



FCC PART 90 & RSS-119 TEST REPORT

FCC Part 90 and RSS-119

Report Reference No.: TRE1207002901 R/C:18530

FCC ID: YAMMD78XGU5

IC: 8913A-MD782GU5

Compiled by

(position+printed name+signature): File administrators Tim Zhang

Tim Zhang

Supervised by

(position+printed name+signature): Test Engineer Eric Zhang

Eric Zhang

Approved by

(position+printed name+signature): Manager Wenliang Li

Wenliang Li

Date of issue: July 31, 2012

Testing Laboratory Name: Shenzhen Huatongwei International Inspection Co., Ltd

Address: Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China

Applicant's name: Hytera Communications Corporation Ltd.

Address: HYT Tower, Hi-Tech Industrial Park North, Nanshan District, Shenzhen China. 518057

Test specification:

Standard: FCC Part 90/FCC Part 2

RSS-119/RSS-Gen/RSS-102

TRF Originator: Shenzhen Huatongwei International Inspection CO., Ltd

Master TRF: Dated 2006-06

Shenzhen Huatongwei International Inspection Co., Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen Huatongwei International Inspection Co., Ltd is acknowledged as copyright owner and source of the material. Shenzhen Huatongwei International Inspection Co., Ltd takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test item description: Digital Mobile Radio

Trade Mark



Manufacturer: Hytera Communications Corporation Ltd.

Model/Type reference: MD782G U(5)/MD785G U(5)/MD786G U(5)/MD788G U(5)

Listed Models: /

Ratings: DC 13.6 V

Modulation: FM&4FSK

Channel Separation: 25KHz&12.5KHz

Rated Power: 35 Watts(45.44dBm)/10 Watts(40.00dBm)

Operation Frequency Range: 806-825MHz/851-870MHz/896-902MHz/935-941MHz

Result: Positive

T E S T R E P O R T

Test Report No. :	TRE1207002901	July 31, 2012
		Date of issue

Equipment under Test : Digital Mobile Radio

Model /Type : MD782G U(5)/MD785G U(5)/MD786G U(5)/MD788G U(5)

Listed Models : /

Applicant : **Hytera Communications Corporation Ltd.**

Address : HYT Tower,Hi-Tech Industrial Park North,Nanshan District,Shenzhen China.518057

Manufacturer : **Hytera Communications Corporation Ltd.**

Address : HYT Tower,Hi-Tech Industrial Park North,Nanshan District,Shenzhen China.518057

Test Result according to the standards on page 4:	Positive
--	-----------------

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

<u>1.</u>	<u>TEST STANDARDS</u>	<u>4</u>
<u>2.</u>	<u>SUMMARY</u>	<u>5</u>
2.1.	General Remarks	5
2.2.	Product Description	5
2.3.	Equipment under Test	5
2.4.	Short description of the Equipment under Test (EUT)	6
2.5.	EUT Configuration	6
2.6.	EUT operation mode	6
2.7.	EUT configuration	7
2.8.	Related Submittal(s) / Grant (s)	7
2.9.	Modifications	7
2.10.	Note	7
<u>3.</u>	<u>TEST ENVIRONMENT</u>	<u>8</u>
3.1.	Address of the test laboratory	8
3.2.	Test Facility	8
3.3.	Environmental conditions	9
3.4.	Configuration of Tested System	9
3.5.	Description of Tested Modes	9
3.6.	Statement of the measurement uncertainty	9
3.7.	Test Description	10
3.8.	Equipments Used during the Test	10
<u>4.</u>	<u>TEST CONDITIONS AND RESULTS</u>	<u>12</u>
4.1.	Conducted Emissions Test	12
4.2.	Occupied Bandwidth and Emission Mask Test	19
4.3.	Transmitter Radiated Spurious Emission	73
4.4.	Spurious Emission on Antenna Port	85
4.5.	Modulation Characteristics	140
4.6.	Frequency Stability Test	145
4.7.	Maximum Transmitter Power	151
4.8.	Receiver Radiated Spurious Emission	178
4.9.	Receiver Conducted Spurious Emission	196
<u>5.</u>	<u>TEST SETUP PHOTOS OF THE EUT</u>	<u>210</u>
<u>6.</u>	<u>EXTERNAL AND INTERNAL PHOTOS OF THE EUT</u>	<u>214</u>

1. TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 90: PRIVATE LAND MOBILE RADIO SERVICES.

TIA/EIA 603 C: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

47 CFR FCC Part 15 Subpart B - Unintentional Radiators

FCC Part 2: FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

RSS-119 Issue 11 June 2011: Radio Transmitters and Receivers Operating in the Land Mobile and Fixed Services in the Frequency Range 27.41-960 MHz

RSS-Gen Issue 3 December 2010: General Requirements and Information for the Certification of Radio Apparatus

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	July 12, 2012
Testing commenced on	:	July 12, 2012
Testing concluded on	:	July 31, 2012

2.2. Product Description

The Hytera Communications Corporation Ltd.'s Model: MD782G U(5)/MD785G U(5)/MD786G U(5)/MD788G U(5) or the "EUT" as referred to in this report; more general information as follows, for more details, refer to the user's manual of the EUT.

Name of EUT	Digital Mobile Radio	
Model Number	MD782G U(5)/MD785G U(5)/MD786G U(5)/MD788G U(5)	
FCC ID	YAMMD78XGU5	
IC	8913A-MD782GU5	
Rated Output Power	35 Watts(45.44dBm)/10 Watts(40.00dBm) for 806-825MHz/851-870MHz	
	30 Watts(44.77dBm)/10 Watts(40.00dBm) for 896-902MHz/935-941MHz	
Support data rate	9.6kbps	
Modulation Type	FM for Analog Voice	
	4FSK for Digital Voice/Digital Data	
	4FSK for Digital Data	
	Analog	16K0F3E for 25KHz Channel Separation
		11K0F3E for 12.5KHz Channel Separation
	Digital	7K60FXD for Digital Data only
Channel Separation	Analog Voice	12.5KHz&25KHz
	Digital Voice/Data	12.5KHz
	Digital Data	12.5KHz
Antenna Type	External	
Frequency Range	806-825MHz/851-870MHz/896-902MHz/935-941MHz	
Maximum Output Power	Analog	41.69 W for 25 KHz Channel Separation
		41.49 W for 12.5 KHz Channel Separation
	Digital	41.49 W for 12.5 KHz Channel Separation

Note: The product has the same digital working characters when operating in both two digitized voice/data mode (7K60FXD and 7K60FXW). So only one set of test results for digital modulation modes are provided in this test report.

2.3. Equipment under Test

Power supply system utilised

Power supply voltage	:	<input type="radio"/> 120V / 60 Hz	<input type="radio"/> 115V / 60Hz
		<input type="radio"/> 12 V DC	<input type="radio"/> 24 V DC
		<input checked="" type="radio"/> Other (specified in blank below)	

DC 13.6V from battery

Test frequency list

Frequency Range (MHz)	Modulation Type	Channel Separation (KHz)	Test Channel	Test Frequency (MHz)	
				TX	RX
806-825	Analog/FM	25	Low Channel	806.5000	851.5000
			Middle Channel	817.0000	860.0000
			High Channel	823.5000	868.5000
		12.5	Low Channel	806.5000	851.5000
			Middle Channel	817.0000	860.0000
			High Channel	823.5000	868.5000
	Digital/4FSK	12.5	Low Channel	806.5000	851.5000
			Middle Channel	817.0000	860.0000
			High Channel	823.5000	868.5000
851-870	Analog/FM	25	Low Channel	851.5000	851.5000
			Middle Channel	860.0000	860.0000
			High Channel	868.5000	868.5000
		12.5	Low Channel	851.5000	851.5000
			Middle Channel	860.0000	860.0000
			High Channel	868.5000	868.5000
	Digital/4FSK	12.5	Low Channel	851.5000	851.5000
			Middle Channel	860.0000	860.0000
			High Channel	868.5000	868.5000
896-902	Analog/FM	12.5	Low Channel	896.5000	935.5000
	High Channel		900.5000	939.5000	
	Digital/4FSK		Low Channel	896.5000	935.5000
	High Channel		900.5000	939.5000	
935-941	Analog/FM	12.5	Low Channel	935.5000	935.5000
	High Channel		939.5000	939.5000	
	Digital/4FSK		Low Channel	935.5000	935.5000
	High Channel		939.5000	939.5000	

2.4. Short description of the Equipment under Test (EUT)

806-825MHz/851-870MHz/896-902MHz/935-941MHz U frequency band Digital Mobile Radio with GPS function (MD782G U(5)/MD785G U(5)/MD786G U(5)/MD788G U(5)).

For more details, refer to the user's manual of the EUT.

Serial number: Prototype

2.5. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.6. EUT operation mode

The EUT has been tested under typical operating condition and The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

2.7. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - supplied by the lab

○	Power Cable	Length (m) :	/
		Shield :	/
		Detachable :	/
○	Multimeter	Manufacturer :	/
		Model No. :	/

2.8. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **YAMMD78XGU5** and IC: **8913A-MD782GU5** filing to comply with FCC Part 90&FCC Part 2&FCC Part 15B Rules and RSS-119&RSS-Gen.

2.9. Modifications

No modifications were implemented to meet testing criteria.

2.10. Note

The EUT is is a U frequency band (806-825MHz/851-870MHz/896-902MHz/935-941MHz) Digital Mobile Radio with GPS function, The functions of the EUT listed as below:

	Test Standards	Reference Report
Radio	FCC Part 90&RSS-119	TRE1207002901
Health	Oet 65&RSS-102	TRE1207002902
Health	Oet 65	TRE1207002903

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Huatongwei International Inspection Co., Ltd
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone: 86-755-26715686 Fax: 86-755-26748089

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2009) and CISPR Publication 22.

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: August 02, 2007. Valid time is until Feb 28, 2015.

A2LA-Lab Cert. No. 2243.01

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until Sept 30, 2013.

FCC-Registration No.: 662850

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 662850, Renewal date June 01, 2015.

IC-Registration No.: 5377

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377 on Jan 25, 2011. Valid time is until Jan 24, 2014

ACA

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

NEMKO-Aut. No.: ELA125

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025:2005 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10; the Authorization is valid through July 07, 2013.

VCCI

The 3m Semi-anechoic chamber (12.2m×7.95m×6.7m) and Shielded Room (8m×4m×3m) of Shenzhen Huatongwei International Inspection Co., Ltd has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2484. Date of Registration: December 20, 2009. Valid time is until December 19, 2013.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-2726. Date of Registration: December 20, 2009. Valid time is until December 19, 2013.

DNV

Shenzhen Huatongwei International Inspection Co Ltd has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025(2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until Aug 24, 2013..

3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

3.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System

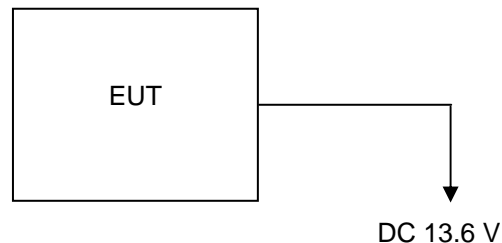


Table 2-1 Equipment Used in Tested System

3.5. Discription of Tested Modes

The EUT (Didital Portable Radio) has been tested under normal operating condition. Three channels (the high, the middle and the low) are chosen for testing at each channel separation (12.5 KHz&25KHz).

3.6. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Frequency stability	150 Hz	(1)
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emission 9KHz-12.75 GHz	1.60 dB	(1)
Radiated spurious emission 9KHz-12.75 GHz	2.20 dB	(1)
Conducted Emission 9KHz-30MHz	3.39 dB	(1)
Radiated Emission 30~1000MHz	4.24 dB	(1)
Radiated Emission 1~18GHz	5.16 dB	(1)
Radiated Emission 18-40GHz	5.54 dB	(1)
Occupied Bandwidth	-----	(1)
Emission Mask	-----	(1)
Modulation Characteristic	-----	(1)
Transmitter Frequency Behavior	-----	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

3.7. Test Description

FCC Rules	Description of Test	Test Result
§ 15.107	Conducted Emission	Complies
§ 15.109	Receiver Radiated Spurious Emssion	Complies
§ 15.109	Receiver Conducted Spurious Emssion	Complies
§ 90.205	Maximum Transmitter Power	Complies
§ 90.207	Modulation Characteristic	Complies
§ 90.209	Occupied Bandwidth	Complies
§ 90.210	Emission Mask	Complies
§ 90.213	Frequency Stability	Complies
§ 90.214	Transmitter Frequency Behavior	N/A
§ 90.210	Transmitter Radiated Spurious Emssion	Complies
§ 90.210	Spurious Emssion On Antenna Port	Complies

3.8. Equipments Used during the Test

DC Power Conducted Emission				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	Rohde&Schwarz	ESCI	100106	10/23/2012
Pulse Limiter	Rohde&Schwarz	ESHSZ2	100044	10/23/2012
EMI Test Software	Rohde&Schwarz	ES-K1 V1.71	N/A	10/23/2012
Artificial Mains	Rohde&Schwarz	ESH3-Z6	100210	10/23/2012
Artificial Mains	Rohde&Schwarz	ESH3-Z6	100211	10/23/2012
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	10/23/2012

Modulation Characteristic				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	10/23/2012

Transmitter Radiated Spurious Emission & Occupied Bandwidth & Emission Mask & Receiver Radiated Spurious Emission				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Ultra-Broadband Antenna	Rohde&Schwarz	HL562	100015	10/23/2012
EMI Test Receiver	Rohde&Schwarz	ESI 26	100009	10/23/2012
RF Test Panel	Rohde&Schwarz	TS / RSP	335015/ 0017	N/A
HORN ANTENNA	Rohde&Schwarz	HF906	100039	10/23/2012
Turntable	ETS	2088	2149	N/A
Antenna Mast	ETS	2075	2346	N/A
EMI Test Software	Rohde&Schwarz	ES-K1 V1.71	N/A	10/23/2012
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	10/23/2012
Spectrum Analyzer	Aglient	E4407B	MY44210775	23/10/2012
Spectrum Analyzer	Rohde&Schwarz	FSP40	1164.4391.40	23/10/2012
High pass filter	Compliance Direction systems	BSU-6	34202	23/10/2012

Frequency Stability				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Communication Test Set	HP	HP8920B	US35010135	10/23/2012
Signal Generator	Rohde&Schwarz	SMT03	100059	10/23/2012
Climate Chamber	ESPEC	EL-10KA	05107008	10/23/2012

Maximum Transmitter Power & Spurious Emission On Antenna Port				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Receiver	Rohde&Schwarz	ESI 26	100009	10/23/2012
Attenuator	R&S	ESH3-22	100449	10/23/2012
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	10/23/2012
High-Pass Filter	Anritsu	MP526B	6220875256	10/23/2012
High-Pass Filter	Anritsu	MP526D	6220878392	10/23/2012
High pass filter	Compliance Direction systems	BSU-6	34202	23/10/2012
Spectrum Analyzer	Rohde&Schwarz	FSP40	1164.4391.40	23/10/2012

The calibration interval was one year.

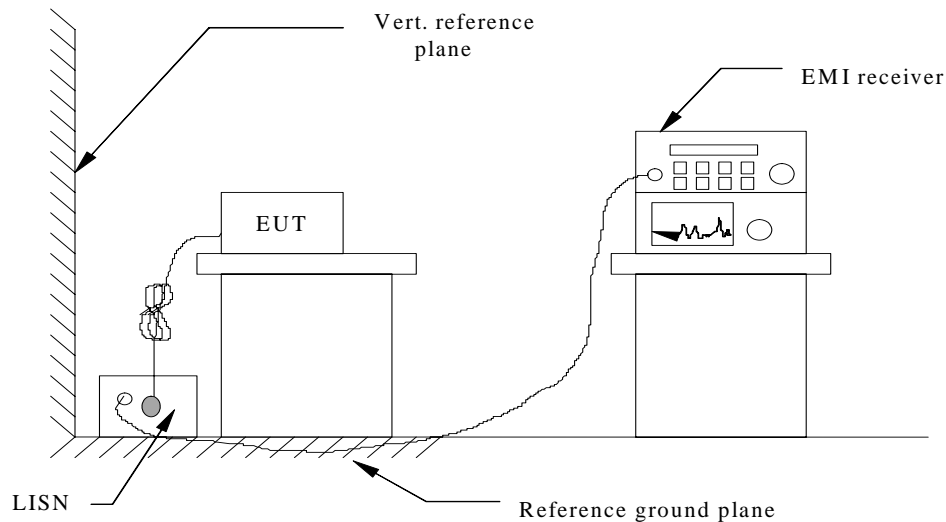
4. TEST CONDITIONS AND RESULTS

4.1. Conducted Emissions Test

TEST APPLICABLE

The EUT was tested according to ANSI C63.4 - 2009. The frequency spectrum from 0.15 MHz to 30 MHz was investigated. The LISN used was 50 ohm / 50 u Henry as specified by section 5.1 of ANSI C63.4 - 2009. Cables and peripherals were moved to find the maximum emission levels for each frequency.

TEST CONFIGURATION



TEST PROCEDURE

- 1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4-2009.
- 2 Support equipment, if needed, was placed as per ANSI C63.4-2009.
- 3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4-2009.
- 4 If a EUT received DC power from the adapter, the adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5 All support equipments received AC power from a second LISN, if any.
- 6 The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7 Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
- 8 During the above scans, the emissions were maximized by cable manipulation.

Conducted Power Line Emission Limit

For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following :

Frequency (MHz)	Maximum RF Line Voltage (dBμV)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

* Decreasing linearly with the logarithm of the frequency

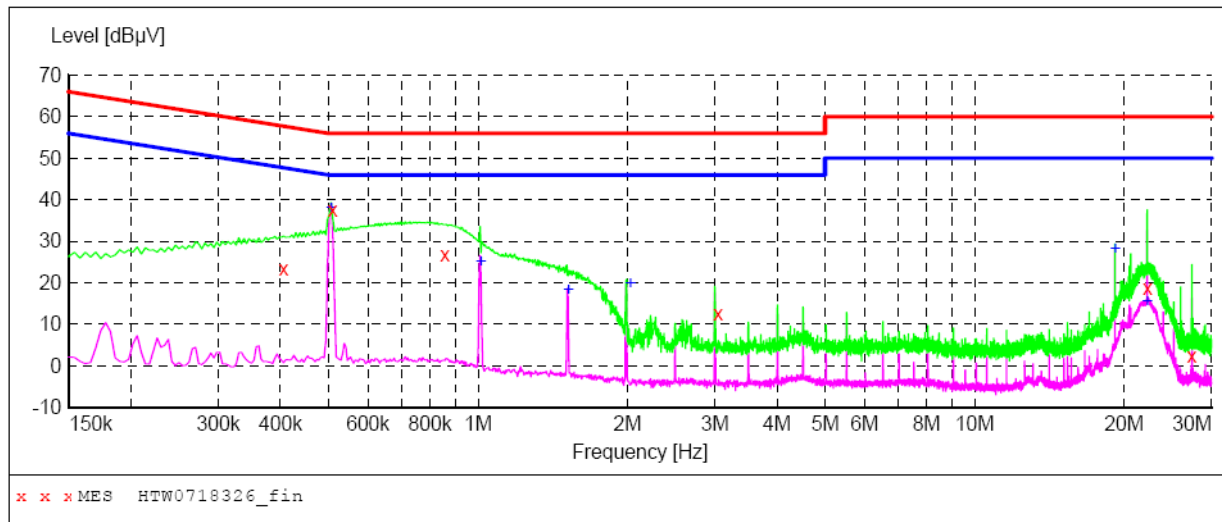
For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

TEST RESULTS

For FM Modulation @ 25 KHz

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HTW0718326_fin"

7/18/2012 4:23PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.406000	23.30	10.2	58	34.4	QP	-	GND
0.510000	37.40	10.2	56	18.6	QP	-	GND
0.858000	26.70	10.2	56	29.3	QP	-	GND
3.042000	12.70	10.4	56	43.3	QP	-	GND
22.298000	18.70	11.0	60	41.3	QP	-	GND
27.386000	2.40	11.2	60	57.6	QP	-	GND

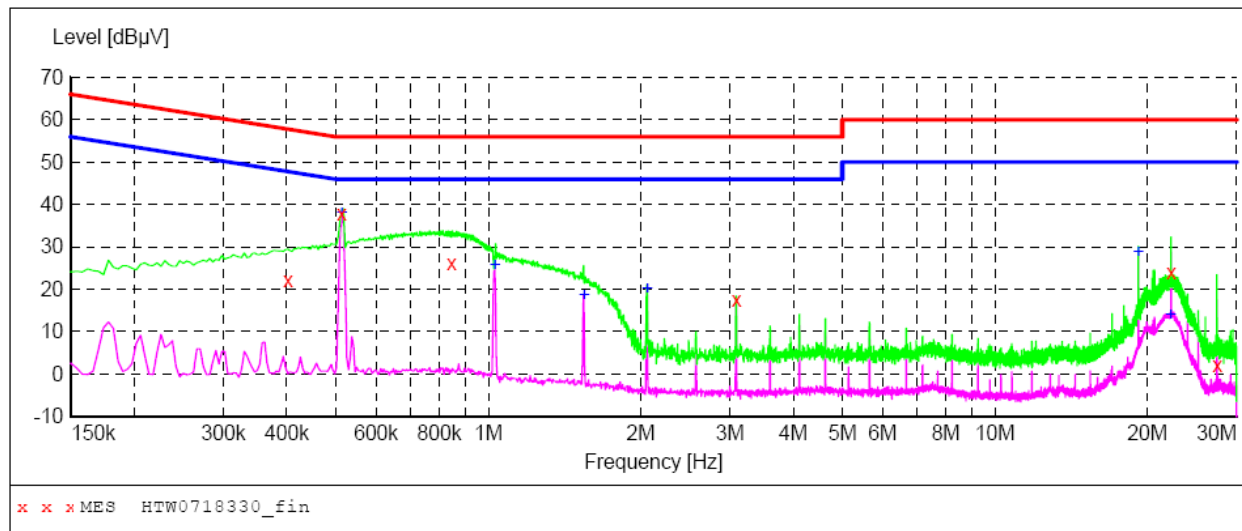
MEASUREMENT RESULT: "HTW0718326_fin2"

7/18/2012 4:23PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.506000	38.00	10.2	46	8.0	AV	-	GND
1.014000	25.20	10.3	46	20.8	AV	-	GND
1.522000	18.30	10.3	46	27.7	AV	-	GND
2.030000	19.80	10.4	46	26.2	AV	-	GND
19.202000	28.20	10.9	50	21.8	AV	-	GND
22.270000	15.70	11.0	50	34.3	AV	-	GND

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "HTW0718330_fin"**

7/18/2012 4:40PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.402000	22.20	10.2	58	35.6	QP	+	GND
0.514000	37.90	10.2	56	18.1	QP	+	GND
0.846000	26.20	10.2	56	29.8	QP	+	GND
3.090000	17.60	10.4	56	38.4	QP	+	GND
22.290000	24.00	11.0	60	36.0	QP	+	GND
27.466000	2.10	11.2	60	57.9	QP	+	GND

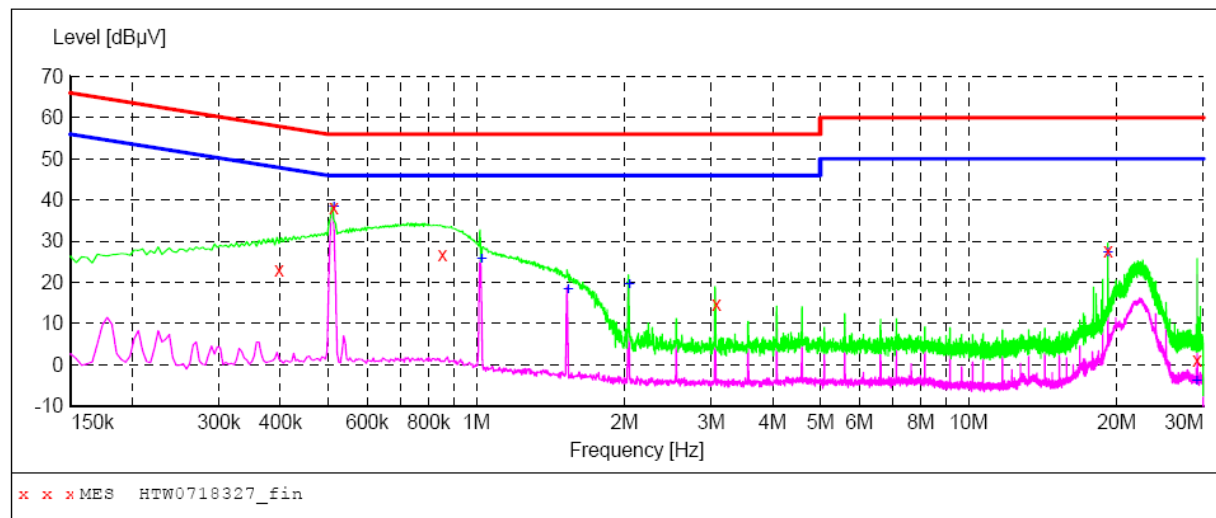
MEASUREMENT RESULT: "HTW0718330_fin2"

7/18/2012 4:40PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.514000	38.00	10.2	46	8.0	AV	+	GND
1.030000	25.70	10.3	46	20.3	AV	+	GND
1.546000	18.70	10.3	46	27.3	AV	+	GND
2.062000	20.40	10.4	46	25.6	AV	+	GND
19.202000	28.80	10.9	50	21.2	AV	+	GND
22.254000	14.00	11.0	50	36.0	AV	+	GND

For FM Modulation @ 25 KHz**SCAN TABLE: "Voltage (9K-30M) FIN"**

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "HTW0718327_fin"**

7/18/2012 4:32PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.398000	23.00	10.2	58	34.9	QP	-	GND
0.514000	38.00	10.2	56	18.0	QP	-	GND
0.854000	26.70	10.2	56	29.3	QP	-	GND
3.074000	14.80	10.4	56	41.2	QP	-	GND
19.202000	27.50	10.9	60	32.5	QP	-	GND
29.110000	1.20	11.2	60	58.8	QP	-	GND

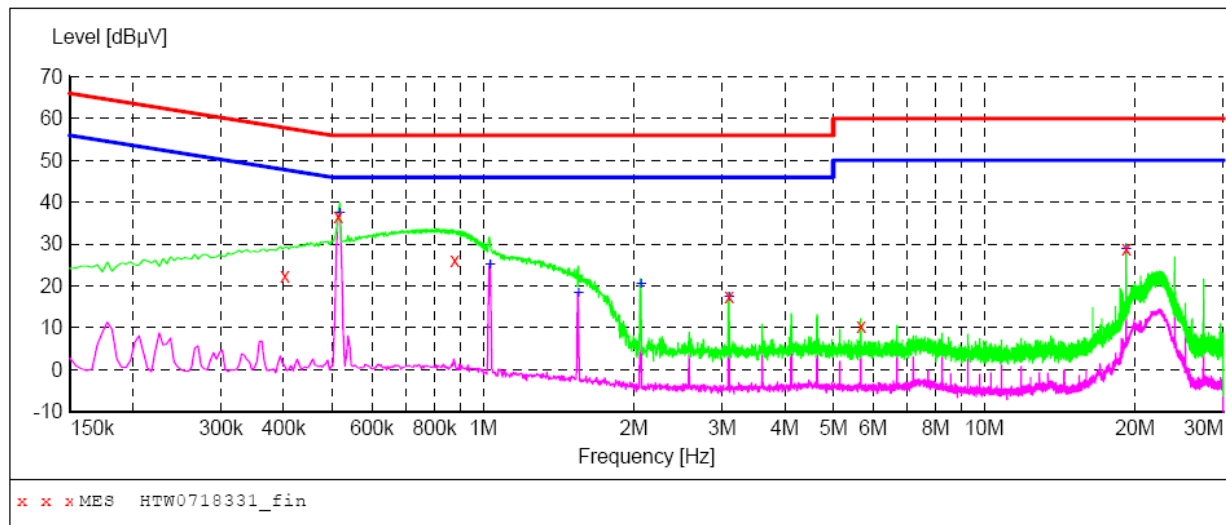
MEASUREMENT RESULT: "HTW0718327_fin2"

7/18/2012 4:32PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.514000	38.30	10.2	46	7.7	AV	-	GND
1.026000	25.70	10.3	46	20.3	AV	-	GND
1.538000	18.50	10.3	46	27.5	AV	-	GND
2.050000	19.70	10.4	46	26.3	AV	-	GND
19.202000	27.30	10.9	50	22.7	AV	-	GND
29.110000	-3.80	11.2	50	53.8	AV	-	GND

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "HTW0718331_fin"**

7/18/2012 4:43PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.402000	22.30	10.2	58	35.5	QP	+	GND
0.514000	36.60	10.2	56	19.4	QP	+	GND
0.878000	26.00	10.2	56	30.0	QP	+	GND
3.098000	17.50	10.4	56	38.5	QP	+	GND
5.678000	10.40	10.4	60	49.6	QP	+	GND
19.202000	28.90	10.9	60	31.1	QP	+	GND

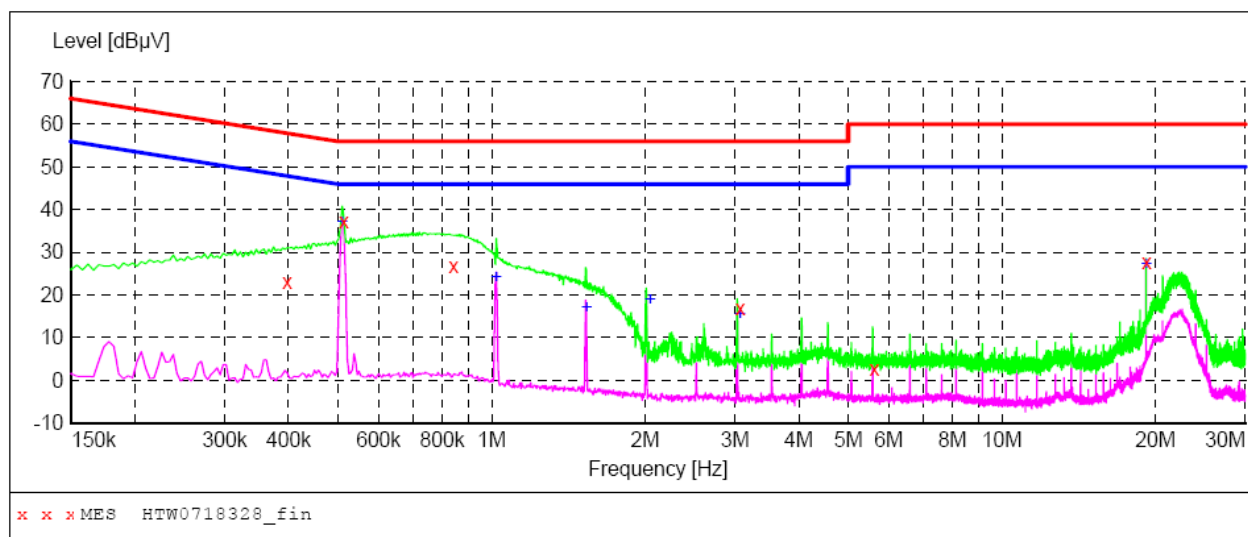
MEASUREMENT RESULT: "HTW0718331_fin2"

7/18/2012 4:43PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.518000	37.50	10.2	46	8.5	AV	+	GND
1.034000	25.10	10.3	46	20.9	AV	+	GND
1.550000	18.30	10.3	46	27.7	AV	+	GND
2.066000	20.60	10.4	46	25.4	AV	+	GND
3.098000	17.50	10.4	46	28.5	AV	+	GND
19.202000	28.80	10.9	50	21.2	AV	+	GND

For FSK Modulation @ 12.5 KHz**SCAN TABLE: "Voltage (9K-30M)FIN"**

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "HTW0718328_fin"**

7/18/2012 4:31PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.398000	23.00	10.2	58	34.9	QP	-	GND
0.514000	37.30	10.2	56	18.7	QP	-	GND
0.842000	26.70	10.2	56	29.3	QP	-	GND
3.070000	16.90	10.4	56	39.1	QP	-	GND
5.626000	2.80	10.4	60	57.2	QP	-	GND
19.202000	27.50	10.9	60	32.5	QP	-	GND

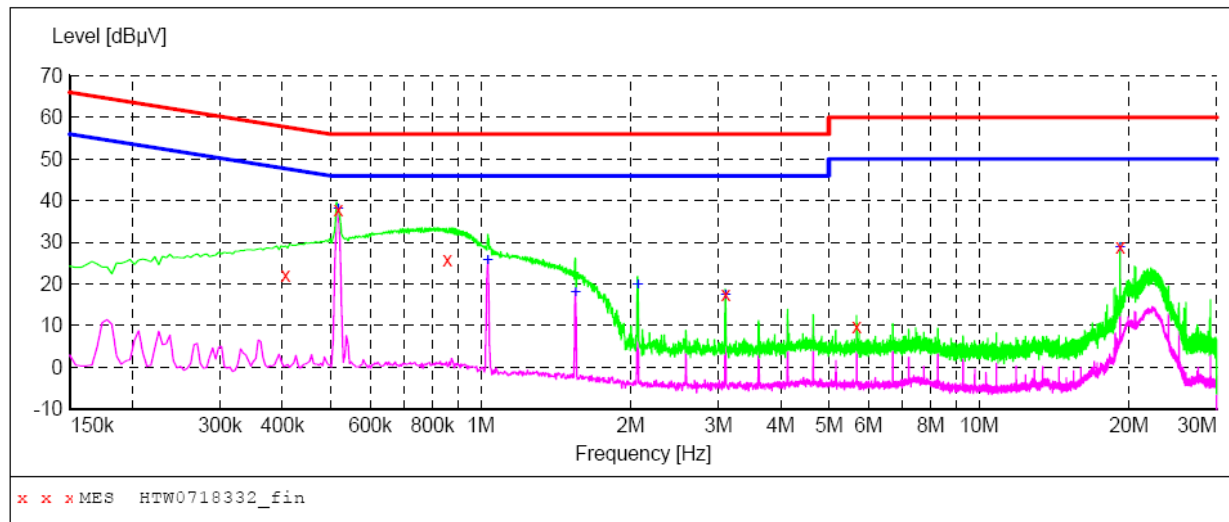
MEASUREMENT RESULT: "HTW0718328_fin2"

7/18/2012 4:31PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.510000	37.30	10.2	46	8.7	AV	-	GND
1.022000	24.30	10.3	46	21.7	AV	-	GND
1.534000	17.30	10.3	46	28.7	AV	-	GND
2.046000	19.00	10.4	46	27.0	AV	-	GND
3.070000	15.50	10.4	46	30.5	AV	-	GND
19.202000	27.30	10.9	50	22.7	AV	-	GND

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "HTW0718332_fin"**

7/18/2012 4:46PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.406000	22.10	10.2	58	35.6	QP	+	GND
0.518000	37.80	10.2	56	18.2	QP	+	GND
0.858000	25.90	10.2	56	30.1	QP	+	GND
3.102000	17.60	10.4	56	38.4	QP	+	GND
5.686000	9.90	10.4	60	50.1	QP	+	GND
19.202000	29.00	10.9	60	31.0	QP	+	GND

MEASUREMENT RESULT: "HTW0718332_fin2"

7/18/2012 4:46PM

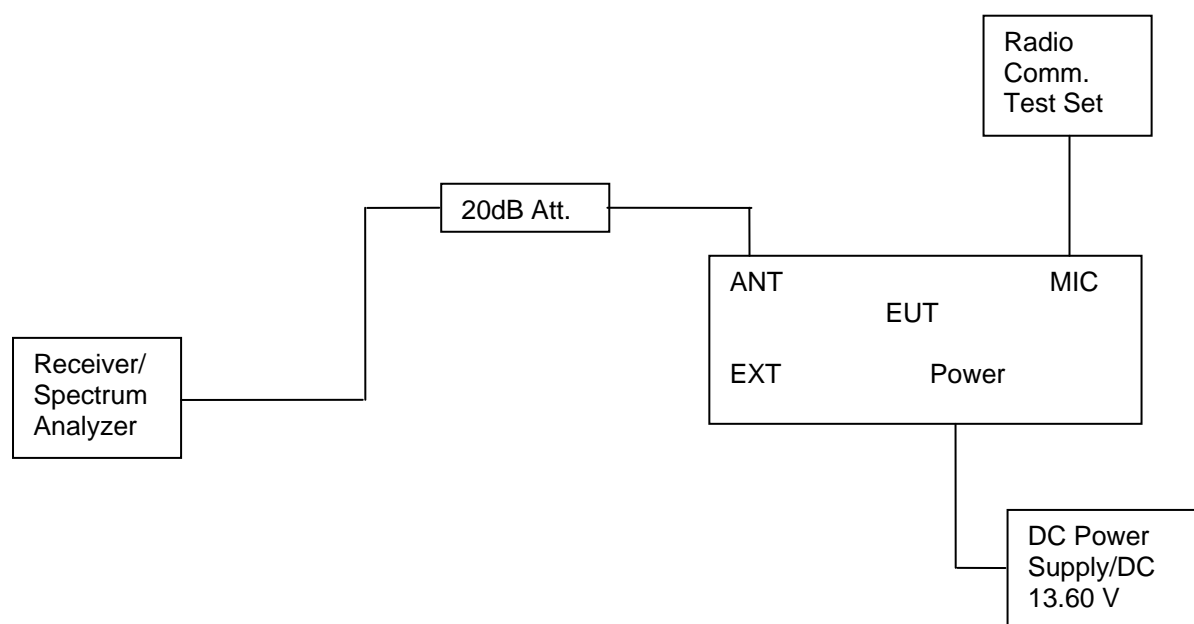
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.518000	38.00	10.2	46	8.0	AV	+	GND
1.034000	25.70	10.3	46	20.3	AV	+	GND
1.550000	18.20	10.3	46	27.8	AV	+	GND
2.070000	20.00	10.4	46	26.0	AV	+	GND
3.102000	17.40	10.4	46	28.6	AV	+	GND
19.202000	28.90	10.9	50	21.1	AV	+	GND

4.2. Occupied Bandwidth and Emission Mask Test

TEST APPLICABLE

- (a). Occupied Bandwidth: The EUT was connected to the audio signal generator and the spectrum analyzer via the main RF connector, and through an appropriate attenuator. The EUT was controlled to transmit its maximum power. Then the bandwidth of 99% power can be measured by the spectrum analyzer.
- (b). Emission Mask B: For transmitters that are equipped with an audio low-pass filter pursuant to §90.211(a), the power of any emission must be below the unmodulated carrier power (P) as follows:
- (1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.
 - (2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.
 - (3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log (P)$ dB.
- (c). Emission Mask D, 12.5 kHz channel bandwidth equipment: For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:
- (1) On any frequency from the center of the authorized bandwidth f_0 to 5.625 kHz removed from f_0 : Zero dB.
 - (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5.625 kHz but no more than 12.5 kHz: At least $7.27(f_d - 2.88 \text{ kHz})$ dB.
 - (3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz: At least $50 + 10 \log (P)$ dB or 70 dB, whichever is the lesser attenuation.
- (d). Emission Mask I: For transmitters that are equipped with an audio low-pass filter pursuant to §90.211(a), the power of any emission must be below the unmodulated carrier power (P) as follows:
- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency of more than 6.8 kHz, but no more than 9.0 kHz: At least 25 dB;
 - (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency of more than 9.0 kHz, but no more than 15 kHz: At least 35 dB;
 - (3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency of more than 15 kHz: At least $43 + 10 \log (P)$ dB, or 70 dB, whichever is the lesser attenuation.

TEST CONFIGURATION



TEST PROCEDURE

- 1 The EUT was placed on a turn table which is 0.8m above ground plane.
- 2 The EUT was modulated by 2.5 KHz Sine wave audio signal; the level of the audio signal employed is 16 dB greater than that necessary to produce 50% of rated system deviation. Rated system deviation is 2.5 kHz (12.5 kHz channel spacing) and 5 kHz (25 kHz channel spacing).
- 3 Set EUT as normal operation.

- 4 Set SPA Center Frequency = fundamental frequency, RBW=300Hz, VBW= 3 KHz, span =50 KHz.
- 5 Set SPA Max hold. Mark peak, Set 99% Occupied Bandwidth and 26dB Occupied Bandwidth.
- 6 Set SPA Center Frequency=fundamental frequency, set =100Hz, VBW=1 KHz, span=50 KHz for 12.5 channel spacing.

