

FCC Part15.247 Test Report

Product Name : High Definition Digital
Transport Adapter
Model No. : DC750
FCC ID : QISDC750

Applicant : HUAWEI TECHNOLOGIES CO.,LTD
Address : Administration Building, Huawei Base, Bantian,
Longgang District, Shenzhen 518129

Date of Receipt : 02/11/2011
Test Date : 03/11/2011~ 10/11/2011
Issued Date : 11/11/2011
Report No. : 11BS006R-RF-US-P05V01
Report Version : V2.1

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.

This report must not be used to claim product endorsement by TAF, NVLAP or any agency of the Government.

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Test Report Certification

Issued Date : 11/11/2011

Report No. : 11BS006R-RF-US-P05V01



Product Name : High Definition Digital Transport Adapter
 Applicant : HUAWEI TECHNOLOGIES CO.,LTD
 Address : Administration Building, Huawei Base, Bantian,
 Longgang District, Shenzhen 518129
 Manufacturer : HUAWEI TECHNOLOGIES CO.,LTD
 Address : Administration Building, Huawei Base, Bantian,
 Longgang District, Shenzhen 518129
 Model No. : DC750
 FCC ID : QISDC750
 EUT Voltage : 5V DC
 Brand Name : HUAWEI, SuddenLink
 Applicable Standard : FCC CFR Title 47 Part 15 Subpart C: 2009
 ANSI C63.4: 2009; ANSI C63.10: 2009
 Test Result : Complied
 Performed Location : Suzhou EMC Laboratory
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 FCC Registration Number: 800392

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Laboratory Information

We, **QuietTek 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

The related certificate for our laboratories about the test site and management system can be downloaded from QuietTek Corporation's Web Site : <http://www.quietek.com/tw/ctg/cts/accreditations.htm>
The address and introduction of QuietTek 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	High Definition Digital Transport Adapter
Brand Name	HUAWEI, SuddenLink
Model No.	DC750
EUT Voltage	5V DC
ZigBee	
Modulation Technology	O-QPSK
Pulse Shaping Filter	Half sine
Bit Rate	250Kb/s
Chip rate	2M chip/s
Channel Control	Auto
Antenna Type	Internal
Peak Antenna Gain	4.45dBi
AC Adapter #1	Brand: HUAWEI Manufacturer: Fuhua Electronic Co.,Ltd. M/N: HW-050100U6W Input: 100-240Vac,50/60Hz, 0.2A Output: 5Vdc, 1A Power Line: 1.5m non-shielded cable without core.
AC Adapter #2	Brand: HUAWEI Manufacturer: Shenzhen OCT Xinqiao Technology Co.,Ltd. M/N: HW-050100U6W Input: 100-240Vac,50/60Hz, 0.2A Output: 5Vdc, 1A Power Line:1.5m non-shielded cable without core.

Note: In this report, we choose AC Adapter #1 for all RF testing.

DC750 Working Frequency of Each Channel

Channel	Frequency
15	2425 MHz
20	2450 MHz
25	2475 MHz

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
Mode 1: Transmit

Note:

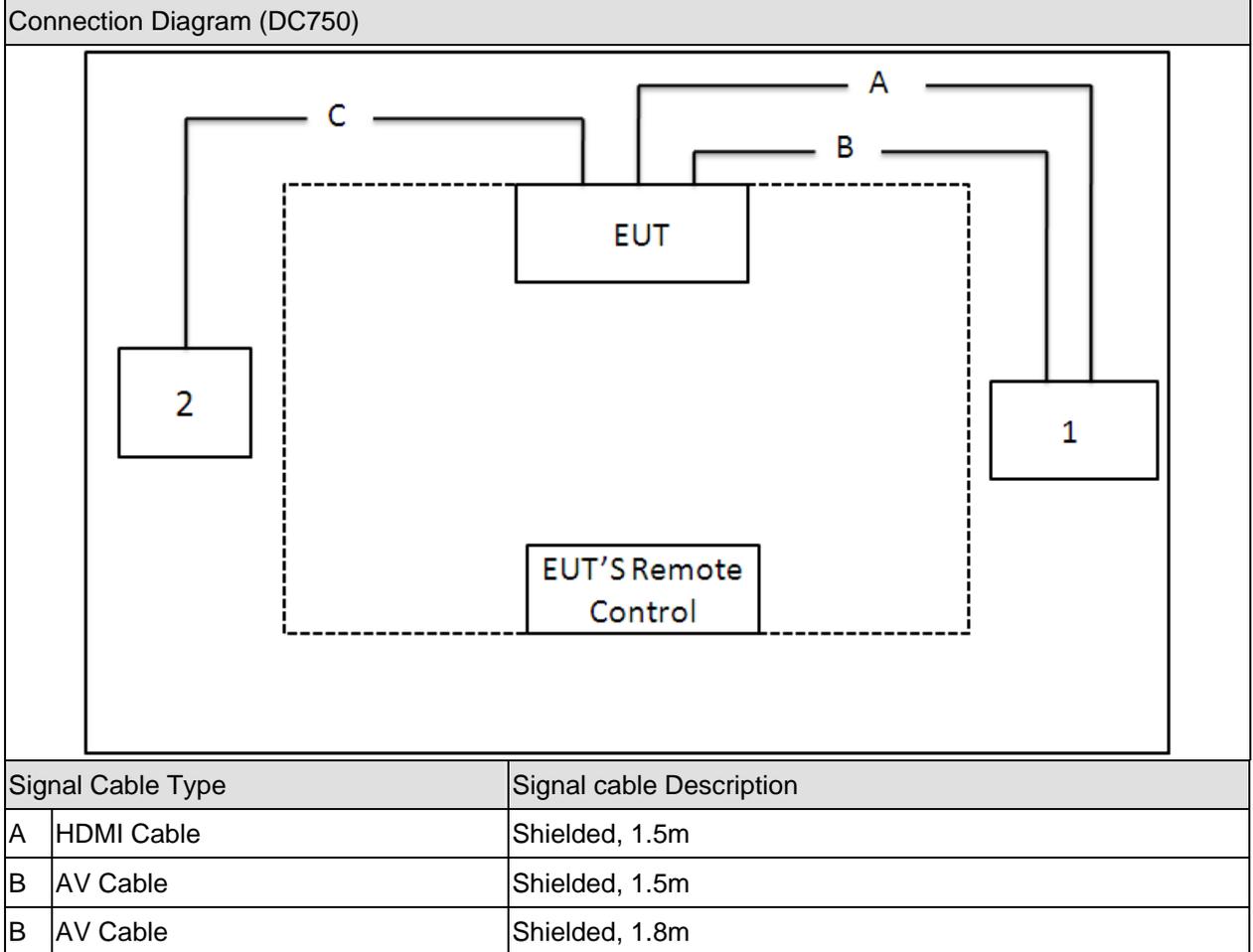
1. Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.
2. This device is a composite device in accordance with Part 15 Subpart B regulations. The function for the receiver was measured and made a test report that the report number is 11BS006R-RF-US-P01V02.

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	TV	Great Wall	V2231	N/A	Non-Shielded, 1.8m
2	DTV Signal Generator	Ya Shun	MPS-200	N/A	Non-Shielded, 1.8m

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 all equipment.
3	Excute some commands to make EUT transmitter.

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: 2009 Section 15.207	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2009 Section 15.209	Yes	No
RF Antenna Conducted Spurious	FCC CFR Title 47 Part 15 Subpart C: 2009 Section 15.247(d)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2009 15.247(d)	Yes	No
Operation Frequency Range of 20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2009 15.215(c)	Yes	No
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2009 Section 15.247(a)(2)	Yes	No
Power Output	FCC CFR Title 47 Part 15 Subpart C: 2009 Section 15.247(b)(3)	Yes	No
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2009 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

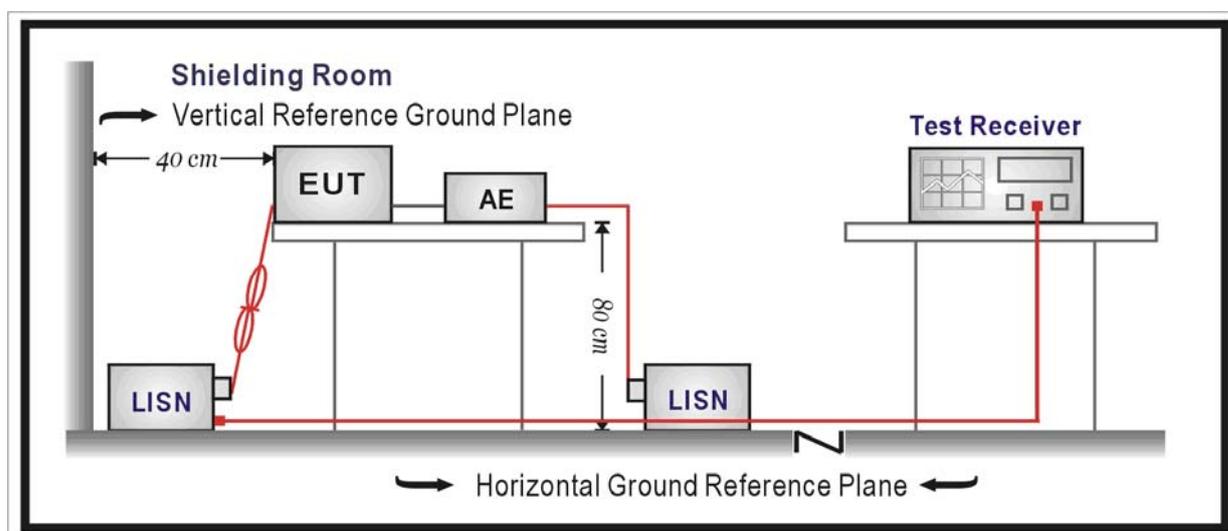
3.1. Test Equipment

Conducted Emission / TR-1

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100726	2012.04.23
Two-Line V-Network	R&S	ENV216	100043	N/A
Two-Line V-Network	R&S	ENV216	100044	N/A
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2012.05.05
50ohm Termination	SHX	TF2	07081401	2012.04.20
Temperature/Humidity Meter	zhicheng	ZC1-2	TR1-TH	2012.01.14

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.

