

FCC TEST REPORT

CATEGORY : Module for Professional Use Mobile Host
PRODUCT NAME : 802.11a/g Workgroup Bridge
FCC ID. : QXO-RBTSAAA
FILING TYPE : Certification
BRAND NAME : Enterasys
MODEL NAME : WP300A-E2, RBTSA-AA, RBTSA-AB

APPLICANT : **Enterasys Networks, Inc.**
50 Minuteman Road, Andover, MA 01810, 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.

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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.



Wayne Hsu



Lab Code: 200079-0

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History of this test report

☒ No additional attachment.

☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description



1. General Description of Equipment under Test

1.1. Applicant

Enterasys Networks, Inc.
50 Minuteman Road, Andover, MA 01810, 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 / Ethernet Bridge with 802.11a/b/g wireless solution. The technical data has been listed on section "Features of Equipment under Test". 3 types of antenna are filed in this project. 2 additional diodes was added on the pins of the LAN port and the core power supply has been changed from linear to switching.

1.4. Features of Equipment under Test

ITEMS	DESCRIPTION
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Number of Channels	Normal Mode (12), Turbo Mode (5)
Frequency Band	5150 ~ 5250MHz, 5250 ~ 5350MHz 5725 ~ 5825MHz
Carrier Frequency	Please reference table below.
Channel Bandwidth	Normal Mode (39MHz), Turbo Mode (58MHz)
RF Conducted Output Power	Normal : 23.65 dBm Turbo : 18.50 dBm
Function Type	Transceiver
Power Rating (DC/AC, Voltage)	5 VDC from 100~240VAC power adapter
Temperature Range (Operating)	0 ~ 55°C

Note: Only the test result of 802.11a part is shown in this test report.

1.5. Antenna Description

3 types of antenna are filed in this project.

No.	Antenna Type	Gain (dBi)
1	Printed Monopole (GEM-220838-W 1500)	2.5dBi @2.4GHz 5.0dBi @5.0GHz
2	Monopole (Rubber duck antenna)	5.15dBi @2.4GHz 4.38dBi @5.0GHz
3	Chip Antenna	1.58dBi @2.4GHz 3.53dBi @5.0GHz

Note: This EUT is for professional use. The installation of this EUT will be handled by technical people with special skill, not the normal end users. If antenna 1 or antenna 2 is used in installation, then the operation on the frequency band, 5.15~5.25GHz, will be turned off by software.

1.6. Table for Carrier Frequencies

Normal Mode				Turbo Mode	
Channel	Frequency	Channel	Frequency	Channel	Frequency
1	5180 MHz	9	5745 MHz	1	5210 MHz
2	5200 MHz	10	5765 MHz	2	5250 MHz
3	5220 MHz	11	5785 MHz	3	5290 MHz
4	5240 MHz	12	5805 MHz	4	5760 MHz
5	5260 MHz	13		5	5800 MHz
6	5280 MHz	14			
7	5300 MHz	15			
8	5320 MHz	16			



2. Test Configuration of the Equipment under Test

2.1. Description of the Test

- a. During testing, the equipment was placed on a non-conducting support.
- b. Based on the description on section 1.3, only spurious emission below 1GHz and conduction has to be re-measured.
- c. The following test modes were performed:
Mode 1 : Ant. 1 (GEM-220838-W 1500)
Mode 2 : Ant. 2 (Rubber duck antenna)
Mode 3 : Ant. 3 (Internal antenna)
- d. Spurious emission below 1GHz is independent of channel selection, so only normal mode channel 12 was tested.
- e. The EUT has been programmed to continuously transmit or receive during testing. The used peripherals as well as the configuration fulfill the requirements of ANSI C63.4:2003.
- f. The configuration is operated in a manner which tends to maximize its emission characteristics in a typical application.

2.2. Frequency Range Investigated

- a. Conducted power line test: from 150 kHz to 30 MHz
- b. Radiated emission test: from 30 MHz to 40,000 MHz

2.3. Description of Test Supporting Units

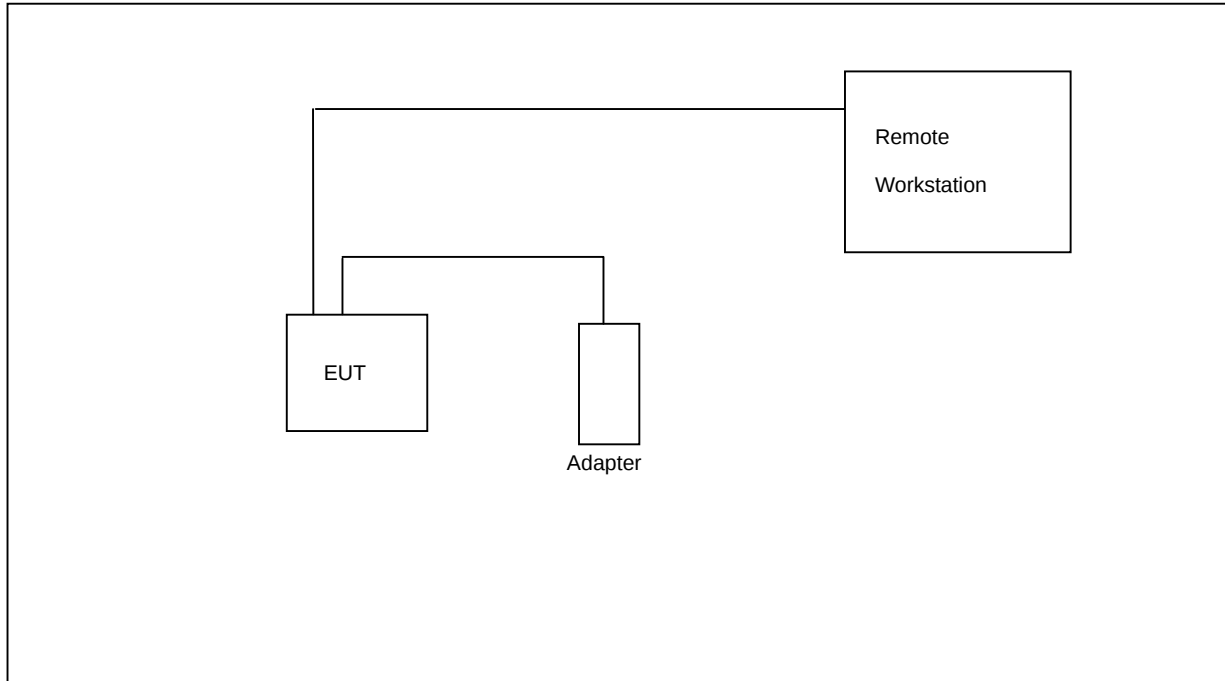
Support Unit 1. – Notebook (NEC) – for remote workstation

FCC ID	: N/A
Model No.	: VERSA VX
Serial No.	: SP0034
Remark	: This support device was tested to comply with FCC standards and authorized under Declaration of Conformity.

Support Unit 2. – Notebook (Dell) – for remote workstation

FCC ID	: N/A
Model No.	: D505
Serial No.	: SP0035
Remark	: This support device was tested to comply with FCC standards and authorized under Declaration of Conformity.

2.4. Connection Diagram of Test System



2.5. Test Software

There are 2 softwares installed in the remote station (notebook) can be used in the testing.

- a. 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.
- b. "H" Pattern Generator: Except Access Point, the supporting equipment such as monitor or printer is always available. Under testing, these supporting equipment has to also under working condition. "H" Pattern Generator is able to continuously transmitting "H" character to those supporting equipments.

3. Test Location and Standards

3.1. Test Location

Test Location : Sporton Hwa Ya Testing Building

Address : 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. : CO04-HY, 03CH03-HY

3.2. Test Conditions

Normal Voltage : 120VAC/60Hz

Extreme Voltage : 138VAC and 102VAC

Normal Temperature : 20 °C

Extreme Temperature : -20 °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 E (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.

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(a)	26dB Bandwidth	Pass
5.2	15.407(a)	Maximum Peak Transmit Power	Pass
5.3	15.407(a)	Peak Power Spectral Density	Pass
5.4	15.407(a)	The Ratio of the Peak Excursion	Pass
5.5	15.407(b)	Band Edges of the Operation Frequency	Pass
5.6	15.209/15.407(b)	Spurious Radiated Emission	Pass
5.7	15.407(g)	Frequency Stability	Pass
5.8	15.107/15.207	AC Power Line Conducted Emission	Pass
5.9	15.203/15.407(a)	Antenna Requirement	Pass
5.10	2.1091/2.1093	Maximum Permissible Exposure for the EUT	Pass

5. Test Result

5.1. Test of 26dB Bandwidth

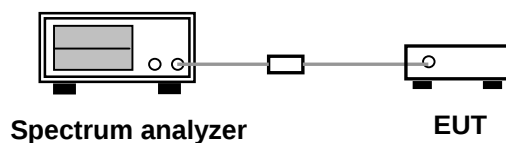
5.1.1. Measuring Instruments

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 300kHz and VBW to 1000kHz.
3. The 6dB bandwidth is defined as the spectrum width with level higher than 26dB below the peak level.
4. Repeat above 1~3 points for the other channel of the EUT.
5. Calculated the power limit.

5.1.3. Test Setup Layout

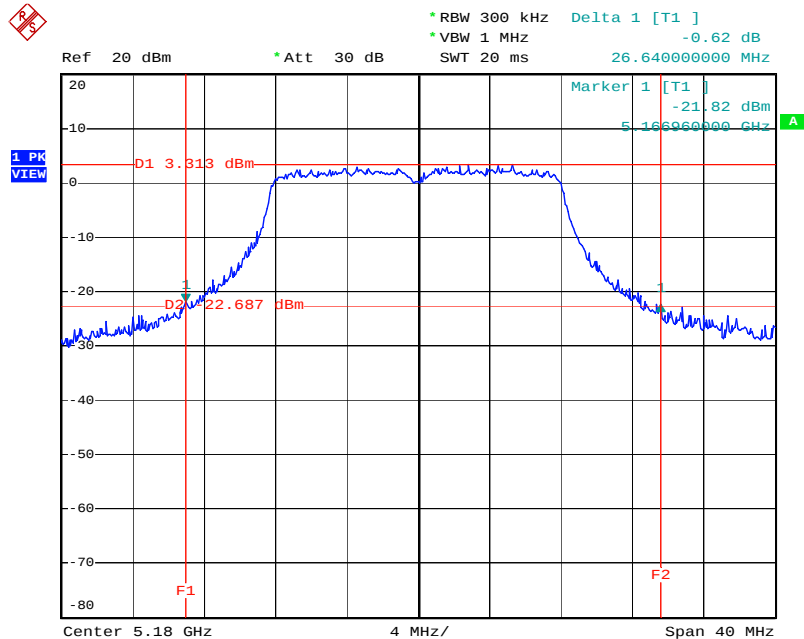


5.1.4. Test Result : See spectrum analyzer plots below

- Normal Mode
- Temperature: 26°C
- Relative Humidity: 64 %
- Duty cycle of the equipment during the test: 100%
- Test Engineer: Bunny Yao

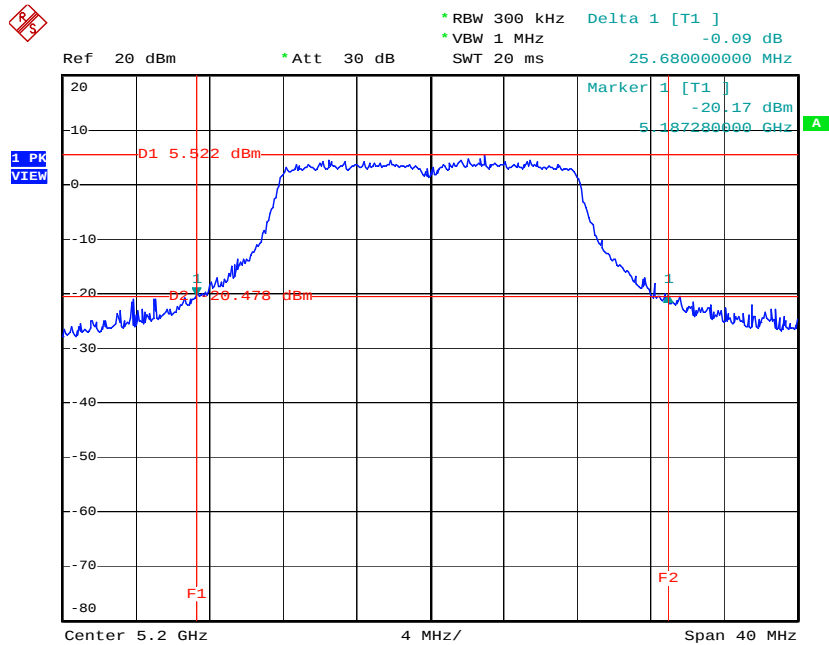
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Calculated Power. Limit dBm	Applied Power Limit dBm
01	5180	26.64	18.26	17
02	5200	25.68	18.10	17
04	5240	25.68	18.10	17
05	5260	35.90	27.38	24
06	5280	36.50	27.34	24
08	5320	28.00	25.47	24
09	5745	29.40	33.02	30
10	5765	38.56	32.86	30
12	5800	24.80	30.94	30

(CH 01) : 5180MHz



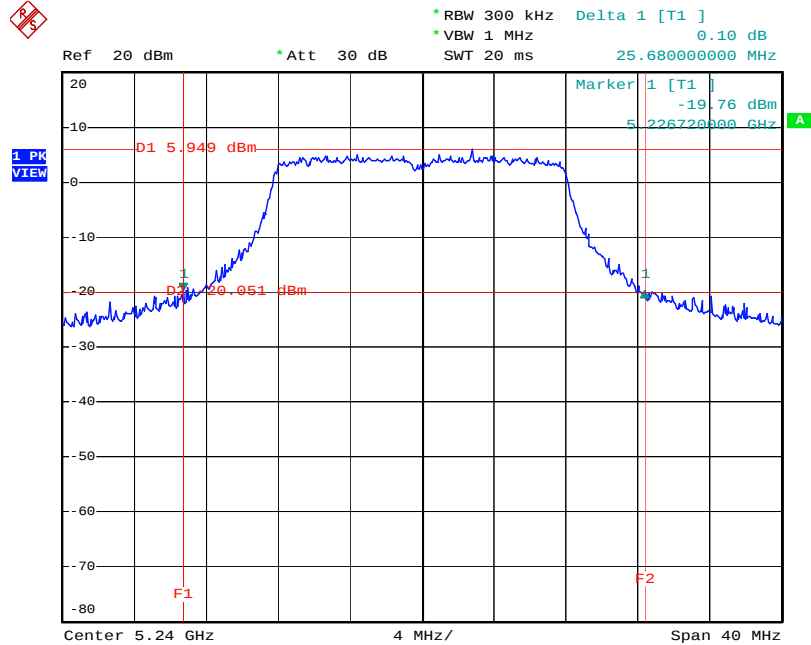
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(CH 02) : 5200MHz



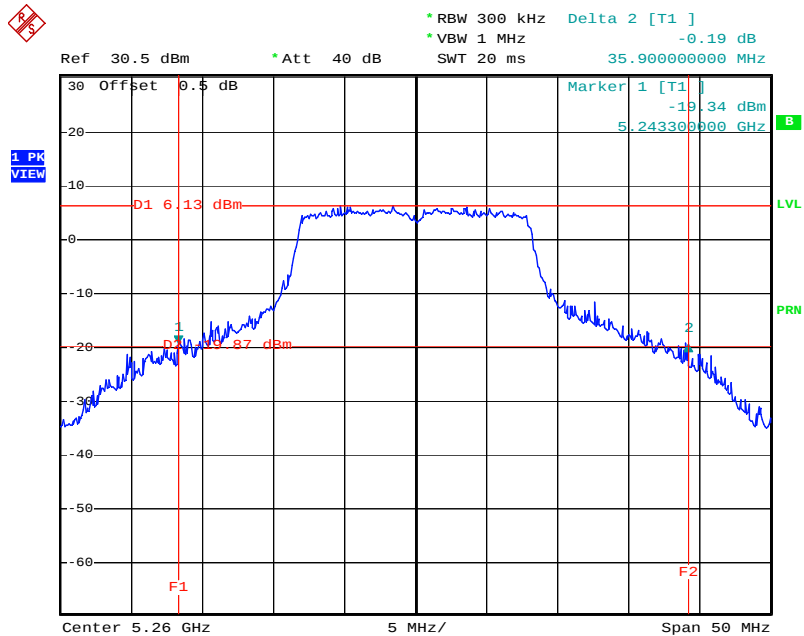
Date: 1.JUL.2004 20:23:40

(CH 04) : 5240MHz



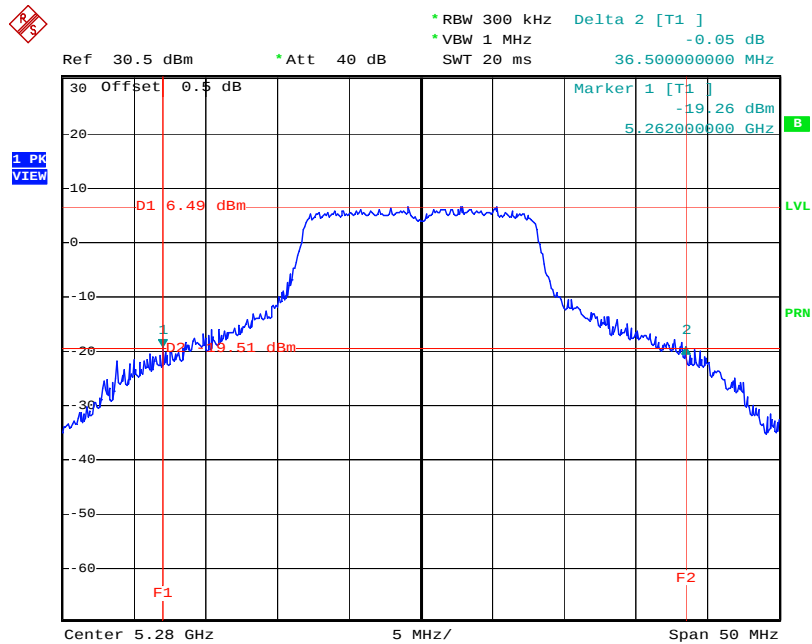
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(CH 05) : 5260MHz



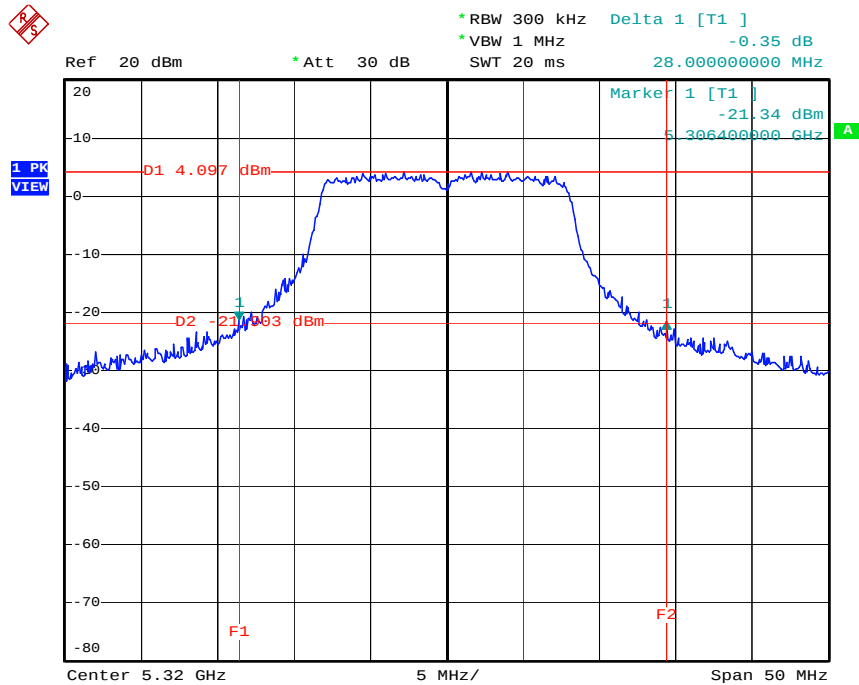
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(CH 06) : 5280MHz



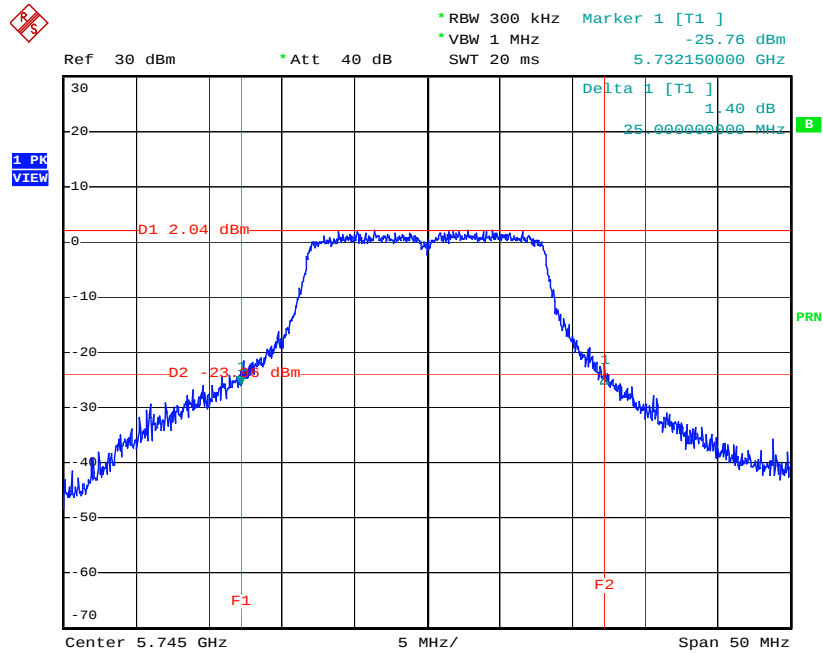
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(CH 08) : 5320MHz



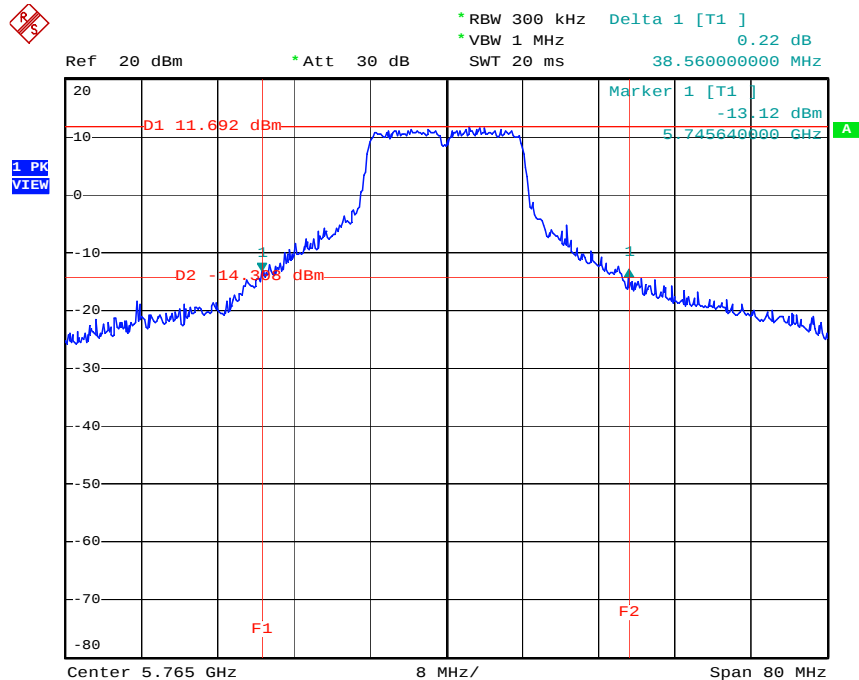
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(CH 09) : 5745MHz



