



FCC ID: O9C-AP3750
Issued on May 26, 2005

Report No.: FR540715

FCC TEST REPORT

CATEGORY : Mobile
PRODUCT NAME : AP3750 Managed Access Point
FCC ID. : O9C-AP3750
FILING TYPE : Certification
BRAND NAME : 3COM
MODEL NAME : AP3750

APPLICANT : **3Com Corporation**
350 Campus Drive, Marlborough, Mass. 01752 USA

MANUFACTURER : **Same as Applicant**

ISSUED BY : **SPORTON INTERNATIONAL INC.**
6F, No. 106, Sec. 1, Hsin Tai Wu Rd., His Chih, Taipei Hsien,
Taiwan, R.O.C.

Statements:

Only the test result of 802.11b/g part (2400 ~ 2483.5MHz) is shown in this test report.

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

Certificate or Test Report could not be used by the applicant to claim the product endorsement by CNLA, NVLAP or any agency of U.S. government.

The test equipment used to perform the test are calibrated and traceable to NML/ROC or NIST/USA.



Lab Code: 200079-0

SPORTON International Inc.

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255



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History of this test report

Original Report Issue Date: May 26, 2005

Report No.: FR540715

☒ No additional attachment.

☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description



CERTIFICATE OF COMPLIANCE

with

47 CFR FCC Part 15 Subpart C (Section 15.247)

PRODUCT NAME : AP3750 Managed Access Point

BRAND NAME : 3COM

MODEL NAME : AP3750

APPLICANT : **3Com Corporation**

350 Campus Drive, Marlborough, Mass. 01752 USA

MANUFACTURER : **Same as Applicant**

I HEREBY CERTIFY THAT:

The measurements shown in this test report were made in accordance with the procedures given in ANSI C63.4 - 2003 and all test are performed according to 47 CFR FCC Part 15. Testing was carried out on May 26, 2005 at SPORTON International Inc. LAB.

A blue ink signature of Wayne Hsu, written in a cursive style, is positioned above the name 'Wayne Hsu' which is printed in a standard sans-serif font.

Wayne Hsu



1. General Description of Equipment under Test

1.1. Applicant

3Com Corporation

350 Campus Drive, Marlborough, Mass. 01752 USA

1.2. Manufacturer

Same as Applicant

1.3. Basic Description of Equipment under Test

This product is a Wireless Access Point with 802.11a/b/g wireless solution. The technical data has been listed on section "Features of Equipment under Test". 4 types of antenna are filed in this report.

1.4. Features of Equipment under Test

Items	Description
Type of Modulation	: DSSS (CCK / DQPSK / DBPSK) OFDM (16QAM / 64QAM / DQPSK / DBPSK)
Number of Channels	: 11
Frequency Band	: 2400MHz ~ 2483.5MHz
Carrier Frequency	: See section 1.6 for details
Data Rate	: CCK : 1, 2, 5.5, 11Mbps OFDM : 108, 54, 48,36, 24,18,12, 6Mbps
Max. Conducted Output Power	: See Section 5.2
Antenna Type	: See section 1.5 for details
Communication Type	: Half-Duplex
Testing Duty Cycle	: 100.00%
Power Rating (DC/AC, Voltage)	: 48 VDC from POE
Test Power Source	: 110.00V AC
Temperature Range (Operating)	: -10 ~ 55



1.5. Antenna Description

4 types of antenna are filed in this project.

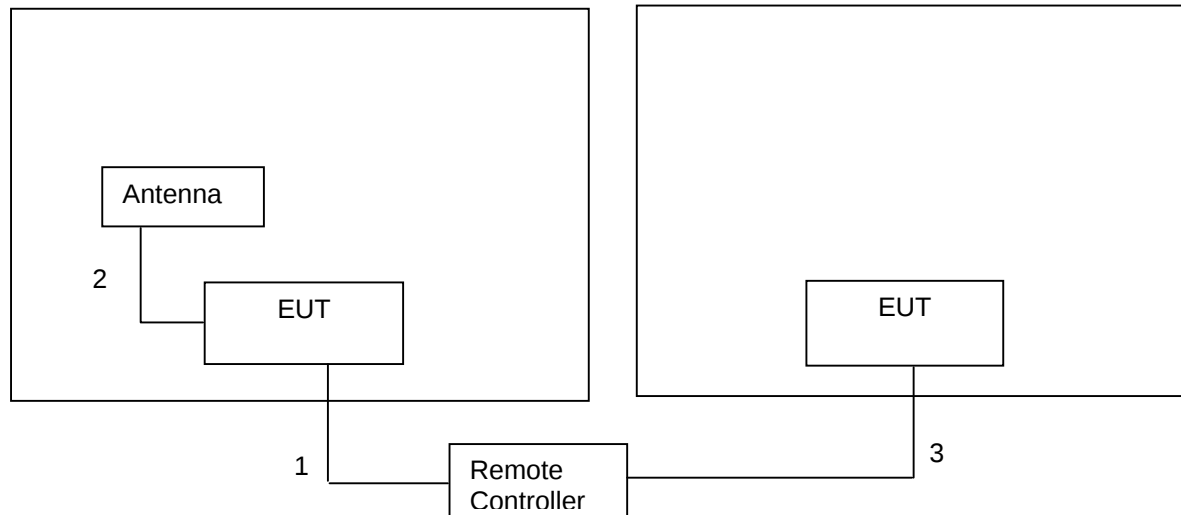
No.	Antenna Type	Gain (dBi)
1	Internal Antenna	3.00dBi @2.4GHz
2	High Gain Omni-Directional Antenna (3CWE591)	6.00dBi @2.4GHz
3	Hallway Bi-Directional Antenna (3CWE597)	6.00dBi @2.4GHz
4	Medium Gain Panel (3CWE598)	8.00dBi @2.4GHz

1.6. Table for Carrier Frequencies

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	05	2432 MHz	09	2452 MHz	-	-
02	2417 MHz	06	2437 MHz	10	2457 MHz	-	-
03	2422 MHz	07	2442 MHz	11	2462 MHz	-	-
04	2427 MHz	08	2447 MHz	-	-	-	-

2. Test Configuration of the Equipment under Test

2.1. Connection Diagram of Test System



1. RJ45, 5m, non-shielding
2. Antenna Cable, 2m, non-shielding
3. RJ45, 5m, non-shielding

2.2. The Test Mode Description

1. For DSSS modulation, CCK is the worst case on all test items.
2. For OFDM modulation, BPSK is the worst case on all test items.
3. Spurious emission below 1GHz and AC conduction is independent of channel selection, so only channel 11 with BPSK modulation was worst case tested.
4. Only Antenna 4 was tested for spurious below 1GHz since it is the worst case.
5. There are 4 types of antennas during the testing.

Mode 1 : Ant. 1 Internal Antenna

Mode 2 : Ant. 2 High Gain Omni-Directional Antenna (3CWE591)

Mode 3 : Ant. 3 Hallway Bi-Directional Antenna (3CWE597)

Mode 4 : Ant. 4 Medium Gain Panel (3CWE598)

2.3. Description of Test Supporting Units

Support Unit 1. – Notebook (COMPAQ) – for remote workstation

FCC ID : N/A

Model No. : PRESARIO 1500

Serial No. : SP0004

Remark : This support device was tested to comply with FCC standards and authorized under Declaration of Conformity.

3. General Information of Test

3.1. Test Facility

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiag, Tao Yuan Hsien, Taiwan, R.O.C.
: TEL 886-3-327-3456
: FAX 886-3-318-0055

Test Site No : CO04-HY / 03CH03-HY / TH01-HY

3.2. Test Conditions

Normal Voltage : 110.00VAC (adapter of POE)
Normal Temperature : 20°C

3.3. Standards for Methods of Measurement

Here is the list of the standards followed in this test report.

ANSI C63.4-2003

47 CFR Part 15 Subpart C (Section 15.247)

3.4. DoC Statement

This EUT is also classified as a device of computer peripheral Class B which DoC has to be followed. It has been verified according to the rule of 47 CFR part 15 Subpart B, and found that all the requirements has been fulfilled.

3.5. Frequency Range Investigated

Radiated emission test: from 30 MHz to 10th carrier harmonic

3.6. Test Distance

The test distance of radiated emission (30MHz~1GHz) test from antenna to EUT is 3 M.

The test distance of radiated emission (1GHz~10th carrier harmonic) test from antenna to EUT is 1 M.

3.7. Test Software

During testing, Channel & Power Controlling Software: This was provided by the manufacturer and is able to let the test engineer select the operating channel as well as the RF output power. The parameters for channel selection is trying to offer the test engineer the ability to fix the operating channel for testing, both normal data and continuously transmitting modes are allowed, and that for RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Mode 1

Software Version : ART
Power Set Ch01 / CCK : 20/TX Power
Power Set Ch06 / CCK : 20/TX Power
Power Set Ch11 / CCK : 20/TX Power
Power Set Ch01 / OFDM : 15/TX Power
Power Set Ch06 / OFDM : 19/TX Power
Power Set Ch11 / OFDM : 13.5/TX Power
IP Address of EUT : 192.168.1.20

Mode 2

Software Version : ART
Power Set Ch01 / CCK : 15/TX Power
Power Set Ch06 / CCK : 20/TX Power
Power Set Ch11 / CCK : 15/TX Power
Power Set Ch01 / OFDM : 13.5/TX Power
Power Set Ch06 / OFDM : 19/TX Power
Power Set Ch11 / OFDM : 13/TX Power
IP Address of EUT : 192.168.1.20

Mode 3

Software Version : ART
Power Set Ch01 / CCK : 17/TX Power
Power Set Ch06 / CCK : 20/TX Power
Power Set Ch11 / CCK : 17/TX Power
Power Set Ch01 / OFDM : 15/TX Power
Power Set Ch06 / OFDM : 19/TX Power
Power Set Ch11 / OFDM : 14.5/TX Power
IP Address of EUT : 192.168.1.20

Mode 4

Software Version : ART
Power Set Ch01 / CCK : 13/TX Power
Power Set Ch06 / CCK : 20/TX Power
Power Set Ch11 / CCK : 13/TX Power
Power Set Ch01 / OFDM : 13/TX Power
Power Set Ch06 / OFDM : 20/TX Power
Power Set Ch11 / OFDM : 13/TX Power
IP Address of EUT : 192.168.1.20



4. List of Measurements

4.1. Summary of the Test Results

Applied Standard: 47 CFR Part 15 and Part 2

Paragraph	FCC Rule	Description of Test	Result
5.1	15.247	6dB Spectrum Bandwidth	Pass
5.2	15.247	Maximum Conducted Output Power	Pass
5.3	15.247	Peak Power Spectral Density	Pass
5.4	15.247	Band Edges Emission	Pass
5.5	15.207	AC Power Line Conducted Emission	Pass
5.6	15.209/15.247	Spurious Radiated Emission	Pass
5.7	15.203/15.247	Antenna Requirement	Pass
5.8	2.1091	Maximum Permissible Exposure	Pass

5. Test Result

5.1. Test of 6dB Spectrum Bandwidth

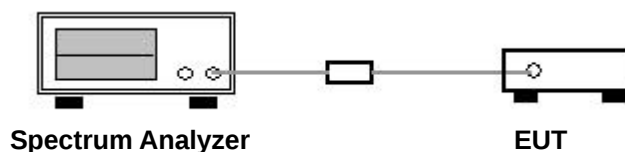
5.1.1. Measuring Instruments

Item 18 of the table on section 6.

5.1.2. Test Procedures

1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 100KHz and VBW to 100KHz.
3. The 6dB bandwidth is the spectrum width with level higher than 6dB below the peak level.
4. Repeat above 1~3 points for the middle and highest channel of the EUT.

5.1.3. Test Setup Layout

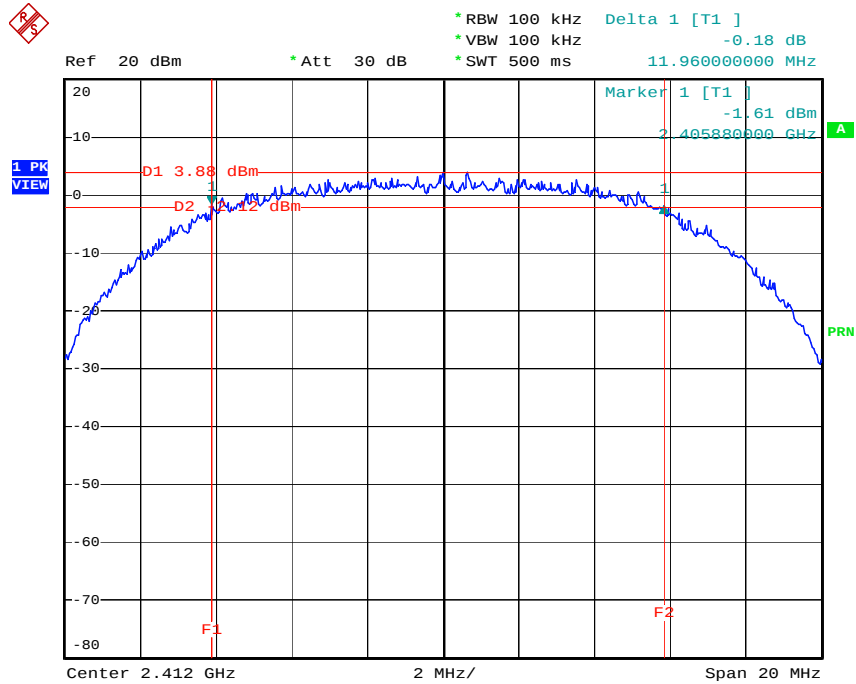


5.1.4. Test Result: See spectrum analyzer plots below

- Mode 1 ~ Mode 4
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Eason Lu

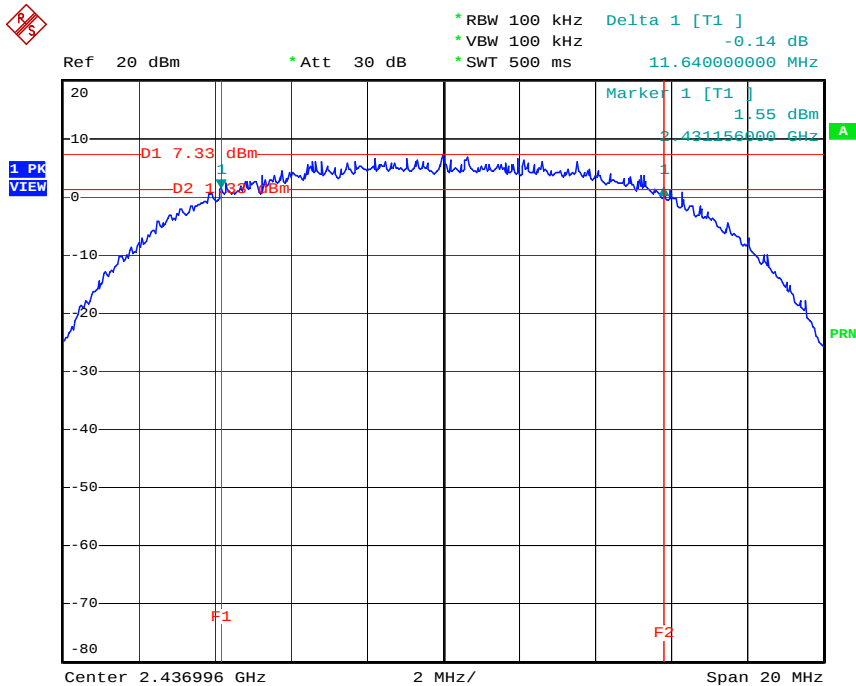
Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Min. Limit (MHz)
CCK	01	2412 MHz	11.68	0.5
CCK	06	2437 MHz	11.68	0.5
CCK	11	2462 MHz	11.76	0.5
OFDM	01	2412 MHz	16.36	0.5
OFDM	06	2437 MHz	16.36	0.5
OFDM	11	2462 MHz	16.36	0.5

Modulation Type: CCK (Channel 01) :

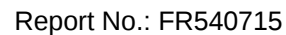


Date: 18.APR.2005 12:52:20

Modulation Type: CCK (Channel 06) :

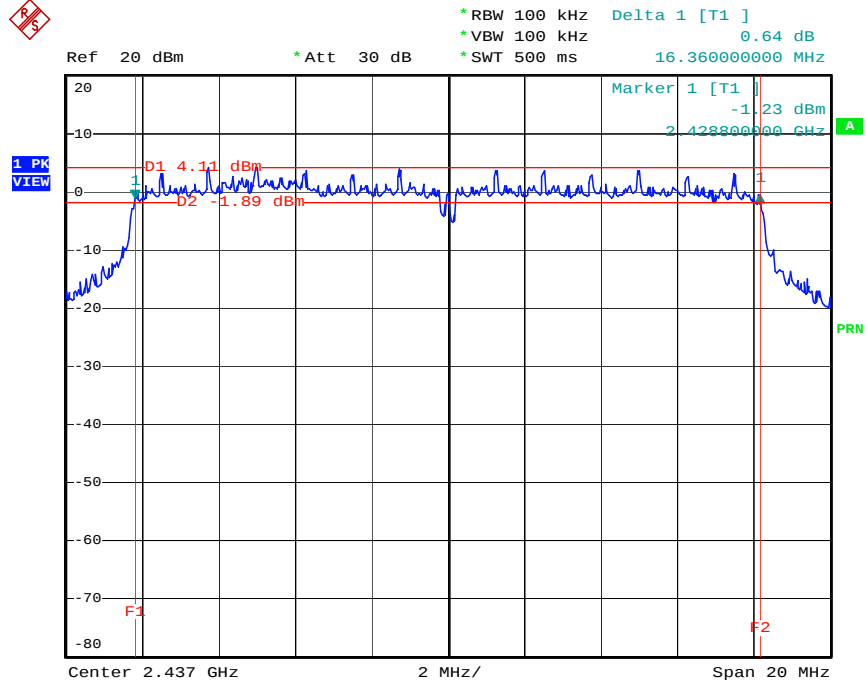


Date: 18.APR.2005 12:58:55



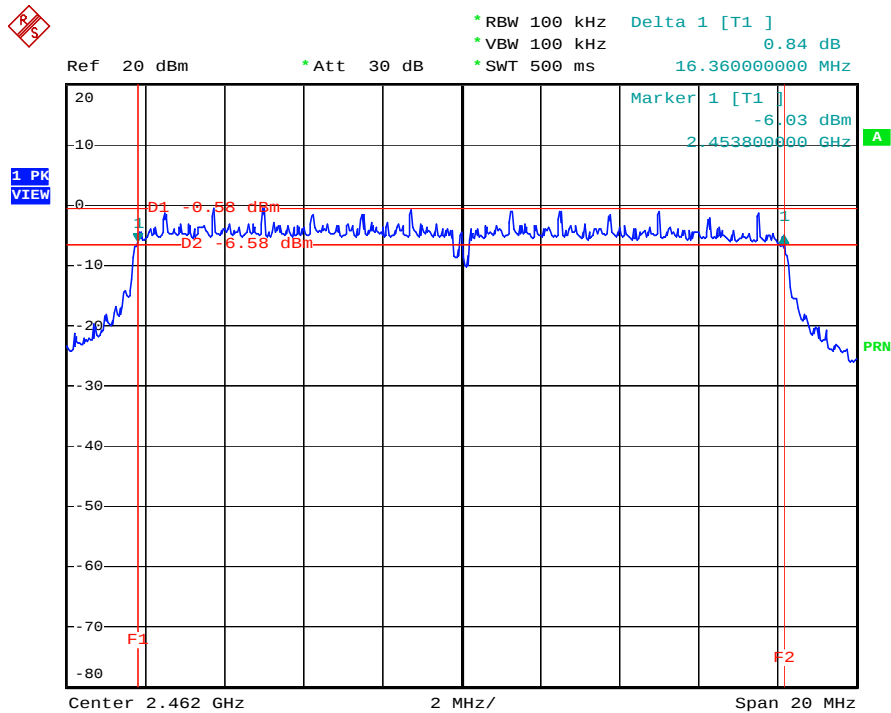


Modulation Type: OFDM (Channel 06) :



Date: 18.APR.2005 13:16:14

Modulation Type: OFDM (Channel 11) :



Date: 18.APR.2005 13:25:27

5.2. Test of Maximum Conducted Output Power

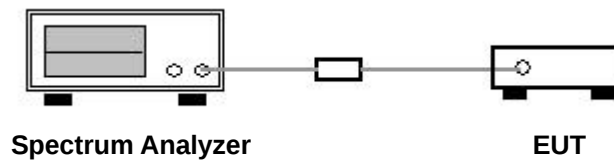
5.2.1. Measuring Instruments

Item 18 of the table on section 6.

