Deutscher Akkreditierungs Rat

No. DAT-P-114/01-01

TEST REPORT

No. 2007BTH0011

Product name	**OT-C717A**
Model	**C7SA**
Client	**T&A Mobile Phones**
Classification of test	**Type Approval**

Telecommunication Metrology Center

of Ministry of Information Industry

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Address: No. 52, Huayuan Bei Road, Haidian District, Beijing, P. R. China
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Post code: 100083
Telephone: +86 10 62302041 Fax: +86 10 62304793
Web site: http://www.emcite.com
E-mail: welcome@emcite.com

Product Name	OT-C717A	**Model** / **Trade mark**	C7SA
Client	T&A Mobile Phones		
Manufacturer	T&A Mobile Phones		
Arrival Date of sample	July 20, 2007	**Carrier of the samples**	Weidong Yang
Quantity of the samples	2	**Date of product**	/
Series number	011095000001914 011095000000957		
Standard(s)	FCC Part 15, Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits; general requirements; 15.247 Operation within the bands 902–928MHz, 2400–2483.5 MHz, and 5725–5850 MHz.		
Conclusion	8 test cases were done. The test results are shown in the clause 6 and annex B. The samples passed all the tests required by the client. Date of issue: 2007-8-8		
Comment	The test result relates only to the tested samples.		

Approved by_____ **Reviewed by**_____ **Tested by**_____

(Xiao Li) (Lv Songdong) (Gao Hong)

(Xiao Li- **Deputy Director of the laboratory**)

CONTENTS

1. Competence and Warranties

Telecommunication Metrology Center of Ministry of Information Industry is a test laboratory accredited by CNAL – China National Accreditation Committee for Laboratories, for the tests indicated in the Certificate No. **L0442**

Telecommunication Metrology Center of Ministry of Information Industry (hereinafter TMC of MII) is a test laboratory competent to carry out the tests described in this test report.

TMC of MII guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at **TMC of MII** at the time of execution of the test.

TMC of MII is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test.

2. Testing Laboratory

2.1. Testing Location

Name of Company :	Telecommunication Metrology Center of Ministry of Information Industry
Address:	No 52, Hua Yuanbei Road, Haidian District, Beijing, P.R.China
Postal Code:	100083
Telephone:	+86-10-62303288
Fax:	+86-10-62304793

2.2. Testing Environment

Shielding Room1 (4.5 meters×4 meters×2.7 meters) did not exceed following limits along the conducted RF performance testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Ground system resistance	< 0.5 Ω

Shielding room2 did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

Fully-anechoic chamber1 (6.8 meters×3.08 meters×3.53 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

Fully-anechoic chamber2 (6.0 meters×4.0 meters×3.67 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

Control room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. =20 %, Max. = 80 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

Semi-anechoic chamber (23 meters×17meters×10meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Normalised site attenuation (NSA)	< ±3.2 dB, 10 m distance, from 30 to 1000 MHz
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

2.3. Testing Period

The performed test started on 2007-7-20 and finished on 2007-8-6.

3. Applicant Information

3.1. Client information

Name of Company:	T&A Mobile Phones
Address /Post:	4F, South Building, No.2966, JinKe Road,

	Zhangjiang High-Tech Park Shanghai 201203, P.R.China
City:	Shanghai
Postal Code:	201203
Country:	China
Telephone:	0086-21-61460853
Fax:	0086-21-61460602

3.2. Manufacturer information

Name of Company:	T&A Mobile Phones
Address /Post:	4F, South Building, No.2966, JinKe Road, Zhangjiang High-Tech Park Shanghai 201203, P.R.China
City:	Shanghai
Postal Code:	201203
Country:	China
Telephone:	0086-21-61460853
Fax:	0086-21-61460602

4. Equipment Under Test (EUT) and Ancillary Equipment (AE)

4.1. About EUT

Product Name:	OT-C717A
Type:	C7SA
With BT	Yes
EUT operating voltage- Normal:	3.7V
Extreme Low Voltage:	3.5V
Extreme High Voltage:	4.2V
Extreme temperature:	-10℃ / + 55℃

Note: please refer to ANNEX A in this test report for Photographs of EUT.

4.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	011095000001914	PIO	V521
EUT2	011095000000957	PIO	V521

*EUT ID is used to identify the test sample in the lab internally.

4.3. Internal Identification of AE used during the test

AE ID*	Description	Type	SN
AE1	Travel Charger	T5000436AGAA	/
AE2	Battery	T5001418AAAA	/

*AE ID: is used to identify the test sample in the lab internally.

5. Reference Documents

5.1. Documents supplied by applicant

EUT feature information is supplied by the client or manufacturer, which is the basis of testing.

5.2. Reference Documents

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15, Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902–928MHz, 2400–2483.5 MHz, and 5725–5850 MHz.	May 4, 2007 Edition

6. Test Results

6.1. Summary of Test Results

Abbreviations used in this clause:

P Pass

F Fail

NA not applicable

NM not measured

SUMMARY OF MEASUREMENT RESULTS	Sub-clause	Verdict
Peak Output Power - Conducted	15.247 (b)(1)	**P**
Frequency Band Edges	15.247 (d)	**P**
20dB Bandwidth	15.247 (a)(1)	**NA**
Conducted Emission	15.247 (d)	**P**
Radiated Emission	15.247, 15.205, 15.209	**P**
Time of Occupancy (Dwell Time)	15.247 (a) (1)(iii)	**P**
Carrier Frequency Separation	15.247 (a)(1)	**P**
Number of hopping channels	15.247 (a)(1)(iii)	**P**

Please refer to **ANNEX B** for detail.

6.2. Statements

TMC has evaluated the test cases requested by the client/manufacturer as listed in section 6.1 of this report for the EUT specified in section 4 according to the standards or reference documents listed in section 5.2.

7. Test Equipments

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date
1	Power Supply	TS-LDE	100010	Rohde & Schwarz	/
2	Vector Signal Analyzer	FSQ26	200136	Rohde & Schwarz	2008-01-14
3	Bluetooth Tester	CBT	100135	Rohde & Schwarz	2007-11-12
4	Switch Panel	RSCP	/	Rohde & Schwarz	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date
1	Test Receiver	ESI40	831564/002	Rohde & Schwarz	2008-02-12
2	BiLog Antenna	3142B	9908-1403	EMCO	2008-03-15
3	Dual-Ridge Waveguide Horn Antenna	3115	9906-5827	EMCO	2007-12-25
4	Universal Radio Communication Tester	CMU200	105948	Rohde & Schwarz	2007-08-15

Anechoic chamber

Fully anechoic chamber by Frankonia German.

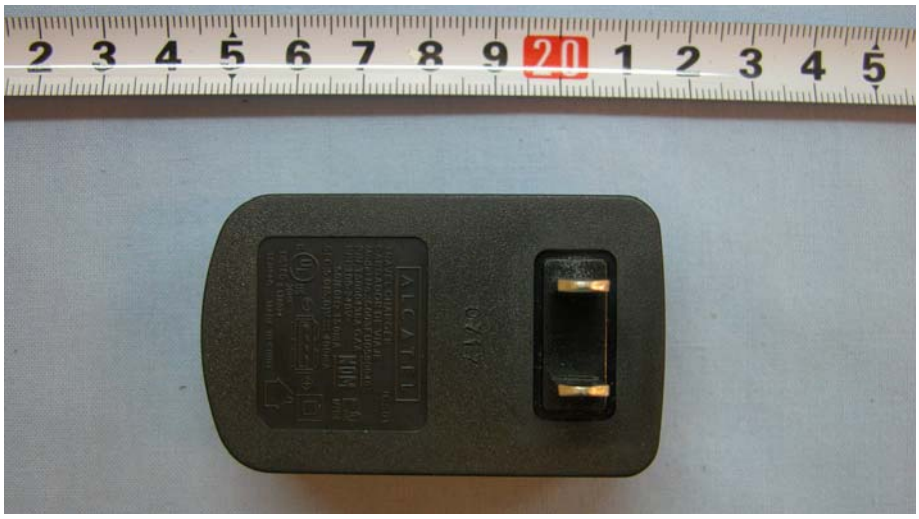
ANNEX A: Photograph of EUT

External Photo

Mobile Phone

Mobile Phone

Mobile Phone



Charger (AC/DC Adapter)

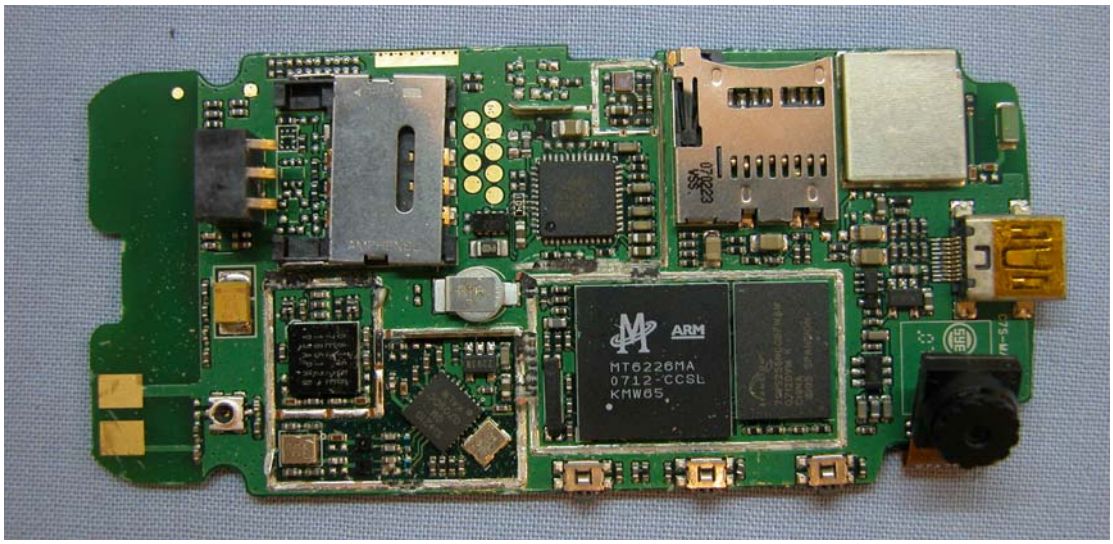
Charger (AC/DC Adapter)

USB Cable

Battery

Internal Photo

Mobile phone Disassembly



Mobile phone PCB front view

ANNEX B: MEASUREMENT RESULTS

B.1 Peak Output Power - Conducted

Measurement Limit:

Standard	Limit (dBm)
FCC 47 CFR Part 15.247 (b)(1)	< 30

Measurement Results:

Channel	Ch 0 2402 MHz	Ch 39 2441 MHz	Ch 78 2480 MHz	Conclusion
Peak Conducted Output Power (dBm)	2.33	3.22	4.01	**P**

Conclusion: PASS

B.2 Frequency Band Edges - Conducted

Measurement Limit:

Standard	Limit (dBc)
FCC 47 CFR Part 15.247 (d)	> 20

Measurement Result:

Channel	Hopping	Band Edge Power (dBc)		Conclusion
0	Hopping OFF	Fig.1	63.65	**P**
	Hopping ON	Fig.2	61.26	**P**
78	Hopping OFF	Fig.3	64.91	**P**
	Hopping ON	Fig.4	65.35	**P**

See annex C for test graphs.

Conclusion: PASS

B.3 Conducted Emission

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (d)	20dB below peak output power in 100 kHz bandwidth

Measurement Results:

Channel	Frequency Range	Test Results	Conclusion
Ch 0 2402 MHz	Center Frequency	Fig.5	**P**
	30 MHz ~ 1 GHz	Fig.6	**P**
	1 GHz ~ 26 GHz	Fig.7	**P**

Ch 39 2441 MHz	Center Frequency	Fig.8	**P**
	30 MHz ~ 1 GHz	Fig.9	**P**
	1 GHz ~ 26 GHz	Fig.10	**P**
Ch 78 2480 MHz	Center Frequency	Fig.11	**P**
	30 MHz ~ 1 GHz	Fig.12	**P**
	1 GHz ~ 26 GHz	Fig.13	**P**

See annex C for test graphs.

Conclusion: PASS

B.4 Radiated Emission

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output power

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Limit in restricted band:

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Measurement Results:

Channel	Frequency Range	Test Results	Conclusion
Ch 0 2402 MHz	30 MHz ~ 1 GHz	Fig.14	**P**
	1 GHz ~ 3 GHz	Fig.15	**P**
	3 GHz ~ 18 GHz	Fig.16	**P**
Ch 39 2441 MHz	30 MHz ~ 1 GHz	Fig.17	**P**
	1 GHz ~ 3 GHz	Fig.18	**P**
	3 GHz ~ 18 GHz	Fig.19	**P**
Ch 78 2480 MHz	30 MHz ~ 1 GHz	Fig.20	**P**
	1 GHz ~ 3 GHz	Fig.21	**P**
	3 GHz ~ 18 GHz	Fig.22	**P**
For all channels	18 GHz ~ 26 GHz	Fig.23	**P**

See annex C for test graphs.

