FCC TEST REPORT

for

47 CFR Part 15 Subpart C

Equipment : 802.11 a/b/g WLAN Access Port

Trade Name : Symbol

Model No. : WSAP-5100 /WSAP-5110

FCC ID : H9PWSAP5100

Filing Type : Certification

Applicant : Universal Scientific Industrial Co., Ltd.
141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen,
Nan-Tou, Taiwan

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

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History of this test report

Original Report Issue Date: Aug. 12, 2004

■ No additional attachment.

☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

Certificate No. : F471907

CERTIFICATE OF COMPLIANCE

for

47 CFR Part 15 Subpart C

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FCC ID : **H9PWSAP5100**

Filing Type : **Certification**

Applicant : **Universal Scientific Industrial Co., Ltd.**
141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen,
Nan-Tou, Taiwan

I **HEREBY** CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 - 2001** and the equipment under test was ***passed*** all test items required in FCC Part 15 subpart C, relative to the equipment under test. Testing was carried out on Aug. 03, 2004 at **SPORTON International Inc.** LAB.

Daniel Lee 8/3/04

Daniel Lee
Manager

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

1. General Description of Equipment under Test

1.1. Applicant

Universal Scientific Industrial Co., Ltd.
140, Lane 351, Taiping Road, Sec. 1, Tsao, Tuen, Nan_Tou, Taiwan

1.2 Manufacturer

Universal Scientific Industrial Co., Ltd.
140, Lane 351, Taiping Road, Sec. 1, Tsao, Tuen, Nan_Tou, Taiwan

1.3 Basic Description of Equipment under Test

Equipment	: 802.11 a/b/g WLAN Access Port
Trade Name	: Symbol
Model No.	: WSAP-5100 /WSAP-5110
FCC ID	: H9PWSAP5100
Power Supply Type	: Power Over Ethenet (48V)

1.4 Feature of Equipment under Test

Product Feature & Specification				
1. Host/Radio Interface	Power Over Ethernet/Wireless LAN Access Port			
2. Housing Type	Plastic Housing for WSAP-5110 Metallic Housing for WSAP-5100			
3. Modulation Type/Data Rate	OFDM:54/48/36/24/18/12/9/6Mbps CCK:11/5Mbps DQPSK:2Mbps DBPSK:1Mbps			
4. Freq.Range/Carrier Freqs.	2400~2483.5MHz;5150 ~ 5250MHz (Band I); 5250 ~ 5350MHz (Band II);5725~5850MHz (Band III)			
5. Number o f Channels	802.11g/b: 11 Ch 802.11a:8Ch(5150~5350MHz),5Ch(5725~5850MHz)			
6. Carrier Frequency of each channel	802.11g/b:2412+ m*5 MHz,m=1~11 802.11a: 5000+n*5 MHz, n=36,40,44,48,52,56,60,64,149,153,157,161,165			
7. Channel Spacing	802.11g/b:5MHz 802.11a: 20MHz			
8. Maximum Output Power to Antenna (Normal condition)	Refer to power table 1.6			
9. Type of Antenna Connector	Refer to Antenna list 1.5			
10. Antenna Type				
11. Antenna Gain				
12. Main Board Version	Plastic Housing		Cypress Mercury Abracon	
	Metallic Housing		Mercury TXC-33.3MHz	
13. Function Type	Transmitter		Transceiver	V
14. Power Rating (DC/AC , Voltage)	Power Over Ethernet (48V) (Symbol WS 2000)			
15. Duty Cycle	100%			

1.5 Antenna List

Antenna List	Antenna Type	Peak Gain (dBi)	Cable Loss (dB)	Net Gain (dBi)	Frequency Range (GHz)	Application	Housing Type	Connector Type	Serial No.
Antenna 1	Integral	2 / 3.8	0	2 / 3.8	2.4 ~ 2.5/ 5.15 ~ 5.825	11b/g; 11 a band I/II/III	Plastic	NA	NA
Antenna 2	Sector Panel	11.2	2.7	8.5	2.4 ~ 2.5	11 b/g	Metallic	RP-BNC	ML-2499-11 PNA2-01
Antenna 3	Dipole	2	0	2	2.4 ~ 2.5	11 b/g	Metallic	RP-BNC	ML-2499-AP A2-01
Antenna 4	Dipole Array	4.6	1.3	3.3	2.4 ~ 2.5	11 b/g	Metallic	RP-BNC	ML-2499-HP A3-01
Antenna 5	YAGI	14.2	1.3	12.9	2.4 ~ 2.5	11 b/g	Metallic	N-Type	ML-2499-BY GA2-01
Antenna 6	Dipole	2.0	0	2.0	5.15 ~ 5.875	11 a Band II/III	Metallic	RP-SMA	ML-5299-AP A1-01
Antenna 7	Dipole Array	5.9	0.84	5	5.15 ~ 5.875	11 a Band II/III	Metallic	RP-SMA	ML-5299-HP A1-01
Antenna 8	Panel	14.2	1.2	13	5.15 ~ 5.875	11 a Band II/III	Metallic	RP-SMA	ML-5299-W PNA1-01

1.6 Power Table

	802.11b	802.11g	802.11a/band 1	802.11a/band 2	802.11a/band 3
Antenna 1	20.3 dBm	21.5 dBm	16.6 dBm	22.1 dBm	23.4 dBm
Antenna 2	18.1 dBm	20.8 dBm	N/A	N/A	N/A
Antenna 3	18.1 dBm	19.9 dBm	N/A	N/A	N/A
Antenna 4	18.1 dBm	21.5 dBm	N/A	N/A	N/A
Antenna 5	15.5 dBm	19.7 dBm	N/A	N/A	N/A
Antenna 6	N/A	N/A	N/A	22.1 dBm	24 dBm
Antenna 7	N/A	N/A	N/A	23.5 dBm	23.4 dBm
Antenna 8	N/A	N/A	N/A	17 dBm	22.5 dBm

2 Test Configuration of Equipment under Test

2.1 Test Manner

a. The EUT has been associated with peripherals pursuant to ANSI C63.4-2001 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

b. The complete test system included DELL Notebook and EUT for EMI test.

c. The EUT can operate on 11 channels for 802.11b/g and 13 channels for 802.11a(as listed in section 1.4).

d. The following test modes were tested for conduction test:

Plastic housing /WSAP5110

Mode 1: 802.11g link mode

Mode 2: 802.11a link mode

Mode 3: 802.11g & 11a link mode

Metallic housing WSAP5100

Mode 4: 802.11g link mode

Mode 5: 802.11a link mode

Mode 6: 802.11g & 11a link mode

e. The following test modes were tested for radiation test:

Refer to testing matrix.

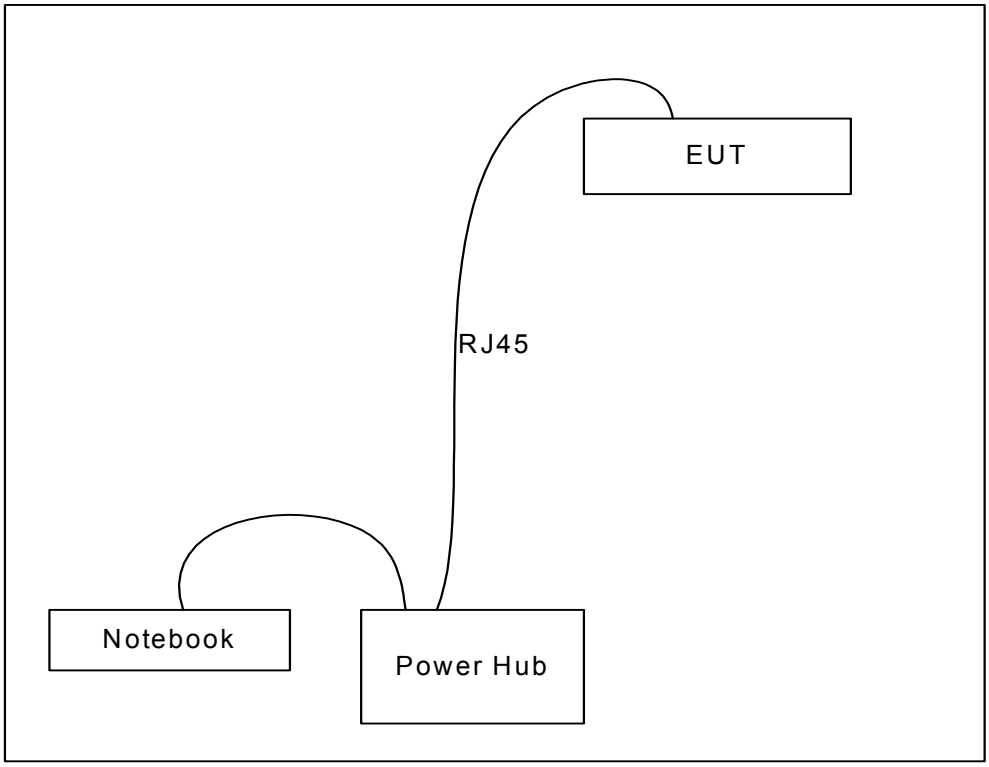
Antenna List	11b TX Ch 1/6/11 /above 1 GHz	11b TX Ch 6 /below 1 GHz	11g TX Ch 1/ 6/11 /above 1 GHz	11g TX Ch 6 /below 1 GHz	11a TX f=5745 /5785/5825 MHz /above 1 GHz	11a TX f=5825 MHz /below 1 GHz
Antenna 1	Y	Y	Y	Y	Y	Y
Antenna 2	Y		Y			
Antenna 3	Y		Y			
Antenna 4	Y		Y			
Antenna 5	Y	Y	Y	Y		
Antenna 6					Y	
Antenna 7					Y	
Antenna 8					Y	Y

f. Frequency range investigated: conduction 150 kHz to 30 MHz, radiation 30 MHz to 25000MHz for 802.11b/g and 30MHz to 40GHz for 802.11a.

2.2 Description of Test System

Item	Asset	Model Name	Power Cord	S/N
1	Notebook (DELL)	PP05L	N/A	SP0005

2.3 Connection Diagram of Test System



Power Hub: Symbol WS 2000

3 Operation of Equipment under Test

The following programs were executed:

one self test program ”WinLEO Version 00.33” to keep transmitting signals.

4 General Information of Test

Test Site Location	:	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055
Test Site No	:	CO01-HY, 03CH03-HY、03CH06-HY

4.1 Test Voltage

110V/ 60Hz

4.2 Standard for Methods of Measurement

ANSI C63.4-2001

4.3 Test in Compliance with

47 CFR Part 15 Subpart C

4.4 Frequency Range Investigated

a. Conduction: from 150 kHz to 30 MHz
b. Radiation: from 30 MHz to 25000 MHz for 802.11b/g
c. Radiation: from 30MHz to 40000MHz for 802.11a/ band III.

4.5 Test Distance

The test distance of radiated emission from antenna to EUT is 3 m.

5 Report of Measurements and Examinations

5.1 List of Measurements and Examinations

FCC Rule	Description of Test	Result
15.207	Conducted Emission	Pass
15.247(a)(2)	6dB Bandwidth	Pass
15.247(b)	Maximum Peak Output Power	Pass
15.209(a)	Radiated Emission	Pass
15.247 (c)	100kHz Bandwidth of Frequency Band Edges	Pass
15.247(d)	Power Spectral Density	Pass
15.203 15.247(b)(4)	Antenna Requirement	Pass
1.1307 2.1091	RF Exposure	Pass

5.2 6dB Bandwidth

5.2.1 Measuring Instruments：

As described in chapter 10 of this test report.

5.2.2 Test Procedure：

1. The transmitter output was connected to the spectrum analyzer directly.
2. Set RBW of spectrum analyzer to 100kHz and VBW to 100kHz.
3. The 6 dB bandwidth is defined as the frequency range where the power is higher than the peak power minus 6dB.

