

Test Report

INTENTIONAL RADIATOR TESTS ACCORDING TO ARIB STD-T66 REQUIREMENTS

Equipment Under Test: 802.11 b/g/n WLAN module

Model: WF111-A, WF111-E

Type: -

Manufacturer: Bluegiga Oy
Sinikalliontie 5 A
FI-02630 ESPOO
FINLAND

Customer: Bluegiga Oy
Sinikalliontie 5 A
FI-02630 ESPOO
FINLAND



Date: 21.12.2012

Issued by:


Niklas Karpatskij
Test Engineer

Date: 21.12.2012

Checked by:


Jari Merikari
Technical Manager

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Equipment Under Test (EUT)

802.11 b/g/n WLAN module	
Brand:	Bluegiga
Model:	WF111-A, WF111-E
Type:	-
Serial no:	-
HW version:	-
SW version:	-

Description of the EUT

The EUT is a 802.11 b/g/n WLAN module. It can be operated with batteries or DC power supply.

Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing

Ratings and declarations

Operating Frequency Range (OFR):	2412 – 2472 MHz
Channels:	13
Channel separation:	5 MHz
Conducted power:	802.11b: 16.94 dBm, 802.11g: 15.33 dBm, 802.11n: 14.89 dBm
Transmission technique:	DSSS/OFDM
Modulation:	CCK/OFDM
Antenna connector type	U.FL connector
Antenna gain:	2.14 dBi

Power Supply

Battery or DC operated	
Operating voltage range	2.7 – 4.8 VDC
Normal input voltage:	3.3 VDC
Tested by using external power supply and 3.3 VDC voltage level	

Mechanical Size of the EUT

Length: 67.9 mm	Width: 39.10 mm	Height: 11.90 mm
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Peripherals

No peripherals were used during the tests.

Disclaimer

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SUMMARY OF TESTING

Ordinance reference	Description of Test	Result
Article 14	Antenna power, tolerances for antenna power	PASS
Article 5	Frequency tolerance	PASS
Article 6 and 49.20	Occupied Bandwidth (99%), Spread Bandwidth (90%) and Spreading Factor	PASS
Article 7	Transmission spurious emissions	PASS
Article 24	Limitation of collateral emission of receiver	PASS

Test methods

References:	Tests were performed according to the methods presented in standards EN 300 328-1 v1.7.1.
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EUT Test Conditions During Testing

The EUT was in continuous transmit or receiving mode during all the tests.

The EUT was configured into the wanted channel.

According to the customers declaration the voltage inside the EUT is regulated except the amplifier which takes voltage directly from the input voltage. Therefore tests were performed using three different input voltage levels, -10% (2.97 VDC) and +10% (3.63 VDC) from the nominal input voltage and with the nominal voltage (3.30 VDC).

Following channels were used during the tests:

Channel LOW (CH 1) = 2412 MHz

Channel MID (CH 7) = 2442 MHz

Channel HIGH (CH 13) = 2472 MHz

The EUT was controlled by using Unittest software. Following settings were used during the tests:

Occupied bandwidth tests:

b-mode: 1 Mbps

g-mode: 54 Mbps

n-mode: 65 Mbps

All other tests:

b-mode: 1 Mbps

g-mode: 6 Mbps

n-mode: 6.5 Mbps

Summary of Testing

Test Facility

<input type="checkbox"/> Testing Location / address: FCC registration number: 90598	SGS Fimko Ltd Särkiniementie 3 FI-00210, HELSINKI FINLAND
<input checked="" type="checkbox"/> Testing Location / address: FCC registration number: 178986 Industry Canada registration number: 8708A-2	SGS Fimko Ltd Karakaarenkuja 4 FI-02610, ESPOO FINLAND

Antenna power and tolerances

Standard: EN 300 328
Limit: ARIB-T66
Tested by: NKA/JJM
Date: 14.12.2012
Humidity: 27 %
Temperature: 21 °C
Measurement uncertainty ± 0.49 dB Level of confidence 95 % (k = 2)

Limits: 10mW/MHz; 2 400 – 2483.5 MHz
 Antenna Power Tolerance: +20% to -80%

Test procedure

Total power for tolerance of antenna power measurement is measured by the channel power measurement of the test receiver.

Table 1. 1Mbps, b-mode.

Channel	Voltage level (VDC)	Reading (dBm/MHz)	Result (mW/MHz)	Limit (mW/MHz)	Margin (mW/MHz)	Result
Low	2.97	7.77	5.98	10	4.02	PASS
	3.30	7.97	6.27	10	3.73	PASS
	3.63	7.95	6.24	10	3.76	PASS
Mid	2.97	7.59	5.74	10	4.26	PASS
	3.30	7.89	6.15	10	3.85	PASS
	3.63	7.82	6.05	10	3.95	PASS
High	2.97	8.00	6.31	10	3.69	PASS
	3.30	7.96	6.25	10	3.75	PASS
	3.63	8.03	6.35	10	3.65	PASS

Antenna power and tolerances
Table 2. 6 Mbps, g-mode.

Channel	Voltage level (VDC)	Reading (dBm/MHz)	Result (mW/MHz)	Limit (mW/MHz)	Margin (mW/MHz)	Result
Low	2.97	2.29	1.69	10	8.31	PASS
	3.30	2.45	1.76	10	8.24	PASS
	3.63	2.54	1.79	10	8.21	PASS
Mid	2.97	2.49	1.77	10	8.23	PASS
	3.30	2.68	1.85	10	8.15	PASS
	3.63	2.62	1.83	10	8.17	PASS
High	2.97	2.69	1.86	10	8.14	PASS
	3.30	2.96	1.98	10	8.02	PASS
	3.63	2.95	1.97	10	8.03	PASS

Table 3. 6.5 Mbps, n-mode.

Channel	Voltage level (VDC)	Reading (dBm/MHz)	Result (mW/MHz)	Limit (mW/MHz)	Margin (mW/MHz)	Result
Low	2.97	1.97	1.57	10	8.43	PASS
	3.30	1.97	1.57	10	8.43	PASS
	3.63	2.20	1.66	10	8.34	PASS
Mid	2.97	2.15	1.64	10	8.36	PASS
	3.30	2.37	1.73	10	8.27	PASS
	3.63	2.32	1.71	10	8.29	PASS
High	2.97	2.16	1.64	10	8.36	PASS
	3.30	2.13	1.63	10	8.37	PASS
	3.63	2.11	1.63	10	8.37	PASS

Antenna power and tolerances

Tolerances of antenna power

Table 4. Test Results

Modulation type	Declared antenna power (dBm)	-80% limit	+20% limit	Maximum measured power (dBm)	Deviation %	Result
b	17.60	3.52	21.12	16.94	-3.75	PASS
g	15.60	3.12	18.72	15.33	-1.73	PASS
n	15.60	3.12	18.72	14.89	-4.55	PASS

Power tolerance is calculated by using the following formula:

Power tolerance = $\{[(\text{Measured power}) - (\text{Rated Cond. P})] / (\text{Rated Cond. P})\} \times 100$

* Rated Cond. P: Rated Conducted power

Frequency tolerance

Standard: EN 300 328
Limit: ARIB-T66
Tested by: NKA
Date: 7.12.2012
Humidity: 16 %
Temperature: 20.7 °C
Measurement uncertainty $\pm 4.758 \times 10^{-8}$ Level of confidence 95 % (k = 2)

Limit: ± 50 ppm

Frequency tolerance was measured by using frequency counter function of the spectrum analyzer.
 Modulation was switched off for the test.

Table 5. 2.97 VDC

	Ch low	Ch mid	Ch high
Reading frequency MHz	2412.017769	2442.017871	2472.020724
Frequency error (kHz)	17.769	17.871	20.724
Frequency error (ppm)	7.367	7.318	8.383
Margin (ppm)	42.633	42.682	41.617
Result	PASS	PASS	PASS

Table 6. 3.30 VDC

	Ch low	Ch mid	Ch high
Reading frequency MHz	2412.017020	2442.016766	2472.019996
Frequency error (kHz)	17.020	16.766	19.996
Frequency error (ppm)	7.056	6.866	8.089
Margin (ppm)	42.944	43.134	41.911
Result	PASS	PASS	PASS

Frequency tolerance
Table 7. 3.63 VDC

	Ch low	Ch mid	Ch high
Reading frequency MHz	2412.016825	2442.016359	2472.019534
Frequency error (kHz)	16.825	16.359	19.534
Frequency error (ppm)	6.975538972	6.699017199	7.90210356
Margin (ppm)	43.02446103	43.3009828	42.09789644
Result	PASS	PASS	PASS

99% Occupied Bandwidth, Spreading Bandwidth and Spreading rate

Standard: EN 300 328
Limit: ARIB-T66
Tested by: NKA
Date: 7.12.2012
Humidity: 16 %
Temperature: 20.7 °C
Measurement uncertainty ± 1.78 dB

Level of confidence 95 % (k = 2)

99% Occupied bandwidth test results

Table 8. 1 Mbps, b-mode

Channel	Voltage VDC	Limit [MHz]	99% BW [MHz]	Result
Low	2,97	≤ 26.5	15.3	PASS
	3,30	≤ 26.5	15.3	PASS
	3,63	≤ 26.5	15.3	PASS
Med	2,97	≤ 26.5	15.4	PASS
	3,30	≤ 26.5	15.4	PASS
	3,63	≤ 26.5	15.3	PASS
High	2,97	≤ 26.5	15.4	PASS
	3,30	≤ 26.5	15.3	PASS
	3,63	≤ 26.5	15.4	PASS

Table 9. 54 Mbps, g-mode

Channel	Voltage VDC	Limit [MHz]	99% BW [MHz]	Result
Low	2,97	≤ 26.5	16.7	PASS
	3,30	≤ 26.5	16.7	PASS
	3,63	≤ 26.5	16.7	PASS
Med	2,97	≤ 26.5	16.7	PASS
	3,30	≤ 26.5	16.6	PASS
	3,63	≤ 26.5	16.6	PASS
High	2,97	≤ 26.5	16.6	PASS
	3,30	≤ 26.5	16.6	PASS
	3,63	≤ 26.5	16.6	PASS

Table 10. 65 Mbps, n-mode

Channel	Voltage VDC	Limit [MHz]	99% BW [MHz]	Result
Low	2,97	≤ 26.5	17.7	PASS
	3,30	≤ 26.5	17.7	PASS
	3,63	≤ 26.5	17.7	PASS
Med	2,97	≤ 26.5	17.7	PASS
	3,30	≤ 26.5	17.7	PASS
	3,63	≤ 26.5	17.6	PASS
High	2,97	≤ 26.5	17.8	PASS
	3,30	≤ 26.5	17.6	PASS
	3,63	≤ 26.5	17.6	PASS

90% Occupied Bandwidth
90% Spread bandwidth
Table 11. 1 Mbps, b-mode

Channel	Voltage VDC	Limit [kHz]	90% BW [MHz]	Result
Low	2,97	500 or more	10.1	PASS
	3,30	500 or more	10.1	PASS
	3,63	500 or more	10.1	PASS
Med	2,97	500 or more	10.1	PASS
	3,30	500 or more	10.1	PASS
	3,63	500 or more	10.1	PASS
High	2,97	500 or more	10.0	PASS
	3,30	500 or more	10.0	PASS
	3,63	500 or more	10.0	PASS

Table 12. 54 Mbps, g-mode

Channel	Voltage VDC	Limit [kHz]	90% BW [MHz]	Result
Low	2,97	500 or more	14.4	PASS
	3,30	500 or more	14.3	PASS
	3,63	500 or more	14.4	PASS
Med	2,97	500 or more	14.4	PASS
	3,30	500 or more	14.4	PASS
	3,63	500 or more	14.4	PASS
High	2,97	500 or more	14.3	PASS
	3,30	500 or more	14.3	PASS
	3,63	500 or more	14.3	PASS

Table 13. 65 Mbps, n-mode

Channel	Voltage VDC	Limit [kHz]	90% BW [MHz]	Result
Low	2,97	500 or more	15.4	PASS
	3,30	500 or more	15.4	PASS
	3,63	500 or more	15.4	PASS
Med	2,97	500 or more	15.3	PASS
	3,30	500 or more	15.4	PASS
	3,63	500 or more	15.3	PASS
High	2,97	500 or more	15.4	PASS
	3,30	500 or more	15.3	PASS
	3,63	500 or more	15.4	PASS

Spreading rate
Table 14. Spreading rates

Modulation	Channel	Voltage			Result
		2.97 Vdc	3.30 Vdc	3.63 Vdc	
b	Low	7.35	7.35	7.35	PASS
	Mid	7.35	7.35	7.35	PASS
	High	7.27	7.27	7.27	PASS
g	Low	9.60	9.53	9.60	PASS
	Mid	9.60	9.60	9.60	PASS
	High	9.53	9.53	9.53	PASS
n	Low	10.27	10.27	10.27	PASS
	Mid	10.2	10.27	10.2	PASS
	High	10.27	10.2	10.27	PASS

Transmission spurious emissions

Transmission spurious emissions

Standard: EN 300 328
Limit: ARIB-T66
Tested by: NKA
Date: 18.12.2012
Humidity: 14 %
Temperature: 20.1 °C
Measurement uncertainty ± 2.96 dB Level of confidence 95 % (k = 2)

Unwanted spurious emissions are measured 30 MHz - 8 GHz. The resolution bandwidth below 1 GHz is 100 kHz and 1 MHz above 1 GHz.

