

FCC Test Report

Product Name : Outdoor 5G MIMO-OFDM Radio
Trade Name : IO-Power
Model No. : EL-N-1, EL-N-2, EL-N-3, ML-N-1, ML-N-2, ML-N-3
FCC ID. : 2ANBN-IOP-EL-N

Applicant : IO-Power Technology Co., Ltd.
Address : 1F., No.100, Jinzhu Rd., North Dist., Hsinchu
City 30055, Taiwan

Date of Receipt : Feb. 23, 2017
Issued Date : Aug. 23, 2017
Report No. : 1750005R-RFUSP42V00
Report Version : V1.0



The test results relate only to the samples tested.

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Test Report Certification

Issued Date: Aug. 23, 2017

Report No. : 1750005R-RFUSP42V00



Product Name : Outdoor 5G MIMO-OFDM Radio
Applicant : IO-Power Technology Co., Ltd.
Address : 1F., No.100, Jinzhu Rd., North Dist., Hsinchu City 30055, Taiwan
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. : 2ANBN-IOP-EL-N
EUT Voltage : DC 48V
Testing Voltage : DC 48V
Trade Name : IO-Power
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

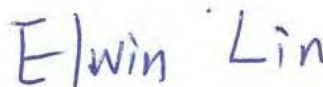
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(Demi Chang / Senior Engineering Adm. Specialist)

Tested By

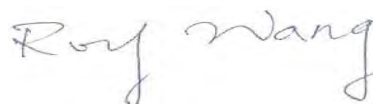
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(Elwin Lin / Assistant Engineer)

Approved By

:



(Roy Wang / Director)

Revision History

Report No.	Version	Description	Issued Date
1750005R-RFUSP42V00	V1.0	Initial issue of report	Aug. 23, 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: 0007939127
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 sites 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 / FAX:+886-3-592-8859 E-Mail : info.tw@dekra.com
- 2 No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan
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 31061, Taiwan
TEL: +886-3-582-8001 / FAX: +886-3-582-8958 E-Mail : info.tw@dekra.com

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

Product Name	Outdoor 5G MIMO-OFDM Radio	
Trade Name	IO-Power	
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/	5745~5825MHz / 5 Channels
	IEEE 802.11n (20MHz)	
	IEEE 802.11n (40MHz)	5755~5795MHz / 2 Channels
Type of Modulation	IEEE 802.11a/n	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 802.11a/n (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. 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 Multi-cast / Broadcast.
EL-N-2	2 sheets WIFI Module	
EL-N-3	3 sheets WIFI Module	
ML-N-1	1 sheet WIFI Module	General function
ML-N-2	2 sheets WIFI Module	
ML-N-3	3 sheets WIFI Module	

4. Those series models of product features, brand, design is the identical. The difference between the series models is only the hardware using different number of WIFI module and the software advanced difference.

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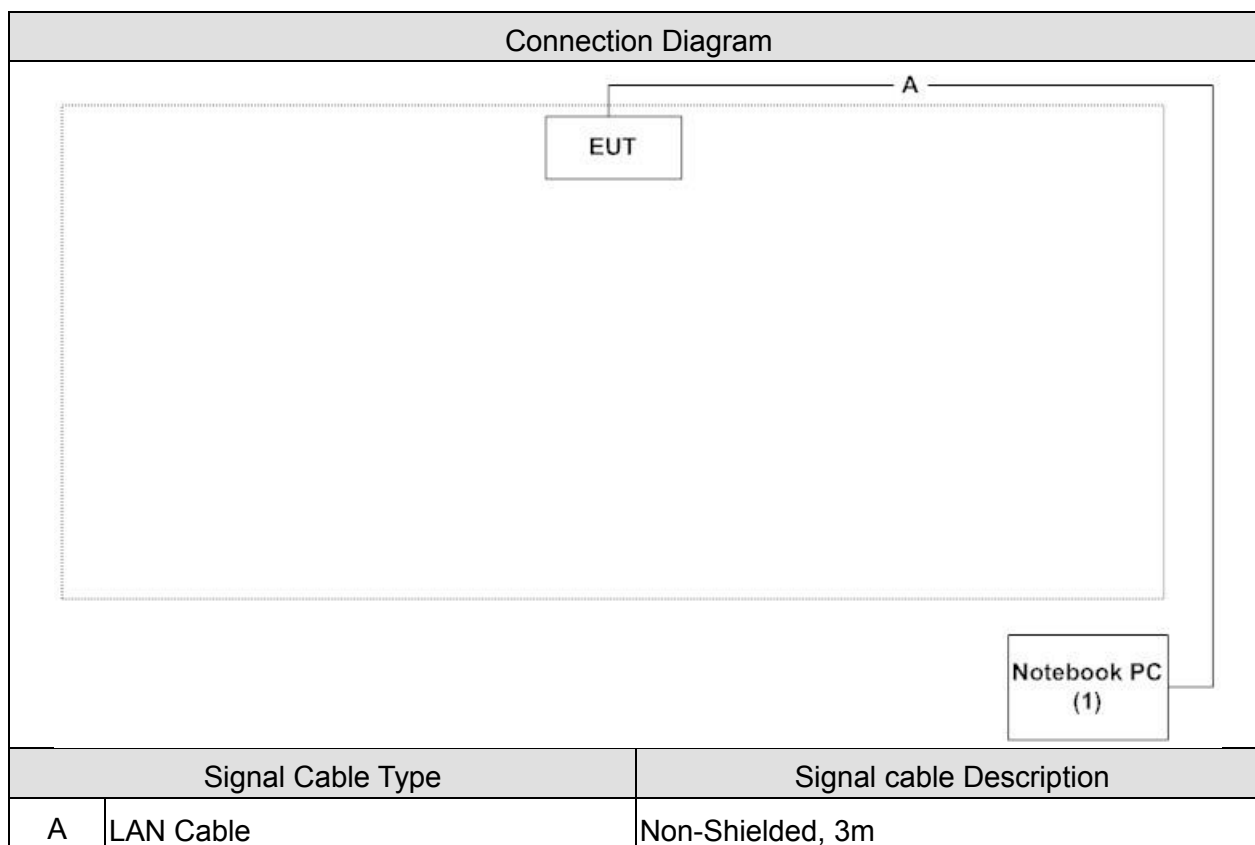
Test Items	Modulation	Channel	Antenna	Result
Conducted Emission	11n (40MHz)	151/159	0/1/2/3/4/5	N/A
99% & DTS Bandwidth	a	149/157/165	0/1/2/3/4/5	Complies
	11n (20MHz)	149/157/165	0/1/2/3/4/5	Complies
	11n (40MHz)	151/159	0/1/2/3/4/5	Complies
Peak Transmit Output	a	149/157/165	0+1+2+3+4+5	Complies
	11n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

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	Test Site
Temperature (°C)	FCC PART 15 E 15.407 99% & DTS Bandwidth	15 - 35	25°C	3
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	3
Humidity (%RH)		25 - 75	65%RH	
Barometric pressure (mbar)		860 - 1060	950-1000	
Temperature (°C)	FCC PART 15 E 15.407 Peak Power Spectrum Density	15 - 35	25°C	3
Humidity (%RH)		25 - 75	45%RH	
Barometric pressure (mbar)		860 - 1060	950-1000	
Temperature (°C)	FCC PART 15 E 15.407 Radiated Emission	15 - 35	25°C	2
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	2
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	3
Humidity (%RH)		25 - 75	45%RH	
Barometric pressure (mbar)		860 - 1060	950-1000	

2. Conducted Emission

2.1. Test Equipment

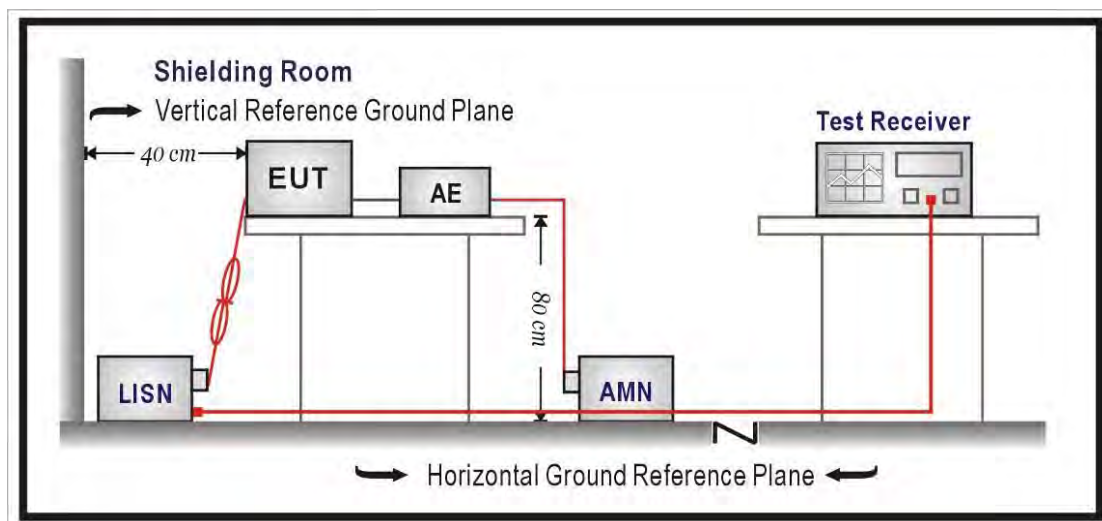
The following test equipments are used during the test:

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

EUT using DC input voltage, so the project does not have to test for testing.

3. 99% & DTS Bandwidth

3.1. Test Equipment

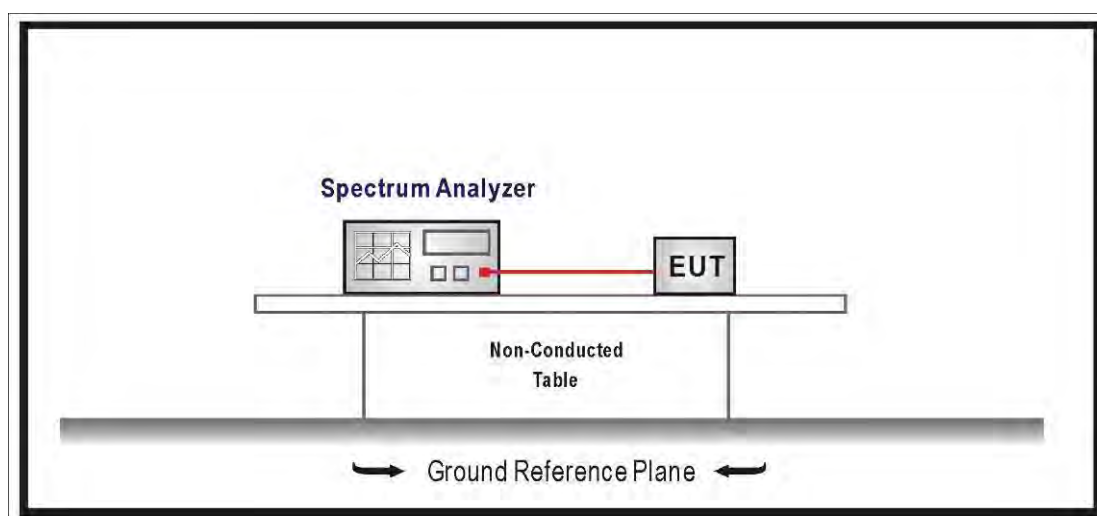
The following test equipments are used during the radiated emission tests:

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 $\pm 150\text{Hz}$

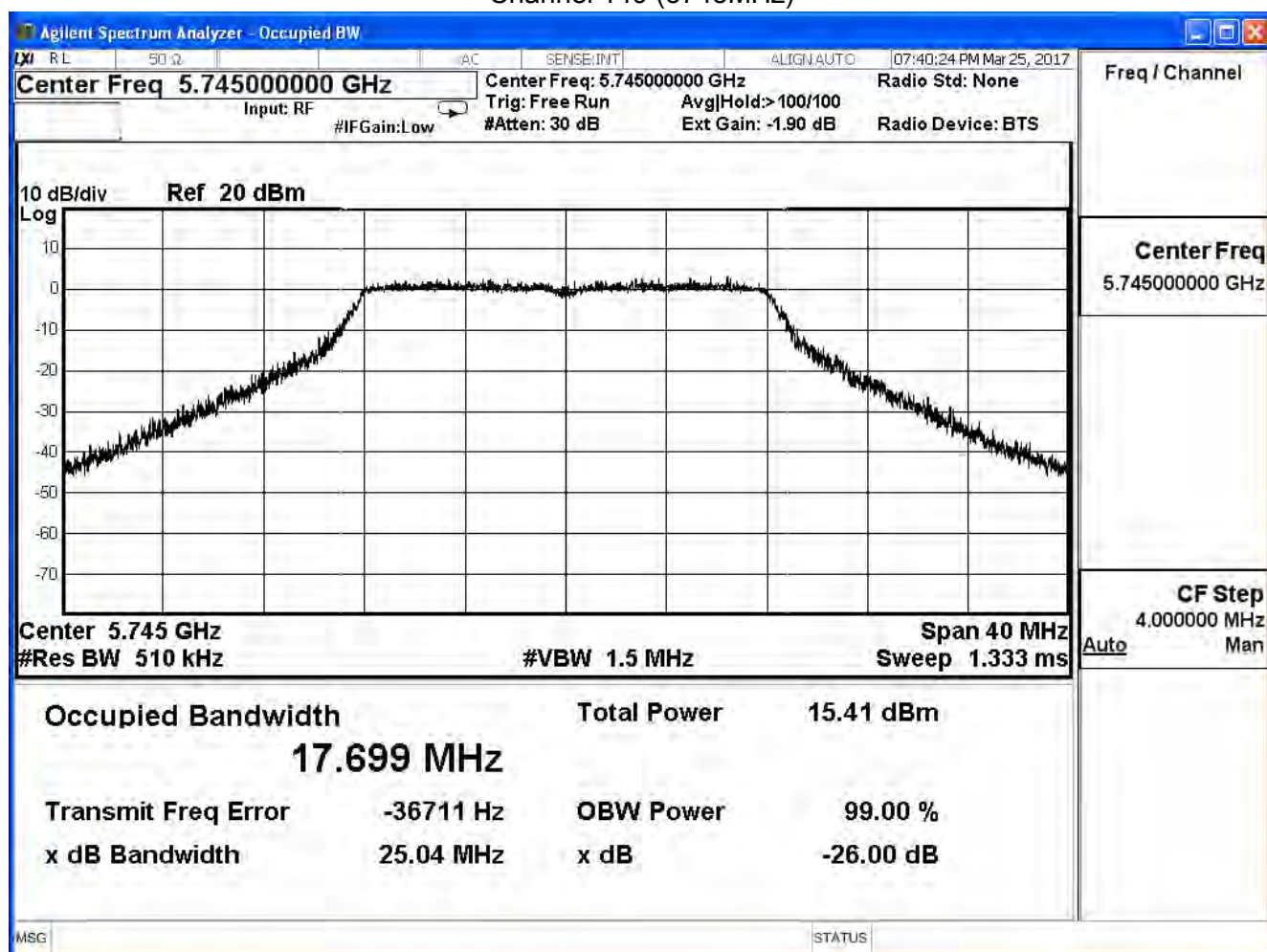
3.6. Test Result

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

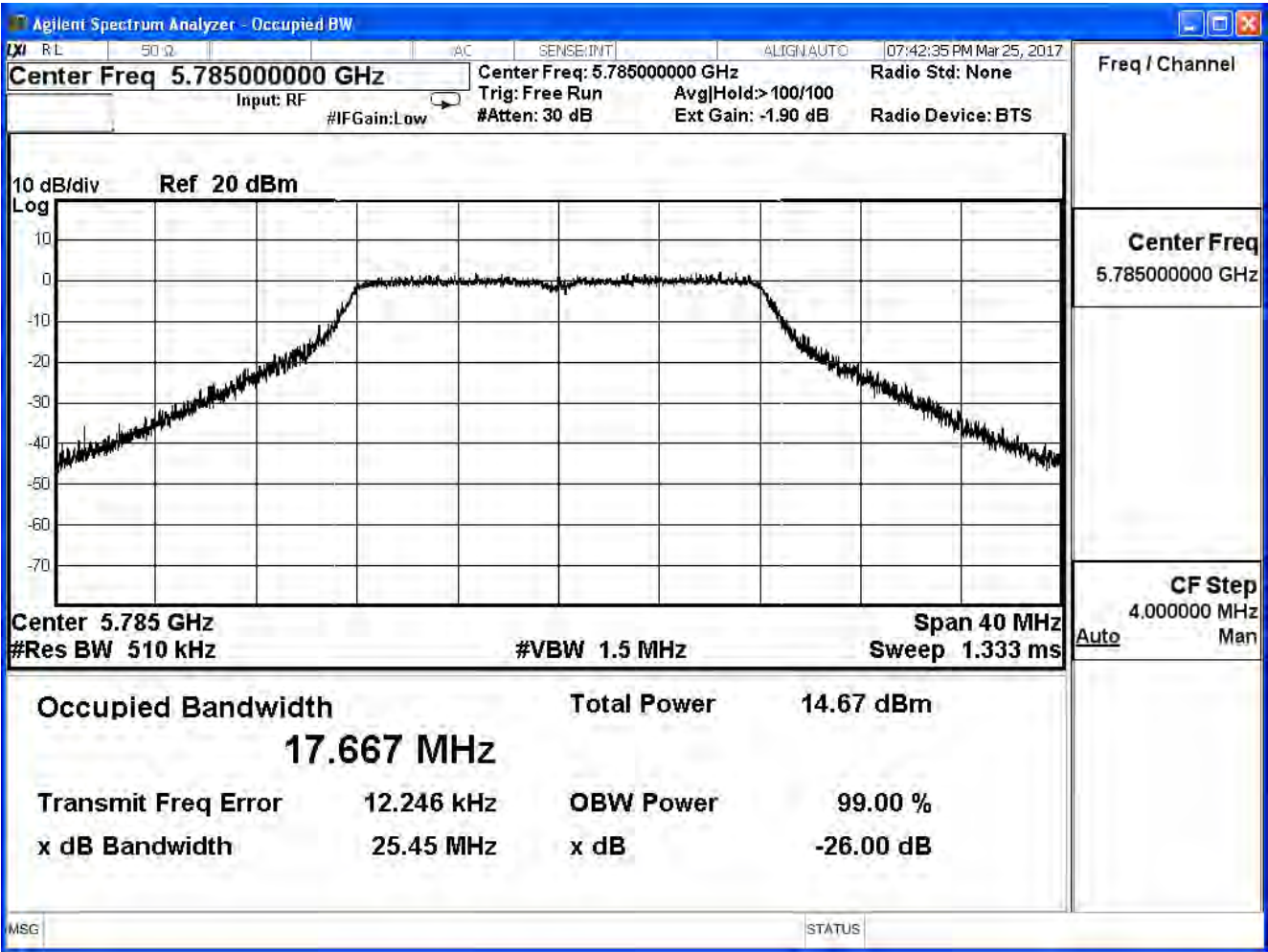
IEEE 802.11a (ANT 0) (Gain 2±0.7dBi)

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	--

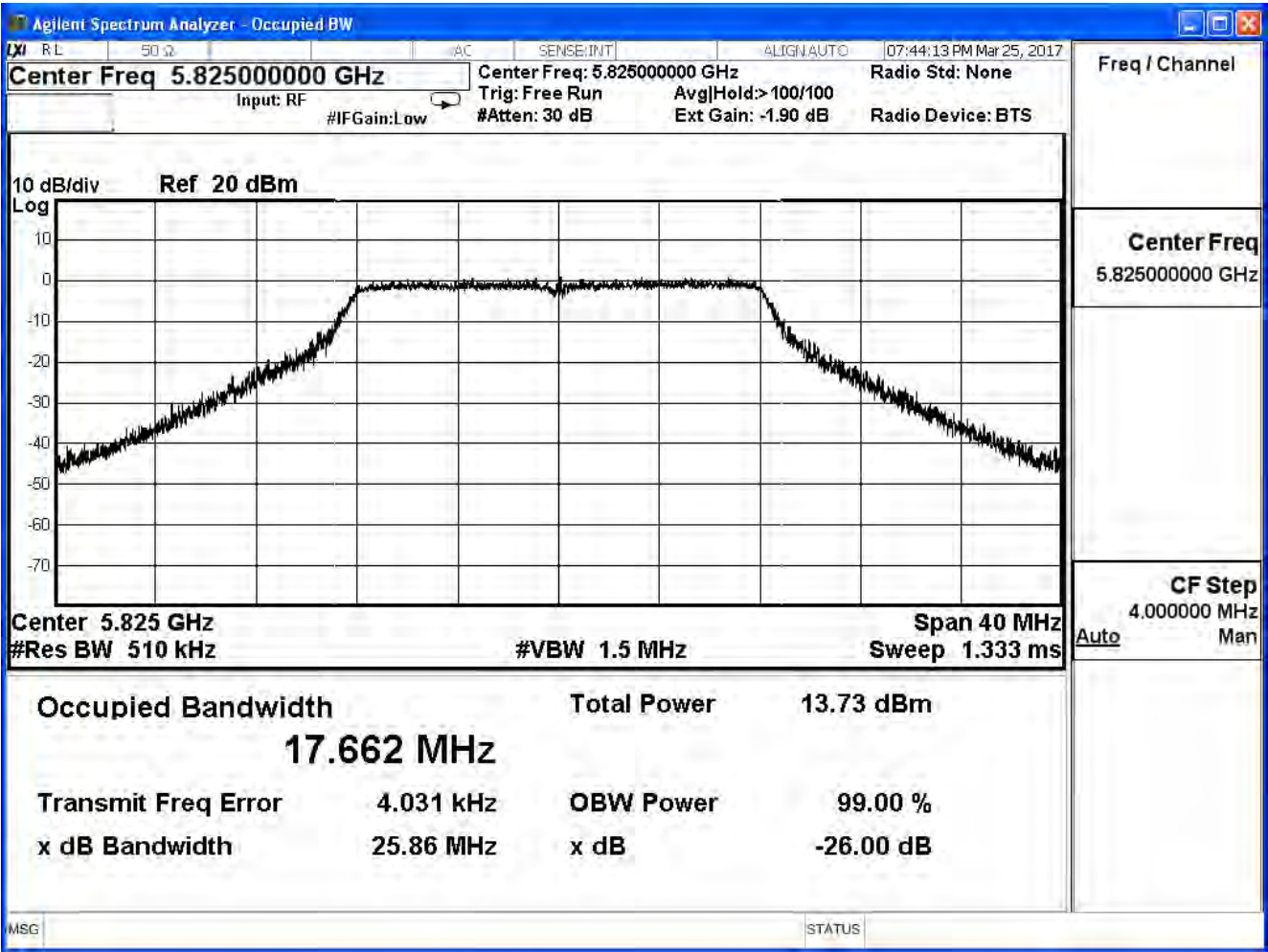
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

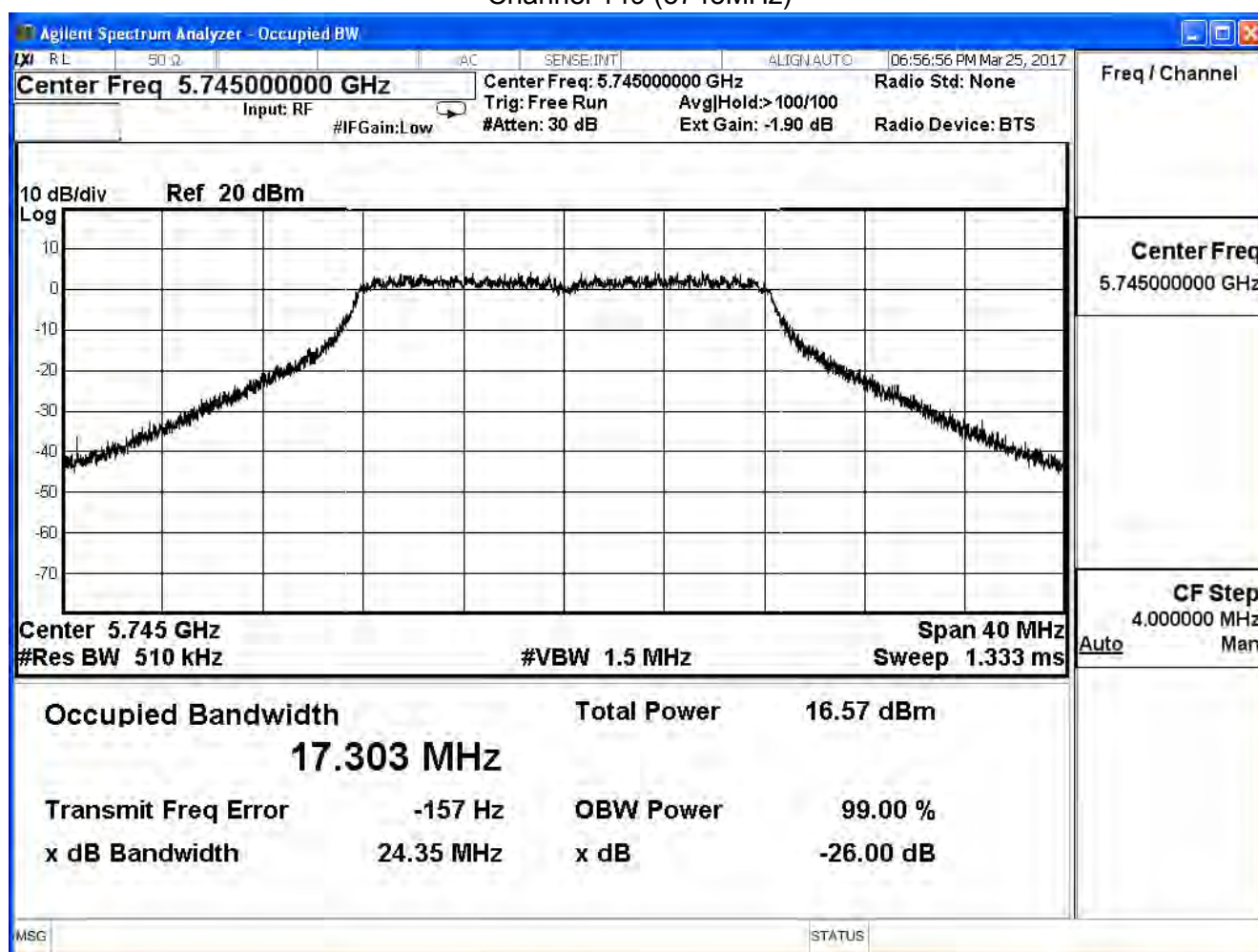


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

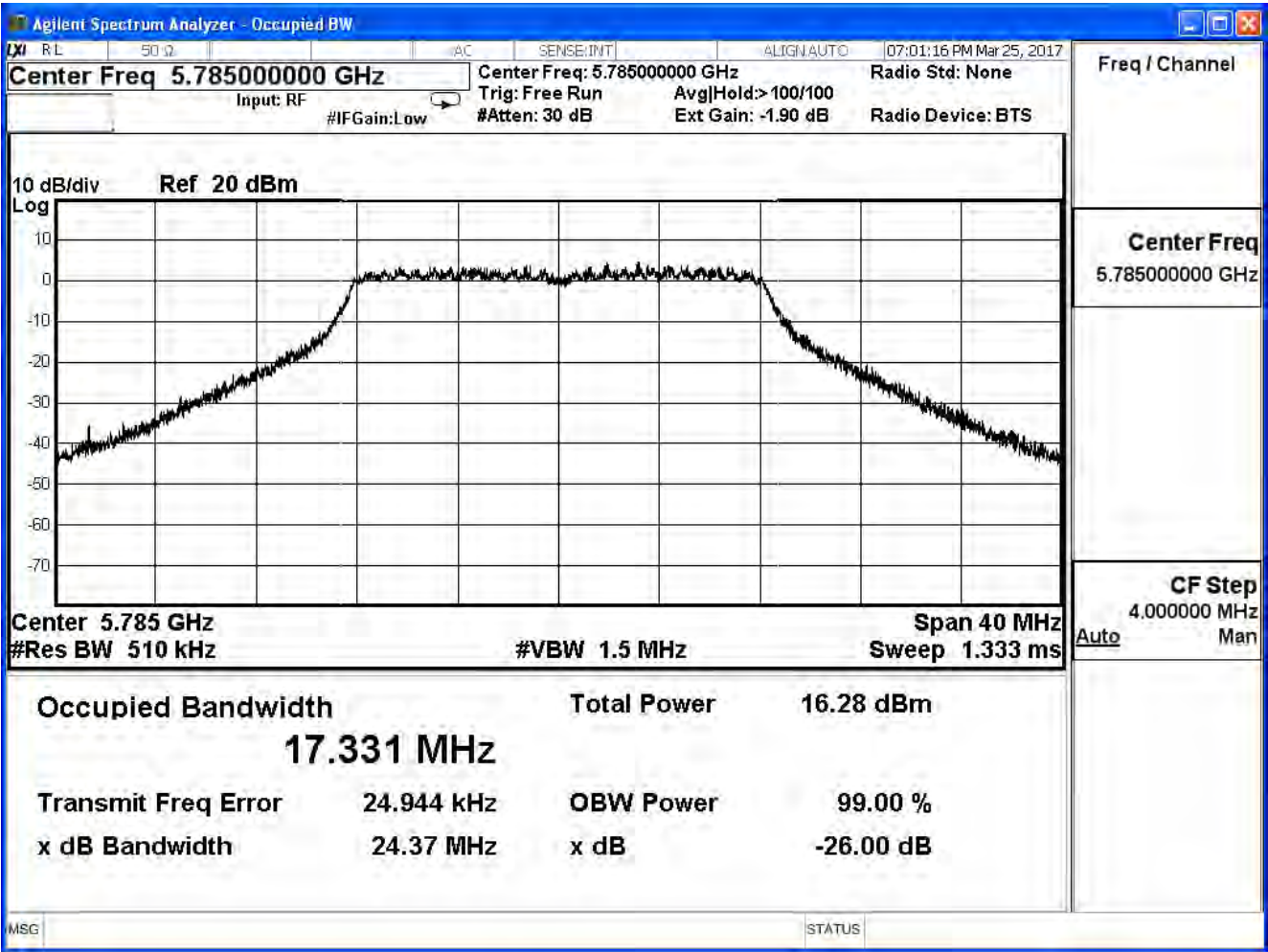
IEEE 802.11a (ANT 1)

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	--

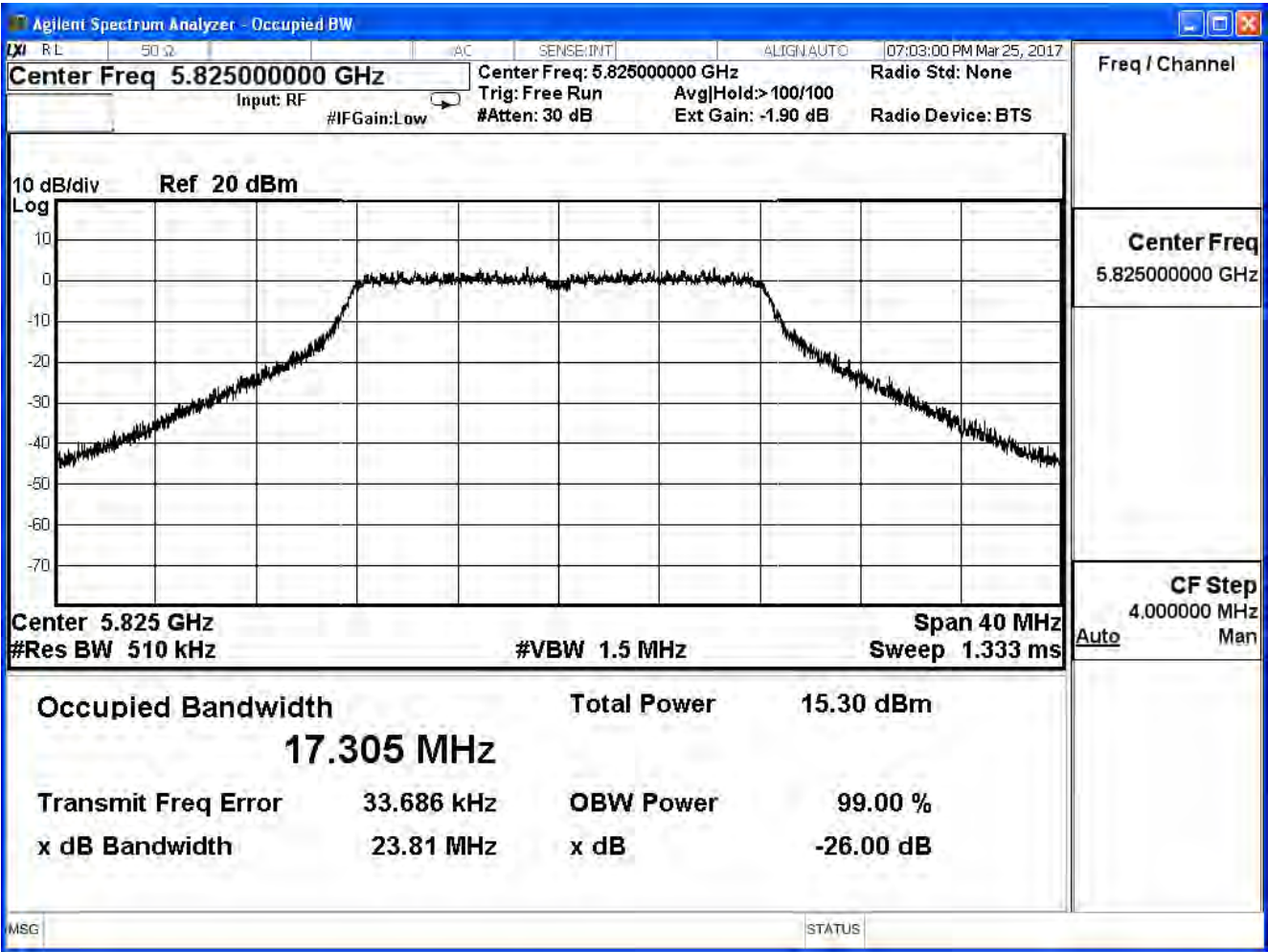
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

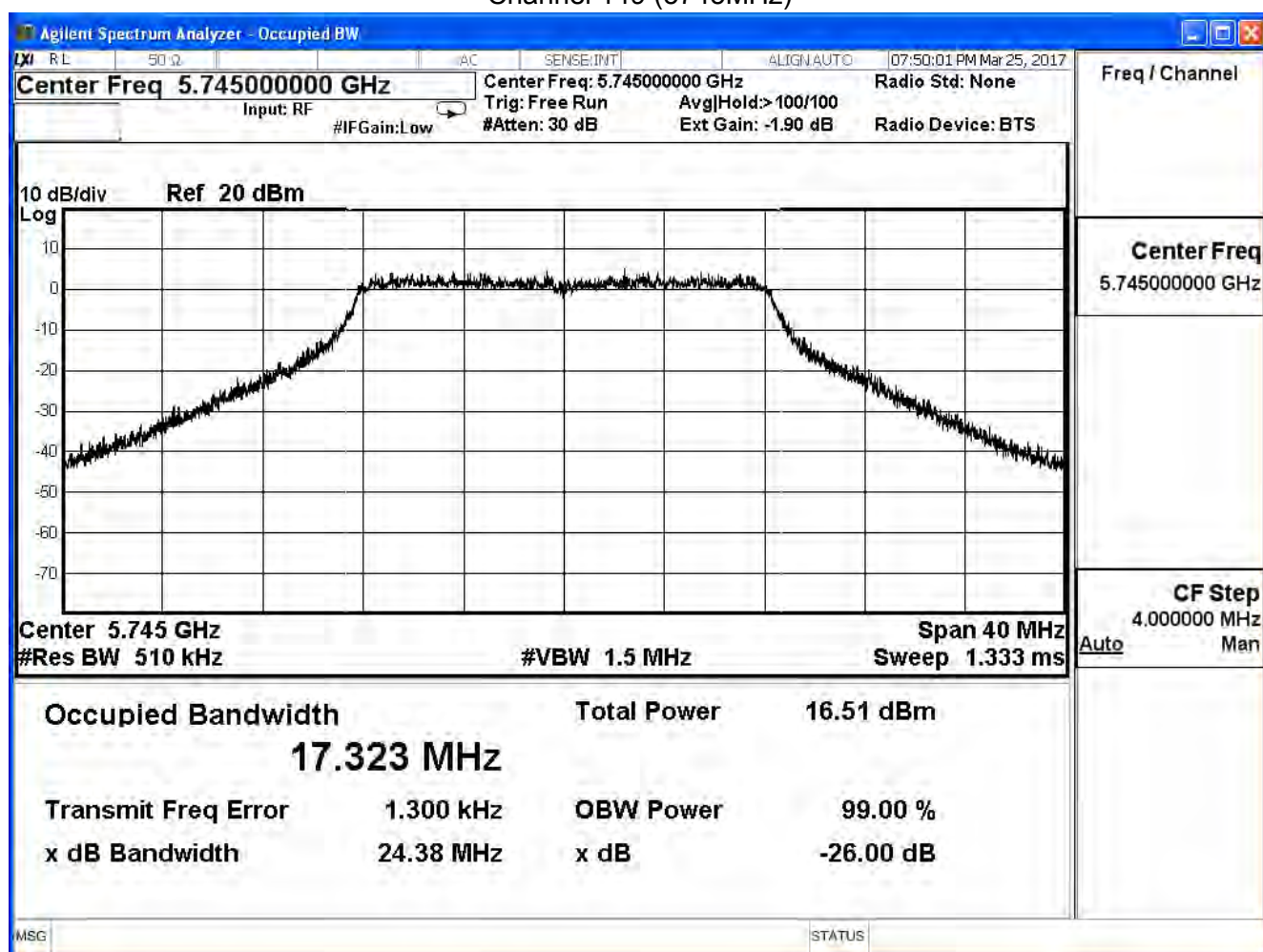


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

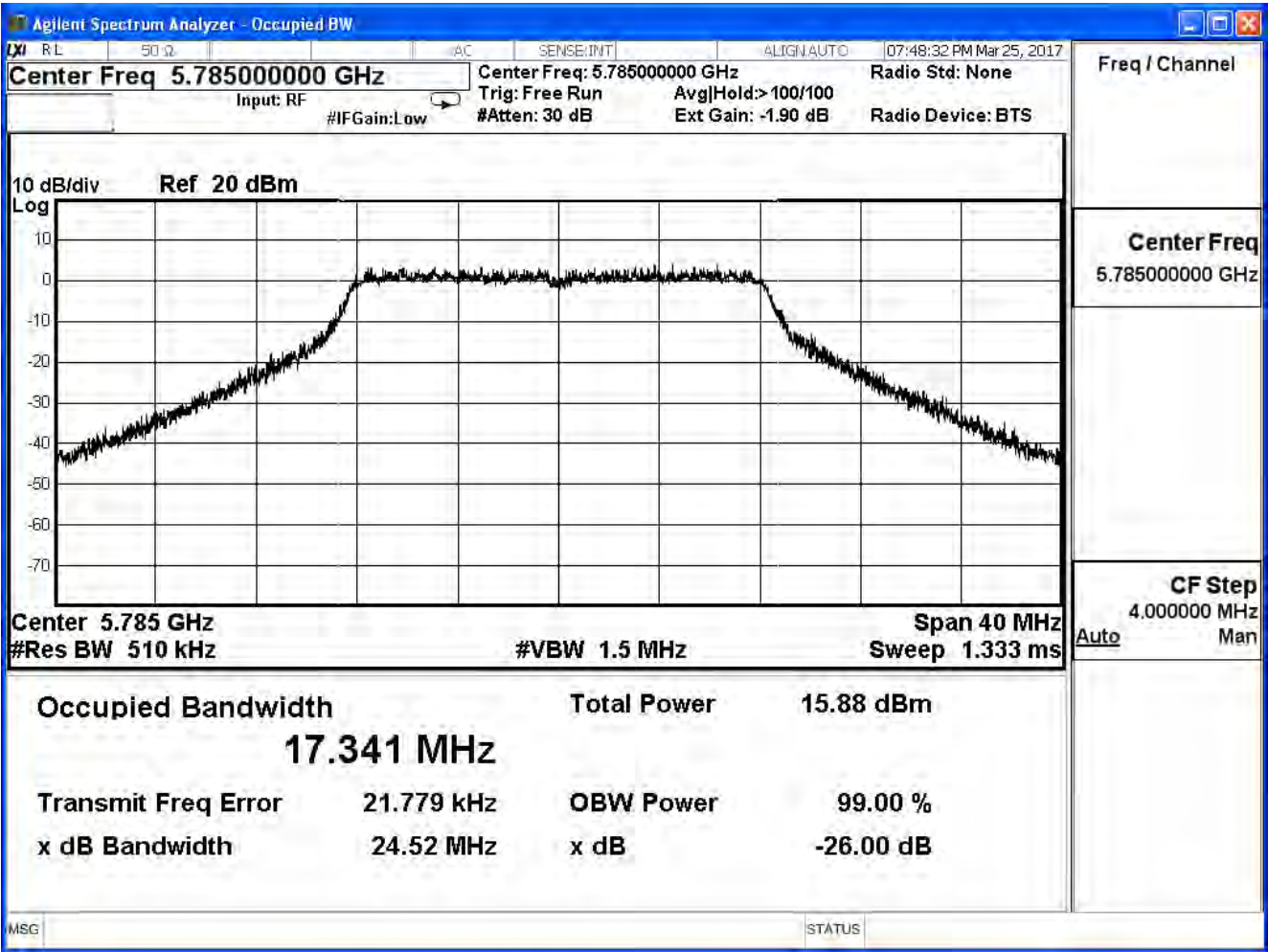
IEEE 802.11a (ANT 2) (Gain 2±0.7dBi)

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	--

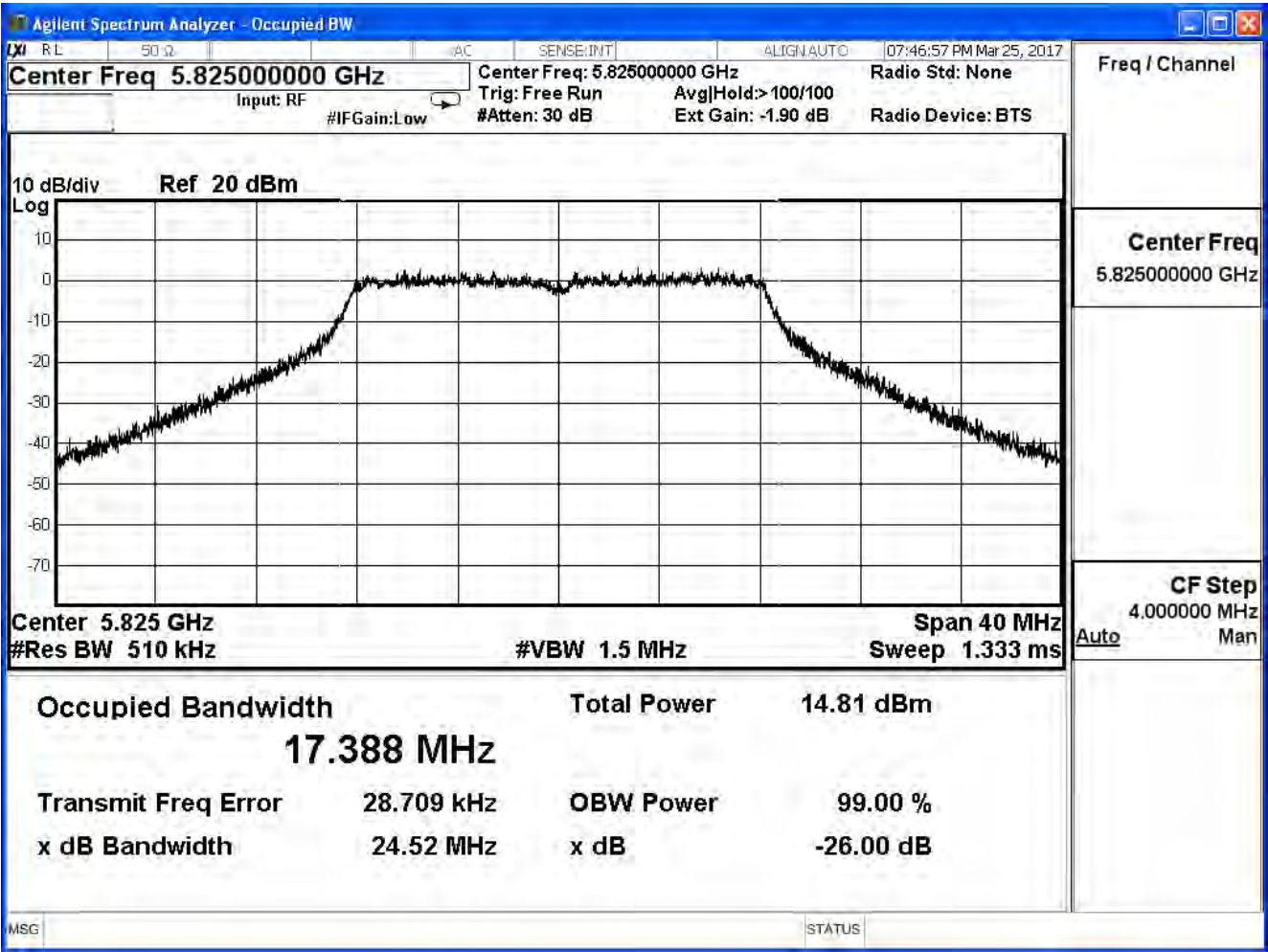
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

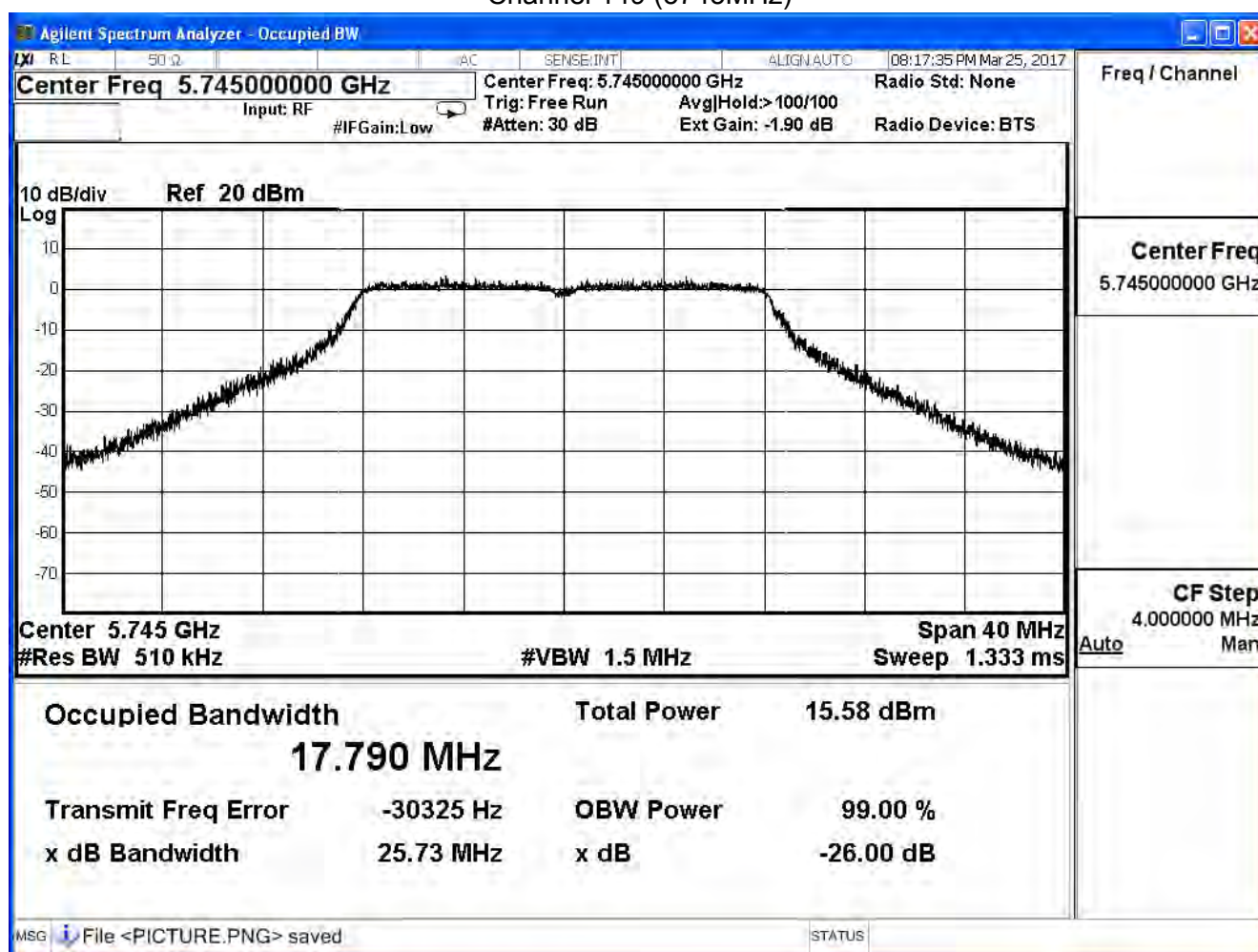


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

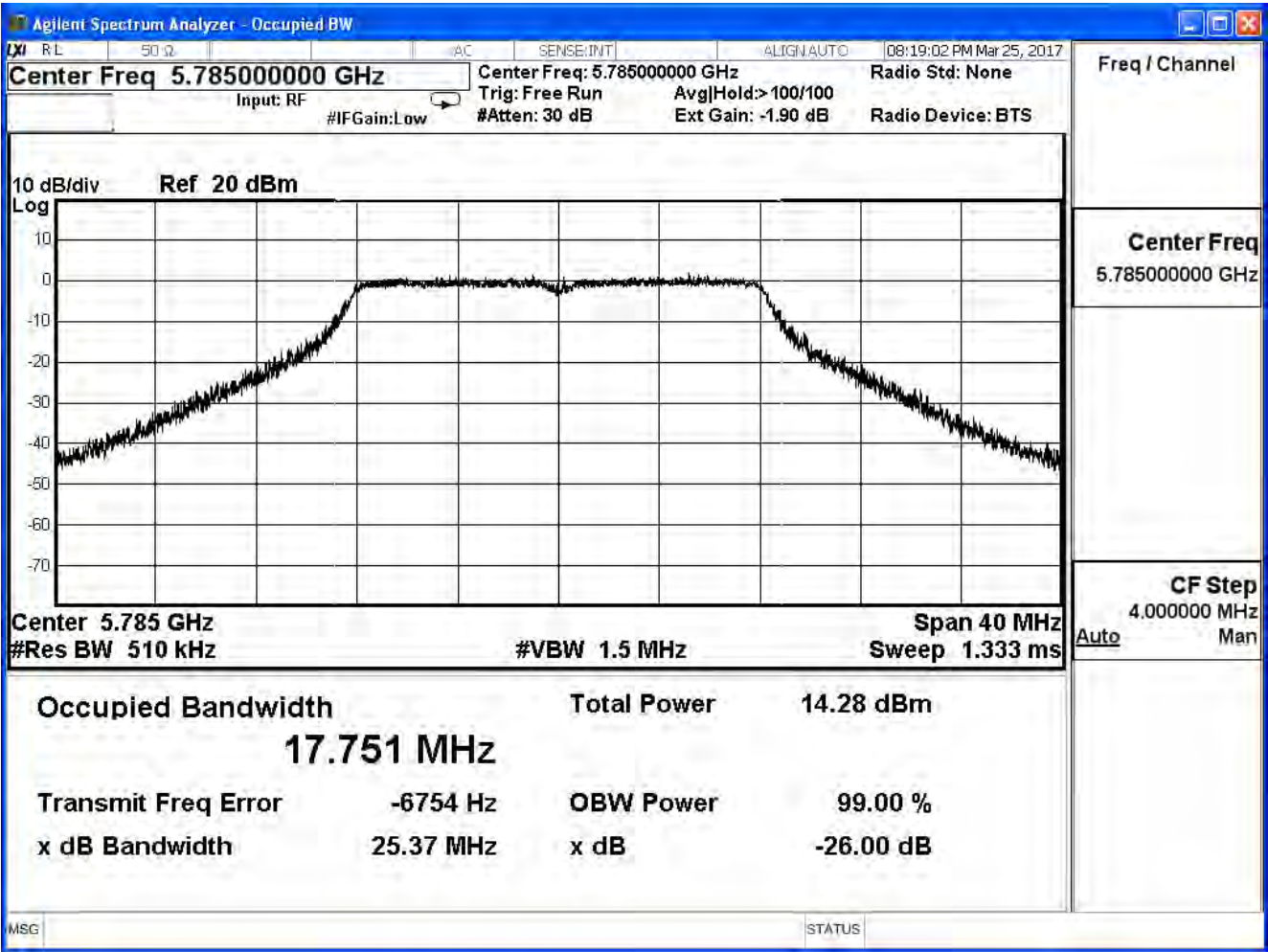
IEEE 802.11a (ANT 3)

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	--

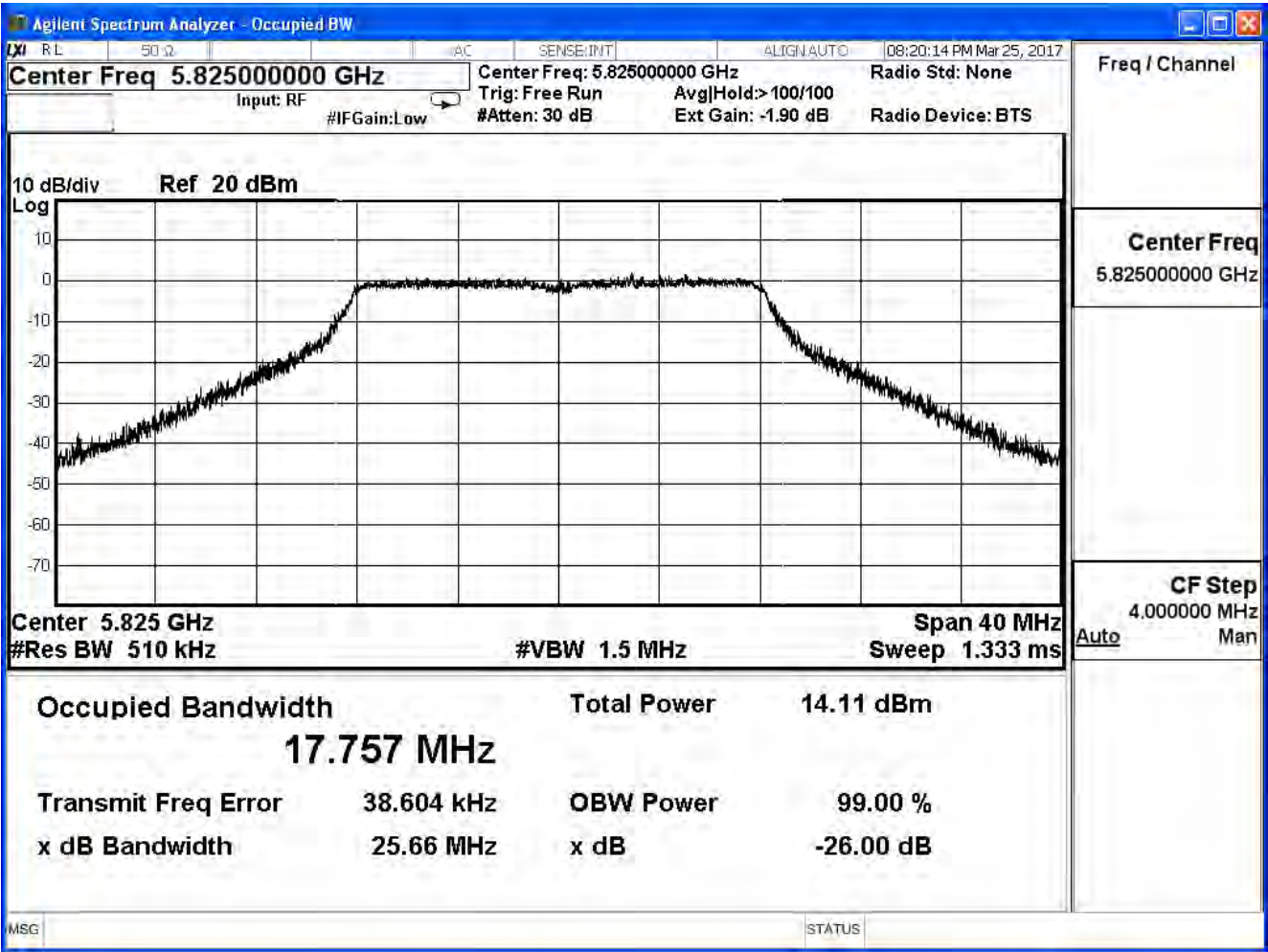
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

