



FCC PART 15C/IC RSS-210 TEST REPORT No. 2010TAR251

for

Sony Ericsson Mobile Communications AB

GSM 850/1900 dual bands mobile phone

Type: AAB-1880028-BV

With

FCC ID: PY7A1880028

IC ID: 4170B-A1880028

Hardware Version: A

Software Version: R2AC001

Issued Date: 2010-07-07



No. DGA-PL-114/01-02

DAR accreditation (DIN EN ISO/IEC 17025): No. DGA-PL-114/01-02

FCC 2.948 Listed: No.733176

IC O.A.T.S listed: No.6629A-1

Note:The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of TMC Beijing.

Test Laboratory:

TMC Beijing, Telecommunication Metrology Center of Ministry of Industry and Information Technology

Shouxiang Science Building, No 51, Xueyuan Road, Haidian District, Beijing, P.R.China 100191

Tel:+86(0)10-62304633-2678, Fax:+86(0)10-62304793 Email:welcomed@emcite.com. www.emcite.com

CONTENTS

CONTENTS	2
1. TEST LABORATORY	4
1.1. TESTING LOCATION.....	4
1.2. TESTING ENVIRONMENT.....	4
1.3. PROJECT DATA	4
1.4. SIGNATURE	4
2. CLIENT INFORMATION	5
2.1. APPLICANT INFORMATION.....	5
2.2. MANUFACTURER INFORMATION.....	5
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE)	6
3.1. ABOUT EUT	6
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST.....	6
3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST	6
3.4. GENERAL DESCRIPTION.....	6
4. REFERENCE DOCUMENTS	7
4.1. DOCUMENTS SUPPLIED BY APPLICANT.....	7
4.2. REFERENCE DOCUMENTS FOR TESTING.....	7
5. LABORATORY ENVIRONMENT	8
6. SUMMARY OF TEST RESULTS.....	9
6.1. SUMMARY OF TEST RESULTS	9
6.2. STATEMENTS.....	10
6.3. TEST CONDITIONS.....	10
7. TEST EQUIPMENTS UTILIZED.....	11
ANNEX A: MEASUREMENT RESULTS	12
A.1. MEASUREMENT METHOD.....	12
A.2. PEAK OUTPUT POWER	13
A.2.1 Antenna gain	13
A.2.2 Peak Output Power(Conducted)	13
A.2.3 Peak Output Power(Radiated)	13
A.3. FREQUENCY BAND EDGES - CONDUCTED.....	14
A.4. CONDUCTED EMISSION.....	21
A.5. RADIATED EMISSION.....	36
A.6. TIME OF OCCUPANCY (DWELL TIME).....	56
A.7. 20dB BANDWIDTH.....	66
A.8. CARRIER FREQUENCY SEPARATION.....	71
A.9. NUMBER OF HOPPING CHANNELS	73
A.10. AC POWERLINE CONDUCTED EMISSION	77

ANNEX B: PHOTOGRAPHS OF THE TEST SET-UP80
ANNEX C: PHOTOGRAPHS OF THE EUT82

1. Test Laboratory

1.1. Testing Location

Company Name: TMC Beijing, Telecommunication Metrology Center of MIIT
Address: Shouxiang Science Building, No 51, Xueyuan Road, Haidian District,
Beijing, P.R.China
Postal Code: 100191
Telephone: 00861062304633
Fax: 00861062304793

1.2. Testing Environment

Normal Temperature: 15-35°C
Extreme Temperature: -20/+55°C
Relative Humidity: 30-60%
Air Pressure 990hPa-1040hPa

Note:The climatic requirements above are general exclude the special requirements for dedicated test environments listed in section 5 and some specific test cases in other parts of this report.

1.3. Project data

Project Leader: Zi Xiaogang
Testing Start Date: 2010-06-15
Testing End Date: 2010-07-07

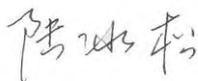
1.4. Signature



Zi Xiaogang
(Prepared this test report)



Sun Xiangqian
(Reviewed this test report)



Lu Bingsong
Deputy Director of the laboratory
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name: Sony Ericsson Mobile Communications(China) Co., Ltd.
Address /Post: 1/F, China Digital Kingdom Building, No.1 North Road, Wangjing,
Chaoyang District, Beijing, China
City: Beijing
Postal Code: 100000
Country: China
Contact: Ma, Gang
Email: gang.song@sonyericsson.com
Telephone: +86-10-58656312
Fax: +86-10-58656750

2.2. Manufacturer Information

Company Name: Sony Ericsson Mobile Communications AB
Address /Post: Nya Vattentorget, 22188 Lund, Sweden
City: Lund
Postal Code: 22188
Country: Sweden
Contact: Nordlof, Anders
Email: Anders.Nordlof@sonyericsson.com
Telephone: +46 46 193919
Fax: +46 46 193295

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

3.1. About EUT

Description	GSM850/1900, GPRS, EDGE, BT EDR2.0, FM-receiver mobile phone
Type	AAB-1880028-BV
FCC ID	PY7A1880028
IC ID	4170B-A1880028
Frequency Band	ISM 2400MHz~2483.5MHz
Type of Modulation	GFSK/ $\pi/4$ DQPSK/8DPSK
Number of Channels	79
Cellular Frequency Band	GSM850/PCS1900, PowerClass: GSM850:4/PCS1900:1
Support Functions	Bluetooth, Camera, FM, MP3, USB Memory
Antenna	Integral Antenna
MAX Radiated Power	4.41dBm EIRP(GFSK)
MAX Conducted Power	3.76dBm(GFSK)
Power Supply	3.7V DC by Battery

Note: Photographs of EUT are shown in ANNEX C of this test report.

3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI	HW Version	SW Version
N07	00100300-180948-5	A	R2AC001
R10a	00100300-180951-9	A	R2AC001

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

3.3. Internal Identification of AE used during the test

AE ID*	Description	Type	SN
AE1	Battery	CBA-0002022	/
AE2	Travel Charger	CAA-0002016-BV	/

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

3.4. General Description

Equipment Under Test (EUT) is a model of GSM 850/1900 dual bands mobile phone with integrated antenna. It has MP3, Camera, FM radio, USB memory and Bluetooth functions. It also supports GPRS function with multi-slots class 10 and EGPRS function with multi-slots class 10 too. It consists of normal options: Lithium Battery and Travel Charger.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the Client.

4. Reference Documents

4.1. Documents supplied by applicant

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

4.2. Reference Documents for testing

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

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.	Oct, 2009 Edition
ANSI C63.4	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2009
FCC Public Notice DA 00-705	Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems	March 2000
RSS - Gen Issue 2	Spectrum Management and Telecommunications - Radio Standards Specification General Requirements and Information for the Certification of Radiocommunication Equipment	2007-06
RSS - 210 Issue 7	Spectrum Management and Telecommunications - Radio Standards Specification Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment	2007-06

5. LABORATORY ENVIRONMENT

Shielding Room1 (6.0 meters×3.0 meters×2.7 meters) did not exceed following limits along the conducted RF performance testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
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 °C, Max. = 35 °C
Relative humidity	Min. =30 %, Max. = 60 %
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 °C, Max. = 30 °C
Relative humidity	Min. = 30 %, 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 80 to 2000 MHz

6. SUMMARY OF TEST RESULTS

6.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Modulation	Sub-clause of Part15C	Sub-clause of IC	Verdict
Peak Output Power (Conducted)	GFSK/	15.247 (b)(1)	RSS-210 A8.4 (2)	P
	$\pi/4$ DQPSK			P
	8DPSK			P
Peak Output Power(Radiated)	GFSK	15.247 (b)(1)	RSS-210 A8.4 (2)	P
Antenna Gain	GFSK/	None	None	P
Frequency Band Edges	GFSK	15.247 (d)	RSS-210 A8.5	P
	$\pi/4$ DQPSK			P
	8DPSK			P
Conducted Emission	GFSK	15.247 (d)	RSS-210 A8.5	P
	$\pi/4$ DQPSK			P
	8DPSK			P
Radiated Emission	GFSK	15.247(d),15.205,15.209,15.109	RSS-210 A8.5	P
	$\pi/4$ DQPSK			P
	8DPSK			P
Time of Occupancy (Dwell Time)	GFSK	15.247 (a) (1)(iii)	RSS-210 A8.1 (4)	P
	$\pi/4$ DQPSK			P
	8DPSK			P
20dB Bandwidth	GFSK	15.247 (a)(1)	RSS-210 A8.1 (1)	P
	$\pi/4$ DQPSK			P
	8DPSK			P
Carrier Frequency Separation	GFSK	15.247 (a)(1)	RSS-210 A8.1 (2)	P
	$\pi/4$ DQPSK			P
	8DPSK			P
Number of hopping channels	GFSK	15.247 (a)(1)(iii)	RSS-210 A8.1 (4)	P
	$\pi/4$ DQPSK			P
	8DPSK			P
AC Powerline Conducted Emission	GFSK	15.107, 15.207	RSS-Gen 7.2.2	P

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

The measurement is made according to Public notice DA 00-705 and ANSI C63.4.

Terms used in Verdict column

P	Pass, The EUT complies with the essential requirements in the standard.
NP	Not Perform, The test was not performed by TMC
NA	Not Applicable, The test was not applicable
F	Fail, The EUT does not comply with the essential requirements in the standard

6.2. Statements

The test cases as listed in section 6.1 of this report for the EUT specified in section 3 was performed by TMC and according to the standards or reference documents listed in section 4.2 The EUT met all requirements of the standards or reference documents.

6.3. Test Conditions

T nom	Normal Temperature
T min	Low Temperature
T max	High Temperature
V nom	Normal Voltage
V min	Low Voltage
V max	High Voltage
H nom	Norm Humidity
A nom	Norm Air Pressure

For this report, all the test case listed above are tested under Normal Temperature and Normal Voltage, and also under norm humidity, the specific conditions as following:

Temperature	T nom	24°C
Voltage	V nom	3.7V(By battery)
Humidity	H nom	31%
Air Pressure	A nom	1010hPa

7. Test Equipments Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date
1	Vector Signal Analyzer	FSU26	200030	Rohde & Schwarz	2011-06-17
2	Bluetooth Tester	CBT32	100649	Rohde & Schwarz	2011-02-03

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date
1	Test Receiver	ESI40	831564/002	Rohde & Schwarz	2011-02-11
2	EMI Antenna	VULB 9163	9163 301	Schwarzbeck	2011-04-29
3	EMI Antenna	3117	00034610	EMCO	2011-06-30
4	Dual-Ridge Waveguide Horn Antenna	3116	2663	EMCO	2011-03-01
5	Dual-Ridge Waveguide Horn Antenna	3116	2661	EMCO	2011-03-01
6	Universal Radio Communication Tester	CMU200	105948	Rohde & Schwarz	2010-08-14
7	LISN	ESH2-Z5	829991/012	Rohde & Schwarz	2010-08-13
8	Pre-amplifier(18GHz)	/	1005277	Rohde & Schwarz	/
9	Pre-amplifier(26.5GHz)	/	1005277	Rohde & Schwarz	/

Anechoic chamber

Fully anechoic chamber by Frankonia German.

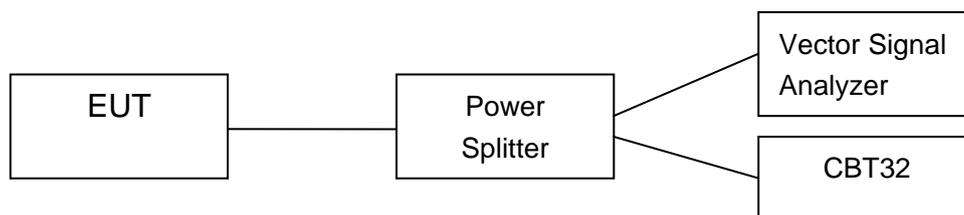
ANNEX A: MEASUREMENT RESULTS

A.1. Measurement Method

A.1.1. Conducted Measurements

The measurement is made according to Public notice DA 00-705 and ANSI C63.4.

- 1). Connect the EUT to the test system correctly.
- 2). Set the EUT to the required work mode (Transmitter, receiver or transmitter & receiver).
- 3). Set the EUT to the required channel.
- 4). Set the EUT hopping mode (hopping or hopping off).
- 5). Set the spectrum analyzer to start measurement.
- 6). Record the values. Vector Signal Analyzer



A.1.2. Radiated Emission Measurements

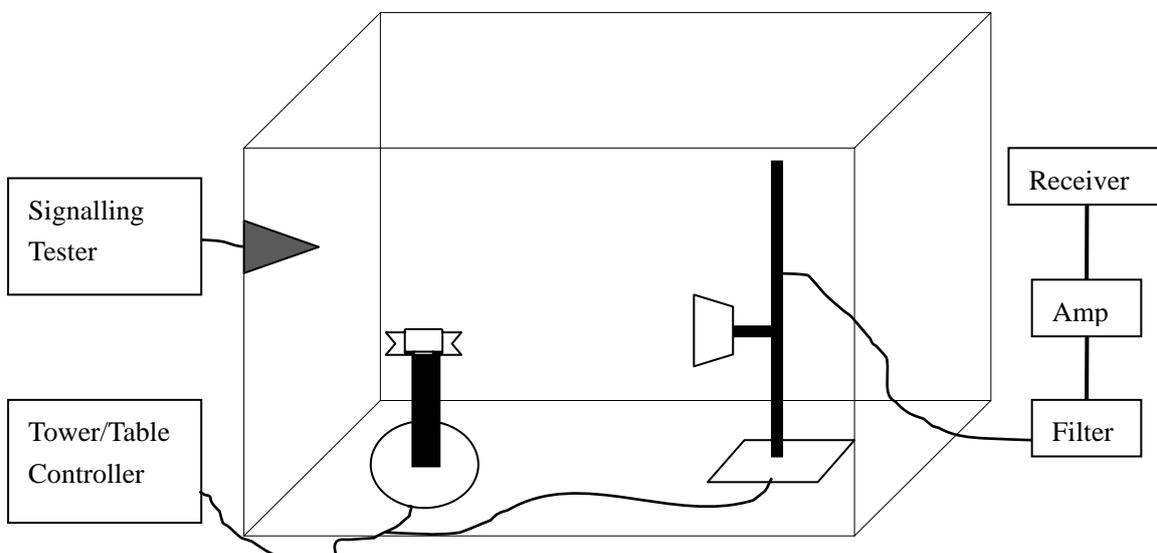
The measurement is made according to Public notice DA 00-705 and ANSI C63.4

The radiated emission test is performed in semi-anechoic chamber. The distance from the EUT to the reference point of measurement antenna is 3m. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result.

In the case of radiated emission, the used settings are as follows,

Sweep frequency from 30 MHz to 1GHz, RBW = 100 kHz, VBW = 300 kHz;

Sweep frequency from 1 GHz to 26GHz, RBW = 1MHz, VBW = 1MHz;



A.2. Peak Output Power

Measurement Limit:

Standard	Limit (dBm)
FCC Part 15.247(b)(1)/ / RSS-210 A8.4 (2)	< 30

The measurement is made according to Public notice DA 00-705 and ANSI C63.4.

Measurement Condition:

RBW=VBW=1MHz; SPAN=5MHz; Detector: peak

Measurement Results:

A.2.1 Antenna gain

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the EUT.

Channel	Ch 0 2402 MHz	Ch 39 2441 MHz	Ch 78 2480 MHz
GFSK (dBi)	2.66	2.07	-1.49

Conclusion: PASS

A.2.2 Peak Output Power(Conducted)

EUT ID:N07

Channel	Ch 0 2402 MHz	Ch 39 2441 MHz	Ch 78 2480 MHz	Conclusion
GFSK (dBm)	1.55	2.34	3.76	P
$\pi/4$ DQPSK (dBm)	2.92	3.31	3.28	P
8DPSK (dBm)	2.88	3.39	3.50	P

Measurement Uncertainty: ± 1.17 dB

Conclusion: PASS

A.2.3 Peak Output Power(Radiated)

EUT ID:N05

Channel	Ch 0 2402 MHz	Ch 39 2441 MHz	Ch 78 2480 MHz	Conclusion
GFSK (dBm)	4.21	4.41	2.27	P

Measurement Uncertainty: ± 1.98 dB

Conclusion: PASS

A.3. Frequency Band Edges - Conducted

Measurement Limit:

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

The measurement is made according to Public notice DA 00-705 and ANSI C63.4.

Measurement Result:

For GFSK

Channel	Hopping	Band Edge Power (dBc)		Conclusion
0	Hopping OFF	Fig.1	-50.25	P
	Hopping ON	Fig.2	-51.94	P
78	Hopping OFF	Fig.3	-53.47	P
	Hopping ON	Fig.4	-56.93	P

For $\pi/4$ DQPSK

Channel	Hopping	Band Edge Power (dBc)		Conclusion
0	Hopping OFF	Fig.5	-55.07	P
	Hopping ON	Fig.6	-53.47	P
78	Hopping OFF	Fig.7	-60.52	P
	Hopping ON	Fig.8	-50.91	P

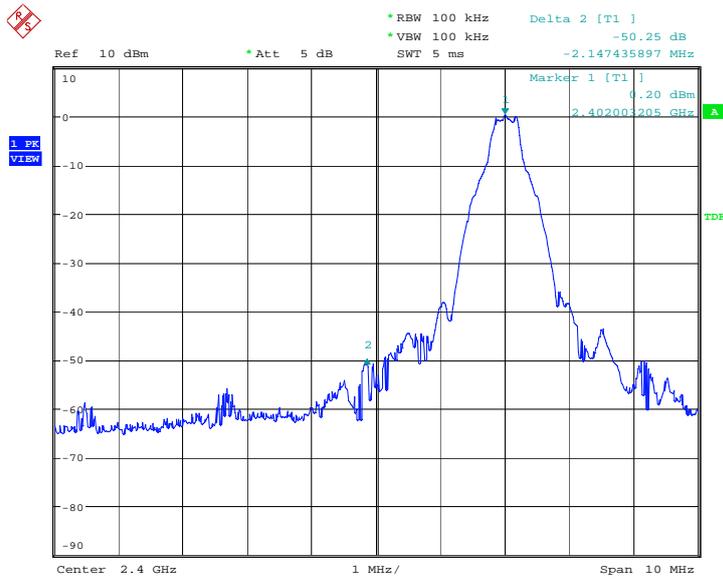
For 8DPSK

Channel	Hopping	Band Edge Power (dBc)		Conclusion
0	Hopping OFF	Fig.9	-55.82	P
	Hopping ON	Fig.10	-53.38	P
78	Hopping OFF	Fig.11	-59.72	P
	Hopping ON	Fig.12	-50.61	P

