



FCC/IC RADIO TEST REPORT-WIFI
FCC ID:LNQSBWD950A
IC:2496A-SBWD950A

Product : ScreenBeam Pro Enterprise Edition

Trade Name : Actiontec

Model Name : SBWD950A

Serial Model : N/A

Report No. : NTEK-2015NT06182085F4

Prepared for

Actiontec Electronics, Inc.

760 North Mary Ave., Sunnyvale, California 94085 United States

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street
Bao'an District, Shenzhen P.R. China

Tel.: +86-0755-61156588 Fax.: +86-0755-61156599

Website: www.ntek.org.cn

TEST RESULT CERTIFICATION

Applicant's name Actiontec Electronics, Inc.

Address 760 North Mary Ave., Sunnyvale, California 94085 United States

Manufacturer's Name... Actiontec Electronics, Inc.

Address 760 North Mary Ave., Sunnyvale, California 94085 United States

Product description

Product name ScreenBeam Pro Enterprise Edition

Model and/or type SBWD950A
reference

Serial Model N/A

Standards FCC Part15.247 01 Oct. 2014
RSS-247 Issue 1 May 28, 2015

Test procedure ANSI C63.10-2013 and KDB 558074: June 5, 2014
RSS GEN Issue 4

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements/ the Industry Canada requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of NTEK, this document may be altered or revised by NTEK, personnel only, and shall be noted in the revision of the document.

Date of Test

Date (s) of performance of tests 18 Jun. 2015 ~31 Jul. 2015

Date of Issue 31 Jul. 2015

Test Result **Pass**

Testing Engineer : Jason Chen
(Jason Chen)

Technical Manager : Brown Lu
(Brown Lu)

Authorized Signatory : Sam. Chen
(Sam Chen)

Table of Contents

	Page
1 . SUMMARY OF TEST RESULTS	5
1.1 TEST FACILITY	6
1.2 MEASUREMENT UNCERTAINTY	6
2 . GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 DESCRIPTION OF TEST MODES	10
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	11
2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	12
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	13
3 . EMC EMISSION TEST	14
3.1 CONDUCTED EMISSION MEASUREMENT	14
3.1.1 POWER LINE CONDUCTED EMISSION LIMITS	14
3.1.2 TEST PROCEDURE	15
3.1.3 DEVIATION FROM TEST STANDARD	15
3.1.4 TEST SETUP	15
3.1.5 EUT OPERATING CONDITIONS	15
3.1.6 TEST RESULTS	16
3.2 RADIATED EMISSION MEASUREMENT	32
3.2.1 RADIATED EMISSION LIMITS	32
3.2.2 TEST PROCEDURE	33
3.2.3 DEVIATION FROM TEST STANDARD	33
3.2.4 TEST SETUP	34
3.2.5 EUT OPERATING CONDITIONS	35
3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)	36
3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)	37
3.2.8 TEST RESULTS (ABOVE 1000 MHZ)	45
4 . POWER SPECTRAL DENSITY TEST	49
4.1 APPLIED PROCEDURES / LIMIT	49
4.1.1 TEST PROCEDURE	49
4.1.2 DEVIATION FROM STANDARD	49
4.1.3 TEST SETUP	49
4.1.4 EUT OPERATION CONDITIONS	49
4.1.5 TEST RESULTS	50
5 . BANDWIDTH TEST	82
5.1 APPLIED PROCEDURES / LIMIT	82
5.1.1 TEST PROCEDURE	82

Table of Contents

	Page
TEST SETUP	82
5.1.2 EUT OPERATION CONDITIONS	82
5.1.3 TEST RESULTS	83
6 . PEAK OUTPUT POWER TEST	139
6.1 APPLIED PROCEDURES / LIMIT	139
6.1.1 TEST PROCEDURE	139
6.1.2 DEVIATION FROM STANDARD	139
6.1.3 TEST SETUP	139
6.1.4 EUT OPERATION CONDITIONS	139
6.1.5 TEST RESULTS	140
7 . 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE	145
7.1 DEVIATION FROM STANDARD	145
7.2 TEST SETUP	145
7.3 EUT OPERATION CONDITIONS	145
7.4 TEST RESULTS	146
8 . ANTENNA REQUIREMENT	169
8.1 STANDARD REQUIREMENT	169
8.2 EUT ANTENNA	169
9 . EUT TEST PHOTO	170
APPENDIX-PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS	

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C/ RSS-247 Issue 1			
Standard Section	Test Item	Judgment	Remark
15.207/ RSS-Gen §8.8/RSS-247 §6.2	Conducted Emission	PASS	
15.247 (a)(2)/ RSS-247§A5.2 (1)	6dB Bandwidth	PASS	
15.247 (b)/ RSS-247 §5.4 (4)	Peak Output Power	PASS	
15.247 (c)/ RSS-247 §A5.5	Radiated Spurious Emission	PASS	
15.247 (d)/ RSS-247 §A5.2 (2)	Power Spectral Density	PASS	
15.205/ RSS-247 §A5.5	Band Edge Emission	PASS	
15.203/ RSS-Gen §7.1.2	Antenna Requirement	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

1.1 TEST FACILITY

NTEK Testing Technology Co., Ltd

Add.:1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.

FCC Registration No.:238937; IC Registration No.:9270A-1

CNAS Registration No.:L5516

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power,conducted	$\pm 0.16\text{dB}$
3	Spurious emissions,conducted	$\pm 0.21\text{dB}$
4	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	ScreenBeam Pro Enterprise Edition	
Trade Name	Actiontec	
Model Name	SBWD950A	
Product Description	The EUT is a ScreenBeam Pro Enterprise Edition	
	Operation Frequency:	802.11b/g/n(20MHz):2412~2462 MHz 802.11n(40MHz):2422~2452 MHz 802.11a/ac/n(20M/40M): 5725 ~ 5850 MHz
	Modulation Type:	802.11b : DSSS (CCK, QPSK, DBPSK) 802.11a/g/n (HT20/HT40) : OFDM (64QAM, 16QAM, QPSK, BPSK) 802.11ac:OFDM (QPSK/BPSK/16QAM/64QAM/256QAM)
	Bit Rate of Transmitter	802.11b:11/5.5/2/1 Mbps 802.11a/g:54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: at most 433.3 Mbps
	Number Of Channel	802.11b/g/n(20MHz):11CH 802.11n(40MHz):7CH 802.11a/n/ac(20MHz):5CH 802.11a/n/ac(40MHz):3CH 802.11ac(80MHz):1CH
	Antenna Designation:	Please see Note 3.
	Antenna Gain (dBi)	Please see Note 3.
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.	
Channel List	Please refer to the Note 2.	
Ratings	DC 5.0V,2.0A	
Adapter	Adapter 1 Mode: WA-10P05FU Input: 100-240V~, 50/60Hz, 0.3A MAX Output: 5.0V $\overline{\text{---}}$, 2.0A Adapter 2 Mode: KSAS0120500200HU Input: 100-240V~, 50/60Hz, 0.4A Output: 5.0V $\overline{\text{---}}$, 2.0A	
Connecting I/O Port(s)	Please refer to the User's Manual	
Radio firmware Version	RTL8192DU:v4.0.0_756324.20150428 RTL8812AU-VS:v4.2.0-aei-20150409; BT: 1.0.0.0	
Radio software Version	Wifi: 9.2.4.102 ; BT: 1.0.0.0	
Test program power setting	44	
Product Hardware Version	2A	
Product Software Version	9.2.4.102	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2. 2.4GHz

Channel List for 802.11b/g/n(20 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452	-	-

Channel List for 802.11n(40MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
03	2422	06	2437	09	2452	-	-
04	2427	07	2442	-	-	-	-
05	2432	08	2447	-	-	-	-

5GHz

802.11a/ ac/n 20 MHz Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	153	5765	157	5785	161	5805
165	5825	-	-	-	-	-	-

802.11ac/n 40MHz Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	155	5775	159	5795	-	-

802.11ac 80MHz Carrier Frequency Channel	
Channel	Frequency (MHz)
155	5775

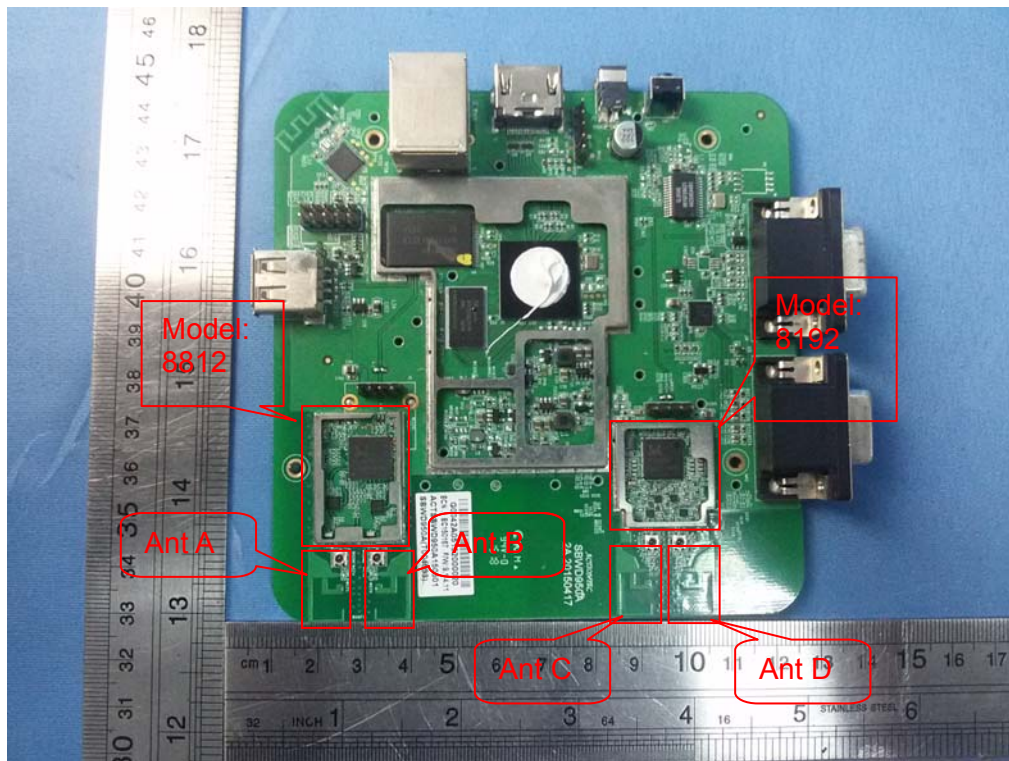
3.

Table for Filed Antenna for RF Model 8812

Ant.	Brand	Model Name	Antenna Type	Gain (dBi)	NOTE
A/B	N/A	N/A	PCB antenna	2.4G:2.91	Wifi Antenna
	N/A	N/A	PCB antenna	5G:5.9	Wifi Antenna

Table for Filed Antenna for RF Model 8192

Ant.	Brand	Model Name	Antenna Type	Gain (dBi)	NOTE
C/D	N/A	N/A	PCB antenna	2.4G:3.47	Wifi Antenna
	N/A	N/A	PCB antenna	5G:5.37	Wifi Antenna



The Control software(tool_WIFI.exe) can control Model 8812/8192 antenna A B,C,D ,
For 2.4GHz mode, antenna A B C D are transmitting, antenna A and B or antenna C and D
May simultaneously transmit.
And the data is recorded for radiated emission and band edge.

For 5GHz mode,antenna A B C D are transmitting, antenna A and B or antenna C and D
May simultaneously transmit.
And the data is recorded for radiated emission, and band edge.

Model 8812 For MIMO mode: Directional gain= $G_{ANT} + 10\log(N)$ dbi =5.92dbi in 2.4GHz
Directional gain= $G_{ANT} + 10\log(N)$ dbi =8.91dbi in 5GHz
802.11a/b/g/n/ac 2.4GHz & 5GHz has MIMO mode.

Model 8192 For MIMO mode: Directional gain= $G_{ANT} + 10\log(N)$ dbi =6.48dbi in 2.4GHz
Directional gain= $G_{ANT} + 10\log(N)$ dbi =8.38dbi in 5GHz
802.11a/b/g/n/ac 2.4GHz & 5GHz has MIMO mode.

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n20 CH1/ CH6/ CH11
Mode 4	802.11n40 CH3/ CH6/ CH9
Mode 5	Link Mode
Mode 6	802.11a /n 20 CH149/ CH157/ CH 165
Mode 7	802.11n40 CH 151 / CH 159
Mode 8	802.11AC 20 MHz CH149/ CH157/ CH 165
Mode 9	802.11AC40 MHz CH 151 / CH 159
Mode 10	802.11AC80 MHz CH 155

For Conducted Emission	
Final Test Mode	Description
Mode 5	Link Mode

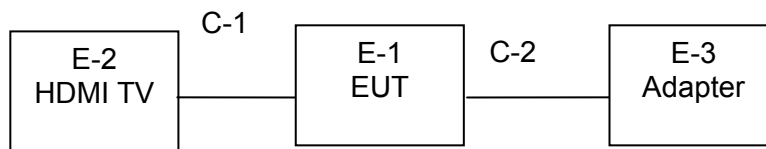
For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n20 CH1/ CH6/ CH11
Mode 4	802.11n40 CH3/ CH6/ CH 9
Mode 5	Link Mode
Mode 6	802.11a /n20 CH149/ CH157/ CH165
Mode 7	802.11n40 CH151 / CH159
Mode 8	802.11AC 20 MHz CH149/ CH157/ CH 165
Mode 9	802.11AC40 MHz CH 151 / CH 159
Mode 10	802.11AC80 MHz CH 155

Note:

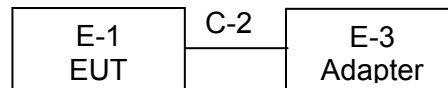
- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission Test



Radiated Emission Test



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No.	Series No.	Note
E-1	ScreenBeam Pro Enterprise Edition	Actiontec	SBWD950A	N/A	EUT
E-2	TV	SONY	KDL-24EX520	N/A	
E-3	Adapter 1	Actiontec	WA-10P05FU	N/A	
E-3	Adapter 2	Actiontec	KSAS0120500200HU	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	100cm	
C-2	NO	NO	80cm	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2015.07.06	2016.07.05	1 year
2	Test Receiver	R&S	ESPI	101318	2015.06.06	2016.06.05	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2015.07.06	2016.07.05	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2015.06.06	2016.06.05	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2015.06.06	2016.06.05	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2015.07.06	2016.07.05	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2015.07.06	2016.07.05	1 year
8	Amplifier	EM	EM-30180	060538	2014.12.22	2015.12.21	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2015.06.06	2016.06.05	1 year
10	Power Meter	R&S	NRVS	100696	2015.07.06	2016.07.05	1 year
11	Power Sensor	R&S	URV5-Z4	0395.1619.05	2015.07.06	2016.07.05	1 year

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2014.07.06	2015.07.05	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2014.07.06	2015.07.05	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2014.07.06	2015.07.05	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2014.07.06	2015.07.05	1 year
10	Power Meter	R&S	NRVS	100696	2014.07.06	2015.07.05	1 year
11	Power Sensor	R&S	URV5-Z4	0395.1619.05	2014.07.06	2015.07.05	1 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2015.06.06	2016.06.05	1 year
2	LISN	R&S	ENV216	101313	2014.08.24	2015.08.23	1 year
3	LISN	EMCO	3816/2	00042990	2015.06.06	2016.06.05	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2015.06.06	2016.06.05	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2015.06.06	2016.06.05	1 year
6	Absorbing clamp	R&S	MOS-21	100423	2015.06.06	2016.06.05	1 year

1	Attenuation	MCE	24-10-34	BN9258	2015.06.06	2016.06.05	1 year
---	-------------	-----	----------	--------	------------	------------	--------

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC/ RSS-247
0.50 -5.0	73.00	60.00	56.00	46.00	FCC/ RSS-247
5.0 -30.0	73.00	60.00	60.00	50.00	FCC/ RSS-247

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

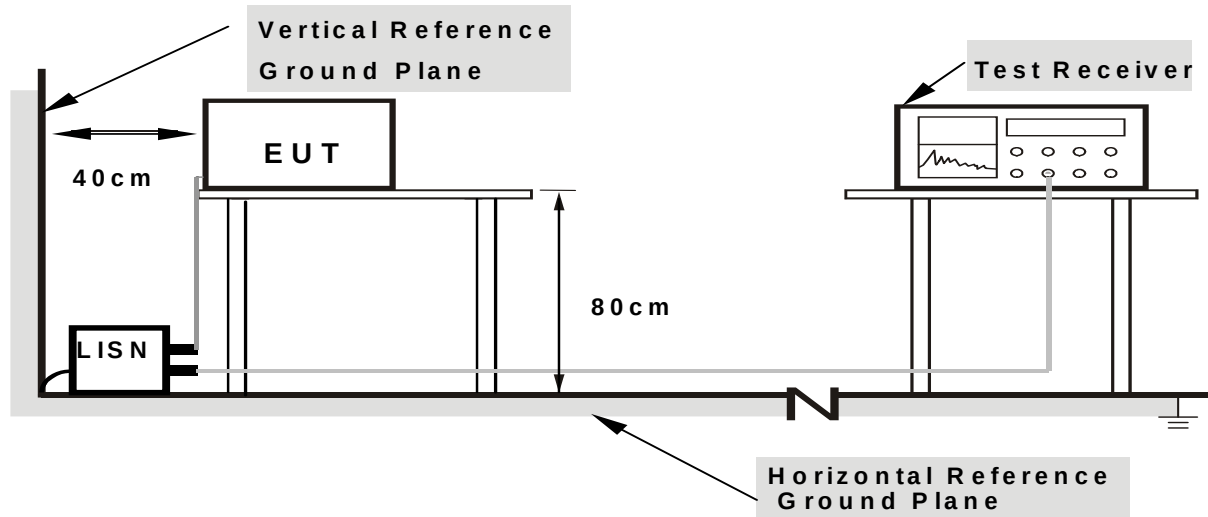
3.1.2 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN .

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

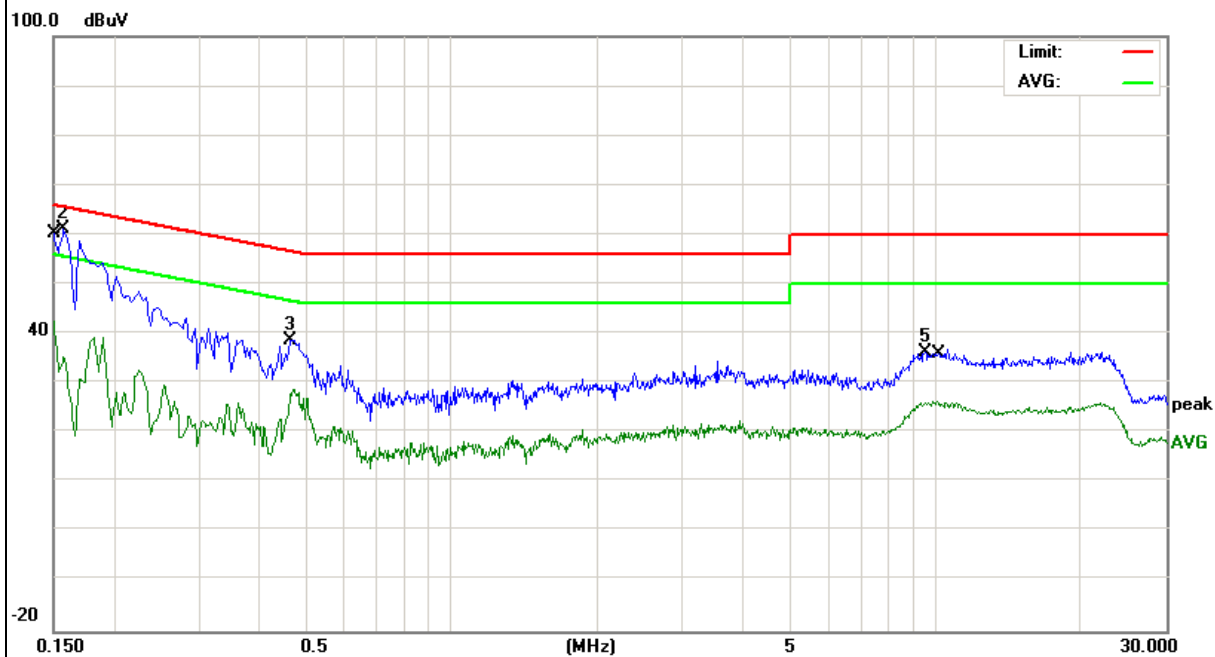
3.1.6 TEST RESULTS

EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V From adapter AC120V/60Hz	Test Mode :	Mode 5(2.4G) -Adapter 1

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1500	31.20	11.49	42.69	55.99	-13.30	AVG
0.1580	49.67	11.36	61.03	65.56	-4.53	QP
0.4660	28.11	10.62	38.73	56.58	-17.85	QP
0.4700	18.02	10.62	28.64	46.51	-17.87	AVG
9.5180	25.56	10.83	36.39	60.00	-23.61	QP
10.1140	15.41	10.84	26.25	50.00	-23.75	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

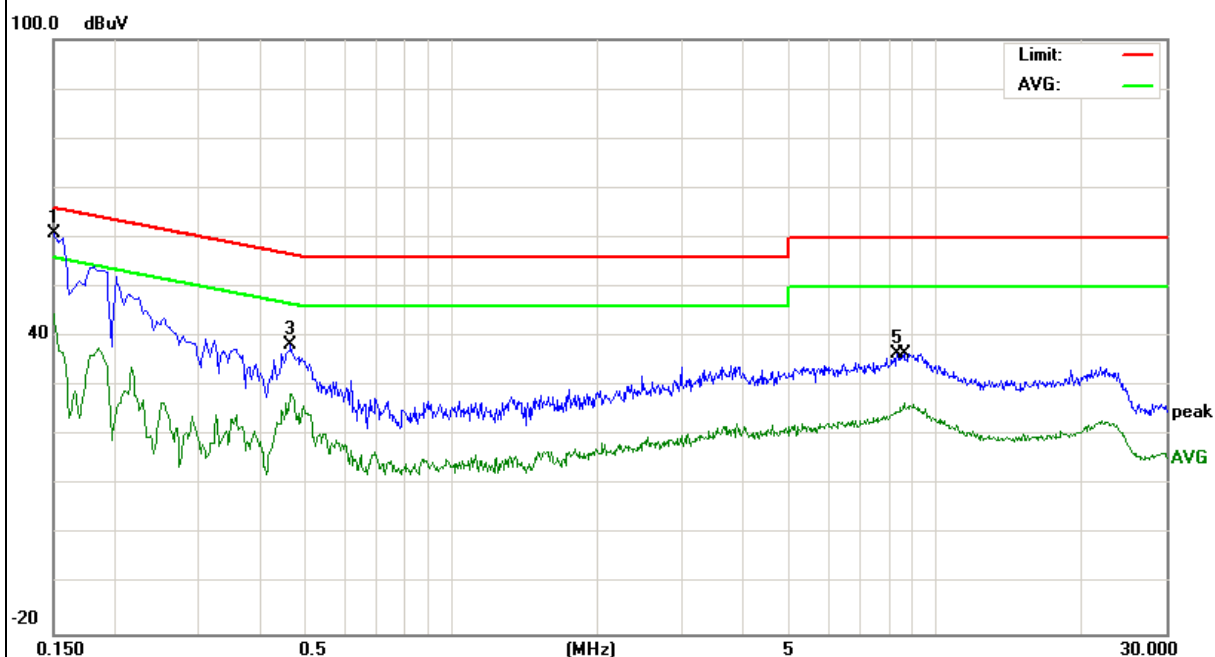


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V From adapter AC120V/60Hz	Test Mode :	Mode 5(2.4G) -Adapter 1

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1500	49.25	11.63	60.88	65.99	-5.11	QP
0.1500	32.96	11.63	44.59	55.99	-11.40	AVG
0.4660	27.60	10.61	38.21	56.58	-18.37	QP
0.4660	17.96	10.61	28.57	46.58	-18.01	AVG
8.3300	25.81	10.78	36.59	60.00	-23.41	QP
8.5940	15.80	10.78	26.58	50.00	-23.42	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

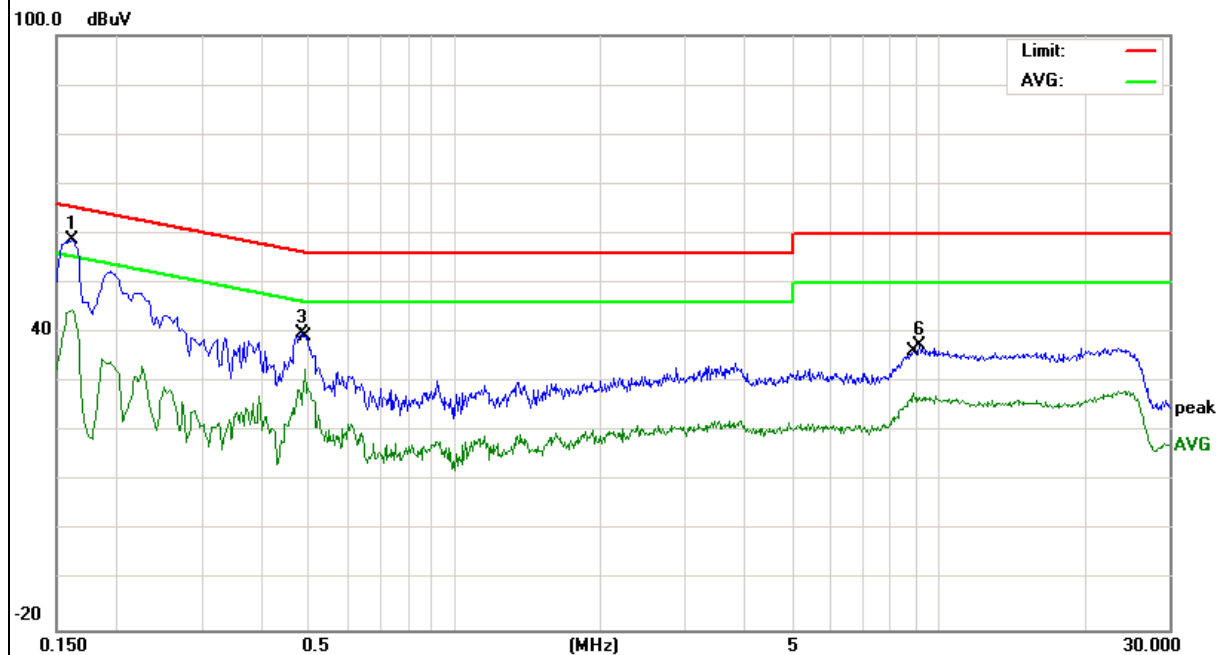


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V From adapter AC240V/60Hz	Test Mode :	Mode 5(2.4G) -Adapter 1

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1620	47.35	11.29	58.64	65.36	-6.72	QP
0.1620	33.38	11.29	44.67	55.36	-10.69	AVG
0.4820	29.33	10.60	39.93	56.30	-16.37	QP
0.4900	21.97	10.60	32.57	46.17	-13.60	AVG
8.8740	16.91	10.80	27.71	50.00	-22.29	AVG
9.1260	26.58	10.81	37.39	60.00	-22.61	QP

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

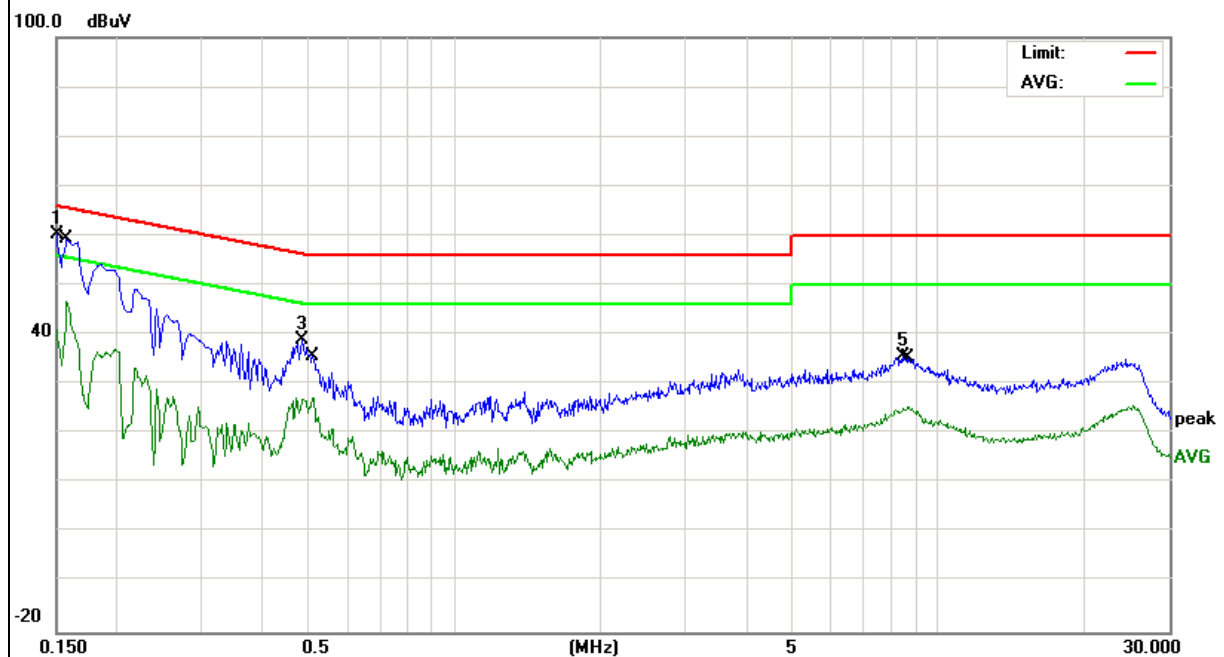


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V From adapter AC240V/60Hz	Test Mode :	Mode 5(2.4G) -Adapter 1

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1500	48.54	11.63	60.17	65.99	-5.82	QP
0.1580	35.21	11.54	46.75	55.56	-8.81	AVG
0.4860	28.46	10.60	39.06	56.24	-17.18	QP
0.5100	16.71	10.58	27.29	46.00	-18.71	AVG
8.4340	24.87	10.78	35.65	60.00	-24.35	QP
8.7100	14.70	10.78	25.48	50.00	-24.52	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

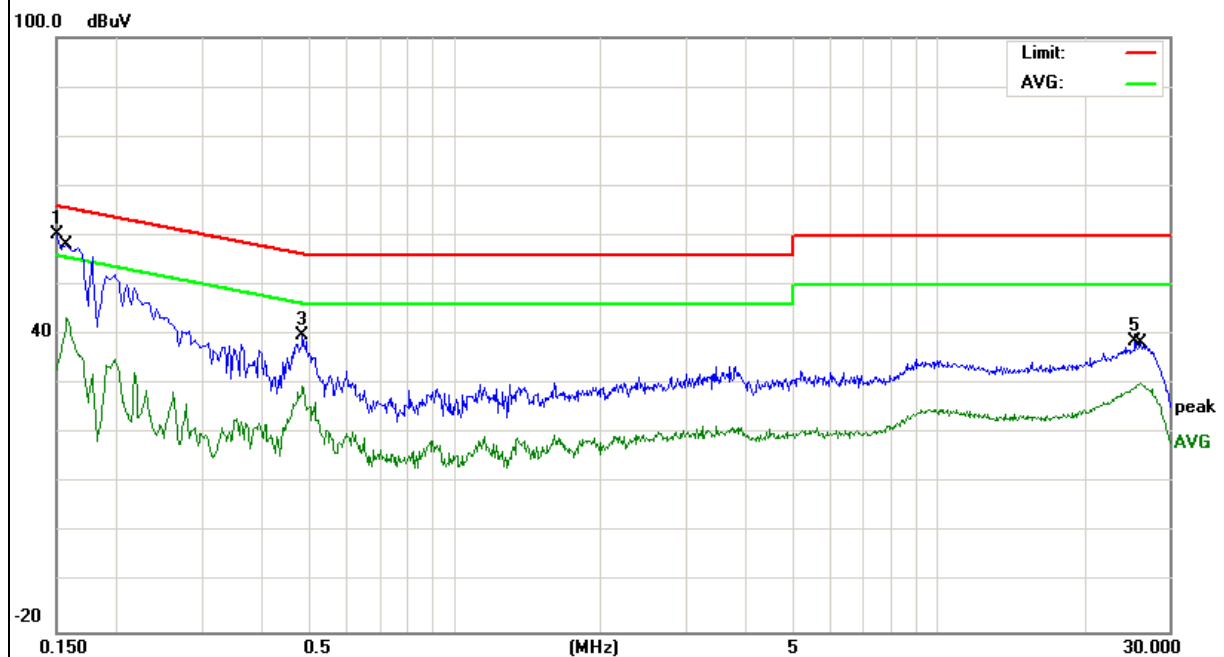


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V From adapter AC120V/60Hz	Test Mode :	Mode 5(5G) -Adapter 1

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1500	48.76	11.49	60.25	65.99	-5.74	QP
0.1580	32.06	11.36	43.42	55.56	-12.14	AVG
0.4860	29.11	10.60	39.71	56.24	-16.53	QP
0.4860	19.12	10.60	29.72	46.24	-16.52	AVG
25.5100	27.48	11.14	38.62	60.00	-21.38	QP
26.1580	19.09	11.14	30.23	50.00	-19.77	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

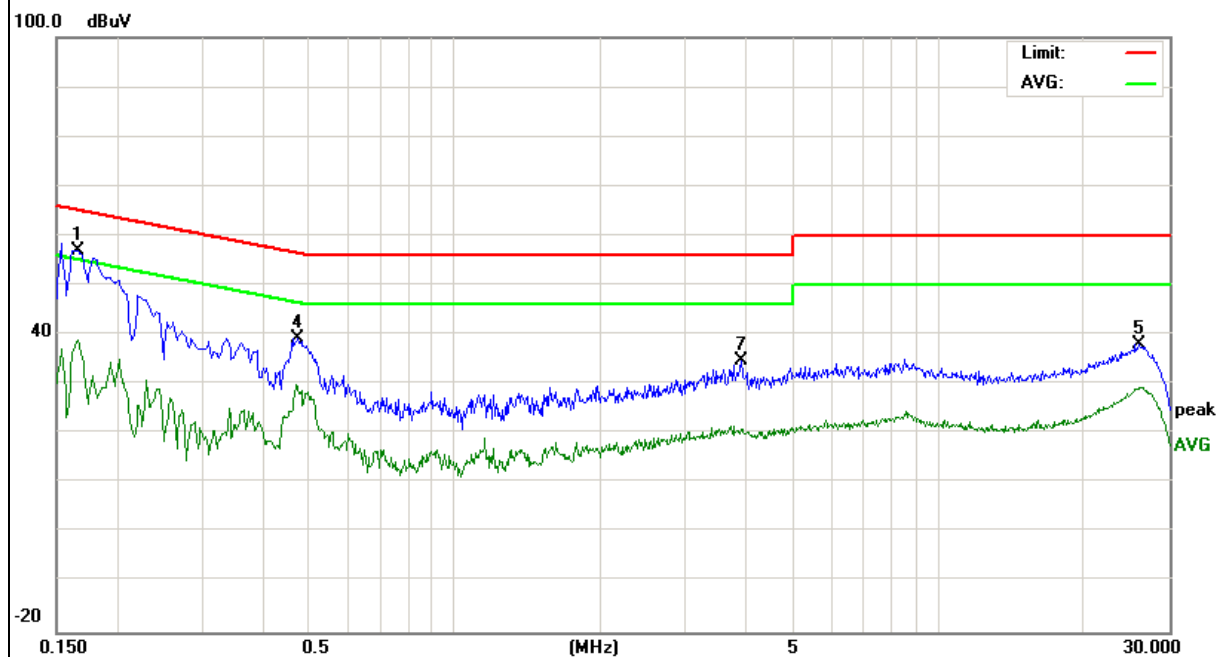


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V From adapter AC120V/60Hz	Test Mode :	Mode 5(5G) -Adapter 1

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1660	45.39	11.46	56.85	65.15	-8.30	QP
0.1660	27.60	11.46	39.06	55.15	-16.09	AVG
0.4700	19.23	10.61	29.84	46.51	-16.67	AVG
0.4740	28.76	10.61	39.37	56.44	-17.07	QP
26.0180	27.00	11.16	38.16	60.00	-21.84	QP
26.2580	18.18	11.16	29.34	50.00	-20.66	AVG
3.9140	24.04	10.59	34.63	56.00	-21.37	QP

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

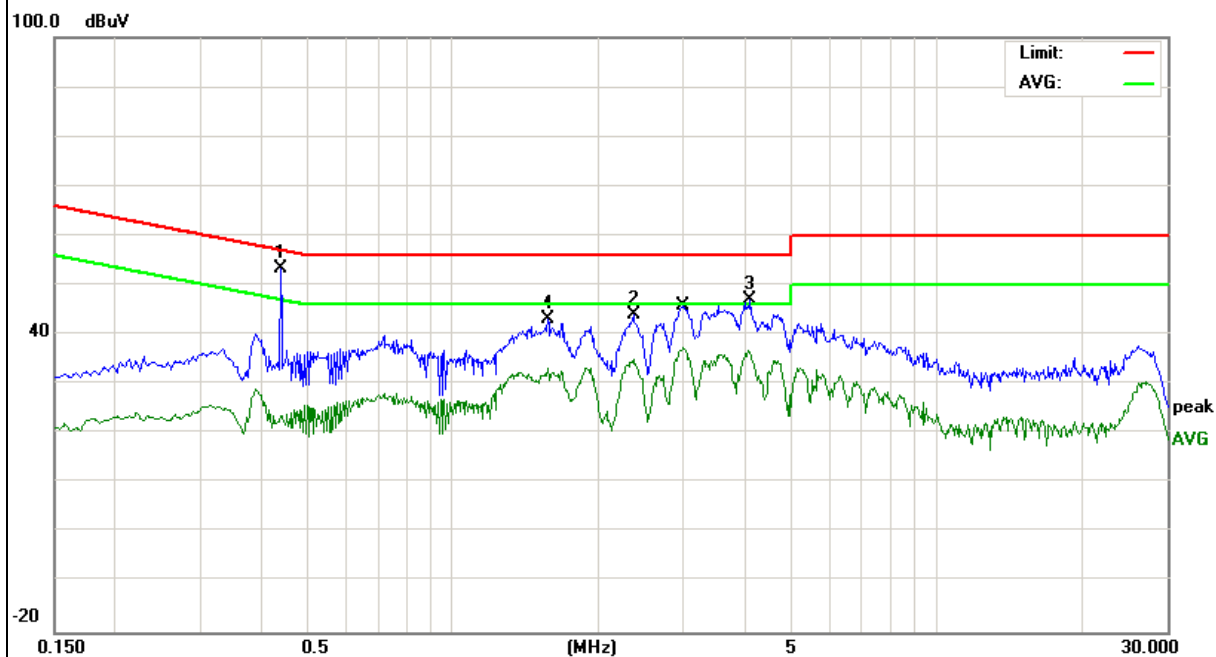


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V From adapter AC240V/60Hz	Test Mode :	Mode 5(5G) -Adapter 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.4420	43.75	9.53	53.28	57.02	-3.74	QP
2.3700	34.51	9.66	44.17	56.00	-11.83	QP
4.1299	37.43	9.70	47.13	56.00	-8.87	QP
1.5740	33.35	9.68	43.03	56.00	-12.97	QP
3.0020	27.78	9.67	37.45	46.00	-8.55	AVG
4.0859	27.26	9.70	36.96	46.00	-9.04	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

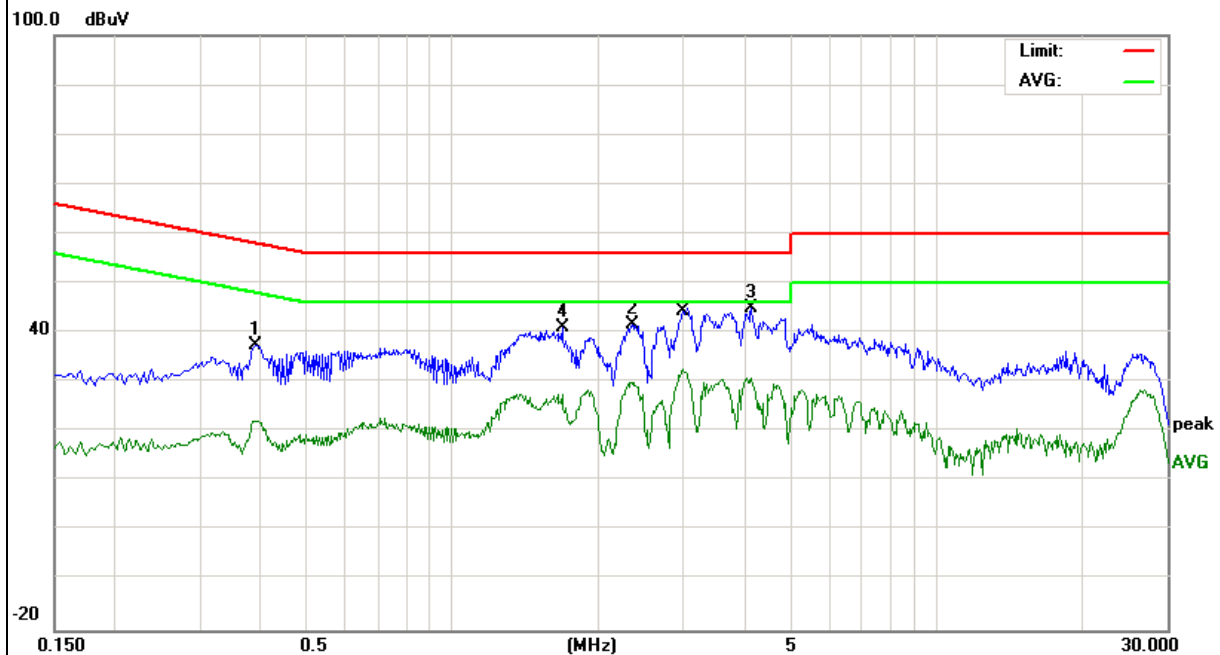


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V From adapter AC240V/60Hz	Test Mode :	Mode 5(5G) -Adapter 1

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.3900	27.90	9.64	37.54	58.06	-20.52	QP
2.3580	32.25	9.53	41.78	56.00	-14.22	QP
4.1379	35.55	9.51	45.06	56.00	-10.94	QP
1.6860	31.38	9.56	40.94	56.00	-15.06	QP
0.3860	12.57	9.63	22.20	48.15	-25.95	AVG
2.9900	23.10	9.52	32.62	46.00	-13.38	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

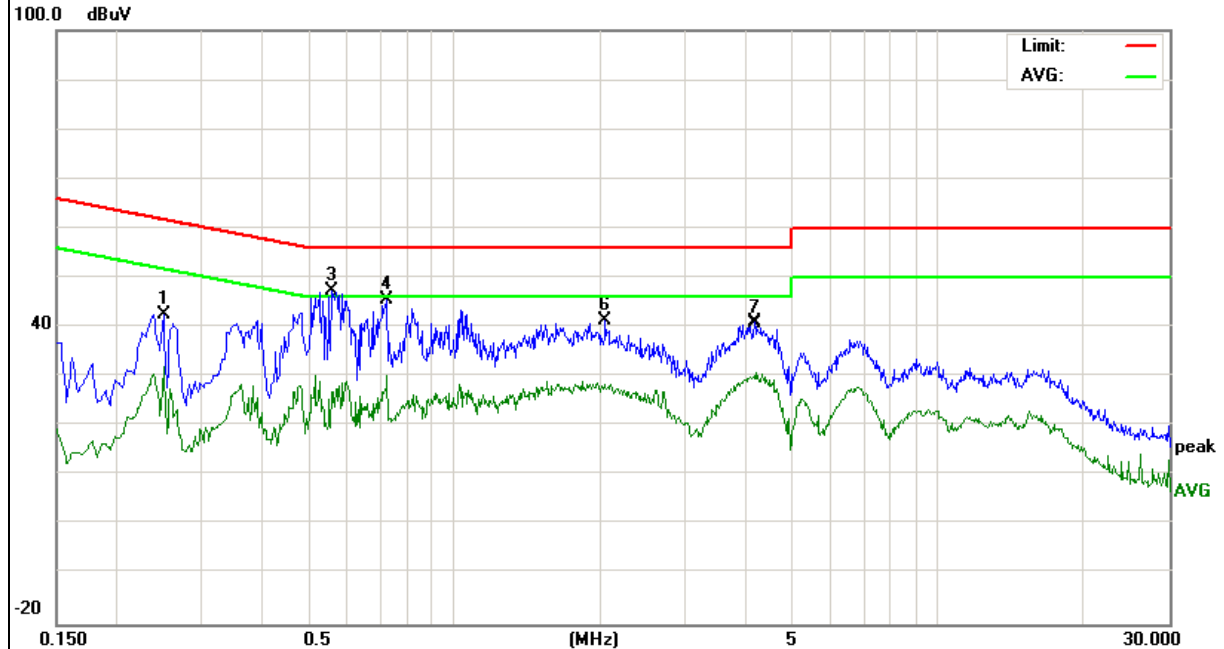


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V From adapter AC120V/60Hz	Test Mode :	Mode 5(2.4G)-Adapter 2

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.2500	33.02	9.67	42.69	61.75	-19.06	QP
0.2500	22.42	9.67	32.09	51.75	-19.66	AVG
0.5580	37.56	9.78	47.34	56.00	-8.66	QP
0.7260	35.76	9.77	45.53	56.00	-10.47	QP
0.7260	20.42	9.77	30.19	46.00	-15.81	AVG
2.0460	31.68	9.65	41.33	56.00	-14.67	QP
4.1579	31.20	9.70	40.90	56.00	-15.10	QP
4.1898	21.20	9.70	30.90	46.00	-15.10	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

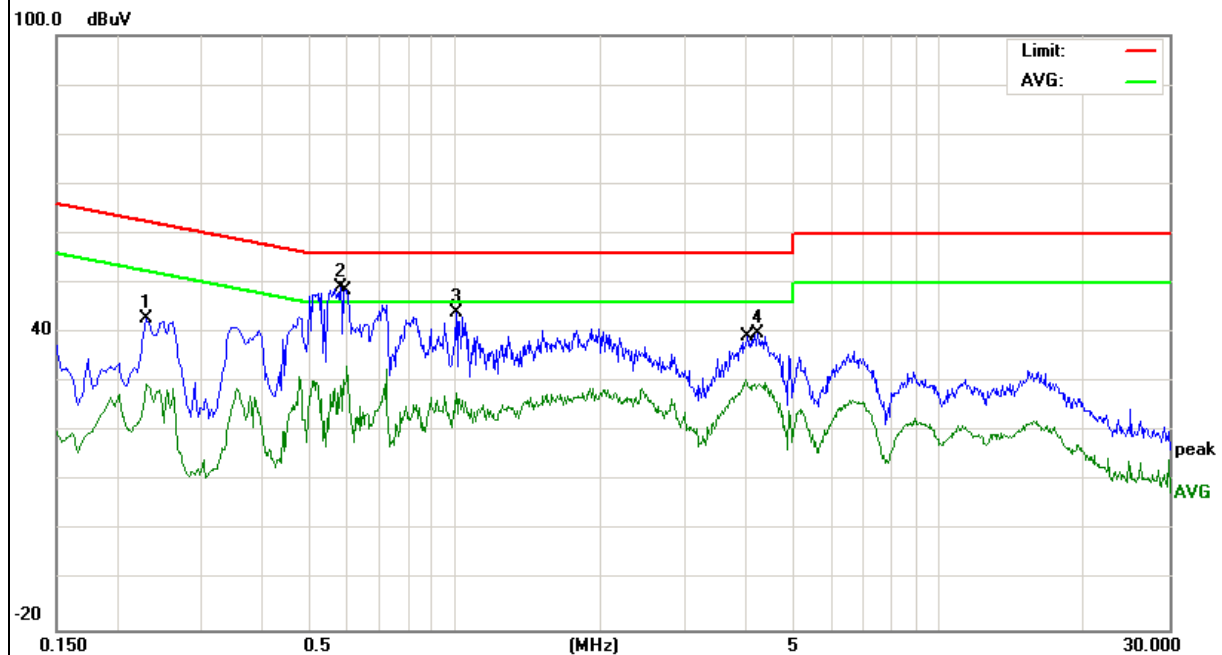


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V From adapter AC120V/60Hz	Test Mode :	Mode 5(2.4G)-Adapter 2

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.2300	33.12	9.61	42.73	62.45	-19.72	QP
0.5820	39.36	9.66	49.02	56.00	-6.98	QP
1.0100	34.58	9.61	44.19	56.00	-11.81	QP
4.2299	30.32	9.51	39.83	56.00	-16.17	QP
0.2300	19.92	9.61	29.53	52.45	-22.92	AVG
0.5980	23.60	9.66	33.26	46.00	-12.74	AVG
4.0060	20.96	9.51	30.47	46.00	-15.53	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

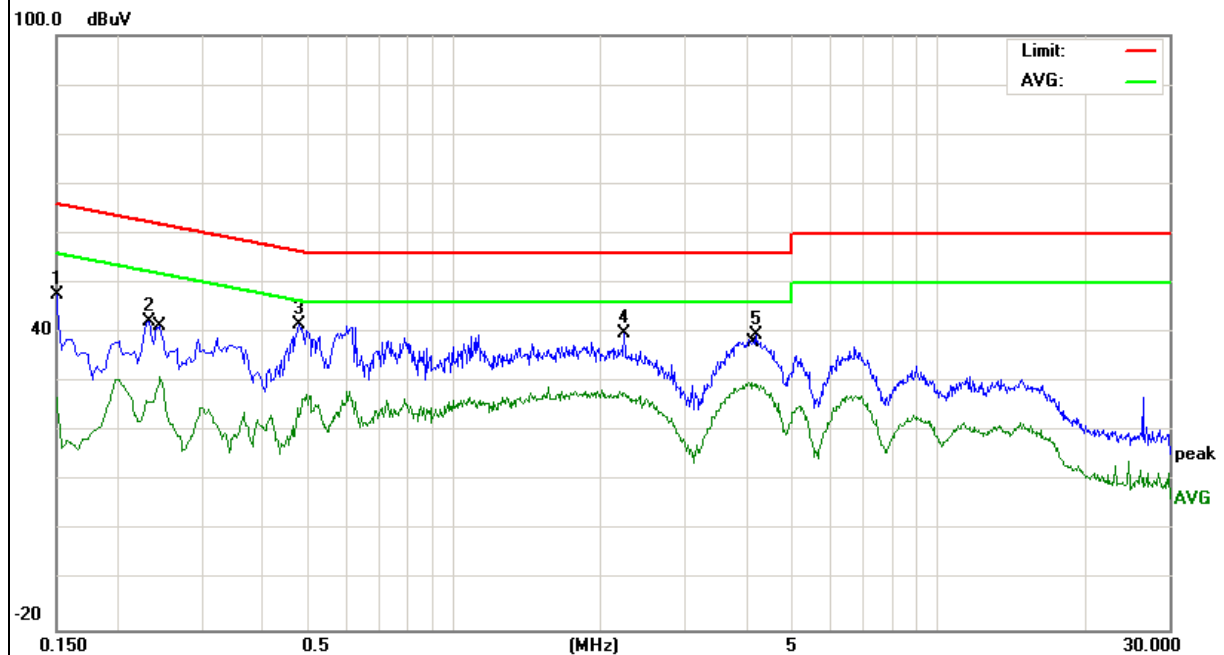


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V From adapter AC240V/60Hz	Test Mode :	Mode 5(2.4G)-Adapter 2

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1499	38.10	9.63	47.73	66.00	-18.27	QP
0.2340	32.58	9.65	42.23	62.30	-20.07	QP
0.4780	31.83	9.68	41.51	56.37	-14.86	QP
2.2460	30.13	9.65	39.78	56.00	-16.22	QP
4.1859	29.90	9.70	39.60	56.00	-16.40	QP
0.2460	21.53	9.67	31.20	51.89	-20.69	AVG
4.1139	20.32	9.70	30.02	46.00	-15.98	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

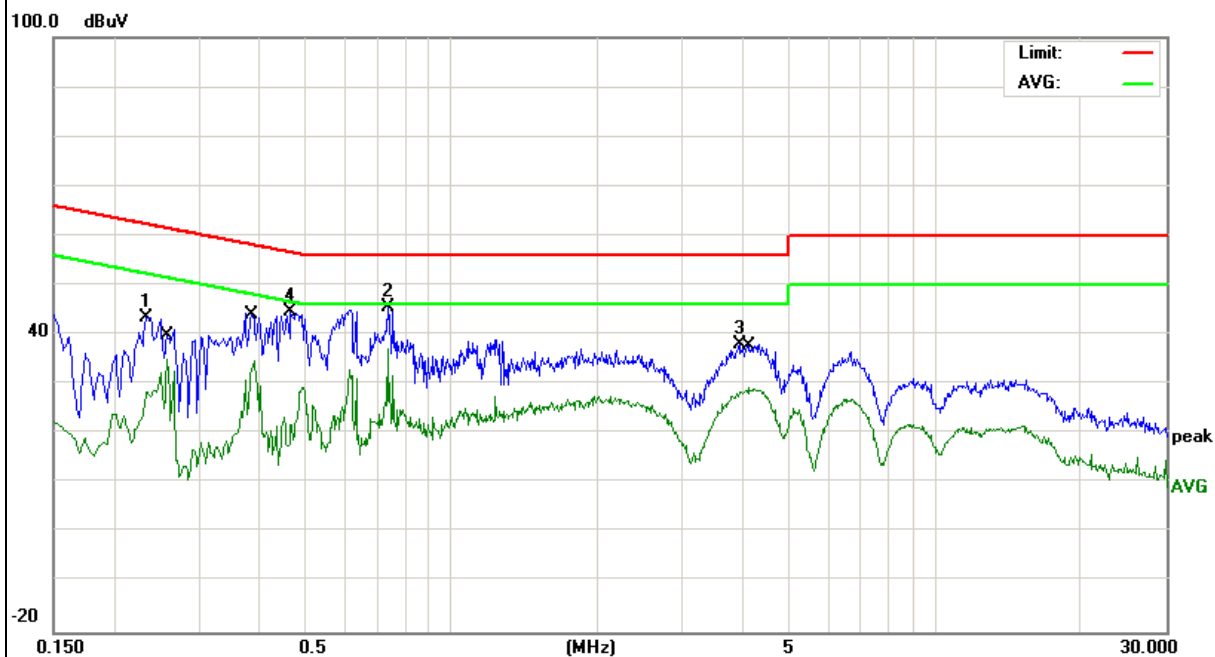


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V From adapter AC240V/60Hz	Test Mode :	Mode 5(2.4G)-Adapter 2

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.2340	33.90	9.61	43.51	62.30	-18.79	QP
0.7380	35.90	9.63	45.53	56.00	-10.47	QP
3.9300	28.68	9.51	38.19	56.00	-17.81	QP
0.4660	34.97	9.66	44.63	56.58	-11.95	QP
0.2580	25.55	9.62	35.17	51.49	-16.32	AVG
0.3899	25.24	9.64	34.88	48.06	-13.18	AVG
0.7380	27.58	9.63	37.21	46.00	-8.79	AVG
4.1179	19.79	9.51	29.30	46.00	-16.70	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

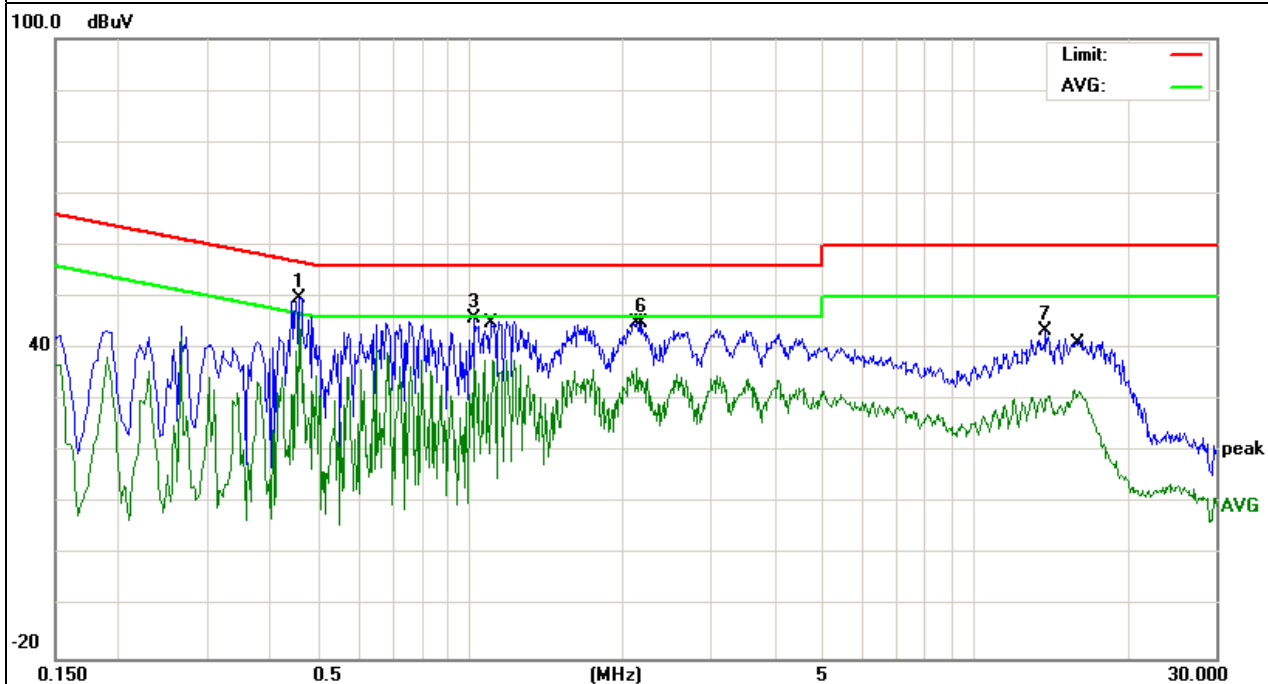


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V From adapter AC120V/60Hz	Test Mode :	Mode 5(5G)-Adapter 2

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.4580	40.37	9.51	49.88	56.73	-6.85	peak
0.4580	36.01	9.51	45.52	46.73	-1.21	AVG
1.0180	36.35	9.53	45.88	56.00	-10.12	peak
1.1060	28.32	9.53	37.85	46.00	-8.15	AVG
2.1340	26.63	9.55	36.18	46.00	-9.82	AVG
2.1700	35.31	9.55	44.86	56.00	-11.14	peak
13.8299	33.66	9.82	43.48	60.00	-16.52	peak
15.7979	22.01	9.91	31.92	50.00	-18.08	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

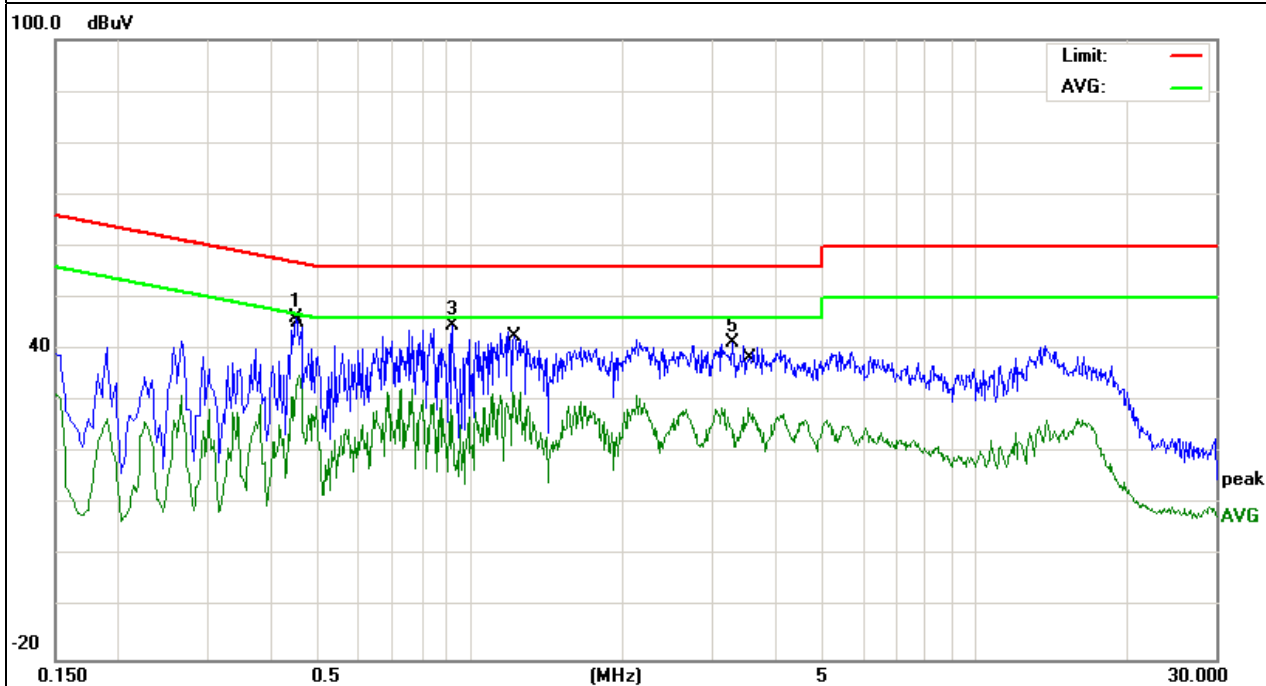


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V From adapter AC120V/60Hz	Test Mode :	Mode 5(5G)-Adapter 2

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.4500	36.55	9.51	46.06	56.87	-10.81	peak
0.4580	25.51	9.51	35.02	46.73	-11.71	AVG
0.9220	35.13	9.53	44.66	56.00	-11.34	peak
1.2100	22.18	9.53	31.71	46.00	-14.29	AVG
3.3020	31.80	9.58	41.38	56.00	-14.62	peak
3.5540	19.24	9.58	28.82	46.00	-17.18	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



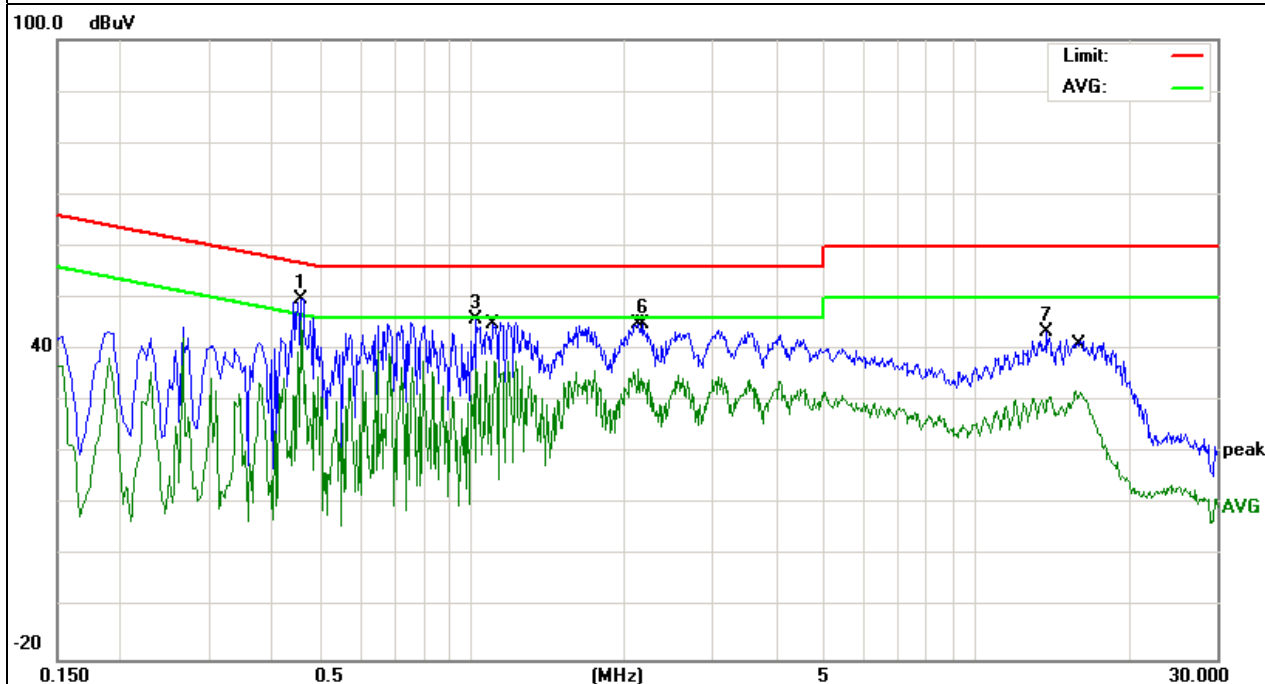
EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V From adapter AC240V/60Hz	Test Mode :	Mode 5(5G)-Adapter 2

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.4580	40.37	9.51	49.88	56.73	-6.85	peak
0.4580	36.01	9.51	45.52	46.73	-1.21	AVG
1.0180	36.35	9.53	45.88	56.00	-10.12	peak
1.1060	28.32	9.53	37.85	46.00	-8.15	AVG
2.1340	26.63	9.55	36.18	46.00	-9.82	AVG
2.1700	35.31	9.55	44.86	56.00	-11.14	peak
13.8299	33.66	9.82	43.48	60.00	-16.52	peak
15.7979	22.01	9.91	31.92	50.00	-18.08	AVG

Remark:

1. All readings are Quasi-Peak and Average values.

2. Factor = Insertion Loss + Cable Loss.

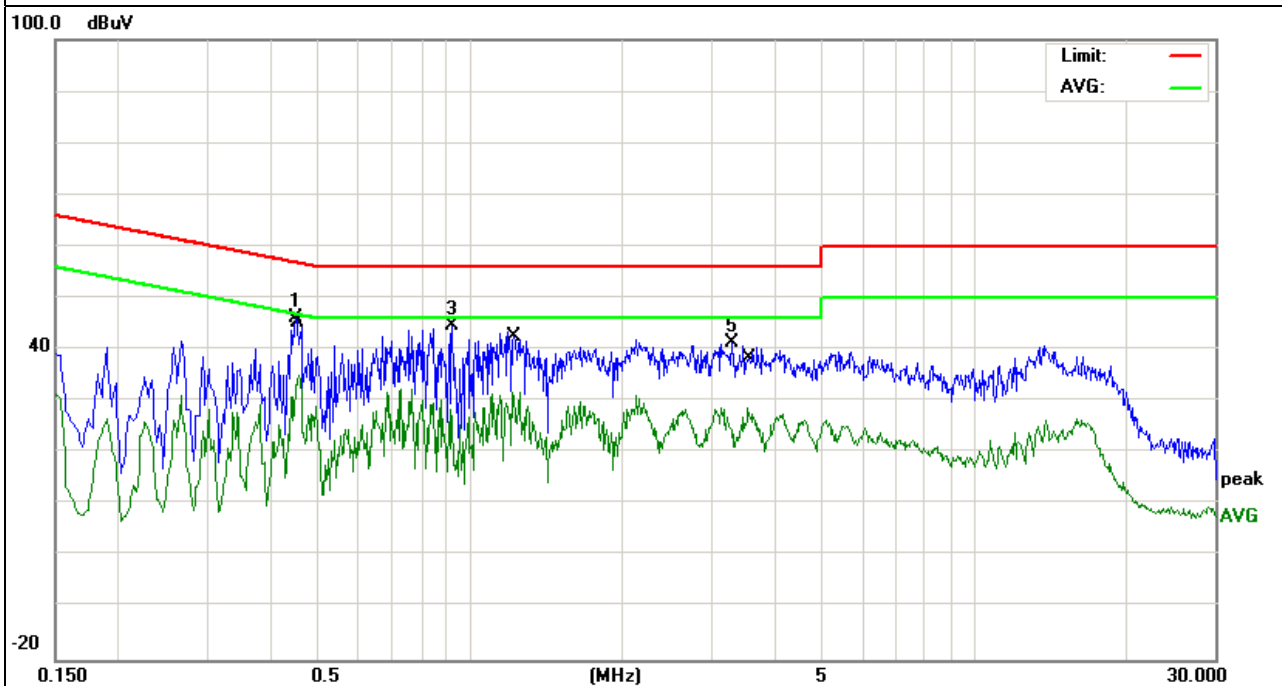


EUT :	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V From adapter AC240V/60Hz	Test Mode :	Mode 5(5G)-Adapter 2

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.4500	36.55	9.51	46.06	56.87	-10.81	peak
0.4580	25.51	9.51	35.02	46.73	-11.71	AVG
0.9220	35.13	9.53	44.66	56.00	-11.34	peak
1.2100	22.18	9.53	31.71	46.00	-14.29	AVG
3.3020	31.80	9.58	41.38	56.00	-14.62	peak
3.5540	19.24	9.58	28.82	46.00	-17.18	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a)/ RSS-247 §5.5, then the 15.209(a)/ RSS-Gen limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	dBuV/m@at 3M	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C/ RSS-Gen.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

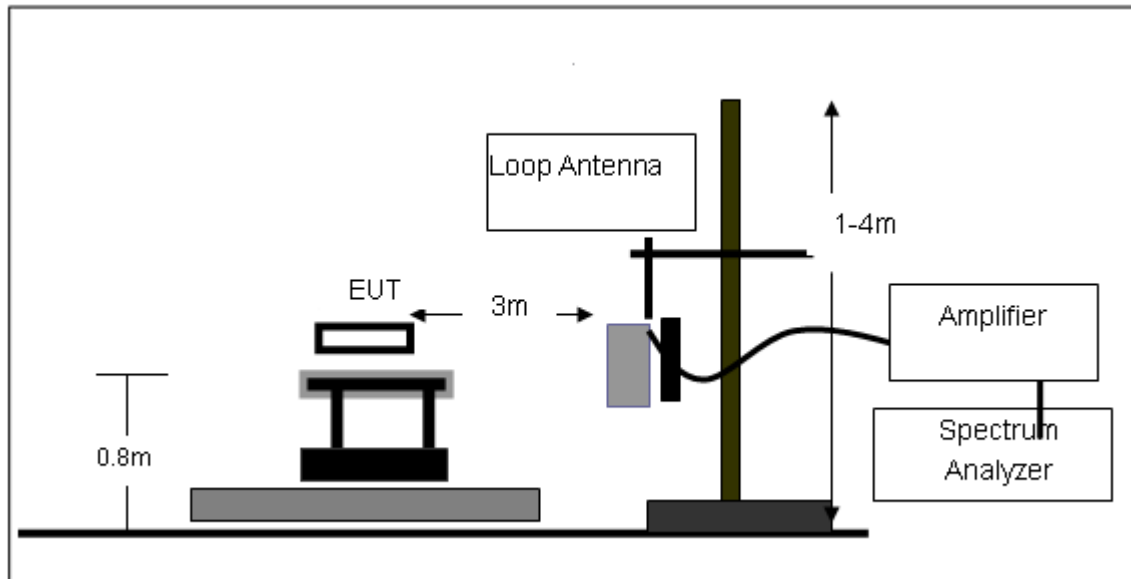
Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
	Peak	1 MHz	10 Hz

3.2.3 DEVIATION FROM TEST STANDARD

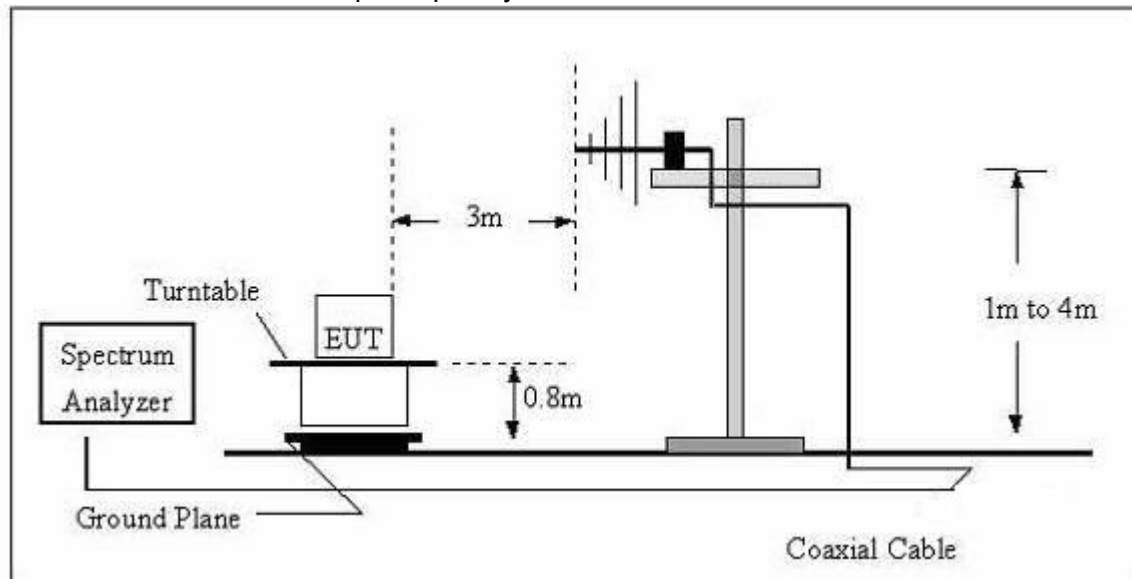
No deviation

3.2.4 TEST SETUP

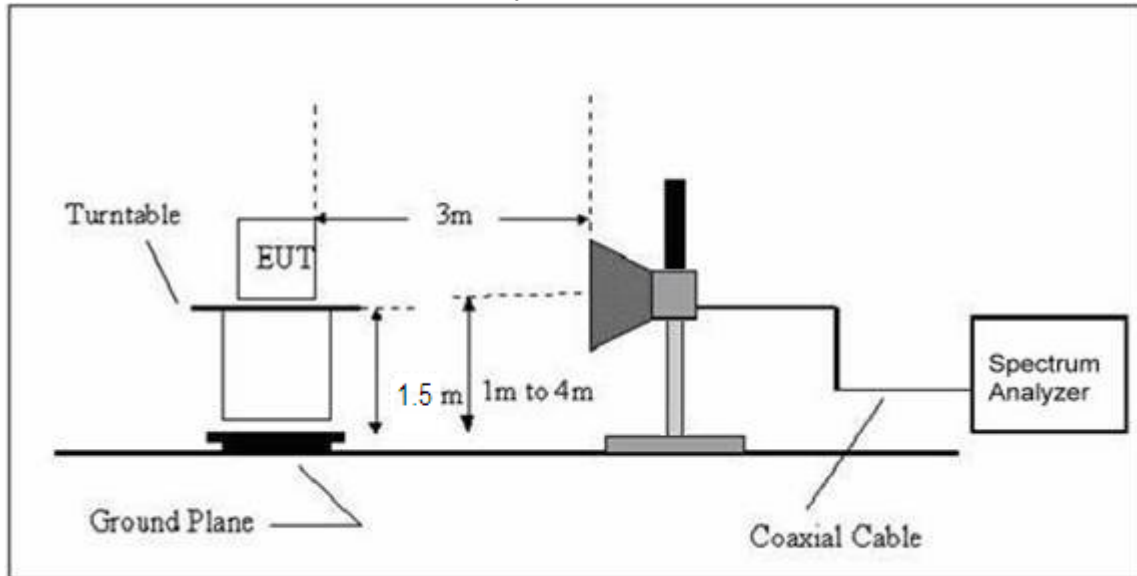
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)

EUT:	ScreenBeam Pro Enterprise Edition	Model Name. :	SBWD950A
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	N/A
--	--	--	--	N/A

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance/test distance})(\text{dB})$;

Limit line = specific limits(dBuv) + distance extrapolation factor.

