05

Note: Maximum conducted output power Value =Reading value on Spectrum Analyzer + cable loss

Chain B

		Maximum conducted output power									
Channel No	Frequency (MHz)	Data Rate (Mbps)									
		65	130	1965	260	390	520	585	650	780	866.7
42	5210	9.85	9.74	9.62	9.51	9.4	9.28	9.15	9.04	8.92	8.81
58	5290	9.05	8.91	8.82	8.73	8.64	8.52	8.41	8.3	8.14	8.02
106	5530	10.56	--	--	--	--	--	--	--	--	--
122	5610	17.05	16.94	16.82	16.7	16.58	16.45	16.32	16.17	16.05	15.94
138 (U-NII-2C)	5690	20.11	--	--	--	--	--	--	--	--	--
138 (U-NII-3)	5690	3.35	--	--	--	--	--	--	--	--	--
155	5775	16.85	16.7	16.58	16.45	16.32	16.15	16.04	15.94	15.82	15.7

Note: Maximum conducted output power Value =Reading value on Spectrum Analyzer + cable loss

Maximum conducted output power Measurement:

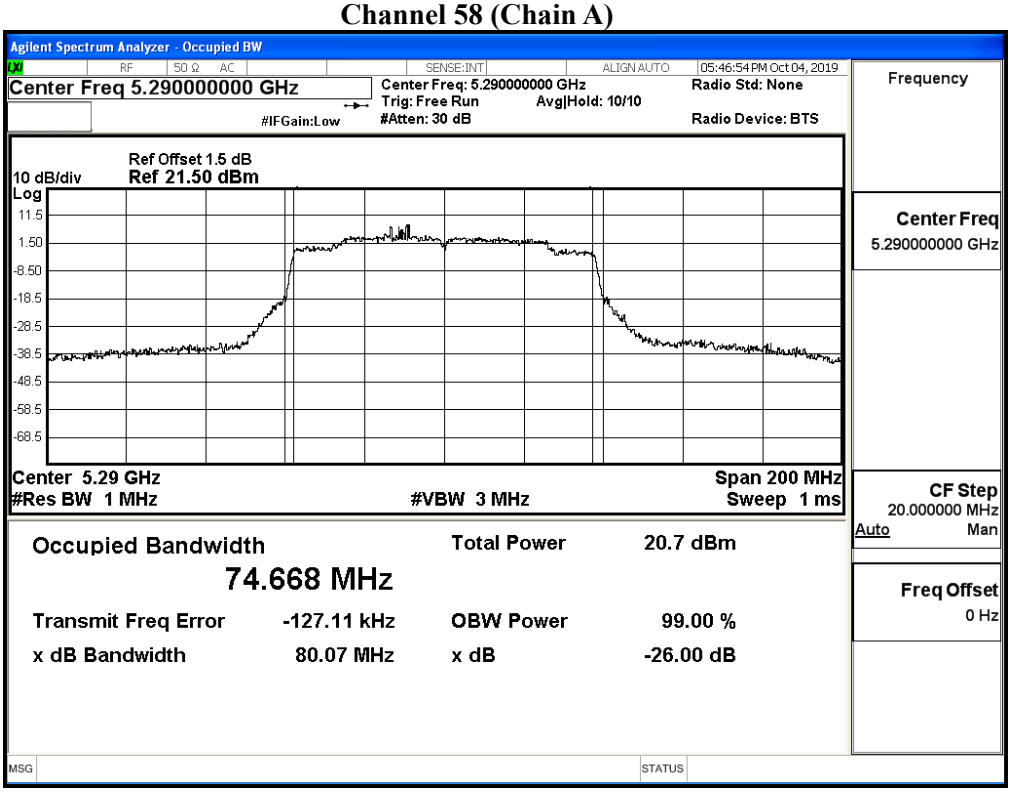
Channel No	Frequency Range (MHz)	99% Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
42	5210	--	10.13	9.85	13.00	24	--
58	5290	74.668	9.00	9.05	12.04	24	29.73
106	5530	74.646	10.55	10.56	13.57	24	29.73
122	5610	75.096	17.83	17.05	20.47	24	29.76
138 (U-NII-2C)	5690	73.141	19.70	20.11	22.92	24	29.64
138 (U-NII-3)	5690	--	3.45	3.35	6.41	30	--
155	5775	--	16.24	16.85	19.57	30	--

Note:

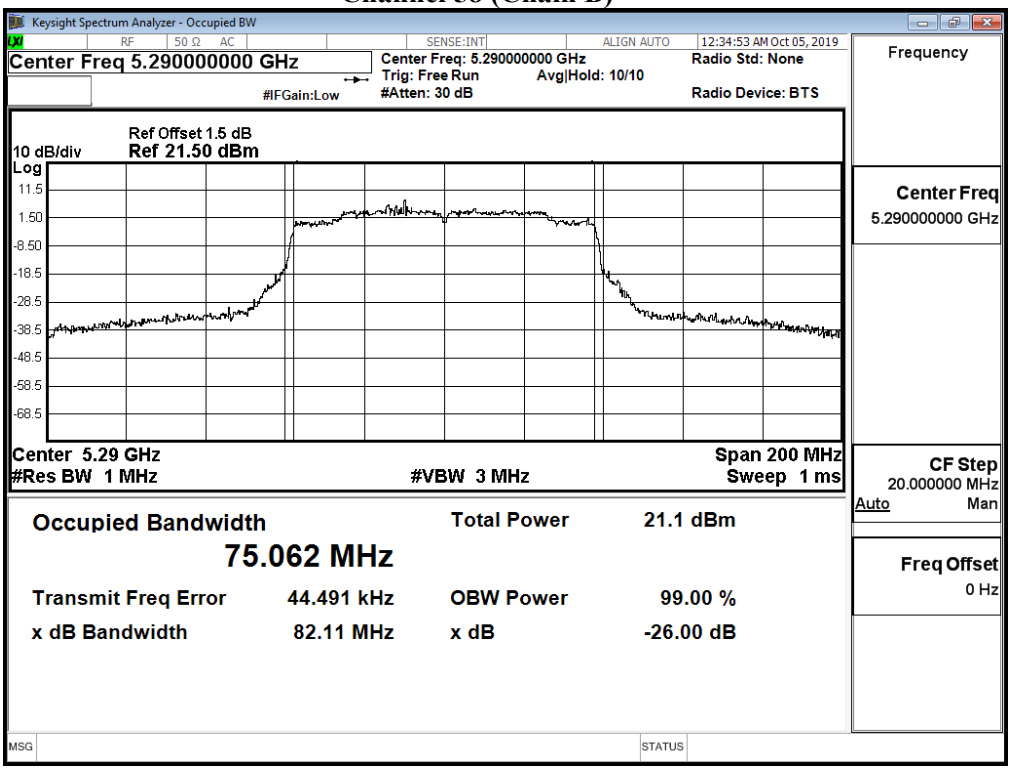
1. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))
2. 99% Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

99% Occupied Bandwidth:

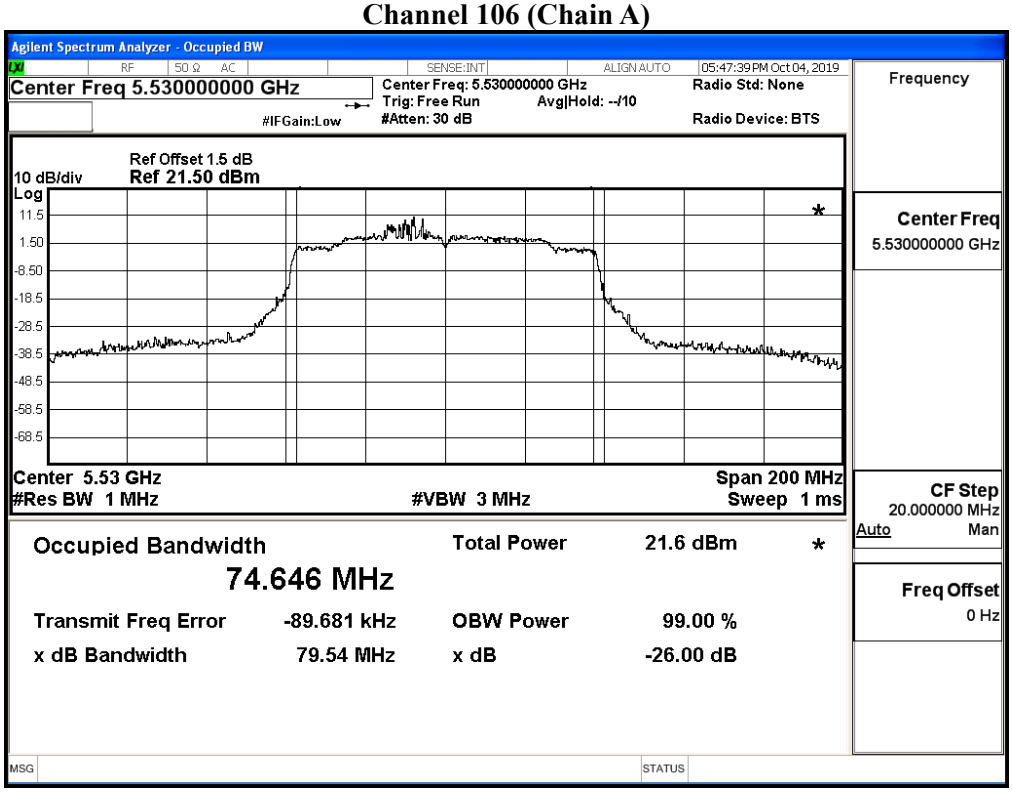
Channel 58 (Chain A)



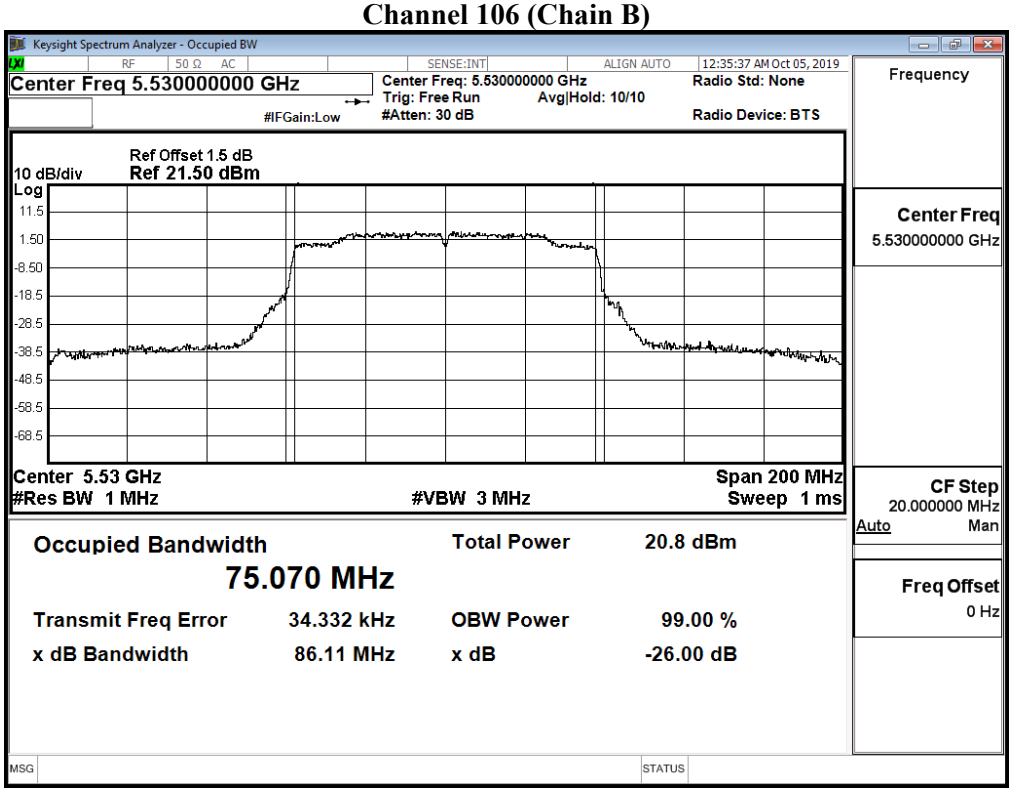
Channel 58 (Chain B)



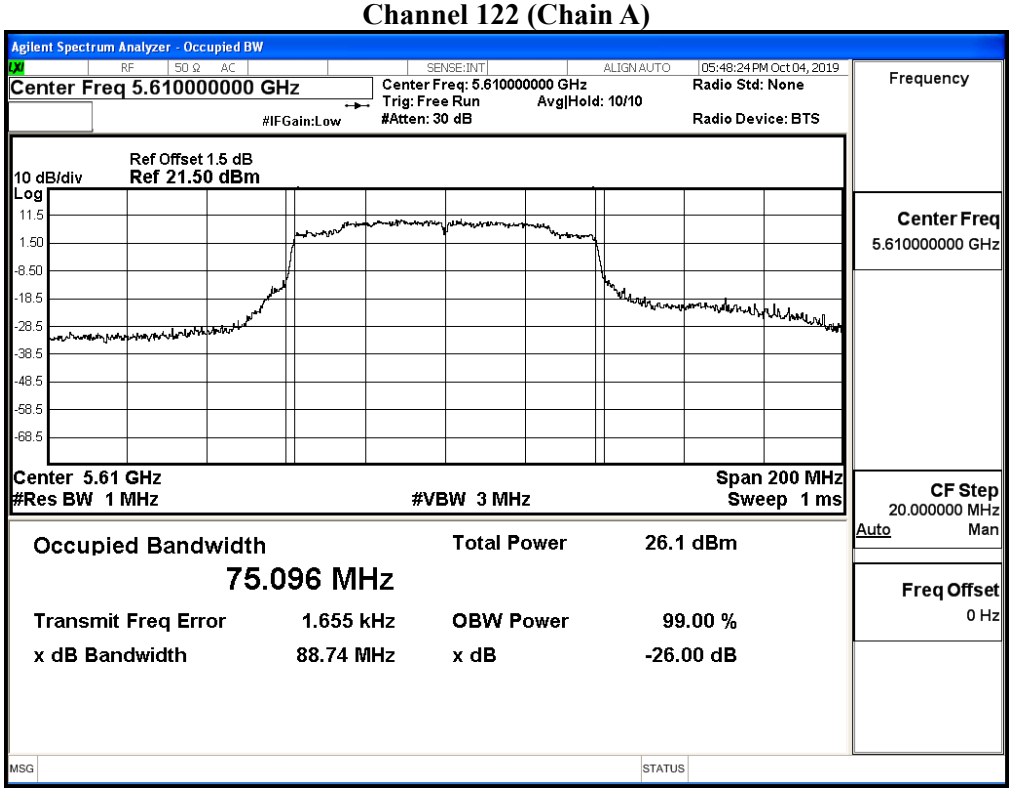
Channel 106 (Chain A)



