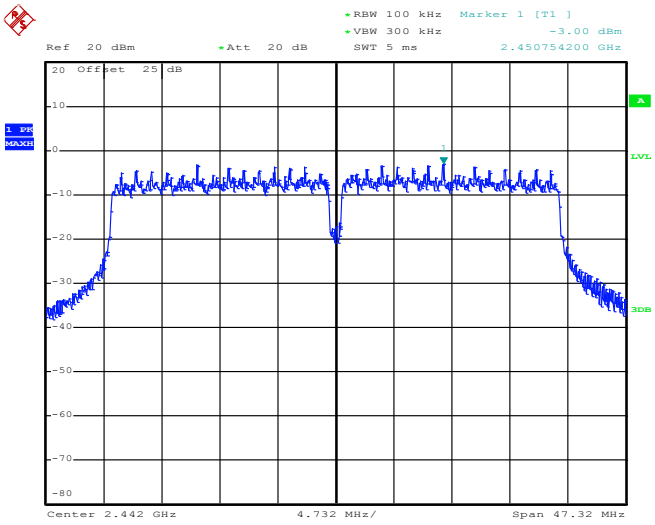
802.11n HT40 – MIMO Chain 1+2(2)

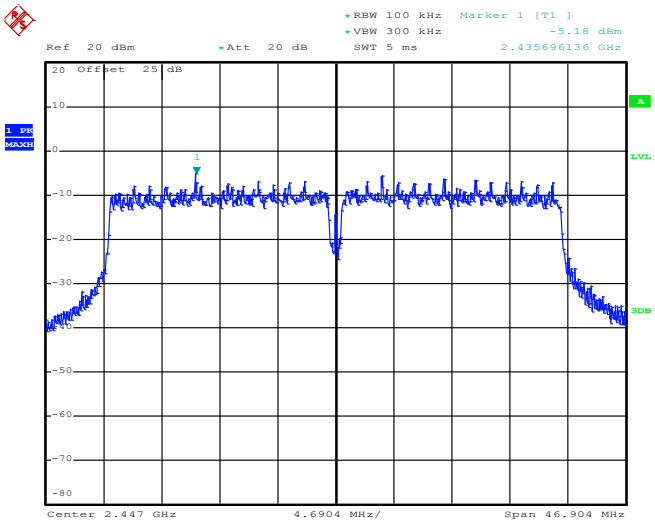
PSD 100kHz Plot on Channel 07



290603 15C PSD 802.11g_N40 2442
Date: 3.OCT.2012 01:10:43

802.11n HT40 – MIMO Chain 1+2(2)

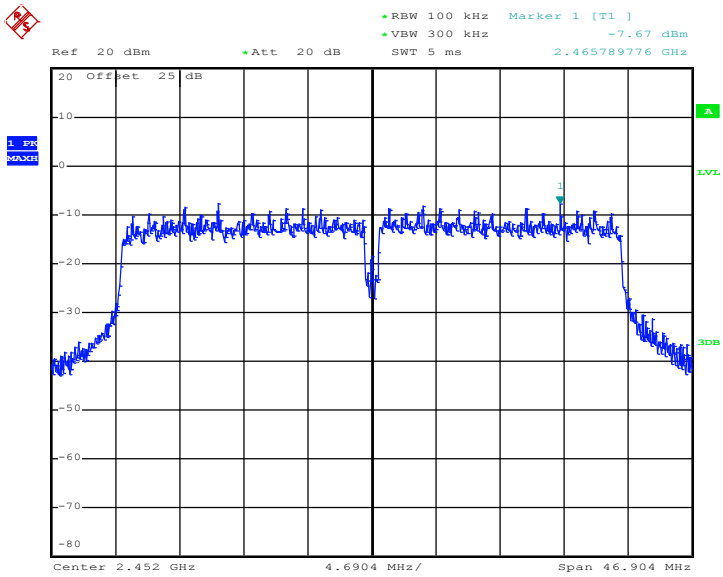
PSD 100kHz Plot on Channel 08



290603 15C PSD 802.11g_N40 2447
Date: 3.OCT.2012 01:21:32

802.11n HT40 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 09



290603 15C PSD 802.11g_N40 2452 (ch09)
Date: 3.OCT.2012 01:24:48

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

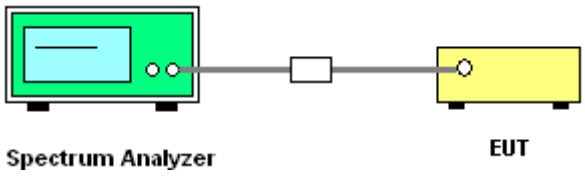
3.4.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.4.3 Test Procedures

1. The testing follows the guidelines in the Measurement Procedure of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance, ANSI C63.4-2003, and ANSI C63.10-2009.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Set RBW = 100 KHz, VBW=300 KHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz, when maximum peak conducted output power procedure is used.
4. Measure and record the results in the test report.

3.4.4 Test Setup



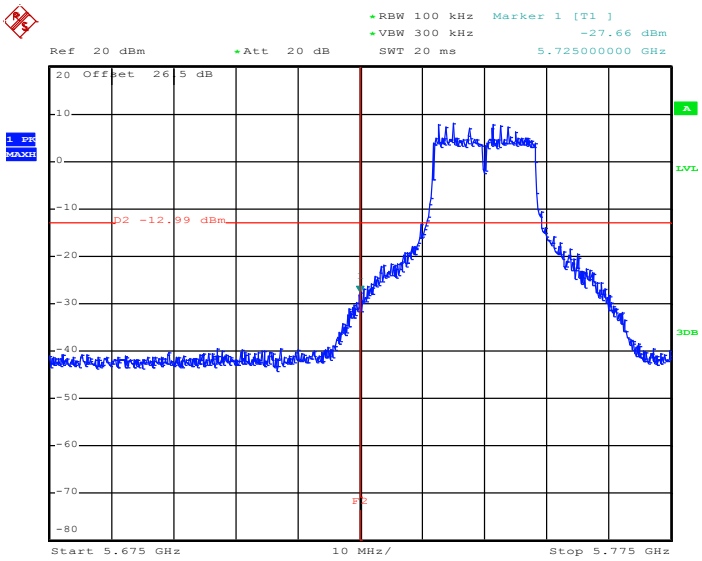
3.4.5 Test Result of Conducted Spurious at Band Edges

<Antenna 7 for 4.5V>

Test Mode :	802.11a	**Temperature :**	24~26℃
Test Band :	Low and High	**Relative Humidity :**	55~58%
Test Channel :	149 and 165	**Test Engineer :**	Alan Liu and Book Lin

802.11a – MIMO Chain 1+2(1)

Low Band Edge Plot on Channel 149

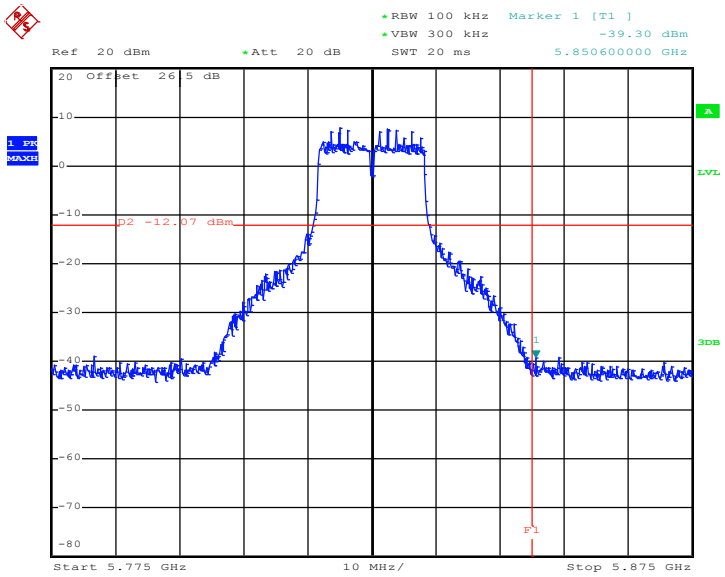


290603 15C BandEdge 802.11a 5745 (ch149)

Date: 10.OCT.2012 18:26:30

802.11a – MIMO Chain 1+2(1)

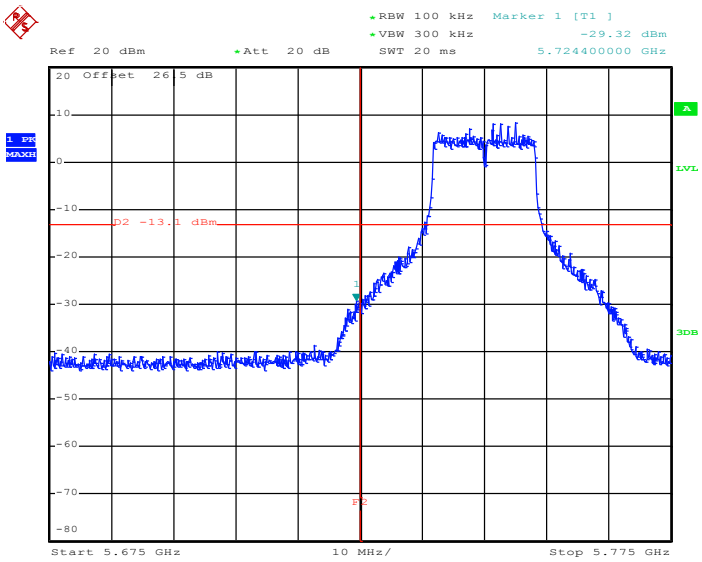
High Band Edge Plot on Channel 165



290603 15C BandEdge 802.11a 5825 (ch165)
Date: 10.OCT.2012 18:28:31

802.11a – MIMO Chain 1+2(2)

Low Band Edge Plot on Channel 149

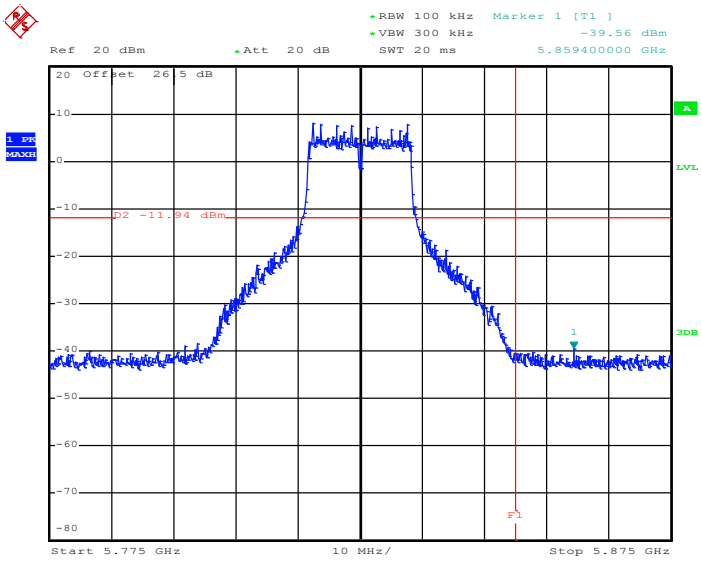


290603 15C BandEdge 802.11a 5745 (ch149)

Date: 10.OCT.2012 18:27:05

802.11a – MIMO Chain 1+2(2)

High Band Edge Plot on Channel 165



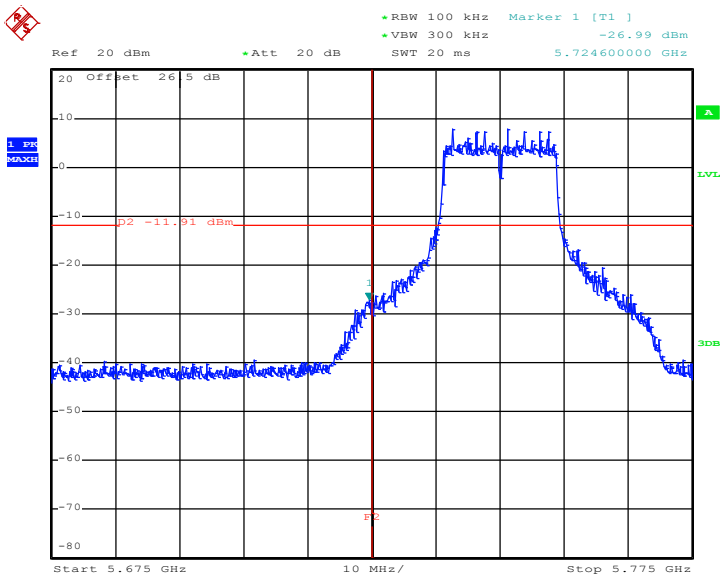
290603 15C BandEdge 802.11a 5825 (ch165)

Date: 10.OCT.2012 18:27:52

Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	Low and High	**Relative Humidity :**	55~58%
Test Channel :	149 and 165	**Test Engineer :**	Alan Liu and Book Lin

802.11n HT20 – MIMO Chain 1+2(1)

Low Band Edge Plot on Channel 149

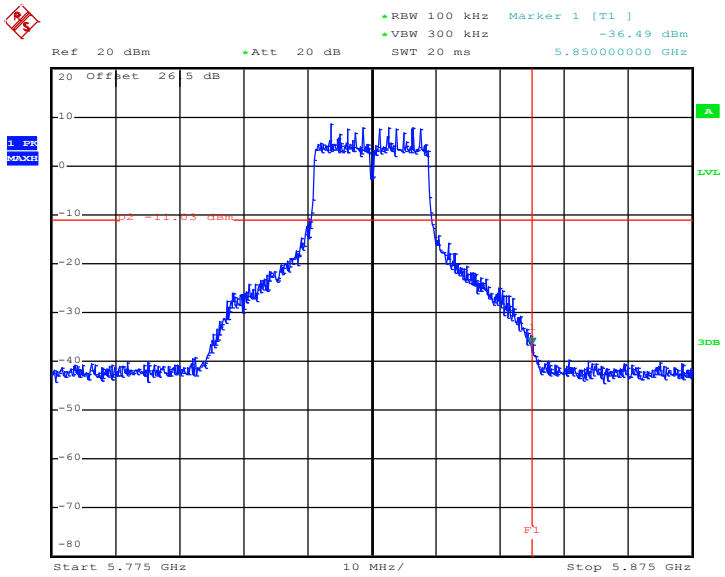


290603 15C BandEdge 802.11a_N20 5745 (ch149)

Date: 10.OCT.2012 17:45:33

802.11n HT20 – MIMO Chain 1+2(1)

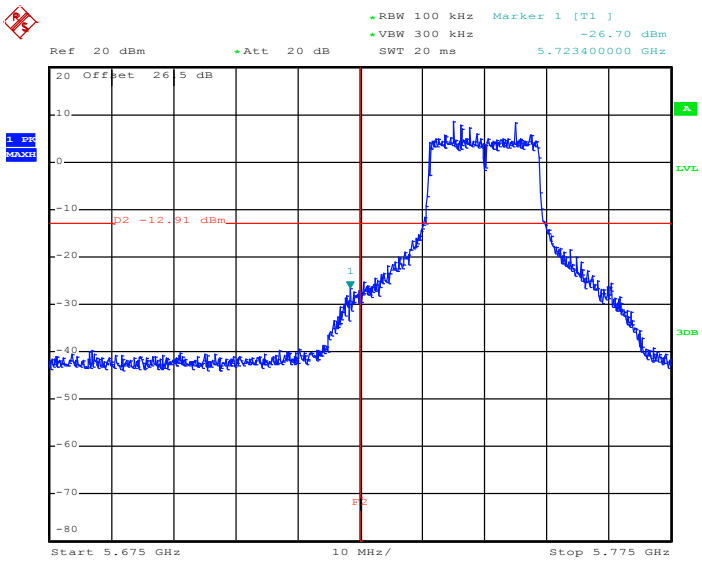
High Band Edge Plot on Channel 165



290603 15C BandEdge 802.11a_N20 5825 (ch165)
Date: 10.OCT.2012 17:57:11

802.11n HT20 – MIMO Chain 1+2(2)

Low Band Edge Plot on Channel 149

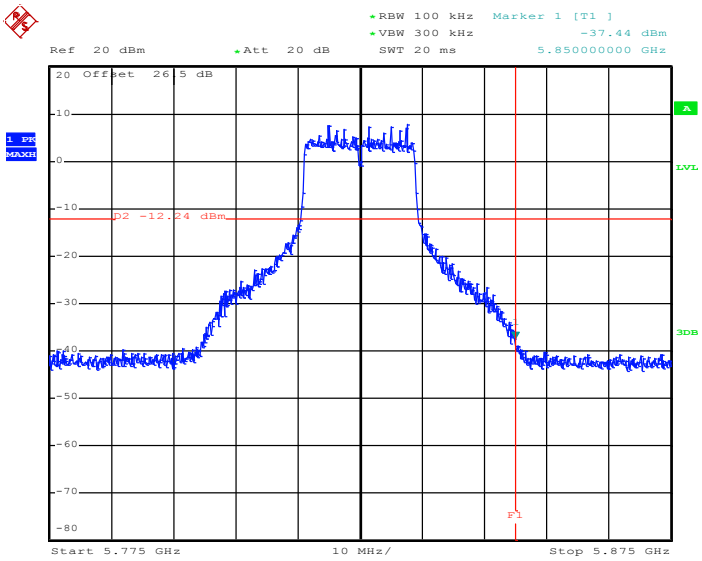


290603 15C BandEdge 802.11a_N20 5745 (ch149)

Date: 10.OCT.2012 17:41:45

802.11n HT20 – MIMO Chain 1+2(2)

High Band Edge Plot on Channel 165



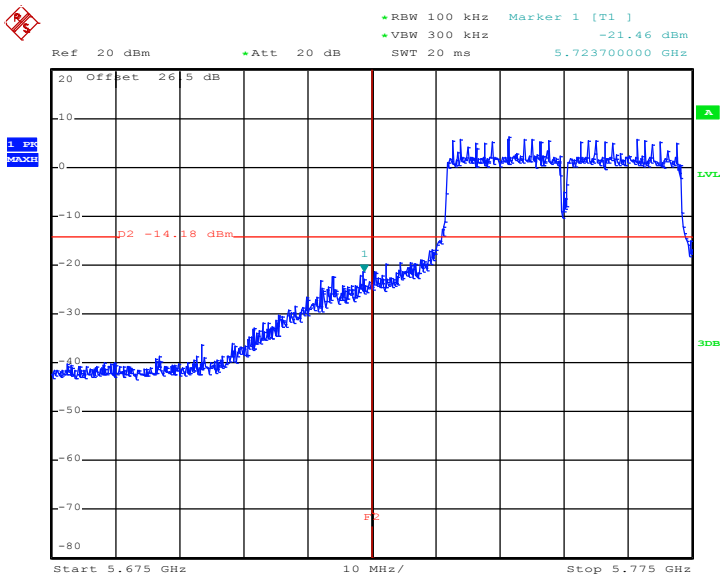
290603 15C BandEdge 802.11a_N20 5825 (ch165)

Date: 10.OCT.2012 17:59:54

Test Mode :	802.11n HT40	**Temperature :**	24~26℃
Test Band :	Low and High	**Relative Humidity :**	55~58%
Test Channel :	151 and 159	**Test Engineer :**	Alan Liu and Book Lin

802.11n HT40 – MIMO Chain 1+2(1)

Low Band Edge Plot on Channel 151

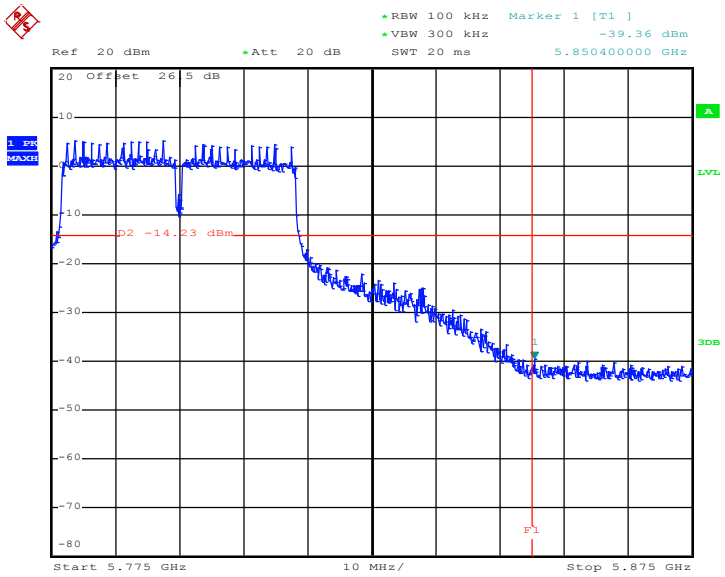


290603 15C BandEdge 802.11a_N40 5755

Date: 10.OCT.2012 17:17:51

802.11n HT40 – MIMO Chain 1+2(1)

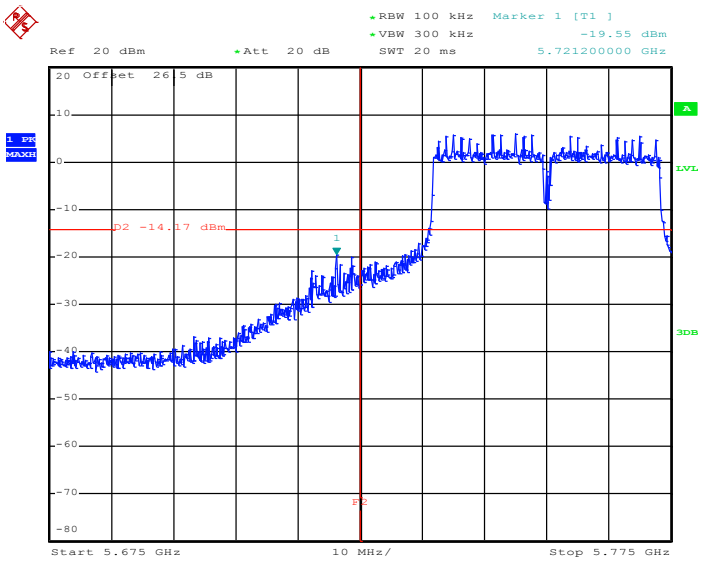
High Band Edge Plot on Channel 159



290603 15C BandEdge 802.11a_N40 5795
Date: 10.OCT.2012 17:07:54

802.11n HT40 – MIMO Chain 1+2(2)

Low Band Edge Plot on Channel 151

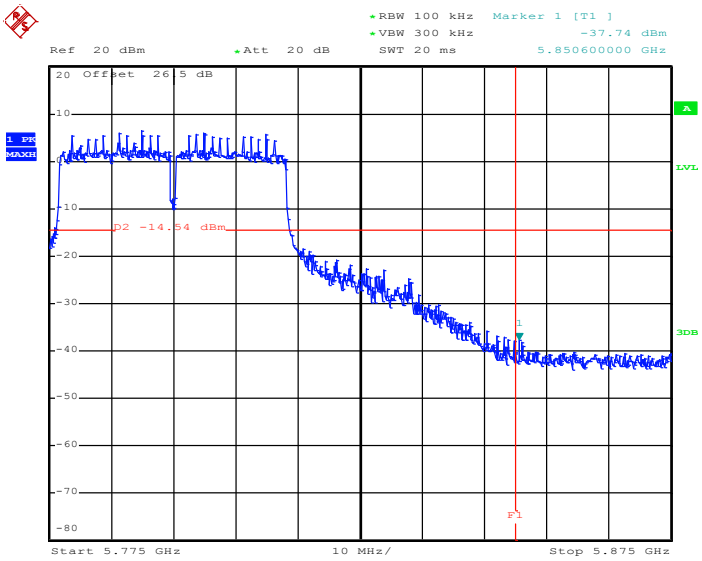


290603 15C BandEdge 802.11a_N40 5755

Date: 10.OCT.2012 17:22:11

802.11n HT40 – MIMO Chain 1+2(2)

High Band Edge Plot on Channel 159



290603 15C BandEdge 802.11a_N40 5795

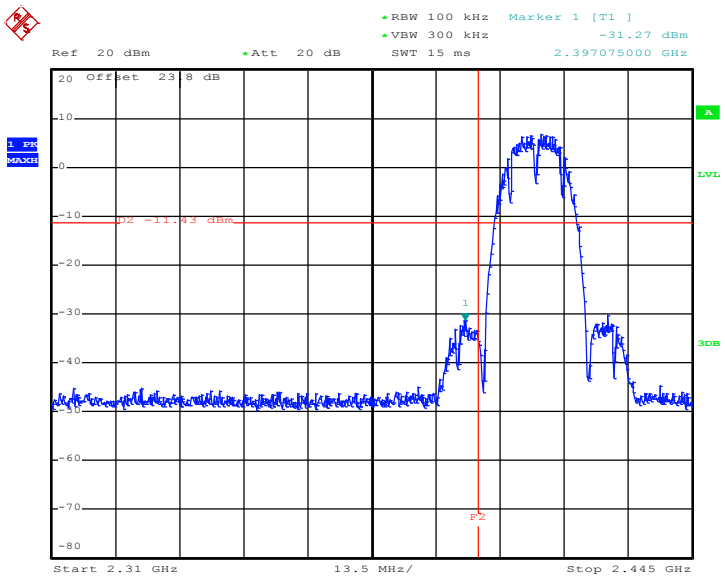
Date: 10.OCT.2012 16:58:07

<Antenna 8 for 4.5V>

Test Mode :	802.11b	**Temperature :**	24~26℃
Test Band :	Low and High	**Relative Humidity :**	55~58%
Test Channel :	01 and 11	**Test Engineer :**	Alan Liu and Book Lin

802.11b – MIMO Chain 1+2(1)

Low Band Edge Plot on Channel 01

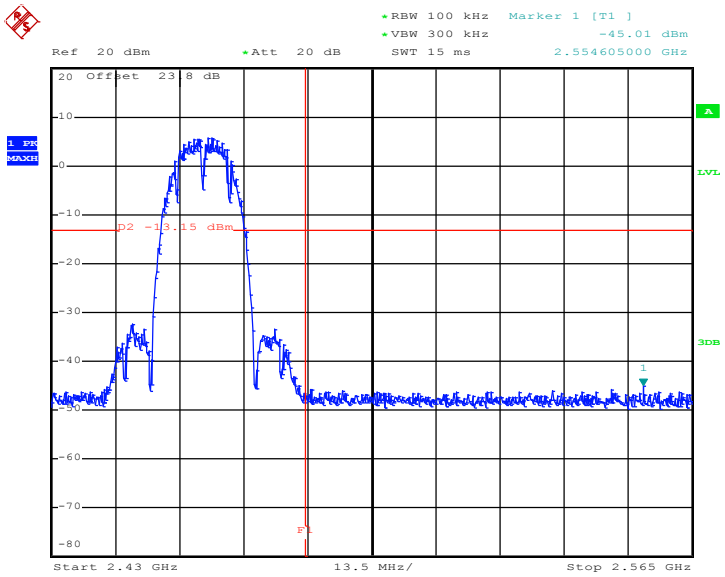


282903-1011 15C BandEdge 802.11b 2412 (ch01)

Date: 27.SEP.2012 15:44:22

802.11b – MIMO Chain 1+2(1)

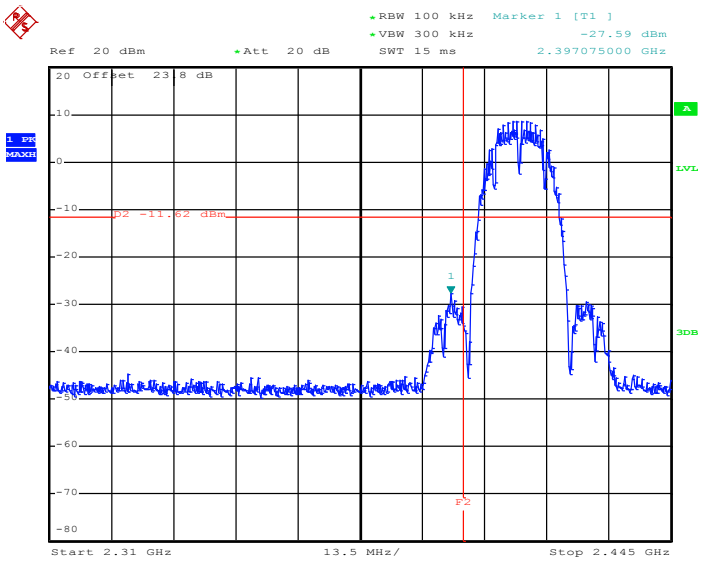
High Band Edge Plot on Channel 11



282903-1011 15C BandEdge 802.11b 2462 (ch11)
Date: 27.SEP.2012 15:55:37

802.11b – MIMO Chain 1+2(2)

Low Band Edge Plot on Channel 01

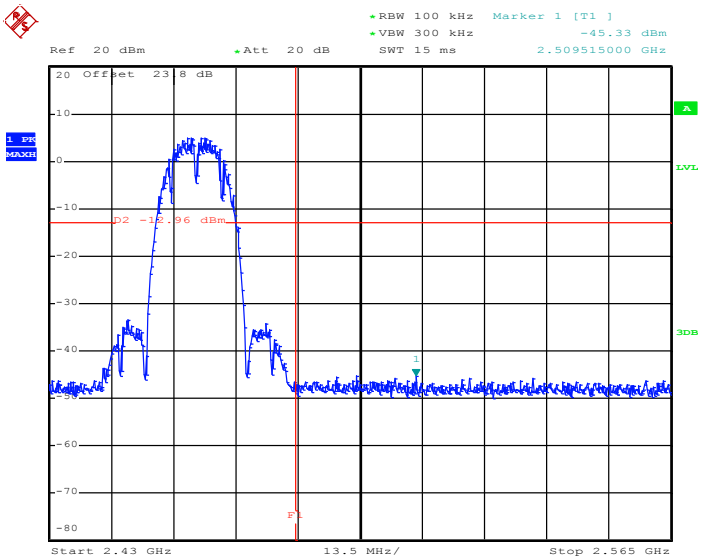


282903-1011 15C BandEdge 802.11b 2412 (ch01)

Date: 27.SEP.2012 17:39:07

802.11b – MIMO Chain 1+2(2)