3.63 VDC operating voltage produced the highest output power and emission level. Results presented here are measured by using a voltage of 3.63 VDC which was considered to be the worst case.

1 Mbps

Channel low

Frequency (MHz)	Detector	Level (dBm)	Limit (dBm)	Margin (dBm)	Result
2400.00	Peak	-38.60	-16.02	22.58	PASS
4026.92	Peak	-52.85	-26.02	26.83	PASS

Channel mid

Frequency (MHz)	Detector	Level (dBm)	Limit (dBm)	Margin (dBm)	Result
1743.46	Peak	-57.02	-26.02	31.00	PASS
4879.81	Peak	-51.20	-26.02	25.18	PASS

Channel high

Frequency (MHz)	Detector	Level (dBm)	Limit (dBm)	Margin (dBm)	Result
2483.50	Peak	-38.16	-16.02	22.14	PASS
2500.00	Peak	-51.19	-26.02	25.17	PASS
4941.51	Peak	-52.55	-26.02	26.53	PASS

6 Mbps

Channel low

Frequency (MHz)	Detector	Level (dBm)	Limit (dBm)	Margin (dBm)	Result
2400.00	Peak	-35.12	-16.02	19.10	PASS
2483.50	Peak	-48.60	-16.02	32.58	PASS
2500.00	Peak	-48.84	-26.02	22.82	PASS
3601.76	Peak	-64.03	-26.02	38.01	PASS
4826.92	Peak	-61.79	-26.02	35.77	PASS
6563.30	Peak	-63.25	-26.02	37.23	PASS

Channel mid

Frequency (MHz)	Detector	Level (dBm)	Limit (dBm)	Margin (dBm)	Result
2500.00	Peak	-49.60	-26.02	23.58	PASS
2949.52	Peak	-66.16	-26.02	40.14	PASS
4079.01	Peak	-54.20	-26.02	28.18	PASS

Transmission spurious emissions

Channel high

Frequency (MHz)	Detector	Level (dBm)	Limit (dBm)	Margin (dBm)	Result
2483.50	Peak	-36.50	-16.02	20.48	PASS
2500.00	Peak	-48.44	-26.02	22.42	PASS
4950.33	Peak	-60.50	-26.02	34.48	PASS

6.5 Mbps

Channel low

Frequency (MHz)	Detector	Level (dBm)	Limit (dBm)	Margin (dBm)	Result
2400.00	Peak	-35.09	-16.02	19.07	PASS
2500.00	Peak	-49.24	-26.02	23.22	PASS
4010.10	Peak	-60.90	-26.02	34.88	PASS

Channel mid

Frequency (MHz)	Detector	Level (dBm)	Limit (dBm)	Margin (dBm)	Result
2500.00	Peak	-49.47	-26.02	23.45	PASS
4879.81	Peak	-61.66	-26.02	35.64	PASS
6113.78	Peak	-63.20	-26.02	37.18	PASS

Channel high

Frequency (MHz)	Detector	Level (dBm)	Limit (dBm)	Margin (dBm)	Result
2483.50	Peak	-33.08	-16.02	17.06	PASS
2500.00	Peak	-49.14	-26.02	23.12	PASS
4941.51	Peak	-61.96	-26.02	35.94	PASS

Limitation of collateral emission of receiver

Standard: EN 300 328
Limit: ARIB-T66
Tested by: NKA
Date: 18.12.2012
Humidity: 14 %
Temperature: 20.1 °C
Measurement uncertainty ± 2.96 dB Level of confidence 95 % (k = 2)

Unwanted spurious emissions are measured 30 MHz - 8 GHz. The resolution bandwidth below 1 GHz is 100 kHz and 1 MHz above 1 GHz.

3.63 VDC operating voltage produced the highest output power and emission level. Results presented here are measured by using 3.63 VDC voltage which was considered to be the worst case.

Channel mid

Frequency (MHz)	Detector	Level (dBm)	Limit (dBm)	Margin (dBm)	Result
358.17	Peak	-74.72	-53.98	20.74	PASS
1933.85	Peak	-59.42	-46.99	12.43	PASS
2438.22	Peak	-71.12	-46.99	24.13	PASS
2445.06	Peak	-70.87	-46.99	23.88	PASS
2479.67	Peak	-71.24	-46.99	24.25	PASS
3416.67	Peak	-66.54	-46.99	19.55	PASS
4624.20	Peak	-65.67	-46.99	18.68	PASS
7303.61	Peak	-65.54	-46.99	18.55	PASS

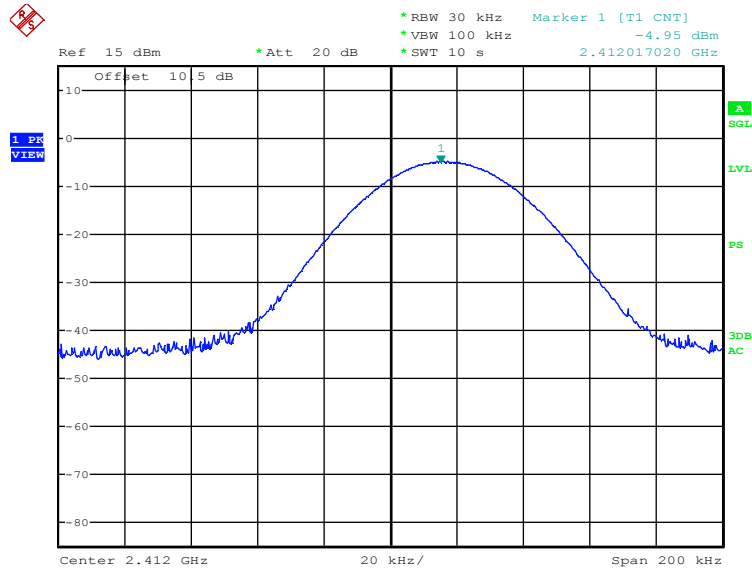
List of Test Equipment

Manufacturer	Type	Serial no	Cal due date
ROHDE & SCHWARZ			
EMI Test receiver	ESU 26	100185	2013-07-19
EMI Test receiver	ESCI 3	100885	2013-08-24
Test software	EMC32	-	-
PENDULUM			
Frequency Standard	GPS-88	SM 968615	2015-18-03
HUBER+SUHNER			
Attenuator 10dB	6810.17B	-	-

ANNEX A

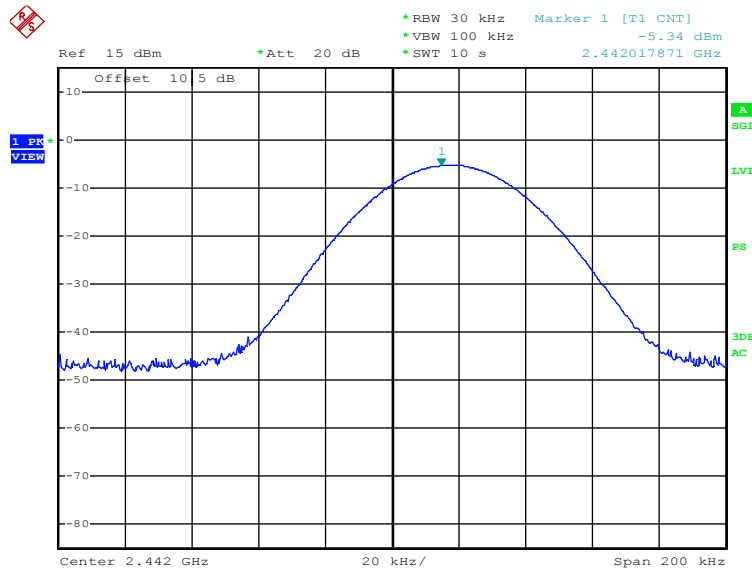
This annex contains the graphical data recorded during the tests and the pictures of the EUT.

These plots represent the worst case results.



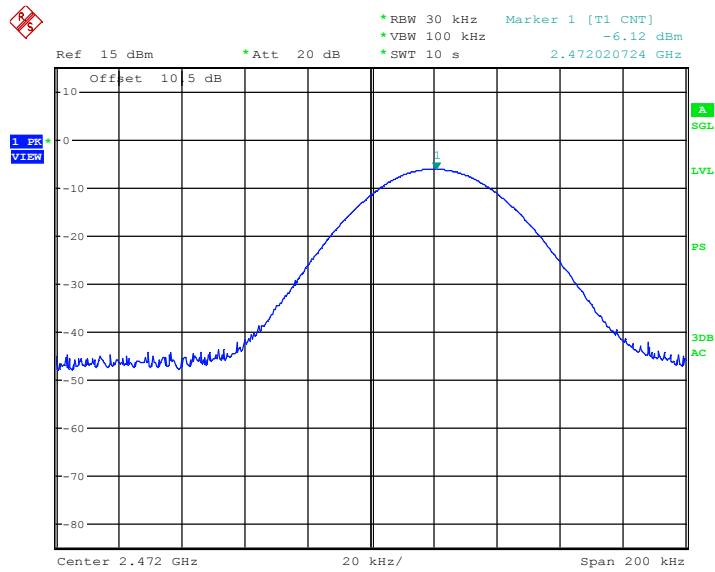
Date: 7.DEC.2012 15:51:29

Picture 1. Frequency tolerance low channel.



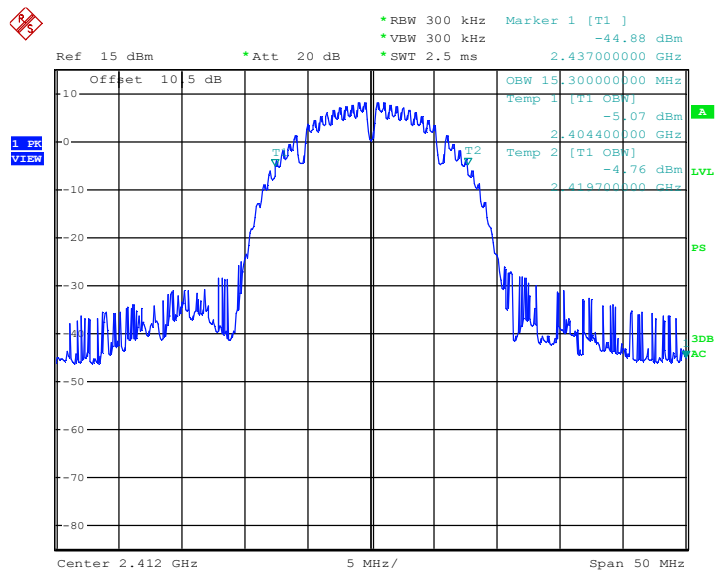
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Picture 2. Frequency tolerance middle channel.