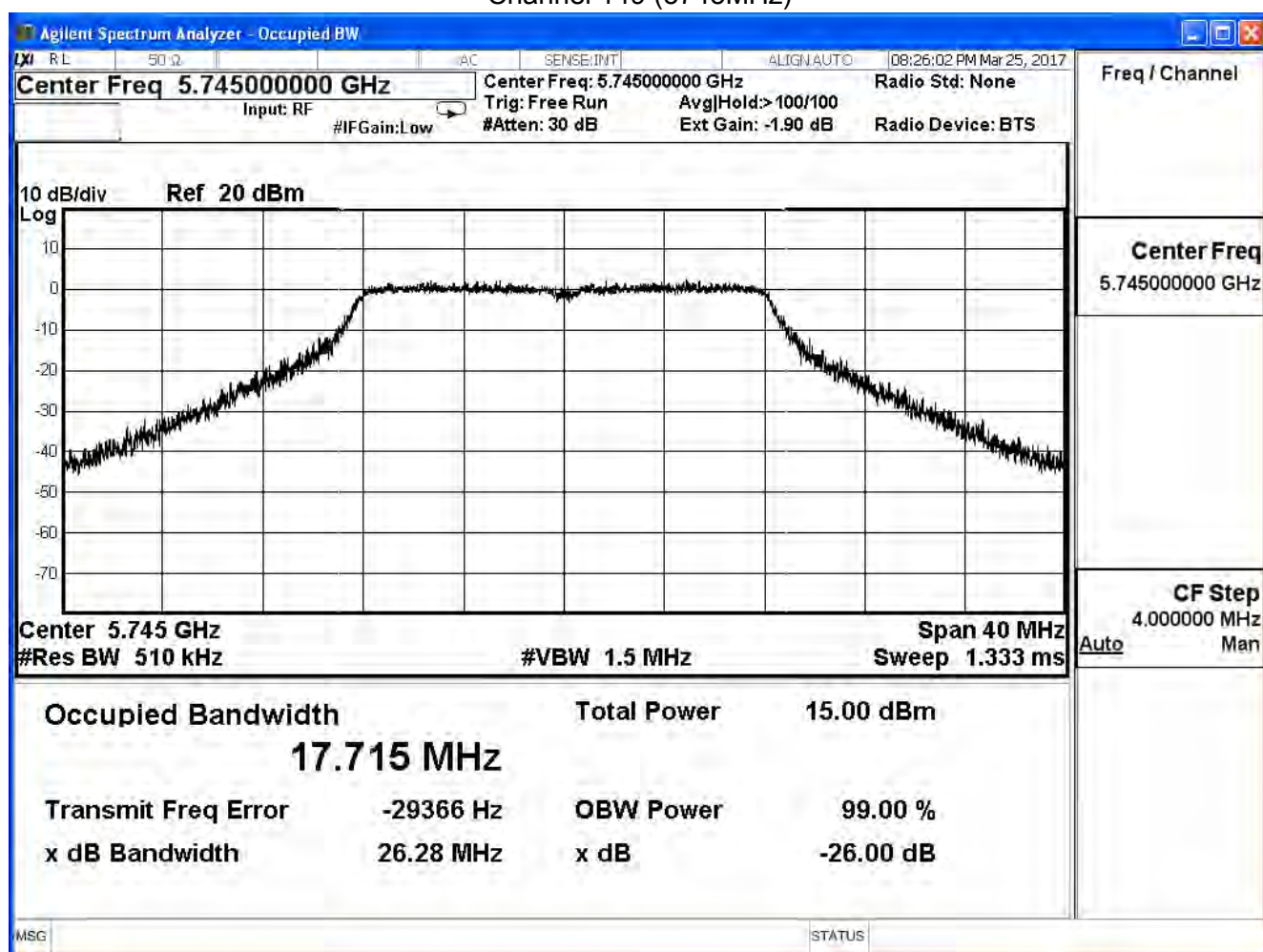


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

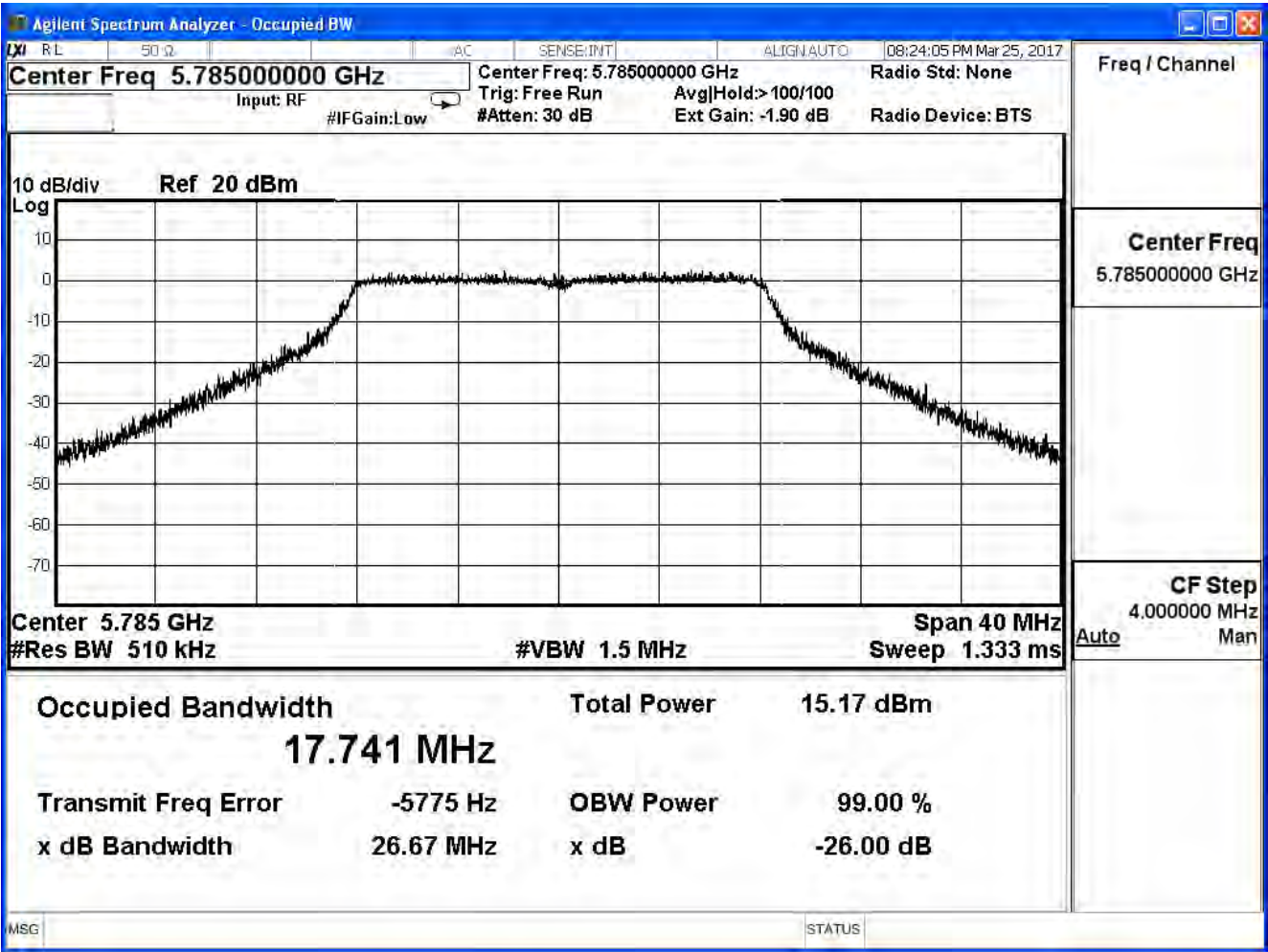
IEEE 802.11a (ANT 4) (Gain 2±0.7dBi)

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	--

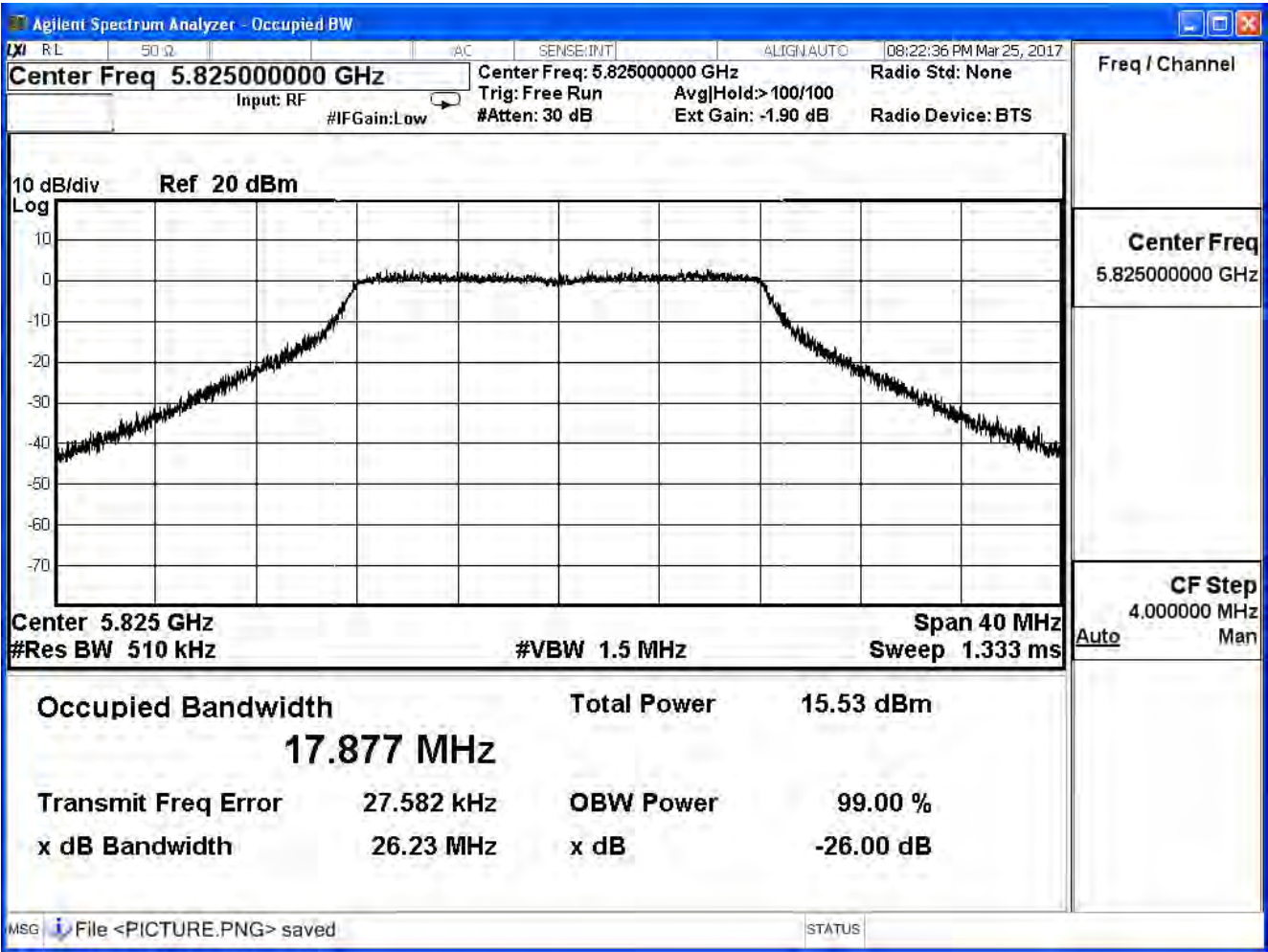
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

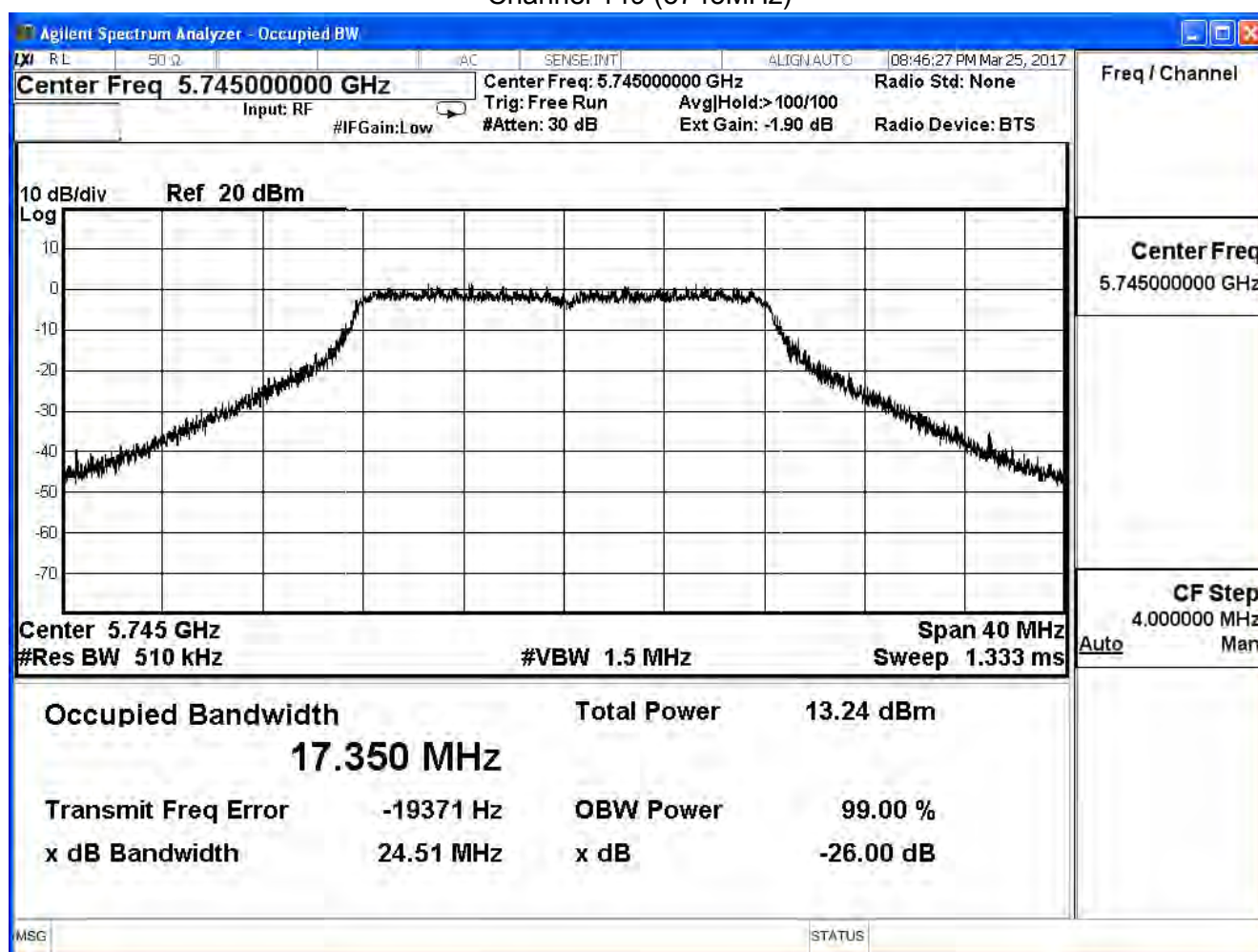


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

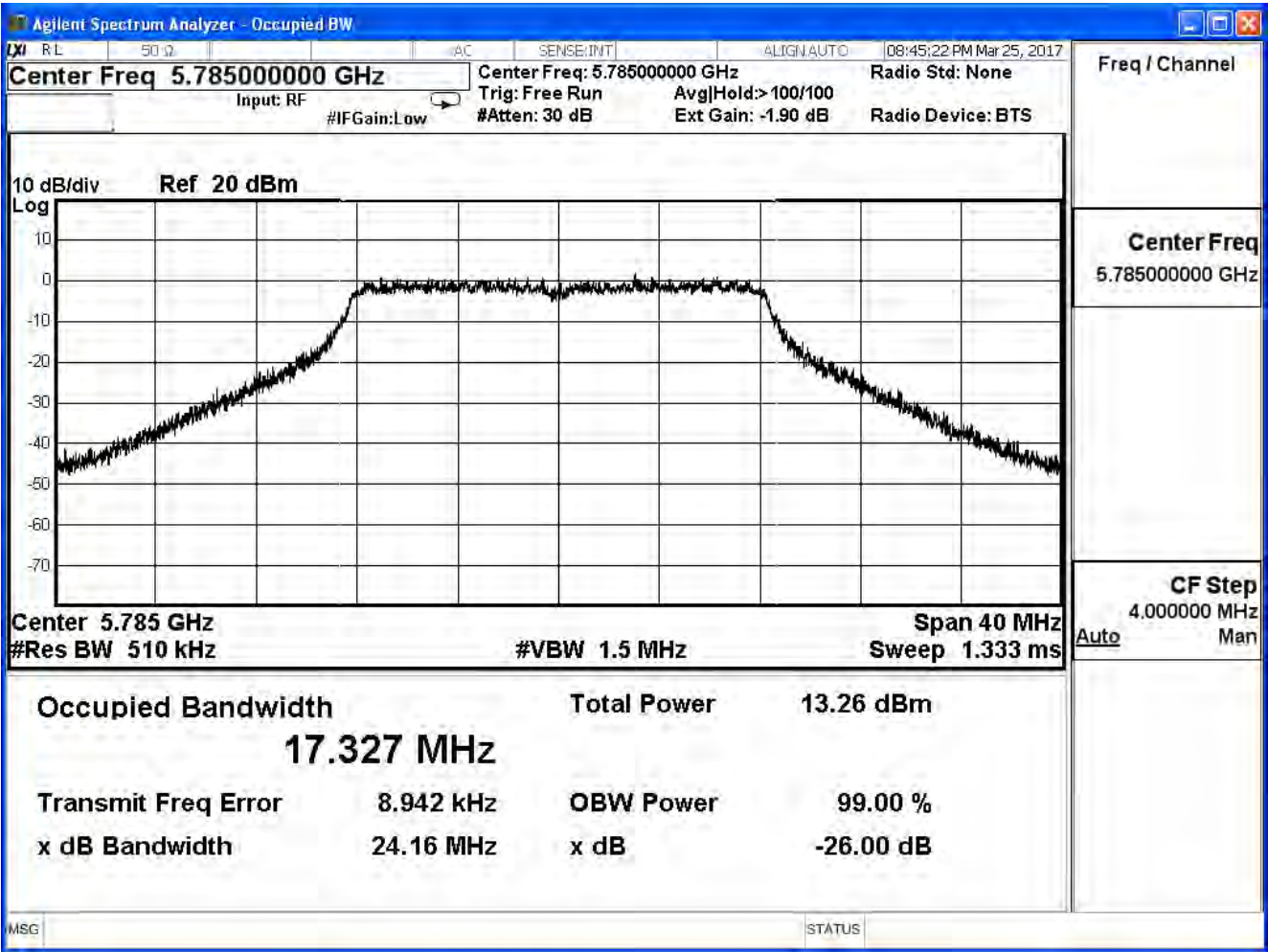
IEEE 802.11a(ANT 5)

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	--

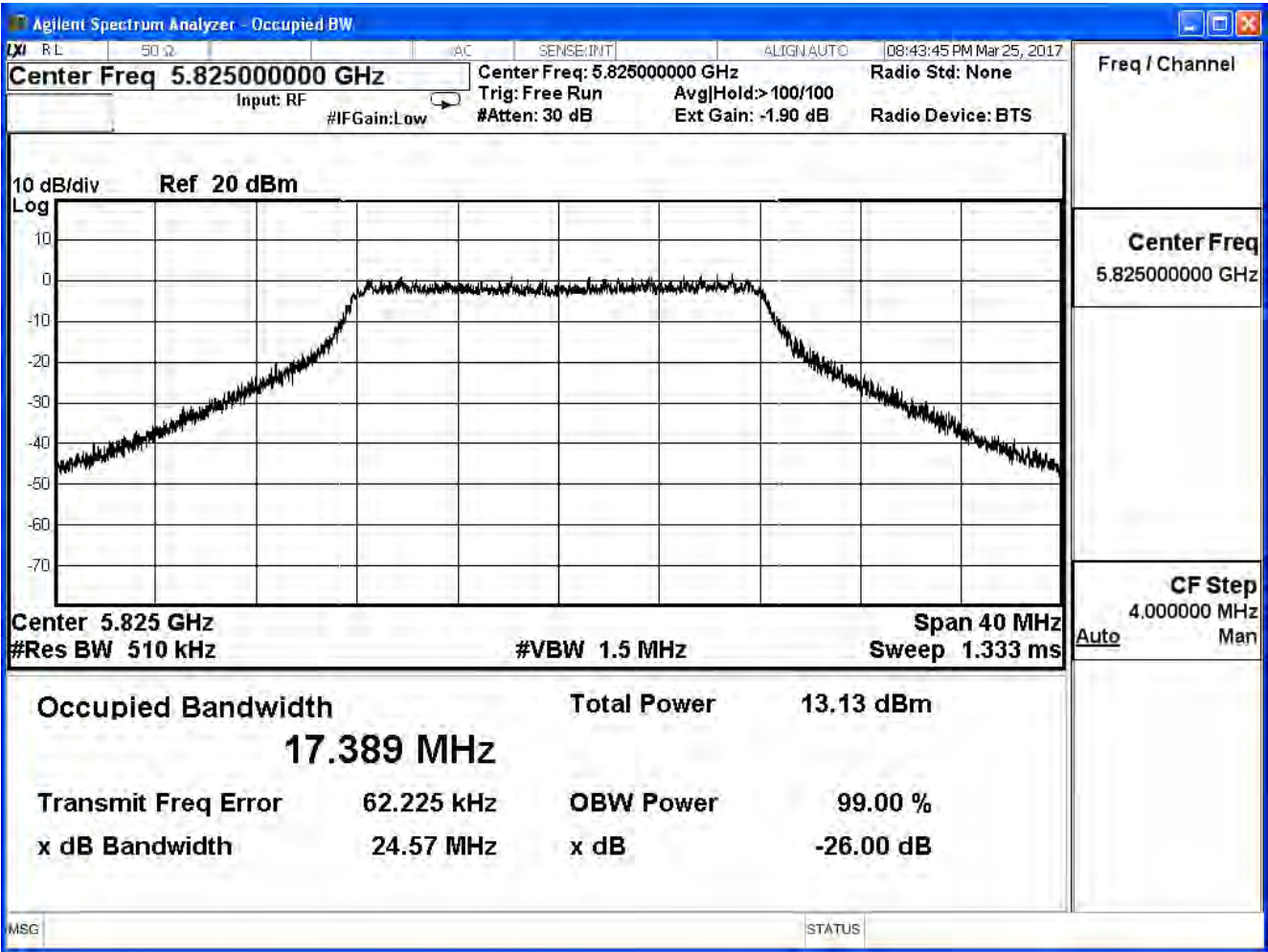
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

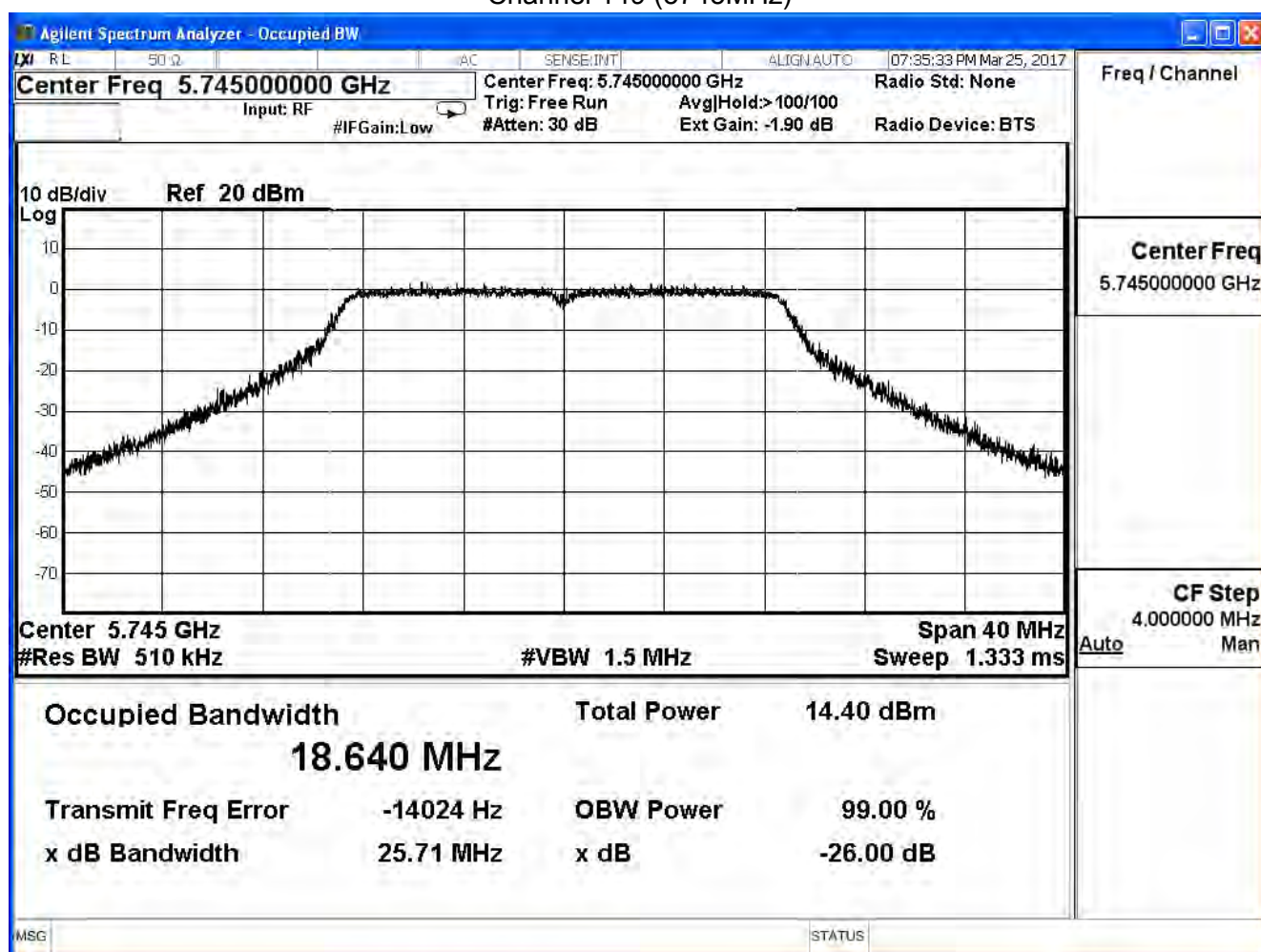


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

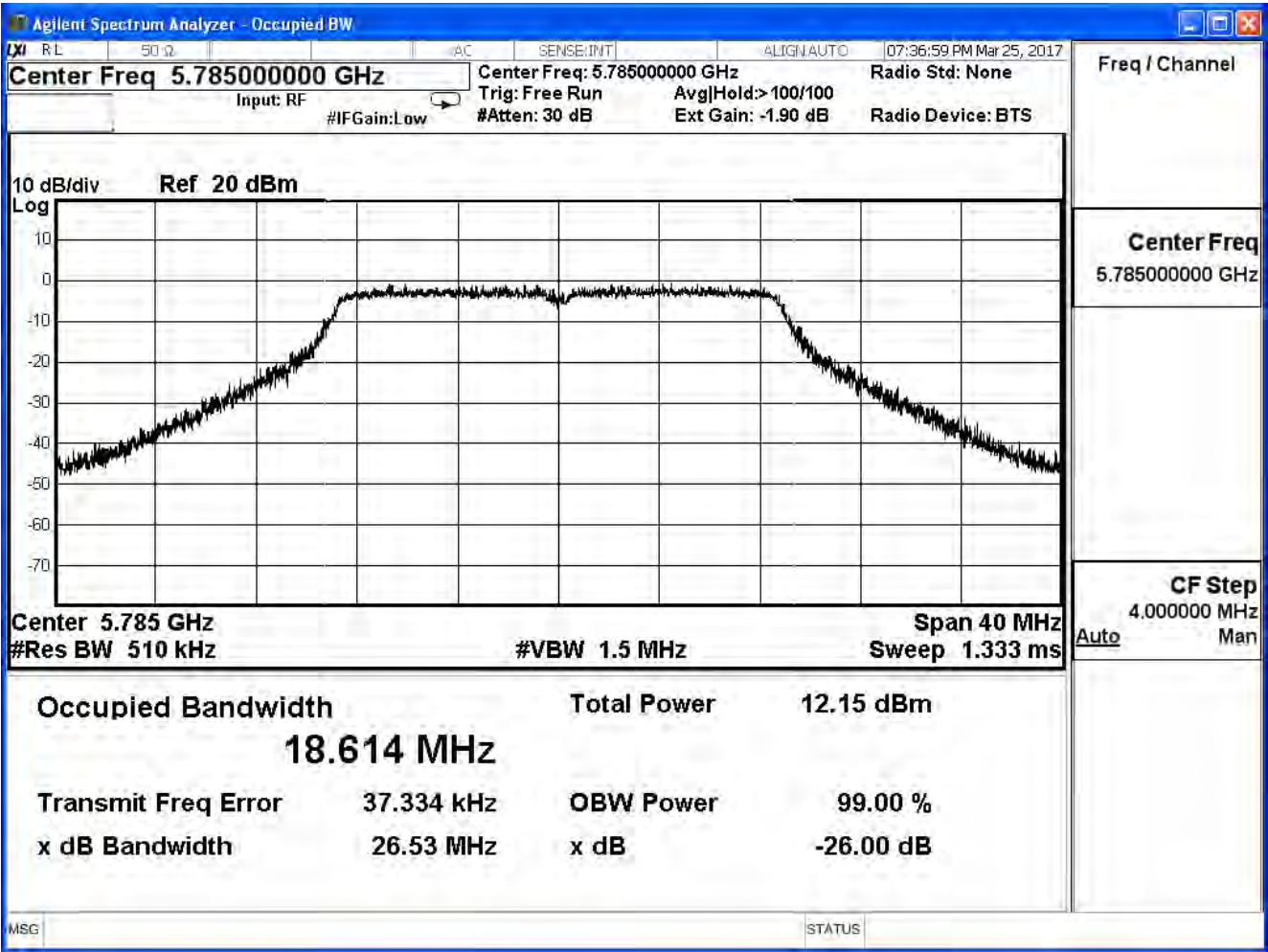
IEEE 802.11n20 (ANT 0) (Gain 2±0.7dBi)

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	--

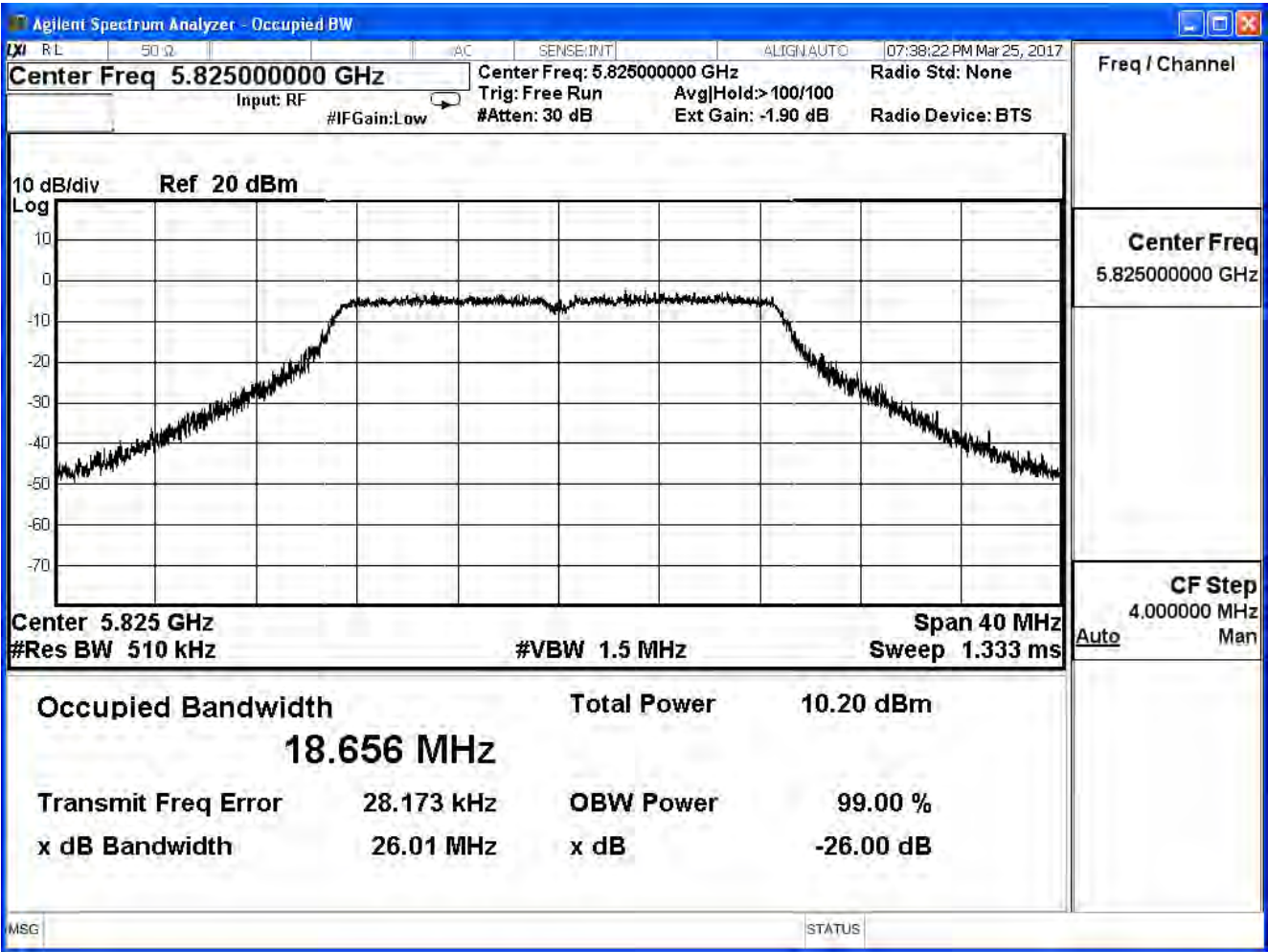
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

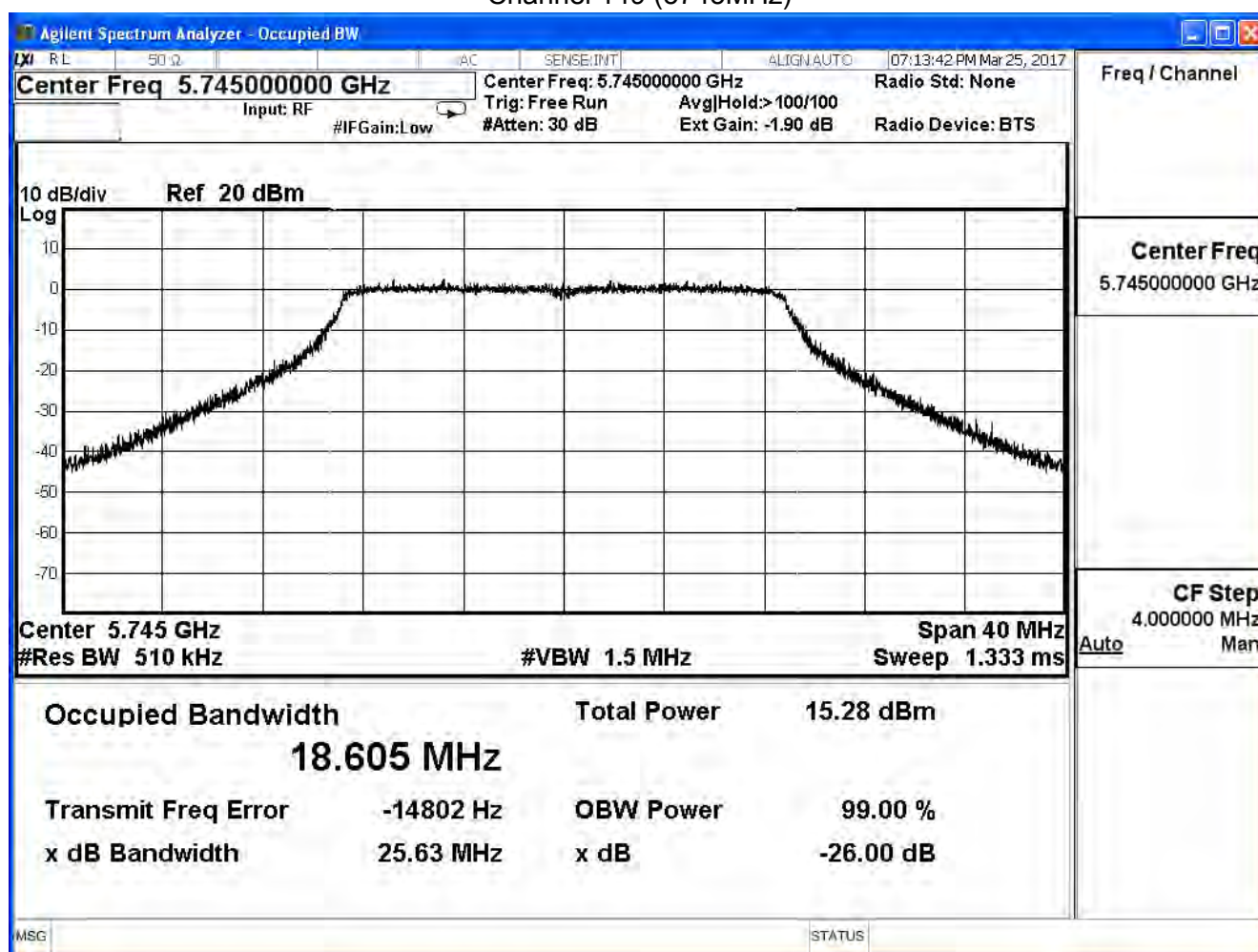


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

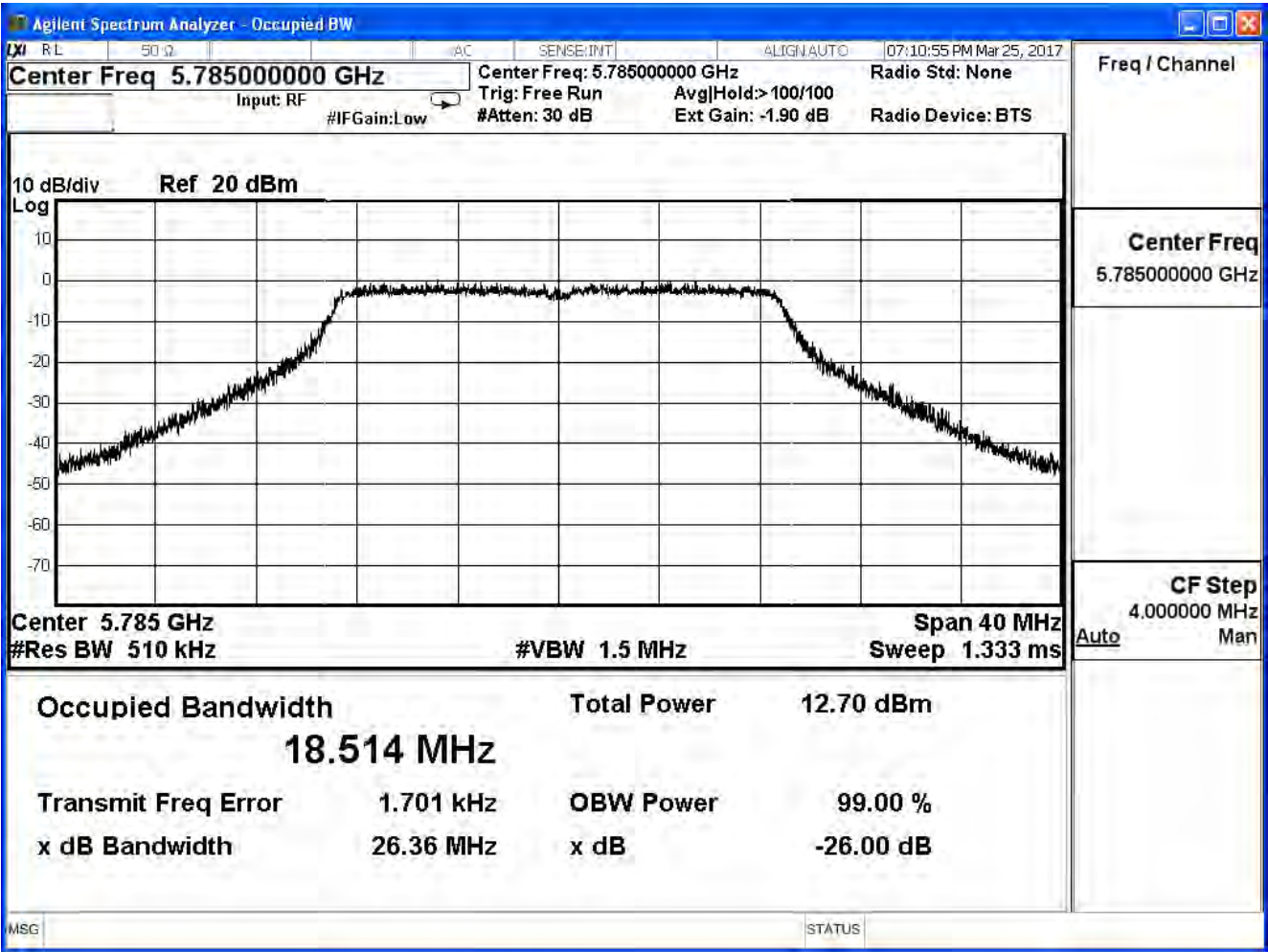
IEEE 802.11n20 (ANT 1)

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	--

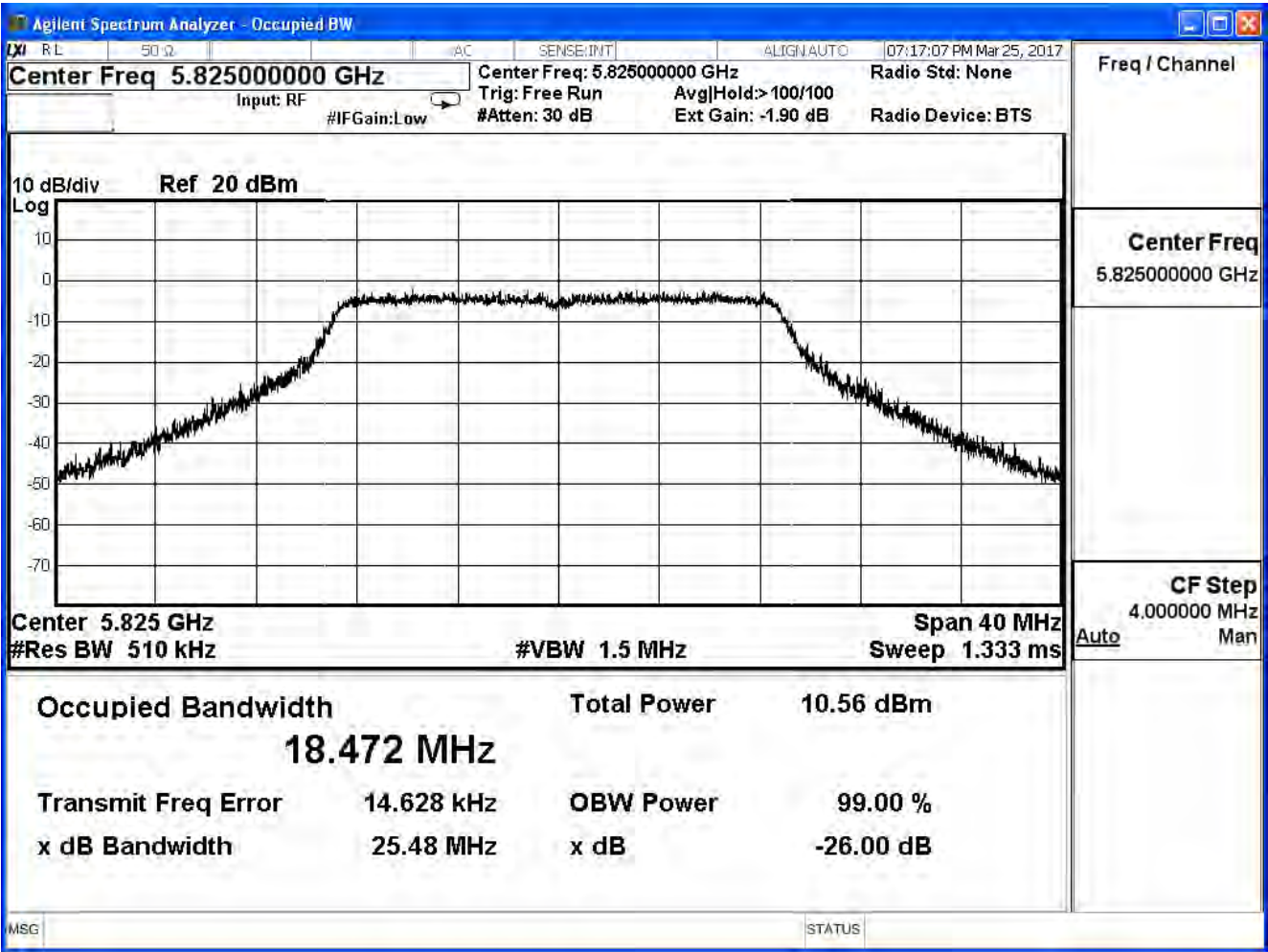
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

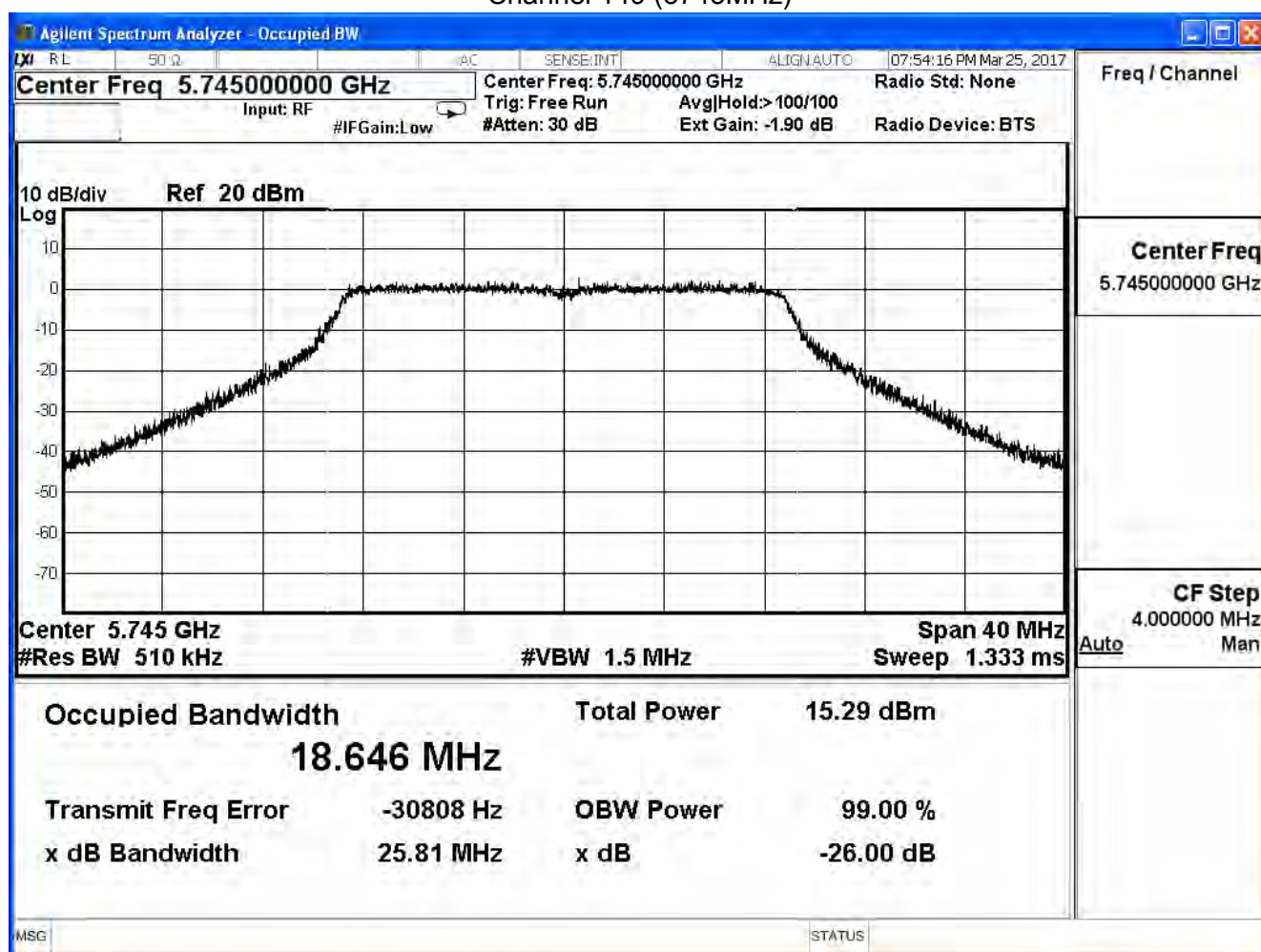


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

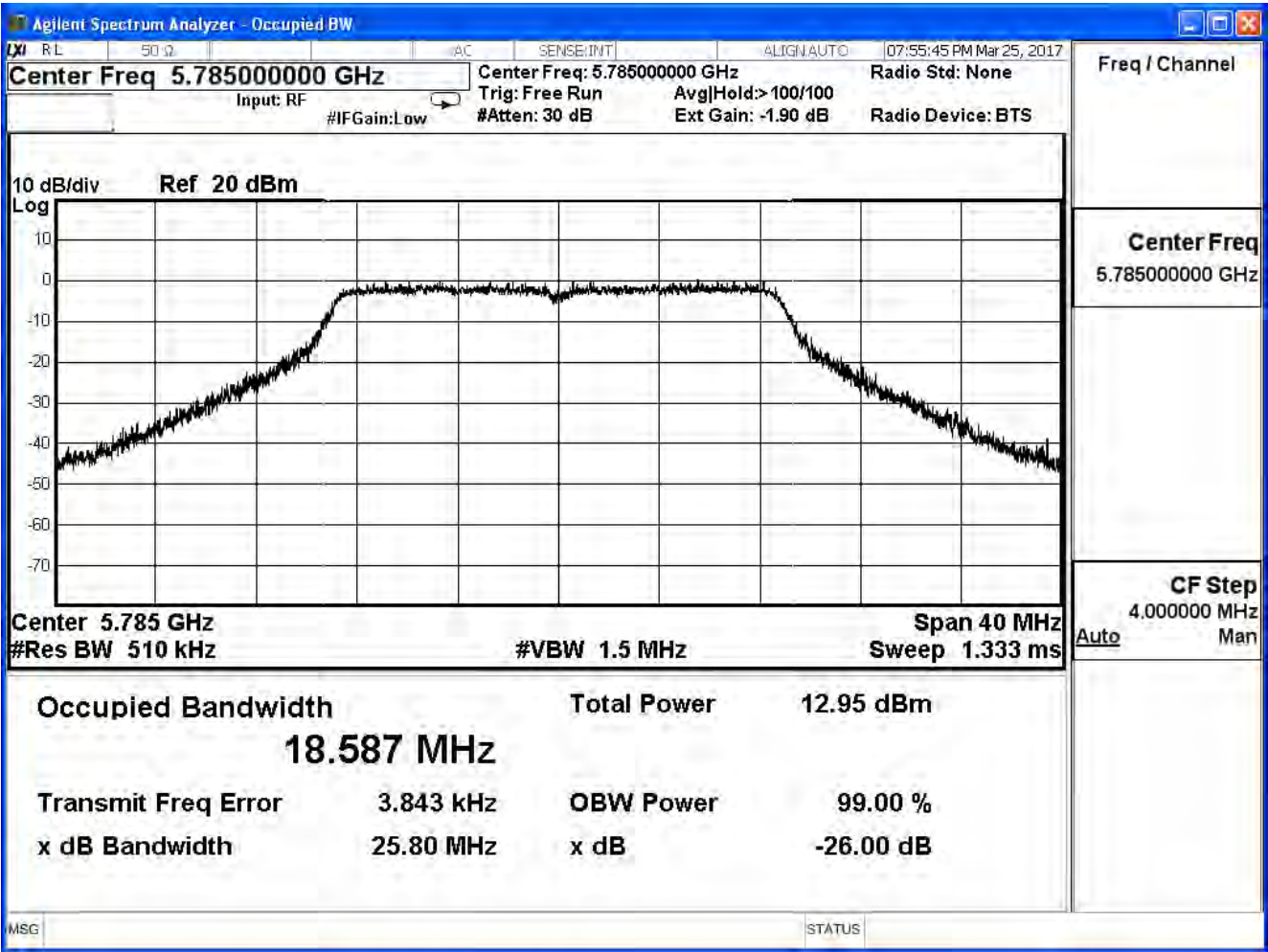
IEEE 802.11n20 (ANT 2) (Gain 2±0.7dBi)

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	--

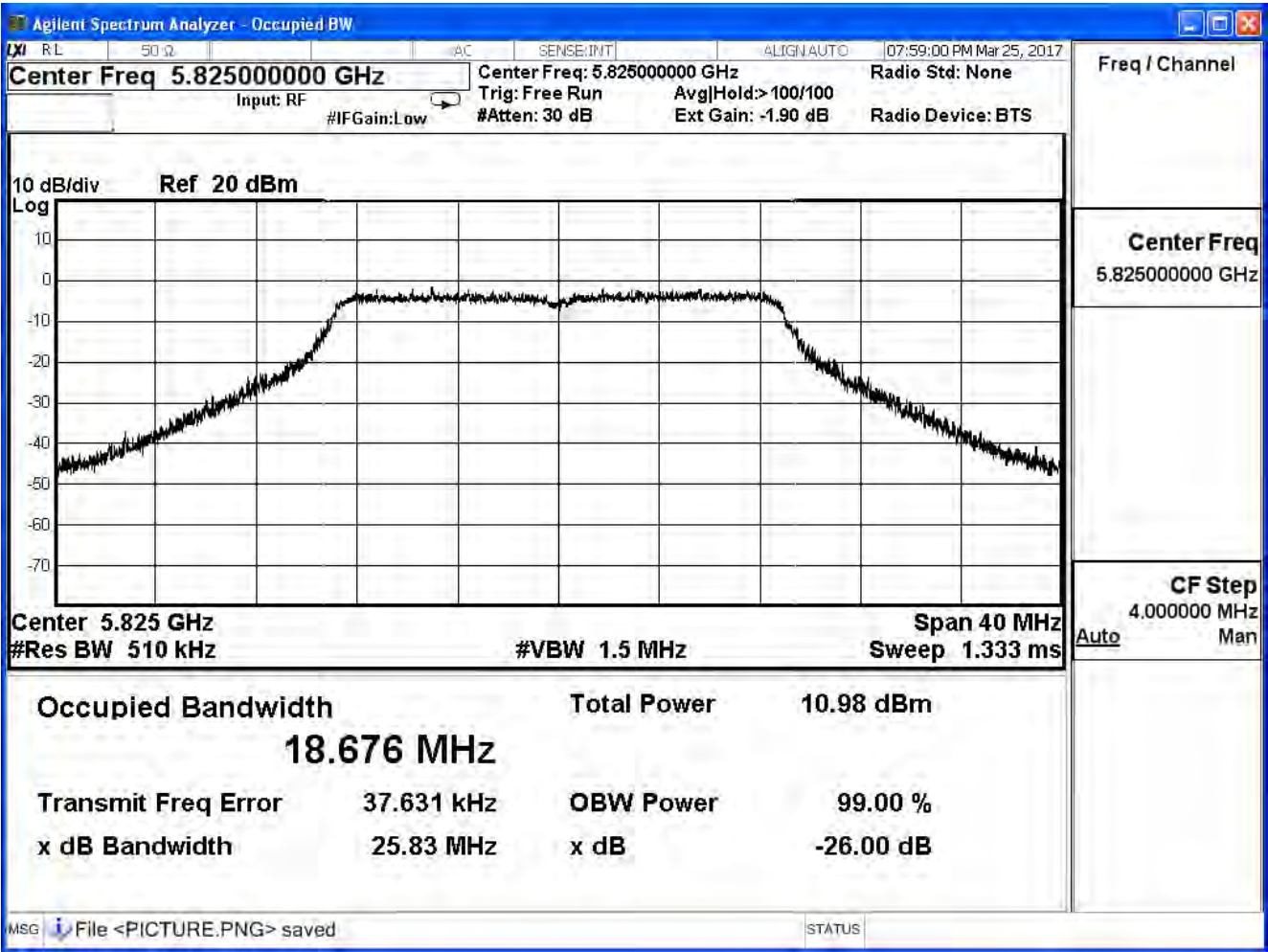
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