High Band Edge Plot on Channel 11



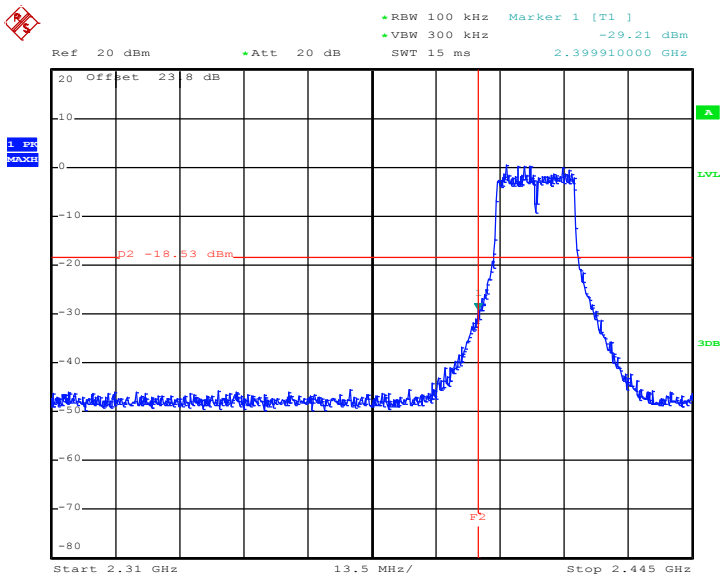
282903-1011 15C BandEdge 802.11b 2462 (ch11)

Date: 27.SEP.2012 17:46:10

Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	Low and High	**Relative Humidity :**	55~58%
Test Channel :	01 and 11	**Test Engineer :**	Alan Liu and Book Lin

802.11g – MIMO Chain 1+2(1)

Low Band Edge Plot on Channel 01

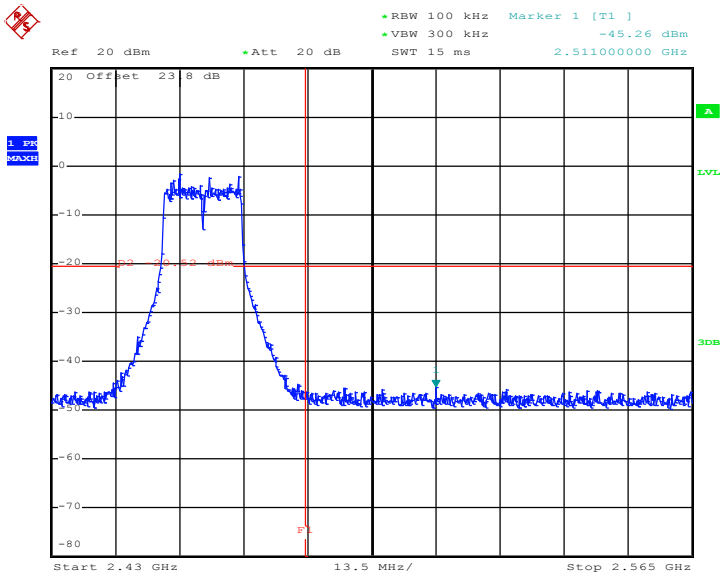


282903-1011 15C BandEdge 802.11g 2412 (ch01)

Date: 27.SEP.2012 16:05:16

802.11g – MIMO Chain 1+2(1)

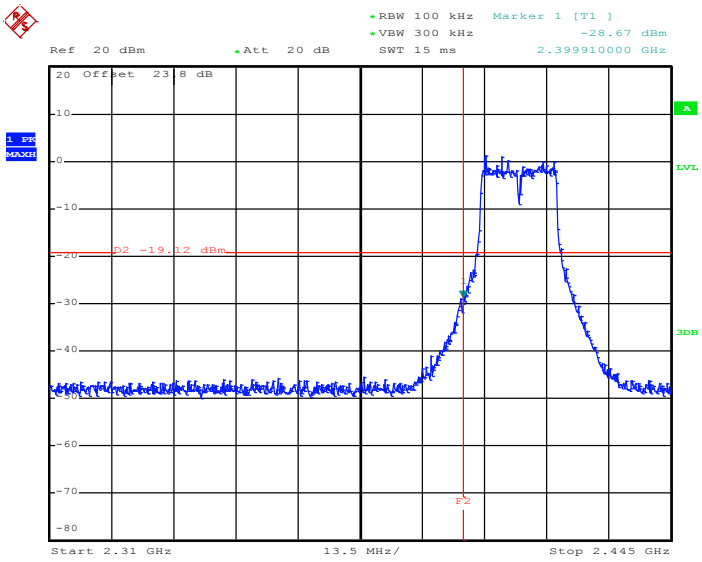
High Band Edge Plot on Channel 11



282903-1011 15C BandEdge 802.11g 2462 (ch11)
Date: 27.SEP.2012 15:58:21

802.11g – MIMO Chain 1+2(2)

Low Band Edge Plot on Channel 01

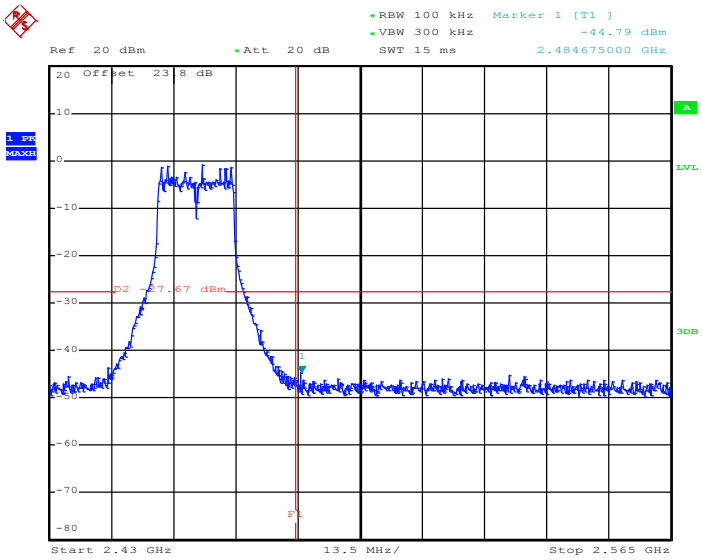


282903-1011 15C BandEdge 802.11g 2412 (ch01)

Date: 27.SEP.2012 17:37:31

802.11g – MIMO Chain 1+2(2)

High Band Edge Plot on Channel 11



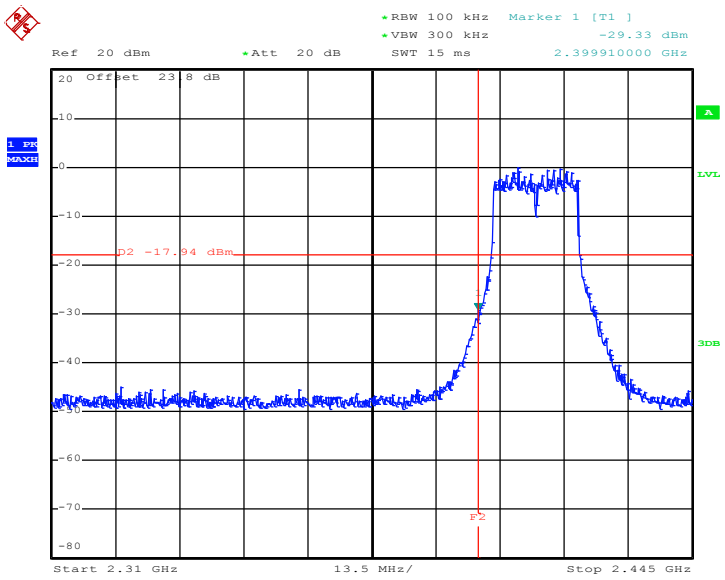
282903-1011 15C BandEdge 802.11g 2462 (ch11)

Date: 27.SEP.2012 17:28:43

Test Mode :	802.11n HT20	**Temperature :**	24~26℃
Test Band :	Low and High	**Relative Humidity :**	55~58%
Test Channel :	01 and 11	**Test Engineer :**	Alan Liu and Book Lin

802.11n HT20 – MIMO Chain 1+2(1)

Low Band Edge Plot on Channel 01

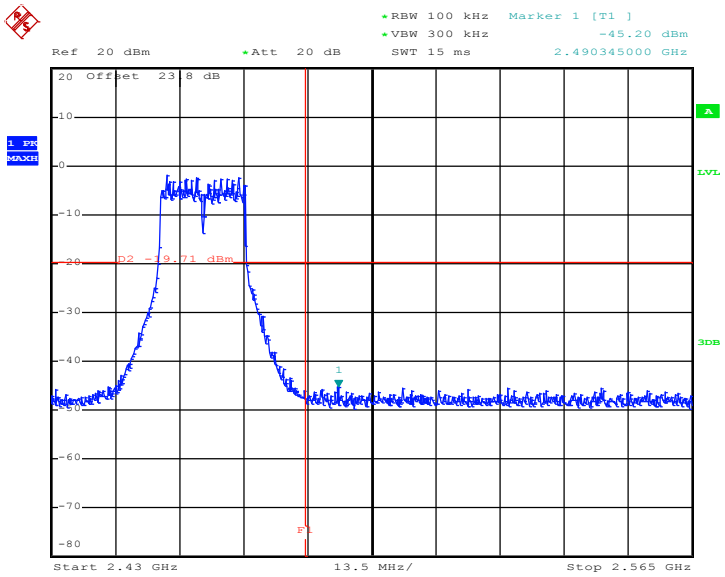


282903-1011 15C BandEdge 802.11g_N20 2412 (ch01)

Date: 27.SEP.2012 16:08:56

802.11n HT20 – MIMO Chain 1+2(1)

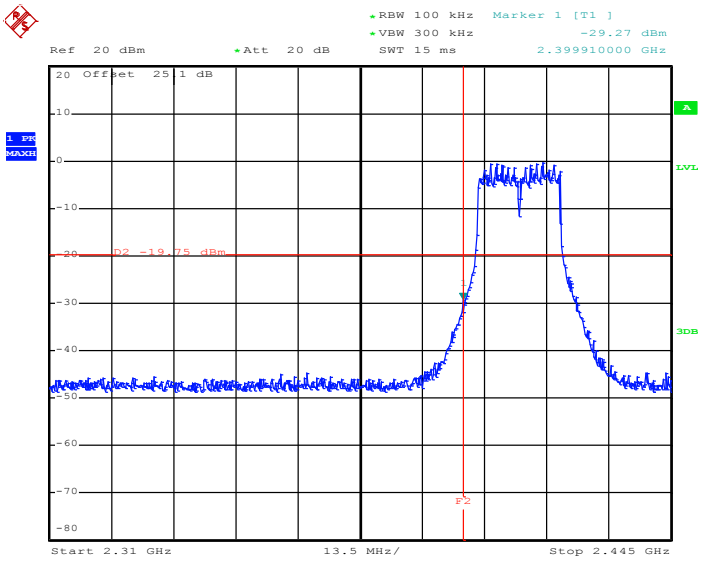
High Band Edge Plot on Channel 11



282903-1011 15C BandEdge 802.11g_N20 2462 (ch11)
Date: 27.SEP.2012 16:16:14

802.11n HT20 – MIMO Chain 1+2(2)

Low Band Edge Plot on Channel 01

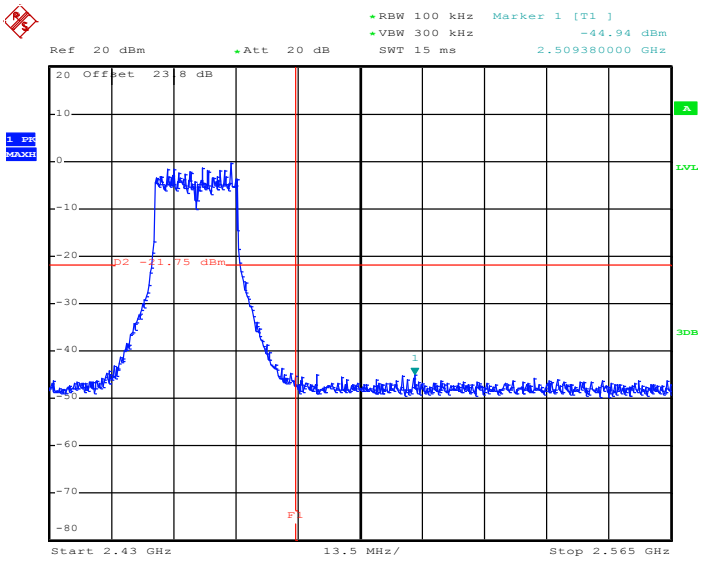


USI 15C BandEdge 802.11g_N20 2412 (ch01)

Date: 22.OCT.2012 19:22:29

802.11n HT20 – MIMO Chain 1+2(2)

High Band Edge Plot on Channel 11



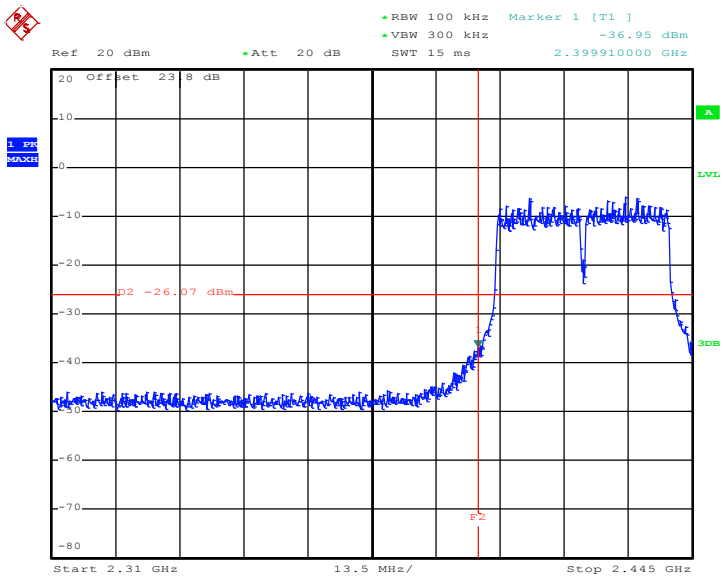
282903-1011 15C BandEdge 802.11a_N20 2462 (ch11)

Date: 27.SEP.2012 17:06:21

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Band :	Low and High	Relative Humidity :	55~58%
Test Channel :	03 and 09	Test Engineer :	Alan Liu and Book Lin

802.11n HT40 – MIMO Chain 1+2(1)

Low Band Edge Plot on Channel 03

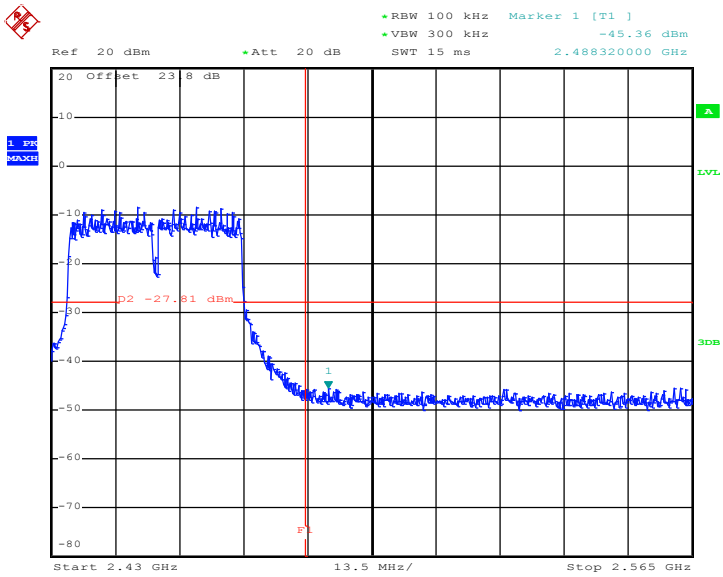


282903-1011 15C BandEdge 802.11g_N40 2422 (ch03)

Date: 27.SEP.2012 16:41:13

802.11n HT40 – MIMO Chain 1+2(1)

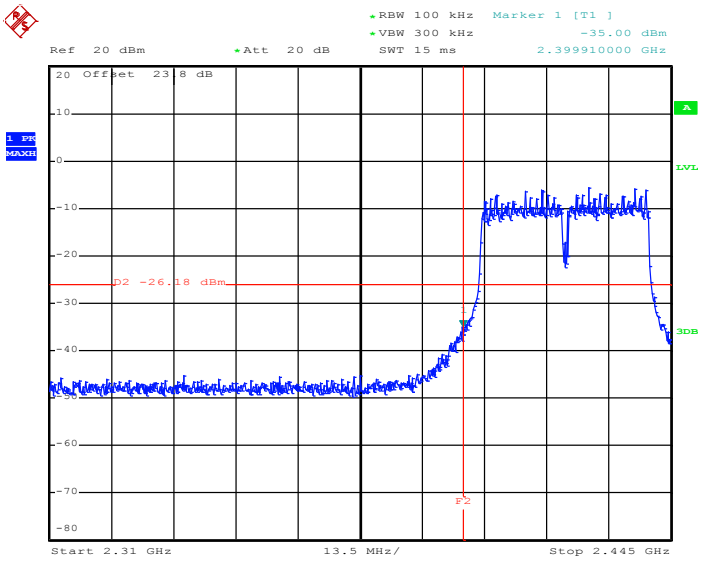
High Band Edge Plot on Channel 09



282903-1011 15C BandEdge 802.11g_N40 2452 (ch09)
Date: 27.SEP.2012 16:23:46

802.11n HT40 – MIMO Chain 1+2(2)

Low Band Edge Plot on Channel 03

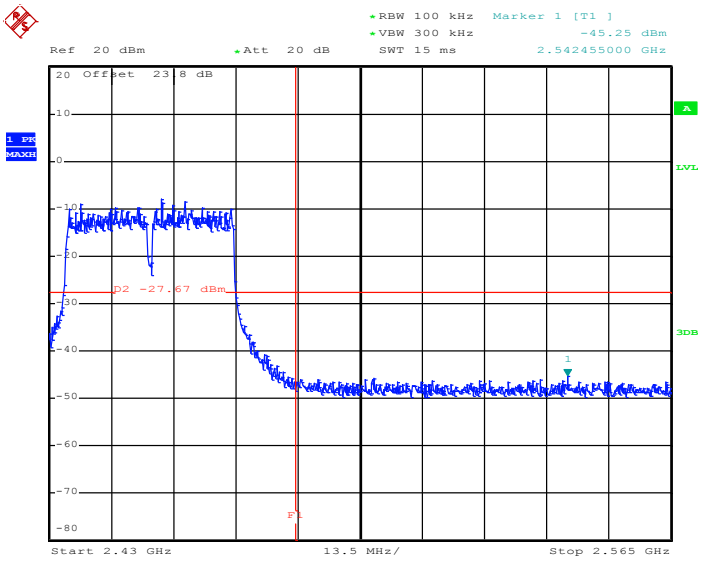


282903-1011 15C BandEdge 802.11g_N40 2422 (ch03)

Date: 27.SEP.2012 16:49:36

802.11n HT40 – MIMO Chain 1+2(2)

High Band Edge Plot on Channel 09



282903-1011 15C BandEdge 802.11g_N40 2452 (ch09)

Date: 27.SEP.2012 17:02:55

3.4.5 Test Result of Conducted Spurious Emission

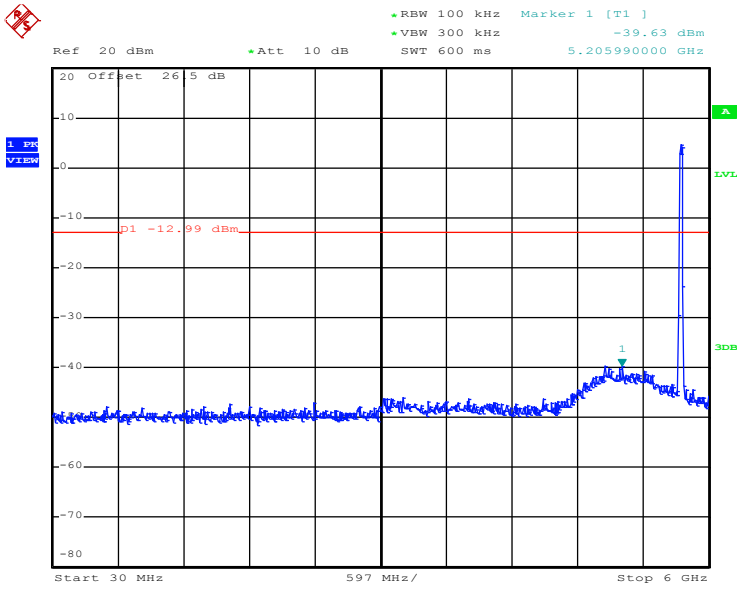
<Antenna 7 for 4.5V>

Test Mode :	802.11a <MIMO Chain 1+2(1)>	**Temperature :**	24~26℃
Test Band :	30MHz-6GHz and 5G-40GHz	**Relative Humidity :**	55~58%
Test Channel :	149, 157, 165	**Test Engineer :**	Alan Liu and Book Lin

802.11a <MIMO Chain 1+2(1)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 149



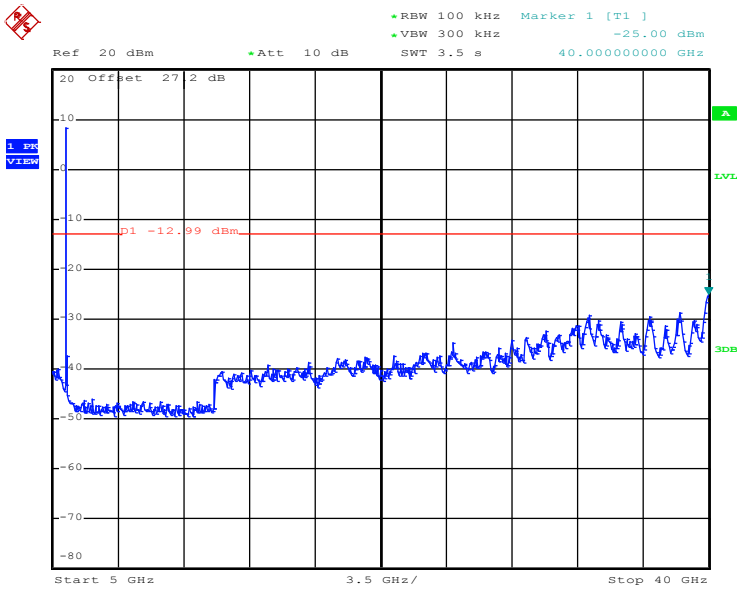
290603 15C Spurious 802.11a 5745 (ch149)

Date: 10.OCT.2012 17:48:36

802.11a <MIMO Chain 1+2(1)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 149



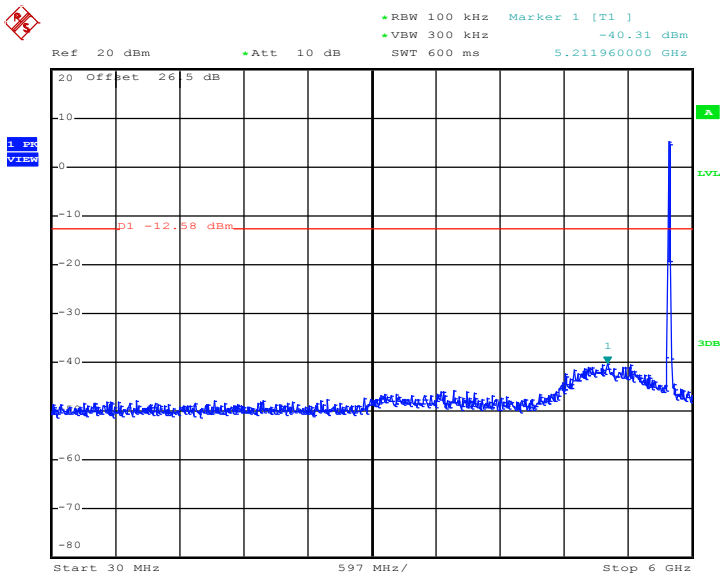
290603 15C Spurious 802.11a 5745 (ch149)

Date: 10.OCT.2012 17:48:54

802.11a <MIMO Chain 1+2(1)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 157

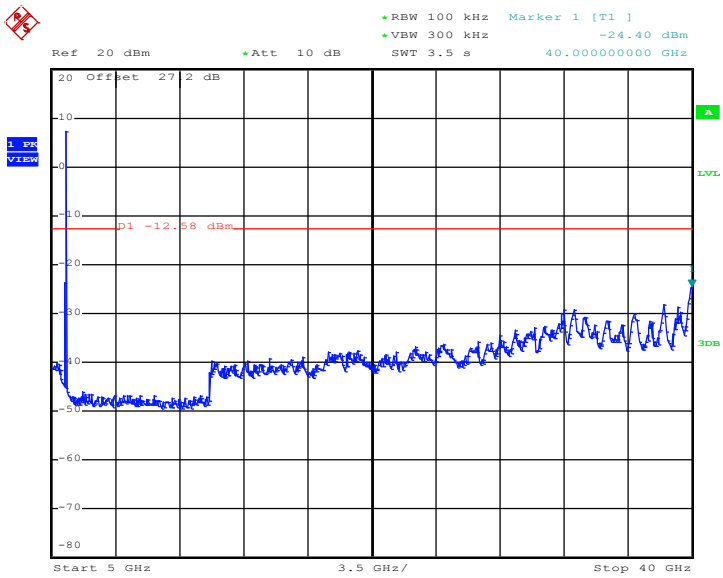


290603 15C Spurious 802.11a 5785 (ch157)
Date: 10.OCT.2012 18:17:19

802.11a <MIMO Chain 1+2(1)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 157

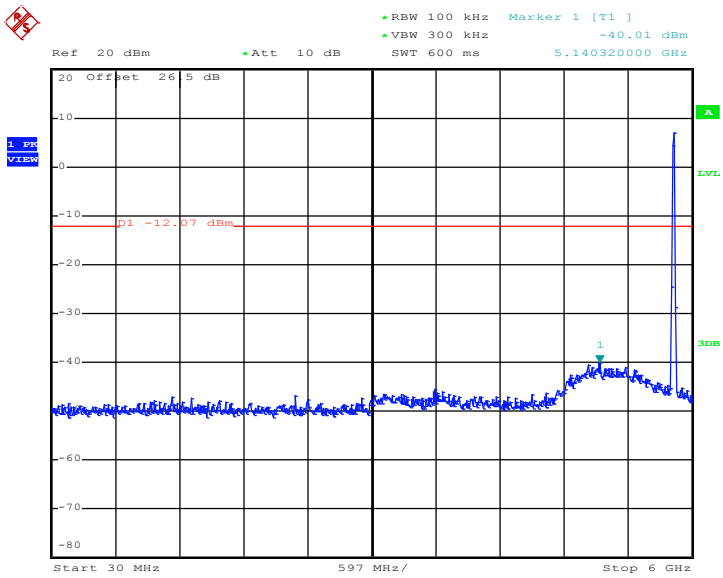


290603 15C Spurious 802.11a 5785 (ch157)
Date: 10.OCT.2012 18:17:37

802.11a <MIMO Chain 1+2(1)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 165

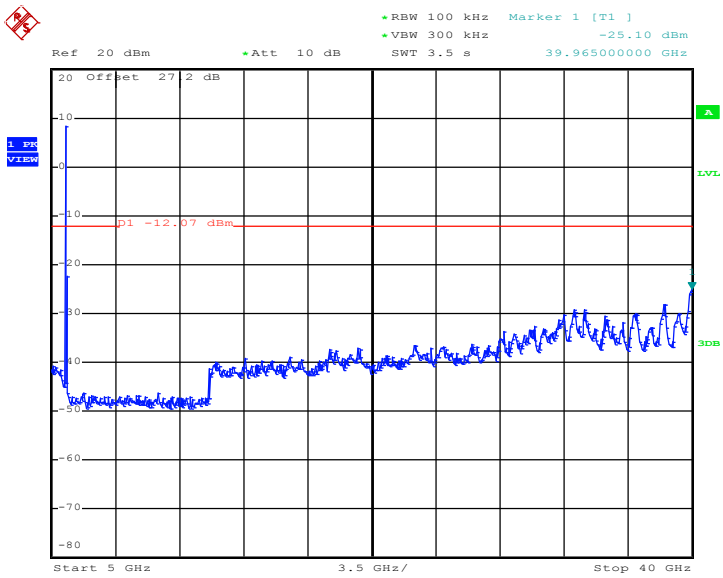


290603 15C Spurious 802.11a 5825 (ch165)
Date: 10.OCT.2012 17:55:30

802.11a <MIMO Chain 1+2(1)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 165



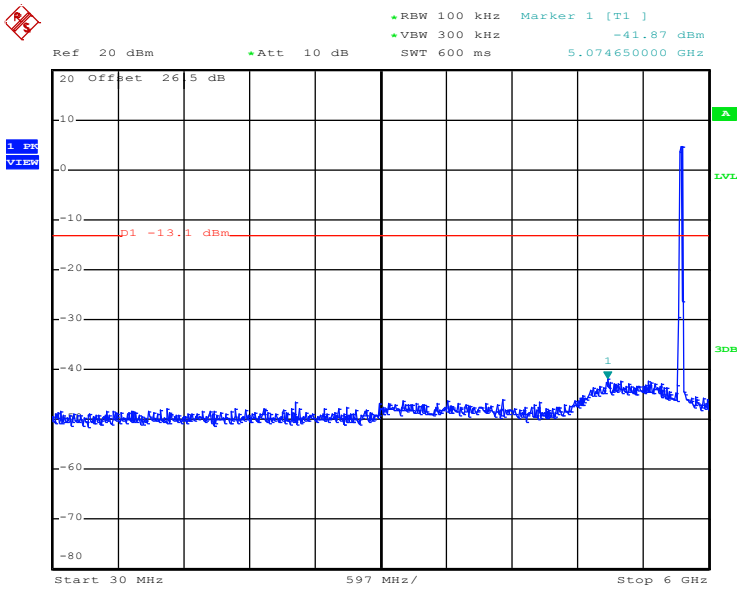
290603 15C Spurious 802.11a 5825 (ch165)
Date: 10.OCT.2012 17:55:48

Test Mode :	802.11a <MIMO Chain 1+2(2)>	Temperature :	24~26℃
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	55~58%
Test Channel :	149, 157, 165	Test Engineer :	Alan Liu and Book Lin

802.11a <MIMO Chain 1+2(2)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 149