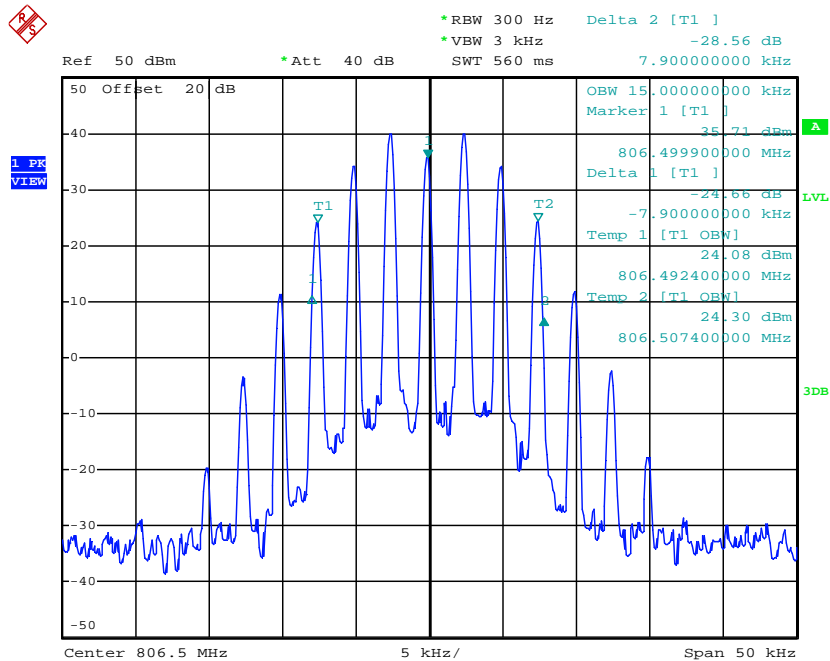
TEST RESULTS

4.2.1 Occupied Bandwidth

Frequency Range (MHz)	Modulation Type	Channel Separation (KHz)	Test Channel	Occupied Bandwidth (KHz)	
				99%	26dB
806-825	Analog/FM	25	Low	15.00	15.80
			Middle	15.00	15.80
			High	15.00	15.80
		12.5	Low	10.00	10.60
			Middle	10.00	10.60
			High	10.05	10.60
	Digital/4FSK	12.5	Low	7.10	9.50
			Middle	7.60	9.60
			High	7.60	9.90
851-870	Analog/FM	25	Low	15.10	15.80
			Middle	15.10	15.90
			High	15.10	15.80
		12.5	Low	10.00	10.70
			Middle	10.00	10.70
			High	10.00	10.70
	Digital/4FSK	12.5	Low	7.30	10.00
			Middle	7.60	9.60
			High	7.50	10.20
896-902	Analog/FM	12.5	Low	10.10	10.70
	High		10.00	10.70	
	Digital/4FSK		Low	7.30	9.40
	High		7.80	10.10	
935-941	Analog/FM	12.5	Low	10.10	10.70
	High		10.00	10.70	
	Digital/4FSK		Low	7.40	9.50
	High		7.60	10.00	
Limit	806-825MHz/851-870MHz		11.25KHz for 12.5KHz Channel Separation 20KHz for 25KHz Channel Separation		
	896-902MHz/935-941MHz		13.6KHz for 12.5KHz Channel Separation		
Test Results	Compliance				

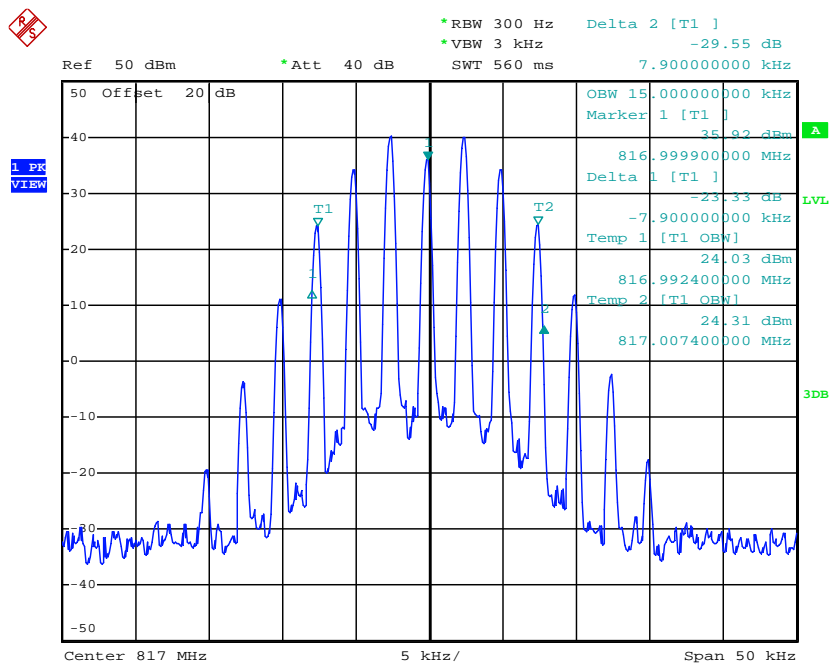
Plots of 99% and 26dB Bandwidth Measurement

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	25 KHz	806.5000	15.00	15.80	20.00	Compliance



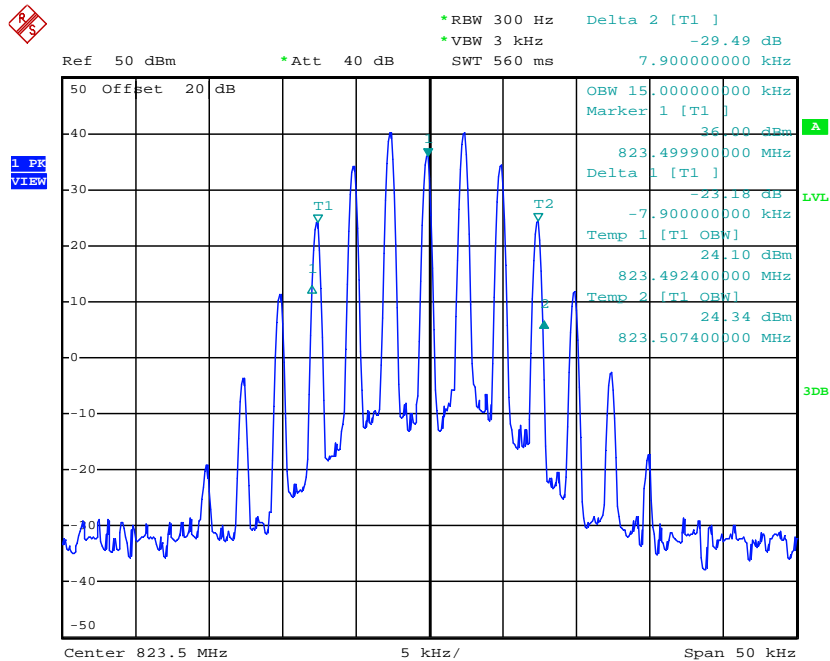
Date: 26.JUL.2012 10:37:58

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	25 KHz	817.0000	15.00	15.80	20.00	Compliance



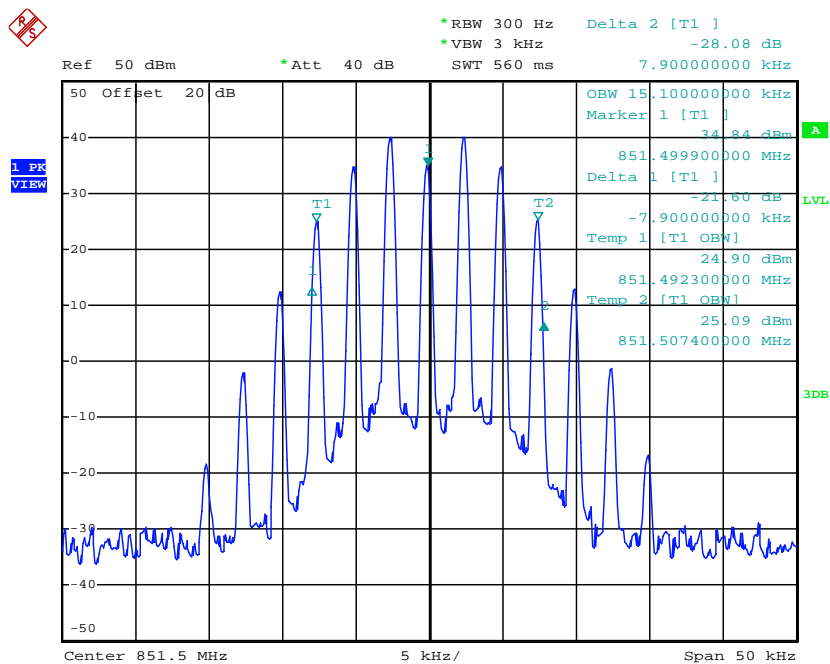
Date: 26.JUL.2012 10:38:55

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	25 KHz	823.5000	15.00	15.80	20.00	Complicance



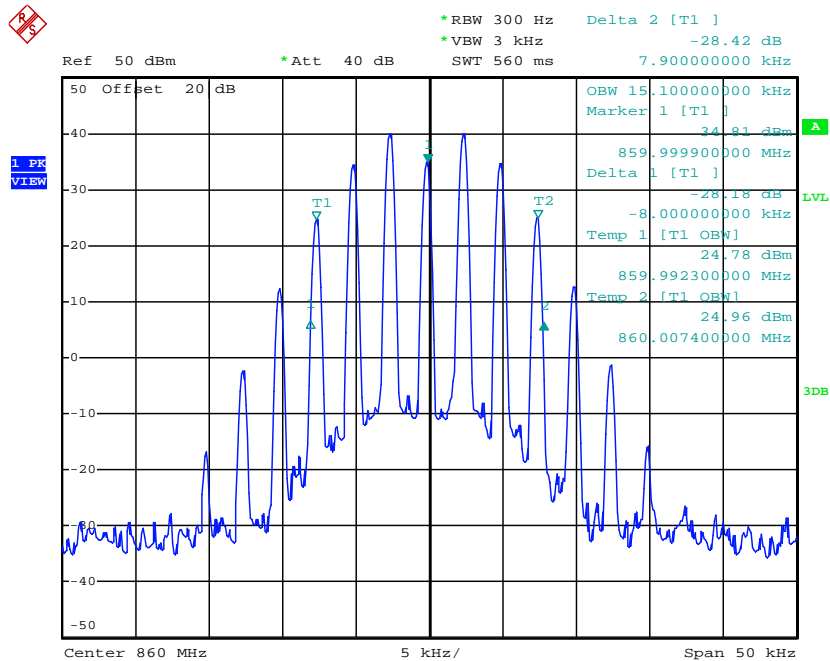
Date: 26.JUL.2012 10:39:46

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	25 KHz	851.5000	15.10	15.80	20.00	Complicance



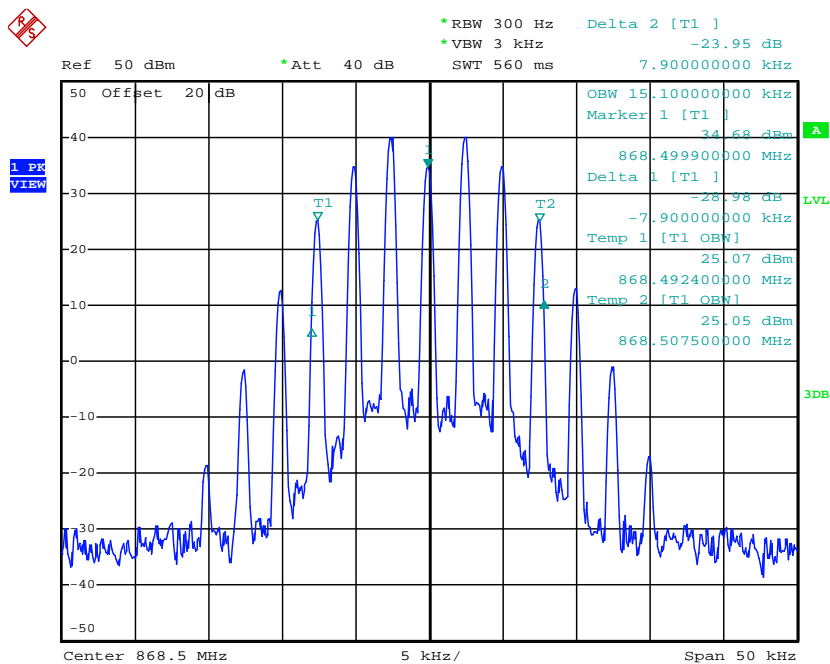
Date: 26.JUL.2012 10:41:33

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	25 KHz	860.0000	15.10	15.90	20.00	Complicance



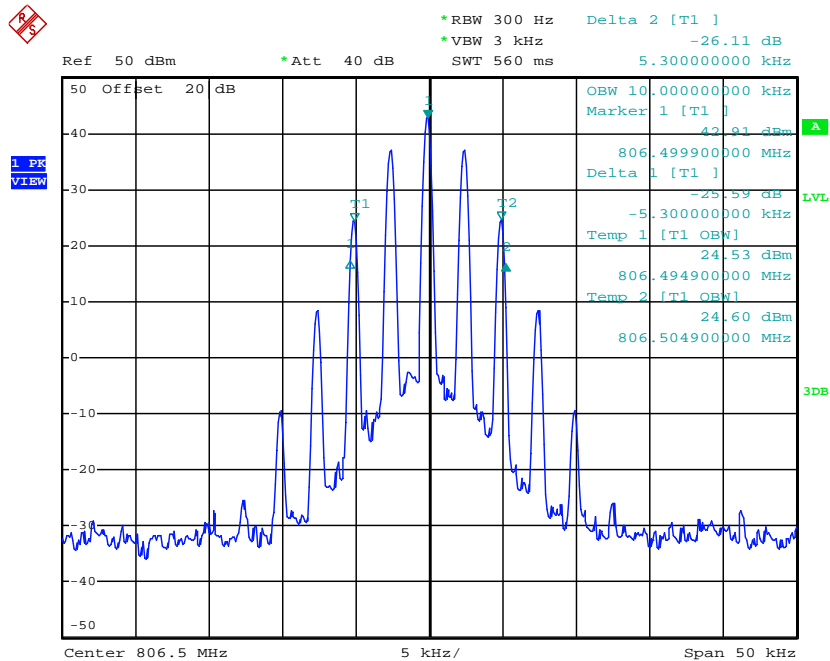
Date: 26.JUL.2012 10:42:22

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	25 KHz	868.5000	15.10	15.80	20.00	Complicance



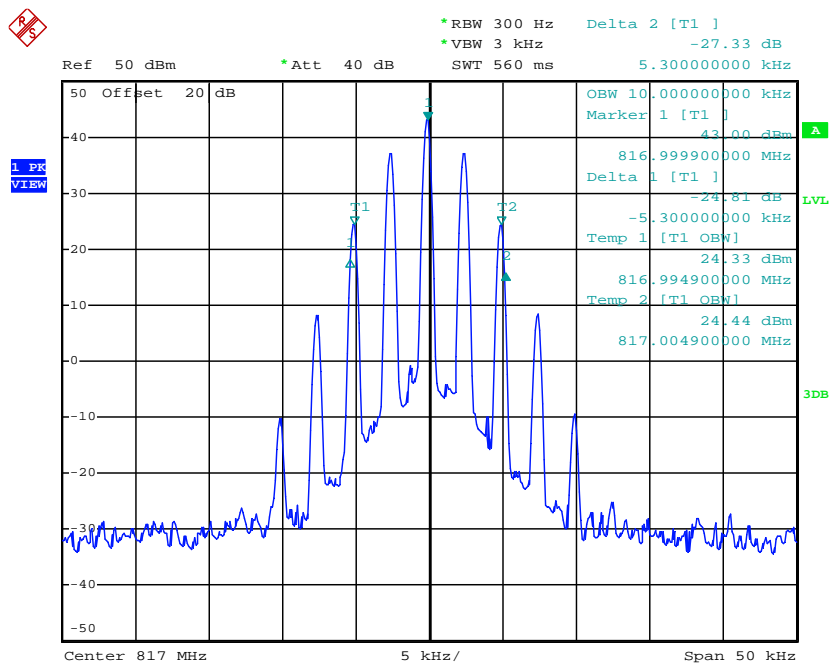
Date: 27.JUL.2012 14:03:16

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	12.5 KHz	806.5000	10.00	10.60	11.25	Compliance



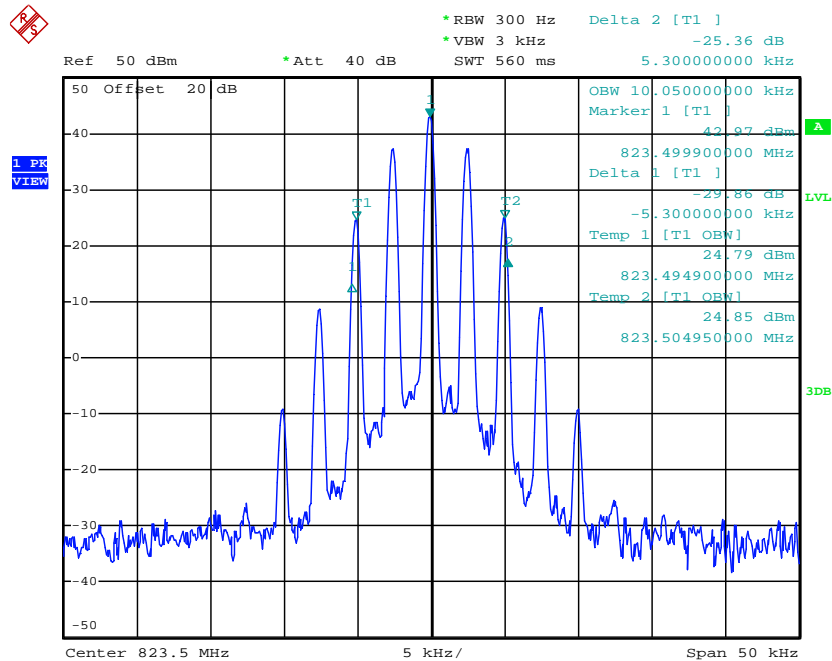
Date: 26.JUL.2012 10:22:43

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	12.5 KHz	817.0000	10.00	10.60	11.25	Compliance



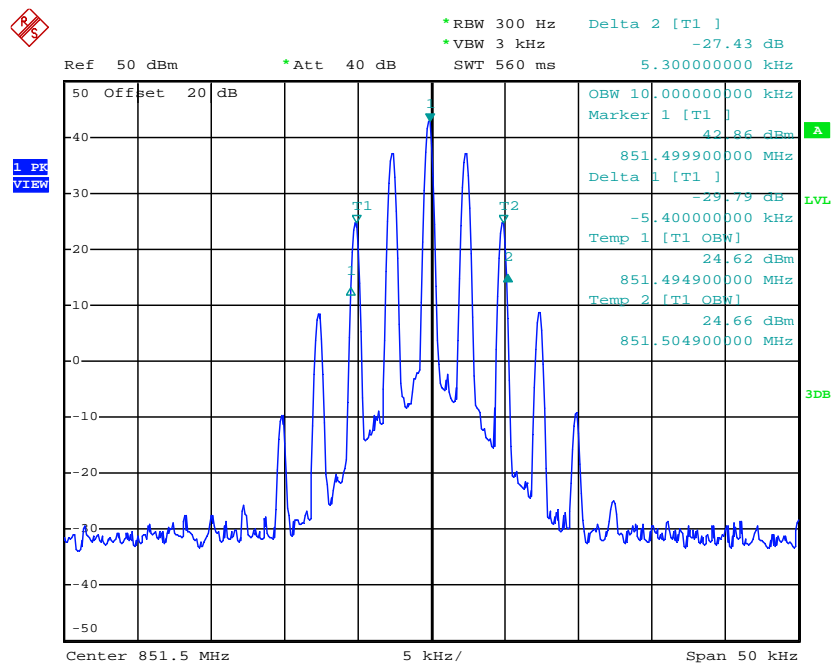
Date: 26.JUL.2012 10:27:58

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	12.5 KHz	823.5000	10.05	10.60	11.25	Complicance



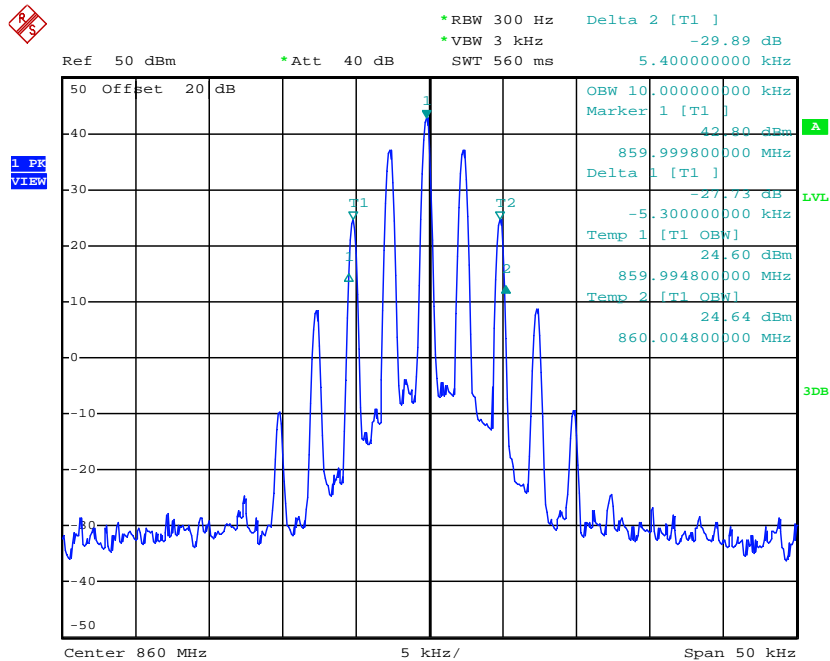
Date: 27.JUL.2012 14:01:53

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	12.5 KHz	851.5000	10.00	10.70	11.25	Complicance



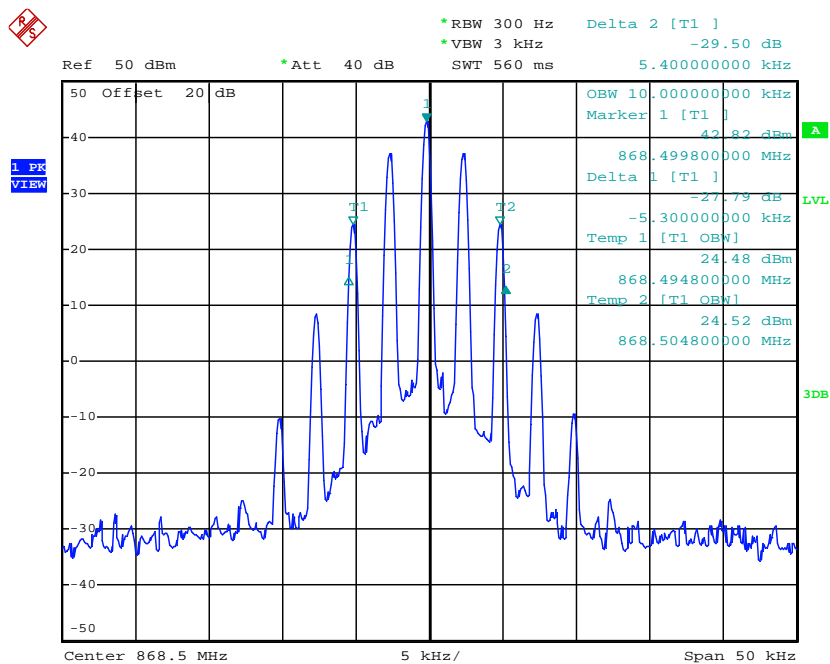
Date: 26.JUL.2012 10:29:52

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	12.5 KHz	860.0000	10.00	10.70	11.25	Complicance



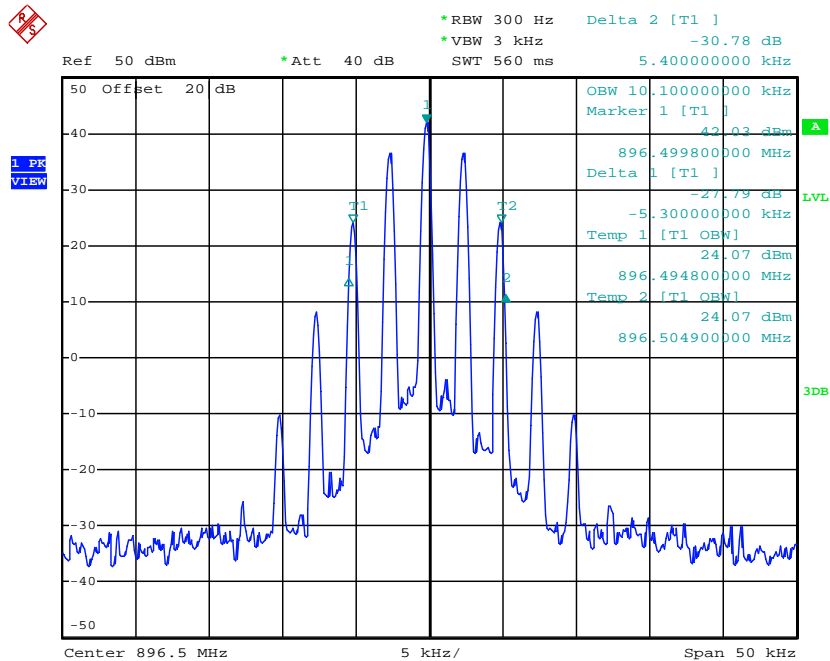
Date: 26.JUL.2012 10:31:11

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	12.5 KHz	868.5000	10.00	10.70	11.25	Complicance



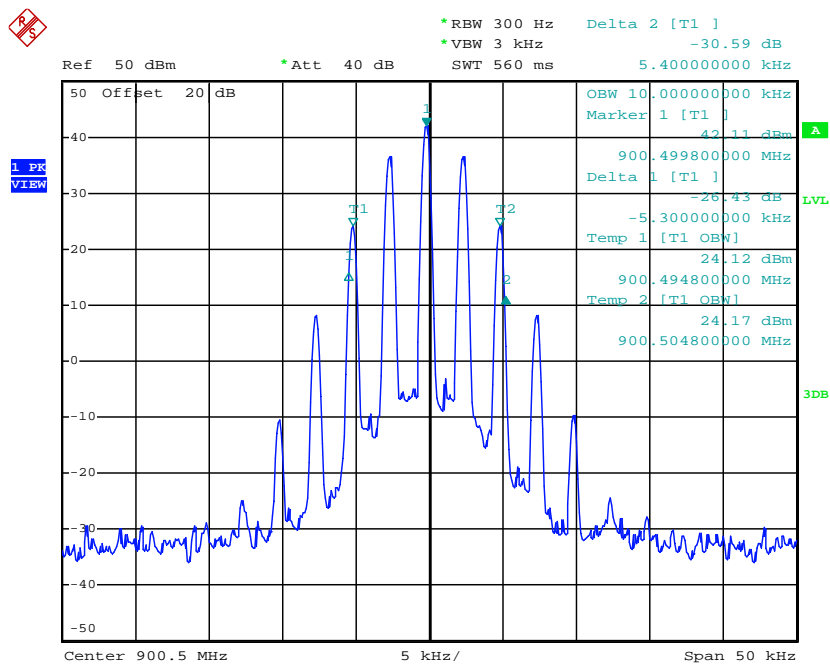
Date: 26.JUL.2012 10:31:55

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	12.5 KHz	896.5000	10.10	10.70	13.60	Complicance



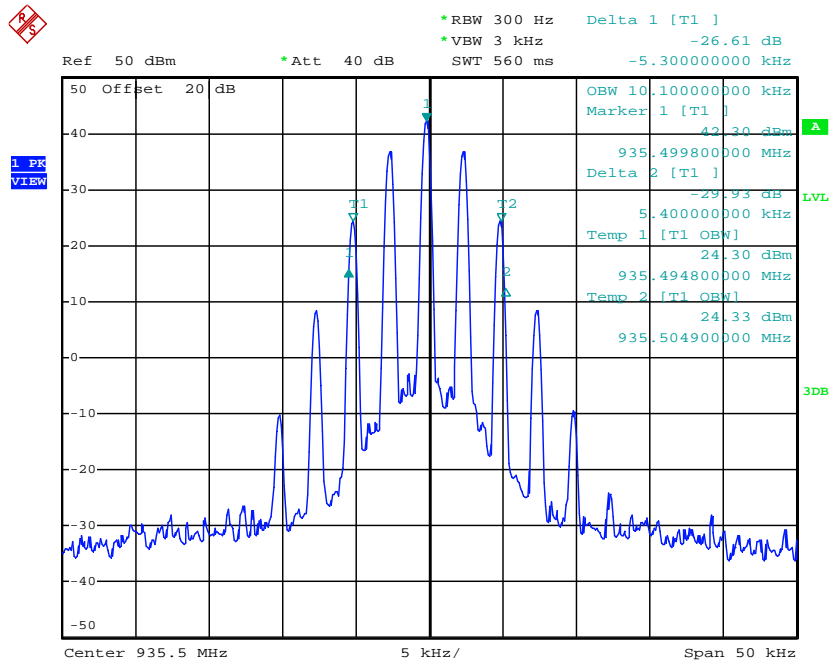
Date: 26.JUL.2012 10:32:56

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	12.5 KHz	900.5000	10.00	10.70	13.60	Complicance



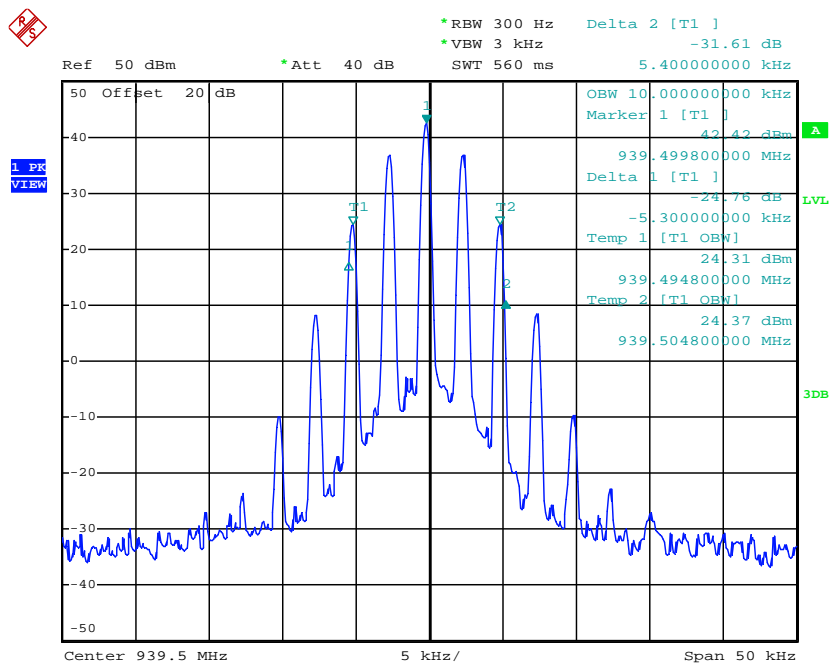
Date: 26.JUL.2012 10:33:44

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	12.5 KHz	935.5000	10.10	10.70	13.60	Complicance



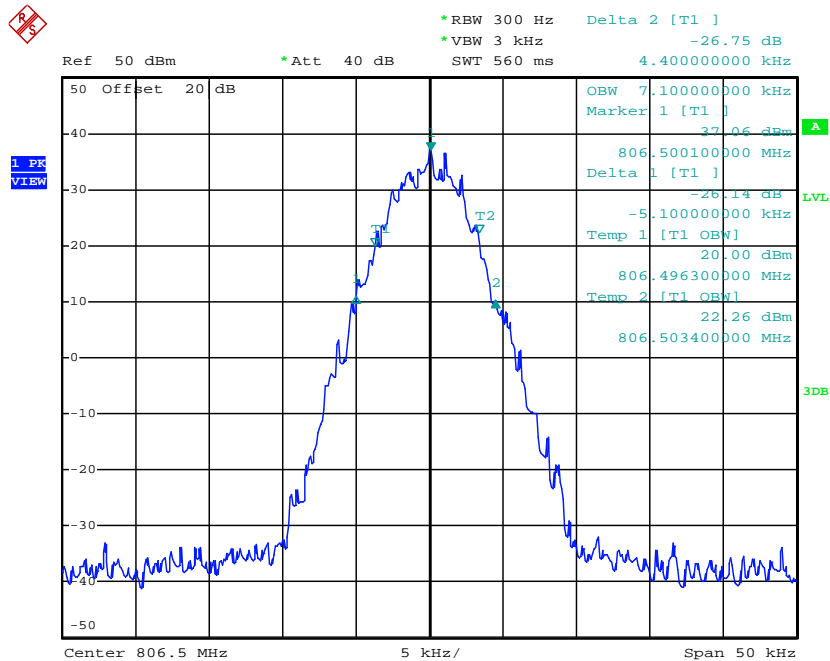
Date: 26.JUL.2012 10:34:39

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
FM	12.5 KHz	939.5000	10.00	10.70	13.60	Complicance



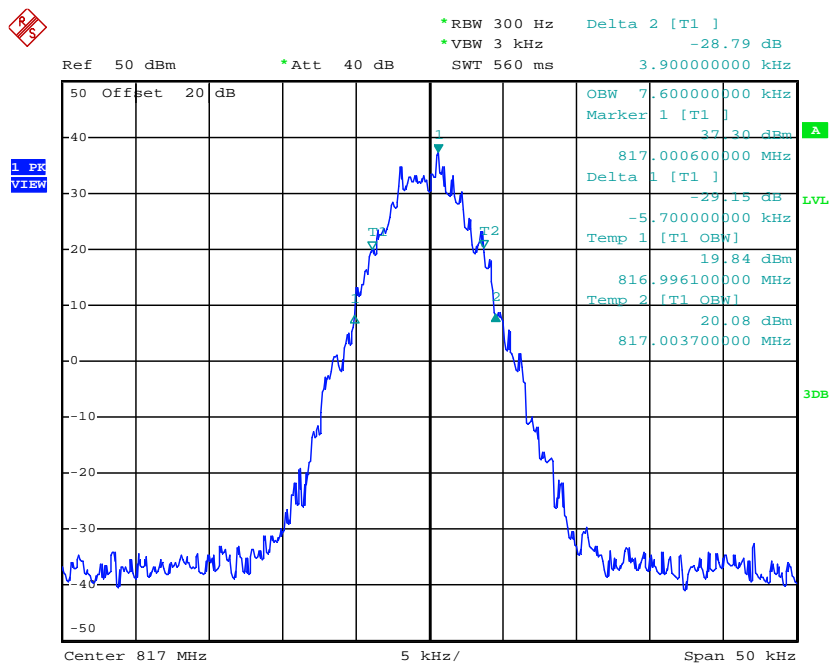
Date: 26.JUL.2012 10:35:30

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
4FSK	12.5 KHz	806.5000	7.10	9.50	11.25	Compliance



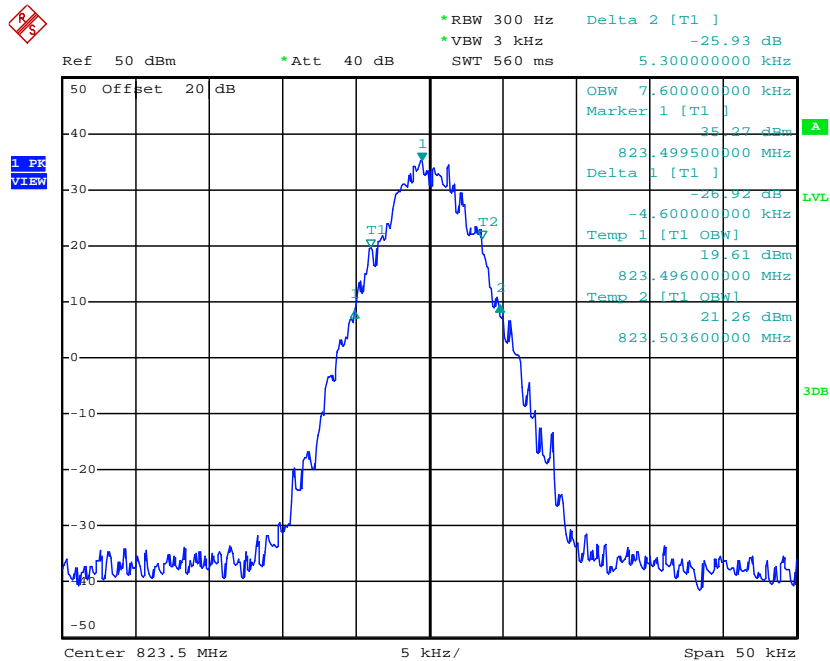
Date: 26.JUL.2012 14:23:21

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
4FSK	12.5 KHz	817.0000	7.60	9.60	11.25	Compliance



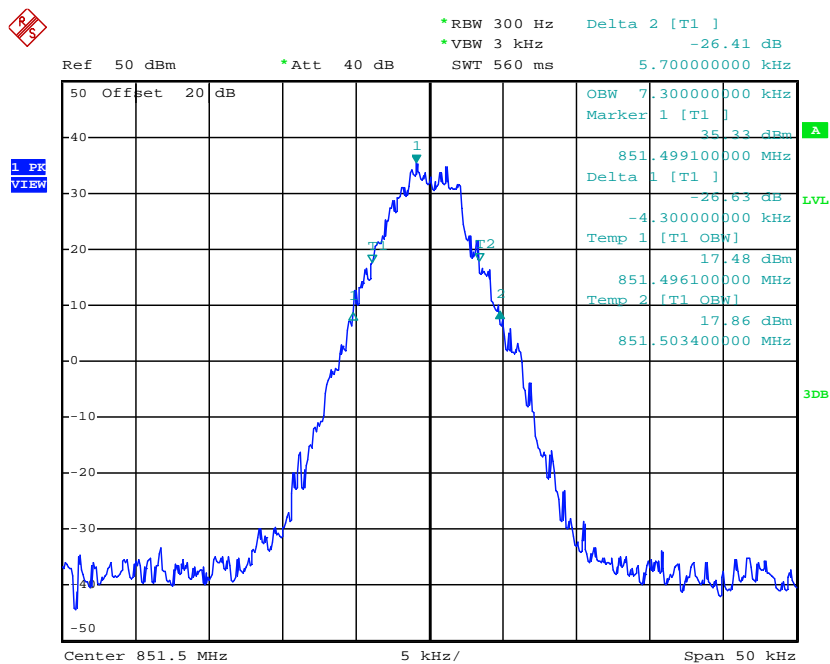
Date: 26.JUL.2012 14:25:02

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
4FSK	12.5 KHz	823.5000	7.60	9.90	11.25	Compliance



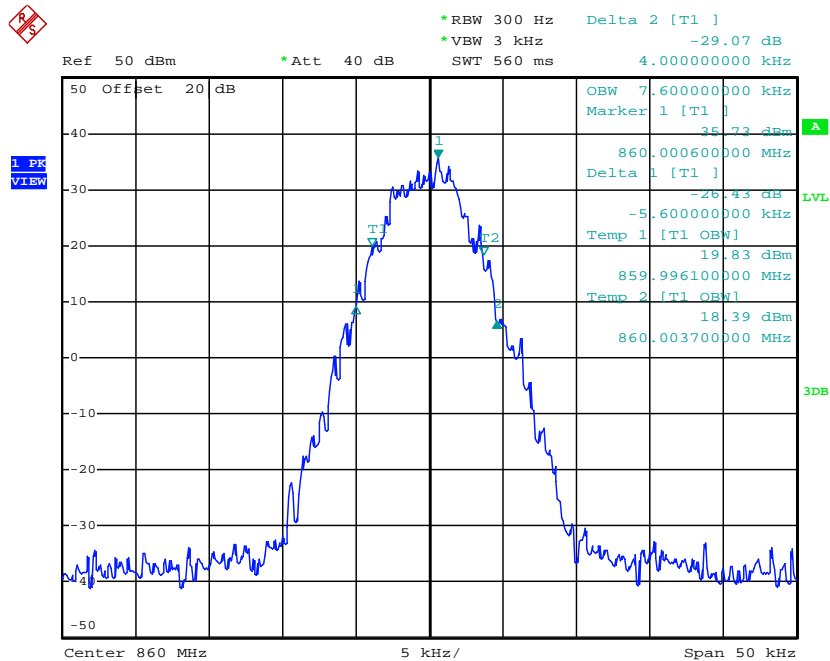
Date: 26.JUL.2012 14:26:01

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
4FSK	12.5 KHz	851.5000	7.30	10.00	11.25	Compliance



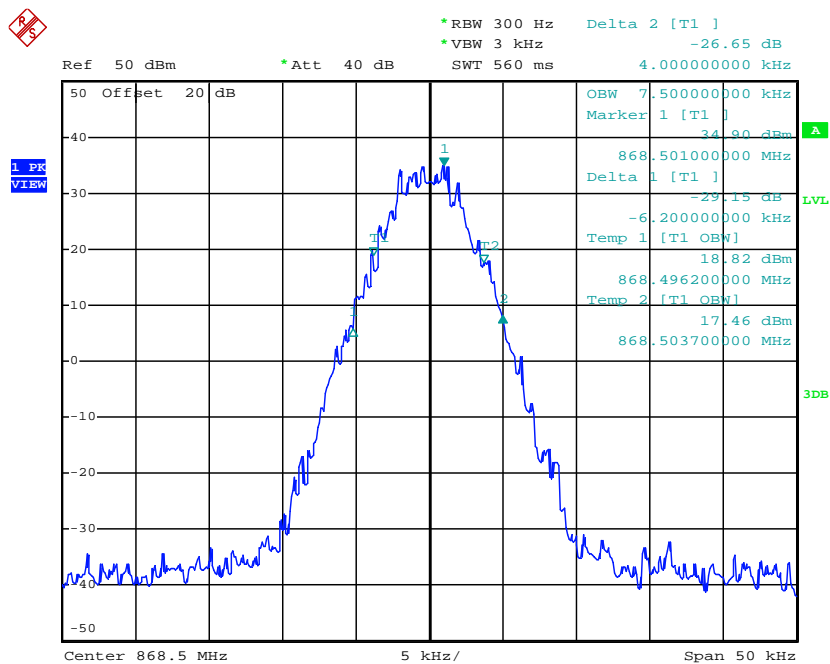
Date: 26.JUL.2012 14:27:11

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
4FSK	12.5 KHz	860.0000	7.60	9.60	11.25	Compliance



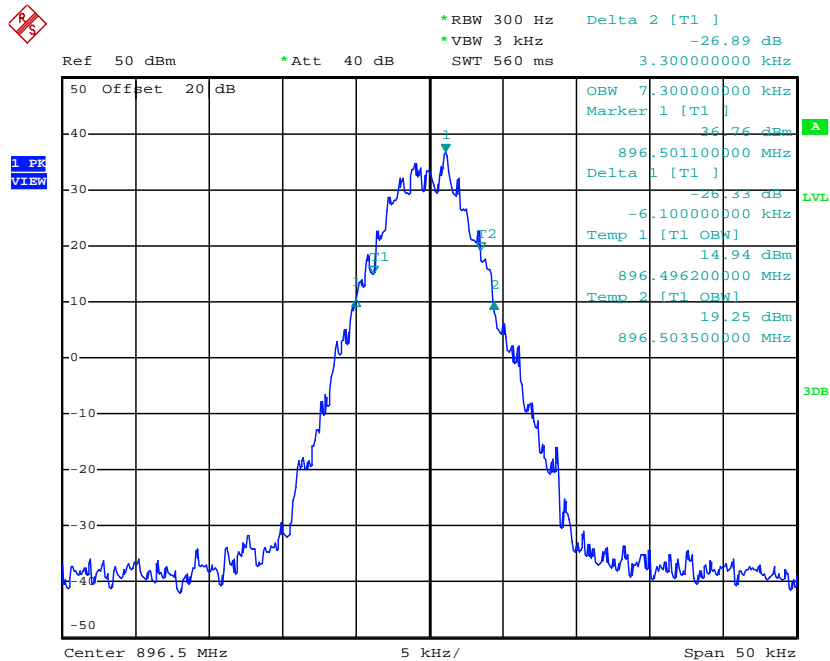
Date: 26.JUL.2012 14:29:13

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
4FSK	12.5 KHz	868.5000	7.50	10.20	11.25	Compliance



