



FCC Part15.247 Test Report

Product Name : Trinity316TDD Plus

Model No. : 801-3161

FCC ID : N27TRINITY316M

Applicant : Repeatit AB

Address : Hamngatan 33, 172 66 Sundbyberg, Sweden

Date of Receipt : 18/04/2012

Test Date : 06/07/2010~25/07/2010

Issued Date : 26/06/2012

Report No. : 124S035R-RF-US-P05V01

Report Version : V1.0

The test results relate only to the samples tested.

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

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Test Report Certification

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Address : Hamngatan 33, 172 66 Sundbyberg, Sweden

Manufacturer : Repeatit AB

Address : Hamngatan 33, 172 66 Sundbyberg, Sweden

Model No. : 801-3161

FCC ID : N27TRINITY316M

EUT Voltage : DC 3.3V

Trade Name : Repeatit AB

Applicable Standard : FCC CFR Title 47 Part 15 Subpart C: 2011
ANSI C63.4: 2009
ANSI C63.10: 2009

Test Result : Complied

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Laboratory Information

We, **Quietek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

Taiwan R.O.C.	:	BSMI, NCC, TAF
Germany	:	TUV Rheinland
Norway	:	Nemko, DNV
USA	:	FCC, NVLAP
Japan	:	VCCI
China	:	CNAS

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site :<http://www.quietek.com/tw/ctg/cts/accreditations.htm>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web site :
<http://www.quietek.com/>

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1. General Information

1.1. EUT Description

Product Name	Trinity316TDD Plus
Model No.	801-3161
EUT Voltage	DC 3.3V
Frequency Range	802.11a/n(20MHz): 5745 - 5825 MHz 802.11n(40MHz): 5755 - 5795 MHz
Channel Number	802.11a/n(20MHz): 5 802.11n(40MHz): 2
Tech. of Modulation	802.11a/n: OFDM
Data Rate	802.11a: 6/9/12/18/24/36/48/54 Mbps 802.11n: up to 300 Mbps
Channel Control	Auto
Antenna Delivery	2*Tx + 2*Rx
Antenna Type	Reference to Antenna List
Peak Antenna Gain	Reference to Antenna List
AC Adapter	Manufacturer: DVE M/N: DSA-0421S-501 Input: 100-240V~, 1.2A, 50-60Hz Output: 48V, 0.625A MAX

For 5.0GHz Band

802.11a/n(20MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745 MHz	153	5765 MHz	157	5785 MHz	161	5805 MHz
165	5825 MHz	N/A	N/A	N/A	N/A	N/A	N/A

802.11n(40MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz	N/A	N/A	N/A	N/A

802.11a/b/g/n Antenna List

Antenna	Manufacturer	Model No.	Peak Gain
Panel Antenna	COMPEX	5N17	5GHz: 17dBi

1.2. Mode of Operation

Quietek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode 1
Mode 1: Transmit by 802.11a
Mode 2: Transmit by 802.11n (20MHz)
Mode 3: Transmit by 802.11n (40MHz)

Note:

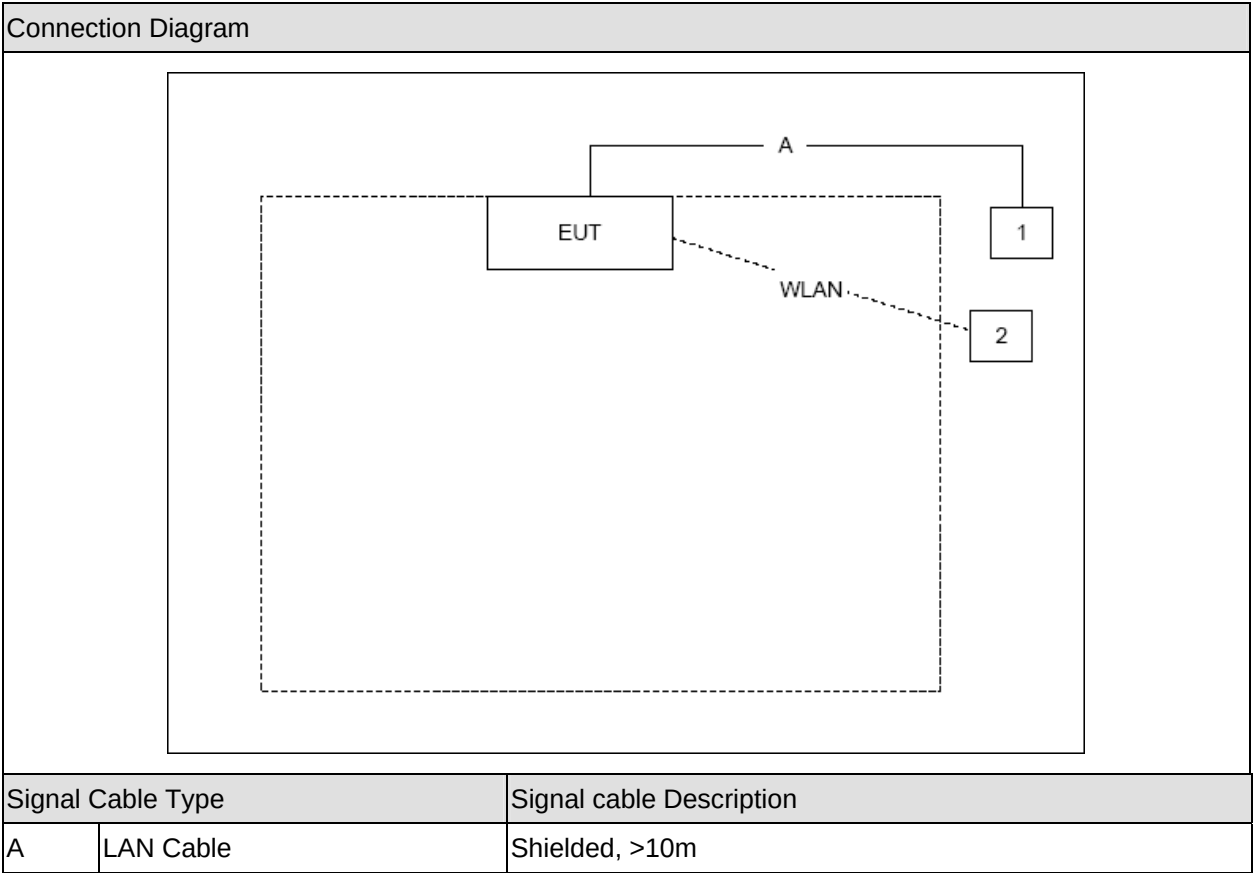
1. Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.
2. This device is a composite device in accordance with Part 15 Subpart B regulations. The function for the receiver was measured and made a test report that the report number is 124S035R-RF-US-P02V01.
3. The conducted data of the report was based on Quietek report No: 106S012R. The original module test report 106S012R is for the FCC ID: TK4WLM200N5-23ESD.

1.3. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	DELL	PP19L	JH097 A01	N/A
2	MacBook	Apple	MB061CH	W8732B4TZ5V	R33057

1.4. Configuration of Tested System



1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of equipment.
3	Run the RF test software "BRICKS", and set the test mode and channel, then press OK to start continue Transmit or receive.

2. Technical Test

2.1. Summary of Test Result

- ☒ No deviations from the test standards
- ☐ Deviations from the test standards as below description:

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.207	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.209	Yes	No
RF Antenna Conducted Spurious	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.247(d)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2011 15.247(d)	Yes	No
Operation Frequency Range of 20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2011 15.215(c)	Yes	No
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.247(a)(2)	Yes	No
Power Output	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.247(b)(3)	Yes	No
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.247(e)	Yes	No

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emission

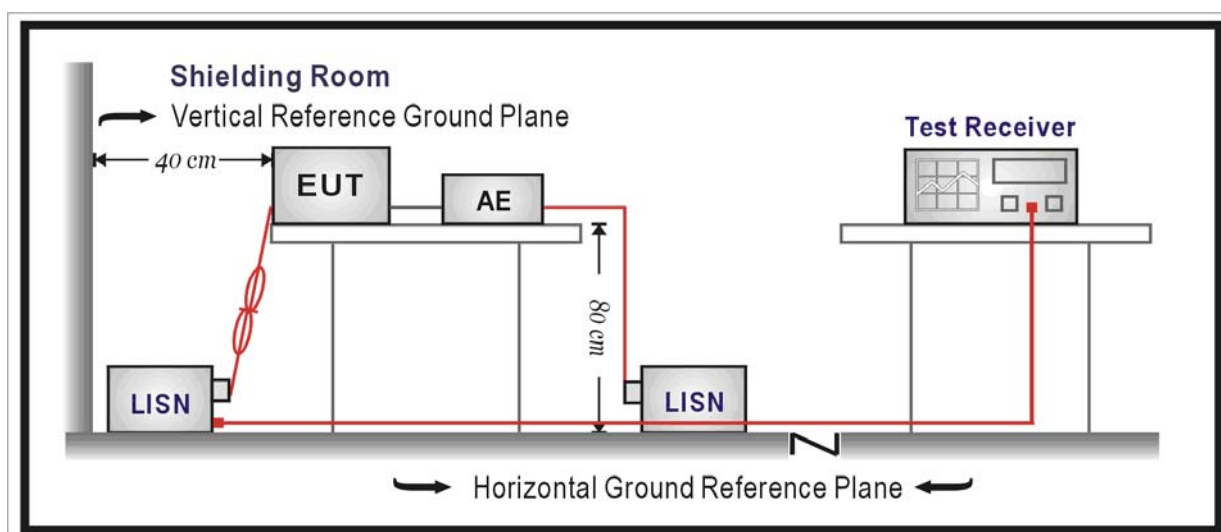
3.1. Test Equipment

Conducted Emission / TR-1

Instrument	Manufacturer	Type No.	Serial No.	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100726	2013.04.18
Two-Line V-Network	R&S	ENV216	101043	2013.04.18
Two-Line V-Network	R&S	ENV216	101044	2012.09.07
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2013.05.04
50ohm Termination	SHX	TF2	07081401	2012.09.22
Temperature/Humidity Meter	zhicheng	ZC1-2	TR1-TH	2013.01.10

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

3.2. Test Setup



3.3. Limit

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

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

3.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009 and tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

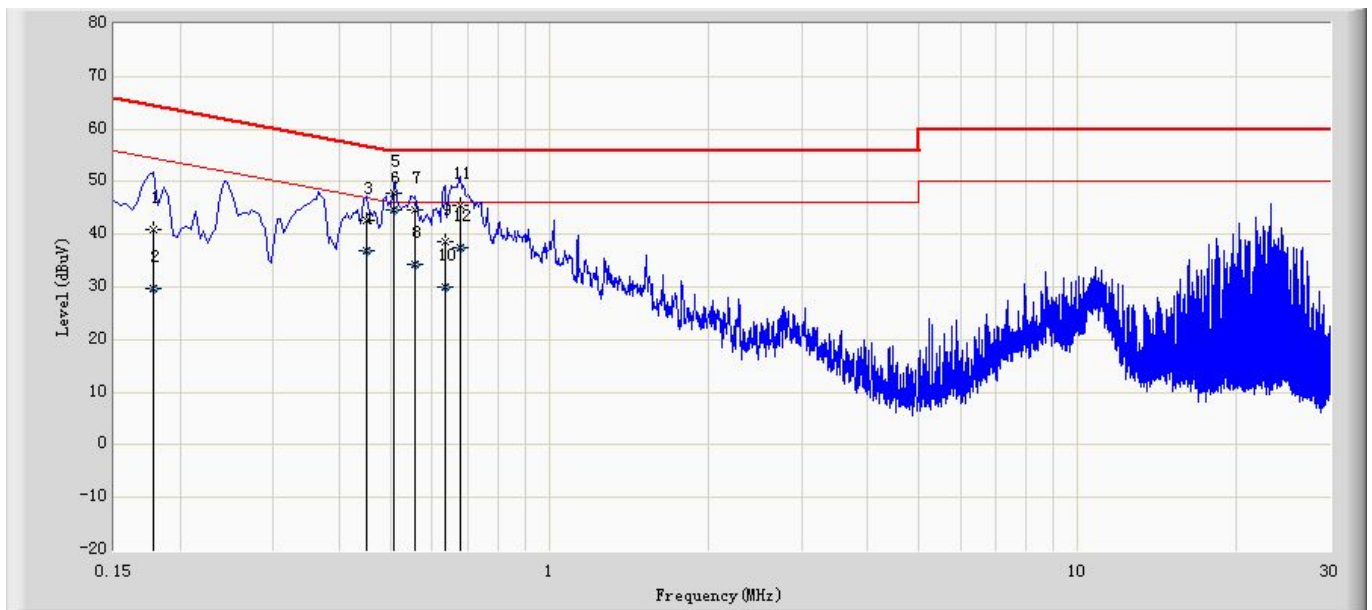
The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

3.5. Uncertainty

The measurement uncertainty is defined as ± 2.02 dB

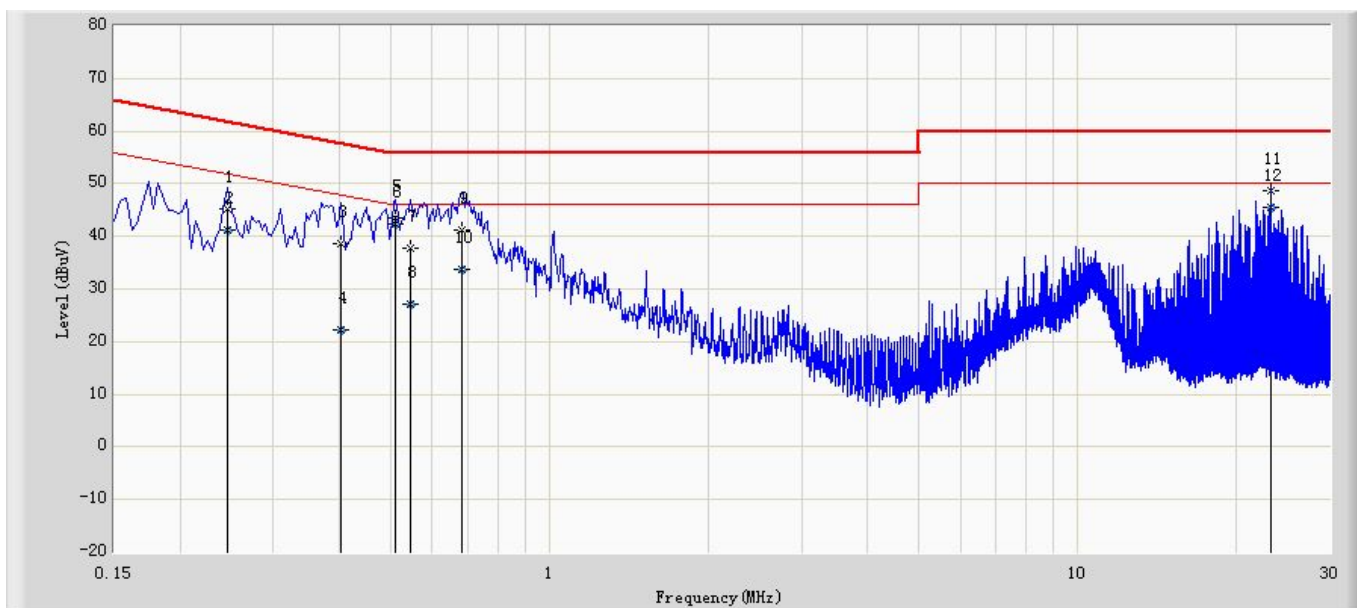
3.6. Test Result

Engineer: Aileen	
Site: TR8	Time: 2012/05/15 - 09:17
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Line
EUT: Trinity316TDD Plus	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.178	40.825	30.970	-23.754	64.578	9.855	QP
2		0.178	29.685	19.830	-24.894	54.578	9.855	AV
3		0.450	42.539	32.635	-14.336	56.875	9.904	QP
4		0.450	36.753	26.849	-10.122	46.875	9.904	AV
5		0.508	47.705	37.800	-8.295	56.000	9.905	QP
6	*	0.508	44.605	34.700	-1.395	46.000	9.905	AV
7		0.558	44.736	34.846	-11.264	56.000	9.890	QP
8		0.558	34.325	24.435	-11.675	46.000	9.890	AV
9		0.634	38.701	28.838	-17.299	56.000	9.863	QP
10		0.634	29.918	20.055	-16.082	46.000	9.863	AV
11		0.678	45.660	35.812	-10.340	56.000	9.848	QP
12		0.678	37.472	27.624	-8.528	46.000	9.848	AV

Engineer: Aileen	
Site: TR8	Time: 2012/05/15 - 09:24
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Neutral
EUT: Trinity316TDD Plus	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.246	45.184	35.262	-16.707	61.891	9.923	QP
2		0.246	41.271	31.348	-10.620	51.891	9.923	AV
3		0.402	38.693	28.688	-19.119	57.812	10.005	QP
4		0.402	22.280	12.275	-25.532	47.812	10.005	AV
5		0.510	43.366	33.320	-12.634	56.000	10.046	QP
6	*	0.510	42.421	32.375	-3.579	46.000	10.046	AV
7		0.546	37.874	27.855	-18.126	56.000	10.019	QP
8		0.546	27.063	17.044	-18.937	46.000	10.019	AV
9		0.682	41.080	31.184	-14.920	56.000	9.896	QP
10		0.682	33.609	23.712	-12.391	46.000	9.896	AV
11		23.130	48.641	38.226	-11.359	60.000	10.415	QP
12		23.130	45.616	35.201	-4.384	50.000	10.415	AV

4. Radiated Emission

4.1. Test Equipment

Radiated Emission / AC-2

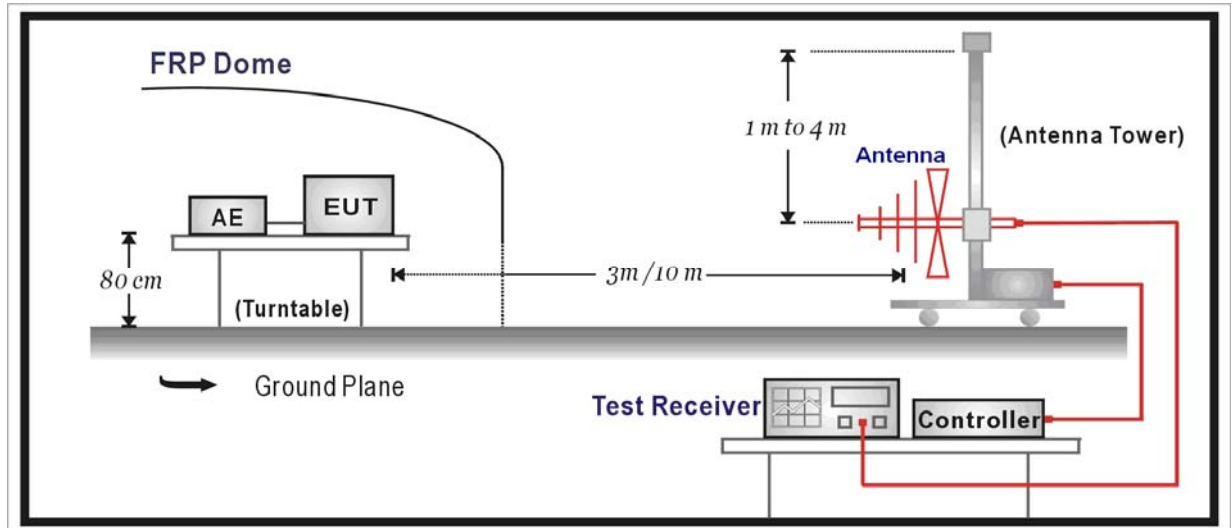
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2013.04.18
Loop Antenna	R&S	HFH2-Z2	833799/003	2012.11.22
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2012.10.18
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2013.03.02
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC2-TH	2012.01.14

Radiated Emission / AC-5

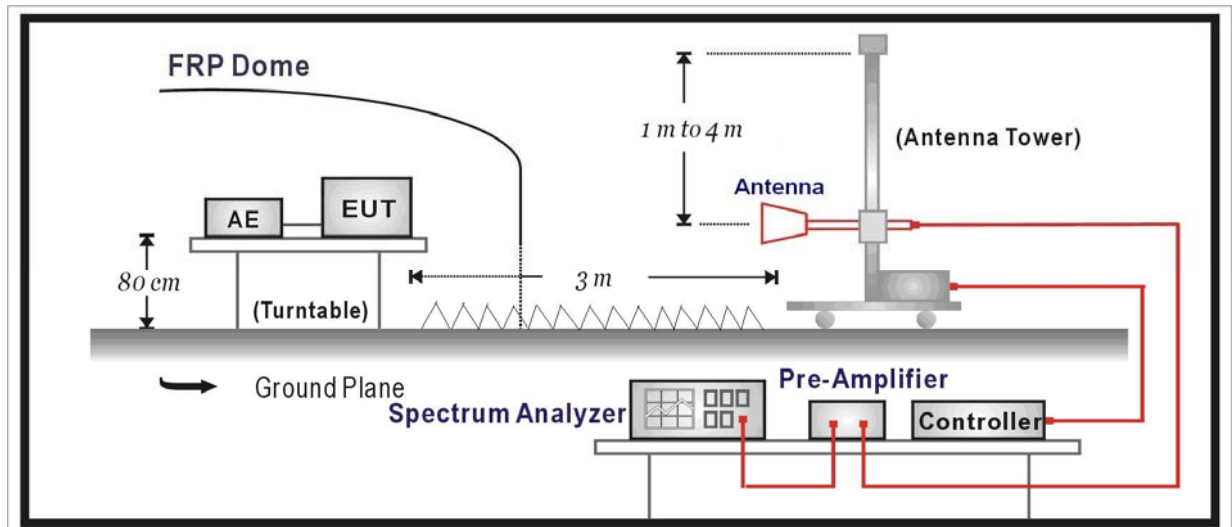
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2013.04.18
Preamplifier	Miteq	NSP1800-25	1364185	2013.05.04
Preamplifier	Quietek	AP-040G	CHM-0906001	2013.05.04
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2012.10.18
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2014.06.08
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2013.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2013.03.02
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2013.03.02
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2013.03.02
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC5-TH	2013.01.10

4.2. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

FCC Part 15 Subpart C Paragraph 15.209		
Frequency (MHz)	Distance (m)	Level (dBuV/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54

Note 1: The lower limit shall apply at the transition frequency.

Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009 and tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2009 on radiated measurement.

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

The frequency range from 30MHz to 10th harmonic is checked.

Note: When doing emission measurement above 1GHz, the horn antenna will be bended down a little (as horn antenna has the narrow beamwidth) in order to keeping the antenna in the "cone of radiation" of EUT. The 3dB beamwidth is 10~60 degrees for H-plane and 10~90 degrees for E-plane.

4.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB
below 1G is defined as ± 3.8 dB

4.6. Test Result

All of the test result shown indicates the worst case, and spectrum analyzer parameters setting as shown below:

Peak detector: RBW = 1MHz, VBW = 3MHz, sweep time = 200ms;

Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.

Measure Level = Reading Level + Cable Loss + Antenna Factor - Preamplifier Gain

802.11a

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
100	149	V	5738.5	82.6	36.5	119.1	Fundamental	/	PK
		H	598.4	17.2	21.2	38.4	46	-7.6	QP
		H	668.3	15.6	21.2	36.8	46	-9.2	QP
		V	10500.0	40.6	8.1	48.7	54(Note3)	-5.3	PK
		H	11490.0	39.8	9.0	48.8	54(Note3)	-5.2	PK
		V	15350.0	41.0	8.8	49.8	54(Note3)	-4.2	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	157	V	5777.5	80.2	36.7	116.9	Fundamental	/	PK
		H	599.4	16.5	21.2	37.7	46	-8.3	QP
		H	668.3	16.1	21.2	37.3	46	-8.7	QP
		V	10500.0	40.9	8.1	49.0	54(Note3)	-5.0	PK
		H	11570.0	40.3	8.8	49.1	54(Note3)	-4.9	PK
		H	15350.0	40.6	8.8	49.4	54(Note3)	-4.6	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	165	V	5818.7	80.1	36.8	116.9	Fundamental	/	PK
		H	567.9	16.8	21.3	38.1	46	-7.9	QP
		H	632.4	14.4	21.2	35.6	46	-10.4	QP
		V	10500.0	41.3	8.1	49.4	54(Note3)	-4.6	PK
		H	11650.0	41.1	8.5	49.6	54(Note3)	-4.4	PK
		V	15350.0	40.5	8.8	49.3	54(Note3)	-4.7	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	149	V	5738.5	82.2	36.5	118.7	Fundamental	/	PK
		H	598.4	18.1	21.2	39.3	46	-6.7	QP
		H	668.3	16.0	21.2	37.2	46	-8.8	QP
		V	10367.0	49.6	1.9	51.5	54(Note3)	-2.5	PK
		V	7485.5	54.3	-5.4	48.9	54(Note3)	-5.1	PK
		V	11497.0	64.4	2.2	66.6	54(Note3)	12.6	PK

	157	H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
		V	5777.5	81.3	36.7	118.0	Fundamental	/	PK
		H	631.9	15.2	21.2	36.4	46	-9.6	QP
		H	664.9	16.0	21.2	37.2	46	-8.8	QP
		V	10500.0	40.9	8.1	49.0	54(Note3)	-5.0	PK
		V	11490.0	40.7	9.0	49.7	54(Note3)	-4.3	PK
		V	15350.0	40.7	8.8	49.5	54(Note3)	-4.5	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	165	V	5818.7	80.5	36.8	117.3	Fundamental	/	PK
		H	566.9	14.6	21.2	35.8	46	-10.2	QP
		H	668.3	16.0	21.2	37.2	46	-8.8	QP
		V	10500.0	40.7	8.1	48.8	54(Note3)	-5.2	PK
		V	11570.0	40.2	8.8	49.0	54(Note3)	-5.0	PK
		V	15350.0	40.4	8.8	49.2	54(Note3)	-4.8	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

802.11n(20MHz)

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
100	149	V	5738.5	78.1	36.5	114.6	Fundamental	/	PK
		H	567.4	14.2	21.3	35.5	46	-10.5	QP
		H	668.3	15.4	21.2	36.6	46	-9.4	QP
		V	10500.0	40.2	8.1	48.3	54(Note3)	-5.7	PK
		V	11490.0	40.1	9.0	49.1	54(Note3)	-4.9	PK
		V	15350.0	41.4	8.8	50.2	54(Note3)	-3.8	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	157	V	5777.5	77.3	36.7	114.0	Fundamental	/	PK
		H	598.4	16.7	21.2	37.9	46	-8.1	QP
		H	668.3	15.4	21.2	36.6	46	-9.4	QP
		V	10500.0	41.0	8.1	49.1	54(Note3)	-4.9	PK
		V	11570.0	40.2	8.8	49.0	54(Note3)	-5.0	PK

