

FCC Test Report

Product Name : Outdoor 5G MIMO-OFDM Radio

Trade Name : EUBO

Model No. : EL-N-1, EL-N-2, EL-N-3, ML-N-1, ML-N-2, ML-N-3

FCC ID. : 2ALYE-EMLN35

Applicant : EUBO CO., LTD.

Address : 1F., No.7, Ln. 30, Sanrong 7th Rd., Wuri Dist.,
Taichung City 414, Taiwan (R.O.C.)

Date of Receipt : Feb. 23, 2017

Issued Date : May 08, 2017

Report No. : 1720584R-RFUSP42V00

Report Version : V1.0



The test results relate only to the samples tested.

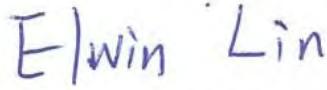
The test report shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd.

Test Report Certification

Issued Date: May 08, 2017

Report No. : 1720584R-RFUSP42V00



Product Name	:	Outdoor 5G MIMO-OFDM Radio
Applicant	:	EUBO CO., LTD.
Address	:	1F., No.7, Ln. 30, Sanrong 7th Rd., Wuri Dist., Taichung City 414, Taiwan (R.O.C.)
Manufacturer	:	Azuretec Co. Ltd.
Model No.	:	EL-N-1, EL-N-2, EL-N-3, ML-N-1, ML-N-2, ML-N-3
FCC ID.	:	2ALYE-EMLN35
EUT Voltage	:	DC 48V
Testing Voltage	:	DC 48V
Trade Name	:	EUBO
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart E Section 15.407: 2015 ANSI C63.10: 2013
Laboratory Name	:	Hsin Chu Laboratory
Address	:	No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 310, Taiwan, R.O.C. TEL: +886-3-582-8001 / FAX: +886-3-582-8958
Test Result	:	Complied
Documented By	:	 (Demi Chang / Senior Engineering Adm. Specialist)
Tested By	:	 (Elwin Lin / Assistant Engineer)
Approved By	:	 (Roy Wang / Director)

Revision History

Report No.	Version	Description	Issued Date
1720584R-RFUSP42V00	V1.0	Initial issue of report	May 08, 2017

Laboratory Information

We, **DEKRA Testing and Certification Co., Ltd.**, are an independent RF consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025 specified testing scopes:

Taiwan R.O.C.	:	TAF, Accreditation Number: 3024
USA	:	FCC, Registration Number: 834100
Canada	:	IC, Submission No: 181665 IC Registration Number: 22397-1 / 22397-2 / 22397-3

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:

<http://www.dekra.com.tw/english/about/certificates.aspx?bval=5>

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site : http://www.dekra.com.tw/index_en.aspx

If you have any comments, Please don't hesitate to contact us. Our test site as below:

- 1 No. 75-2, 3rd Lin, WangYe Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan (R.O.C.)
[TEL:+886-3-592-8858](tel:+886-3-592-8858) / FAX:+886-3-592-8859 E-Mail : info.tw@dekra.com
- 2 No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 310, Taiwan, R.O.C.
TEL: +886-3-582-8001 / FAX: +886-3-582-8958 E-Mail : info.tw@dekra.com
- 3 No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 310, Taiwan, R.O.C.
TEL: +886-3-582-8001 / FAX: +886-3-582-8958 E-Mail : info.tw@dekra.com

TABLE OF CONTENTS

Description	Page
1. General Information.....	7
1.1. EUT DESCRIPTION.....	7
1.2. TEST MODE	13
1.3. SYSTEM DETAILS	14
1.4. CONFIGURATION OF TESTED SYSTEM	14
1.5. EUT EXERCISE SOFTWARE	14
1.6. TEST FACILITY	15
2. 99% & DTS Bandwidth	16
2.1. TEST EQUIPMENT.....	19
2.2. TEST SETUP	19
2.3. LIMITS	20
2.4. TEST PROCEDURE	20
2.5. UNCERTAINTY	20
2.6. TEST RESULT.....	21
3. Peak Transmit power.....	117
3.1. TEST EQUIPMENT.....	117
3.2. TEST SETUP	117
3.3. LIMITS	118
3.4. TEST PROCEDURE	119
3.5. UNCERTAINTY	119
3.6. TEST RESULT.....	120
4. Peak Power Spectrum Density	189
4.1. TEST EQUIPMENT.....	189
4.2. TEST SETUP	189
4.3. LIMITS	190
4.4. TEST PROCEDURE	190
4.5. UNCERTAINTY	190
4.6. TEST RESULT.....	191
5. Radiated Emission.....	242
5.1. TEST EQUIPMENT.....	242
5.2. TEST SETUP	242
5.3. LIMITS	243
5.4. TEST PROCEDURE	244
5.5. UNCERTAINTY	244

5.6. TEST RESULT.....	245
6. Band Edge	267
6.1. TEST EQUIPMENT.....	267
6.2. TEST SETUP	267
6.3. LIMITS	268
6.4. TEST PROCEDURE	270
6.5. UNCERTAINTY	270
6.6. TEST RESULT.....	271
7. Frequency Stability.....	319
7.1. TEST EQUIPMENT.....	319
7.2. TEST SETUP	319
7.3. LIMITS	319
7.4. TEST PROCEDURE	319
7.5. UNCERTAINTY	319
7.6. TEST RESULT.....	320
ATTACHMENT 1	324
TEST SETUP PHOTOGRAPH	324
ATTACHMENT 2	326
EUT EXTERNAL PHOTOGRAPH.....	326
ATTACHMENT 3.....	327
EUT INTERNAL PHOTOGRAPH.....	327

1. General Information**1.1. EUT Description**

Product Name	Outdoor 5G MIMO-OFDM Radio	
Trade Name	EUBO	
Model No.	EL-N-1, EL-N-2, EL-N-3, ML-N-1, ML-N-2, ML-N-3	
Frequency Range/ Channel Number	IEEE 802.11a/ IEEE 802.11n (20MHz)	5745~5825MHz / 5 Channels
	IEEE 802.11n (40MHz)	5755~5795MHz / 2 Channels
	Type of Modulation	Orthogonal Frequency Division Multiplexing

Antenna Information

Antenna Type	Dipole Antenna
Antenna Gain	2±0.7dBi

Accessories Information

Antenna	Woken Technology Inc. / 0030DGIA3C099Z (6pcs)
---------	---

ANT-TX / RX & Bandwidth

ANT-TX / RX	TX	
Mode / Channel Bandwidth	20MHz	40MHz
IEEE802.11a	✓	✗
IEEE802.11n	✓	✓

IEEE 802.11n

MCS Index	Modulation	R	N _{BPSCS}	N _{CBPS}		N _{DBPS}		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI	
								20MHz	40MHz	20MHz	40MHz
0	BPSK	1/2	1	52	108	26	54	6.5	13.5	7.2	15.0
1	QPSK	1/2	2	104	216	52	108	13.0	27.0	14.4	30.0
2	QPSK	3/4	2	104	216	78	162	19.5	40.5	21.7	45.0
3	16-QAM	1/2	4	208	432	104	216	26.0	54.0	28.9	60.0
4	16-QAM	3/4	4	208	432	156	324	39.0	81.0	43.3	90.0
5	64-QAM	2/3	6	312	648	208	432	52.0	108.0	57.8	120.0
6	64-QAM	3/4	6	312	648	234	486	58.5	121.5	65.0	135.0
7	64-QAM	5/6	6	312	648	260	540	65.0	135.0	72.2	150.0

Note 1: Support of 400ns GI is optional on transmit and receive.

Table 1 – MCS parameters for TX Antenna number = 1

MCS Index	Modulation	R	N _{BPSCS}	N _{CBPS}		N _{DBPS}		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI	
								20MHz	40MHz	20MHz	40MHz
8	BPSK	1/2	1	104	216	52	108	13.0	27.0	14.4	30.0
9	QPSK	1/2	2	208	432	104	216	26.0	54.0	28.9	60.0
10	QPSK	3/4	2	208	432	156	324	39.0	81.0	43.3	90.0
11	16-QAM	1/2	4	416	864	208	432	52.0	108.0	57.8	120.0
12	16-QAM	3/4	4	416	864	312	648	78.0	162.0	86.7	180.0
13	64-QAM	2/3	6	624	1296	416	864	104.0	216.0	115.6	240.0
14	64-QAM	3/4	6	624	1296	468	972	117.0	243.0	130.0	270.0
15	64-QAM	5/6	6	624	1296	520	1080	130.0	270.0	144.4	300.0

Note 1: Support of 400ns GI is optional on transmit and receive.

Table 2 – MCS parameters for TX Antenna number = 2

MCS Index	Modulation	R	N _{BPSCS}	N _{CBPS}		N _{DBPS}		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI	
								20MHz	40MHz	20MHz	40MHz
16	BPSK	1/2	1	156	324	78	162	19.5	40.5	21.7	45.0
17	QPSK	1/2	2	312	648	156	324	39.0	81.0	43.3	90.0
18	QPSK	3/4	2	312	648	234	486	58.5	121.5	65.0	135.0
19	16-QAM	1/2	4	624	1296	312	648	78.0	162.0	86.7	180.0
20	16-QAM	3/4	4	624	1296	468	972	117.0	243.0	130.0	270.0
21	64-QAM	2/3	6	936	1944	624	1296	156.0	324.0	173.3	360.0
22	64-QAM	3/4	6	936	1944	702	1458	175.5	364.5	195.0	405.0
23	64-QAM	5/6	6	936	1944	780	1620	195.0	405.0	216.7	450.0

Note 1: Support of 400ns GI is optional on transmit and receive.

Table 3 – MCS parameters for TX Antenna number = 3

MCS Index	Modulation	R	N _{BPSCS}	N _{CBPS}		N _{DBPS}		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI	
								20MHz	40MHz	20MHz	40MHz
24	BPSK	1/2	1	208	432	104	216	26.00	54.00	28.80	60.00
25	QPSK	1/2	2	416	864	208	432	52.00	108.00	57.60	120.00
26	QPSK	3/4	2	416	864	312	648	78.00	162.00	86.80	180.00
27	16-QAM	1/2	4	832	1728	416	864	104.00	216.00	115.60	240.00
28	16-QAM	3/4	4	832	1728	624	1296	156.00	324.00	172.20	360.00
29	64-QAM	2/3	6	1248	2592	832	1728	208.00	432.00	231.20	480.00
30	64-QAM	3/4	6	1248	2592	936	1944	234.00	486.00	260.00	540.00
31	64-QAM	5/6	6	1248	2592	1040	2040	260.00	540.00	288.80	600.00

Note 1: Support of 400ns GI is optional on transmit and receive.

Table 4 – MCS parameters for TX Antenna number = 4

MCS Index	Modulation	R	N _{BPSCS}	N _{CBPS}		N _{DBPS}		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI	
								20MHz	40MHz	20MHz	40MHz
16	BPSK	1/2	1	156	324	78	162	19.5	40.5	21.7	45.0
17	QPSK	1/2	2	312	648	156	324	39.0	81.0	43.3	90.0
18	QPSK	3/4	2	312	648	234	486	58.5	121.5	65.0	135.0
19	16-QAM	1/2	4	624	1296	312	648	78.0	162.0	86.7	180.0
20	16-QAM	3/4	4	624	1296	468	972	117.0	243.0	130.0	270.0
21	64-QAM	2/3	6	936	1944	624	1296	156.0	324.0	173.3	360.0
22	64-QAM	3/4	6	936	1944	702	1458	175.5	364.5	195.0	405.0
23	64-QAM	5/6	6	936	1944	780	1620	195.0	405.0	216.7	450.0

Note 1: Support of 400ns GI is optional on transmit and receive.

Table 5 – MCS parameters for TX Antenna number = 5

MCS Index	Modulation	R	N _{BPSCS}	N _{CBPS}		N _{DBPS}		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI	
								20MHz	40MHz	20MHz	40MHz
24	BPSK	1/2	1	208	432	104	216	26.00	54.00	28.80	60.00
25	QPSK	1/2	2	416	864	208	432	52.00	108.00	57.60	120.00
26	QPSK	3/4	2	416	864	312	648	78.00	162.00	86.80	180.00
27	16-QAM	1/2	4	832	1728	416	864	104.00	216.00	115.60	240.00
28	16-QAM	3/4	4	832	1728	624	1296	156.00	324.00	172.20	360.00
29	64-QAM	2/3	6	1248	2592	832	1728	208.00	432.00	231.20	480.00
30	64-QAM	3/4	6	1248	2592	936	1944	234.00	486.00	260.00	540.00
31	64-QAM	5/6	6	1248	2592	1040	2040	260.00	540.00	288.80	600.00

Note 1: Support of 400ns GI is optional on transmit and receive.

Table 6 – MCS parameters for TX Antenna number = 6

Symbol	Explanation
R	Code rate
N _{BPSC}	Number of coded bits per single carrier
N _{CBPS}	Number of coded bits per symbol
N _{DBPS}	Number of data bits per symbol
GI	guard interval

IEEE 802.11n (20MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745 MHz	153	5765 MHz	157	5785 MHz	161	5805 MHz
165	5825 MHz						

IEEE 802.11n (40MHz)

Working Frequency of Each Channel			
Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

Note:

1. This device is Outdoor 5G MIMO-OFDM Radio including 5GHz a/n (6x6) transmitting and receiving function.
2. Regards to the frequency band operation; the lowest、middle and highest frequency of channel were selected to perform the test, and then shown on this report.
3. This device is a composite device in accordance with Part 15 regulations. The receiving function was tested and its number is 1720584R-RFUSP01V00.
4. The different of the each model is shown as below:

Model No.	Hardware difference	Software difference
EL-N-1	1 sheet WIFI Module	Support advanced software features, especially enhanced Iti-cast / Broadcast deal with
EL-N-2	2 sheets WIFI Module	
EL-N-3	3 sheets WIFI Module	
ML-N-1	1 sheets WIFI Module	General function
ML-N-2	2 sheets WIFI Module	
ML-N-3	3 sheets WIFI Module	

5. The application of the model series of product features, labels, design, etc. are the same, only because the hardware using the difference between the number of WIFI module and the software advanced network packet processing functions derived from the difference between EL-N-1, EL -N-2, EL-N-3, ML-N-1, ML-N-2, ML-N-3 different series models.

1.2. Test Mode

DEKRA has verified the construction and function in typical operation. The preliminary tests were performed in different data rate, and to find the worst condition, which was shown in this test report. The following table is the final test mode.

TX	Mode 1: Transmit				
----	------------------	--	--	--	--

Test Items	Modulation	Channel	Antenna	Result	Test Site
Conducted Emission	11n (40MHz)	151/159	0/1/2/3/4/5	N/A	--
99% & DTS Bandwidth	11n (20MHz)	149/157/165	0/1/2/3/4/5	Complies	3
	11n (40MHz)	151/159	0/1/2/3/4/5	Complies	3
Peak Transmit Output	11n (20MHz)	149/157/165	0+1+2+3+4+5	Complies	3
	11n (40MHz)	151/159	0+1+2+3+4+5	Complies	3
Peak Power Spectrum Density	11n (20MHz)	149/157/165	0+1+2+3+4+5	Complies	3
	11n (40MHz)	151/159	0+1+2+3+4+5	Complies	3
Radiated Emission	11n (20MHz)	149/157/165	0+1+2+3+4+5	Complies	2
	11n (40MHz)	151/159	0+1+2+3+4+5	Complies	2
Band Edge	11n (20MHz)	149/157/165	0+1+2+3+4+5	Complies	2
	11n (40MHz)	151/159	0+1+2+3+4+5	Complies	3
Frequency Stability	11n (20MHz)	149/157/165	0/1/2/3/4/5	Complies	3
	11n (40MHz)	151/159	0/1/2/3/4/5	Complies	3

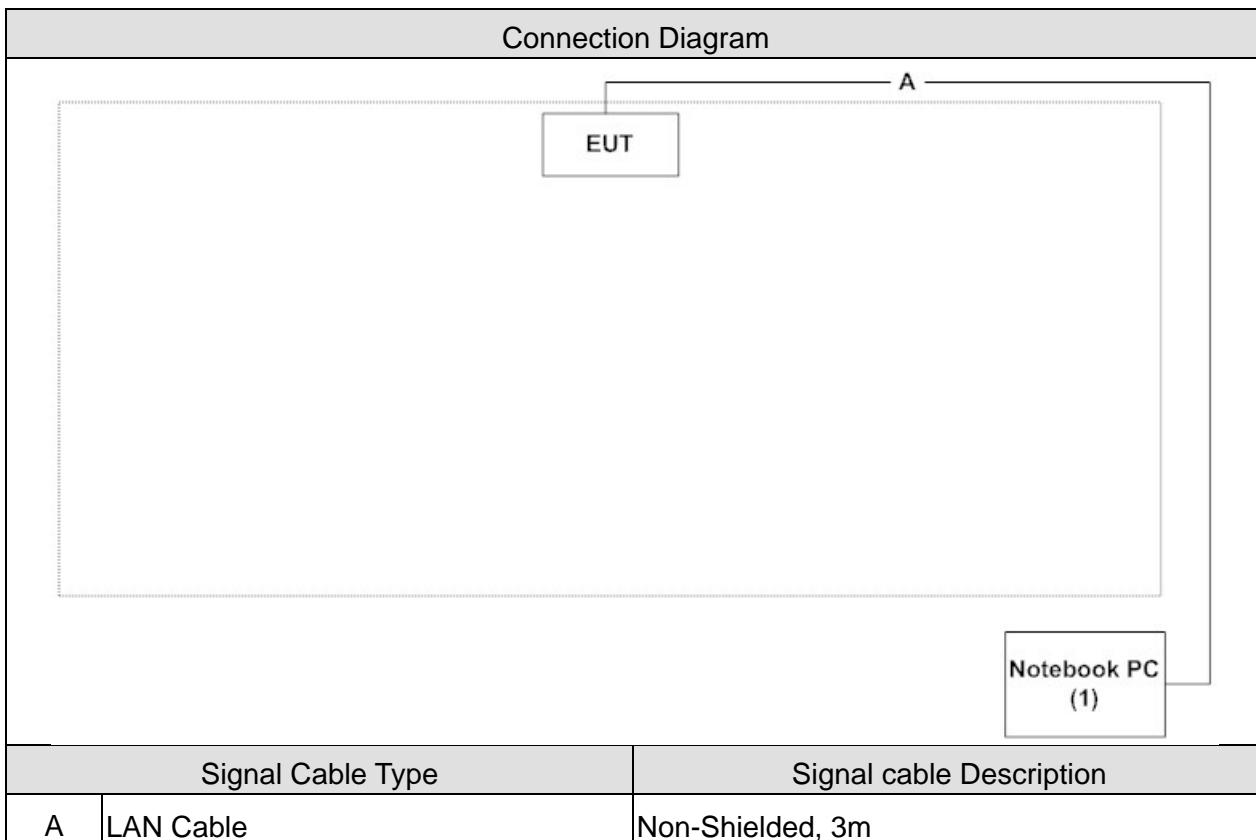
Note: Test site information refers to Laboratory Information.

1.3. System Details

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

Product	Manufacturer	Model No.	Serial No.	Power Cord
1 Notebook PC	ASUS	X522EP	E5N0CV043264197	Non-Shielded, 1.8m, one ferrite core bonded

1.4. Configuration of tested System



1.5. EUT Exercise Software

1	Setup the EUT as shown in Section 1.4
2	Execute the software "putty".
3	Configure the test mode, the test channel, and the data rate.
4	Start the continuous Transmitter.
5	Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 E 15.407 99% & DTS Bandwidth	15 - 35	25°C
Humidity (%RH)		25 - 75	45%RH
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 E 15.407 Peak Transmit Power	15 - 35	25°C
Humidity (%RH)		25 - 75	65%RH
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 E 15.407 Peak Power Spectrum	15 - 35	25°C
Humidity (%RH)		25 - 75	45%RH
Barometric pressure (mbar)		Density	860 - 1060
Temperature (°C)	FCC PART 15 E 15.407 Radiated Emission	15 - 35	25°C
Humidity (%RH)		25 - 75	45%RH
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 E 15.407 Band Edge	15 - 35	25°C
Humidity (%RH)		25 - 75	45%RH
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 E 15.407 Frequency Stability	15 - 35	25°C
Humidity (%RH)		25 - 75	45%RH
Barometric pressure (mbar)		860 - 1060	950-1000

2. Conducted Emission

2.1. Test Equipment

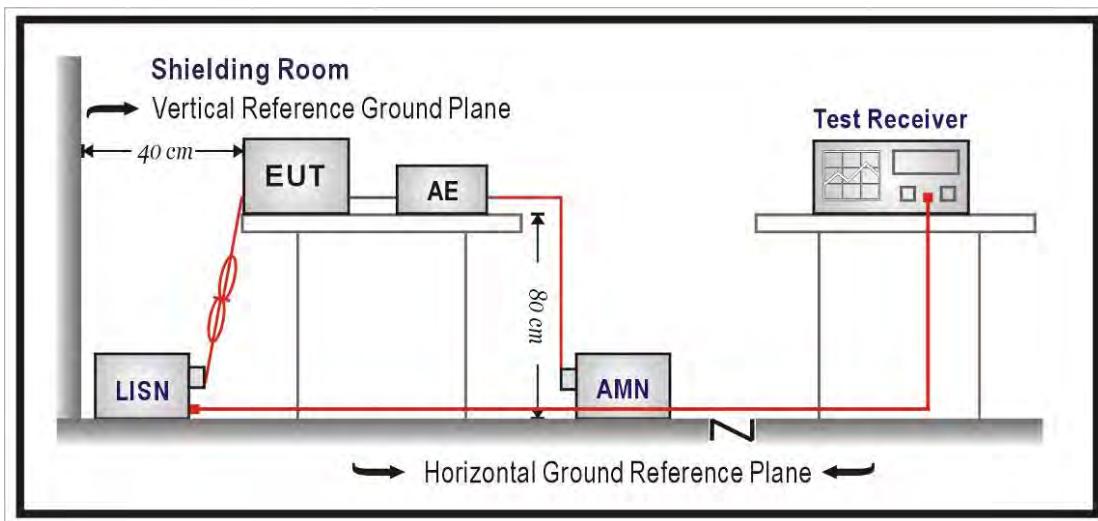
The following test equipments are used during the test:

Conducted Emission / SR2-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Artificial Mains Network	R&S	ENV4200	848411/010	2018/02/05
LISN	R&S	ENV216	100092	2017/08/16
Test Receiver	R&S	ESCS 30	836858/022	2018/01/14

Note: All equipments that need to calibrate are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 Limits (dBuV)		
Frequency MHz	QP	AV
0.15 - 0.50	66-56	56-46
0.50 - 5.0	56	46
5.0 - 30	60	50

Remark: In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

The EUT was setup according to ANSI C63.10:2013. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs.)

Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

2.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2015

2.6. Uncertainty

The measurement uncertainty is defined as ± 2.26 dB.

2.7. Test Result

This conduction does not need testing, since the adapter is not sold with the EUT.

3. 99% & DTS Bandwidth

3.1. Test Equipment

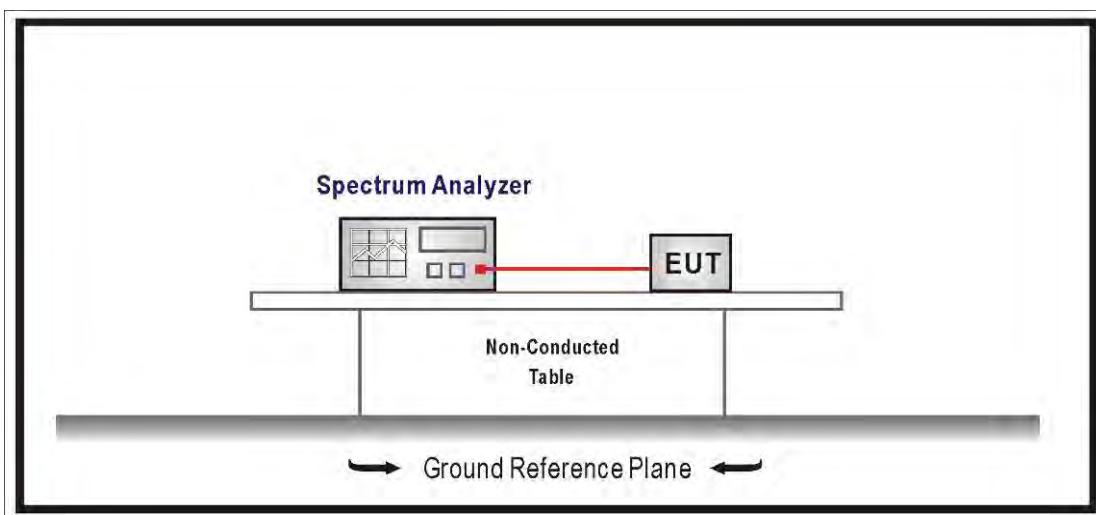
The following test equipments are used during the radiated emission tests:

99% & DTS Bandwidth / SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/01/22

Note: All equipments that need to calibrate are with calibration period of 1 year.

3.2. Test Setup



3.3. Limits

99% Bandwidth : No Required

6dB Bandwidth \geq 500KHz

3.4. Test Procedure

99% Bandwidth :

The EUT was tested according to U-NII test procedure of KDB 789033 V01r03.

Set RBW 1% of the emission bandwidth, VBW equal to 3 times the RBW.

DTS Bandwidth :

Set RBW = 100KHz, VBW \geq 3xRBW, Sweep time=Auto, Set Peak detector.

3.5. Uncertainty

The measurement uncertainty is defined as $\pm 150\text{Hz}$

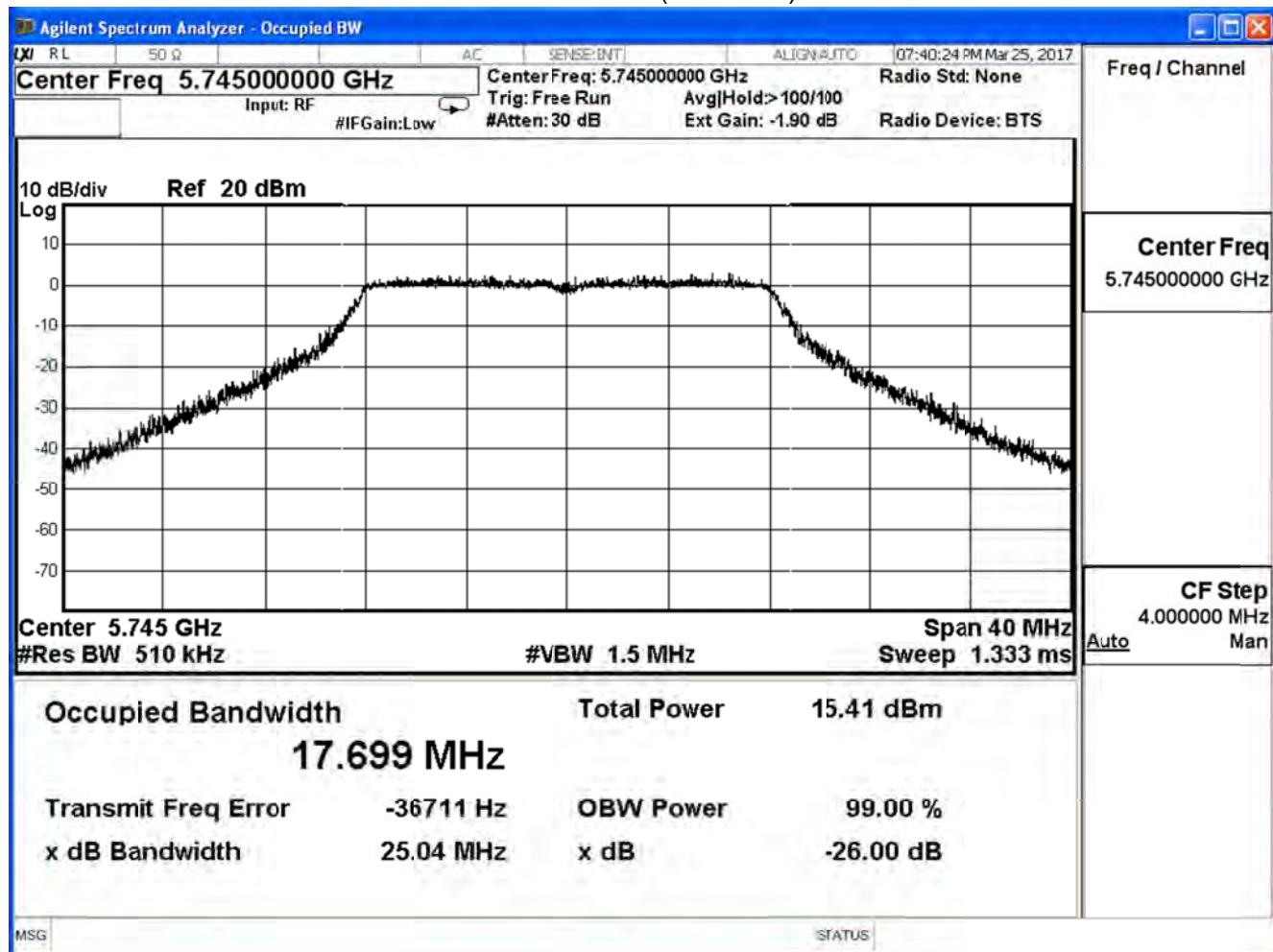
3.6. Test Result

Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

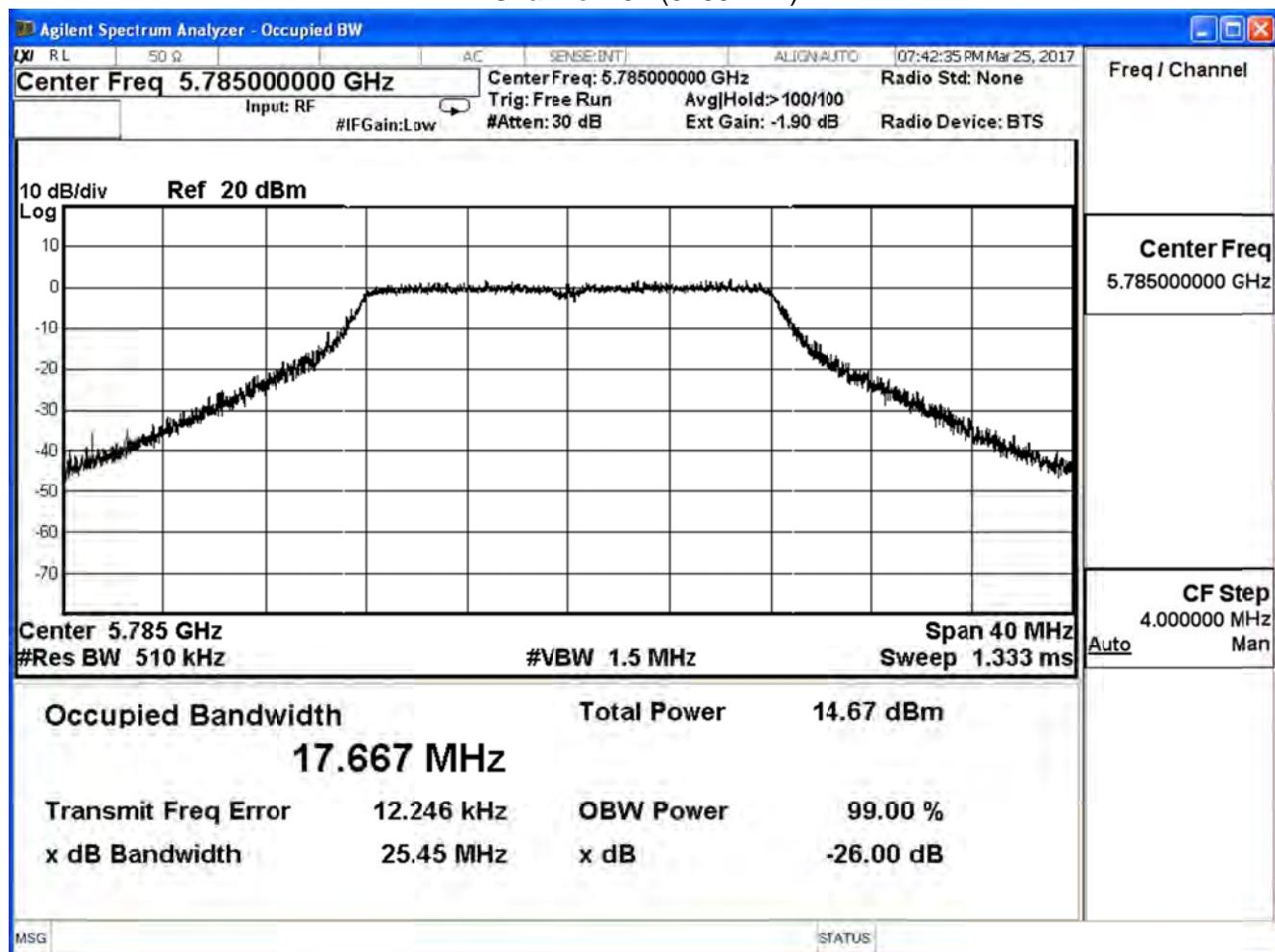
IEEE 802.11a (ANT 0) (Gain 2±0.7dBi)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
149	5745	25.04	17.699	--
157	5785	25.45	17.667	--
165	5825	25.86	17.662	--

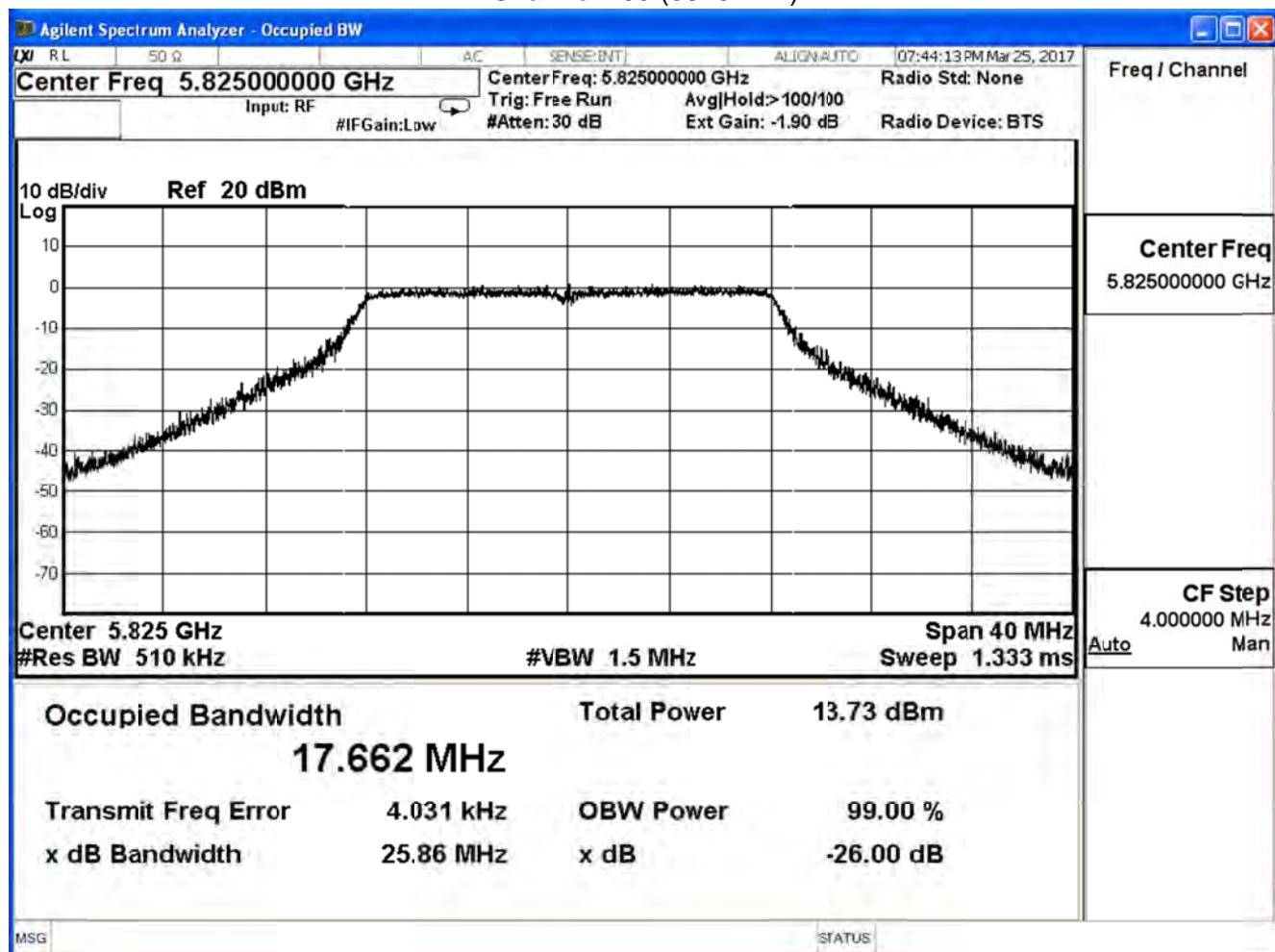
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

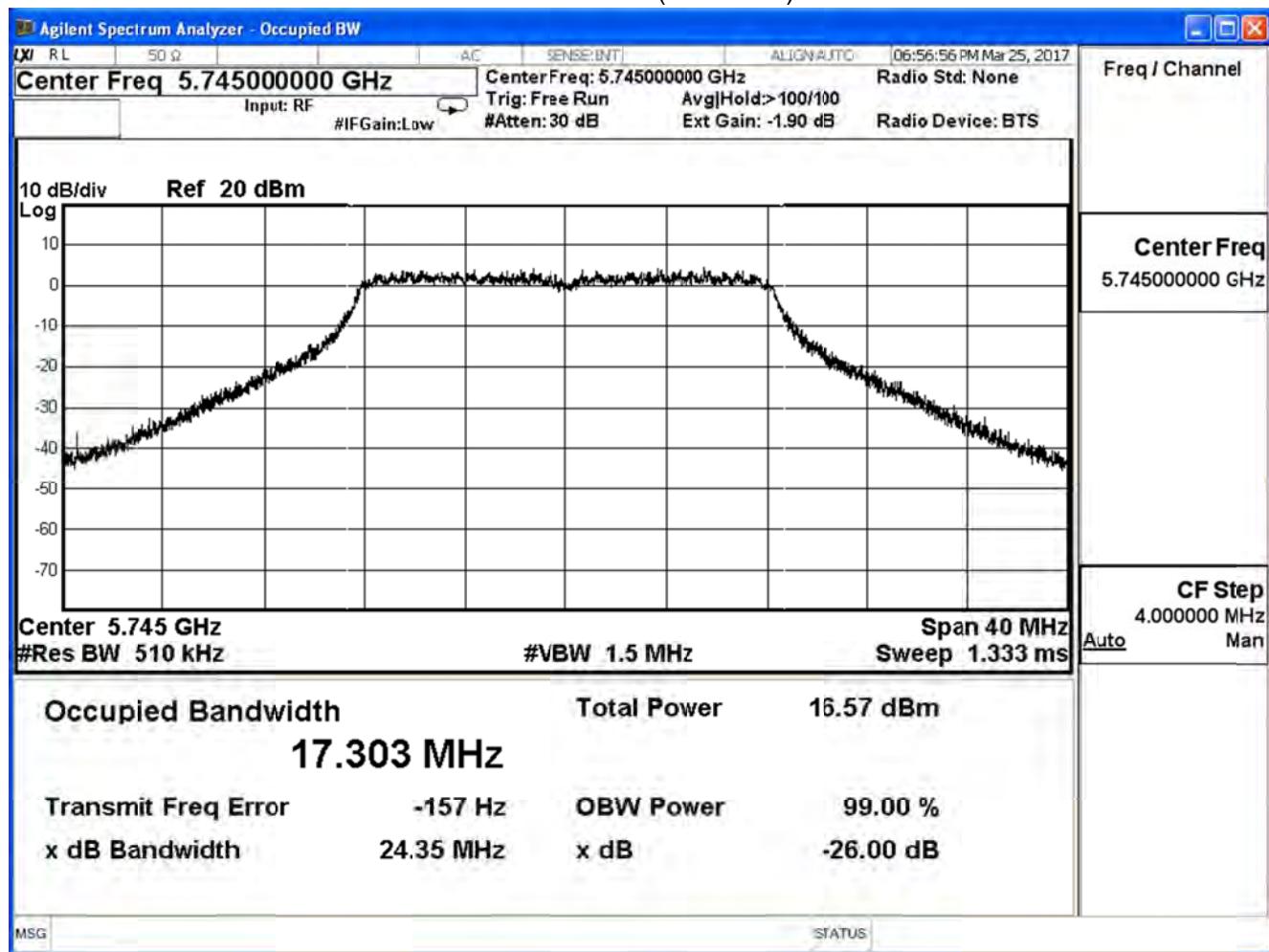


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

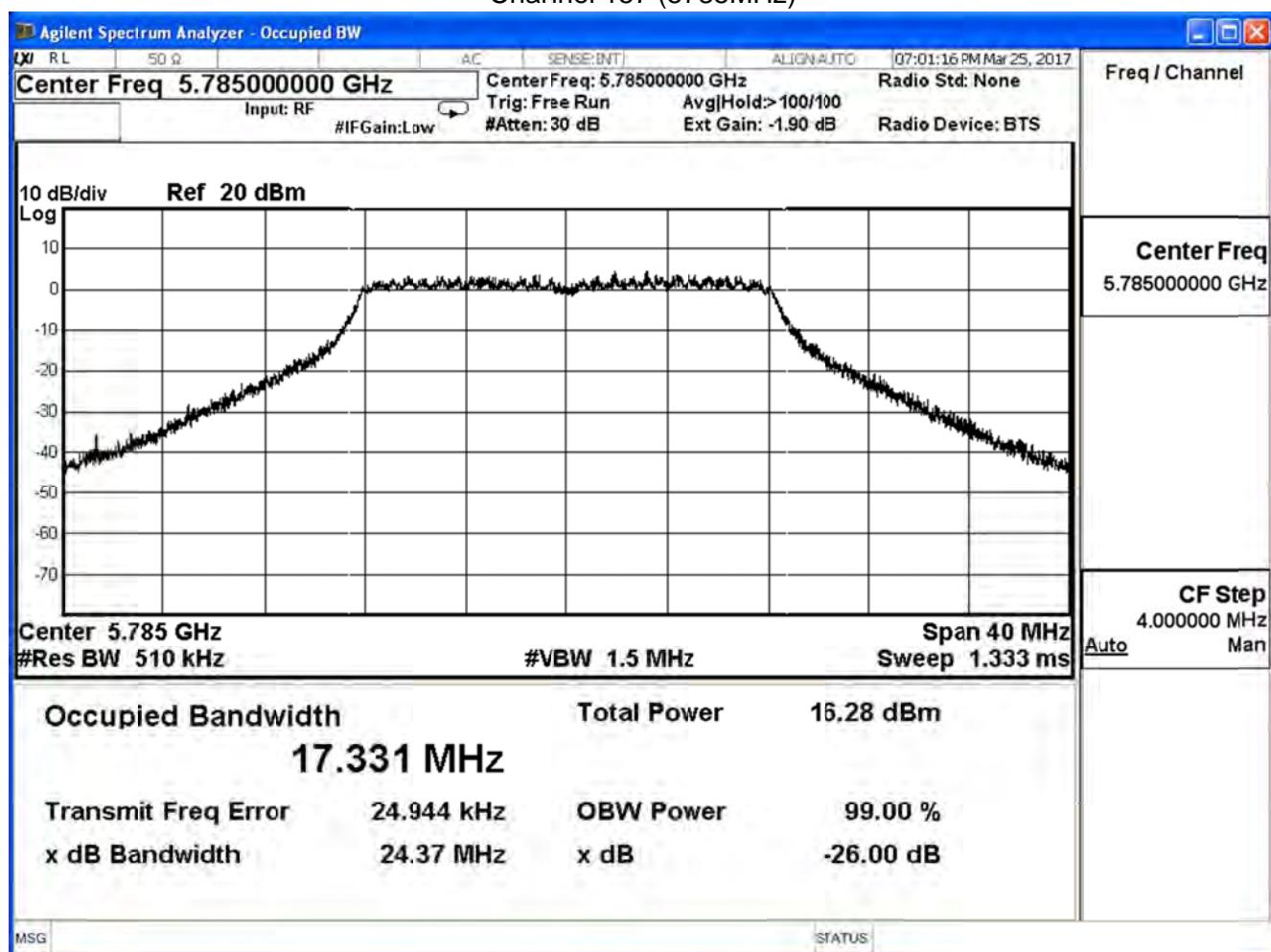
IEEE 802.11a (ANT 1)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
149	5745	24.35	17.303	--
157	5785	24.37	17.331	--
165	5825	23.81	17.305	--

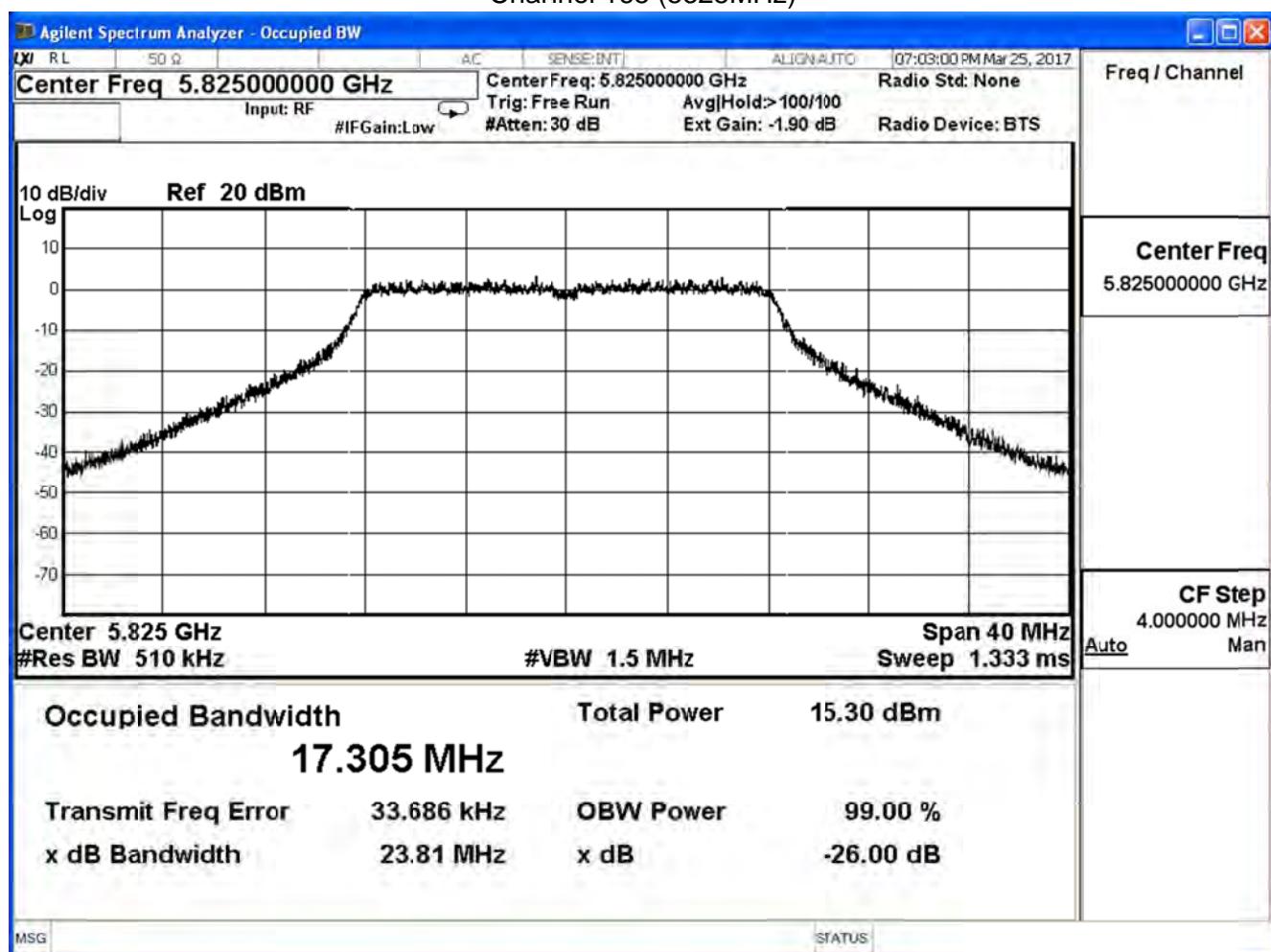
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