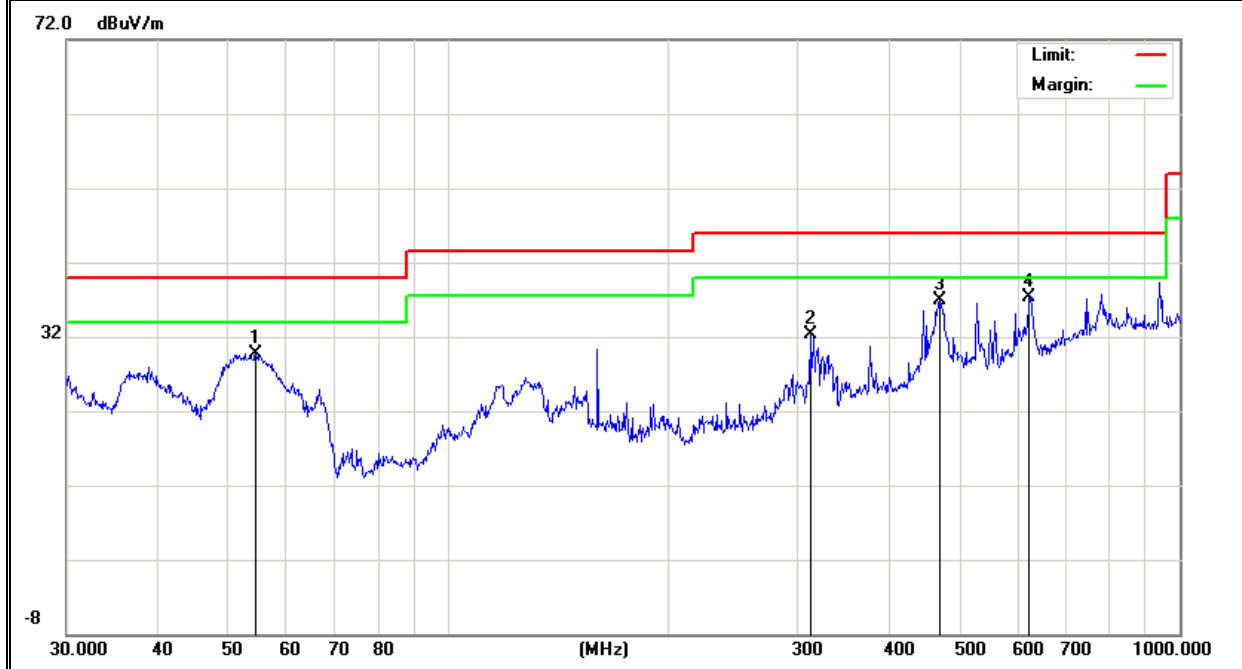
3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX (2.4G) -8812 module		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	54.4516	20.19	9.42	29.61	40.00	-10.39	QP
V	312.1794	17.57	14.66	32.23	46.00	-13.77	QP
V	470.5232	17.13	19.70	36.83	46.00	-9.17	QP
V	622.8900	14.41	22.87	37.28	46.00	-8.72	QP

Remark:

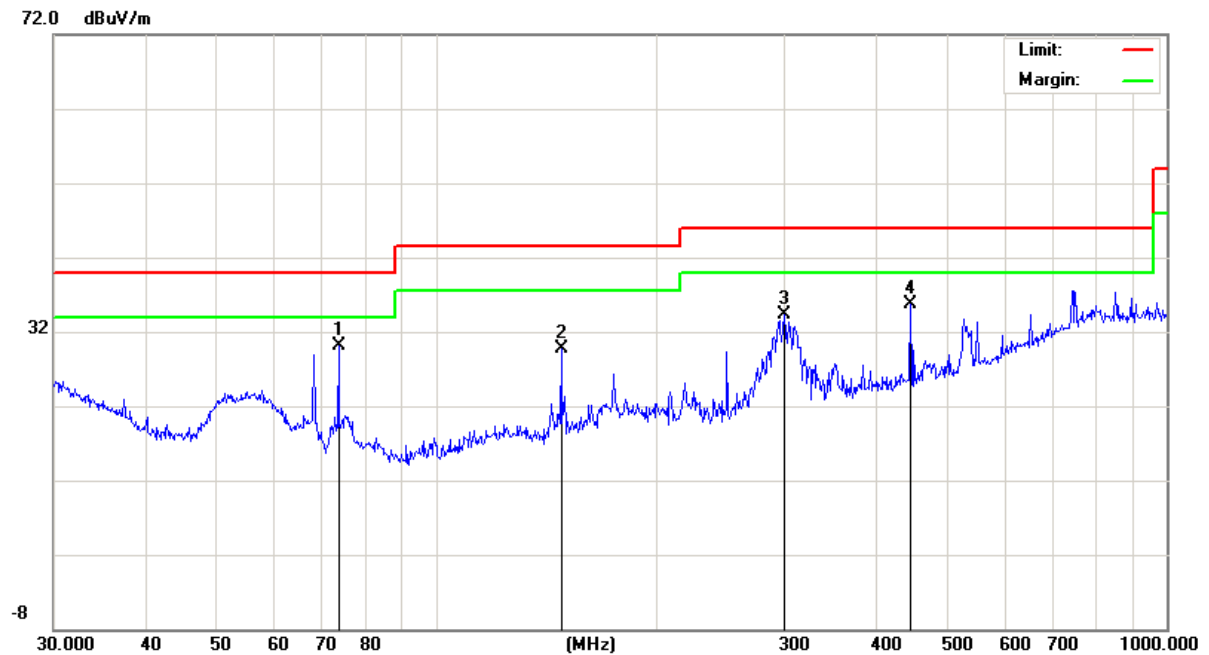
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	73.6170	24.51	5.66	30.17	40.00	-9.83	QP
H	148.4410	19.16	10.57	29.73	43.50	-13.77	QP
H	300.3672	20.19	14.16	34.35	46.00	-11.65	QP
H	446.4141	16.55	19.23	35.78	46.00	-10.22	QP

Remark:

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit

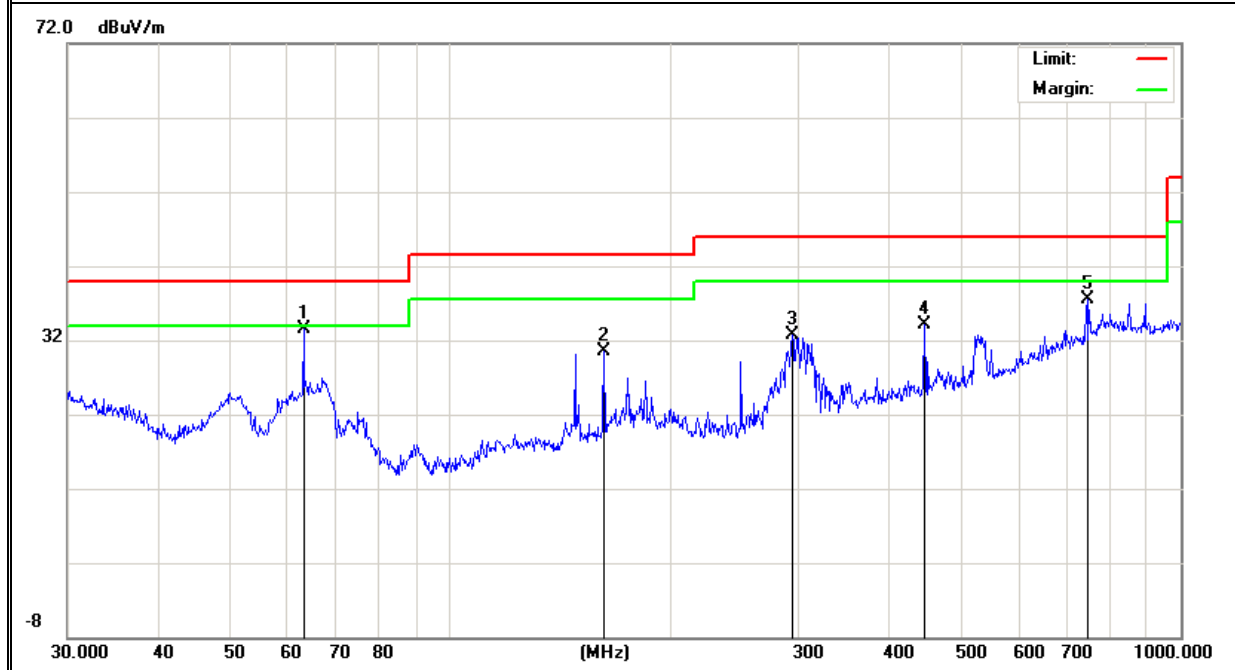


EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX (2.4G) -8192 module		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	63.0916	26.41	7.14	33.55	40.00	-6.45	QP
V	162.6106	19.98	10.50	30.48	43.50	-13.02	QP
V	294.1137	18.69	14.08	32.77	46.00	-13.23	QP
V	446.4141	14.81	19.23	34.04	46.00	-11.96	QP
V	744.8660	11.63	25.96	37.59	46.00	-8.41	QP

Remark:

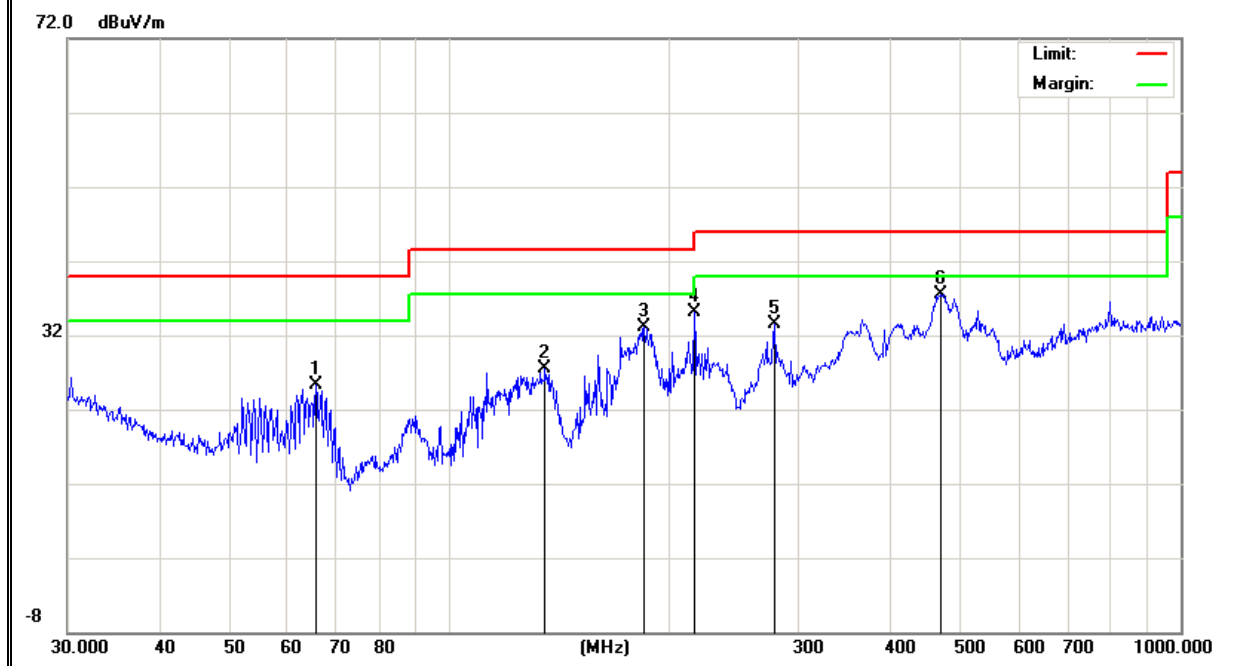
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	65.5725	18.78	6.57	25.35	40.00	-14.65	QP
H	135.0319	15.89	11.65	27.54	43.50	-15.96	QP
H	184.4898	22.36	10.66	33.02	43.50	-10.48	QP
H	216.0240	23.16	11.86	35.02	46.00	-10.98	QP
H	278.0668	19.67	13.90	33.57	46.00	-12.43	QP
H	470.5230	17.83	19.70	37.53	46.00	-8.47	QP

Remark:

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit

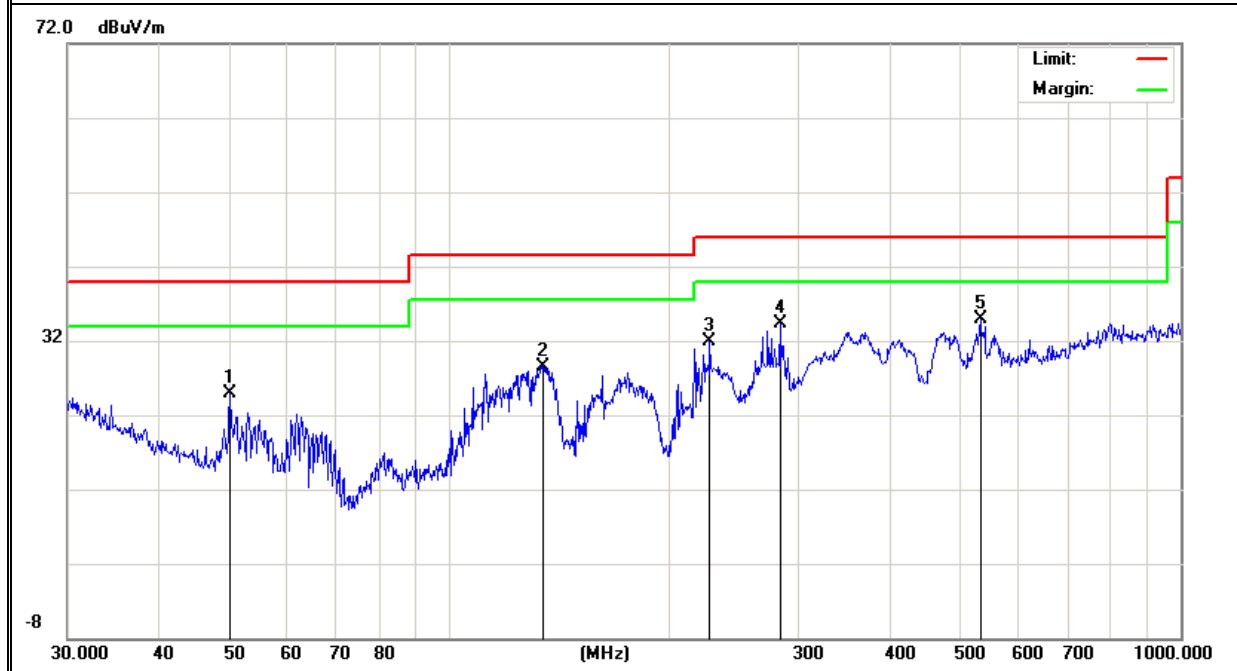


EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX(5.0G) -8812 module		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	50.0566	14.21	10.67	24.88	40.00	-15.12	QP
V	134.0882	16.90	11.70	28.60	43.50	-14.90	QP
V	226.8935	19.29	12.60	31.89	46.00	-14.11	QP
V	282.9852	20.30	13.96	34.26	46.00	-11.74	QP
V	531.9634	13.97	20.96	34.93	46.00	-11.07	QP

Remark:

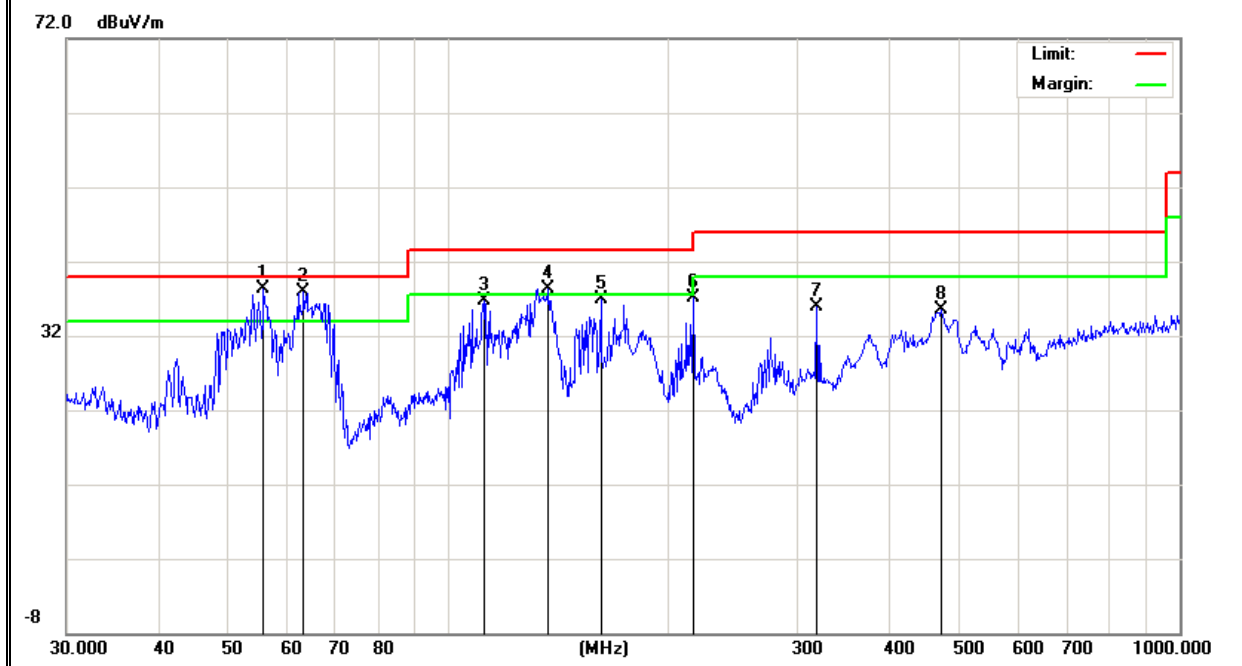
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	55.8046	29.31	9.03	38.34	40.00	-1.66	QP
H	63.3132	30.92	7.08	38.00	40.00	-2.00	QP
H	111.7378	26.39	10.32	36.71	43.50	-6.79	QP
H	136.9390	26.78	11.56	38.34	43.50	-5.16	QP
H	161.4740	26.31	10.50	36.81	43.50	-6.69	QP
H	216.0240	25.24	11.86	37.10	46.00	-8.90	QP
H	318.8170	20.93	14.94	35.87	46.00	-10.13	QP
H	472.1759	15.75	19.74	35.49	46.00	-10.51	QP

Remark:

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit

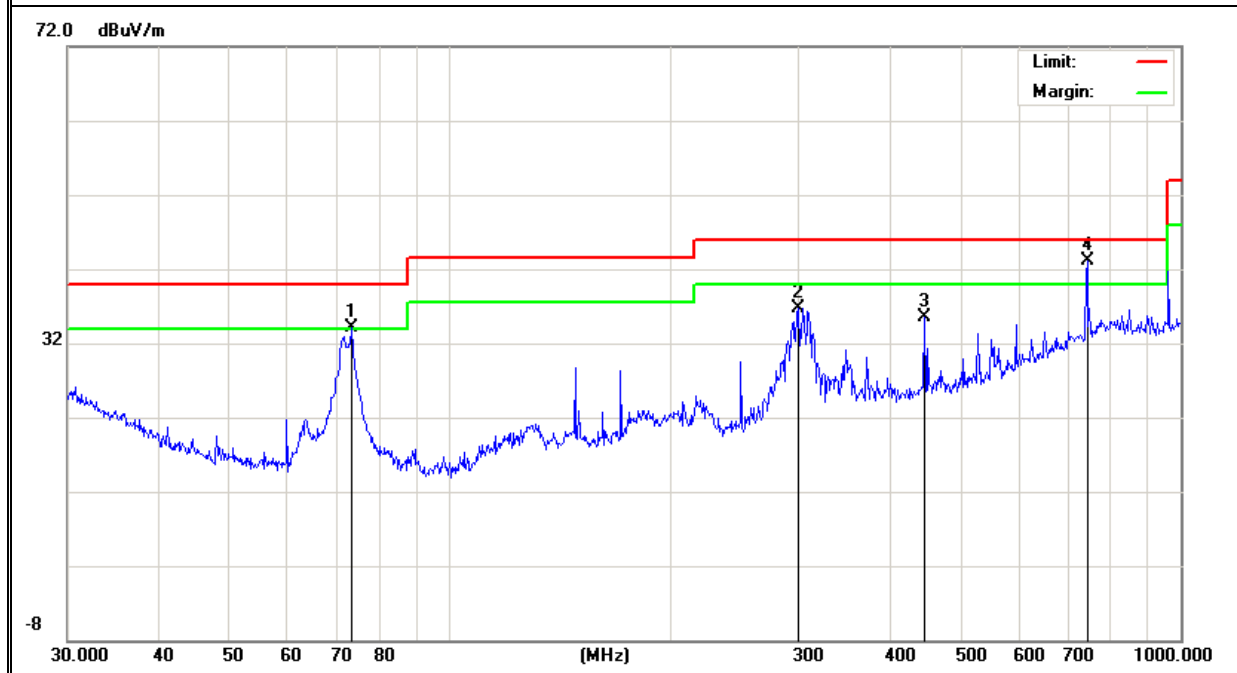


EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX(5.0G) -8192 module		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	73.3593	28.46	5.66	34.12	40.00	-5.88	QP
V	299.3158	22.55	14.15	36.70	46.00	-9.30	QP
V	446.4141	16.32	19.23	35.55	46.00	-10.45	QP
V	744.8661	17.20	25.96	43.16	46.00	-2.84	QP

Remark:

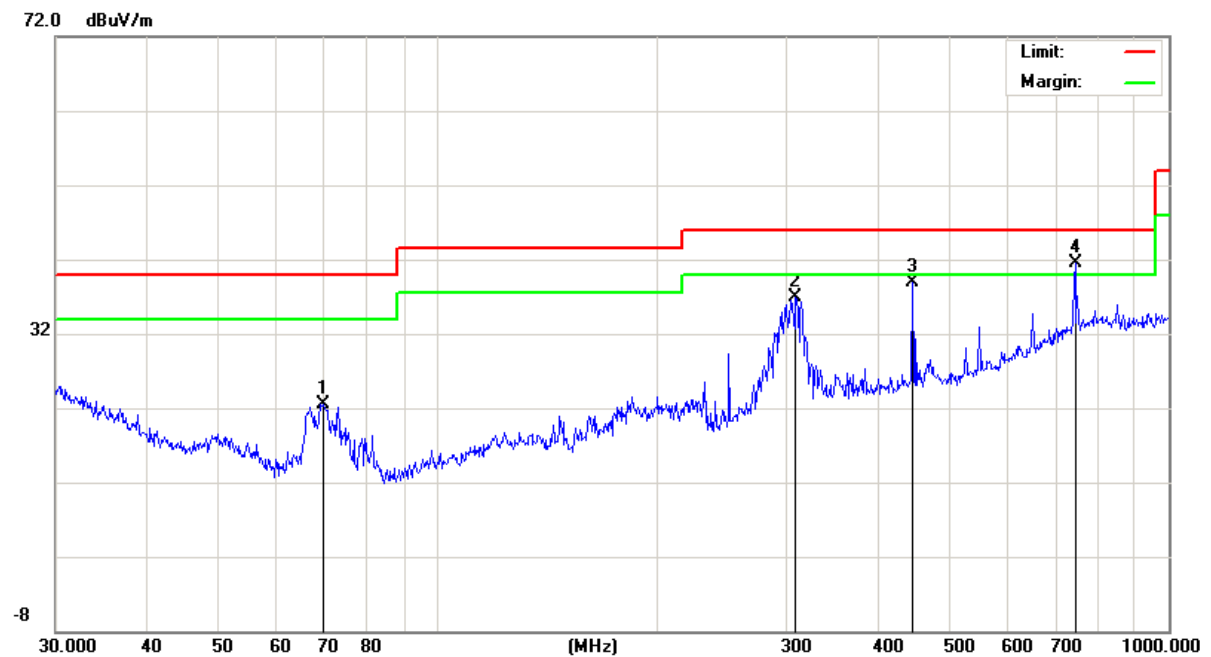
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	69.8449	16.94	5.61	22.55	40.00	-17.45	QP
H	308.9126	22.37	14.53	36.90	46.00	-9.10	QP
H	446.4141	19.72	19.23	38.95	46.00	-7.05	QP
H	744.8661	15.56	25.96	41.52	46.00	-4.48	QP

Remark:

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



3.2.8 TEST RESULTS (ABOVE 1000 MHZ)

EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX (2.4G) -8812 module		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
Low Channel (2412 MHz)-Above 1G							
Vertical	4824	46.35	10.44	56.79	74	-17.21	Pk
Vertical	4824	29.63	10.44	40.07	54	-13.93	Av
Vertical	7236	37.18	12.39	49.57	74	-24.43	Pk
Horizontal	4824	47.03	10.44	57.47	74	-16.53	Pk
Horizontal	4824	24.69	10.44	35.13	54	-18.87	Av
Horizontal	7236	33.81	12.39	46.2	74	-27.8	Pk
Mid Channel (2437 MHz)-Above 1G							
Vertical	4874	46.81	10.4	57.21	74	-16.79	Pk
Vertical	4874	33.69	10.4	44.09	54	-9.91	Av
Vertical	7311	38.16	12.75	50.91	74	-23.09	Pk
Horizontal	4874	44.07	10.4	54.47	74	-19.53	Pk
Horizontal	4874	30.12	10.4	40.52	54	-13.48	Av
Horizontal	7311	32.51	12.75	45.26	74	-28.74	Pk
High Channel (2462 MHz)- Above 1G							
Vertical	4924	44.08	10.39	54.47	74	-19.53	Pk
Vertical	4924	35.17	10.39	45.56	54	-8.44	Av
Vertical	7386	36.12	12.68	48.8	74	-25.2	Pk
Horizontal	4924	45.64	10.39	56.03	74	-17.97	Pk
Horizontal	4924	27.53	10.39	37.92	54	-16.08	Av
Horizontal	7386	35.91	12.68	48.59	74	-25.41	Pk

Note:"802.11b" mode is the worst mode. When PK value is lower than the Average value limit, average didn't record.

EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX (2.4G) -8192 module		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (2412 MHz)-Above 1G							
Vertical	4824	47.11	10.44	57.55	74	-16.45	Pk
Vertical	4824	31.69	10.44	42.13	54	-11.87	Av
Vertical	7236	38.06	12.39	50.45	74	-23.55	Pk
Horizontal	4824	48.36	10.44	58.8	74	-15.2	Pk
Horizontal	4824	35.26	10.44	45.7	54	-8.3	Av
Horizontal	7236	31.09	12.39	43.48	74	-30.52	Pk
Mid Channel (2437 MHz)-Above 1G							
Vertical	4874	47.16	10.4	57.56	74	-16.44	Pk
Vertical	4874	34.61	10.4	45.01	54	-8.99	Av
Vertical	7311	39.46	12.75	52.21	74	-21.79	Pk
Horizontal	4874	43.08	10.4	53.48	74	-20.52	Pk
Horizontal	4874	31.59	10.4	41.99	54	-12.01	Av
Horizontal	7311	33.06	12.75	45.81	74	-28.19	Pk
High Channel (2462 MHz)- Above 1G							
Vertical	4924	45.73	10.39	56.12	74	-17.88	Pk
Vertical	4924	36.19	10.39	46.58	54	-7.42	Av
Vertical	7386	37.54	12.68	50.22	74	-23.78	Pk
Horizontal	4924	46.19	10.39	56.58	74	-17.42	Pk
Horizontal	4924	30.29	10.39	40.68	54	-13.32	Av
Horizontal	7386	37.89	12.68	50.57	74	-23.43	Pk

Note:"802.11b" mode is the worst mode. When PK value is lower than the Average value limit, average didn't record.

EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX (5.0G) -8812 module		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5745 MHz)-Above 1G							
Vertical	10360	38.16	13.09	51.25	74	-22.75	Pk
Vertical	15540	35.65	15.16	50.81	74	-23.19	Pk
Horizontal	10360	37.21	13.09	50.3	74	-23.7	Pk
Horizontal	15540	33.49	15.16	48.65	74	-25.35	Pk
middle Channel (5785 MHz)-Above 1G							
Vertical	10400	37.59	13.11	50.7	74	-23.3	Pk
Vertical	15600	34.89	15.19	50.08	74	-23.92	Pk
Horizontal	10400	34.21	13.11	47.32	74	-26.68	Pk
Horizontal	15600	33.13	15.19	48.32	74	-25.68	Pk
High Channel (5825 MHz)-Above 1G							
Vertical	10480	37.89	13.19	51.08	74	-22.92	Pk
Vertical	15720	33.57	15.25	48.82	74	-25.18	Pk
Horizontal	10480	36.13	13.19	49.32	74	-24.68	Pk
Horizontal	15720	32.67	15.34	48.01	74	-25.99	Pk

Note:"802.11a(5G)" mode is the worst mode. When PK value is lower than the Average value limit average didn't record.

EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX (5.0G) -8192 module		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
Low Channel (5745 MHz)-Above 1G							
Vertical	10360	39.62	13.09	52.71	74	-21.29	Pk
Vertical	15540	36.47	15.16	51.63	74	-22.37	Pk
Horizontal	10360	35.16	13.09	48.25	74	-25.75	Pk
Horizontal	15540	34.09	15.16	49.25	74	-24.75	Pk
middle Channel (5785 MHz)-Above 1G							
Vertical	10400	38.42	13.11	51.53	74	-22.47	Pk
Vertical	15600	35.09	15.19	50.28	74	-23.72	Pk
Horizontal	10400	33.1	13.11	46.21	74	-27.79	Pk
Horizontal	15600	34.67	15.19	49.86	74	-24.14	Pk
High Channel (5825 MHz)-Above 1G							
Vertical	10480	39.16	13.19	52.35	74	-21.65	Pk
Vertical	15720	35.08	15.25	50.33	74	-23.67	Pk
Horizontal	10480	35.64	13.19	48.83	74	-25.17	Pk
Horizontal	15720	33.13	15.34	48.47	74	-25.53	Pk

Note:"802.11a(5G)" mode is the worst mode. When PK value is lower than the Average value limit average didn't record.

4. POWER SPECTRAL DENSITY TEST

4.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C/ RSS-247 & RSS-Gen Rules				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247/ RSS-247§5.2 (2)	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

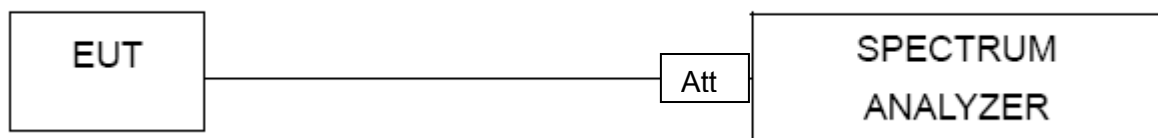
4.1.1 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. 3 kHz $\leq$ Set the RBW $\leq$ 100 kHz.
4. Set the VBW $\geq$ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



4.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.5 TEST RESULTS

EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX b Mode /CH01, CH06, CH11		

RF Model	Frequency	Power Density A (dBm)	Power Density B (dBm)	total power density (dBm)	Limit (dBm)	Result
8812	2412 MHz	-15.13	-15.37	-12.22	8.00	PASS
	2437 MHz	-14.50	-15.26	-11.55	8.00	PASS
	2462 MHz	-14.02	-15.08	-11.55	8.00	PASS
RF Model	Frequency	Power Density C (dBm)	Power Density D (dBm)	total power density (dBm)	Limit (dBm)	Result
8192	2412 MHz	-13.65	-14.38	-10.97	7.52	PASS
	2437 MHz	-13.47	-14.01	-10.97	7.52	PASS
	2462 MHz	-12.78	-13.57	-10.46	7.52	PASS

NOTE: Model A/C (B/D) represent two different modules,

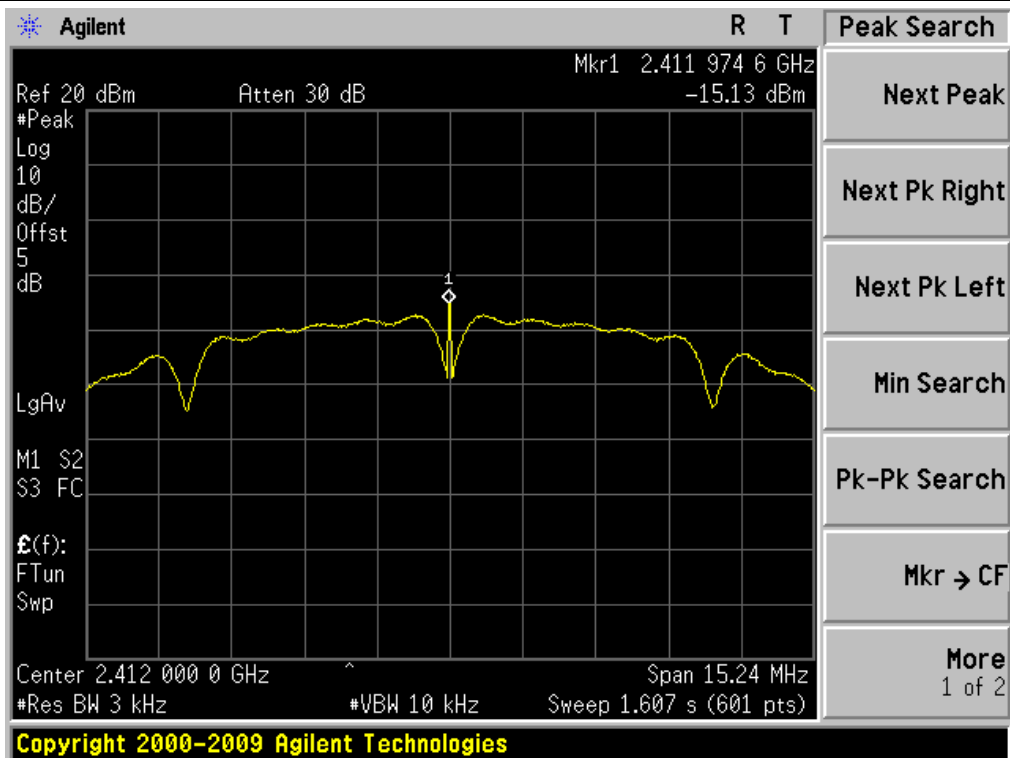
A(B) Represent the value of antenna A and B,The worst data is A Antenna a ,only shown Antenna A Plot.

C(D) Represent the value of antenna C and D,The worst data is C Antenna a ,only shown Antenna C Plot.

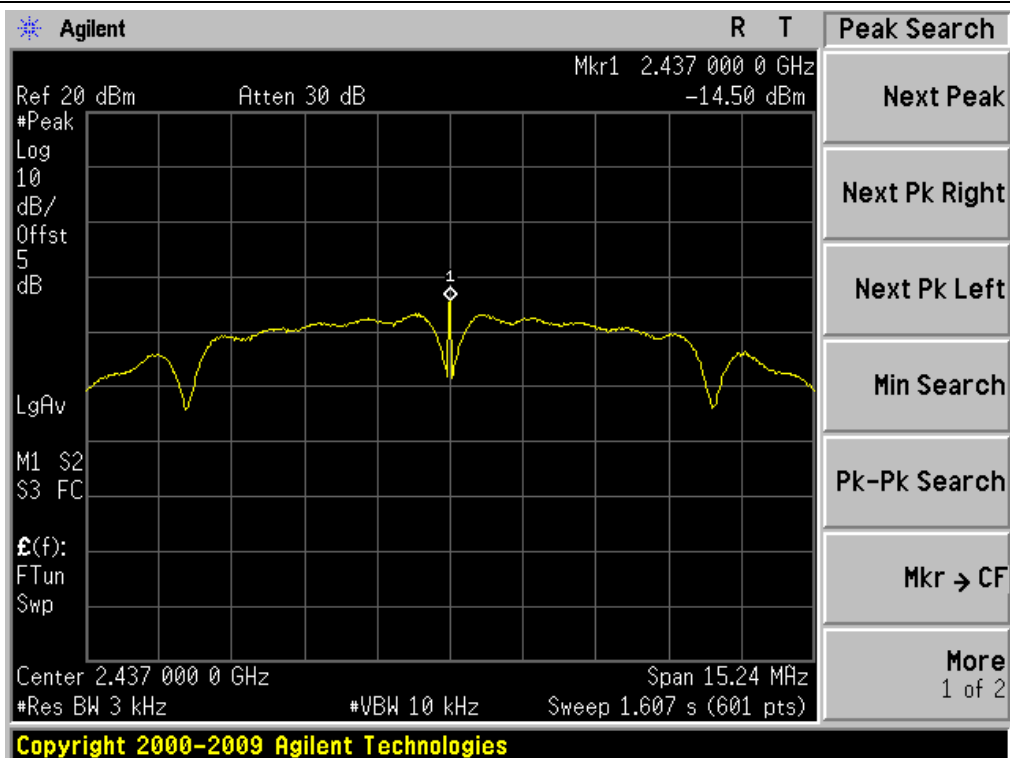
RF Model 8192 :For 2.4G mode , Limit = $8-6.48+6=7.52$.

RF Model 8812

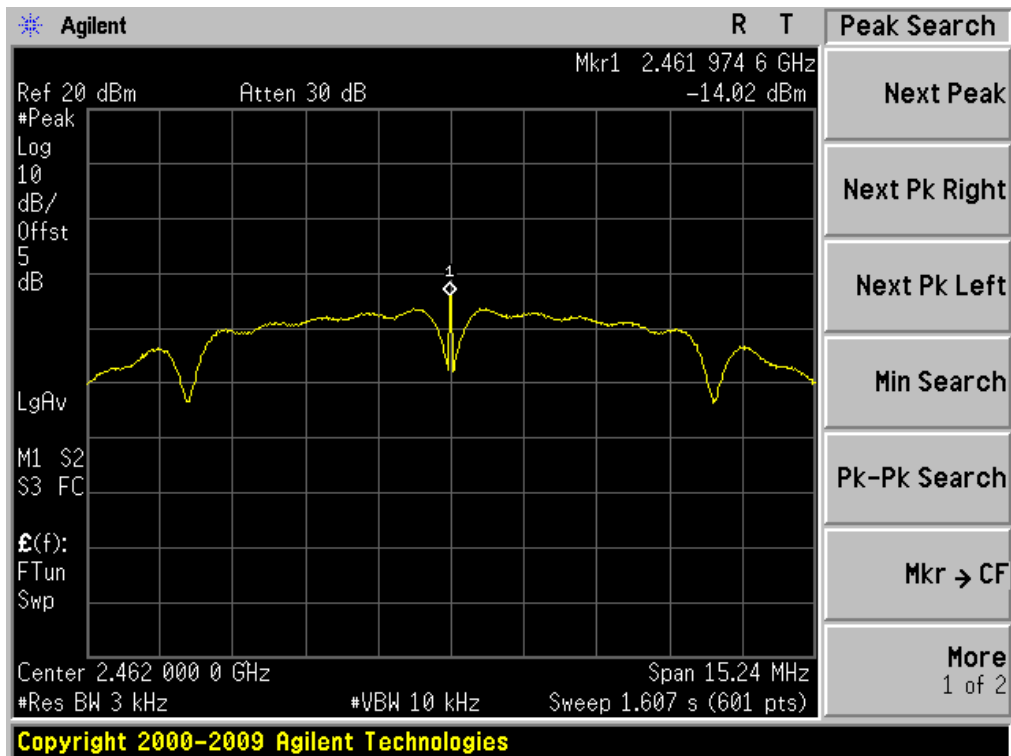
TX CH01



TX CH06



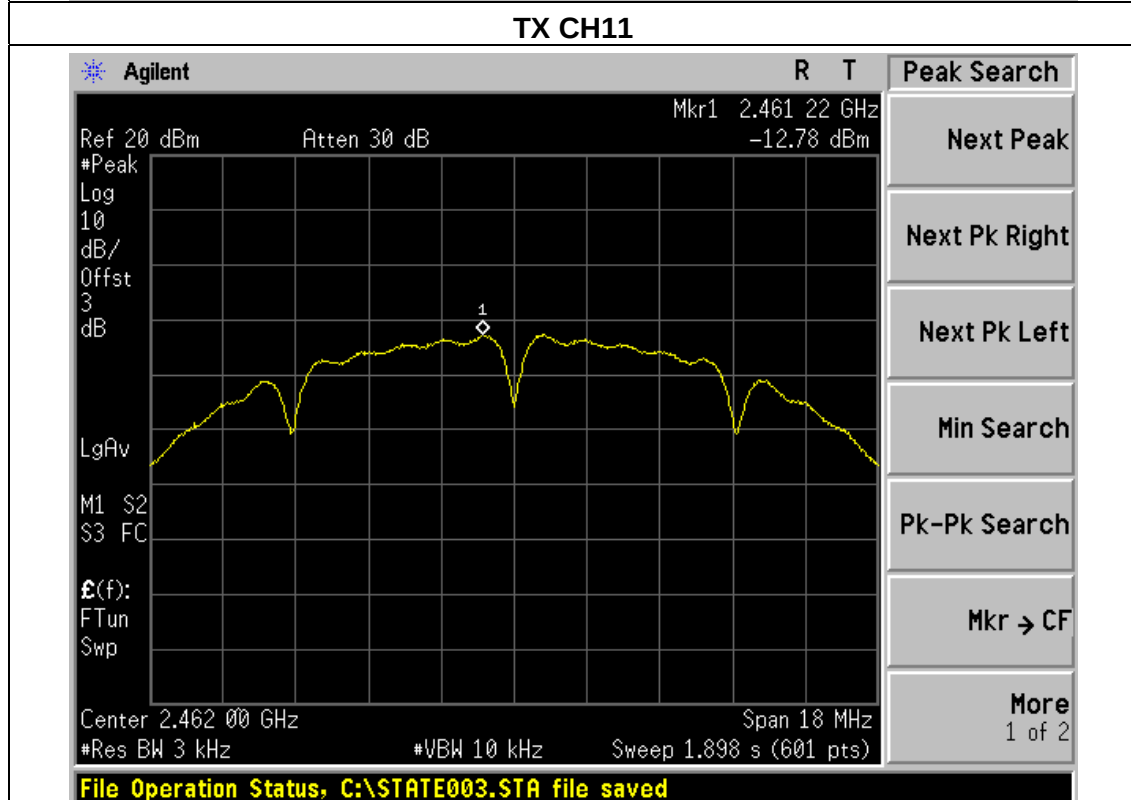
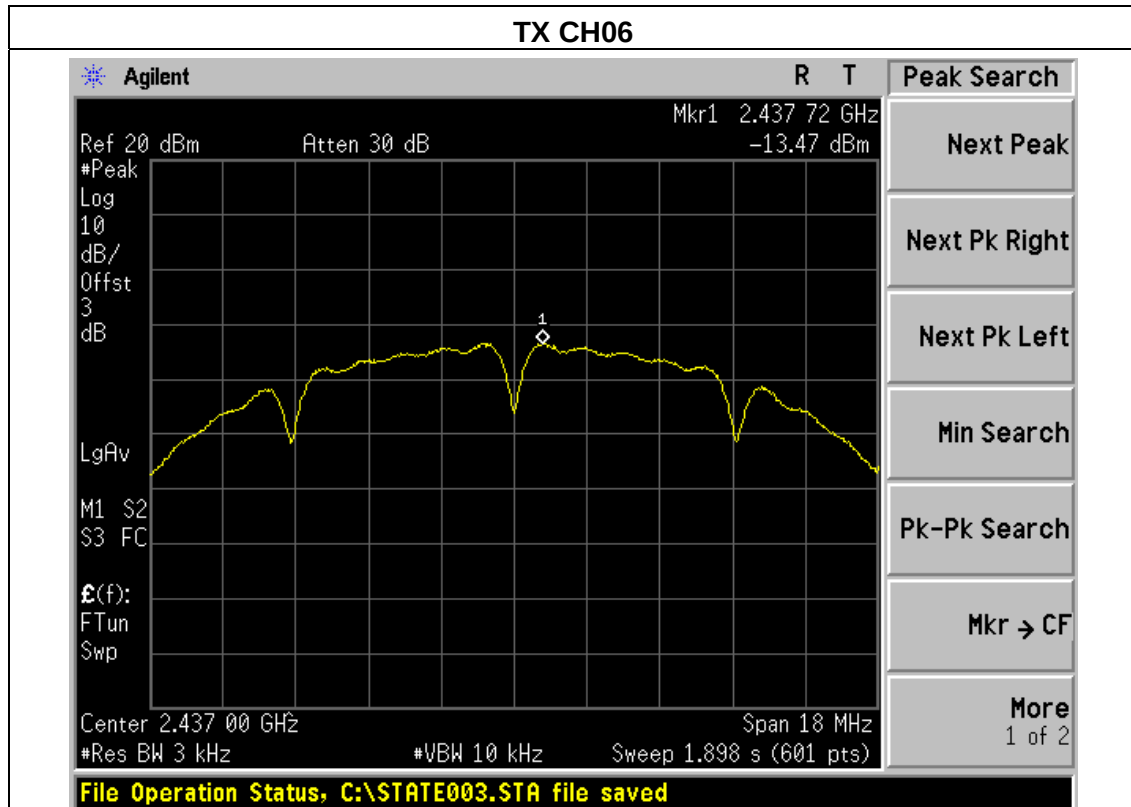
TX CH11



RF Model 8192

TX CH01





EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX g Mode /CH01, CH06, CH11		

RF Model	Frequency	Power Density A (dBm)	Power Density B (dBm)	total power density (dBm)	Limit (dBm)	Result
8812	2412 MHz	-6.46	-7.36	-3.87	8.00	PASS
	2437 MHz	-6.57	-6.59	-3.57	8.00	PASS
	2462 MHz	-7.11	-6.72	-3.98	8.00	PASS
RF Model	Frequency	Power Density C (dBm)	Power Density D (dBm)	total power density (dBm)	Limit (dBm)	Result
8192	2412 MHz	-17.44	-18.32	-15.23	7.52	PASS
	2437 MHz	-16.73	-17.54	-13.98	7.52	PASS
	2462 MHz	-16.07	-17.38	-13.98	7.52	PASS

NOTE: Model A/C (B/D) represent two different modules,

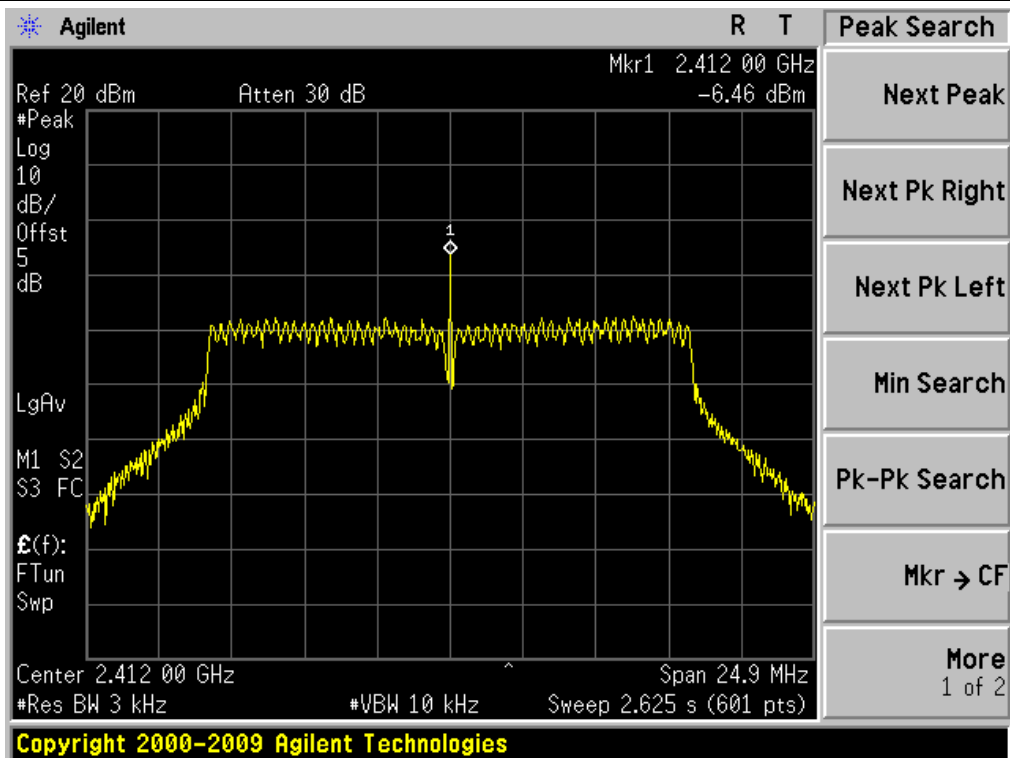
A(B) Represent the value of antenna A and B, The worst data is A Antenna a ,only shown Antenna A Plot.

C(D) Represent the value of antenna C and D, The worst data is C Antenna a ,only shown Antenna C Plot.

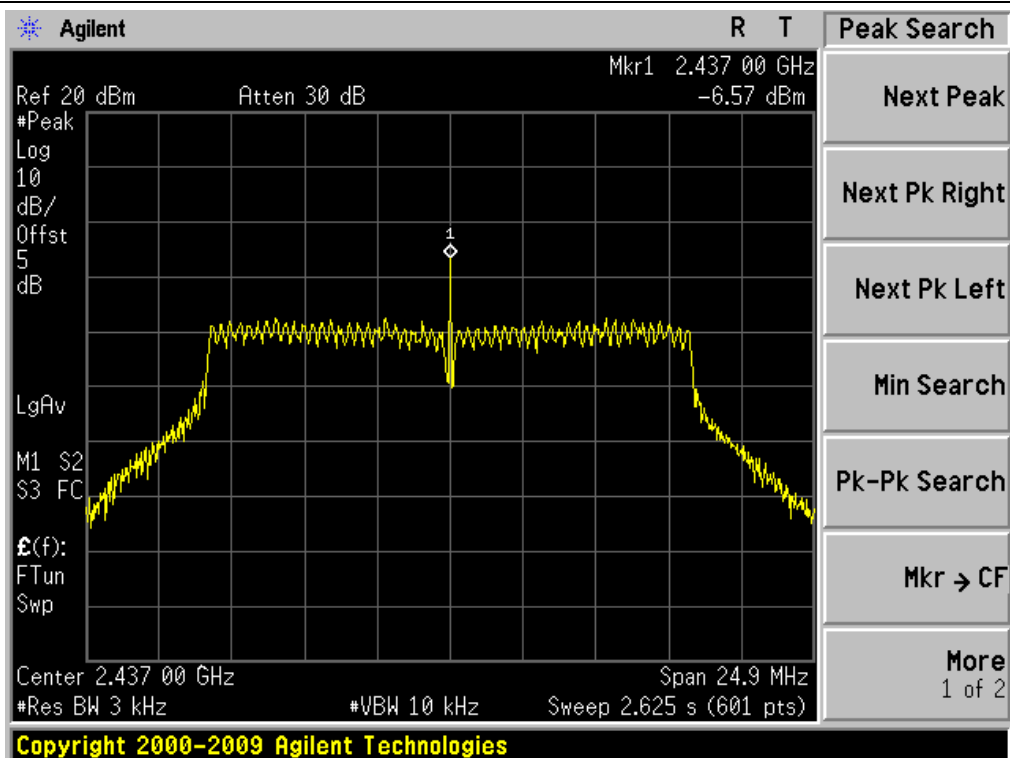
RF Model 8192 :For 2.4G mode , Limit = $8-6.48+6=7.52$.

RF Model 8812

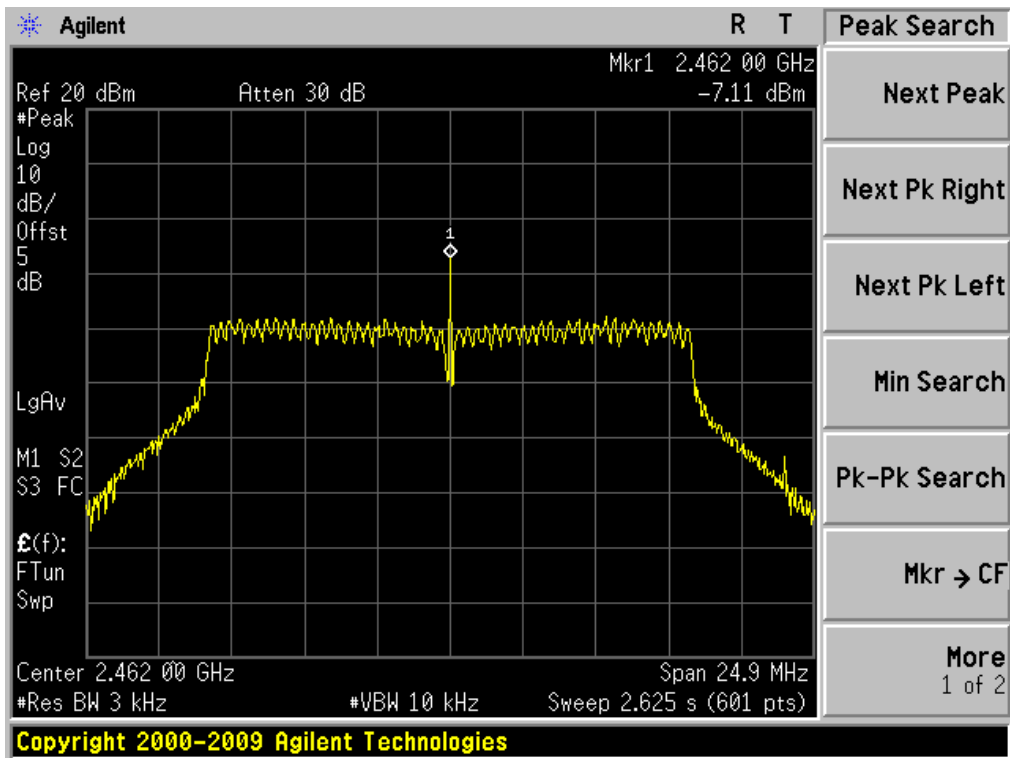
TX CH01



TX CH06

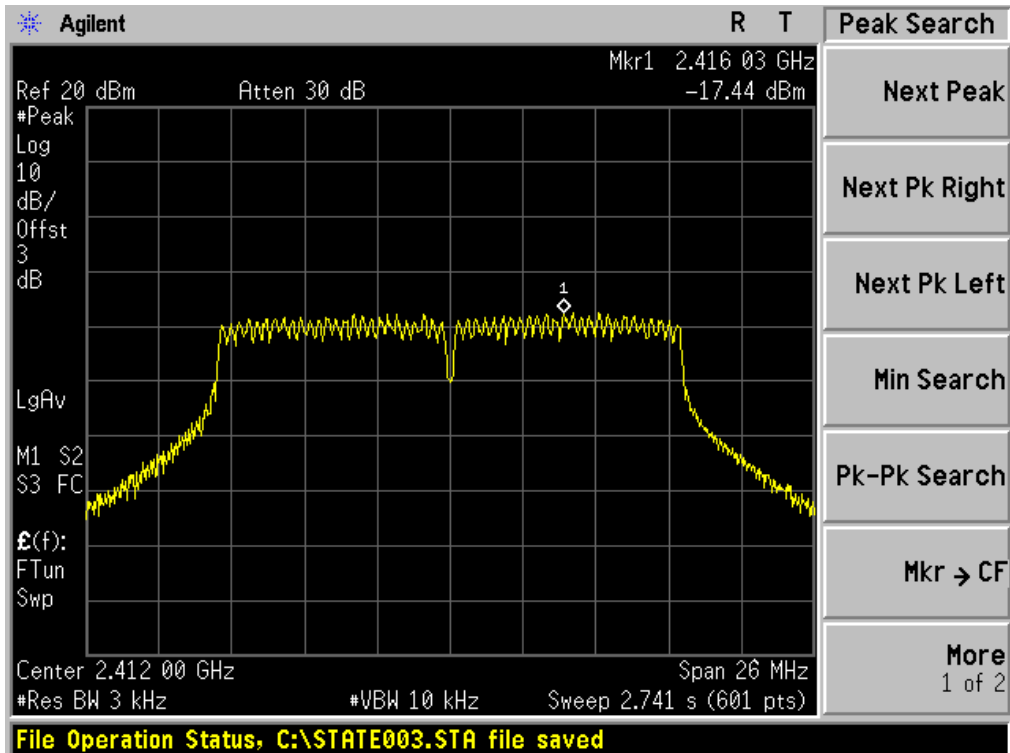


TX CH11

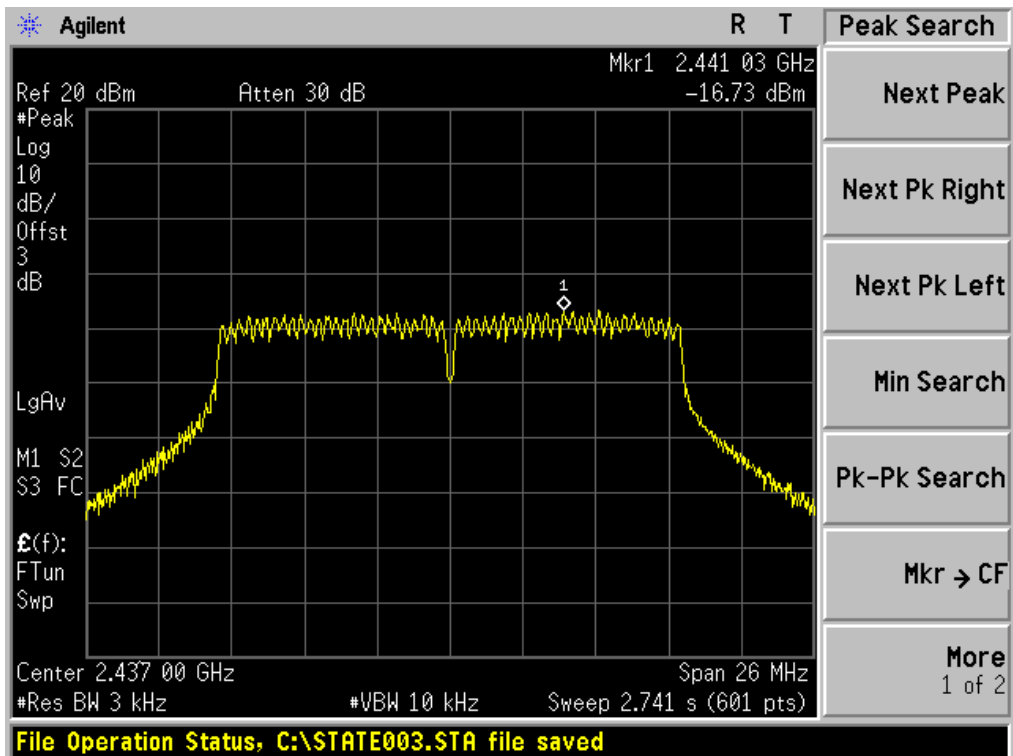


RF Model 8192

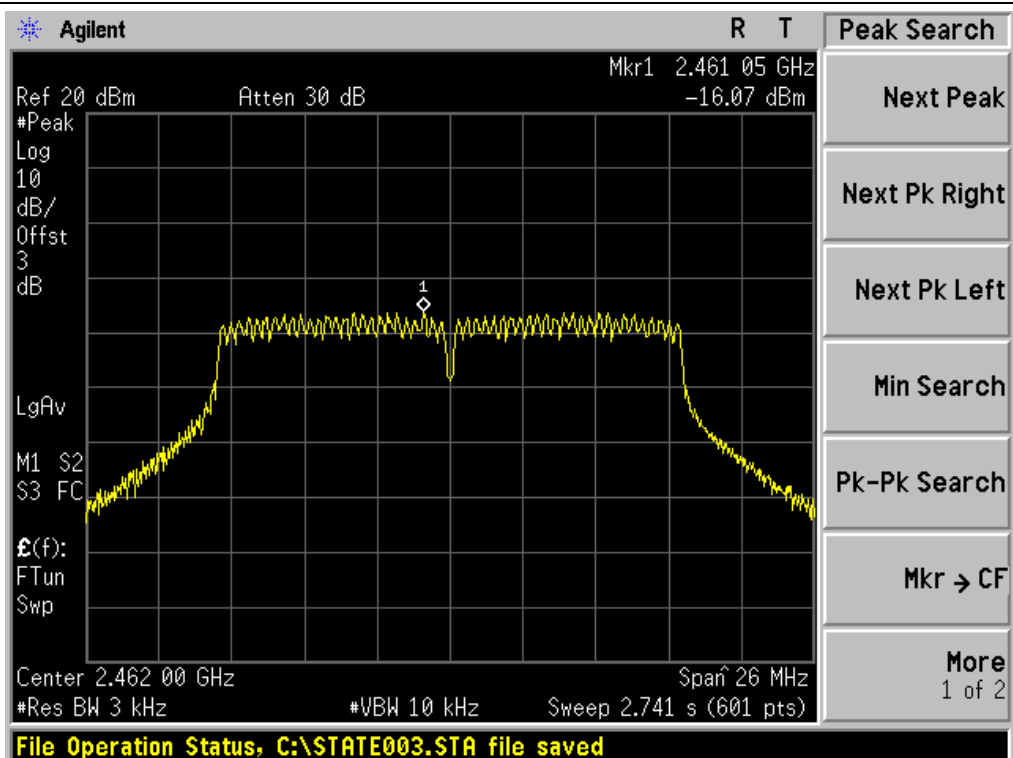
TX CH01



TX CH06



TX CH11



EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX n Mode (20MHz)/CH01, CH06, CH11		

RF Model	Frequency	Power Density A (dBm)	Power Density B (dBm)	total power density (dBm)	Limit (dBm)	Result
8812	2412 MHz	-6.56	-6.72	-3.67	8.00	PASS
	2437 MHz	-6.61	-6.84	-3.67	8.00	PASS
	2462 MHz	-7.16	-7.43	-4.32	8.00	PASS
RF Model	Frequency	Power Density C (dBm)	Power Density D (dBm)	total power density (dBm)	Limit (dBm)	Result
8192	2412 MHz	-16.94	-17.48	-13.98	7.52	PASS
	2437 MHz	-16.77	-17.51	-13.98	7.52	PASS
	2462 MHz	-15.92	-16.24	-13.01	7.52	PASS

NOTE: Model A/C (B/D) represent two different modules,

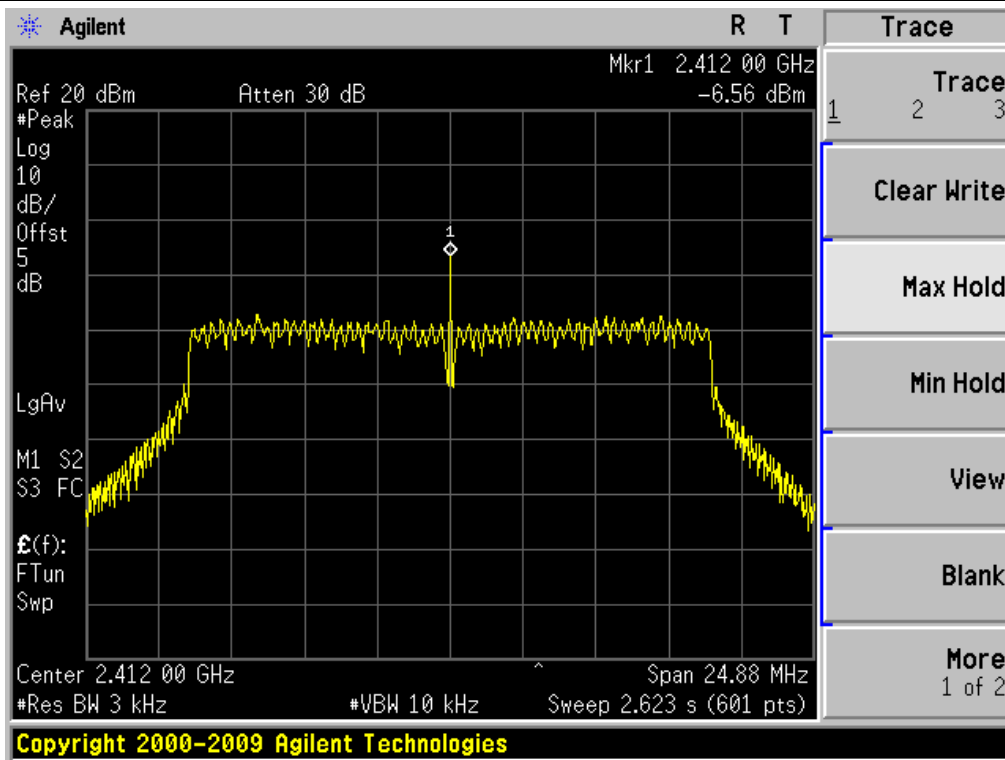
A(B) Represent the value of antenna A and B, The worst data is A Antenna a ,only shown Antenna A Plot.

C(D) Represent the value of antenna C and D, The worst data is C Antenna a ,only shown Antenna C Plot.

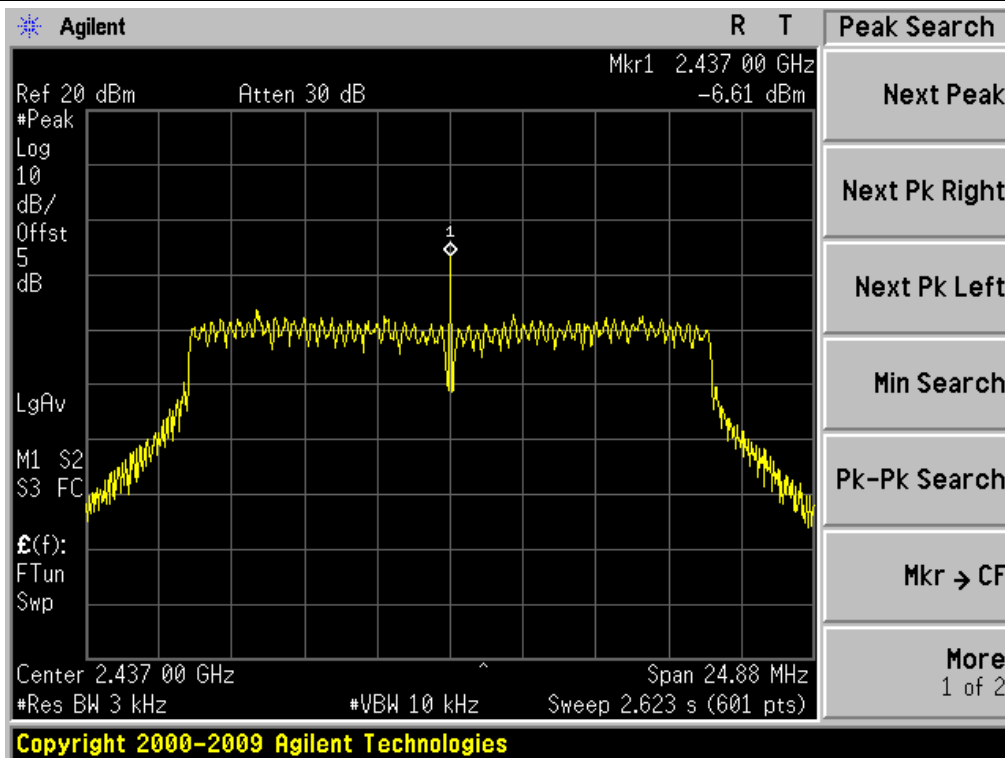
RF Model 8192 :For 2.4G mode , Limit = $-8-6.48+6=7.52$.

