MEASUREMENT REPORT
FCC PART 15 Subpart E WLAN 802.11a/n/ac

FCC ID:	HLEHT730BTNFL
APPLICANT:	Unitech Electronics Co., Ltd.
Application Type:	Certification
Product:	Handheld Data Terminal
Model No.:	HT730
Brand Name:	unitech
FCC Classification:	Unlicensed National Information Infrastructure (UNII)
FCC Rule Part(s):	Part 15 Subpart E (Section 15.407)
Test Procedure(s):	ANSI C63.10-2013
Received Date:	January 6, 2021
Test Date:	January 21 ~ February 26, 2021

Tested By : 

(Peter Syu)

Reviewed By : 

(Paddy Chen)

Approved By : 

(Chenz Ker)

The test results only relate to the tested samples.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10. Test results reported herein relate only to the item(s) tested.

Revision History

Report No.	Version	Description	Issue Date	Note
2101TW2601-U4	1.0	Original Report	2021-03-17	

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§2.1033 General Information

Applicant	Unitech Electronics Co., Ltd.
Applicant Address	5F, No. 136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist., New Taipei City, Taiwan
Manufacturer	Unitech Electronics Co., Ltd.
Manufacturer Address	5F, No. 136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist., New Taipei City, Taiwan
Test Site	MRT Technology (Taiwan) Co., Ltd
Test Site Address	No. 38, Fuxing Second Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C)
MRT FCC Registration No.	291082
FCC Rule Part(s)	Part 15 Subpart E (Section 15.407)
Test Device Serial No.	#1 ☐ Production ☒ Pre-Production ☐ Engineering

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Fuxing Rd., Taoyuan, Taiwan (R.O.C)

- **MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm.**
- **MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada.**
- **MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC (Designation Number: TW3261), Industry Taiwan, EU and TELEC Rules.**

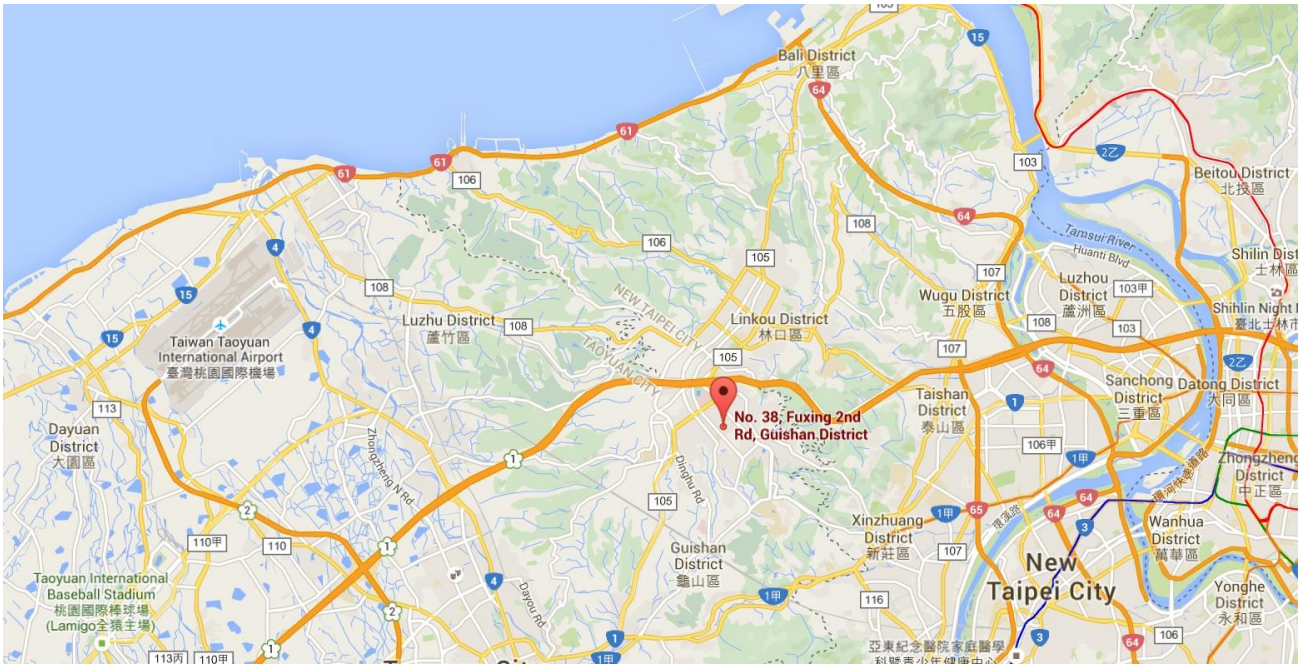
1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taoyuan City. These measurement tests were conducted at the MRT Technology (Taiwan) Co., Ltd. Facility located at No.38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C).



2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	Handheld Data Terminal
Brand Name	unitech
Model No.	HT730
Supports Radios Spec.	**WPAN:** Bluetooth Dual Mode: V5.1 NFC 13.56MHz **WLAN:** 2.4G: 802.11b/g/n-20/n-40 5G: 802.11a/n-20/ac-20/n-40/ac-40/ac-80, Band 1,2,3,4 **WWAN:** 3G: Band 2, 5 4G: Band 2,4,5,7,17,41 **GNSS:** GPS, GLONASS, Galileo, BeiDou
Wi-Fi Specification	802.11a/n/ac (2TX / 2RX)
Frequency Range	**5GHz:** For 802.11a/n-HT20/ac-VHT-20: 5180~5320MHz, 5500~5700MHz, 5745~5825MHz For 802.11n-HT40/ ac-VHT40: 5190~5310MHz, 5510~5670MHz, 5755~5795MHz For 802.11ac-VHT80: 5210MHz, 5290MHz, 5530MHz, 5610MHz, 5690MHz, 5775MHz
Maximum Output Power	802.11a: 16.41dBm 802.11n-HT20: 15.49dBm, 802.11ac-VHT20: 15.33dBm 802.11n-HT40: 15.53dBm 802.11ac-VHT40: 15.22dBm 802.11ac-VHT80: 14.47dBm
Modulation Type	802.11a/n-20/ac-20/n-40/ac-40/ac-80: OFDM (BPSK, QPSK, 16QAM, 64QAM,256QAM)
Power Adapter	Brand: TEN PAO Model No: S018BYU1200150 Input: AC 100-240V ~ 50-60Hz 600mA Output: DC 5V/9V/12V, 3A/2A/1.5A

Note: There are two types of keyboard on this product, the only difference is the number of buttons. This report only evaluated the product with more buttons.

2.2. Operation Frequencies and Channel List

802.11 n-HT20/ ac-VHT20

Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180 MHz	40	5200 MHz	44	5220 MHz
48	5240 MHz	52	5260 MHz	56	5280 MHz
60	5300 MHz	64	5320 MHz	100	5500 MHz
104	5520 MHz	108	5540 MHz	112	5560 MHz
120	5600 MHz	124	5620 MHz	128	5640 MHz
132	5660 MHz	136	5680 MHz	140	5700 MHz
144	5720 MHz	149	5745 MHz	153	5765 MHz
157	5785 MHz	161	5805 MHz	165	5825 MHz