5.2.2. Test Procedures

1. According to FCC DA 02-2138 test procedure, EUT connected to spectrum analyzer, then used the channel power function of spectrum analyzer and calculated total average power with spectrum range more than 26dB bandwidth.
2. Repeated point 1 for the middle and highest channel of the EUT.

5.2.3. Test Setup Layout



5.2.4. Test Result of Conducted Power

- Mode 1
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Eason Lu

Modulation Type	Channel	Frequency (MHz)	Output Power (dBm)	Limits (dBm)
CCK	01	2412 MHz	20.80	30
CCK	06	2437 MHz	20.80	30
CCK	11	2462 MHz	20.50	30
OFDM	01	2412 MHz	17.60	30
OFDM	06	2437 MHz	21.70	30
OFDM	11	2462 MHz	15.30	30

The max output power : CCK modulation is 20.80 dBm, OFDM modulation is 21.70 dBm.

- Mode 2
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Eason Lu

Modulation Type	Channel	Frequency (MHz)	Output Power (dBm)	Limits (dBm)
CCK	01	2412 MHz	14.89	30
CCK	06	2437 MHz	20.09	30
CCK	11	2462 MHz	14.85	30
OFDM	01	2412 MHz	15.93	30
OFDM	06	2437 MHz	20.77	30
OFDM	11	2462 MHz	14.15	30

The max output power : CCK modulation is 20.09 dBm, OFDM modulation is 20.77 dBm.

- Mode 3
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Eason Lu

Modulation Type	Channel	Frequency (MHz)	Output Power (dBm)	Limits (dBm)
CCK	01	2412 MHz	17.12	30
CCK	06	2437 MHz	20.09	30
CCK	11	2462 MHz	16.85	30
OFDM	01	2412 MHz	17.15	30
OFDM	06	2437 MHz	20.77	30
OFDM	11	2462 MHz	15.24	30

The max output power : CCK modulation is 20.09 dBm, OFDM modulation is 20.77 dBm.



- Mode 4
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Eason Lu

Modulation Type	Channel	Frequency (MHz)	Output Power (dBm)	Limits (dBm)
CCK	01	2412 MHz	12.80	28
CCK	06	2437 MHz	20.09	28
CCK	11	2462 MHz	12.34	28
OFDM	01	2412 MHz	15.03	28
OFDM	06	2437 MHz	22.11	28
OFDM	11	2462 MHz	14.15	28

The max output power : CCK modulation is 20.09 dBm, OFDM modulation is 22.11 dBm.

5.3. Test of Peak Power Spectral Density

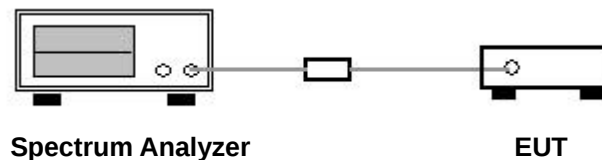
5.3.1. Measuring Instruments

Item 18 of the table on section 6.

5.3.2. Test Procedures

1. The transmitter output is connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 3kHz and VBW to 30kHz.
3. Mark the frequency with maximum peak power as the center of the display of the spectrum.
4. Set the span to 1.5MHz and the sweep time to 500s and record the maximum peak value.
5. Repeated point 1~4 for the middle and highest channel of the EUT.

5.3.3. Test Setup Layout



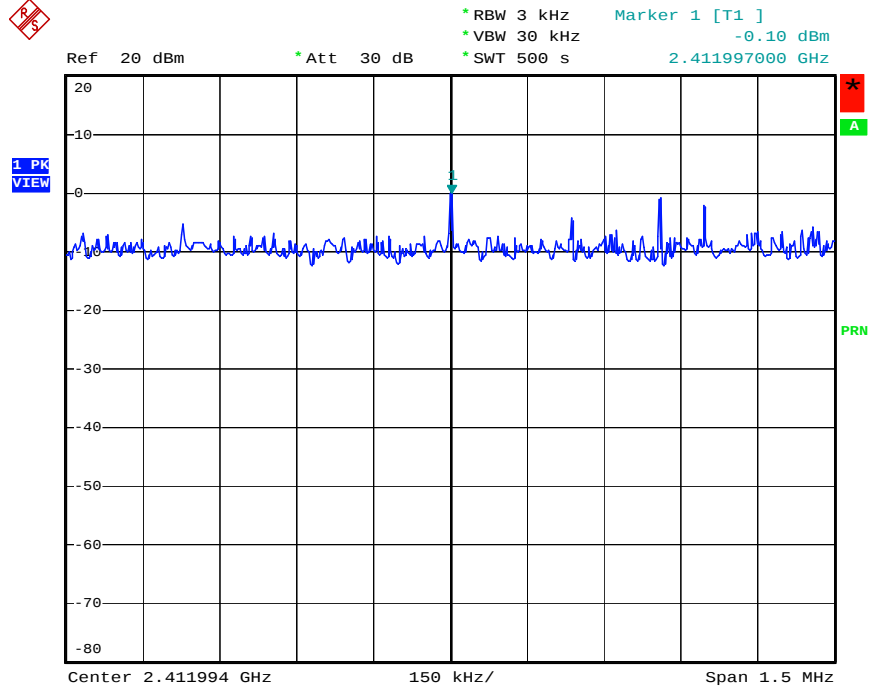
5.3.4. Test Result: See spectrum analyzer plots below

- Mode 1
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Eason Lu

Modulation Type	Channel	Frequency (MHz)	Power Density (dBm)	Limits (dBm)
CCK	01	2412 MHz	-0.10	8
CCK	06	2437 MHz	-0.61	8
CCK	11	2462 MHz	-0.76	8
OFDM	01	2412 MHz	-7.25	8
OFDM	06	2437 MHz	-3.26	8
OFDM	11	2462 MHz	-9.21	8

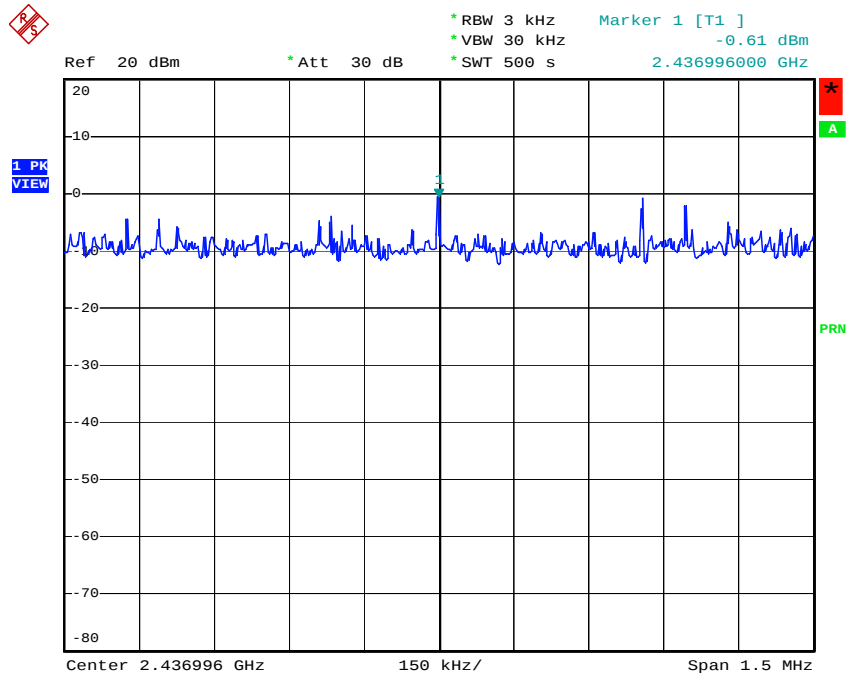


Modulation Type: CCK (Channel 01) :



Date: 18.APR.2005 11:49:13

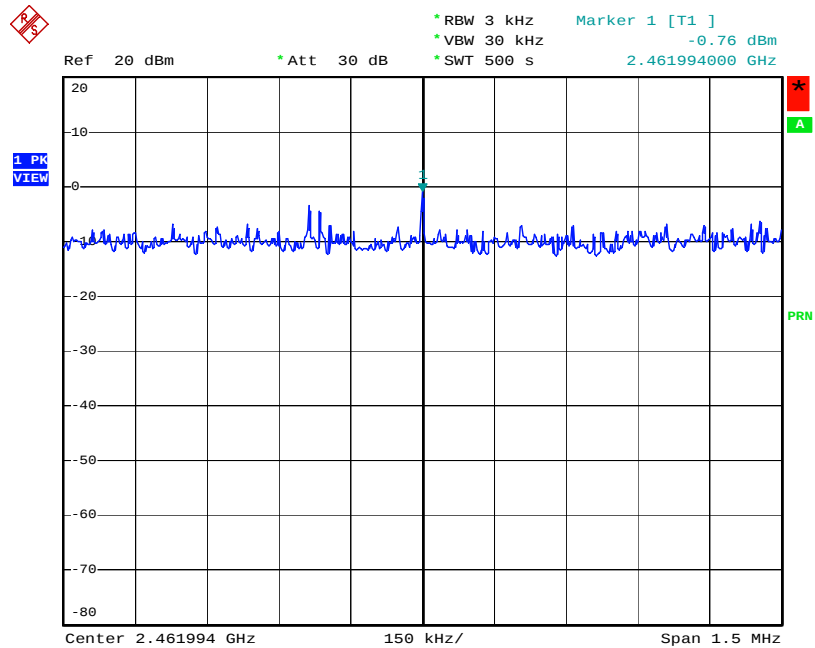
Modulation Type: CCK (Channel 06) :



Date: 18.APR.2005 11:51:08



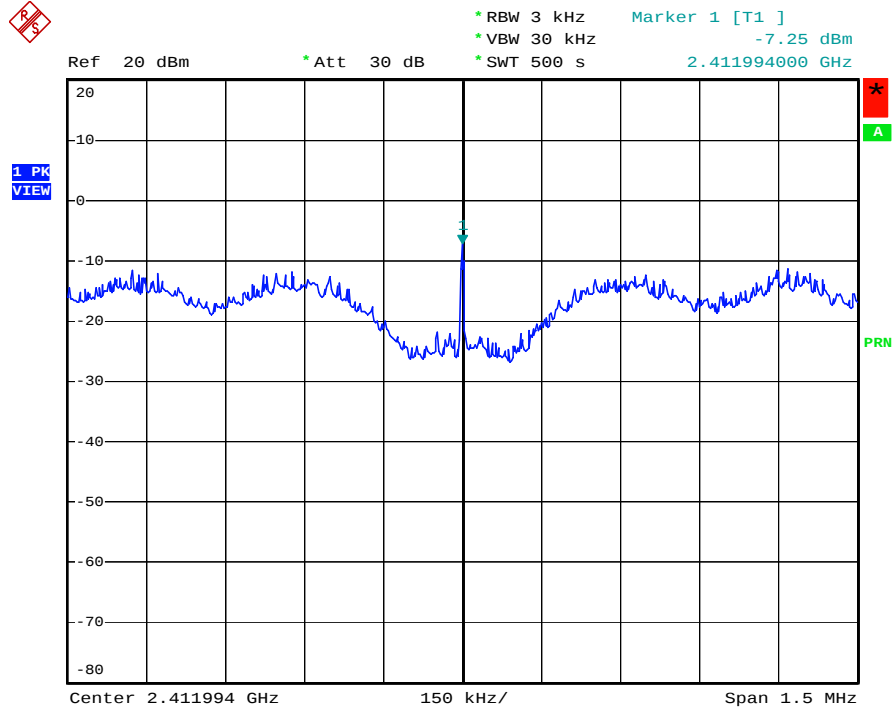
Modulation Type: CCK (Channel 11) :



Date: 18.APR.2005 11:52:41

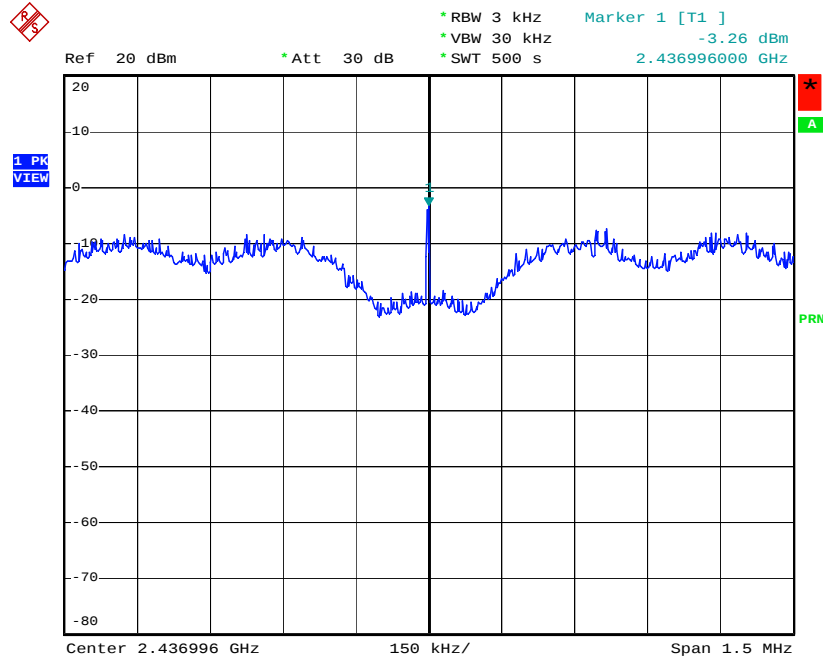


Modulation Type: OFDM (Channel 01) :



Date: 18.APR.2005 12:04:49

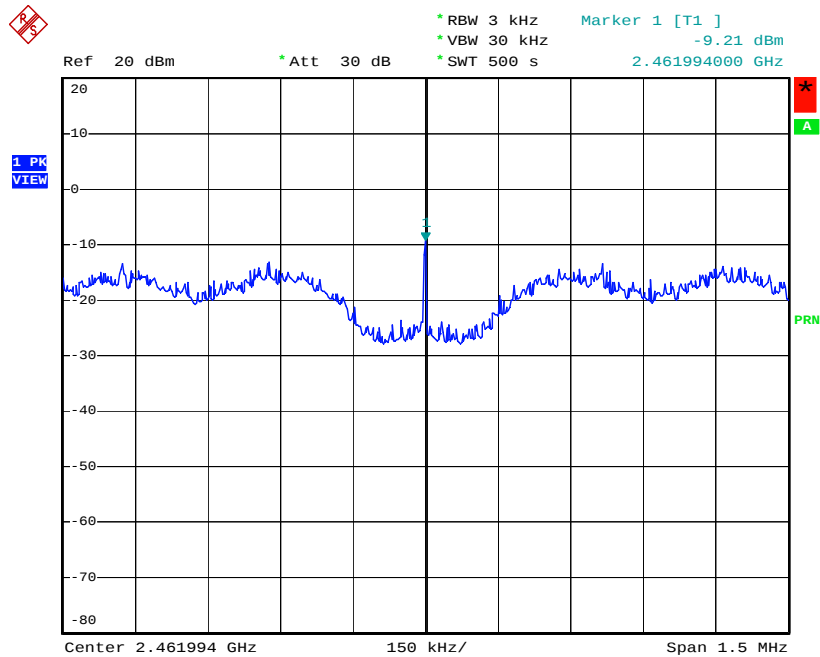
Modulation Type: OFDM (Channel 06) :



Date: 18.APR.2005 12:09:59



Modulation Type: OFDM (Channel 11) :



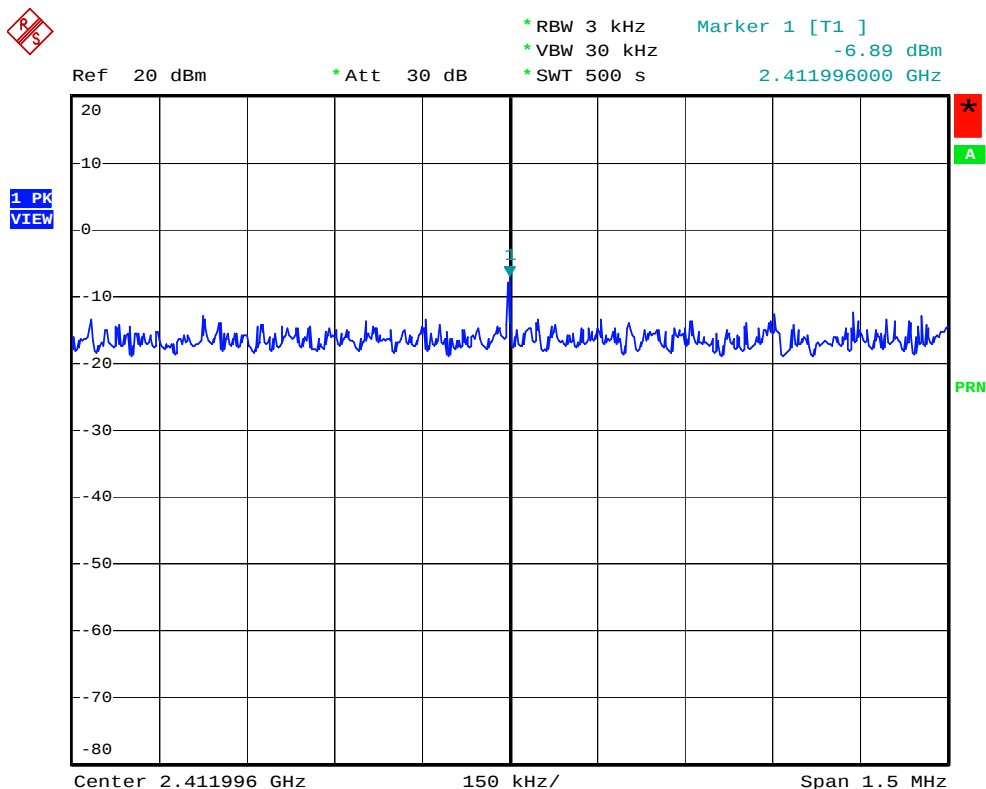
Date: 18.APR.2005 12:17:08



- Mode 2
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Eason Lu

Modulation Type	Channel	Frequency (MHz)	Power Density (dBm)	Limits (dBm)
CCK	01	2412 MHz	-6.89	8
CCK	06	2437 MHz	-1.69	8
CCK	11	2462 MHz	-7.45	8
OFDM	01	2412 MHz	-7.13	8
OFDM	06	2437 MHz	-4.01	8
OFDM	11	2462 MHz	-10.13	8

