FCC TEST REPORT

CATEGORY	:	Mobile
PRODUCT NAME	:	3Com Managed Access Point AP2750
FCC ID.	:	O9C-AP2750
FILING TYPE	:	Certification
BRAND NAME	:	3Com
MODEL NAME	:	AP2750
APPLICANT	:	**3Com Corporation** 5500 Great America Pkwy Santa Clara, CA. 95052 USA
MANUFACTURER	:	**DONGGUAN G-COM COMPUTER CO., LTD.** 1st Row Yin Shan Rd., Yin Hwu Industrial Area, Qingxi Town, Dong Guan City, Guang Dong, China
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 802.11a part 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.

Dr. Alan Lane
Vice General Manager
Sporton International Inc.

Lab Code: 200079-0

Table of Contents

History of this test report

Original Report Issue Date: Nov. 04, 2004

Report No.: FR493039

■ 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 15.407)

PRODUCT NAME : 3Com Managed Access Point AP2750

BRAND NAME : 3Com

MODEL NAME : AP2750

APPLICANT : **3Com Corporation**
5500 Great America Pkwy Santa Clara, CA. 95052 USA

MANUFACTURER : **DONGGUAN G-COM COMPUTER CO., LTD.**
1st Row Yin Shan Rd., Yin Hwu Industrial Area, Qingxi Town, Dong Guan City, Guang Dong, China

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 Nov. 03, 2004 at SPORTON International Inc. LAB.

Dr. Alan Lane
Vice General Manager
Sporton International Inc.

1. General Description of Equipment under Test

1.1. Applicant

3Com Corporation
5500 Great America Pkwy Santa Clara, CA. 95052 USA

1.2. Manufacturer

DONGGUAN G-COM COMPUTER CO., LTD.
1st Row Yin Shan Rd., Yin Hwu Industrial Area, Qingxi Town, Dong Guan City, Guang Dong, China

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 ". There are RJ45, RS-232 and power ports in this product. 4 types of antenna were filed in this project.

1.4. Features of Equipment under Test

Items		Description
Type of Modulation	:	OFDM (16QAM / 64QAM / DQPSK / DBPSK)
Number of Channels	:	19
Frequency Band	:	5150MHz ~ 5250MHz, 5250MHz ~ 5350MHz 5725MHz ~ 5805MHz
Carrier Frequency	:	See section 1.6 for details
Data Rate	:	54, 48,36, 24,18,12, 6Mbps
Channel Bandwidth	:	18MHz
Max. Conducted Output Power	:	See section 0 for details
Antenna Type	:	See section 1.7 for details
Communication Type	:	Half-Duplex
Testing Duty Cycle	:	100.00%
Power Rating (DC/AC, Voltage)	:	110 VAC to 5 VDC
Test Power Source	:	110.00V AC
Temperature Range (Operating)	:	-30 ~ 50 °C

1.5. Antenna Description

4 types of antenna were filed in this project.

No.	Antenna Type	Gain (dBi)
1	Ceiling Antenna (3CWE592)	4.00dBi @5.0GHz
2	Hallway Antenna (3CWE597)	6.00dBi @5.0GHz
3	Omni Antenna (3CWE591)	8.00dBi @5.0GHz
4	SMA Omni Antenna (3CWE502)	2.50dBi @5.0GHz

1.6. Table for Carrier Frequencies

Normal Mode

Frequency Bands					
5150MHz ~ 5250MHz		**5250MHz ~ 5350MHz**		**5725MHz ~ 5825MHz**	
Channel	**Frequency**	**Channel**	**Frequency**	**Channel**	**Frequency**
01	5180 MHz	05	5260 MHz	09	5745 MHz
02	5200 MHz	06	5280 MHz	10	5765 MHz
03	5220 MHz	07	5300 MHz	11	5785 MHz
04	5240 MHz	08	5320 MHz	12	5805 MHz

Turbo Mode

Frequency Bands					
5150MHz ~ 5250MHz		**5250MHz ~ 5350MHz**		**5725MHz ~ 5825MHz**	
Channel	**Frequency**	**Channel**	**Frequency**	**Channel**	**Frequency**
01	5210 MHz	03	5290 MHz	04	5760 MHz
02	5250 MHz			05	5800 MHz

1.7. Table for Maximum Conducted Output Power

Normal Mode

Maximum Conducted Output Power (dBm)		
Frequency Bands 5150MHz ~ 5250MHz	**Frequency Bands 5250MHz ~ 5350MHz**	**Frequency Bands 5725MHz ~ 5825MHz**
14.91	21.40	23.44

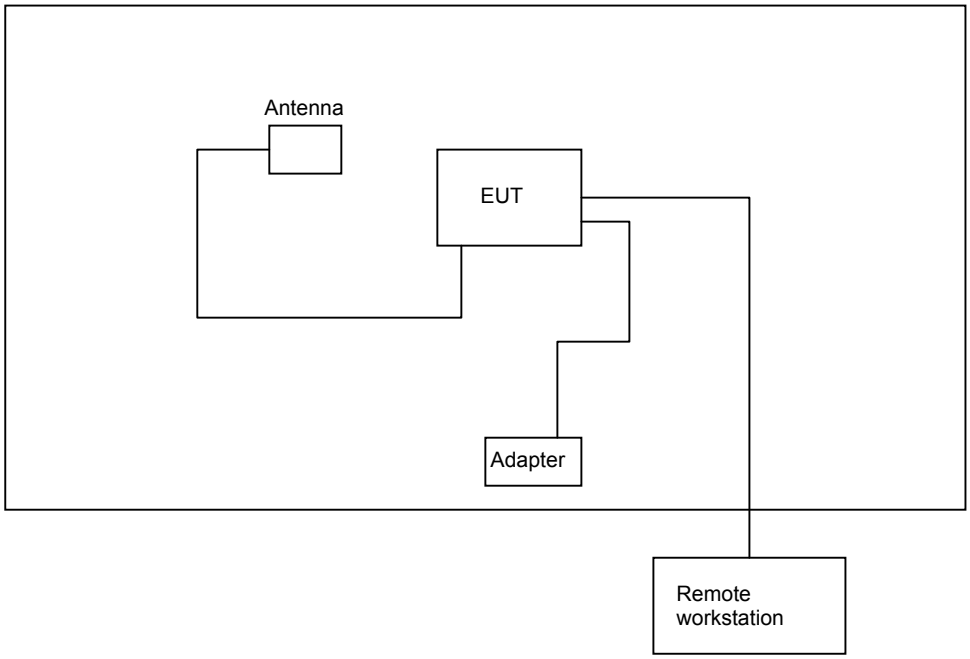
Turbo Mode

Maximum Conducted Output Power (dBm)		
Frequency Bands 5150MHz ~ 5250MHz	**Frequency Bands 5250MHz ~ 5350MHz**	**Frequency Bands 5725MHz ~ 5825MHz**
14.31	18.19	17.30

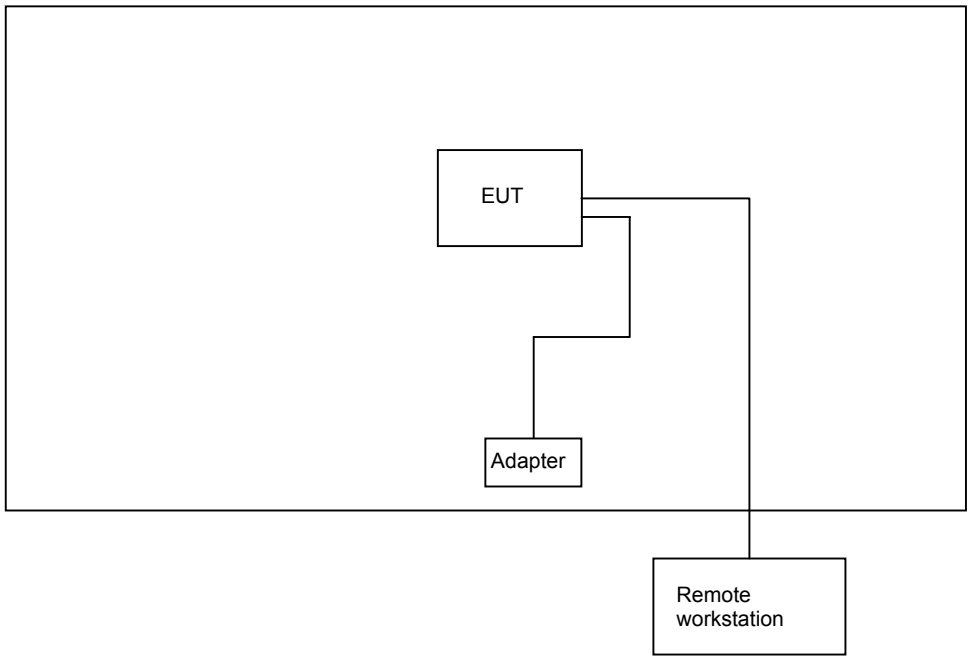
2. Test Configuration of the Equipment under Test

2.1. Connection Diagram of Test System

Antenna 1, 2, & 3



Antenna 4



2.2. The Test Mode Description

1. For OFDM modulation, 64QAM is the worst case on all test items.
2. Spurious emission below 1GHz is independent of channel selection, so only channel 01 was worst case tested.
3. AC conduction emission is independent of channel selection, so only channel 01 was the tested case.
4. Operating channel with carrier located within 5.47~5.725GHz was not included in this test report.
5. There are 4 types of antennas during the testing.

   Mode 1 : Ceiling Antenna (3CWE592)
   Mode 2 : Ha llway Antenna (3CWE597)
   Mode 3 : Omni Antenna (3CWE591)
   Mode 4 : SMA Omni Antenna (3CWE502)

2.3. Description of Test Supporting Units

No supporting unit is required for the EUT.

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 : 03CH03-HY / TH01-HY

3.2. Test Conditions

Normal Voltage : 110.00V (power adapter)

Extreme Voltages : 126.50V and 93.5V (power adapter)

Normal Temperature : 20˚C

Extreme Temperature : -30 ˚C and 50 ˚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 15.407)

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 3 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.

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	15.407	26dB Spectrum Bandwidth	Pass
5.2	15.407	Maximum Conducted Output Power	Pass
5.3	15.407	Peak Power Spectral Density	Pass
5.4	15.407	Ratio of the Peak Excursion	Pass
5.5	15.407	Band Edges Emission	Pass
5.6	15.407	Test of Frequency Stability	Pass
5.7	15.407	AC Power Line Conducted Emission	Pass
5.8	15.209/15.407	Spurious Radiated Emission	Pass
5.9	15.203/15.407	Antenna Requirement	Pass
5.10	2.1091	Maximum Permissible Exposure	Pass

5. Test Result

5.1. Test of 26dB Spectrum Bandwidth

5.1.1. Measuring Instruments

Item 18 of the table is 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 300KHz and VBW to 1000KHz.
3. The spectrum width with level higher than 26dB below the peak level.

5.1.3. Test Setup Layout

Spectrum Analyzer **EUT**

5.1.4. Test Result: See spectrum analyzer plots below

- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Sam Lee

Normal Mode

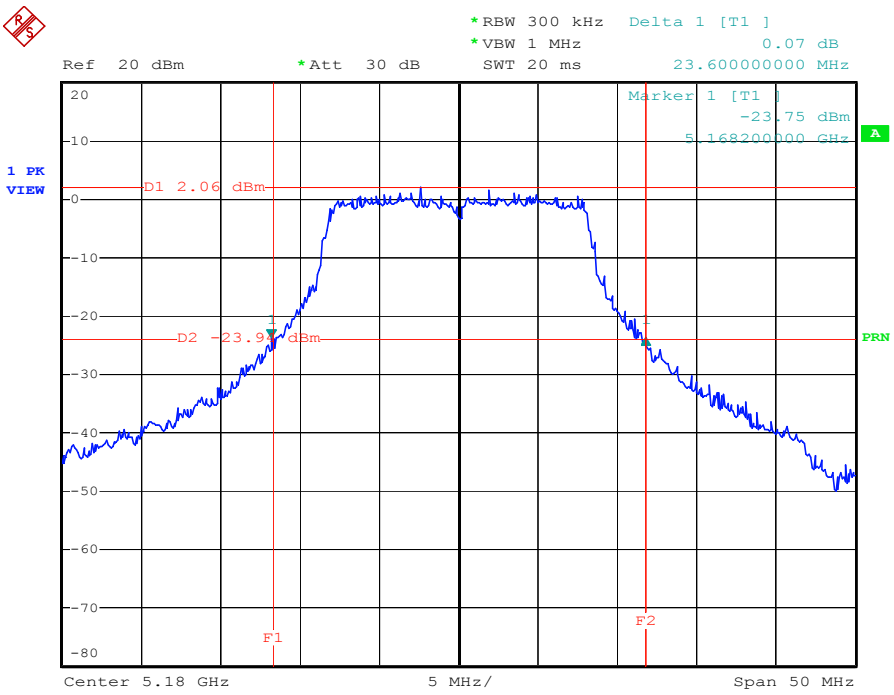
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Calculated Power Limit (dBm)	Applied Power Limit (dBm)
01	5180 MHz	23.60	17.73	17
02	5200 MHz	27.80	18.44	17
04	5240 MHz	27.00	18.31	17
05	5260 MHz	36.30	26.60	24
06	5280 MHz	38.30	26.83	24
08	5320 MHz	24.40	24.87	24
09	5745 MHz	24.50	30.69	30
10	5765 MHz	29.10	32.43	30
12	5805 MHz	28.20	30.86	30

Turbo Mode

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Calculated Power Limit (dBm)	Applied Power Limit (dBm)
01	5210 MHz	47.40	20.76	17
02	5250 MHz	47.40	27.76	17
03	5290 MHz	45.40	27.57	24
04	5760 MHz	45.80	33.63	30
05	5800 MHz	48.60	33.55	30

Normal Mode

Channel: 01 / 5180 MHz



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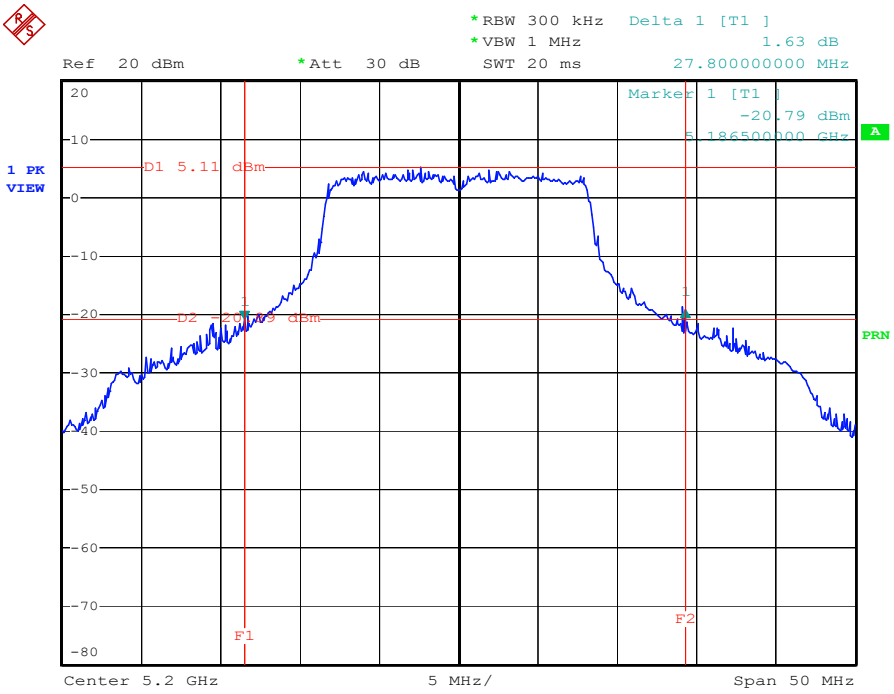

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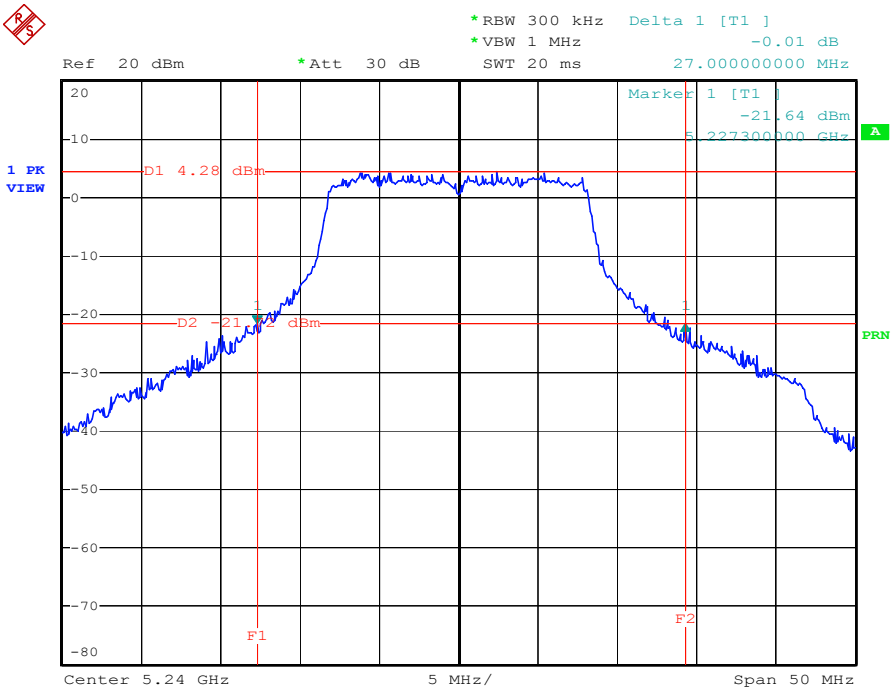

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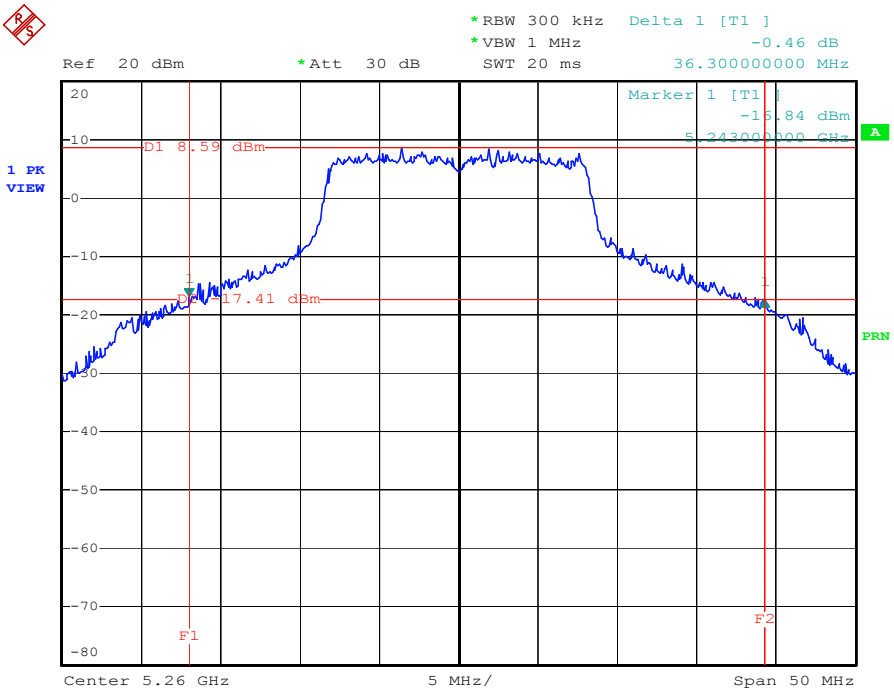
Channel: 05 / 5260 MHz



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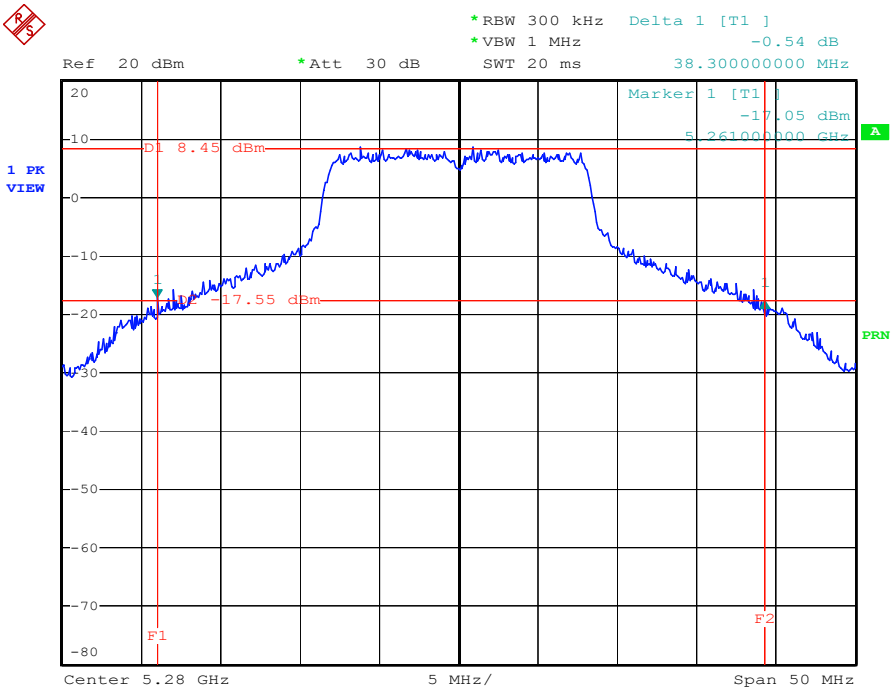

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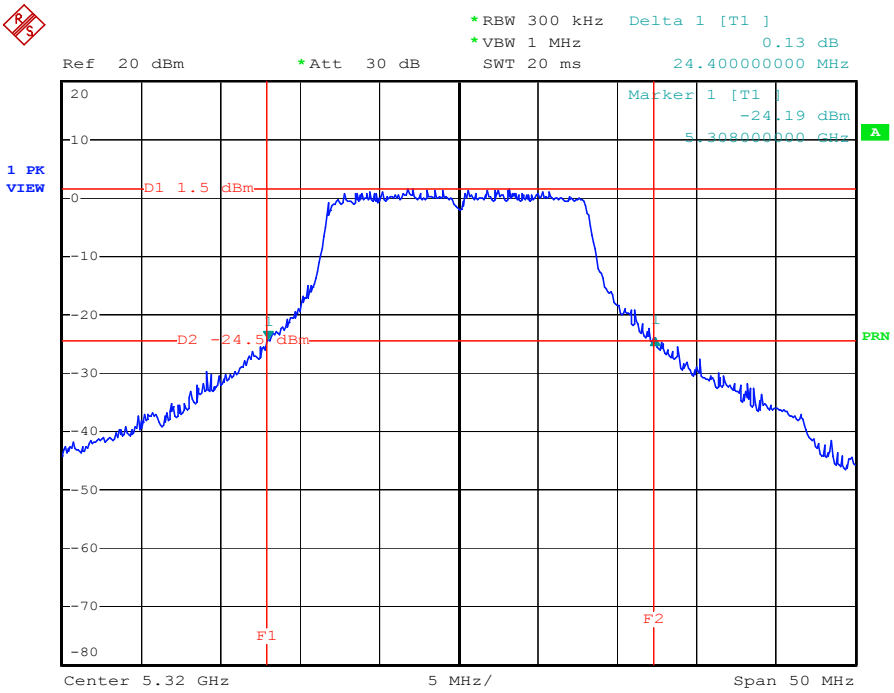

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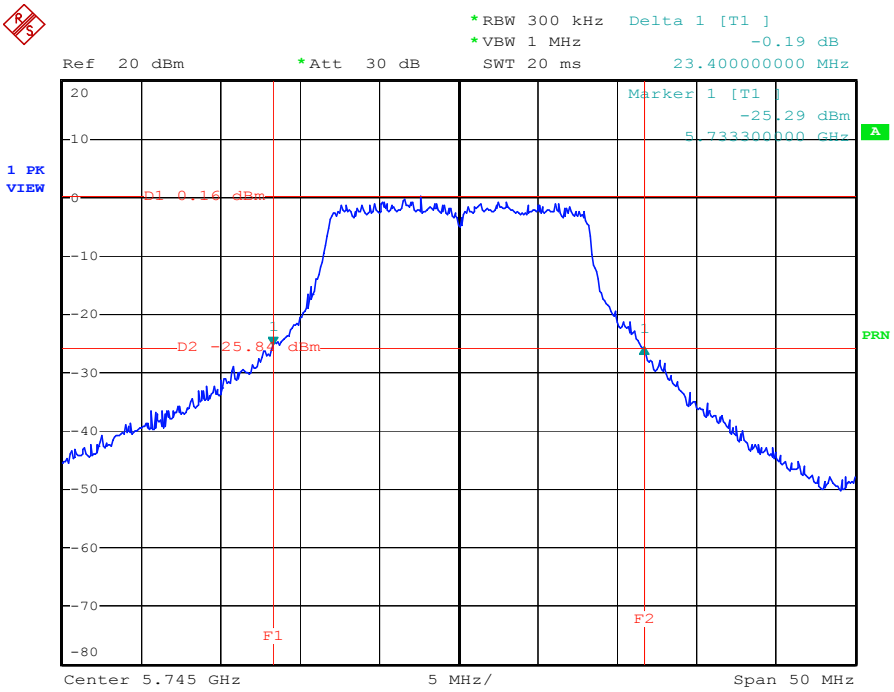