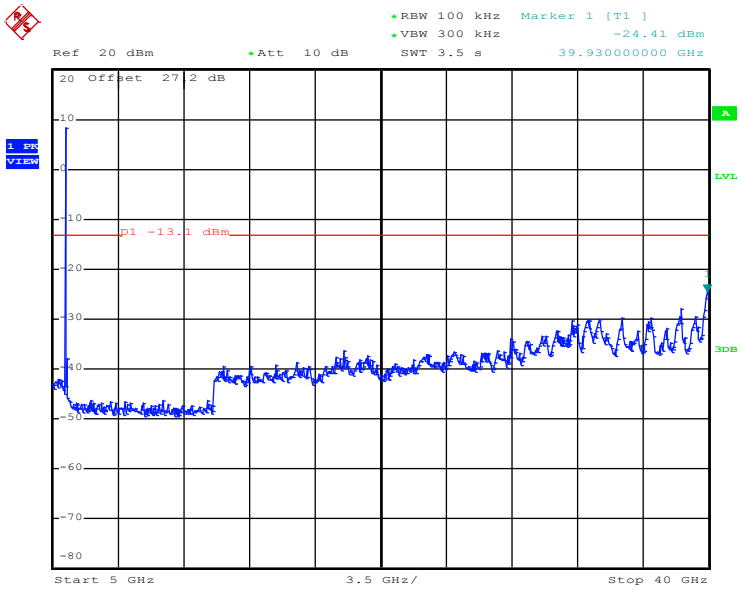
290603 15C Spurious 802.11a 5745 (ch149)

Date: 10.OCT.2012 17:50:41

802.11a <MIMO Chain 1+2(2)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 149



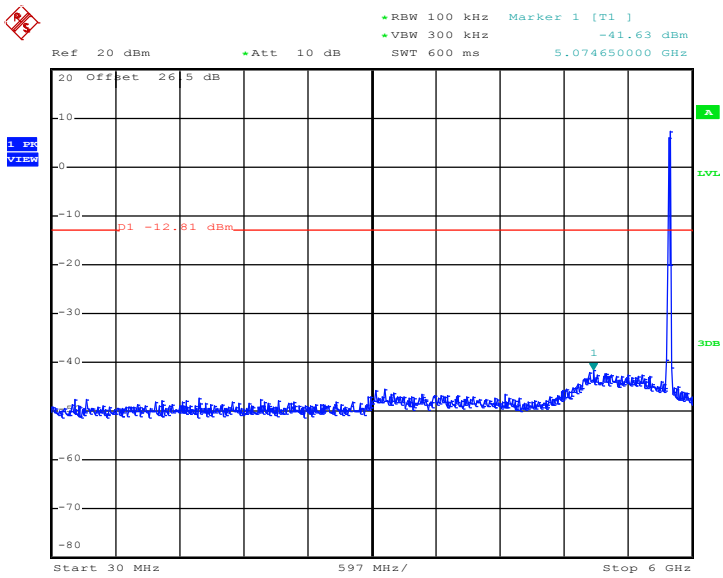
290603 15C Spurious 802.11a 5745 (ch149)

Date: 10.OCT.2012 17:50:58

802.11a <MIMO Chain 1+2(2)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 157

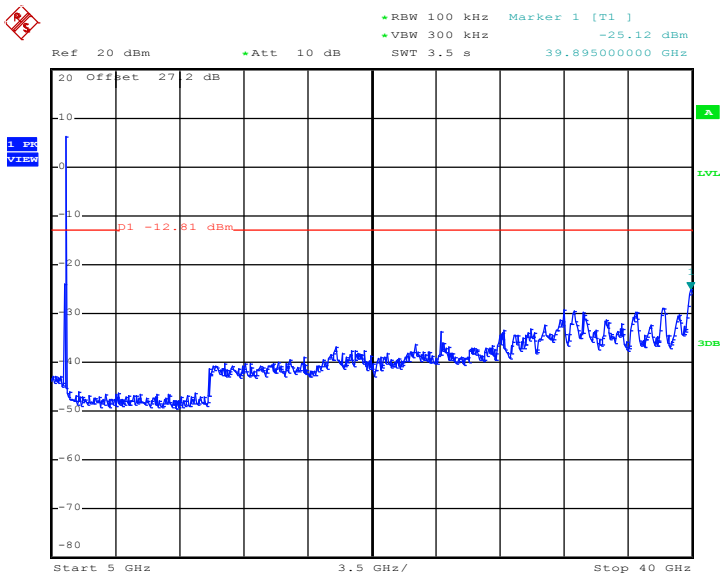


290603 15C Spurious 802.11a 5785 (ch157)
Date: 10.OCT.2012 18:06:34

802.11a <MIMO Chain 1+2(2)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 157

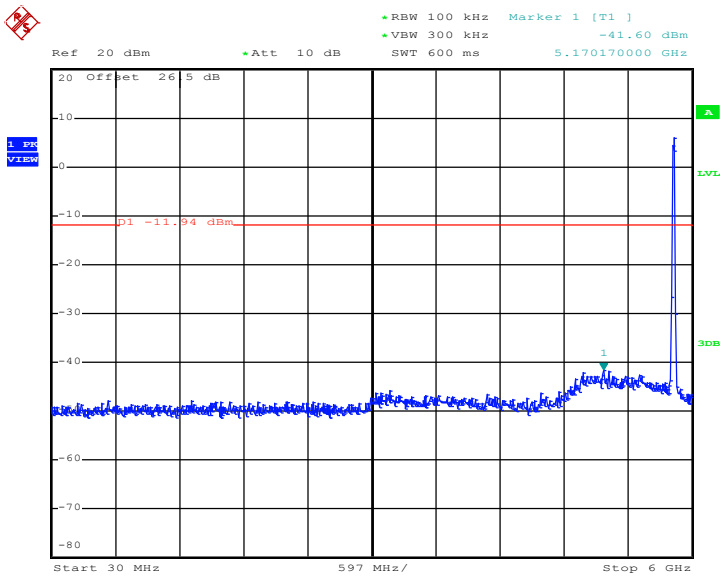


290603 15C Spurious 802.11a 5785 (ch157)
Date: 10.OCT.2012 18:06:52

802.11a <MIMO Chain 1+2(2)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 165

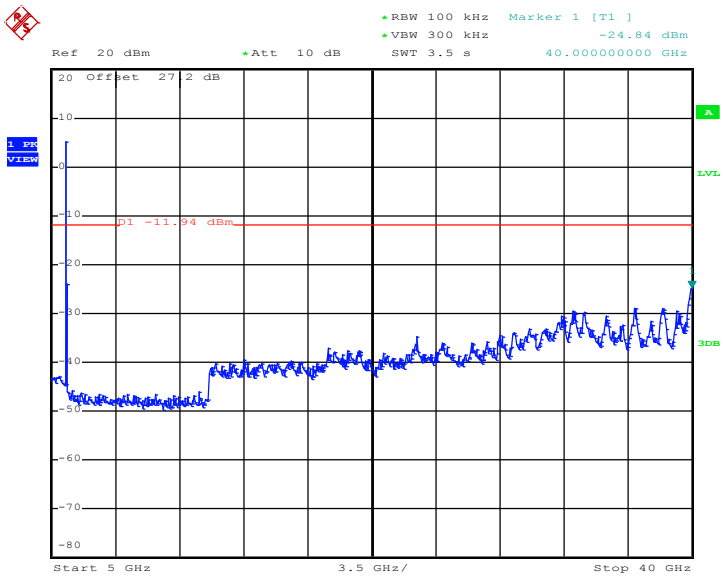


290603 15C Spurious 802.11a 5825 (ch165)
Date: 10.OCT.2012 17:53:15

802.11a <MIMO Chain 1+2(2)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 165



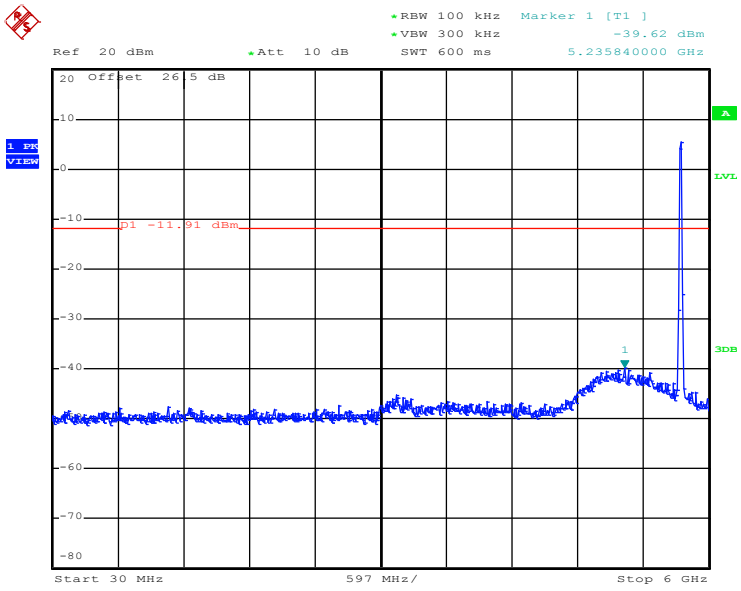
290603 15C Spurious 802.11a 5825 (ch165)
Date: 10.OCT.2012 17:53:33

Test Mode :	802.11n HT20 <MIMO Chain 1+2(1)>	**Temperature :**	24~26℃
Test Band :	30MHz-6GHz and 5G-40GHz	**Relative Humidity :**	55~58%
Test Channel :	149, 157, 165	**Test Engineer :**	Alan Liu and Book Lin

802.11n HT20 <MIMO Chain 1+2(1)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 149



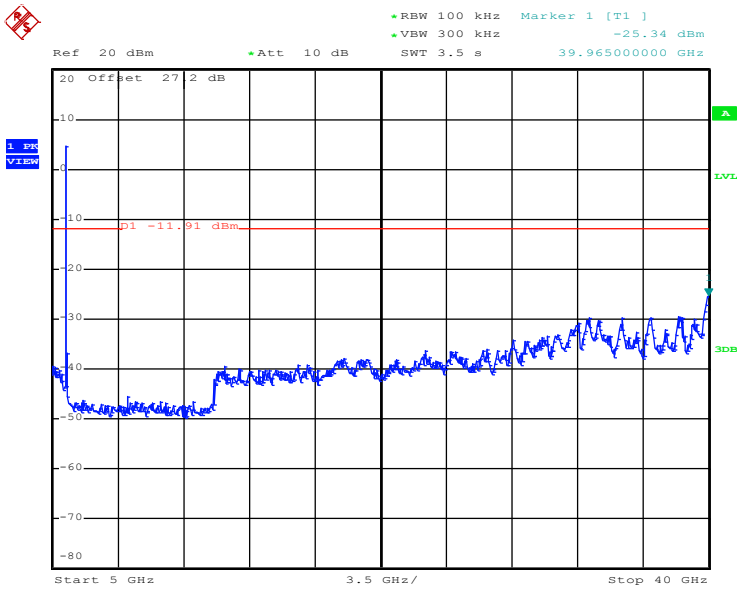
290603 15C Spurious 802.11a_N20 5745 (ch149)

Date: 10.OCT.2012 17:45:57

802.11n HT20 <MIMO Chain 1+2(1)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 149



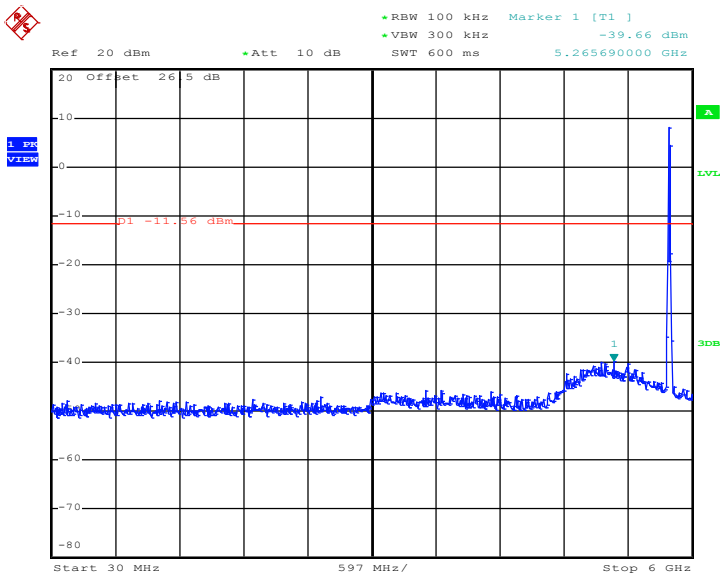
290603 15C Spurious 802.11a_N20 5745 (ch149)

Date: 10.OCT.2012 17:46:15

802.11n HT20 <MIMO Chain 1+2(1)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 157

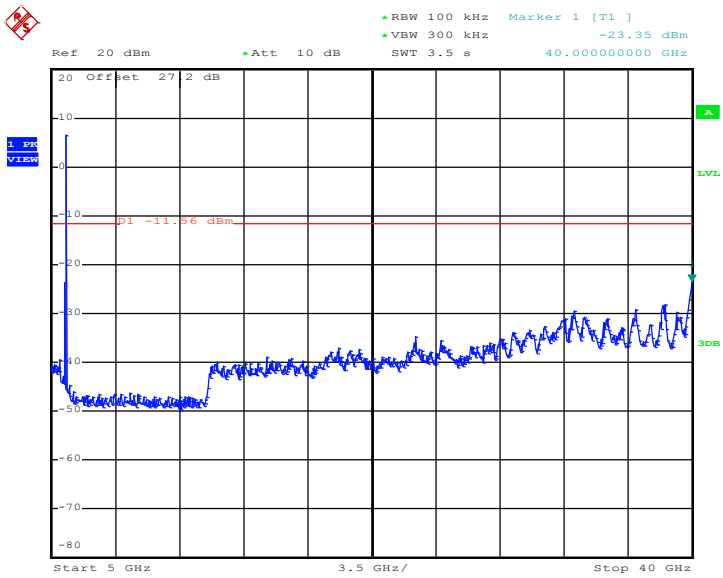


290603 15C Spurious 802.11a_N20 5785 (ch157)
Date: 10.OCT.2012 18:03:47

802.11n HT20 <MIMO Chain 1+2(1)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 157

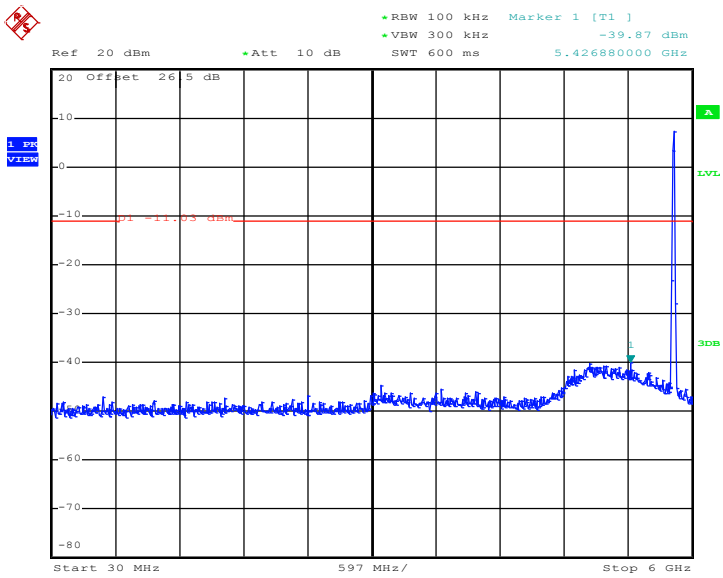


290603 15C Spurious 802.11a_N20 5785 (ch157)
Date: 10.OCT.2012 18:04:05

802.11n HT20 <MIMO Chain 1+2(1)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 165

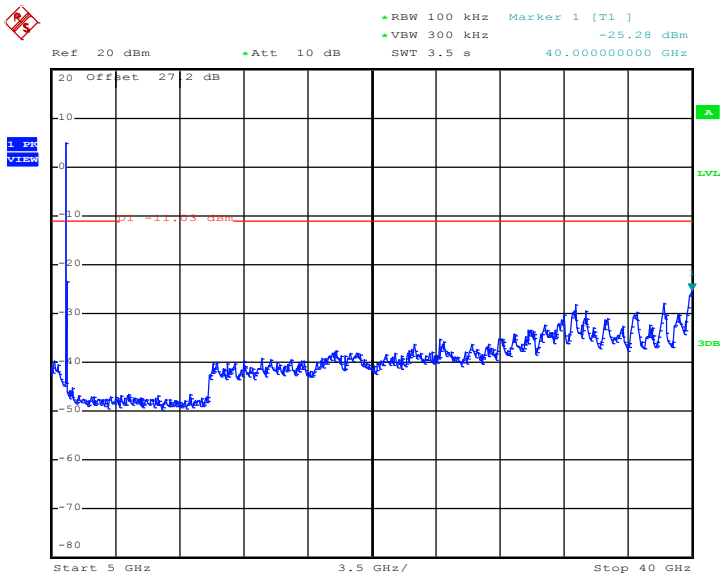


290603 15C Spurious 802.11a_N20 5825 (ch165)
Date: 10.OCT.2012 17:57:56

802.11n HT20 <MIMO Chain 1+2(1)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 165



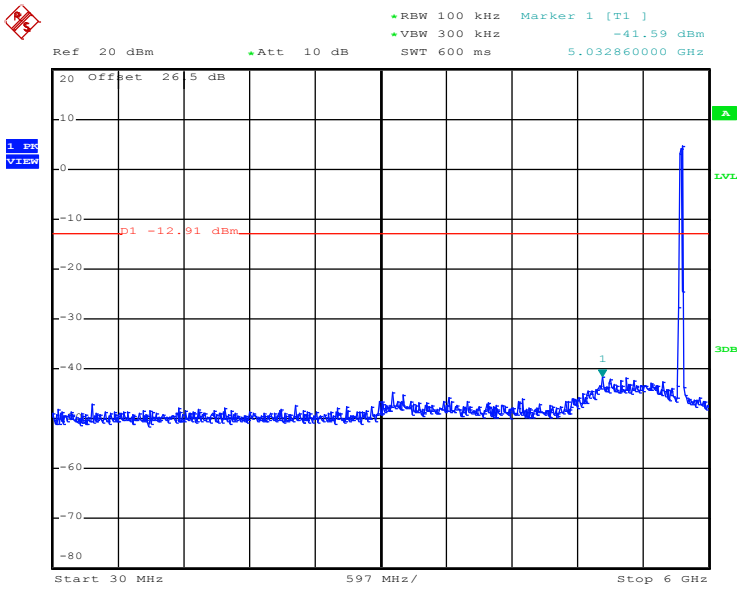
290603 15C Spurious 802.11a_N20 5825 (ch165)
Date: 10.OCT.2012 17:58:14

Test Mode :	802.11n HT20 <MIMO Chain 1+2(2)>	**Temperature :**	24~26℃
Test Band :	30MHz-6GHz and 5G-40GHz	**Relative Humidity :**	55~58%
Test Channel :	149, 157, 165	**Test Engineer :**	Alan Liu and Book Lin

802.11n HT20 <MIMO Chain 1+2(2)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 149

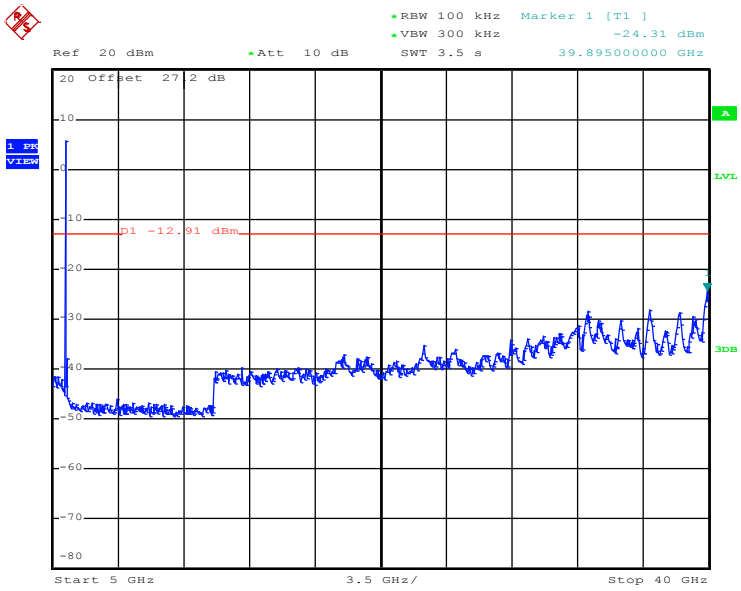


290603 15C Spurious 802.11a_N20 5745 (ch149)
Date: 10.OCT.2012 17:43:45

802.11n HT20 <MIMO Chain 1+2(2)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 149

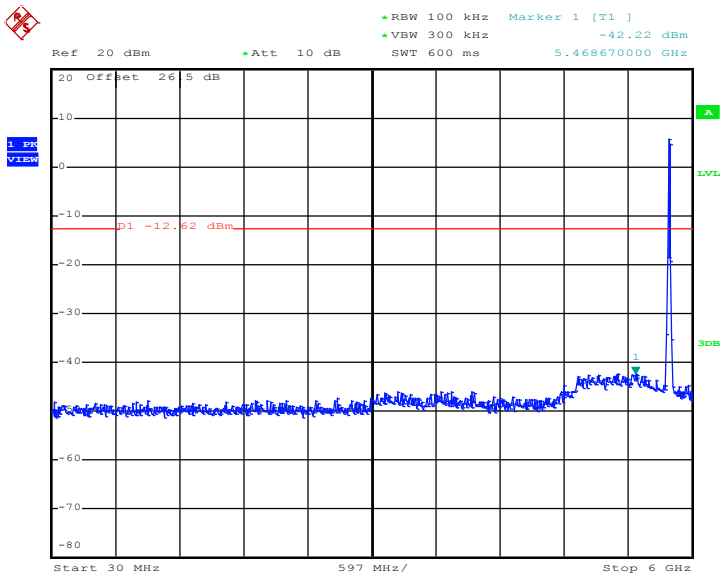


290603 15C Spurious 802.11a_N20 5745 (ch149)
Date: 10.OCT.2012 17:44:03

802.11n HT20 <MIMO Chain 1+2(2)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 157

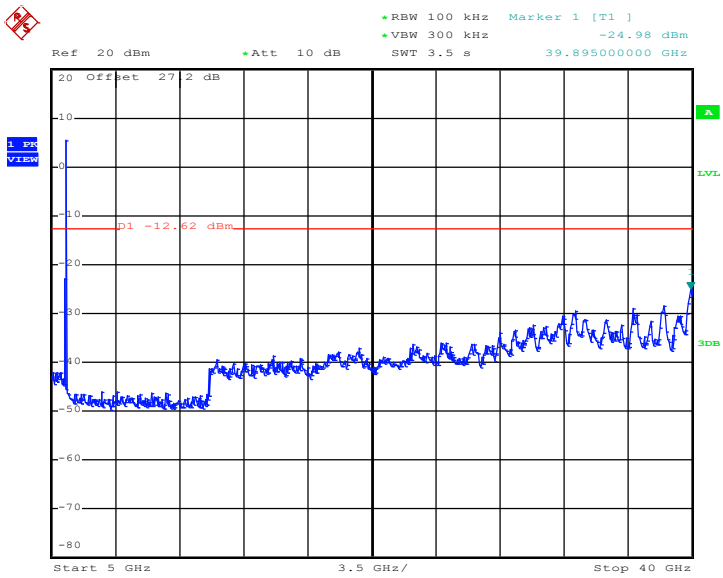


290603 15C Spurious 802.11a_N20 5785 (ch157)
Date: 10.OCT.2012 18:02:03

802.11n HT20 <MIMO Chain 1+2(2)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 157

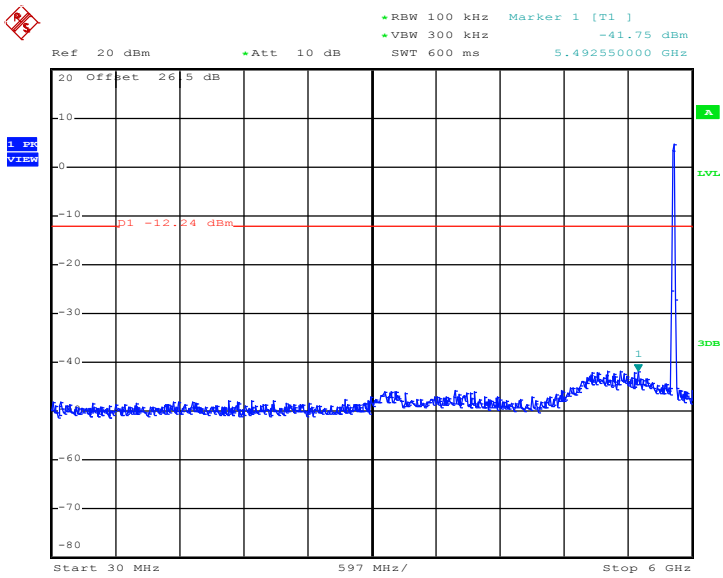


290603 15C Spurious 802.11a_N20 5785 (ch157)
Date: 10.OCT.2012 18:02:21

802.11n HT20 <MIMO Chain 1+2(2)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 165

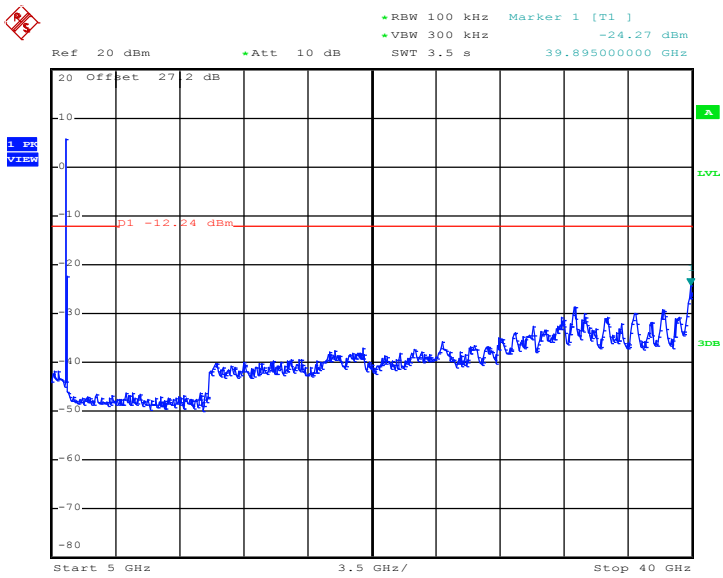


290603 15C Spurious 802.11a_N20 5825 (ch165)
Date: 10.OCT.2012 18:00:37

802.11n HT20 <MIMO Chain 1+2(2)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 165



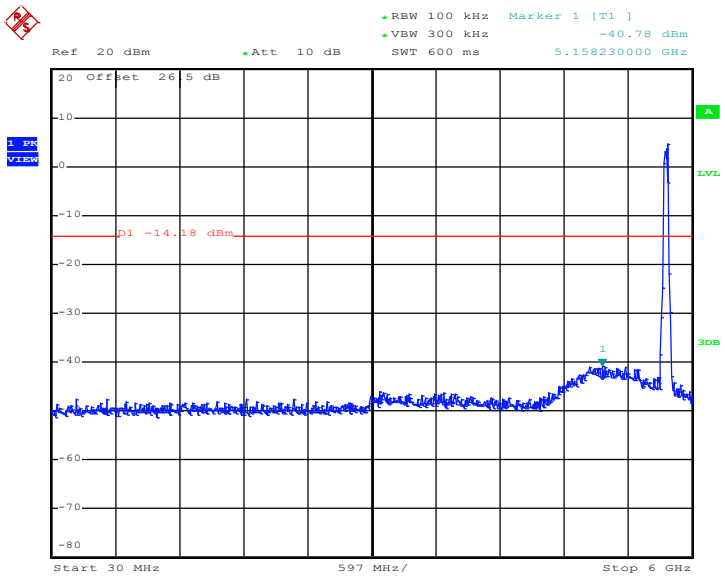
290603 15C Spurious 802.11a_N20 5825 (ch165)
Date: 10.OCT.2012 18:00:54

Test Mode :	802.11n HT40 <MIMO Chain 1+2(1)>	**Temperature :**	24~26℃
Test Band :	30MHz-6GHz and 5G-40GHz	**Relative Humidity :**	55~58%
Test Channel :	151 and 159	**Test Engineer :**	Alan Liu and Book Lin

802.11n HT40 <MIMO Chain 1+2(1)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 151



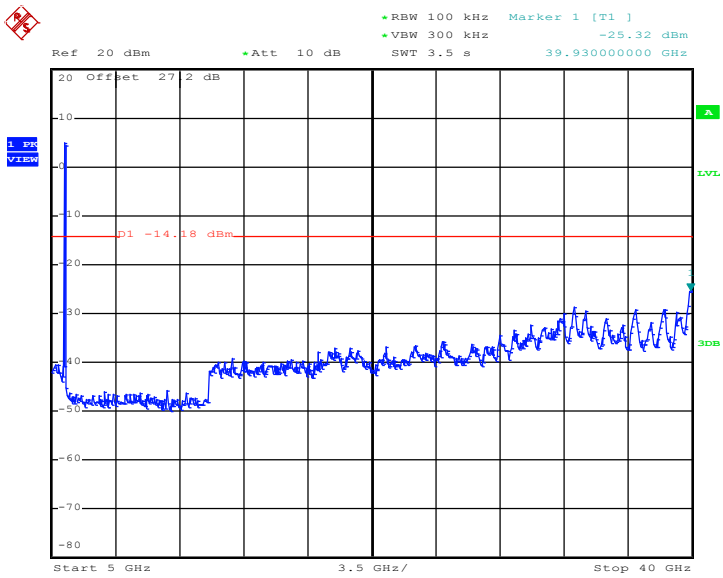
290603 15C Spurious 802.11a_N40 5755

Date: 10.OCT.2012 18:22:57

802.11n HT40 <MIMO Chain 1+2(1)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 151

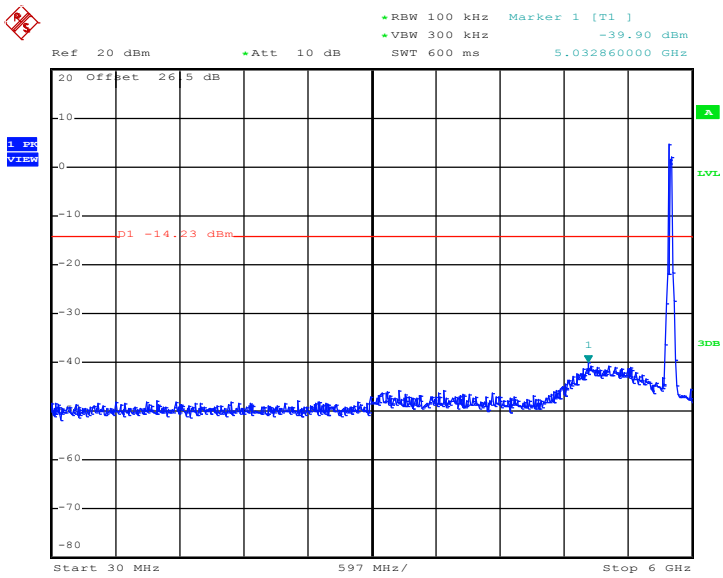


290603 15C Spurious 802.11a_N40 5755
Date: 10.OCT.2012 18:23:14

802.11n HT40 <MIMO Chain 1+2(1)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 159