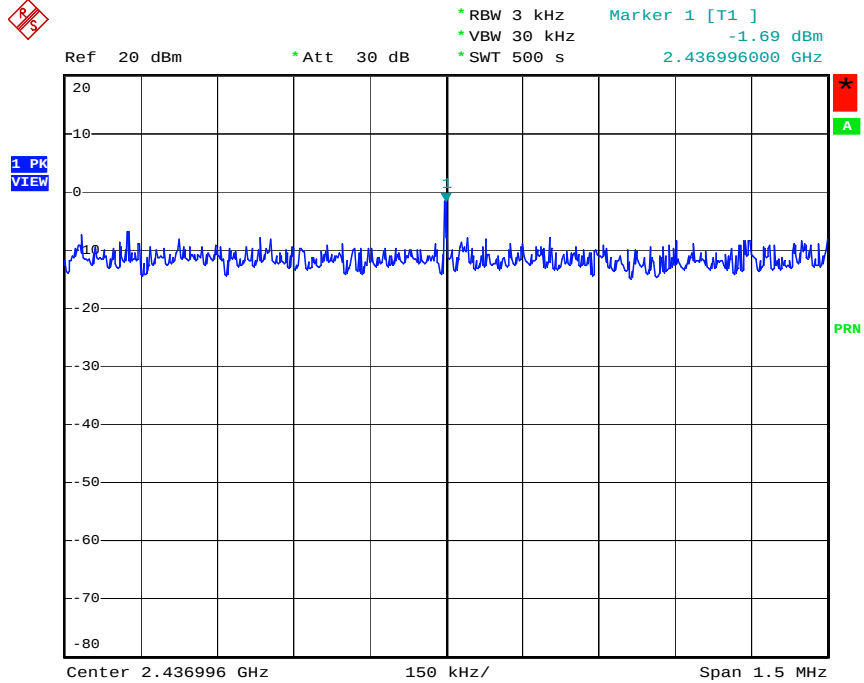
Modulation Type: CCK (Channel 01) :



Date: 18.APR.2005 12:55:40

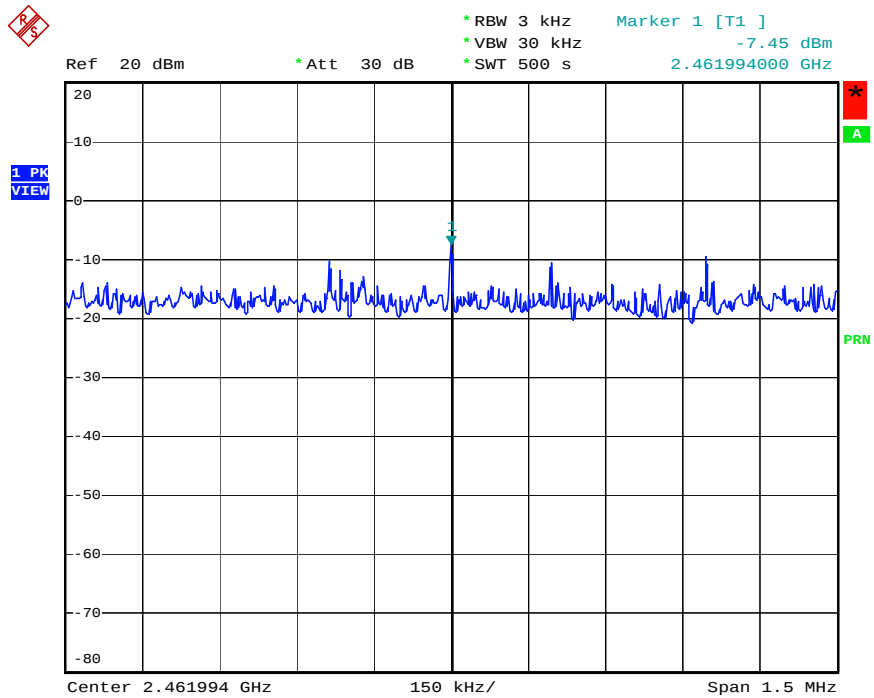


Modulation Type: CCK (Channel 06) :



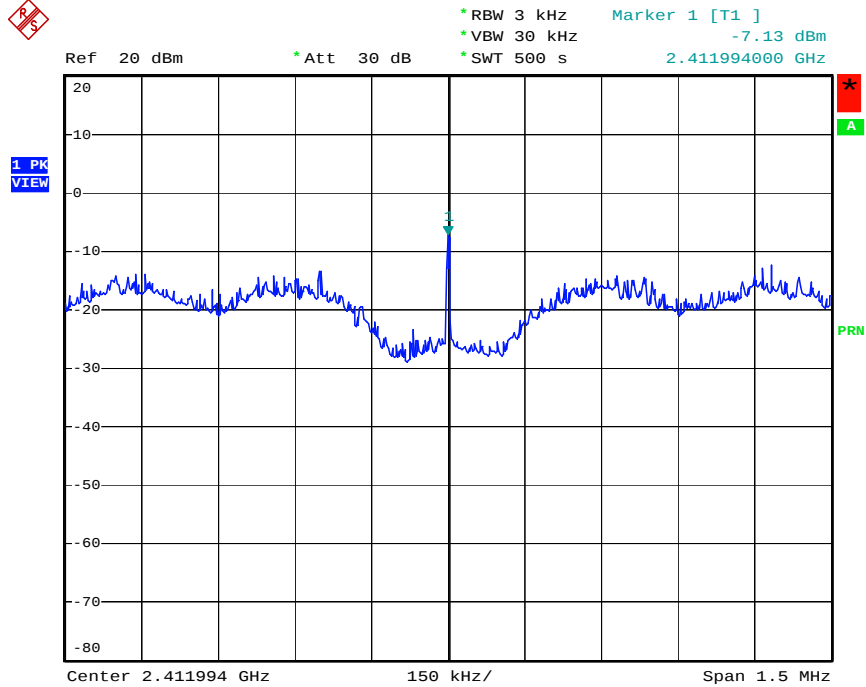
Date: 18.APR.2005 12:57:18

Modulation Type: CCK (Channel 11) :



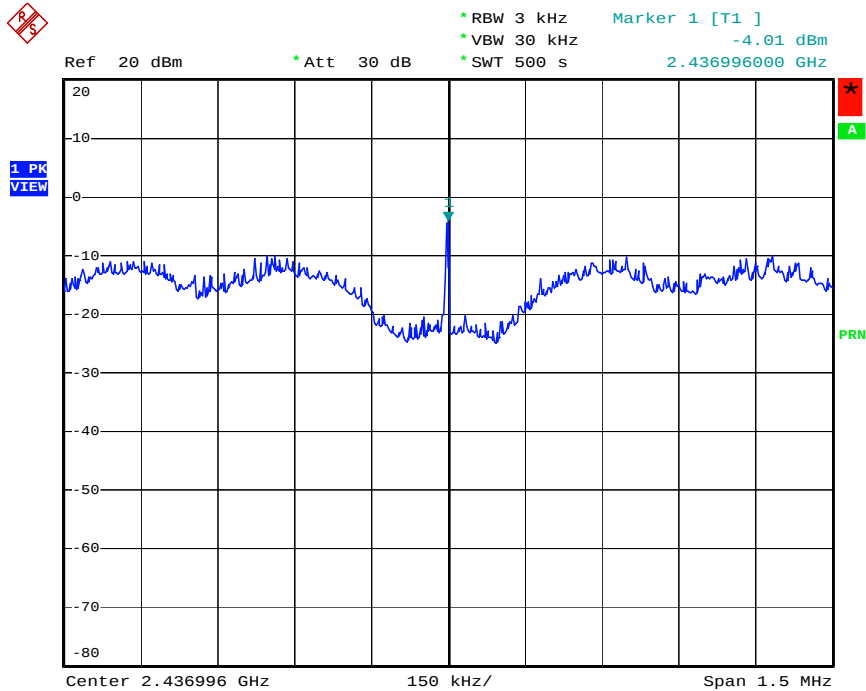
Date: 18.APR.2005 13:06:48

Modulation Type: OFDM (Channel 01) :



Date: 18.APR.2005 13:11:20

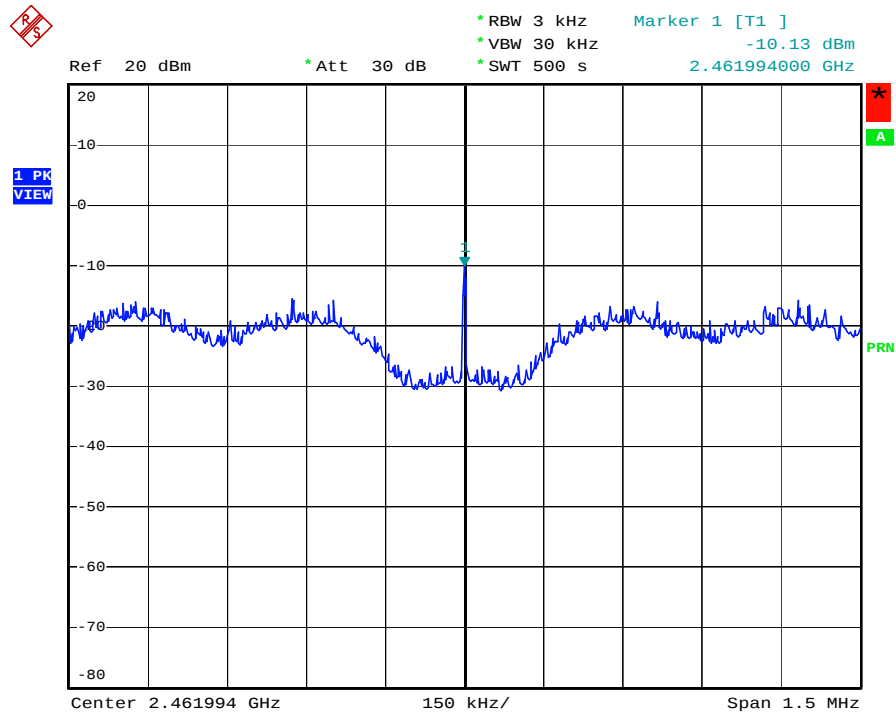
Modulation Type: OFDM (Channel 06) :



Date: 18.APR.2005 13:17:44



Modulation Type: OFDM (Channel 11) :



Date: 18.APR.2005 13:19:17

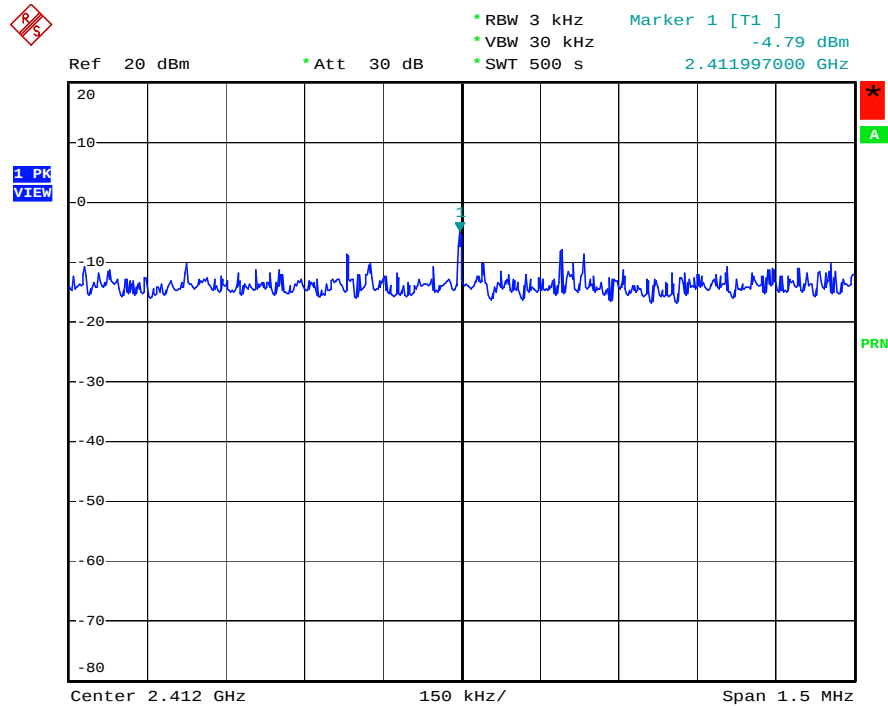


- Mode 3
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Eason Lu

Modulation Type	Channel	Frequency (MHz)	Power Density (dBm)	Limits (dBm)
CCK	01	2412 MHz	-4.79	8
CCK	06	2437 MHz	-1.69	8
CCK	11	2462 MHz	-6.07	8
OFDM	01	2412 MHz	-7.94	8
OFDM	06	2437 MHz	-4.01	8
OFDM	11	2462 MHz	-9.01	8

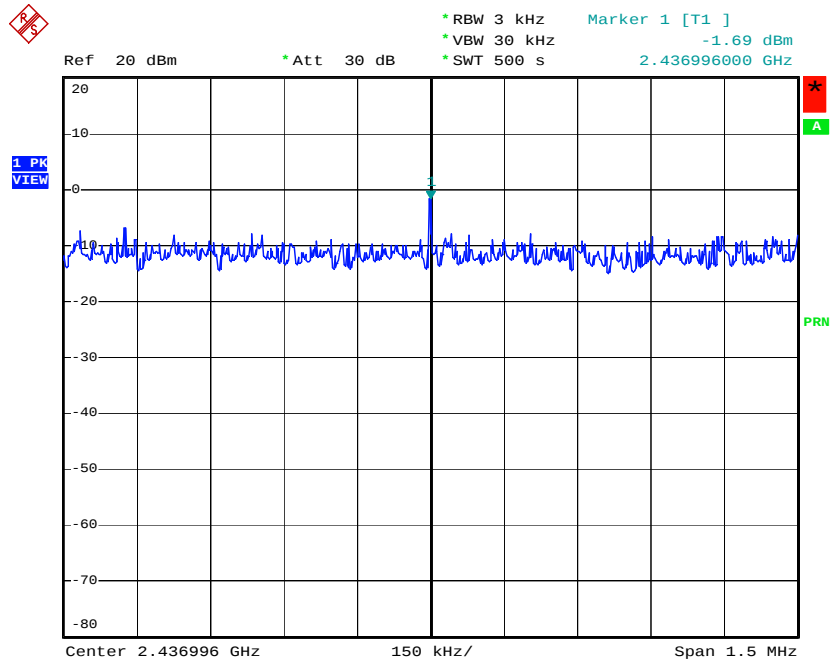


Modulation Type: CCK (Channel 01) :



Date: 18.APR.2005 16:13:40

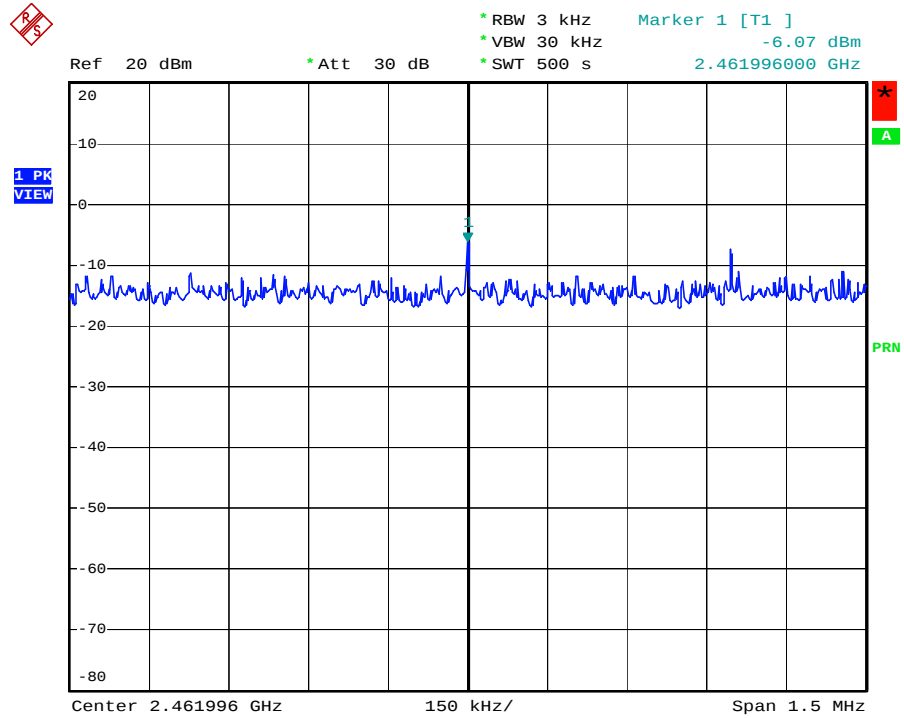
Modulation Type: CCK (Channel 06) :



Date: 18.APR.2005 12:57:18

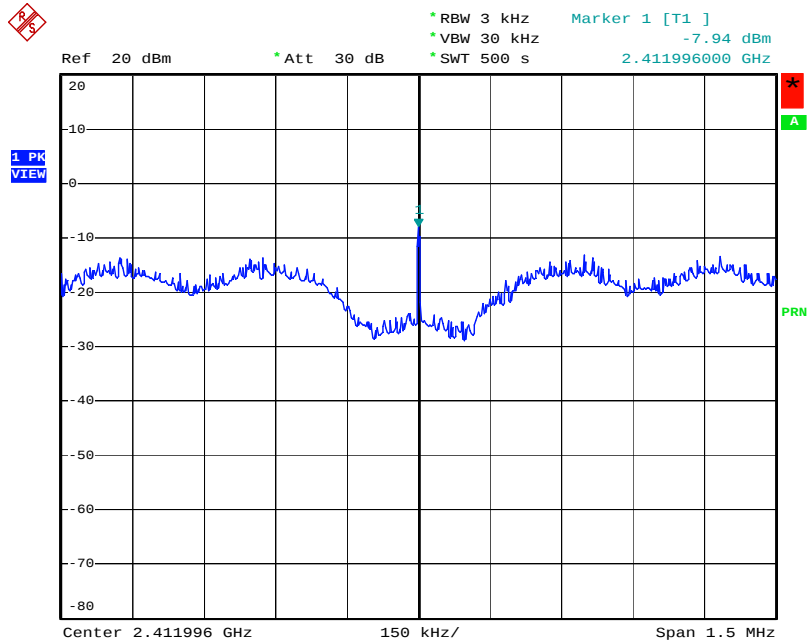


Modulation Type: CCK (Channel 11) :