Conclusion: PASS

B.5 Time of Occupancy (Dwell Time)

Measurement Limit:

Standard	Limit (ms)

FCC 47 CFR Part 15.247(a) (1)(iii)	< 400

Measurement Result:

Channel	Dwell Time (ms)		Conclusion
39	Fig.24	351.75	**P**

See annex C for test graphs.

Conclusion: PASS

B.6 20dB Bandwidth

Measurement Limit:

Comment: This test case is not required according to the latest FCC 47 CFR Part 15.247. But the test results are necessary for “carrier frequency separation” test case, in Annex B.7.

Measurement Results:

Channel	20dB Bandwidth (kHz)		Conclusion
0	Fig.25	921.63	**P**
39	Fig.26	921.63	**P**
78	Fig.27	924.80	**P**

See annex C for test graphs.

Conclusion: NA

B.7 Carrier Frequency Separation

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(a)(1)	> 25kHz or (2/3) * 20dB bandwidth, whichever is greater

Measurement Result:

Channel	Carrier frequency separation (kHz)		Conclusion
39	Fig.28	846.15	**P**

See annex C for test graphs.

Conclusion: PASS

B.8 Number of Hopping Channels

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(a) (1)(iii)	> 75

Measurement Result:

Channel	Number of hopping channels		Conclusion
0~39	Fig.29	79	**P**
40~78	Fig.30		

ANNEX C: TEST FIGURE LIST