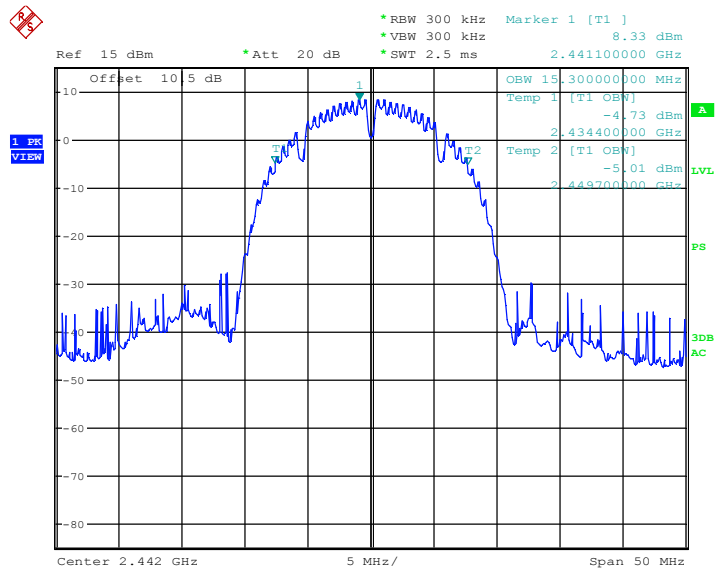
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Picture 3. Frequency tolerance channel high.



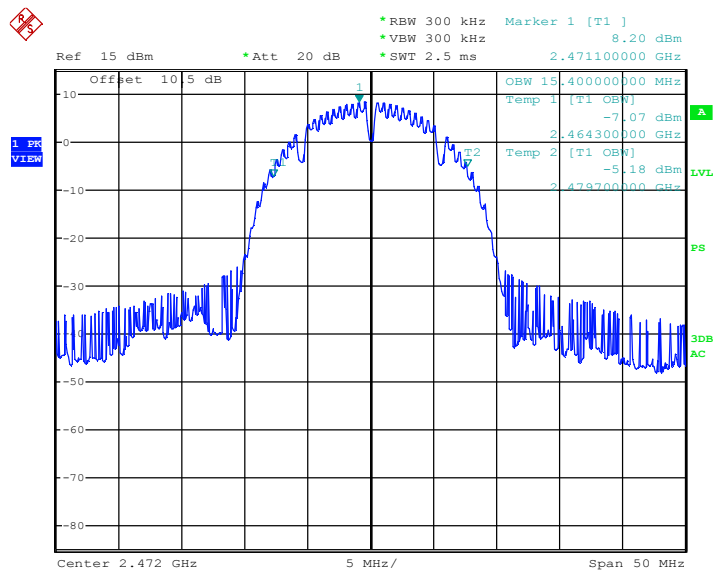
Date: 7.DEC.2012 15:11:46

Picture 4. 99% Occupied Bandwidth, low channel, b-mode.



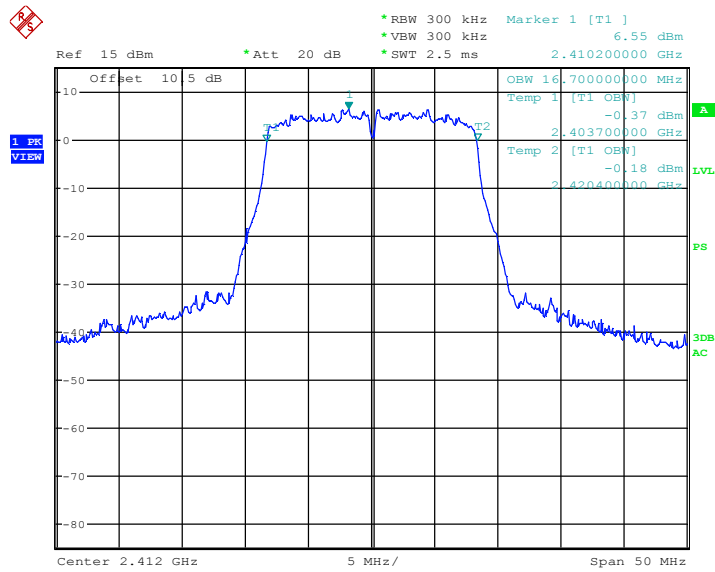
Date: 7.DEC.2012 15:19:28

Picture 5. 99% Occupied Bandwidth, mid channel, b mode.



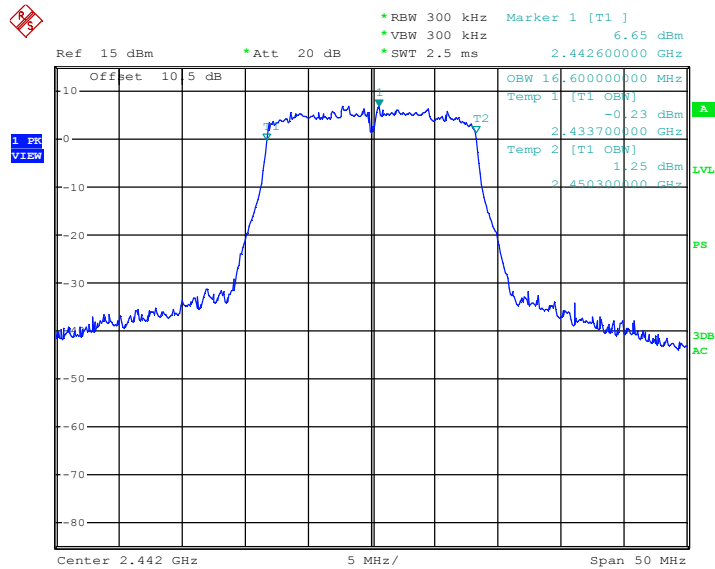
Date: 7.DEC.2012 15:20:34

Picture 6. 99% Occupied Bandwidth, high channel, b mode



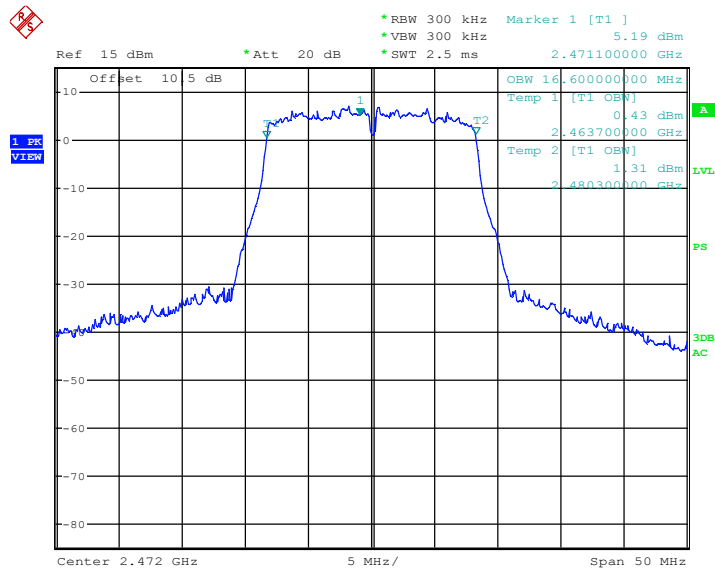
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Picture 7. 99% Occupied Bandwidth, low channel, g mode



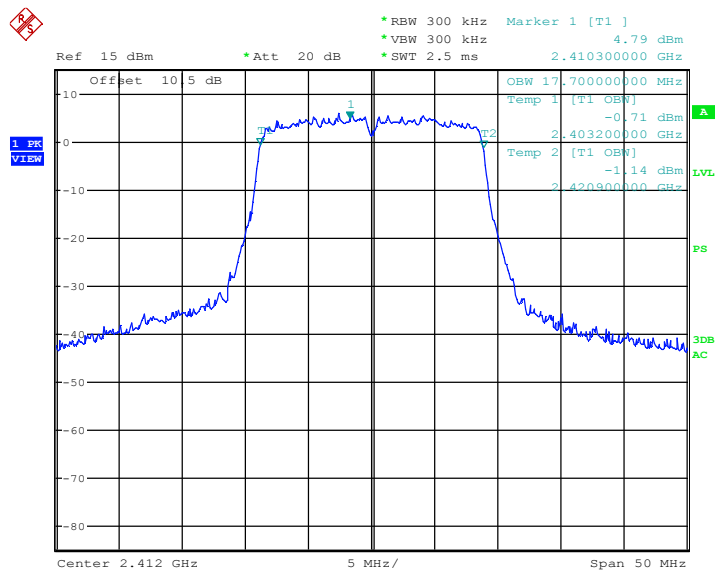
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Picture 8. 99% Occupied Bandwidth, mid channel, g mode



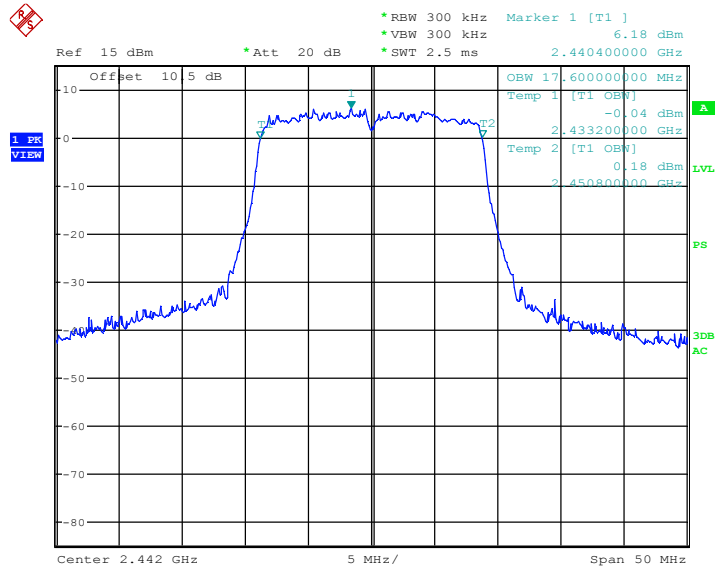
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Picture 9. 99% Occupied Bandwidth, high channel, g mode



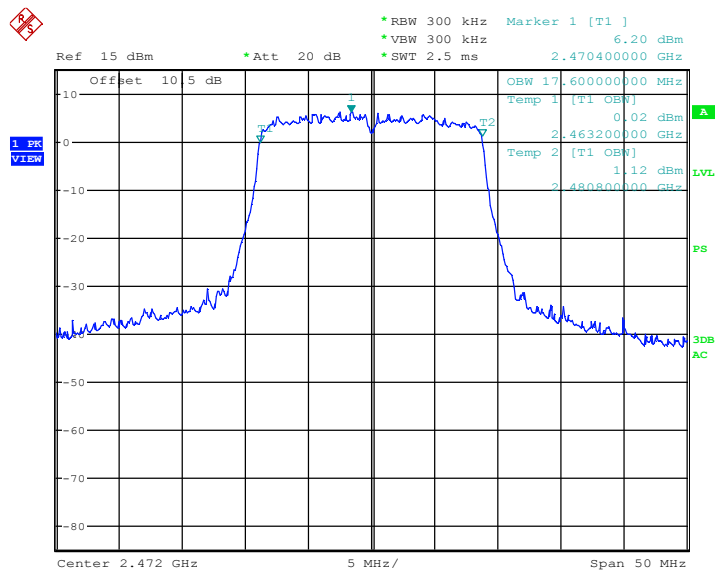
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Picture 10. 99% Occupied Bandwidth, low channel, n mode



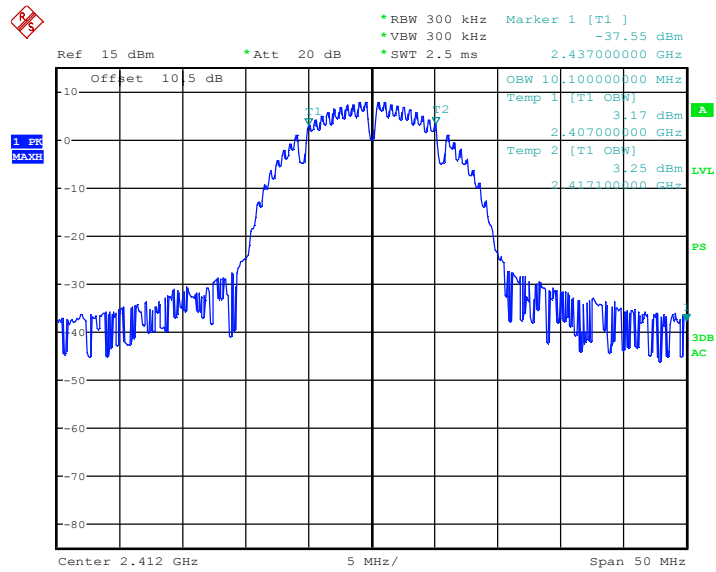
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Picture 11. 99% Occupied Bandwidth, mid channel, n mode