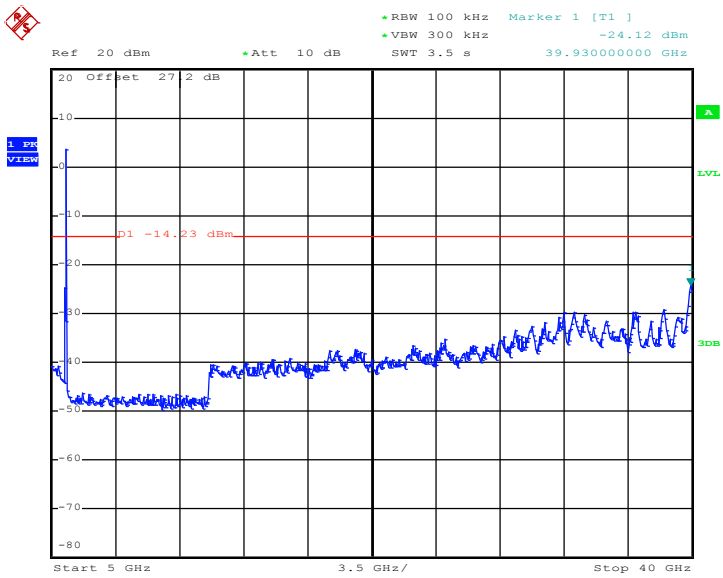


290603 15C Spurious 802.11a_N40 5795
Date: 10.OCT.2012 18:19:14

802.11n HT40 <MIMO Chain 1+2(1)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 159



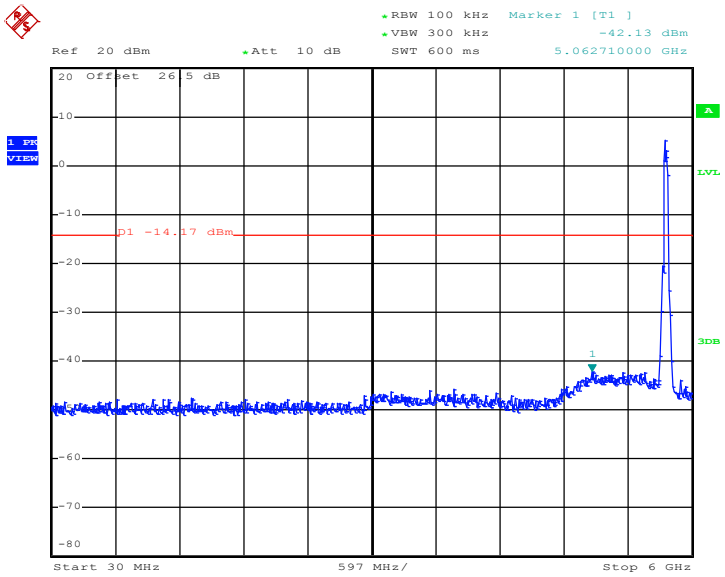
290603 15C Spurious 802.11a_N40 5795
Date: 10.OCT.2012 18:19:31

Test Mode :	802.11n HT40 <MIMO Chain 1+2(2)>	**Temperature :**	24~26℃
Test Band :	30MHz-6GHz and 5G-40GHz	**Relative Humidity :**	55~58%
Test Channel :	151 and 159	**Test Engineer :**	Alan Liu and Book Lin

802.11n HT40 <MIMO Chain 1+2(2)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 151



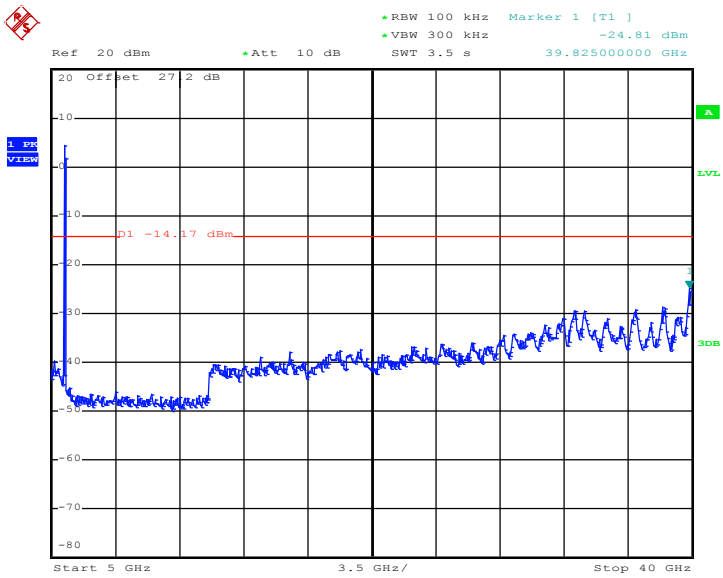
290603 15C Spurious 802.11a_N40 5755

Date: 10.OCT.2012 18:21:31

802.11n HT40 <MIMO Chain 1+2(2)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 151

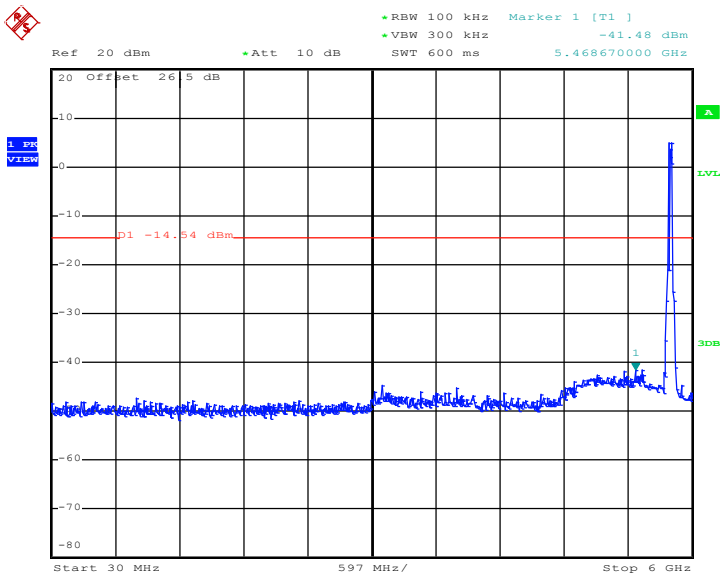


290603 15C Spurious 802.11a_N40 5755
Date: 10.OCT.2012 18:21:48

802.11n HT40 <MIMO Chain 1+2(2)>

30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 159

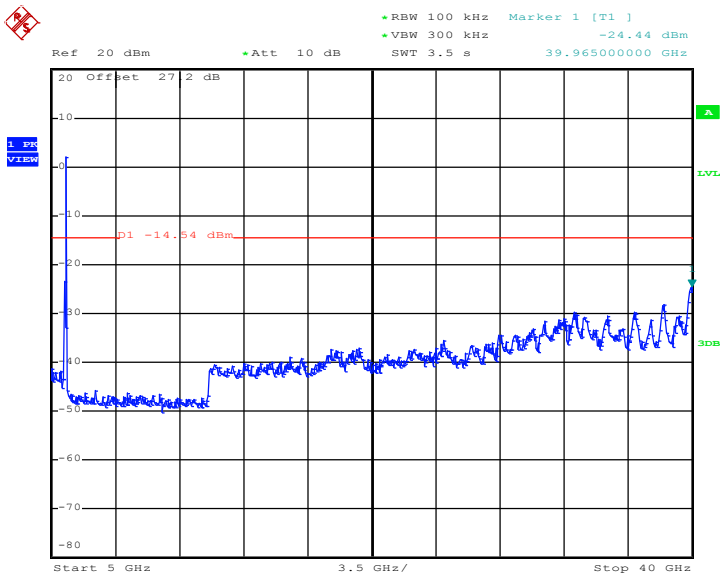


290603 15C Spurious 802.11a_N40 5795
Date: 10.OCT.2012 18:20:22

802.11n HT40 <MIMO Chain 1+2(2)>

5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 159



290603 15C Spurious 802.11a_N40 5795
Date: 10.OCT.2012 18:20:40

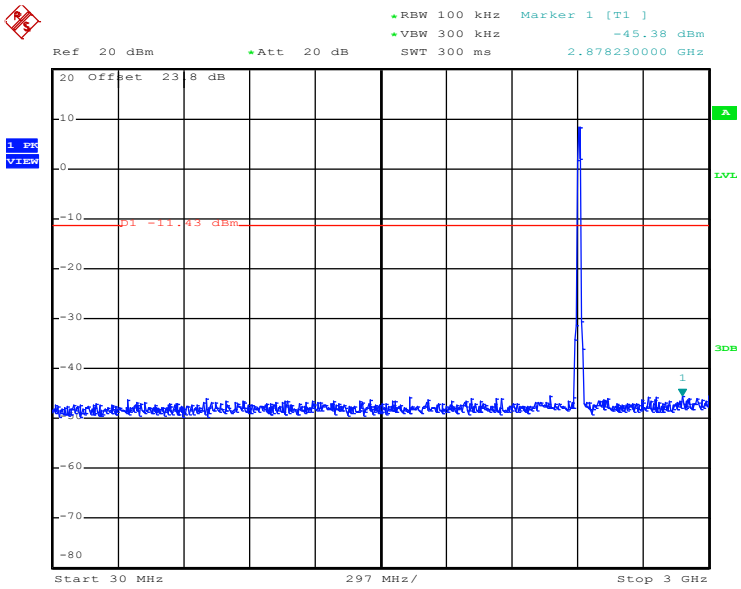
<Antenna 8 for 4.5V>

Test Mode :	802.11b <MIMO Chain 1+2(1)>	**Temperature :**	24~26℃
Test Band :	30MHz-3GHz and 2G-25GHz	**Relative Humidity :**	55~58%
Test Channel :	01, 02, 06, 10, 11	**Test Engineer :**	Alan Liu and Book Lin

802.11b <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 01



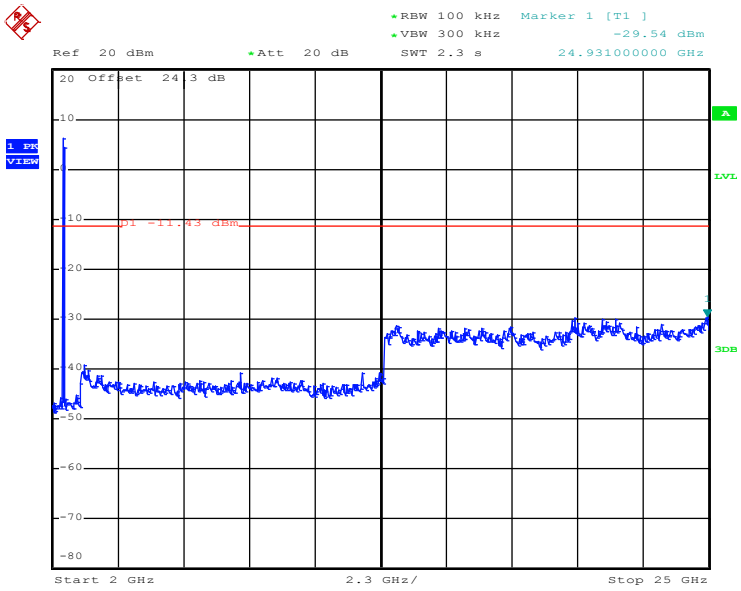
282903-1011 15C Spurious 802.11b 2412 (ch01)

Date: 27.SEP.2012 17:55:31

802.11b <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01



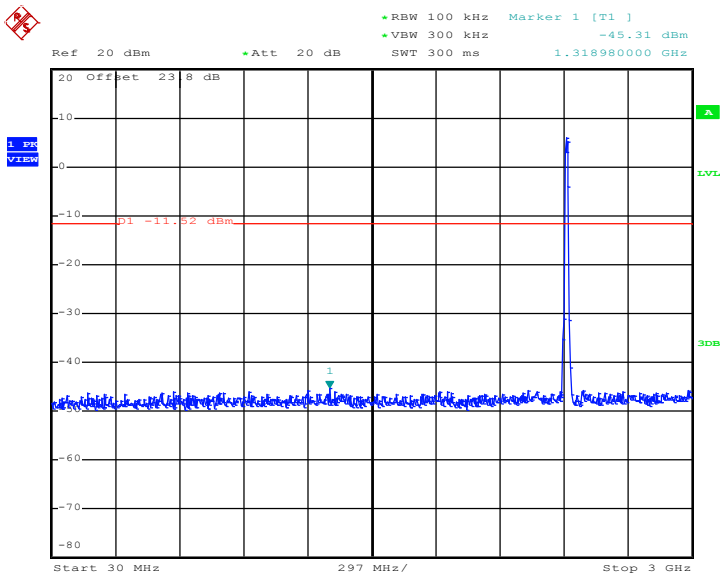
282903-1011 15C Spurious 802.11b 2412 (ch01)

Date: 27.SEP.2012 17:55:49

802.11b <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 02

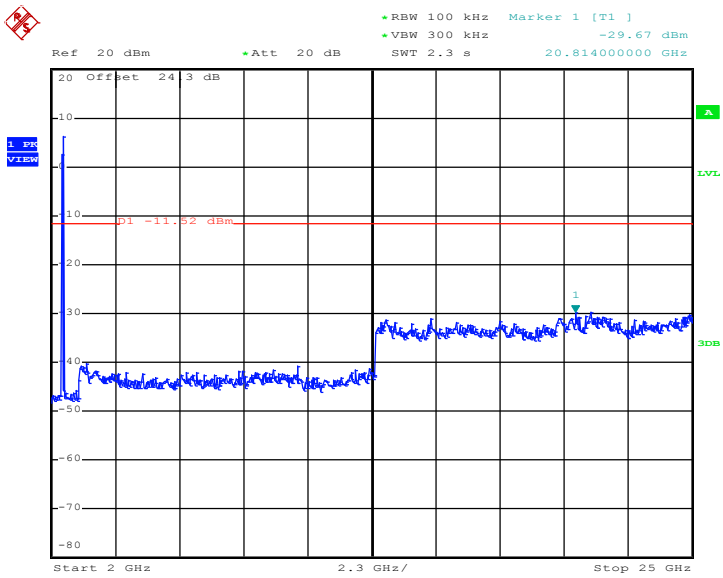


282903-1011 15C Spurious 802.11b 2417
Date: 27.SEP.2012 17:54:12

802.11b <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 02

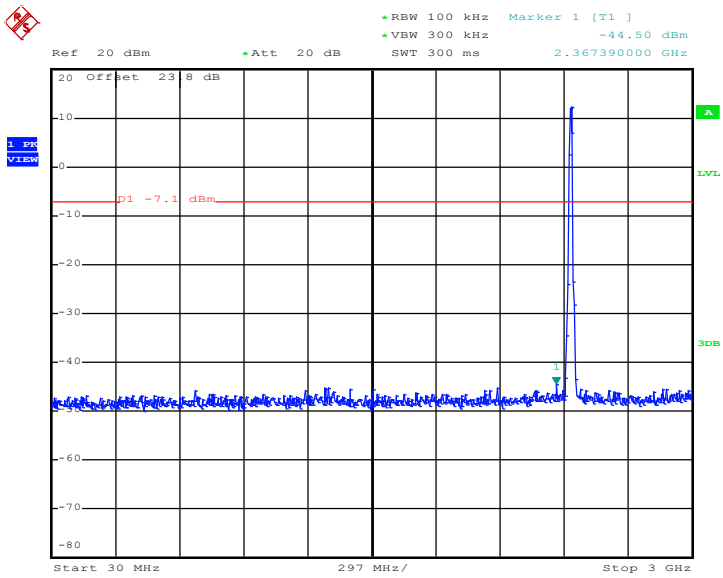


282903-1011 15C Spurious 802.11b 2417
Date: 27.SEP.2012 17:54:34

802.11b <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 06

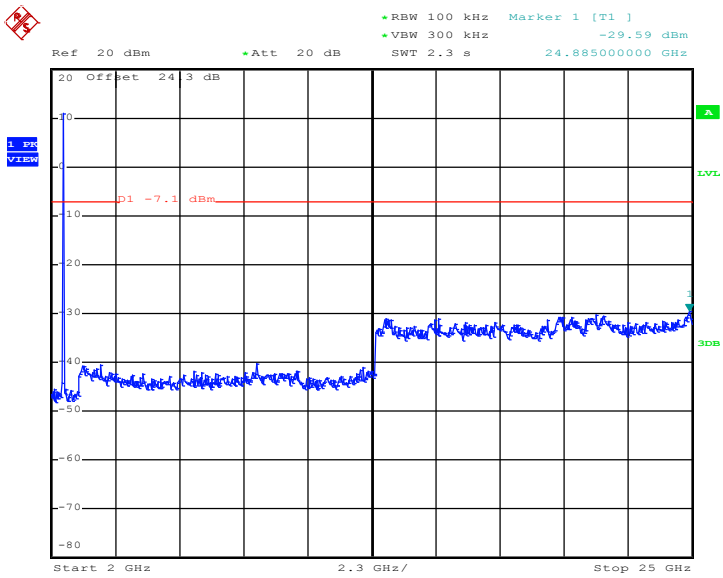


282903-1011 15C Spurious 802.11b 2437 (ch06)
Date: 27.SEP.2012 17:53:00

802.11b <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

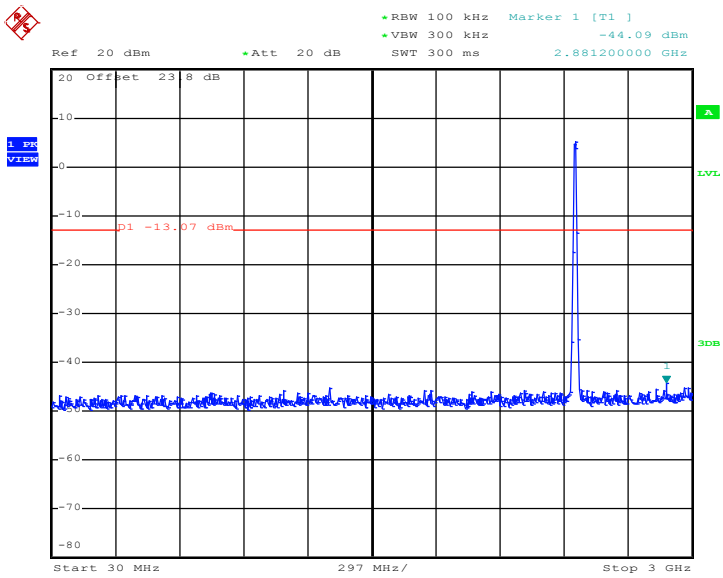


282903-1011 15C Spurious 802.11b 2437 (ch06)
Date: 27.SEP.2012 17:53:21

802.11b <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 10

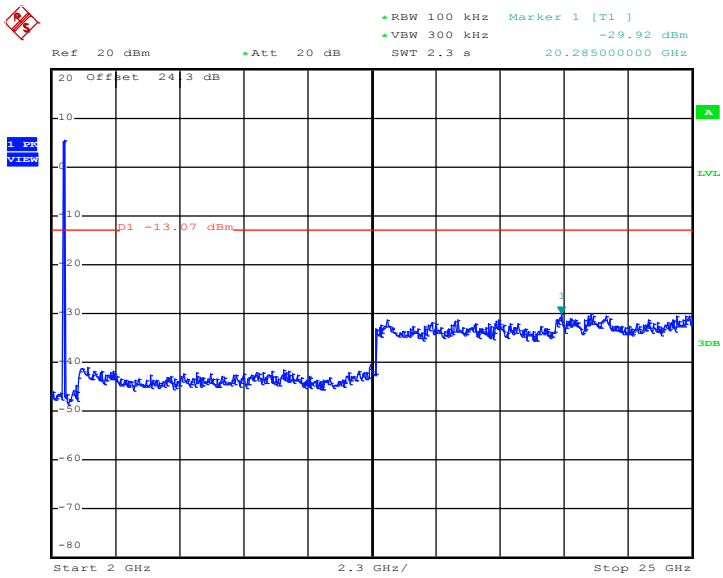


282903-1011 15C Spurious 802.11b 2457
Date: 27.SEP.2012 17:51:58

802.11b <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 10

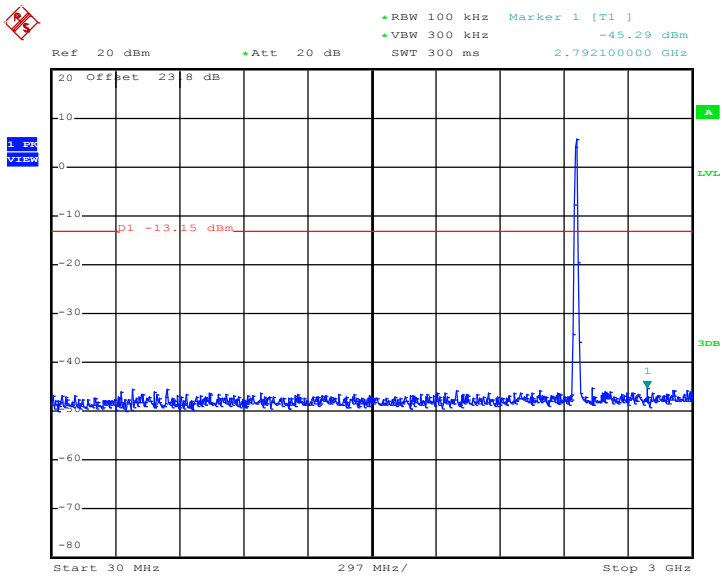


282903-1011 15C Spurious 802.11b 2457
Date: 27.SEP.2012 17:52:16

802.11b <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 11

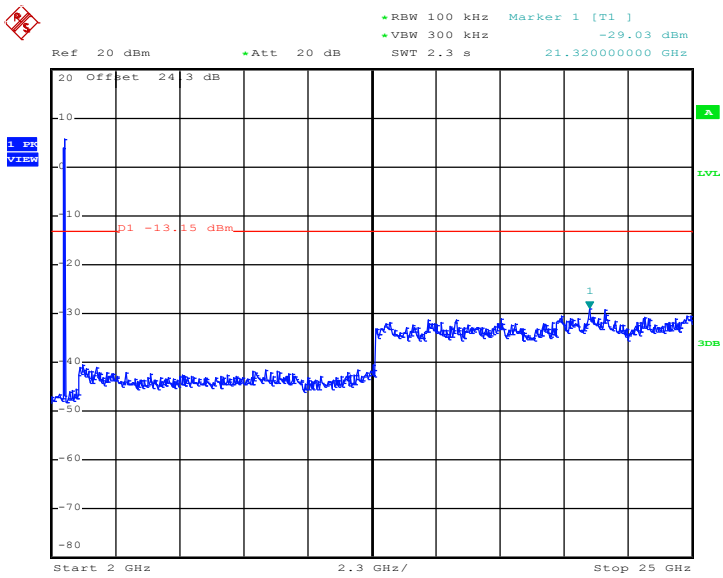


282903-1011 15C Spurious 802.11b 2462 (ch11)
Date: 27.SEP.2012 17:50:40

802.11b <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



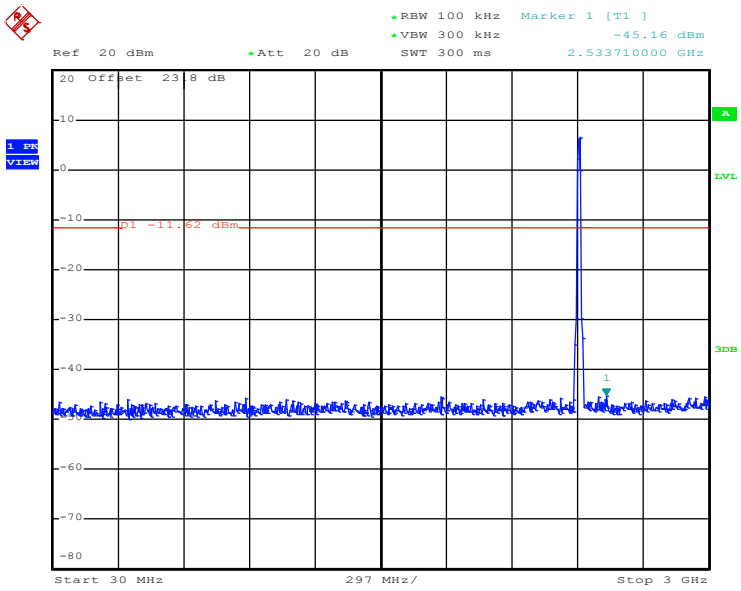
282903-1011 15C Spurious 802.11b 2462 (ch11)
Date: 27.SEP.2012 17:51:00

Test Mode :	802.11b <MIMO Chain 1+2(2)>	**Temperature :**	24~26℃
Test Band :	30MHz-3GHz and 2G-25GHz	**Relative Humidity :**	55~58%
Test Channel :	01, 02, 06, 10, 11	**Test Engineer :**	Alan Liu and Book Lin

802.11b <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 01

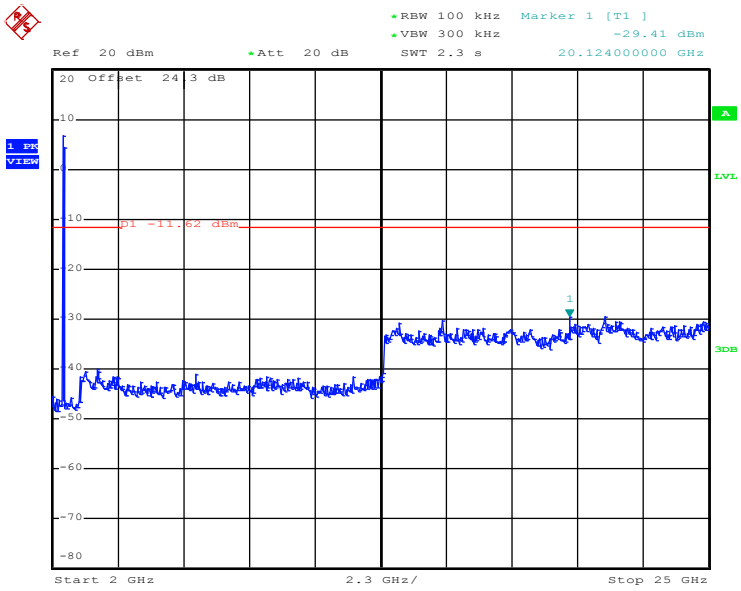


282903-1011 15C Spurious 802.11b 2412 (ch01)
Date: 27.SEP.2012 17:39:42

802.11b <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01



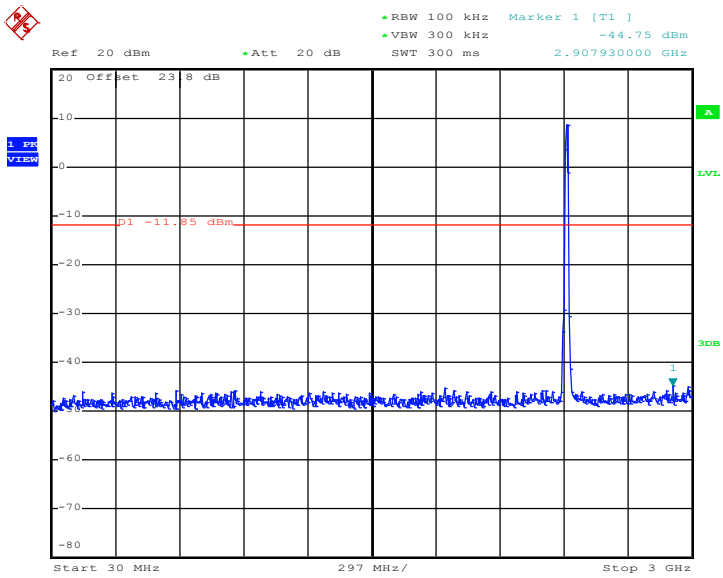
282903-1011 15C Spurious 802.11b 2412 (ch01)