5.2.3 Test Setup Layout：

5.2.4 Test Result：

5.2.4.1 Antenna 1

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11b

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	11.52	>0.5	Antenna 1-1
06	2437	11.52	>0.5	Antenna 1-2
11	2462	11.52	>0.5	Antenna 1-3

- Application: 802.11g

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	16.44	>0.5	Antenna 1-4
06	2437	16.44	>0.5	Antenna 1-5
11	2462	16.44	>0.5	Antenna 1-6

- Application: 802.11a

Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
5745	16.48	>0.5	Antenna 1-7
5785	16.52	>0.5	Antenna 1-8
5825	16.48	>0.5	Antenna 1-9

5.2.4.2 Antenna 2

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11b

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	11.6	>0.5	Antenna 2-1
06	2437	11.6	>0.5	Antenna 2-2
11	2462	11.6	>0.5	Antenna 2-3

- Application: 802.11g

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	16.52	>0.5	Antenna 2-4
06	2437	16.44	>0.5	Antenna 2-5
11	2462	16.52	>0.5	Antenna 2-6

5.2.4.3 Antenna 3

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11b

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	11.2	>0.5	Antenna 3-1
06	2437	11.6	>0.5	Antenna 3-2
11	2462	11.6	>0.5	Antenna 3-3

- Application: 802.11g

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	16.48	>0.5	Antenna 3-4
06	2437	16.48	>0.5	Antenna 3-5
11	2462	16.48	>0.5	Antenna 3-6

5.2.4.4 Antenna 4

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11b

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	11.6	>0.5	Antenna 4-1
06	2437	11.6	>0.5	Antenna 4-2
11	2462	11.6	>0.5	Antenna 4-3

- Application: 802.11g

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	16.52	>0.5	Antenna 4-4
06	2437	16.48	>0.5	Antenna 4-5
11	2462	16.48	>0.5	Antenna 4-6

5.2.4.5 Antenna 5

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11b

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	12.92	>0.5	Antenna 5-1
06	2437	12.28	>0.5	Antenna 5-2
11	2462	11.6	>0.5	Antenna 5-3

- Application: 802.11g

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	16.52	>0.5	Antenna 5-4
06	2437	16.44	>0.5	Antenna 5-5
11	2462	16.44	>0.5	Antenna 5-6

5.2.4.6 Antenna 6

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11a

Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
5745	16.8	>0.5	Antenna 6-1
5785	16.8	>0.5	Antenna 6-2
5825	16.8	>0.5	Antenna 6-3

5.2.4.7 Antenna 7

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11a

Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
5745	16.8	>0.5	Antenna 7-1
5785	16.8	>0.5	Antenna 7-2
5825	16.8	>0.5	Antenna 7-3

5.2.4.8 Antenna 8

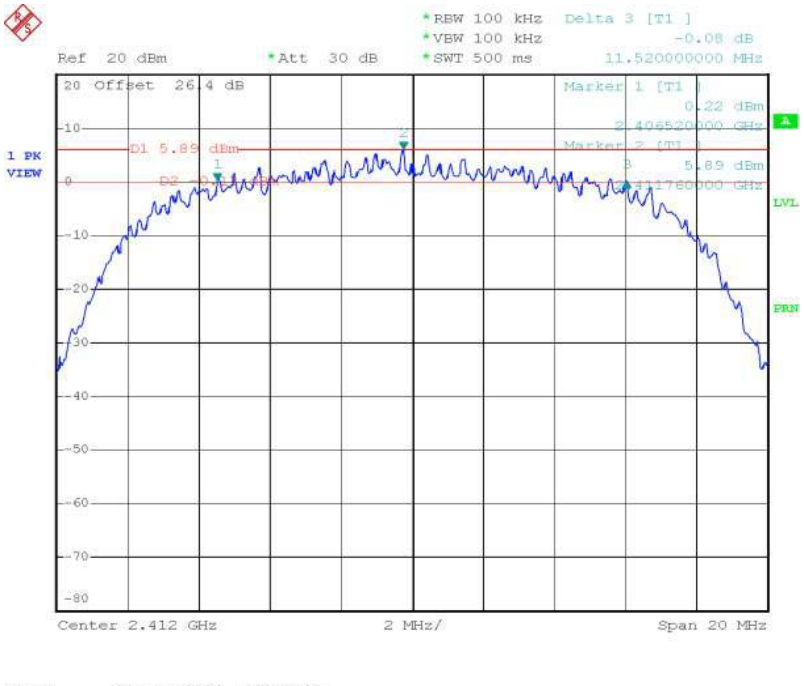
- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11a

Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
5745	16.8	>0.5	Antenna 8-1
5785	16.8	>0.5	Antenna 8-2
5825	16.8	>0.5	Antenna 8-3

5.2.5 Test Data

5.2.5.1 Antenna 1

1-1



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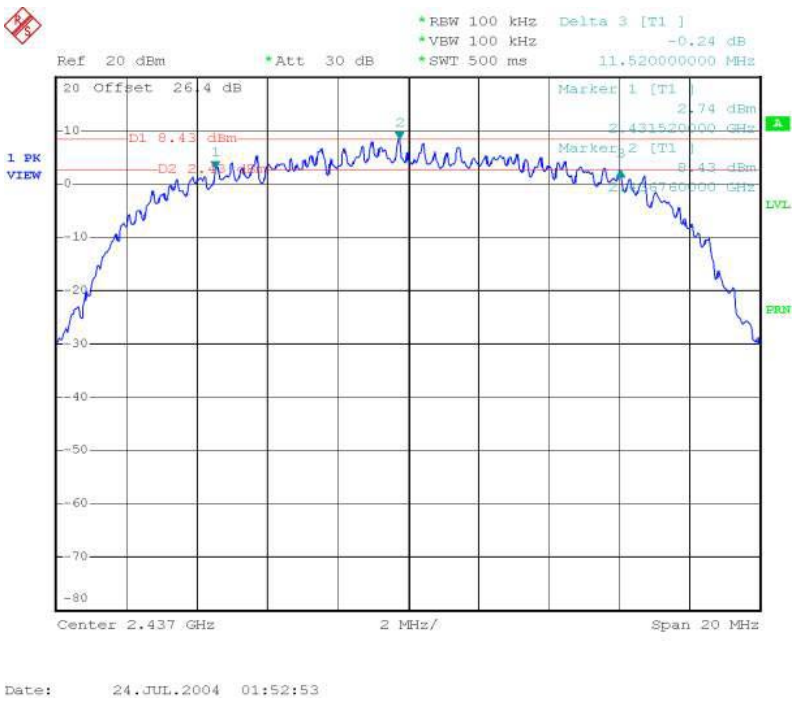

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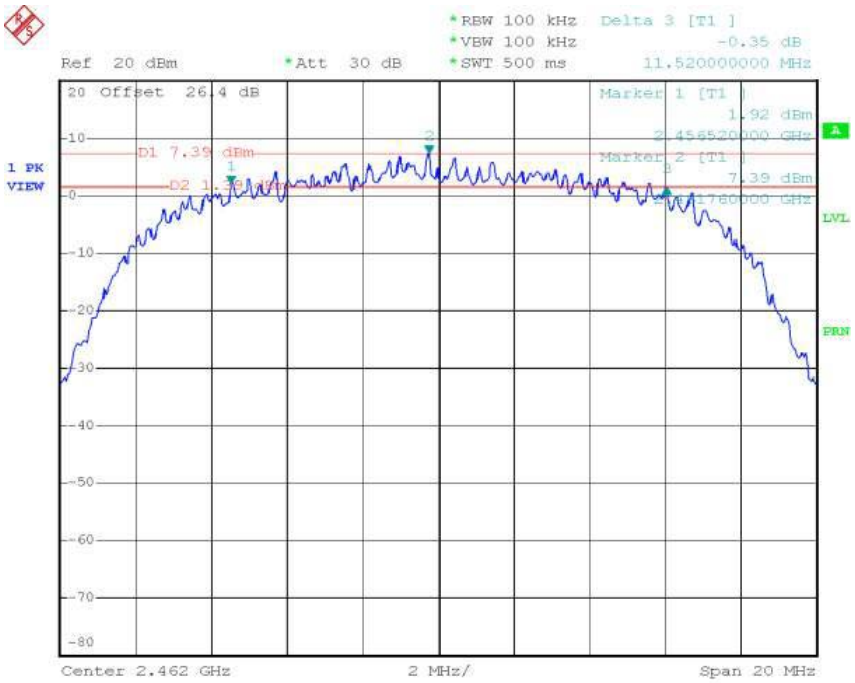

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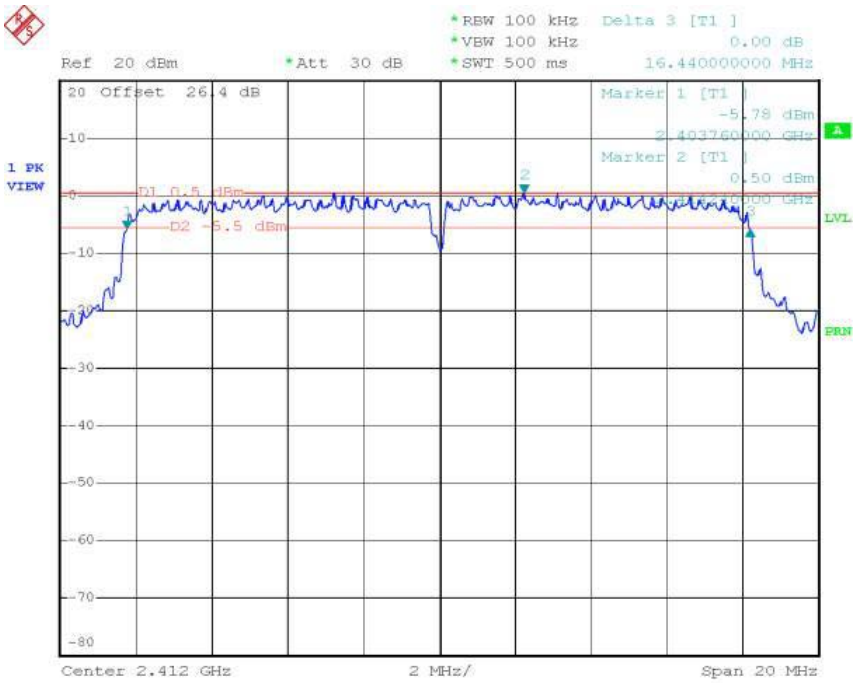

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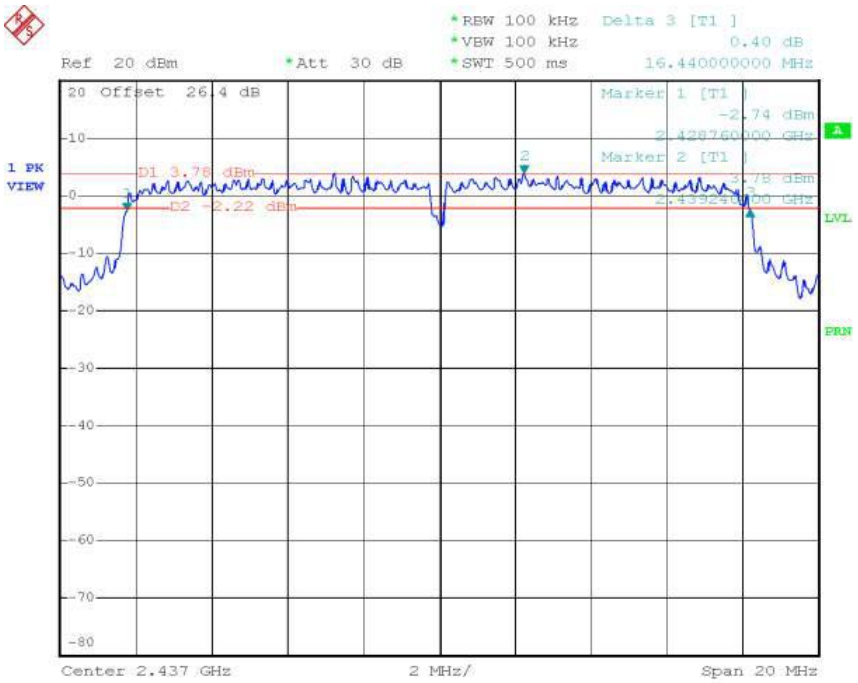