		V	15350.0	40.4	8.8	49.2	54(Note3)	-4.8	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	165	V	5818.7	78.4	36.8	115.2	Fundamental	/	PK
		H	599.9	16.5	21.2	37.7	46	-8.3	QP
		H	668.3	15.8	21.2	37.0	46	-9.0	QP
		V	10500.0	40.3	8.1	48.4	54(Note3)	-5.6	PK
		V	11650.0	40.0	8.5	48.5	54(Note3)	-5.5	PK
		V	15350.0	41.2	8.8	50.0	54(Note3)	-4.0	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
010	149	V	5738.5	80.1	36.5	116.6	Fundamental	/	PK
		H	567.9	17.8	21.3	39.1	46	-6.9	QP
		H	668.3	15.8	21.2	37.0	46	-9.0	QP
		V	10500.0	40.4	8.1	48.5	54(Note3)	-5.5	PK
		V	11490.0	40.2	9.0	49.2	54(Note3)	-4.8	PK
		V	15350.0	41.2	8.8	50.0	54(Note3)	-4.0	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	157	V	5777.5	78.2	36.7	114.9	Fundamental	/	PK
		H	598.4	16.4	21.2	37.6	46	-8.4	QP
		H	668.3	15.8	21.2	37.0	46	-9.0	QP
		V	10500.0	40.5	8.1	48.6	54(Note3)	-5.4	PK
		V	11570.0	39.7	8.8	48.5	54(Note3)	-5.5	PK
		V	15350.0	41.0	8.8	49.8	54(Note3)	-4.2	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	165	V	5818.7	77.3	36.8	114.1	Fundamental	/	PK
		H	624.1	16.3	21.2	37.5	46	-8.5	QP
		H	701.7	18.2	21.2	39.4	46	-6.6	QP
		V	10500.0	40.5	8.1	48.6	54(Note3)	-5.4	PK
		H	11650.0	39.9	8.5	48.4	54(Note3)	-5.6	PK
		V	15350.0	41.0	8.8	49.8	54(Note3)	-4.2	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
110	149	V	5738.5	87.1	36.5	123.6	Fundamental	/	PK
		H	624.1	13.7	21.2	34.9	46	-11.1	QP
		H	698.8	14.8	21.1	35.9	46	-10.1	QP
		H	10500.0	40.7	8.1	48.8	54(Note3)	-5.2	PK
		H	11490.0	40.2	9.0	49.2	54(Note3)	-4.8	PK
		H	15350.0	40.5	8.8	49.3	54(Note3)	-4.7	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK

	157	V	5738.5	84.5	36.5	121.0	Fundamental	/	PK
		H	624.1	13.7	21.2	34.9	46	-11.1	QP
		H	698.8	14.8	21.1	35.9	46	-10.1	QP
		V	10500.0	40.8	8.1	48.9	54(Note3)	-5.1	PK
		V	11570.0	40.5	8.8	49.3	54(Note3)	-4.7	PK
		V	15350.0	40.8	8.8	49.6	54(Note3)	-4.4	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	165	V	5777.5	82.4	36.7	119.1	Fundamental	/	PK
		H	624.1	15.9	21.2	37.1	46	-8.9	QP
		H	700.8	16.9	21.2	38.1	46	-7.9	QP
		V	10500.0	40.9	8.1	49.0	54(Note3)	-5.0	PK
		V	11650.0	40.1	8.5	48.6	54(Note3)	-5.4	PK
		V	15350.0	41.1	8.8	49.9	54(Note3)	-4.1	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

802.11n(40MHz)

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
100	151	V	5757.2	80.3	36.6	116.9	Fundamental	/	PK
		H	624.1	16.0	21.2	37.2	46	-8.8	QP
		H	708.5	16.2	21.3	37.5	46	-8.5	QP
		V	10500.0	41.3	8.1	49.4	54(Note3)	-4.6	PK
		H	11510.0	40.5	8.9	49.4	54(Note3)	-4.6	PK
		V	15350.0	40.6	8.8	49.4	54(Note3)	-4.6	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	159	V	5793.6	80.4	36.8	117.2	Fundamental	/	PK
		H	624.1	16.1	21.2	37.3	46	-8.7	QP
		H	715.8	13.7	21.5	35.2	46	-10.8	QP
		V	10500.0	40.6	8.1	48.7	54(Note3)	-5.3	PK
		H	11590.0	39.8	8.7	48.5	54(Note3)	-5.5	PK
		H	15350.0	40.2	8.8	49.0	54(Note3)	-5.0	PK

		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
010	151	V	5757.2	80.4	36.6	117.0	Fundamental	/	PK
		H	624.1	16.2	21.2	37.4	46	-8.6	QP
		H	689.1	16.7	21.2	37.9	46	-8.1	QP
		V	10500.0	40.4	8.1	48.5	54(Note3)	-5.5	PK
		V	11510.0	40.8	8.9	49.7	54(Note3)	-4.3	PK
		V	15350.0	40.8	8.8	49.6	54(Note3)	-4.4	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	159	V	5793.6	79.2	36.8	116.0	Fundamental	/	PK
		H	624.1	16.2	21.2	37.4	46	-8.6	QP
		H	689.1	16.7	21.2	37.9	46	-8.1	QP
		V	10500.0	41.2	8.1	49.3	54(Note3)	-4.7	PK
		V	11590.0	40.6	8.7	49.3	54(Note3)	-4.7	PK
		V	15350.0	40.8	8.8	49.6	54(Note3)	-4.4	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
110	151	V	5757.2	80.5	36.6	117.1	Fundamental	/	PK
		H	634.8	14.2	21.2	35.4	46	-10.6	QP
		H	720.2	7.1	21.6	28.7	46	-17.3	QP
		V	10500.0	40.6	8.1	48.7	54(Note3)	-5.3	PK
		V	11510.0	40.9	8.9	49.8	54(Note3)	-4.2	PK
		V	15350.0	40.9	8.8	49.7	54(Note3)	-4.3	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	159	V	5793.6	79.1	36.8	115.9	Fundamental	/	PK
		H	624.1	12.9	21.2	34.1	46	-11.9	QP
		H	707.5	8.9	21.3	30.2	46	-15.8	QP
		V	10500.0	40.6	8.1	48.7	54(Note3)	-5.3	PK
		V	11590.0	39.7	8.7	48.4	54(Note3)	-5.6	PK
		V	15350.0	40.9	8.8	49.7	54(Note3)	-4.3	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

5. RF Antenna Conducted Spurious

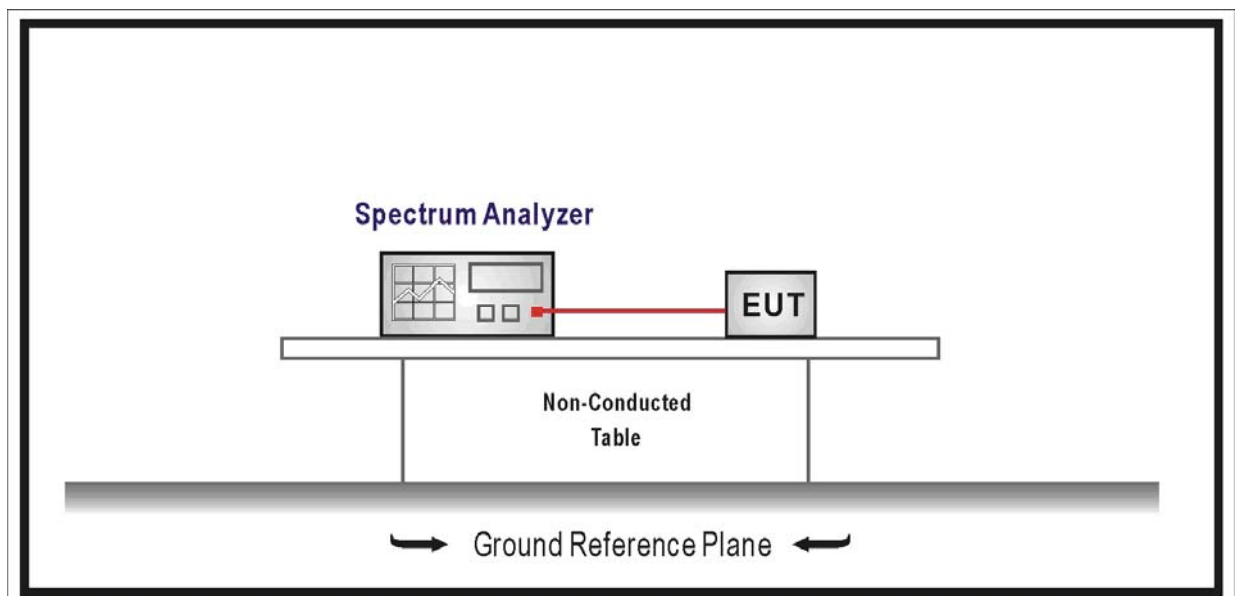
5.1. Test Equipment

RF Antenna Conducted Spurious / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2010.04.30
Temperature/Humidity Meter	zhicheng	ZC1-2	AC6-TH	2010.01.14

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

5.2. Test Setup



5.3. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.

5.4. Test Procedure

The EUT was tested according to DTS test procedure of ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

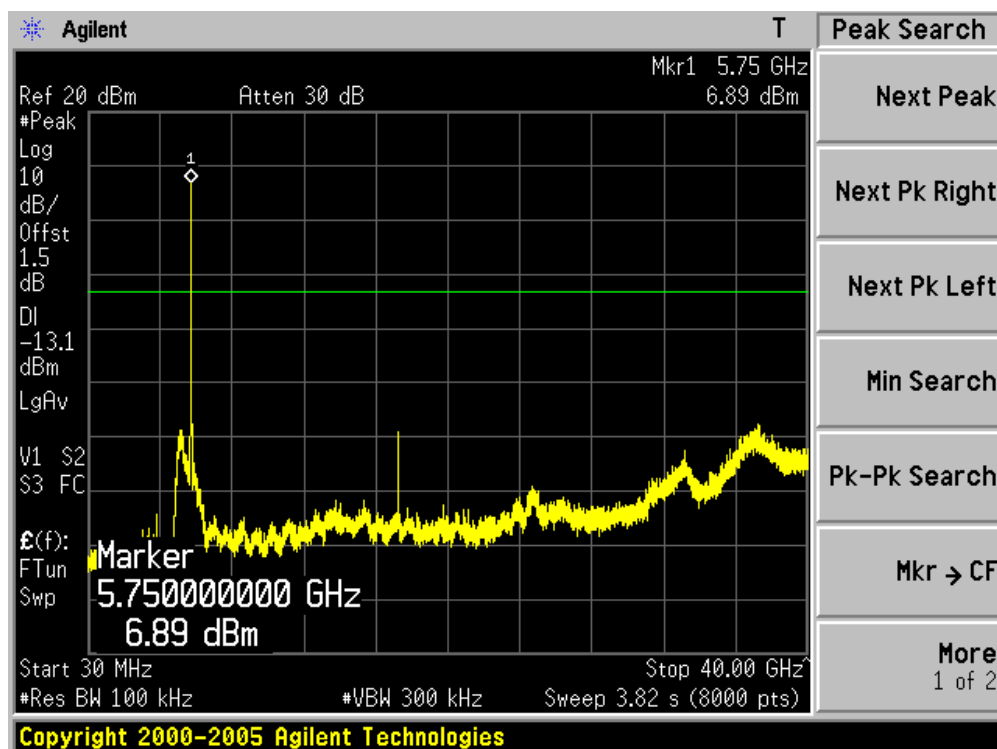
5.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

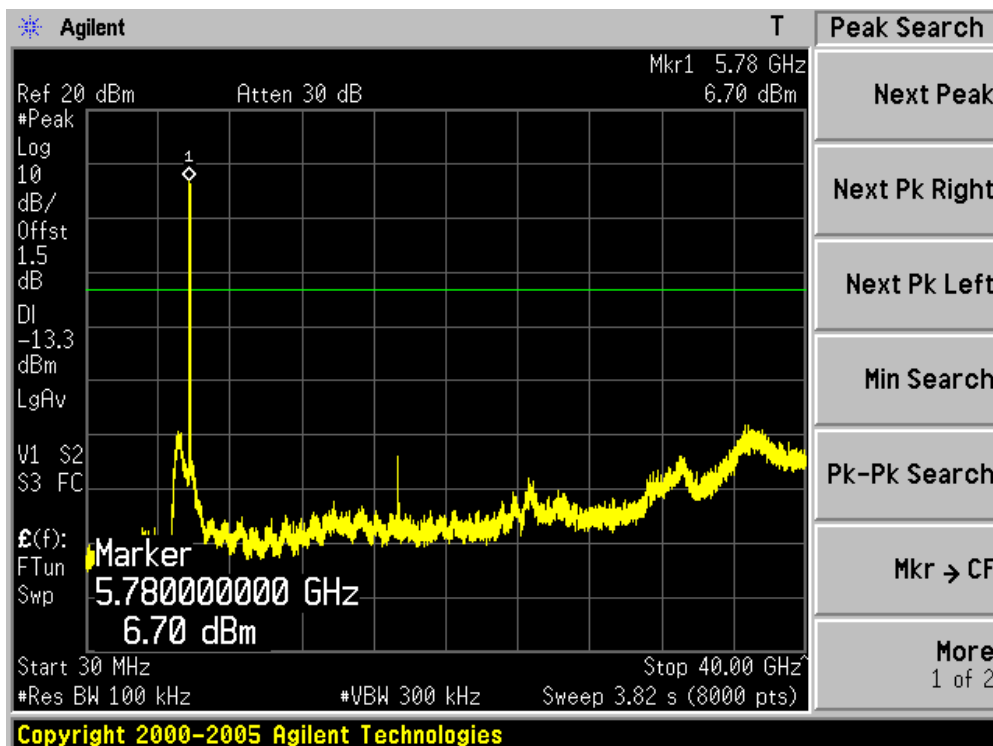
5.6. Test Result

Product	:	Trinity316TDD Plus
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 100)

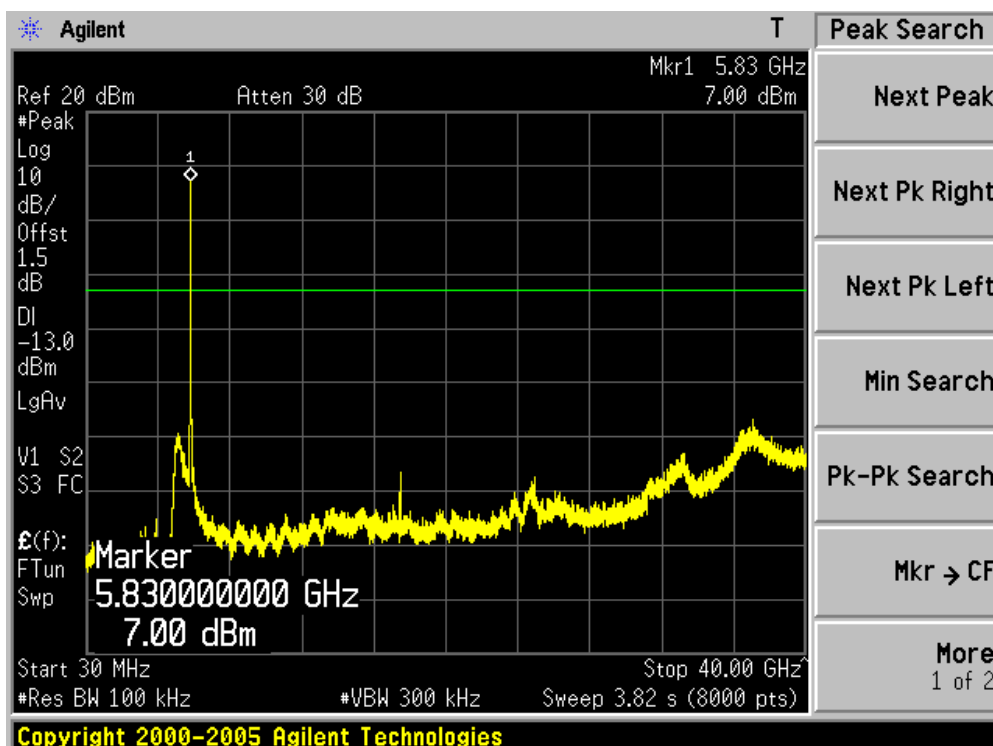
Channel 149 (5745MHz)



Channel 157 (5785MHz)

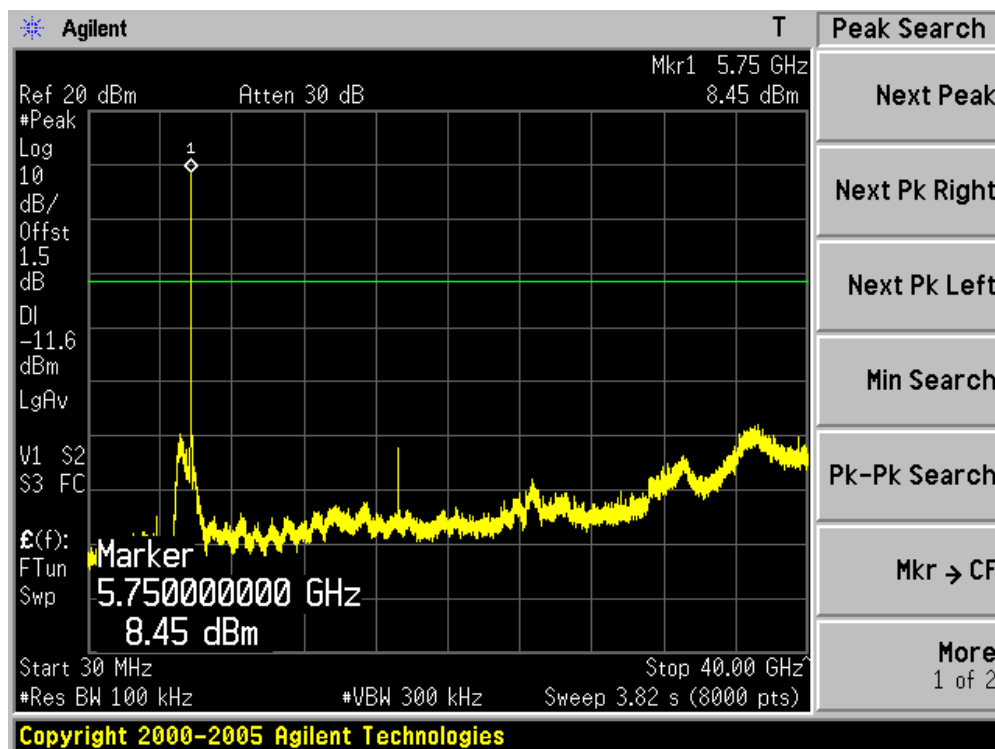


Channel 165 (5825MHz)

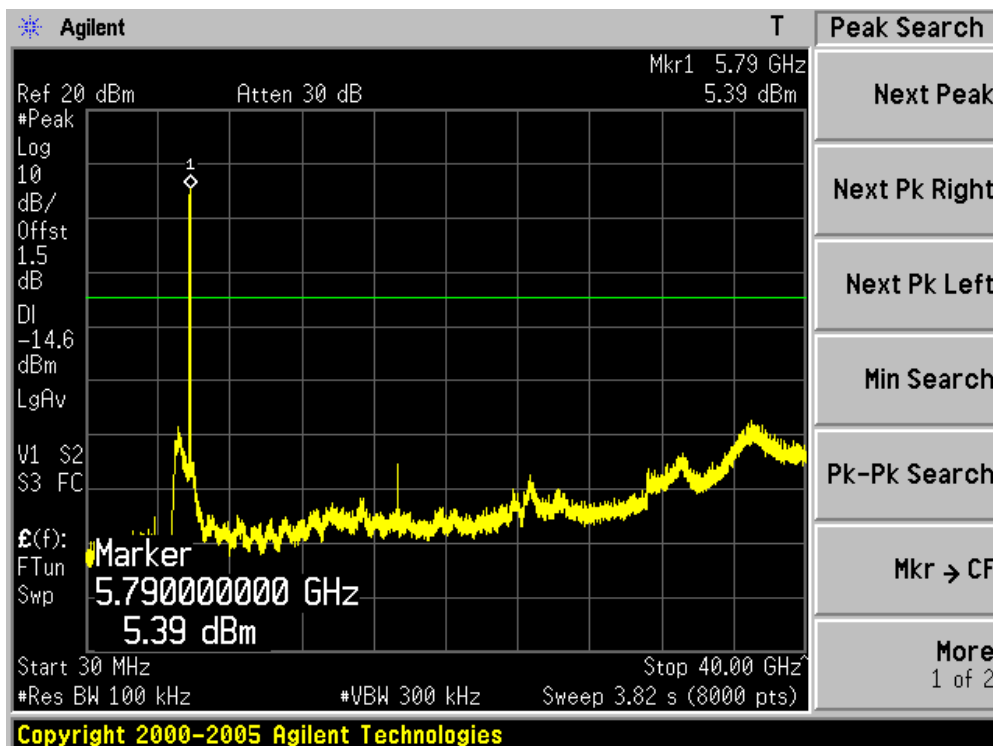


Product	:	Trinity316TDD Plus
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 100)

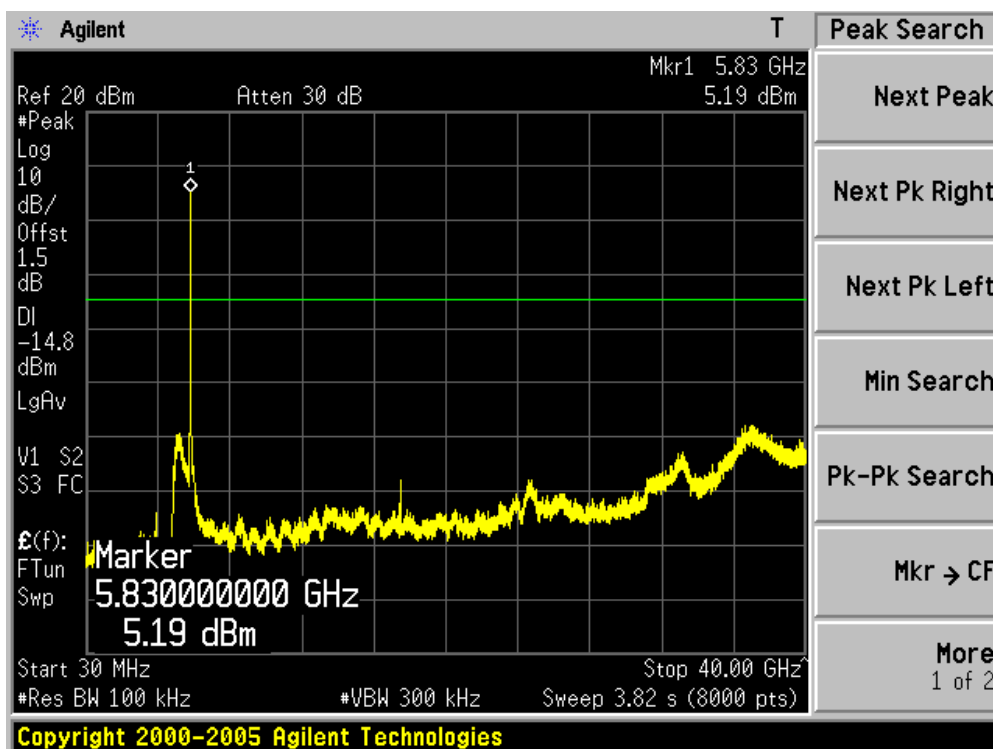
Channel 149 (5745MHz)



Channel 157 (5785MHz)

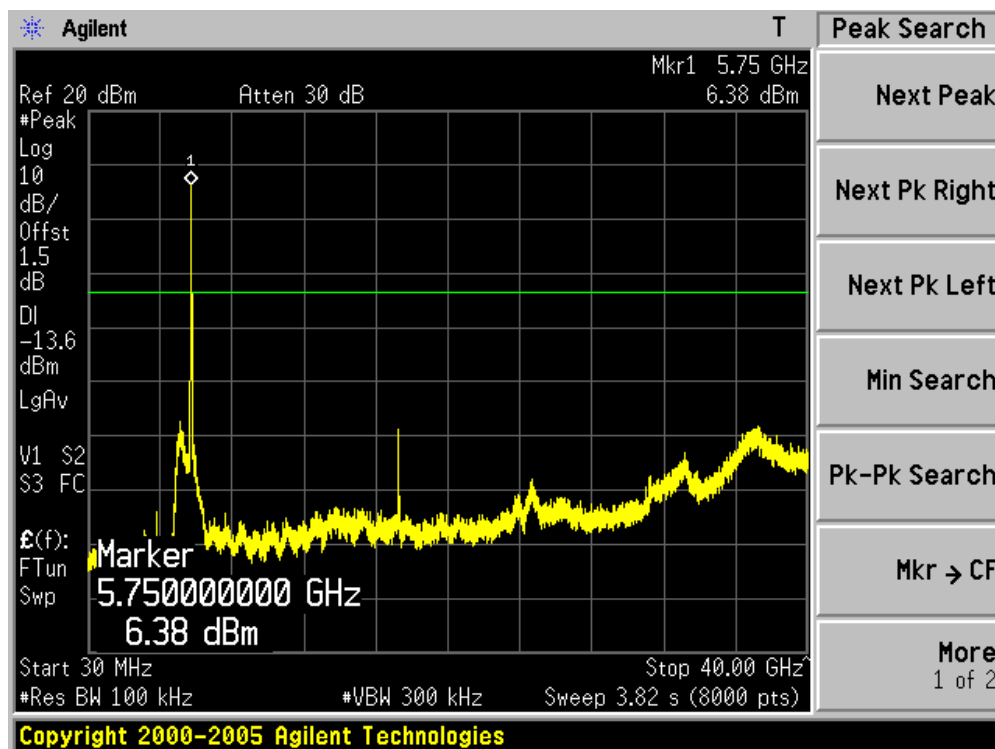


Channel 165 (5825MHz)

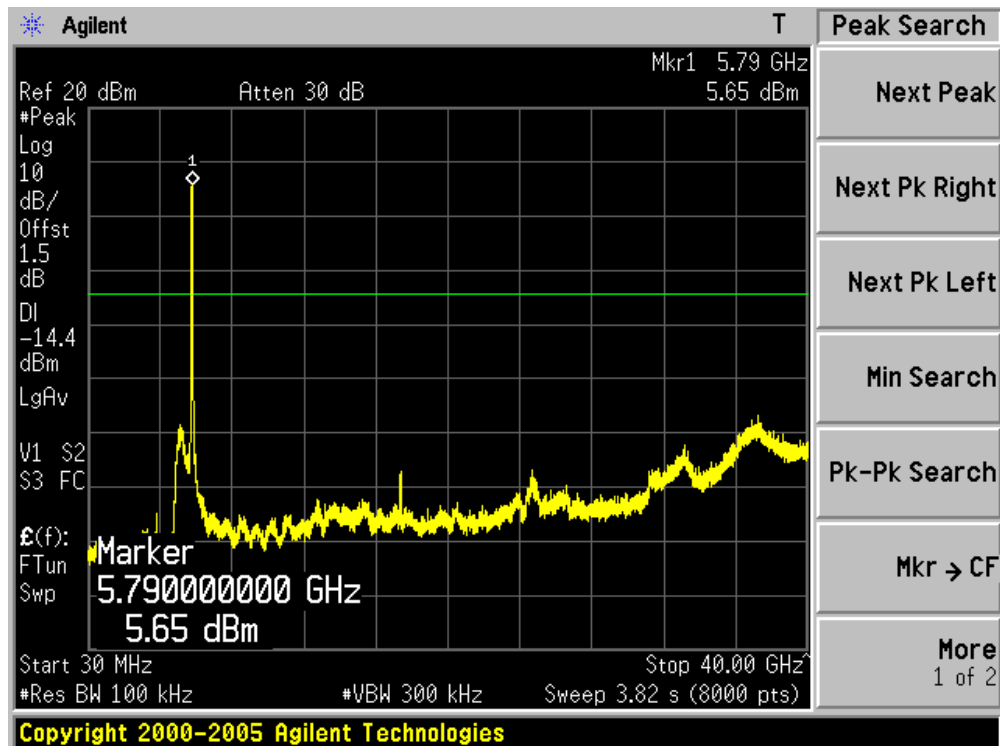


Product	:	Trinity316TDD Plus
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 100)