Date: 27.SEP.2012 17:40:02

802.11b <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 02

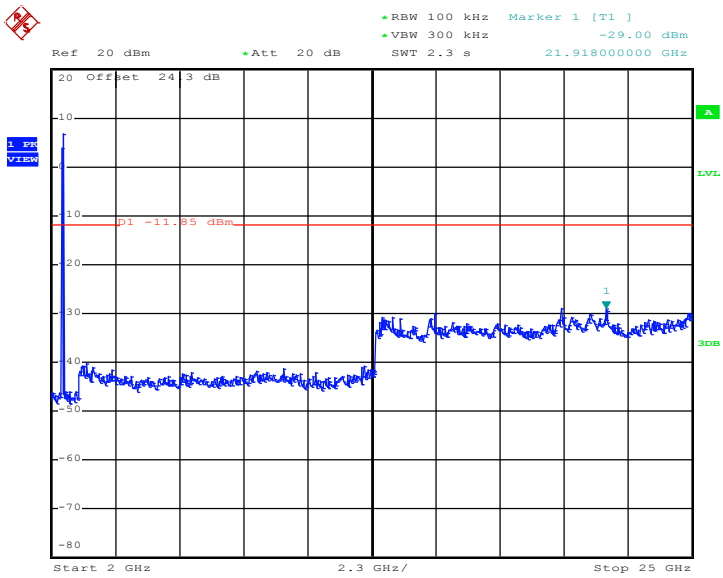


282903-1011 15C Spurious 802.11b 2417
Date: 27.SEP.2012 17:41:37

802.11b <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 02

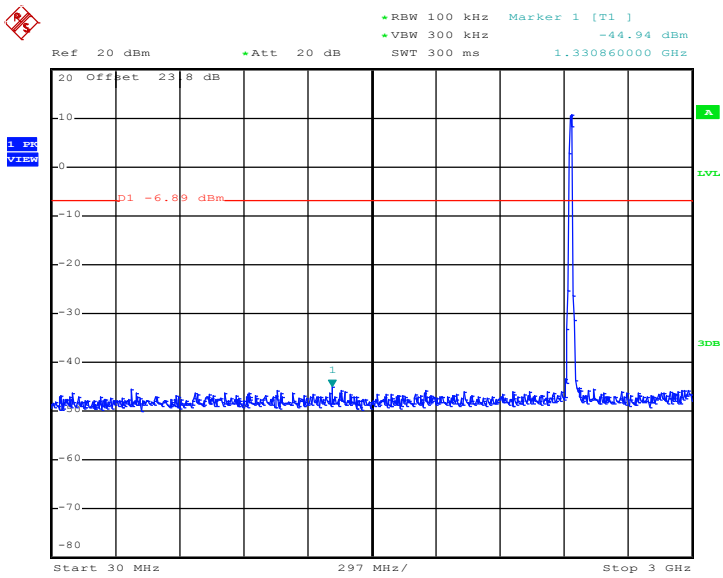


282903-1011 15C Spurious 802.11b 2417
Date: 27.SEP.2012 17:41:58

802.11b <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 06

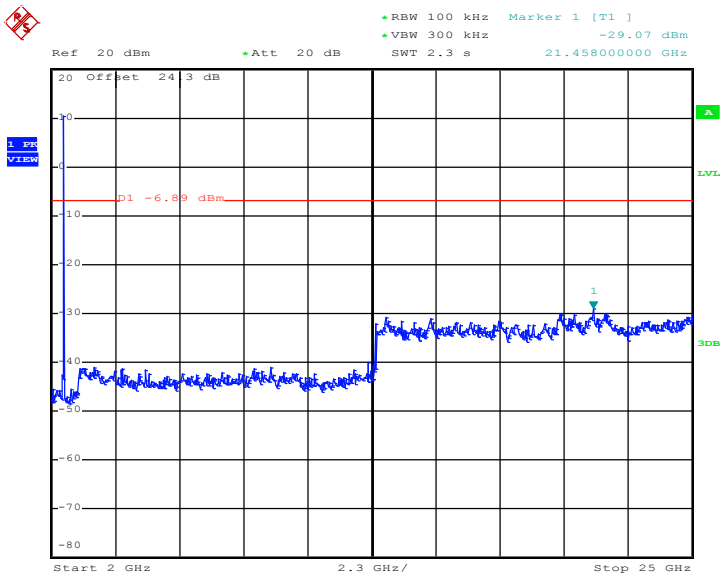


282903-1011 15C Spurious 802.11b 2437 (ch06)
Date: 27.SEP.2012 17:43:25

802.11b <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

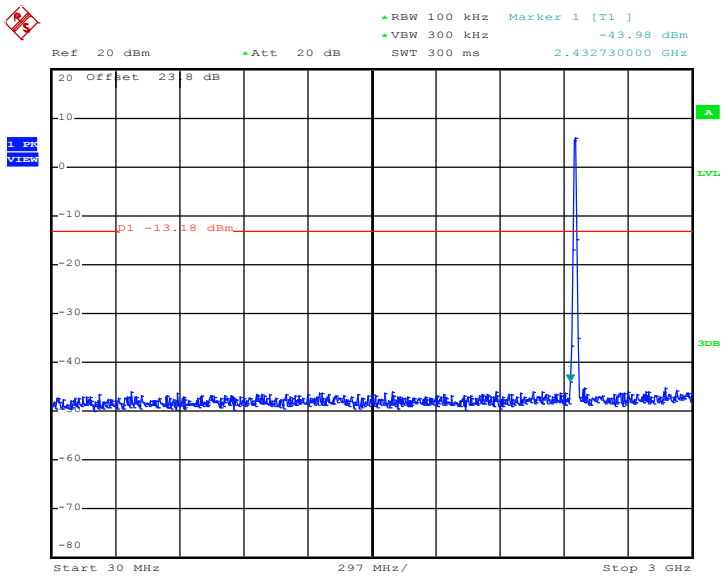


282903-1011 15C Spurious 802.11b 2437 (ch06)
Date: 27.SEP.2012 17:43:46

802.11b <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 10

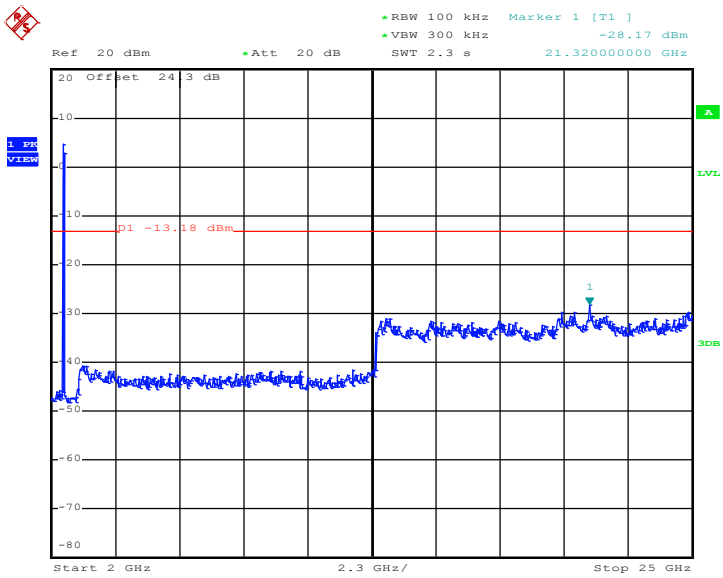


282903-1011 15C Spurious 802.11b 2457
Date: 27.SEP.2012 17:44:51

802.11b <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 10

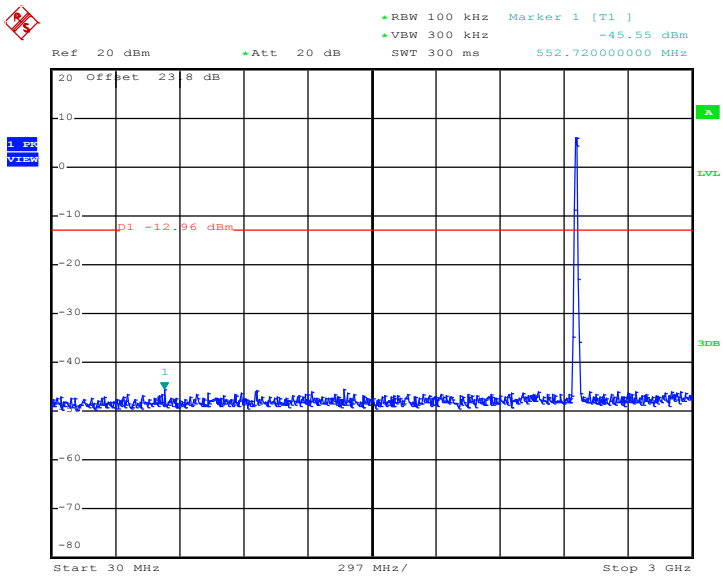


282903-1011 15C Spurious 802.11b 2457
Date: 27.SEP.2012 17:45:09

802.11b <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 11

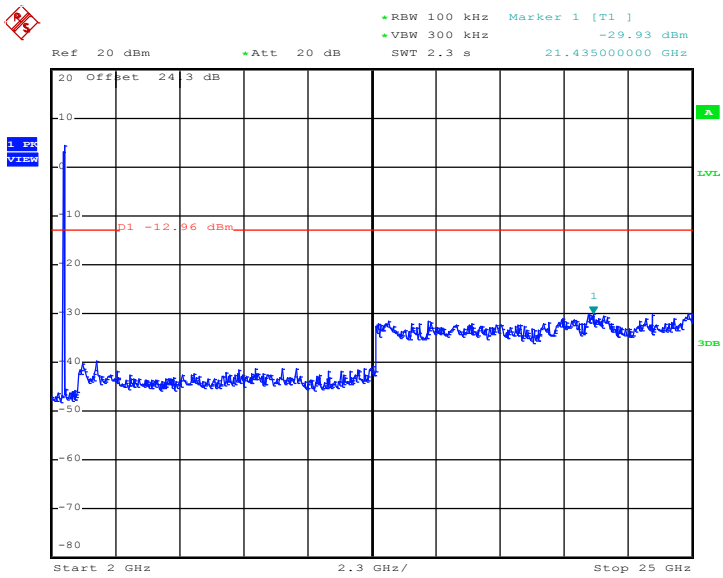


282903-1011 15C Spurious 802.11b 2462 (ch11)
Date: 27.SEP.2012 17:46:31

802.11b <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



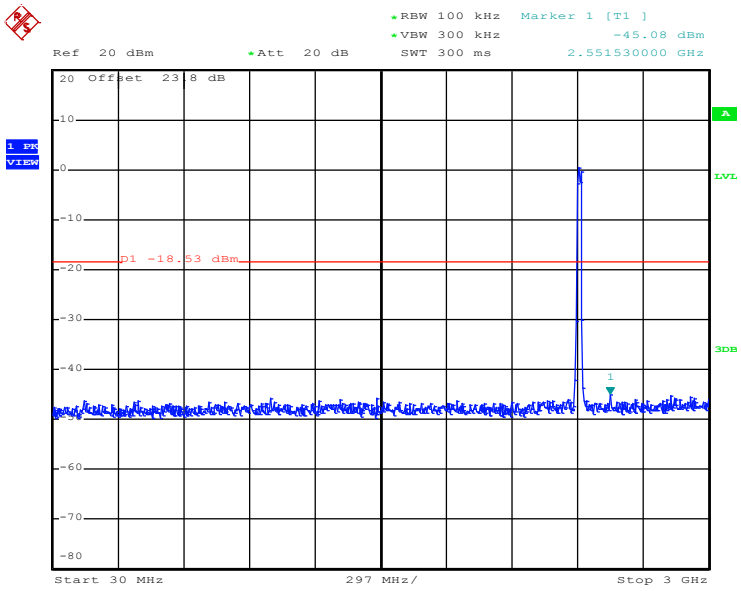
282903-1011 15C Spurious 802.11b 2462 (ch11)
Date: 27.SEP.2012 17:46:49

Test Mode :	802.11g <MIMO Chain 1+2(1)>	Temperature :	24~26℃
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	55~58%
Test Channel :	01, 02, 06, 10, 11	Test Engineer :	Alan Liu and Book Lin

802.11g <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 01

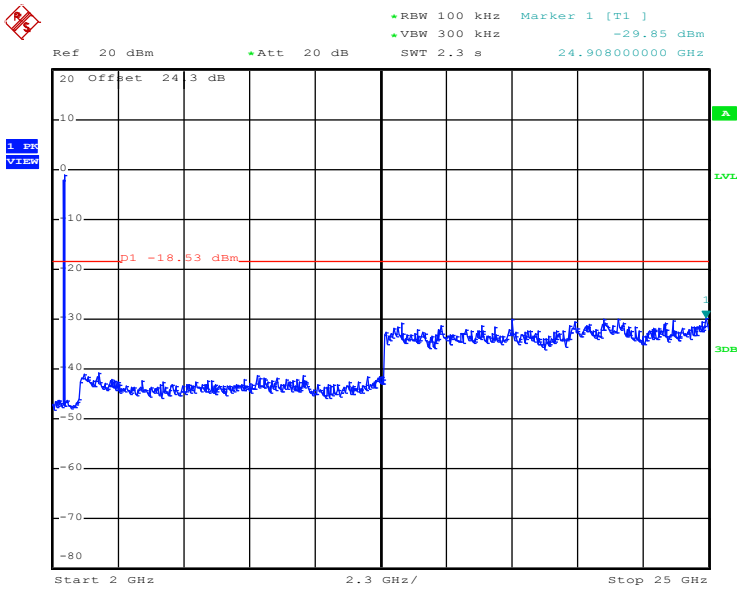


282903-1011 15C Spurious 802.11g 2412 (ch01)
Date: 27.SEP.2012 17:57:49

802.11g <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01



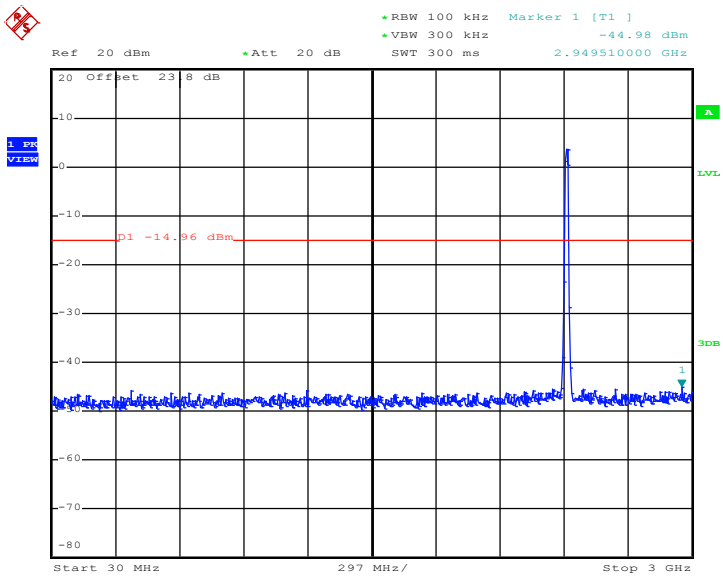
282903-1011 15C Spurious 802.11g 2412 (ch01)

Date: 27.SEP.2012 17:58:10

802.11g <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 02

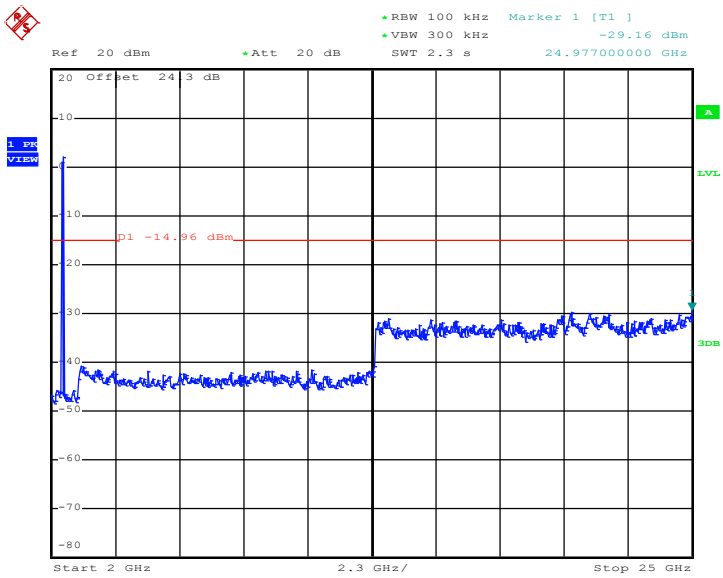


282903-1011 15C Spurious 802.11g 2417
Date: 27.SEP.2012 17:59:40

802.11g <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 02

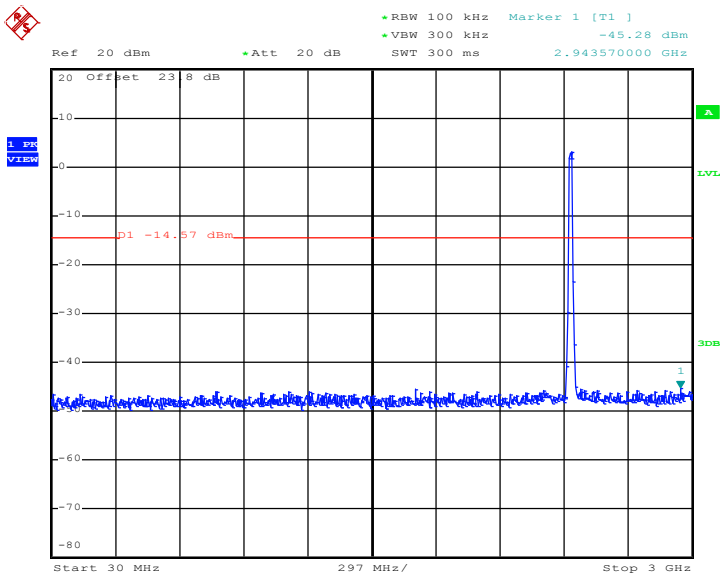


282903-1011 15C Spurious 802.11g 2417
Date: 27.SEP.2012 18:00:00

802.11g <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 06

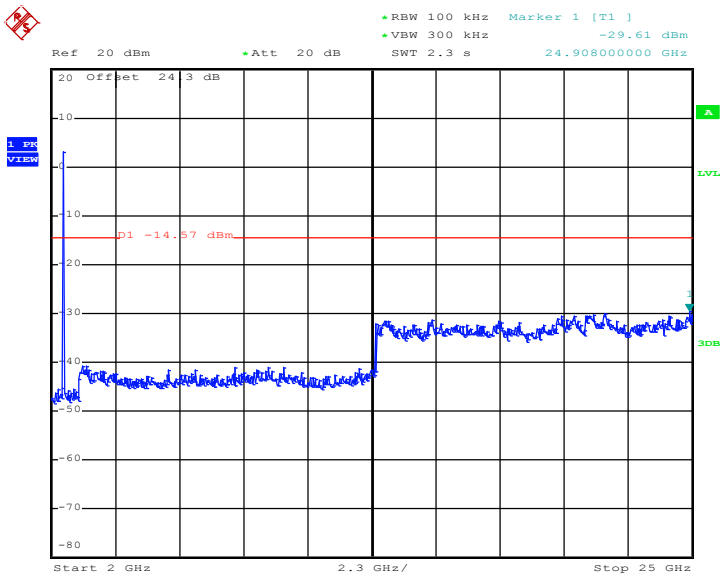


282903-1011 15C Spurious 802.11g 2437 (ch06)
Date: 27.SEP.2012 18:00:47

802.11g <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

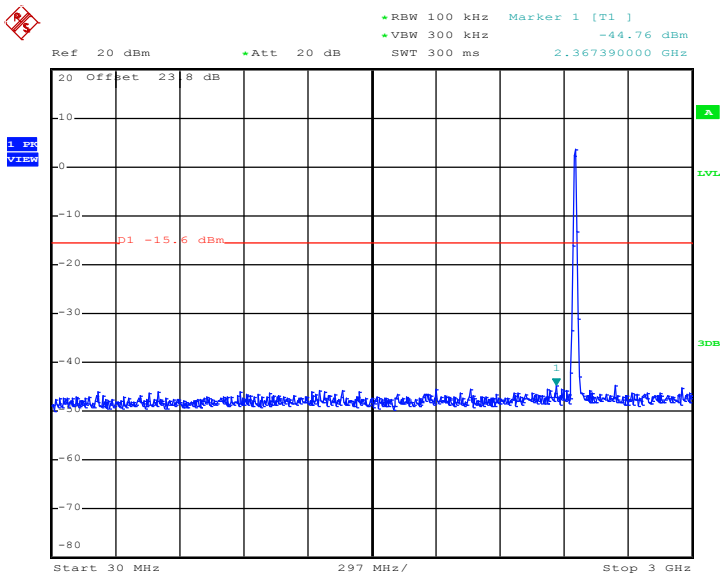


282903-1011 15C Spurious 802.11g 2437 (ch06)
Date: 27.SEP.2012 18:01:06

802.11g <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 10

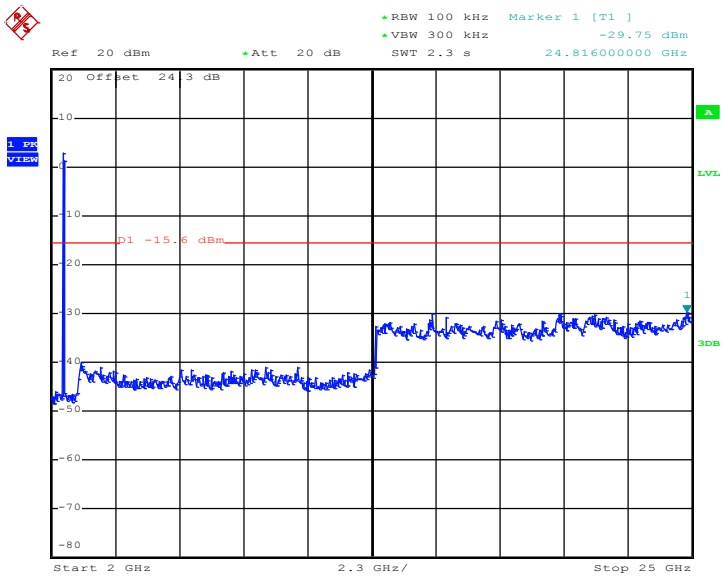


282903-1011 15C Spurious 802.11g 2457
Date: 27.SEP.2012 18:01:55

802.11g <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 10

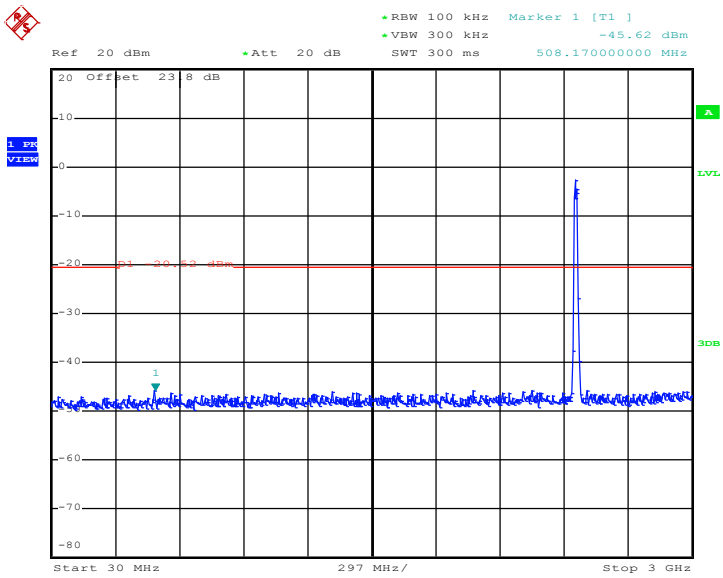


282903-1011 15C Spurious 802.11g 2457
Date: 27.SEP.2012 18:02:15

802.11g <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 11

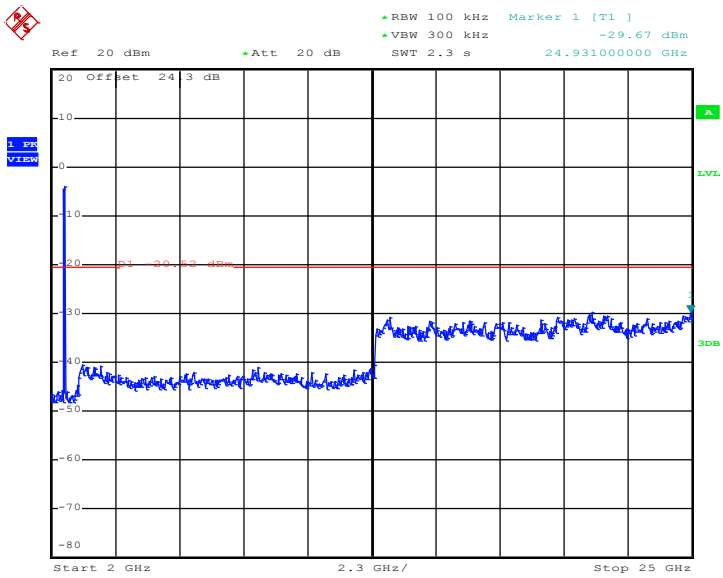


282903-1011 15C Spurious 802.11g 2462 (ch11)
Date: 27.SEP.2012 18:03:11

802.11g <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



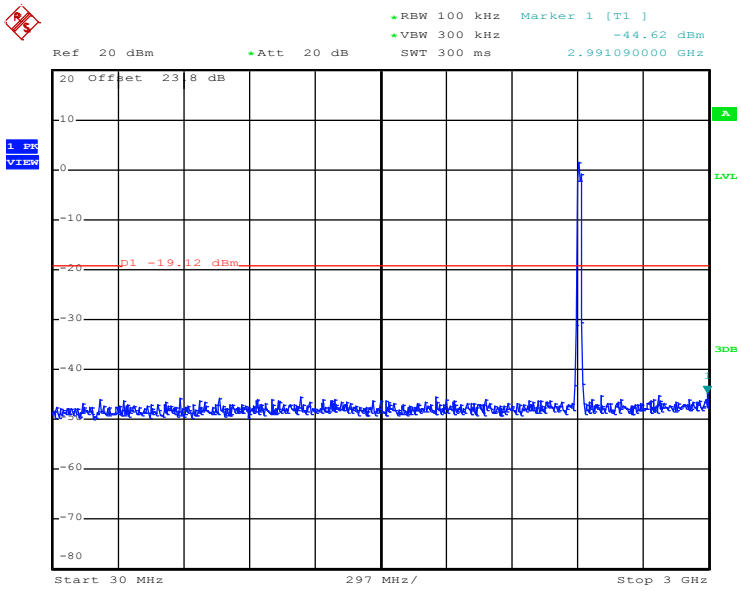
282903-1011 15C Spurious 802.11g 2462 (ch11)
Date: 27.SEP.2012 18:03:29

Test Mode :	802.11g <MIMO Chain 1+2(2)>	**Temperature :**	24~26℃
Test Band :	30MHz-3GHz and 2G-25GHz	**Relative Humidity :**	55~58%
Test Channel :	01, 02, 06, 10, 11	**Test Engineer :**	Alan Liu and Book Lin

802.11g <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 01

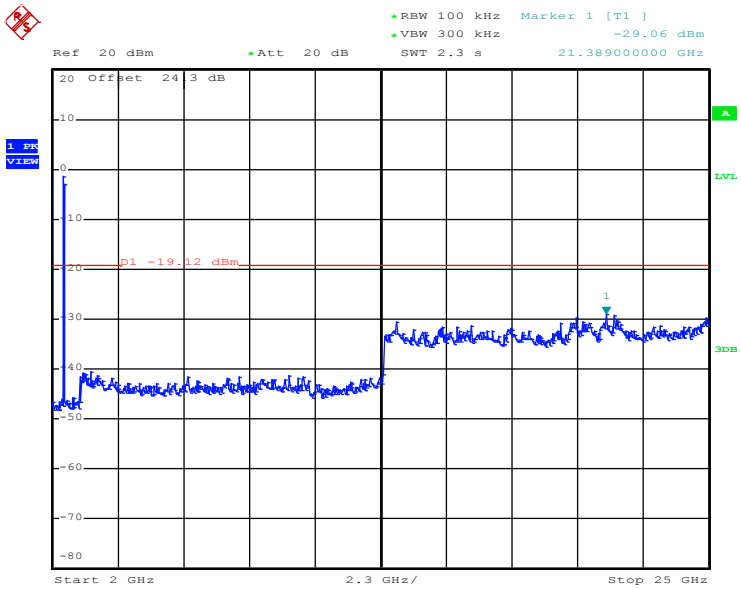


282903-1011 15C Spurious 802.11g 2412 (ch01)
Date: 27.SEP.2012 17:36:41

802.11g <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01



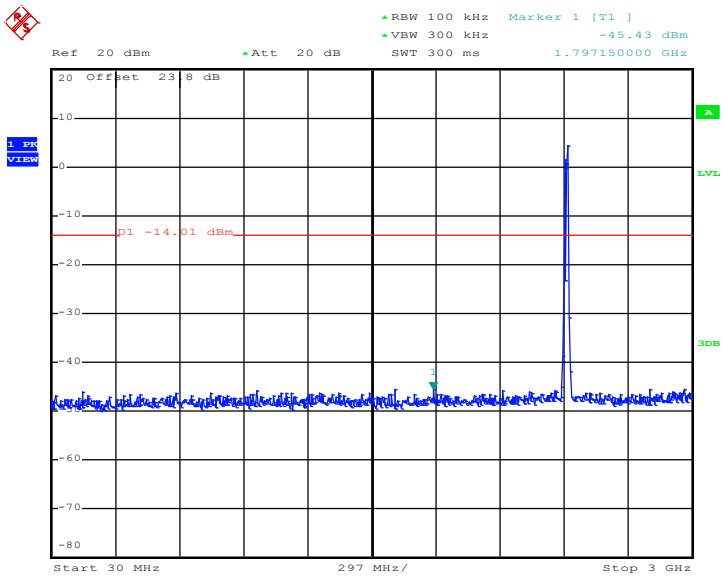
282903-1011 15C Spurious 802.11g 2412 (ch01)