RF Model 8812

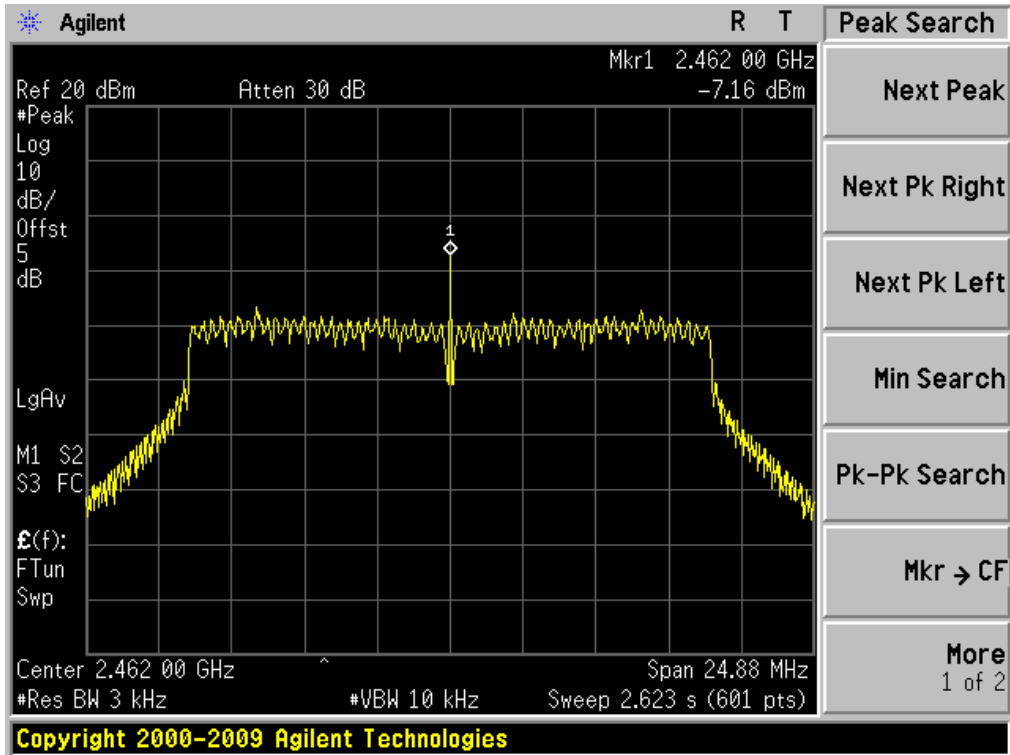
TX CH01



TX CH06

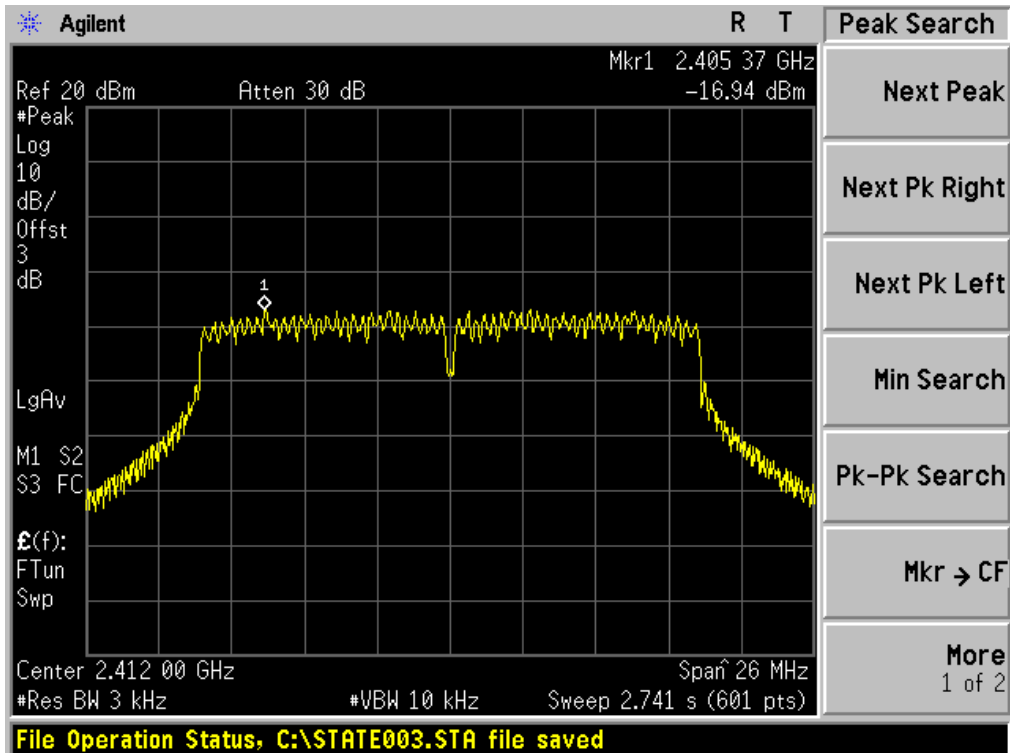


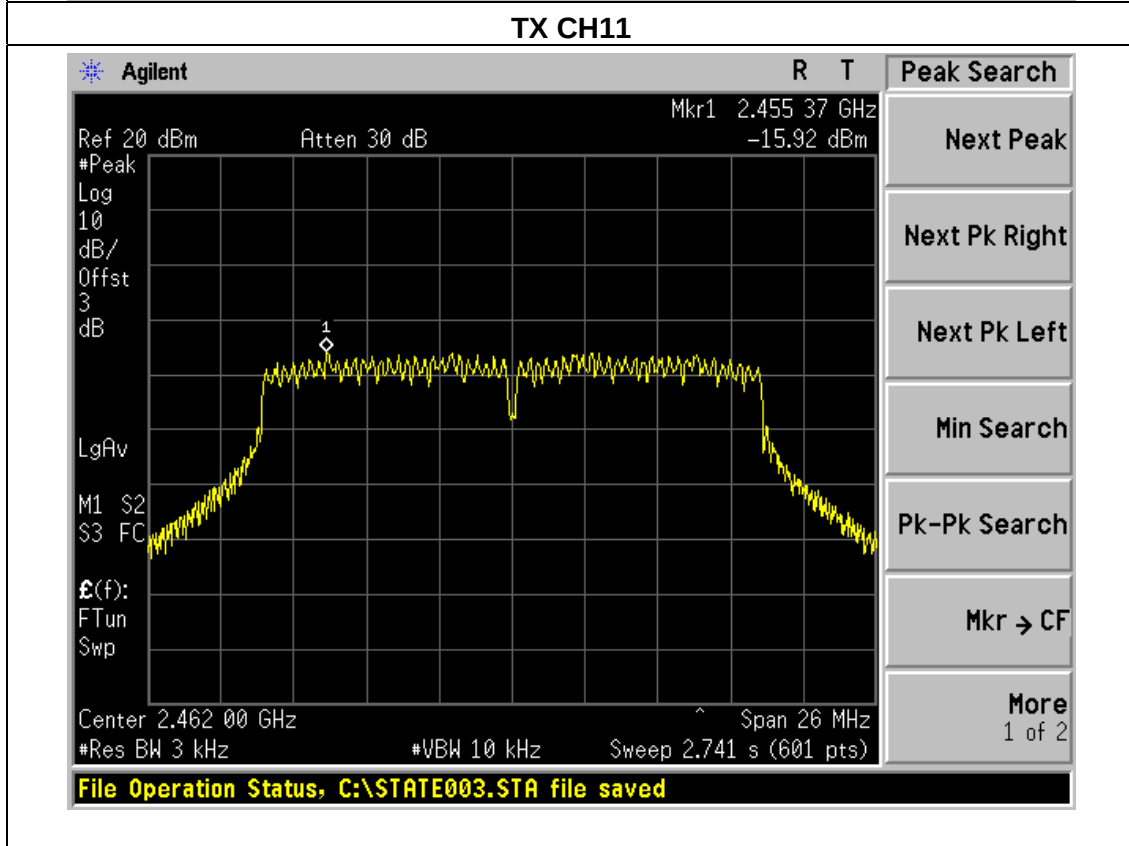
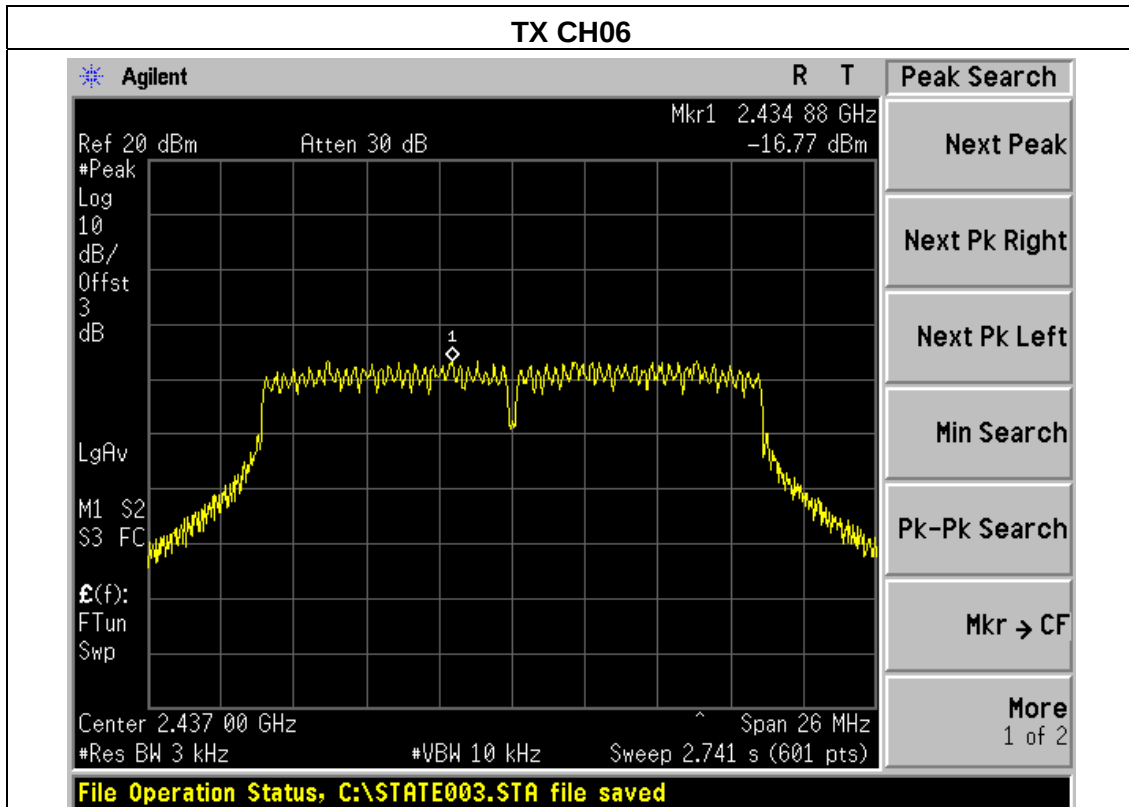
TX CH11



RF Model 8192

TX CH01





EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX n Mode (40MHz)/CH03, CH06, CH09		

RF Model	Frequency	Power Density A (dBm)	Power Density B (dBm)	total power density (dBm)	Limit (dBm)	Result
8812	2422 MHz	-5.19	-6.42	-2.76	8.00	PASS
	2437 MHz	-5.23	-6.27	-2.68	8.00	PASS
	2452 MHz	-5.54	-6.43	-2.92	8.00	PASS
RF Model	Frequency	Power Density C (dBm)	Power Density D (dBm)	total power density (dBm)	Limit (dBm)	Result
8192	2422 MHz	-18.57	-18.62	-16.99	7.52	PASS
	2437 MHz	-17.28	-17.50	-13.98	7.52	PASS
	2452 MHz	-17.35	-17.42	-13.98	7.52	PASS

NOTE: Model A/C (B/D) represent two different modules,

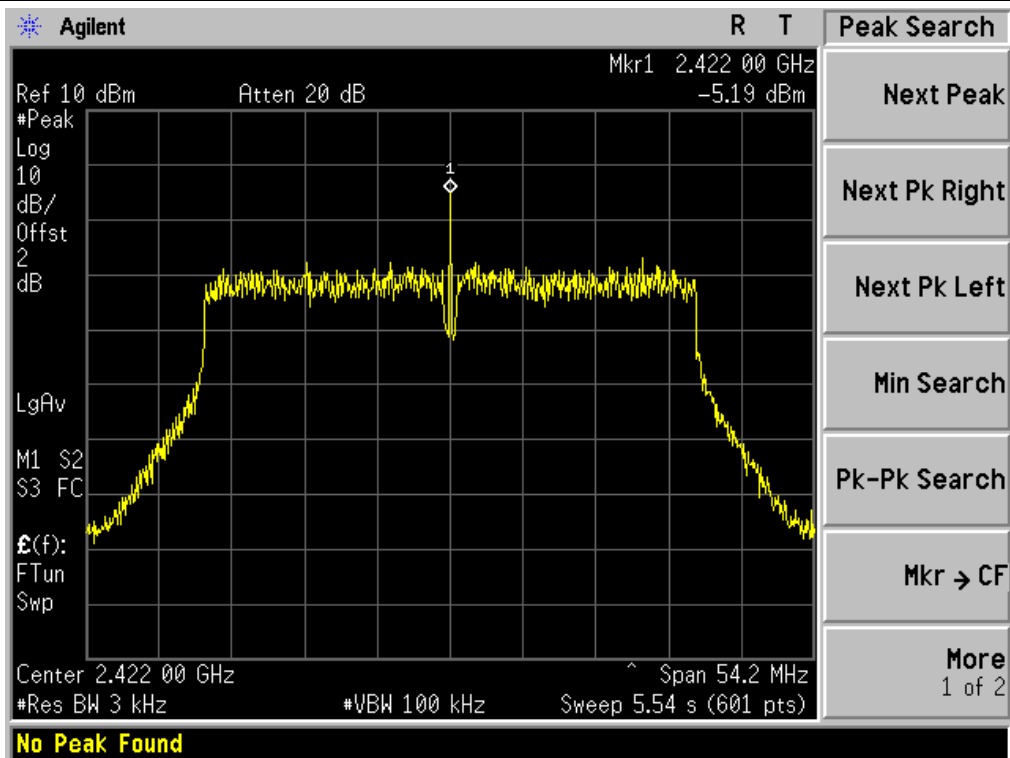
A(B) Represent the value of antenna A and B, The worst data is A Antenna a ,only shown Antenna A Plot.

C(D) Represent the value of antenna C and D, The worst data is C Antenna a ,only shown Antenna C Plot.

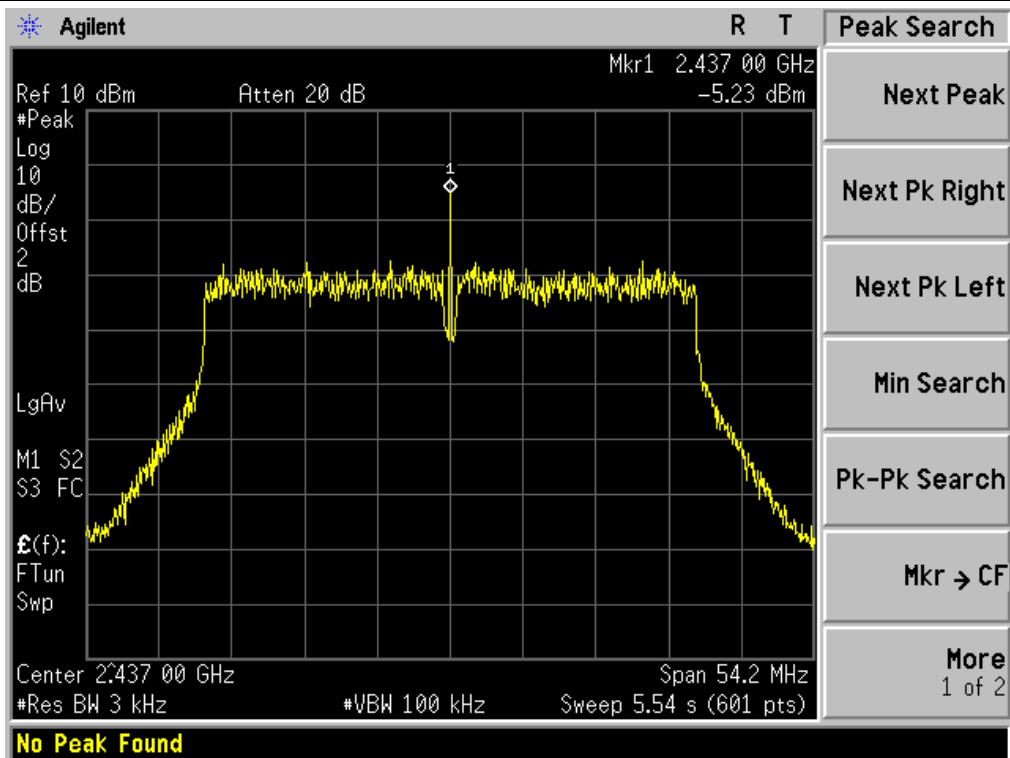
RF Model 8192 :For 2.4G mode , Limit = $-8-6.48+6=7.52$.

RF Model 8812

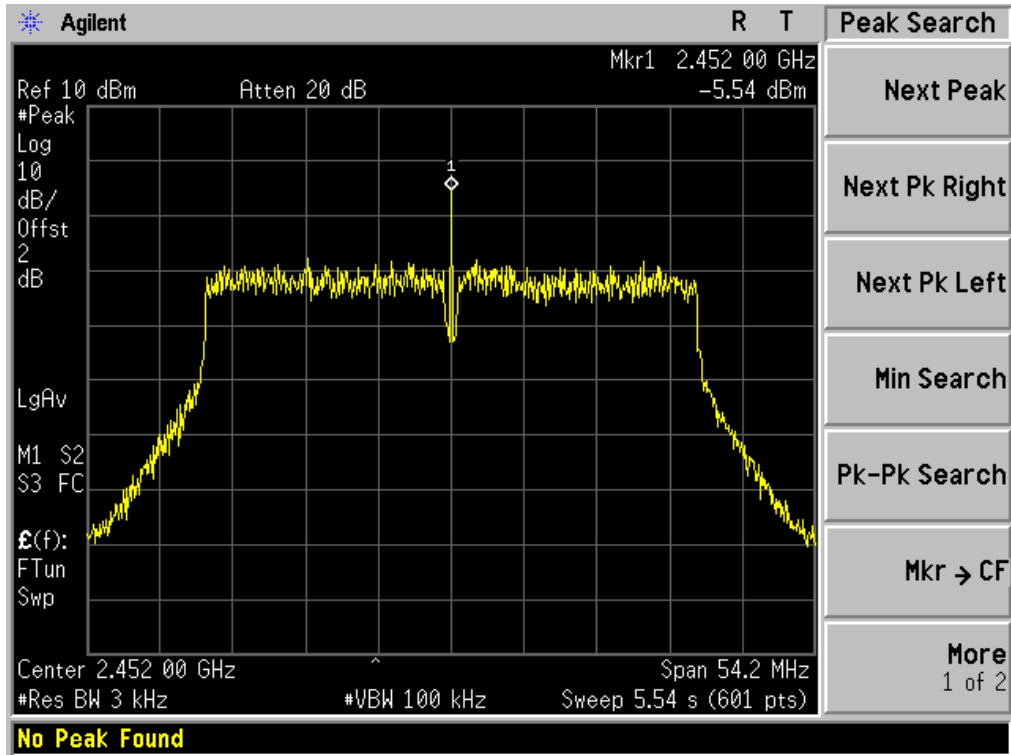
TX CH03



TX CH06

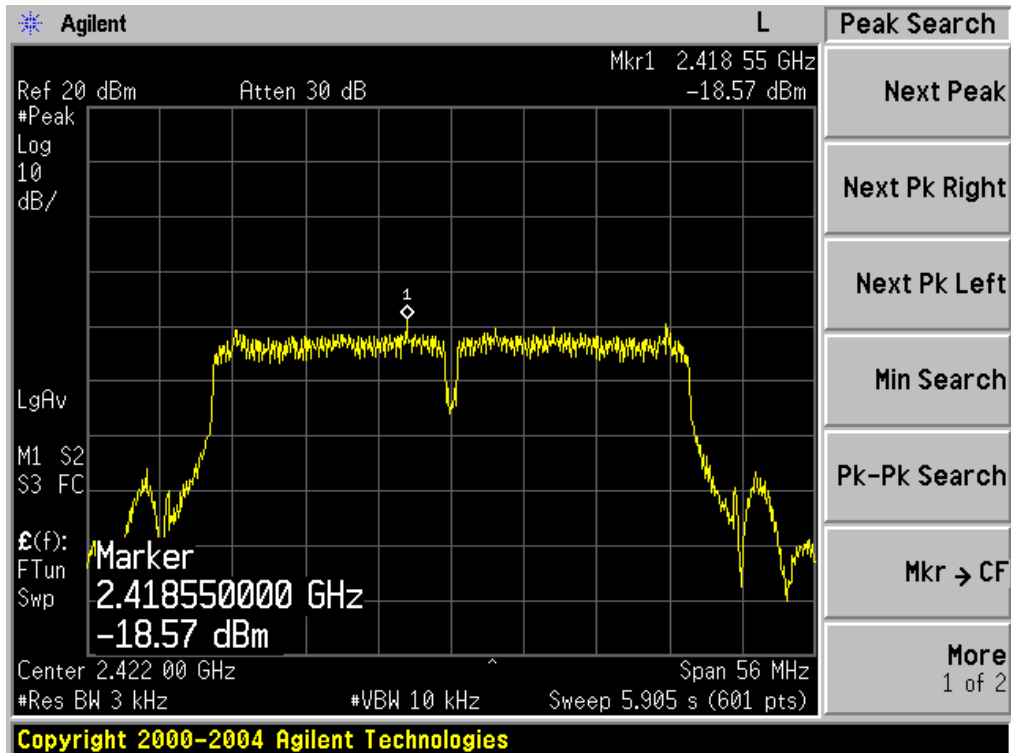


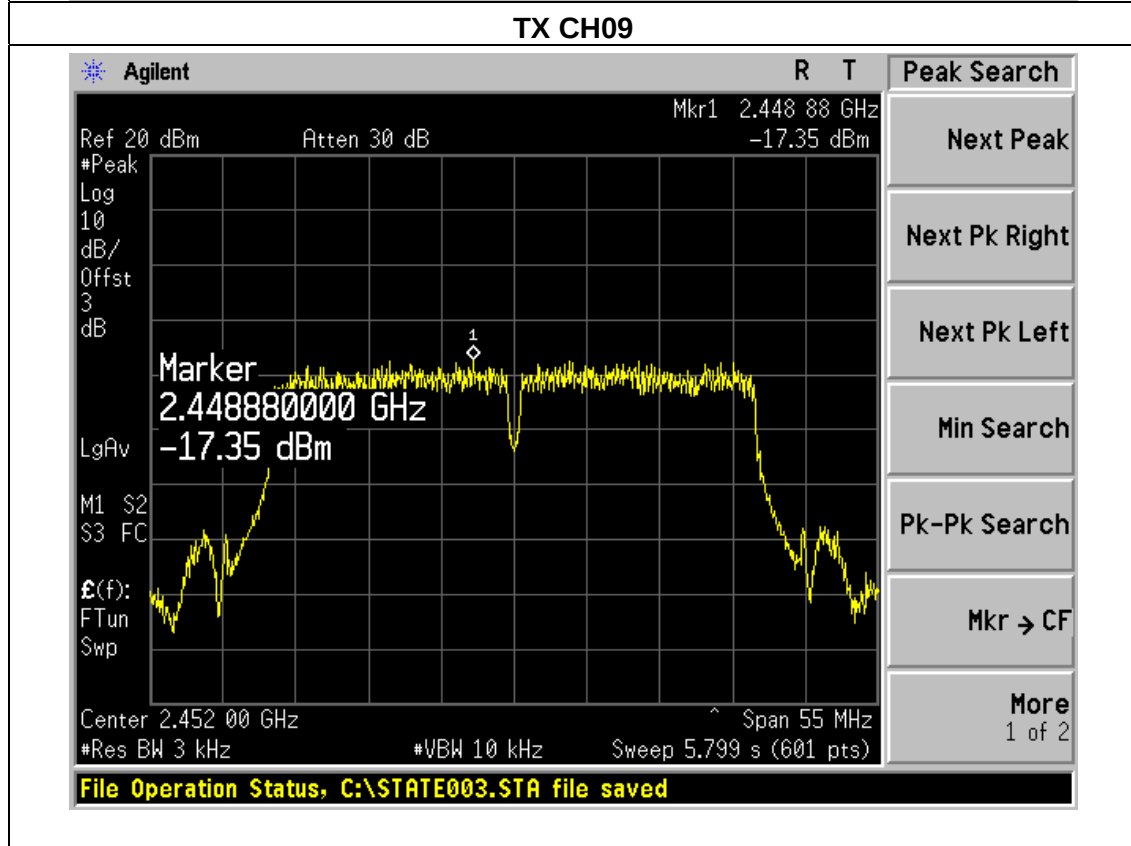
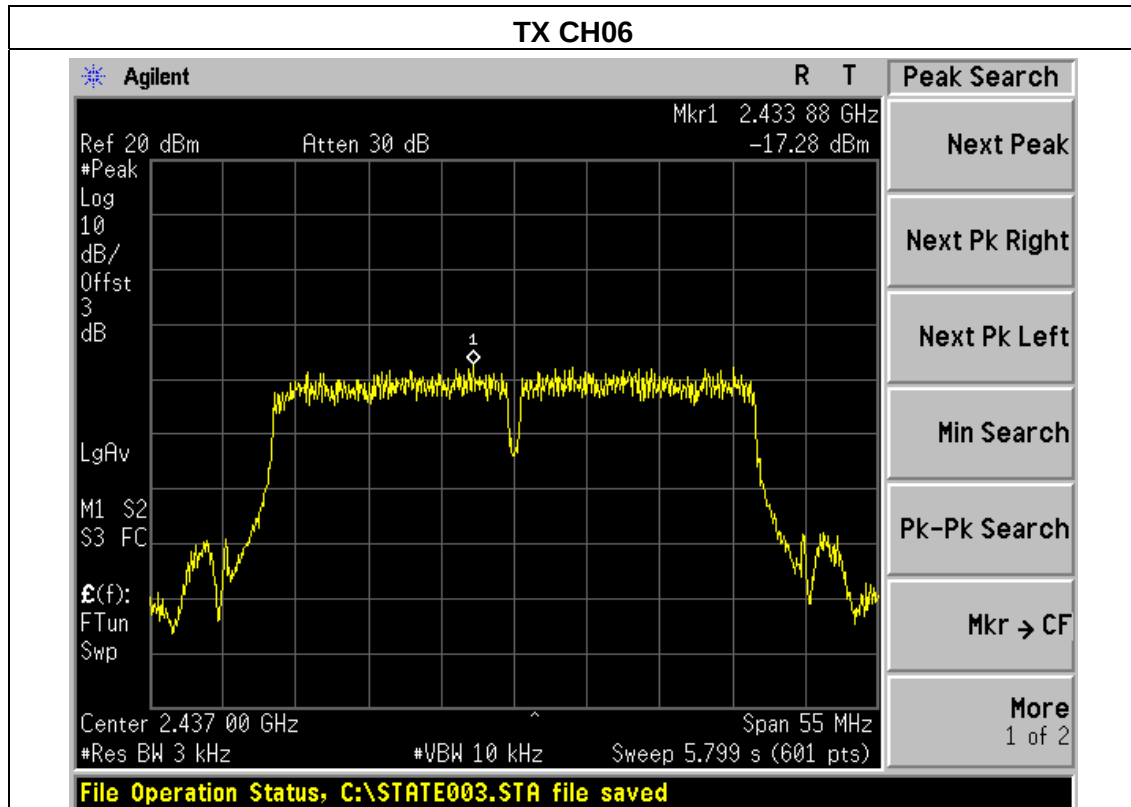
TX CH09



RF Model 8192

TX CH03





EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX a Mode /CH149, CH157, CH165		

RF Model	Frequency	Power Density A (dBm)	Power Density B (dBm)	total power density (dBm)	Limit (dBm)	Result
8812	5745MHz	-12.84	-13.18	-10.00	5.09	PASS
	5785 MHz	-11.79	-12.43	-8.86	5.09	PASS
	5825 MHz	-10.57	-11.64	-7.69	5.09	PASS
RF Model	Frequency	Power Density C (dBm)	Power Density D (dBm)	total power density (dBm)	Limit (dBm)	Result
8192	5745MHz	-20.22	-21.54	-16.99	5.62	PASS
	5785 MHz	-18.93	-20.63	-16.99	5.62	PASS
	5825 MHz	-17.43	-18.62	-15.23	5.62	PASS

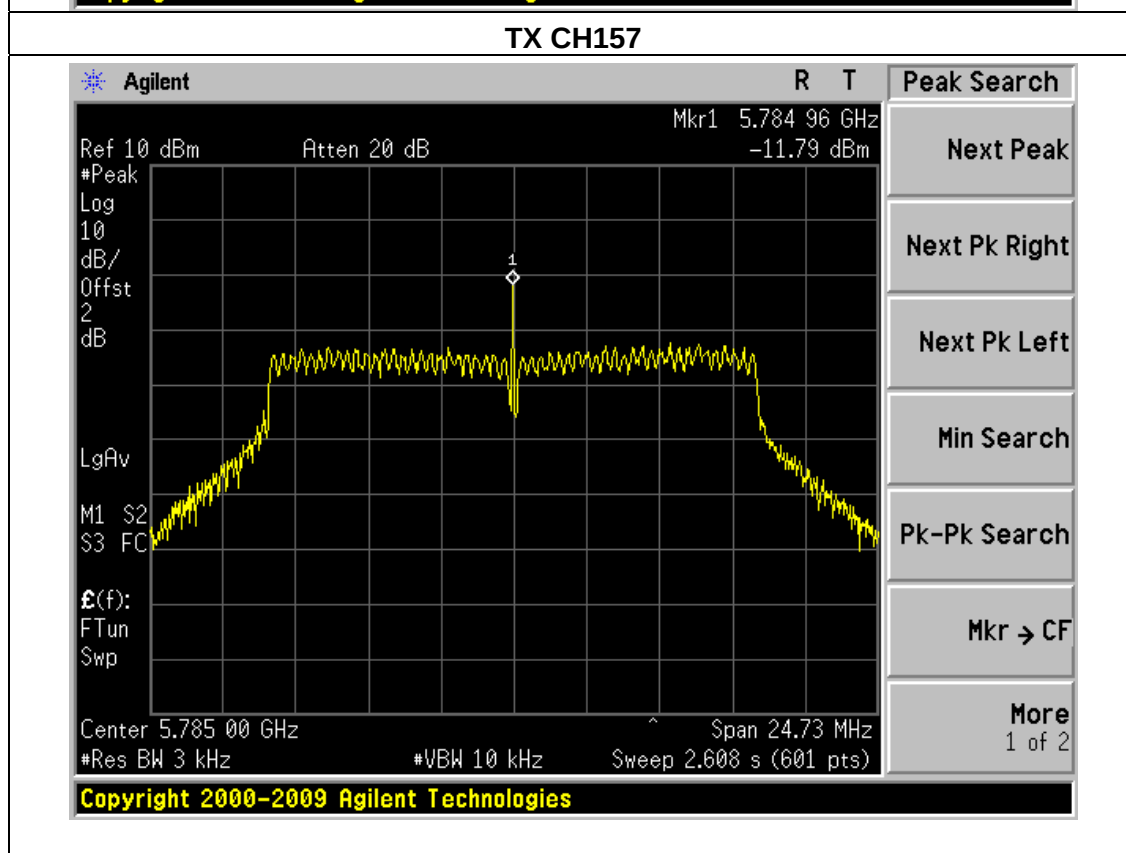
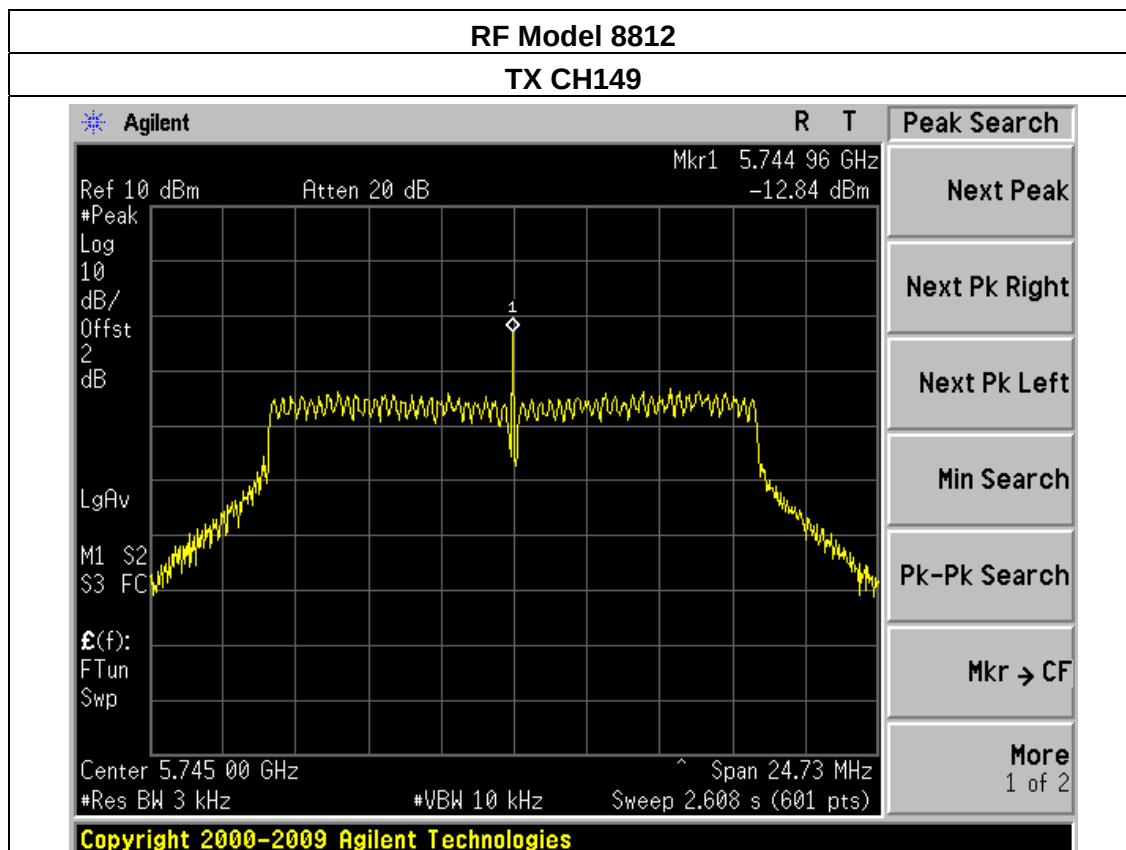
NOTE: Model A/C (B/D) represent two different modules,

A(B) Represent the value of antenna A and B,The worst data is A Antenna a ,only shown Antenna A Plot.

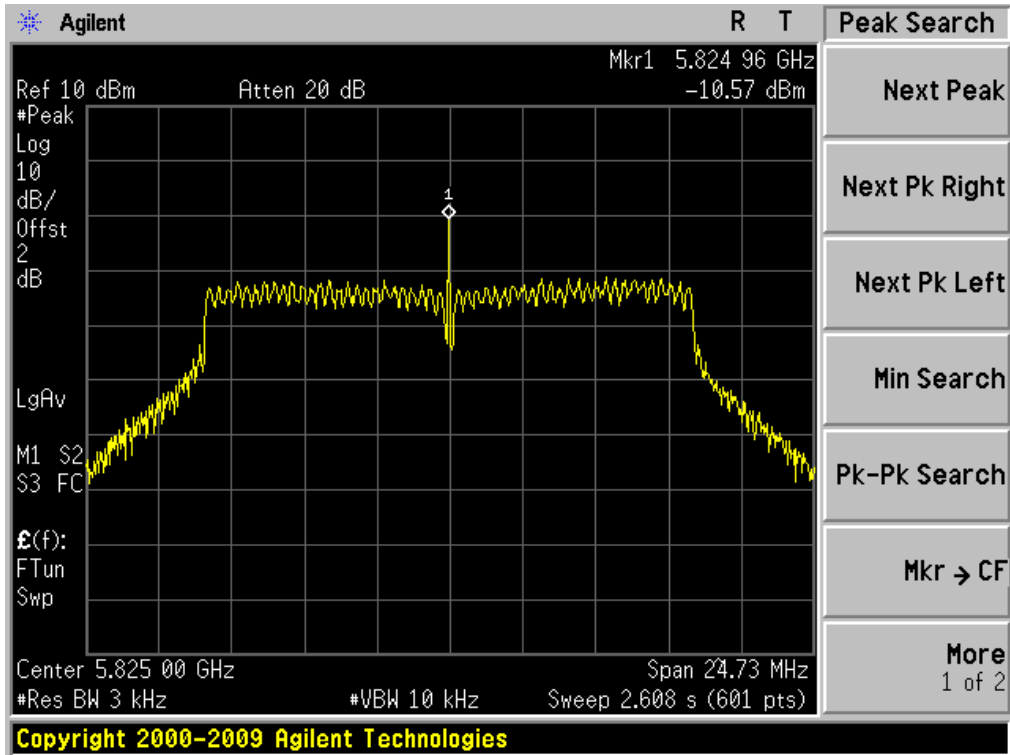
C(D) Represent the value of antenna C and D,The worst data is C Antenna a ,only shown Antenna C Plot.

RF Model 8812 :For 5G mode , Limit = $-8-8.91+6=5.09$.

RF Model 8192 :For 5G mode , Limit = $-8-8.38+6=5.62$.

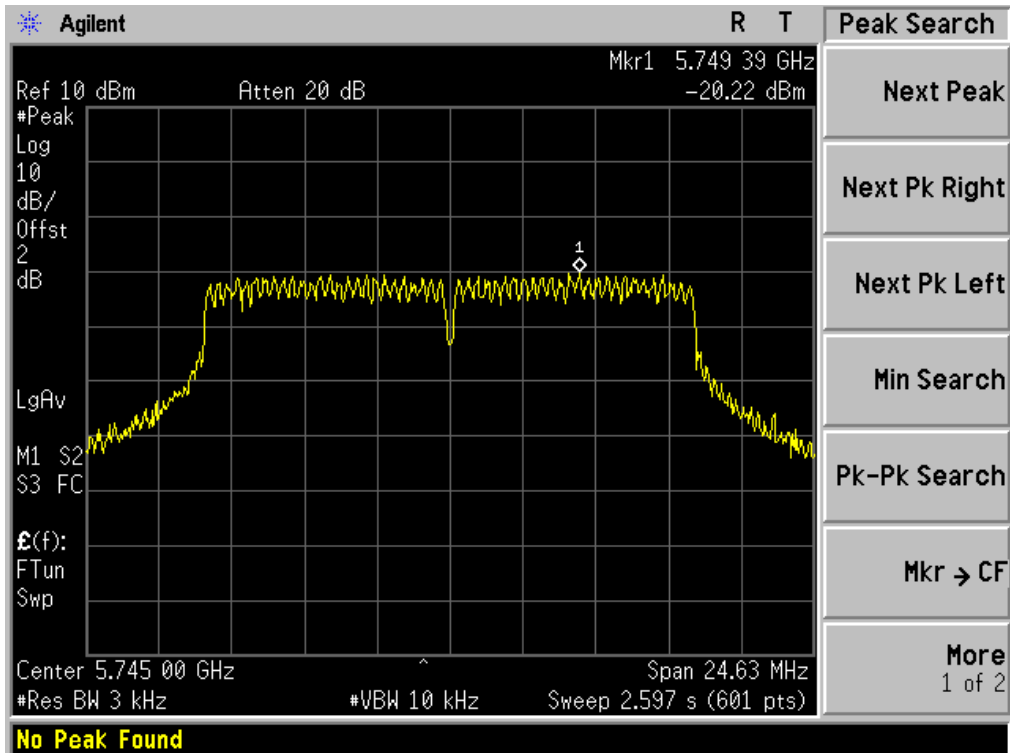


TX CH165

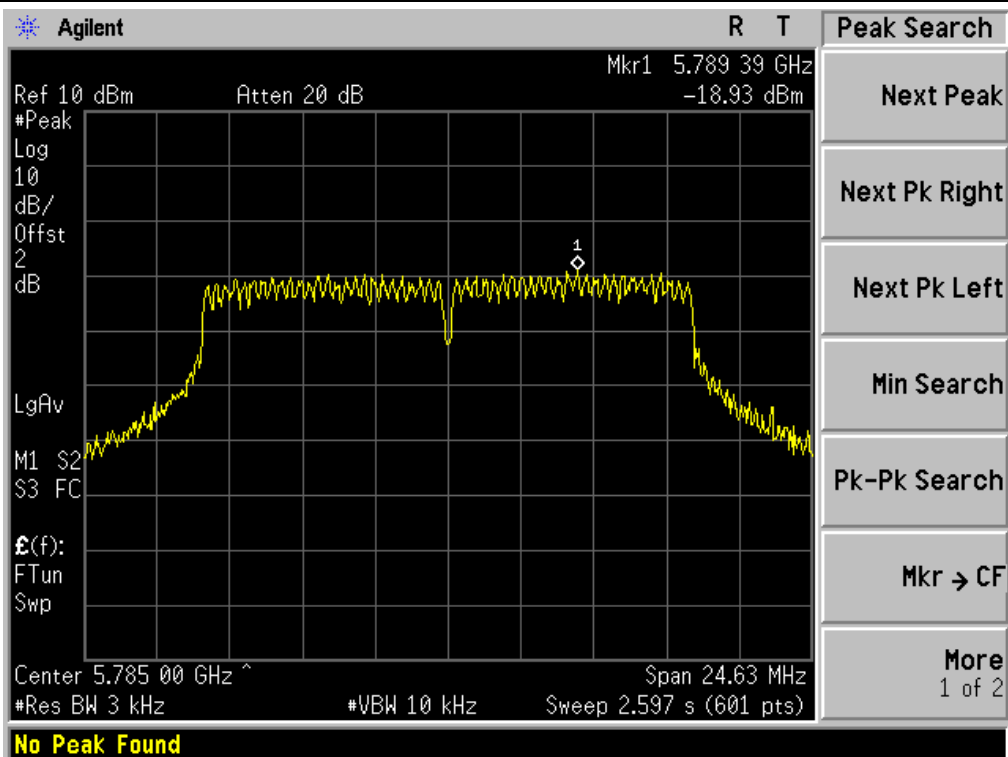


RF Model 8192

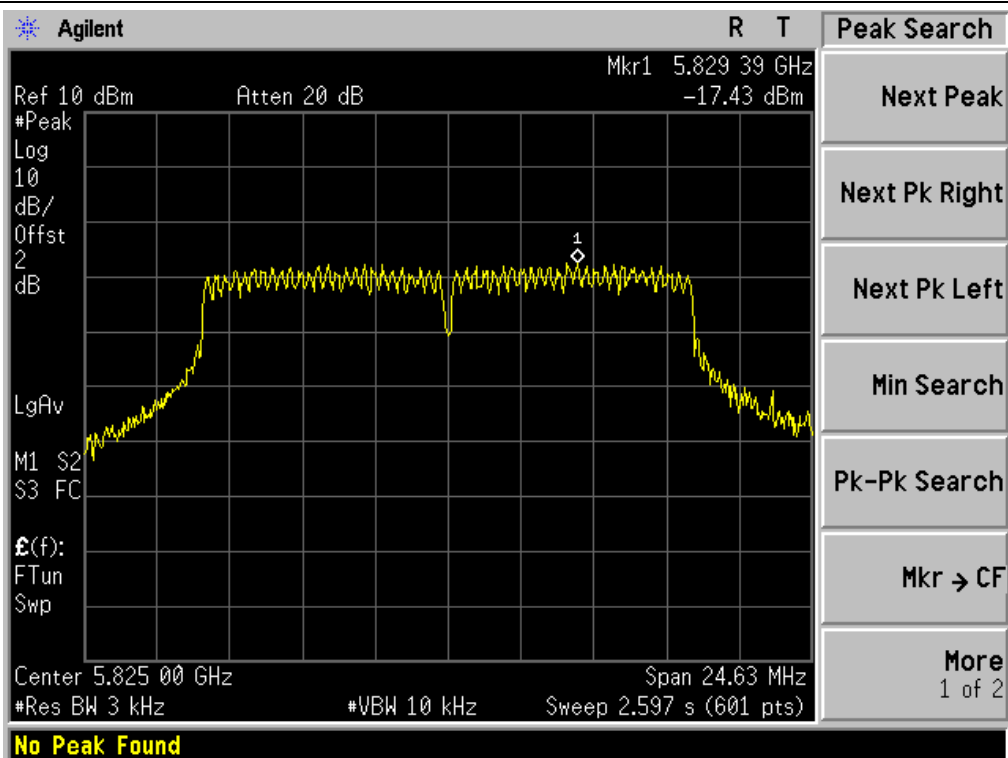
TX CH149



TX CH157



TX CH165



EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX n(20) Mode(5G) /CH149, CH157, CH165		

RF Model	Frequency	Power Density A (dBm)	Power Density B (dBm)	total power density (dBm)	Limit (dBm)	Result
8812	5745MHz	-12.82	-13.17	-10.00	5.09	PASS
	5785 MHz	-11.87	-12.53	-8.86	5.09	PASS
	5825 MHz	-10.56	-11.54	-7.96	5.09	PASS
RF Model	Frequency	Power Density C (dBm)	Power Density D (dBm)	total power density (dBm)	Limit (dBm)	Result
8192	5745MHz	-20.09	-21.07	-16.99	5.62	PASS
	5785 MHz	-19.25	-20.56	-16.99	5.62	PASS
	5825 MHz	-17.45	-17.89	-13.98	5.62	PASS

NOTE: Model A/C (B/D) represent two different modules,

A(B) Represent the value of antenna A and B, The worst data is A Antenna a ,only shown Antenna A Plot.

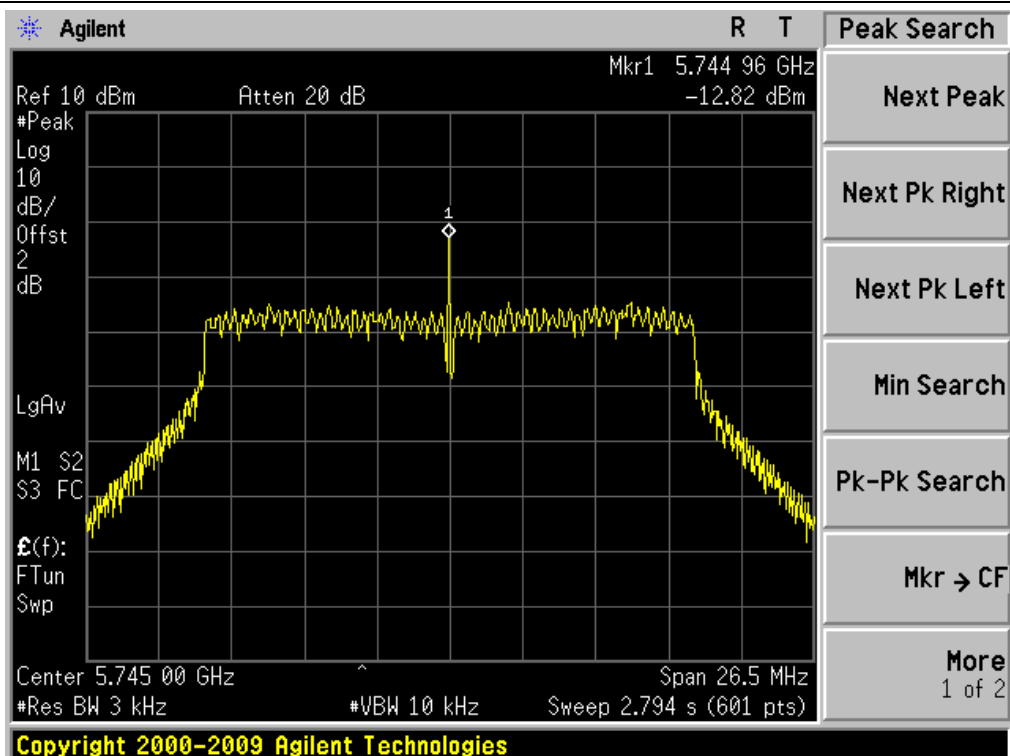
C(D) Represent the value of antenna C and D, The worst data is C Antenna a ,only shown Antenna C Plot.

RF Model 8812 :For 5G mode , Limit = $-8.91+6=5.09$.

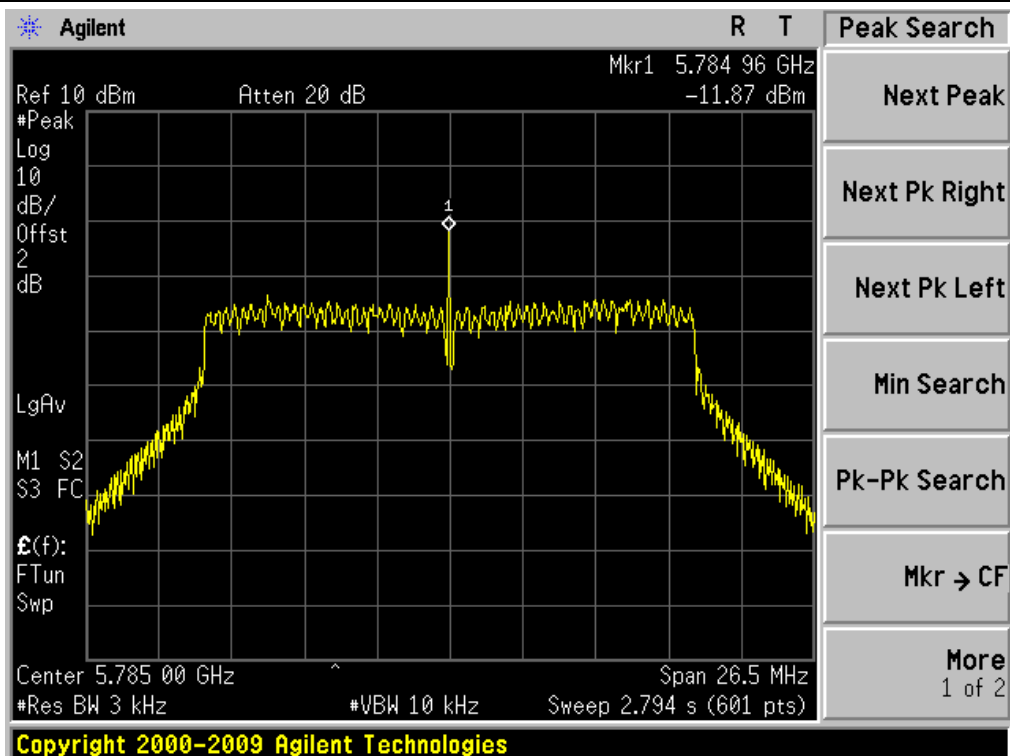
RF Model 8192 :For 5G mode , Limit = $-8.38+6=5.62$.

RF Model 8812

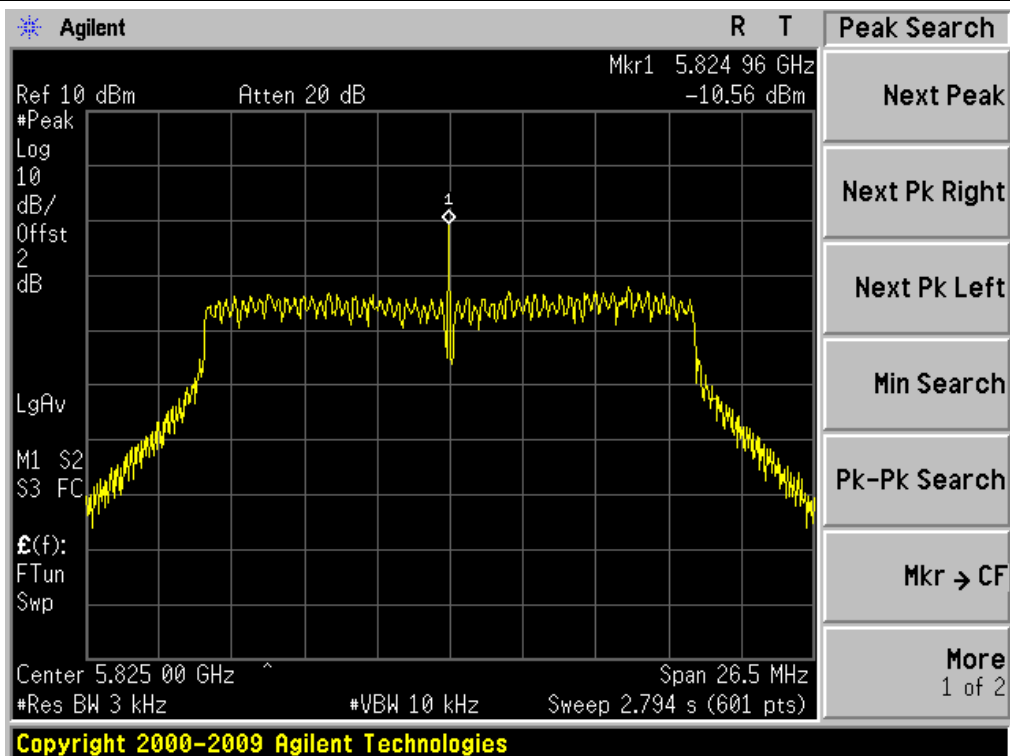
TX CH149



TX CH157

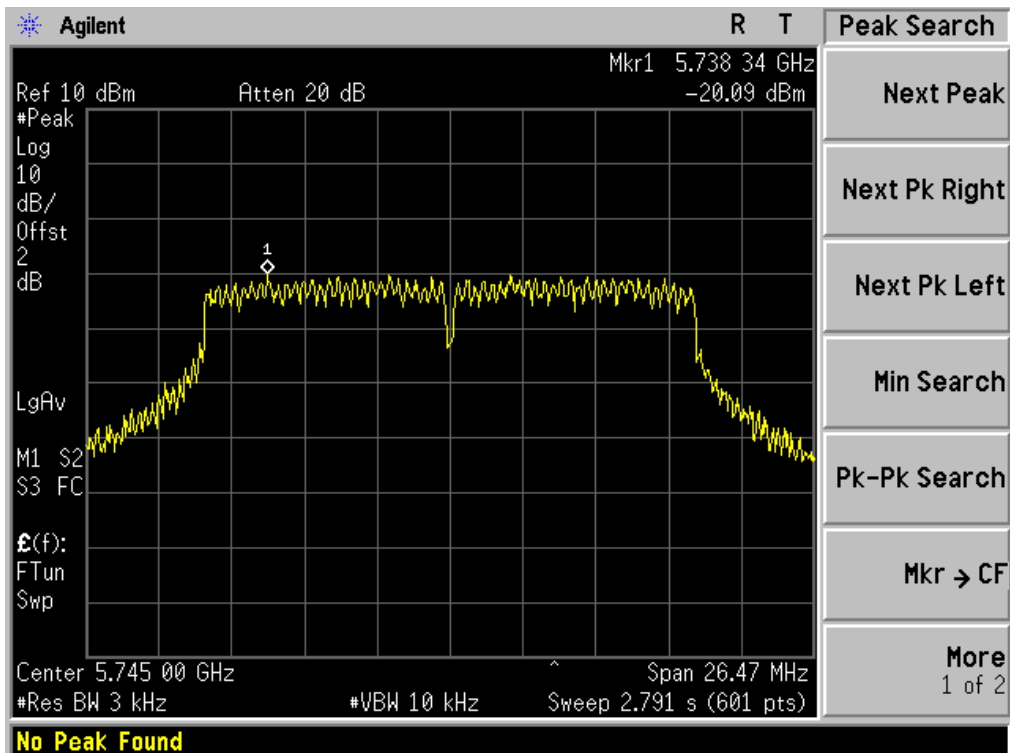


TX CH165

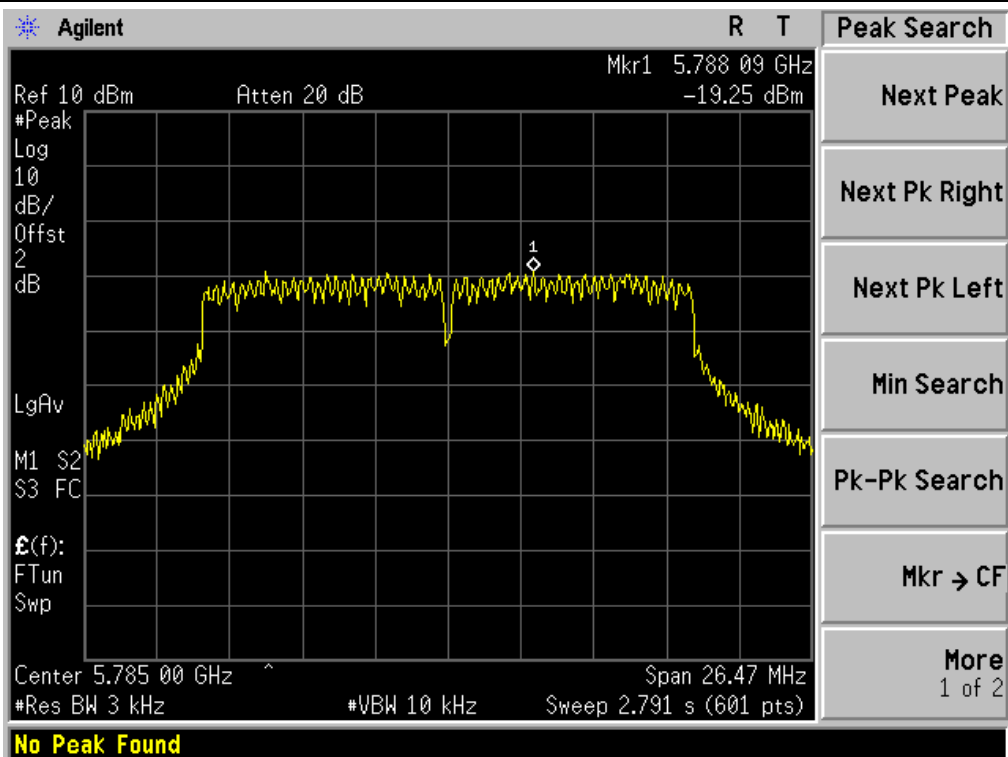


RF Model 8192

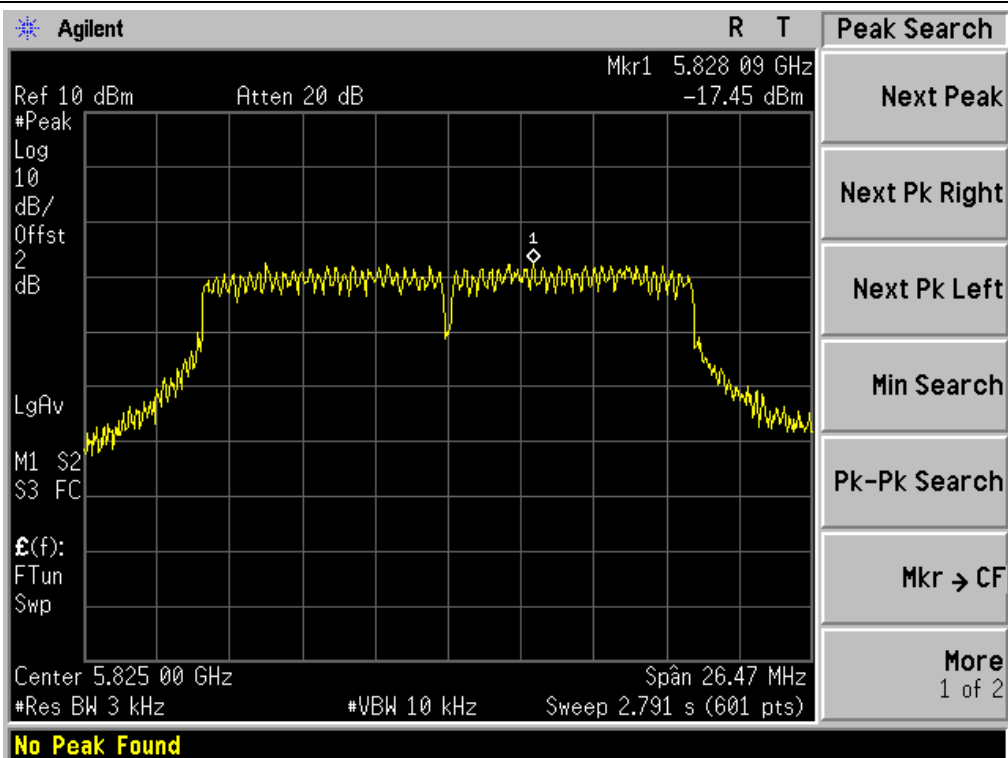
TX CH149



TX CH157



TX CH165



EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX n40 Mode(5G) /CH151, CH159		

RF Model	Frequency	Power Density A (dBm)	Power Density B (dBm)	total power density (dBm)	Limit (dBm)	Result
8812	5755 MHz	-14.14	-14.81	-11.55	5.09	PASS
	5795 MHz	-12.94	-13.57	-10.46	5.09	PASS
RF Model	Frequency	Power Density C (dBm)	Power Density D (dBm)	total power density (dBm)	Limit (dBm)	Result
8192	5755 MHz	-20.88	-22.28	-16.99	5.62	PASS
	5795 MHz	-19.35	-21.12	-16.99	5.62	PASS

NOTE: Model A/C (B/D) represent two different modules,

A(B) Represent the value of antenna A and B,The worst data is A Antenna a ,only shown Antenna A Plot.

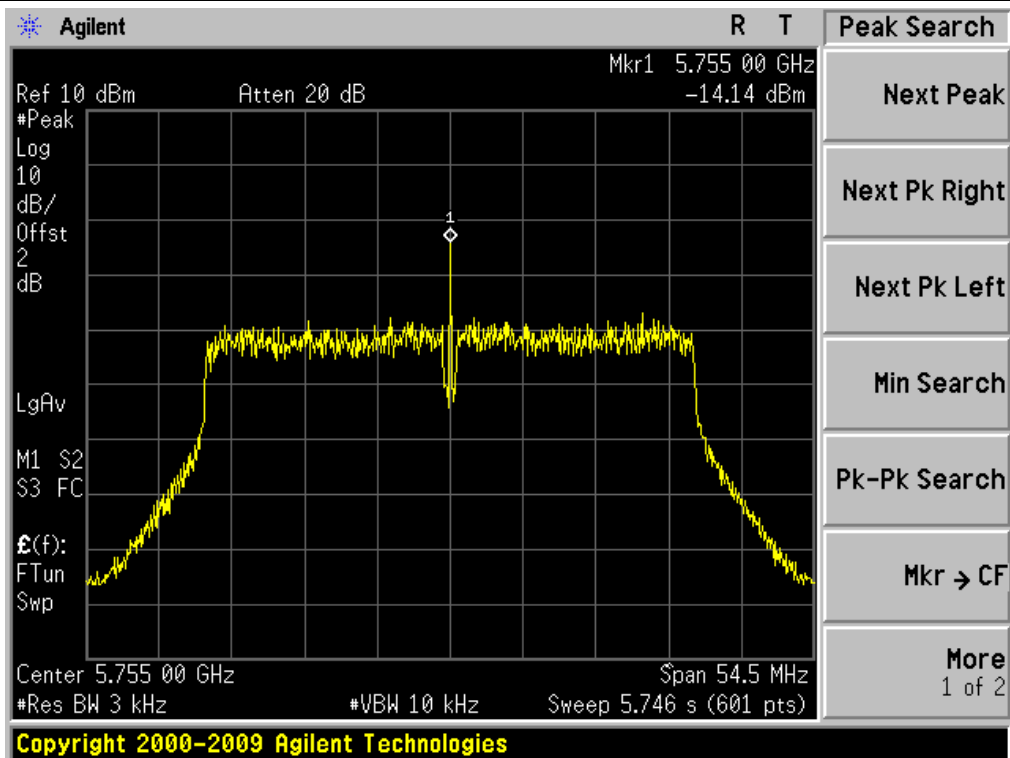
C(D) Represent the value of antenna C and D,The worst data is C Antenna a ,only shown Antenna C Plot.

RF Model 8812 :For 5G mode , Limit =8-8.91+6=5.09.

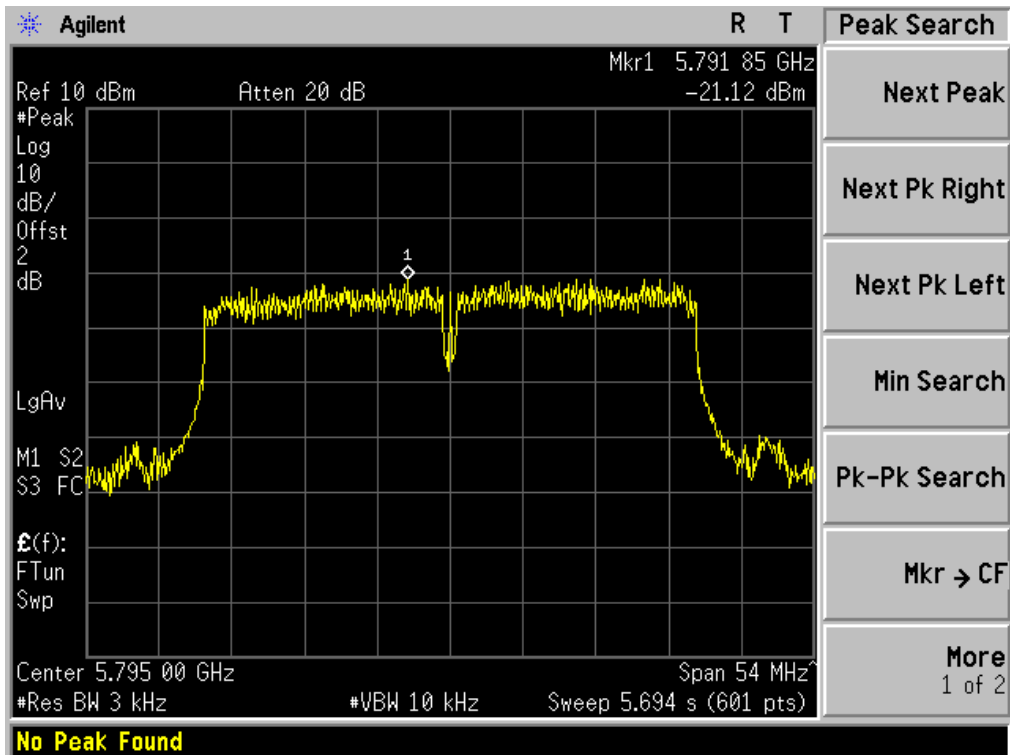
RF Model 8192 :For 5G mode , Limit =8-8.38+6=5.62.