Channel 151 (5755MHz)

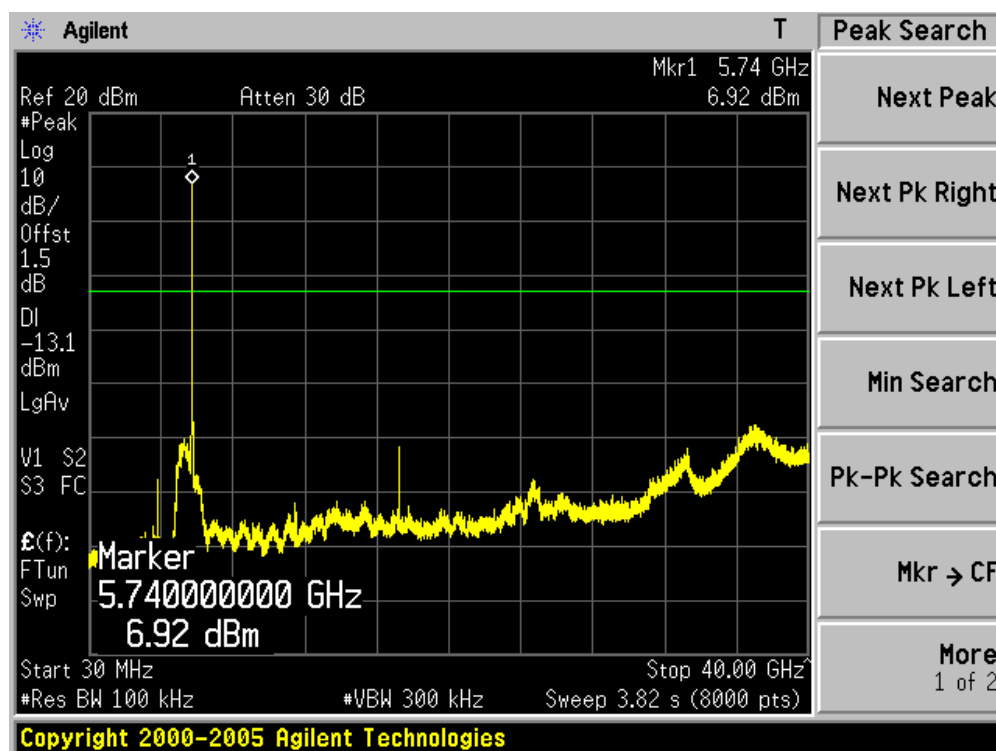


Channel 159 (5795MHz)

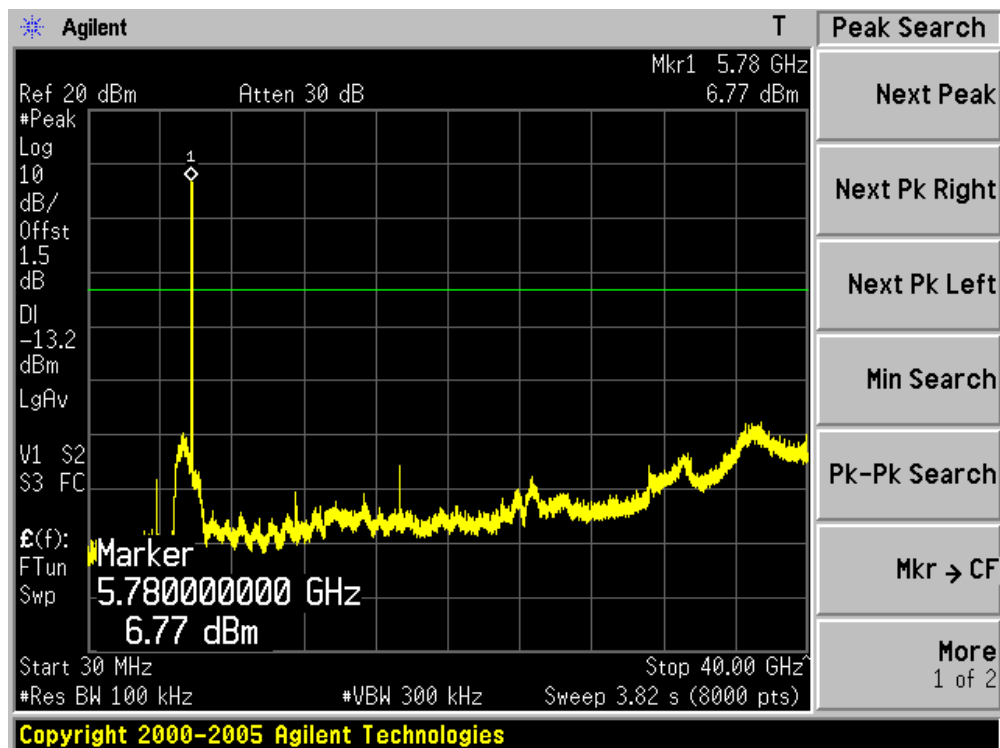


Product	:	Trinity316TDD Plus
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 010)

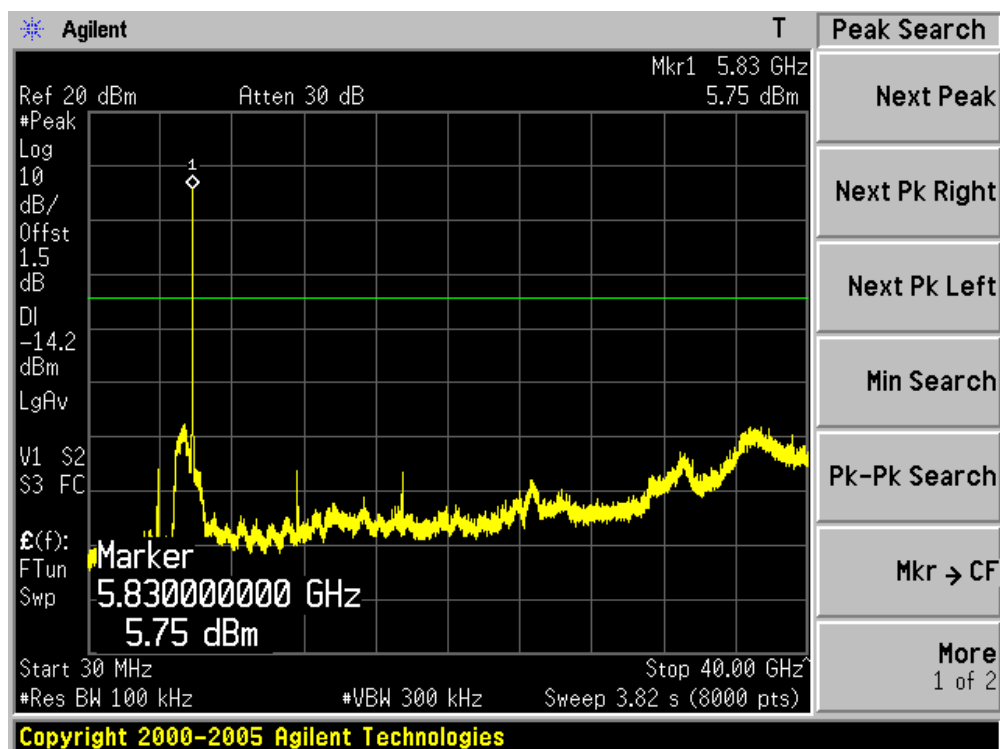
Channel 149 (5745MHz)



Channel 157 (5785MHz)

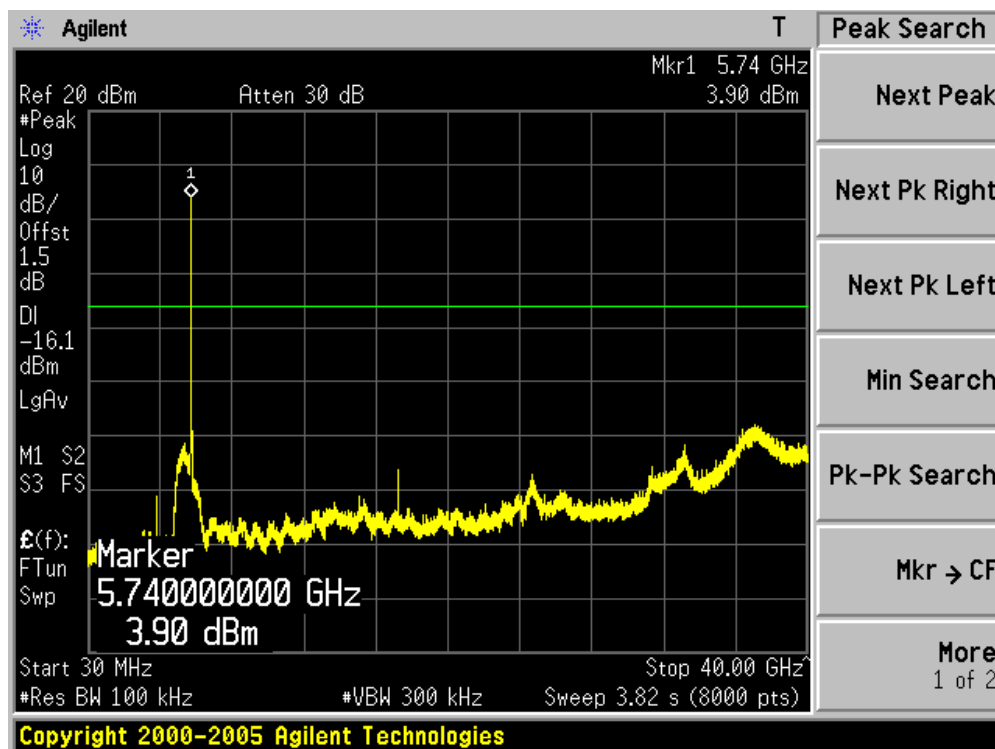


Channel 165 (5825MHz)

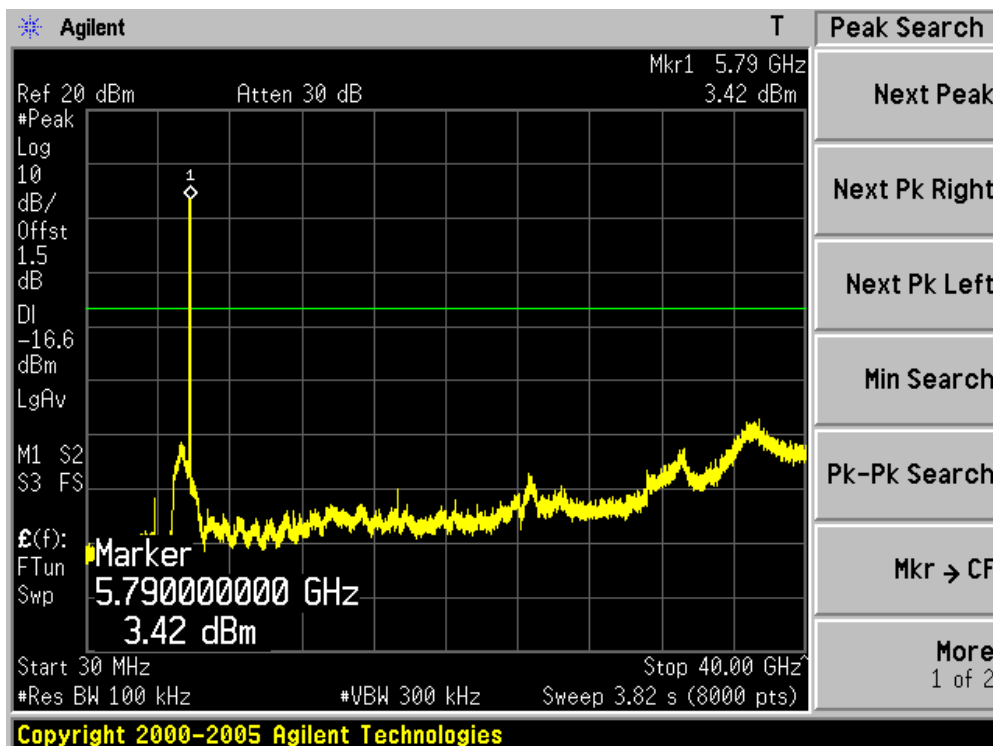


Product	:	Trinity316TDD Plus
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n (20MHz) (Chain 010)

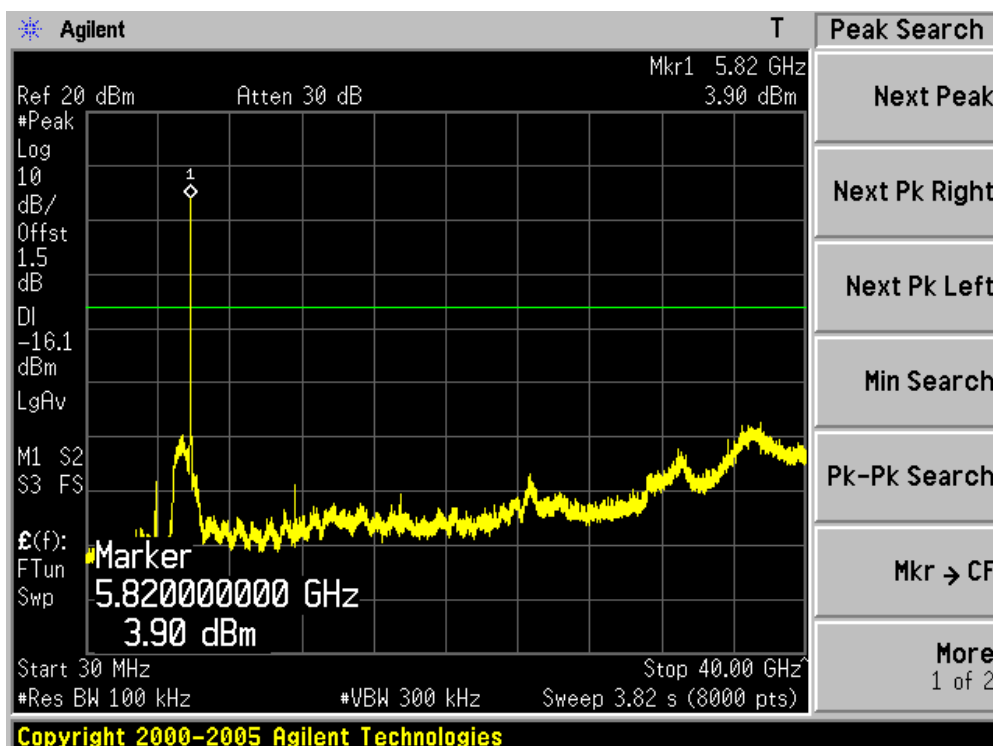
Channel 149 (5745MHz)



Channel 157 (5785MHz)

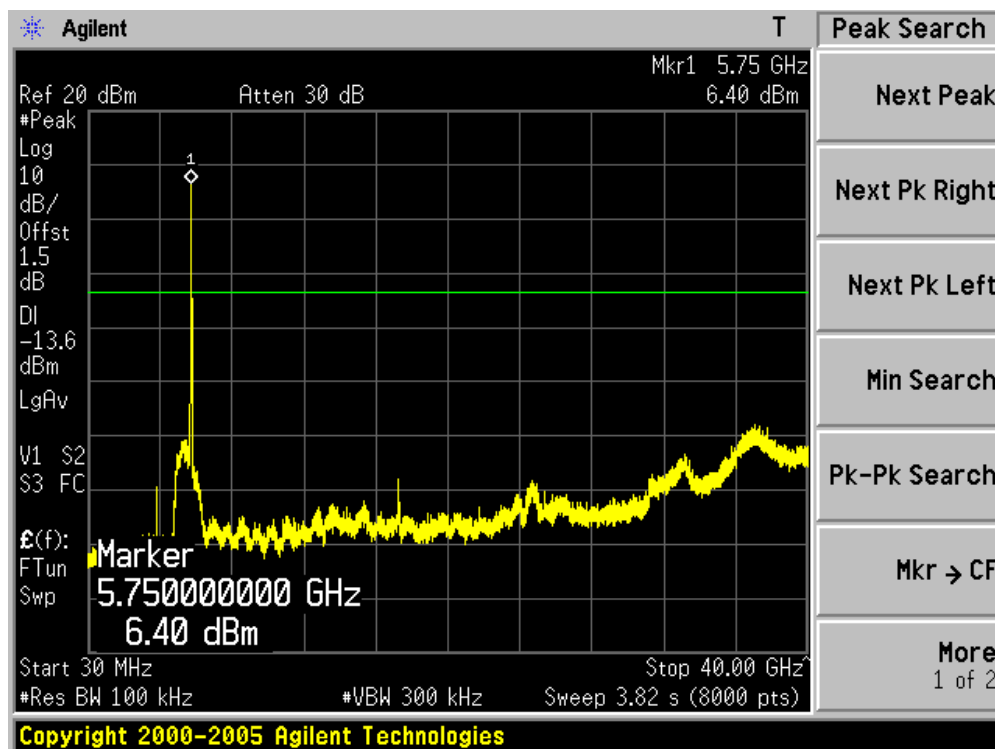


Channel 165 (5825MHz)

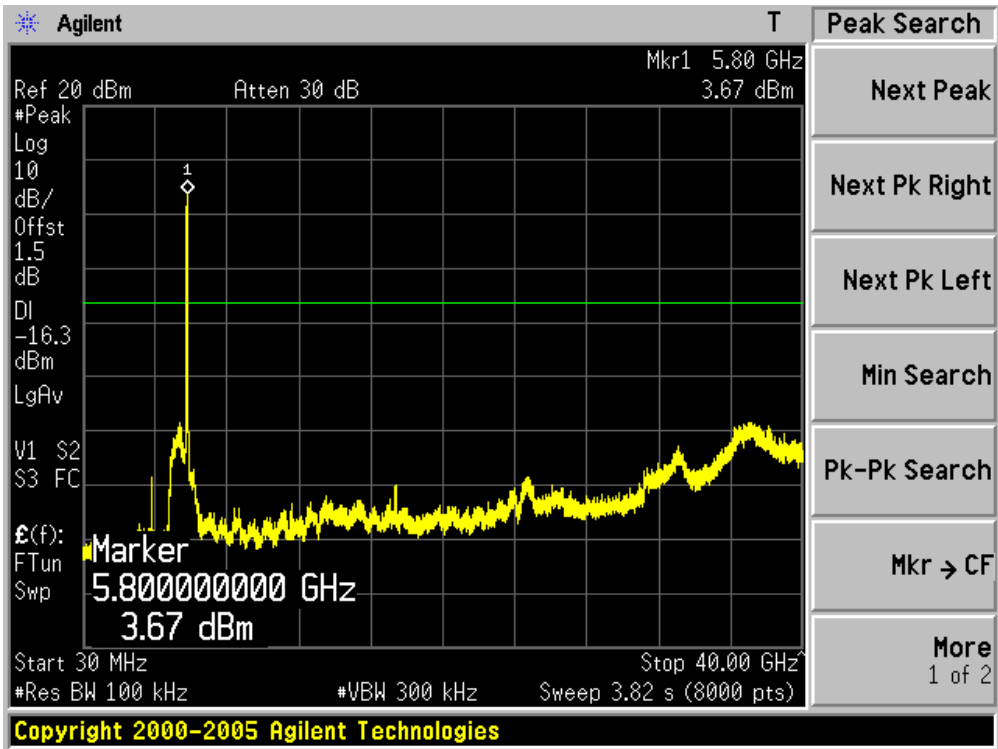


Product	:	Trinity316TDD Plus
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n (40MHz) (Chain 010)

Channel 151(5755MHz)



Channel 159(5795MHz)



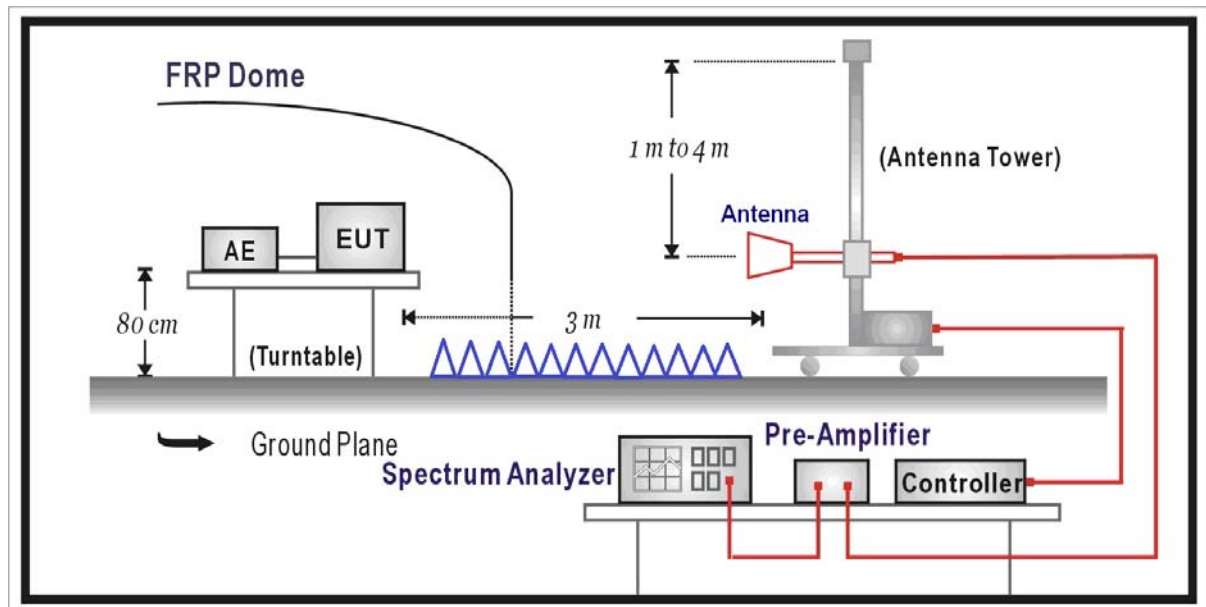
6. Radiated Emission Band Edge

6.1. Test Equipment

☒ Radiated Emission Band Edge / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2010.04.23
EMI Test Receiver	R&S	ESCI	100573	2010.04.23
Preamplifier	Quietek	AP-025C	CHM-0511006	2010.05.05
Preamplifier	Quietek	AP-180C	CHM-0602013	2010.05.05
Bilog Type Antenna	Schaffner	CBL6112B	2932	2009.11.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2010.06.11
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2010.05.05
Temperature/Humidity Meter	zhicheng	ZC1-2	AC5-TH	2010.01.14

6.2. Test Setup



6.3. Limit

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

6.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009 and tested according to ANSI C63.10 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2009 on radiated measurement.

6.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB

6.6. Test Result

Refer to the follow table, the operation frequency is far away from the restriction band 5.35-5.46 and 7.25-7.75, so this item needn't be performed.

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(2)
13.36 - 13.41			

7. Operation Frequency Range of 20dB Bandwidth

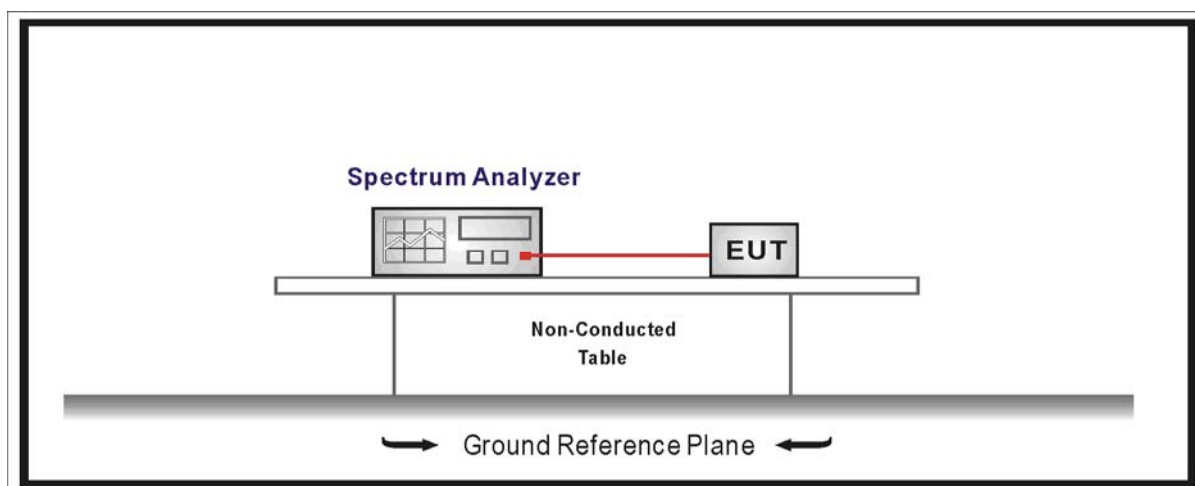
7.1. Test Equipment

Operation Frequency Range of 20dB Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2010.04.30
Temperature/Humidity Meter	zhicheng	ZC1-2	AC6-TH	2010.01.14

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

7.2. Test Setup



7.3. Limit

20 dB bandwidth of the emission is contained within the operation frequency band.

7.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Span greater than RBW.