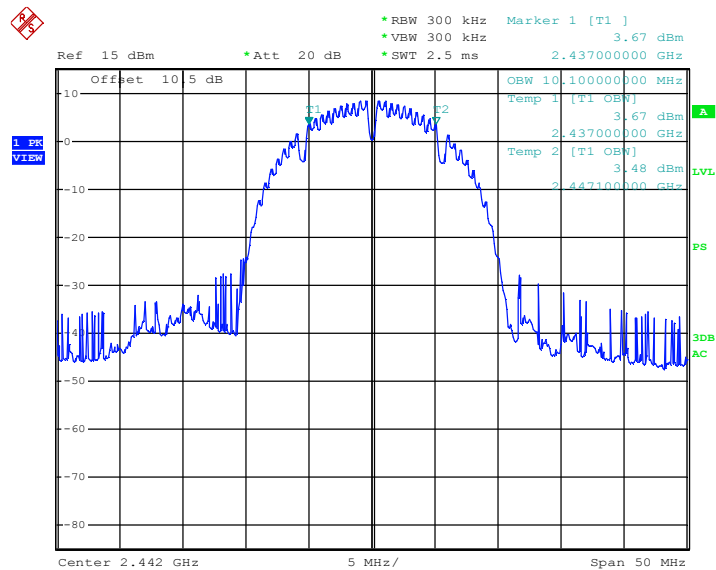
Date: 7.DEC.2012 15:37:52

Picture 12. 99% Occupied Bandwidth, high channel, n mode



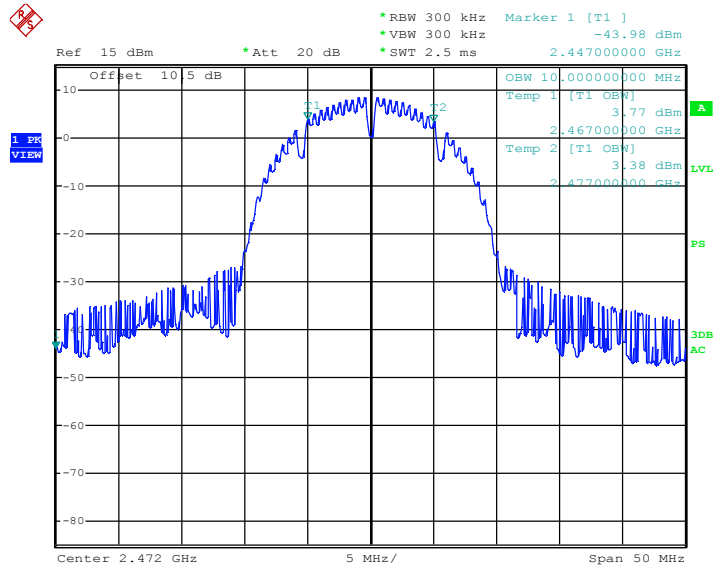
Date: 7.DEC.2012 14:48:21

Picture 13. 90% Occupied Bandwidth, low channel, b mode



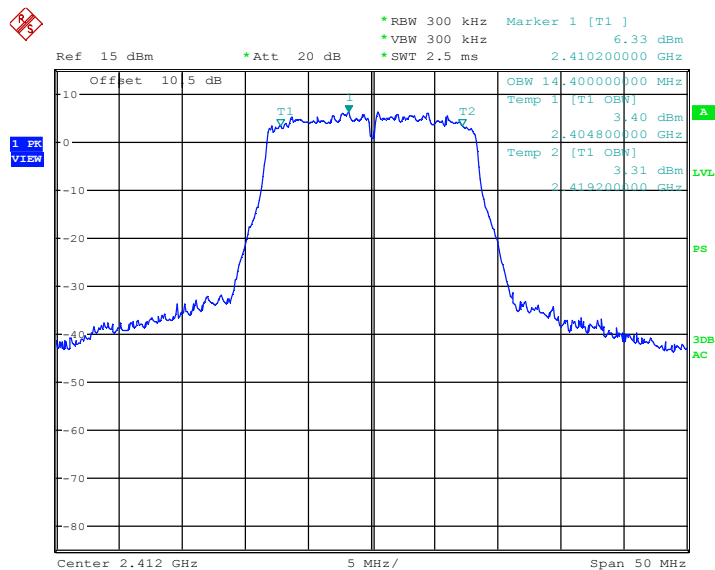
Date: 7.DEC.2012 14:52:41

Picture 14. 90% Occupied Bandwidth, mid channel, b mode.



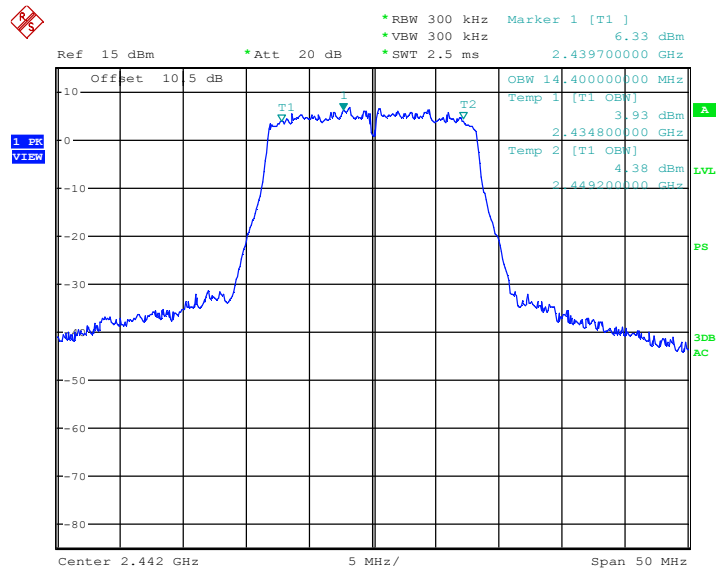
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Picture 15. 90% Occupied Bandwidth, high channel, b mode