802.11 n-HT40/ ac-VHT40

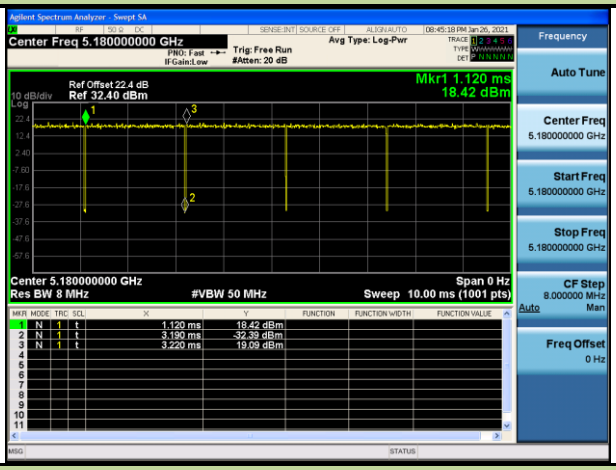
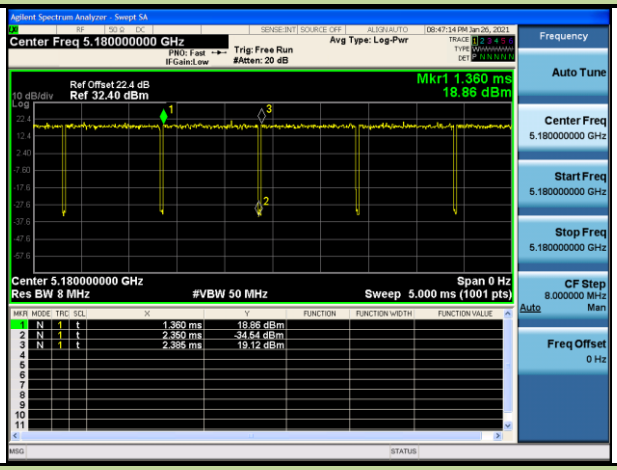
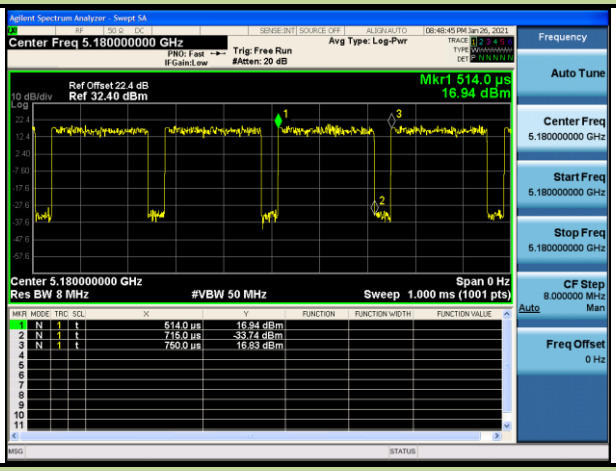
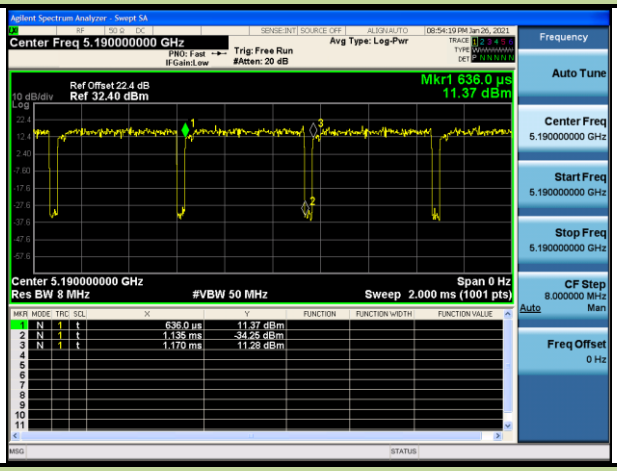
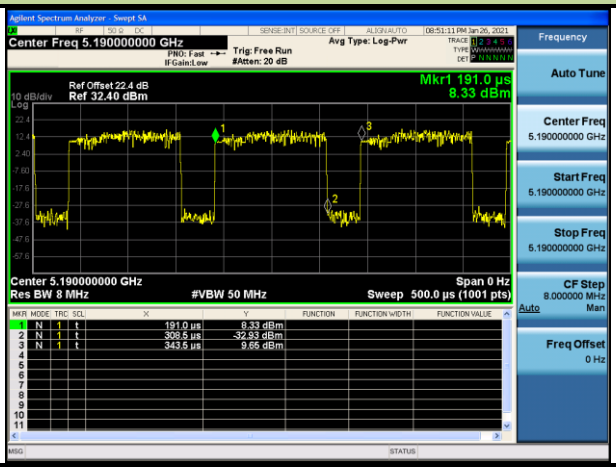
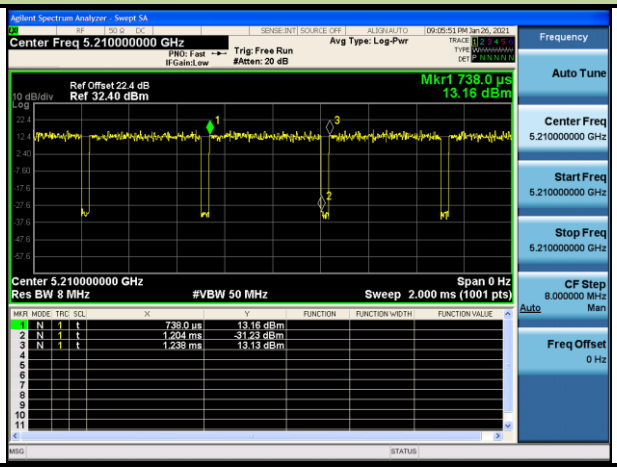
Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz	54	5270 MHz
62	5310 MHz	102	5510 MHz	110	5550 MHz
126	5630 MHz	134	5670 MHz	151	5755 MHz
159	5795 MHz	--	--	--	--

802.11ac-VHT80

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

Duty Cycle

Test Mode	Duty Cycle
802.11a	99%
802.11n-HT20	97%
802.11ac-VHT20	85%
802.11n-HT40	93%
802.11ac-VHT40	77%
802.11ac-VHT80	93%

802.11a	802.11n-HT20
	
802.11ac-VHT20	**802.11n-HT40**
	
802.11ac-VHT40	**802.11ac-VHT80**
	

2.3. Test Mode

Test Mode	Mode 1: Transmit by 802.11a
	Mode 2: Transmit by 802.11n-HT20
	Mode 3: Transmit by 802.11ac-VHT20
	Mode 4: Transmit by 802.11n-HT40
	Mode 5: Transmit by 802.11ac-VHT40
	Mode 6: Transmit by 802.11ac-VHT80

Note: Since 802.11n and 802.11ac have the same modulation/data rate/bandwidth, and after confirmation of conducted power, we select 802.11n-HT20 and HT40 are covered by 802.11ac-VHT20 and VHT40 in this report.

2.4. Test Software

The test utility software used during testing was “QRCT”.

2.5. Device Capabilities

This device contains the following capabilities:
2.4GHz WLAN (DTS) and 5GHz WLAN (NII).
Note: 5GHz (NII) operation is possible in 20MHz, 40MHz and 80MHz channel bandwidths. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = average per the guidance of Section B)2)b) of KDB 789033 D02v02r01. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100.

2.6. Test Configuration

This device was tested per the guidance of KDB 789033 D02v02r01. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing.

2.7. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

2.8. Labeling Requirements

Per 2.1074 & 15.19; Docket 95-19
The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the FCC ID must be displayed on the device per Section 15.19(a)(5). Please see attachment for FCC ID label and label location.

3. DESCRIPTION OF TEST

3.1. Evaluation Procedure

The measurement procedures described in the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2013), and the guidance provided in KDB 789033 were used in the measurement of the device**.**

Deviation from measurement procedure…….....None

3.2. AC Line Conducted Emissions

The line-conducted facility is located inside an 9'x4'x3' shielded enclosure. A 1m x 2m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50Ω/50uH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference ground-plane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the receiver and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The receiver was scanned from 150kHz to 30MHz. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 9kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Each emission was also maximized by varying: power lines, the mode of operation or data exchange speed, or support equipment whichever determined the worst-case emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions are used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

An extension cord was used to connect to a single LISN which powered by EUT. The extension cord was calibrated with LISN, the impedance and insertion loss are compliance with the requirements as stated in ANSI C63.10-2013.

Line conducted emissions test results are shown in Section 7.10.

3.3. Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. A turntable is used for radiated measurement. It is a continuously rotatable, remote controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm high PVC support structure is placed on top of the turntable.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up for frequencies below 1GHz was placed on top of the 0.8 meter high, 1 x 1.5 meter table; and test set-up for frequencies 1-40GHz was placed on top of the 1.5 meter high, 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, if applicable, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions. According to 3dB Beam-Width of horn antenna, the horn antenna should be always directed to the EUT when rising height.

4. ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

- The antenna of the **Handheld Data Terminal,** is permanently attached.
- There are no provisions for connection to an external antenna.

Conclusion:

The EUT unit complies with the requirement of §15.203.

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Shanghai Saintenna Wireless Technology Co., LTD.	SAA31560A	FPCB	1.32dBi

5. TEST EQUIPMENT CALIBRATION DATE

Conducted Emissions – SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Two-Line V-Network	R&S	ENV216	MRTTWA00019	1 year	2021/3/26
Cable	Rosnol	N1C50-RG400-B 1C50-500CM	MRTTWE00013	1 year	2021/6/21
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2021/3/25

Radiated Emissions – AC1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Broadband TRILOG Antenna	SCHWARZBECK	VULB 9162	MRTTWA00001	1 year	2021/10/5
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2021/3/25
Acitve Loop Antenna	Schwarzbeck	FMZB 1519B	MRTTWA00002	1 year	2021/4/27
Broadband Horn antenna	SCHWARZBECK	BBHA 9120D	MRTTWA00003	1 year	2021/4/24
Breitband Hornantenna	Schwarzbeck	BBHA 9170	MRTTWA00004	1 year	2021/4/24
Broadband Amplifier	Schwarzbeck	BBV 9721	MRTTWA00006	1 year	2021/4/24
Broadband Preamplifier	SCHWARZBECK	BBV 9718	MRTTWA00005	1 year	2021/4/24
Antenna Cable	HUBERSUHNER	SF106	MRTTWE00010	1 year	2021/6/16
Cable	Rosnol	K1K50-UP0264-K1K50-4M	MRTTWE00012	1 year	2021/6/21

Conducted Test Equipment – SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2021/10/14
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTTWA00074	1 year	2021/7/14
USB Wideband Power Sensor	KEYSIGHT	U2021XA	MRTTWA00015	1 year	2021/3/26

Test Software

Software	Version	Function
e3	9.160520a	EMI Test Software
EMI	V3	EMI Test Software

6. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Conducted Emission- Power Line
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 0.15MHz~30MHz: ± 2.53dB
Radiated Spurious Emission
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 9kHz~30MHz: ± 3.92dB 30MHz~1GHz: ± 4.25dB 1GHz~18GHz: ± 4.40dB 18GHz~40GHz: ± 4.45dB
Frequency Error
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): ±78.4Hz
Conducted Power
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): ± 0.84dB
Conducted Spurious Emission
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)):± 2.65 dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 3.3%
Temp. / Humidity
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): ±0.82°C/ ±3%
DC Voltage
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): ±0.3%