RF Model 8812

TX CH151

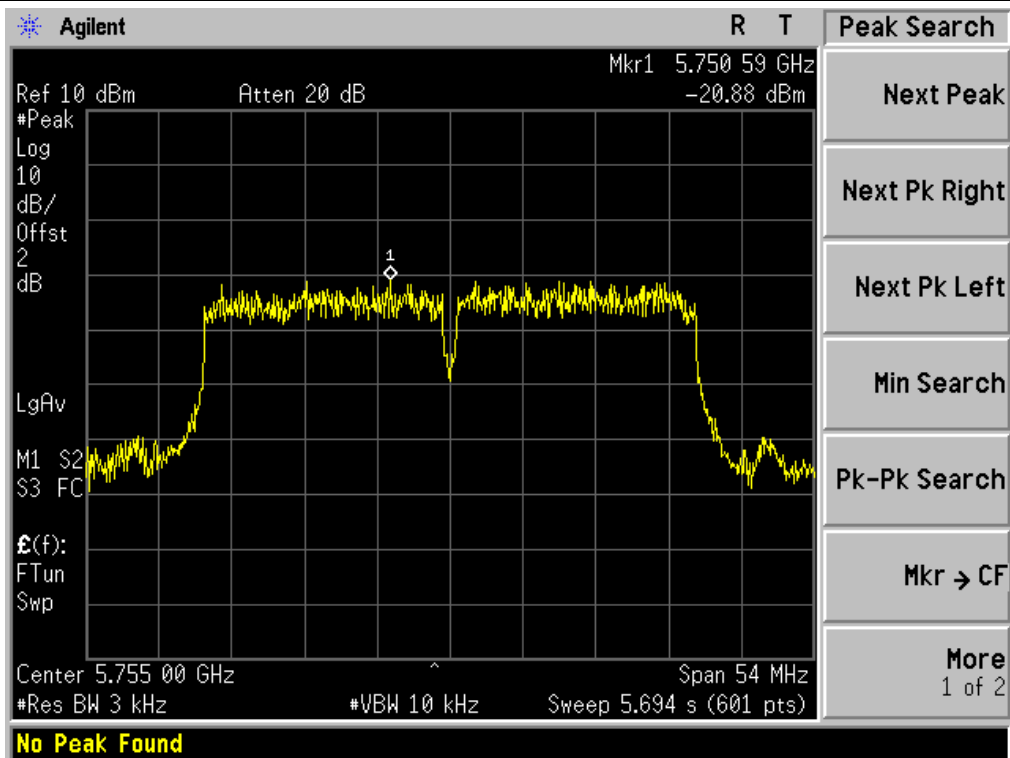


TX CH159

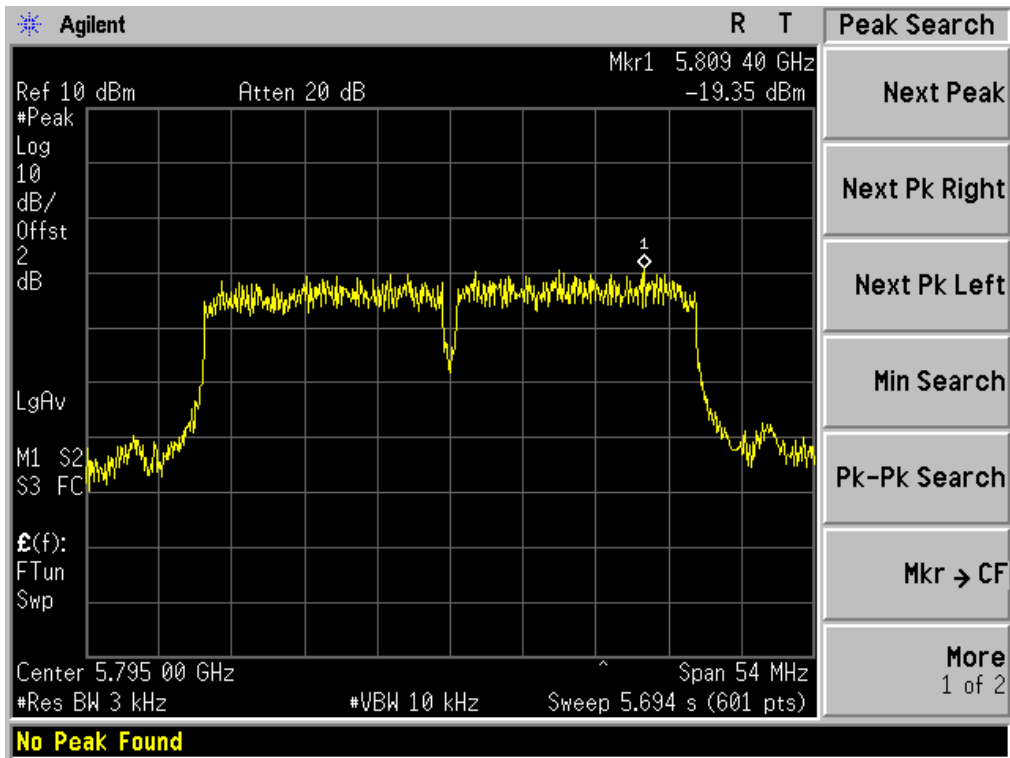


RF Model 8192

TX CH151



TX CH159



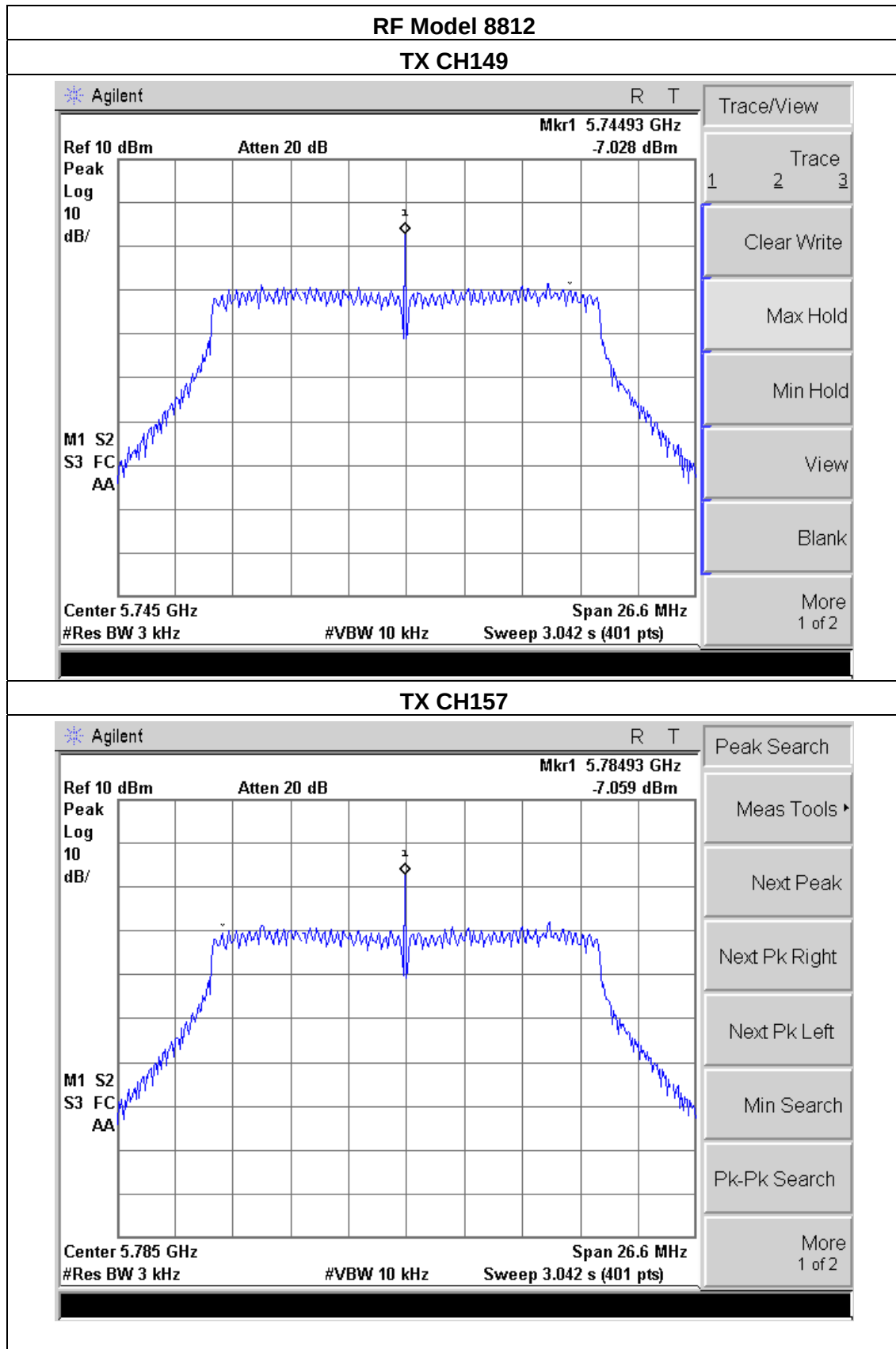
EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX AC(20) Mode(5G) /CH149, CH157, CH165		

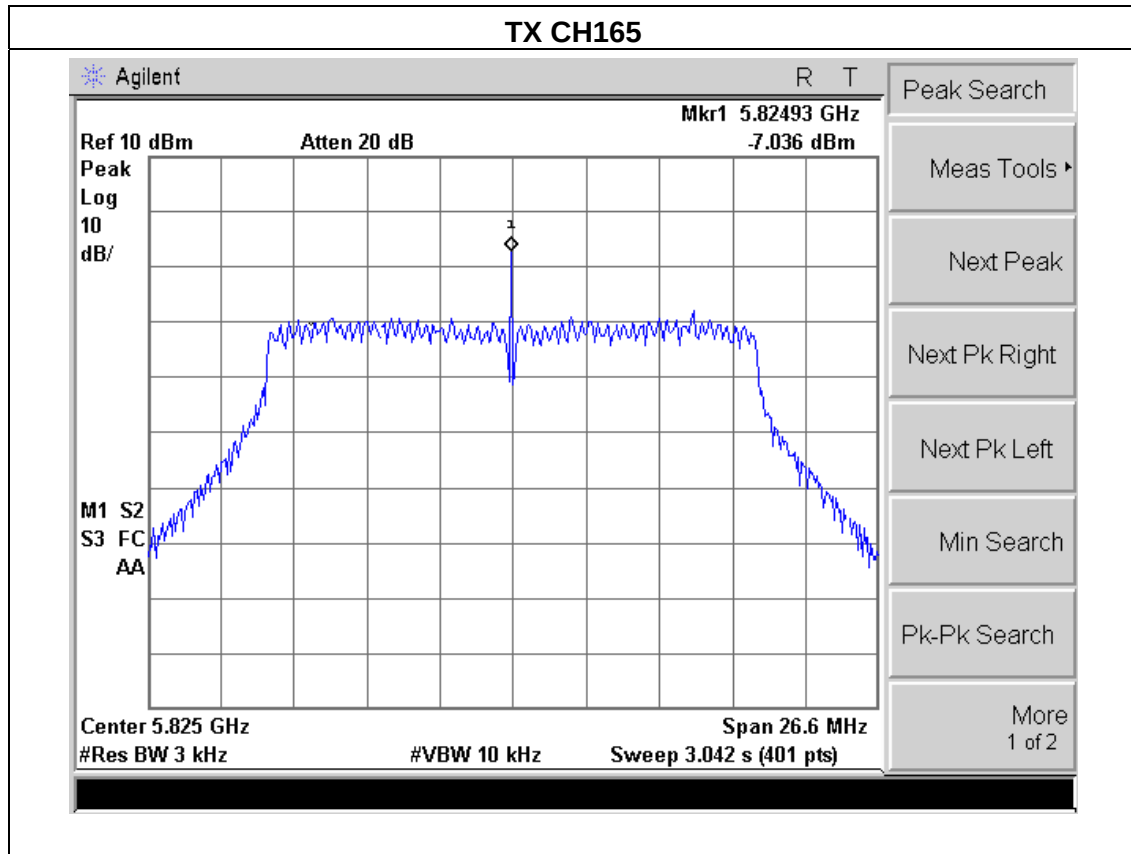
RF Model	Frequency	Power Density A (dBm)	Power Density B (dBm)	total power density (dBm)	Limit (dBm)	Result
8812	5745MHz	-7.028	-9.986	-5.25	5.09	PASS
	5785 MHz	-7.059	-10.51	-5.44	5.09	PASS
	5825 MHz	-7.036	-10.74	-5.49	5.09	PASS

NOTE: Model A (B) represent two different modules,

A(B) Represent the value of antenna A and B, The worst data is A Antenna a ,only shown Antenna A Plot.

RF Model 8812 :For 5G mode , Limit = $8-8.91+6=5.09$.





EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX AC(40) Mode(5G) /CH151, CH159		

RF Model	Frequency	Power Density A (dBm)	Power Density B (dBm)	total power density (dBm)	Limit (dBm)	Result
8812	5755 MHz	-21.11	-22.29	-18.65	5.09	PASS
	5795 MHz	-22.47	-22.53	-19.49	5.09	PASS

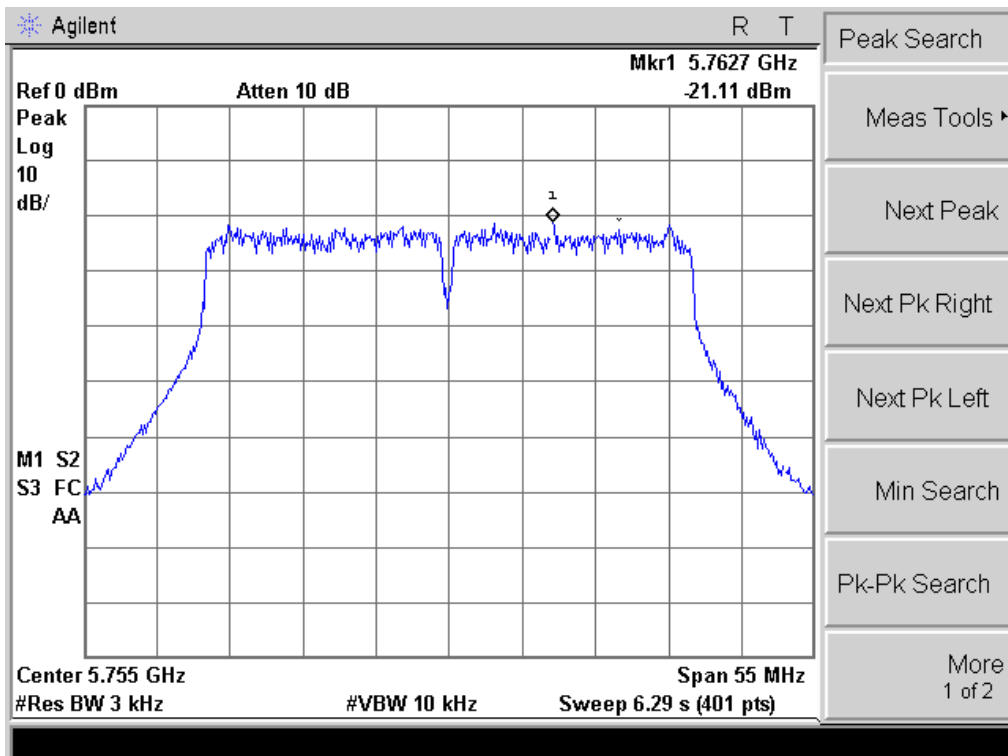
NOTE: Model A (B) represent two different modules,

A(B) Represent the value of antenna A and B, The worst data is A Antenna a ,only shown Antenna A Plot.

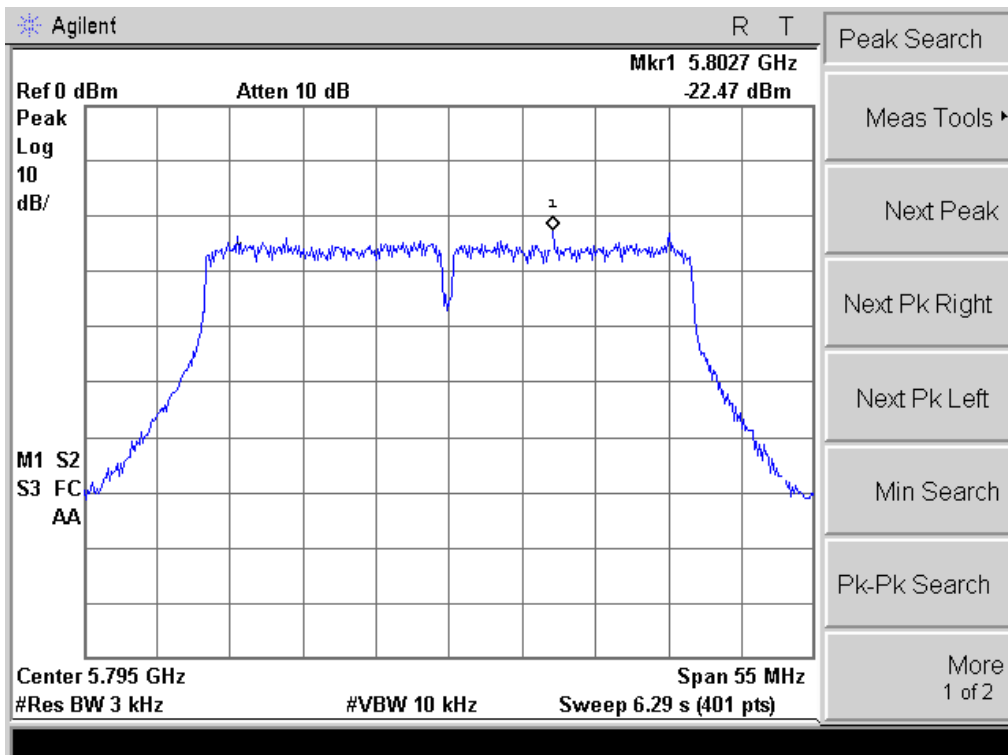
RF Model 8812 :For 5G mode , Limit = $8-8.91+6=5.09$.

RF Model 8812

TX CH151



TX CH159



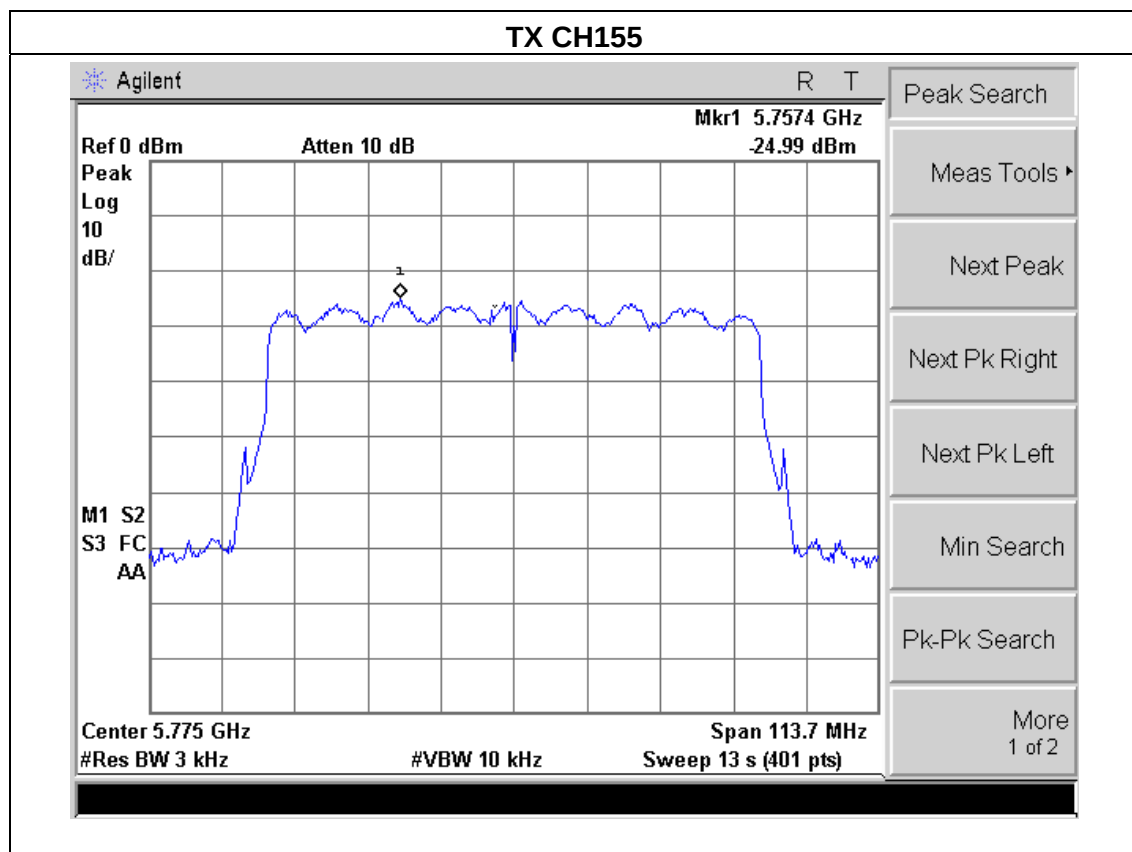
EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX AC(80) Mode(5G) /CH155		

RF Model	Frequency	Power Density A (dBm)	Power Density B (dBm)	total power density (dBm)	Limit (dBm)	Result
8812	5775 MHz	-24.99	-25.00	-21.98	5.09	PASS

NOTE: Model A (B) represent two different modules.

A(B) Represent the value of antenna A and B,The worst data is A Antenna a ,only shown Antenna A Plot.

RF Model 8812 :For 5G mode , Limit = $8-8.91+6=5.09$.



5. BANDWIDTH TEST

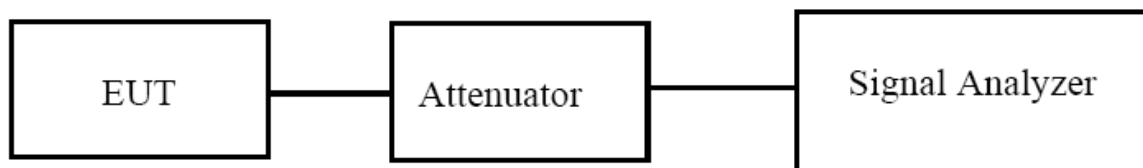
5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C/ RSS-247 & RSS-Gen Rules				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)/ RSS-Gen§6.6 .1&RSS-247§ 5.2 (1)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

5.1.1 TEST PROCEDURE

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

TEST SETUP



5.1.2 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.3 TEST RESULTS

EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX b Mode(2.4G) /CH01, CH06, CH11		

RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	2412	10.161	10.056	500	Pass
	Middle	2437	10.160	10.059	500	Pass
	High	2462	10.162	10.055	500	Pass
RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	2412	10.122	10.116	500	Pass
	Middle	2437	10.119	10.117	500	Pass
	High	2462	10.084	10.114	500	Pass

RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	2412	15.240	15.184	500	Pass
	Middle	2437	15.217	15.197	500	Pass
	High	2462	15.196	15.125	500	Pass
RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	2412	14.809	14.807	500	Pass
	Middle	2437	14.813	14.812	500	Pass
	High	2462	14.806	14.801	500	Pass

NOTE: Model A/C (B/D) represent two different modules,

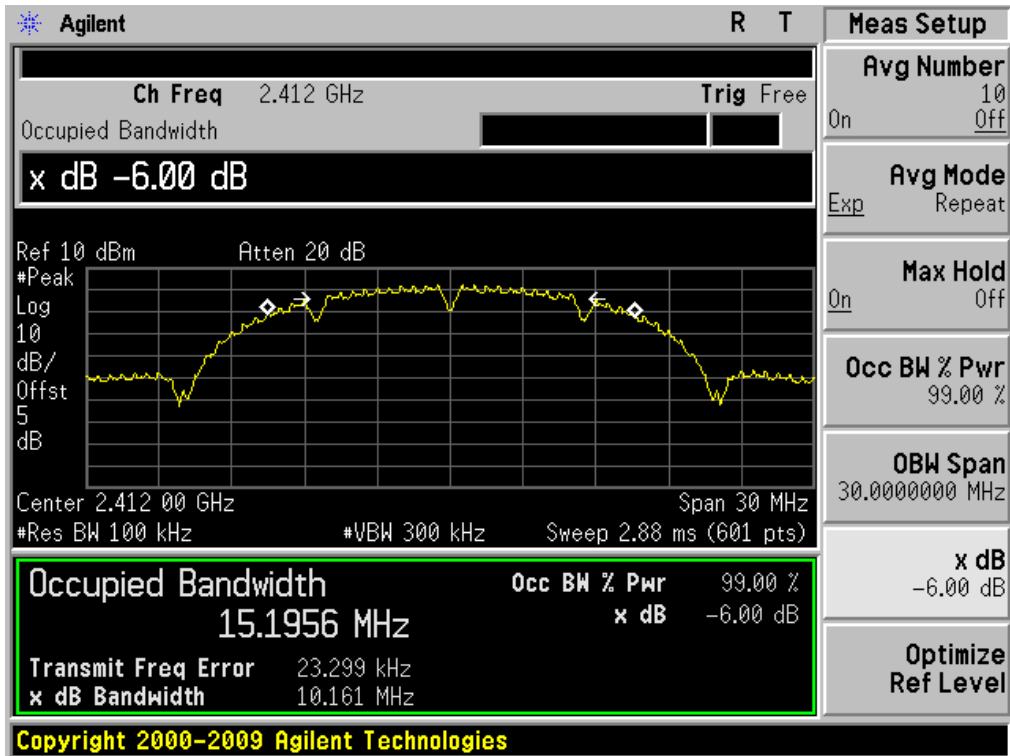
A(B) Represent the value of antenna A and B,The worst data is A Antenna a ,only shown Antenna A Plot.

C(D) Represent the value of antenna C and D,The worst data is C Antenna a ,only shown Antenna C Plot.

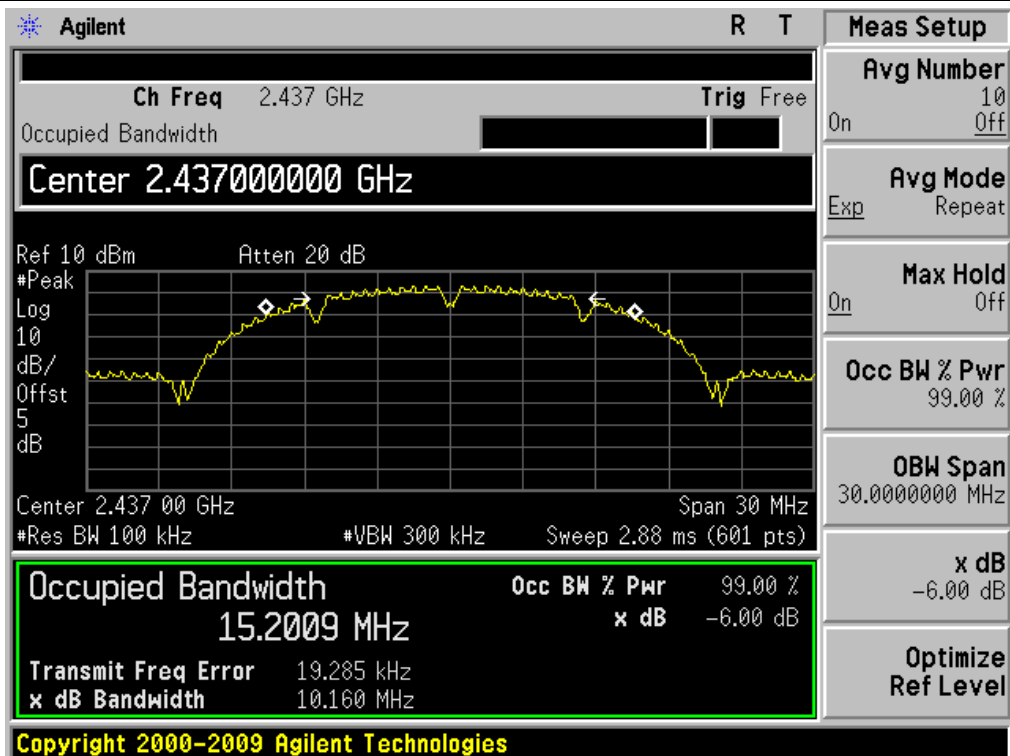
RF Model 8812

6dB bandwidth

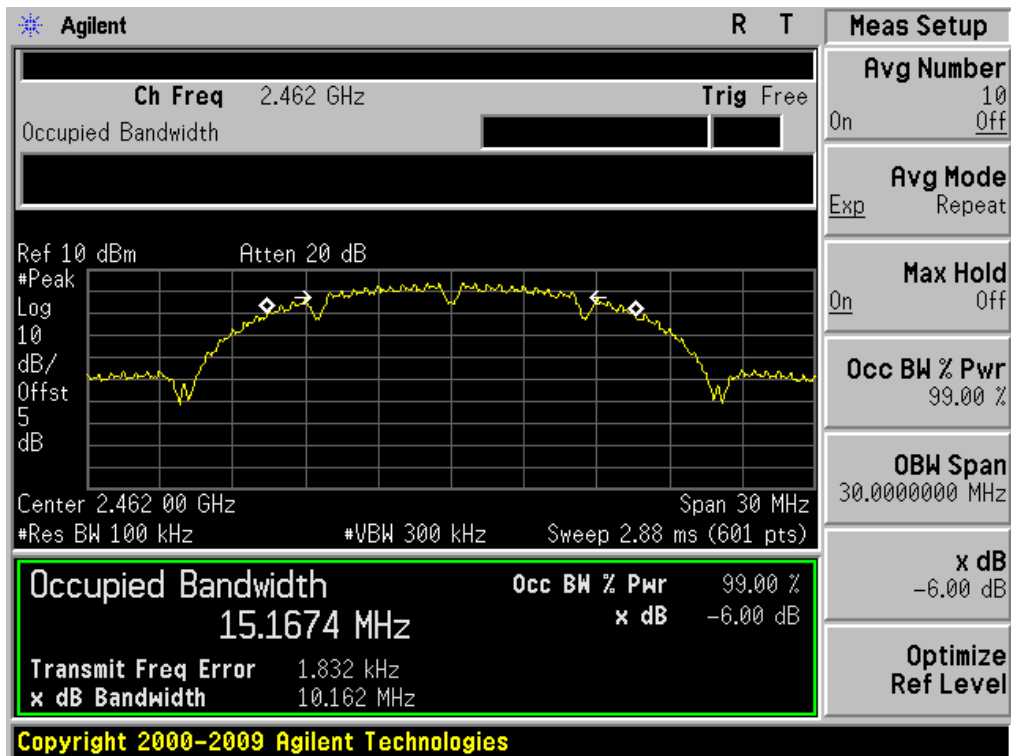
TX CH 01



TX CH 06

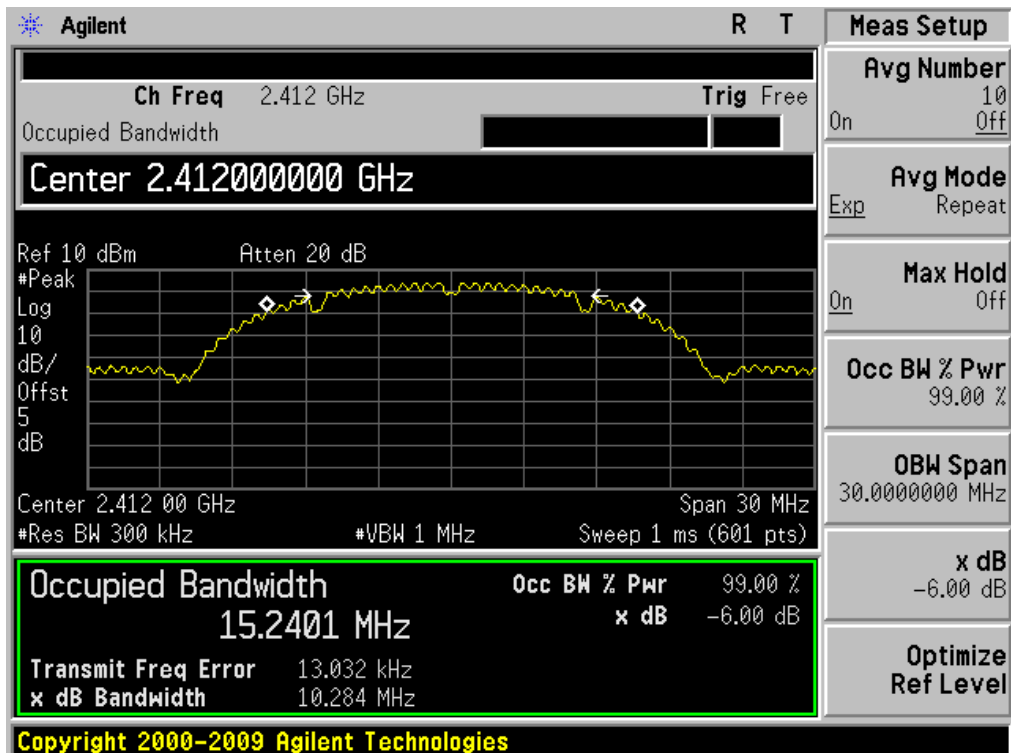


TX CH 11

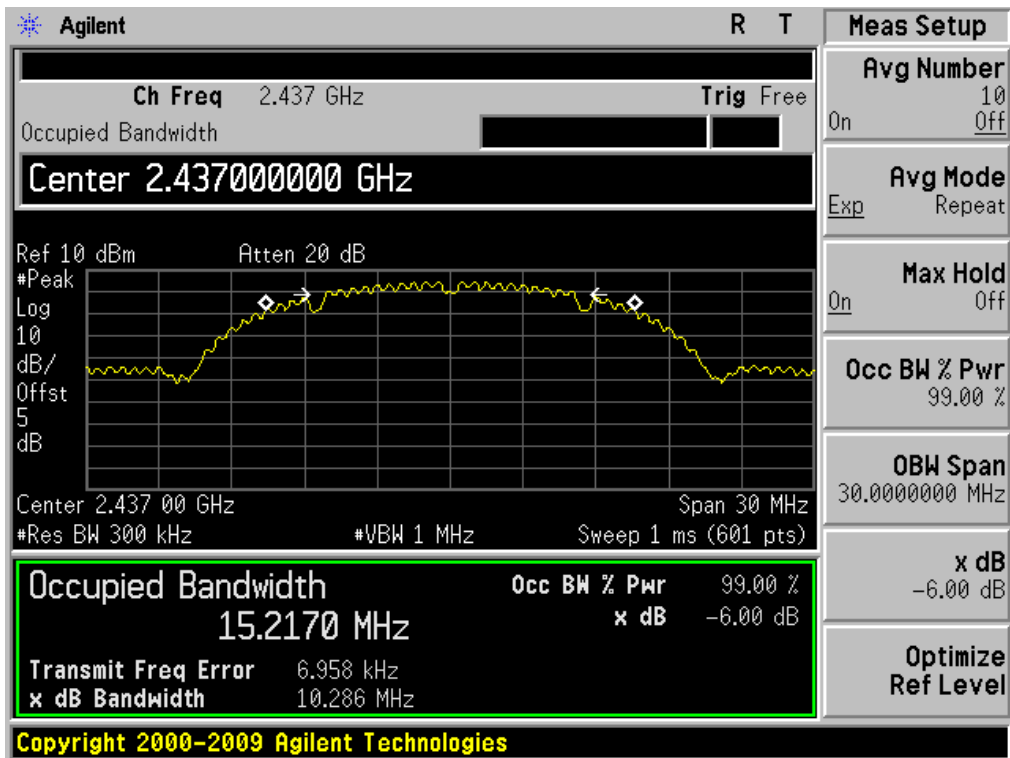


99% bandwidth

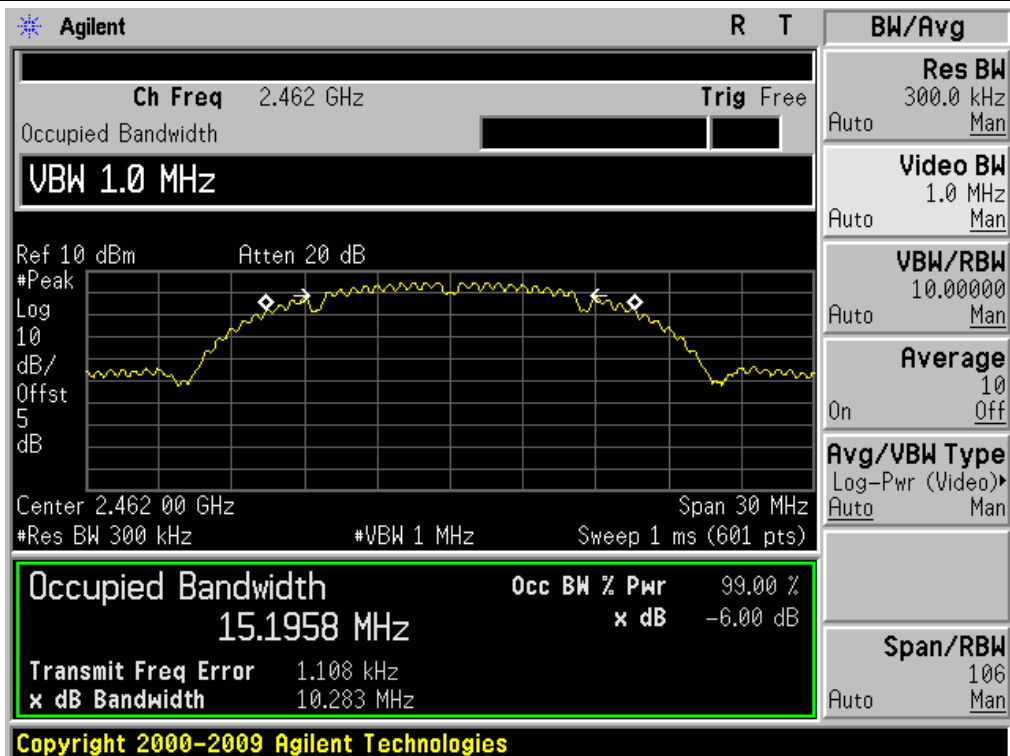
TX CH 01



TX CH 06



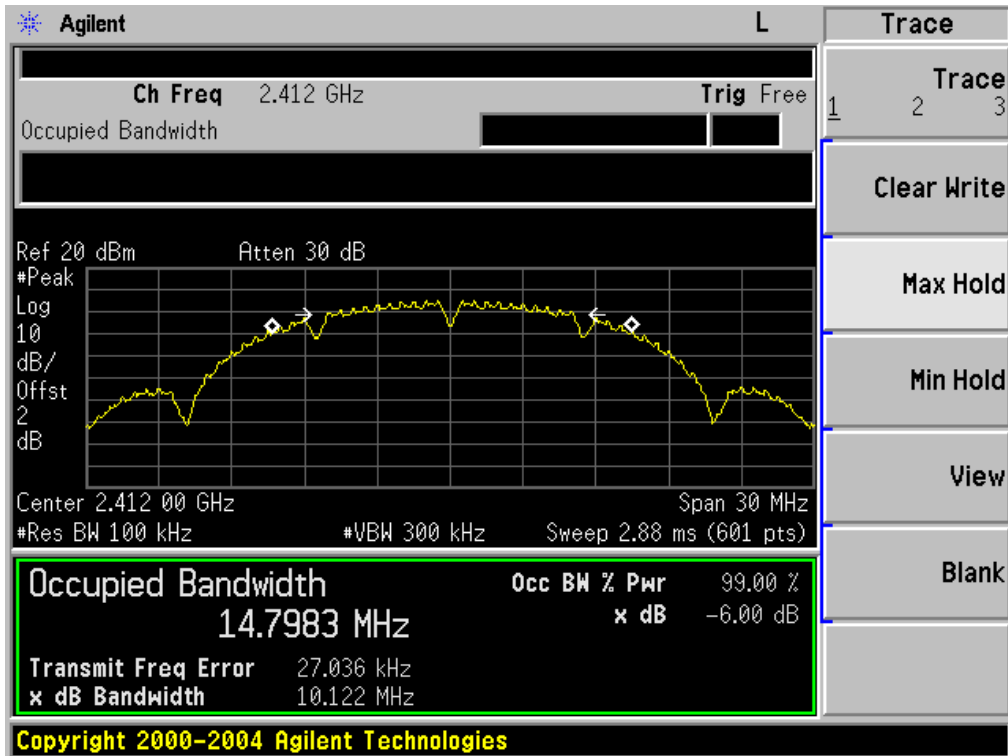
TX CH 11



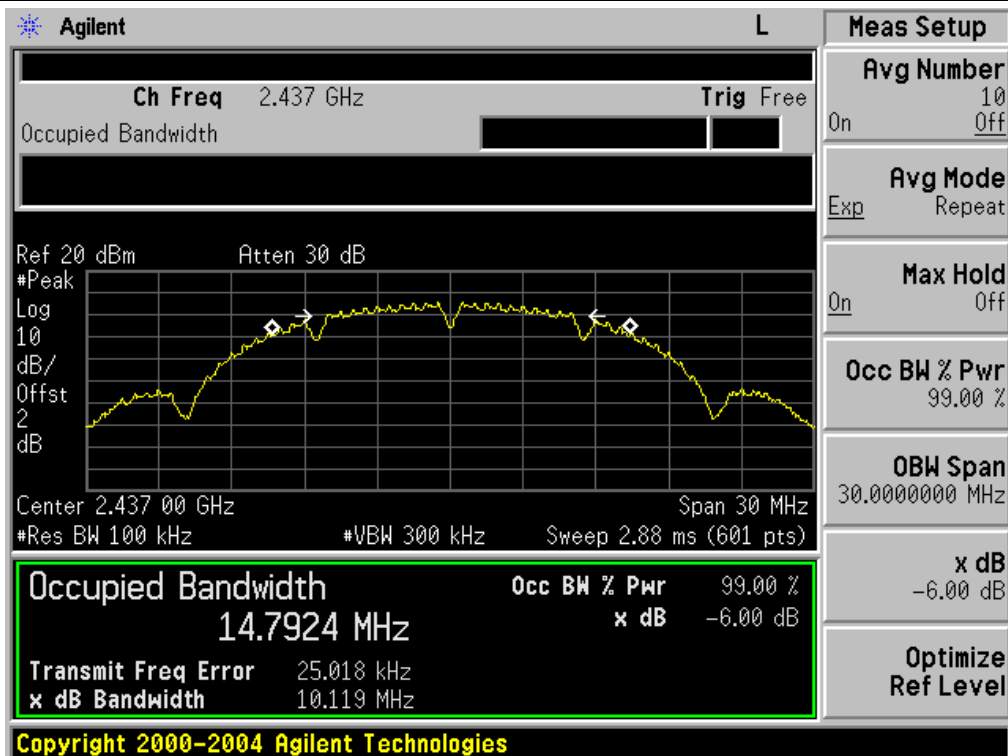
RF Model 8192

6dB bandwidth

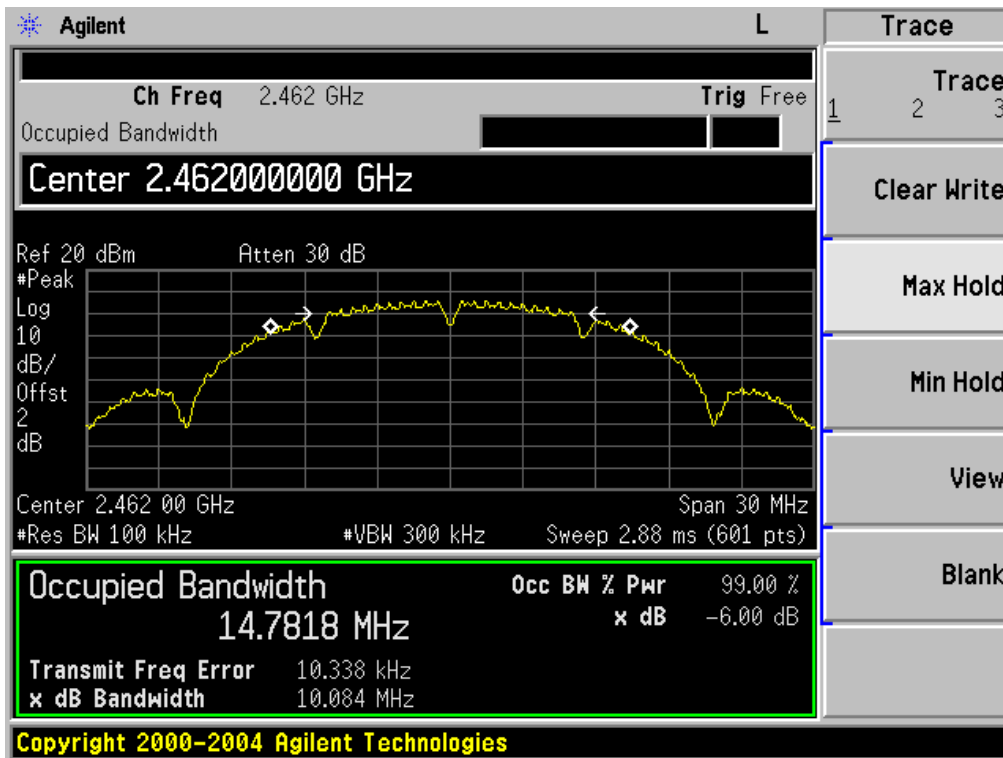
TX CH 01



TX CH 06

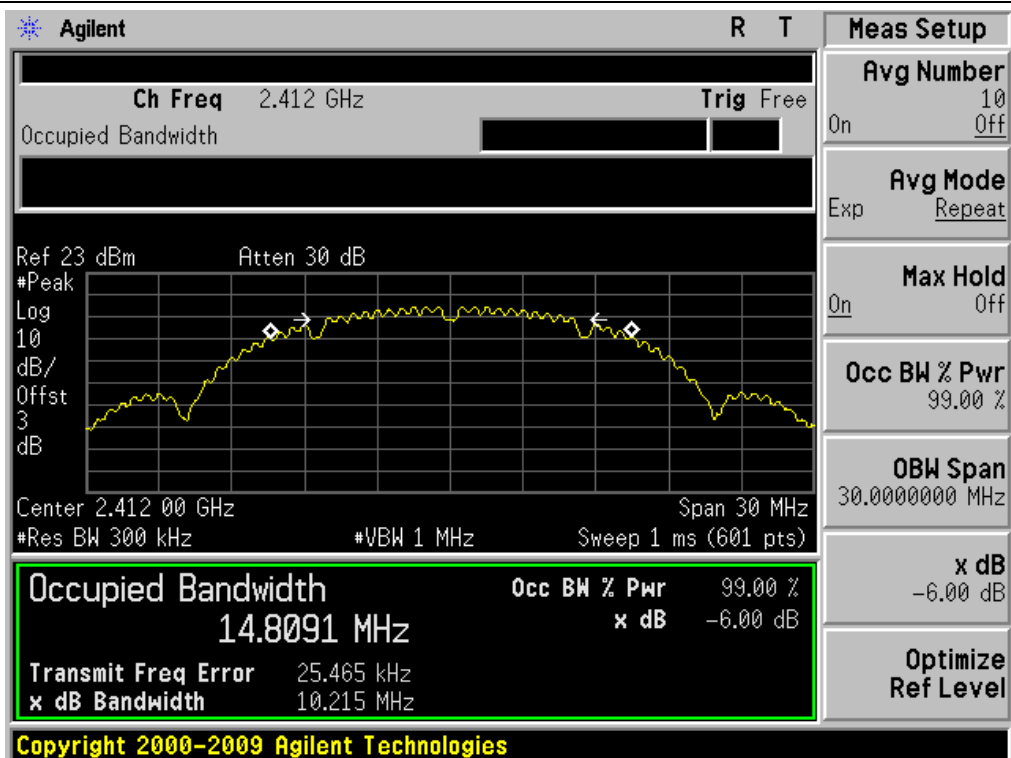


TX CH 11

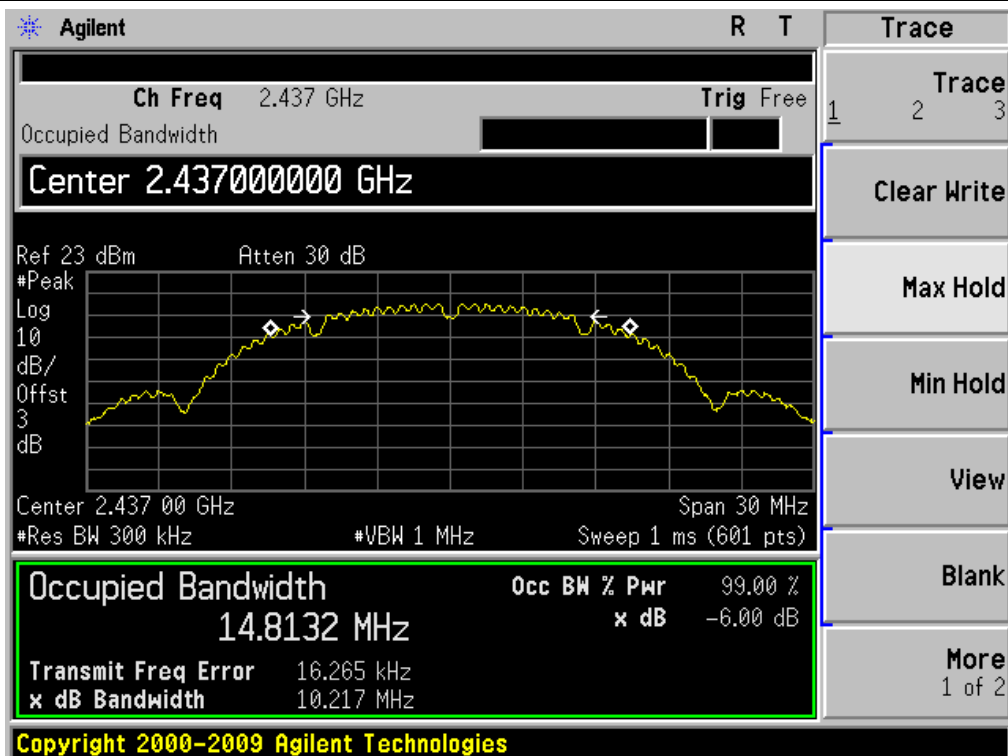


99% bandwidth

TX CH 01



TX CH 06



TX CH 11



EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX g Mode(2.4G) /CH01, CH06, CH11		

RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	2412	16.600	16.614	500	Pass
	Middle	2437	16.591	16.618	500	Pass
	High	2462	16.600	16.603	500	Pass
RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	2412	16.555	16.421	500	Pass
	Middle	2437	16.596	16.427	500	Pass
	High	2462	16.566	16.478	500	Pass

RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	2412	16.851	16.755	500	Pass
	Middle	2437	16.868	16.745	500	Pass
	High	2462	16.890	16.587	500	Pass
RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	2412	16.829	16.814	500	Pass
	Middle	2437	16.792	16.784	500	Pass
	High	2462	16.822	16.805	500	Pass

NOTE: Model A/C (B/D) represent two different modules.

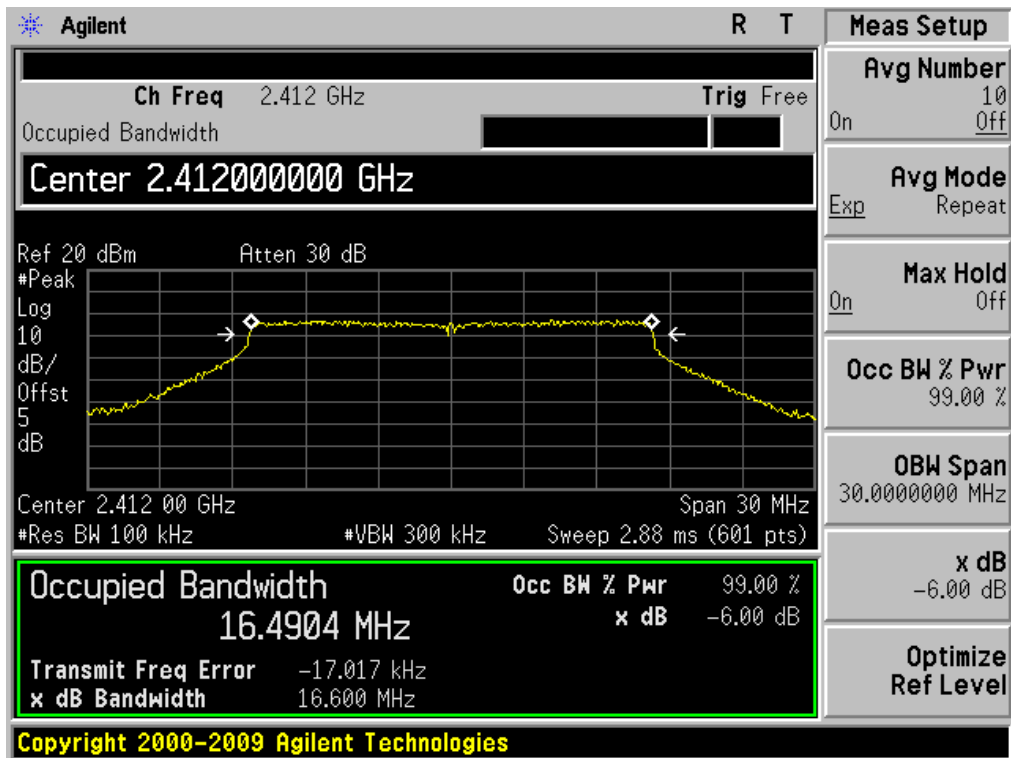
A(B) Represent the value of antenna A and B,The worst data is A Antenna a ,only shown Antenna A Plot.

C(D) Represent the value of antenna C and D,The worst data is C Antenna a ,only shown Antenna C Plot.

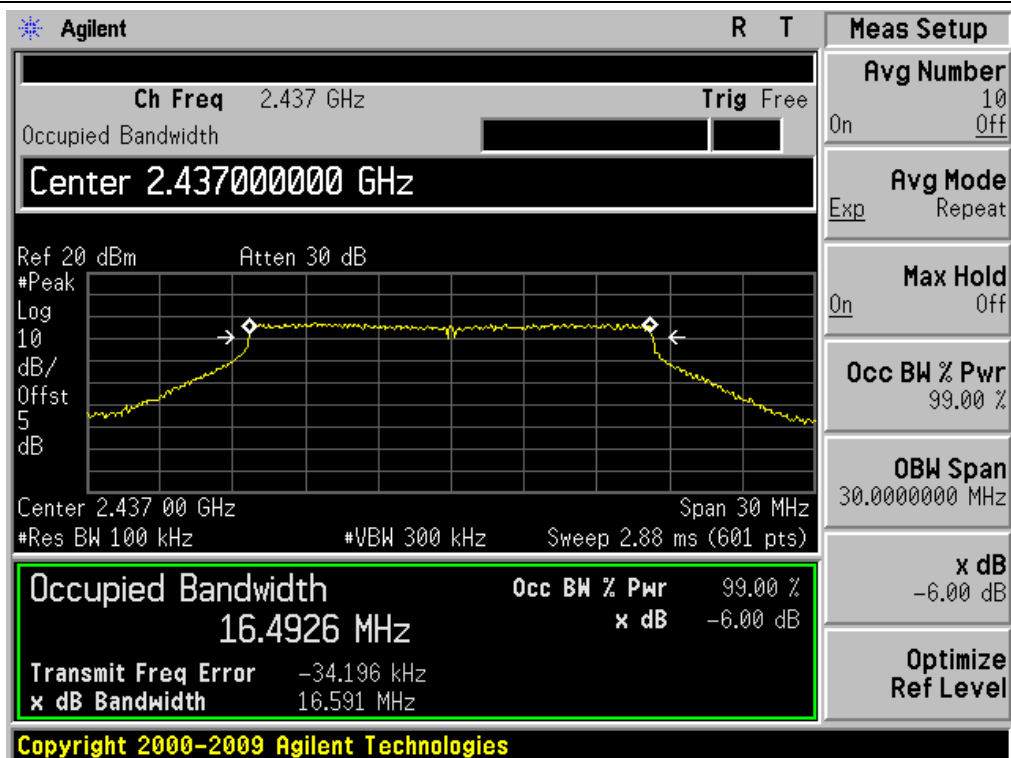
RF Model 8812

6dB bandwidth

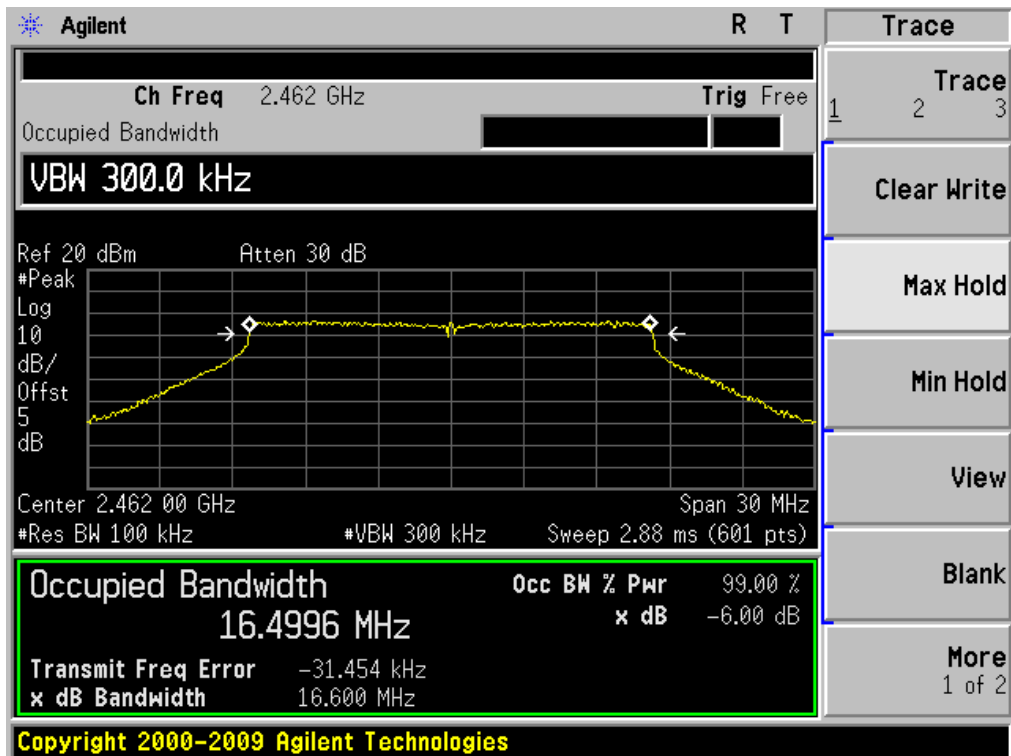
TX CH 01



TX CH 06

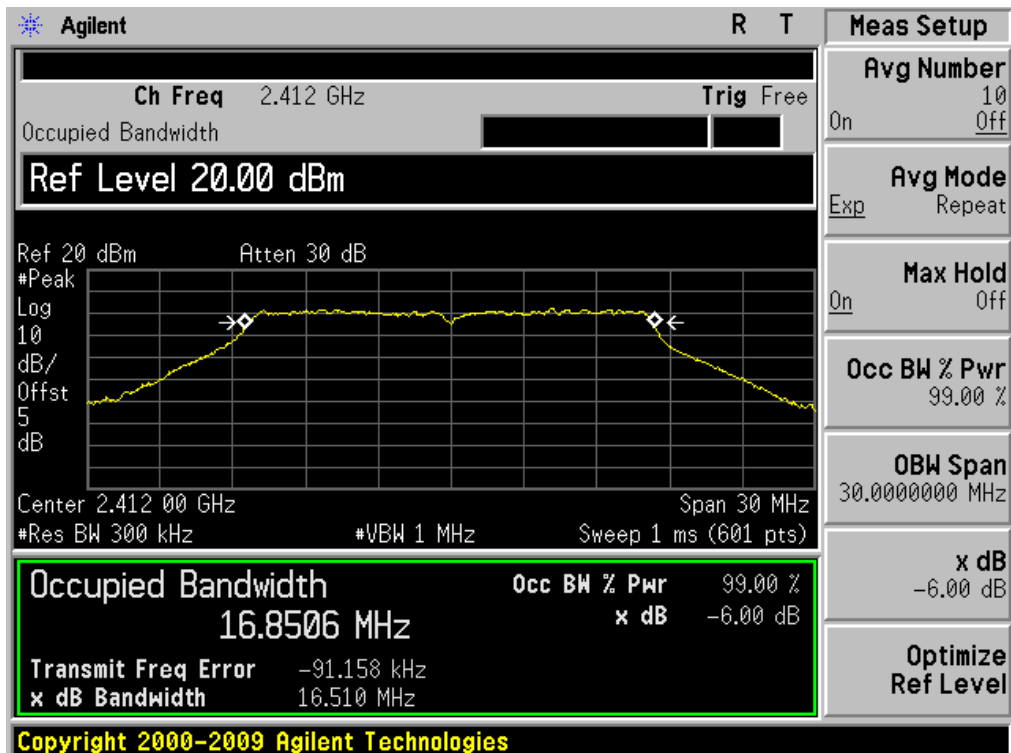


TX CH 11

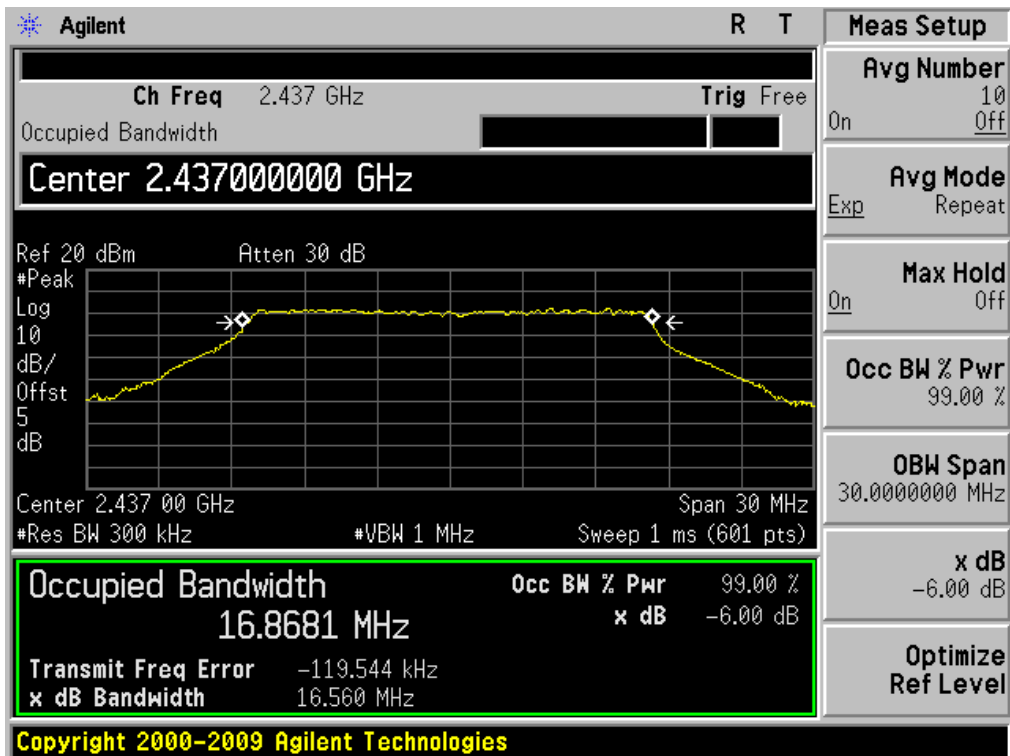


99% bandwidth

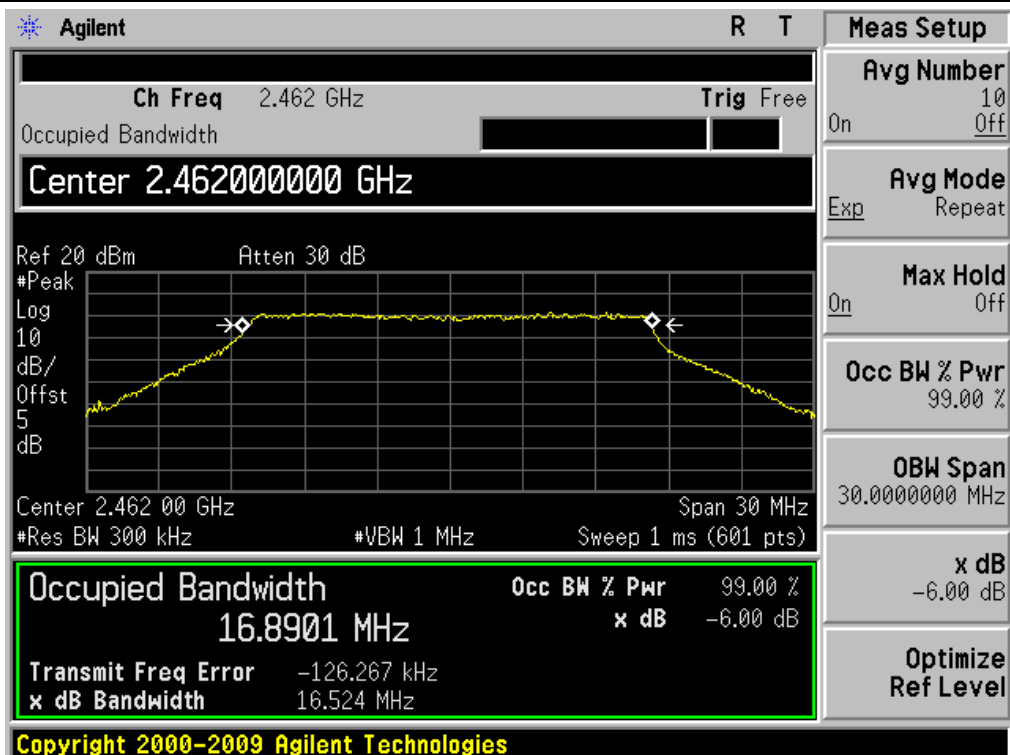
TX CH 01



TX CH 06



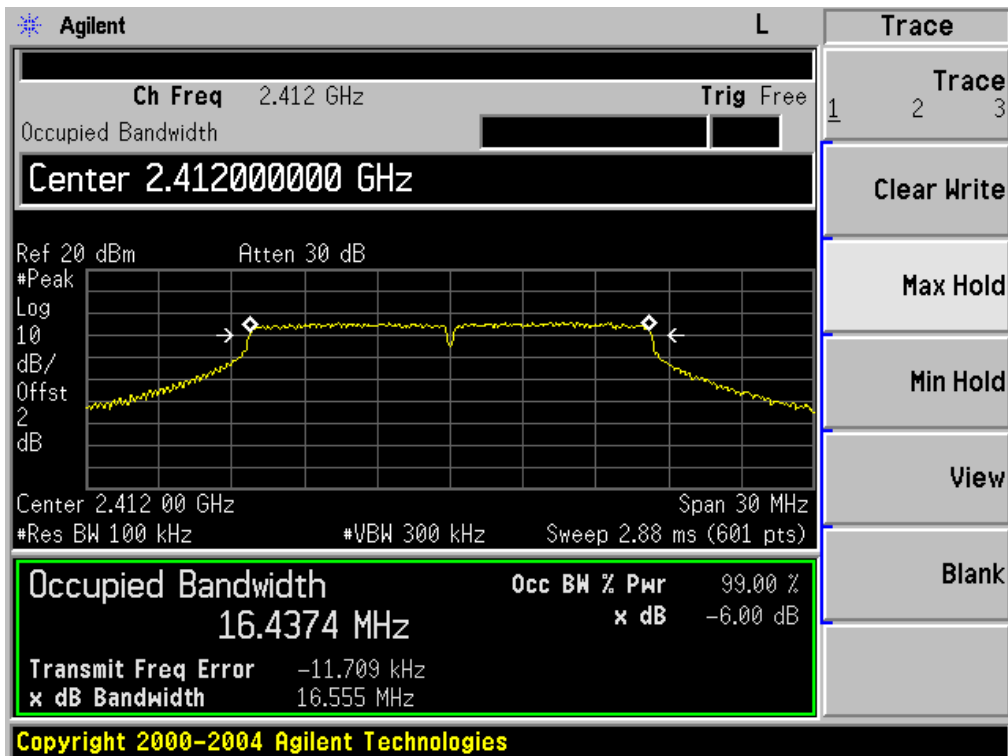
TX CH 11



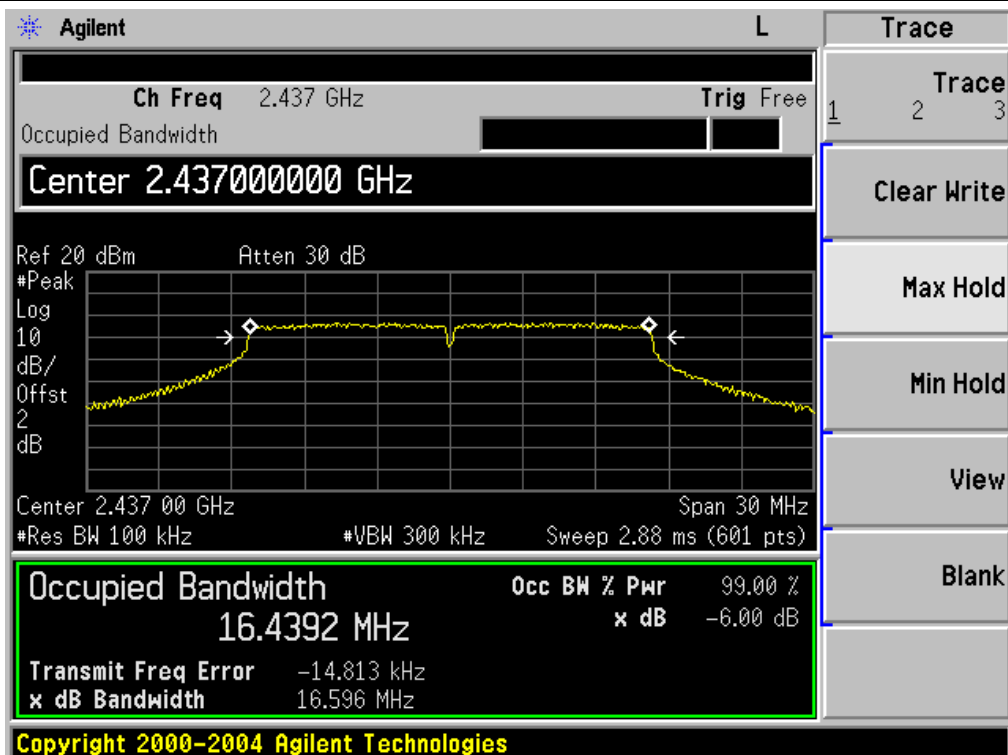
RF Model 8192

6dB bandwidth

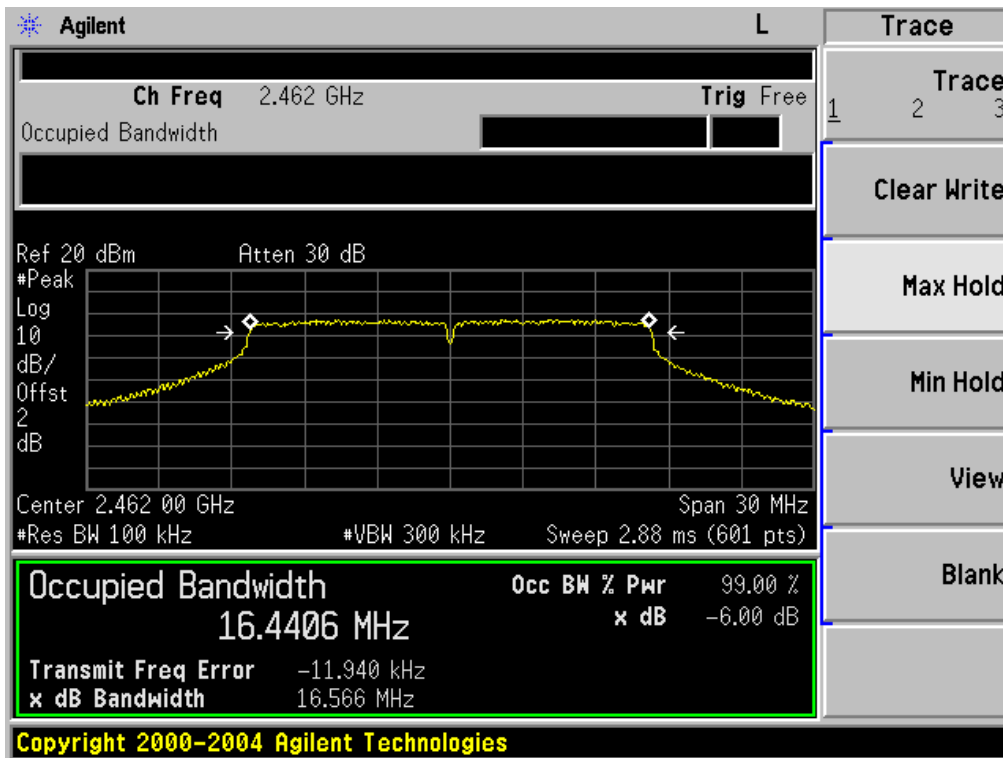
TX CH 01



TX CH 06

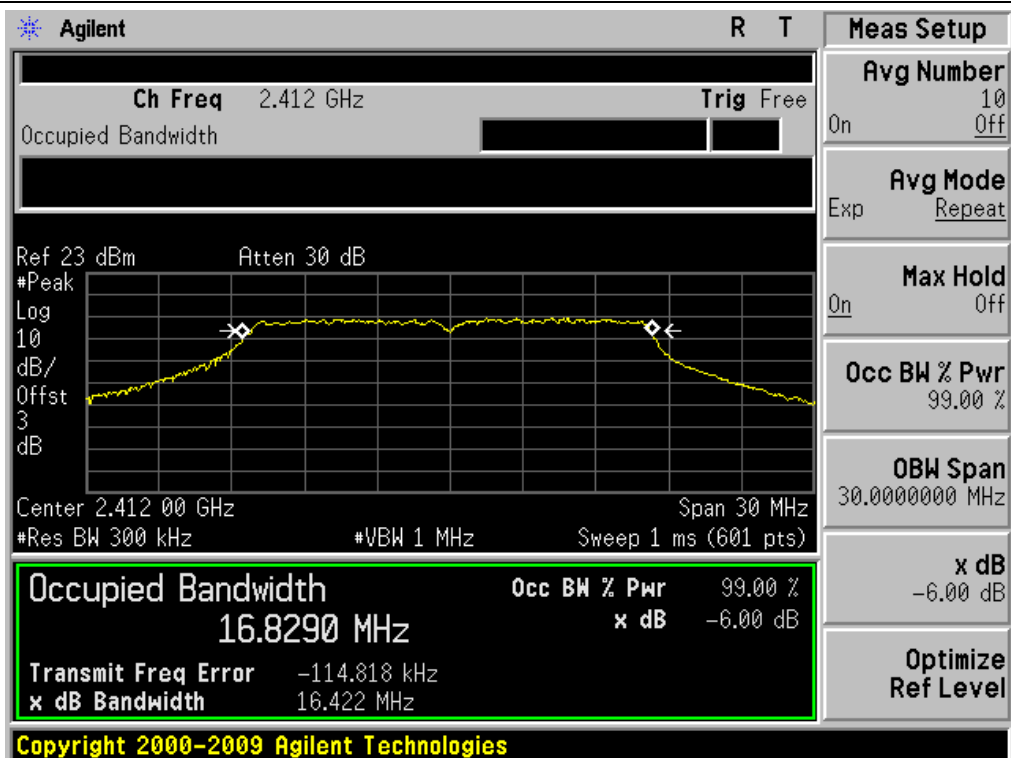


TX CH 11

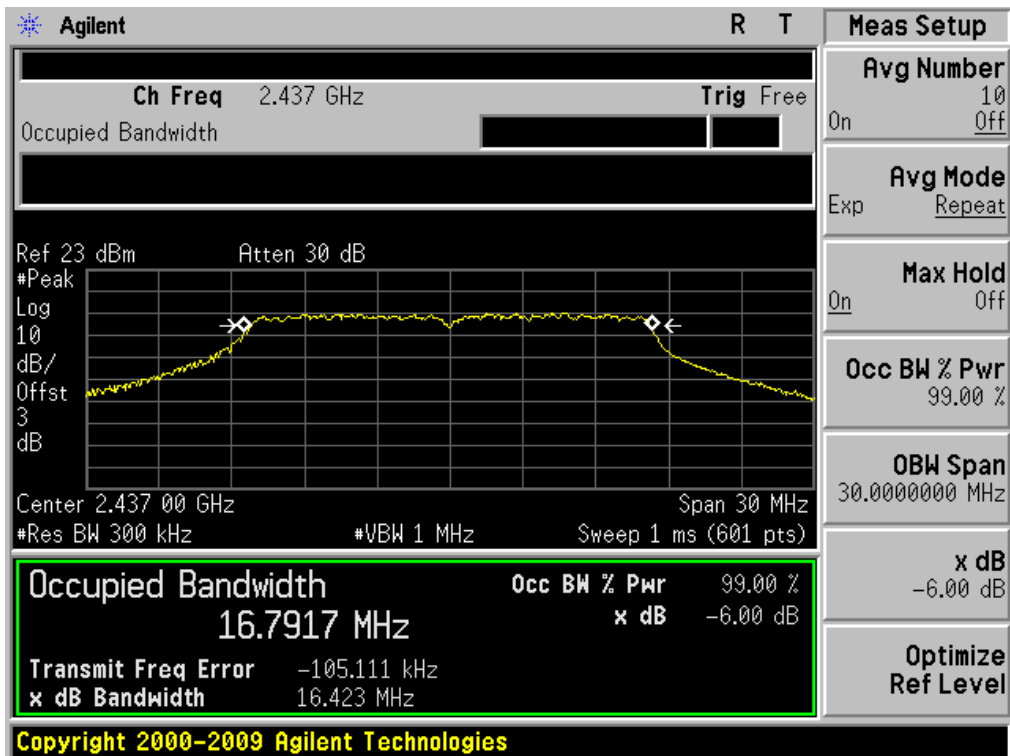


99% bandwidth

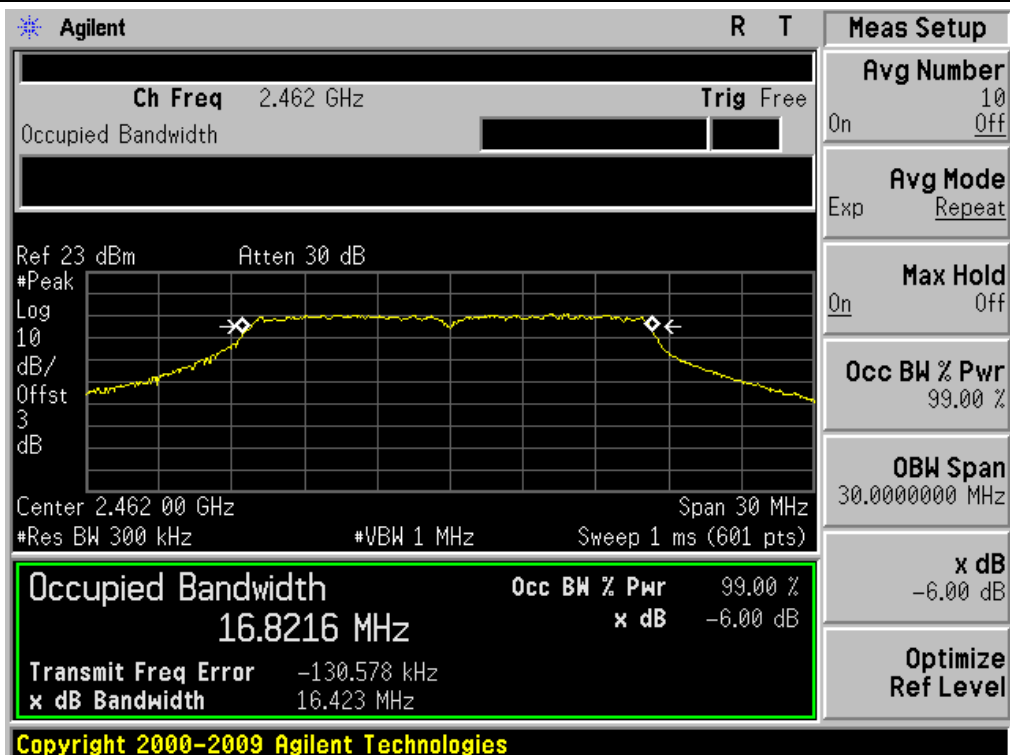
TX CH 01



TX CH 06



TX CH 11



EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX n Mode(20M) (2.4G) /CH01, CH06, CH11		

RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	2412	17.864	17.565	500	Pass
	Middle	2437	17.835	17.513	500	Pass
	High	2462	17.831	17.554	500	Pass
RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	2412	17.765	17.467	500	Pass
	Middle	2437	17.782	17.448	500	Pass
	High	2462	17.798	17.455	500	Pass

RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	2412	17.973	17.885	500	Pass
	Middle	2437	17.973	17.846	500	Pass
	High	2462	17.974	17.850	500	Pass
RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	2412	17.900	17.864	500	Pass
	Middle	2437	17.892	17.877	500	Pass
	High	2462	17.917	17.889	500	Pass

NOTE: Model A/C (B/D) represent two different modules.