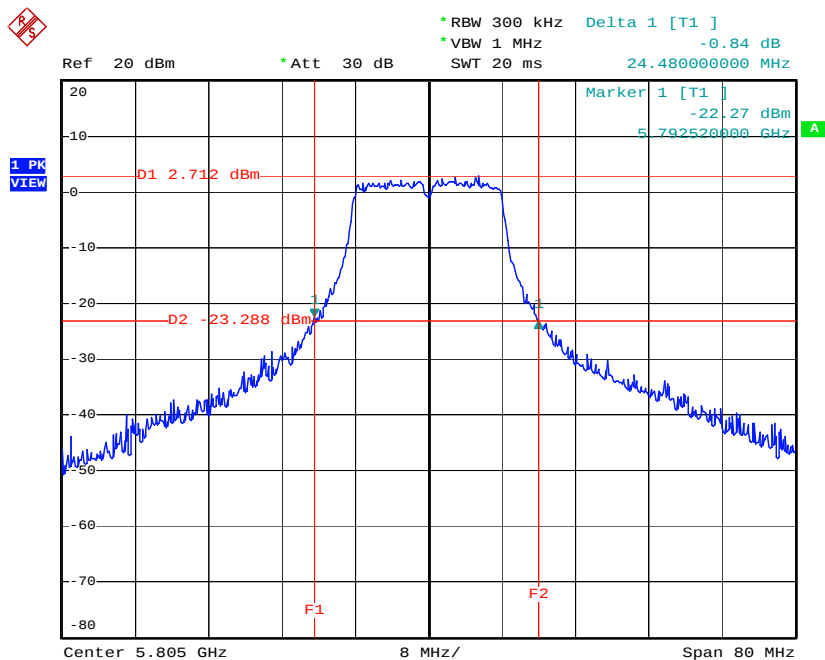
Date: 5.AUG.2004 17:01:18

(CH 10) : 5765MHz



Date: 1.JUL.2004 22:09:18

(CH 12) : 5805MHz

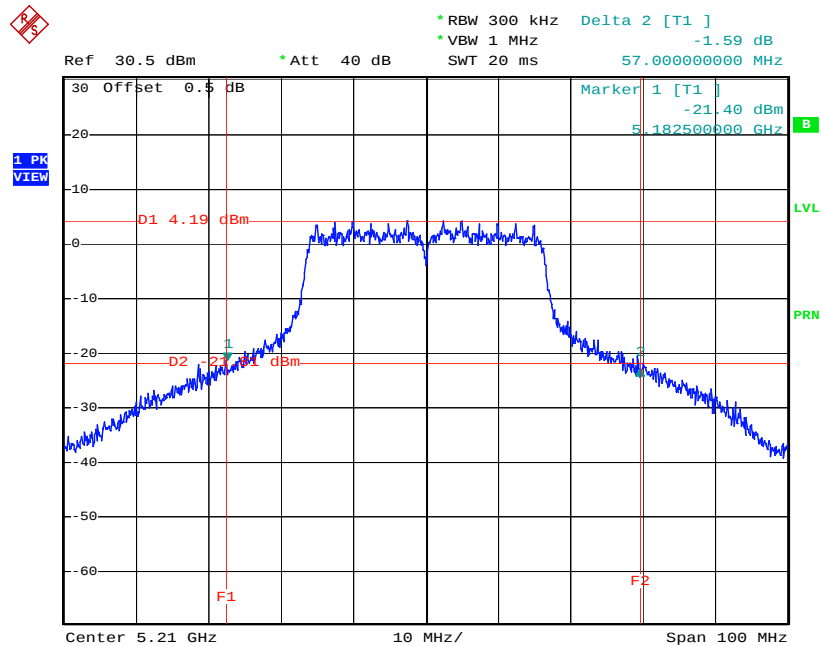


Date: 1.JUL.2004 22:23:01

- Turbo Mode
- Temperature: 26°C
- Relative Humidity: 64 %
- Duty cycle of the equipment during the test: 100%
- Test Engineer: Bunny Yao

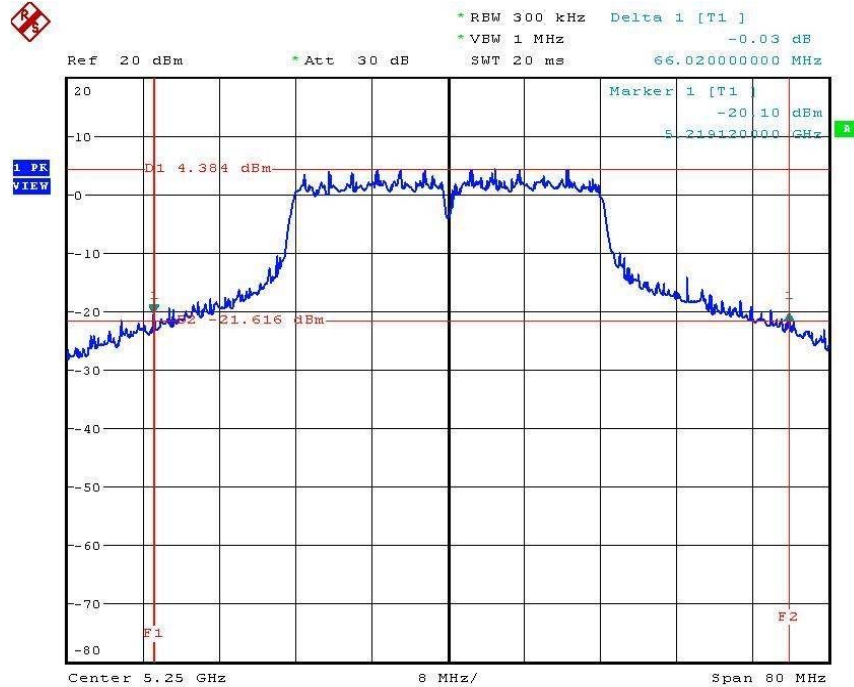
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Calculated Power. Limit dBm	Applied Power Limit dBm
01	5210	57.00	22.06	17
02	5250	66.02	29.24	17
03	5290	57.40	29.24	24
04	5760	45.84	35.70	30
05	5800	48.60	36.25	30

(CH 01) : 5210MHz



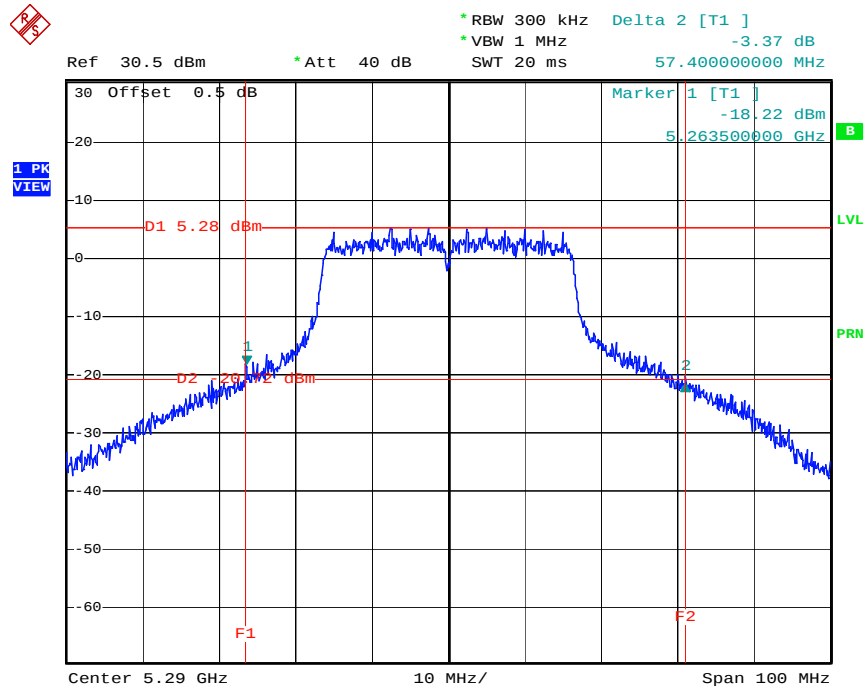
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(CH 02) : 5250MHz



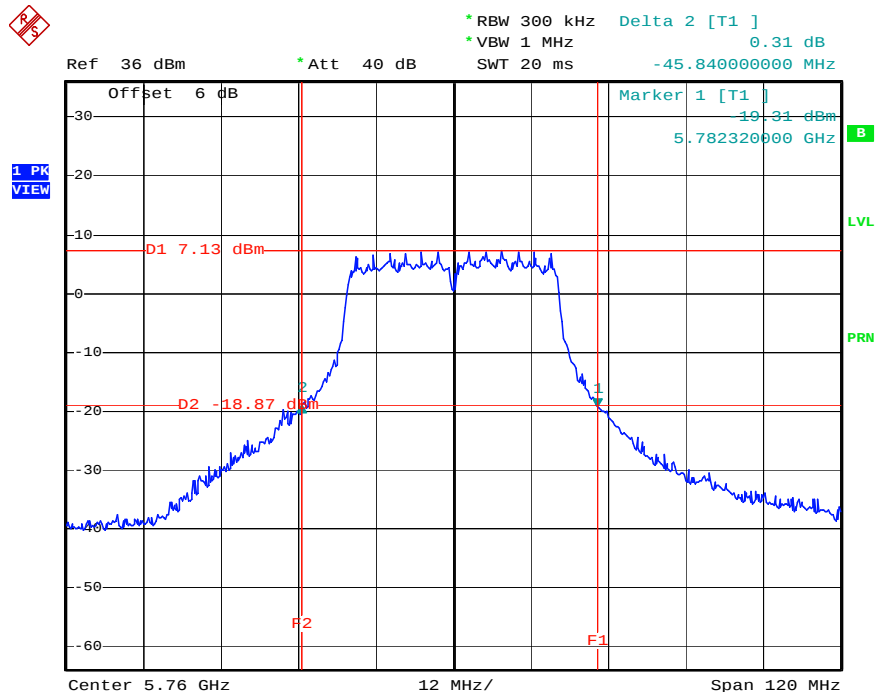
Date: 30.AUG.2004 20:06:00

(CH 03) : 5290MHz



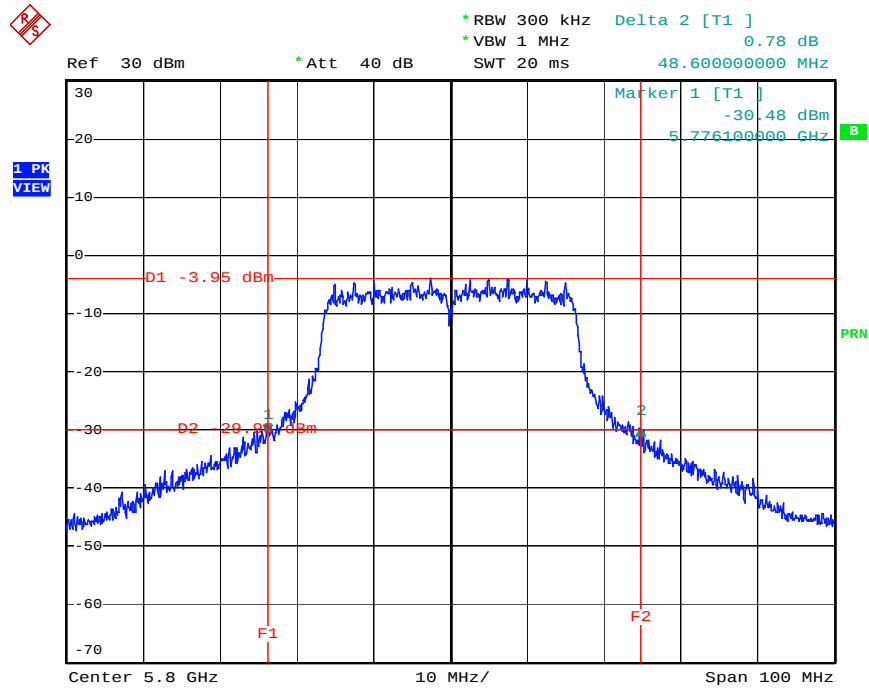
Date: 5.AUG.2004 14:52:10

(CH 04) : 5760MHz



Date: 5.AUG.2004 11:45:09

(CH 05) : 5800MHz



Date: 5.AUG.2004 15:49:04

5.2. Test of Maximum Peak Transmit Power

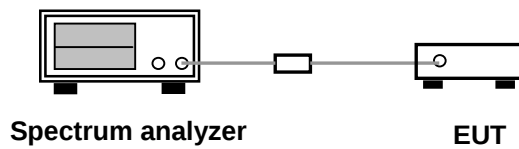
5.2.1. Measuring Instruments

Item 7 of the table on section 6.

5.2.2. Test Procedures

1. The transmitter output was connected to the Spectrum through an attenuator.
2. Set RBW of spectrum analyzer to 1000kHz and VBW to 3000kHz.
3. Use sample detector mode, span 50MHz and max hold.
4. Use the channel power function of the spectrum analyzer to measure the power.

5.2.3. Test Setup Layout



5.2.4. Test Result : See spectrum analyzer plots below

- Normal Mode
- Temperature: 25°C
- Relative Humidity: 62 %
- Duty cycle of the equipment during the test : 100%
- Test Engineer: Bunny Yao

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mWatt)	Limits (dBm)
01	5180	14.62	28.97	17.00
02	5200	16.28	42.46	17.00
04	5240	16.80	47.86	17.00
05	5260	22.06	106.69	24.00
06	5280	21.96	157.04	24.00
08	5320	15.59	36.22	24.00
09	5745	13.48	22.28	30.00
10	5765	23.65	231.74	30.00
12	5805	14.10	25.70	30.00

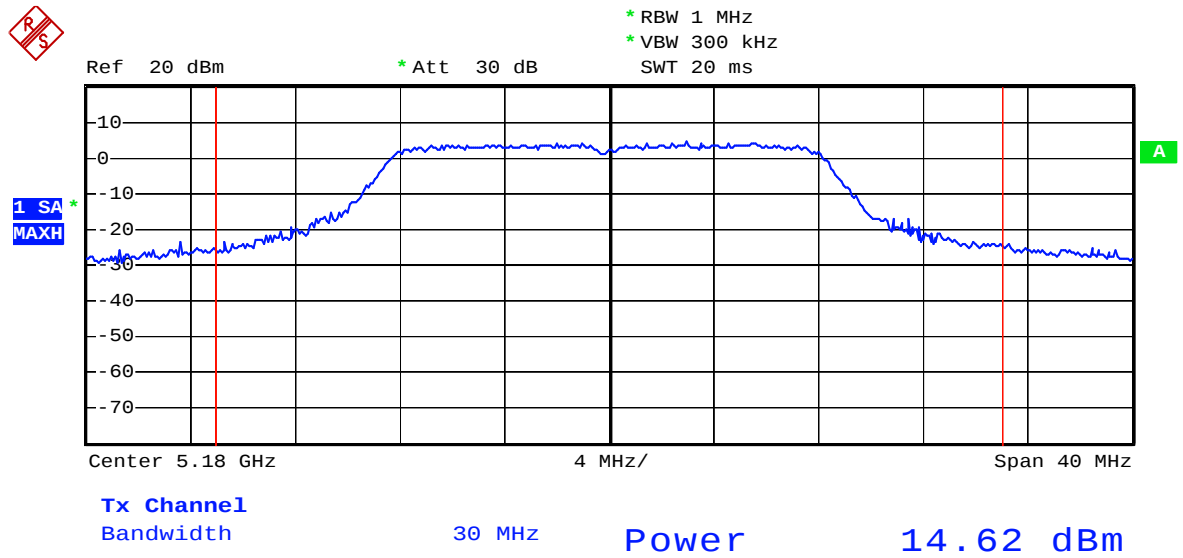
Power Limits:

5150MHz~5250MHz is 17dBm or 26dB bandwidth of Power Limits, whichever is less.

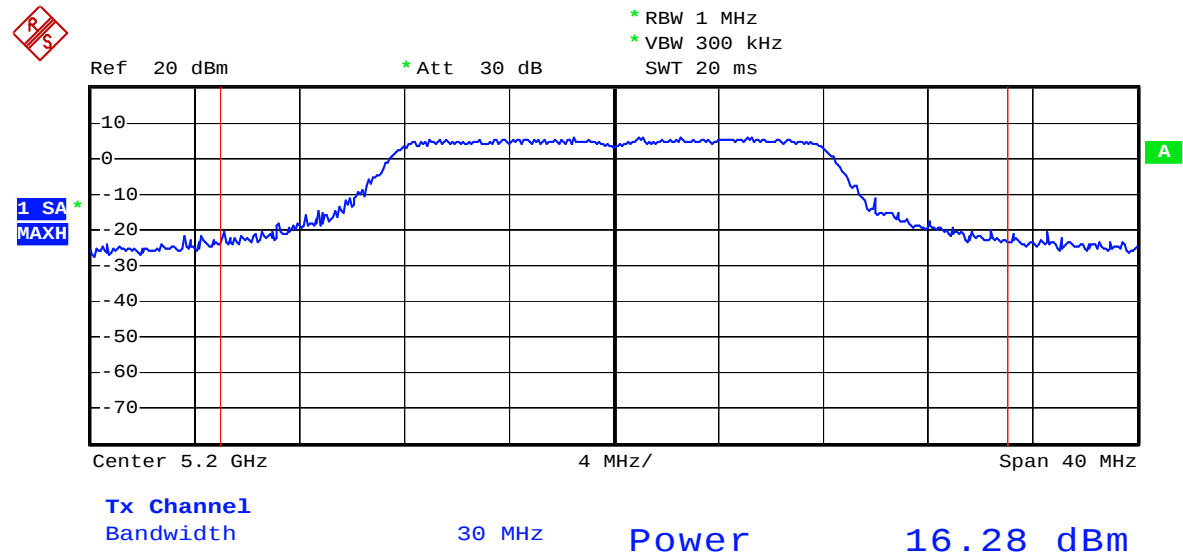
5250MHz~5350MHz is 24dBm or 26dB bandwidth of Power Limits, whichever is less.

5725MHz~5825MHz is 30dBm or 26dB bandwidth of Power Limits, whichever is less.