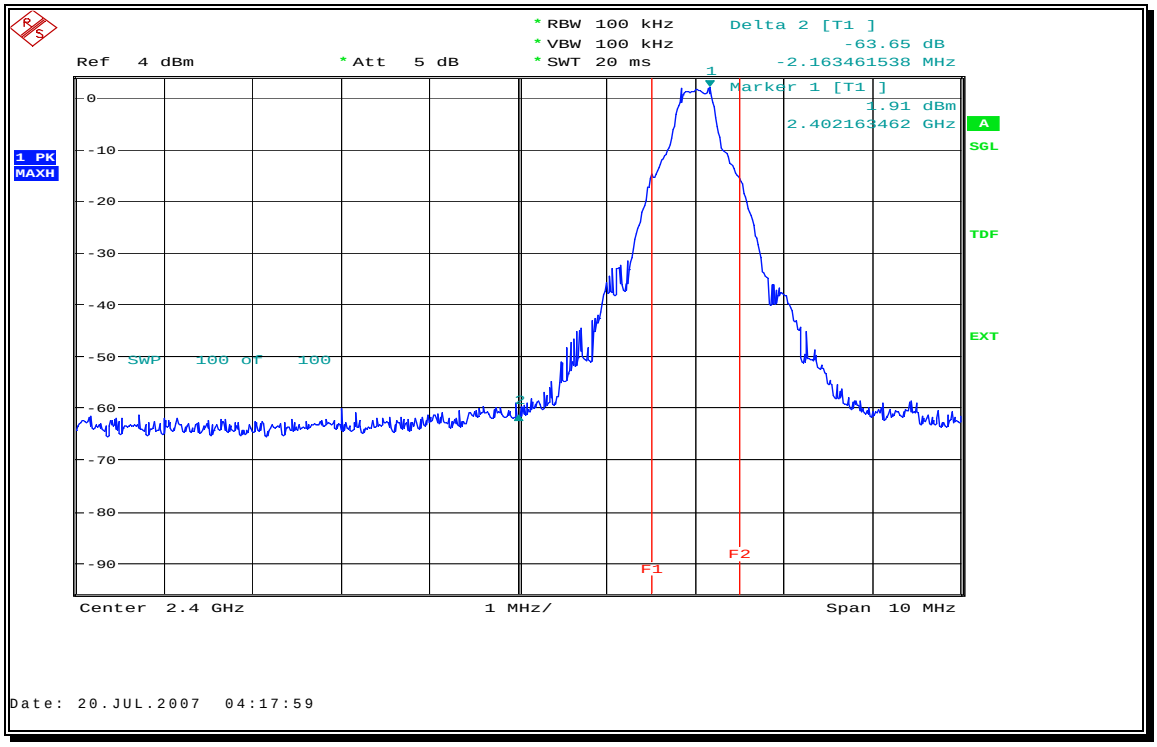


Fig. 1 Band edge: Channel 0, Hopping Off

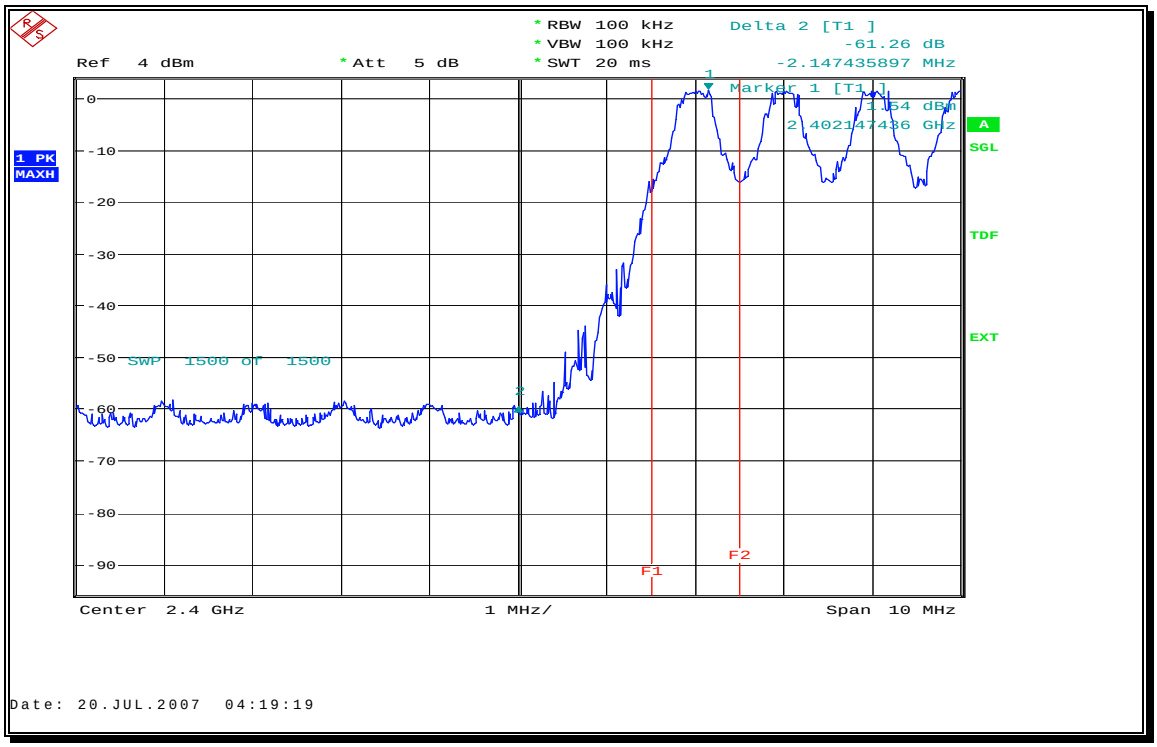


Fig. 2 Band edge: Channel 0, Hopping On

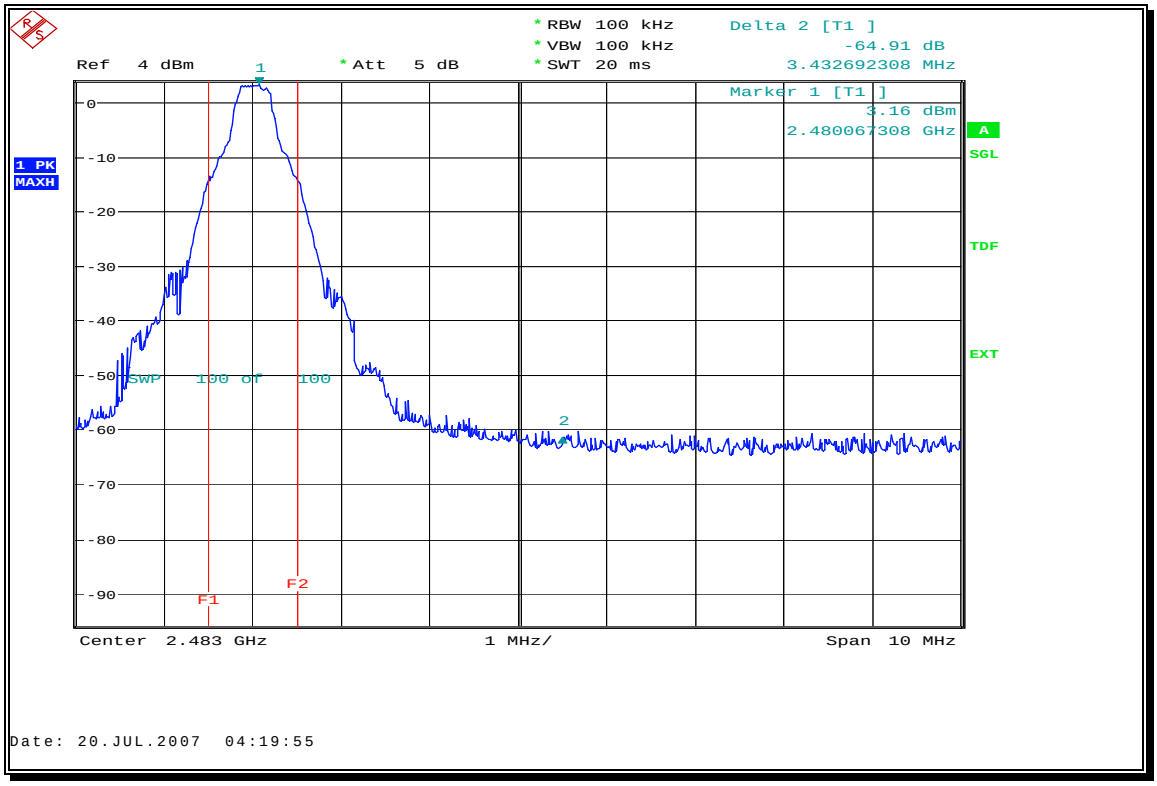


Fig. 3 Band edge: Channel 78, Hopping Off

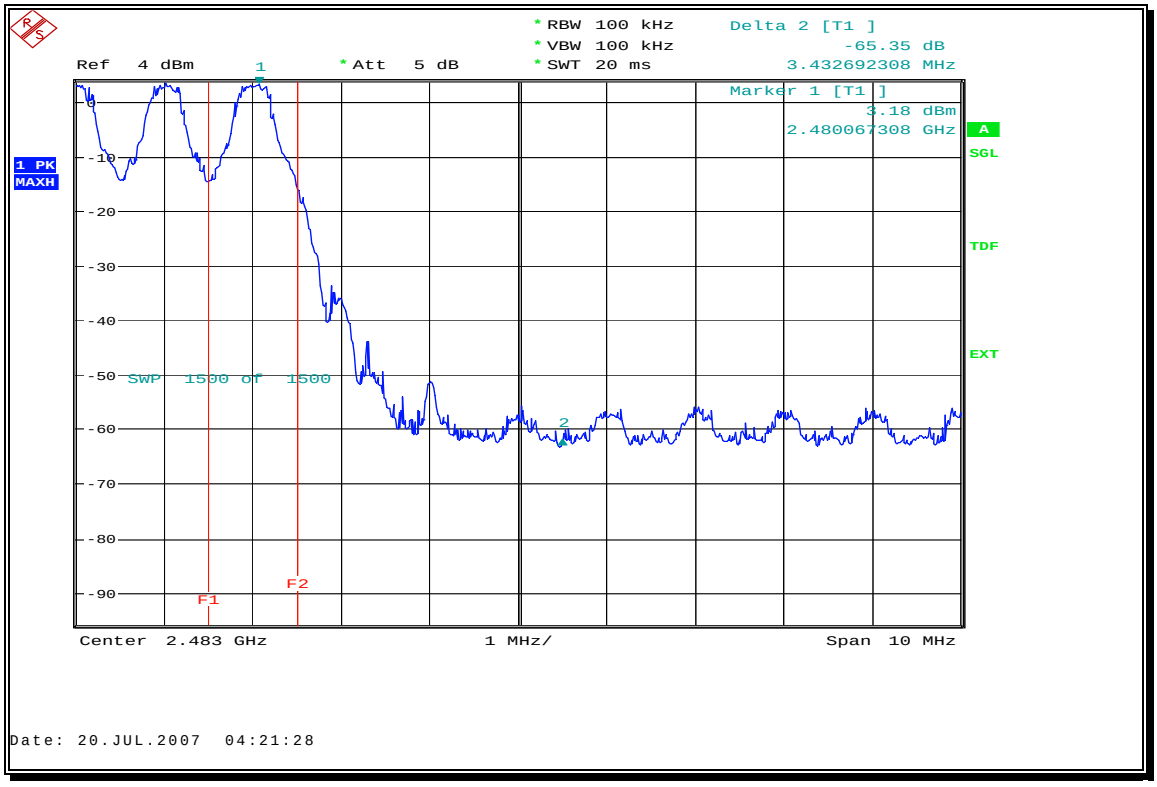


Fig. 4 Band edge: Channel 78, Hopping On

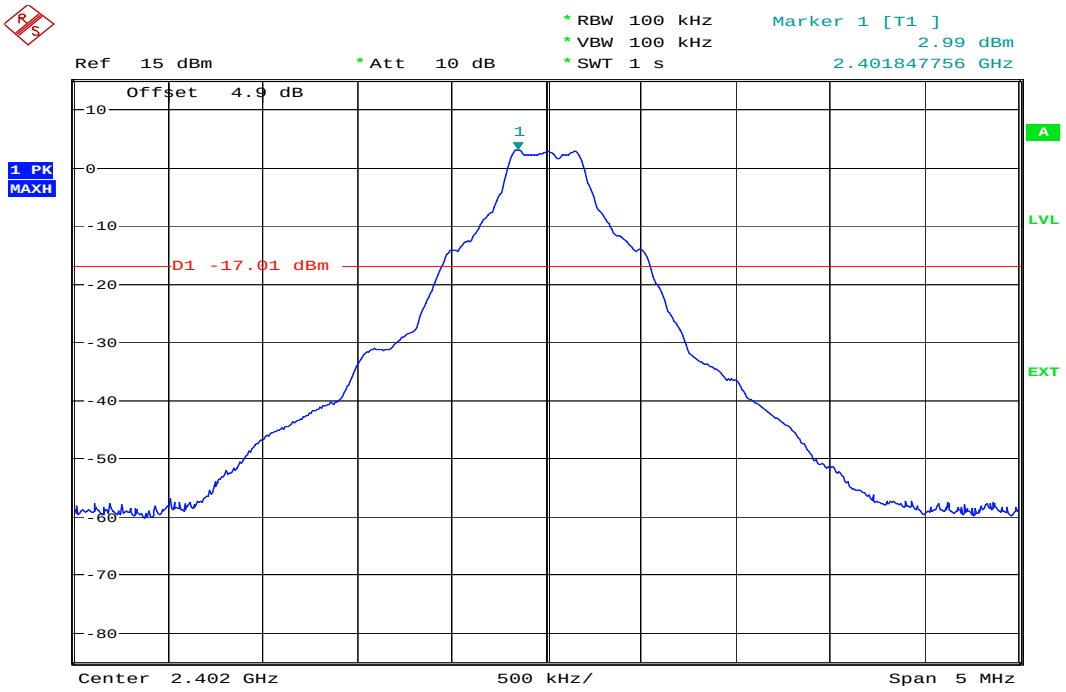


Fig. 5 Conducted spurious emission: Channel 0,2402MHz

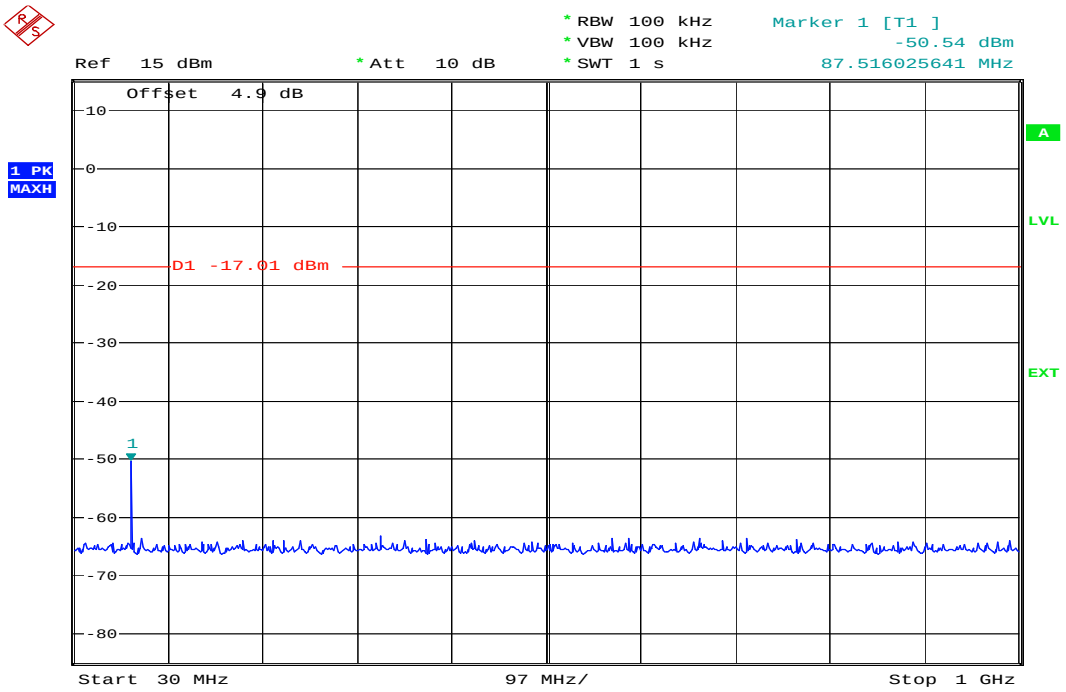


Fig. 6 Conducted spurious emission: Channel 0, 30MHz - 1GHz

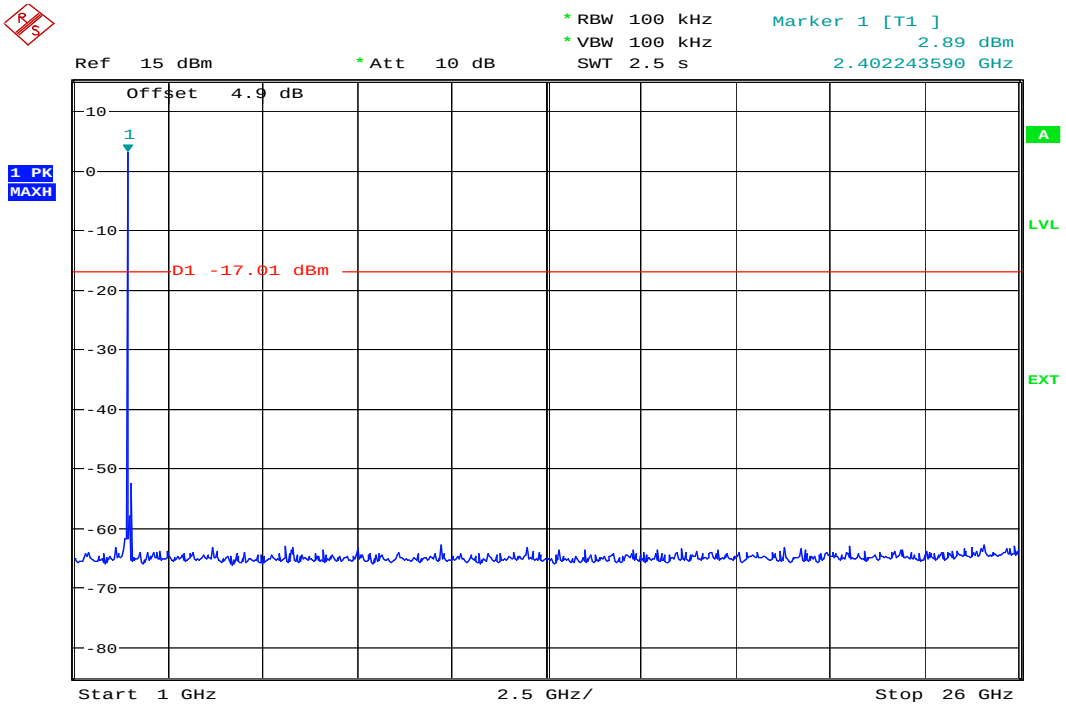


Fig. 7 Conducted spurious emission: Channel 0,1GHz – 26GHz