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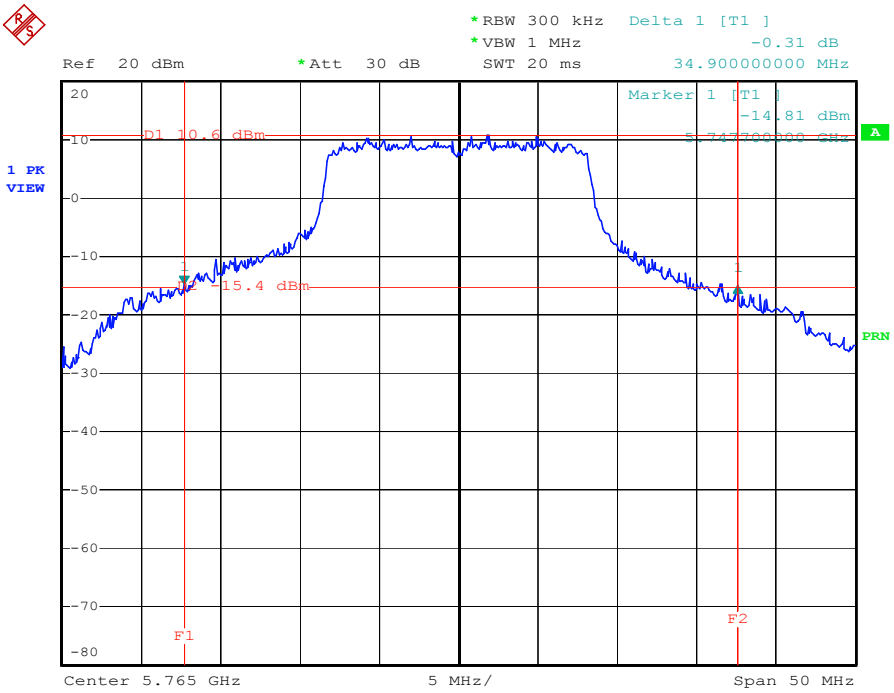

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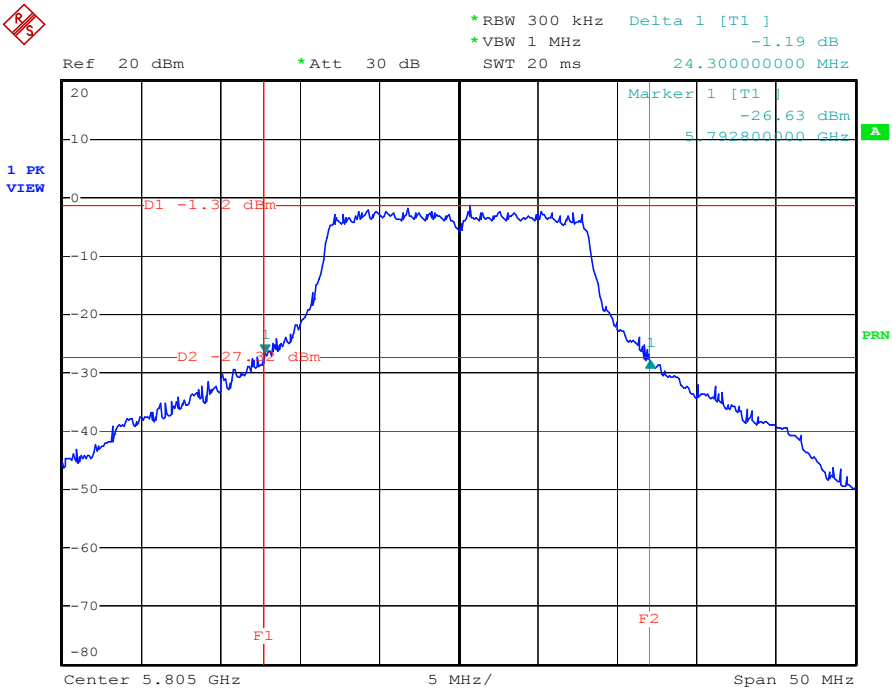
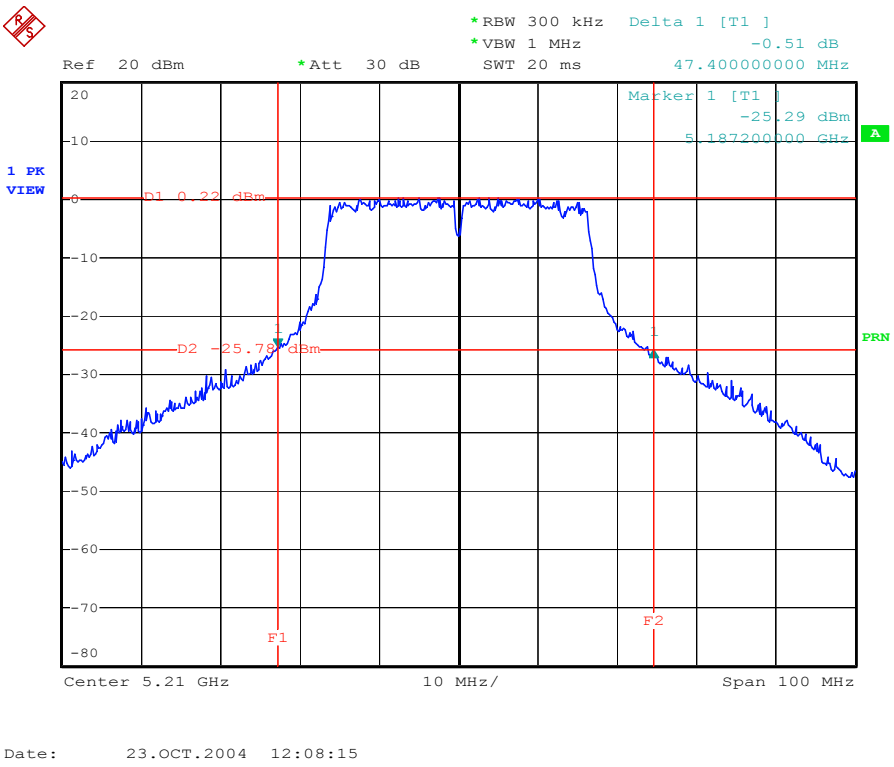
Channel: 12 / 5805 MHz

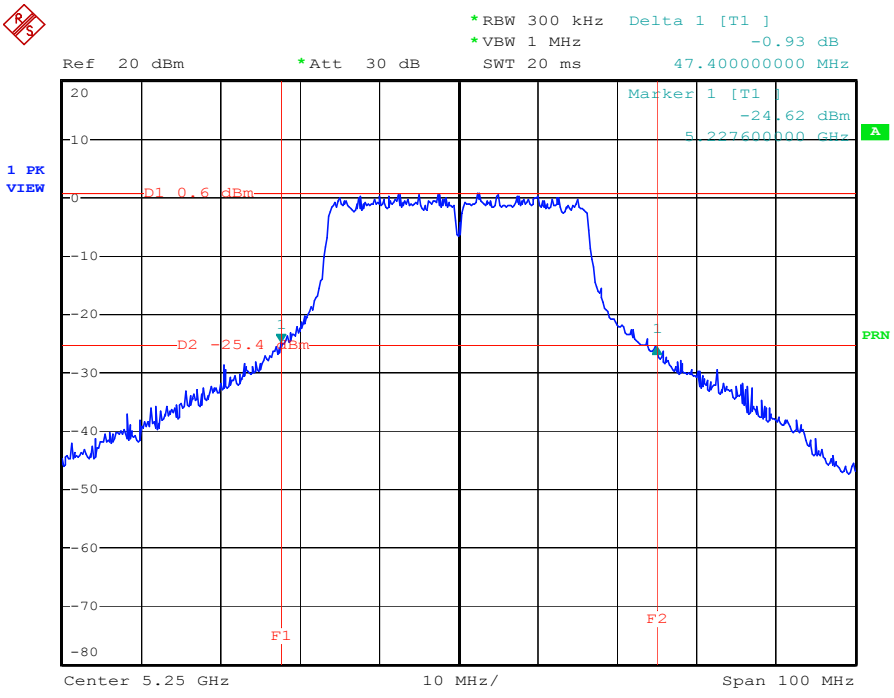


Turbo Mode

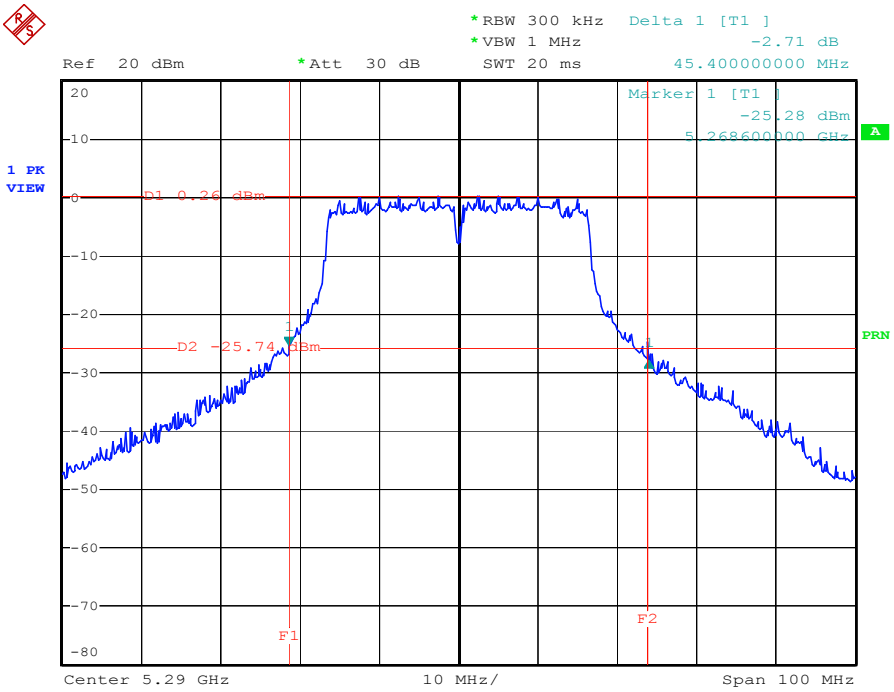
Channel: 01 / 5210 MHz



Channel: 02 / 5250 MHz



Channel: 03 / 5290 MHz



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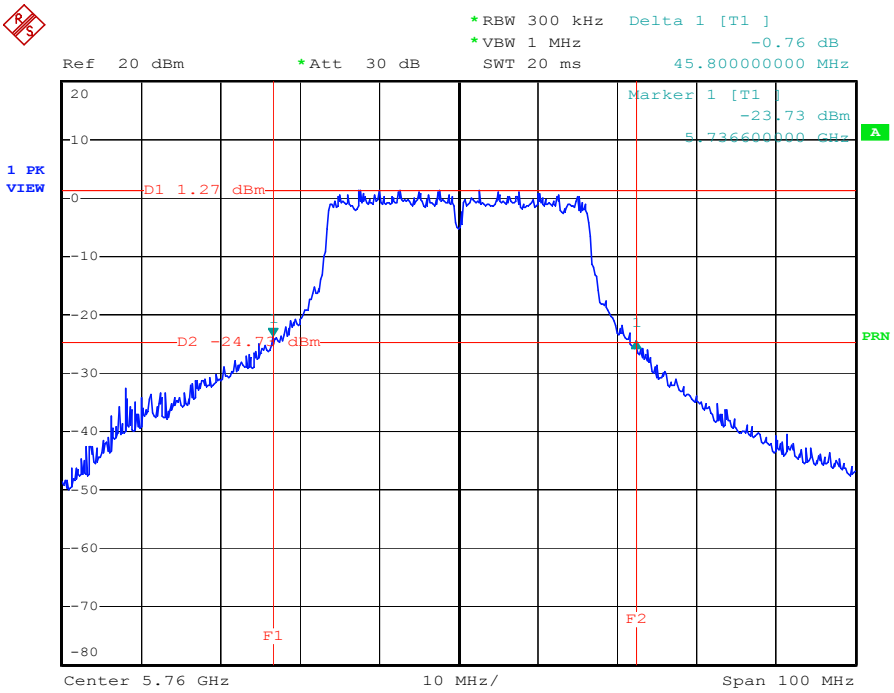
Channel: 04 / 5760 MHz



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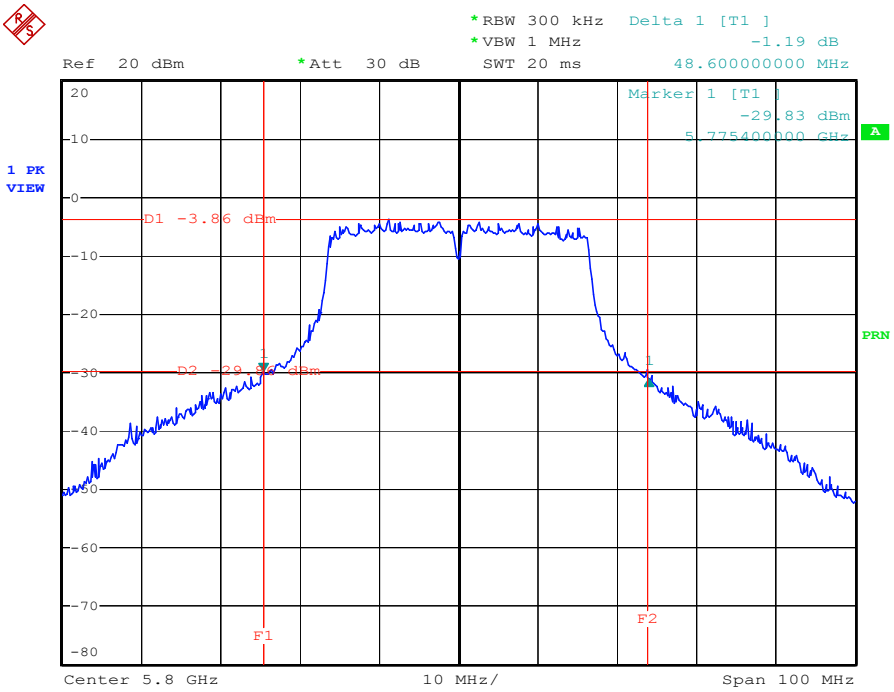
Channel: 05 / 5800 MHz



5.2. Test of Maximum Conducted Output Power

5.2.1. Measuring Instruments

Item 18 of the table is 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 range is more than 26dB bandwidth.
2. Repeated the 1 for the middle and highest channel of the EUT.

5.2.3. Test Setup Layout

Spectrum Analyzer **EUT**

5.2.4. Test Result of Conducted Power

- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Sam Lee

Normal Mode

Channel	Frequency (MHz)	Output Power (dBm)	Limits (dBm)
01	5180 MHz	14.77	15
02	5200 MHz	14.91	15
04	5240 MHz	14.28	15
05	5260 MHz	21.26	22
06	5280 MHz	21.40	22
08	5320 MHz	15.21	22
09	5745 MHz	13.08	28
10	5765 MHz	23.44	28
12	5805 MHz	13.96	28

The max output power in normal mode:

5150MHz~5250MHz is 14.91dBm / 5250MHz~5350MHz is 21.40dBm
5725MHz~5825MHz is 23.44dBm

Turbo Mode

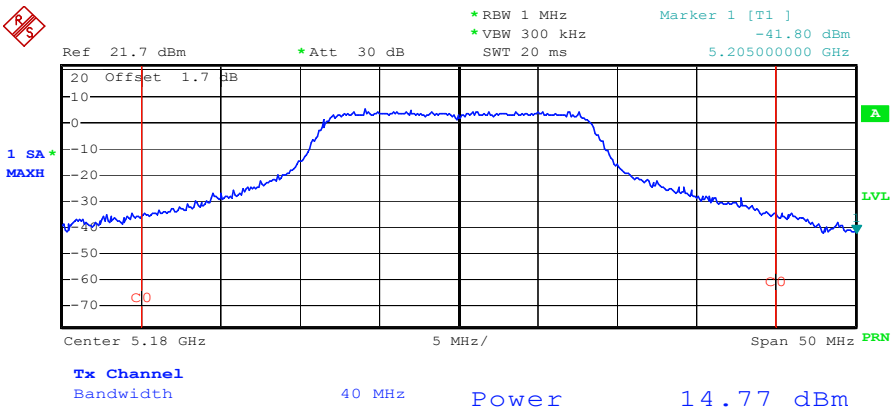
Channel	Frequency (MHz)	Output Power (dBm)	Limits (dBm)
01	5210 MHz	14.31	15
02	5250 MHz	14.30	15
03	5290 MHz	18.19	22
04	5760 MHz	17.30	28
05	5800 MHz	11.37	28

The max output power in turbo mode:

5150MHz~5250MHz is 14.31dBm / 5250MHz~5350MHz is 18.19dBm
5725MHz~5825MHz is 17.30dBm

Normal Mode

Channel: 01 / 5180 MHz



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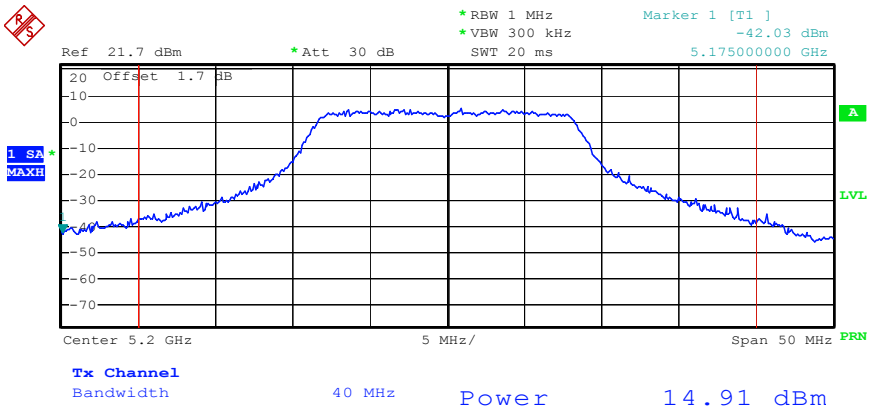

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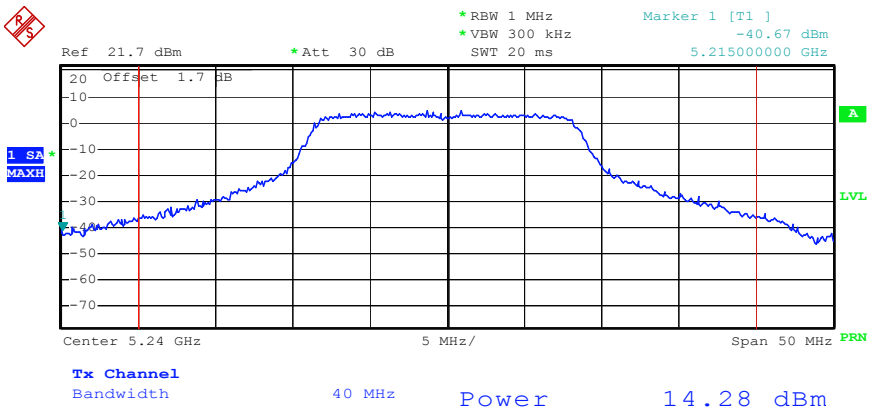
Channel: 04 / 5240 MHz



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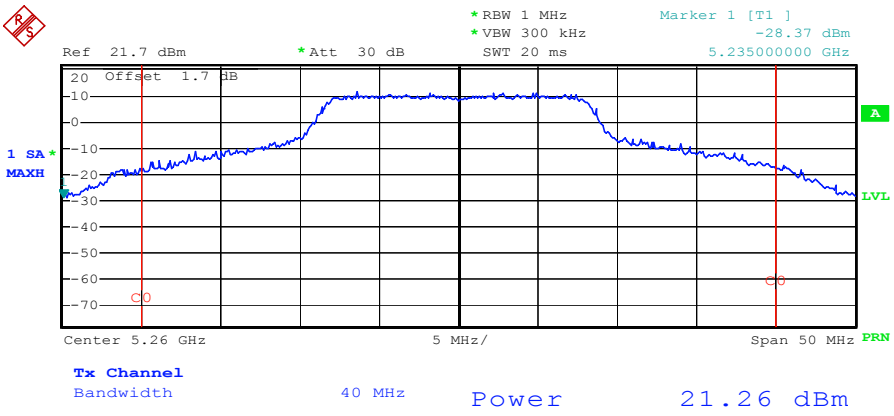

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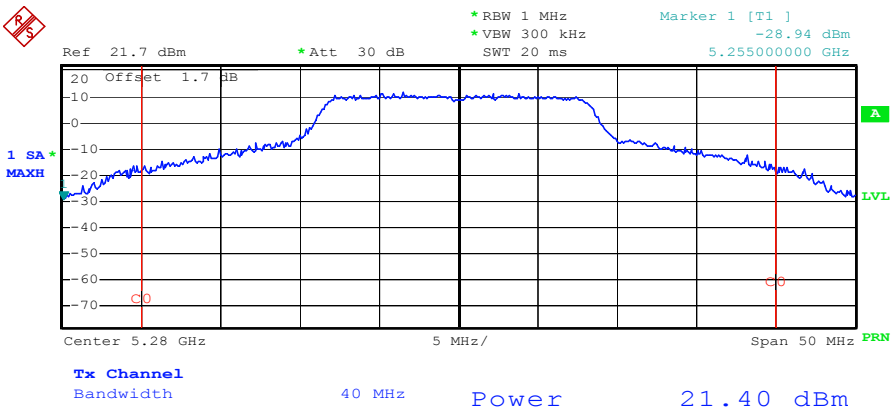

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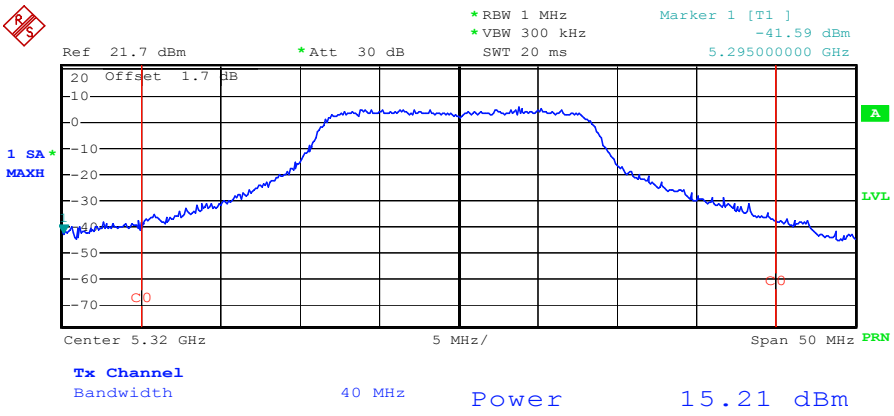

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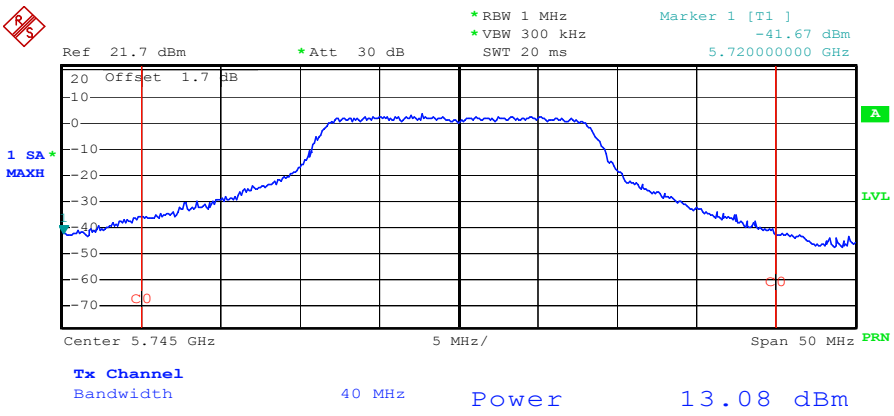

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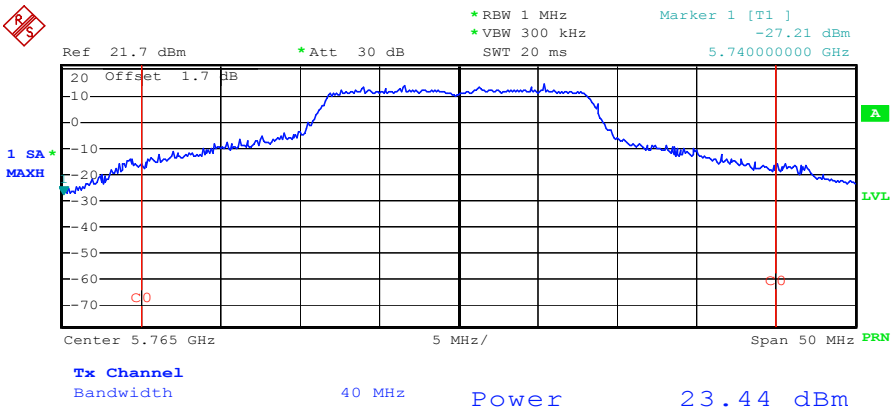
Channel: 10 / 5765 MHz