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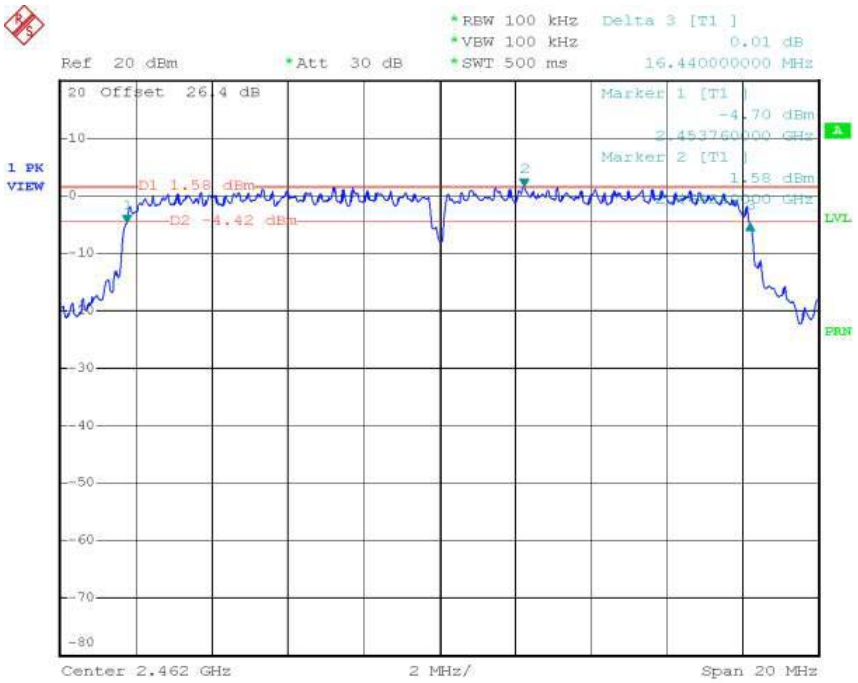

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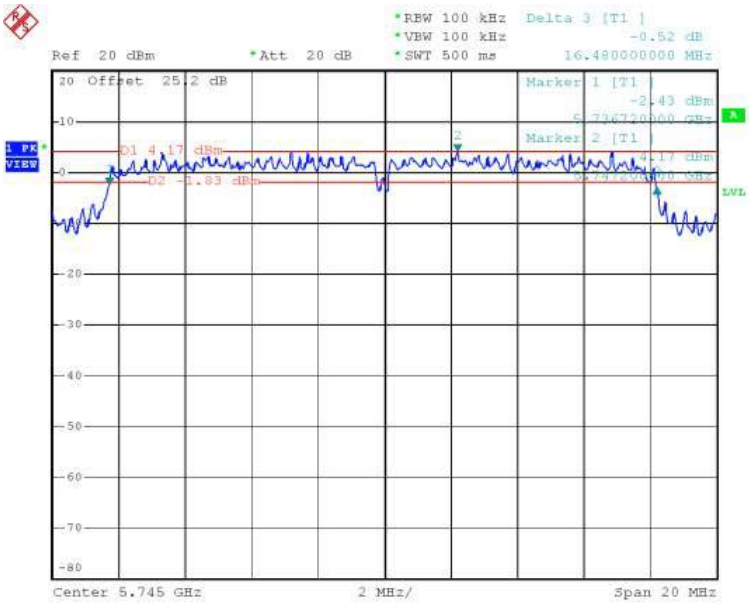

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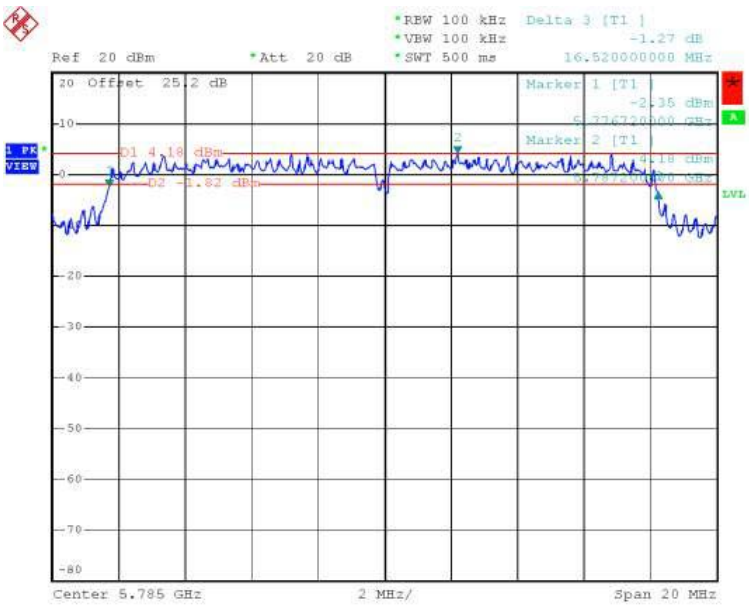

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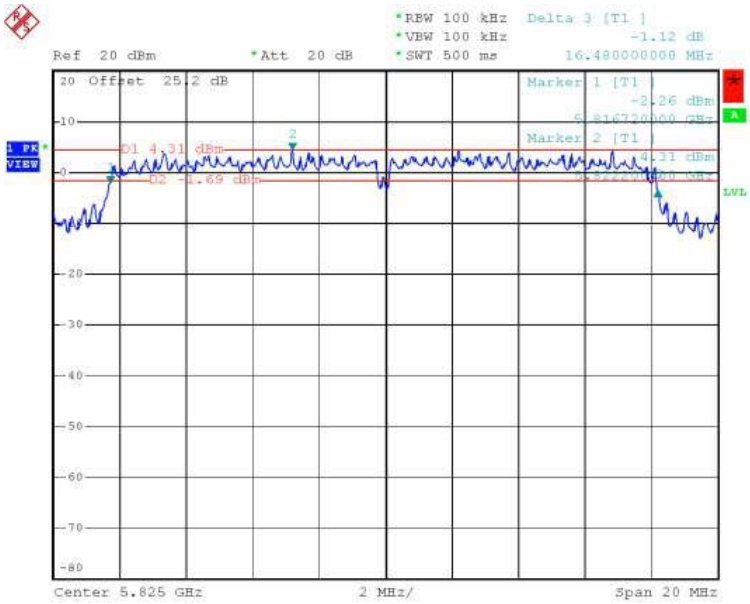

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5.2.5.2 Antenna 2

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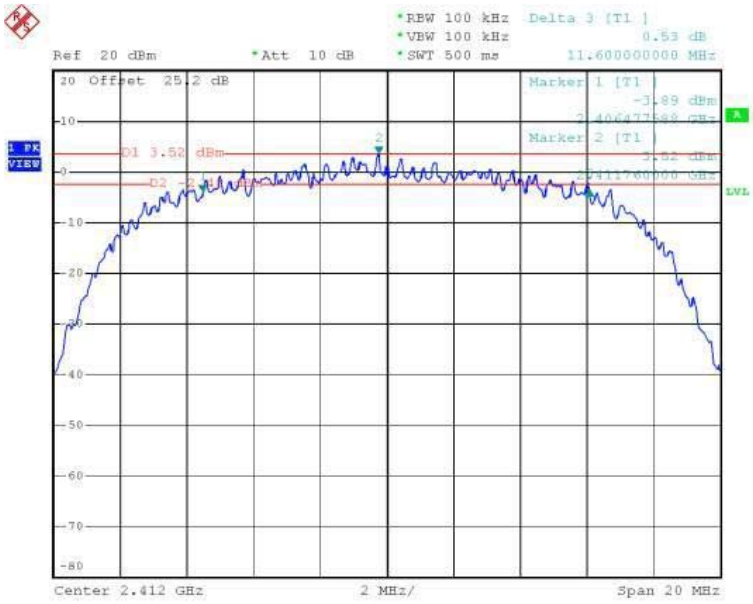

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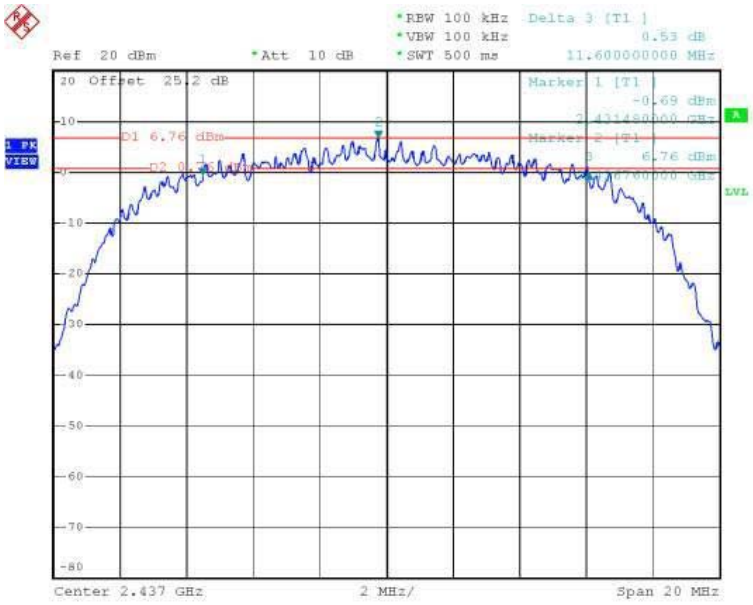

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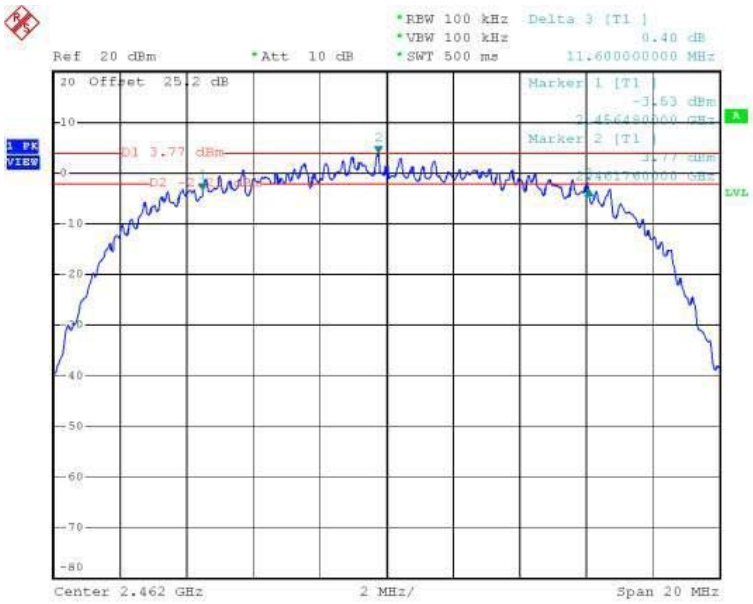

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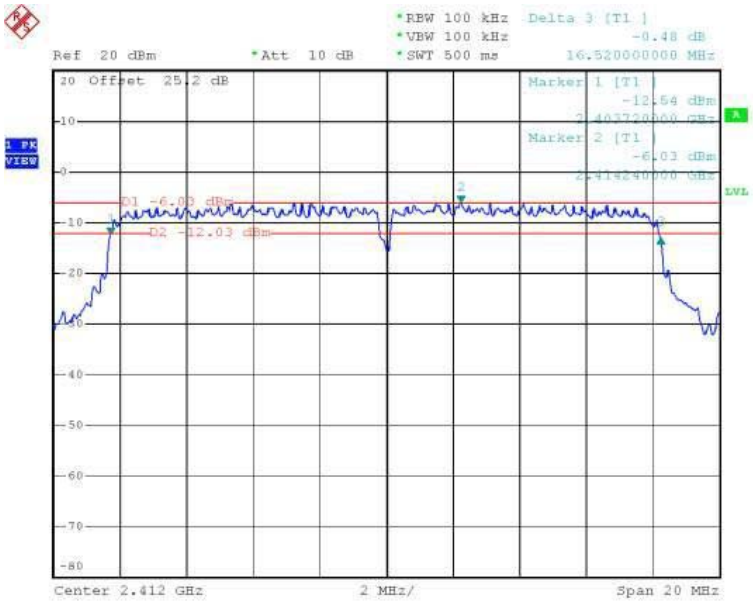

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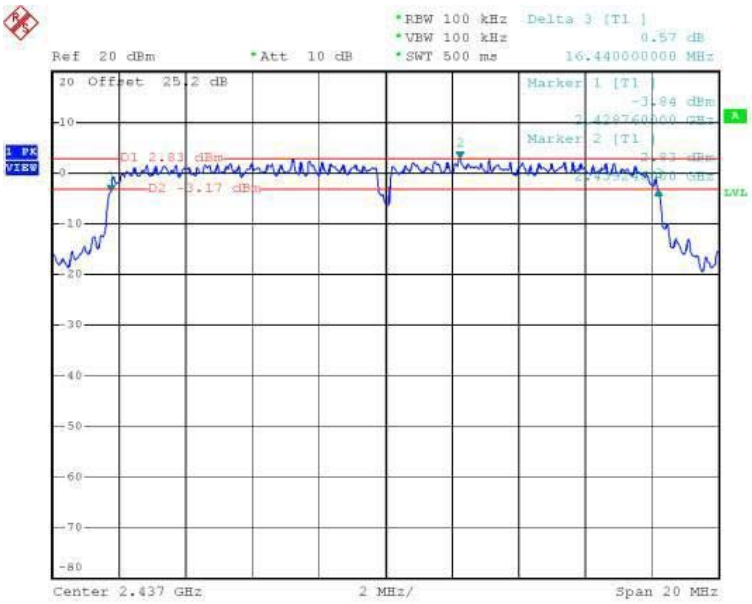