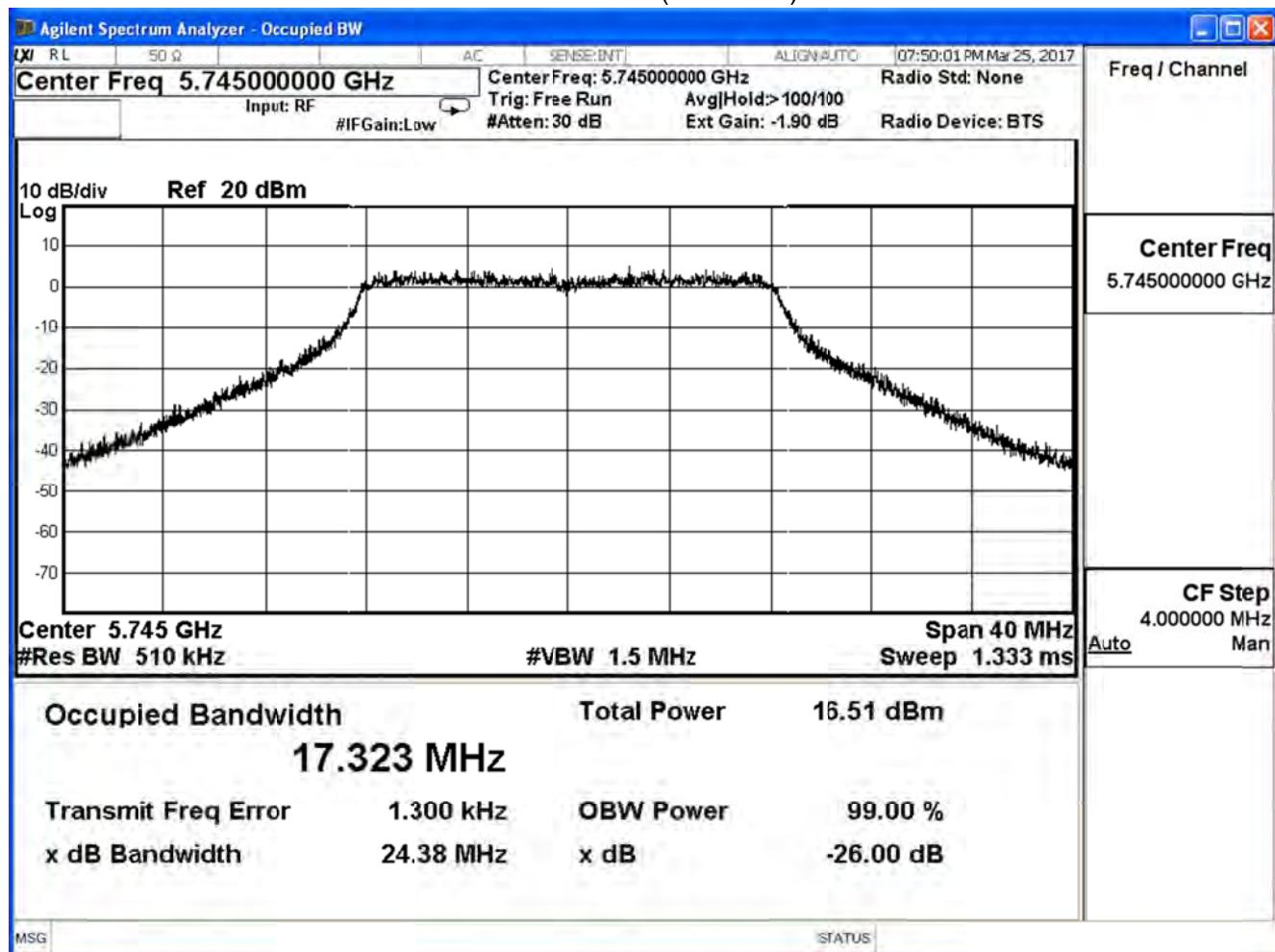


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

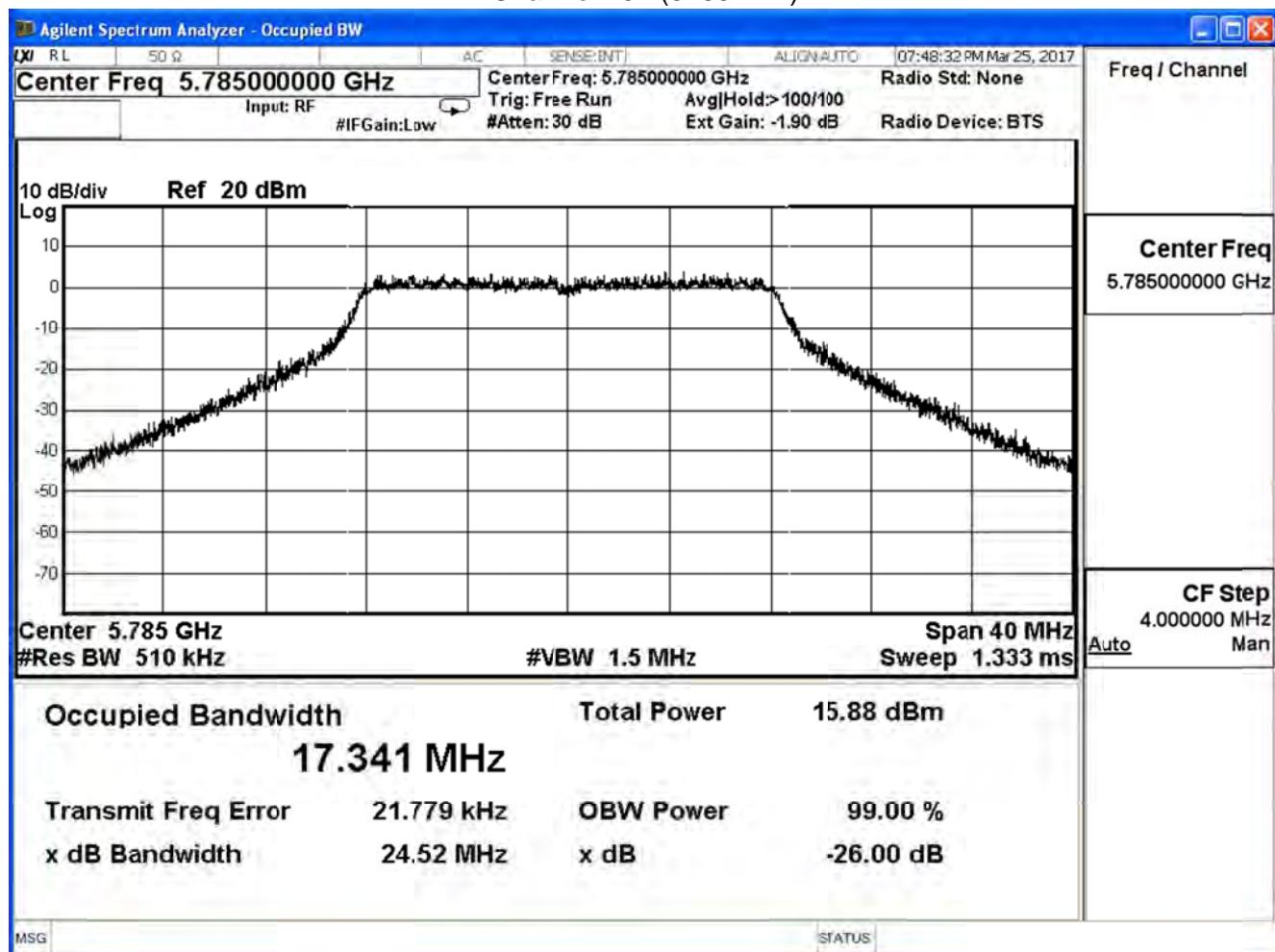
IEEE 802.11a (ANT 2) (Gain 2±0.7dBi)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
149	5745	24.38	17.323	--
157	5785	24.52	17.341	--
165	5825	24.52	17.388	--

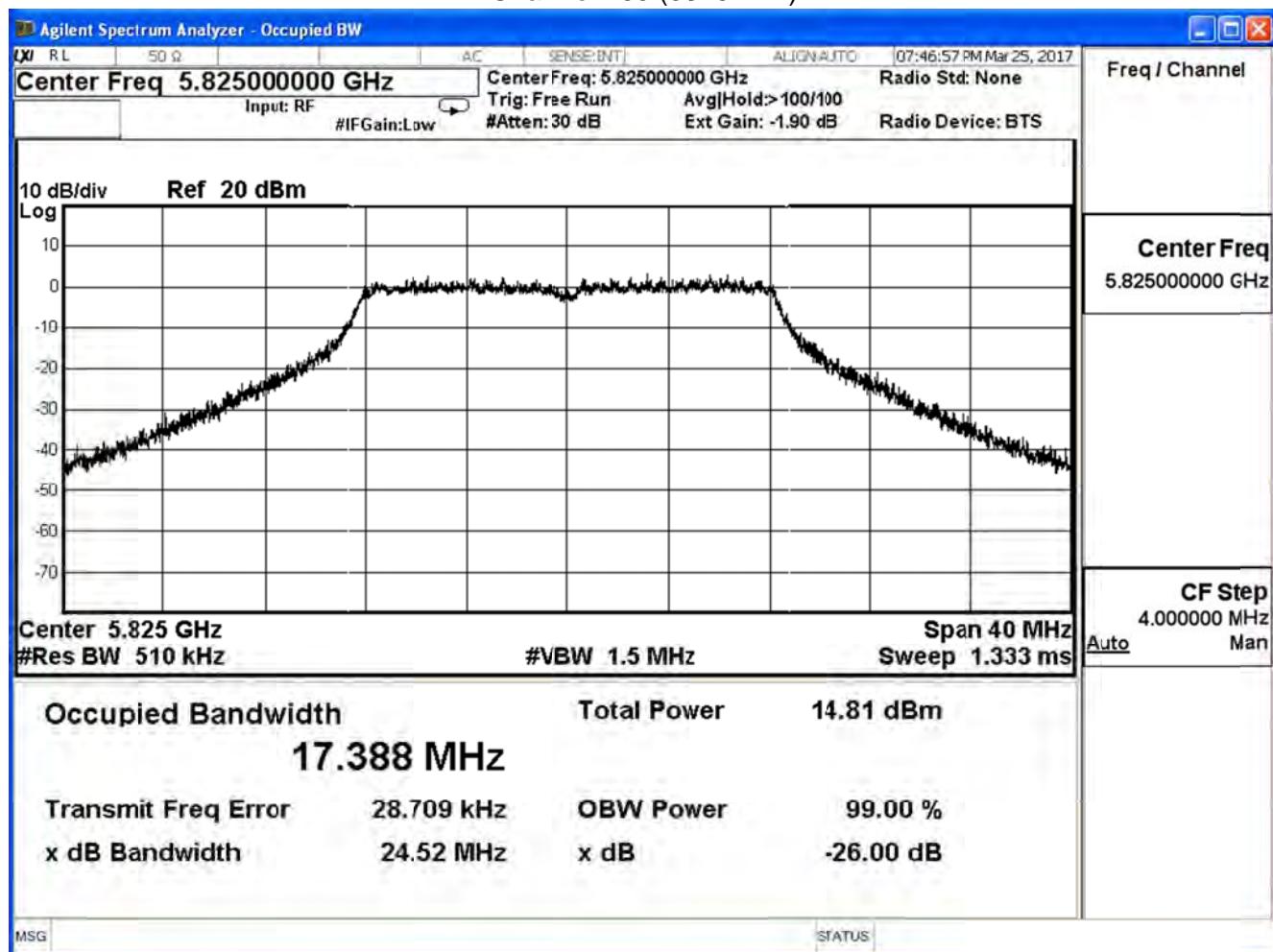
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

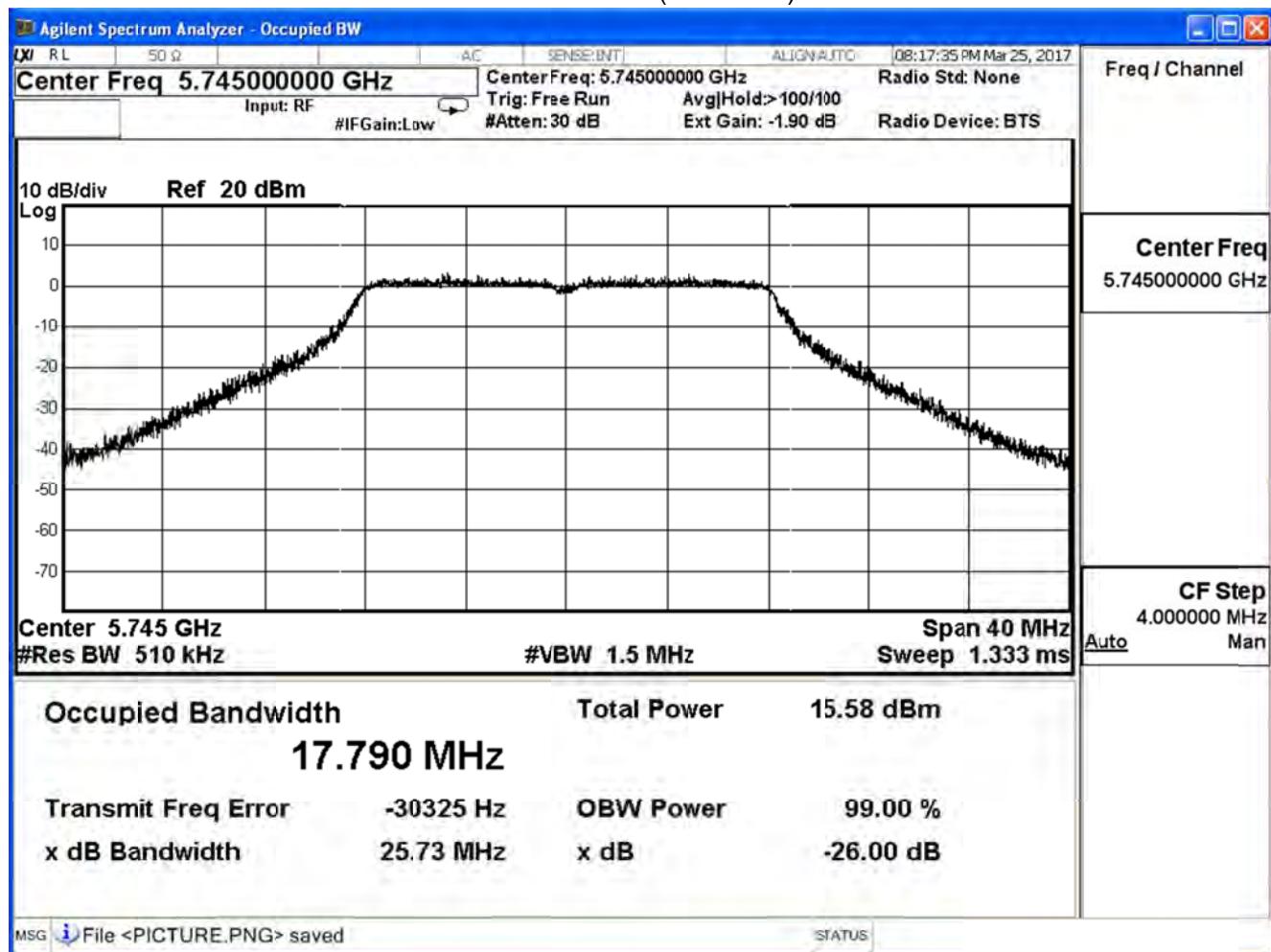


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

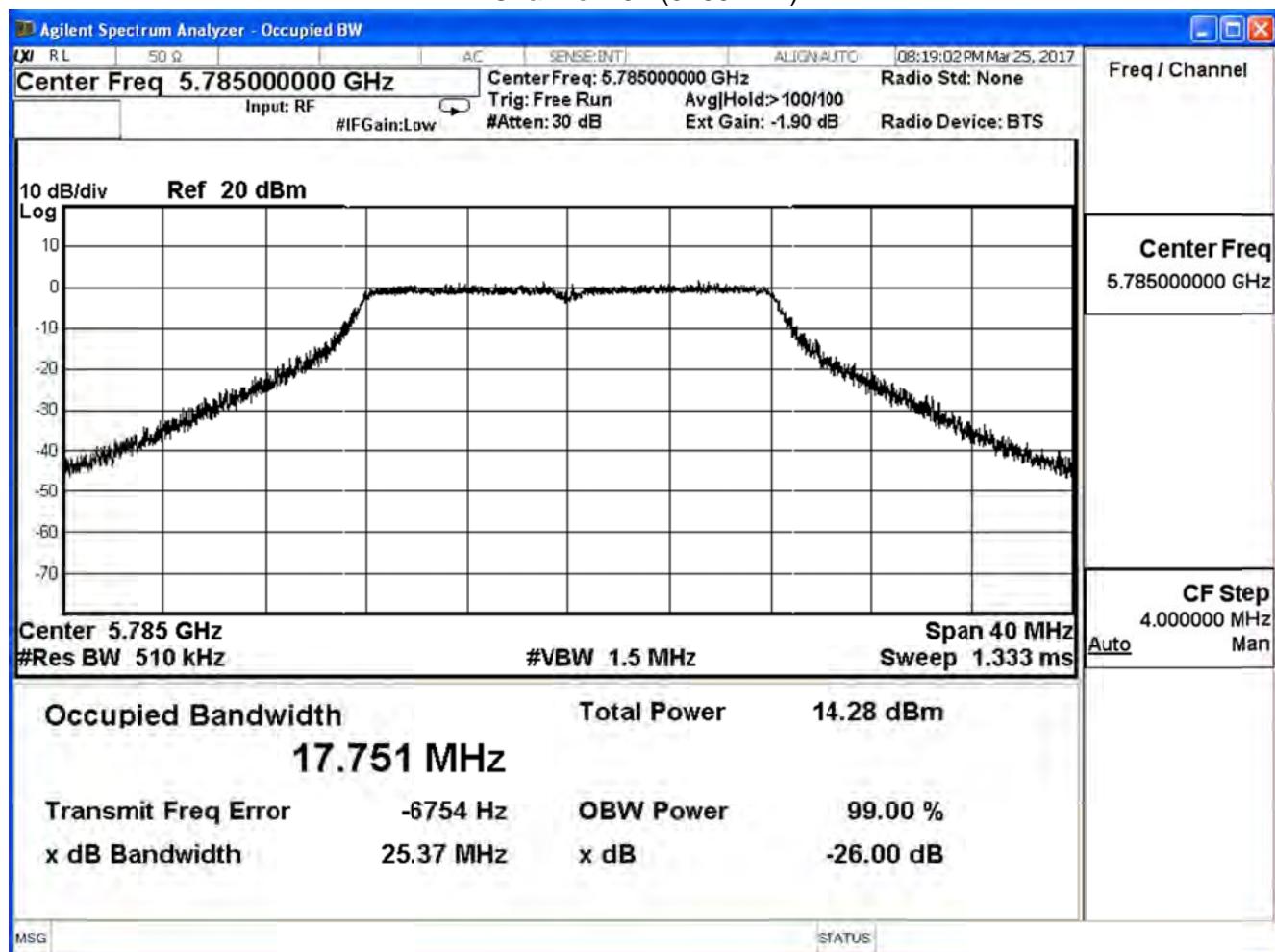
IEEE 802.11a (ANT 3)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
149	5745	25.73	17.790	--
157	5785	25.37	17.751	--
165	5825	25.66	17.757	--

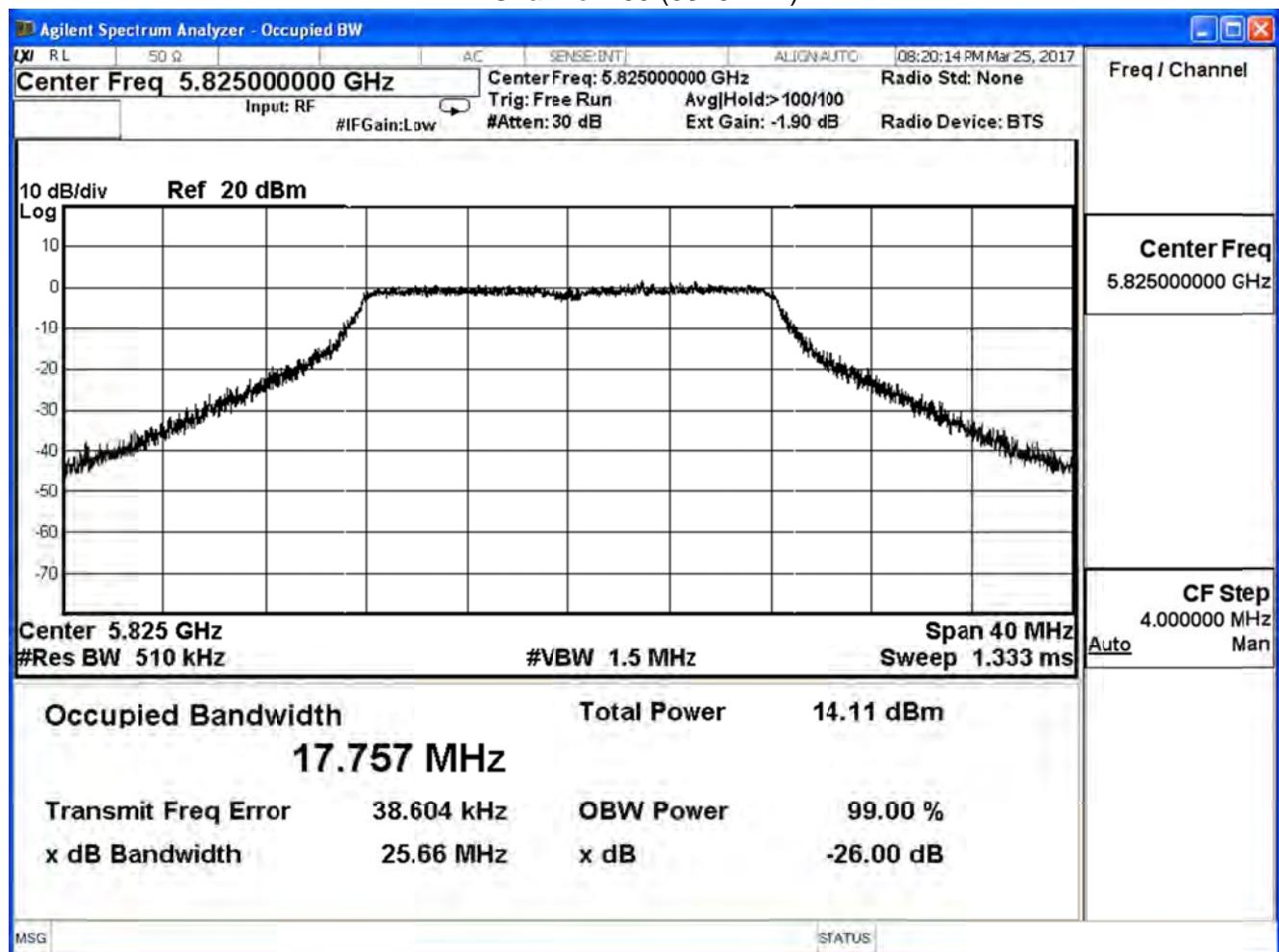
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

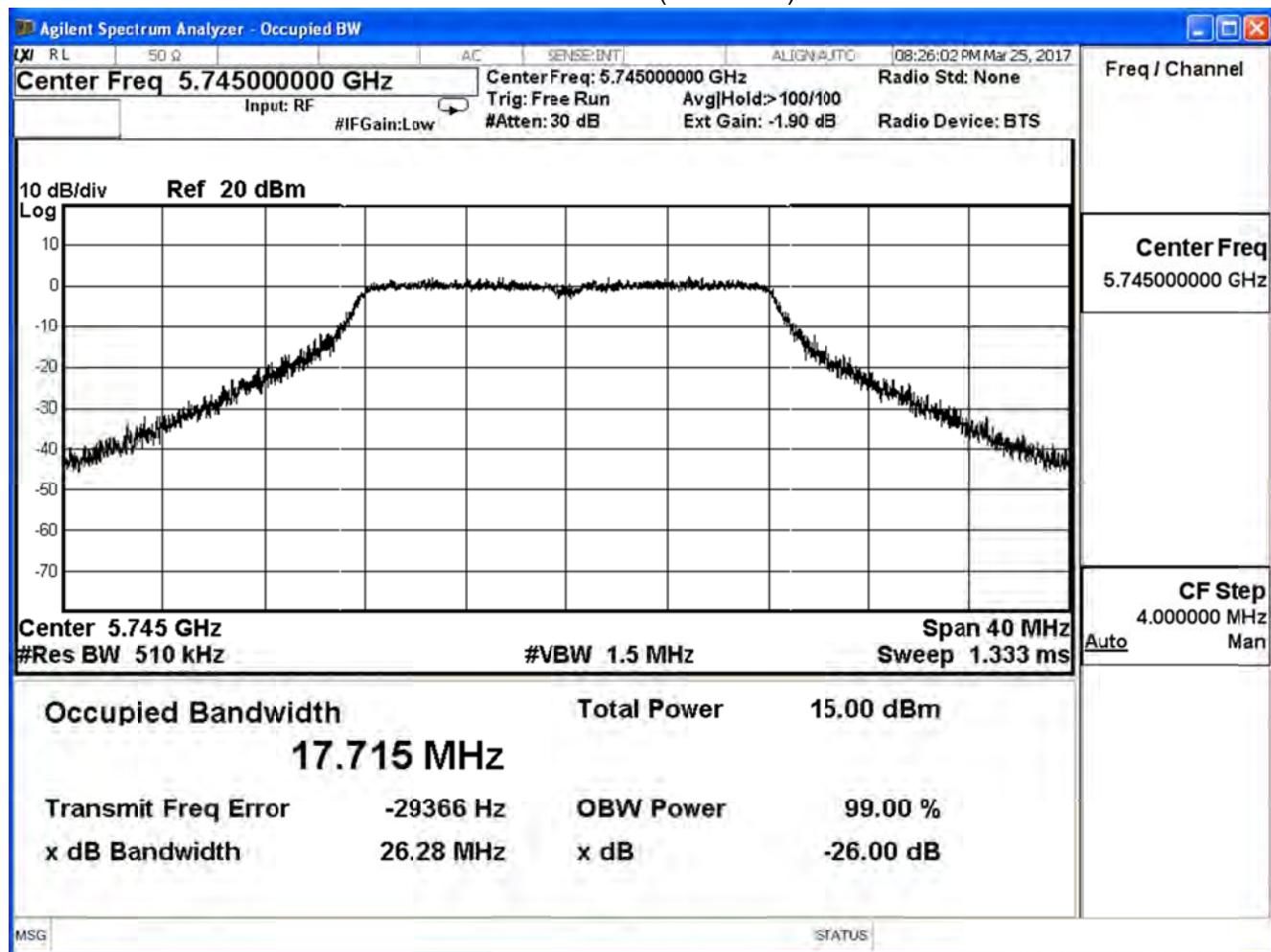


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

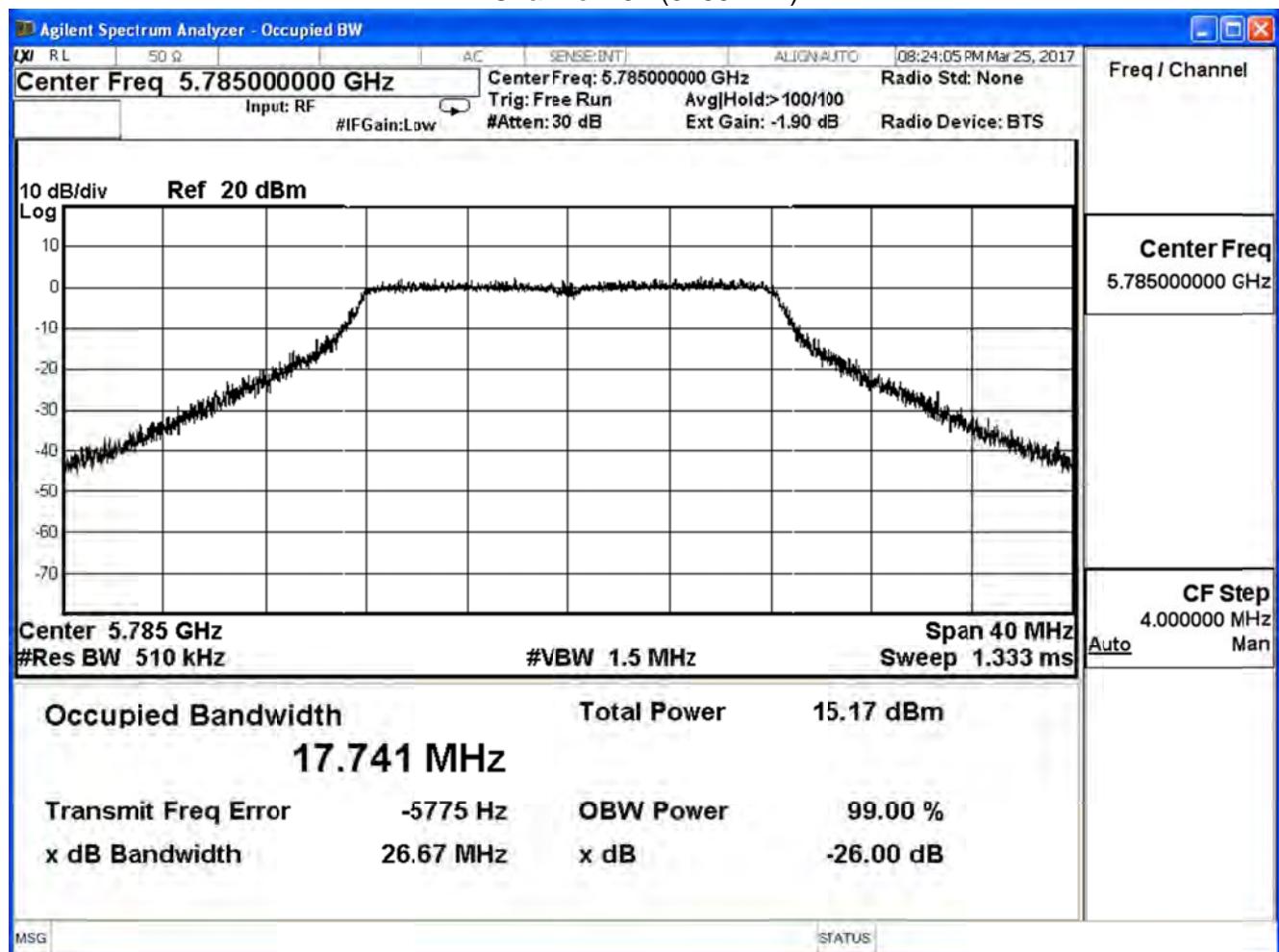
IEEE 802.11a (ANT 4) (Gain 2±0.7dBi)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
149	5745	26.28	17.715	--
157	5785	26.67	17.741	--
165	5825	26.23	17.877	--

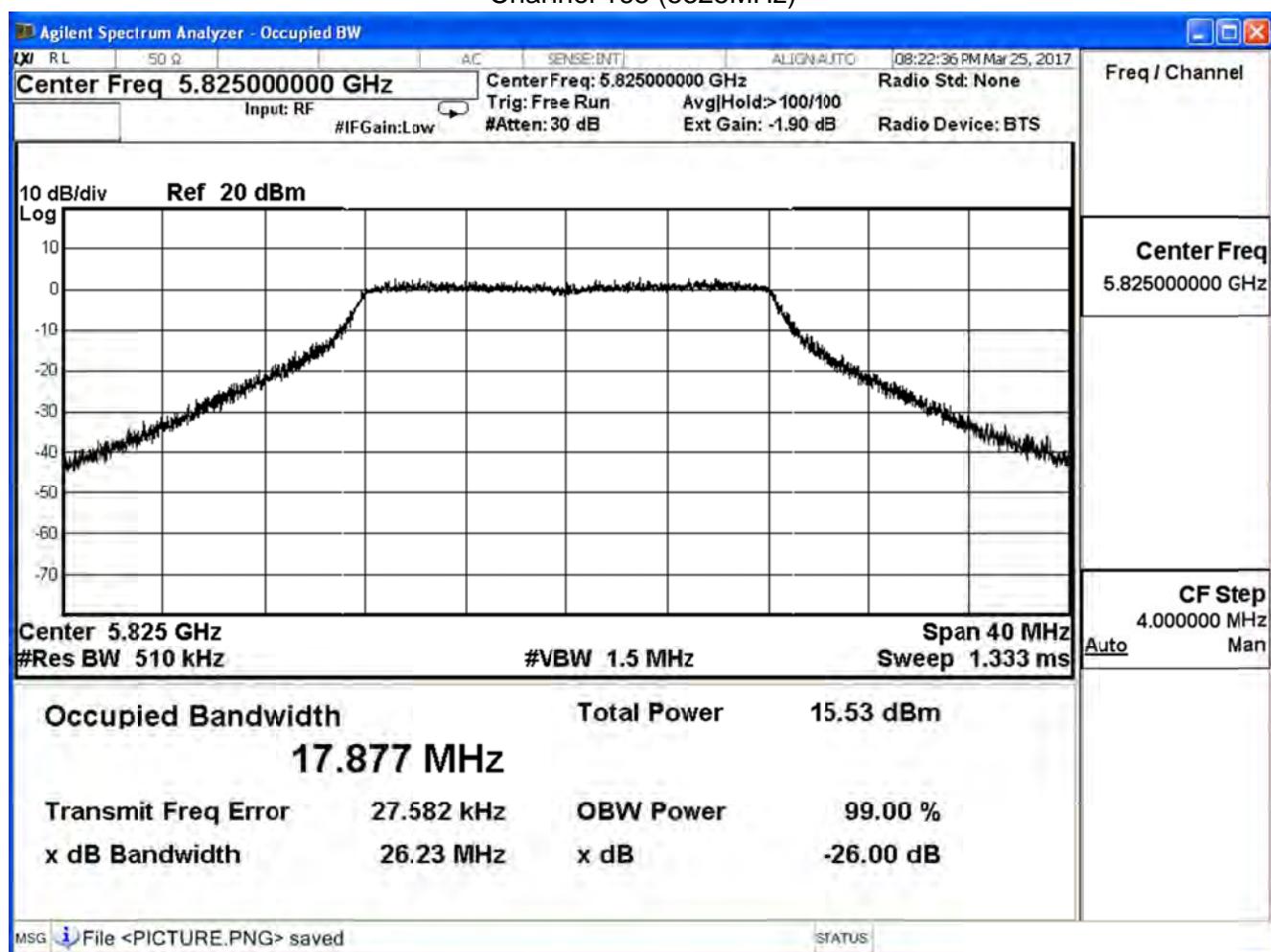
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

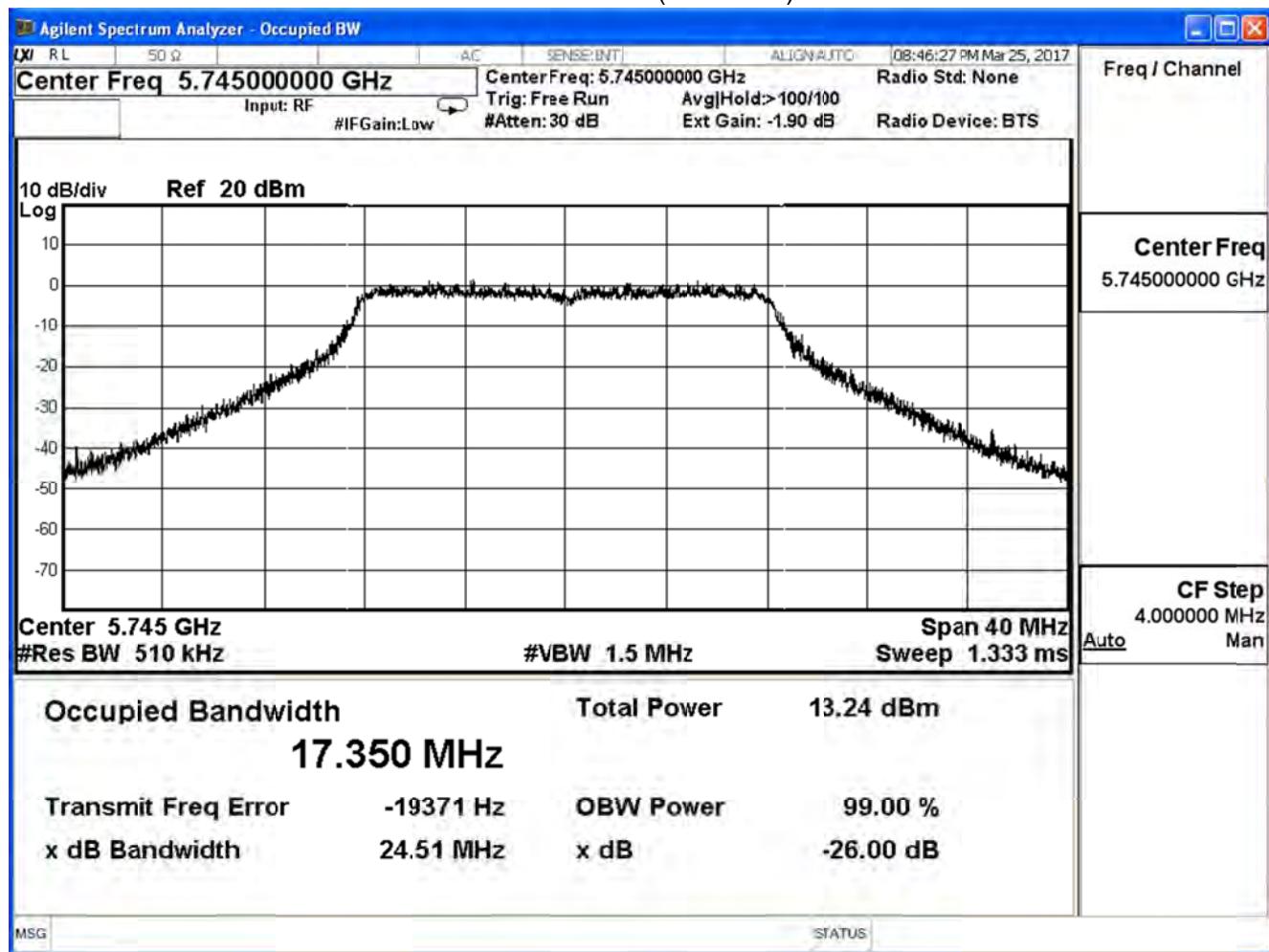


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

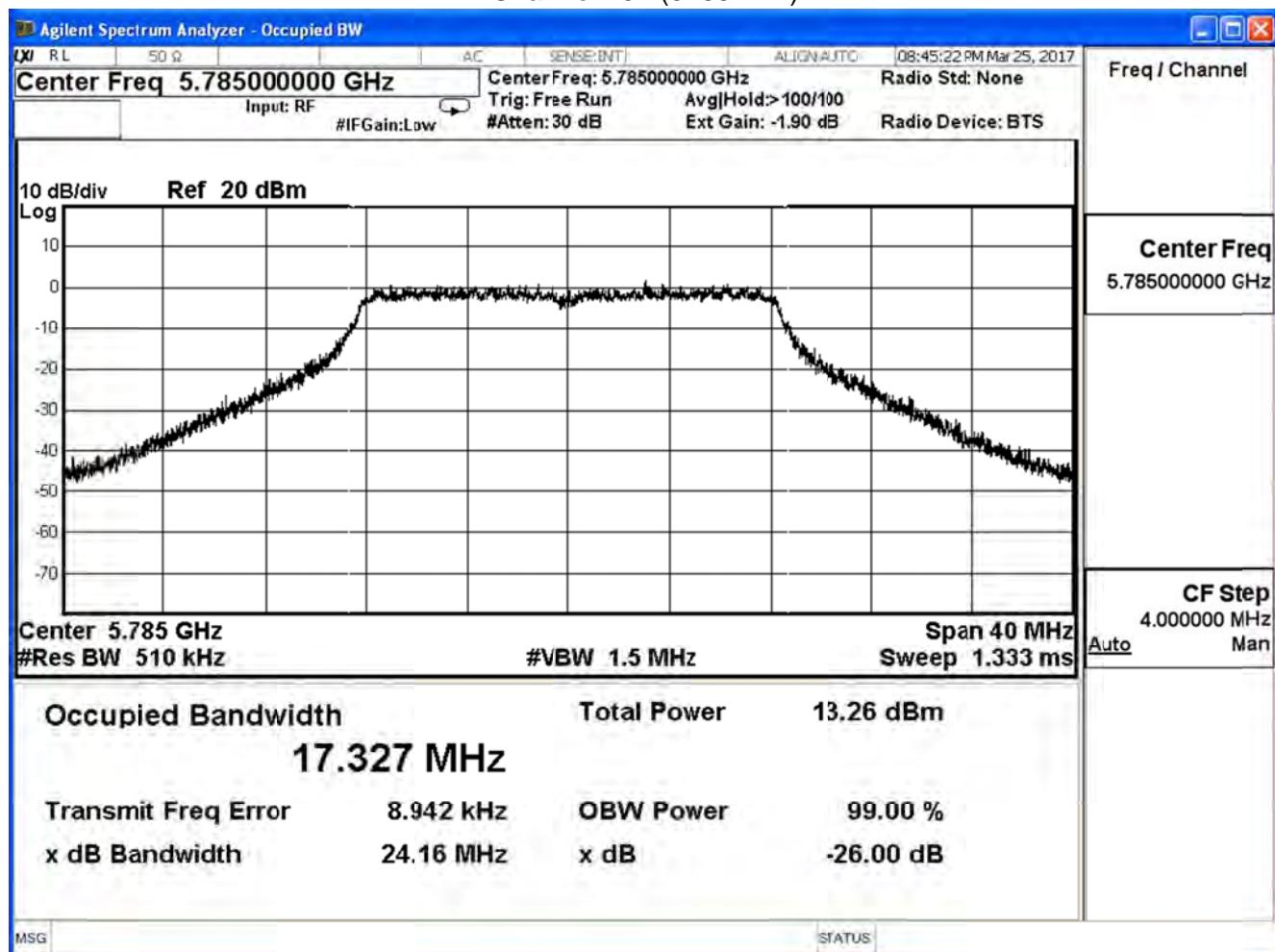
IEEE 802.11a(ANT 5)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
149	5745	24.51	17.350	--
157	5785	24.16	17.327	--
165	5825	24.57	17.389	--

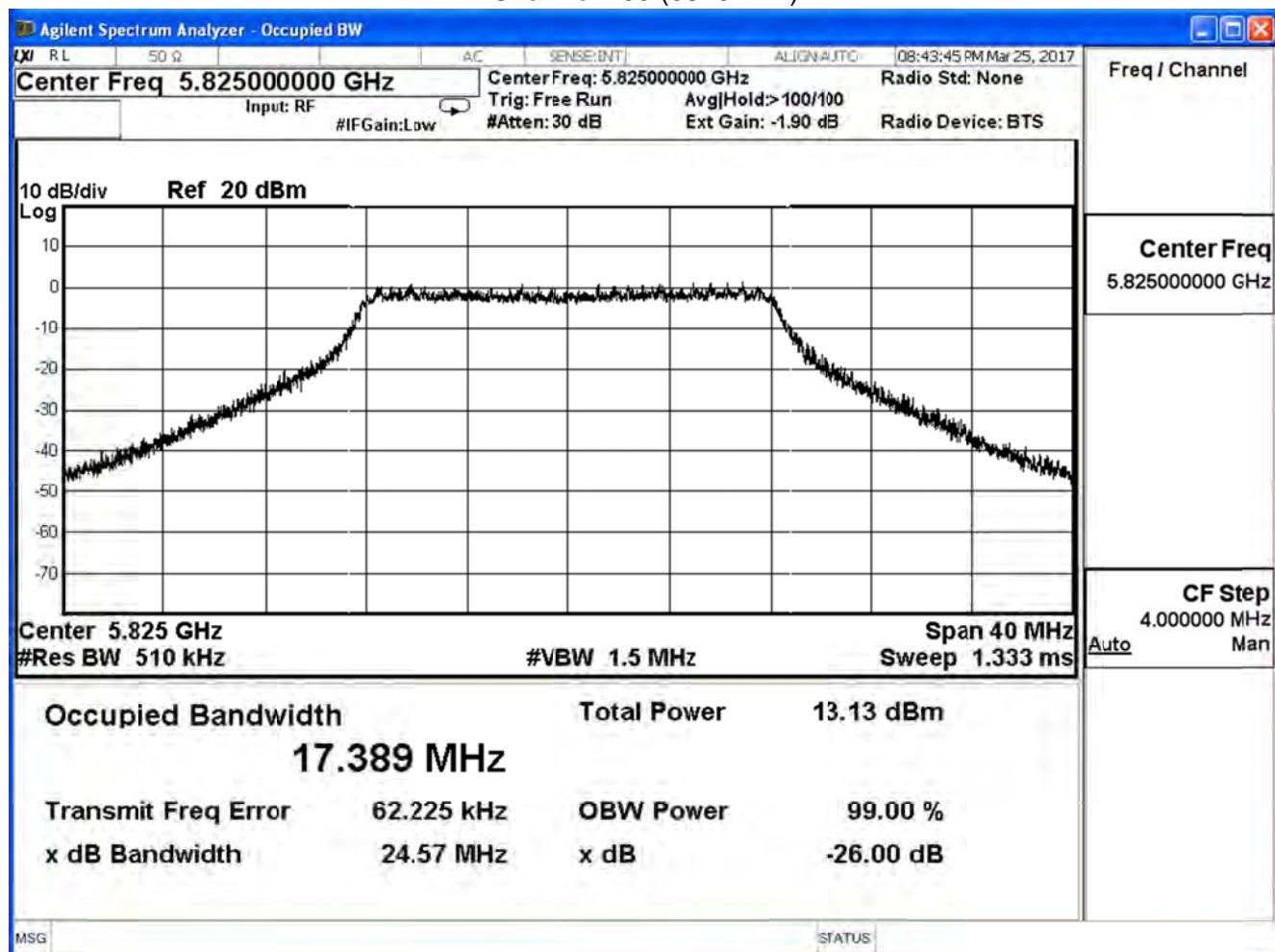
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