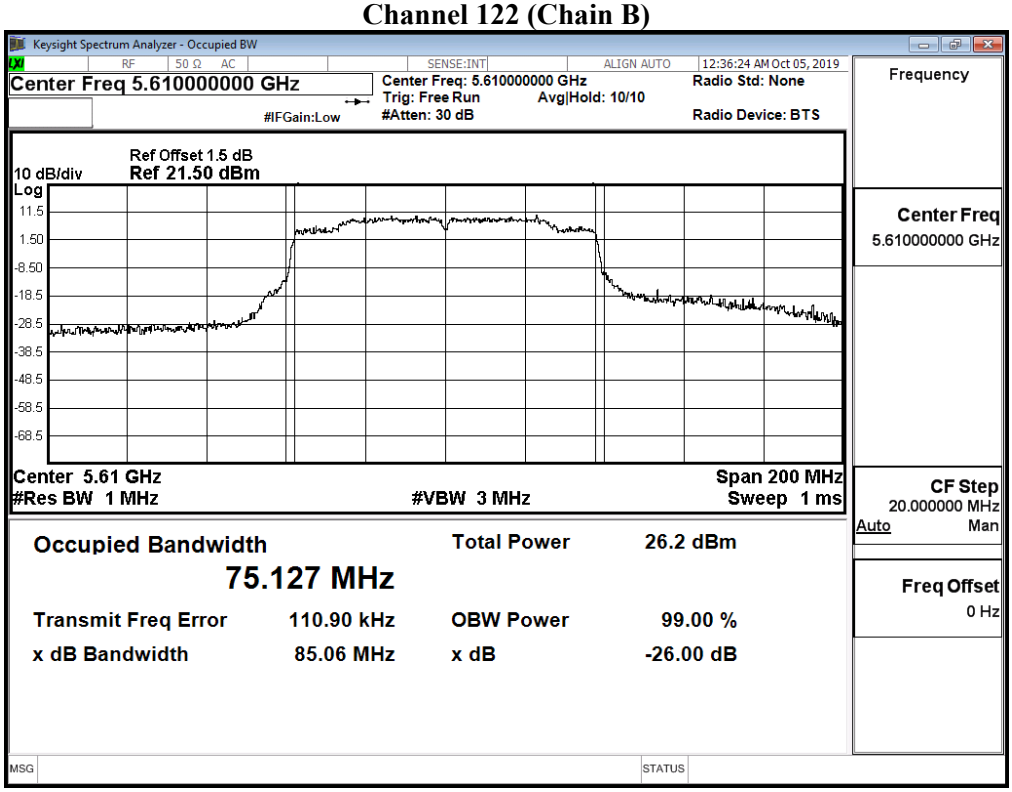
Channel 106 (Chain B)



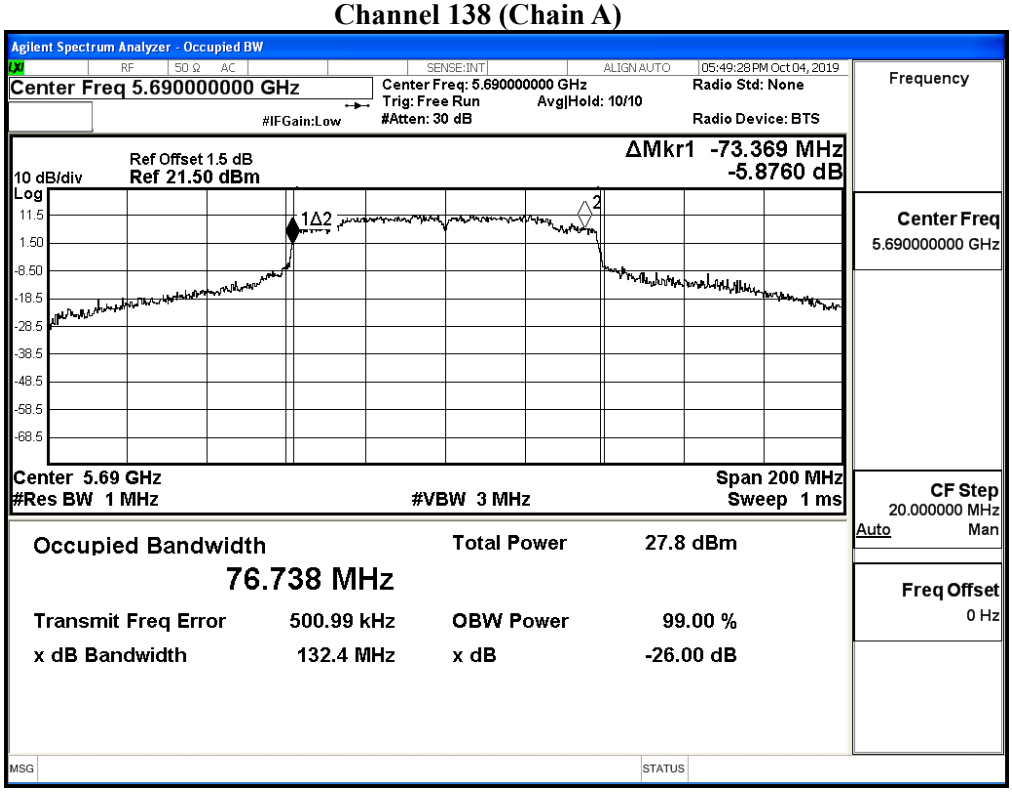
Channel 122 (Chain A)



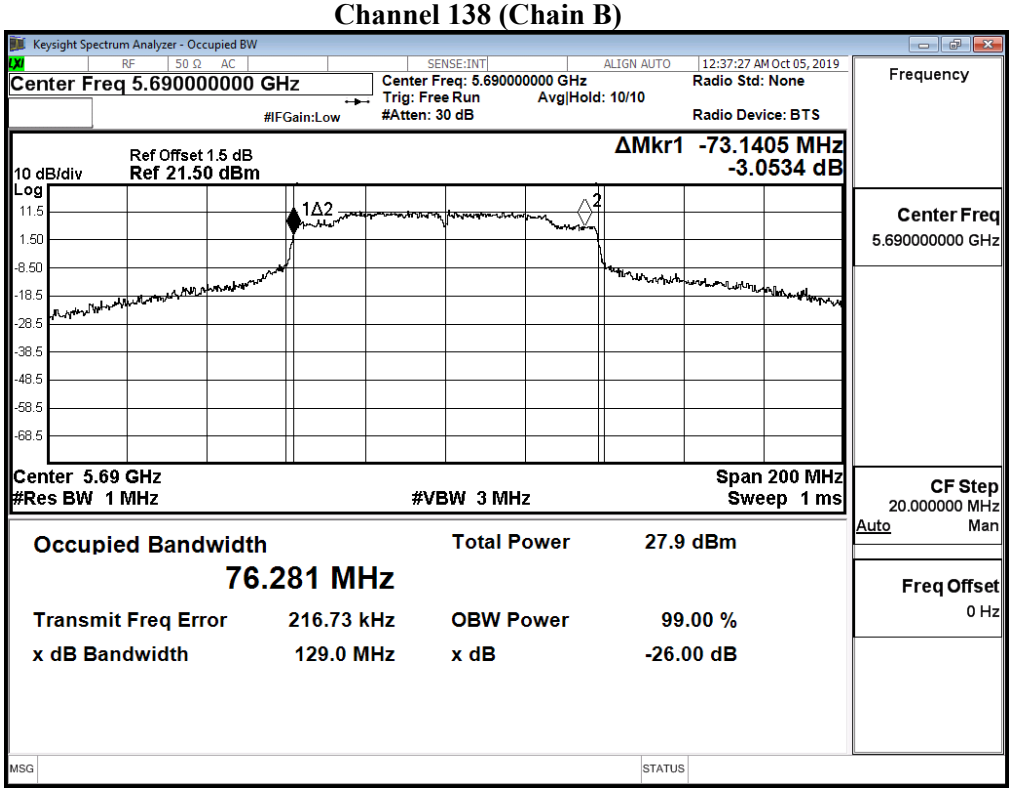
Channel 122 (Chain B)



Channel 138 (Chain A)