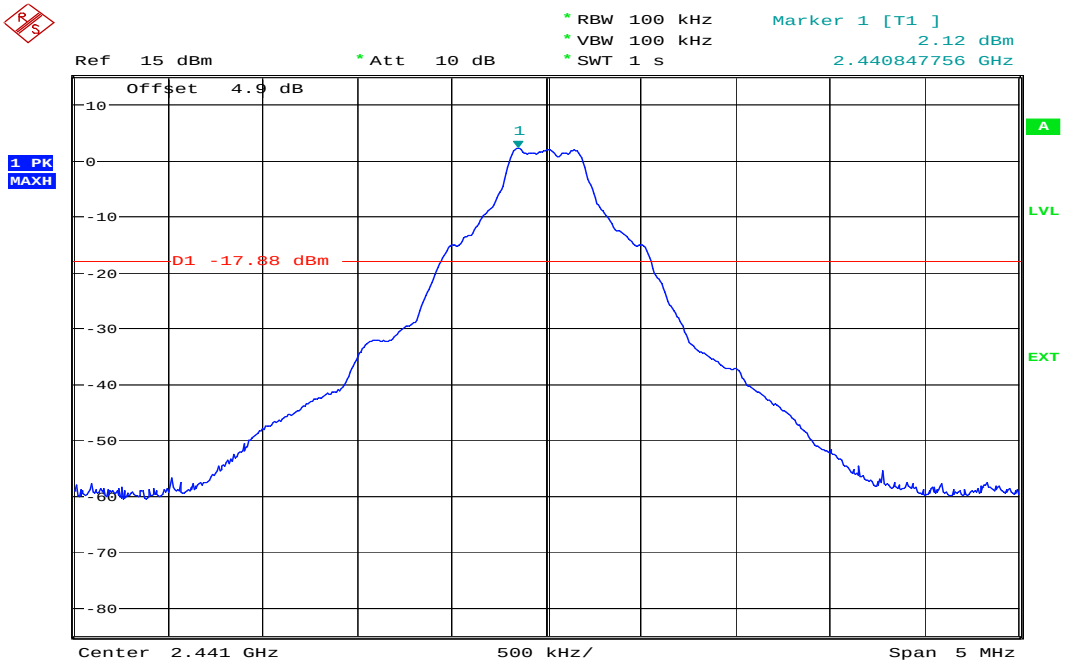


Fig. 8 Conducted spurious emission: Channel 39, 2441MHz

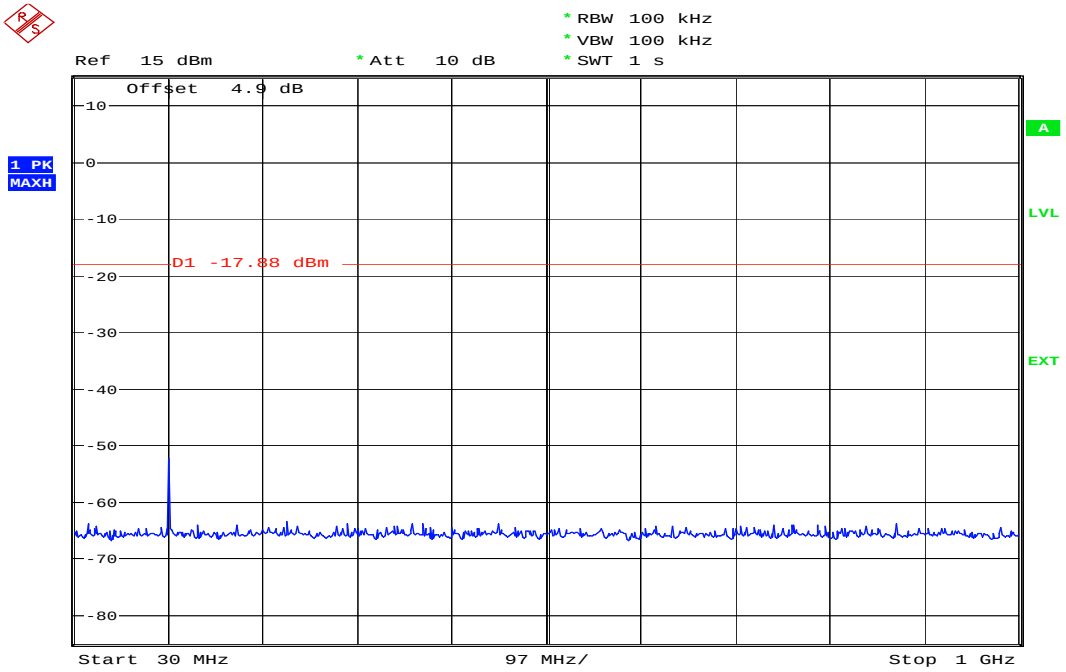


Fig. 9 Conducted spurious emission: Channel 39, 30MHz - 1GHz

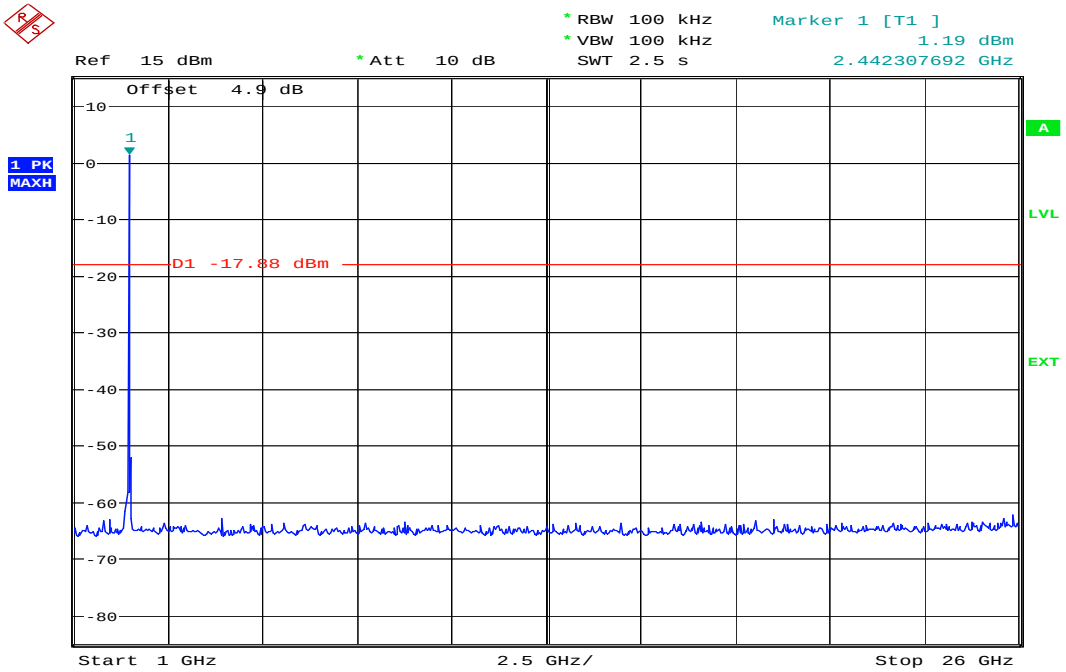


Fig. 10 Conducted spurious emission: Channel 39, 1GHz – 26GHz

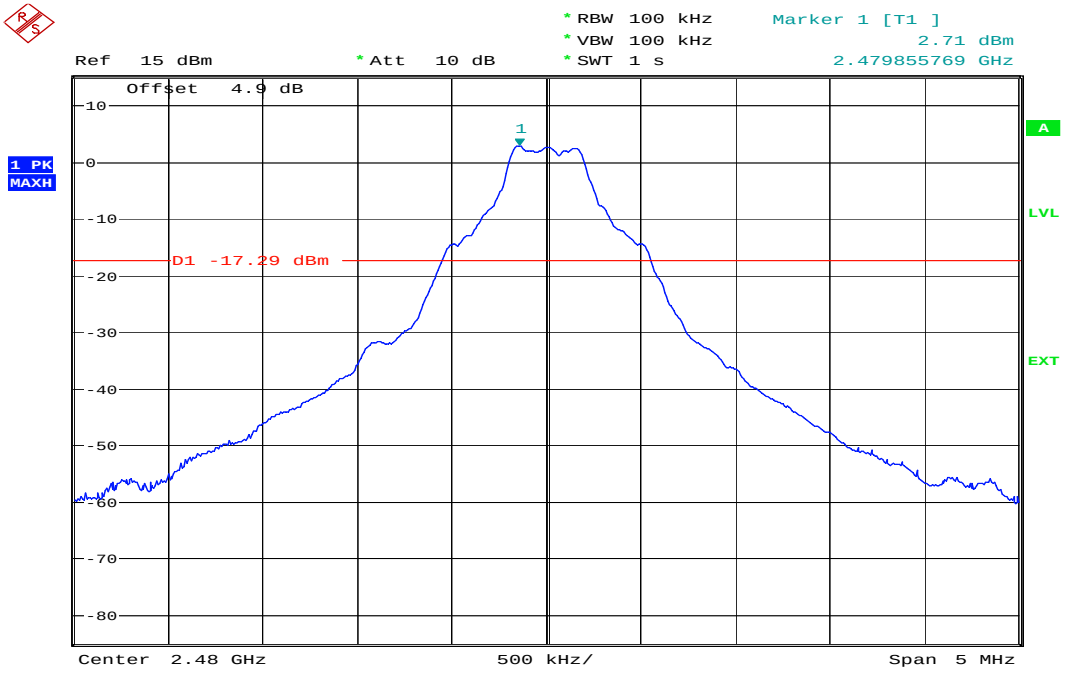


Fig. 11 Conducted spurious emission: Channel 78, 2480MHz

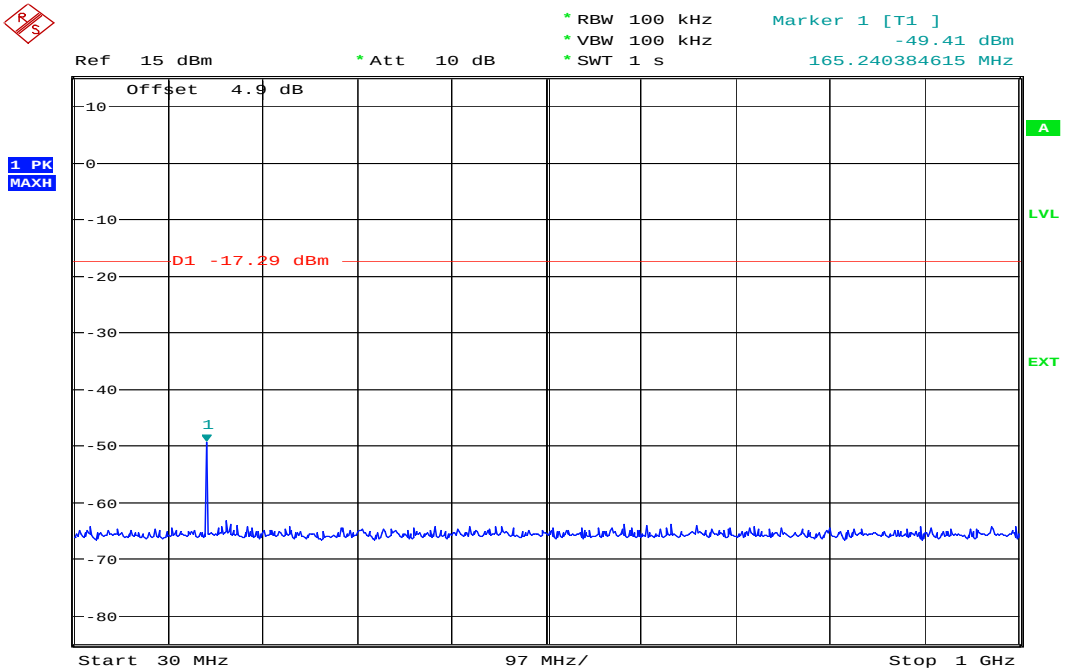


Fig. 12 Conducted spurious emission: Channel 78, 30MHz - 1GHz

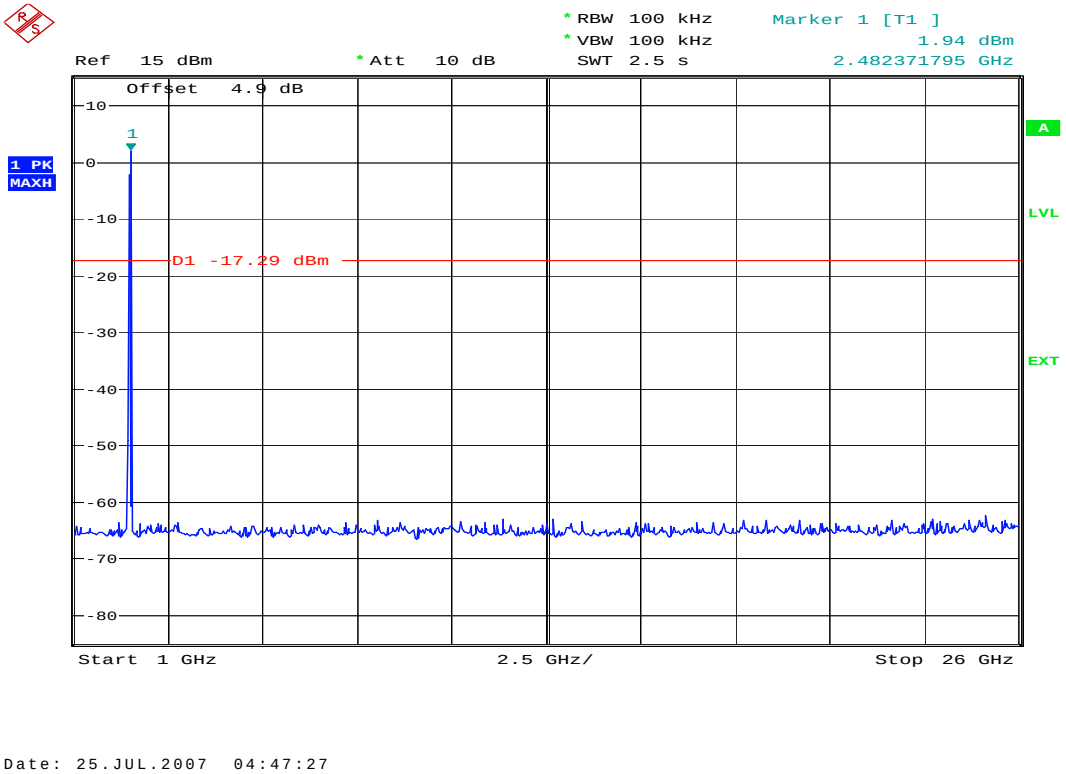