7. TEST RESULT

7.1. Summary

Company Name: **Handheld Data Terminal**

FCC Classification: **Unlicensed National Information Infrastructure (UNII)**

Data Rate(s) Tested: **6Mbps ~ 54Mbps (a);**
6.5/7.2Mbps ~ 130/144.4Mbps (n-HT20);
13.5/15.0Mbps ~ 270/300Mbps (n-HT40);
6.5/7.2Mbps ~ 156/173.4Mbps (ac-VHT20MHz);
13.5/15.0Mbps ~ 360/400Mbps (ac-VHT40MHz);
29.3/32.5Mbps ~ 780/866.6Mbps (ac-VHT80MHz)

FCC Section(s)	IC Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.407(a)	RSS-247 §6.2.1	26dB Bandwidth	N/A	Conducted	Pass	Section 7.2
15.407(e)	RSS-247 §6.2.4	6dB Bandwidth	≥ 500kHz		Pass	Section 7.3
15.407(a)(1)(i), (2), (3)	RSS-247 §6.2.1, §6.2.2, §6.2.3, §6.2.4	Maximum Conducted Output Power	Refer to Section 7.5		Pass	Section 7.5
15.407(h)(1)	RSS-247 §6.2.2, §6.2.3	Transmit Power Control	≤ 24 dBm		N/A	Section 7.6
15.407(a)(1)(i), (2), (3), (5)	RSS-247 §6.2.1, §6.2.2, §6.2.3, §6.2.4	Power Spectral Density	Refer to Section 7.7		Pass	Section 7.7
15.407(b)(1), (4)	RSS-247 §6.2.1, §6.2.2, §6.2.3, §6.2.4	Undesirable Emissions	≤ -27dBm/MHz EIRP ≤ -17dBm/MHz EIRP	Radiated	Pass	Section 7.8 & 7.9
15.205, 15.209 15.407(b)(5), (6), (7)	RSS-247 §6.2.1, §6.2.2, §6.2.3, §6.2.4	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		Pass	
15.207	RSS-Gen 8.8	AC Conducted Emissions 150kHz - 30MHz	< FCC 15.207 limits	Line Conducted	Pass	Section 7.10

Notes:

1) Determining compliance is based on the test results met the regulation limits or requirements declared by clients, and the test results don't take into account the value of measurement uncertainty.
2) All channels, modes, and modulations/data rates were investigated among all UNII bands. The test results shown in the following sections represent the worst case emissions.
3) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.

7.2. 26dB Bandwidth Measurement

7.2.1. Test Limit

N/A

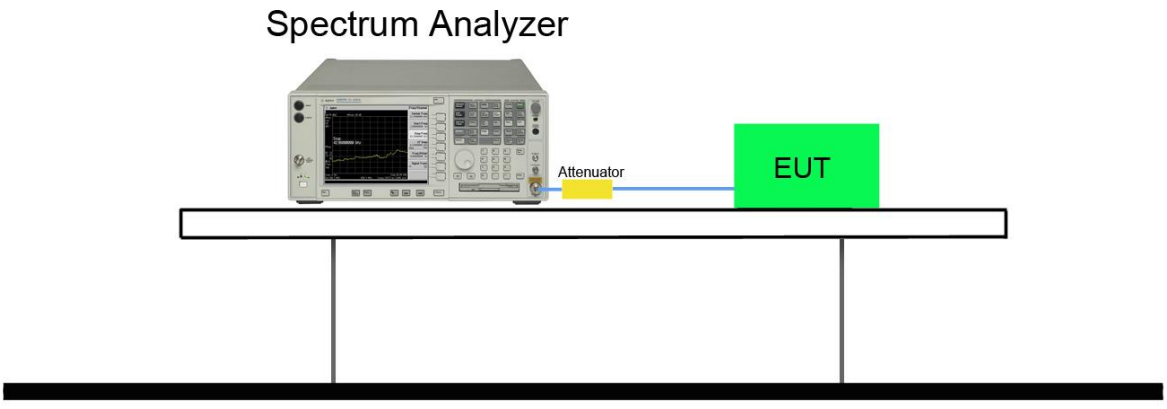
7.2.2. Test Procedure used

KDB 789033 D02v02r01 - Section C.1 / ANSI C63.10 6.9.3 / RSS-Gen 6.7

7.2.3. Test Setting

1. The analyzers' automatic bandwidth measurement capability was used to perform the 26dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 26. The automatic bandwidth measurement function also has the capability of simultaneously measuring the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediated power nulls in the fundamental emission.
2. RBW = approximately 1% of the emission bandwidth.
3. VBW ≥ 3 × RBW.
4. Detector = Peak.
5. Trace mode = max hold.

7.2.4. Test Setup



7.2.5. Test Result

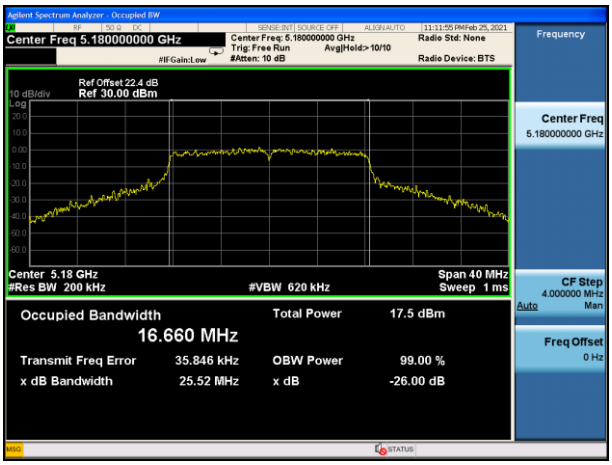
Product	Handheld Data Terminal	Test Engineer	Eric
Test Site	SR2	Test Date	2021/2/25
Test Item	26dB Bandwidth & 99% Bandwidth		

Test Mode	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Antenna 0				
802.11a	36	5180	25.520	16.660
802.11a	44	5220	22.620	16.564
802.11a	48	5240	23.120	16.629
802.11a	52	5260	22.540	16.558
802.11a	60	5300	21.570	16.516
802.11a	64	5320	22.630	16.542
802.11a	100	5500	22.780	16.582
802.11a	120	5600	24.340	16.489
802.11a	140	5700	23.520	16.612
802.11a	144	5720	25.460	16.716
802.11a	149	5745	25.930	16.752
802.11a	157	5785	22.110	16.553
802.11a	165	5825	24.580	16.780
802.11n-HT20	36	5180	20.730	17.717
802.11n-HT20	44	5220	20.730	17.722
802.11n-HT20	48	5240	21.940	17.762
802.11n-HT20	52	5260	22.200	17.731
802.11n-HT20	60	5300	22.020	17.666
802.11n-HT20	64	5320	21.440	17.728
802.11n-HT20	100	5500	22.450	17.725
802.11n-HT20	120	5600	24.920	17.808
802.11n-HT20	140	5700	24.000	17.792
802.11n-HT20	144	5720	25.990	17.820
802.11n-HT20	149	5745	24.630	17.775
802.11n-HT20	157	5785	23.910	17.883
802.11n-HT20	165	5825	25.370	17.823

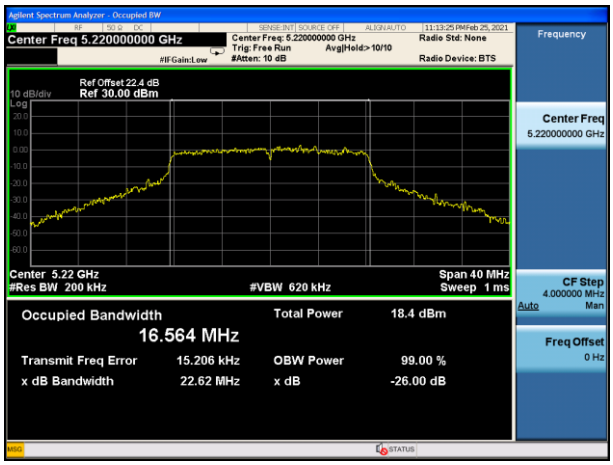
Test Mode	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11n-HT40	38	5190	40.030	36.174
802.11n-HT40	46	5230	40.310	36.123
802.11n-HT40	54	5270	40.230	36.217
802.11n-HT40	62	5310	40.360	36.073
802.11n-HT40	102	5510	40.590	36.253
802.11n-HT40	110	5550	40.330	36.187
802.11n-HT40	134	5670	40.110	36.219
802.11n-HT40	151	5755	40.810	36.244
802.11n-HT40	159	5795	40.570	36.202
802.11ac-VHT80	42	5210	40.810	36.268
802.11ac-VHT80	58	5290	82.060	75.588
802.11ac-VHT80	106	5530	80.400	75.465
802.11ac-VHT80	122	5610	82.010	75.760
802.11ac-VHT80	138	5690	84.510	75.686
802.11ac-VHT80	155	5775	82.550	75.759

802.11a 26dB Bandwidth & 99% Bandwidth - Ant 0

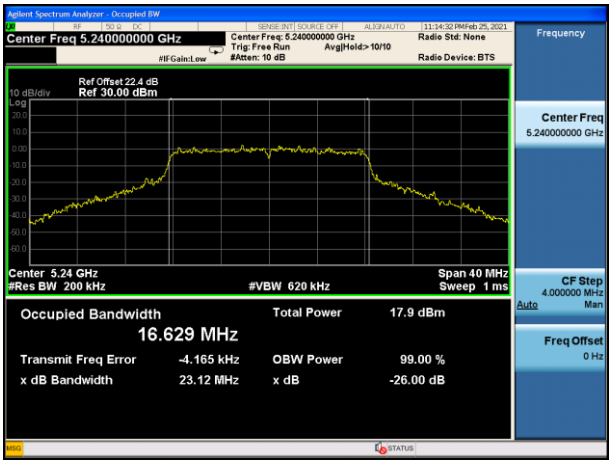
Channel 36 (5180MHz)