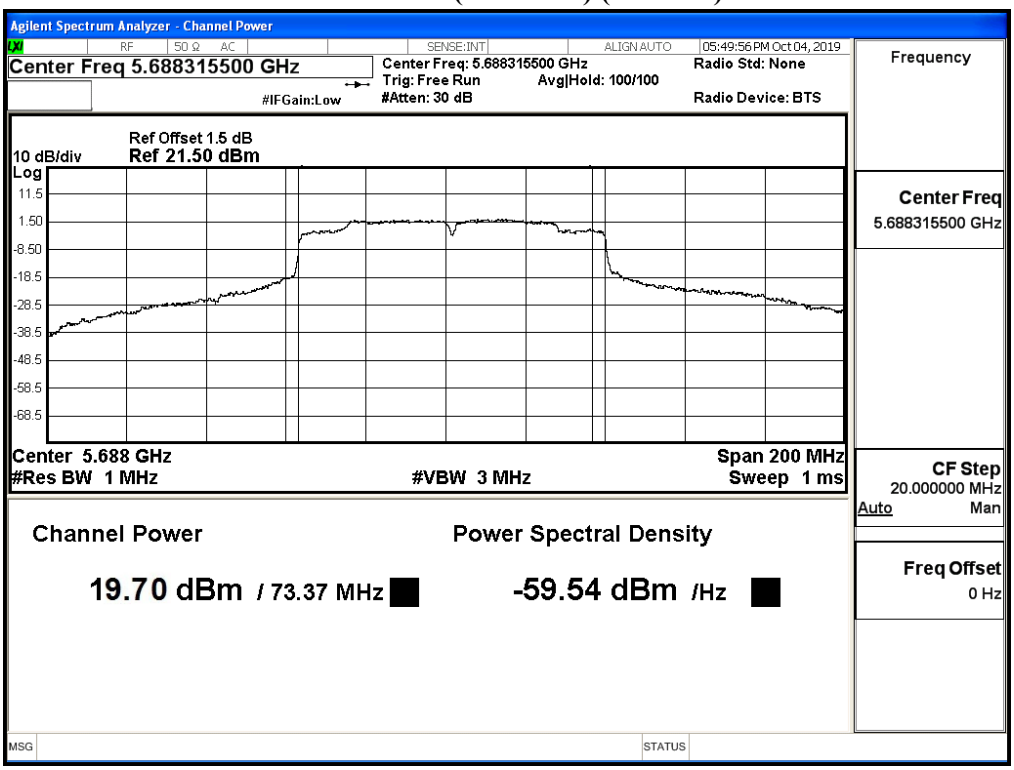


Channel 138 (Chain B)



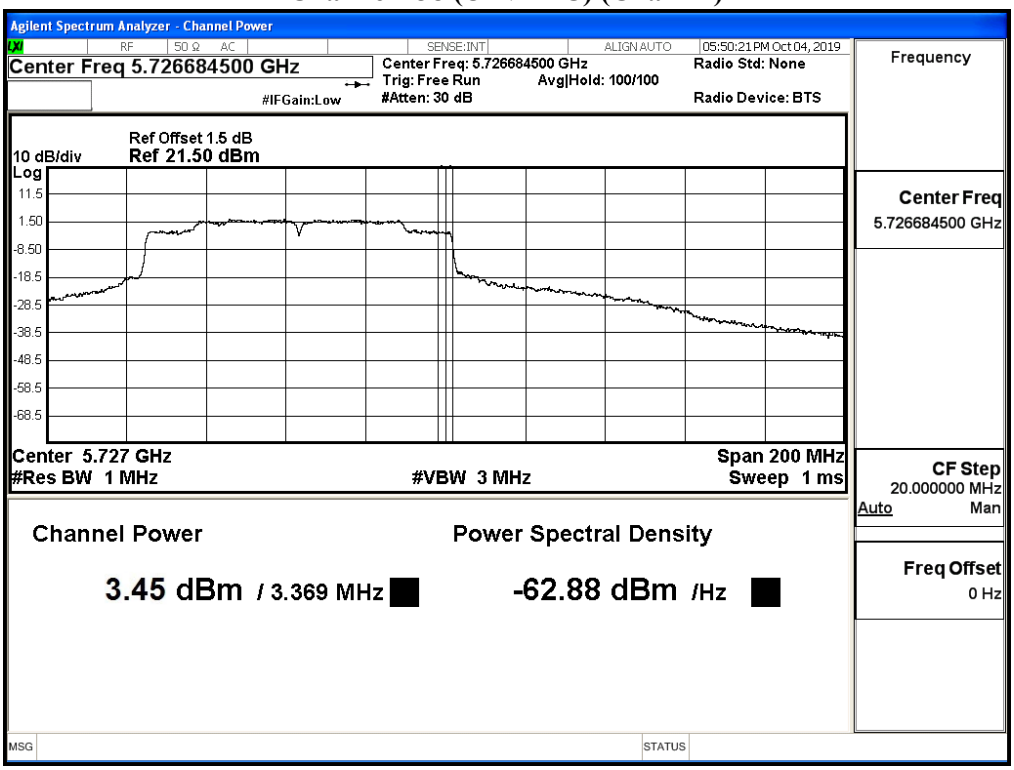
Maximum conducted output power:

Channel 138 (U-NII-2C) (Chain A)



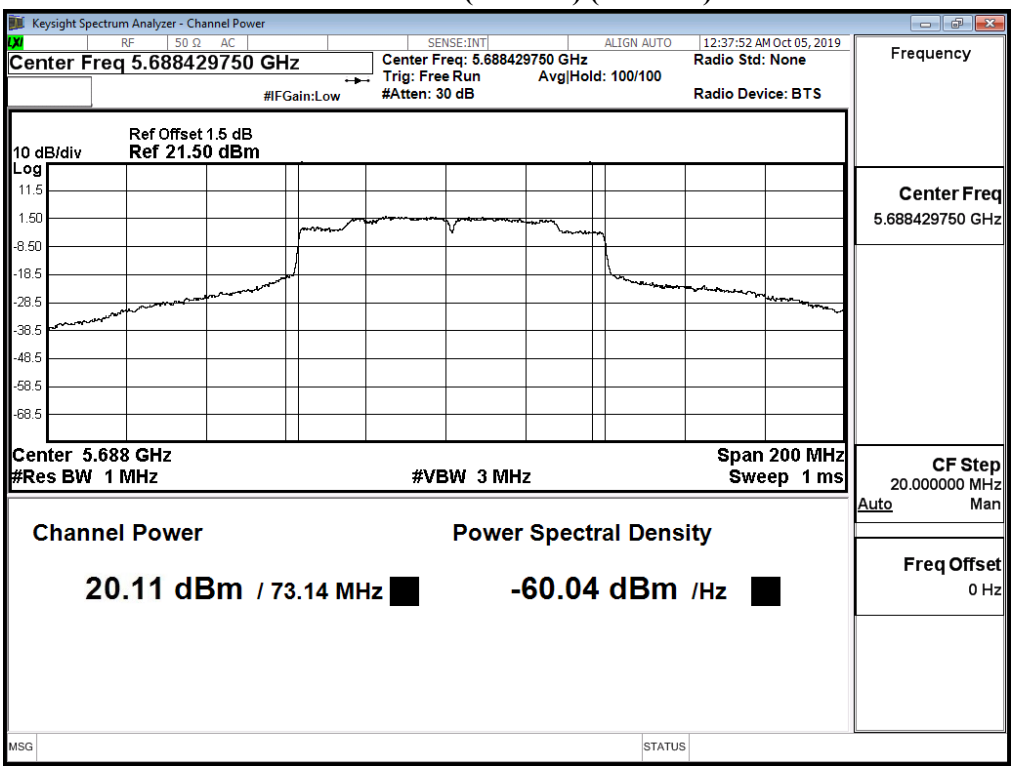
Maximum conducted output power:

Channel 138 (U-NII-2C) (Chain A)