Measurement Uncertainty: ± 1.53 dB

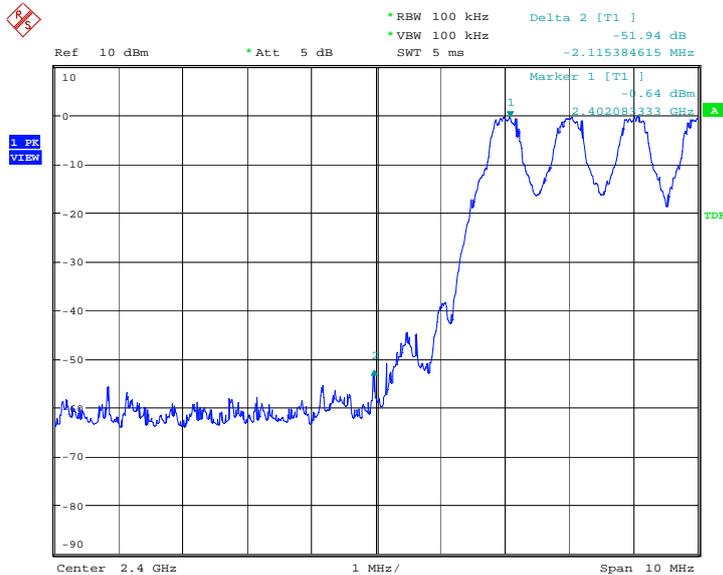
Conclusion: PASS

Test graphs as below



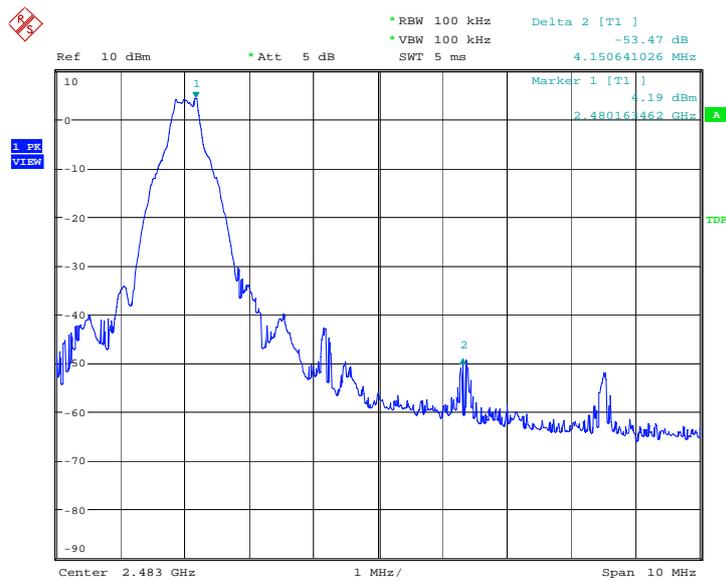
Date: 22.JUN.2010 01:46:05

Fig.1 Frequency Band Edges: GFSK, Channel 0, Hopping Off



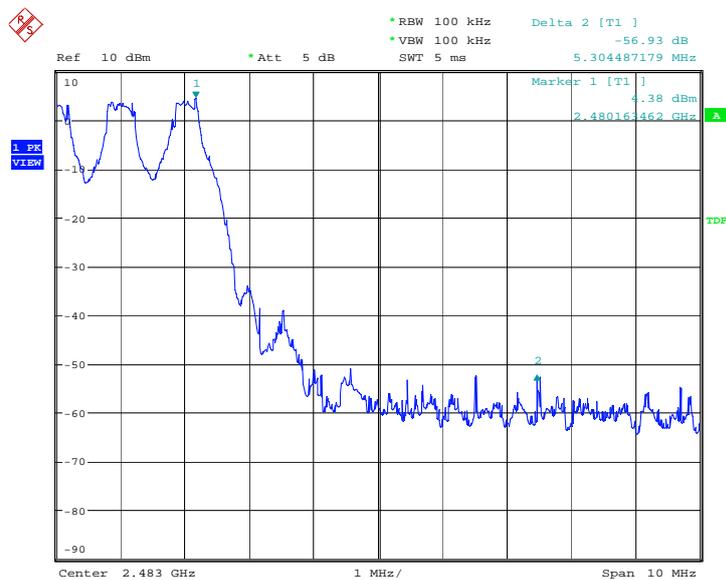
Date: 22.JUN.2010 01:48:25

Fig.2 Frequency Band Edges: GFSK, Channel 0, Hopping On



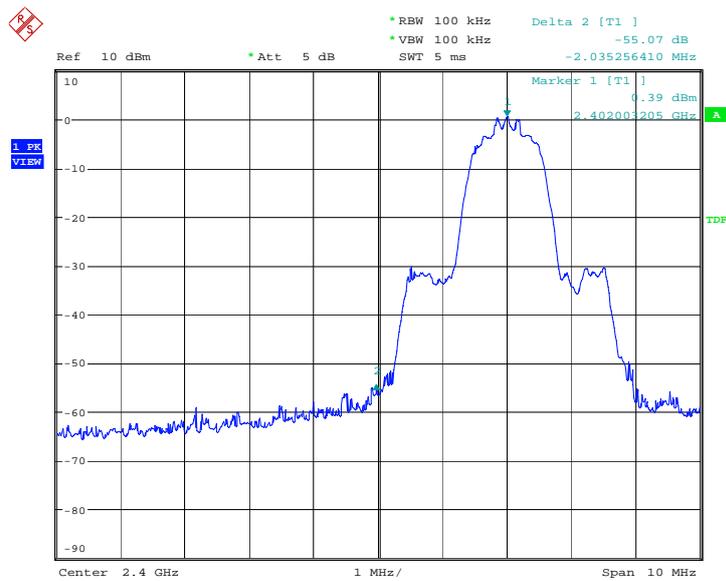
Date: 22.JUN.2010 01:46:22

Fig.3 Frequency Band Edges: GFSK, Channel 78, Hopping Off



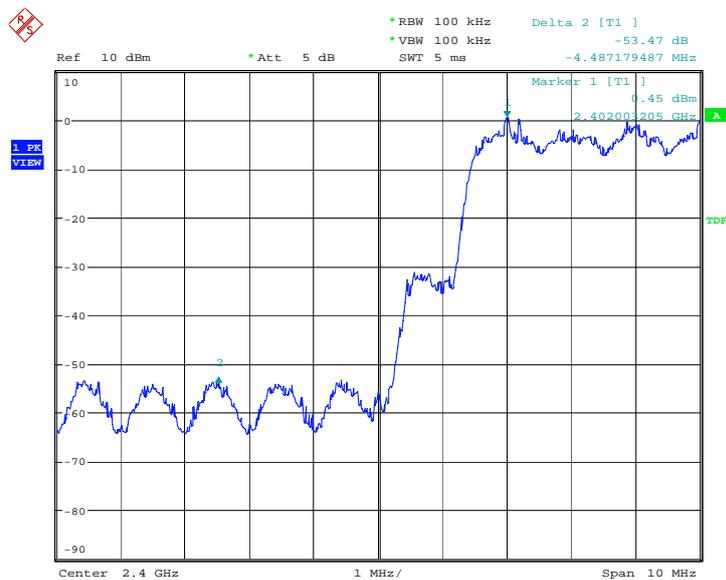
Date: 22.JUN.2010 01:50:27

Fig.4 Frequency Band Edges: GFSK, Channel 78, Hopping On



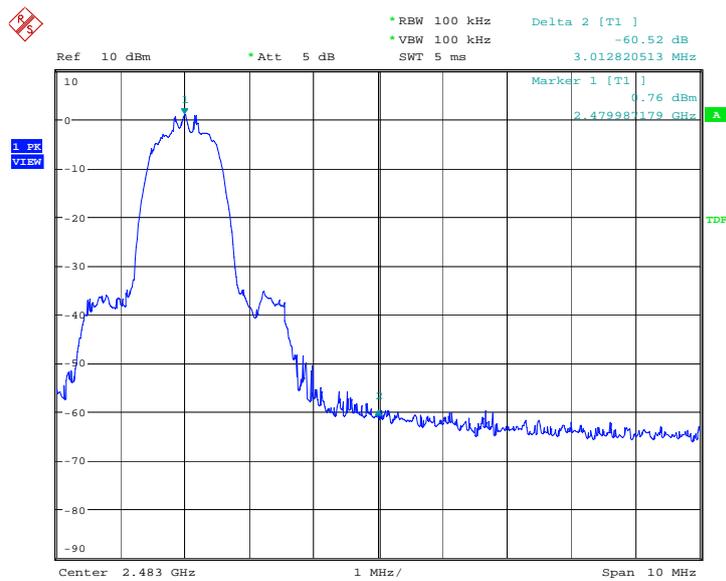
Date: 22.JUN.2010 02:06:28

Fig.5 Frequency Band Edges: $\pi/4$ DQPSK, Channel 0, Hopping Off



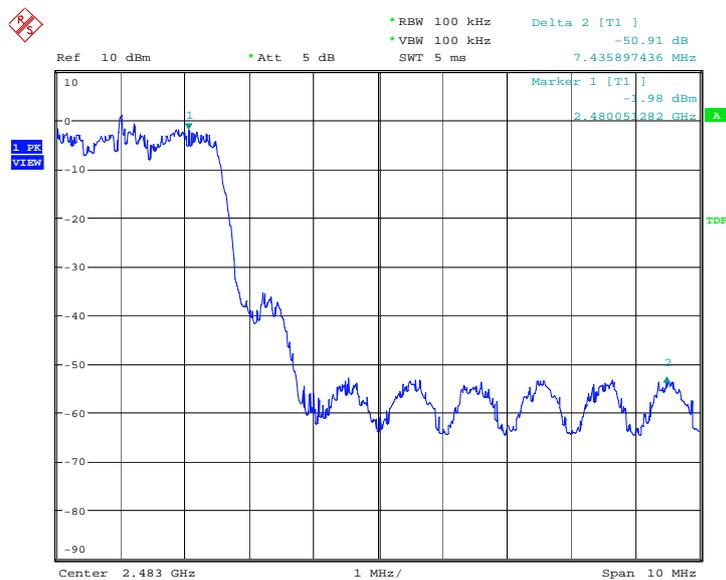
Date: 22.JUN.2010 02:08:48

Fig.6 Frequency Band Edges: $\pi/4$ DQPSK, Channel 0, Hopping On



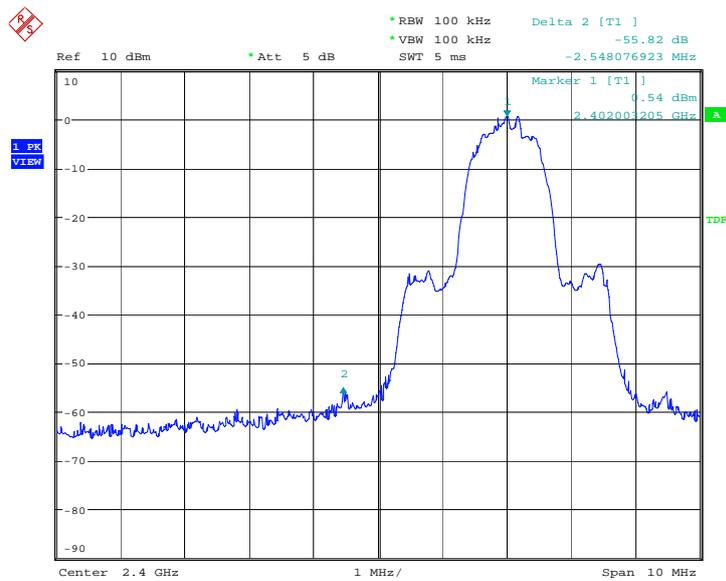
Date: 22.JUN.2010 02:06:45

Fig.7 Frequency Band Edges: $\pi/4$ DQPSK, Channel 78, Hopping Off



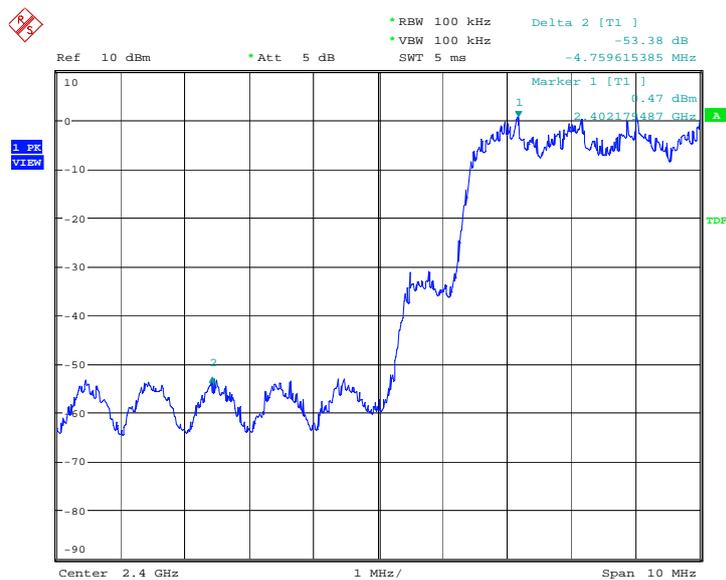
Date: 22.JUN.2010 02:10:50

Fig.8 Frequency Band Edges: $\pi/4$ DQPSK, Channel 78, Hopping On



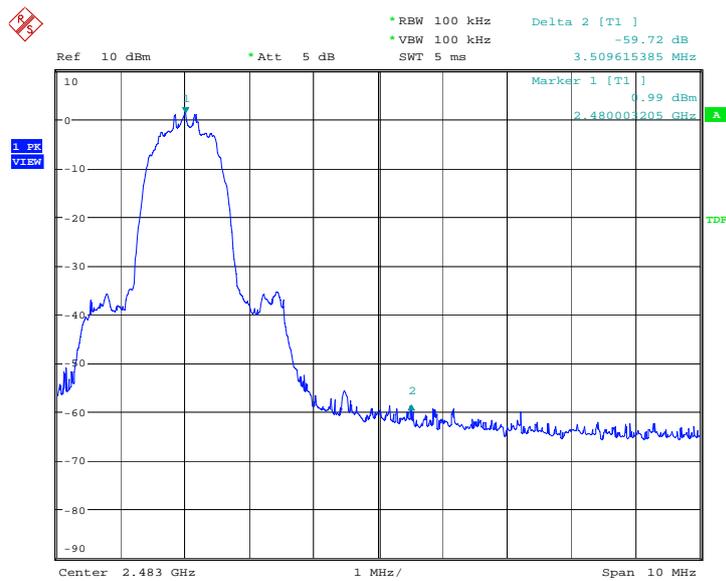
Date: 22.JUN.2010 02:26:49

Fig.9 Frequency Band Edges: 8DPSK, Channel 0, Hopping Off



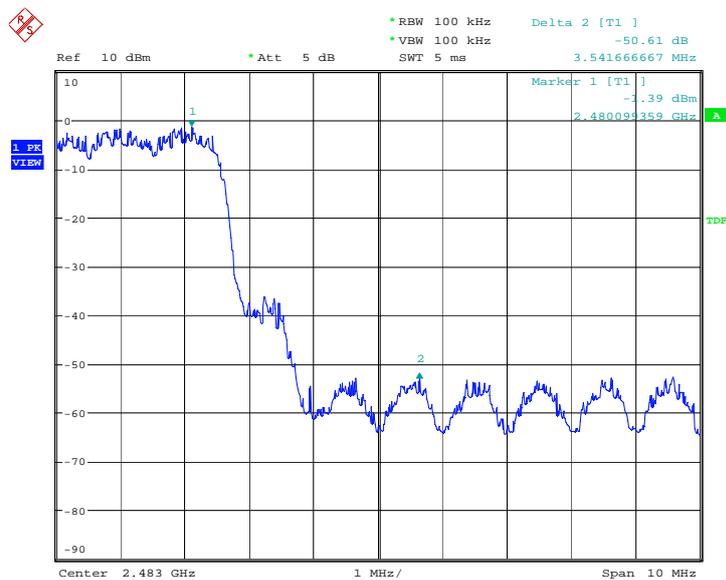
Date: 22.JUN.2010 02:29:08

Fig.10 Frequency Band Edges: 8DPSK, Channel 0, Hopping On



Date: 22.JUN.2010 02:27:06

Fig.11 Frequency Band Edges: 8DPSK, Channel 78, Hopping Off



Date: 22.JUN.2010 02:31:10

Fig.12 Frequency Band Edges: 8DPSK, Channel 78, Hopping On

A.4. Conducted Emission

Measurement Limit:

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

The measurement is made according to Public notice DA 00-705 and ANSI C63.4

Measurement Results:

For GFSK

Channel	Frequency Range	Test Results	Conclusion
Ch 0 2402 MHz	Center Frequency	Fig.13	P
	30 MHz ~ 1 GHz	Fig.14	P
	1 GHz ~ 26 GHz	Fig.15	P
Ch 39 2441 MHz	Center Frequency	Fig.16	P
	30 MHz ~ 1 GHz	Fig.17	P
	1 GHz ~ 26 GHz	Fig.18	P
Ch 78 2480 MHz	Center Frequency	Fig.19	P
	30 MHz ~ 1 GHz	Fig.20	P
	1 GHz ~ 26 GHz	Fig.21	P

For $\pi/4$ DQPSK

Channel	Frequency Range	Test Results	Conclusion
Ch 0 2402 MHz	Center Frequency	Fig.22	P
	30 MHz ~ 1 GHz	Fig.23	P
	1 GHz ~ 26 GHz	Fig.24	P
Ch 39 2441 MHz	Center Frequency	Fig.25	P
	30 MHz ~ 1 GHz	Fig.26	P
	1 GHz ~ 26 GHz	Fig.27	P
Ch 78 2480 MHz	Center Frequency	Fig.28	P
	30 MHz ~ 1 GHz	Fig.29	P
	1 GHz ~ 26 GHz	Fig.30	P

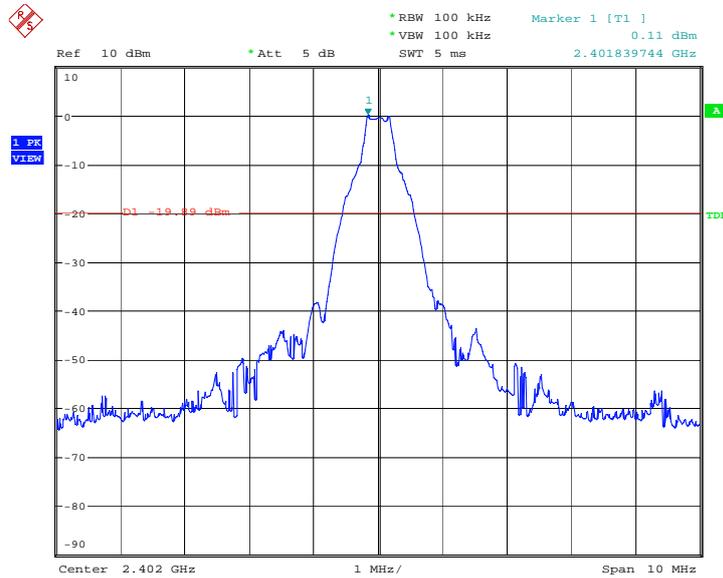
For 8DPSK

Channel	Frequency Range	Test Results	Conclusion
Ch 0 2402 MHz	Center Frequency	Fig.31	P
	30 MHz ~ 1 GHz	Fig.32	P
	1 GHz ~ 26 GHz	Fig.33	P
Ch 39 2441 MHz	Center Frequency	Fig.34	P
	30 MHz ~ 1 GHz	Fig.35	P
	1 GHz ~ 26 GHz	Fig.36	P
Ch 78 2480 MHz	Center Frequency	Fig.37	P
	30 MHz ~ 1 GHz	Fig.38	P
	1 GHz ~ 26 GHz	Fig.39	P