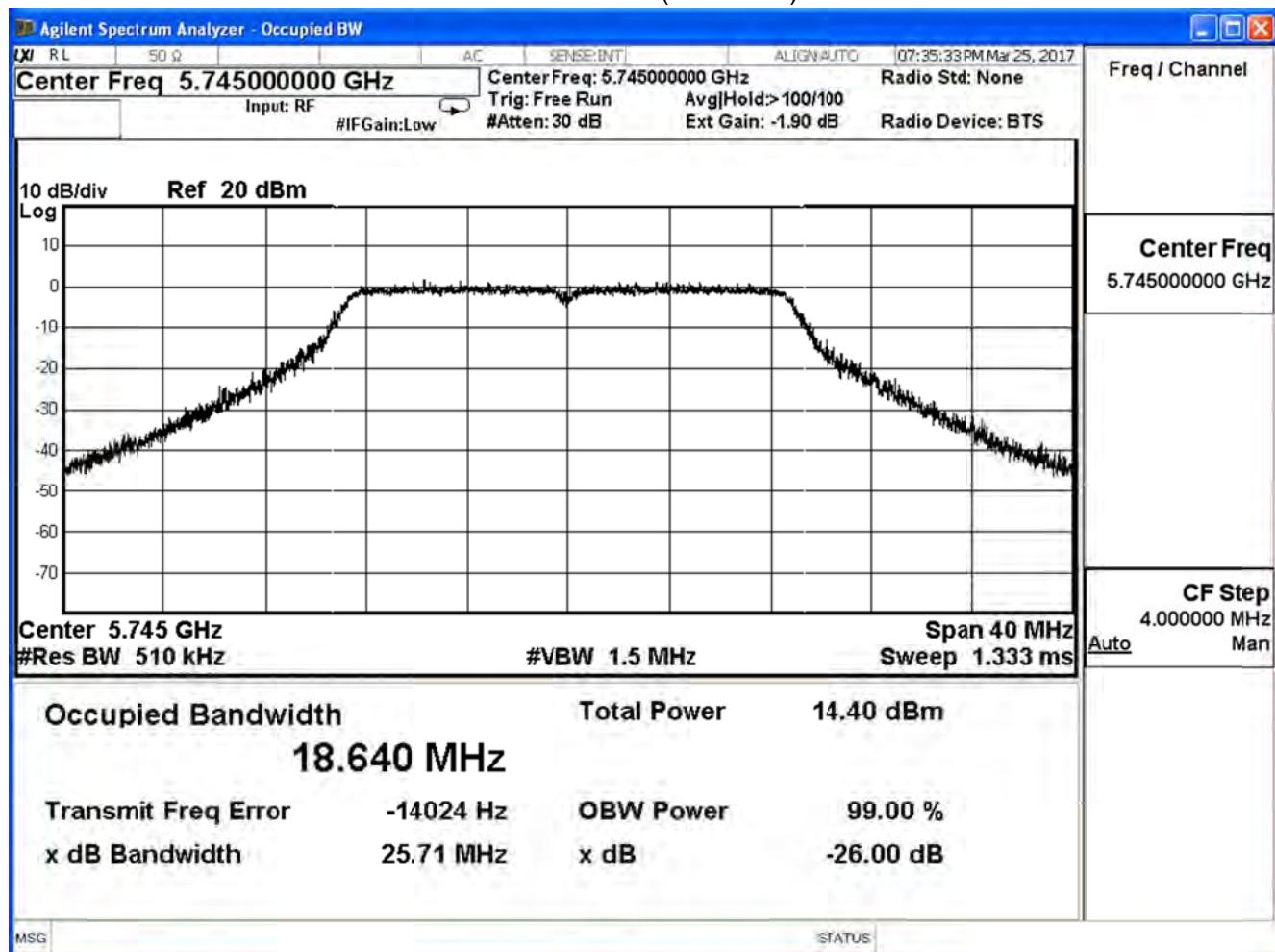


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

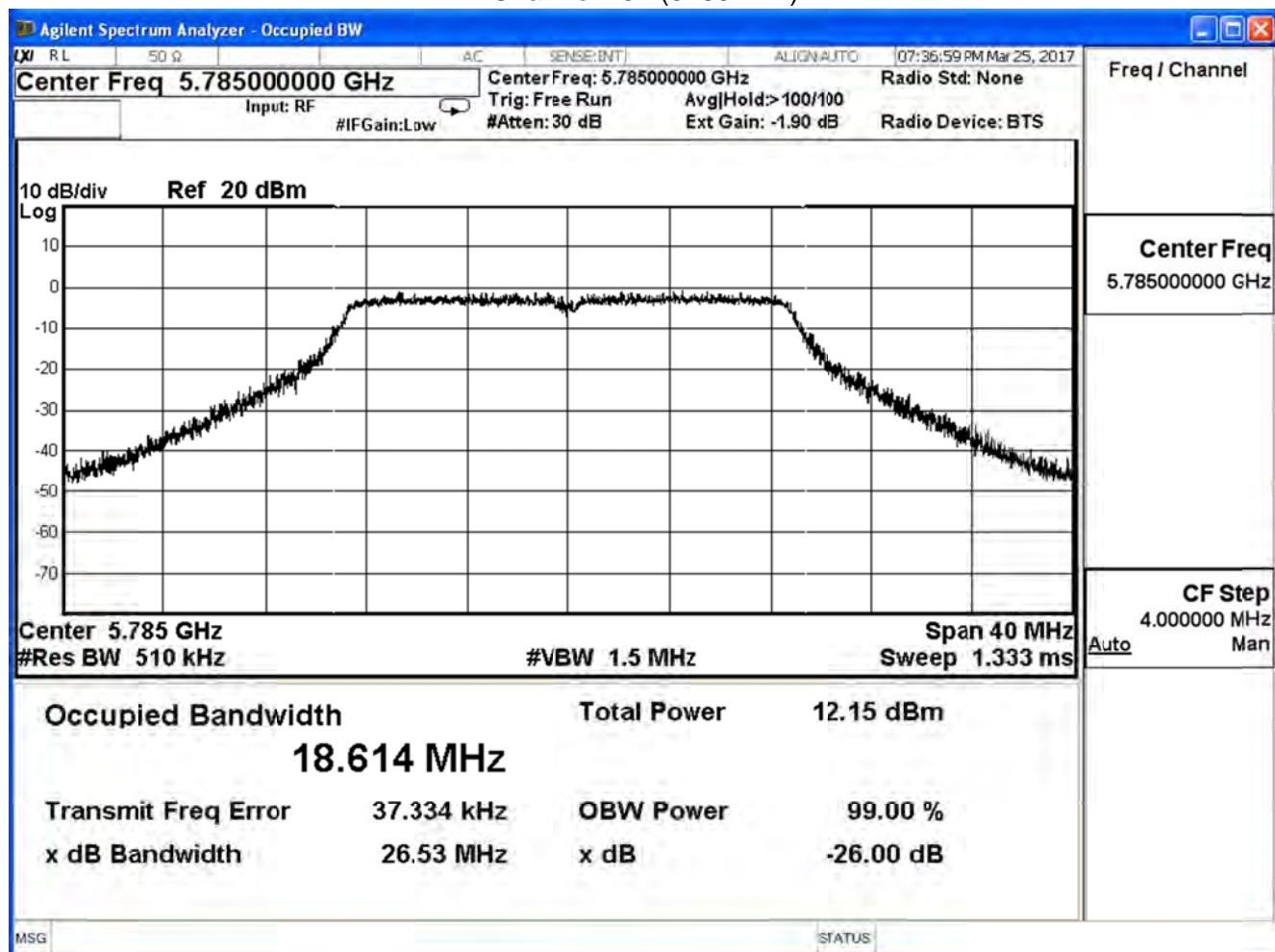
IEEE 802.11n20 (ANT 0) (Gain 2±0.7dBi)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
149	5745	25.71	18.640	--
157	5785	26.53	18.614	--
165	5825	26.01	18.656	--

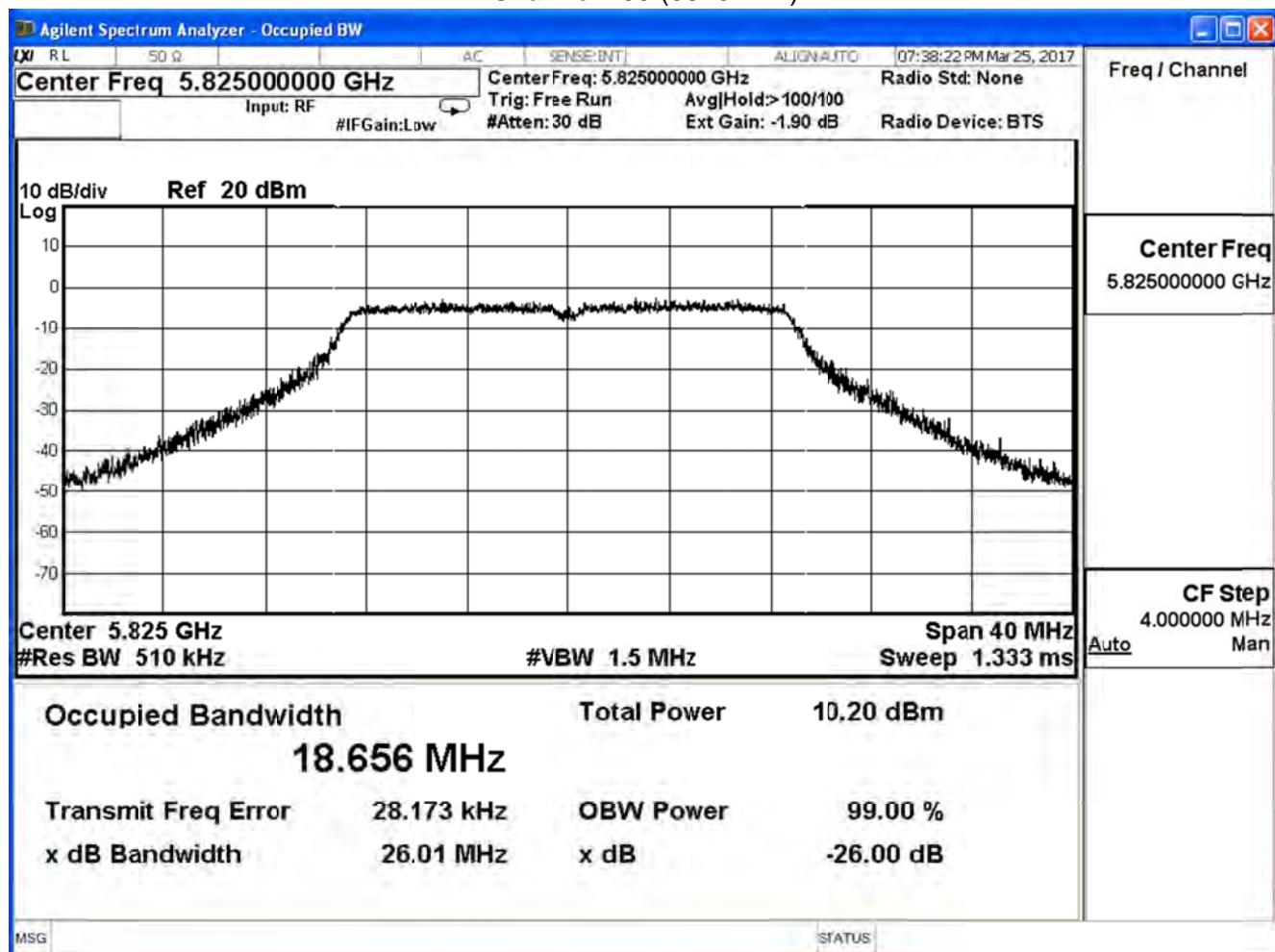
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

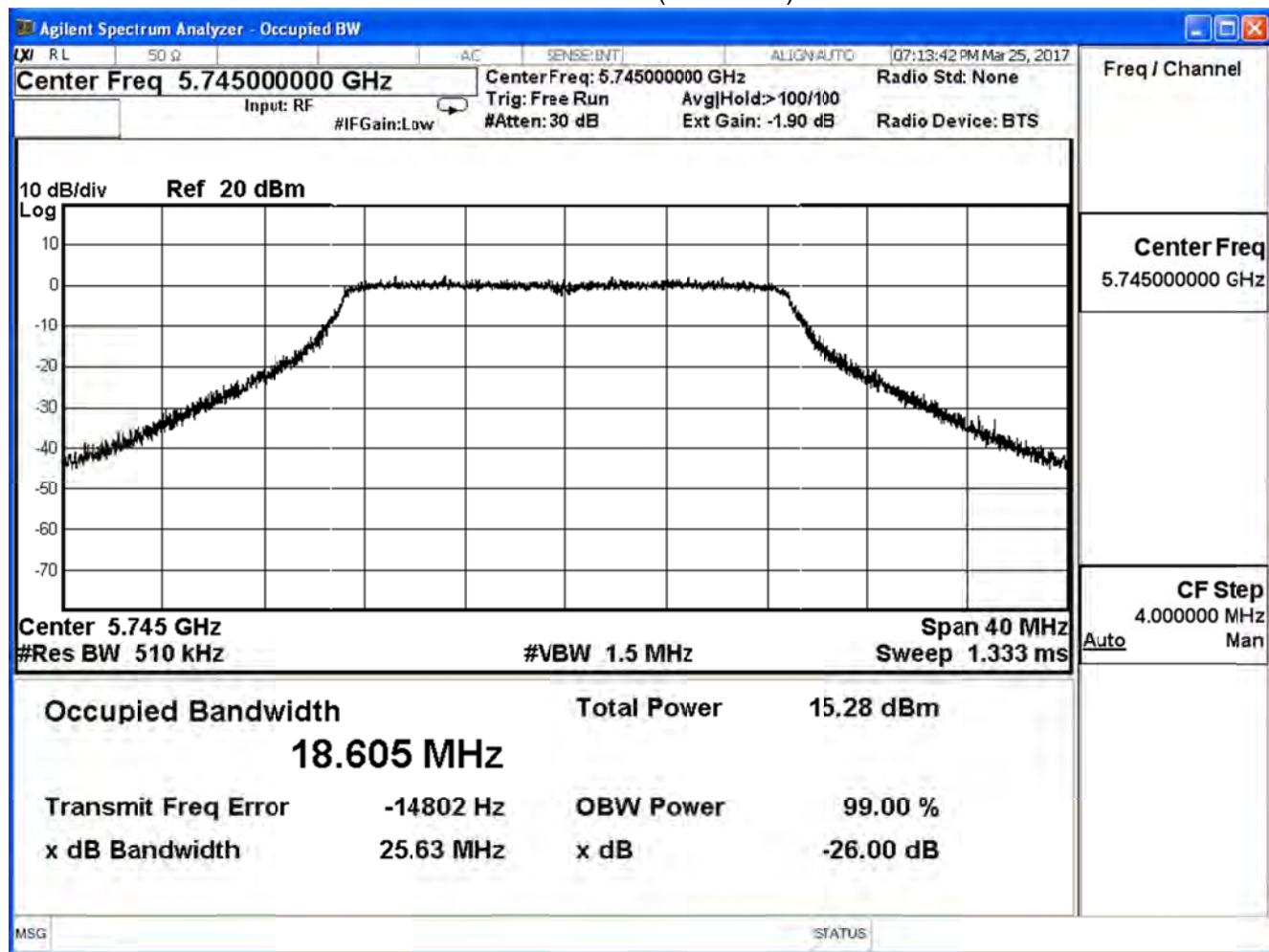


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

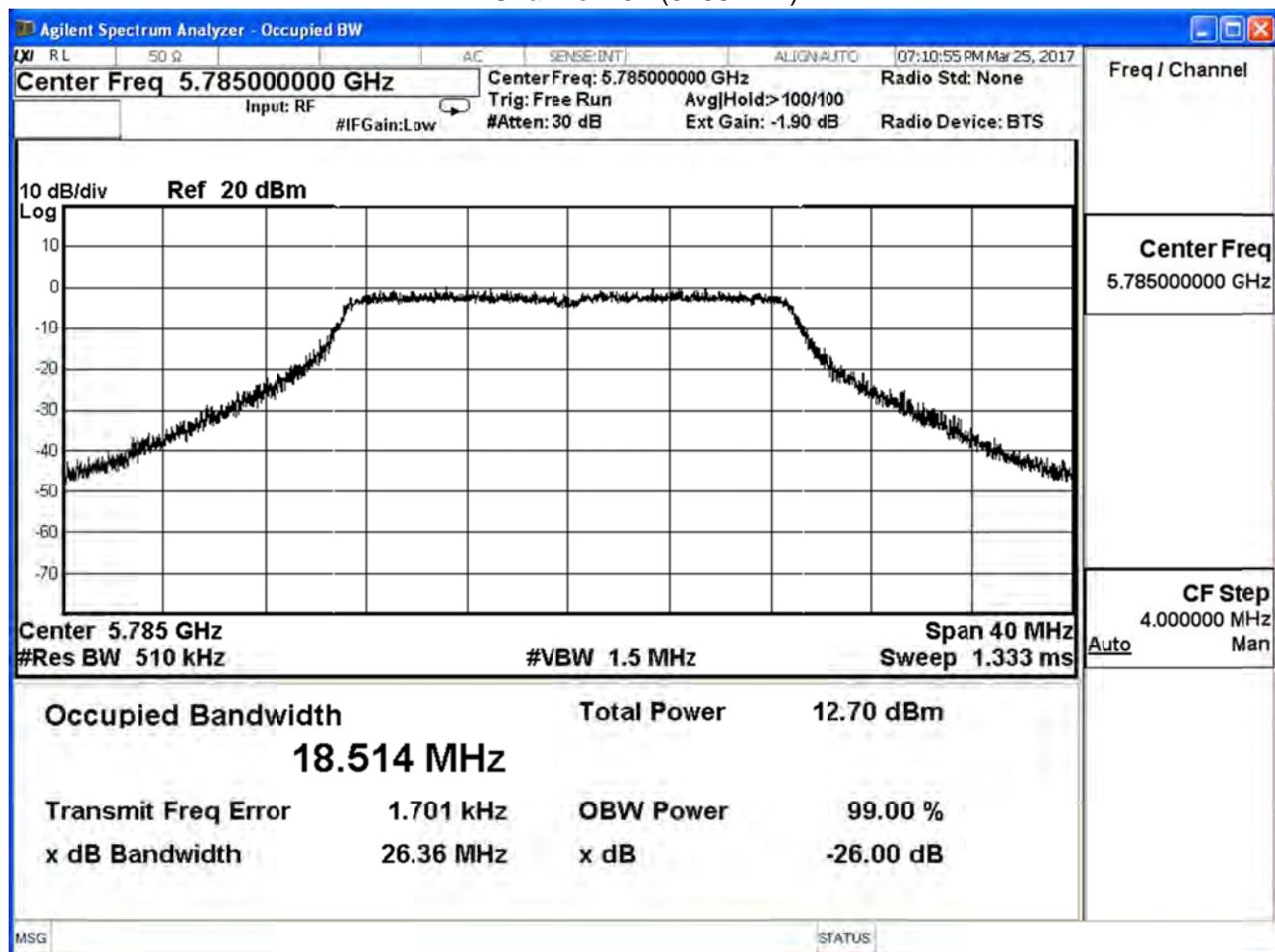
IEEE 802.11n20 (ANT 1)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
149	5745	25.63	18.605	--
157	5785	26.36	18.514	--
165	5825	25.48	18.472	--

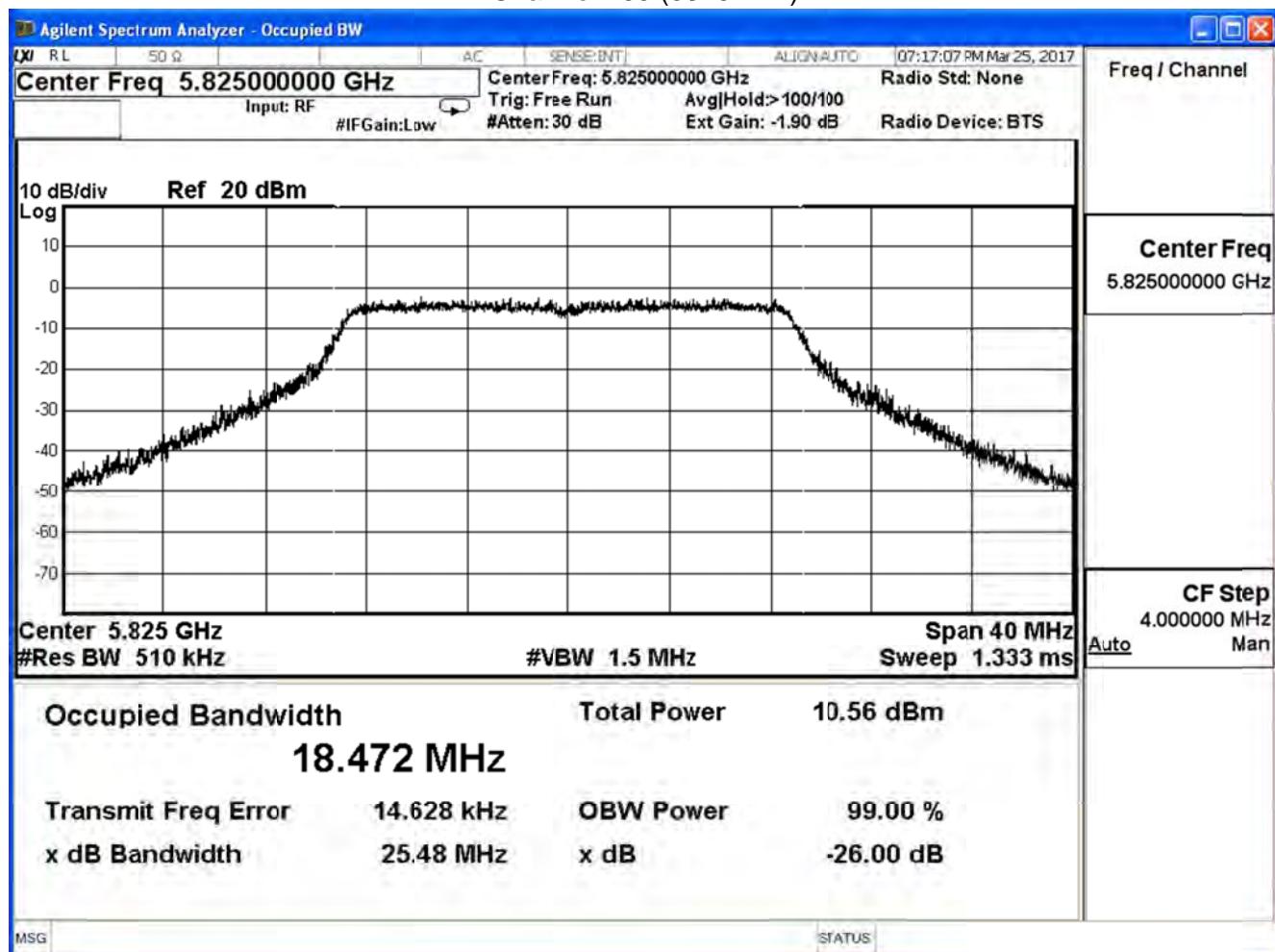
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

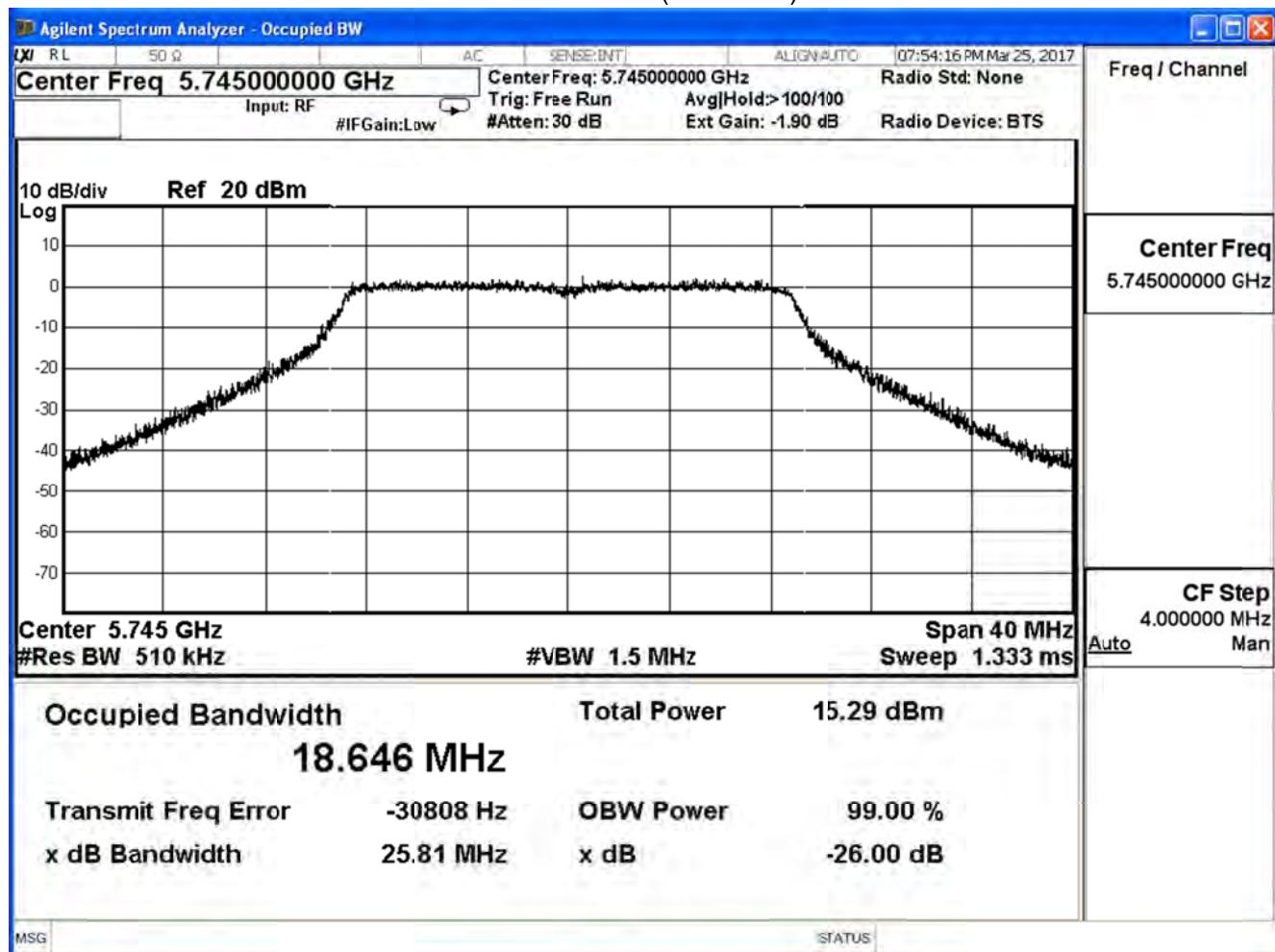


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

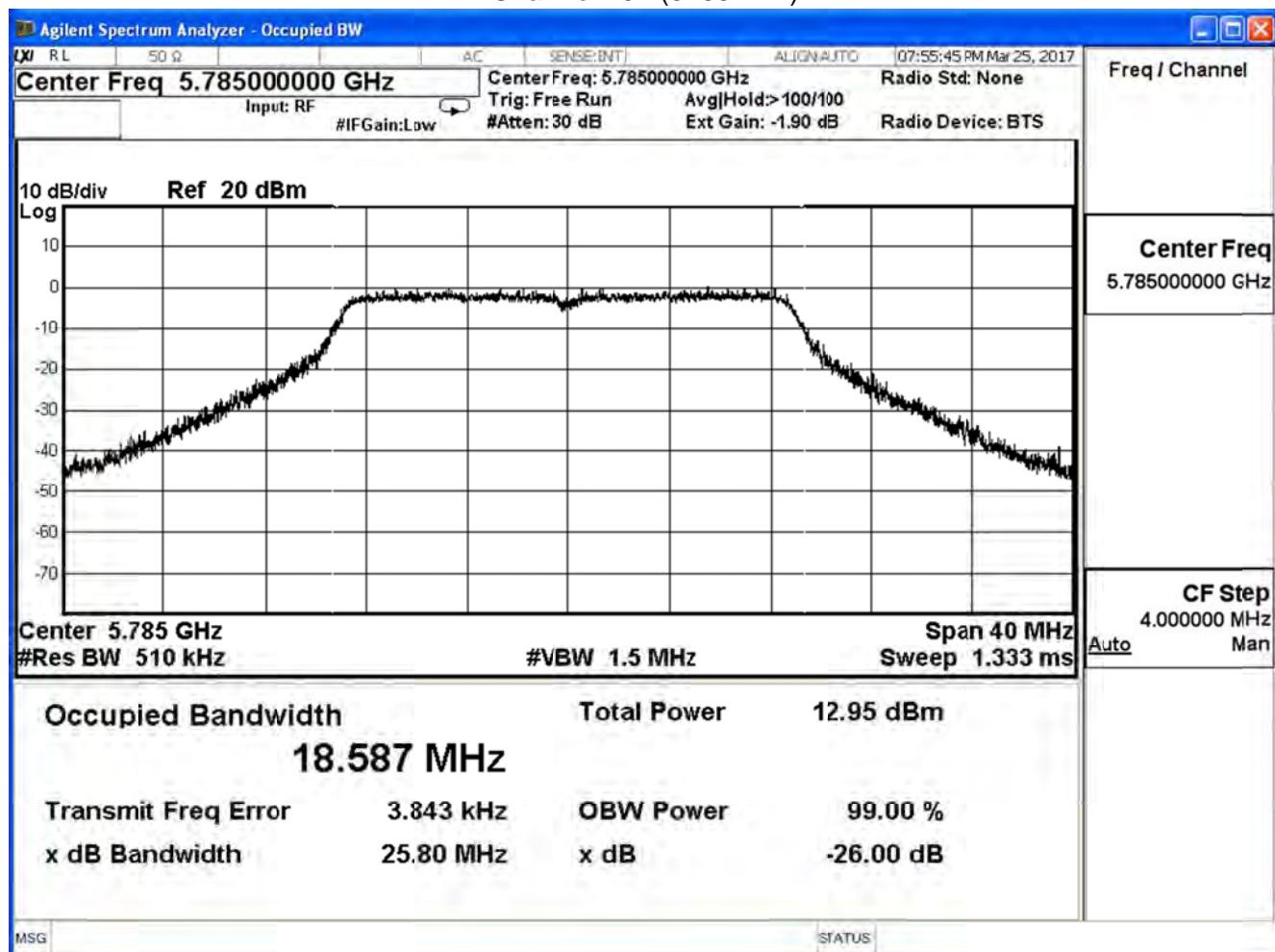
IEEE 802.11n20 (ANT 2) (Gain 2±0.7dBi)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
149	5745	25.81	18.646	--
157	5785	25.80	18.587	--
165	5825	25.83	18.676	--

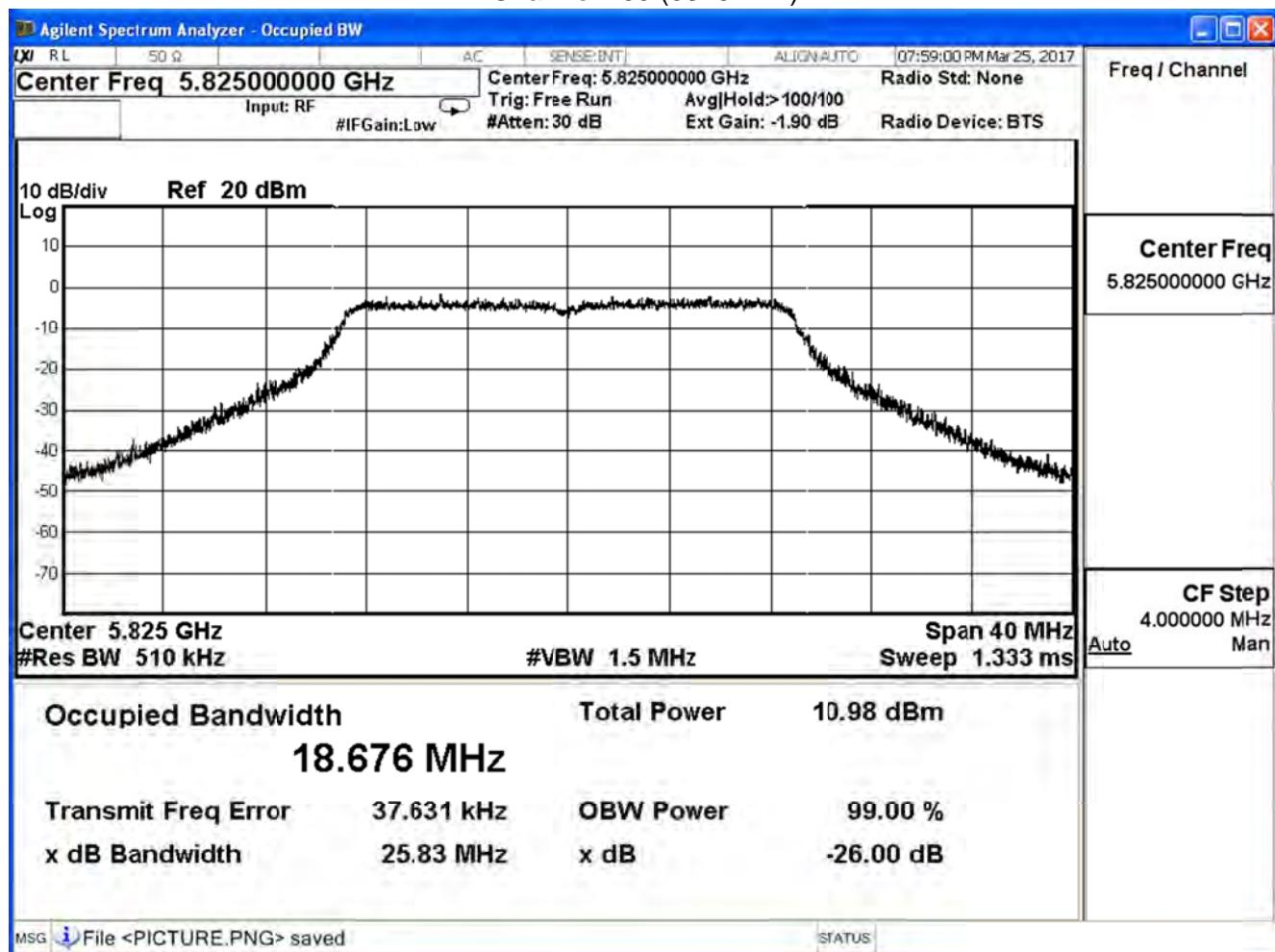
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

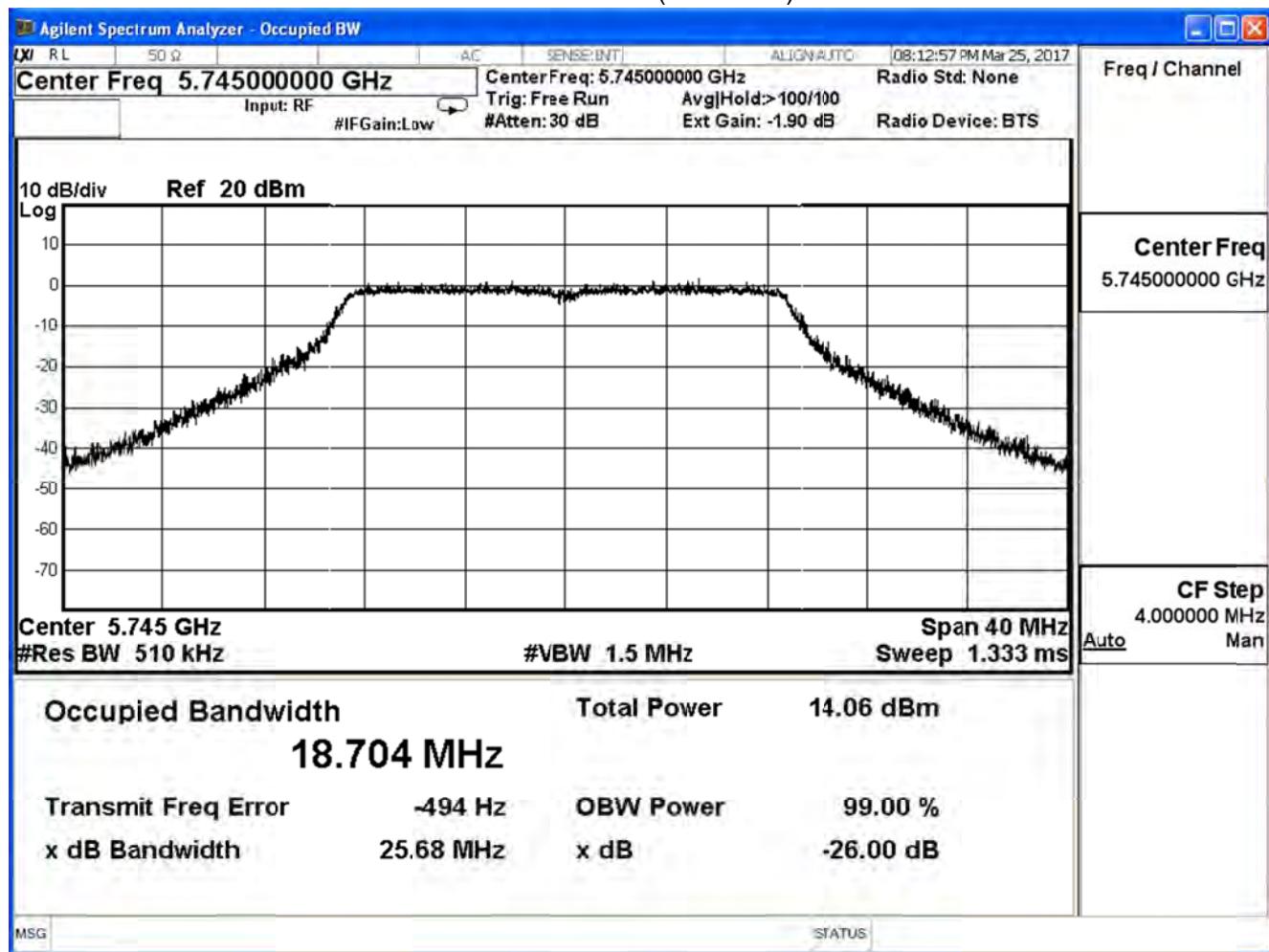


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

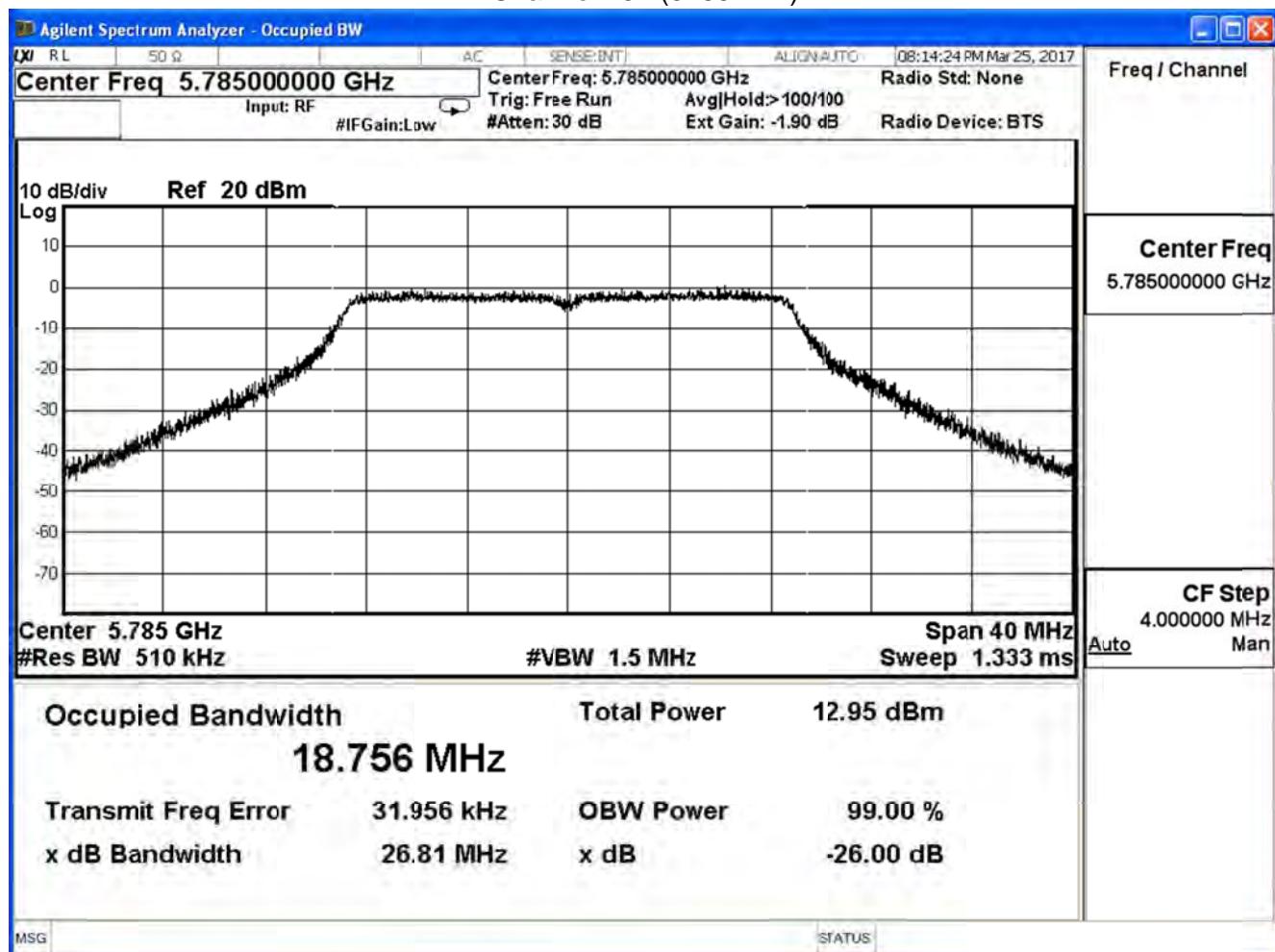
IEEE 802.11n20 (ANT 3)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
149	5745	25.68	18.704	--
157	5785	26.81	18.756	--
165	5825	26.41	18.821	--

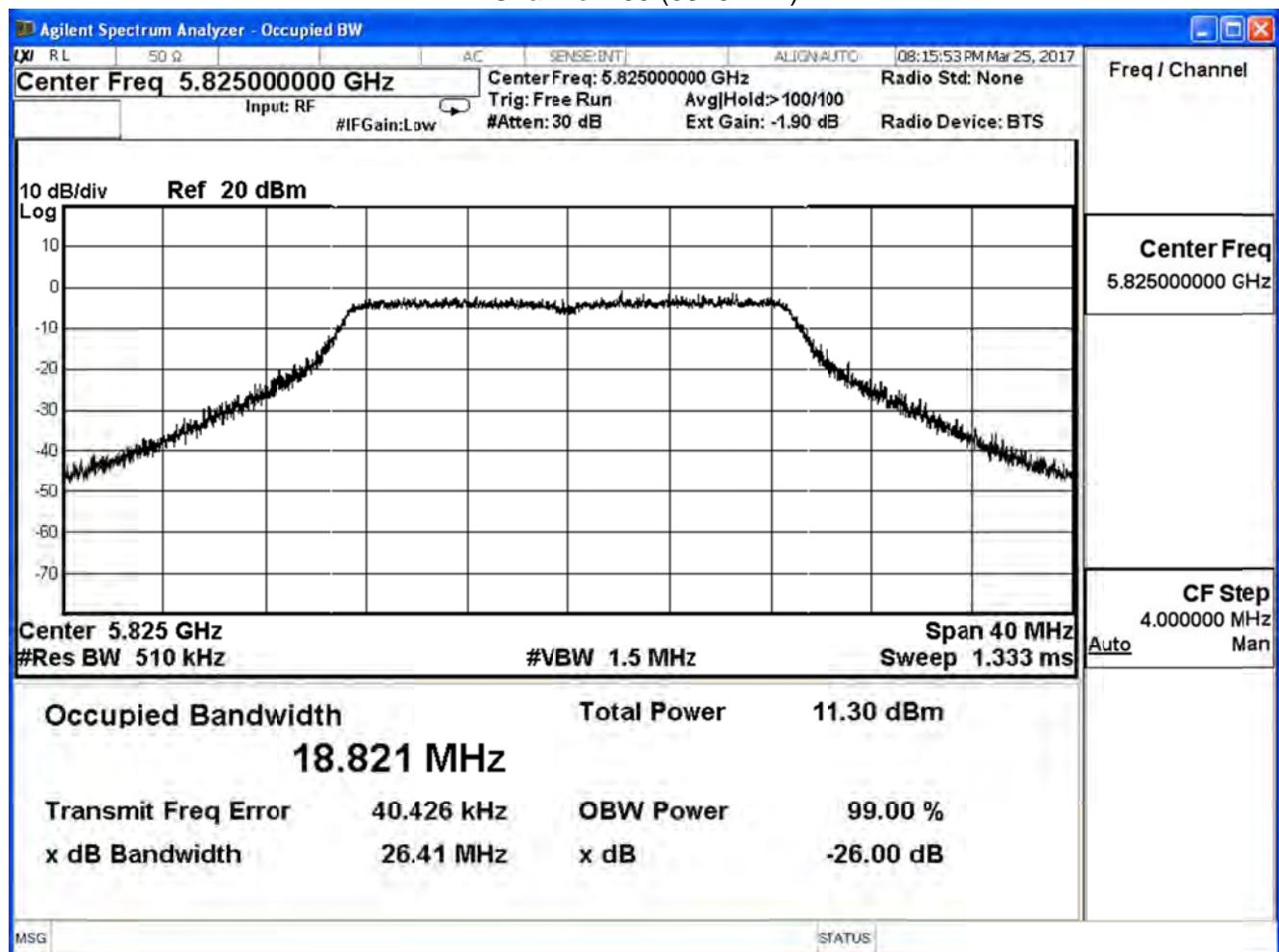
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

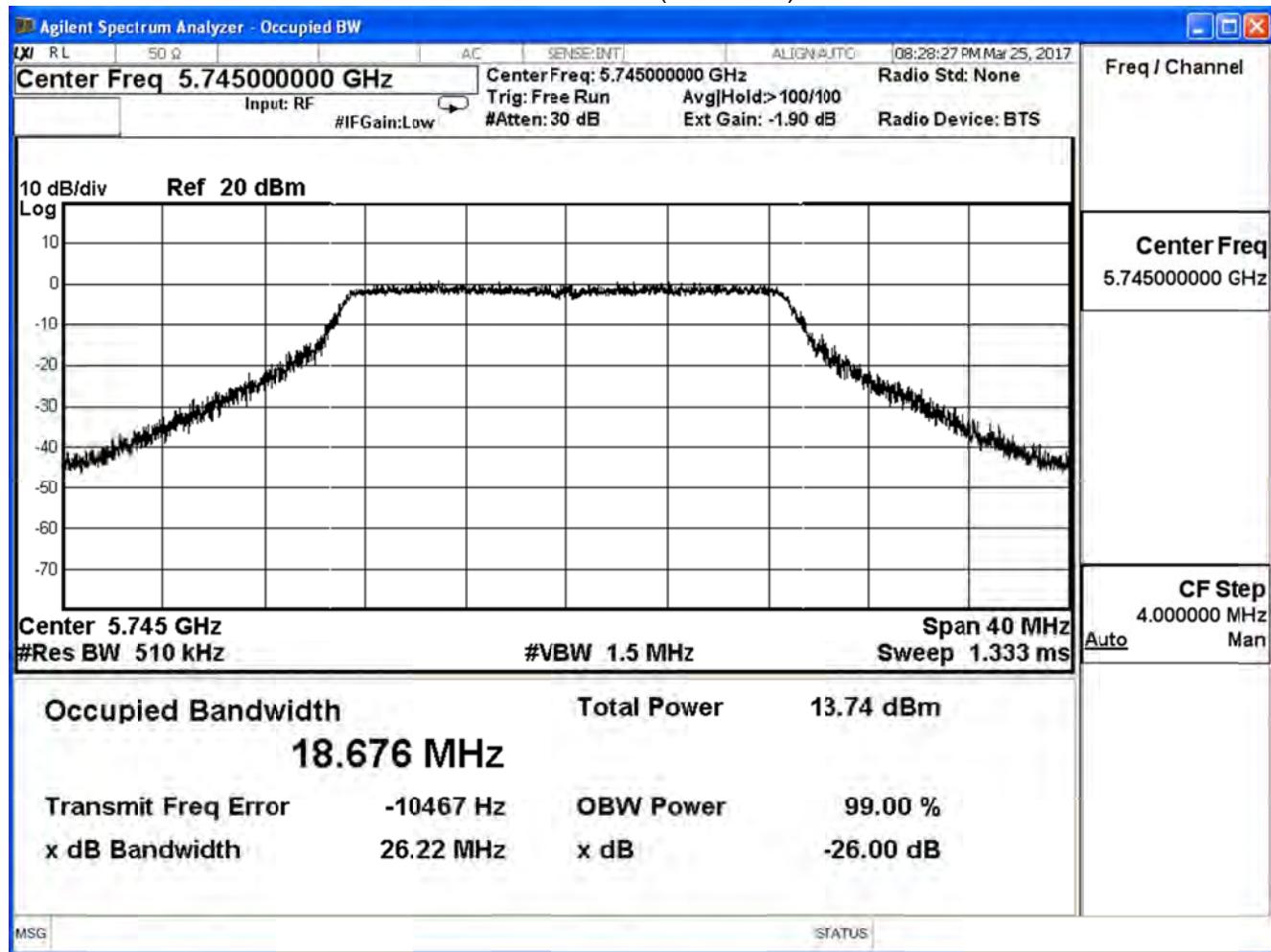


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

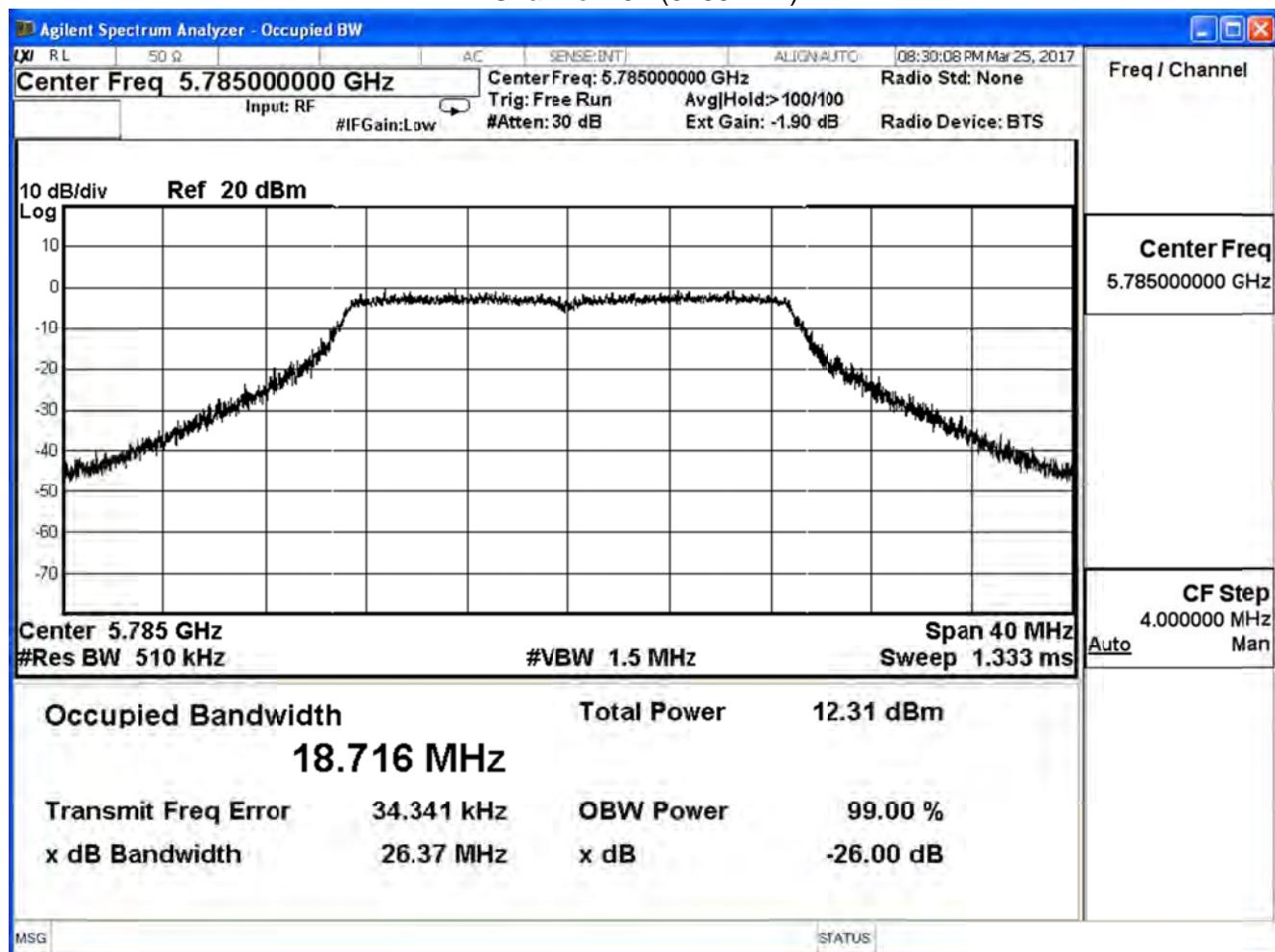
IEEE 802.11n20 (ANT 4) (Gain 2±0.7dBi)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
149	5745	26.22	18.676	--
157	5785	26.37	18.716	--
165	5825	26.92	18.722	--