Date: 27.SEP.2012 17:36:59

802.11g <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 02

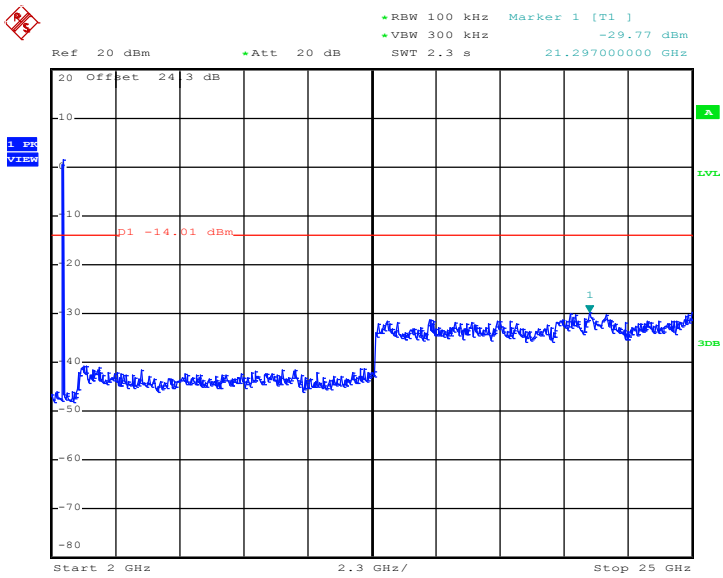


282903-1011 15C Spurious 802.11g 2417
Date: 27.SEP.2012 17:35:10

802.11g <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 02

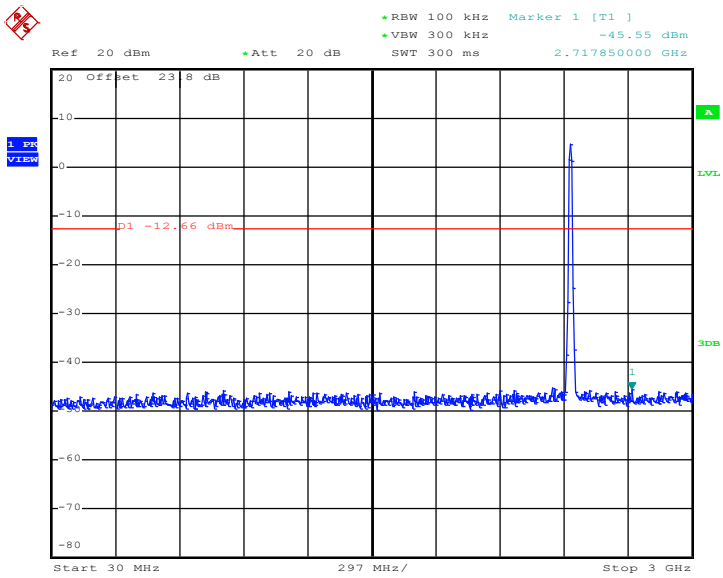


282903-1011 15C Spurious 802.11g 2417
Date: 27.SEP.2012 17:35:29

802.11g <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 06

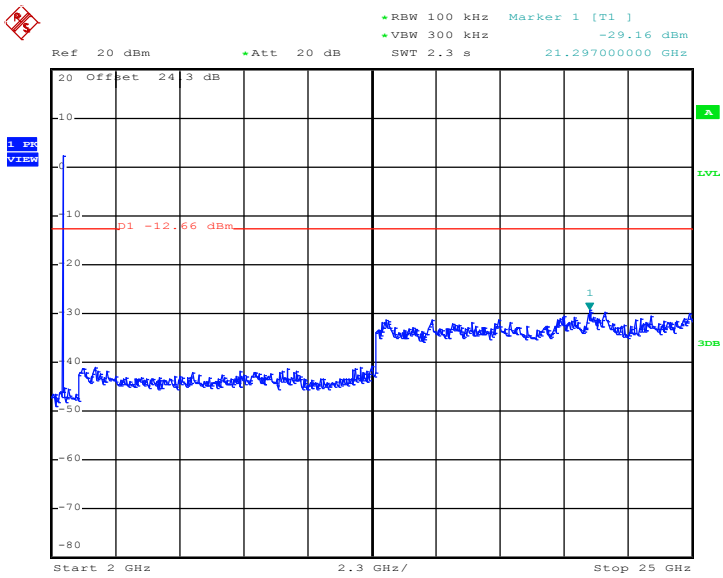


282903-1011 15C Spurious 802.11g 2437 (ch06)
Date: 27.SEP.2012 17:33:53

802.11g <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

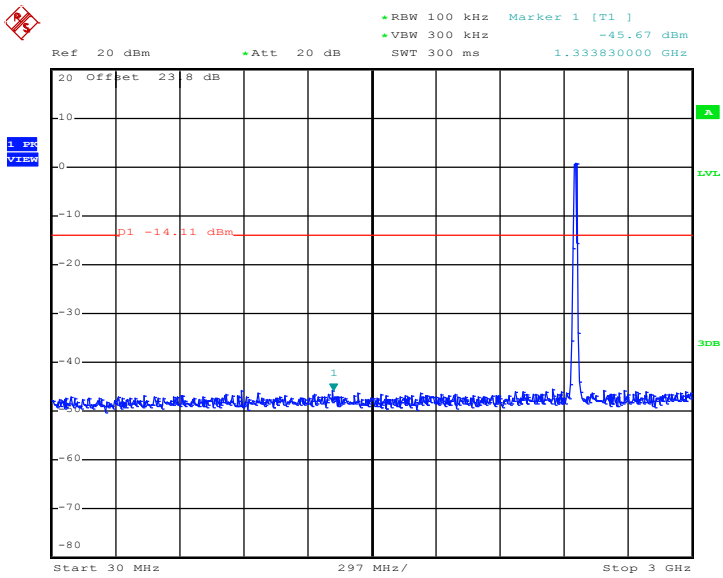


282903-1011 15C Spurious 802.11g 2437 (ch06)
Date: 27.SEP.2012 17:34:11

802.11g <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 10

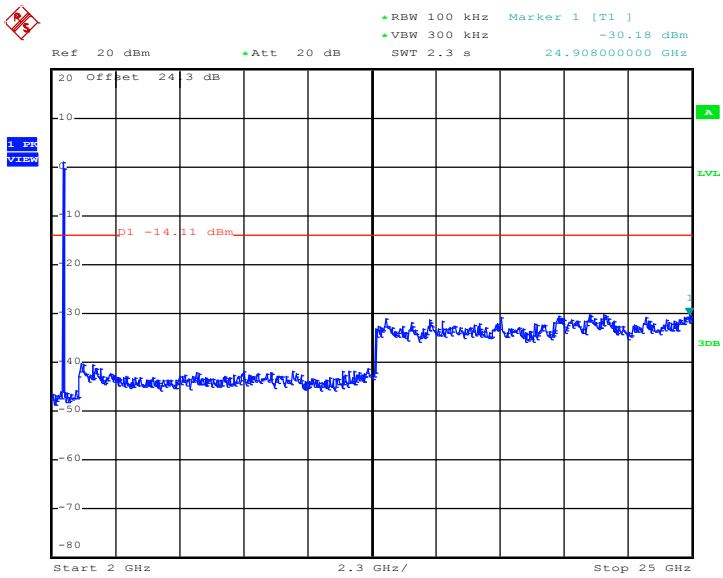


282903-1011 15C Spurious 802.11g 2457
Date: 27.SEP.2012 17:31:06

802.11g <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 10

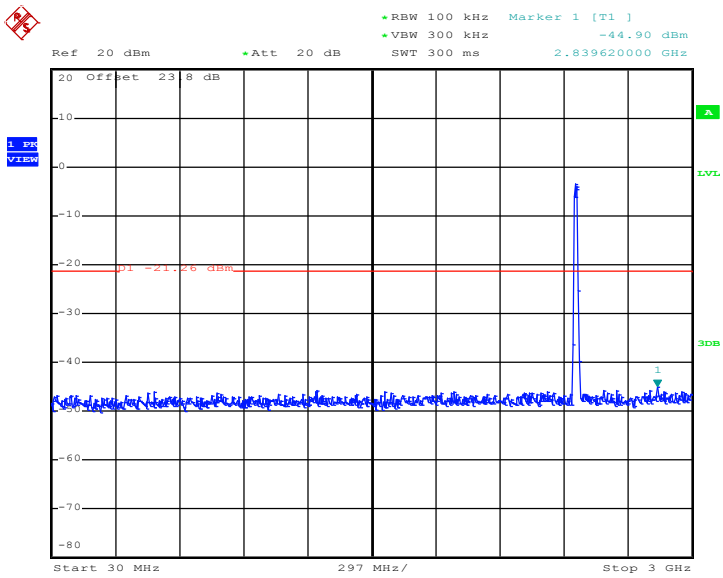


282903-1011 15C Spurious 802.11g 2457
Date: 27.SEP.2012 17:31:26

802.11g <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 11

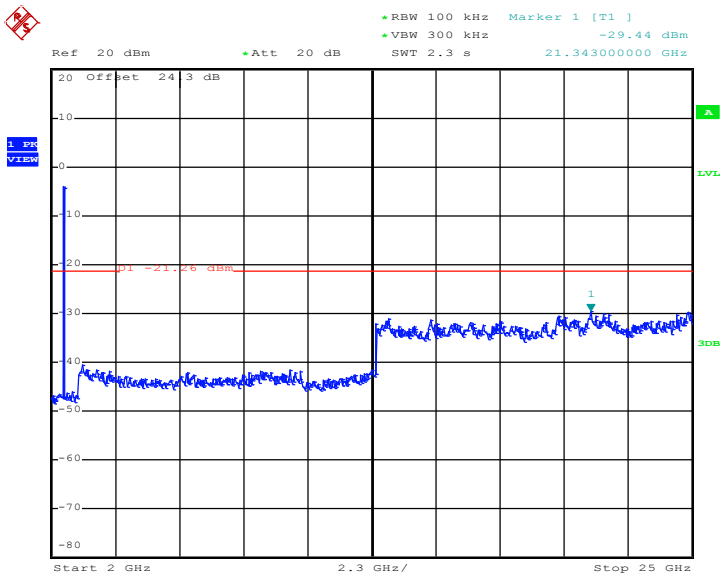


282903-1011 15C Spurious 802.11g 2462 (ch11)
Date: 27.SEP.2012 17:32:21

802.11g <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



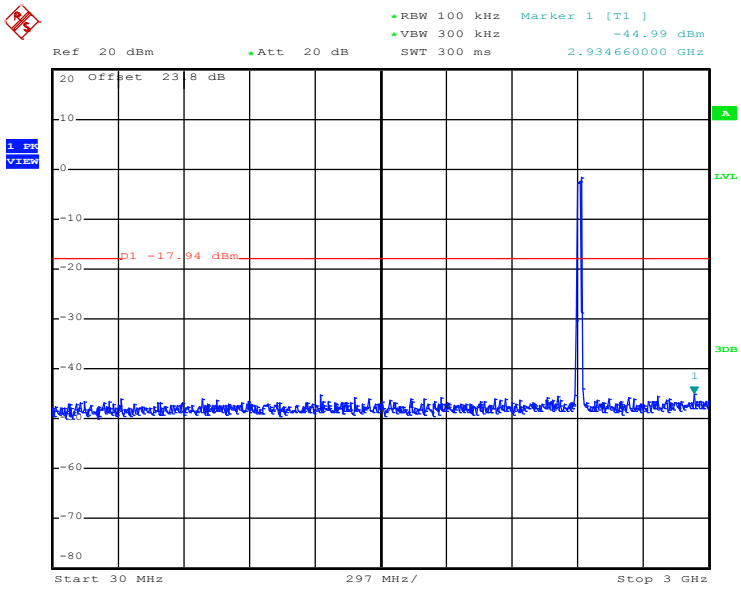
282903-1011 15C Spurious 802.11g 2462 (ch11)
Date: 27.SEP.2012 17:32:39

Test Mode :	802.11n HT20 <MIMO Chain 1+2(1)>	**Temperature :**	24~26℃
Test Band :	30MHz-3GHz and 2G-25GHz	**Relative Humidity :**	55~58%
Test Channel :	01, 02, 06, 10, 11	**Test Engineer :**	Alan Liu and Book Lin

802.11n HT20 <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 01



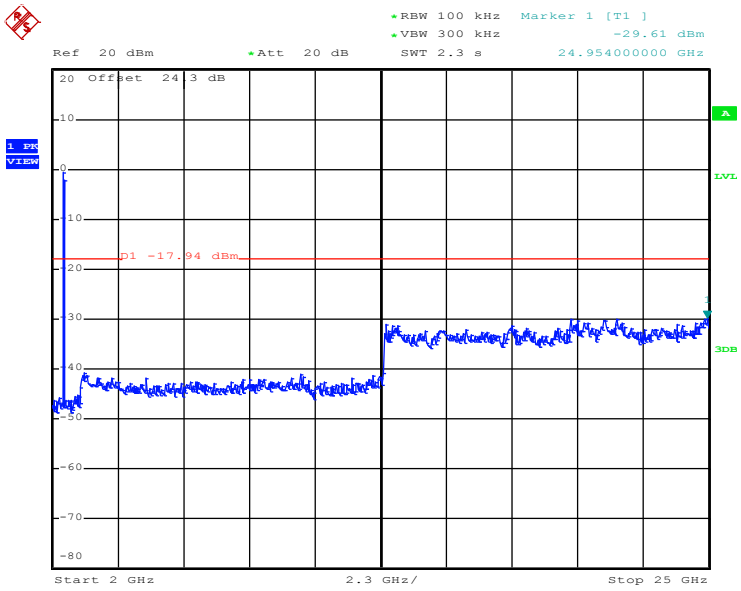
282903-1011 15C Spurious 802.11g_N20 2412 (ch01)

Date: 27.SEP.2012 18:32:07

802.11n HT20 <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01

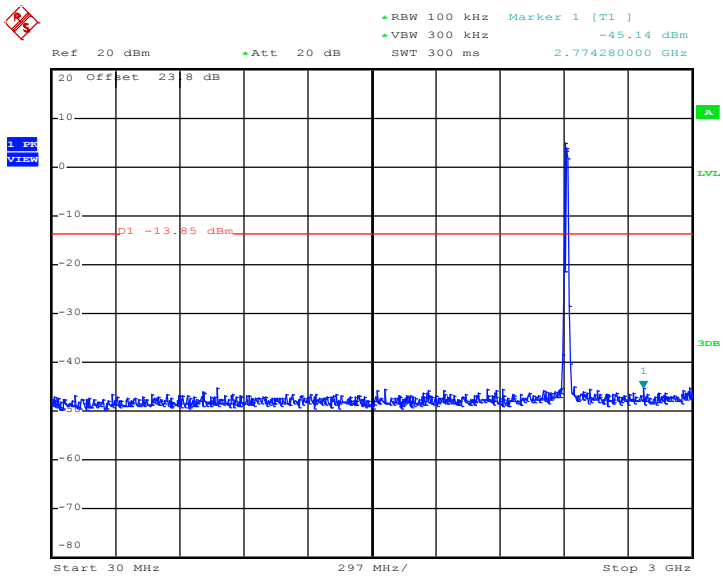


282903-1011 15C Spurious 802.11g_N20 2412 (ch01)
Date: 27.SEP.2012 18:32:26

802.11n HT20 <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 02

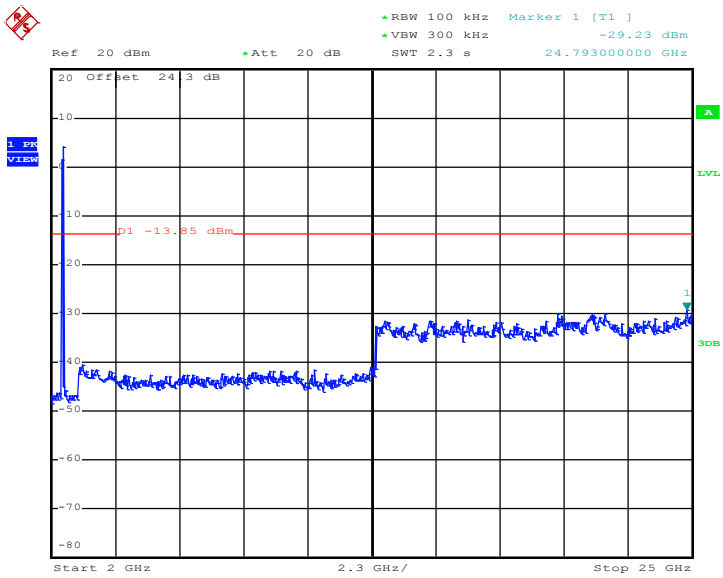


282903-1011 15C Spurious 802.11g_N20 2417
Date: 27.SEP.2012 18:31:08

802.11n HT20 <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 02

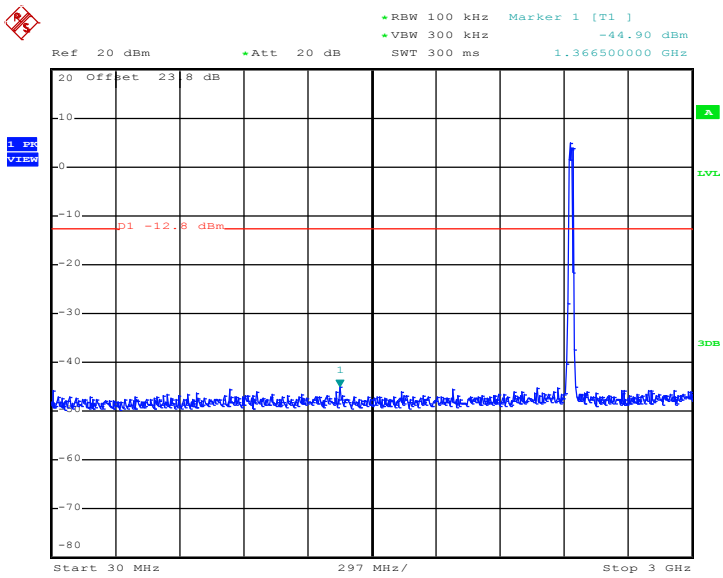


282903-1011 15C Spurious 802.11g_N20 2417
Date: 27.SEP.2012 18:31:29

802.11n HT20 <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 06

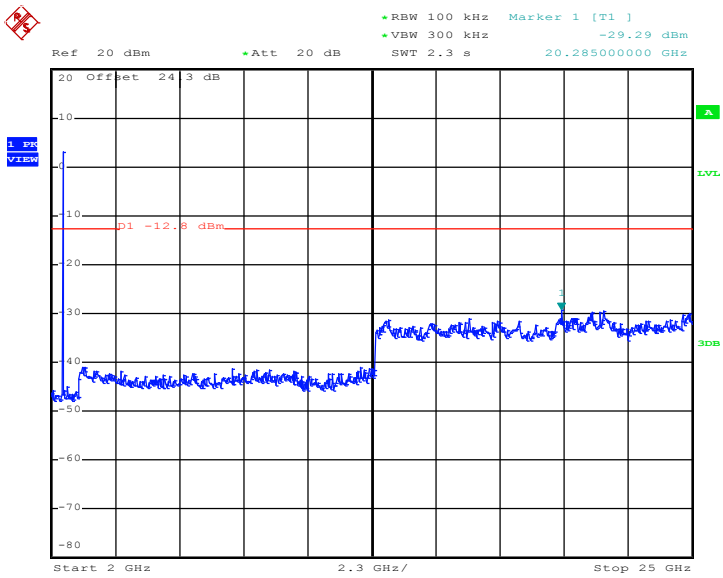


282903-1011 15C Spurious 802.11g_N20 2437 (ch06)
Date: 27.SEP.2012 18:30:12

802.11n HT20 <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

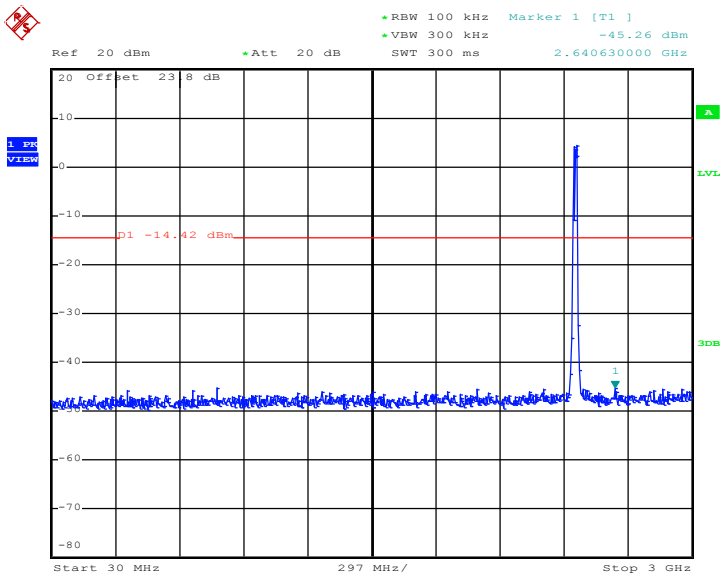


282903-1011 15C Spurious 802.11g_N20 2437 (ch06)
Date: 27.SEP.2012 18:30:30

802.11n HT20 <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 10

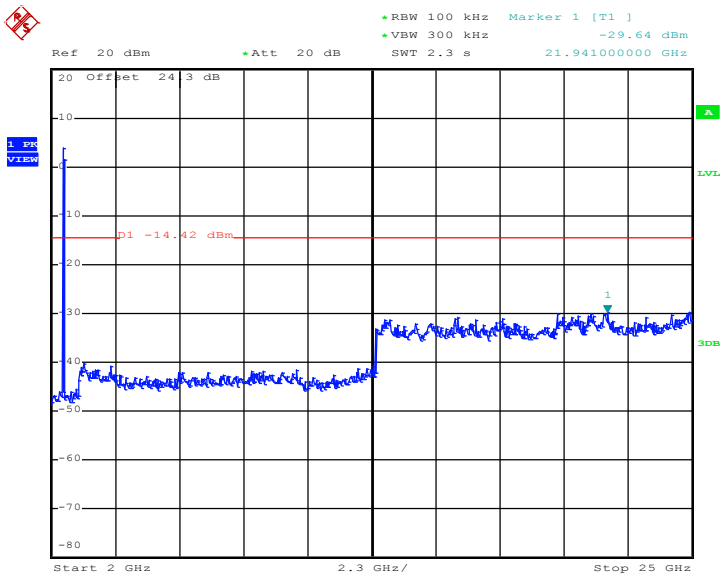


282903-1011 15C Spurious 802.11g_N20 2457
Date: 27.SEP.2012 18:29:20

802.11n HT20 <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 10

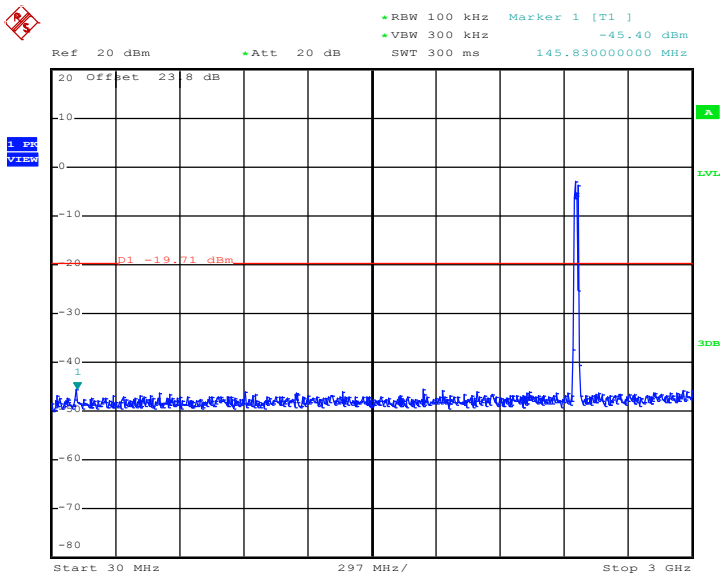


282903-1011 15C Spurious 802.11g_N20 2457
Date: 27.SEP.2012 18:29:38

802.11n HT20 <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 11

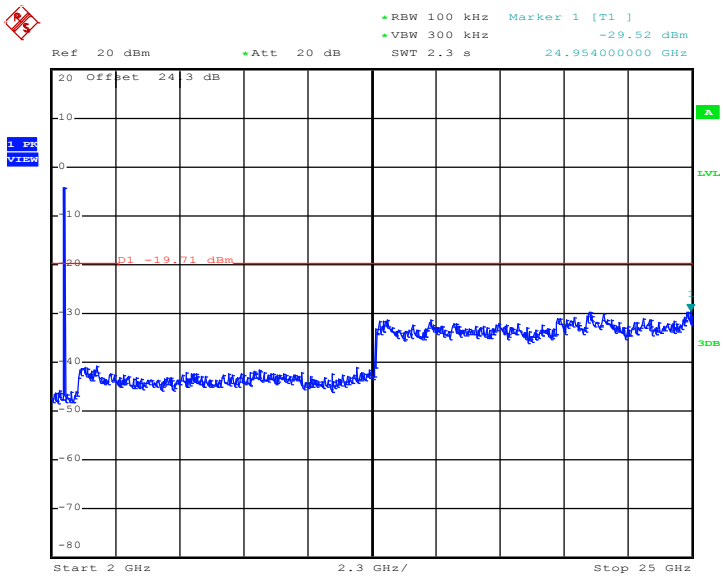


282903-1011 15C Spurious 802.11g_N20 2462 (ch11)
Date: 27.SEP.2012 18:28:12

802.11n HT20 <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



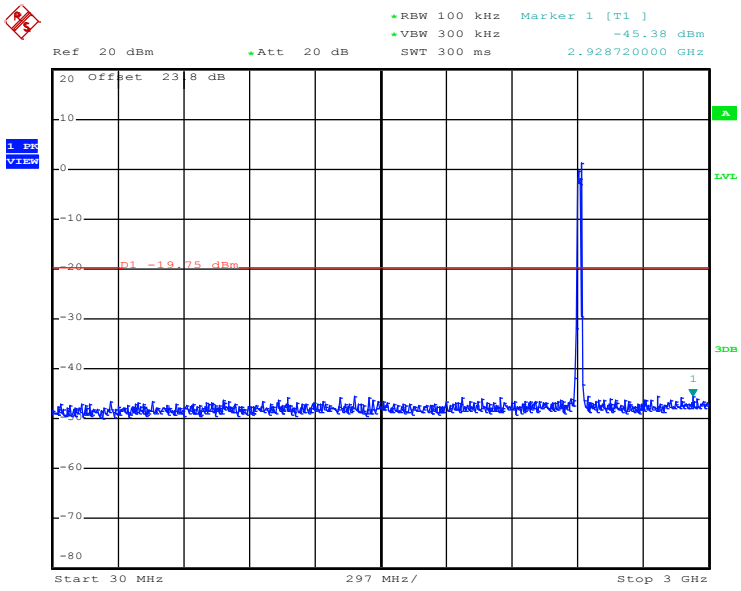
282903-1011 15C Spurious 802.11g_N20 2462 (ch11)
Date: 27.SEP.2012 18:28:32

Test Mode :	802.11n HT20 <MIMO Chain 1+2(2)>	**Temperature :**	24~26℃
Test Band :	30MHz-3GHz and 2G-25GHz	**Relative Humidity :**	55~58%
Test Channel :	01, 02, 06, 10, 11	**Test Engineer :**	Alan Liu and Book Lin

802.11n HT20 <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 01



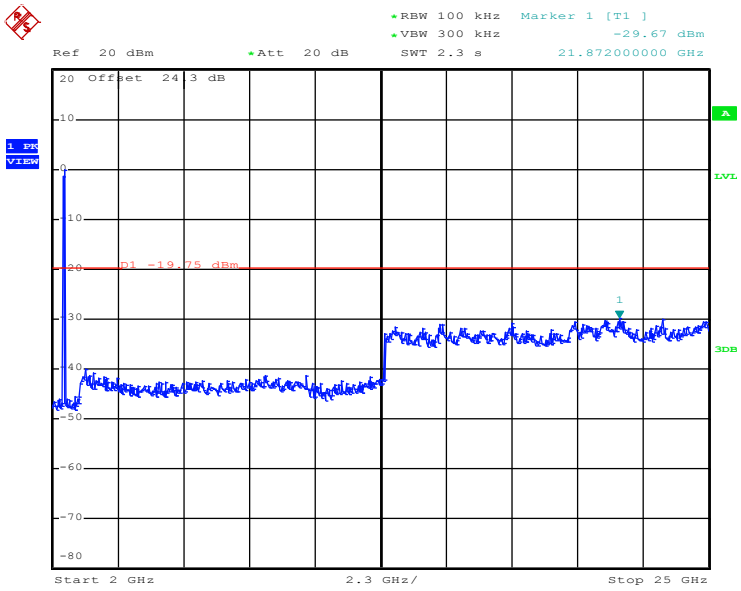
282903-1011 15C Spurious 802.11g_N20 2412 (ch01)

Date: 27.SEP.2012 17:15:29

802.11n HT20 <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01



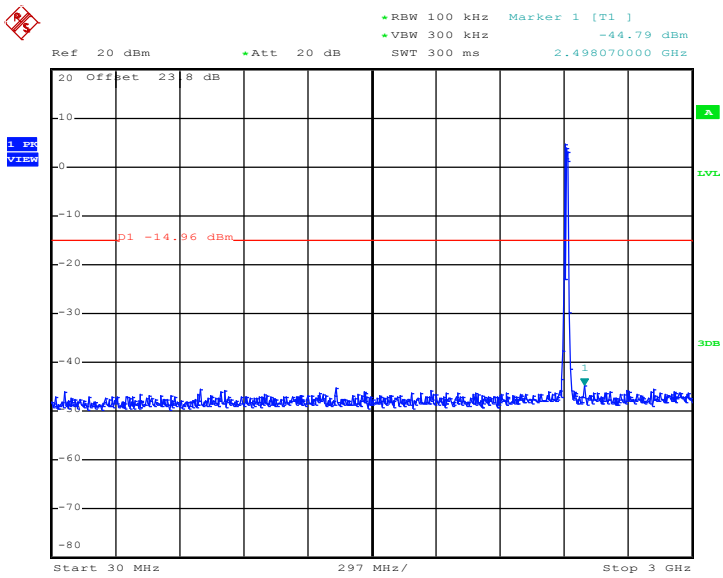
282903-1011 15C Spurious 802.11g_N20 2412 (ch01)