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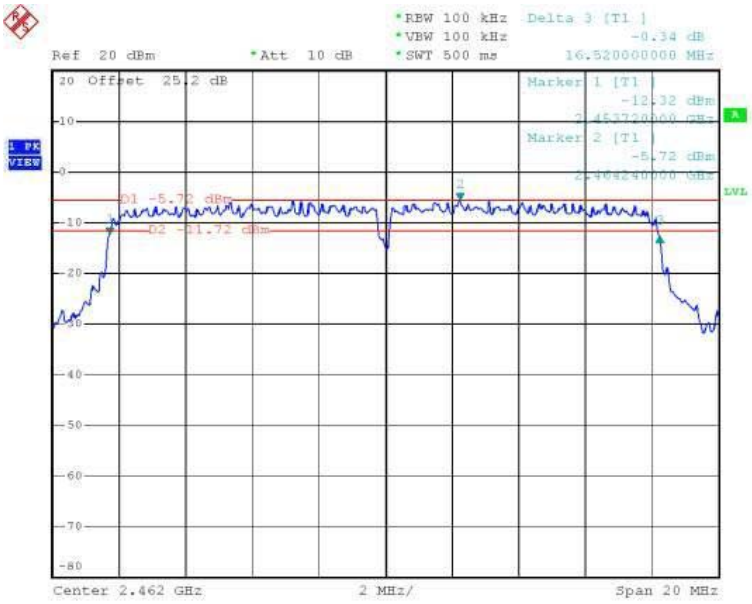

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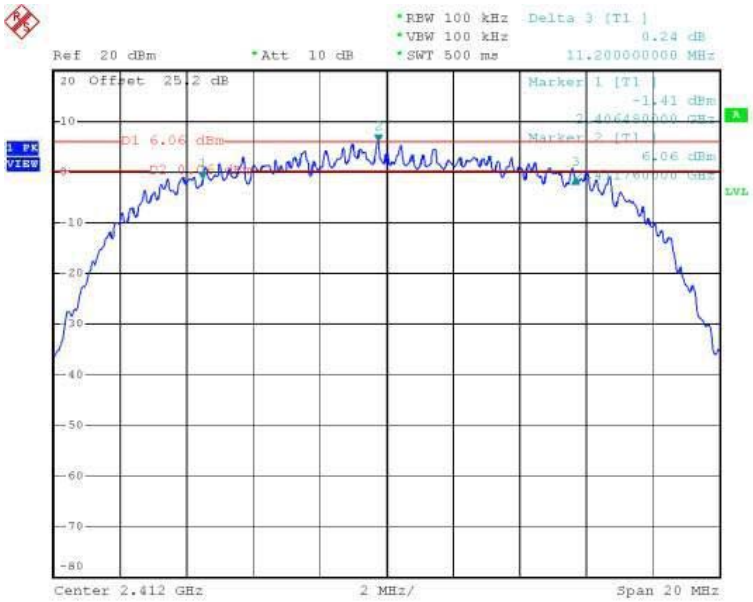

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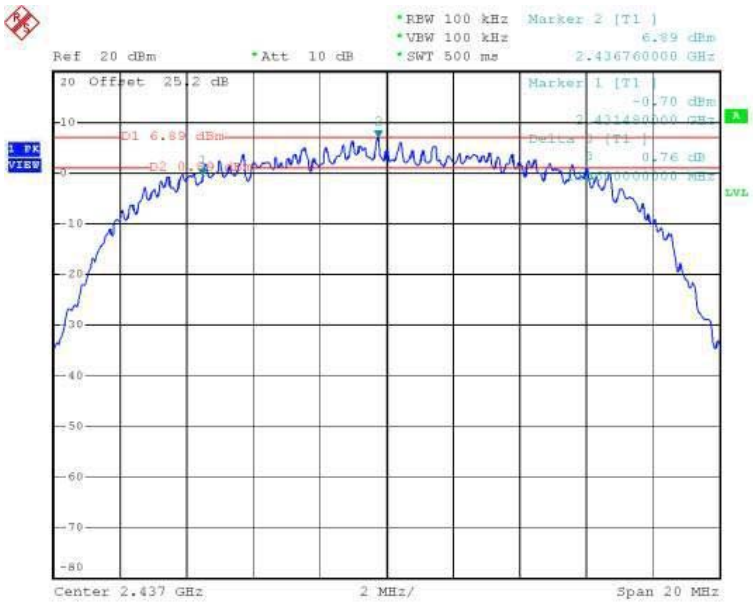

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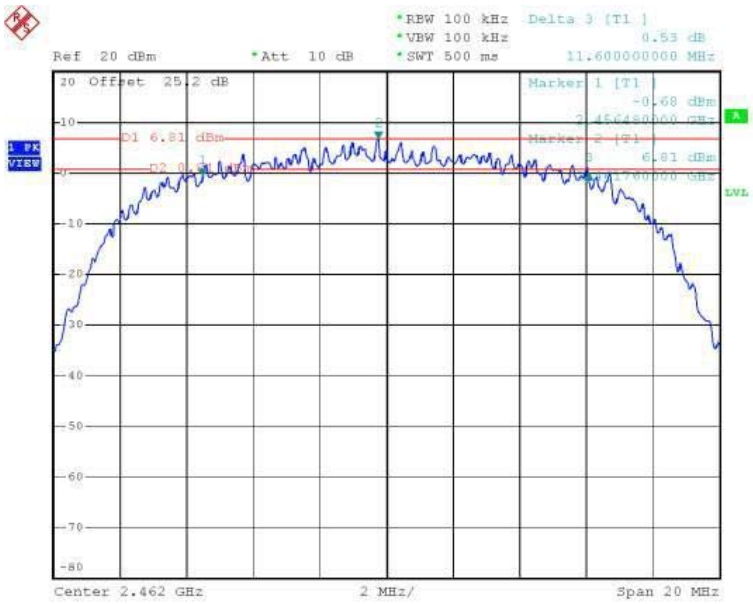

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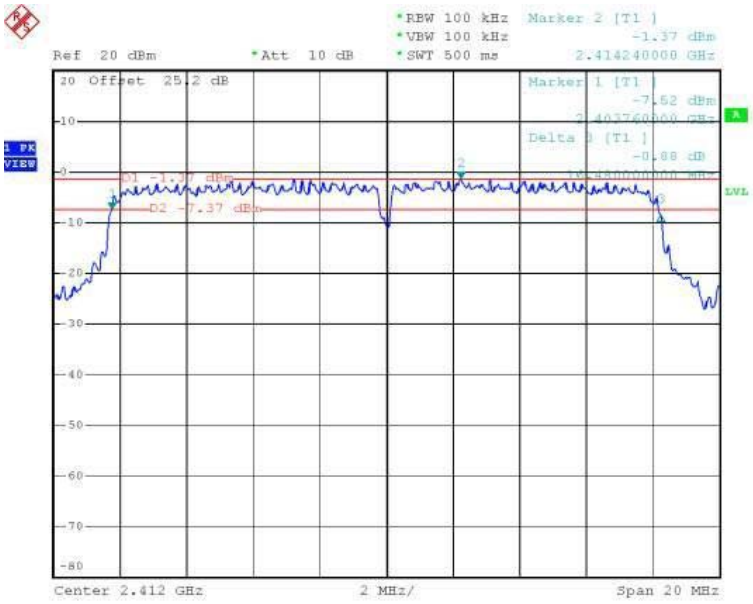

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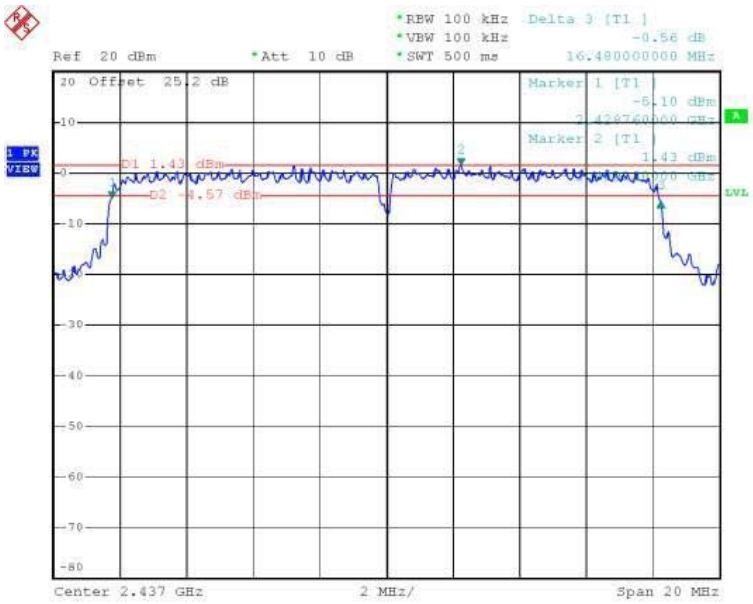

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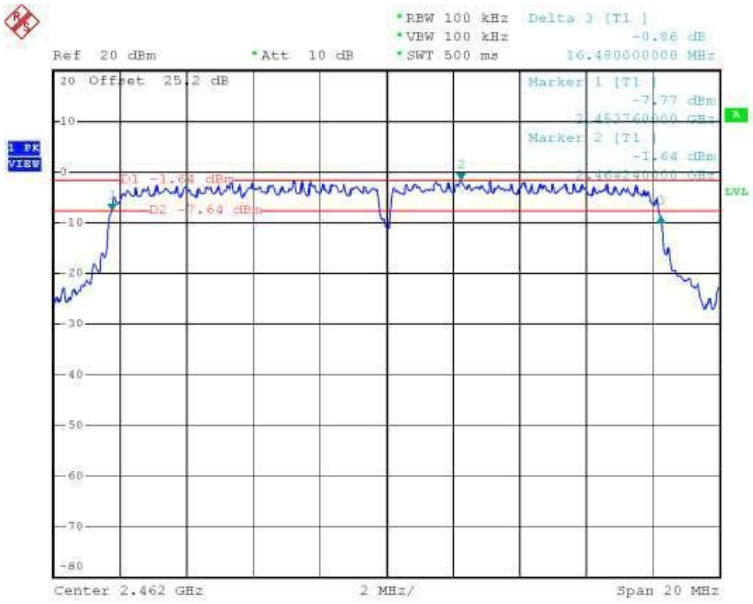

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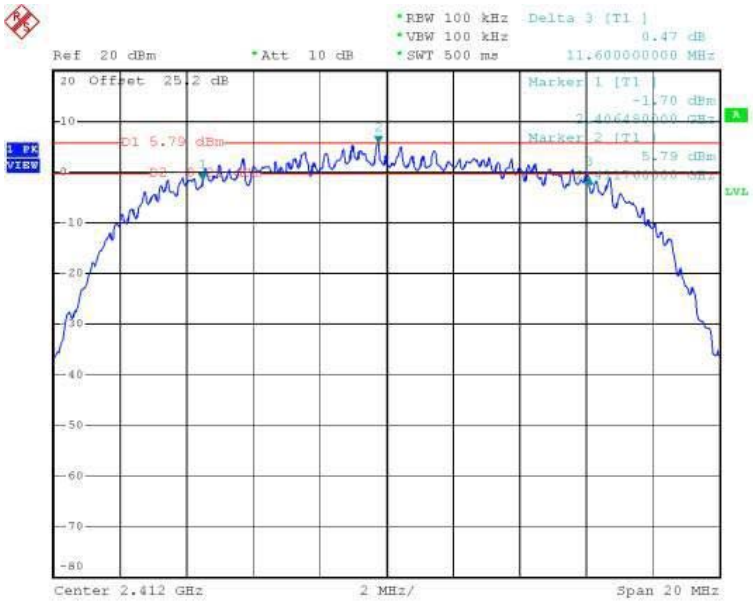
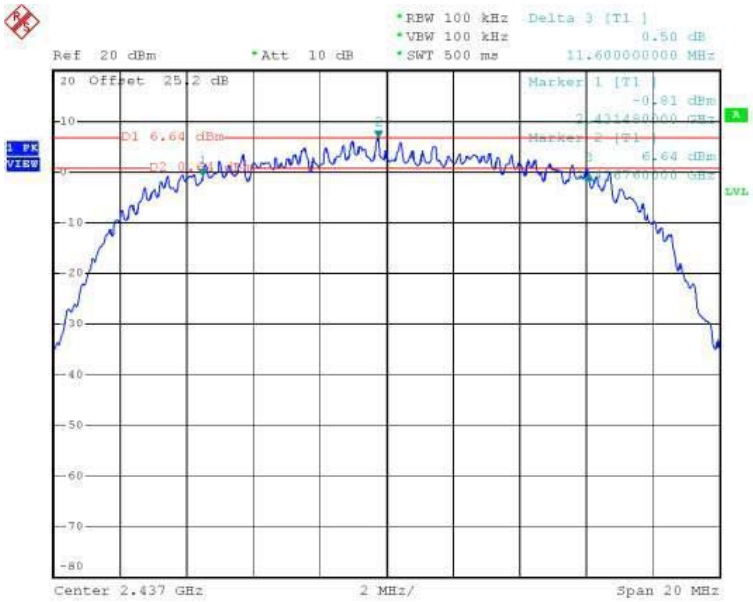
4-1