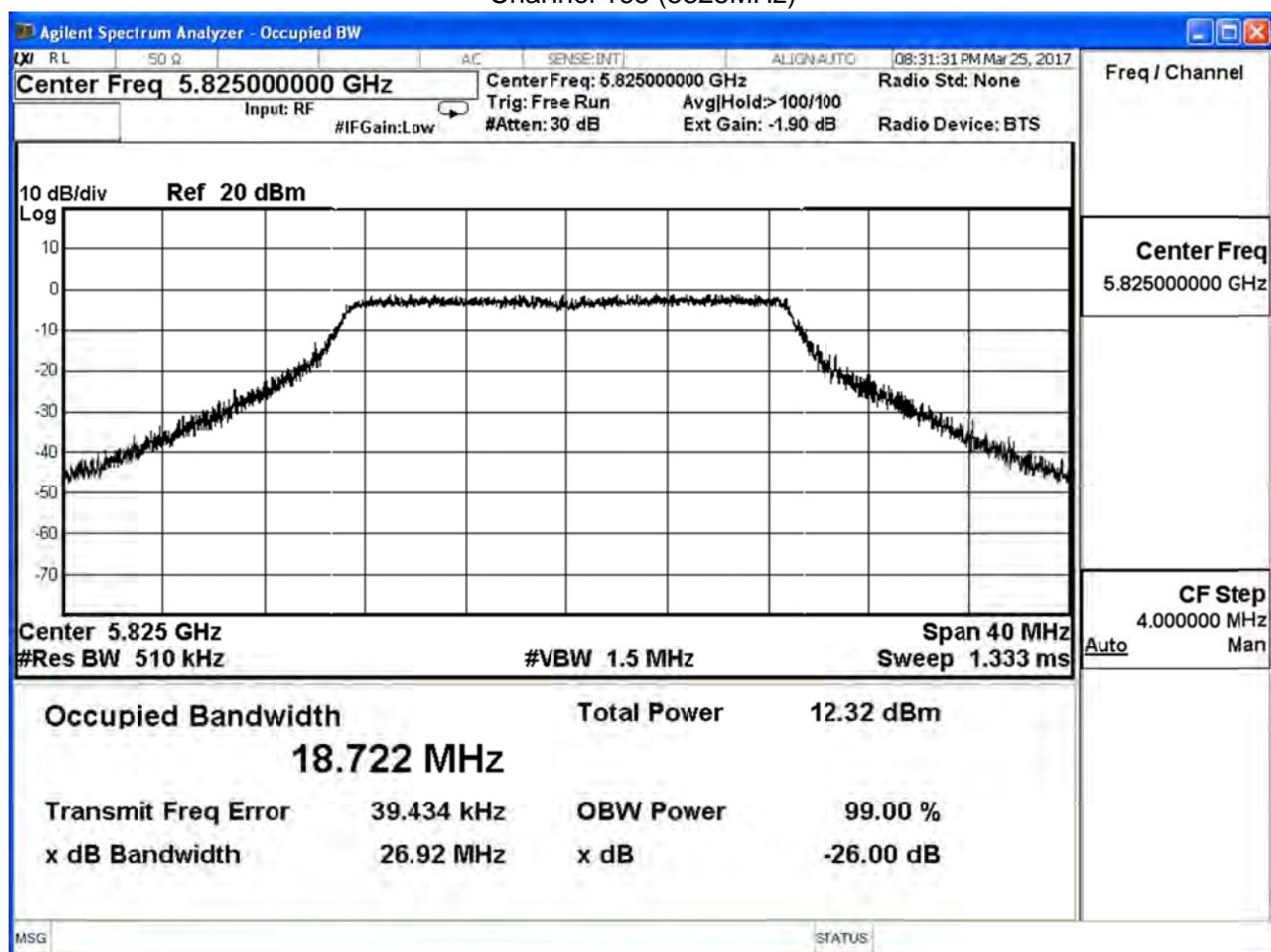
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

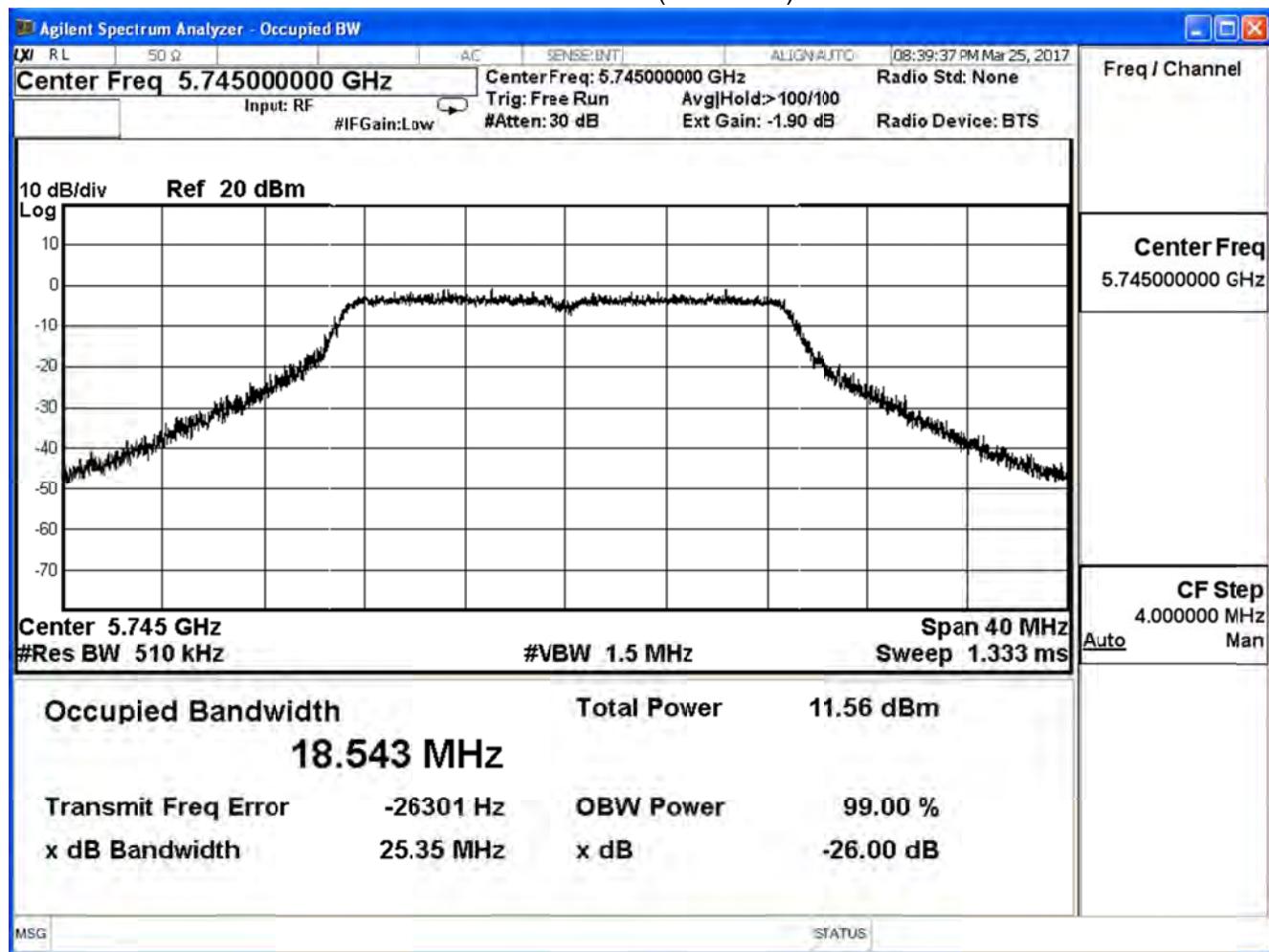


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

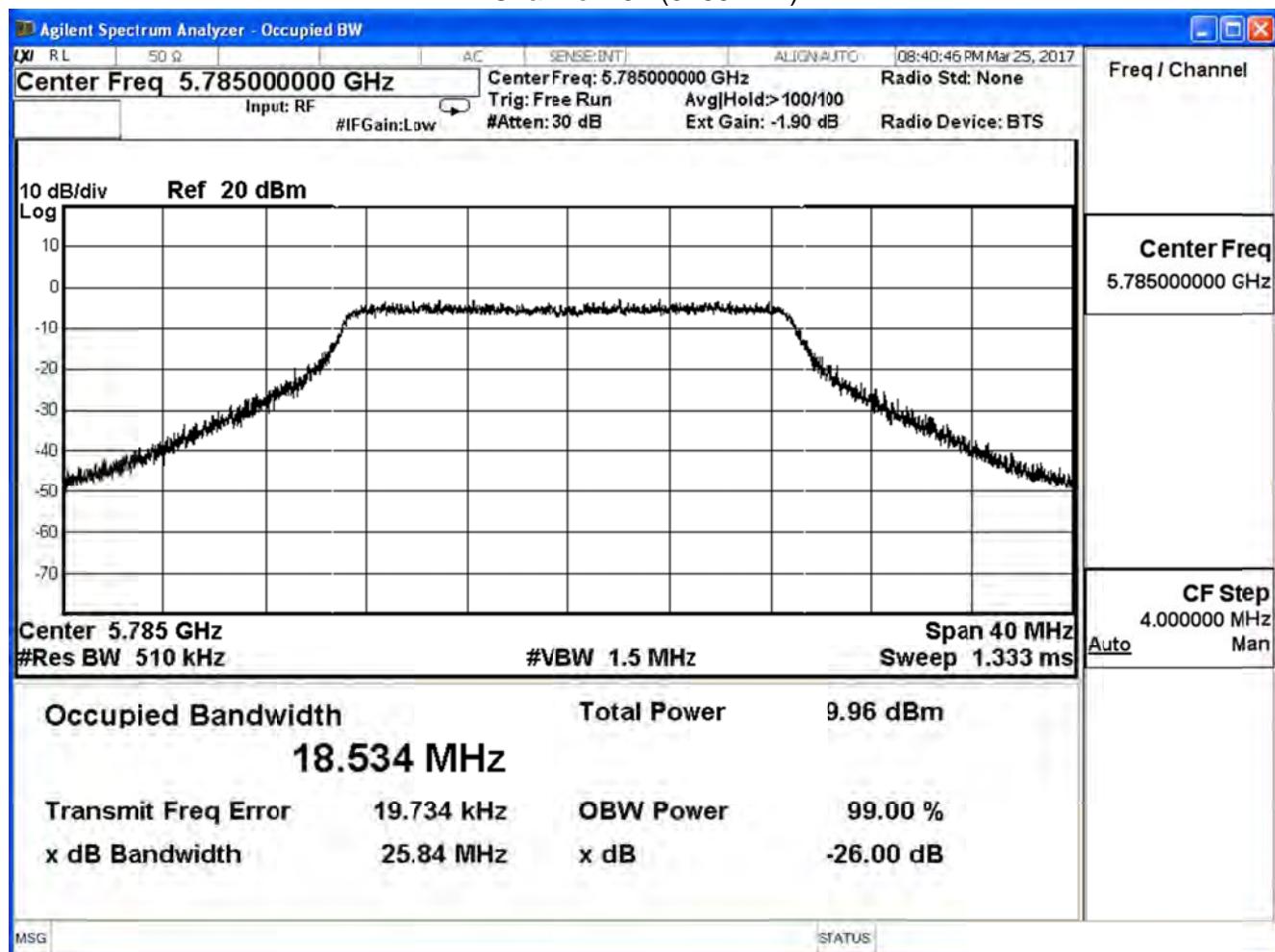
IEEE 802.11n20 (ANT 5)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
149	5745	25.35	18.543	--
157	5785	25.84	18.534	--
165	5825	25.82	18.611	--

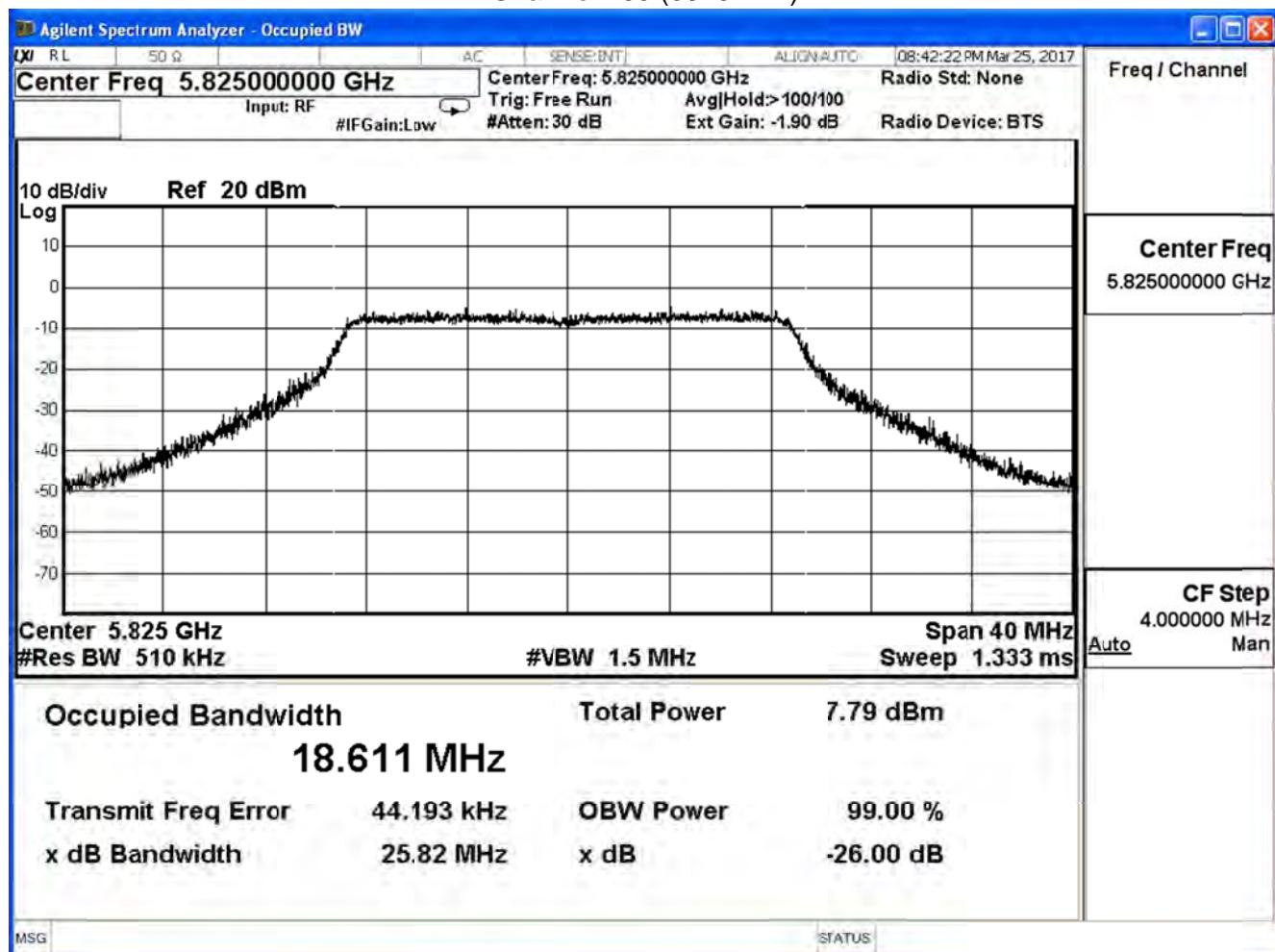
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

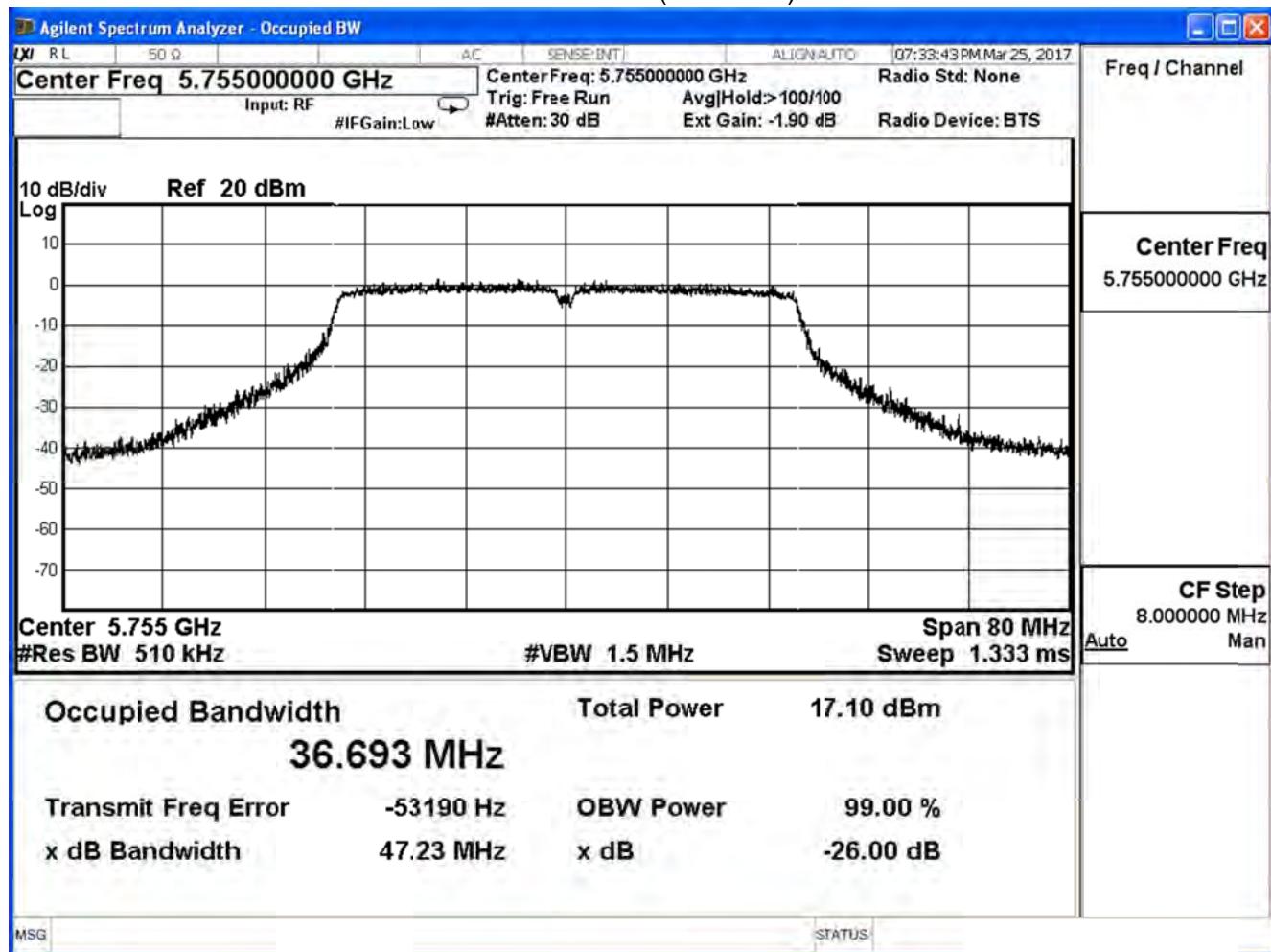


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

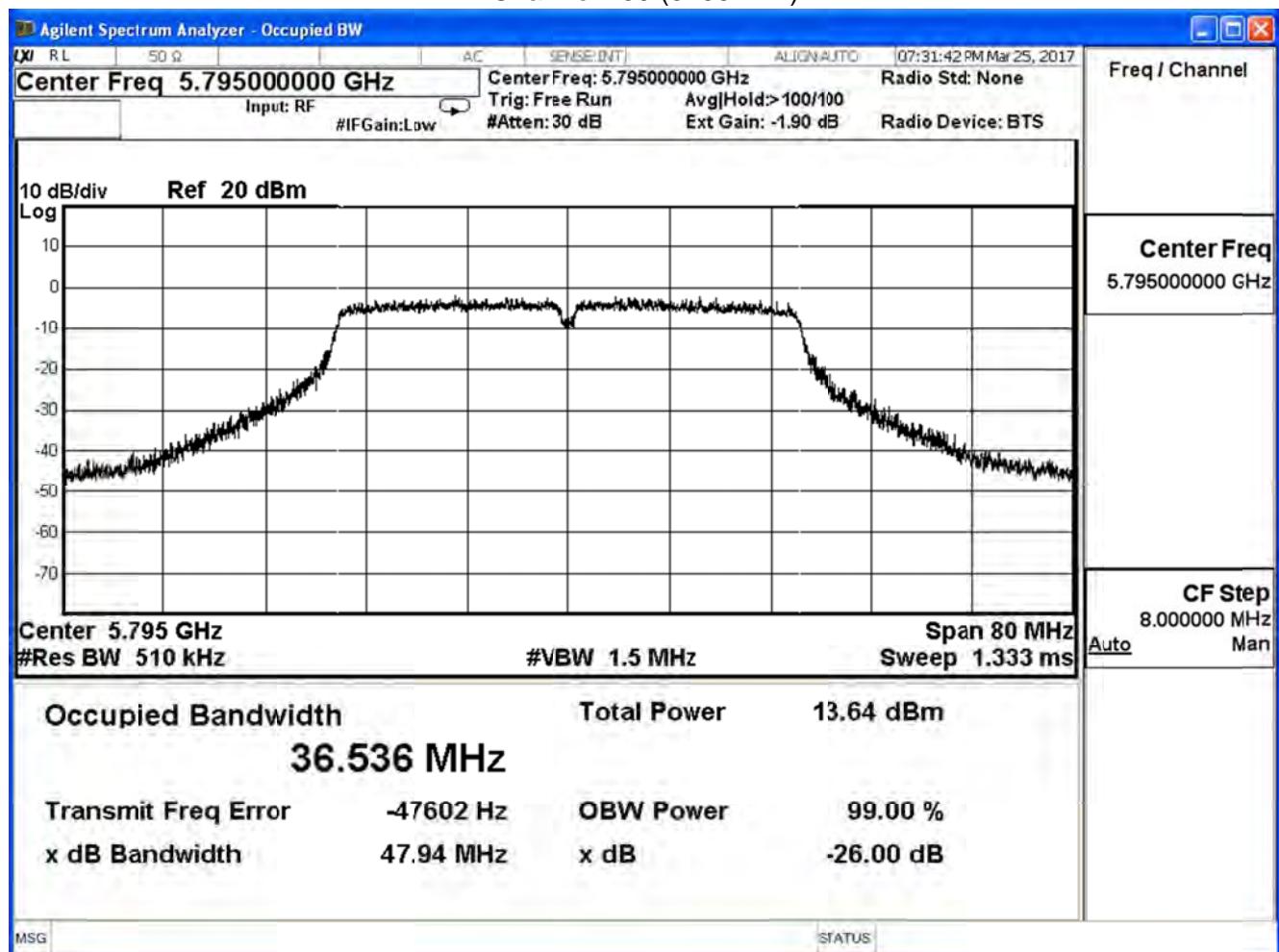
IEEE 802.11n40 (ANT 0)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
151	5755	47.23	36.693	--
159	5795	47.94	36.536	--

Channel 151 (5755MHz)



Channel 159 (5795MHz)

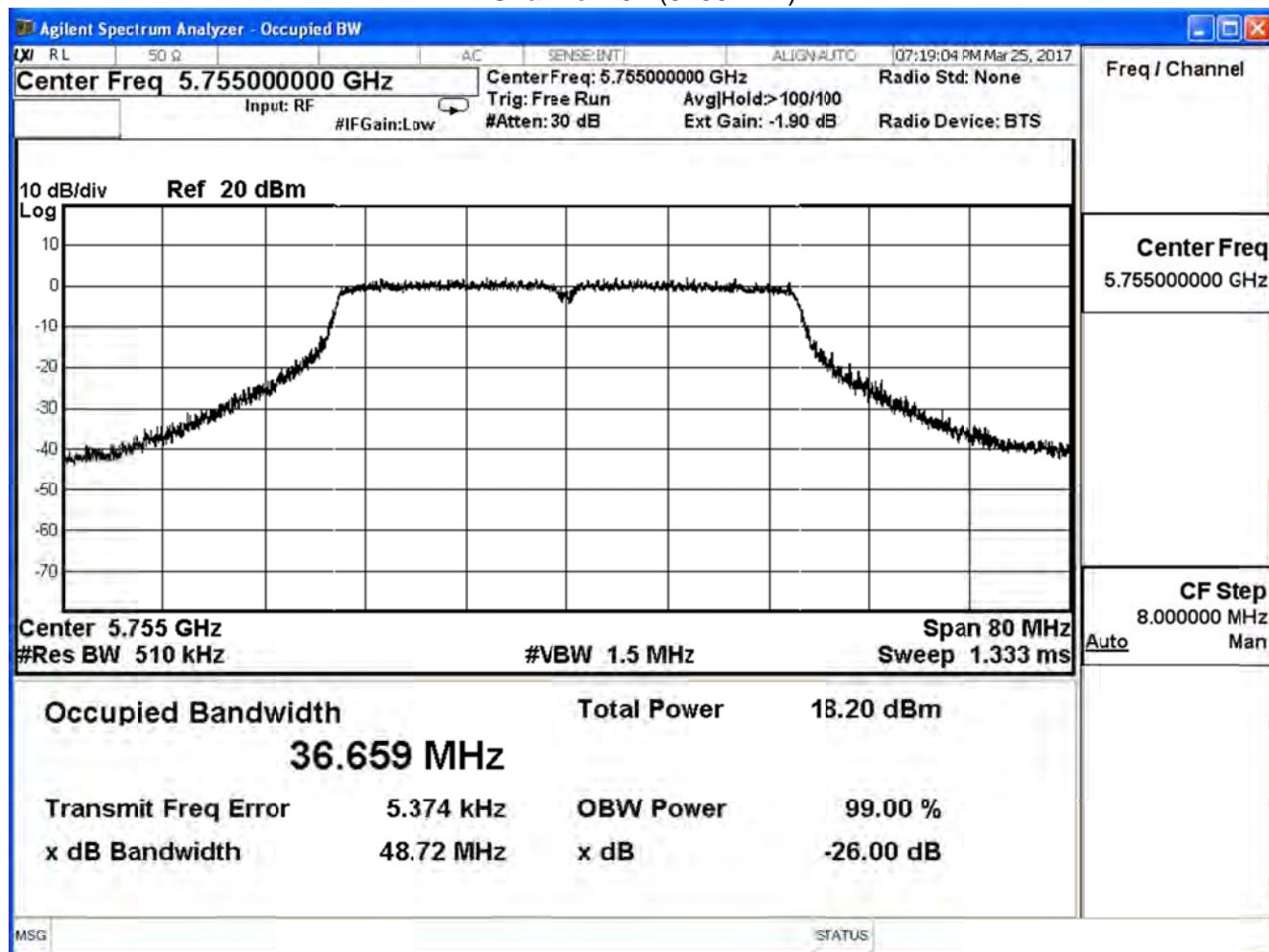


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

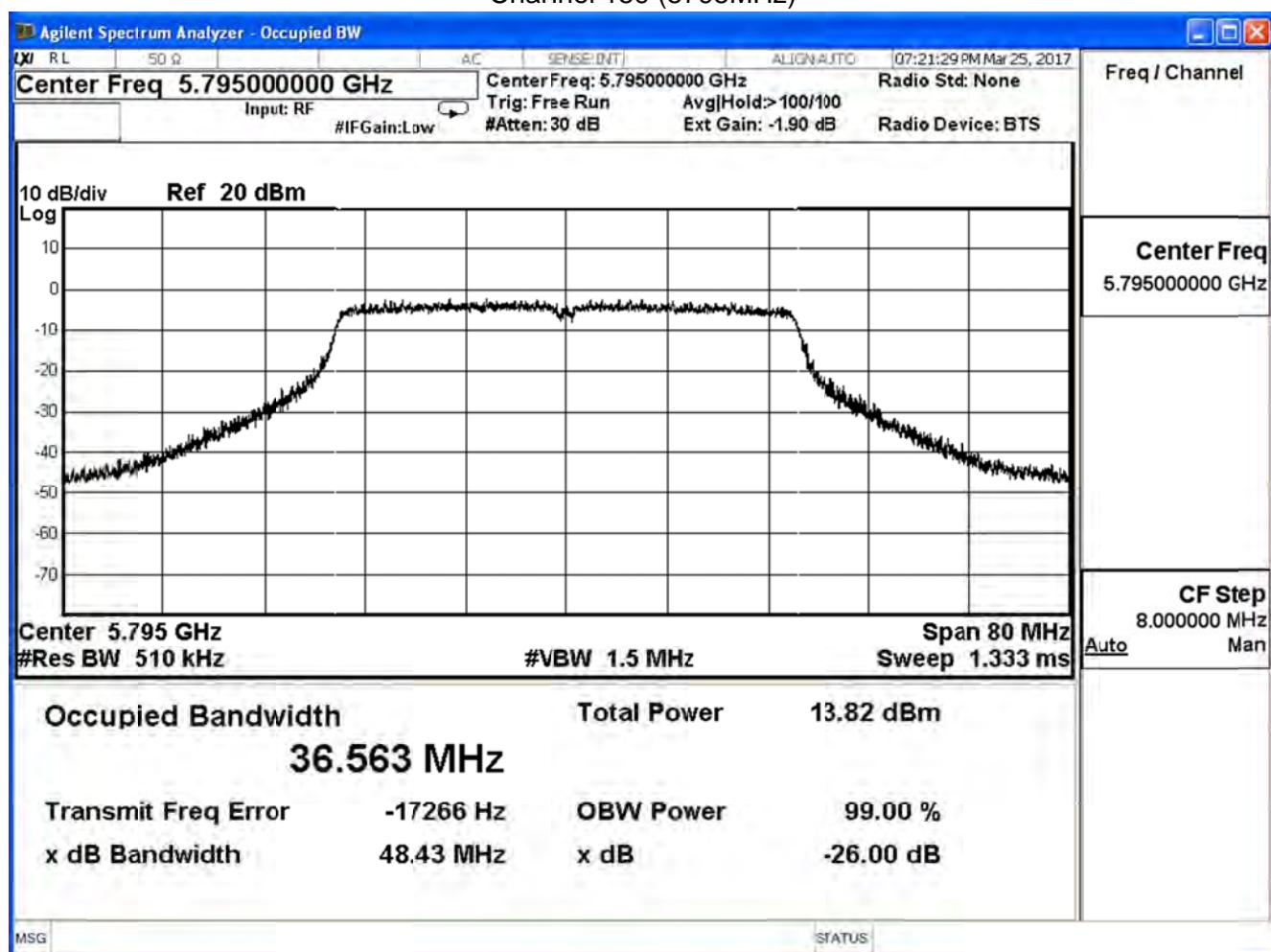
IEEE 802.11n40 (ANT 1)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
151	5755	48.72	36.659	--
159	5795	48.43	36.563	--

Channel 151 (5755MHz)



Channel 159 (5795MHz)

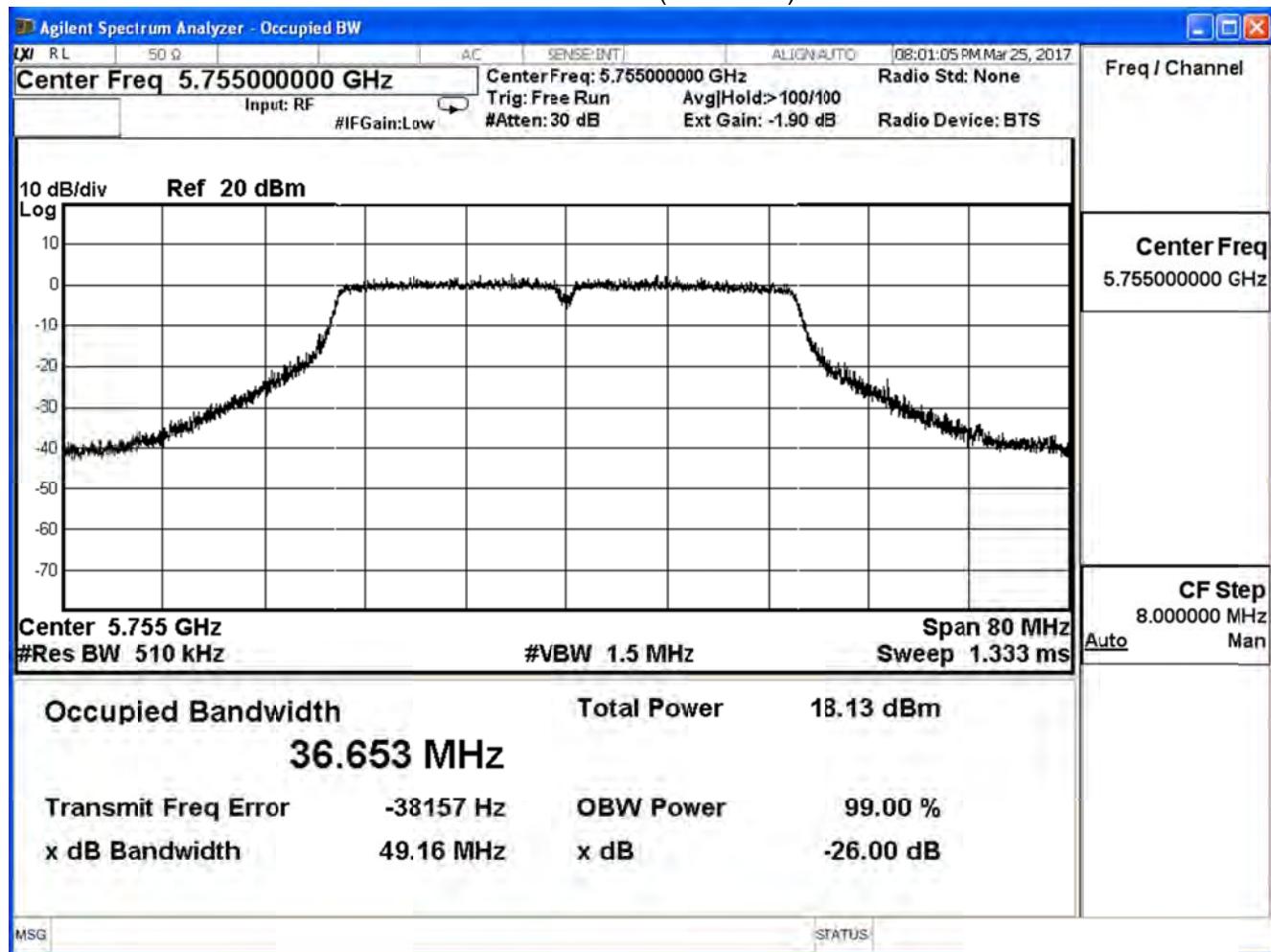


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

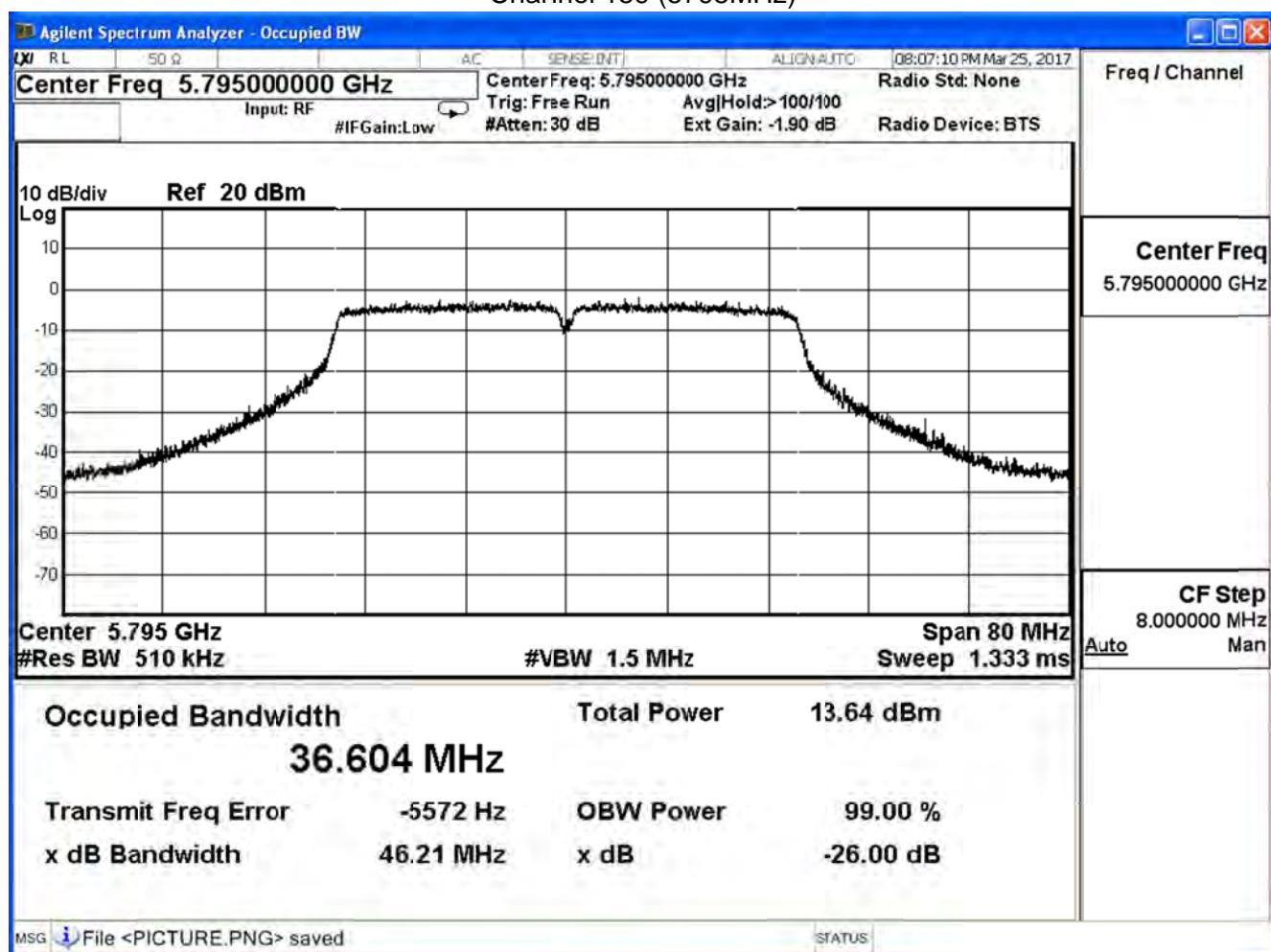
IEEE 802.11n40 (ANT 2)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
151	5755	49.16	36.653	--
159	5795	46.21	36.604	--

Channel 151 (5755MHz)



Channel 159 (5795MHz)

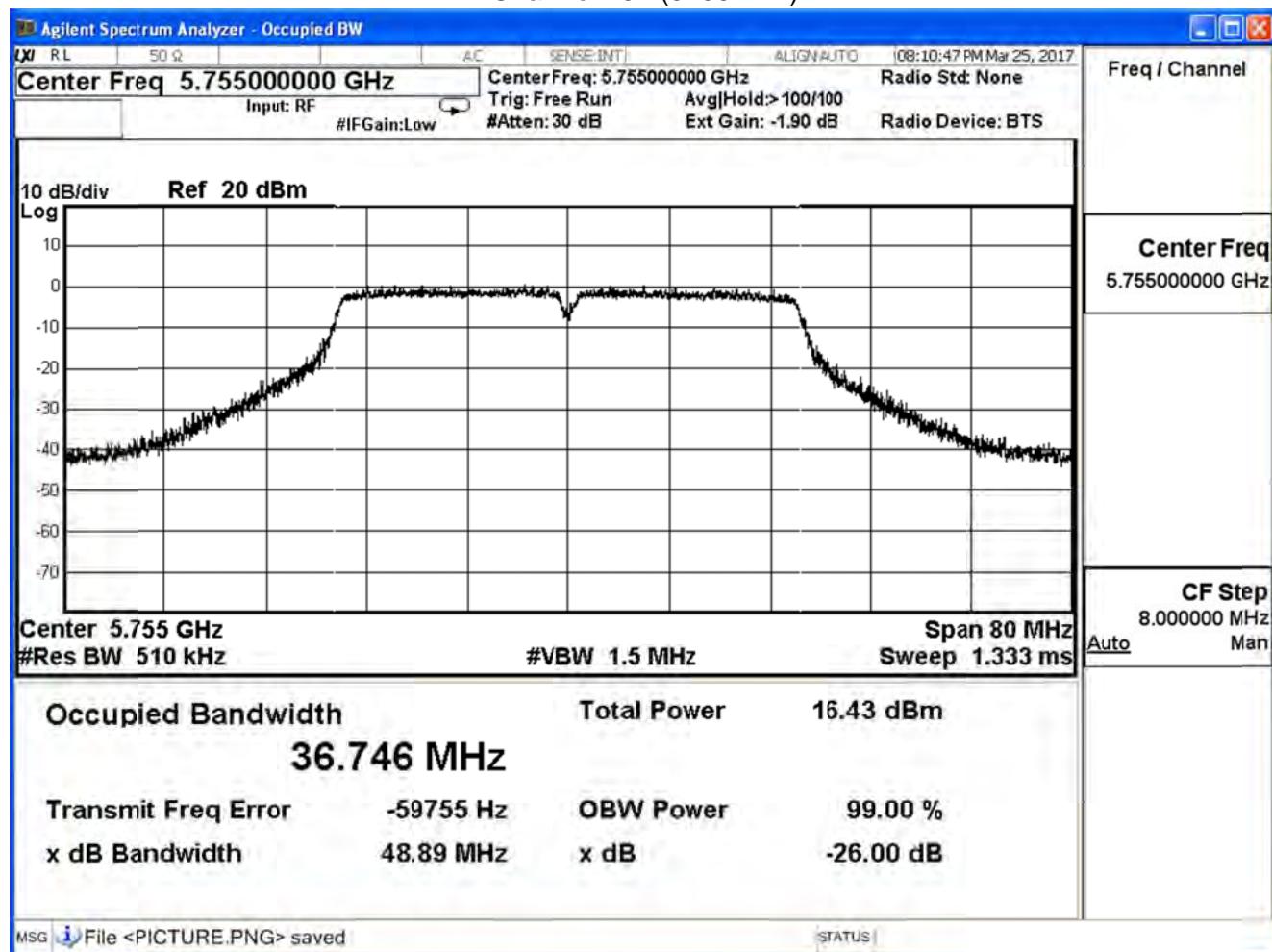


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

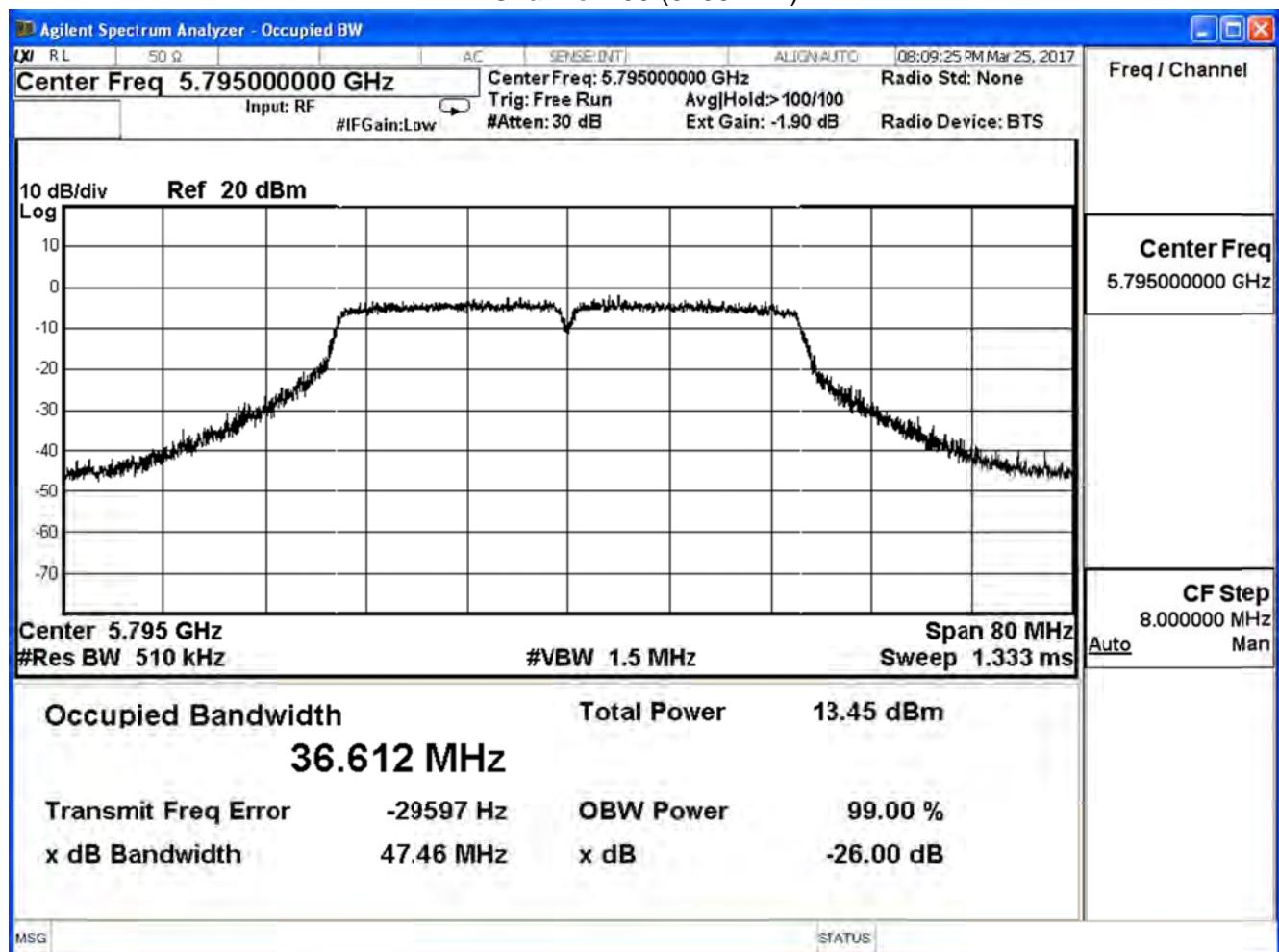
IEEE 802.11n40 (ANT 3)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
151	5755	48.89	36.746	--
159	5795	47.46	36.612	--

Channel 151 (5755MHz)



Channel 159 (5795MHz)