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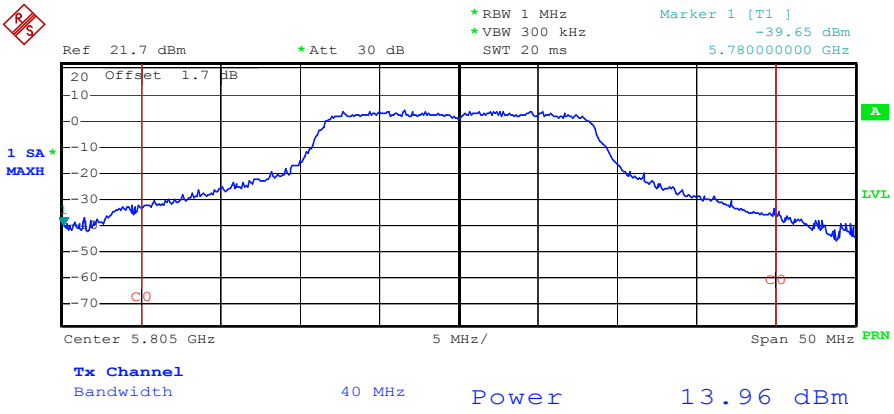
Channel: 12 / 5805 MHz



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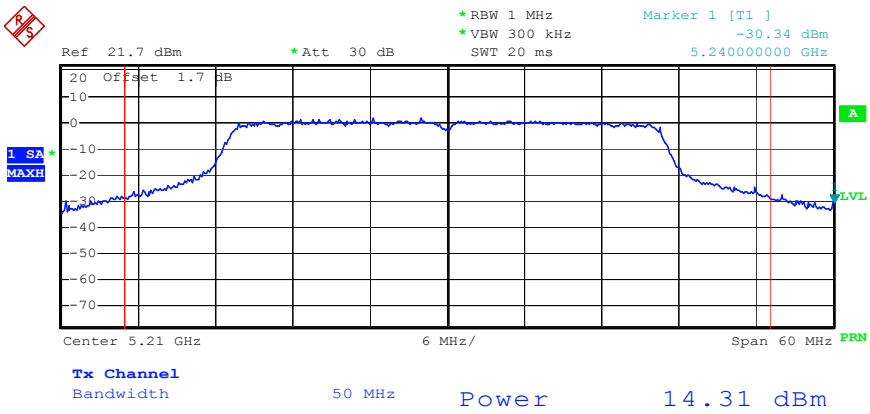
Turbo Mode

Channel: 01 / 5210 MHz



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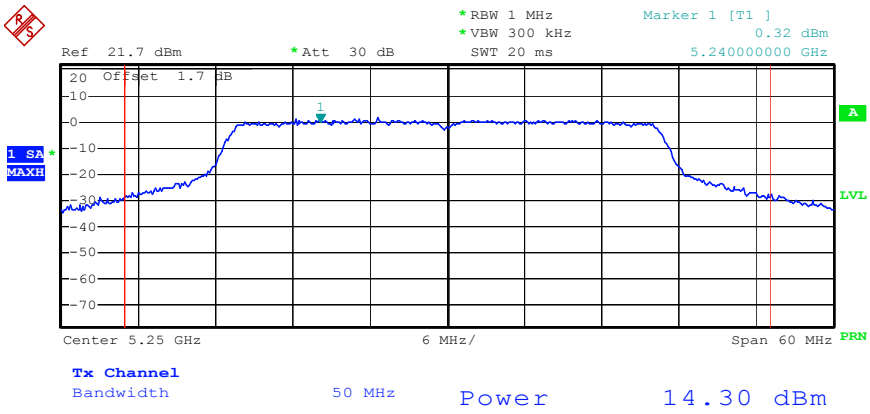
Channel: 02 / 5250 MHz



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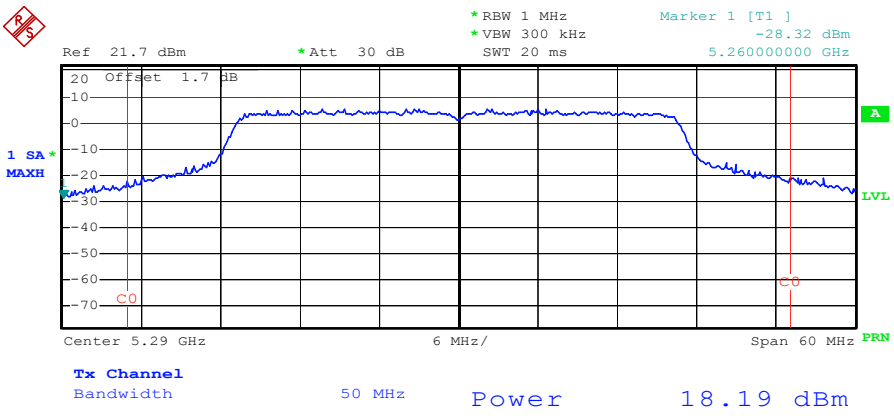
Channel: 03 / 5290 MHz



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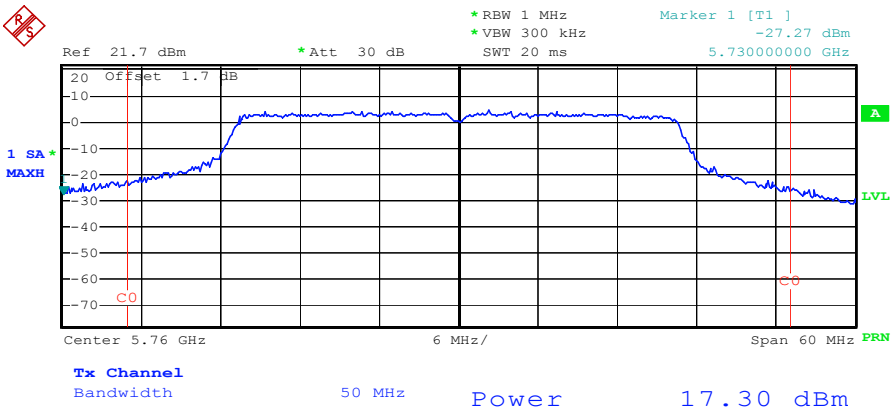
Channel: 04 / 5760 MHz



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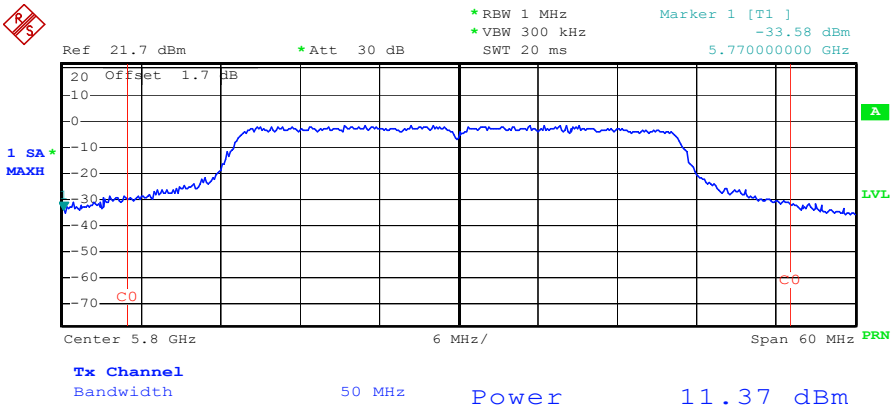


Date: 23.OCT.2004 14:15:37

5.2.5. Test Result of EIRP Power

- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Sam Lee

Normal Mode

Antenna No.	Gain (dBi)	Channel	Frequency (MHz)	Output Power (dBm)	Limits (dBm)
1	4.00	01	5180 MHz	18.77	23
1	4.00	02	5200 MHz	18.91	23
1	4.00	04	5240 MHz	18.28	23
1	4.00	05	5260 MHz	25.26	30
1	4.00	06	5280 MHz	25.40	30
1	4.00	08	5320 MHz	19.21	30
1	4.00	09	5745 MHz	17.08	36
1	4.00	10	5765 MHz	27.44	36
1	4.00	12	5805 MHz	17.96	36
2	6.00	01	5180 MHz	20.77	23
2	6.00	02	5200 MHz	20.91	23
2	6.00	04	5240 MHz	20.28	23
2	6.00	05	5260 MHz	27.26	30
2	6.00	06	5280 MHz	27.40	30
2	6.00	08	5320 MHz	21.21	30
2	6.00	09	5745 MHz	24.26	36
2	6.00	10	5765 MHz	28.81	36
2	6.00	12	5805 MHz	27.66	36
3	8.00	01	5180 MHz	22.77	23
3	8.00	02	5200 MHz	22.91	23
3	8.00	04	5240 MHz	22.28	23

Antenna No.	Gain (dBi)	Channel	Frequency (MHz)	Output Power (dBm)	Limits (dBm)
3	8.00	05	5260 MHz	29.26	30
3	8.00	06	5280 MHz	29.40	30
3	8.00	08	5320 MHz	23.21	30
3	8.00	09	5745 MHz	26.26	36
3	8.00	10	5765 MHz	30.81	36
3	8.00	12	5805 MHz	29.66	36
4	2.50	01	5180 MHz	17.27	23
4	2.50	02	5200 MHz	17.41	23
4	2.50	04	5240 MHz	16.78	23
4	2.50	05	5260 MHz	23.76	30
4	2.50	06	5280 MHz	23.90	30
4	2.50	08	5320 MHz	17.71	30
4	2.50	09	5745 MHz	20.76	36
4	2.50	10	5765 MHz	25.31	36
4	2.50	12	5805 MHz	24.16	36

Turbo Mode

Antenna No.	Gain (dBi)	Channel	Frequency (MHz)	Output Power (dBm)	Limits (dBm)
1	4.00	01	5210 MHz	18.31	23
1	4.00	02	5250 MHz	18.30	23
1	4.00	03	5290 MHz	22.19	30
1	4.00	04	5760 MHz	18.23	36
1	4.00	05	5800 MHz	19.61	36
2	6.00	01	5210 MHz	20.31	23
2	6.00	02	5250 MHz	20.30	23
2	6.00	03	5290 MHz	24.19	30
2	6.00	04	5760 MHz	20.23	36
2	6.00	05	5800 MHz	21.61	36
3	8.00	01	5210 MHz	22.31	23
3	8.00	02	5250 MHz	22.30	23
3	8.00	03	5290 MHz	26.19	30
3	8.00	04	5760 MHz	22.23	36
3	8.00	05	5800 MHz	23.61	36
4	2.50	01	5210 MHz	16.81	23
4	2.50	02	5250 MHz	16.80	23
4	2.50	03	5290 MHz	20.69	30
4	2.50	04	5760 MHz	16.73	36
4	2.50	05	5800 MHz	18.11	36

5.3. Test of Peak Power Spectral Density

5.3.1. Measuring Instruments

Item 18 of the table is on section 6.

5.3.2. Test Procedures

1. According to FCC DA 02-2138 test procedure, EUT connected to spectrum analyzer, then used the same setup as power measurement of spectrum analyzer.
2. Repeated the 1 for the middle and highest channel of the EUT.

5.3.3. Test Setup Layout

Spectrum Analyzer **EUT**

5.3.4. Test Result of conducted peak power spectral density:

- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Sam Lee

Normal Mode

Channel	Frequency (MHz)	Power Density (dBm)	Limits (dBm)
01	5180 MHz	-4.23	2
02	5200 MHz	-1.44	2
04	5240 MHz	-1.38	2
05	5260 MHz	2.09	9
06	5280 MHz	2.33	9
08	5320 MHz	-4.26	9
09	5745 MHz	-6.55	15
10	5765 MHz	4.54	15
12	5805 MHz	-8.07	15

Turbo Mode

Channel	Frequency (MHz)	Power Density (dBm)	Limits (dBm)
01	5210 MHz	-5.71	2
02	5250 MHz	-5.23	2
03	5290 MHz	-5.09	9
04	5760 MHz	-4.44	15
05	5800 MHz	-9.97	15

5.3.5. Test Result of EIRP peak power spectral density

- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Sam Lee

Normal Mode

Antenna No.	Gain (dBi)	Channel	Frequency (MHz)	Power Density (dBm)	Limits (dBm)
1	4.00	01	5180 MHz	-0.23	10
1	4.00	02	5200 MHz	2.56	10
1	4.00	04	5240 MHz	2.62	10
1	4.00	05	5260 MHz	6.09	17
1	4.00	06	5280 MHz	6.33	17
1	4.00	08	5320 MHz	-0.26	17
1	4.00	09	5745 MHz	-2.55	23
1	4.00	10	5765 MHz	8.54	23
1	4.00	12	5805 MHz	-4.07	23
2	6.00	01	5180 MHz	1.77	10
2	6.00	02	5200 MHz	4.56	10
2	6.00	04	5240 MHz	4.62	10
2	6.00	05	5260 MHz	8.09	17
2	6.00	06	5280 MHz	8.33	17
2	6.00	08	5320 MHz	1.74	17
2	6.00	09	5745 MHz	-0.55	23
2	6.00	10	5765 MHz	10.54	23
2	6.00	12	5805 MHz	-2.07	23
3	8.00	01	5180 MHz	3.77	10
3	8.00	02	5200 MHz	6.56	10
3	8.00	04	5240 MHz	6.62	10

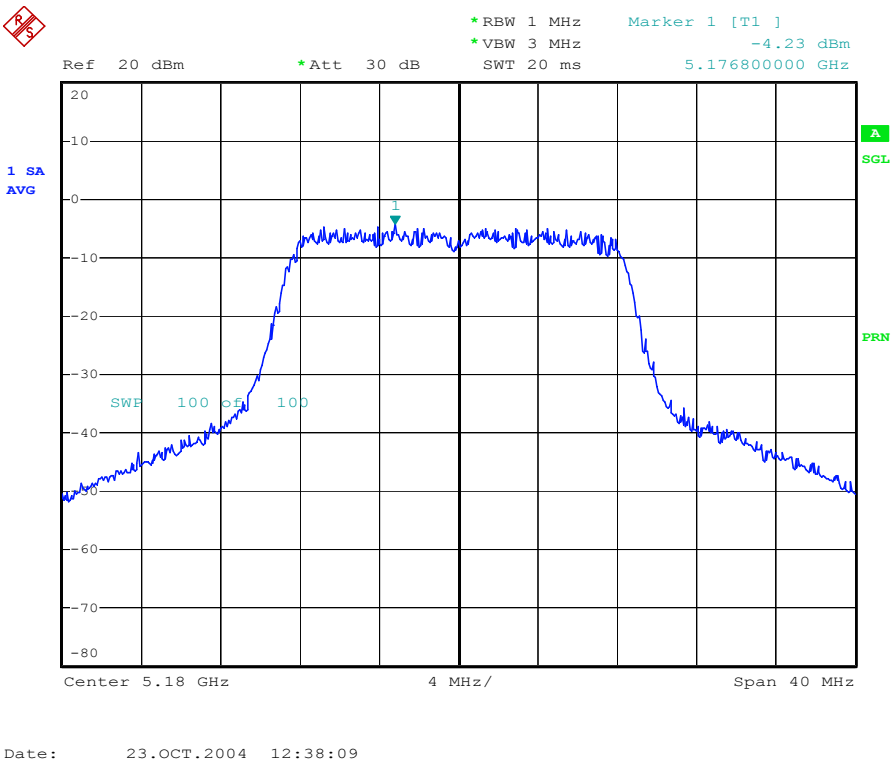
Antenna No.	Gain (dBi)	Channel	Frequency (MHz)	Power Density (dBm)	Limits (dBm)
3	8.00	05	5260 MHz	10.09	17
3	8.00	06	5280 MHz	10.33	17
3	8.00	08	5320 MHz	3.74	17
3	8.00	09	5745 MHz	1.45	23
3	8.00	10	5765 MHz	12.54	23
3	8.00	12	5805 MHz	-0.07	23
4	2.50	01	5180 MHz	-1.73	10
4	2.50	02	5200 MHz	1.06	10
4	2.50	04	5240 MHz	1.12	10
4	2.50	05	5260 MHz	4.59	17
4	2.50	06	5280 MHz	4.83	17
4	2.50	08	5320 MHz	-1.76	17
4	2.50	09	5745 MHz	-4.05	23
4	2.50	10	5765 MHz	7.04	23
4	2.50	12	5805 MHz	-5.57	23

Turbo Mode

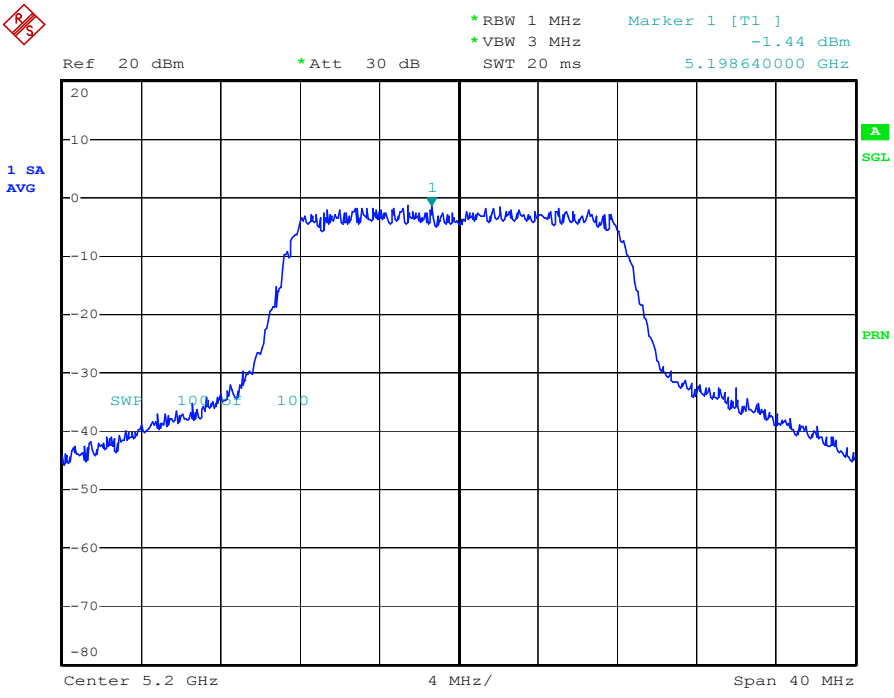
Antenna No.	Gain (dBi)	Channel	Frequency (MHz)	Power Density (dBm)	Limits (dBm)
1	4.00	01	5210 MHz	-1.71	10
1	4.00	02	5250 MHz	-1.23	10
1	4.00	03	5290 MHz	-1.09	17
1	4.00	04	5760 MHz	-0.44	23
1	4.00	05	5800 MHz	-5.97	23
2	6.00	01	5210 MHz	0.29	10
2	6.00	02	5250 MHz	0.77	10
2	6.00	03	5290 MHz	0.91	17
2	6.00	04	5760 MHz	1.56	23
2	6.00	05	5800 MHz	-3.97	23
3	8.00	01	5210 MHz	2.29	10
3	8.00	02	5250 MHz	2.77	10
3	8.00	03	5290 MHz	2.91	17
3	8.00	04	5760 MHz	3.56	23
3	8.00	05	5800 MHz	-1.97	23
4	2.50	01	5210 MHz	-3.21	10
4	2.50	02	5250 MHz	-2.73	10
4	2.50	03	5290 MHz	-2.59	17
4	2.50	04	5760 MHz	-1.94	23
4	2.50	05	5800 MHz	-7.47	23

Normal Mode

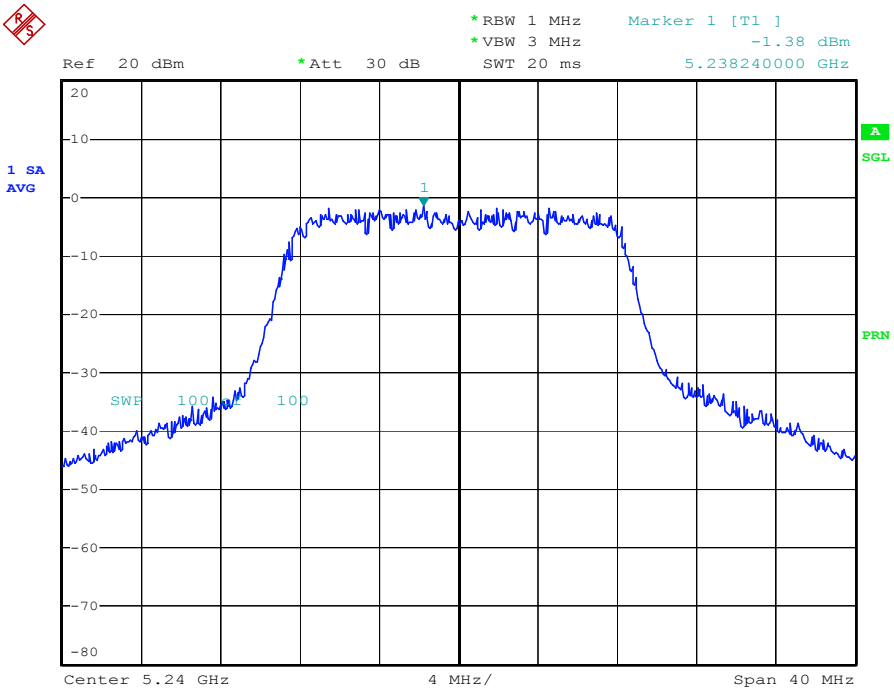
Channel: 01 / 5180 MHz



Channel: 02 / 5200 MHz

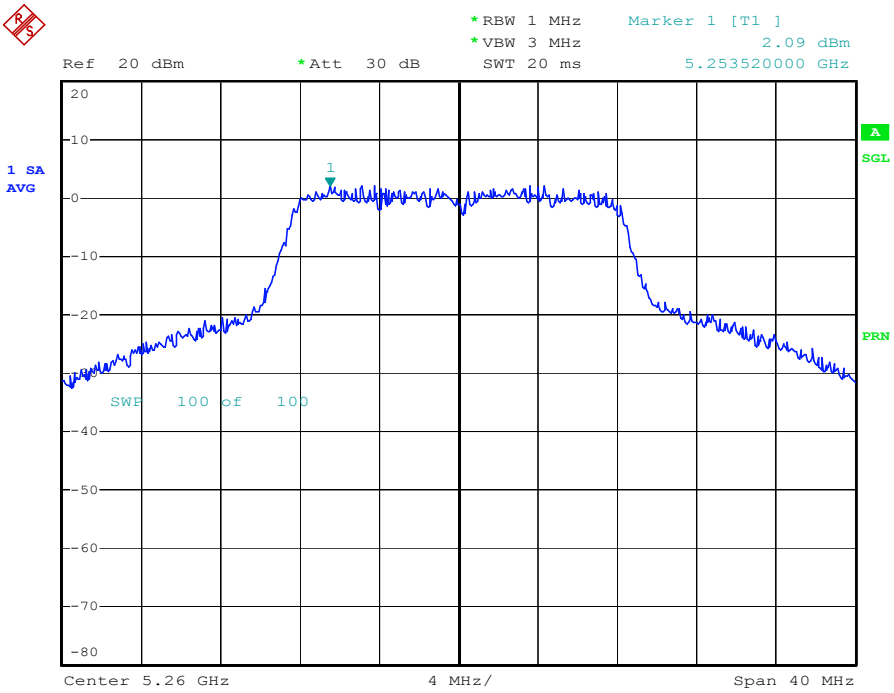


Channel: 04 / 5240 MHz



Date: 23.OCT.2004 12:39:38

Channel: 05 / 5260 MHz



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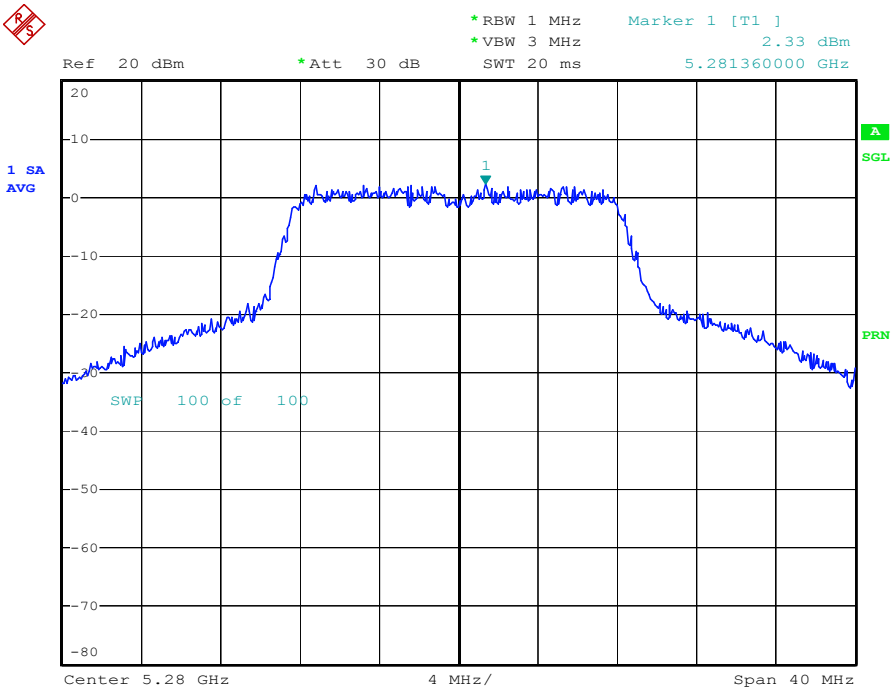
Channel: 06 / 5280 MHz