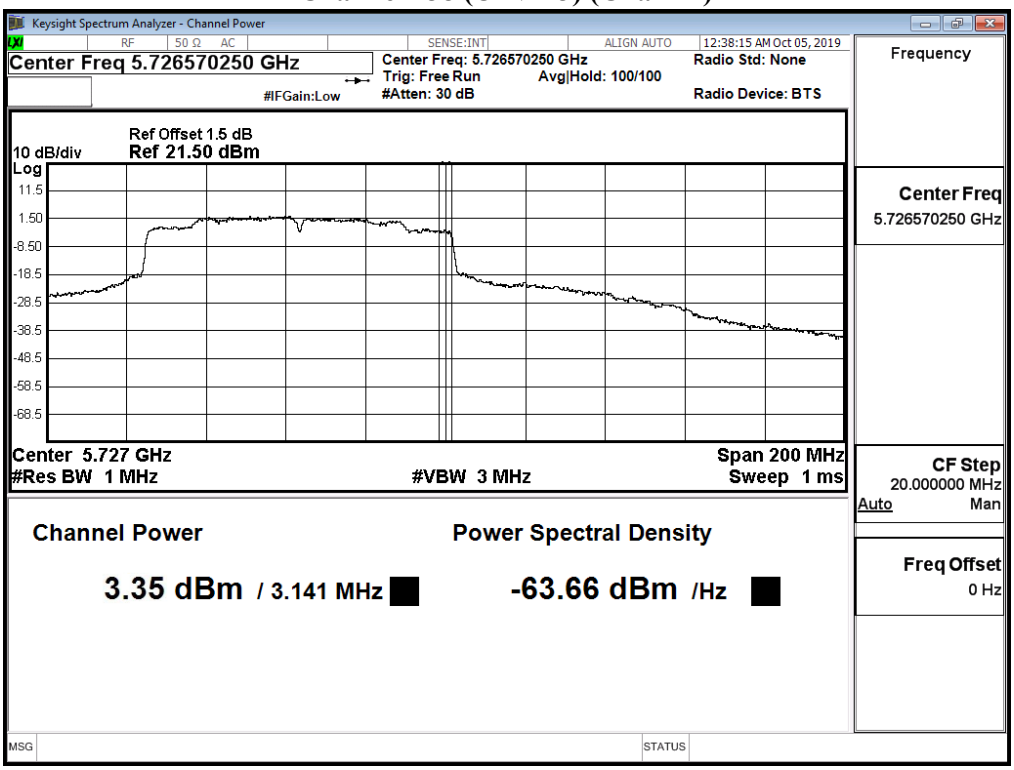
Maximum conducted output power:

Channel 138 (U-NII-3) (Chain B)



Maximum conducted output power:

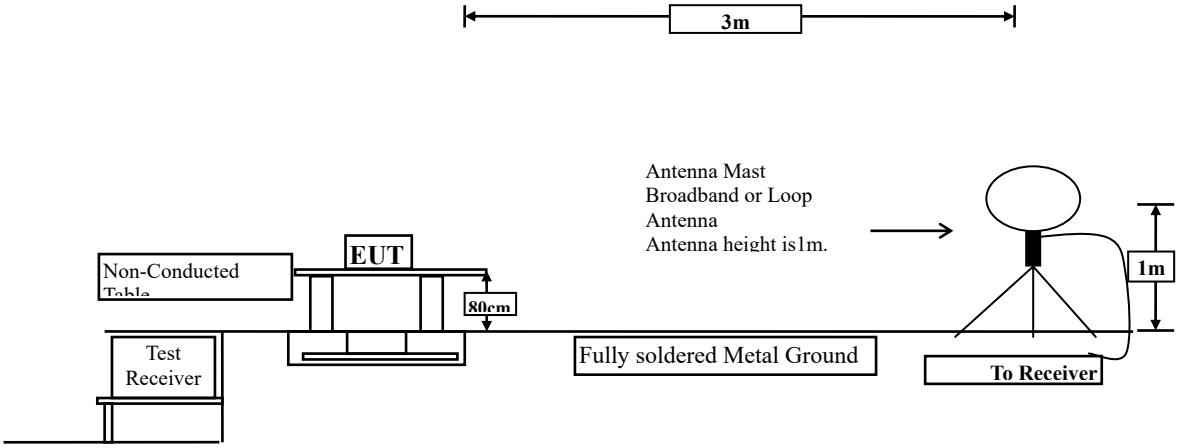
Channel 138 (U-NII-3) (Chain B)



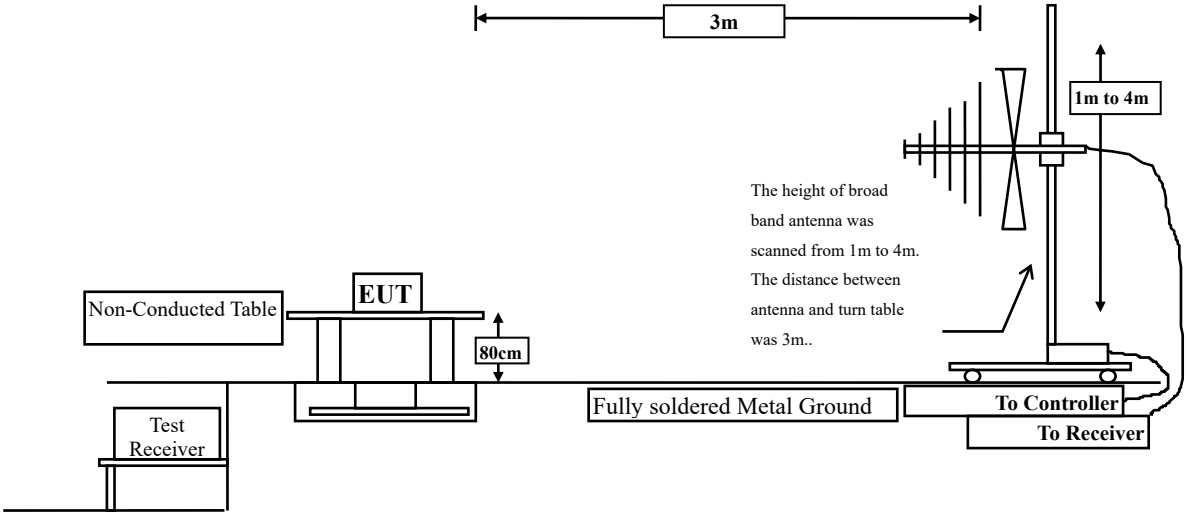
3. Radiated Emission

3.1. Test Setup

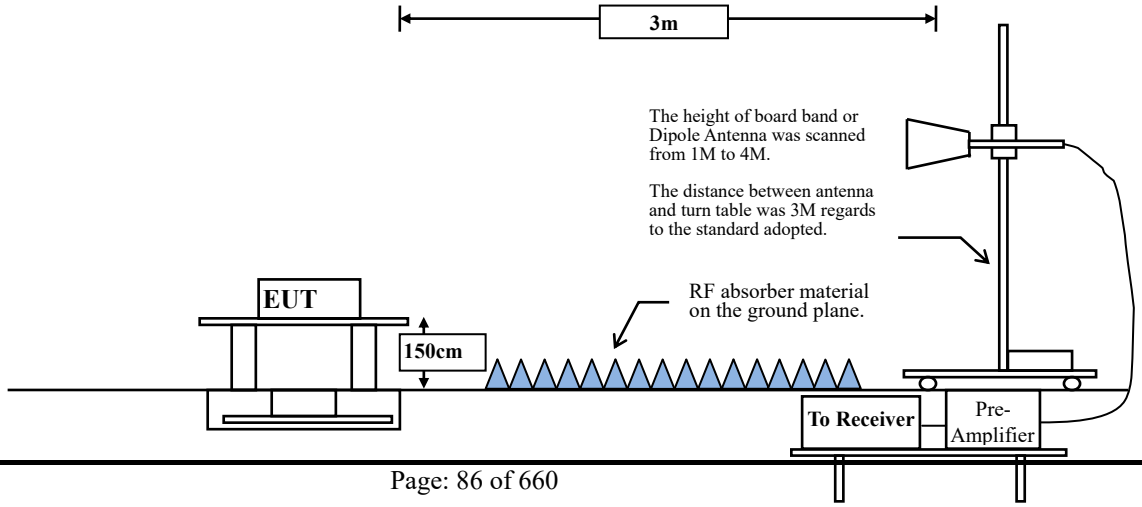
Radiated Emission Under 30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



3.2. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks: E field strength (dBμV/m) = 20 log E field strength (uV/m)

3.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to FCC KDB-789033 test procedure for compliance to FCC 47CFR 15. 407 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground,when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The measurement frequency range form 9kHz - 10th Harmonic of fundamental was investigated.