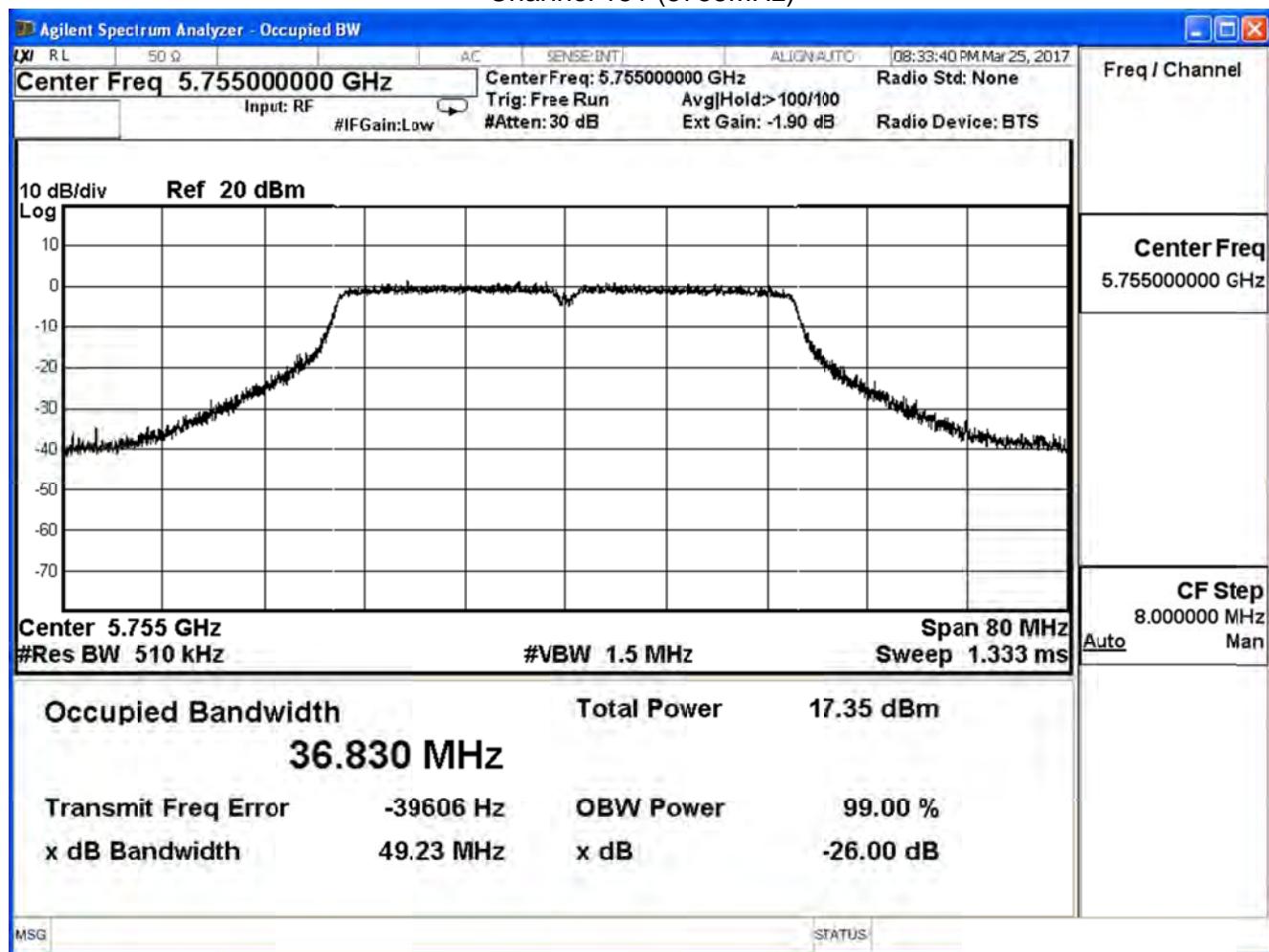


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

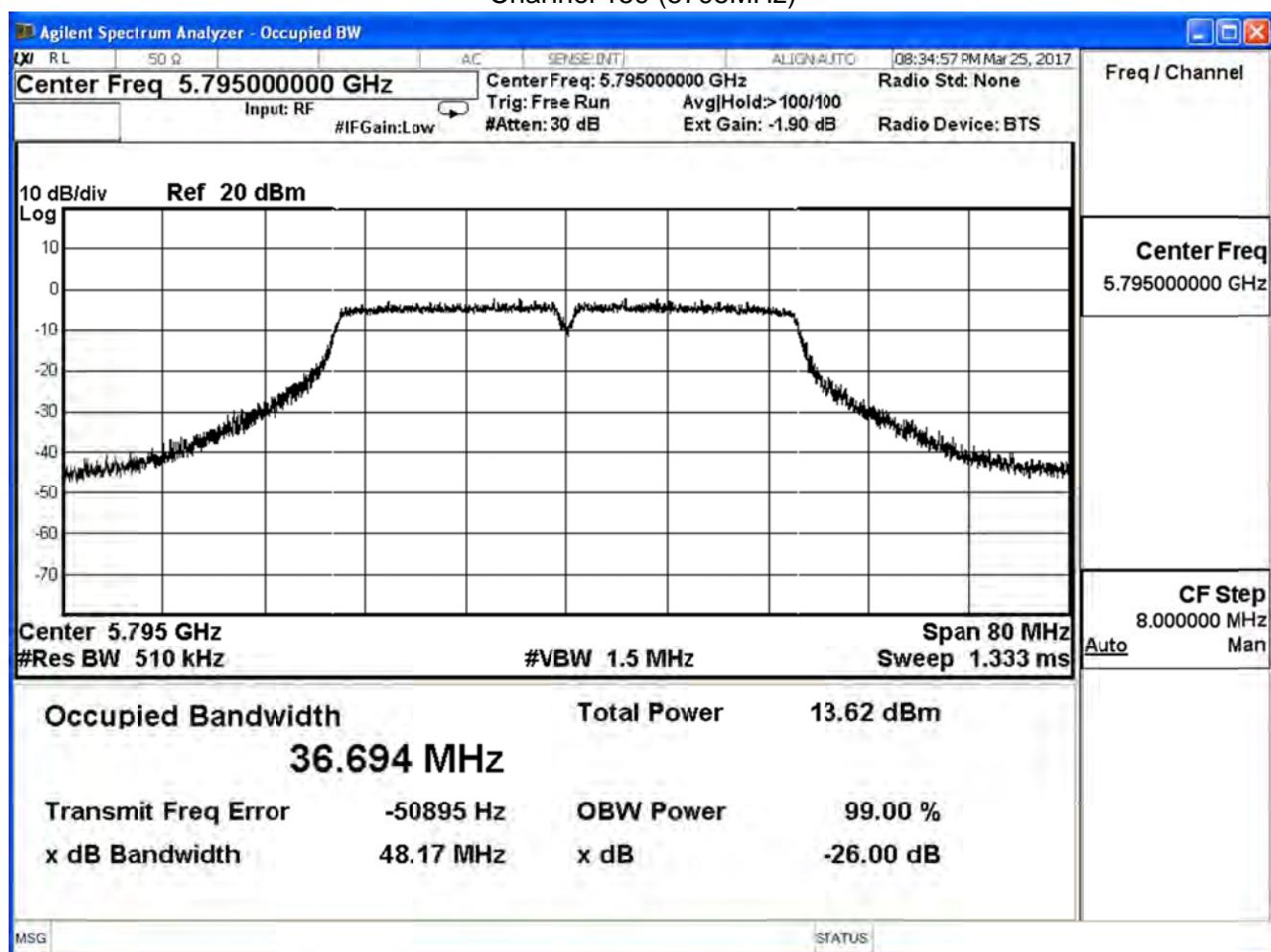
IEEE 802.11n40 (ANT 4)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
151	5755	49.23	36.830	--
159	5795	48.17	36.694	--

Channel 151 (5755MHz)



Channel 159 (5795MHz)

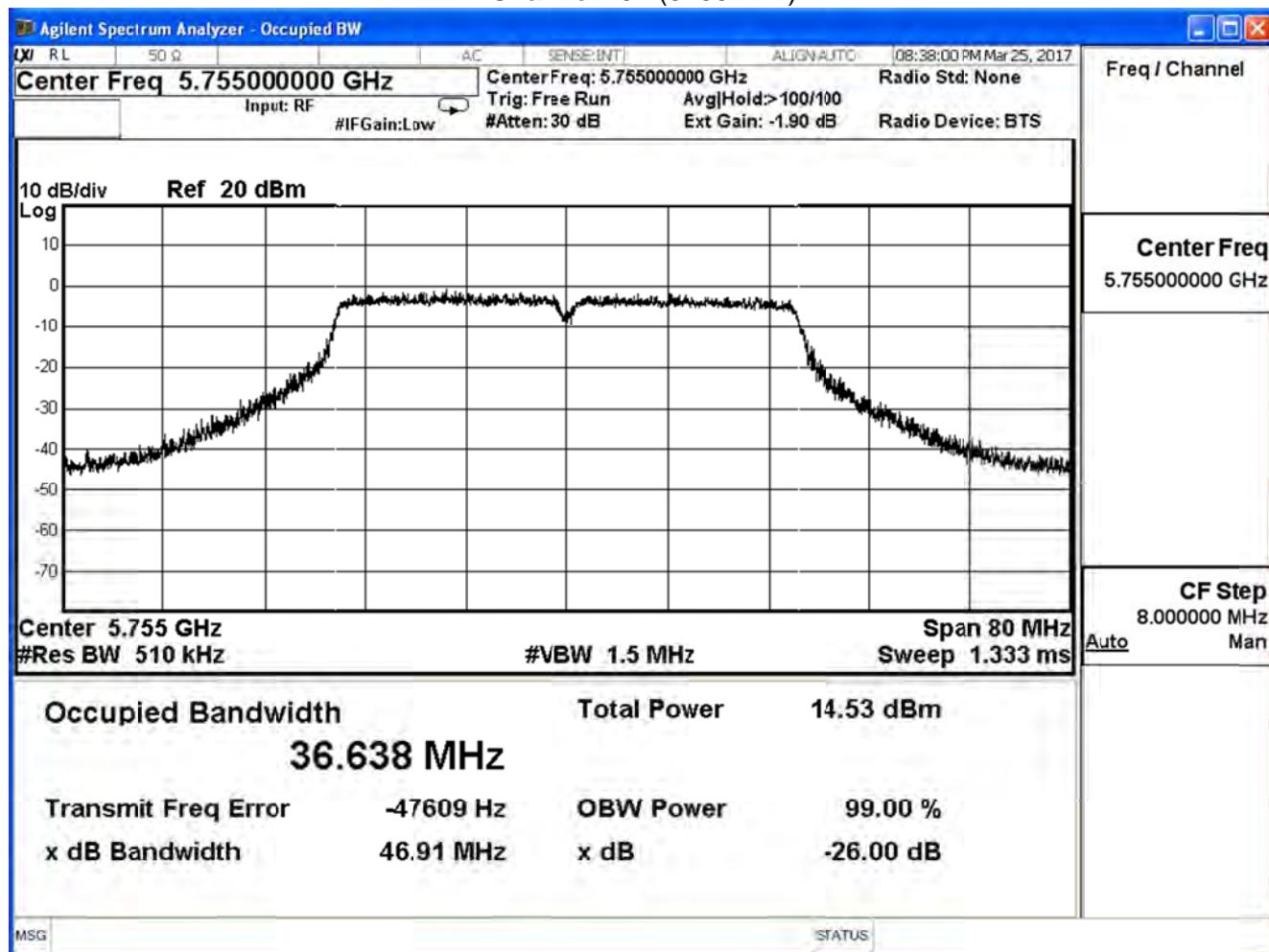


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

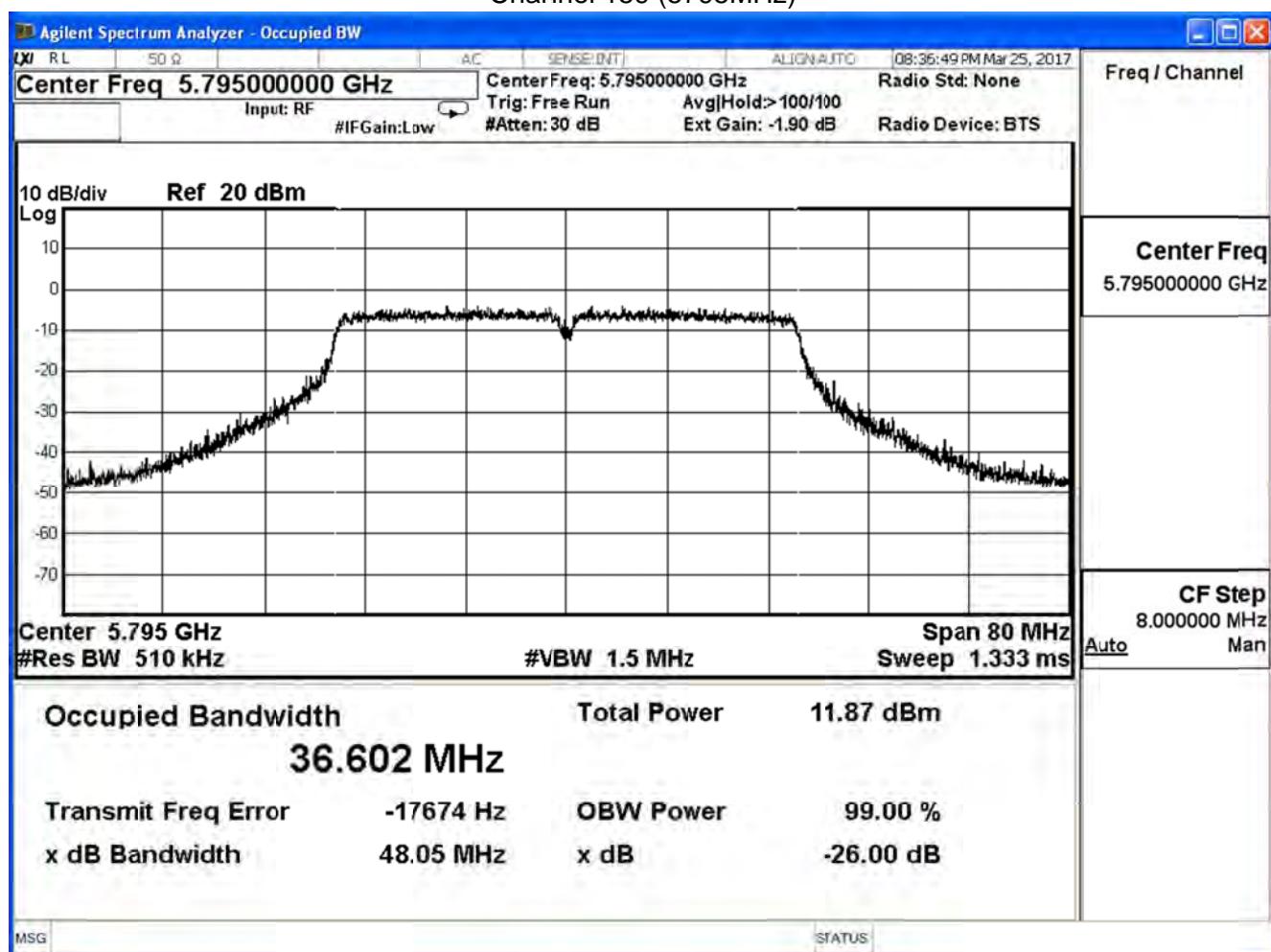
IEEE 802.11n40 (ANT 5)

Channel No.	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
		26dB	99%	
151	5755	46.91	36.638	--
159	5795	48.05	36.602	--

Channel 151 (5755MHz)



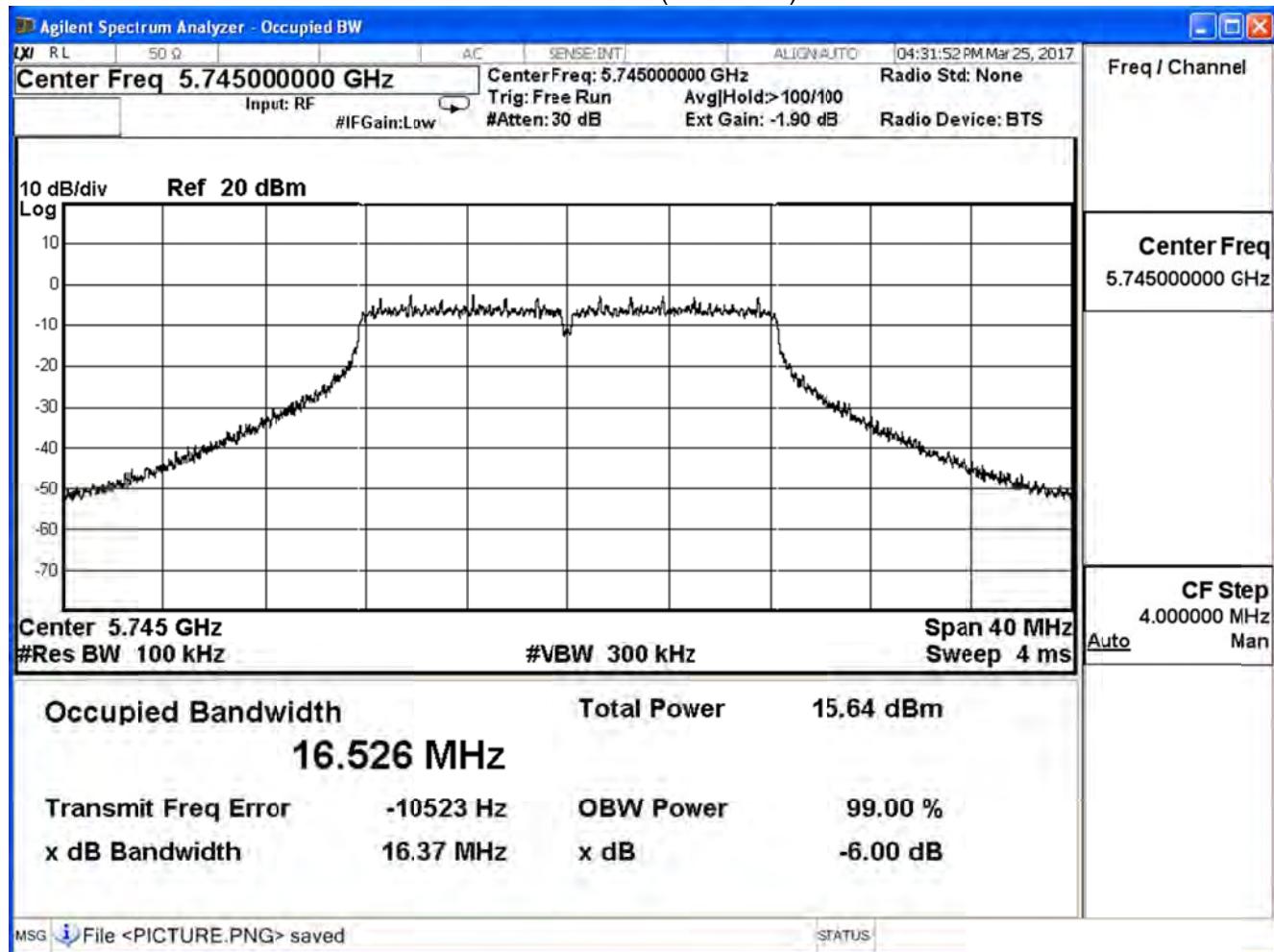
Channel 159 (5795MHz)



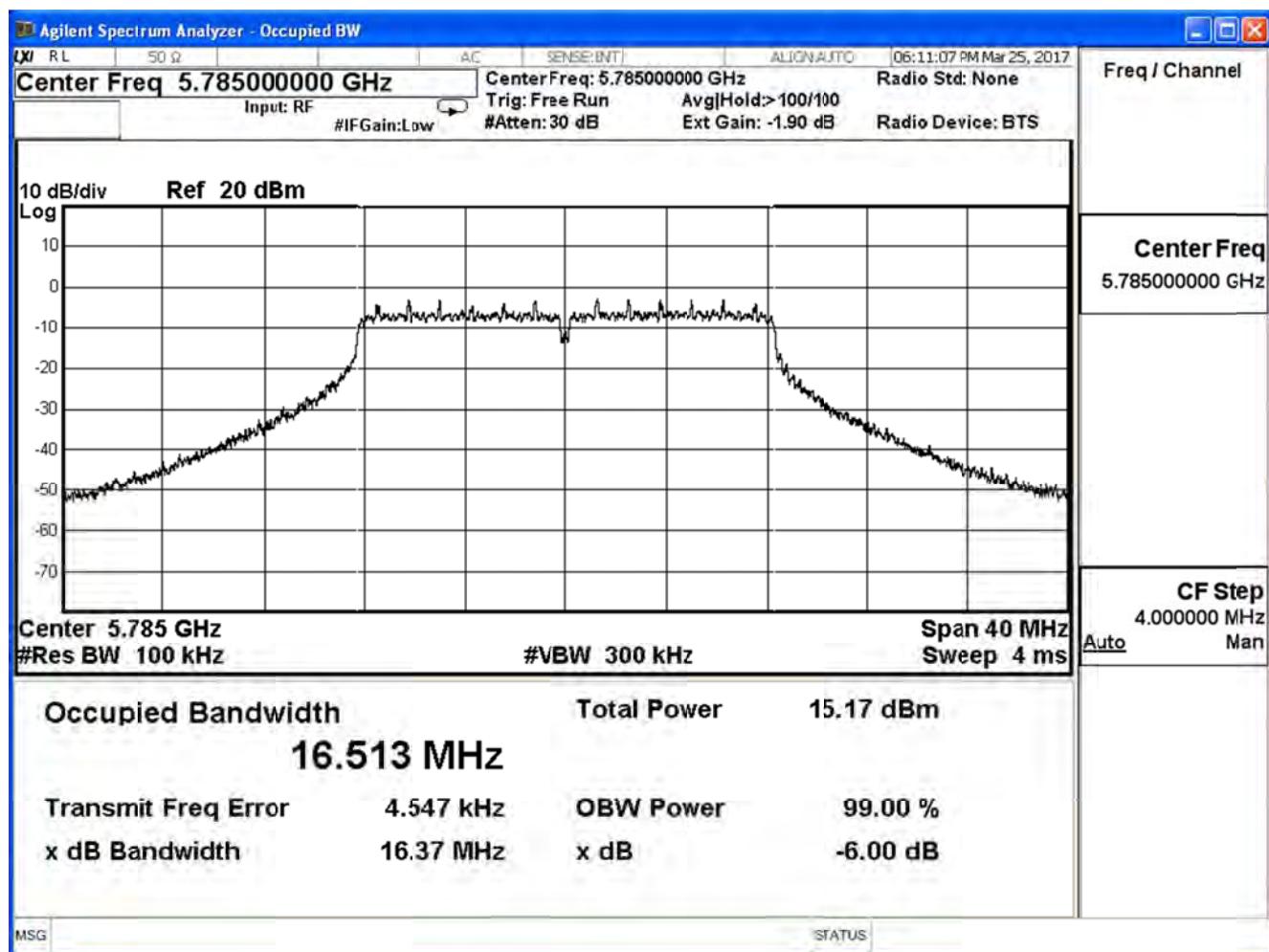
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11a (ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
149	5745	16.37	>0.5	Pass
157	5785	16.37	>0.5	Pass
165	5825	16.35	>0.5	Pass

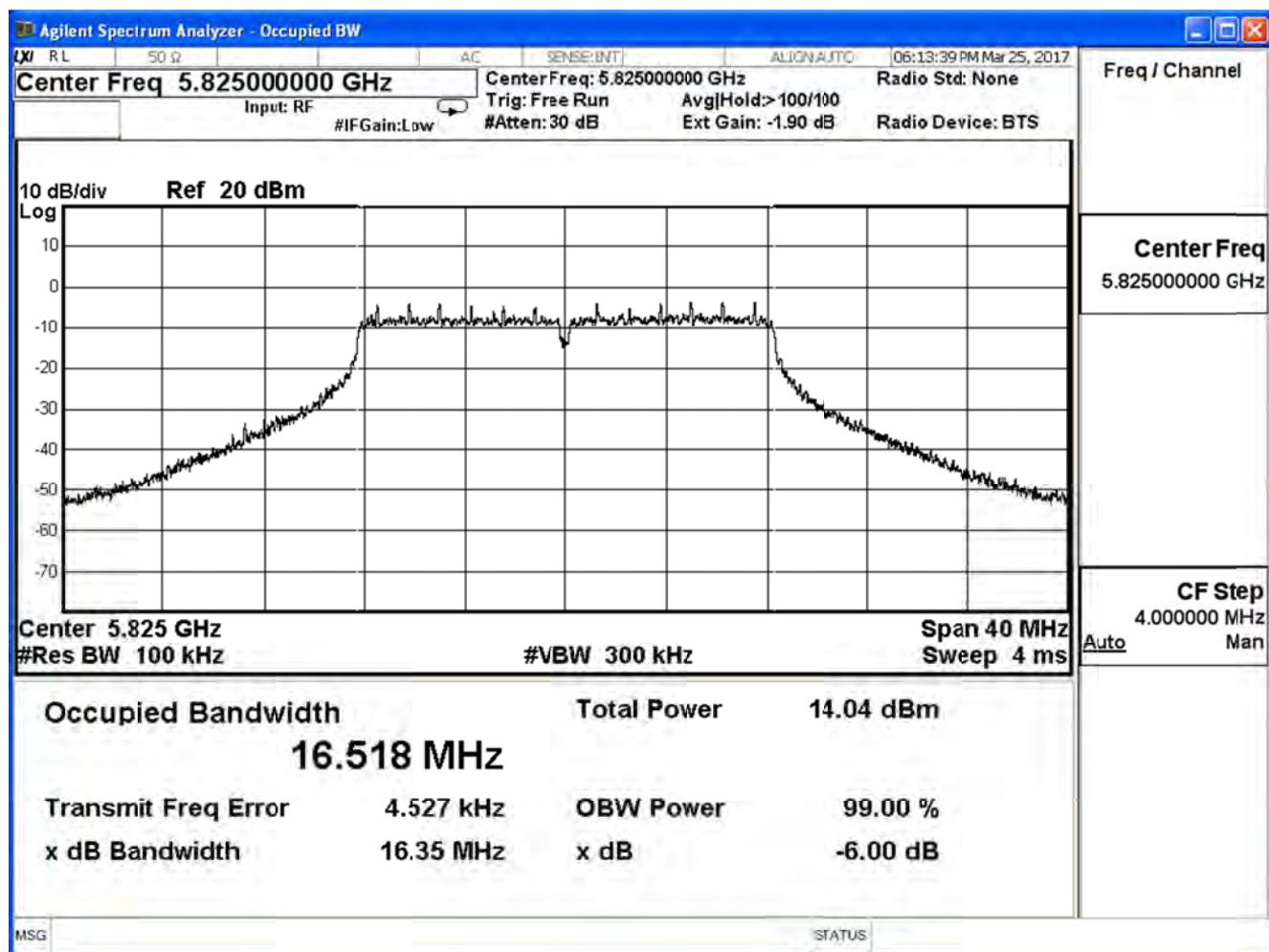
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

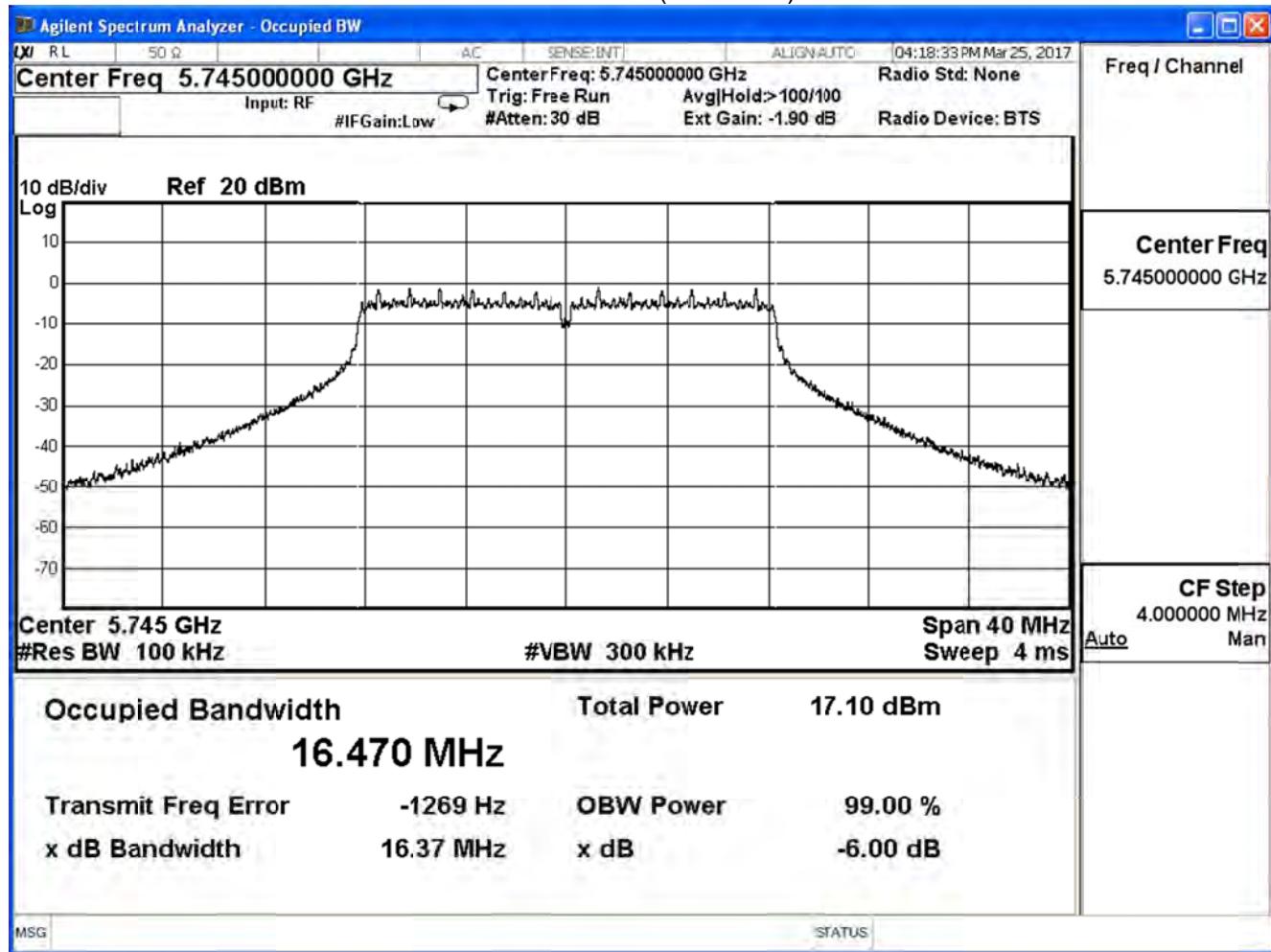


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

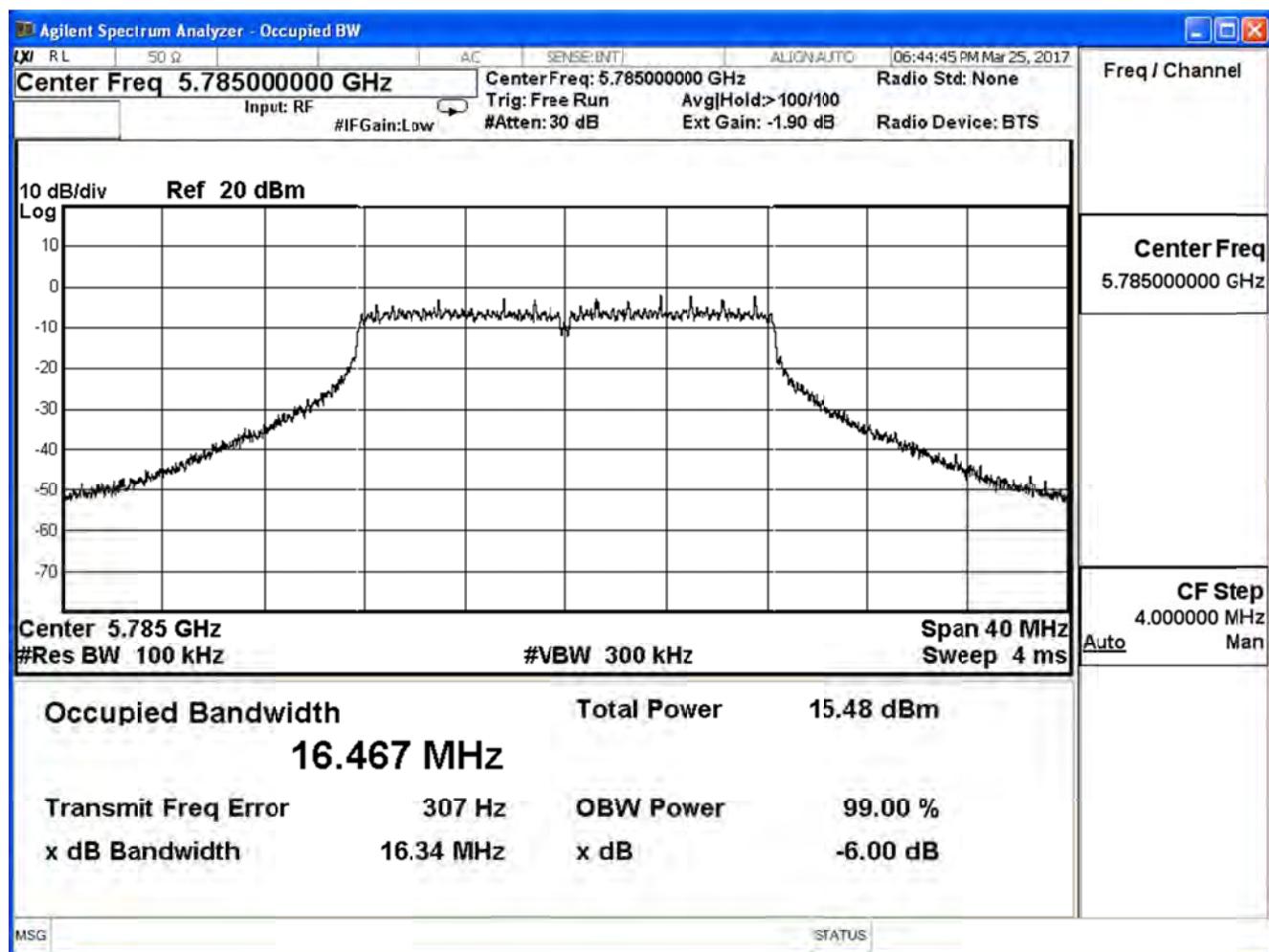
IEEE 802.11a (ANT 1)

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
149	5745	16.37	>0.5	Pass
157	5785	16.34	>0.5	Pass
165	5825	16.39	>0.5	Pass

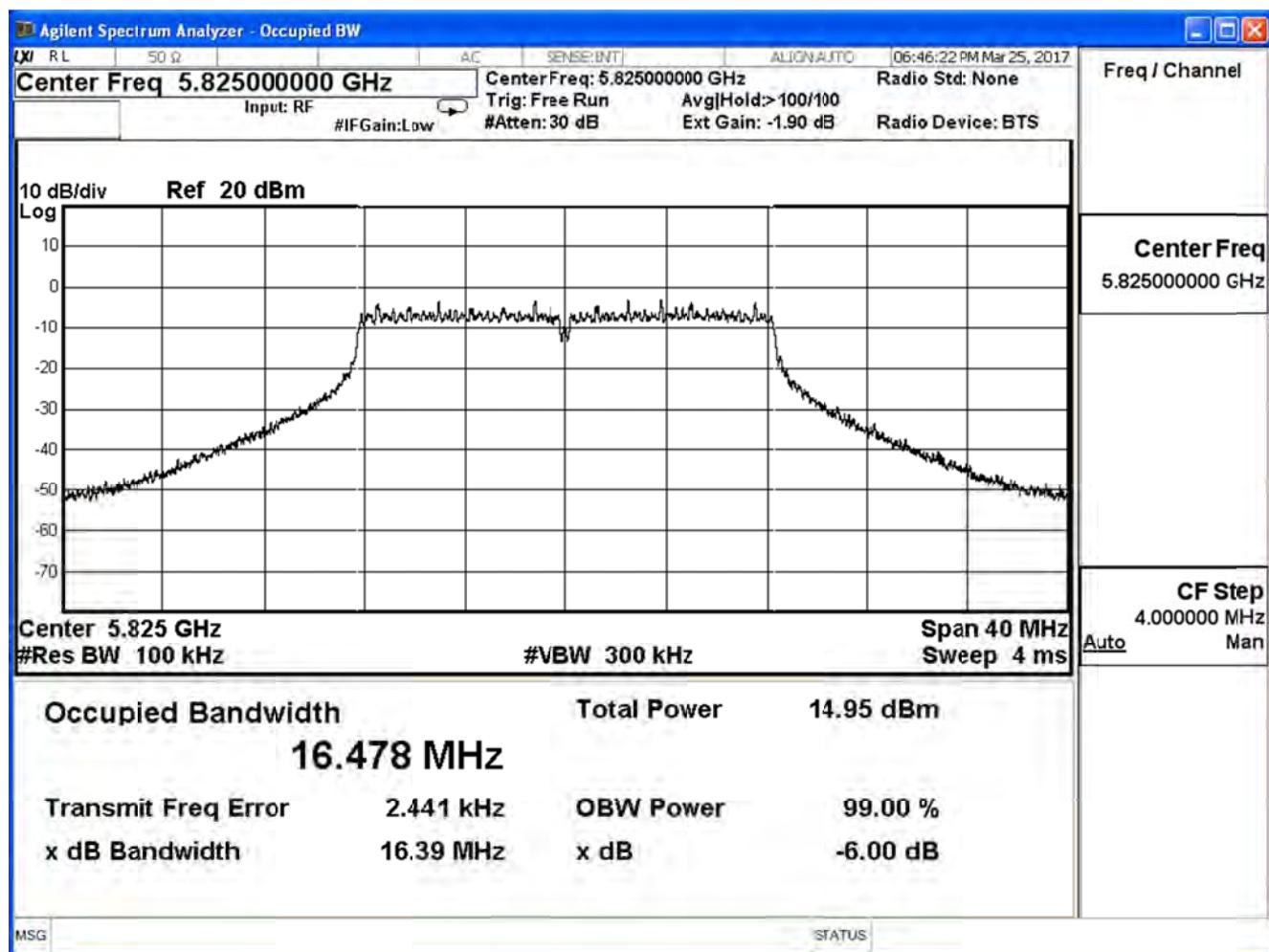
Channel 149 (5745MHz)



Channel 157 (5785MHz)



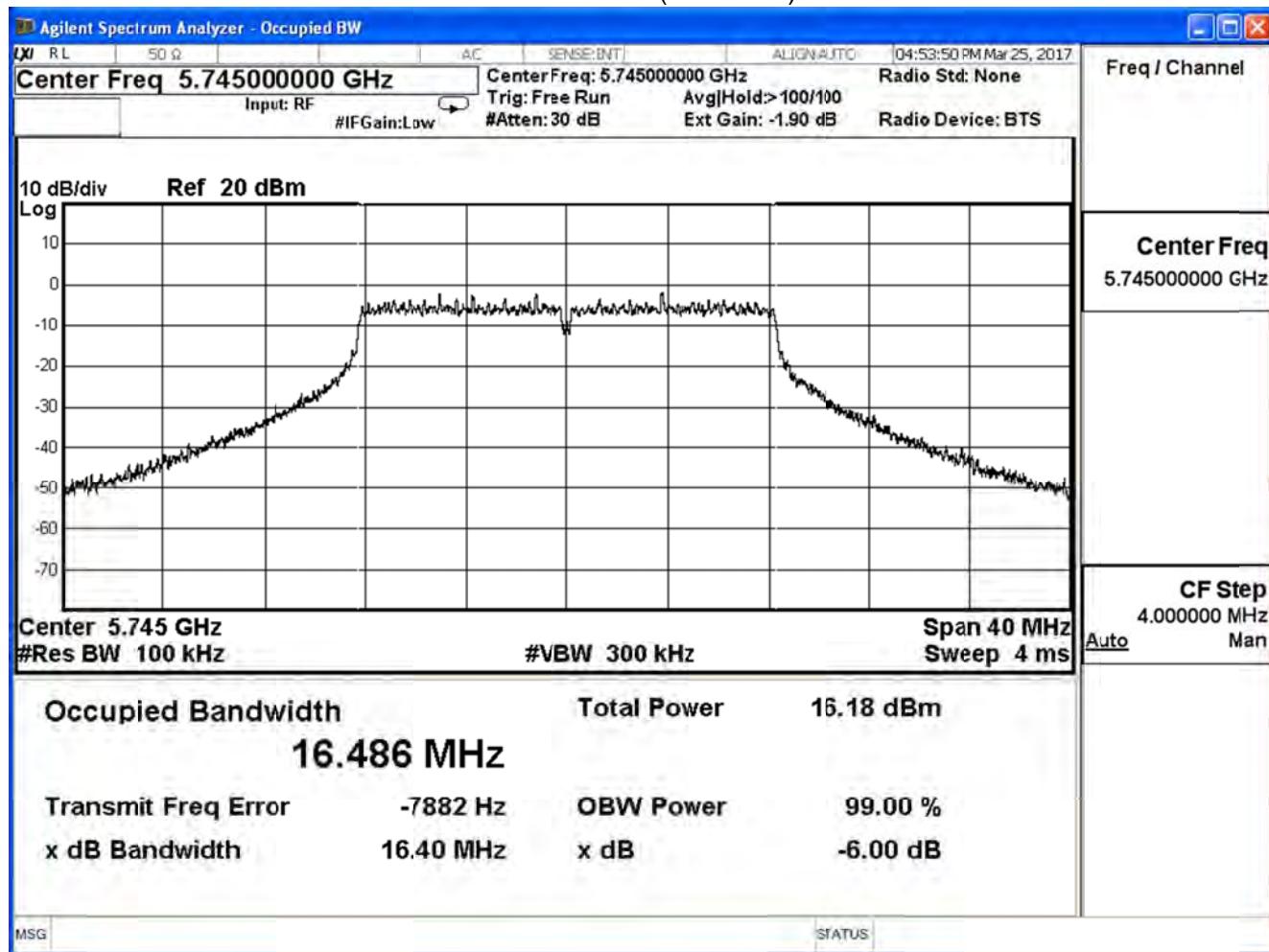
Channel 165 (5825MHz)



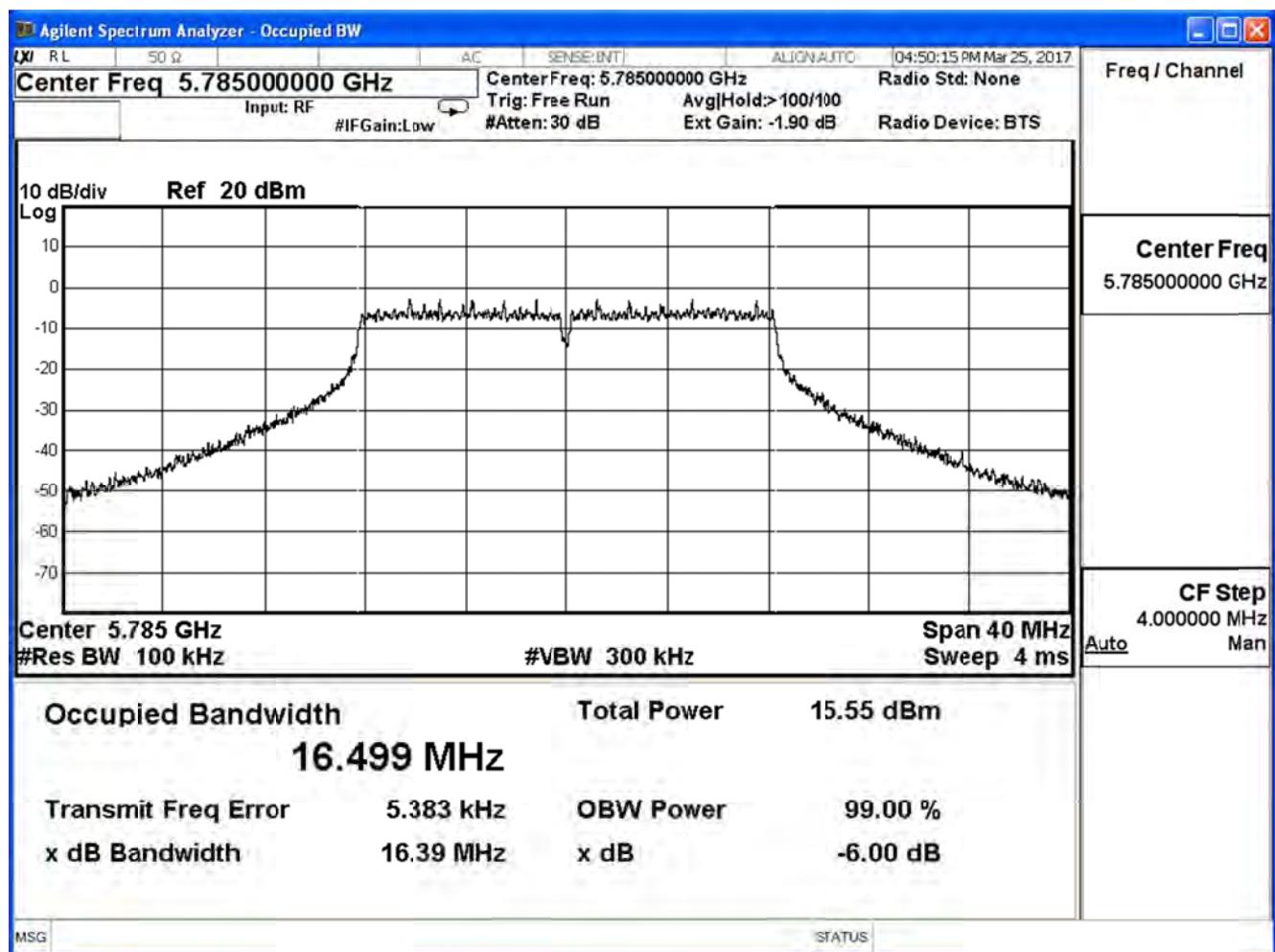
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11a (ANT 2)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
149	5745	16.40	>0.5	Pass
157	5785	16.39	>0.5	Pass
165	5825	16.36	>0.5	Pass

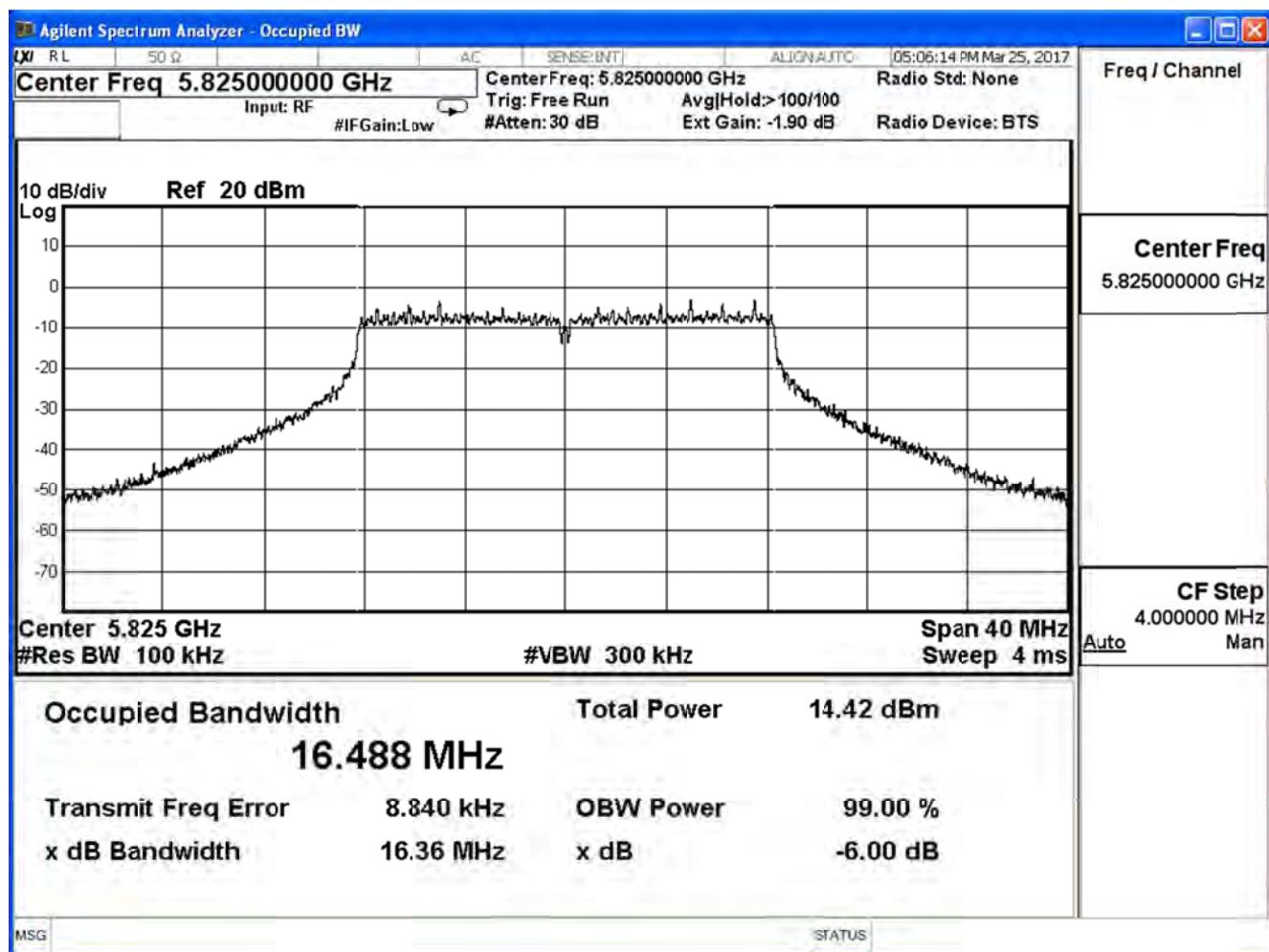
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