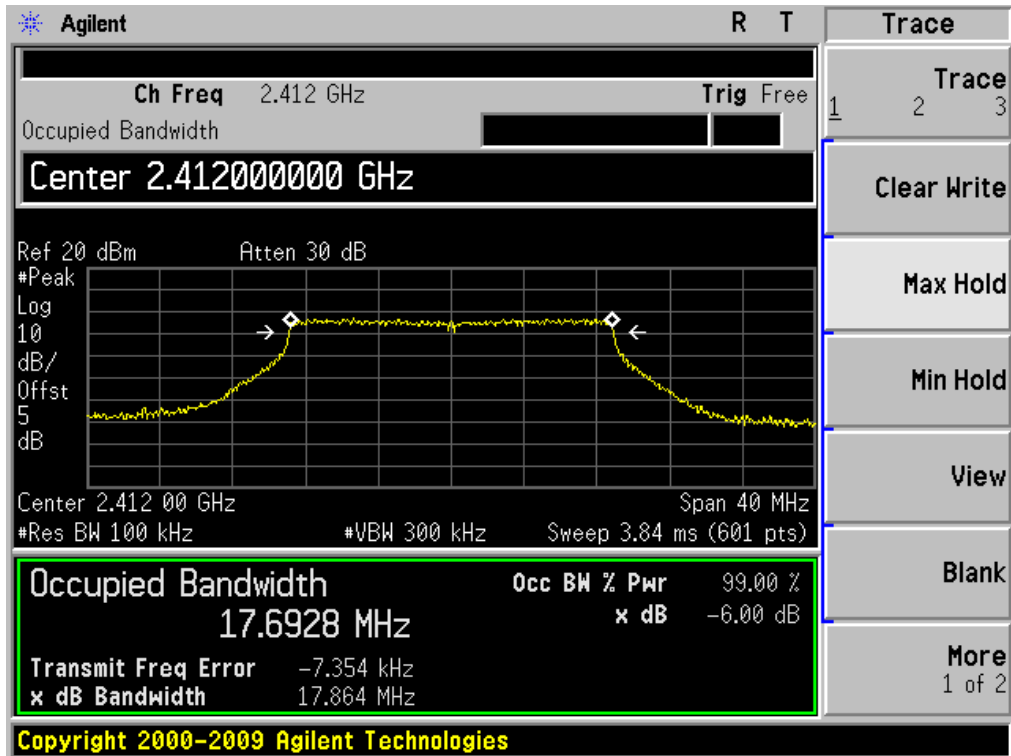
A(B) Represent the value of antenna A and B,The worst data is A Antenna a ,only shown Antenna A Plot.

C(D) Represent the value of antenna C and D,The worst data is C Antenna a ,only shown Antenna C Plot.

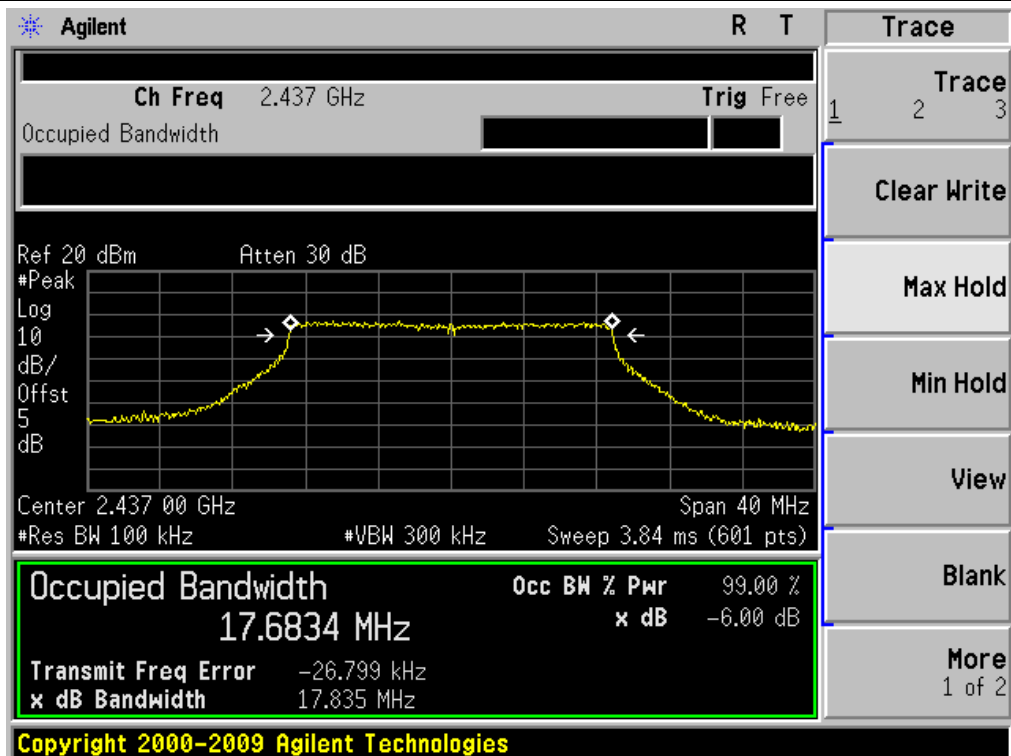
RF Model 8812

6dB bandwidth

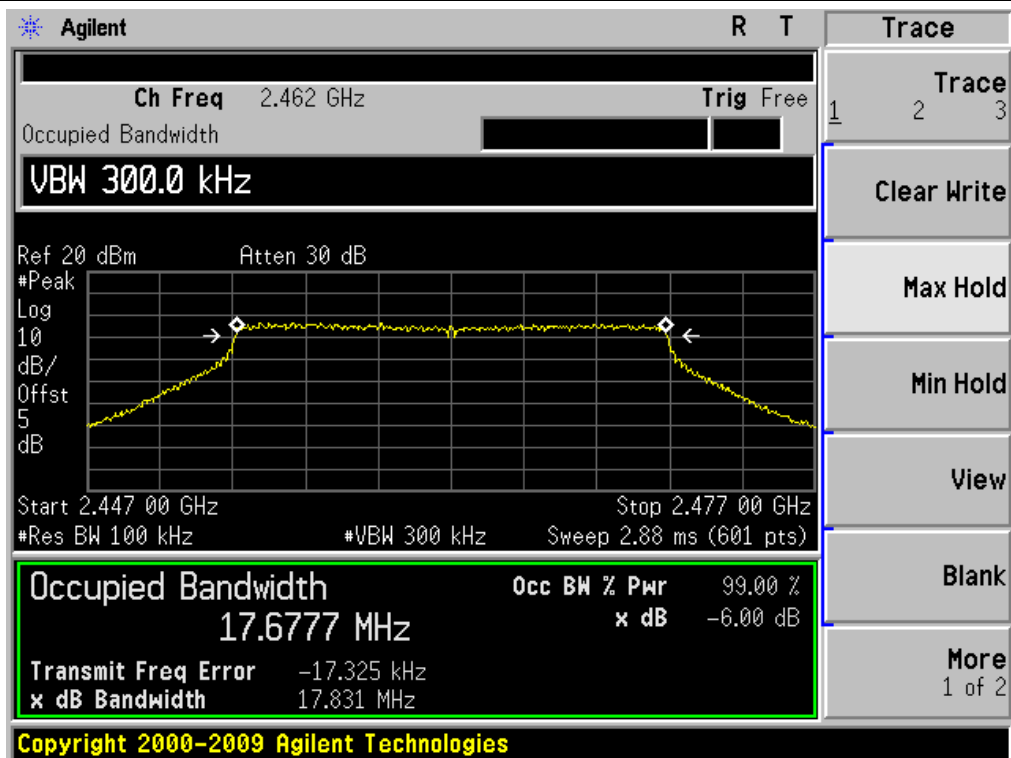
TX CH 01



TX CH 06

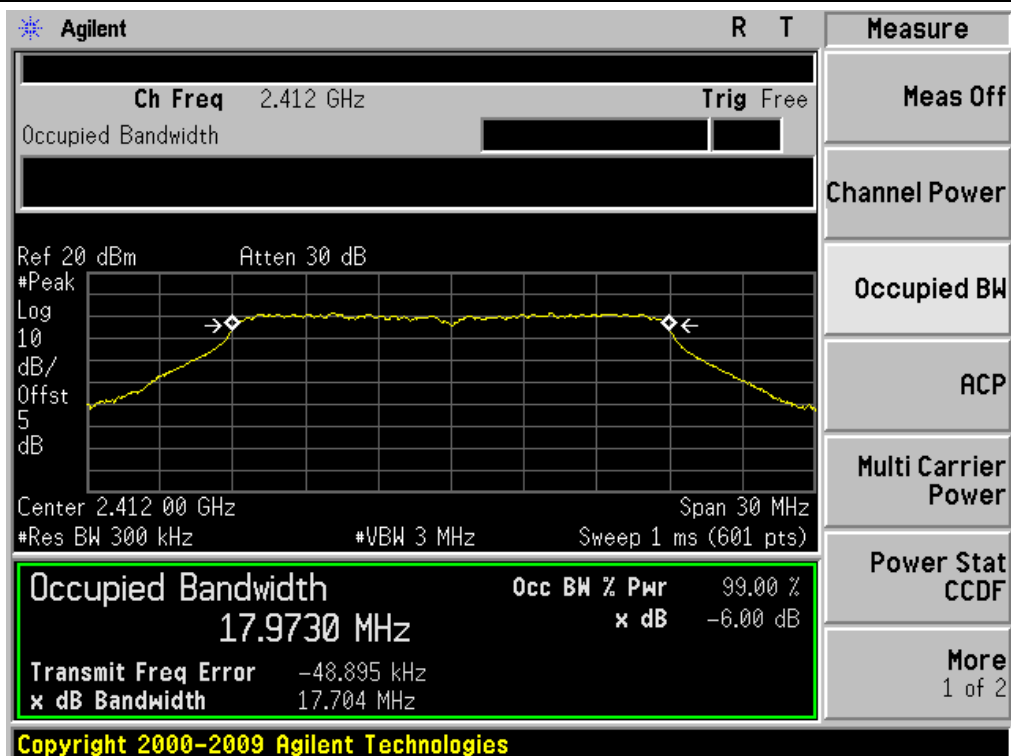


TX CH 11

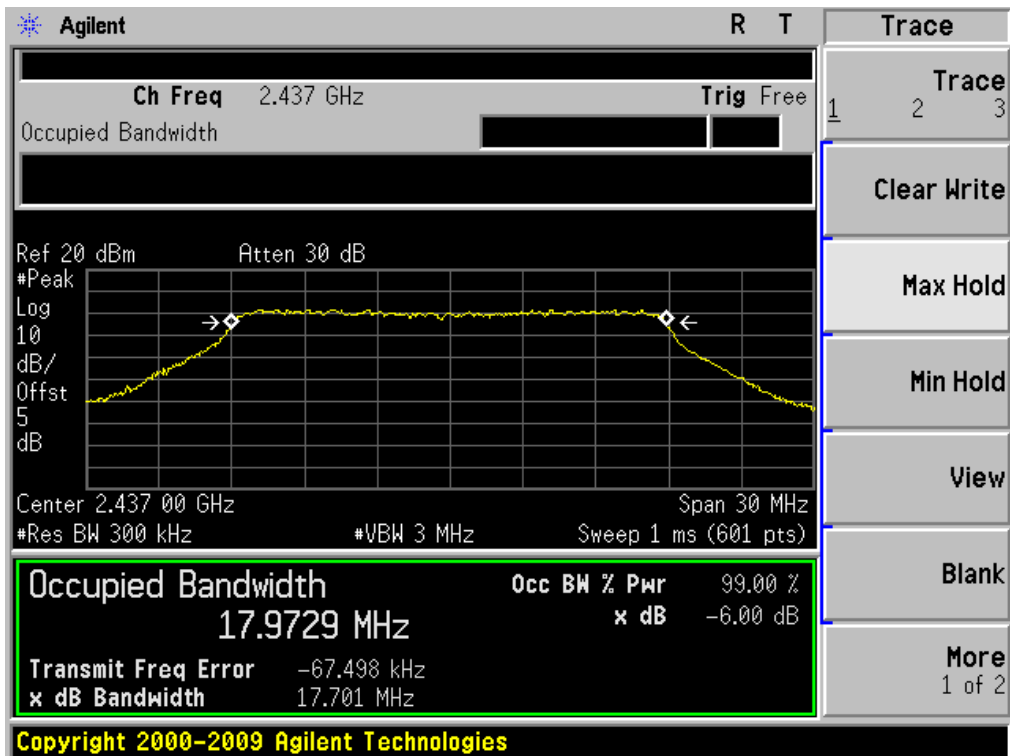


99% bandwidth

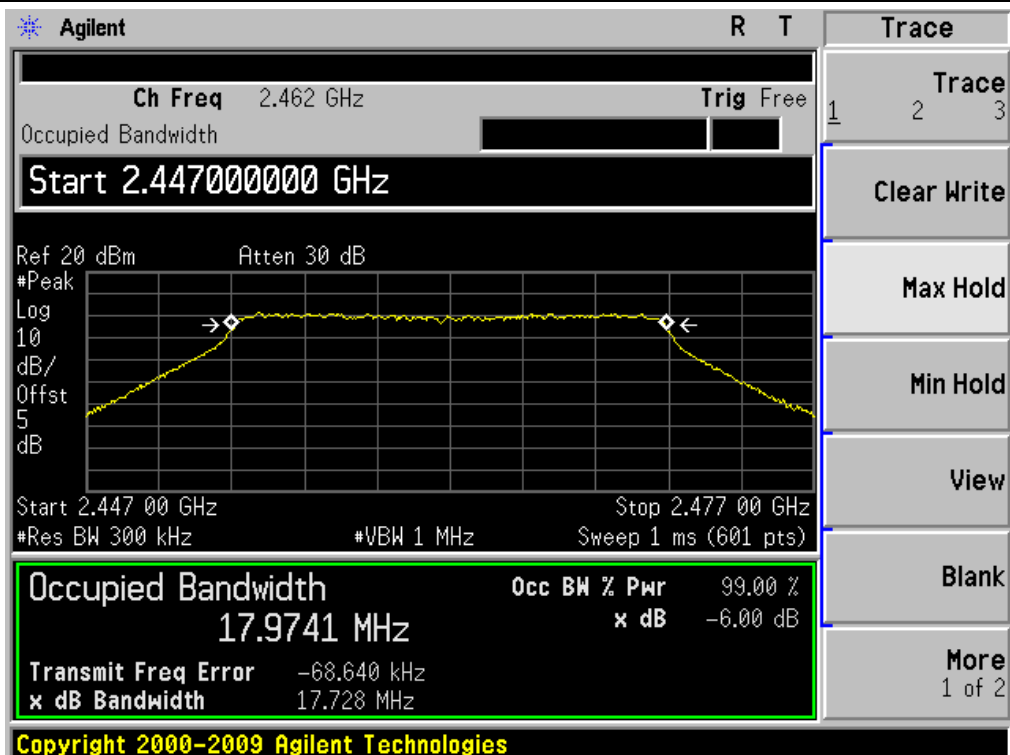
TX CH 01



TX CH 06



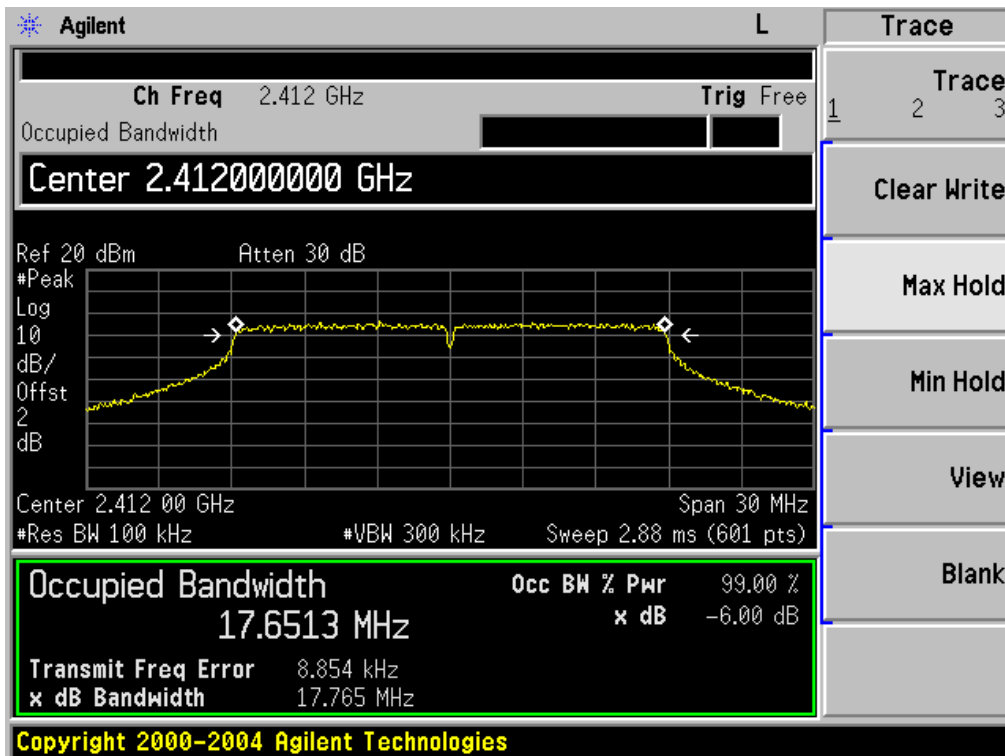
TX CH 11



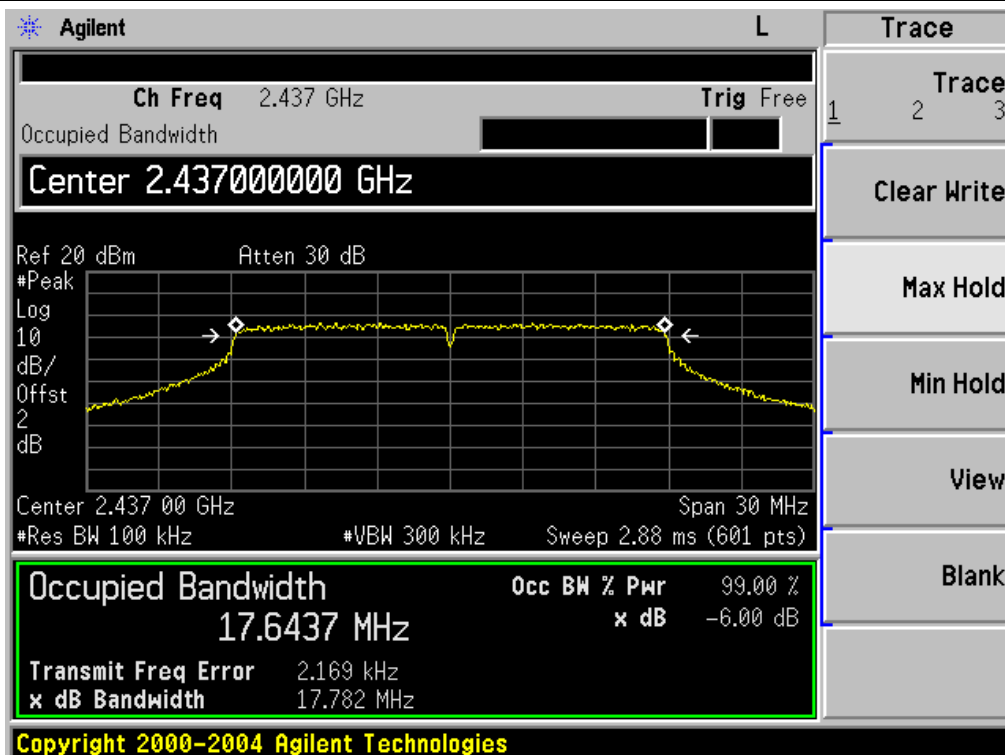
RF Model 8192

6dB bandwidth

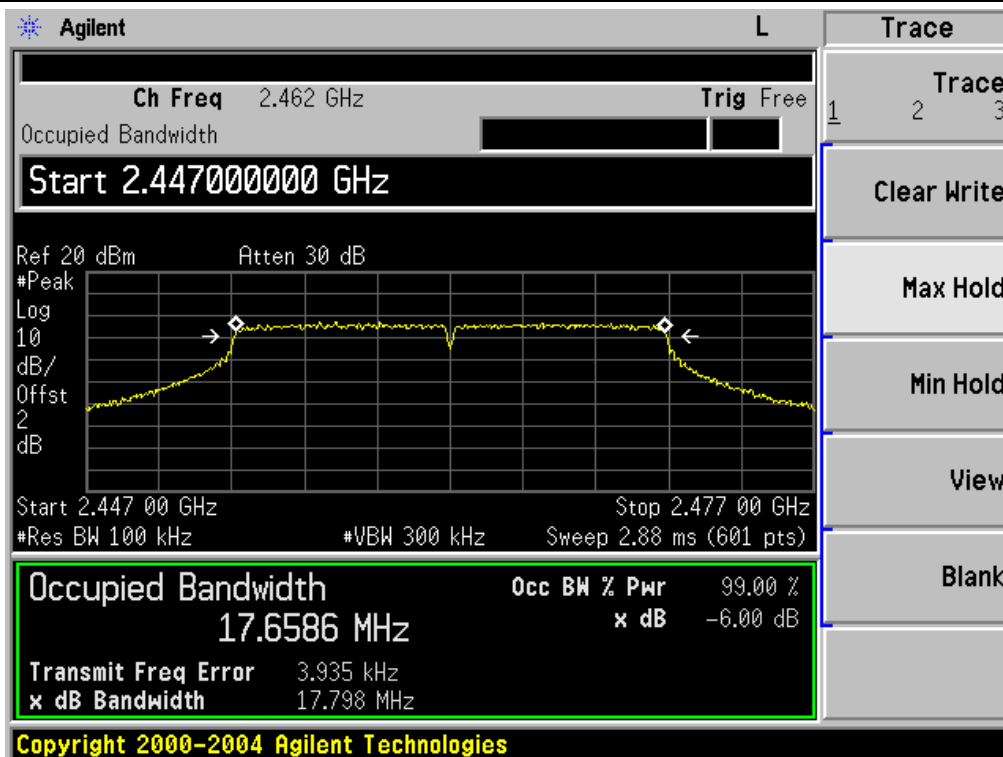
TX CH 01



TX CH 06

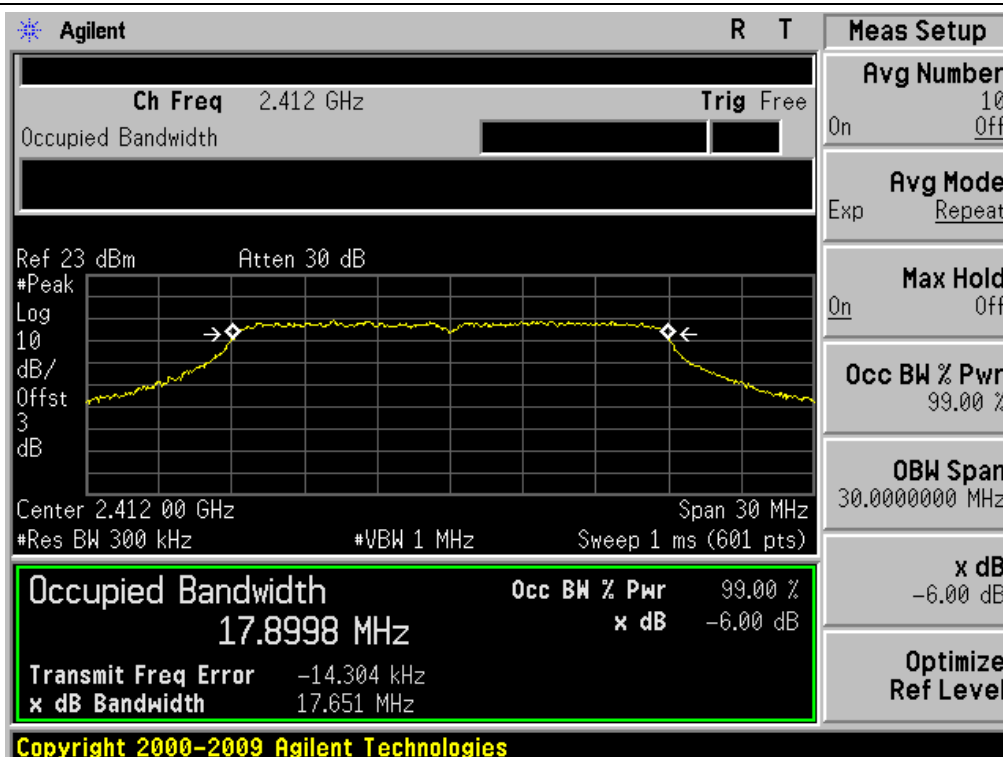


TX CH 11

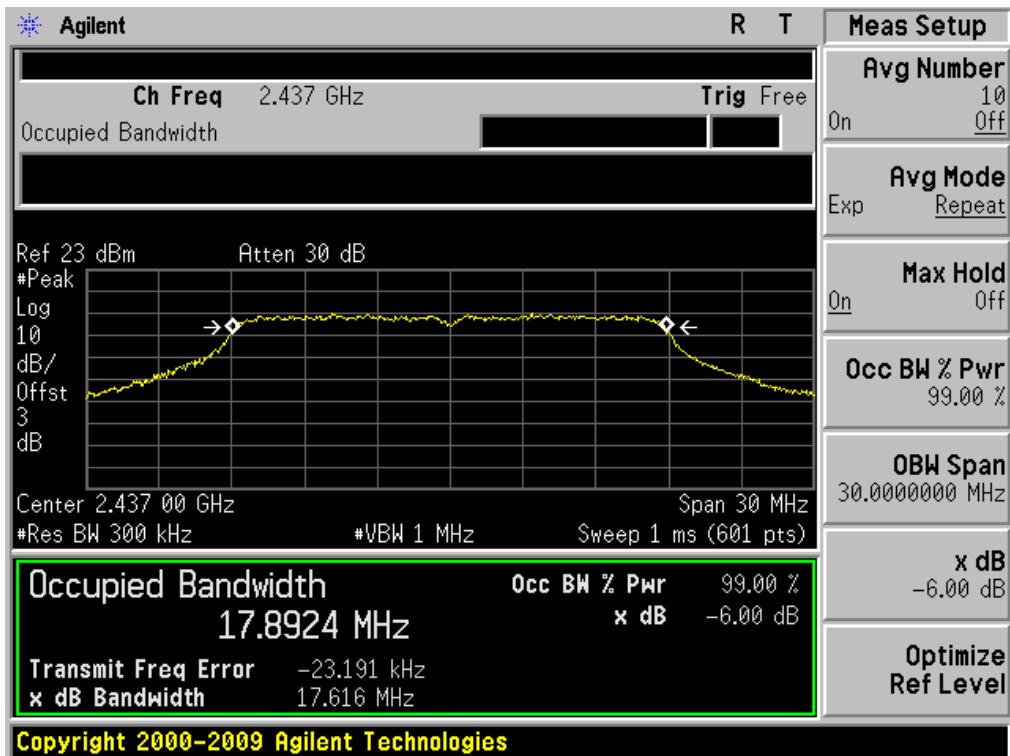


99% bandwidth

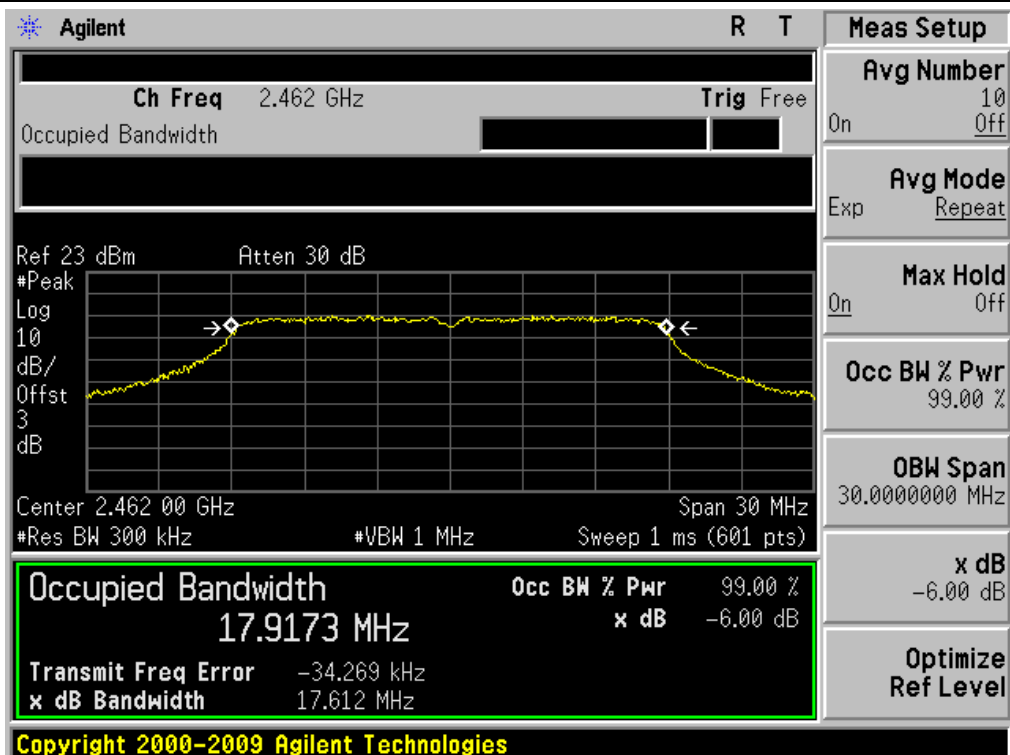
TX CH 01



TX CH 06



TX CH 11



EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX n Mode(40M) (2.4G) /CH03, CH06, CH09		

RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	2422	36.497	36.325	500	Pass
	Middle	2437	36.500	36.421	500	Pass
	High	2452	36.505	36.337	500	Pass
RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	2422	36.093	36.121	500	Pass
	Middle	2437	36.080	36.115	500	Pass
	High	2452	36.070	36.106	500	Pass

RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	2422	36.706	36.587	500	Pass
	Middle	2437	36.678	36.602	500	Pass
	High	2452	36.672	36.558	500	Pass
RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	2422	36.245	36.227	500	Pass
	Middle	2437	36.262	36.253	500	Pass
	High	2452	36.290	36.178	500	Pass

NOTE: Model A/C (B/D) represent two different modules.

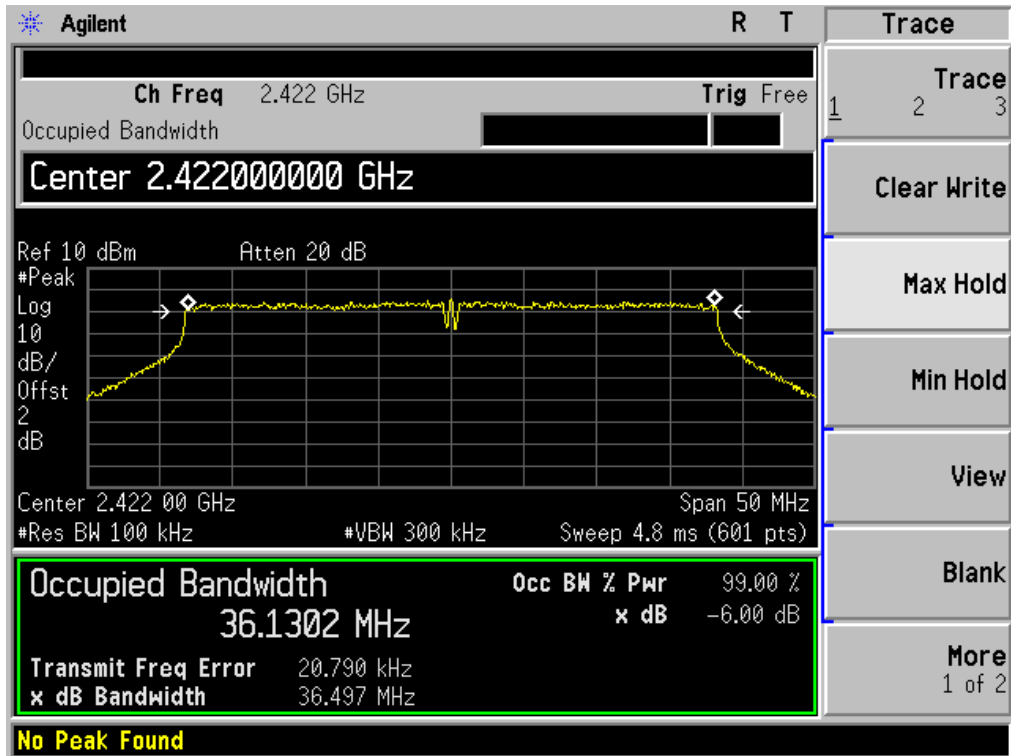
A(B) Represent the value of antenna A and B, The worst data is A Antenna a ,only shown Antenna A Plot.

C(D) Represent the value of antenna C and D, The worst data is C Antenna a ,only shown Antenna C Plot.

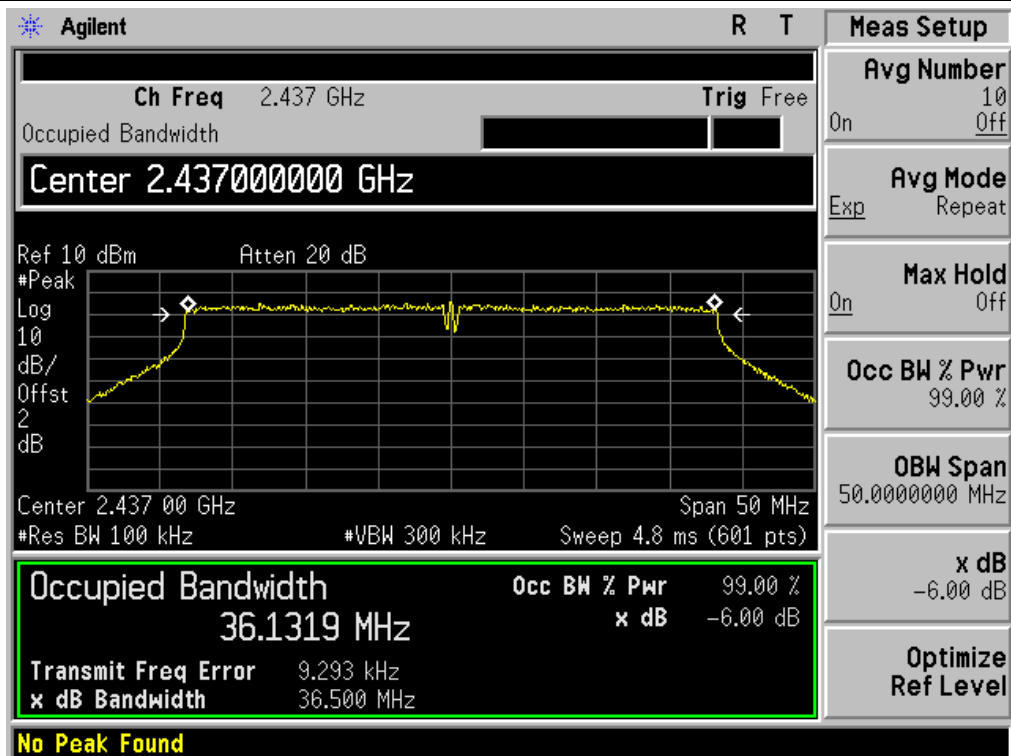
RF Model 8812

6dB bandwidth

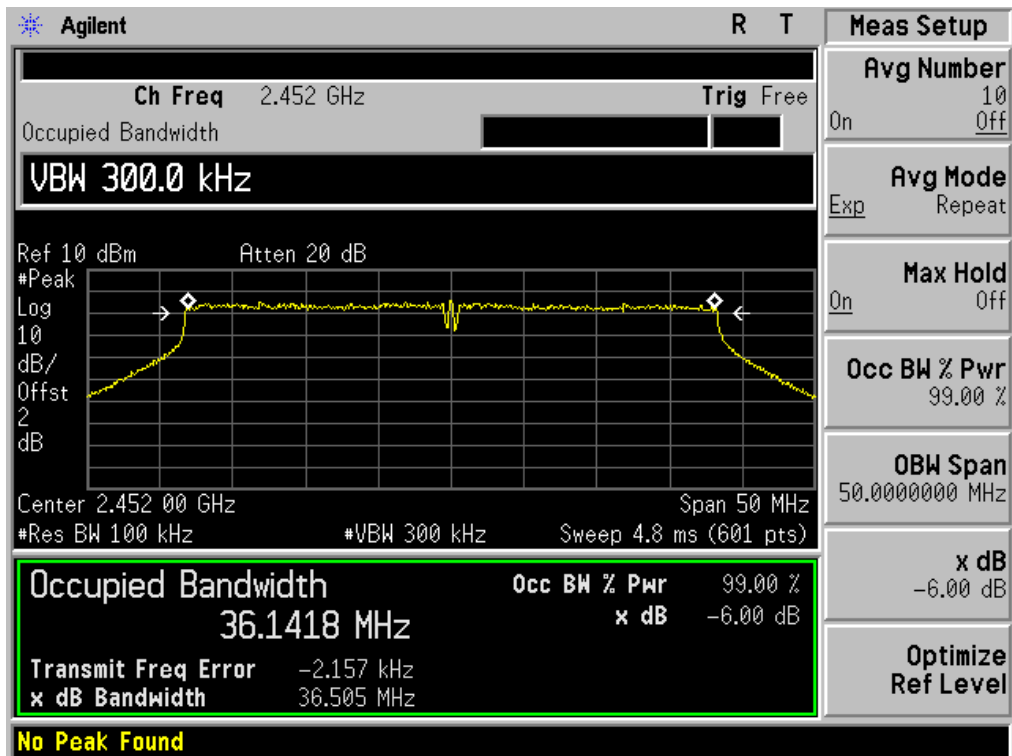
TX CH 03



TX CH 06

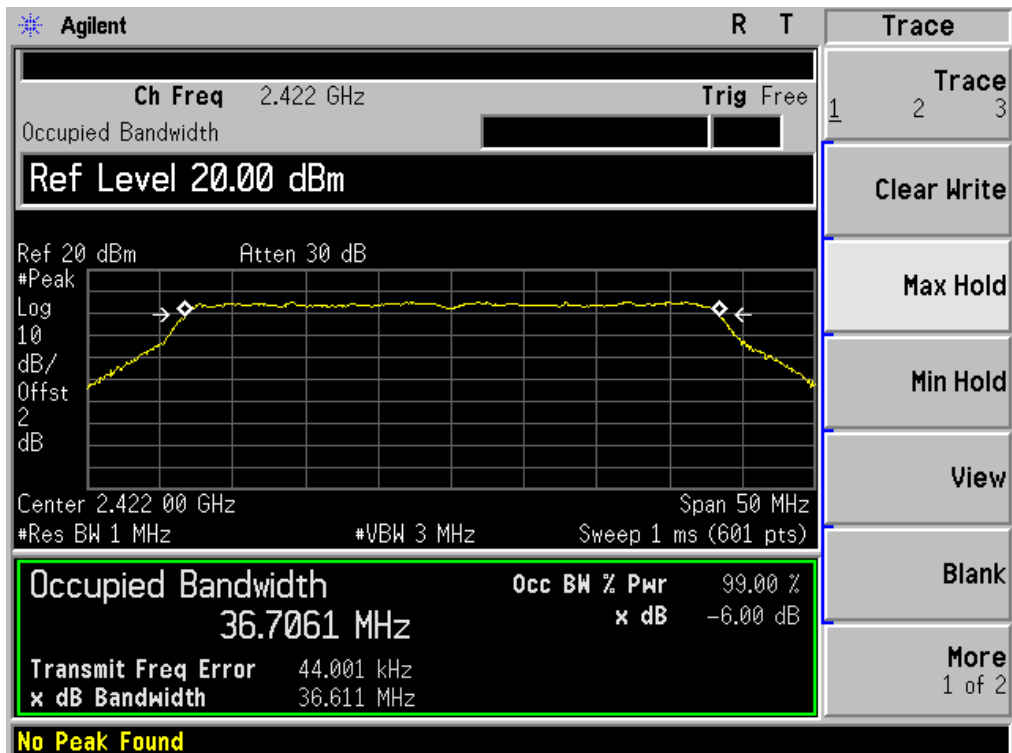


TX CH 09

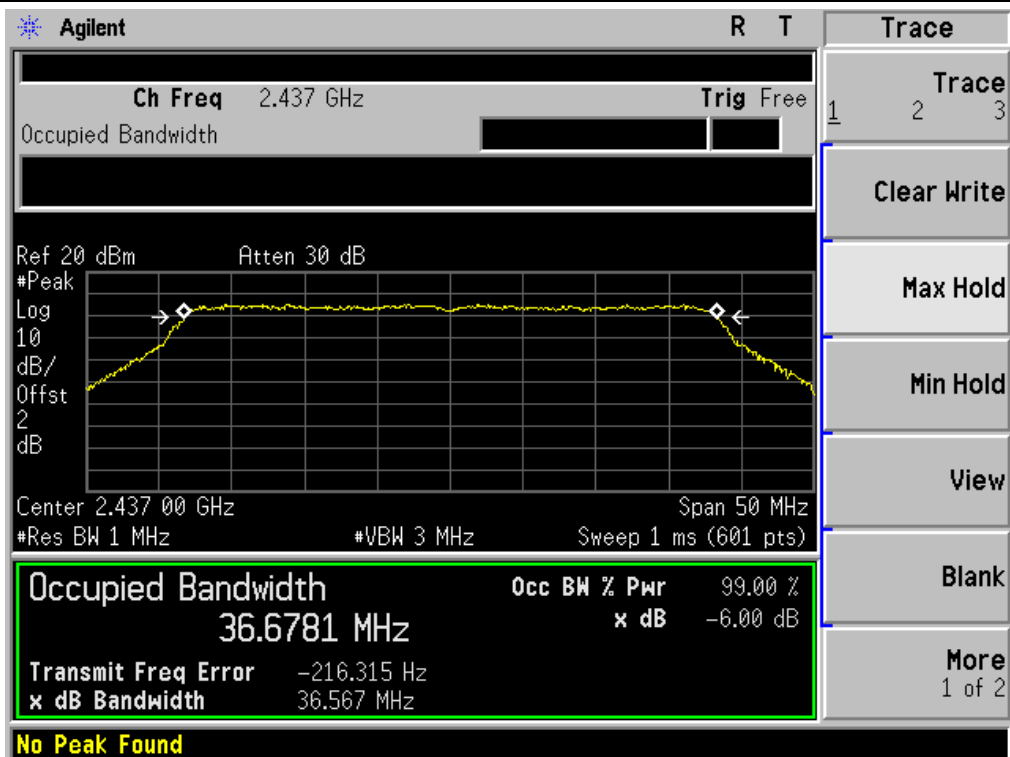


99% bandwidth

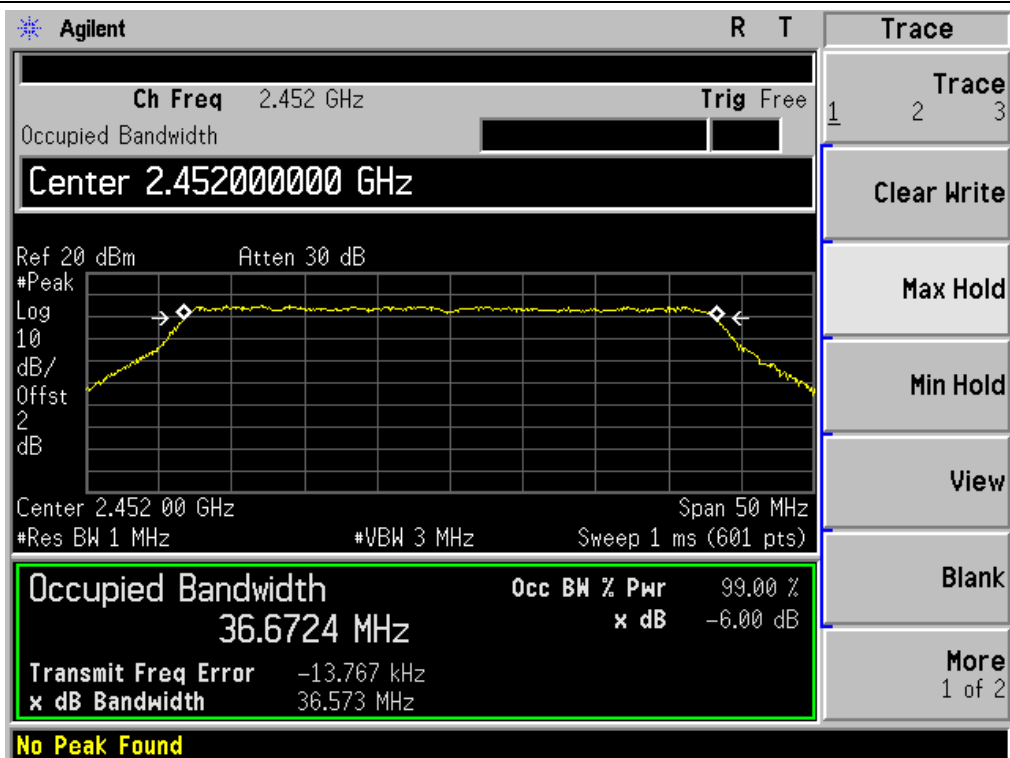
TX CH 03



TX CH 06



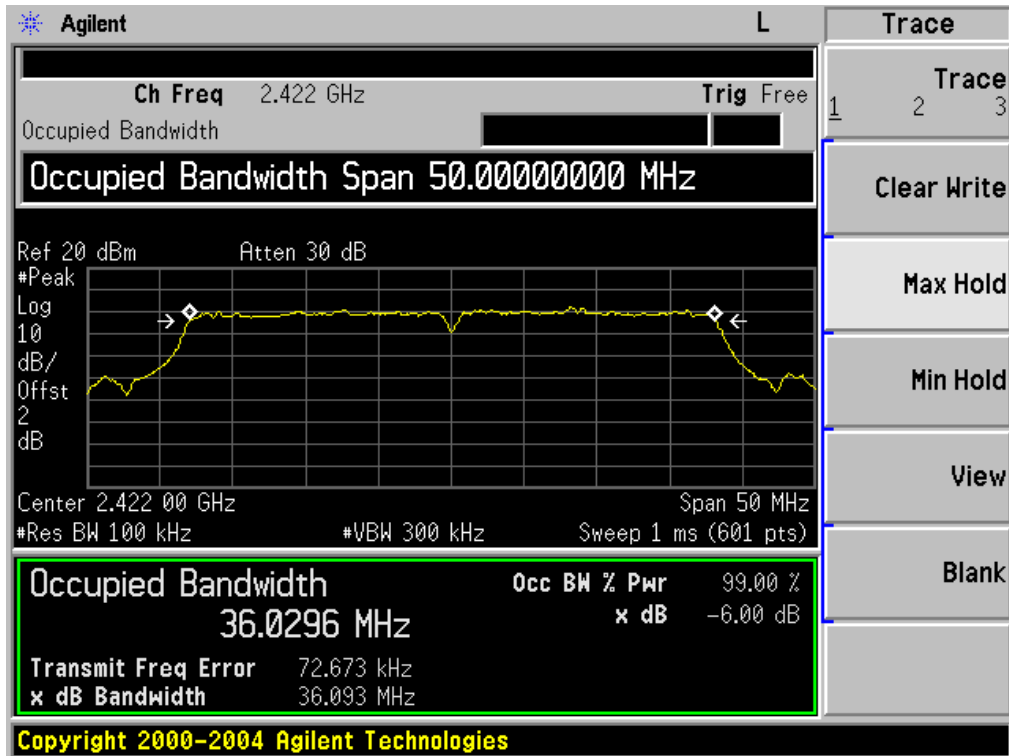
TX CH 09



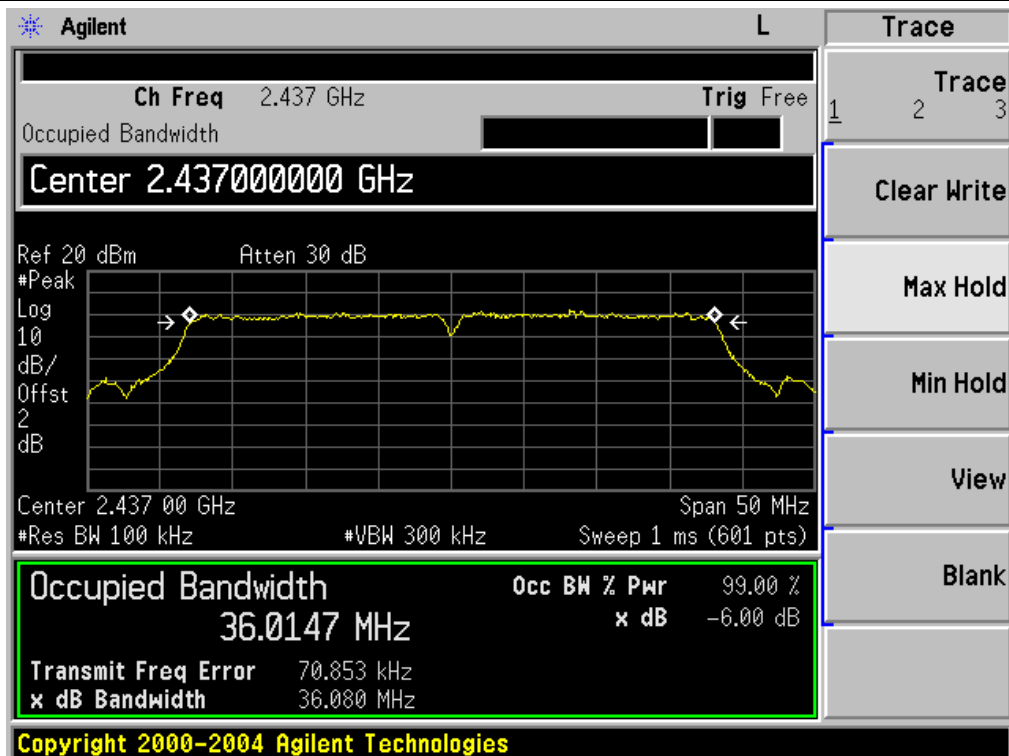
RF Model 8192

6dB bandwidth

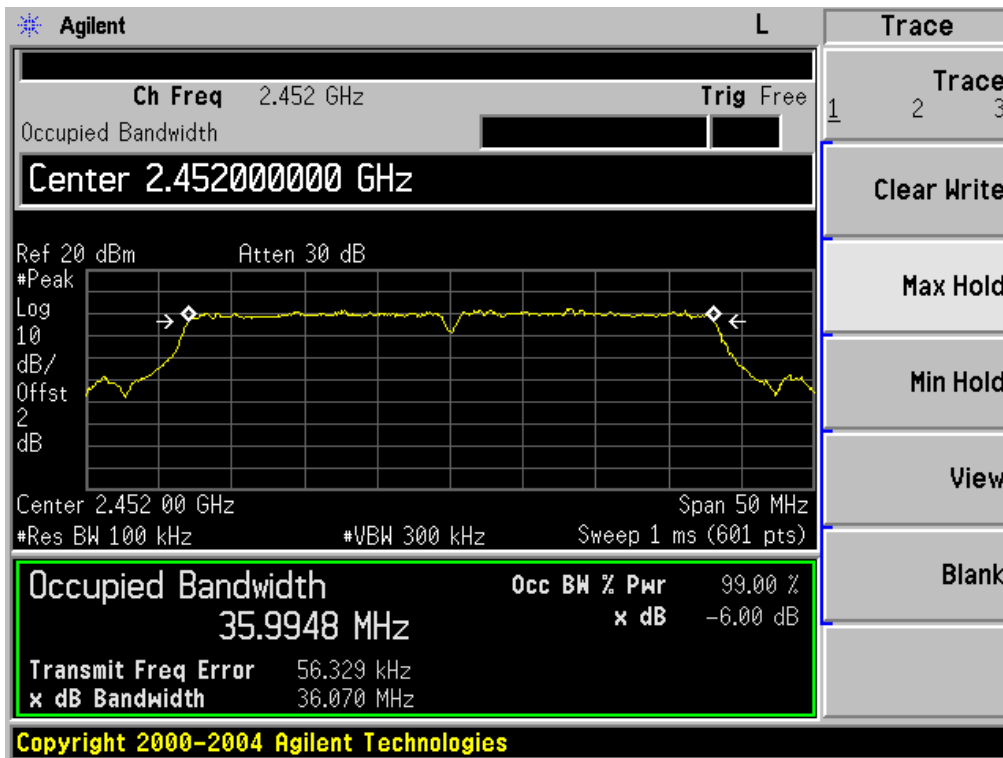
TX CH 03



TX CH 06

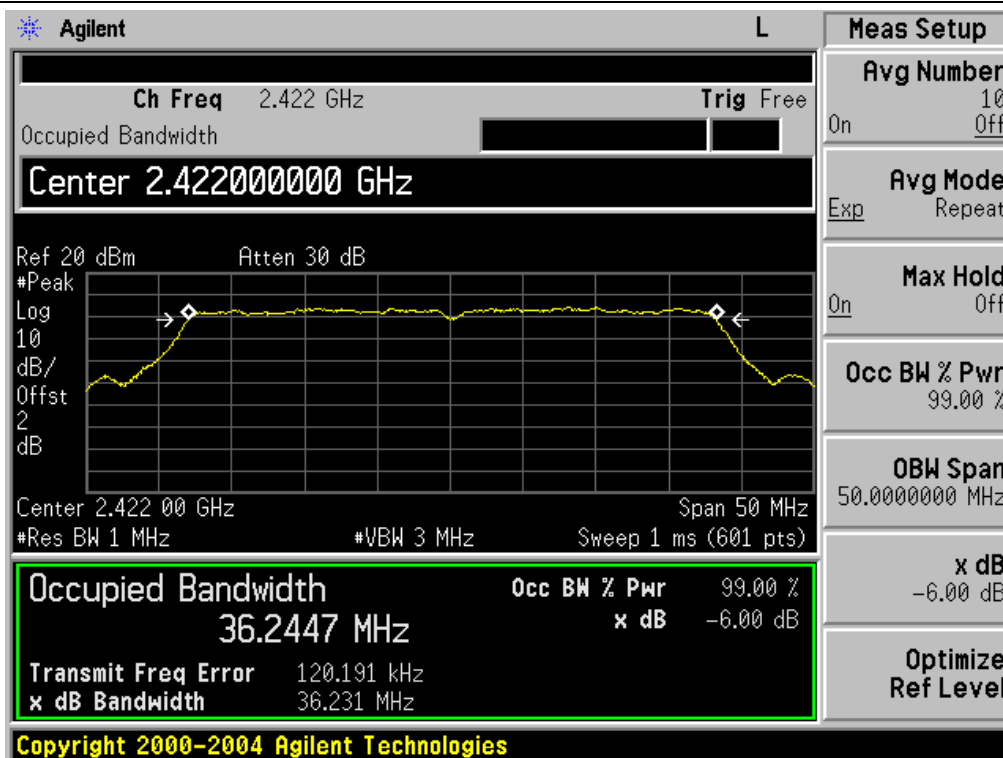


TX CH 09

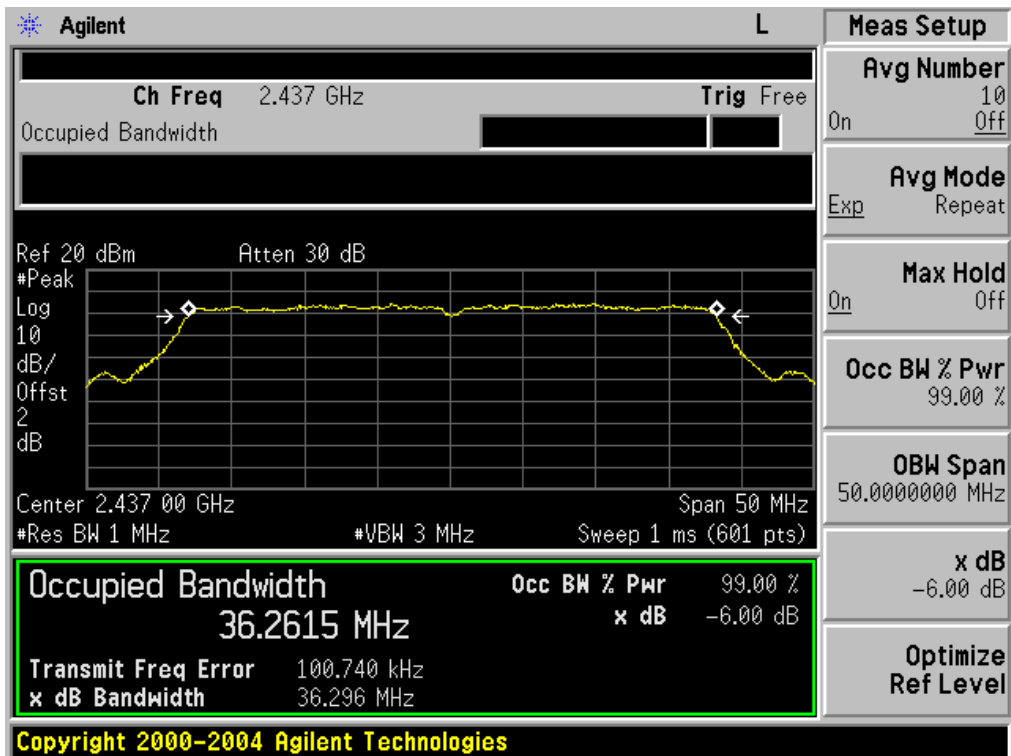


99% bandwidth

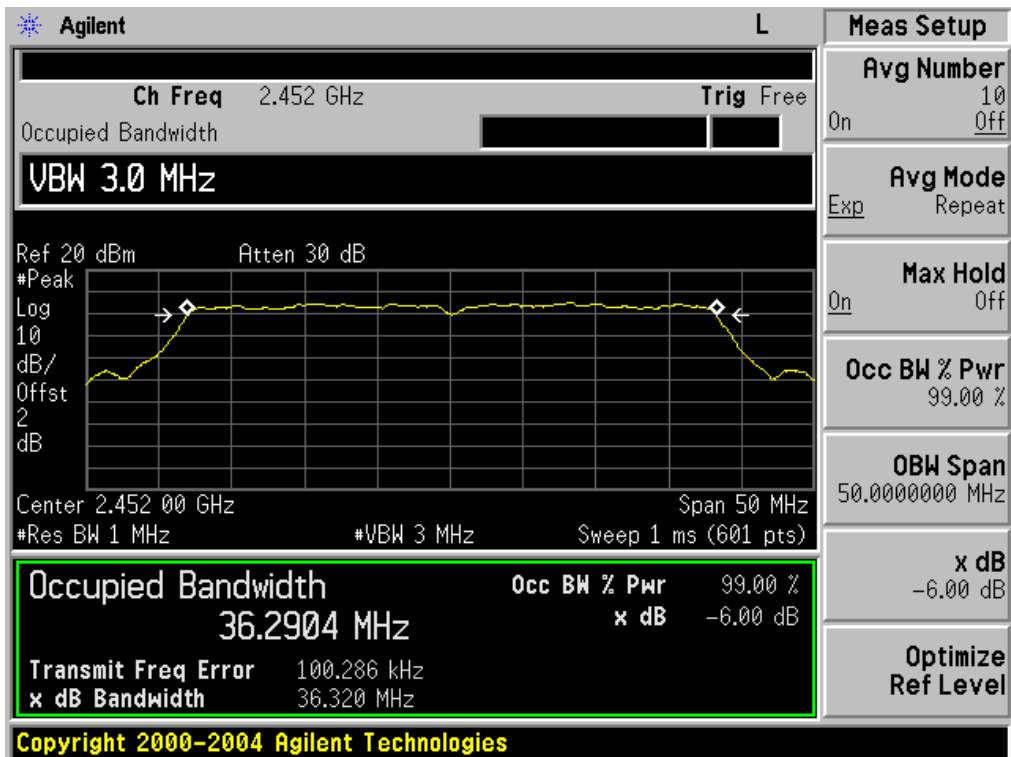
TX CH 03



TX CH 06



TX CH 09



EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX a Mode(5G) /CH149, CH157, CH165		

RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	5745	16.588	16.563	500	Pass
	Middle	5785	16.564	16.558	500	Pass
	High	5825	16.573	16.564	500	Pass
RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	5745	16.539	16.538	500	Pass
	Middle	5785	16.577	16.528	500	Pass
	High	5825	16.548	16.513	500	Pass

RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	5745	16.845	16.839	500	Pass
	Middle	5785	16.840	16.826	500	Pass
	High	5825	16.856	16.847	500	Pass
RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	5745	16.799	16.725	500	Pass
	Middle	5785	16.722	16.720	500	Pass
	High	5825	16.767	16.703	500	Pass

NOTE: Model A/C (B/D) represent two different modules,

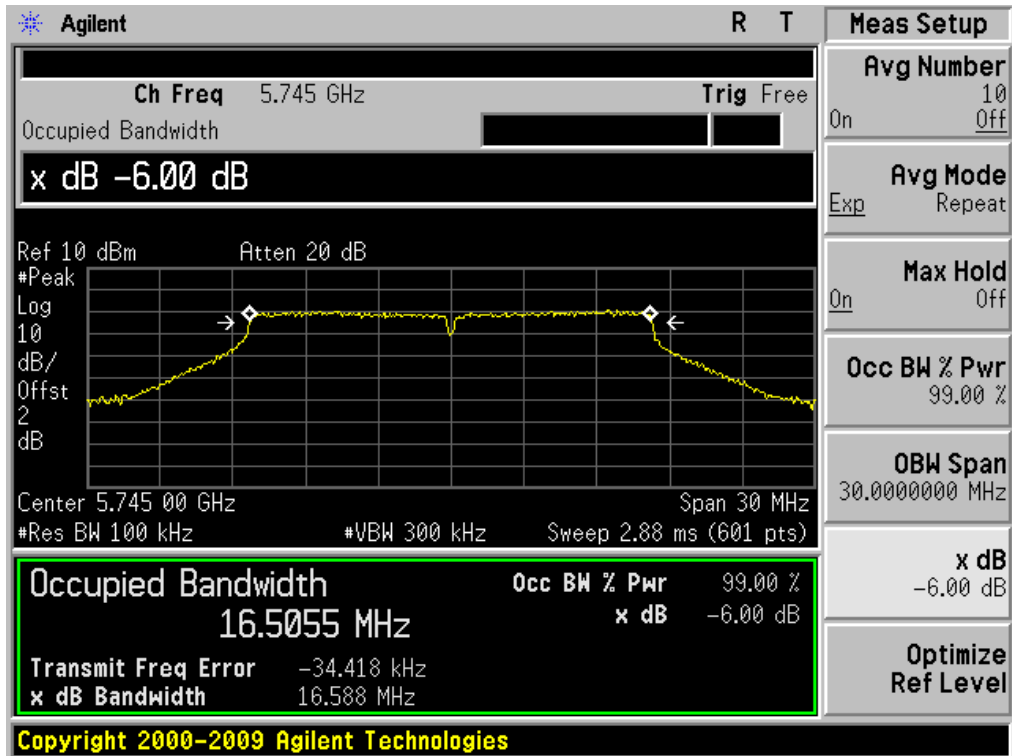
A(B) Represent the value of antenna A and B, The worst data is A Antenna a ,only shown Antenna A Plot.

C(D) Represent the value of antenna C and D, The worst data is C Antenna a ,only shown Antenna C Plot.