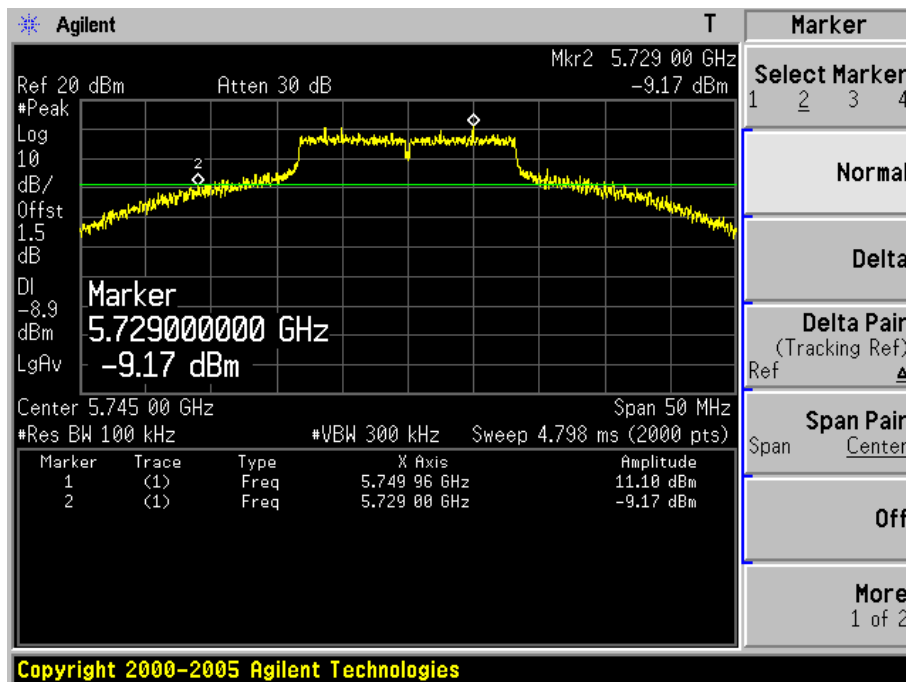
7.5. Uncertainty

The measurement uncertainty is defined as ± 1 kHz

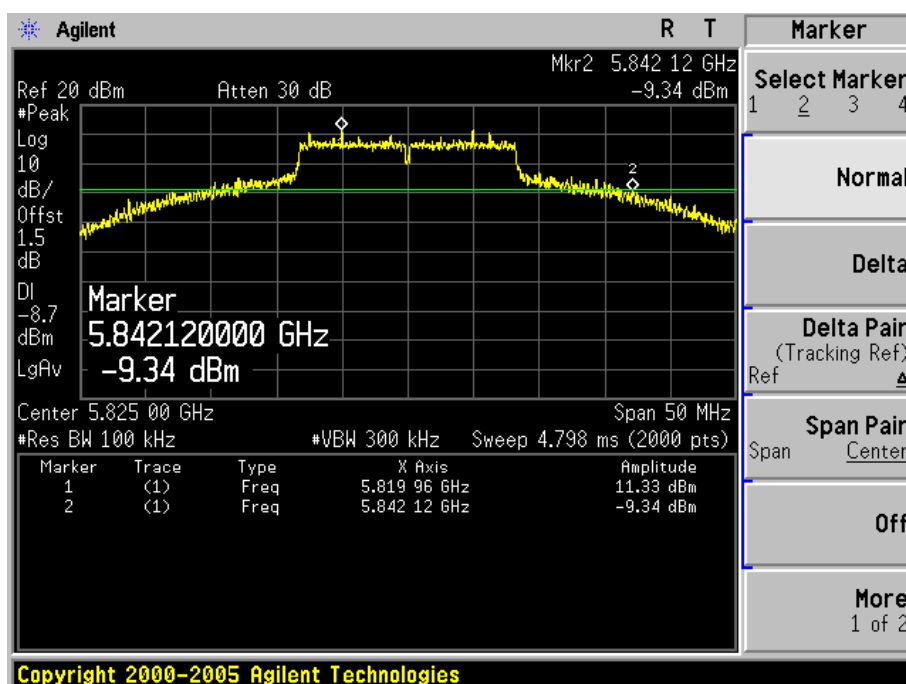
7.6. Test Result

Product	:	Trinity316TDD Plus
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 100)

Channel 149(5745MHz)

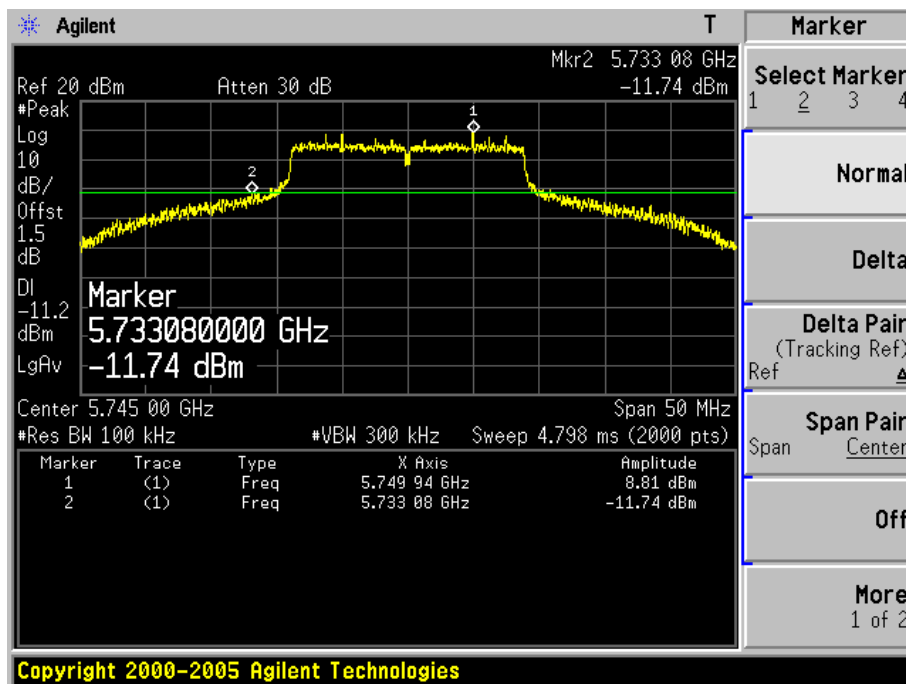


Channel 165(5825MHz)

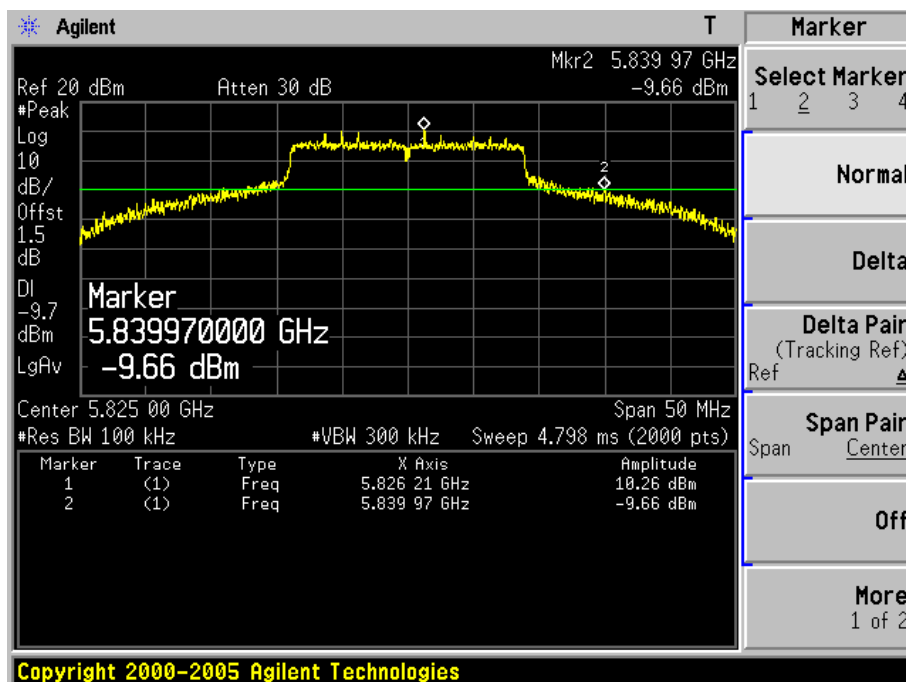


Product	:	Trinity316TDD Plus
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 100)

Channel 149(5745MHz)

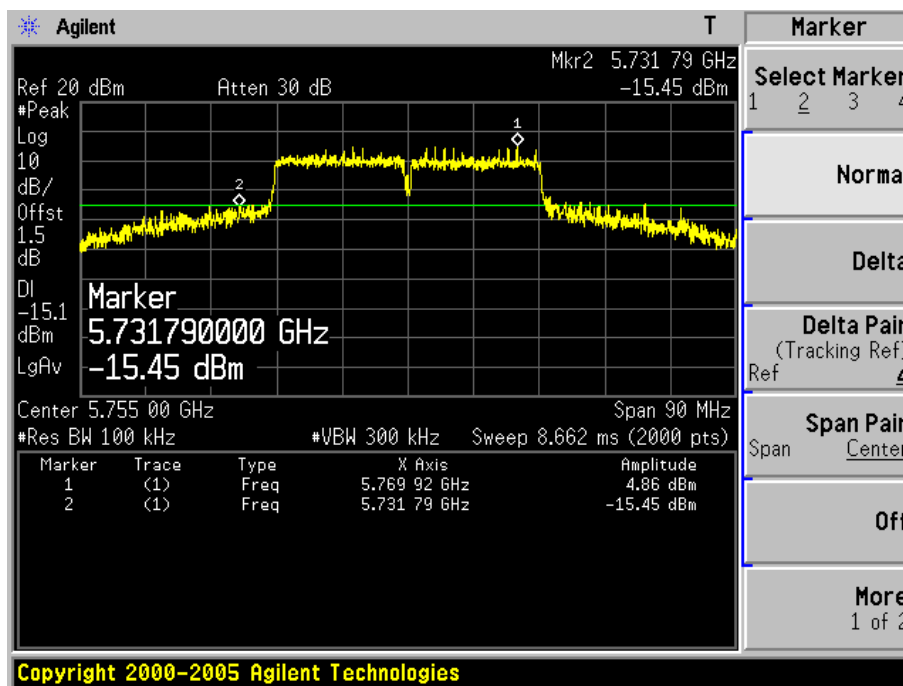


Channel 165(5825MHz)

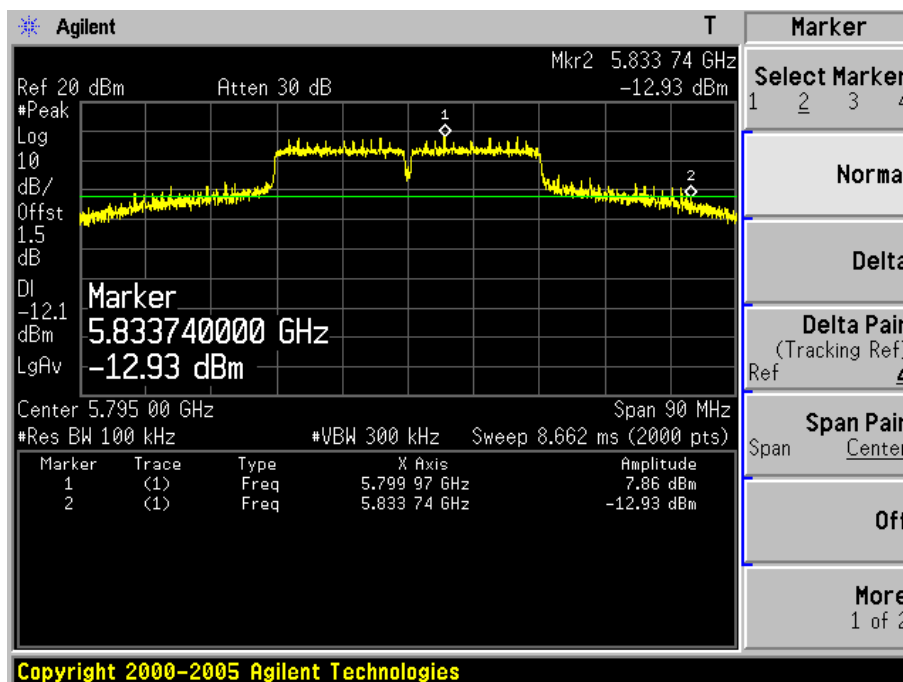


Product	:	Trinity316TDD Plus
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 100)

Channel 151(5755MHz)

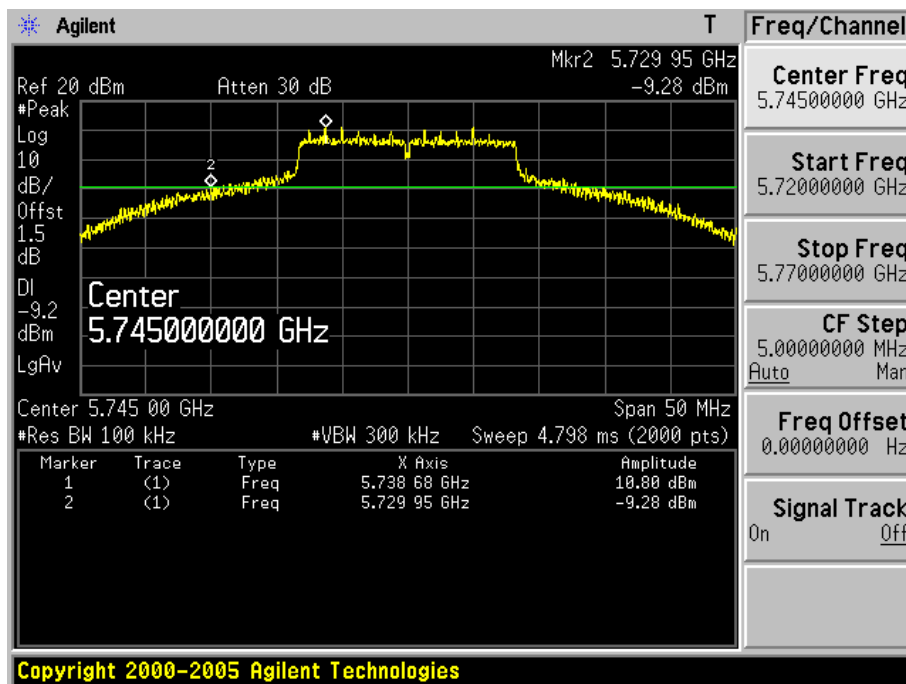


Channel 159(5795MHz)

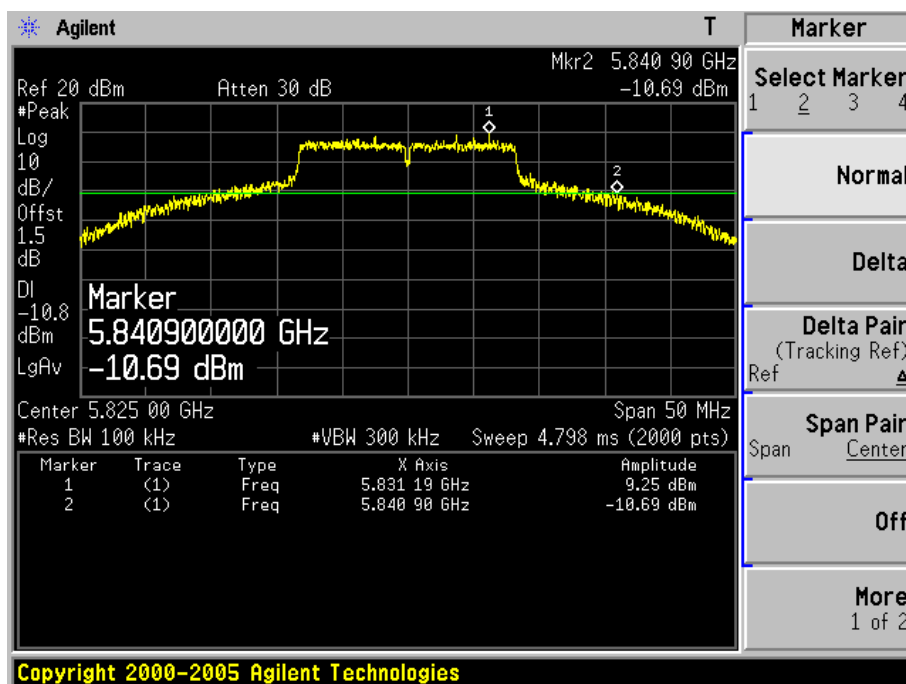


Product	:	Trinity316TDD Plus
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 010)

Channel 149(5745MHz)

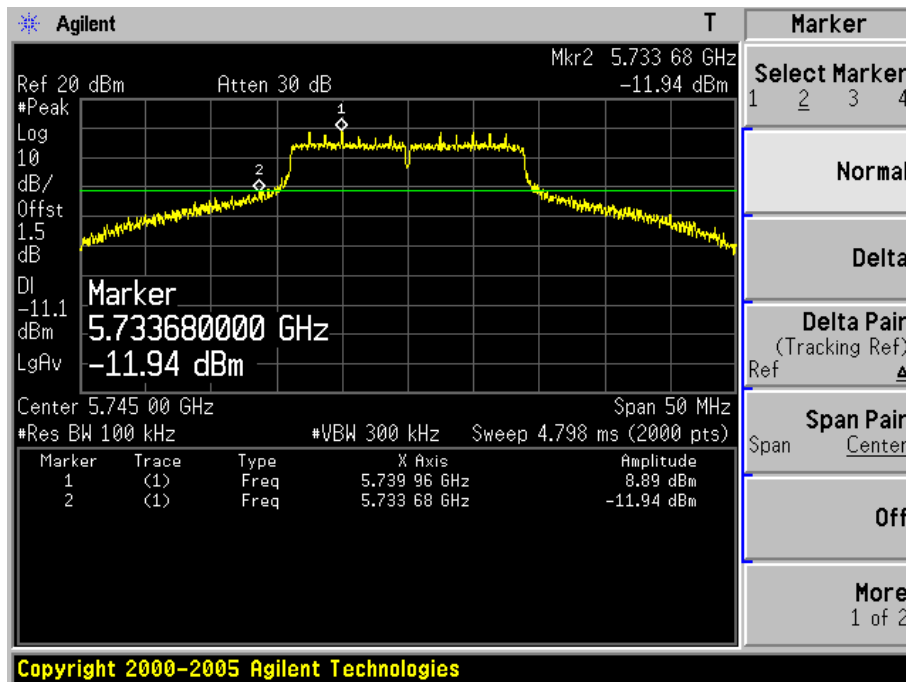


Channel 165(5825MHz)

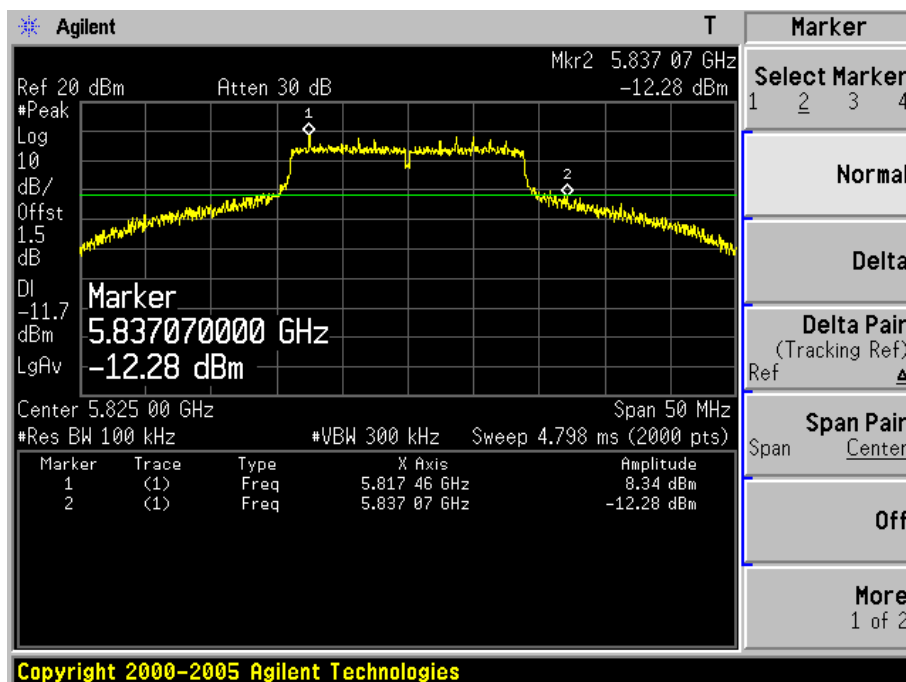


Product	:	Trinity316TDD Plus
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n (20MHz) (Chain 010)

Channel 149(5745MHz)

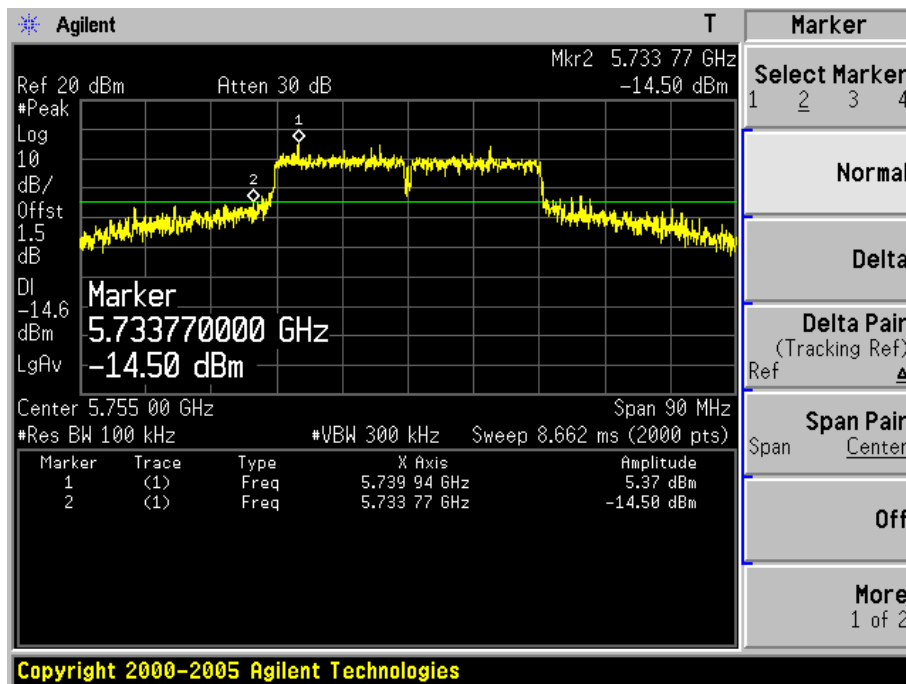


Channel 165(5825MHz)

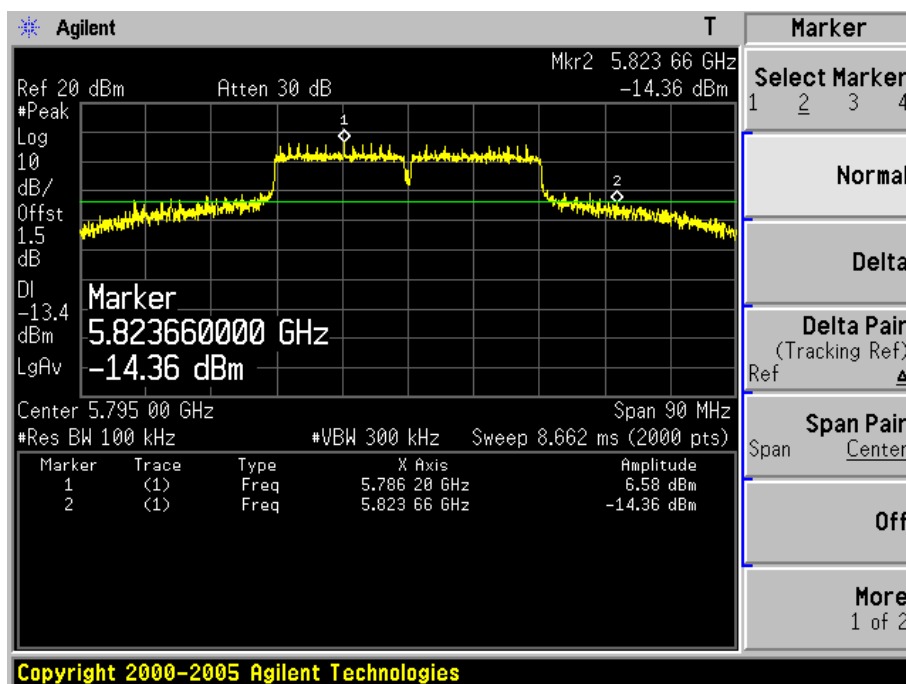


Product	:	Trinity316TDD Plus
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 010)

Channel 151(5755MHz)



Channel 159(5795MHz)



8. Occupied Bandwidth

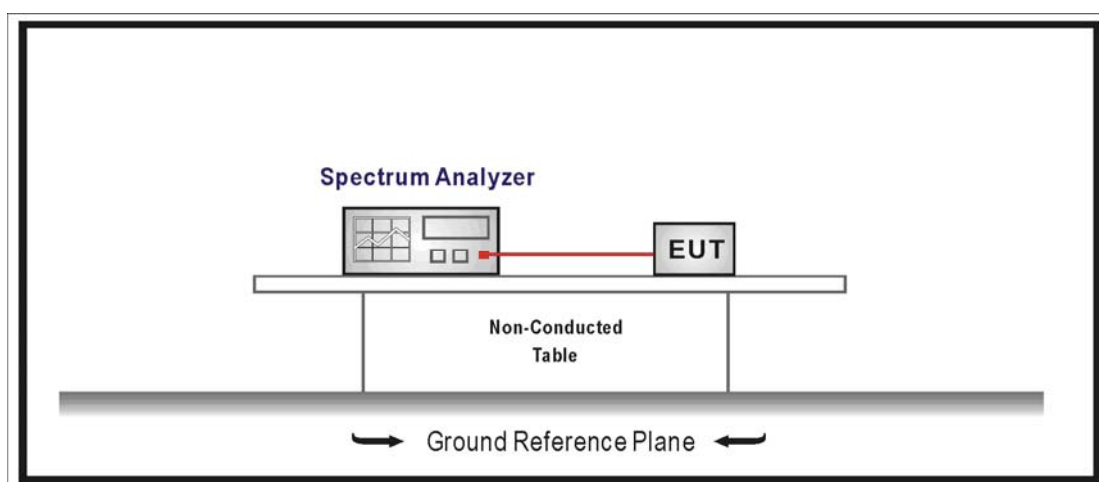
8.1. Test Equipment

Occupied Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2010.04.30
Temperature/Humidity Meter	zhicheng	ZC1-2	AC6-TH	2010.01.14

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

8.2. Test Setup



8.3. Limit

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

8.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Span greater than RBW.