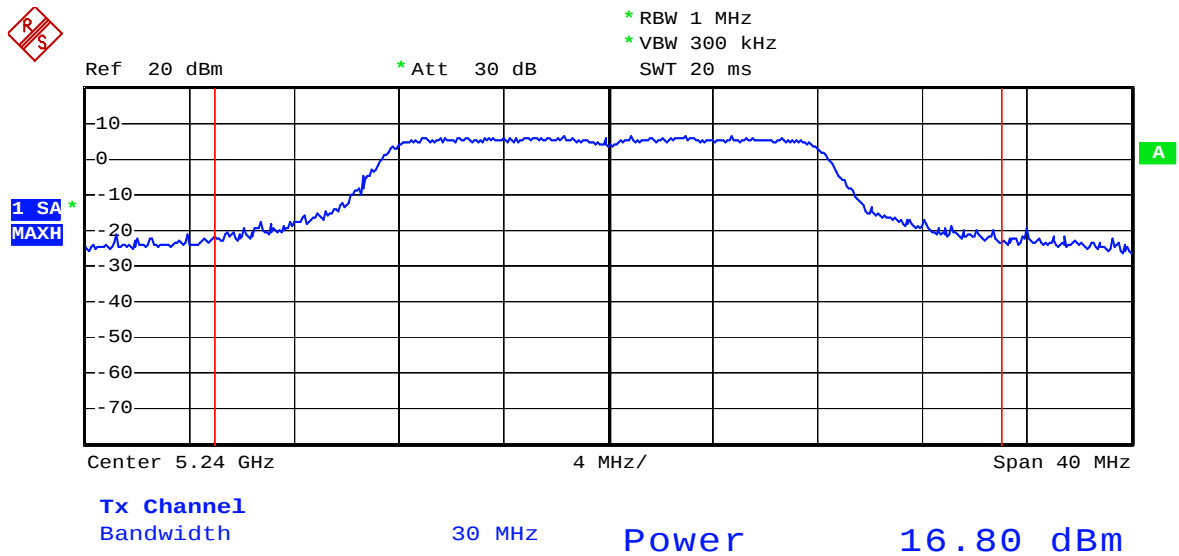
(CH 01) : 5180MHz



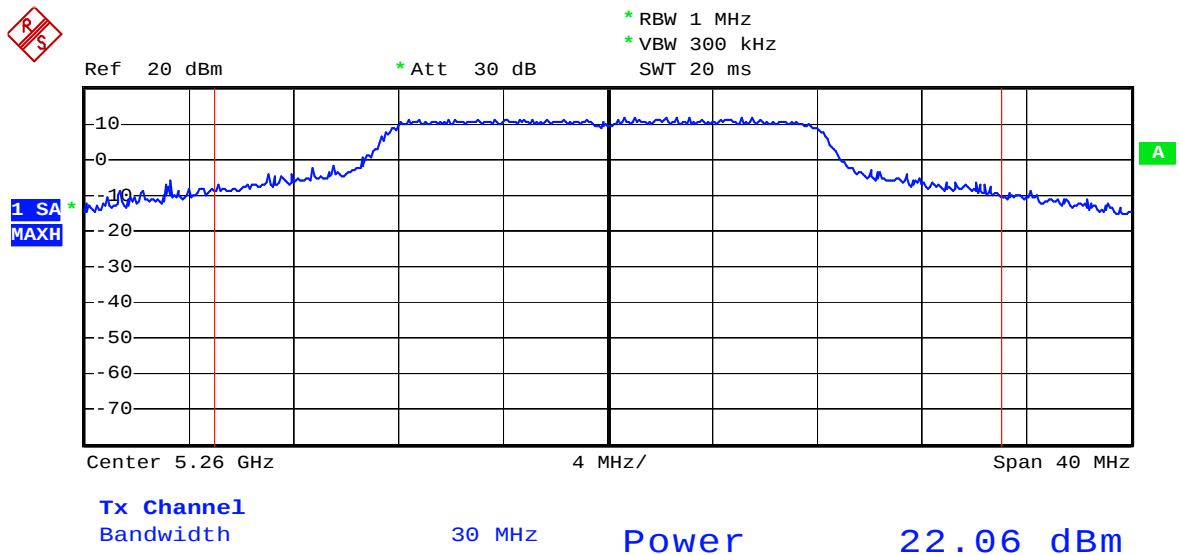
(CH 02) : 5200MHz



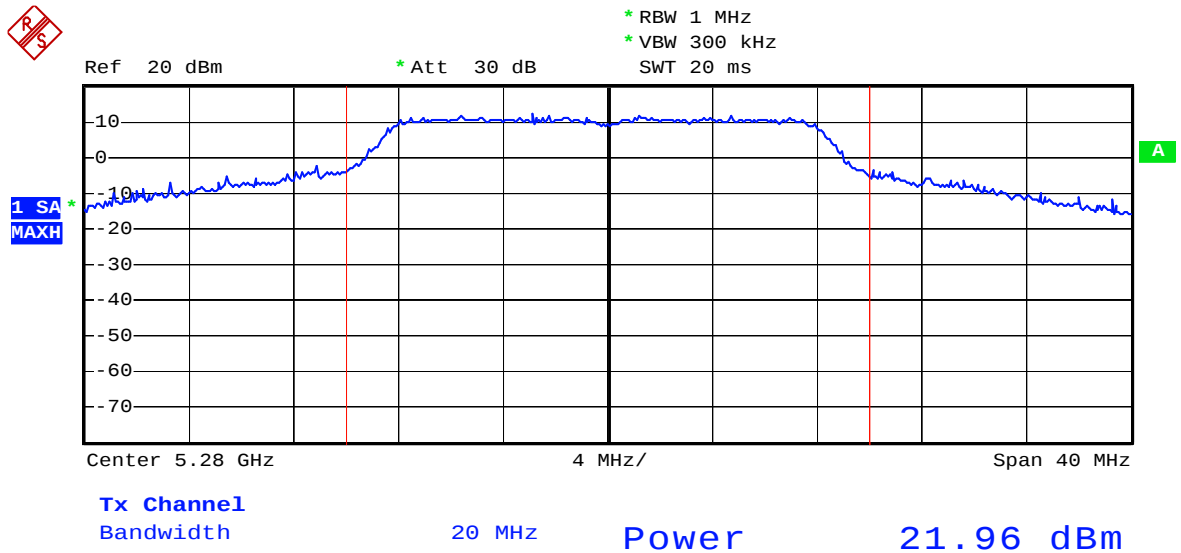
(CH 04) : 5240MHz



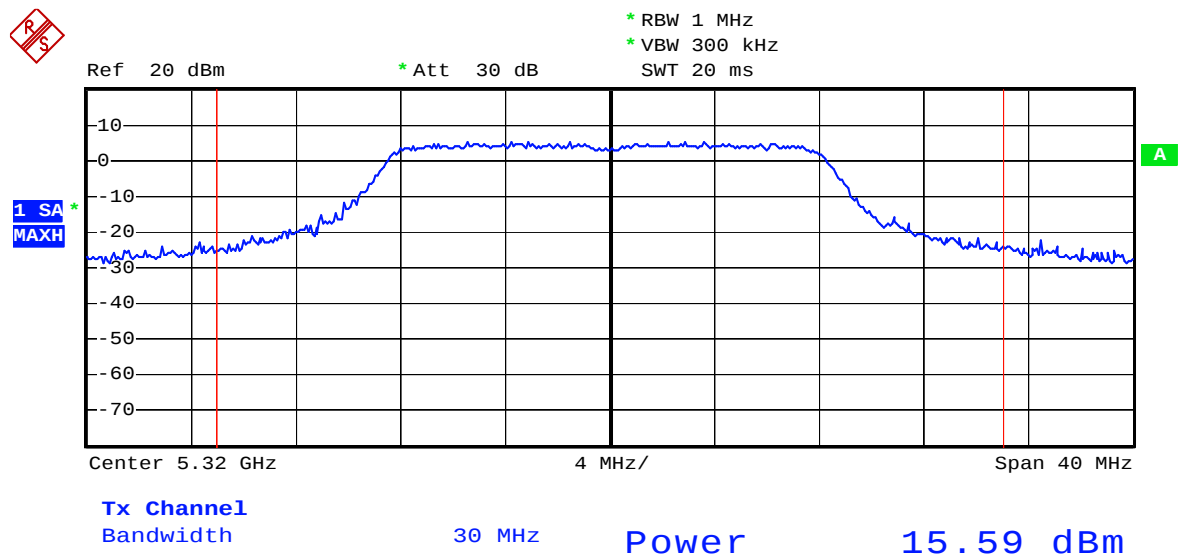
(CH 05) : 5260MHz



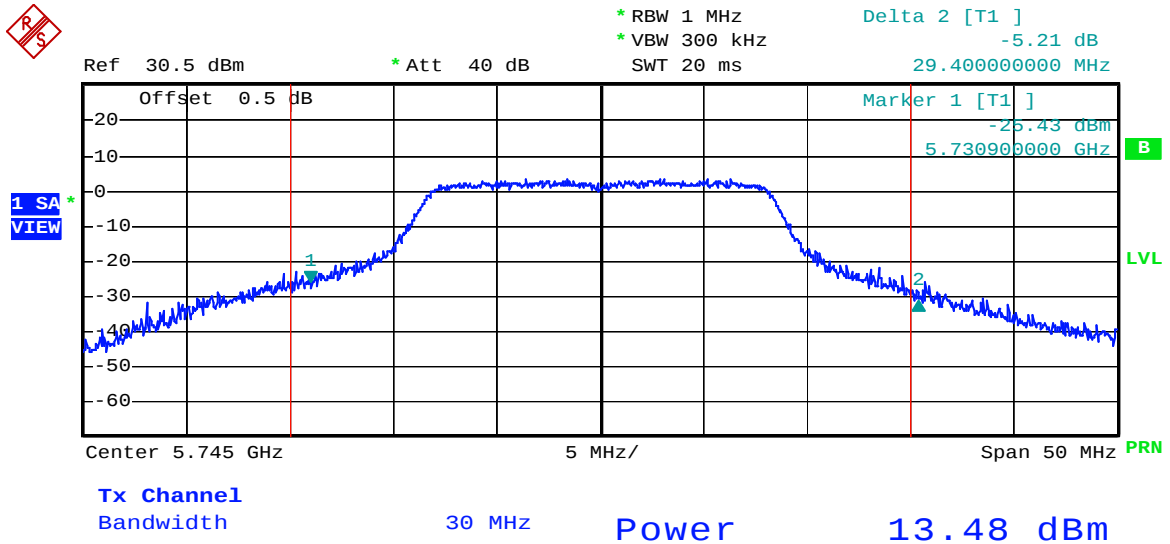
(CH 06) : 5280MHz



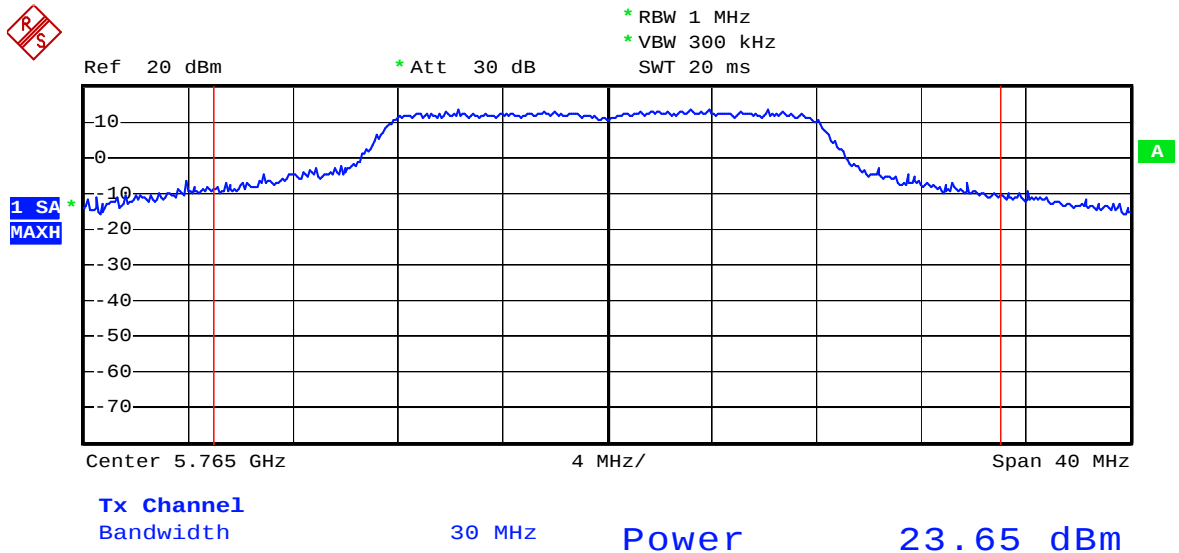
(CH 08) : 5320MHz



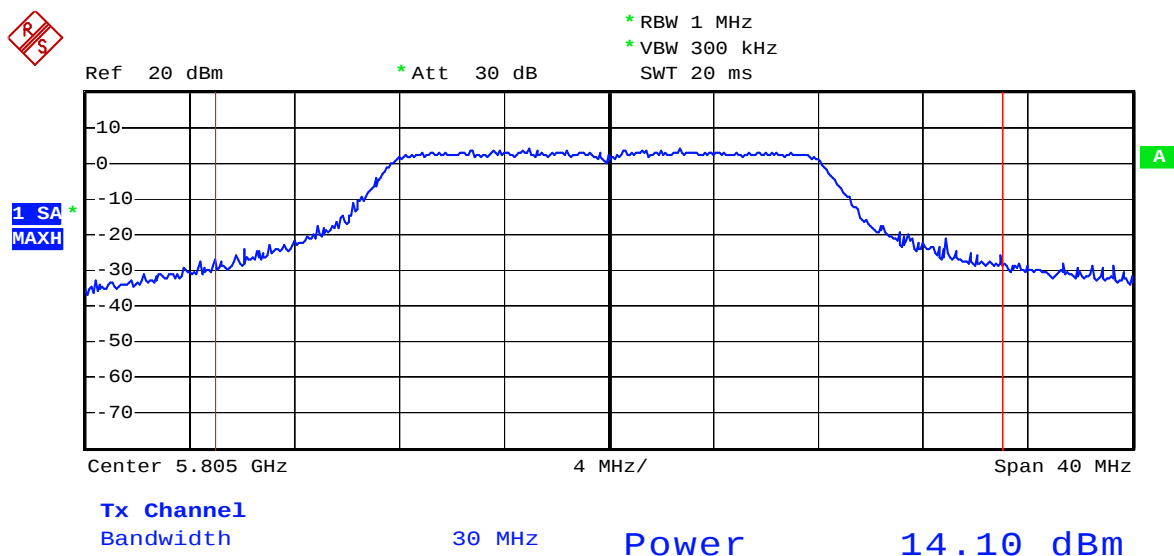
(CH 09) : 5745MHz



(CH 10) : 5765MHz



(CH 12) : 5805MHz



- Turbo Mode
- Temperature: 25°C
- Relative Humidity: 62 %
- Duty cycle of the equipment during the test : 100%
- Test Engineer: Bunny Yao

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mWatt)	Limits (dBm)
01	5210	16.34	43.05	17.00
02	5250	16.80	47.86	17.00
03	5290	18.50	70.79	24.00
04	5760	17.41	55.08	30.00
05	5800	11.34	13.61	30.00

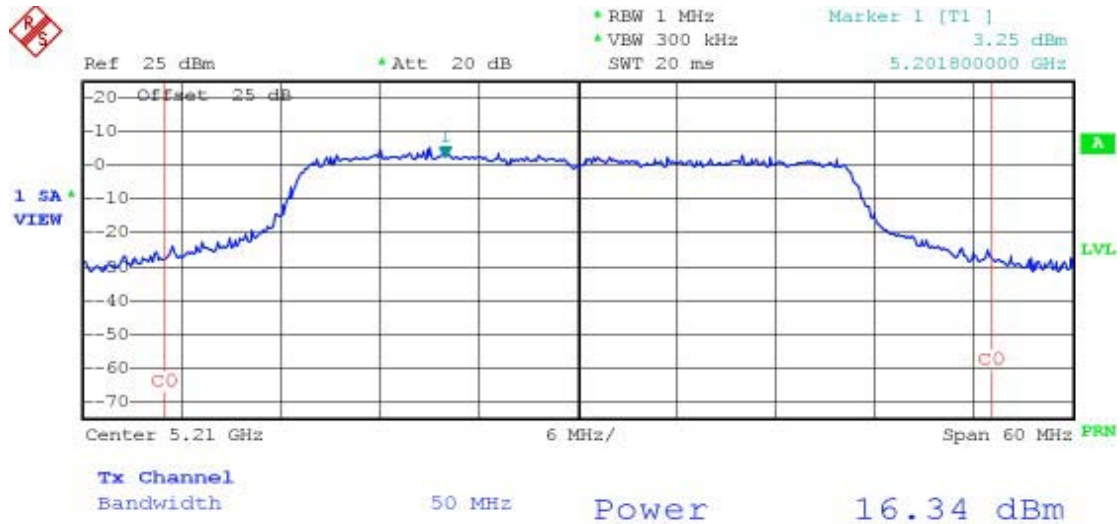
Power Limits:

5150MHz~5250MHz is 17dBm or 26dB bandwidth of Power Limits, whichever is less.

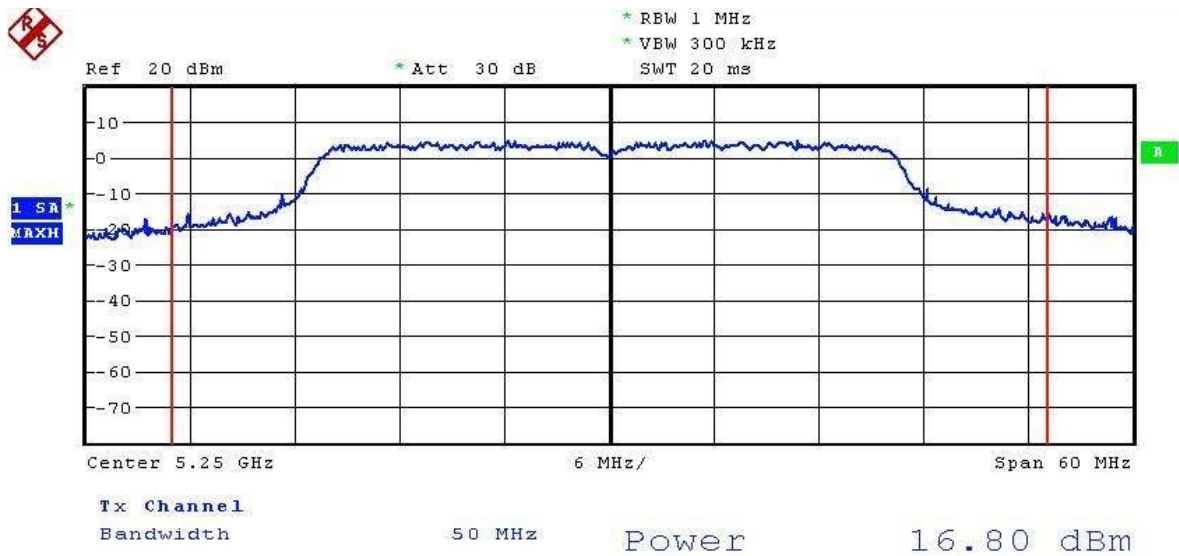
5250MHz~5350MHz is 24dBm or 26dB bandwidth of Power Limits, whichever is less.

5725MHz~5825MHz is 30dBm or 26dB bandwidth of Power Limits, whichever is less.

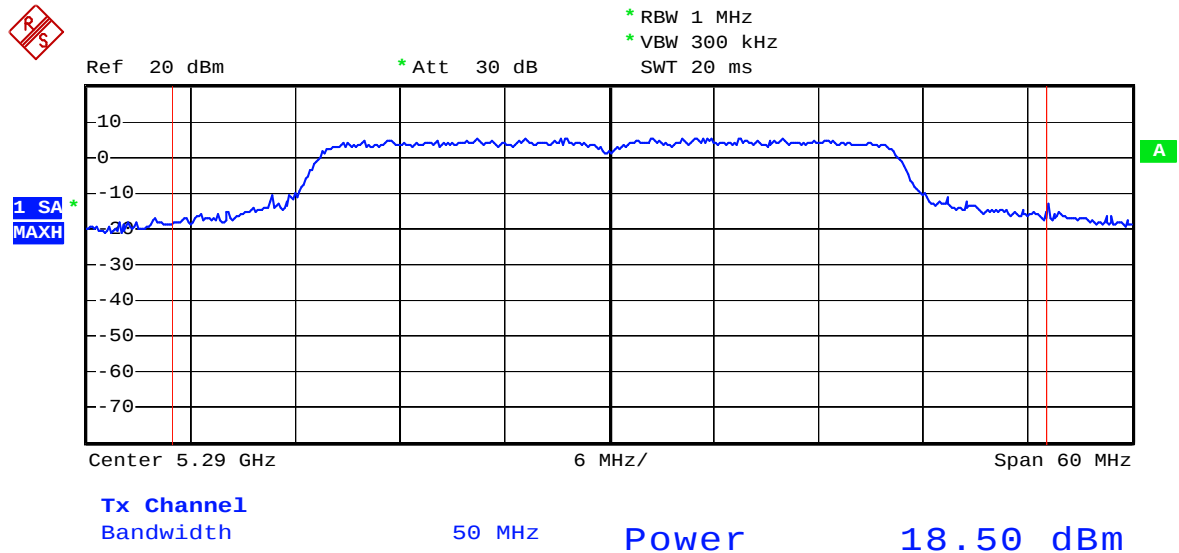
(CH 01) : 5210MHz



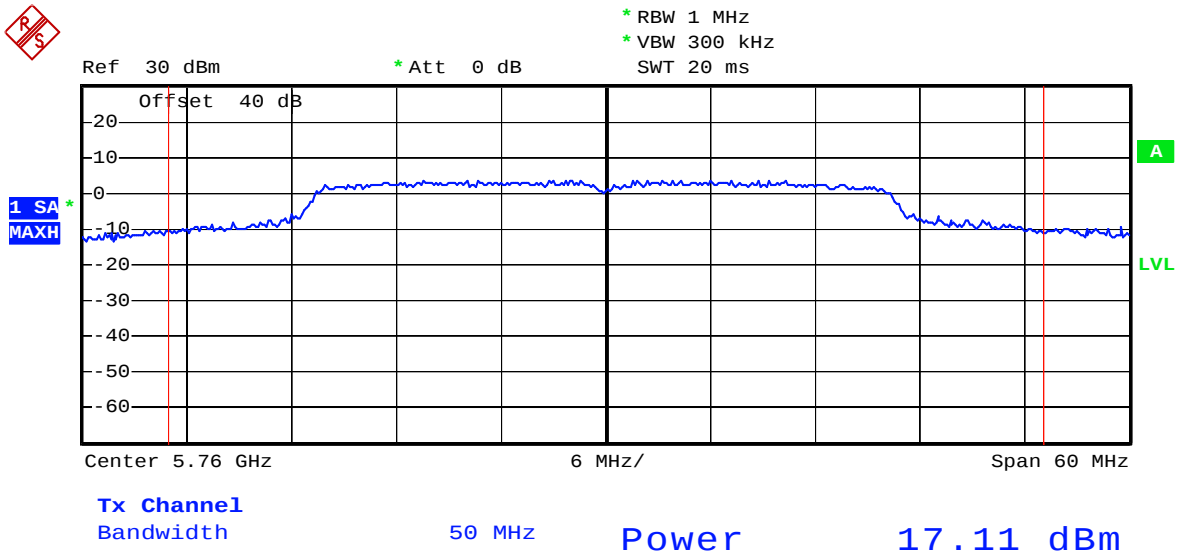
(CH 02) : 5250MHz



(CH 03) : 5290MHz

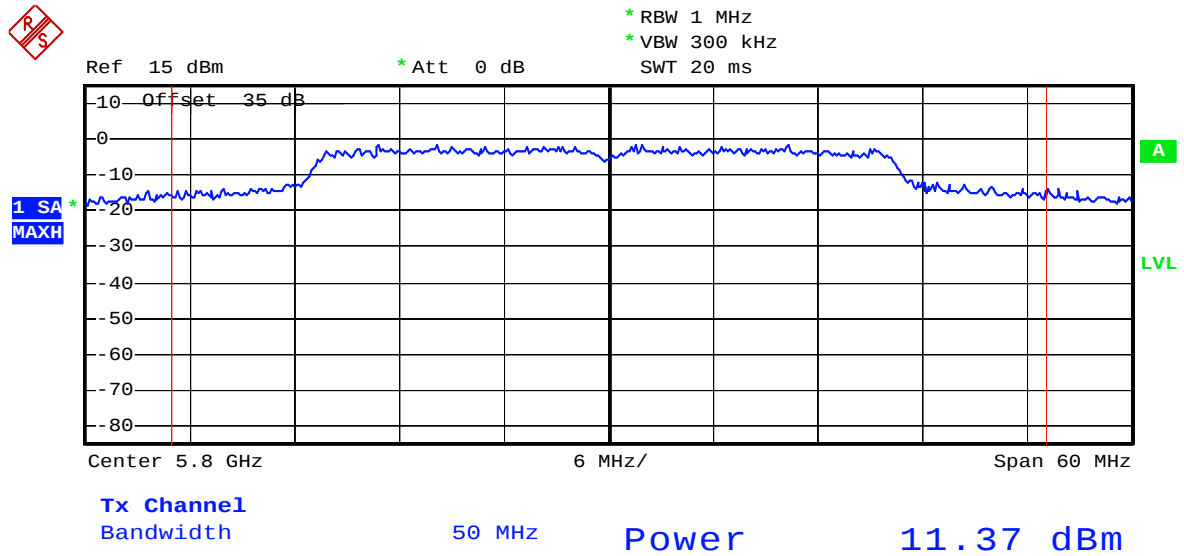


(CH 04) : 5760MHz





(CH 05) : 5800MHz



5.3. Test of Peak Power Spectral Density

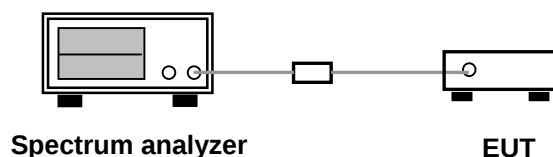
5.3.1. Measuring Instruments

Item 7 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 1000kHz and VBW to 3000kHz.
3. Use sample detector mode, span 50MHz and trace average of 100 sweeps time
4. Mark peak power and record the power density.