Date: 18.APR.2005 16:19:57

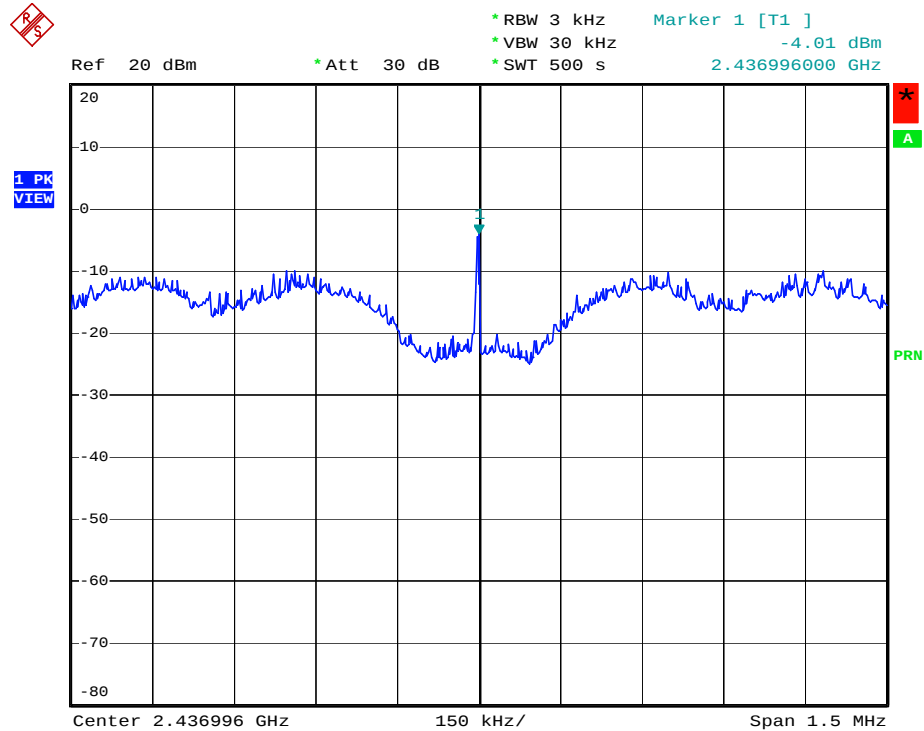
Modulation Type: OFDM (Channel 01) :



Date: 18.APR.2005 16:25:56

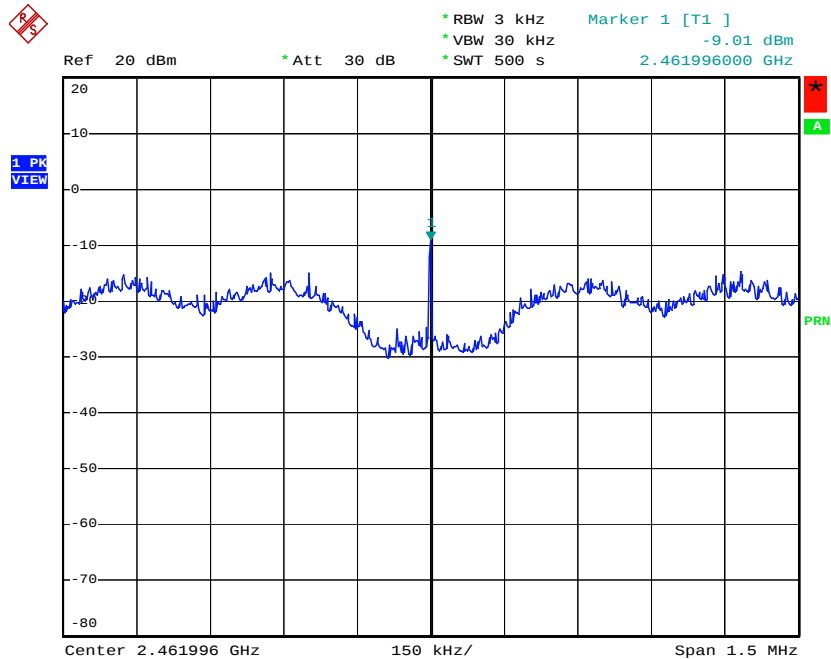


Modulation Type: OFDM (Channel 06) :



Date: 18.APR.2005 13:17:44

Modulation Type: OFDM (Channel 11) :



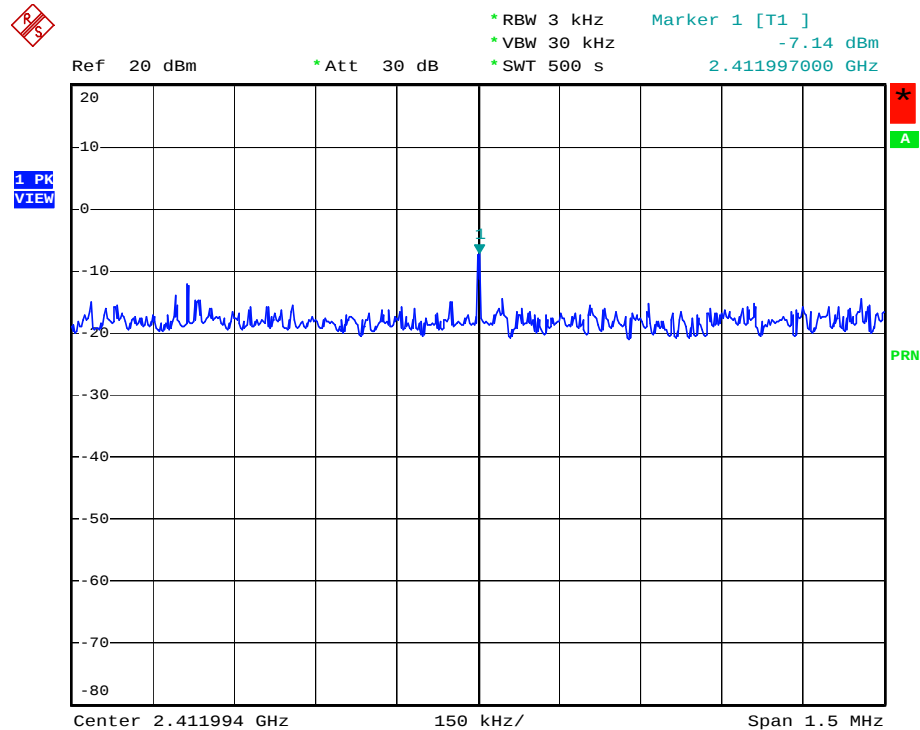
Date: 18.APR.2005 16:27:51



- Mode 4
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Eason Lu

Modulation Type	Channel	Frequency (MHz)	Power Density (dBm)	Limits (dBm)
CCK	01	2412 MHz	-7.14	8
CCK	06	2437 MHz	-1.69	8
CCK	11	2462 MHz	-8.90	8
OFDM	01	2412 MHz	-11.72	8
OFDM	06	2437 MHz	-3.45	8
OFDM	11	2462 MHz	-11.41	8

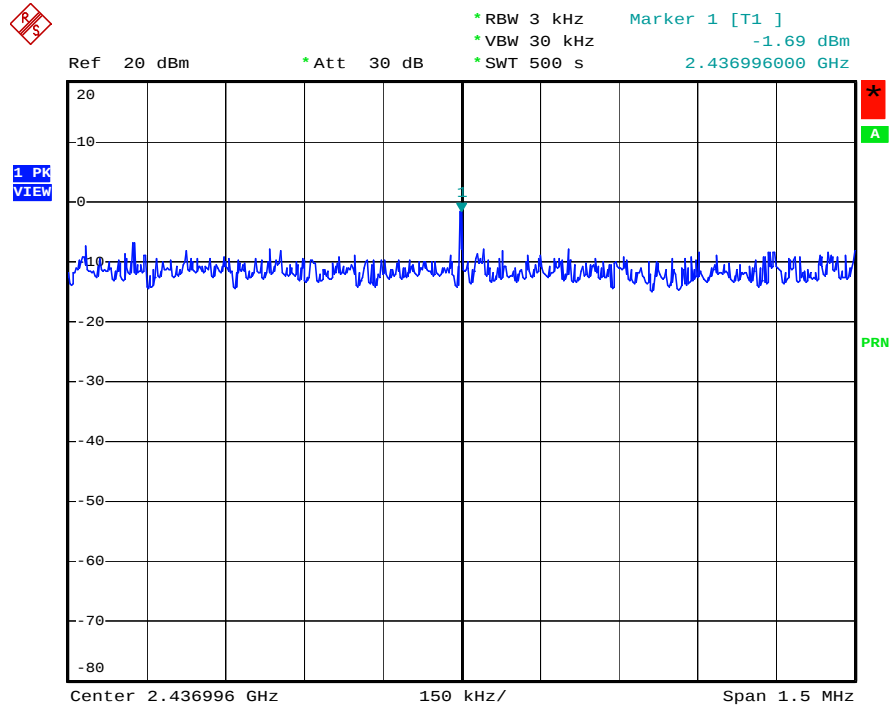
Modulation Type: CCK (Channel 01) :



Date: 18.APR.2005 16:34:42

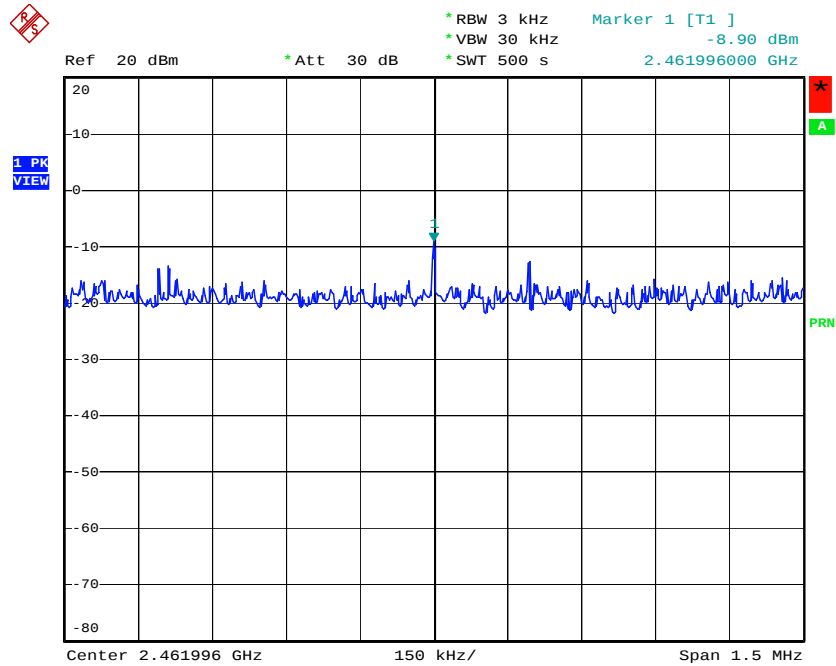


Modulation Type: CCK (Channel 06) :



Date: 18.APR.2005 12:57:18

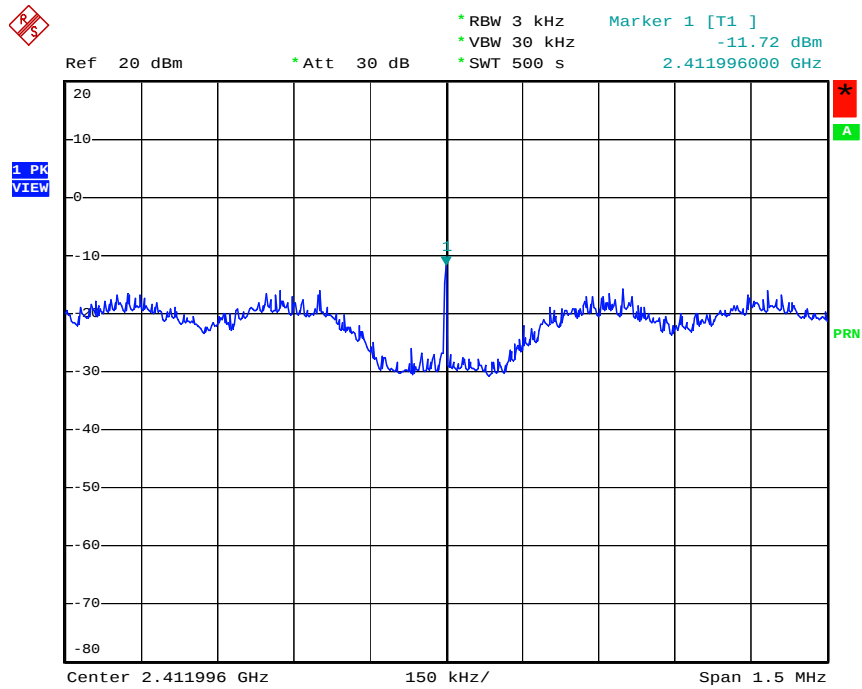
Modulation Type: CCK (Channel 11) :



Date: 18.APR.2005 16:36:26

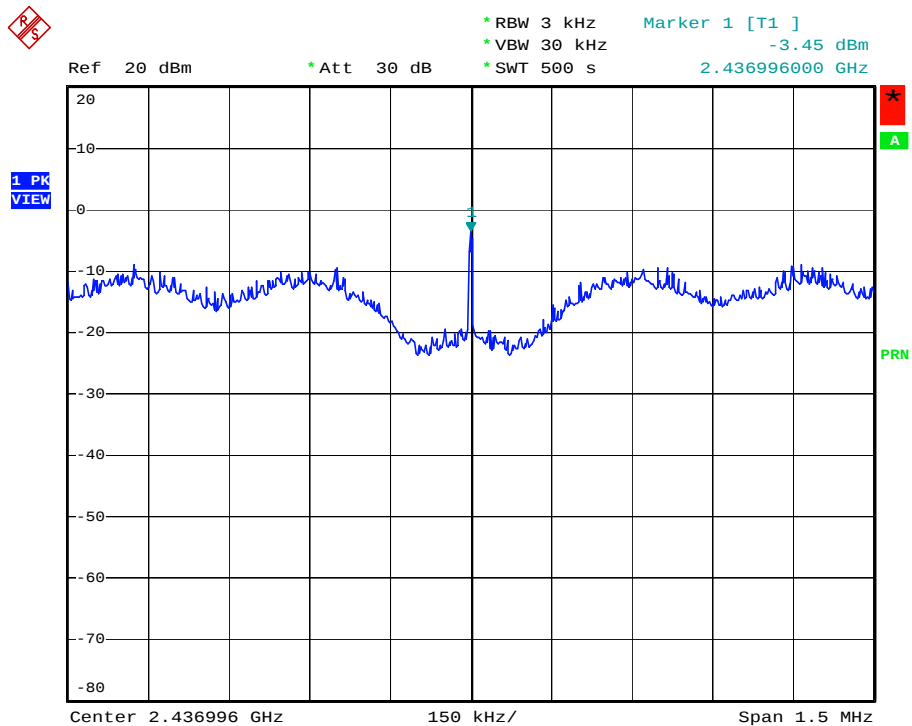


Modulation Type: OFDM (Channel 01) :



Date: 18.APR.2005 16:50:24

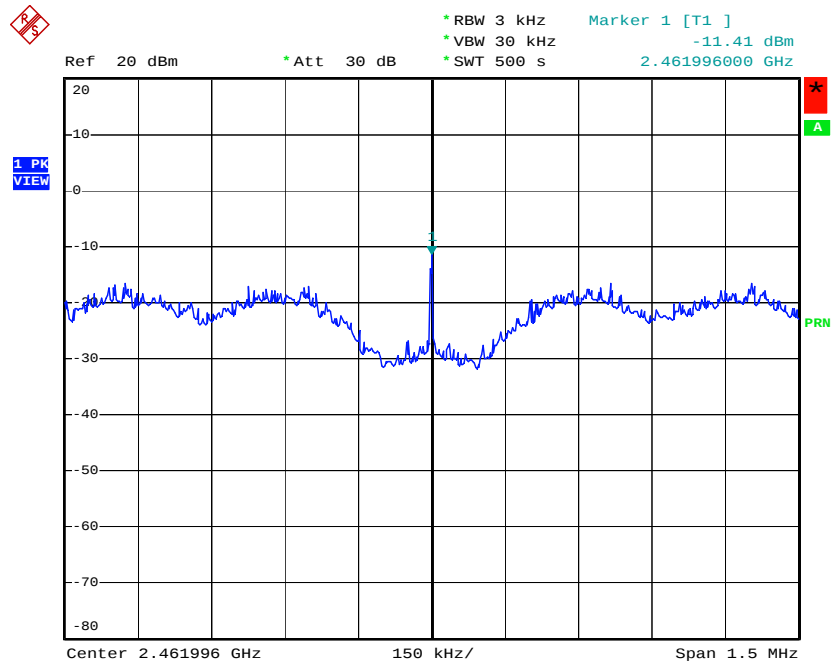
Modulation Type: OFDM (Channel 06) :



Date: 18.APR.2005 16:52:24



Modulation Type: OFDM (Channel 11) :



Date: 18.APR.2005 16:54:22



5.4. Test of Band Edges Emission

5.4.1. Measuring Instruments

Item 18 of the table on section 6.

5.4.2. Test Procedures

1. The transmitter is set to the lowest channel.
2. The transmitter output was connected to the spectrum analyzer via a cable and cable loss is used as the offset of the spectrum analyzer.
3. Set both RBW and VBW of spectrum analyzer to 100KHz with convenient frequency span including 100MHz bandwidth from lower band edge.
4. The lowest band edges emission was measured and recorded.
5. The transmitter set to the highest channel and repeated 2~4.

5.4.3. Test Result

Temperature: 26°C

Relative Humidity: 64%

Duty Cycle of the Equipment During the Test: 100.00%

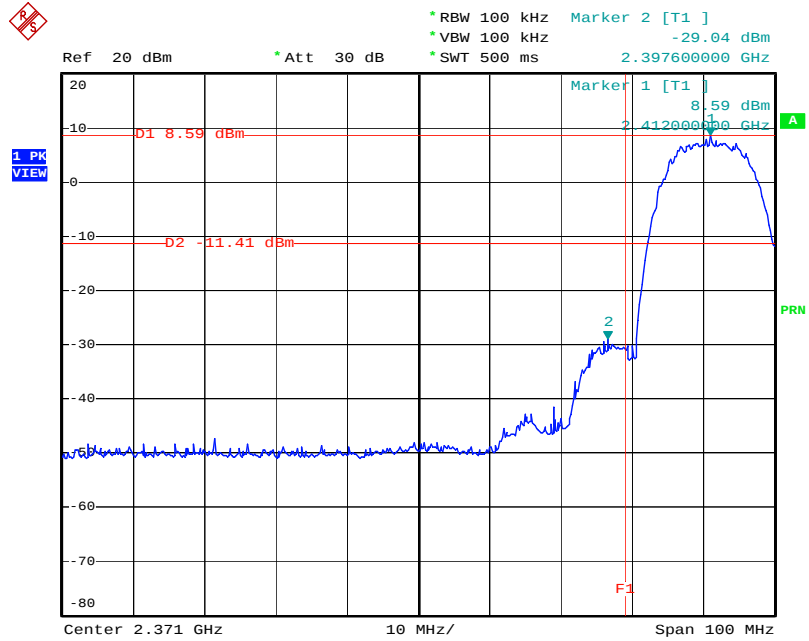
Test Engineer: Eason Lu

Mode 1

Modulation	Test	Freq.	Level*	Margin	Limit	Trace
Type	Channel	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(PK/AV)
CCK	01	2389.990	64.81	-9.19	74	PK
CCK	01	2389.990	50.19	-3.81	54	AV
CCK	11	2483.660	67.50	-6.50	74	PK
CCK	11	2483.660	50.01	-3.99	54	AV
OFDM	01	2389.990	71.37	-2.63	74	PK
OFDM	01	2389.990	51.48	-2.52	54	AV
OFDM	11	2483.660	70.29	-3.71	74	PK
OFDM	11	2483.660	52.92	-1.08	54	AV

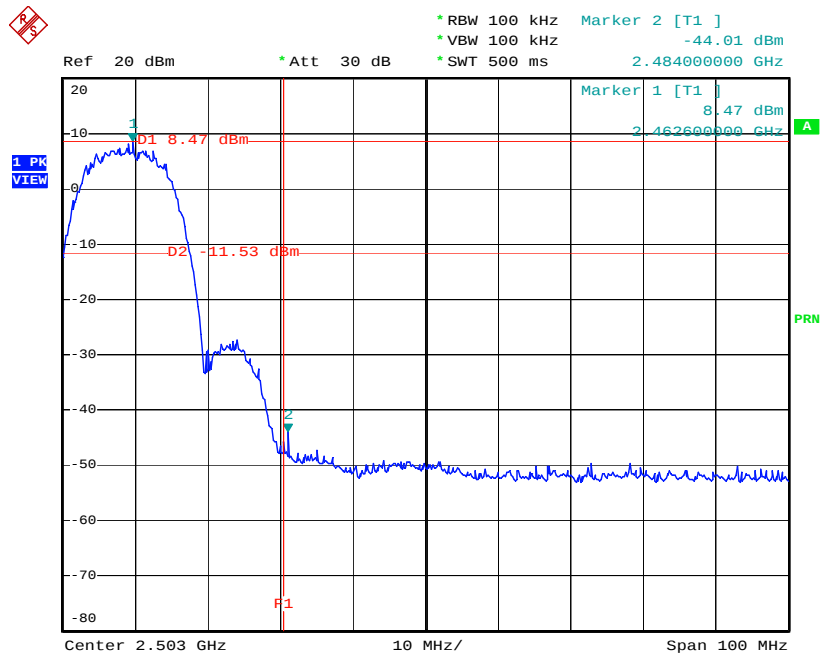
Level* : The max field strength in the restricted bands.