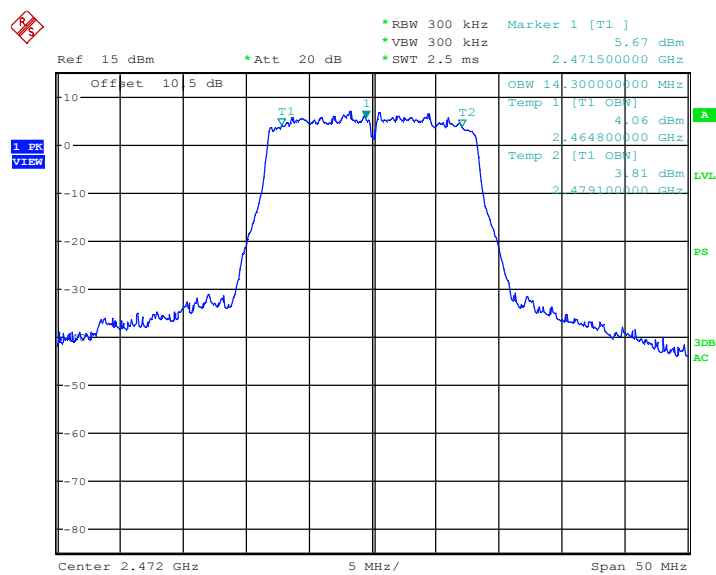
Date: 7.DEC.2012 15:01:09

Picture 16. 90% Occupied Bandwidth, low channel, g mode



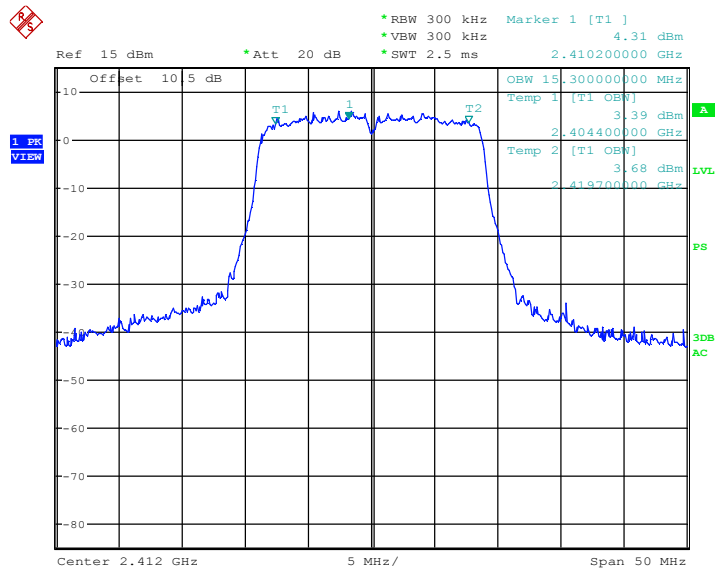
Date: 7.DEC.2012 15:00:14

Picture 17. 90% Occupied Bandwidth, mid channel, g mode



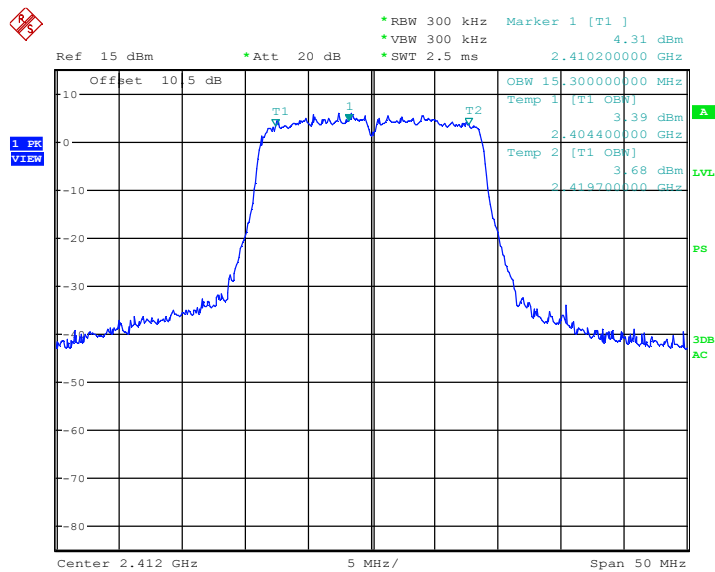
Date: 7.DEC.2012 14:56:50

Picture 18. 90% Occupied Bandwidth, high channel, g mode



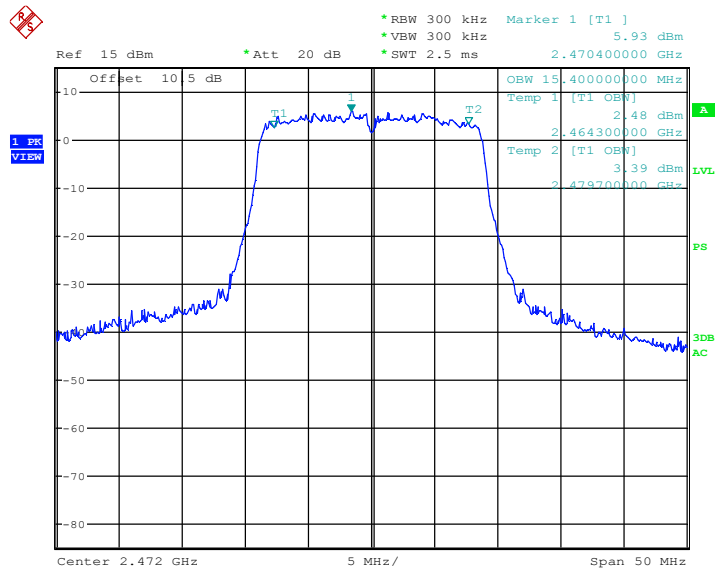
Date: 7.DEC.2012 15:04:53

Picture 19. 90% Occupied Bandwidth, low channel, n mode



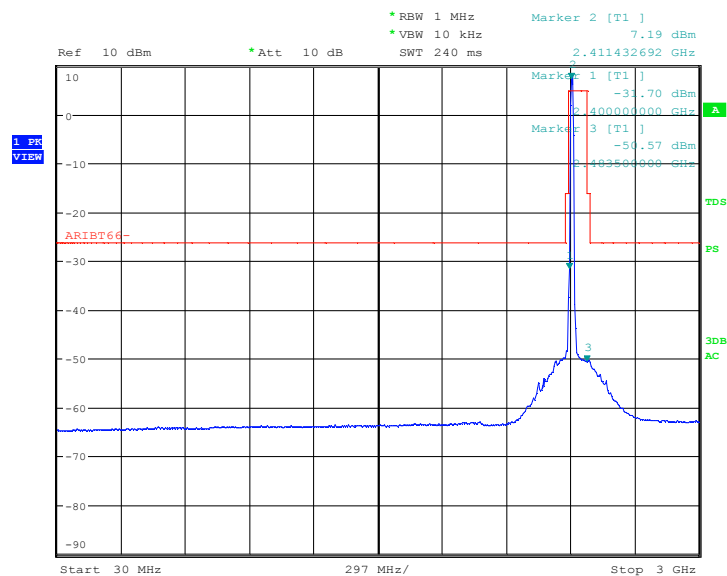
Date: 7.DEC.2012 15:04:53

Picture 20. 90% Occupied Bandwidth, mid channel, n mode



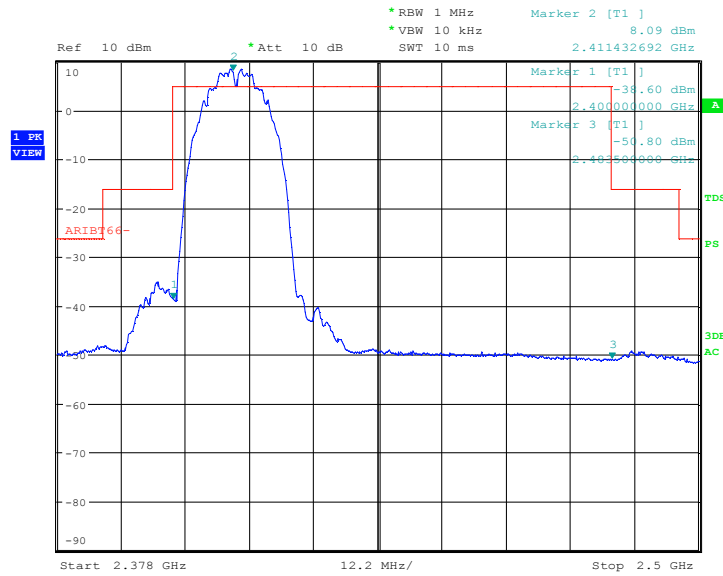
Date: 7.DEC.2012 15:09:57

Picture 21. 90% Occupied Bandwidth, high channel, n mode



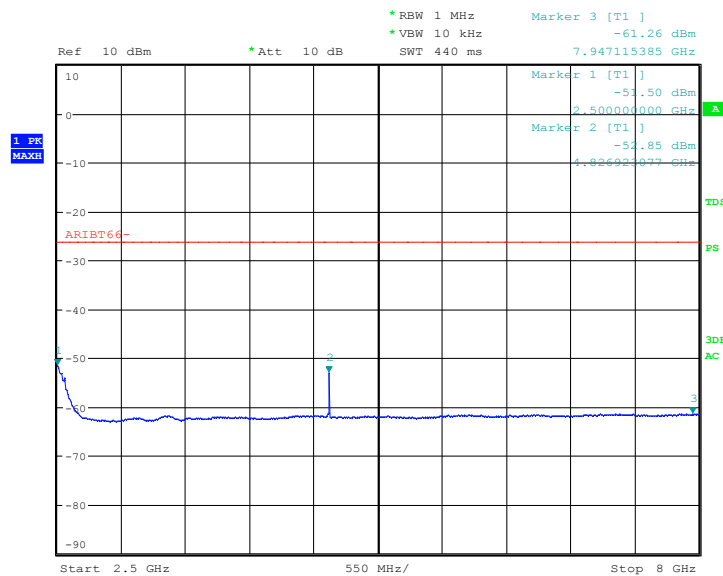
Date: 18.DEC.2012 16:02:26

Picture 22. Tx spurious emissions b mode channel low 30 – 3000 MHz.



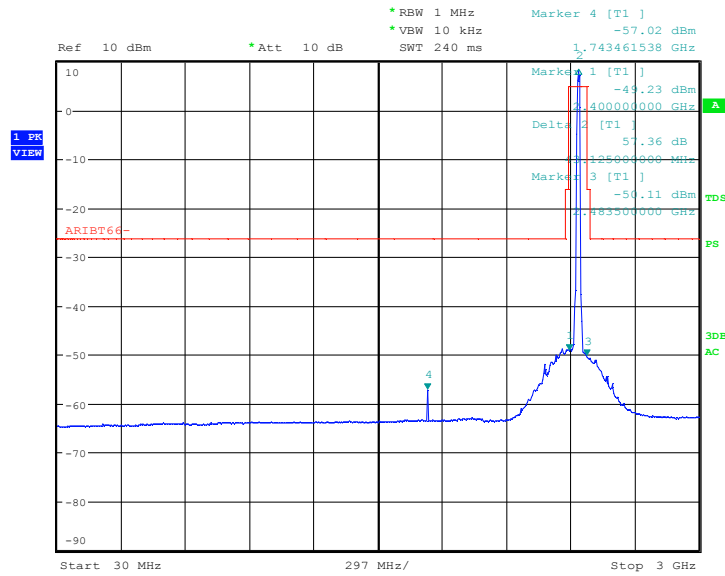
Date: 18.DEC.2012 16:03:48

Picture 23. Tx spurious emissions b mode channel low 2.4 GHz.



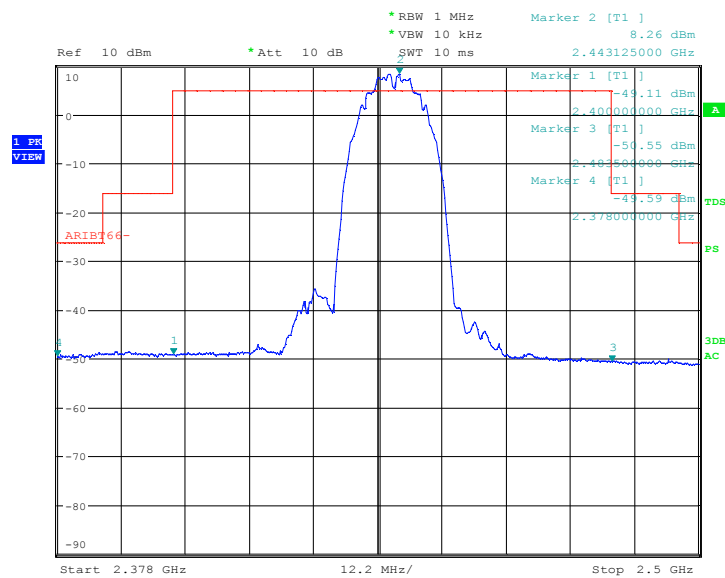
Date: 18.DEC.2012 16:05:13

Picture 24. Tx spurious emissions b mode channel low 2.5 – 8 GHz.



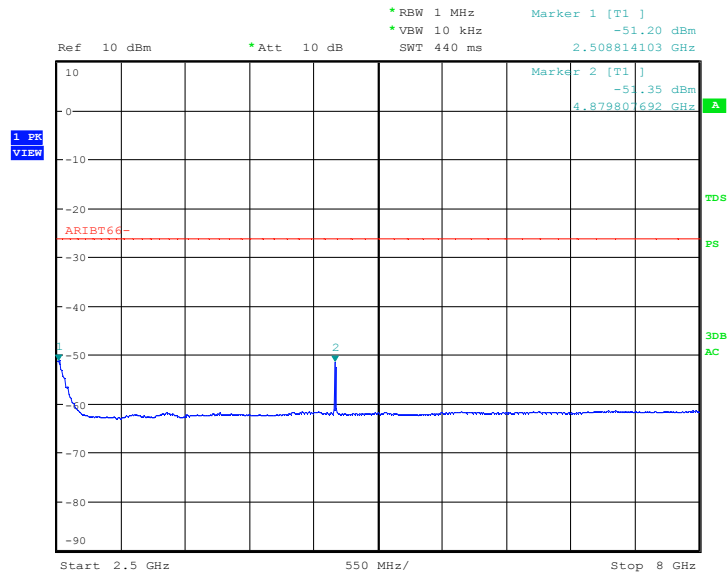
Date: 18.DEC.2012 16:07:48

Picture 25. Tx spurious emissions b mode channel mid 30 – 3000 MHz.



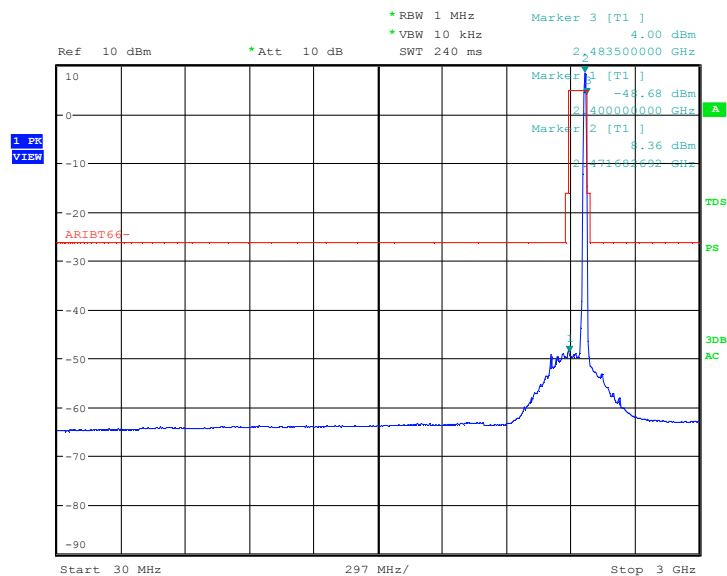
Date: 18.DEC.2012 16:09:57

Picture 26. Tx spurious emissions b mode channel mid 2.4 GHz.



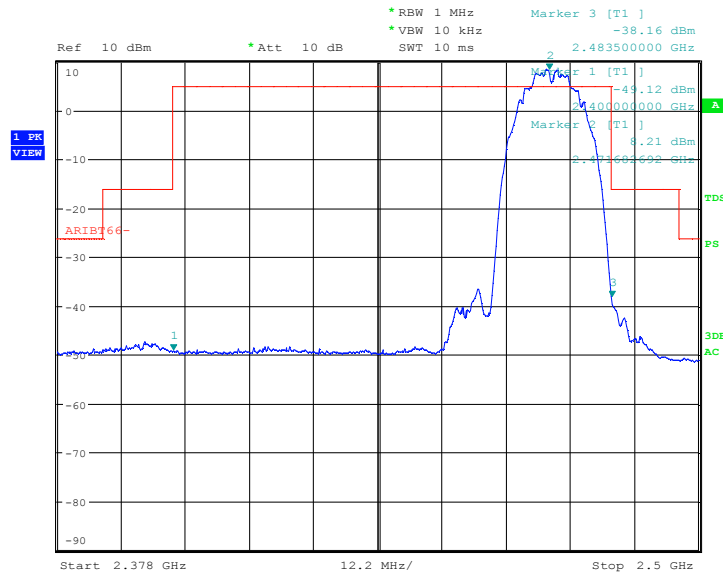
Date: 18.DEC.2012 16:10:50

Picture 27. Tx spurious emissions b mode channel mid 2.5 – 8 GHz.