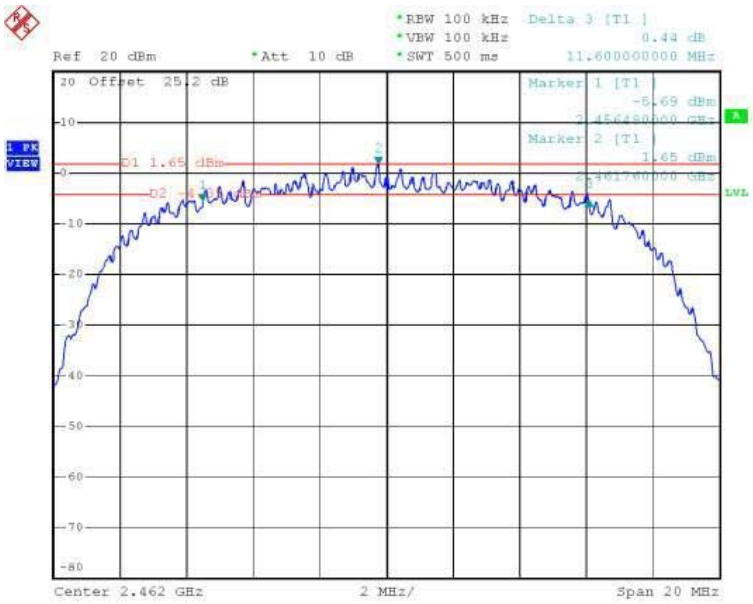
Date: 26.JUL.2004 16:50:21

4-2



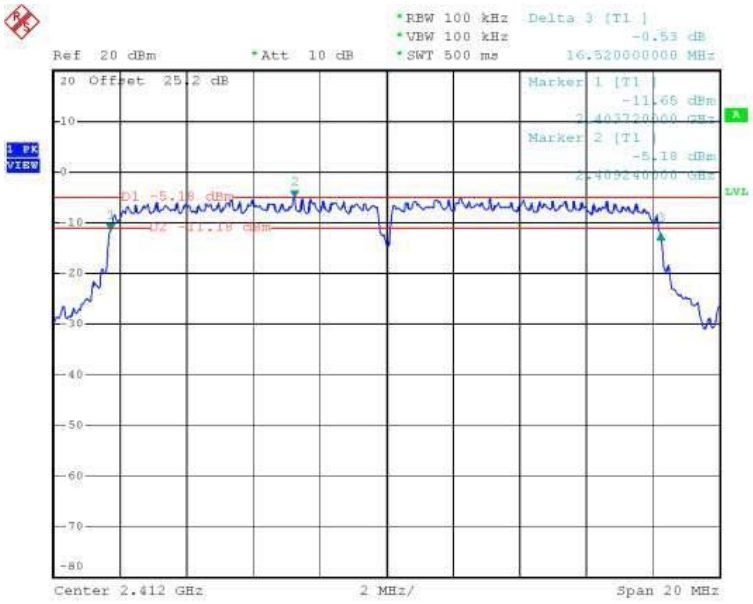
Date: 26.JUL.2004 16:52:32

4-3



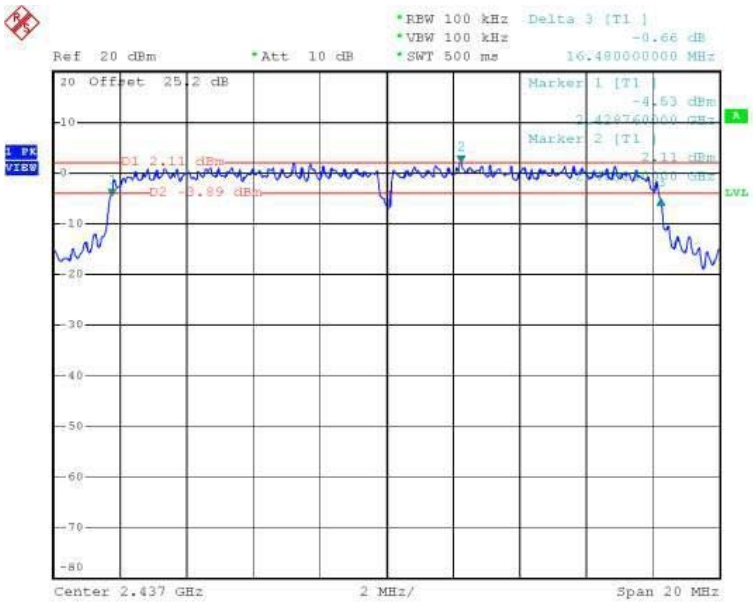
Date: 26.JUL.2004 16:54:05

4-4



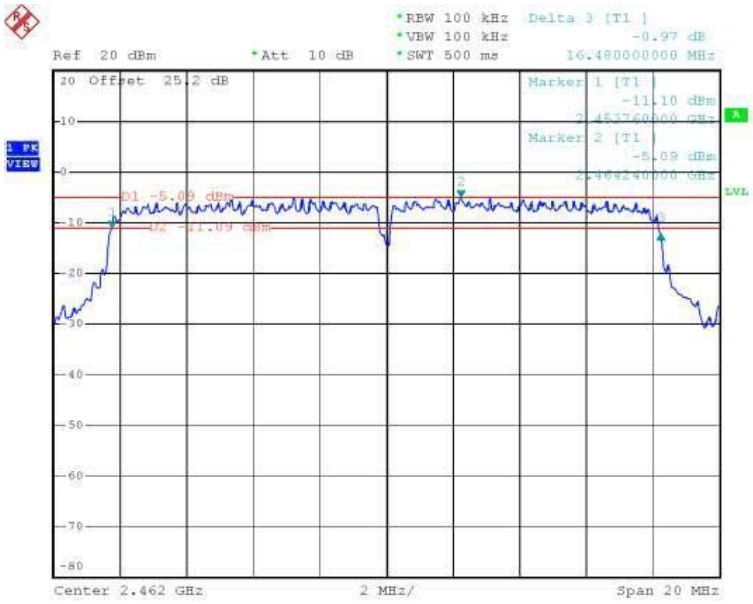
Date: 26.JUL.2004 17:17:56

4-5



Date: 26.JUL.2004 17:20:51

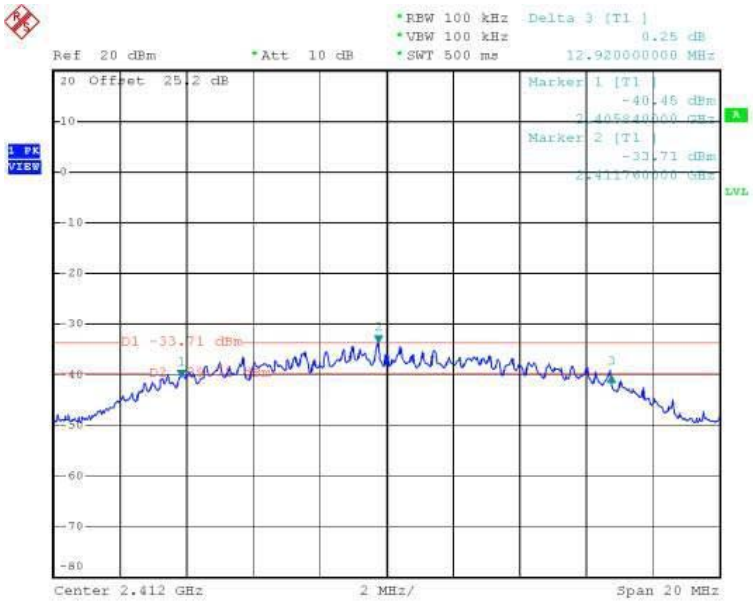
4-6



Date: 26.JUL.2004 17:23:13

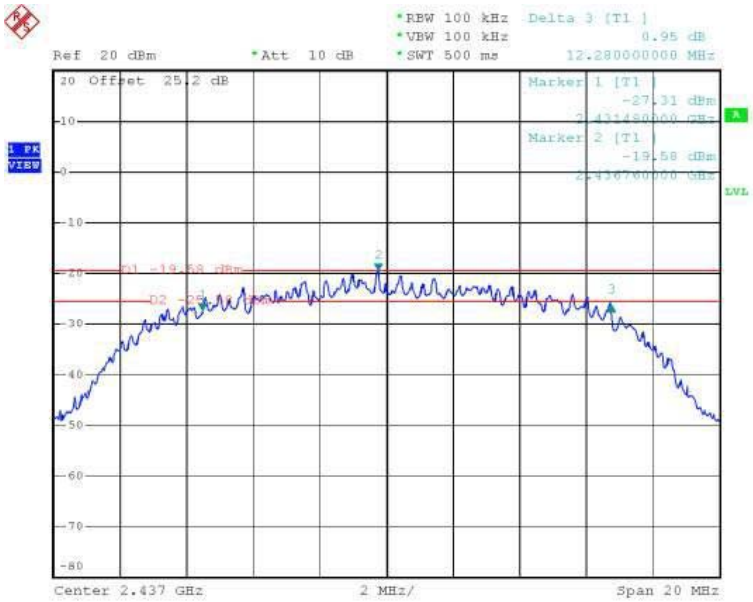
5.2.5.5 Antenna 5

5-1



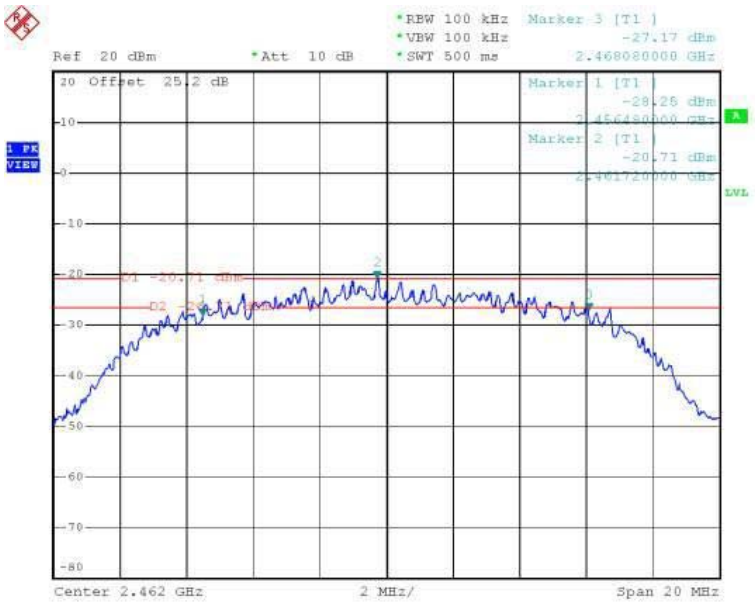
Date: 26.JUL.2004 16:55:53

5-2



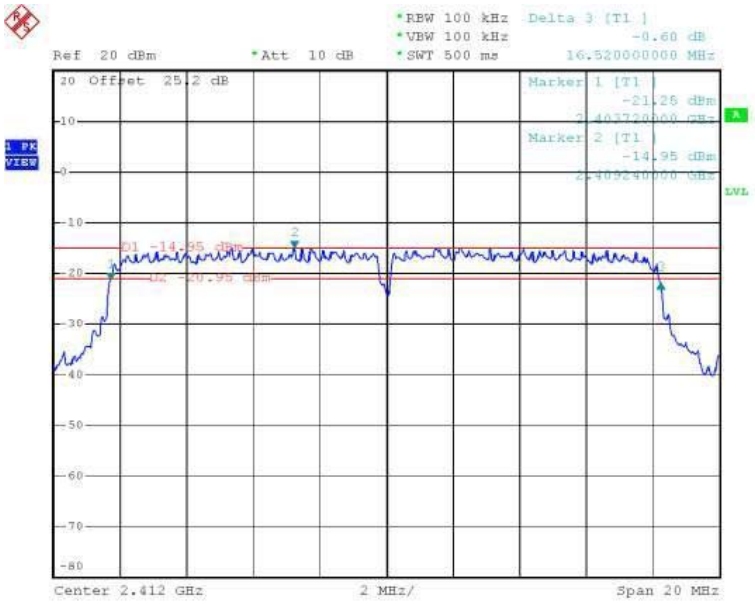
Date: 26.JUL.2004 16:57:30

5-3



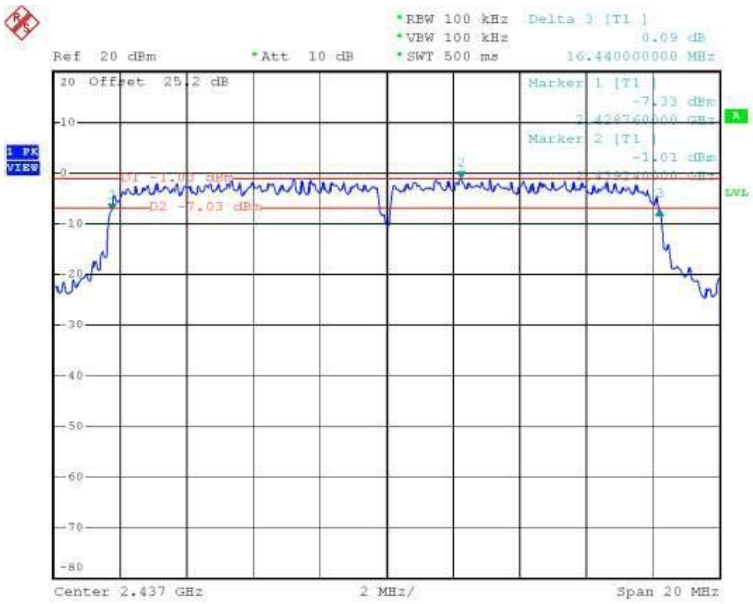
Date: 26.JUL.2004 16:59:27

5-4



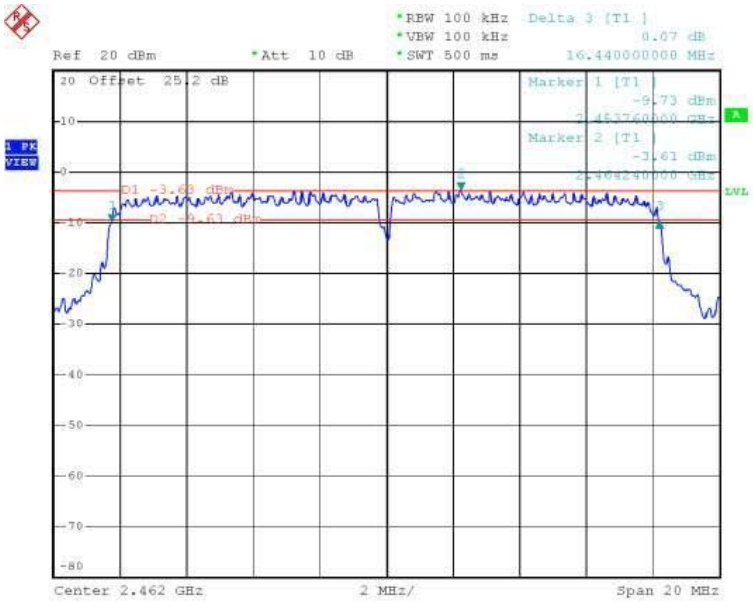
Date: 26.JUL.2004 17:24:41

5-5



Date: 26.JUL.2004 17:25:57

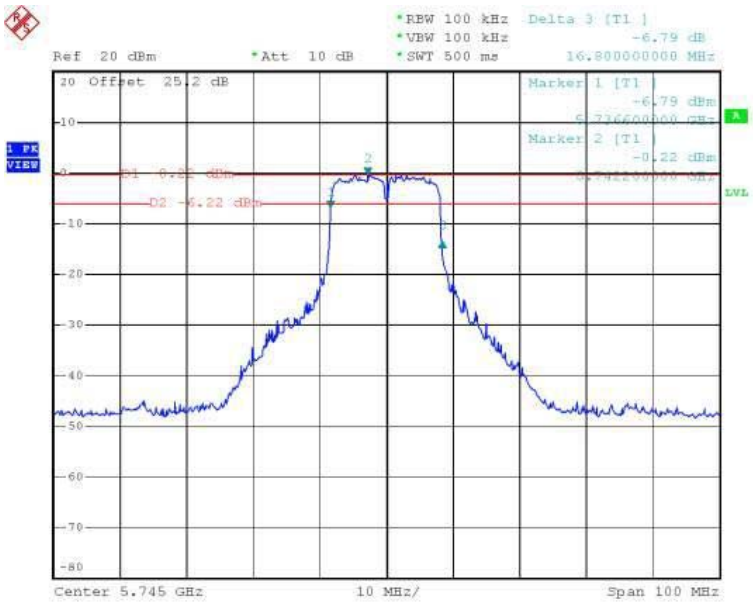
5-6



Date: 26.JUL.2004 17:27:07

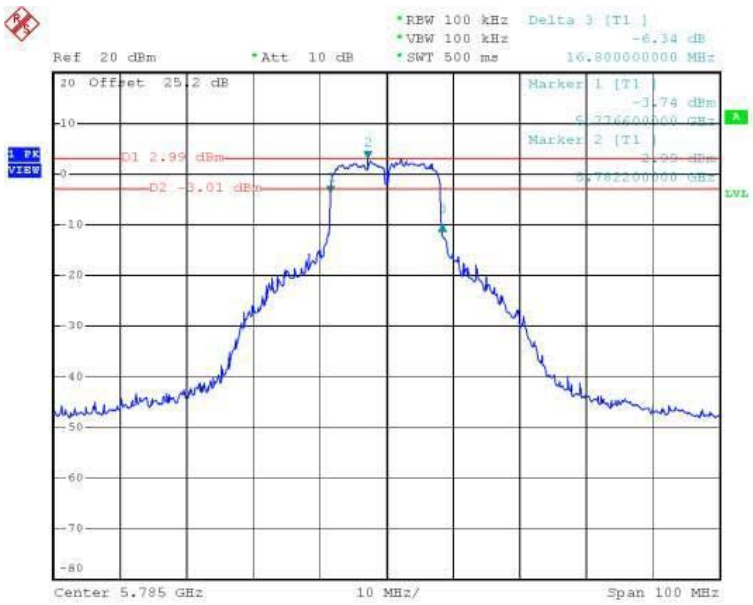
5.2.5.6 Antenna 6

6-1



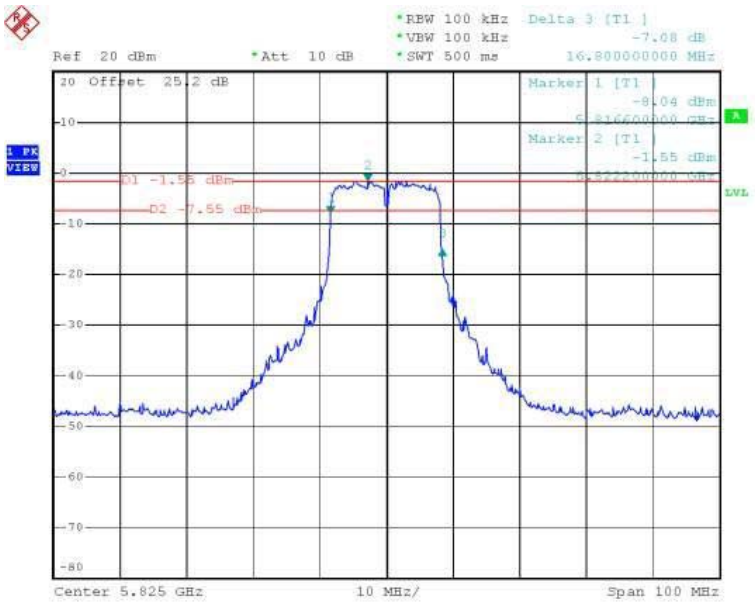
Date: 26.JUL.2004 19:34:22

6-2



Date: 26.JUL.2004 19:37:38

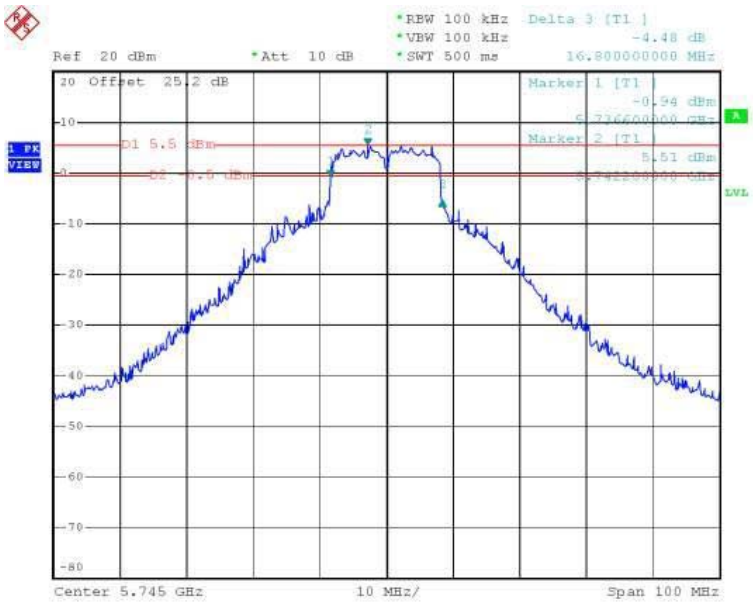
6-3



Date: 26.JUL.2004 19:41:42

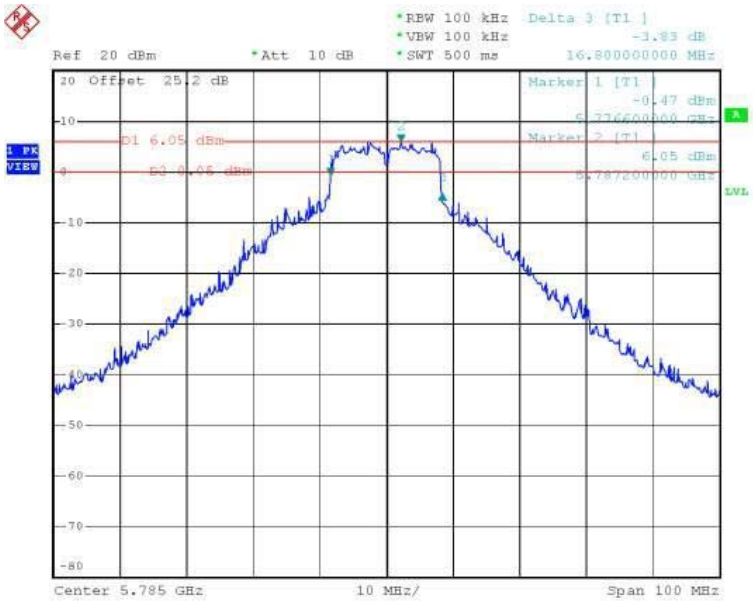
5.2.5.7 Antenna 7

7-1



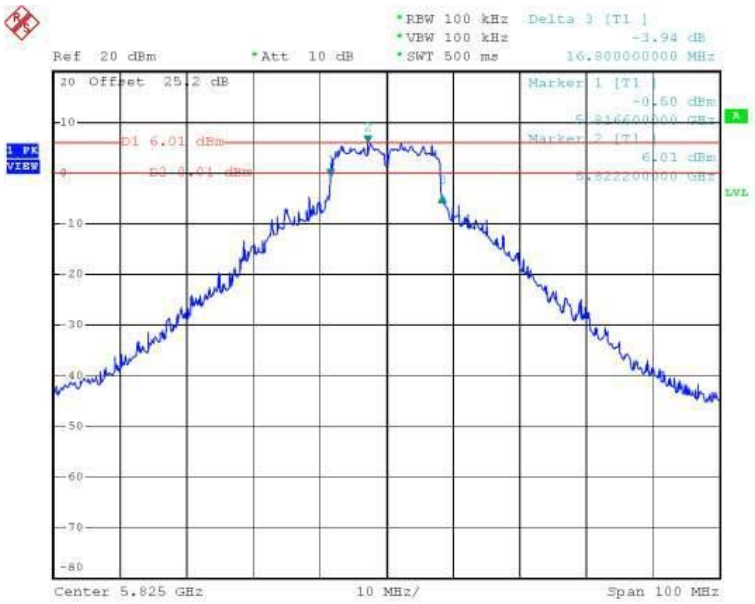
Date: 26.JUL.2004 19:33:20

7-2



Date: 26.JUL.2004 19:36:40

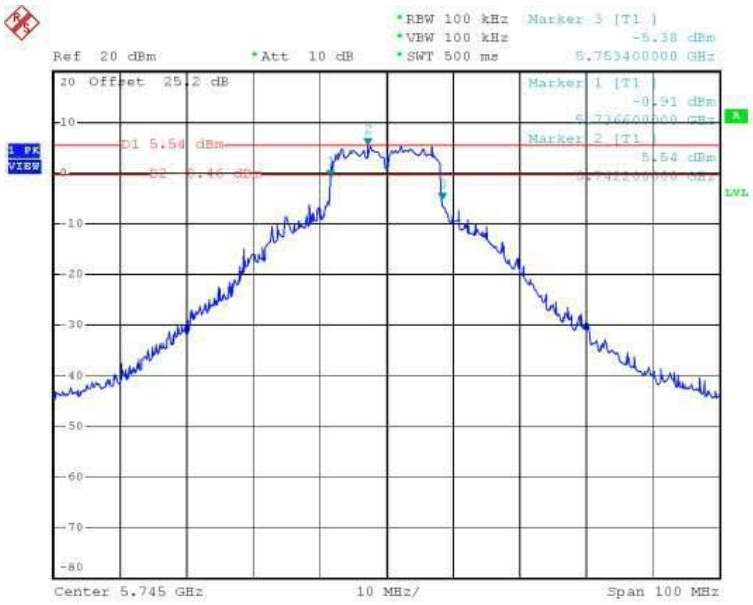
7-3



Date: 26.JUL.2004 19:40:33

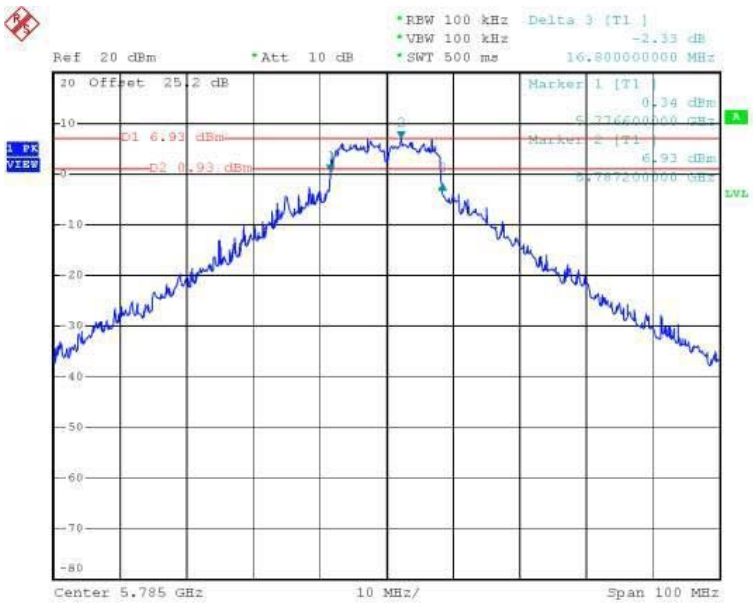
5.2.5.8 Antenna 8

8-1



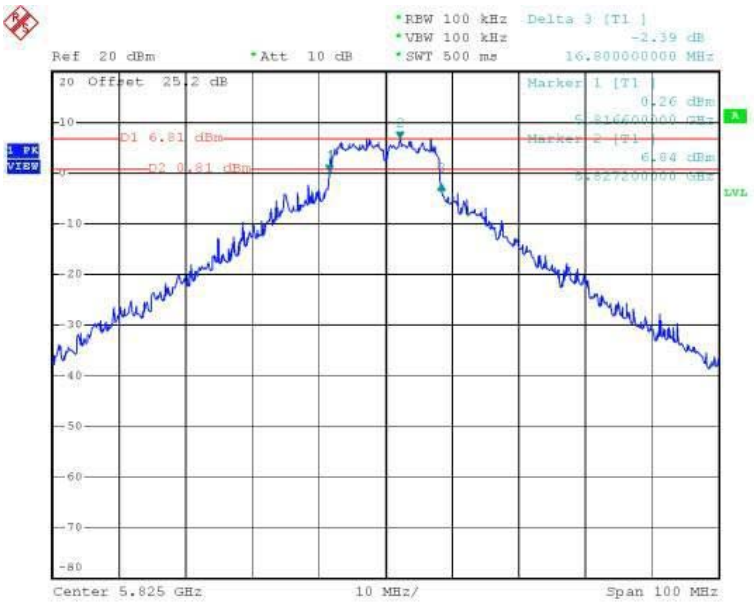
Date: 26.JUL.2004 19:32:22

8-2



Date: 26.JUL.2004 19:35:37

8-3


RBW 100 kHz
VBW 100 kHz
SWT 500 ms
Delta 3 [T1]
-2.39 dB
16.800000000 MHz
Ref 20 dBm
Att 10 dB