Modulation Type: CCK (Channel 01) :



Date: 18.APR.2005 11:47:16

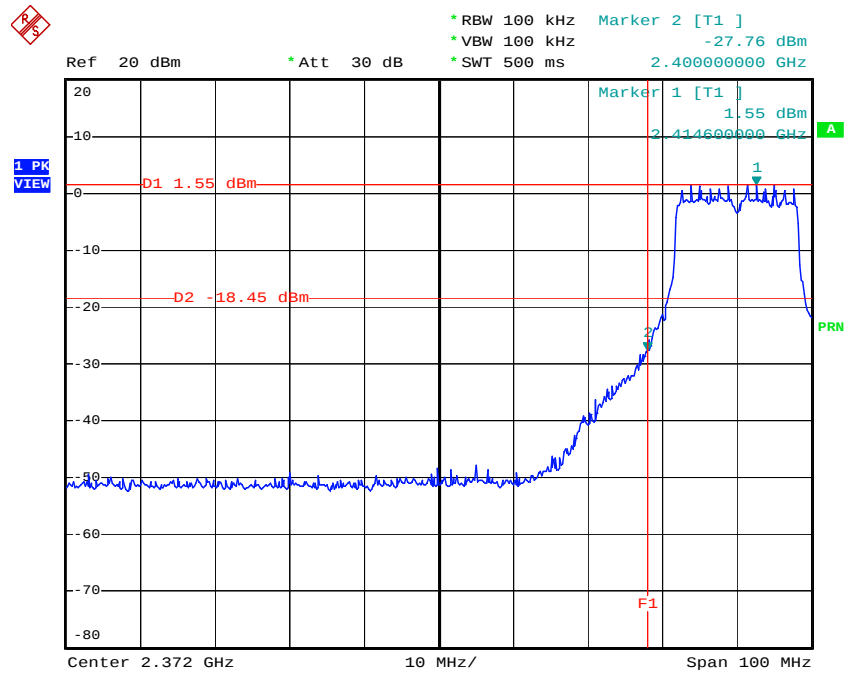
Modulation Type: CCK (Channel 11) :



Date: 18.APR.2005 11:45:51

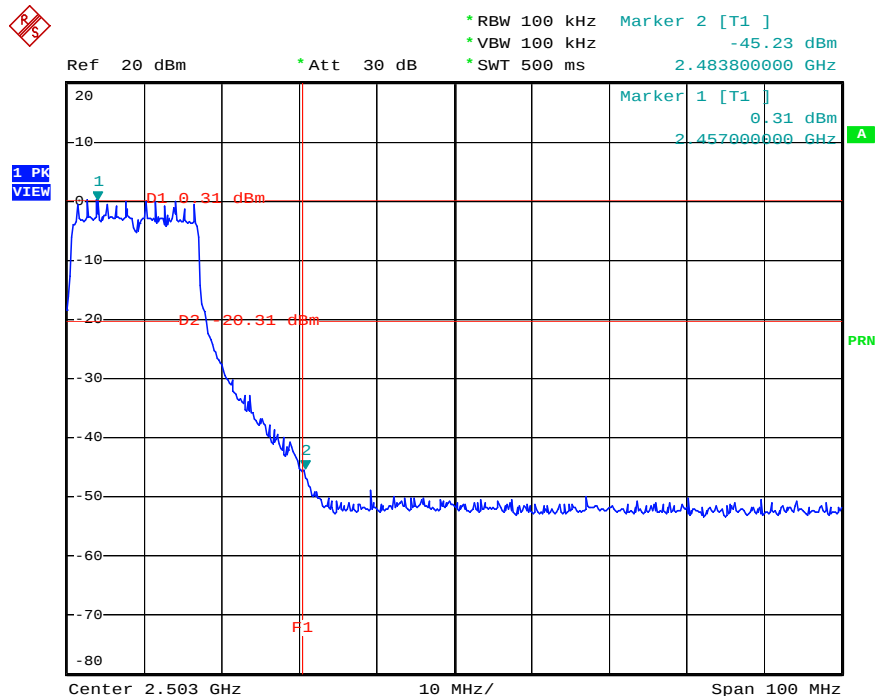


Modulation Type: OFDM (Channel 01) :



Date: 18.APR.2005 11:57:12

Modulation Type: OFDM (Channel 11) :



Date: 18.APR.2005 12:15:17

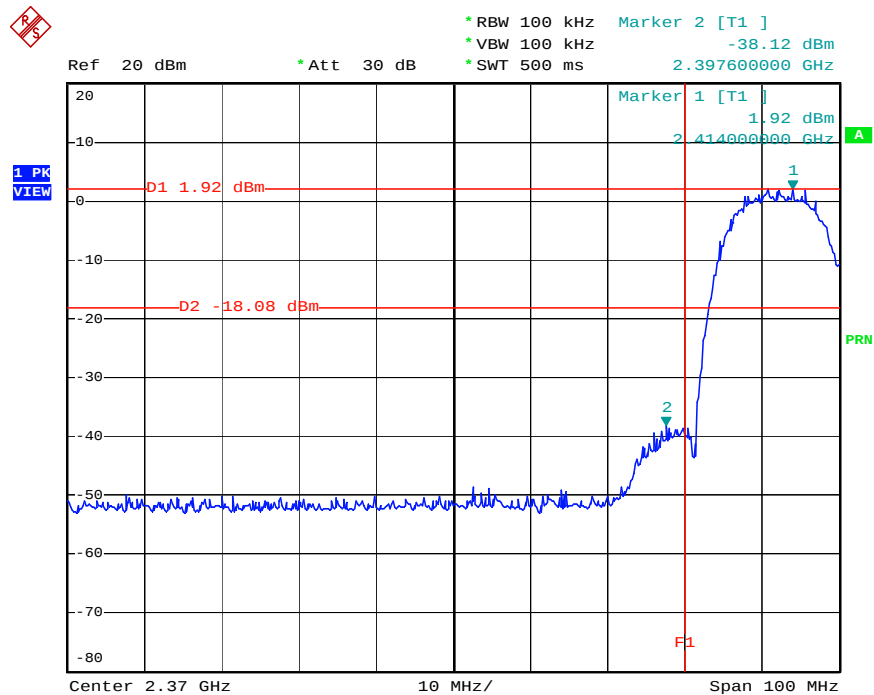


Mode 2

Modulation	Test	Freq.	Level*	Margin	Limit	Trace
Type	Channel	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(PK/AV)
CCK	01	2389.990	70.75	-3.25	74	PK
CCK	01	2389.990	46.95	-7.05	54	AV
CCK	11	2483.660	61.67	-12.33	74	PK
CCK	11	2483.660	44.69	-9.31	54	AV
OFDM	01	2389.990	72.82	-1.18	74	PK
OFDM	01	2389.990	52.80	-1.20	54	AV
OFDM	11	2483.660	71.46	-2.54	74	PK
OFDM	11	2483.660	52.90	-1.10	54	AV

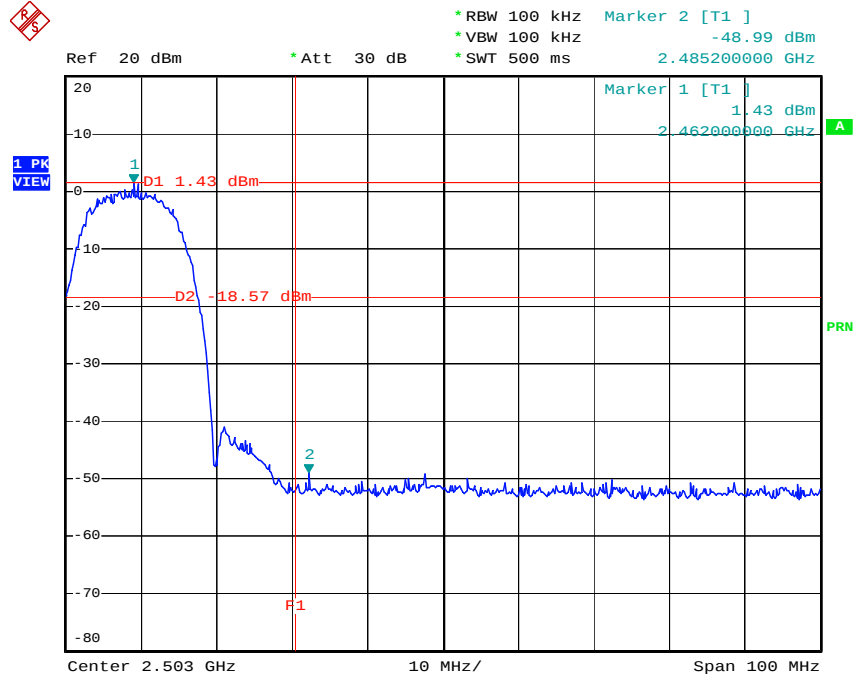
Level* : The max field strength in the restricted bands.

Modulation Type: CCK (Channel 01) :



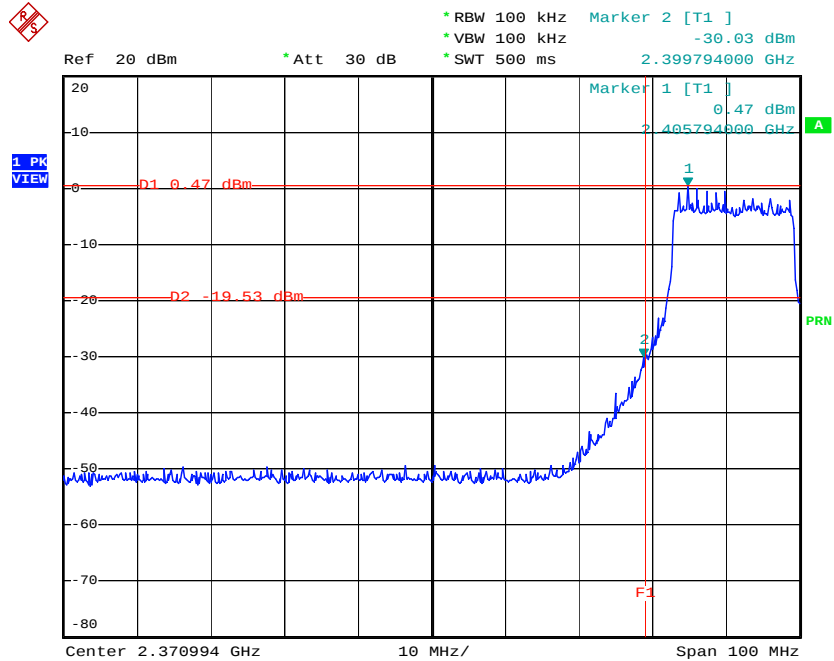
Date: 18.APR.2005 12:54:00

Modulation Type: CCK (Channel 11) :



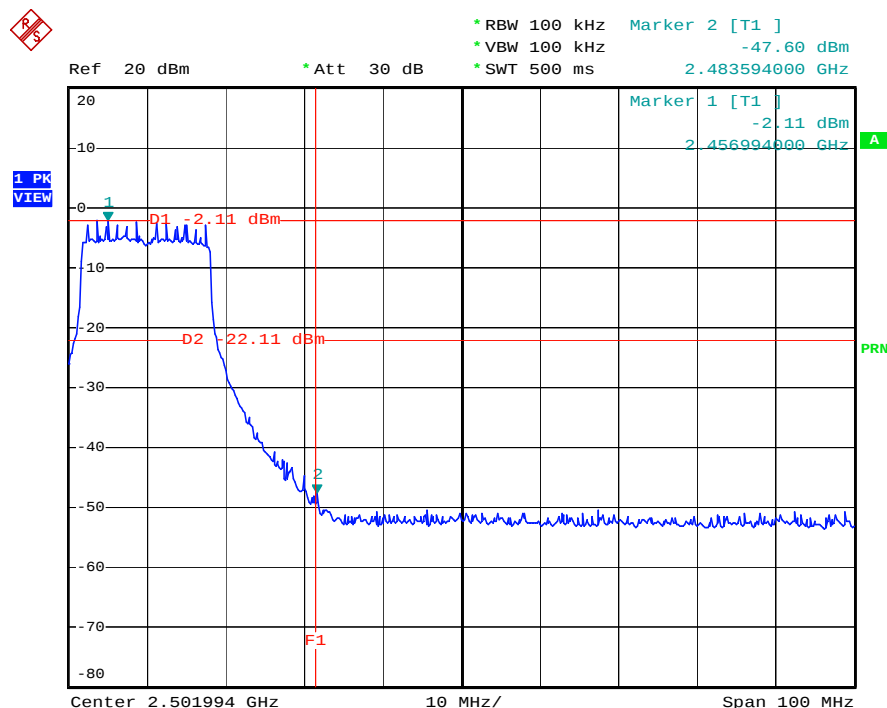
Date: 18.APR.2005 13:02:56

Modulation Type: OFDM (Channel 01) :



Date: 18.APR.2005 13:13:57

Modulation Type: OFDM (Channel 11) :



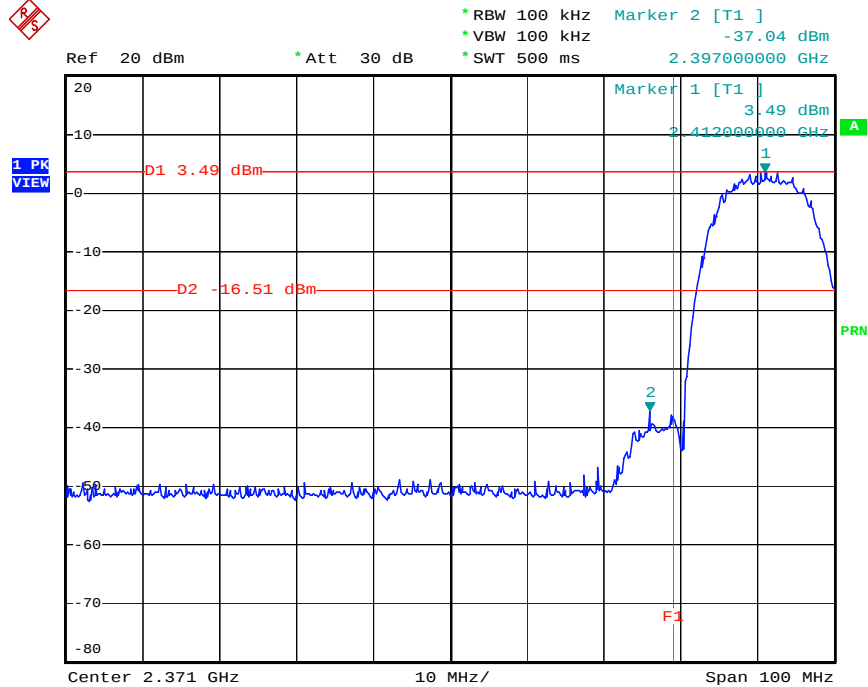
Date: 18.APR.2005 13:23:57

Mode 3

Modulation Type	Test Channel	Freq. (MHz)	Level* (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Trace (PK/AV)
CCK	01	2389.990	59.43	-14.57	74	PK
CCK	01	2389.990	45.58	-8.42	54	AV
CCK	11	2483.660	62.65	-11.35	74	PK
CCK	11	2483.660	44.51	-9.49	54	AV
OFDM	01	2389.990	71.21	-2.79	74	PK
OFDM	01	2389.990	51.02	-2.98	54	AV
OFDM	11	2483.660	70.53	-3.47	74	PK
OFDM	11	2483.660	50.48	-3.52	54	AV

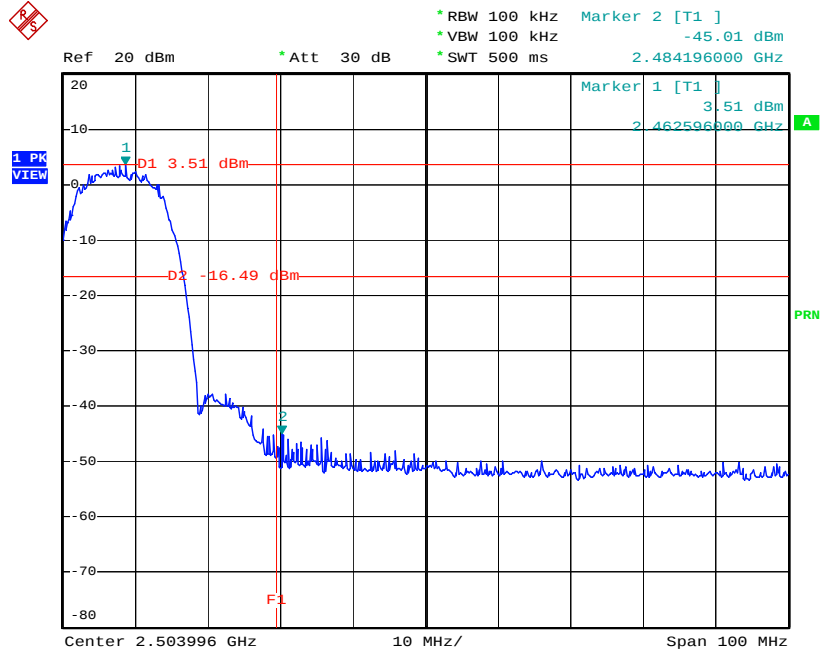
Level* : The max field strength in the restricted bands.