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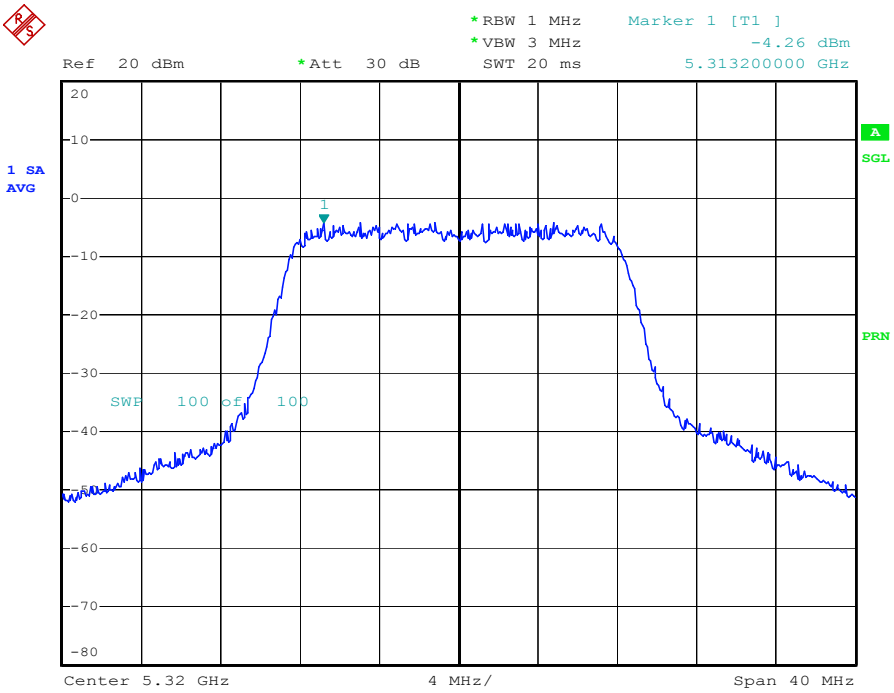
Channel: 08 / 5320 MHz



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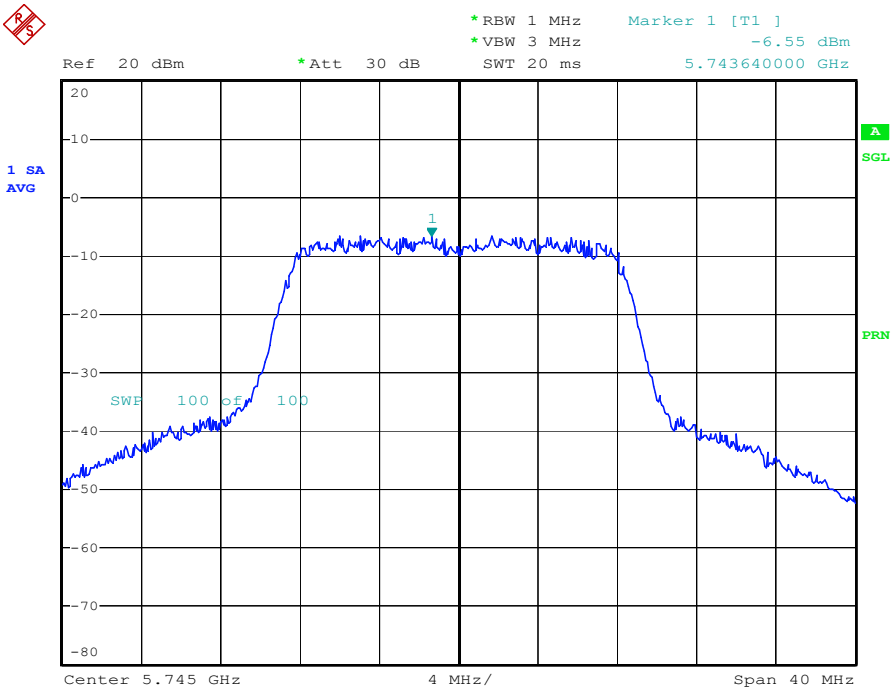
Channel: 09 / 5745 MHz



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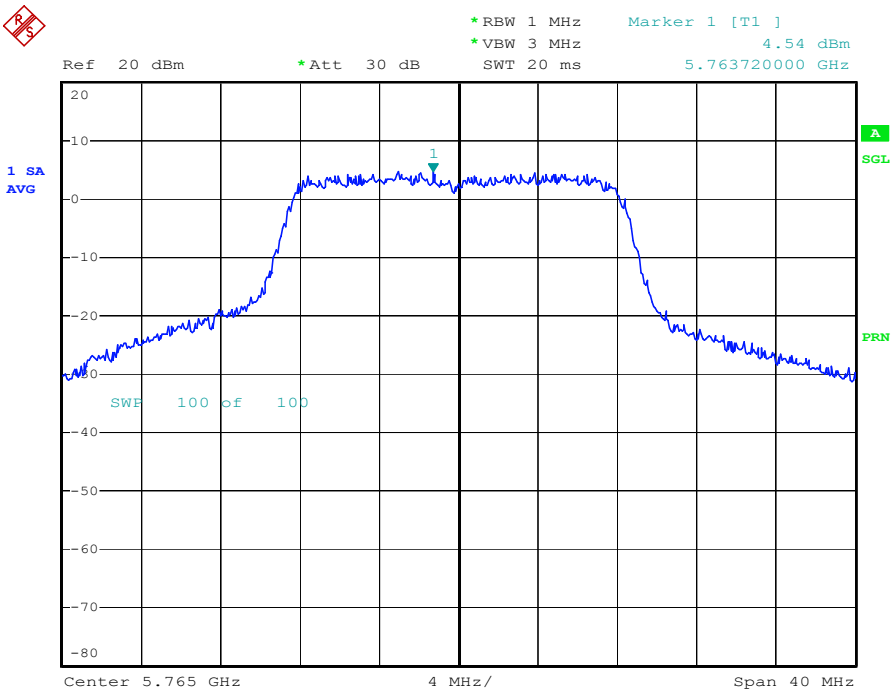
Channel: 10 / 5765 MHz



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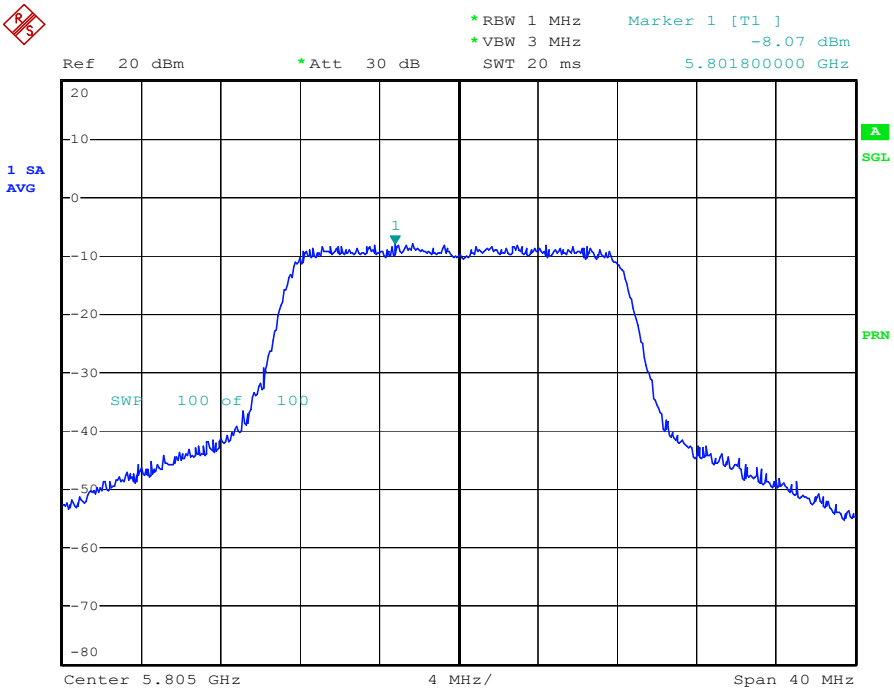
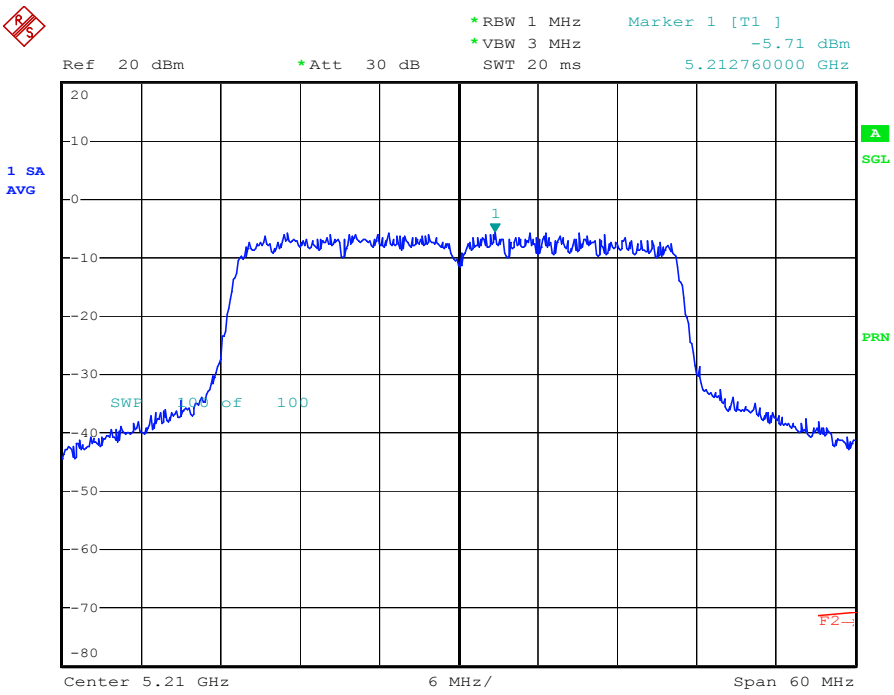
Channel: 12 / 5805 MHz

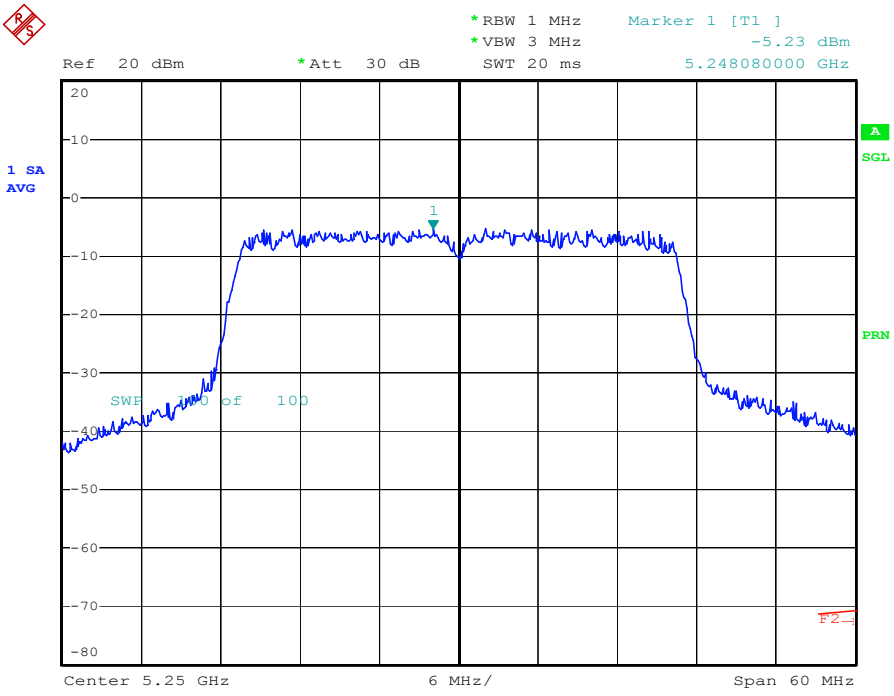


Turbo Mode

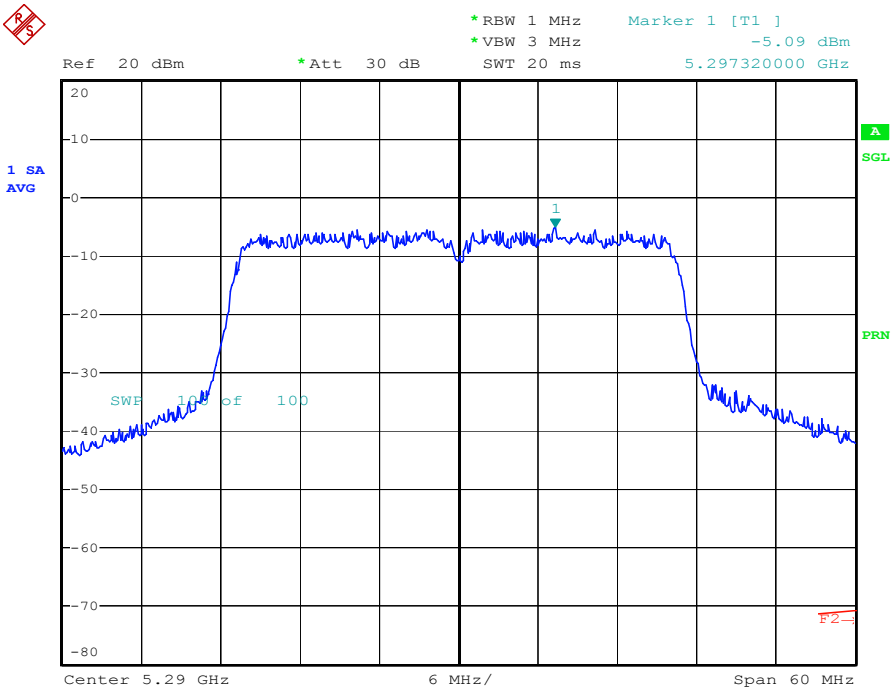
Channel: 01 / 5210 MHz



Channel: 02 / 5250 MHz



Channel: 03 / 5290 MHz



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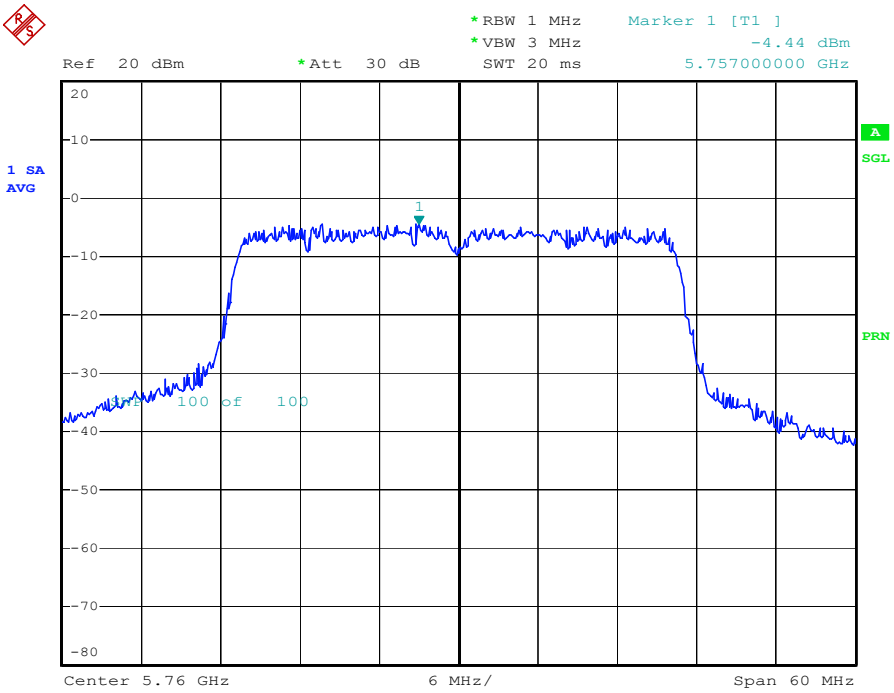
Channel: 04 / 5760 MHz



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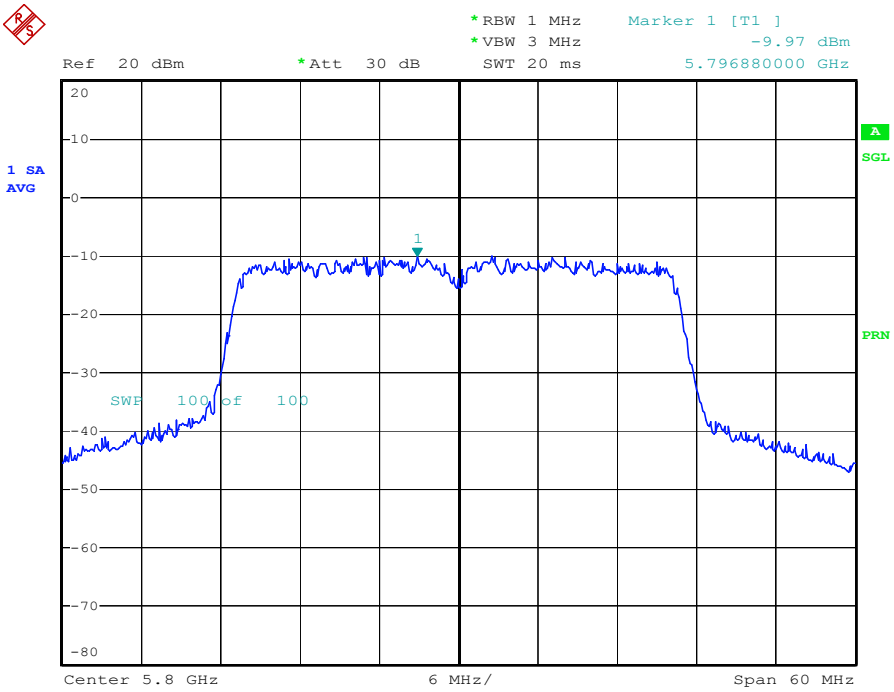
Channel: 05 / 5800 MHz



5.4. Ratio of the Peak Excursion

5.4.1. Measuring Instruments

Item 18 of the table is on section 6.

5.4.2. Test Procedures

1. The transmitter output is connected to the spectrum analyzer through an attenuator.
2. Trace 1:Set RBW of spectrum analyzer to 1000kHz and VBW to 3000kHz.
3. Use peak detector mode, Max-hold and search the peak of trace 1.
4. Trace 1:Set RBW of spectrum analyzer to 1000kHz and VBW to 3000kHz.
5. Use sample detector mode, trace max-hold and search the peak of trace 2
6. The delta limits is 13dB between trace 1 and trace 2 of the peak value.

5.4.3. Test Setup Layout

Spectrum Analyzer **EUT**

5.4.4. Test Result of conducted peak power spectral density

- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Sam Lee

Normal Mode

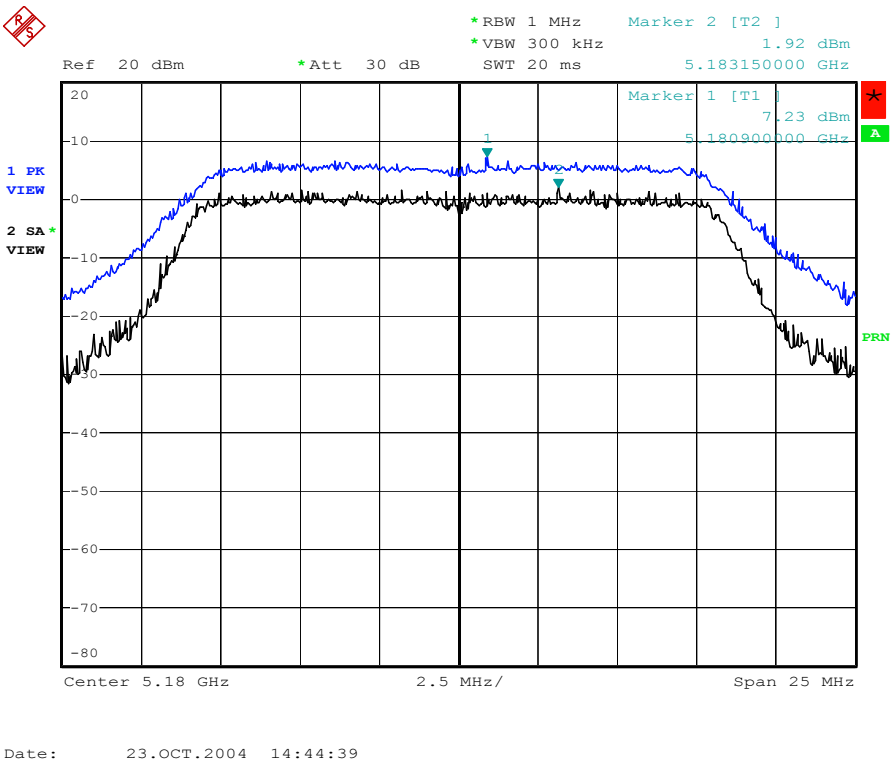
Channel	Frequency (MHz)	Peak Excursion (dB)	Max. Limits (dB)
01	5180 MHz	5.31	13
02	5200 MHz	4.91	13
04	5240 MHz	5.14	13
05	5260 MHz	4.50	13
06	5280 MHz	4.88	13
08	5320 MHz	4.74	13
09	5745 MHz	5.24	13
10	5765 MHz	4.23	13
12	5805 MHz	4.27	13

Turbo Mode

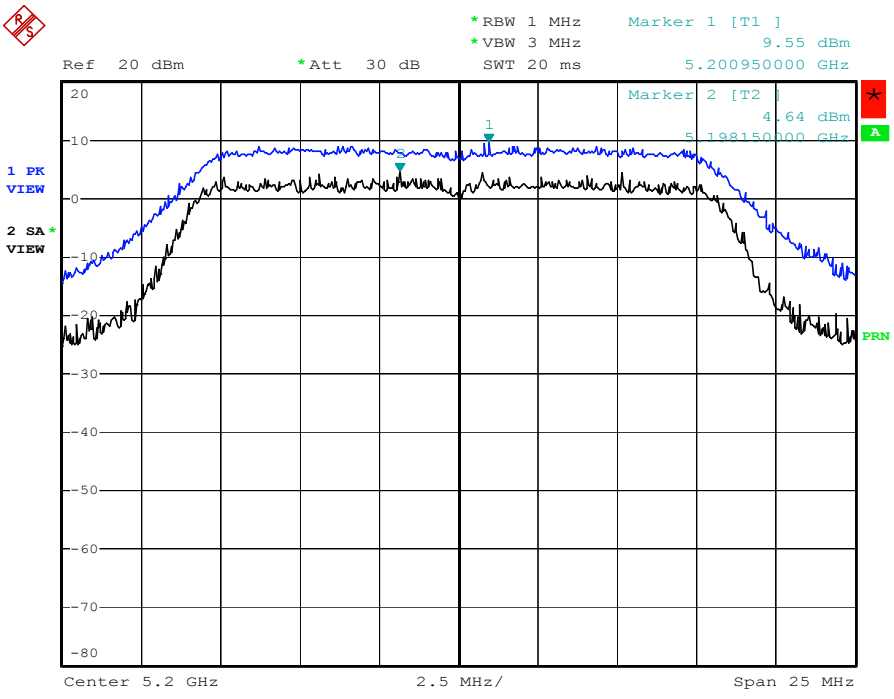
Channel	Frequency (MHz)	Peak Excursion (dB)	Max. Limits (dB)
01	5210 MHz	4.66	13
02	5250 MHz	5.62	13
03	5290 MHz	4.87	13
04	5760 MHz	5.12	13
05	5800 MHz	3.90	13

Normal Mode

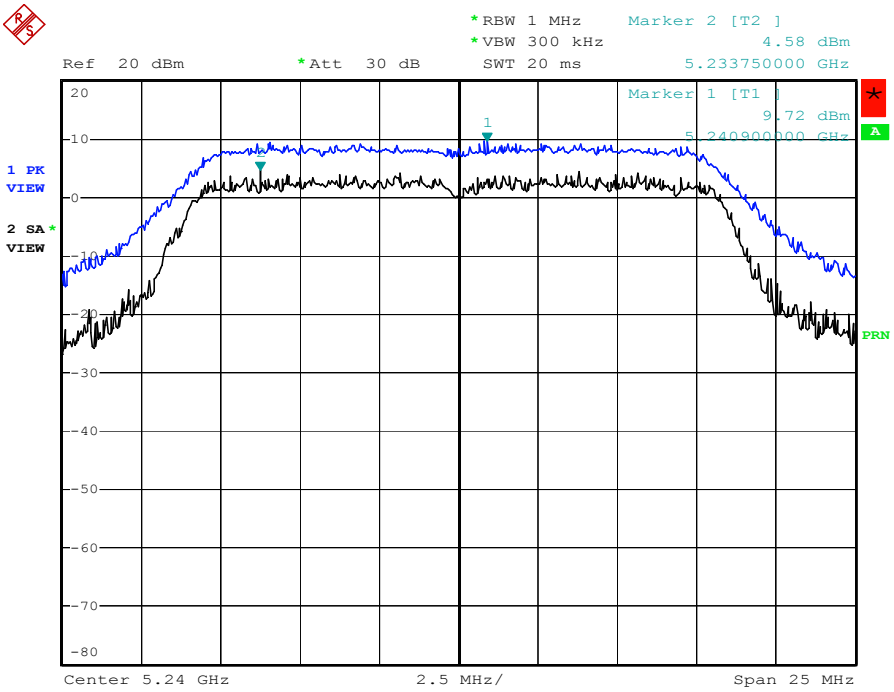
Channel: 01 / 5180 MHz



Channel: 02 / 5200 MHz



Channel: 04 / 5240 MHz



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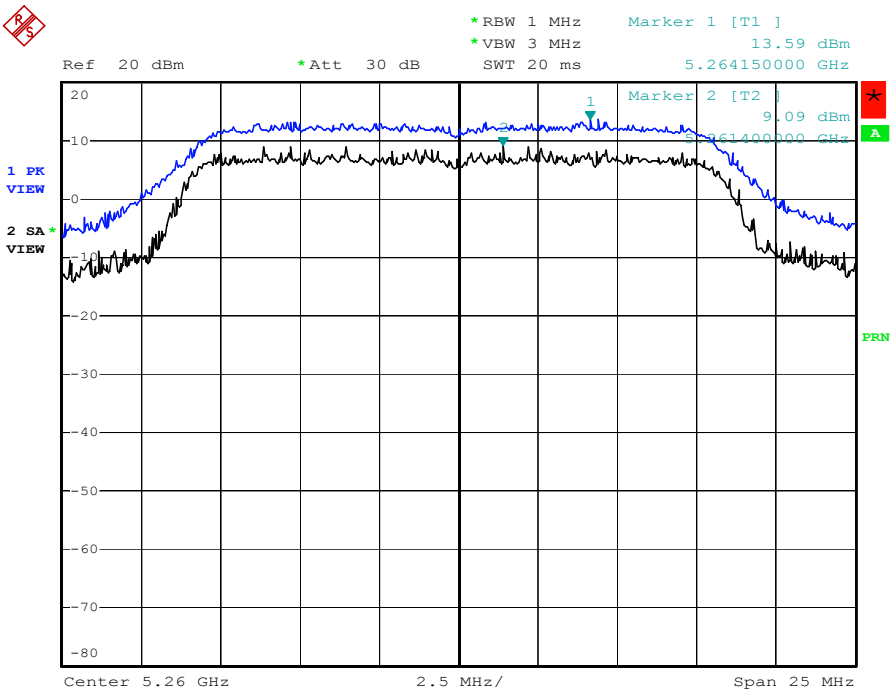
Channel: 05 / 5260 MHz