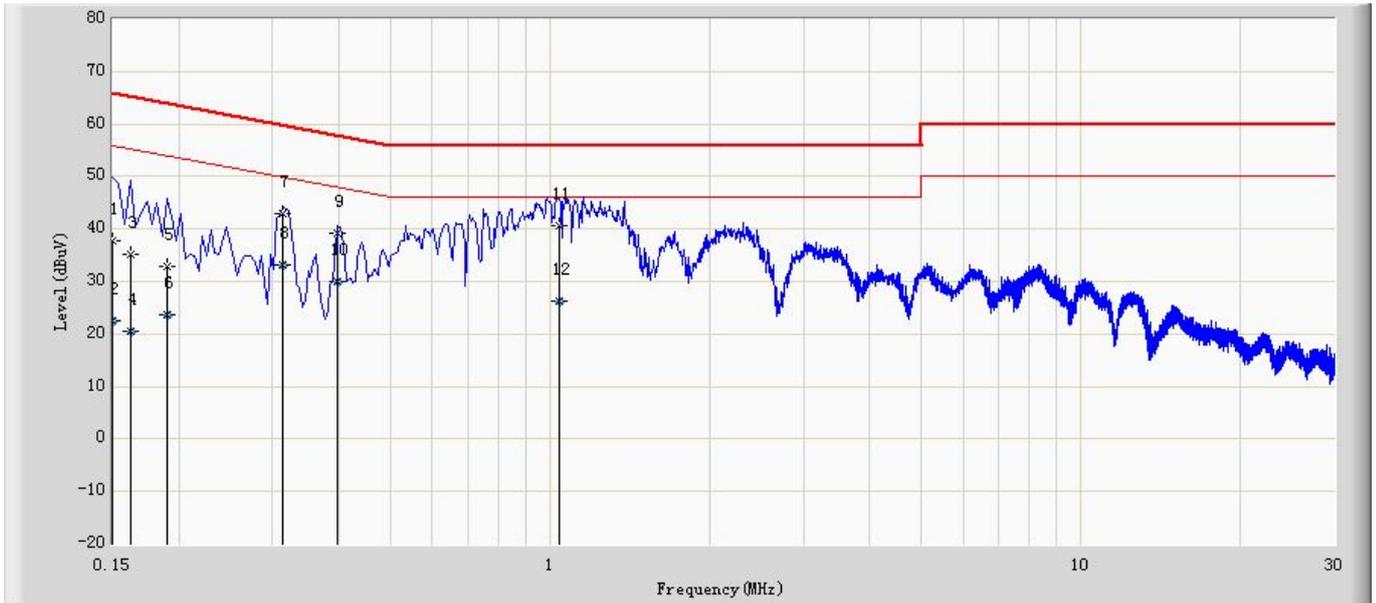
The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

3.5. Uncertainty

The measurement uncertainty is defined as ± 2.02 dB

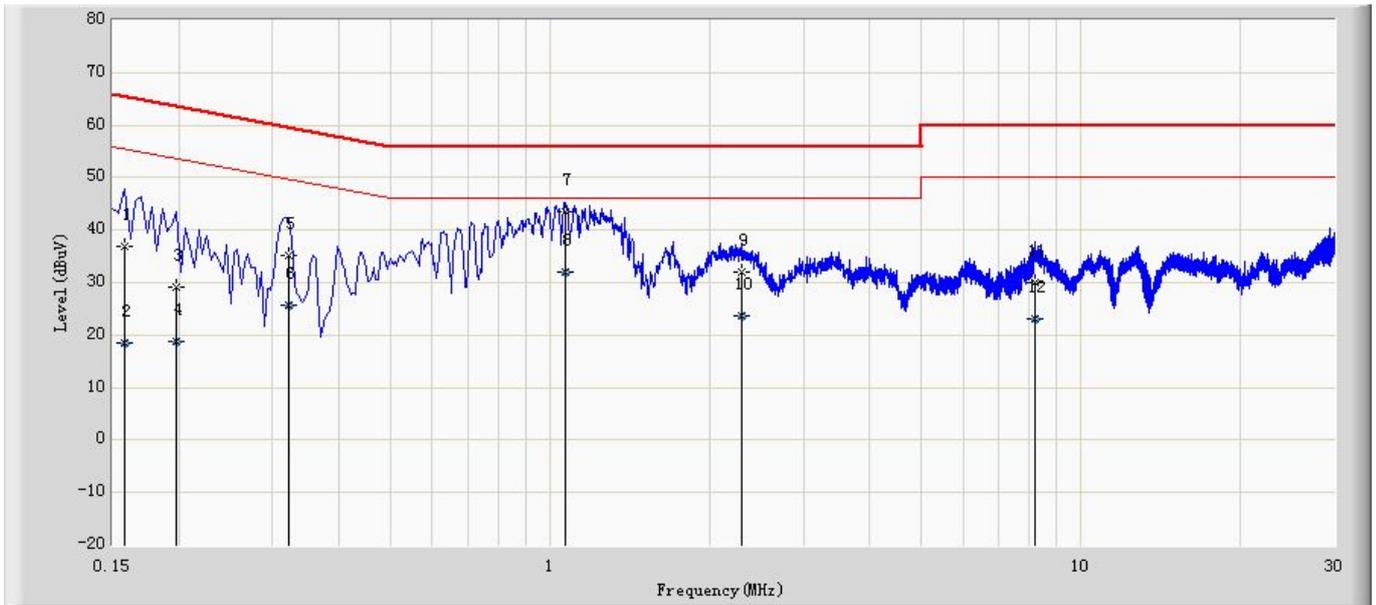
3.6. Test Result

Profile: 11BS006R	Page No.: 1
Engineer: Vilkk	
Site: TR1	Time: 2011/11/08 - 11:43
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101043(0.009-30MHz)	Polarity: Line
EUT: High Definition Digital Transport Adapter	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		0.150	37.849	28.261	-28.151	66.000	9.588	QP
2		0.150	22.560	12.972	-33.440	56.000	9.588	AV
3		0.162	35.117	25.528	-30.244	65.361	9.589	QP
4		0.162	20.481	10.892	-34.880	55.361	9.589	AV
5		0.190	32.959	23.305	-31.077	64.037	9.654	QP
6		0.190	23.651	13.996	-30.386	54.037	9.654	AV
7		0.314	42.866	33.186	-16.998	59.864	9.680	QP
8		0.314	33.231	23.551	-16.633	49.864	9.680	AV
9		0.398	39.283	29.600	-18.612	57.895	9.683	QP
10		0.398	29.925	20.242	-17.970	47.895	9.683	AV
11	*	1.042	40.491	30.809	-15.509	56.000	9.681	QP
12		1.042	26.173	16.491	-19.827	46.000	9.681	AV

Profile: 11BS006R	Page No.: 2
Engineer: Vilik	
Site: TR1	Time: 2011/11/08 - 11:49
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101043(0.009-30MHz)	Polarity: Neutral
EUT: High Definition Digital Transport Adapter	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		0.158	36.754	27.006	-28.815	65.568	9.748	QP
2		0.158	18.571	8.823	-36.998	55.568	9.748	AV
3		0.198	29.023	19.354	-34.671	63.694	9.669	QP
4		0.198	18.710	9.041	-34.984	53.694	9.669	AV
5		0.322	35.120	25.466	-24.535	59.655	9.654	QP
6		0.322	25.593	15.939	-24.062	49.655	9.654	AV
7	*	1.066	43.373	33.654	-12.627	56.000	9.719	QP
8		1.066	32.085	22.365	-13.915	46.000	9.719	AV
9		2.290	32.087	22.354	-23.913	56.000	9.733	QP
10		2.290	23.535	13.802	-22.465	46.000	9.733	AV
11		8.186	29.893	19.946	-30.107	60.000	9.948	QP
12		8.186	23.127	13.179	-26.873	50.000	9.948	AV

4. Radiated Emission

4.1. Test Equipment

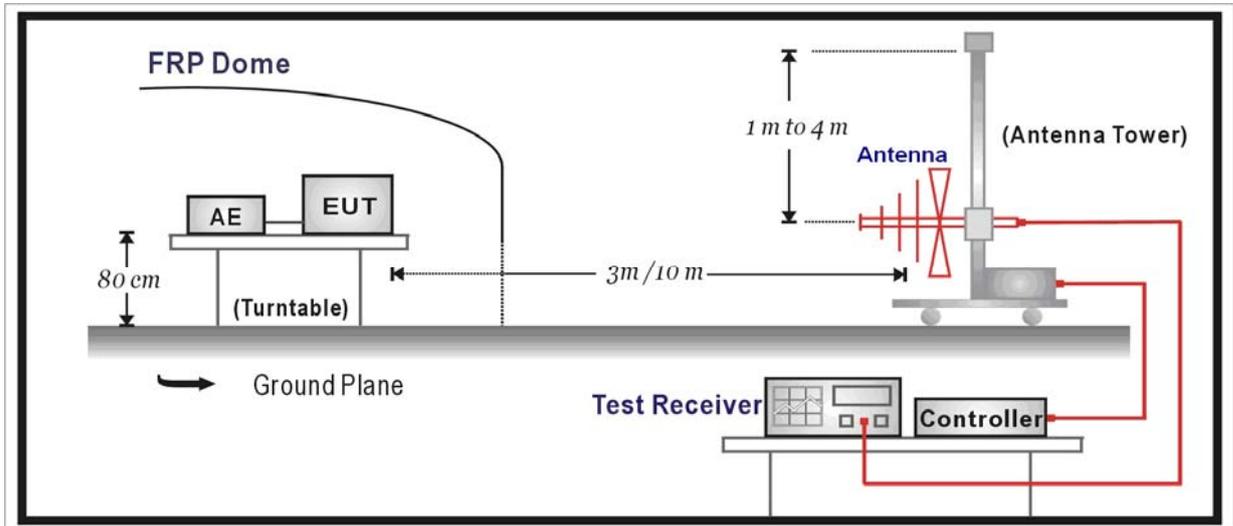
Radiated Emission / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2012.04.23
EMI Test Receiver	R&S	ESCI	100906	2012.01.15
Preamplifier	Quietek	AP-180C	CHM-0602013	2012.03.07
Preamplifier	Quietek	AP-040G	CHM-0906001	2012.05.05
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2012.10.18
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2012.06.11
High-Pass Filter	Wainwright	WHKX2.8/18G-12SS	SN1	2012.03.03
High-Pass Filter	Wainwright	WHKX7.0/18G-8SS	SN16	2012.03.03
Lowpass Filter	Wainwright	WLKS4500-9SS	SN2	2012.03.03
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC5-TH	2012.01.14

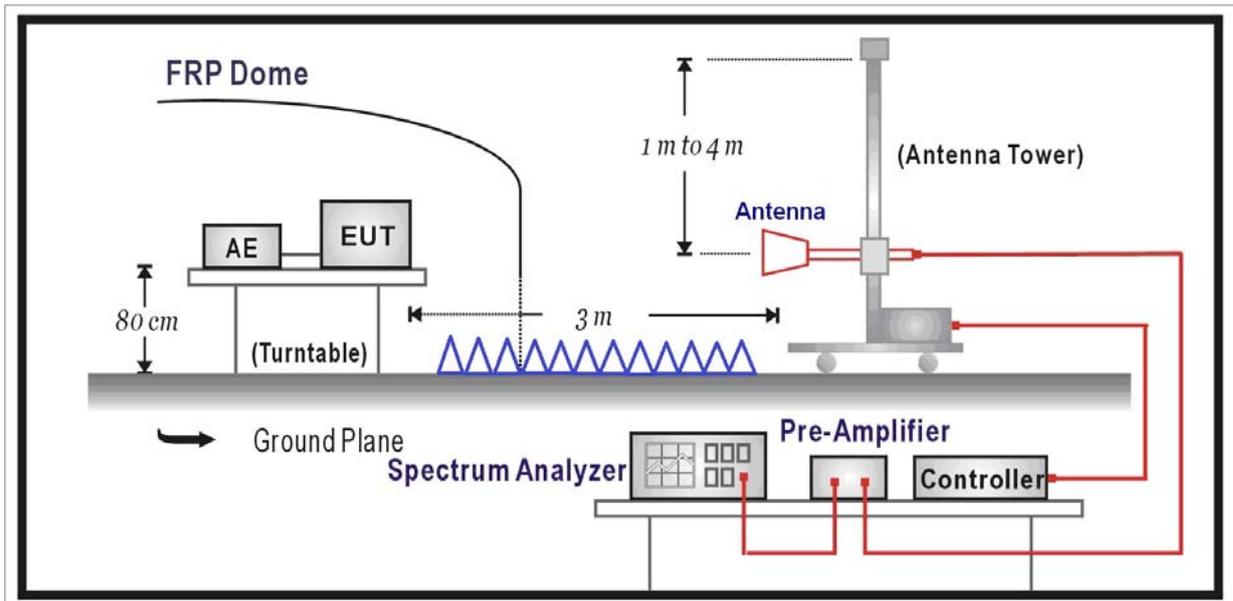
Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