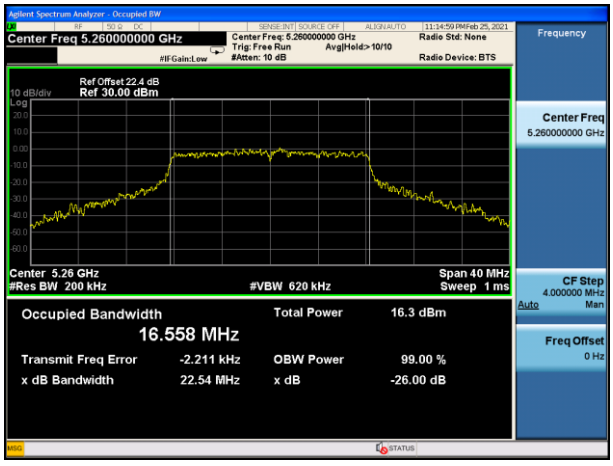
Channel 44 (5220MHz)



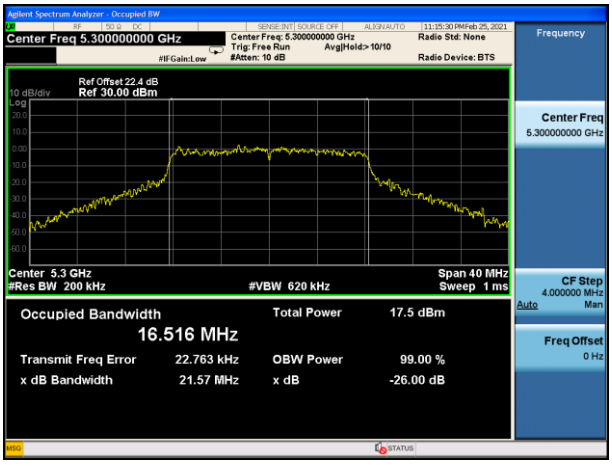
Channel 48 (5240MHz)



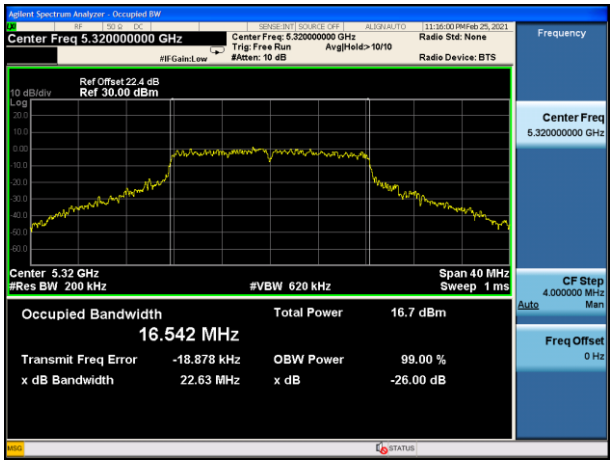
Channel 52 (5260MHz)

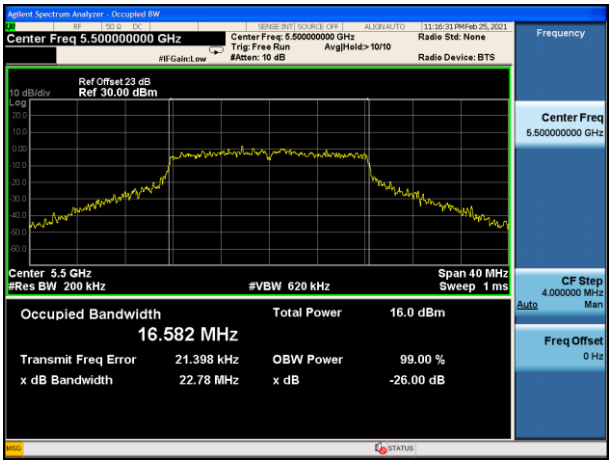
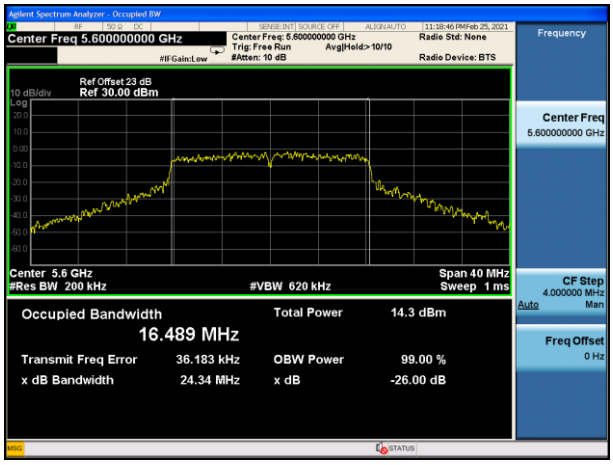
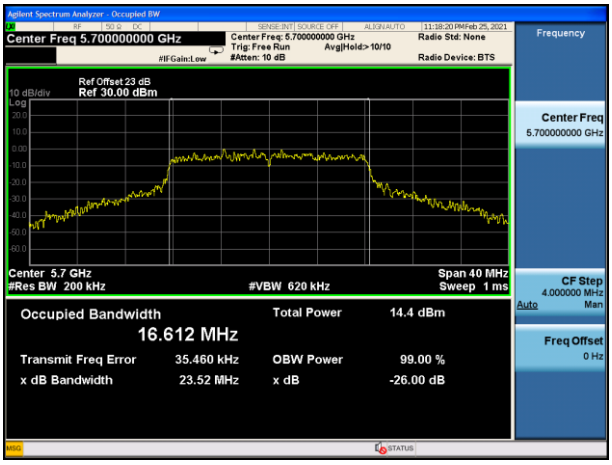
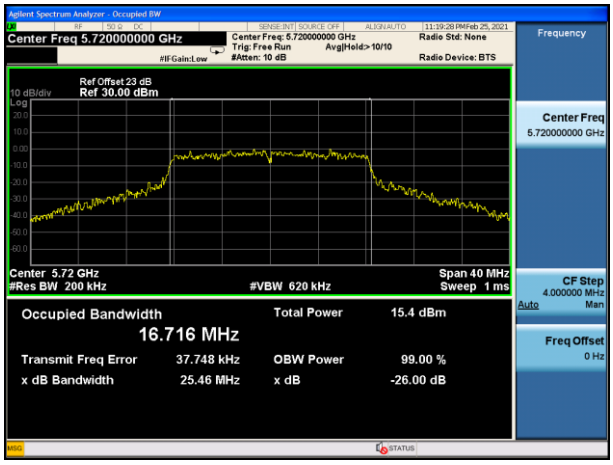
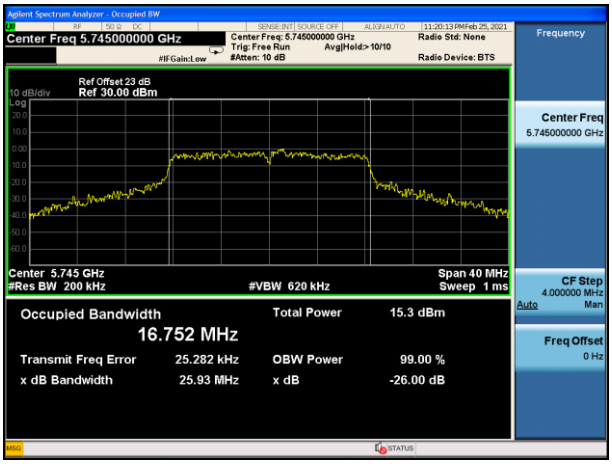
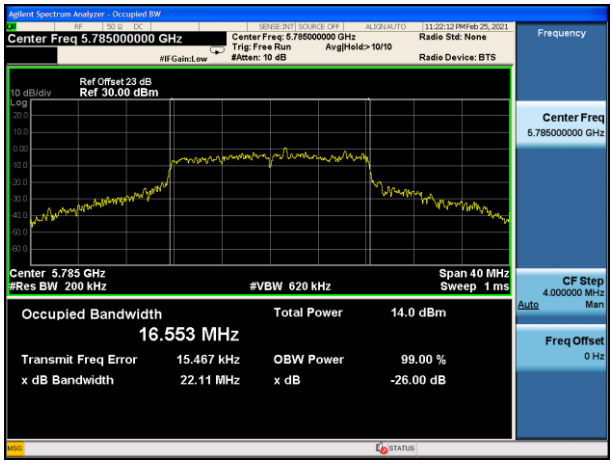