8.5. Uncertainty

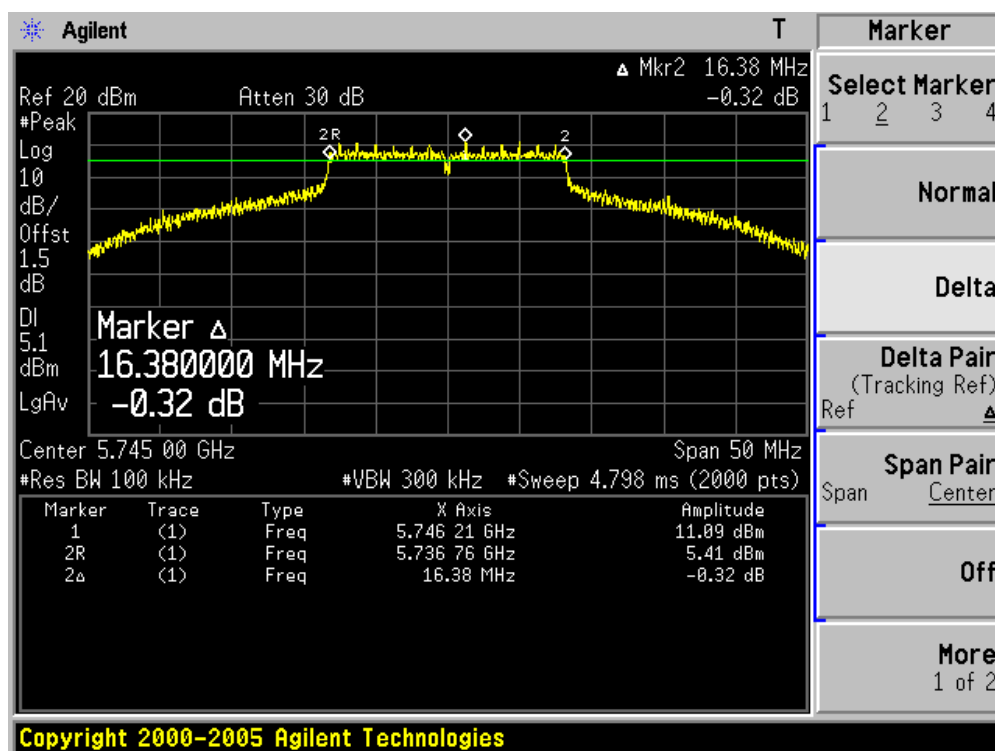
The measurement uncertainty is defined as ± 1 kHz

8.6. Test Result

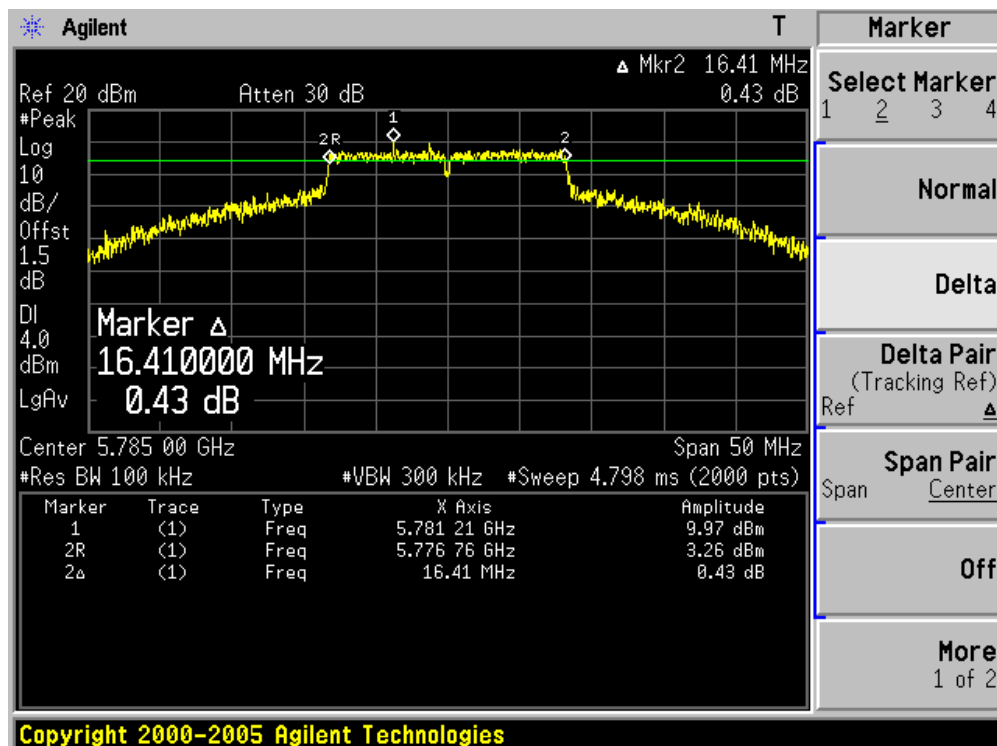
Product	:	Trinity316TDD Plus
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 100)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
149	5745	16380	500	Pass
157	5785	16410	500	Pass
165	5825	16380	500	Pass

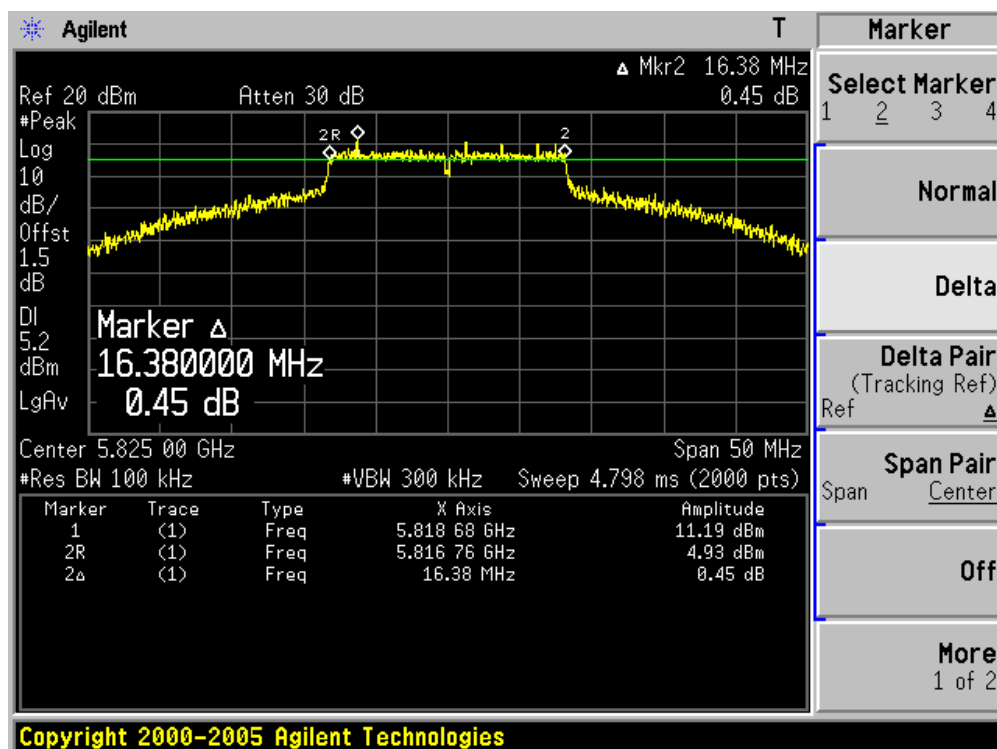
Channel 149 (5745MHz)



Channel 157 (5785MHz)



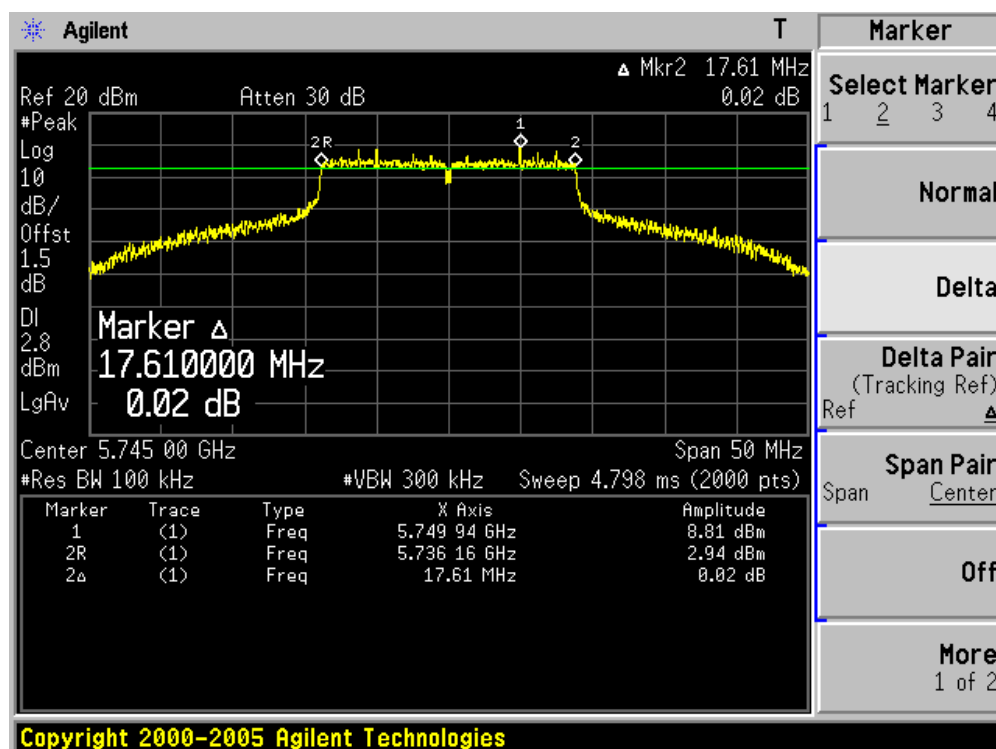
Channel 165 (5825MHz)



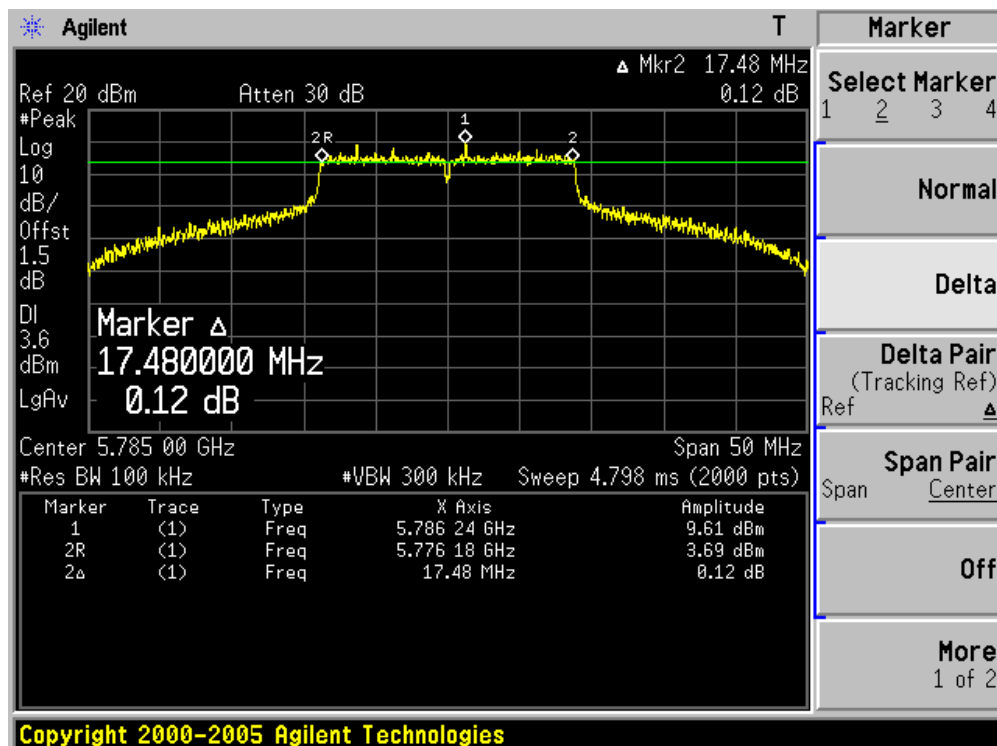
Product	:	Trinity316TDD Plus
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 100)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
149	5745	17610	500	Pass
157	5785	17480	500	Pass
165	5825	17580	500	Pass

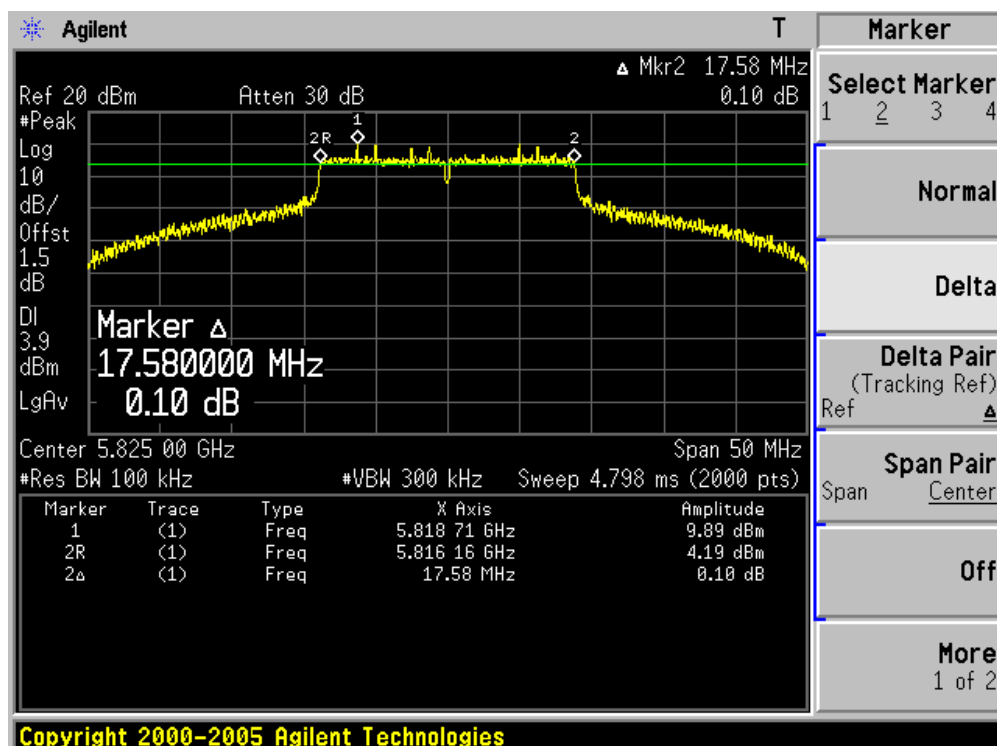
Channel 149 (5745MHz)



Channel 157 (5785MHz)

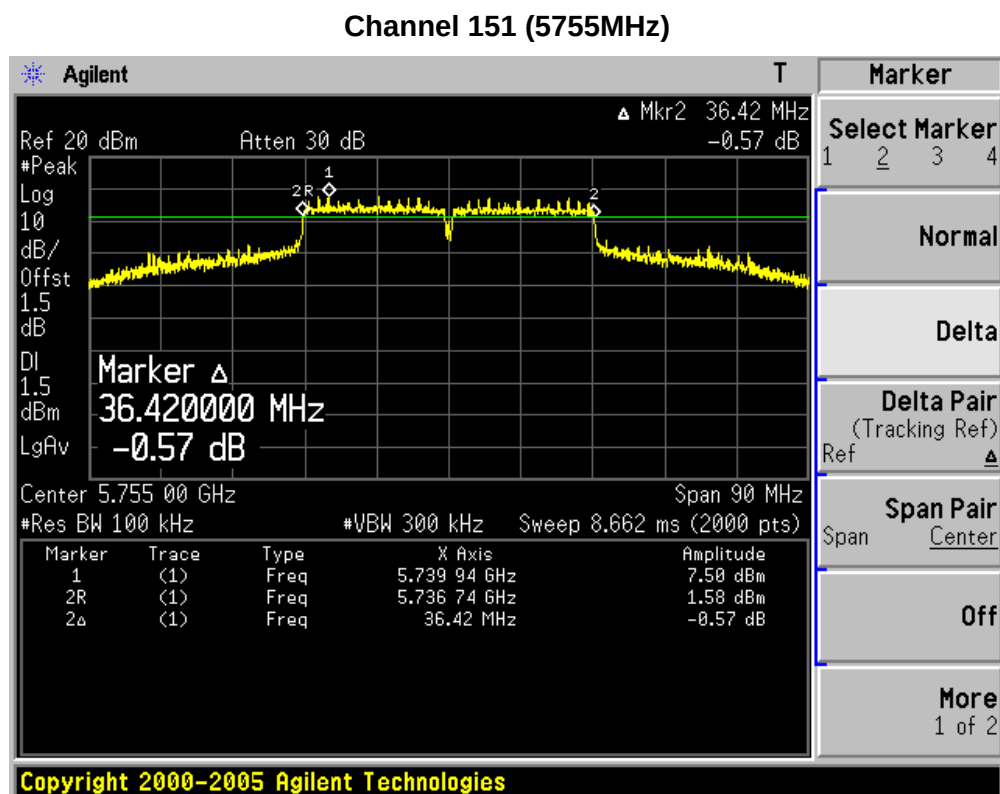


Channel 165 (5825MHz)

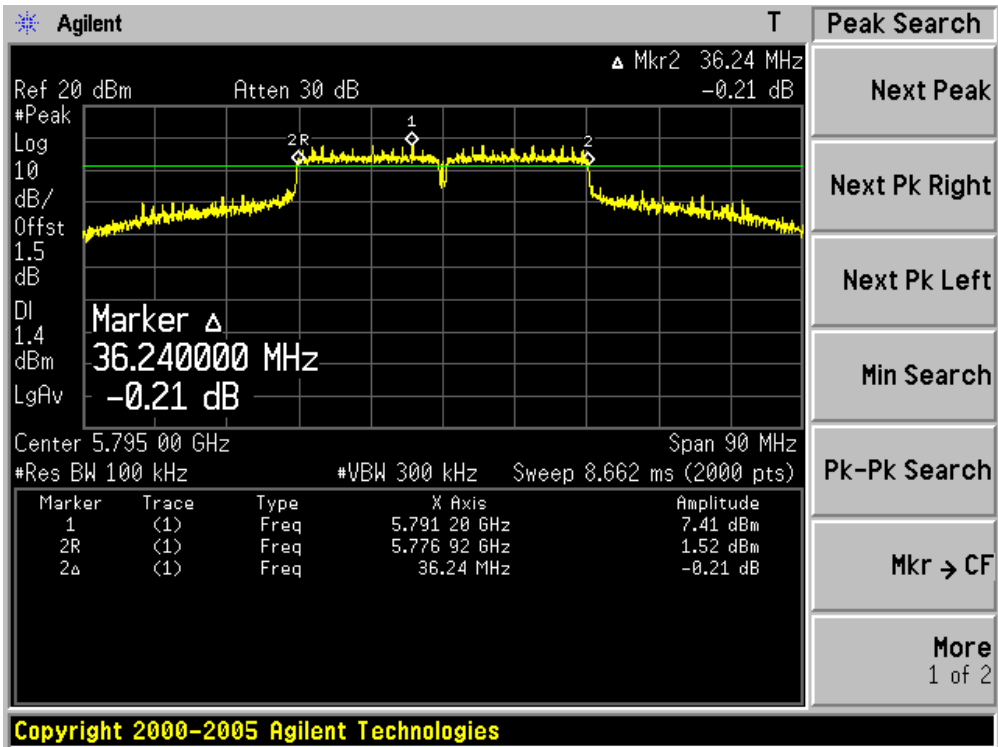


Product	:	Trinity316TDD Plus
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n (40MHz) (Chain 100)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
151	5755	35420	500	Pass
159	5795	35240	500	Pass



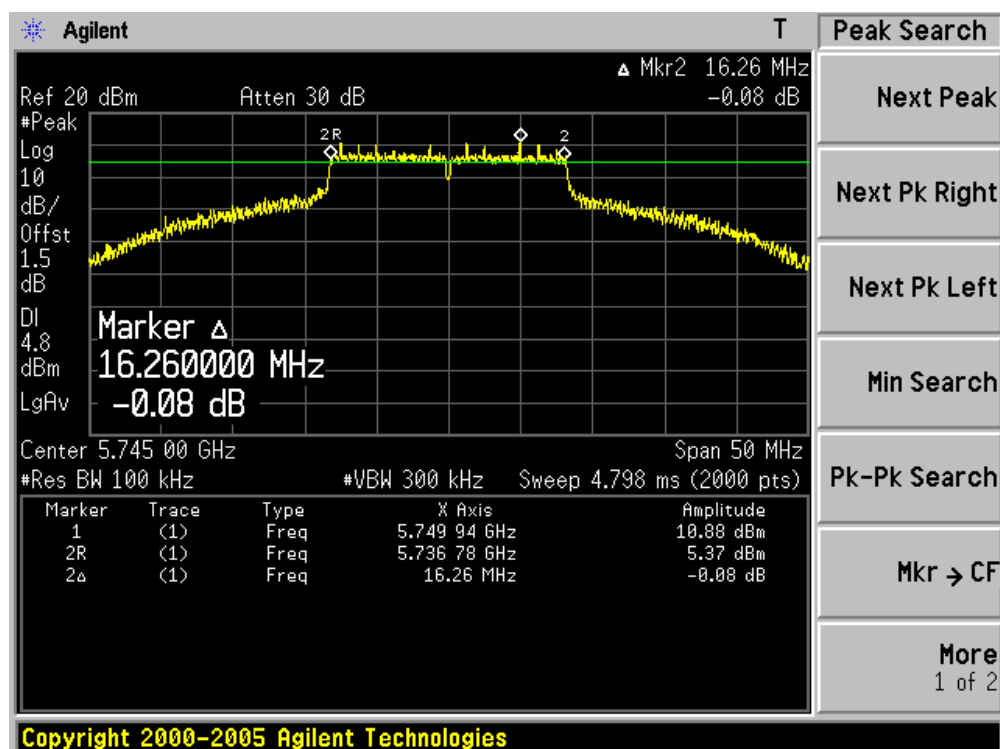
Channel 159 (5795MHz)



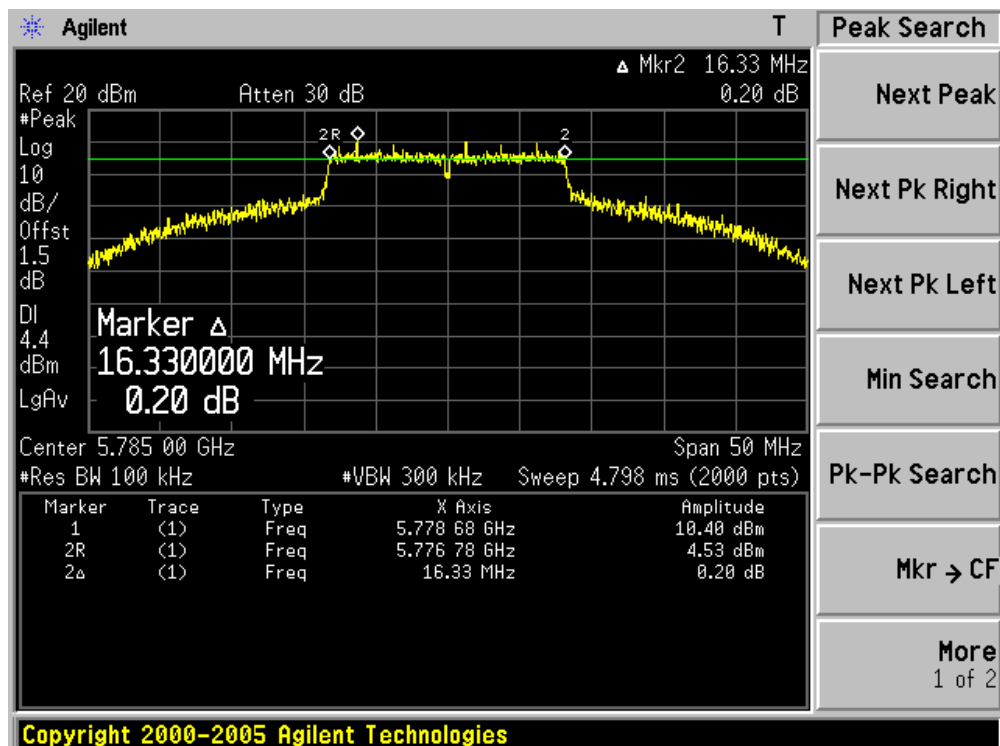
Product	:	Trinity316TDD Plus
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 010)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
149	5745	16260	500	Pass
157	5785	16330	500	Pass
165	5825	16530	500	Pass

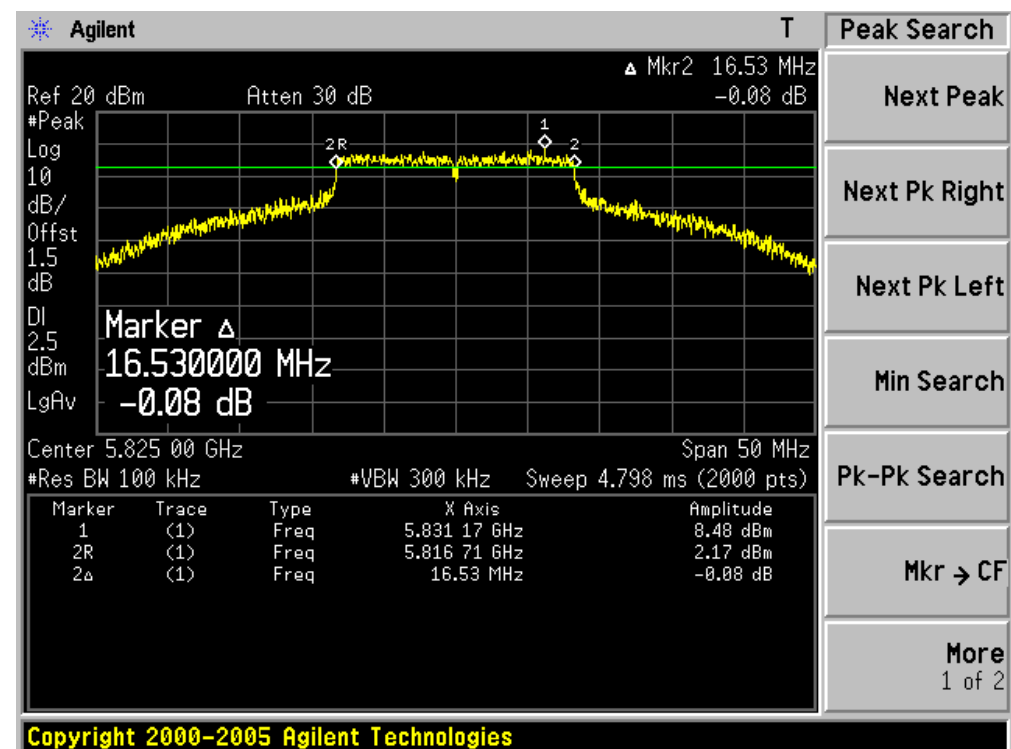
Channel 149 (5745MHz)



Channel 157 (5785MHz)



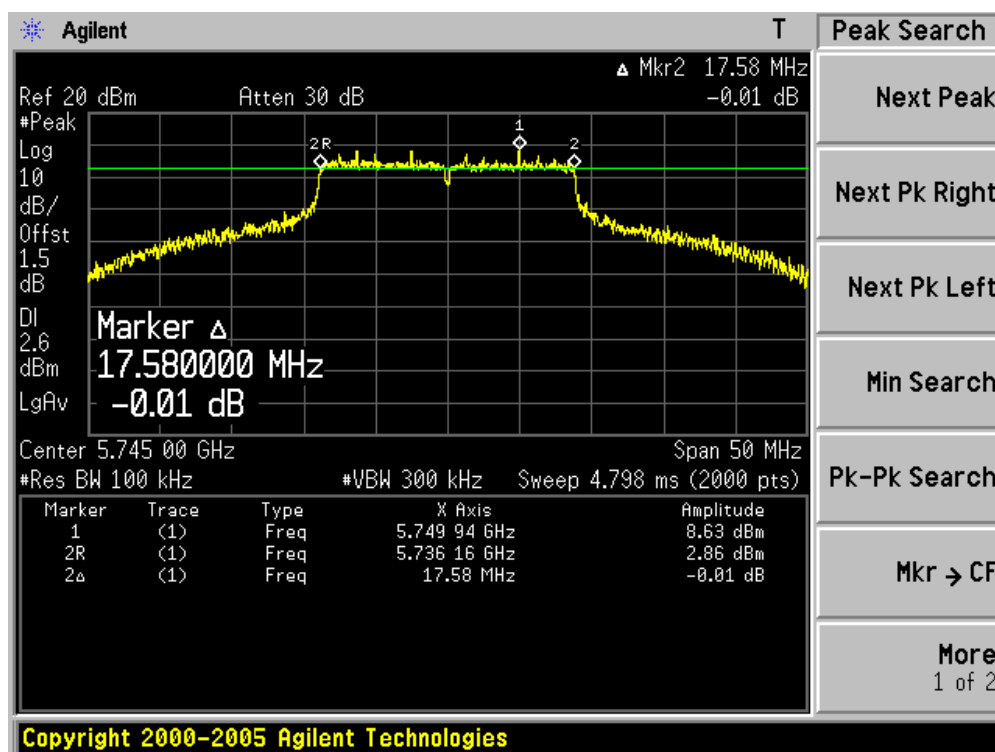
Channel 165 (5825MHz)