Fig. 13 Conducted spurious emission: Channel 78, 1GHz – 26GHz

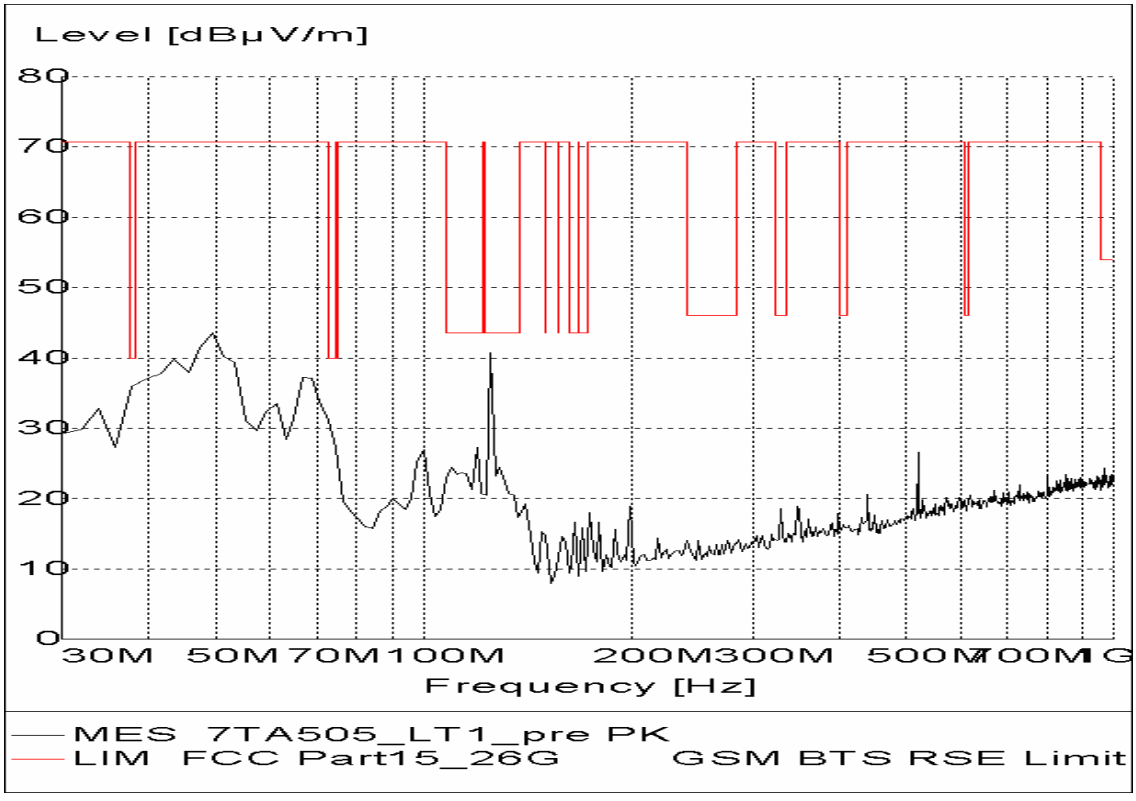


Fig. 14 Radiated emission: Channel 0, 30 MHz ~ 1 GHz

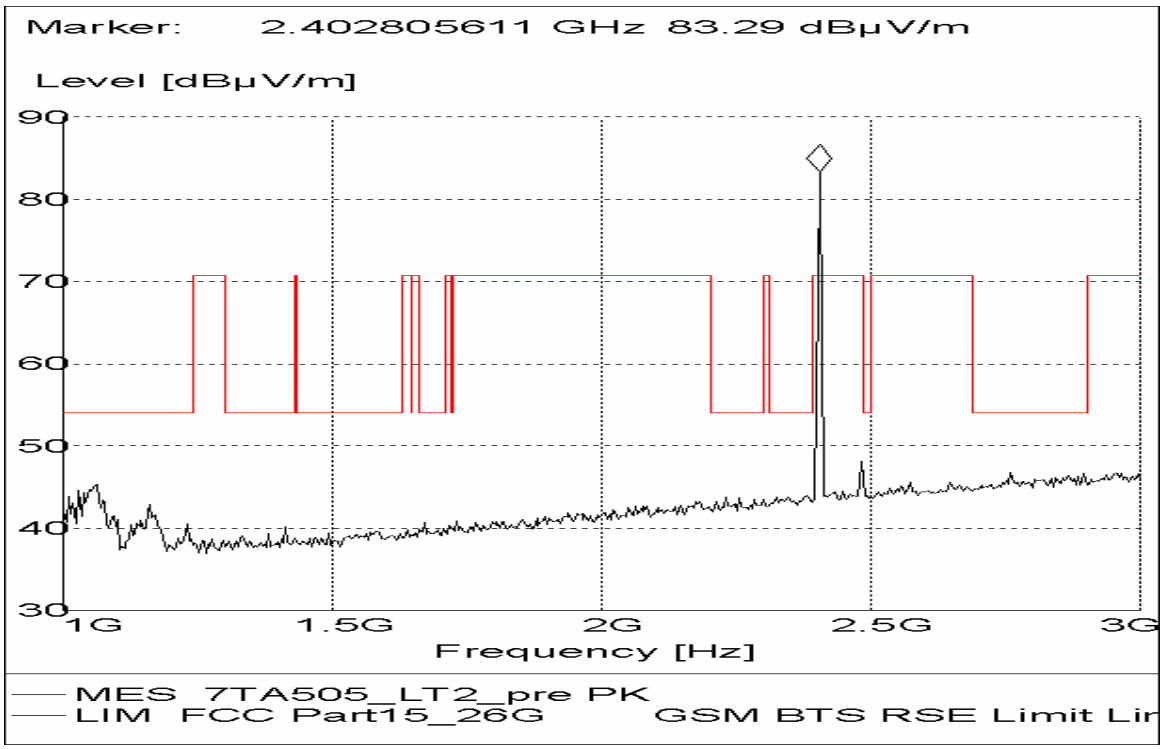


Fig. 15 Radiated emission: Channel 0, 1 GHz ~ 3 GHz

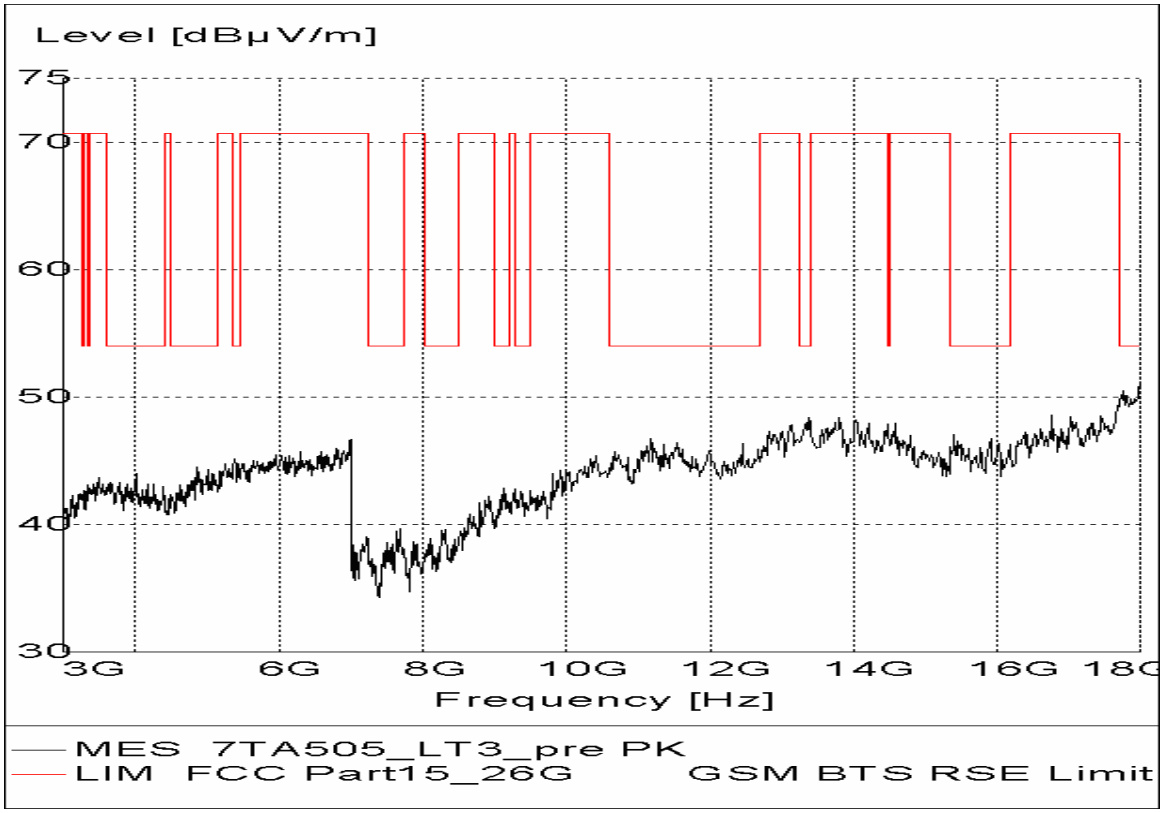


Fig. 16 Radiated emission: Channel 0, 3 GHz ~ 18 GHz

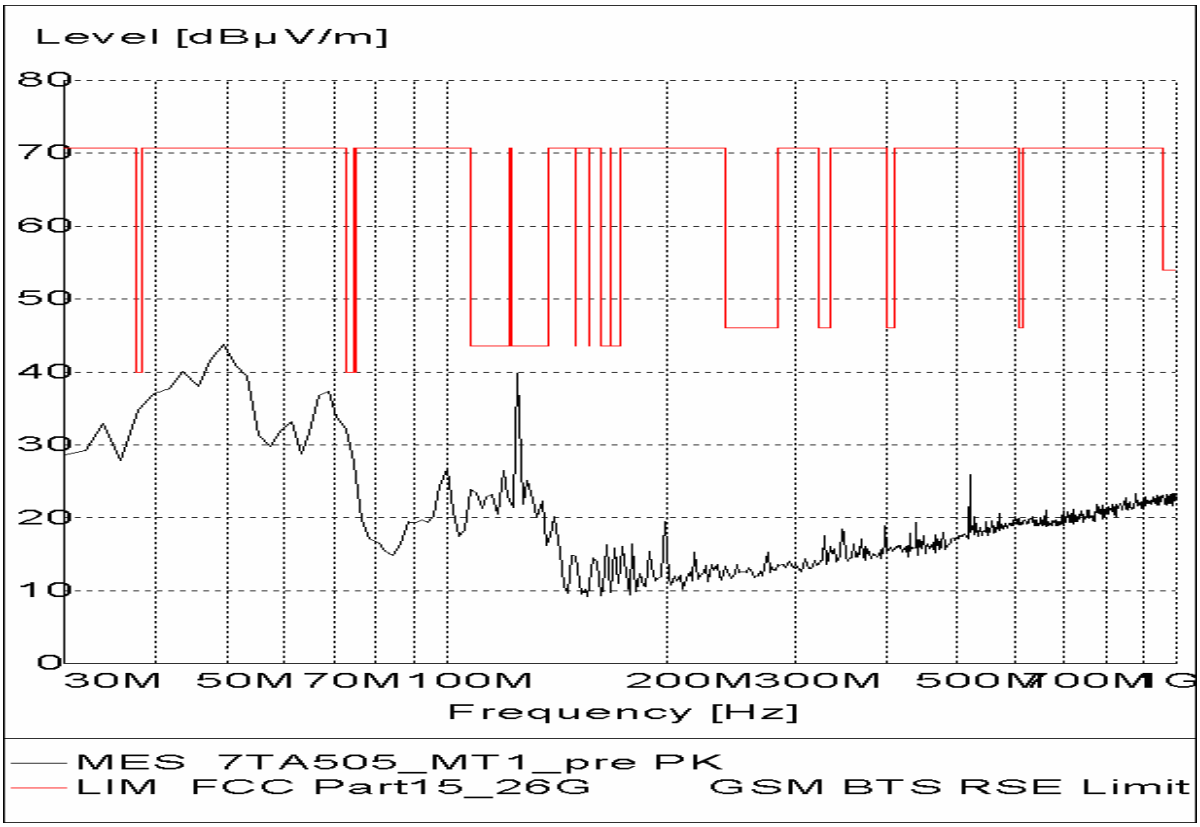


Fig. 17 Radiated emission: Channel 39, 30 MHz ~ 1 GHz

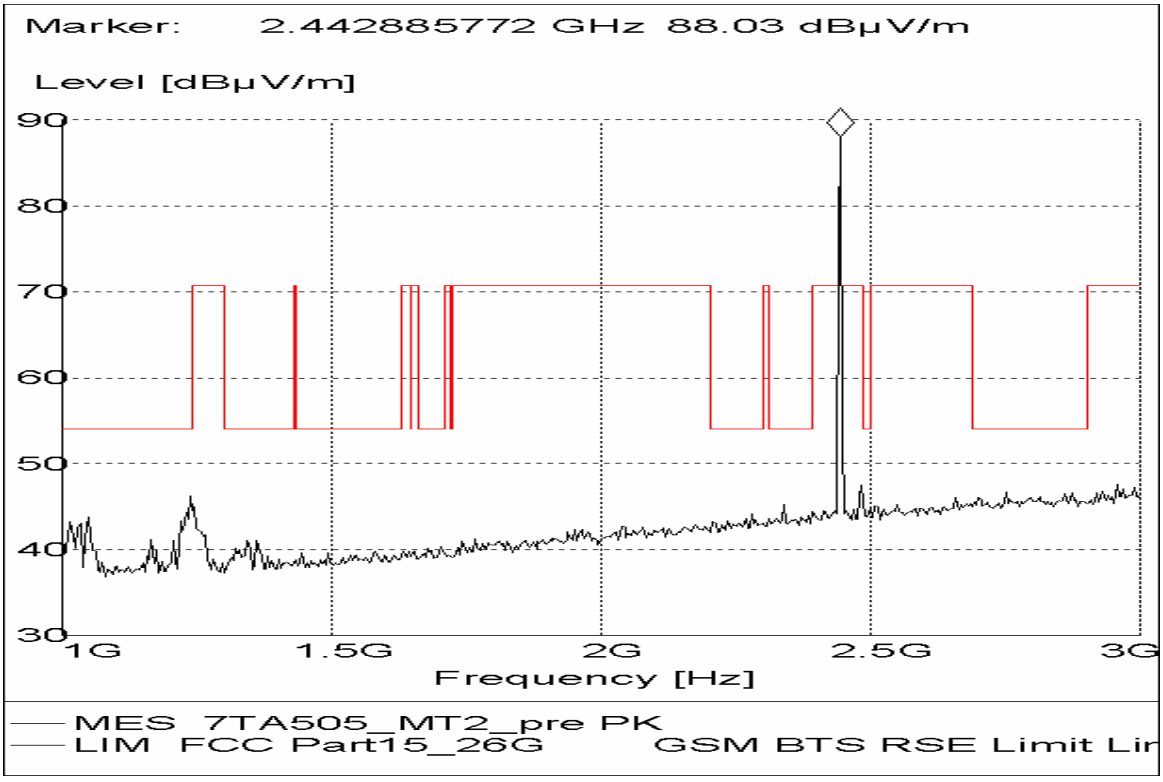


Fig. 18 Radiated emission: Channel 39, 1 GHz ~ 3 GHz

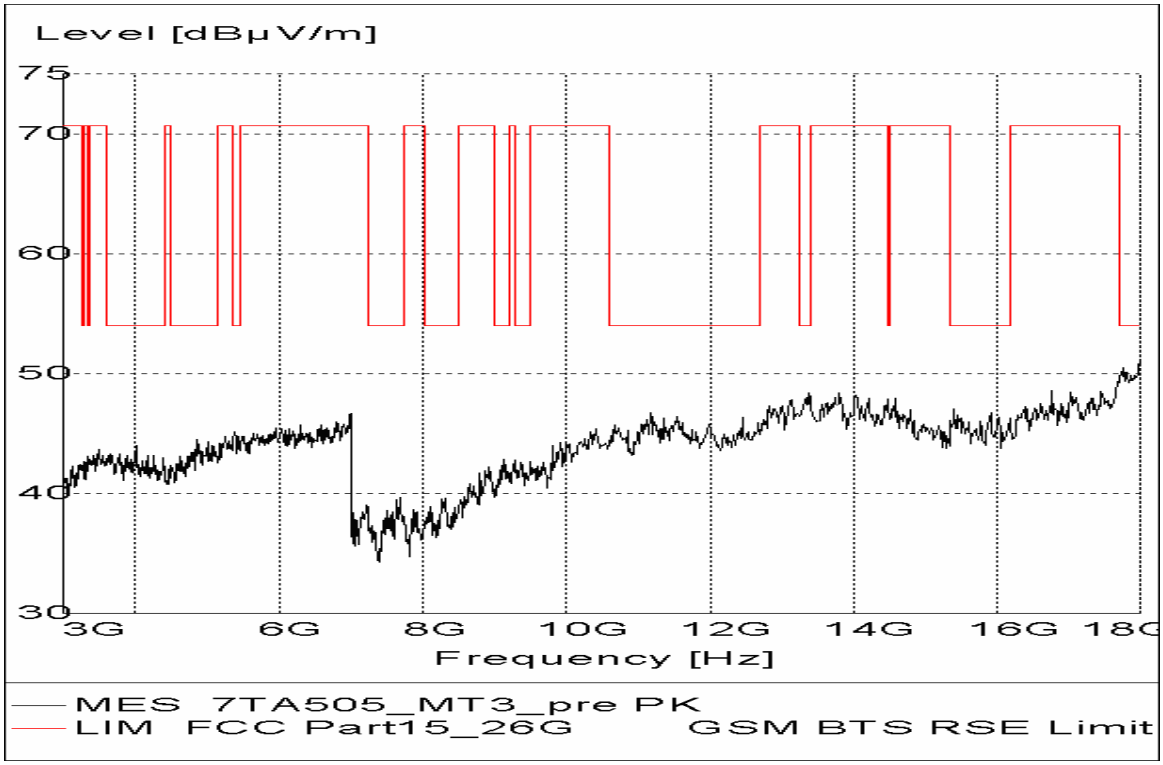


Fig. 19 Radiated emission: Channel 39, 3 GHz ~ 18 GHz