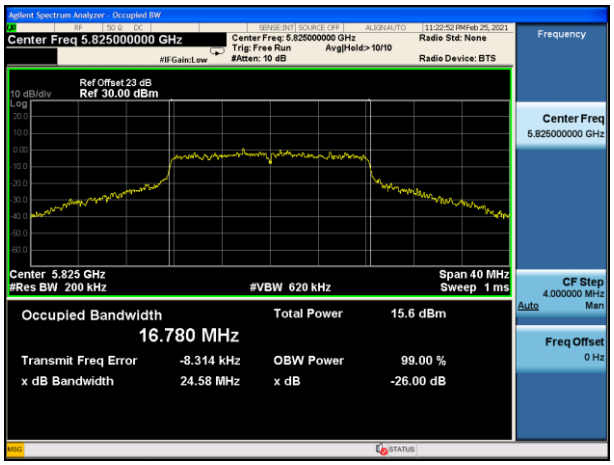
Channel 60 (5300MHz)



Channel 64 (5320MHz)

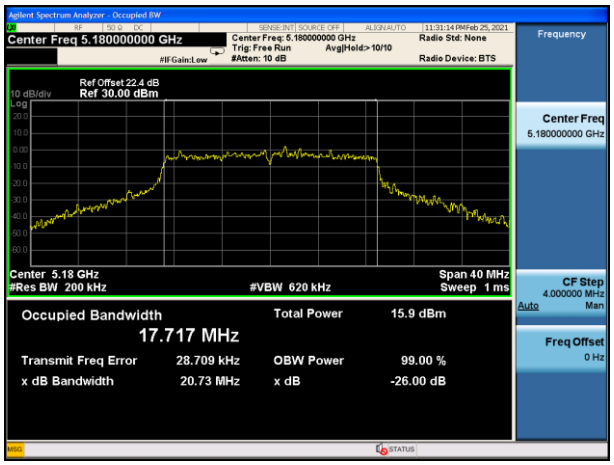


Channel 100 (5500MHz)	Channel 120 (5600MHz)
	
Channel 140 (5700MHz)	**Channel 144 (5720MHz)**
	
Channel 149 (5745MHz)	**Channel 157 (5785MHz)**
	

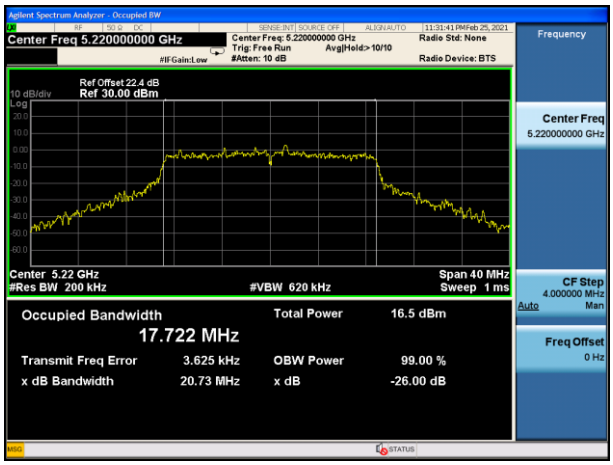
Channel 165 (5825MHz)	
	

802.11n-HT20 26dB Bandwidth & 99% Bandwidth - Ant 0

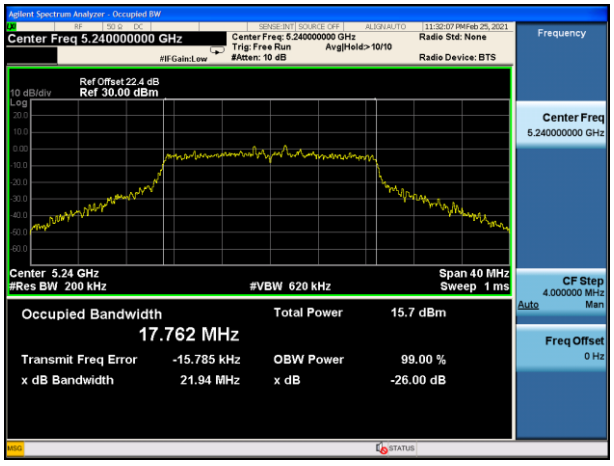
Channel 36 (5180MHz)



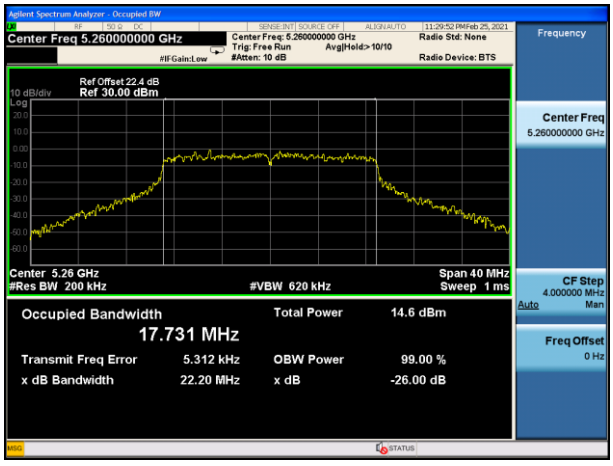
Channel 44 (5220MHz)



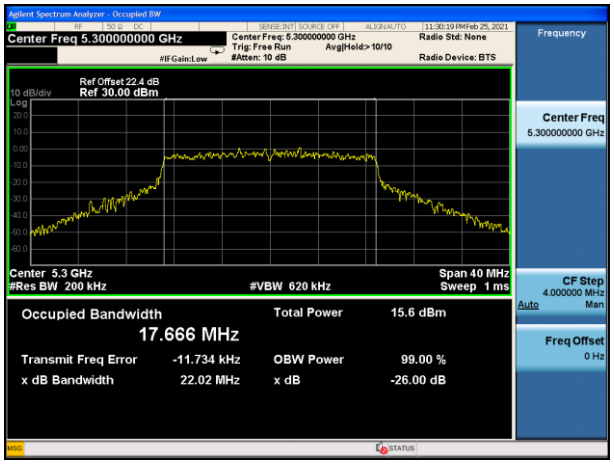
Channel 48 (5240MHz)



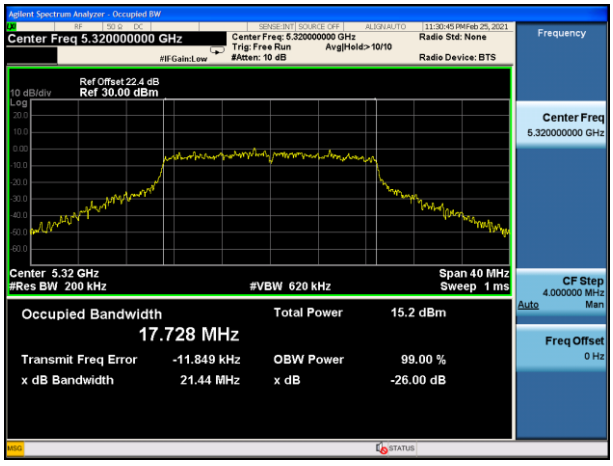
Channel 52 (5260MHz)