Measurement Uncertainty: $\pm 3.46\text{dB}$

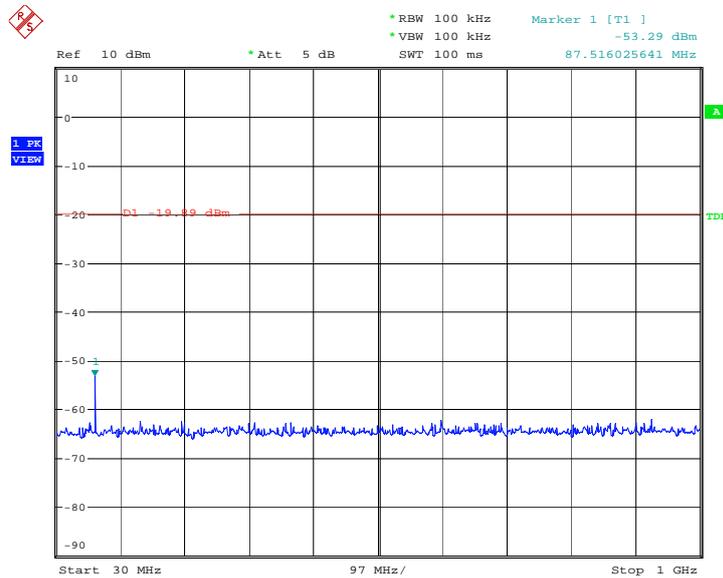
Conclusion: PASS

Test graphs as below



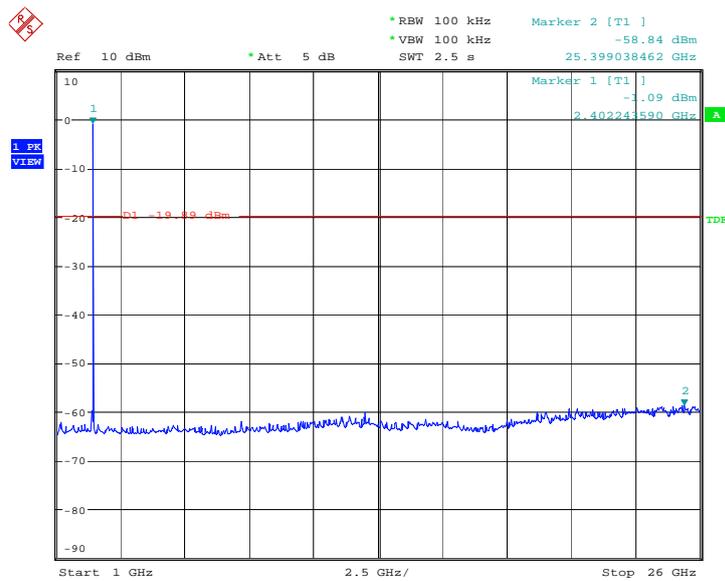
Date: 22.JUN.2010 01:50:45

Fig.13 Conducted spurious emission: GFSK, Channel 0,2402MHz



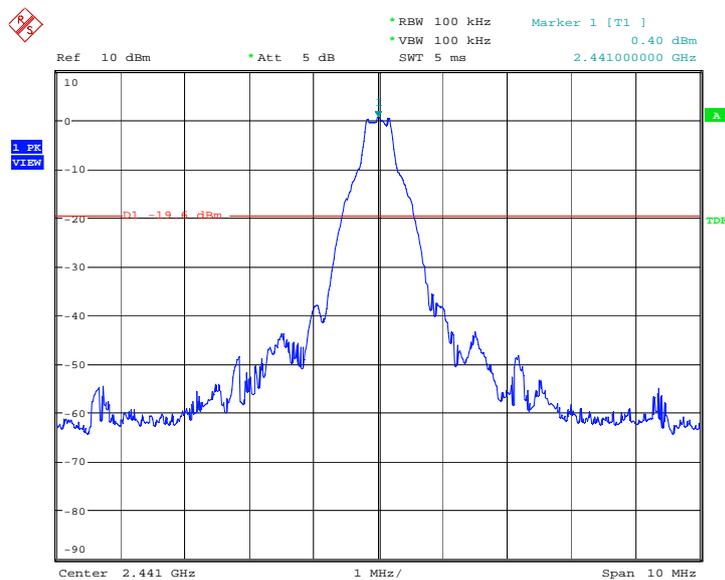
Date: 22.JUN.2010 01:51:02

Fig.14 Conducted spurious emission: GFSK, Channel 0, 30MHz - 1GHz



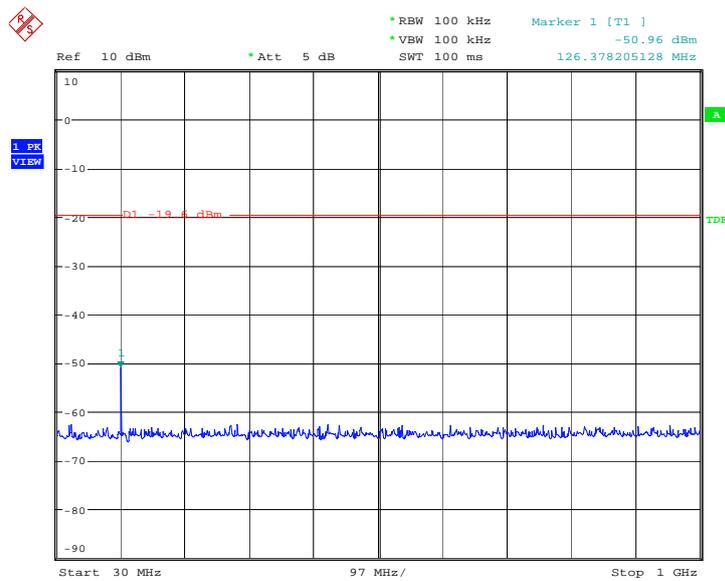
Date: 22.JUN.2010 01:51:33

Fig.15 Conducted spurious emission: GFSK, Channel 0,1GHz - 26GHz



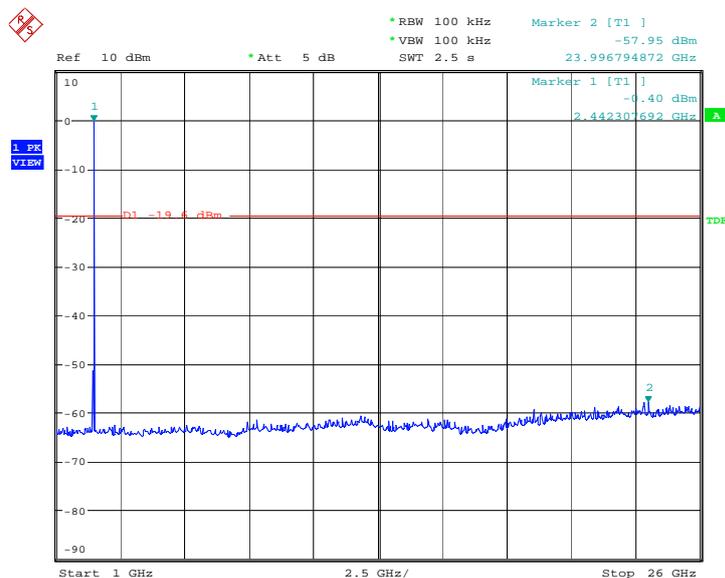
Date: 22.JUN.2010 01:51:50

Fig.16 Conducted spurious emission: GFSK, Channel 39, 2441MHz



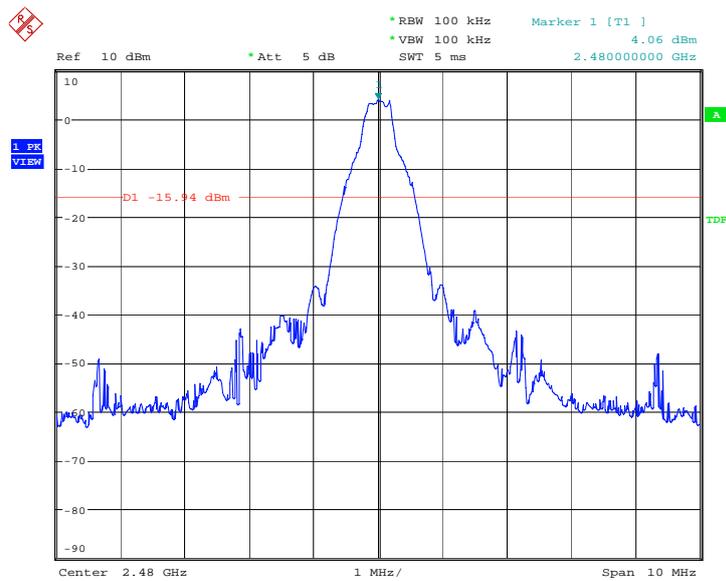
Date: 22.JUN.2010 01:52:06

Fig.17 Conducted spurious emission: GFSK, Channel 39, 30MHz - 1GHz



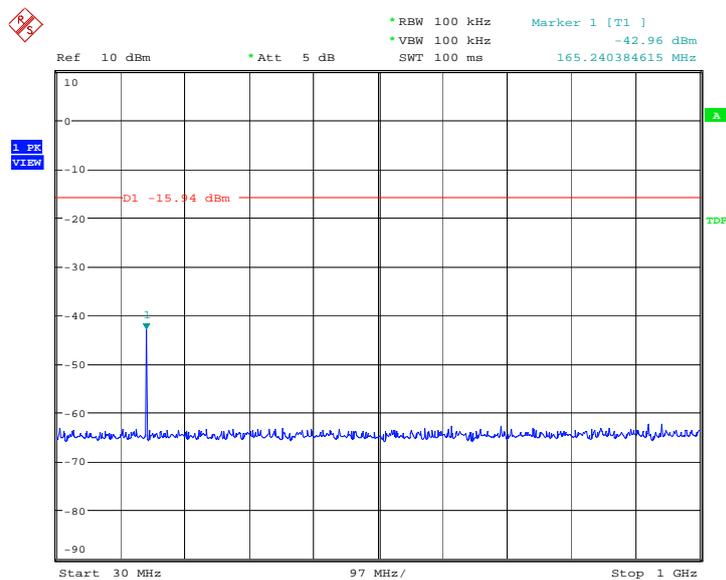
Date: 22.JUN.2010 01:52:38

Fig.18 Conducted spurious emission: GFSK, Channel 39, 1GHz - 26GHz



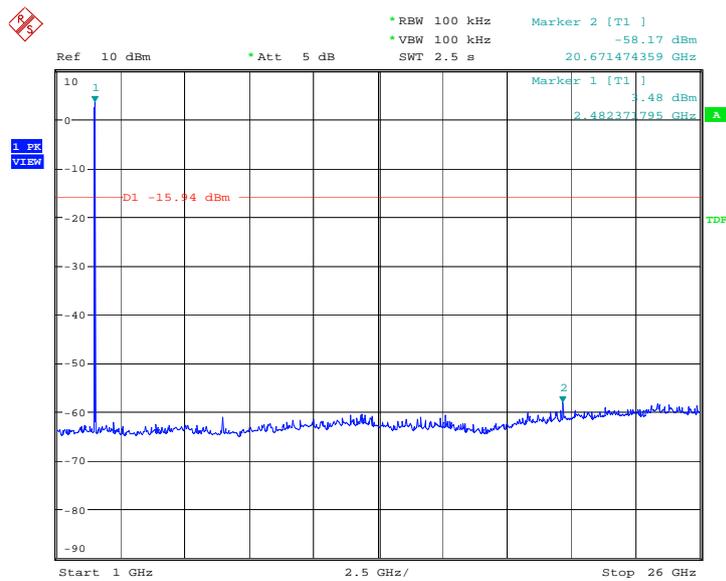
Date: 22.JUN.2010 01:52:54

Fig.19 Conducted spurious emission: GFSK, Channel 78, 2480MHz



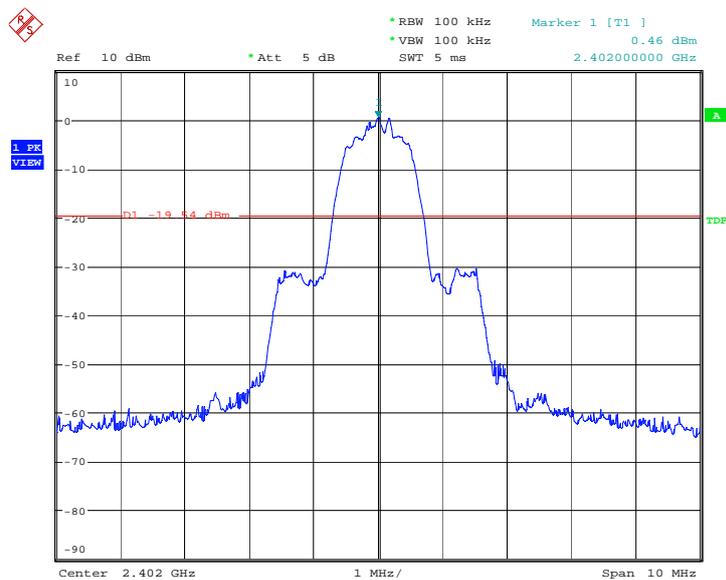
Date: 22.JUN.2010 01:53:11

Fig.20 Conducted spurious emission: GFSK, Channel 78, 30MHz - 1GHz



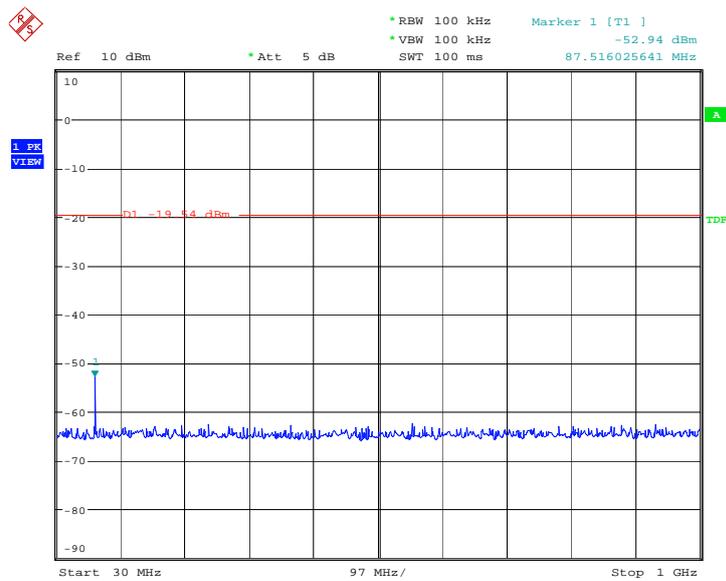
Date: 22.JUN.2010 01:53:42

Fig.21 Conducted spurious emission: GFSK, Channel 78, 1GHz - 26GHz



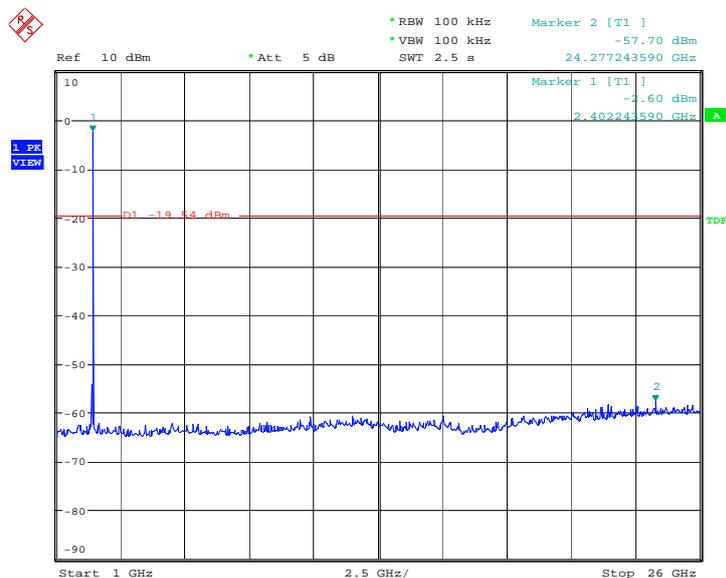
Date: 22.JUN.2010 02:11:08

Fig.22 Conducted spurious emission: $\pi/4$ DQPSK, Channel 0,2402MHz



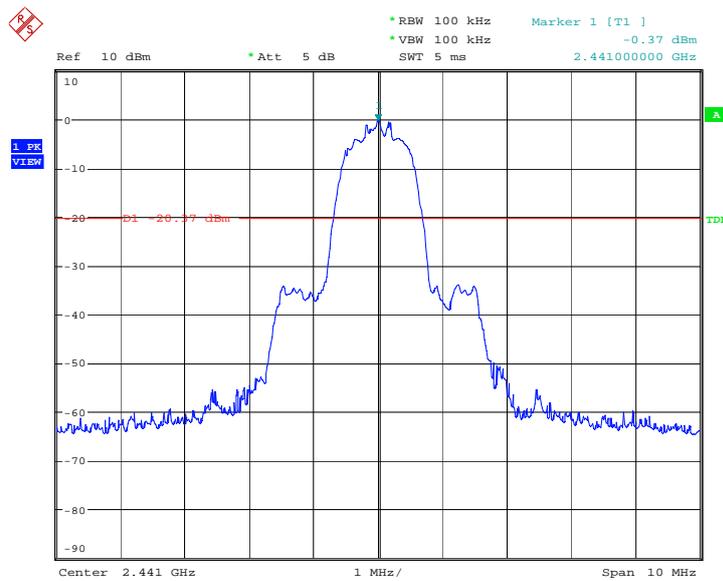
Date: 22.JUN.2010 02:11:25

Fig.23 Conducted spurious emission: $\pi/4$ DQPSK, Channel 0, 30MHz - 1GHz



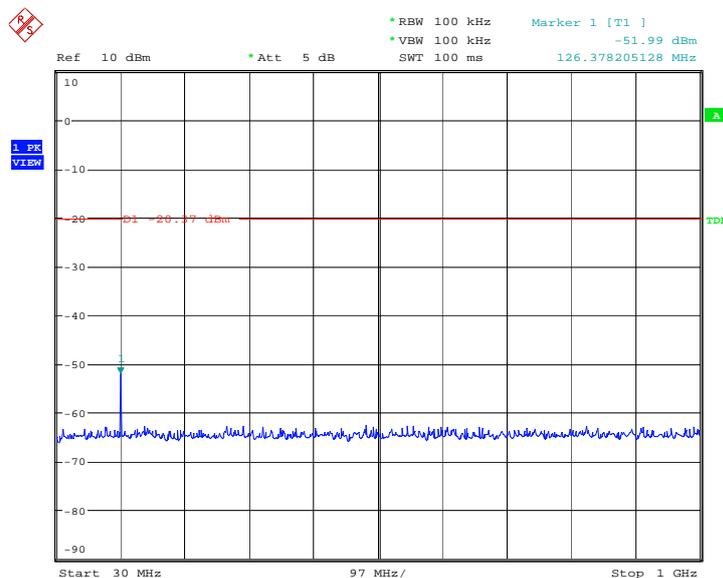
Date: 22.JUN.2010 02:11:56

Fig.24 Conducted spurious emission: $\pi/4$ DQPSK, Channel 0, 1GHz - 26GHz



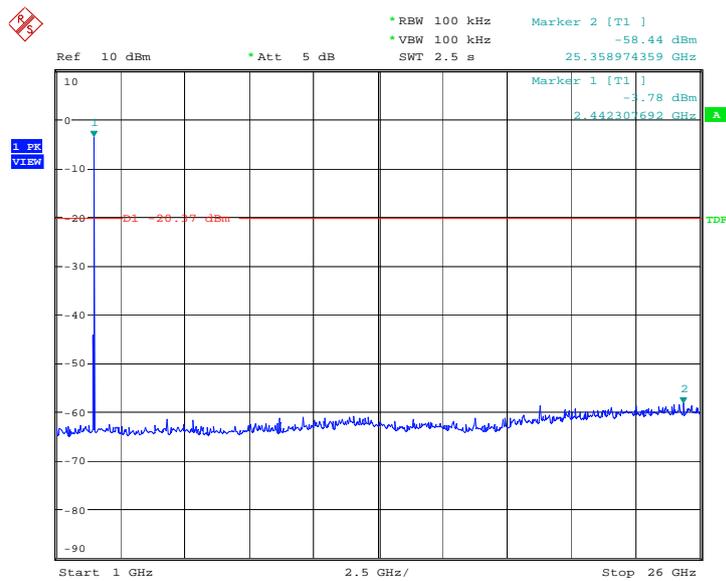
Date: 22.JUN.2010 02:12:13

Fig.25 Conducted spurious emission: $\pi/4$ DQPSK, Channel 39, 2441MHz



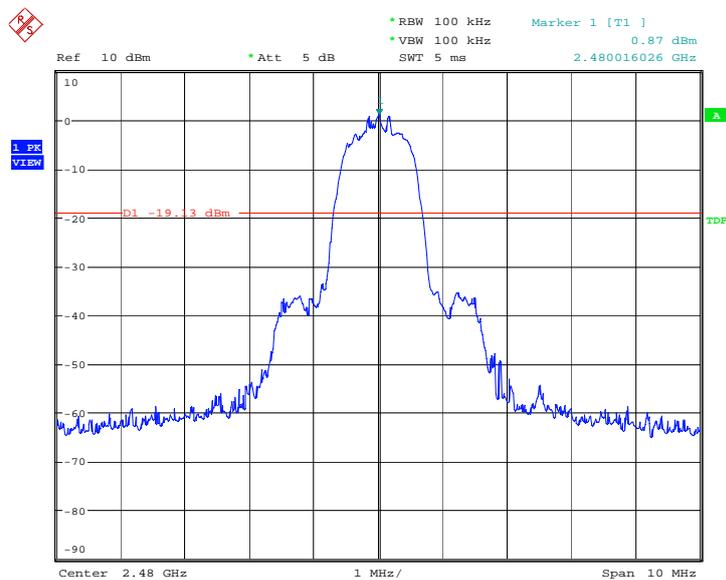
Date: 22.JUN.2010 02:12:29

Fig.26 Conducted spurious emission: $\pi/4$ DQPSK, Channel 39, 30MHz - 1GHz



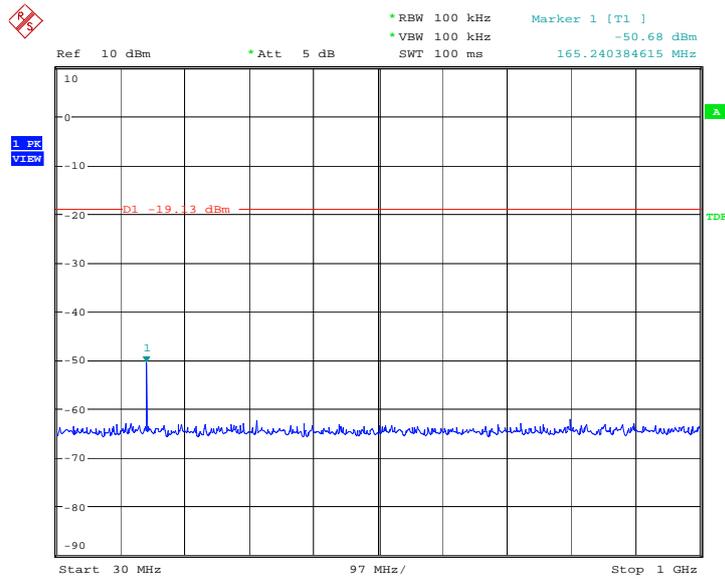
Date: 22.JUN.2010 02:13:01

Fig.27 Conducted spurious emission: $\pi/4$ DQPSK, Channel 39, 1GHz – 26GHz



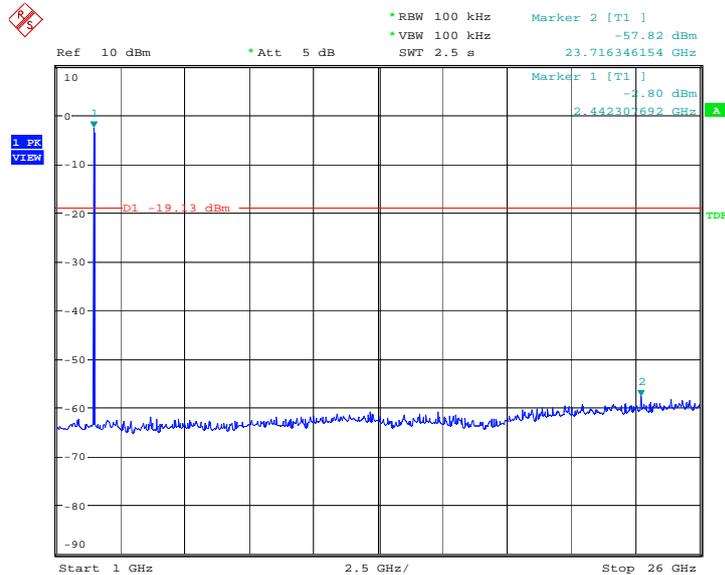
Date: 22.JUN.2010 02:13:18

Fig.28 Conducted spurious emission: $\pi/4$ DQPSK, Channel 78, 2480MHz



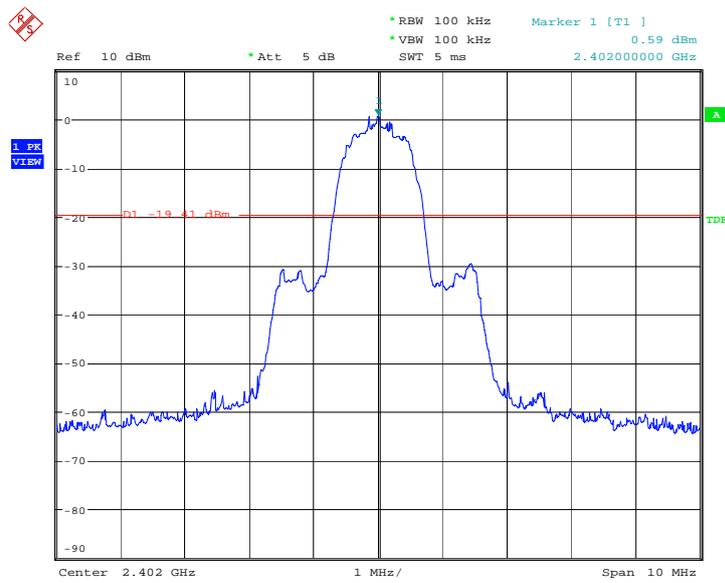
Date: 22.JUN.2010 02:13:34

Fig.29 Conducted spurious emission: $\pi/4$ DQPSK, Channel 78, 30MHz - 1GHz



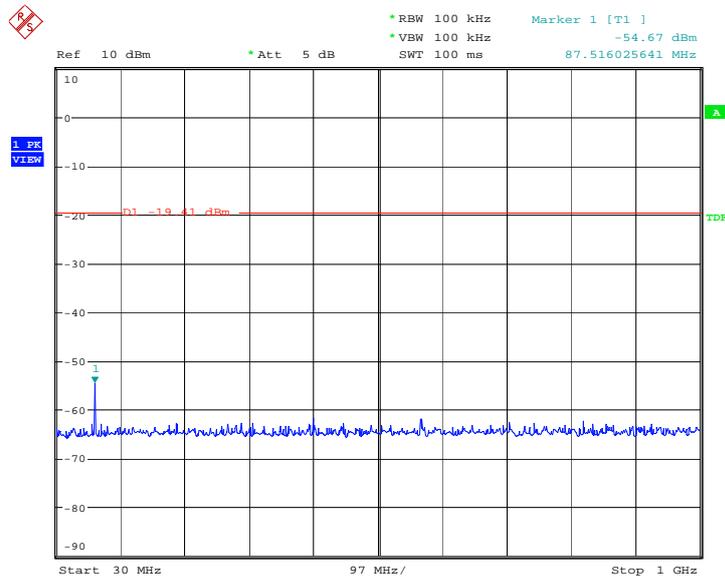
Date: 22.JUN.2010 02:14:05

Fig.30 Conducted spurious emission: $\pi/4$ DQPSK, Channel 78, 1GHz - 26GHz



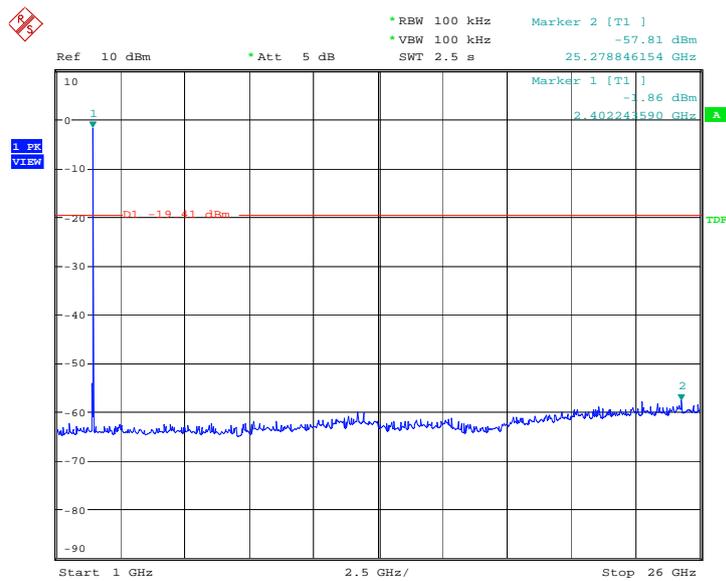
Date: 22.JUN.2010 02:31:29

Fig.31 Conducted spurious emission: 8DPSK, Channel 0,2402MHz



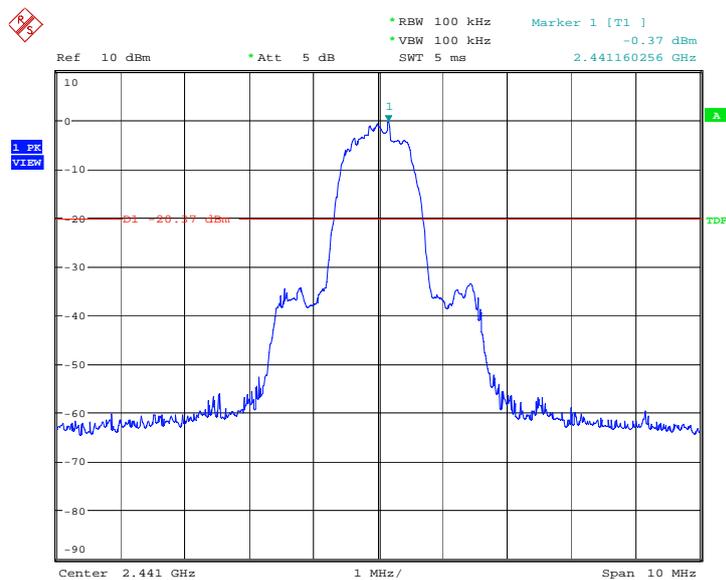
Date: 22.JUN.2010 02:31:45

Fig.32 Conducted spurious emission: 8DPSK, Channel 0, 30MHz - 1GHz



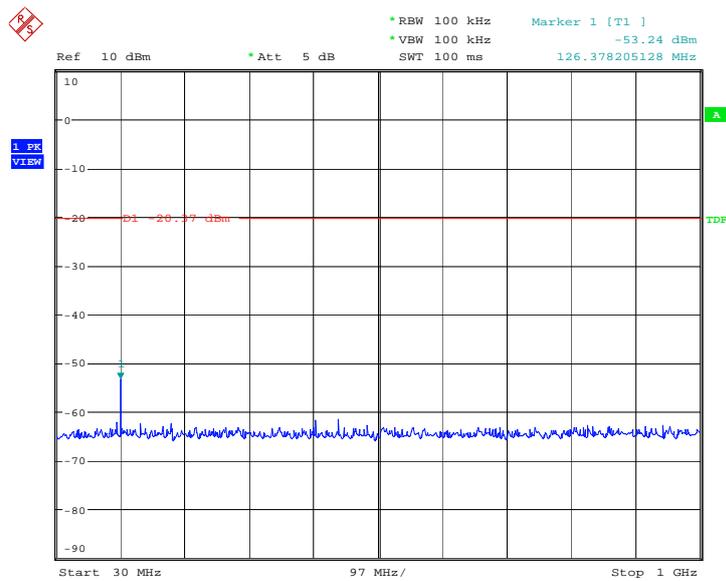
Date: 22.JUN.2010 02:32:17

Fig.33 Conducted spurious emission: 8DPSK, Channel 0,1GHz - 26GHz



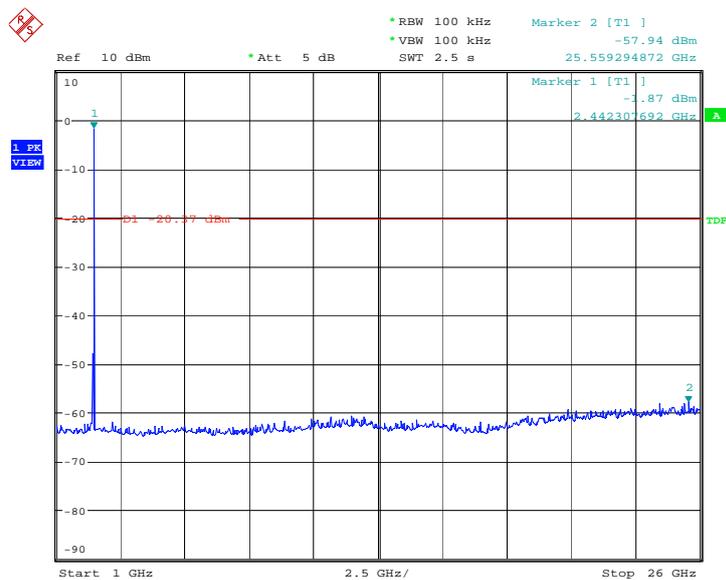
Date: 22.JUN.2010 02:32:33

Fig.34 Conducted spurious emission: 8DPSK, Channel 39, 2441MHz



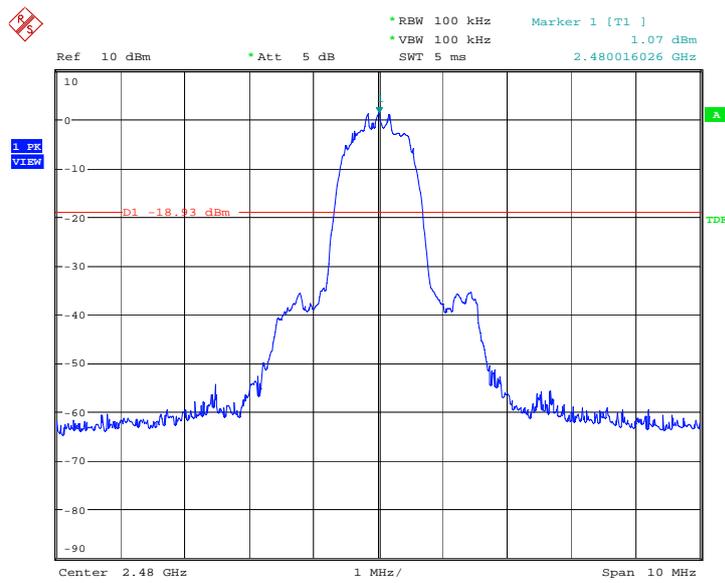
Date: 22.JUN.2010 02:32:50

Fig.35 Conducted spurious emission: 8DPSK, Channel 39, 30MHz - 1GHz



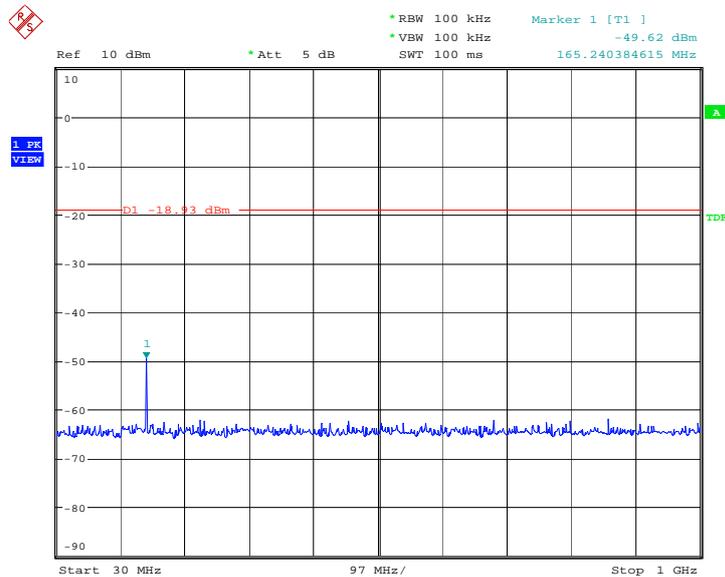
Date: 22.JUN.2010 02:33:21

Fig.36 Conducted spurious emission: 8DPSK, Channel 39, 1GHz - 26GHz



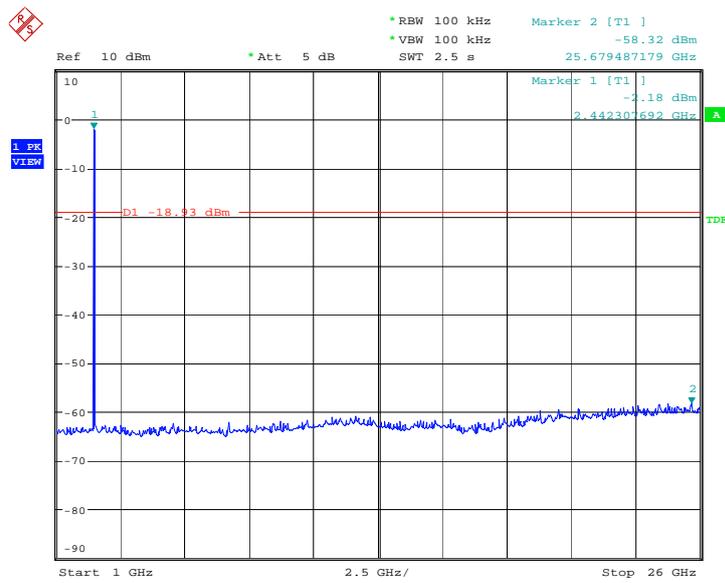
Date: 22.JUN.2010 02:33:38

Fig.37 Conducted spurious emission: 8DPSK, Channel 78, 2480MHz



Date: 22.JUN.2010 02:33:54

Fig.38 Conducted spurious emission: 8DPSK, Channel 78, 30MHz - 1GHz



Date: 22.JUN.2010 02:34:26

Fig.39 Conducted spurious emission: 8DPSK, Channel 78, 1GHz - 26GHz

A.5. 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)).