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

Mode 1: Transmit

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
15	H	2425.4	66.7	31.2	97.9	Fundamental	/	PK
	V	36.8	13.0	14.8	27.8	40.0	-12.2	QP
	V	455.0	18.8	18.4	37.2	46.0	-8.8	QP
	V	3252.5	60.4	-14.9	45.5	54(Note1)	-8.5	PK
	V	4850.5	55.9	-10.7	45.2	54(Note1)	-8.8	PK
	V	6933.0	55.2	-5.6	49.6	54(Note1)	-4.4	PK
	H	24000.0	59.1	-8.9	50.2	54(Note1)	-3.8	PK
20	H	2450.2	66.1	31.4	97.5	Fundamental	/	PK
	V	194.4	12.5	10.3	22.8	43.5	-20.7	QP
	V	511.2	8.7	19.5	28.2	46	-17.8	QP
	V	3465.0	56.4	-14.5	41.9	54(Note1)	-12.1	PK
	V	4901.5	62.4	-10.6	51.8	54(Note1)	-2.2	PK
	H	7349.5	63.1	-2.9	60.2	97.5	6.2	PK
	H	7349.5	49.6	-2.8	46.8	54	-7.2	AV
	H	24000.0	59.1	-8.9	50.2	54(Note1)	-3.8	PK
25	H	2474.5	65.9	31.3	97.2	Fundamental	/	PK
	V	455.0	18.8	18.4	37.2	46	-8.8	QP
	V	875.1	7.5	23.4	30.9	46	-15.1	QP
	H	3465.0	57.0	-14.5	42.5	54(Note1)	-11.5	PK
	V	4952.5	55.6	-10.6	45.0	54(Note1)	-9	PK
	V	6933.0	55.9	-5.6	50.3	54(Note1)	-3.7	PK
	H	24000.0	59.1	-8.9	50.2	54(Note1)	-3.8	PK

Note 1: 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

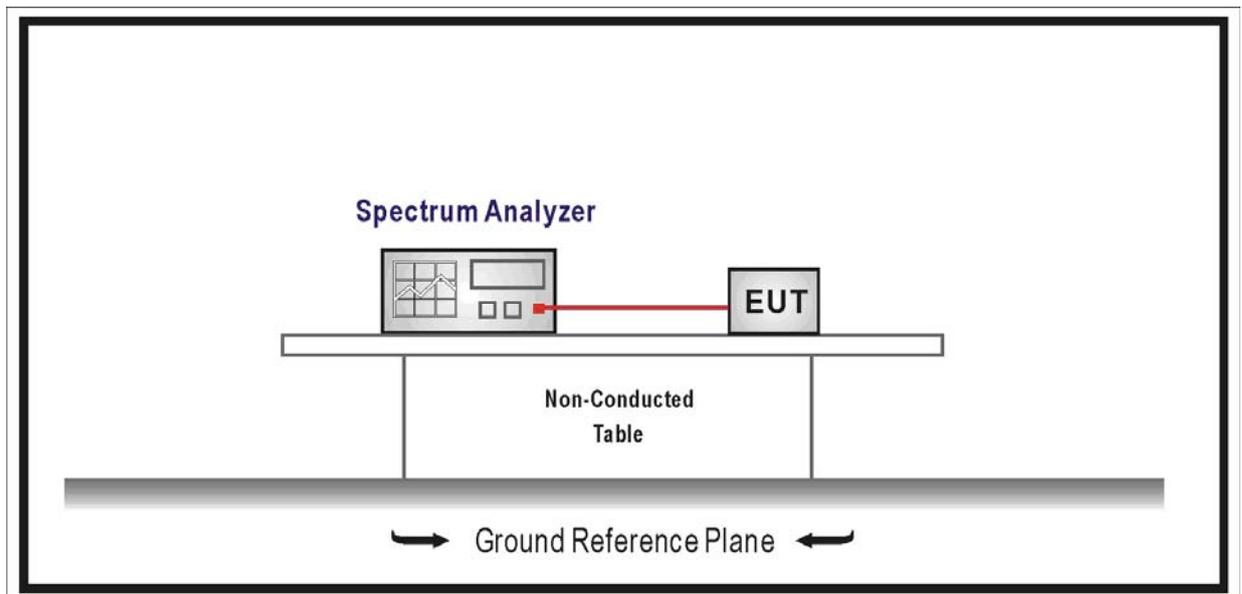
5.1. Test Equipment

RF Antenna Conducted Spurious / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2012.04.29
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2012.05.04

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.

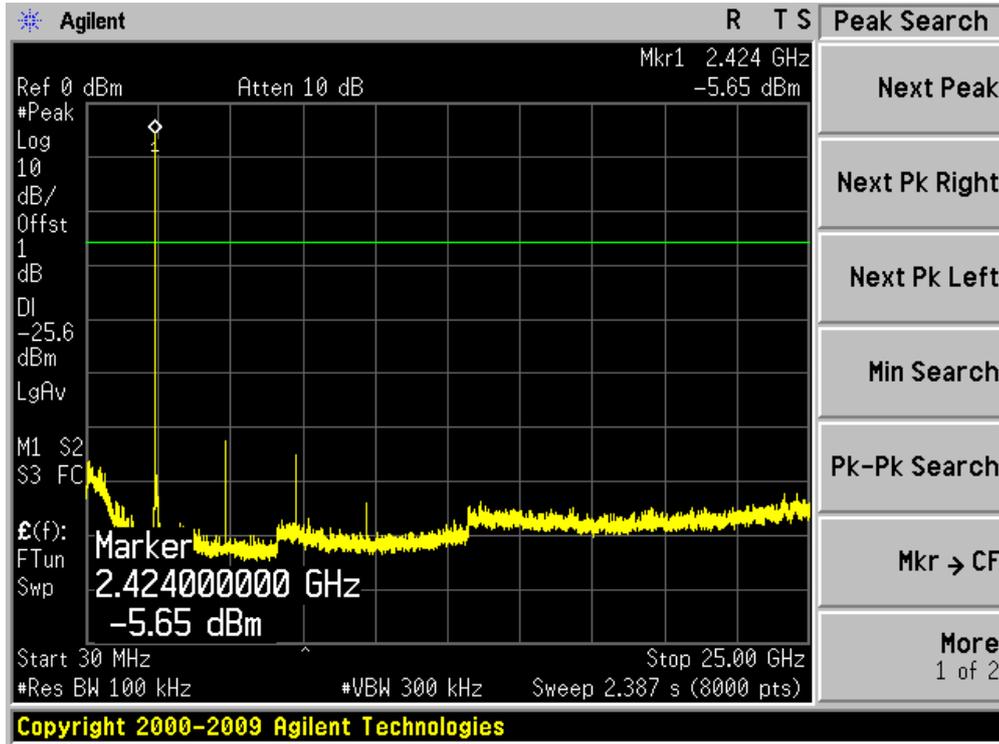
5.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

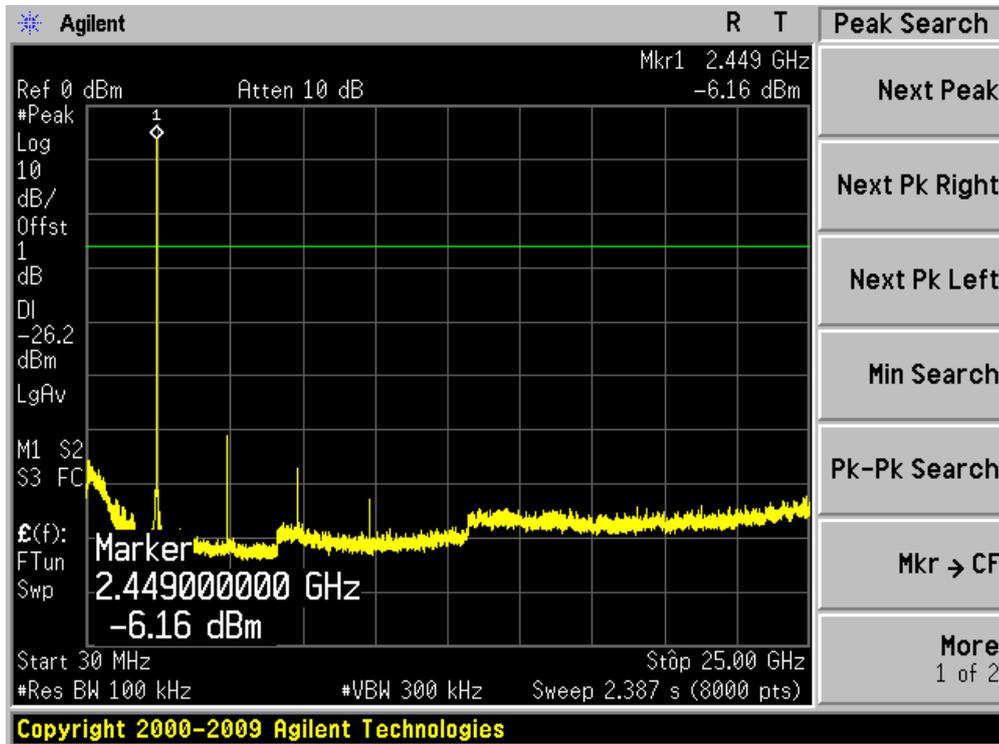
5.6. Test Result

Product	:	High Definition Digital Transport Adapter
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8