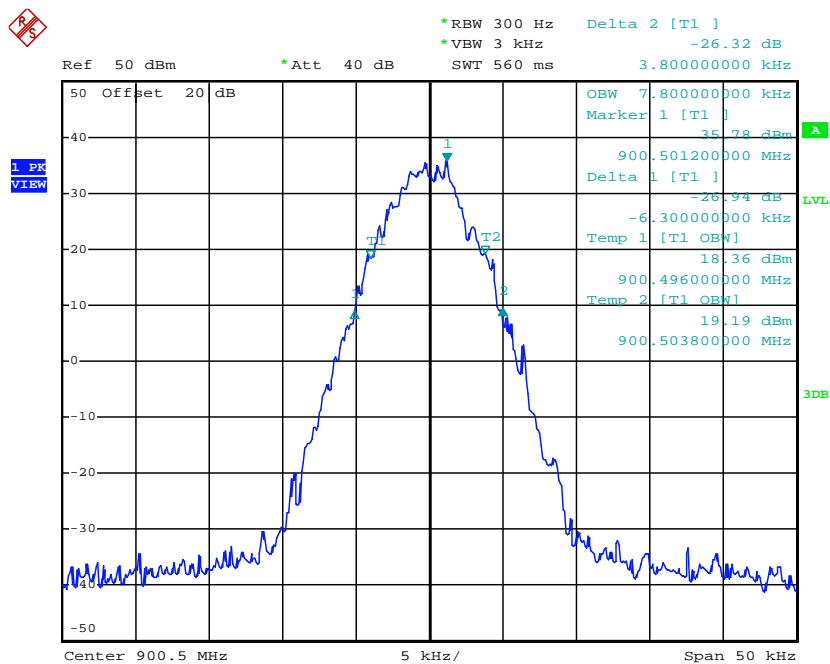
Date: 26.JUL.2012 14:30:15

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
4FSK	12.5 KHz	896.5000	7.30	9.40	13.60	Complicance



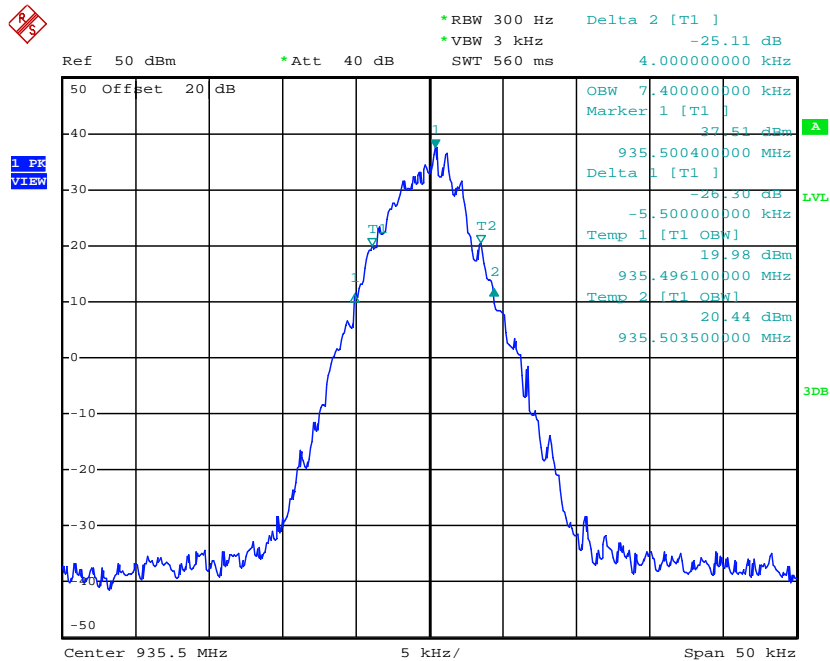
Date: 26.JUL.2012 14:31:09

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
4FSK	12.5 KHz	900.5000	7.80	10.10	13.60	Complicance



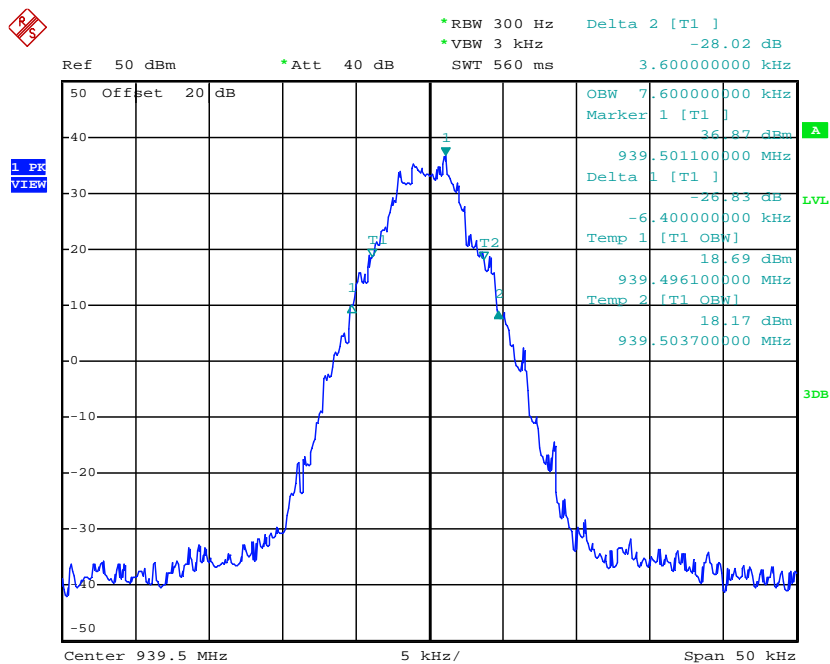
Date: 26.JUL.2012 14:32:16

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
4FSK	12.5 KHz	935.5000	7.40	9.50	13.60	Compliance



Date: 26.JUL.2012 14:33:21

Modulation Type	Channel Separation	Freq.(MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)	FCC Limit (KHz)	Results
4FSK	12.5 KHz	939.5000	7.60	10.00	13.60	Compliance



Date: 26.JUL.2012 14:34:34

4.2.2 Emission Mask

Frequency Range (MHz)	Modulation Type	Channel Separation (KHz)	Test Channel	Test Frequency (MHz)	Applicable Mask	Remark	
806-825 ^[1]	Analog/FM	25	Low	806.5000	B	Both FCC and IC	
			Middle	817.0000	B		
			High	823.5000	B		
		Digital/4FSK	12.5	Low	806.5000	B and D	D only for IC B only for FCC
				Middle	817.0000	B and D	
				High	823.5000	B and D	
	12.5		Low	806.5000	B and D		
			Middle	817.0000	B and D		
			High	823.5000	B and D		
851-870 ^[1]	Analog/FM	25	Low	851.5000	B	Both FCC and IC	
			Middle	860.0000	B		
			High	868.5000	B		
		Digital/4FSK	12.5	Low	851.5000	B and D	D only for IC B only for FCC
				Middle	860.0000	B and D	
				High	868.5000	B and D	
	12.5		Low	851.5000	B and D		
			Middle	860.0000	B and D		
			High	868.5000	B and D		
896-902	Analog/FM	12.5	Low	896.5000	I	Both FCC and IC	
	Digital/4FSK		High	900.5000	I		
			Low	896.5000	I		
			High	900.5000	I		
935-941	Analog/FM	12.5	Low	935.5000	I		
	Digital/4FSK		High	939.5000	I		
			Low	935.5000	I		
			High	939.5000	I		
Test Results			Compliance				

Remark:

[1]. Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of §90.691.

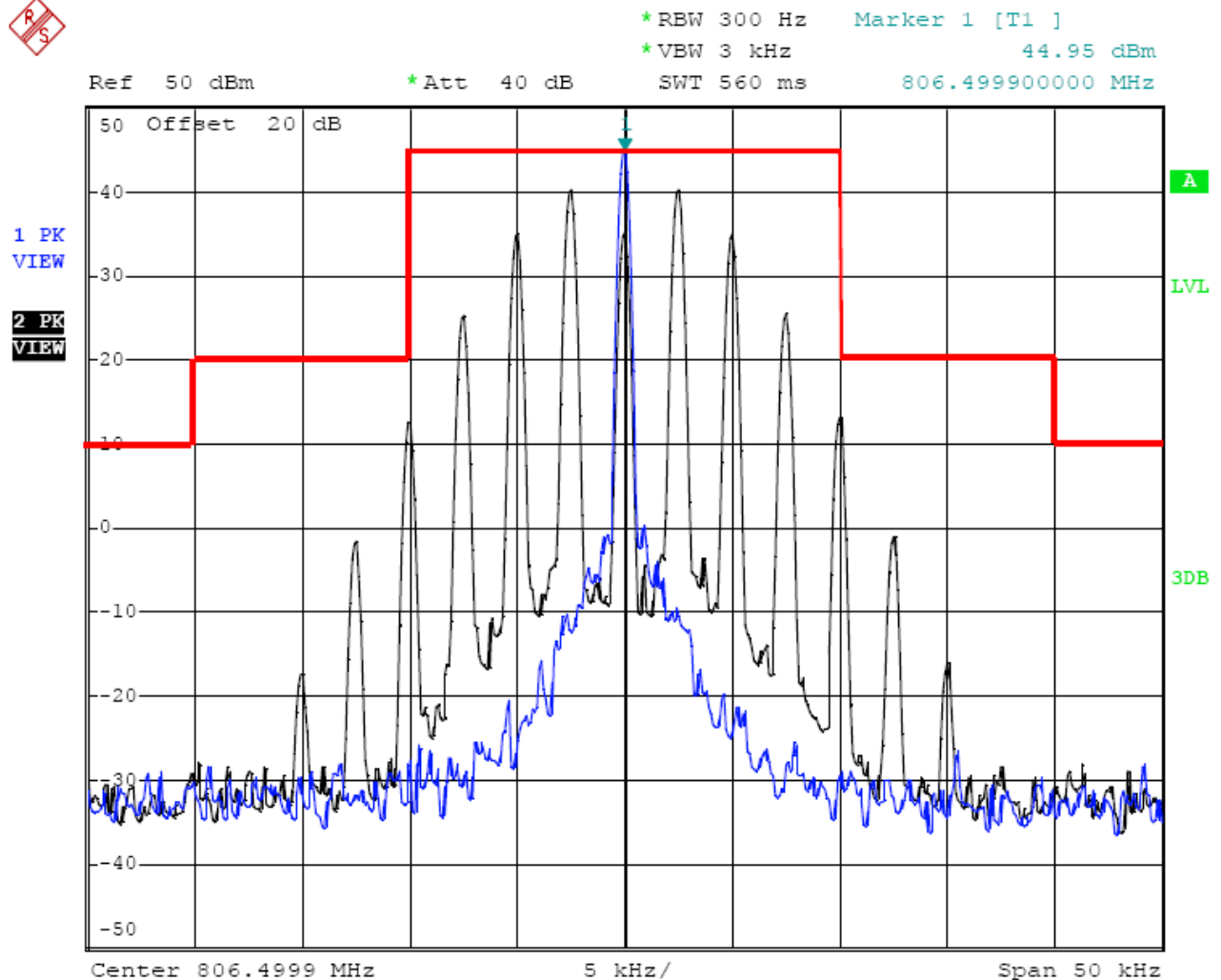
Plots of Emission Mask Measurement

Referred as the attached plot hereinafter

Note: The dark blue curve represents unmodulated signal.
The black curve represents modulated signal.

For Both FCC and IC Review

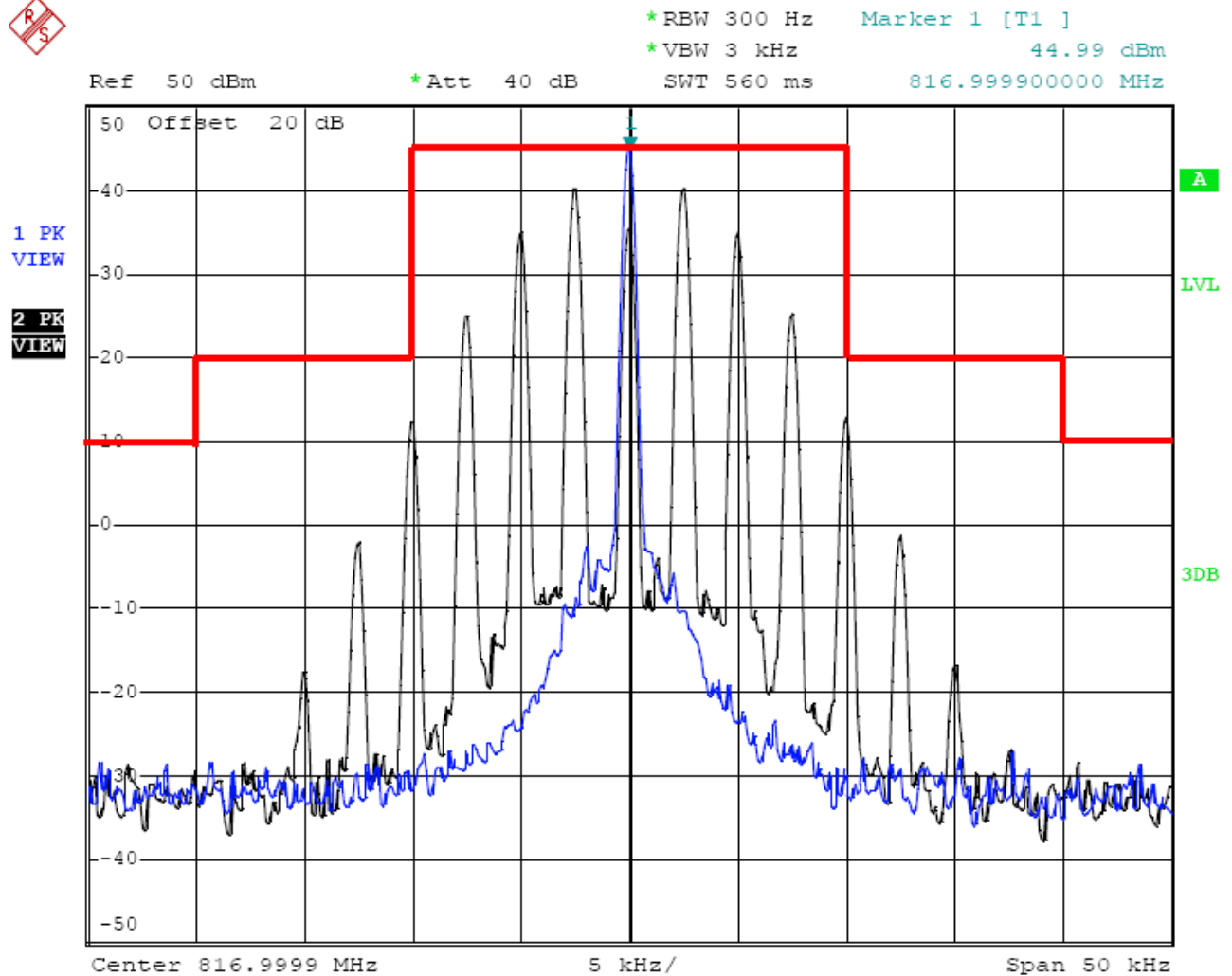
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	25 KHz	806.5000	B	300Hz	2.5	Compliance



Date: 26.JUL.2012 13:20:49

25 kHz Channel Spacing, 806.5000 MHz, 2500 Hz Audio Modulation Only

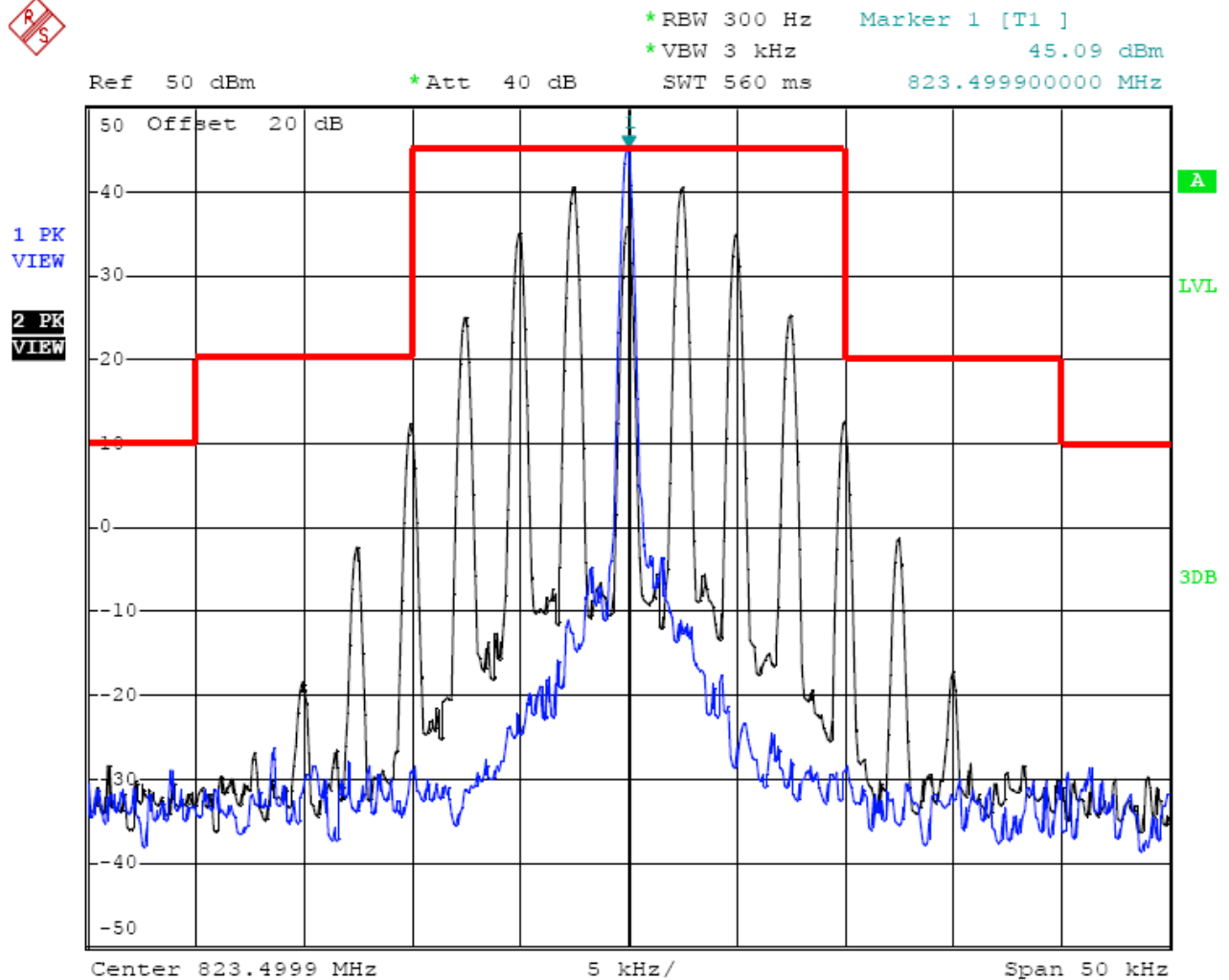
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	25 KHz	817.0000	B	300Hz	2.5	Compliance



Date: 26.JUL.2012 13:22:20

25 kHz Channel Spacing, 817.0000 MHz, 2500 Hz Audio Modulation Only

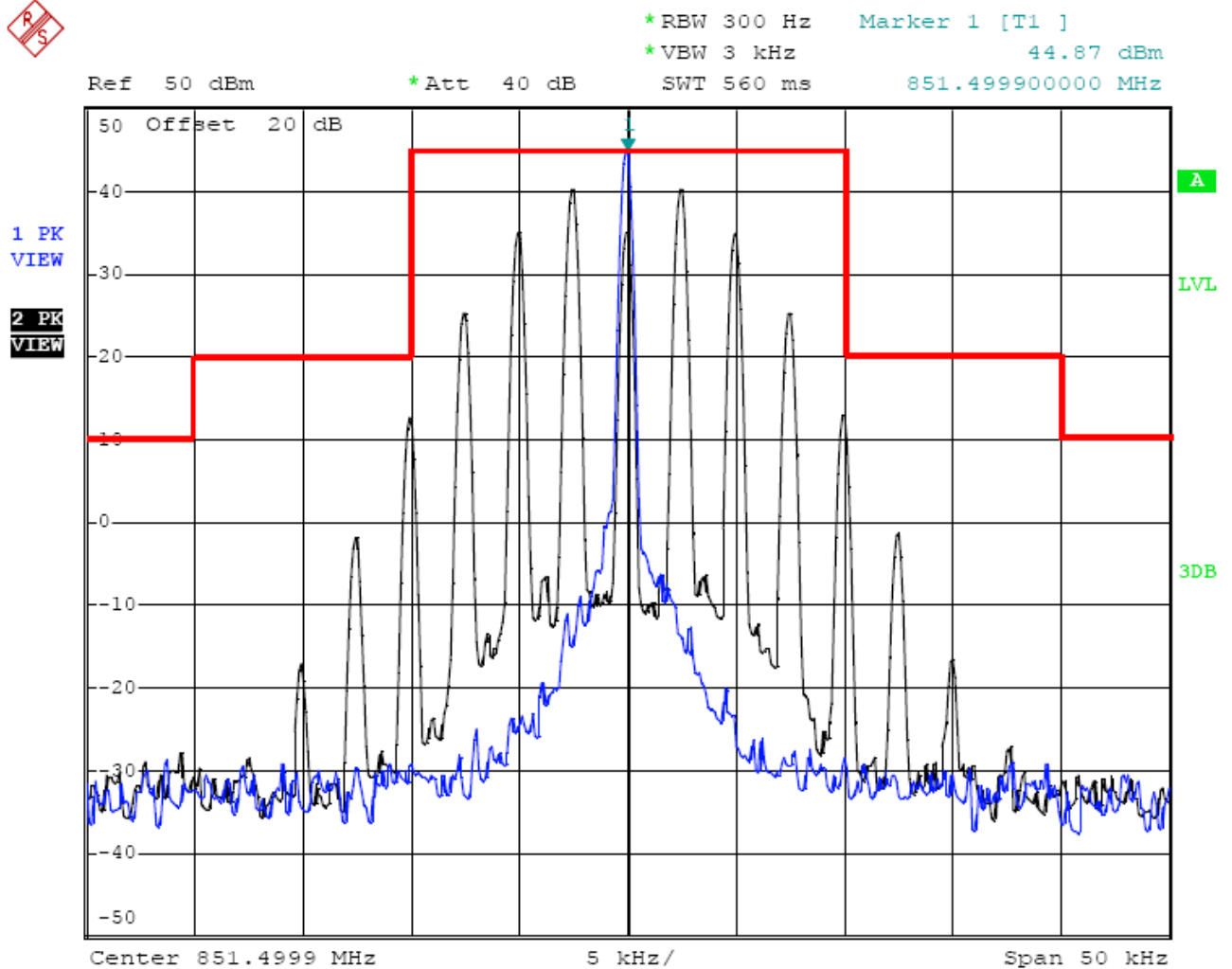
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	25 KHz	823.5000	B	300Hz	2.5	Compliance



Date: 26.JUL.2012 13:23:52

25 kHz Channel Spacing, 823.5000 MHz, 2500 Hz Audio Modulation Only

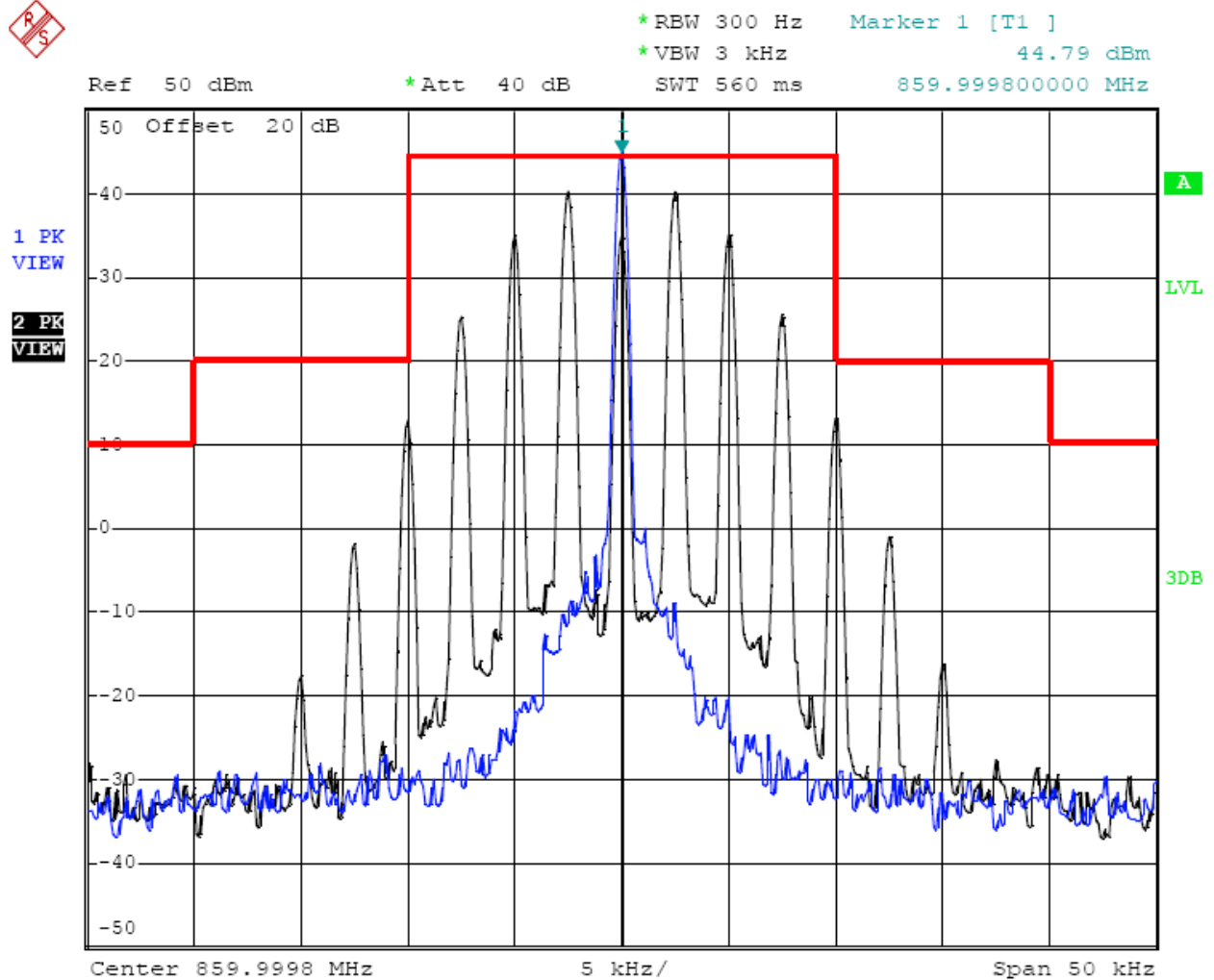
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	25 KHz	851.5000	B	300Hz	2.5	Compliance



Date: 26.JUL.2012 13:25:07

25 kHz Channel Spacing, 851.5000 MHz, 2500 Hz Audio Modulation Only

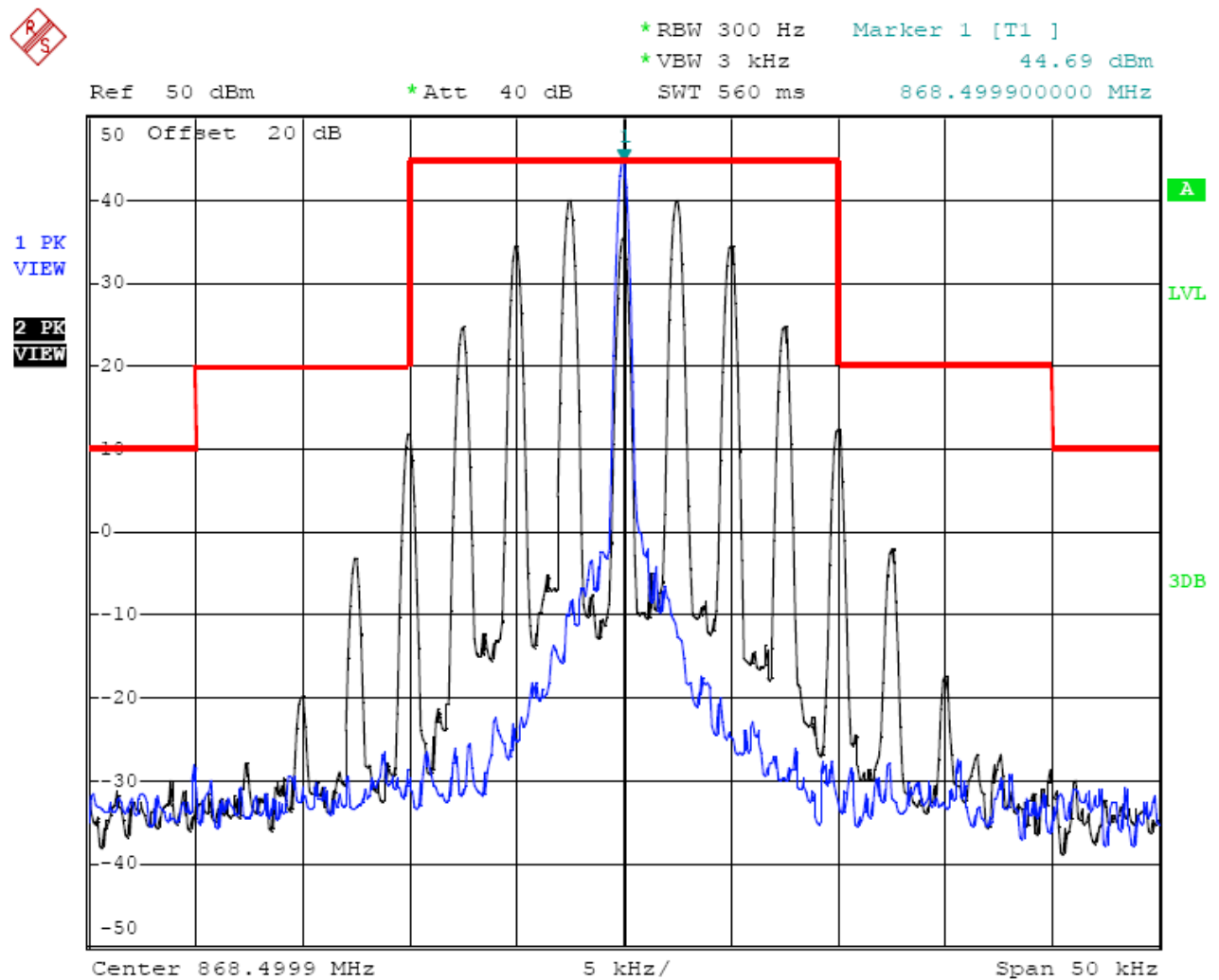
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	25 KHz	860.0000	B	300Hz	2.5	Compliance



Date: 26.JUL.2012 13:26:25

25 kHz Channel Spacing, 860.0000 MHz, 2500 Hz Audio Modulation Only

Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	25 KHz	868.5000	B	300Hz	2.5	Compliance

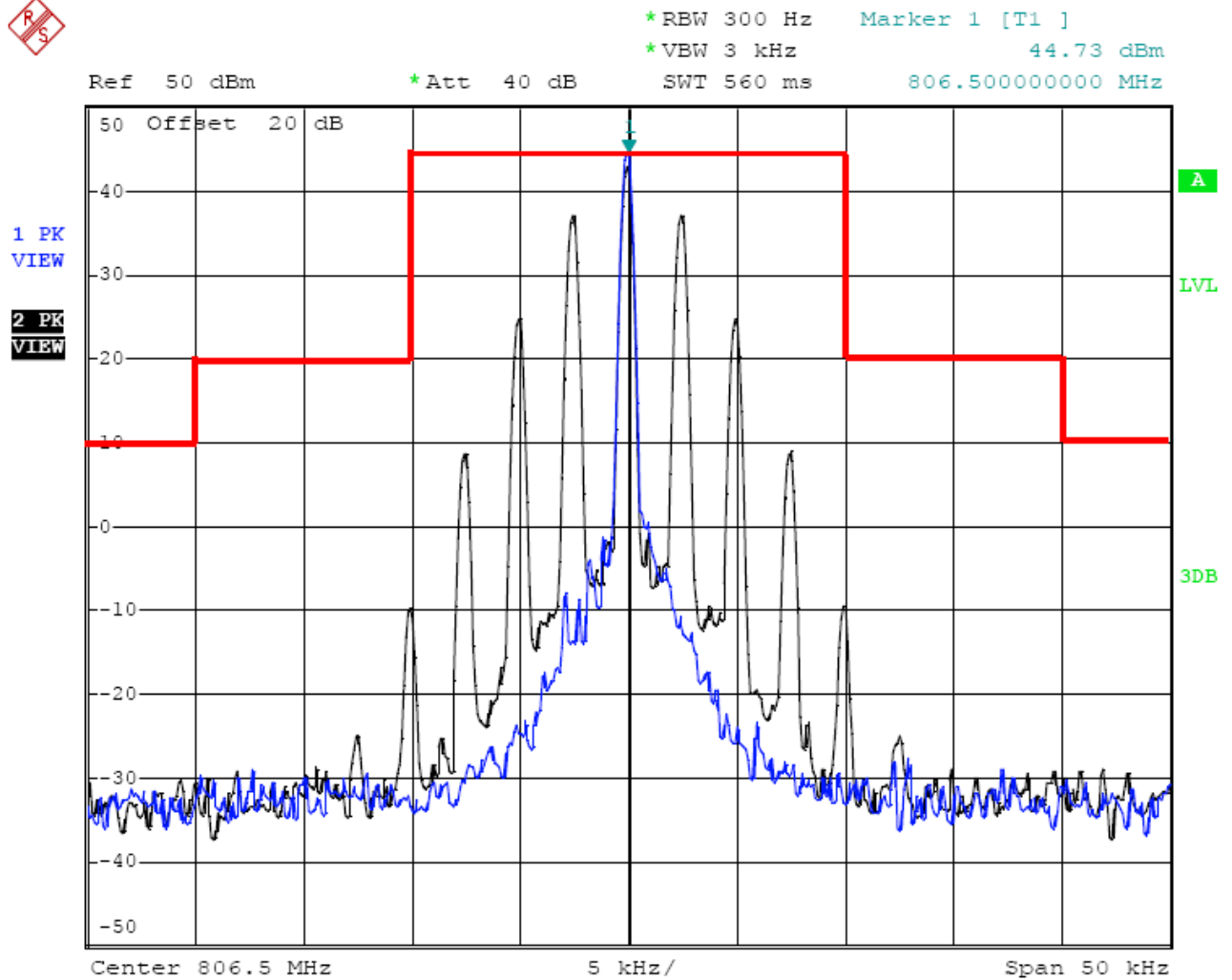


Date: 26.JUL.2012 15:21:17

25 kHz Channel Spacing, 868.5000 MHz, 2500 Hz Audio Modulation Only

Only for FCC Review

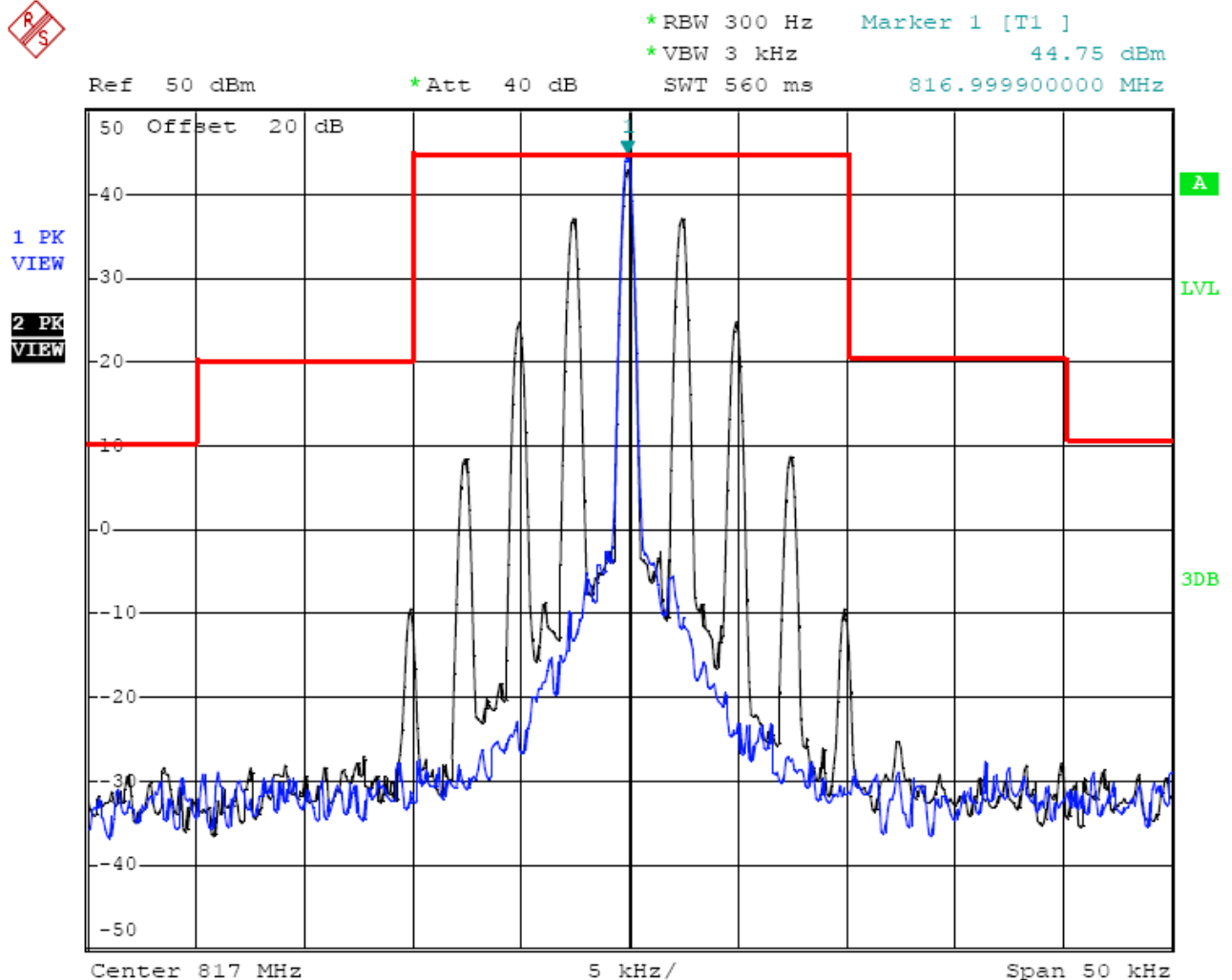
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	806.5000	B	300Hz	2.5	Compliance



Date: 30.JUL.2012 15:01:30

12.5 kHz Channel Spacing, 806.5000 MHz, 2500 Hz Audio Modulation Only

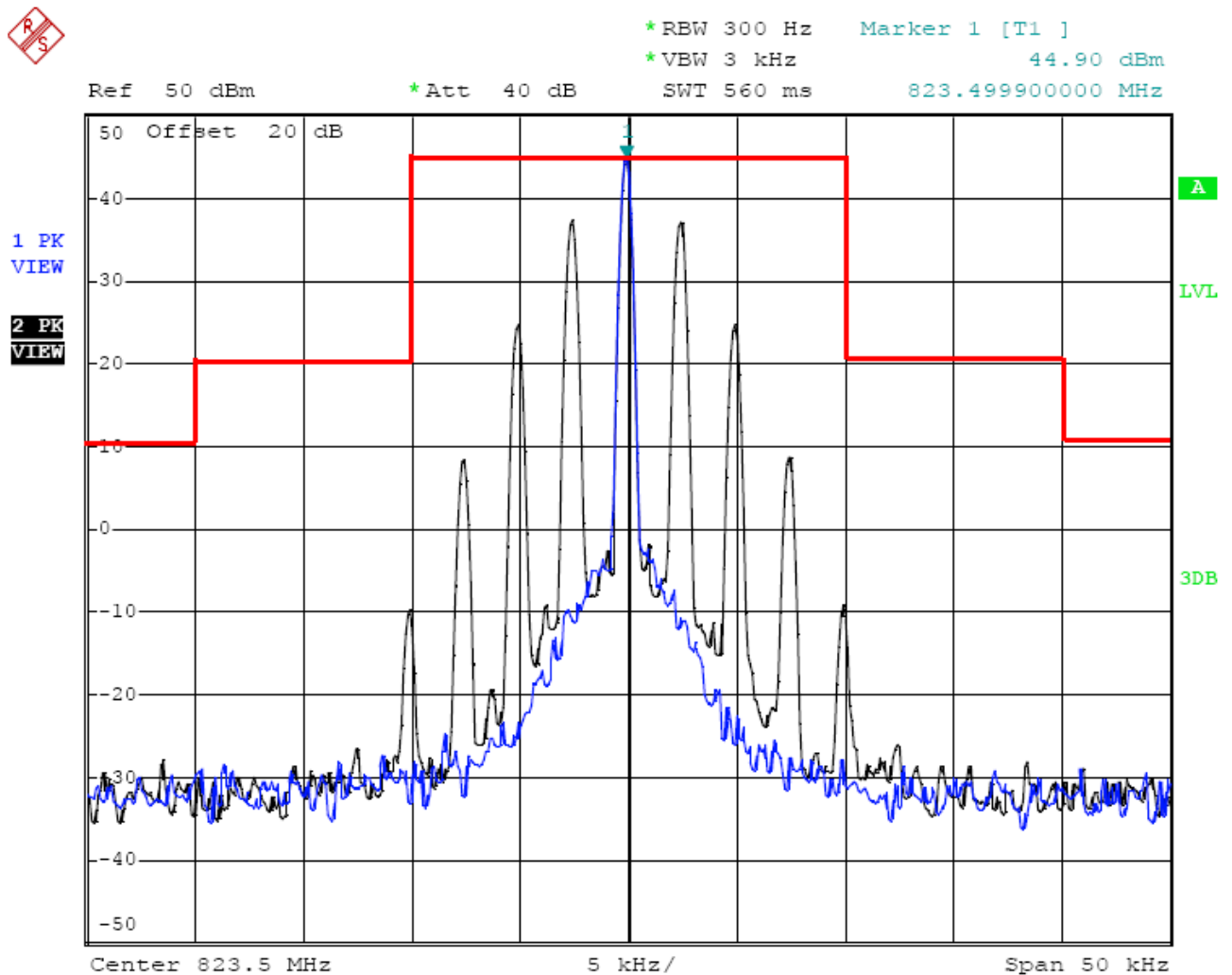
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	817.0000	B	300Hz	2.5	Compliance