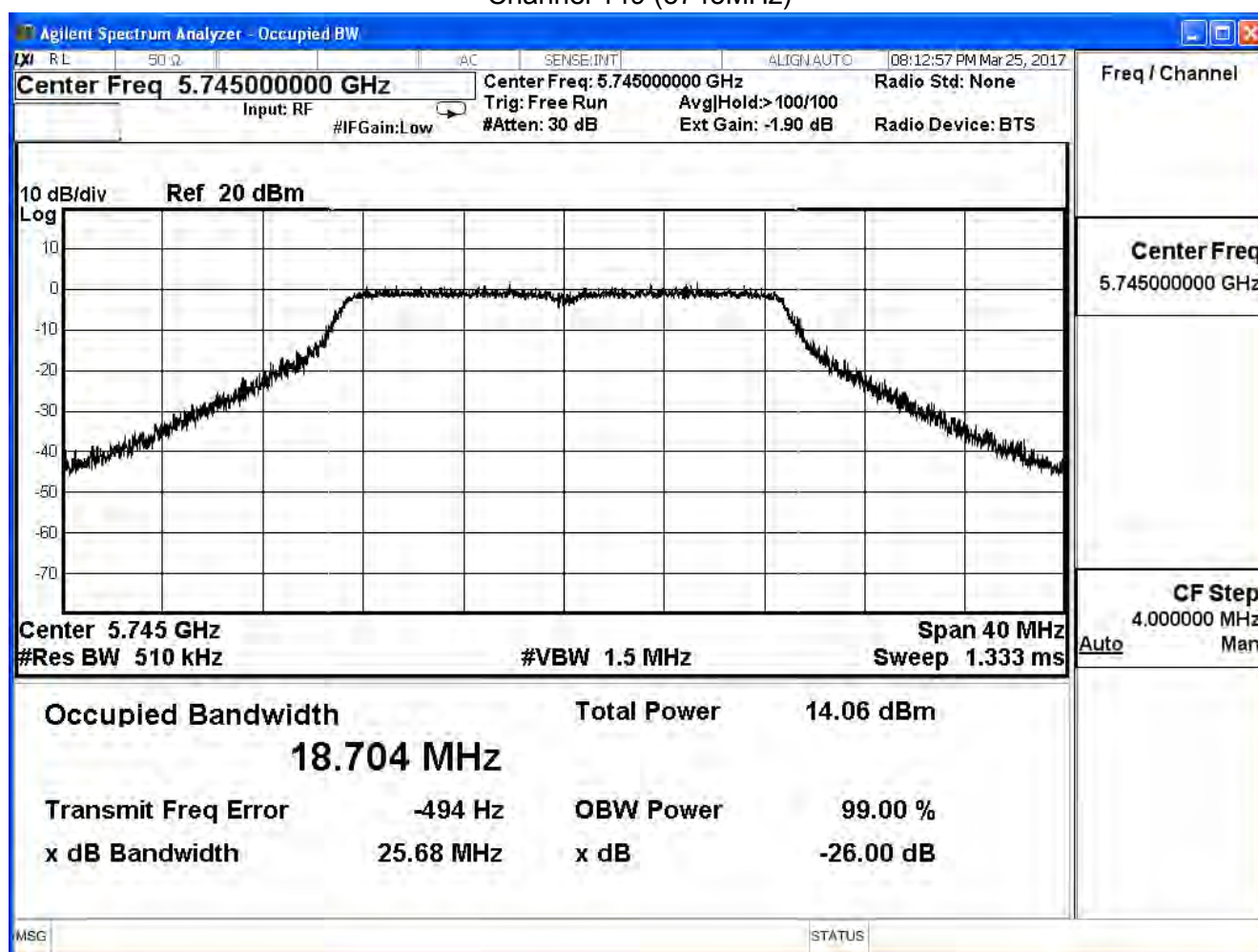


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

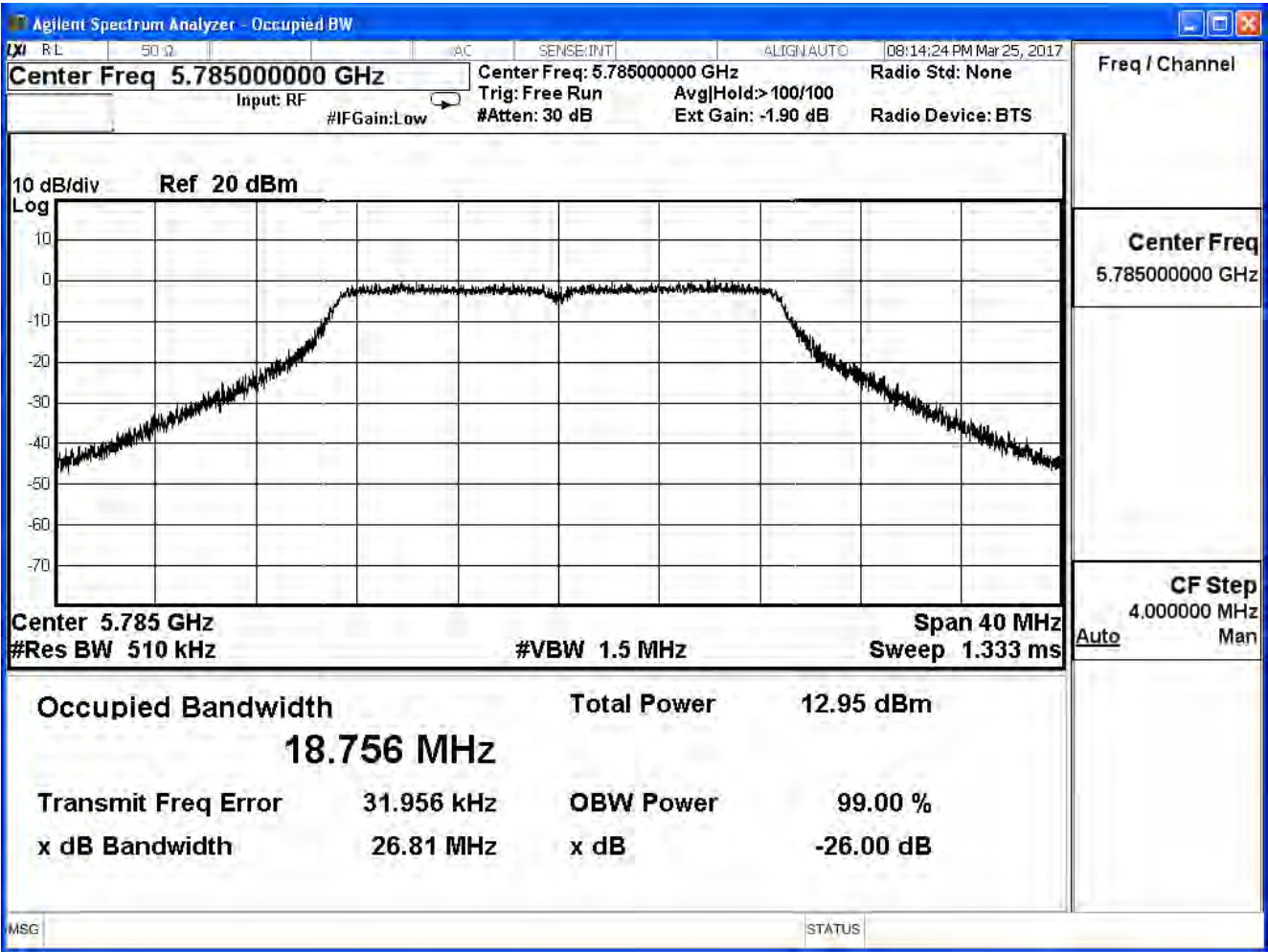
IEEE 802.11n20 (ANT 3)

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	--

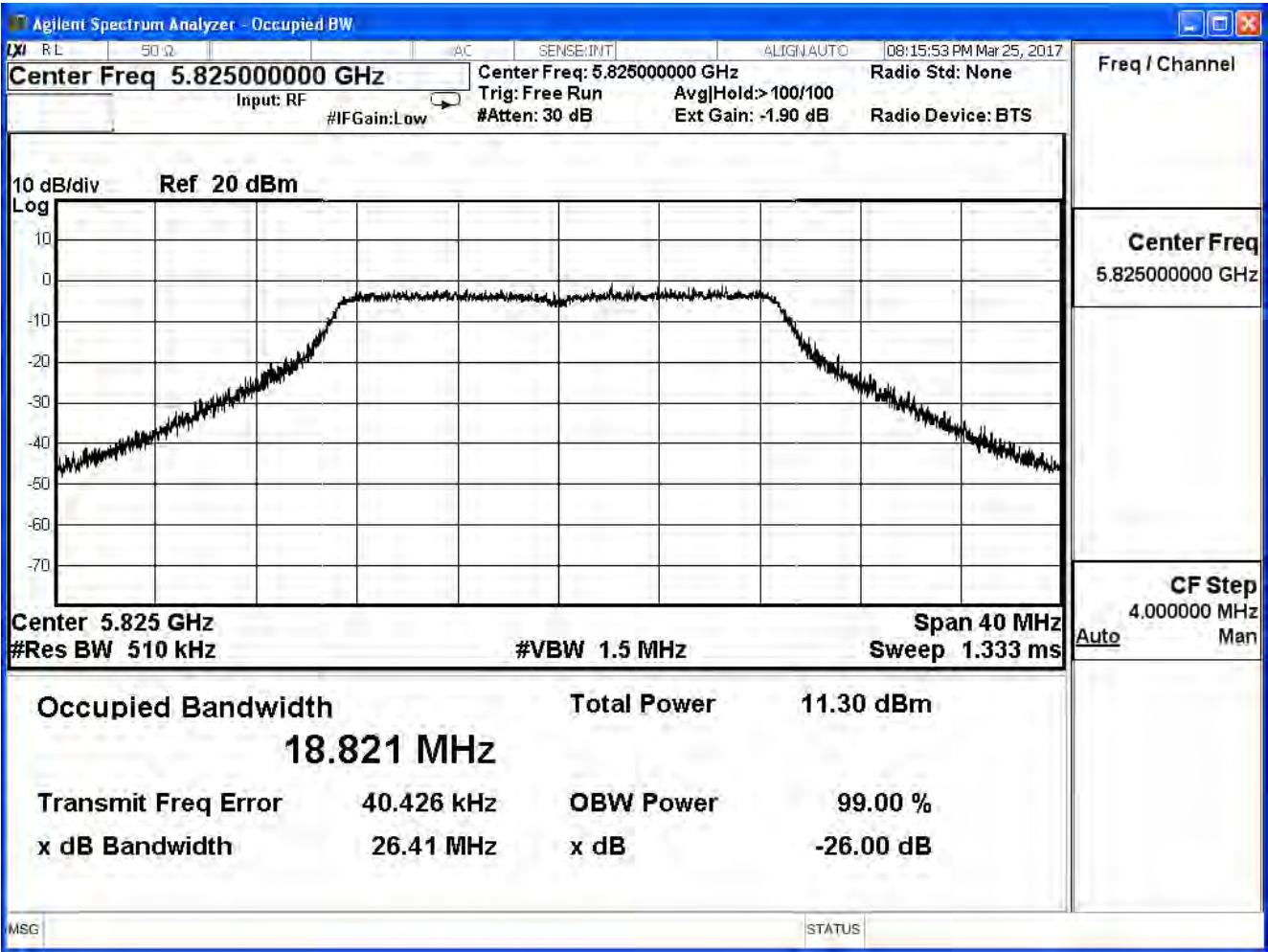
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

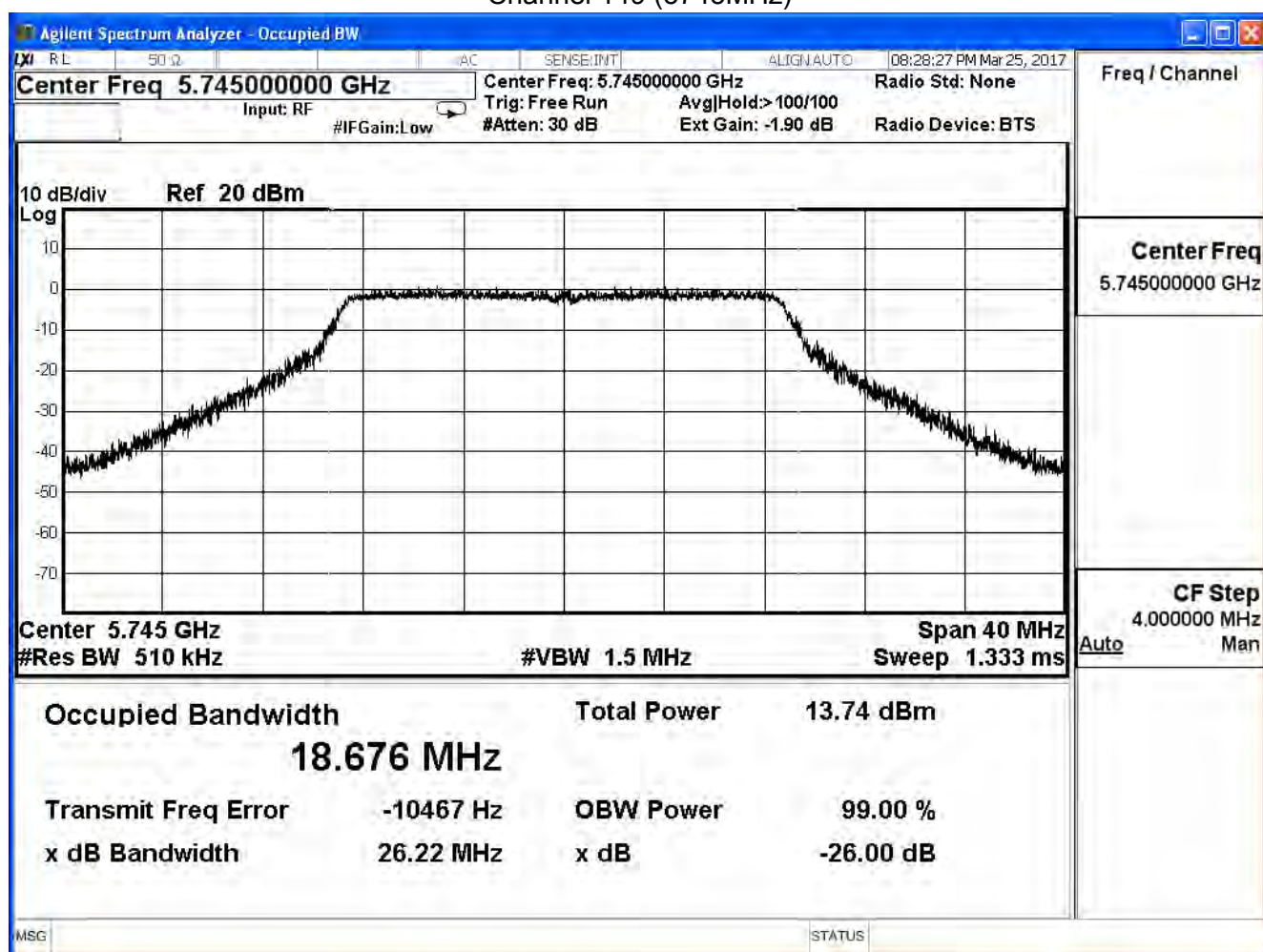


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

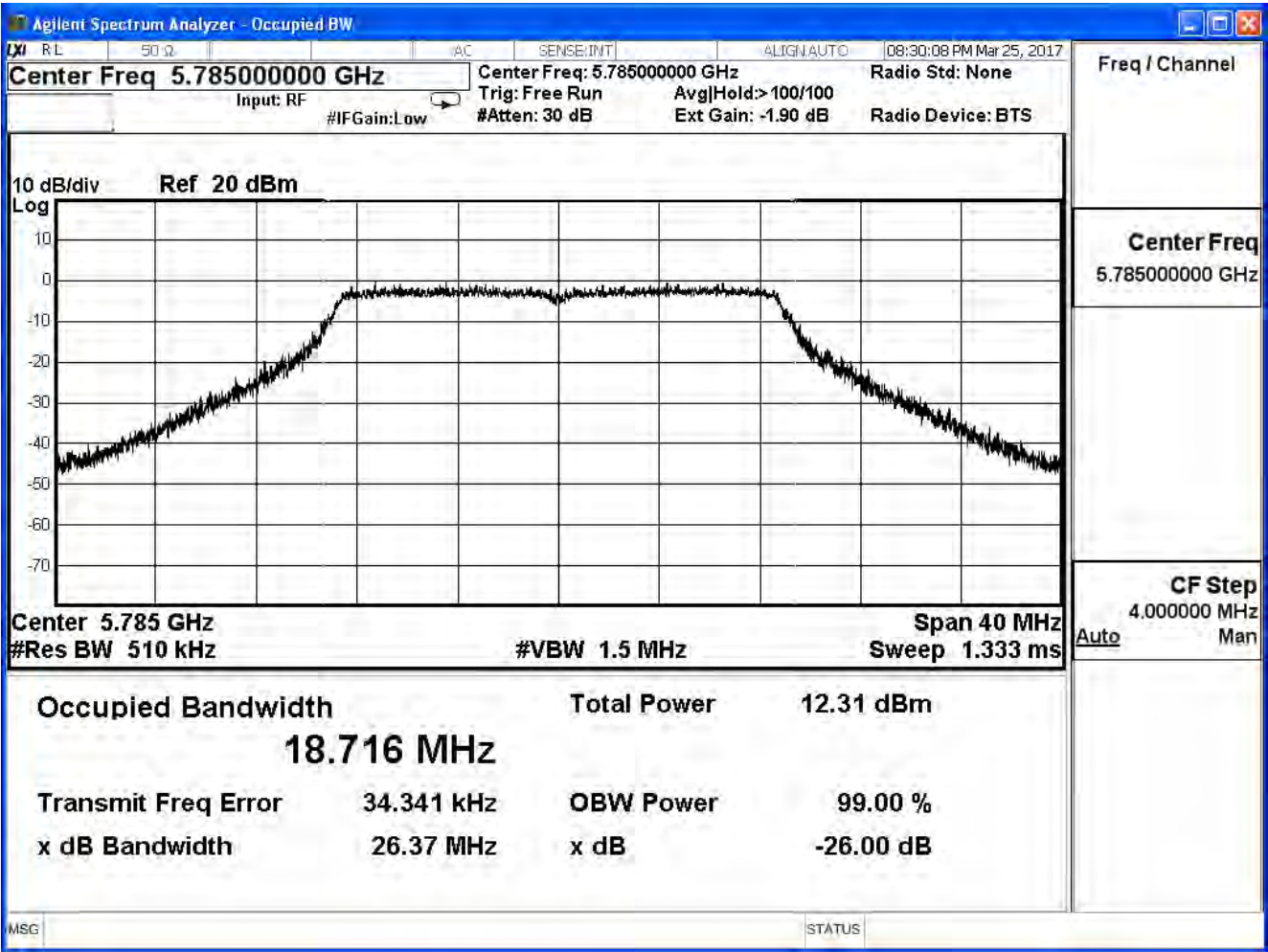
IEEE 802.11n20 (ANT 4) (Gain 2±0.7dBi)

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	--

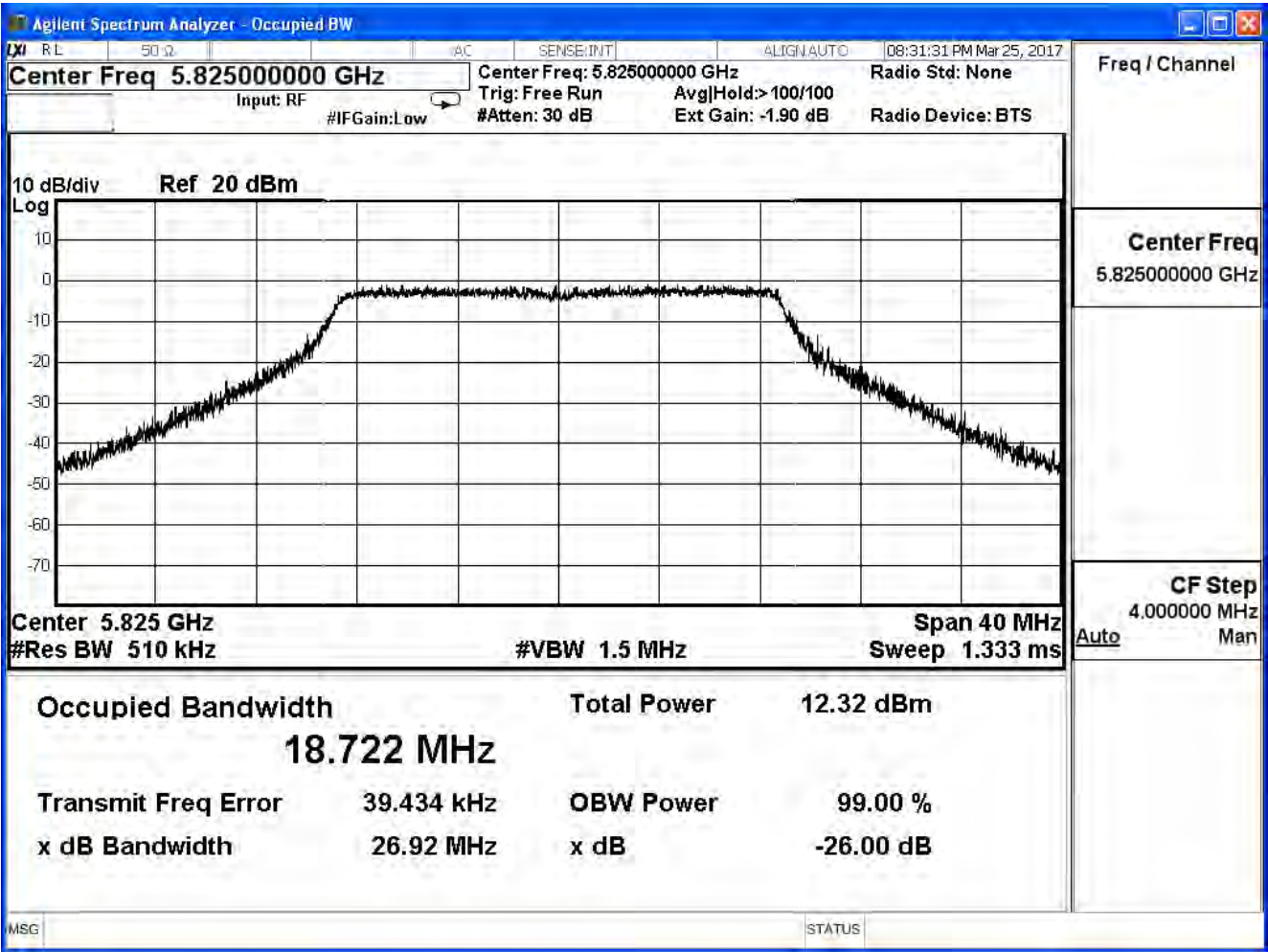
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

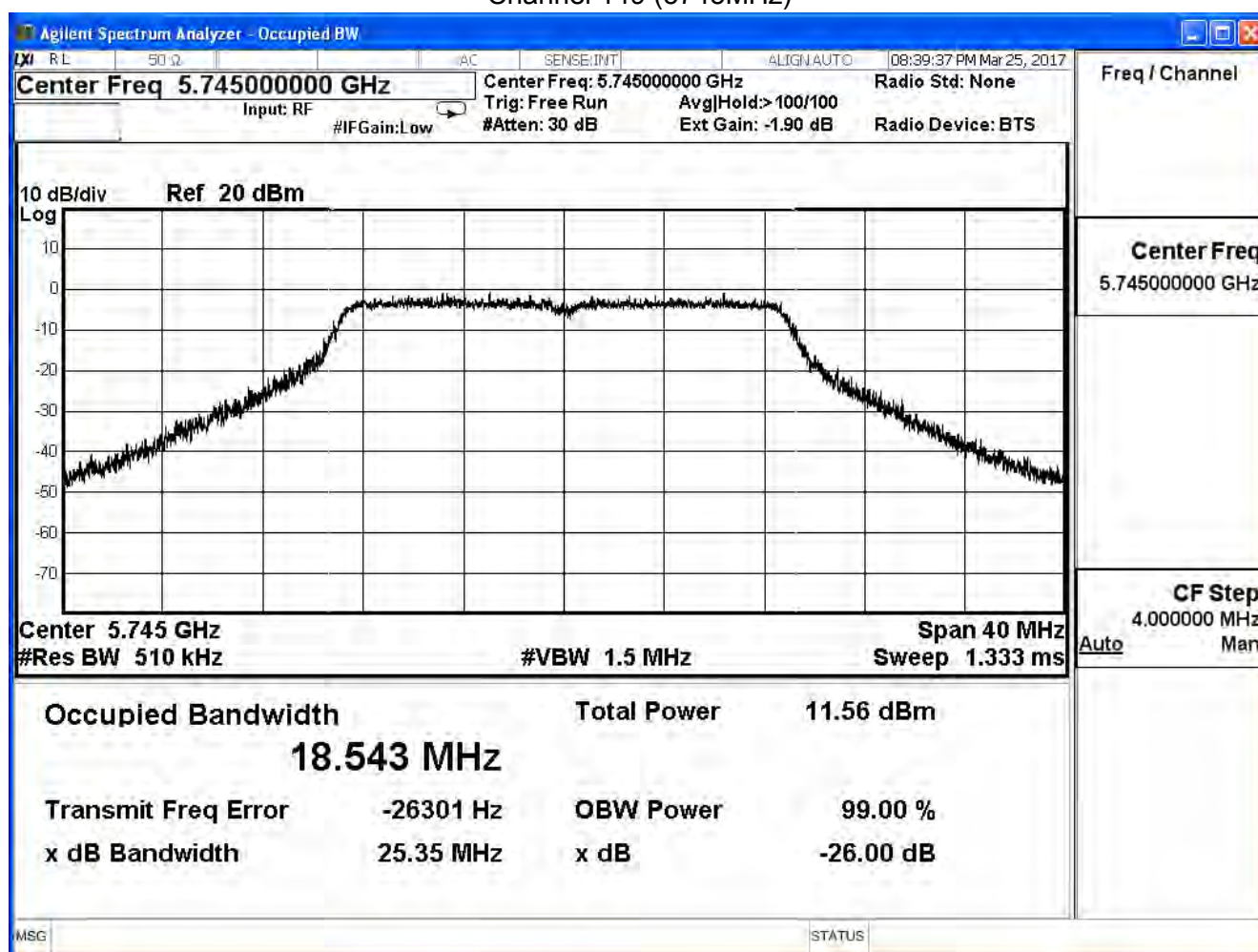


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

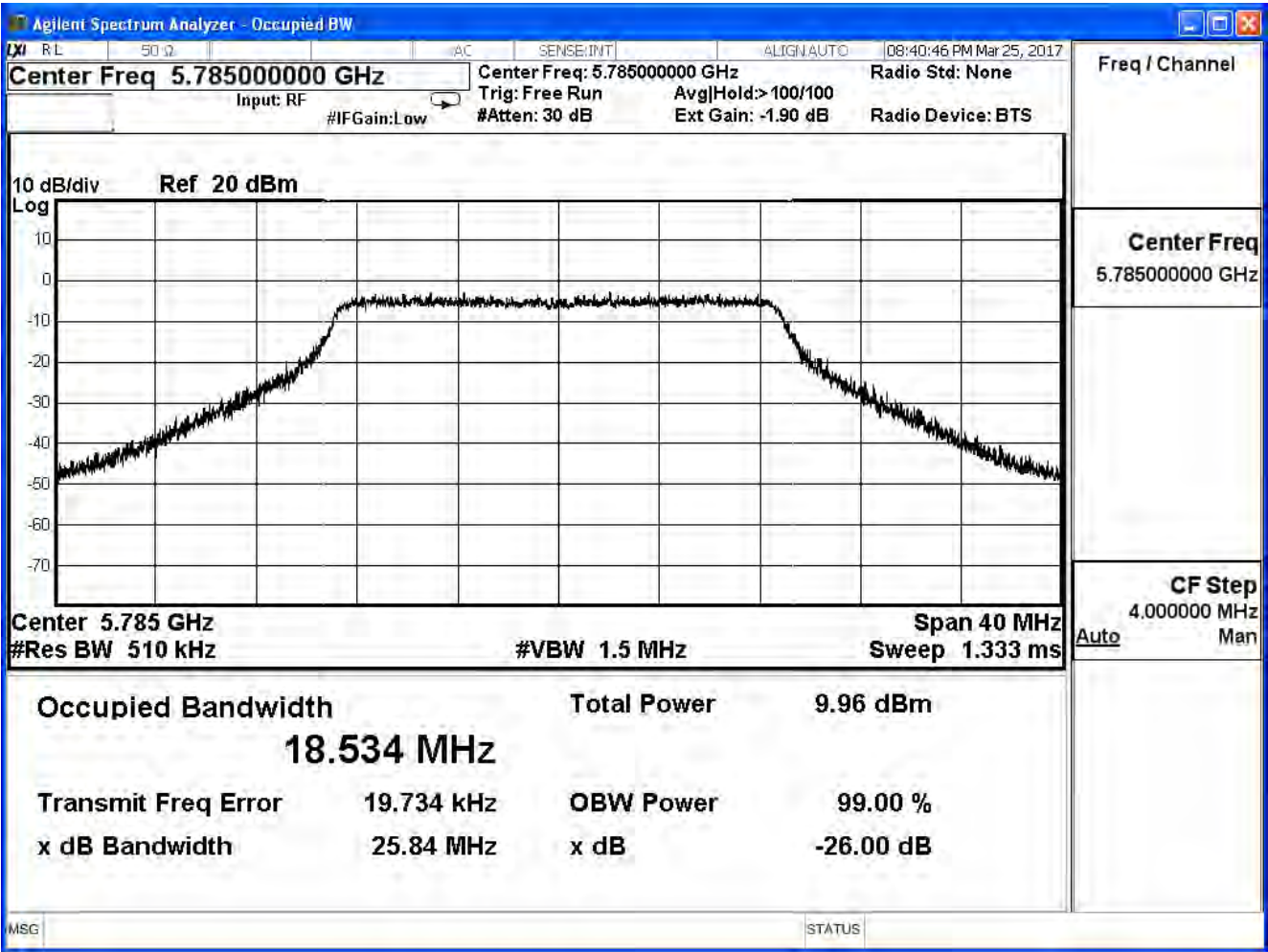
IEEE 802.11n20 (ANT 5)

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	--

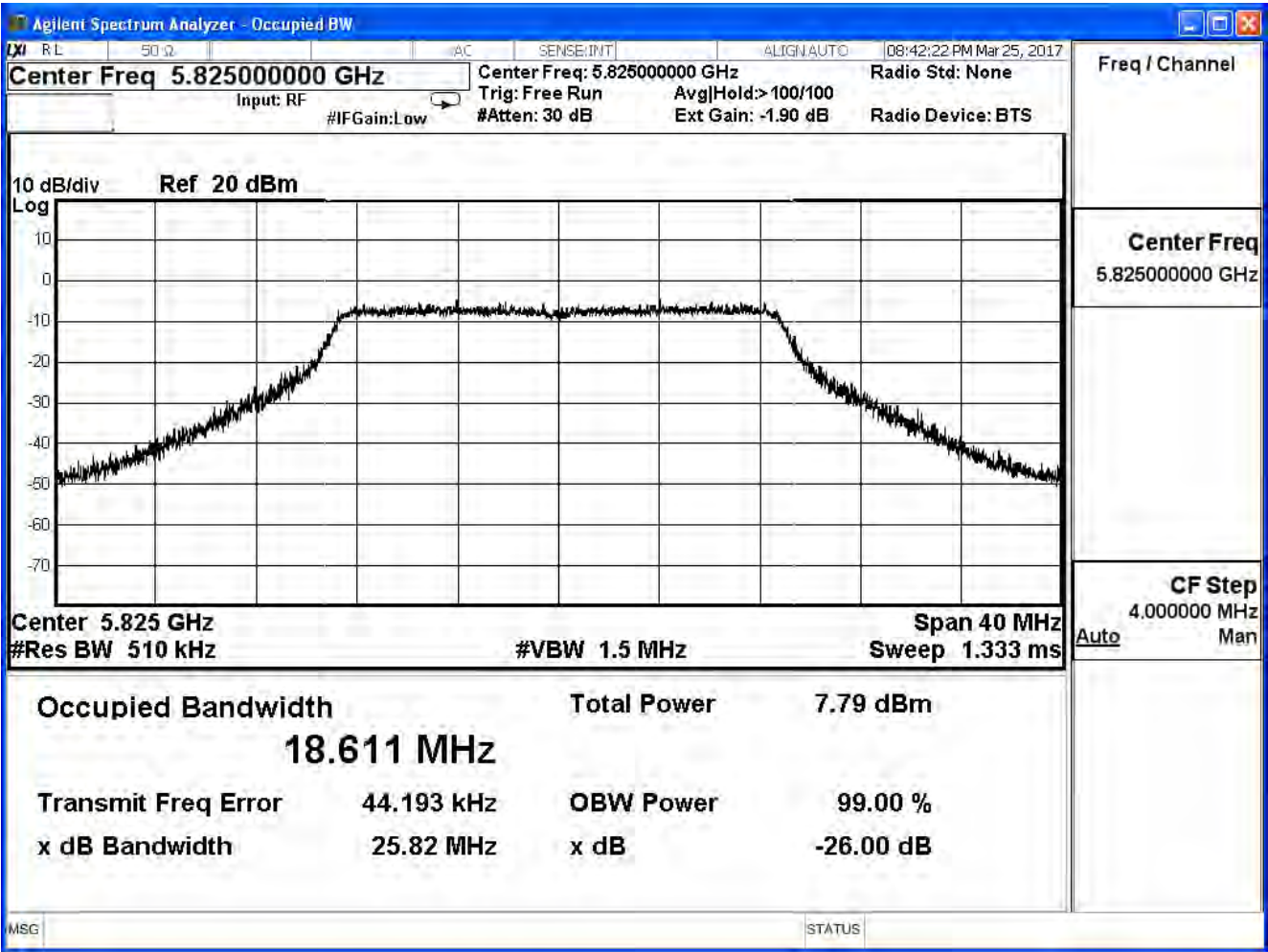
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

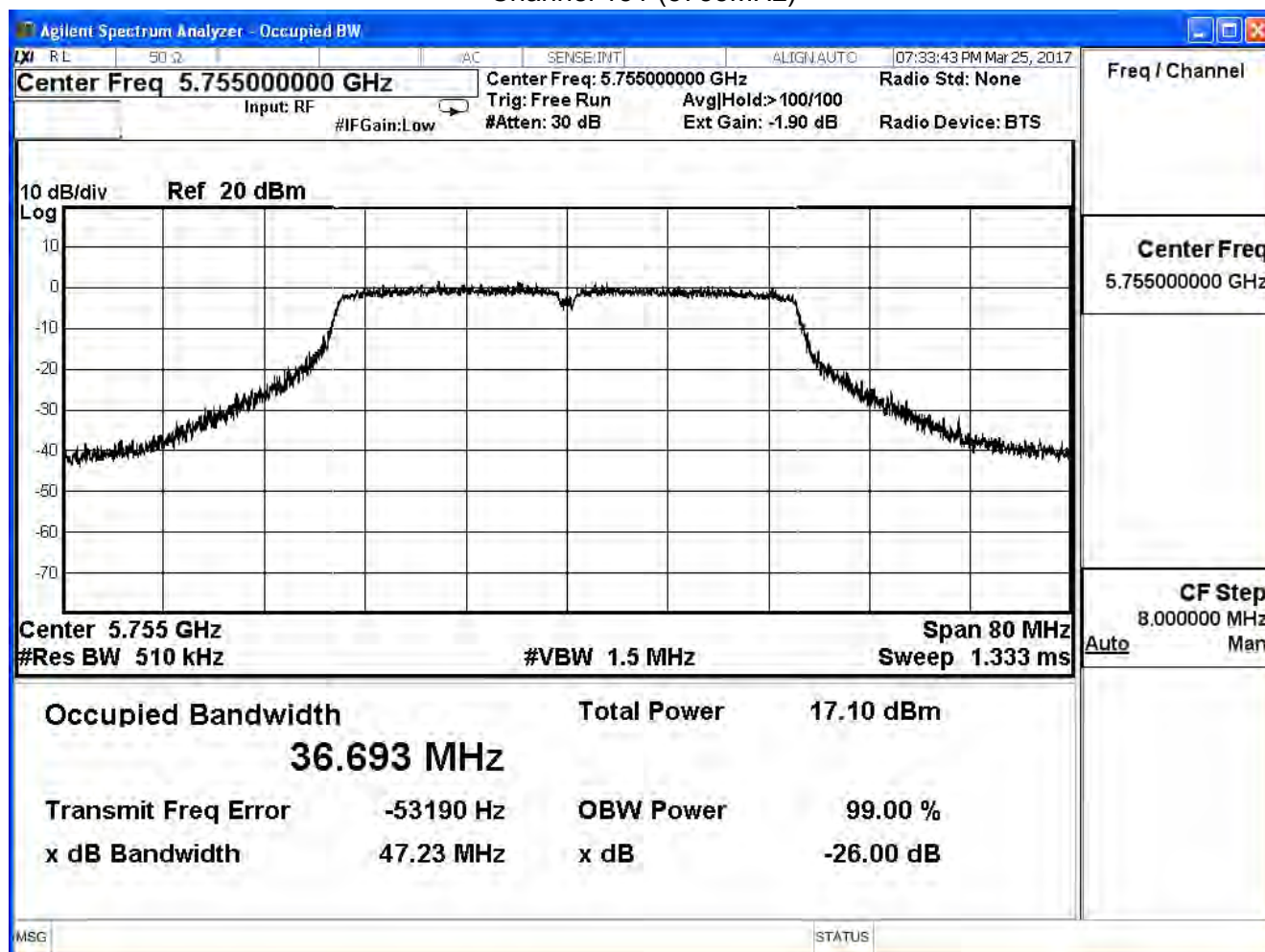


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

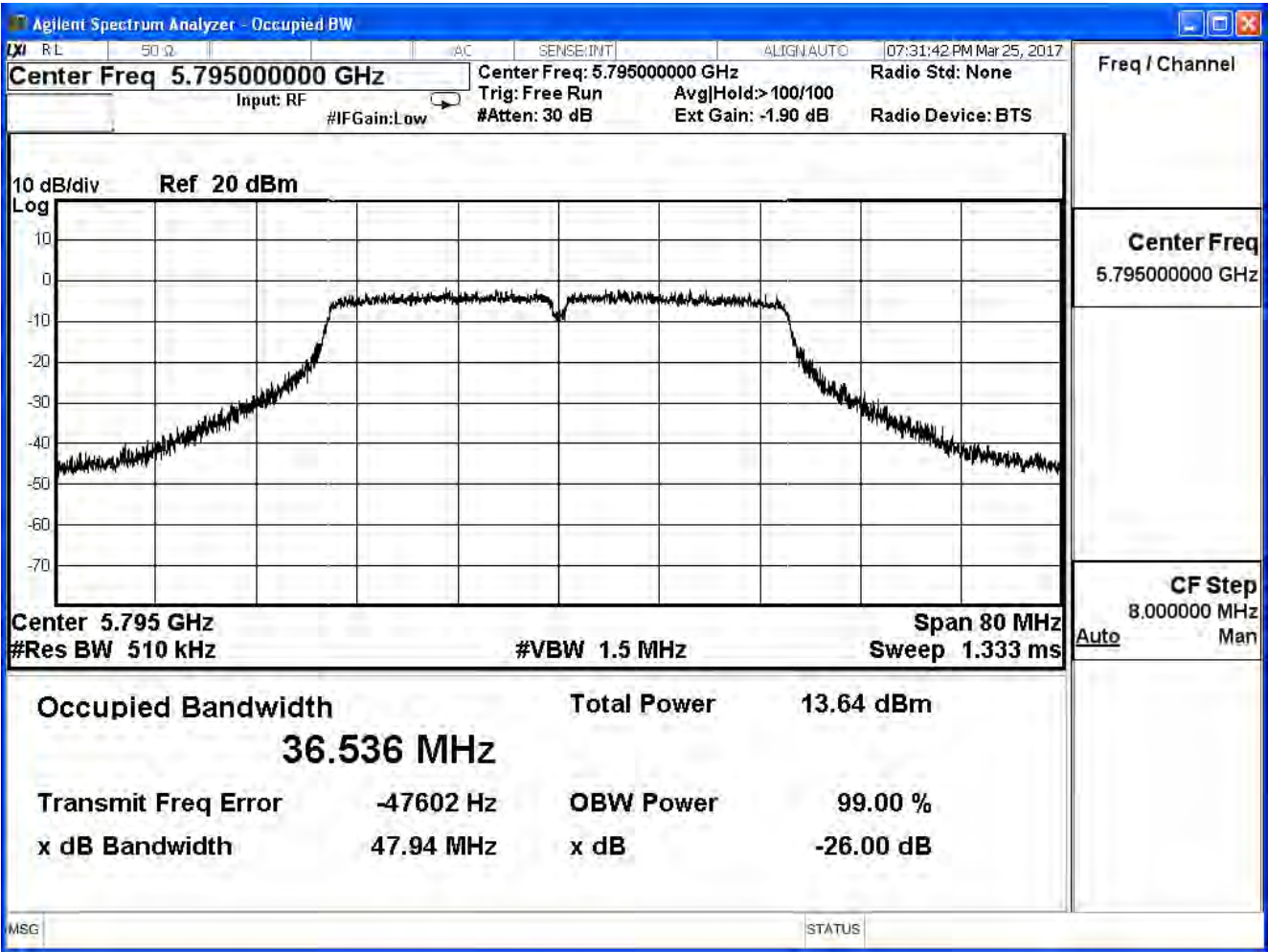
IEEE 802.11n40 (ANT 0)

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)

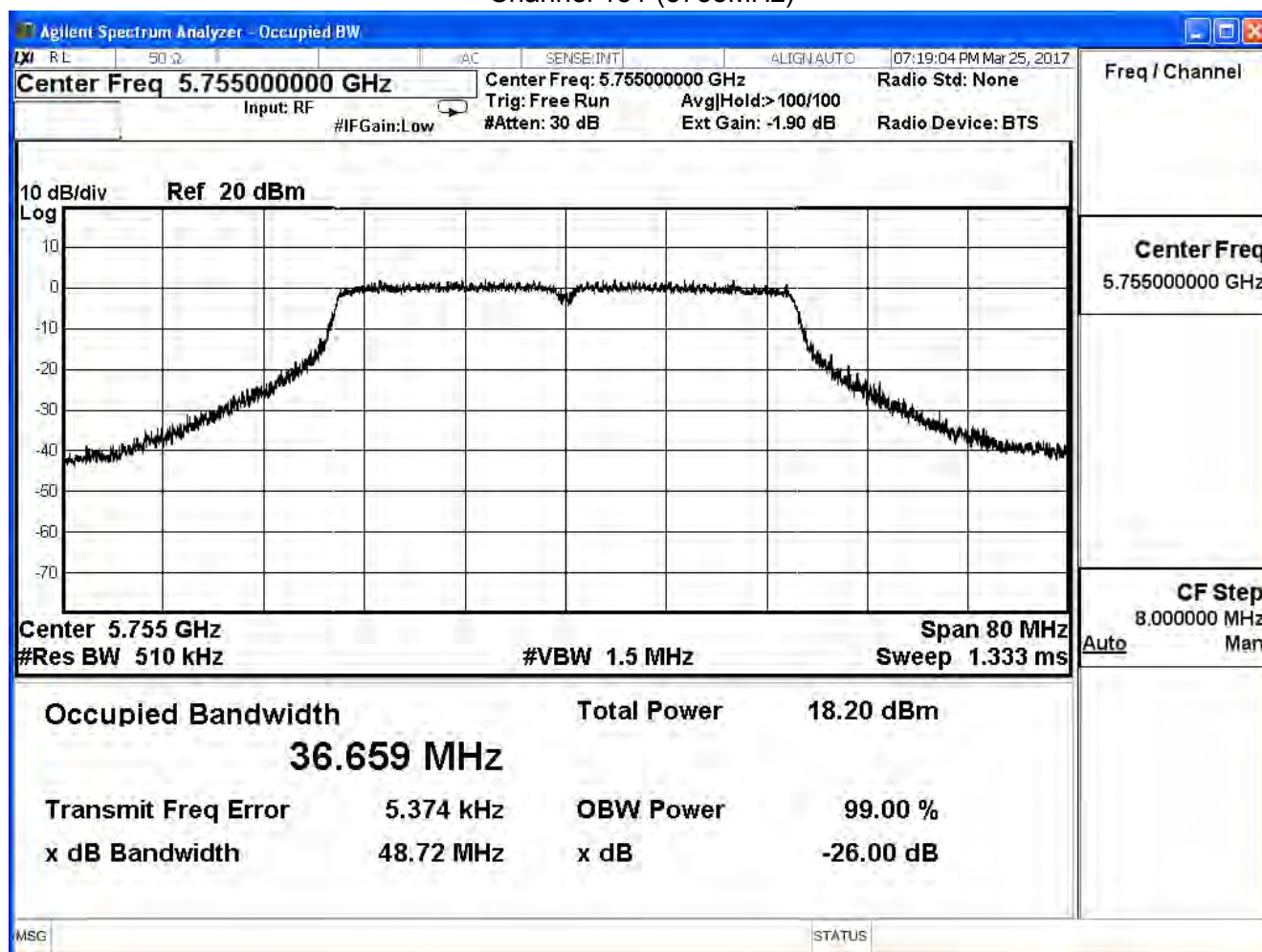


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

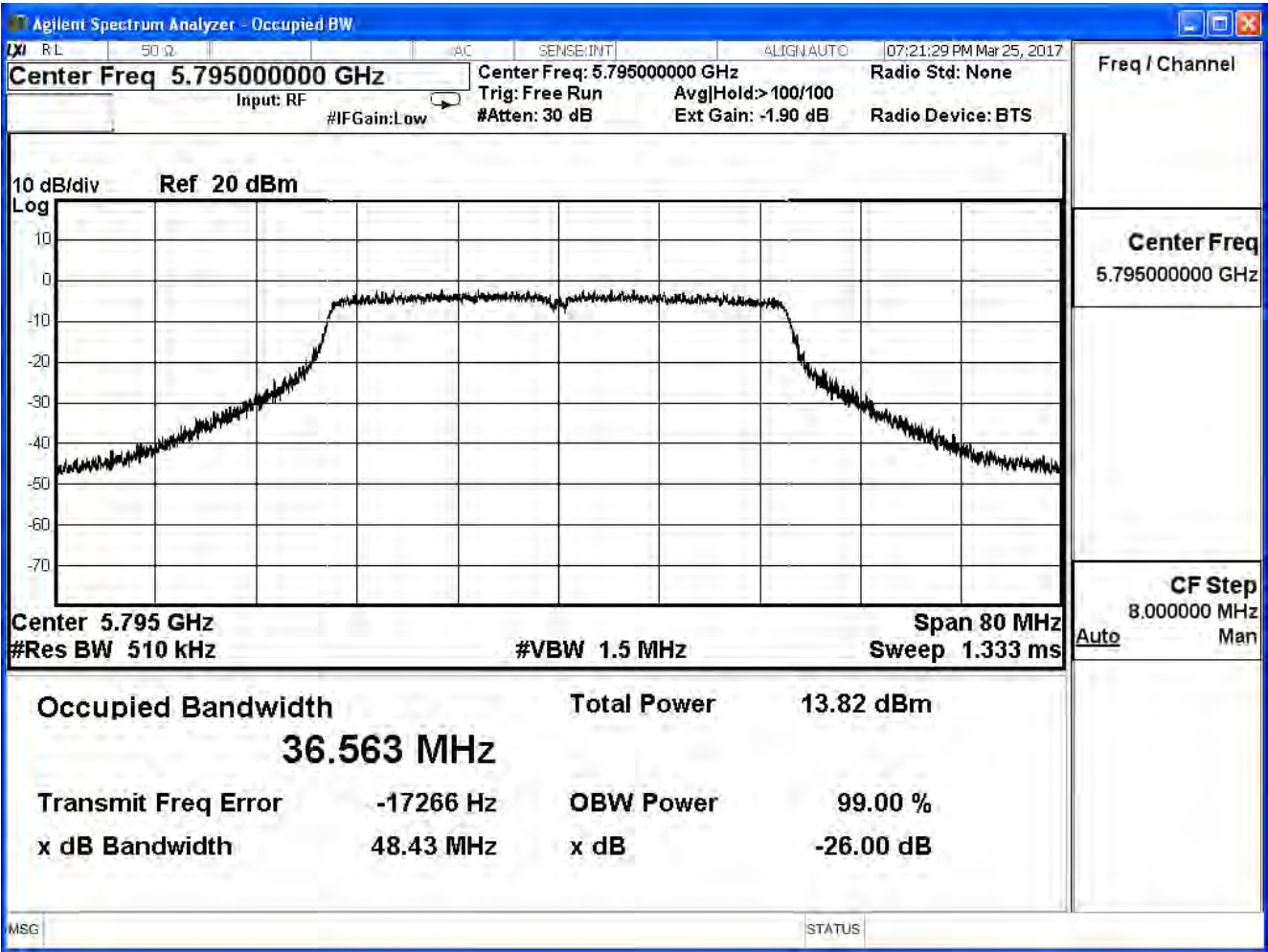
IEEE 802.11n40 (ANT 1)

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)

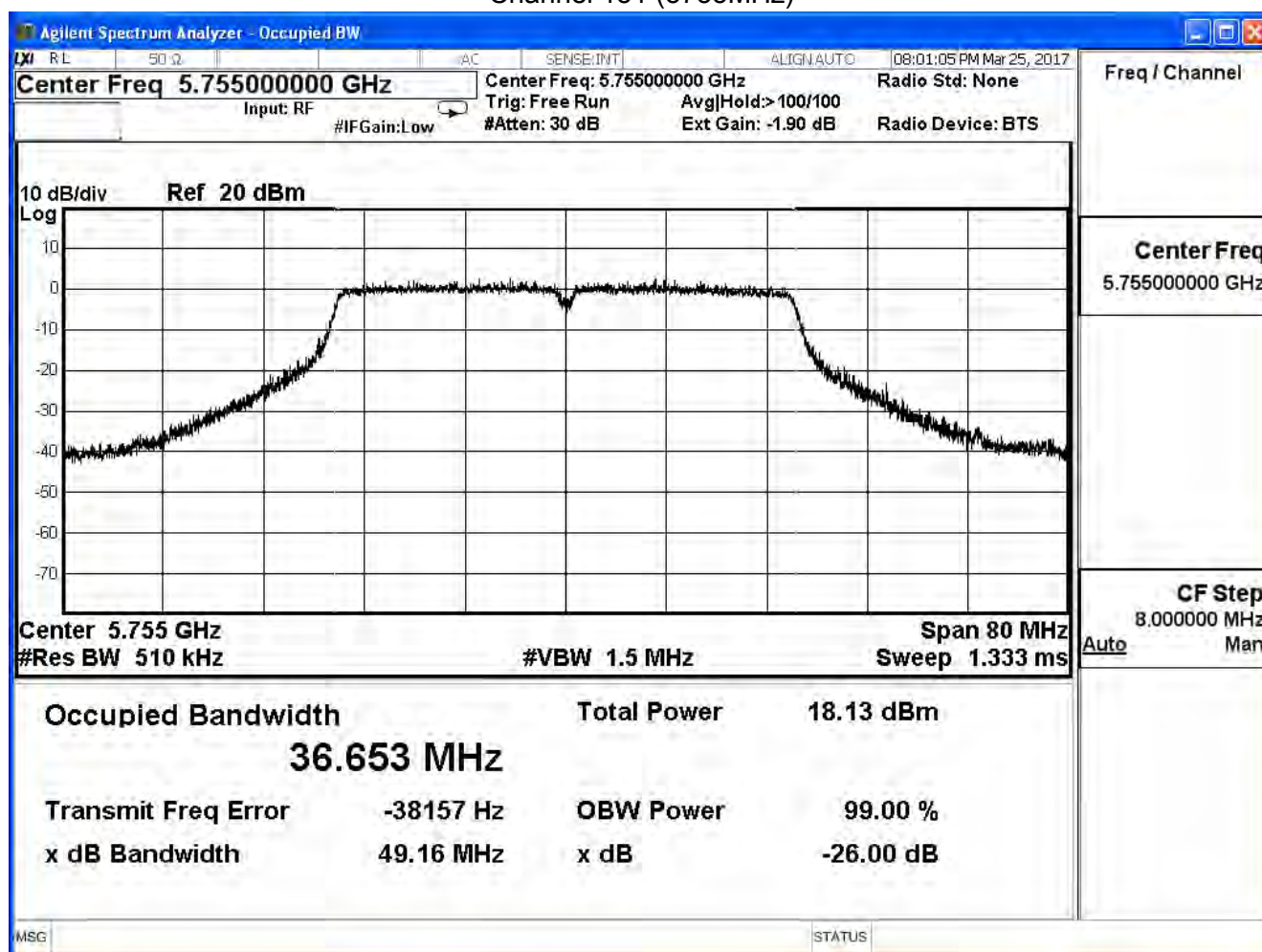


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

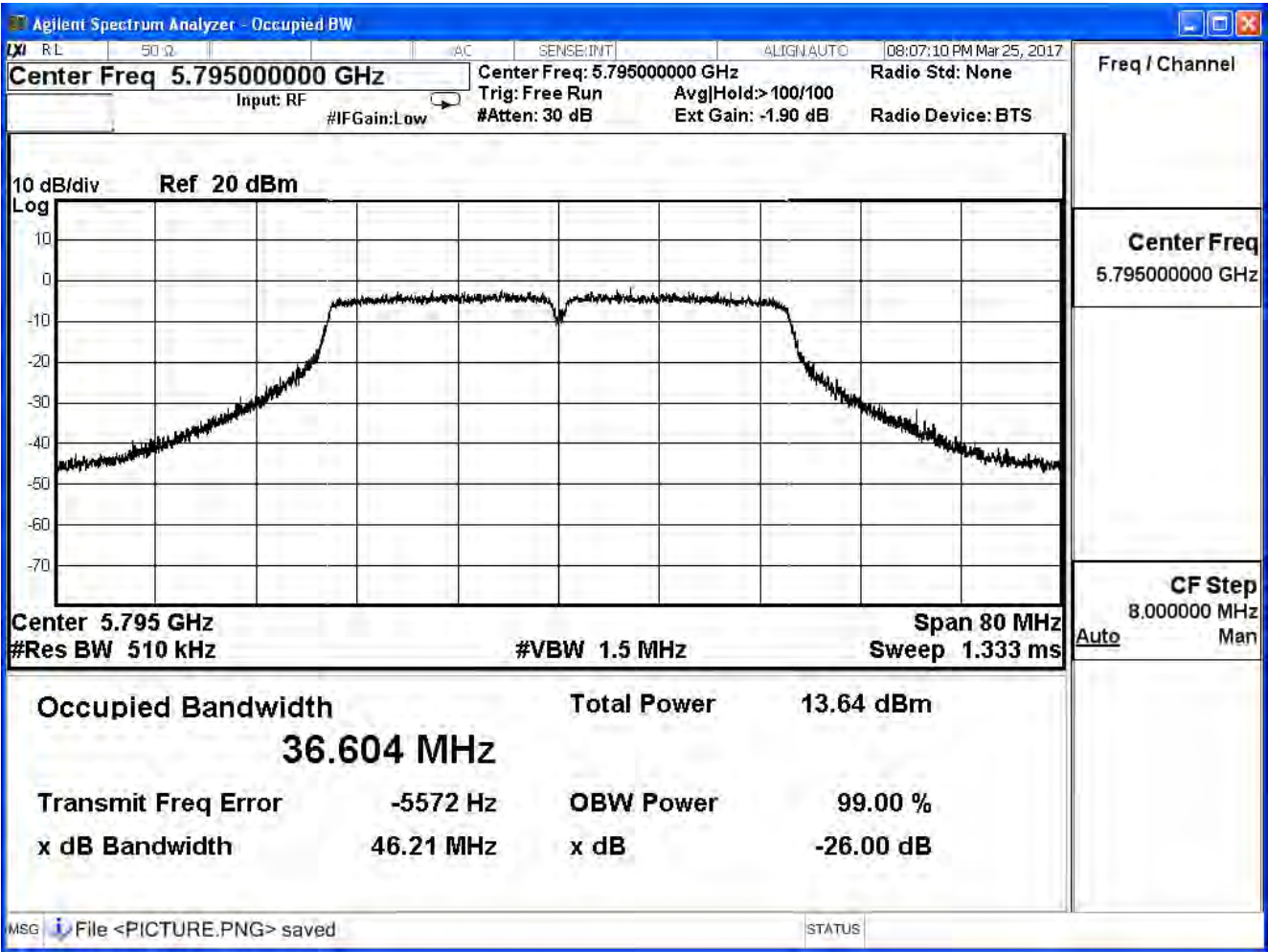
IEEE 802.11n40 (ANT 2)