Offset 25.2 dB
Marker 1 [T1]
0.26 dBm
Marker 2 [T1]
6.84 dBm
D1 6.81 dBm
D2 0.81 dBm
1 PK VIEW
A
LVL
Center 5.825 GHz
10 MHz/
Span 100 MHz
Date: 26.JUL.2004 19:39:17

5.3 Power Spectral Density

5.3.1 Measuring Instruments：

As described in chapter 10 of this test report.

5.3.2 Test Procedure：

1. The transmitter output was connected to spectrum analyzer directly.
2. The spectrum analyzer's resolution bandwidth was set at 3kHz RBW and 30kHz VBW as that of the fundamental frequency. Set the sweep time=span/3kHz.
3. The power spectral density was measured and recorded.
4. The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

5.3.3 Test Setup Layout：

5.3.4 Test Result：

5.3.4.1 Antenna 1

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11b

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-8.59	8	Antenna 1-1
06	2437	-6.50	8	Antenna 1-2
11	2462	-7.50	8	Antenna 1-3

- Application: 802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-21.09	8	Antenna 1-4
06	2437	-17.16	8	Antenna 1-5
11	2462	-19.82	8	Antenna 1-6

- Application: 802.11a

Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
5745	-11.39	8	Antenna 1-7
5785	-11.56	8	Antenna 1-8
5825	-11.40	8	Antenna 1-9

5.3.4.2 Antenna 2

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11b

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-11.09	8	Antenna 2-1
06	2437	-7.83	8	Antenna 2-2
11	2462	-10.8	8	Antenna 2-3

- Application: 802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-27.52	8	Antenna 2-4
06	2437	-18.51	8	Antenna 2-5
11	2462	-27.11	8	Antenna 2-6

5.3.4.3 Antenna 3

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11b