5.3.3. Test Setup Layout

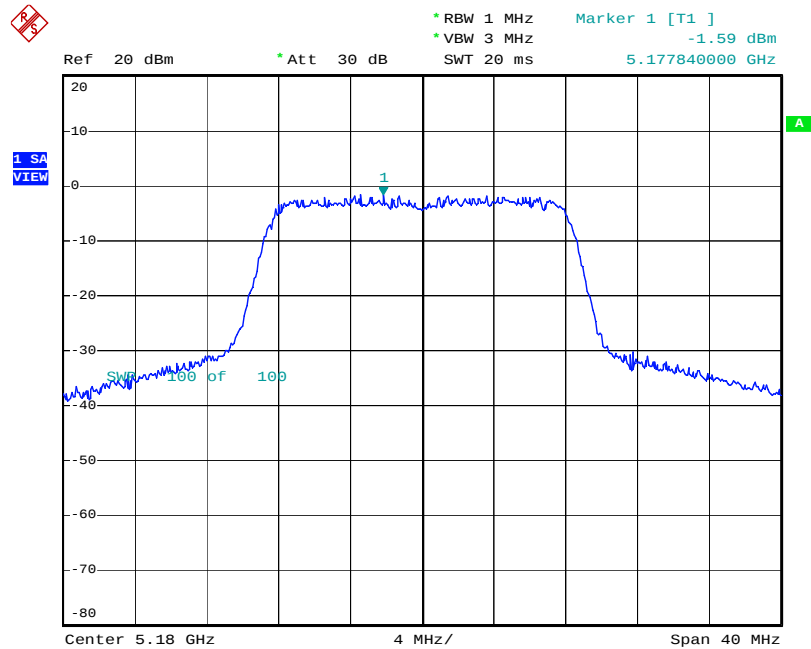


5.3.4. Test Result : See spectrum analyzer plots below

- Normal Mode
- Temperature: 25°C
- Relative Humidity: 62 %
- Duty cycle of the equipment during the test: 100%

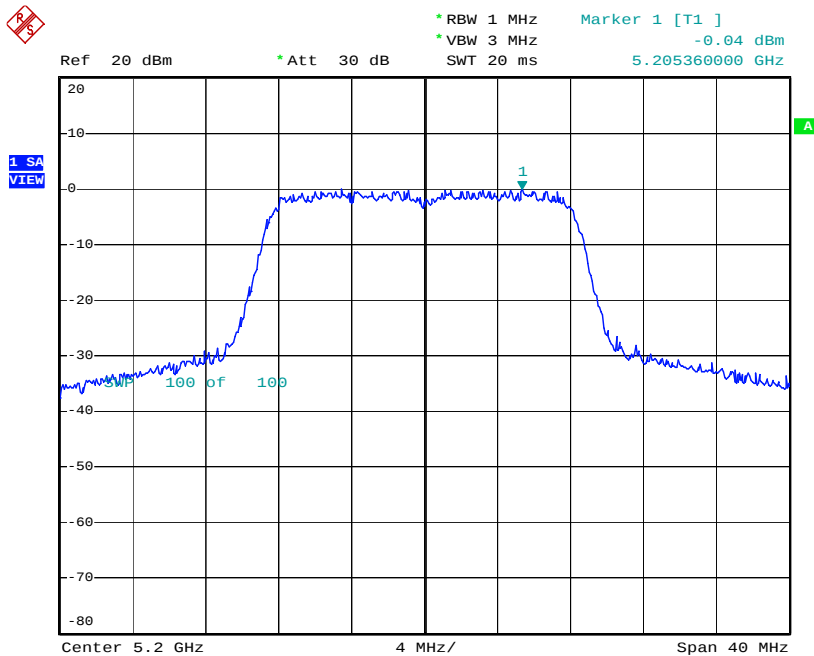
Channel	Frequency (MHz)	Density (dBm)	Limits (dBm)
01	5180	-1.59	4dBm
02	5200	-0.04	4dBm
04	5240	0.56	4dBm
05	5260	5.73	11dBm
06	5280	5.48	11dBm
08	5320	-0.72	11dBm
09	5745	6.93	17dBm
10	5765	7.14	17dBm
12	5805	-1.86	17dBm

(CH 01) : 5180MHz



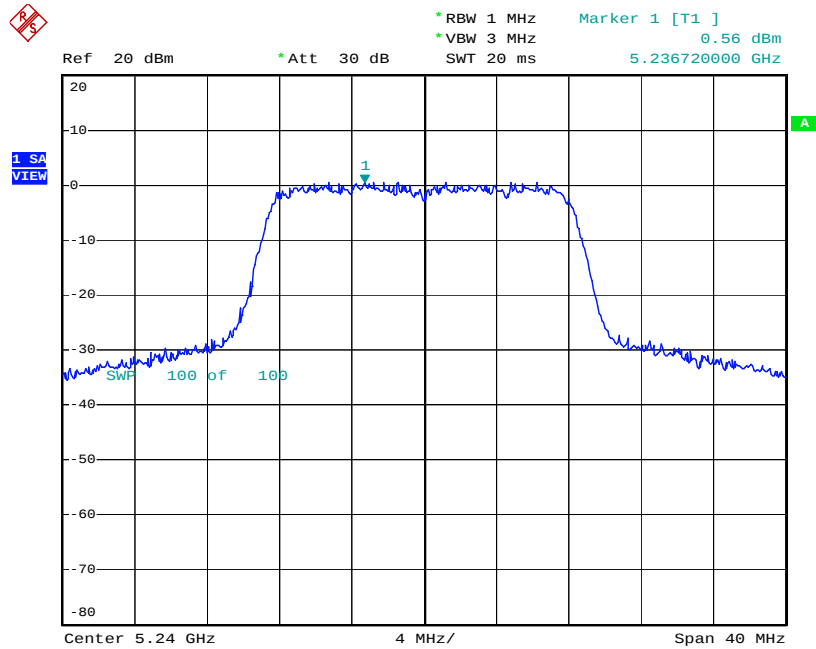
Date: 1.JUL.2004 20:19:06

(CH 02) : 5200MHz



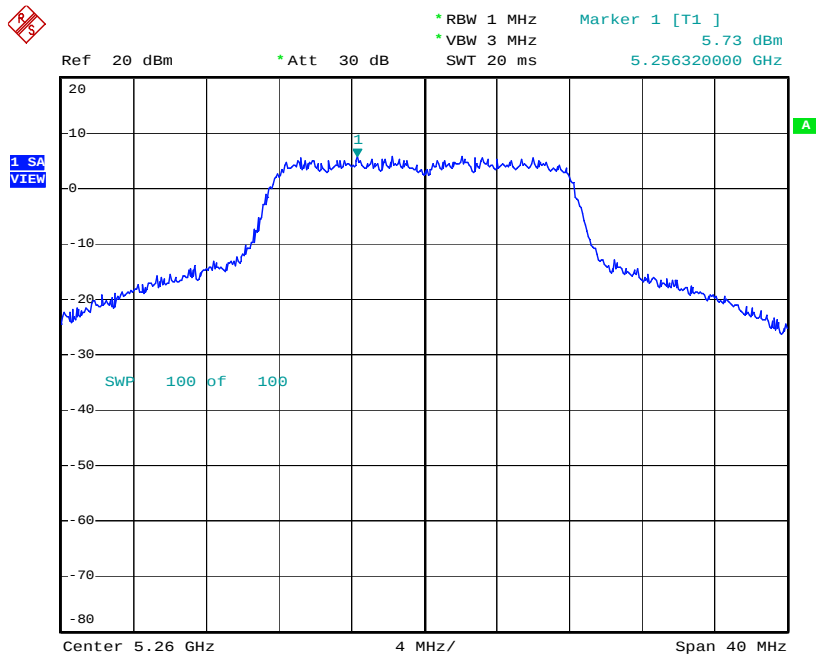
Date: 1.JUL.2004 20:23:47

(CH 04) : 5240MHz



Date: 1.JUL.2004 20:25:10

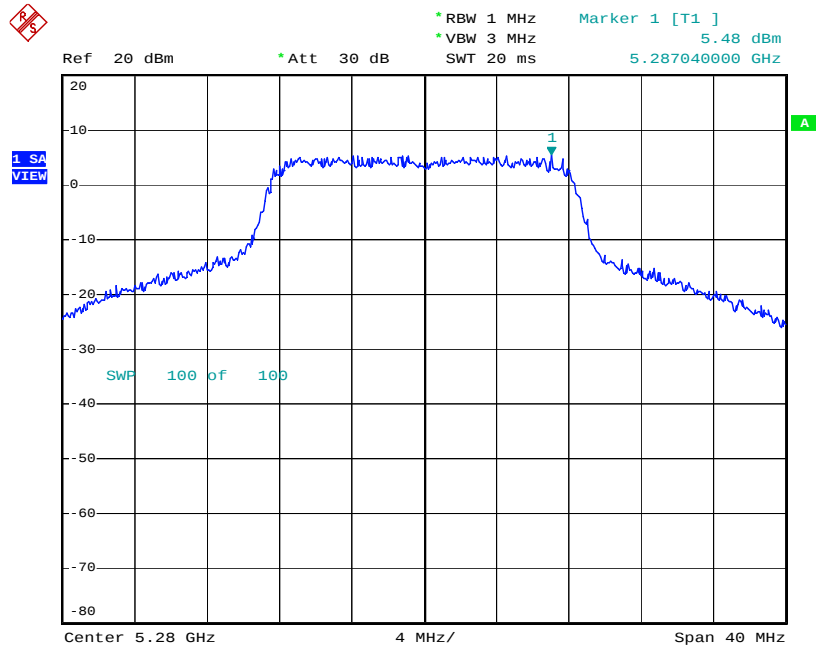
(CH 05) : 5260MHz



Date: 1.JUL.2004 20:30:38

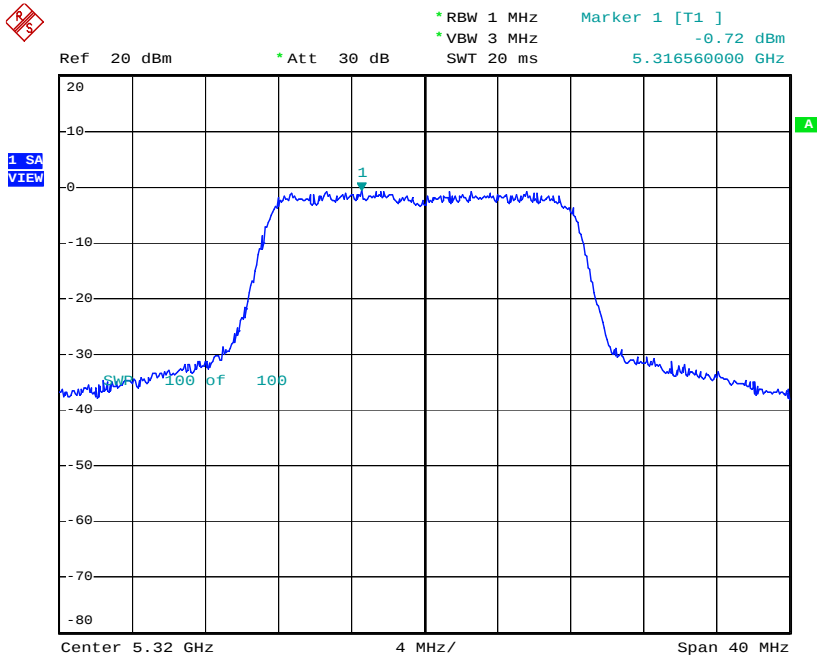


(CH 06) : 5280MHz



Date: 1.JUL.2004 20:39:15

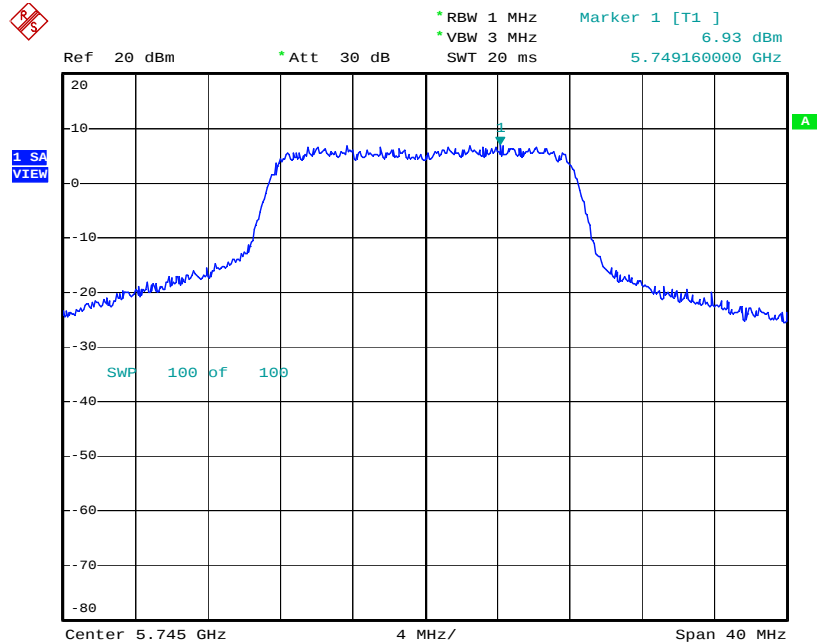
(CH 08) : 5320MHz



Date: 1.JUL.2004 20:42:07

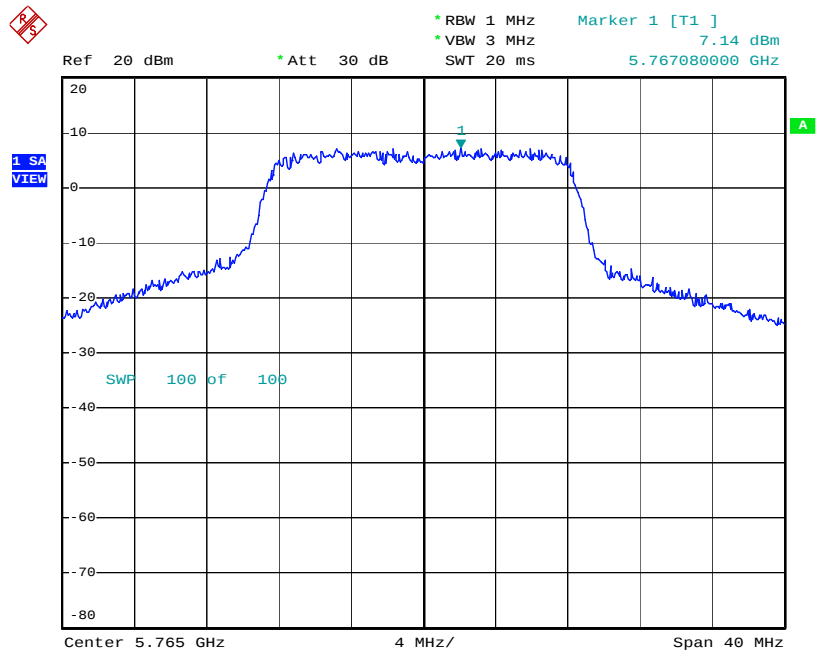


(CH 09) : 5745MHz



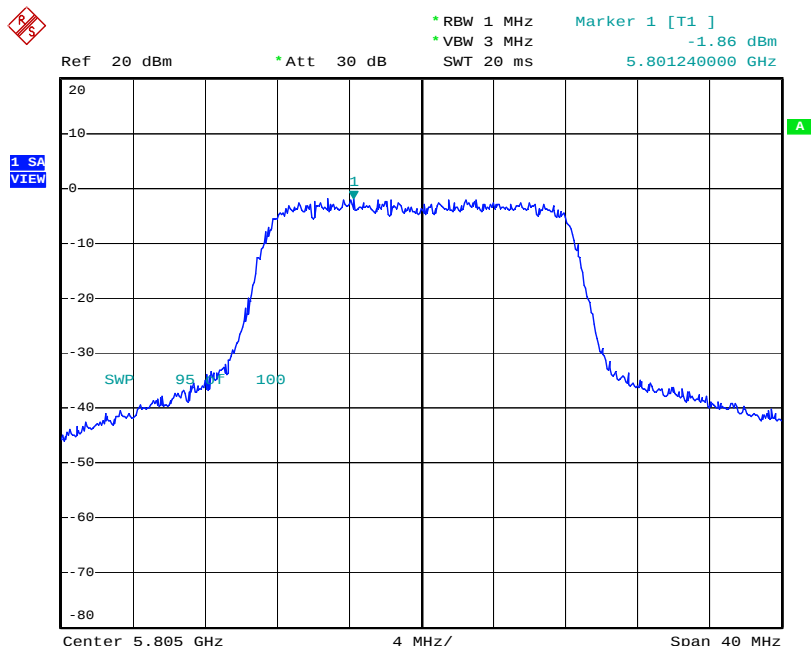
Date: 1.JUL.2004 22:06:46

(CH 10) : 5765MHz



Date: 1.JUL.2004 22:09:25

(CH 12) : 5805MHz

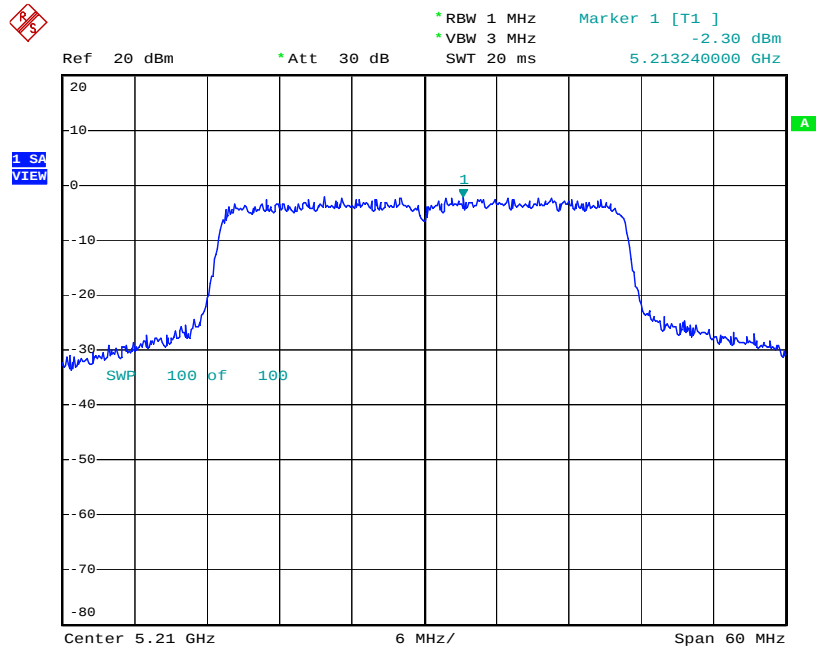


Date: 1.JUL.2004 22:23:07

- Turbo Mode
- Temperature: 25°C
- Relative Humidity: 62 %
- Duty cycle of the equipment during the test: 100%

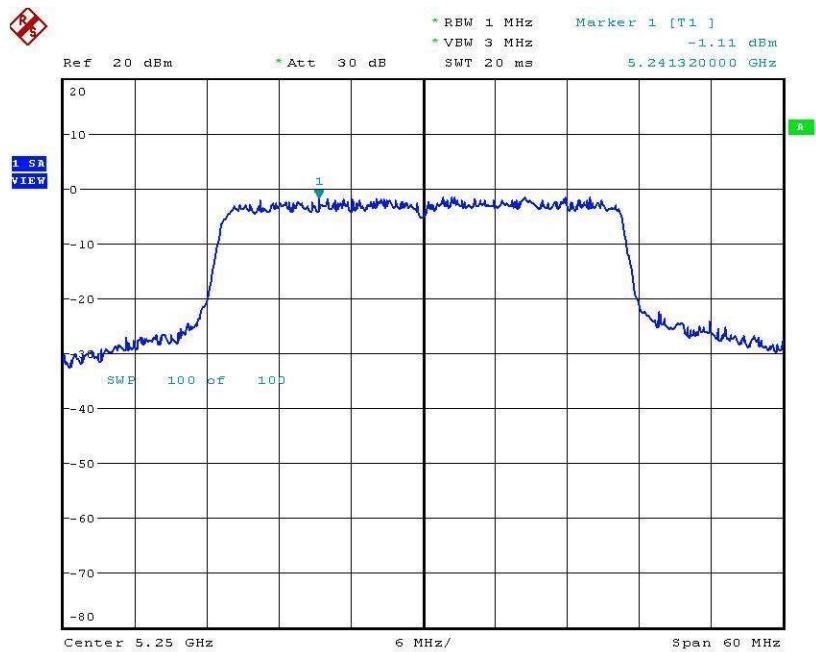
Channel	Frequency (MHz)	Density (dBm)	Limits (dBm)
01	5210	-2.30	4dBm
02	5250	-1.11	4dBm
03	5290	-0.52	11dBm
04	5760	-3.38	17dBm
05	5800	-4.06	17dBm

(CH 01) : 5210MHz



Date: 16.JUL.2004 04:04:06

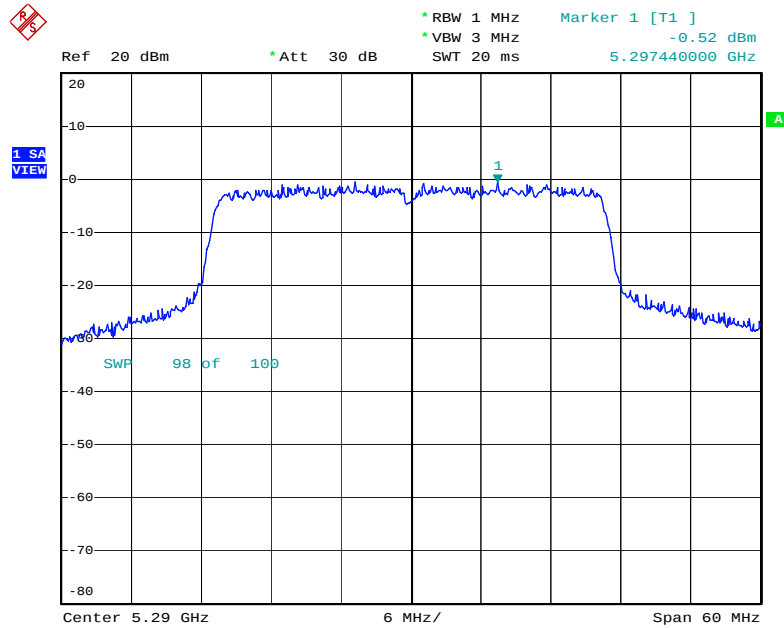
(CH 02) : 5250MHz



Date: 30.AUG.2004 20:40:04

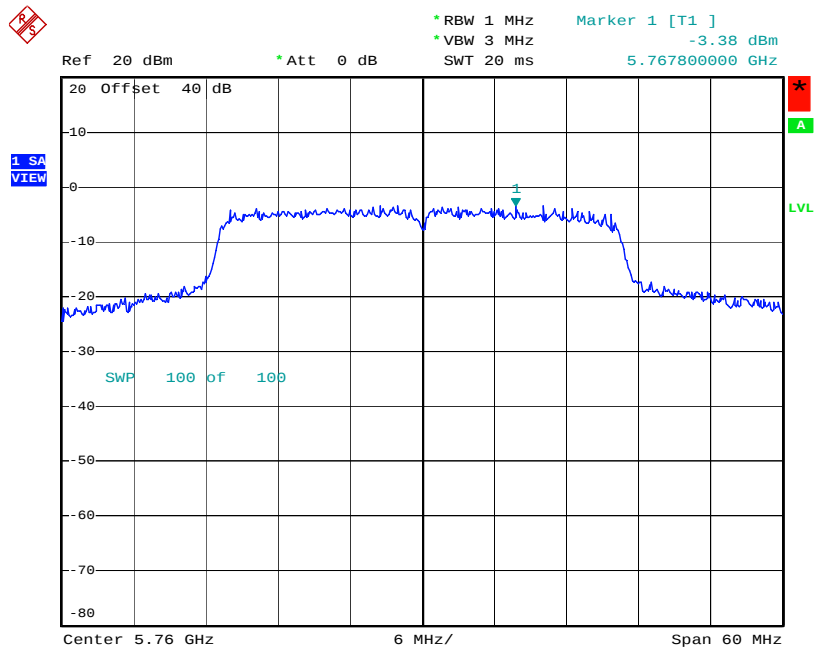


(CH 03) : 5290MHz



Date: 16.JUL.2004 04:09:09

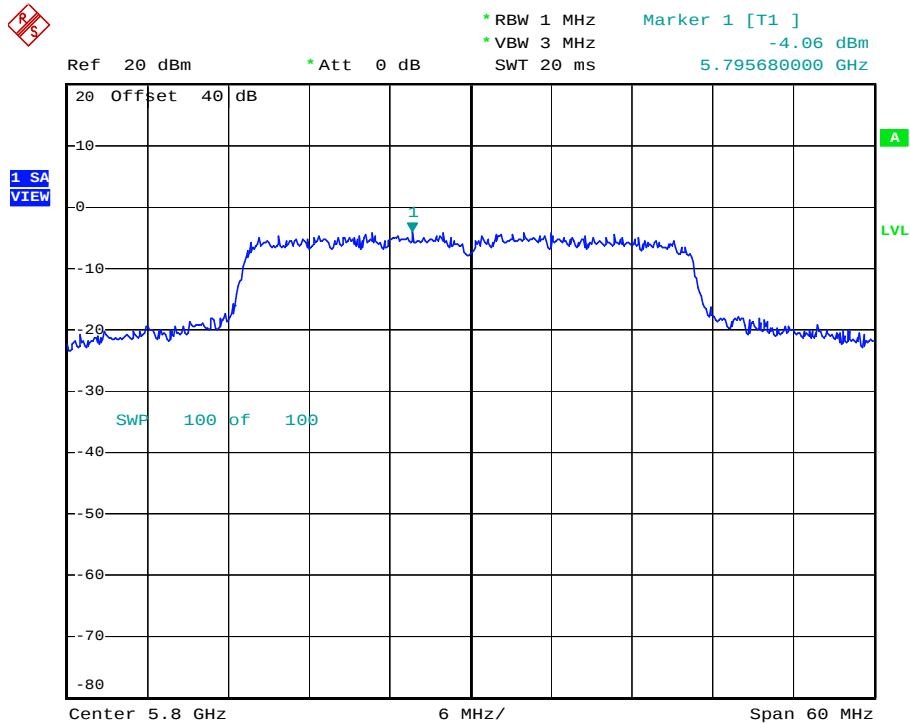
(CH 04) : 5760MHz



Date: 16.JUL.2004 05:39:51



(CH 05) : 5800MHz



Date: 16.JUL.2004 05:58:20

5.4. Test of the Ratio of Peak Excursion

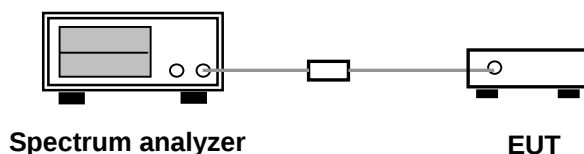
5.4.1. Measuring Instruments

Item 7 of the table 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.
Use peak detector mode, Max-hold and search the peak of trace 1.
3. Trace 1: Set RBW of spectrum analyzer to 1000kHz and VBW to 300kHz.
Use sample detector mode, trace max-hold and search the peak of trace 2
4. The delta limits is 13dB between trace 1 and trace 2 of the peak value.