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)

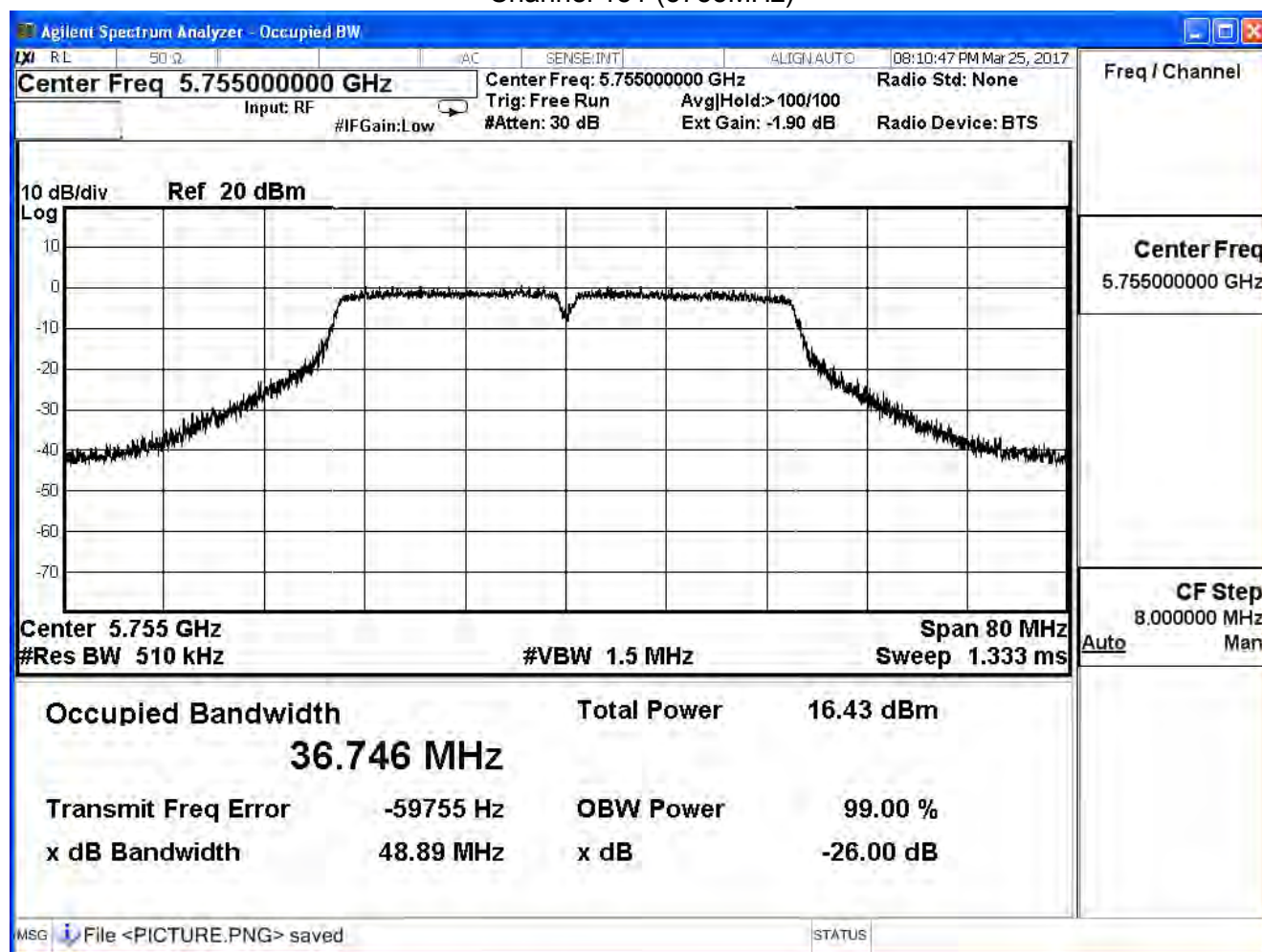


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

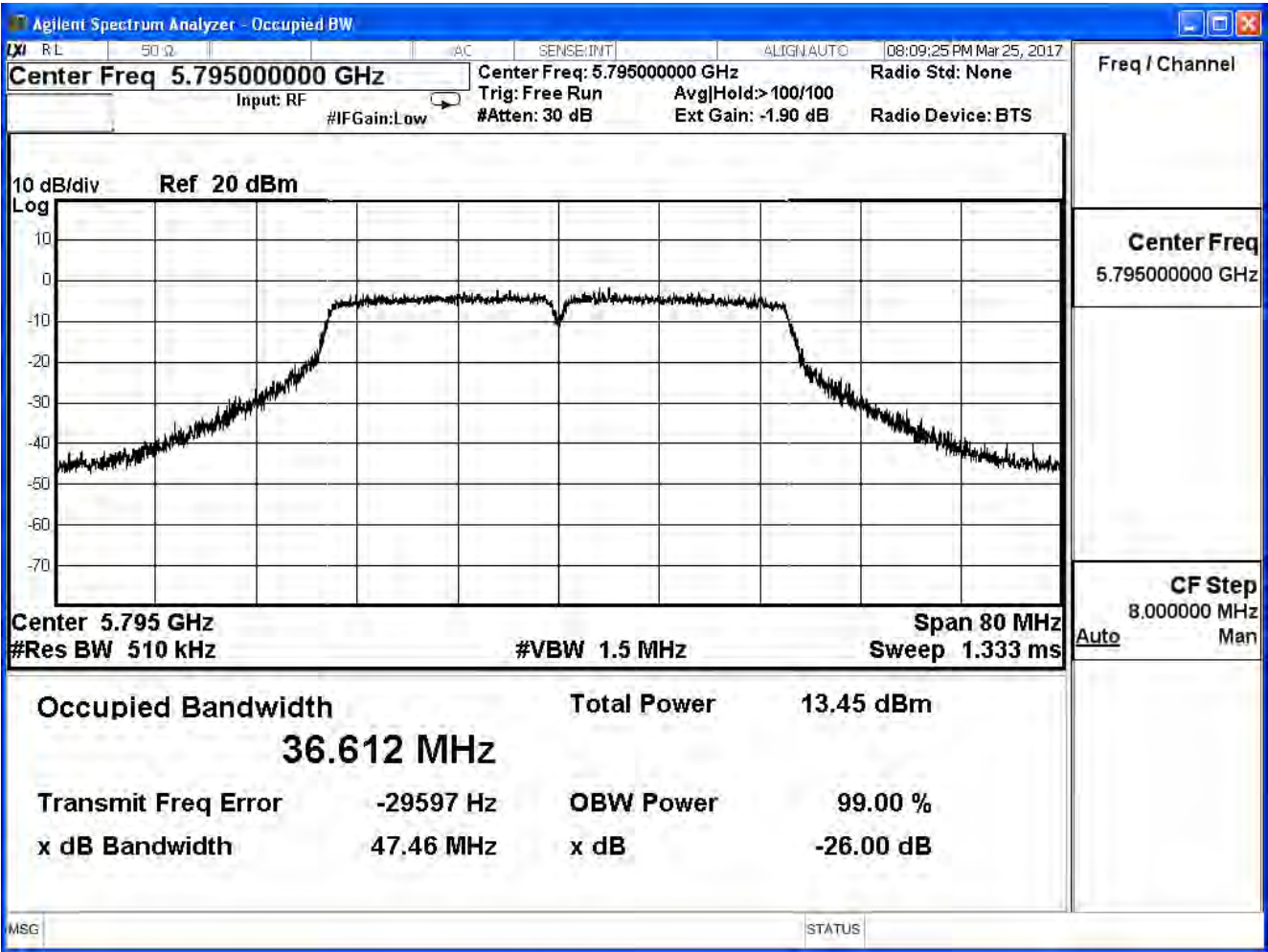
IEEE 802.11n40 (ANT 3)

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)

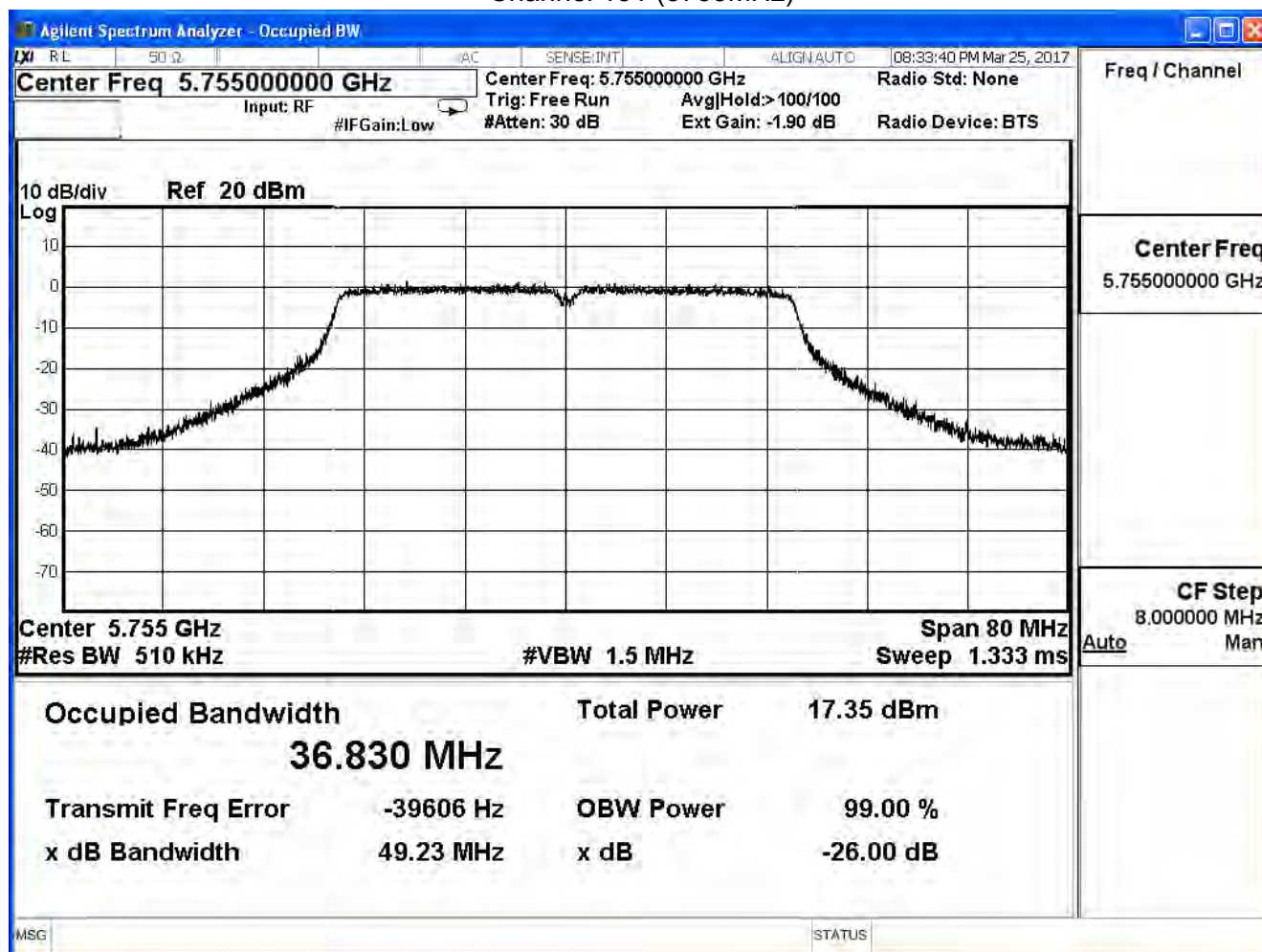


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

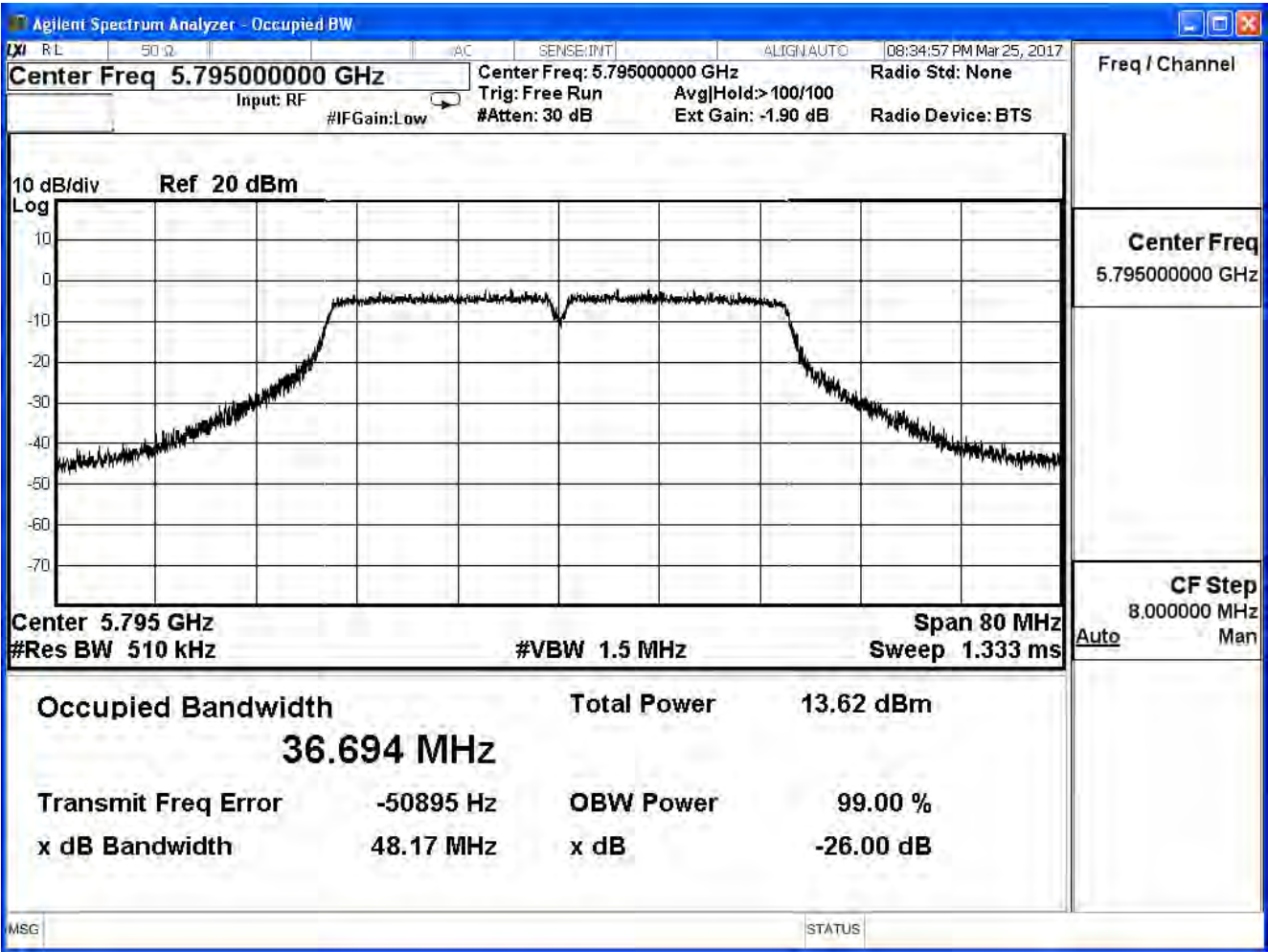
IEEE 802.11n40 (ANT 4)

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)

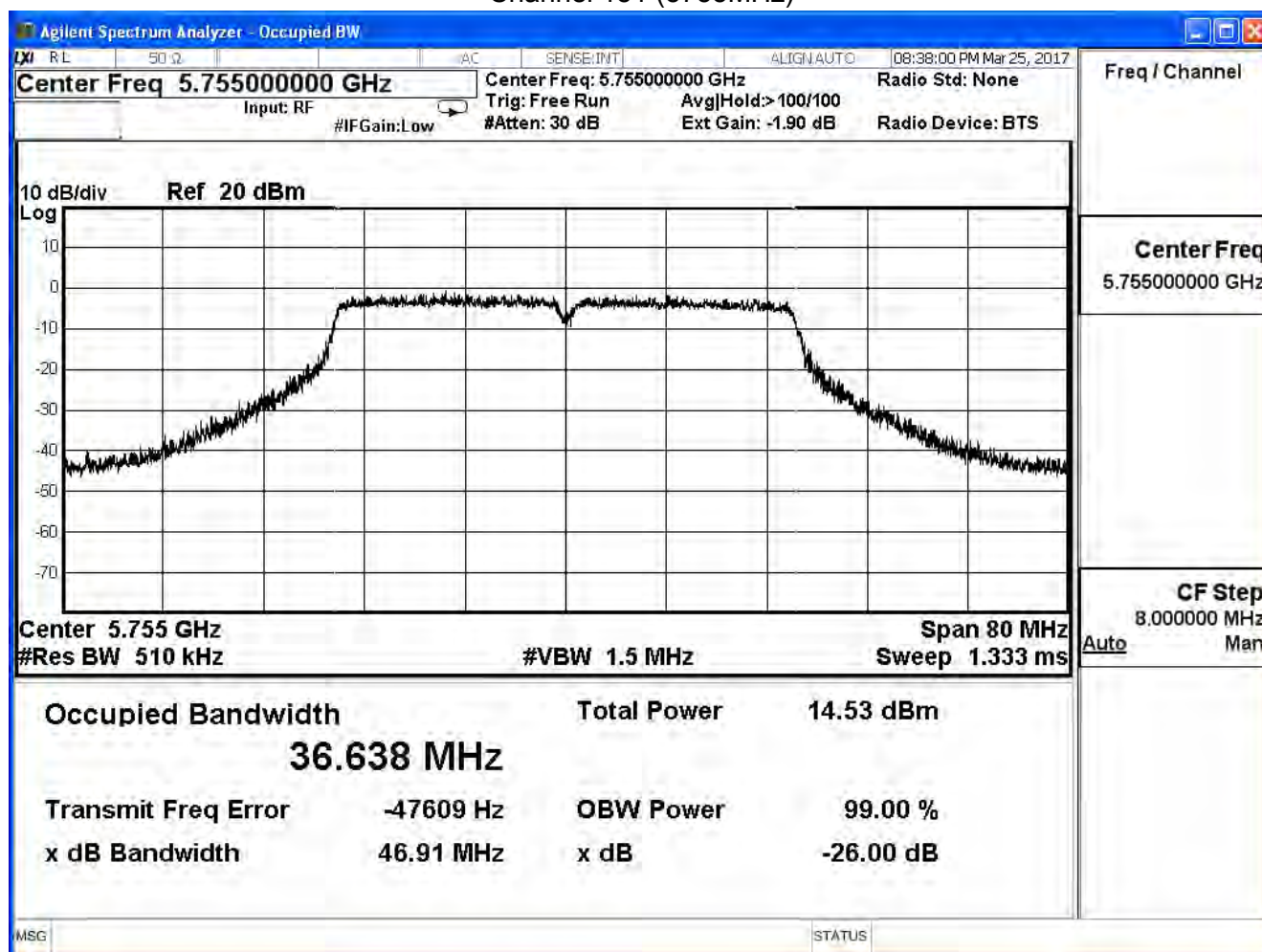


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	99% Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

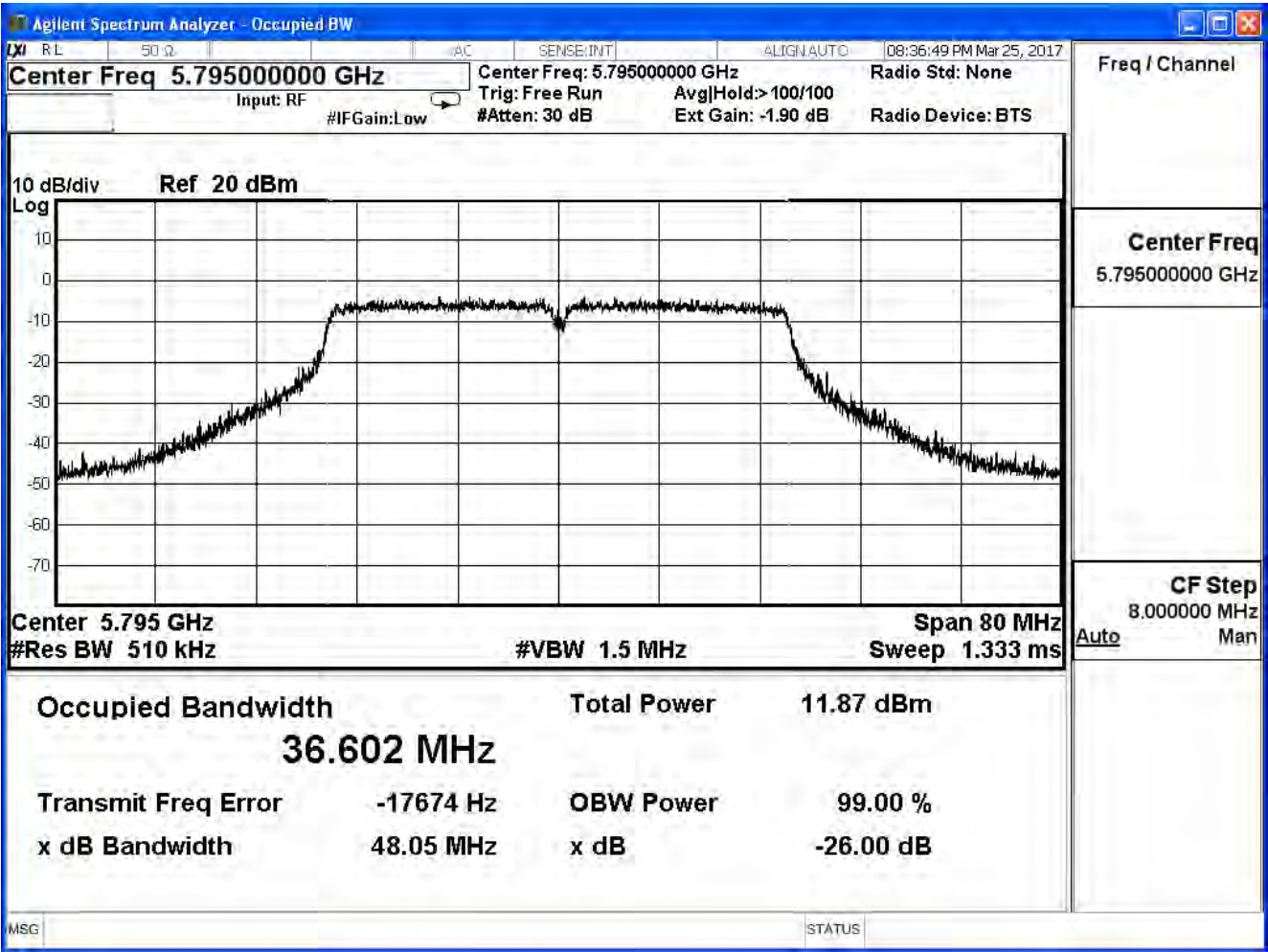
IEEE 802.11n40 (ANT 5)

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)

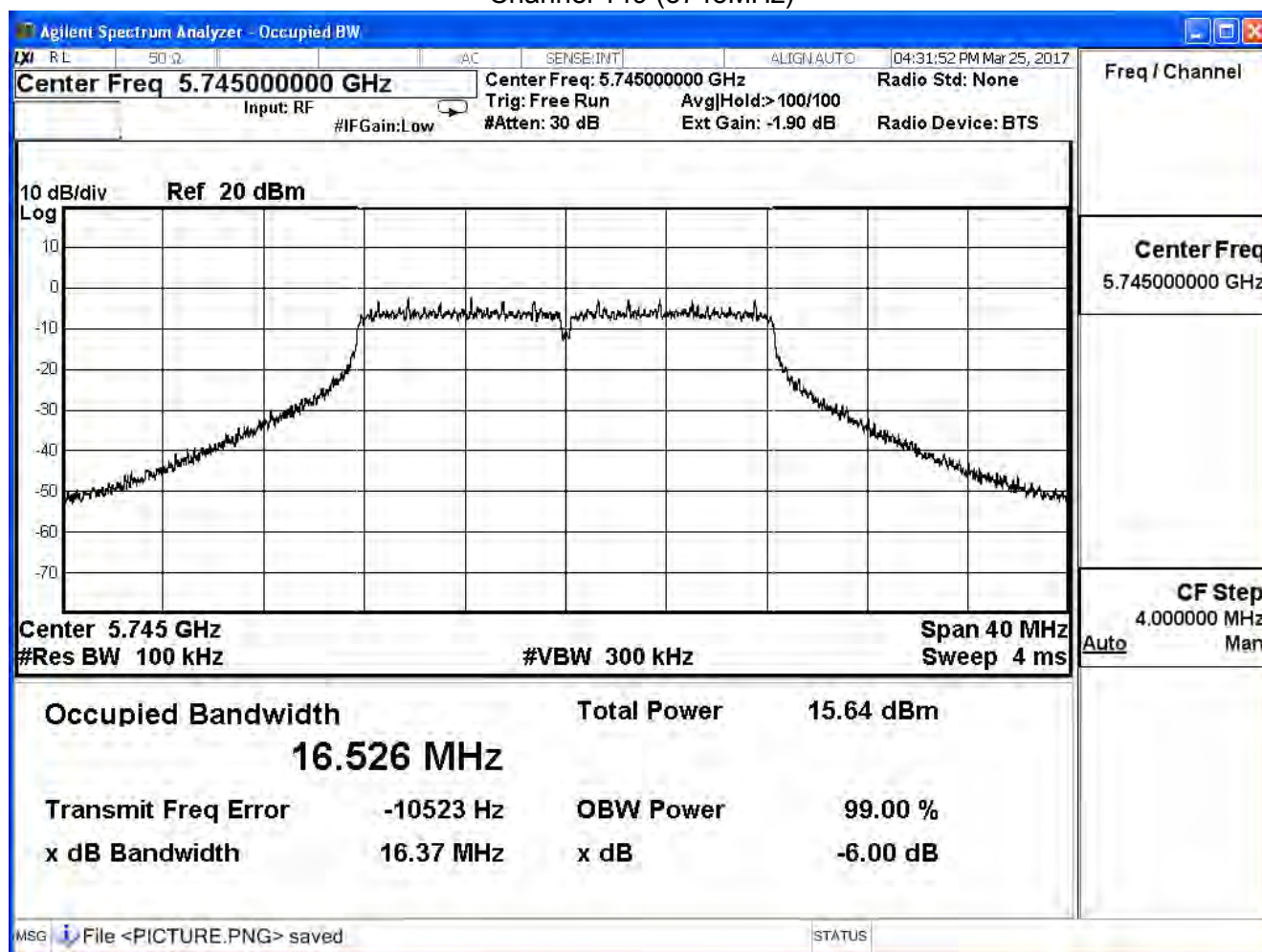


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

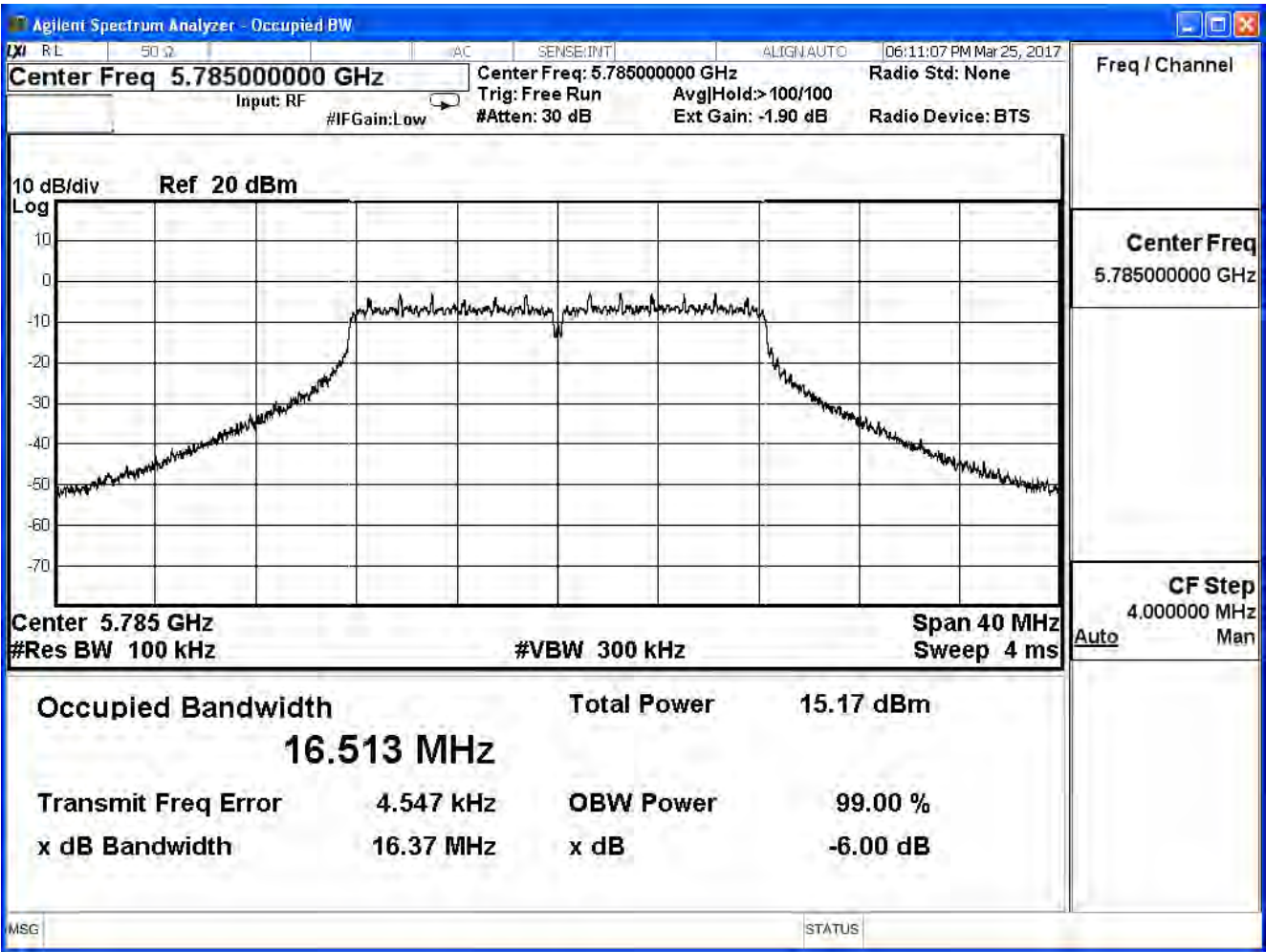
IEEE 802.11a (ANT 0)

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

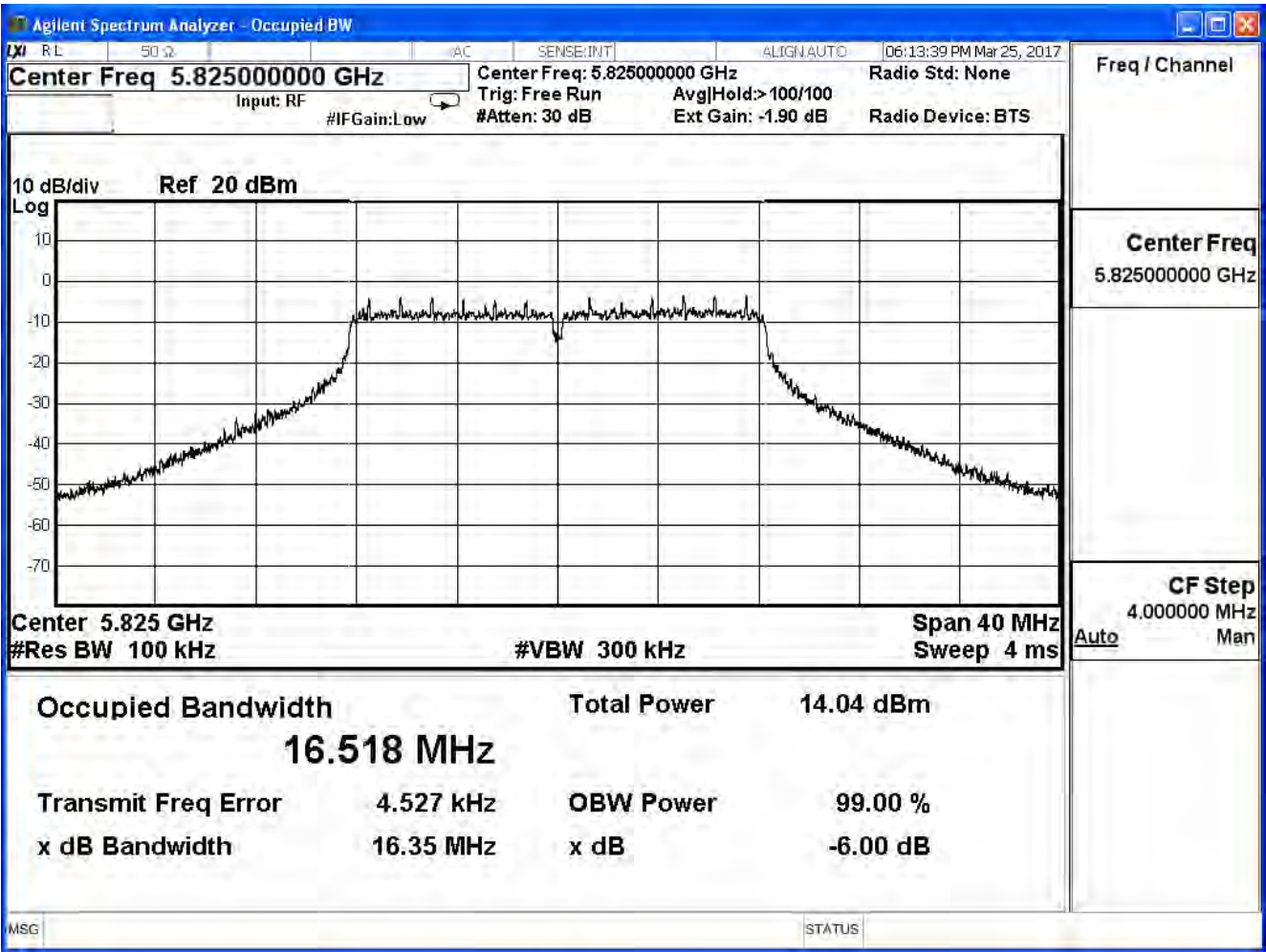
Channel 149 (5745MHz)



Channel 157 (5785MHz)



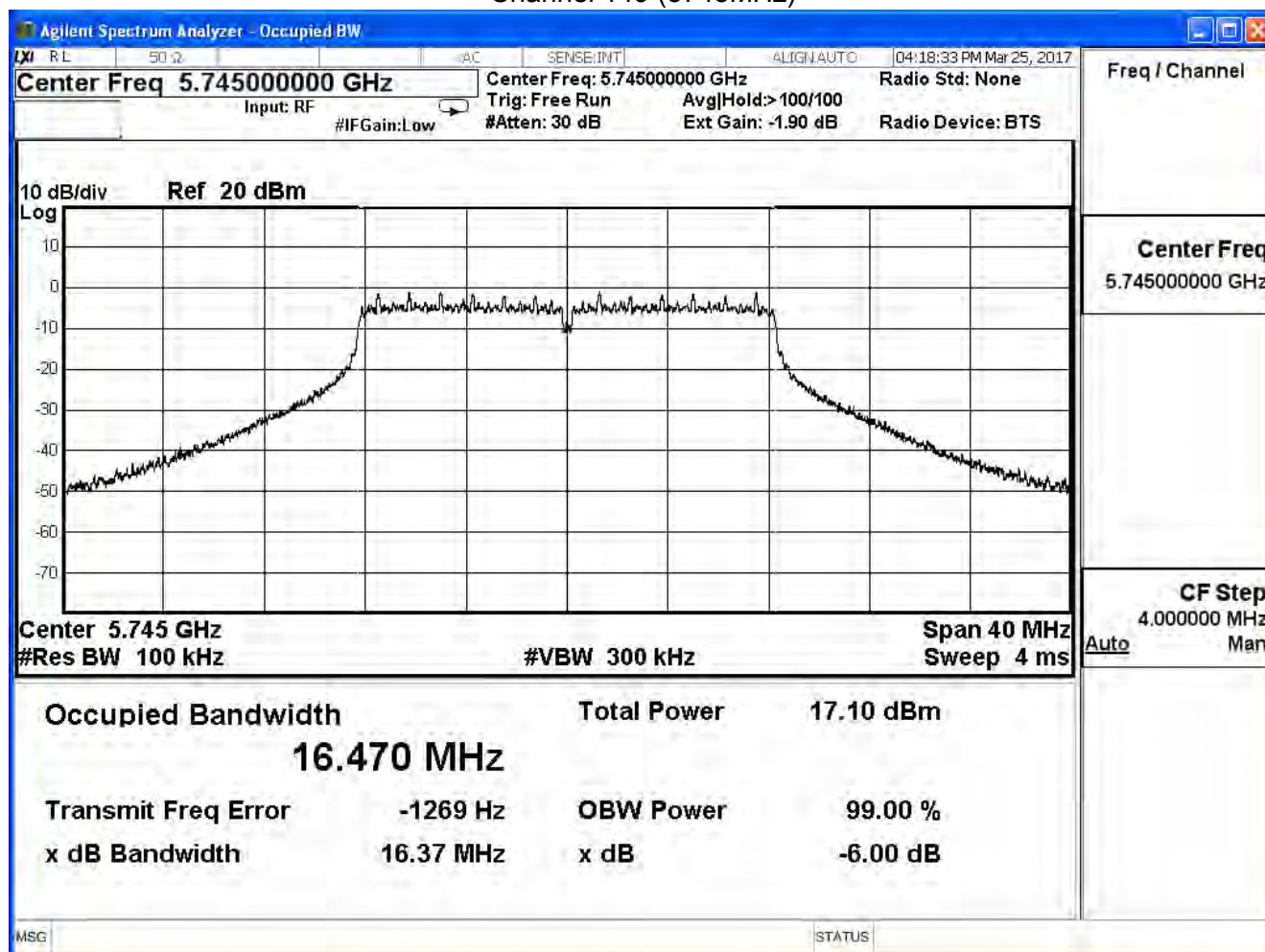
Channel 165 (5825MHz)



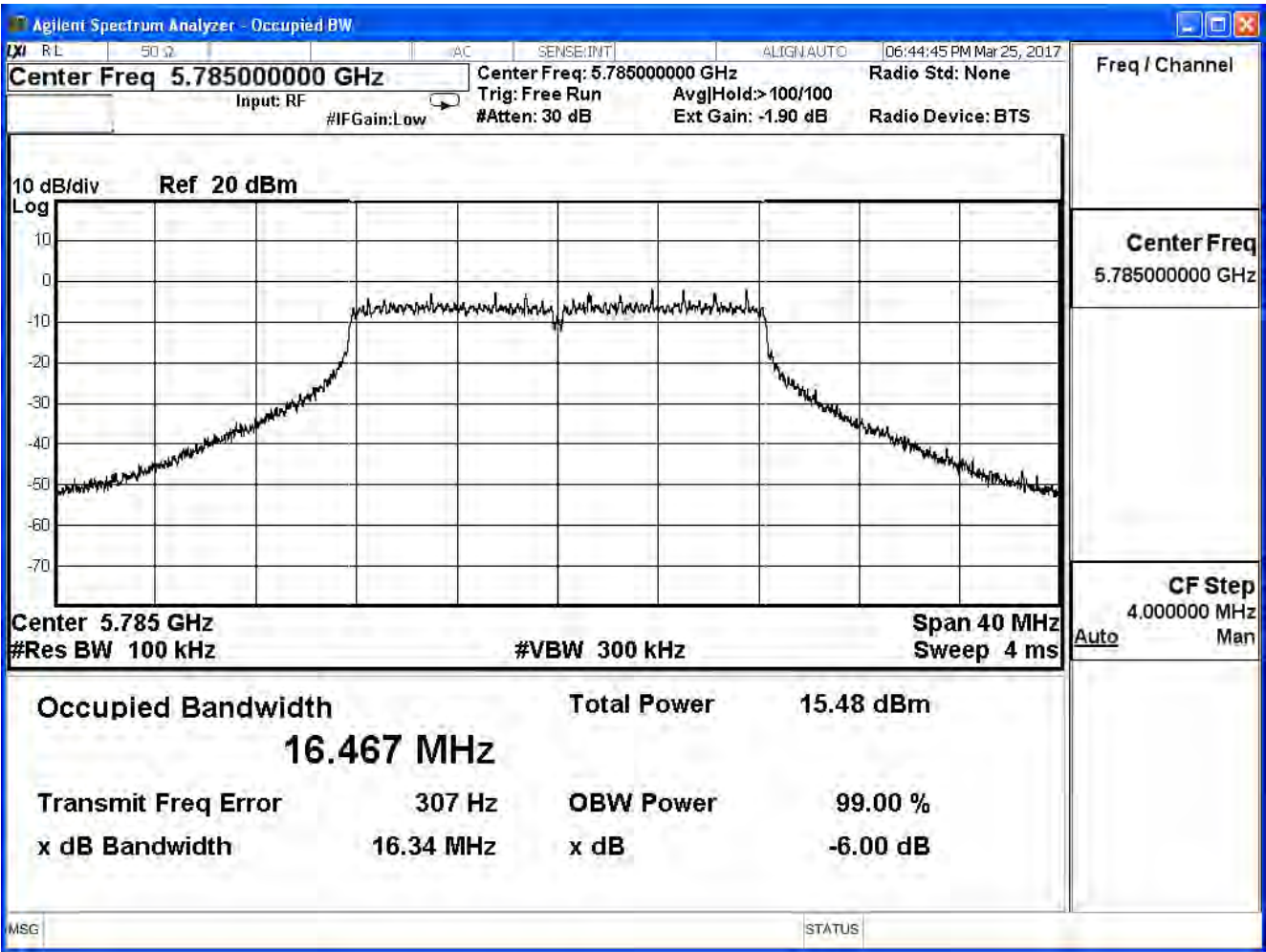
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

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

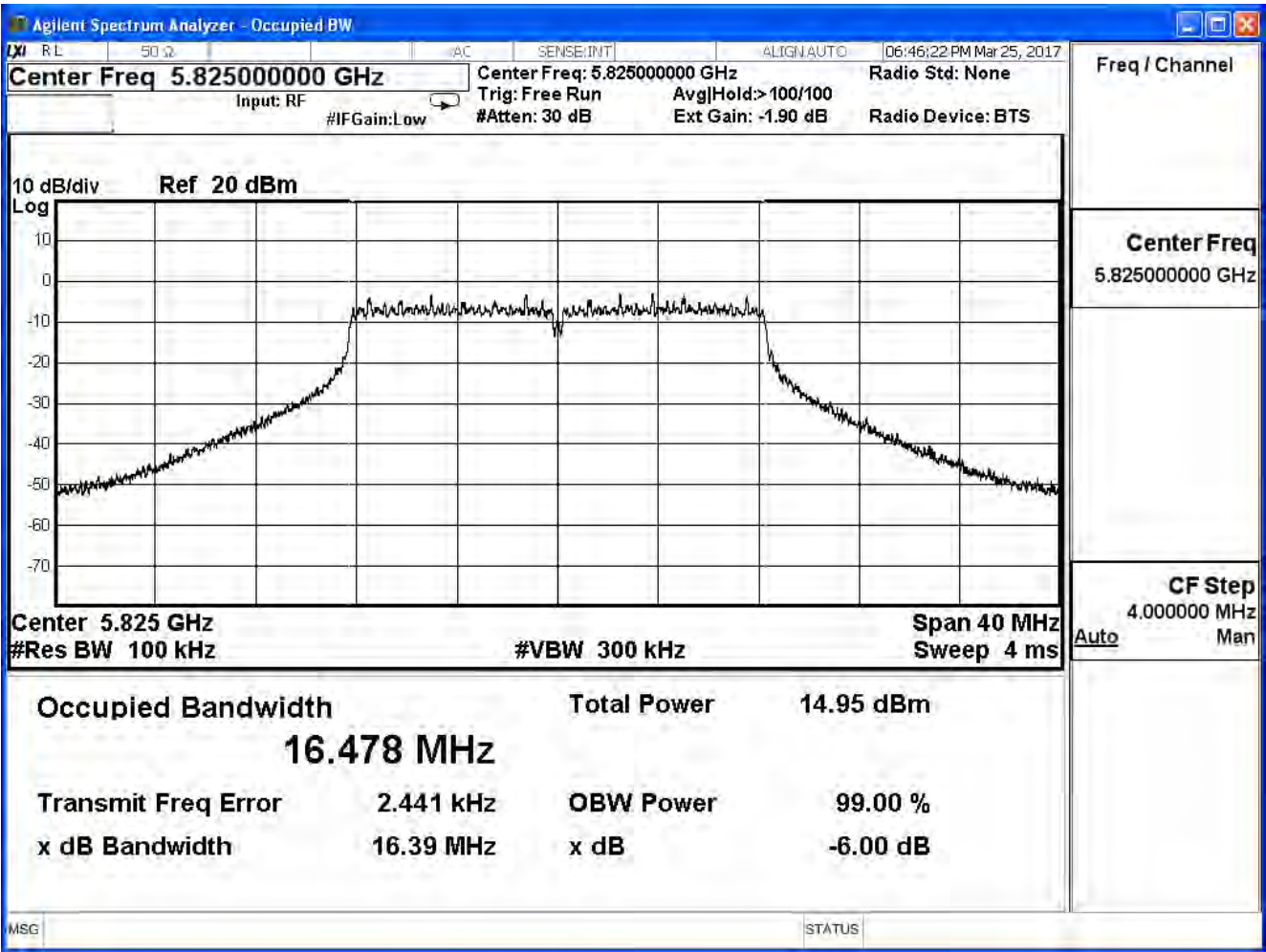
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

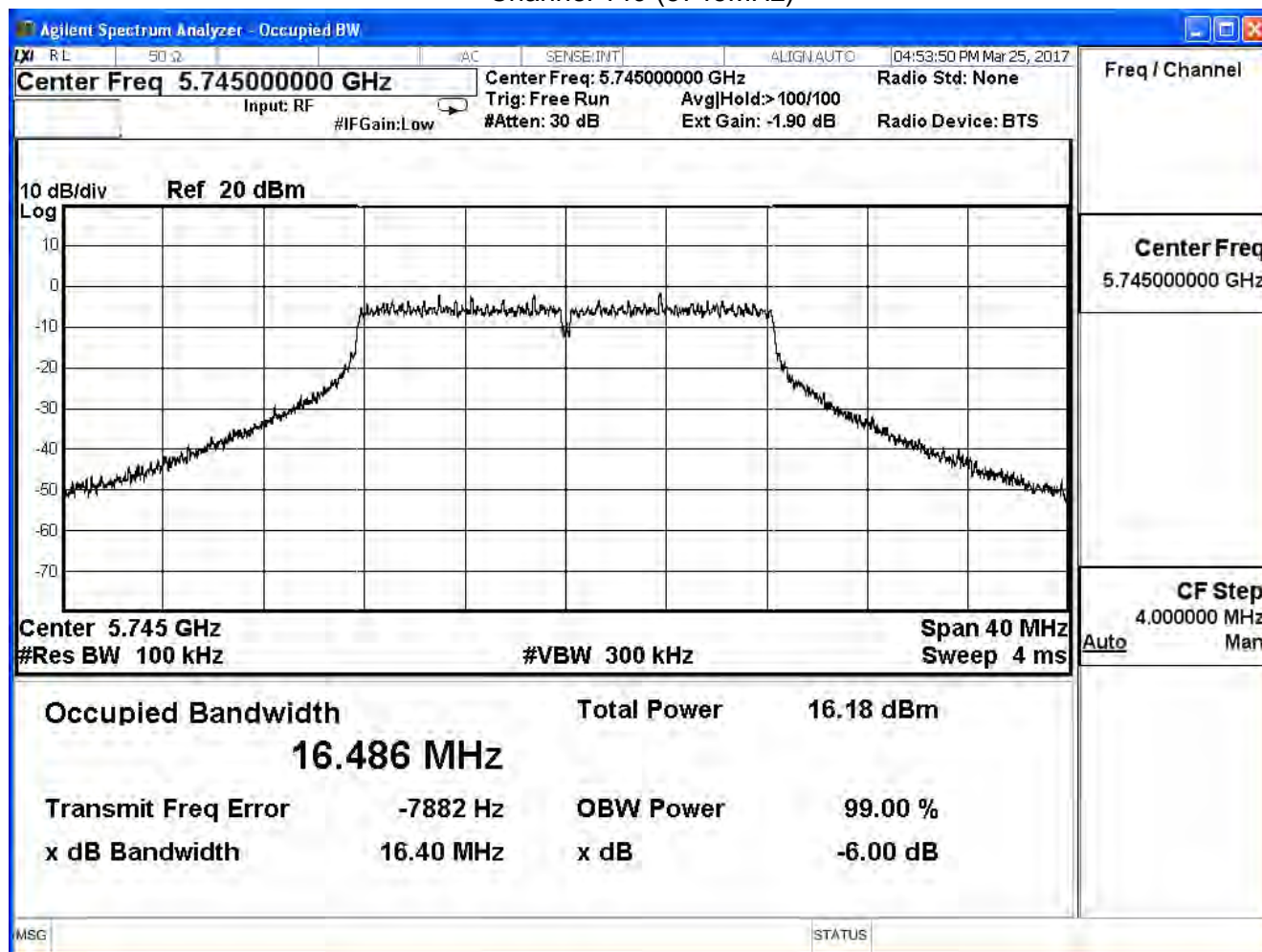


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

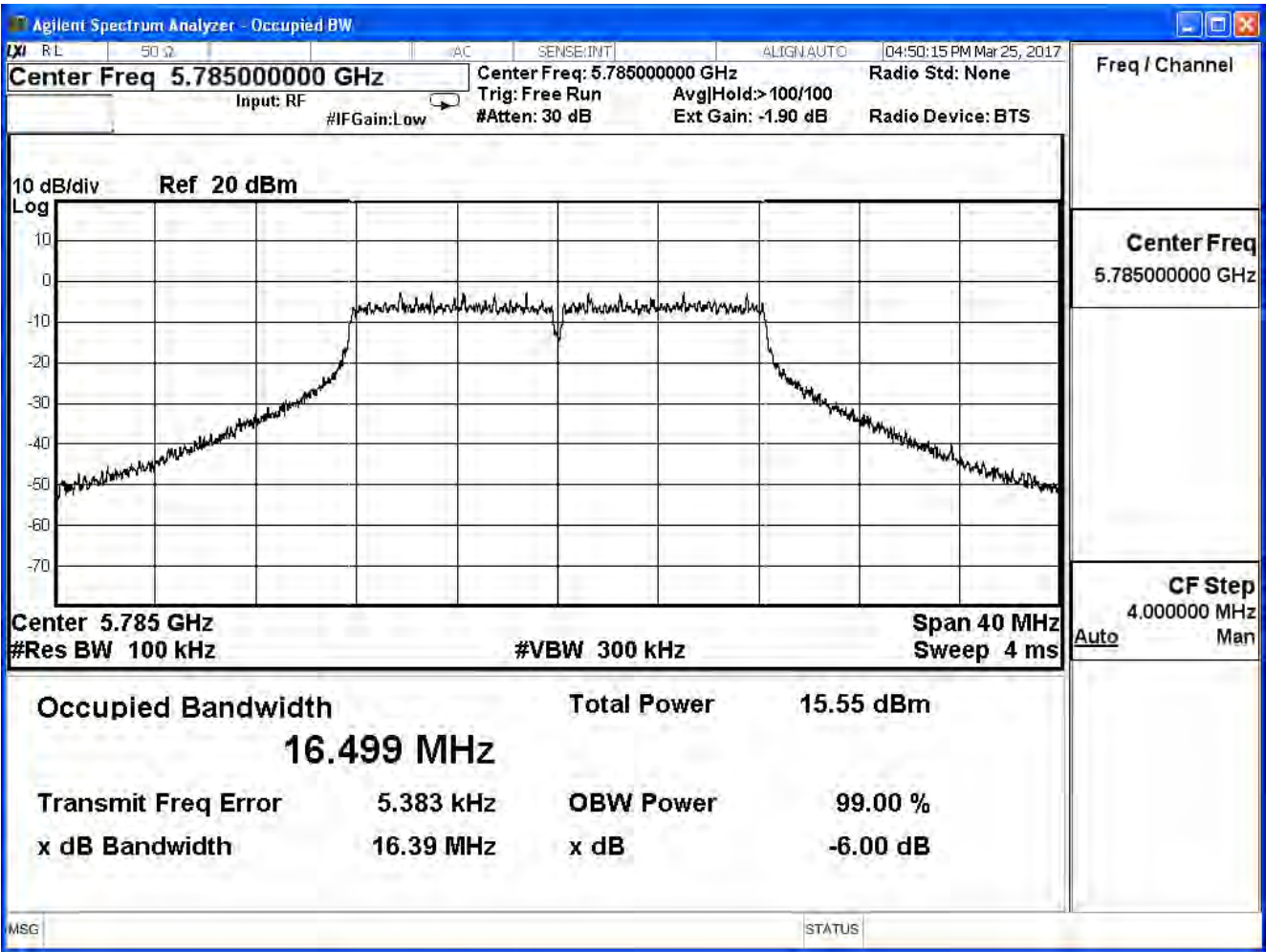
IEEE 802.11a (ANT 2)