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-8.36	8	Antenna 3-1
06	2437	-7.5	8	Antenna 3-2
11	2462	-7.65	8	Antenna 3-3

- Application: 802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-23.22	8	Antenna 3-4
06	2437	-20.42	8	Antenna 3-5
11	2462	-23.6	8	Antenna 3-6

5.3.4.4 Antenna 4

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11b

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-8.99	8	Antenna 4-1
06	2437	-8.18	8	Antenna 4-2
11	2462	-13.21	8	Antenna 4-3

- Application: 802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-24.86	8	Antenna 4-4
06	2437	-17.13	8	Antenna 4-5
11	2462	-24.7	8	Antenna 4-6

5.3.4.5 Antenna 5

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11b

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-14.54	8	Antenna 5-1
06	2437	-11.73	8	Antenna 5-2
11	2462	-14.37	8	Antenna 5-3

- Application: 802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-23.25	8	Antenna 5-4
06	2437	-10.64	8	Antenna 5-5
11	2462	-23.02	8	Antenna 5-6

5.3.4.6 Antenna 6

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11a

Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
5745	-5.76	8	Antenna 6-1
5785	-10.47	8	Antenna 6-2
5825	-14.43	8	Antenna 6-3

5.3.4.7 Antenna 7

- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11a

Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
5745	-11.08	8	Antenna 7-1
5785	-8.09	8	Antenna 7-2
5825	-8.16	8	Antenna 7-3

5.3.4.8 Antenna 8

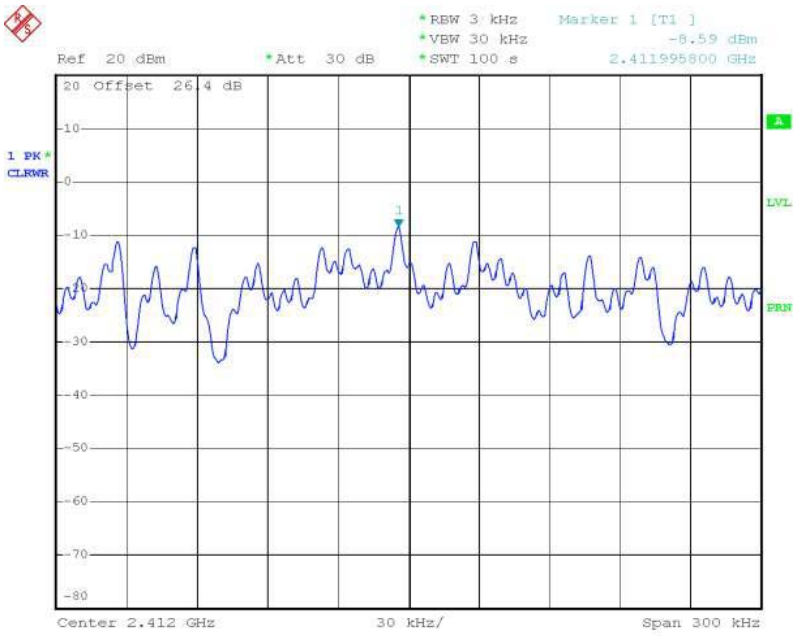
- Temperature : 25.5C
- Relative Humidity : 53%
- Application: 802.11a

Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
5745	-11.58	8	Antenna 8-1
5785	-7.48	8	Antenna 8-2
5825	-7.54	8	Antenna 8-3