Modulation Type: CCK (Channel 01) :



Date: 18.APR.2005 16:11:41

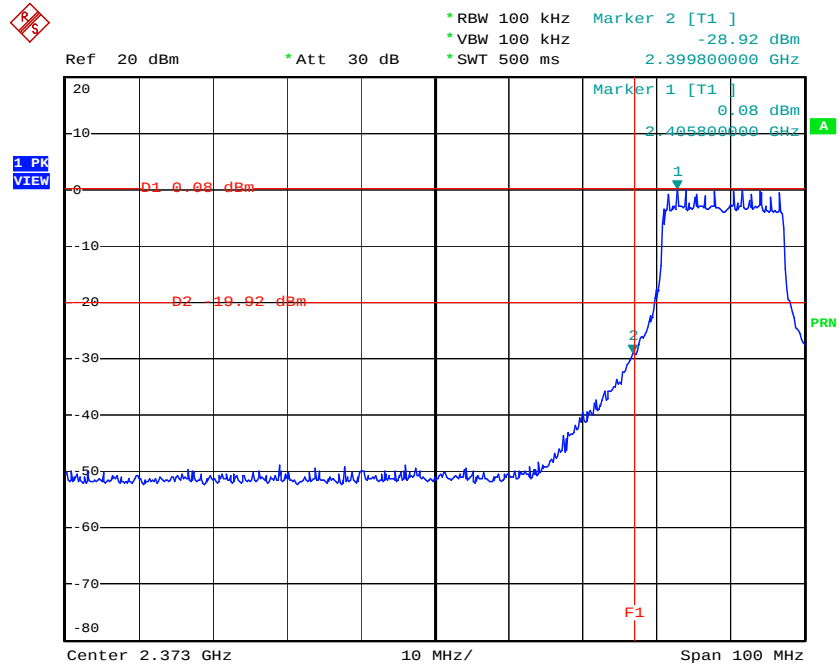
Modulation Type: CCK (Channel 11) :



Date: 18.APR.2005 16:21:12

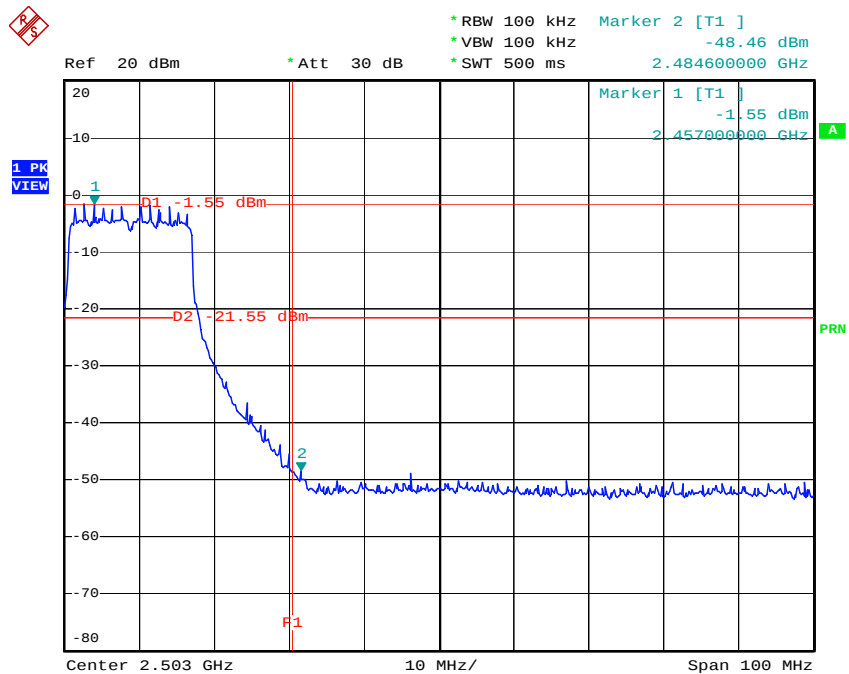


Modulation Type: OFDM (Channel 01) :



Date: 18.APR.2005 16:24:07

Modulation Type: OFDM (Channel 11) :



Date: 18.APR.2005 16:29:15

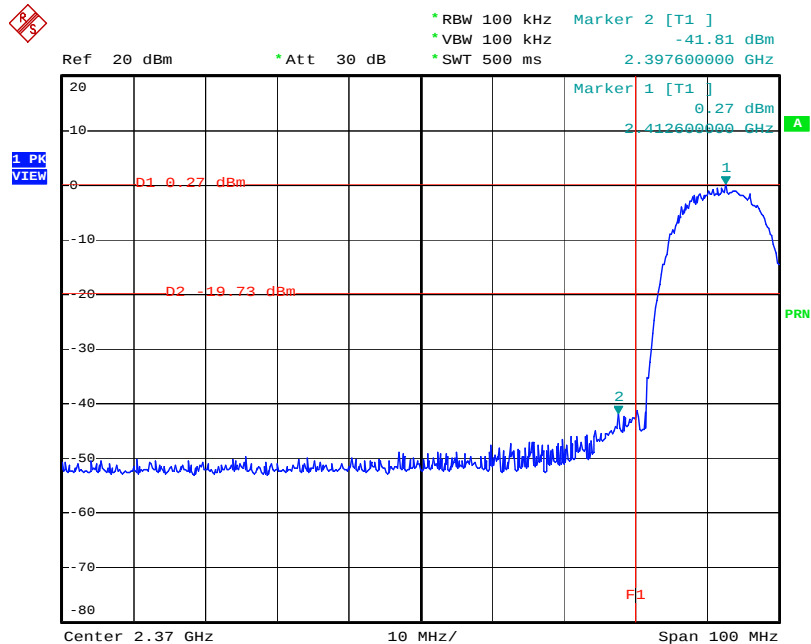


Mode 4

Modulation	Test	Freq.	Level*	Margin	Limit	Trace
Type	Channel	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(PK/AV)
CCK	01	2371.940	66.12	-7.88	74	PK
CCK	01	2371.940	44.52	-9.48	54	AV
CCK	11	2484.990	58.61	-15.39	74	PK
CCK	11	2484.990	46.07	-7.93	54	AV
OFDM	01	2389.990	72.99	-1.01	74	PK
OFDM	01	2389.990	52.36	-1.64	54	AV
OFDM	11	2483.660	72.58	-1.42	74	PK
OFDM	11	2483.660	52.09	-1.91	54	AV

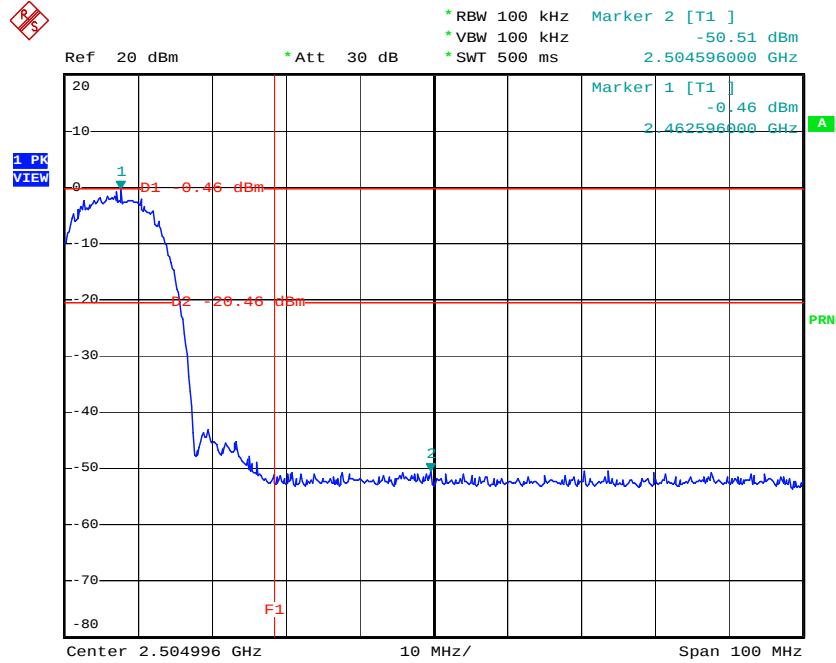
Level* : The max field strength in the restricted bands.

Modulation Type: CCK (Channel 01) :



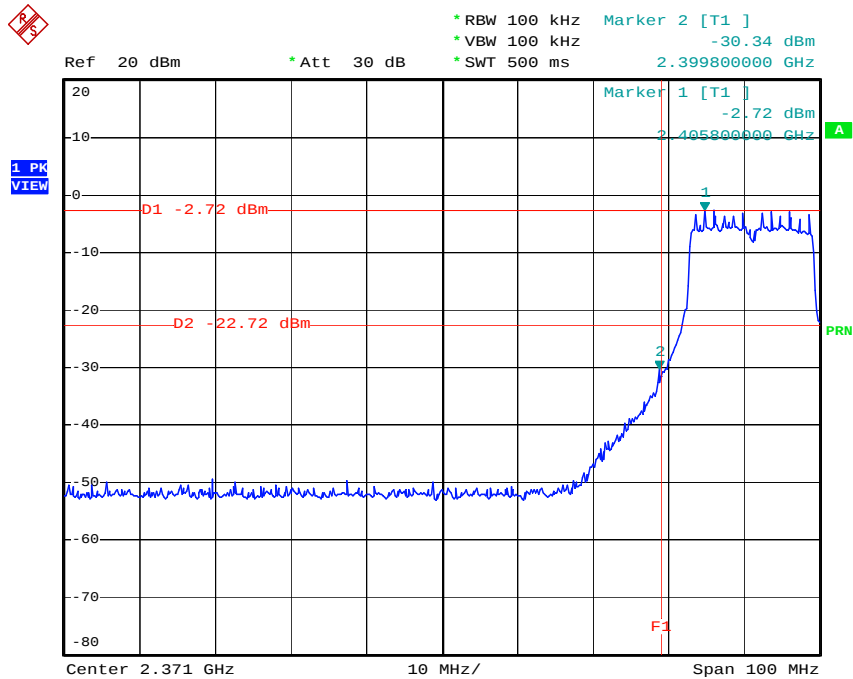
Date: 18.APR.2005 16:32:49

Modulation Type: CCK (Channel 11) :



Date: 18.APR.2005 16:38:13

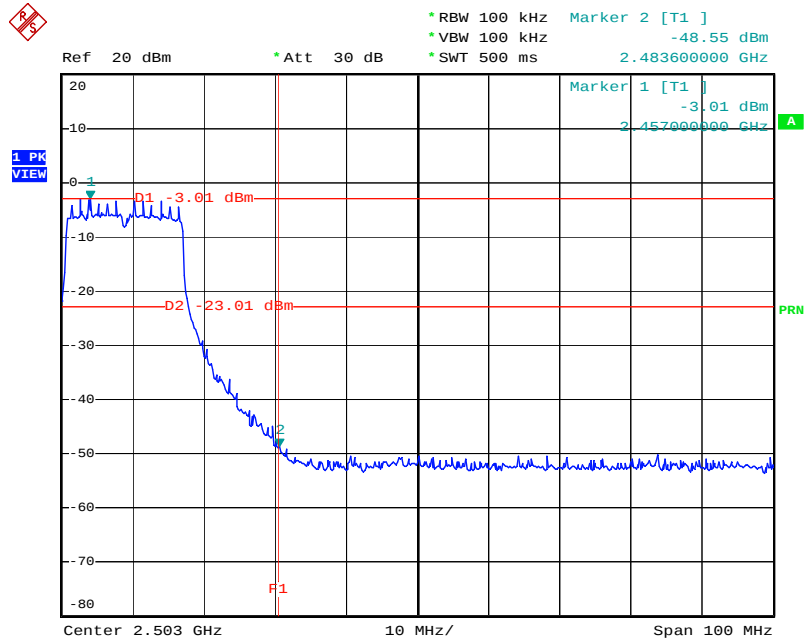
Modulation Type: OFDM (Channel 01) :



Date: 18.APR.2005 16:48:48



Modulation Type: OFDM (Channel 11) :



Date: 18.APR.2005 16:56:05

5.5. Test of AC Power Line Conducted Emission

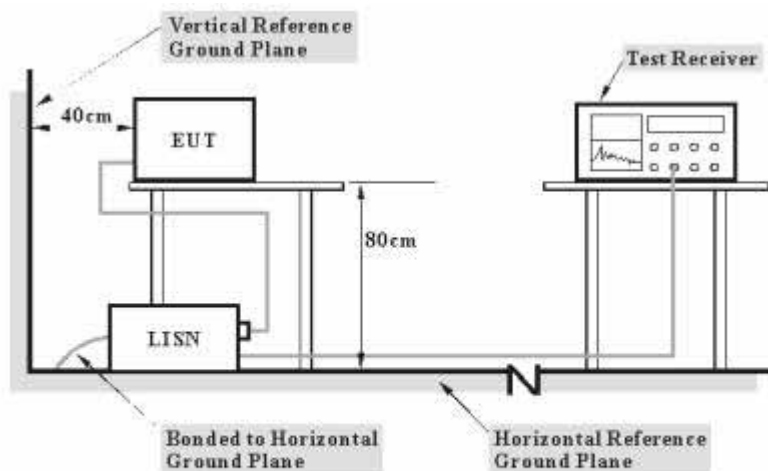
5.5.1. Measuring Instruments

Please reference item 1~5 in chapter 6 for the instruments used for testing.

5.5.2. Test Procedures

1. Configure the EUT according to ANSI C63.4.
2. The EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN)
4. All the support units are connected to the other LISNs. The LISN should provides 50uH/50ohms coupling impedance.
5. The frequency range from 150 KHz to 30 MHz was searched.
6. Use the Channel & Power Controlling software to make the EUT working on selected channel and expected output power, then use the "H" Patter Generator software to make the supporting equipments stay on working condition.
7. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
8. The measurement has to be done between each power line and ground at the power terminal for each RF channel. Only one RF channel has to be investigated since this test is independent with the RF channel selection.

5.5.3. Test Setup Layout

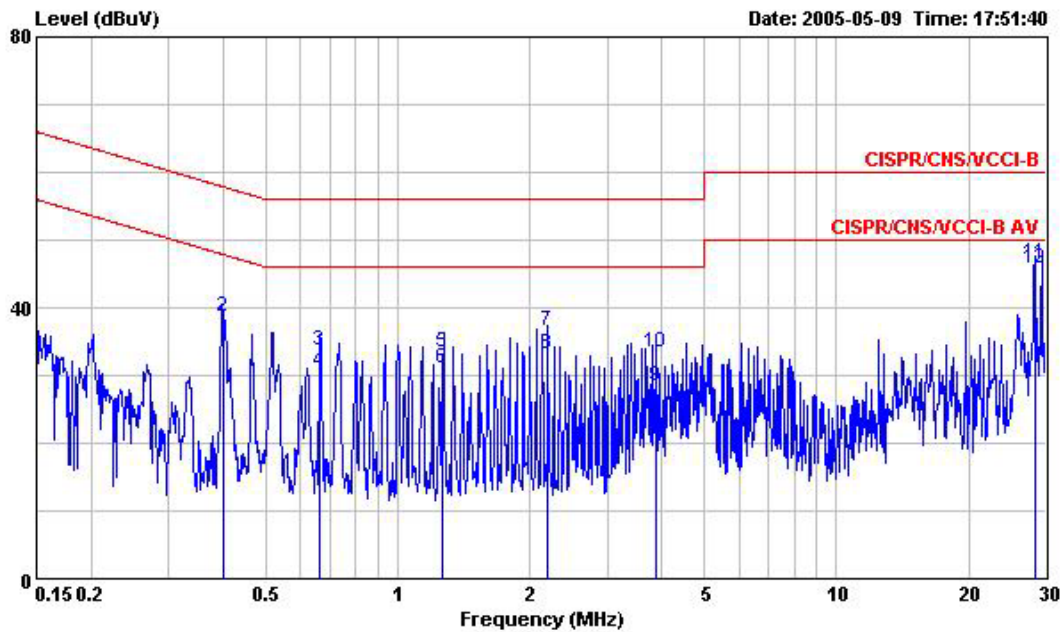


Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

5.5.4. Test Result of Conducted Emission

- Temperature: 26°C
- Relative Humidity: 64%
- Test Engineer: Sky Wu

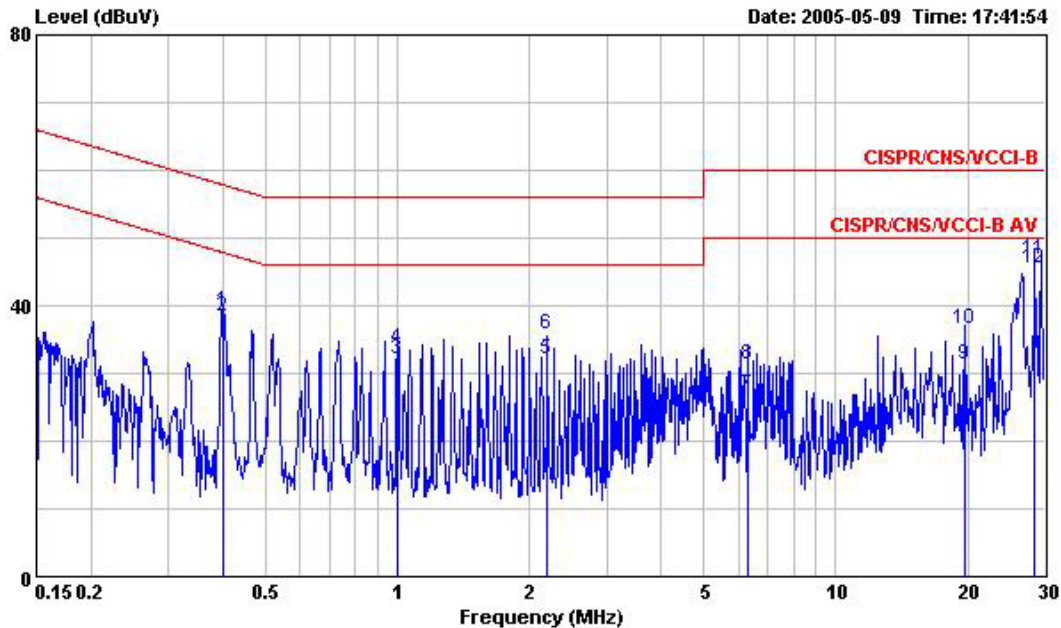
Line to Ground



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.3997440	37.66	-10.20	47.86	37.32	0.06	0.28	Average
2	0.3997440	38.65	-19.21	57.86	38.31	0.06	0.28	QP
3	0.6647840	33.66	-22.34	56.00	32.90	0.11	0.65	QP
4	0.6647840	30.53	-15.47	46.00	29.77	0.11	0.65	Average
5	1.266	33.32	-22.68	56.00	32.71	0.11	0.50	QP
6	1.266	31.05	-14.95	46.00	30.44	0.11	0.50	Average
7	2.201	36.55	-19.45	56.00	36.20	0.12	0.23	QP
8	2.201	33.28	-12.72	46.00	32.93	0.12	0.23	Average
9	3.867	28.40	-17.60	46.00	27.89	0.21	0.30	Average
10	3.867	33.37	-22.63	56.00	32.86	0.21	0.30	QP
11	28.332	46.70	-13.30	60.00	45.75	0.45	0.50	QP
12	28.332	45.66	-4.34	50.00	44.71	0.45	0.50	Average