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

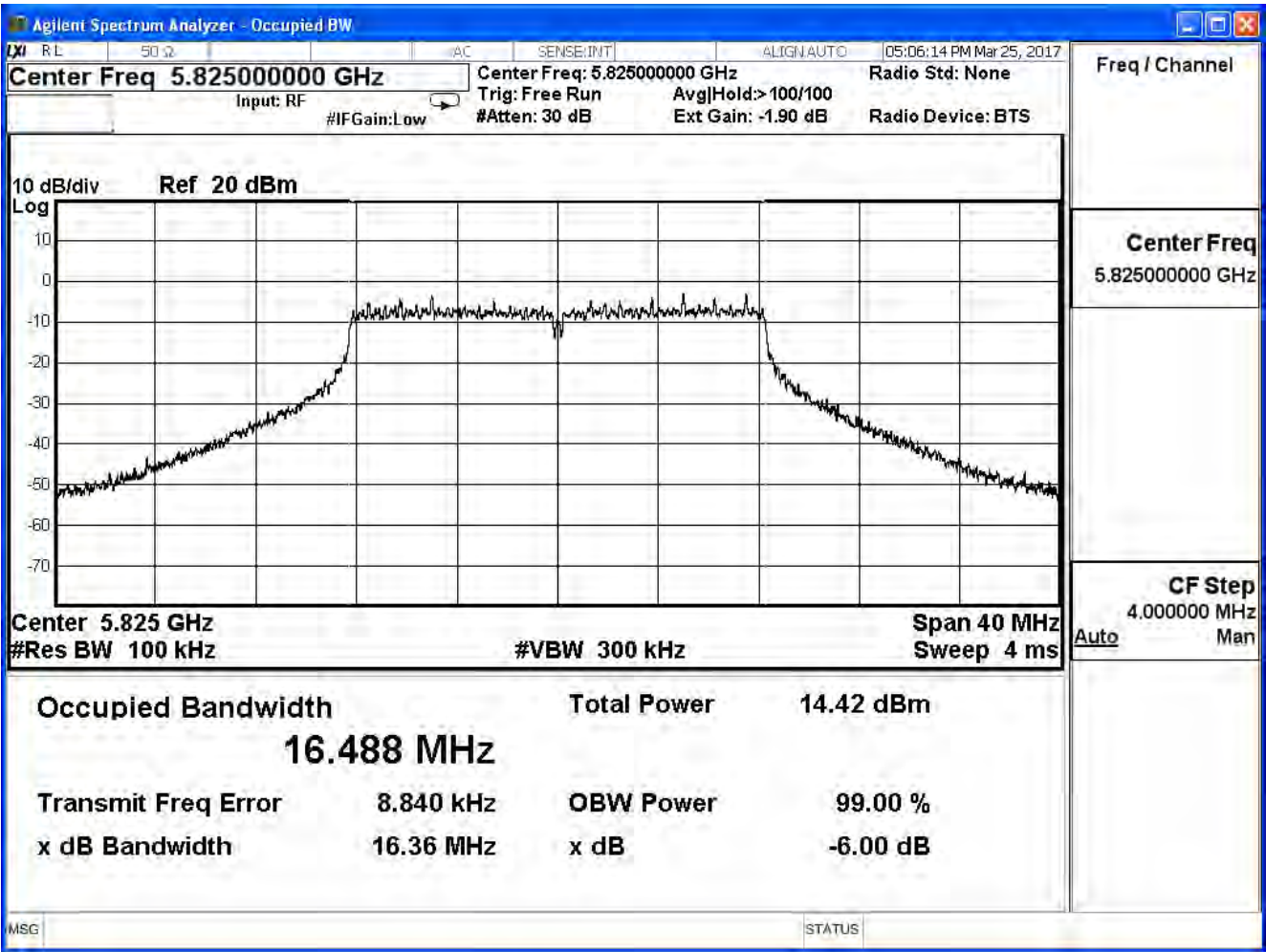
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

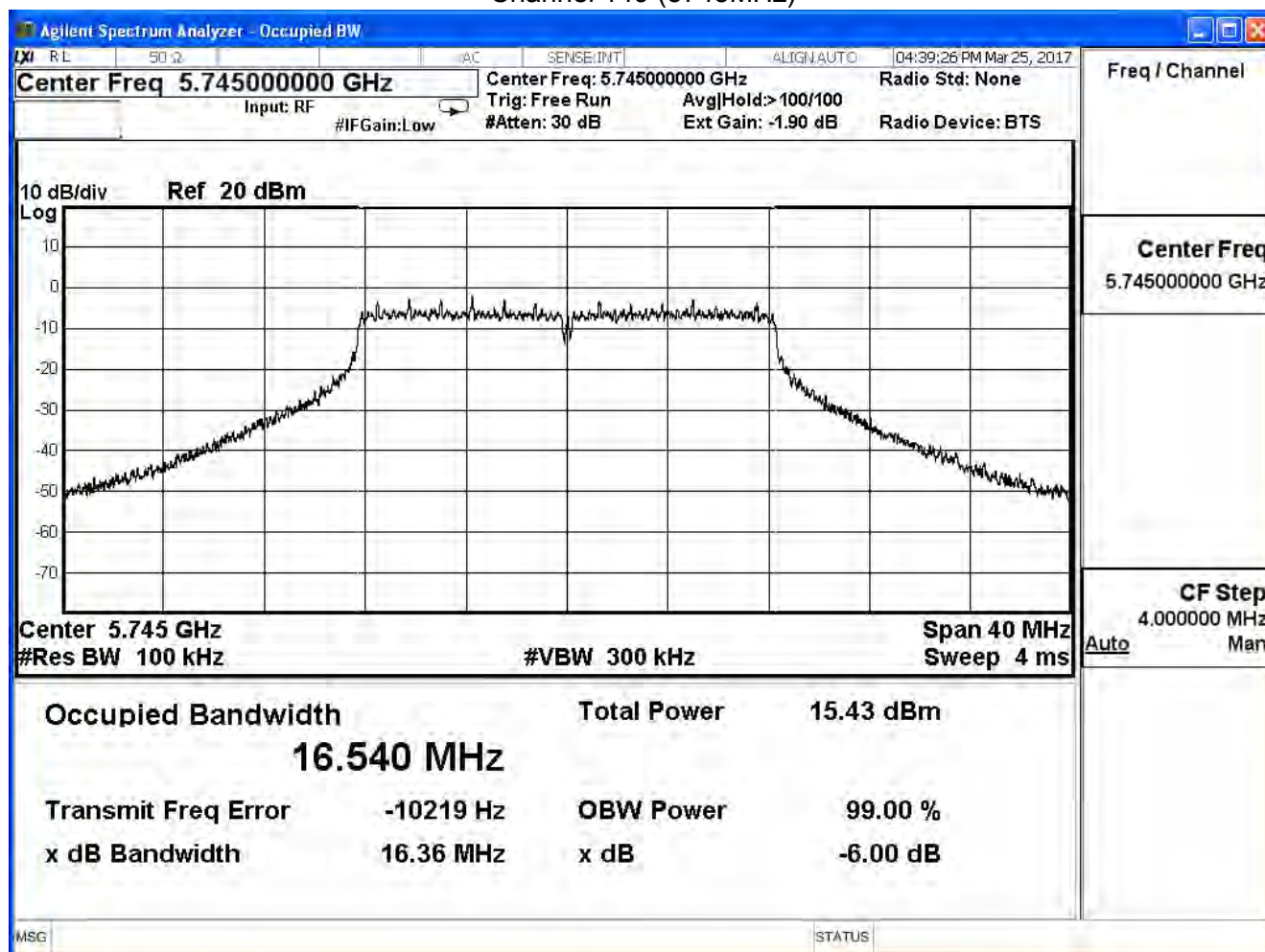


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

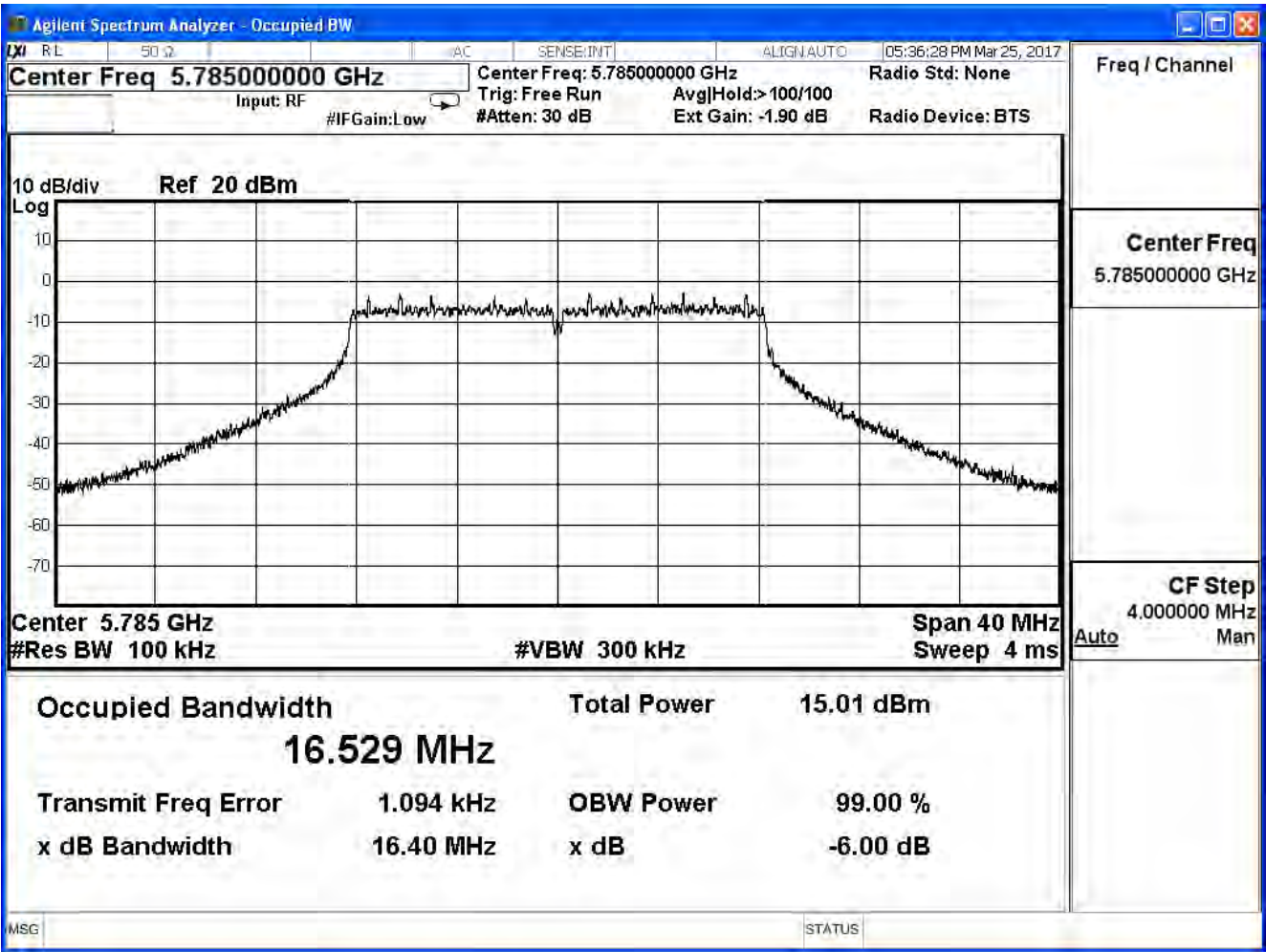
IEEE 802.11a (ANT 3)

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

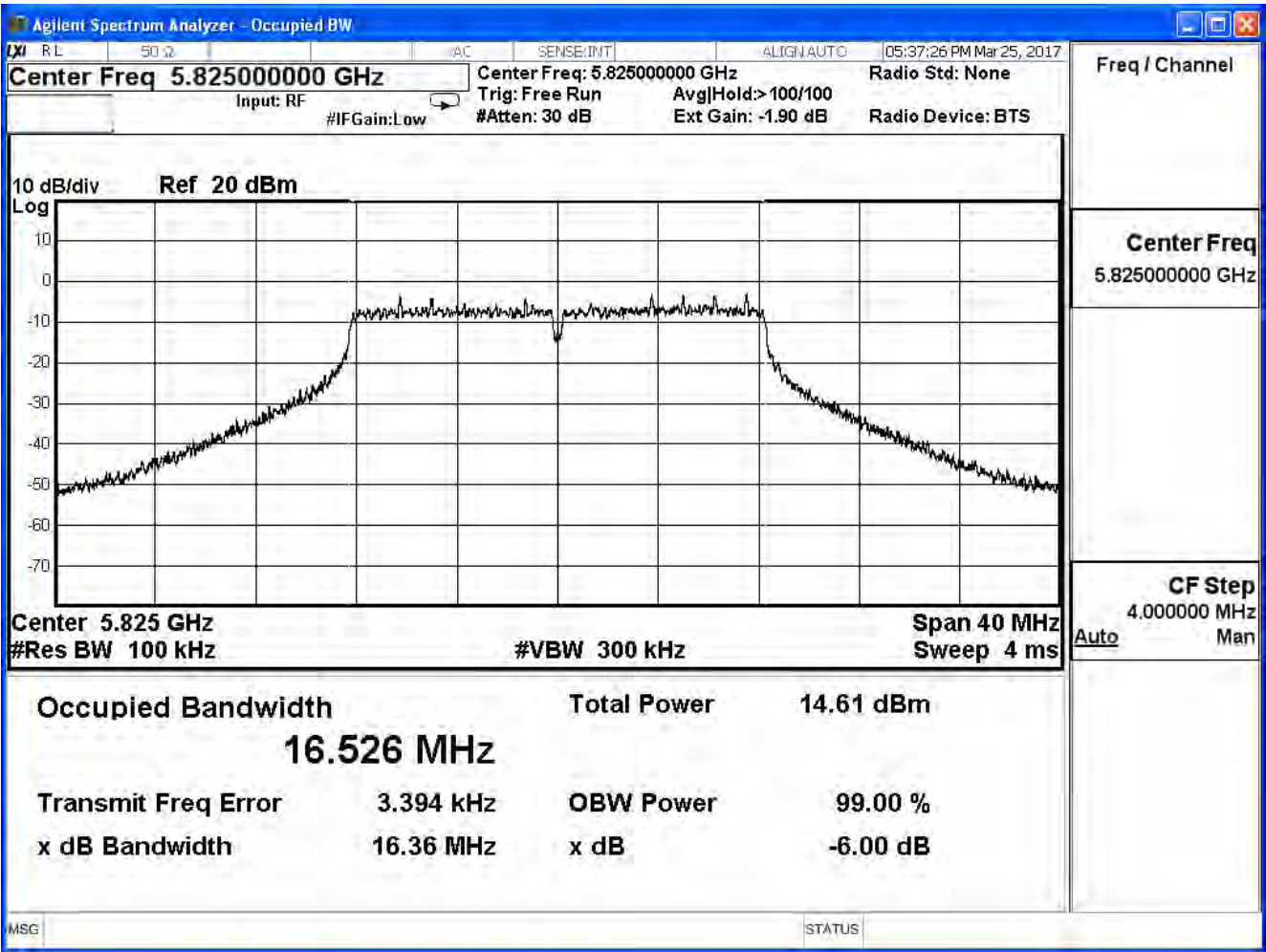
Channel 149 (5745MHz)



Channel 157 (5785MHz)



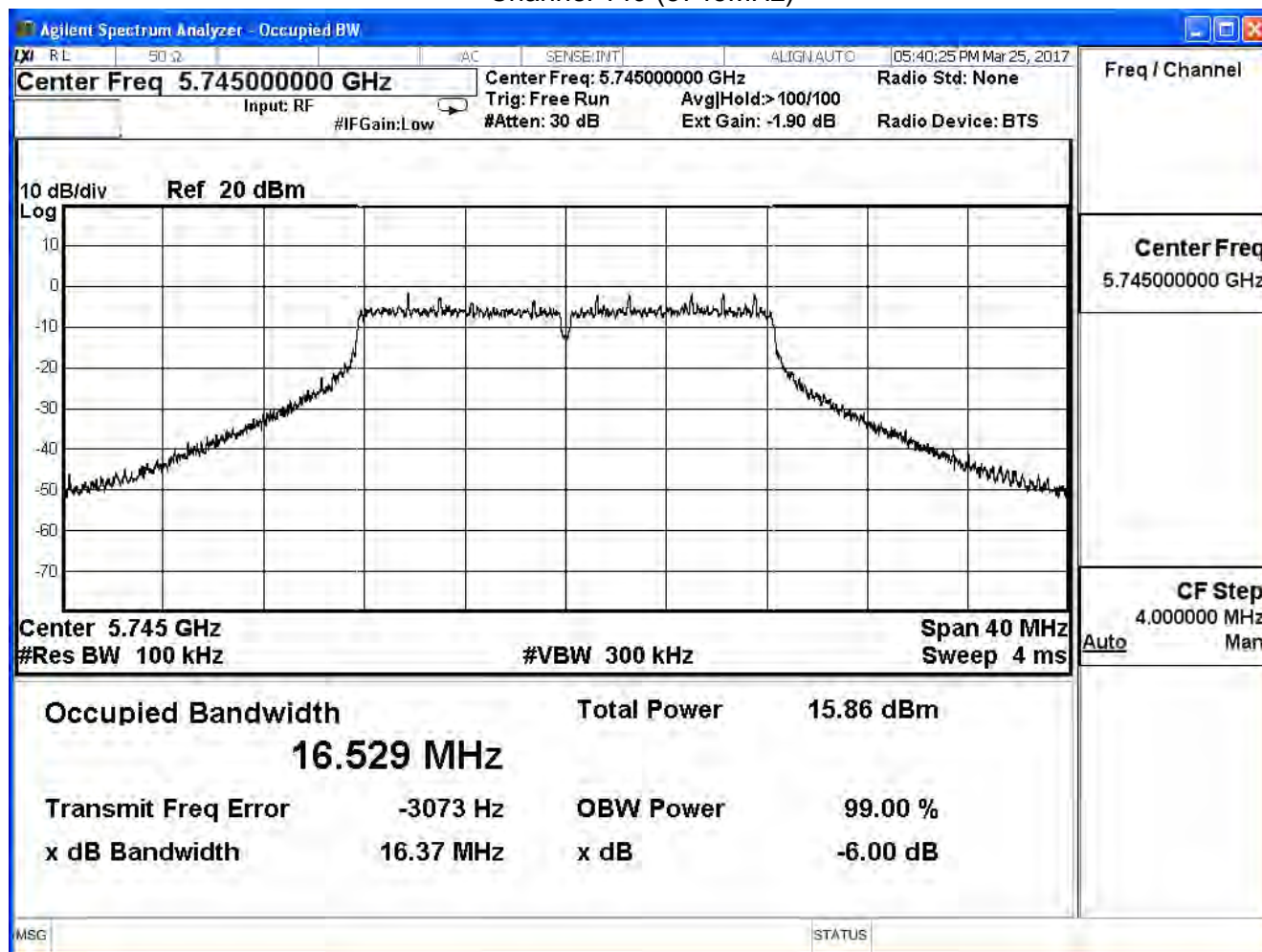
Channel 165 (5825MHz)



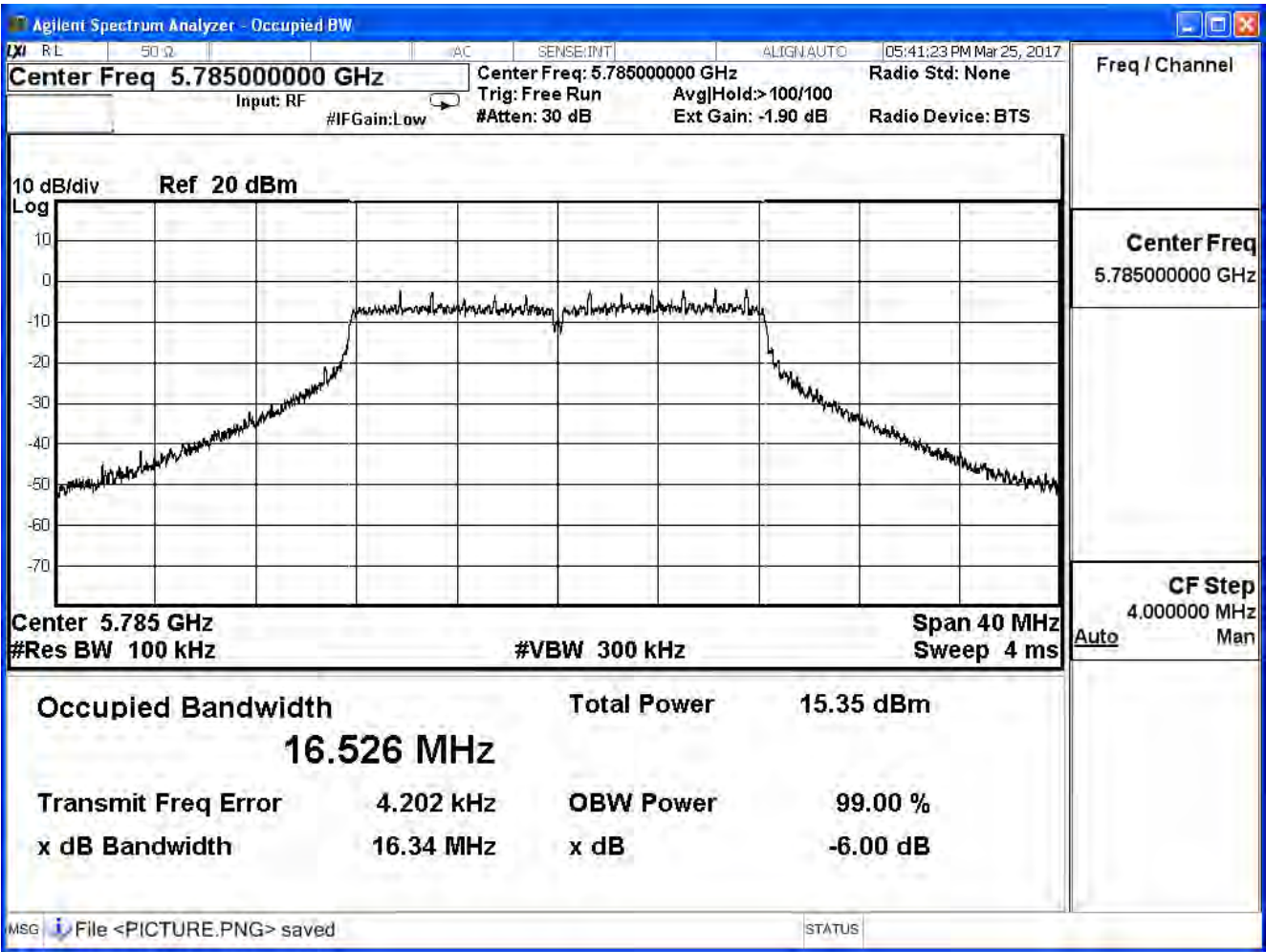
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

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

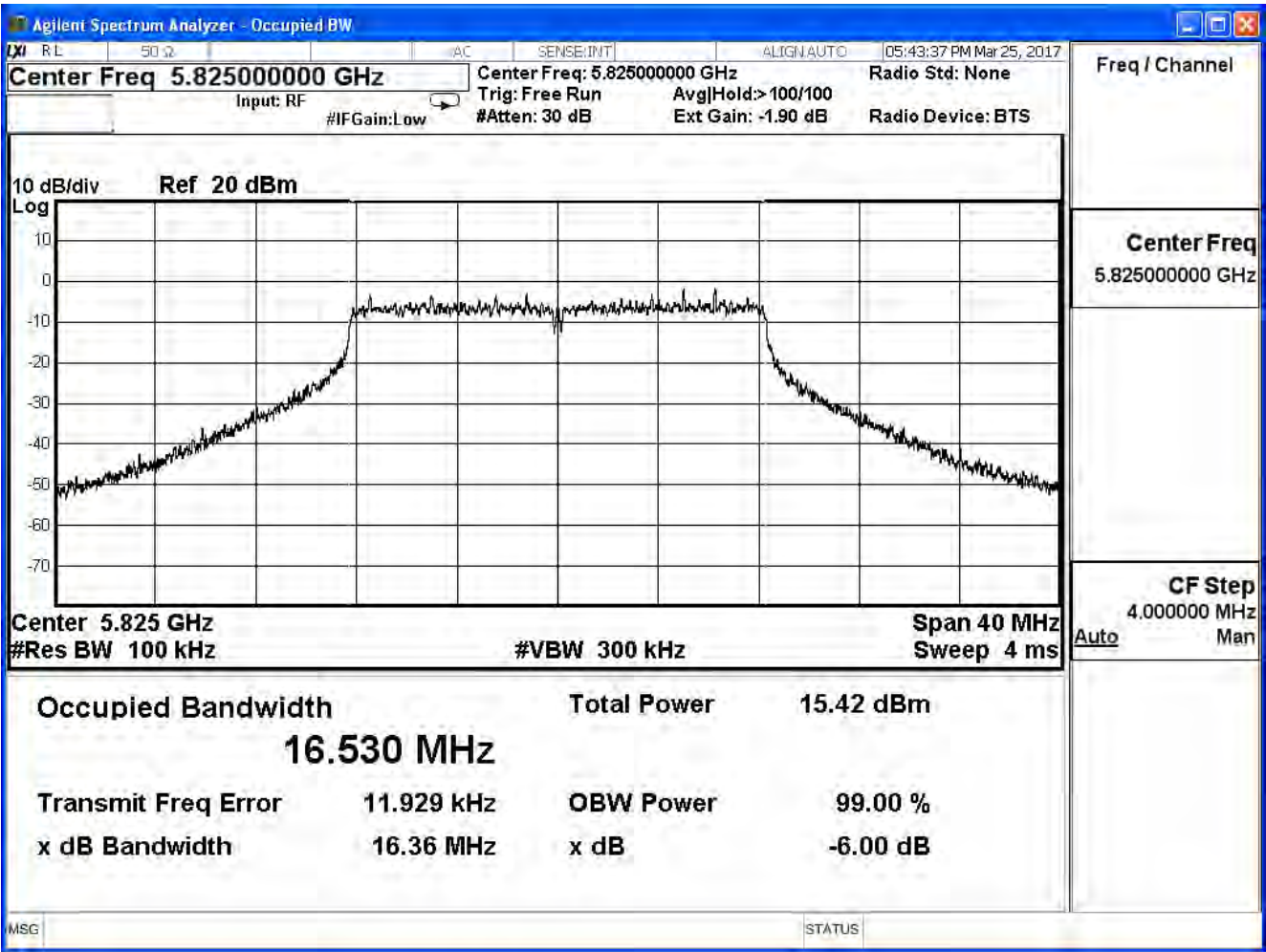
Channel 149 (5745MHz)



Channel 157 (5785MHz)



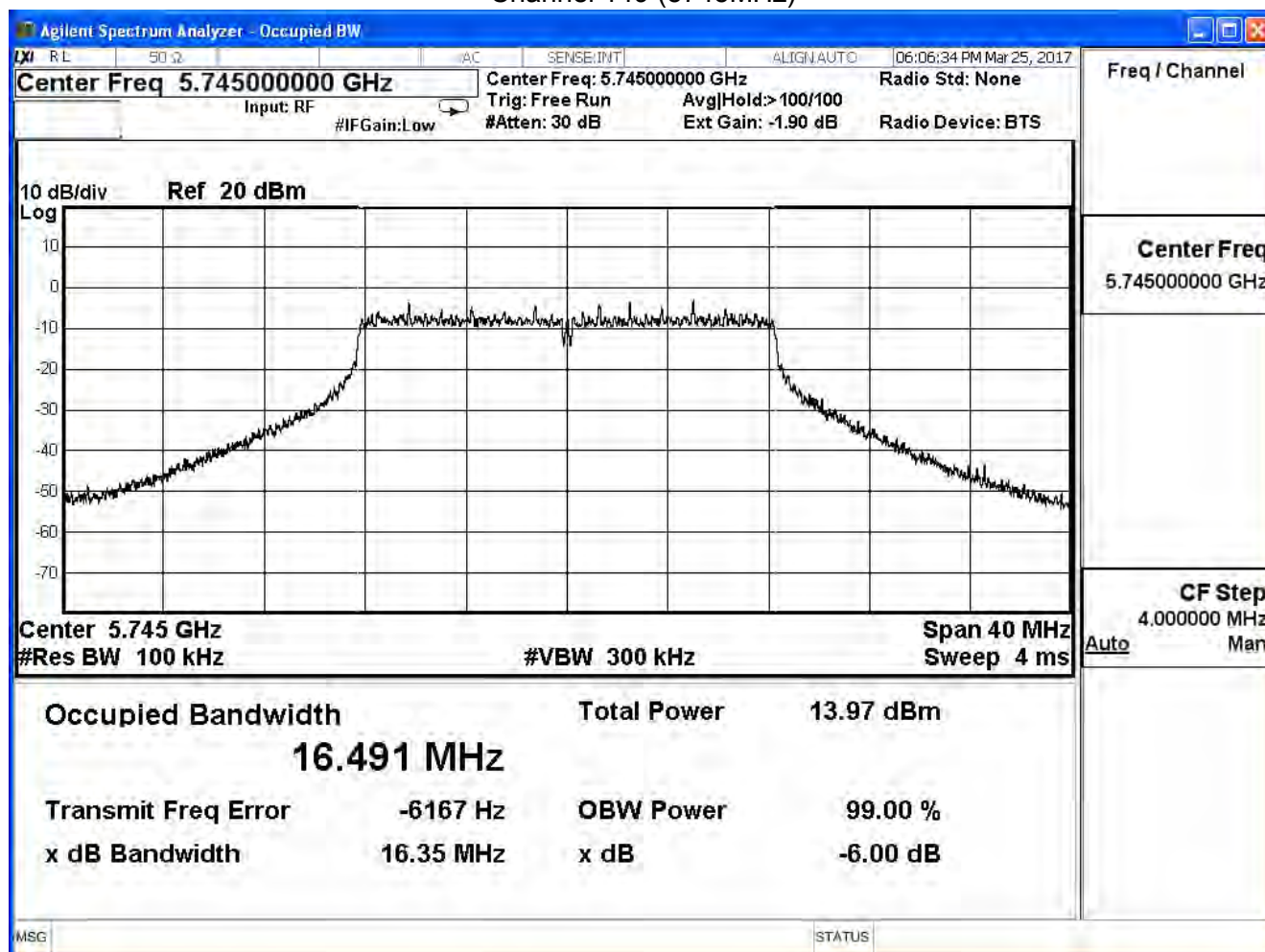
Channel 165 (5825MHz)



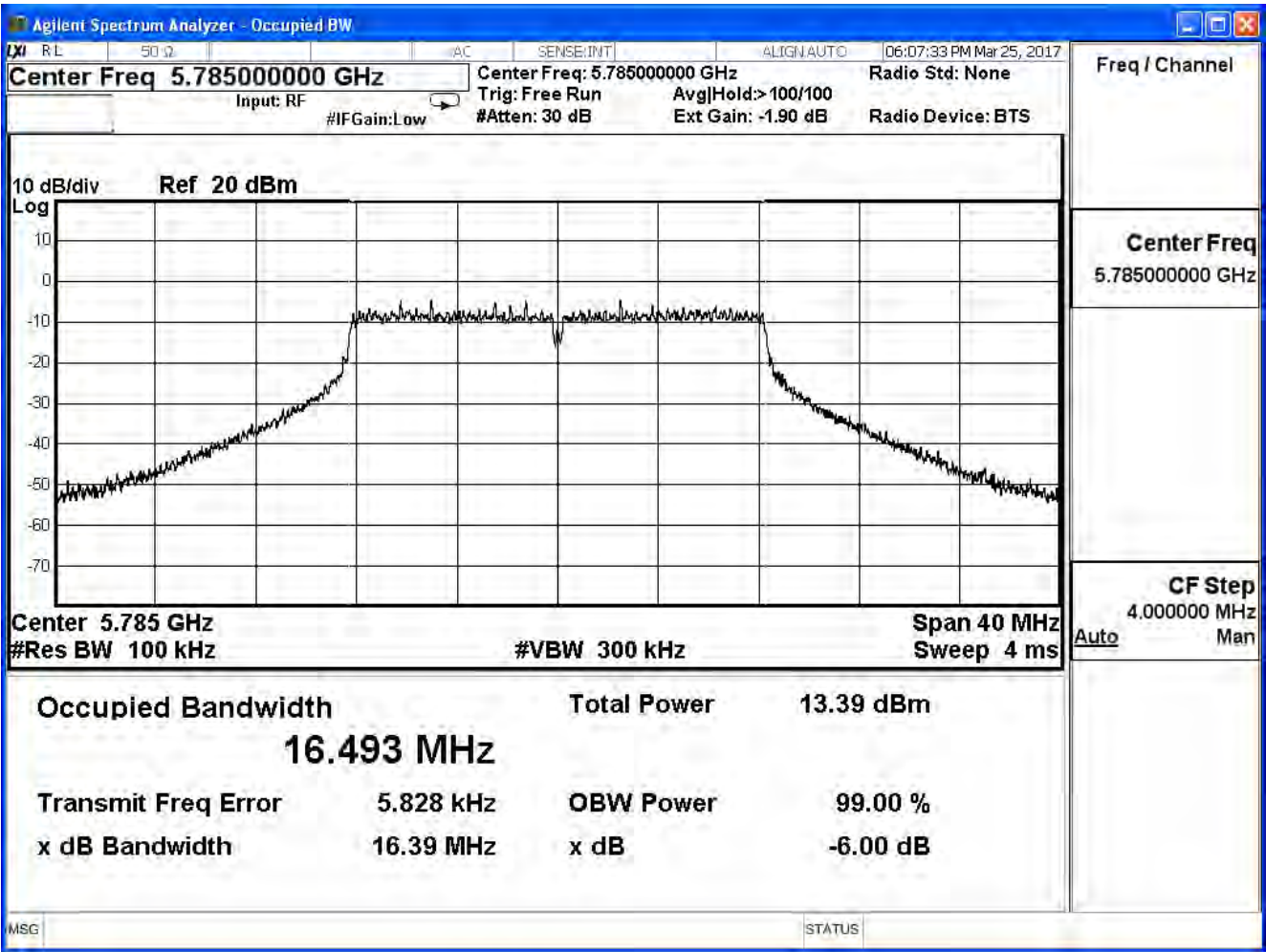
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

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

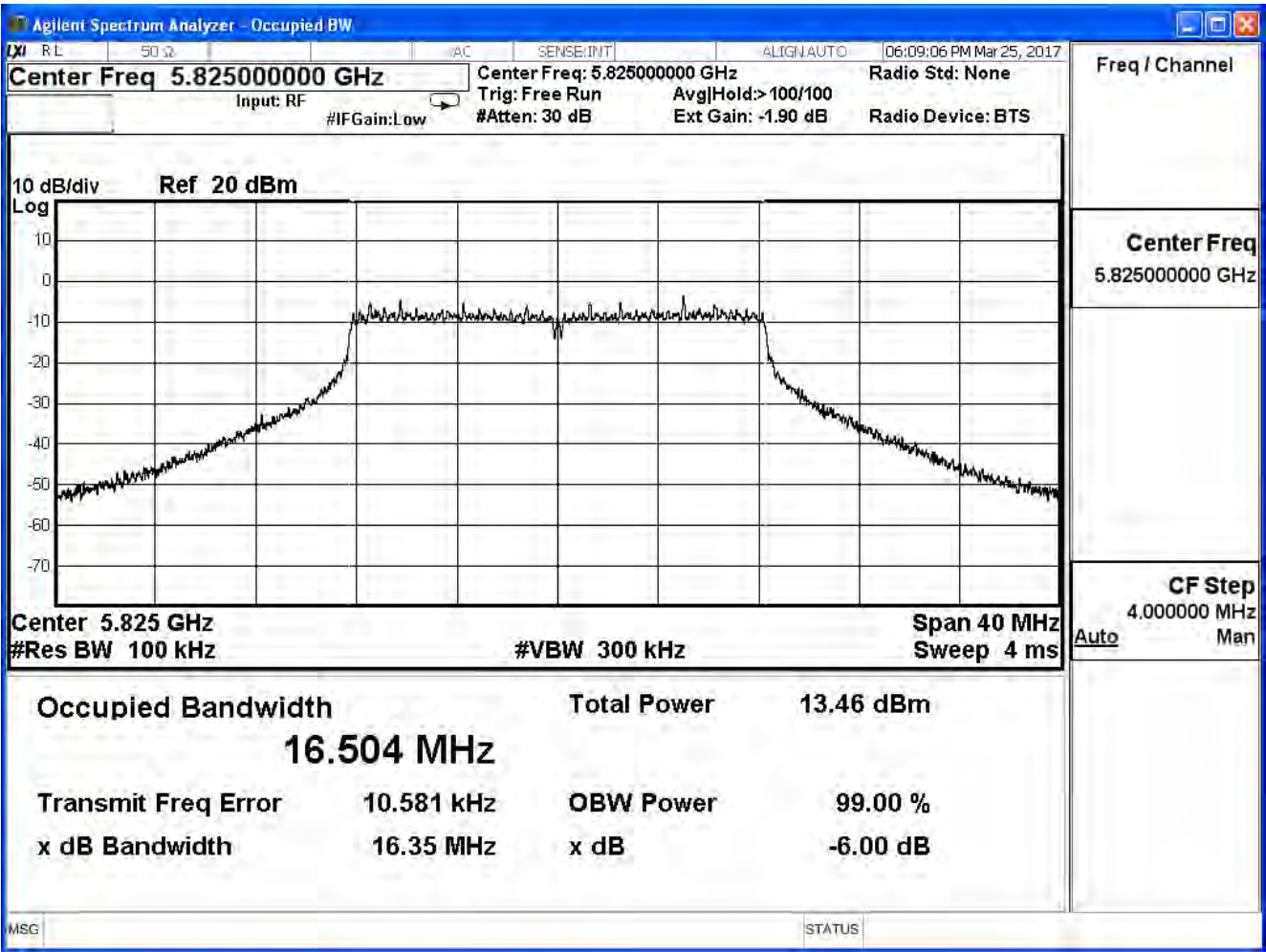
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

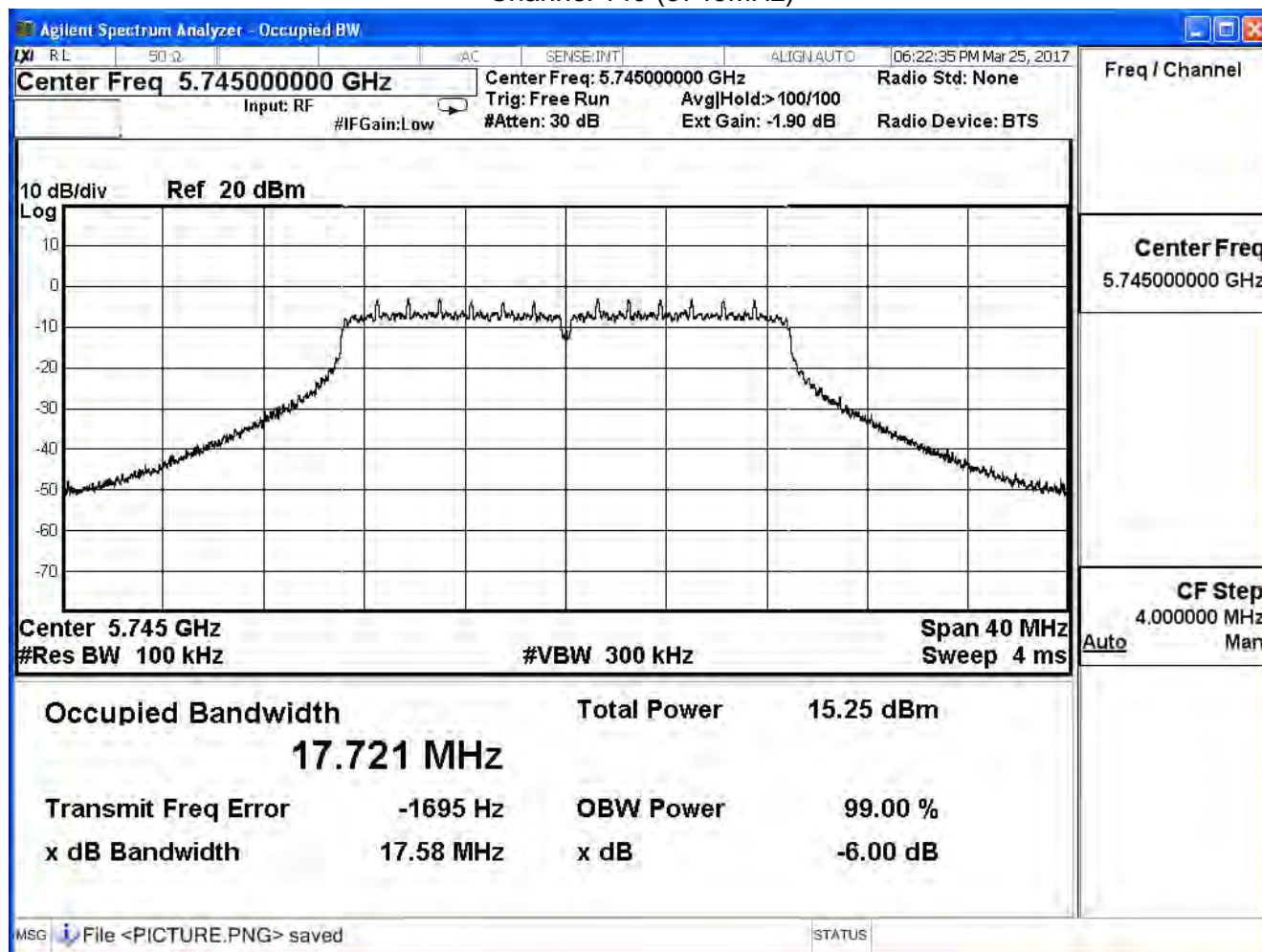


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

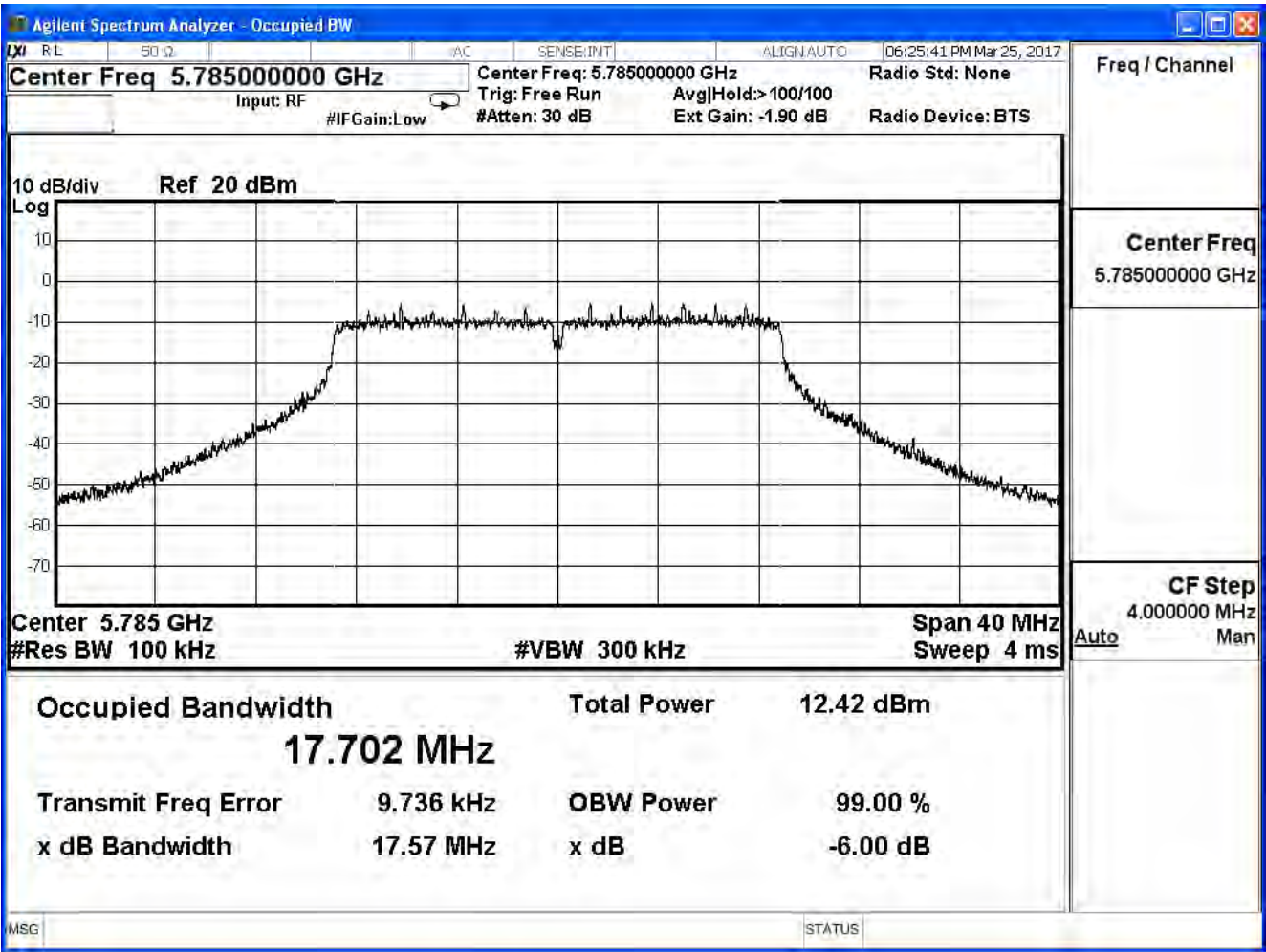
IEEE 802.11n20 (ANT 0)

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

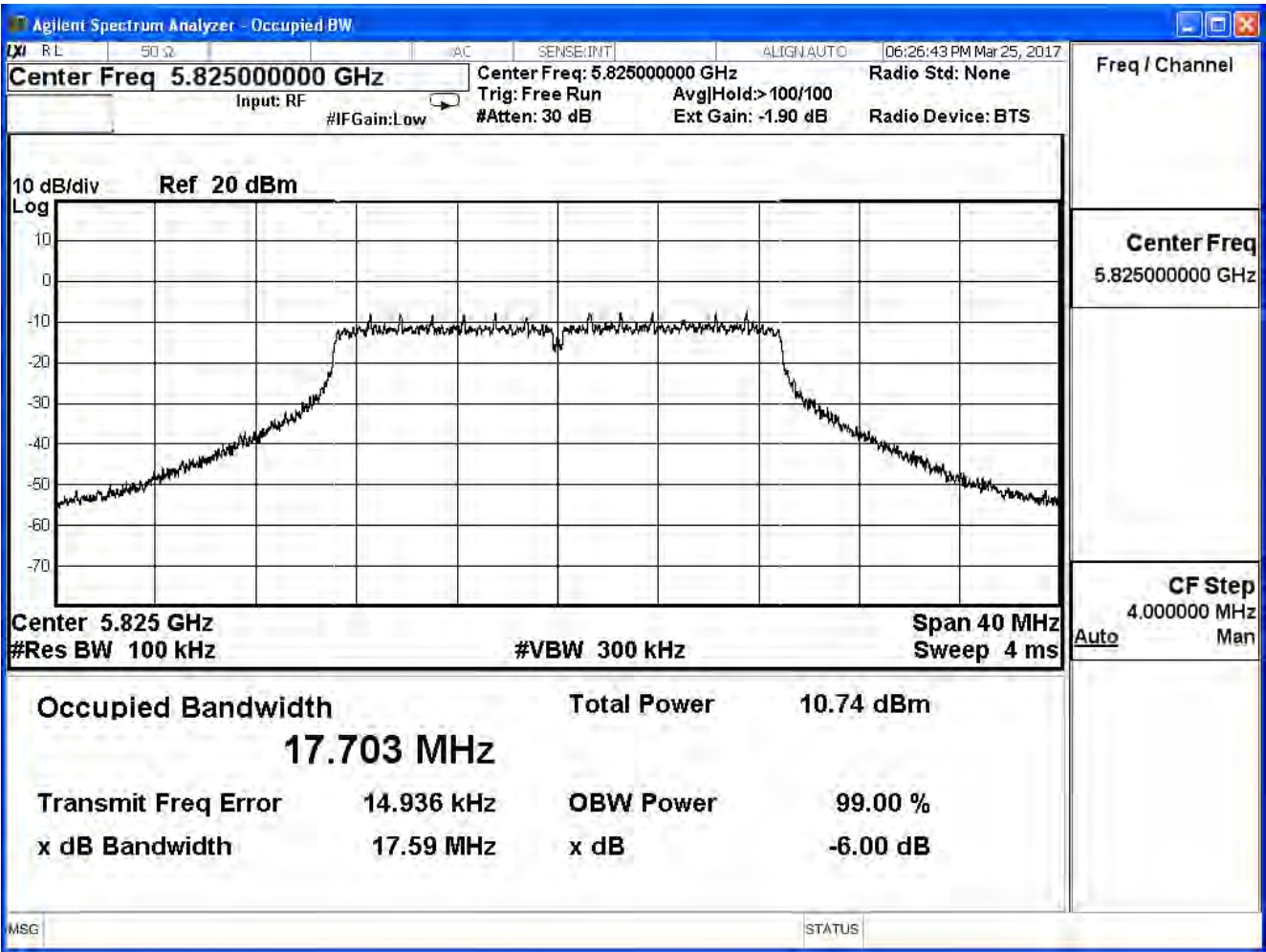
Channel 149 (5745MHz)



Channel 157 (5785MHz)



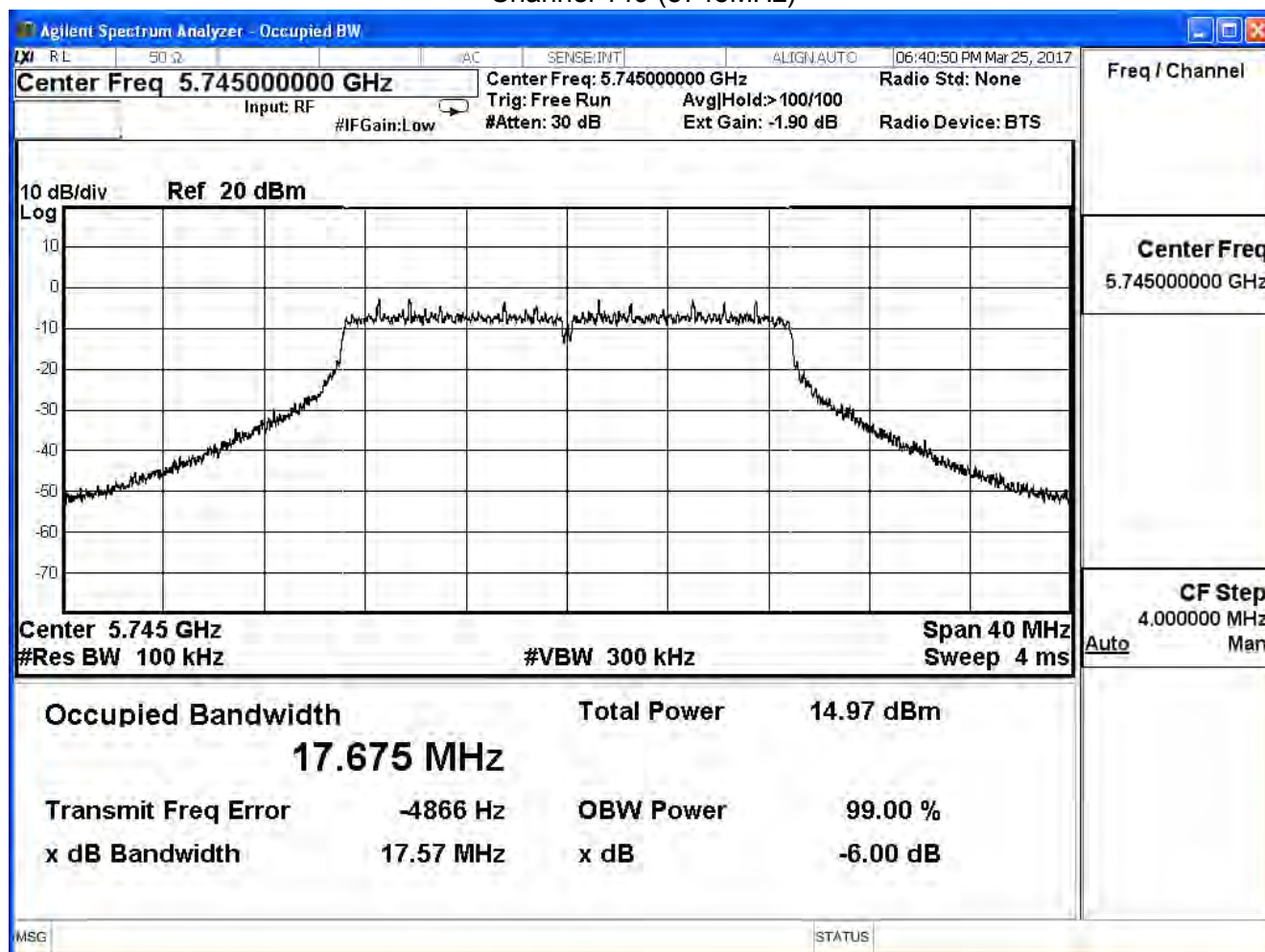
Channel 165 (5825MHz)



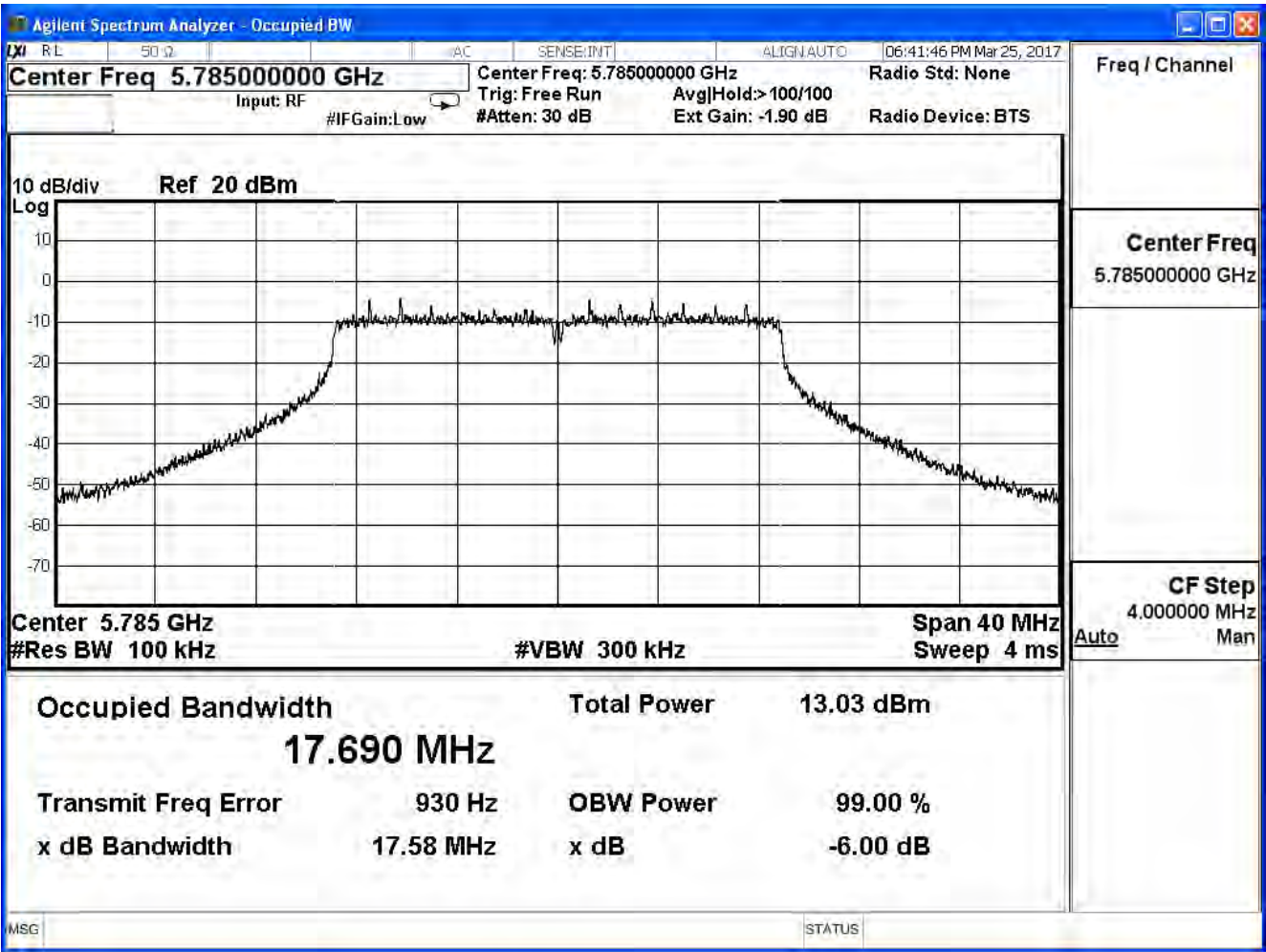
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