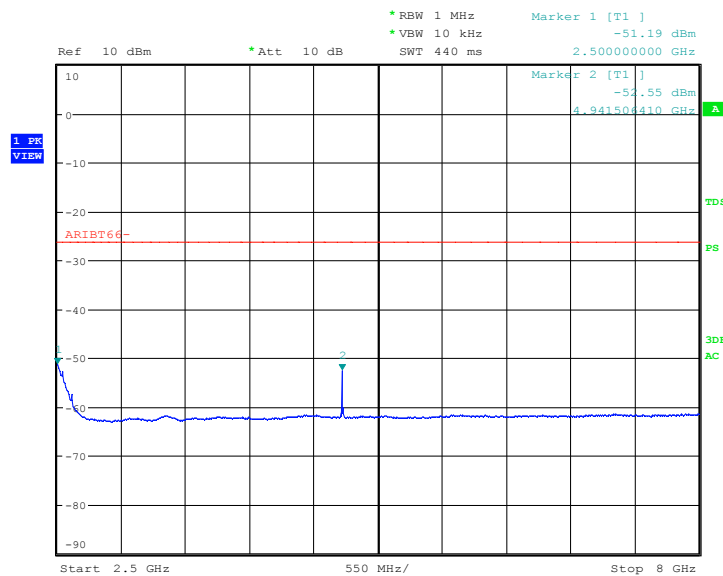
Date: 18.DEC.2012 16:13:25

Picture 28. Tx spurious emissions b mode channel high 30 – 3000 MHz.



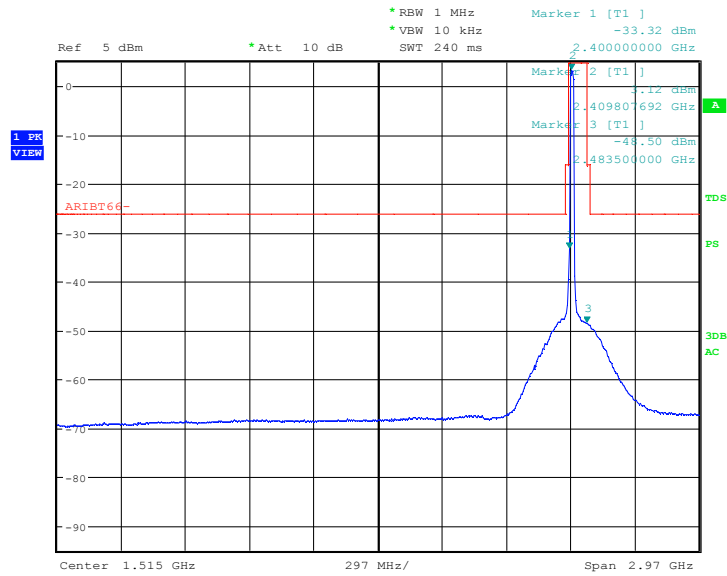
Date: 18.DEC.2012 16:14:54

Picture 29.Tx spurious emissions b mode channel high 2.4 GHz.



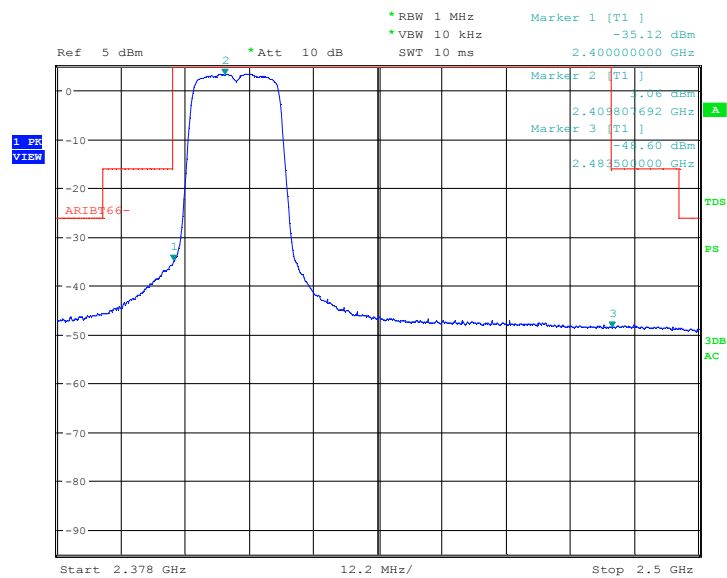
Date: 18.DEC.2012 16:16:02

Picture 30.Tx spurious emissions b mode channel high 2.5 – 8 GHz.



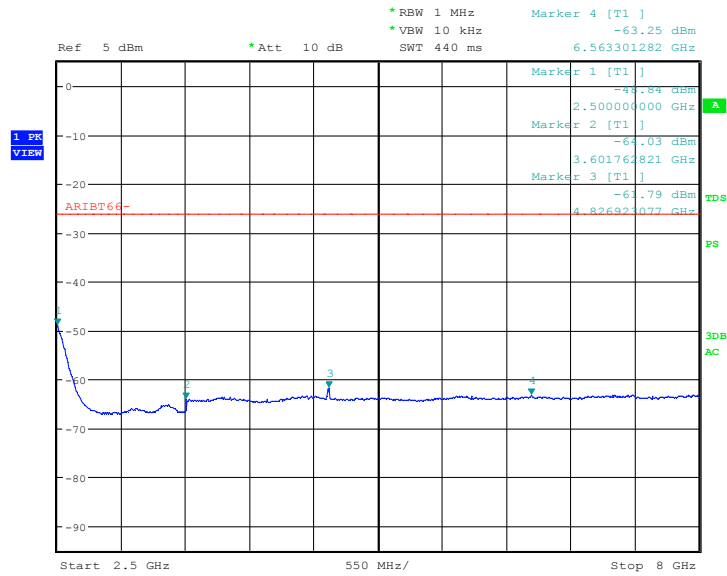
Date: 18.DEC.2012 16:29:54

Picture 31. Tx spurious emissions g mode channel low 30 – 3000 MHz.



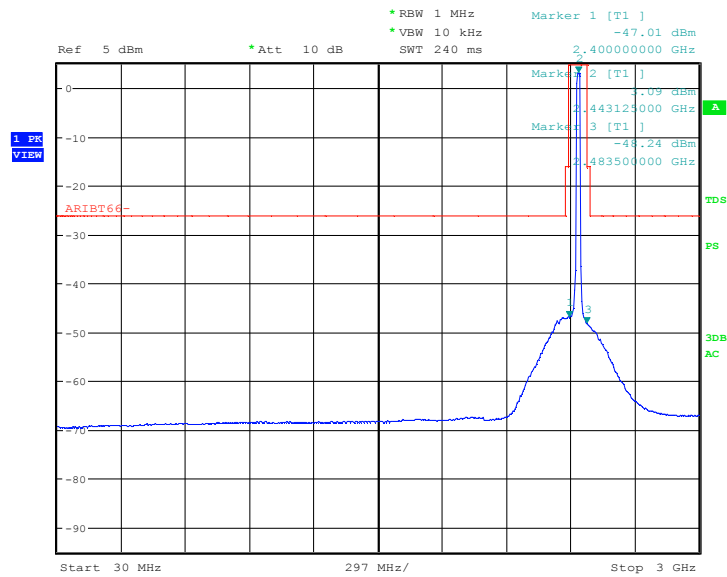
Date: 18.DEC.2012 16:32:03

Picture 32. Tx spurious emissions g mode channel low 2.4 GHz.



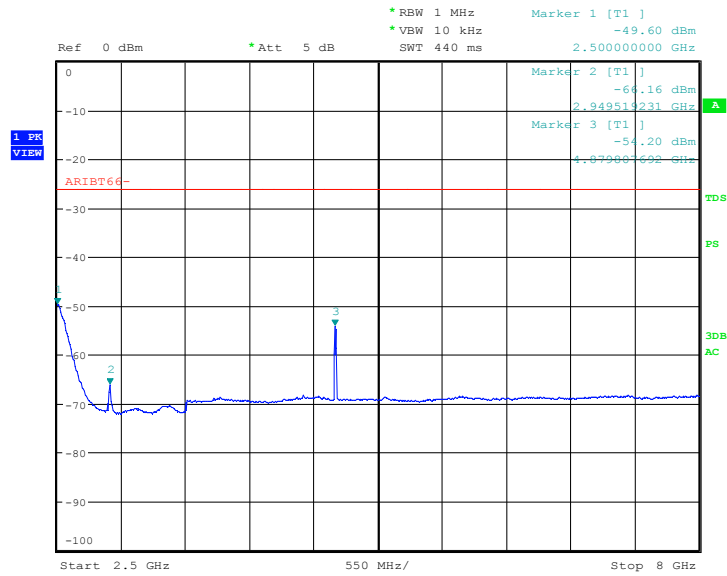
Date: 18.DEC.2012 16:35:06

Picture 33. Tx spurious emissions g mode channel low 2.5 – 8 GHz.



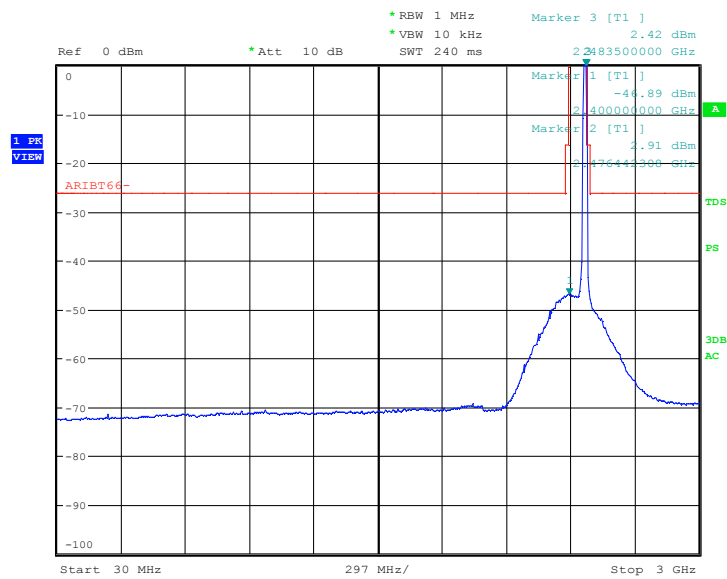
Date: 18.DEC.2012 16:36:25

Picture 34. Tx spurious emissions g mode channel mid 30 – 3000 MHz.



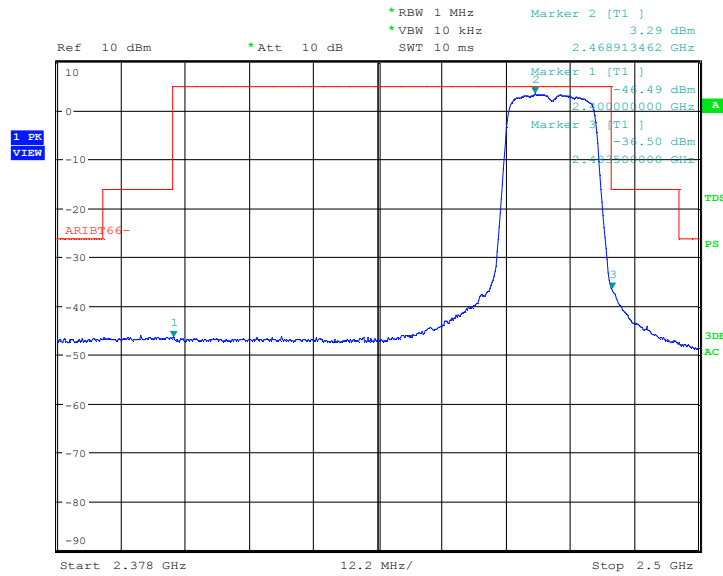
Date: 18.DEC.2012 16:39:52

Picture 35. Tx spurious emissions g mode channel mid 2.5 – 8 GHz.