5.3.5 Power Spectral Density

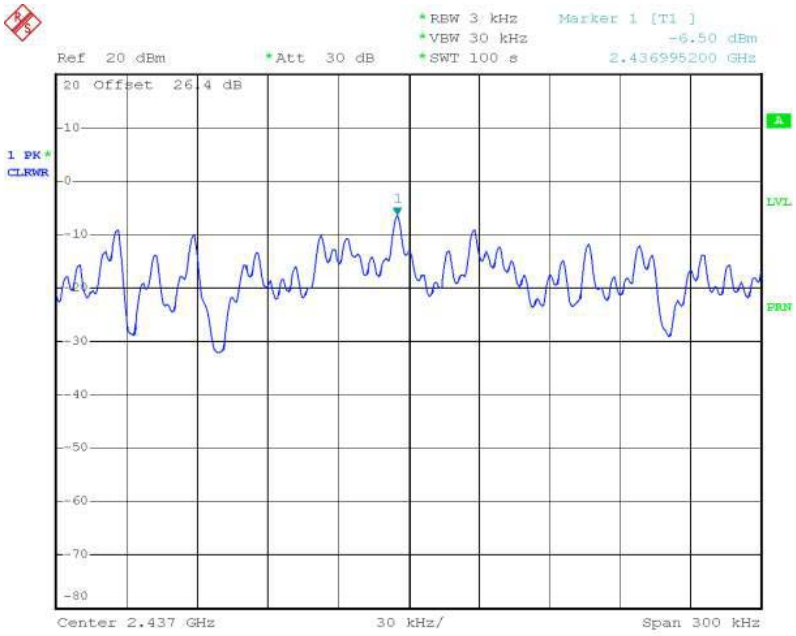
5.3.5.1 Antenna 1

1-1



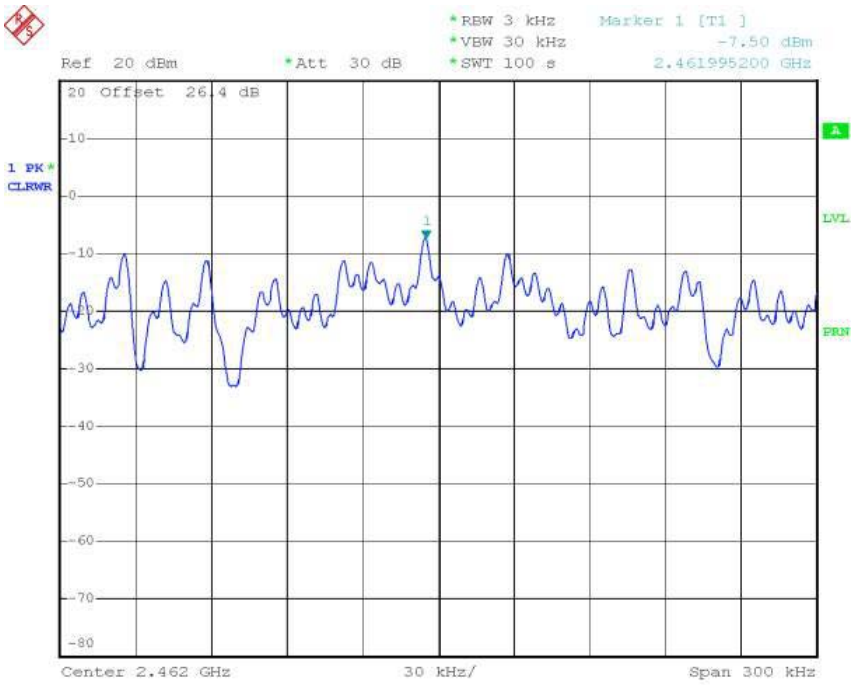
Date: 24.JUL.2004 02:16:46

1-2

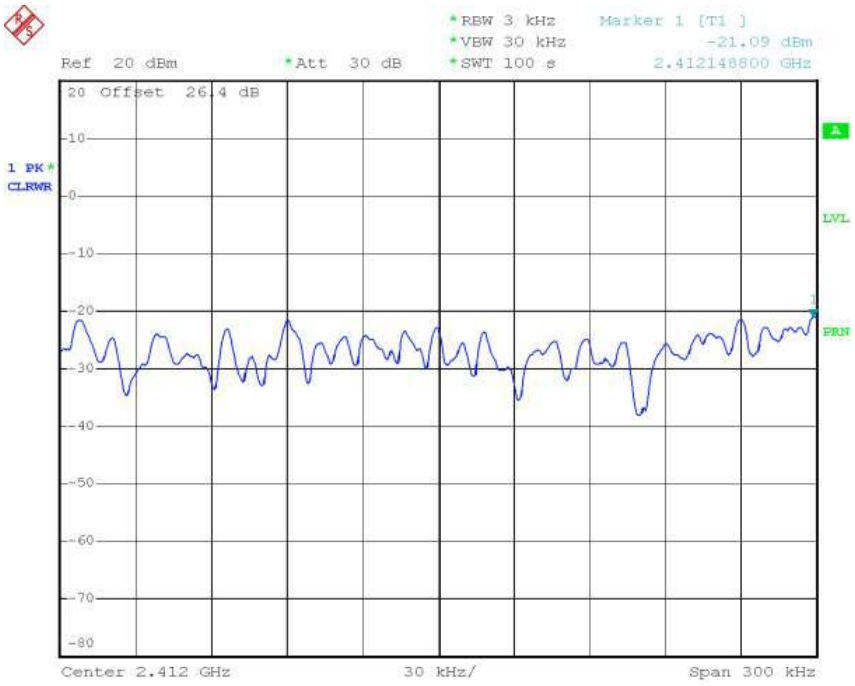


Date: 24.JUL.2004 02:21:31

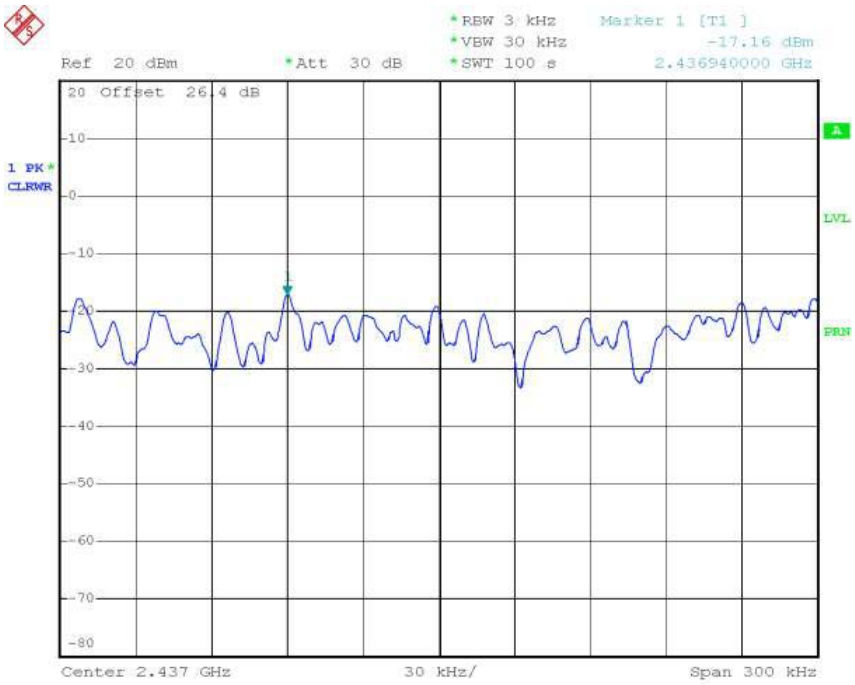
1-3


*RBW 3 kHz
*VBW 30 kHz
*SWT 100 s
Marker 1 [T1]
-7.50 dBm
2.461995200 GHz
Ref 20 dBm
*Att 30 dB
20 Offset 26.4 dB
1 PK*
CLRWR
LVL
PRN
Center 2.462 GHz
30 kHz/
Span 300 kHz
Date: 24.JUL.2004 02:25:32

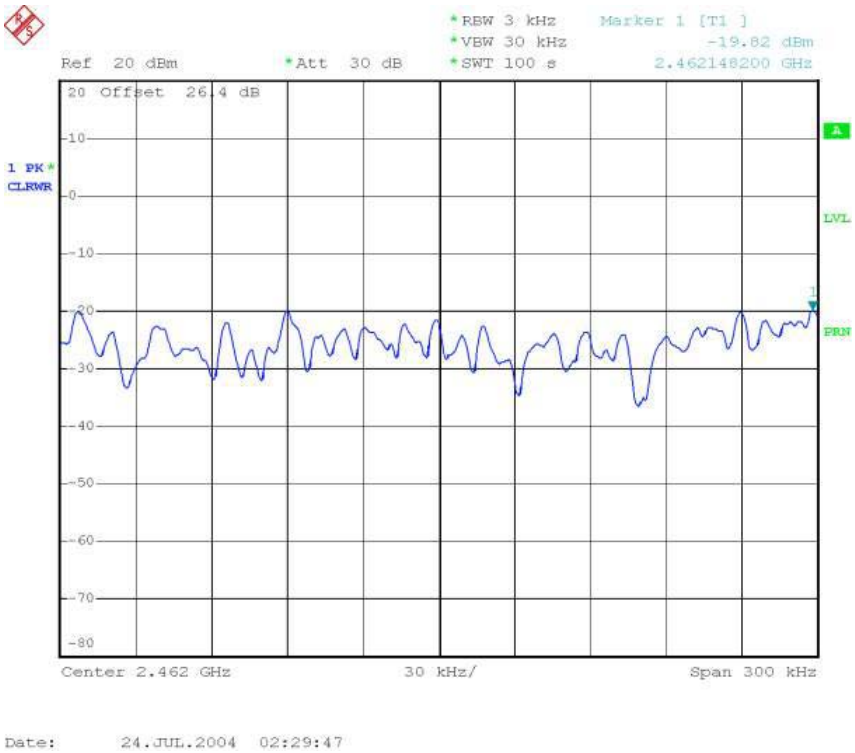
1-4


*RBW 3 kHz
*VBW 30 kHz
*SWT 100 s
Marker 1 [T1]
-21.09 dBm
2.412148800 GHz
Ref 20 dBm
*Att 30 dB
20 Offset 26.4 dB
1 PK*
CLRWR
LVL
PRN
Center 2.412 GHz
30 kHz/
Span 300 kHz
Date: 24.JUL.2004 02:38:43

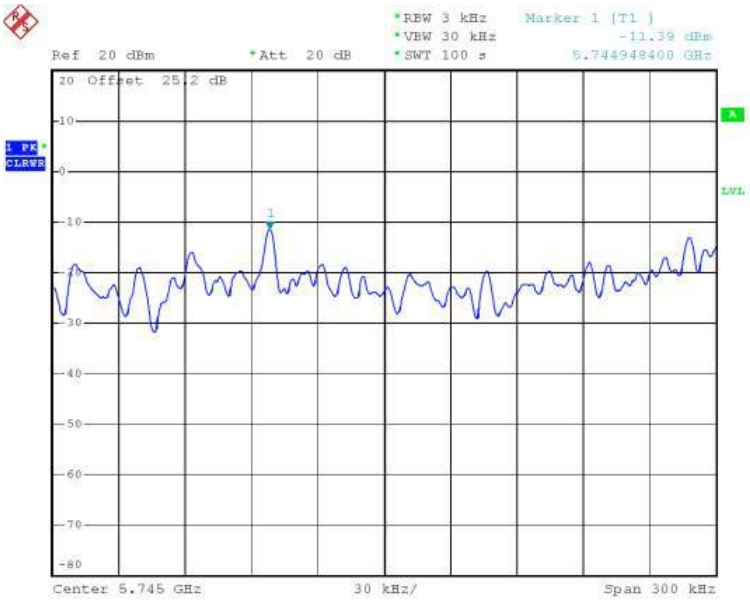
1-5


*RBW 3 kHz
*VBW 30 kHz
*SWT 100 s
Marker 1 [T1]
-17.16 dBm
2.436940000 GHz
Ref 20 dBm
*Att 30 dB
20 Offset 26.4 dB
1 PK*
CLRWR
A
LVL
PRN
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.437 GHz
30 kHz/
Span 300 kHz
Date: 24.JUL.2004 02:34:28

1-6

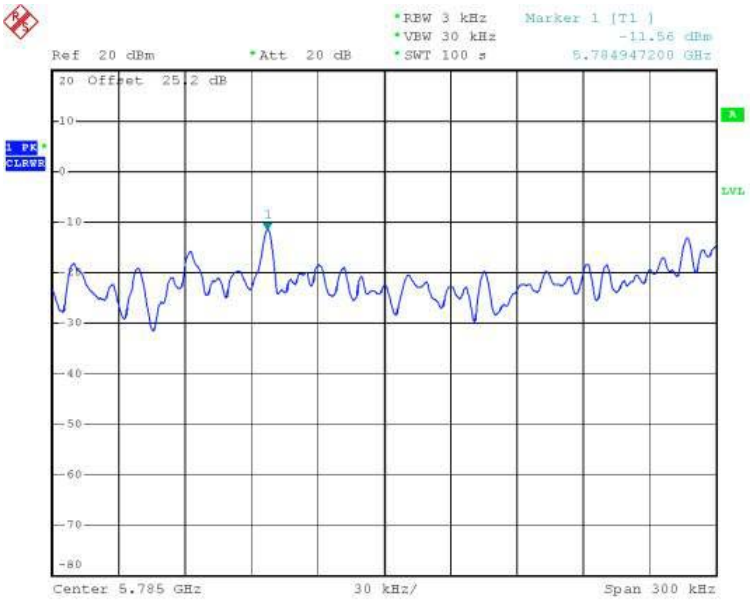

*RBW 3 kHz
*VBW 30 kHz
*SWT 100 s
Marker 1 [T1]
-19.82 dBm
2.462148200 GHz
Ref 20 dBm
*Att 30 dB
20 Offset 26.4 dB
1 PK*
CLRWR
A
LVL
PRN
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.462 GHz
30 kHz/
Span 300 kHz
Date: 24.JUL.2004 02:29:47

1-7



Date: 2.AUG.2004 13:32:49

1-8



Date: 2.AUG.2004 13:38:12