Date: 30.JUL.2012 15:02:16

12.5 kHz Channel Spacing, 817.0000 MHz, 2500 Hz Audio Modulation Only

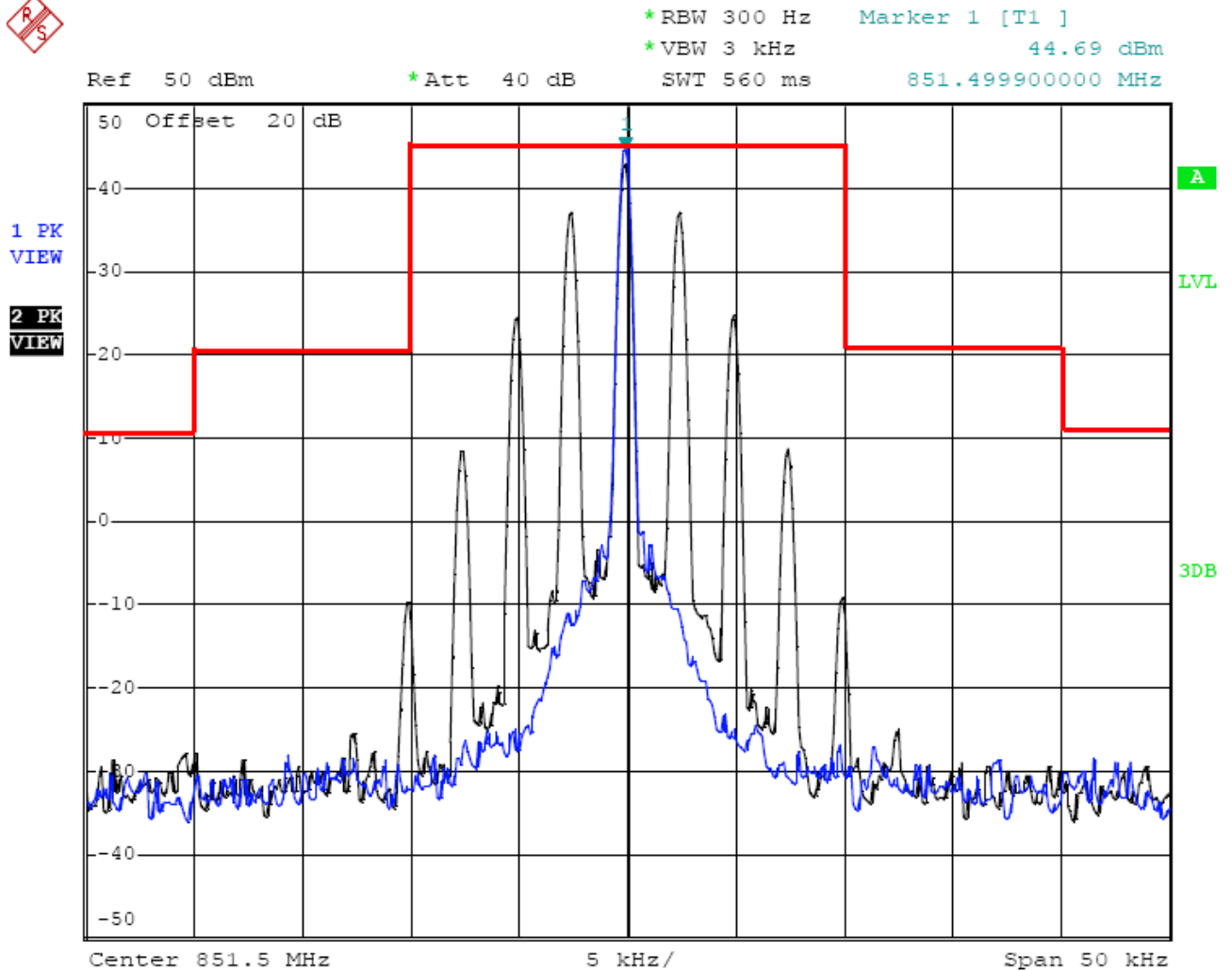
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	823.5000	B	300Hz	2.5	Compliance



Date: 30.JUL.2012 15:03:09

12.5 kHz Channel Spacing, 823.5000 MHz, 2500 Hz Audio Modulation Only

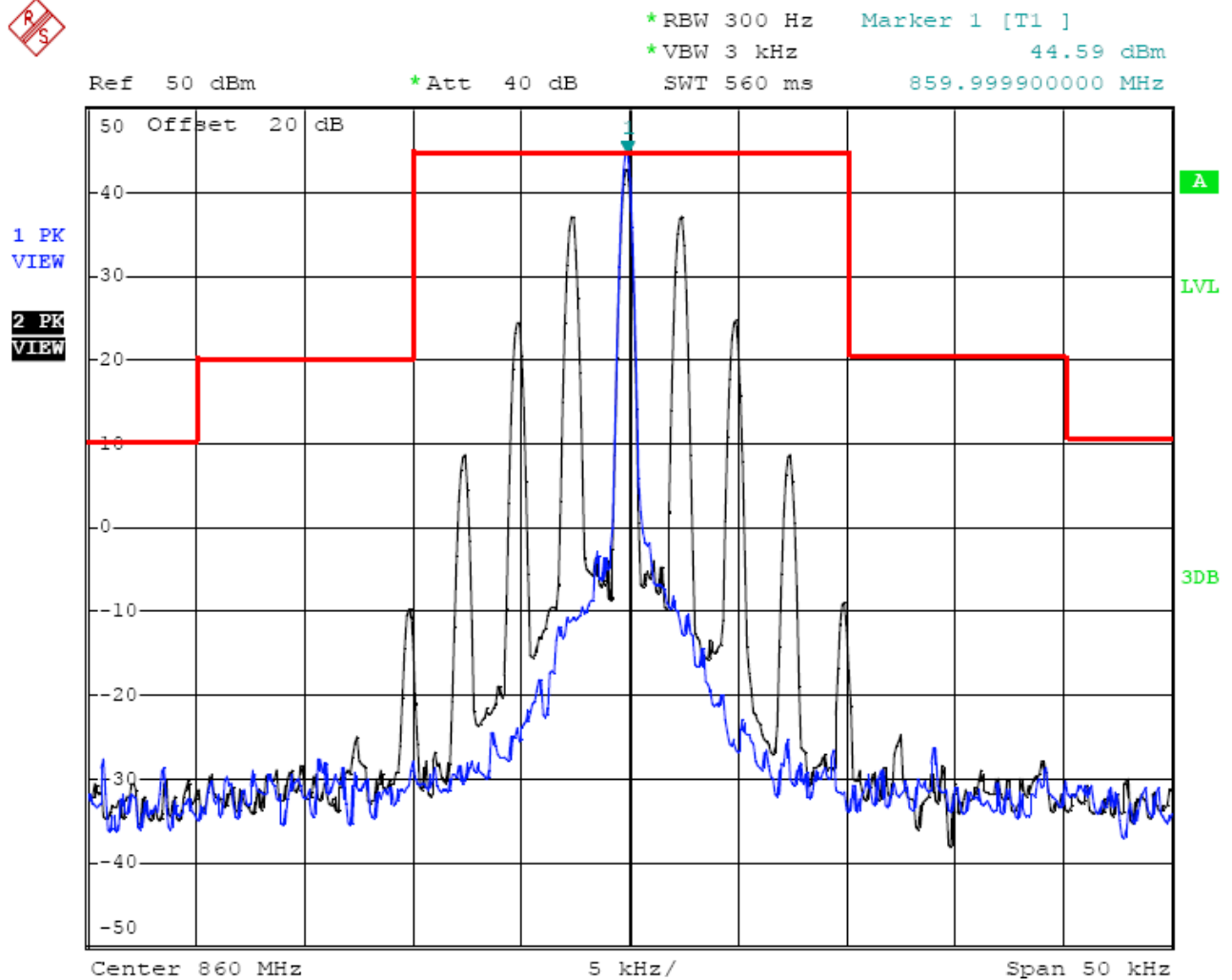
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	851.5000	B	300Hz	2.5	Compliance



Date: 30.JUL.2012 15:04:10

12.5 kHz Channel Spacing, 851.5000 MHz, 2500 Hz Audio Modulation Only

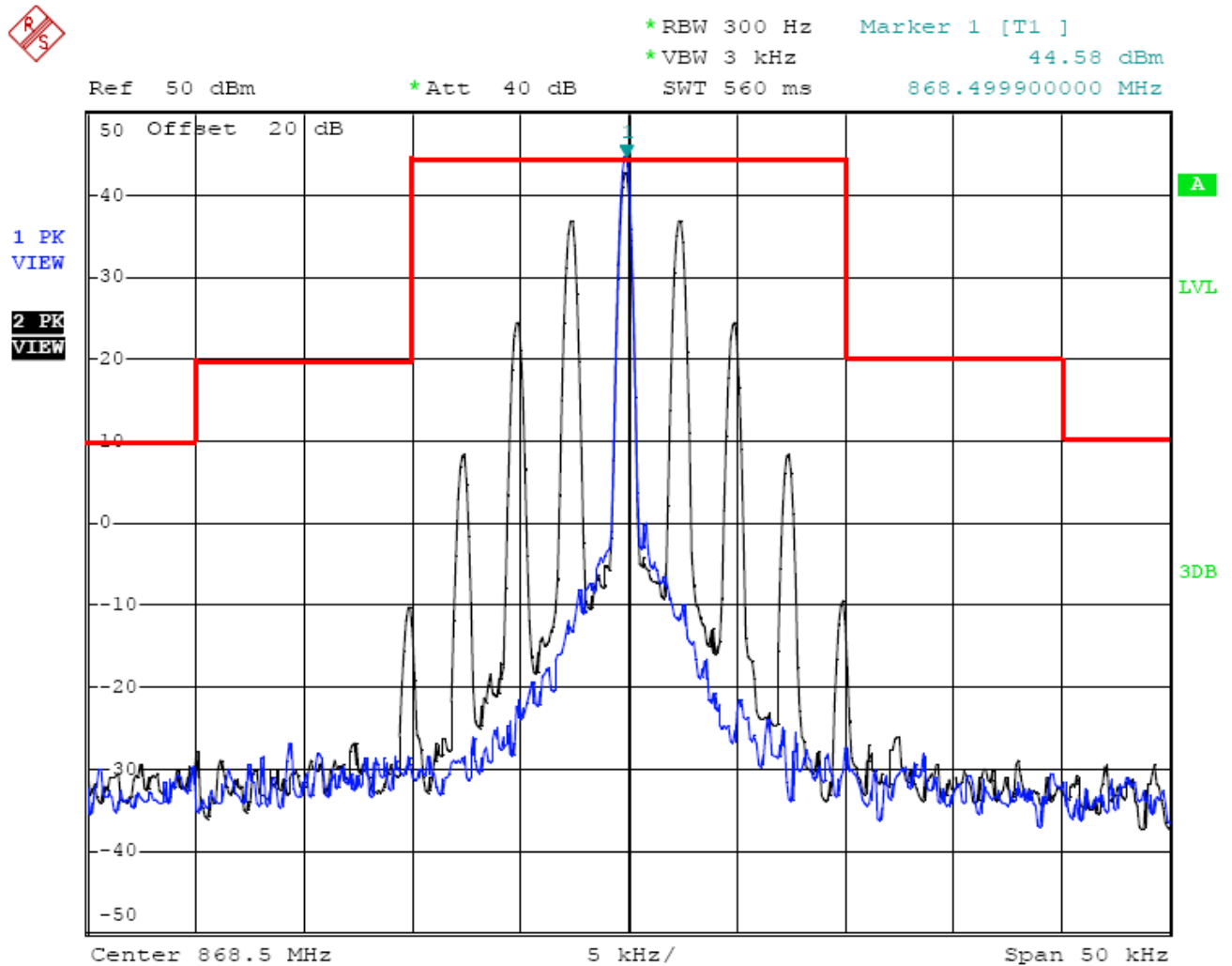
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	860.0000	B	300Hz	2.5	Compliance



Date: 30.JUL.2012 15:05:00

12.5 kHz Channel Spacing, 860.0000 MHz, 2500 Hz Audio Modulation Only

Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	868.5000	B	300Hz	2.5	Compliance

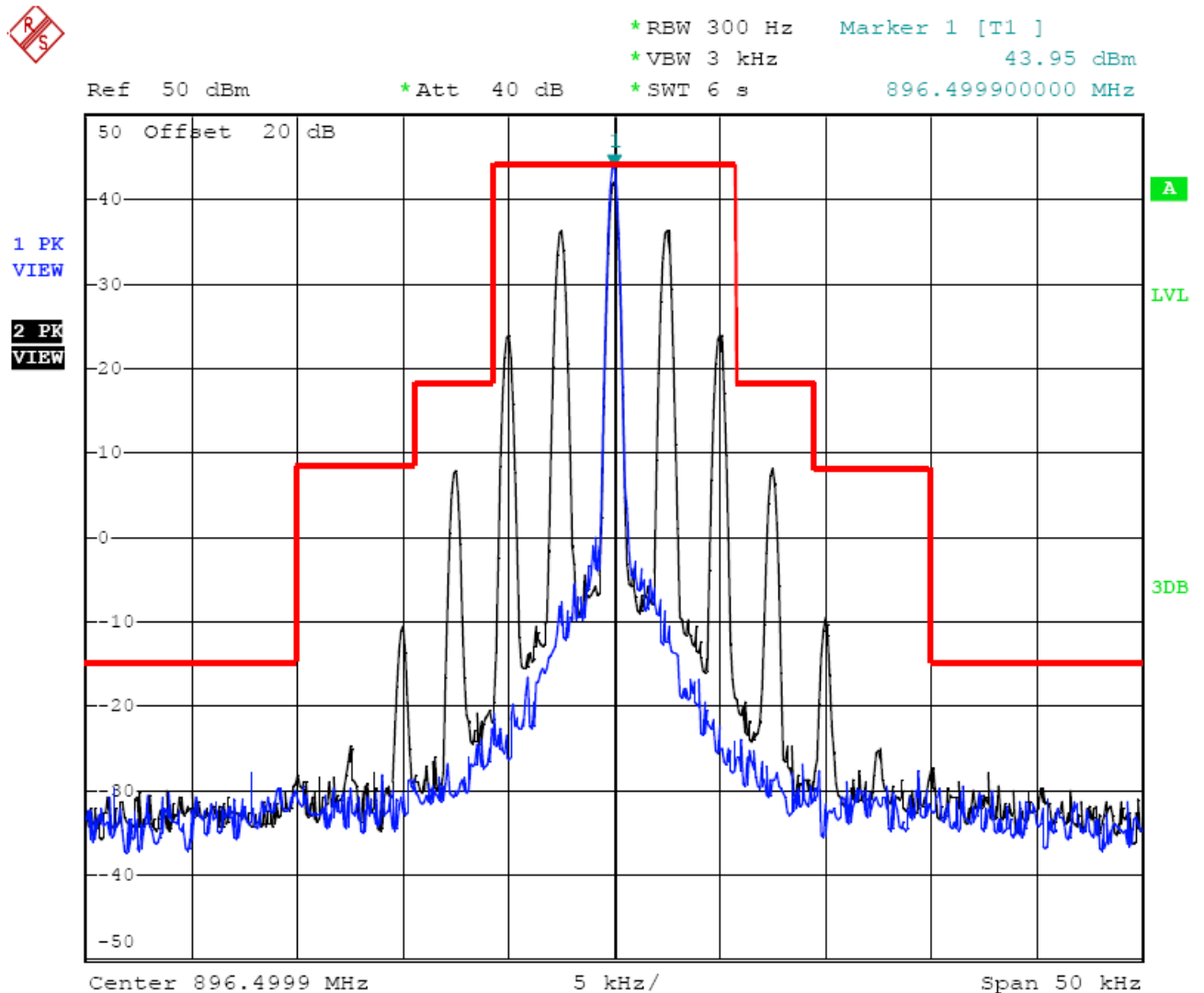


Date: 30.JUL.2012 15:05:54

12.5 kHz Channel Spacing, 868.5000 MHz, 2500 Hz Audio Modulation Only

For Both FCC and IC Review

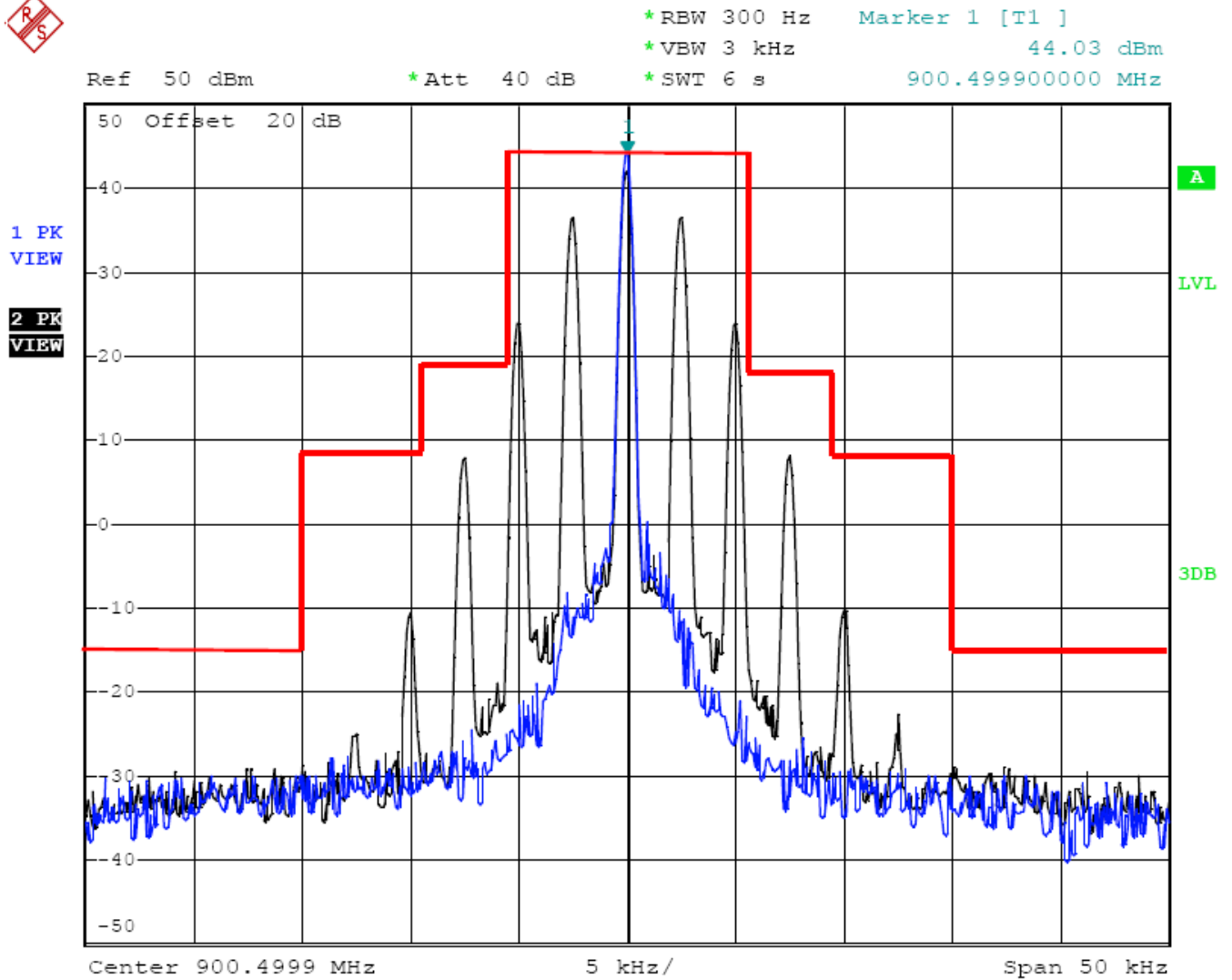
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	896.5000	I	300Hz	2.5	Complicance



Date: 26.JUL.2012 15:26:45

12.5 kHz Channel Spacing, 868.5000 MHz, 2500 Hz Audio Modulation Only

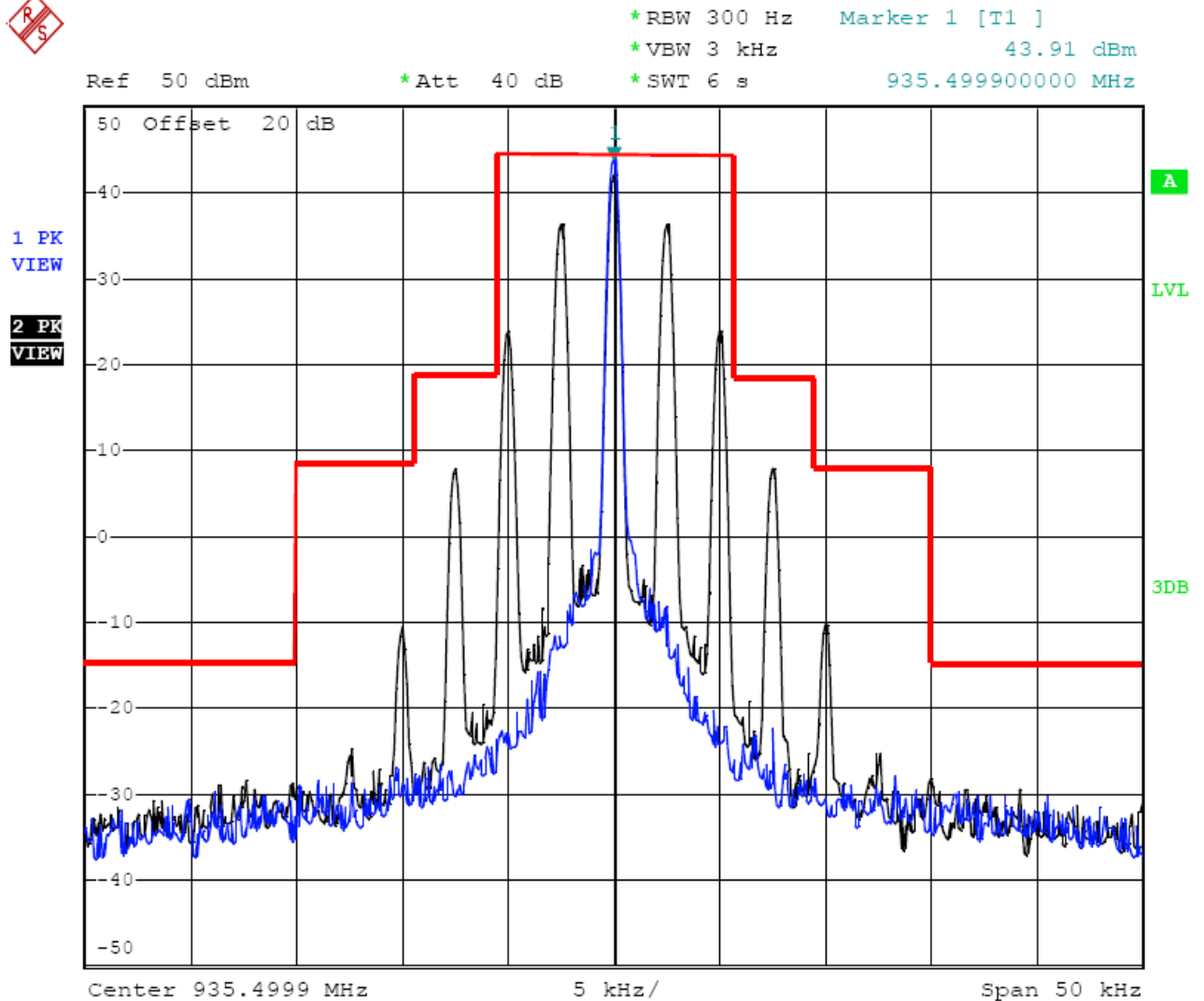
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	900.5000	I	300Hz	2.5	Compliance



Date: 26.JUL.2012 15:28:37

12.5 kHz Channel Spacing, 900.5000 MHz, 2500 Hz Audio Modulation Only

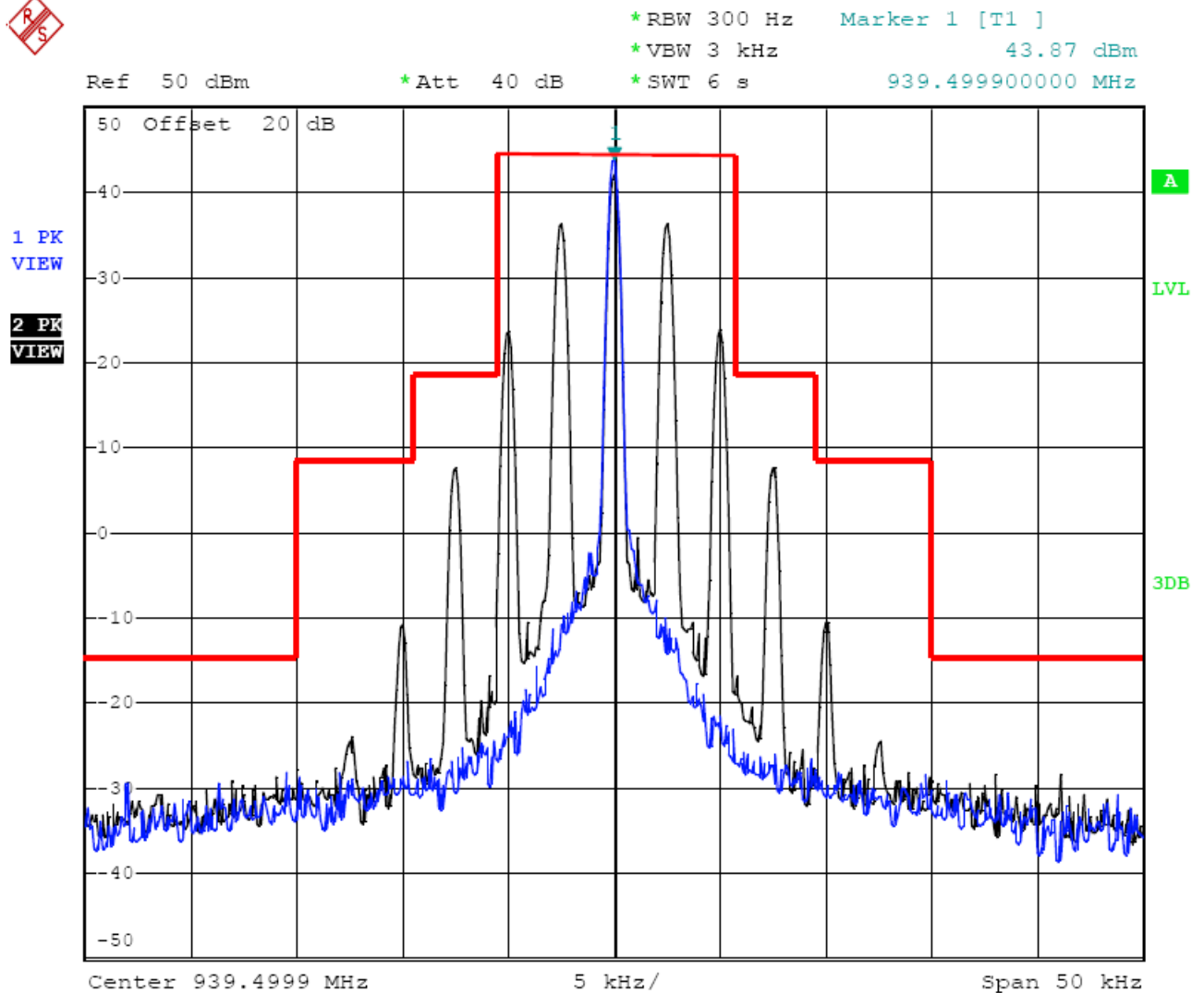
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	935.5000	I	300Hz	2.5	Compliance



Date: 26.JUL.2012 15:30:21

12.5 kHz Channel Spacing, 935.5000 MHz, 2500 Hz Audio Modulation Only

Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	939.5000	I	300Hz	2.5	Compliance

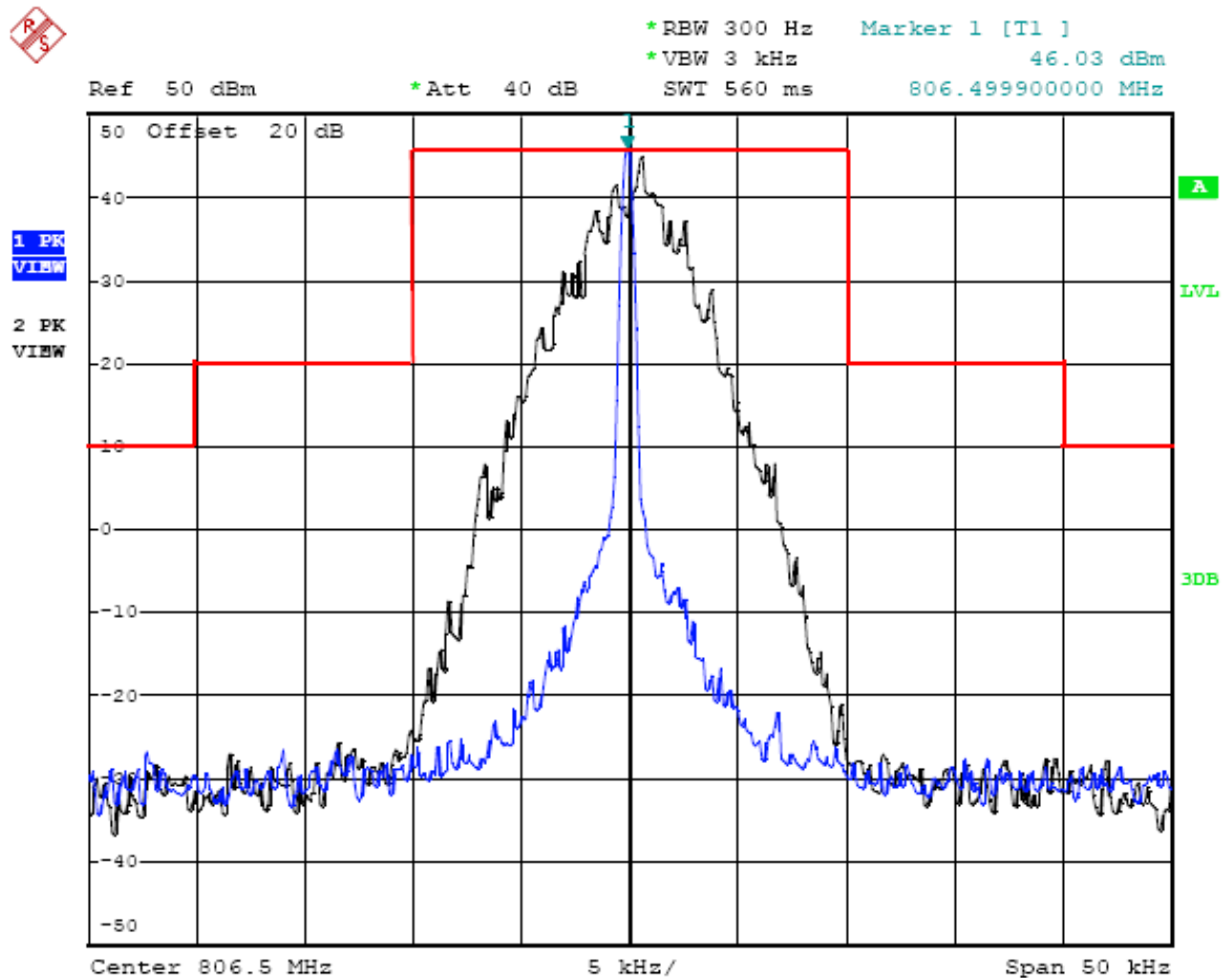


Date: 26.JUL.2012 15:33:02

12.5 kHz Channel Spacing, 939.5000 MHz, 2500 Hz Audio Modulation Only

Only for FCC Review

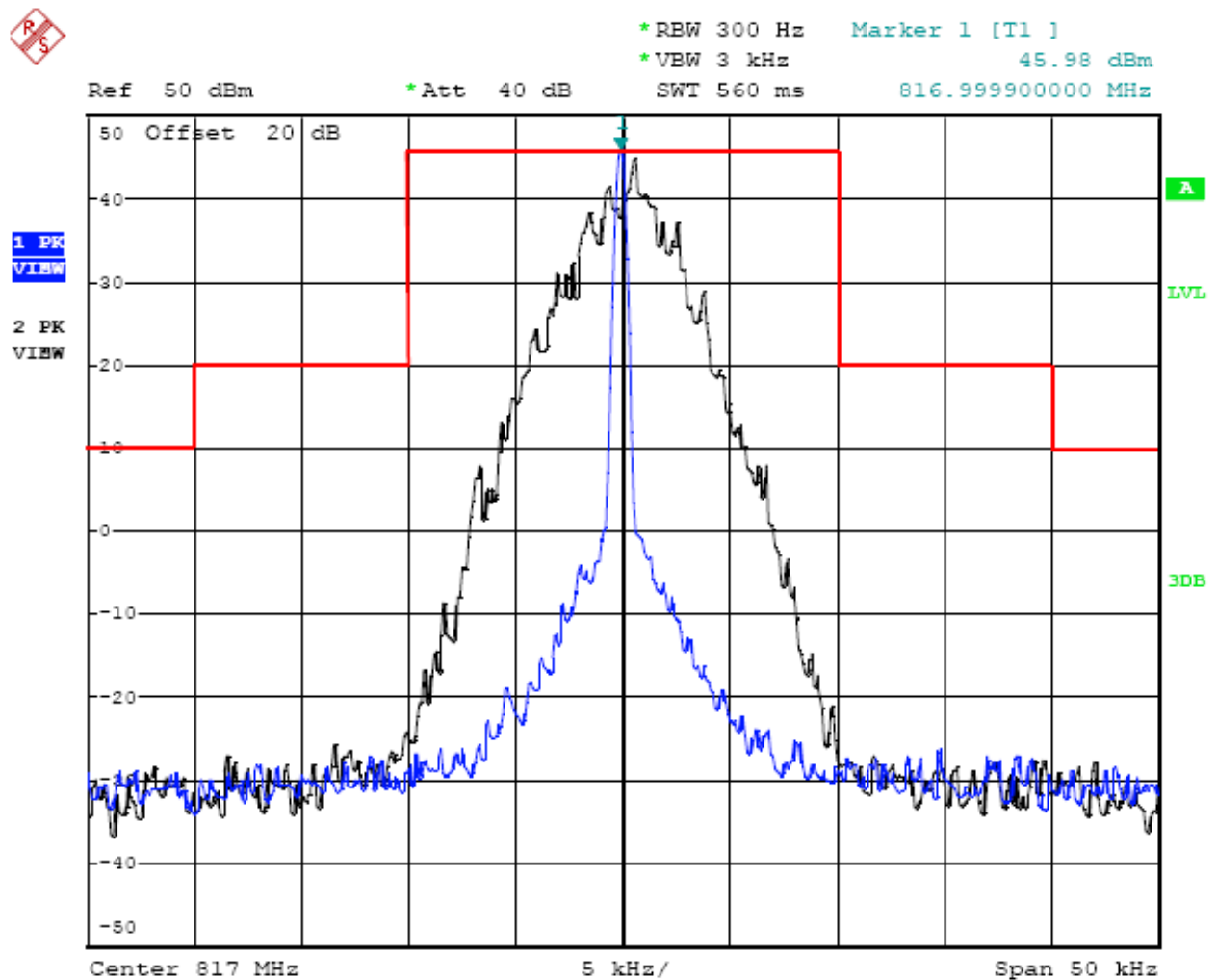
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	806.5000	B	300Hz	2.5	Complicance



Date: 27.JUL.2012 13:55:40

12.5 kHz Channel Spacing, 806.5000 MHz, 4FSK Modulation Only

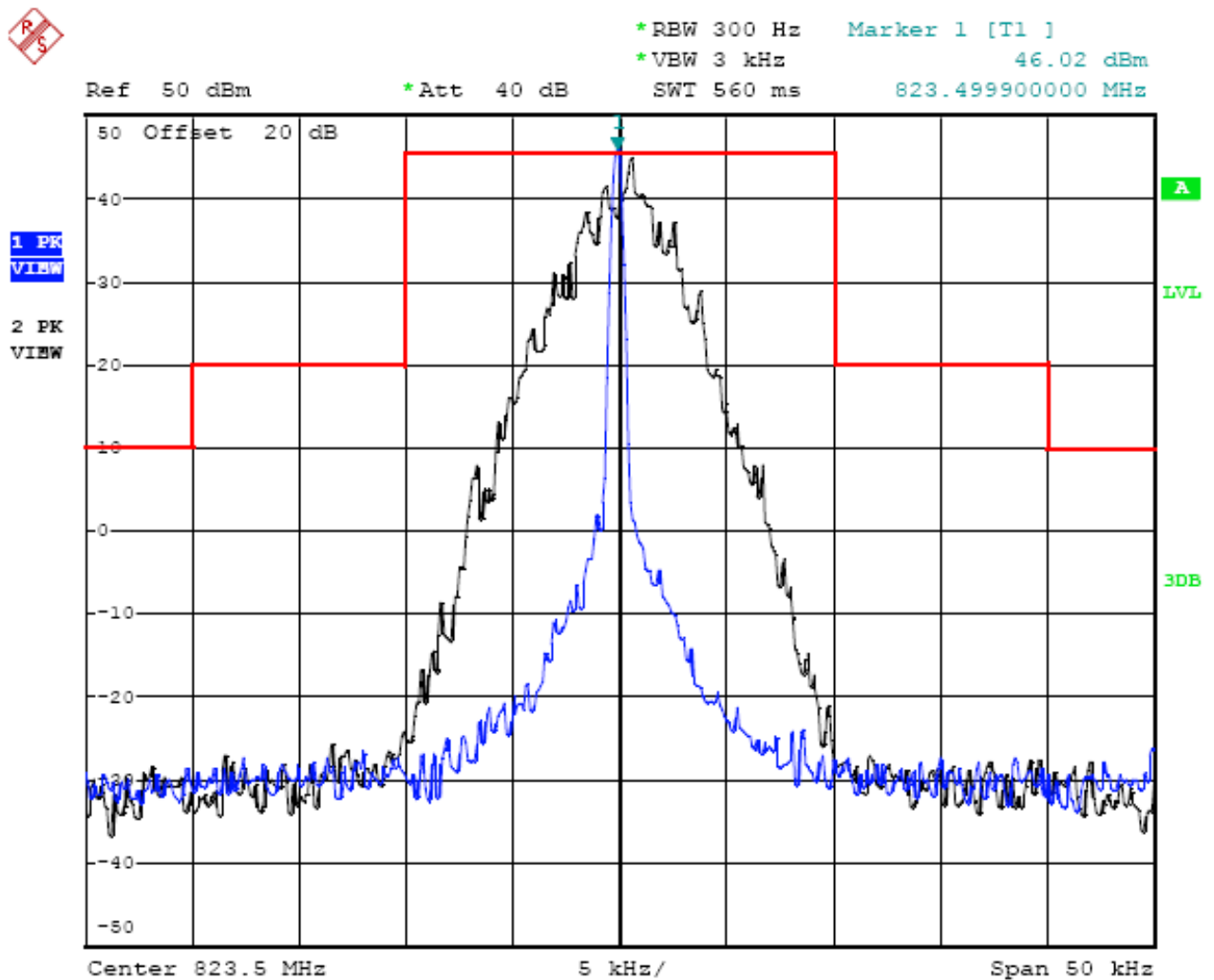
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	817.0000	B	300Hz	/	Compliance



Date: 27.JUL.2012 13:56:06

12.5 kHz Channel Spacing, 817.0000 MHz, 4FSK Modulation Only

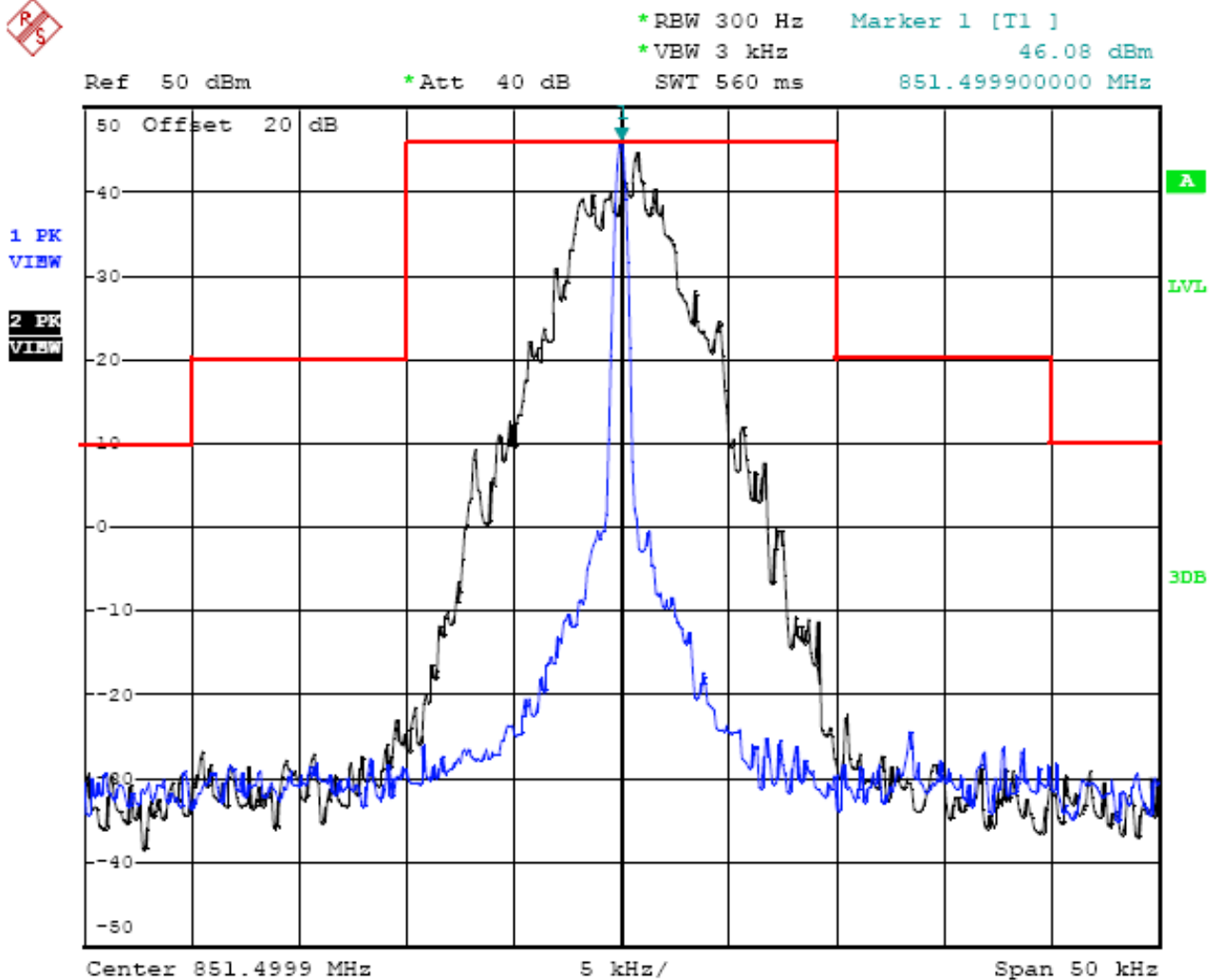
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	823.5000	B	300Hz	/	Compliance