RBW and VBW Parameter setting:

According to KDB 789033 section II.G.5 Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz.

RBW = 1MHz.

VBW ≥ 3MHz.

According to KDB 789033 section II.G.6 Procedures for Average Unwanted Emissions Measurements above 1000 MHz.

RBW = 1MHz.

VBW = 10Hz, when duty cycle ≥ 98 %

VBW ≥ 1/T, when duty cycle < 98 %

(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

SISO A:

5GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11a	94.30	2.0362	491	500
802.11 n20	94.93	1.8986	527	1000
802.11 n40	81.05	0.8986	1113	2000
802.11 ac80	77.66	0.4232	2363	3000

Note: Duty Cycle Refer to Section 5

SISO B:

5GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11a	94.27	2.0493	488	500
802.11 n20	95.56	1.9044	525	1000
802.11 n40	82.22	0.9116	1097	2000
802.11 ac80	77.37	0.4261	2347	3000

Note: Duty Cycle Refer to Section 5

MIMO:

5GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11 n20	83.50	0.9681	1033	2000
802.11 n40	83.50	0.4913	2035	3000
802.11 ac80	82.98	0.2580	3876	5000

Note: Duty Cycle Refer to Section 5

3.4. Uncertainty

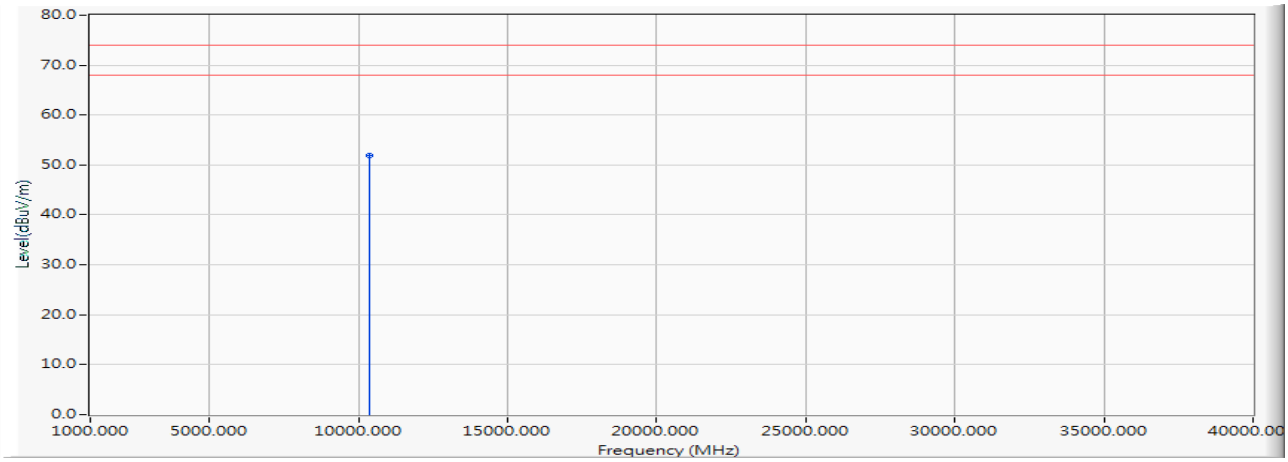
±4.08 dB below 1GHz

±4.22 dB above 1GHz

3.5. Test Result of Radiated Emission

Product : Flat Panel Detector
Test Item : Harmonic Radiated Emission Data
Test Date : 2019/09/25
Test Mode : Mode 1 SISO A: Transmit (802.11a_6Mbps)(5180MHz)

Horizontal



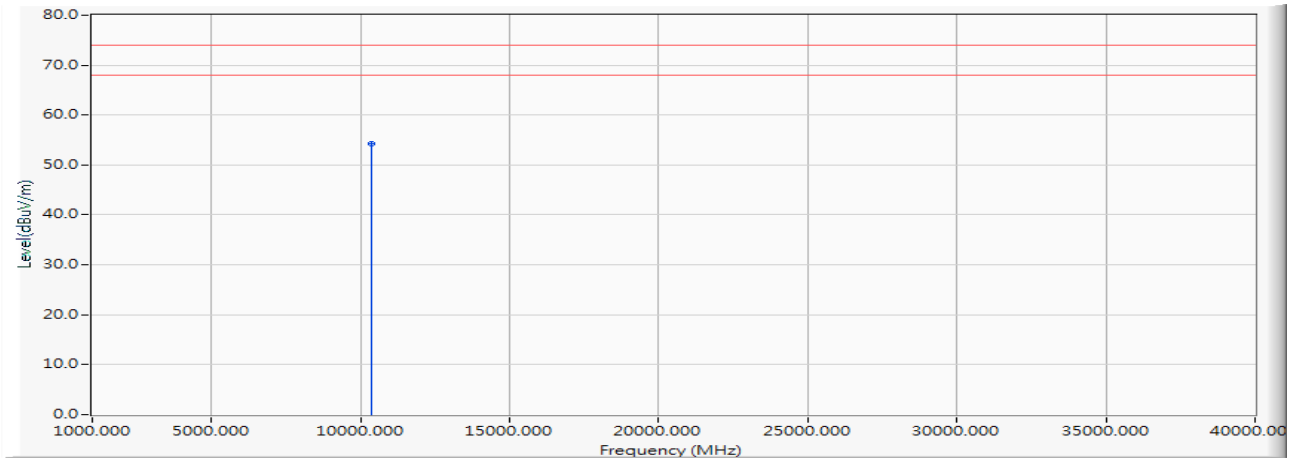
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	10360.000	13.393	38.505	51.898	-22.102	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	Flat Panel Detector
Test Item	:	Harmonic Radiated Emission Data
Test Date	:	2019/09/25
Test Mode	:	Mode 1 SISO A: Transmit (802.11a_6Mbps)(5180MHz)

Vertical



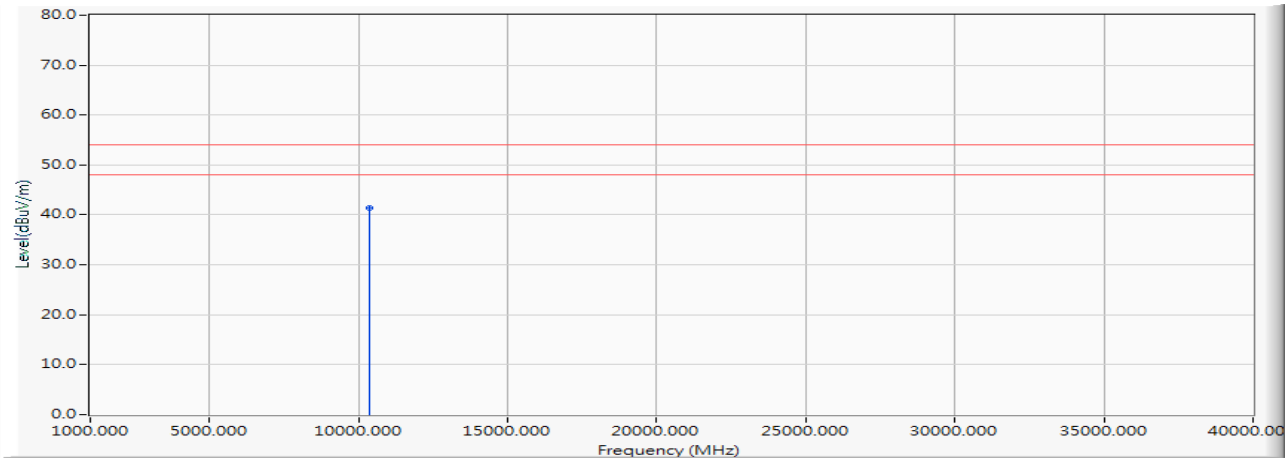
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	10360.000	13.393	40.825	54.218	-19.782	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	Flat Panel Detector
Test Item	:	Harmonic Radiated Emission Data
Test Date	:	2019/09/25
Test Mode	:	Mode 1 SISO A: Transmit (802.11a_6Mbps)(5180MHz)