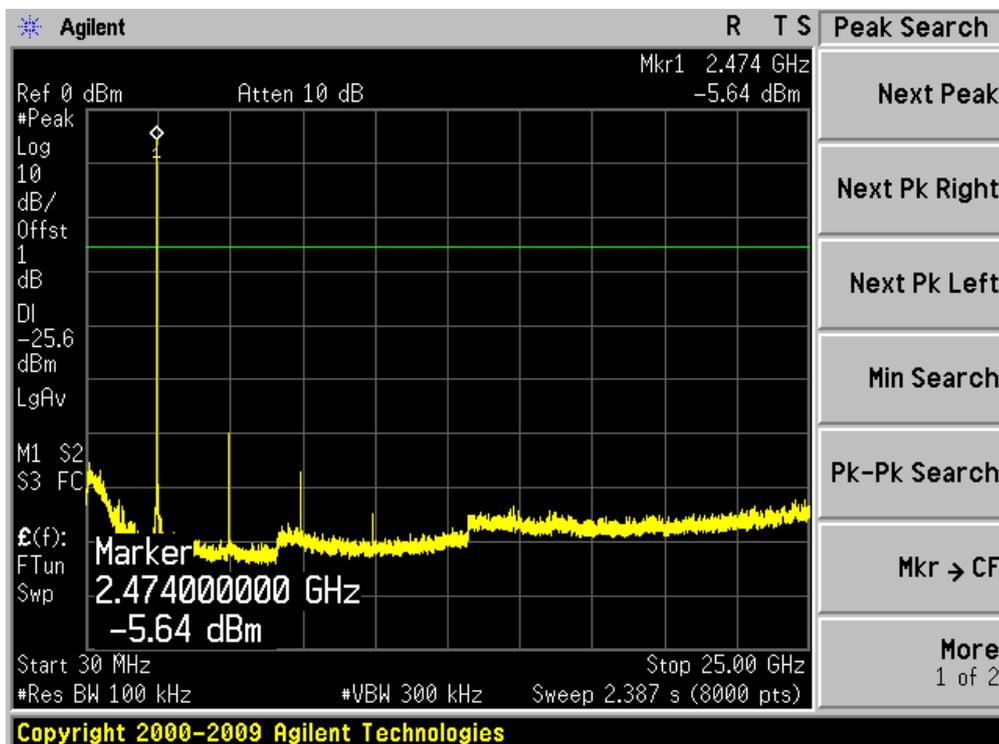
Channel 15 (2425MHz)



Channel 20(2450MHz)



Channel 25(2475MHz)



6. Radiated Emission Band Edge

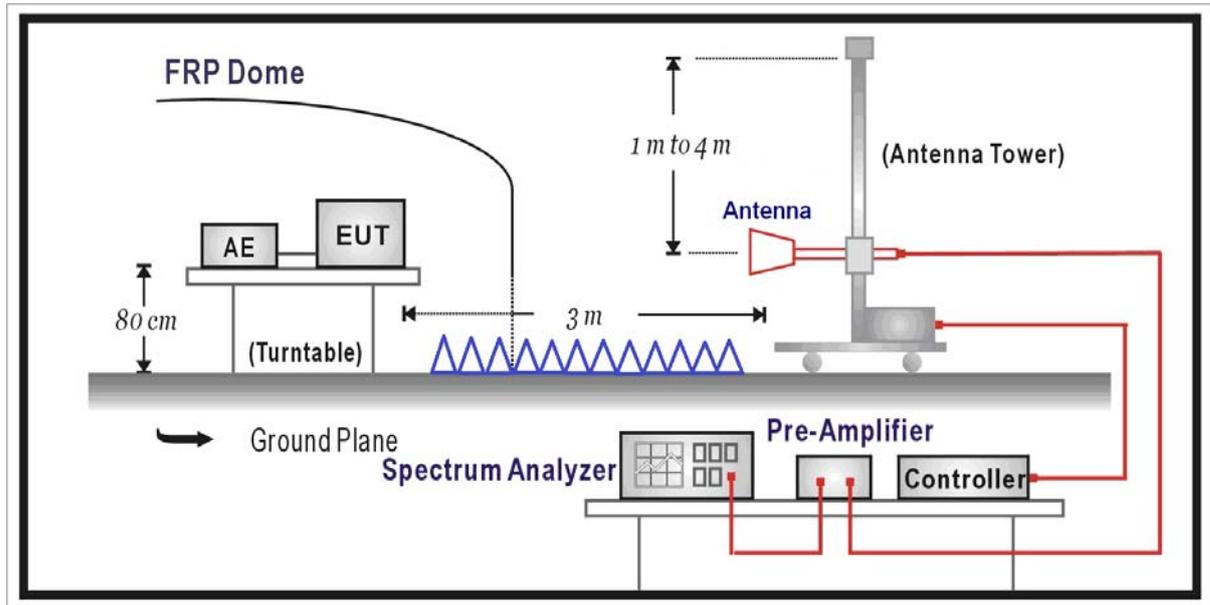
6.1. Test Equipment

Radiated Emission Band Edge / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2012.04.23
EMI Test Receiver	R&S	ESCI	100573	2012.04.23
Preamplifier	Quietek	AP-025C	CHM-0511006	2012.04.12
Preamplifier	Quietek	AP-180C	CHM-0602013	2012.03.07
Bilog Type Antenna	Schaffner	CBL6112B	2932	2012.10.18
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2012.06.11
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2012.05.05
Temperature/Humidity Meter	zhicheng	ZC1-2	AC5-TH	2012.01.14

Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

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.

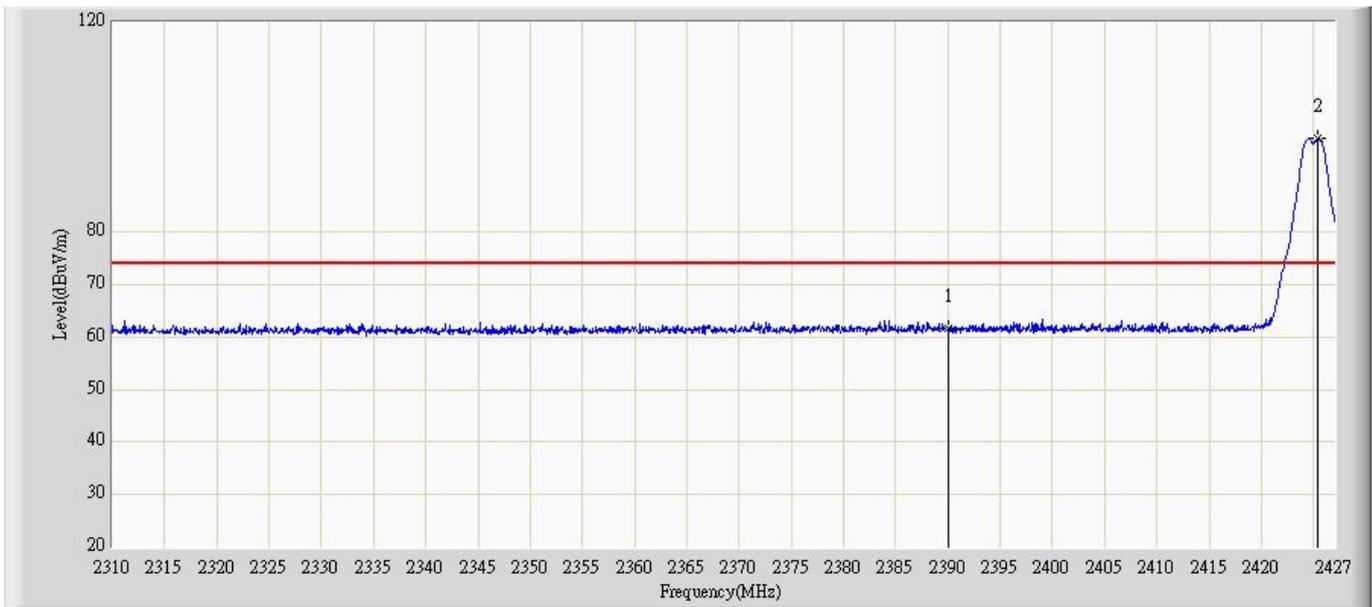
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2009 on radiated measurement.

6.5. Uncertainty

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

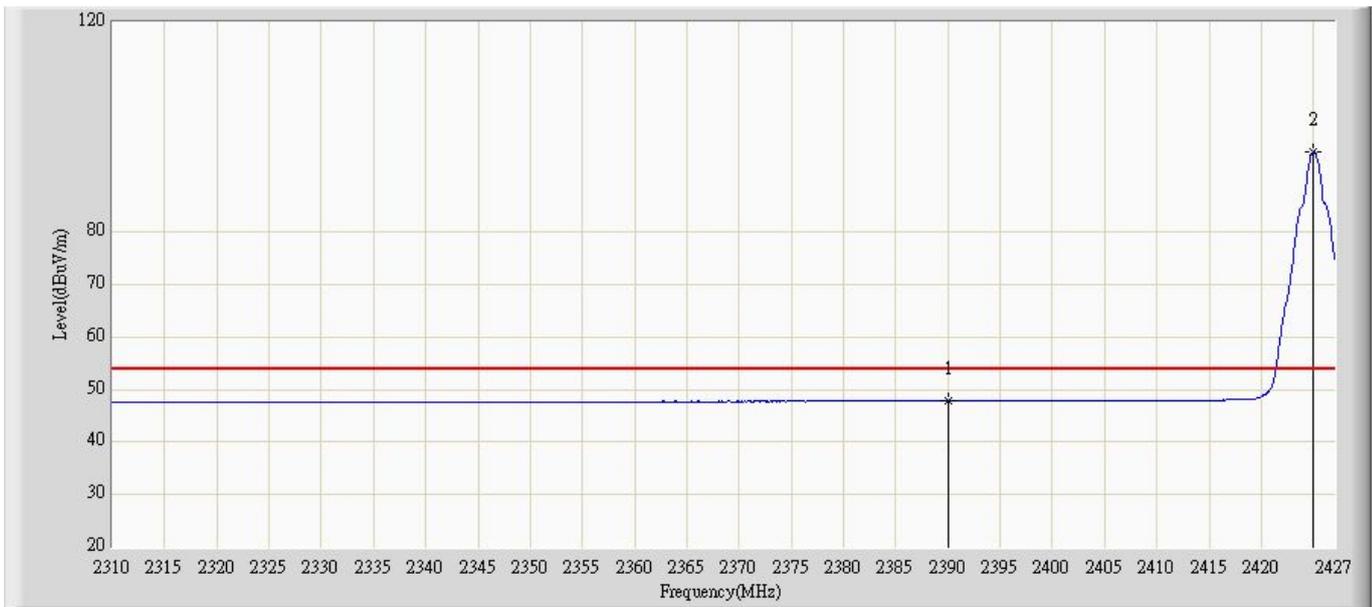
6.6. Test Result

Profile: 11BS006R	Page No.: 1
Engineer: Vilkk	
Site: AC5	Time: 2011/11/07 - 21:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D_499(1-18GHz)	Polarity: Horizontal
EUT: High Definition Digital Transport Adapter	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2425MHz	