Date: 27.JUL.2012 13:56:39

12.5 kHz Channel Spacing, 823.5000 MHz, 4FSK Modulation Only

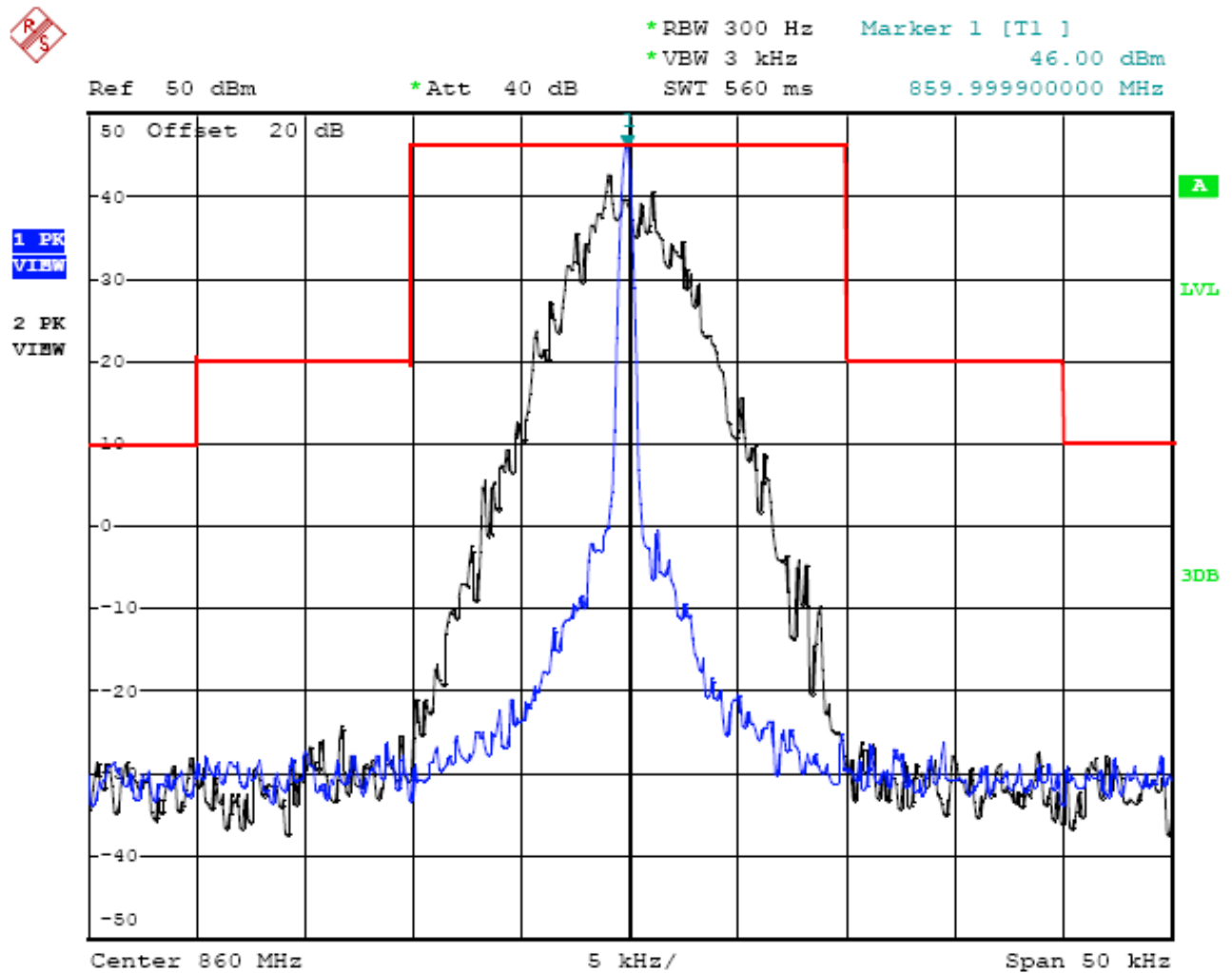
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	851.5000	B	300Hz	/	Compliance



Date: 27.JUL.2012 13:52:15

12.5 kHz Channel Spacing, 851.5000 MHz, 4FSK Modulation Only

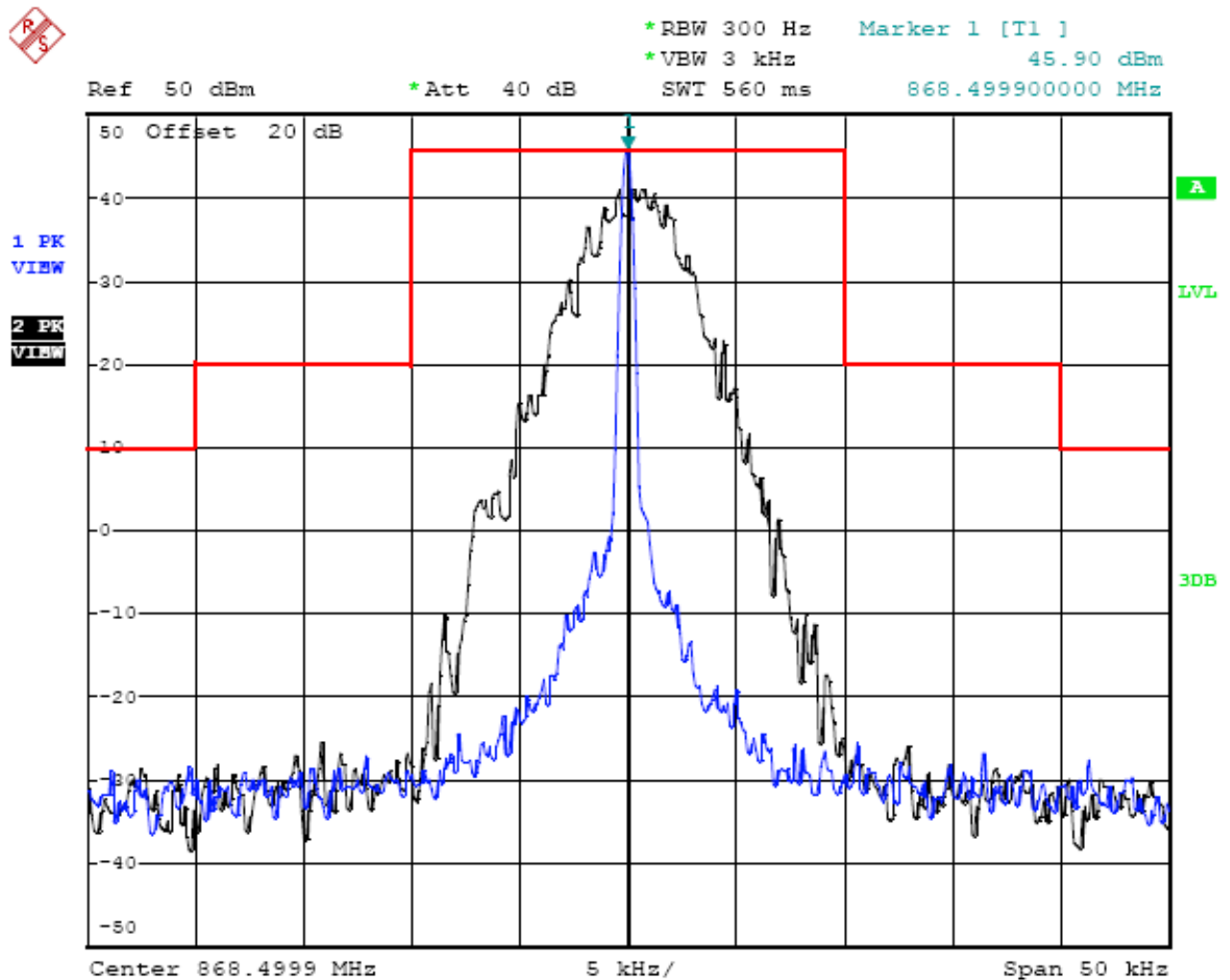
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	860.0000	B	300Hz	/	Compliance



Date: 27.JUL.2012 13:53:31

12.5 kHz Channel Spacing, 860.0000 MHz, 4FSK Modulation Only

Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	868.5000	B	300Hz	/	Compliance

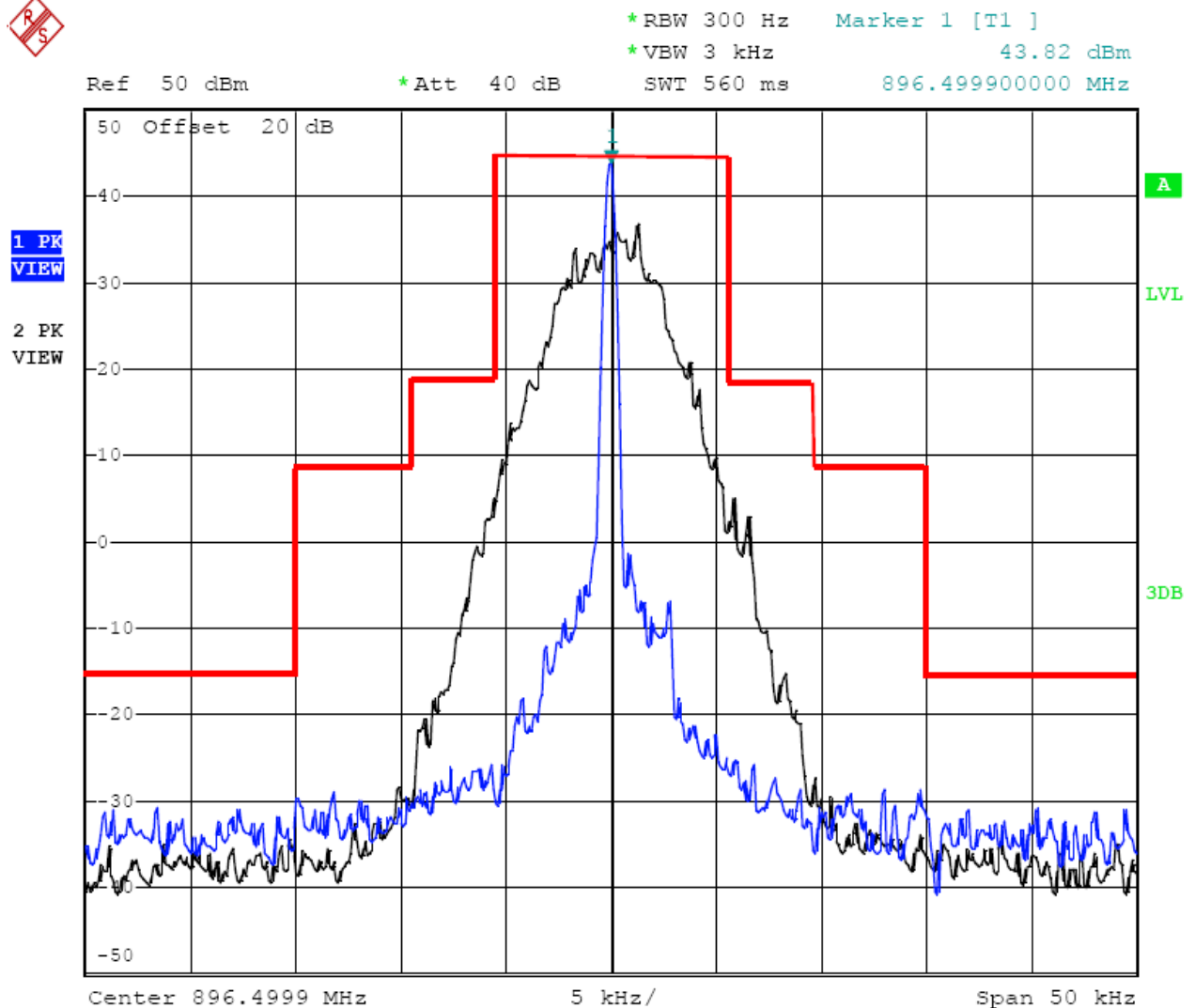


Date: 27.JUL.2012 13:54:31

12.5 kHz Channel Spacing, 868.5000 MHz, 4FSK Modulation Only

For Both FCC and IC Review

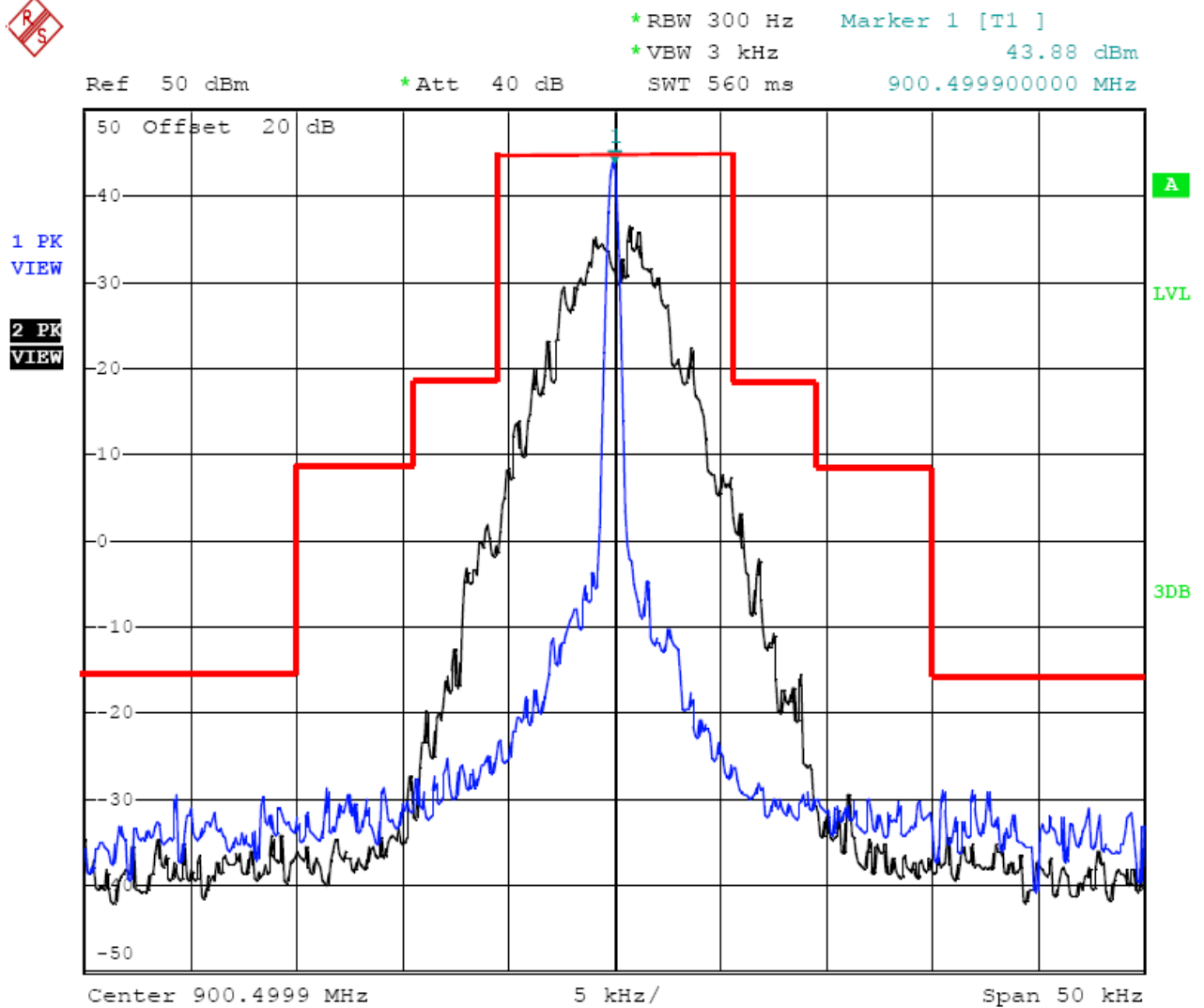
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	896.5000	I	300Hz	/	Compliance



Date: 26.JUL.2012 15:05:34

12.5 kHz Channel Spacing, 896.5000 MHz, 4FSK Modulation Only

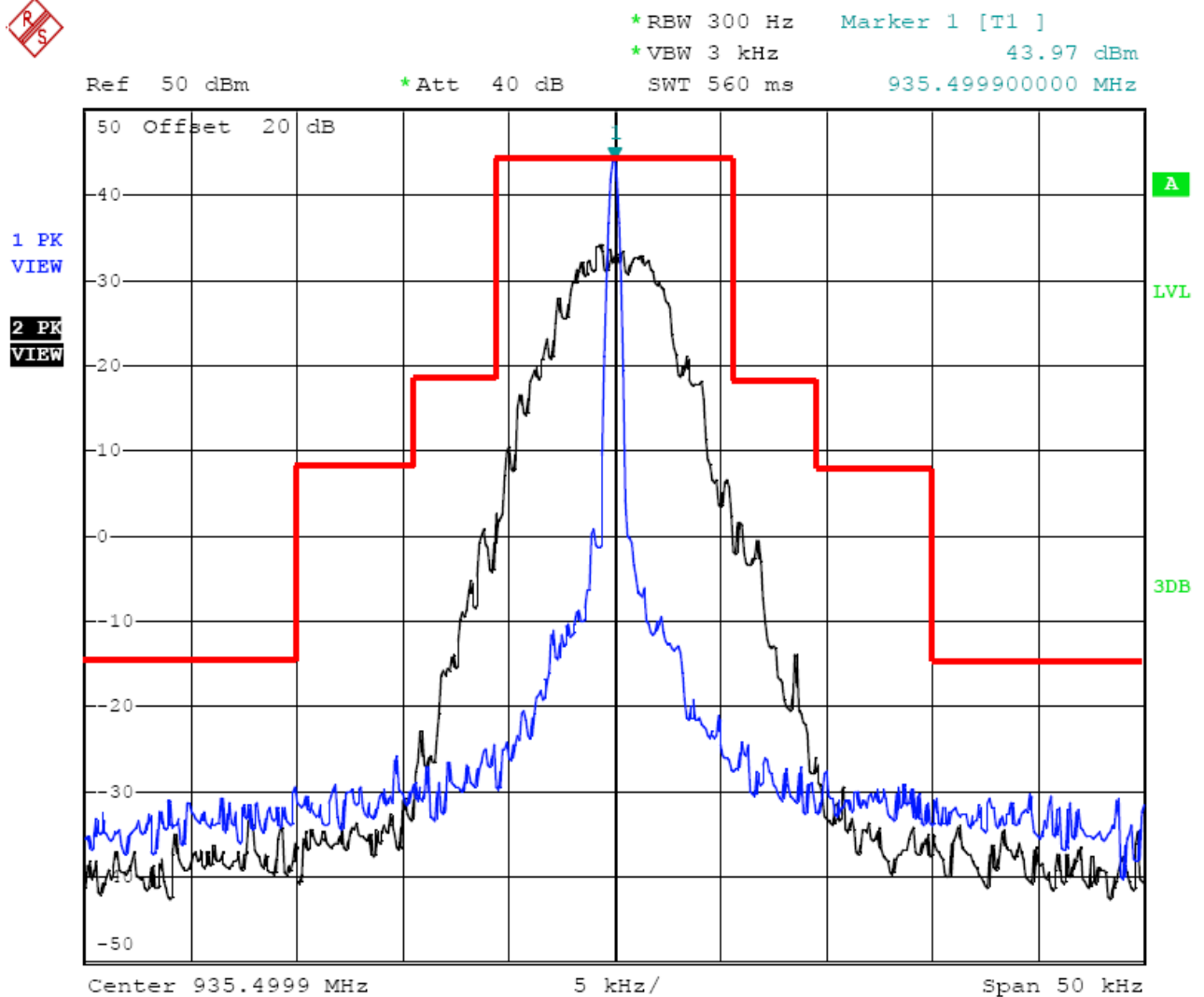
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	900.5000	I	300Hz	/	Compliance



Date: 26.JUL.2012 15:07:03

12.5 kHz Channel Spacing, 900.5000 MHz, 4FSK Modulation Only

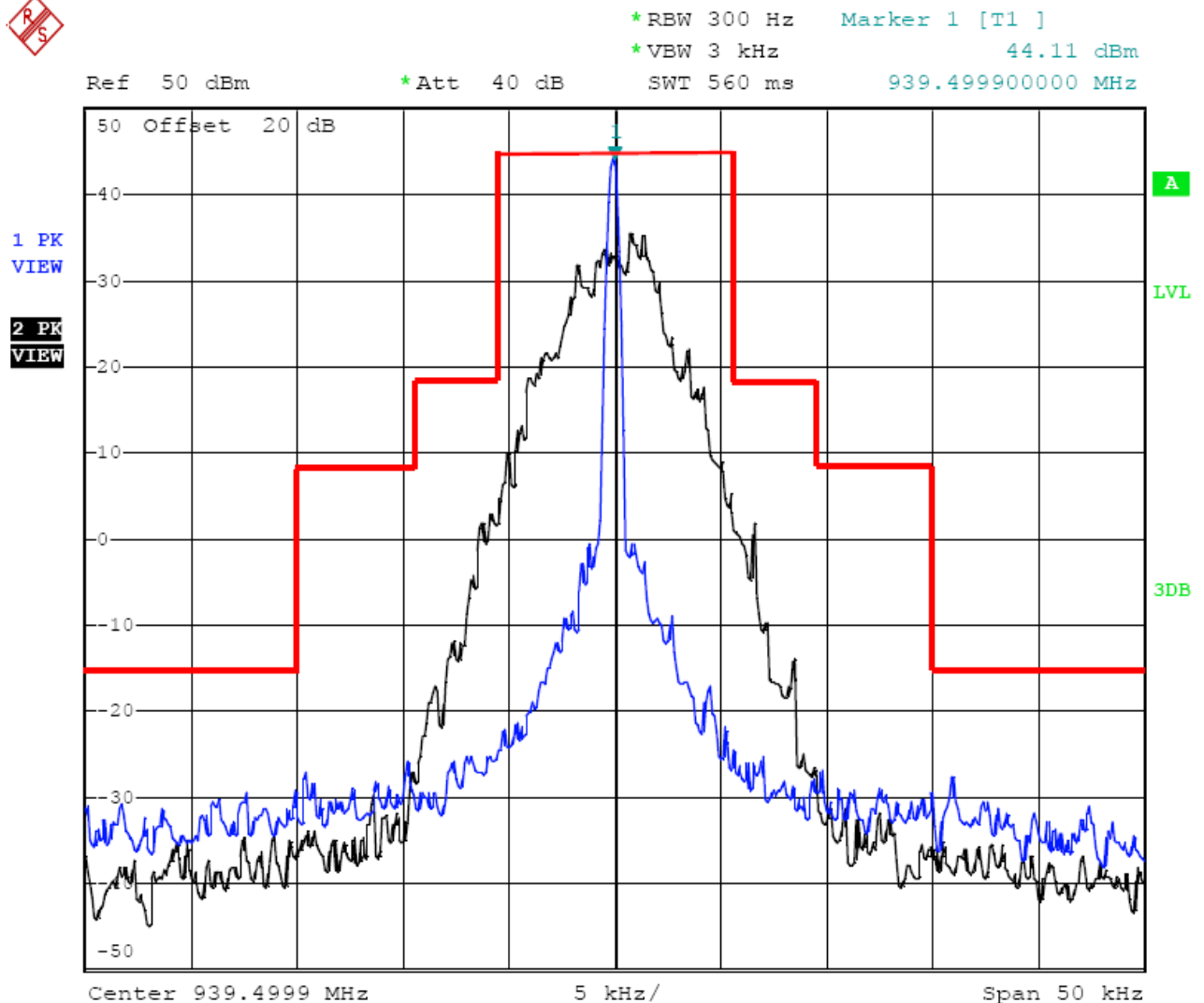
Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	935.5000	I	300Hz	/	Compliance



Date: 26.JUL.2012 15:12:12

12.5 kHz Channel Spacing, 935.5000 MHz, 4FSK Modulation Only

Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	939.5000	I	300Hz	/	Compliance

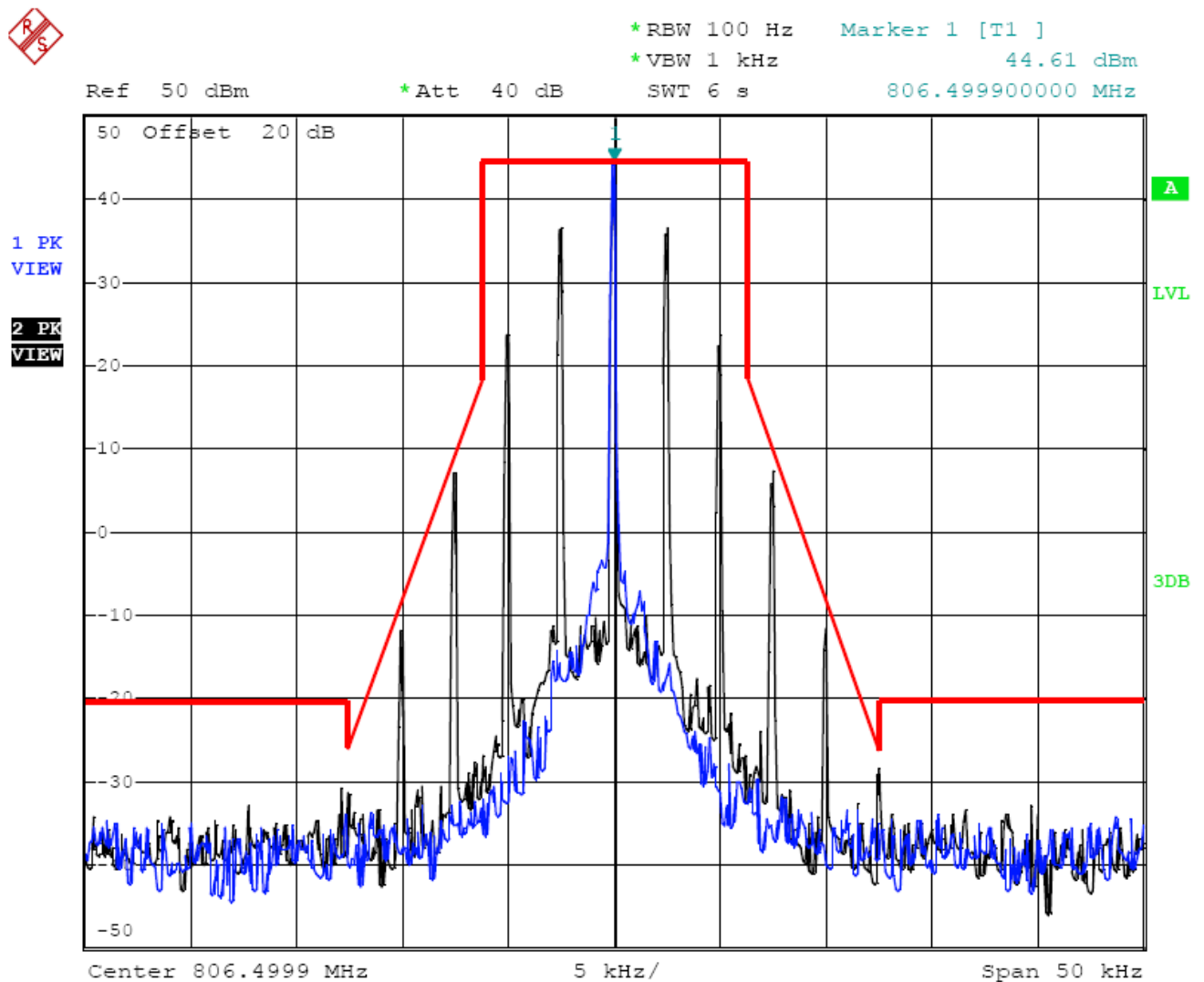


Date: 26.JUL.2012 15:13:24

12.5 kHz Channel Spacing, 939.5000 MHz, 4FSK Modulation Only

Only For IC Review Not For FCC Review

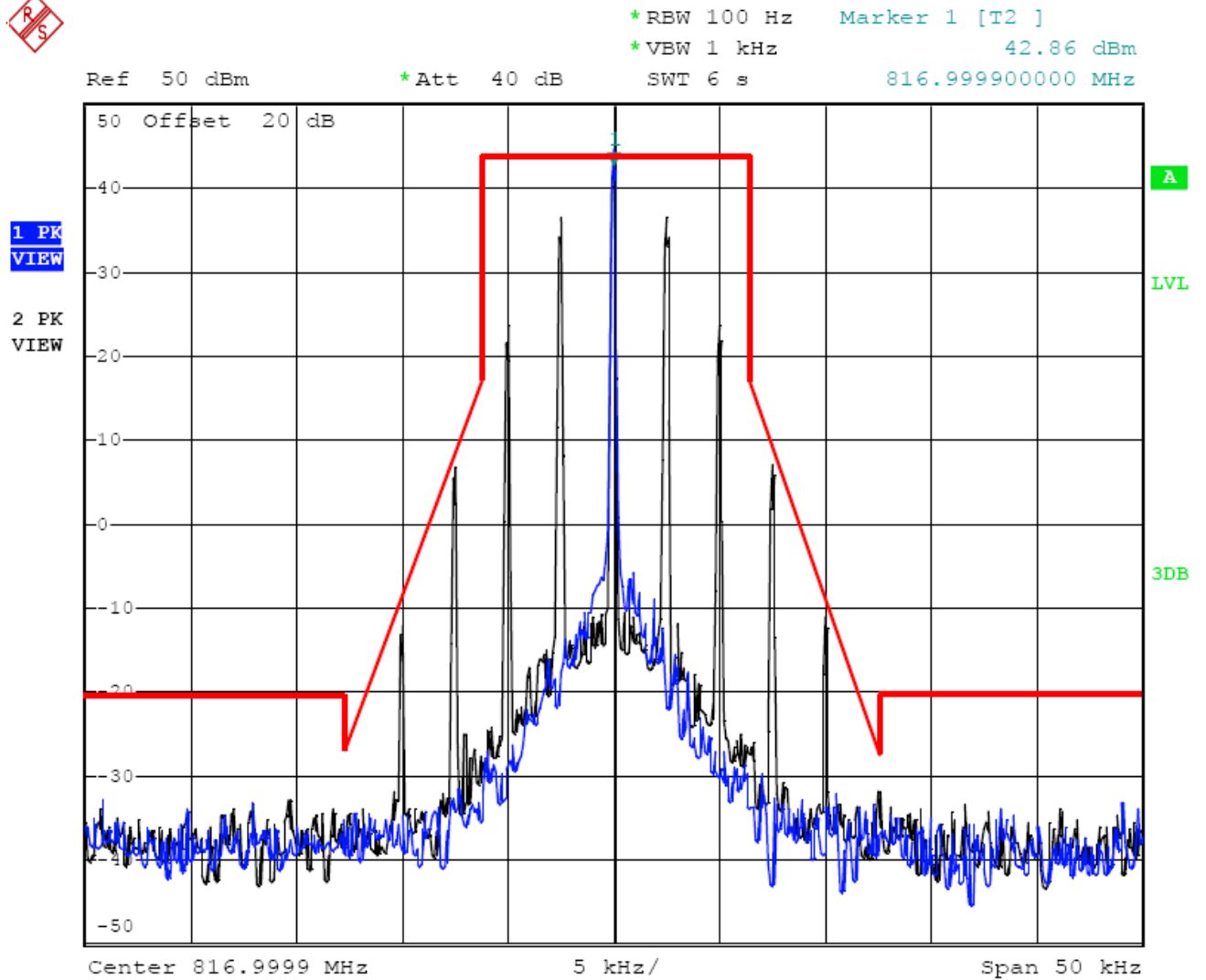
Modulation Type	Channel Separation	Freq.(MHz)	IC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	806.5000	D	100Hz	2.5	Complicance



Date: 26.JUL.2012 10:47:12

12.5 kHz Channel Spacing, 806.5000 MHz, 2500 Hz Audio Modulation Only

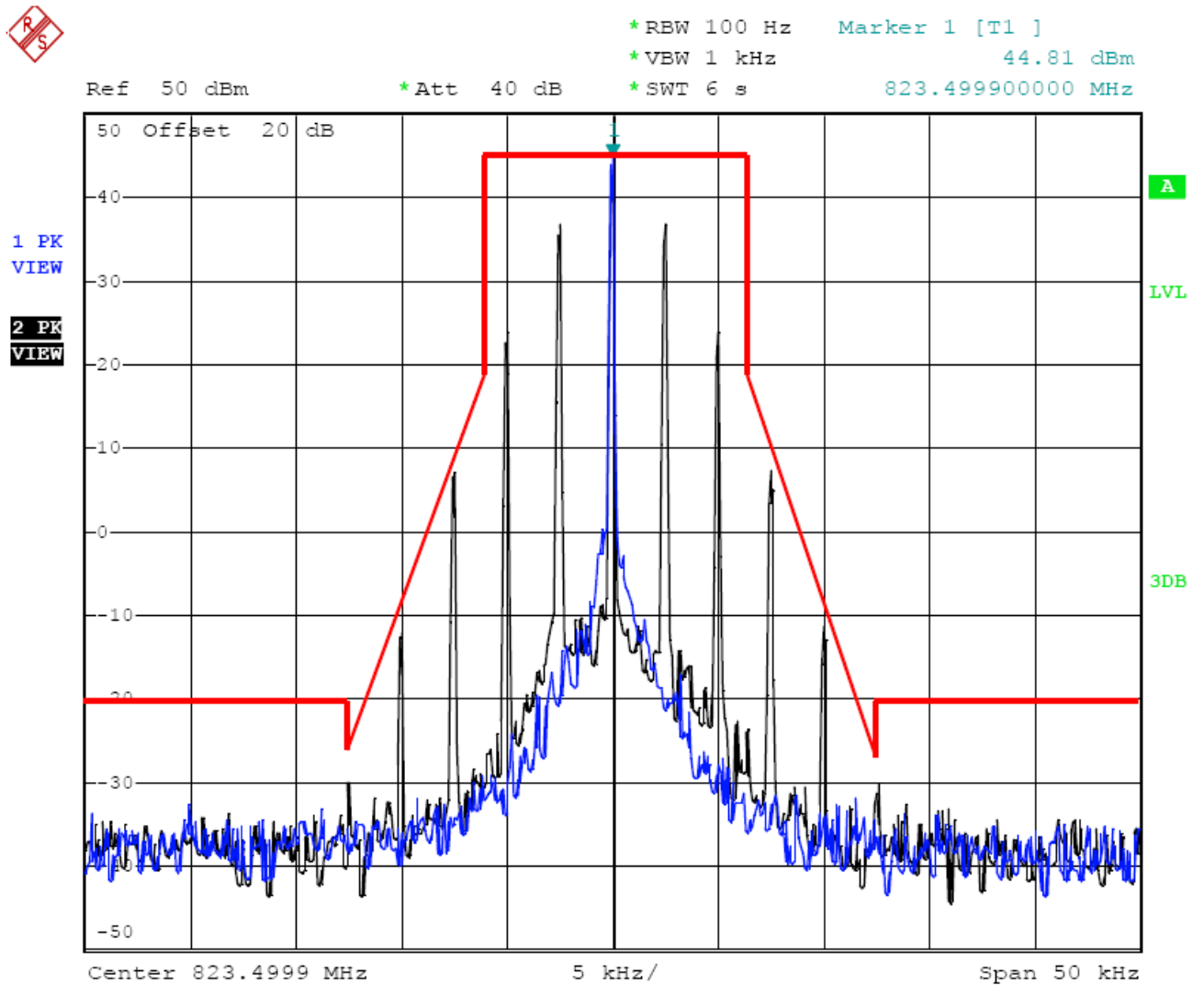
Modulation Type	Channel Separation	Freq.(MHz)	IC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	817.0000	D	100Hz	2.5	Compliance



Date: 26.JUL.2012 10:54:30

12.5 kHz Channel Spacing, 817.0000 MHz, 2500 Hz Audio Modulation Only

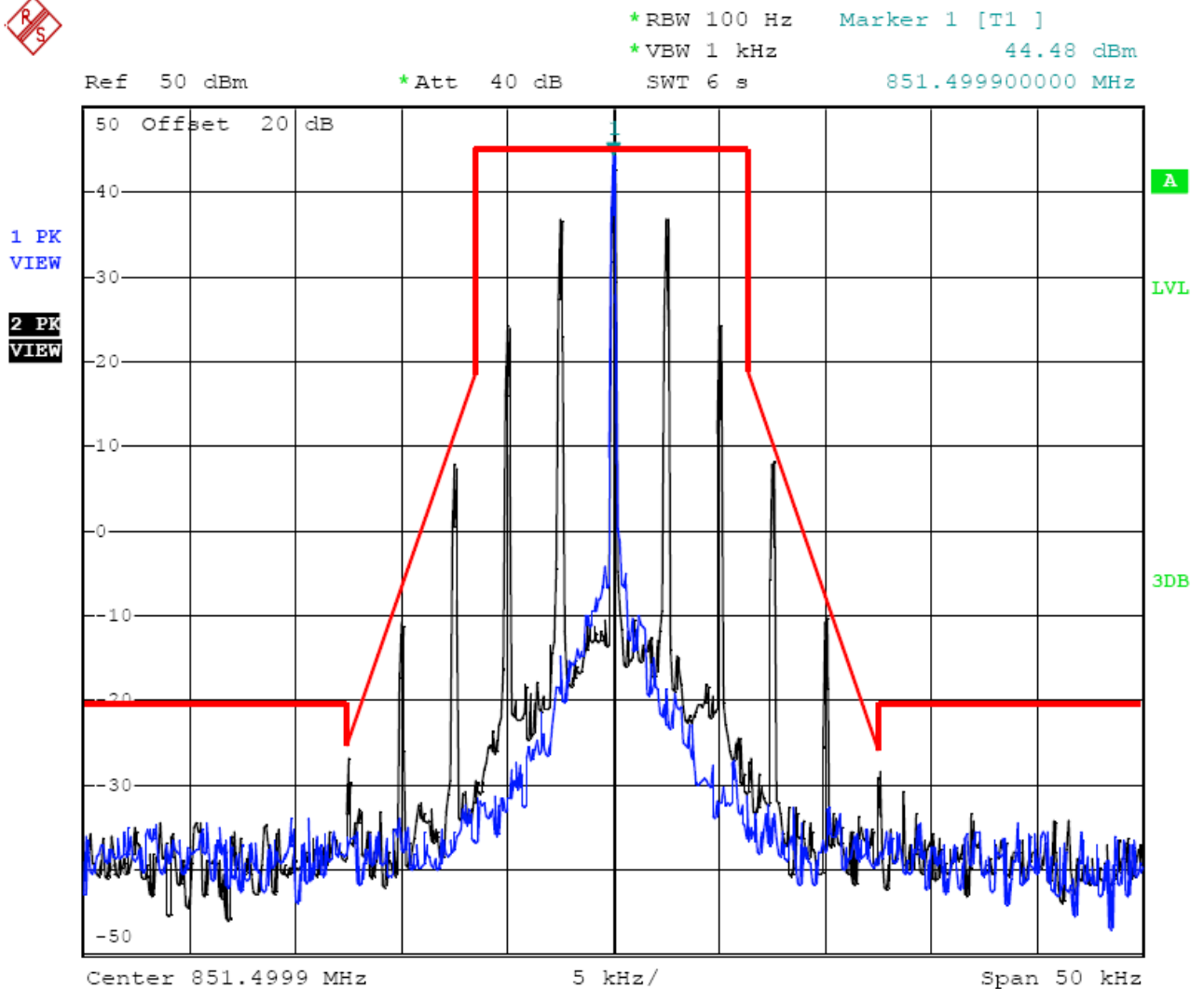
Modulation Type	Channel Separation	Freq.(MHz)	IC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	823.5000	D	100Hz	2.5	Compliance



Date: 26.JUL.2012 15:23:17

12.5 kHz Channel Spacing, 823.5000 MHz, 2500 Hz Audio Modulation Only

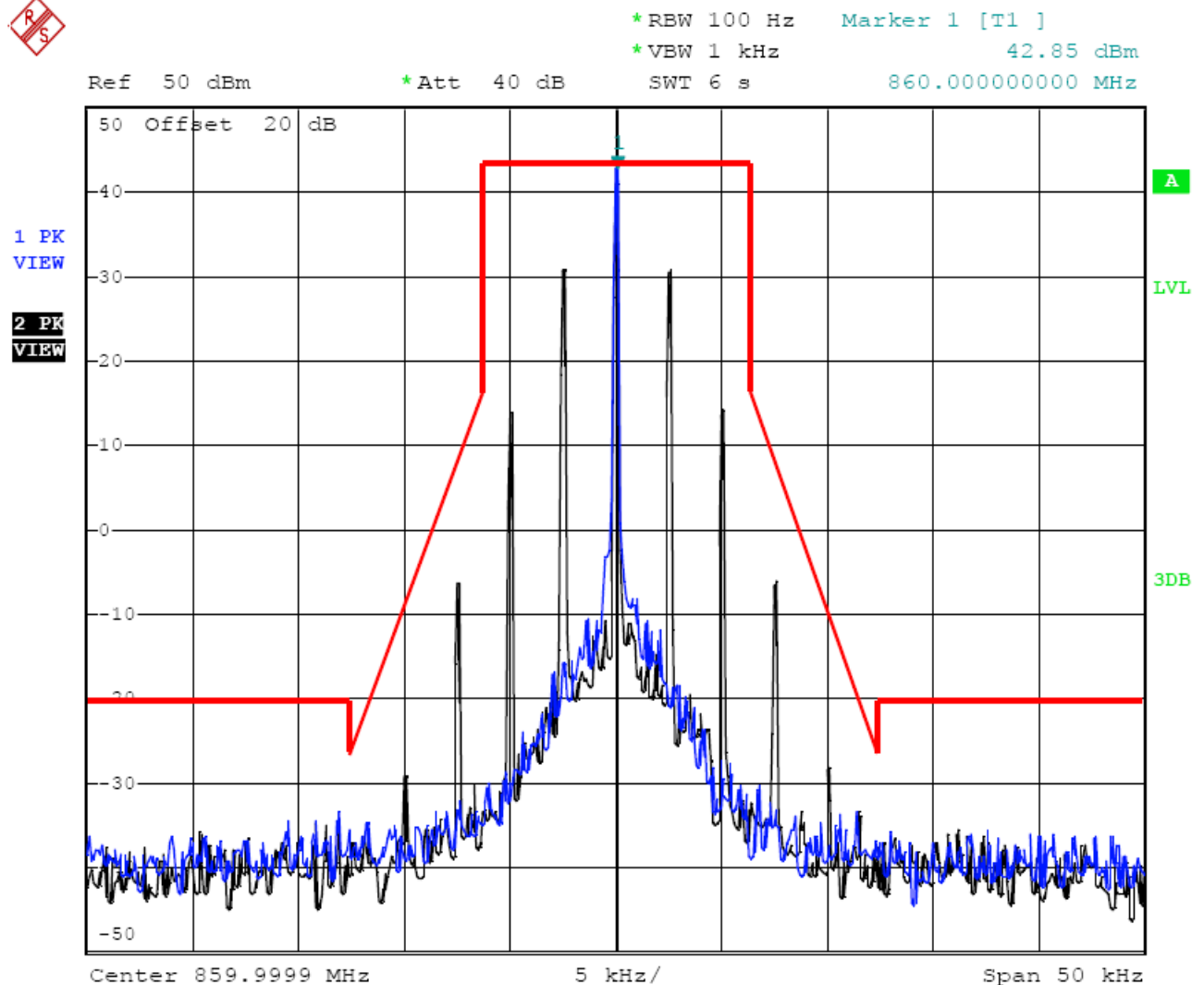
Modulation Type	Channel Separation	Freq.(MHz)	IC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	851.5000	D	100Hz	2.5	Compliance