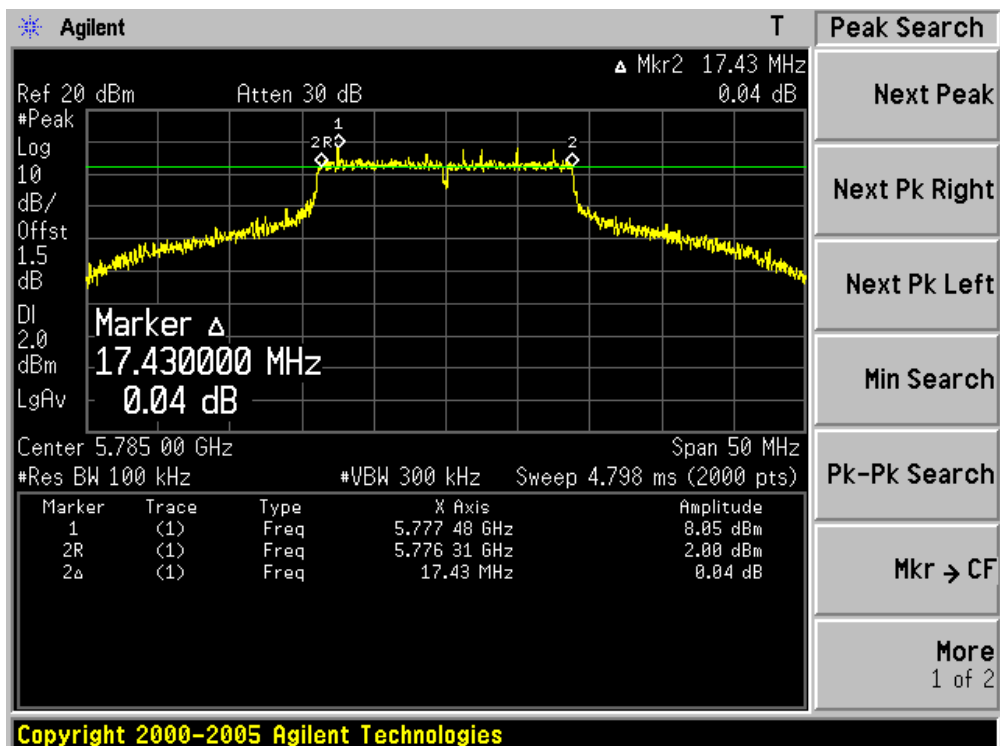
Product	:	Trinity316TDD Plus
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 010)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
149	5745	17580	500	Pass
157	5785	17430	500	Pass
165	5825	17310	500	Pass

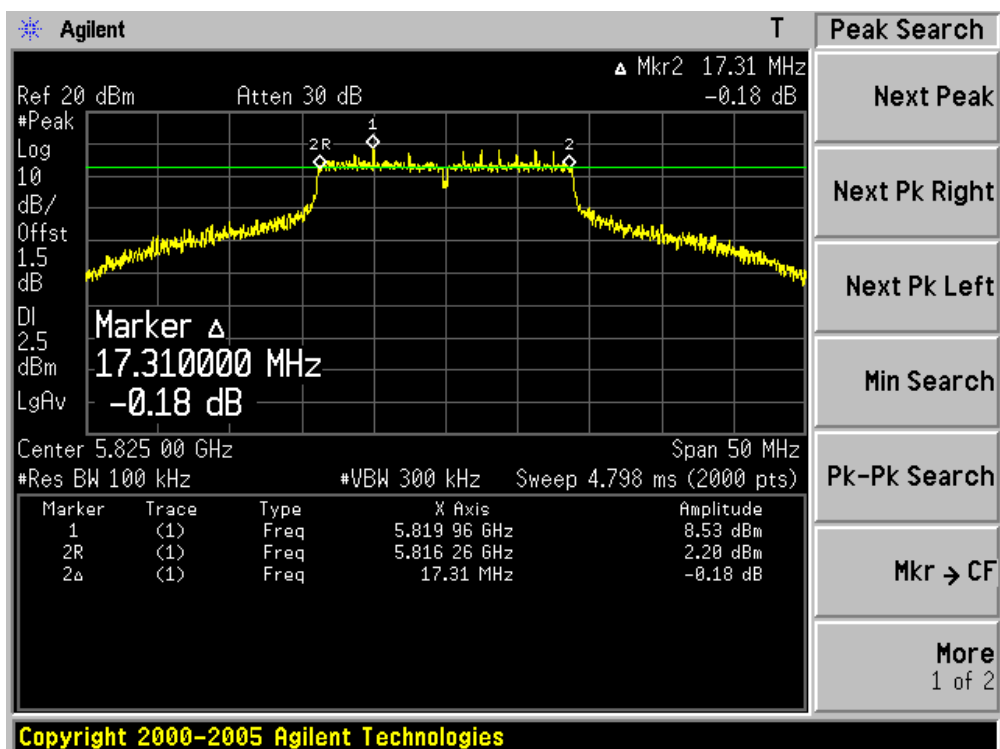
Channel 149 (5745MHz)



Channel 157 (5785MHz)



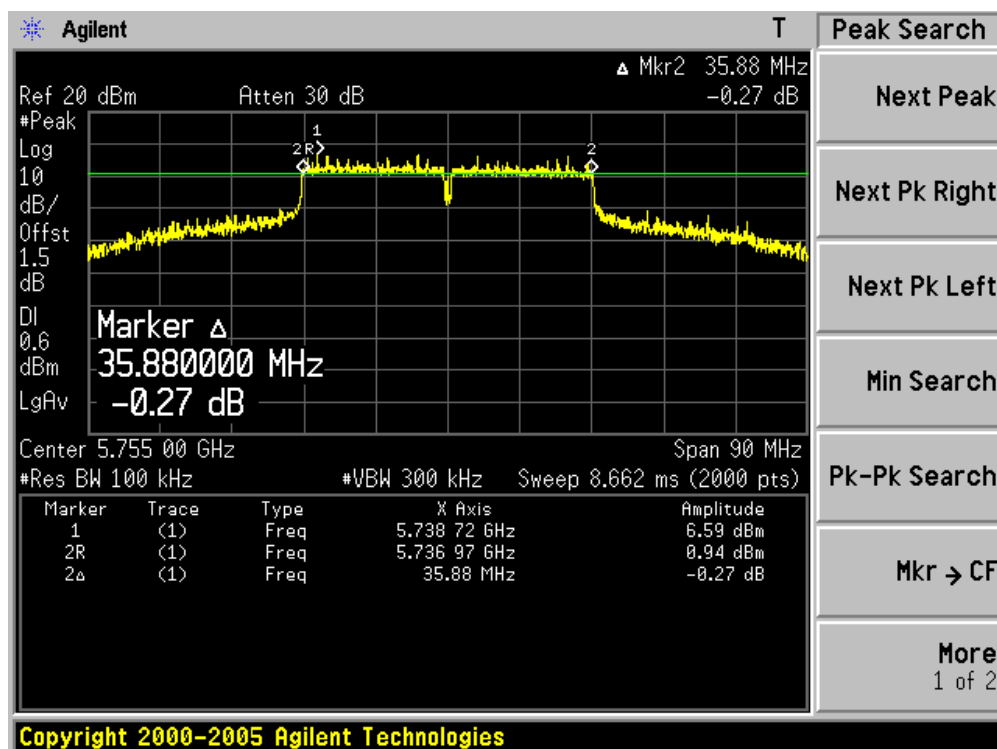
Channel 165 (5825MHz)



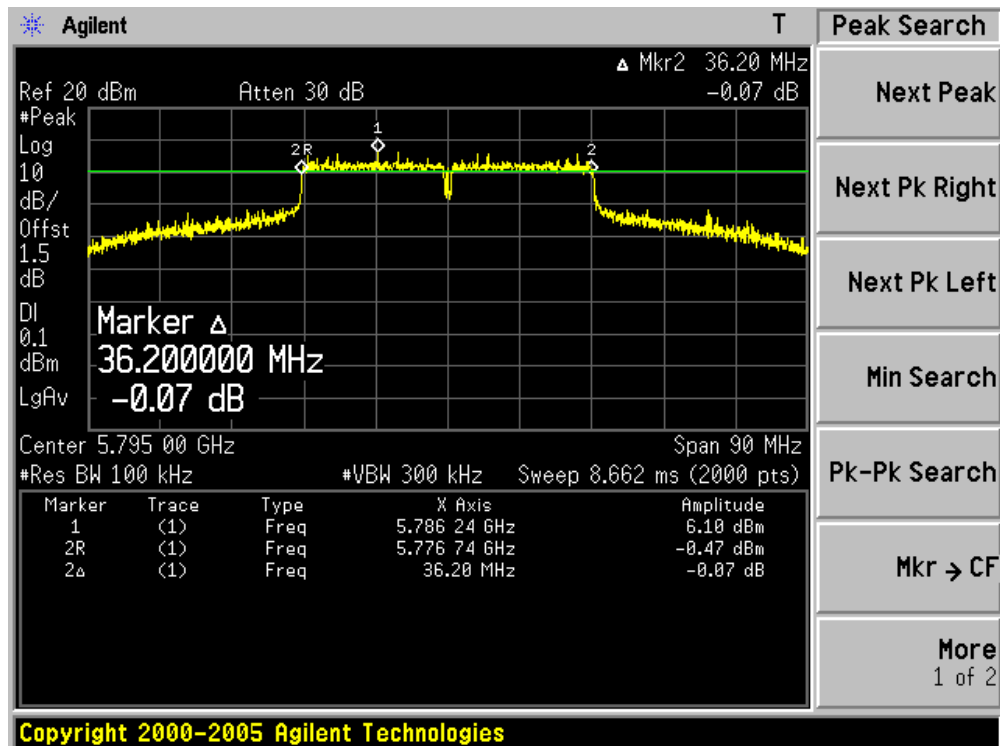
Product	:	Trinity316TDD Plus
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 010)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
151	5755	35880	500	Pass
159	5795	36200	500	Pass

Channel 151 (5755MHz)



Channel 159 (5795MHz)



9. Power Output

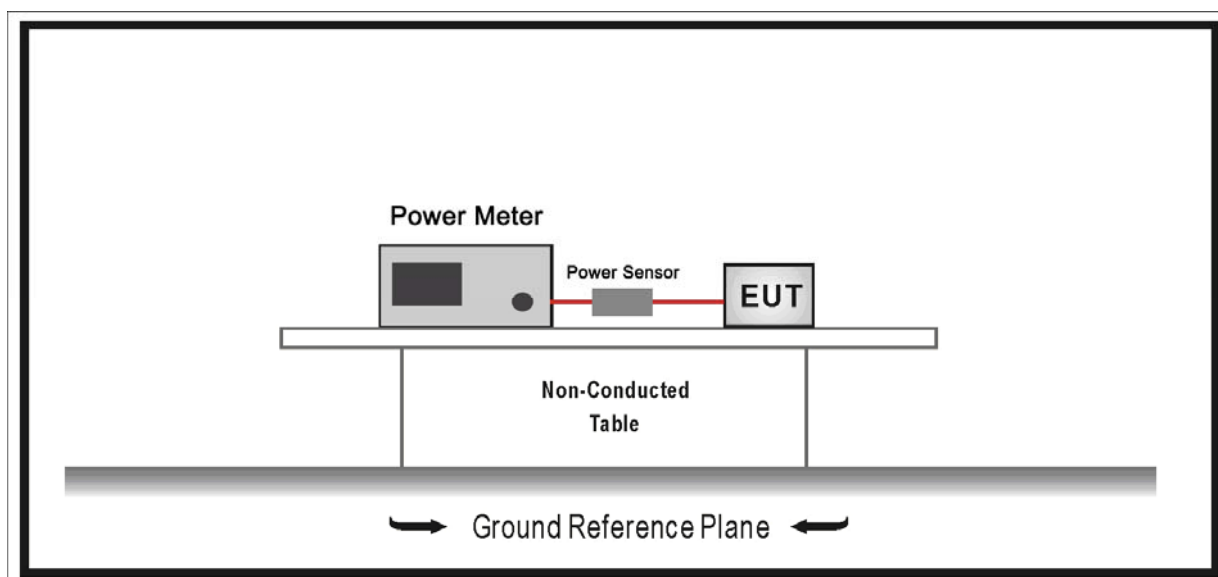
9.1. Test Equipment

Power Output / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2010.01.12
Power Sensor	Anritsu	MA2411B	0846014	2010.01.12
Temperature/Humidity Meter	zhicheng	ZC1-2	AC6-TH	2010.01.14

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

9.2. Test Setup



9.3. Limit

The maximum peak power shall be less 1 Watt (30dBm).

Note: the conducted output power limit specified above is based on the use the antennas with directional gains that do not exceed 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values above, as appropriate, by the amount in dB that the directional gain of antenna exceeds 6 dBi.

9.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Use the wideband power meter to test peak power and record the result.

9.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

9.6. Test Result

Power output test was verified over all data rates of each mode shown as below, and then choose the maximum power output (blue marker) for final test of each channel.

MCS Index for 802.11n	Spatial Streams	Data Rate (Mbps)				
		802.11a	20MHz Bandwidth		40MHz Bandwidth	
			800ns GI	400ns GI	800ns GI	400ns GI
0	1	6	6.5	7.2	13.5	15.0
1	1	9	13.0	14.4	27.0	30.0
2	1	12	19.5	21.7	40.5	45.0
3	1	18	26.0	28.9	54.0	60.0
4	1	24	39.0	43.3	81.0	90.0
5	1	36	52.0	57.8	108.0	120.0
6	1	48	58.5	65.0	121.5	135.0
7	1	54	65.0	72.2	135.0	150.0
8	2	---	13.0	14.4	27.0	30.0
9	2	---	26.0	28.9	54.0	60.0
10	2	---	39.0	43.3	81.0	90.0
11	2	---	52.0	57.8	108.0	120.0
12	2	---	78.0	86.7	162.0	180.0
13	2	---	104.0	115.6	216.0	240.0
14	2	---	117.0	130.0	243.0	270.0
15	2	---	130.0	144.0	270.0	300.0

Power output at various data rates:

Test Mode	Chain	Bandwidth	Frequency (MHz)	Channel	Data Rate	Peak Power (dBm)
802.11a	100	20	5785	157	6	23.19
					24	23.11
					54	22.93
802.11a	010	20	5785	157	6	23.18
					24	23.12
					54	22.98
802.11n	100	20	5785	157	HT0	23.34
					HT4	23.23
					HT7	23.15
802.11n	010	20	5785	157	HT0	23.23
					HT4	23.17
					HT7	23.03
802.11n	100	40	5795	159	HT0	23.35
					HT4	23.26
					HT7	23.14
802.11n	010	40	5795	159	HT0	23.14
					HT4	23.09
					HT7	22.92

Product	:	Trinity316TDD Plus
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 100)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
149	5745	23.01	N/A	23.01	30.00	Pass
157	5785	23.19	N/A	23.19	30.00	Pass
165	5825	23.27	N/A	23.27	30.00	Pass

Product	:	Trinity316TDD Plus
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 010)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
149	5745	N/A	23.16	23.16	30.00	Pass
157	5785	N/A	23.18	23.18	30.00	Pass
165	5825	N/A	23.21	23.21	30.00	Pass

Product	:	Trinity316TDD Plus
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 100)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
149	5745	22.75	N/A	22.75	30.00	Pass
157	5785	23.34	N/A	23.34	30.00	Pass
165	5825	23.55	N/A	23.55	30.00	Pass

Product	:	Trinity316TDD Plus
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 010)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
149	5745	N/A	22.92	22.92	30.00	Pass
157	5785	N/A	23.23	23.23	30.00	Pass
165	5825	N/A	23.32	23.32	30.00	Pass

Product	:	Trinity316TDD Plus
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 110)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
149	5745	22.89	23.10	26.01	30.00	Pass
157	5785	23.30	23.48	26.40	30.00	Pass
165	5825	23.38	23.61	26.51	30.00	Pass

Product	:	Trinity316TDD Plus
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 100)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
151	5755	23.38	N/A	23.38	30.00	Pass
159	5795	23.35	N/A	23.35	30.00	Pass

Product	:	Trinity316TDD Plus
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 010)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
151	5755	N/A	23.17	23.17	30.00	Pass
159	5795	N/A	23.14	23.14	30.00	Pass

Product	:	Trinity316TDD Plus
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 110)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
151	5755	23.22	23.42	26.33	30.00	Pass
159	5795	23.33	23.50	26.43	30.00	Pass

Note: this device is used exclusively for fixed or point-to-point operations, so more than 6dBi antenna gain is allowed to use without any corresponding reduction in transmitter conducted output power.

10. Power Spectral Density

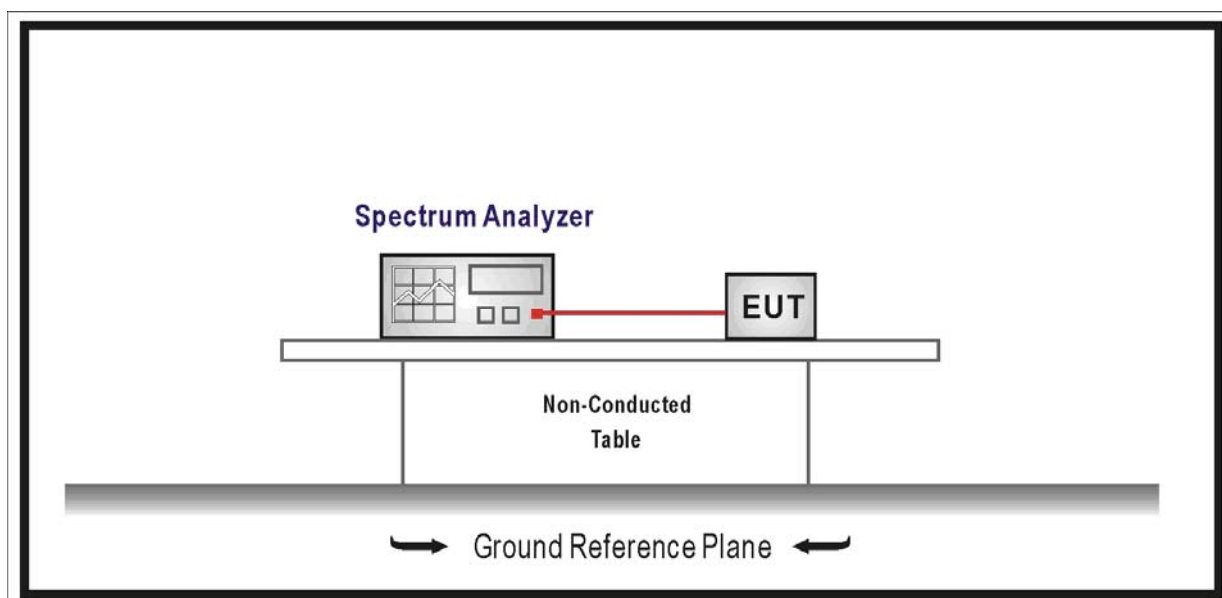
10.1. Test Equipment

Power Spectral Density / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2010.04.30
Temperature/Humidity Meter	zhicheng	ZC1-2	AC6-TH	2010.01.14

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

10.2. Test Setup



10.3. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiated to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

10.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Set RBW= 3 kHz, Set VBW $\cong$ 10 kHz, Sweep time=100s, Set detector=Peak detector.

10.5. Uncertainty

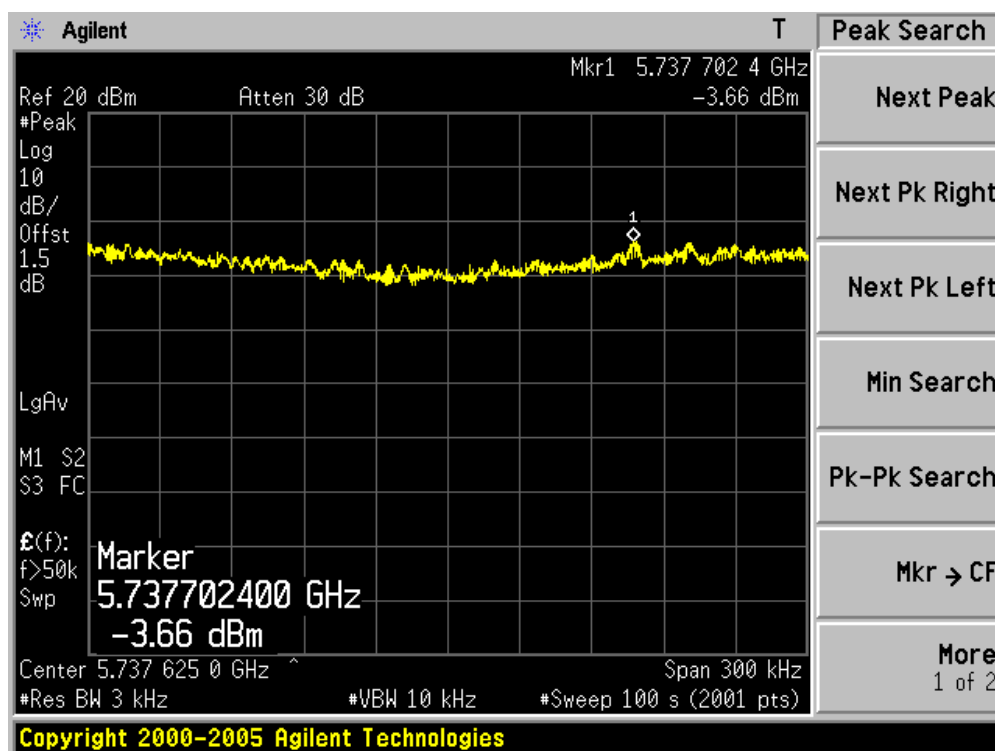
The measurement uncertainty is defined as ± 1.27 dB

10.6. Test Result

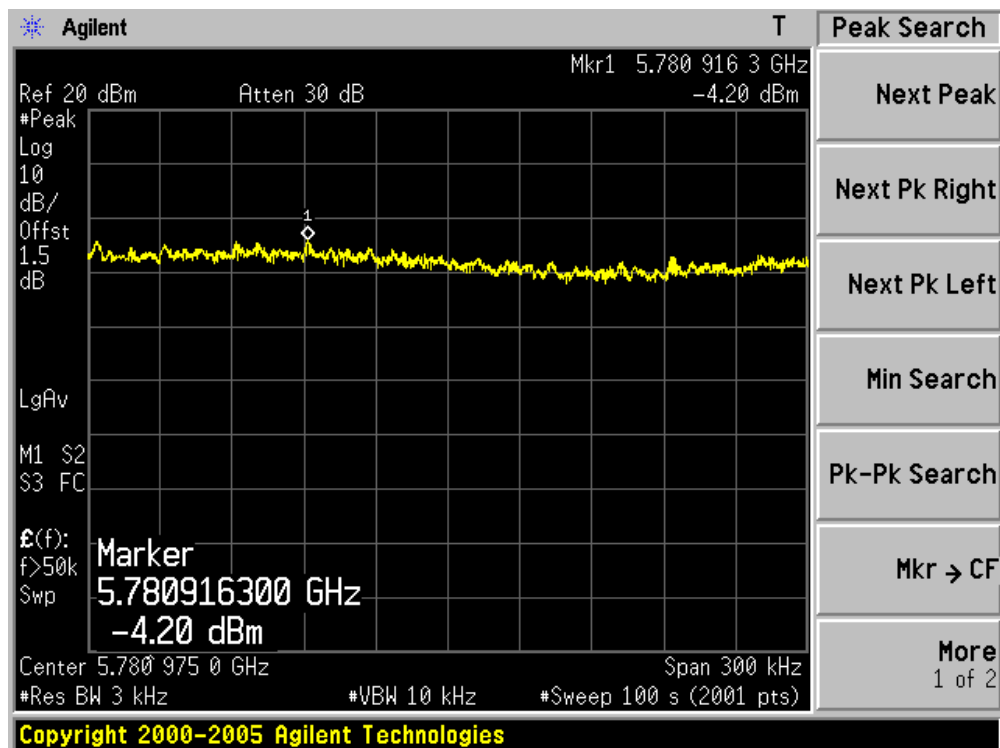
Product	:	Trinity316TDD Plus
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 100)

Channel No.	Frequency (MHz)	Measurement PPSP (dBm)		Total PPSP (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
149	5745	-3.66	N/A	-3.66	8	Pass
157	5785	-4.20	N/A	-4.20	8	Pass
165	5825	-4.27	N/A	-4.27	8	Pass

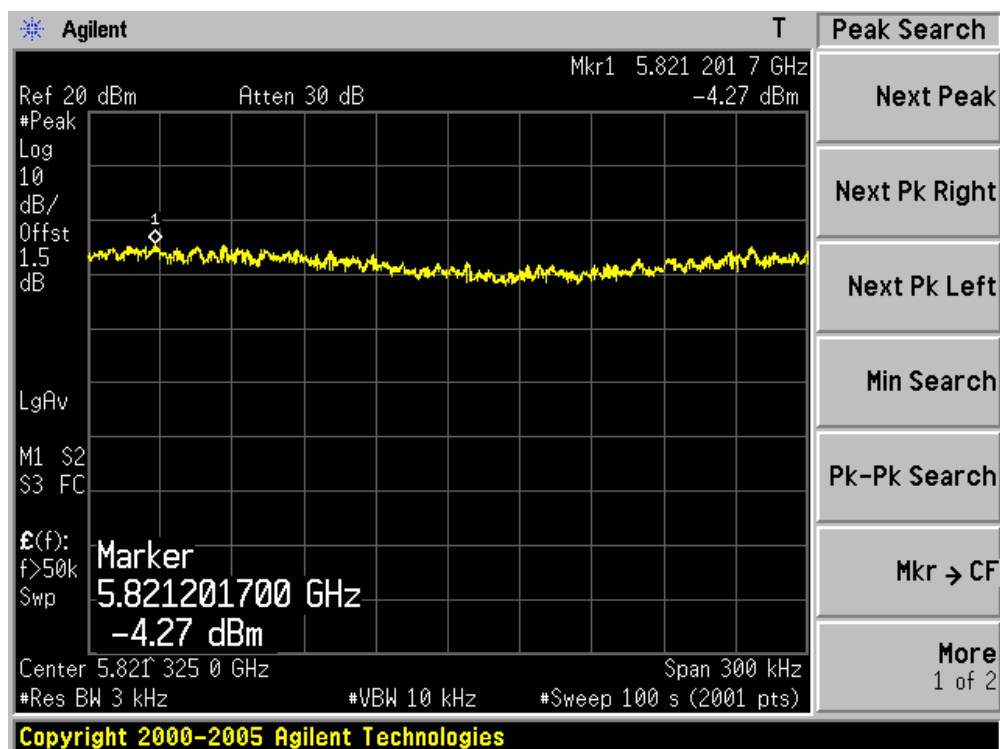
Channel 149 (5745MHz)



Channel 157 (5785MHz)