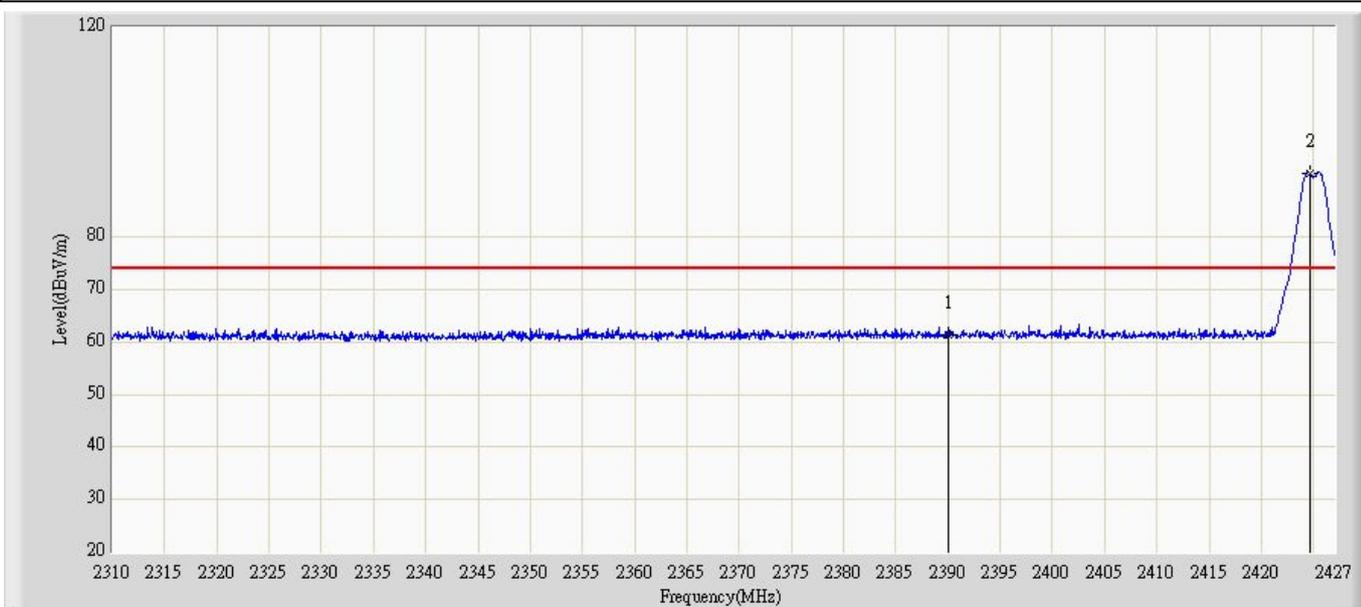
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	61.546	30.255	-12.454	74.000	31.291	PK
2		*	2425.420	97.845	66.691	N/A	N/A	31.154	PK

Profile: 11BS006R	Page No.: 2
Engineer: Vilkk	
Site: AC5	Time: 2011/11/07 - 21:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D_499(1-18GHz)	Polarity: Horizontal
EUT: High Definition Digital Transport Adapter	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2425MHz	



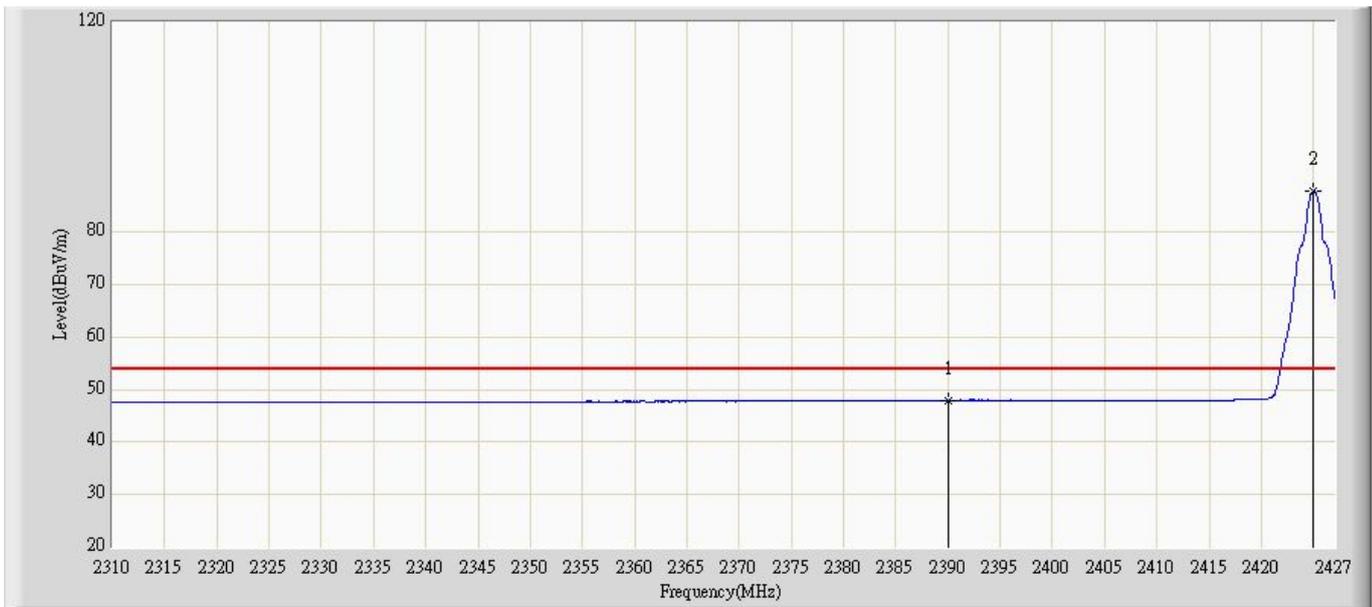
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	47.910	16.619	-6.090	54.000	31.291	AV
2		*	2424.952	95.228	64.072	N/A	N/A	31.156	AV

Profile: 11BS006R	Page No.: 3
Engineer: Vilkk	
Site: AC5	Time: 2011/11/07 - 21:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D_499(1-18GHz)	Polarity: Vertical
EUT: High Definition Digital Transport Adapter	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2425MHz	



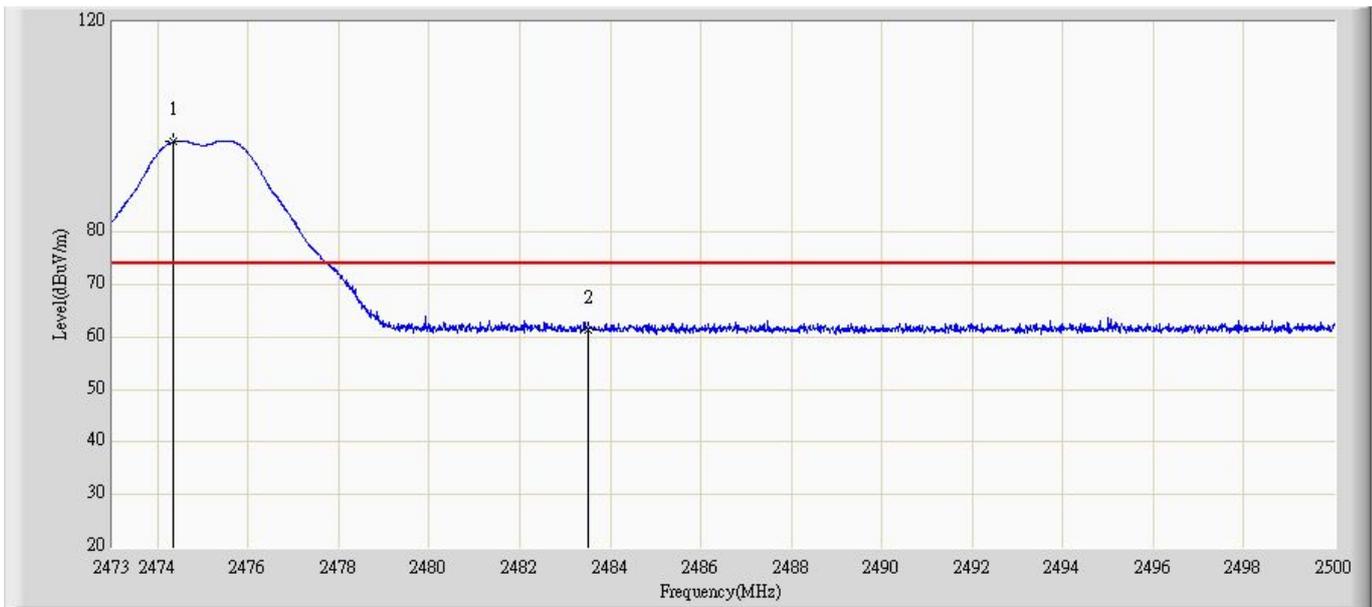
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	61.340	30.049	-12.660	74.000	31.291	PK
2		*	2424.602	92.263	61.105	N/A	N/A	31.158	PK

Profile: 11BS006R	Page No.: 4
Engineer: Vilkk	
Site: AC5	Time: 2011/11/07 - 21:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D_499(1-18GHz)	Polarity: Vertical
EUT: High Definition Digital Transport Adapter	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2425MHz	



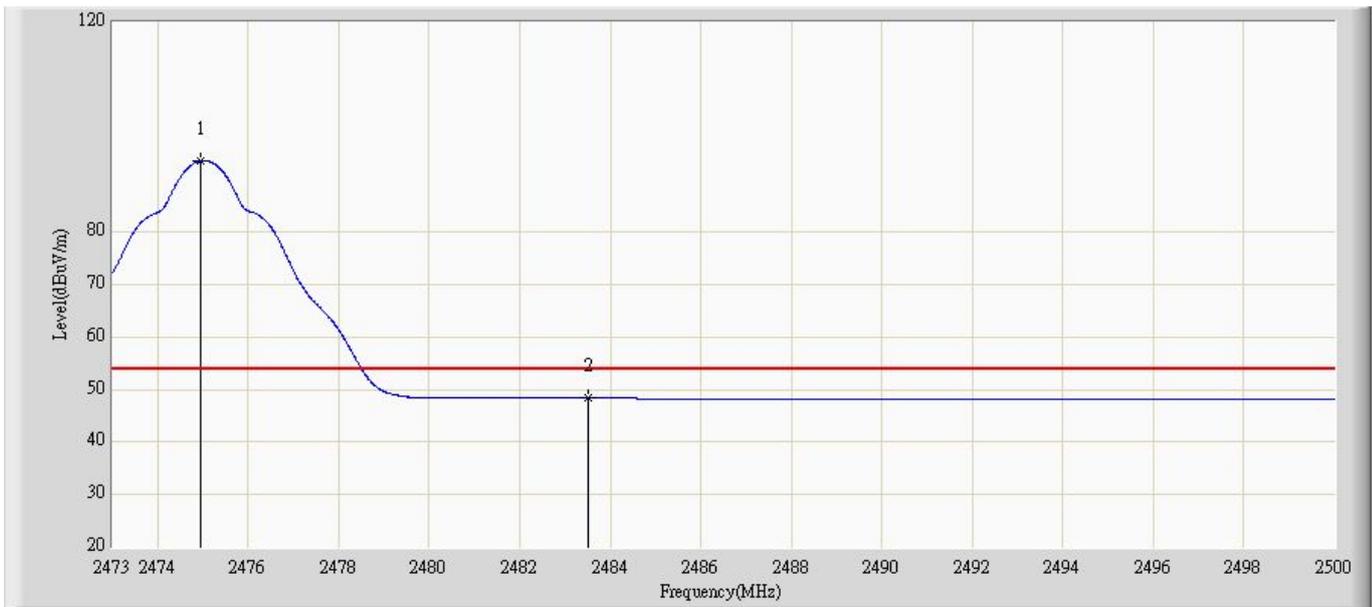
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	47.944	16.653	-6.056	54.000	31.291	AV
2		*	2424.952	87.865	56.709	N/A	N/A	31.156	AV

Profile: 11BS006R	Page No.: 5
Engineer: Vilkk	
Site: AC5	Time: 2011/11/07 - 21:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D_499(1-18GHz)	Polarity: Horizontal
EUT: High Definition Digital Transport Adapter	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2475MHz	