5.4.3. Test Setup Layout

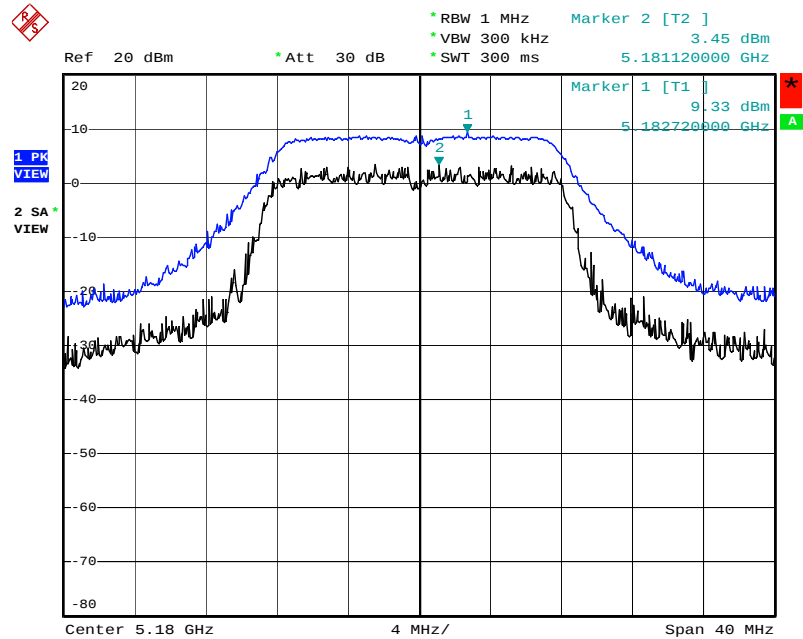


5.4.4. Test Result : See spectrum analyzer plots below

- Normal Mode
- Temperature: 25°C
- Relative Humidity: 62 %
- Duty cycle of the equipment during the test: 100%

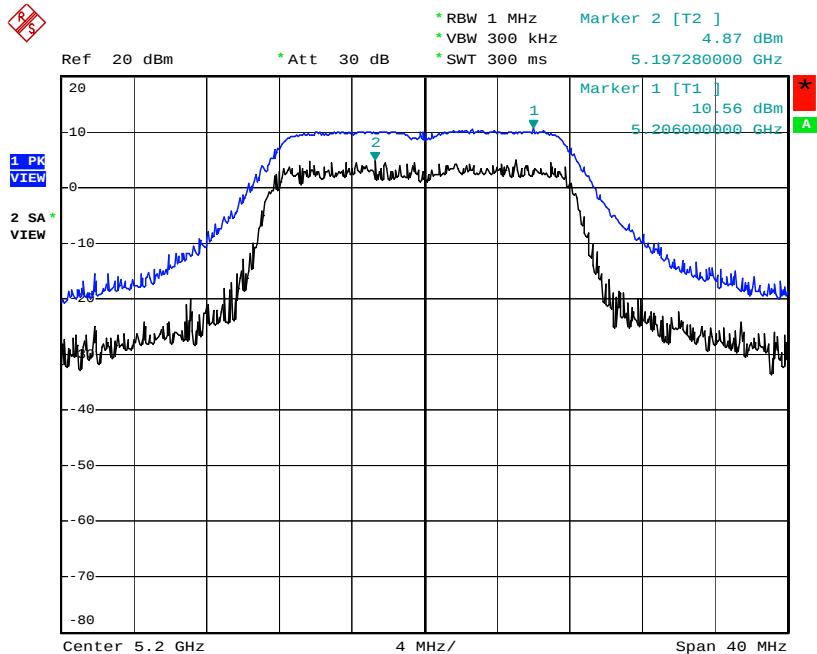
Channel	Frequency (MHz)	Peak Excursion (dB)	Limits (dB)
01	5180	5.89	13
02	5200	5.89	13
04	5240	5.07	13
05	5260	4.84	13
06	5280	5.26	13
08	5320	5.20	13
09	5745	5.06	13
10	5765	4.81	13
12	5805	6.26	13

(CH 01) : 5180MHz



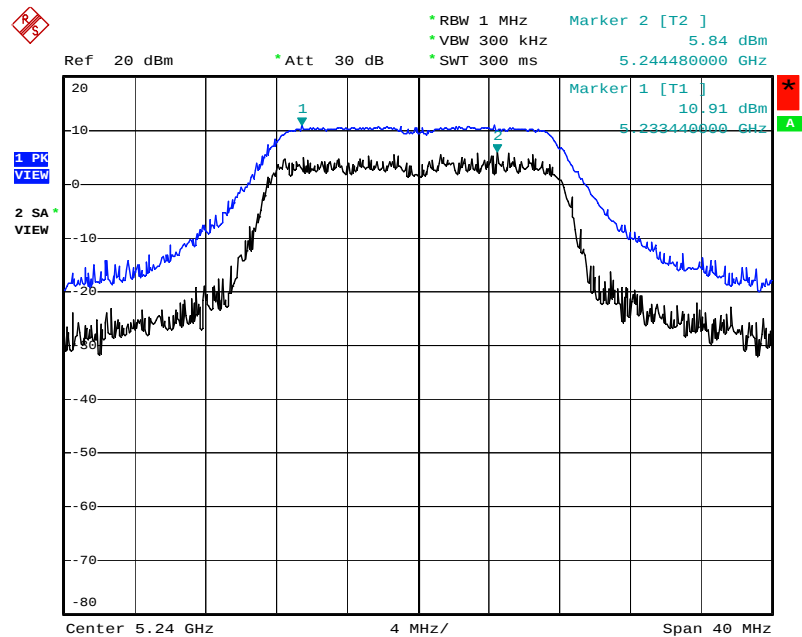
Date: 1.JUL.2004 20:19:37

(CH 02) : 5200MHz



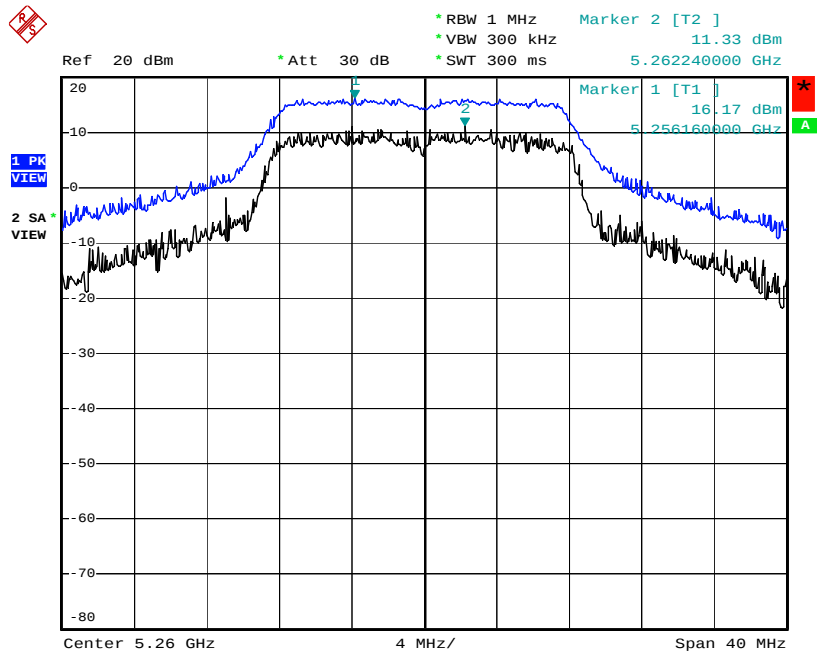
Date: 1.JUL.2004 20:24:18

(CH 04) : 5240MHz



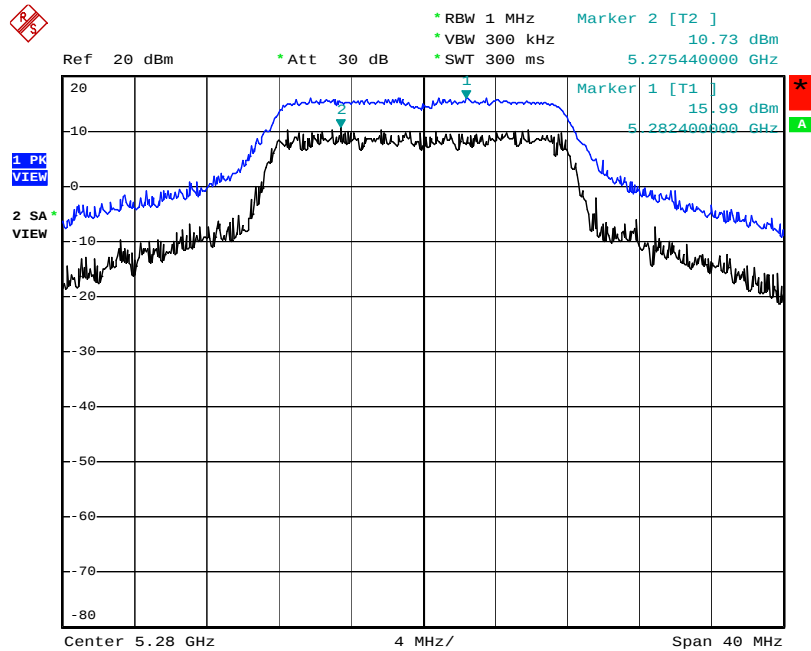
Date: 1.JUL.2004 20:25:41

(CH 05) : 5260MHz



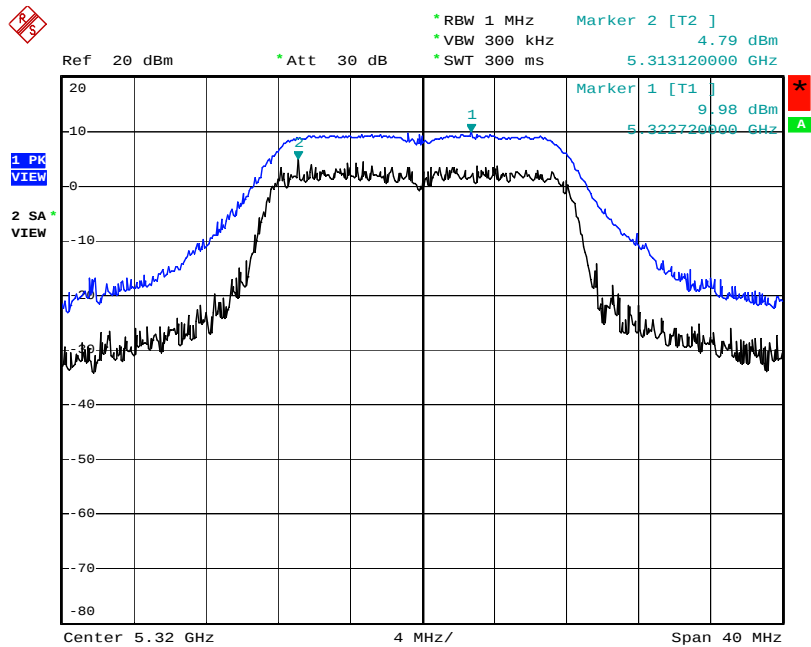
Date: 1.JUL.2004 20:31:09

(CH 06) : 5280MHz



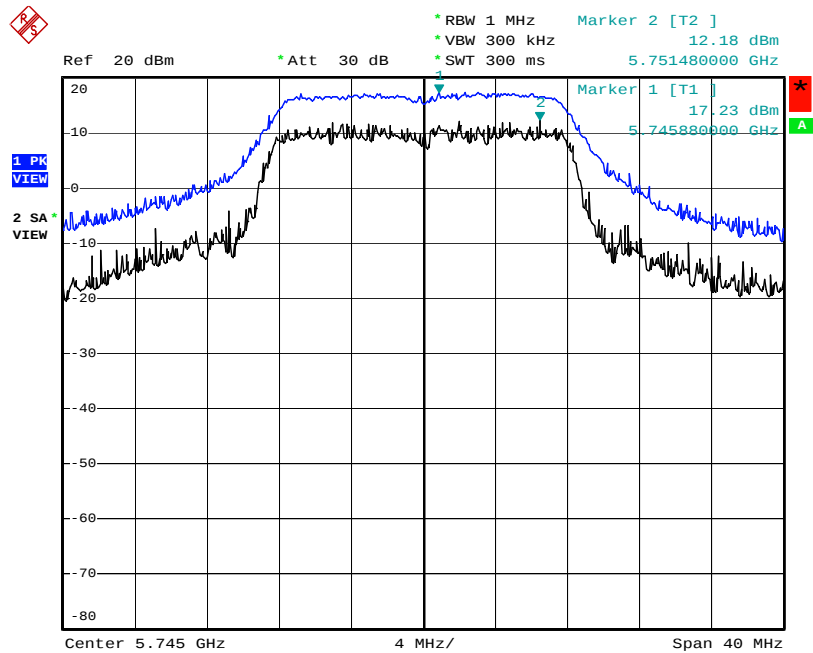
Date: 1.JUL.2004 20:39:46

(CH 08) : 5320MHz



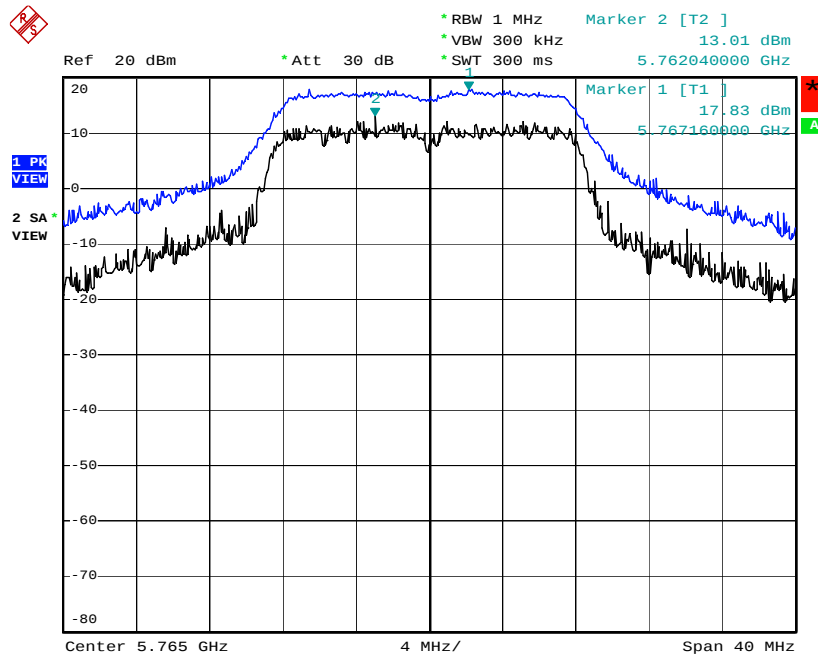
Date: 1.JUL.2004 20:42:38

(CH09) : 5745MHz



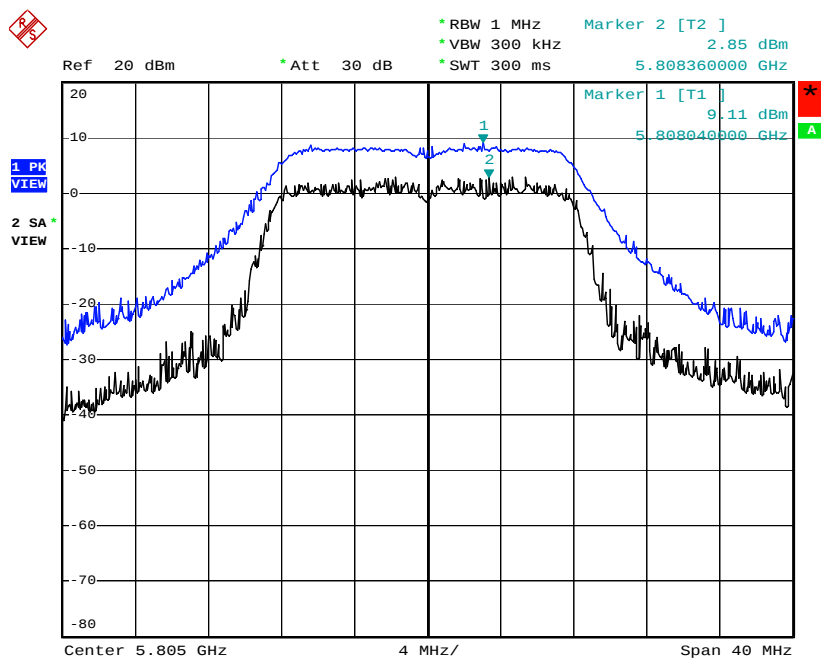
Date: 1.JUL.2004 22:07:17

(CH 10) : 5765MHz



Date: 1.JUL.2004 22:09:56

(CH12) : 5805MHz

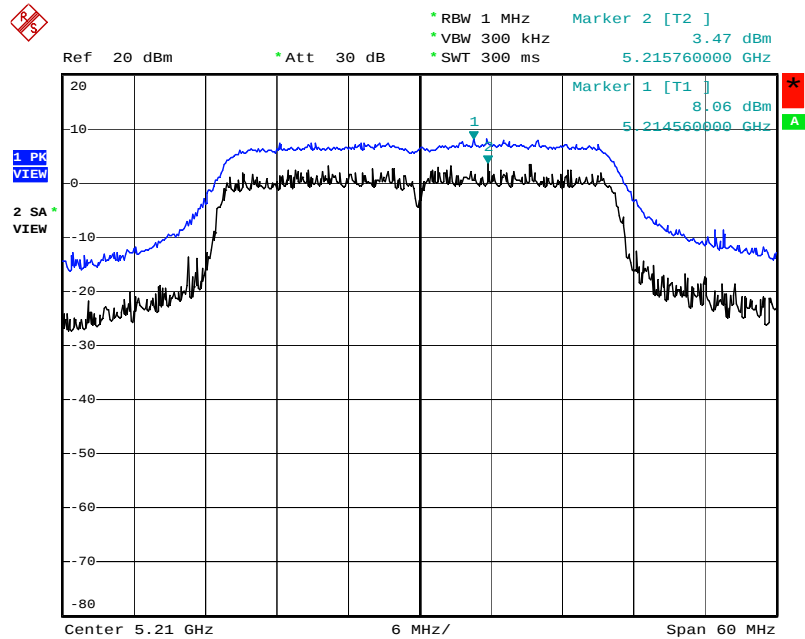


Date: 1.JUL.2004 22:23:38

- Turbo Mode
- Temperature: 25°C
- Relative Humidity: 62 %
- Duty cycle of the equipment during the test: 100%

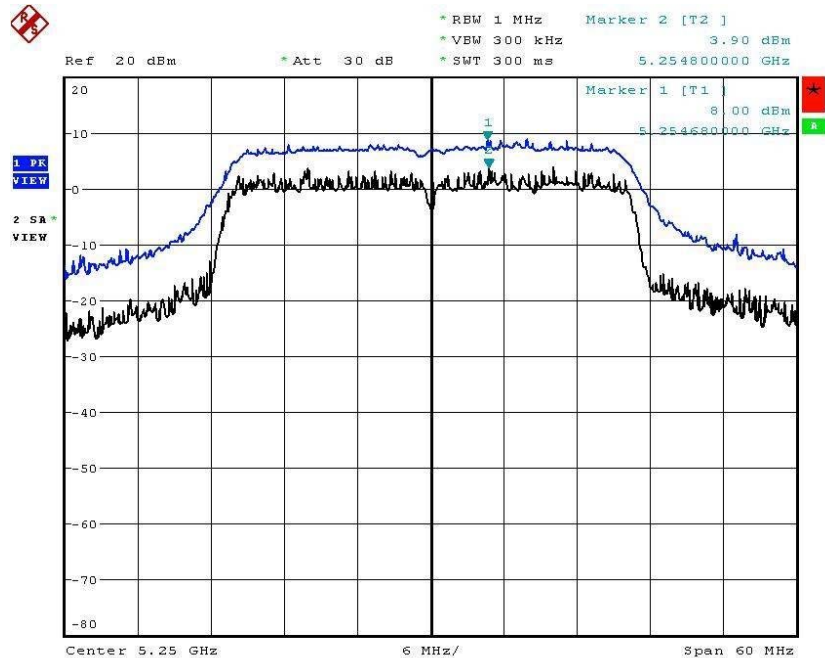
Channel	Frequency (MHz)	Peak Excursion (dB)	Limits (dB)
01	5210	4.59	13
02	5250	4.10	13
03	5290	4.49	13
04	5760	5.74	13
05	5800	4.30	13