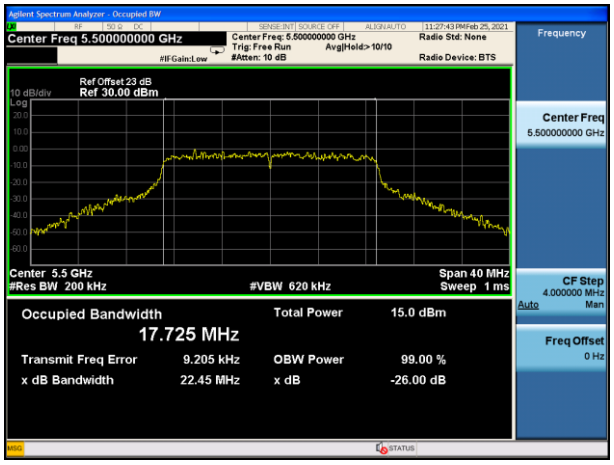
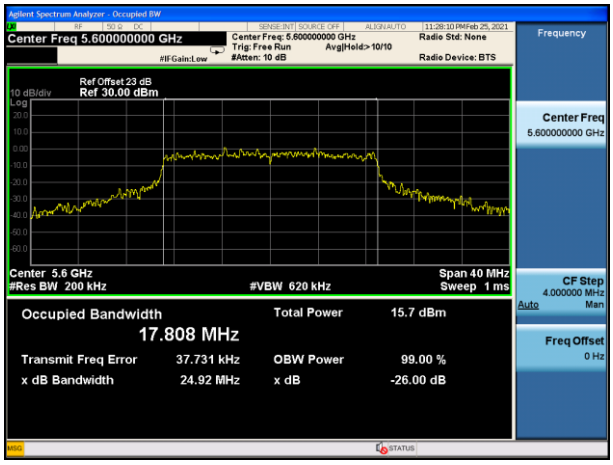
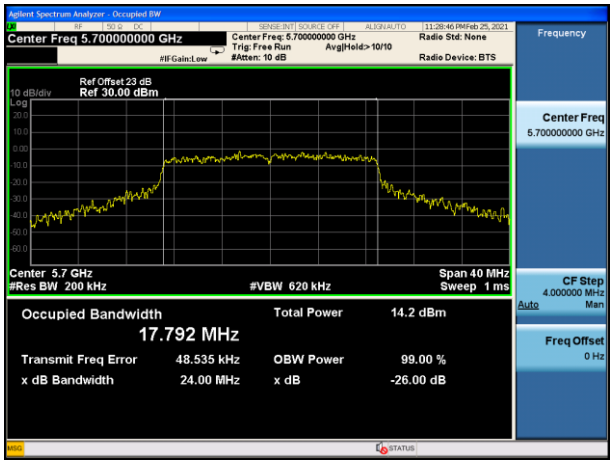
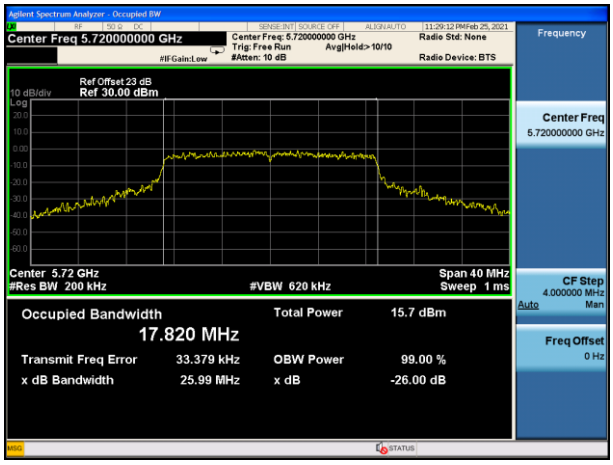
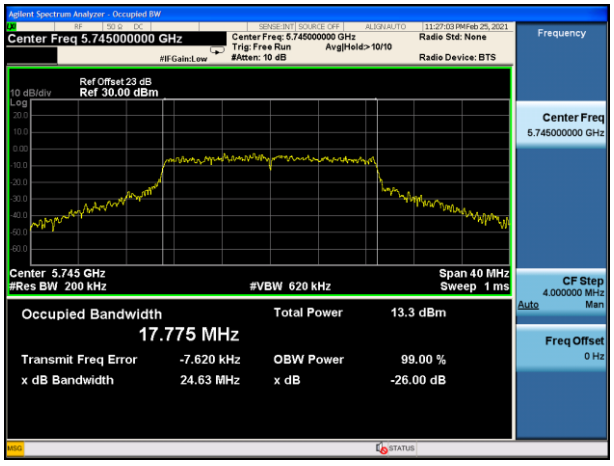
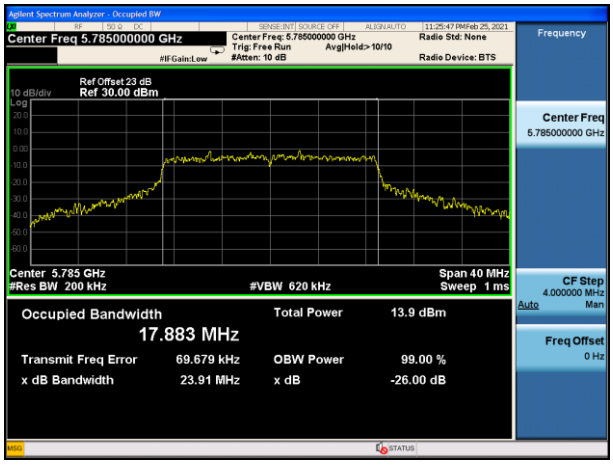


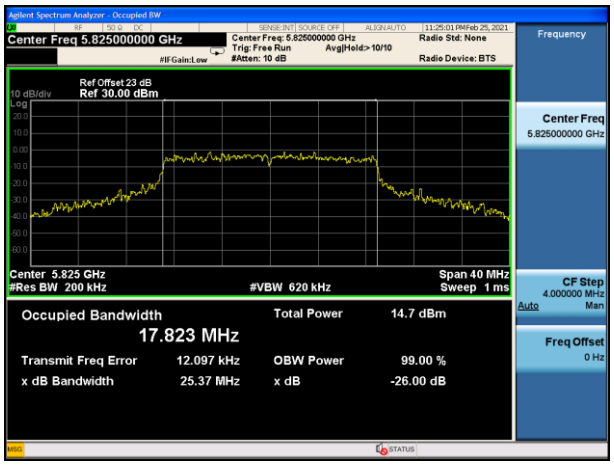
Channel 60 (5300MHz)



Channel 64 (5320MHz)

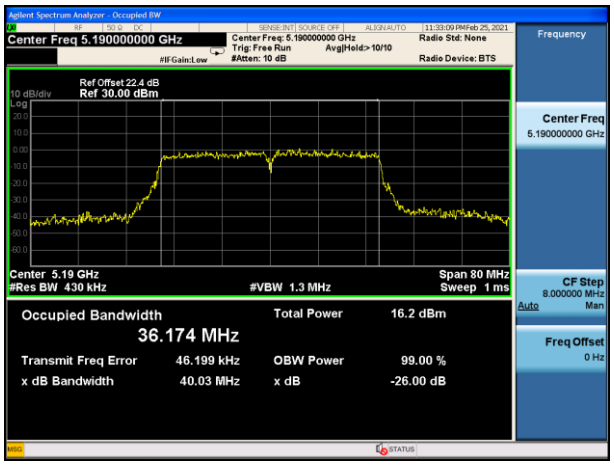


Channel 100 (5500MHz)	Channel 120 (5600MHz)
	
Channel 140 (5700MHz)	**Channel 144 (5720MHz)**
	
Channel 149 (5745MHz)	**Channel 157 (5785MHz)**
	

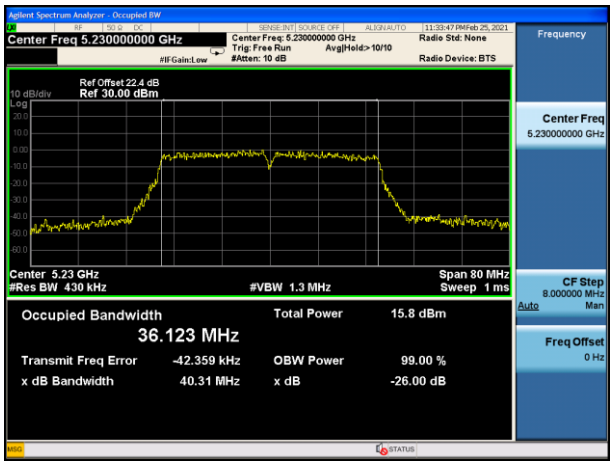
Channel 165 (5825MHz)	
	

802.11n-HT40 26dB Bandwidth & 99% Bandwidth - Ant 0

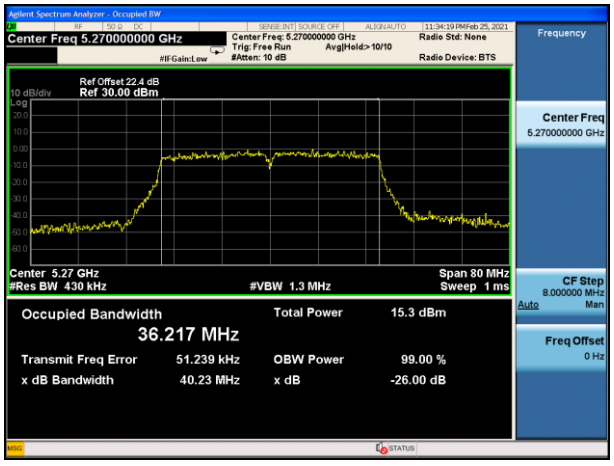
Channel 38 (5190MHz)



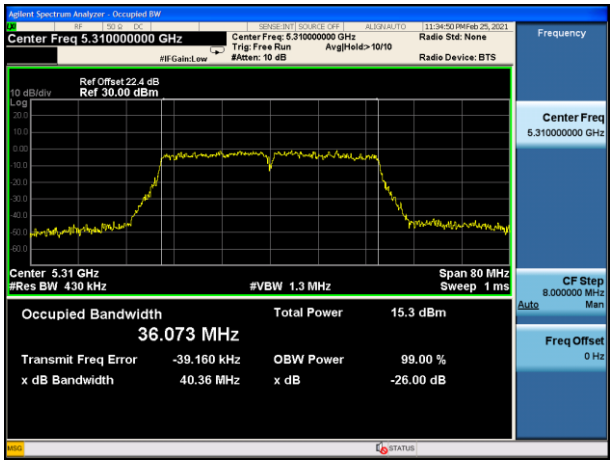
Channel 46 (5230MHz)



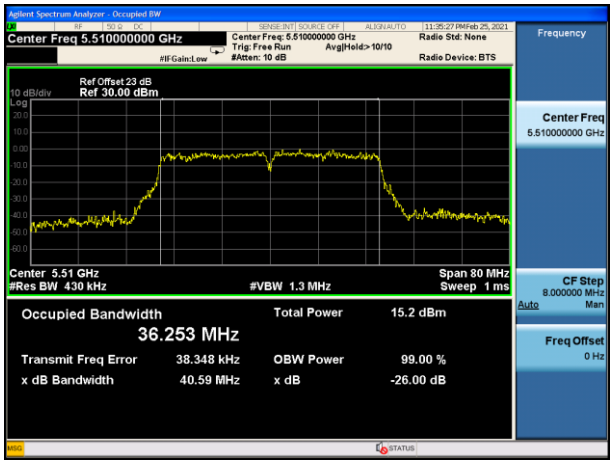
Channel 54 (5270MHz)