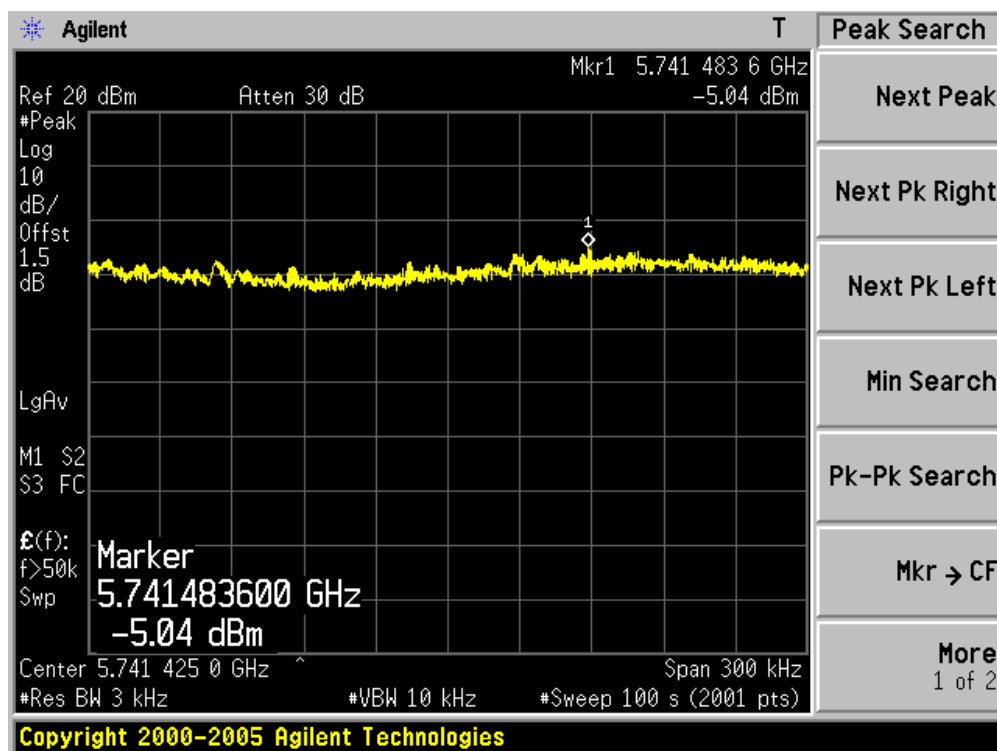
Channel 165 (5825MHz)



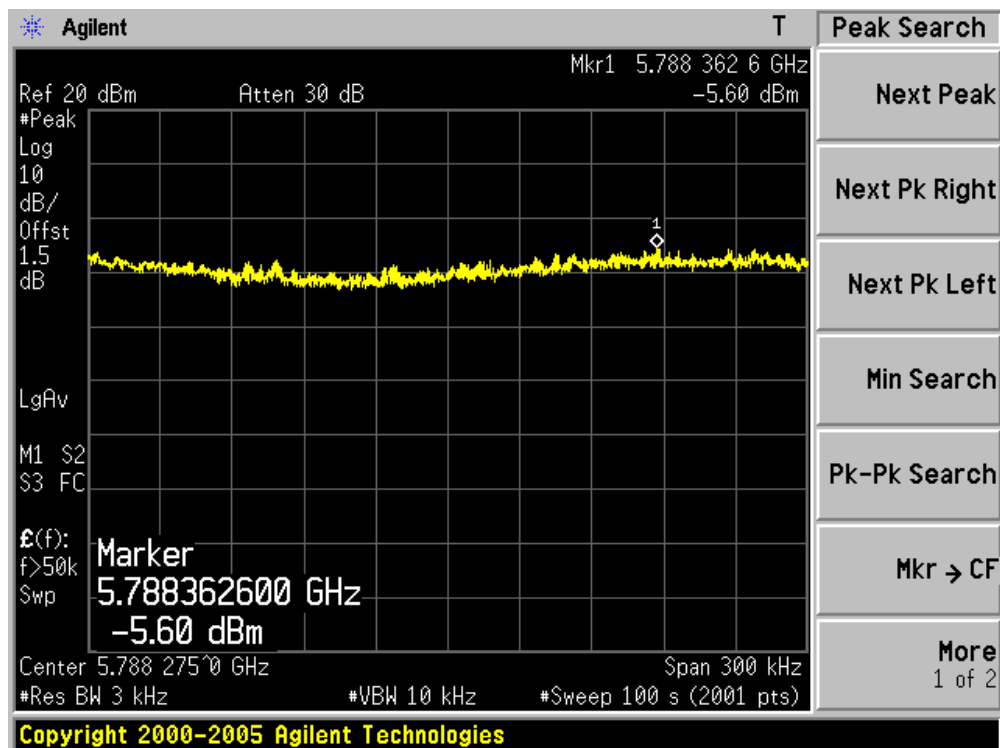
Product	:	Trinity316TDD Plus
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 100)

Channel No.	Frequency (MHz)	Measurement PPSD (dBm)		Total PPSD (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
149	5745	-5.04	N/A	-5.04	8	Pass
157	5785	-5.60	N/A	-5.60	8	Pass
165	5825	-5.18	N/A	-5.18	8	Pass

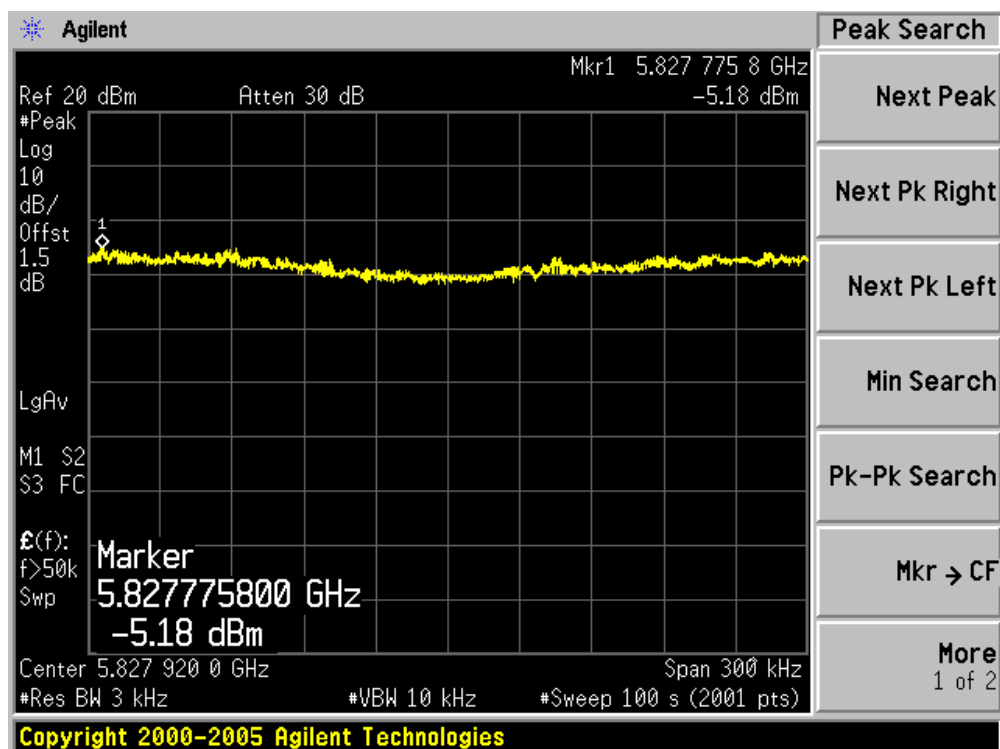
Channel 149 (5745MHz)



Channel 157 (5785MHz)



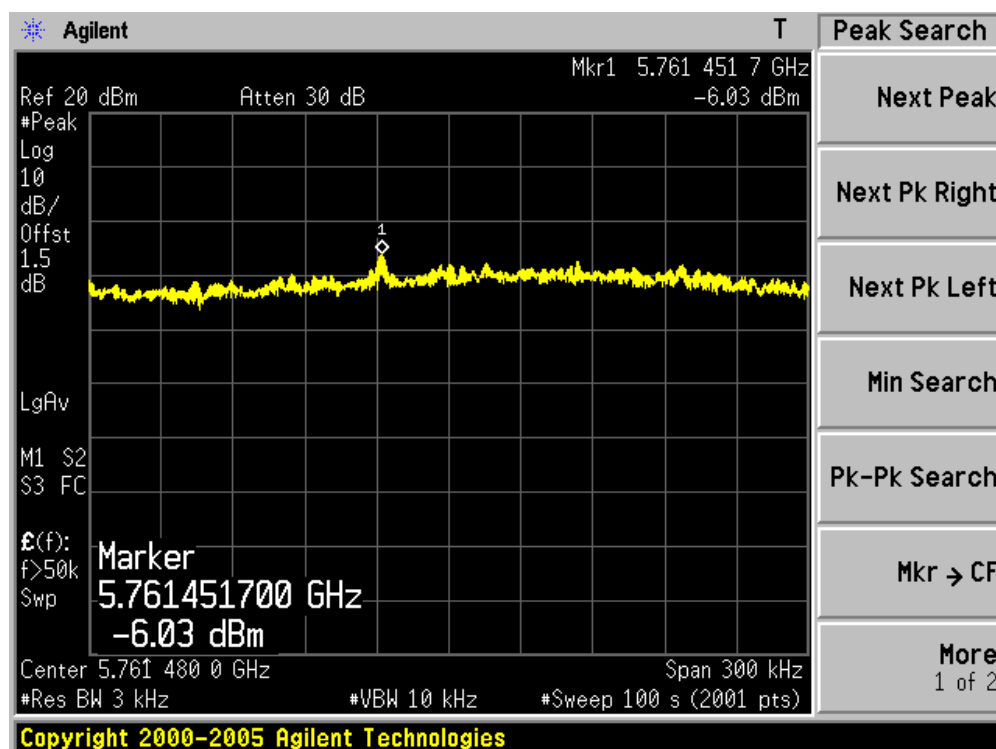
Channel 165 (5825MHz)



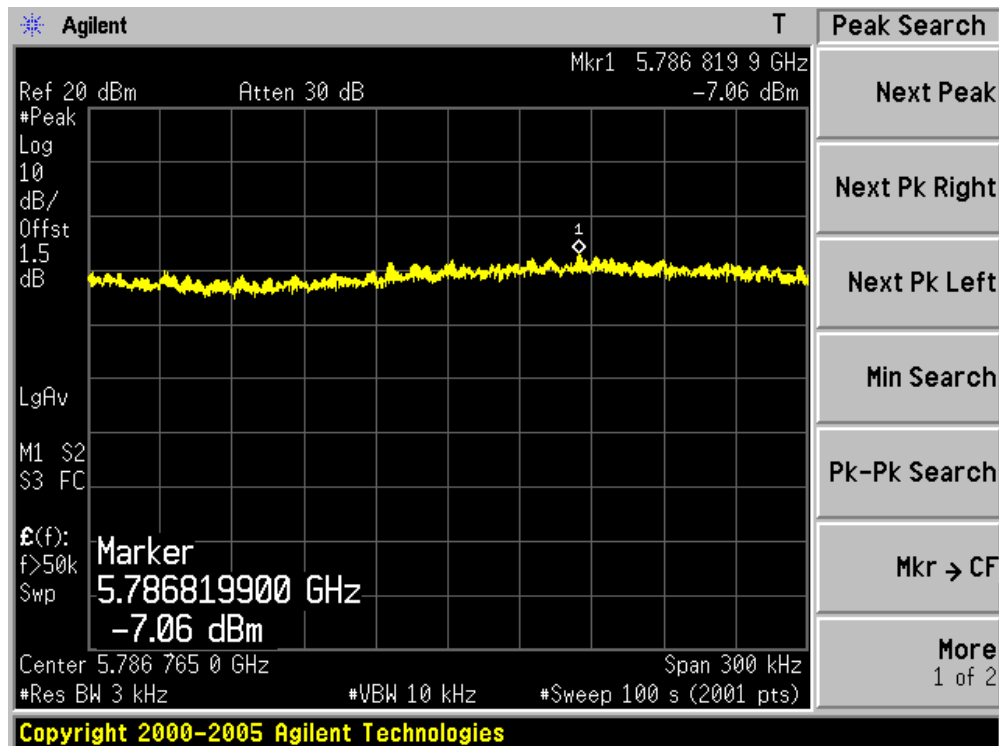
Product	:	Trinity316TDD Plus
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 100)

Channel No.	Frequency (MHz)	Measurement PPSD (dBm)		Total PPSD (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
151	5755	-6.03	N/A	-6.03	8	Pass
159	5795	-7.06	N/A	-7.06	8	Pass

Channel 151 (5755MHz)



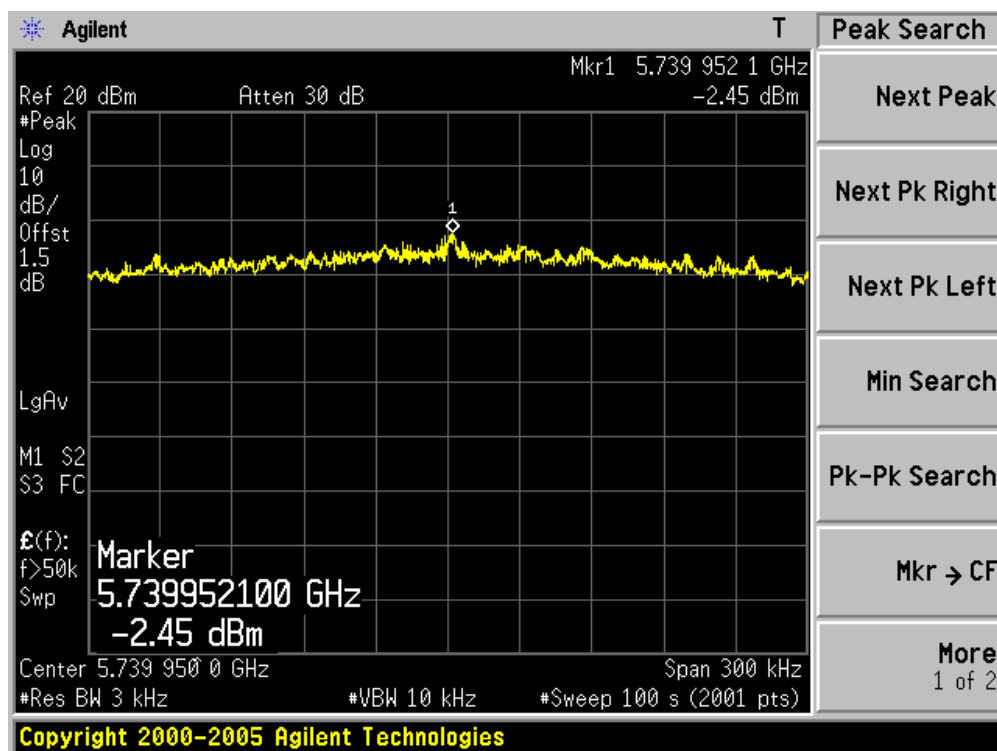
Channel 159 (5795MHz)



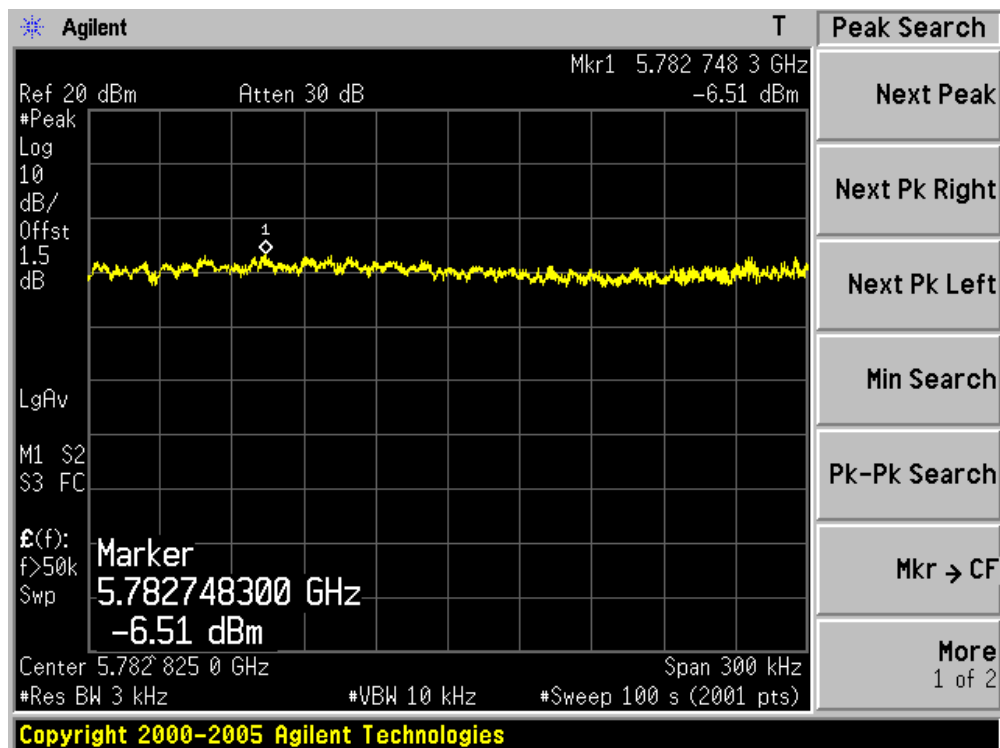
Product	:	Trinity316TDD Plus
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 010)

Channel No.	Frequency (MHz)	Measurement PPSD (dBm)		Total PPSD (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
149	5745	N/A	-2.45	-2.45	8	Pass
157	5785	N/A	-6.51	-6.51	8	Pass
165	5825	N/A	-3.17	-3.17	8	Pass

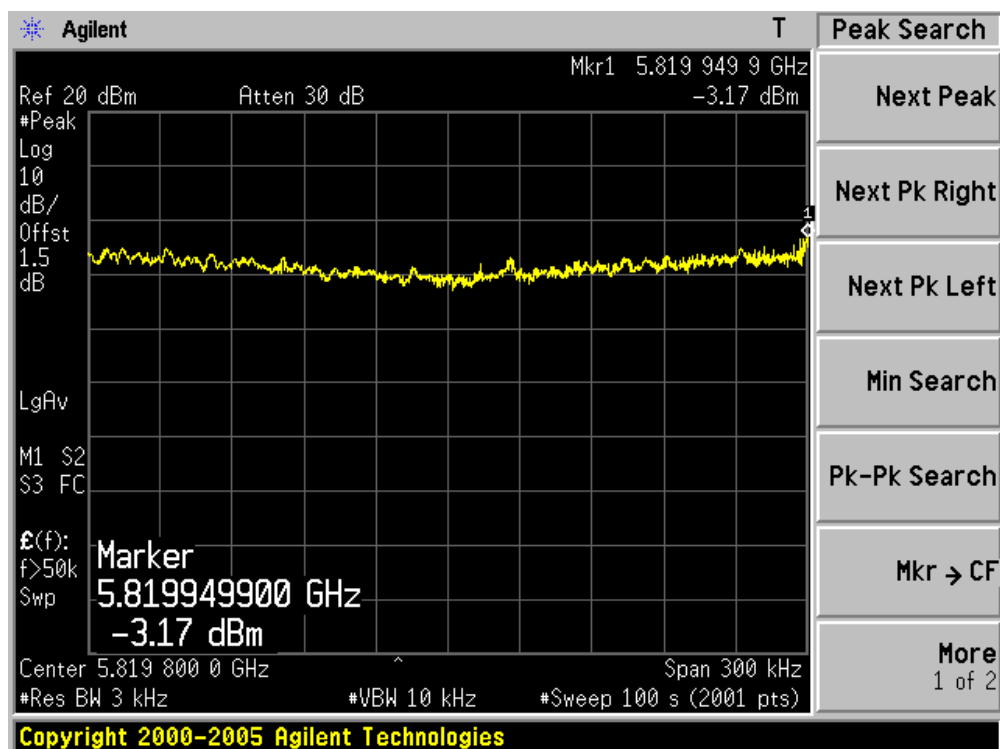
Channel 149 (5745MHz)



Channel 157 (5785MHz)



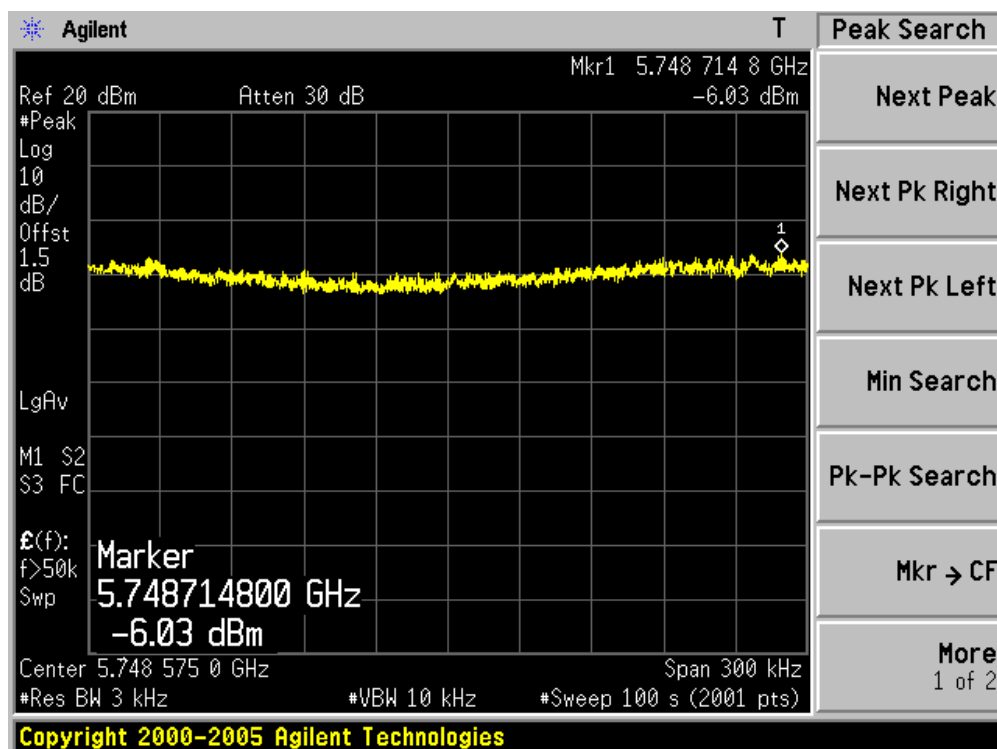
Channel 165 (5825MHz)



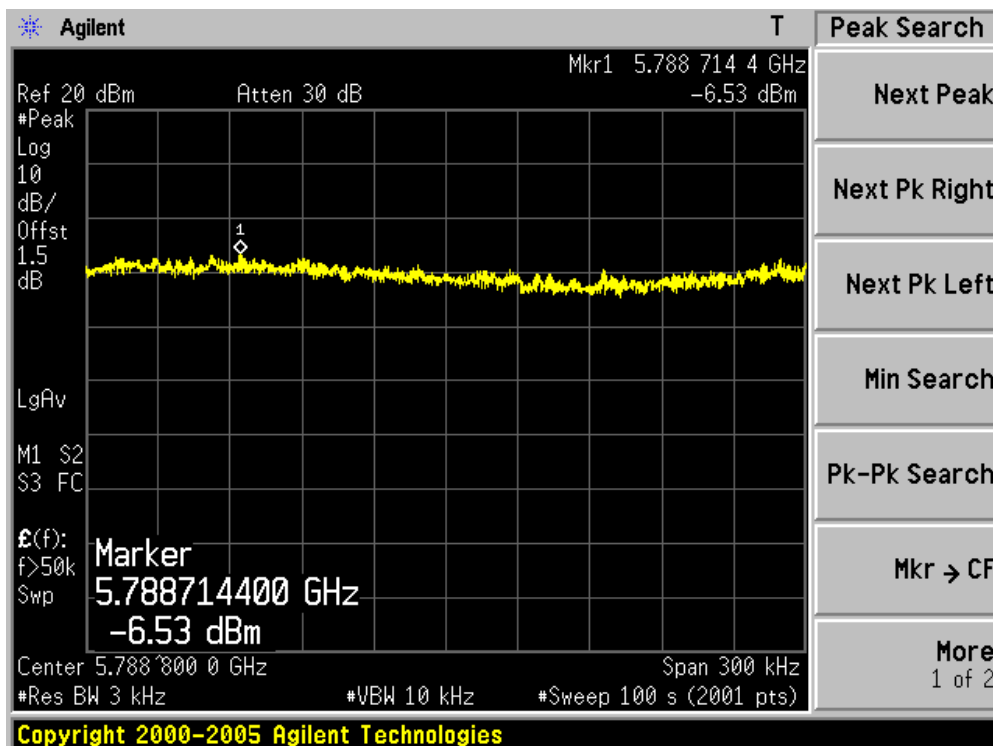
Product	:	Trinity316TDD Plus
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 010)

Channel No.	Frequency (MHz)	Measurement PPSD (dBm)		Total PPSD (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
149	5745	N/A	-6.03	-6.03	8	Pass
157	5785	N/A	-6.53	-6.53	8	Pass
165	5825	N/A	-5.81	-5.81	8	Pass

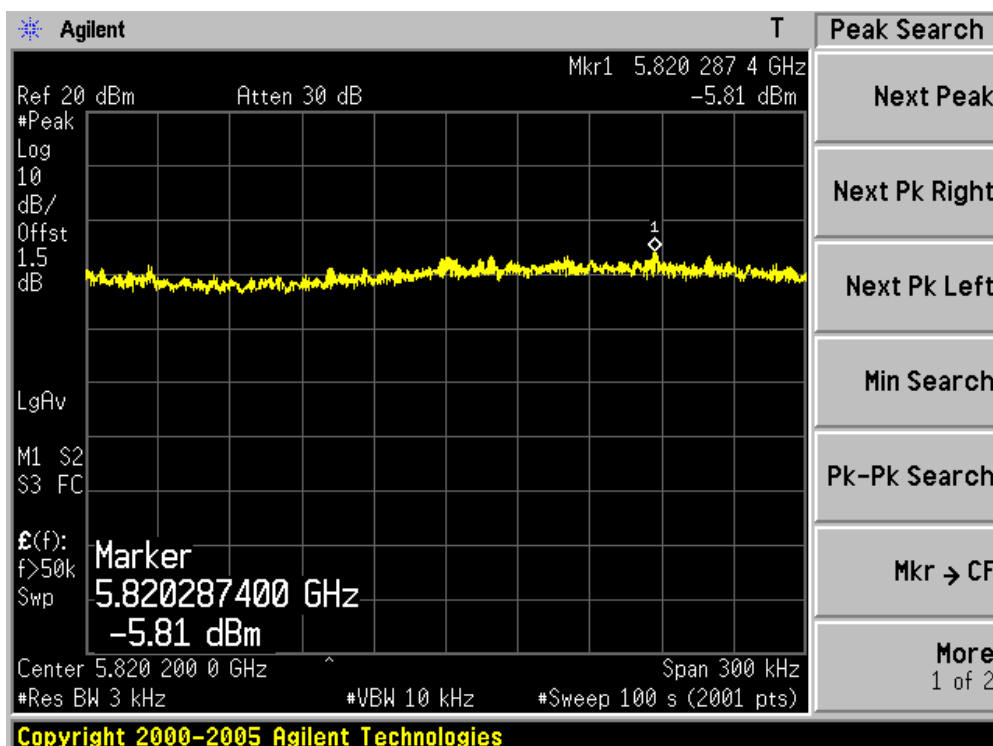
Channel 149 (5745MHz)



Channel 157 (5785MHz)