Date: 27.SEP.2012 17:15:51

802.11n HT20 <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 02

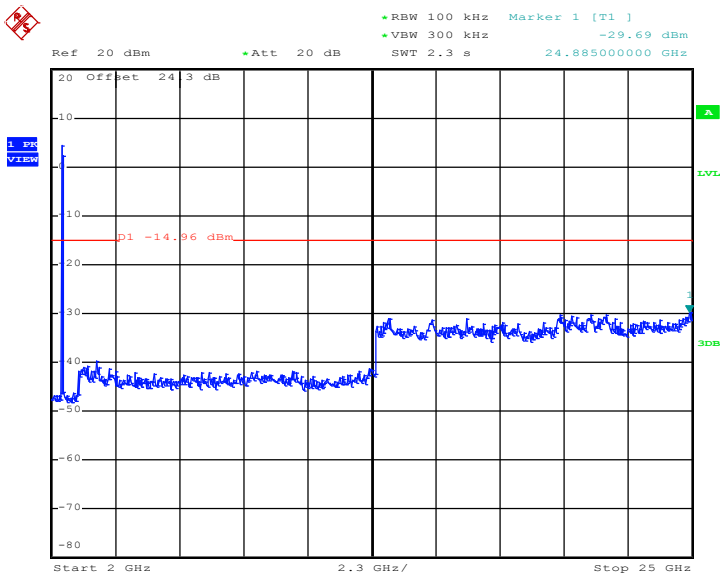


282903-1011 15C Spurious 802.11a_N20 2417
Date: 27.SEP.2012 17:11:09

802.11n HT20 <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 02

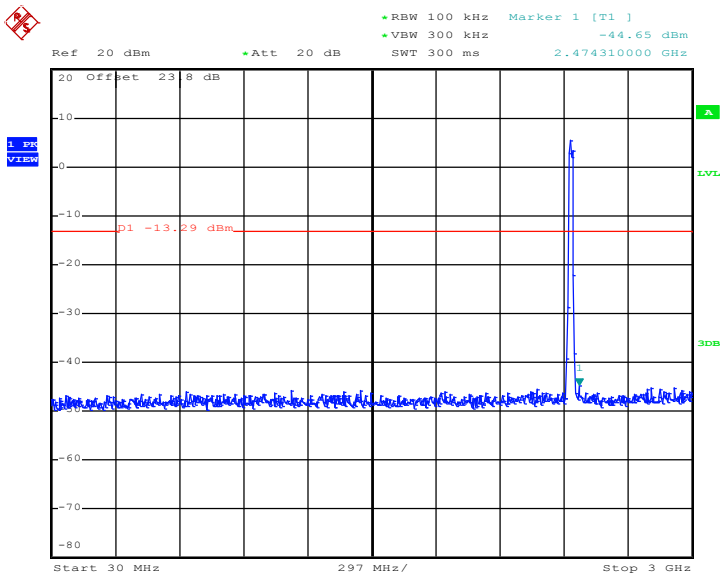


282903-1011 15C Spurious 802.11a_N20 2417
Date: 27.SEP.2012 17:11:28

802.11n HT20 <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 06

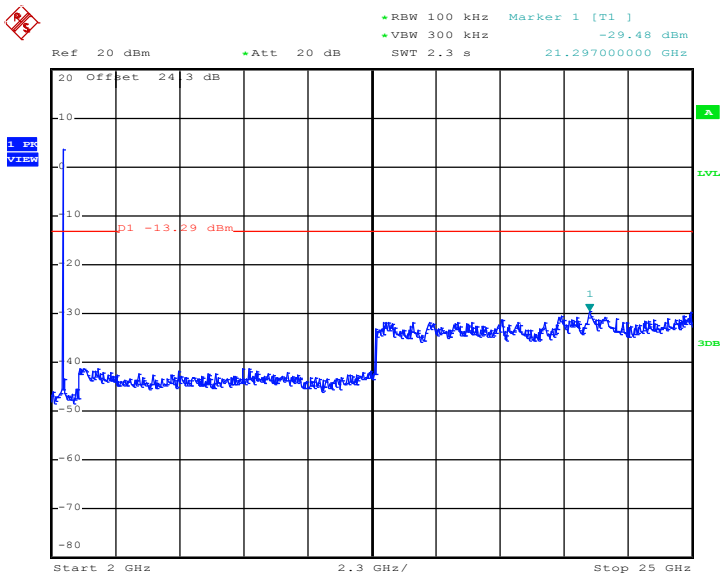


282903-1011 15C Spurious 802.11a_N20 2437 (ch06)
Date: 27.SEP.2012 17:09:24

802.11n HT20 <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

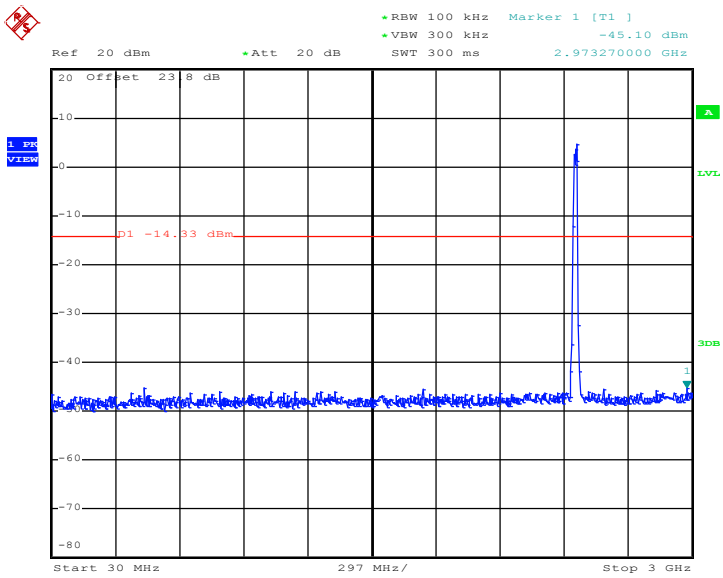


282903-1011 15C Spurious 802.11a_N20 2437 (ch06)
Date: 27.SEP.2012 17:09:42

802.11n HT20 <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 10

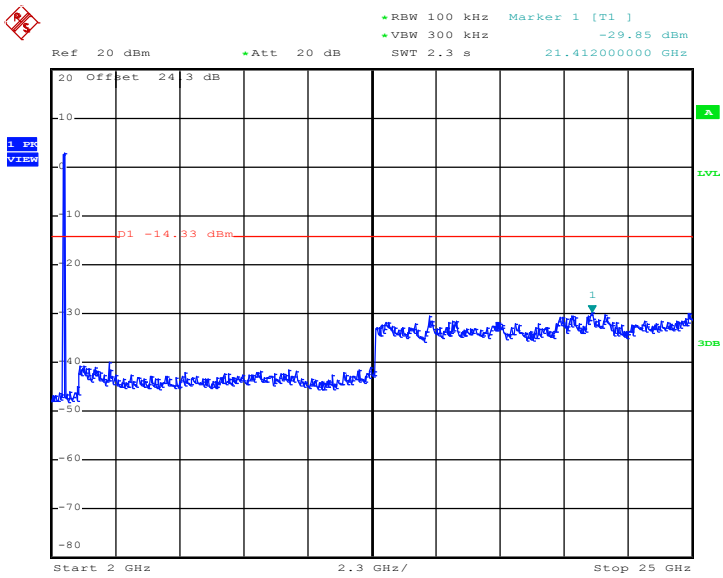


282903-1011 15C Spurious 802.11a_N20 2457
Date: 27.SEP.2012 17:08:17

802.11n HT20 <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 10

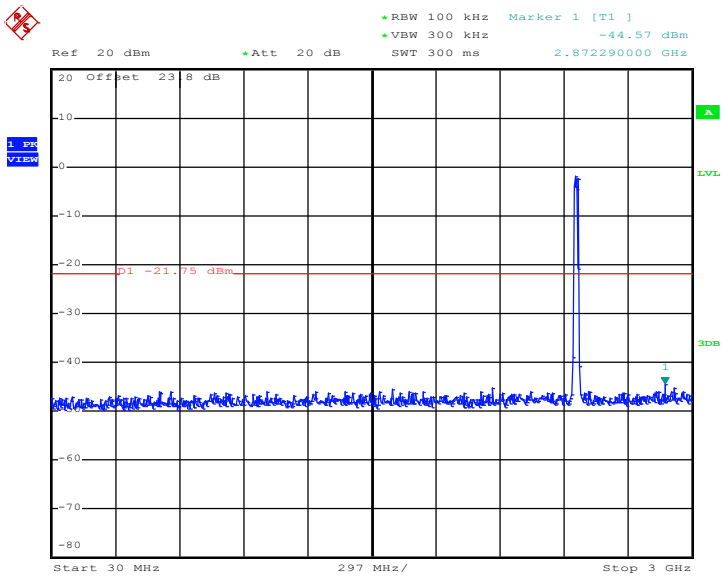


282903-1011 15C Spurious 802.11a_N20 2457
Date: 27.SEP.2012 17:08:35

802.11n HT20 <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 11

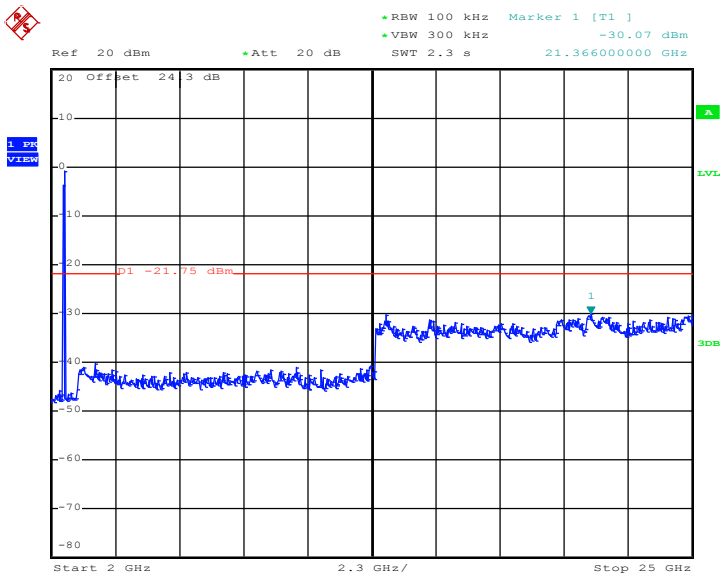


282903-1011 15C Spurious 802.11a_N20 2462 (ch11)
Date: 27.SEP.2012 17:06:43

802.11n HT20 <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11



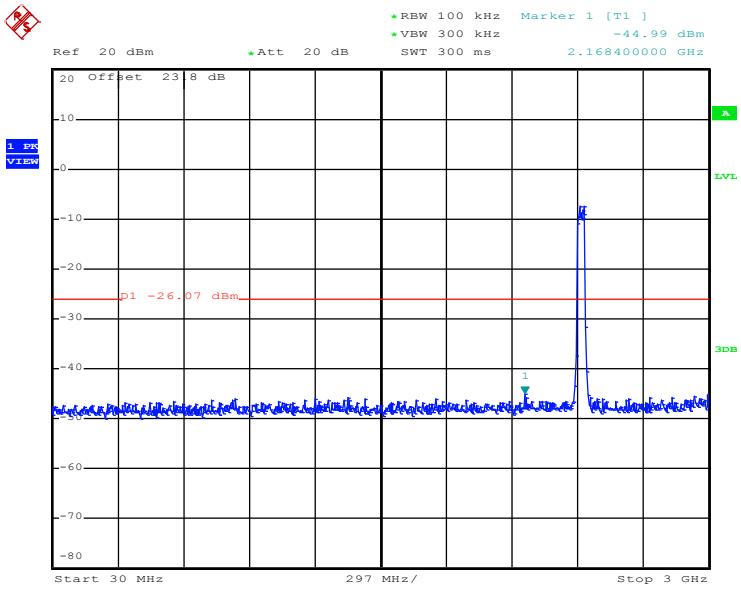
282903-1011 15C Spurious 802.11a_N20 2462 (ch11)
Date: 27.SEP.2012 17:07:00

Test Mode :	802.11n HT40 <MIMO Chain 1+2(1)>	**Temperature :**	24~26℃
Test Band :	30MHz-3GHz and 2G-25GHz	**Relative Humidity :**	55~58%
Test Channel :	03, 04, 05, 06, 07, 08, 09	**Test Engineer :**	Alan Liu and Book Lin

802.11n HT40 <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 03



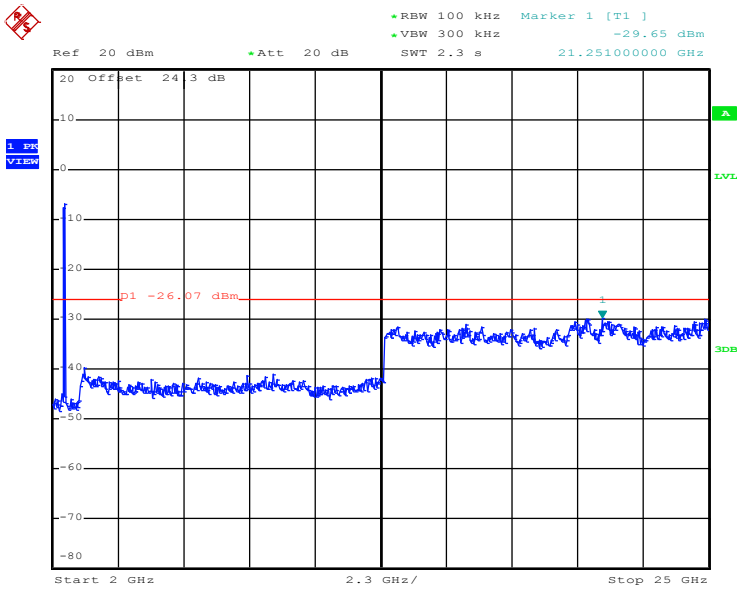
282903-1011 15C Spurious 802.11g_N40 2422 (ch03)

Date: 27.SEP.2012 18:15:12

802.11n HT40 <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 03

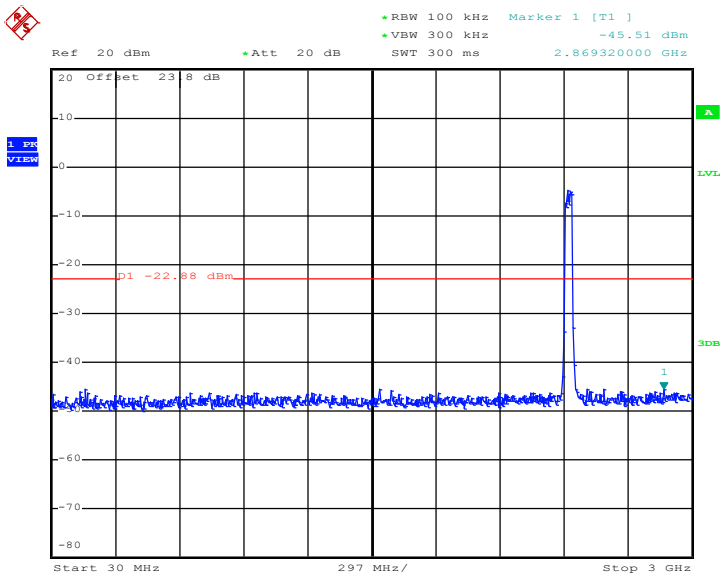


282903-1011 15C Spurious 802.11g_N40 2422 (ch03)
Date: 27.SEP.2012 18:15:30

802.11n HT40 <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 04

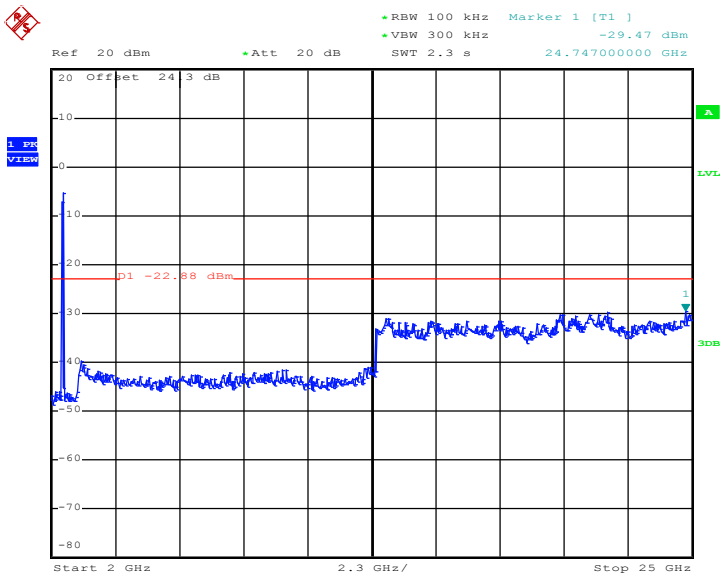


282903-1011 15C Spurious 802.11g_N40 2427
Date: 27.SEP.2012 18:17:33

802.11n HT40 <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 04

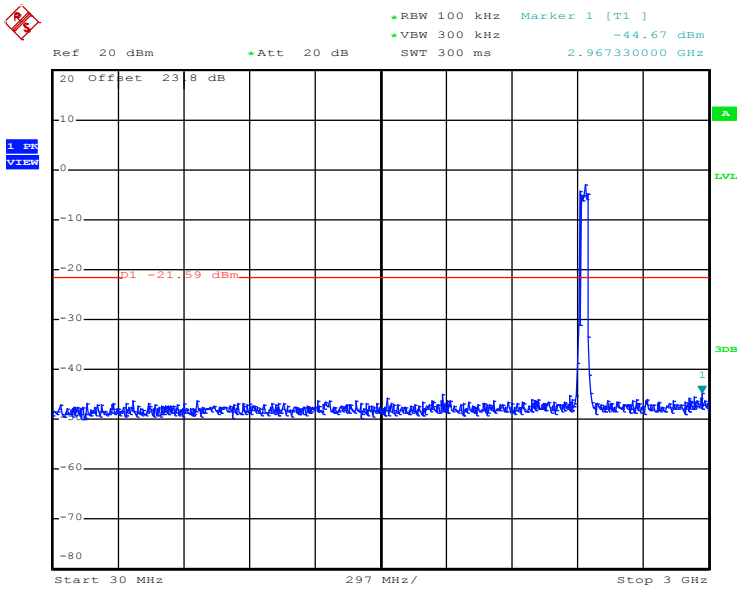


282903-1011 15C Spurious 802.11g_N40 2427
Date: 27.SEP.2012 18:17:54

802.11n HT40 <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 05



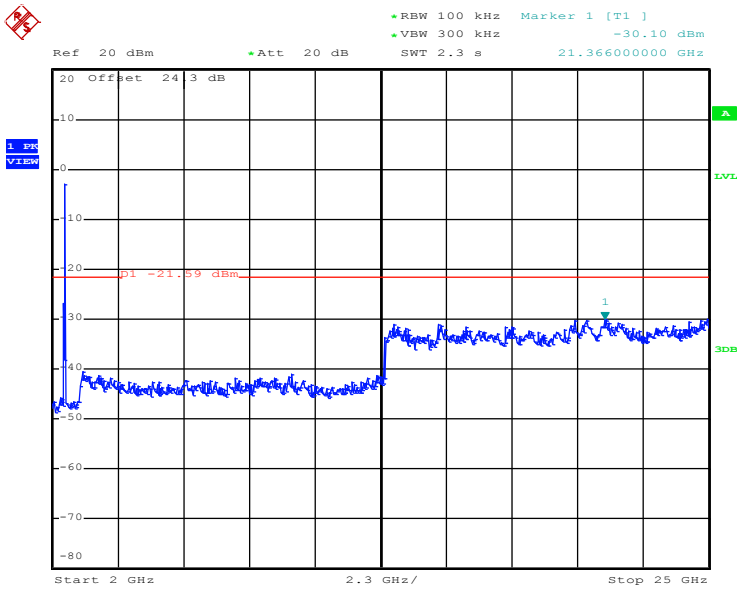
282903-1011 15C Spurious 802.11g_N40 2432

Date: 27.SEP.2012 18:19:00

802.11n HT40 <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 05



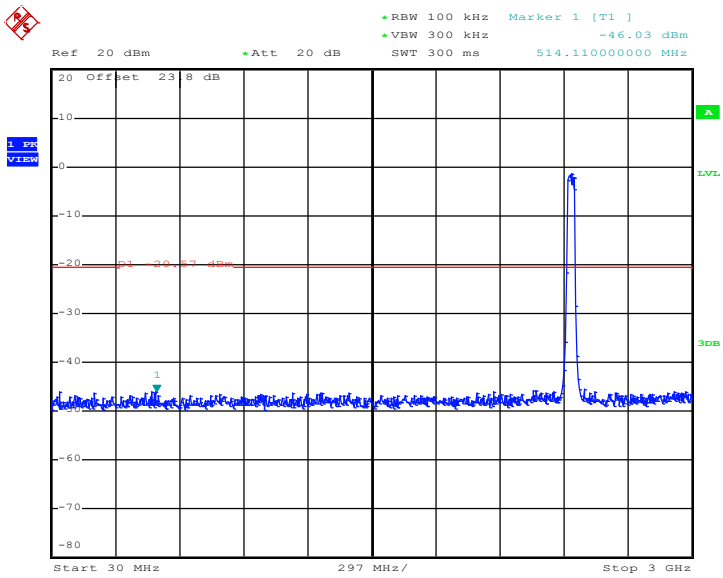
282903-1011 15C Spurious 802.11g_N40 2432

Date: 27.SEP.2012 18:19:20

802.11n HT40 <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 06

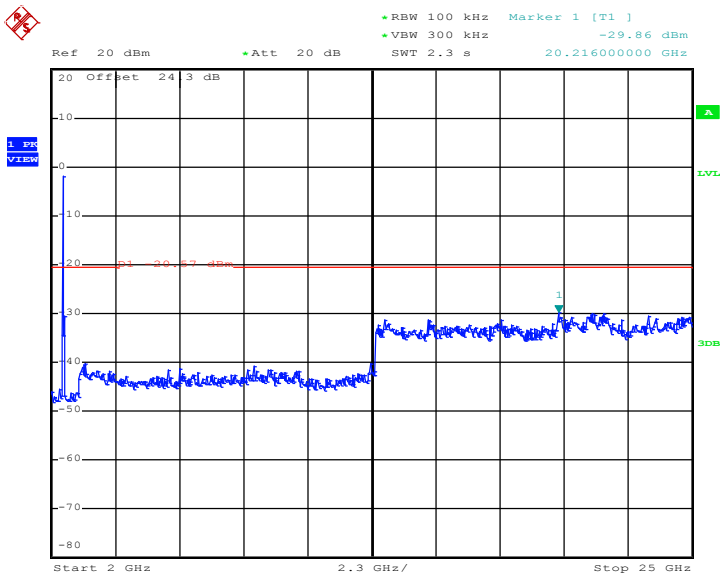


282903-1011 15C Spurious 802.11g_N40 2437 (ch06)
Date: 27.SEP.2012 18:21:11

802.11n HT40 <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

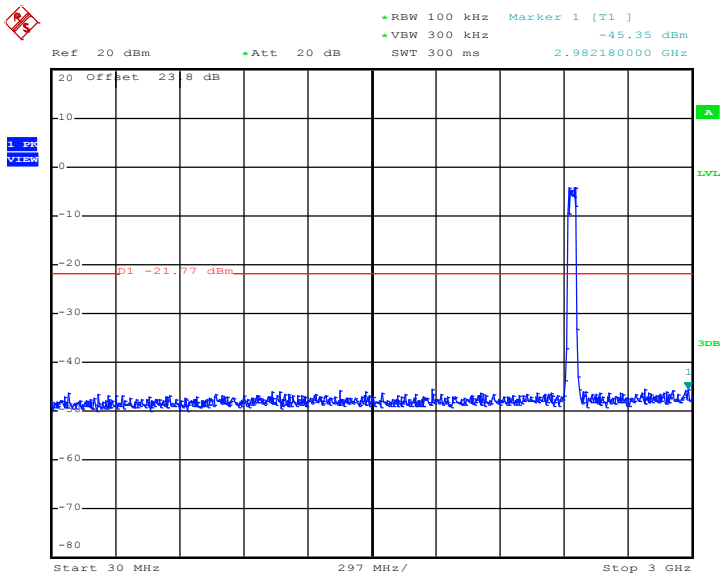


282903-1011 15C Spurious 802.11g_N40 2437 (ch06)
Date: 27.SEP.2012 18:21:31

802.11n HT40 <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 07

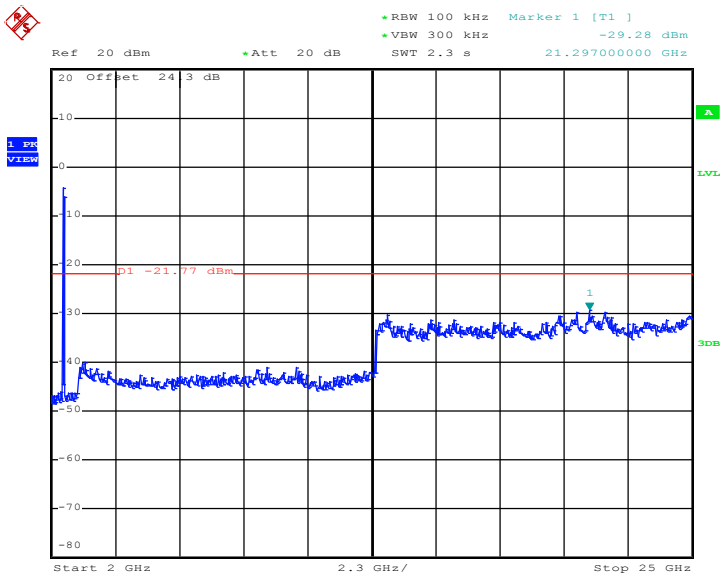


282903-1011 15C Spurious 802.11g_N40 2442 (ch07)
Date: 27.SEP.2012 18:23:19

802.11n HT40 <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 07

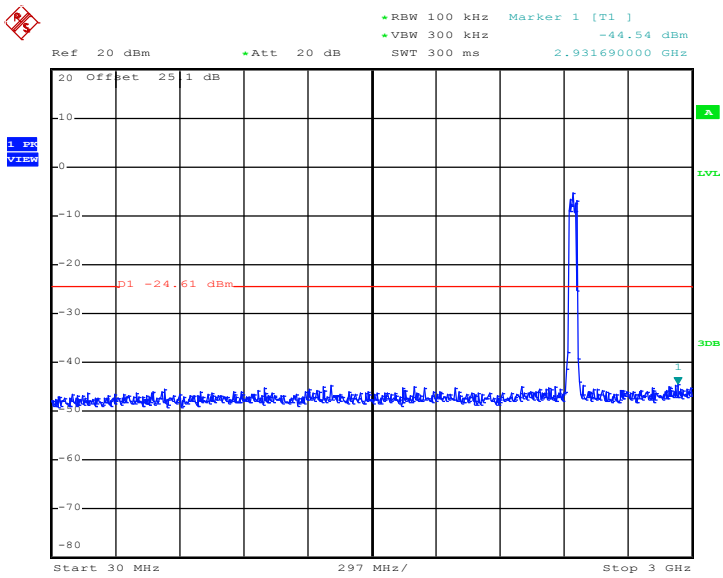


282903-1011 15C Spurious 802.11g_N40 2442 (ch07)
Date: 27.SEP.2012 18:23:38

802.11n HT40 <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 08

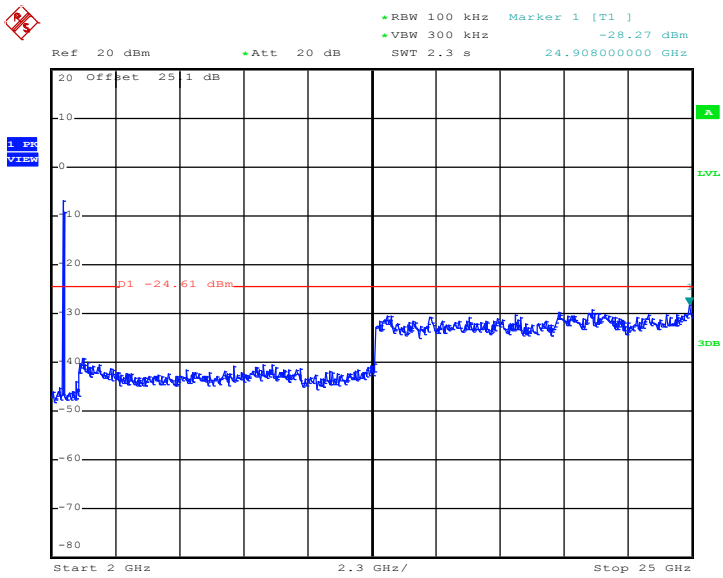


USI 15C Spurious 802.11g_N40 2447
Date: 22.OCT.2012 19:29:54

802.11n HT40 <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 08

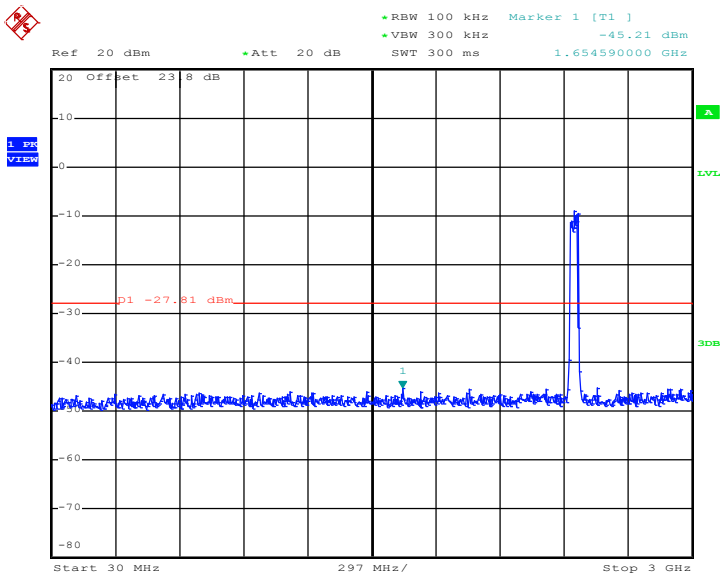


USI 15C Spurious 802.11g_N40 2447
Date: 22.OCT.2012 19:30:11

802.11n HT40 <MIMO Chain 1+2(1)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 09

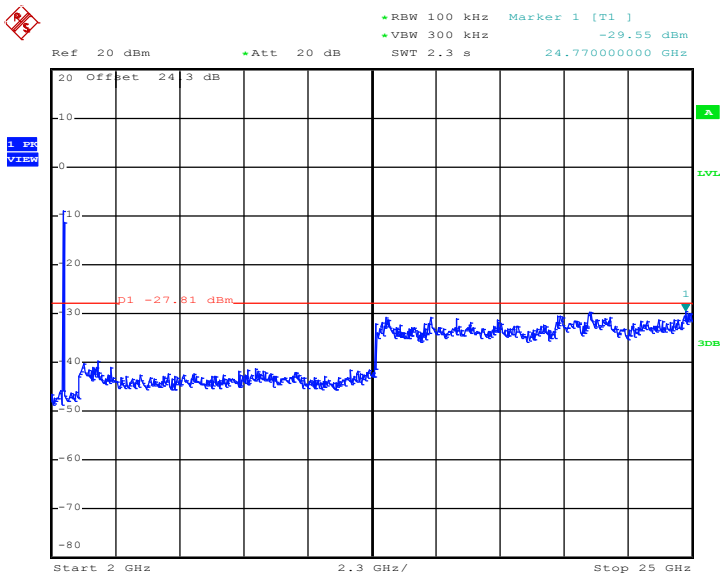


282903-1011 15C Spurious 802.11g_N40 2452 (ch09)
Date: 27.SEP.2012 18:25:17

802.11n HT40 <MIMO Chain 1+2(1)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 09



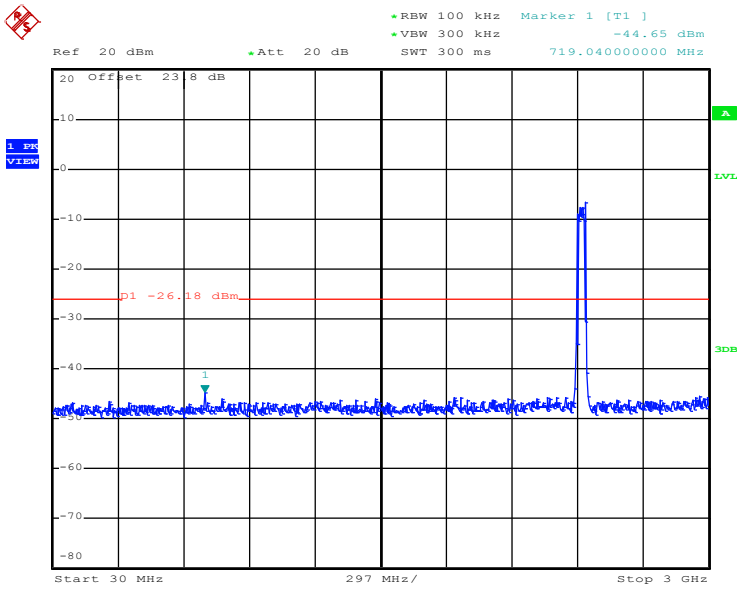
282903-1011 15C Spurious 802.11g_N40 2452 (ch09)
Date: 27.SEP.2012 18:25:36