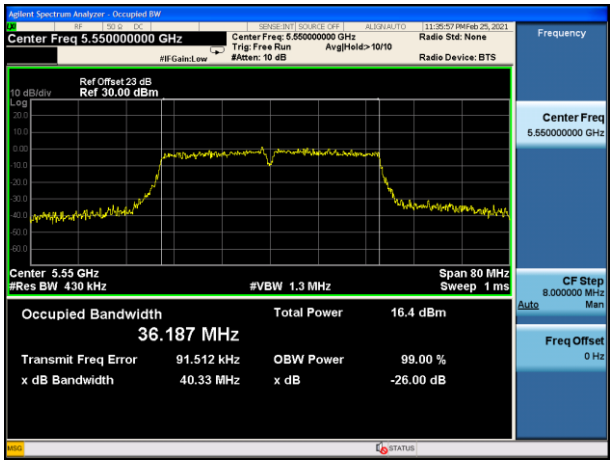
Channel 62 (5310MHz)

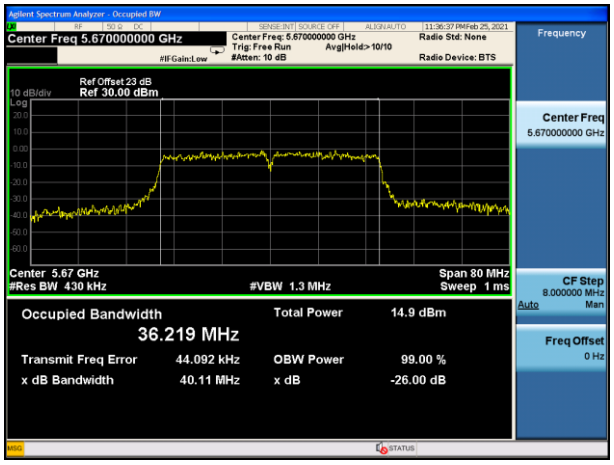
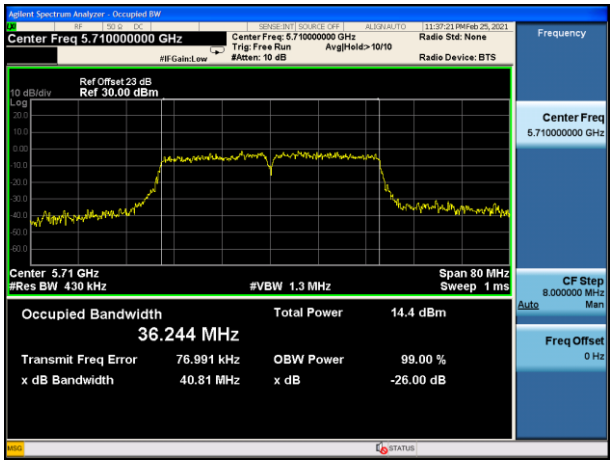
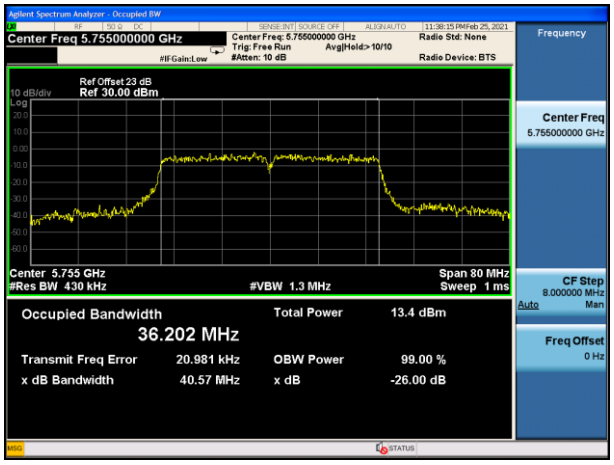
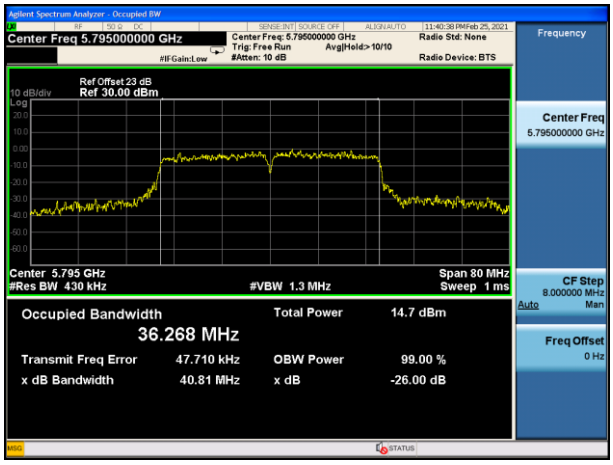


Channel 102 (5510MHz)



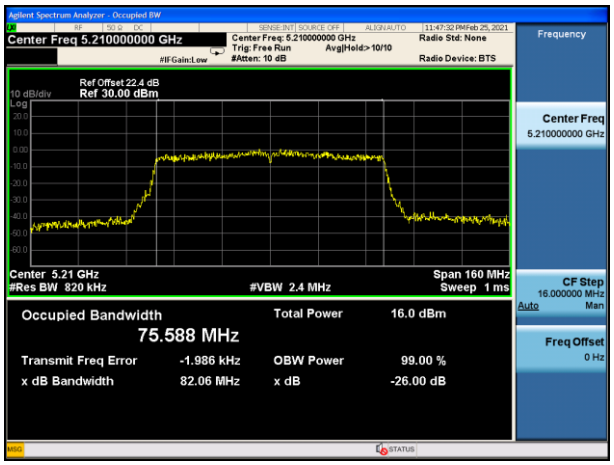
Channel 110 (5550MHz)



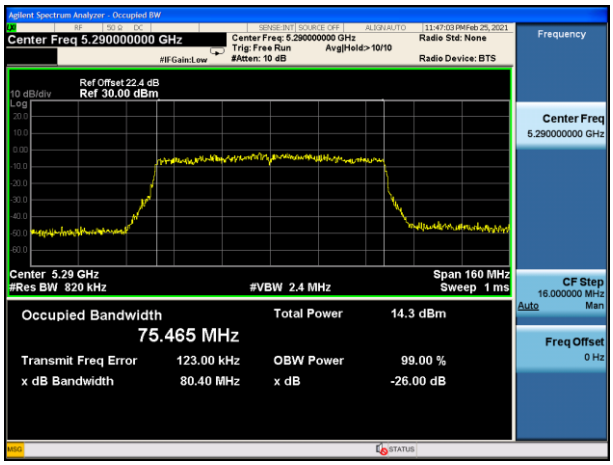
Channel 134 (5670MHz)	Channel 142 (5710MHz)
	
Channel 151 (5755MHz)	**Channel 159 (5795MHz)**
	

802.11ac-VHT80 26dB Bandwidth & 99% Bandwidth - Ant 0

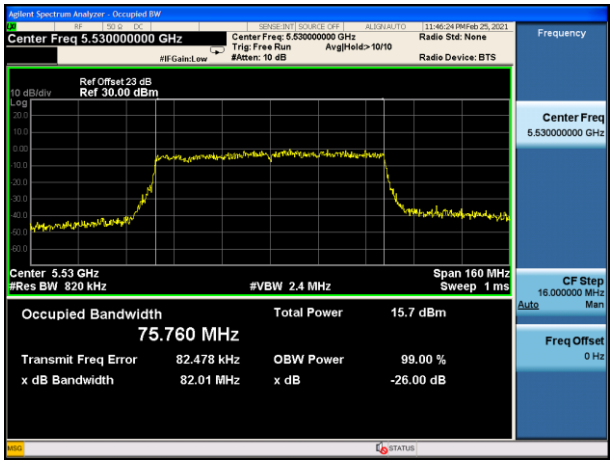
Channel 42 (5210MHz)



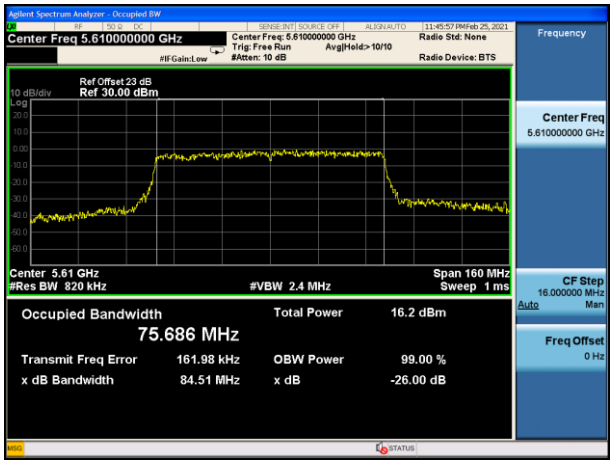
Channel 58 (5290MHz)



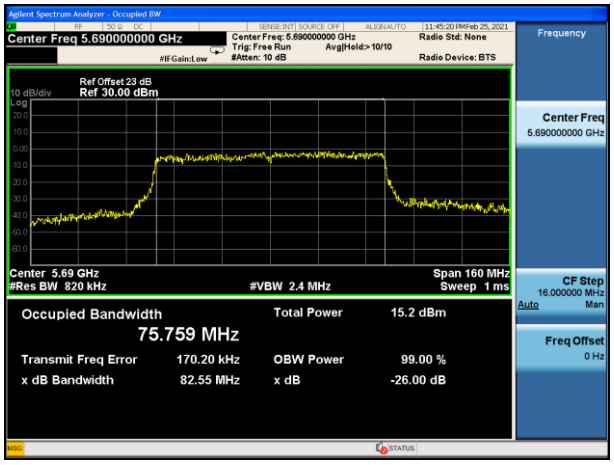
Channel 106 (5530MHz)



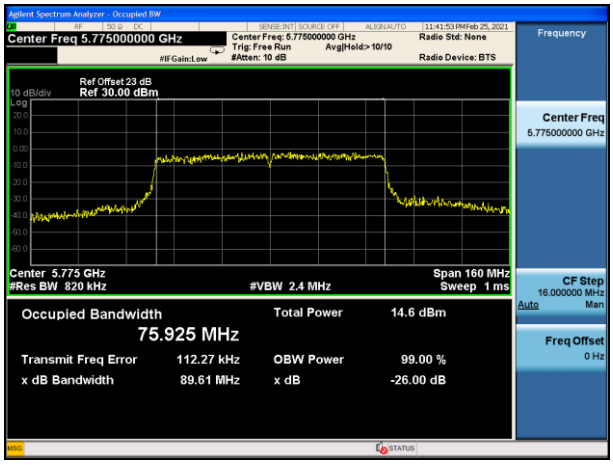
Channel 122 (5610MHz)



Channel 138 (5690MHz)



Channel 155 (5775MHz)



7.3. 6dB Bandwidth Measurement

7.3.1. Test Limit

The minimum 6dB bandwidth shall be at least 500 kHz.