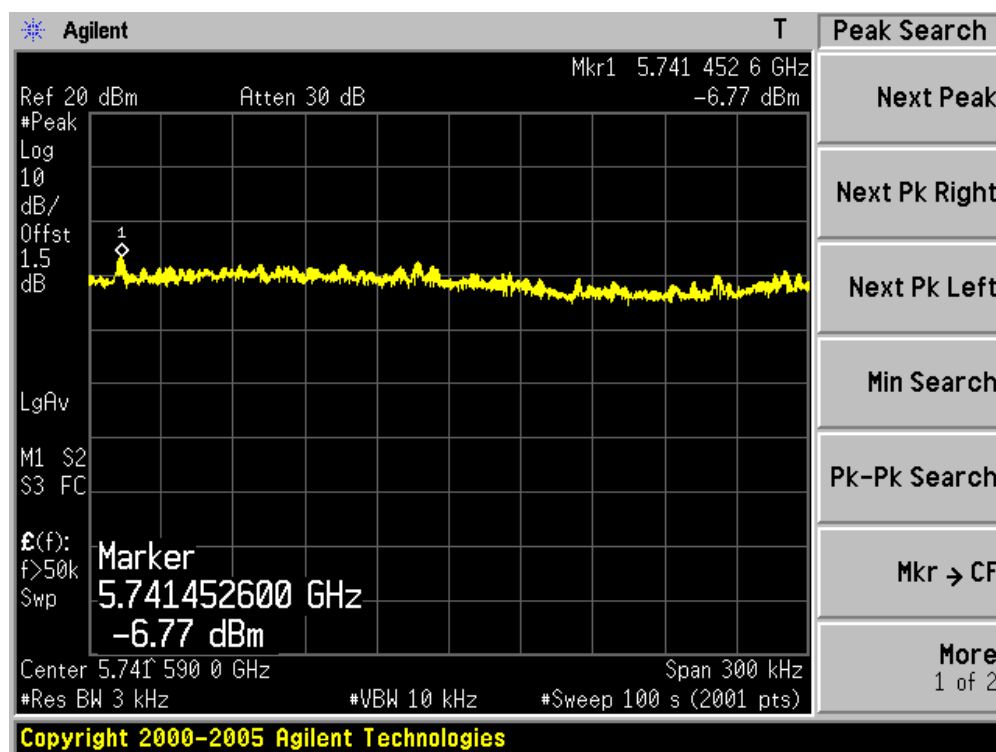
Channel 165 (5825MHz)



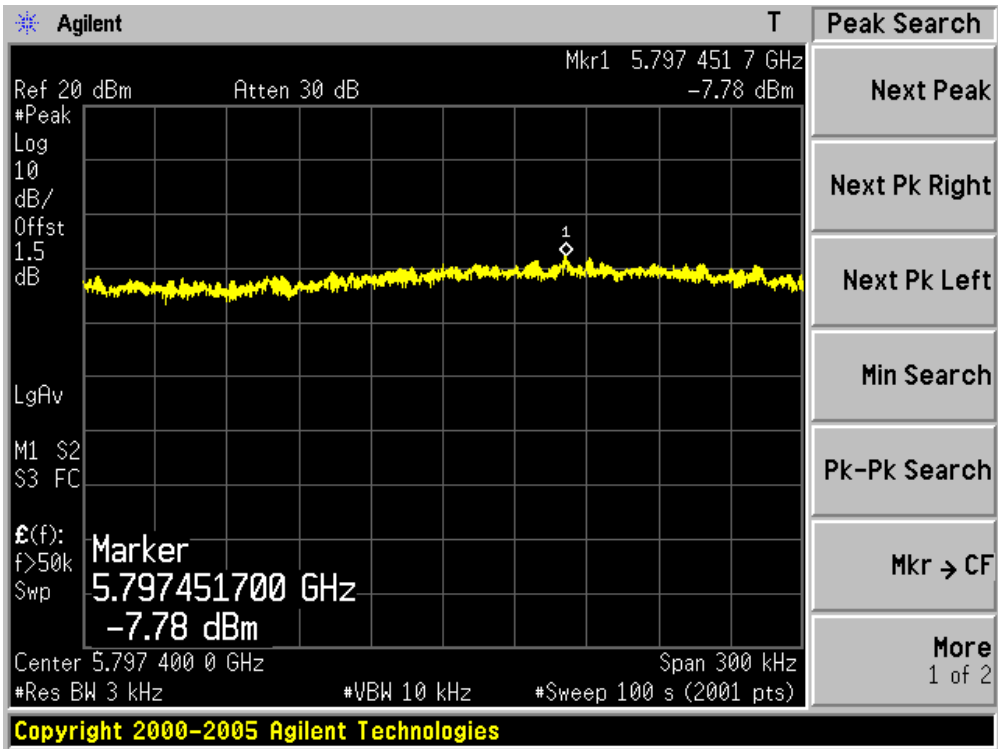
Product	:	Trinity316TDD Plus
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n (40MHz) (Chain 010)

Channel No.	Frequency (MHz)	Measurement PPSP (dBm)		Total PPSP (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
151	5755	N/A	-6.77	-6.77	8	Pass
159	5795	N/A	-7.78	-7.78	8	Pass

Channel 151 (5755MHz)



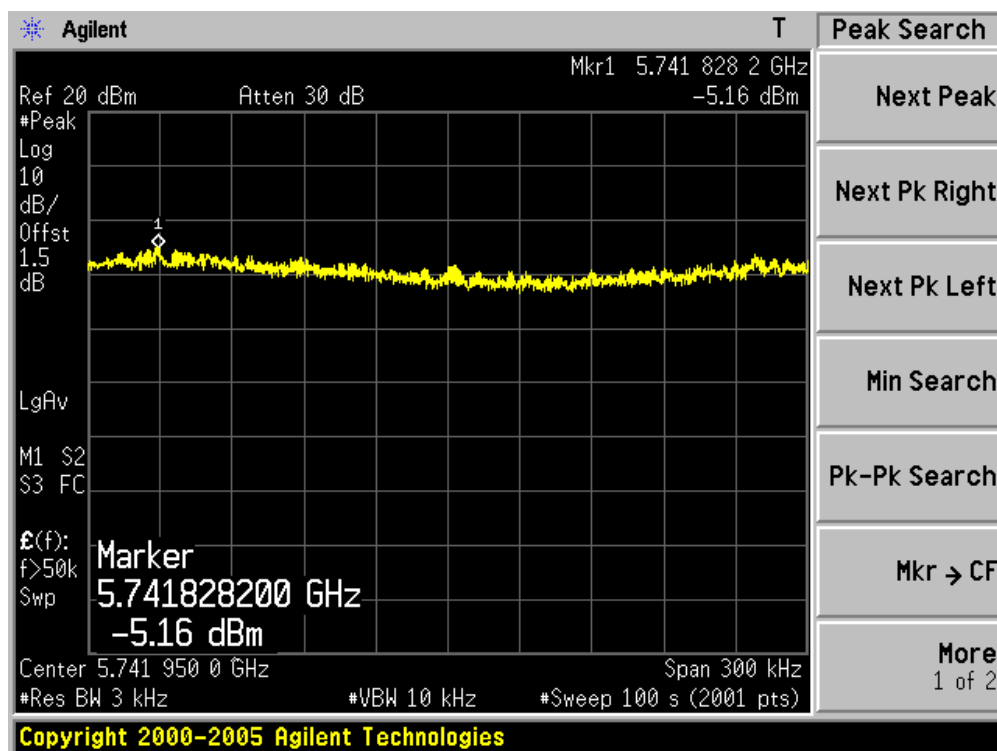
Channel 159 (5795MHz)



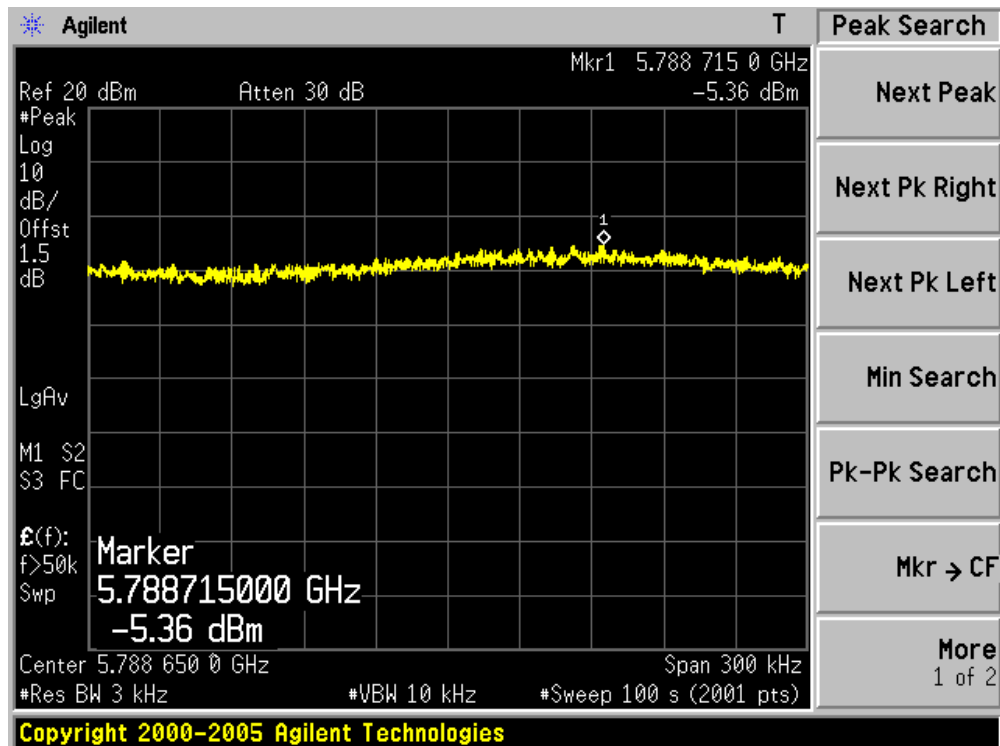
Product	:	Trinity316TDD Plus
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n (20MHz) (Chain 110)

Channel No.	Frequency (MHz)	Measurement PPSD (dBm)		Total PPSD (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
149	5745	-5.16	-5.76	-2.44	8	Pass
157	5785	-5.36	-6.01	-2.66	8	Pass
165	5825	-4.65	-6.56	-2.49	8	Pass

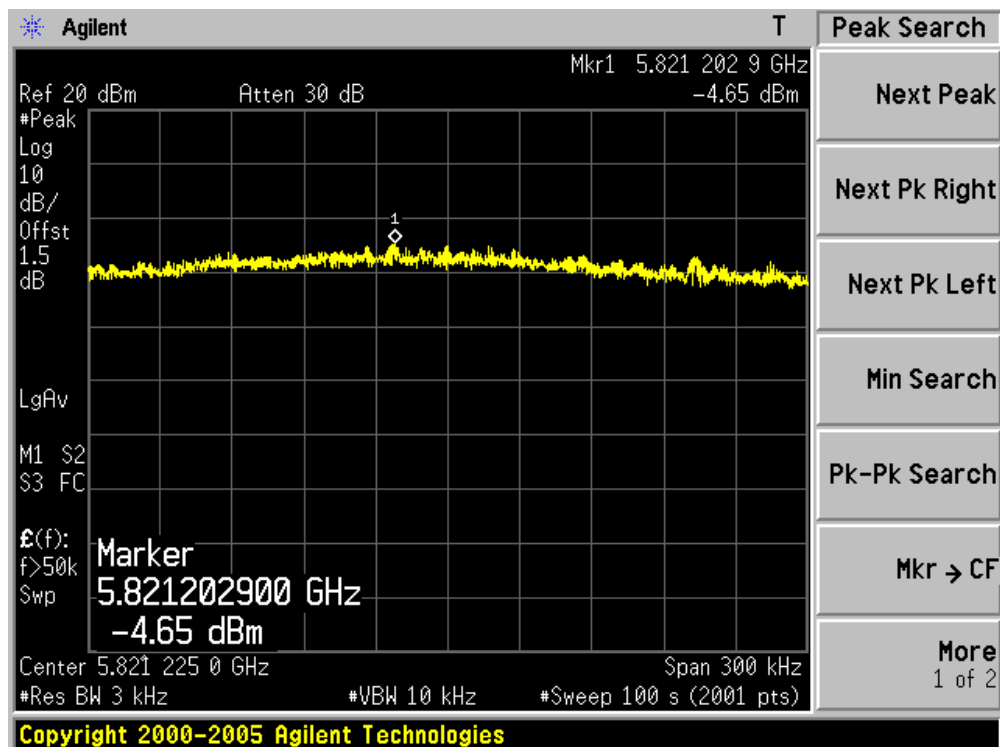
Channel 149 (5745MHz) – Chain 100



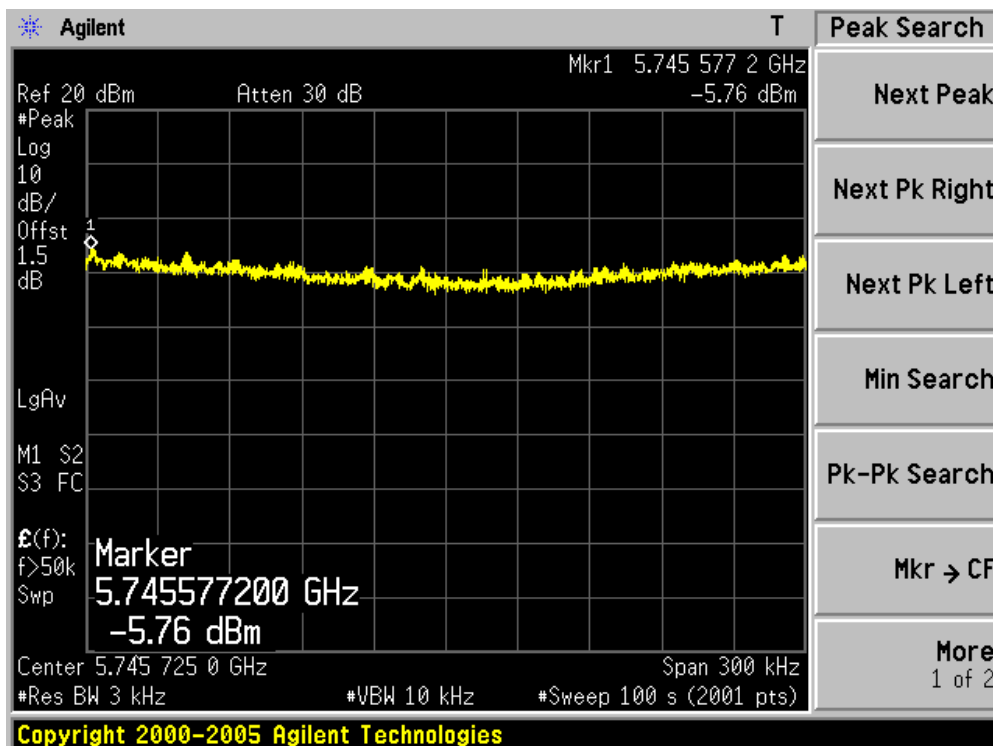
Channel 157 (5785MHz) – Chain 100



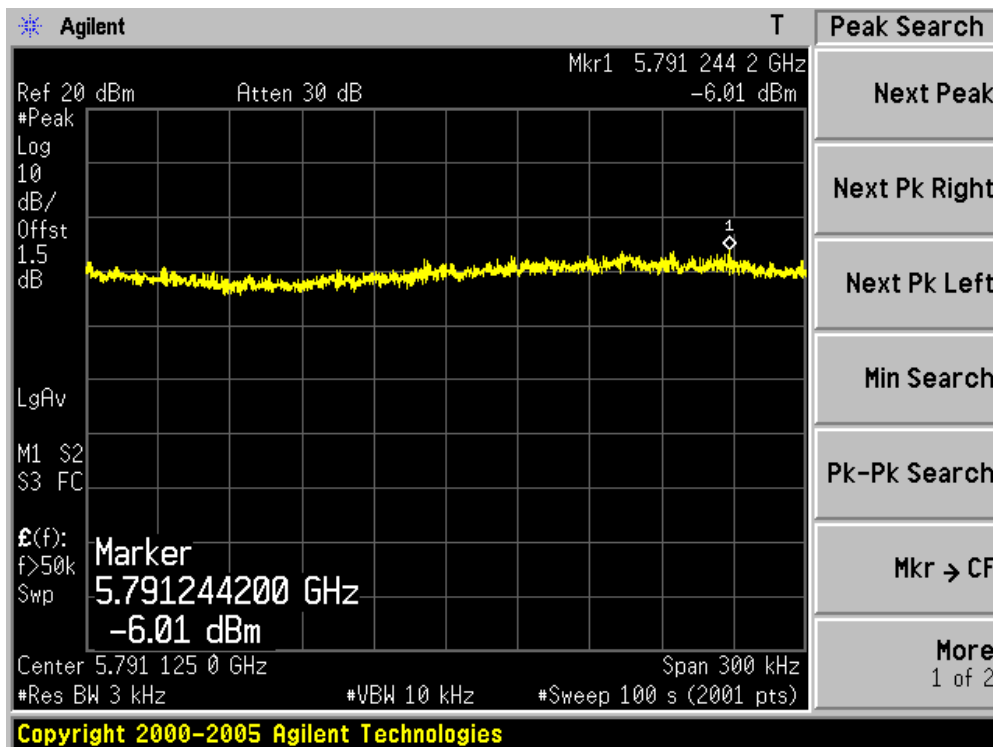
Channel 165 (5825MHz) – Chain 100



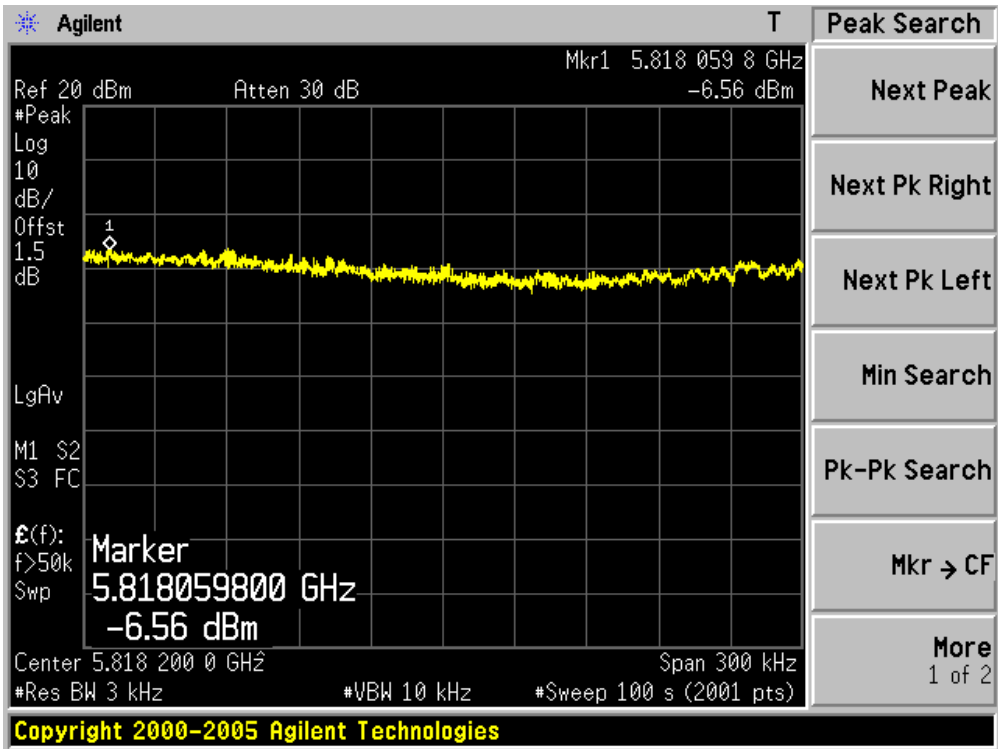
Channel 149 (5745MHz) – Chain 010



Channel 157 (5785MHz) – Chain 010



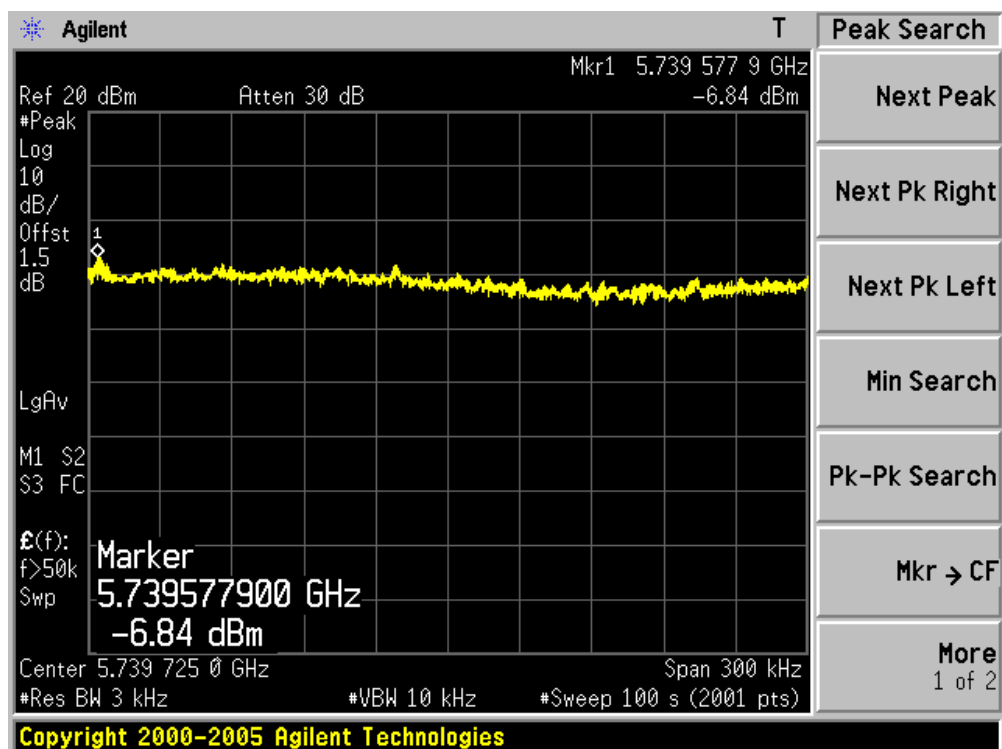
Channel 165 (5825MHz) – Chain 010



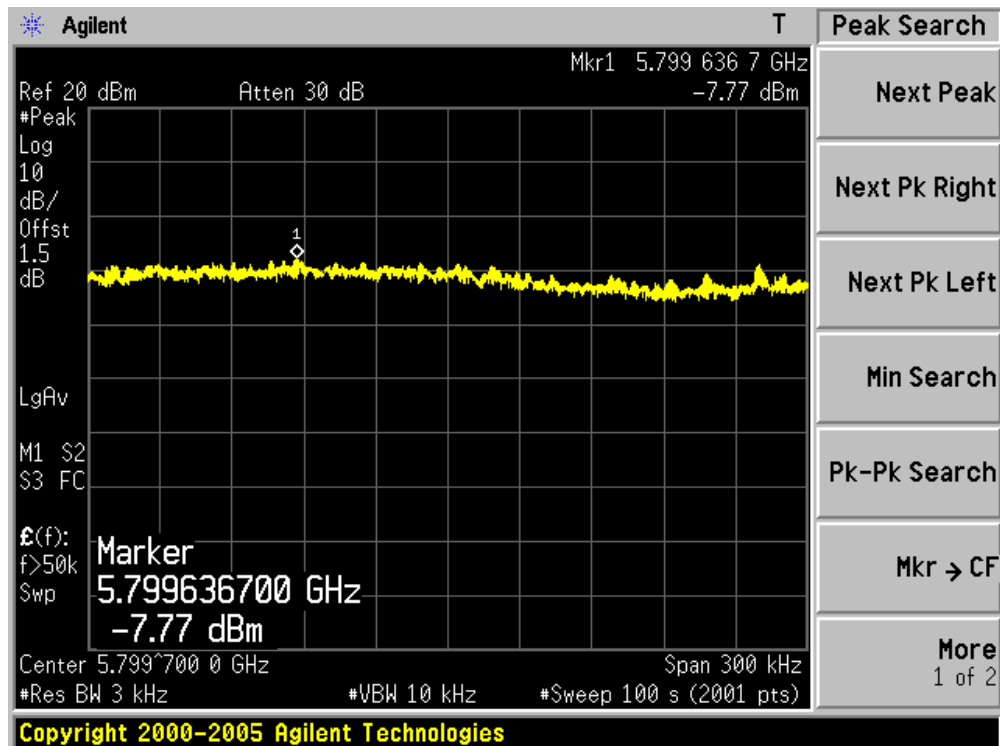
Product	:	Trinity316TDD Plus
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n (40MHz) (Chain 110)

Channel No.	Frequency (MHz)	Measurement PPSP (dBm)		Total PPSP (dBm)	Limit (dBm)	Result
		Chain 100	Chain 010			
151	5755	-6.84	-6.07	-3.43	8	Pass
159	5795	-7.77	-8.30	-5.02	8	Pass

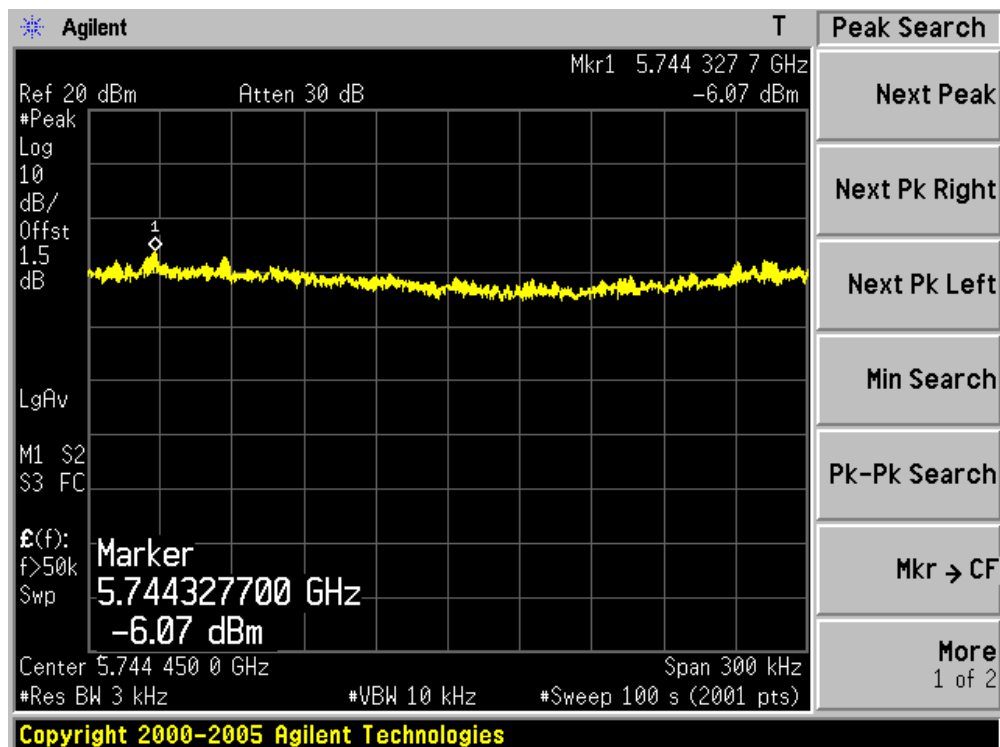
Channel 151 (5755MHz) – Chain 100



Channel 159 (5795MHz) – Chain 100



Channel 151 (5755MHz) – Chain 010



Channel 159 (5795MHz) – Chain 010