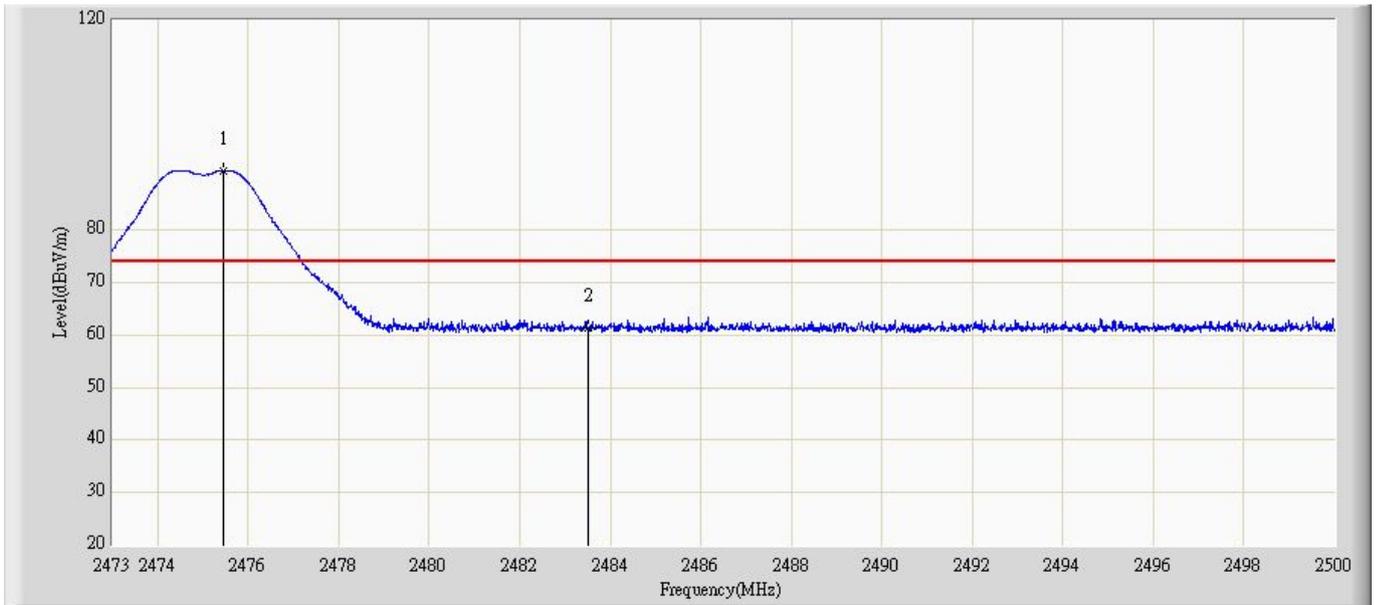
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2474.350	97.189	65.893	N/A	N/A	31.297	PK
2			2483.500	61.364	30.075	-12.636	74.000	31.288	PK

Profile: 11BS006R	Page No.: 6
Engineer: Vilkk	
Site: AC5	Time: 2011/11/07 - 21:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D_499(1-18GHz)	Polarity: Horizontal
EUT: High Definition Digital Transport Adapter	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2475MHz	



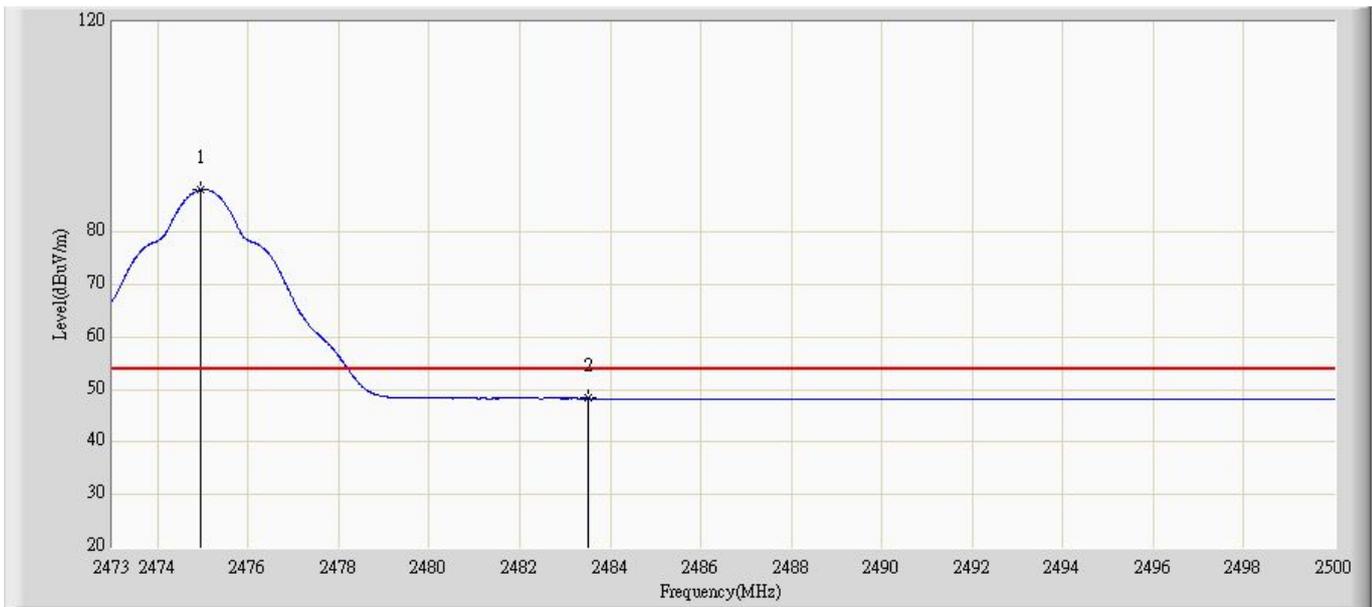
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2474.958	93.594	62.296	N/A	N/A	31.298	AV
2			2483.500	48.396	17.107	-5.604	54.000	31.288	AV

Profile: 11BS006R	Page No.: 7
Engineer: Vilkk	
Site: AC5	Time: 2011/11/07 - 21:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D_499(1-18GHz)	Polarity: Vertical
EUT: High Definition Digital Transport Adapter	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2475MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2475.457	91.395	60.095	N/A	N/A	31.299	PK
2			2483.500	61.374	30.085	-12.626	74.000	31.288	PK

Profile: 11BS006R	Page No.: 8
Engineer: Vilkk	
Site: AC5	Time: 2011/11/07 - 21:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D_499(1-18GHz)	Polarity: Vertical
EUT: High Definition Digital Transport Adapter	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2475MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2474.958	88.054	56.756	N/A	N/A	31.298	AV
2			2483.500	48.326	17.037	-5.674	54.000	31.288	AV

7. Operation Frequency Range of 20dB Bandwidth

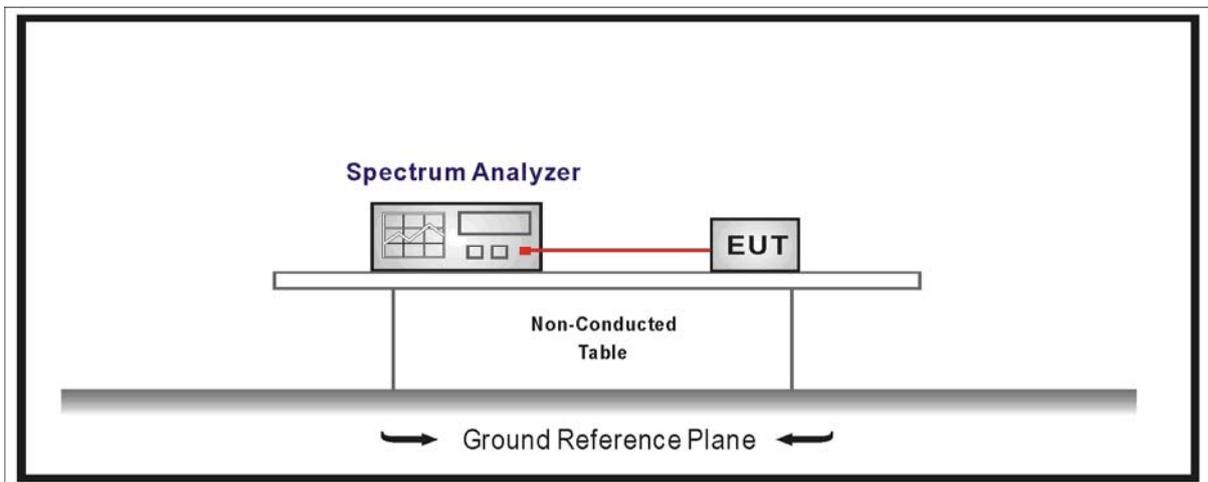
7.1. Test Equipment

Operation Frequency Range of 20dB Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2012.04.29
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2012.05.04

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.