Test Mode :	802.11n HT40 <MIMO Chain 1+2(2)>	**Temperature :**	24~26℃
Test Band :	30MHz-3GHz and 2G-25GHz	**Relative Humidity :**	55~58%
Test Channel :	03, 04, 05, 06, 07, 08, 09	**Test Engineer :**	Alan Liu and Book Lin

802.11n HT40 <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 03



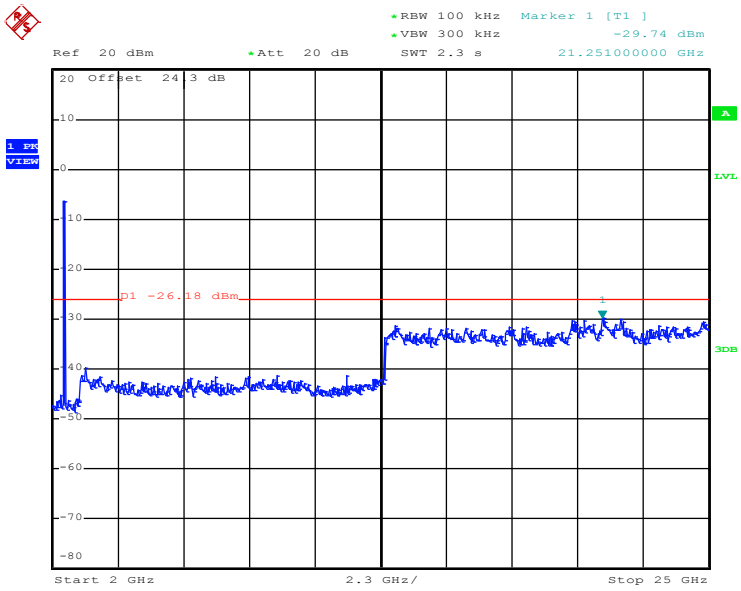
282903-1011 15C Spurious 802.11g_N40 2422 (ch03)

Date: 27.SEP.2012 16:52:03

802.11n HT40 <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 03

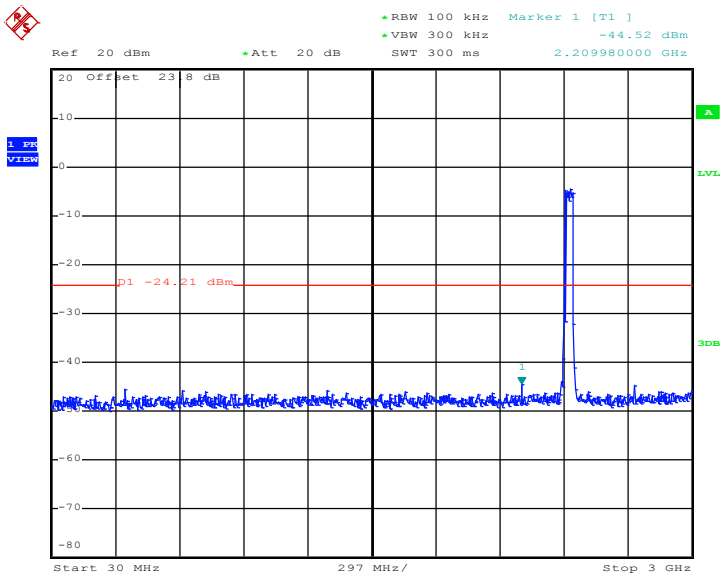


282903-1011 15C Spurious 802.11g_N40 2422 (ch03)
Date: 27.SEP.2012 16:52:22

802.11n HT40 <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 04

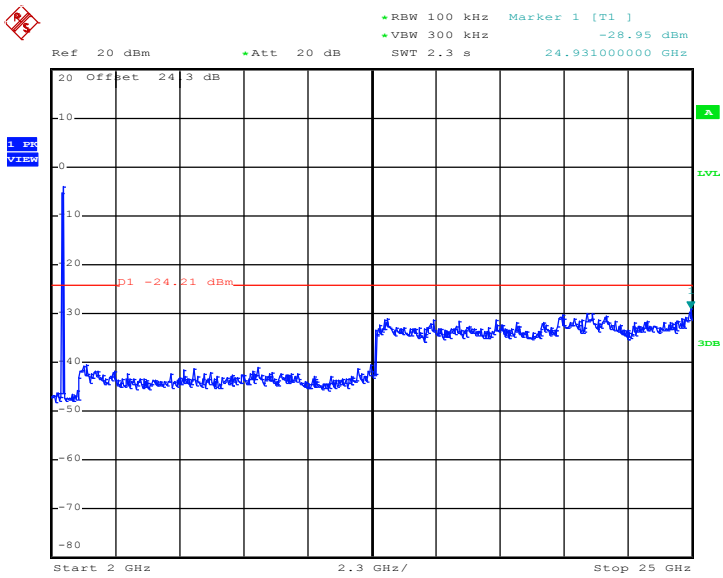


282903-1011 15C Spurious 802.11g_N40 2427
Date: 27.SEP.2012 16:54:35

802.11n HT40 <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 04

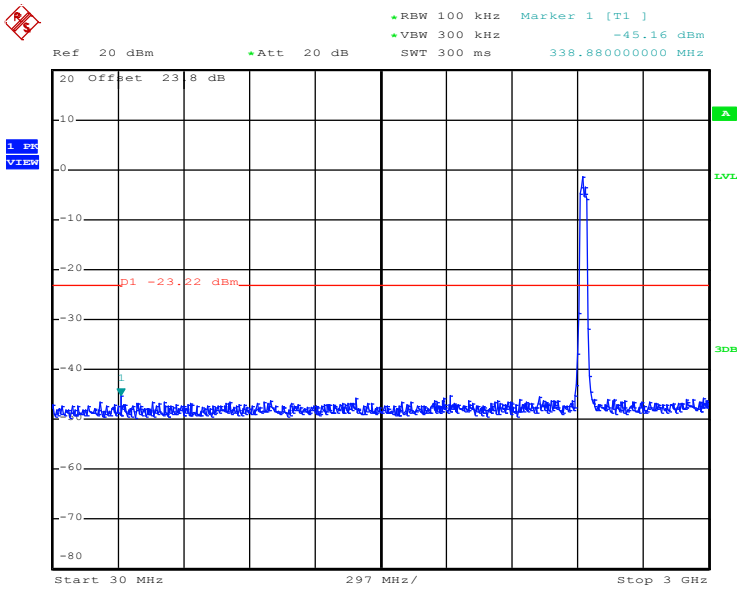


282903-1011 15C Spurious 802.11g_N40 2427
Date: 27.SEP.2012 16:54:53

802.11n HT40 <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 05



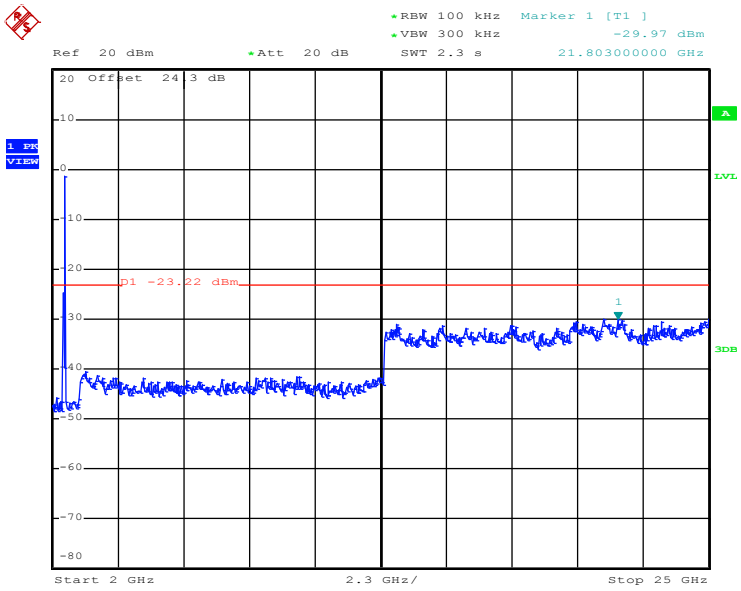
282903-1011 15C Spurious 802.11g_N40 2432

Date: 27.SEP.2012 16:55:50

802.11n HT40 <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 05

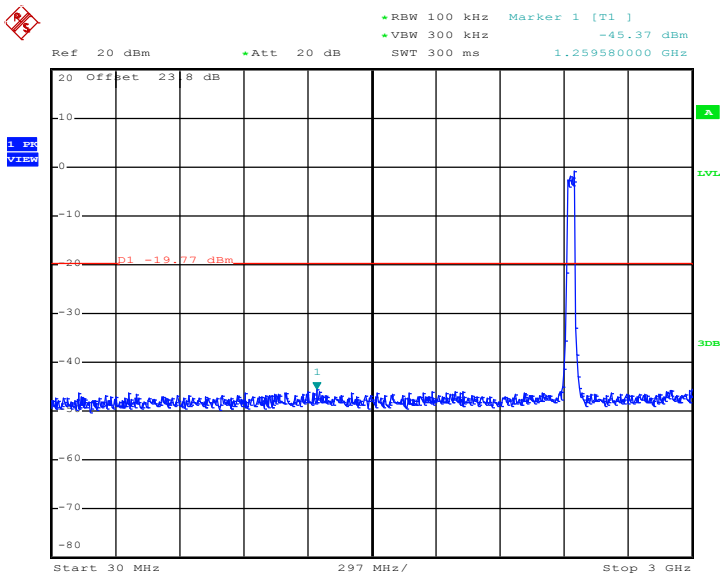


282903-1011 15C Spurious 802.11g_N40 2432
Date: 27.SEP.2012 16:56:10

802.11n HT40 <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 06

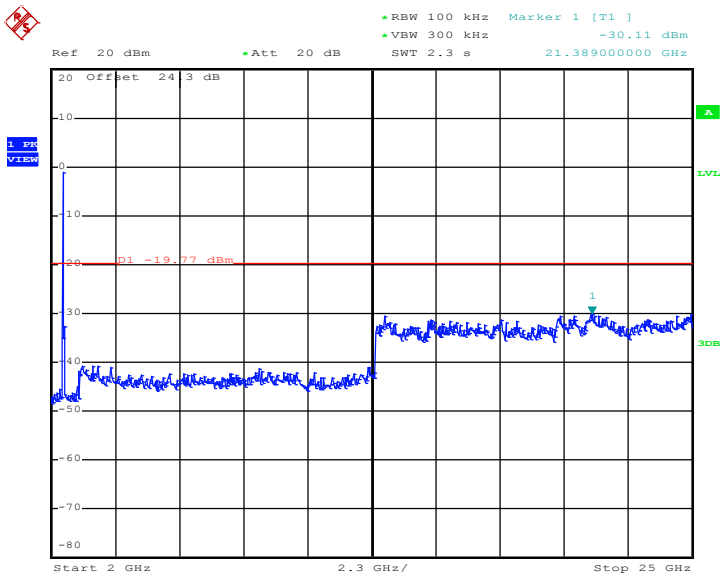


282903-1011 15C Spurious 802.11g_N40 2437 (ch06)
Date: 27.SEP.2012 16:57:33

802.11n HT40 <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

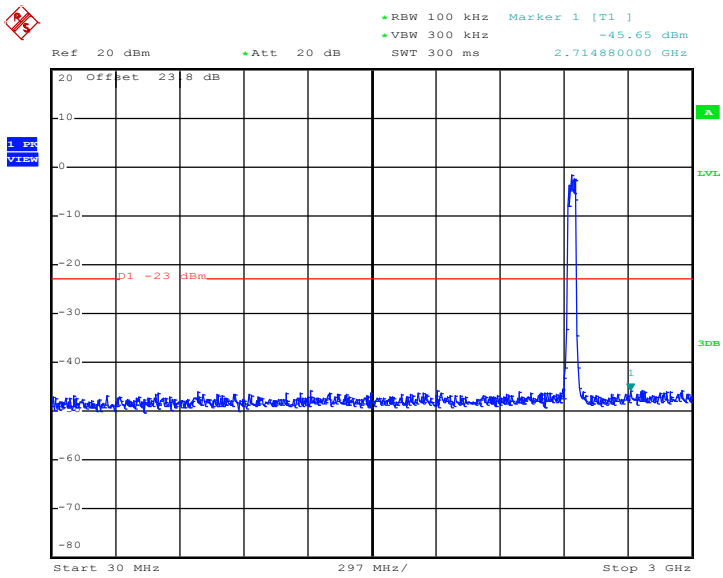


282903-1011 15C Spurious 802.11g_N40 2437 (ch06)
Date: 27.SEP.2012 16:57:53

802.11n HT40 <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 07

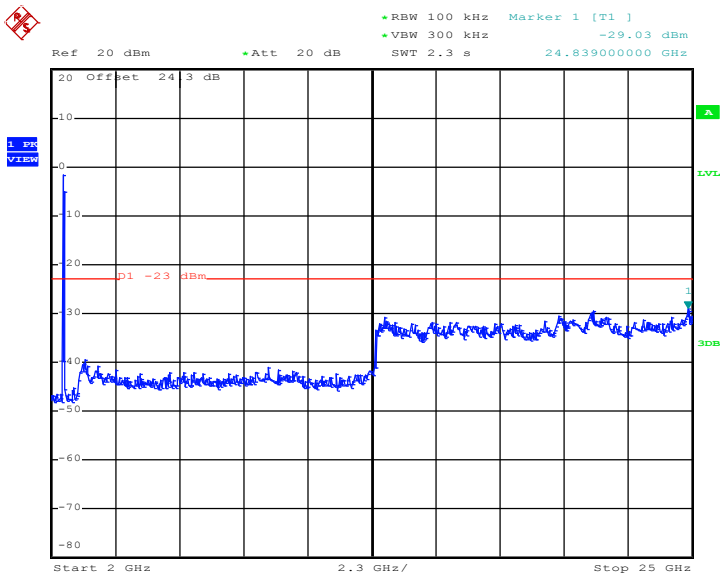


282903-1011 15C Spurious 802.11g_N40 2442 (ch07)
Date: 27.SEP.2012 16:59:12

802.11n HT40 <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 07

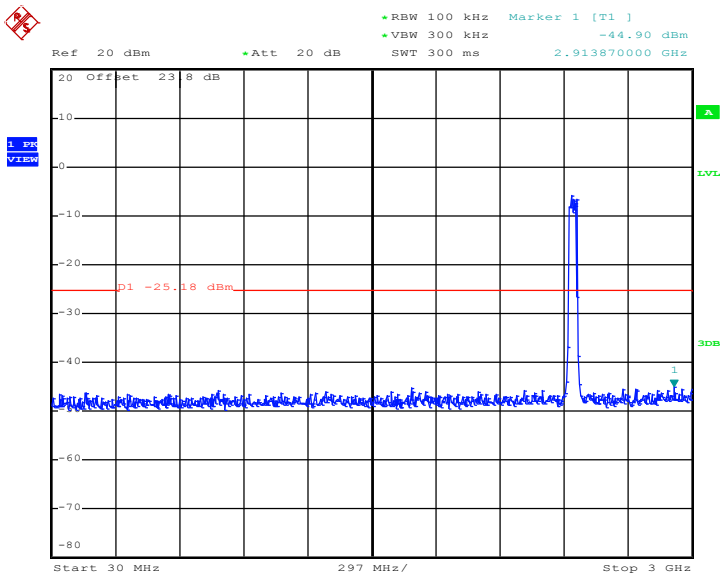


282903-1011 15C Spurious 802.11g_N40 2442 (ch07)
Date: 27.SEP.2012 16:59:31

802.11n HT40 <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 08

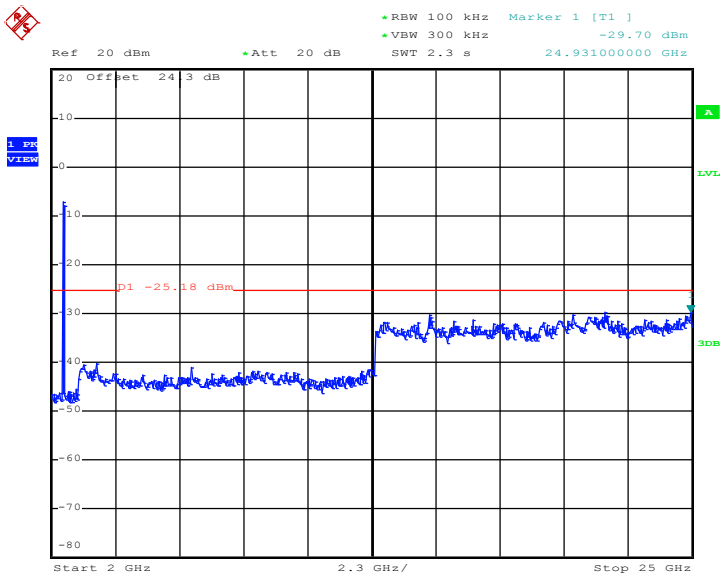


282903-1011 15C Spurious 802.11g_N40 2447
Date: 27.SEP.2012 17:00:43

802.11n HT40 <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 08

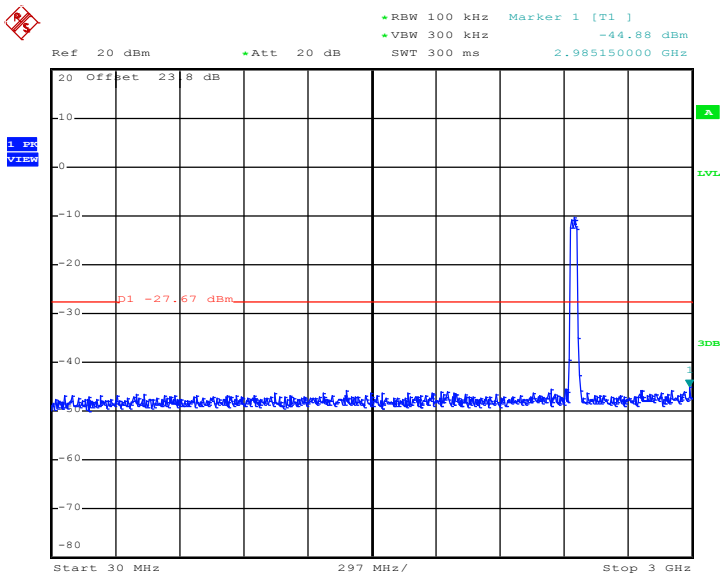


282903-1011 15C Spurious 802.11g_N40 2447
Date: 27.SEP.2012 17:01:05

802.11n HT40 <MIMO Chain 1+2(2)>

30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 09

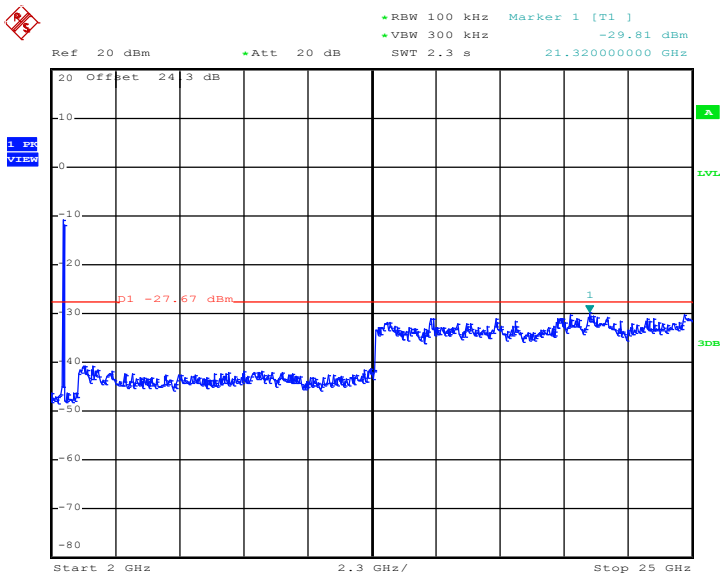


282903-1011 15C Spurious 802.11g_N40 2452 (ch09)
Date: 27.SEP.2012 17:03:17

802.11n HT40 <MIMO Chain 1+2(2)>

2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 09



282903-1011 15C Spurious 802.11g_N40 2452 (ch09)
Date: 27.SEP.2012 17:03:35

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 KHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(KHz)	300
0.490 – 1.705	24000/F(KHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.5.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.5.3 Test Procedure

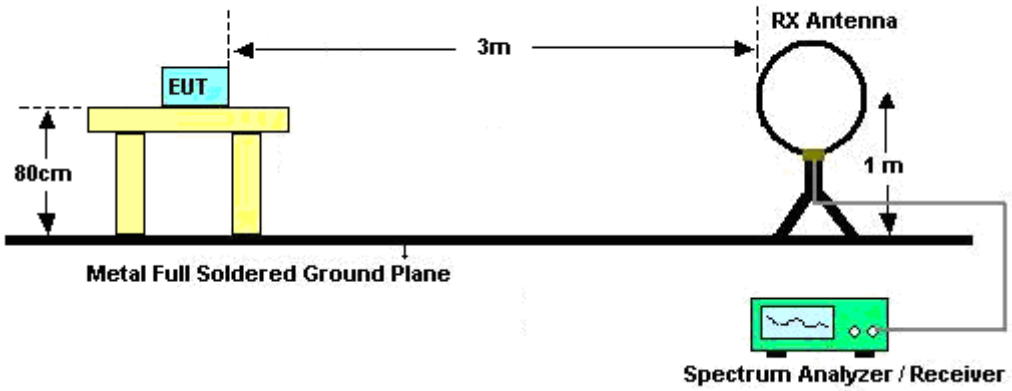
1. The testing follows the guidelines in ANSI C63.10-2009 and ANSI C63.4-2003 test site requirement.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW=100 KHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement.
   For average measurement:
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Antenna	Band	Duty Cycle(%)	T(us)	1/T(KHz)	VBW Setting
6	802.11b for MIMO Chain 1+2(1)	100.00	-	-	10Hz
6	802.11b for MIMO Chain 1+2(2)	100.00	-	-	
6	802.11g for MIMO Chain 1+2(1)	100.00	-	-	10Hz
6	802.11g for MIMO Chain 1+2(2)	100.00	-	-	
6	2.4G 802.11n HT20 for MIMO Chain 1+2(1)	98.93	-	-	10Hz
6	2.4G 802.11n HT20 for MIMO Chain 1+2(2)	98.94	-	-	
6	2.4G 802.11n HT40 for MIMO Chain 1+2(1)	98.41	-	-	10Hz
6	2.4G 802.11n HT40 for MIMO Chain 1+2(2)	98.41	-	-	
7	802.11a for Chain 1+2(1)	100.00	-	-	10Hz
7	802.11a for Chain 1+2(2)	100.00	-	-	
7	5G 802.11n HT20 for MIMO Chain 1+2(1)	99.15	-	-	10Hz
7	5G 802.11n HT20 for MIMO Chain 1+2(2)	99.15	-	-	
7	5G 802.11n HT40 for MIMO Chain 1+2(1)	98.30	-	-	10Hz
7	5G 802.11n HT40 for MIMO Chain 1+2(2)	98.30	-	-	
8	802.11b for MIMO Chain 1+2(1)	100.00	-	-	10Hz
8	802.11b for MIMO Chain 1+2(2)	100.00	-	-	
8	802.11g for MIMO Chain 1+2(1)	100.00	-	-	10Hz
8	802.11g for MIMO Chain 1+2(2)	100.00	-	-	
8	2.4G 802.11n HT20 for MIMO Chain 1+2(1)	98.93	-	-	10Hz
8	2.4G 802.11n HT20 for MIMO Chain 1+2(2)	98.94	-	-	
8	2.4G 802.11n HT40 for MIMO Chain 1+2(1)	98.41	-	-	10Hz
8	2.4G 802.11n HT40 for MIMO Chain 1+2(2)	98.41	-	-	

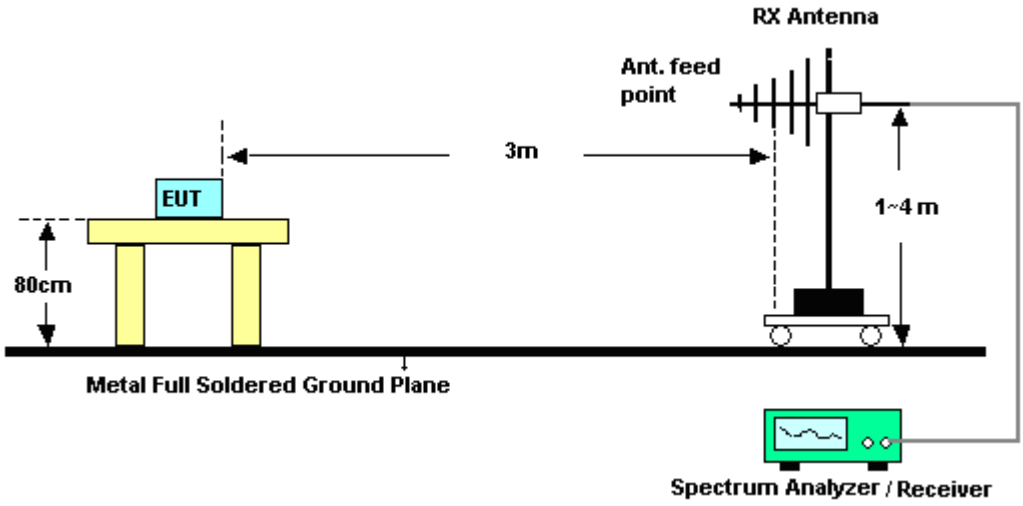
Note: For average measurement with duty cycle < 98%, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

3.5.4 Test Setup

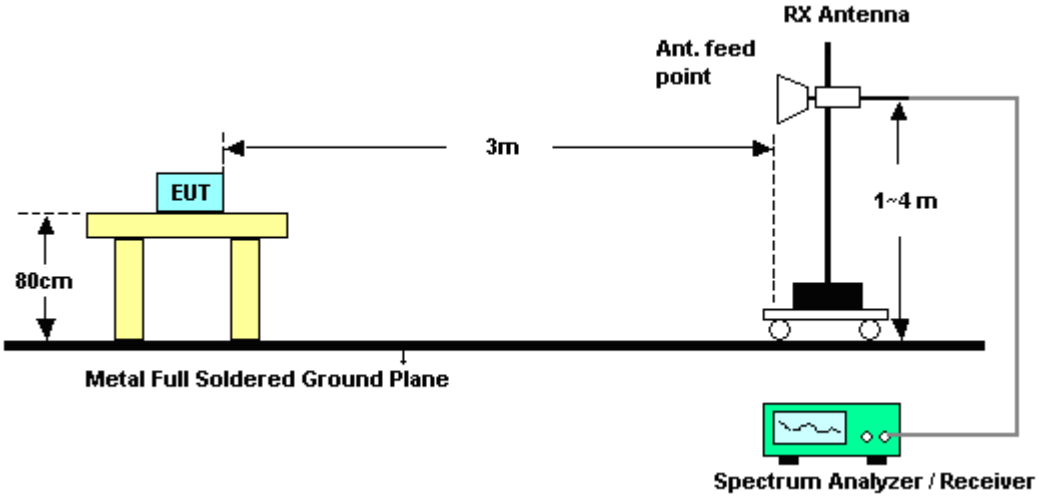
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Emissions (9KHz ~ 30MHz)

Test Engineer :	Kyle Jhuang	Temperature :	22~24°C
		Relative Humidity :	50~52%

Frequency (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix A to C.

3.5.7 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix A to C.

3.6 Antenna Requirements

3.6.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the Antenna exceeds 6 dBi. The use of a permanently attached Antenna or of an Antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.6.2 Antenna Connected Construction

Non-standard connector is used.

3.6.3 Antenna Gain

When the antenna gain of EUT is over 6 dBi, the maximum peak output power and PSD limit should be reduced as following table.

Antenna 6	11b/g	11n
Composite gain (dBi)	9.2	9.2
PSD Array gain (dBi)	3.01	0
Power limit reduction (dBi)	3.2	3.2
PSD limit reduction	6.21	3.2

Antenna 7	11a	11n
Composite gain (dBi)	3.5	3.5
PSD Array gain (dBi)	3.01	0
Power limit reduction (dBi)	0	0
PSD limit reduction	0.51	0

Antenna 8	11b/g	11n
Composite gain (dBi)	6.2	6.2
PSD Array gain (dBi)	3.01	0
Power limit reduction (dBi)	0.2	0.2
PSD limit reduction	3.21	0

Power limit reduction = Composite gain – 6dBi, (min = 0)

PSD limit reduction = Composite gain + PSD Array gain – 6dBi, (min = 0)

FCC KDB 662911 D01 Multiple Transmitter Output v01r02

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(N_{ANT}/N_{SS}=1) dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 06, 2012	Sep. 11, 2012~ Oct. 10, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Sep. 08, 2012	Sep. 11, 2012~ Oct. 10, 2012	Sep. 07, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Sep. 08, 2012	Sep. 11, 2012~ Oct. 10, 2012	Sep. 07, 2013	Conducted (TH02-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 22, 2011	Sep. 22, 2012~ Oct. 09, 2012	Oct. 21, 2012	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Sep. 22, 2012~ Oct. 09, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 01, 2012	Sep. 22, 2012~ Oct. 09, 2012-	Jul. 31, 2013	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz ~ 26.5GHz	Dec. 05, 2011	Sep. 22, 2012~ Oct. 09, 2012	Dec. 04, 2012	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Feb. 27, 2012	Sep. 22, 2012~ Oct. 09, 2012	Feb. 26, 2013	Radiation (03CH07-HY)
Signal Analyzer	Rohde & Schwarz	FSQ	200578/026	20Hz~26.5GHz	Feb. 06, 2012	Sep. 22, 2012~ Oct. 09, 2012	Feb. 05, 2013	Radiation (03CH07-HY)
Pre Amplifier	MITEQ	AMF-7D-00101800-30-10P	159088	1GHz ~ 18GHz	Mar. 10, 2012	Sep. 22, 2012~ Oct. 09, 2012	Mar. 09, 2013	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Oct. 21, 2011	Sep. 22, 2012~ Oct. 09, 2012	Oct. 20, 2012	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Sep. 22, 2012~ Oct. 09, 2012	Jul. 02, 2014	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150KHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.26**

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.54**

Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**