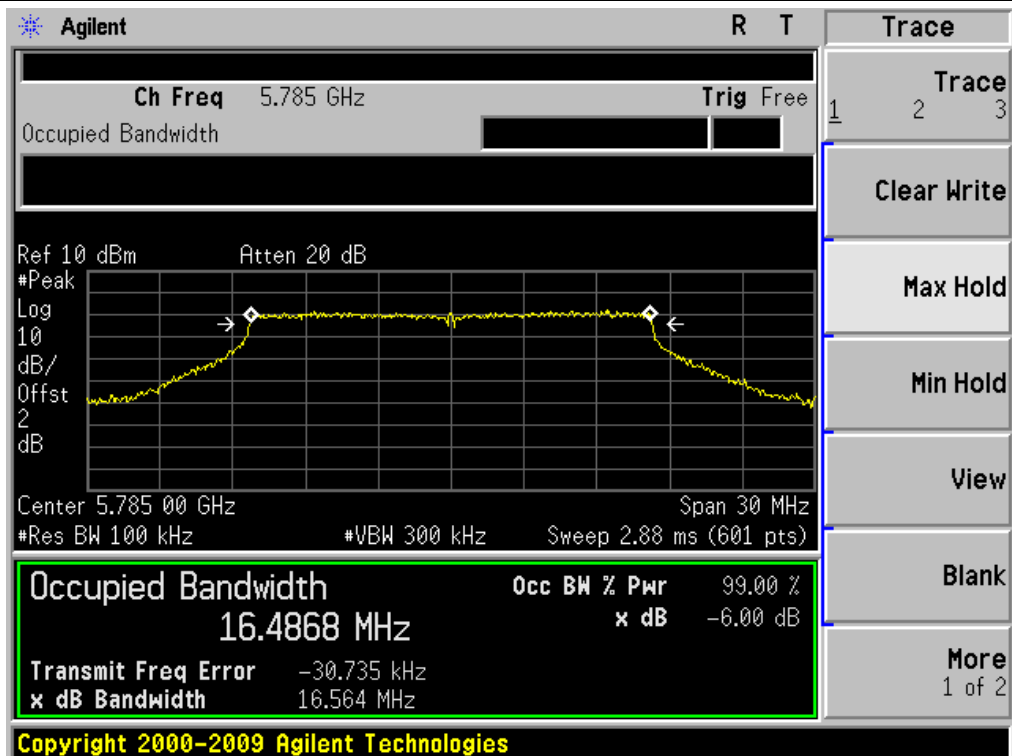
RF Model 8812

6dB bandwidth

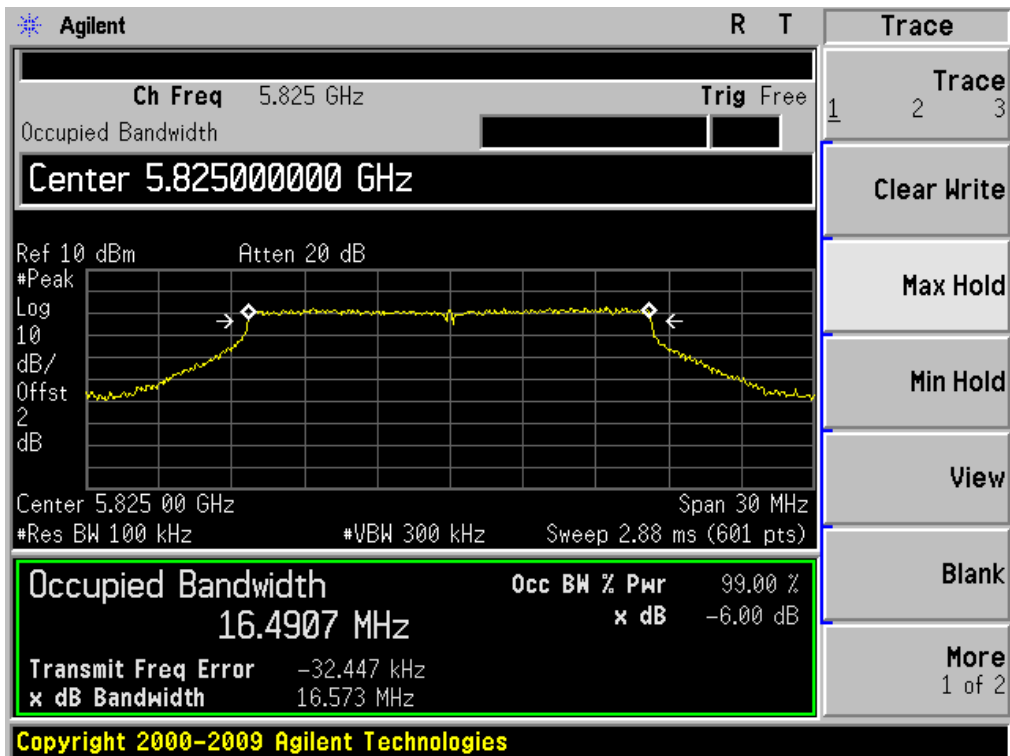
TX CH 149



TX CH 157

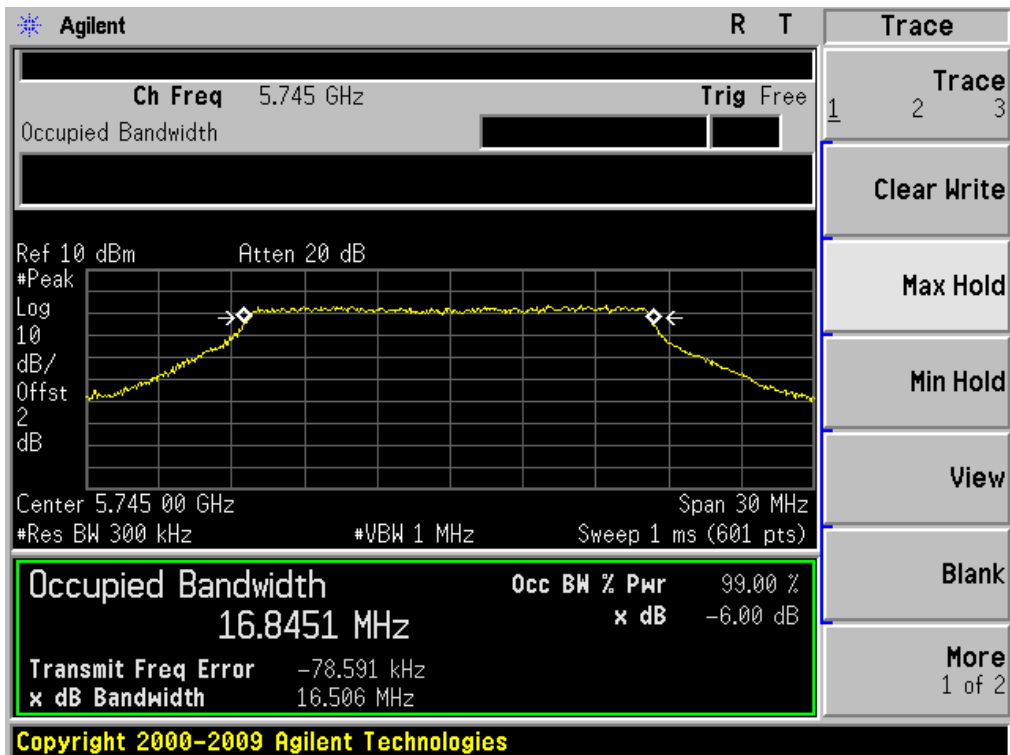


TX CH 165

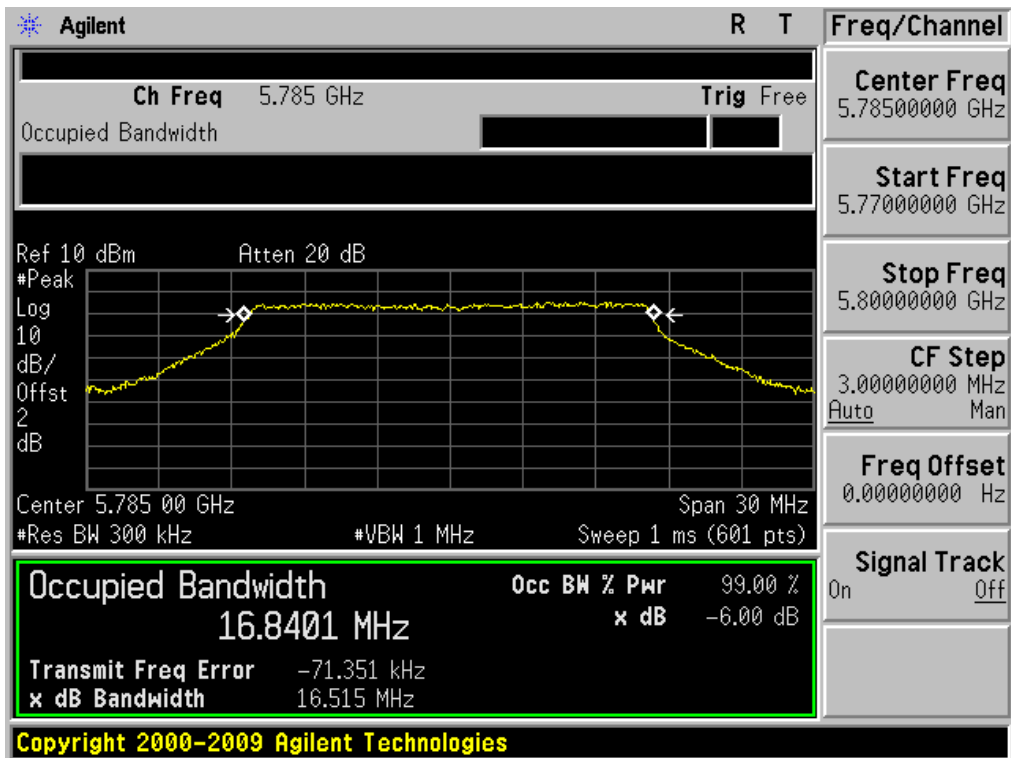


99% bandwidth

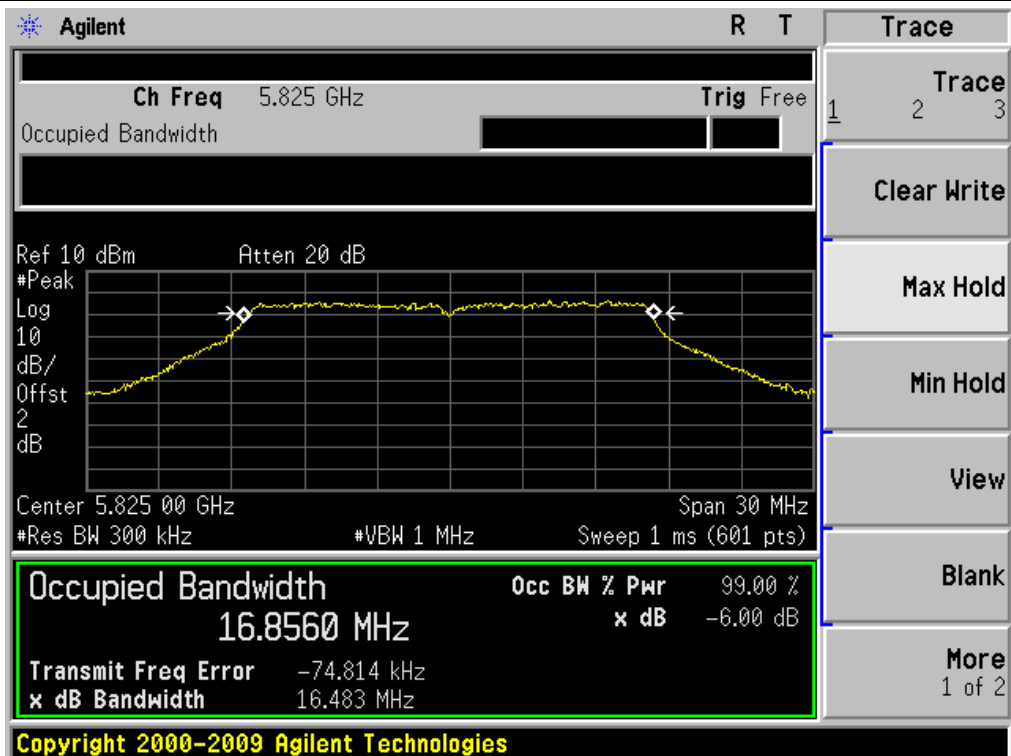
TX CH 149

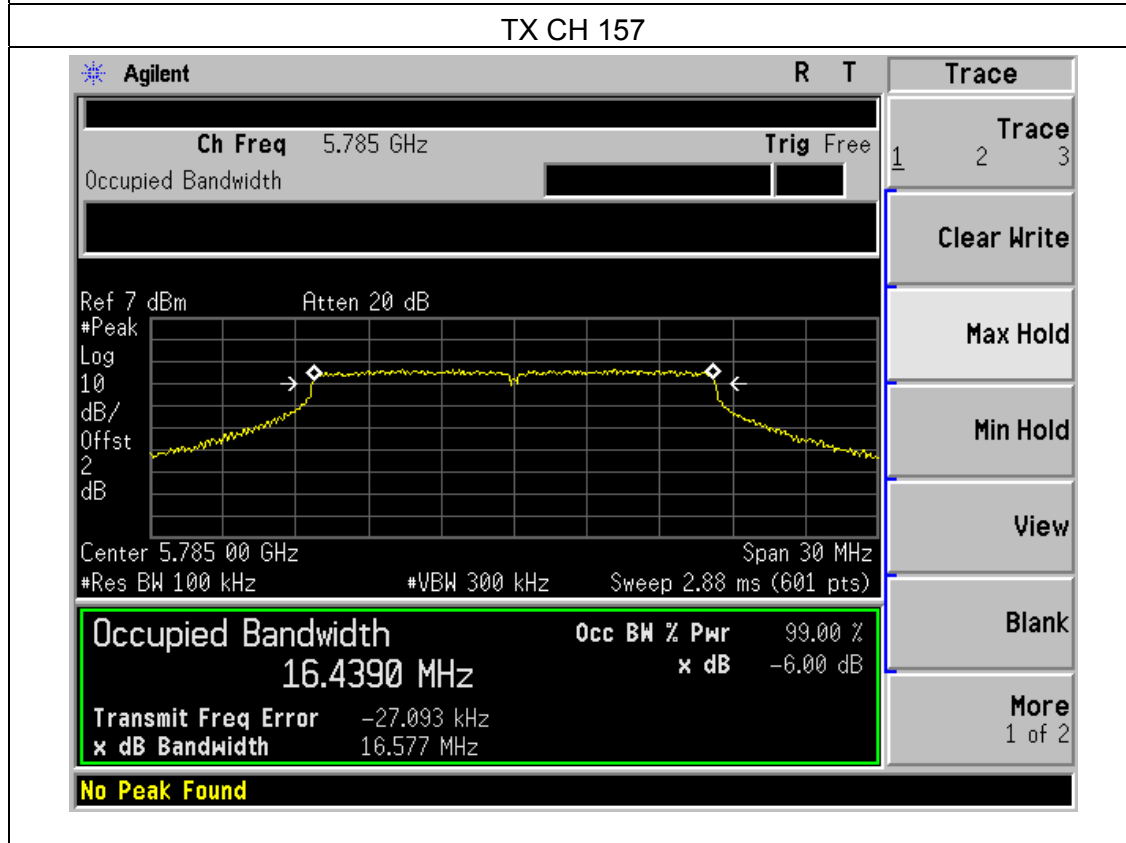
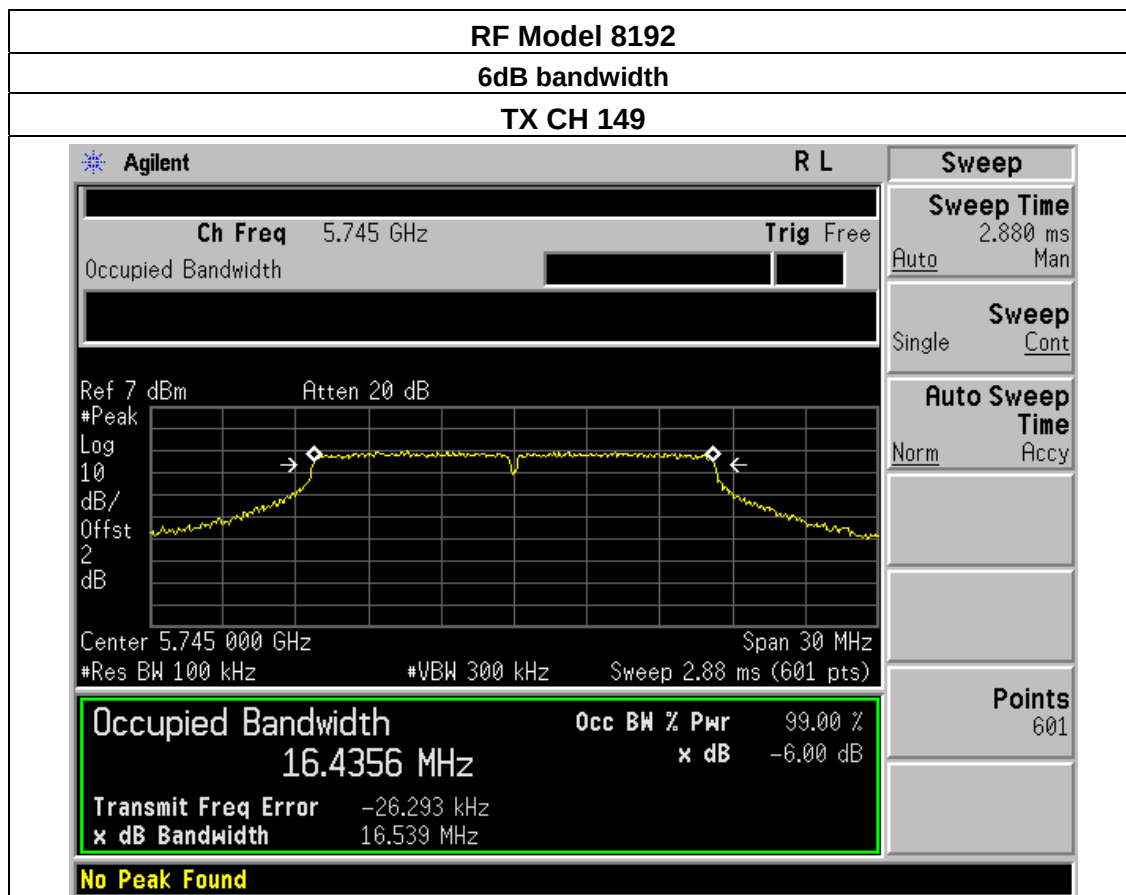


TX CH 157

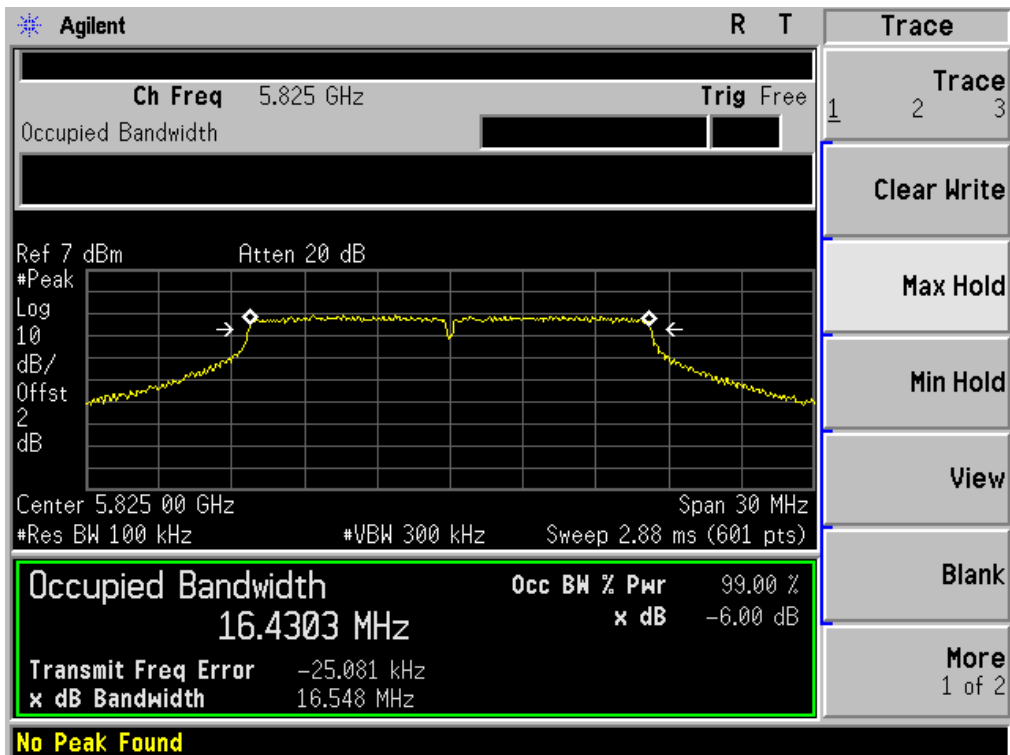


TX CH 165



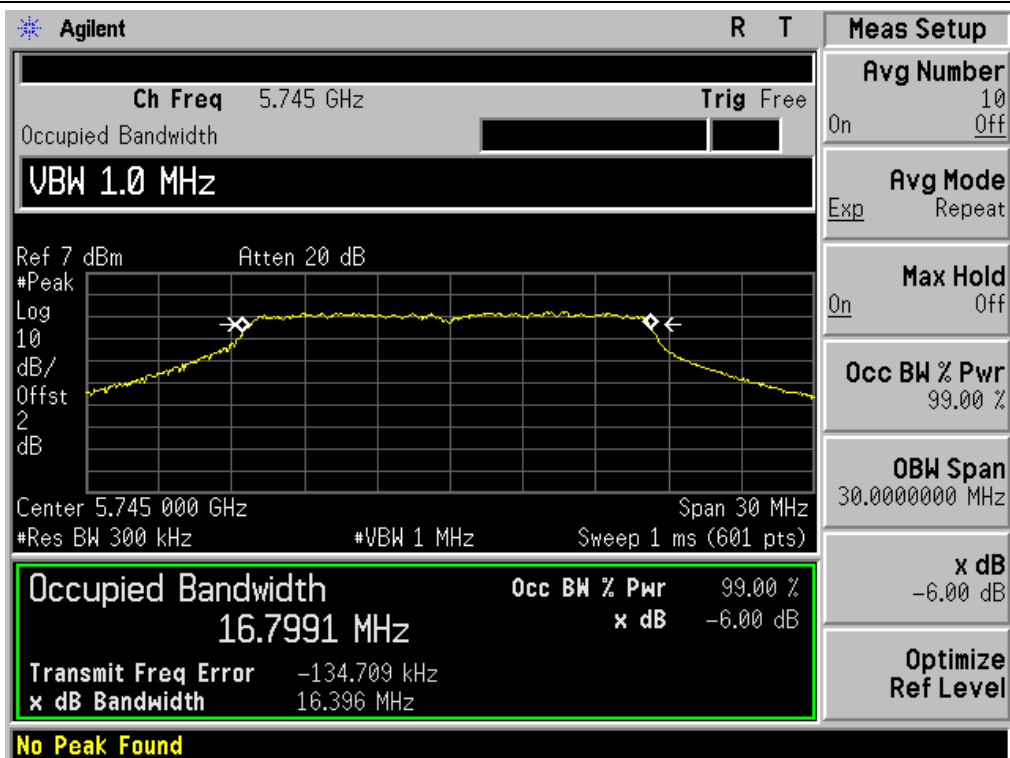


TX CH 165

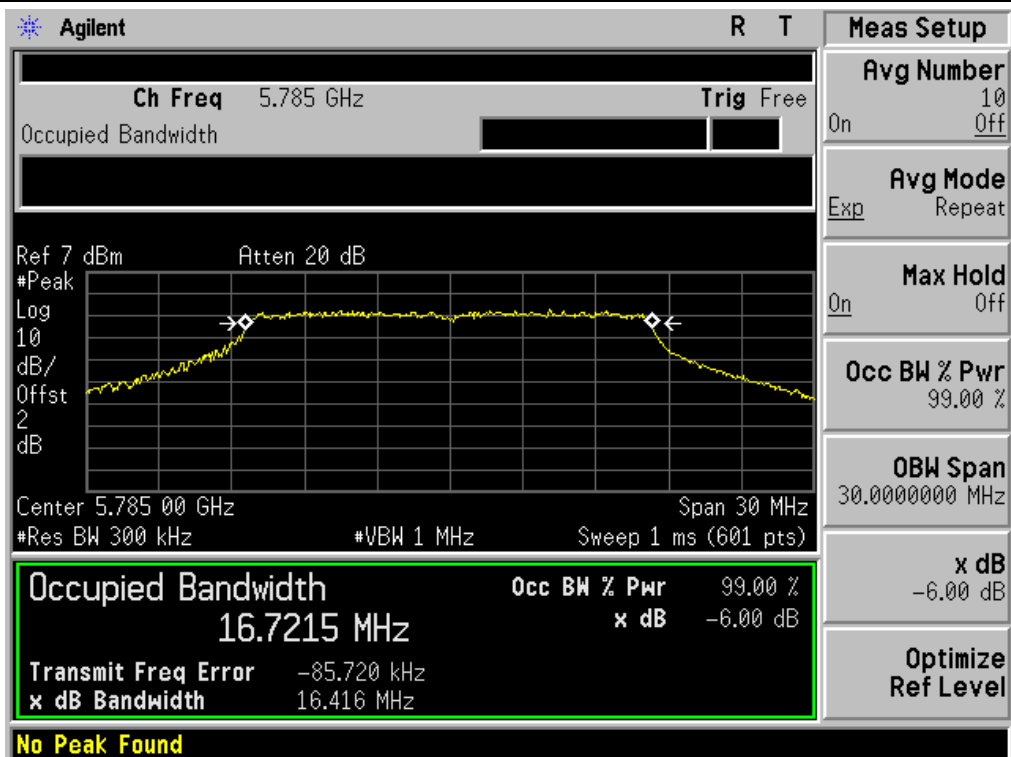


99% bandwidth

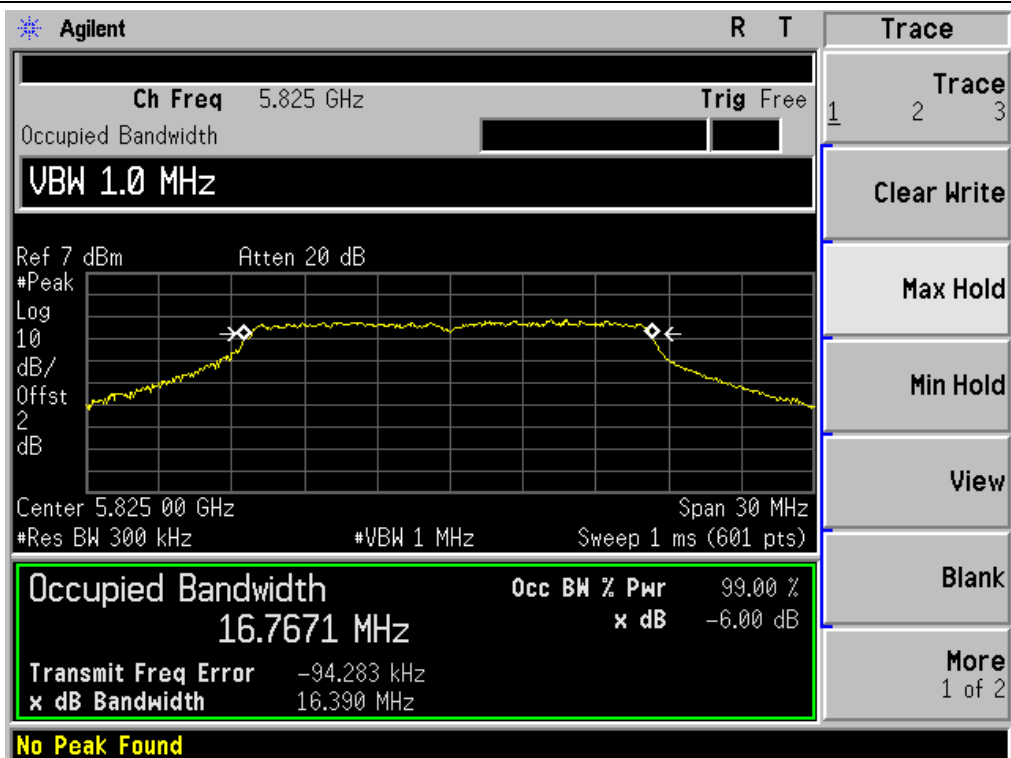
TX CH 149



TX CH 157



TX CH 165



EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX n(20) Mode(5G) /CH149, CH157, CH165		

RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	5745	17.855	17.840	500	Pass
	Middle	5785	17.845	17.811	500	Pass
	High	5825	17.802	17.801	500	Pass
RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	5745	17.761	17.756	500	Pass
	Middle	5785	17.777	17.753	500	Pass
	High	5825	17.782	17.750	500	Pass

RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	5745	17.951	17.924	500	Pass
	Middle	5785	17.926	17.908	500	Pass
	High	5825	17.929	17.908	500	Pass
RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	5745	17.856	17.839	500	Pass
	Middle	5785	17.845	17.843	500	Pass
	High	5825	17.873	17.862	500	Pass

NOTE: Model A/C (B/D) represent two different modules,

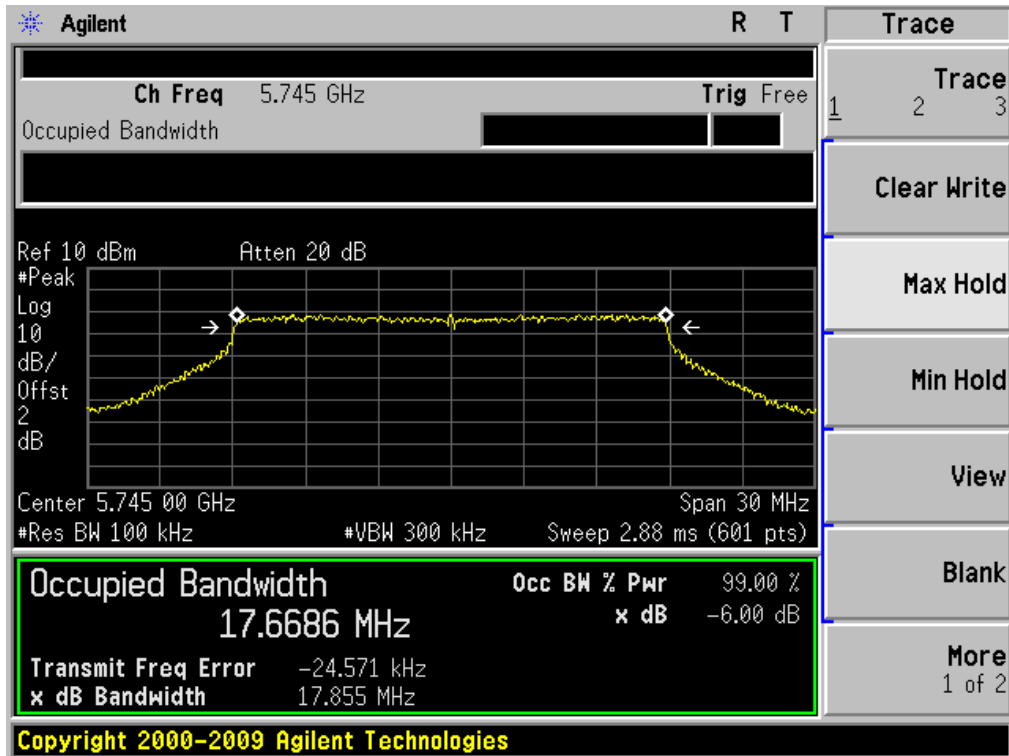
A(B) Represent the value of antenna A and B, The worst data is A Antenna a ,only shown Antenna A Plot.

C(D) Represent the value of antenna C and D, The worst data is C Antenna a ,only shown Antenna C Plot.

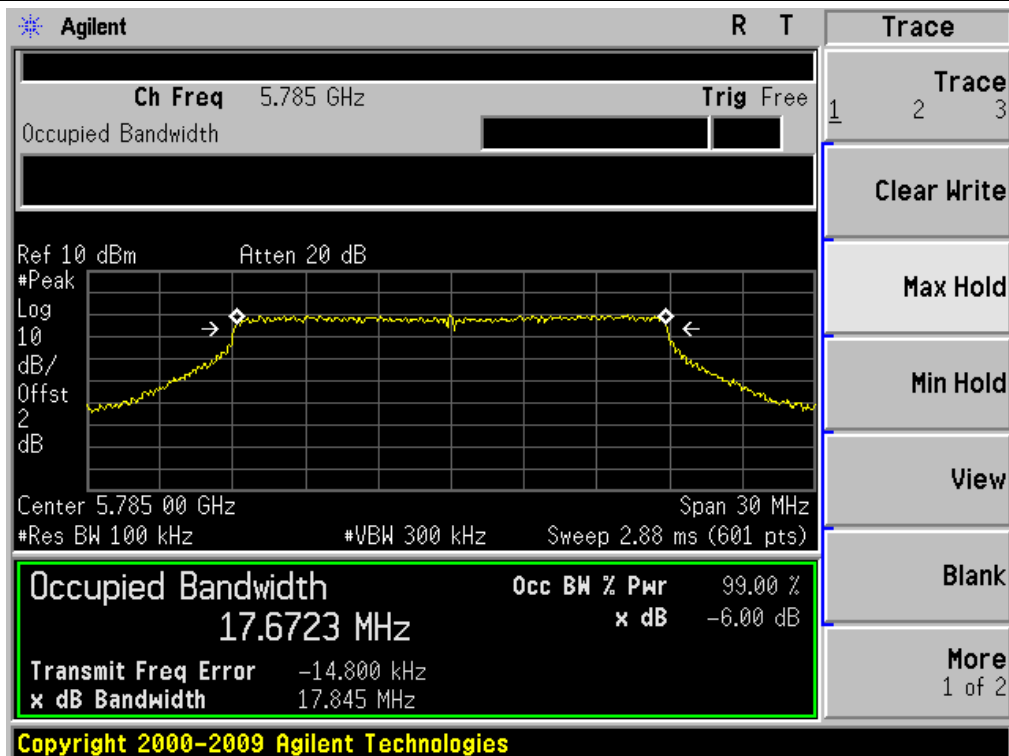
RF Model 8812

6dB bandwidth

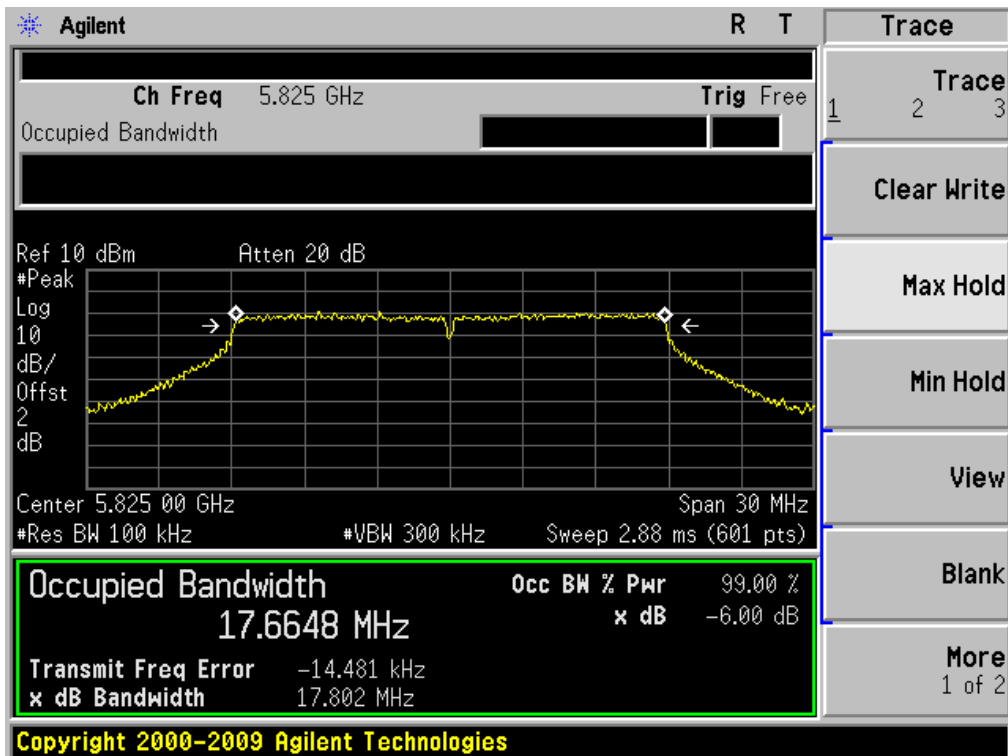
TX CH 149



TX CH 157

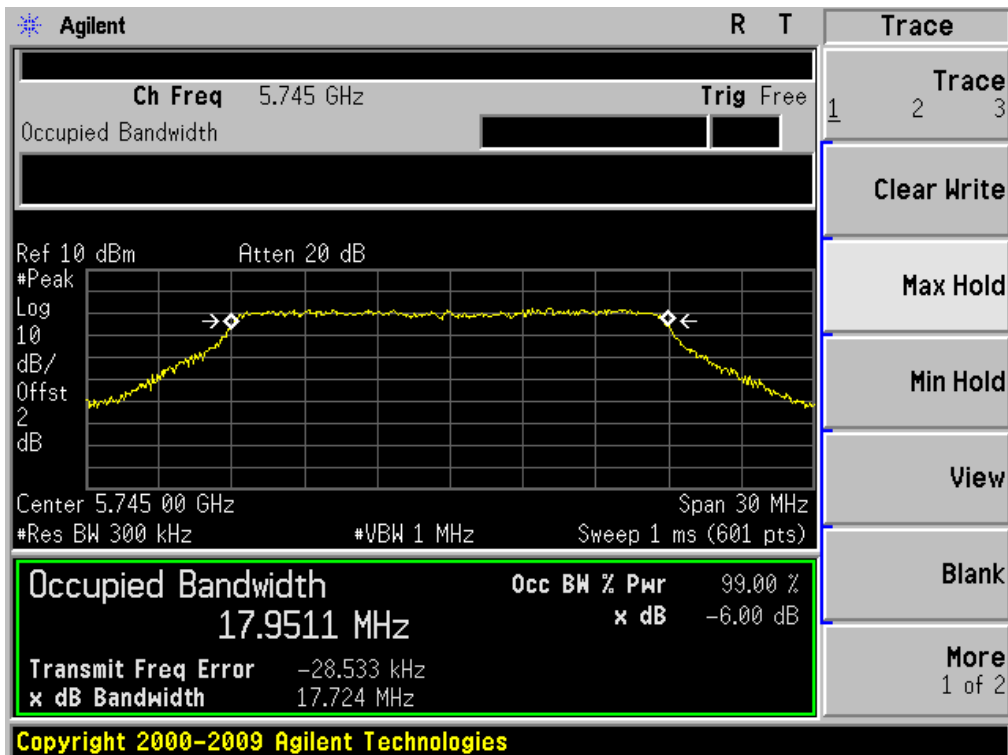


TX CH 165

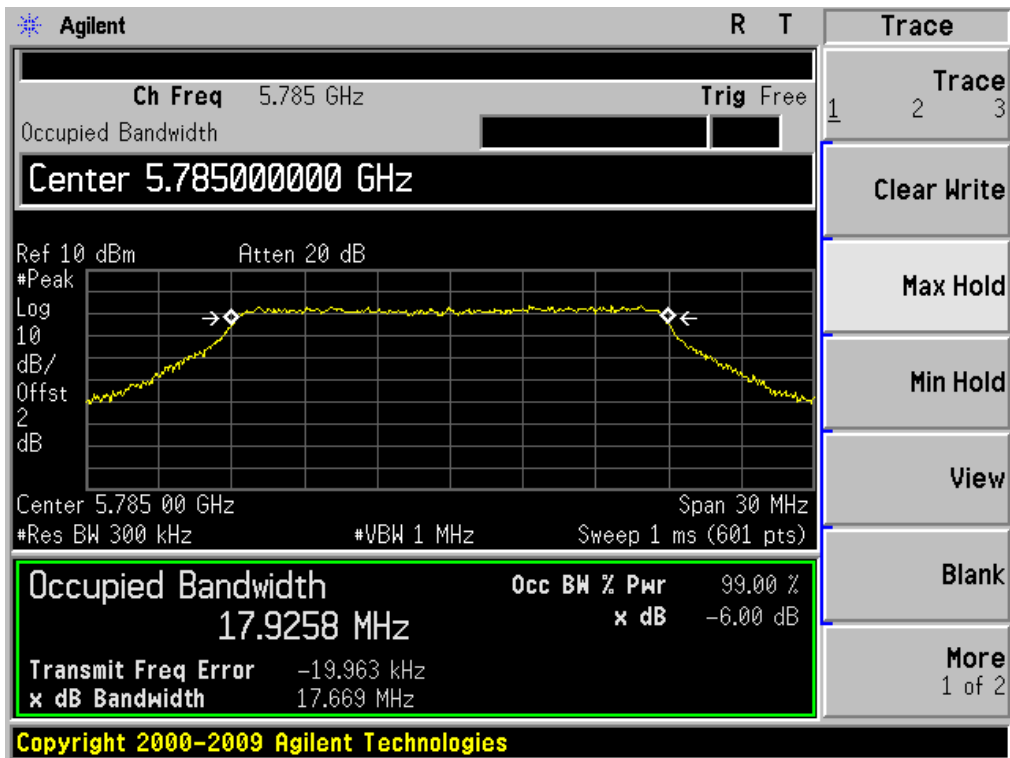


99% bandwidth

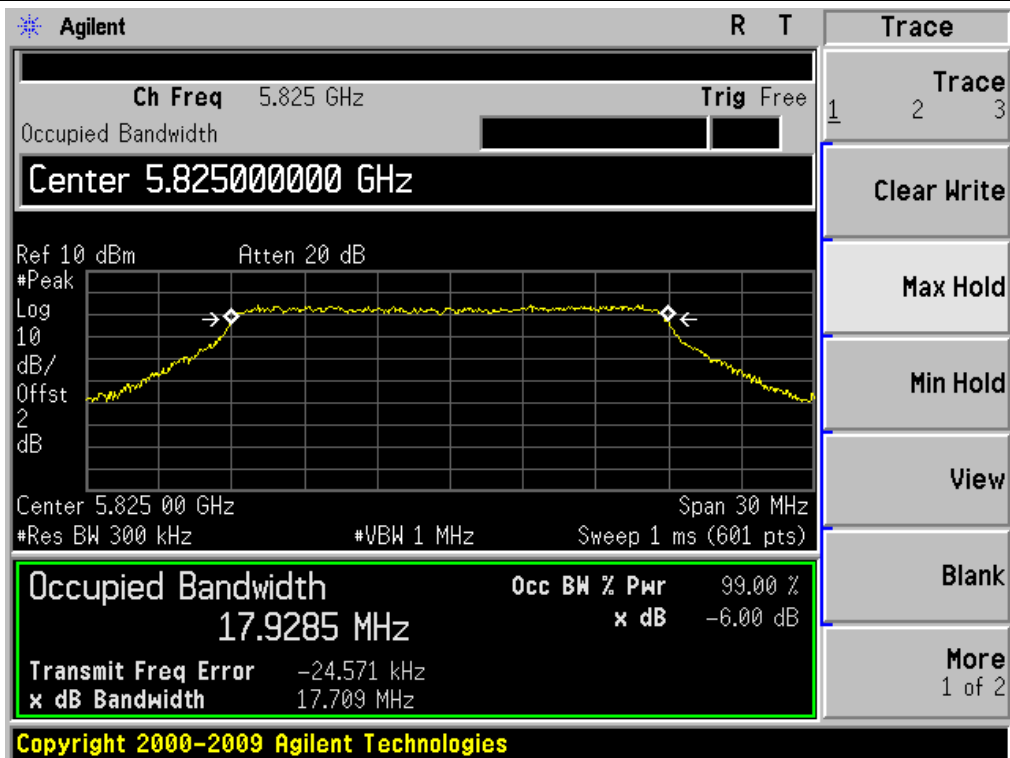
TX CH 149



TX CH 157



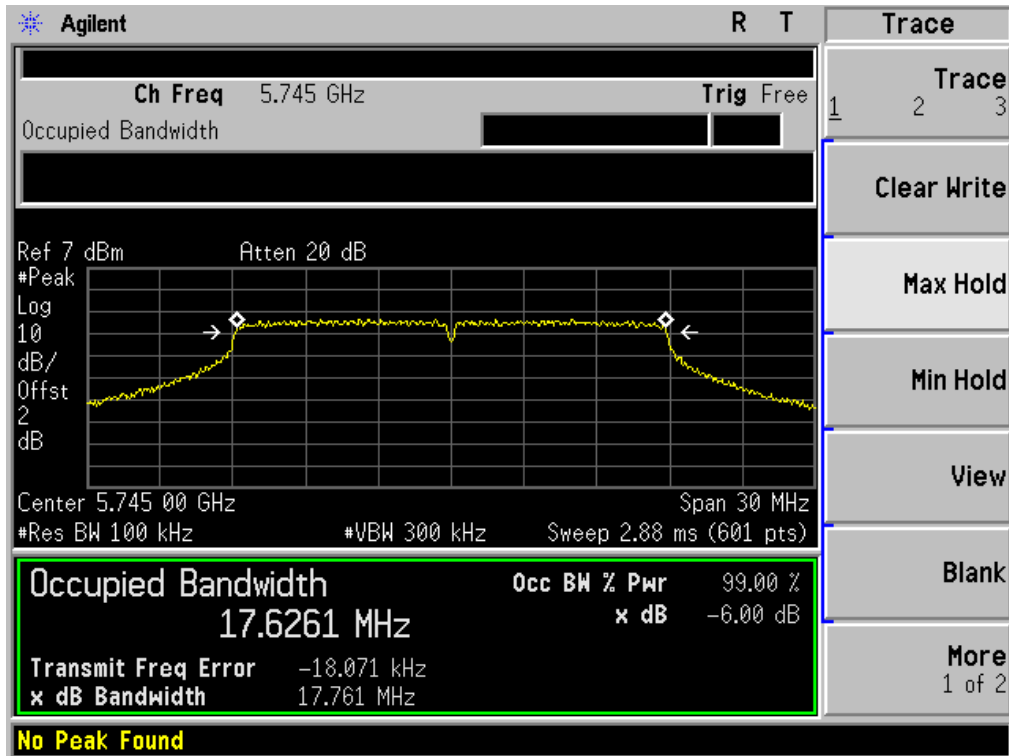
TX CH 165



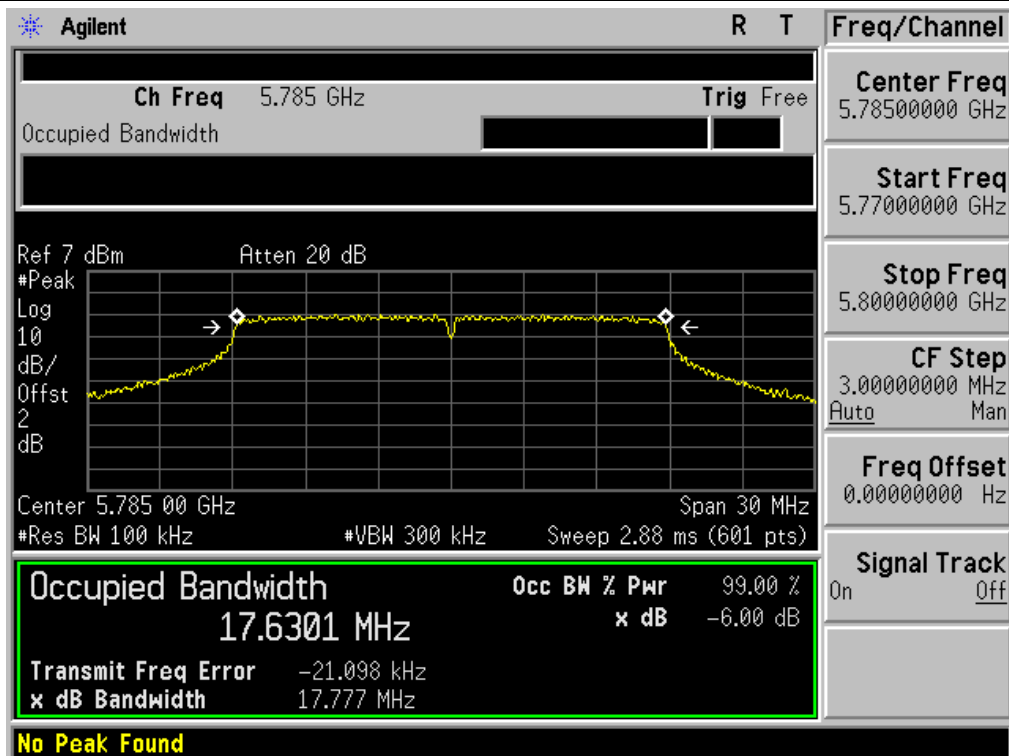
RF Model 8192

6dB bandwidth

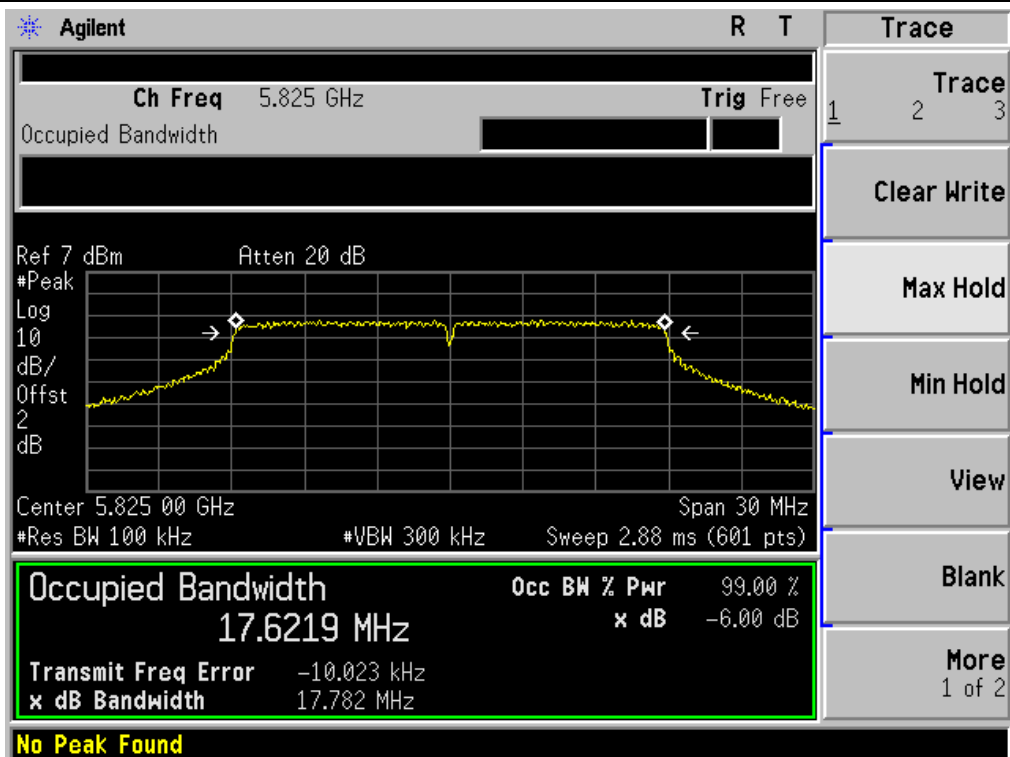
TX CH 149



TX CH 157

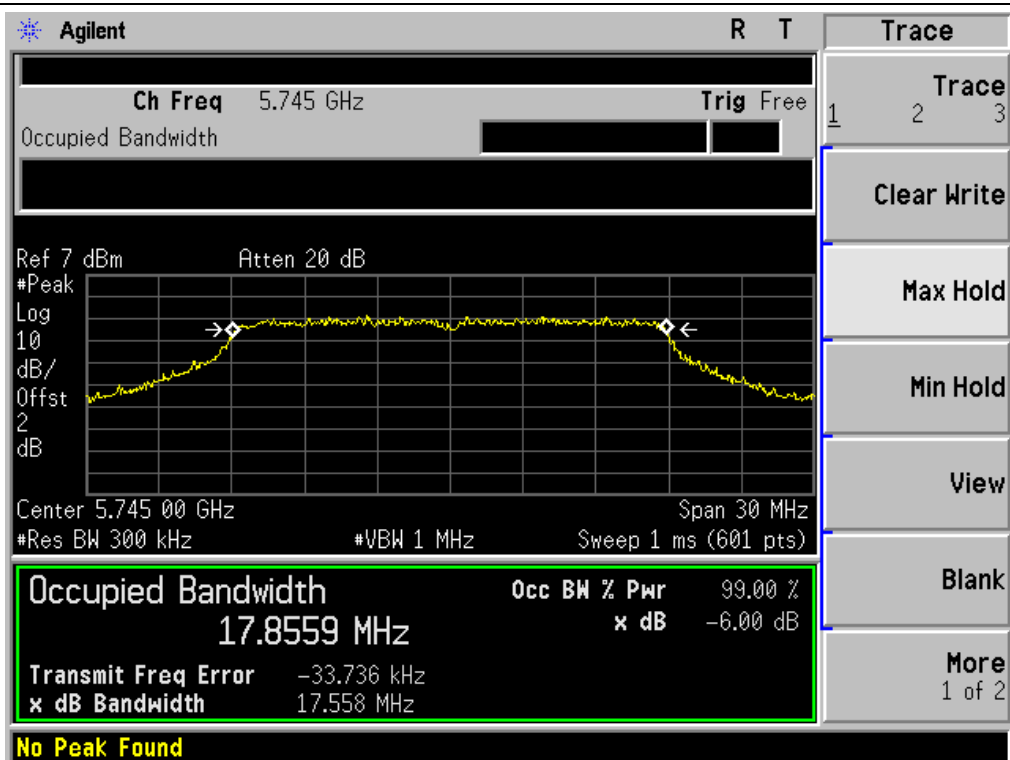


TX CH 165

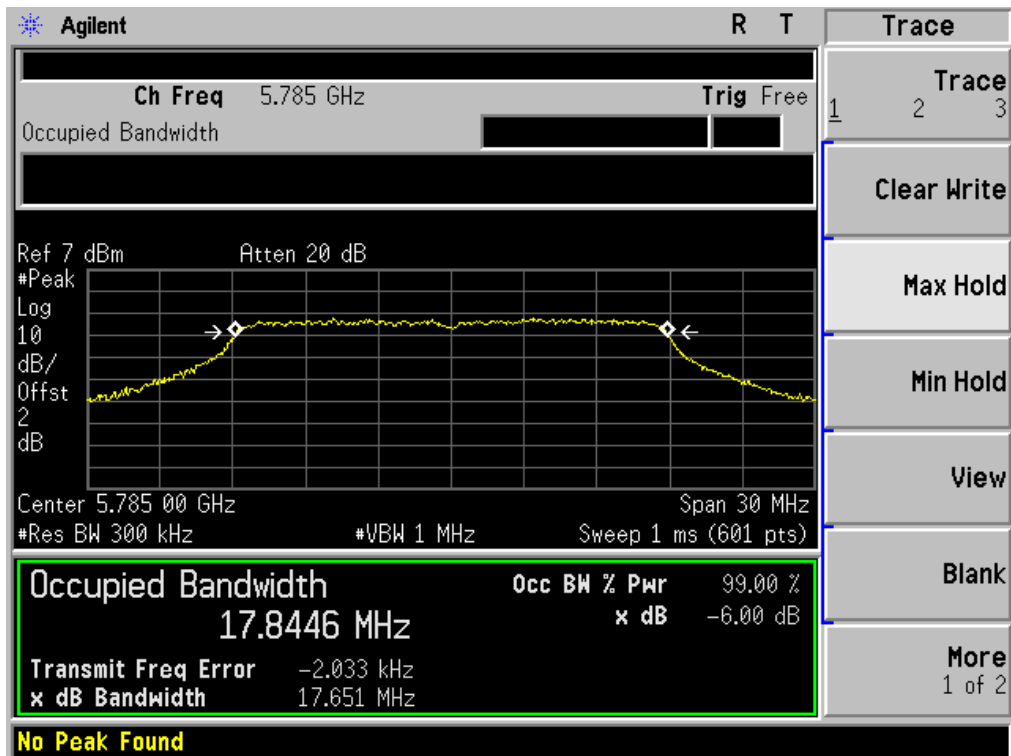


99% bandwidth

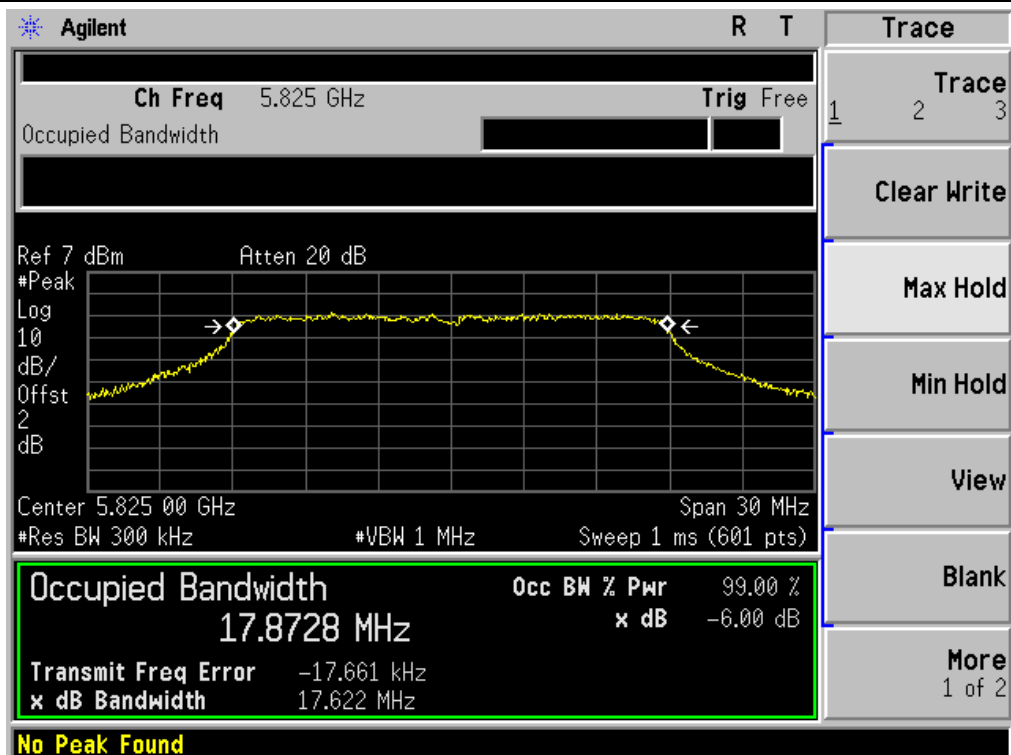
TX CH 149



TX CH 157



TX CH 165



EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX n40 Mode(5G) /CH151, CH159		

RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	5755	36.541	36.532	500	Pass
	High	5795	36.142	35.796	500	Pass
RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	5755	36.444	36.434	500	Pass
	High	5795	36.419	36.408	500	Pass

RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	5755	36.694	36.658	500	Pass
	High	5795	36.623	36.527	500	Pass
RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT C	ANT D		
8192	Low	5755	36.391	36.172	500	Pass
	High	5795	36.477	36.229	500	Pass

NOTE: Model A/C (B/D) represent two different modules,

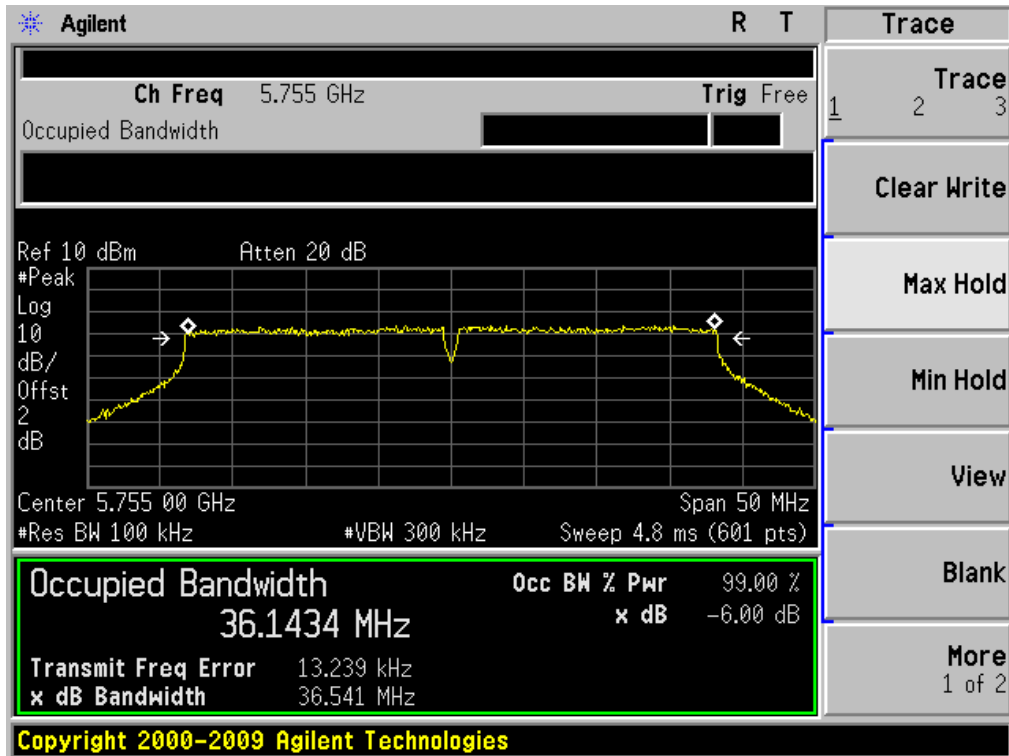
A(B) Represent the value of antenna A and B,The worst data is A Antenna a ,only shown Antenna A Plot.

C(D) Represent the value of antenna C and D,The worst data is C Antenna a ,only shown Antenna C Plot.

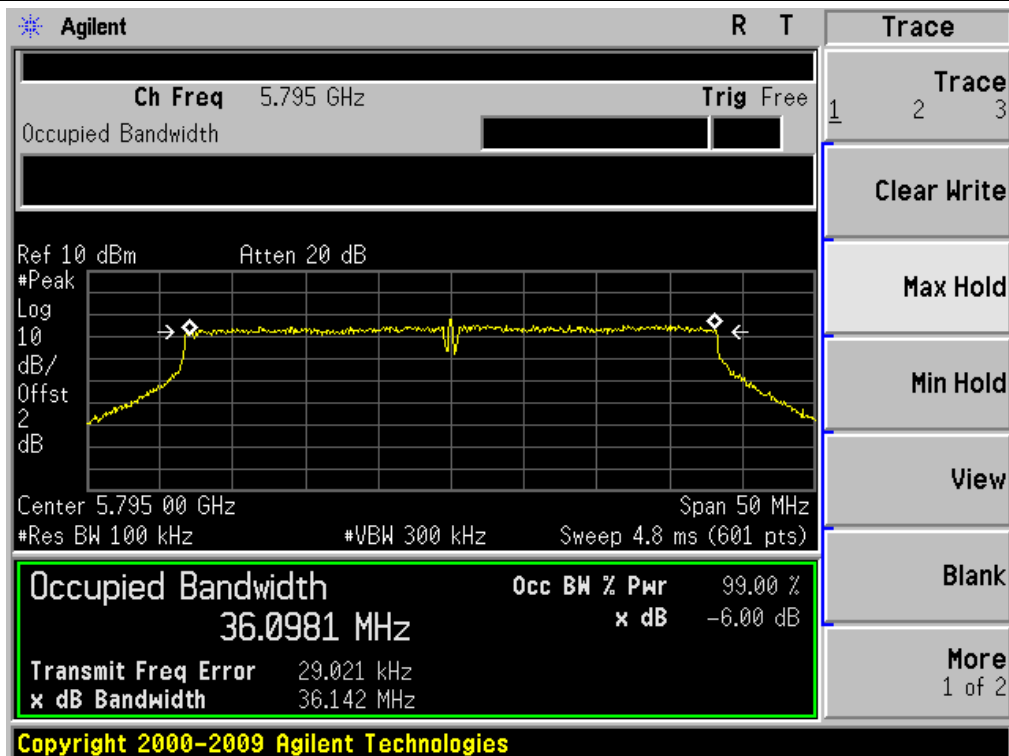
RF Model 8812

6dB bandwidth

TX CH 151

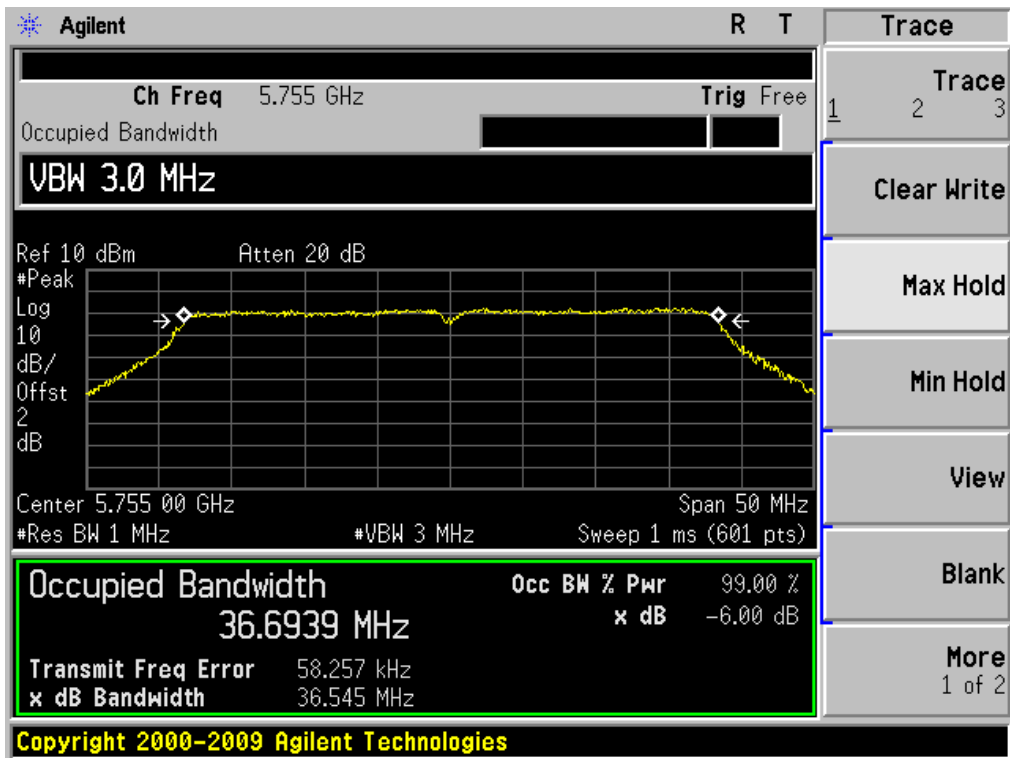


TX CH 159

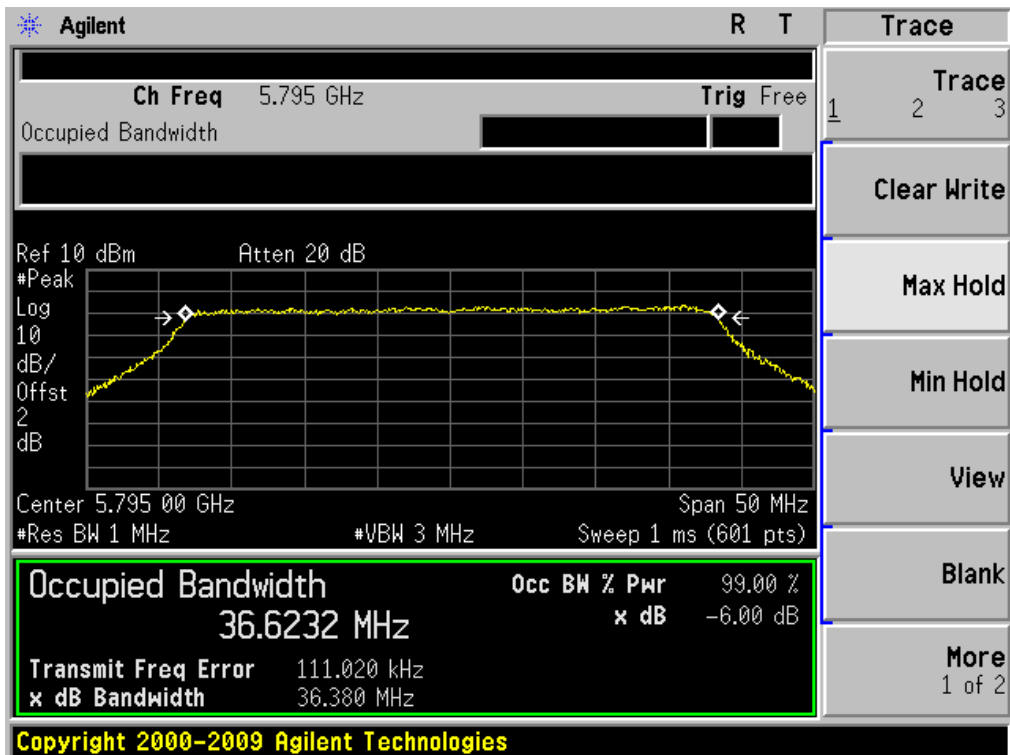


99% bandwidth

TX CH 151



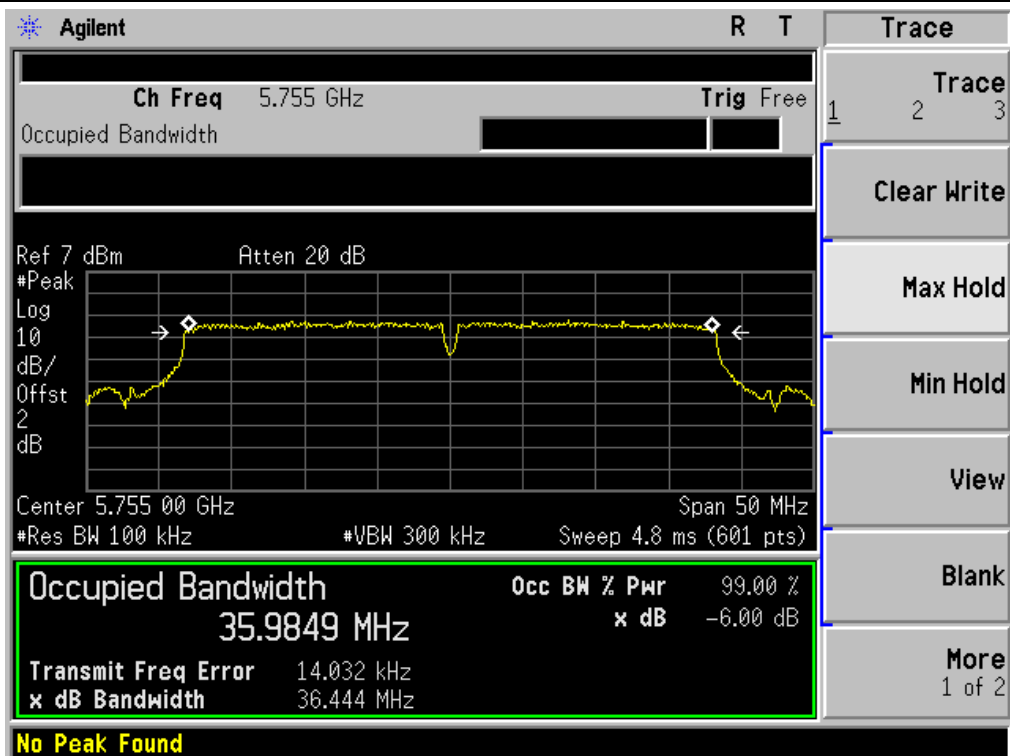
TX CH 159



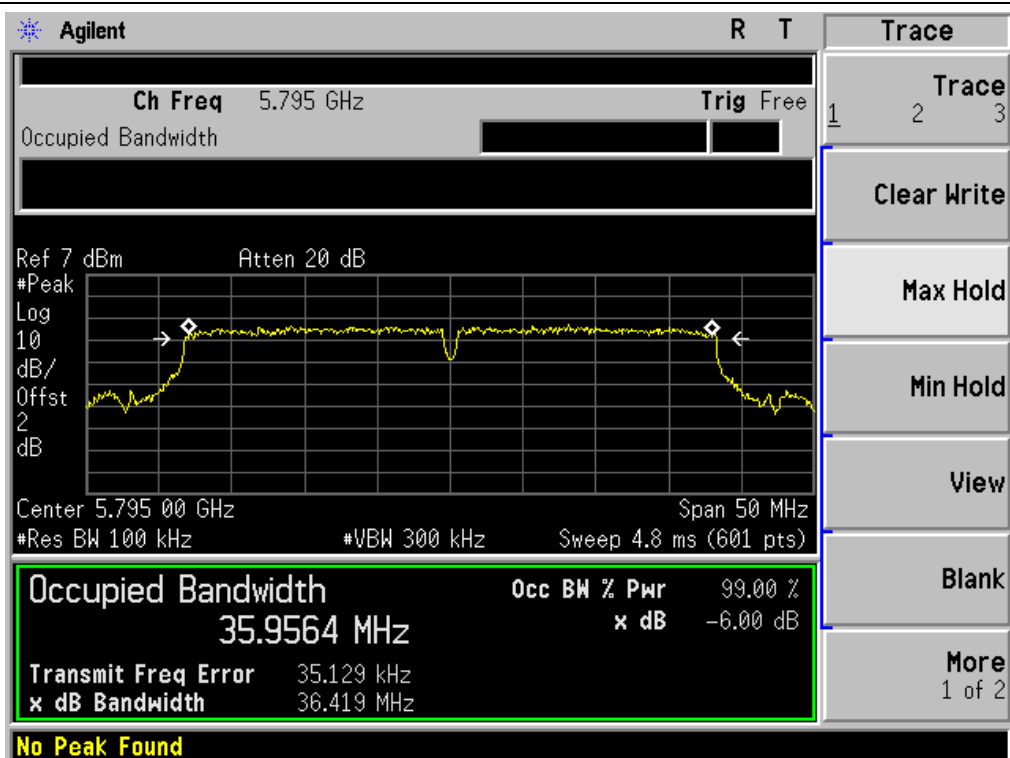
RF Model 8192

6dB bandwidth

TX CH 151

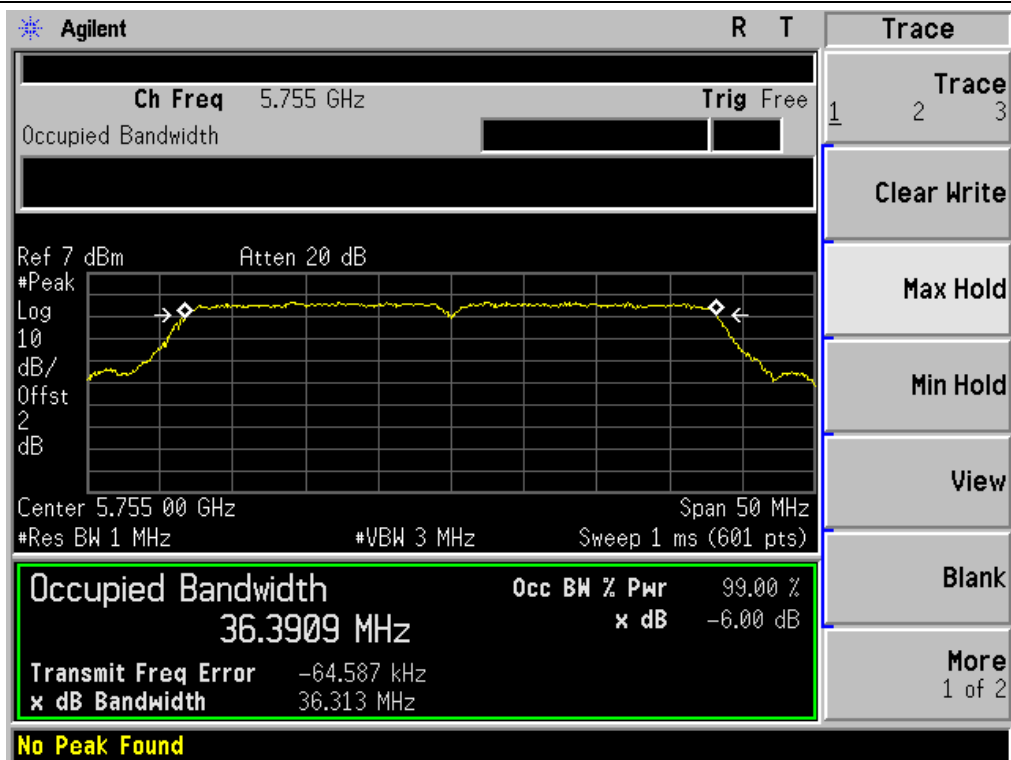


TX CH 159

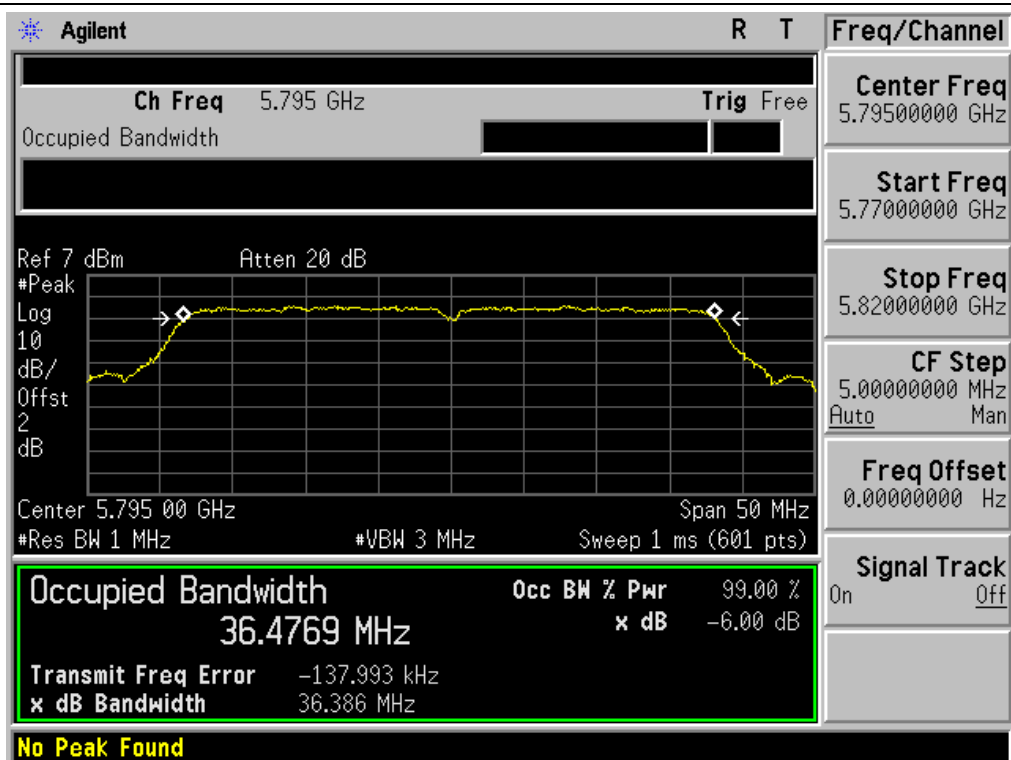


99% bandwidth

TX CH 151



TX CH 159



EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX AC(20) Mode(5G) /CH149, CH157, CH165		

RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	5745	17.793	17.748	500	Pass
	Middle	5785	17.773	17.769	500	Pass
	High	5825	17.787	17.775	500	Pass
RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	5745	17.694	17.693	500	Pass
	Middle	5785	17.814	17.793	500	Pass
	High	5825	17.767	17.762	500	Pass

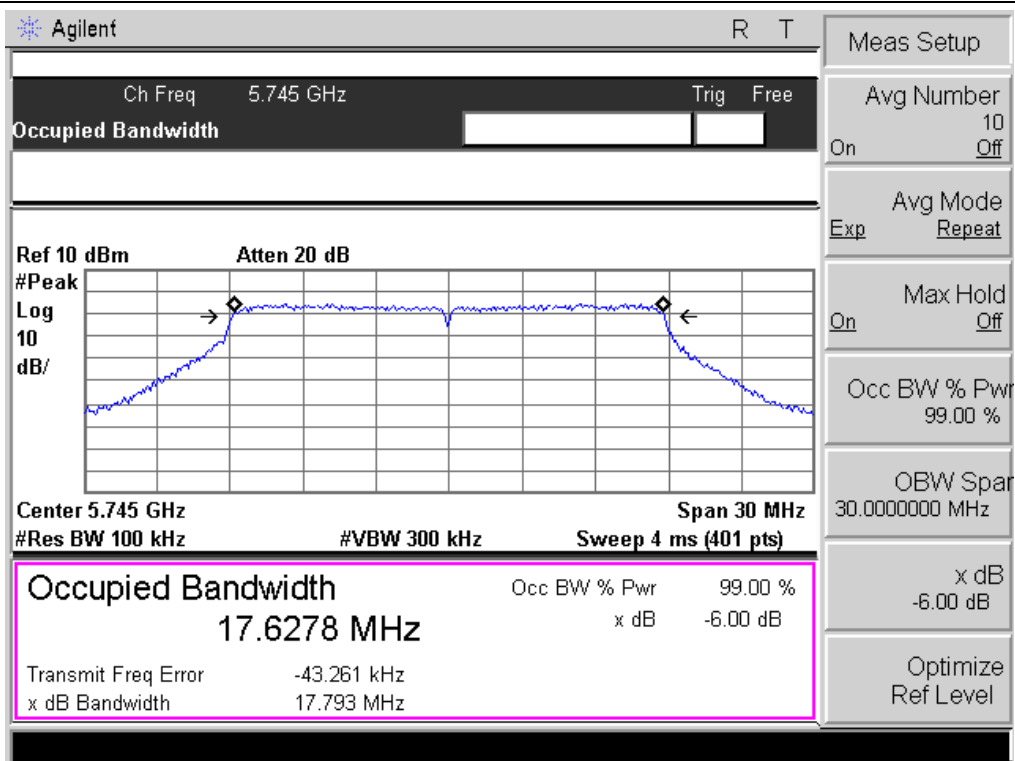
NOTE: Model A(B) represent two different modules,

A(B) Represent the value of antenna A and B, The worst data is A Antenna a ,only shown Antenna A Plot.