Vertical



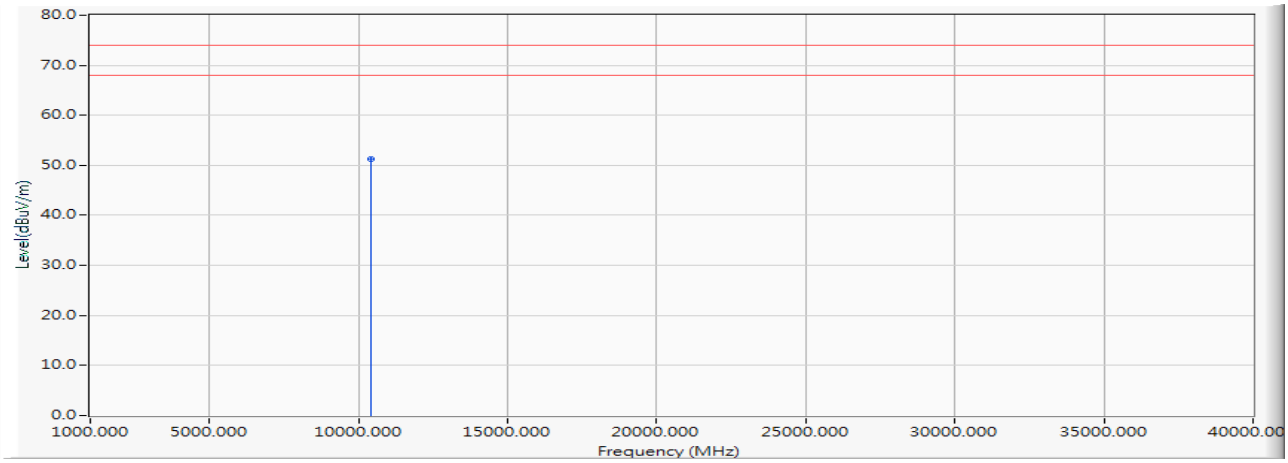
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	10360.000	13.393	28.064	41.457	-12.543	54.000	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	Flat Panel Detector
Test Item	:	Harmonic Radiated Emission Data
Test Date	:	2019/09/25
Test Mode	:	Mode 1 SISO A: Transmit (802.11a_6Mbps)(5200MHz)

Horizontal



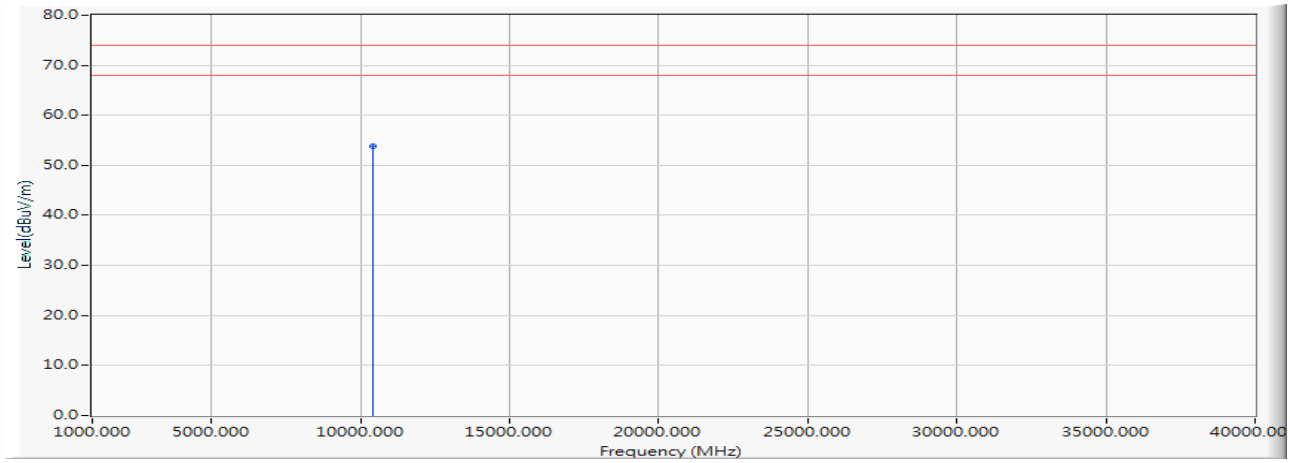
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	10400.000	24.622	26.609	51.232	-22.768	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	Flat Panel Detector
Test Item	:	Harmonic Radiated Emission Data
Test Date	:	2019/09/25
Test Mode	:	Mode 1 SISO A: Transmit (802.11a_6Mbps) (5200MHz)

Vertical



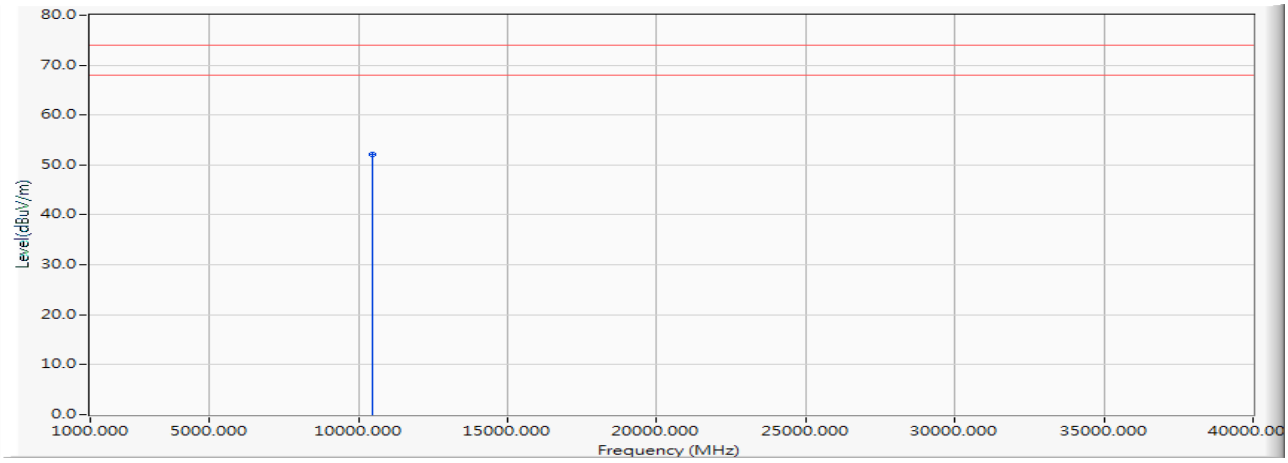
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	10400.000	24.622	29.284	53.907	-20.093	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	Flat Panel Detector
Test Item	:	Harmonic Radiated Emission Data
Test Date	:	2019/09/25
Test Mode	:	Mode 1 SISO A: Transmit (802.11a_6Mbps)(5240MHz)

Horizontal



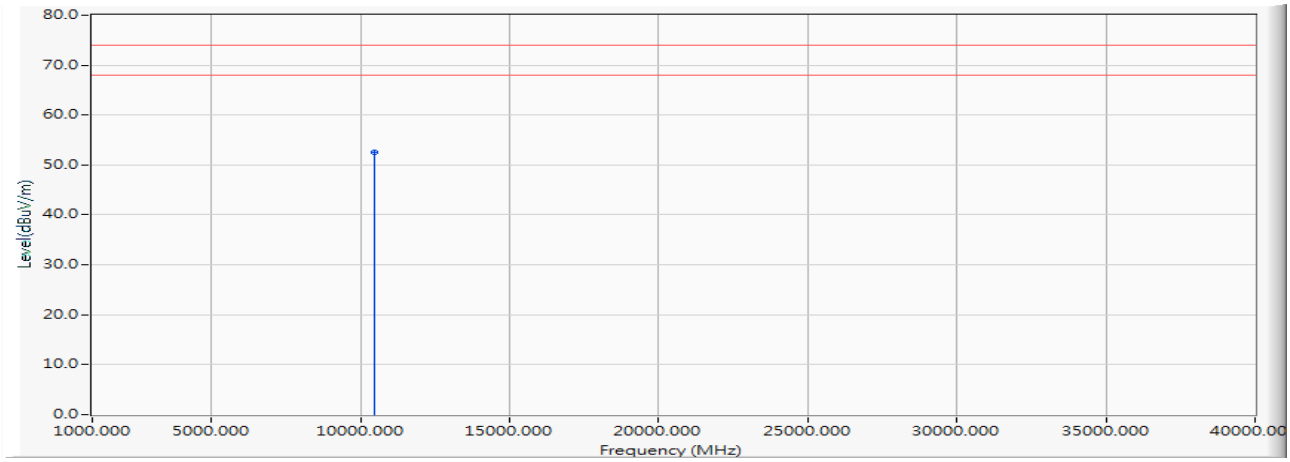
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	10480.000	13.152	39.023	52.174	-21.826	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	Flat Panel Detector
Test Item	:	Harmonic Radiated Emission Data
Test Date	:	2019/09/25
Test Mode	:	Mode 1 SISO A: Transmit (802.11a_6Mbps)(5240MHz)