Date: 26.JUL.2012 10:58:31

12.5 kHz Channel Spacing, 851.5000 MHz, 2500 Hz Audio Modulation Only

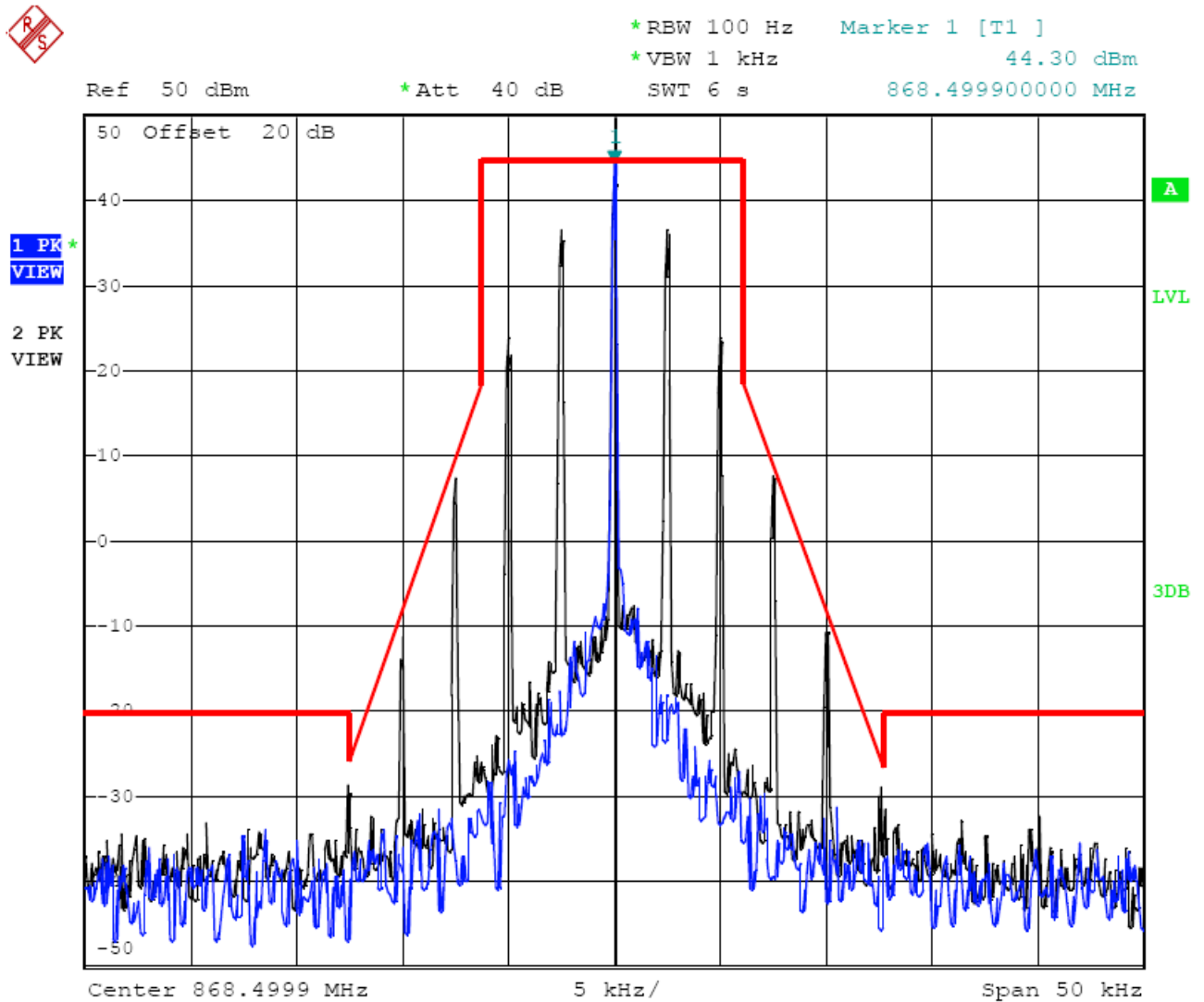
Modulation Type	Channel Separation	Freq.(MHz)	IC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	860.0000	D	100Hz	2.5	Compliance



Date: 26.JUL.2012 11:02:08

12.5 kHz Channel Spacing, 860.0000 MHz, 2500 Hz Audio Modulation Only

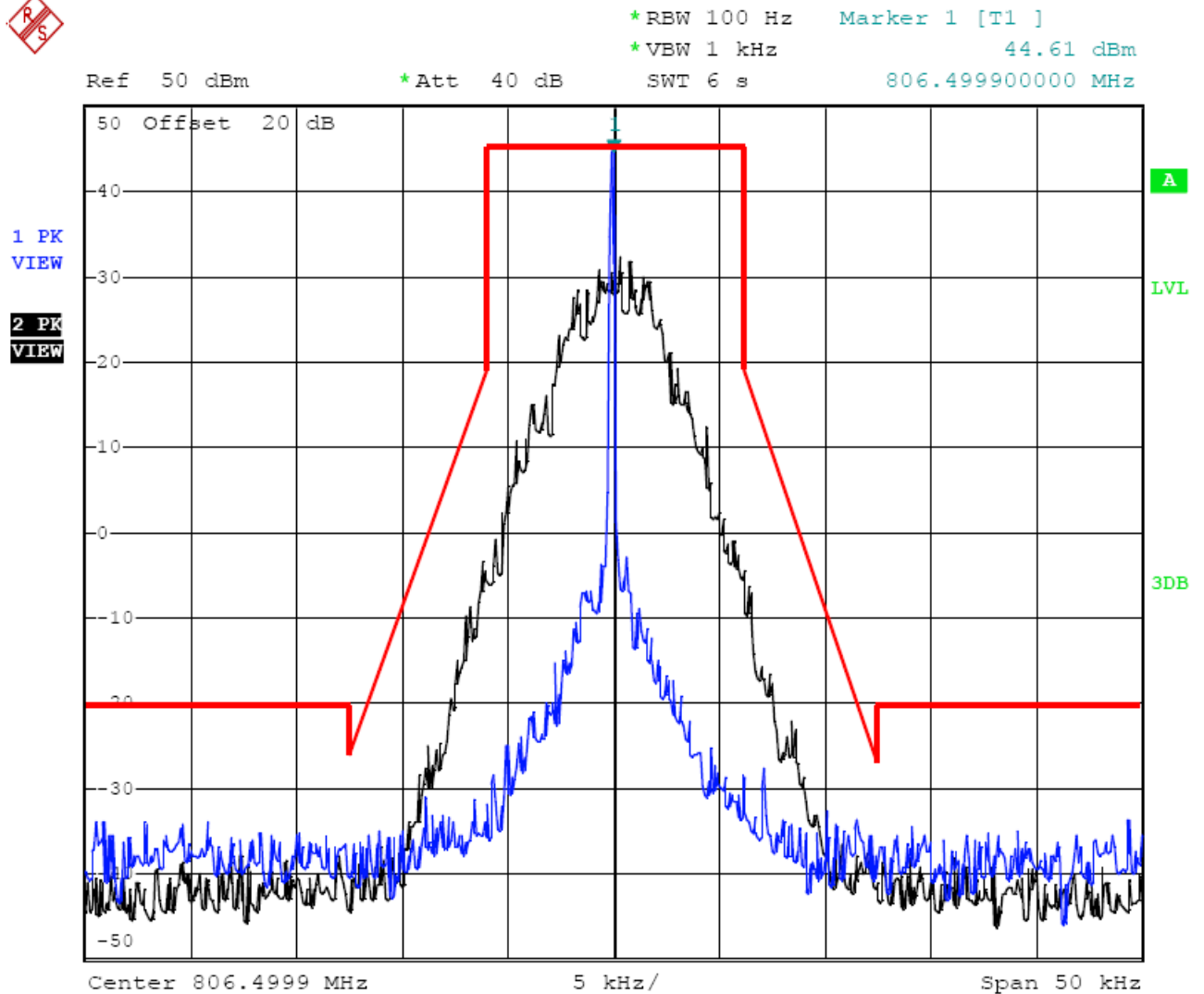
Modulation Type	Channel Separation	Freq.(MHz)	IC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	868.5000	D	100Hz	2.5	Compliance



Date: 26.JUL.2012 11:19:08

12.5 kHz Channel Spacing, 868.5000 MHz, 2500 Hz Audio Modulation Only

Modulation Type	Channel Separation	Freq.(MHz)	IC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	806.5000	D	100Hz	2.5	Compliance



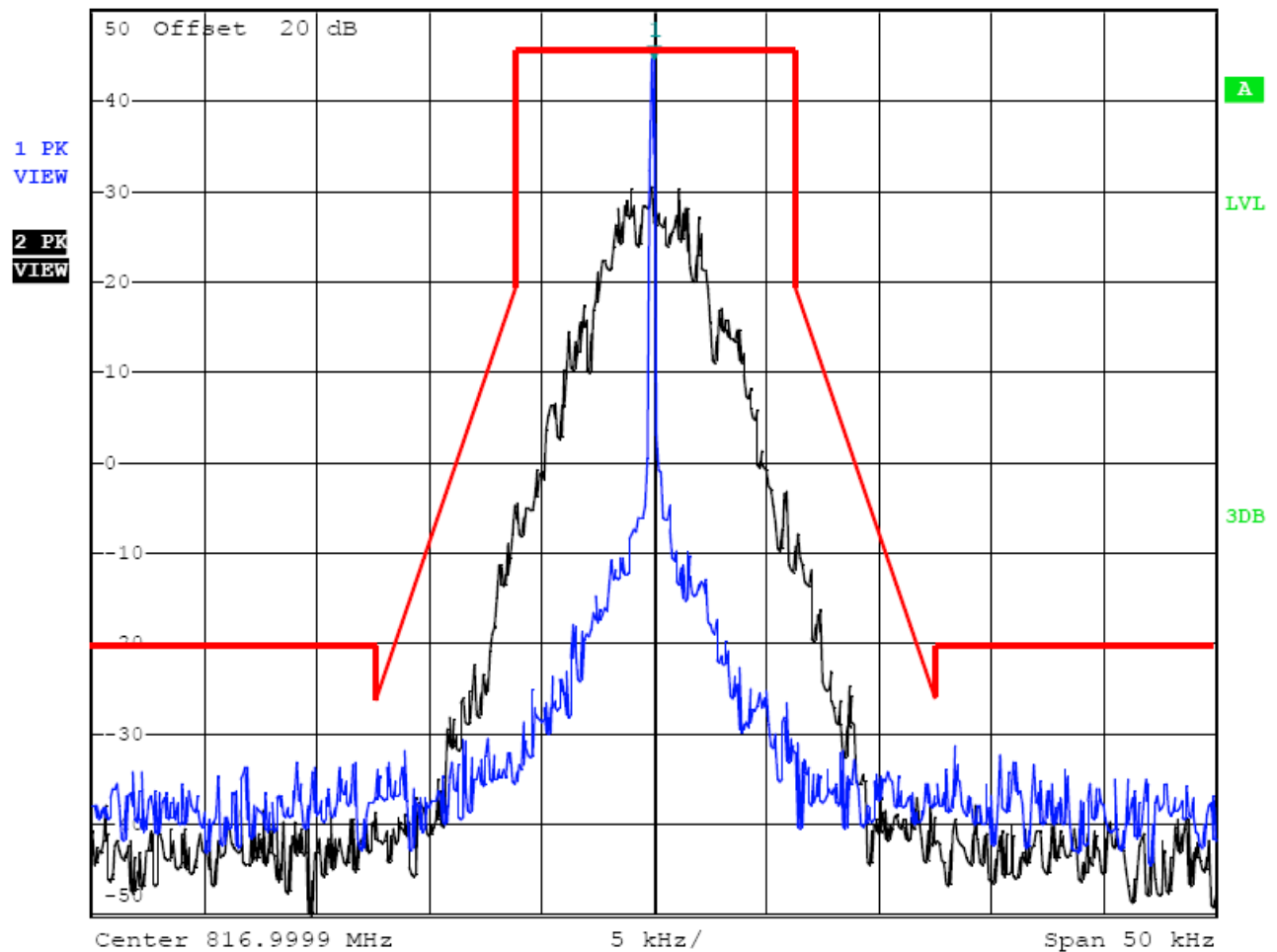
Date: 26.JUL.2012 14:45:16

12.5 kHz Channel Spacing, 806.5000 MHz, 4FSK Modulation Only

Modulation Type	Channel Separation	Freq.(MHz)	IC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	817.0000	D	100Hz	/	Compliance



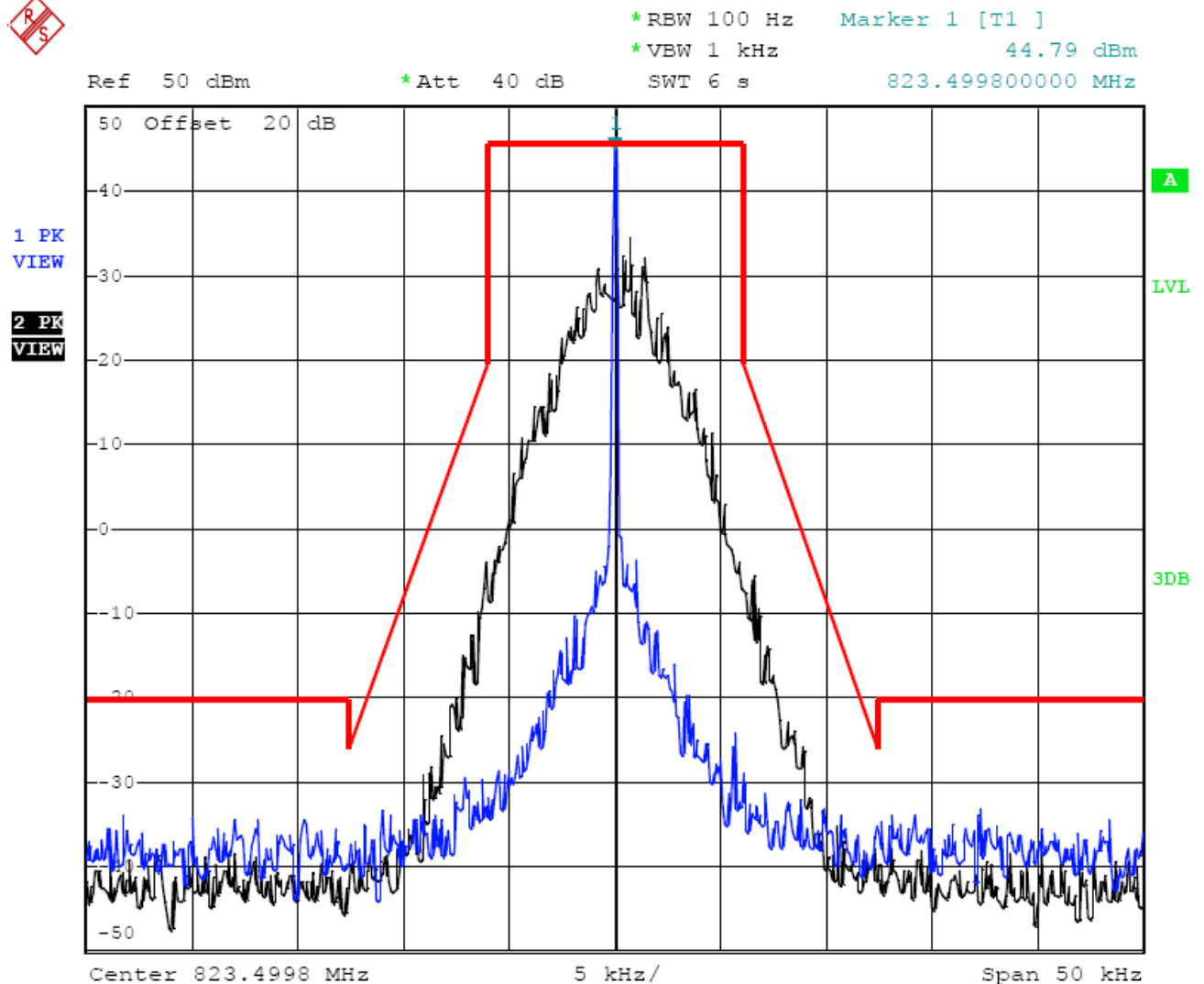
*RBW 100 Hz Marker 1 [T1]
 *VBW 1 kHz 44.71 dBm
 Ref 50 dBm *Att 40 dB SWT 6 s 816.999900000 MHz



Date: 26.JUL.2012 14:48:09

12.5 kHz Channel Spacing, 817.0000 MHz, 4FSK Modulation Only

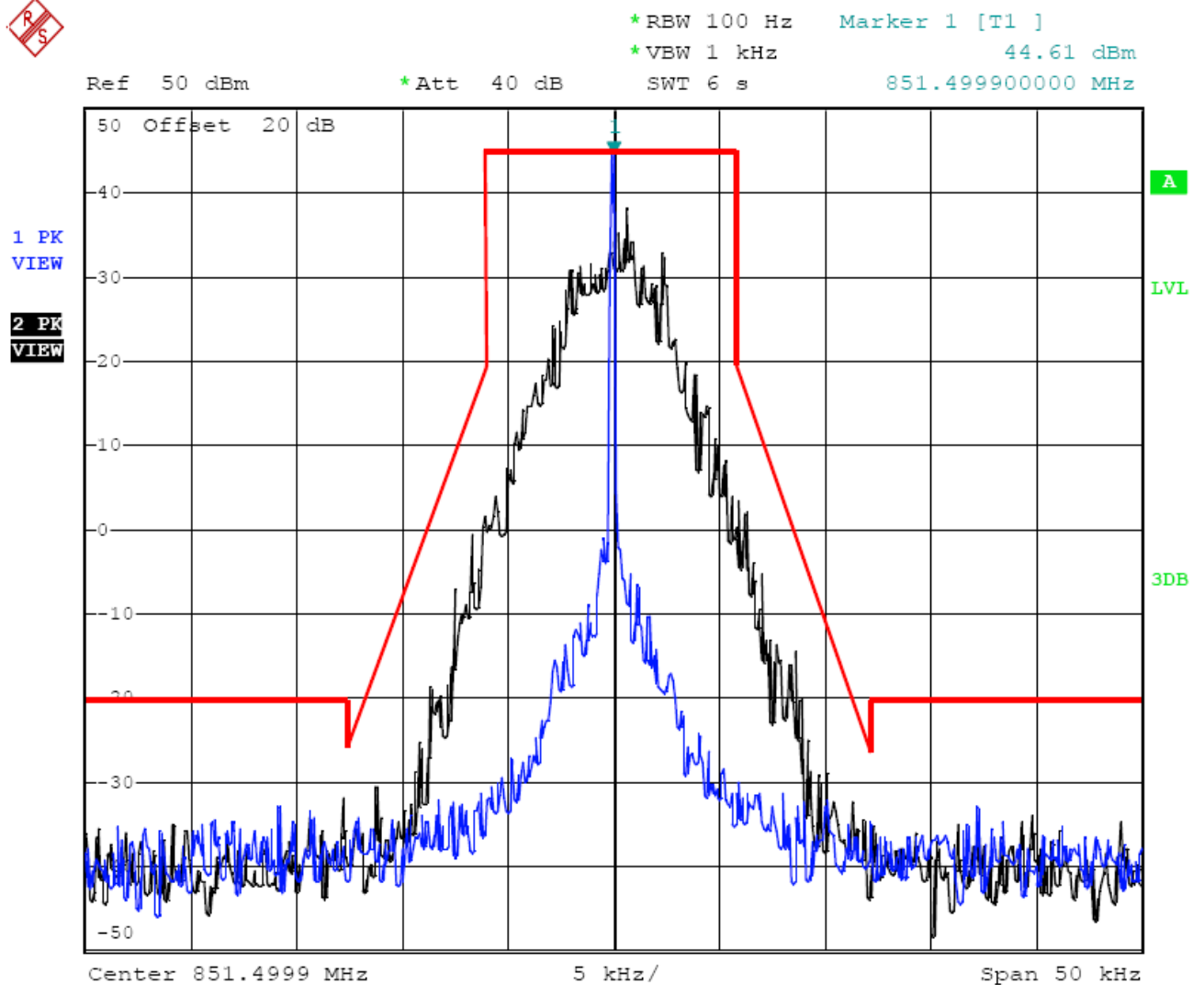
Modulation Type	Channel Separation	Freq.(MHz)	IC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	823.5000	D	100Hz	/	Compliance



Date: 26.JUL.2012 14:49:52

12.5 kHz Channel Spacing, 823.5000 MHz, 4FSK Modulation Only

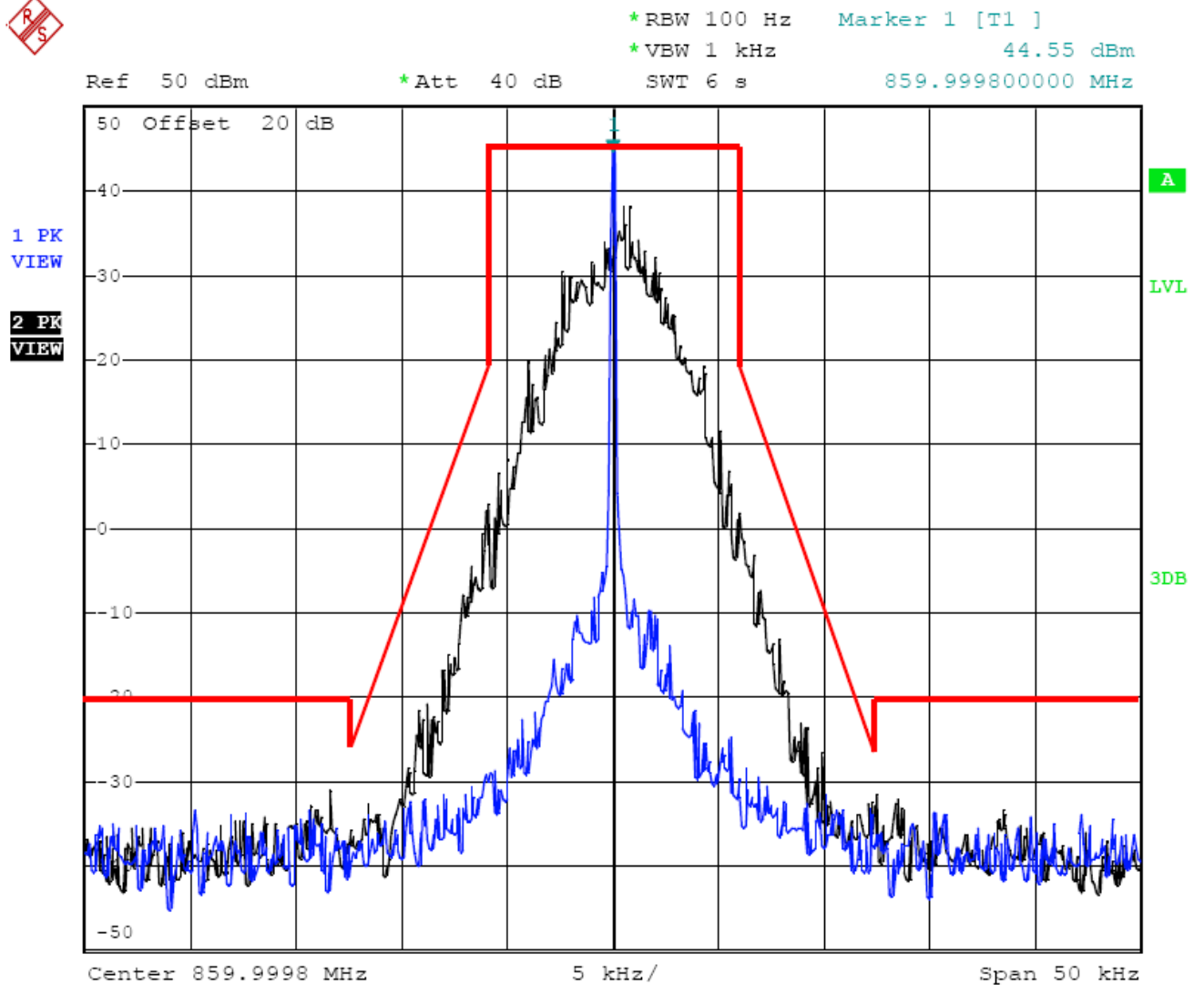
Modulation Type	Channel Separation	Freq.(MHz)	IC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	851.5000	D	100Hz	/	Compliance



Date: 26.JUL.2012 14:52:08

12.5 kHz Channel Spacing, 851.5000 MHz, 4FSK Modulation Only

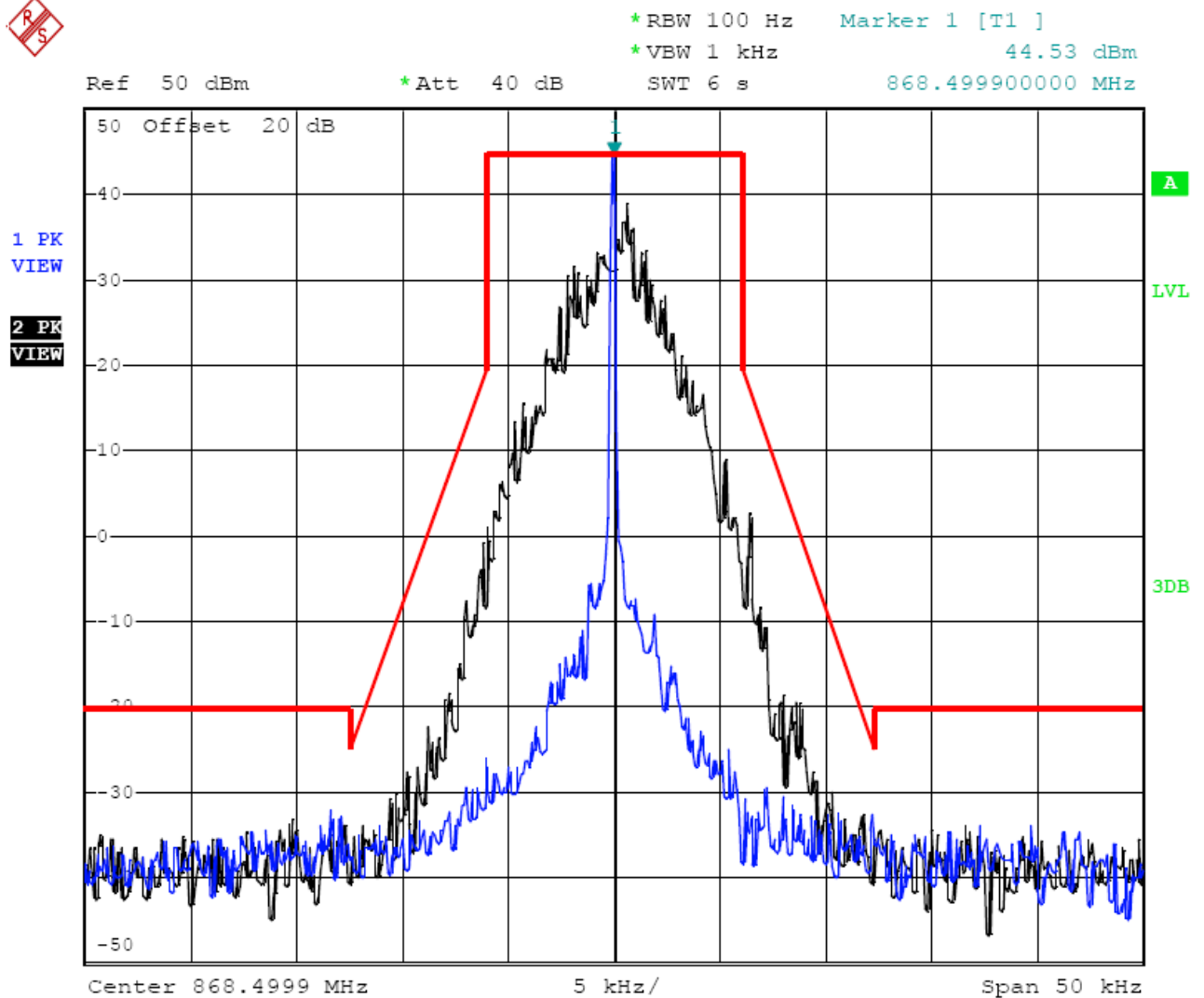
Modulation Type	Channel Separation	Freq.(MHz)	IC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	860.0000	D	100Hz	/	Compliance



Date: 26.JUL.2012 14:55:02

12.5 kHz Channel Spacing, 860.0000 MHz, 4FSK Modulation Only

Modulation Type	Channel Separation	Freq.(MHz)	IC Applicable Mask	RBW	Audio Freq. (KHz)	Results
4FSK	12.5 KHz	868.5000	D	100Hz	/	Compliance



Date: 26.JUL.2012 14:57:03

12.5 kHz Channel Spacing, 868.5000 MHz, 4FSK Modulation Only

4.3. Transmitter Radiated Spurious Emission

TEST APPLICABLE

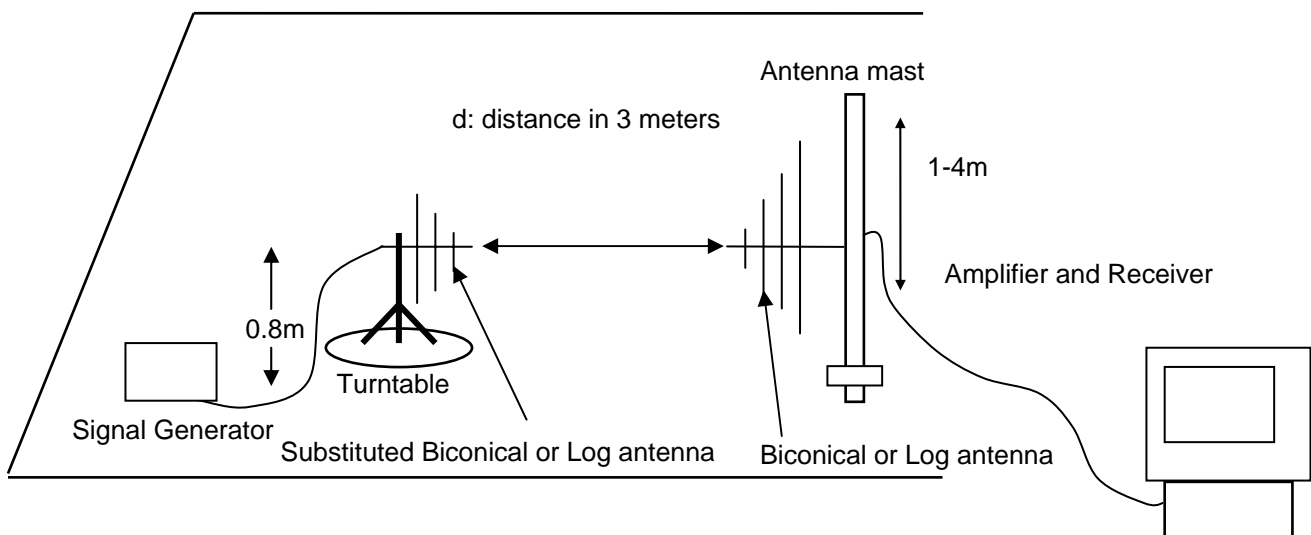
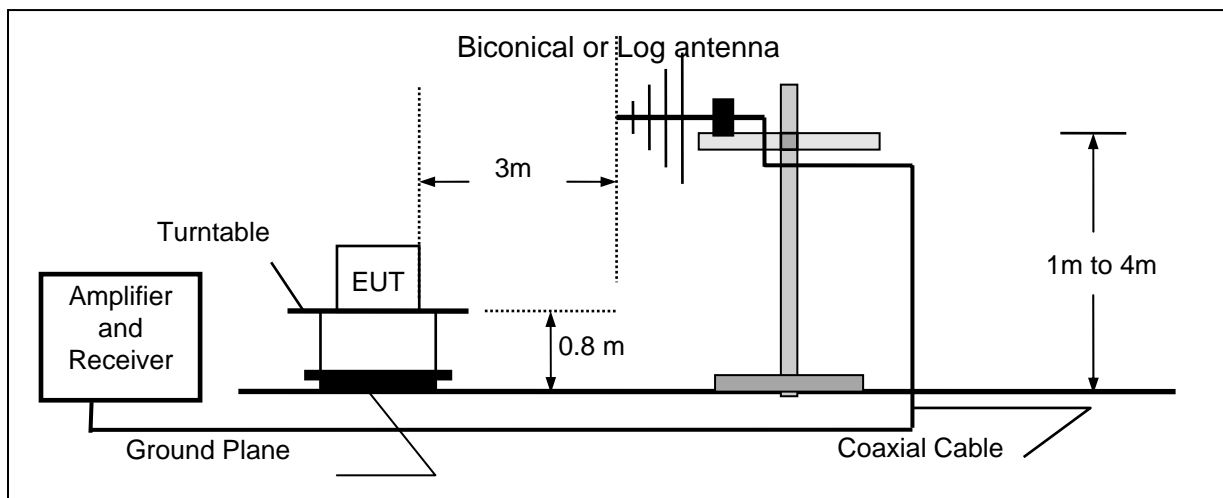
According to the TIA/EIA 603 test method, and according to Section 90.210, the power of each unwanted emission shall be less than Transmitted Power as specified below for transmitters designed to operate with 12.5 KHz channel bandwidth:

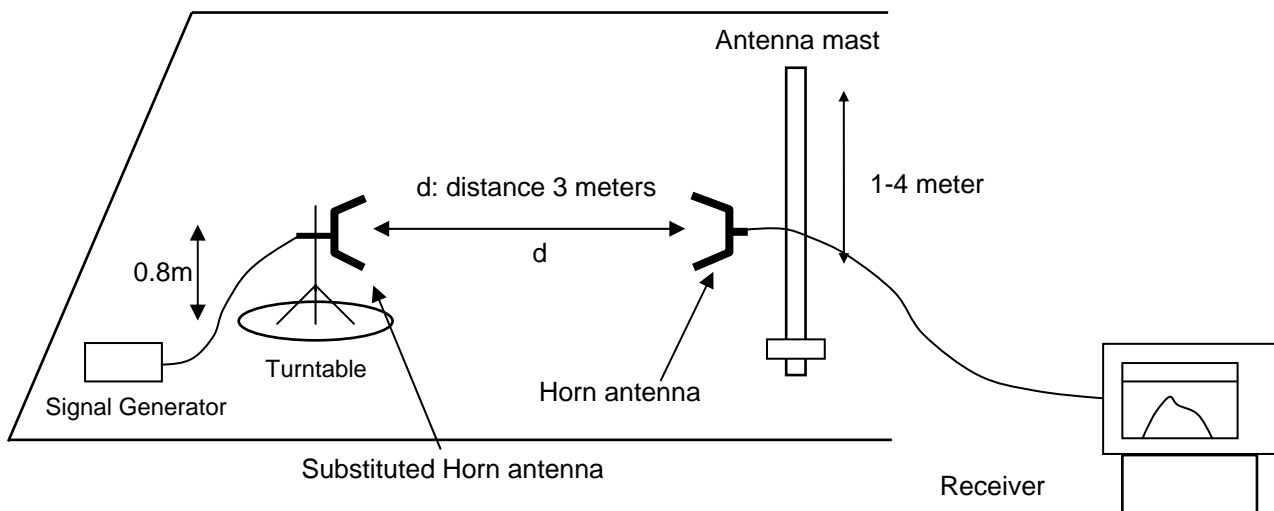
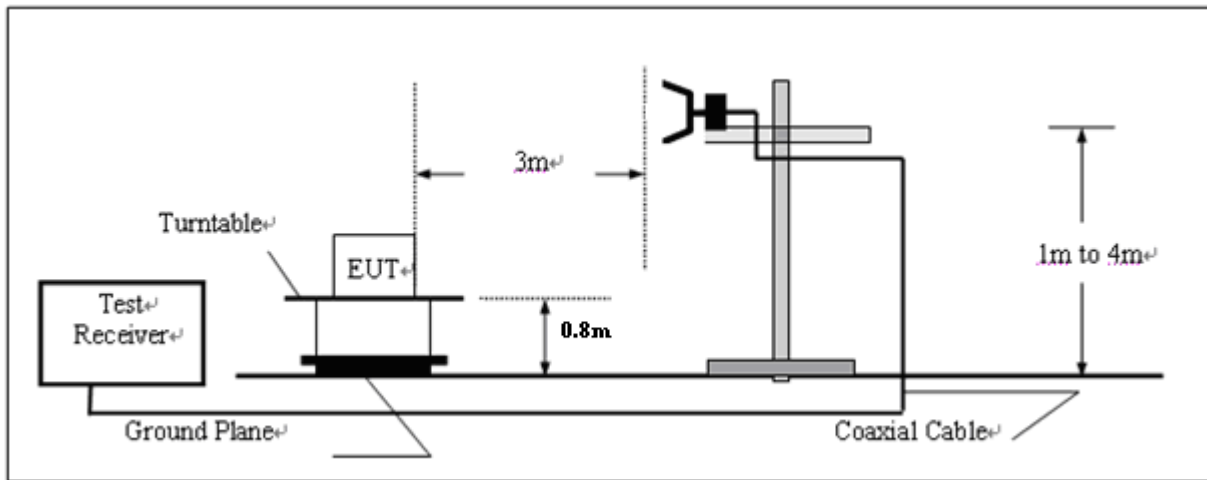
- 1 On any frequency removed from the center of the authorized bandwidth f_0 to 5.625 KHz removed from f_0 : Zero dB
 - 2 On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in KHz) f_0 of more than 5.625 KHz but no more than 12.5 KHz: At least 7.27dB
 - 3 On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in KHz) f_0 of more than 12.5 KHz: At least $50 + 10 \log(P)$ dB or 70 dB, which ever is lesser attenuation.
- For transmitters designed to transmit with 25 KHz channel separation and equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as following:

- 1 On any frequency removed from the assigned frequency by more than 50 percent, but no more than 100 percent of the authorized bandwidth: At least 25 dB.
- 2 On any frequency removed from the assigned frequency by more than 100 percent, but no more than 250 percent of the authorized bandwidth: At least 35 dB.
- 3 On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log(P)$ dB.

TEST CONFIGURATION

Below 1GHz



Above 1GHz**TEST PROCEDURE**

- 1 Set the EMI Receiver (for measuring E-Field) and Receiver (for measuring EIRP) as follows:
 Center Frequency: equal to the signal source
 Resolution BW: 100 KHz
 Video BW: VBW > RBW
 Detector Mode: positive
 Average: off
 Span: 3 x the signal bandwidth
- 2 Load an appropriate correction factors file in EMI Receiver for correcting the field strength reading level
 Total Correction Factor recorded in the EMI Receiver = Cable Loss + Antenna Factor + Amplifier Gain
 $E \text{ (dBuV/m)} = \text{Reading (dBuV)} + \text{Total Correction Factor (dB)}$
- 3 The transmitter under test was placed at the specified height on a non-conducting turntable (80 cm height)
- 4 Substitute the EUT by a signal generator and one of the following transmitting antenna (substitution antenna):
 DIPOLE antenna for frequency from 30-1000 MHz or
 HORN antenna for frequency above 1 GHz.
- 5 Mount the transmitting antenna at 1.0 meter high from the ground plane.
- 6 Use one of the following antenna as a receiving antenna:
 DIPOLE antenna for frequency from 30-1000 MHz or
 HORN antenna for frequency above 1 GHz.
- 7 If the DIPOLE antenna is used, tune its elements to the frequency as specified in the calibration manual.
- 8 Adjust both transmitting and receiving antenna in a VERTICAL polarization.
- 9 Tune the EMI Receivers to the test frequency.
- 10 Lower or raise the test antenna from 1 to 4 meters until the maximum signal level was detected.
- 11 The transmitter was rotated through 360° about a vertical axis until a higher maximum signal was received.

- 12 Lower or raise the test antenna from 1 to 4 meters until the maximum signal level was detected.
- 13 Adjust input signal to the substitution antenna until an equal or a known related level to that detected from the transmitter was obtained in the test receiver.
- 14 Record the power level read from the Average Power Meter and calculate the ERP/EIRP as follows:

$$P = P_1 - L_1 = (P_2 + L_2) - L_1 = P_3 + A + L_2 - L_1$$

$$\text{EIRP} = P + G_1 = P_3 + L_2 - L_1 + A + G_1$$

$$\text{ERP} = \text{EIRP} - 2.15 \text{ dB}$$

$$\text{Total Correction factor in EMI Receiver} = L_2 - L_1 + G_1$$
- Where:
 P: Actual RF Power fed into the substitution antenna port after corrected.
 P₁: Power output from the signal generator
 P₂: Power measured at attenuator A input
 P₃: Power reading on the Average Power Meter
 EIRP: EIRP after correction
 ERP: ERP after correction
- 15 Adjust both transmitting and receiving antenna in a Horizontal polarization, then repeat step (11) to (14).
- 16 Repeat step (4) to (16) for different test frequency
- 17 Repeat steps (3) to (12) with the substitution antenna oriented in horizontal polarization.
- 18 Actual gain of the EUT's antenna is the difference of the measured EIRP and measured RF power at the RF port. Correct the antenna gain if necessary.

TEST RESULTS

The Transmitter Radiated Spurious Emssion was performed to the Rated high power (35Watt) and Rated low power (10Watt) the datum that reported below is the worst case (Rated high power) of the two rated power conditions.