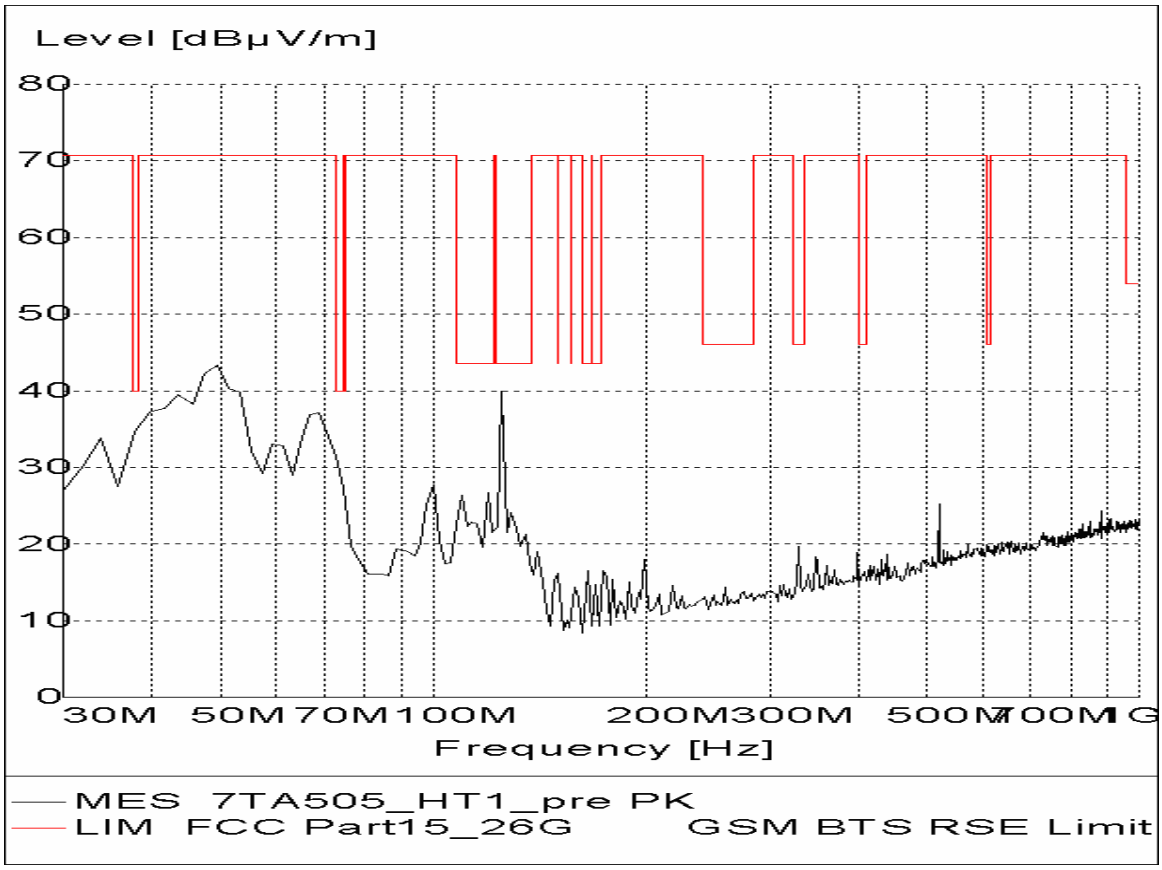


Fig. 20 Radiated emission: Channel 78, 30 MHz ~ 1 GHz

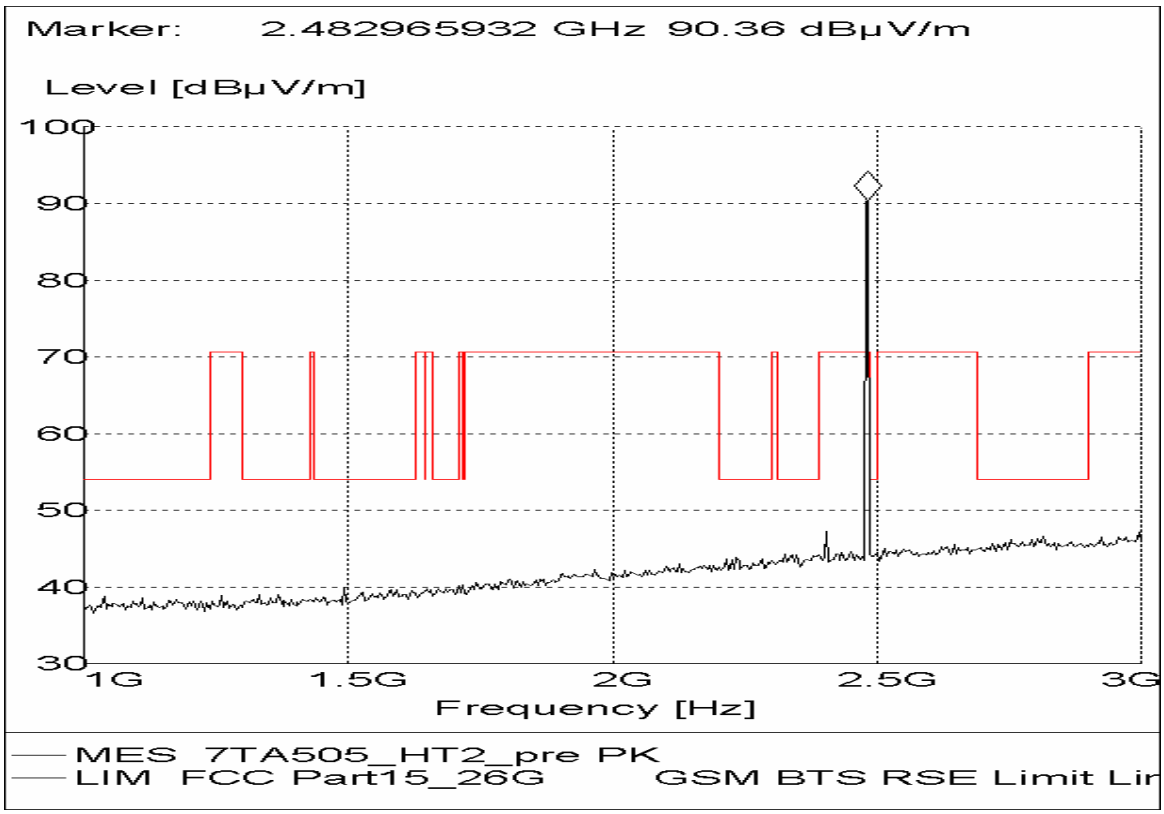


Fig. 21 Radiated emission: Channel 78, 1 GHz ~ 3 GHz

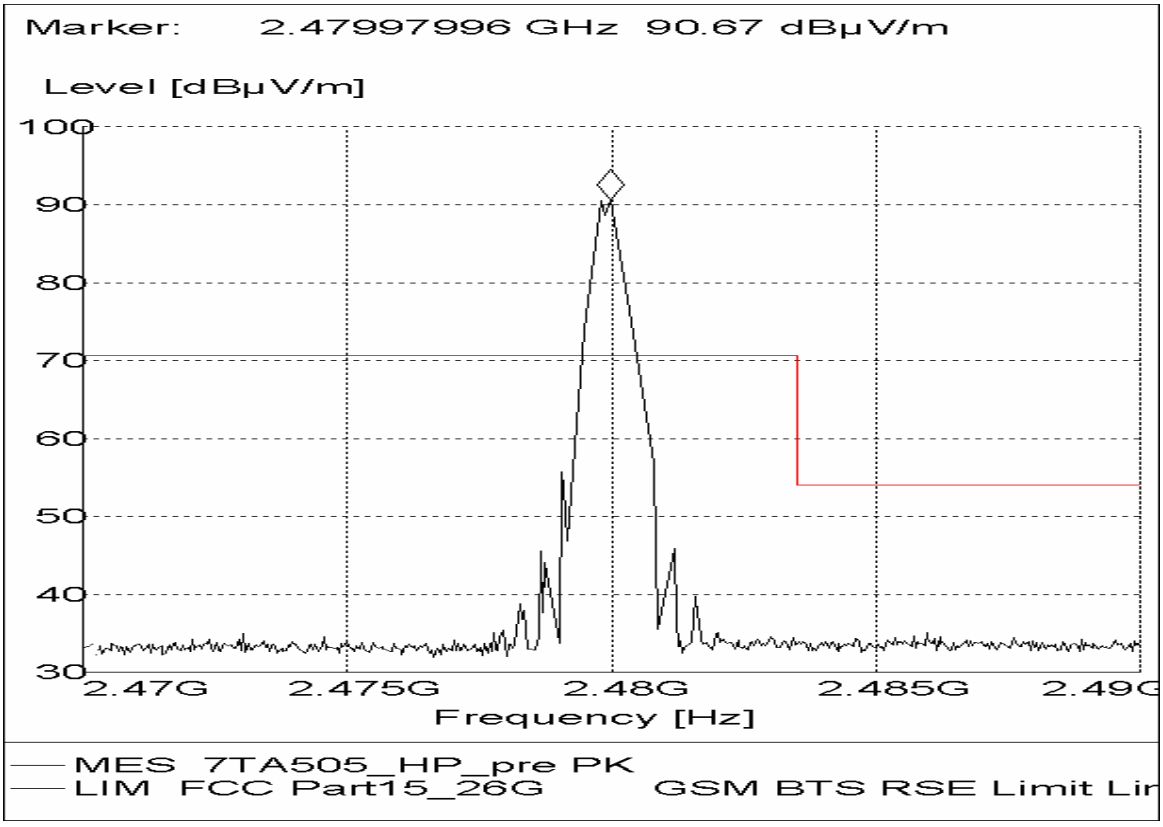


Fig.21-1 Radiated emission: Channel 78, 1 GHz ~ 3 GHz

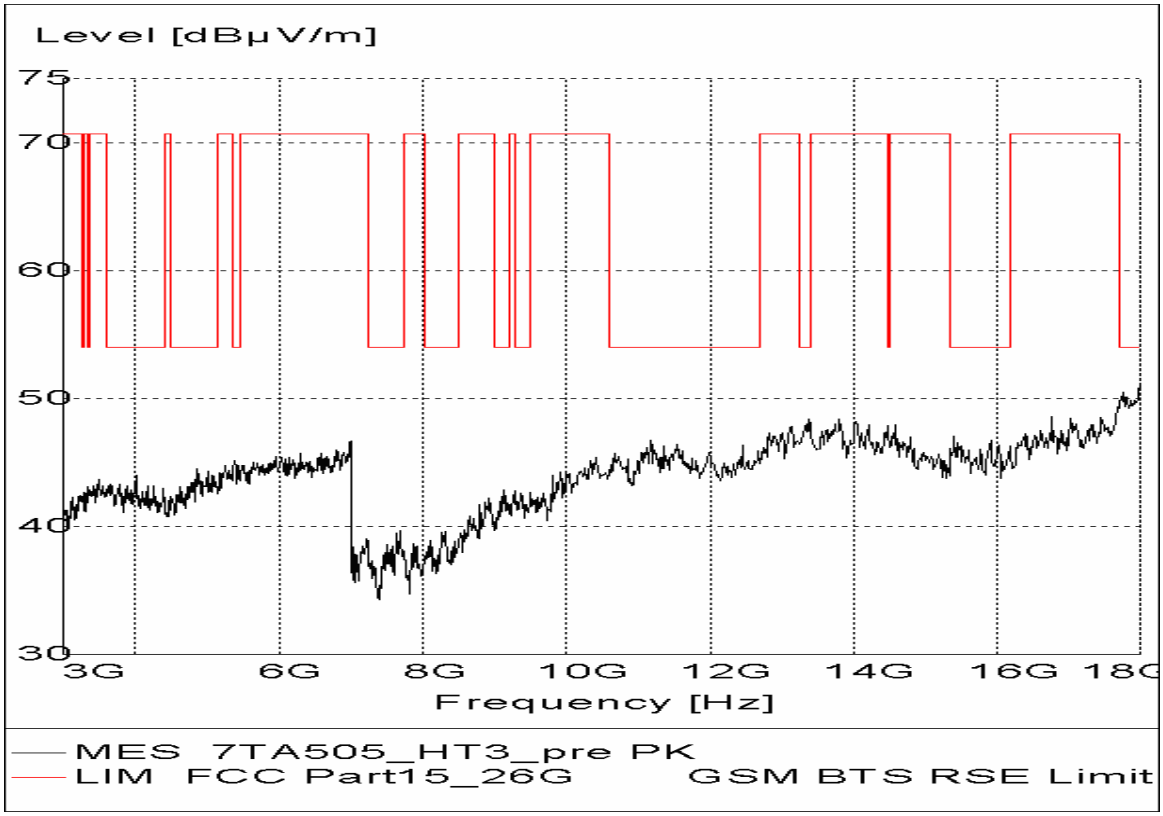


Fig. 22 Radiated emission: Channel 78, 3 GHz ~ 18 GHz

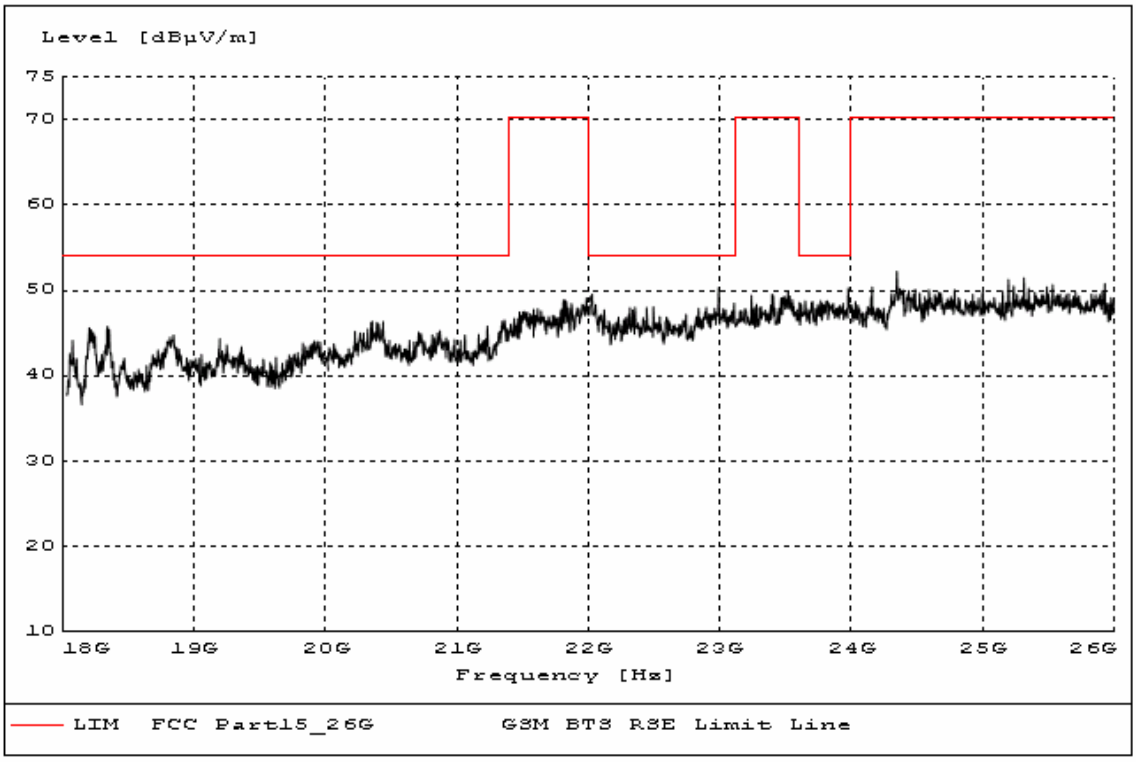


Fig. 23 Radiated emission: 18 GHz ~ 26 GHz

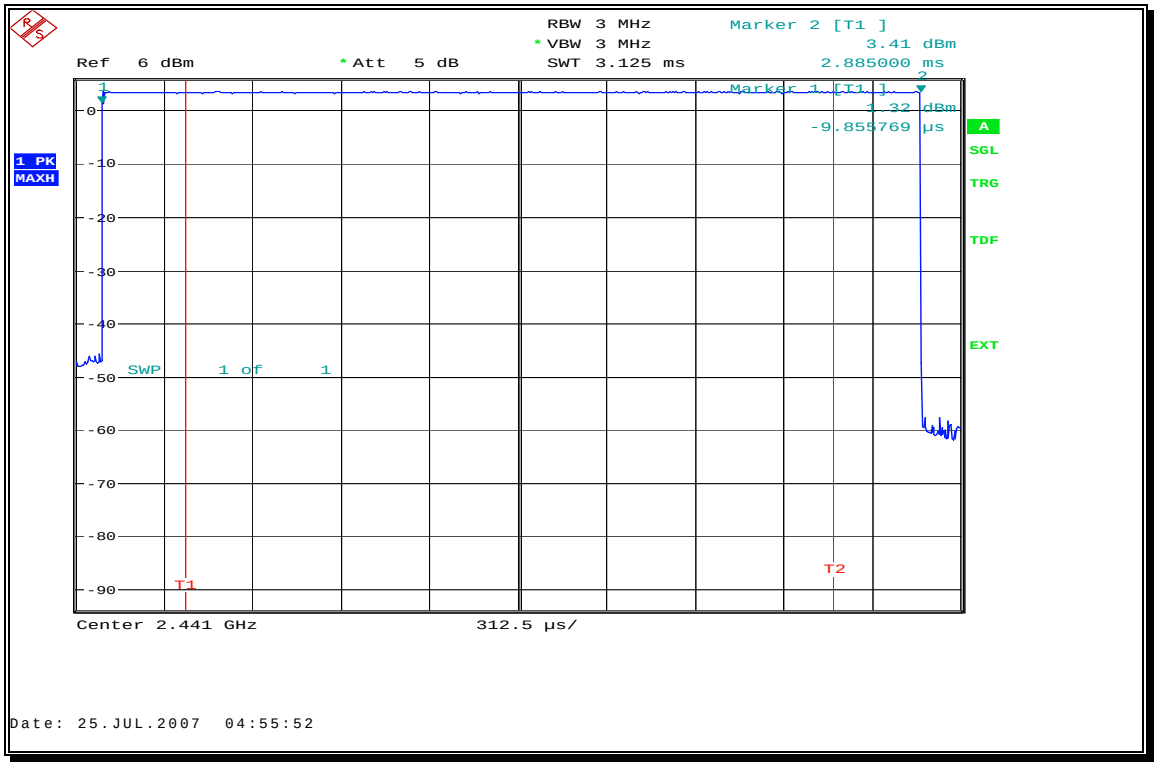


Fig. 24 Time of occupancy (Dwell Time): Channel 39