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

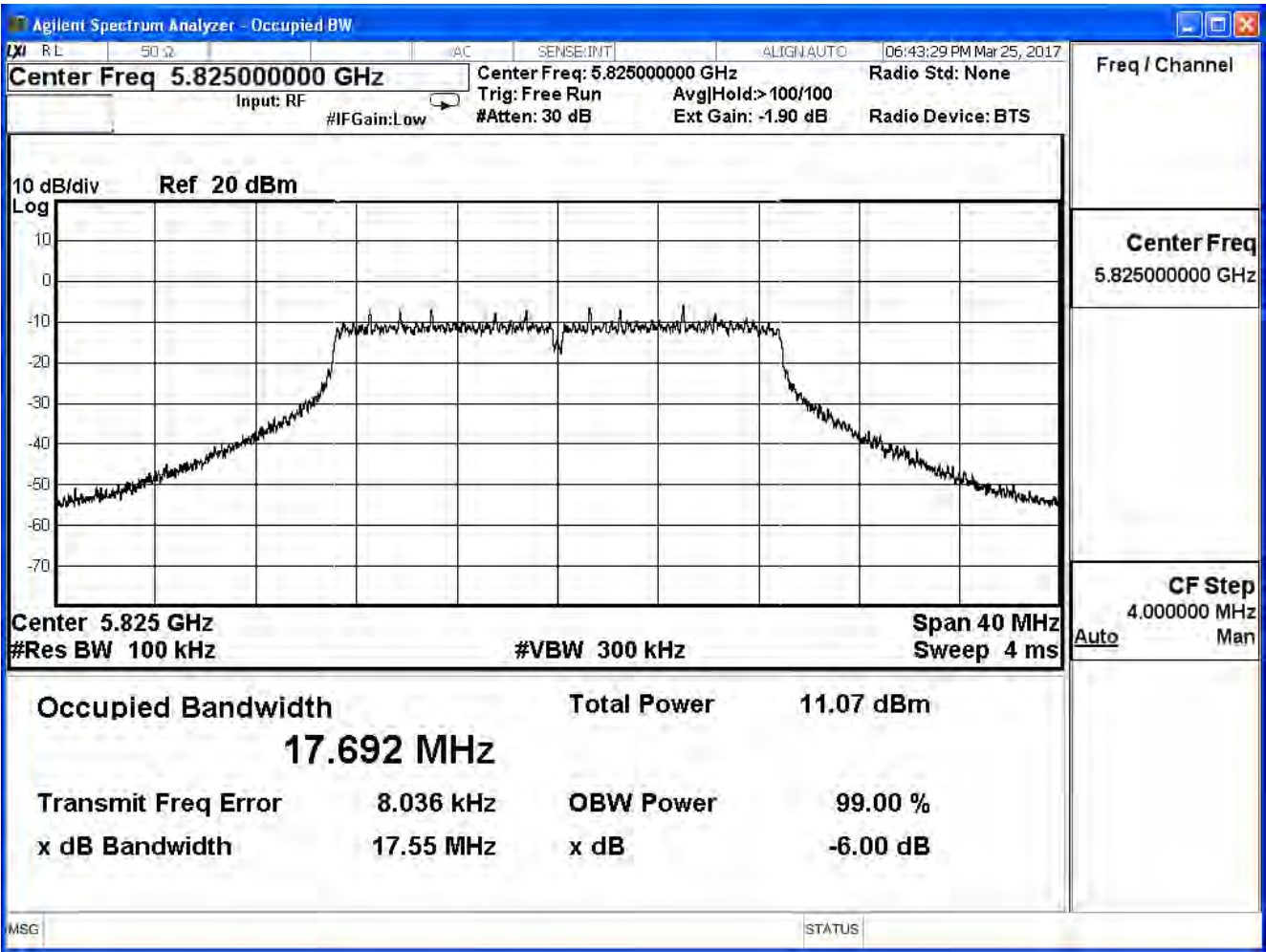
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

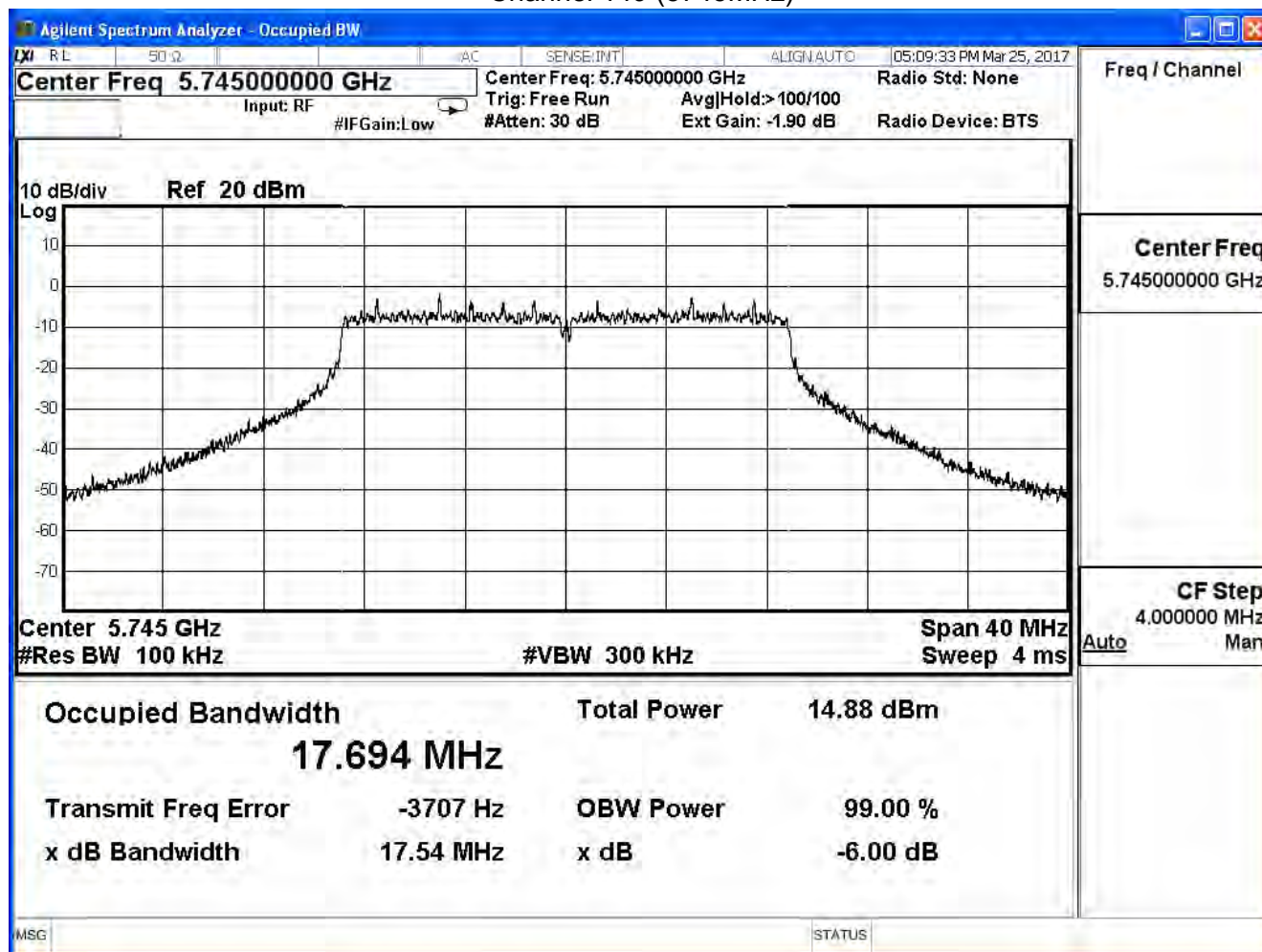


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

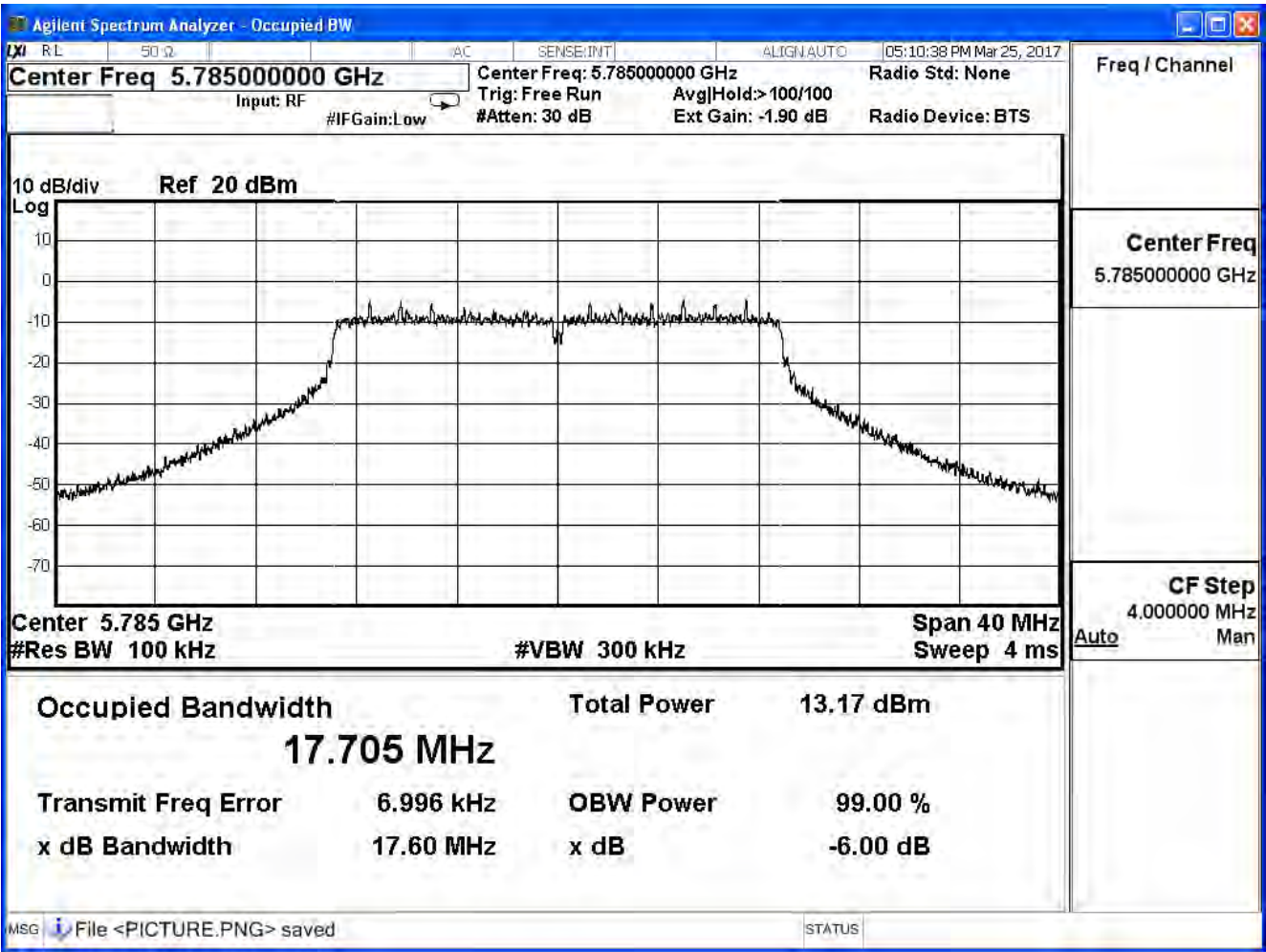
IEEE 802.11n20 (ANT 2)

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

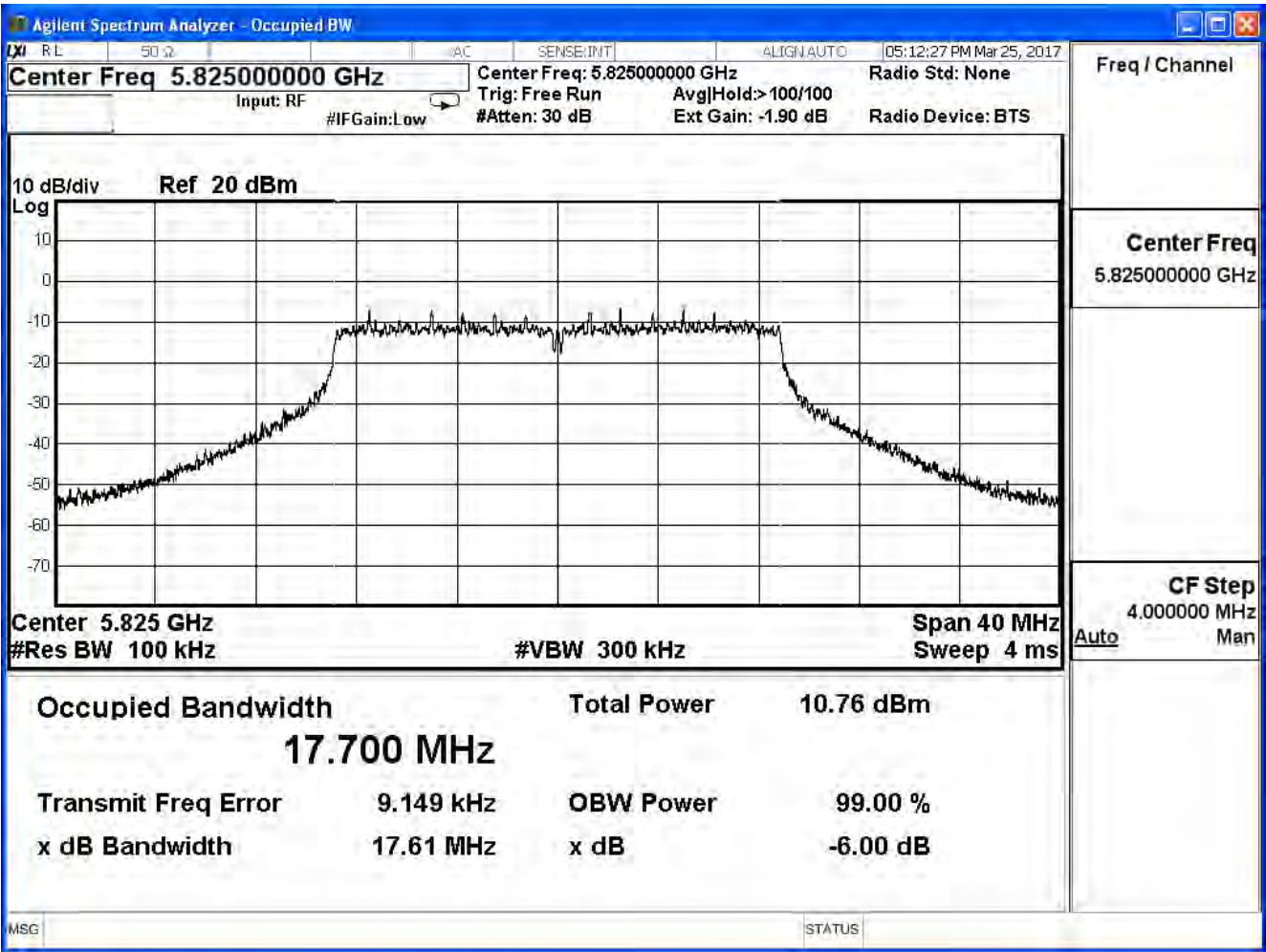
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

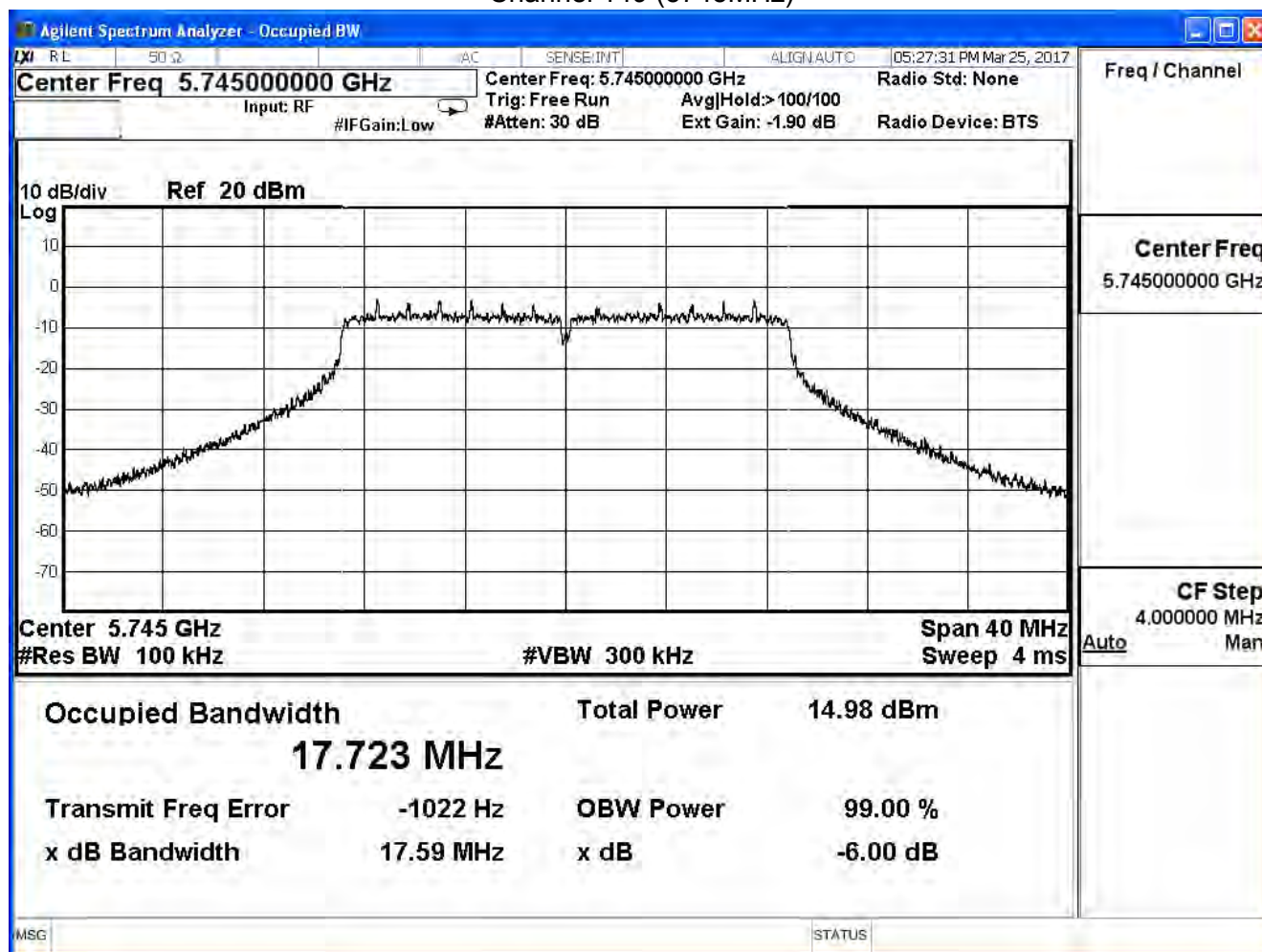


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

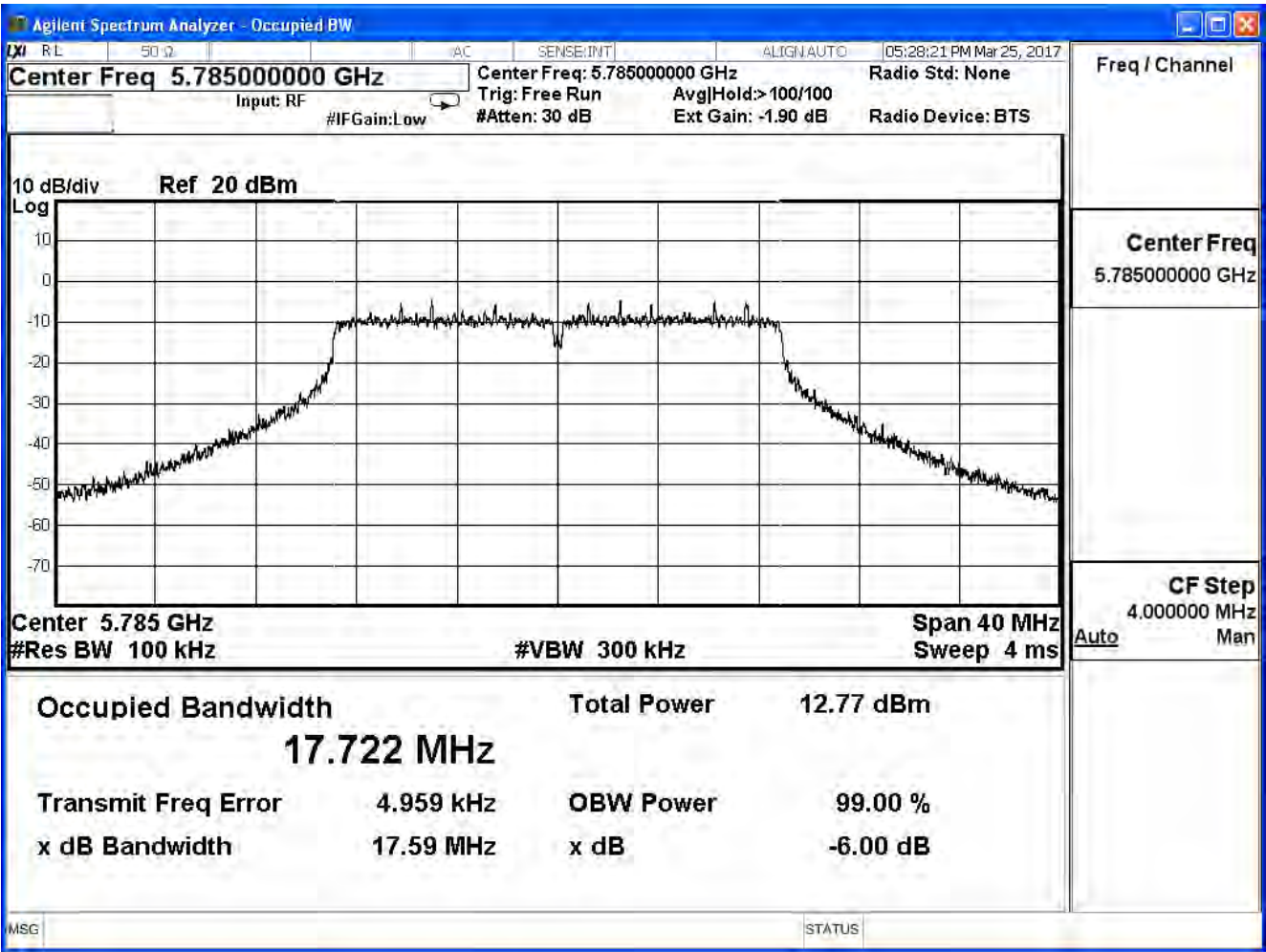
IEEE 802.11n20 (ANT 3)

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

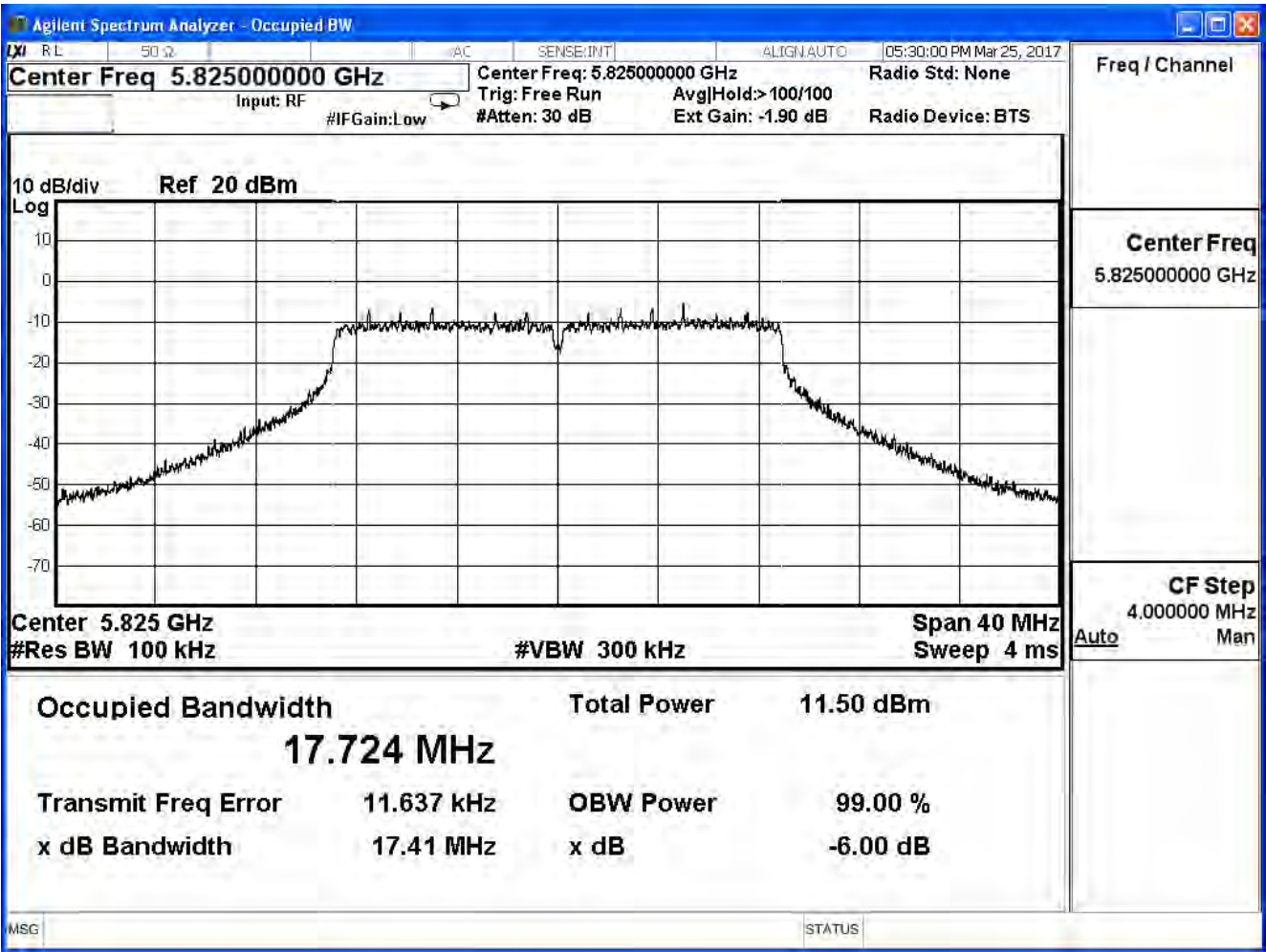
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

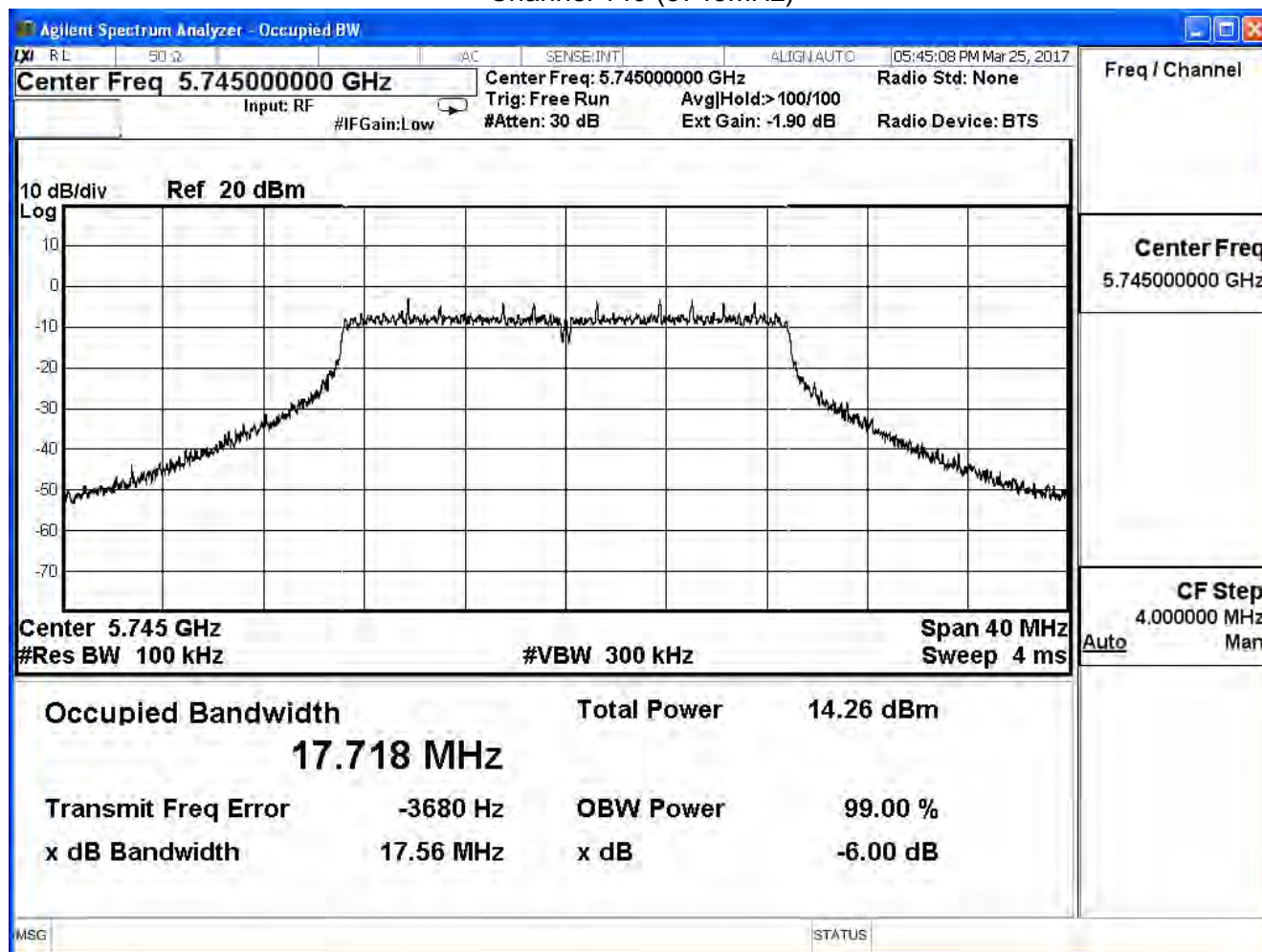


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

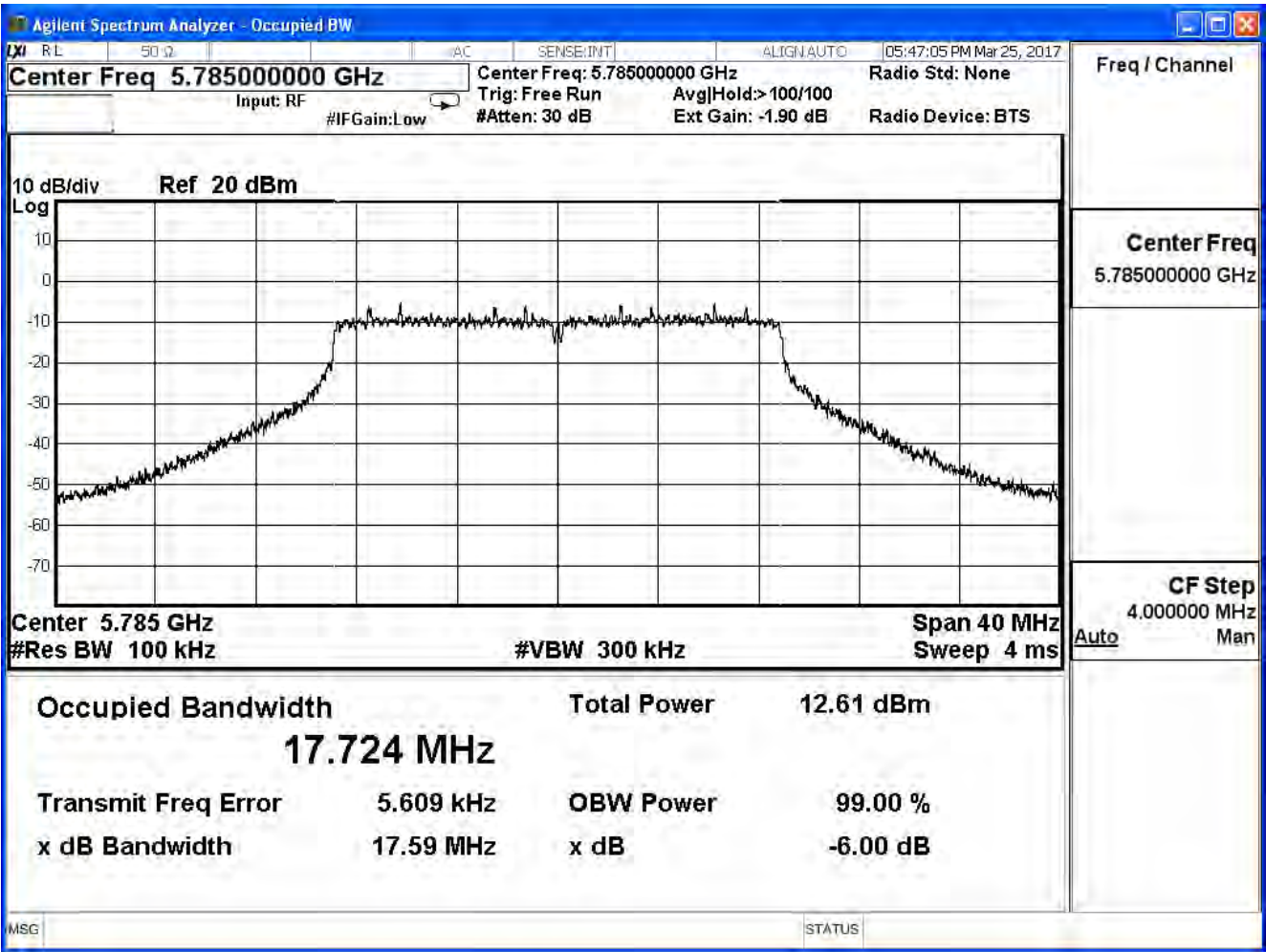
IEEE 802.11n20 (ANT 4)

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

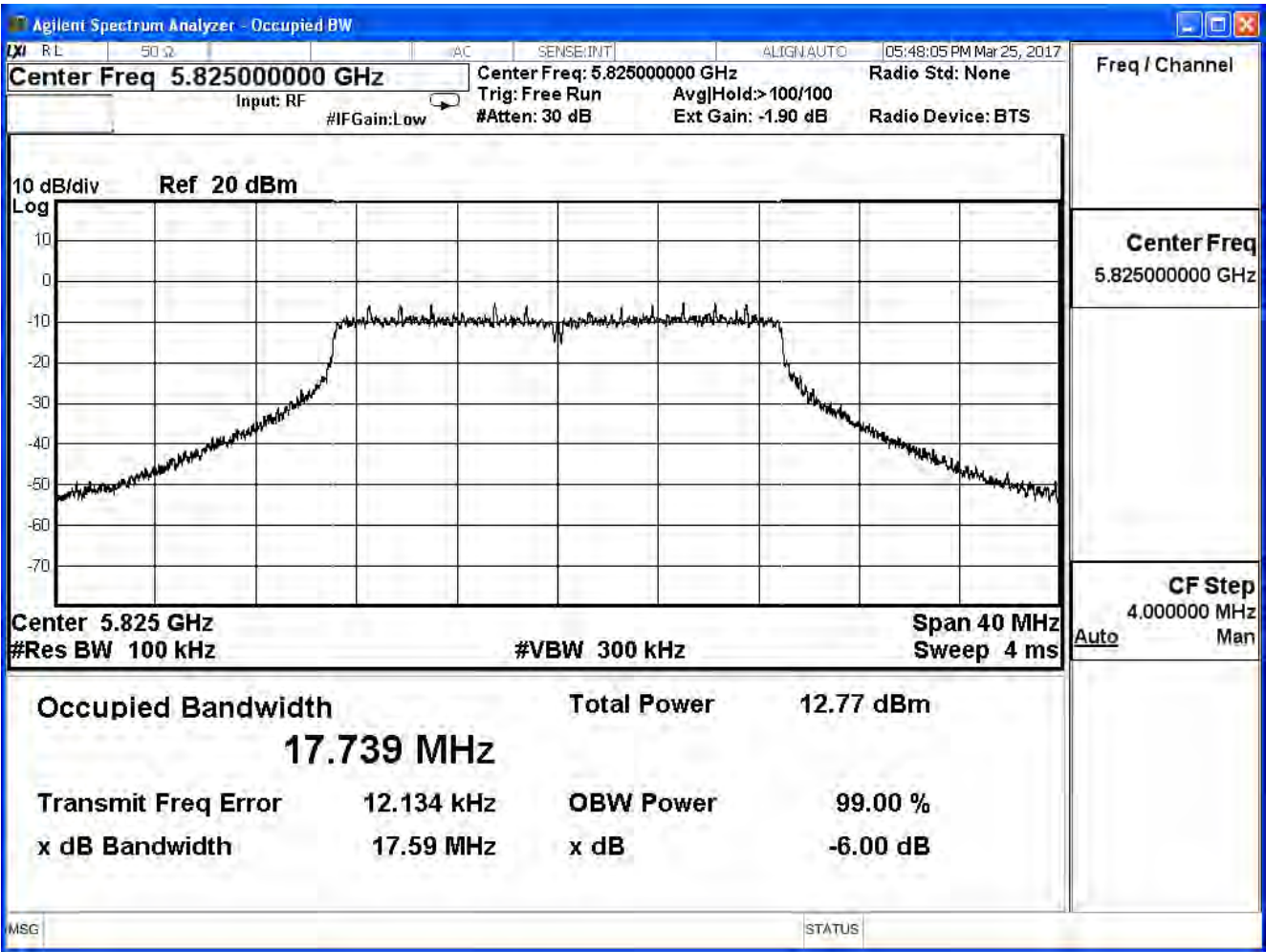
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

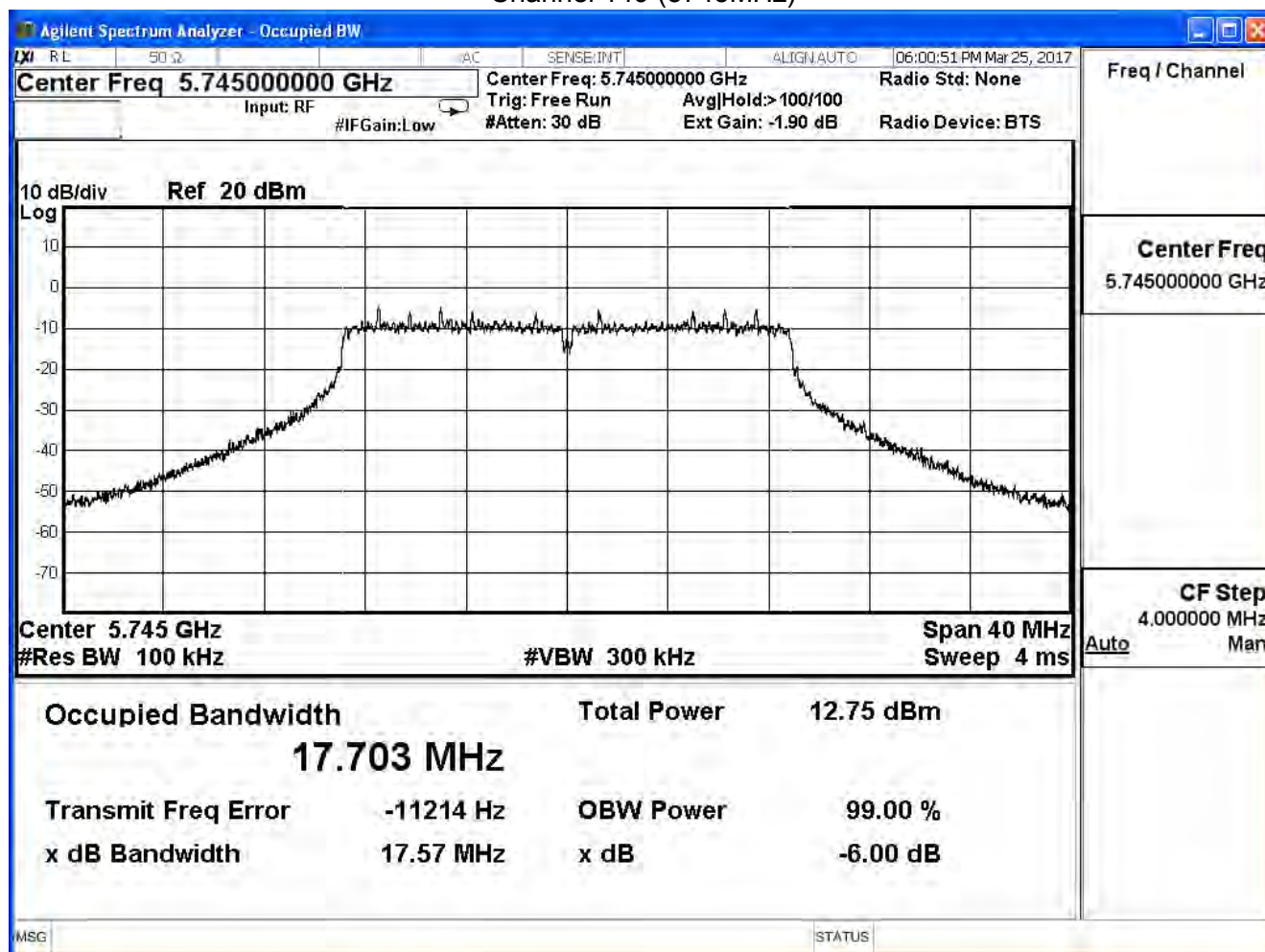


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

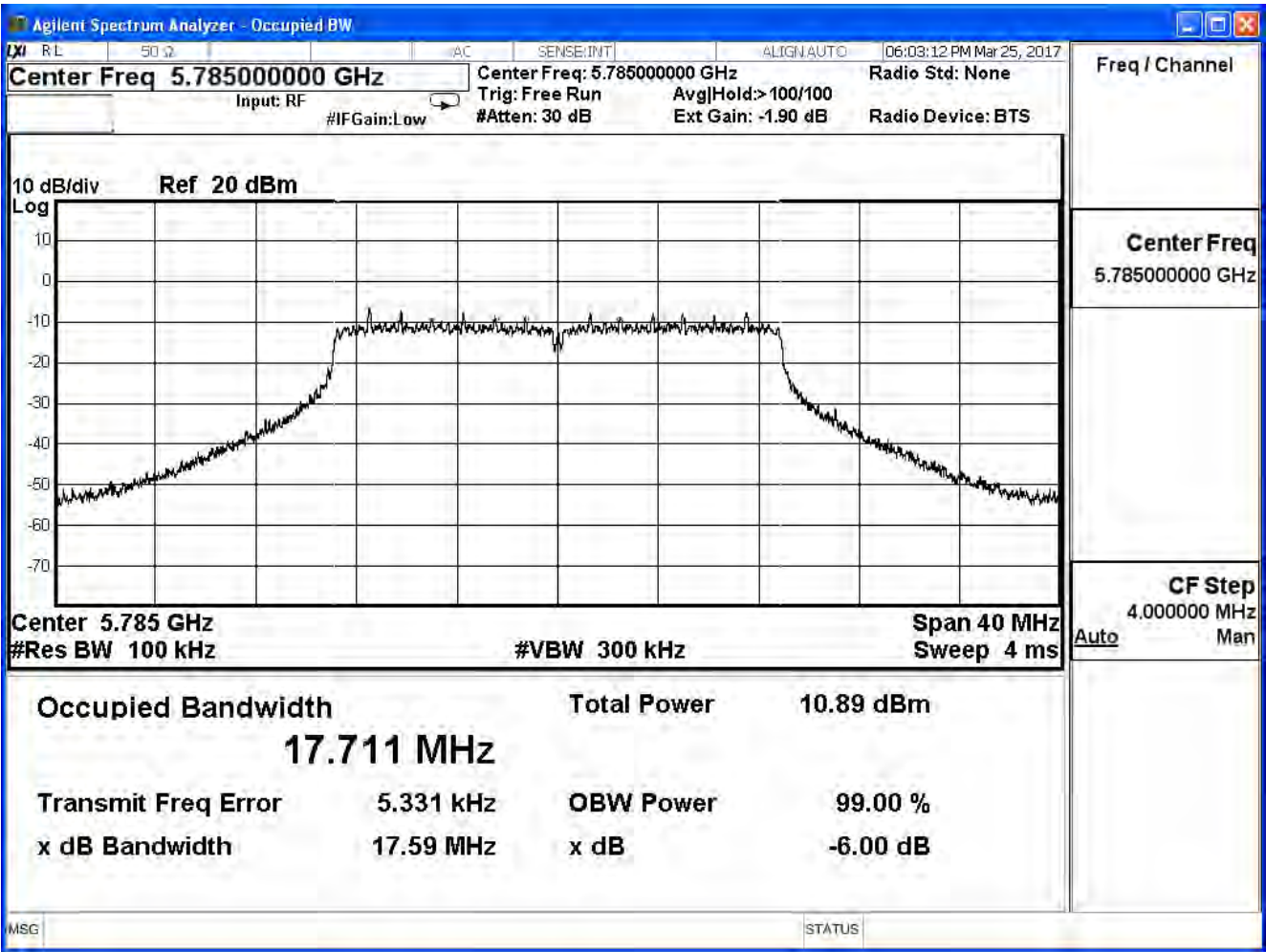
IEEE 802.11n20 (ANT 5)

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

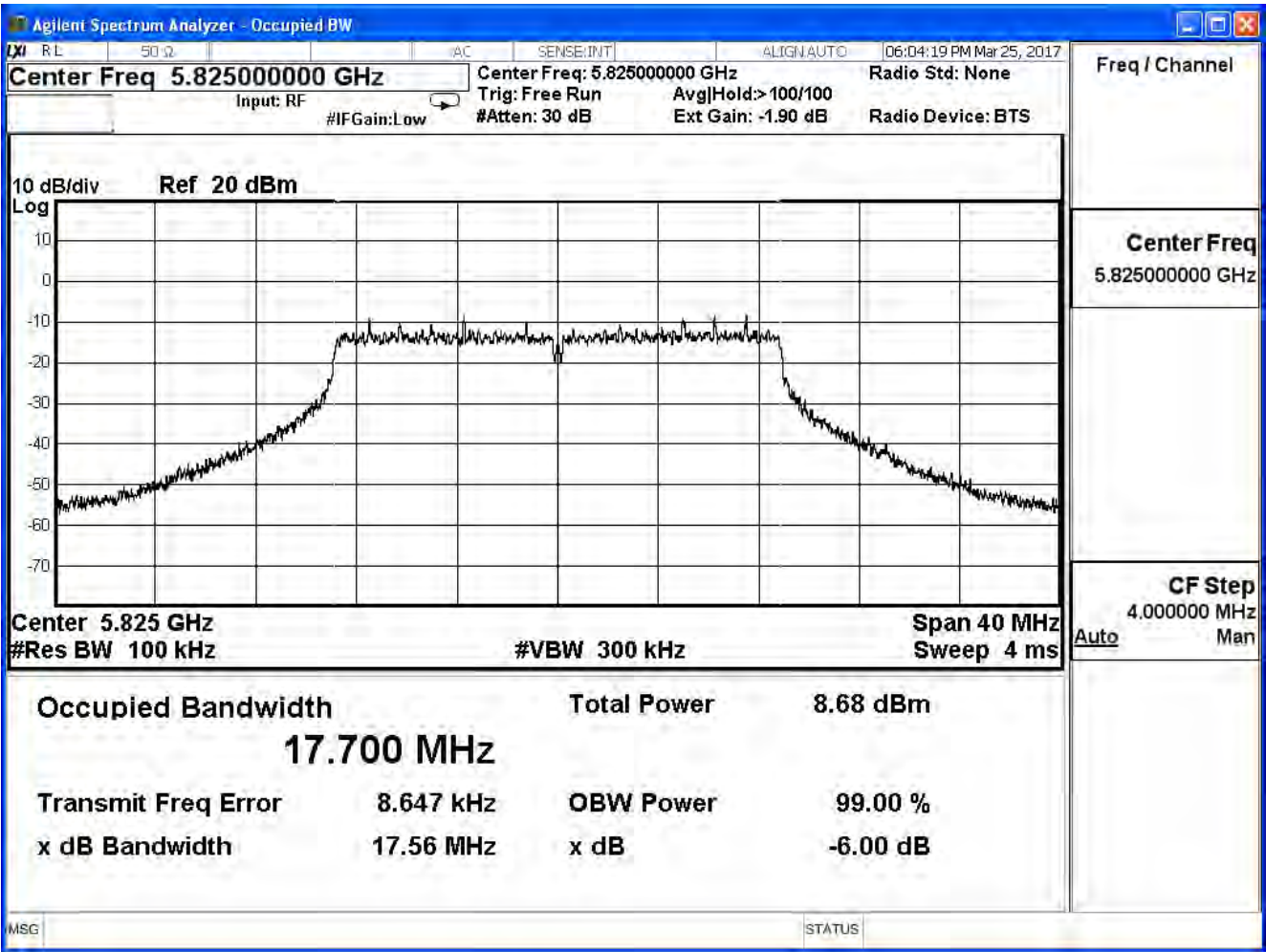
Channel 149 (5745MHz)



Channel 157 (5785MHz)



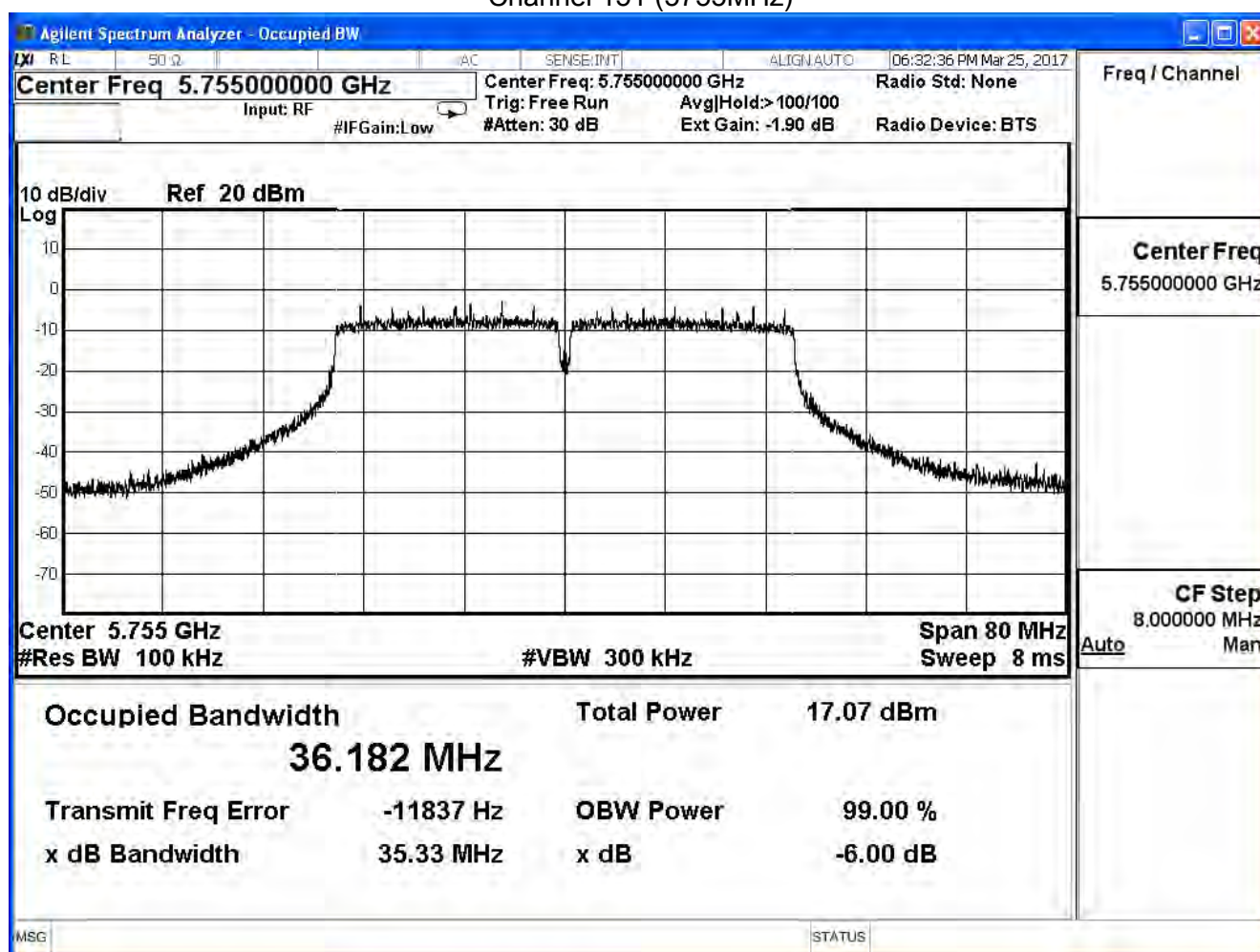
Channel 165 (5825MHz)



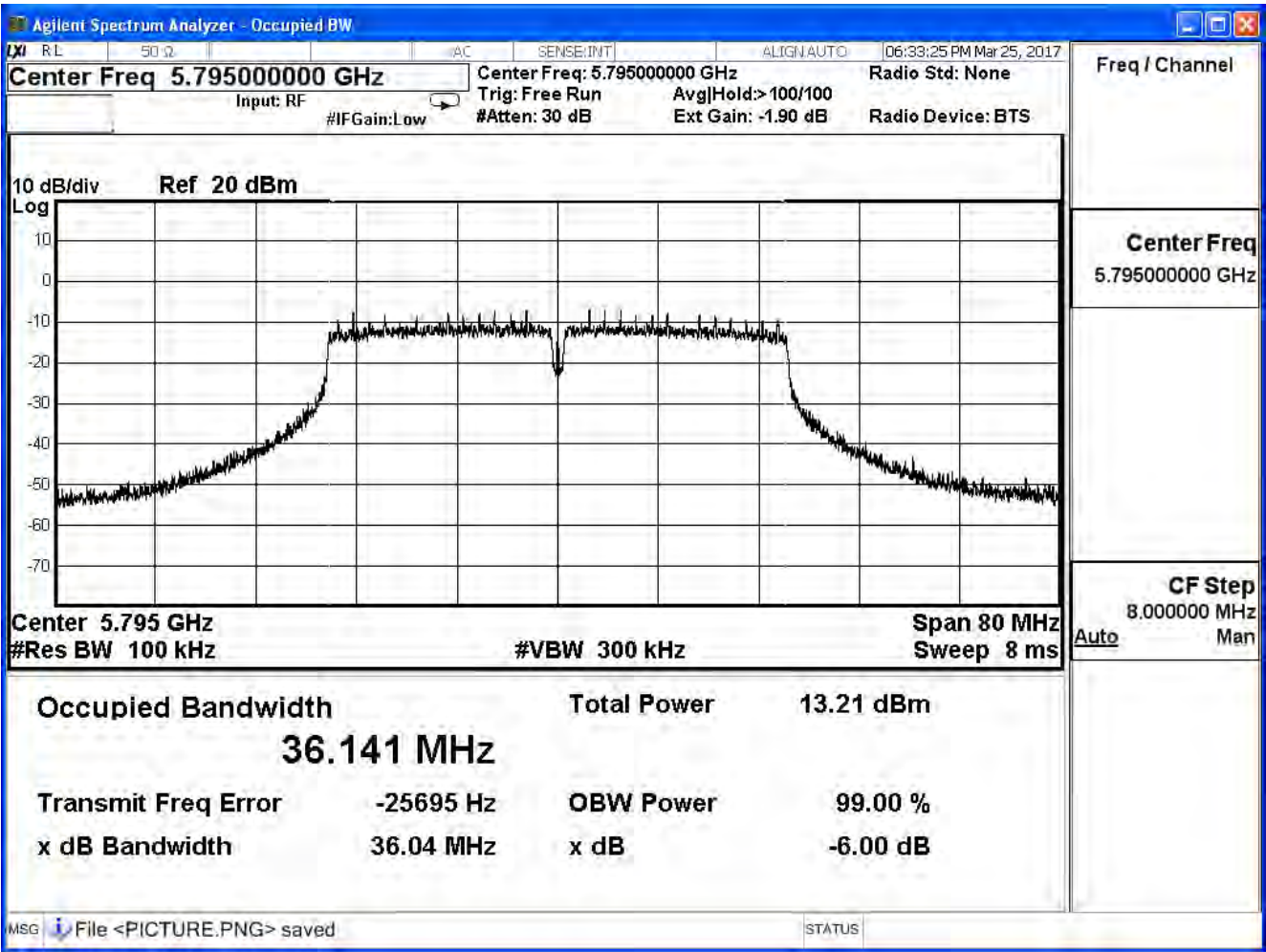
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

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)