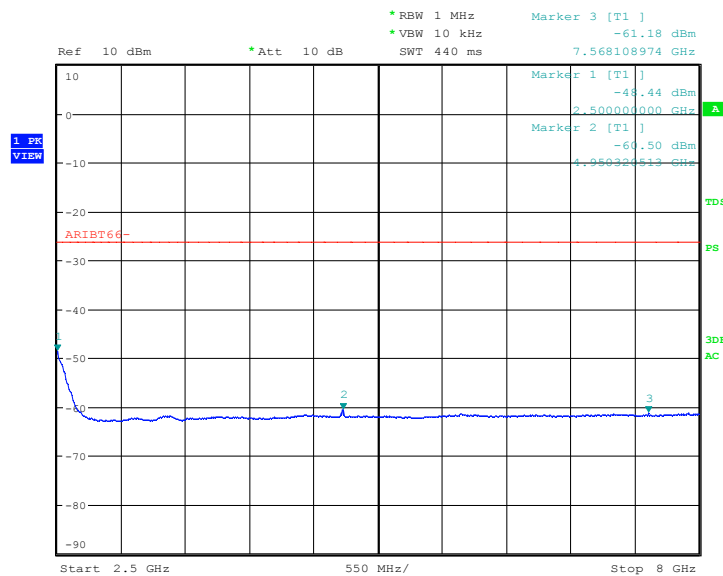
Date: 18.DEC.2012 16:43:52

Picture 36. Tx spurious emissions g mode channel high 30 – 3000 MHz.



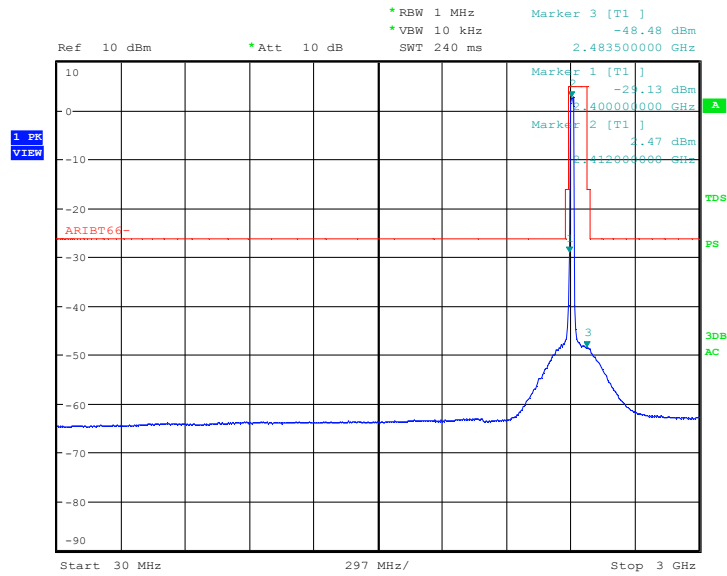
Date: 18.DEC.2012 16:45:31

Picture 37. Tx spurious emissions g mode channel high 2.4 GHz.



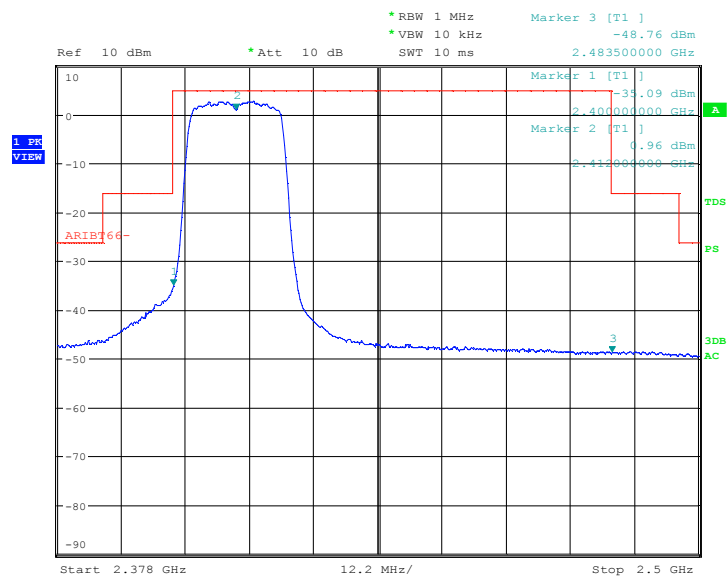
Date: 18.DEC.2012 16:48:27

Picture 38. Tx spurious emissions g mode channel high 2.5 – 8 GHz.



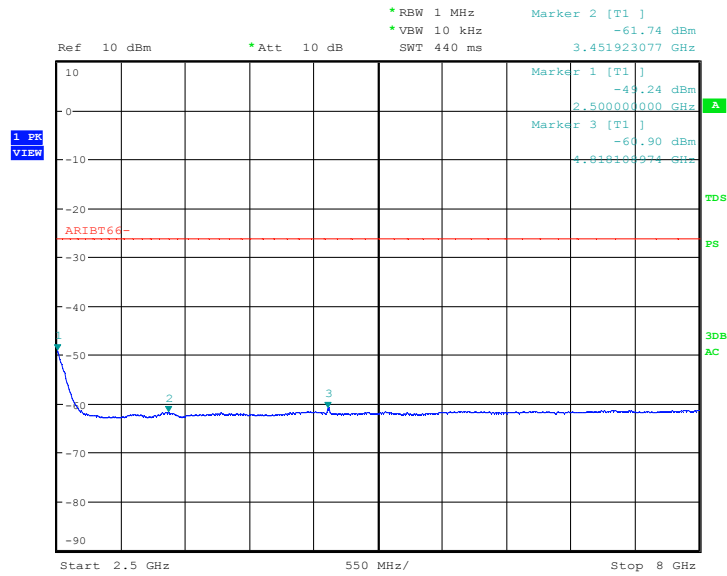
Date: 18.DEC.2012 16:51:29

Picture 39. Tx spurious emissions n mode channel low 30 – 3000 MHz.



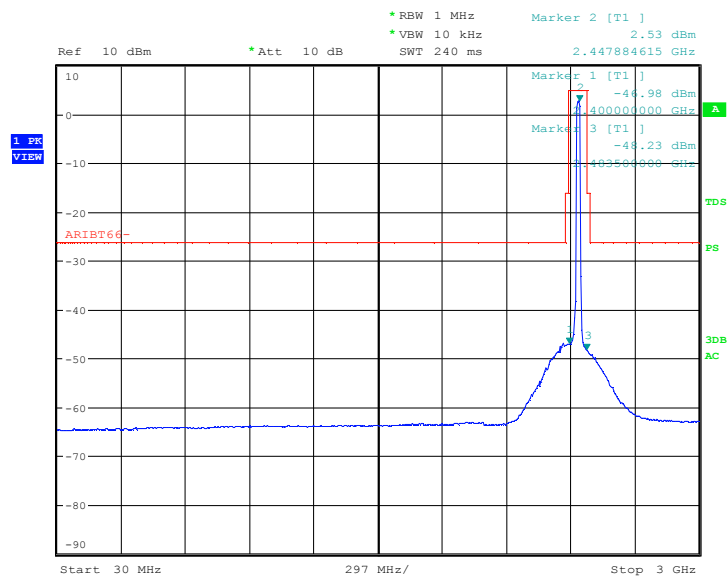
Date: 18.DEC.2012 16:52:53

Picture 40. Tx spurious emissions n mode channel low 2.4 GHz.



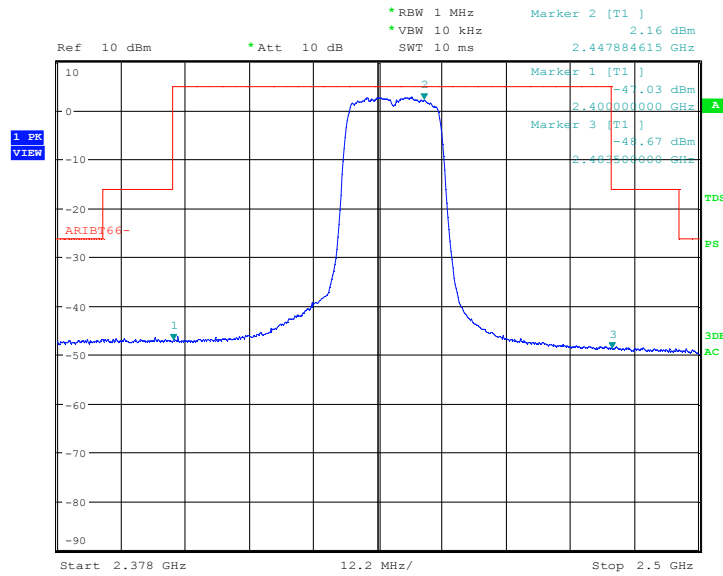
Date: 18.DEC.2012 16:55:26

Picture 41. Tx spurious emissions n mode channel low 2.5 – 8 GHz.



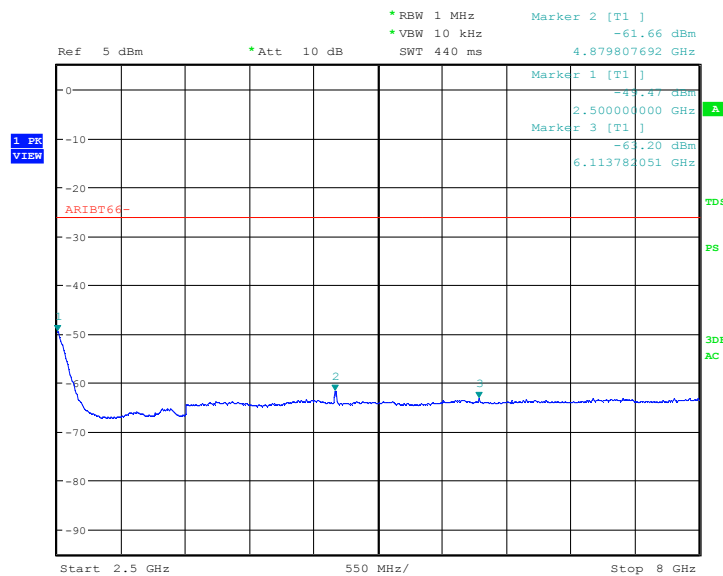
Date: 18.DEC.2012 16:56:34

Picture 42. Tx spurious emissions n mode channel mid 30 – 3000 MHz.



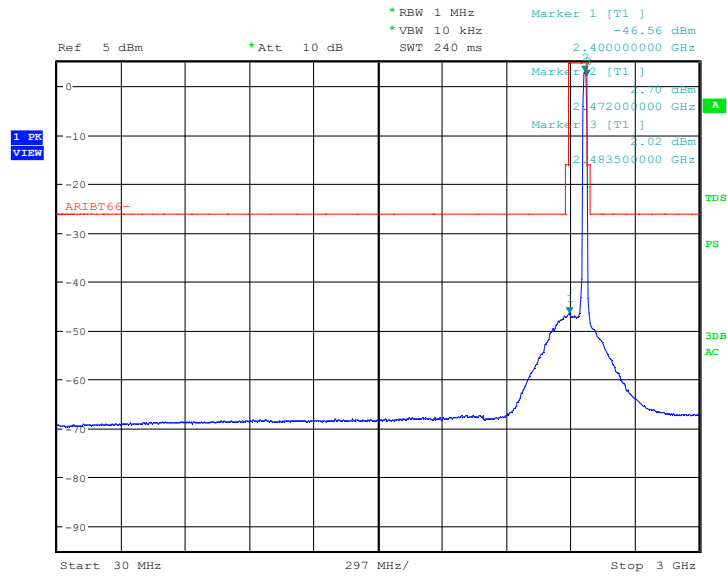
Date: 18.DEC.2012 16:57:29

Picture 43. Tx spurious emissions n mode channel mid 2.4 GHz.