Vertical



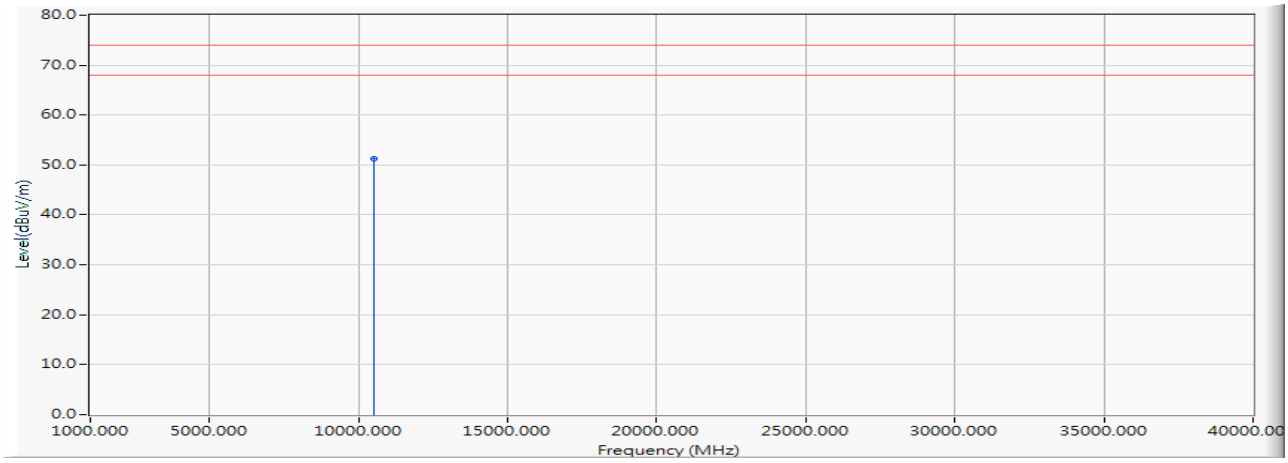
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	10480.000	13.152	39.463	52.614	-21.386	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	Flat Panel Detector
Test Item	:	Harmonic Radiated Emission Data
Test Date	:	2019/09/25
Test Mode	:	Mode 1 SISO A: Transmit (802.11a_6Mbps)(5260MHz)

Horizontal



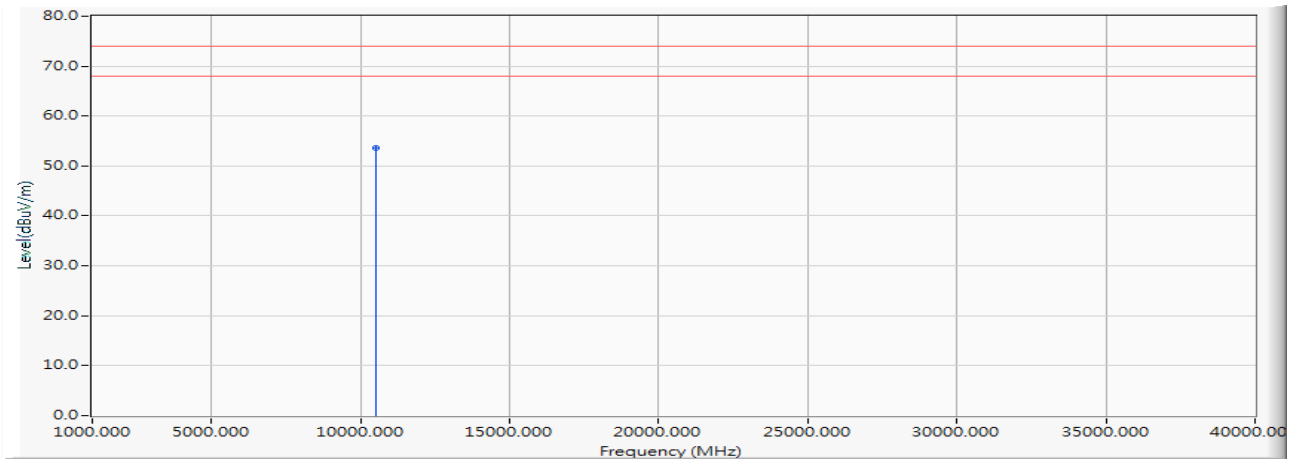
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	10520.000	13.107	38.236	51.343	-22.657	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	Flat Panel Detector
Test Item	:	Harmonic Radiated Emission Data
Test Date	:	2019/09/25
Test Mode	:	Mode 1 SISO A: Transmit (802.11a_6Mbps)(5260MHz)

Vertical



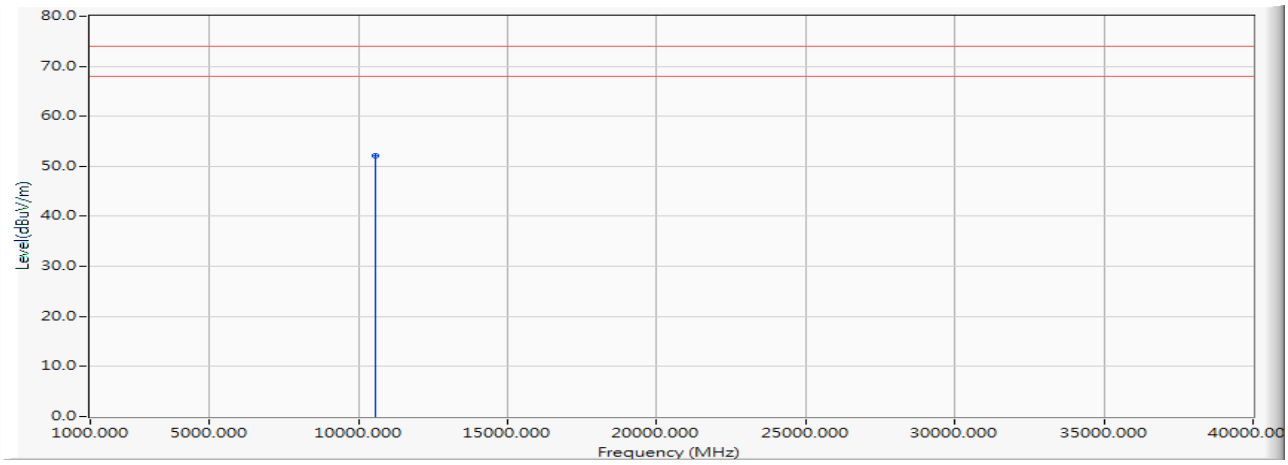
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	10520.000	13.107	40.612	53.719	-20.281	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Flat Panel Detector
Test Item : Harmonic Radiated Emission Data
Test Date : 2019/09/25
Test Mode : Mode 1 SISO A: Transmit (802.11a_6Mbps)(5280MHz)

Horizontal



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	10560.000	23.118	28.958	52.076	-21.924	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.