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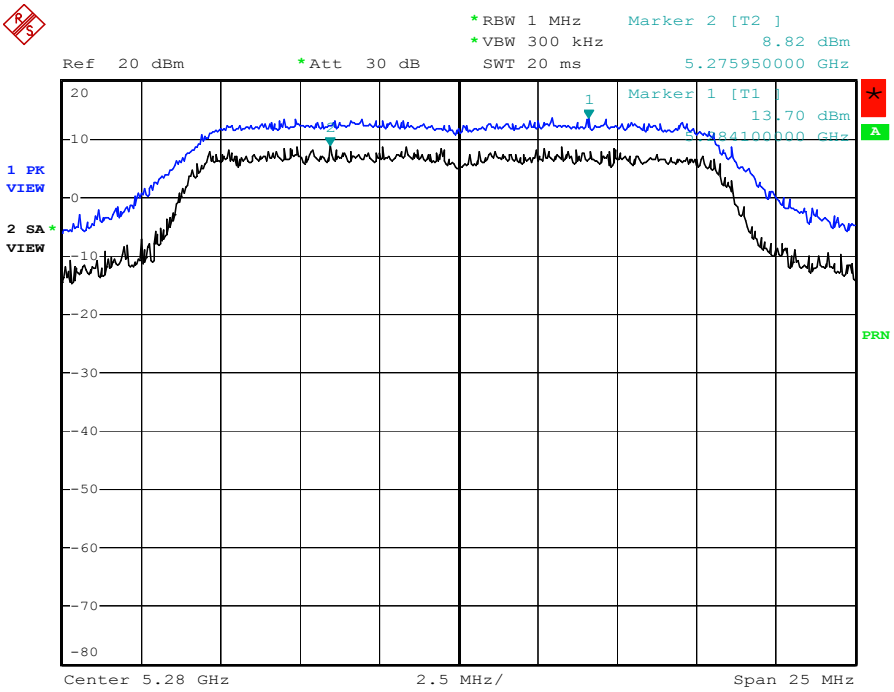
Channel: 06 / 5280 MHz



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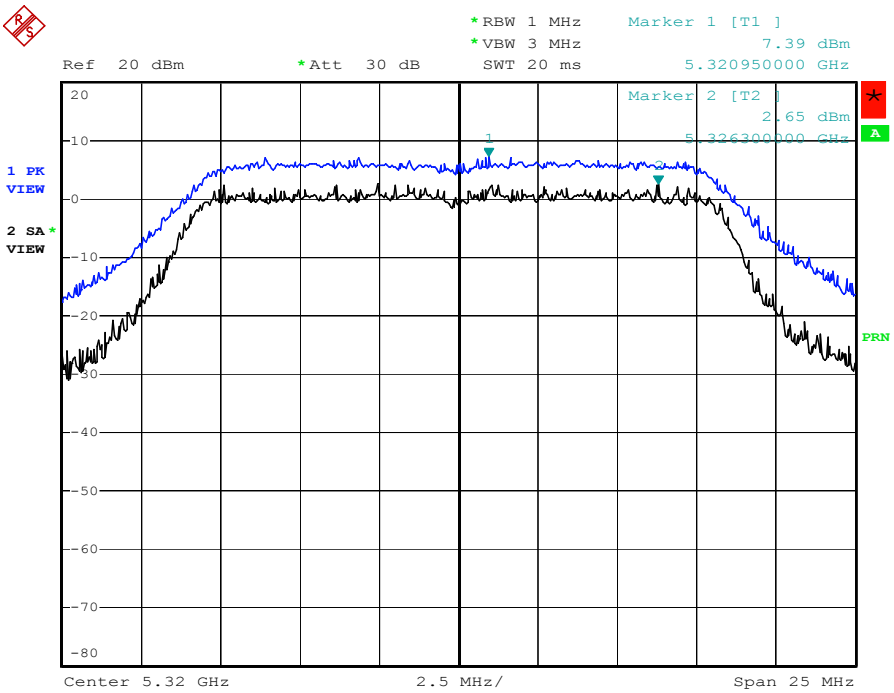
Channel: 08 / 5320 MHz



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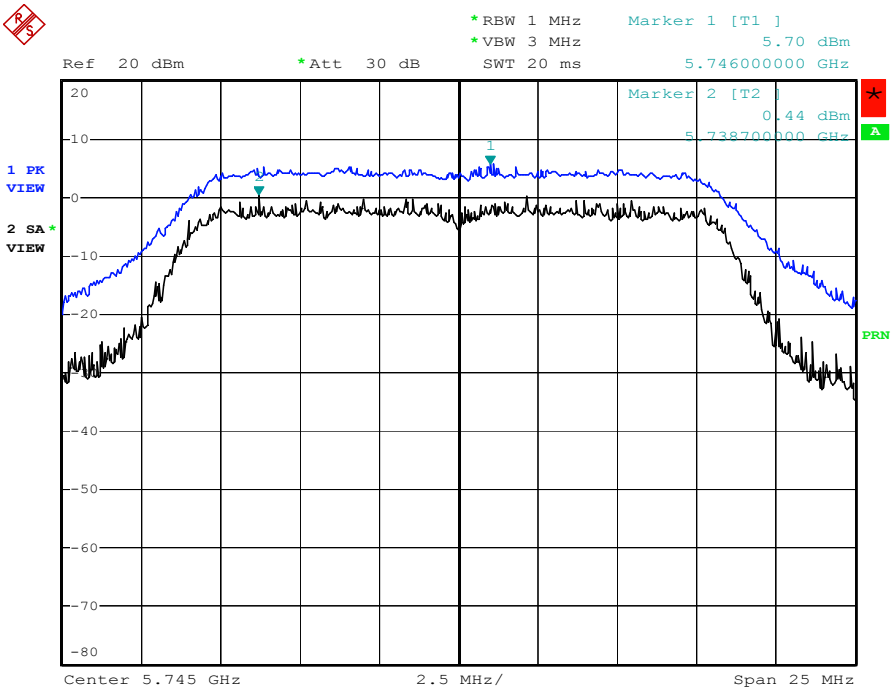
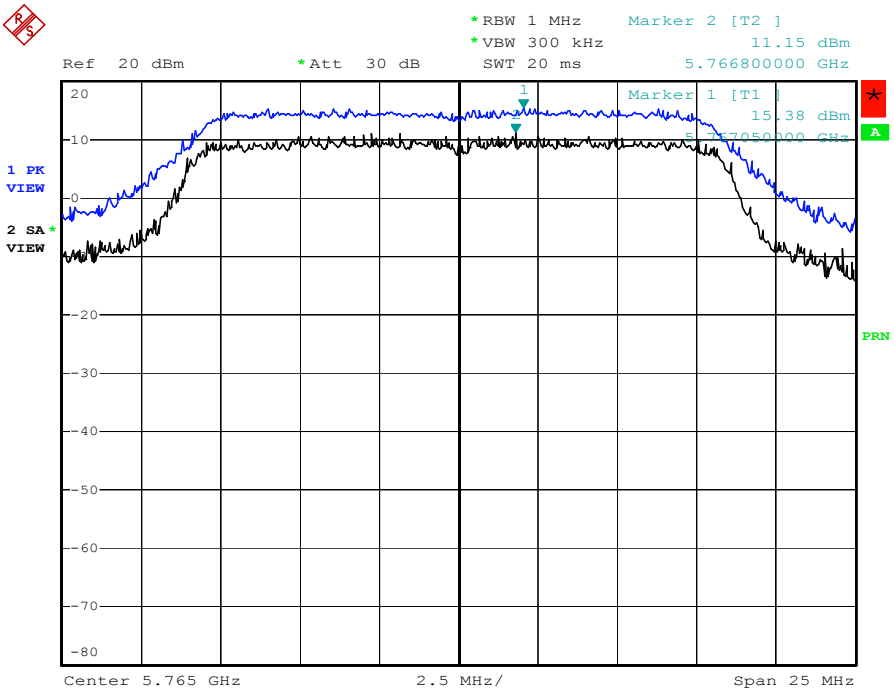
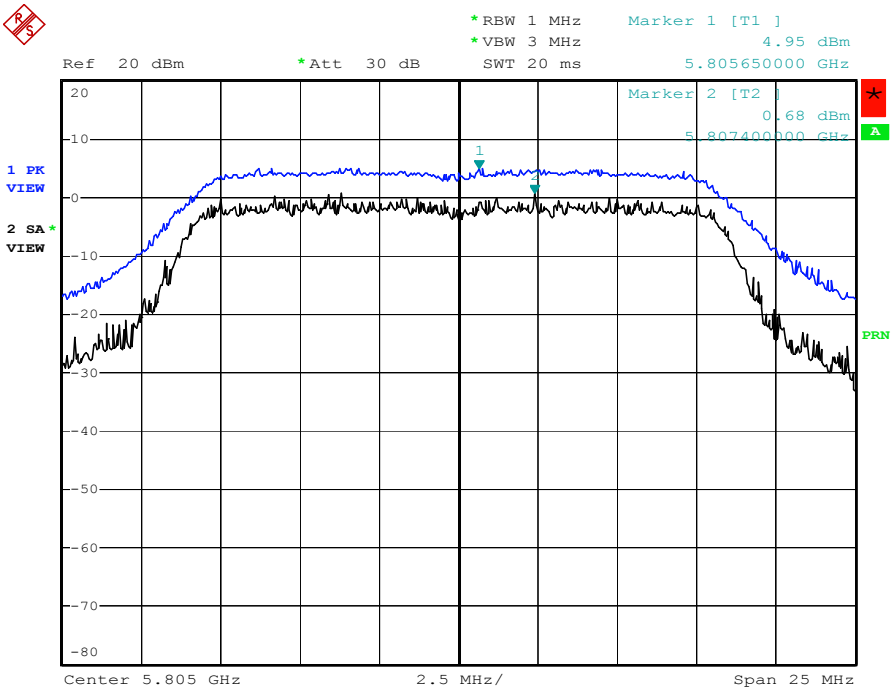
Channel: 09 / 5745 MHz



Channel: 10 / 5765 MHz

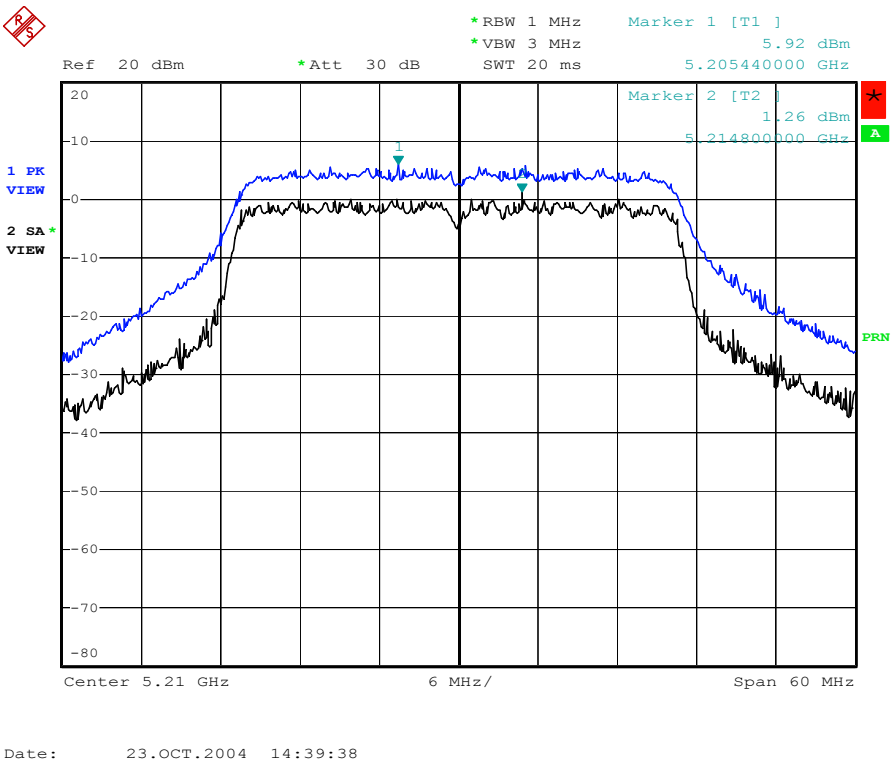


Channel: 12 / 5805 MHz

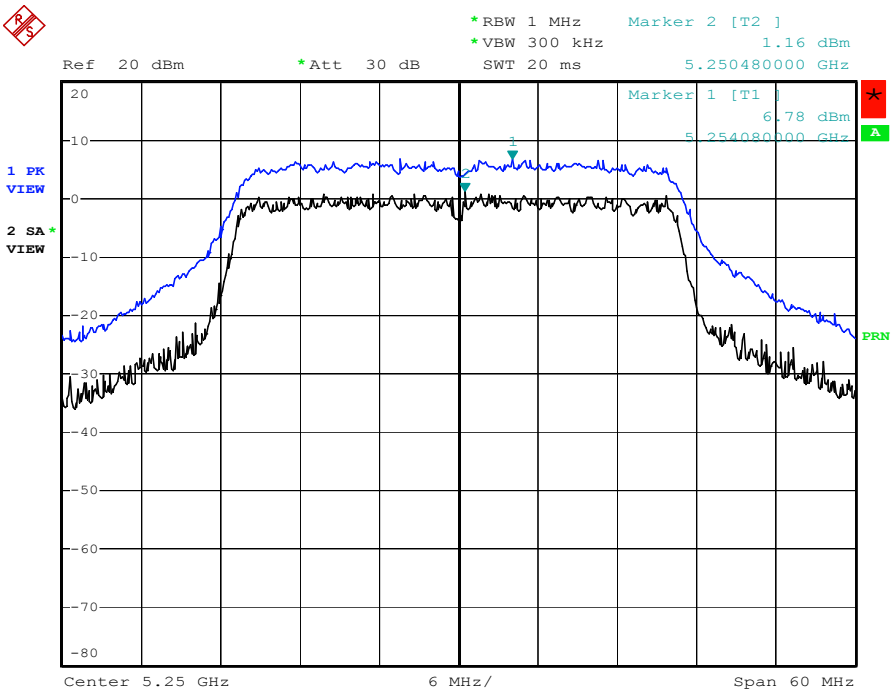


Turbo Mode

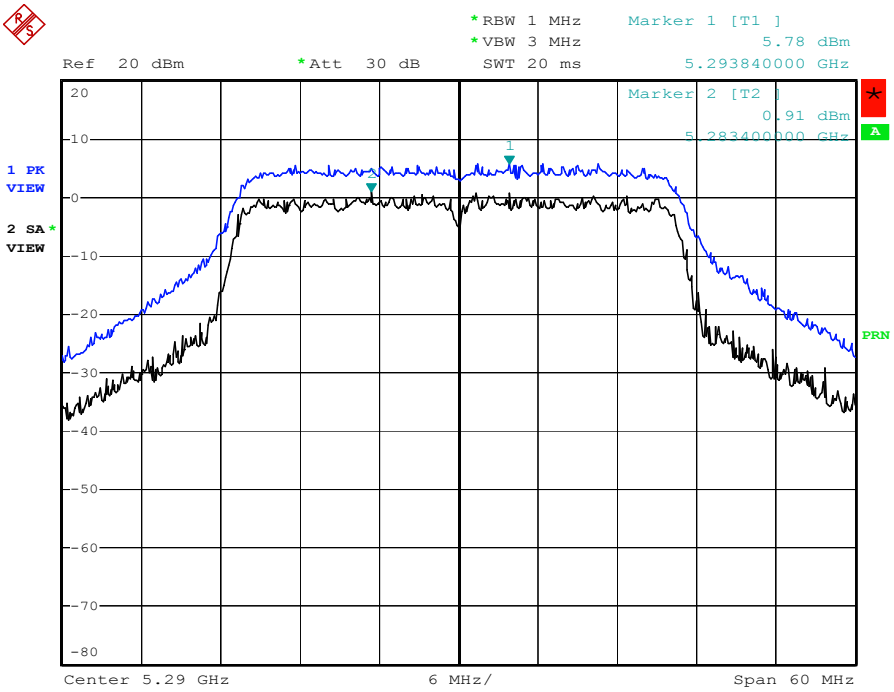
Channel: 01 / 5210 MHz



Channel: 02 / 5250 MHz



Channel: 03 / 5290 MHz



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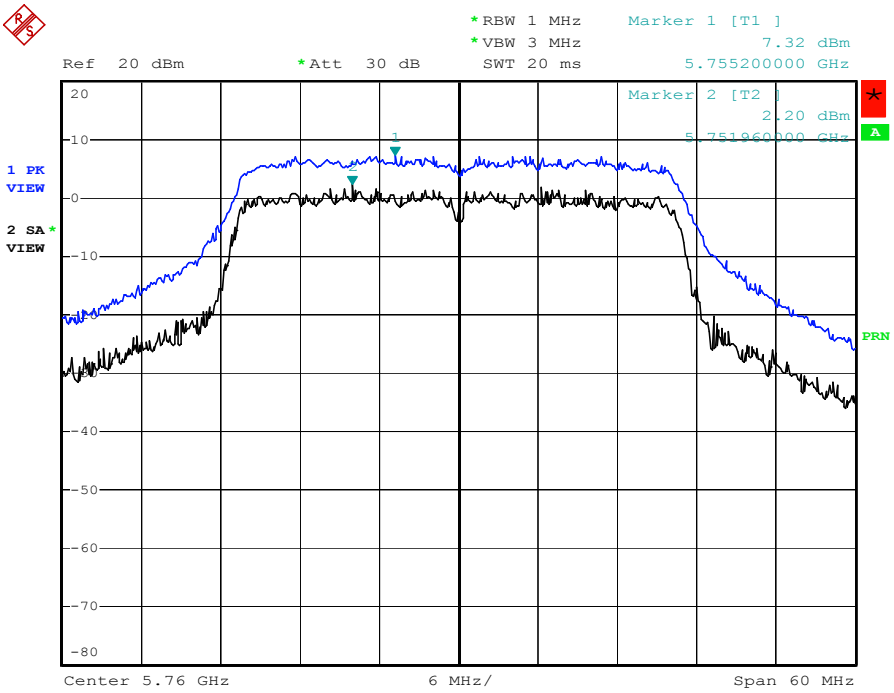
Channel: 04 / 5760 MHz



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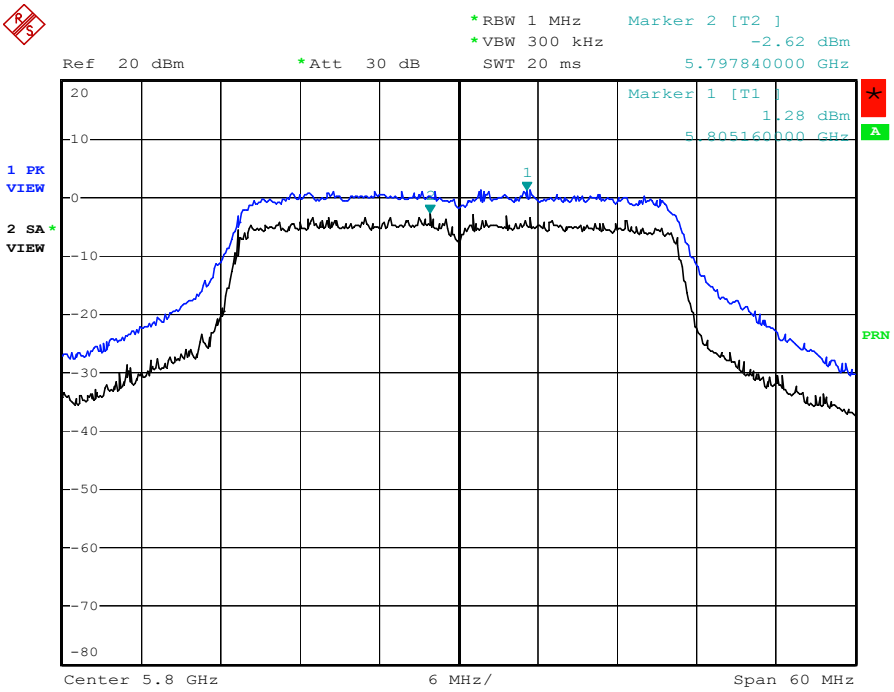
Channel: 05 / 5800 MHz



Date: 23.OCT.2004 14:24:05

5.5. Test of Band Edges Emission

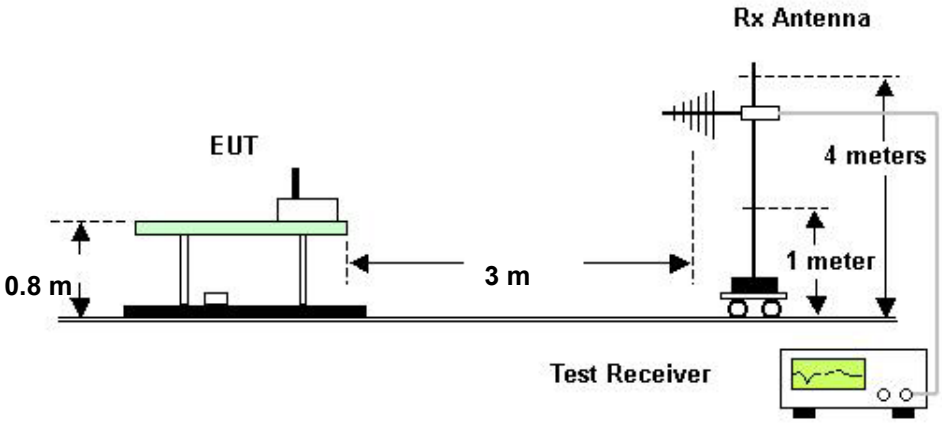
5.5.1. Measuring Instruments

Please reference item 6~17 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 was placed on the top of the turntable 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 turntable.
4. The transmitter is set to the lowest channel of each band.
5. The turntable was rotated 360 degrees to determine the position of the highest radiation.
6. Set both RBW and VBW of spectrum analyzer to 1MHz with convenient frequency span including 1MHz bandwidth from lower band edge.
7. 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. Record the maximum value of band-edge.
8. Remove the transmitter and replace it with a broadband substitution antenna.
9. With the substitution antennas at maximum polarized and with the signal generator tuned to a particular fundamental frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading (item 6). This should be done carefully repeating the adjustment of the test antenna and generator output.
10. Pd(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBi). Pd is the dipole equivalent power and Pg is the generator output power into the substitution antenna.
11. The lowest and highest channels of band edges of each band emission was measured and recorded.

5.5.3. Test Setup Layout



5.5.4. Test Result

- Temperature: 26°C
- Relative Humidity: 64%
- Duty Cycle of the Equipment During the Test: 100.00%
- Test Engineer: Sam Lee

Normal Mode

Ant. No.	Gain (dBi)	Freq. Band (MHz)	Freq. (MHz)	Level* (dBm/MHz)	Margin (dB)	Limit (dBm/MHz)
1	4.00	5150~5250	5149.6	-32.37	-5.37	-27
1	4.00	5250~5350	5350.0	-34.74	-7.74	-27
1	4.00	5725~5825	5714.4	-32.10	-5.10	-27
1	4.00	5725~5825	5724.8	-22.88	-5.88	-17
1	4.00	5725~5825	5826.0	-25.74	-8.74	-17
1	4.00	5725~5825	5837.0	-32.69	-5.69	-27
2	6.00	5150~5250	5149.4	-30.26	-3.26	-27
2	6.00	5250~5350	5361.8	-30.67	-3.67	-27
2	6.00	5725~5825	5713.8	-30.46	-3.46	-27
2	6.00	5725~5825	5724.8	-20.92	-3.92	-17
2	6.00	5725~5825	5825.4	-21.92	-4.92	-17
2	6.00	5725~5825	5839.2	-30.85	-3.85	-27
3	8.00	5150~5250	5150.0	-27.61	-0.61	-27
3	8.00	5250~5350	5356.2	-28.70	-1.70	-27
3	8.00	5725~5825	5715.0	-27.98	-0.98	-27
3	8.00	5725~5825	5724.8	-18.60	-1.60	-17
3	8.00	5725~5825	5825.8	-20.64	-3.64	-17
3	8.00	5725~5825	5835.2	-28.38	-1.38	-27
4	2.50	5150~5250	5149.2	-33.15	-6.15	-27
4	2.50	5250~5350	5358.0	-34.58	-7.58	-27
4	2.50	5725~5825	5714.6	-31.28	-4.28	-27

Ant. No.	Gain (dBi)	Freq. Band (MHz)	Freq. (MHz)	Level* (dBm/MHz)	Margin (dB)	Limit (dBm/MHz)
4	2.50	5725~5825	5725.0	-24.31	-7.31	-17
4	2.50	5725~5825	5825.8	-25.53	-8.53	-17
4	2.50	5725~5825	5836.4	-34.21	-7.21	-27

Level*: The max EIRP emission in the band-edge.