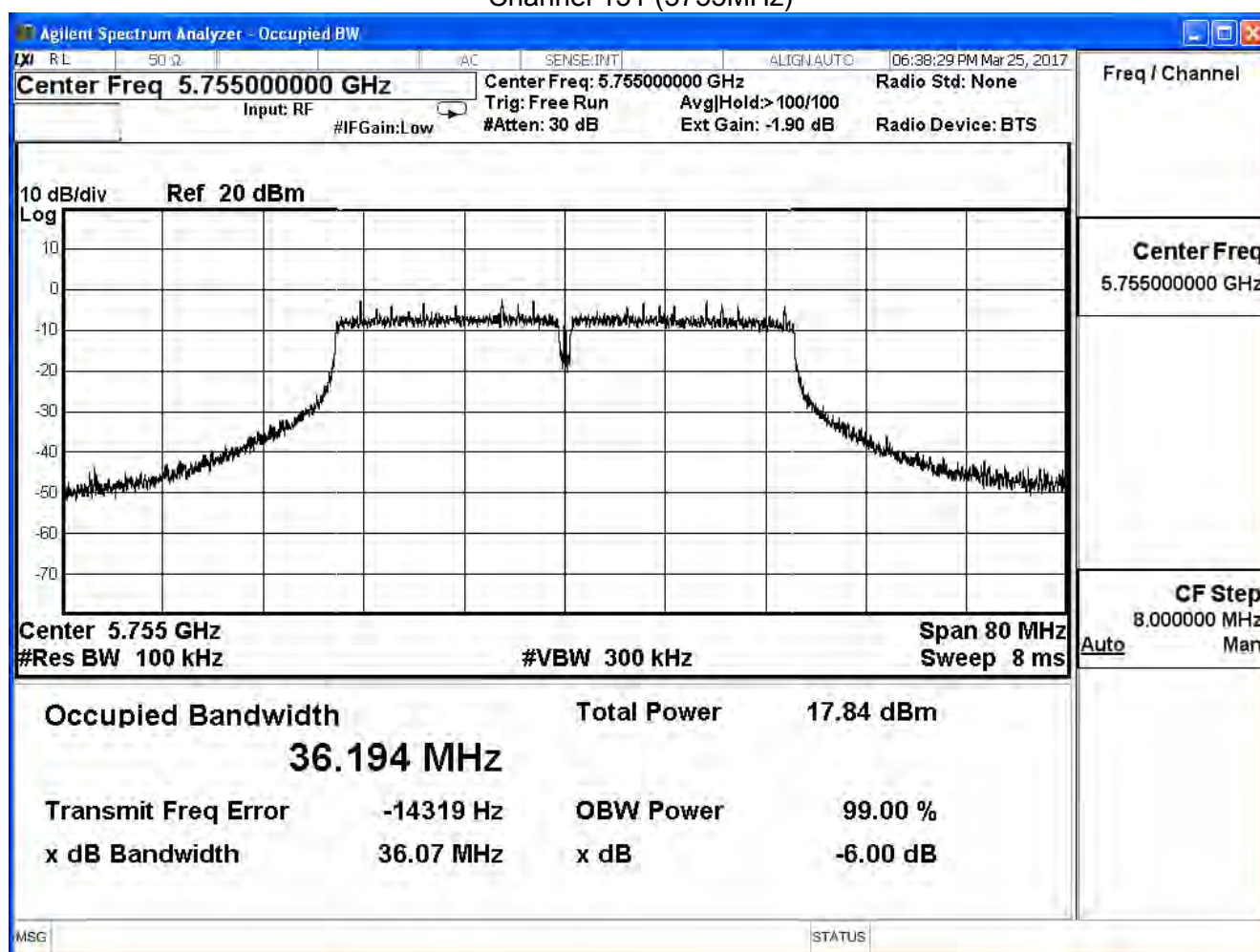
Channel 159 (5795MHz)



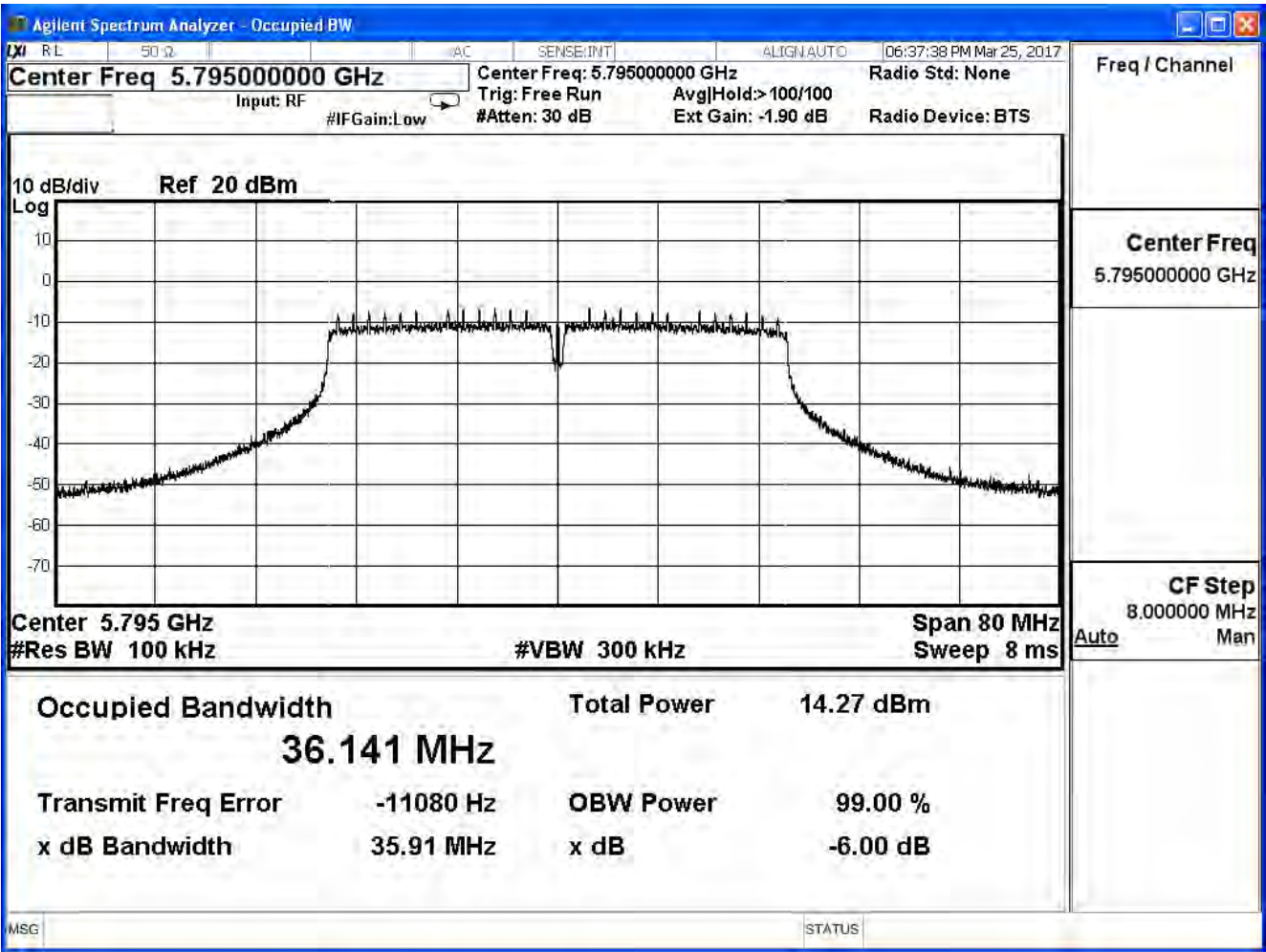
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

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)



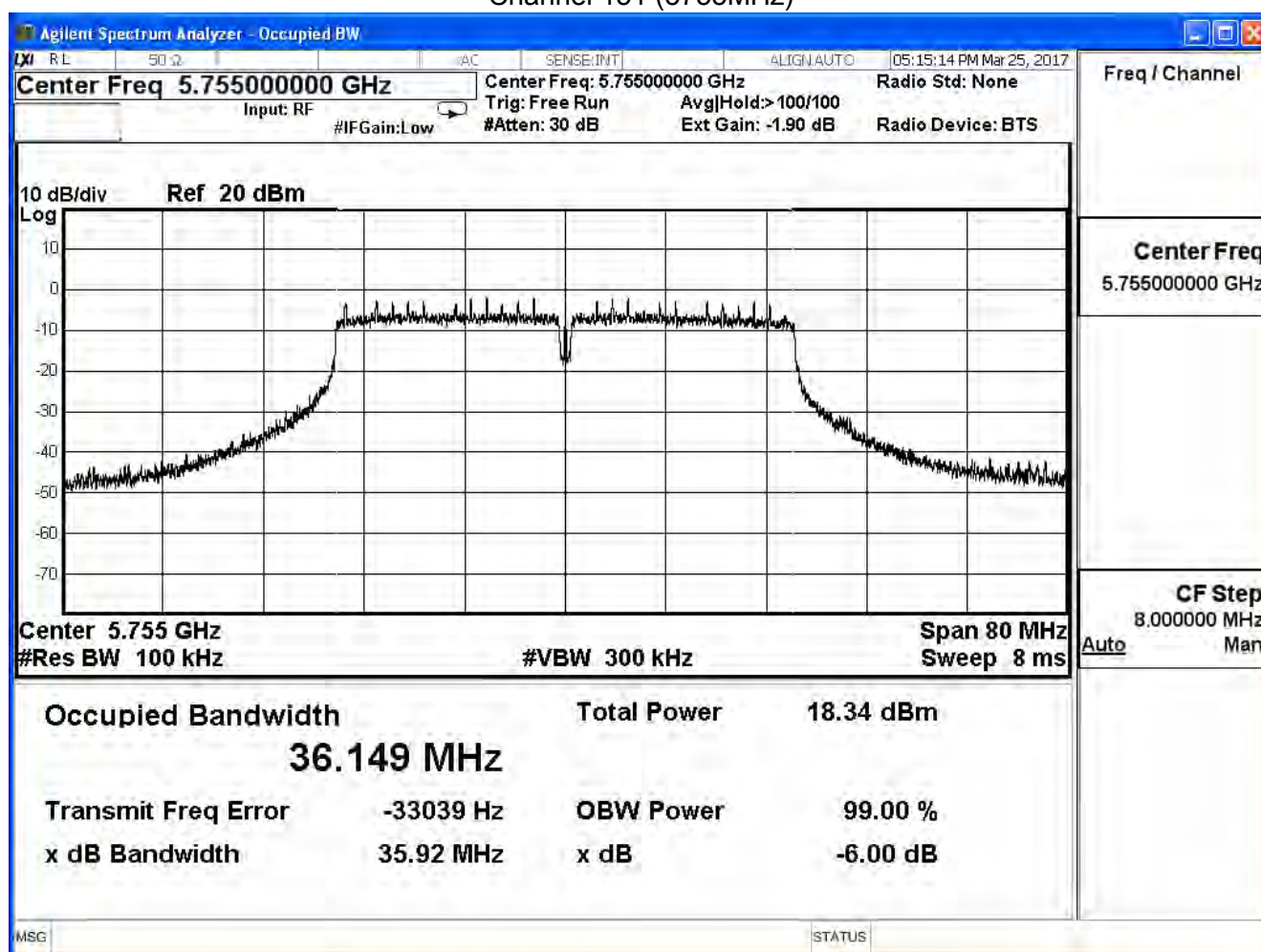
Channel 159 (5795MHz)



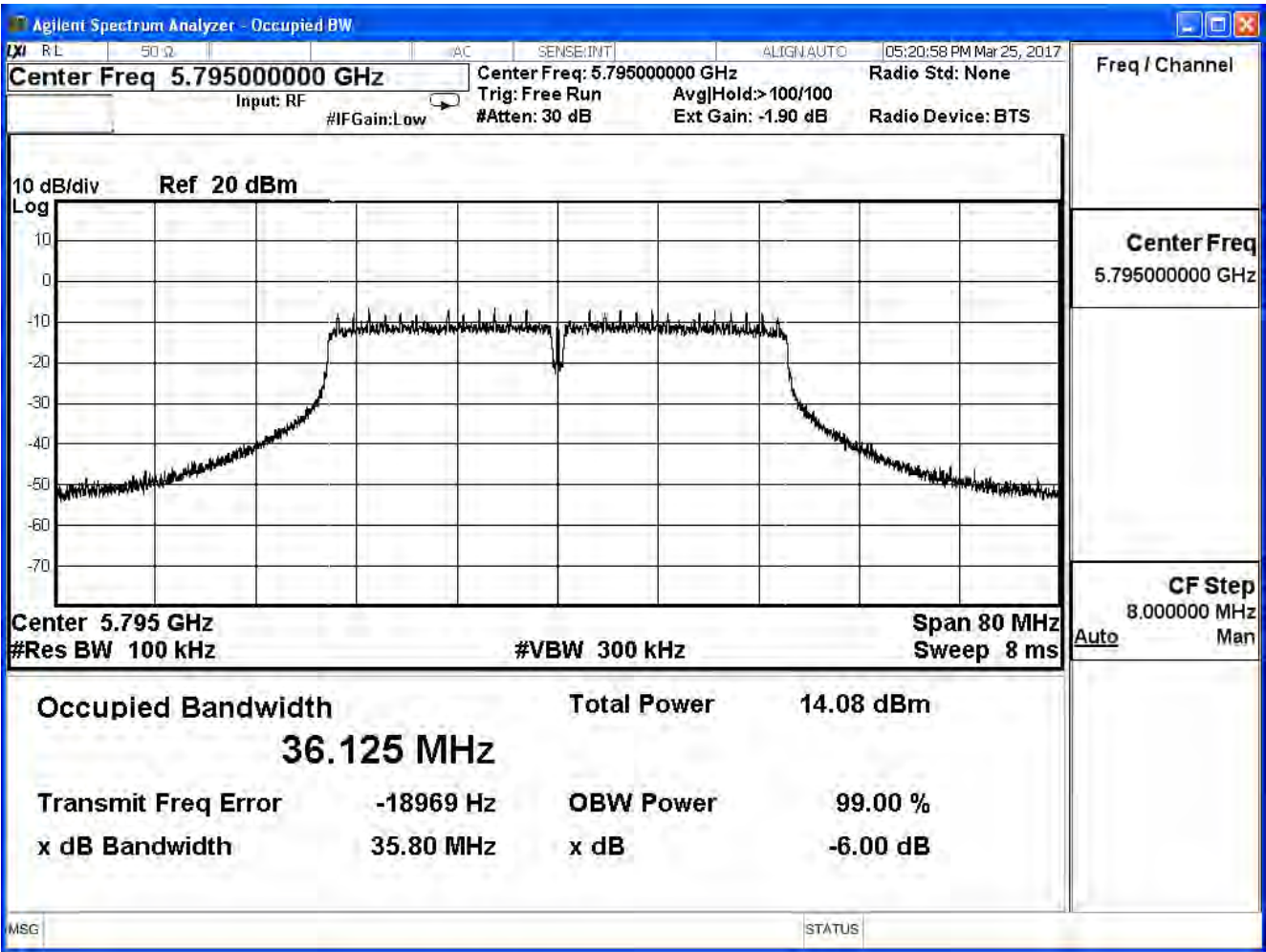
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

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)

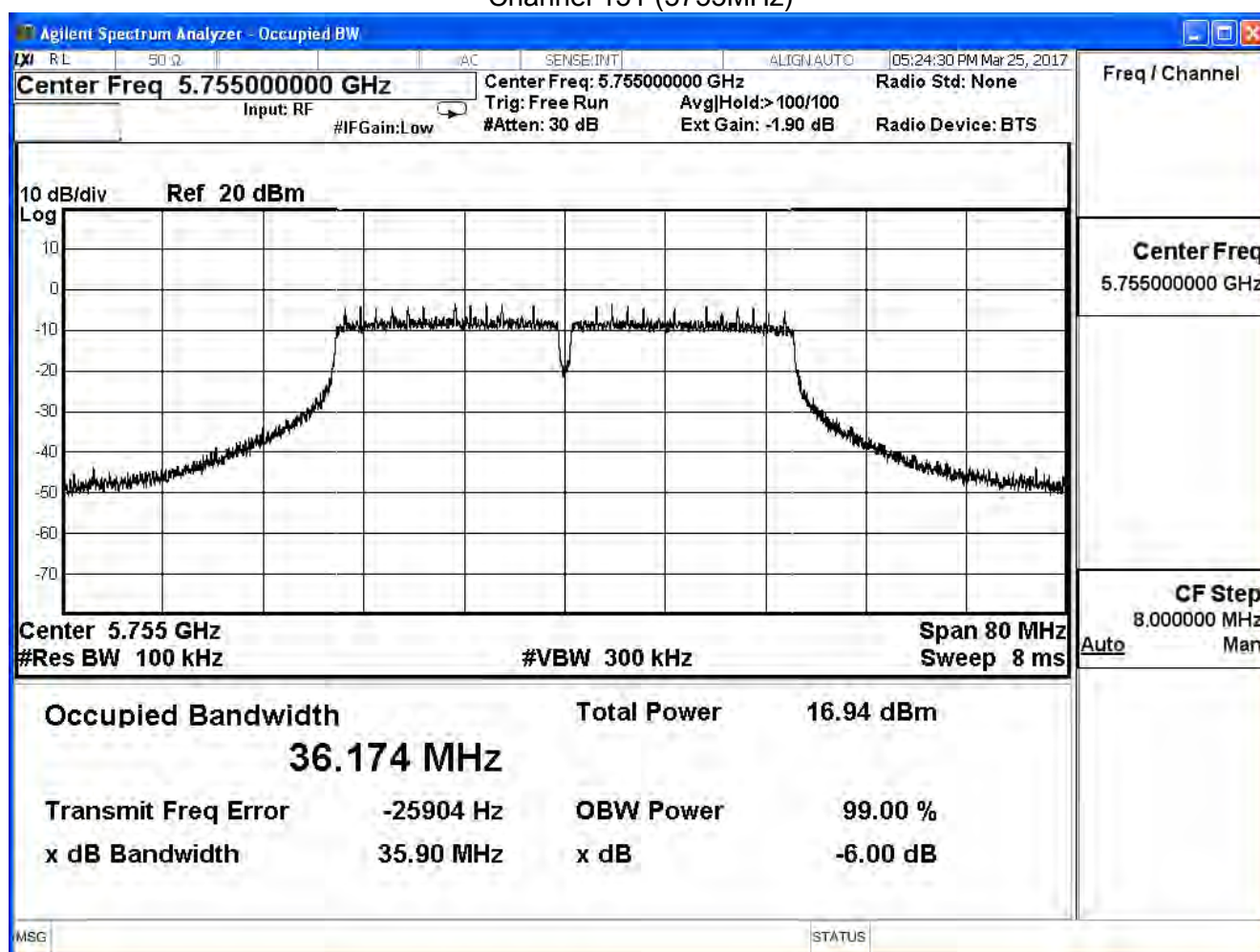


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

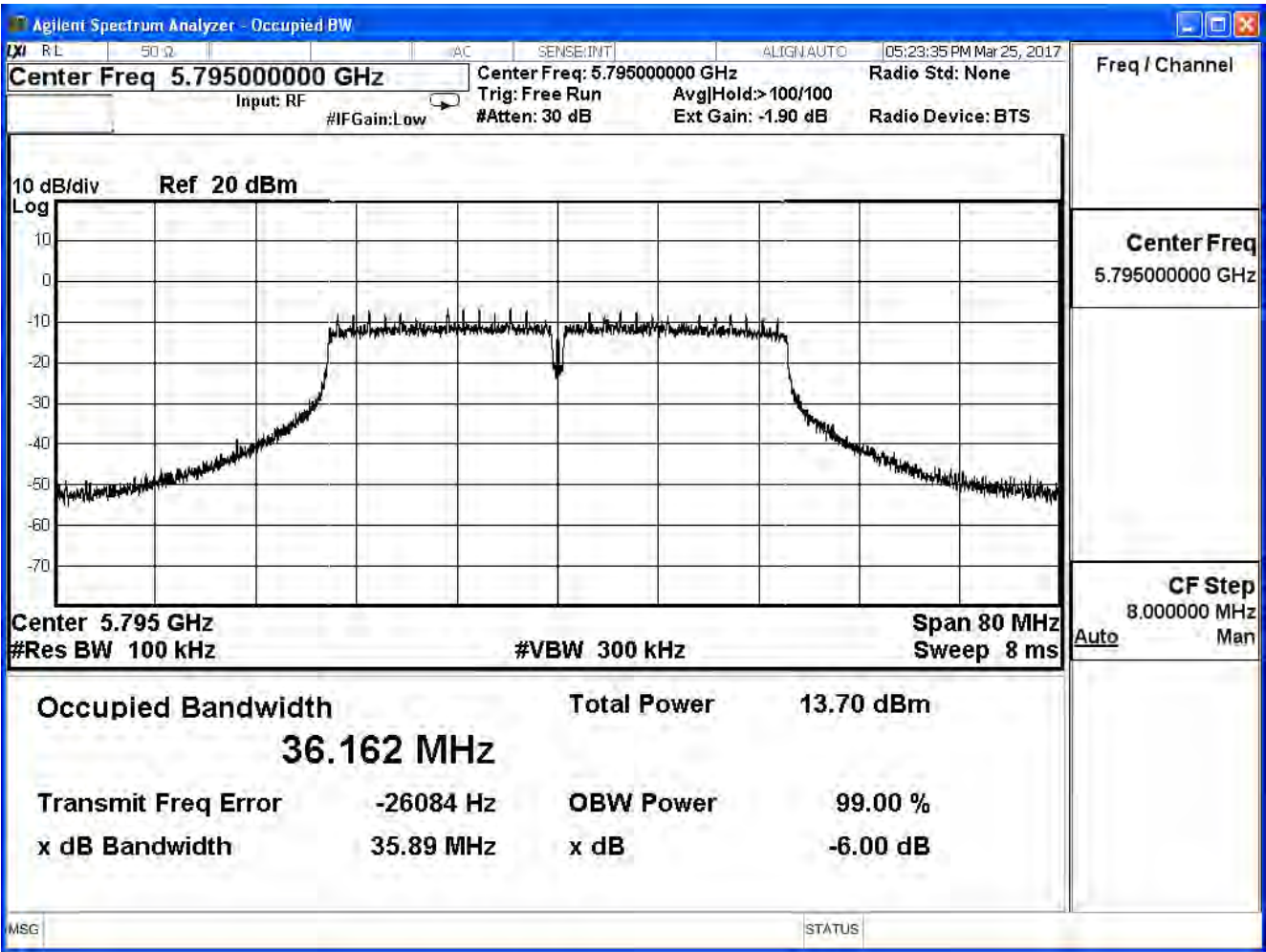
IEEE 802.11n40 (ANT 3)

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)

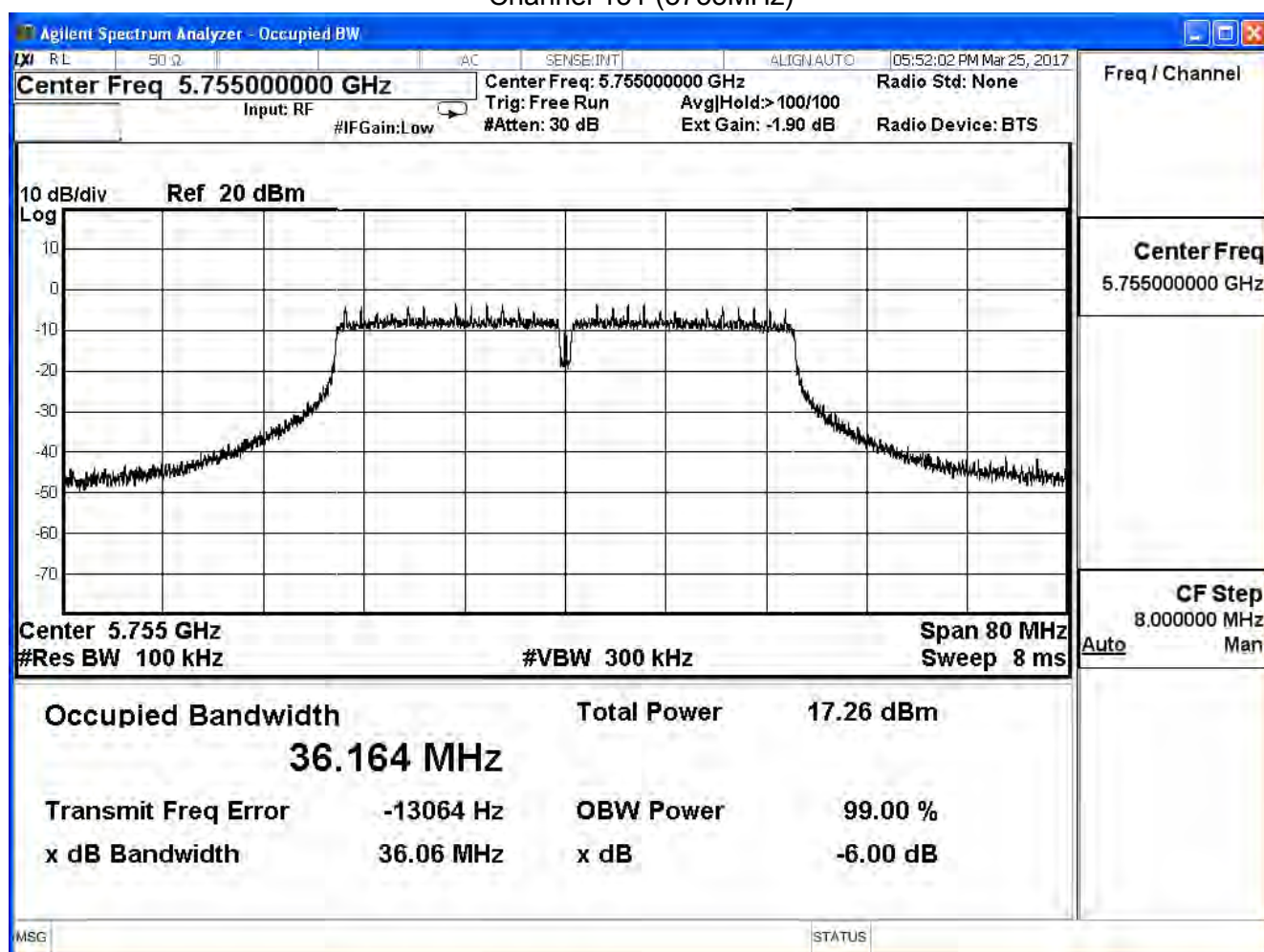


Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

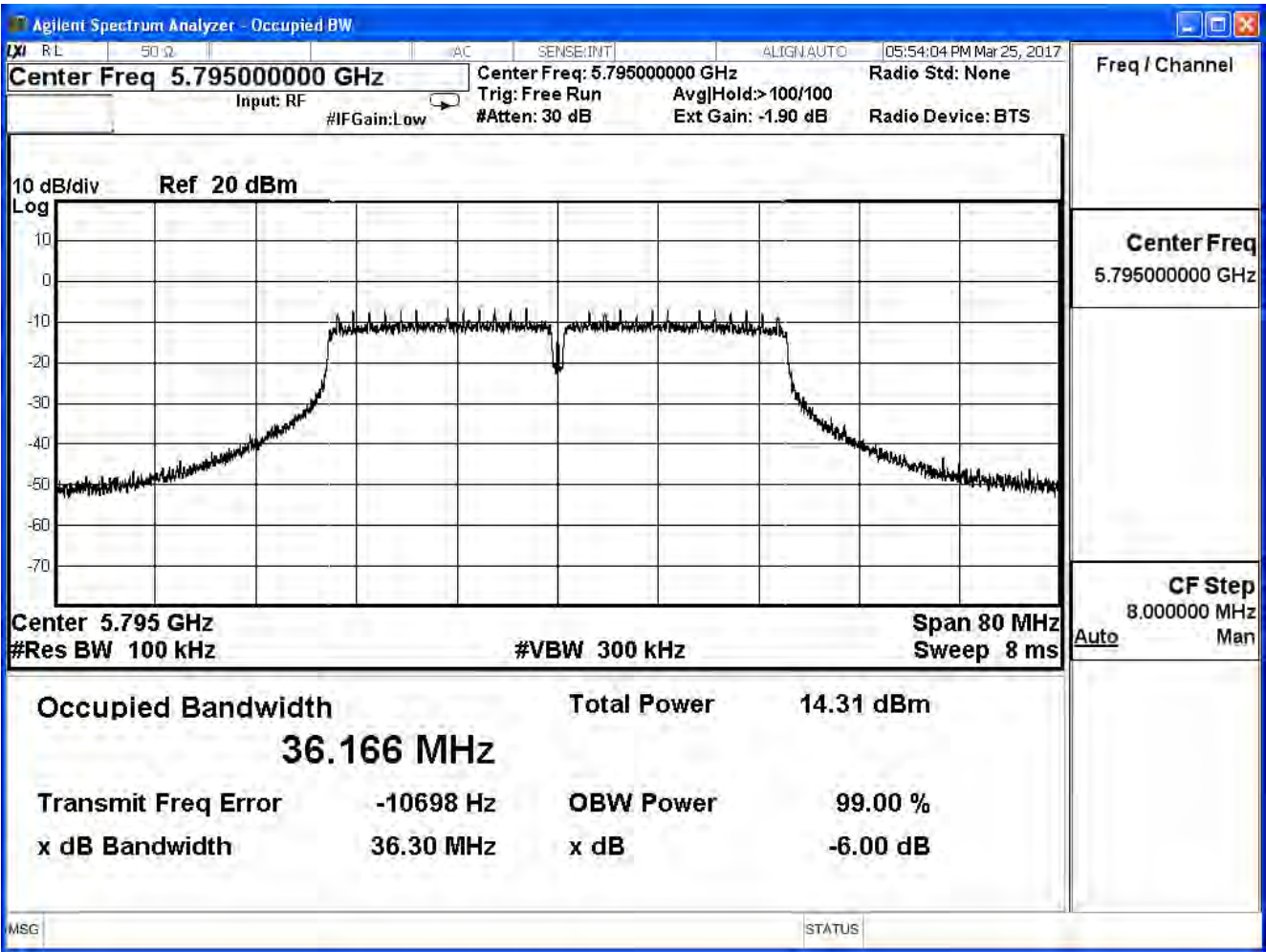
IEEE 802.11n40 (ANT 4)

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)



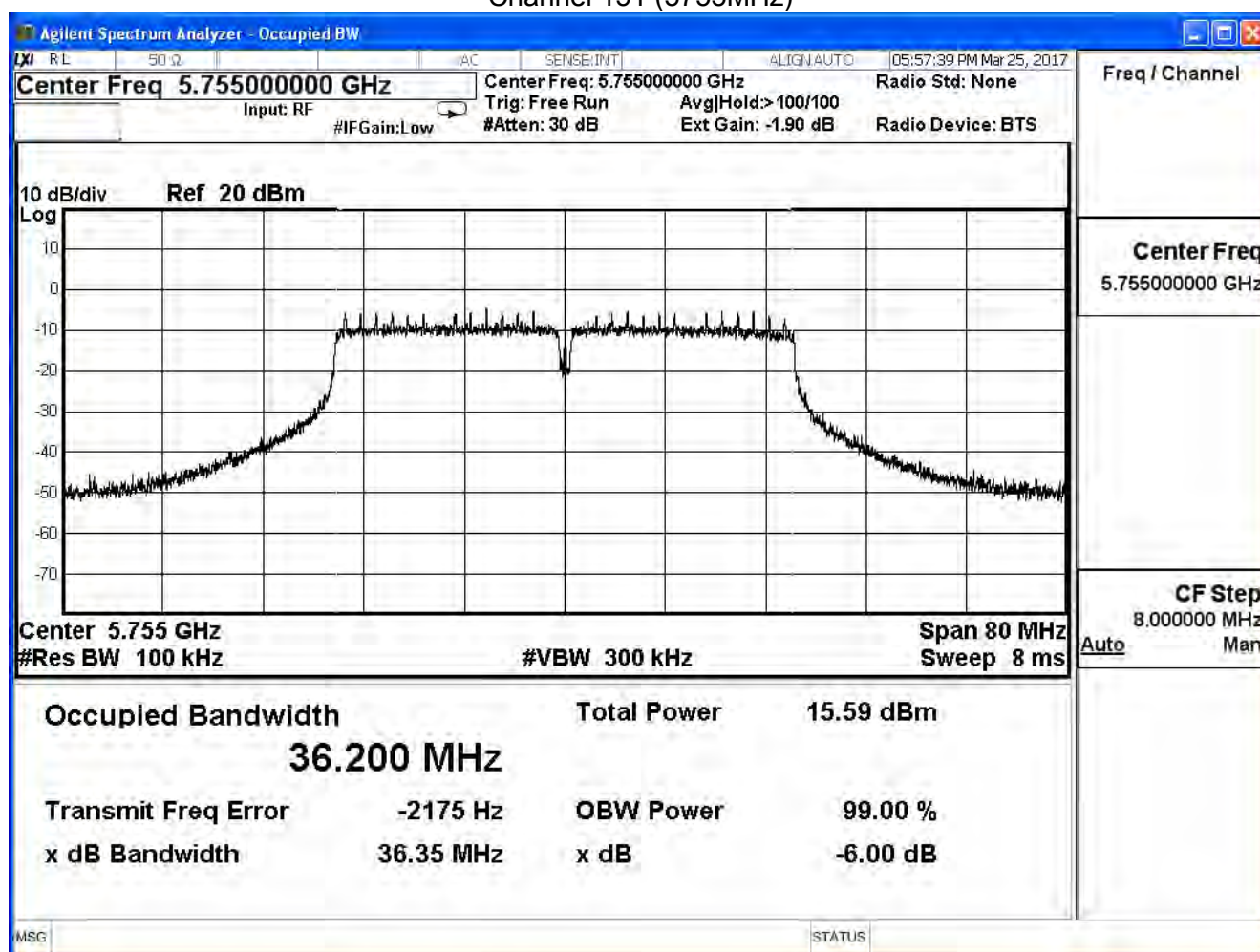
Channel 159 (5795MHz)



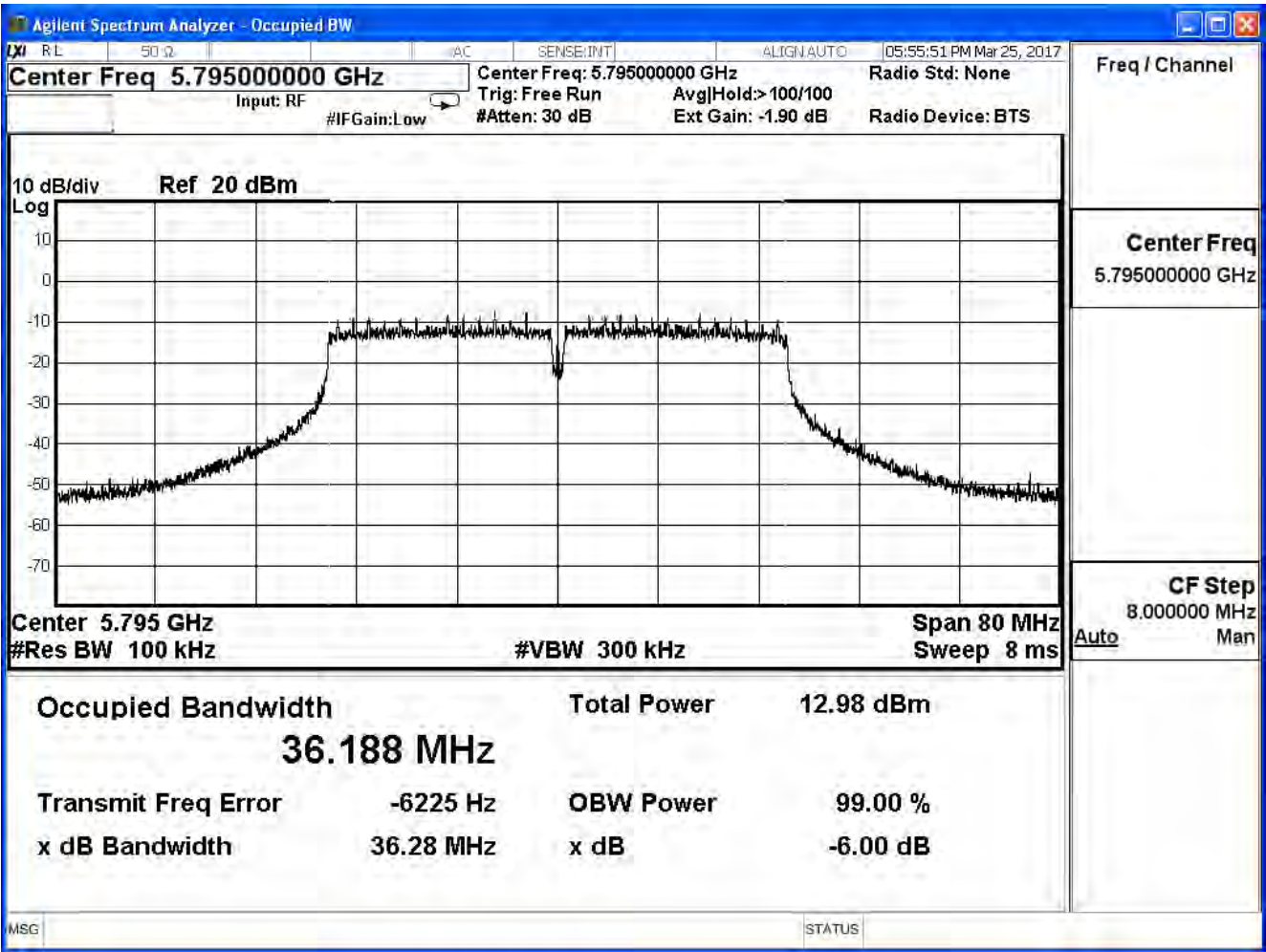
Product	Outdoor 5G MIMO-OFDM Radio		
Test Item	DTS Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2017/03/25	Test Site	SR10-H

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)



4. Peak Transmit power

4.1. Test Equipment

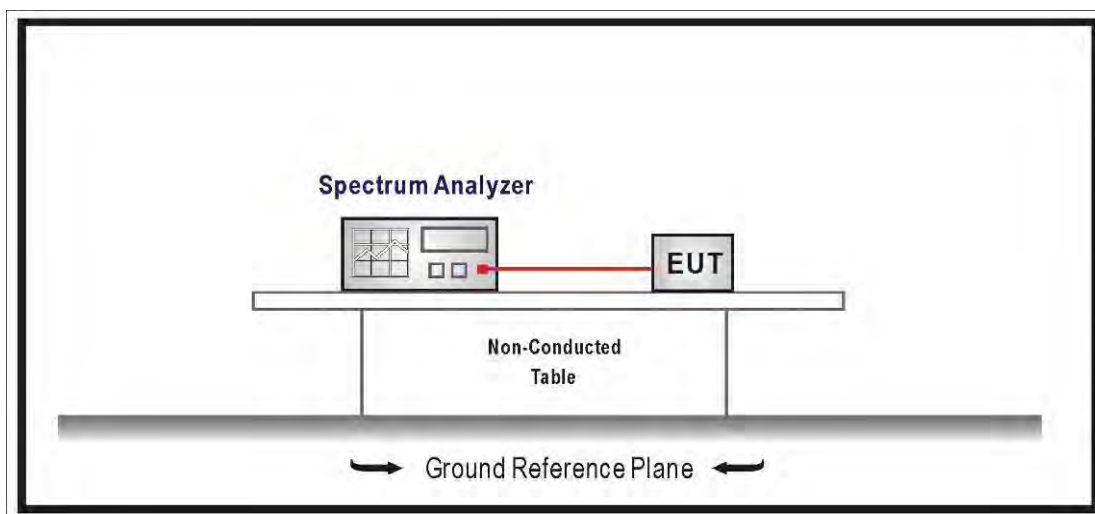
The following test equipments are used during the radiated emission tests:

Peak Transmit Output / SR10-H

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	US47140172	2017/08/08

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

4.2. Test Setup



4.3. Limits

1. For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
2. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
3. For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
4. For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5. For the band 5.25-5.35 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 250 mW. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
6. For the band 5.725-5.850 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 1W. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

4.4. Test Procedure

The EUT was setup to ANSI C63.10: 2013; tested to U-NII test procedure of 789033 D02 V01r03 and 662911 D01 v02r01 for compliance to FCC 47CFR Subpart E requirements. The Method SA-1 of the Maximum conducted output power was used.

Set RBW=1MHz, VBW=3MHz with RMS detector and trace average 100 traces in power averaging mode. Set span to encompass the entire emission bandwidth (EBW) of the signal.

4.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

4.6. Test Result

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

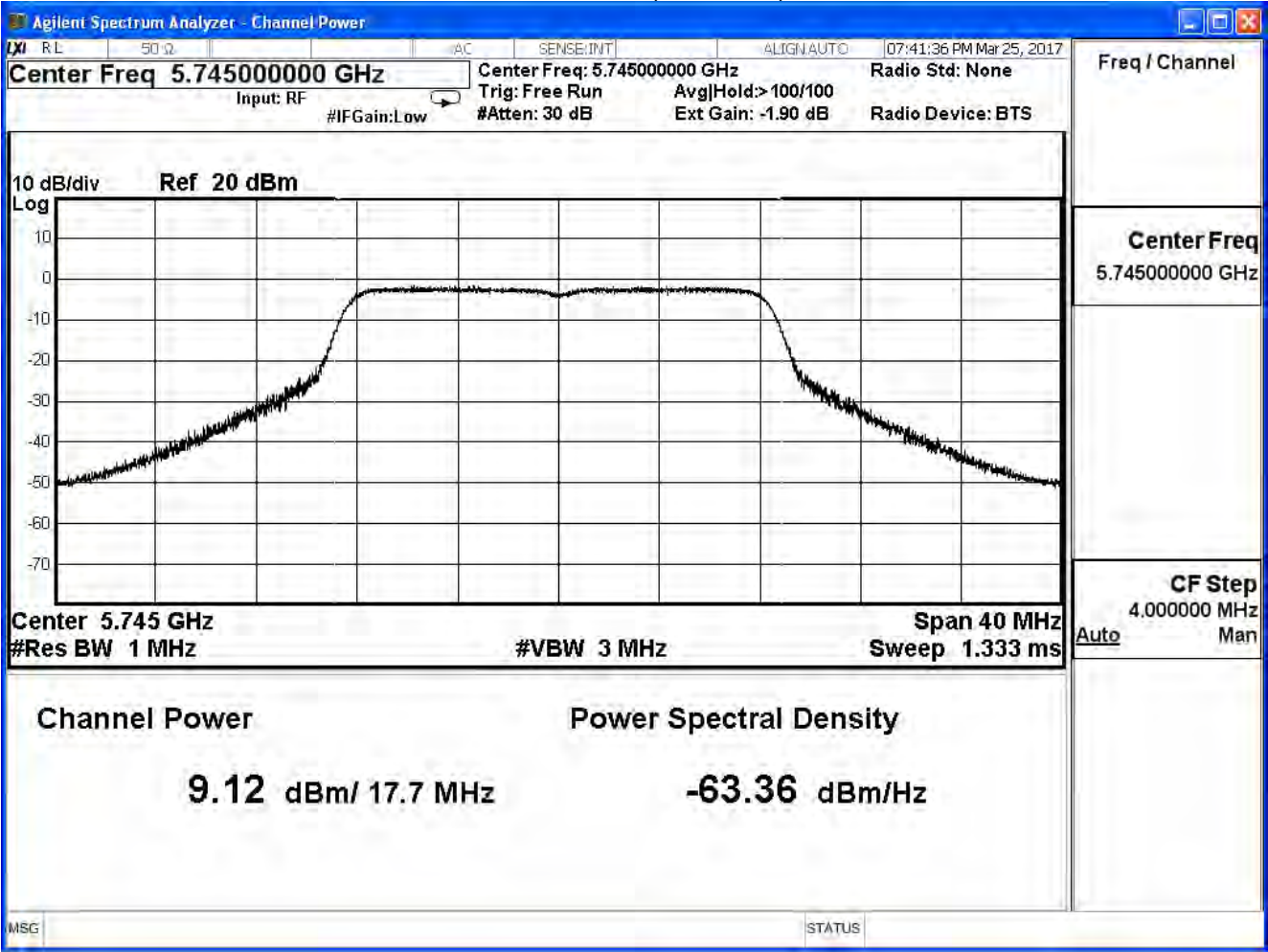
IEEE 802.11a (ANT 0)			
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)
149	5745	9.12	≤ 26.22
157	5785	8.16	≤ 26.22
165	5825	7.34	≤ 26.22

Peak Power Output (dBm)									
MCS Index		6	12	18	24	36	48	54	Require Limit
Channel No	Frequency (MHz)								
149	5745	9.120	--	--	--	--	--	--	≤ 26.22
157	5785	8.160	8.138	8.115	8.093	8.048	8.003	7.980	≤ 26.22
165	5825	7.340	--	--	--	--	--	--	≤ 26.22

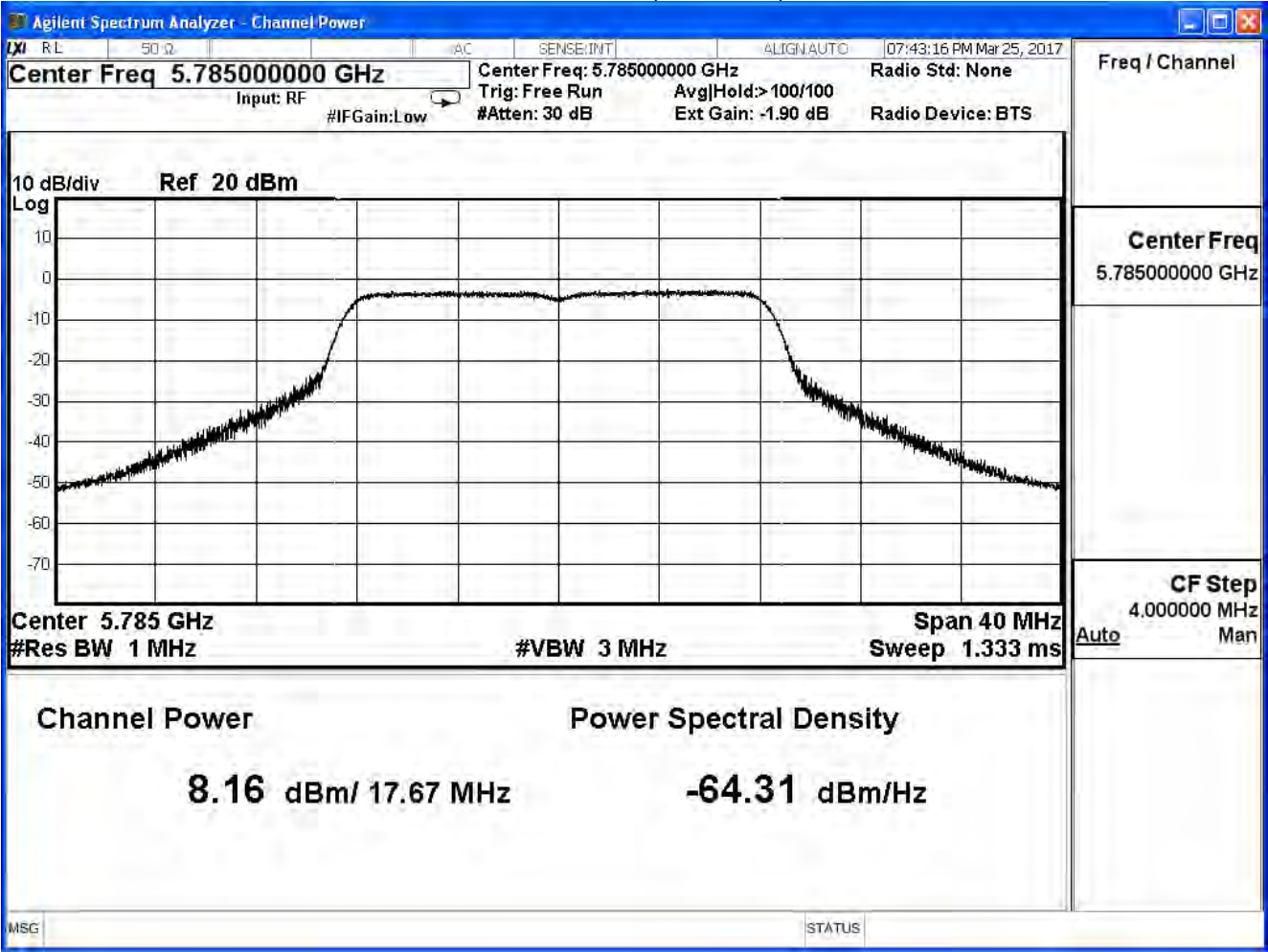
Directional gain=10log(ANT N)+Gain=7.78+2=9.78

Limit =30dBm-(9.78dBi-6dBi)=26.22dBm

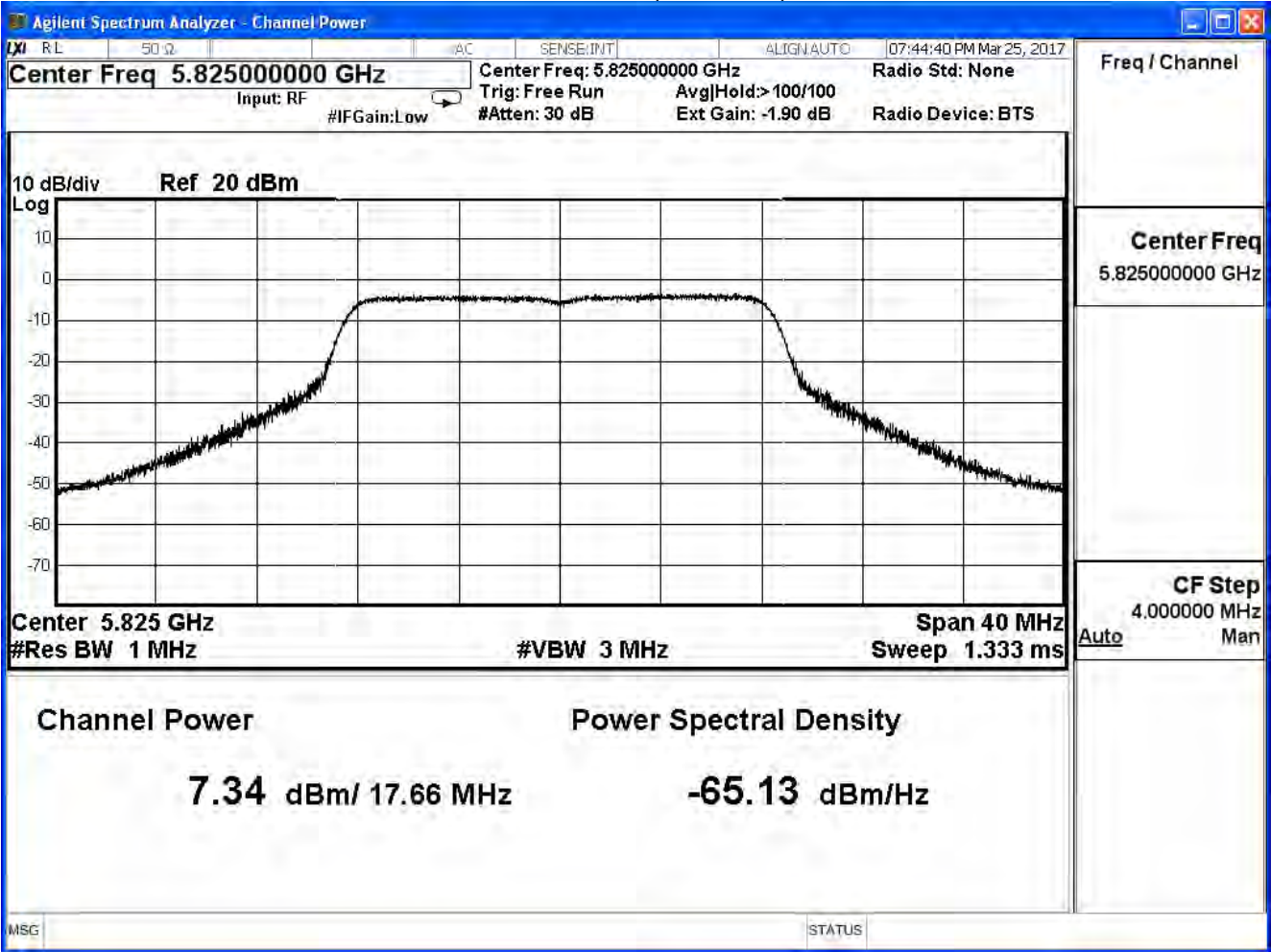
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



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

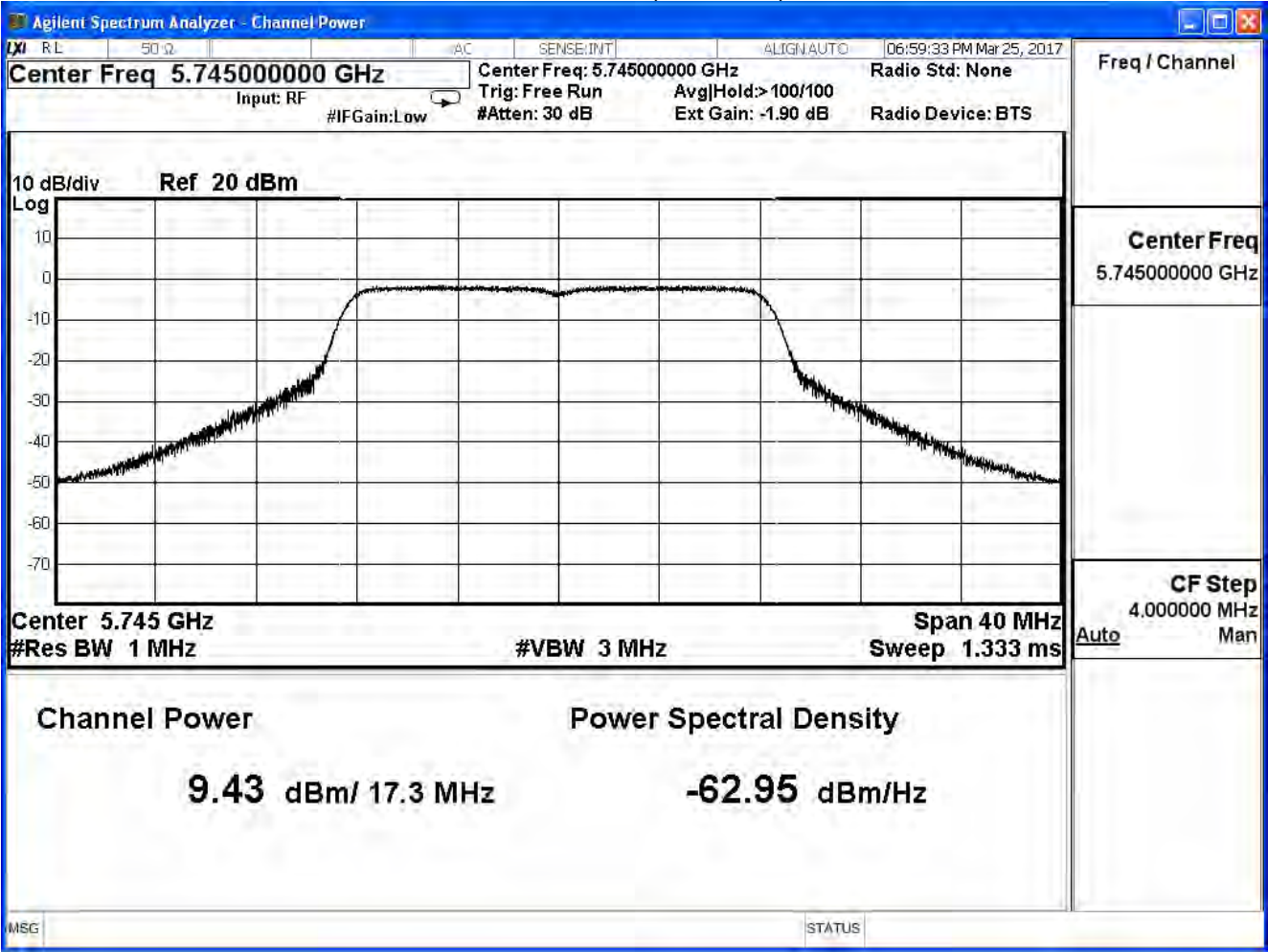
IEEE 802.11a (ANT 1)			
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)
149	5745	9.43	≤ 26.22
157	5785	8.87	≤ 26.22
165	5825	8.16	≤ 26.22