(CH 01) : 5210MHz



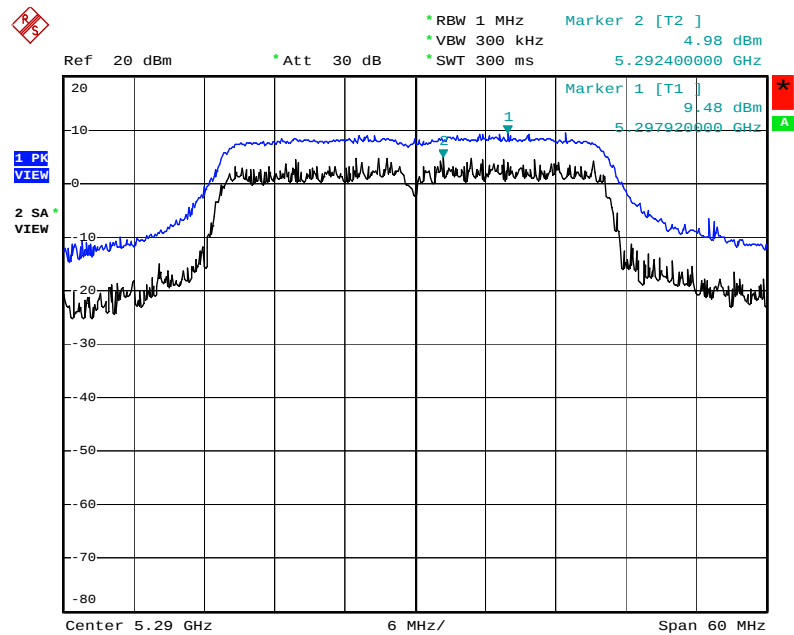
Date: 16.JUL.2004 04:04:37

(CH 02) : 5250MHz



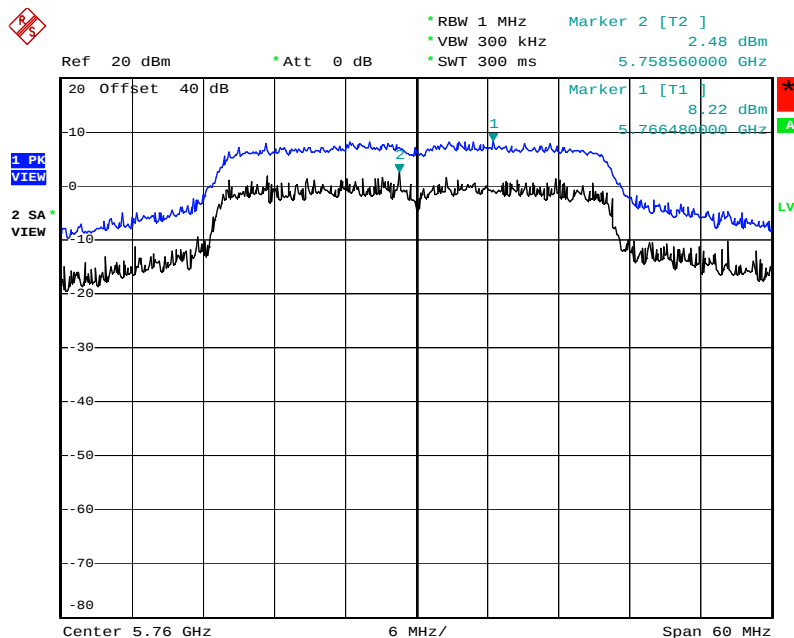
Date: 30.AUG.2004 20:00:00

(CH 03) : 5290MHz



Date: 16.JUL.2004 04:09:39

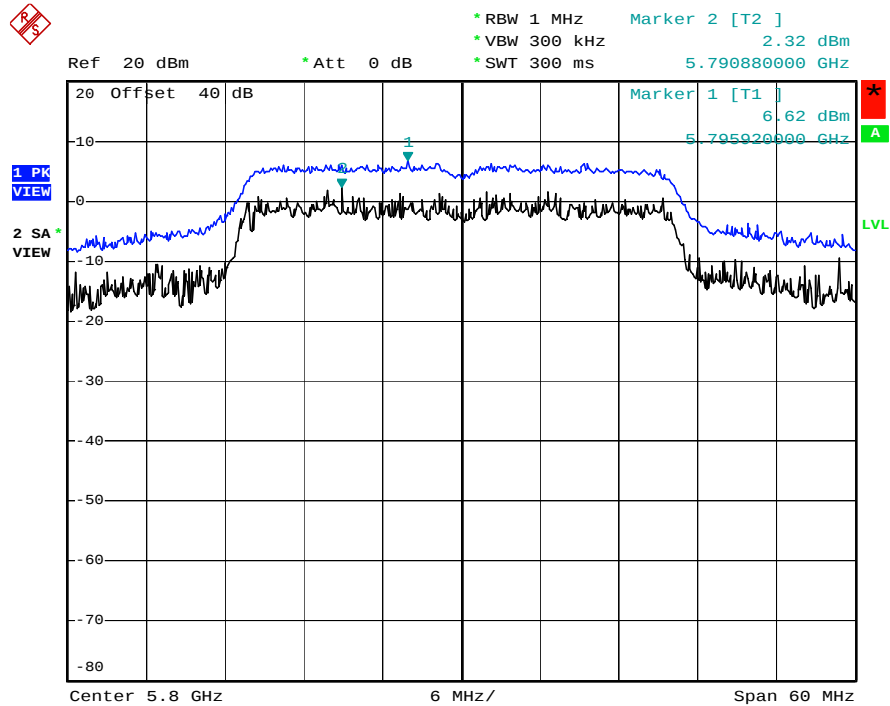
(CH 04) : 5760MHz



Date: 16.JUL.2004 05:41:30



(CH 05) : 5800MHz



Date: 16.JUL.2004 05:46:21



5.5. Test of Band Edges of the Operating Frequency

5.5.1. Measuring Instruments

Item 9 of the table on section 6.

5.5.2. 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 1000KHz and 300Hz 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.

5.5.3. Test Result

Test Result in lower band (Channel 01) :	PASS
Test Result in higher band(Channel 11) :	PASS

5.5.4. Note on Band edge Emission

(For Frequency Band 5.15~5.35GHz)

Normal Mode

(A) Left Edge

The band edge emission plot shows 46.06dB delta between carrier maximum power and local maximum emission in the restricted band.

Mode 1

CH01 Carrier power strength (dB μ V/m)	Delta (dB)	The maximum field strength in restrict band (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
87.90	46.06	41.84	54.00	-12.16

Mode 2

CH01 Carrier power strength (dB μ V/m)	Delta (dB)	The maximum field strength in restrict band (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
94.07	46.06	48.01	54.00	-5.99

Mode 3

CH01 Carrier power strength (dB μ V/m)	Delta (dB)	The maximum field strength in restrict band (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
89.33	46.06	43.27	54.00	-10.73

(B) Right Edge

The band edge emission plot shows 45.68dB delta between carrier maximum power and local maximum emission in the restricted band

Mode 1

CH08 Carrier power strength (dB μ V/m)	Delta (dB)	The maximum field strength in restrict band (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
88.10	45.68	42.42	54.00	-11.58

Mode 2

CH08 Carrier power strength (dB μ V/m)	Delta (dB)	The maximum field strength in restrict band (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
96.20	45.68	50.52	54.00	-3.48

Mode 3

CH08 Carrier power strength (dB μ V/m)	Delta (dB)	The maximum field strength in restrict band (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
94.26	45.68	48.58	54.00	-5.42

* The maximum field strength in restricted band is the emission of carrier power strength subtract to the delta between carrier maximum power and local maximum emission in the restricted band.

Turbo Mode

(A) Left Edge

The band edge emission plot shows 46.13dB delta between carrier maximum power and local maximum emission in the restricted band.

Mode 1

CH01 Carrier power strength (dB μ V/m)	Delta (dB)	The maximum field strength in restrict band (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
87.61	46.13	41.48	54.00	-12.52

Mode 2

CH01 Carrier power strength (dB μ V/m)	Delta (dB)	The maximum field strength in restrict band (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
86.20	46.13	40.07	54.00	-13.93

Mode 3

CH01 Carrier power strength (dB μ V/m)	Delta (dB)	The maximum field strength in restrict band (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
86.39	46.13	40.26	54.00	-13.74

(B) Right Edge

The band edge emission plot shows 43.09dB delta between carrier maximum power and local maximum emission in the restricted band.

Mode 1

CH03 Carrier power strength (dB μ V/m)	Delta (dB)	The maximum field strength in restrict band (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
88.51	43.09	45.42	54.00	-8.58

Mode 2

CH03 Carrier power strength (dB μ V/m)	Delta (dB)	The maximum field strength in restrict band (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
86.58	43.09	45.49	54.00	-10.51

Mode 3

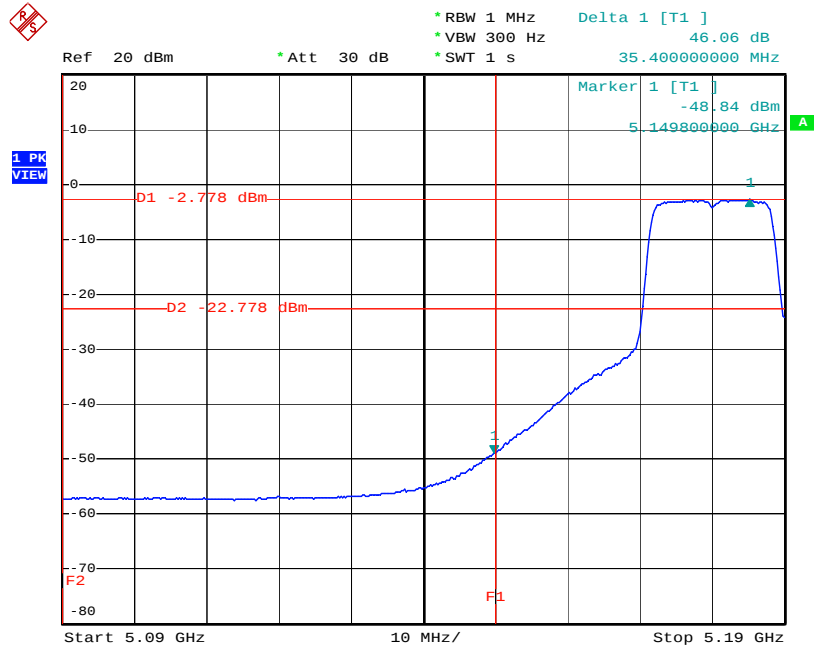
CH03 Carrier power strength (dB μ V/m)	Delta (dB)	The maximum field strength in restrict band (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
90.67	43.09	47.58	54.00	-6.42

* The maximum field strength in restricted band is the emission of carrier power strength subtract to the delta between carrier maximum power and local maximum emission in the restricted band.



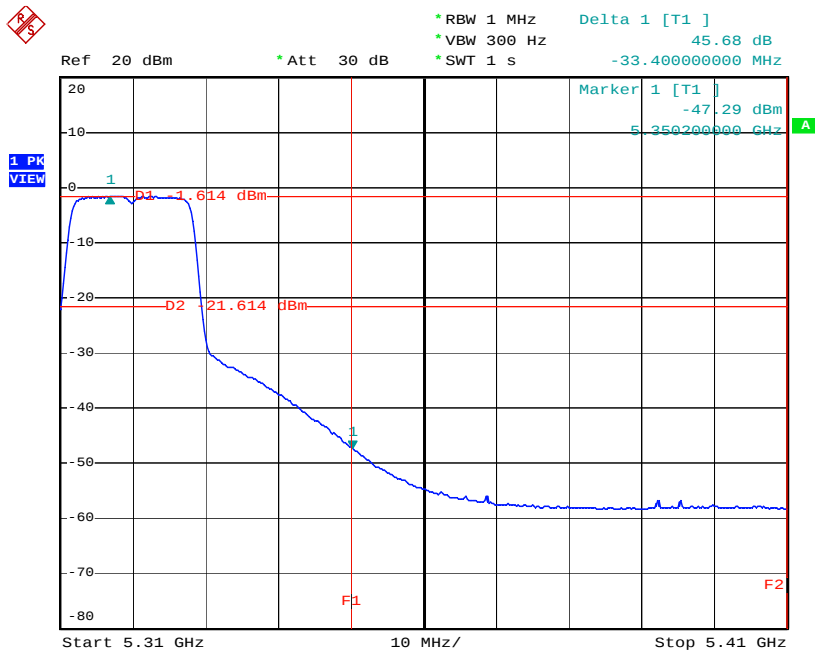
Normal Mode

(CH 01) : 5180MHz



Date: 1.JUL.2004 20:19:54

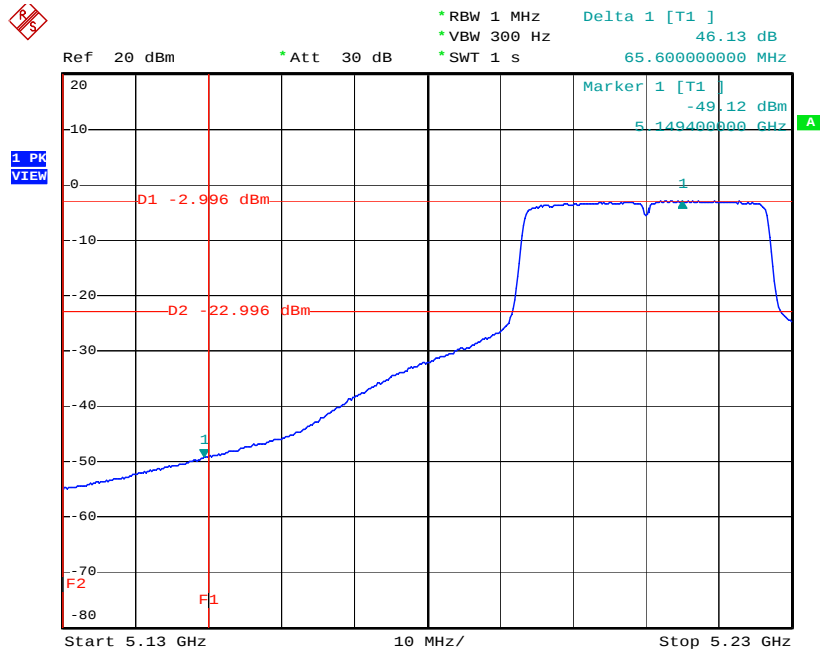
(CH 08) : 5320MHz



Date: 1.JUL.2004 20:42:55

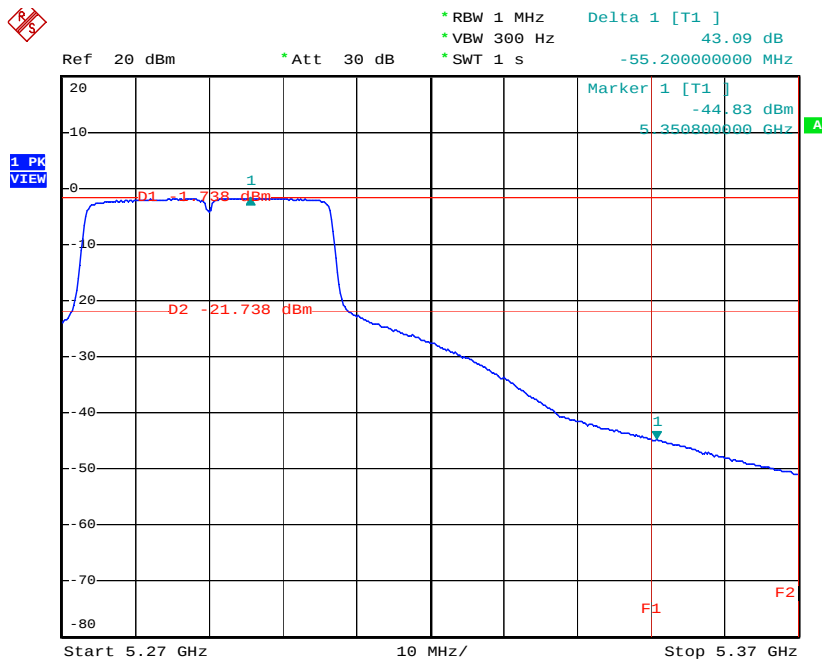
Turbo Mode

(CH 01) : 5210MHz



Date: 16.JUL.2004 04:04:54

(CH 03) : 5290MHz



Date: 16.JUL.2004 04:09:56

(For Frequency Band 5.725~5.825GHz)

Normal Mode

(A)Left Edge

Mode 1

Spurious (MHz)	Maximum EIRP outside Bandedge (dBm)	Limit (dBm)	Margin (dB)
5724.72	-21.19	-17	-4.19
5714.40	-31.25	-27	-4.25

Mode 2

Spurious (MHz)	Maximum EIRP outside Bandedge (dBm)	Limit (dBm)	Margin (dB)
5723.92	-19.15	-17	-2.15
5714.40	-29.22	-27	-2.22

Mode 3

Spurious (MHz)	Maximum EIRP outside Bandedge (dBm)	Limit (dBm)	Margin (dB)
5723.92	-19.32	-17	-2.32
5714.80	-30.10	-27	-3.10

(B) Right Edge

Mode 1

Spurious (MHz)	Maximum EIRP outside Bandedge (dBm)	Limit (dBm)	Margin (dB)
5825.44	-19.45	-17	-2.45
5836.24	-28.57	-27	-1.57

Mode 2

Spurious (MHz)	Maximum EIRP outside Bandedge (dBm)	Limit (dBm)	Margin (dB)
5825.44	-19.15	-17	-2.15
5837.44	-27.42	-27	-0.42

Mode 3

Frequency (MHz)	The maximum EIRP power outside bandedge (dBm)	Limit (dBm)	Margin (dB)
5825.92	-19.83	-17	-2.83
5844.88	-29.27	-27	-2.27

Turbo Mode

(A)Left Edge

Mode 1

Spurious (MHz)	Maximum EIRP outside Bandedge (dBm)	Limit (dBm)	Margin (dB)
5724.72	-22.35	-17	-5.35
5714.16	-32.88	-27	-5.88

Mode 2

Spurious (MHz)	Maximum EIRP outside Bandedge (dBm)	Limit (dBm)	Margin (dB)
5722.80	-20.91	-17	-3.91
5714.64	-31.04	-27	-4.04

Mode 3

Spurious (MHz)	Maximum EIRP outside Bandedge (dBm)	Limit (dBm)	Margin (dB)
5721.92	-19.68	-17	-2.68
5714.76	-28.55	-27	-1.55

(B) Right Edge

Mode 1

Spurious (MHz)	Maximum EIRP outside Bandedge (dBm)	Limit (dBm)	Margin (dB)
5825.20	-22.11	-17	-5.11
5836.72	-28.56	-27	-1.56

Mode 2

Spurious (MHz)	Maximum EIRP outside Bandedge (dBm)	Limit (dBm)	Margin (dB)
5825.44	-21.67	-17	-4.67
5835.52	-28.95	-27	-1.95

Mode 3

Spurious (MHz)	Maximum EIRP outside Bandedge (dBm)	Limit (dBm)	Margin (dB)
5825.20	-18.97	-17	-1.97
5835.28	-28.03	-27	-1.03

5.6. Test of Spurious Radiated Emission

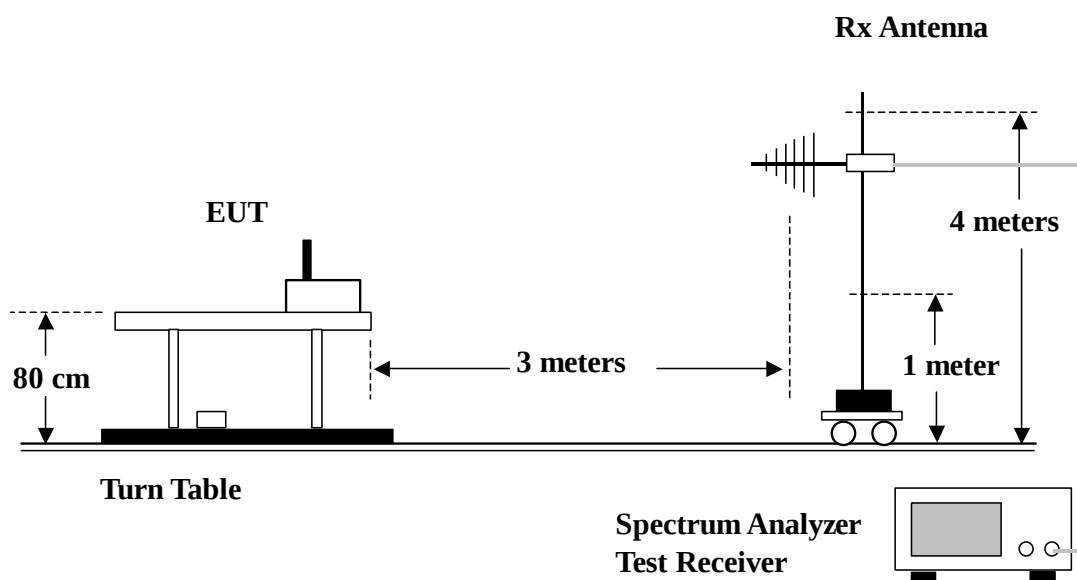
5.6.1. Measuring Instruments

Please reference item 8~19 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 300Hz 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 spurious emission below 1GHz

Note:

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

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

Normal Mode					
Test Mode	Mode 1 CH12	Temperature	27 deg. C	Tested By	Ted Chiu
Freq. Range	30MHz~1GHz	Humidity	45%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	56.350	29.00	-11.00	40.00	44.45	10.83	1.27	27.55	Peak	---	---
2	89.670	30.50	-13.00	43.50	47.64	8.52	1.62	27.28	Peak	---	---
3	143.220	26.73	-16.77	43.50	39.37	12.36	2.11	27.11	Peak	---	---
1 !	374.400	42.44	-3.56	46.00	50.41	16.04	3.38	27.39	Peak	---	---
2	400.000	36.04	-9.96	46.00	43.47	16.80	3.47	27.70	Peak	---	---
3	900.000	38.67	-7.33	46.00	38.83	21.70	5.34	27.20	Peak	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1 !	34.420	36.55	-3.45	40.00	50.97	12.02	1.01	27.45	QP	---	---
2 !	58.390	36.49	-3.51	40.00	52.10	10.64	1.28	27.53	QP	---	---
3 !	80.830	36.82	-3.18	40.00	53.21	9.41	1.55	27.35	QP	139	70
1	448.800	36.23	-9.77	46.00	44.01	16.41	3.71	27.90	Peak	---	---
2	630.400	36.99	-9.01	46.00	40.35	20.49	4.46	28.31	Peak	---	---
3	720.000	38.02	-7.98	46.00	40.33	20.95	4.76	28.02	Peak	---	---



Note:

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

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

Normal Mode					
Test Mode	Mode 2 CH12	Temperature	27 deg. C	Tested By	Ted Chiu
Freq. Range	30MHz~1GHz	Humidity	45%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	37.140	23.54	-16.46	40.00	37.78	12.19	1.04	27.47	Peak	---	---
2	58.390	26.39	-13.61	40.00	42.00	10.64	1.28	27.53	Peak	---	---
3	180.110	28.42	-15.08	43.50	38.83	14.20	2.43	27.04	Peak	---	---
1 !	900.000	40.04	-5.96	46.00	40.20	21.70	5.34	27.20	Peak	---	---
2 !	944.800	41.65	-4.35	46.00	40.74	22.69	5.51	27.29	Peak	---	---
3 !	957.600	42.49	-3.51	46.00	41.20	22.96	5.65	27.32	QP	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1 !	34.420	36.15	-3.85	40.00	50.57	12.02	1.01	27.45	QP	---	---
2 !	58.390	36.77	-3.23	40.00	52.38	10.64	1.28	27.53	QP	---	---
3 !	89.670	38.43	-5.07	43.50	55.57	8.52	1.62	27.28	QP	---	---
1	810.400	36.60	-9.40	46.00	37.25	21.88	5.12	27.65	Peak	---	---
2	902.400	37.45	-8.55	46.00	37.56	21.75	5.35	27.21	Peak	---	---
3 !	957.600	42.89	-3.11	46.00	41.60	22.96	5.65	27.32	QP	118	79



Note:

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

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

Normal Mode					
Test Mode	Mode 3 CH12	Temperature	27 deg. C	Tested By	Ted Chiu
Freq. Range	30MHz~1GHz	Humidity	45%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	58.390	24.13	-15.87	40.00	39.74	10.64	1.28	27.53	Peak	---	---
2	89.670	18.38	-25.12	43.50	35.52	8.52	1.62	27.28	Peak	---	---
3	180.110	21.49	-22.01	43.50	31.90	14.20	2.43	27.04	Peak	---	---
1 !	908.800	42.37	-3.63	46.00	42.32	21.90	5.37	27.22	Peak	---	---
2 !	915.200	42.03	-3.97	46.00	41.83	22.04	5.39	27.23	Peak	---	---
3 !	957.600	42.65	-3.35	46.00	41.36	22.96	5.65	27.32	QP	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1 !	34.420	36.85	-3.15	40.00	51.27	12.02	1.01	27.45	QP	148	89
2 !	62.470	36.27	-3.73	40.00	52.12	10.33	1.32	27.50	QP	---	---
3 !	89.670	40.15	-3.35	43.50	57.29	8.52	1.62	27.28	Peak	---	---
1	249.600	39.25	-6.75	46.00	50.87	12.30	2.83	26.75	Peak	---	---
2 !	902.400	42.48	-3.52	46.00	42.59	21.75	5.35	27.21	QP	---	---
3 !	957.600	42.39	-3.61	46.00	41.10	22.96	5.65	27.32	QP	---	---



5.6.5. Test Results for spurious emission above 1GHz

Note:

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

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

Normal Mode					
Test Mode	Mode 1 CH01	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	38.20	-15.80	54.00	53.14	24.04	1.21	40.19	Average	102	226
2	1260.000	36.84	-17.16	54.00	51.27	24.56	1.38	40.37	Average	---	---
3	1622.000	37.20	-16.80	54.00	50.65	25.71	1.52	40.68	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	36.79	-17.21	54.00	51.73	24.04	1.21	40.19	Average	---	---
2	1438.000	35.05	-18.95	54.00	49.07	25.07	1.46	40.55	Average	---	---
3	1622.000	36.37	-17.63	54.00	49.82	25.71	1.52	40.68	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Normal Mode					
Test Mode	Mode 1 CH04	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	36.08	-17.92	54.00	51.02	24.04	1.21	40.19	Average	---	---
2	1260.000	33.91	-20.09	54.00	48.34	24.56	1.38	40.37	Average	---	---
3	1438.000	35.28	-18.72	54.00	49.30	25.07	1.46	40.55	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	36.77	-17.23	54.00	51.71	24.04	1.21	40.19	Average	105	228
2	1438.000	34.23	-19.77	54.00	48.25	25.07	1.46	40.55	Average	---	---
3	1622.000	35.15	-18.85	54.00	48.60	25.71	1.52	40.68	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Normal Mode					
Test Mode	Mode 1 CH08	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	37.46	-16.54	54.00	52.40	24.04	1.21	40.19	Average	105	258
2	1260.000	36.30	-17.70	54.00	50.73	24.56	1.38	40.37	Average	---	---
3	1526.000	35.92	-18.08	54.00	49.73	25.35	1.46	40.62	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	37.23	-16.77	54.00	52.17	24.04	1.21	40.19	Average	---	---
2	1260.000	33.46	-20.54	54.00	47.89	24.56	1.38	40.37	Average	---	---
3	1438.000	32.80	-21.20	54.00	46.82	25.07	1.46	40.55	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Normal Mode					
Test Mode	Mode 1 CH09	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1260.000	40.04	-13.96	54.00	56.61	24.56	1.38	42.51	Average	---	---
2	1438.000	40.34	-13.66	54.00	56.39	25.07	1.46	42.58	Average	---	---
3	1798.000	40.82	-13.18	54.00	55.54	26.36	1.58	42.66	Average	---	---
1	3828.000	41.56	-12.44	54.00	50.85	32.25	2.06	43.60	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	39.11	-14.89	54.00	56.30	24.04	1.21	42.44	Average	---	---
2	1348.000	38.23	-15.77	54.00	54.61	24.81	1.35	42.54	Average	---	---
3	1438.000	43.01	-10.99	54.00	59.06	25.07	1.46	42.58	Average	105	171

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Normal Mode					
Test Mode	Mode 1 CH12	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	36.15	-17.85	54.00	51.09	24.04	1.21	40.19	Average	---	---
2	1260.000	33.88	-20.12	54.00	48.31	24.56	1.38	40.37	Average	---	---
3	1622.000	35.19	-18.81	54.00	48.64	25.71	1.52	40.68	Average	---	---
1	3868.000	47.61	-6.39	54.00	54.49	32.37	2.20	41.45	Average	105	218
1	11606.000	57.68	-16.32	74.00	54.02	39.22	4.65	40.21	Peak	---	---
2	11606.000	46.94	-7.06	54.00	43.28	39.22	4.65	40.21	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	36.04	-17.96	54.00	50.98	24.04	1.21	40.19	Average	---	---
2	1438.000	33.55	-20.45	54.00	47.57	25.07	1.46	40.55	Average	---	---
3	1622.000	35.44	-18.56	54.00	48.89	25.71	1.52	40.68	Average	---	---
1	3868.000	47.27	-6.73	54.00	54.15	32.37	2.20	41.45	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Turbo Mode					
Test Mode	Mode 1 CH01	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

Remark: There is no spurious emission on this polarization.

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	33.71	-20.29	54.00	50.90	24.04	1.21	42.44	Average	---	---
2	1260.000	34.18	-19.82	54.00	50.75	24.56	1.38	42.51	Average	---	---
3	1438.000	34.96	-19.04	54.00	51.01	25.07	1.46	42.58	Average	107	181

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Turbo Mode					
Test Mode	Mode 1 CH02	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	33.64	-20.36	54.00	50.83	24.04	1.21	42.44	Average	---	---
2	1892.000	35.43	-18.57	54.00	49.82	26.71	1.58	42.68	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	32.92	-21.08	54.00	50.11	24.04	1.21	42.44	Average	---	---
2	1260.000	34.28	-19.72	54.00	50.85	24.56	1.38	42.51	Average	---	---
3	1438.000	35.55	-18.45	54.00	51.60	25.07	1.46	42.58	Average	103	219

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Turbo Mode					
Test Mode	Mode 1 CH03	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	32.66	-21.34	54.00	49.85	24.04	1.21	42.44	Average	---	---
2	1620.000	35.20	-18.80	54.00	50.61	25.70	1.52	42.63	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	33.87	-20.13	54.00	51.06	24.04	1.21	42.44	Average	---	---
2	1260.000	34.07	-19.93	54.00	50.64	24.56	1.38	42.51	Average	---	---
3	1438.000	35.27	-18.73	54.00	51.32	25.07	1.46	42.58	Average	102	126

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Turbo Mode					
Test Mode	Mode 1 CH04	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

Remark: There is no spurious emission on this polarization.

(A) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	34.03	-19.97	54.00	51.22	24.04	1.21	42.44	Average	---	---
2	1260.000	34.18	-19.82	54.00	50.75	24.56	1.38	42.51	Average	---	---
3	1438.000	34.50	-19.50	54.00	50.55	25.07	1.46	42.58	Average	104	145

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Turbo Mode					
Test Mode	Mode 1 CH05	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

Remark: There is no spurious emission on this polarization.

(A) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	34.10	-19.90	54.00	51.29	24.04	1.21	42.44	Average	---	---
2	1260.000	34.86	-19.14	54.00	51.43	24.56	1.38	42.51	Average	---	---
3	1438.000	35.33	-18.67	54.00	51.38	25.07	1.46	42.58	Average	105	126

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Normal Mode					
Test Mode	Mode 2 CH01	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	39.20	-14.80	54.00	54.14	24.04	1.21	40.19	Average	105	220
2	1260.000	35.84	-18.16	54.00	50.27	24.56	1.38	40.37	Average	---	---
3	1622.000	37.20	-16.80	54.00	50.65	25.71	1.52	40.68	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	35.79	-18.21	54.00	50.73	24.04	1.21	40.19	Average	---	---
2	1438.000	36.05	-17.95	54.00	50.07	25.07	1.46	40.55	Average	---	---
3	1622.000	37.37	-16.63	54.00	50.82	25.71	1.52	40.68	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Normal Mode					
Test Mode	Mode 2 CH04	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1076.000	35.15	-18.85	54.00	50.10	24.04	1.20	40.19	Average	---	---
2	1438.000	37.28	-16.72	54.00	51.30	25.07	1.46	40.55	Average	---	---
3	1708.000	35.45	-18.55	54.00	48.66	26.03	1.49	40.73	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	37.77	-16.23	54.00	52.71	24.04	1.21	40.19	Average	105	218
2	1494.000	33.88	-20.12	54.00	47.79	25.23	1.46	40.60	Average	---	---
3	1622.000	36.15	-17.85	54.00	49.60	25.71	1.52	40.68	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Normal Mode					
Test Mode	Mode 2 CH08	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	39.46	-14.54	54.00	54.40	24.04	1.21	40.19	Average	107	218
2	1260.000	36.30	-17.70	54.00	50.73	24.56	1.38	40.37	Average	---	---
3	1526.000	37.92	-16.08	54.00	51.73	25.35	1.46	40.62	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	38.23	-15.77	54.00	53.17	24.04	1.21	40.19	Average	---	---
2	1260.000	34.46	-19.54	54.00	48.89	24.56	1.38	40.37	Average	---	---
3	1438.000	32.80	-21.20	54.00	46.82	25.07	1.46	40.55	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Normal Mode					
Test Mode	Mode 2 CH09	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	39.59	-14.41	54.00	56.78	24.04	1.21	42.44	Average	---	---
2	1438.000	43.98	-10.02	54.00	60.03	25.07	1.46	42.58	Average	106	184
3	2252.000	39.26	-14.74	54.00	52.41	27.78	1.72	42.65	Average	---	---
1	3828.000	43.19	-10.81	54.00	52.48	32.25	2.06	43.60	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1438.000	39.06	-14.94	54.00	55.11	25.07	1.46	42.58	Average	---	---
2	1798.000	35.80	-18.20	54.00	50.52	26.36	1.58	42.66	Average	---	---
3	2252.000	35.70	-18.30	54.00	48.85	27.78	1.72	42.65	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Normal Mode					
Test Mode	Mode 2 CH12	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	37.15	-16.85	54.00	52.09	24.04	1.21	40.19	Average	---	---
2	1260.000	35.88	-18.12	54.00	50.31	24.56	1.38	40.37	Average	---	---
3	1622.000	36.19	-17.81	54.00	49.64	25.71	1.52	40.68	Average	---	---
1	3870.000	47.00	-7.00	54.00	53.98	32.37	2.10	41.45	Average	---	---
1	11606.000	57.68	-16.32	74.00	54.02	39.22	4.65	40.21	Peak	---	---
2	11606.000	45.77	-8.23	54.00	42.11	39.22	4.65	40.21	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1076.000	35.35	-18.65	54.00	50.30	24.04	1.20	40.19	Average	---	---
2	1438.000	34.55	-19.45	54.00	48.57	25.07	1.46	40.55	Average	---	---
3	1622.000	36.44	-17.56	54.00	49.89	25.71	1.52	40.68	Average	---	---
1	3868.000	48.27	-5.73	54.00	55.15	32.37	2.20	41.45	Average	102	215

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Turbo Mode					
Test Mode	Mode 2 CH01	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	32.90	-21.10	54.00	50.09	24.04	1.21	42.44	Average	---	---
2	1886.000	36.34	-17.66	54.00	50.75	26.69	1.58	42.68	Average	102	226

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1438.000	35.15	-18.85	54.00	51.20	25.07	1.46	42.58	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Turbo Mode					
Test Mode	Mode 2 CH02	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1260.000	33.15	-20.85	54.00	49.72	24.56	1.38	42.51	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	33.67	-20.33	54.00	50.86	24.04	1.21	42.44	Average	---	---
2	1260.000	33.85	-20.15	54.00	50.42	24.56	1.38	42.51	Average	101	149
3	1438.000	33.84	-20.16	54.00	49.89	25.07	1.46	42.58	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Turbo Mode					
Test Mode	Mode 2 CH03	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	32.82	-21.18	54.00	50.01	24.04	1.21	42.44	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	33.80	-20.20	54.00	50.99	24.04	1.21	42.44	Average	---	---
2	1260.000	34.67	-19.33	54.00	51.24	24.56	1.38	42.51	Average	---	---
3	1438.000	36.30	-17.70	54.00	52.35	25.07	1.46	42.58	Average	105	217

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Turbo Mode					
Test Mode	Mode 2 CH04	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	32.88	-21.12	54.00	50.07	24.04	1.21	42.44	Average	---	---
2	1438.000	33.11	-20.89	54.00	49.16	25.07	1.46	42.58	Average	---	---
3	1798.000	35.86	-18.14	54.00	50.58	26.36	1.58	42.66	Average	102	219

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	33.31	-20.69	54.00	50.50	24.04	1.21	42.44	Average	---	---
2	1260.000	34.97	-19.03	54.00	51.54	24.56	1.38	42.51	Average	---	---
3	1438.000	35.77	-18.23	54.00	51.82	25.07	1.46	42.58	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Turbo Mode					
Test Mode	Mode 2 CH05	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	33.88	-20.12	54.00	51.07	24.04	1.21	42.44	Average	---	---
2	1438.000	33.78	-20.22	54.00	49.83	25.07	1.46	42.58	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	34.20	-19.80	54.00	51.39	24.04	1.21	42.44	Average	---	---
2	1260.000	33.91	-20.09	54.00	50.48	24.56	1.38	42.51	Average	---	---
3	1438.000	35.50	-18.50	54.00	51.55	25.07	1.46	42.58	Average	105	216

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Normal Mode					
Test Mode	Mode 3 CH01	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	38.04	-15.96	54.00	52.98	24.04	1.21	40.19	Average	---	---
2	1438.000	37.35	-16.65	54.00	51.37	25.07	1.46	40.55	Average	---	---
3	1886.000	35.71	-18.29	54.00	48.28	26.69	1.58	40.84	Average	---	---
1	10366.000	51.51	-22.49	74.00	47.57	39.35	4.01	39.42	Peak	---	---
2	10366.000	38.45	-15.55	54.00	34.51	39.35	4.01	39.42	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	39.30	-14.70	54.00	54.24	24.04	1.21	40.19	Average	103	113
2	1260.000	37.22	-16.78	54.00	51.65	24.56	1.38	40.37	Average	---	---
3	1622.000	36.85	-17.15	54.00	50.30	25.71	1.52	40.68	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Normal Mode					
Test Mode	Mode 3 Ch04	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	37.09	-16.91	54.00	52.03	24.04	1.21	40.19	Average	---	---
2	1438.000	38.04	-15.96	54.00	52.06	25.07	1.46	40.55	Average	---	---
3	1622.000	37.12	-16.88	54.00	50.57	25.71	1.52	40.68	Average	---	---
1	3492.000	43.67	-10.33	54.00	51.70	31.30	1.97	41.30	Average	---	---
1	10476.000	50.90	-23.10	74.00	47.49	39.48	3.33	39.40	Peak	---	---
2	10476.000	37.96	-16.04	54.00	34.55	39.48	3.33	39.40	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	39.13	-14.87	54.00	54.07	24.04	1.21	40.19	Average	---	---
2	1260.000	37.50	-16.50	54.00	51.93	24.56	1.38	40.37	Average	---	---
3	1622.000	37.09	-16.91	54.00	50.54	25.71	1.52	40.68	Average	---	---
1	3492.000	43.99	-10.01	54.00	52.02	31.30	1.97	41.30	Average	107	197
1	10476.000	52.50	-21.50	74.00	49.09	39.48	3.33	39.40	Peak	---	---
2	10476.000	39.58	-14.42	54.00	36.17	39.48	3.33	39.40	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Normal Mode					
Test Mode	Mode 3 CH08	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	37.84	-16.16	54.00	52.78	24.04	1.21	40.19	Average	---	---
2	1438.000	37.47	-16.53	54.00	51.49	25.07	1.46	40.55	Average	---	---
3	1622.000	35.11	-18.89	54.00	48.56	25.71	1.52	40.68	Average	---	---
1	3542.000	42.45	-11.55	54.00	50.21	31.44	2.12	41.32	Average	---	---
1	10646.000	54.39	-19.61	74.00	50.23	39.41	4.12	39.37	Peak	---	---
2	10646.000	41.84	-12.16	54.00	37.68	39.41	4.12	39.37	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	39.35	-14.65	54.00	54.29	24.04	1.21	40.19	Average	---	---
2	1260.000	37.58	-16.42	54.00	52.01	24.56	1.38	40.37	Average	---	---
3	1622.000	36.76	-17.24	54.00	50.21	25.71	1.52	40.68	Average	---	---
1	3542.000	46.04	-7.96	54.00	53.80	31.44	2.12	41.32	Average	105	185
1	10644.000	56.30	-17.70	74.00	52.15	39.41	4.11	39.37	Peak	---	---
2	10644.000	43.64	-10.36	54.00	39.49	39.41	4.11	39.37	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Normal Mode					
Test Mode	Mode 3 CH09	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	39.34	-34.66	74.00	56.53	24.04	1.21	42.44	Average	---	---
2	1348.000	38.18	-35.82	74.00	54.56	24.81	1.35	42.54	Average	---	---
3	1438.000	42.70	-31.30	74.00	58.75	25.07	1.46	42.58	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1260.000	37.97	-16.03	54.00	54.54	24.56	1.38	42.51	Average	---	---
2	1438.000	40.47	-13.53	54.00	56.52	25.07	1.46	42.58	Average	102	185
3	1886.000	36.60	-17.40	54.00	51.01	26.69	1.58	42.68	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Normal Mode					
Test Mode	Mode 3 CH12	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	37.45	-16.55	54.00	52.39	24.04	1.21	40.19	Average	---	---
2	1438.000	36.98	-17.02	54.00	51.00	25.07	1.46	40.55	Average	---	---
3	1892.000	35.88	-18.12	54.00	48.43	26.71	1.58	40.84	Average	---	---
1	3868.000	50.97	-3.03	54.00	57.85	32.37	2.20	41.45	Average	106	112

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	38.98	-15.02	54.00	53.92	24.04	1.21	40.19	Average	---	---
2	1260.000	37.10	-16.90	54.00	51.53	24.56	1.38	40.37	Average	---	---
3	1438.000	36.20	-17.80	54.00	50.22	25.07	1.46	40.55	Average	---	---
1	3868.000	48.28	-5.72	54.00	55.16	32.37	2.20	41.45	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Turbo Mode					
Test Mode	Mode 3 CH01	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

Remark: There is no spurious emission on this polarization.

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamplifier Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	39.30	-14.70	54.00	54.24	24.04	1.21	40.19	Average	103	113
2	1260.000	37.22	-16.78	54.00	51.65	24.56	1.38	40.37	Average	---	---
3	1622.000	36.85	-17.15	54.00	50.30	25.71	1.52	40.68	Average	---	---

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Turbo Mode					
Test Mode	Mode 3 CH02	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1076.000	32.08	-21.92	54.00	49.27	24.04	1.20	42.43	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1438.000	35.33	-18.67	54.00	51.38	25.07	1.46	42.58	Average	102	126

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Turbo Mode					
Test Mode	Mode 3 CH03	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1390.000	33.32	-20.68	54.00	49.55	24.93	1.40	42.56	Average	---	---
2	1622.000	33.73	-20.27	54.00	49.13	25.71	1.52	42.63	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	33.18	-20.82	54.00	50.37	24.04	1.21	42.44	Average	---	---
2	1260.000	34.28	-19.72	54.00	50.85	24.56	1.38	42.51	Average	---	---
3	1438.000	34.85	-19.15	54.00	50.90	25.07	1.46	42.58	Average	105	185

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

Turbo Mode					
Test Mode	Mode 3 CH04	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	33.42	-20.58	54.00	50.61	24.04	1.21	42.44	Average	---	---
2	1438.000	33.56	-20.44	54.00	49.61	25.07	1.46	42.58	Average	---	---
3	2252.000	36.86	-17.14	54.00	50.01	27.78	1.72	42.65	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	33.64	-20.36	54.00	50.83	24.04	1.21	42.44	Average	---	---
2	1260.000	34.17	-19.83	54.00	50.74	24.56	1.38	42.51	Average	---	---
3	1438.000	35.29	-18.71	54.00	51.34	25.07	1.46	42.58	Average	102	216

Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.



Turbo Mode					
Test Mode	Mode 3 CH05	Temperature	26 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~40GHz	Humidity	64%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1260.000	33.27	-20.73	54.00	49.84	24.56	1.38	42.51	Average	---	---
2	1886.000	36.20	-17.80	54.00	50.61	26.69	1.58	42.68	Average	102	212

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1078.000	33.37	-20.63	54.00	50.56	24.04	1.21	42.44	Average	---	---
2	1260.000	34.14	-19.86	54.00	50.71	24.56	1.38	42.51	Average	---	---
3	1438.000	35.41	-18.59	54.00	51.46	25.07	1.46	42.58	Average	---	---

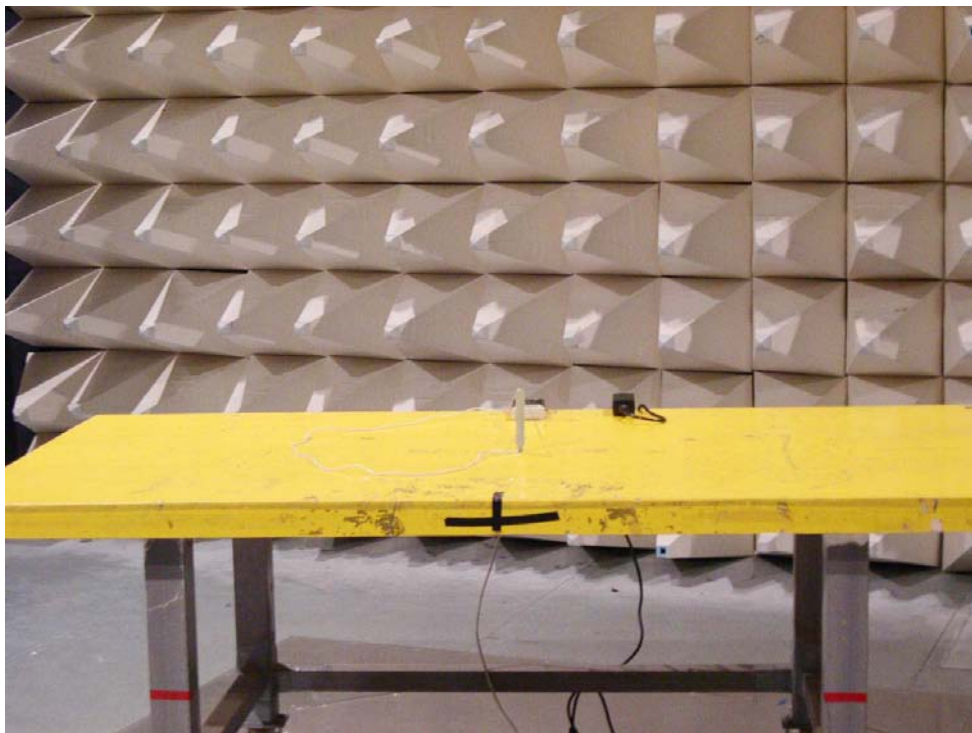
Remark: Spurious on higher frequency band, the emission emitted by the EUT is too low to be measured.