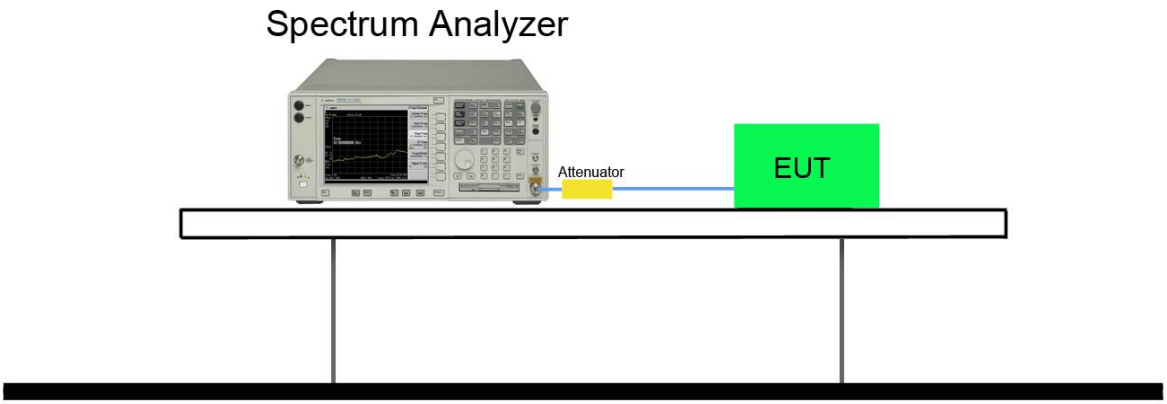
7.3.2. Test Procedure used

KDB 789033 D02v02r01 - Section C.2

7.3.3. Test Setting

1. Set center frequency to the nominal EUT channel center frequency.
2. RBW = 100 kHz.
3. VBW ≧ 3 × RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

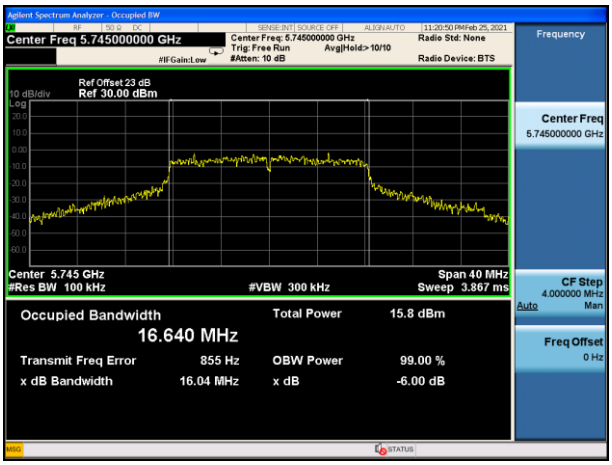
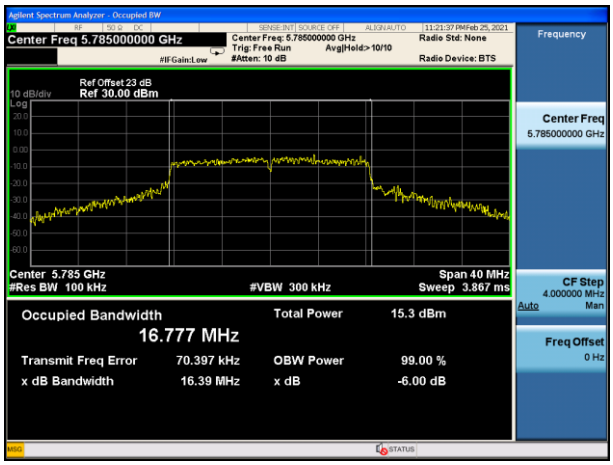
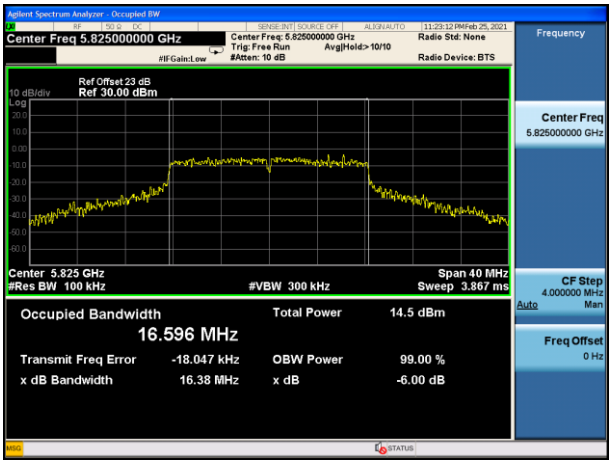
7.3.4. Test Setup

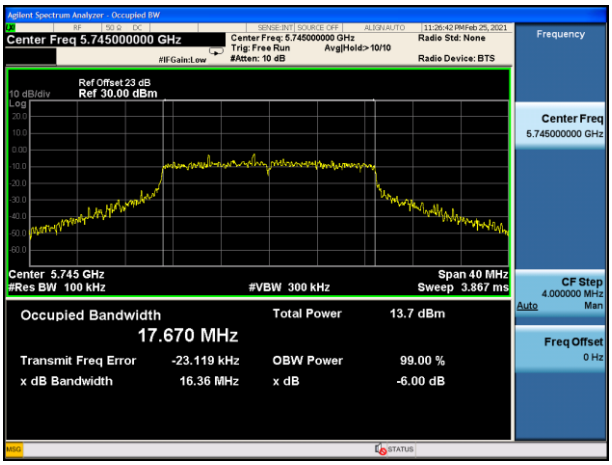
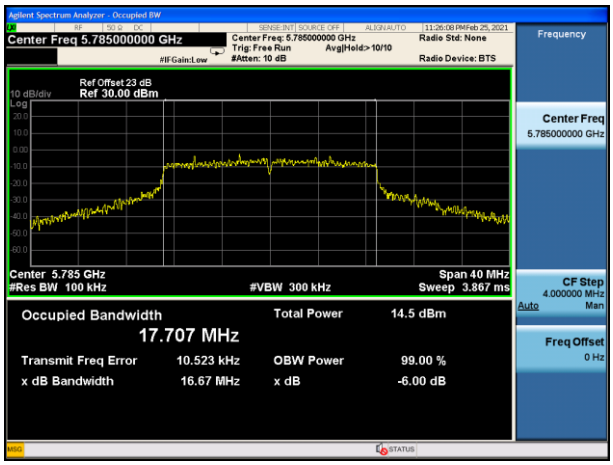


7.3.5. Test Result

Product	Handheld Data Terminal	Test Engineer	Eric
Test Site	SR2	Test Date	2021/2/25
Test Item	6dB Bandwidth		

Test Mode	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
Antenna 0					
802.11a	149	5745	16.040	≥ 0.5	Pass
802.11a	157	5785	16.390	≥ 0.5	Pass
802.11a	165	5825	16.380	≥ 0.5	Pass
802.11n-HT20	149	5745	16.360	≥ 0.5	Pass
802.11n-HT20	157	5785	16.670	≥ 0.5	Pass
802.11n-HT20	165	5825	16.070	≥ 0.5	Pass
802.11ac-VHT20	149	5745	16.990	≥ 0.5	Pass
802.11ac-VHT20	157	5785	16.300	≥ 0.5	Pass
802.11ac-VHT20	165	5825	16.300	≥ 0.5	Pass
802.11n-HT40	151	5755	35.380	≥ 0.5	Pass
802.11n-HT40	159	5795	35.240	≥ 0.5	Pass
802.11ac-VHT40	151	5755	35.750	≥ 0.5	Pass
802.11ac-VHT40	159	5795	35.440	≥ 0.5	Pass
802.11ac-VHT80	159	5775	75.400	≥ 0.5	Pass

802.11a 6dB Bandwidth - Ant 0	
Channel 149 (5745MHz)	**Channel 157 (5785MHz)**
	
Channel 165 (5825MHz)	
	

802.11n-HT20 6dB Bandwidth - Ant 0	
Channel 149 (5745MHz)	**Channel 157 (5785MHz)**
	
Channel 165 (5825MHz)