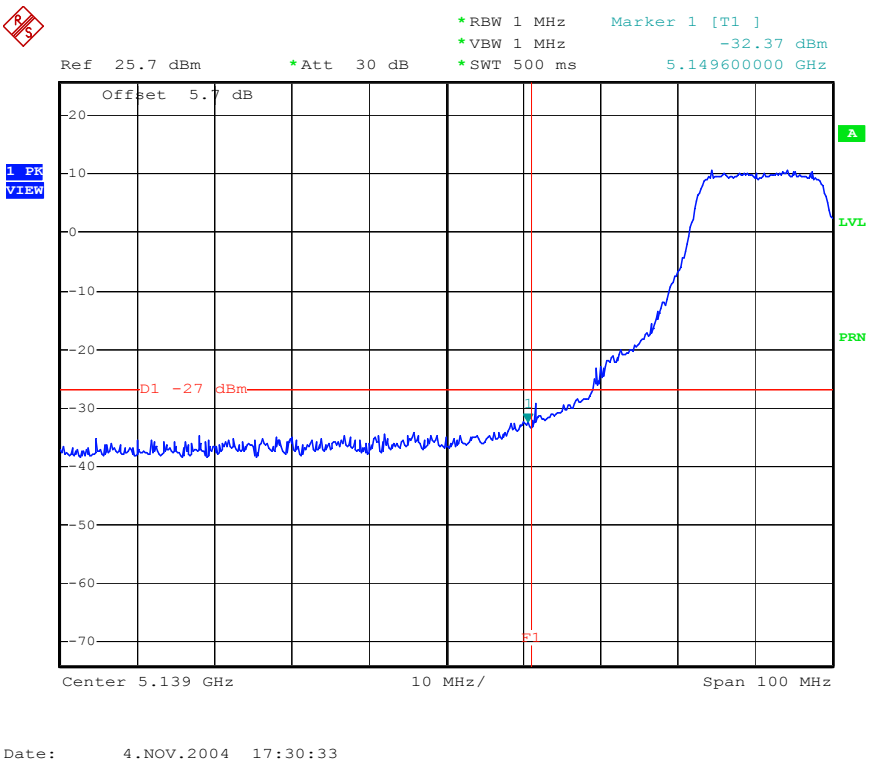
Turbo Mode

Ant. No.	Gain (dBi)	Freq. Band (MHz)	Freq. (MHz)	Level* (dBm/MHz)	Margin (dB)	Limit (dBm/MHz)
1	4.00	5150~5250	5147.2	-34.38	-7.38	-27
1	4.00	5250~5350	5350.6	-32.36	-5.35	-27
1	4.00	5725~5825	5724.6	-20.68	-3.68	-27
1	4.00	5725~5825	5715.0	-30.58	-3.58	-17
1	4.00	5725~5825	5825.2	-21.42	-4.42	-17
1	4.00	5725~5825	5836.0	-31.11	-4.11	-27
2	6.00	5150~5250	5149.6	-35.54	-8.54	-27
2	6.00	5250~5350	5350.8	-30.57	-3.57	-27
2	6.00	5725~5825	5724.8	-18.73	-1.73	-27
2	6.00	5725~5825	5715.0	-29.14	-2.14	-17
2	6.00	5725~5825	5826.2	-20.26	-3.26	-17
2	6.00	5725~5825	5837.6	-29.10	-2.10	-27
3	8.00	5150~5250	5147.6	-29.32	-2.32	-27
3	8.00	5250~5350	5350.6	-27.70	-0.70	-27
3	8.00	5725~5825	5724.0	-17.10	-0.10	-27
3	8.00	5725~5825	5715.0	-27.24	-0.24	-17
3	8.00	5725~5825	5825.2	-18.14	-1.14	-17
3	8.00	5725~5825	5836.6	-27.03	-0.03	-27
4	2.50	5150~5250	5147.4	-39.77	-12.77	-27
4	2.50	5250~5350	5350.2	-33.64	-6.64	-27
4	2.50	5725~5825	5724.2	-22.27	-5.27	-27
4	2.50	5725~5825	5714.0	-31.94	-4.94	-17
4	2.50	5725~5825	5825.2	-23.26	-6.26	-17
4	2.50	5725~5825	5836.6	-31.17	-4.17	-27

Level*: The max EIRP emission in the band-edge.

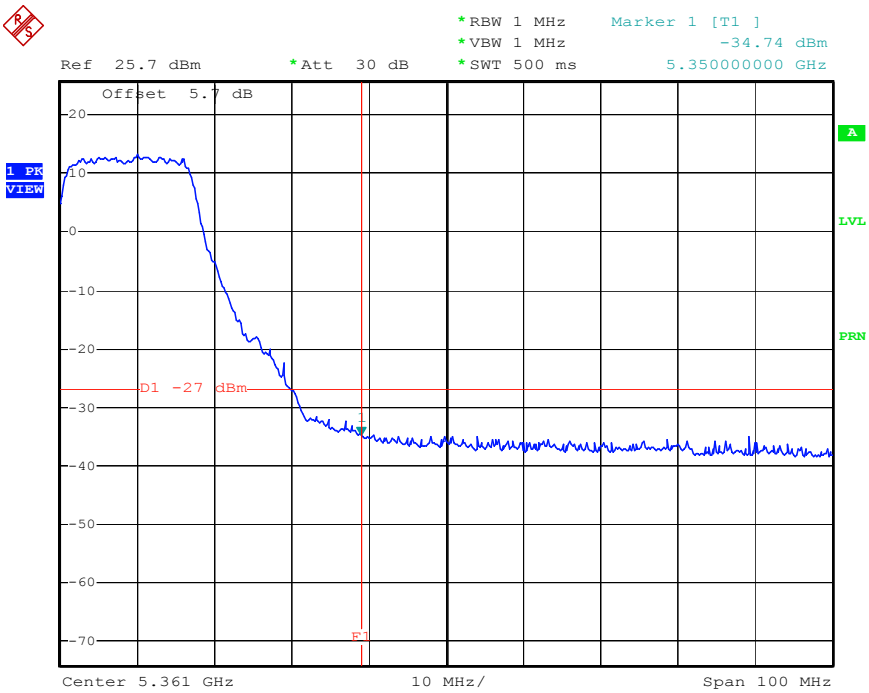
Normal Mode (Mode 1)

Channel: 01 / 5180 MHz



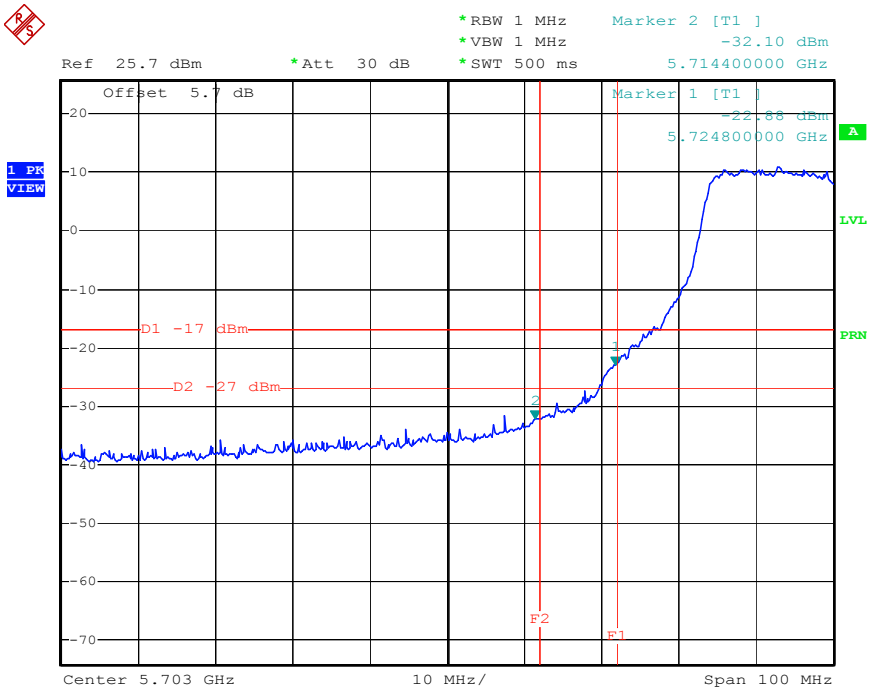
Date: 4.NOV.2004 17:30:33

Channel: 08 / 5320 MHz



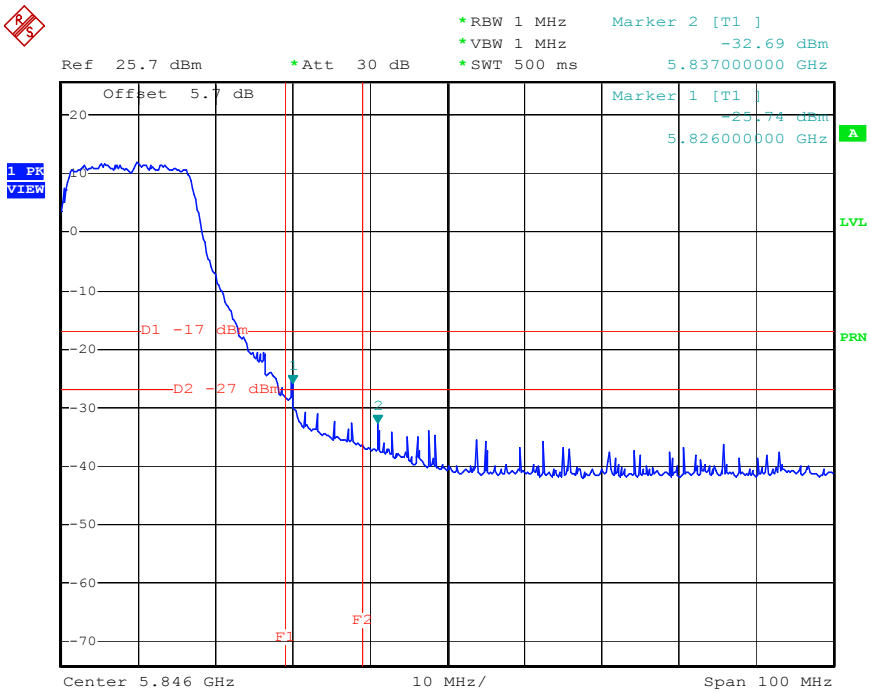
Date: 4.NOV.2004 17:39:04

Channel: 09 / 5745 MHz



Date: 4.NOV.2004 17:43:32

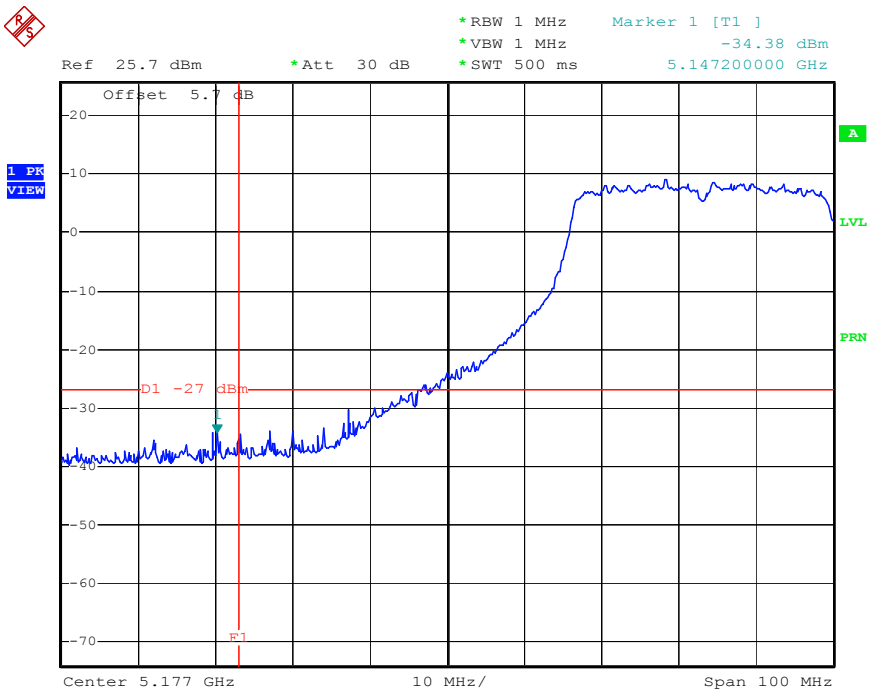
Channel: 12 / 5805 MHz



Date: 4.NOV.2004 17:52:32

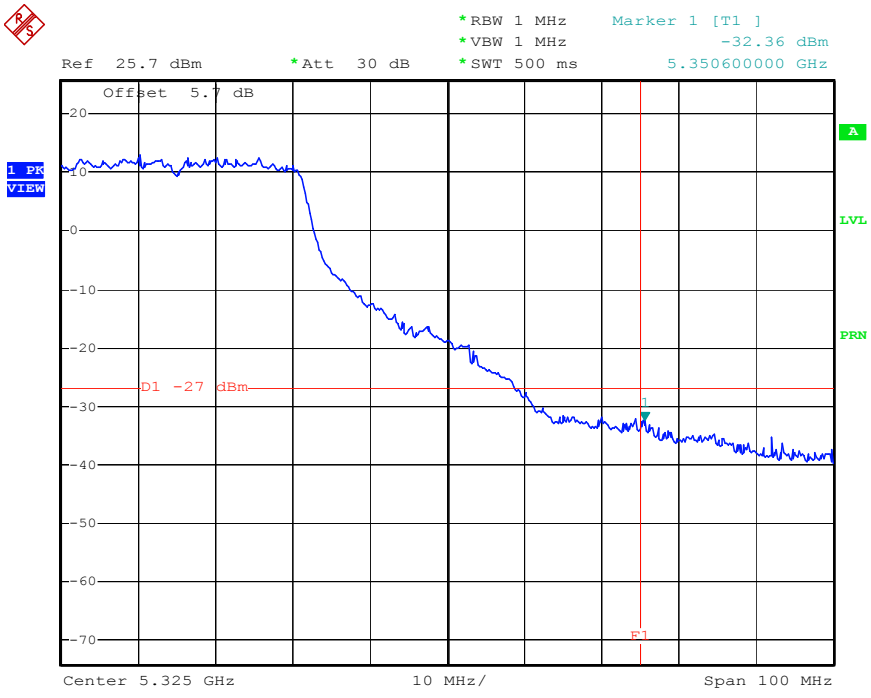
Turbo Mode (Mode 1)

Channel: 01 / 5210 MHz



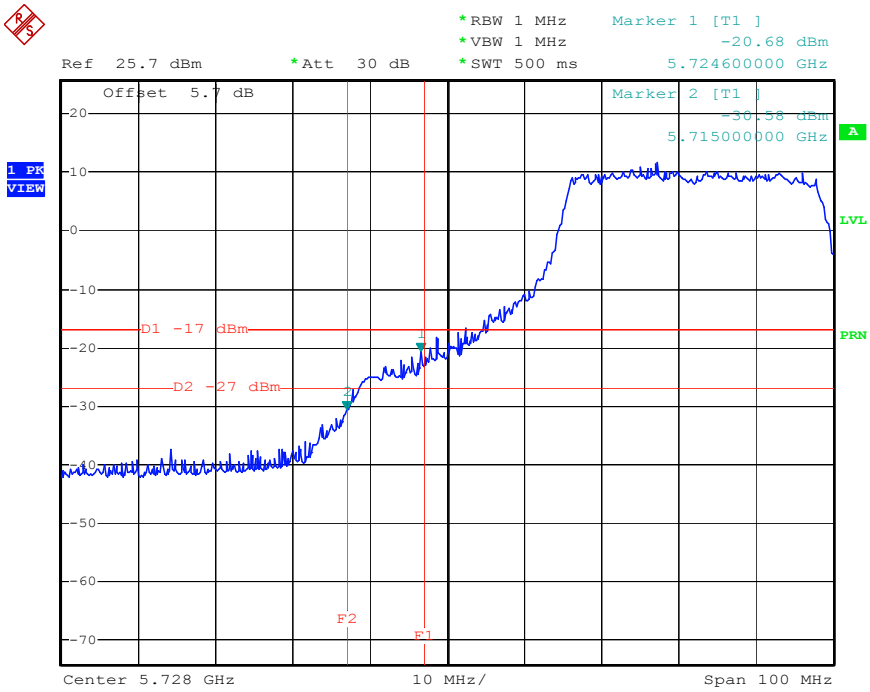
Date: 8.NOV.2004 11:15:22

Channel: 03 / 5290 MHz



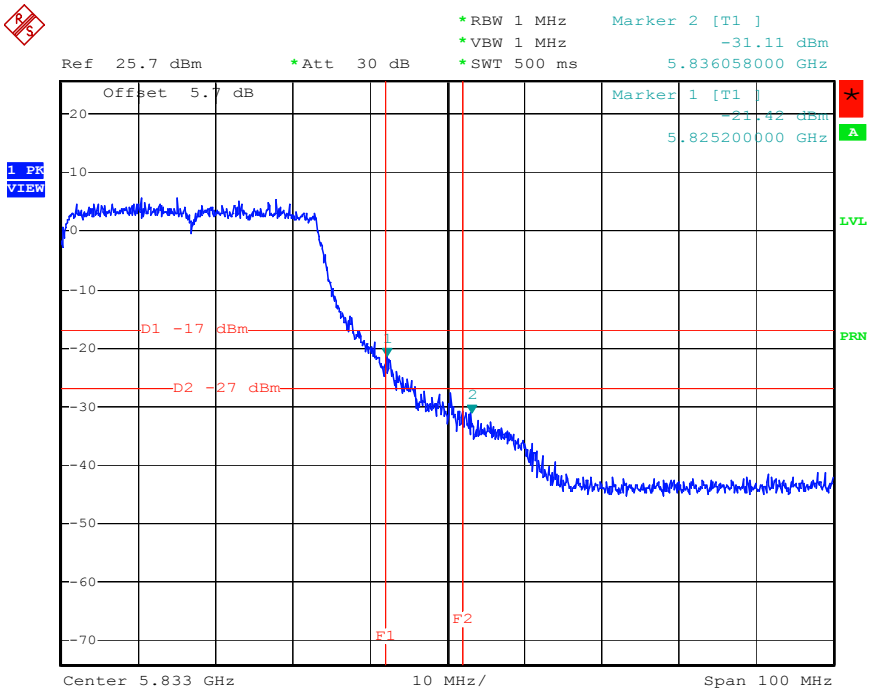
Date: 8.NOV.2004 11:39:24

Channel: 04 / 5760 MHz



Date: 4.NOV.2004 18:26:03

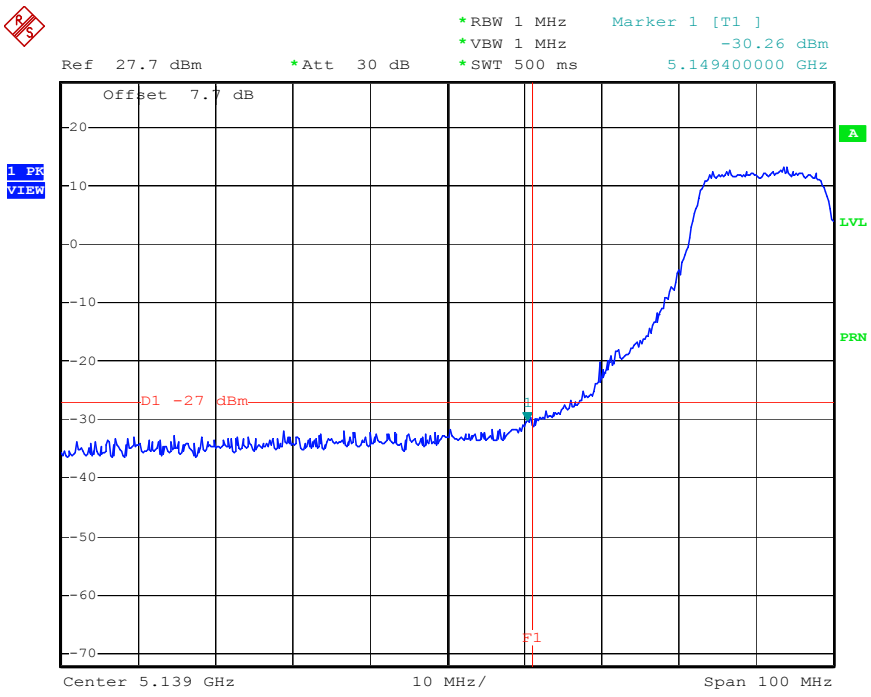
Channel: 05 / 5800 MHz



Date: 4.NOV.2004 19:11:07

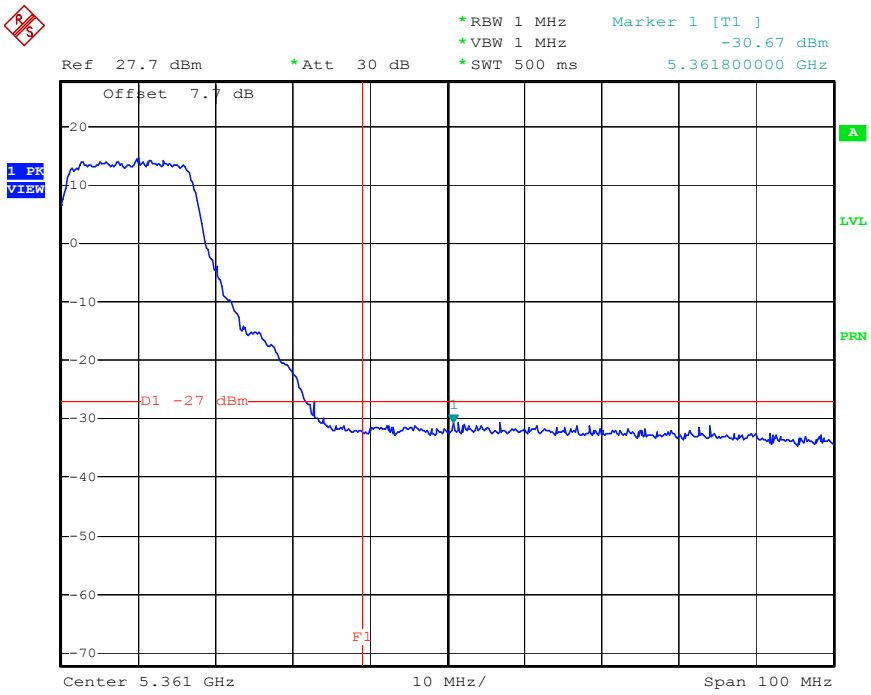
Normal Mode (Mode 2)