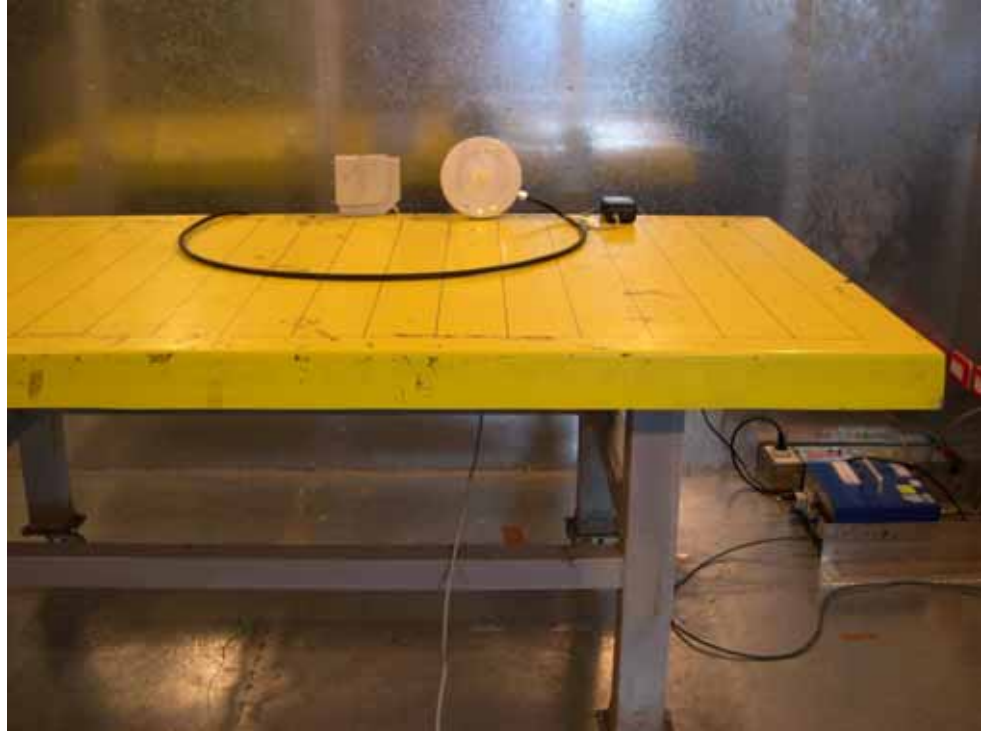
Neutral to Ground



	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.3997440	39.33	-18.53	57.86	38.94	0.11	0.28	QP
2	0.3997440	38.52	-9.34	47.86	38.13	0.11	0.28	Average
3	1.001	32.10	-13.90	46.00	31.23	0.23	0.64	Average
4	1.001	33.64	-22.36	56.00	32.77	0.23	0.64	QP
5	2.201	32.21	-13.79	46.00	31.75	0.23	0.23	Average
6	2.201	35.82	-20.18	56.00	35.36	0.23	0.23	QP
7	6.272	26.82	-23.18	50.00	26.30	0.28	0.24	Average
8	6.272	31.19	-28.81	60.00	30.67	0.28	0.24	QP
9	19.708	31.28	-18.72	50.00	30.44	0.43	0.41	Average
10	19.708	36.57	-23.43	60.00	35.73	0.43	0.41	QP
11	28.440	46.76	-13.24	60.00	45.58	0.67	0.51	QP
12	28.440	45.57	-4.43	50.00	44.39	0.67	0.51	Average

5.5.5. Photographs of Conducted Emission Test Configuration

FRONT VIEW



REAR VIEW



5.6. Test of Spurious Radiated Emission

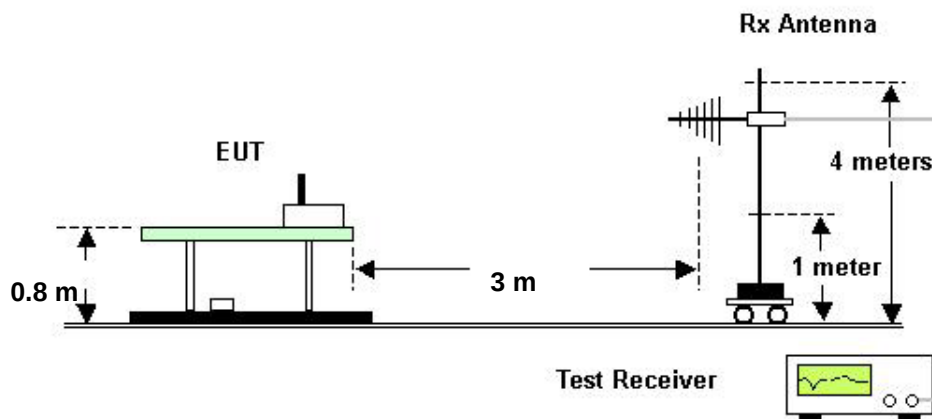
5.6.1. Measuring Instruments

Please reference item 6~17 in chapter 6 for the instruments used for testing.

5.6.2. Test Procedures

1. Configure the EUT according to ANSI C63.4.
2. The EUT was placed on the top of the turn table 0.8 meter above ground.
3. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turn table.
4. Power on the EUT and all the supporting units.
5. The turn table was rotated by 360 degrees to determine the position of the highest radiation.
6. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of both horizontal and vertical polarization.
7. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turn table was rotated (from 0 degree to 360 degrees) to find the maximum reading.
8. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
9. For emission above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
10. If the emission level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz and average method for above the 1GHz. the reported.
11. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB higher than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

5.6.3. Test Setup Layout





5.6.4. Test Results for CH 11 / 2462 MHz (for emission below 1GHz)

- Modulation Type: OFDM
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Ted Chiu

Mode 4

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
98.340	33.35	-10.15	53.75	43.50	-20.40	0.94	30.26	Peak
109.900	39.36	-4.14	58.20	43.50	-18.84	1.03	30.29	Peak
138.460	35.17	-8.33	52.20	43.50	-17.03	1.17	30.76	Peak
329.600	27.24	-18.76	41.55	46.00	-14.31	1.76	30.76	Peak
550.400	26.69	-19.31	37.38	46.00	-10.69	2.24	31.17	Peak
768.800	31.16	-14.84	37.37	46.00	-6.21	2.79	30.53	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
33.060	36.78	-3.22	54.28	40.00	-17.50	0.56	30.39	QP
35.950	37.80	-2.20	55.69	40.00	-17.89	0.57	30.50	QP
71.140	35.66	-4.34	55.33	40.00	-19.67	0.83	30.27	Peak
249.600	26.17	-19.83	42.83	46.00	-16.66	1.53	30.49	Peak
329.600	26.56	-19.44	40.87	46.00	-14.31	1.76	30.76	Peak
768.800	29.60	-16.40	35.81	46.00	-6.21	2.79	30.53	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

5.6.5. Test Results for CH 01 / 2412 MHz (for emission above 1GHz)

- Modulation Type: CCK
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Ted Chiu

Mode 1

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2508.000	46.30	-27.70	55.37	74.00	-9.07	1.96	39.58	Peak
4824.000	49.39	-24.61	53.70	74.00	-4.31	2.84	40.14	Peak
7236.000	67.04	-6.96	67.07	74.00	-0.03	3.62	39.47	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2502.000	47.06	-26.94	56.18	74.00	-9.12	1.96	39.58	Peak
2572.000	43.58	-30.42	52.42	74.00	-8.84	2.00	39.55	Peak
4824.000	48.93	-25.07	53.24	74.00	-4.31	2.84	40.14	Peak
7232.000	65.10	-8.90	65.13	74.00	-0.03	3.62	39.47	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 2

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	39.34	-34.66	55.34	74.00	-16.00	1.28	41.66	Peak
2686.000	25.98	-48.02	37.18	74.00	-11.20	2.05	42.34	Peak
4824.000	32.20	-41.80	39.79	74.00	-7.59	2.84	43.42	Peak
10764.000	49.12	-24.88	46.90	74.00	2.22	4.64	41.16	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2516.000	50.91	-23.09	62.70	74.00	-11.79	1.96	42.30	Peak
2686.000	41.81	-32.19	53.01	74.00	-11.20	2.05	42.34	Peak
4824.000	42.97	-31.03	50.56	74.00	-7.59	2.84	43.42	Peak
9648.000	49.27	-24.73	48.17	74.00	1.10	4.01	41.18	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 3

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2356.000	50.98	-23.02	60.51	74.00	-9.53	1.88	39.61	Peak
2518.000	44.50	-29.50	53.57	74.00	-9.07	1.96	39.58	Peak
4824.000	46.27	-27.73	50.58	74.00	-4.31	2.84	40.14	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2014.000	45.77	-28.23	56.27	74.00	-10.50	1.72	39.65	Peak
2686.000	43.22	-30.78	51.60	74.00	-8.38	2.05	39.52	Peak
4824.000	46.84	-27.16	51.15	74.00	-4.31	2.84	40.14	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 4

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	41.71	-32.29	55.28	74.00	-13.57	1.28	39.23	Peak
2500.000	46.40	-27.60	55.53	74.00	-9.13	1.96	39.59	Peak
6496.000	42.58	-31.42	44.58	74.00	-2.00	3.40	39.70	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2502.000	54.80	-19.20	63.92	74.00	-9.12	1.96	39.58	Peak
2686.000	44.94	-29.06	53.32	74.00	-8.38	2.05	39.52	Peak
6496.000	49.38	-24.62	51.39	74.00	-2.00	3.40	39.70	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



- Modulation Type: OFDM
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Ted Chiu

Mode 1

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2508.000	43.49	-30.51	52.56	74.00	-9.07	1.96	39.58	Peak
3907.000	56.03	-17.97	60.62	74.00	-4.59	2.47	39.34	Peak
3907.000	47.30	-6.70	51.89	54.00	-4.59	2.47	39.34	Average
7236.000	57.75	-16.25	57.78	74.00	-0.03	3.62	39.47	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2508.000	47.13	-26.87	56.20	74.00	-9.07	1.96	39.58	Peak
3907.000	53.79	-20.21	58.38	74.00	-4.59	2.47	39.34	Peak
3907.000	36.70	-17.30	41.29	54.00	-4.59	2.47	39.34	Average
7236.000	59.88	-14.12	59.91	74.00	-0.03	3.62	39.47	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 2

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	38.77	-35.23	54.77	74.00	-16.00	1.28	41.66	Peak
2518.000	40.06	-33.94	51.85	74.00	-11.79	1.96	42.31	Peak
2686.000	29.91	-44.09	41.11	74.00	-11.20	2.05	42.34	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2518.000	49.49	-24.51	61.28	74.00	-11.79	1.96	42.31	Peak
2686.000	44.34	-29.66	55.54	74.00	-11.20	2.05	42.34	Peak
4916.000	37.58	-36.42	45.07	74.00	-7.49	2.89	43.52	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 3

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	42.02	-31.98	55.59	74.00	-13.57	1.28	39.23	Peak
1246.000	38.74	-35.26	51.98	74.00	-13.24	1.33	39.21	Peak
2686.000	42.01	-31.99	50.39	74.00	-8.38	2.05	39.52	Peak
7240.000	56.87	-17.13	56.90	74.00	-0.03	3.62	39.47	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1094.000	36.61	-37.39	50.19	74.00	-13.58	1.26	39.23	Peak
2014.000	42.18	-31.82	52.68	74.00	-10.50	1.72	39.65	Peak
2686.000	44.25	-29.75	52.63	74.00	-8.38	2.05	39.52	Peak
7236.000	58.88	-15.12	58.90	74.00	-0.03	3.62	39.47	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 4

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	41.32	-32.68	54.89	74.00	-13.57	1.28	39.23	Peak
2534.000	42.53	-31.47	51.52	74.00	-8.99	1.98	39.57	Peak
2686.000	36.91	-37.09	45.29	74.00	-8.38	2.05	39.52	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	29.66	-44.34	43.23	74.00	-13.57	1.28	39.23	Peak
2536.000	34.93	-39.07	43.92	74.00	-8.99	1.98	39.57	Peak
2686.000	47.09	-26.91	55.47	74.00	-8.38	2.05	39.52	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



5.6.6. Test Results for CH 06 / 2437 MHz (for emission above 1GHz)

- Modulation Type: CCK
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Ted Chiu

Mode 1

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1374.000	38.13	-35.87	51.03	74.00	-12.90	1.41	39.19	Peak
2510.000	48.86	-25.14	57.93	74.00	-9.07	1.96	39.58	Peak
4876.000	47.80	-26.20	51.98	74.00	-4.19	2.87	40.14	Peak
7316.000	60.24	-13.76	59.97	74.00	0.28	3.65	39.45	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	37.71	-36.29	51.28	74.00	-13.57	1.28	39.23	Peak
4880.000	49.91	-24.09	54.10	74.00	-4.19	2.87	40.14	Peak
7232.000	65.10	-8.90	65.13	74.00	-0.03	3.62	39.47	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 2

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	38.46	-35.54	54.46	74.00	-16.00	1.28	41.66	Peak
2502.000	42.16	-31.84	54.00	74.00	-11.84	1.96	42.30	Peak
4876.000	33.21	-40.79	40.73	74.00	-7.52	2.87	43.47	PEAK
7308.000	50.50	-23.50	54.65	74.00	-4.15	3.65	43.83	PEAK

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2524.000	52.41	-21.59	64.13	74.00	-11.72	1.98	42.31	Peak
2686.000	45.40	-28.60	56.60	74.00	-11.20	2.05	42.34	Peak
4876.000	47.45	-26.55	54.97	74.00	-7.52	2.87	43.47	PEAK
7312.000	54.66	-19.34	58.79	74.00	-4.13	3.65	43.81	PEAK

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 3

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	42.24	-31.76	55.81	74.00	-13.57	1.28	39.23	Peak
2686.000	43.74	-30.26	52.12	74.00	-8.38	2.05	39.52	Peak
4876.000	48.93	-25.07	53.12	74.00	-4.19	2.87	40.14	Peak
7308.000	52.44	-21.56	52.22	74.00	0.23	3.65	39.45	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2014.000	45.02	-28.98	55.52	74.00	-10.50	1.72	39.65	Peak
2686.000	46.83	-27.17	55.21	74.00	-8.38	2.05	39.52	Peak
4876.000	51.09	-22.91	55.28	74.00	-4.19	2.87	40.14	Peak
7308.000	52.99	-21.01	52.77	74.00	0.23	3.65	39.45	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 4

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	41.67	-32.33	55.24	74.00	-13.57	1.28	39.23	Peak
4876.000	48.07	-25.93	52.26	74.00	-4.19	2.87	40.14	PEAK
7316.000	56.61	-17.39	56.33	74.00	0.28	3.65	39.45	PEAK

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2686.000	51.45	-22.55	59.83	74.00	-8.38	2.05	39.52	Peak
4876.000	51.09	-22.91	55.28	74.00	-4.19	2.87	40.14	PEAK
7308.000	59.41	-14.59	59.18	74.00	0.23	3.65	39.45	PEAK

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



- Modulation Type: OFDM
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Ted Chiu

Mode 1

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	39.25	-34.75	52.82	74.00	-13.57	1.28	39.23	Peak
2502.000	50.17	-23.83	59.29	74.00	-9.12	1.96	39.58	Peak
4872.000	47.51	-26.49	51.69	74.00	-4.19	2.87	40.14	Peak
7308.000	52.17	-21.83	51.94	74.00	0.23	3.65	39.45	Peak
9740.000	52.75	-21.25	49.04	74.00	3.71	4.00	38.72	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
4876.000	35.39	-38.61	39.58	74.00	-4.19	2.87	40.14	Peak
7304.000	50.77	-23.23	50.54	74.00	0.23	3.65	39.45	Peak
9744.000	54.74	-19.26	51.03	74.00	3.71	4.00	38.72	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 2

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	38.67	-35.33	54.67	74.00	-16.00	1.28	41.66	Peak
2502.000	42.35	-31.65	54.19	74.00	-11.84	1.96	42.30	Peak
7308.000	46.77	-27.23	50.91	74.00	-4.15	3.65	43.83	PEAK

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2510.000	52.05	-21.95	63.84	74.00	-11.79	1.96	42.30	Peak
2686.000	45.18	-28.82	56.38	74.00	-11.20	2.05	42.34	Peak
4876.000	42.75	-31.25	50.27	74.00	-7.52	2.87	43.47	PEAK

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 3

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	42.02	-31.98	55.59	74.00	-13.57	1.28	39.23	Peak
1246.000	38.30	-35.70	51.54	74.00	-13.24	1.33	39.21	Peak
2686.000	44.37	-29.63	52.75	74.00	-8.38	2.05	39.52	Peak
7300.000	64.43	-9.57	64.21	74.00	0.22	3.65	39.46	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2014.000	45.84	-28.16	56.34	74.00	-10.50	1.72	39.65	Peak
2686.000	46.80	-27.20	55.18	74.00	-8.38	2.05	39.52	Peak
7300.000	64.84	-9.16	64.62	74.00	0.22	3.65	39.46	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 4

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	40.87	-33.13	54.44	74.00	-13.57	1.28	39.23	Peak
2524.000	45.88	-28.12	54.87	74.00	-8.99	1.98	39.57	Peak
7312.000	71.52	-2.48	71.30	74.00	0.23	3.65	39.45	PEAK
9744.000	58.34	-15.66	54.63	74.00	3.71	4.00	38.72	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2502.000	55.91	-18.09	65.03	74.00	-9.12	1.96	39.58	Peak
2686.000	50.83	-23.17	59.21	74.00	-8.38	2.05	39.52	Peak
9740.000	60.26	-13.74	56.55	74.00	3.71	4.00	38.72	PEAK

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



5.6.7. Test Results for CH 11 / 2462 MHz (for emission above 1GHz)

- Modulation Type: CCK
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Ted Chiu

Mode 1

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	39.83	-34.17	53.40	74.00	-13.57	1.28	39.23	Peak
2502.000	54.22	-19.78	63.34	74.00	-9.12	1.96	39.58	Peak
2686.000	32.46	-41.54	40.84	74.00	-8.38	2.05	39.52	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1246.000	27.05	-46.95	40.29	74.00	-13.24	1.33	39.21	Peak
2502.000	52.66	-21.34	61.78	74.00	-9.12	1.96	39.58	Peak
2686.000	33.66	-40.34	42.04	74.00	-8.38	2.05	39.52	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 2

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	38.60	-35.40	54.60	74.00	-16.00	1.28	41.66	Peak
2502.000	43.60	-30.40	55.44	74.00	-11.84	1.96	42.30	Peak
3952.000	42.03	-31.97	49.73	74.00	-7.70	2.48	42.59	PEAK

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2502.000	52.27	-21.73	64.11	74.00	-11.84	1.96	42.30	Peak
2686.000	42.11	-31.89	53.31	74.00	-11.20	2.05	42.34	Peak
4916.000	43.64	-30.36	51.13	74.00	-7.49	2.89	43.52	PEAK

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 3

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	41.15	-32.85	54.72	74.00	-13.57	1.28	39.23	Peak
1246.000	38.92	-35.08	52.16	74.00	-13.24	1.33	39.21	Peak
2686.000	41.84	-32.16	50.22	74.00	-8.38	2.05	39.52	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
2014.000	44.88	-29.12	55.38	74.00	-10.50	1.72	39.65	Peak
2686.000	44.66	-29.34	53.04	74.00	-8.38	2.05	39.52	Peak
4924.000	47.87	-26.13	51.95	74.00	-4.08	2.89	40.15	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 4

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	41.49	-32.51	55.06	74.00	-13.57	1.28	39.23	Peak
2518.000	43.66	-30.34	52.73	74.00	-9.07	1.96	39.58	Peak
2686.000	35.02	-38.98	43.40	74.00	-8.38	2.05	39.52	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	29.68	-44.32	43.25	74.00	-13.57	1.28	39.23	Peak
2518.000	58.30	-15.70	67.37	74.00	-9.07	1.96	39.58	Peak
2686.000	47.40	-26.60	55.78	74.00	-8.38	2.05	39.52	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

- Modulation Type: OFDM
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Ted Chiu

Mode 1

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	39.87	-34.13	53.44	74.00	-13.57	1.28	39.23	Peak
1246.000	24.70	-49.30	37.94	74.00	-13.24	1.33	39.21	Peak
2686.000	32.17	-41.83	40.55	74.00	-8.38	2.05	39.52	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	26.58	-47.42	40.15	74.00	-13.57	1.28	39.23	Peak
1246.000	37.29	-36.71	50.53	74.00	-13.24	1.33	39.21	Peak
2686.000	34.10	-39.90	42.48	74.00	-8.38	2.05	39.52	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 2