Peak Power Output (dBm)									
MCS Index		6	12	18	24	36	48	54	Require Limit
Channel No	Frequency (MHz)								
149	5745	9.430	--	--	--	--	--	--	≤ 26.22
157	5785	8.870	8.855	8.840	8.825	8.795	8.765	8.750	≤ 26.22
165	5825	8.160	--	--	--	--	--	--	≤ 26.22

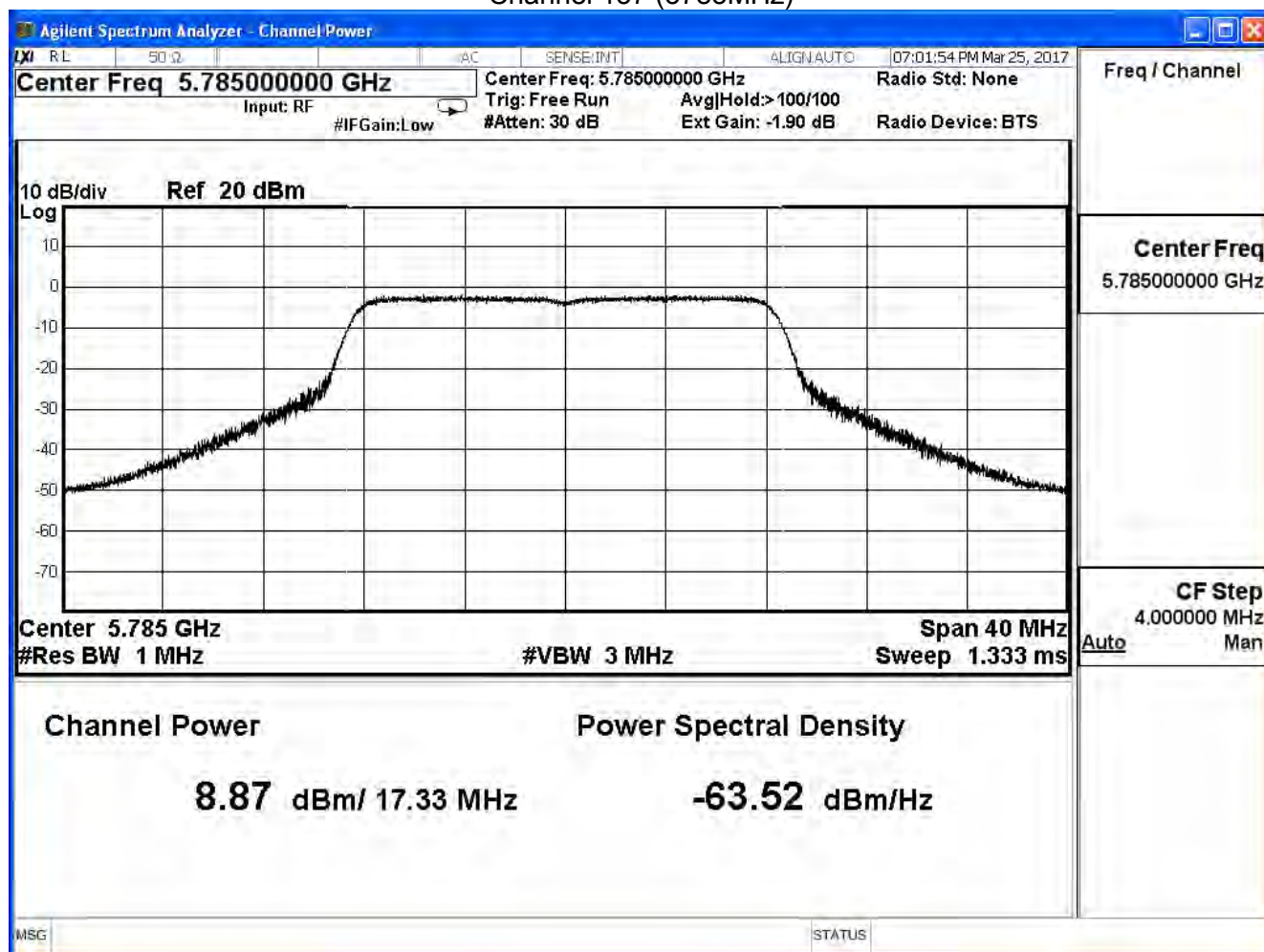
Directional gain=10log(ANT N)+Gain=7.78+2=9.78

Limit =30dBm-(9.78dBi-6dBi)=26.22dBm

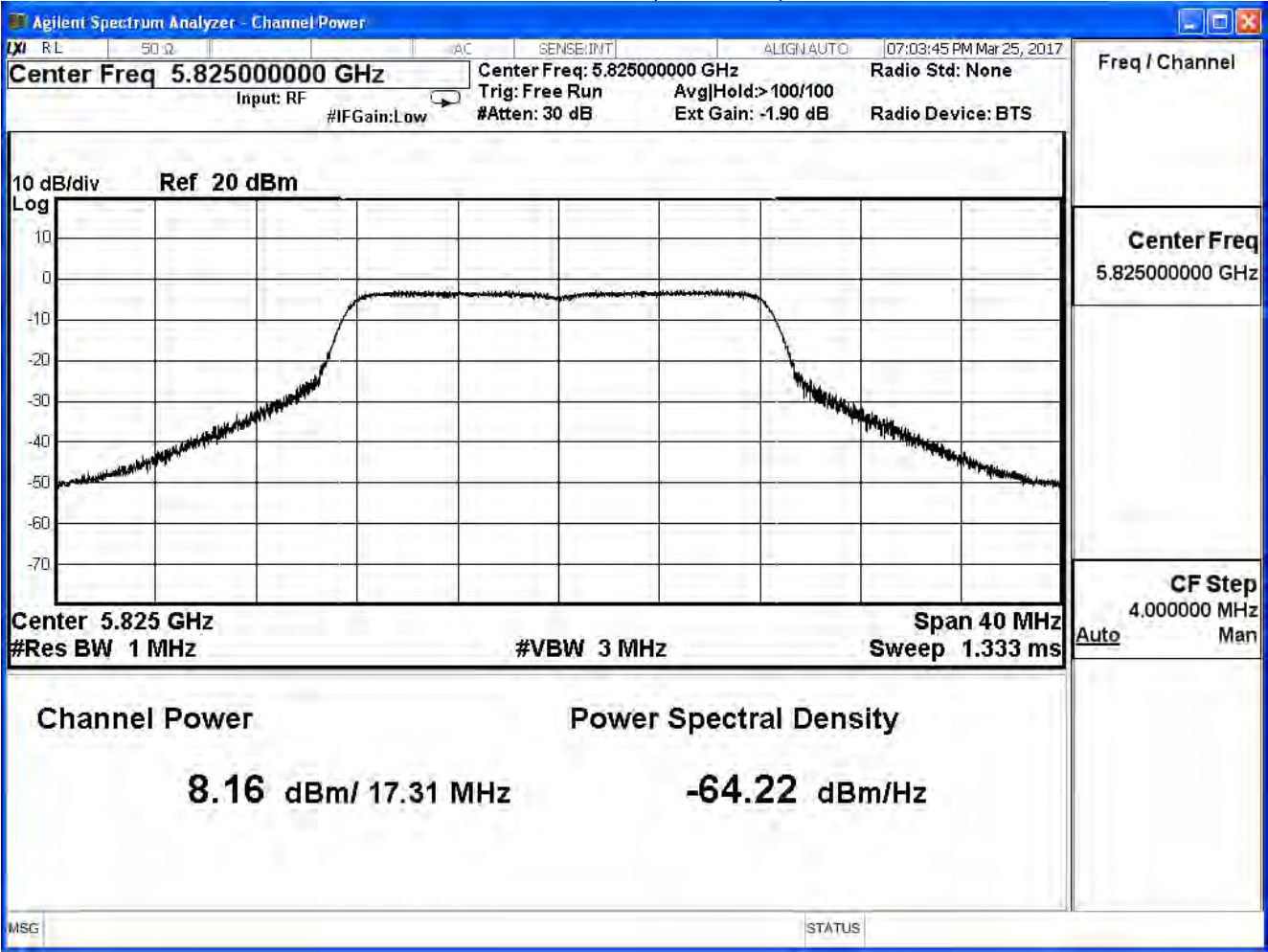
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



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

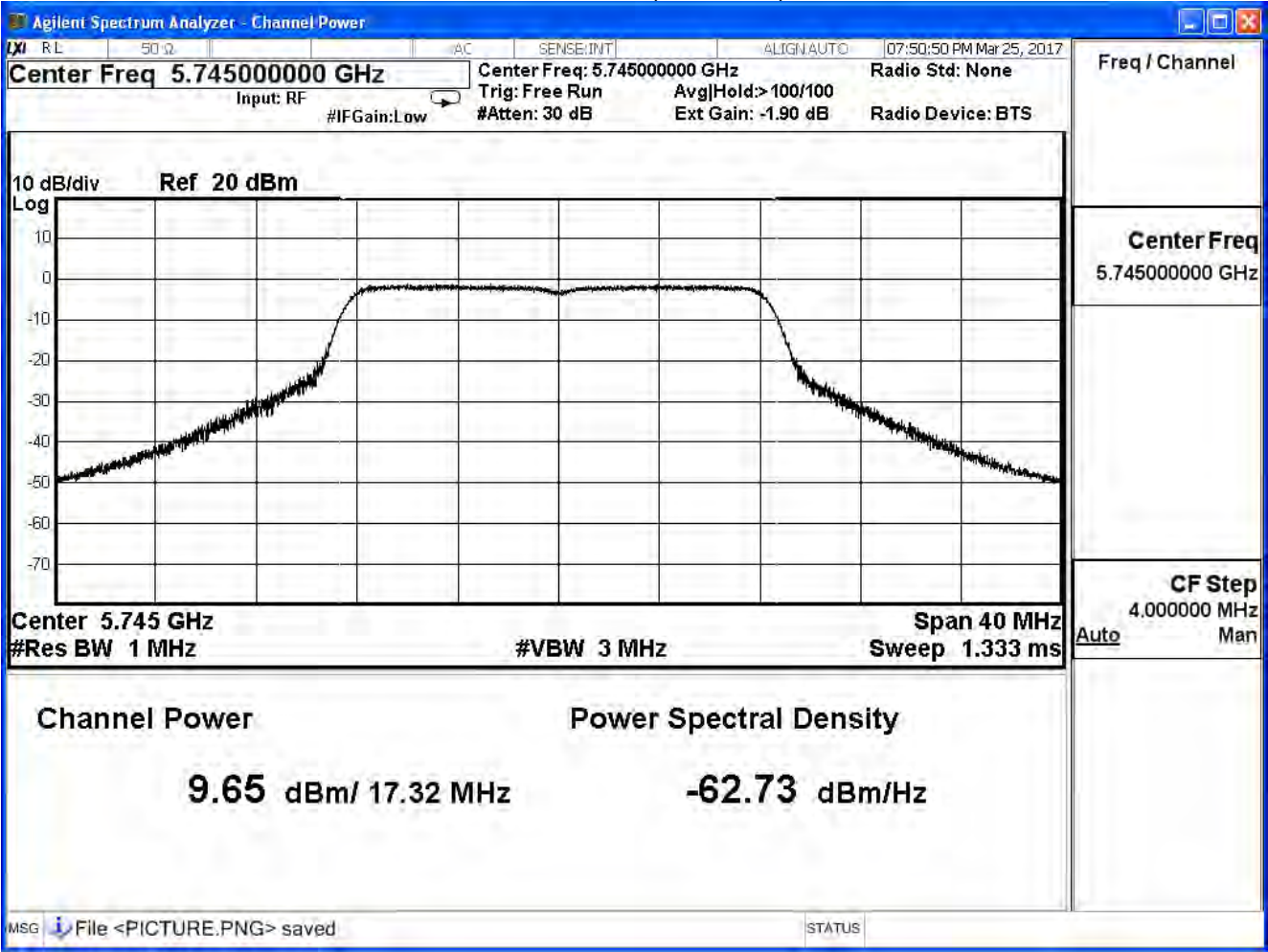
IEEE 802.11a (ANT 2)			
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)
149	5745	9.65	≤ 26.22
157	5785	8.78	≤ 26.22
165	5825	8.01	≤ 26.22

Peak Power Output (dBm)									
MCS Index		6	12	18	24	36	48	54	Require Limit
Channel No	Frequency (MHz)								
149	5745	9.650	--	--	--	--	--	--	≤ 26.22
157	5785	8.780	8.736	8.693	8.649	8.561	8.474	8.430	≤ 26.22
165	5825	8.010	--	--	--	--	--	--	≤ 26.22

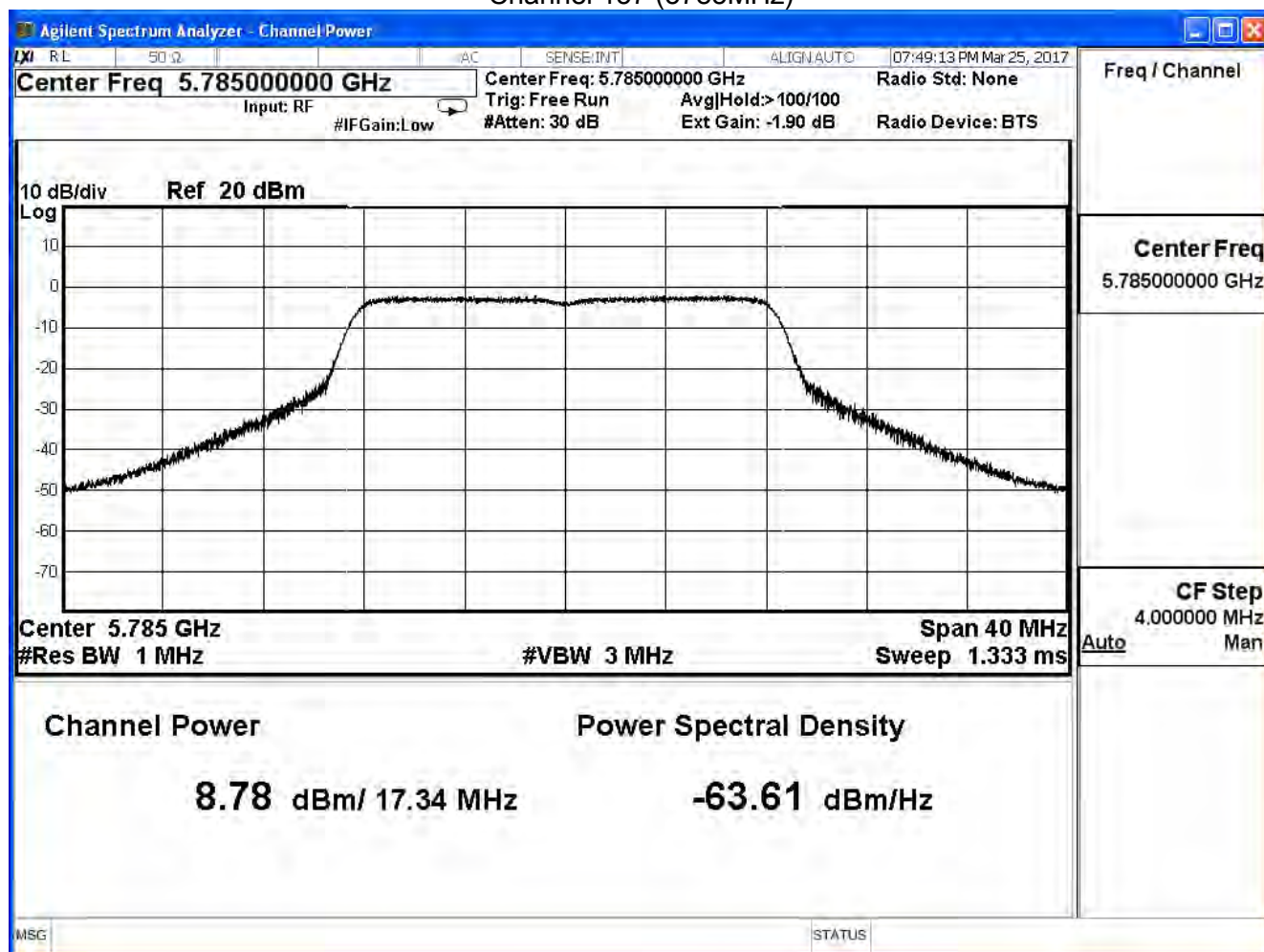
Directional gain=10log(ANT N)+Gain=7.78+2=9.78

Limit =30dBm-(9.78dBi-6dBi)=26.22dBm

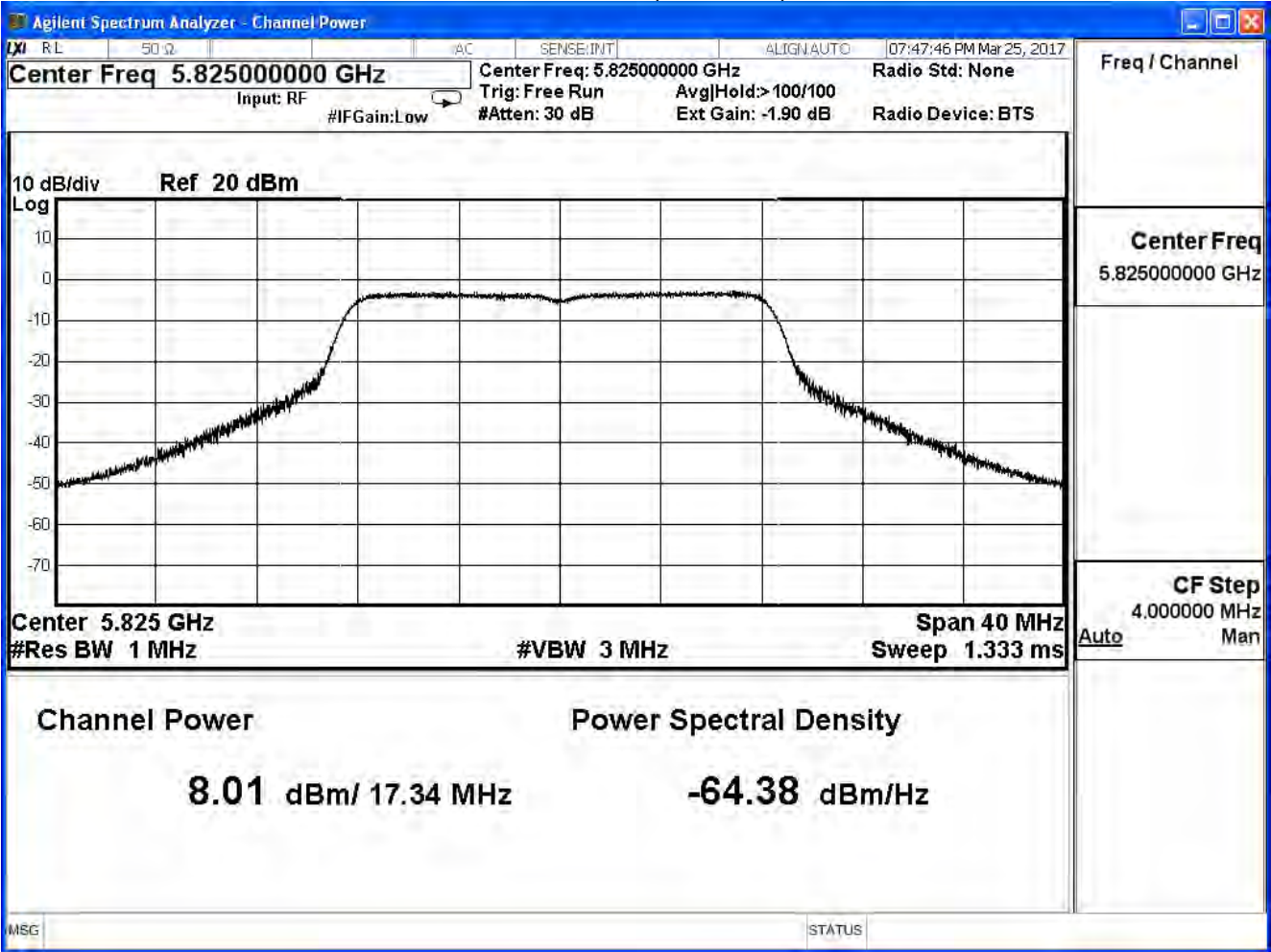
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



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

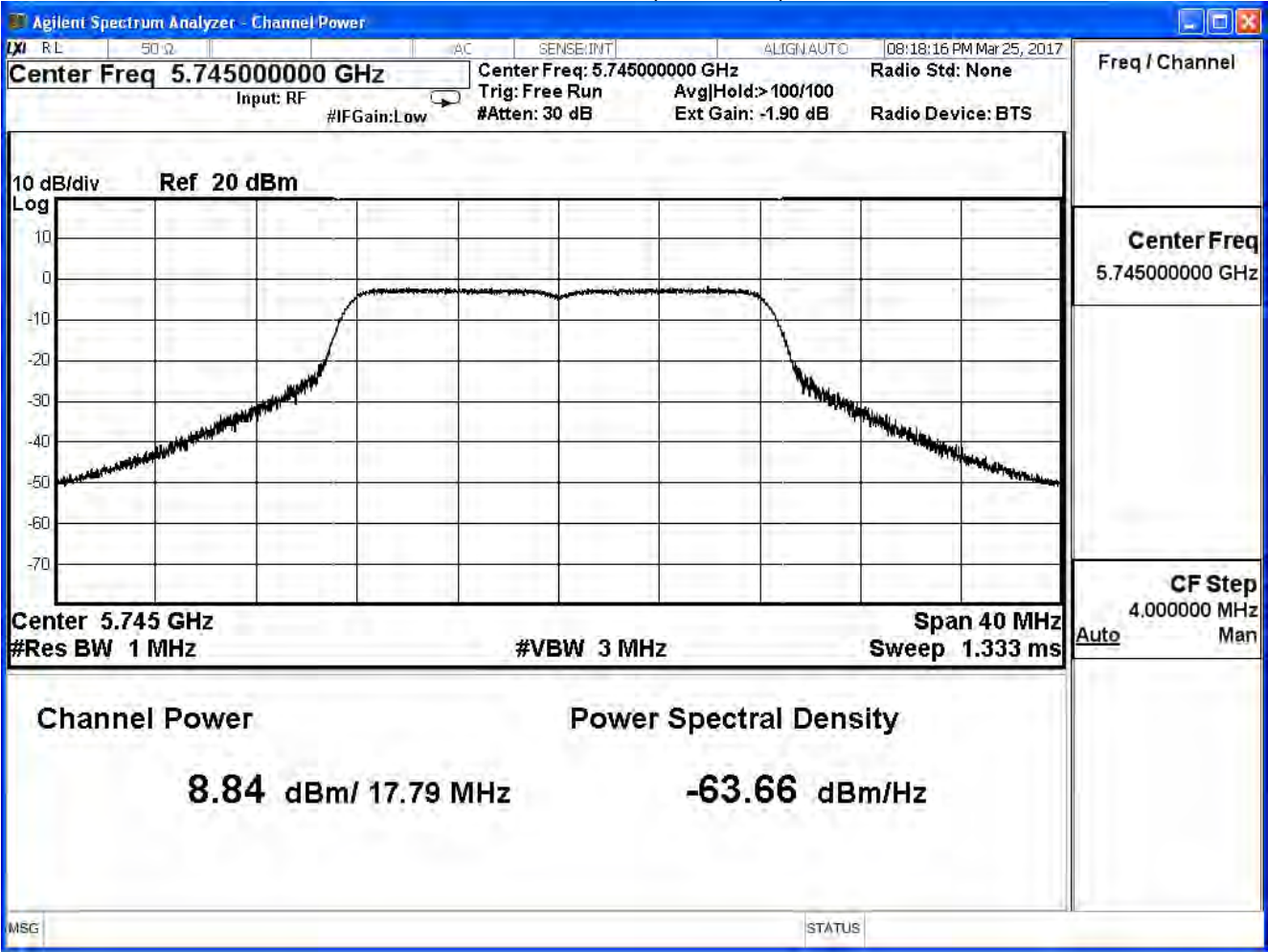
IEEE 802.11a (ANT 3)			
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)
149	5745	8.84	≤ 26.22
157	5785	7.83	≤ 26.22
165	5825	7.59	≤ 26.22

Peak Power Output (dBm)									
MCS Index		6	12	18	24	36	48	54	Require Limit
Channel No	Frequency (MHz)								
149	5745	8.840	--	--	--	--	--	--	≤ 26.22
157	5785	7.830	7.810	7.790	7.770	7.730	7.690	7.670	≤ 26.22
165	5825	7.590	--	--	--	--	--	--	≤ 26.22

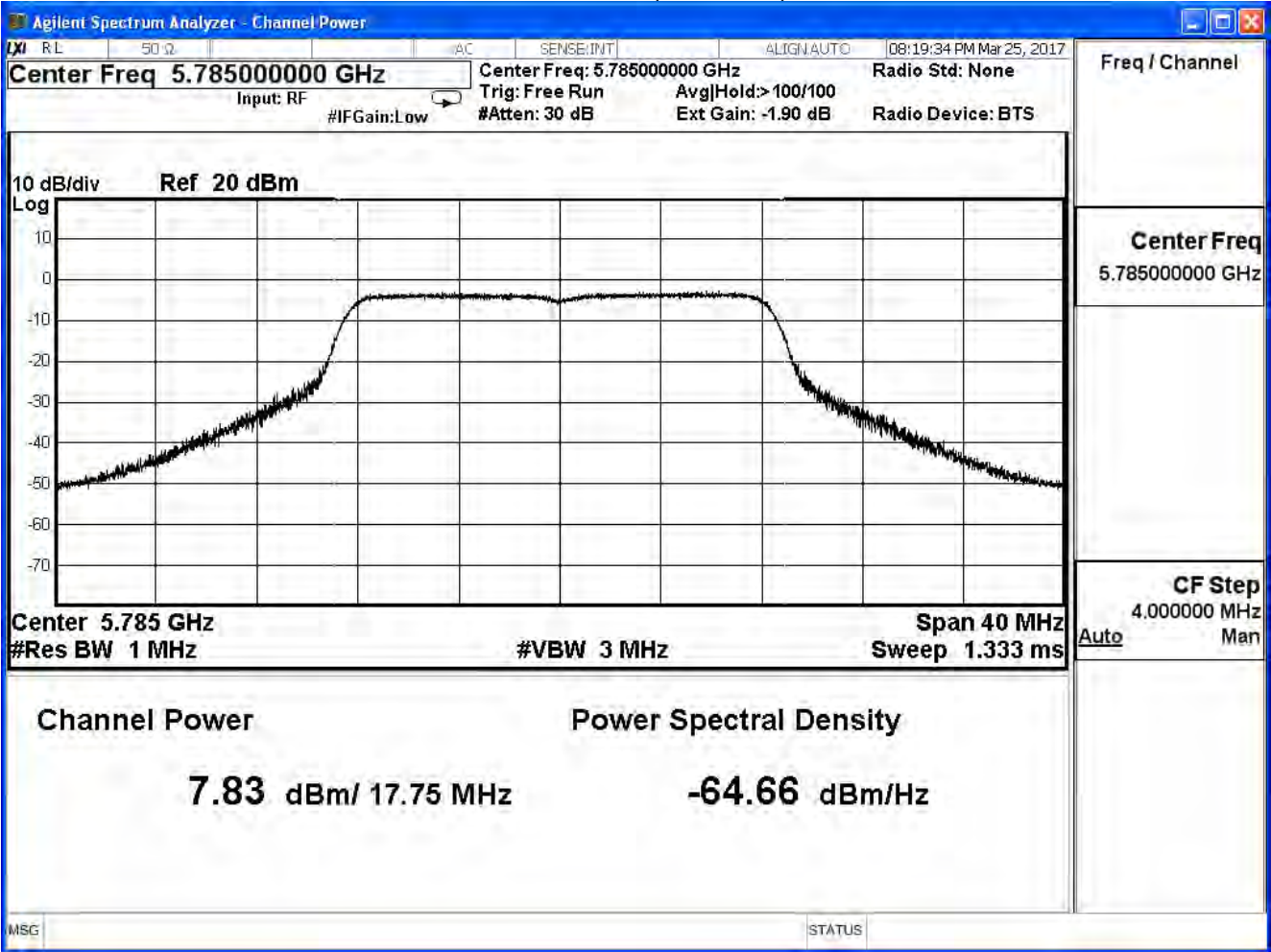
Directional gain=10log(ANT N)+Gain=7.78+2=9.78

Limit =30dBm-(9.78dBi-6dBi)=26.22dBm

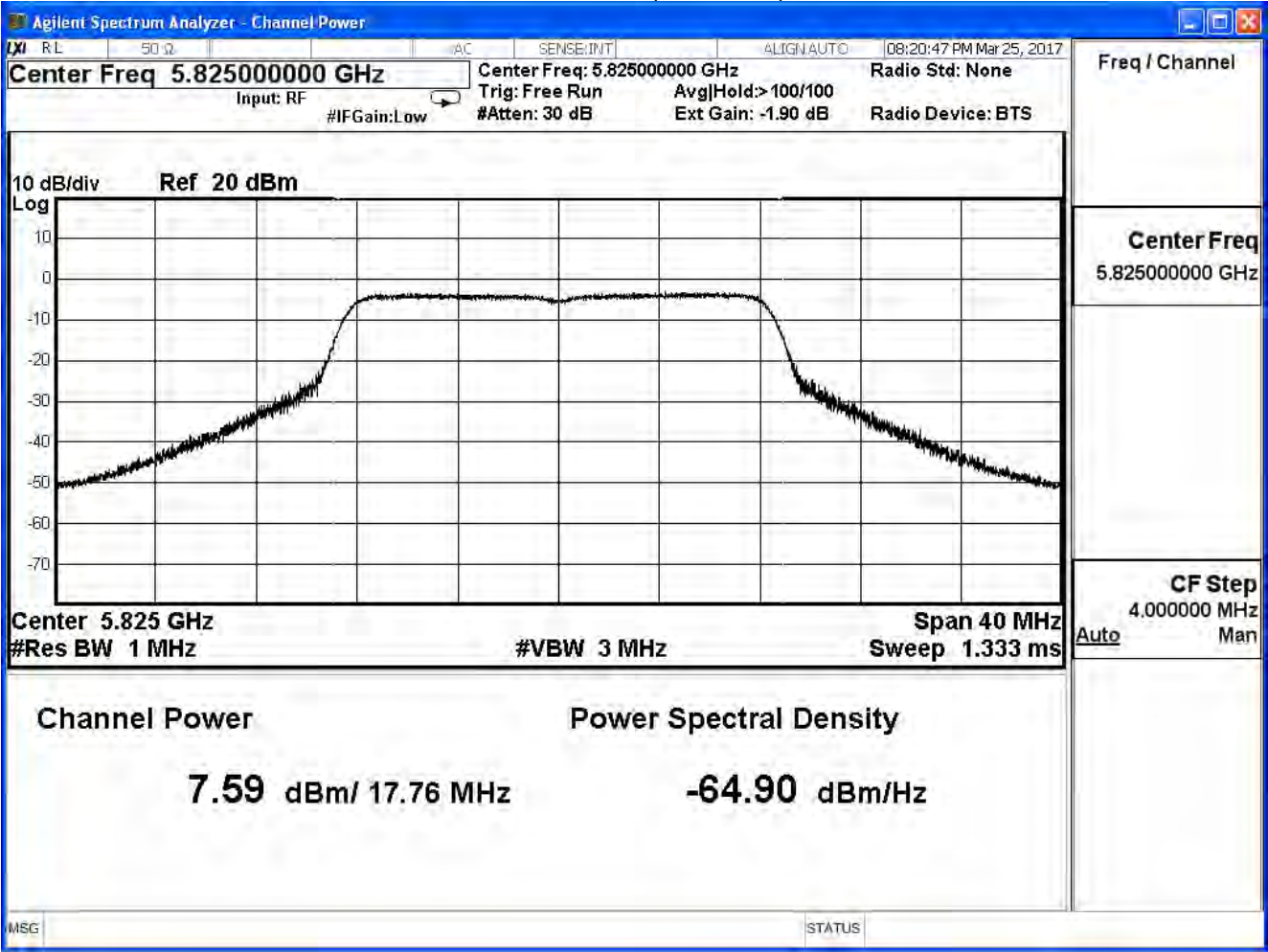
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



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

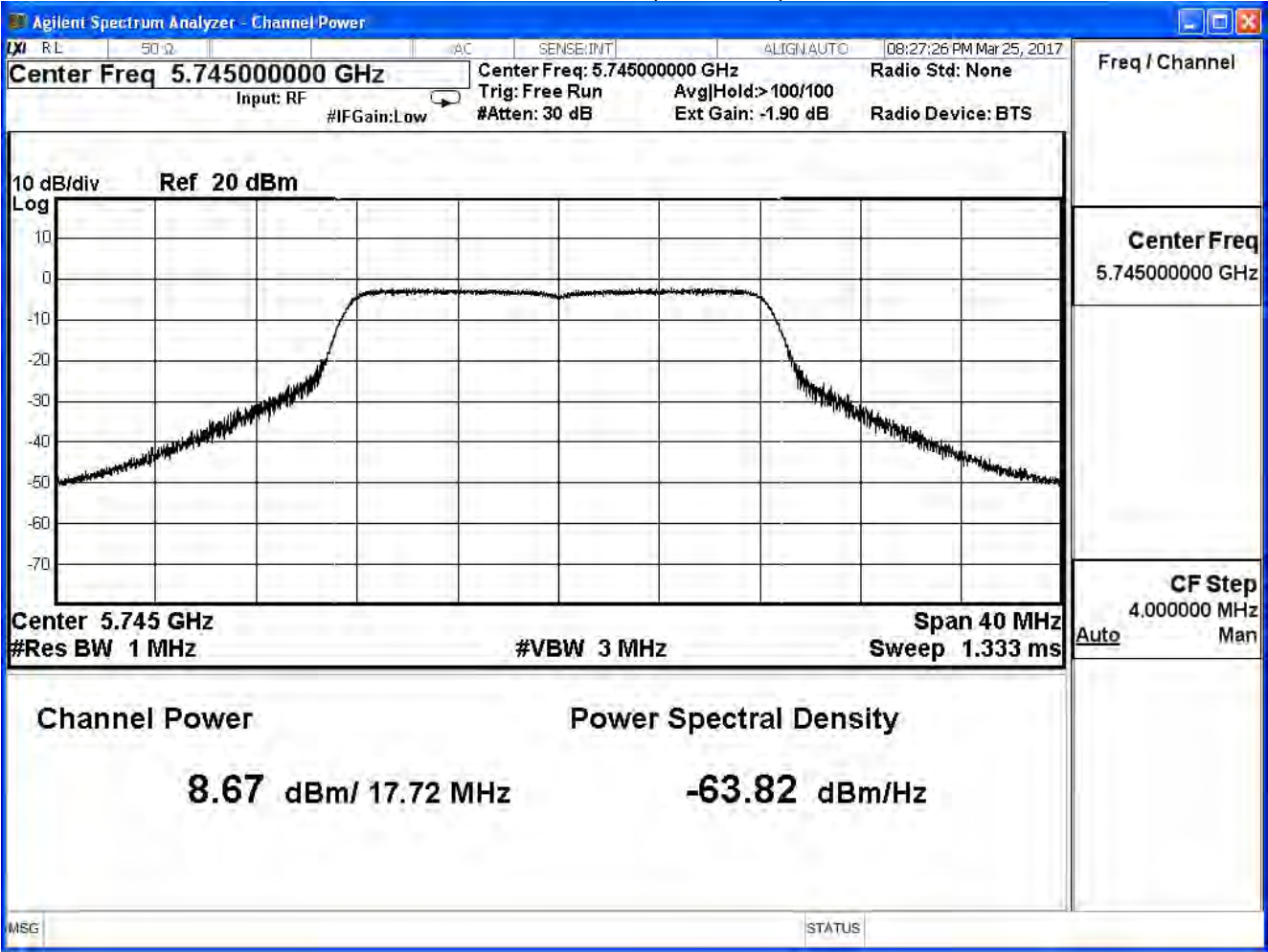
IEEE 802.11a (ANT 4)			
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)
149	5745	8.67	≤ 26.22
157	5785	8.37	≤ 26.22
165	5825	8.60	≤ 26.22

Peak Power Output (dBm)									
MCS Index		6	12	18	24	36	48	54	Require Limit
Channel No	Frequency (MHz)								
149	5745	8.670	--	--	--	--	--	--	≤ 26.22
157	5785	8.370	8.338	8.305	8.273	8.208	8.143	8.110	≤ 26.22
165	5825	8.600	--	--	--	--	--	--	≤ 26.22

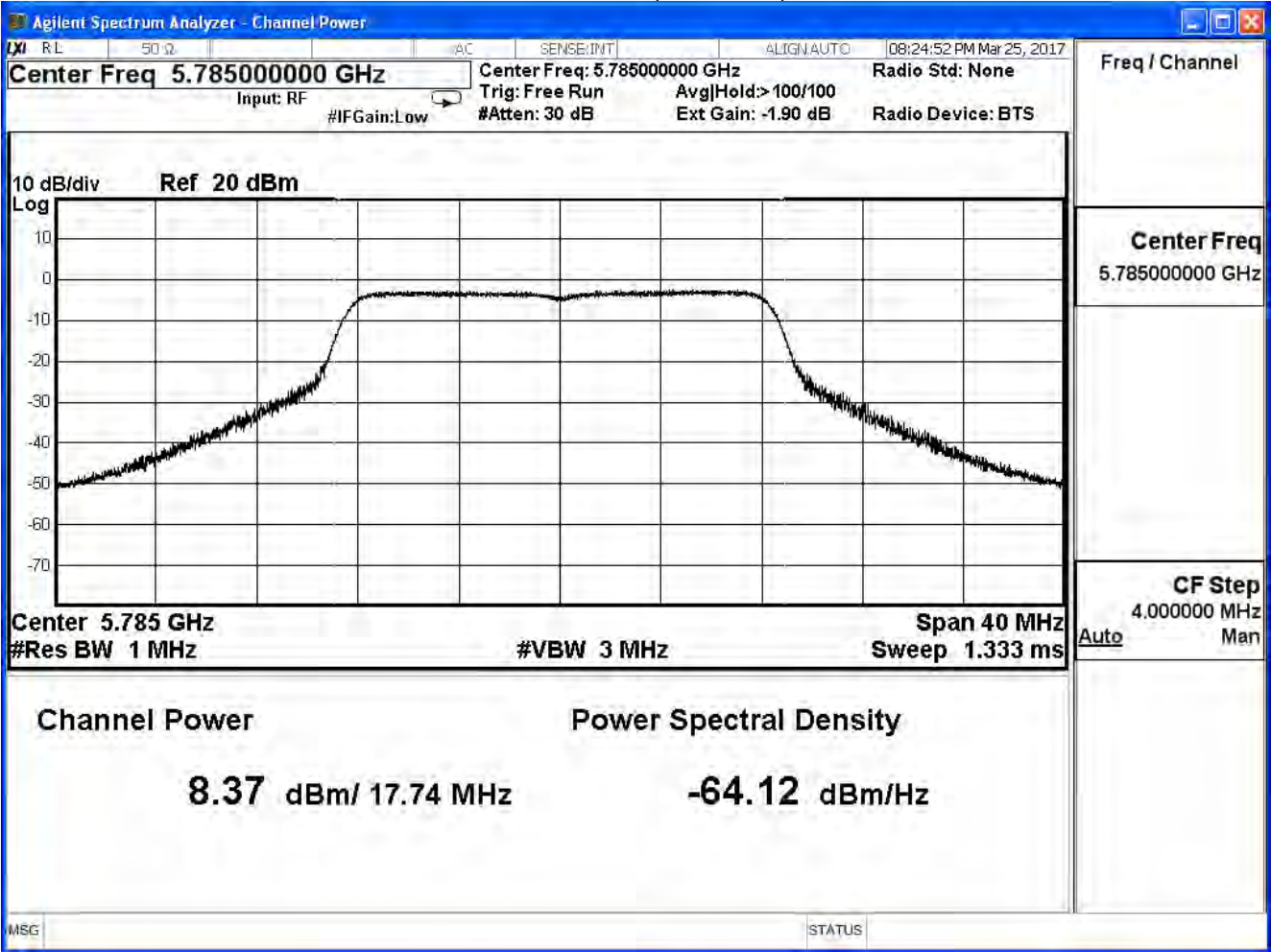
Directional gain=10log(ANT N)+Gain=7.78+2=9.78

Limit =30dBm-(9.78dBi-6dBi)=26.22dBm

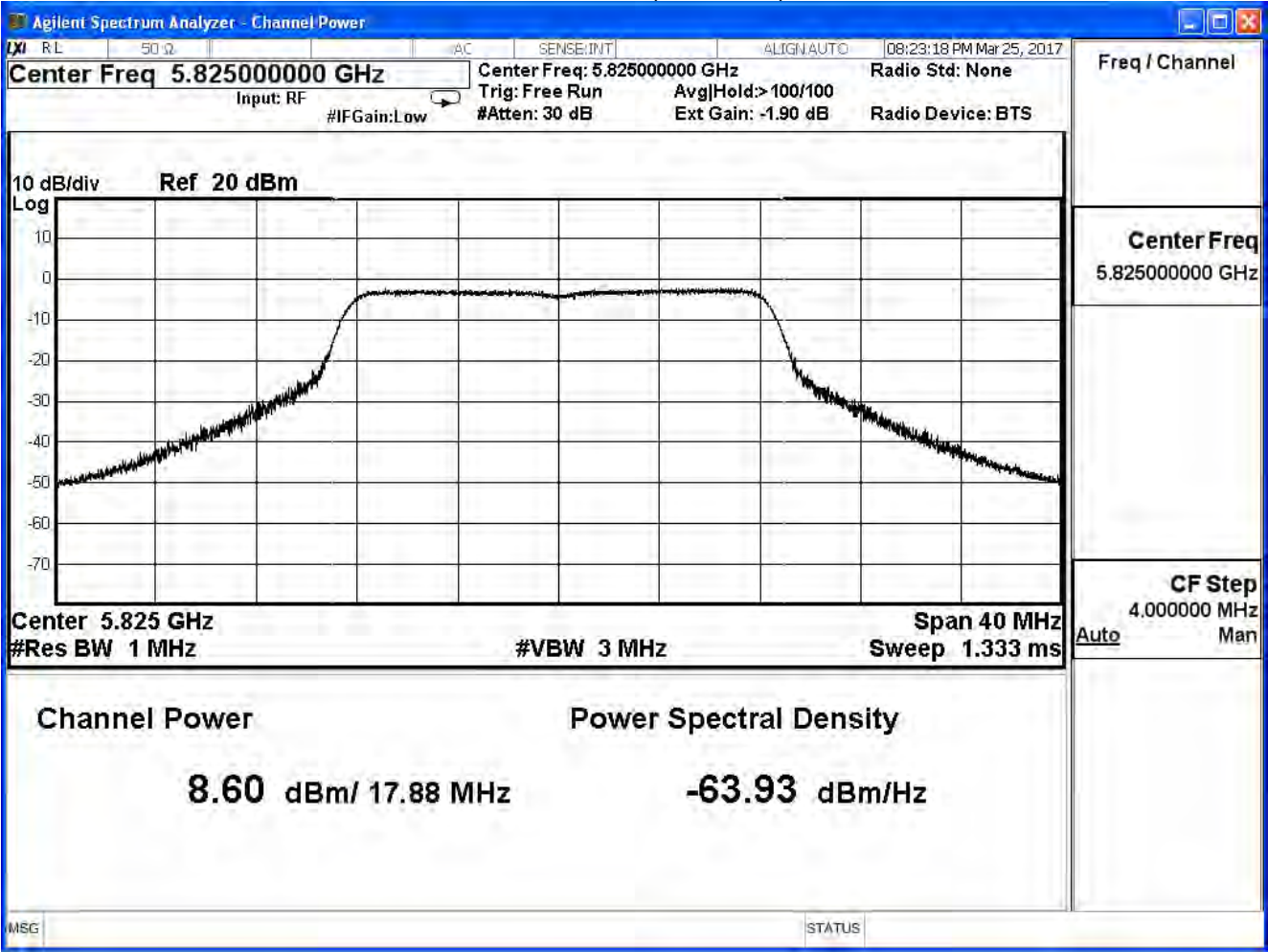
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



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

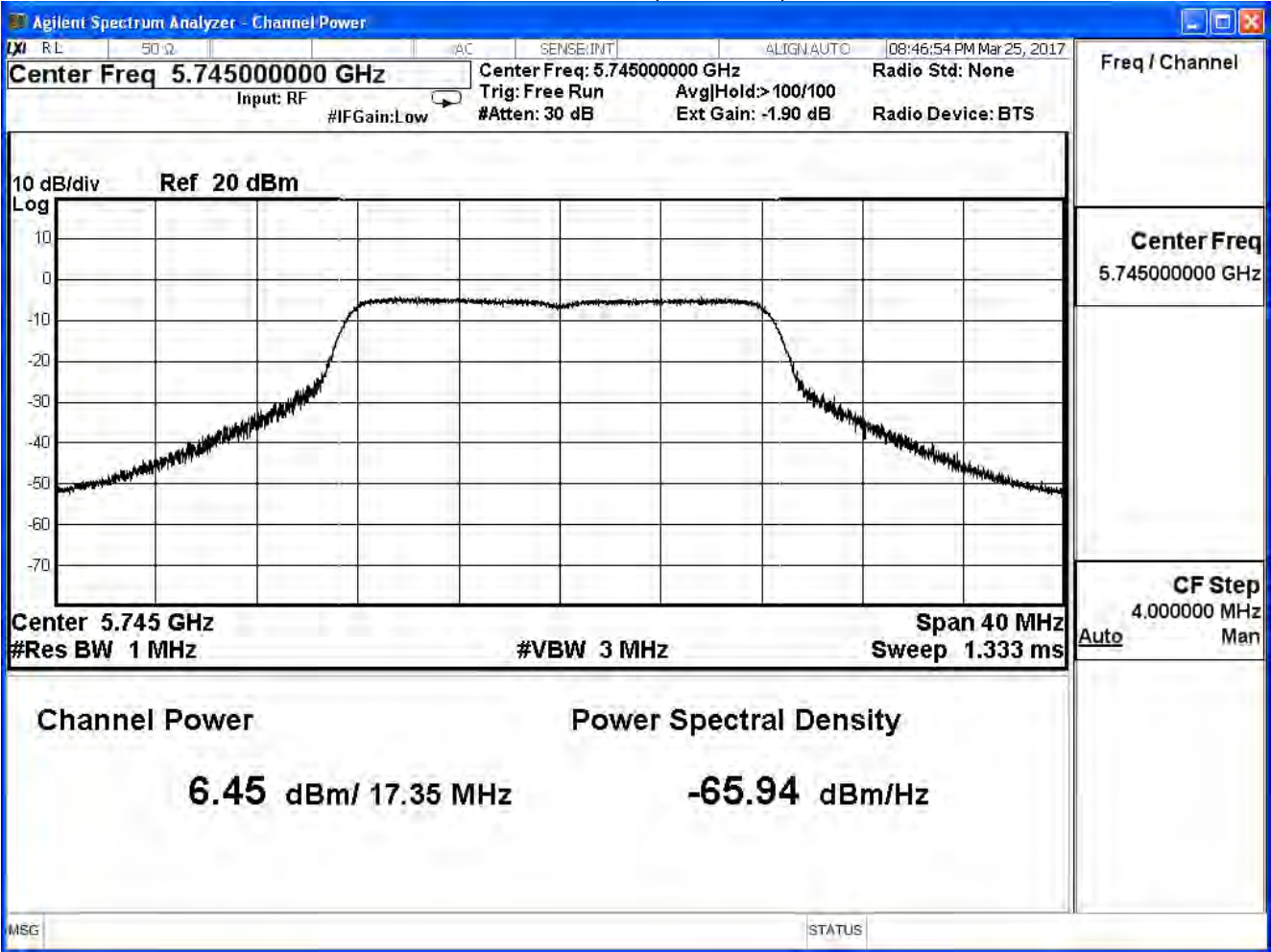
IEEE 802.11a (ANT 5)			
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)
149	5745	6.45	≤ 26.22
157	5785	6.09	≤ 26.22
165	5825	6.11	≤ 26.22

Peak Power Output (dBm)									
MCS Index		6	12	18	24	36	48	54	Require Limit
Channel No	Frequency (MHz)								
149	5745	6.450	--	--	--	--	--	--	≤ 26.22
157	5785	6.090	6.070	6.050	6.030	5.990	5.950	5.930	≤ 26.22
165	5825	6.110	--	--	--	--	--	--	≤ 26.22

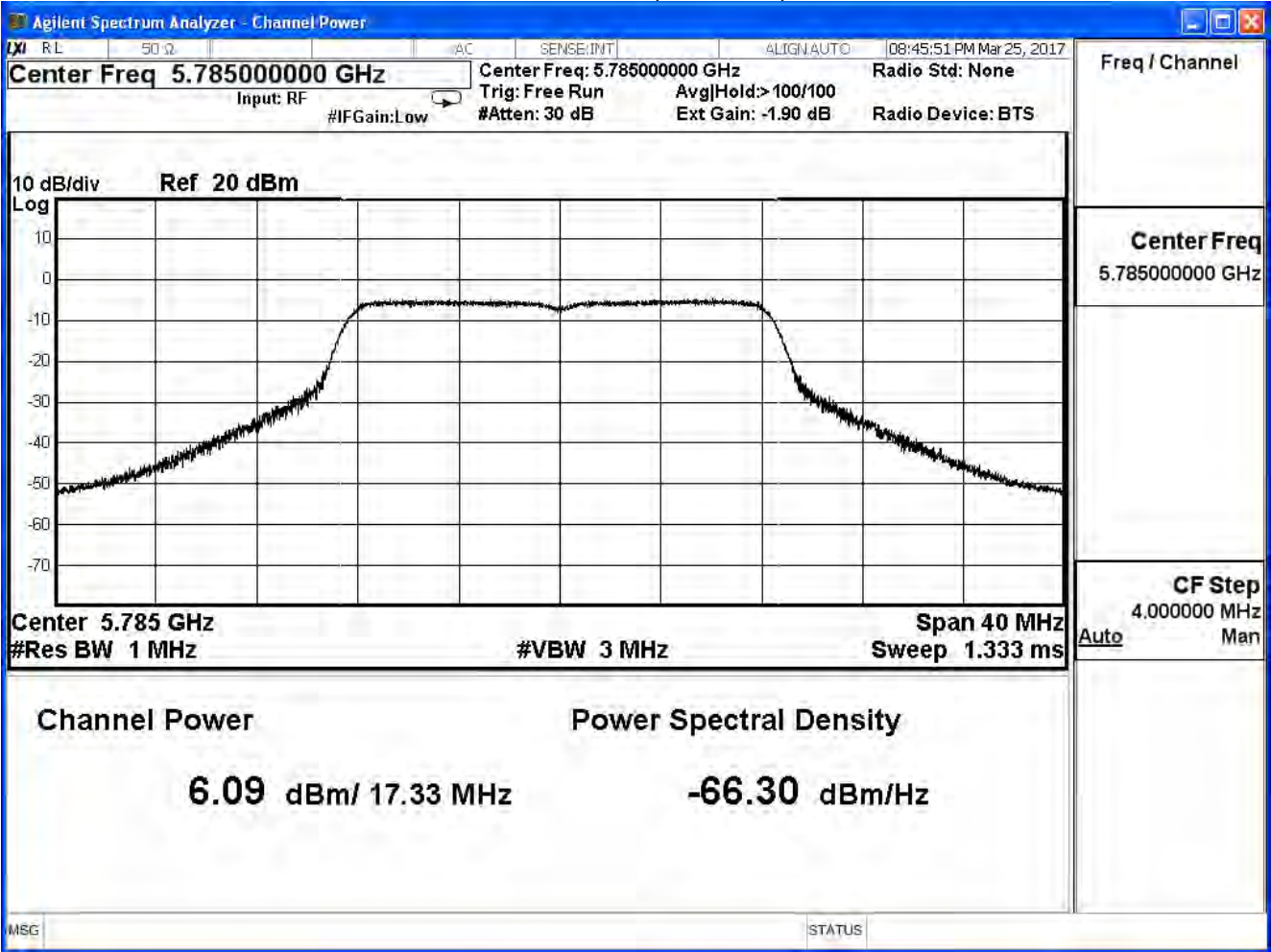
Directional gain=10log(ANT N)+Gain=7.78+2=9.78

Limit =30dBm-(9.78dBi-6dBi)=26.22dBm

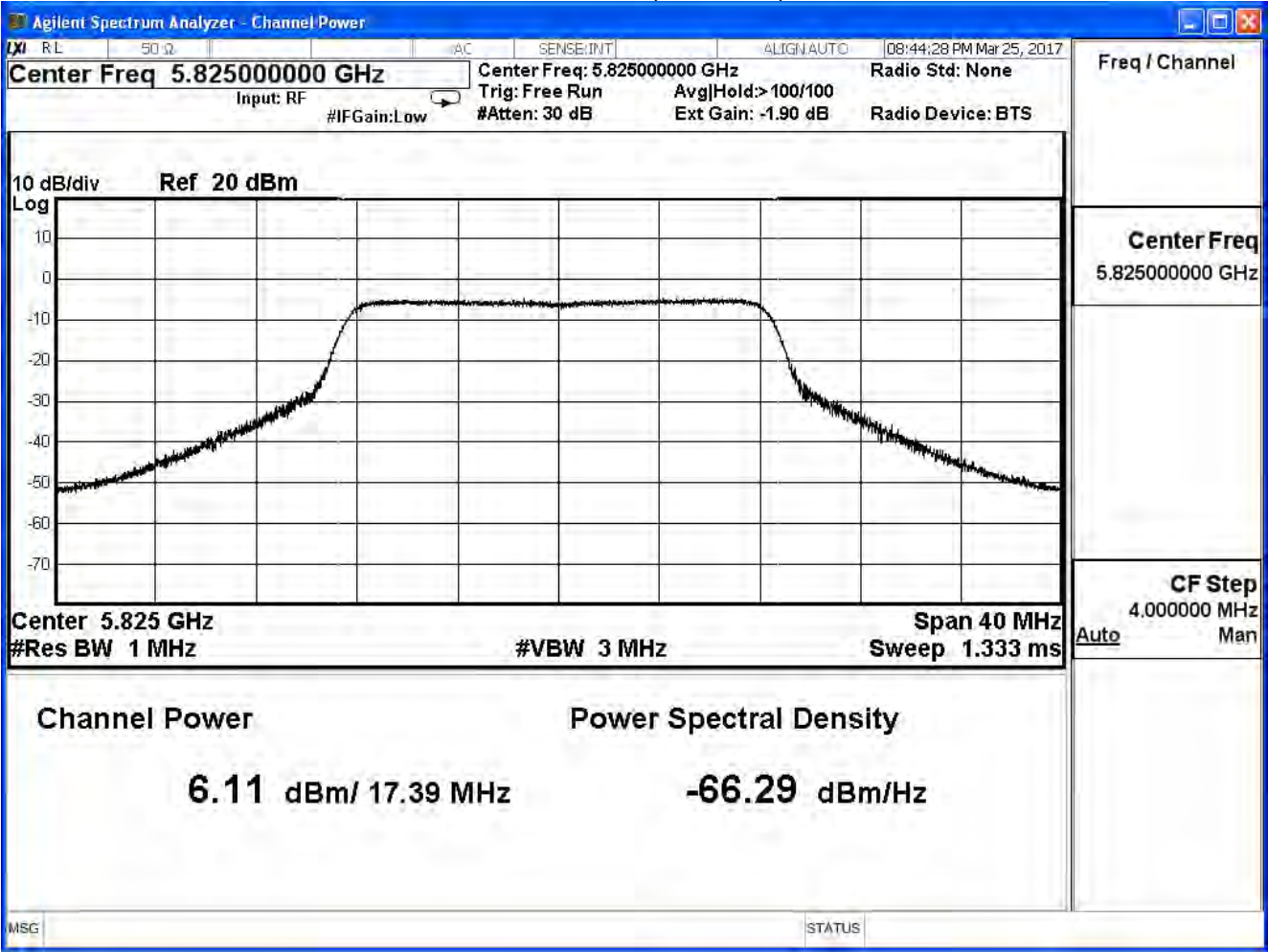
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)



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

IEEE 802.11a (ANT0+1+2+3+4+5)			
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)
149	5745	16.589	≤ 26.22
157	5785	15.889	≤ 26.22
165	5825	15.485	≤ 26.22

Directional gain=10log(ANT N)+Gain=7.78+2=9.78

Limit =30dBm-(9.78dBi-6dBi)=26.22dBm