Channel: 01 / 5180 MHz



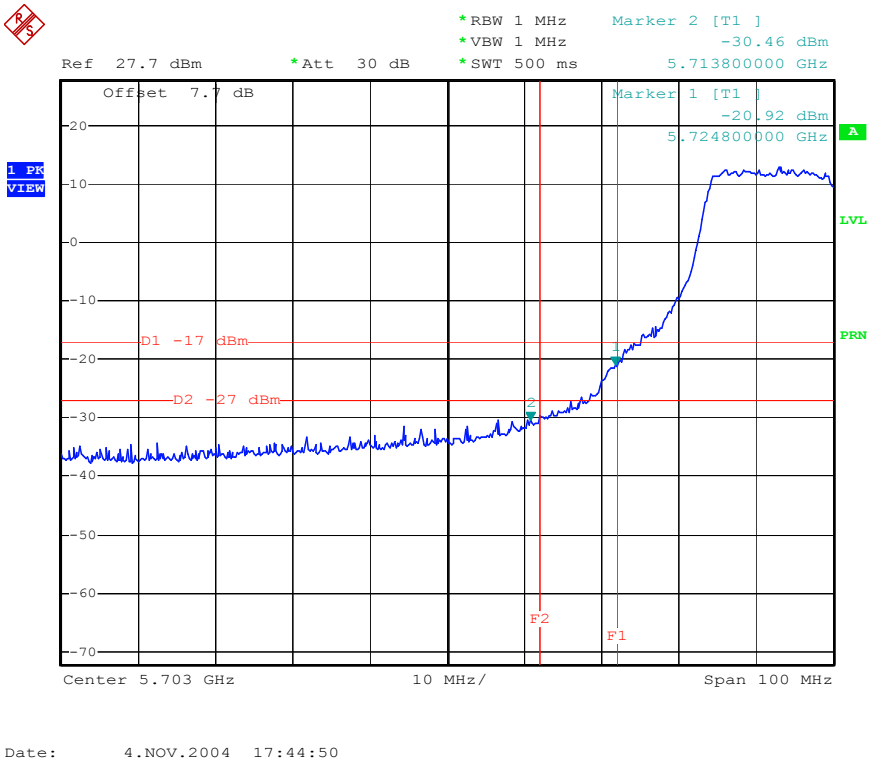
Date: 4.NOV.2004 17:31:27

Channel: 08 / 5320 MHz



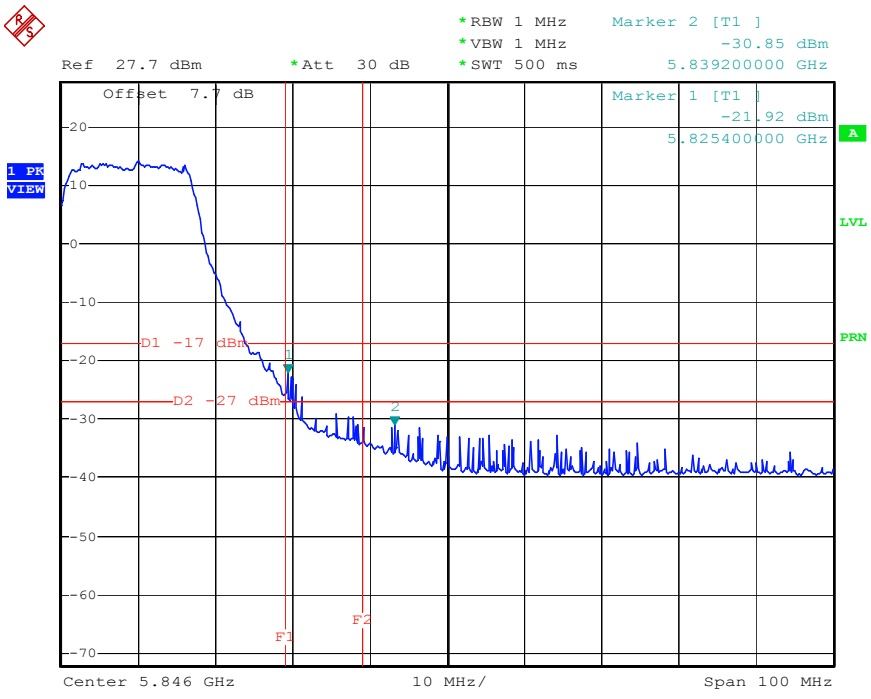
Date: 4.NOV.2004 17:37:55

Channel: 09 / 5745 MHz



Date: 4.NOV.2004 17:44:50

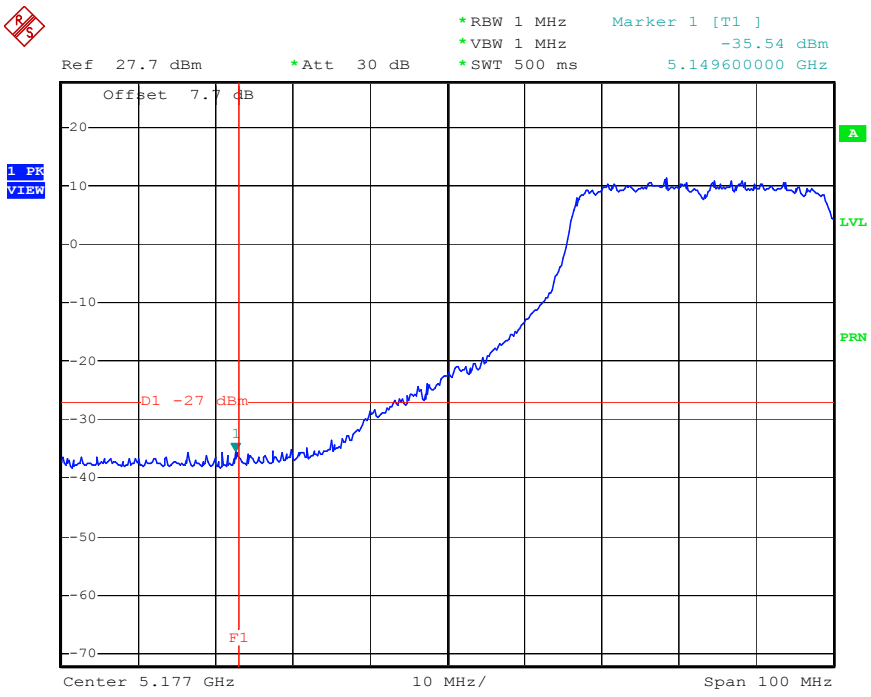
Channel: 12 / 5805 MHz



Date: 4.NOV.2004 17:51:16

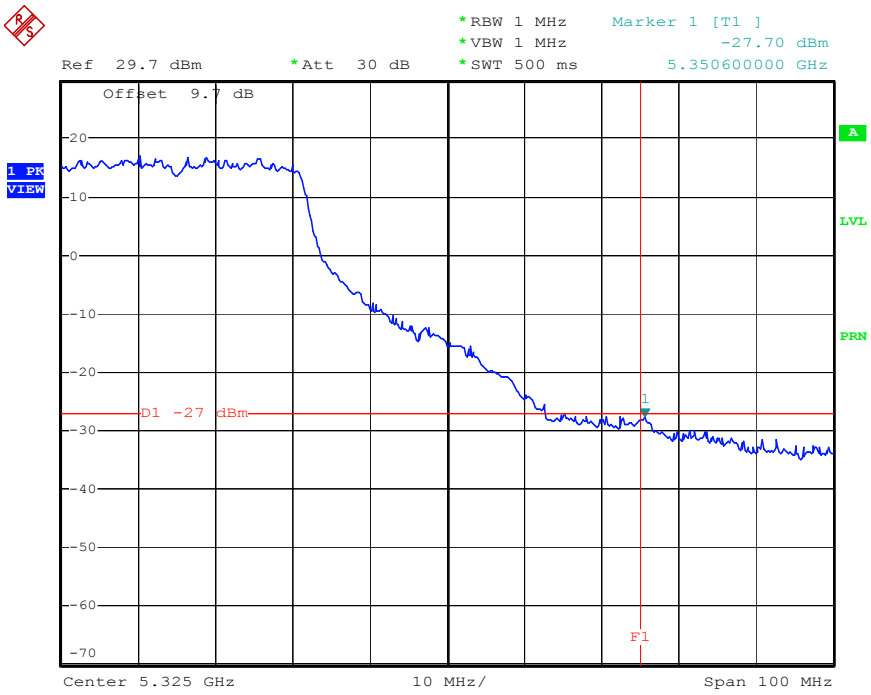
Turbo Mode (Mode 2)

Channel: 01 / 5210 MHz



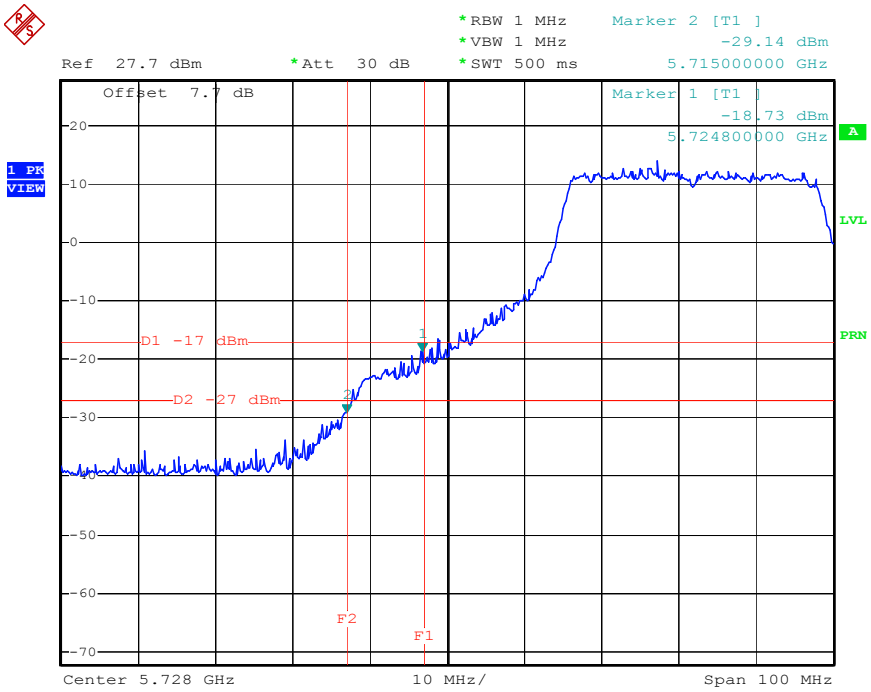
Date: 8.NOV.2004 11:16:33

Channel: 03 / 5290 MHz



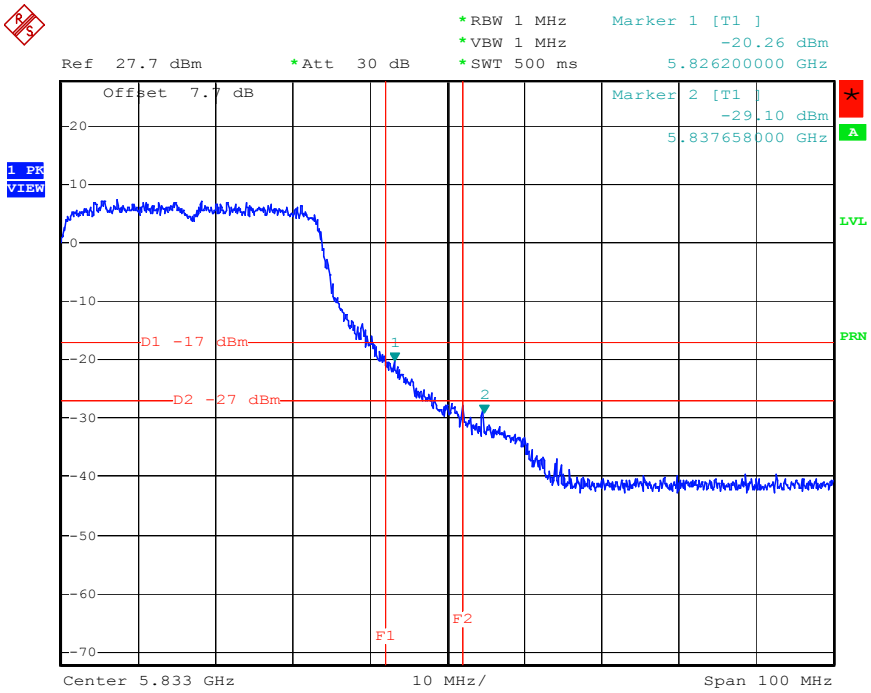
Date: 8.NOV.2004 11:36:28

Channel: 04 / 5760 MHz



Date: 4.NOV.2004 18:26:56

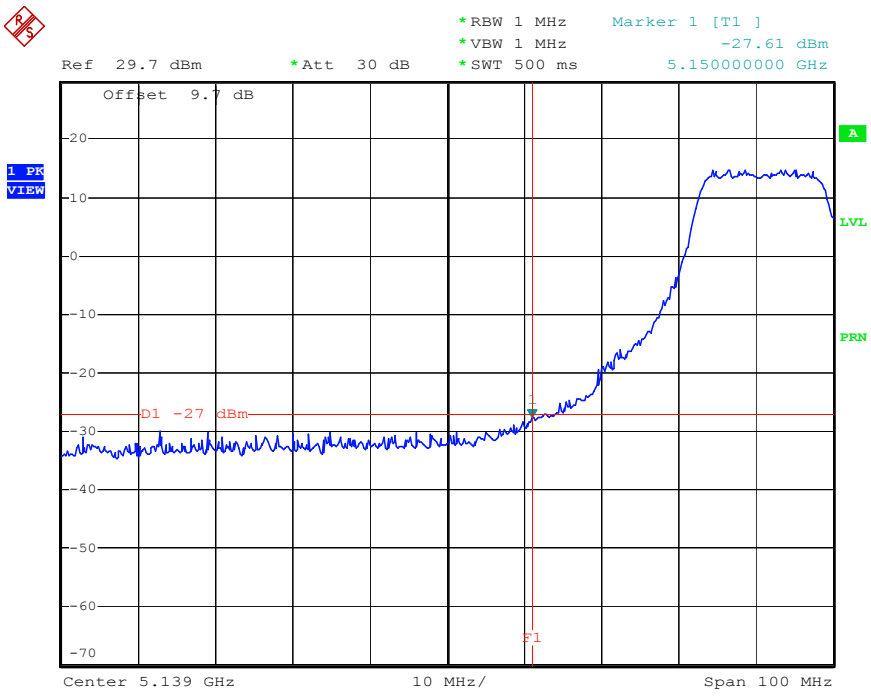
Channel: 05 / 5800 MHz



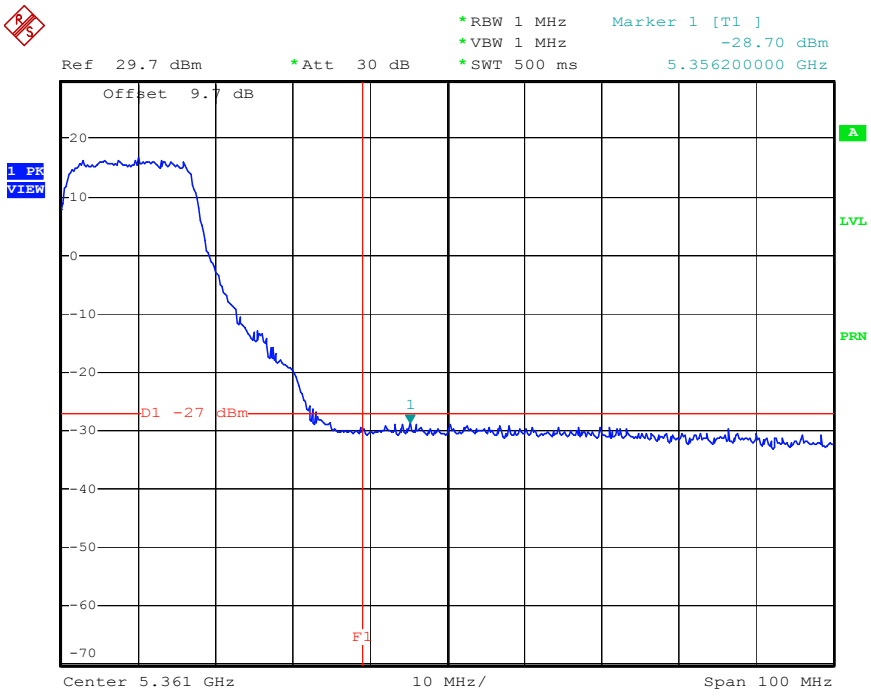
Date: 4.NOV.2004 19:16:56

Normal Mode (Mode 3)

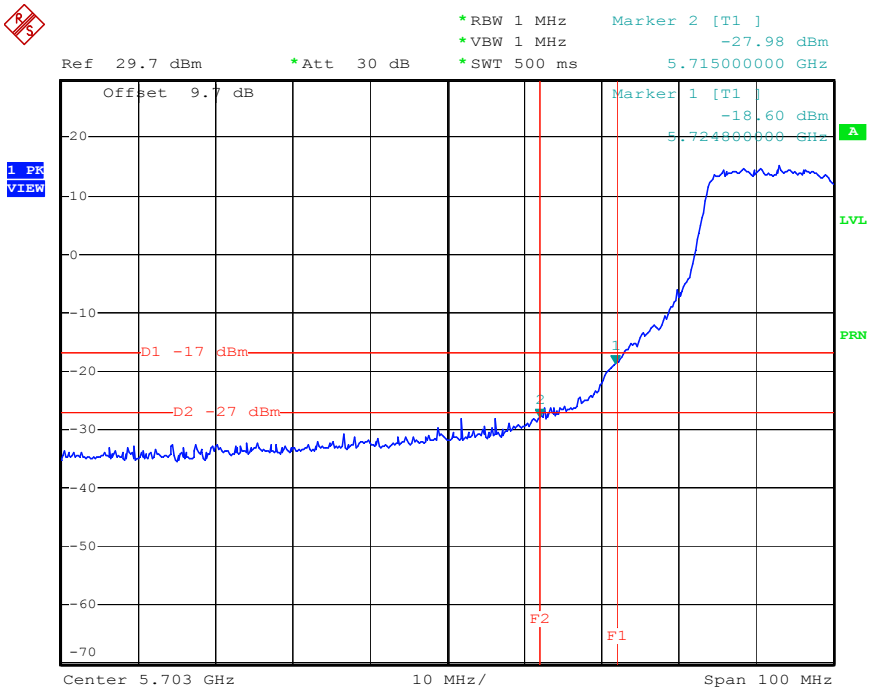
Channel: 01 / 5180 MHz



Channel: 08 / 5320 MHz

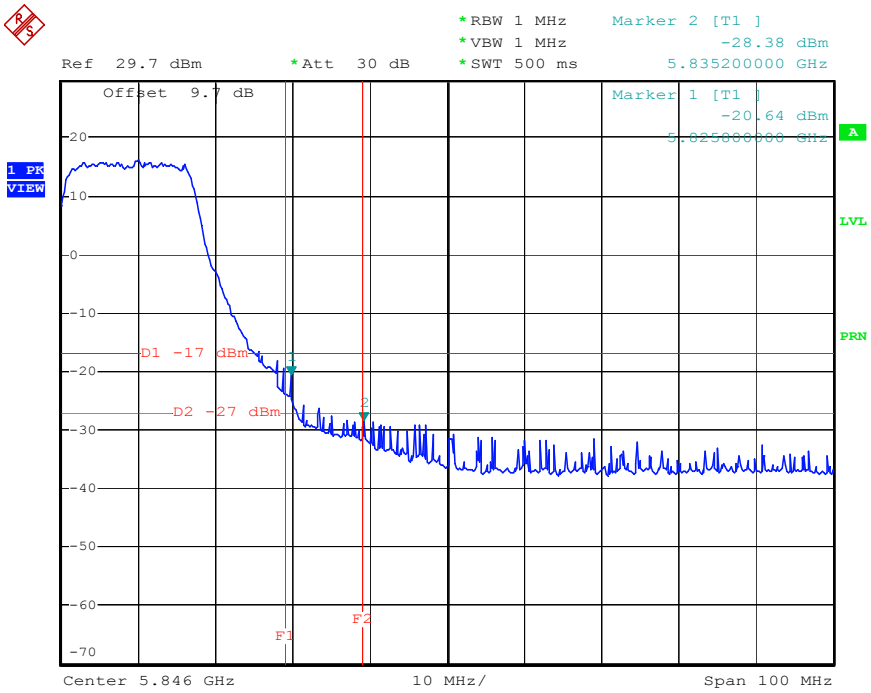


Channel: 09 / 5745 MHz



Date: 4.NOV.2004 17:42:25

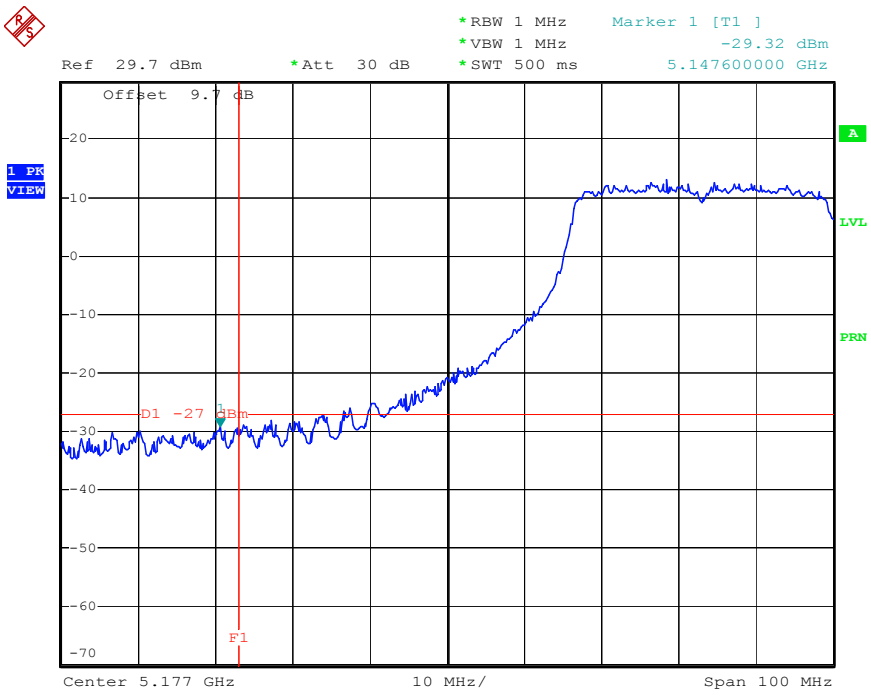
Channel: 12 / 5805 MHz



Date: 4.NOV.2004 17:49:35

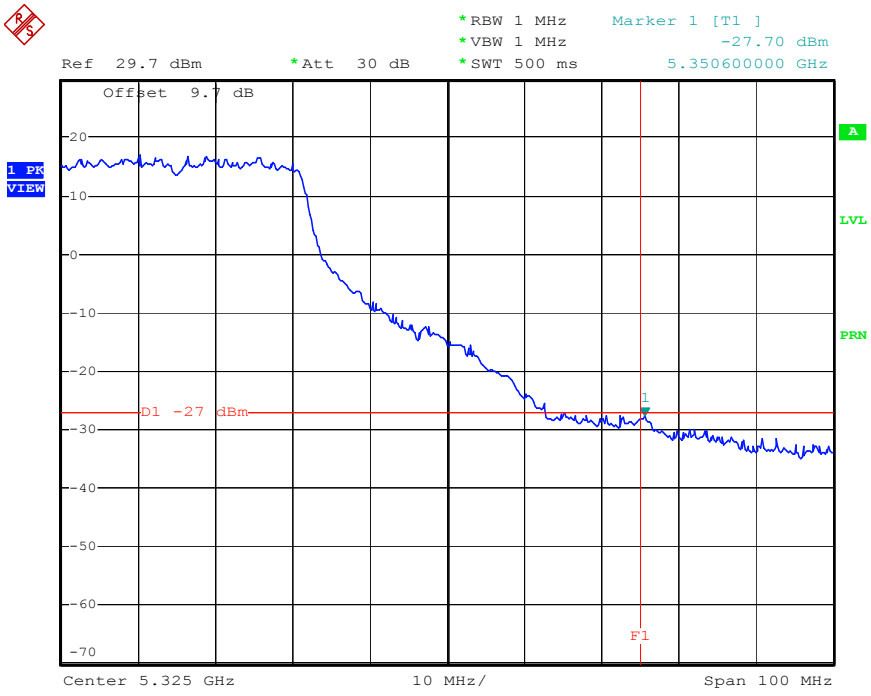
Turbo Mode (Mode 3)