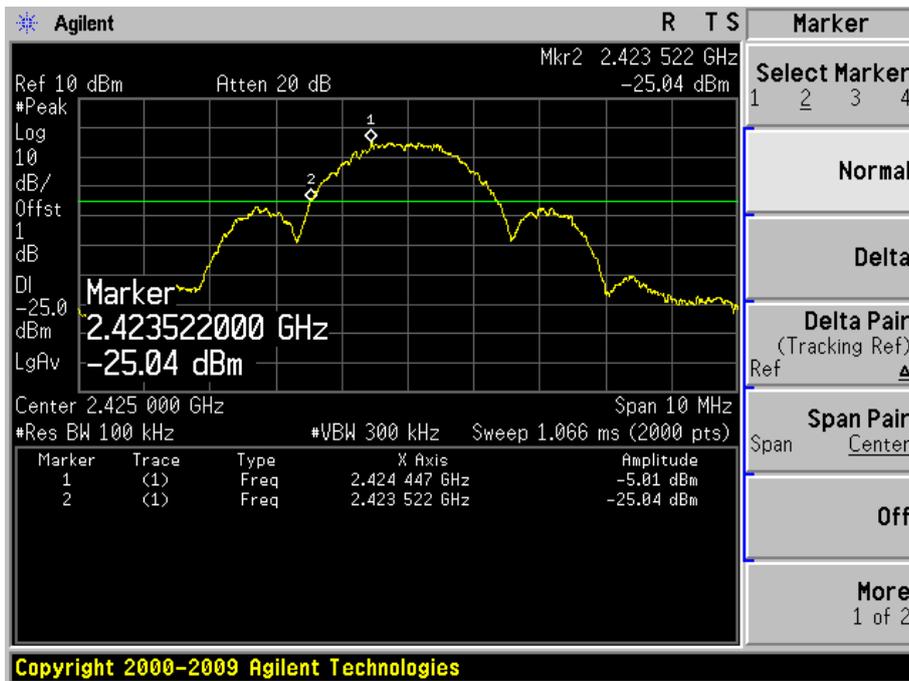
7.5. Uncertainty

The measurement uncertainty is defined as ± 1 kHz

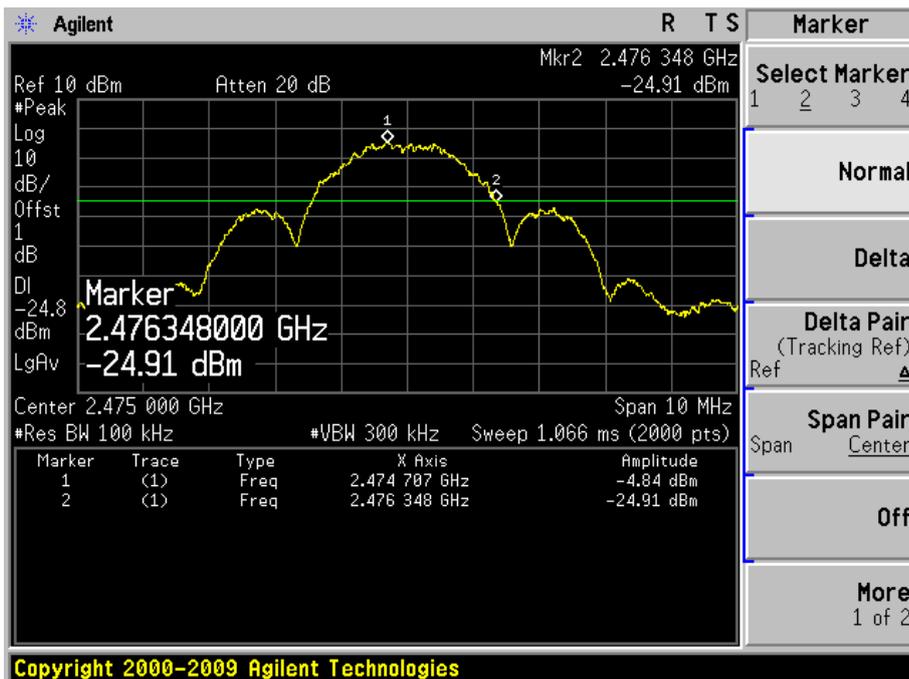
7.6. Test Result

Product	:	High Definition Digital Transport Adapter
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8

Channel 15 (2425MHz)



Channel 25 (2475MHz)



8. Occupied Bandwidth

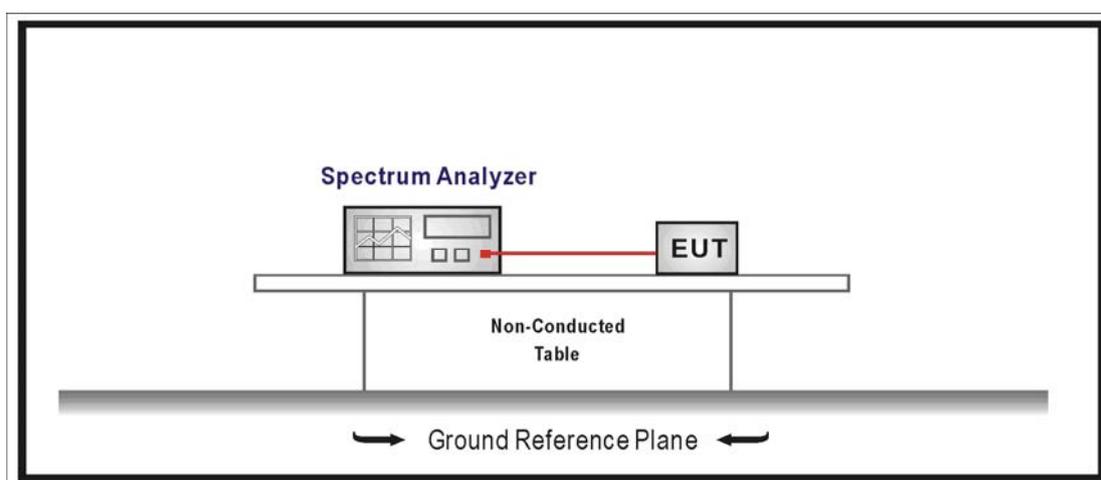
8.1. Test Equipment

Occupied Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2012.04.29
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2012.05.04

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

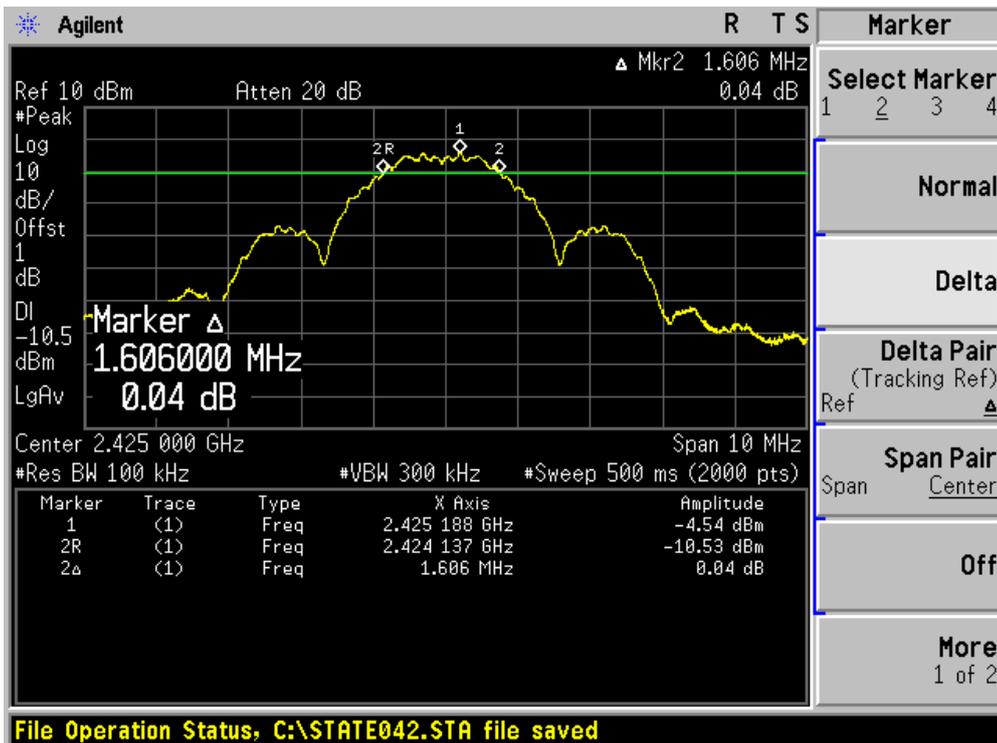
The measurement uncertainty is defined as ± 1 kHz

8.6. Test Result

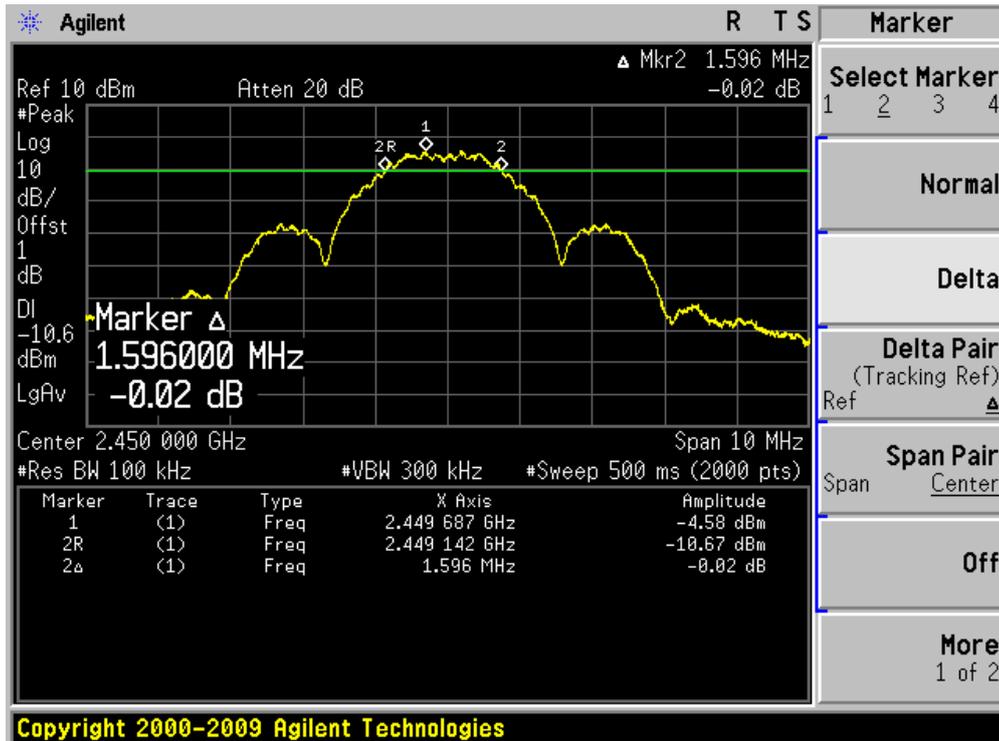
Product	:	High Definition Digital Transport Adapter
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8

Channel No.	Frequency (MHz)	Occupied Bandwidth (MHz)	Limit (kHz)	Result
15	2425	1.606	500	Pass
20	2450	1.596	500	Pass
25	2475	1.616	500	Pass

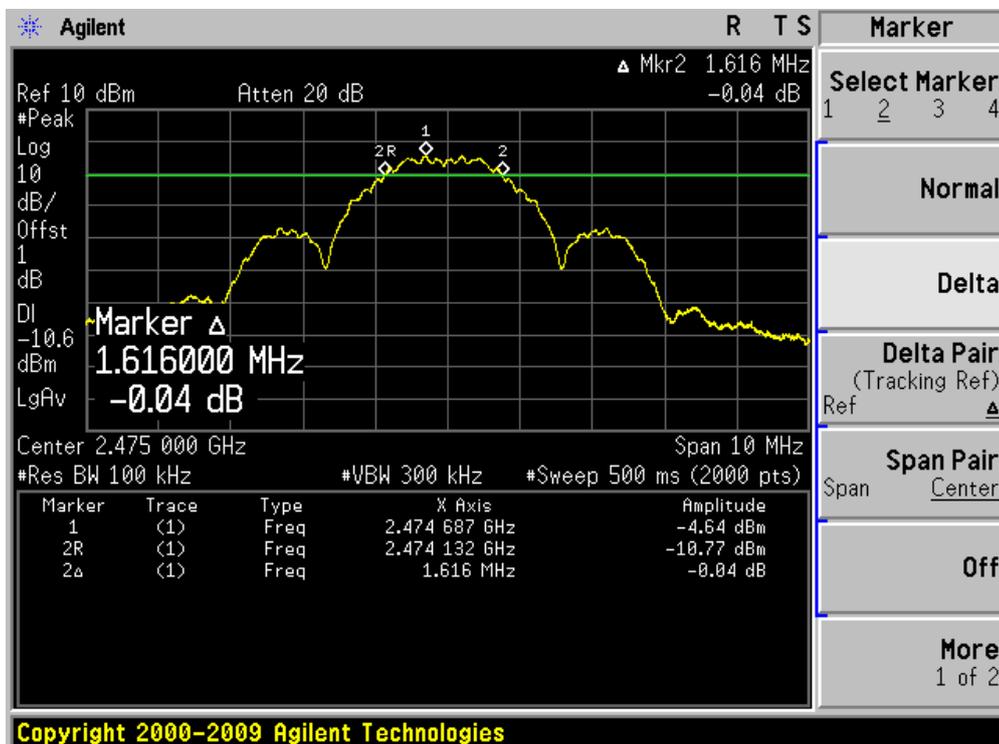
Channel 15 (2425MHz)