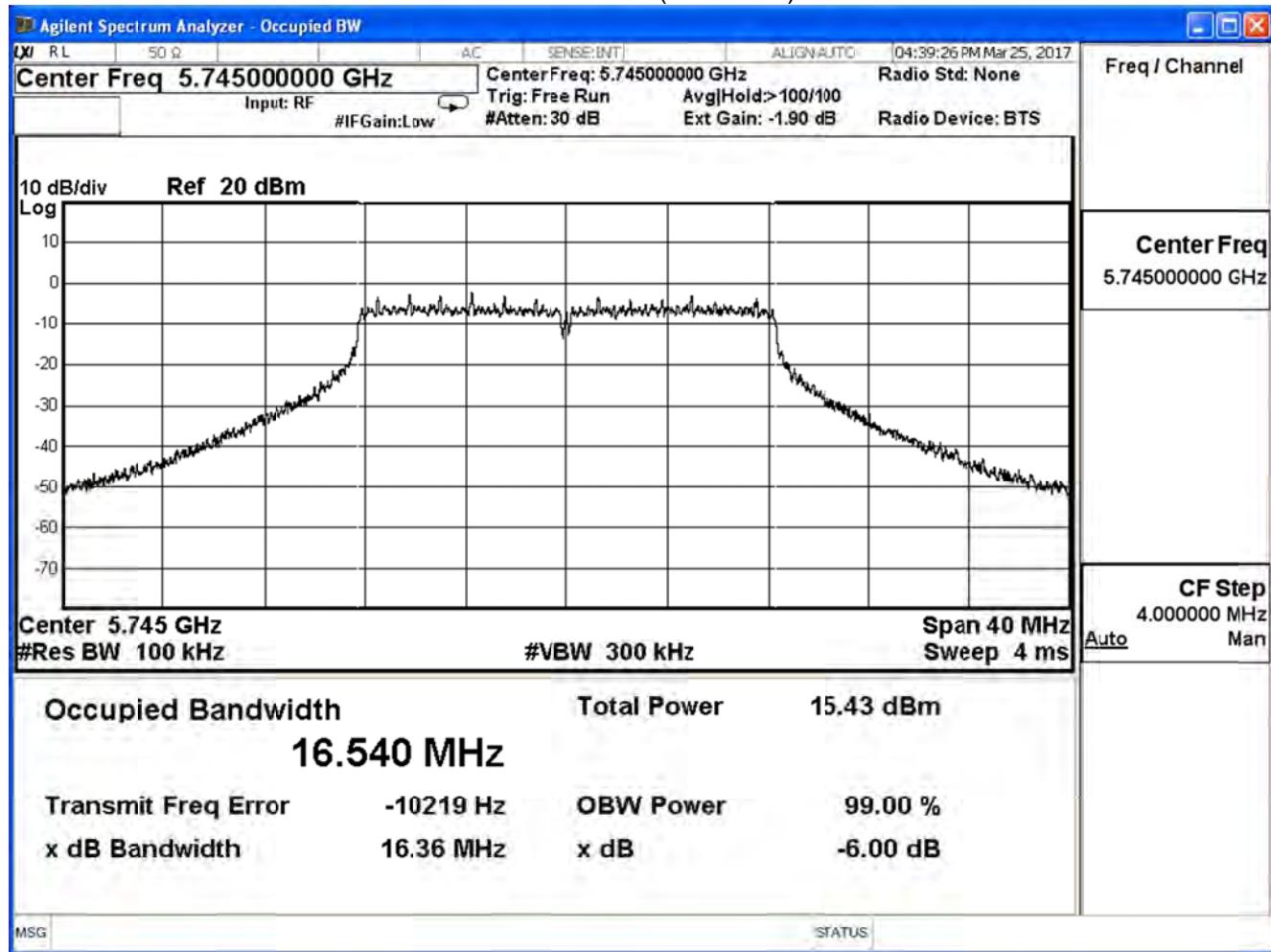


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

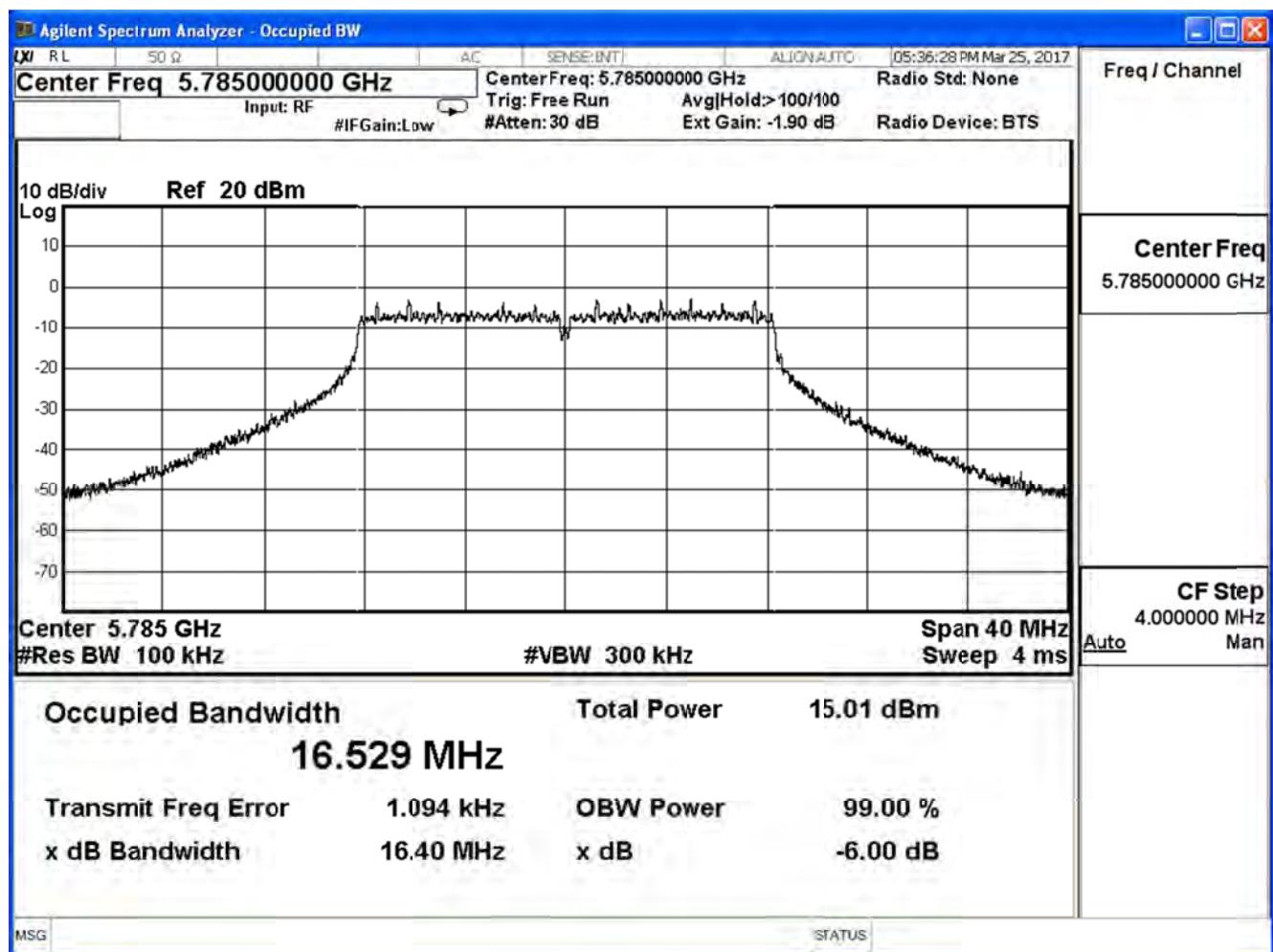
IEEE 802.11a (ANT 3)

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
149	5745	16.36	>0.5	Pass
157	5785	16.40	>0.5	Pass
165	5825	16.36	>0.5	Pass

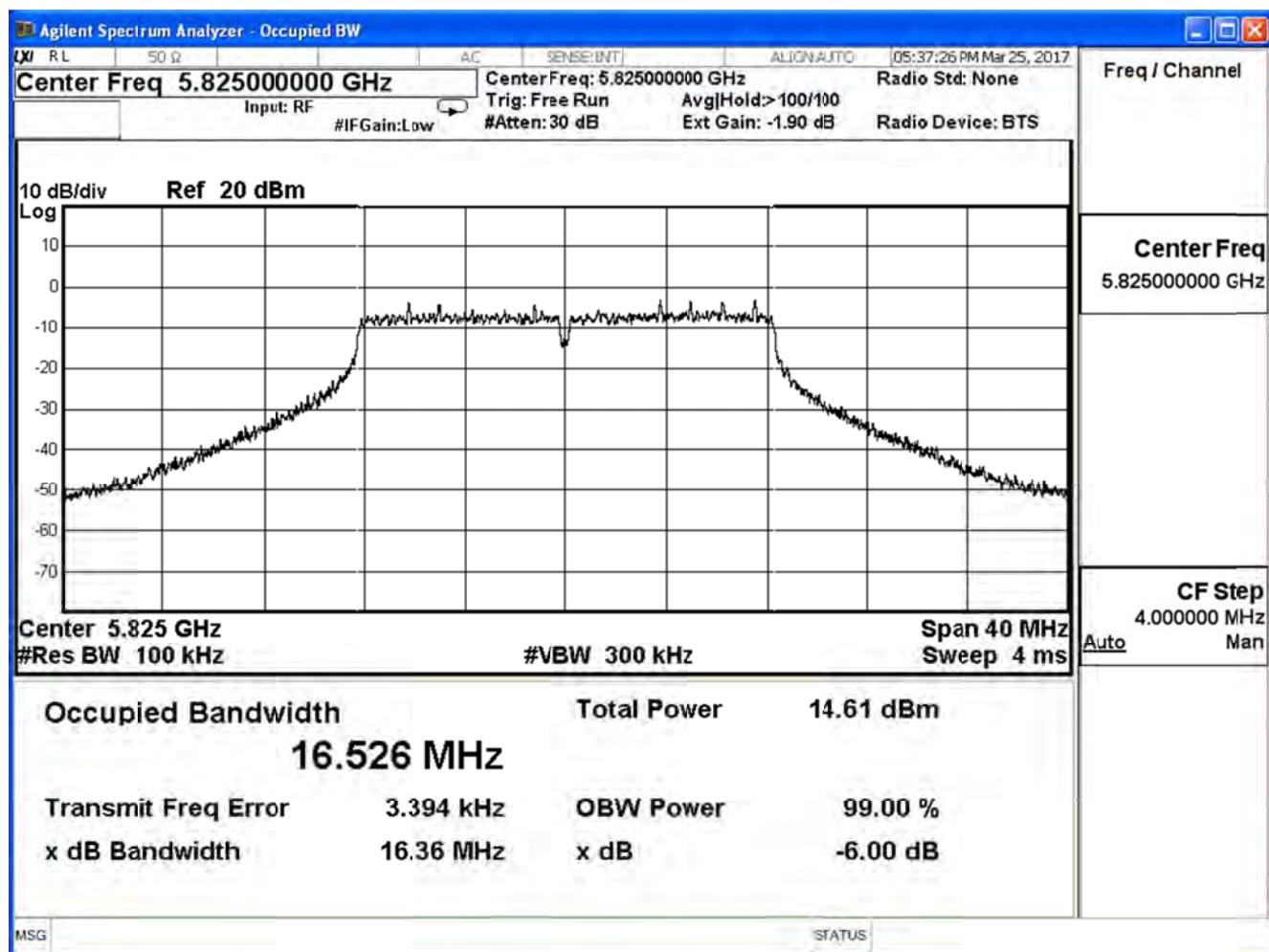
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

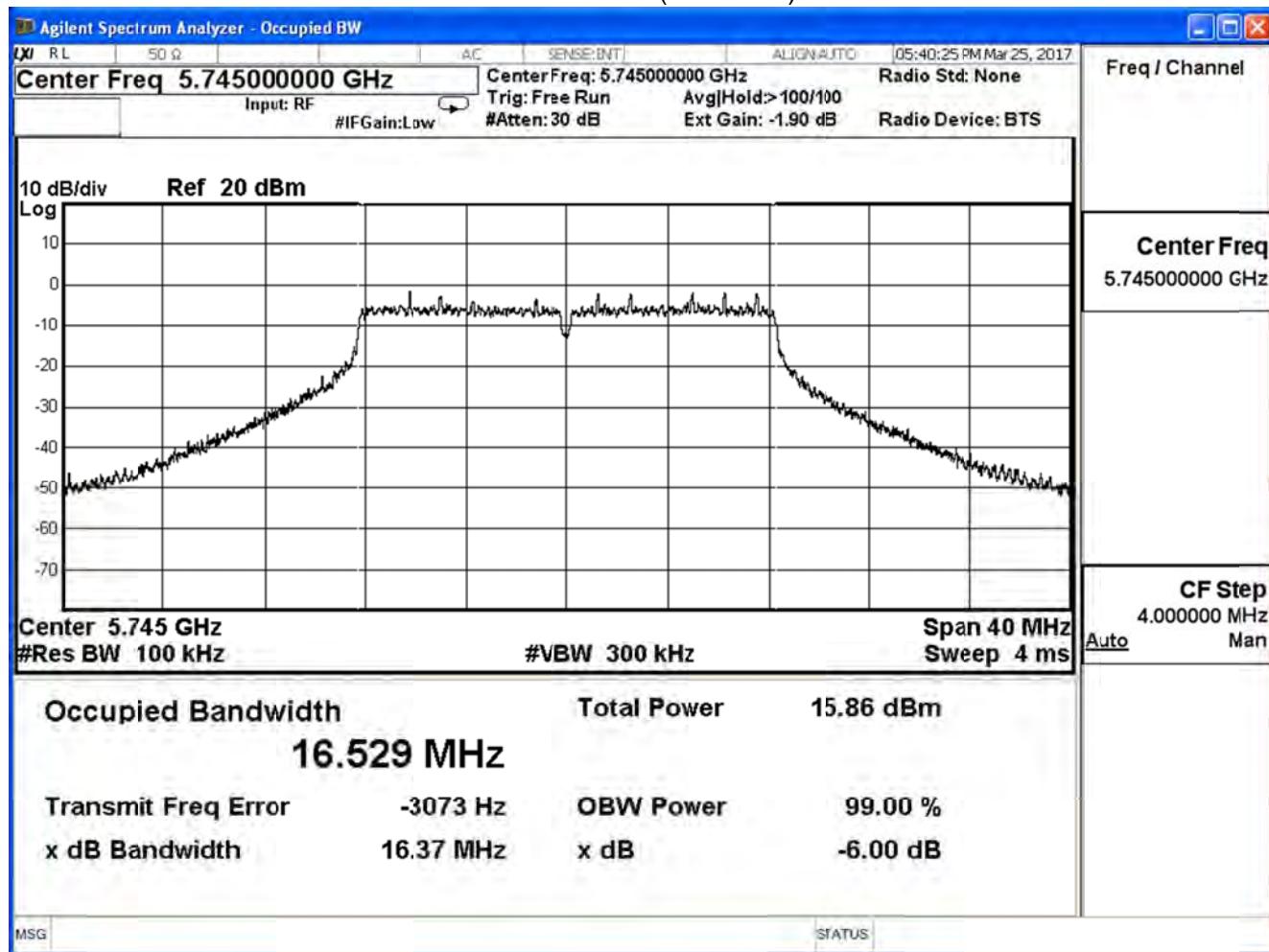


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

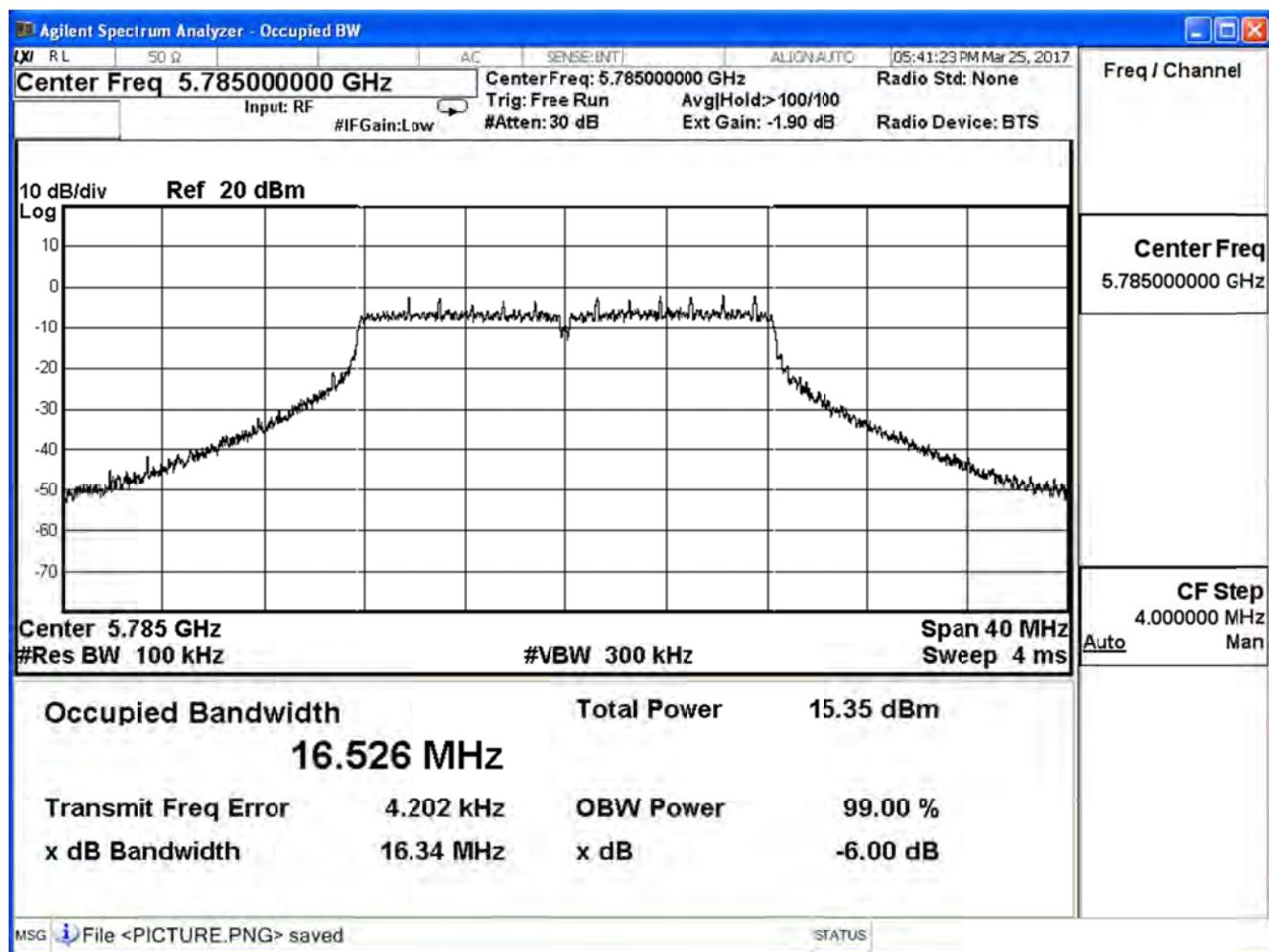
IEEE 802.11a (ANT 4)

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
149	5745	16.37	>0.5	Pass
157	5785	16.34	>0.5	Pass
165	5825	16.36	>0.5	Pass

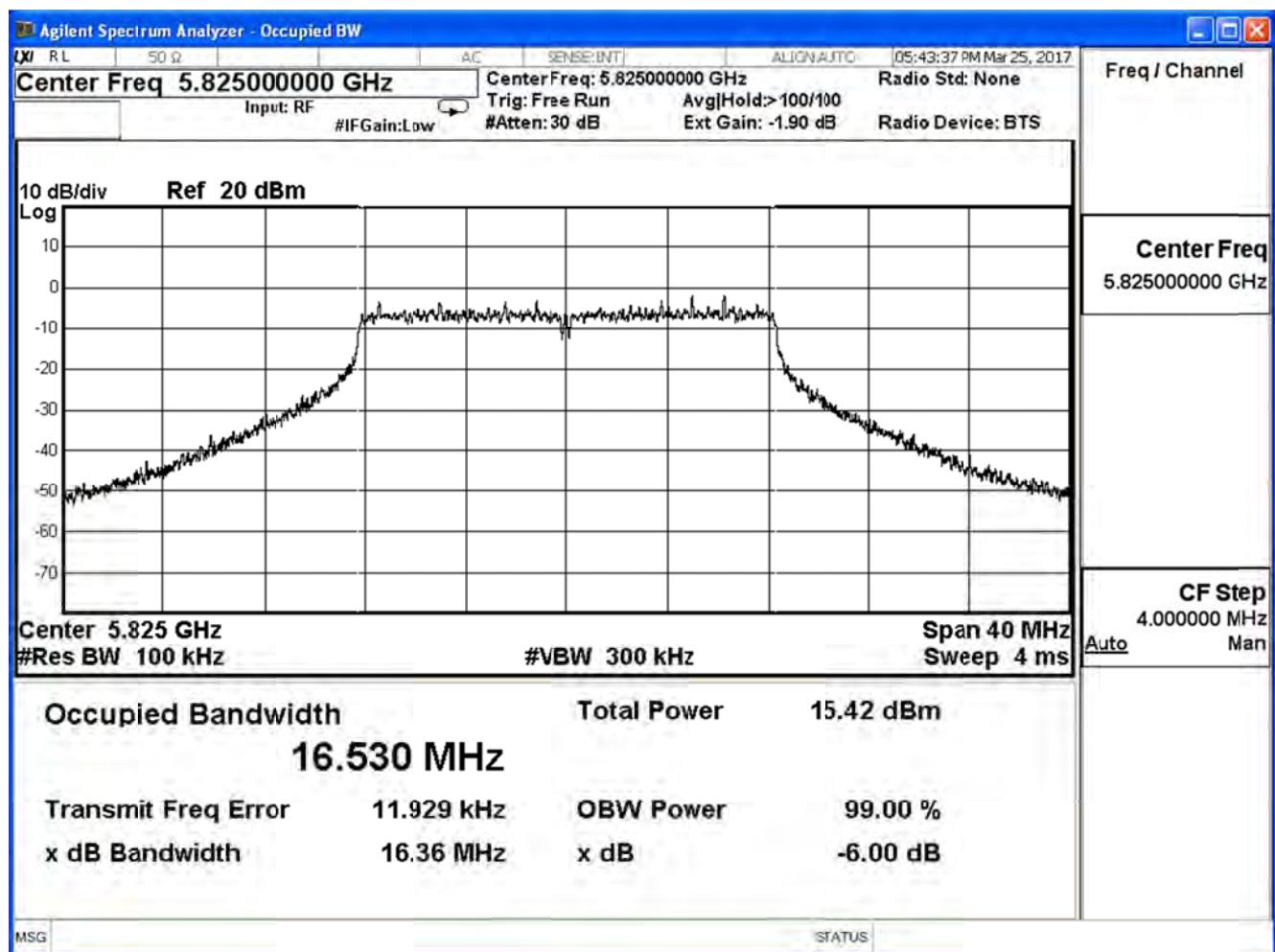
Channel 149 (5745MHz)



Channel 157 (5785MHz)



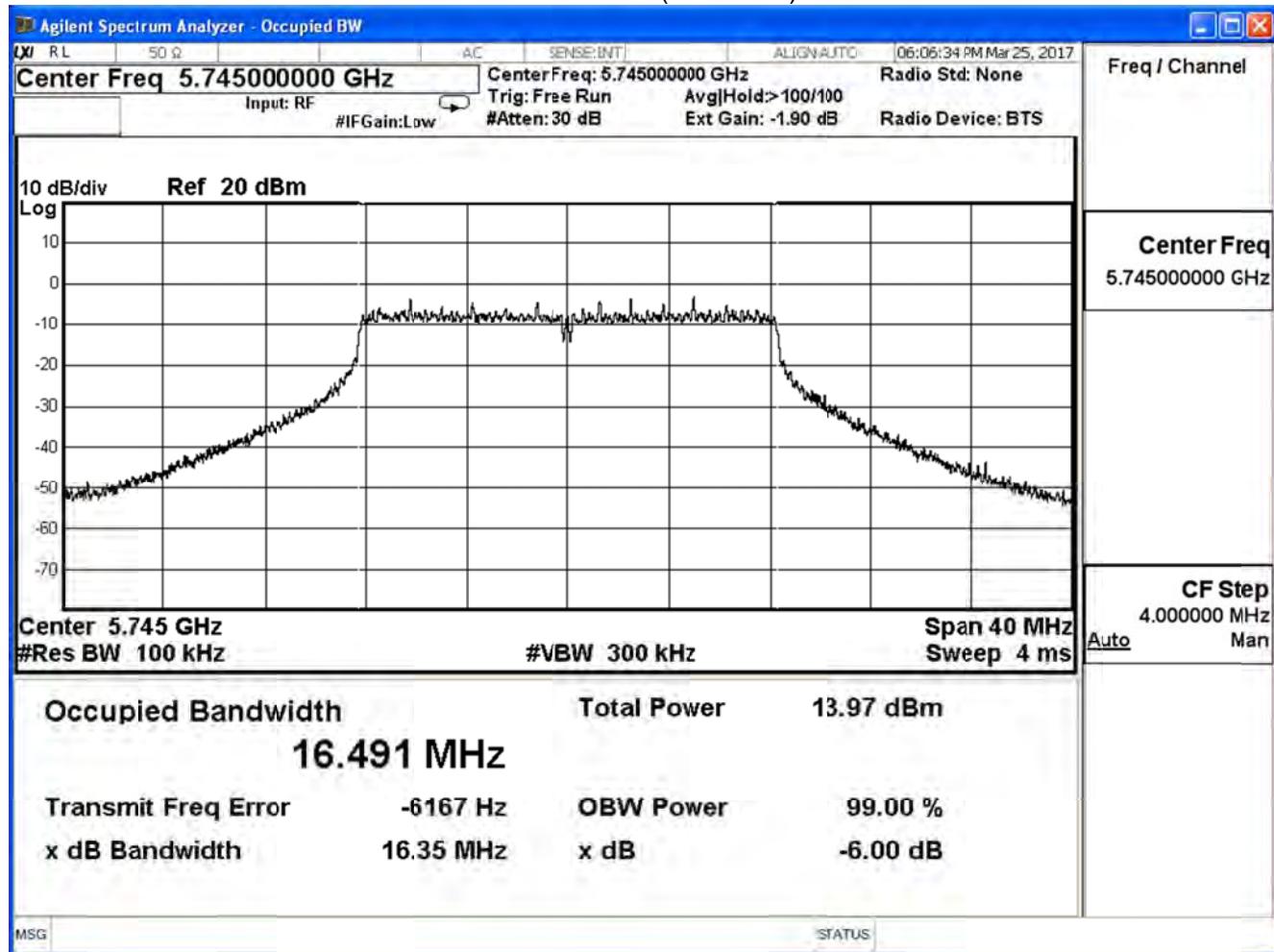
Channel 165 (5825MHz)



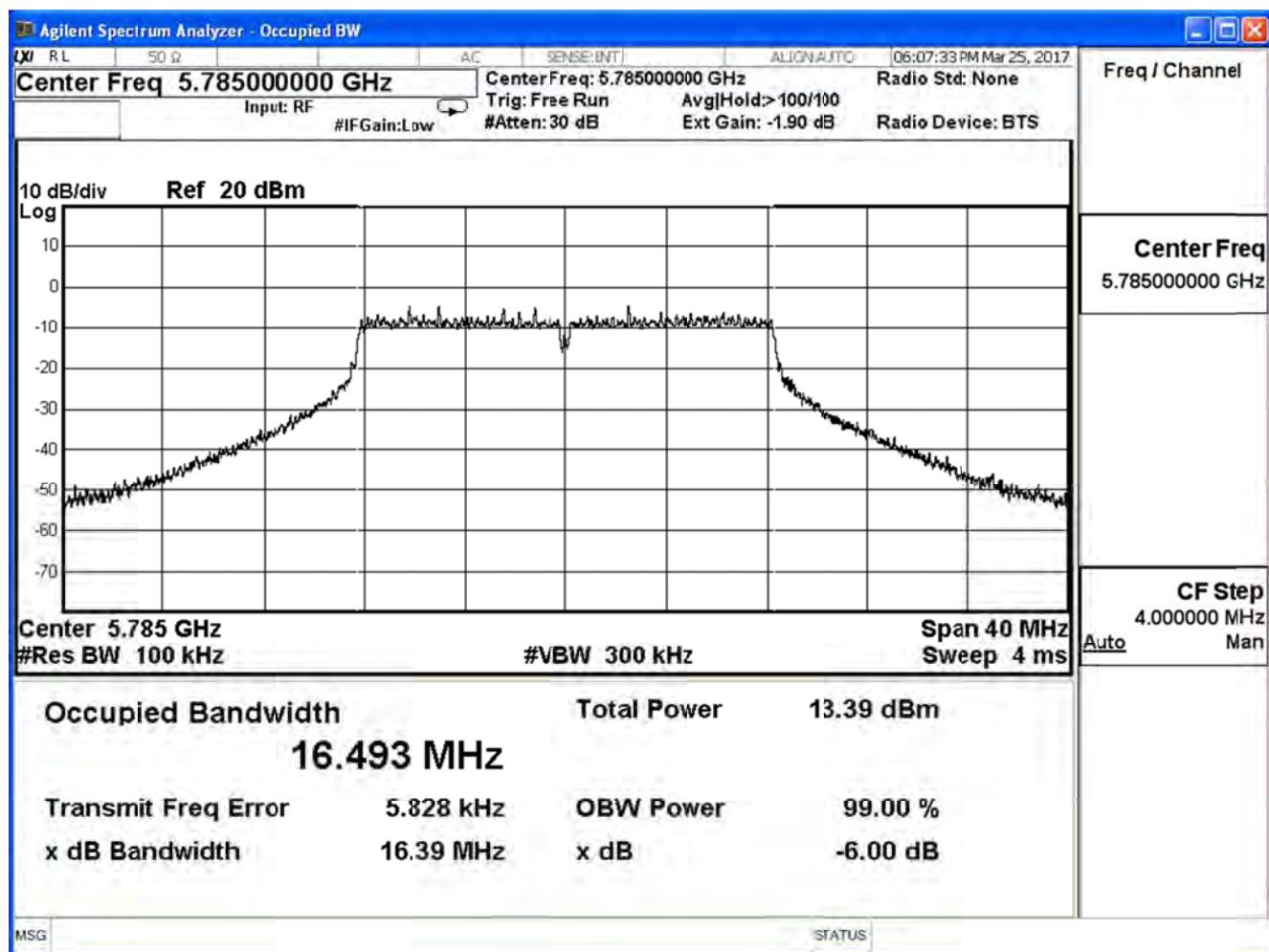
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11a (ANT 5)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
149	5745	16.35	>0.5	Pass
157	5785	16.39	>0.5	Pass
165	5825	16.35	>0.5	Pass

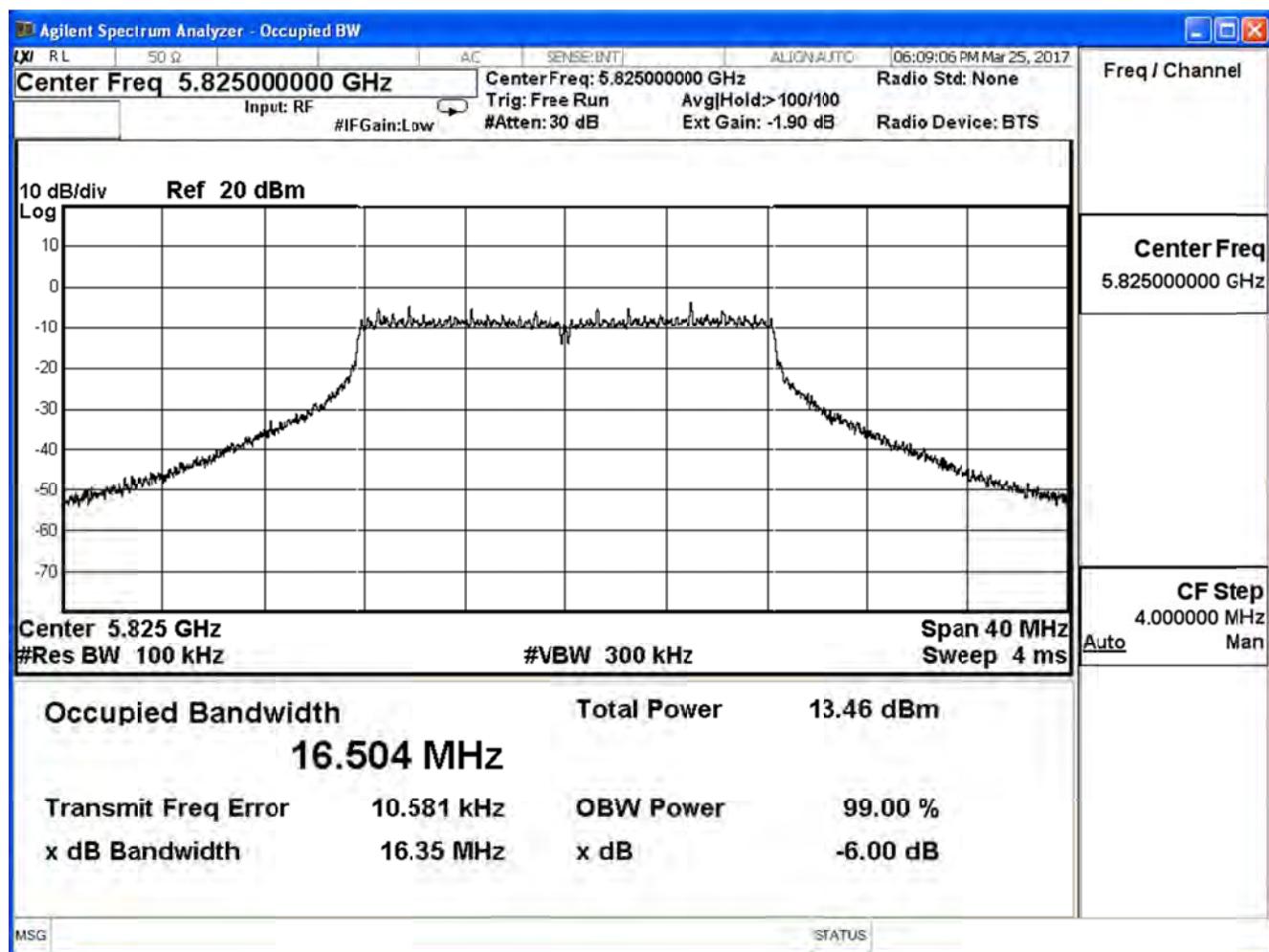
Channel 149 (5745MHz)



Channel 157 (5785MHz)



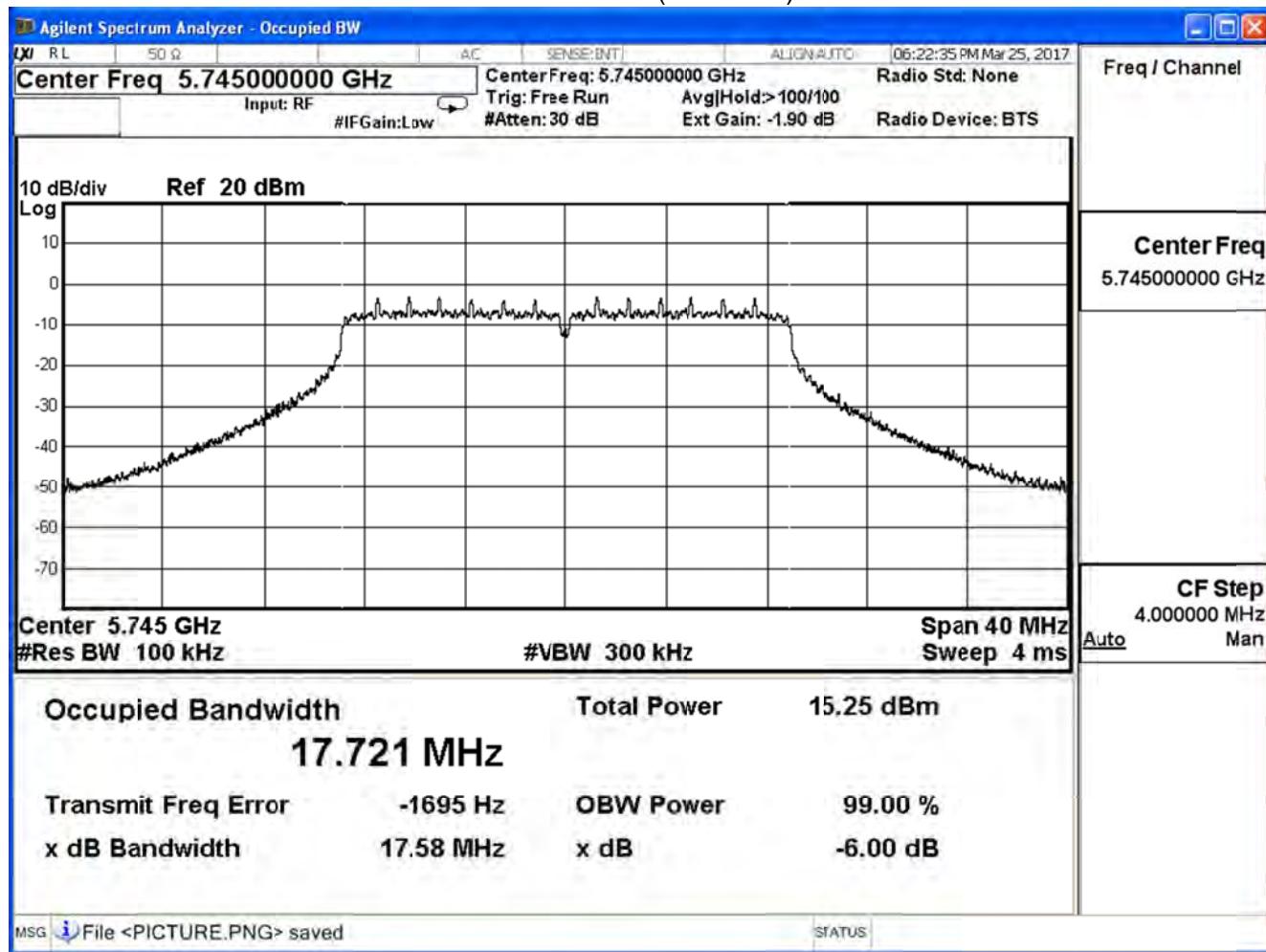
Channel 165 (5825MHz)



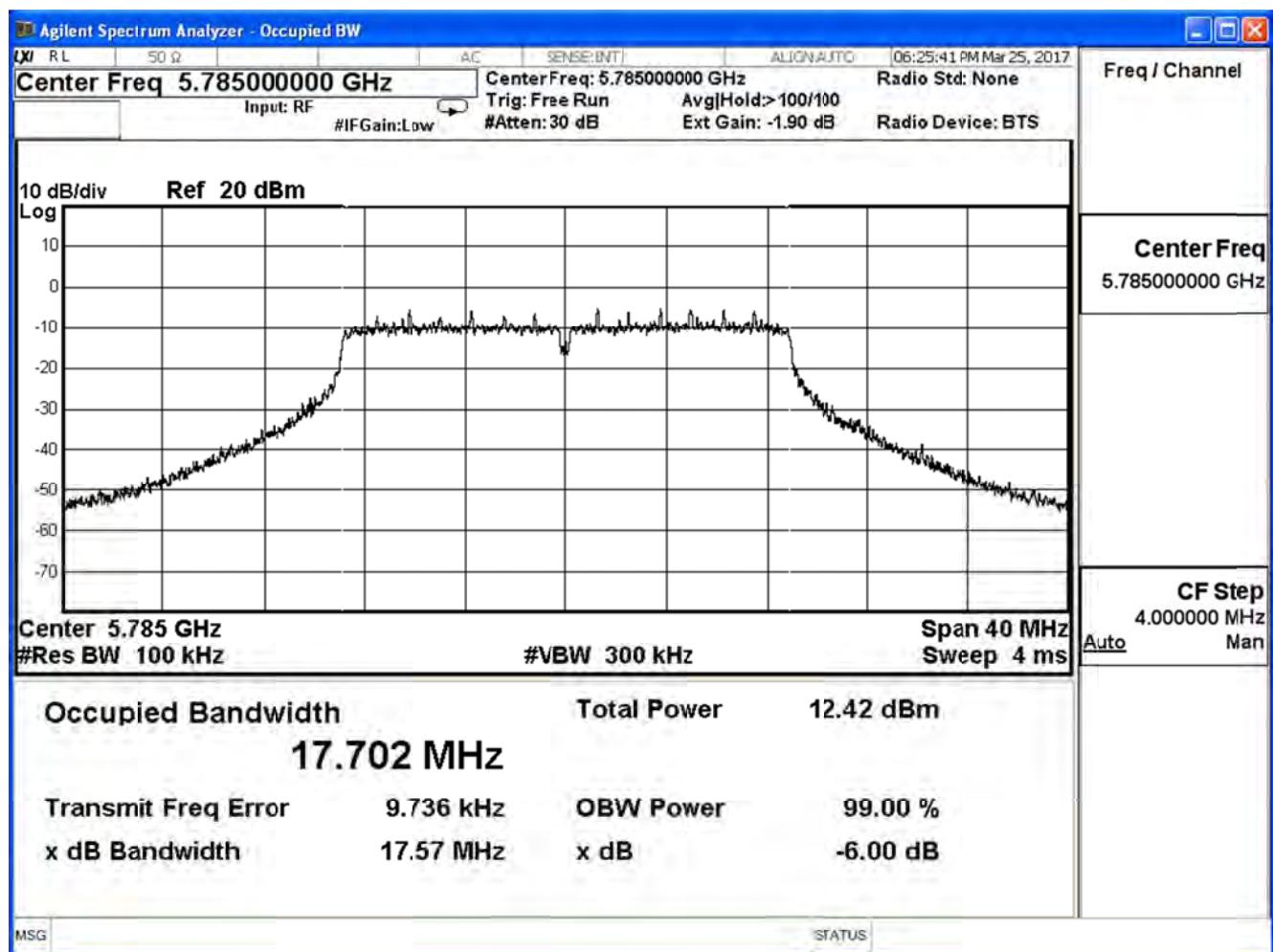
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11n20 (ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
149	5745	17.58	>0.5	Pass
157	5785	17.57	>0.5	Pass
165	5825	17.59	>0.5	Pass

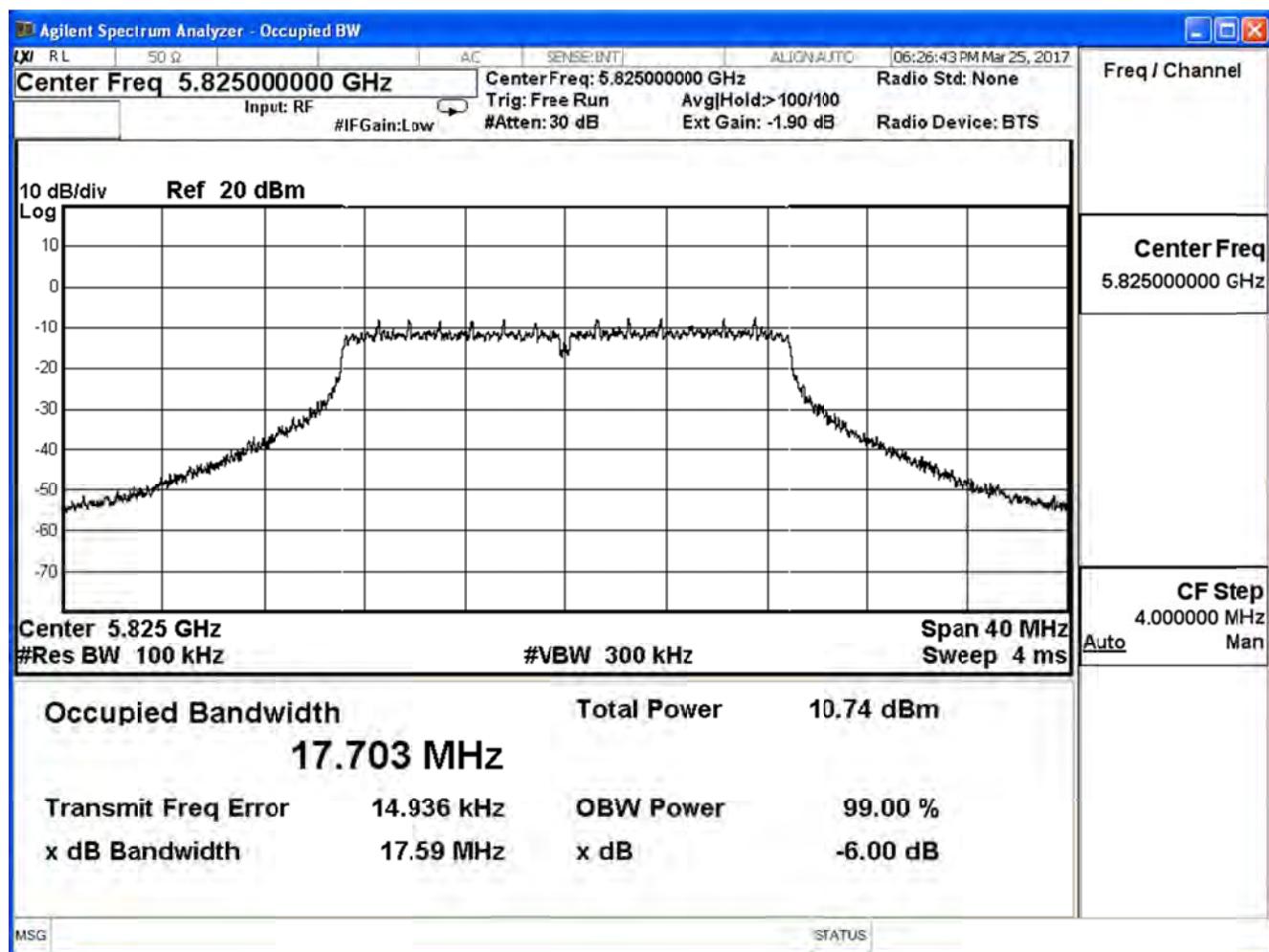
Channel 149 (5745MHz)



Channel 157 (5785MHz)



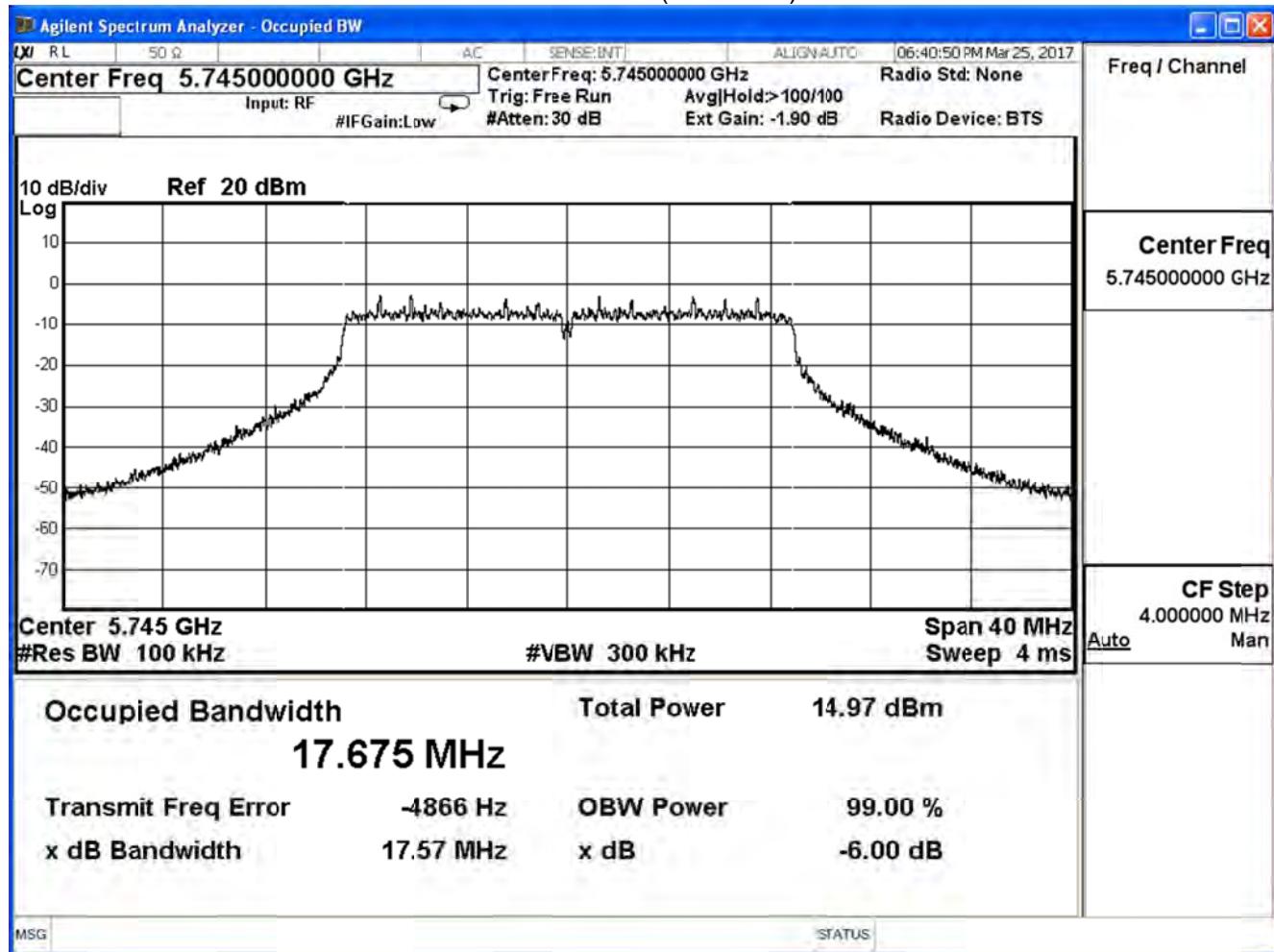
Channel 165 (5825MHz)