The measurement is made according to Public notice DA 00-705 and ANSI C63.4

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

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

Test Condition

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100KHz/300KHz	5
1000-4000	1MHz/1MHz	15
4000-18000	1MHz/1MHz	40
18000-26500	1MHz/1MHz	20

Measurement Results:

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable los.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{Mea}} + A_{\text{Rpl}}$$

For GFSK

Channel	Frequency Range	Test Results	Conclusion
Ch 0 2402 MHz	30 MHz ~ 1 GHz	Fig.40	P
	1 GHz ~ 4 GHz	Fig.41	P
	4 GHz ~ 18 GHz	Fig.42	P
Ch 39 2441 MHz	30 MHz ~ 1 GHz	Fig.43	P
	1 GHz ~ 4 GHz	Fig.44	P
	4 GHz ~ 18 GHz	Fig.45	P

Ch 78 2480 MHz	30 MHz ~ 1 GHz	Fig.46	P
	1 GHz ~ 4 GHz	Fig.47	P
	4 GHz ~ 18 GHz	Fig.48	P
Power	2.45GHz~2.5GHz	Fig.49	P
For all channels	18 GHz ~ 26 GHz	Fig.50	P

Forπ/4 DQPSK

Channel	Frequency Range	Test Results	Conclusion
Ch 0 2402 MHz	30 MHz ~ 1 GHz	Fig.51	P
	1 GHz ~ 4 GHz	Fig.52	P
	4 GHz ~ 18 GHz	Fig.53	P
Ch 39 2441 MHz	30 MHz ~ 1 GHz	Fig.54	P
	1 GHz ~ 4 GHz	Fig.55	P
	4 GHz ~ 18 GHz	Fig.56	P
Ch 78 2480 MHz	30 MHz ~ 1 GHz	Fig.57	P
	1 GHz ~ 4 GHz	Fig.58	P
	4 GHz ~ 18 GHz	Fig.59	P
Power	2.45GHz~2.5GHz	Fig.60	P
For all channels	18 GHz ~ 26 GHz	Fig.61	P

For 8DPSK

Channel	Frequency Range	Test Results	Conclusion
Ch 0 2402 MHz	30 MHz ~ 1 GHz	Fig.62	P
	1 GHz ~ 4 GHz	Fig.63	P
	4 GHz ~ 18 GHz	Fig.64	P
Ch 39 2441 MHz	30 MHz ~ 1 GHz	Fig.65	P
	1 GHz ~ 4 GHz	Fig.66	P
	4 GHz ~ 18 GHz	Fig.67	P
Ch 78 2480 MHz	30 MHz ~ 1 GHz	Fig.68	P
	1 GHz ~ 4 GHz	Fig.69	P
	4 GHz ~ 18 GHz	Fig.70	P
Power	2.45GHz~2.5GHz	Fig.71	P
For all channels	18 GHz ~ 26 GHz	Fig.72	P

GFSK Ch 0

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
3795.591	52.28	14.1	38.18	VERTICAL
3472.946	51.48	12.2	39.28	VERTICAL
3793.587	51.3	14.1	37.2	VERTICAL
3899.8	51.22	14.4	36.82	VERTICAL
3545.09	51.16	14.3	36.86	VERTICAL
3511.022	51.12	14.4	36.72	VERTICAL

GFSK Ch 39

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
3867.735	51.57	14.2	37.37	VERTICAL
2444.89	51.53	8.6	42.93	VERTICAL
3517.034	51.32	14.4	36.92	VERTICAL
3983.968	51.29	14.6	36.69	VERTICAL
3452.906	51.19	11.8	39.39	VERTICAL
3729.459	51.03	14.4	36.63	VERTICAL

GFSK Ch 78

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
3709.419	51.48	14.3	37.18	HORIZONTAL
3885.772	51.46	14.4	37.06	VERTICAL
3819.639	51.39	14.1	37.29	VERTICAL
3494.99	51.3	12.3	39	HORIZONTAL
3478.958	51.23	12.2	39.03	VERTICAL
3531.062	51.16	14.3	36.86	HORIZONTAL

$\pi/4$ DQPSK Ch 0

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
3803.607	51.73	14.2	37.53	VERTICAL
3943.888	51.3	14.1	37.2	VERTICAL
3899.8	51.28	14.4	36.88	VERTICAL
3561.122	51.13	14.2	36.93	VERTICAL
3695.391	51.07	14.2	36.87	VERTICAL
3967.936	51.01	14.4	36.61	VERTICAL

$\pi/4$ DQPSK Ch 39

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
3509.018	51.8	14.5	37.3	VERTICAL
3625.251	51.3	14	37.3	VERTICAL
3897.796	51.3	14.4	36.9	VERTICAL
3713.427	51.13	14.5	36.63	VERTICAL
3693.387	51.1	14.2	36.9	VERTICAL
3877.756	51.04	14.4	36.64	VERTICAL

$\pi/4$ DQPSK Ch 78

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
3893.788	51.49	14.4	37.09	HORIZONTAL
3505.01	51.26	14.5	36.76	VERTICAL
3985.972	51.26	14.6	36.66	VERTICAL
3731.463	51.25	14.4	36.85	VERTICAL
3482.966	51.07	12.2	38.87	HORIZONTAL
3699.399	51.03	14.2	36.83	VERTICAL

8DPSK Ch 0

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
3448.898	51.56	11.9	39.66	VERTICAL
3885.772	51.33	14.4	36.93	VERTICAL
3466.934	51.29	11.9	39.39	HORIZONTAL
3513.026	51.15	14.4	36.75	HORIZONTAL
3675.351	51.14	14.2	36.94	HORIZONTAL
2478.958	51.09	9.1	41.99	HORIZONTAL

8DPSK Ch 39

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
2400.802	52.5	8.8	43.7	HORIZONTAL
2402.806	51.89	8.8	43.09	HORIZONTAL
3490.982	51.46	12.3	39.16	VERTICAL
3969.94	51.29	14.4	36.89	VERTICAL
3535.07	51.21	14.3	36.91	VERTICAL
3865.731	51.18	14.2	36.98	VERTICAL

8DPSK Ch 78

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
3547.094	52.04	14.3	37.74	VERTICAL
3707.415	51.4	14.3	37.1	VERTICAL
3484.97	51.28	12.2	39.08	VERTICAL
3829.659	51.27	14.1	37.17	VERTICAL
3893.788	51.18	14.4	36.78	VERTICAL
3639.279	50.99	14.1	36.89	VERTICAL

Conclusion: PASS

Test graphs as below:

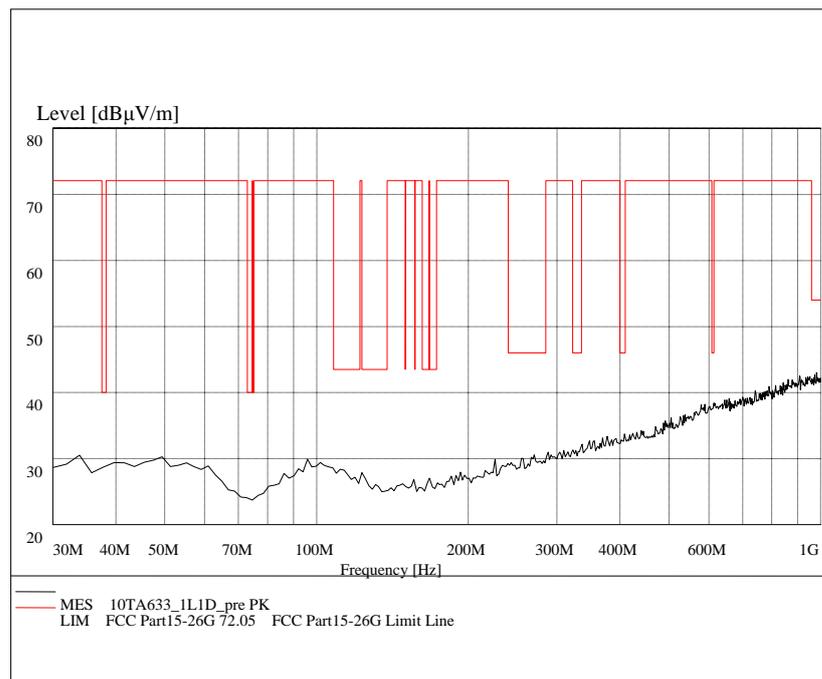


Fig.40 Radiated emission: GFSK, Channel 0, 30 MHz - 1 GHz

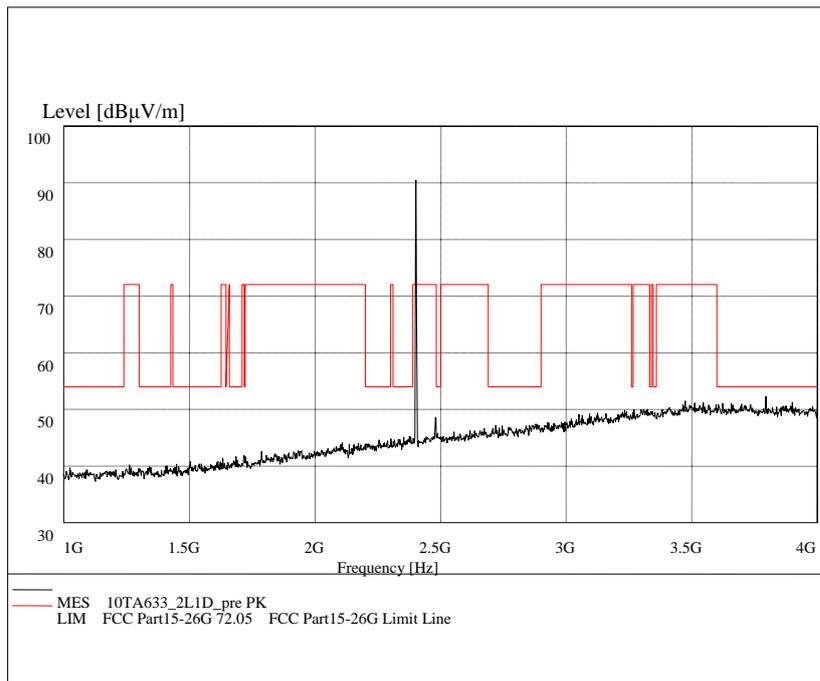


Fig.41 Radiated emission: GFSK, Channel 0, 1 GHz - 4 GHz

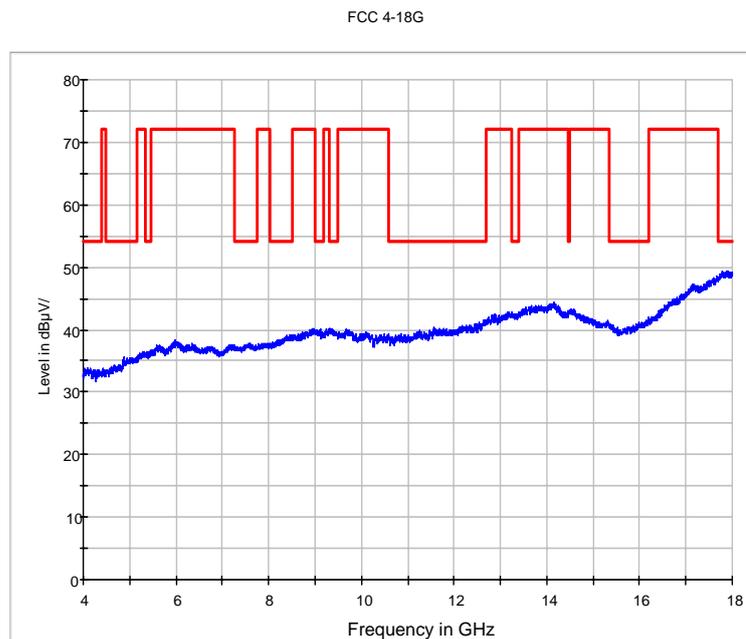


Fig.42 Radiated emission: GFSK, Channel 0, 4 GHz - 18 GHz

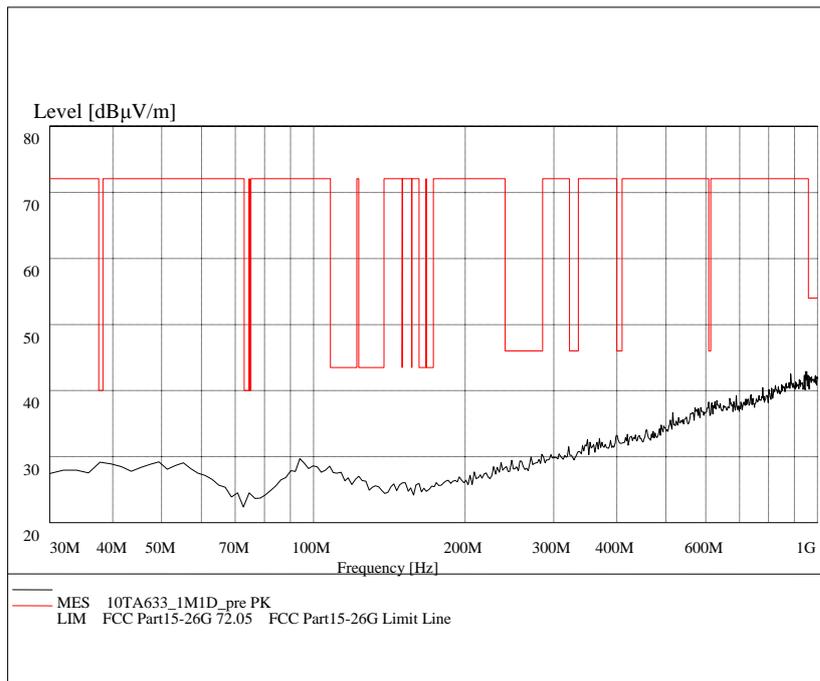


Fig.43 Radiated emission: GFSK, Channel 39, 30 MHz - 1 GHz

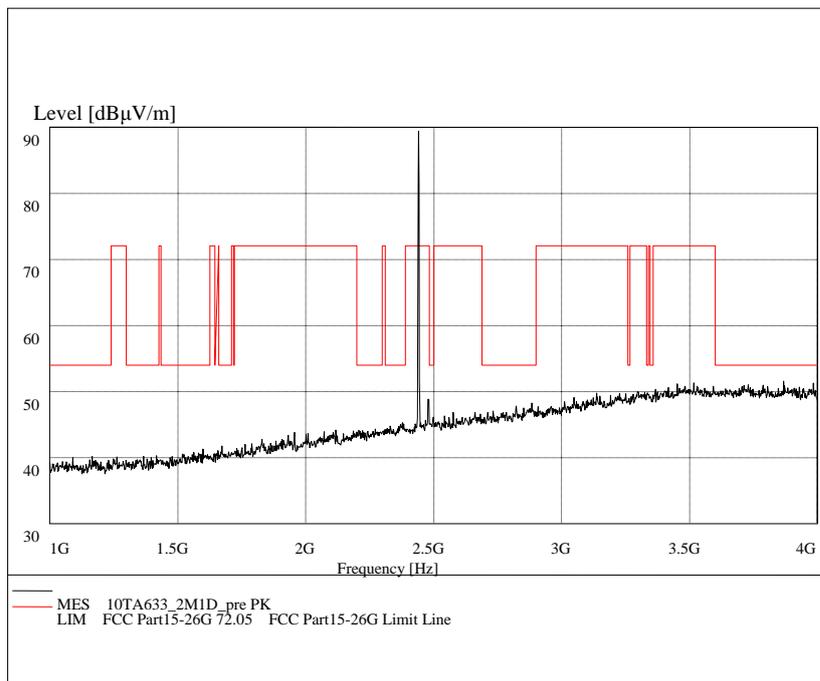


Fig.44 Radiated emission: GFSK, Channel 39, 1 GHz - 4 GHz

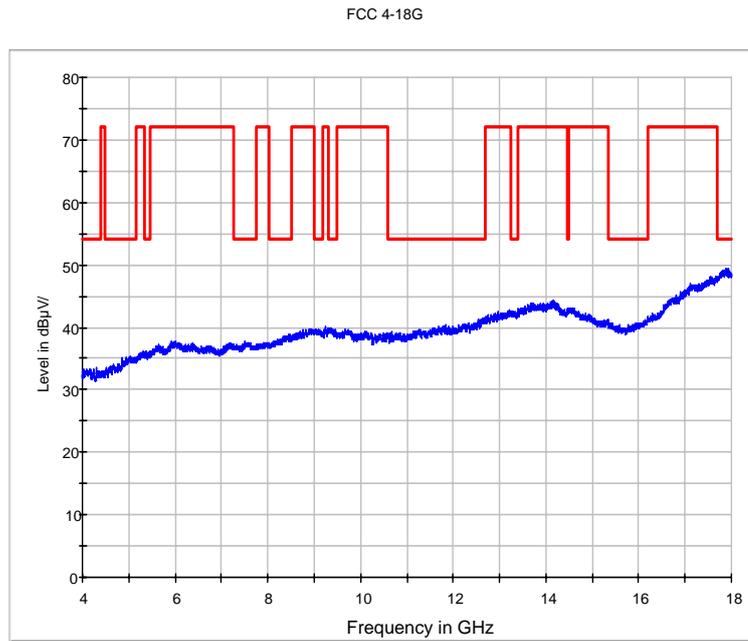


Fig.45 Radiated emission: GFSK, Channel 39, 4 GHz - 18 GHz

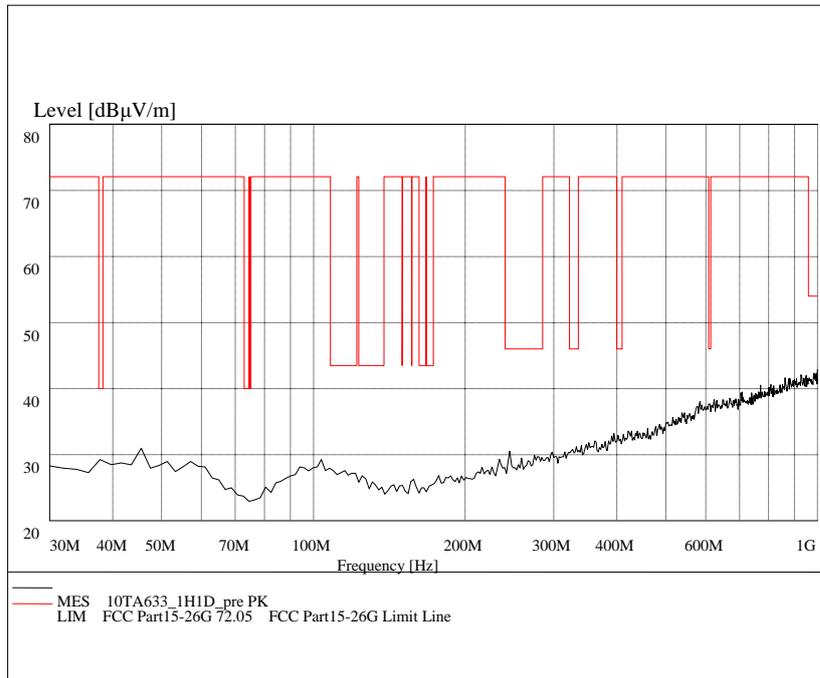


Fig.46 Radiated emission: GFSK, Channel 78, 30 MHz - 1 GHz

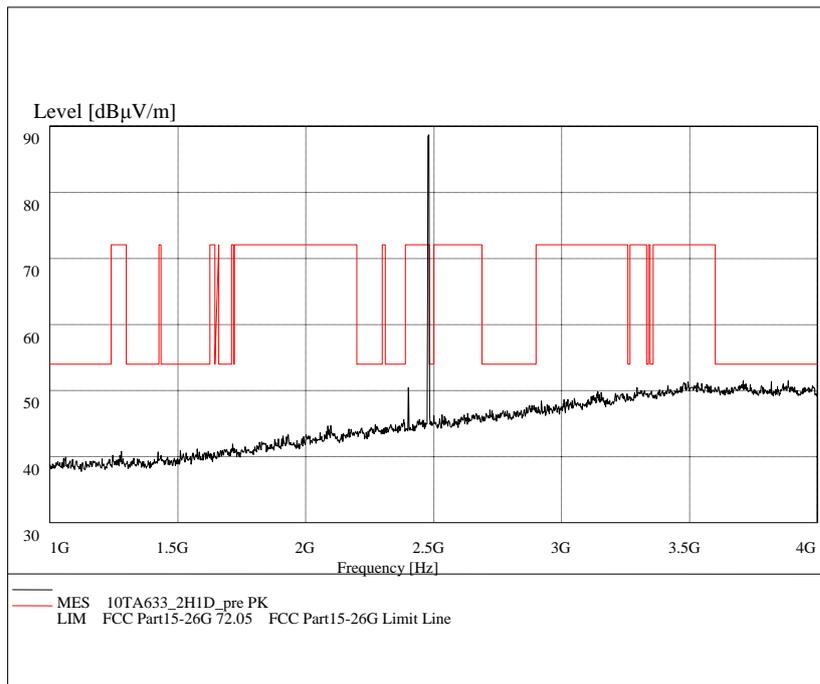


Fig.47 Radiated emission: GFSK, Channel 78, 1 GHz - 4 GHz

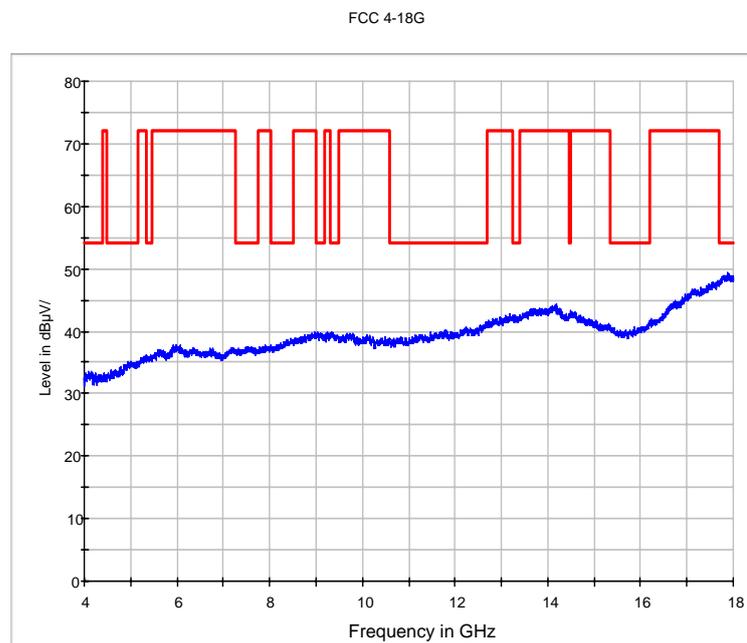


Fig.48 Radiated emission: GFSK, Channel 78, 4 GHz - 18 GHz

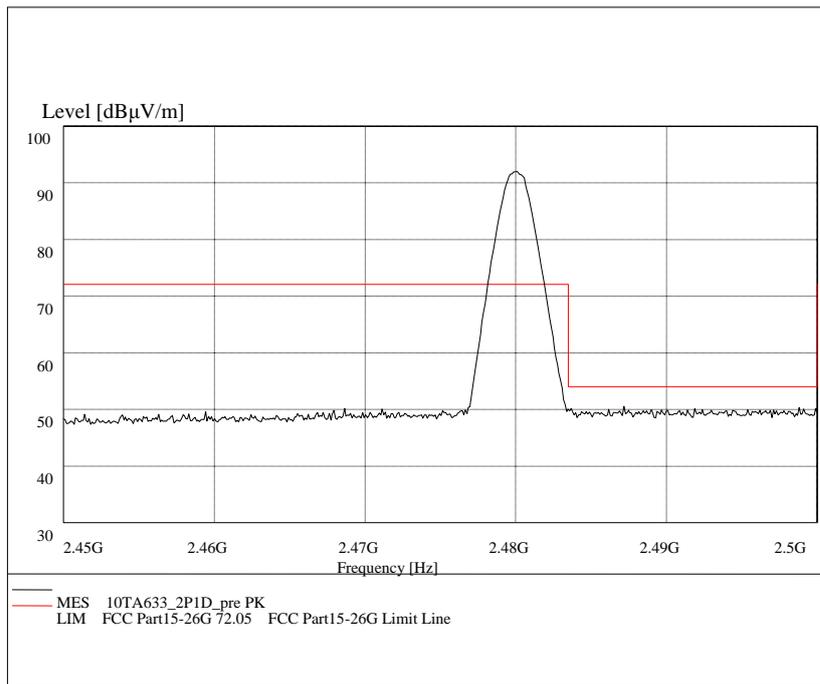


Fig.49 Radiated emission (Power): GFSK, 2.45GHz - 2.5GHz

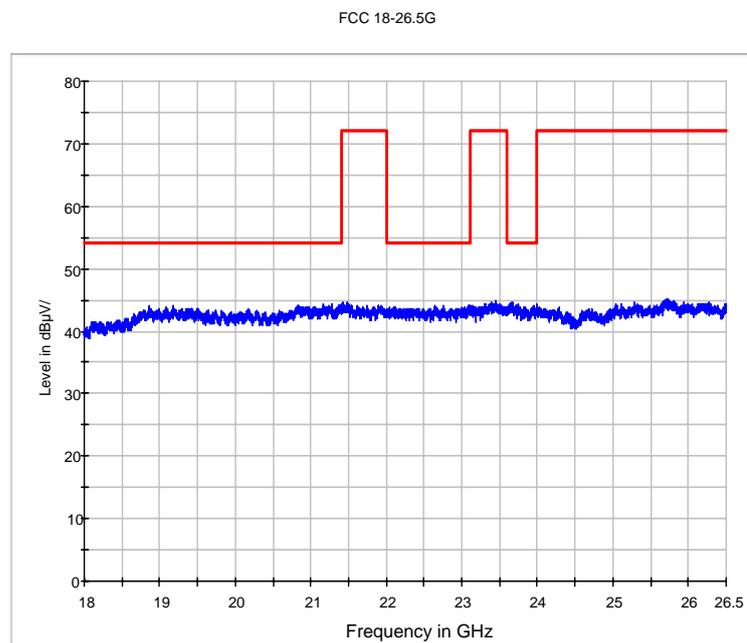


Fig.50 Radiated emission: GFSK, 18 GHz - 26 GHz

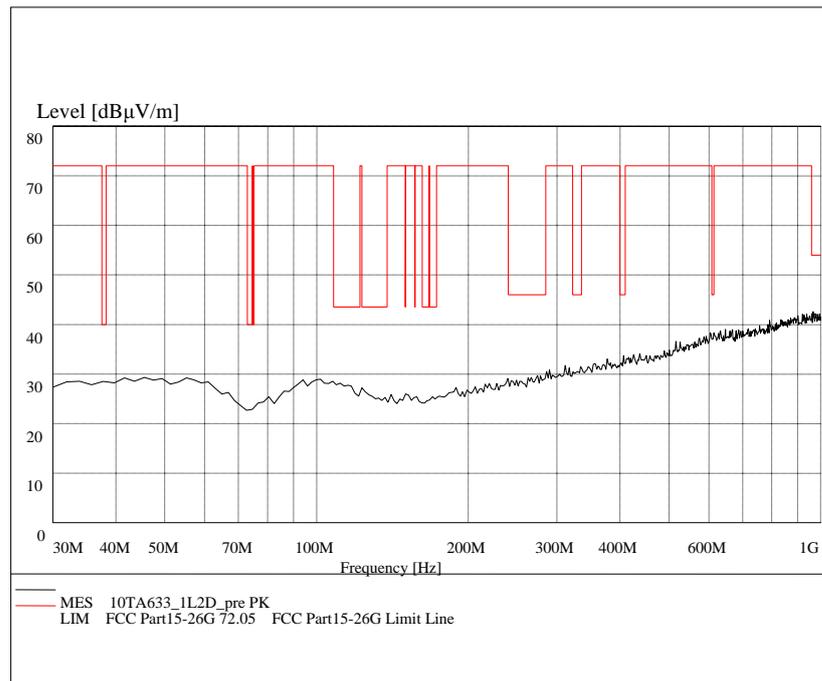


Fig.51 Radiated emission: $\pi/4$ DQPSK, Channel 0, 30 MHz - 1 GHz

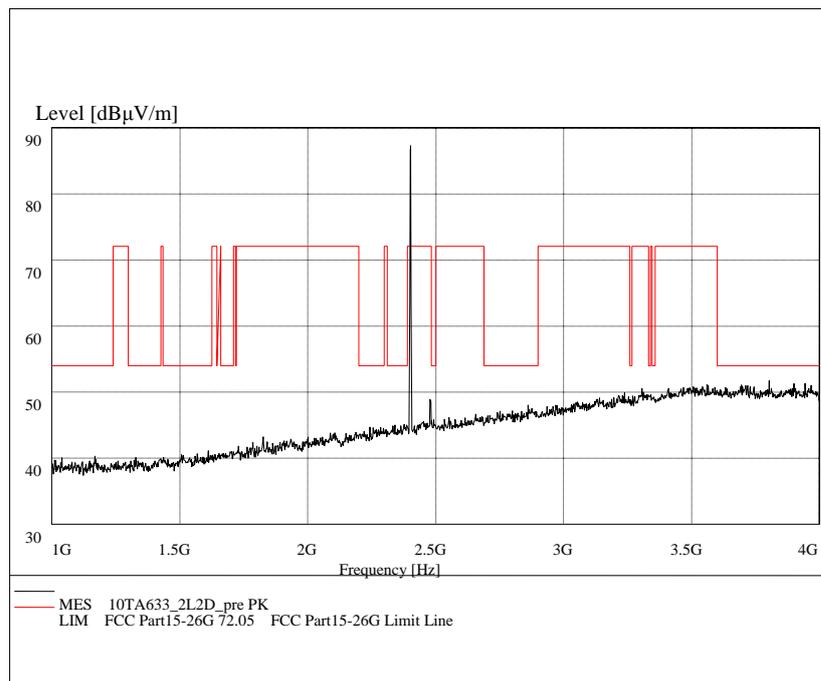


Fig.52 Radiated emission: $\pi/4$ DQPSK, Channel 0, 1 GHz - 4 GHz

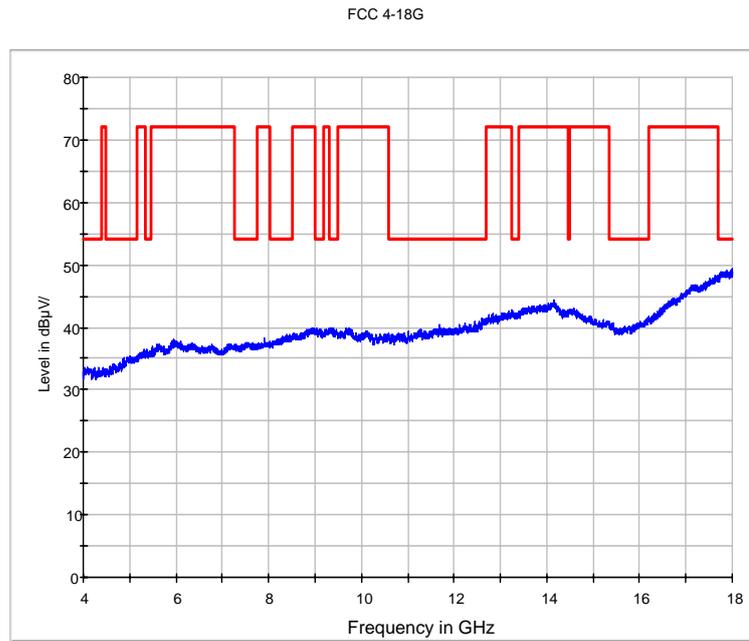


Fig.53 Radiated emission: $\pi/4$ DQPSK, Channel 0, 4 GHz - 18 GHz

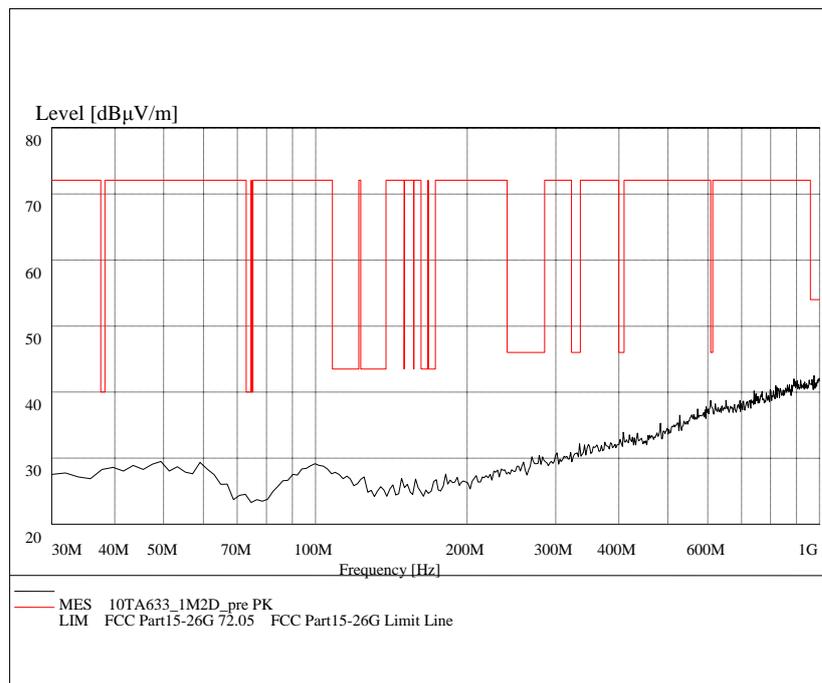


Fig.54 Radiated emission: $\pi/4$ DQPSK, Channel 39, 30 MHz - 1 GHz

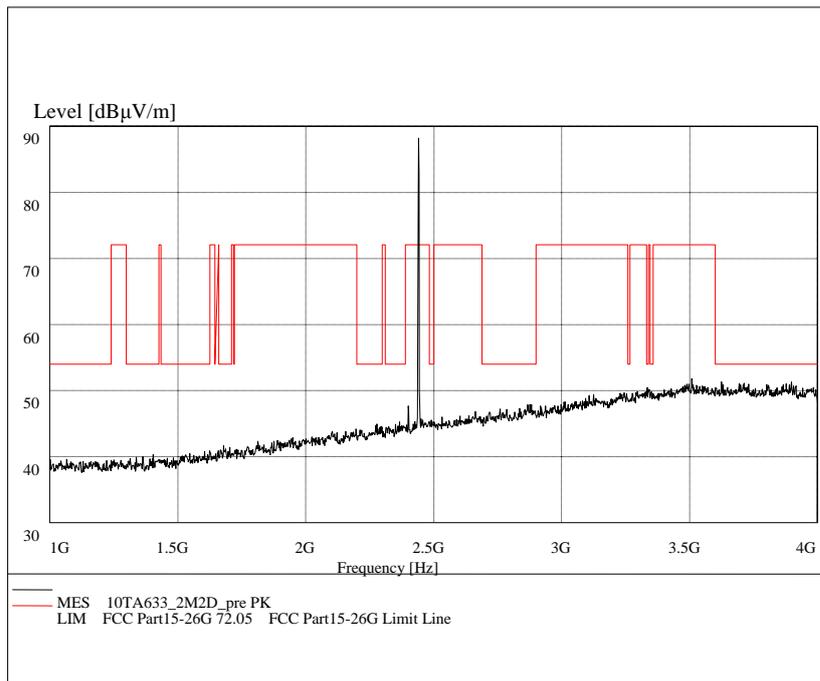


Fig.55 Radiated emission: $\pi/4$ DQPSK, Channel 39, 1 GHz - 4 GHz

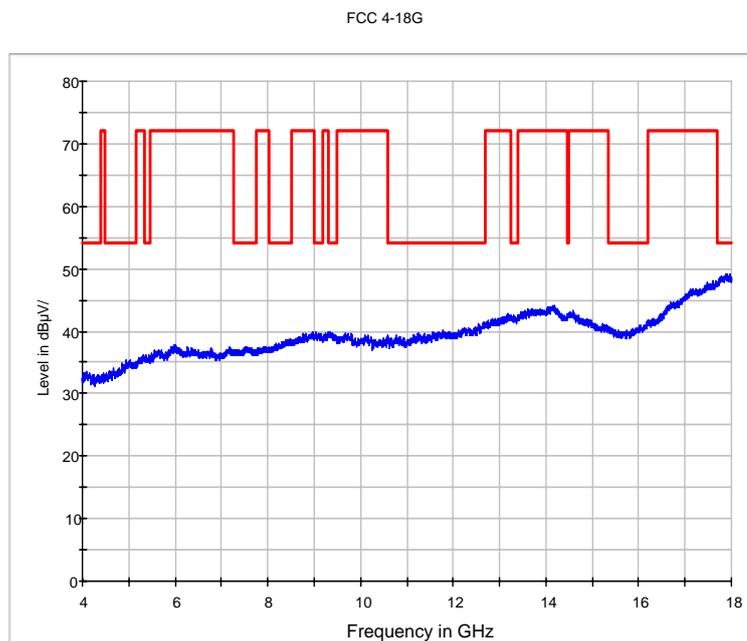


Fig.56 Radiated emission: $\pi/4$ DQPSK, Channel 39, 4 GHz - 18 GHz

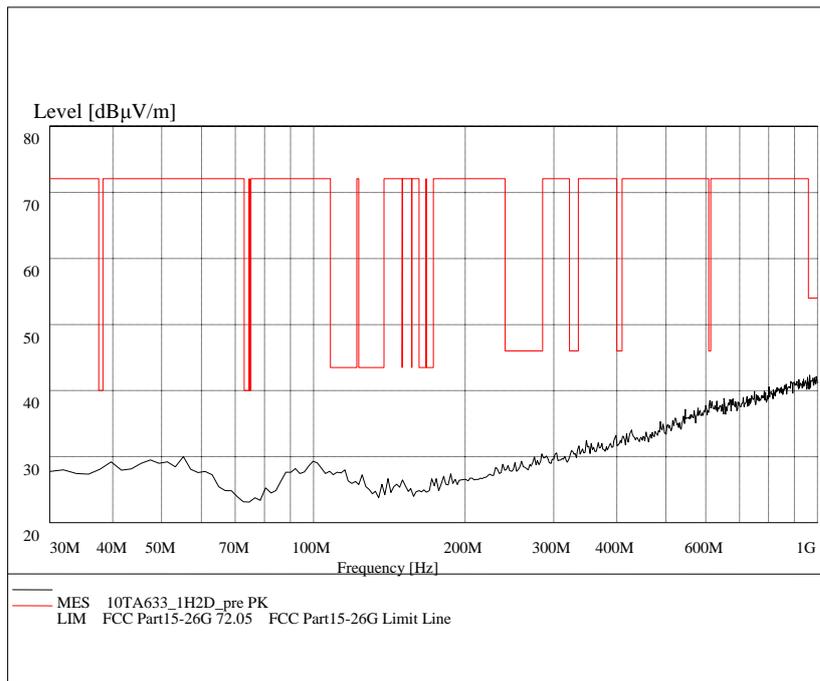


Fig.57 Radiated emission: $\pi/4$ DQPSK, Channel 78, 30 MHz - 1 GHz

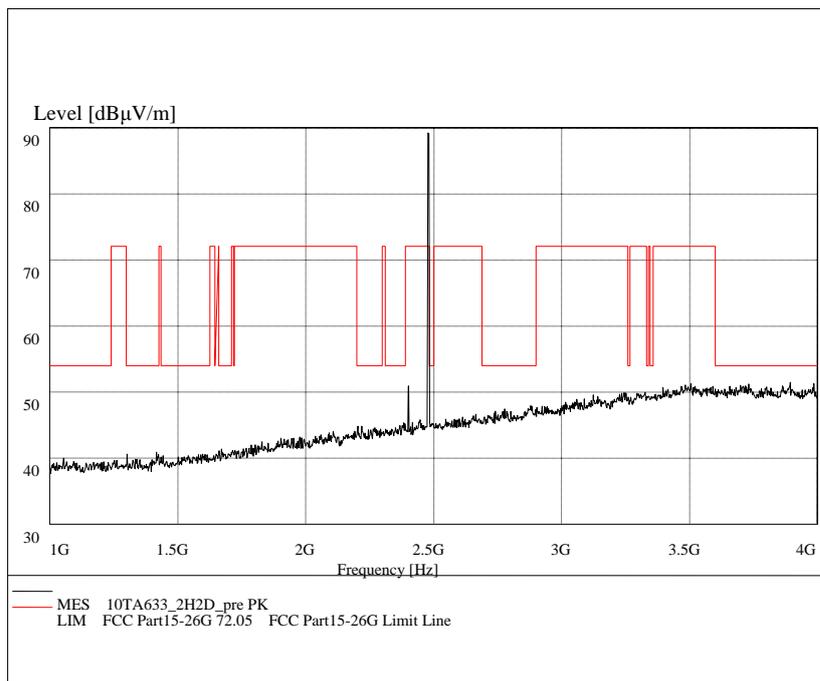


Fig.58 Radiated emission: $\pi/4$ DQPSK, Channel 78, 1 GHz - 4 GHz

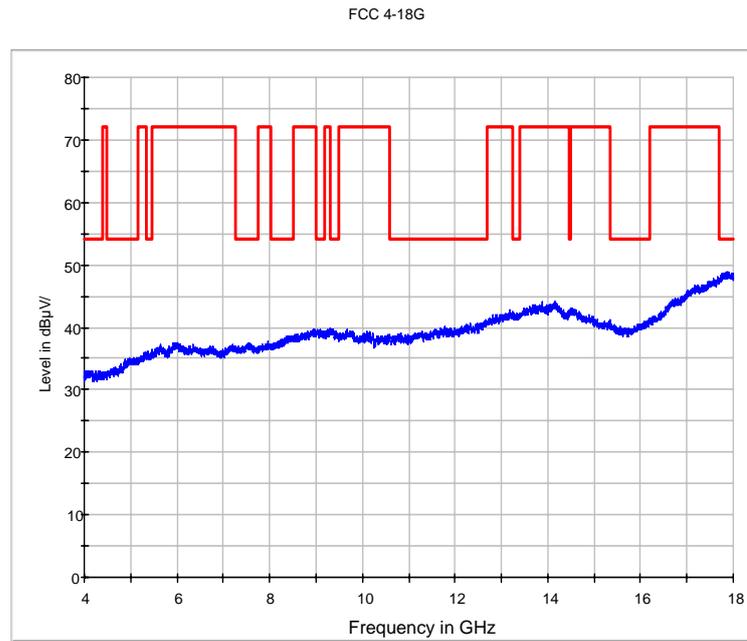


Fig.59 Radiated emission: $\pi/4$ DQPSK, Channel 78, 4 GHz - 18 GHz