Channel: 01 / 5210 MHz



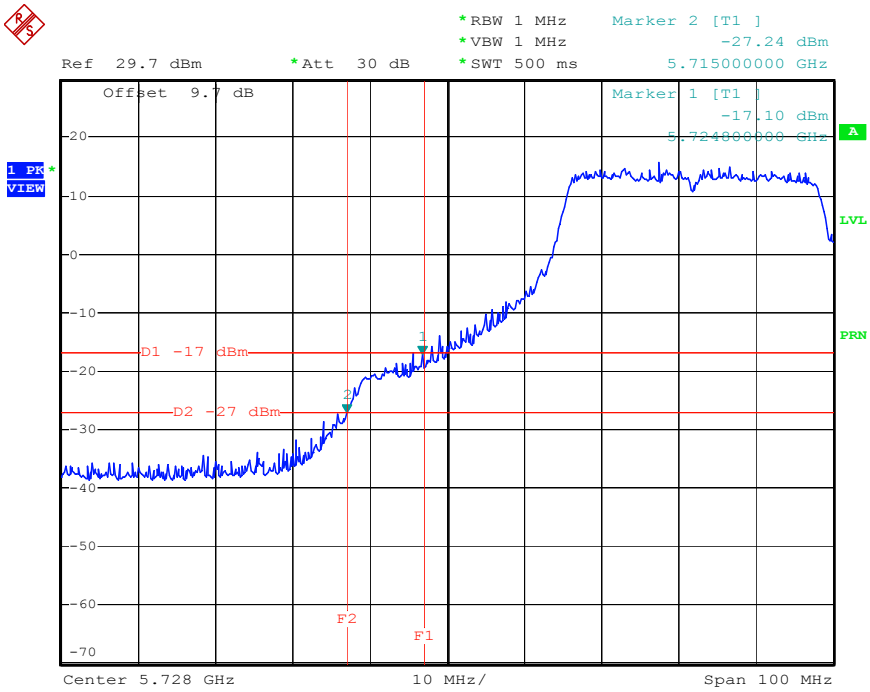
Date: 8.NOV.2004 11:14:29

Channel: 03 / 5290 MHz



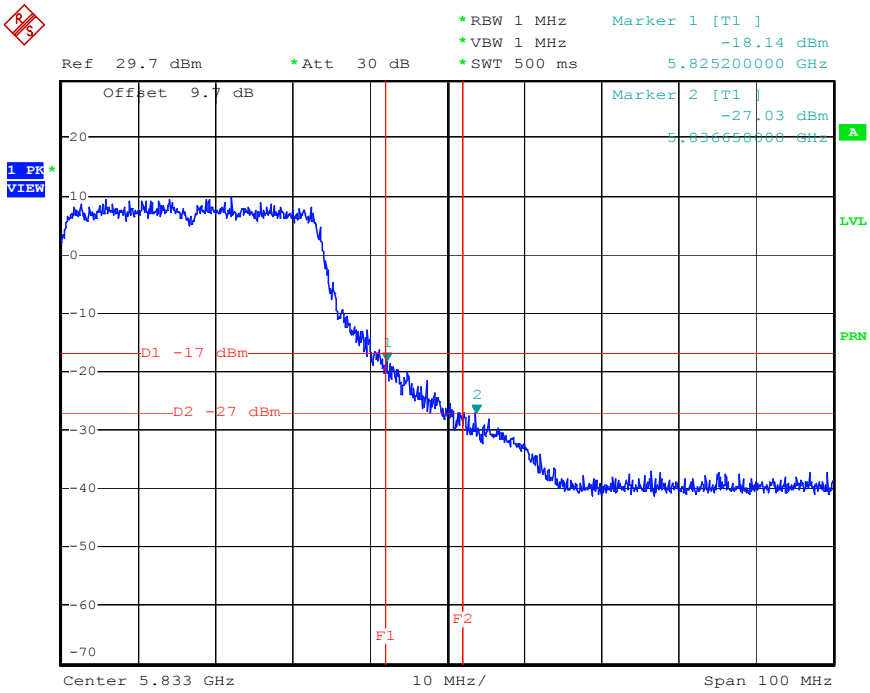
Date: 8.NOV.2004 11:36:28

Channel: 04 / 5760 MHz



Date: 4.NOV.2004 18:24:37

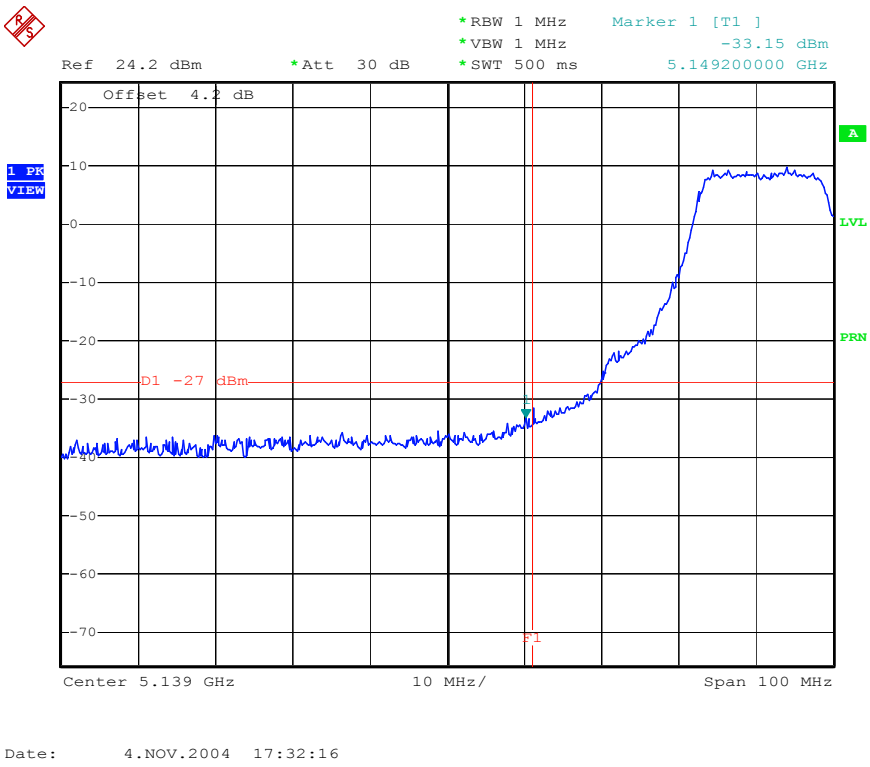
Channel: 05 / 5800 MHz



Date: 4.NOV.2004 19:09:41

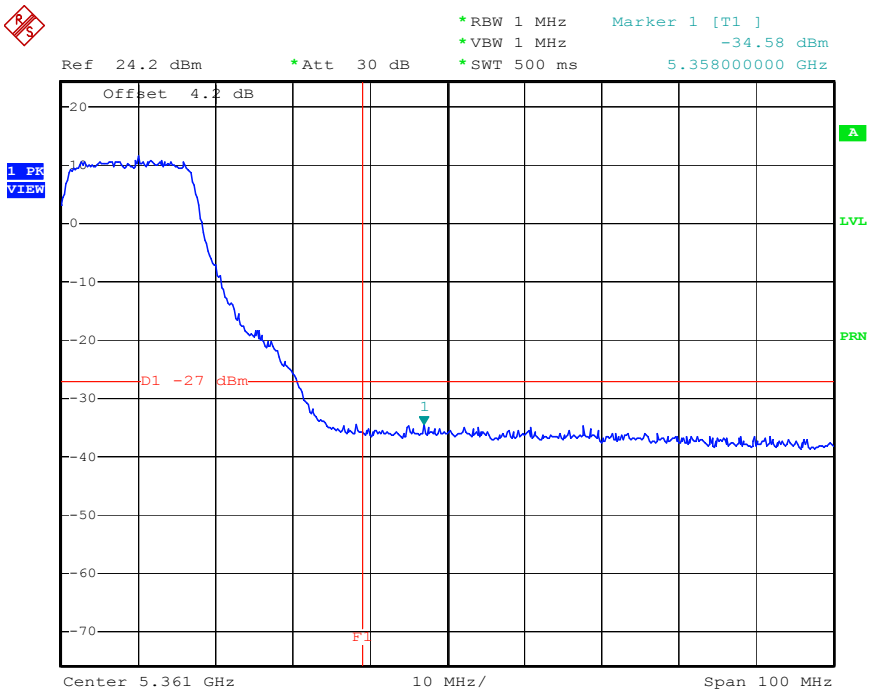
Normal Mode (Mode 4)

Channel: 01 / 5180 MHz



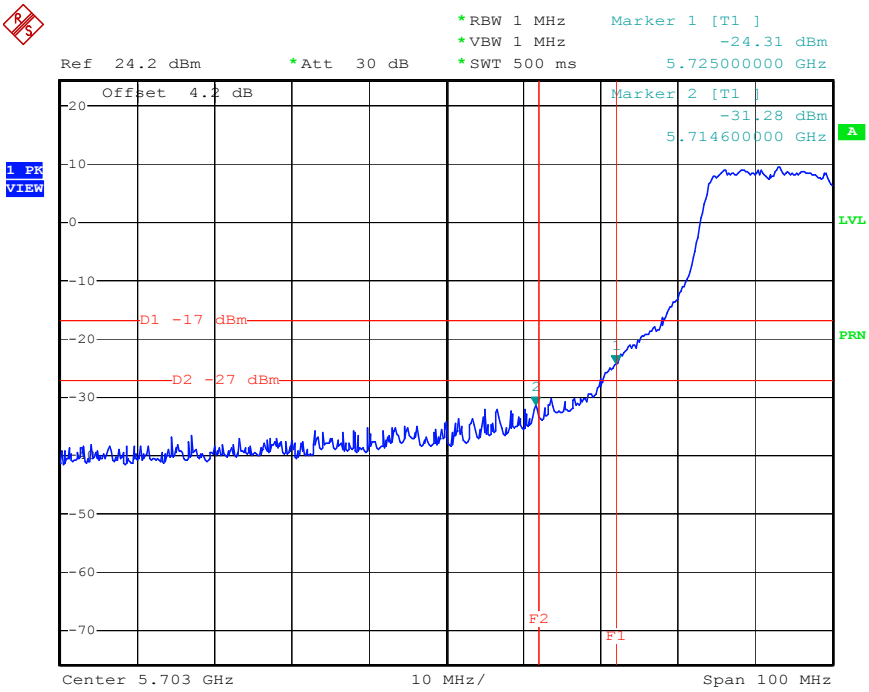
Date: 4.NOV.2004 17:32:16

Channel: 08 / 5320 MHz



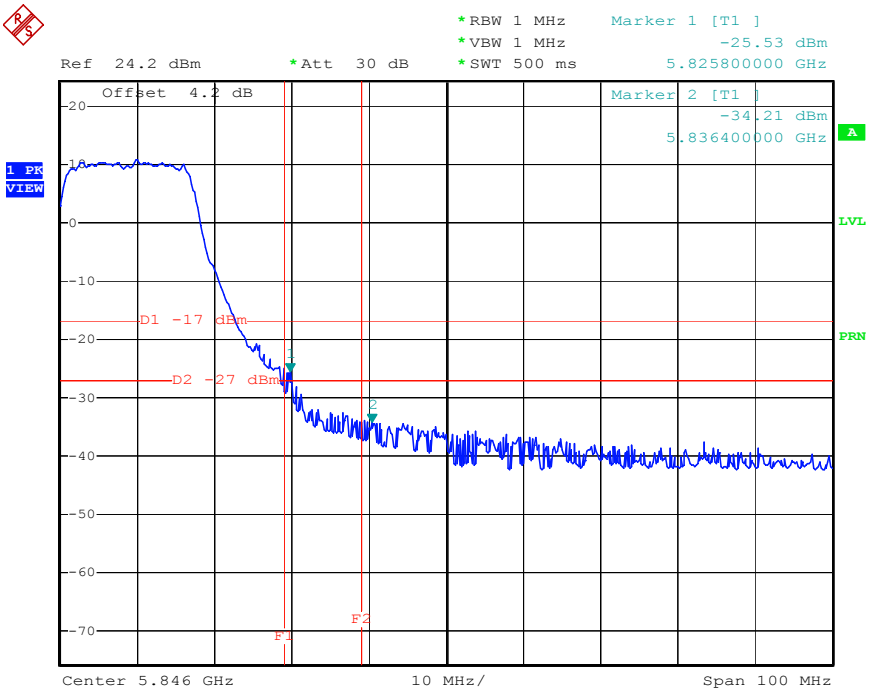
Date: 4.NOV.2004 17:35:44

Channel: 09 / 5745 MHz



Date: 4.NOV.2004 17:46:32

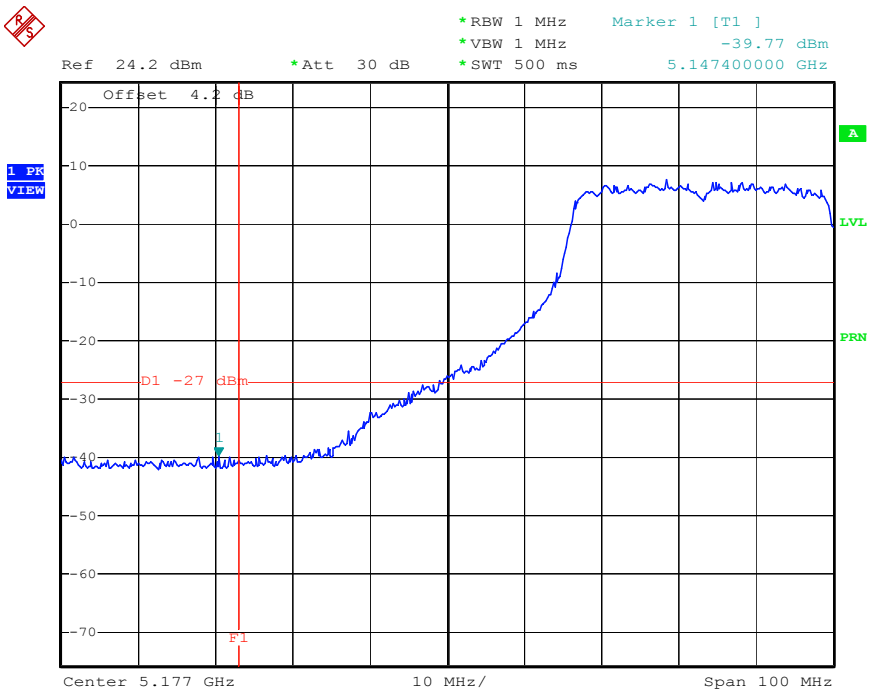
Channel: 12 / 5805 MHz



Date: 4.NOV.2004 18:02:21

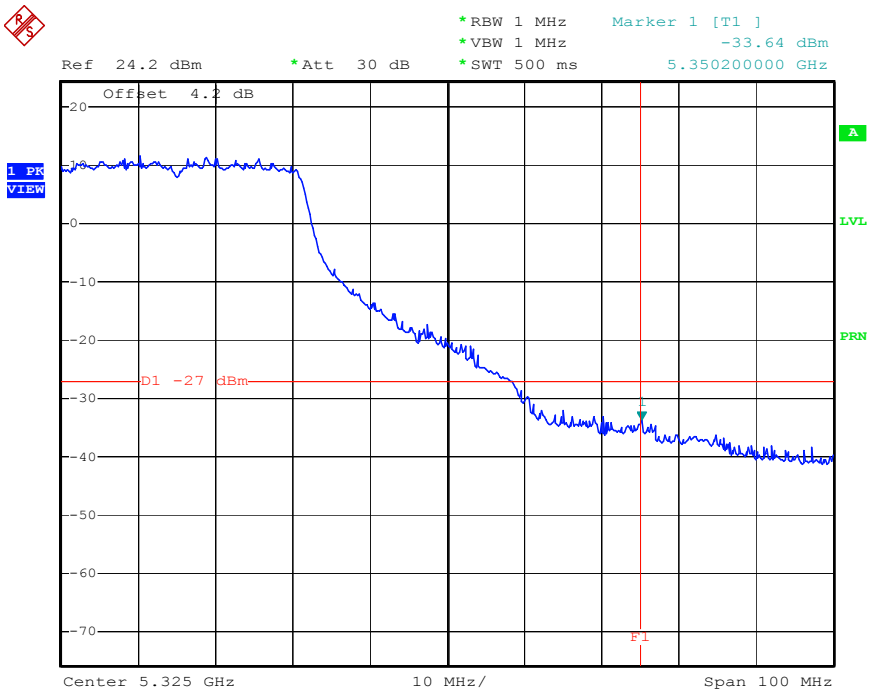
Turbo Mode (Mode 4)

Channel: 01 / 5210 MHz



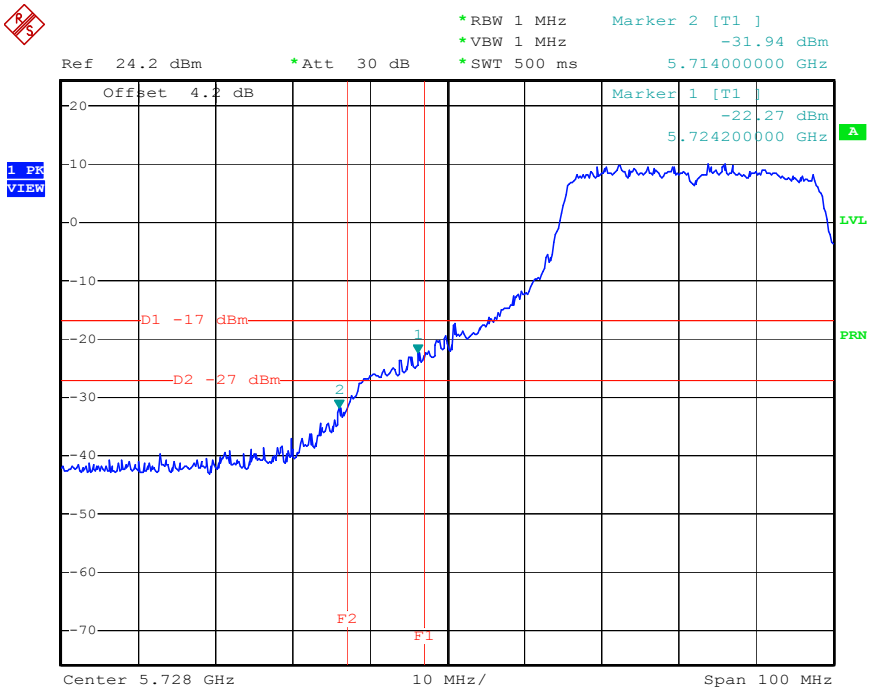
Date: 8.NOV.2004 11:17:26

Channel: 03 / 5290 MHz



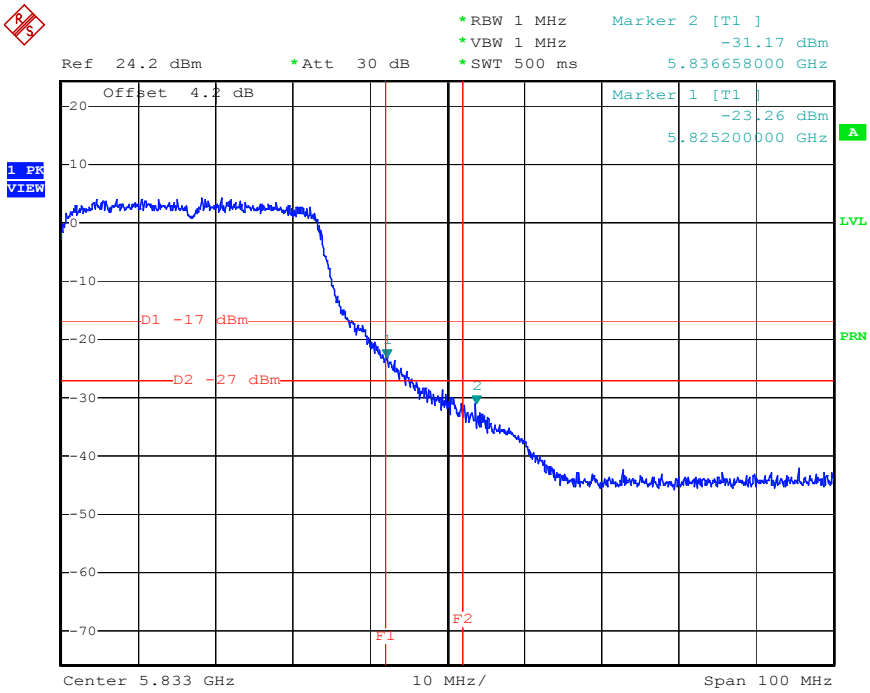
Date: 8.NOV.2004 11:38:20

Channel: 04 / 5760 MHz



Date: 4.NOV.2004 18:28:17

Channel: 05 / 5800 MHz



Date: 4.NOV.2004 19:17:59

5.6. Test of Frequency Stability

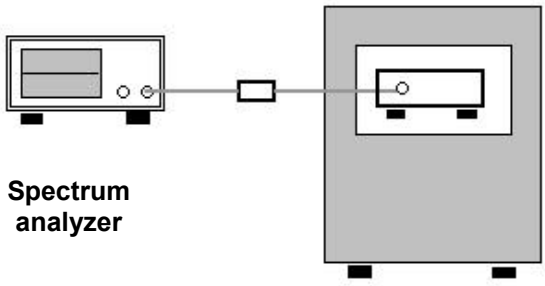
5.6.1. Measuring Instruments

Item 18 of the table is on section 6.

5.6.2. Test Procedures

1. The transmitter output is connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 10kHz and VBW to 10kHz.
3. Use mark counter function to counter the peak un-modulation carrier frequency.
4. The test extreme voltage is, according to 2.1055(d)(1), is to change the primary supply voltage from 85 to 115 percent of the nominal value
5. Extreme temperature rule is, according to 2.1055(a)(1), -30˚C~50˚C.

5.6.3. Test Setup Layout



5.6.4. Test Result:

- Modulation Type: Un-Modulated Carrier
- Temperature: 25°C
- Relative Humidity: 62 %
- Duty cycle of the equipment during the test: 100%

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)	
(V)	5240.0000	5805.0000
126.50	5240.0130	5805.007
110.00	5240.013	5805.008
93.50	5240.015	5805.006
Max. Deviation (MHz)	0.0150	0.0080
Max. Deviation (ppm)	2.86	1.38

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)	
(° C)	5240.0000	5805.0000
-30	5240.016	5805.001
-20	5240.022	5805.004
-10	5240.001	5805.004
0	5239.996	5805.002
10	5239.952	5805.004
20	5239.926	5805.006
30	5239.945	5805.002
40	5239.940	5805.001
50	5239.946	5805.000
Max. Deviation (MHz)	0.0740	0.0060
Max. Deviation (ppm)	14.12	1.03

5.7. Test of AC Power Line Conducted Emission

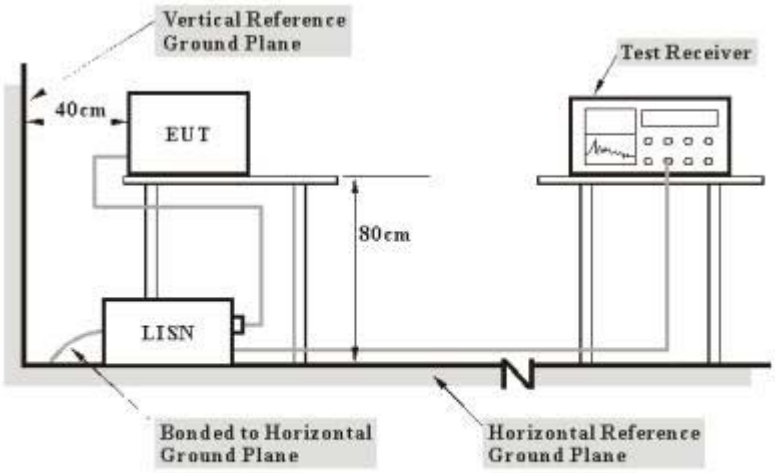
5.7.1. Measuring Instruments

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

5.7.2. 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.

5.7.3. 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.

5.7.4. Test Result of Conducted Emission

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

Line to Ground

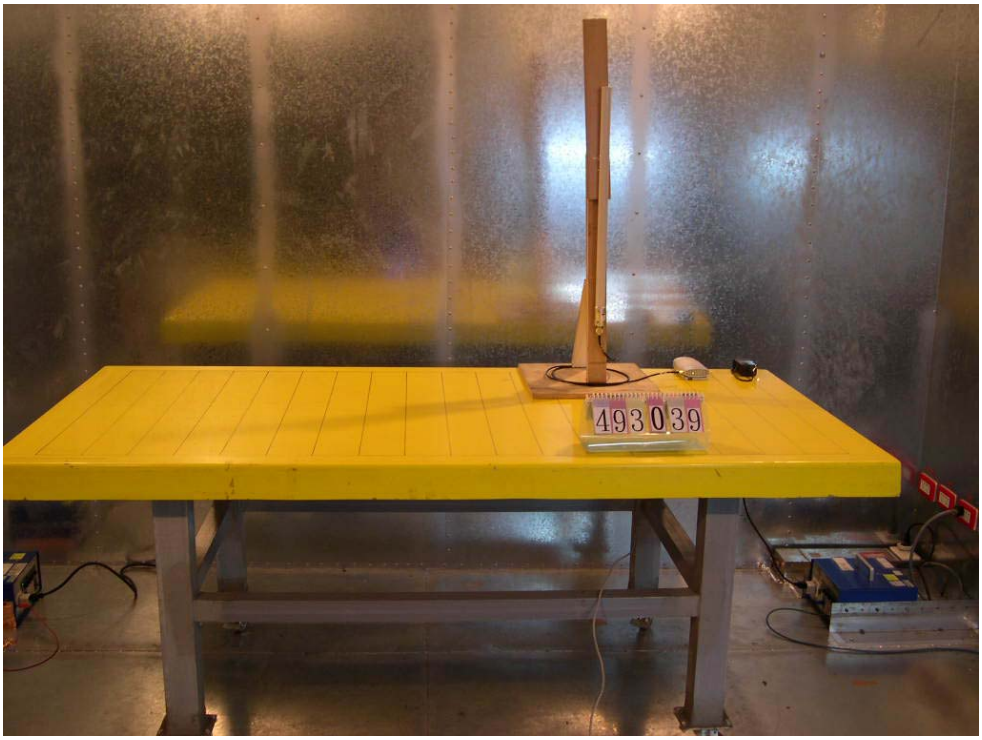
	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1500270	53.96	-12.04	66.00	53.52	0.10	0.34	
2	0.1500270	38.80	-17.20	56.00	38.36	0.10	0.34	Average
3	0.2291780	39.73	-22.75	62.48	39.59	0.10	0.04	QP
4	0.2291780	26.99	-25.49	52.48	26.85	0.10	0.04	Average
5	0.2986930	36.22	-24.06	60.28	36.00	0.10	0.12	QP
6	0.2986930	28.24	-22.04	50.28	28.02	0.10	0.12	Average
7	2.580	23.11	-22.89	46.00	22.92	0.14	0.05	Average
8	2.580	29.60	-26.40	56.00	29.41	0.14	0.05	QP
9	14.153	38.85	-21.15	60.00	37.70	0.20	0.95	QP
10	14.153	36.55	-13.45	50.00	35.40	0.20	0.95	Average
11	19.740	24.13	-35.87	60.00	23.62	0.30	0.21	QP
12	19.740	19.02	-30.98	50.00	18.51	0.30	0.21	Average

Neutral to Ground

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1758420	49.52	-15.16	64.68	49.27	0.10	0.15	QP
2	0.1758420	37.79	-16.89	54.68	37.54	0.10	0.15	Average
3	0.2630270	37.08	-24.26	61.34	36.90	0.10	0.08	QP
4	0.2630270	24.52	-26.82	51.34	24.34	0.10	0.08	Average
5	0.4389140	30.79	-26.29	57.08	30.64	0.10	0.05	QP
6	0.4389140	22.35	-24.73	47.08	22.20	0.10	0.05	Average
7	3.310	19.17	-26.83	46.00	18.99	0.10	0.08	Average
8	3.310	33.45	-22.55	56.00	33.27	0.10	0.08	QP
9	14.152	38.63	-21.37	60.00	37.48	0.20	0.95	QP
10	14.152	36.48	-13.52	50.00	35.33	0.20	0.95	Average
11	19.740	23.93	-36.07	60.00	23.42	0.30	0.21	QP
12	19.740	18.83	-31.17	50.00	18.32	0.30	0.21	Average

5.7.5. Photographs of Conducted Emission Test Configuration

FRONT VIEW



REAR VIEW

5.8. Test of Spurious Radiated Emission

5.8.1. Measuring Instruments

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

5.8.2. 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.

5.8.3. Test Setup Layout