Modulation Type: FM

FCC Part 22.359, 74.462, 80.211 and 90.210 and RSS Gen, RSS 119 Issue 11 (25 kHz bandwidth only):

On any frequency removed from the center of the assigned channel by more than 250 percent at least:

Low: $43 + 10 \log (\text{Pwatts}) = 43 + 10 \log (39.63) = 58.98 \text{ dB}$

High: $43 + 10 \log (\text{Pwatts}) = 43 + 10 \log (41.69) = 59.20 \text{ dB}$

Calculation: Limit (dBm) = EL-43-10log10 (TP)

Notes: EL is the emission level of the Output Power expressed in dBm,

In this application, the EL is 46.20 dBm.

Limit (dBm) = 46.20-43-10log10 (41.69) = -13 dBm

FCC Part 22.359, 74.462, 80.211 and 90.210 and RSS Gen, RSS 119 Issue 11 (12.5 kHz bandwidth only): On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f d in kHz) of more than 12.5 kHz at least:

Low: $50 + 10 \log (\text{Pwatts}) = 50 + 10 \log (31.33) = 64.95 \text{ dB}$

High: $50 + 10 \log (\text{Pwatts}) = 50 + 10 \log (41.49) = 66.18 \text{ dB}$

Note: In general, the worse case attenuation requirement shown above was applied.

Calculation: Limit (dBm) = EL-50-10log10 (TP)

Notes: EL is the emission level of the Output Power expressed in dBm,

In this application, the EL is 46.18 dBm.

Limit (dBm) = 46.18-50-10log10 (41.49) = -20 dBm

Modulation Type: 4FSK

FCC Part 22.359, 74.462, 80.211 and 90.210 and RSS Gen, RSS 119 Issue 11 (12.5 kHz Bandwidth only):

On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f d in kHz) of more than 12.5 kHz at least:

Low: $50 + 10 \log (\text{Pwatts}) = 50 + 10 \log (33.34) = 65.22 \text{ dB}$

High: $50 + 10 \log (\text{Pwatts}) = 50 + 10 \log (41.49) = 66.18 \text{ dB}$

Note: In general, the worse case attenuation requirement shown above was applied.

Calculation: Limit (dBm) = EL-50-10log10 (TP)

Notes: EL is the emission level of the Output Power expressed in dBm,

In this application, the EL is 46.18 dBm.

Limit (dBm) = 46.18-50-10log10 (41.49) = -20 dBm

Note: 1. In general, the worse case attenuation requirement shown above was applied.

2. The measurement frequency range from 30 MHz to 10 GHz.

3. *** means that the emission level is too low to be measured or at least 20 dB down than the limit.

Modulation		FM		Channel Separation		25KHz		
Test Channel		Low Channel		Test Frequency		806.5000 MHz		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1613.000	73.41	Peak	H	100	253	-21.46	-13	8.46
2419.500	63.85	Peak	H	140	112	-29.69	-13	16.69
4032.5000	65.48	Peak	H	120	21	-27.66	-13	14.66
...	...		H					
1613.000	75.31	Peak	V	100	23	-22.93	-13	6.93
2419.500	67.87	Peak	V	100	21	-26.65	-13	13.65
4032.5000	66.48	Peak	V	120	195	-27.67	-13	14.67
...	...		V			...		

Modulation		FM		Channel Separation		25KHz		
Test Channel		Middle Channel		Test Frequency		817.0000 MHz		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1634.000	77.35	Peak	H	130	54	-17.52	-13	4.52
2451.000	66.48	Peak	H	120	254	-27.06	-13	14.06
3268.000	65.51	Peak	H	100	320	-27.63	-13	14.63
...	...		H					
1634.000	76.75	Peak	V	110	250	-21.49	-13	8.49
2451.000	68.52	Peak	V	100	76	-26.00	-13	13.00
3268.000	67.32	Peak	V	100	182	-26.83	-13	13.83
...	...		V			...		

Modulation		FM		Channel Separation		25KHz		
Test Channel		High Channel		Test Frequency		823.5000 MHz		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1647.000	73.54	Peak	H	120	129	-21.33	-13	8.33
3294.000	67.54	Peak	H	140	125	-26.00	-13	13.00
4117.500	69.54	Peak	H	150	83	-23.60	-13	10.60
...			H					
1647.000	77.54	Peak	V	120	89	-20.70	-13	7.70
3294.000	70.41	Peak	V	100	78	-24.11	-13	11.11
4117.500	68.54	Peak	V	150	34	-25.61	-13	12.61
...	...		V			...		

Modulation		FM		Channel Separation		25KHz		
Test Channel		Low Channel		Test Frequency		851.5000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1703.000	73.54	Peak	H	100	42	-21.33	-13	8.33
2554.500	68.45	Peak	H	100	300	-25.09	-13	12.09
4257.500	67.45	Peak	H	100	222	-25.69	-13	12.69
...	...		H					
1703.000	73.58	Peak	V	100	325	-24.66	-13	11.66
2554.500	65.54	Peak	V	100	185	-28.98	-13	15.98
4257.500	69.44	Peak	V	100	99	-24.71	-13	11.71
...	...		V			...		

Modulation		FM		Channel Separation		25KHz		
Test Channel		Middle Channel		Test Frequency		860.0000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1720.000	74.42	Peak	H	170	55	-20.45	-13	7.45
2580.000	67.45	Peak	H	140	223	-26.09	-13	13.09
4300.000	66.54	Peak	H	100	142	-26.60	-13	13.60
...	...		H					
1720.000	75.54	Peak	V	130	158	-22.70	-13	9.70
2580.000	70.21	Peak	V	100	341	-24.31	-13	11.31
4300.000	68.45	Peak	V	120	127	-25.70	-13	12.70
...	...		V			...		

Modulation		FM		Channel Separation		25KHz		
Test Channel		High Channel		Test Frequency		868.5000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1737.000	73.54	Peak	H	140	48	-21.33	-13	8.33
2605.500	72.54	Peak	H	110	115	-21.00	-13	8.00
4342.500	66.40	Peak	H	100	258	-26.74	-13	13.74
...			H					
1737.000	73.29	Peak	V	150	320	-24.95	-13	11.95
2605.500	67.55	Peak	V	100	285	-26.97	-13	13.97
4342.500	63.57	Peak	V	150	111	-30.58	-13	17.58
...	...		V			...		

Modulation		FM		Channel Separation		12.5KHz		
Test Channel		Low Channel		Test Frequency		806.5000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1613.000	72.54	Peak	H	110	21	-24.46	-20	4.46
2419.500	70.57	Peak	H	100	105	-24.53	-20	4.53
4032.5000	68.54	Peak	H	150	75	-25.96	-20	5.96
...	...		H					
1613.000	72.72	Peak	V	100	125	-25.52	-20	5.52
2419.500	68.35	Peak	V	150	215	-26.75	-20	6.75
4032.5000	67.21	Peak	V	100	302	-26.94	-20	6.94
...	...		V			...		

Modulation		FM		Channel Separation		12.5KHz		
Test Channel		Middle Channel		Test Frequency		817.0000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1634.000	71.41	Peak	H	130	157	-25.59	-20	5.59
2451.000	67.54	Peak	H	100	354	-27.56	-20	7.56
3268.000	63.04	Peak	H	120	15	-31.46	-20	11.46
...	...		H					
1634.000	70.28	Peak	V	100	229	-27.96	-20	7.96
2451.000	63.57	Peak	V	100	25	-31.53	-20	11.53
3268.000	65.17	Peak	V	150	66	-28.98	-20	8.98
...	...		V			...		

Modulation		FM		Channel Separation		12.5KHz		
Test Channel		High Channel		Test Frequency		823.5000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1647.000	70.54	Peak	H	100	215	-26.46	-20	6.46
3294.000	68.77	Peak	H	150	345	-26.33	-20	6.33
4117.500	63.22	Peak	H	150	85	-31.28	-20	11.28
...			H					
1647.000	70.08	Peak	V	100	45	-28.16	-20	8.16
3294.000	63.58	Peak	V	130	67	-31.52	-20	11.52
4117.500	64.71	Peak	V	150	252	-29.44	-20	9.44
...	...		V			...		

Modulation		FM		Channel Separation		12.5KHz		
Test Channel		Low Channel		Test Frequency		851.5000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1703.000	70.37	Peak	H	150	252	-26.63	-20	6.63
2554.500	68.59	Peak	H	150	214	-26.51	-20	6.51
4257.500	63.54	Peak	H	110	105	-30.96	-20	10.96
...	...		H					
1703.000	71.21	Peak	V	100	77	-27.03	-20	7.03
2554.500	68.42	Peak	V	120	21	-26.68	-20	6.68
4257.500	68.22	Peak	V	120	144	-25.93	-20	5.93
...	...		V			...		

Modulation		FM		Channel Separation		12.5KHz		
Test Channel		Middle Channel		Test Frequency		860.0000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1720.000	70.35	Peak	H	150	42	-26.65	-20	6.65
2580.000	68.55	Peak	H	150	157	-26.55	-20	6.55
4300.000	65.81	Peak	H	100	226	-28.69	-20	8.69
...	...		H					
1720.000	71.32	Peak	V	100	254	-26.92	-20	6.92
2580.000	68.47	Peak	V	130	33	-26.63	-20	6.63
4300.000	63.97	Peak	V	120	110	-30.18	-20	10.18
...	...		V			...		

Modulation		FM		Channel Separation		12.5KHz		
Test Channel		High Channel		Test Frequency		868.5000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1737.000	71.22	Peak	H	130	41	-25.78	-20	5.78
2605.500	70.23	Peak	H	100	325	-24.87	-20	4.87
4342.500	65.02	Peak	H	120	12	-29.48	-20	9.48
...			H					
1737.000	70.63	Peak	V	100	22	-27.61	-20	7.61
2605.500	65.55	Peak	V	120	87	-29.55	-20	9.55
4342.500	68.25	Peak	V	100	210	-25.90	-20	5.90
...	...		V			...		

Modulation		FM		Channel Separation		12.5KHz		
Test Channel		Low Channel		Test Frequency		896.5000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1793.000	70.22	Peak	H	100	125	-26.78	-20	6.78
2689.500	66.21	Peak	H	110	162	-28.89	-20	8.89
4482.500	68.41	Peak	H	120	245	-26.09	-20	6.09
...	...		H					
1793.000	71.69	Peak	V	110	55	-26.55	-20	6.55
2689.500	67.24	Peak	V	100	173	-27.86	-20	7.86
4482.500	68.21	Peak	V	150	15	-25.94	-20	5.94
...	...		V			...		

Modulation		FM		Channel Separation		12.5KHz		
Test Channel		High Channel		Test Frequency		900.5000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1801.000	70.21	Peak	H	100	237	-26.79	-20	6.79
2701.500	67.55	Peak	H	150	74	-27.55	-20	7.55
3602.000	66.66	Peak	H	100	111	-27.84	-20	7.84
...	...		H					
1801.000	70.54	Peak	V	150	204	-27.70	-20	7.70
2701.500	70.36	Peak	V	110	47	-24.74	-20	4.74
3602.000	68.21	Peak	V	100	162	-25.94	-20	5.94
...	...		V			...		

Modulation		FM		Channel Separation		12.5KHz		
Test Channel		Low Channel		Test Frequency		935.5000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1871.000	70.36	Peak	H	150	54	-26.64	-20	6.64
2806.500	66.66	Peak	H	130	274	-28.44	-20	8.44
4677.500	67.55	Peak	H	120	33	-26.95	-20	6.95
...	...		H					
1871.000	71.81	Peak	V	100	135	-26.43	-20	6.43
2806.500	65.58	Peak	V	120	35	-29.52	-20	9.52
4677.500	62.25	Peak	V	110	300	-31.90	-20	11.90
...	...		V			...		

Modulation		FM		Channel Separation		12.5KHz		
Test Channel		High Channel		Test Frequency		939.5000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1879.000	66.58	Peak	H	100	124	-30.42	-20	10.42
2818.500	67.99	Peak	H	150	67	-27.11	-20	7.11
4697.000	63.58	Peak	H	150	22	-30.92	-20	10.92
...	...		H					
1879.000	68.25	Peak	V	120	158	-29.99	-20	9.99
2818.500	68.15	Peak	V	100	55	-26.95	-20	6.95
4697.000	67.25	Peak	V	120	278	-26.90	-20	6.90
...	...		V			...		

Modulation		4FSK		Channel Separation		12.5KHz		
Test Channel		Low Channel		Test Frequency		806.5000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1613.000	69.58	Peak	H	120	370	-27.42	-20	7.42
2419.500	70.02	Peak	H	120	89	-25.08	-20	5.08
4032.5000	68.96	Peak	H	100	75	-25.54	-20	5.54
...	...		H					
1613.000	68.28	Peak	V	150	182	-29.96	-20	9.96
2419.500	69.02	Peak	V	150	45	-26.08	-20	6.08
4032.5000	69.20	Peak	V	120	111	-24.95	-20	4.95
...	...		V			...		

Modulation		4FSK		Channel Separation		12.5KHz		
Test Channel		Middle Channel		Test Frequency		817.0000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1634.000	69.35	Peak	H	100	75	-27.65	-20	7.65
2451.000	68.23	Peak	H	150	84	-26.87	-20	6.87
3268.000	66.36	Peak	H	150	163	-28.14	-20	8.14
...	...		H					
1634.000	68.54	Peak	V	100	78	-29.70	-20	9.70
2451.000	67.31	Peak	V	100	66	-27.79	-20	7.79
3268.000	65.22	Peak	V	100	188	-28.93	-20	8.93
...	...		V			...		

Modulation		4FSK		Channel Separation		12.5KHz		
Test Channel		High Channel		Test Frequency		823.5000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1647.000	70.25	Peak	H	150	258	-26.75	-20	6.75
3294.000	68.55	Peak	H	150	266	-26.55	-20	6.55
4117.500	67.02	Peak	H	150	45	-27.48	-20	7.48
...	...		H					
1647.000	70.25	Peak	V	100	312	-27.99	-20	7.99
3294.000	70.22	Peak	V	100	355	-24.88	-20	4.88
4117.500	68.33	Peak	V	120	173	-25.82	-20	5.82
...	...		V			...		

Modulation		4FSK		Channel Separation		12.5KHz		
Test Channel		Low Channel		Test Frequency		851.5000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1703.000	70.45	Peak	H	150	152	-26.55	-20	6.55
2554.500	67.25	Peak	H	100	129	-27.85	-20	7.85
4257.500	65.22	Peak	H	100	127	-29.28	-20	9.28
...	...		H					
1703.000	70.58	Peak	V	120	38	-27.66	-20	7.66
2554.500	69.50	Peak	V	100	336	-25.60	-20	5.60
4257.500	67.26	Peak	V	100	143	-26.89	-20	6.89
...	...		V			...		

Modulation		4FSK		Channel Separation		12.5KHz		
Test Channel		Middle Channel		Test Frequency		860.0000 MHz		
Frequency (MHz)	E-Field Level (dBuV/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1720.000	70.58	Peak	H	120	65	-26.42	-20	6.42
2580.000	69.32	Peak	H	120	37	-25.78	-20	5.78
4300.000	67.25	Peak	H	120	111	-27.25	-20	7.25
...	...		H					
1720.000	70.68	Peak	V	100	323	-27.56	-20	7.56
2580.000	68.27	Peak	V	100	58	-26.83	-20	6.83
4300.000	66.48	Peak	V	100	75	-27.67	-20	7.67
...	...		V			...		

Modulation		4FSK		Channel Separation		12.5KHz		
Test Channel		High Channel		Test Frequency		868.5000 MHz		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1737.000	71.21	Peak	H	100	335	-25.79	-20	5.79
2605.500	68.52	Peak	H	120	173	-26.58	-20	6.58
4342.500	66.31	Peak	H	150	125	-28.19	-20	8.19
			H					
1737.000	70.21	Peak	V	120	156	-28.03	-20	8.03
2605.500	69.45	Peak	V	100	44	-25.65	-20	5.65
4342.500	68.22	Peak	V	100	138	-25.93	-20	5.93
...	...		V			...		

Modulation		4FSK		Channel Separation		12.5KHz		
Test Channel		Low Channel		Test Frequency		896.5000 MHz		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1793.000	70.57	Peak	H	150	327	-26.43	-20	6.43
2689.500	67.54	Peak	H	100	55	-27.56	-20	7.56
4482.500	66.21	Peak	H	100	77	-28.29	-20	8.29
...	...		H					
1793.000	70.36	Peak	V	120	88	-27.88	-20	7.88
2689.500	69.25	Peak	V	100	155	-25.85	-20	5.85
4482.500	66.85	Peak	V	100	22	-27.30	-20	7.30
...	...		V			...		

Modulation		4FSK		Channel Separation		12.5KHz		
Test Channel		High Channel		Test Frequency		900.5000 MHz		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1801.000	70.68	Peak	H	130	360	-26.32	-20	6.32
2701.500	68.94	Peak	H	100	42	-26.16	-20	6.16
3602.000	66.98	Peak	H	100	55	-27.52	-20	7.52
...	...		H					
1801.000	70.21	Peak	V	150	44	-28.03	-20	8.03
2701.500	67.21	Peak	V	100	125	-27.89	-20	7.89
3602.000	68.10	Peak	V	120	335	-26.05	-20	6.05
...	...		V			...		

Modulation		4FSK		Channel Separation		12.5KHz		
Test Channel		Low Channel		Test Frequency		935.5000 MHz		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1871.000	70.22	Peak	H	100	228	-26.78	-20	6.78
2806.500	68.11	Peak	H	120	350	-26.99	-20	6.99
4677.500	67.92	Peak	H	120	101	-26.58	-20	6.58
...	...		H					
1871.000	70.25	Peak	V	100	65	-27.99	-20	7.99
2806.500	66.54	Peak	V	100	77	-28.56	-20	8.56
4677.500	68.21	Peak	V	150	78	-25.94	-20	5.94
...	...		V			...		

Modulation		4FSK		Channel Separation		12.5KHz		
Test Channel		High Channel		Test Frequency		939.5000 MHz		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	ERP measured by Substitution Method (dBm)	Limit (dBm)	Margin (dB)
1879.000	69.21	Peak	H	100	120	-27.79	-20	7.79
2818.500	67.54	Peak	H	100	352	-27.56	-20	7.56
4697.000	68.21	Peak	H	150	175	-26.29	-20	6.29
...	...		H					
1879.000	70.21	Peak	V	100	235	-28.03	-20	8.03
2818.500	67.52	Peak	V	120	175	-27.58	-20	7.58
4697.000	65.74	Peak	V	120	330	-28.41	-20	8.41
...	...		V			...		

4.4. Spurious Emission on Antenna Port

TEST APPLICABLE

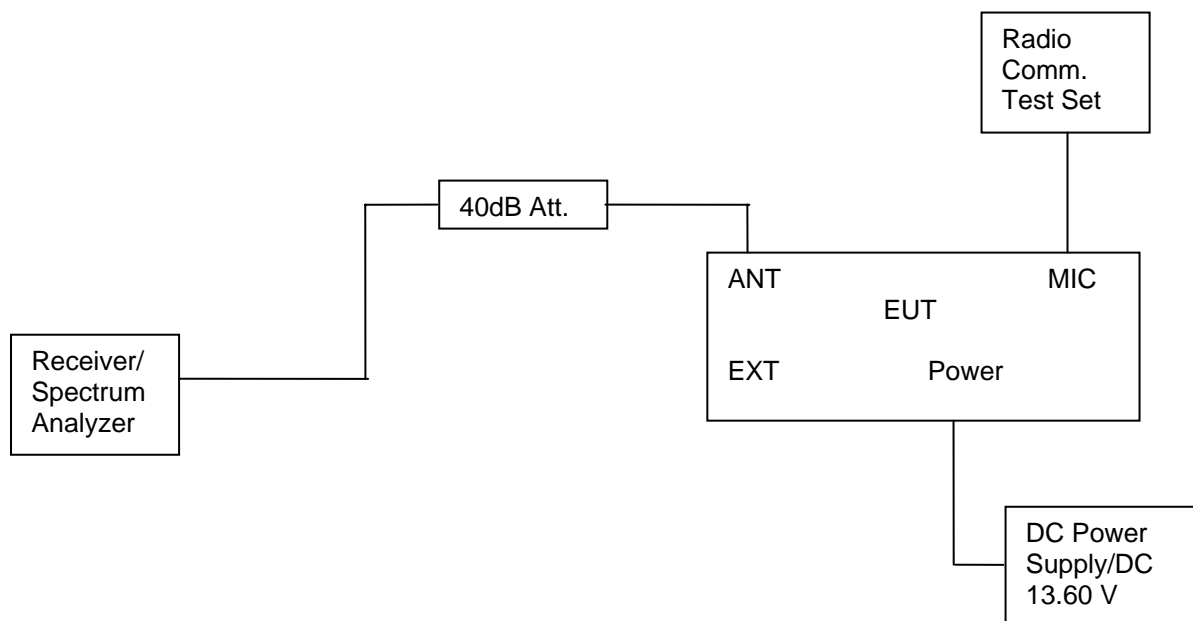
The same as Section 4.3

TEST PROCEDURE

The RF output of the EUT was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set to 100 kHz. Sufficient scans were taken to show any out of band emission up to 10th. Harmonic for the lower and the highest frequency range. Set RBW 100 kHz, VBW 300 kHz in the frequency band 30MHz to 1GHz, while set RBW=1MHz, VBW=3MHz from the 1GHz to 10th Harmonic.

The audio input was set to 0 to get the unmodulated carrier, the resulting picture is print out for each channel separation.

TEST CONFIGURATION



TEST RESULTS

Modulation Type: FM

FCC Part 22.359, 74.462, 80.211 and 90.210 and RSS Gen, RSS 119 Issue 11 (25 kHz bandwidth only):
On any frequency removed from the center of the assigned channel by more than 250 percent at least:

Low: $43 + 10 \log (\text{Pwatts}) = 43 + 10 \log (39.63) = 58.98 \text{ dB}$

High: $43 + 10 \log (\text{Pwatts}) = 43 + 10 \log (41.69) = 59.20 \text{ dB}$

Calculation: Limit (dBm) = EL - 43 - 10log10 (TP)

Notes: EL is the emission level of the Output Power expressed in dBm,

In this application, the EL is 46.20 dBm.

Limit (dBm) = 46.20 - 43 - 10log10 (41.69) = -13 dBm

FCC Part 22.359, 74.462, 80.211 and 90.210 and RSS Gen, RSS 119 Issue 11 (12.5 kHz bandwidth only): On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f d in kHz) of more than 12.5 kHz at least:

Low: $50 + 10 \log (\text{Pwatts}) = 50 + 10 \log (31.33) = 64.95 \text{ dB}$

High: $50 + 10 \log (\text{Pwatts}) = 50 + 10 \log (41.49) = 66.18 \text{ dB}$

Note: In general, the worse case attenuation requirement shown above was applied.

Calculation: Limit (dBm) = EL - 50 - 10log10 (TP)

Notes: EL is the emission level of the Output Power expressed in dBm,

In this application, the EL is 46.18 dBm.

Limit (dBm) = 46.18 - 50 - 10log10 (41.49) = -20 dBm

Modulation Type: 4FSK

FCC Part 22.359, 74.462, 80.211 and 90.210 and RSS Gen, RSS 119 Issue 11 (12.5 kHz Bandwidth only):

On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz at least:

Low: $50 + 10 \log(P_{\text{watts}}) = 50 + 10 \log(33.34) = 65.22 \text{ dB}$

High: $50 + 10 \log(P_{\text{watts}}) = 50 + 10 \log(41.49) = 66.18 \text{ dB}$

Note: In general, the worse case attenuation requirement shown above was applied.

Calculation: Limit (dBm) = EL-50-10log10 (TP)

Notes: EL is the emission level of the Output Power expressed in dBm,
In this application, the EL is 46.18 dBm.

Limit (dBm) = 46.18-50-10log10 (41.49) = -20 dBm

Note: 1. In general, the worse case attenuation requirement shown above was applied.

2. The measurement frequency range from 30MHz to 10 GHz.

For Rated High Power (35Watt)

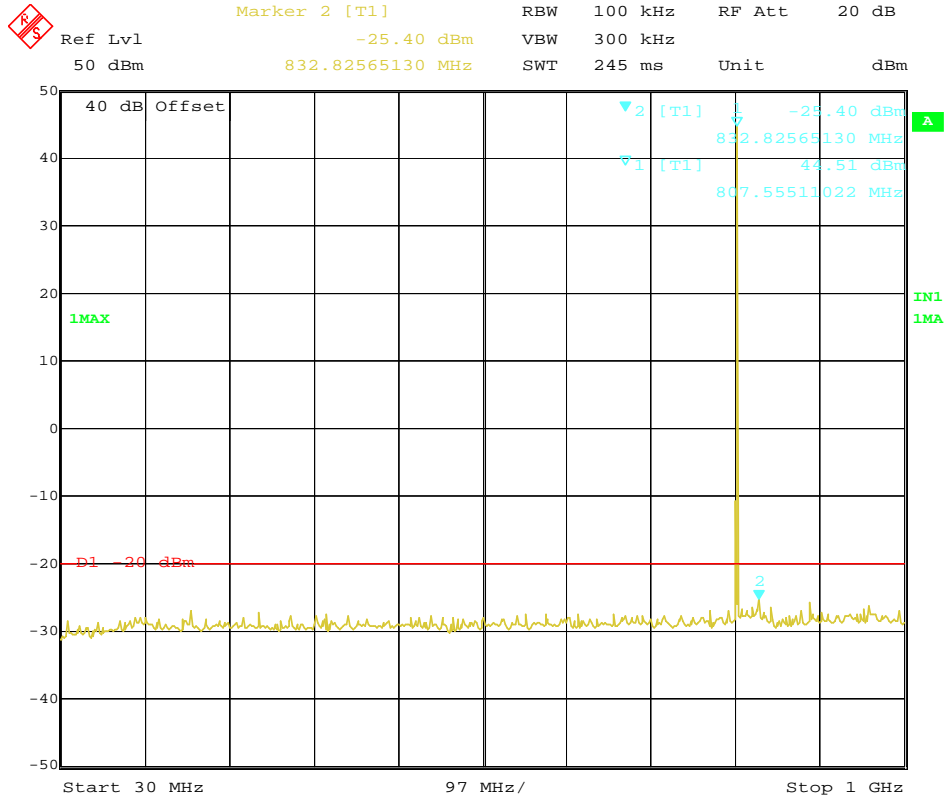
Frequency Range (MHz)	Modulation Type	Channel Separation (KHz)	Test Channel	Maximum Conducted Spurious Emissions (dBm)			
				Below 1GHz		Above 1GHz	
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)
806-825	Analog/FM	25	Low	832.82	-25.40	1613.22	-32.48
			Middle	889.19	-27.66	1631.26	-27.99
			High	852.26	-26.96	1631.26	-28.02
		12.5	Low	883.36	-27.06	1613.22	-23.37
			Middle	817.27	44.57	2442.88	-27.12
			High	896.97	-27.60	2460.92	-26.51
	Digital/4FSK	12.5	Low	920.30	-26.72	1613.22	-31.23
			Middle	974.72	-26.41	1631.26	-29.77
			High	980.56	-27.73	1631.26	-25.20
851-870	Analog/FM	25	Low	976.67	-26.50	1703.40	-26.33
			Middle	965.01	-26.15	1703.40	-26.42
			High	943.62	-25.52	1721.44	-24.97
		12.5	Low	933.90	-26.21	1703.40	-25.95
			Middle	922.24	-25.64	1721.44	-26.17
			High	939.73	-26.12	1721.44	-24.71
	Digital/4FSK	12.5	Low	939.73	-26.65	1703.40	-26.32
			Middle	957.23	-26.12	1721.44	-27.09
			High	945.57	-25.52	1721.44	-25.44
896-902	Analog/FM	12.5	Low	990.28	-25.36	2677.35	-27.71
	High		926.13	-26.45	2695.39	-26.28	
	Digital/4FSK		Low	988.33	-26.00	2677.35	-27.68
			High	988.33	-27.31	1793.55	-27.25
935-941	Analog/FM	12.5	Low	869.75	-26.55	2803.60	-30.55
	High		900.86	-27.17	2521.64	-31.59	
	Digital/4FSK		Low	980.66	-27.47	2803.60	-30.28
			High	988.33	-27.81	2821.64	-31.39
Limit		-13dBm for 25KHz Channel Separation					
		-20dBm for 12.5KHz Channel Separation					
Test Results		Compliance					

For Rated Low Power (10Watt)

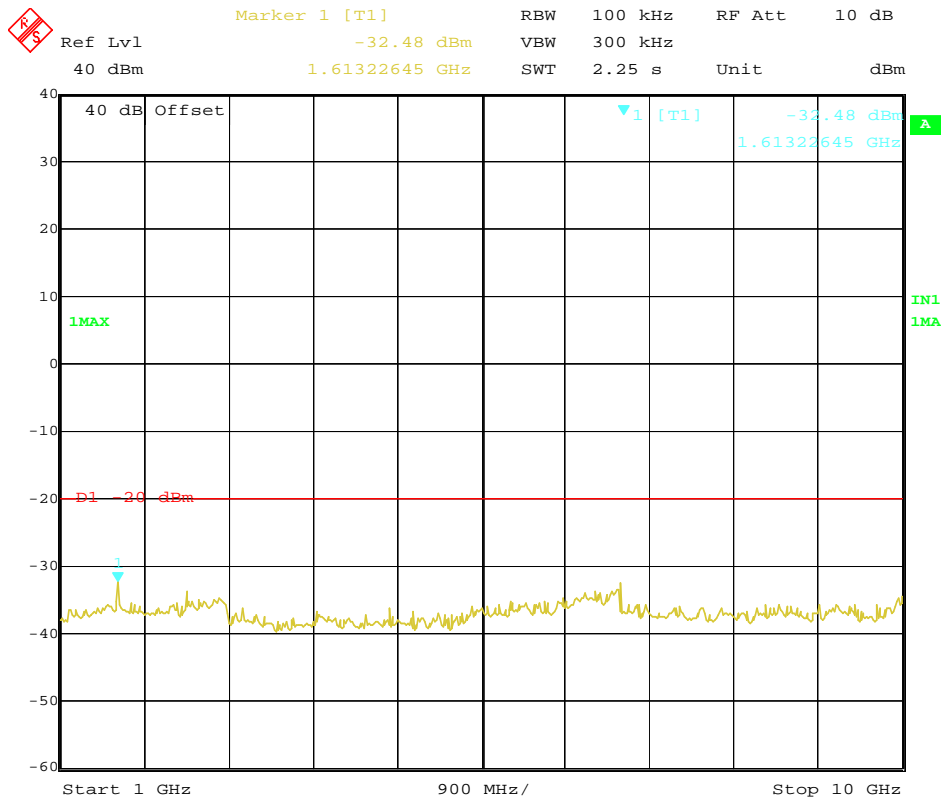
Frequency Range (MHz)	Modulation Type	Channel Separation (KHz)	Test Channel	Maximum Conducted Spurious Emissions (dBm)			
				Below 1GHz		Above 1GHz	
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)
806-825	Analog/FM	25	Low	850.32	-26.65	6951.90	-33.36
			Middle	869.79	-26.30	6987.97	-32.91
			High	966.95	-26.74	6933.66	-32.47
		12.5	Low	859.03	-27.65	1613.22	-33.39
			Middle	851.42	-27.36	2677.35	-33.67
			High	896.91	-27.22	2641.28	-33.96
	Digital/4FSK	12.5	Low	926.13	-25.74	6969.92	-33.67
			Middle	943.62	-27.07	6915.63	-33.52
			High	974.72	-26.41	6957.97	-33.35
851-870	Analog/FM	25	Low	895.03	-26.15	6987.97	-33.20
			Middle	916.41	-26.16	6627.25	-33.13
			High	933.90	-27.86	6591.18	-32.54
		12.5	Low	953.34	-26.48	6969.93	-33.04
			Middle	914.46	-25.41	6573.14	-33.92
			High	986.39	-26.75	6969.93	-32.99
	Digital/4FSK	12.5	Low	916.41	-26.41	6609.21	-33.09
			Middle	957.23	-26.12	6609.21	-33.24
			High	930.02	-25.72	2659.31	-34.59
896-902	Analog/FM	12.5	Low	958.33	-26.20	6609.21	-33.79
	High		988.33	-25.36	6951.90	-32.63	
	Digital/4FSK		Low	931.96	-24.55	2641.25	-34.40
			High	968.59	-25.95	6951.90	-30.52
935-941	Analog/FM	12.5	Low	869.75	-28.32	6933.86	-33.10
	High		840.60	-26.48	6573.14	-33.31	
	Digital/4FSK		Low	966.95	-26.15	6987.97	-33.37
			High	988.33	-26.27	6951.90	-33.37
Limit		-13dBm for 25KHz Channel Separation					
		-20dBm for 12.5KHz Channel Separation					
Test Results		Compliance					

Plots of Spurious Emission on Antenna Port Measurement**For Rated High Power (35Watt)**

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	25KHz	Low	806.5000	832.82	-25.40	1613.22	-32.48	-13dBm
Test Results				Compliance				

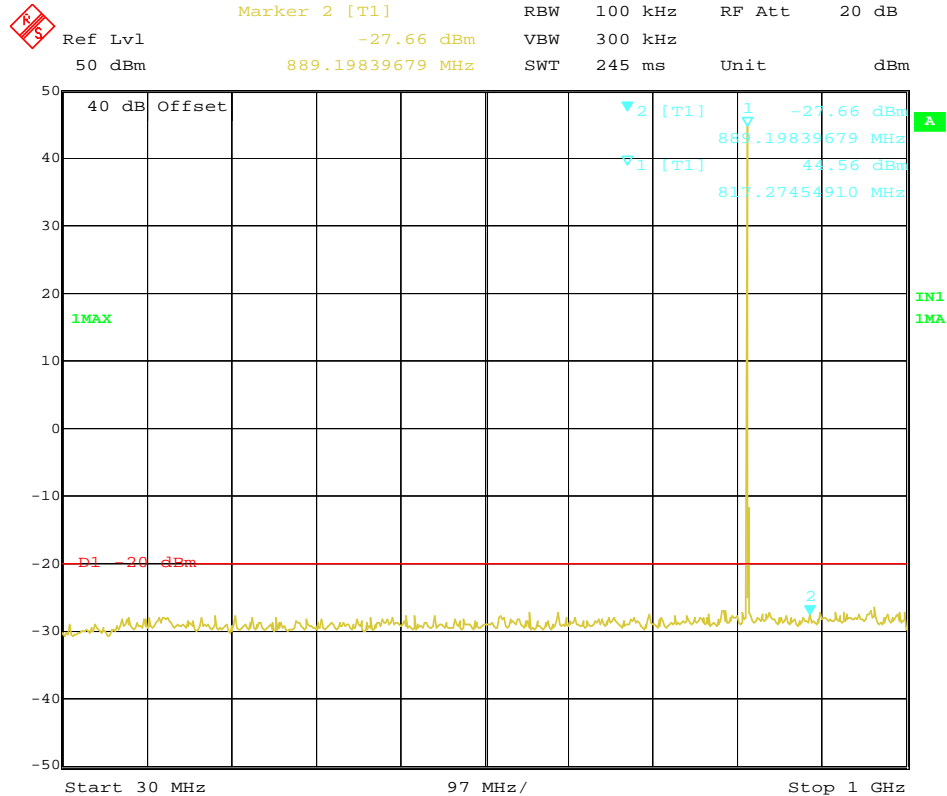


Date: 28.JUL.2012 17:30:42

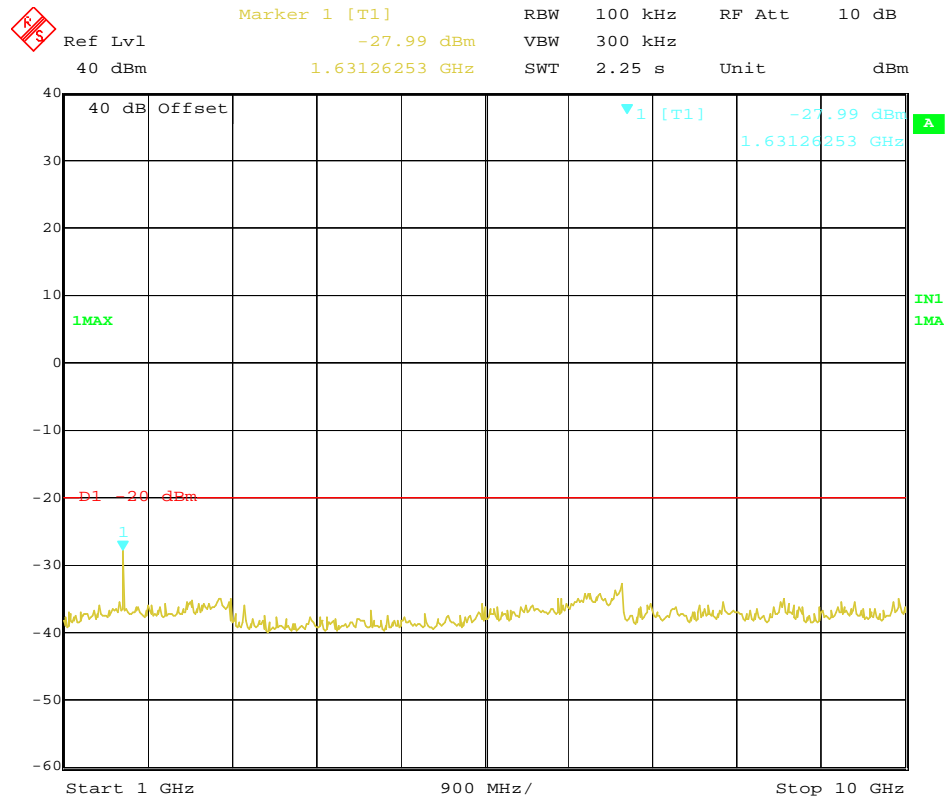


Date: 28.JUL.2012 17:56:32

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	25KHz	Middle	817.0000	889.19	-27.66	1631.26	-27.99	-13dBm
Test Results				Compliance				

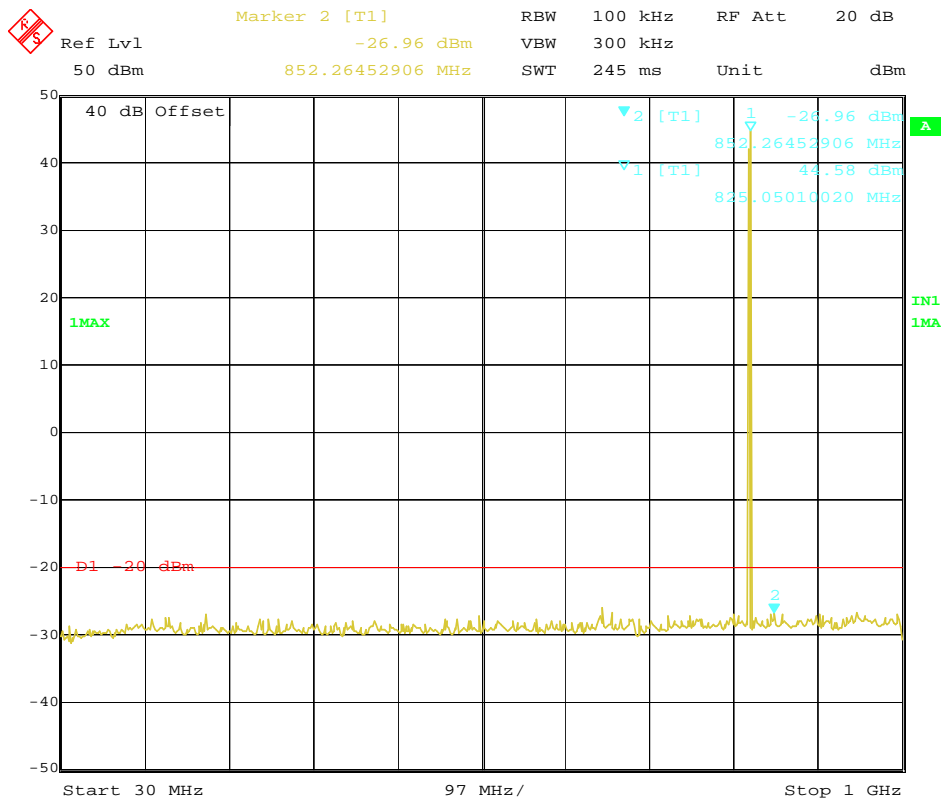


Date: 28.JUL.2012 17:31:34

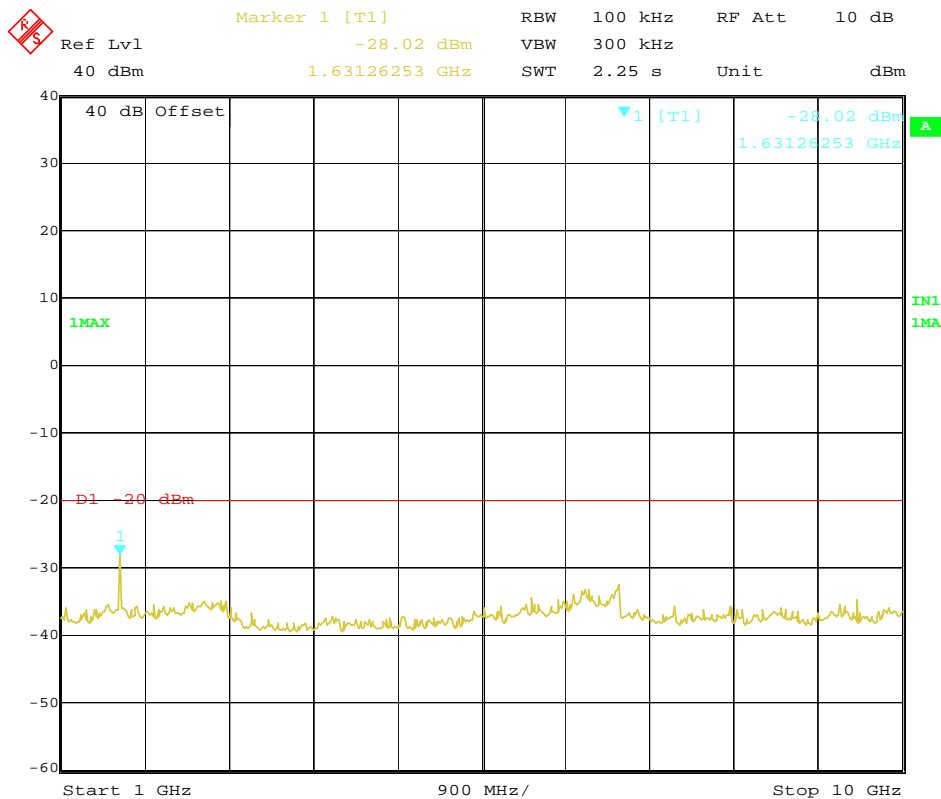


Date: 28.JUL.2012 17:56:49

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	25KHz	High	823.5000	852.26	-26.96	1631.26	-28.02	-13dBm
Test Results				Compliance				