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	39.13	-34.87	55.13	74.00	-16.00	1.28	41.66	Peak
2524.000	42.43	-31.57	54.15	74.00	-11.72	1.98	42.31	Peak
4872.000	42.31	-31.69	49.83	74.00	-7.52	2.87	43.47	PEAK
7312.000	49.82	-24.18	53.95	74.00	-4.13	3.65	43.81	PEAK

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1246.000	36.91	-37.09	52.70	74.00	-15.79	1.33	41.75	Peak
2510.000	48.94	-25.06	60.73	74.00	-11.79	1.96	42.30	Peak
4872.000	36.61	-37.39	44.13	74.00	-7.52	2.87	43.47	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 3

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	42.12	-31.88	55.69	74.00	-13.57	1.28	39.23	Peak
1246.000	38.11	-35.89	51.35	74.00	-13.24	1.33	39.21	Peak
2686.000	41.36	-32.64	49.74	74.00	-8.38	2.05	39.52	Peak
3308.000	42.76	-31.24	48.78	74.00	-6.02	2.29	39.10	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	36.91	-37.09	50.48	74.00	-13.57	1.28	39.23	Peak
2014.000	42.59	-31.41	53.09	74.00	-10.50	1.72	39.65	Peak
2686.000	42.61	-31.39	50.99	74.00	-8.38	2.05	39.52	Peak
3224.000	42.24	-31.76	48.55	74.00	-6.30	2.27	39.17	Peak

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Mode 4

(A) Polarization: Horizontal

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	40.77	-33.23	54.34	74.00	-13.57	1.28	39.23	Peak
2532.000	43.98	-30.02	52.97	74.00	-8.99	1.98	39.57	Peak
2686.000	36.69	-37.31	45.07	74.00	-8.38	2.05	39.52	Peak

(B) Polarization: Vertical

Freq	Level	Over Limit	Read Level	Limit Line	Factor	Cable Loss	Preamp Factor	Remark
MHz	dBuV/m	dB	dBuV	dBuV/m	dB	dB	dB	
1100.000	30.66	-43.34	44.23	74.00	-13.57	1.28	39.23	Peak
2524.000	54.30	-19.70	63.29	74.00	-8.99	1.98	39.57	Peak
2686.000	47.67	-26.33	56.05	74.00	-8.38	2.05	39.52	Peak

Note:

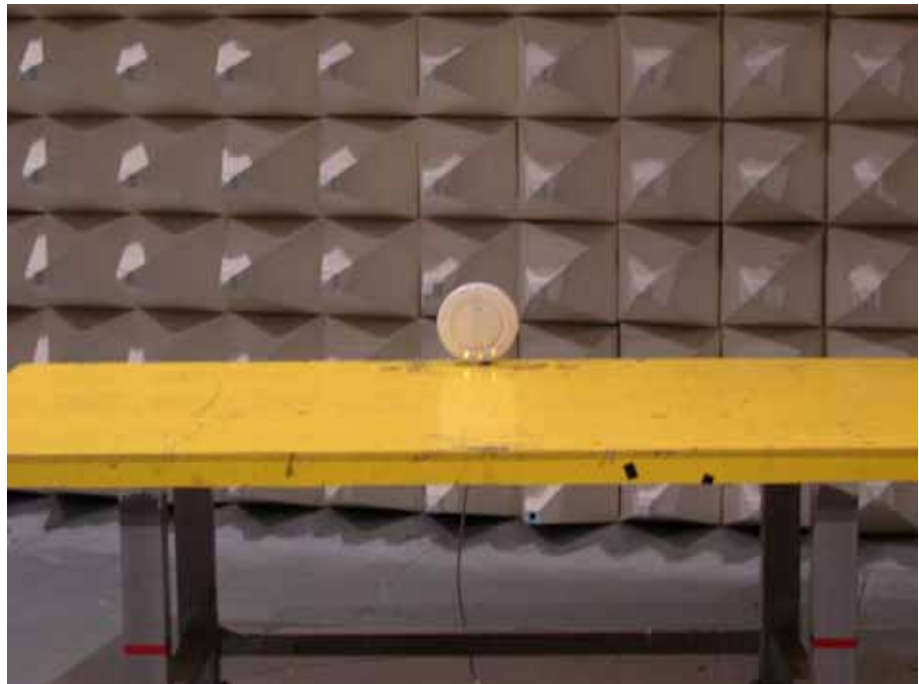
Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

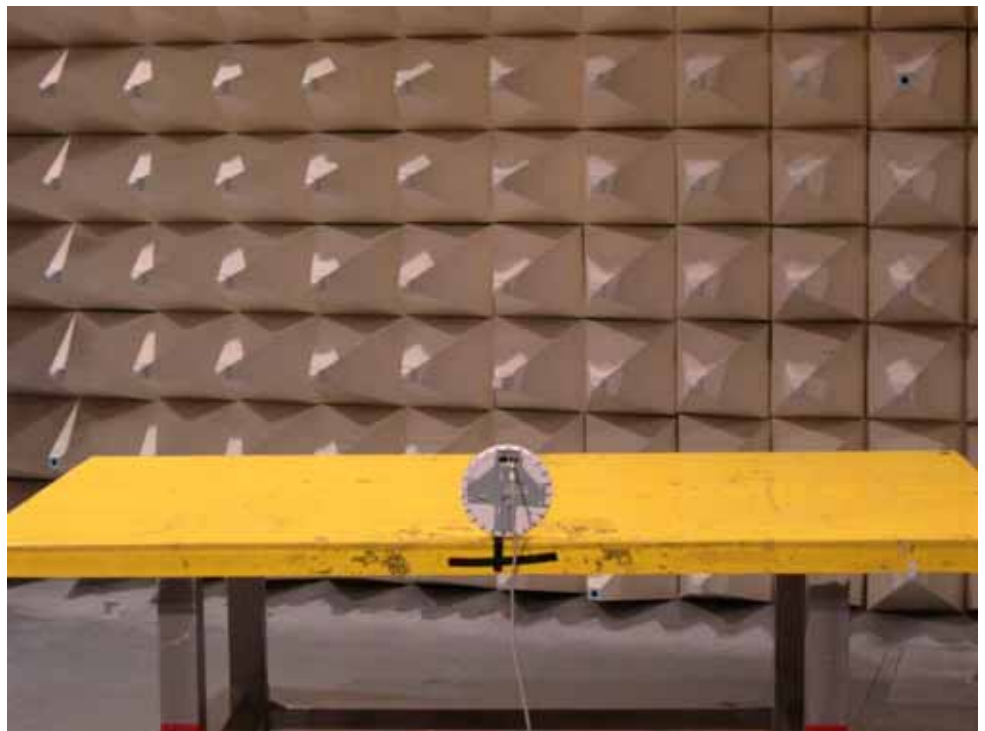
5.6.8. Photographs of Radiated Emission Test Configuration

Mode 1

FRONT VIEW



REAR VIEW

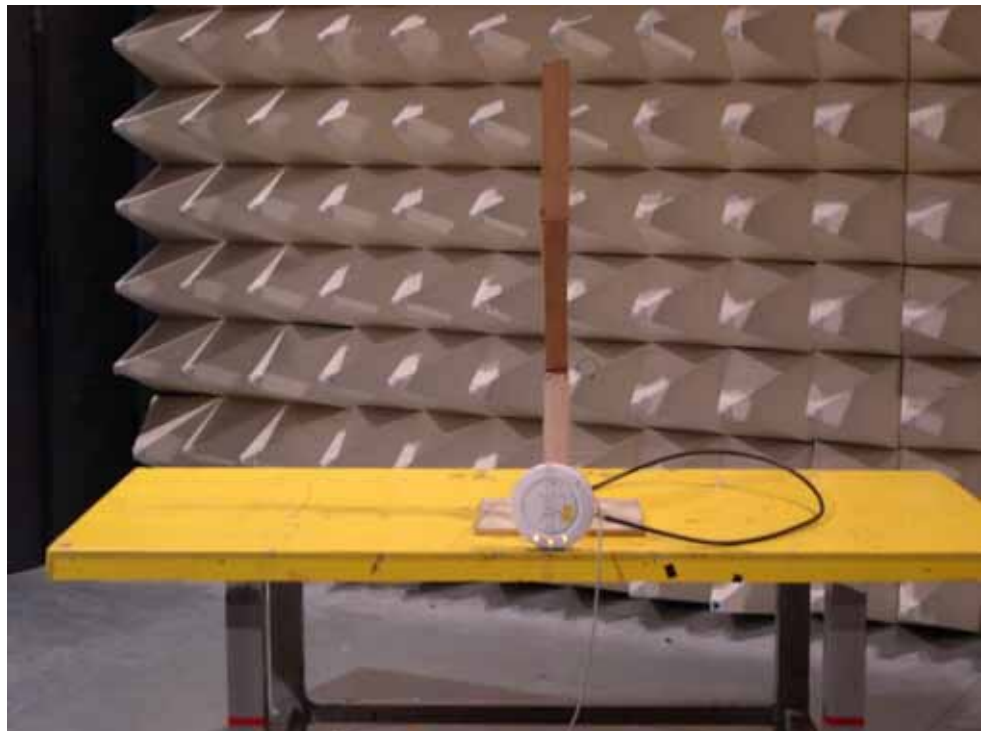


Mode 2

FRONT VIEW

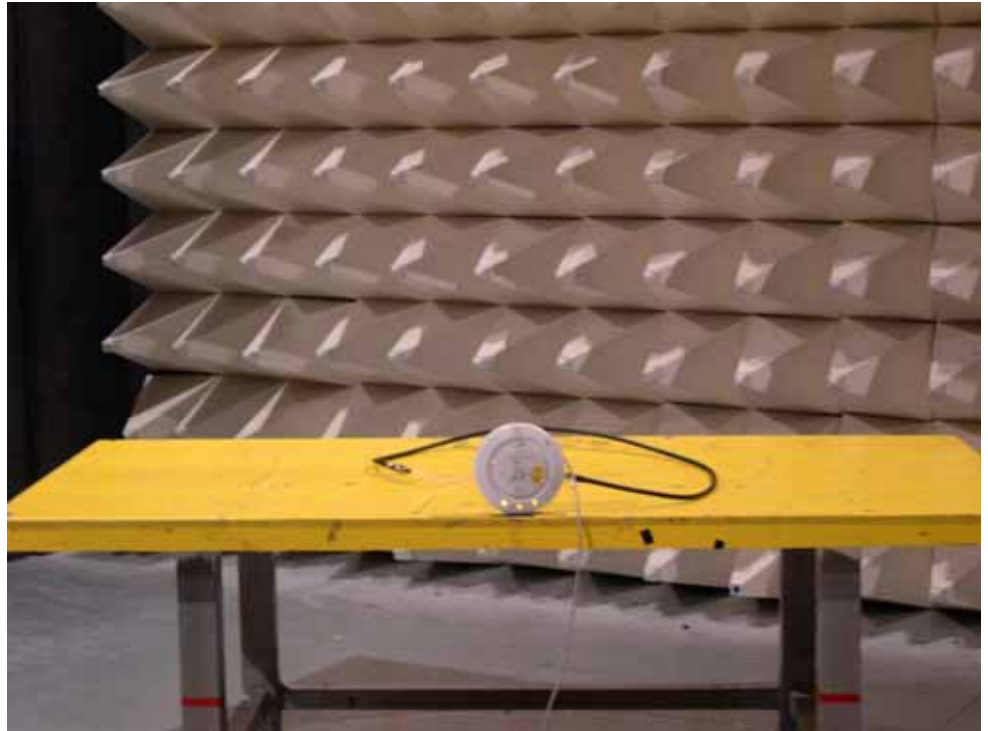


REAR VIEW

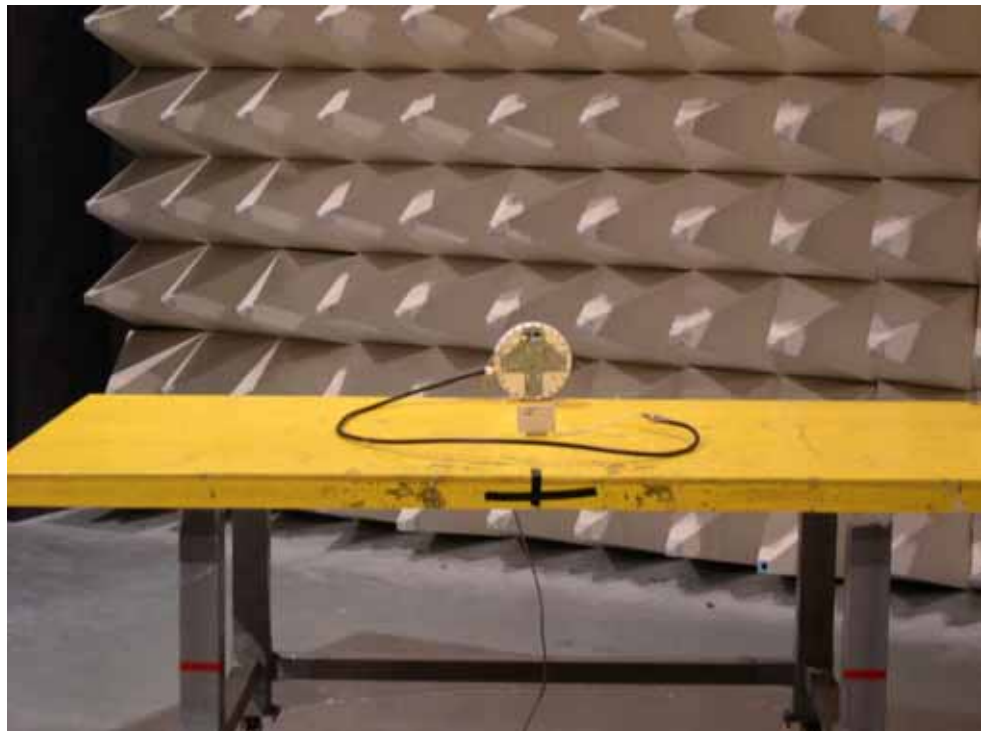


Mode 3

FRONT VIEW



REAR VIEW



Mode 4

FRONT VIEW



REAR VIEW





5.7. Antenna Requirements

5.7.1. Standard Applicable

47 CFR Part15 Section 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.

47 CFR Part15 Section 15.247 (b):

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

If the intentional radiator is used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

5.7.2. Antenna Connected Construction

4 types of antenna are filed in this project. The connector for these antennas is SMA.

5.8. RF Exposure

5.8.1. Limit For Maximum Permissible Exposure (MPE)

This product can be classified as mobile device, so the 20cm separation distance warning is required. In this section, the power density at 20cm location is calculated to examine if it is lower than the limit.

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

F = frequency in MHz

*Plane-wave equivalent power density

5.8.2. MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (mW/cm}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = Peak RF output power (mW)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=20cm, as well as the gain of the used antenna, the RF power density can be obtained.

5.8.3. Calculated Result and Limit

- Modulation Type: CCK
- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Ted Chiu

Mode 1

Max Conducted Power for IEEE 802.11b/g : 21.70dBm

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
3	1.9953	21.7000	147.9108	0.058742	1	Complies

Mode 2

Max Conducted Power for IEEE 802.11b/g : 20.77dBm

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
6	3.9811	20.7700	119.5088	0.094700	1	Complies

Mode 3

Max Conducted Power for IEEE 802.11b/g : 20.77dBm

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
6	3.9811	20.7700	119.3988	0.094613	1	Complies

Mode 4

Max Conducted Power for IEEE 802.11b/g : 22.11dBm

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
8	6.3096	22.1100	162.5549	0.204150	1	Complies



6. List of Measuring Equipments Used

Items	Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
1	EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	Feb. 16, 2005	Conduction (CO04-HY)
2	LISN	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Jun. 09, 2004	Conduction (CO04-HY)
3	LISN (Support Unit)	PIC	NNB-2/16Z	2001/008	9kHz – 30MHz	May 06, 2005	Conduction (CO04-HY)
4	EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	Conduction (CO04-HY)
5	RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9kHz – 30MHz	Apr. 20, 2005	Conduction (CO04-HY)
6	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	Jun. 21, 2004	Radiation (03CH03-HY)
7	Spectrum analyzer	R&S	FSP40	100004	9KHZ~40GHz	Aug. 31, 2004	Radiation (03CH03-HY)
8	Amplifier	SCHAFFNER	CPA9231A	18667	9KHz – 2GHz	Jan. 10, 2005	Radiation (03CH03-HY)
9	Biconical Antenna	SCHWARZBECK	VHBB 9124	301	30MHz – 200MHz	Jul. 28, 2004	Radiation (03CH03-HY)
10	Log Antenna	SCHWARZBECK	VUSLP 9111	221	200MHz -1GHz	Jul. 28, 2004	Radiation (03CH03-HY)
11	RF Cable-R03m	Jye Bao	RG142	CB021	30MHz~1GHz	Feb. 22, 2005	Radiation (03CH03-HY)
12	Amplifier	MITEQ	AFS44	849984	100MHz~26.5GHz	Mar. 25, 2005	Radiation (03CH03-HY)
13	Horn Antenna	EMCO	3115	6741	1GHz – 18GHz	Apr. 22, 2005	Radiation (03CH03-HY)
14	Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	Radiation (03CH03-HY)
15	Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	Radiation (03CH03-HY)
16	Horn Antenna	Schwarzbeck	BBHA9170	154	18GHz~40GHz	Jun. 09, 2004	Radiation (03CH03-HY)
17	RF Cable-HIGH	Jye Bao	RG142	CB030-HIGH	1GHz~29.5GHz	Dec.01, 2004	Radiation (03CH03-HY)

※ Calibration Interval of instruments listed above is one year.



Items	Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
18	Spectrum Analyzer	R&S	FSP30	100023	9kHz – 30GHz	Aug. 02, 2004	Conducted (TH01-HY)
19	Power Meter	R&S	NRVS	100444	DC – 40GHz	Jun. 15, 2004	Conducted (TH01-HY)
20	Power Sensor	R&S	NRV-Z55	100049	DC – 40GHz	Jun. 15, 2004	Conducted (TH01-HY)
21	Power Sensor	R&S	NRV-Z32	100057	30MHz – 6GHz	Jun. 15, 2004	Conducted (TH01-HY)
22	AC Power Source	HPC	HPA-500W	HPA-9100024	AC 0 – 300V	Jun. 16, 2004	Conducted (TH01-HY)
23	DC Power Source	G.W.	GPC-6030D	C671845	DC 1V – 60V	Dec.. 28, 2004	Conducted (TH01-HY)
24	Temp. and Humidity Chamber	KSON	THS-C3L	612	N/A	Oct. 01, 2004	Conducted (TH01-HY)
25	RF CABLE-1m	Jye Bao	RG142	CB034-1m	20MHz – 7GHz	Jan. 01, 2005	Conducted (TH01-HY)
26	RF CABLE-2m	Jye Bao	RG142	CB035-2m	20MHz – 1GHz	Jan. 01, 2005	Conducted (TH01-HY)
27	Data Generator	Tektronix	J310345	J310345	400Mbps	Dec. 21, 2004	Conducted (TH01-HY)
28	OscilloScope	Tektronix	TDS1012	C038520	100MHz-1Gs/s	Jan. 02, 2005	Conducted (TH01-HY)

※ Calibration Interval of instruments listed above is one year.