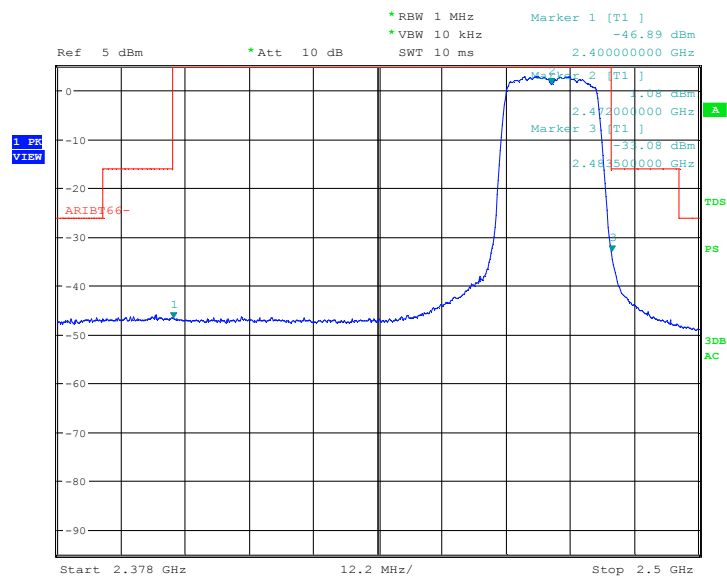
Date: 18.DEC.2012 17:00:01

Picture 44. Tx spurious emissions n mode channel mid 2.5 – 8 GHz.



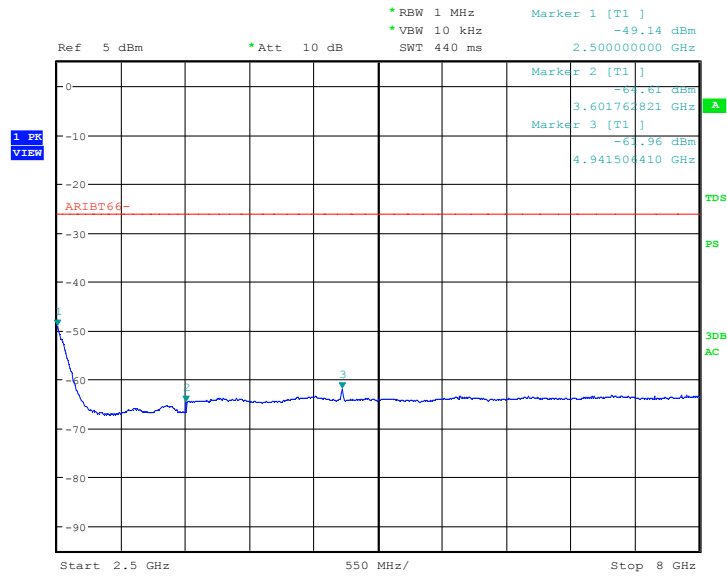
Date: 18.DEC.2012 17:02:13

Picture 45. Tx spurious emissions n mode channel high 30 – 3000 MHz.



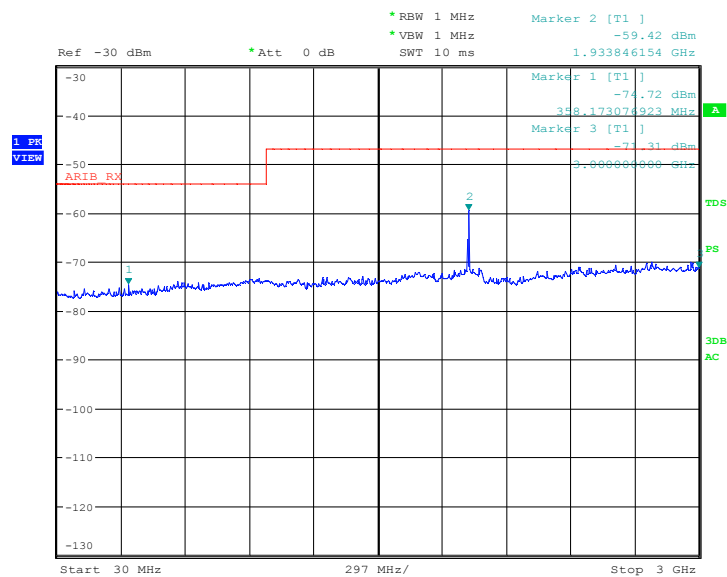
Date: 18.DEC.2012 17:03:02

Picture 46. Tx spurious emissions n mode channel high 2.4 GHz.



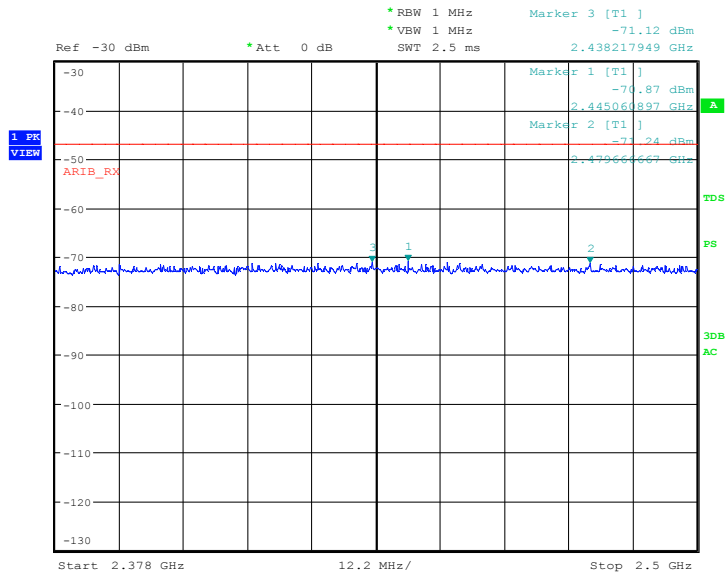
Date: 18.DEC.2012 17:04:20

Picture 47.Tx spurious emissions n mode channel high 2.5 – 8 GHz.



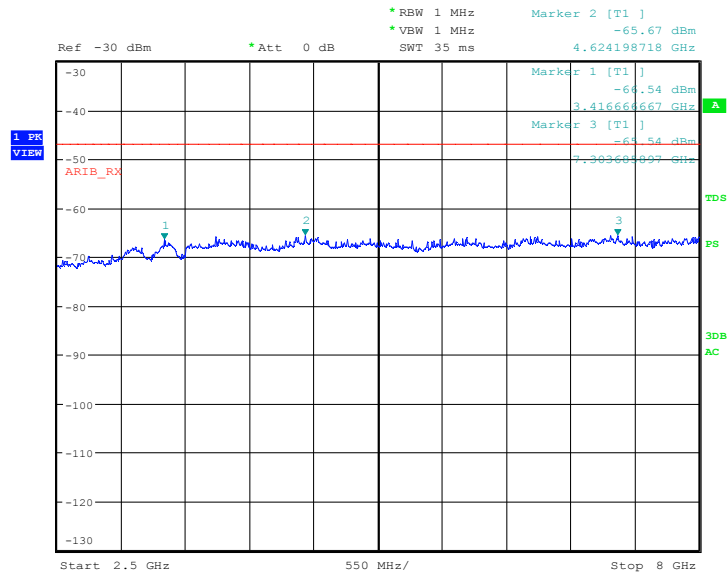
Date: 18.DEC.2012 17:21:59

Picture 42.Rx spurious emissions middle channel 30 – 3000 MHz



Date: 18.DEC.2012 17:23:35

Picture 43.Rx spurious emissions middle channel 2.4 GHz.

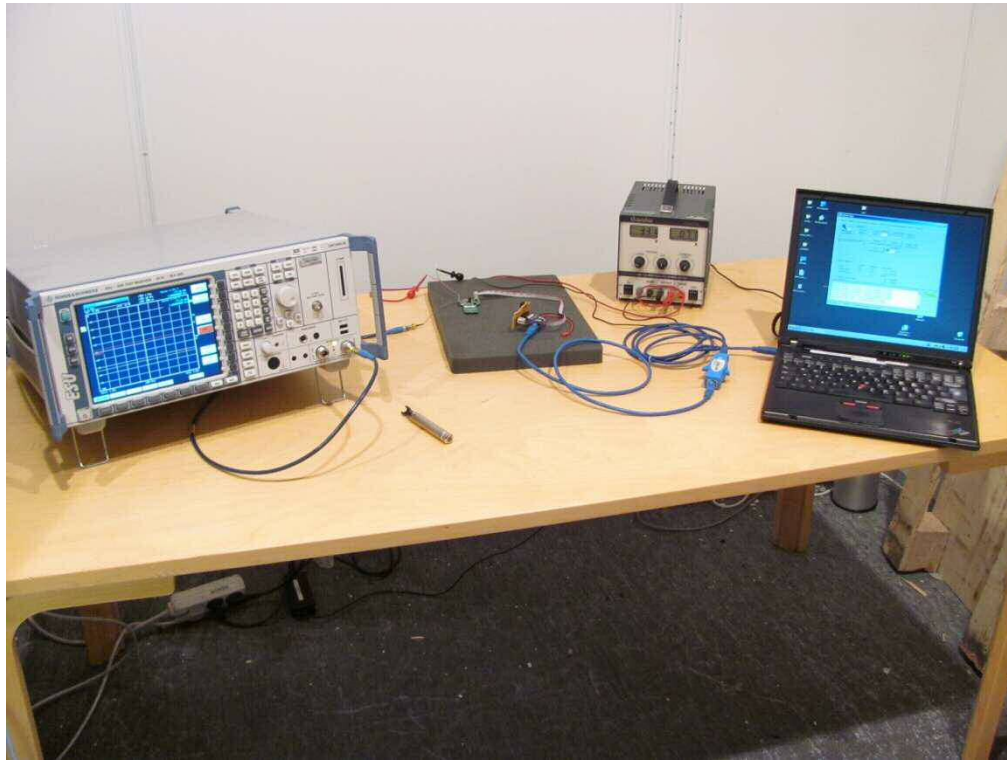


Date: 18.DEC.2012 17:25:32

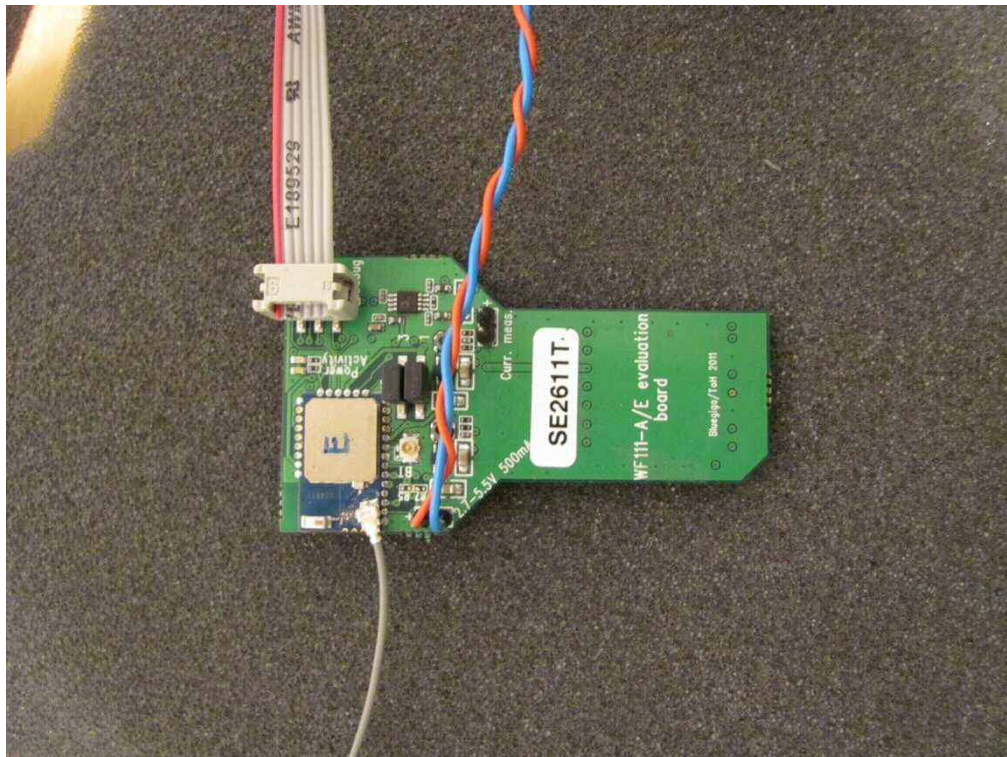
Picture 44.Rx spurious emissions middle channel 2.5 – 8 GHz.

ANNEX B

This annex contains the photographs of the EUT and test setup.



Photograph 1. Test setup.



Photograph 2. The EUT.