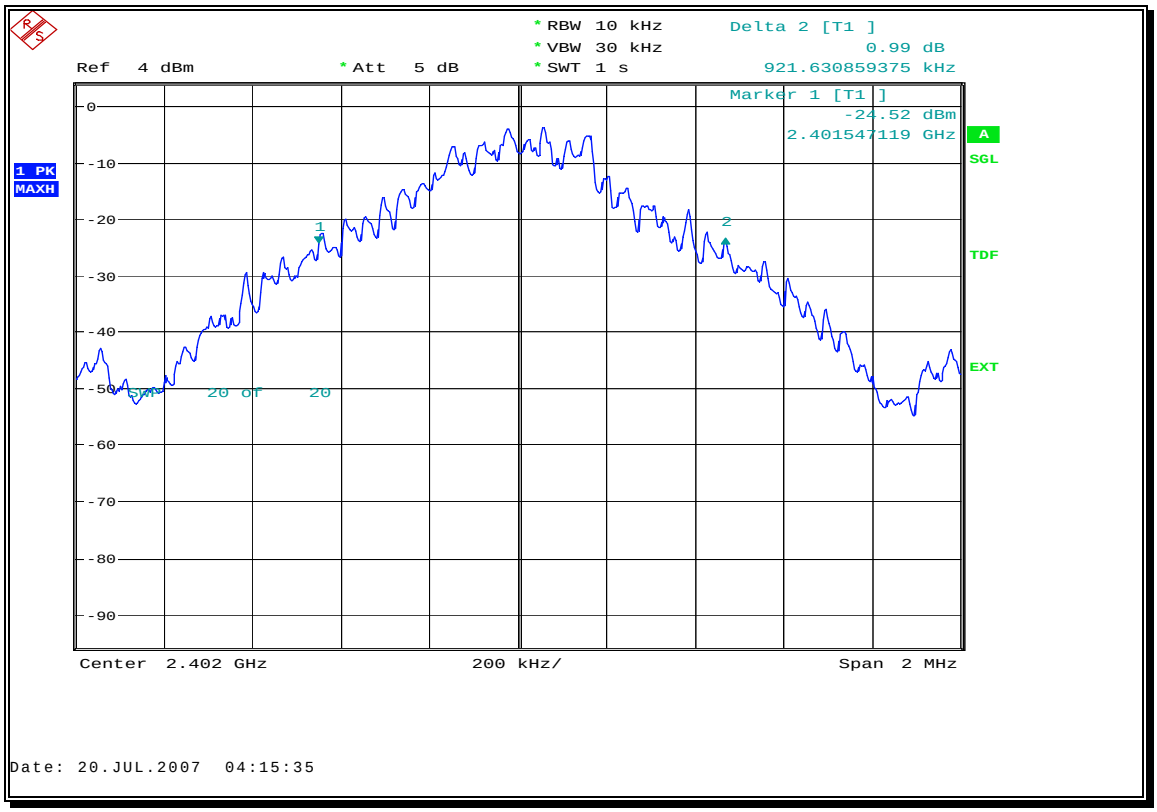


Fig. 25 20dB Bandwidth: Channel 0

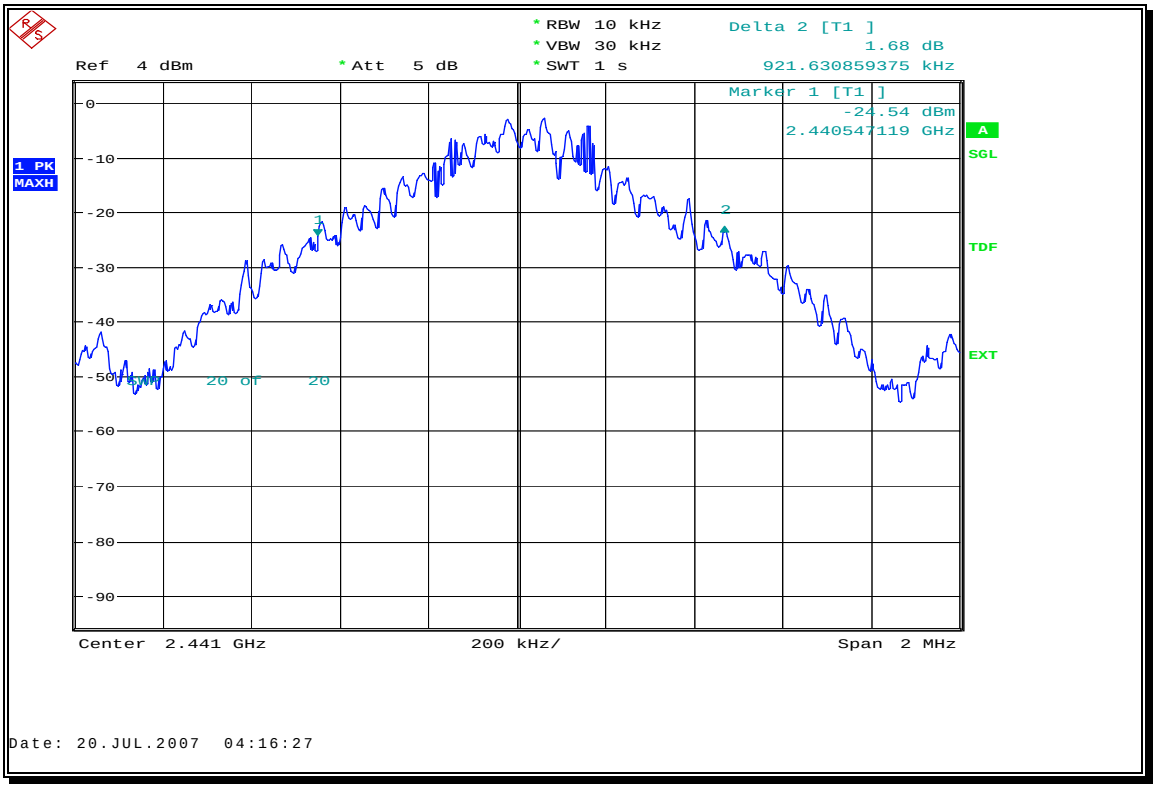


Fig. 26 20dB Bandwidth: Channel 39

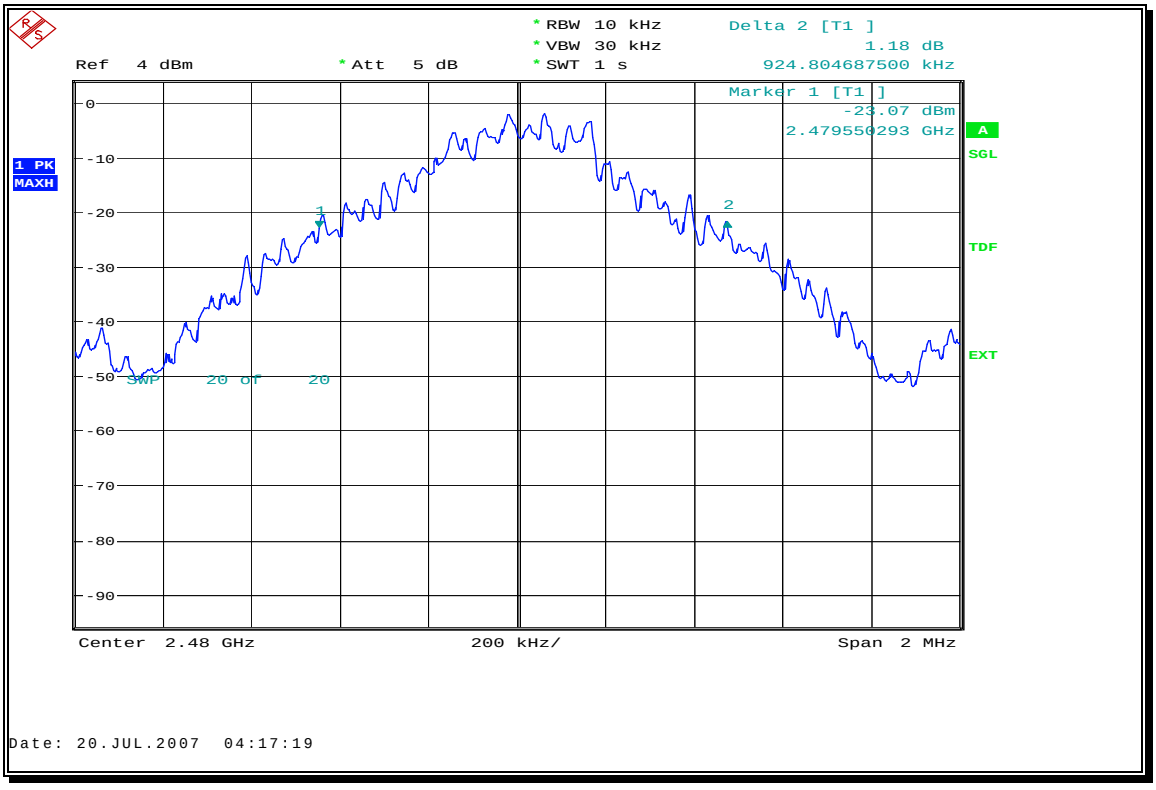


Fig. 27 20dB Bandwidth: Channel 78

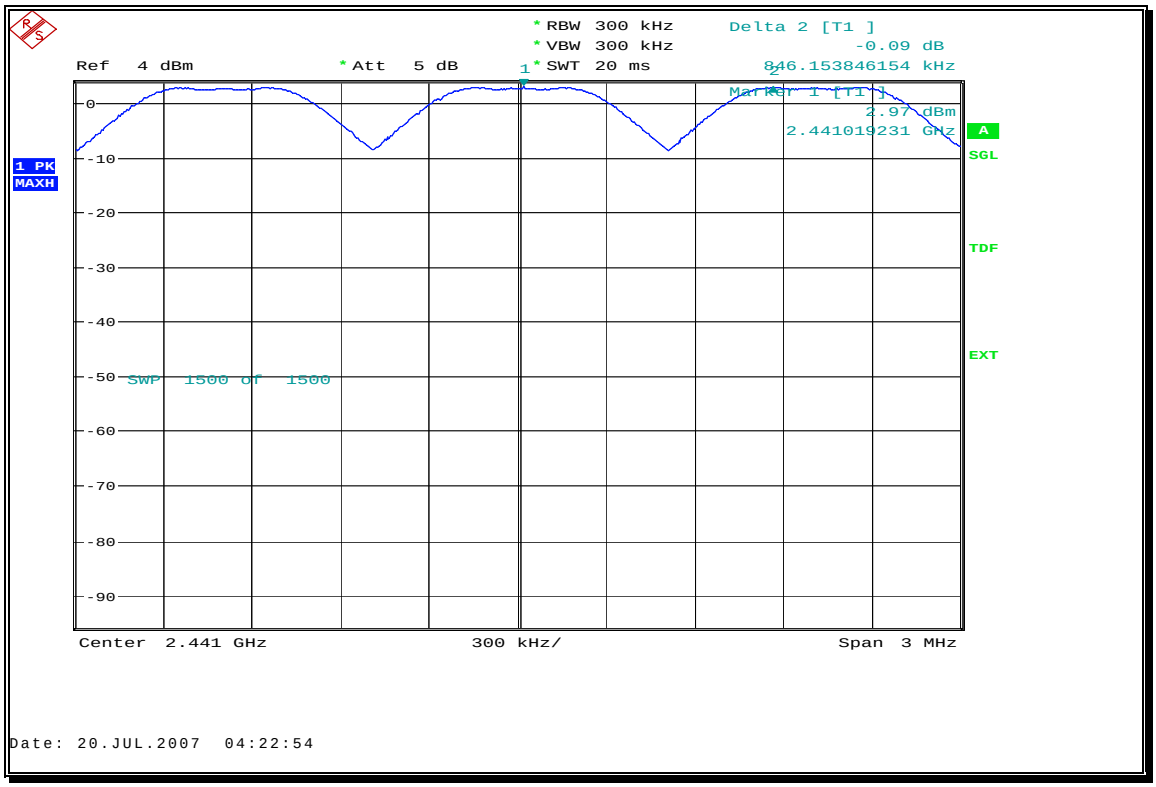


Fig. 28 Carrier frequency separation measurement: Channel 39

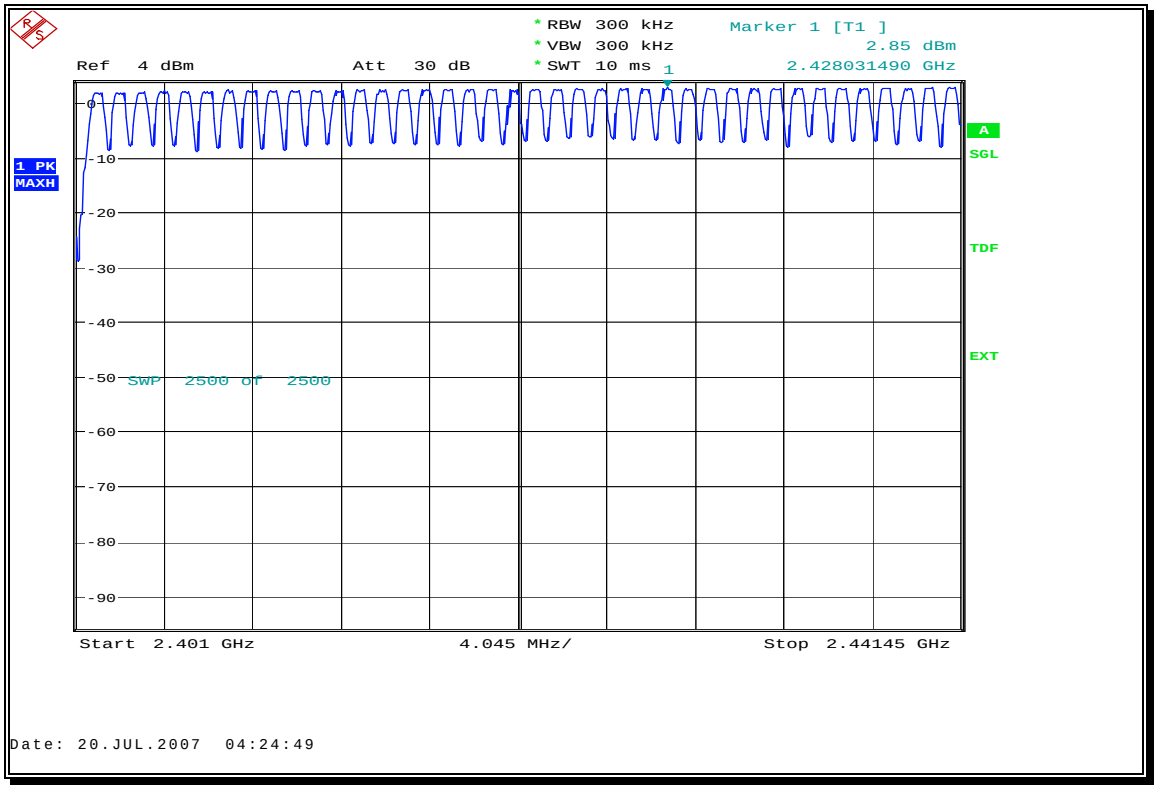


Fig. 29 Number of hopping frequencies: Channel 0 - 39

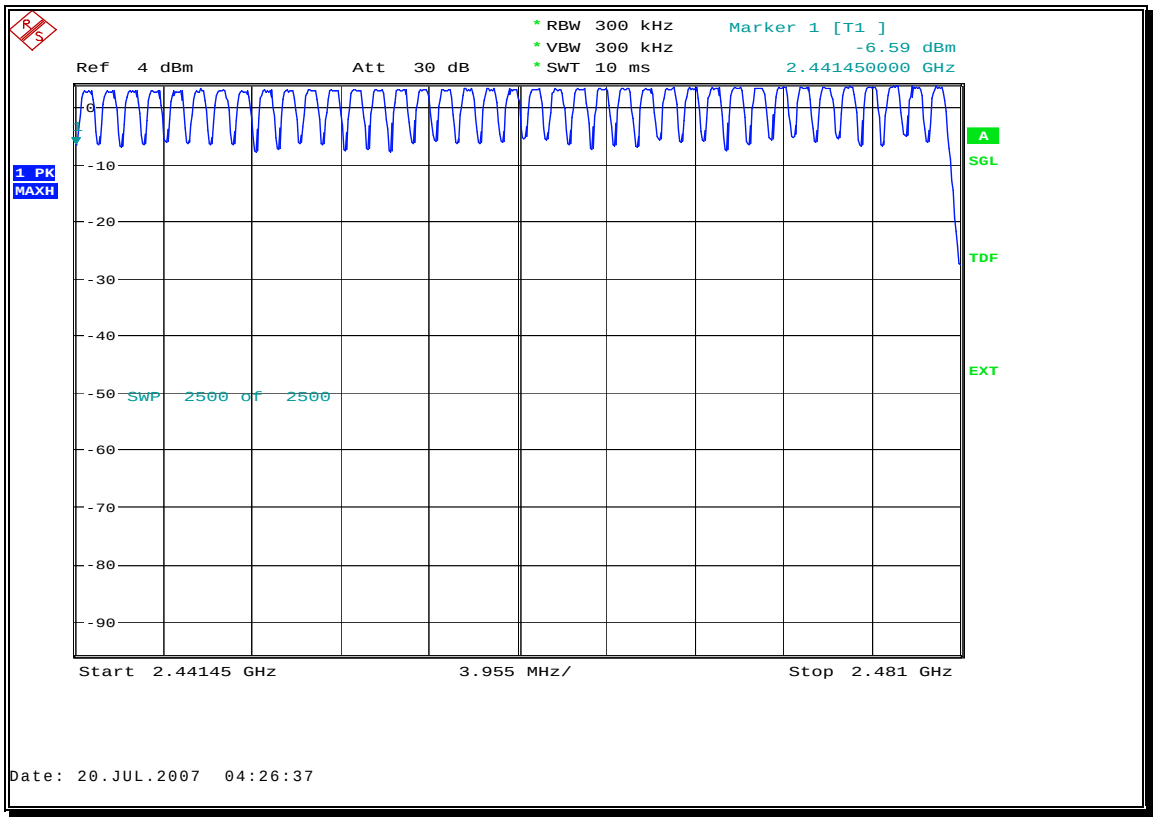


Fig. 30 Number of hopping frequencies: Channel 40 - 78

ANNEX D: TEST LAYOUT

Photo of Radiated Emission Test

*** END OF REPORT BODY ***