5.6.6. Photographs of Radiated Emission Test Configuration

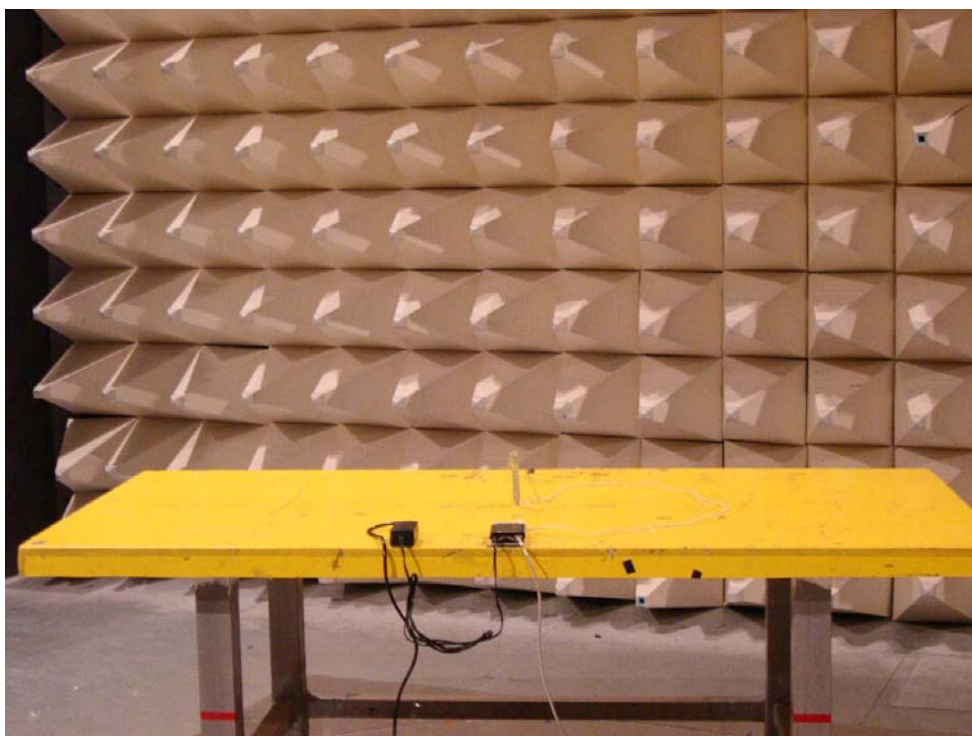
- The photographs show the configuration that generates the maximum emission.

Mode 1

FRONT VIEW

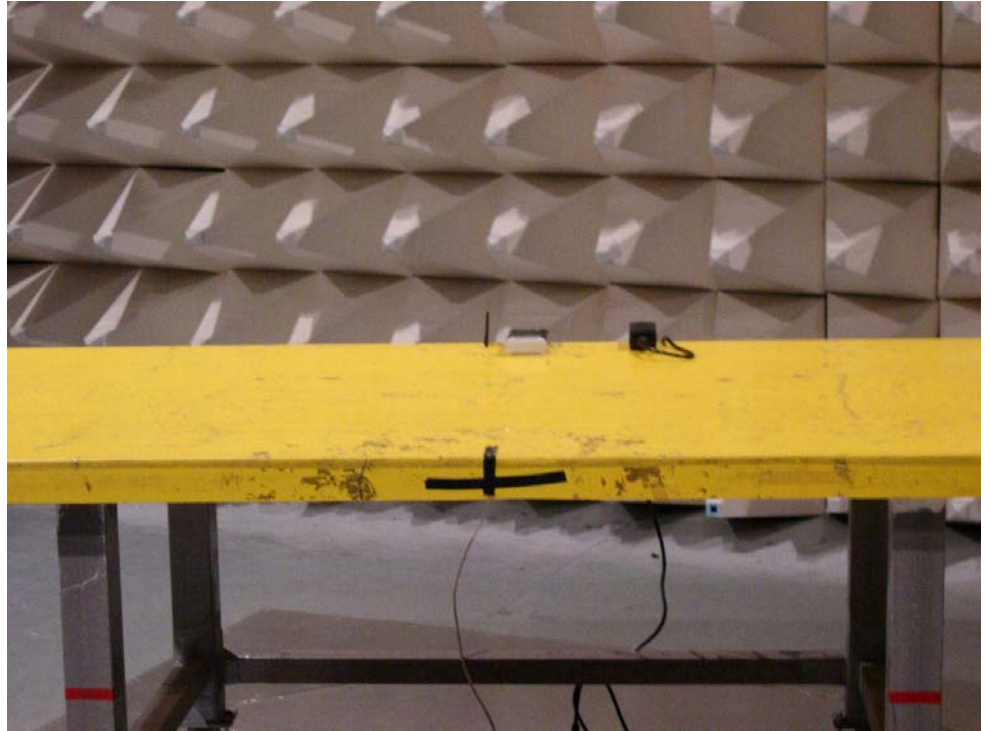


REAR VIEW

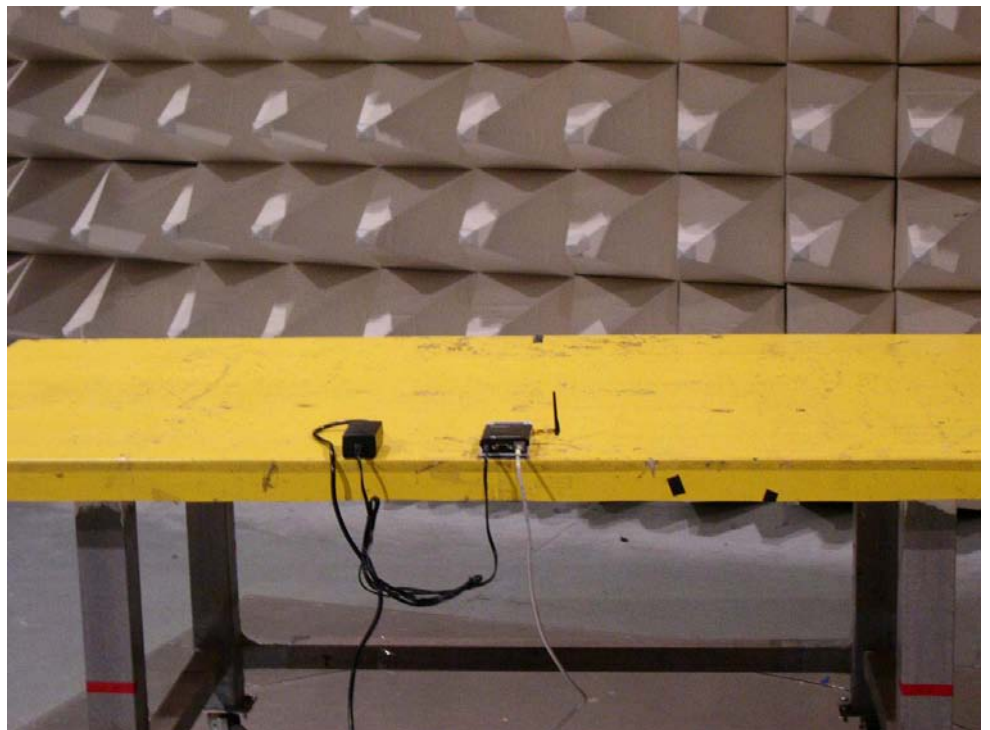


Mode 2

FRONT VIEW

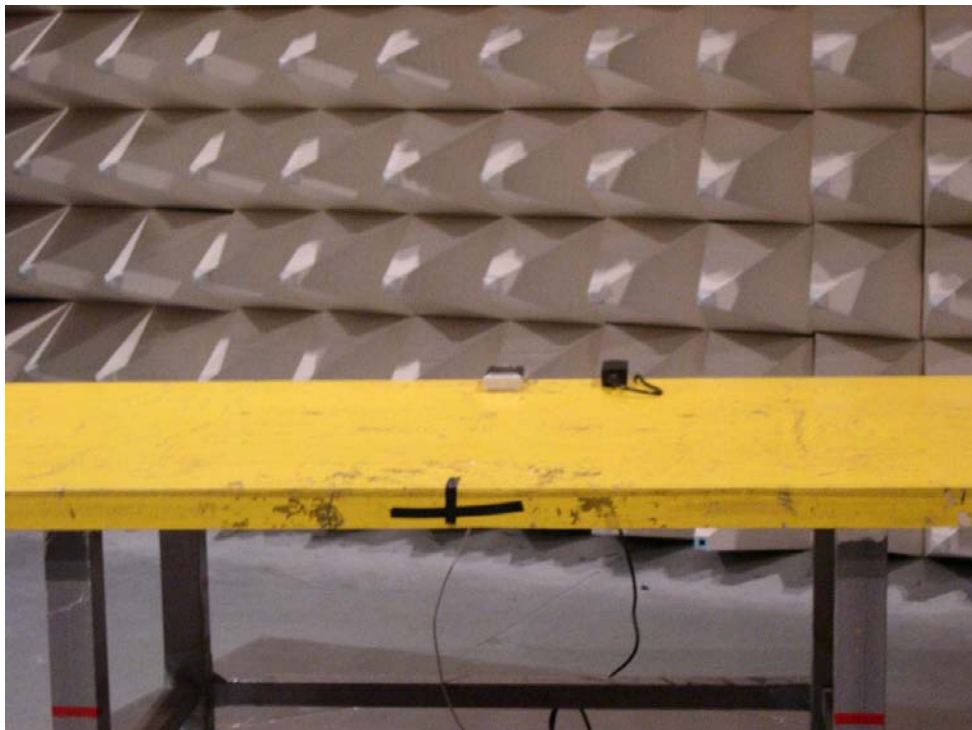


REAR VIEW

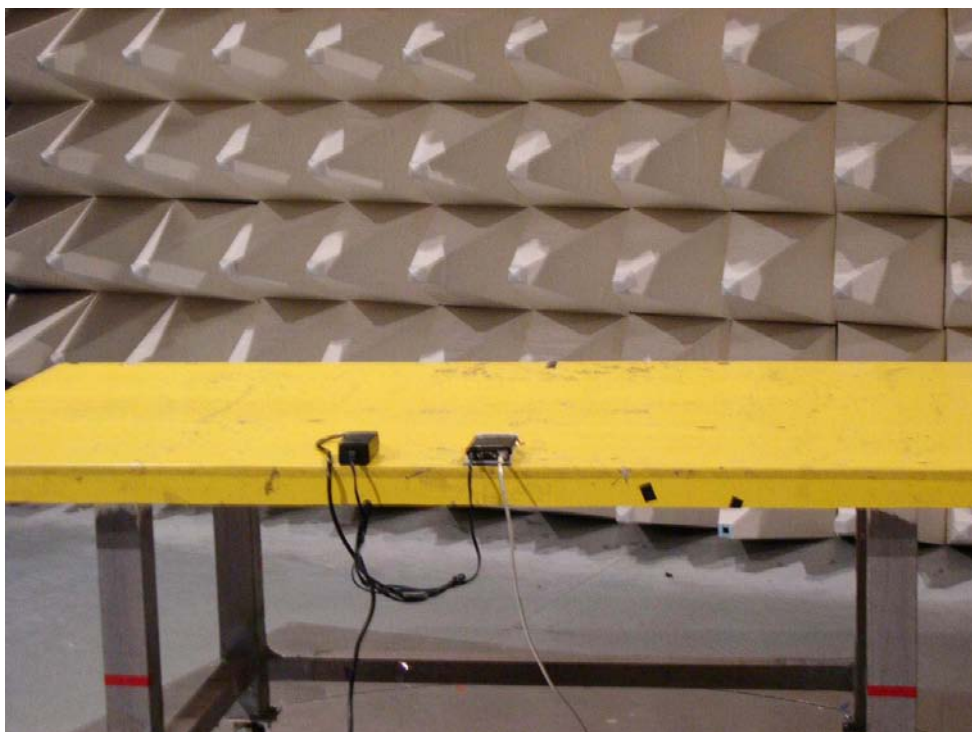


Mode 3

FRONT VIEW



REAR VIEW



5.7. Test of Frequency Stability

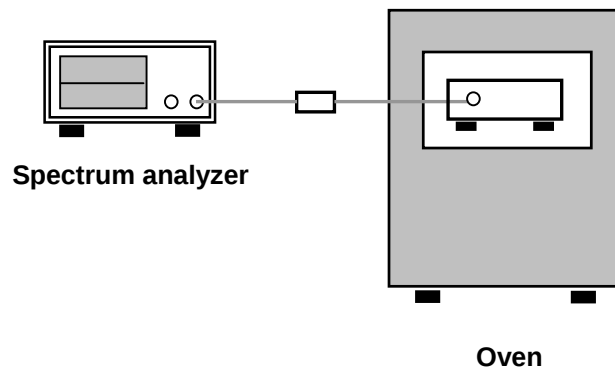
5.7.1. Measuring Instruments

Item 9 of the table on section 6.

5.7.2. 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 peak detector mode, Max-hold and search the peak of trace 1.
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), $-30^{\circ}\text{C} \sim 50^{\circ}\text{C}$.

5.7.3. Test Setup Layout



5.7.4. Test Result : See spectrum analyzer plots below

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

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)		
(°C)	5240.00	5320.00	5805
-30	5240.0160	5320.0056	5805.0015
-20	5240.0220	5320.0021	5805.0045
-10	5240.0010	5320.0044	5805.0044
0	5239.9960	5320.0024	5805.0023
10	5239.9520	5320.0027	5805.0047
20	5239.9260	5320.0014	5805.0064
30	5239.9450	5320.0012	5805.0021
40	5239.9400	5320.0022	5805.0014
50	5239.9460	5320.0047	5805.0002
Max. Deviation (MHz)	5240.0160	5320.0056	5805.0015
Max. Deviation (ppm)	3.05	1.05	0.26

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)		
(V)	5240.00	5320.00	5805
126.50	5240.0130	5320.0100	5805.0070
110.00	5240.0130	5320.0080	5805.0080
93.50	5240.0150	5320.0078	5805.0065
Max. Deviation (MHz)	5240.0150	5320.0100	5805.0070
Max. Deviation (ppm)	2.86	1.88	1.21

5.8. Test of AC Power Line Conducted Emission

5.8.1. Measuring Instruments

Please reference item 1~7 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 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.

5.8.3. Test Result of Conducted Emission

Test Mode	RF Mode	Tested By	Hikaru Chan
Temperature / Humidity	29 deg. C / 54%		

Line to Ground

Frequency (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Read Level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Remark
0.239	46.00	-6.14	52.14	45.85	0.10	0.05	Average
0.239	55.88	-6.26	62.14	55.73	0.10	0.05	QP
0.369	30.89	-17.63	48.52	30.70	0.10	0.09	Average
0.3692	48.12	-10.40	58.52	47.93	0.10	0.09	QP
0.481	36.18	-10.14	46.32	36.07	0.10	0.01	Average
0.4811	36.38	-19.94	56.32	36.27	0.10	0.01	QP
17.696	43.66	-6.34	50.00	43.23	0.26	0.17	Average
17.696	46.07	-13.93	60.00	45.64	0.26	0.17	QP
19.710	41.54	-8.46	50.00	41.03	0.30	0.21	Average
19.710	43.79	-16.21	60.00	43.28	0.30	0.21	QP
22.458	40.78	-9.22	50.00	40.28	0.30	0.20	Average
22.458	43.87	-16.13	60.00	43.37	0.30	0.20	QP

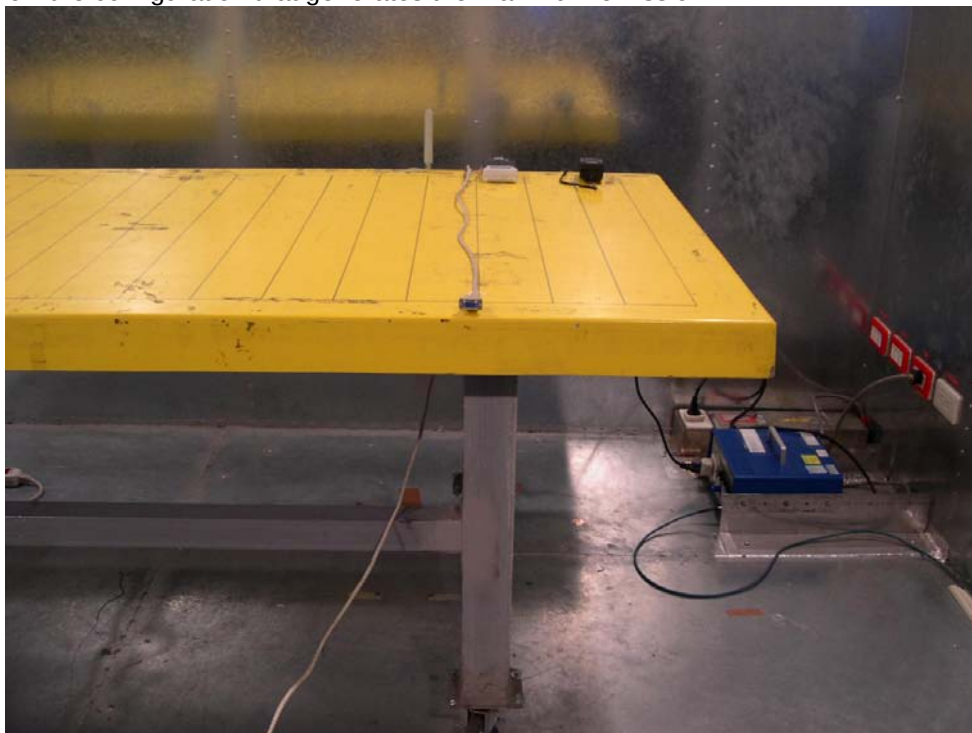
Neutral to Ground

Frequency (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Read Level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Remark
0.239	46.98	-5.16	52.14	46.83	0.10	0.05	Average
0.239	56.30	-5.84	62.14	56.15	0.10	0.05	QP
0.363	36.29	-12.37	48.66	36.10	0.10	0.09	Average
0.363	50.11	-8.55	58.66	49.92	0.10	0.09	QP
0.6043	27.17	-18.83	46	26.77	0.10	0.30	Average
0.6043	33.05	-22.95	56	32.65	0.10	0.30	QP
2.510	14.57	-31.43	46	14.42	0.10	0.05	Average
2.510	32.18	-23.82	56	32.03	0.10	0.05	QP
17.696	43.28	-6.72	50	42.85	0.26	0.17	Average
17.696	45.81	-14.19	60	45.38	0.26	0.17	QP
19.710	42.01	-7.99	50	41.50	0.30	0.21	Average
19.710	44.24	-15.76	60	43.73	0.30	0.21	QP

5.8.4. Photographs of Radiated Emission Test Configuration

- The photographs show the configuration that generates the maximum emission.

FRONT VIEW



REAR VIEW





5.9. Antenna Requirements

5.9.1. 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 15.407 (a):

For 5150MHz~5250MHz : If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. Device shall use a transmitting antenna that is an integral part of the device.

For 5250MHz~5350MHz / 5470MHz~5725MHz : If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For 5725MHz~5825MHz : If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain up to 23 dBi without any corresponding reduction in the transmitter peak output power or peak power spectral density. For fixed, point-to-point U-NII transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in peak transmitter power and peak power spectral density for each 1 dB of antenna gain in excess of 23 dBi would be required. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing

High gain directional antennas are used exclusively for fixed, point-to-point operations.

5.9.2. Antenna Connected Construction

There is no antenna connector for integral chip antenna. The connector for monopole antenna is reversed SMA and standard SMA. But this product is classified as professional use, so there is no need to fulfill the unique antenna connector requirement.

5.10. RF Exposure

5.10.1. 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

5.10.2. MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d}$$

$$\text{Power Density: } Pd \text{ (mW/cm}^2\text{)} = \frac{E^2}{377}$$

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, $d=2.5\text{cm}$, as well as the gain of the used antenna, the RF power density can be obtained.

5.10.3. Calculated Result and Limit

Only the mode with maximum Gain was calculated (Mode 1).

Normal Mode

Channel No.	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)
Channel 22	5	3.16	23.65	231.7395	0.1459	1

Turbo Mode

Channel No.	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)
Channel 03	5	3.16	18.5000	70.7946	0.0446	1

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	9 KHz – 2.75 GHz	Feb. 16, 2004	Conduction (CO04-HY)
2	LISN	MessTec	NNB-2/16Z	2001/004	9 KHz – 30 MHz	Jun. 09, 2004	Conduction (CO04-HY)
3	LISN (Support Unit)	MessTec	NNB-2/16Z	99041	9 KHz – 30 MHz	Apr. 27, 2004	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	CB044	9KHz~30MHz	Apr. 21, 2004	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. 22, 2004	Radiation (03CH03-HY)
8	Amplifier	HP	8447D	2944A09072	100KHz – 1.3GHz	Nov. 04, 2004	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	Dec. 03, 2003	Radiation (03CH03-HY)
12	Amplifier	MITEQ	AFS44	849984	100MHz~26.5GHz	Mar. 26, 2004	Radiation (03CH03-HY)
13	Horn Antenna	EMCO	3115	6821	1GHz – 18GHz	Sep. 11, 2004	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	15GHz~40GHz	Jun. 09, 2004	Radiation (03CH03-HY)
17	RF Cable-HIGH	Jye Bao	RG142	CB030-HIGH	1GHz~29.5GHz	Dec. 05, 2003	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	FSP7	838858/014	9KHZ~7GHZ	Sep. 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	AC power source	G.W.	GPC-6030D	C671845	DC 1V~60V	Nov. 05, 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, 2004	Conducted (TH01-HY)
26	RF CABLE-2m	Jye Bao	RG142	CB035-2m	20MHz~1GHz	Jan. 01, 2004	Conducted (TH01-HY)

※ Calibration Interval of instruments listed above is one year.