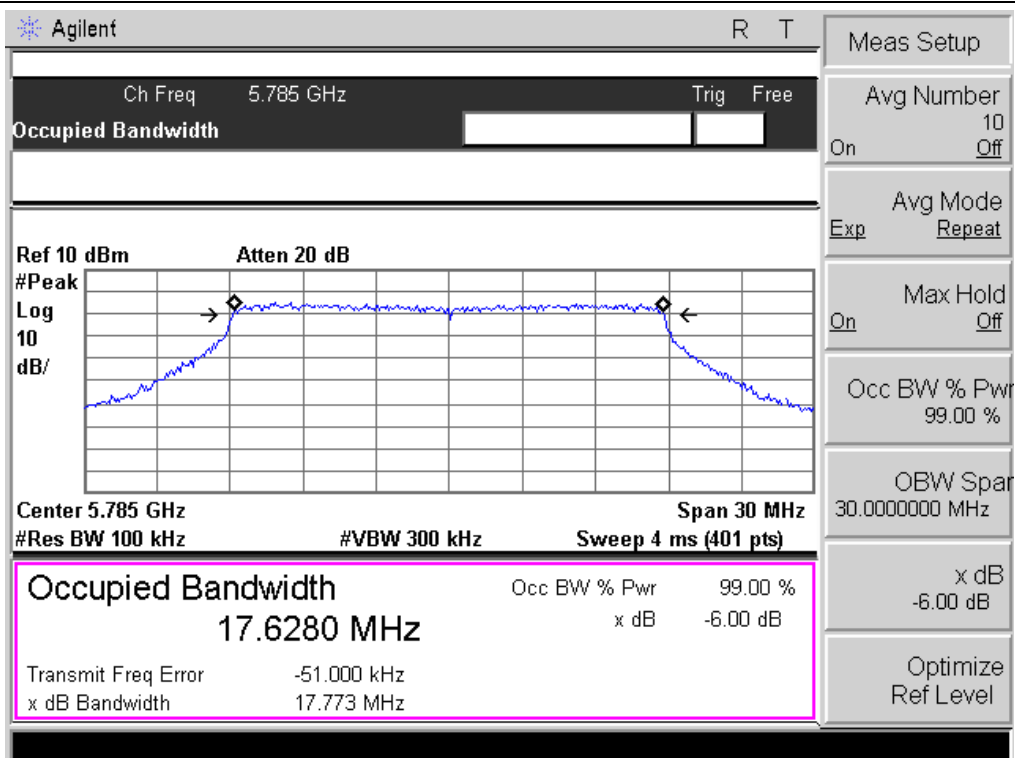
RF Model 8812

6dB bandwidth

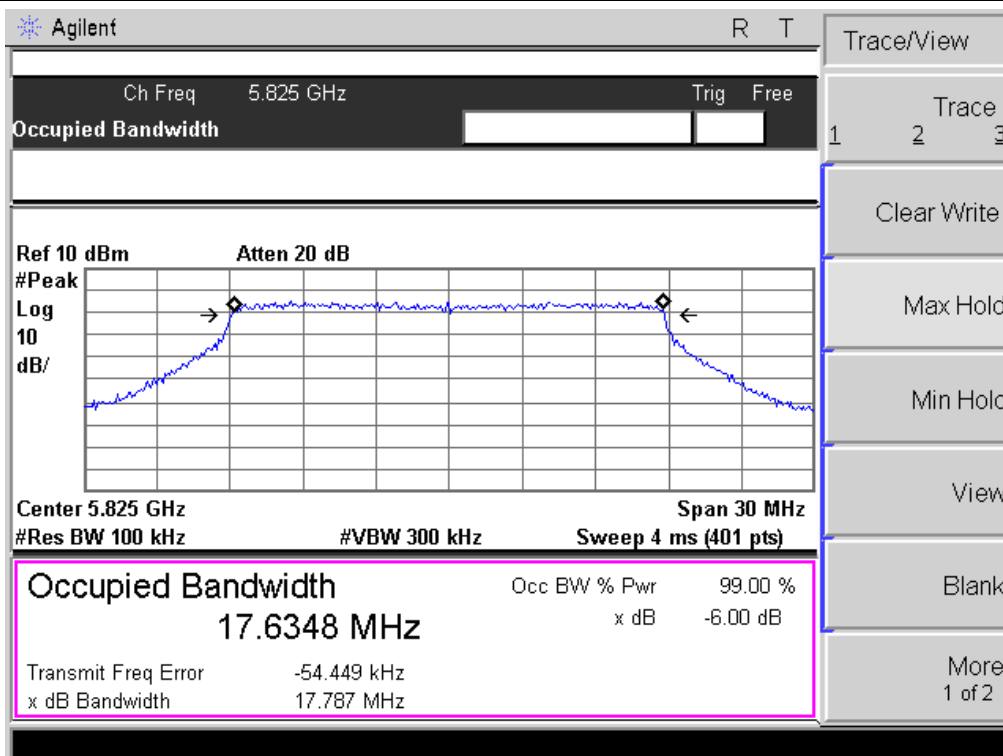
TX CH 149



TX CH 157

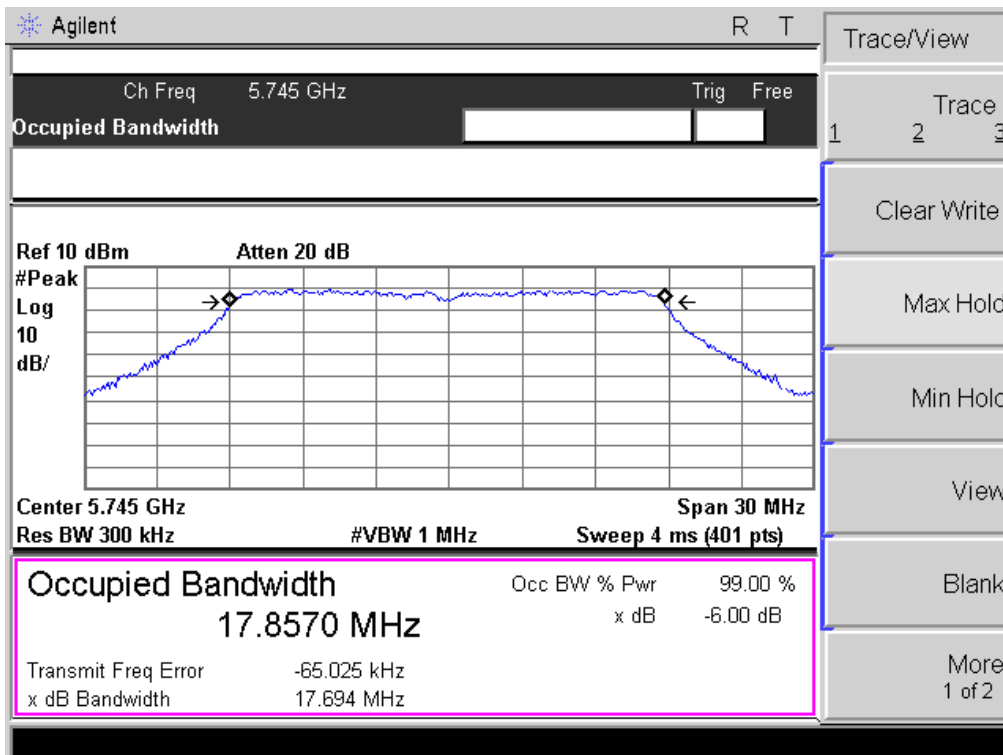


TX CH 165

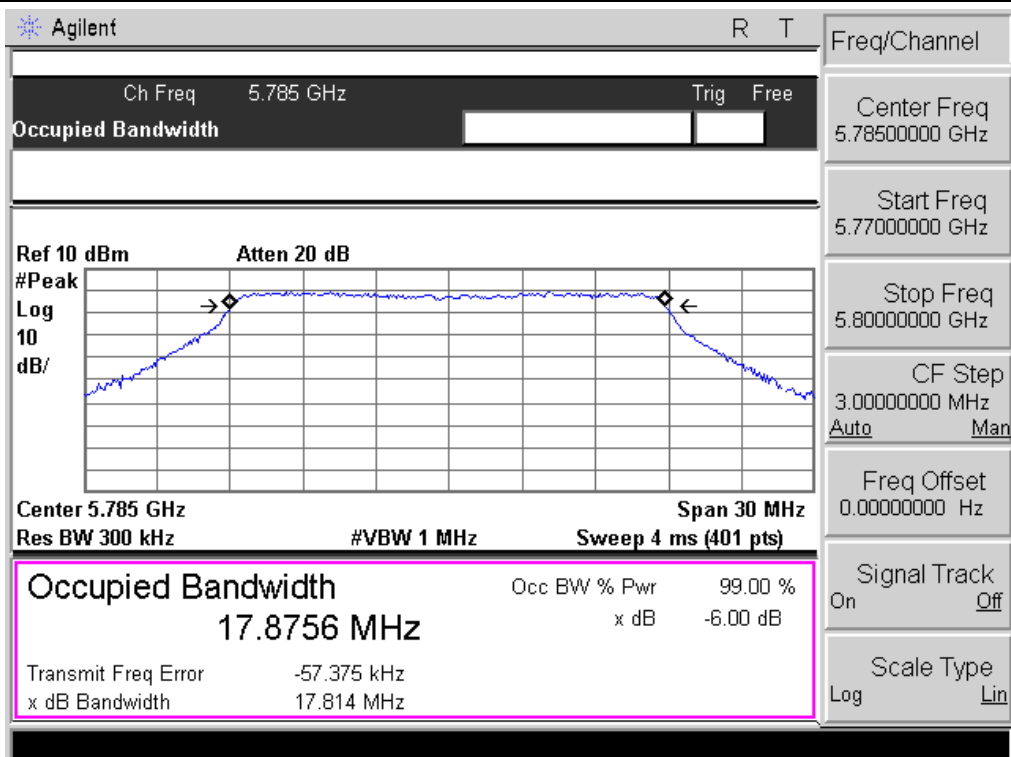


99% bandwidth

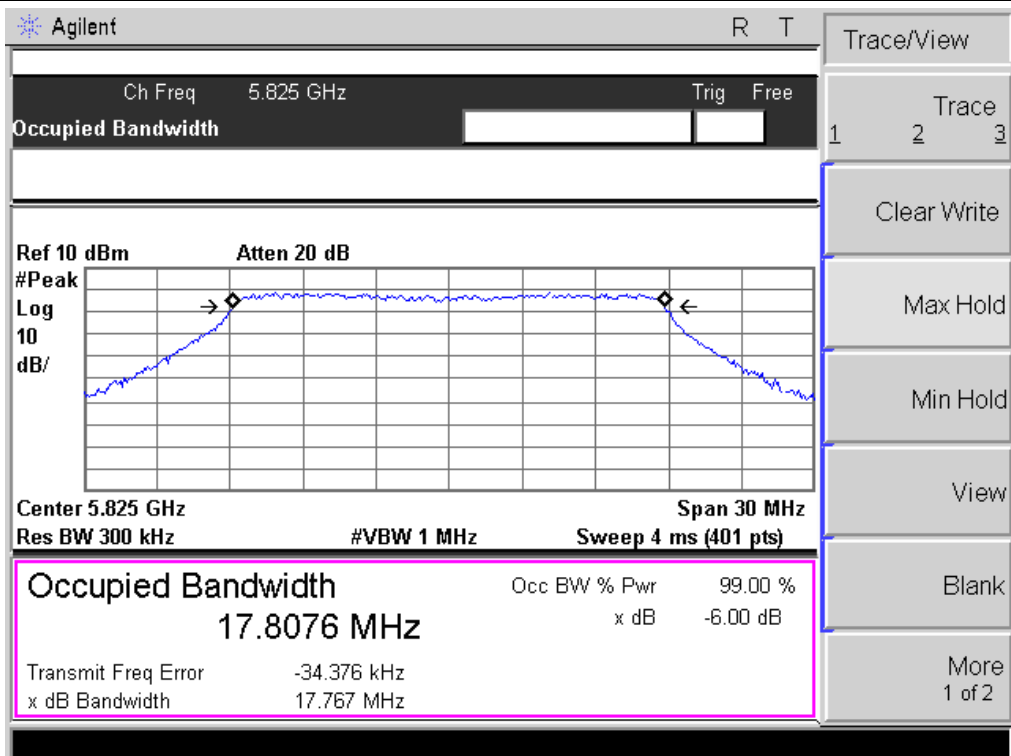
TX CH 149



TX CH 157



TX CH 165



EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX AC(40) Mode(5G) /CH151, CH159		

RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	5755	36.521	36.346	500	Pass
	High	5795	36.540	35.827	500	Pass
RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	Low	5755	36.498	36.458	500	Pass
	High	5795	36.514	36.439	500	Pass

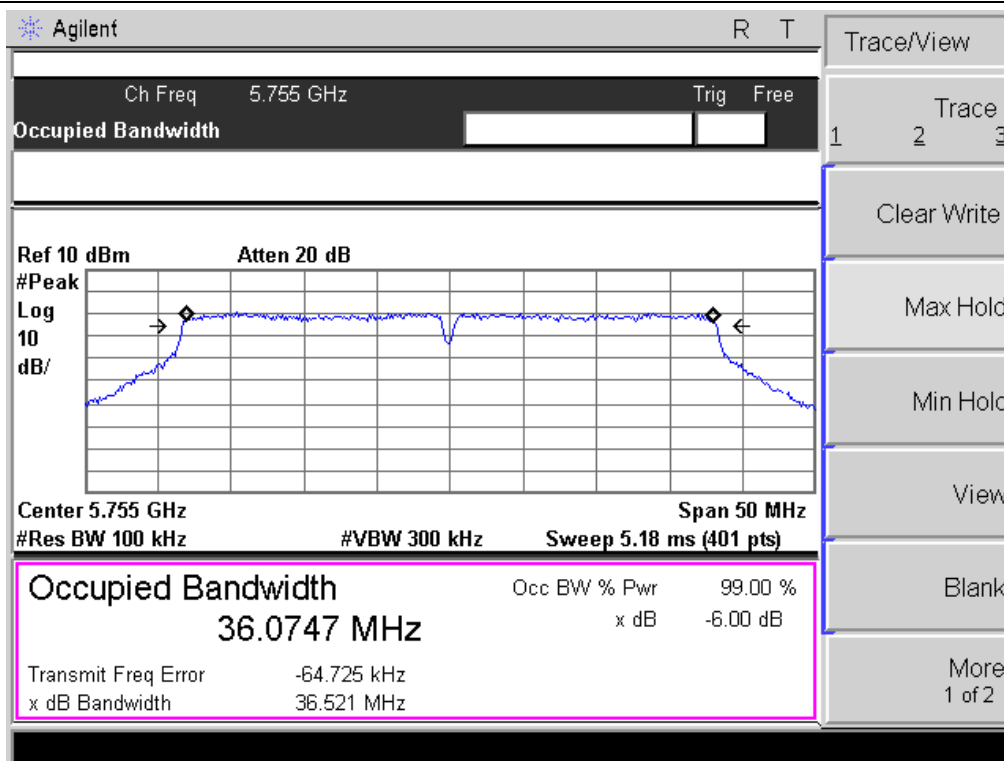
NOTE: Model A (B) represent two different modules.

A(B) Represent the value of antenna A and B, The worst data is A Antenna a ,only shown Antenna A Plot.

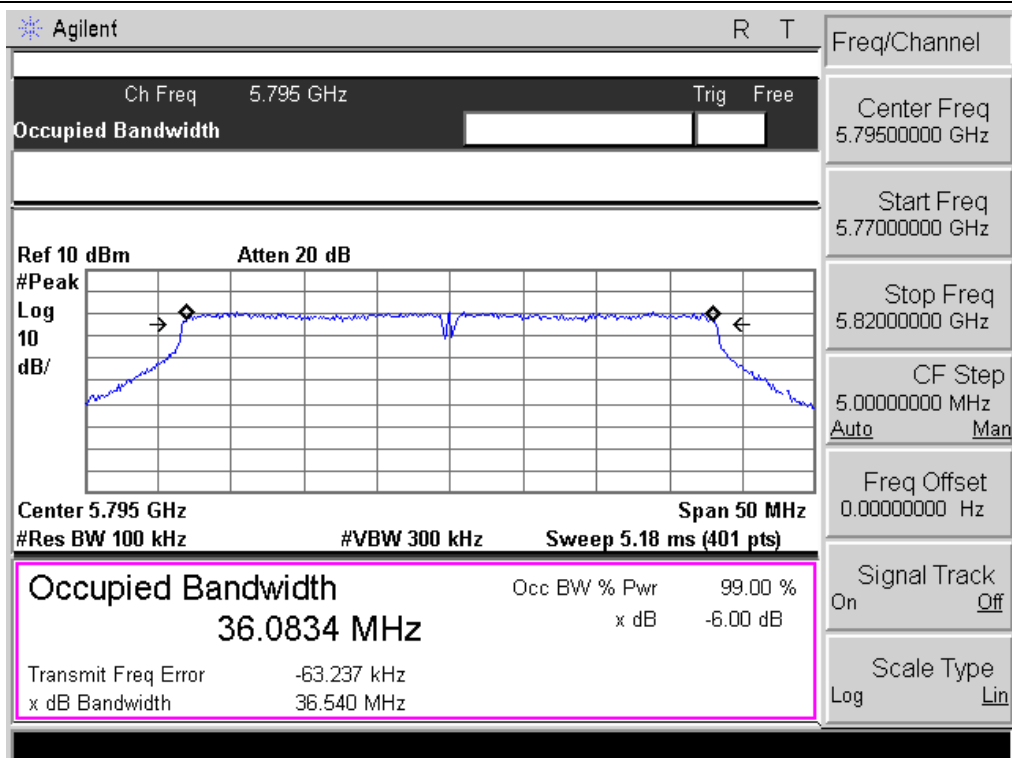
RF Model 8812

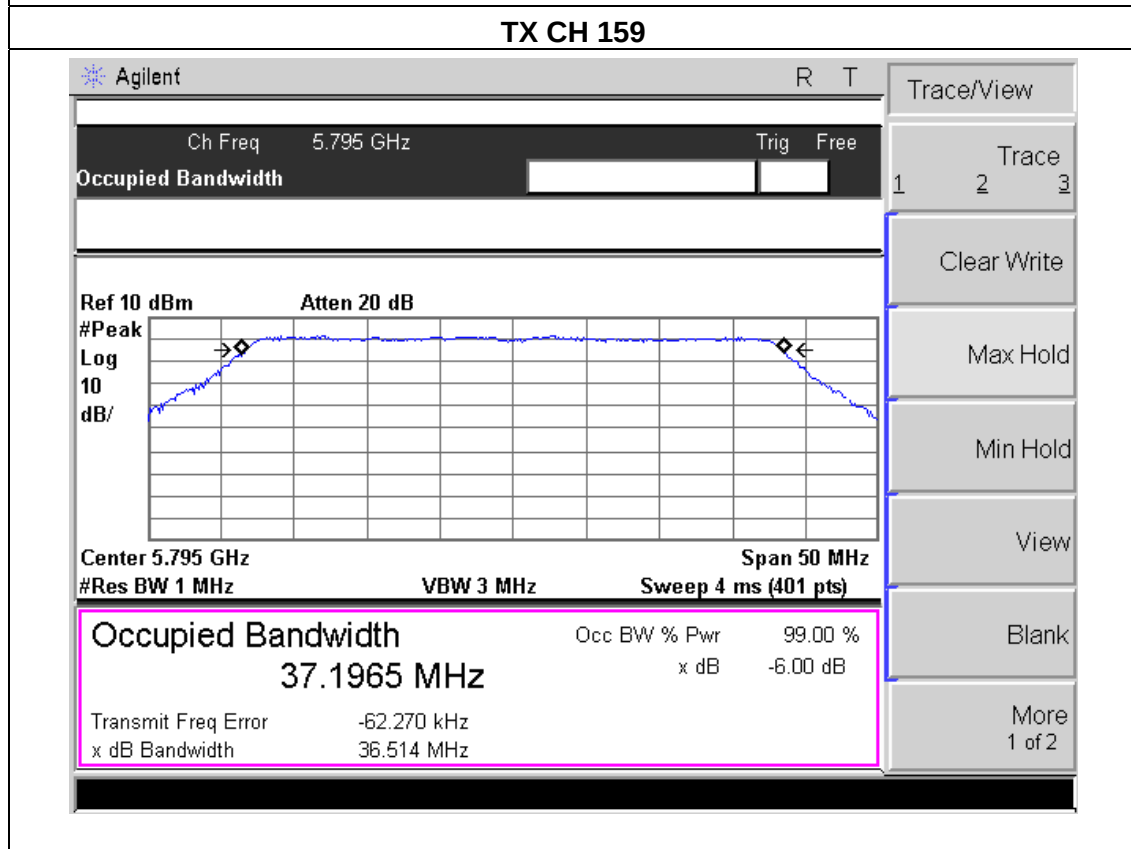
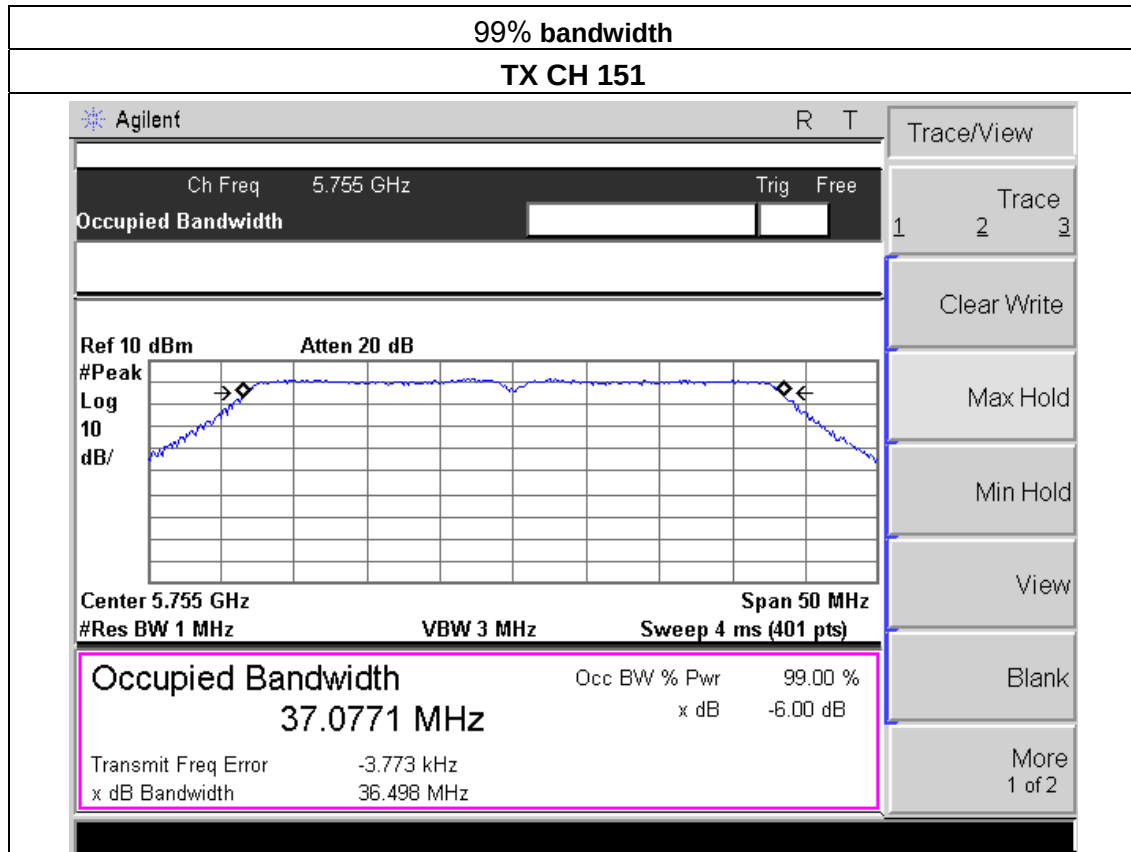
6dB bandwidth

TX CH 151



TX CH 159





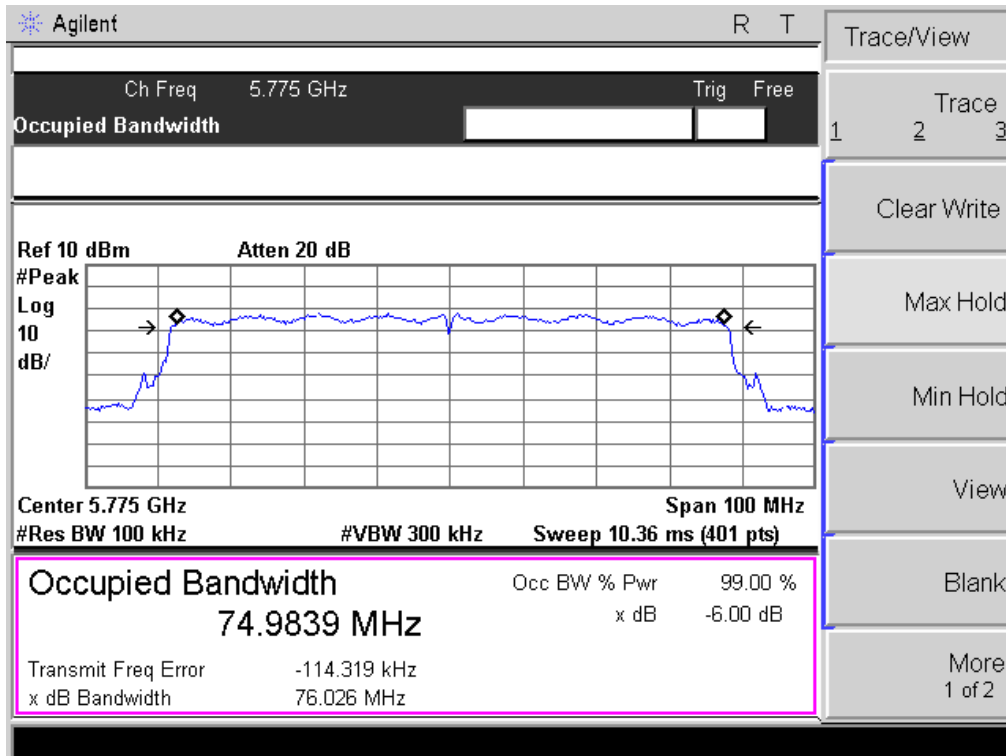
EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX AC(80) Mode(5G) /CH155		

RF Model	Channel	Frequency (MHz)	6dB bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	CH155	5755	76.026	75.877	500	Pass
RF Model	Channel	Frequency (MHz)	99% bandwidth (MHz)		Limit (kHz)	Result
			ANT A	ANT B		
8812	CH155	5755	75.547	75.455	500	Pass

RF Model 8812

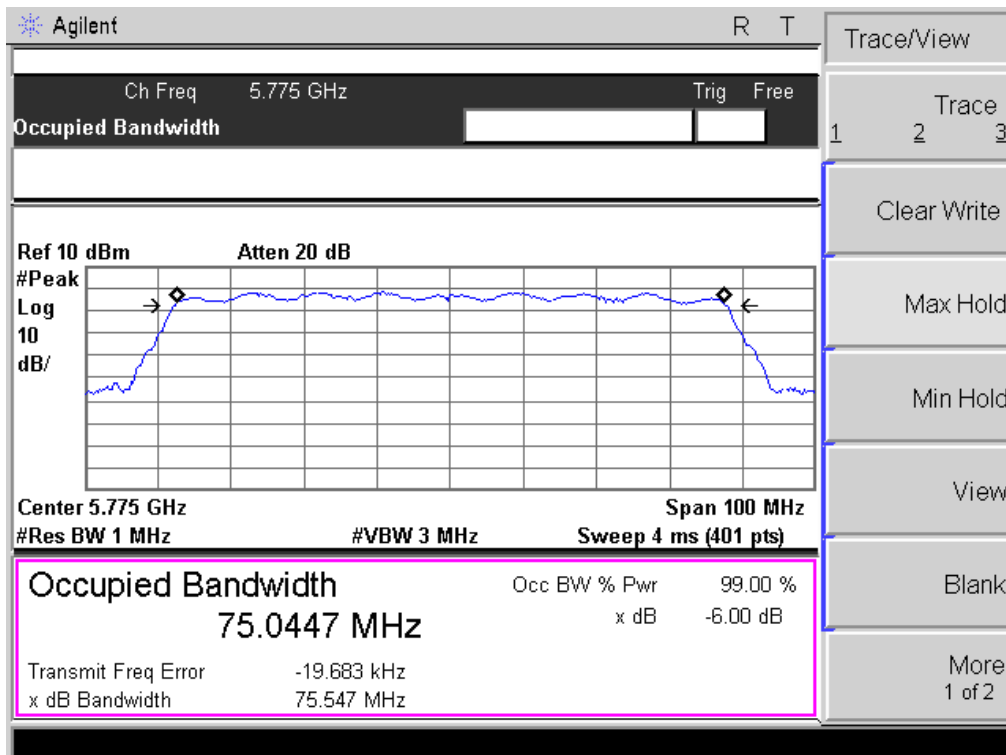
6dB bandwidth

TX CH 155



99% bandwidth

TX CH 159



6. PEAK OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C/ RSS-247 & RSS-Gen Rules				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)/ RSS-247 §5.4	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

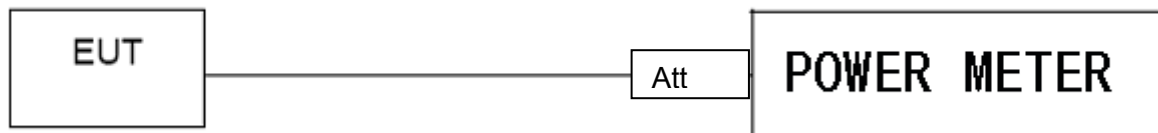
6.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the Power meter

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 TEST RESULTS

EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX b/g/n(20M, 40M) Mode		

Model 8812

Test Channe	Frequency	Maximum output power. Antenna port				Total Power		LIMIT
		(PK) (dBm)		(AV) (dBm)		(PK)	(AV)	
	(MHz)	ANT A	ANT B	ANT A	ANT B	dBm	dBm	dBm
TX 802.11b Mode								
CH01	2412	14.21	14.81	11.79	10.54	17.53	14.22	30
CH06	2437	14.75	14.64	11.12	11.29	17.71	14.20	30
CH11	2462	14.05	14.73	9.09	11.23	17.41	13.30	30
TX 802.11g Mode								
CH01	2412	13.57	14.59	9.66	9.42	17.12	12.55	30
CH06	2437	13.41	14.56	9.02	8.98	17.03	12.01	30
CH11	2462	13.01	13.35	9.95	9.54	16.19	12.76	30
TX 802.11n/20M Mode								
CH01	2412	14.25	14.13	10.20	9.00	17.20	12.65	30
CH06	2437	13.21	14.56	8.97	9.07	16.95	12.03	30
CH11	2462	13.32	13.97	8.31	8.02	16.67	11.18	30
TX 802.11n/40M Mode								
CH03	2422	12.28	12.02	7.75	7.31	15.16	10.55	30
CH06	2437	12.27	12.32	7.43	7.09	15.31	10.27	30
CH09	2452	11.50	11.11	7.25	7.14	14.32	10.21	30

Model 8192

Test Channe	Frequency	Maximum output power. Antenna port				Total Power		LIMIT
		(PK) (dBm)		(AV) (dBm)		(PK)	(AV)	
	(MHz)	ANT C	ANT D	ANT C	ANT D	dBm	dBm	dBm
TX 802.11b Mode								
CH01	2412	13.20	13.03	9.92	9.71	16.13	12.83	29.52
CH06	2437	13.04	13.35	9.76	9.03	16.21	12.42	29.52
CH11	2462	13.35	13.78	9.81	9.43	16.58	12.63	29.52
TX 802.11g Mode								
CH01	2412	9.96	9.55	6.27	6.17	12.77	9.23	29.52
CH06	2437	10.01	10.33	6.47	6.45	13.18	9.47	29.52
CH11	2462	10.10	10.74	6.21	6.79	13.44	9.52	29.52
TX 802.11n/20M Mode								
CH01	2412	8.85	8.66	5.33	5.18	11.77	8.27	29.52
CH06	2437	8.97	9.13	5.24	5.40	12.06	8.33	29.52
CH11	2462	8.69	8.43	5.09	5.56	11.57	8.34	29.52
TX 802.11n/40M Mode								
CH03	2422	8.13	8.10	5.26	5.35	11.13	8.32	29.52
CH06	2437	8.76	8.96	5.91	5.02	11.87	8.50	29.52
CH09	2452	8.36	8.89	5.40	5.76	11.64	8.59	29.52

For 2.4G mode , Limit =30-6.48+6=29.52dBm for output power.

EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX a/n(5G) Mode		

Model 8812

Test Channel	Frequency	Maximum output power. Antenna port				Total Power		LIMIT
		(PK) (dBm)		(AV) (dBm)		(PK)	(AV)	
	(MHz)	ANT A	ANT B	ANT A	ANT B	dBm	dBm	dBm
TX 802.11a Mode								
CH149	5745	8.43	8.41	4.21	4.41	11.43	7.32	27.09
CH157	5785	8.94	8.51	4.56	4.76	11.74	7.67	27.09
CH165	5825	8.71	8.48	4.87	4.37	11.61	7.64	27.09
TX 802.11 n20 Mode								
CH149	5745	8.33	8.94	4.17	4.15	11.66	7.17	27.09
CH157	5785	8.56	8.87	4.73	4.25	11.73	7.51	27.09
CH165	5825	8.13	8.21	4.00	4.03	11.18	7.03	27.09
TX 802.11 n40 Mode								
CH151	5755	7.58	6.29	3.52	3.39	9.99	6.47	27.09
CH159	5795	7.34	6.33	3.27	3.79	9.87	6.55	27.09

For 5G mode, Limit = 30 - 8.91 + 6 = 27.09 dBm for output power

Model 8192

Test Channe	Frequency	Maximum output power. Antenna port				Total Power		LIMIT
		(PK) (dBm)		(AV) (dBm)		(PK)	(AV)	
	(MHz)	ANT C	ANT D	ANT C	ANT D	dBm	dBm	dBm
TX 802.11a Mode								
CH149	5745	8.25	8.12	4.35	4.14	11.20	7.26	27.62
CH157	5785	8.14	8.13	4.54	4.35	11.15	7.46	27.62
CH165	5825	8.67	8.33	4.24	4.21	11.51	7.24	27.62
TX 802.11 n20 Mode								
CH149	5745	8.27	8.11	4.31	4.27	11.20	7.30	27.62
CH157	5785	8.41	8.21	4.55	4.07	11.32	7.33	27.62
CH165	5825	8.20	8.16	4.37	4.39	11.19	7.39	27.62
TX 802.11 n40 Mode								
CH151	5755	6.53	6.49	3.34	3.17	9.52	6.27	27.62
CH159	5795	6.42	6.14	3.17	3.61	9.29	6.41	27.62

For 5G mode,Limit =30-8.38+6=27.62dBm for output power

EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz
Test Mode :	TX AC(5G) Mode		

Model 8812

Test Channel	Frequency	Maximum output power. Antenna port				Total Power		LIMIT
		(PK) (dBm)		(AV) (dBm)		(PK)	(AV)	
	(MHz)	ANT A	ANT B	ANT A	ANT B	dBm	dBm	dBm
TX 802.11 AC20 Mode								
CH149	5745	10.40	10.21	7.06	6.32	13.32	9.72	27.09
CH157	5785	10.49	10.13	7.59	6.13	13.32	9.93	27.09
CH165	5825	9.78	9.14	7.54	6.27	12.48	9.96	27.09
TX 802.11 AC40 Mode								
CH151	5755	9.91	9.12	6.09	5.46	12.54	8.80	27.09
CH159	5795	9.16	9.05	6.76	5.70	12.12	9.27	27.09
TX 802.11 AC80 Mode								
CH155	5775	8.75	8.65	5.73	5.30	11.71	8.53	27.09

For 5G mode, Limit = 30 - 8.91 + 6 = 27.09 dBm for output power

7. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

APPLICABLE STANDARD

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

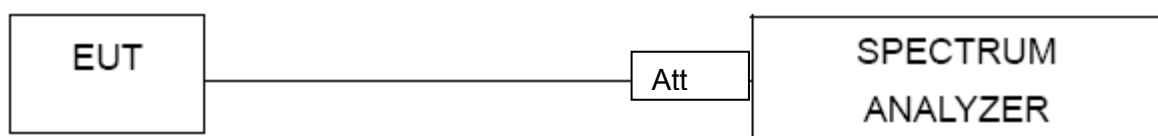
TEST PROCEDURE

- a) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b) Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- c) Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
- d) Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
- e) Repeat above procedures until all measured frequencies were complete.

7.1 DEVIATION FROM STANDARD

No deviation.

7.2 TEST SETUP



7.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.4 TEST RESULTS

EUT :	ScreenBeam Pro Enterprise Edition	Model Name :	SBWD950A
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 5V From adapter AC120V/60Hz

Model 8812

Frequency Band	Delta Peak to band emission (dBc)	> Limit (dBc)	Result
802.11b mode			
2400	33.33	20	Pass
2483.5	50.87	20	Pass
802.11g mode			
2400	31.96	20	Pass
2483.5	49.61	20	Pass
802.11n-HT20 mode			
2400	35.16	20	Pass
2483.5	48.41	20	Pass
802.11n-HT40 mode			
2400	37.80	20	Pass
2483.5	57.44	20	Pass

Frequency Band	Delta Peak to band emission (dBc)	> Limit (dBc)	Result
802.11a mode			
5725	33.10	20	Pass
5850	36.39	20	Pass
802.11n20 mode			
5725	33.55	20	Pass
5850	34.59	20	Pass
802.11n40 mode			
5725	30.31	20	Pass
5850	39.61	20	Pass

Frequency Band	Delta Peak to band emission (dBc)	> Limit (dBc)	Result
802.11AC20 mode			
5725	53.11	20	Pass
5850	56.90	20	Pass
802.11AC40 mode			
5725	56.62	20	Pass
5850	57.21	20	Pass
802.11AC80 mode			
5725	57.35	20	Pass
5850	59.50	20	Pass

Radiated band edge:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
802.11b							
2390	57.53	-13.06	44.47	74	-29.53	peak	Vertical
2390	57.27	-13.06	44.21	74	-29.79	peak	Horizontal
2483.5	58.46	-12.78	45.68	74	-28.32	peak	Vertical
2483.5	58.51	-12.78	45.73	74	-28.27	peak	Horizontal
802.11g							
2390	57.43	-13.06	44.37	74	-29.63	peak	Vertical
2390	56.61	-13.06	43.55	74	-30.45	peak	Horizontal
2483.5	58.33	-12.78	45.55	74	-28.45	peak	Vertical
2483.5	58.54	-12.78	45.76	74	-28.24	peak	Horizontal
802.11n (20)							
2390	59.65	-13.06	46.59	74	-27.41	peak	Vertical
2390	59.43	-13.06	46.37	74	-27.63	peak	Horizontal
2483.5	59.57	-12.78	46.79	74	-27.21	peak	Vertical
2483.5	59.75	-12.78	46.97	74	-27.03	peak	Horizontal
802.11n (40)							
2390	58.44	-13.06	45.38	74	-28.62	peak	Vertical
2390	59.53	-13.06	46.47	74	-27.53	peak	Horizontal
2483.5	57.07	-12.78	44.29	74	-29.71	peak	Vertical
2483.5	56.94	-12.78	44.16	74	-29.84	peak	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
802.11a-5G							
5725	42.54	3.88	46.42	74	-27.58	peak	Vertical
5725	41.65	3.88	45.53	74	-28.47	peak	Horizontal
5850	40.14	3.85	43.99	74	-30.01	peak	Vertical
5850	40.53	3.85	44.38	74	-29.62	peak	Horizontal
802.11n20-5G							
5725	41.26	3.88	45.14	74	-28.86	peak	Vertical
5725	42.04	3.88	45.92	74	-28.08	peak	Horizontal
5850	40.18	3.85	44.03	74	-29.97	peak	Vertical
5850	41.38	3.85	45.23	74	-28.77	peak	Horizontal
802.11n40-5G							
5725	42.34	3.88	46.22	74	-27.78	peak	Vertical
5725	40.22	3.88	44.1	74	-29.90	peak	Horizontal
5850	40.99	3.85	44.84	74	-29.16	peak	Vertical
5850	41.64	3.85	45.49	74	-28.51	peak	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
802.11AC20-5G							
5725	44.62	3.88	48.50	74	-25.50	peak	Vertical
5725	43.76	3.88	47.64	74	-26.36	peak	Horizontal
5850	41.76	3.85	45.61	74	-28.39	peak	Vertical
5850	42.17	3.85	46.02	74	-27.98	peak	Horizontal
802.11AC40-5G							
5725	44.76	3.88	48.64	74	-25.36	peak	Vertical
5725	43.59	3.88	47.47	74	-26.53	peak	Horizontal
5850	42.61	3.85	46.46	74	-27.54	peak	Vertical
5850	42.73	3.85	46.58	74	-27.42	peak	Horizontal
802.11AC80-5G							
5725	45.92	3.88	49.8	74	-24.20	peak	Vertical
5725	42.69	3.88	46.57	74	-27.43	peak	Horizontal
5850	44.75	3.85	48.6	74	-25.4	peak	Vertical
5850	43.68	3.85	47.53	74	-26.47	peak	Horizontal

Note: Test method to see chapter 3.2 . When PK value is lower than the Average value limit, average not record.

Model 8192

Frequency Band	Delta Peak to band emission (dBc)	> Limit (dBc)	Result
802.11b mode			
2400	40.07	20	Pass
2483.5	57.88	20	Pass
802.11g mode			
2400	29.65	20	Pass
2483.5	50.34	20	Pass
802.11n-HT20 mode			
2400	31.06	20	Pass
2483.5	47.68	20	Pass
802.11n-HT40 mode			
2400	33.34	20	Pass
2483.5	44.48	20	Pass

Frequency Band	Delta Peak to band emission (dBc)	> Limit (dBc)	Result
802.11a mode			
5725	33.04	20	Pass
5850	37.44	20	Pass
802.11n20 mode			
5725	33.69	20	Pass
5850	36.47	20	Pass
802.11n40 mode			
5725	29.54	20	Pass
5850	30.69	20	Pass

Radiated band edge:

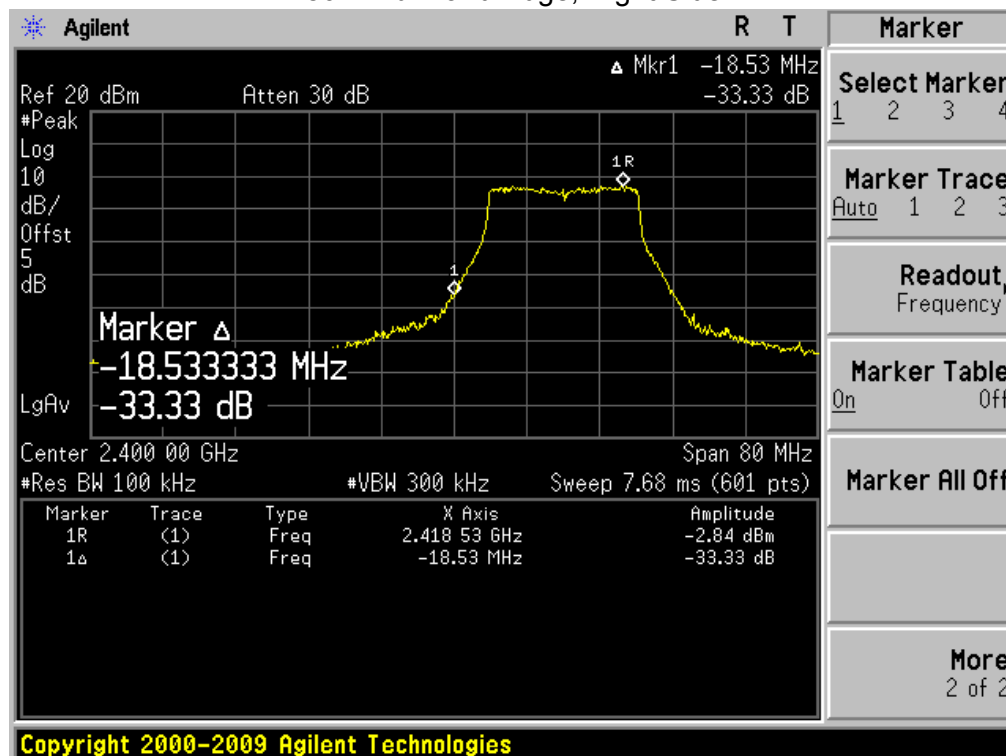
Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
802.11b							
2390	58.64	-13.06	45.58	74	-28.42	peak	Vertical
2390	58.1	-13.06	45.04	74	-28.96	peak	Horizontal
2483.5	60.31	-12.78	47.53	74	-26.47	peak	Vertical
2483.5	59.67	-12.78	46.89	74	-27.11	peak	Horizontal
802.11g							
2390	58.88	-13.06	45.82	74	-28.18	peak	Vertical
2390	58.12	-13.06	45.06	74	-28.94	peak	Horizontal
2483.5	59.21	-12.78	46.43	74	-27.57	peak	Vertical
2483.5	59.47	-12.78	46.69	74	-27.31	peak	Horizontal
802.11n (20)							
2390	60.34	-13.06	47.28	74	-26.72	peak	Vertical
2390	59.96	-13.06	46.9	74	-27.10	peak	Horizontal
2483.5	60.42	-12.78	47.64	74	-26.36	peak	Vertical
2483.5	60.06	-12.78	47.28	74	-26.72	peak	Horizontal
802.11n (40)							
2390	60.79	-13.06	47.73	74	-26.27	peak	Vertical
2390	61.52	-13.06	48.46	74	-25.54	peak	Horizontal
2483.5	61.84	-12.78	49.06	74	-24.94	peak	Vertical
2483.5	60.26	-12.78	47.48	74	-26.52	peak	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
802.11a-5G							
5725	42.13	11.79	53.92	74	-20.08	peak	Vertical
5725	41.54	11.79	53.33	74	-20.67	peak	Horizontal
5850	40.21	11.93	52.14	74	-21.86	peak	Vertical
5850	41.04	11.93	52.97	74	-21.03	peak	Horizontal
802.11n20-5G							
5725	41.85	11.79	53.64	74	-20.36	peak	Vertical
5725	40.19	11.79	51.98	74	-22.02	peak	Horizontal
5850	41.71	11.93	53.64	74	-20.36	peak	Vertical
5850	40.81	11.93	52.74	74	-21.26	peak	Horizontal
802.11n40-5G							
5725	39.62	11.79	51.41	74	-22.59	peak	Vertical
5725	38.32	11.79	50.11	74	-23.89	peak	Horizontal
5850	37.76	11.93	49.69	74	-24.31	peak	Vertical
5850	33.26	11.93	45.19	74	-28.81	peak	Horizontal

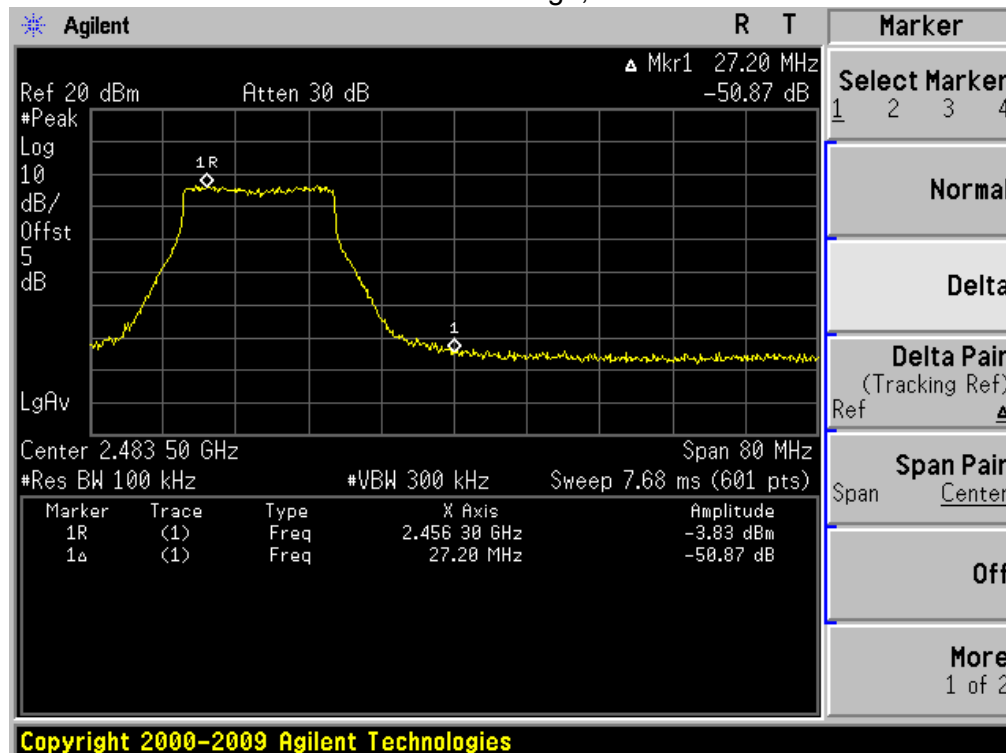
Note: Test method to see chapter 3.2 . When PK value is lower than the Average value limit, average not record.