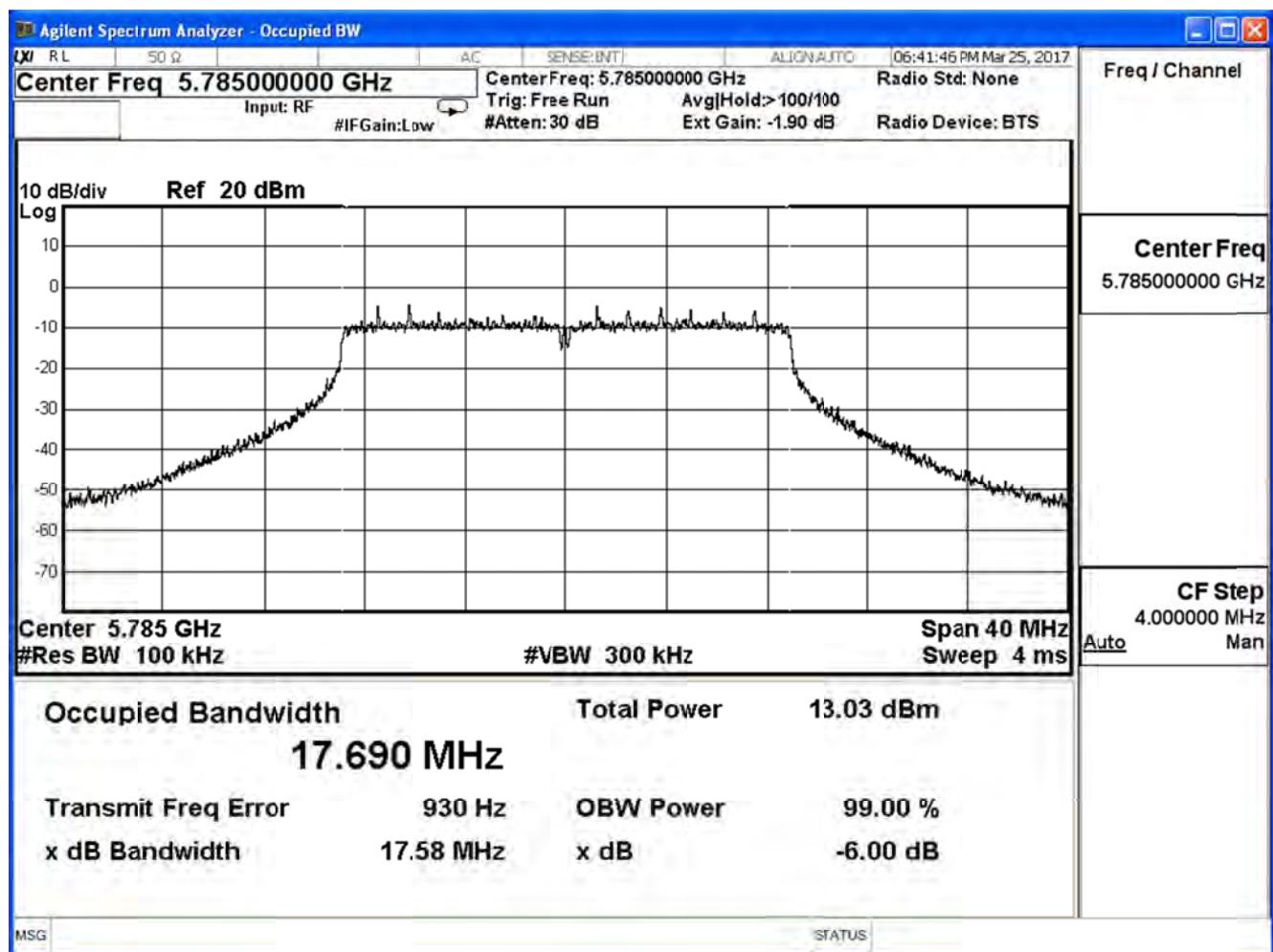
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11n20 (ANT 1)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
149	5745	17.57	>0.5	Pass
157	5785	17.58	>0.5	Pass
165	5825	17.55	>0.5	Pass

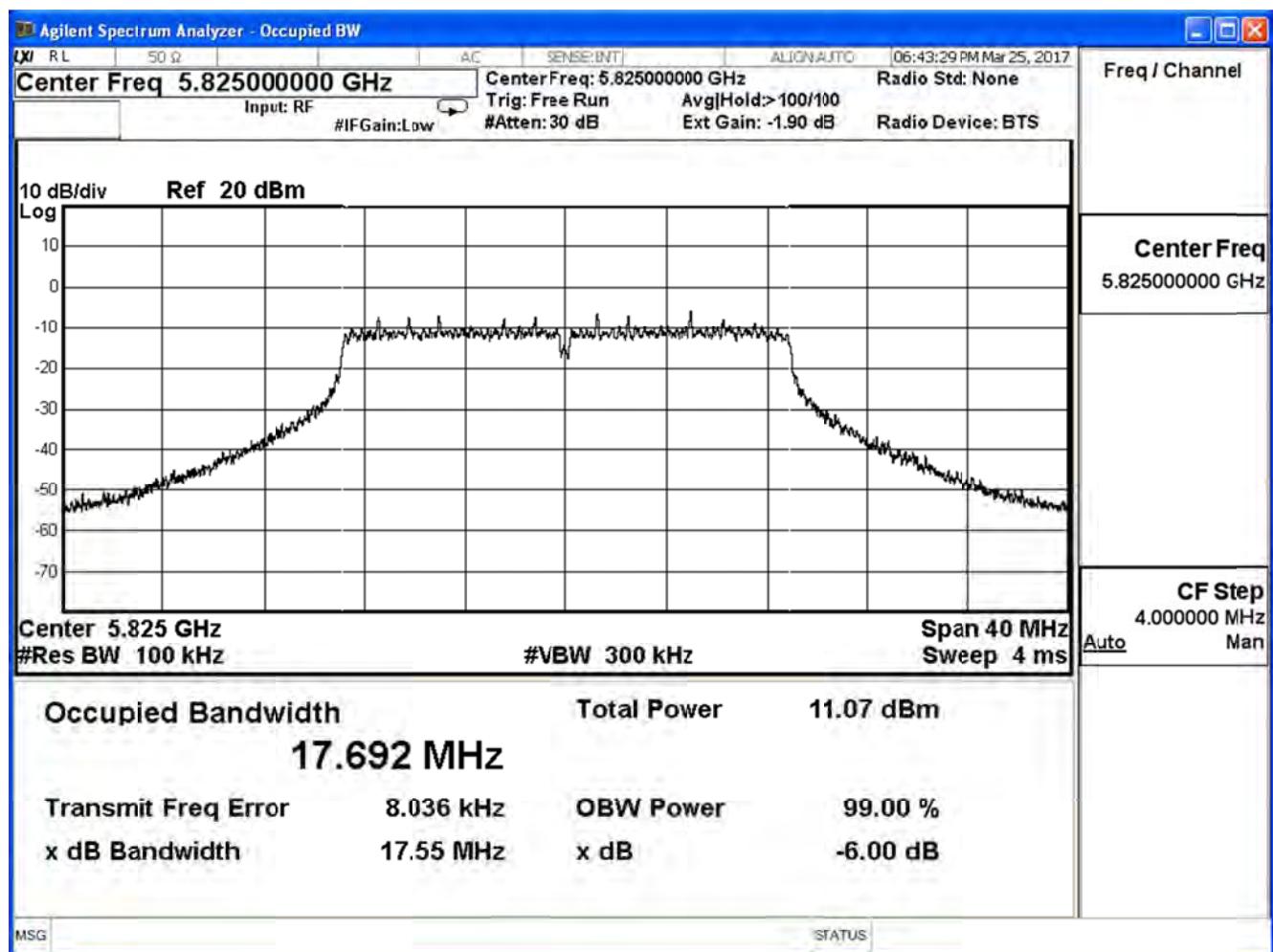
Channel 149 (5745MHz)



Channel 157 (5785MHz)



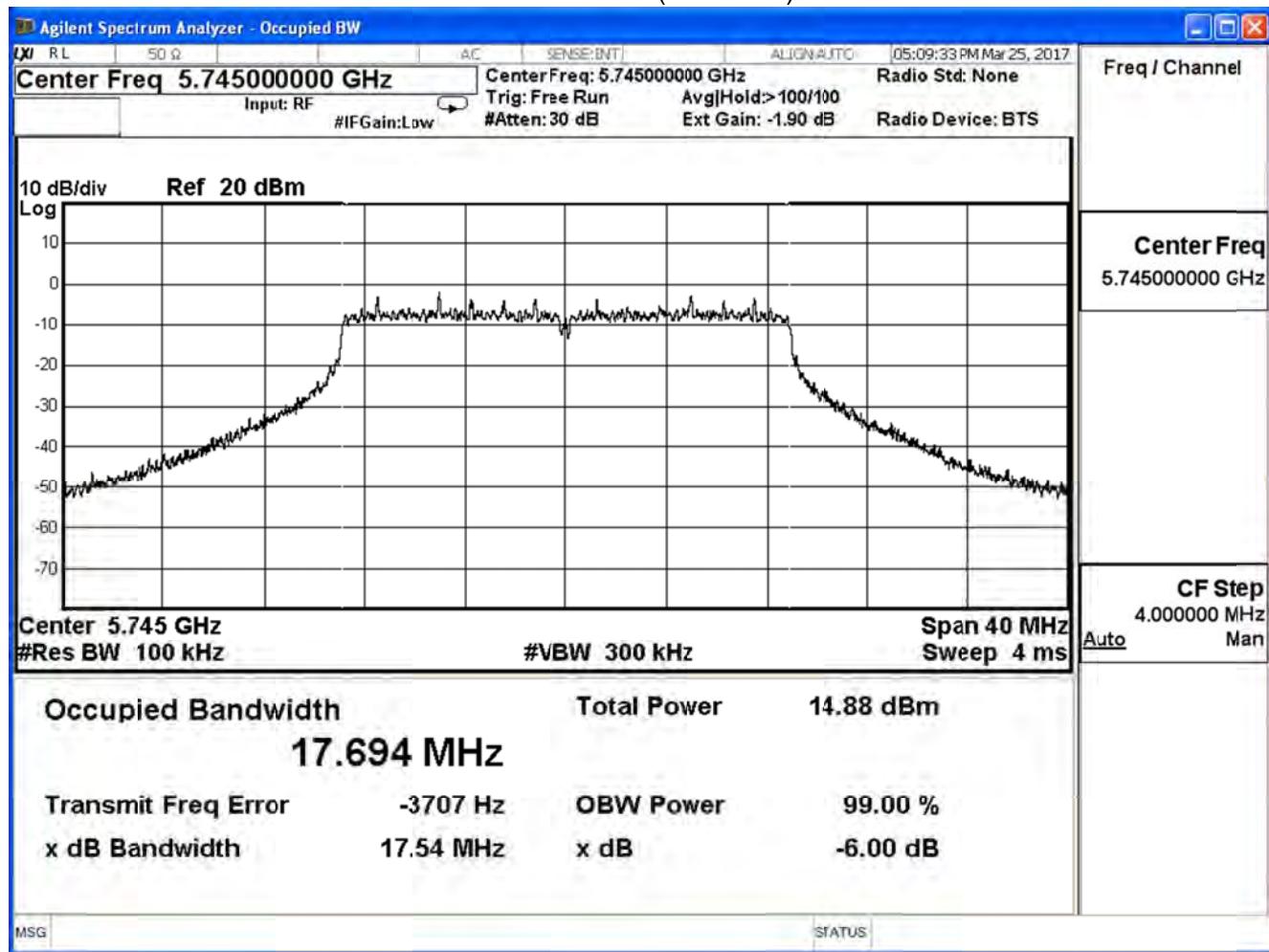
Channel 165 (5825MHz)



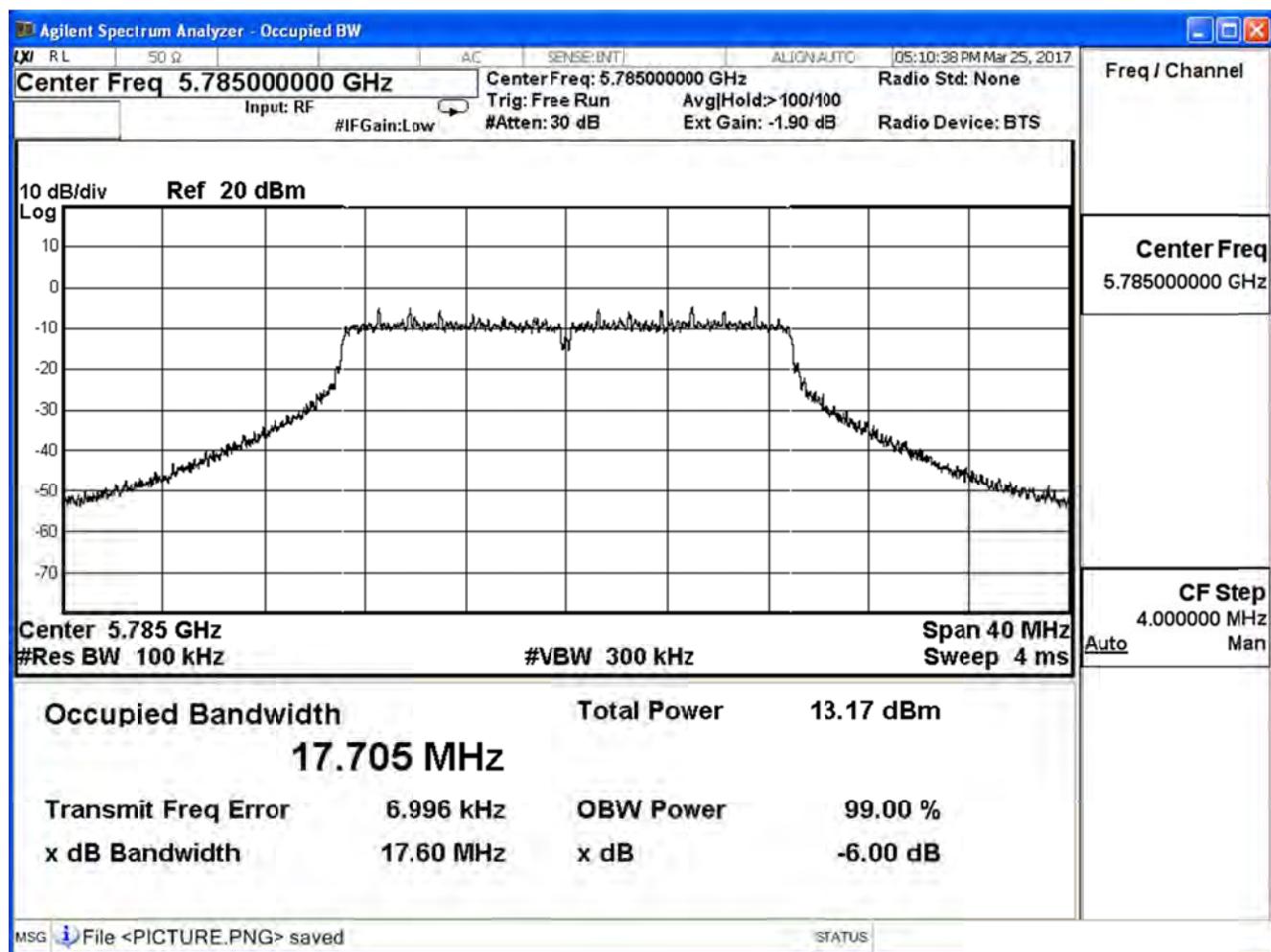
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11n20 (ANT 2)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
149	5745	17.54	>0.5	Pass
157	5785	17.60	>0.5	Pass
165	5825	17.61	>0.5	Pass

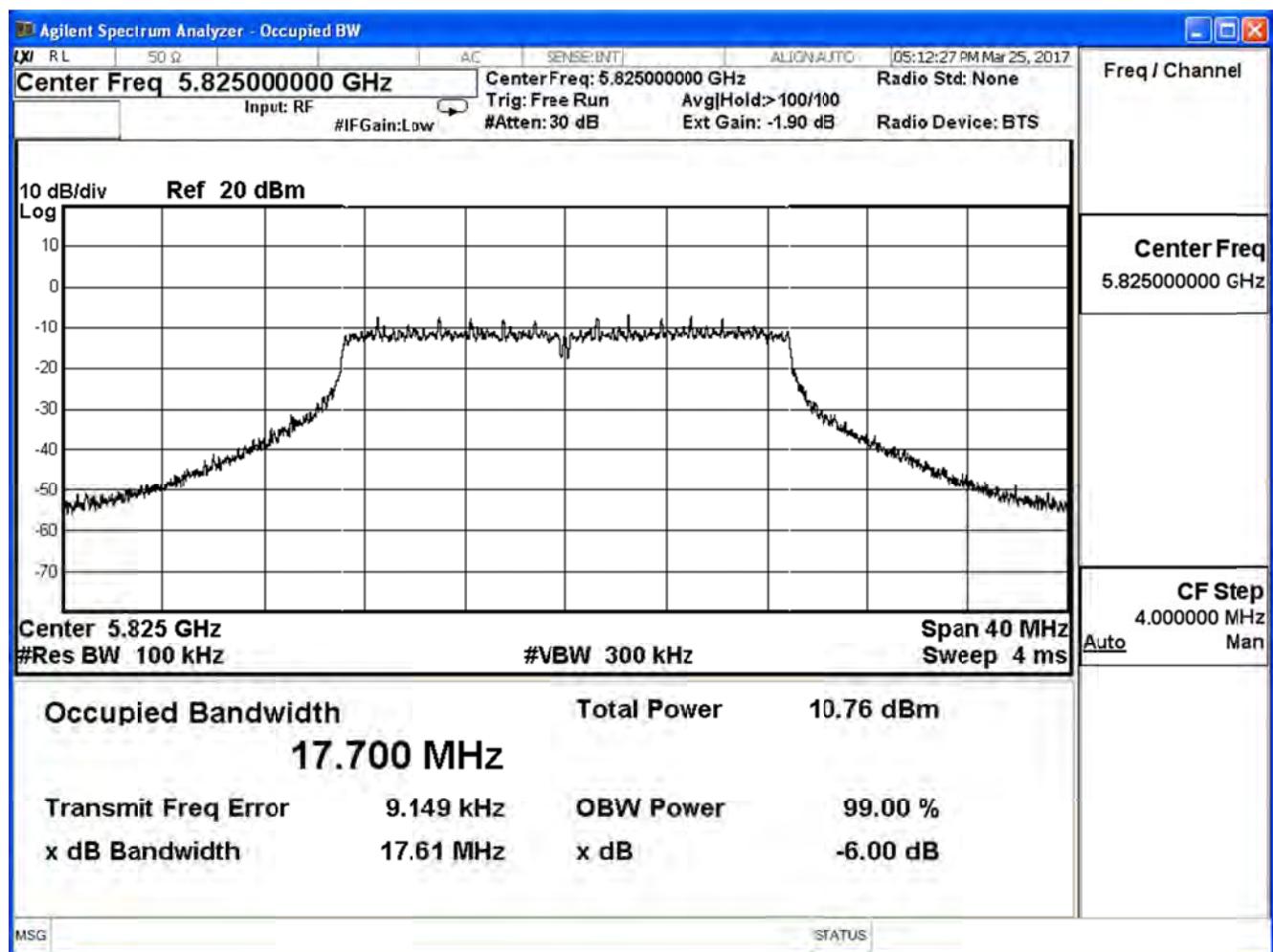
Channel 149 (5745MHz)



Channel 157 (5785MHz)



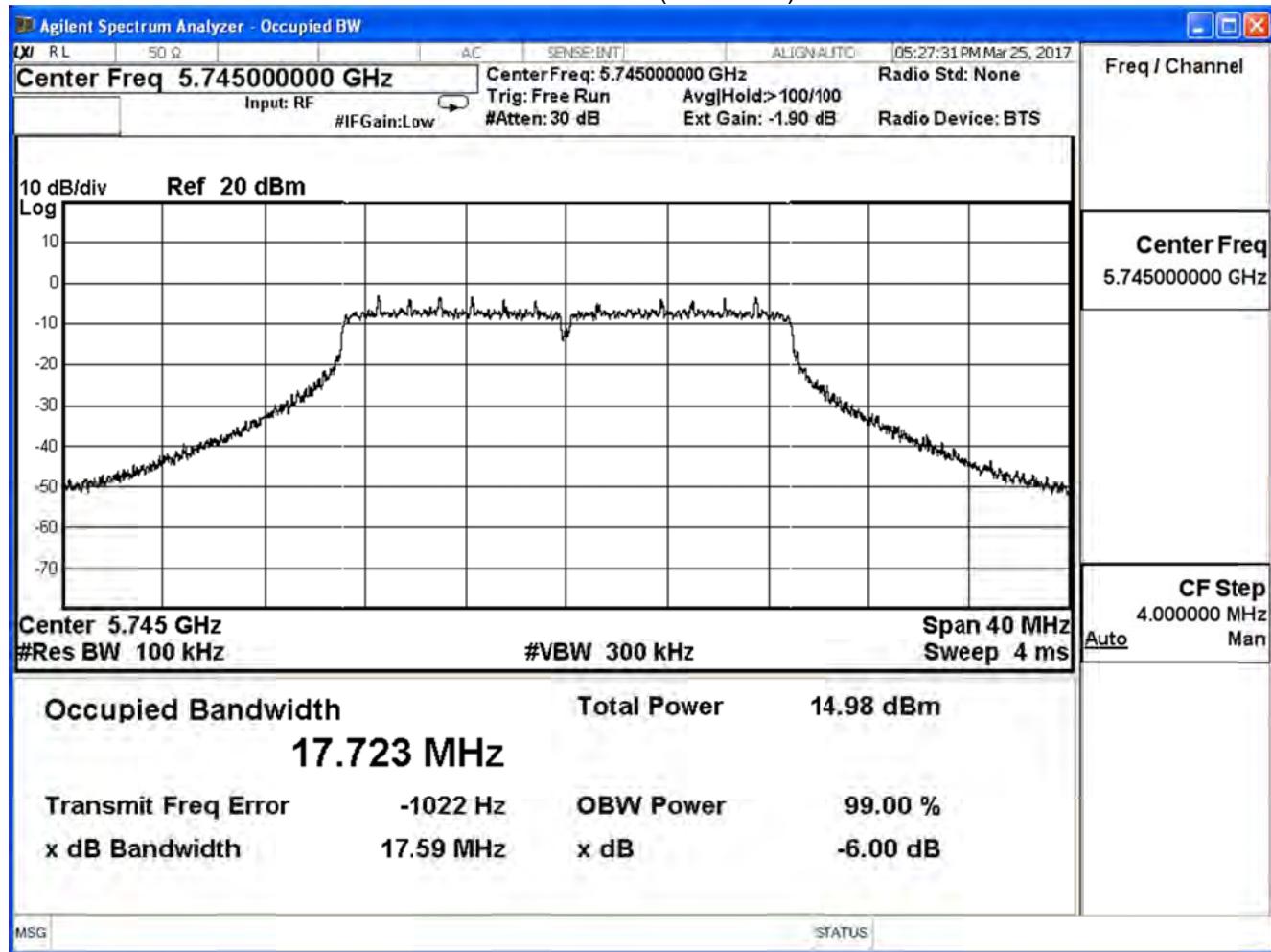
Channel 165 (5825MHz)



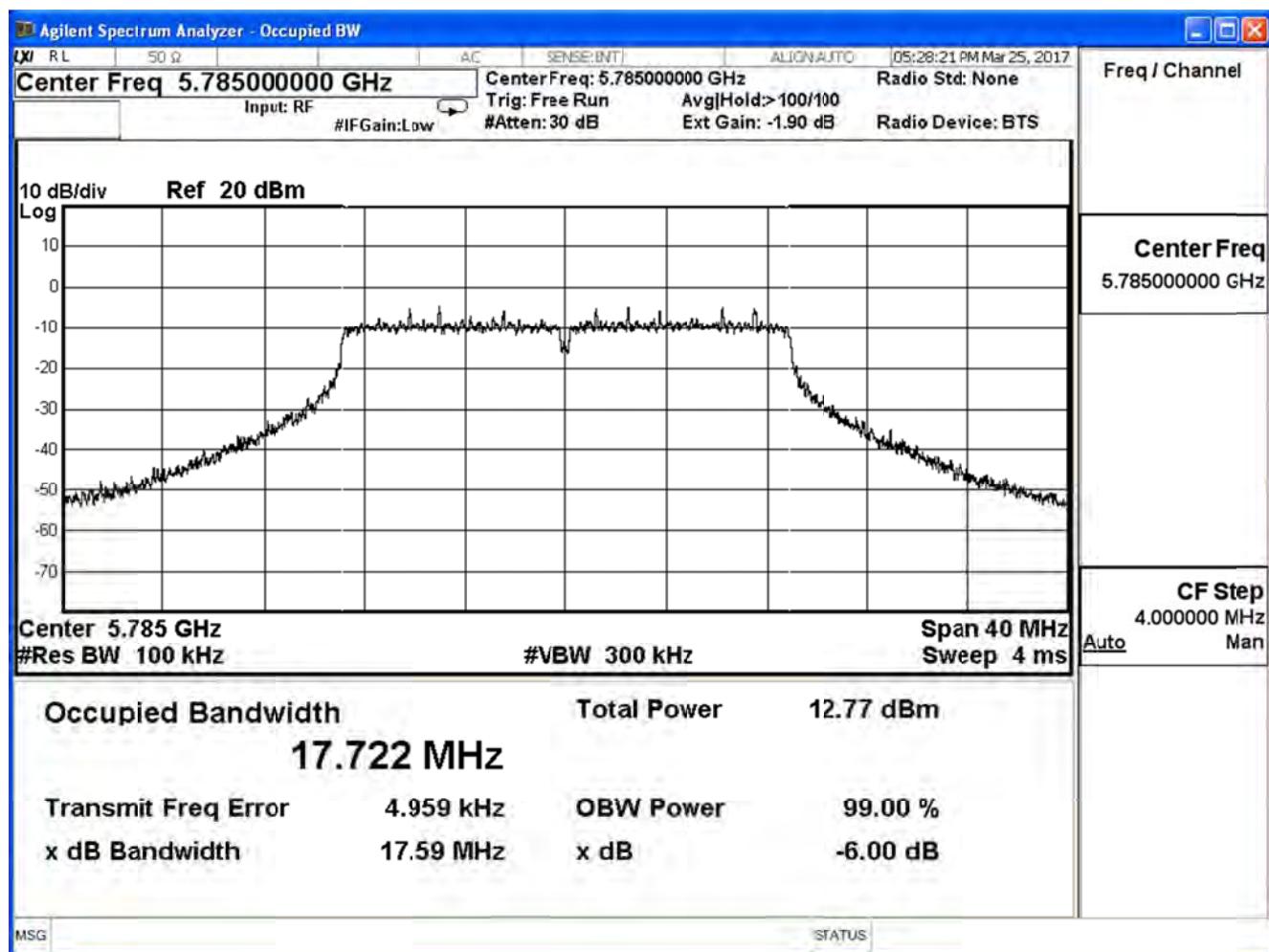
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11n20 (ANT 3)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
149	5745	17.59	>0.5	Pass
157	5785	17.59	>0.5	Pass
165	5825	17.41	>0.5	Pass

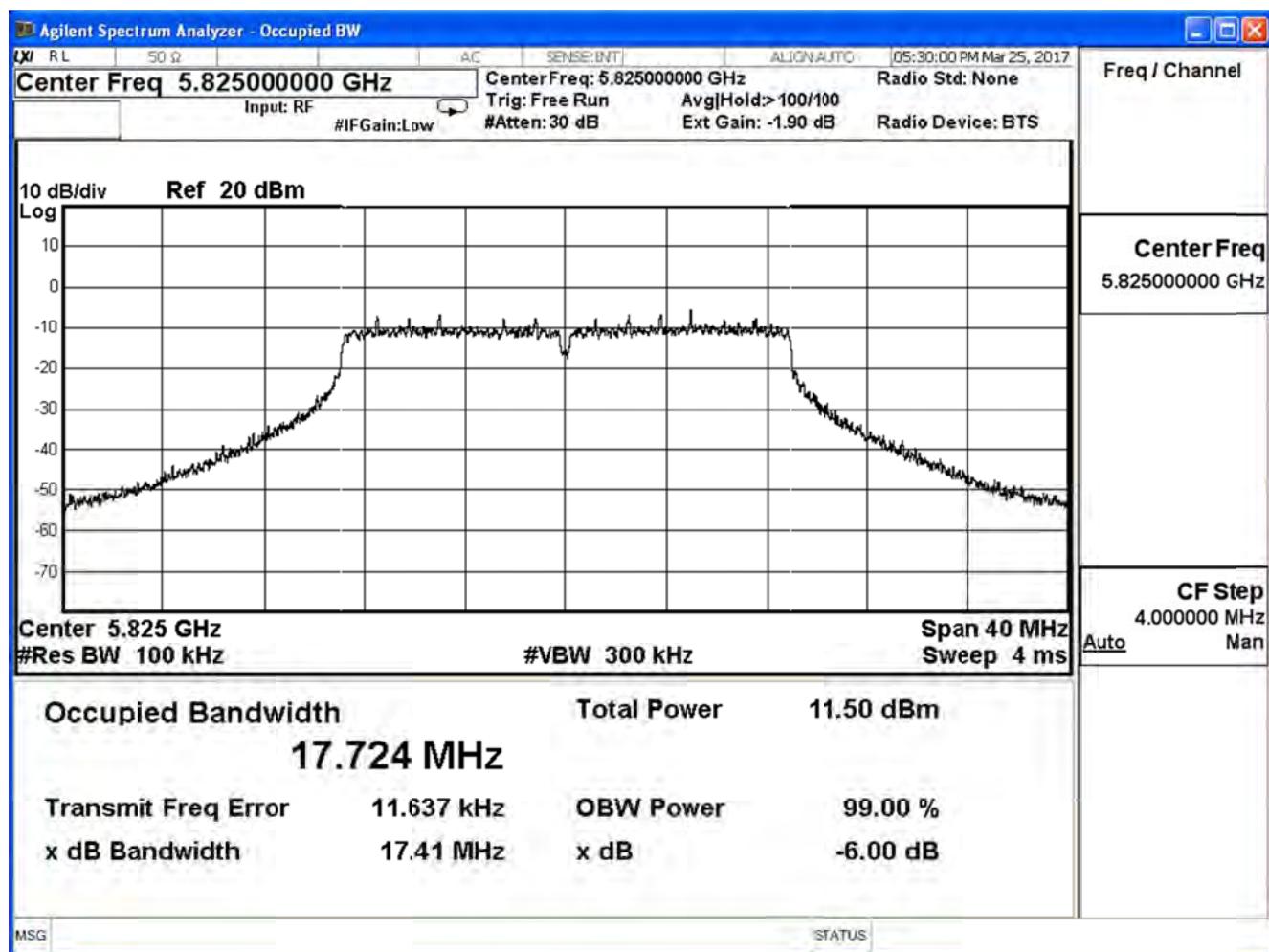
Channel 149 (5745MHz)



Channel 157 (5785MHz)



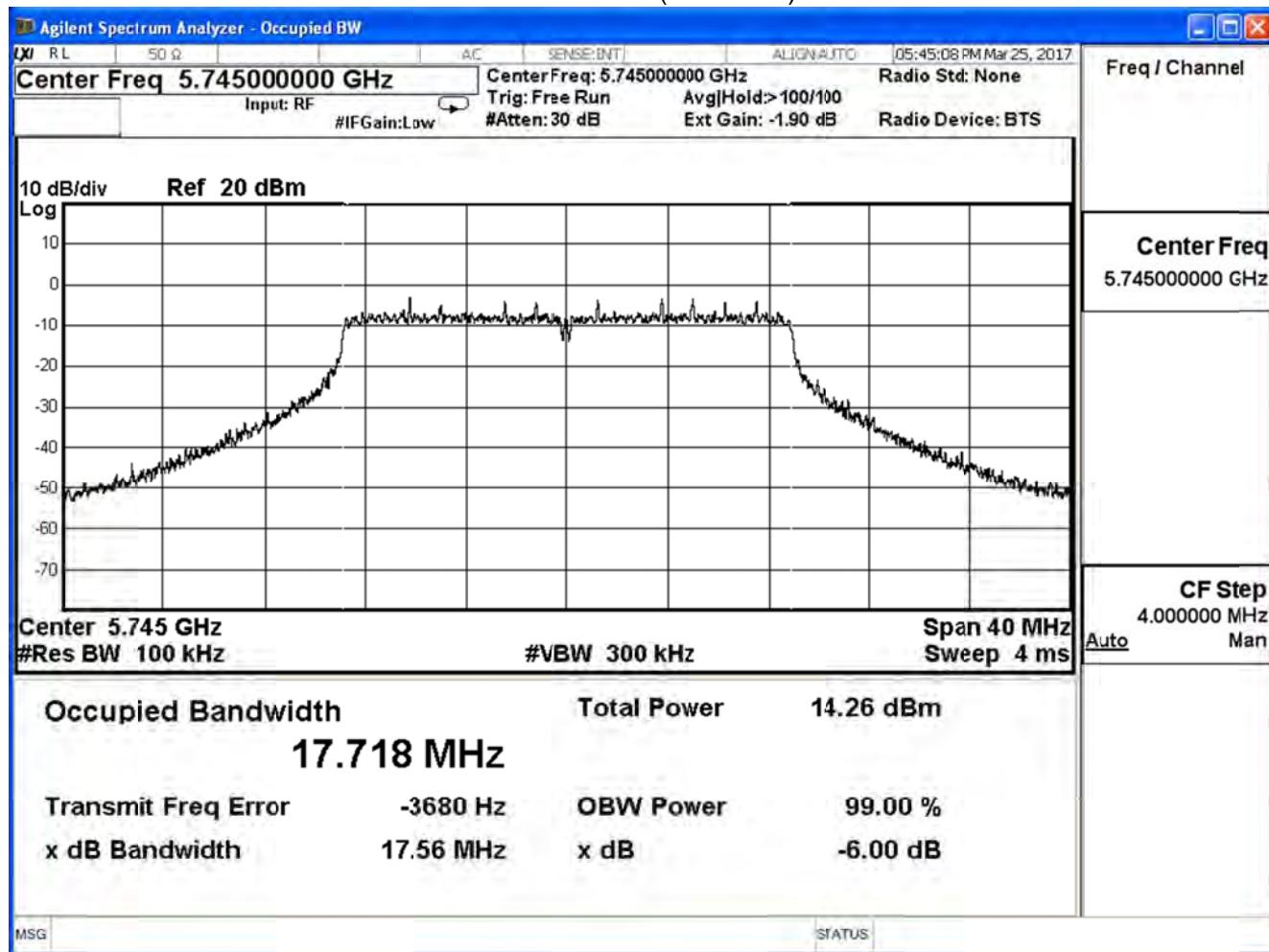
Channel 165 (5825MHz)



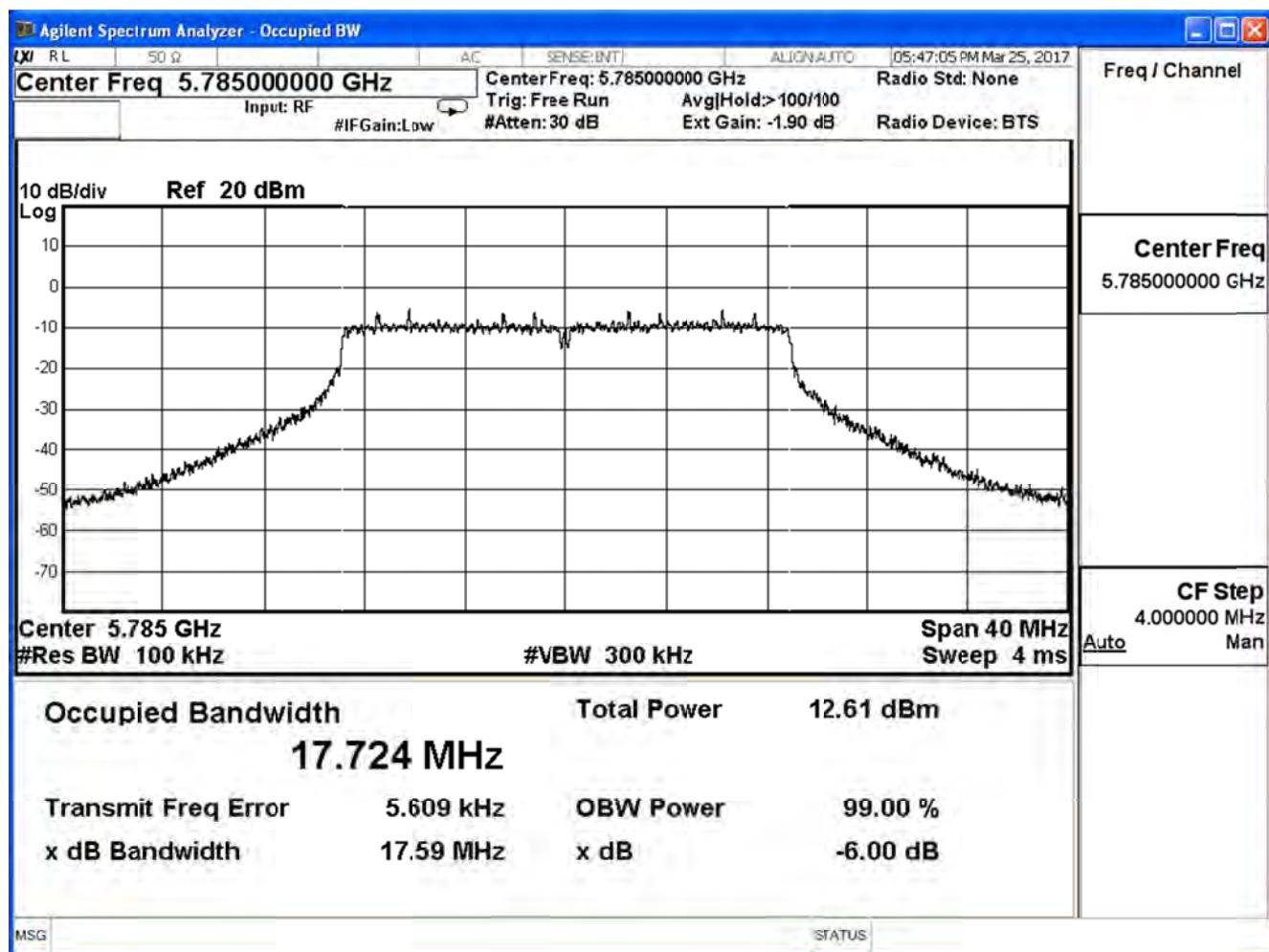
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11n20 (ANT 4)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
149	5745	17.56	>0.5	Pass
157	5785	17.59	>0.5	Pass
165	5825	17.59	>0.5	Pass

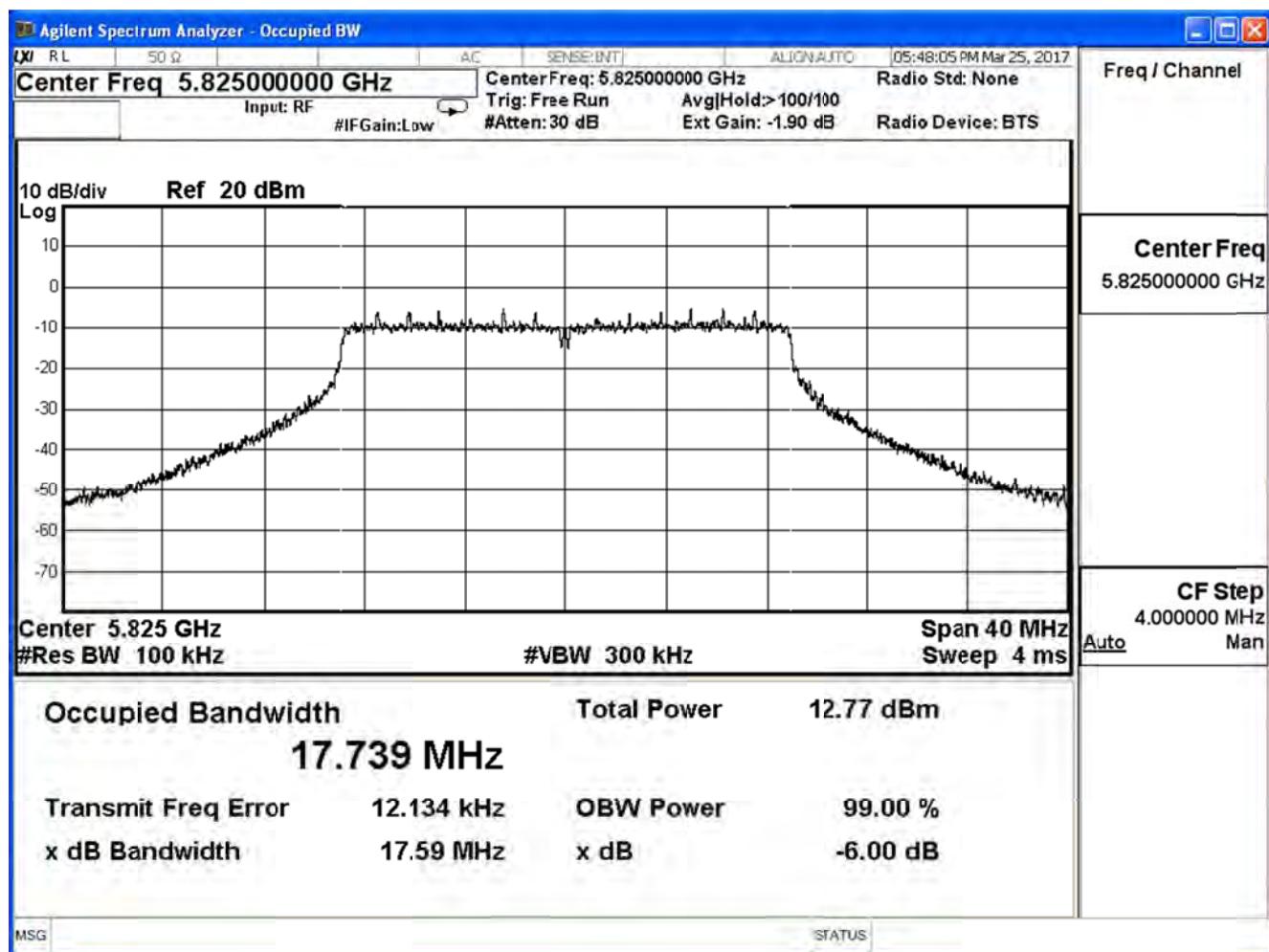
Channel 149 (5745MHz)



Channel 157 (5785MHz)



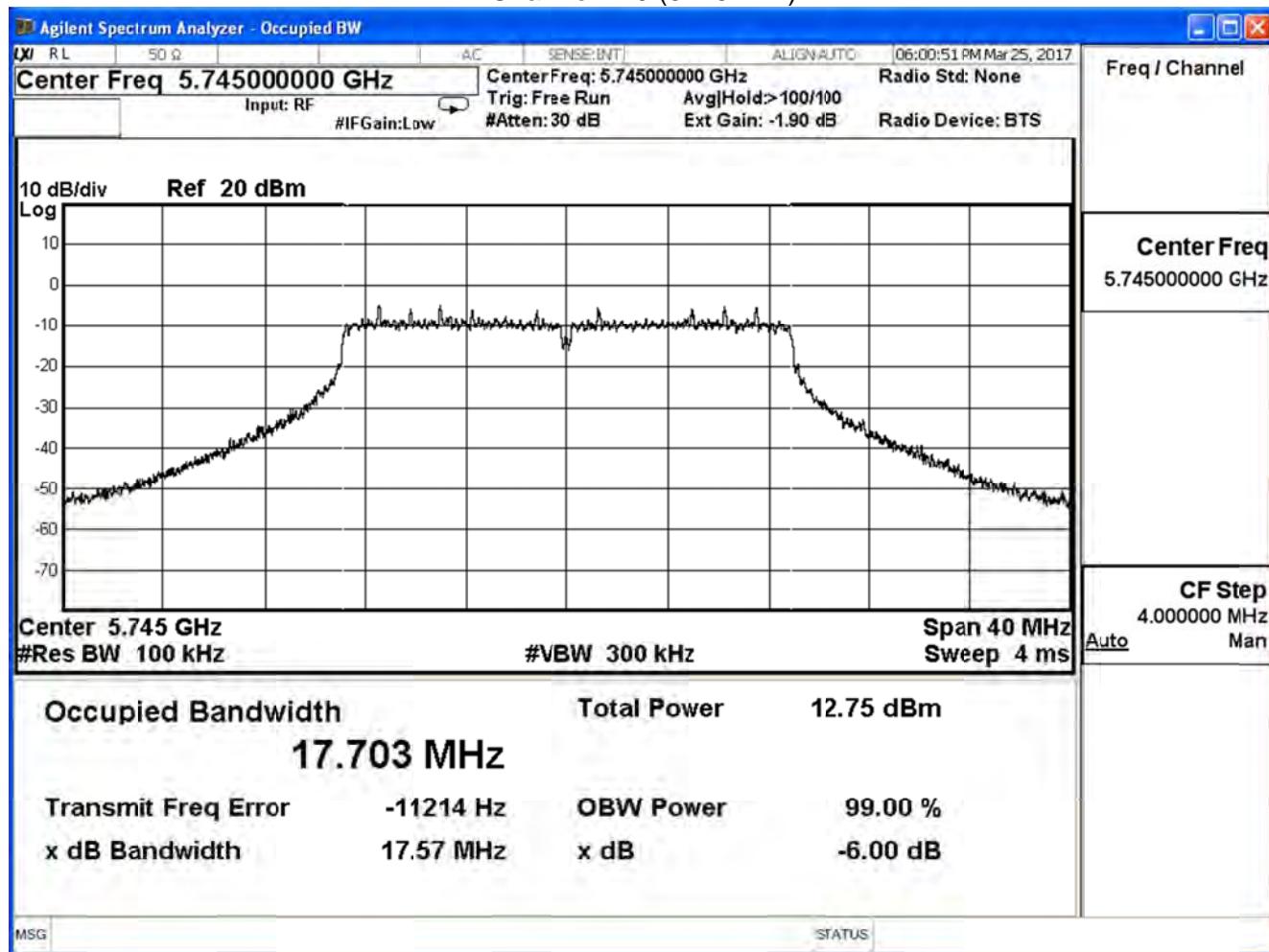
Channel 165 (5825MHz)