Channel 20 (2450MHz)



Channel 25(2475MHz)



9. Power Output

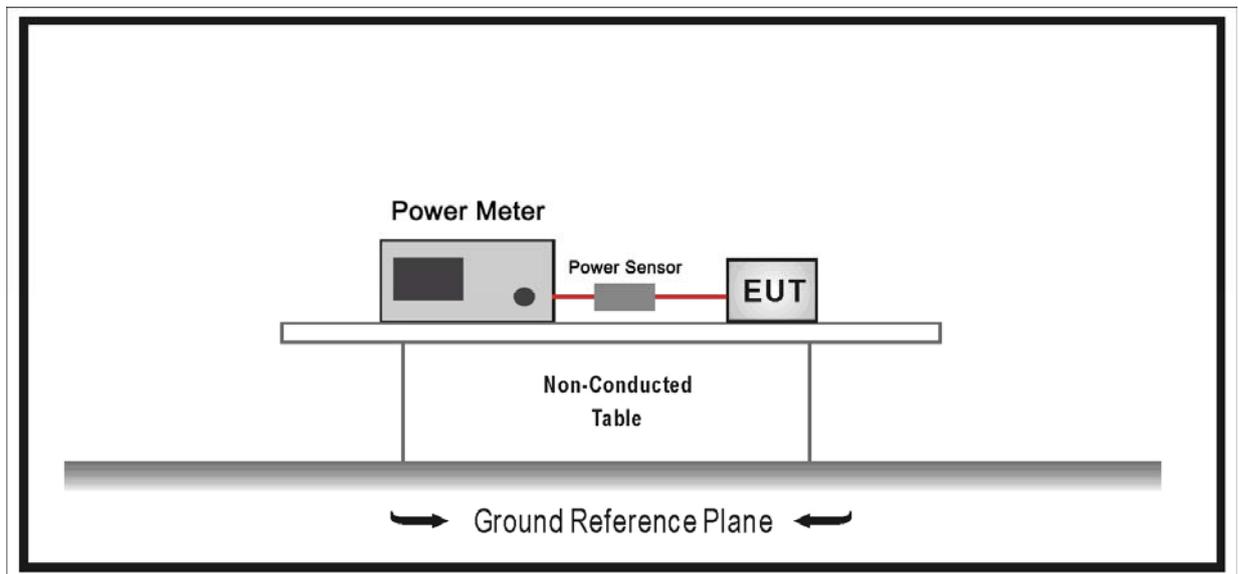
9.1. Test Equipment

Power Output / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2012.01.12
Power Sensor	Anritsu	MA2411B	0846014	2012.01.12
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2012.05.04

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

Product	:	HIGH DEFINITION DIGITAL TRANSPORT ADAPTER
Test Item	:	Power Output
Test Site	:	TR8

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Total Power (dBm)	Limit (dBm)	Result
15	2425	1.00	1.00	30.00	Pass
20	2450	0.53	0.53	30.00	Pass
25	2475	0.61	0.61	30.00	Pass

10. Power Spectral Density

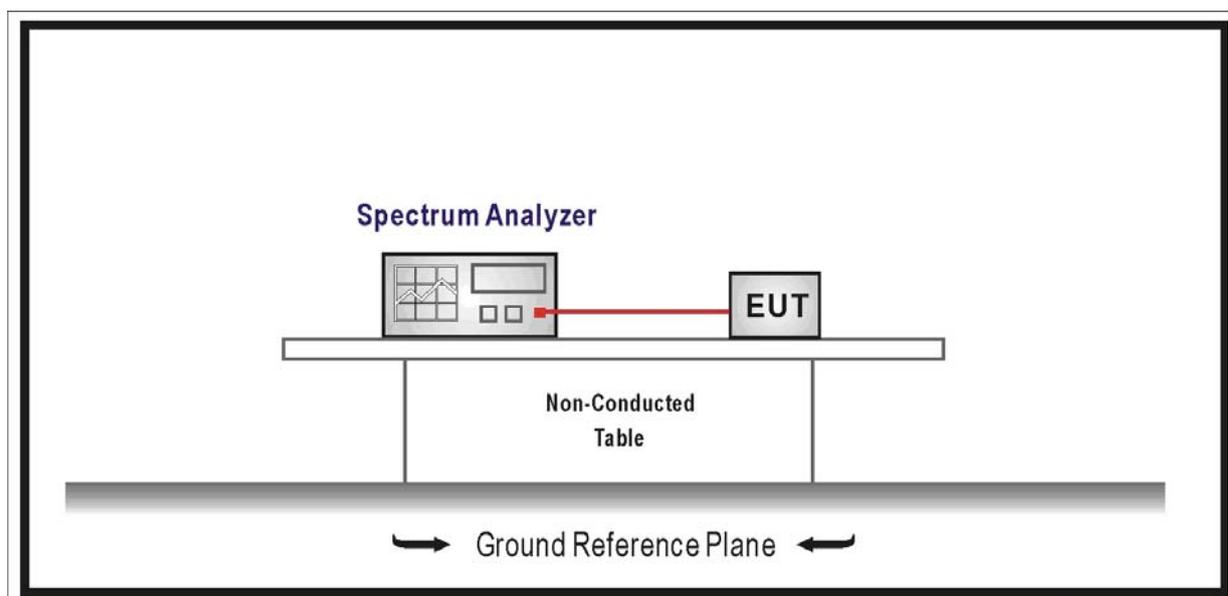
10.1. Test Equipment

Power Spectral Density / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2012.04.29
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2012.05.04

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

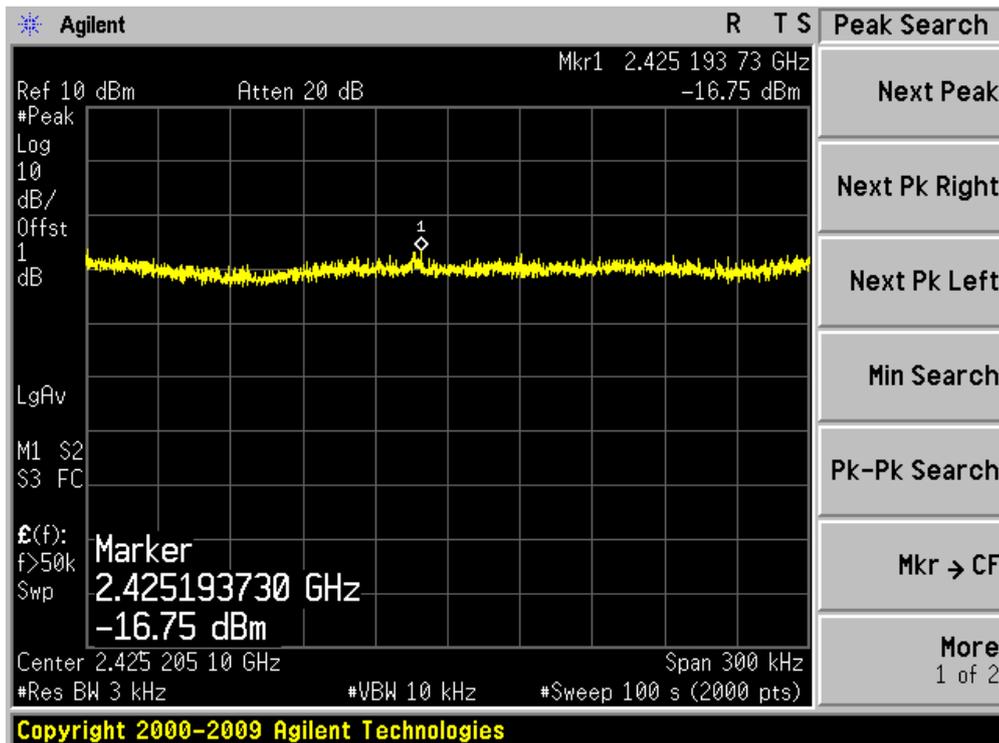
The measurement uncertainty is defined as ± 1.27 dB

10.6. Test Result

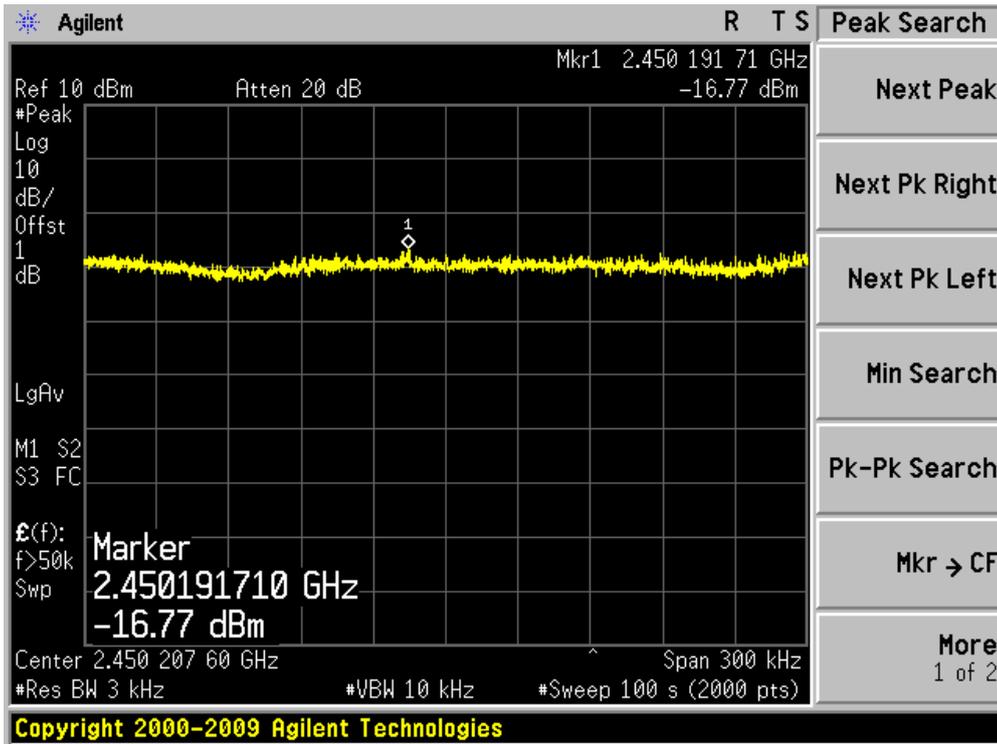
Product	:	High Definition Digital Transport Adapter
Test Item	:	Power Spectral Density
Test Site	:	TR-8

Channel No.	Frequency (MHz)	Measurement PPSD (dBm)	Total PPSD (dBm)	Limit (dBm)	Result
15	2425	-16.75	-16.75	8	Pass
20	2450	-16.77	-16.77	8	Pass
11	2462	-16.25	-16.25	8	Pass

Channel 15 (2425MHz)



Channel 20 (2450MHz)



Channel 25 (2475MHz)