Model 8812

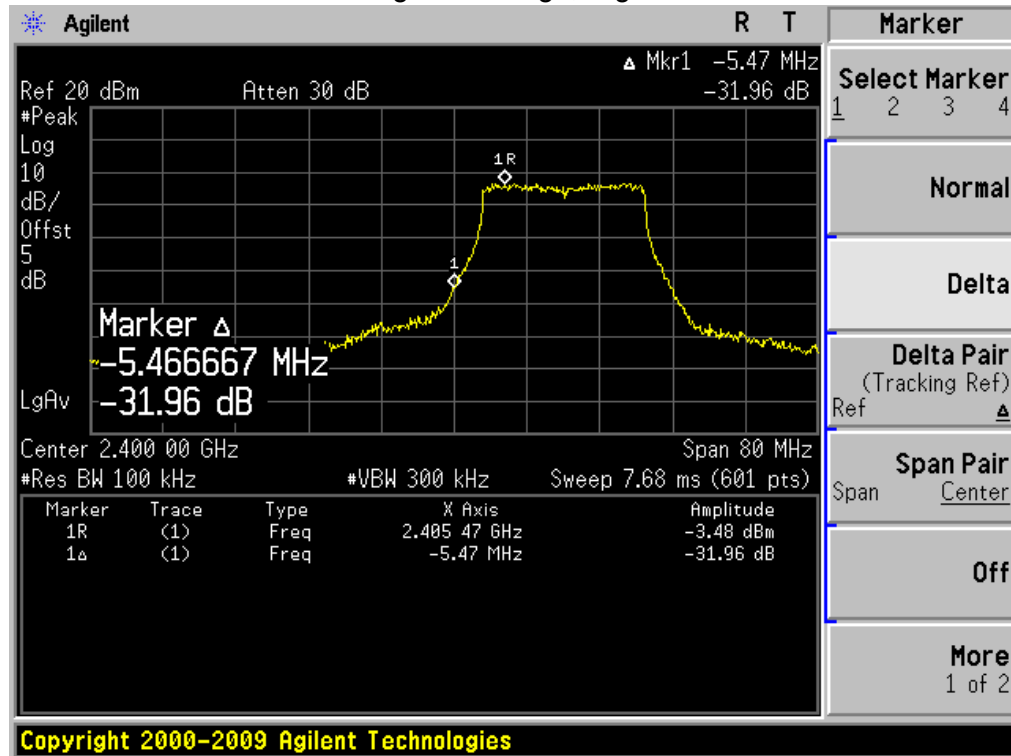
802.11b: Band Edge, Right Side



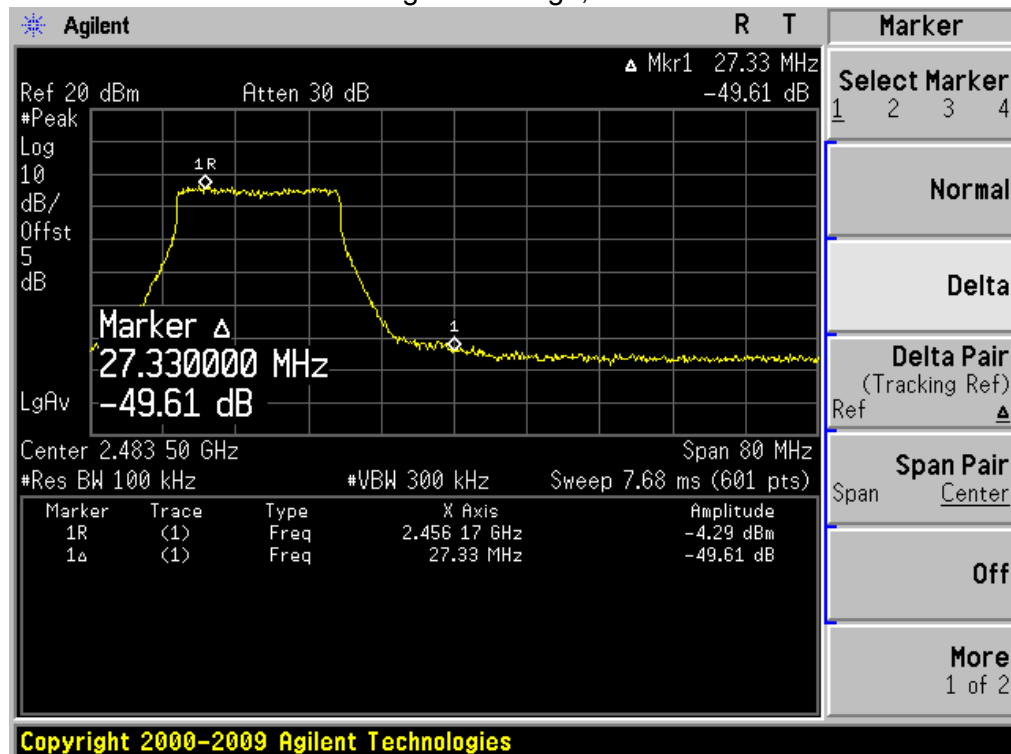
802.11b: Band Edge, Left Side



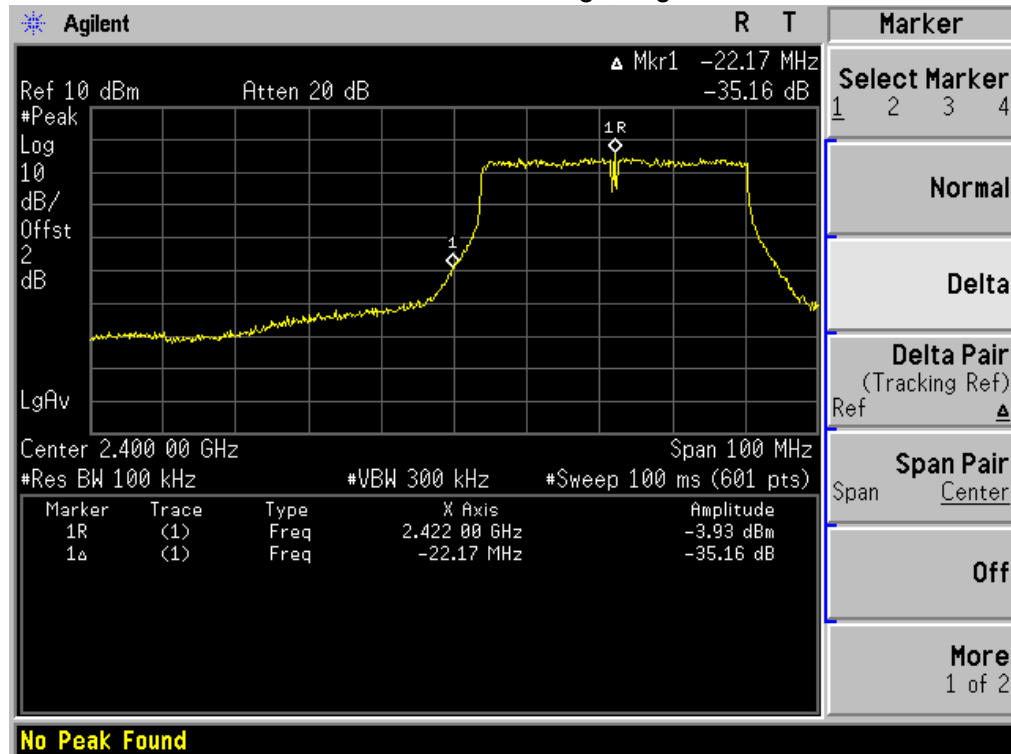
802.11g: Band Edge, Right Side



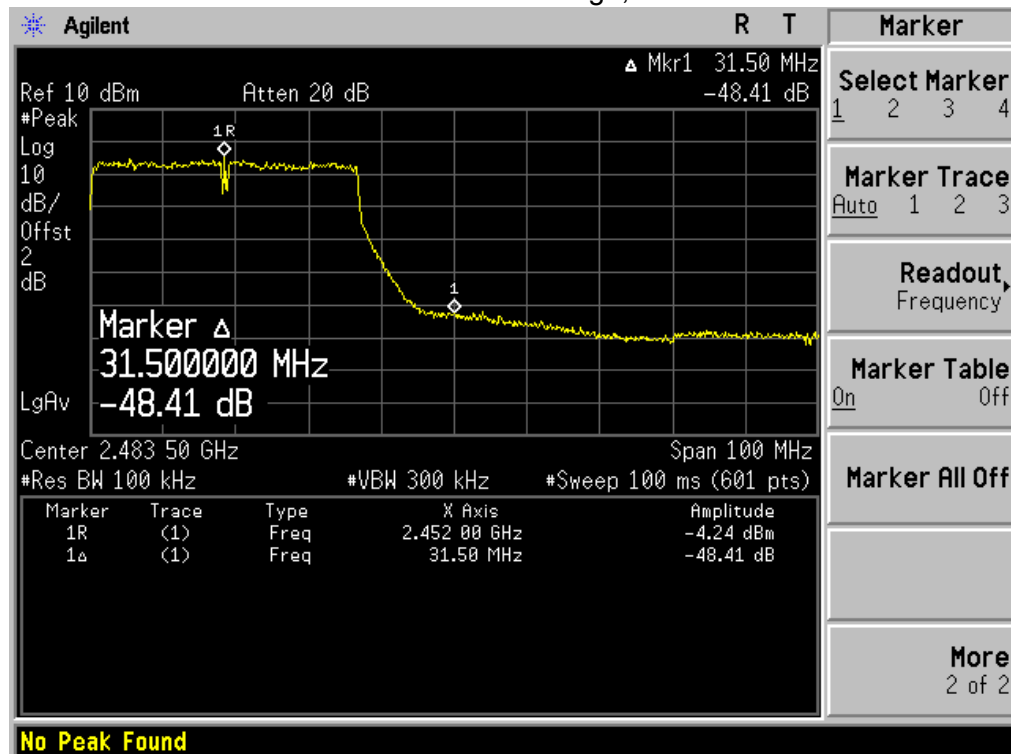
802.11g: Band Edge, Left Side



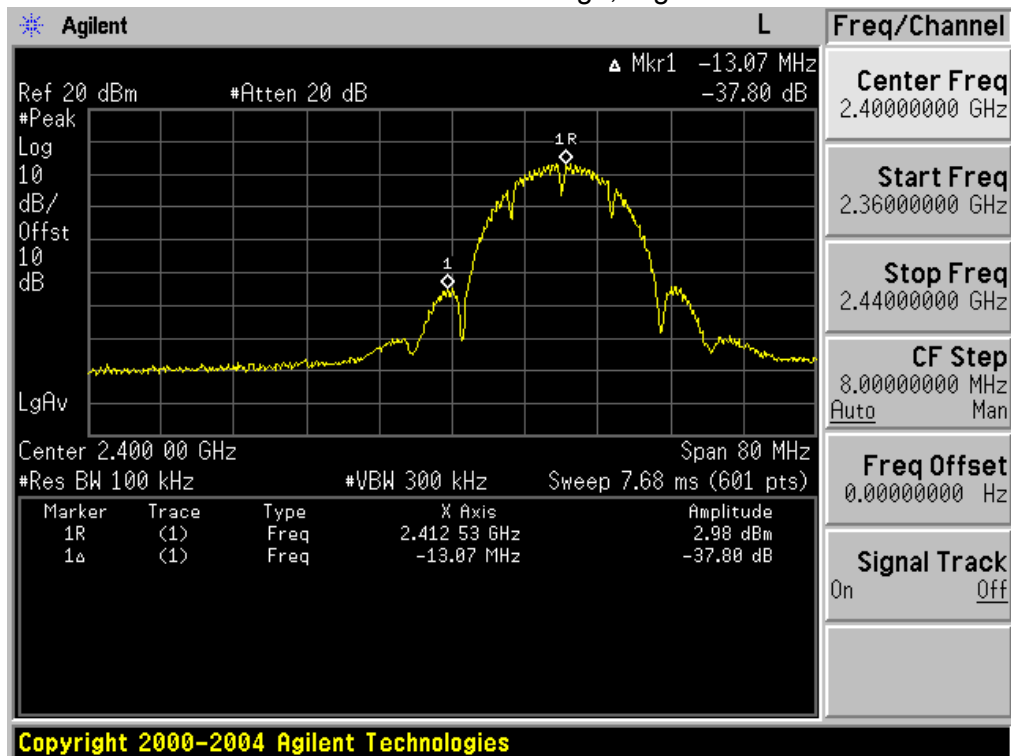
802.11n-HT20: Band Edge, Right Side



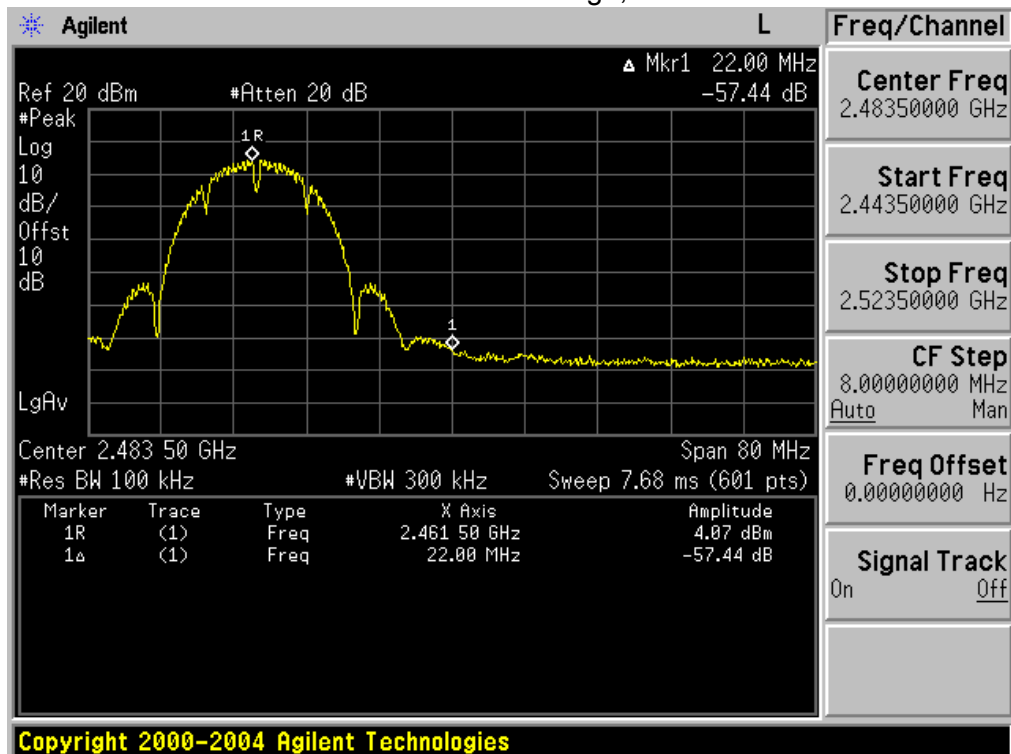
802.11n-HT20: Band Edge, Left Side



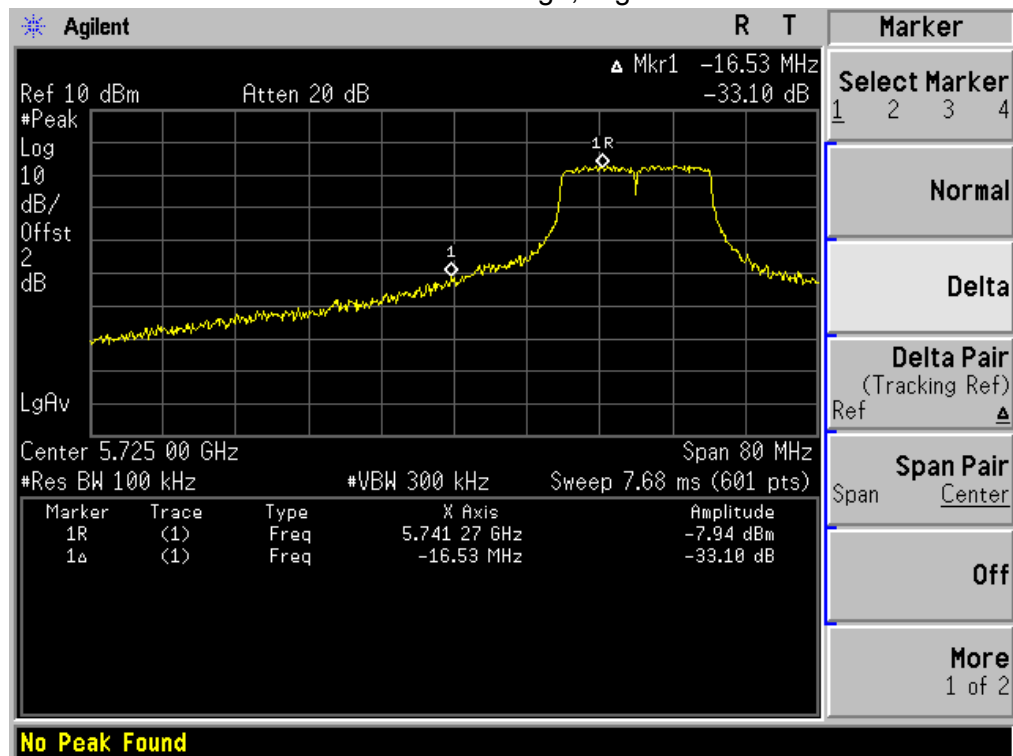
802.11n-HT40: Band Edge, Right Side



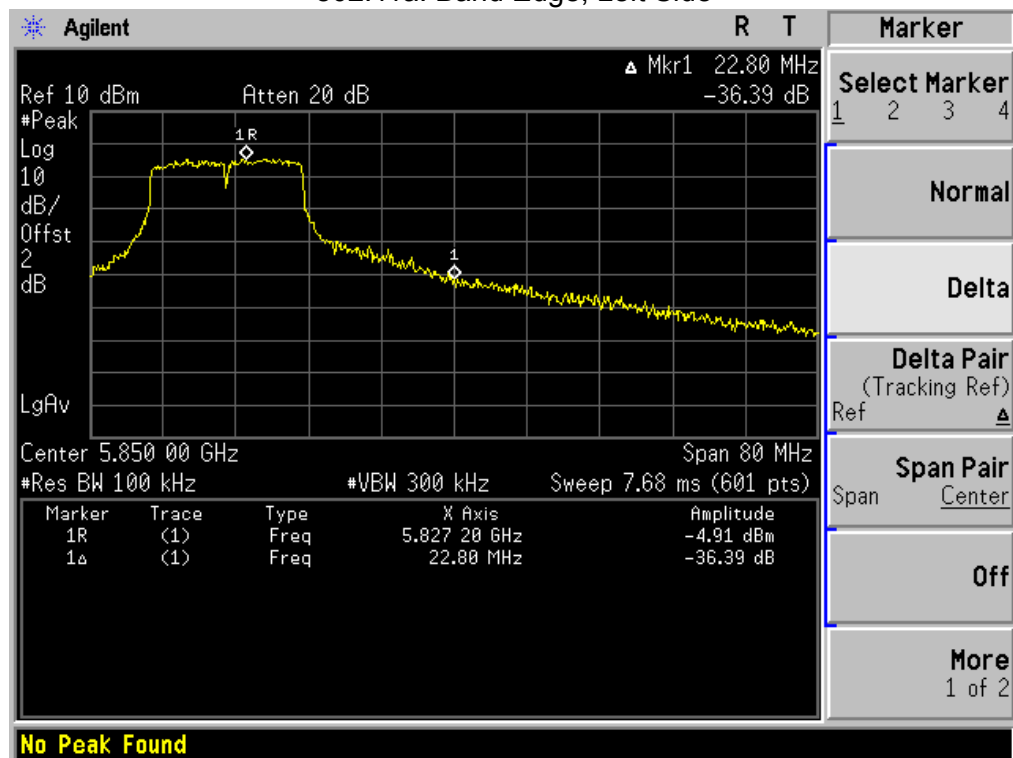
802.11n-HT40: Band Edge, Left Side



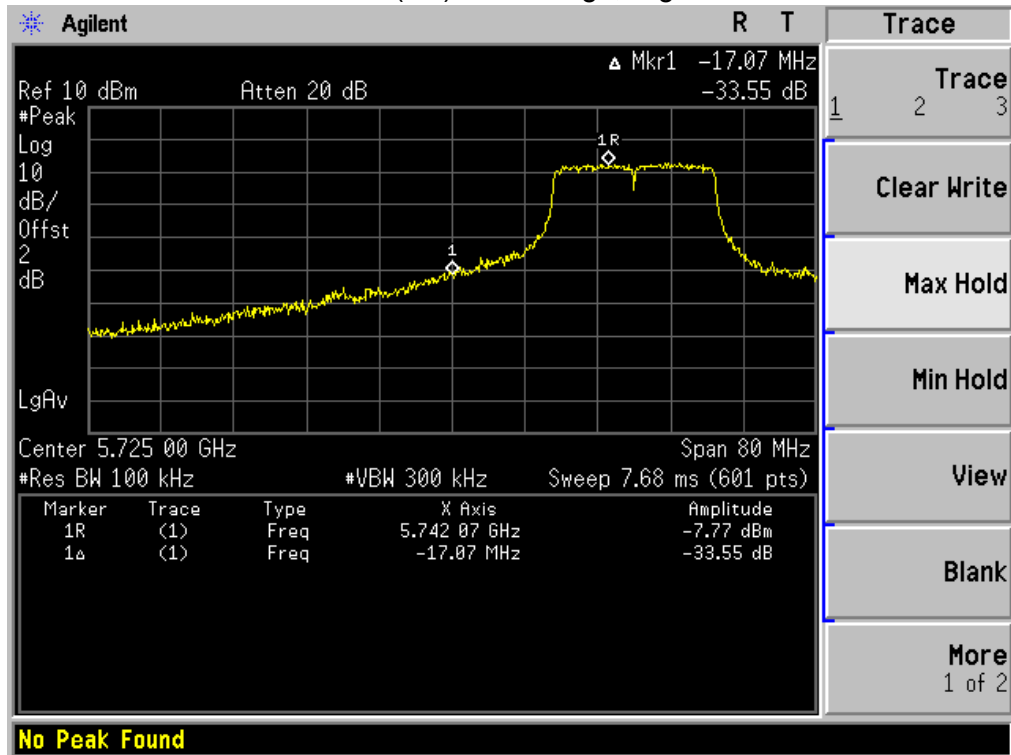
802.11a: Band Edge, Right Side



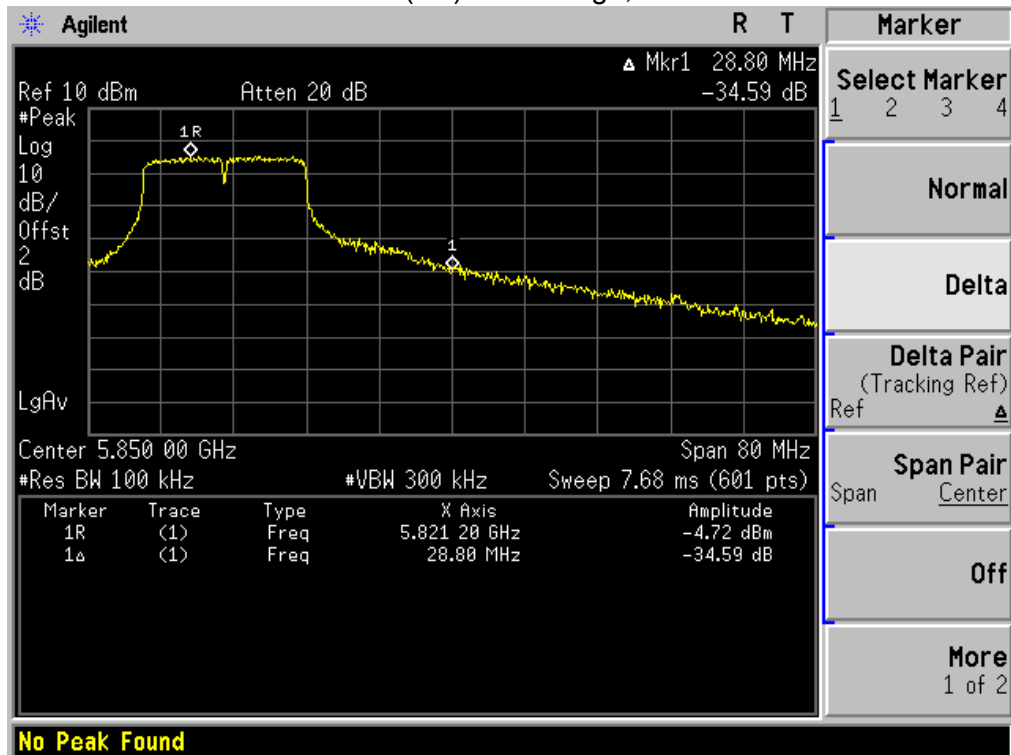
802.11a: Band Edge, Left Side



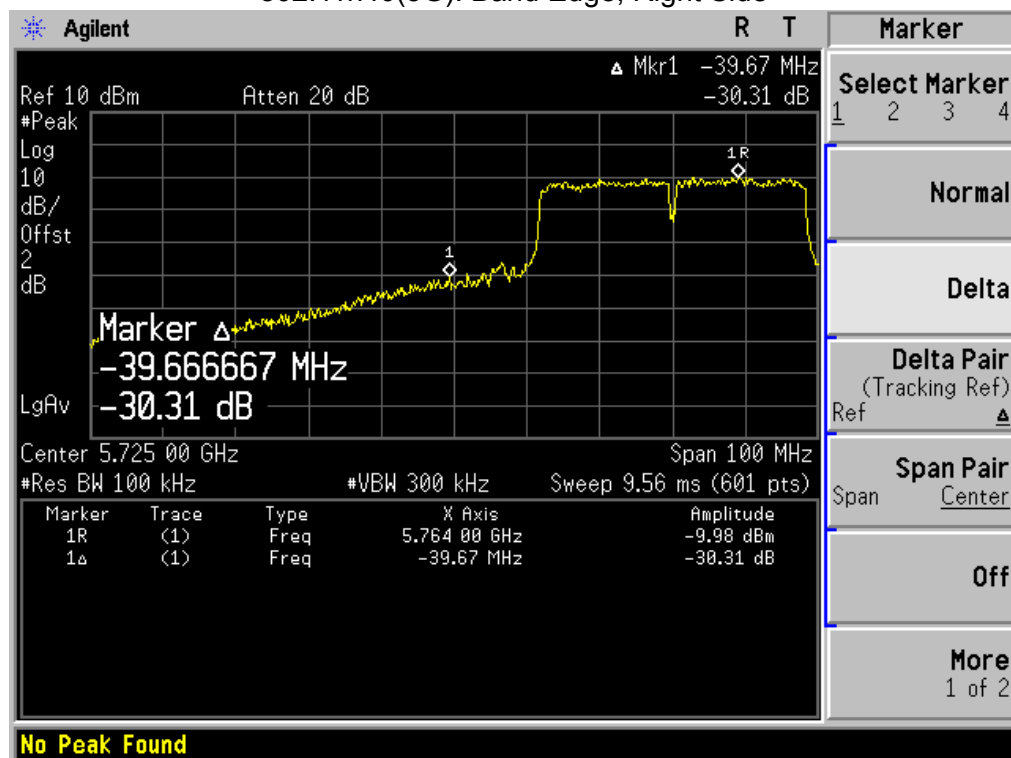
802.11n20(5G): Band Edge, Right Side



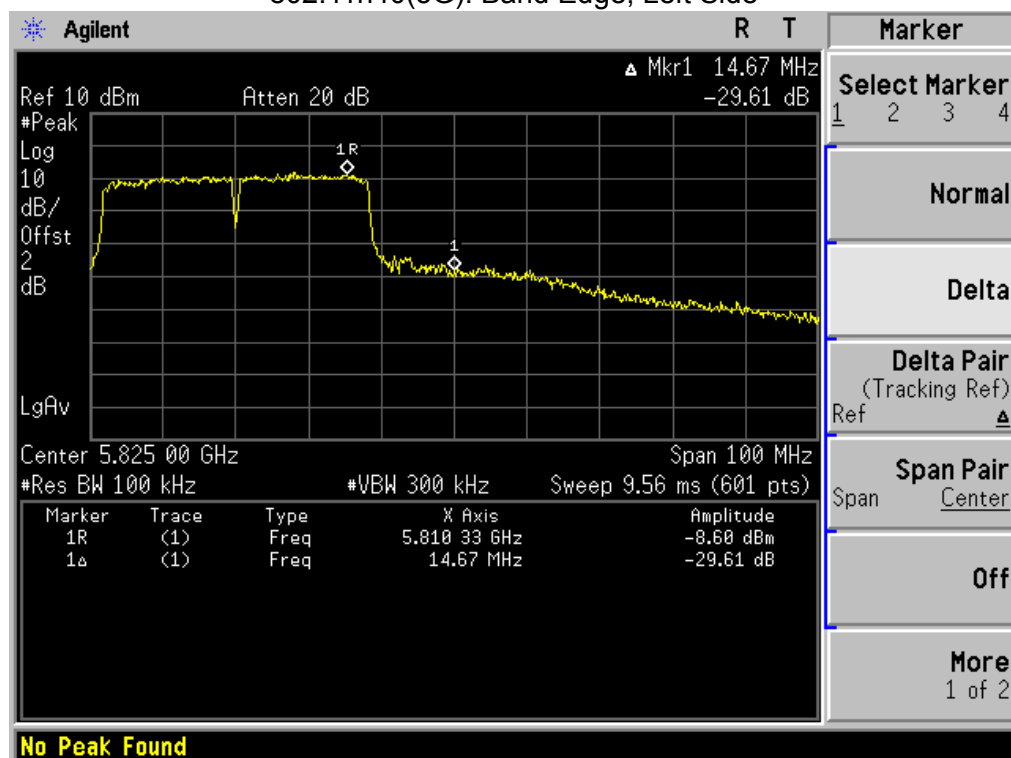
802.11n20(5G): Band Edge, Left Side



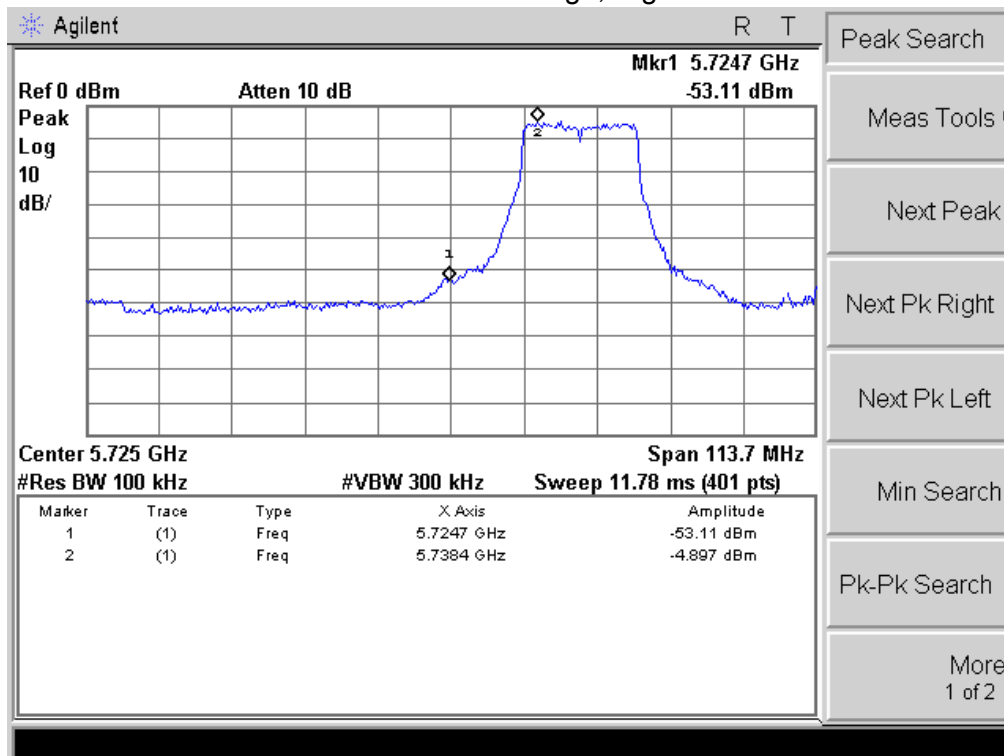
802.11n40(5G): Band Edge, Right Side



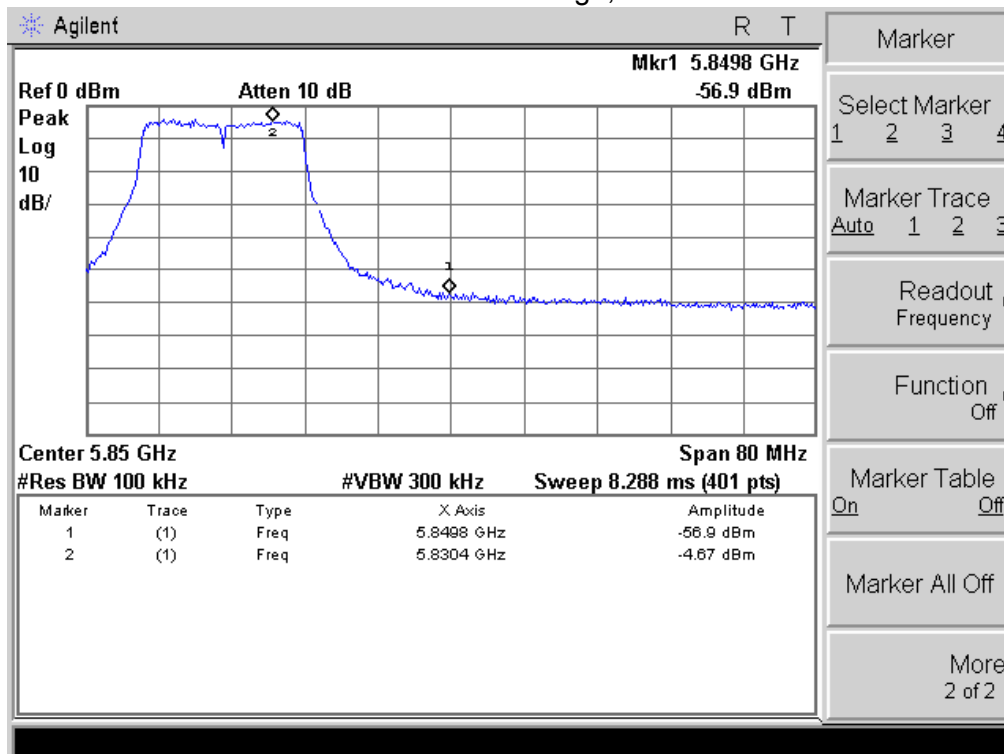
802.11n40(5G): Band Edge, Left Side



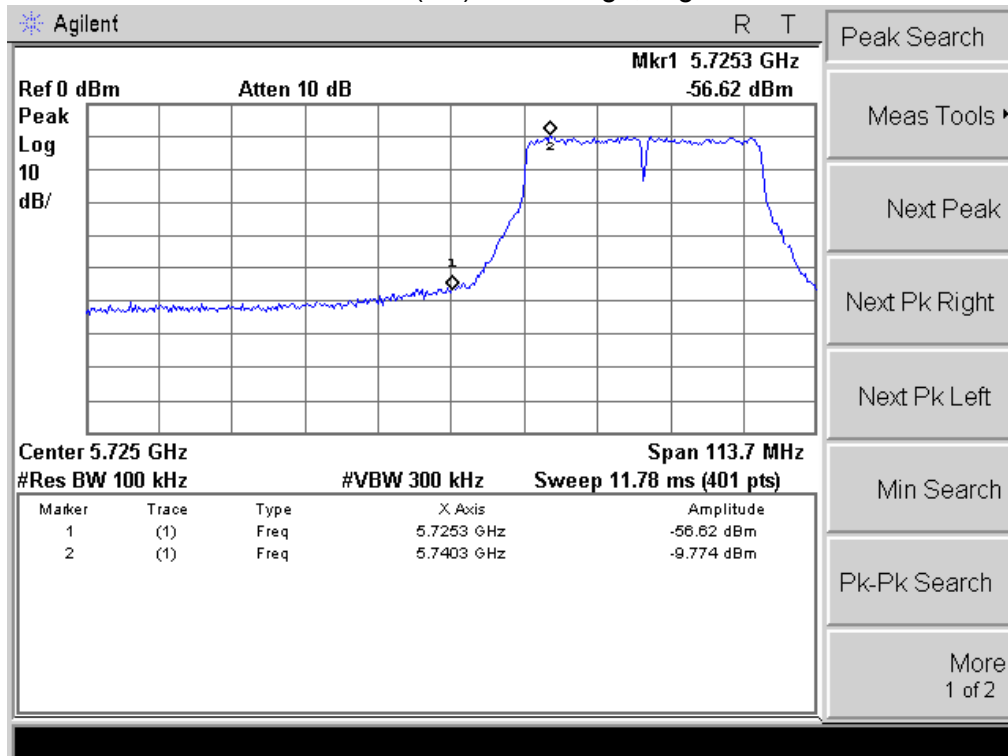
802.11AC20: Band Edge, Right Side



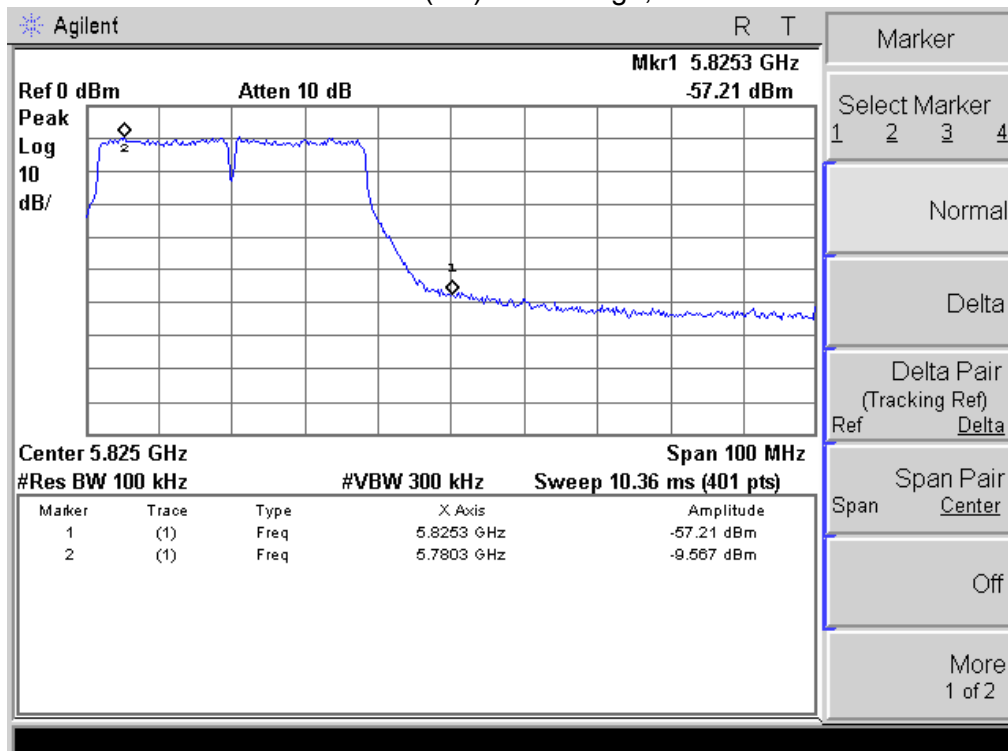
802.11AC20: Band Edge, Left Side



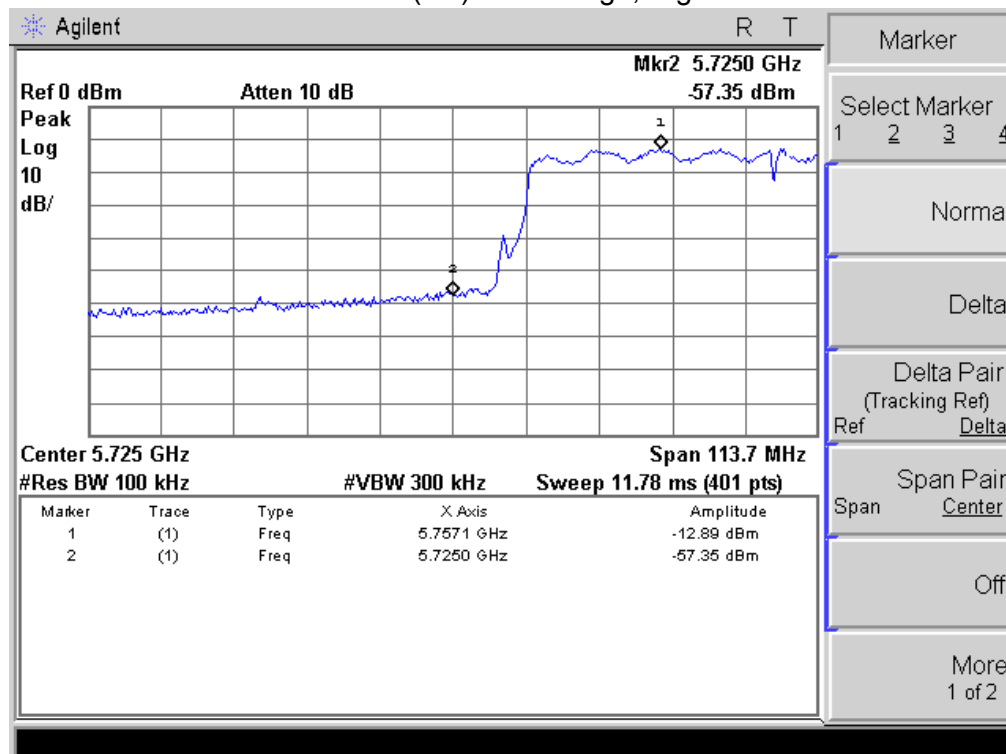
802.11 AC40 (5G): Band Edge, Right Side



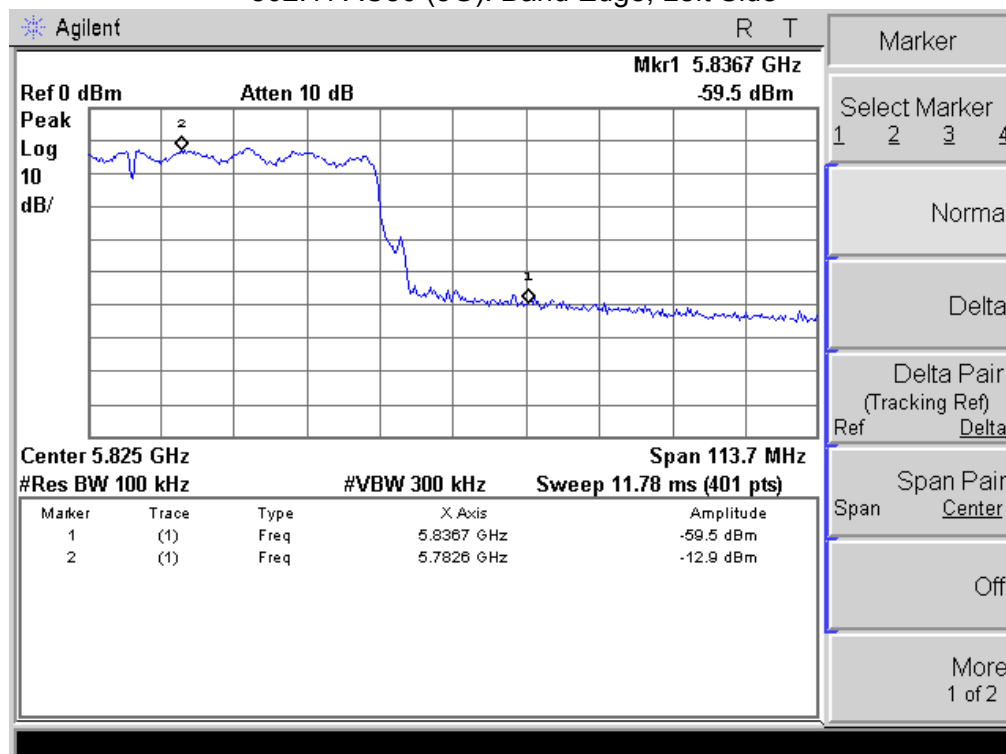
802.11 AC40 (5G): Band Edge, Left Side



802.11 AC80(5G): Band Edge, Right Side

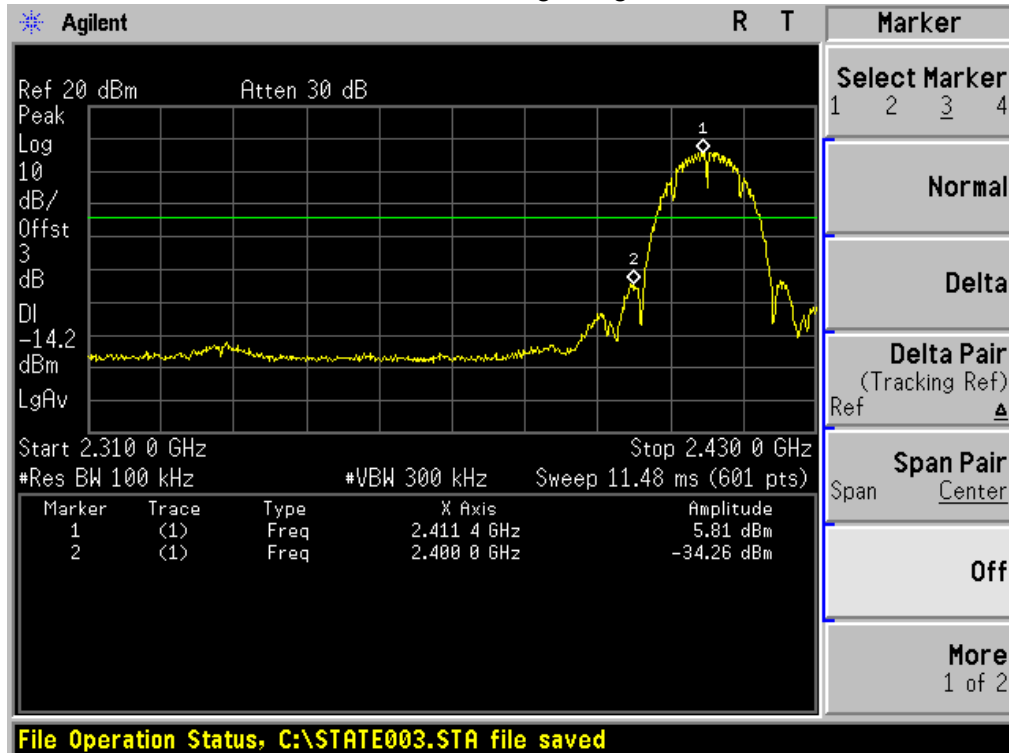


802.11 AC80 (5G): Band Edge, Left Side

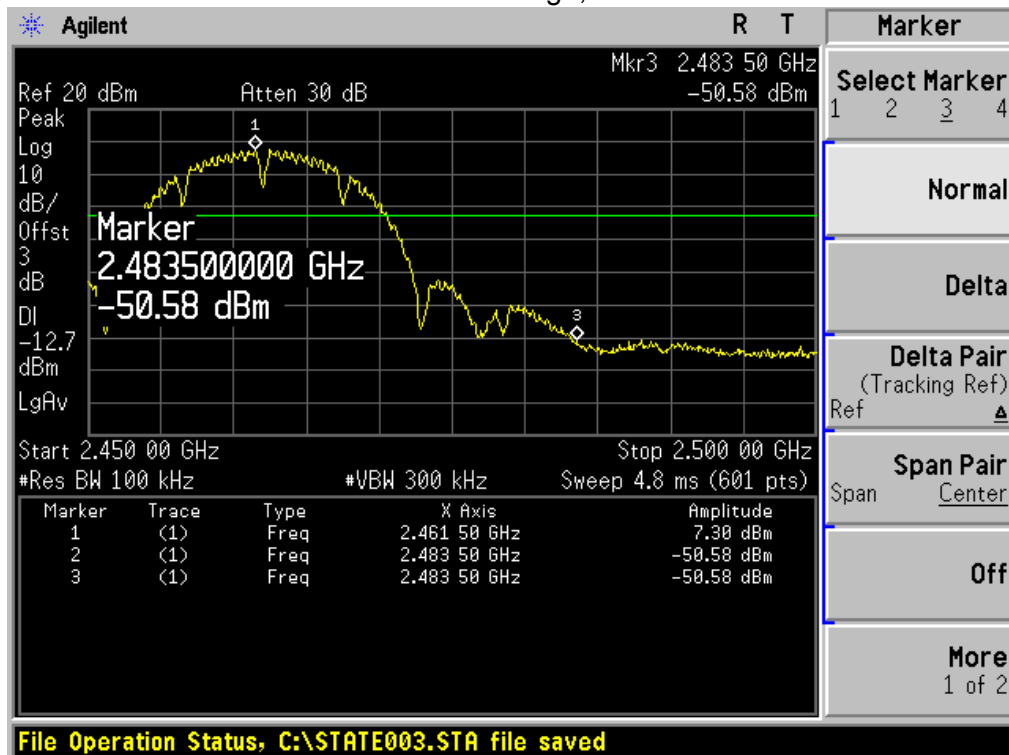


Model 8192

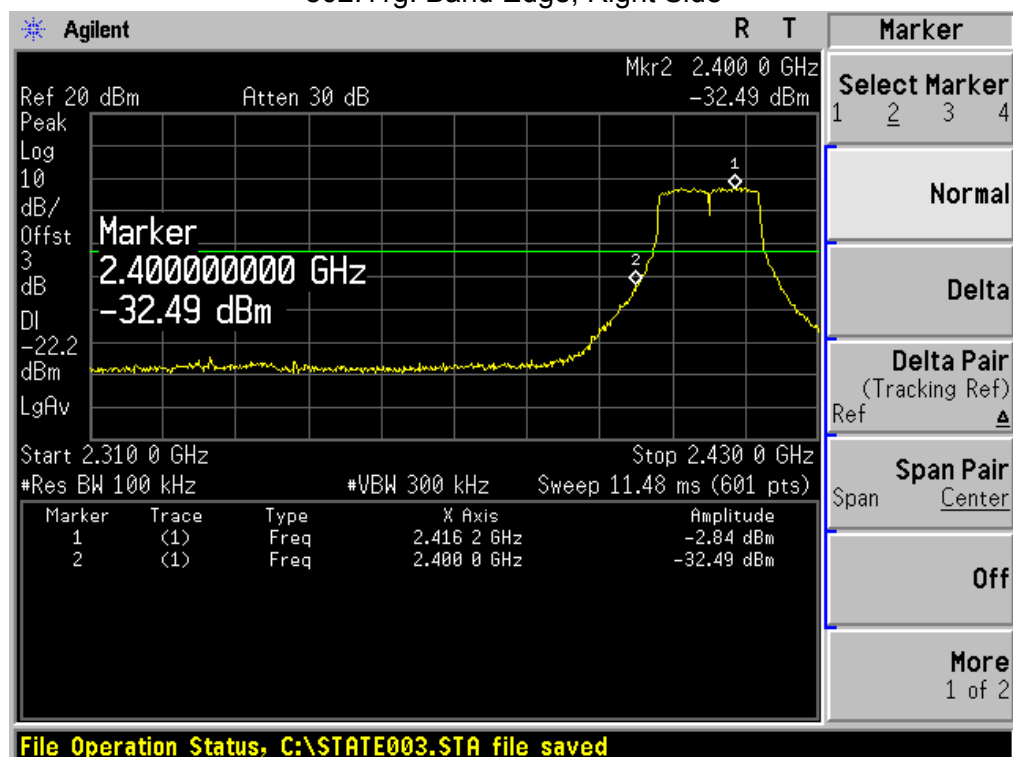
802.11b: Band Edge, Right Side



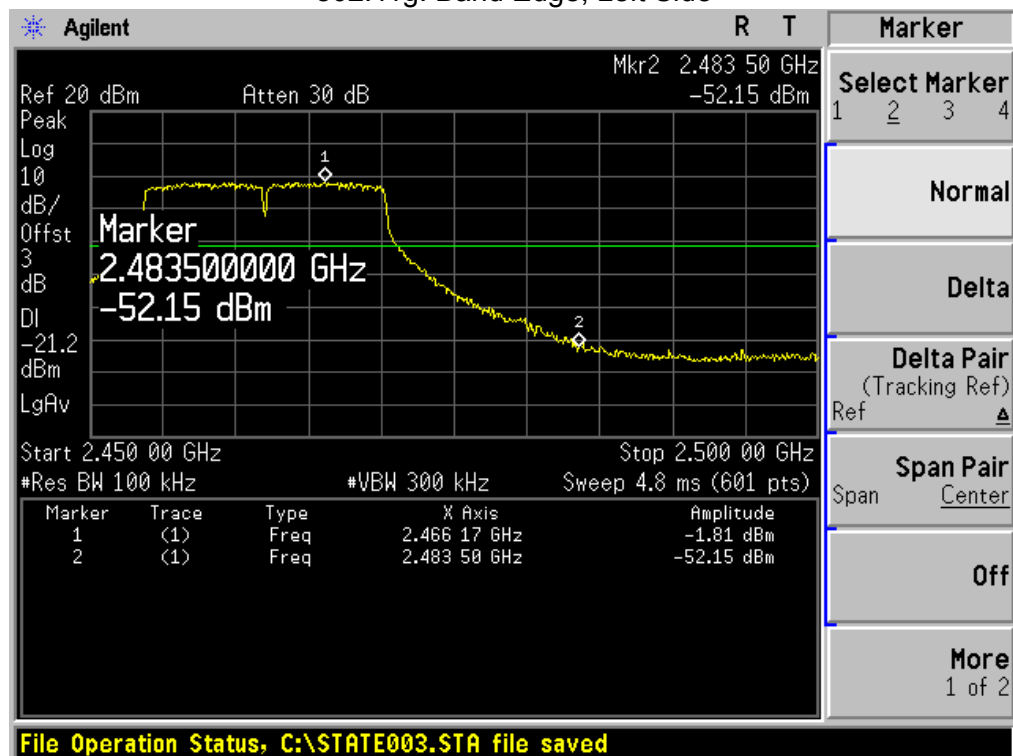
802.11b: Band Edge, Left Side



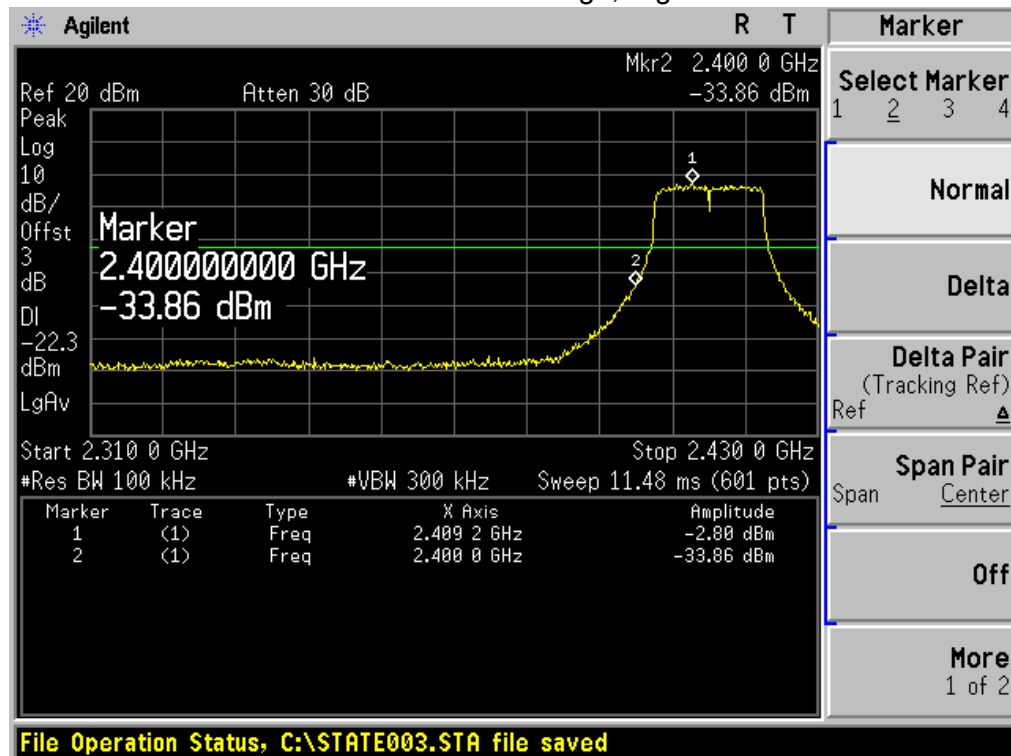
802.11g: Band Edge, Right Side



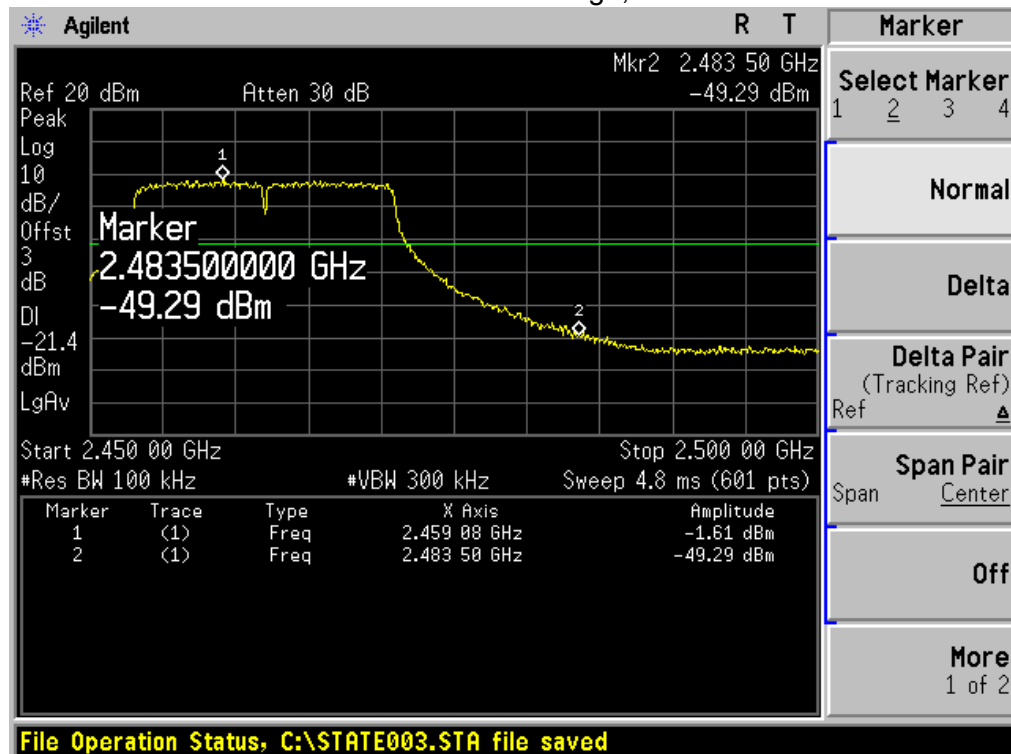
802.11g: Band Edge, Left Side



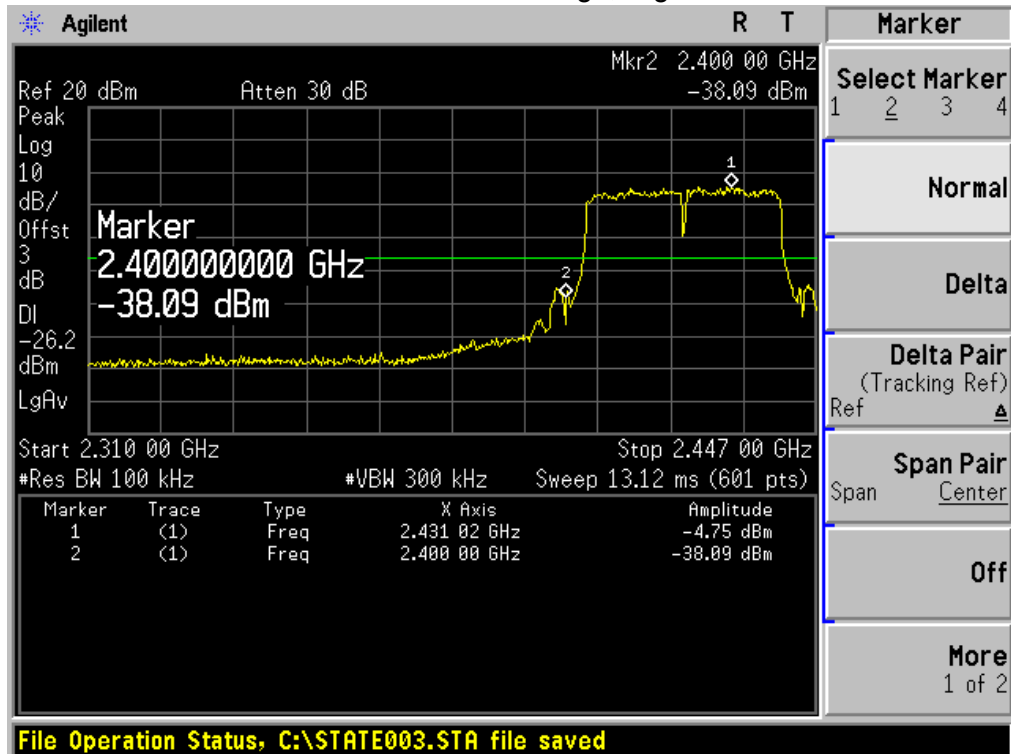
802.11n-HT20: Band Edge, Right Side



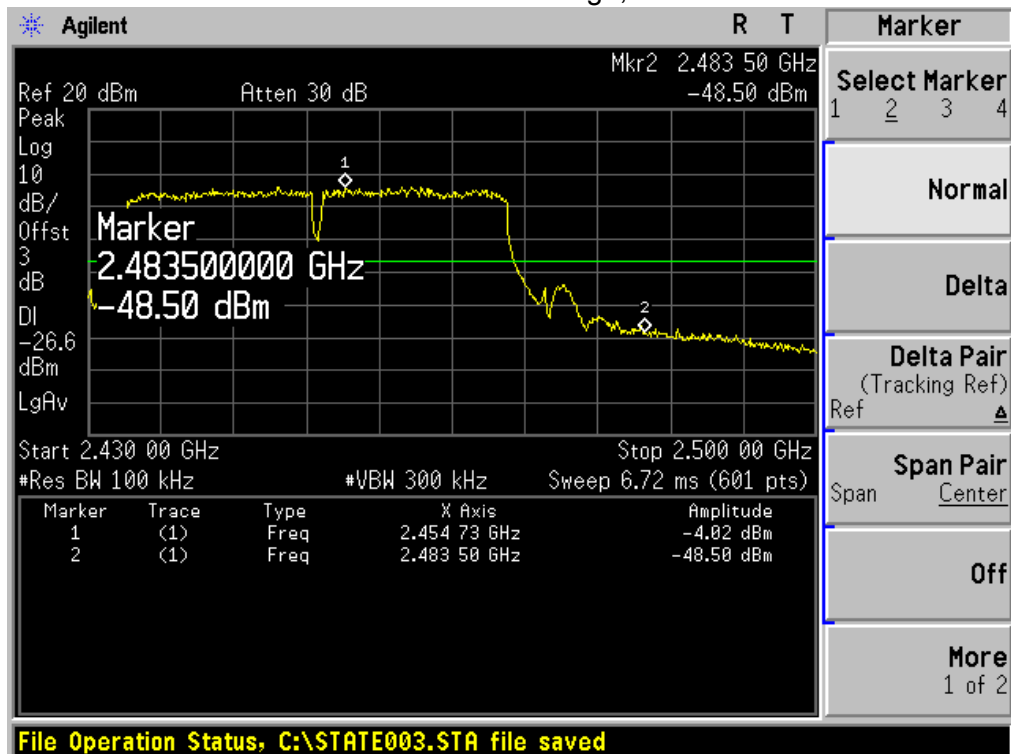
802.11n-HT20: Band Edge, Left Side



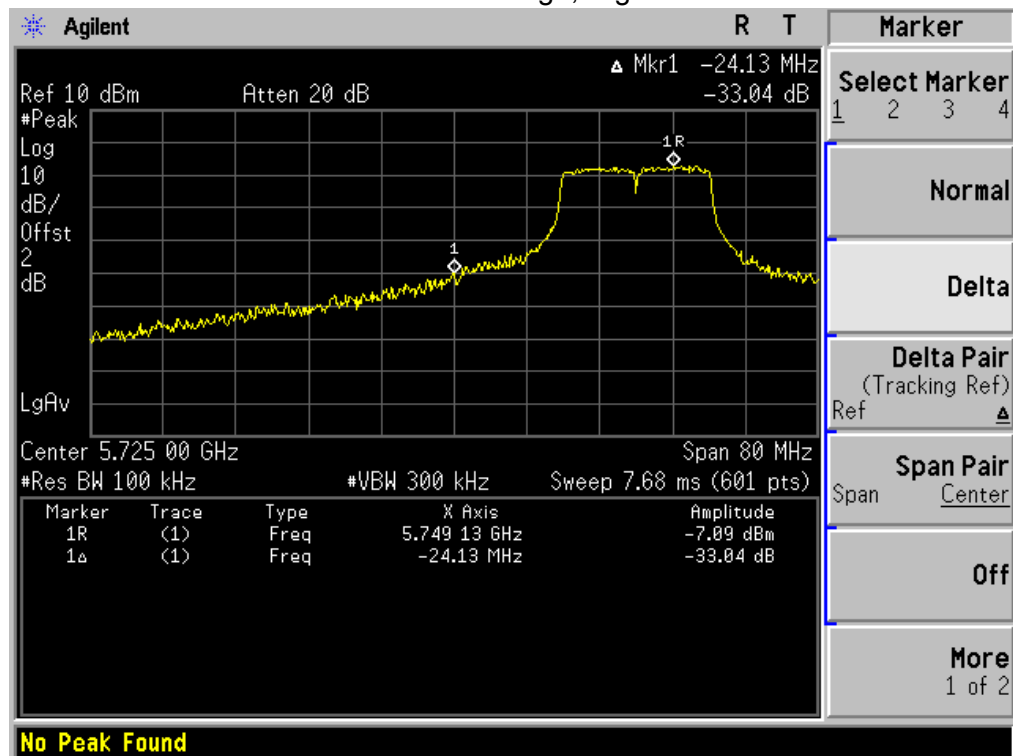
802.11n-HT40: Band Edge, Right Side



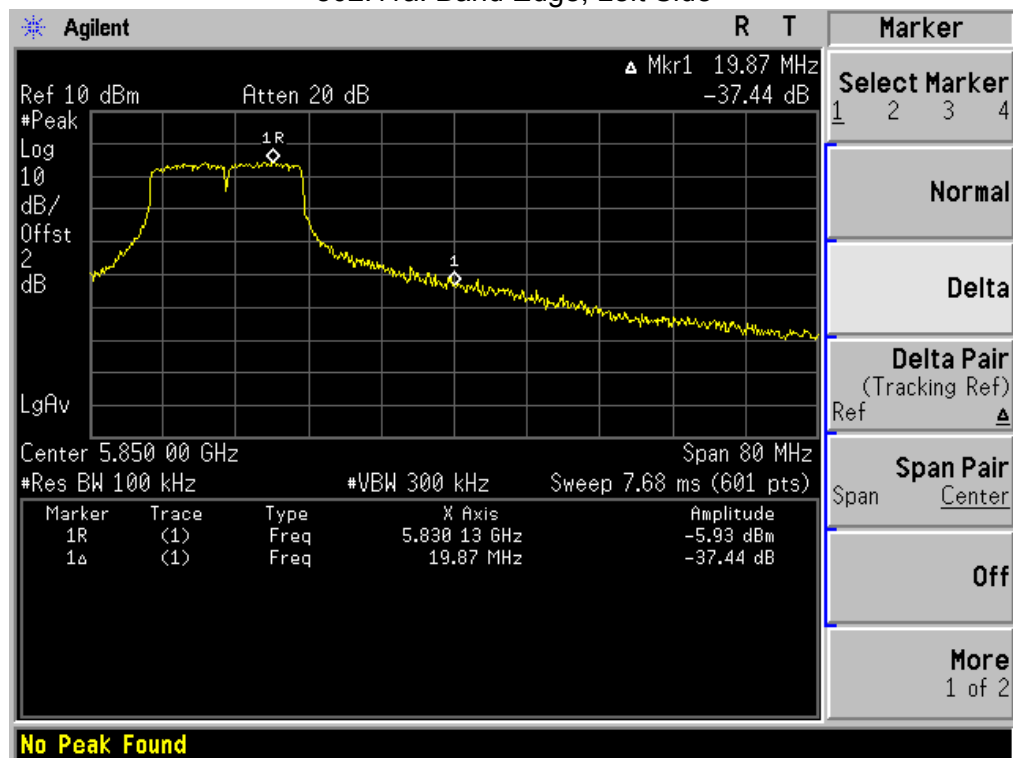
802.11n-HT40: Band Edge, Left Side



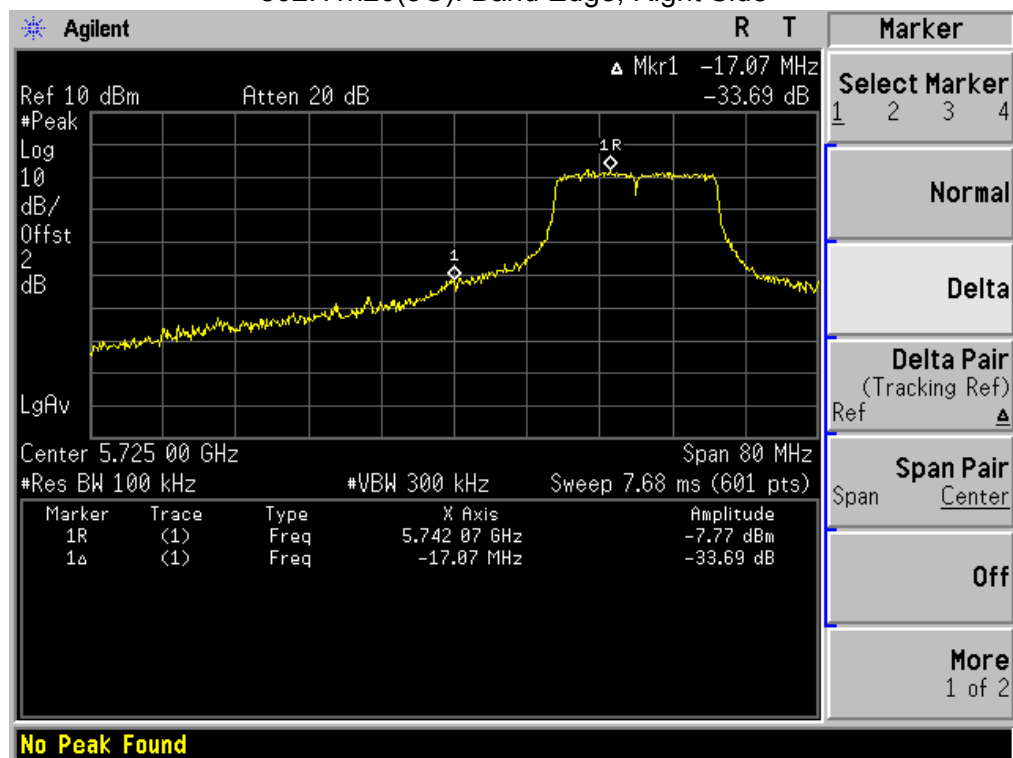
802.11a: Band Edge, Right Side



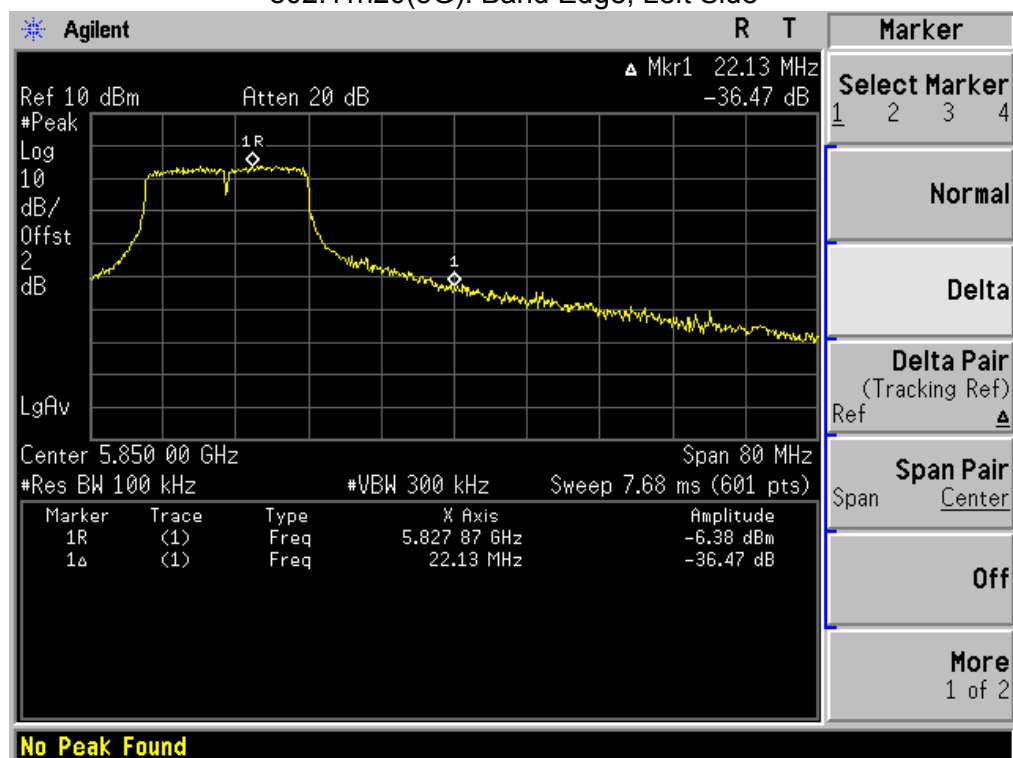
802.11a: Band Edge, Left Side



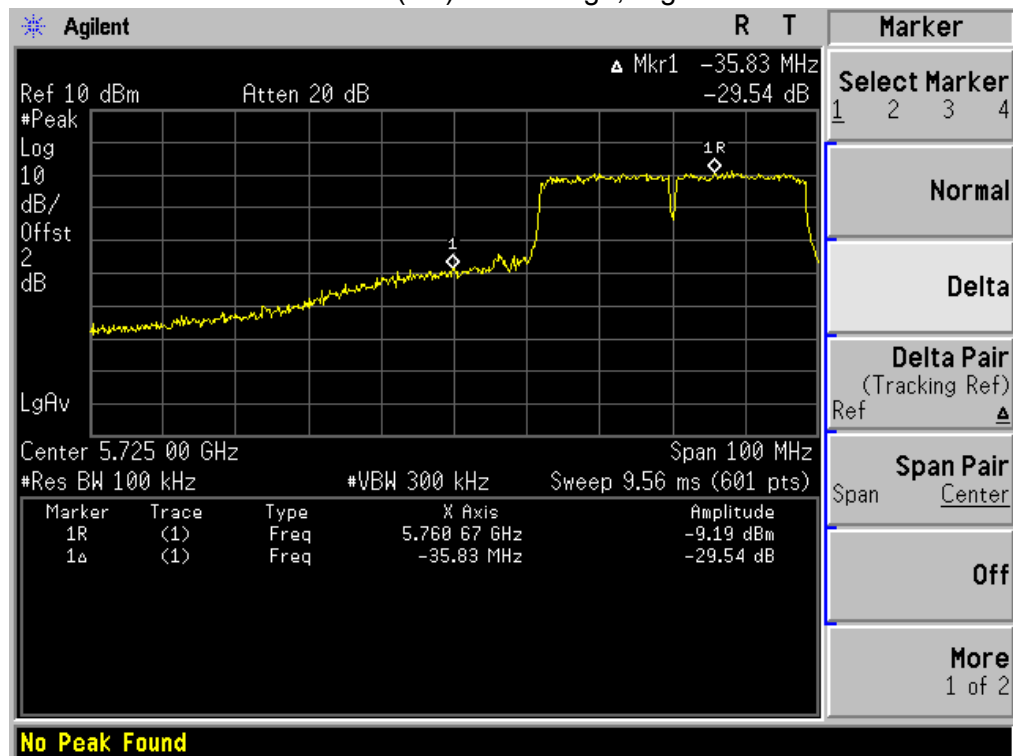
802.11n20(5G): Band Edge, Right Side



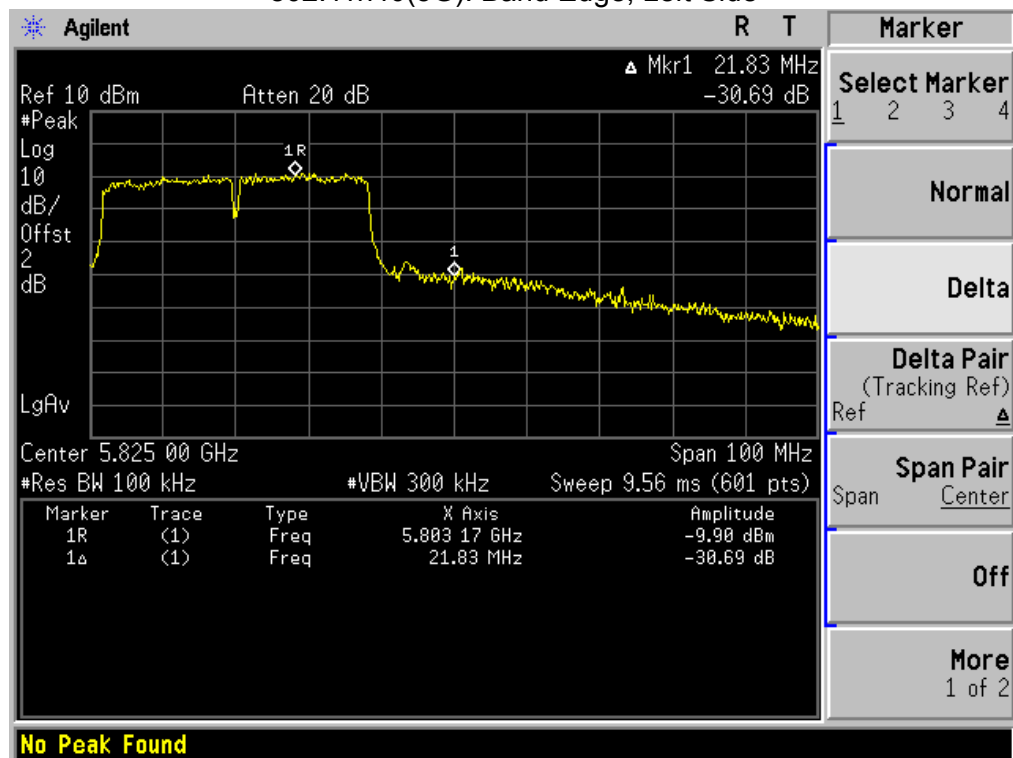
802.11n20(5G): Band Edge, Left Side



802.11n40(5G): Band Edge, Right Side



802.11n40(5G): Band Edge, Left Side



8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

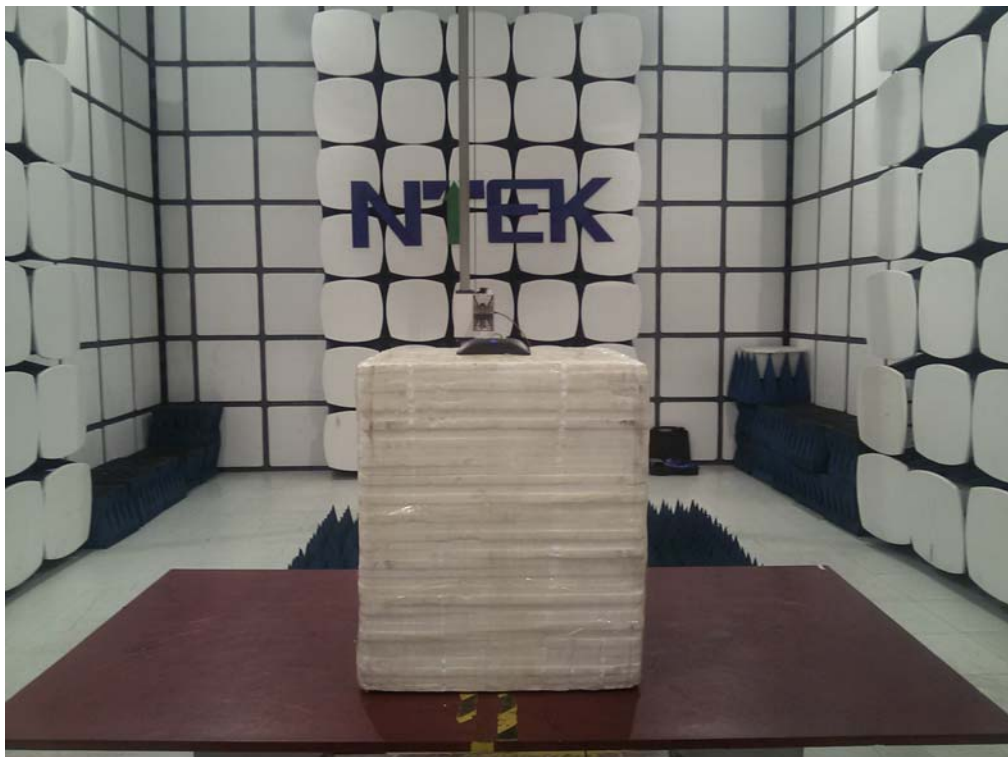
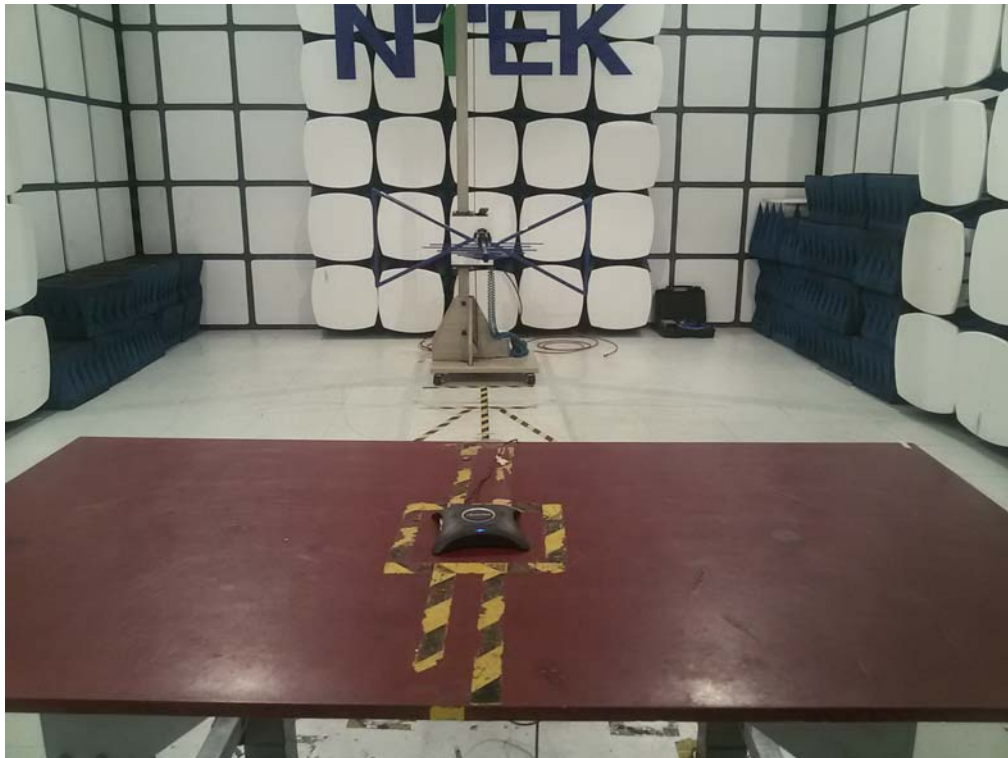
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

8.2 EUT ANTENNA

The EUT antenna is permanent attached antenna. It comply with the standard requirement.

9. EUT TEST PHOTO

Radiated Measurement Photos



Conducted Measurement Photos