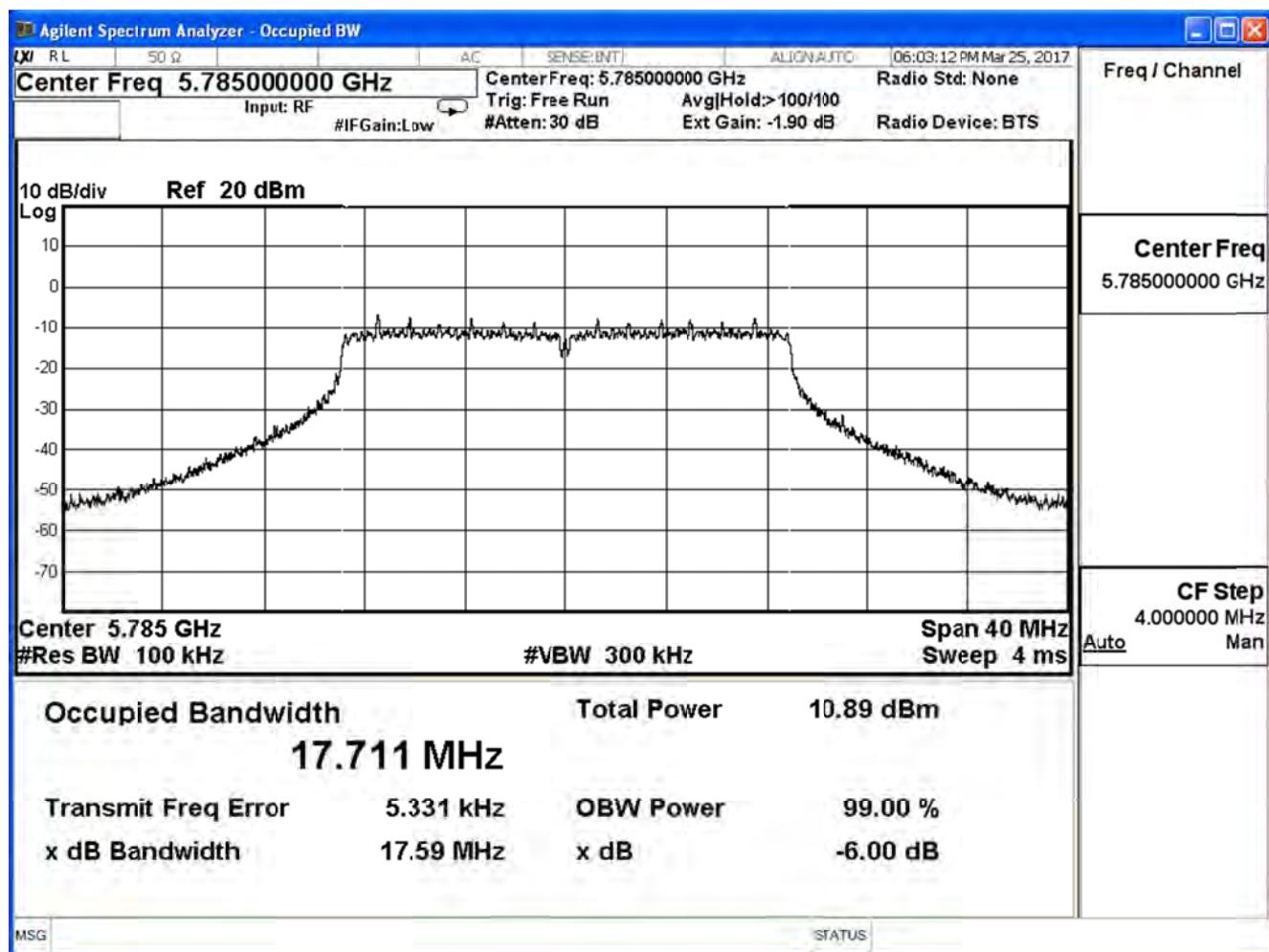
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11n20 (ANT 5)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
149	5745	17.57	>0.5	Pass
157	5785	17.59	>0.5	Pass
165	5825	17.56	>0.5	Pass

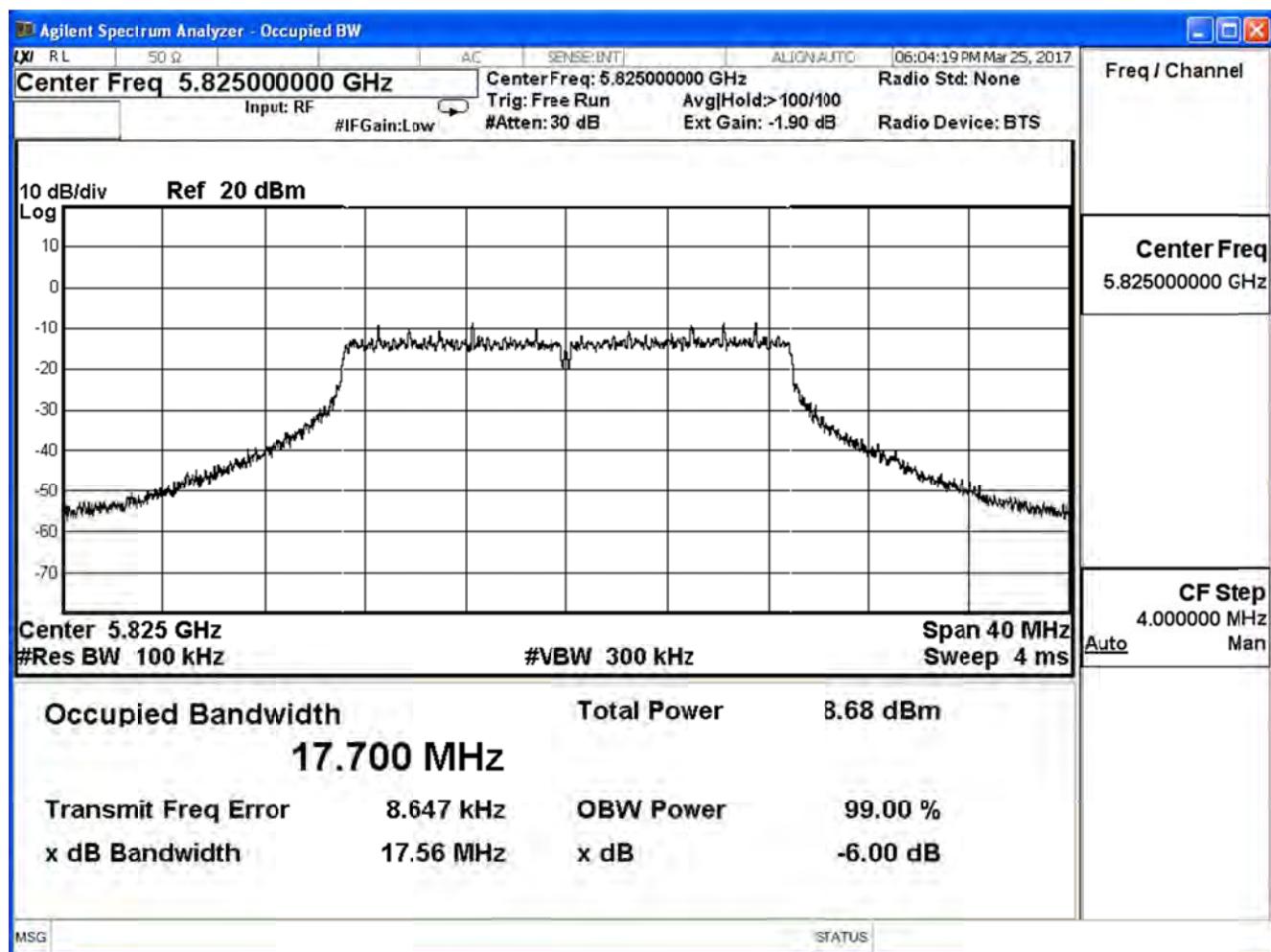
Channel 149 (5745MHz)



Channel 157 (5785MHz)



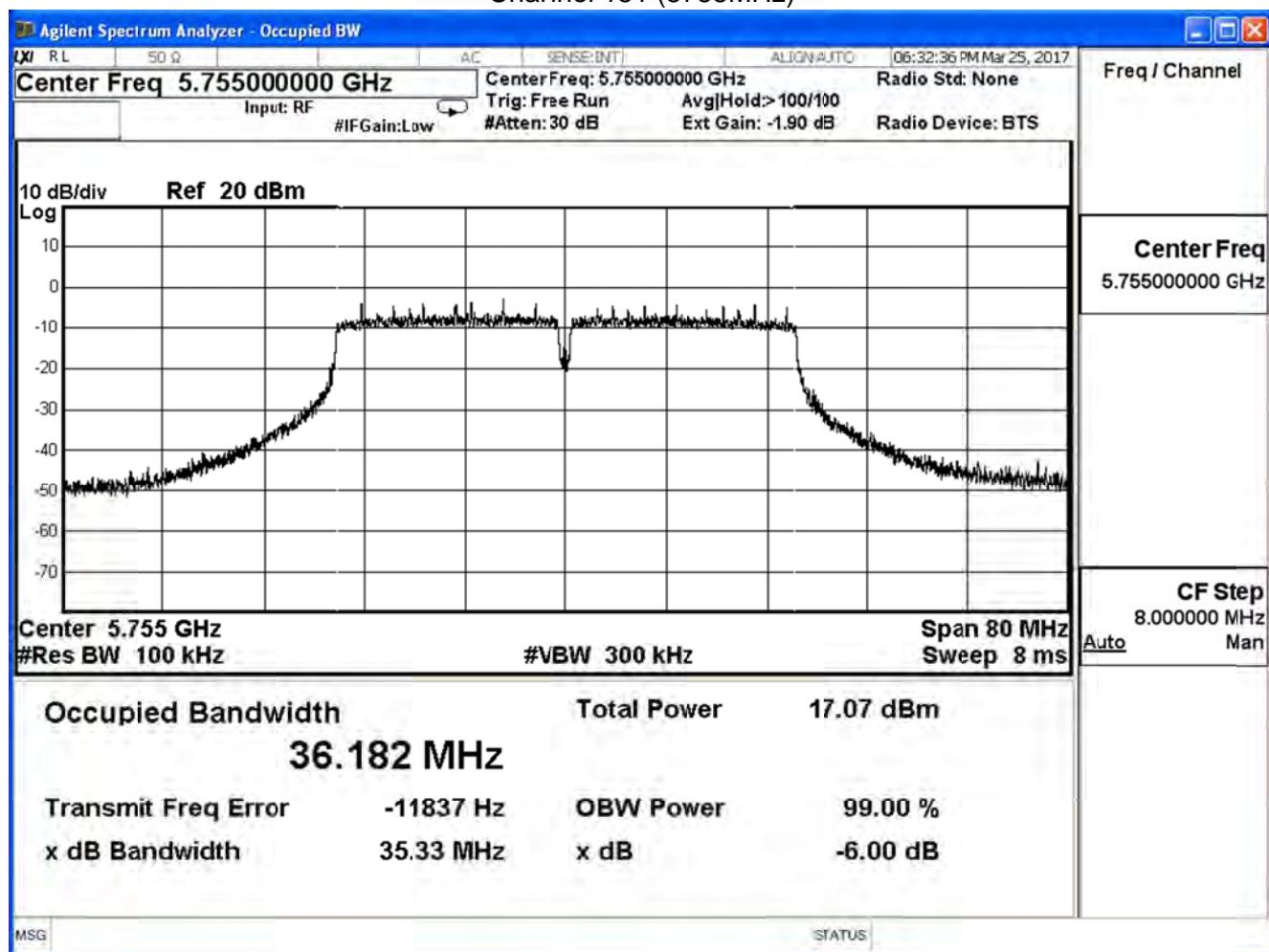
Channel 165 (5825MHz)



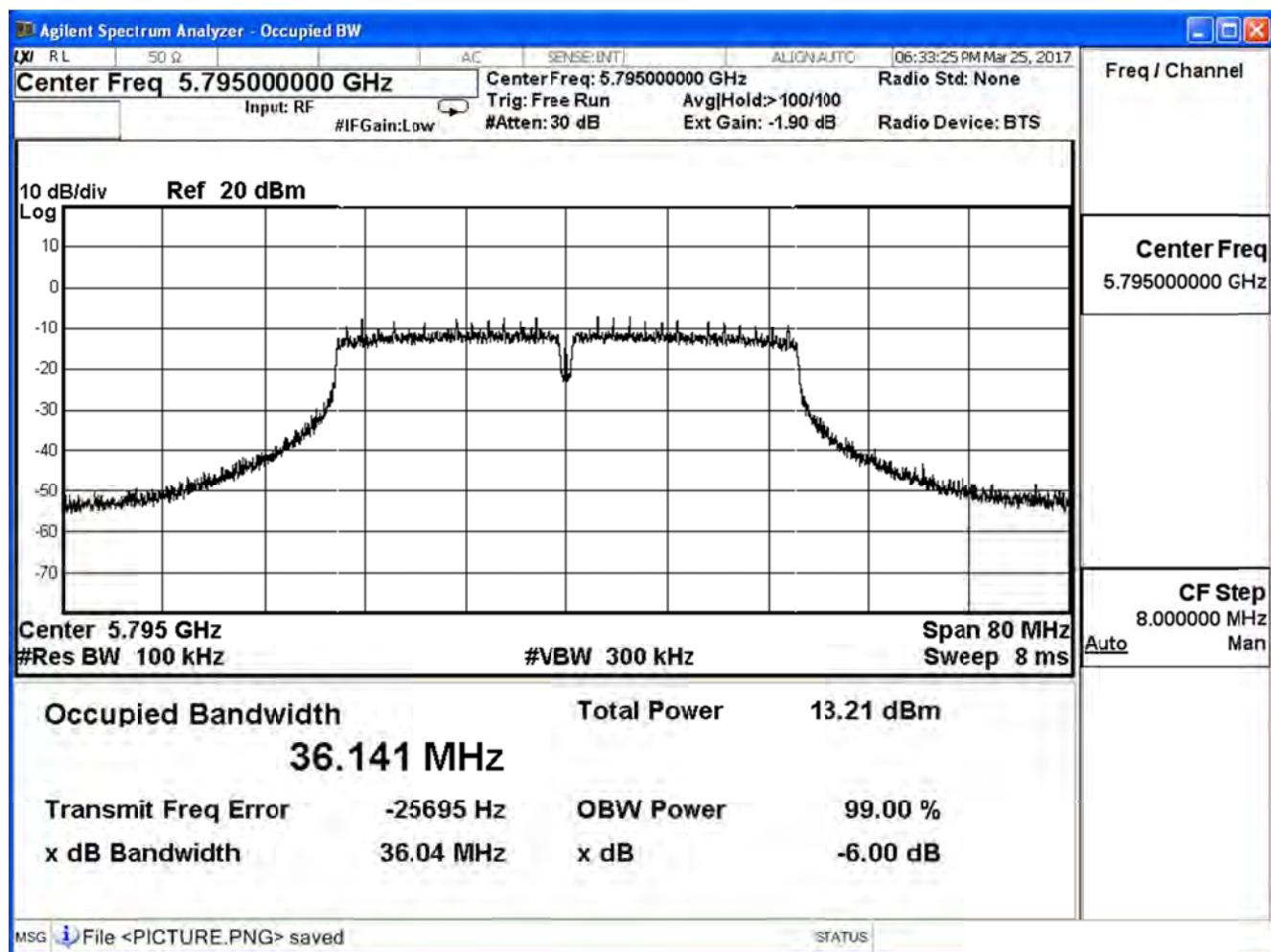
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11n40 (ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
151	5755	35.33	>0.5	Pass
159	5795	36.04	>0.5	Pass

Channel 151 (5755MHz)



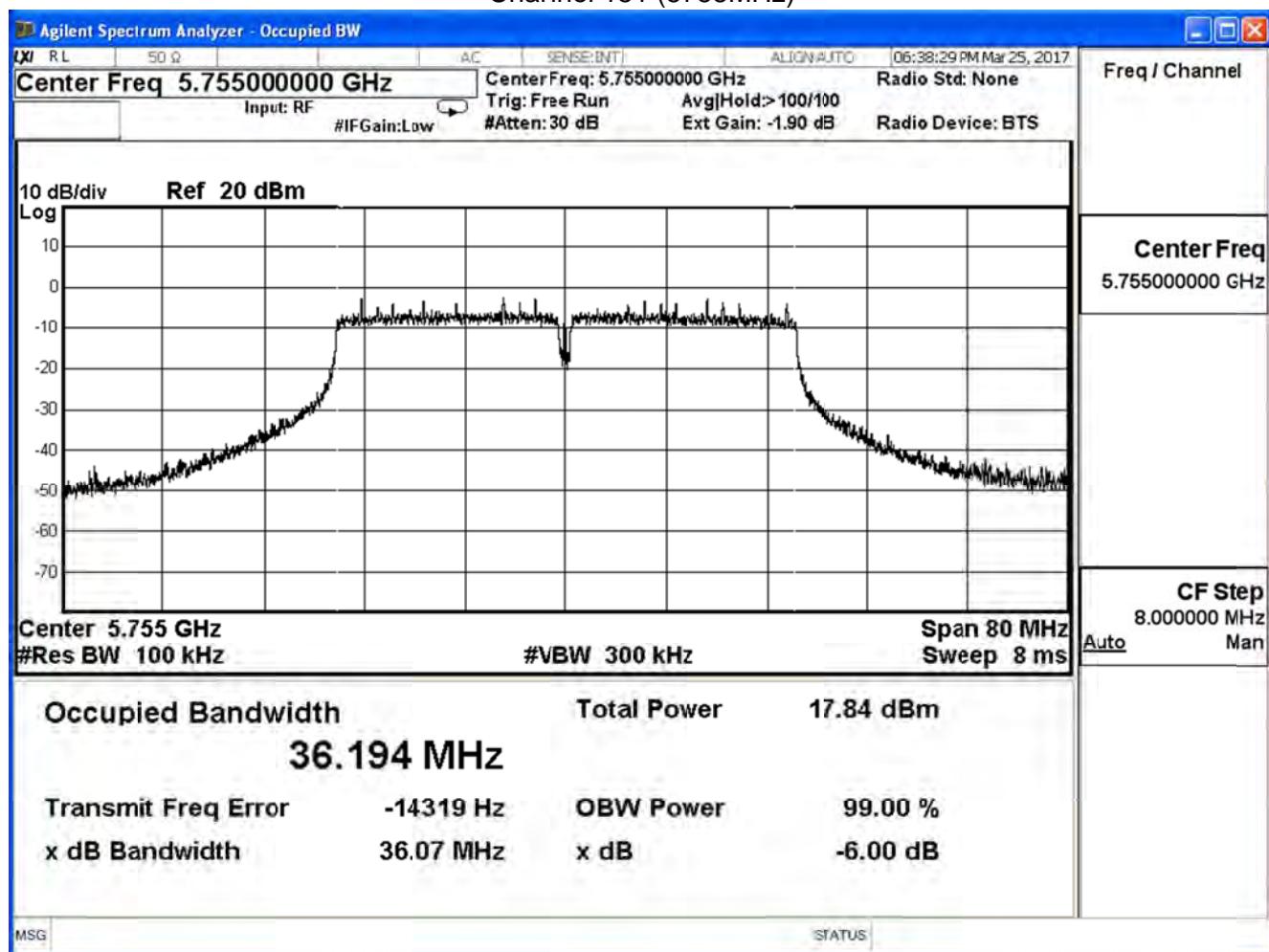
Channel 159 (5795MHz)



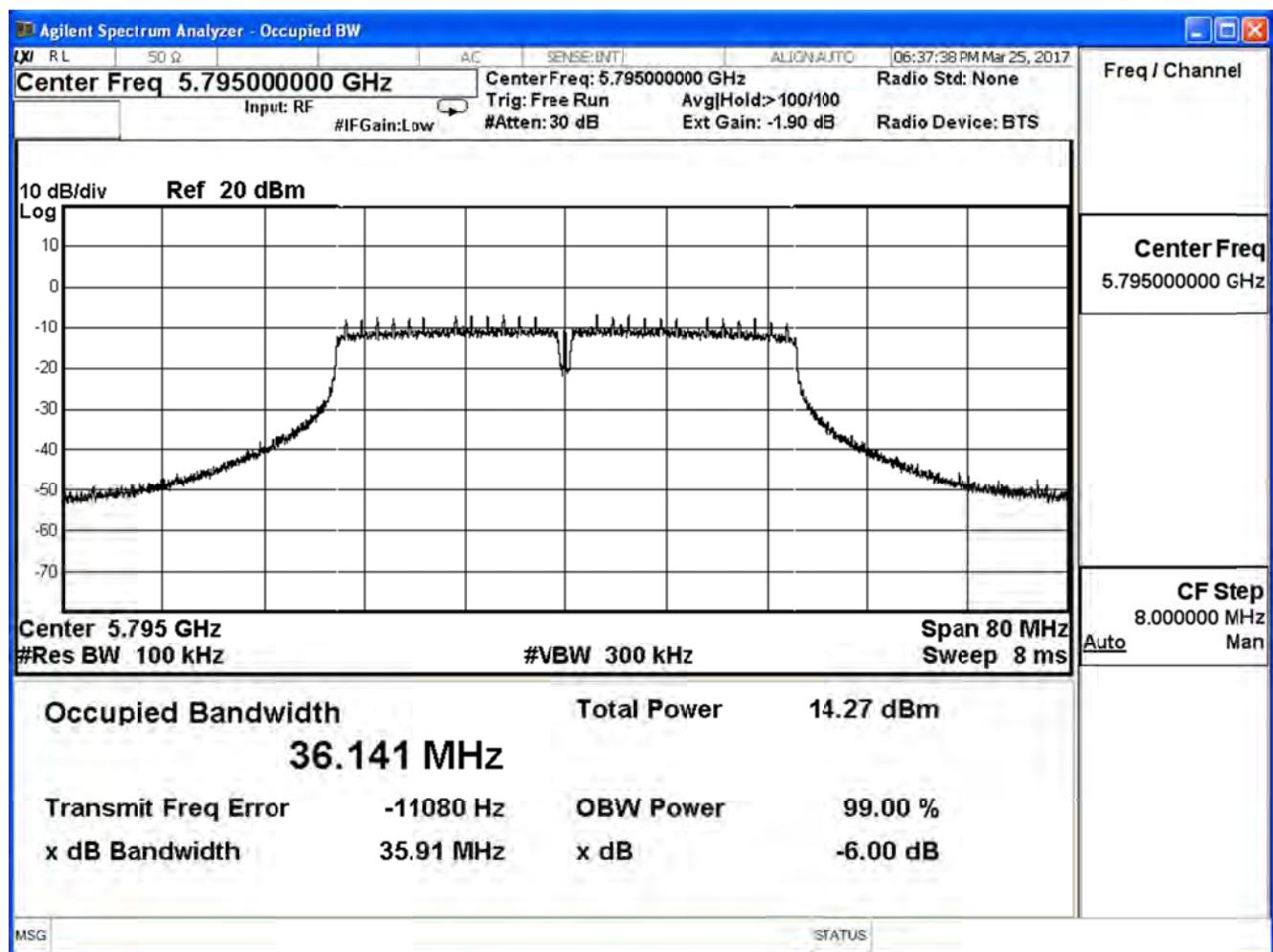
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11n40 (ANT 1)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
151	5755	36.07	>0.5	Pass
159	5795	35.91	>0.5	Pass

Channel 151 (5755MHz)



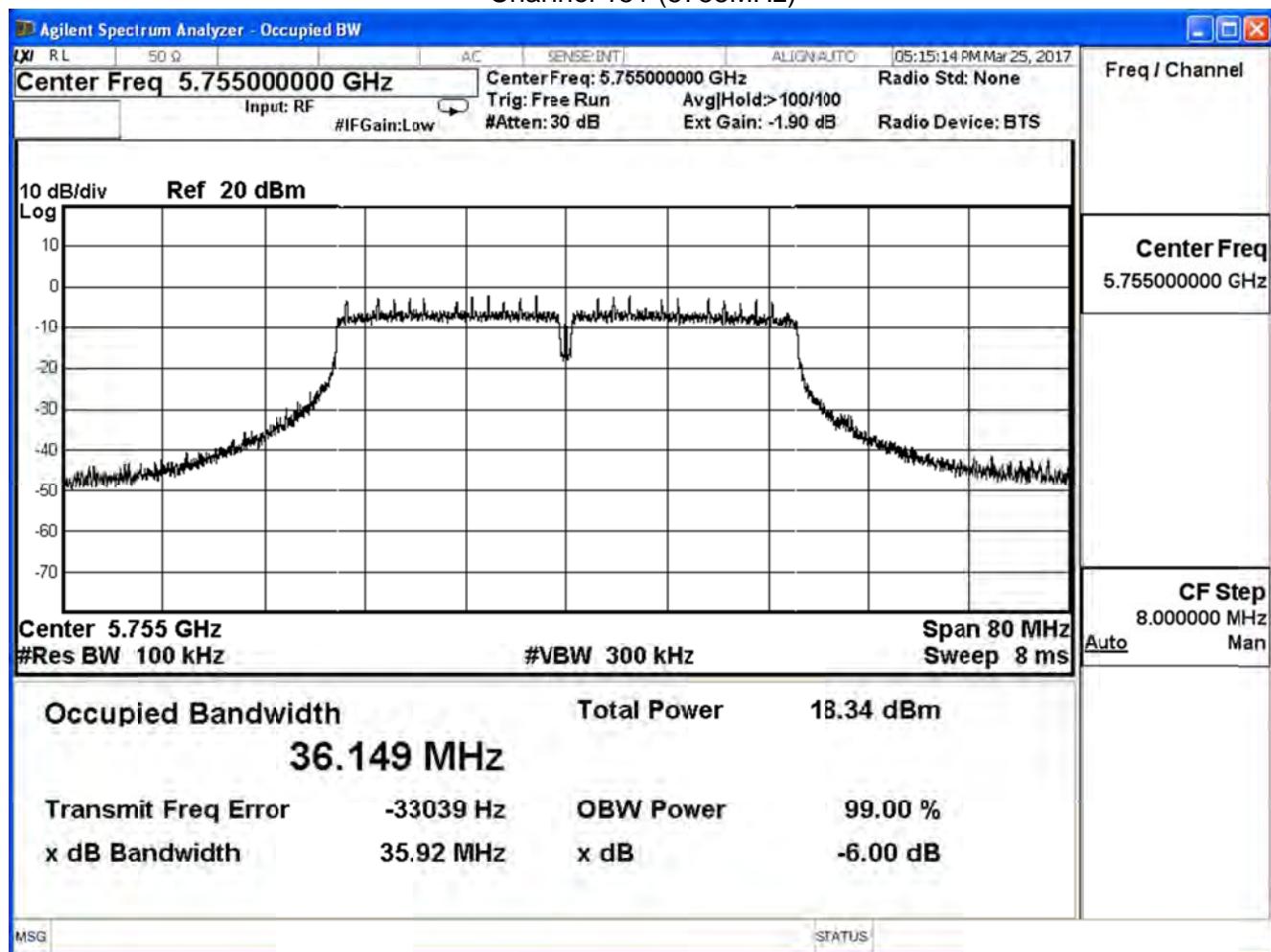
Channel 159 (5795MHz)



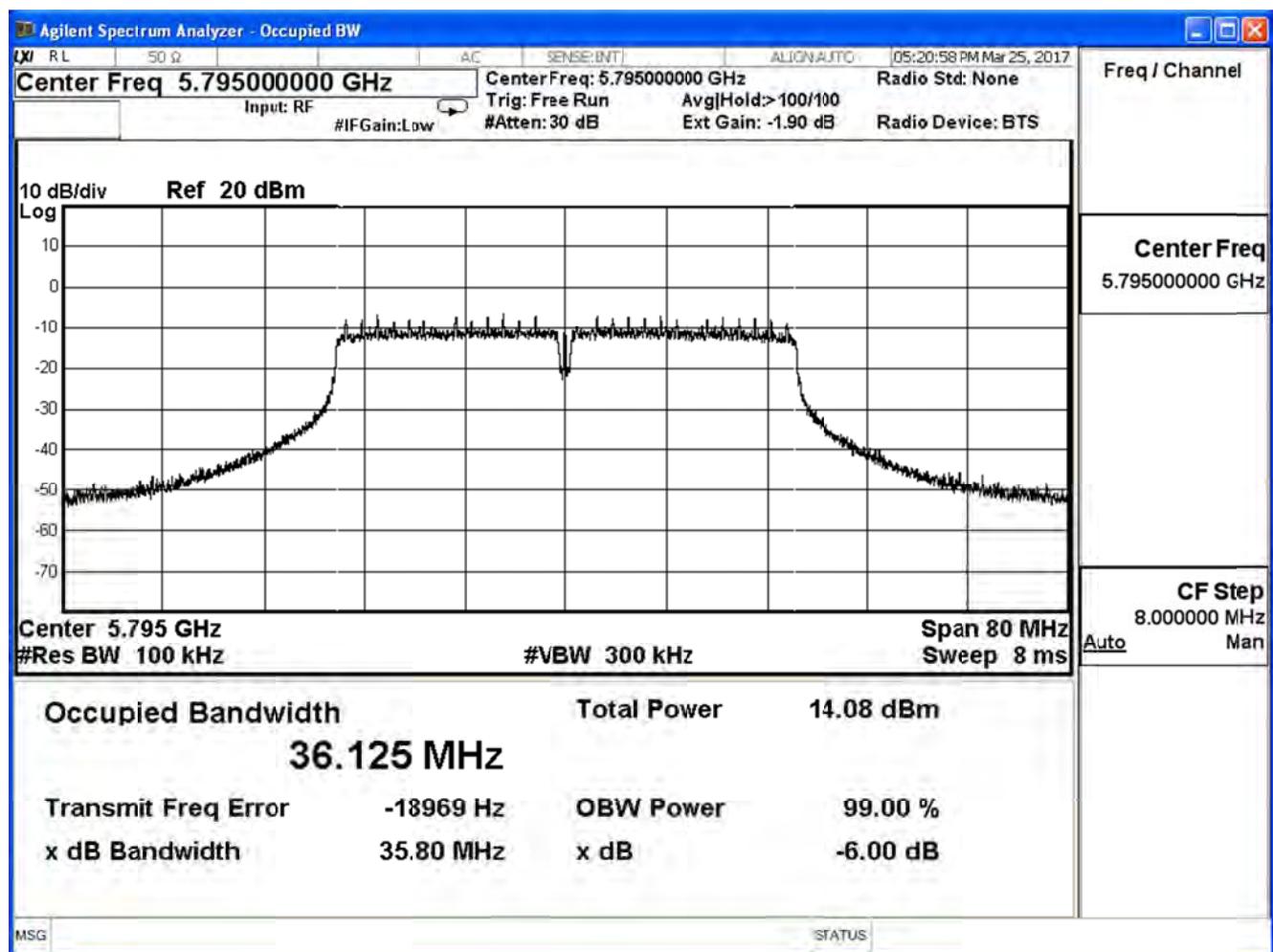
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11n40 (ANT 2)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
151	5755	35.92	>0.5	Pass
159	5795	35.80	>0.5	Pass

Channel 151 (5755MHz)



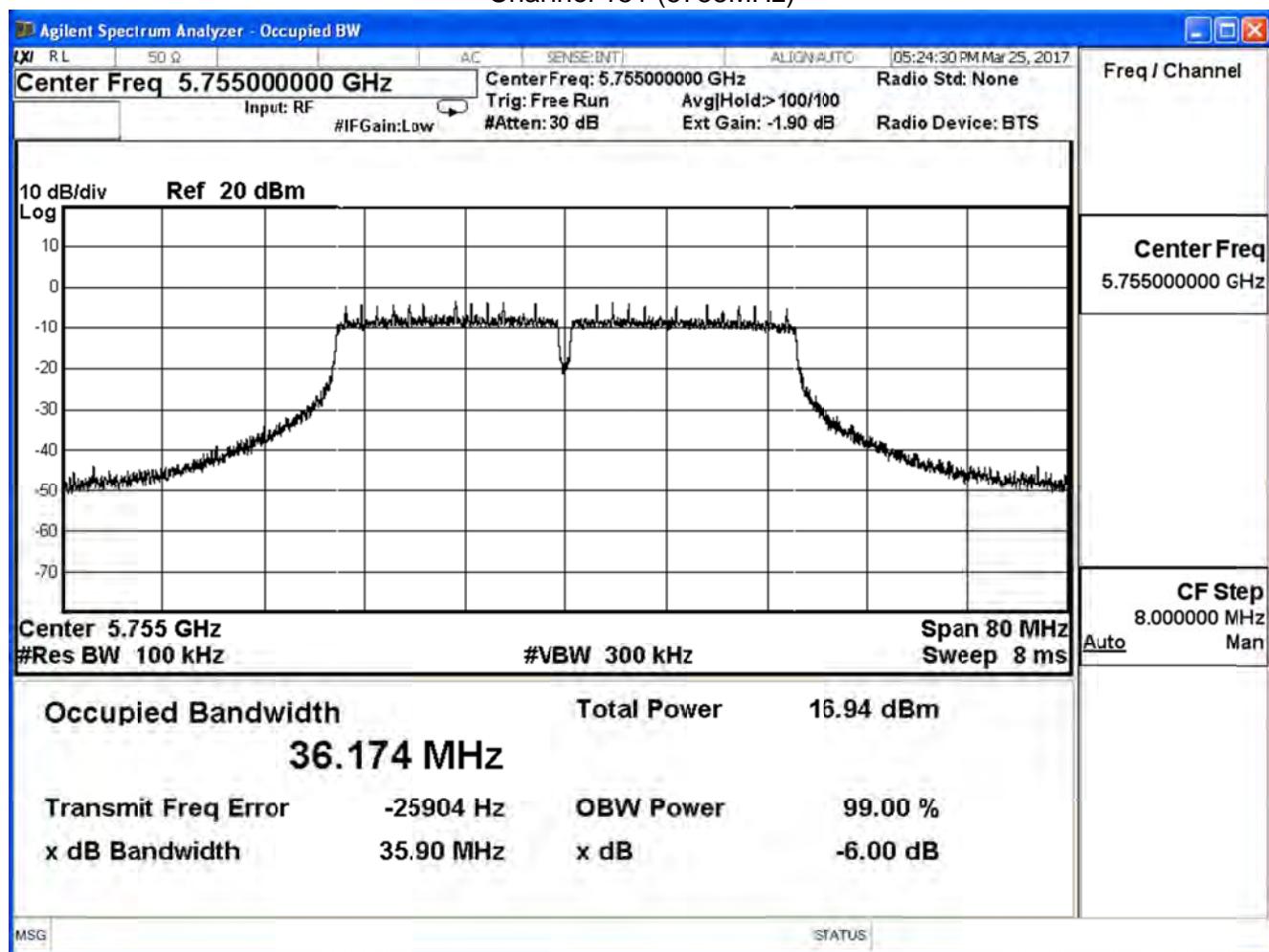
Channel 159 (5795MHz)



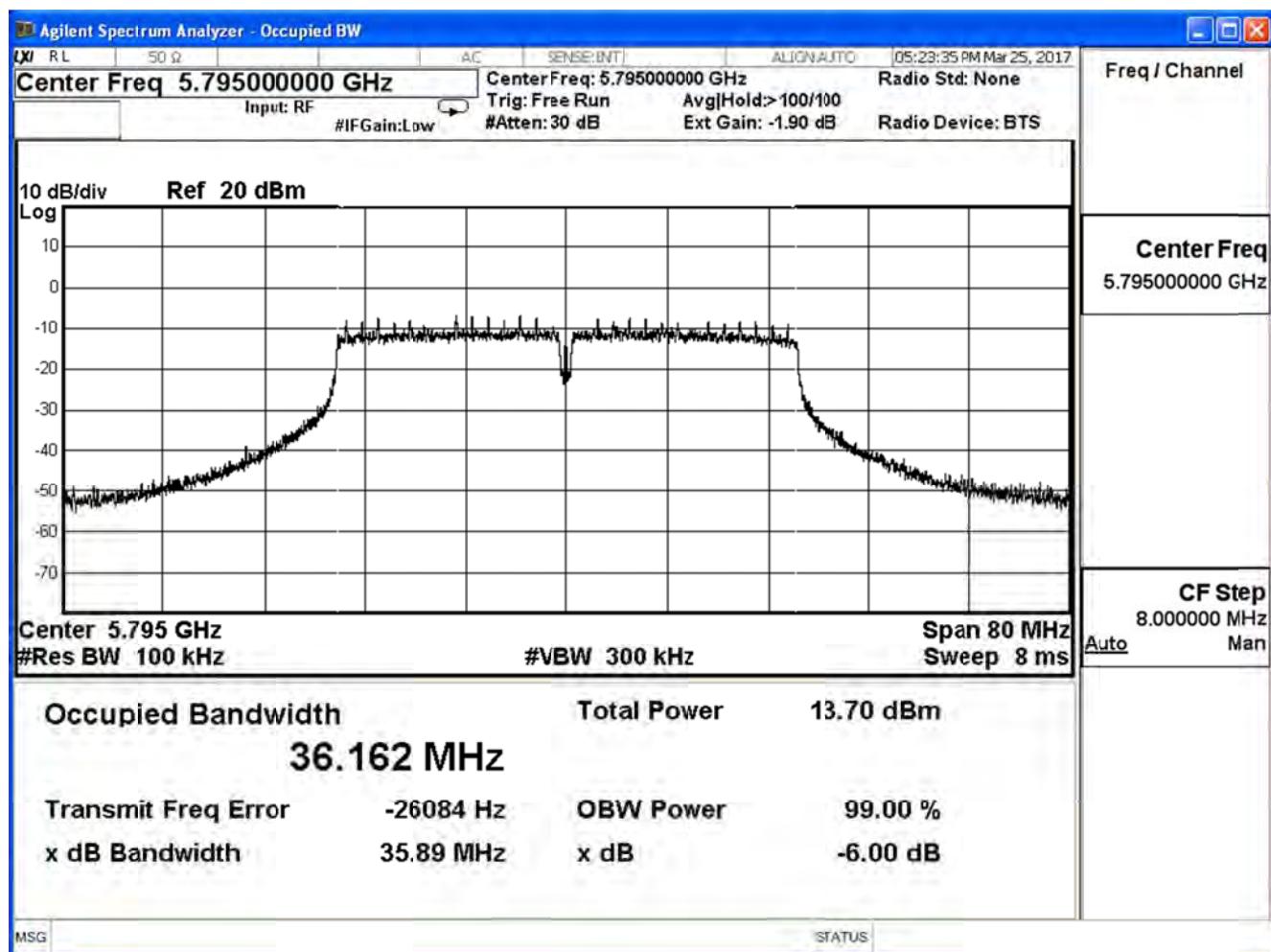
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11n40 (ANT 3)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
151	5755	35.90	>0.5	Pass
159	5795	35.89	>0.5	Pass

Channel 151 (5755MHz)



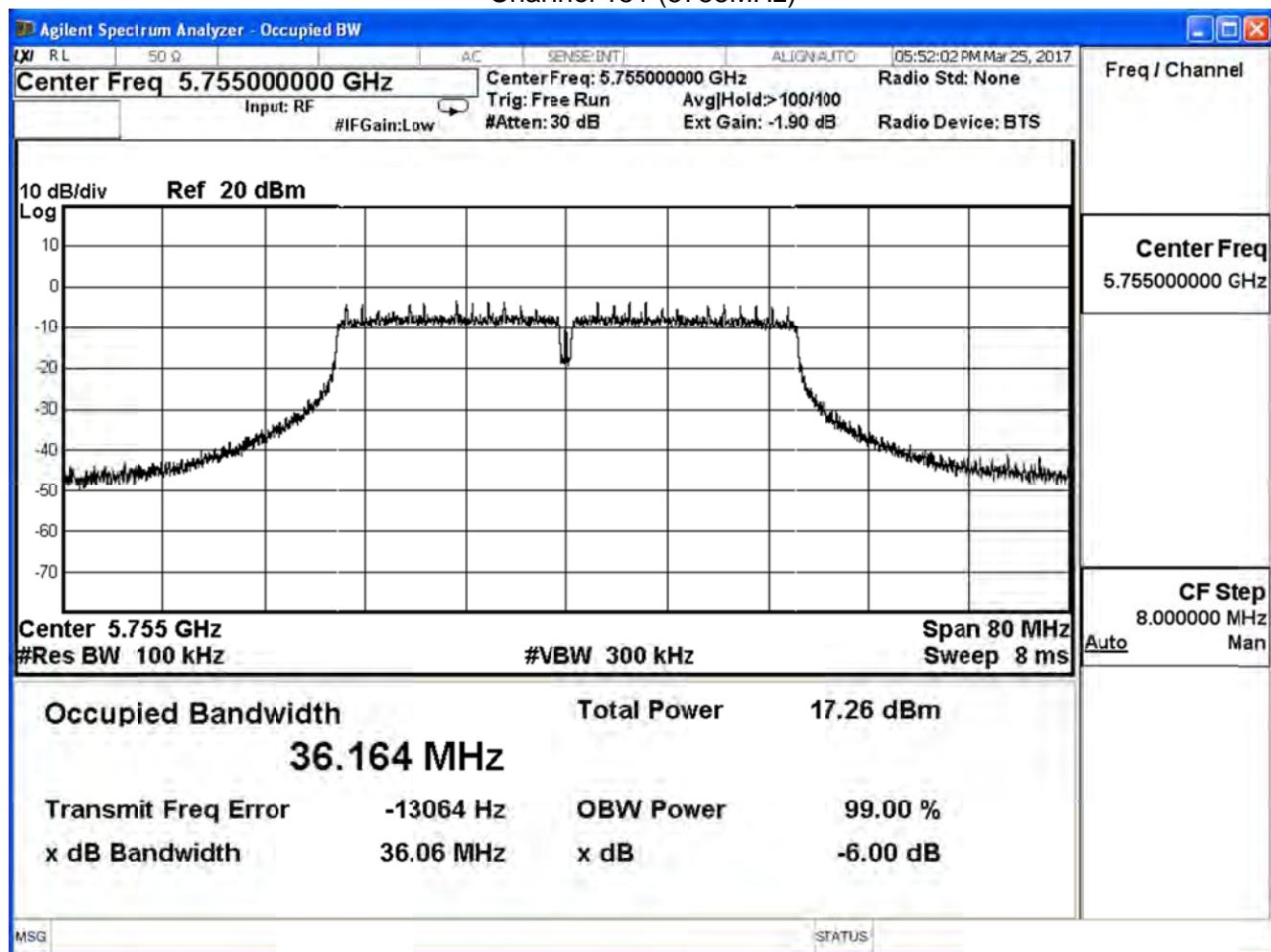
Channel 159 (5795MHz)



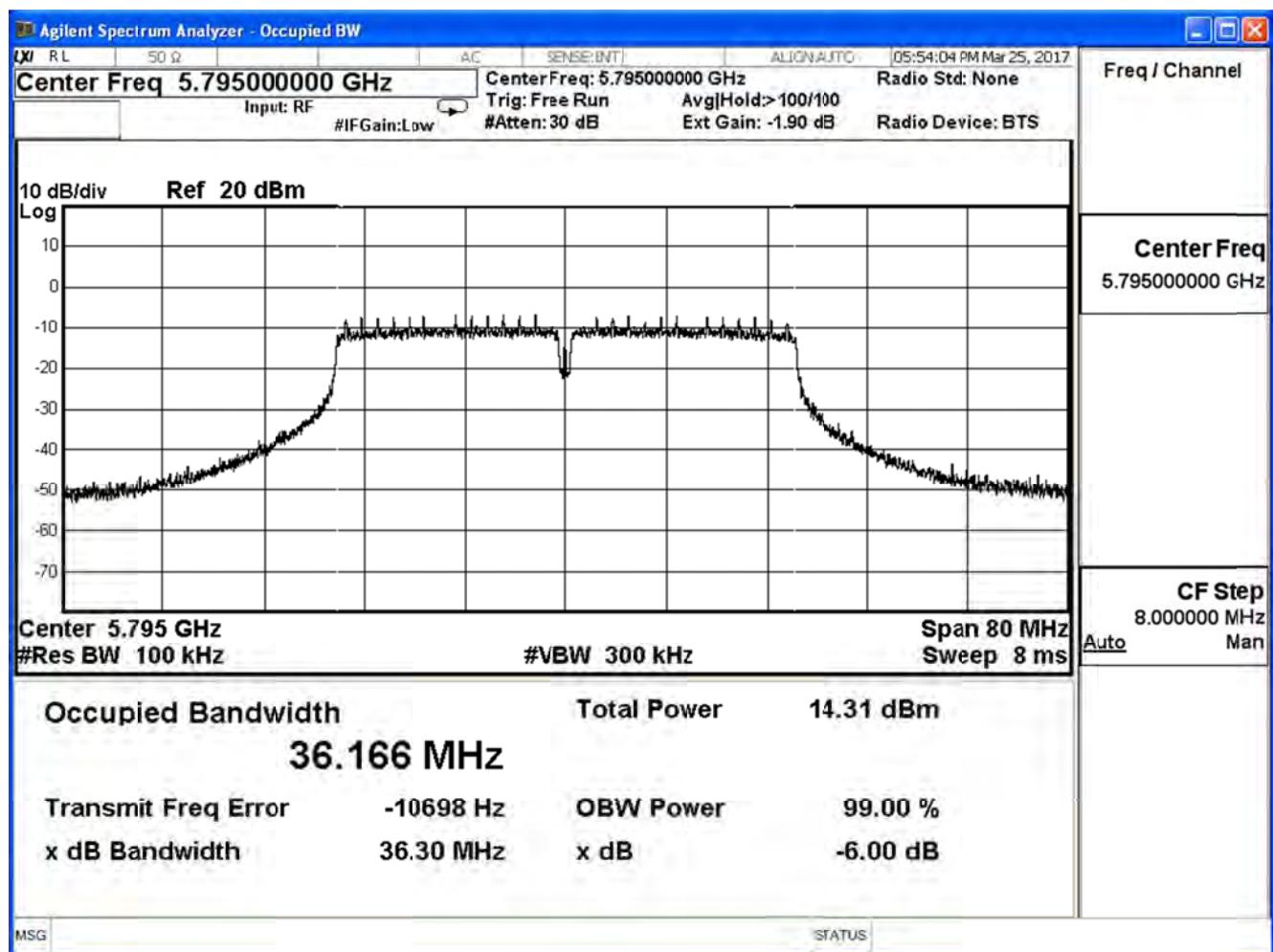
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11n40 (ANT 4)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
151	5755	36.06	>0.5	Pass
159	5795	36.30	>0.5	Pass

Channel 151 (5755MHz)



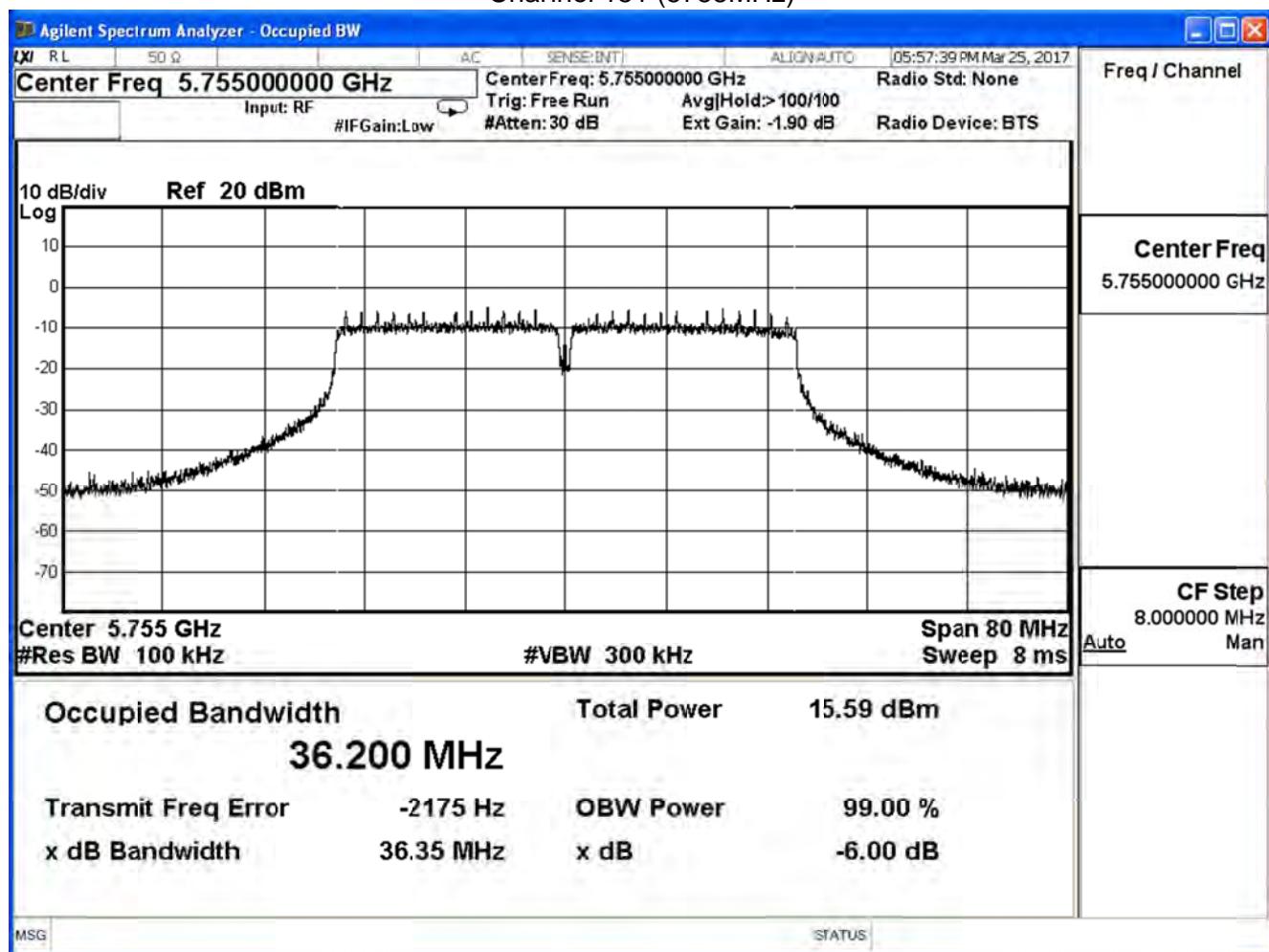
Channel 159 (5795MHz)



Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

IEEE 802.11n40 (ANT 5)				
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
151	5755	36.35	>0.5	Pass
159	5795	36.28	>0.5	Pass

Channel 151 (5755MHz)



Channel 159 (5795MHz)