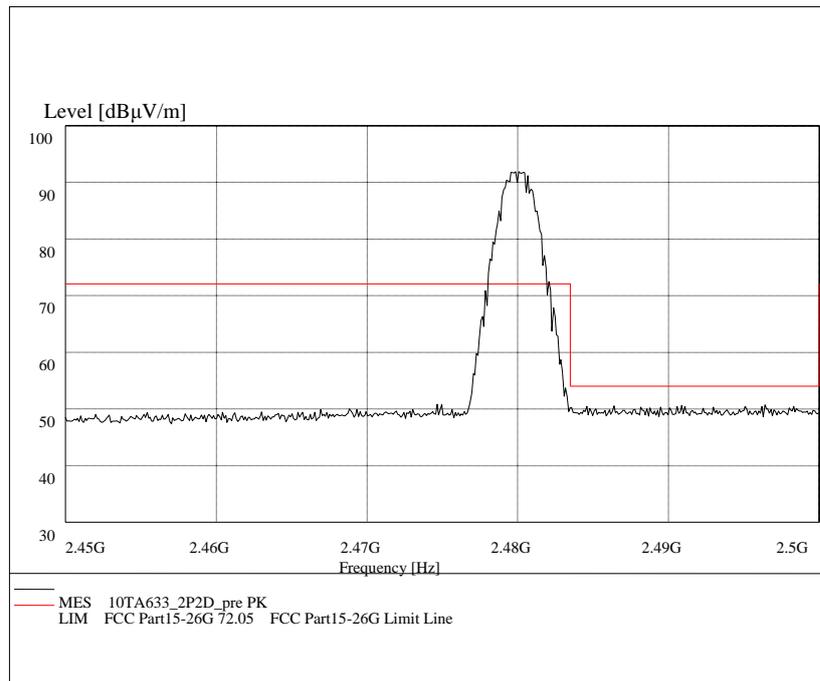


Fig.60 Radiated emission (Power): $\pi/4$ DQPSK, 2.45GHz - 2.5GHz

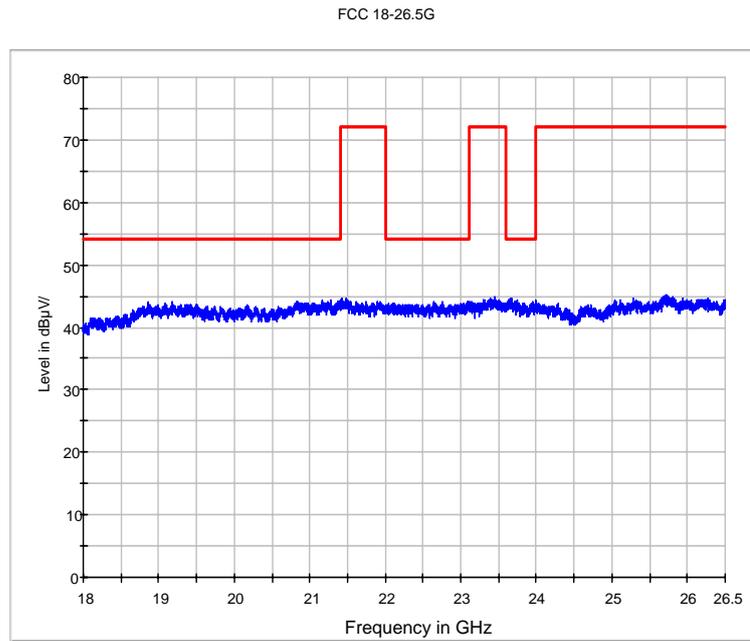


Fig.61 Radiated emission: $\pi/4$ DQPSK, 18 GHz - 26 GHz

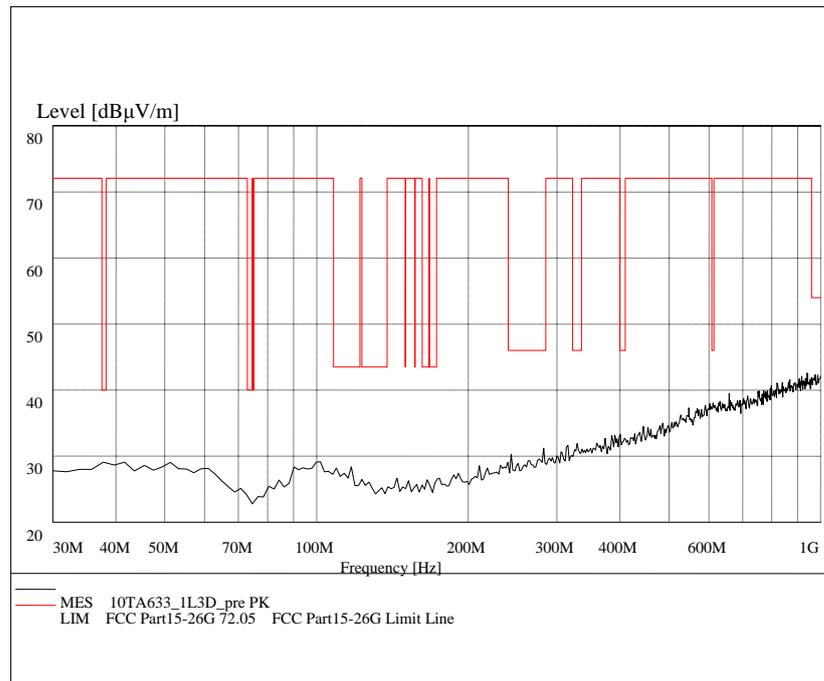


Fig.62 Radiated emission: 8DPSK, Channel 0, 30 MHz - 1 GHz

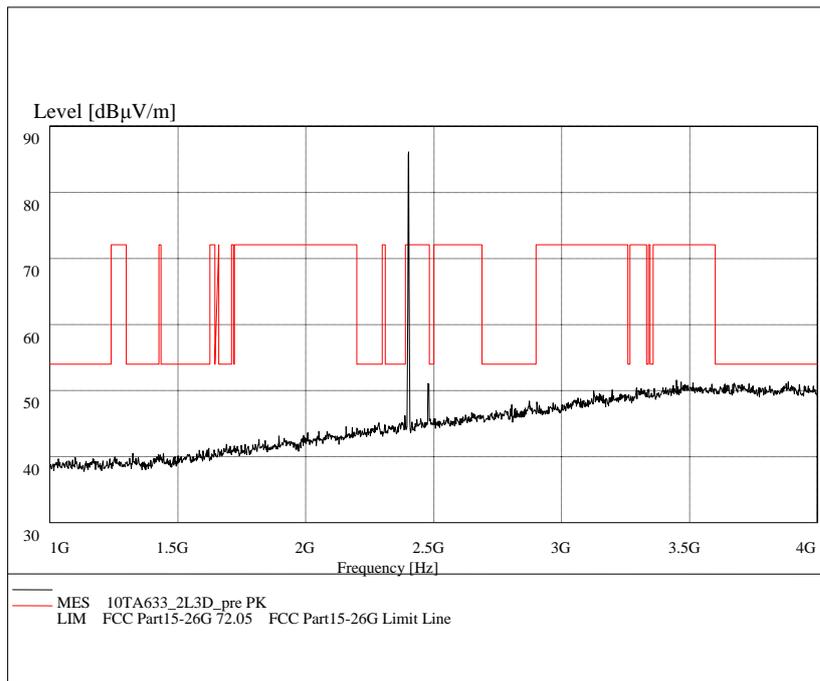


Fig.63 Radiated emission: 8DPSK, Channel 0, 1 GHz - 4 GHz

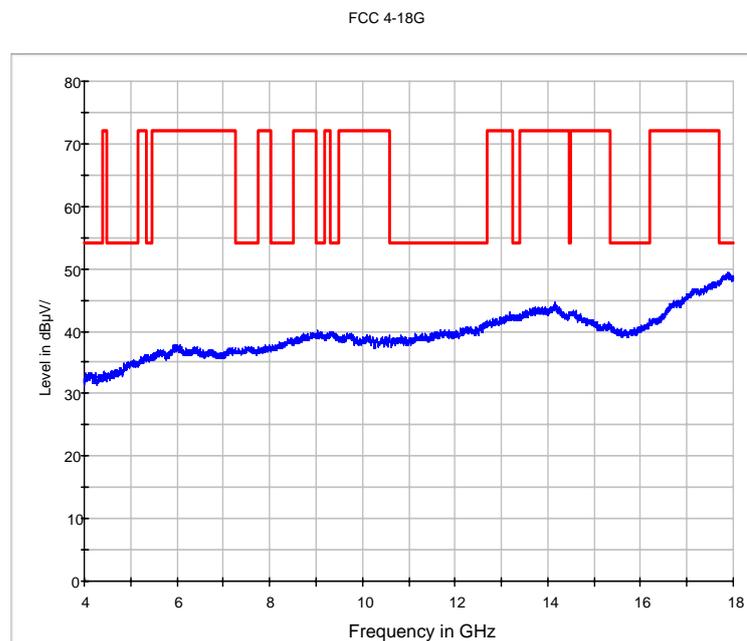


Fig.64 Radiated emission: 8DPSK, Channel 0, 4 GHz - 18 GHz

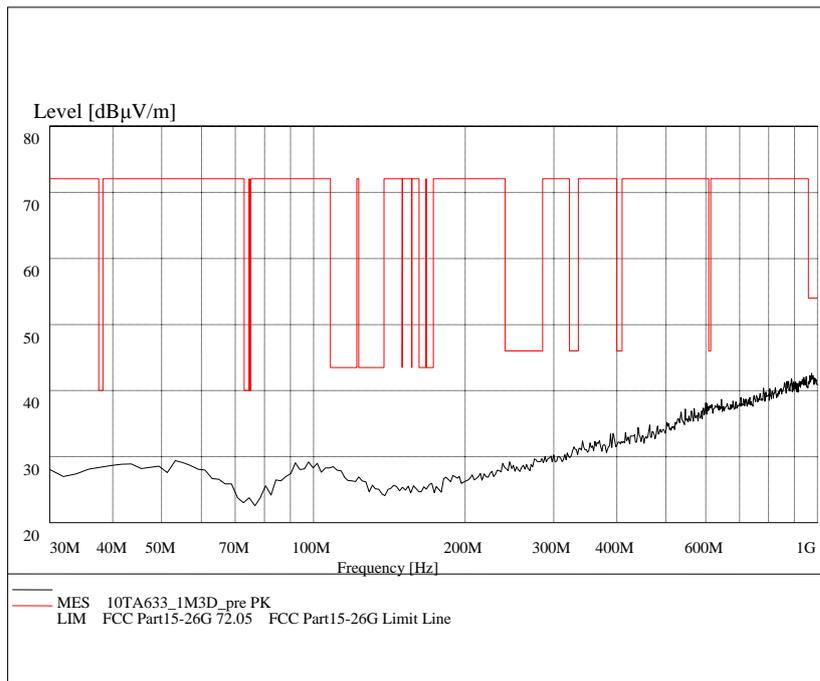


Fig.65 Radiated emission: 8DPSK, Channel 39, 30 MHz - 1 GHz

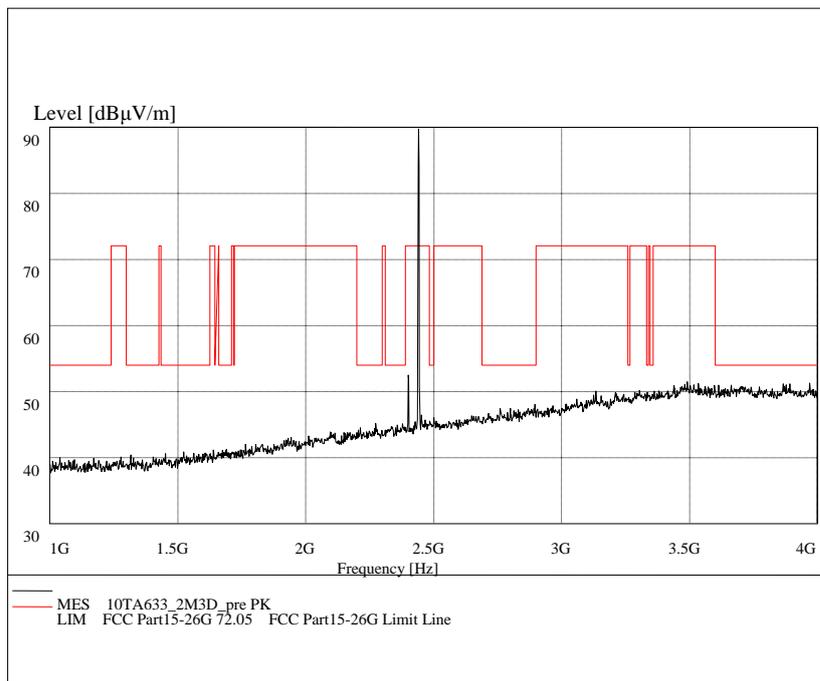


Fig.66 Radiated emission: 8DPSK, Channel 39, 1 GHz - 4 GHz

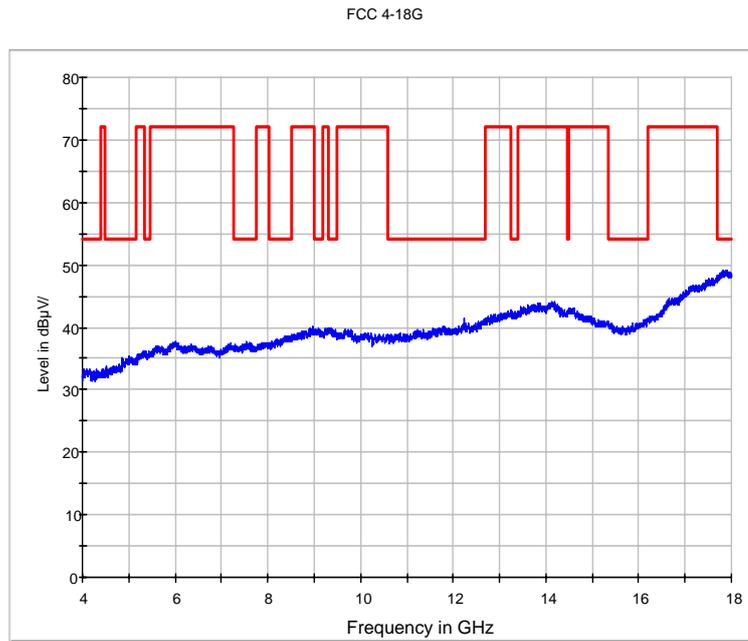


Fig.67 Radiated emission: 8DPSK, Channel 39, 4 GHz - 18 GHz

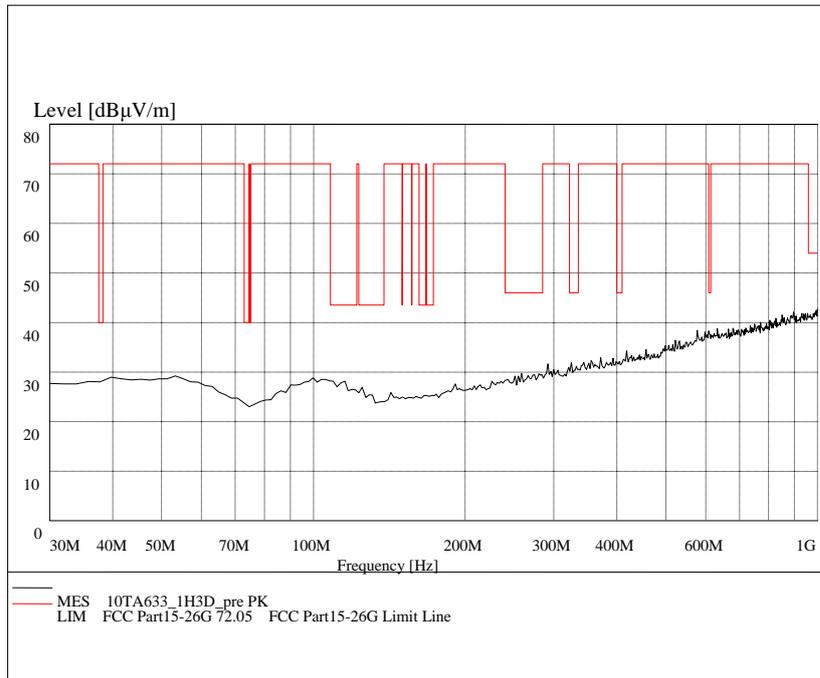


Fig.68 Radiated emission: 8DPSK, Channel 78, 30 MHz - 1 GHz

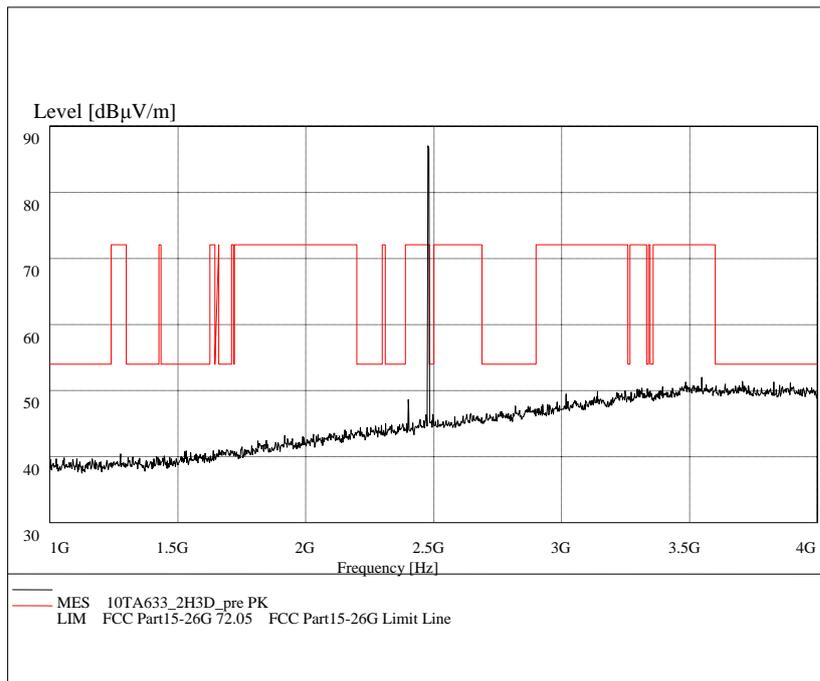


Fig.69 Radiated emission: 8DPSK, Channel 78, 1 GHz - 4 GHz

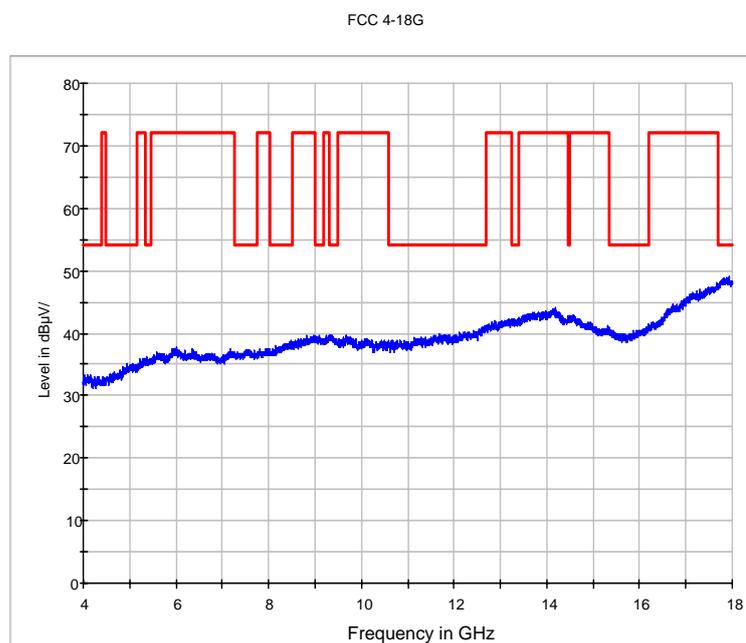


Fig.70 Radiated emission: 8DPSK, Channel 78, 4 GHz - 18 GHz

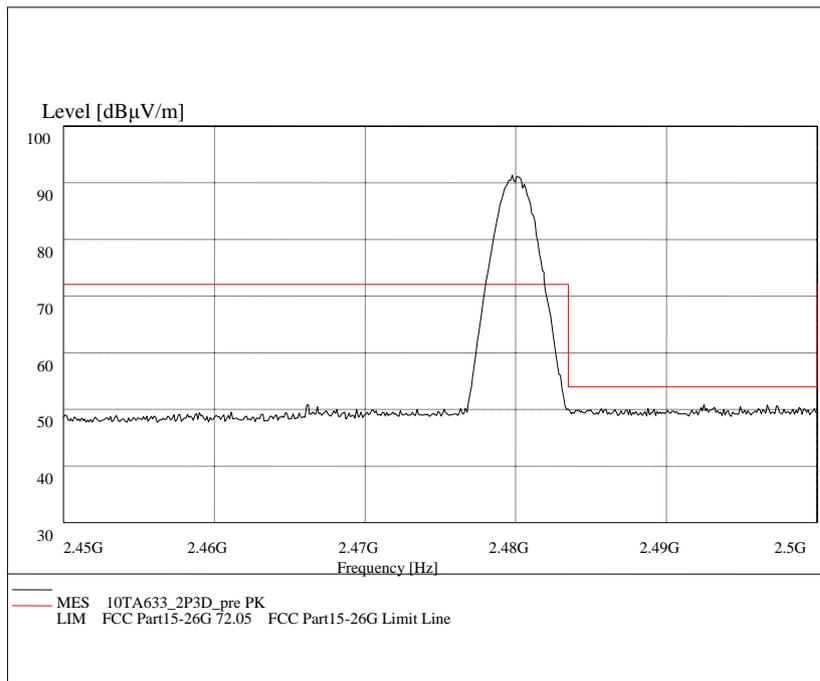


Fig.71 Radiated emission (Power): 8DPSK, 2.45GHz - 2.5GHz

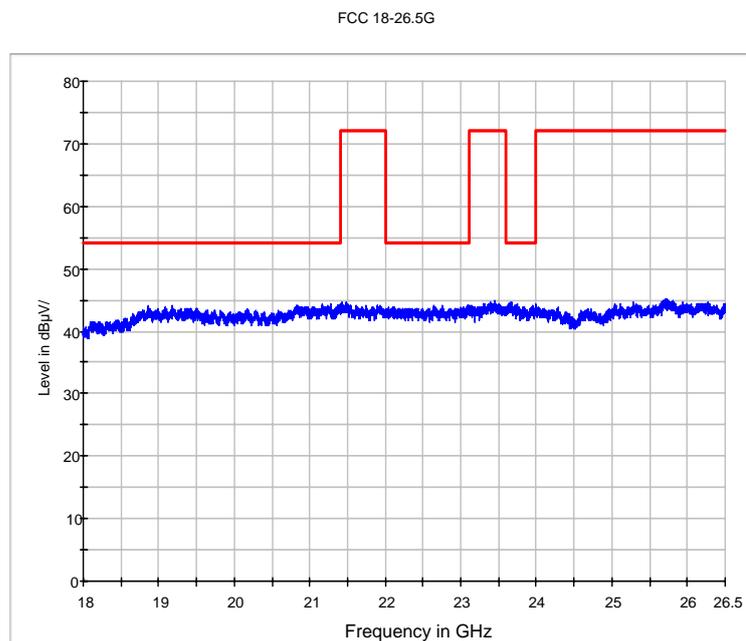


Fig.72 Radiated emission: 8DPSK, 18 GHz - 26 GHz

A.6. Time of Occupancy (Dwell Time)

Measurement Limit:

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

The measurement is made according to Public notice DA 00-705 and ANSI C63.4

Measurement Result:

For GFSK

Channel	Packet	Dwell Time (ms)		Conclusion
39	DH1	Fig.73	115.75	P
		Fig.74		
	DH3	Fig.75	198.24	P
		Fig.76		
	DH5	Fig.77	201.79	P
		Fig.78		

For $\pi/4$ DQPSK

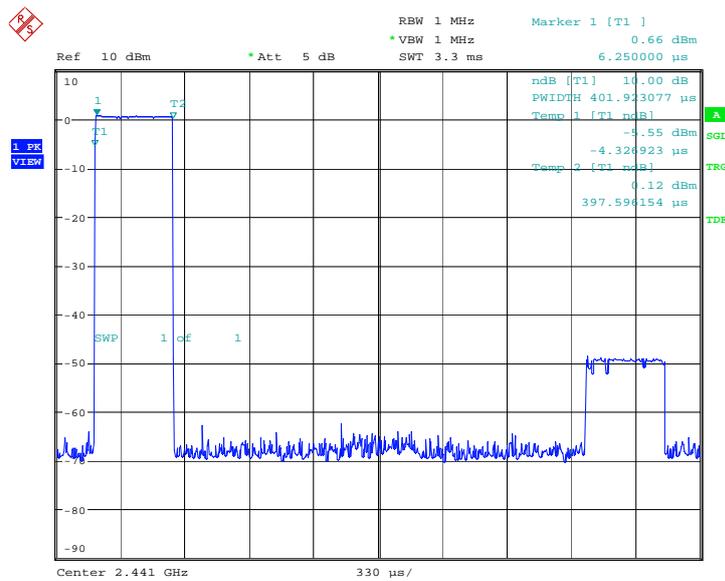
Channel	Packet	Dwell Time (ms)		Conclusion
39	DH1	Fig.79	115.65	P
		Fig.80		
	DH3	Fig.81	186.58	P
		Fig.82		
	DH5	Fig.83	216.81	P
		Fig.84		

For 8DPSK

Channel	Packet	Dwell Time (ms)		Conclusion
39	DH1	Fig.85	118.91	P
		Fig.86		
	DH3	Fig.87	188.84	P
		Fig.88		
	DH5	Fig.89	202.16	P
		Fig.90		

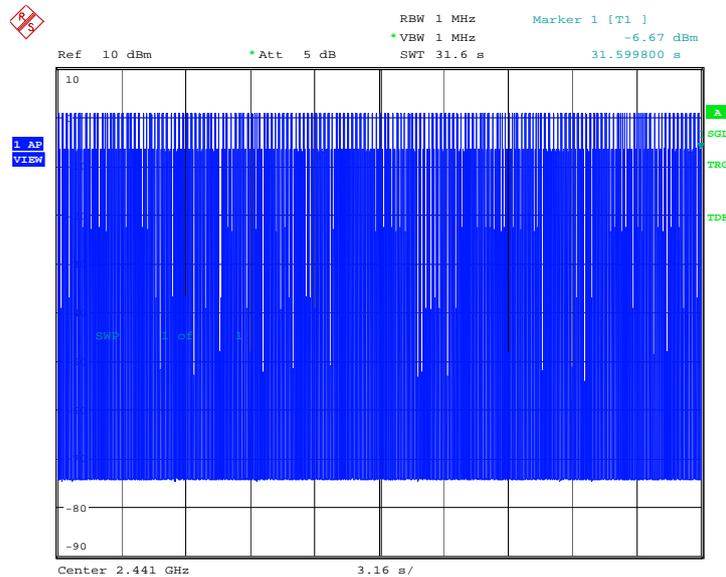
Conclusion: PASS

Test graphs as below:



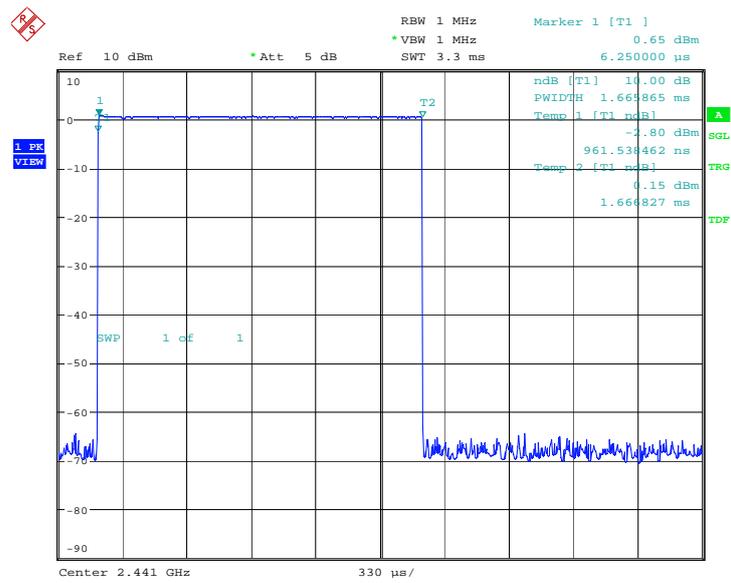
Date: 22.JUN.2010 01:55:08

Fig.73 Time of occupancy (Dwell Time): Channel 39, Packet DH1



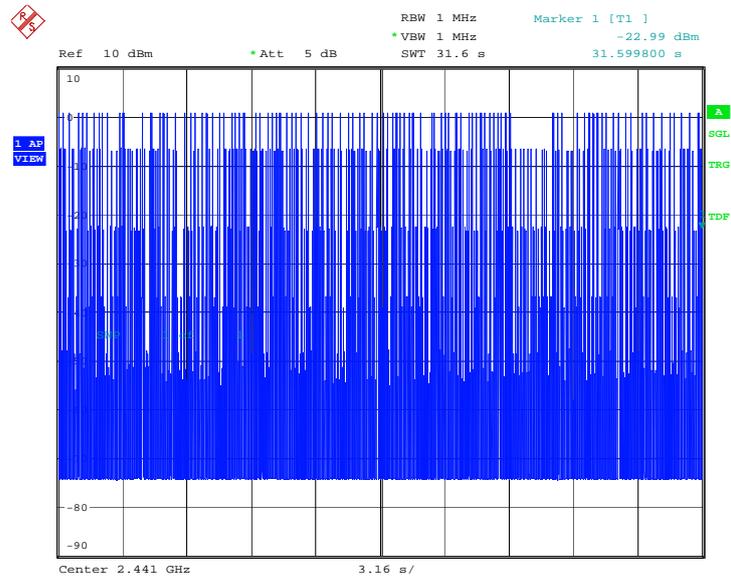
Date: 22.JUN.2010 01:54:57

Fig.74 Number of Transmissions Measurement:Channel 39,Packet DH1



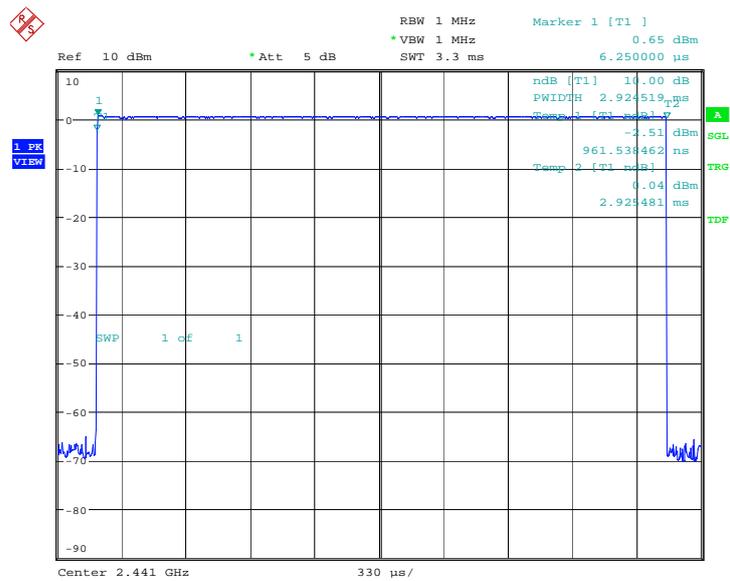
Date: 22.JUN.2010 01:56:28

Fig.75 Time of occupancy (Dwell Time): Channel 39, Packet DH3



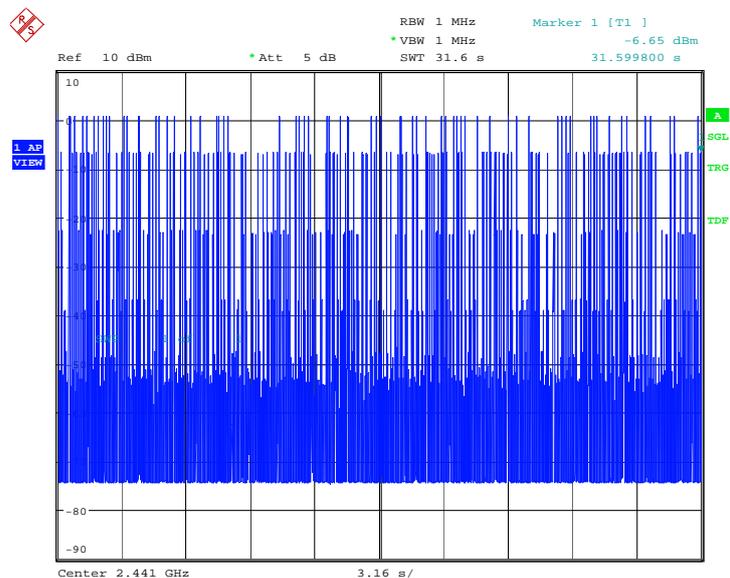
Date: 22.JUN.2010 01:56:17

Fig.76 Number of Transmissions Measurement:Channel 39,Packet DH3



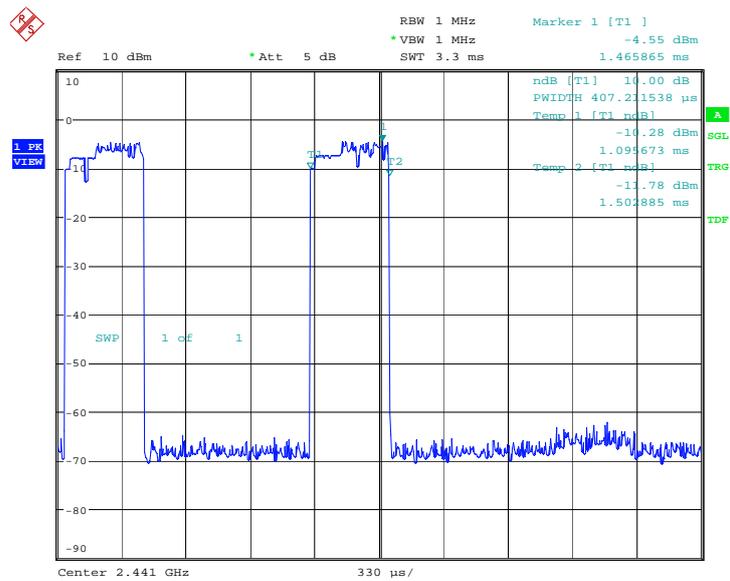
Date: 22.JUN.2010 01:57:46

Fig.77 Time of occupancy (Dwell Time): Channel 39, Packet DH5



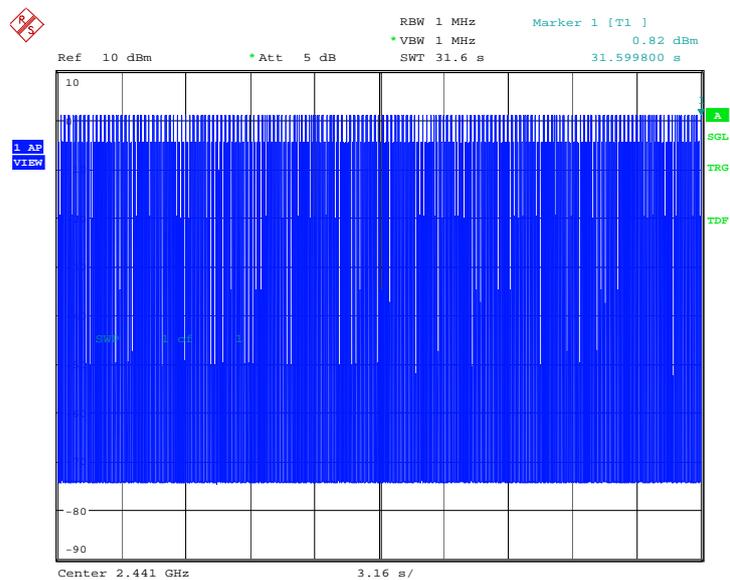
Date: 22.JUN.2010 01:57:35

Fig.78 Number of Transmissions Measurement:Channel 39,Packet DH5



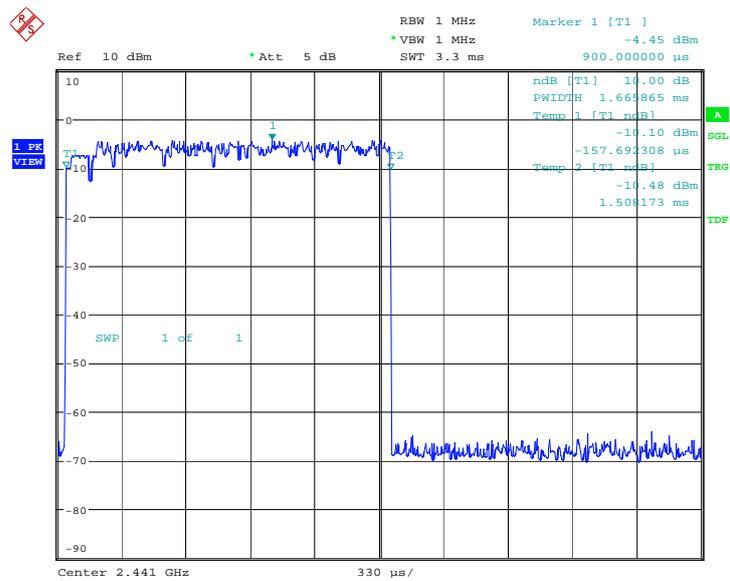
Date: 22.JUN.2010 02:15:32

Fig.79 Time of occupancy (Dwell Time): Channel 39, Packet 2-DH1



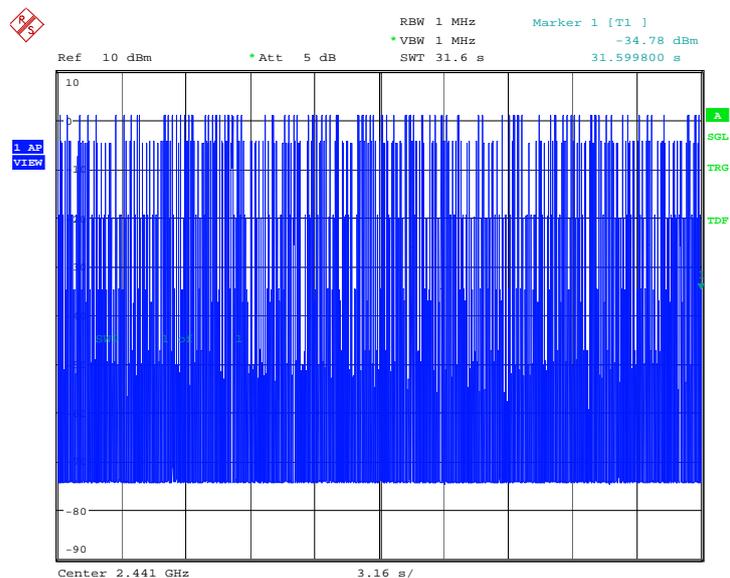
Date: 22.JUN.2010 02:15:20

Fig.80 Number of Transmissions Measurement:Channel 39,Packet 2-DH1



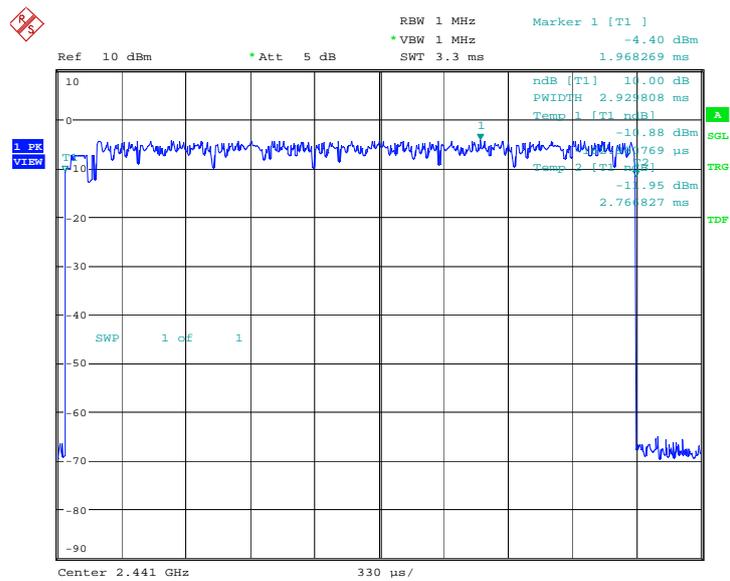
Date: 22.JUN.2010 02:16:49

Fig.81 Time of occupancy (Dwell Time): Channel 39, Packet 2-DH3



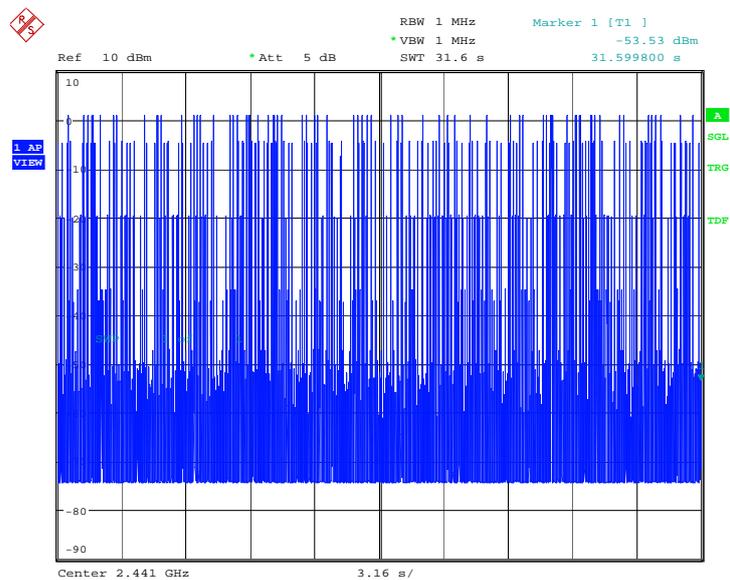
Date: 22.JUN.2010 02:16:38

Fig.82 Number of Transmissions Measurement:Channel 39,Packet 2-DH3



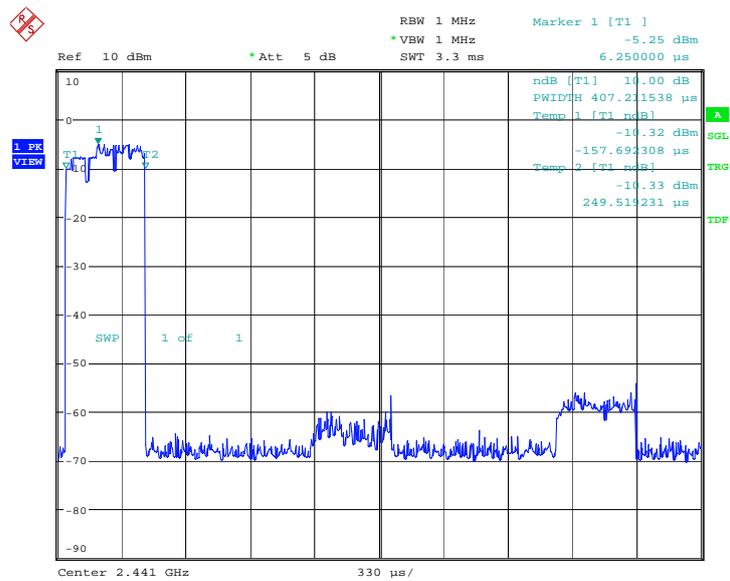
Date: 22.JUN.2010 02:18:06

Fig.83 Time of occupancy (Dwell Time): Channel 39, Packet 2-DH5



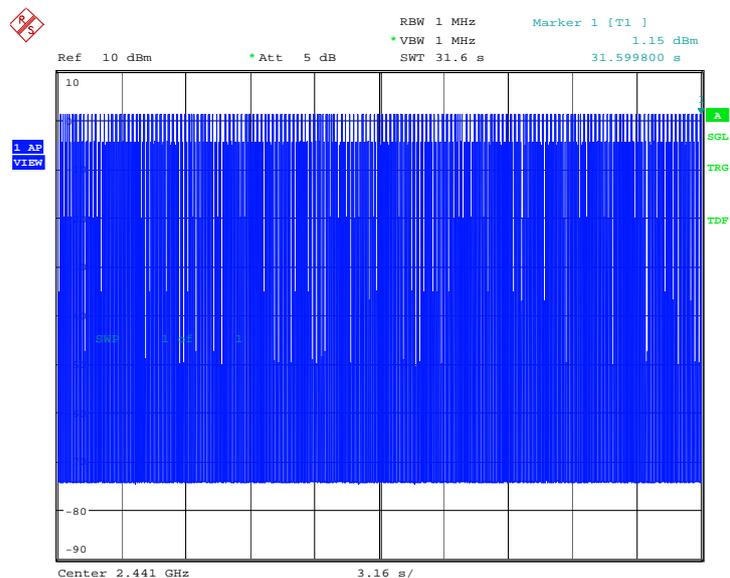
Date: 22.JUN.2010 02:17:55

Fig.84 Number of Transmissions Measurement:Channel 39,Packet 2-DH5



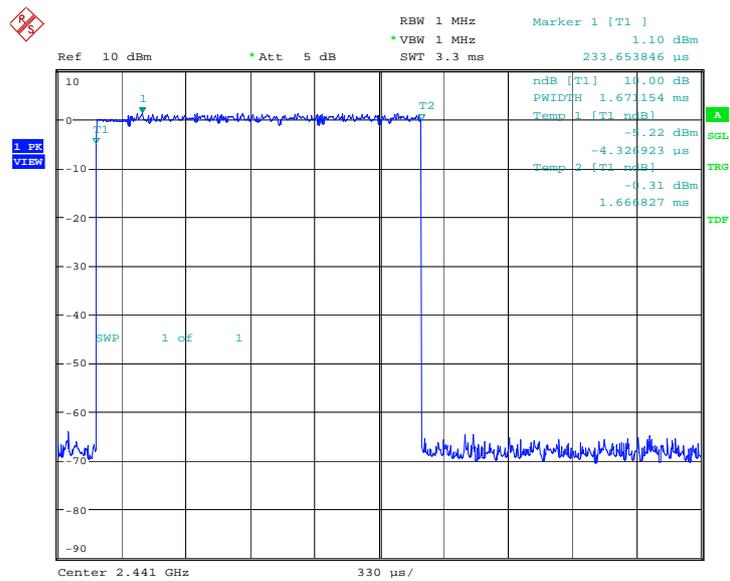
Date: 22.JUN.2010 02:35:49

Fig.85 Time of occupancy (Dwell Time): Channel 39, Packet 3-DH1



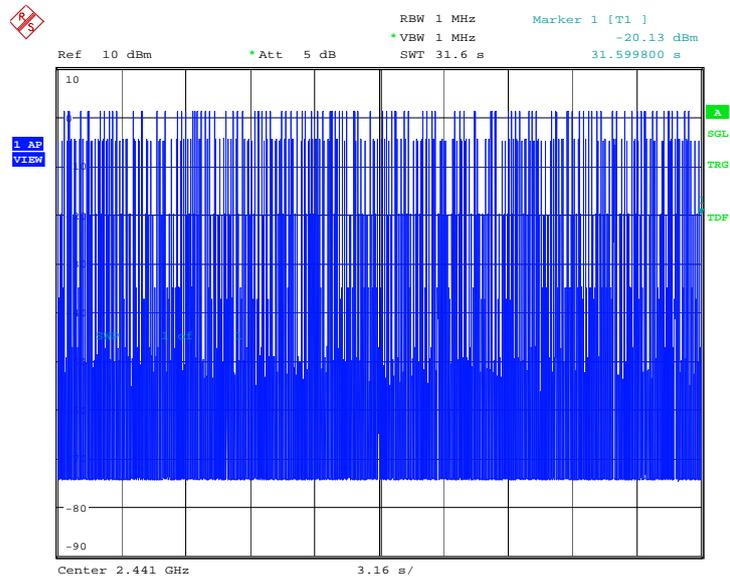
Date: 22.JUN.2010 02:35:38

Fig.86 Number of Transmissions Measurement:Channel 39,Packet 3-DH1



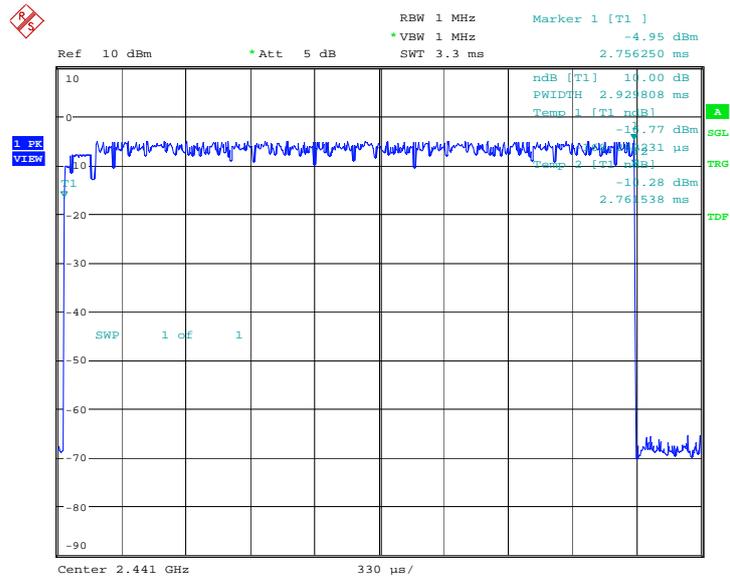
Date: 22.JUN.2010 02:37:10

Fig.87 Time of occupancy (Dwell Time): Channel 39, Packet 3-DH3



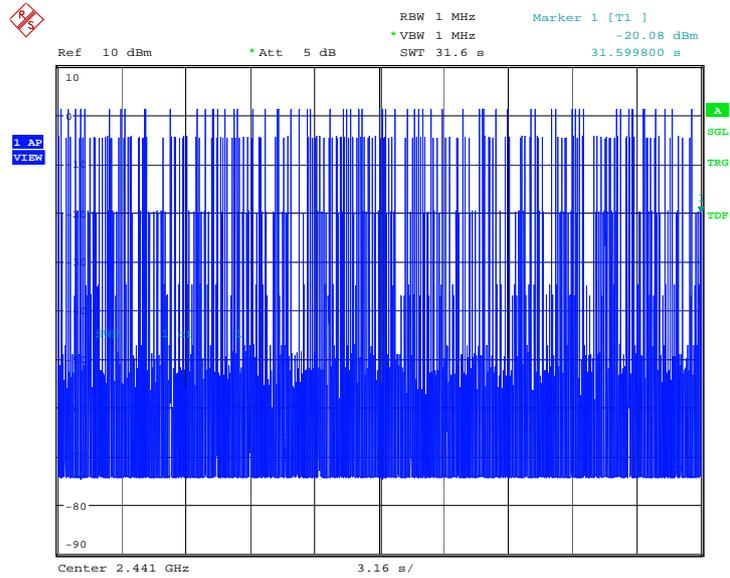
Date: 22.JUN.2010 02:36:58

Fig.88 Number of Transmissions Measurement:Channel 39,Packet 3-DH3



Date: 22.JUN.2010 02:38:27

Fig.89 Time of occupancy (Dwell Time): Channel 39, Packet 3-DH5



Date: 22.JUN.2010 02:38:15

Fig.90 Number of Transmissions Measurement:Channel 39,Packet 3-DH5

A.7. 20dB Bandwidth

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(a)(1)	NA *

The measurement is made according to Public notice DA 00-705 and ANSI C63.4

* 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 A.8.

Measurement Results:

For GFSK

Channel	20dB Bandwidth (kHz)		Conclusion
0	Fig.91	762.82	NA
39	Fig.92	762.82	NA
78	Fig.93	772.43	NA

Forπ/4 DQPSK

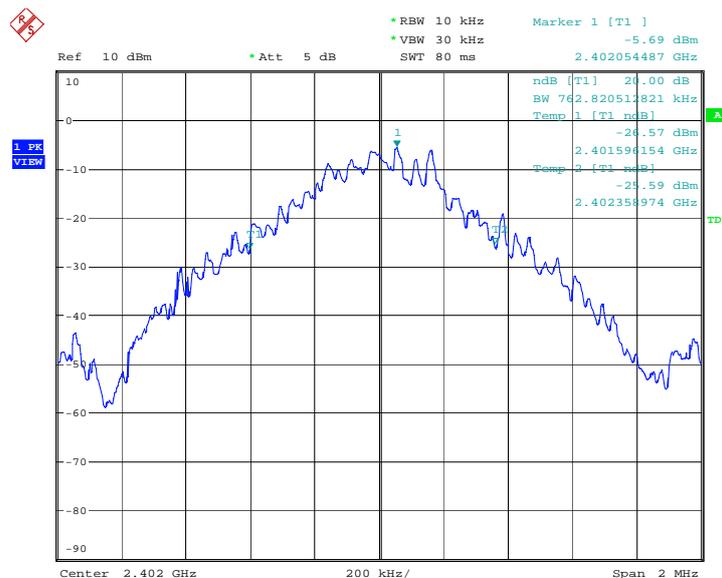
Channel	20dB Bandwidth (kHz)		Conclusion
0	Fig.94	1243.59	NA
39	Fig.95	1243.59	NA
78	Fig.96	1246.79	NA

For 8DPSK

Channel	20dB Bandwidth (kHz)		Conclusion
0	Fig.97	1269.23	NA
39	Fig.98	1272.44	NA
78	Fig.99	1266.03	NA

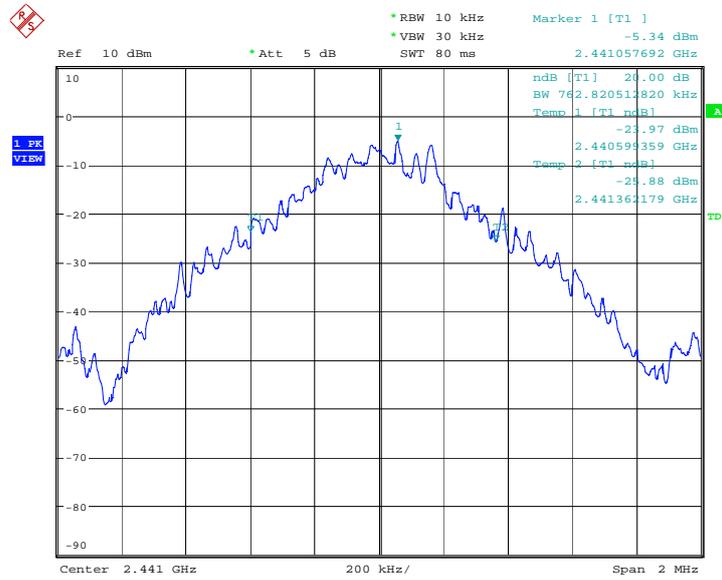
Conclusion: NA

Test graphs as below:



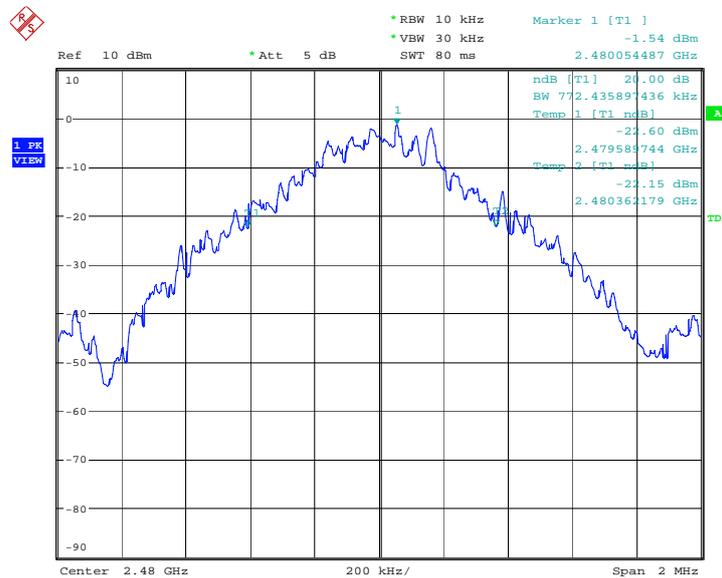
Date: 22.JUN.2010 01:58:20

Fig.91 20dB Bandwidth: GFSK, Channel 0



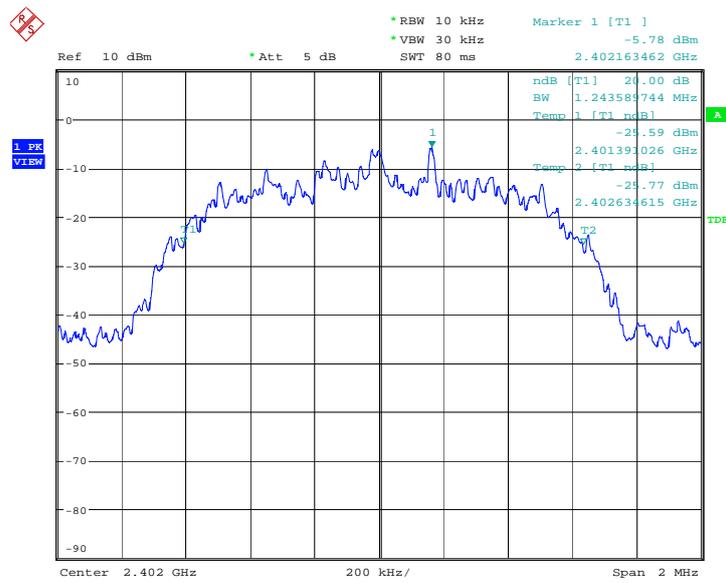
Date: 22.JUN.2010 01:58:52

Fig.92 20dB Bandwidth: GFSK, Channel 39



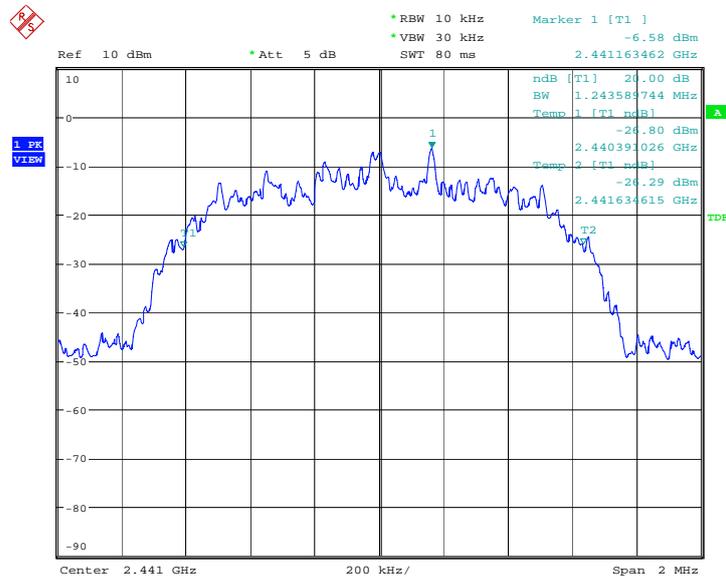
Date: 22.JUN.2010 01:59:23

Fig.93 20dB Bandwidth: GFSK, Channel 78



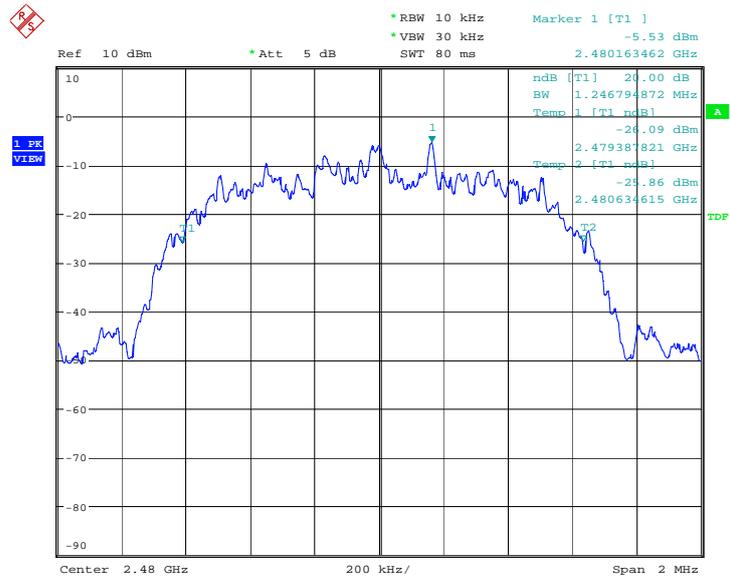
Date: 22.JUN.2010 02:18:40

Fig.94 20dB Bandwidth: $\pi/4$ DQPSK, Channel 0



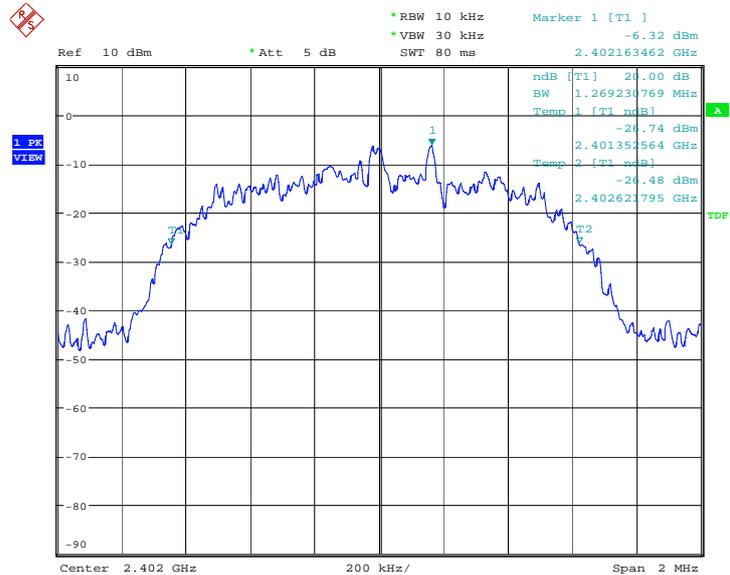
Date: 22.JUN.2010 02:19:11

Fig.95 20dB Bandwidth: $\pi/4$ DQPSK, Channel 39



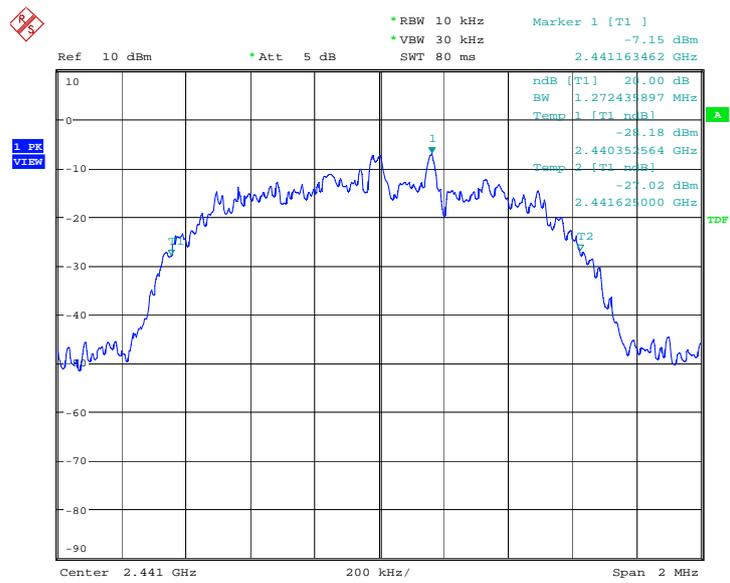
Date: 22.JUN.2010 02:19:43

Fig.96 20dB Bandwidth: $\pi/4$ DQPSK, Channel 78



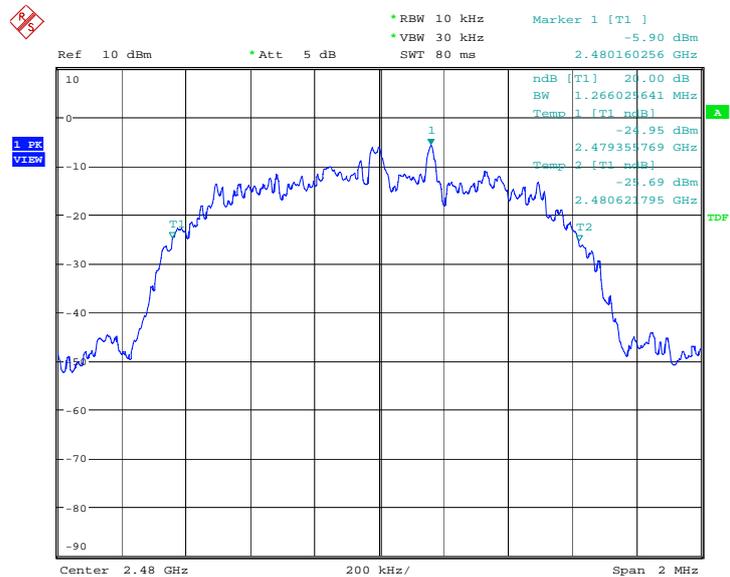
Date: 22.JUN.2010 02:39:00

Fig.97 20dB Bandwidth: 8DPSK, Channel 0



Date: 22.JUN.2010 02:39:32

Fig.98 20dB Bandwidth: 8DPSK, Channel 39



Date: 22.JUN.2010 02:40:04

Fig.99 20dB Bandwidth: 8DPSK, Channel 78

A.8. Carrier Frequency Separation

Measurement Limit:

Standard	Limit(kHz)
FCC 47 CFR Part 15.247(a)(1)	over 25 kHz or $(2/3) * 20\text{dB bandwidth}$

The measurement is made according to Public notice DA 00-705 and ANSI C63.4

* Comment: This limit should be over 25 kHz or $(2/3) * 20\text{dB bandwidth}$, whichever is greater.

Measurement Result:

For GFSK

Channel	Carrier frequency separation (kHz)	Conclusion
39	Fig.100	P

For $\pi/4$ DQPSK

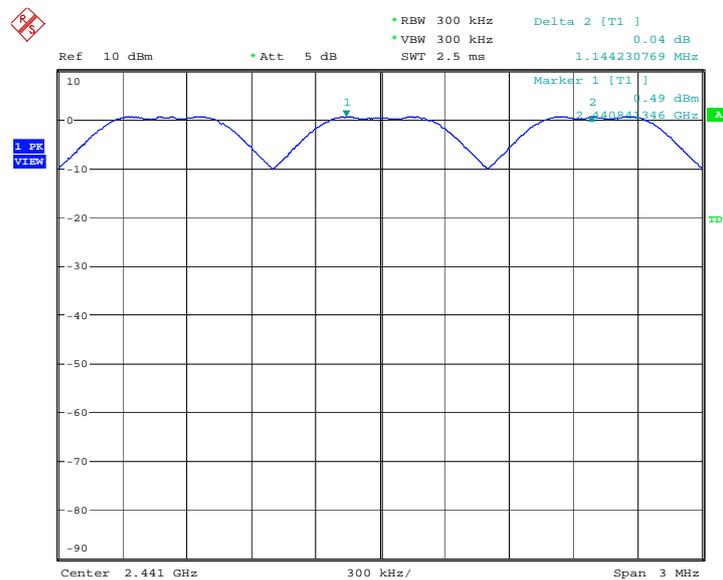
Channel	Carrier frequency separation (kHz)	Conclusion
39	Fig.101	P

For 8DPSK

Channel	Carrier frequency separation (kHz)	Conclusion
39	Fig.102	P

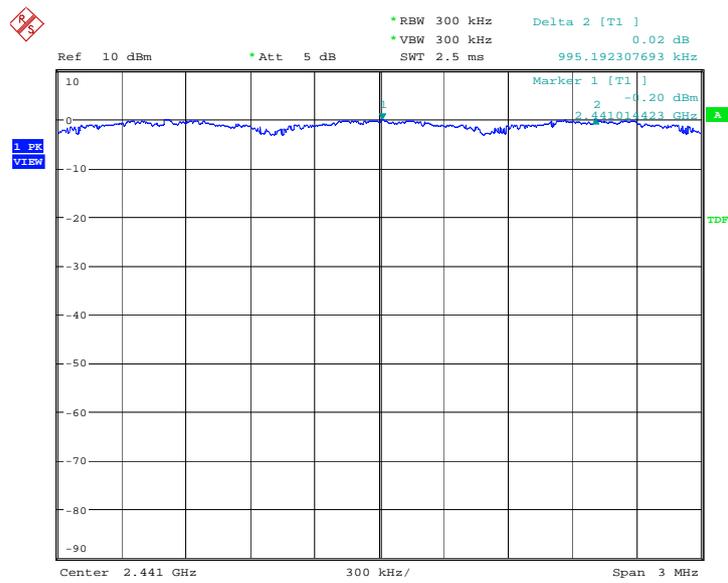
Conclusion: PASS

Test graphs as below:



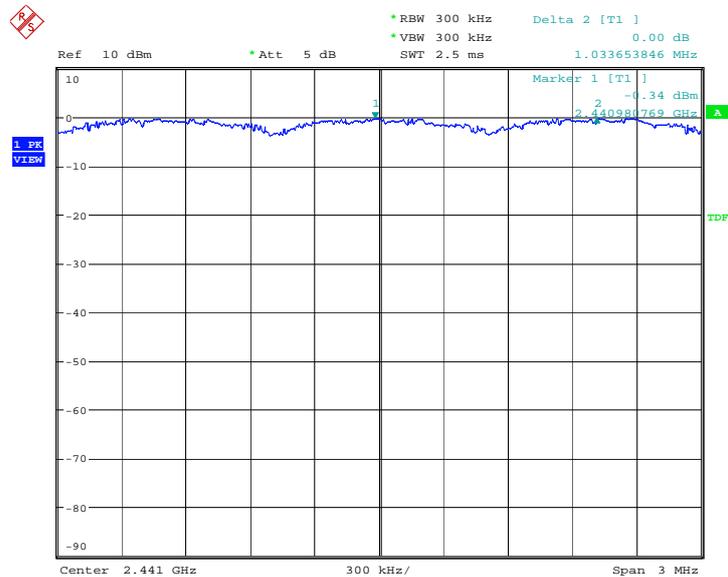
Date: 22.JUN.2010 02:01:27

Fig.100 Carrier frequency separation measurement: GFSK, Channel 39



Date: 22.JUN.2010 02:21:47

Fig.101 Carrier frequency separation measurement: $\pi/4$ DQPSK, Channel 39



Date: 22.JUN.2010 02:42:08

Fig.102 Carrier frequency separation measurement: 8DPSK, Channel 39

A.9. Number of Hopping Channels

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(a) (1)(iii)	At least 15 non-overlapping channels

The measurement is made according to Public notice DA 00-705 and ANSI C63.4

Measurement Result:

For GFSK

Channel	Number of hopping channels	Conclusion
0~39	Fig.103	P
40~78	Fig.104	

For $\pi/4$ DQPSK

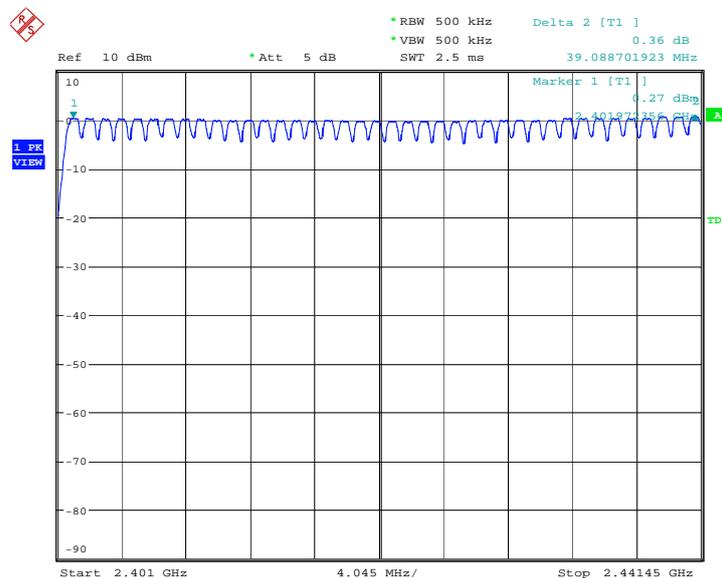
Channel	Number of hopping channels	Conclusion
0~39	Fig.105	P
40~78	Fig.106	

For 8DPSK

Channel	Number of hopping channels	Conclusion
0~39	Fig.107	P
40~78	Fig.108	

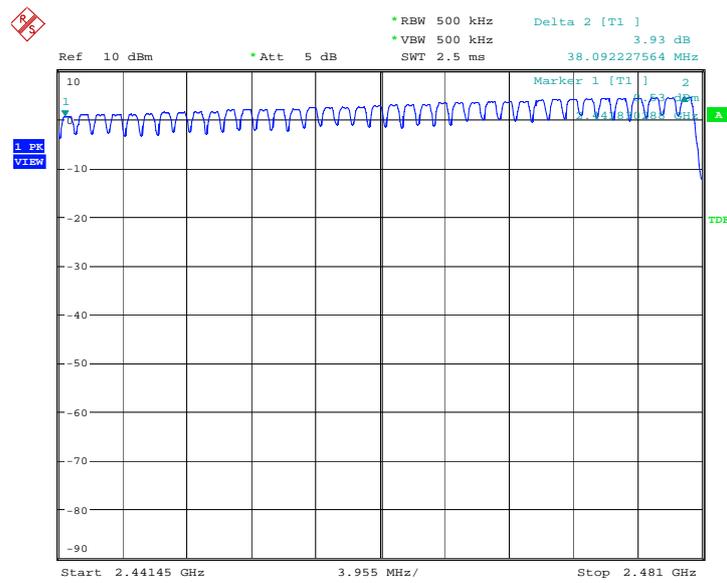
Conclusion: PASS

Test graphs as below:



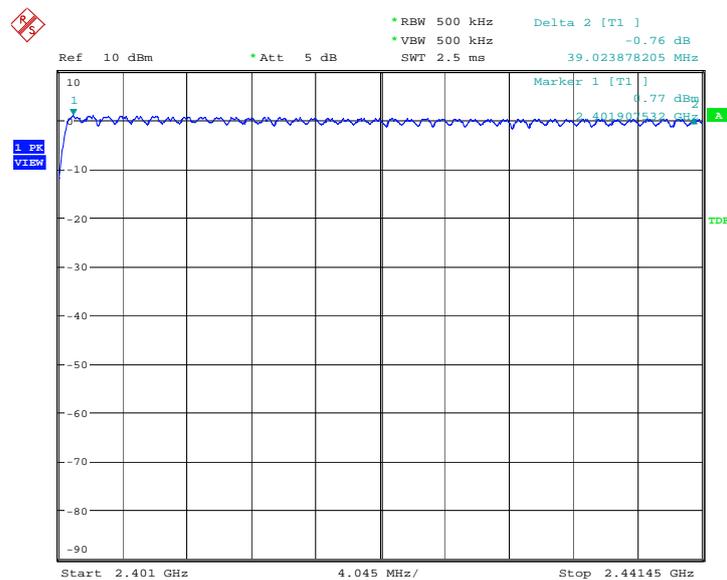
Date: 22.JUN.2010 02:03:31

Fig.103 Number of hopping frequencies: GFSK, Channel 0 - 39



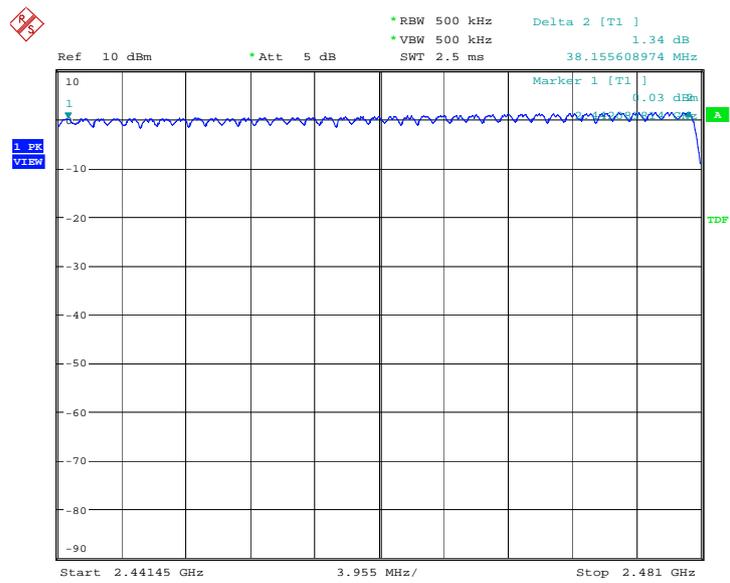
Date: 22.JUN.2010 02:05:33

Fig.104 Number of hopping frequencies: GFSK, Channel 40 - 78



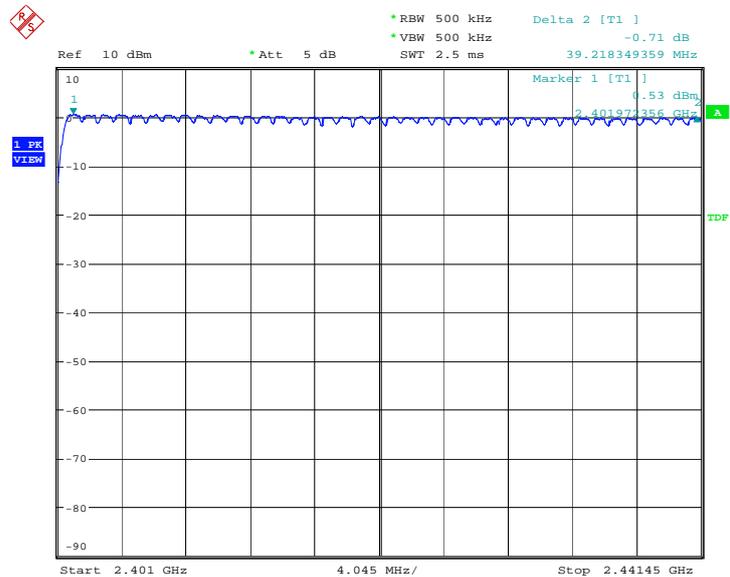
Date: 22.JUN.2010 02:23:51

Fig.105 Number of hopping frequencies: $\pi/4$ DQPSK, Channel 0 - 39



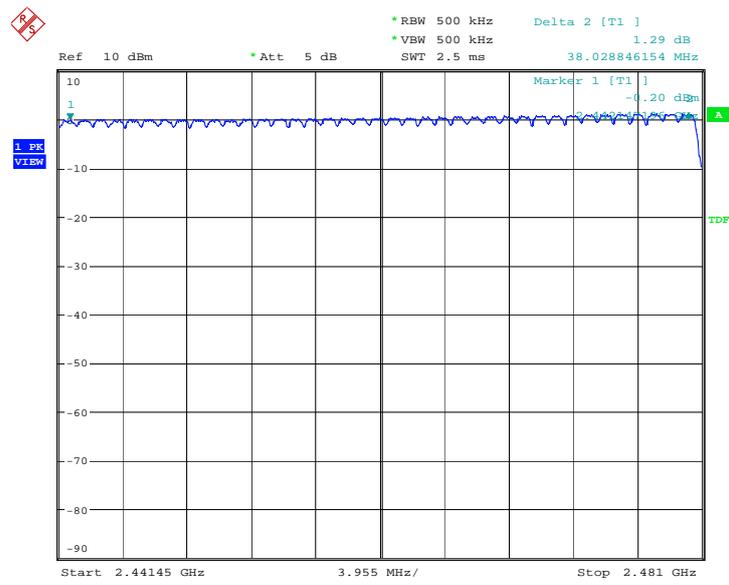
Date: 22.JUN.2010 02:25:53

Fig.106 Number of hopping frequencies: $\pi/4$ DQPSK, Channel 40 - 78



Date: 22.JUN.2010 02:44:11

Fig.107 Number of hopping frequencies: 8DPSK, Channel 0 - 39



Date: 22.JUN.2010 02:46:13

Fig.108 Number of hopping frequencies: 8DPSK, Channel 40 - 78

A.10. AC Powerline Conducted Emission

Test Condition

Voltage (V)	Frequency (Hz)
120	60

Measurement Result and limit:

Bluetooth (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)		Conclusion
		With Charger		
0.15 to 0.5	66 to 56	Fig.109 (TX Mode)	Fig.110 (Idle Mode)	P
0.5 to 5	56			
5 to 30	60			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Bluetooth (Average Limit)

Frequency range (MHz)	Average Limit (dB μ V)	Result (dB μ V)		Conclusion
		With Charger		
0.15 to 0.5	56 to 46	Fig.109 (TX Mode)	Fig.110 (Idle Mode)	P
0.5 to 5	46			
5 to 30	50			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

The measurement is made according to Public notice DA 00-705 and ANSI C63.4

Conclusion: PASS

Test graphs as below:

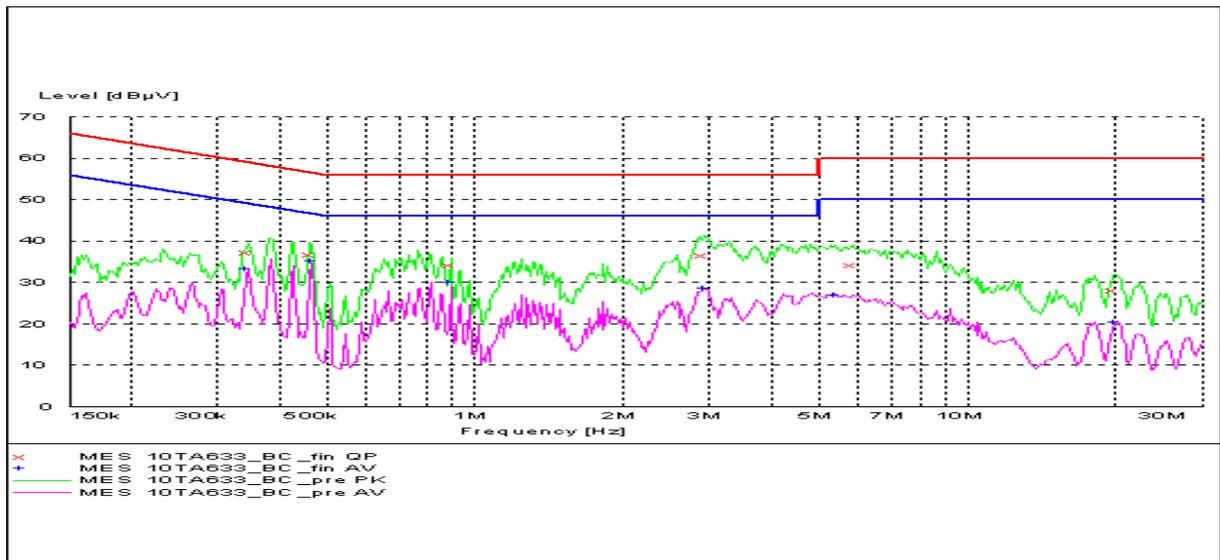


Fig.109 AC Powerline Conducted Emission with charger-TX Mode

MEASUREMENT RESULT: "10TA633_BC_fin QP"

Frequency	Level	Transd	Reading	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dBµV	dB		
0.346008	37.30	10.1	27.20	59	21.7	L1	FLO
0.461750	36.80	10.1	26.70	57	19.8	L1	FLO
0.890466	34.30	10.1	24.20	56	21.7	L1	FLO
2.919054	36.50	10.1	26.40	56	19.5	L1	GND
5.857852	34.30	10.2	24.10	60	25.7	L1	FLO
19.918991	28.20	10.2	18.00	60	31.8	L1	GND

MEASUREMENT RESULT: "10TA633_BC_fin AV"

Frequency	Level	Transd	Reading	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dBµV	dB		
0.346008	33.20	10.1	23.10	49	15.9	L1	FLO
0.466367	35.10	10.1	25.00	47	11.5	L1	FLO
0.890466	30.10	10.1	20.00	46	15.9	L1	FLO
2.948245	28.60	10.1	18.50	46	17.4	L1	GND
5.409628	26.90	10.2	16.70	50	23.1	L1	GND
20.118181	20.30	10.2	10.10	50	29.7	L1	GND

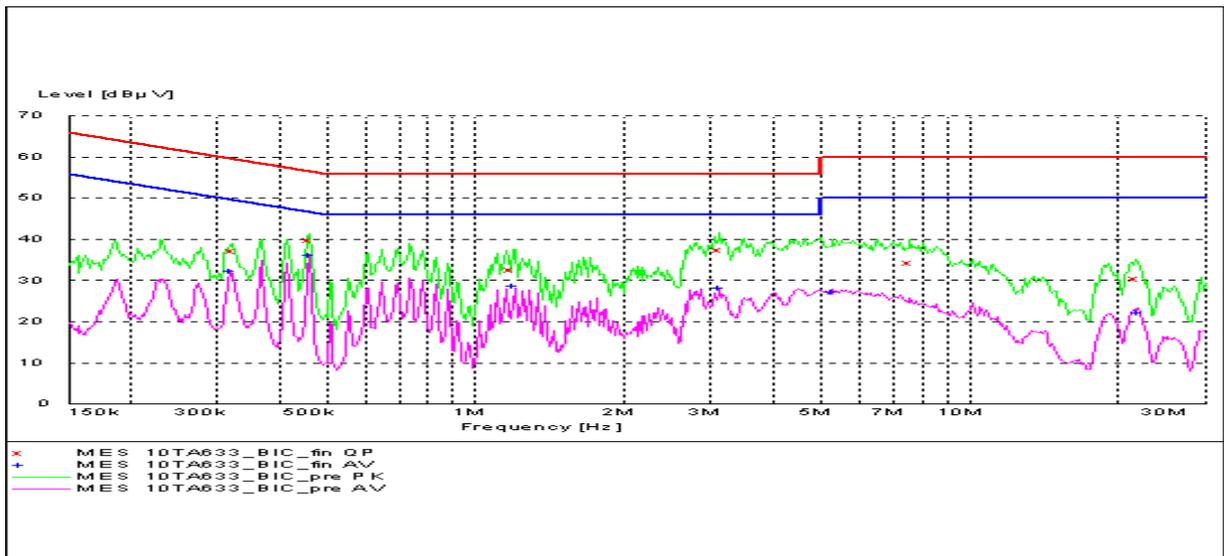


Fig.110 AC Powerline Conducted Emission with charger-Idle Mode

MEASUREMENT RESULT: "10TA633_BIC_fin QP"

Frequency	Level	Transd	Reading	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dBµV	dB		
0.322728	37.20	10.1	27.10	60	22.4	L1	FLO
0.461750	39.80	10.1	29.70	57	16.8	L1	FLO
1.188330	32.50	10.1	22.40	56	23.5	L1	GND
3.129621	37.30	10.1	27.20	56	18.7	L1	GND
7.587419	34.20	10.2	24.00	60	25.8	L1	GND
21.785107	30.30	10.3	20.00	60	29.7	L1	GND

MEASUREMENT RESULT: "10TA633_BIC_fin AV"

Frequency	Level	Transd	Reading	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dBµV	dB		
0.319533	32.30	10.1	22.20	50	17.4	L1	FLO
0.461750	36.00	10.1	25.90	47	10.7	L1	FLO
1.200213	28.50	10.1	18.40	46	17.5	L1	FLO
3.129621	28.30	10.1	18.20	46	17.7	L1	GND
5.303037	27.20	10.2	17.00	50	22.8	L1	GND
22.002958	22.10	10.3	11.80	50	27.9	L1	GND

Sample calculation (frequency 0.322728MHz for average detector):
 $VMEAS = VREADING (27.10 \text{ dB}\mu\text{V}) + ACORR (10.1\text{dB}) = 37.20 \text{ dB}\mu\text{V}$