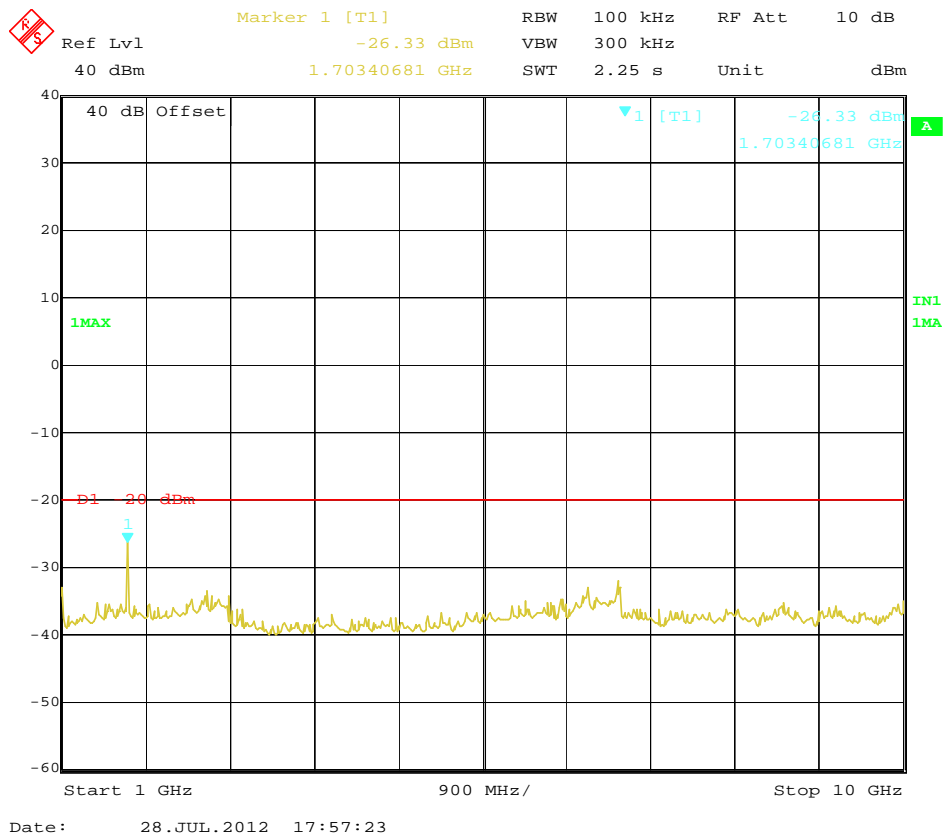
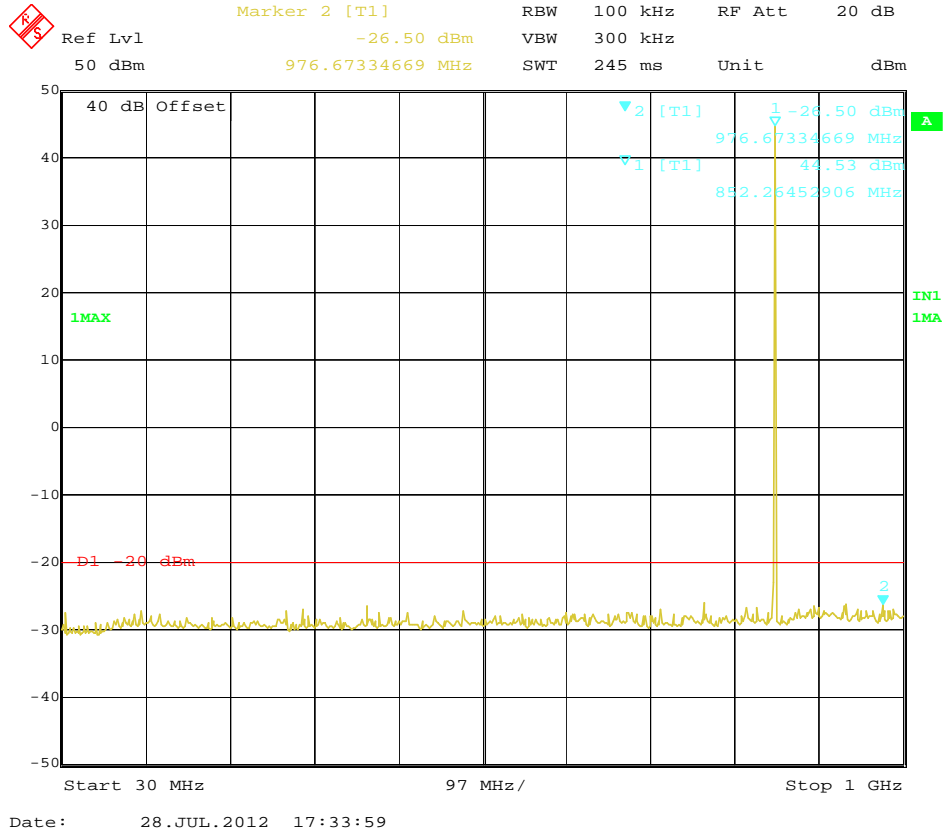


Date: 28.JUL.2012 17:32:11

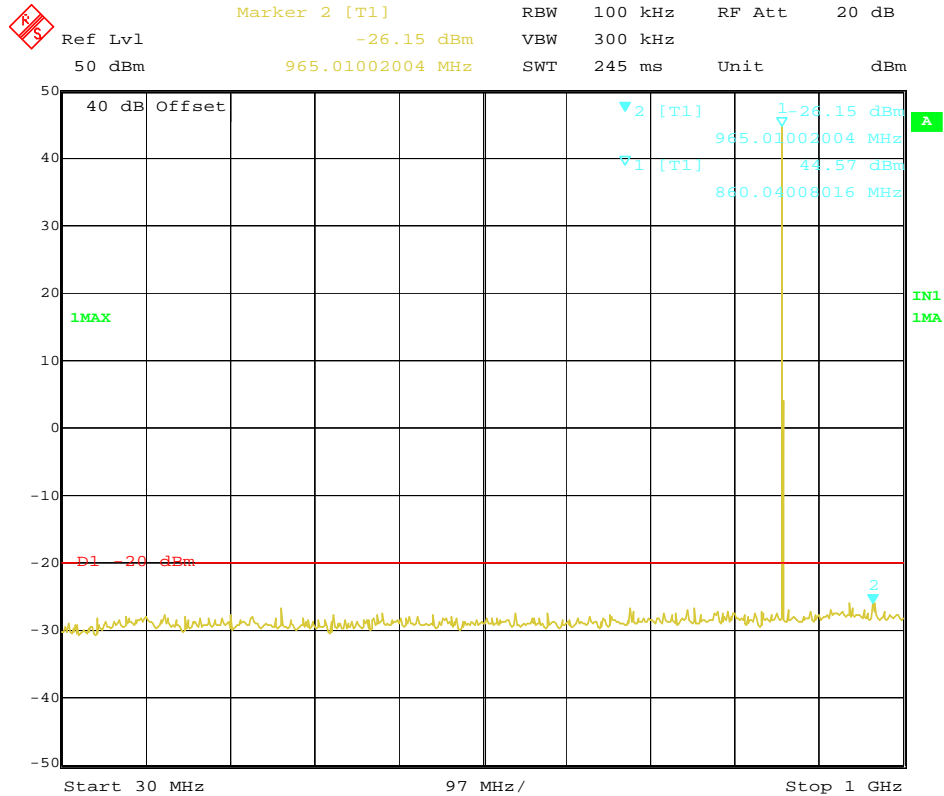


Date: 28.JUL.2012 17:57:04

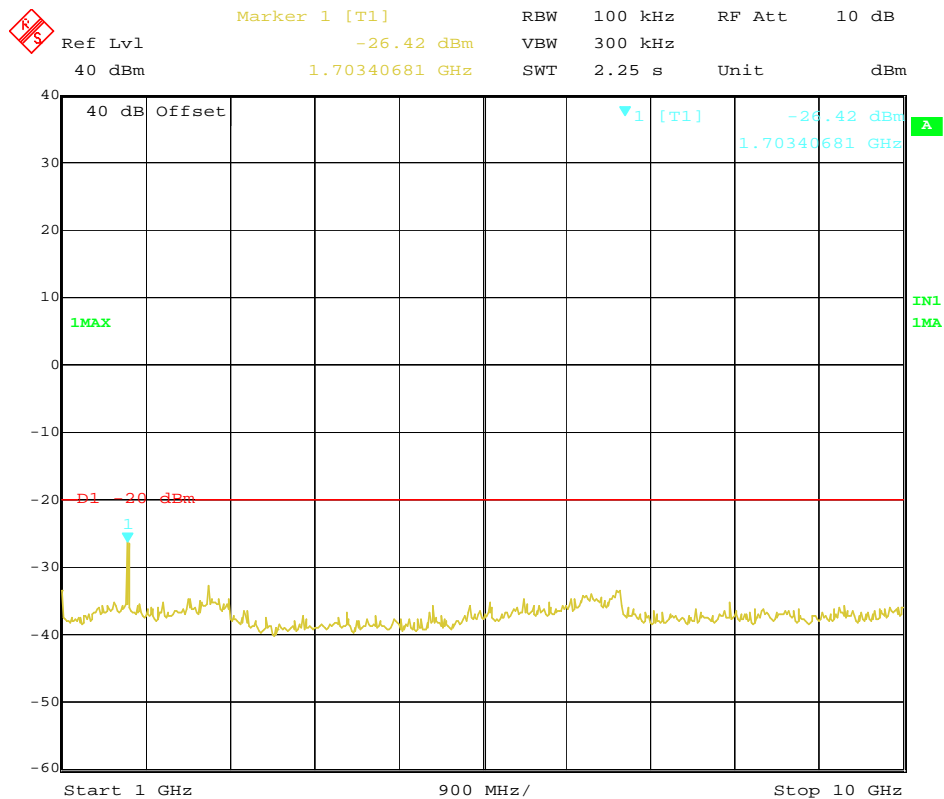
Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	25KHz	Low	851.5000	976.67	-26.50	1703.40	-26.33	-13dBm
Test Results				Compliance				



Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	25KHz	Middle	860.0000	965.01	-26.15	1703.40	-26.42	-13dBm
Test Results				Compliance				

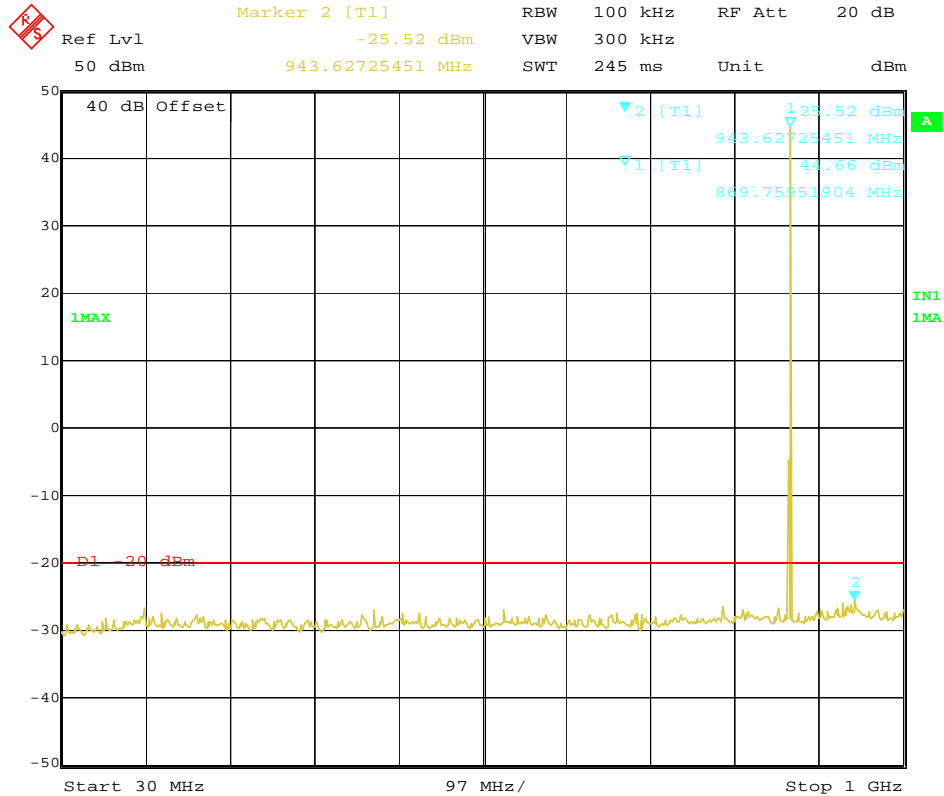


Date: 28.JUL.2012 17:34:41

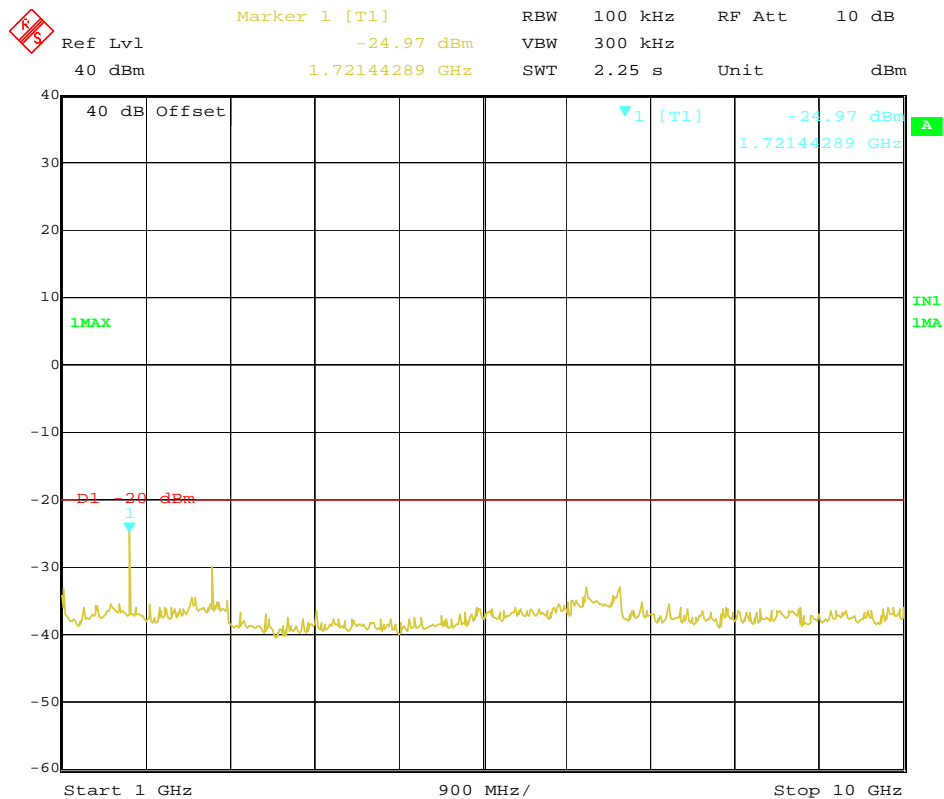


Date: 28.JUL.2012 17:57:38

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	25KHz	High	868.5000	943.62	-25.52	1721.44	-24.97	-13dBm
Test Results				Compliance				

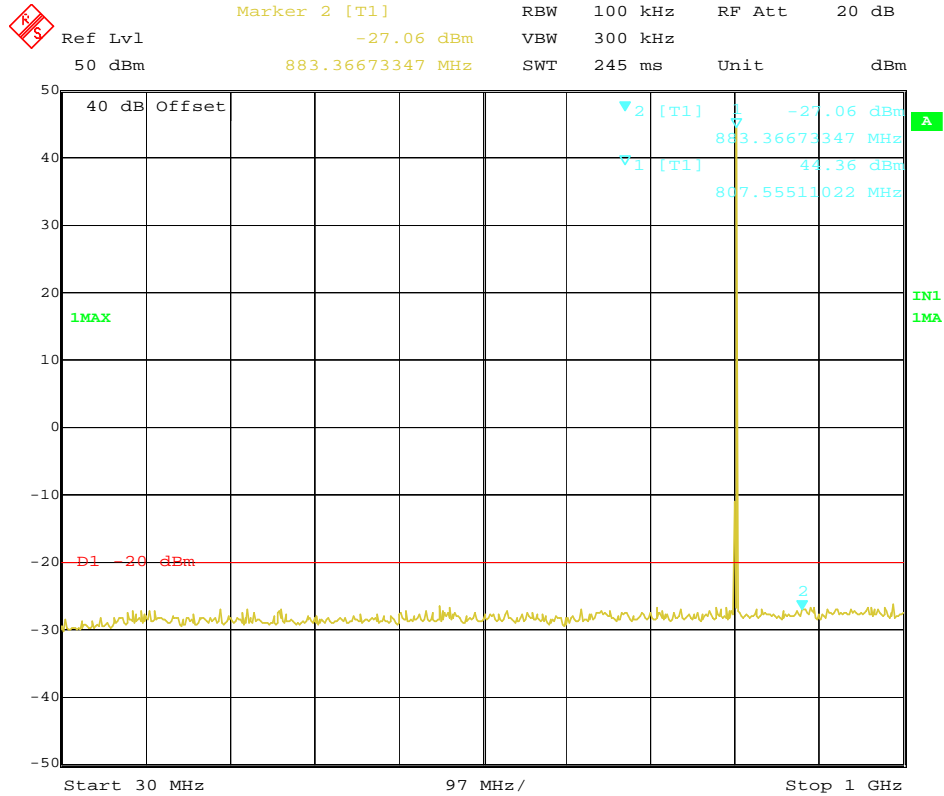


Date: 28.JUL.2012 17:36:09

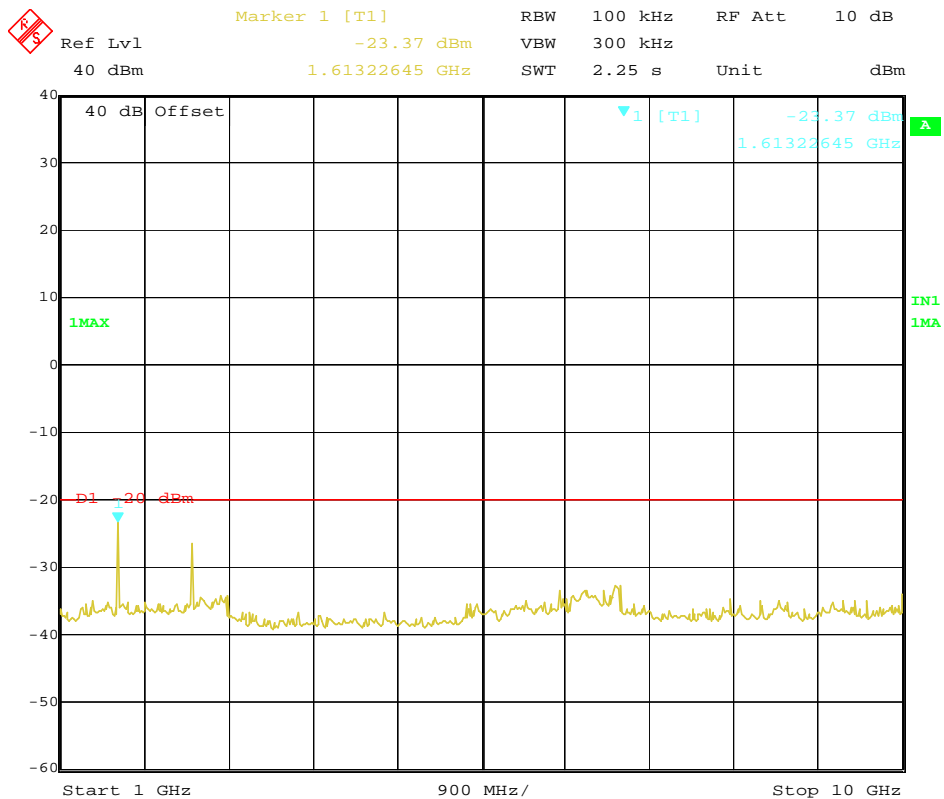


Date: 28.JUL.2012 17:57:52

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	Low	806.5000	883.36	-27.06	1613.22	-23.37	-20dBm
Test Results				Compliance				

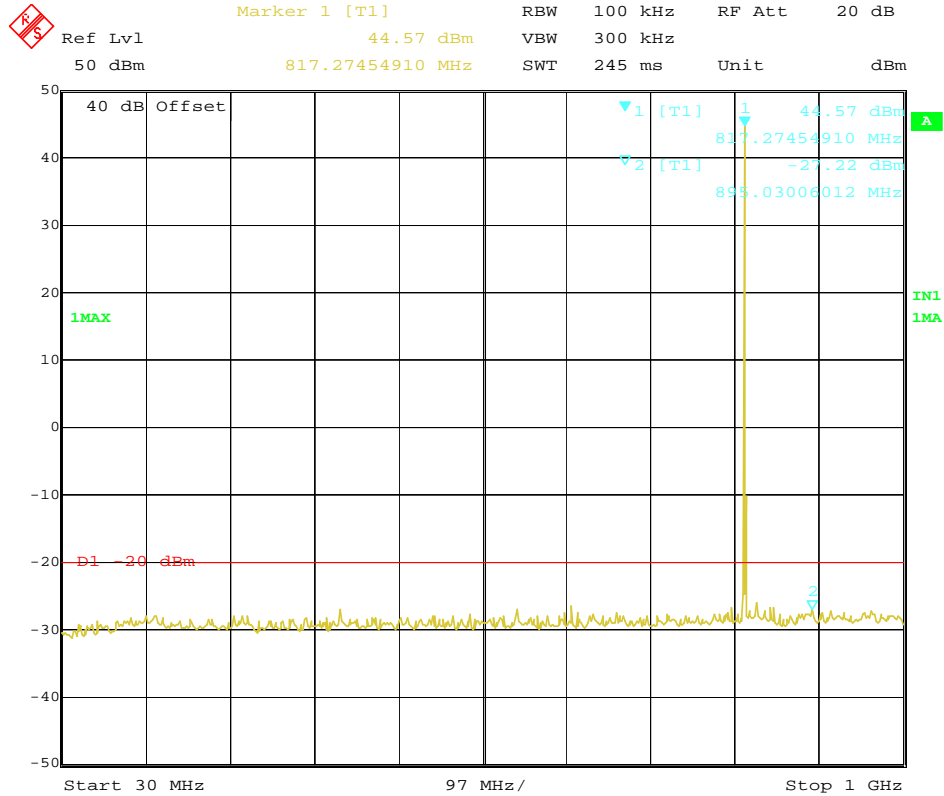


Date: 28.JUL.2012 17:22:39

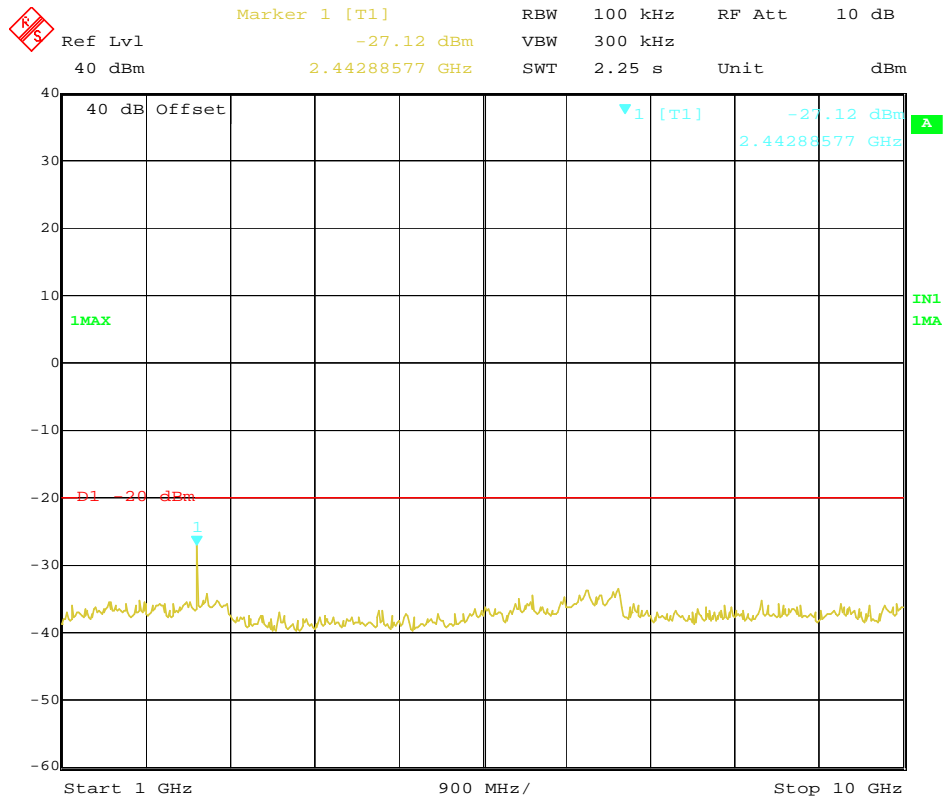


Date: 28.JUL.2012 17:44:47

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	Middle	817.0000	817.27	44.57	2442.88	-27.12	-20dBm
Test Results				Compliance				

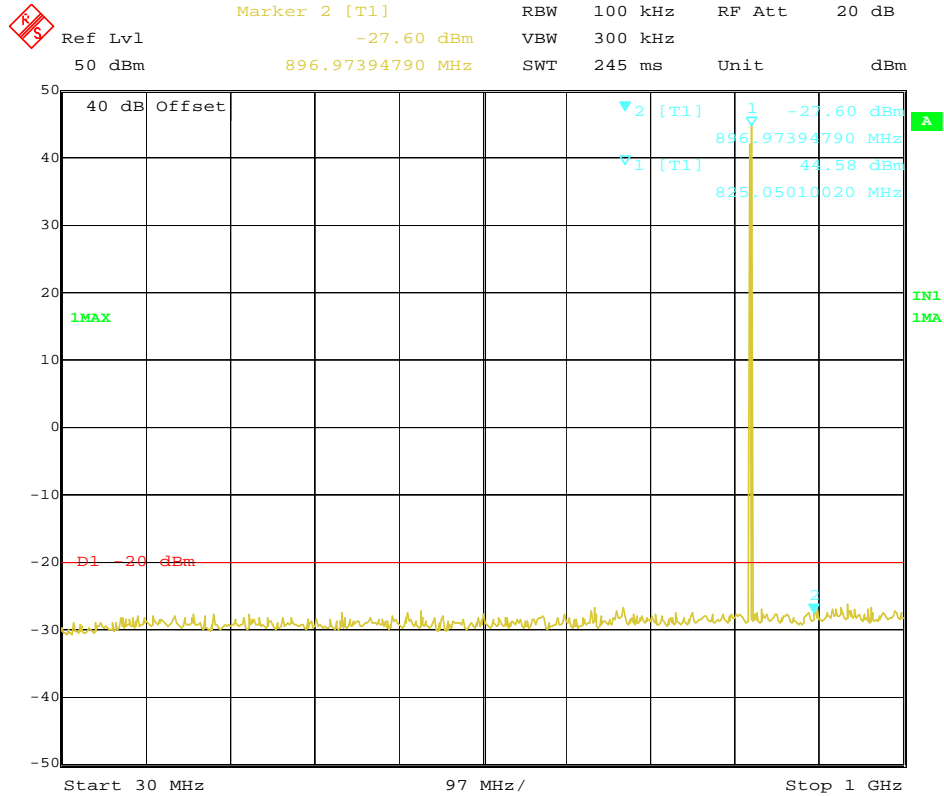


Date: 28.JUL.2012 17:23:37

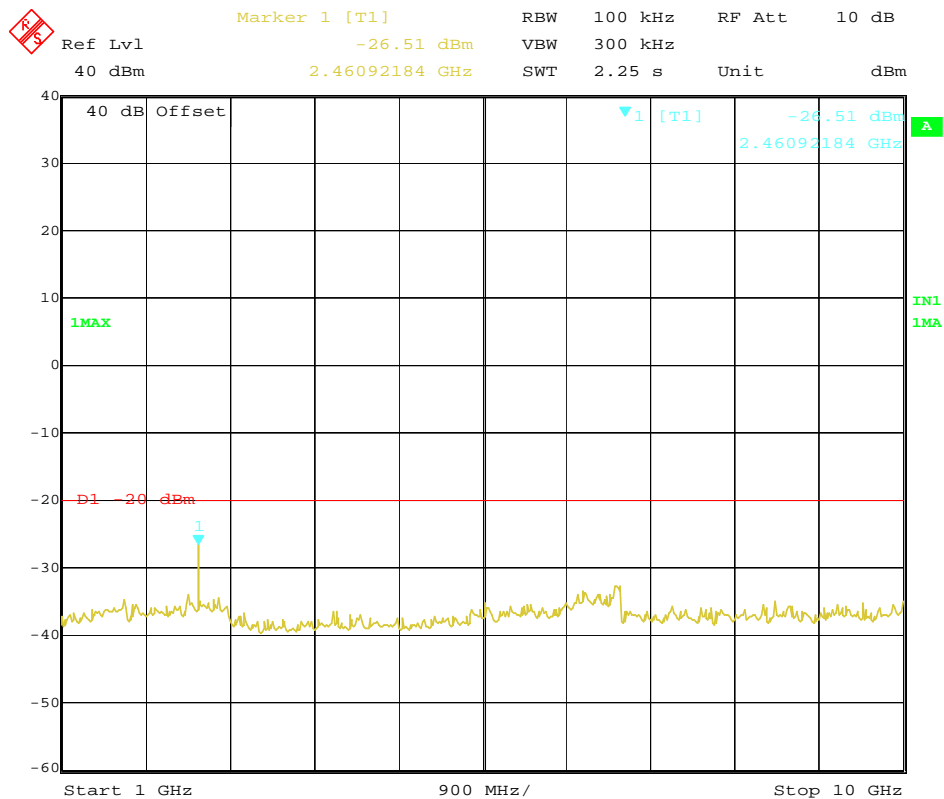


Date: 28.JUL.2012 17:45:42

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	High	823.5000	896.97	-27.60	2460.92	-26.51	-20dBm
Test Results				Compliance				

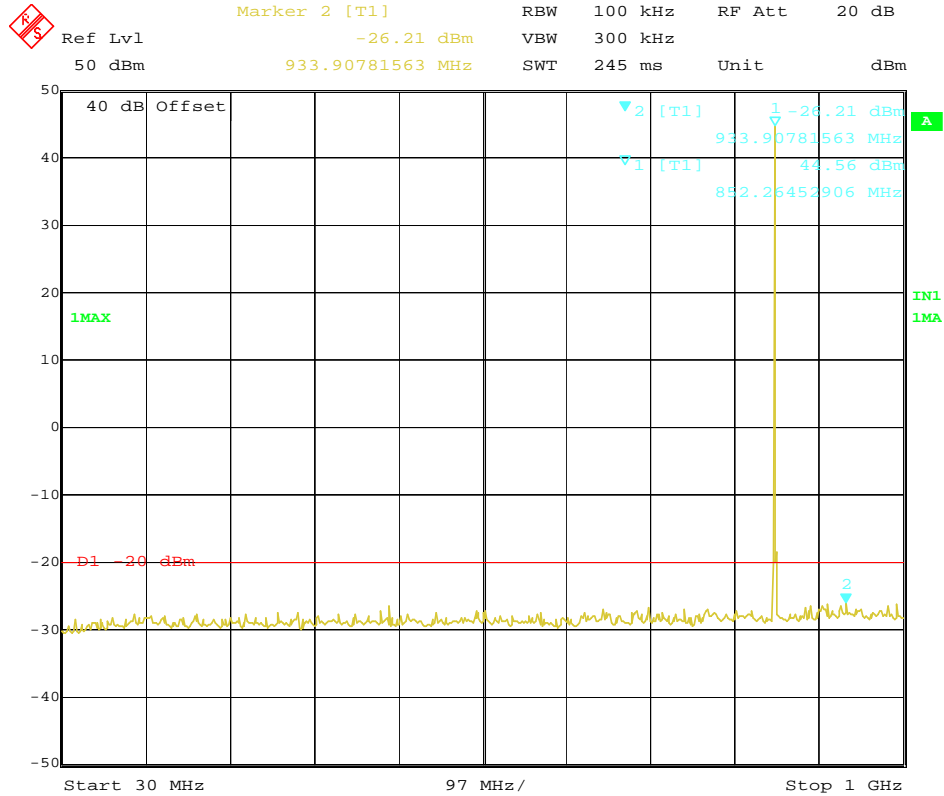


Date: 28.JUL.2012 17:24:15

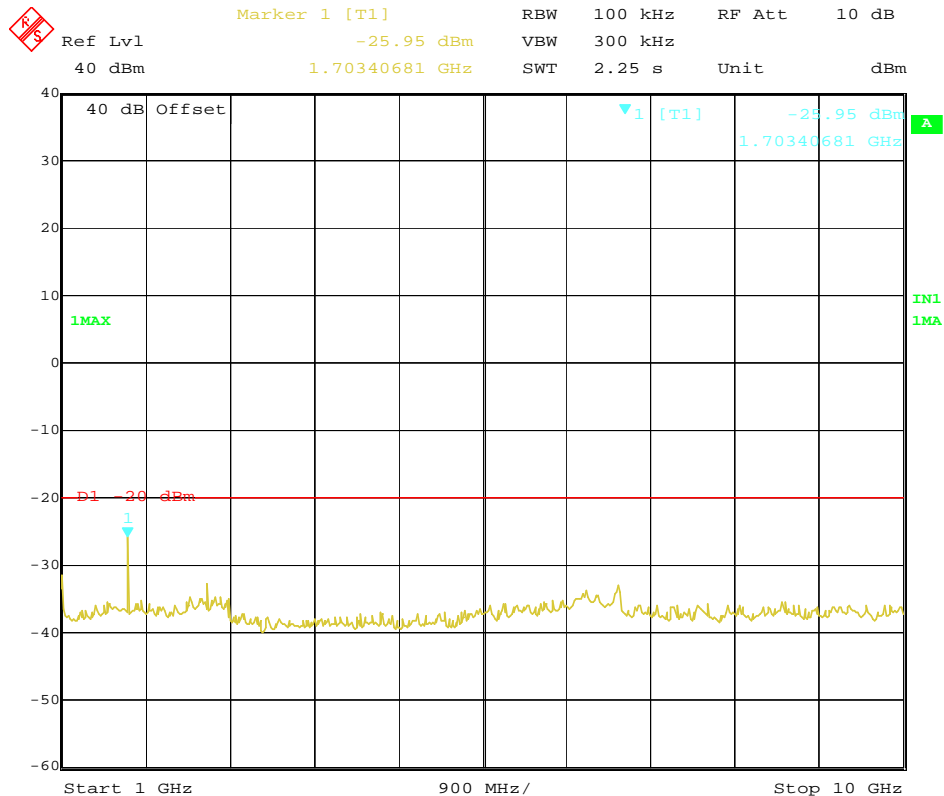


Date: 28.JUL.2012 17:46:32

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	Low	851.5000	933.90	-26.21	1703.40	-25.95	-20dBm
Test Results				Compliance				

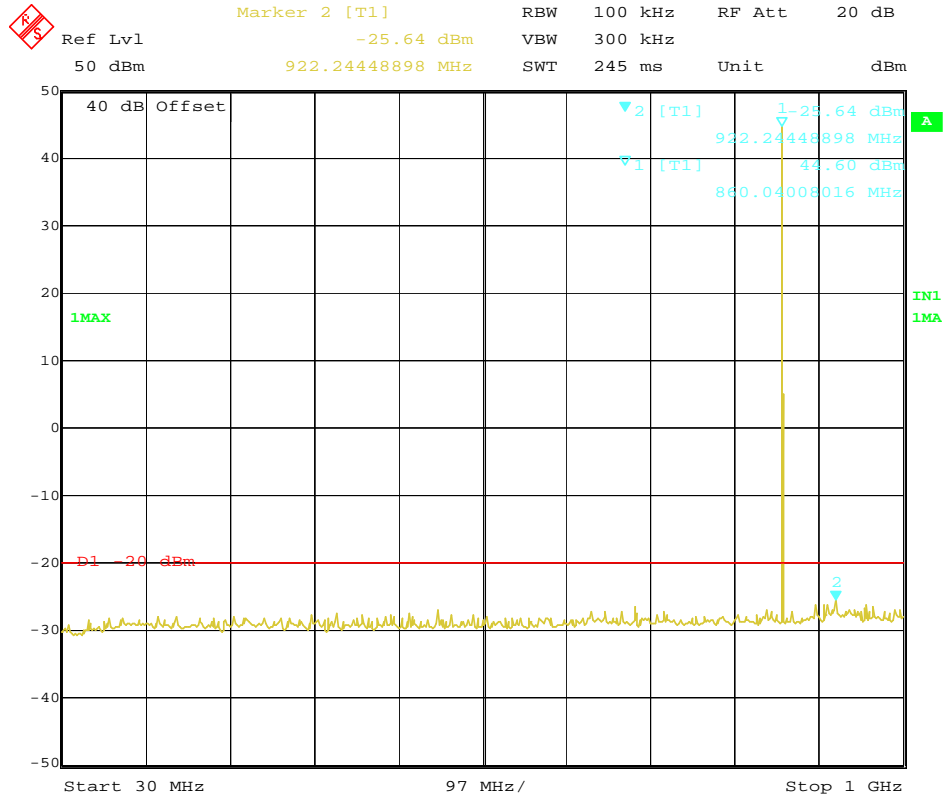


Date: 28.JUL.2012 17:25:08

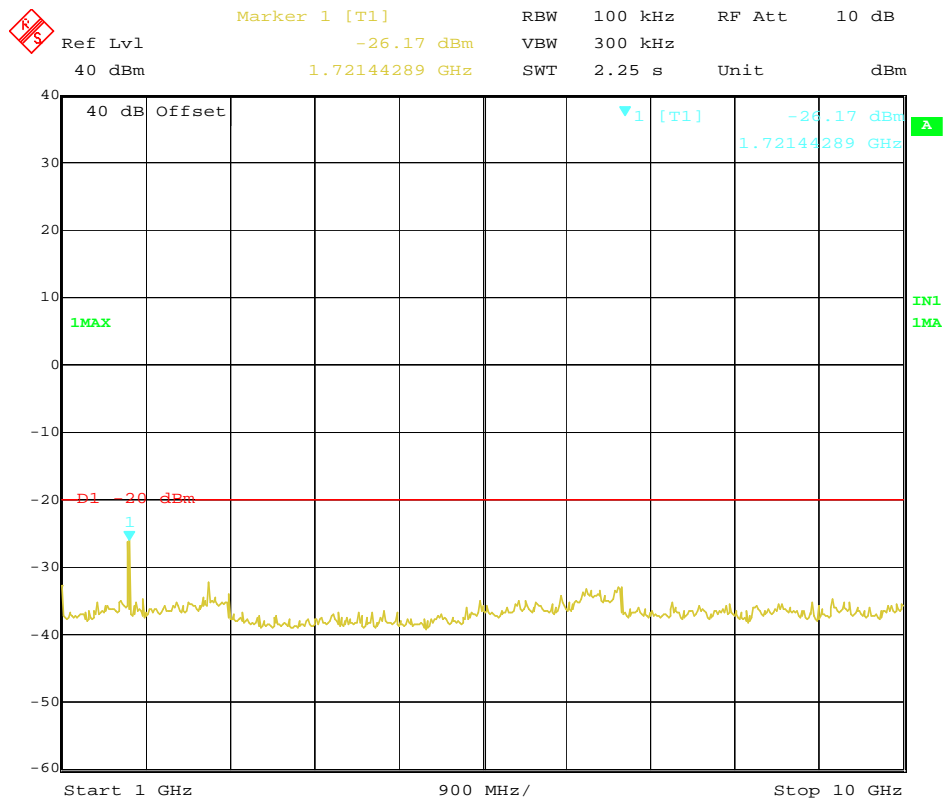


Date: 28.JUL.2012 17:52:01

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	Middle	860.0000	922.24	-25.64	1721.44	-26.17	-20dBm
Test Results				Compliance				

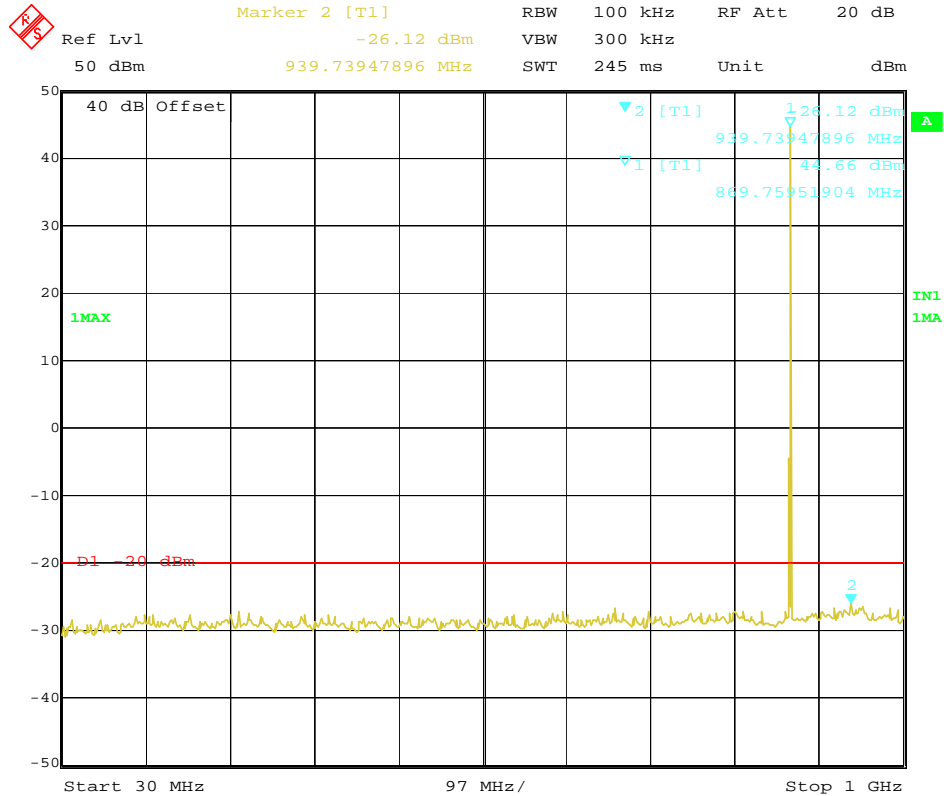


Date: 28.JUL.2012 17:25:49

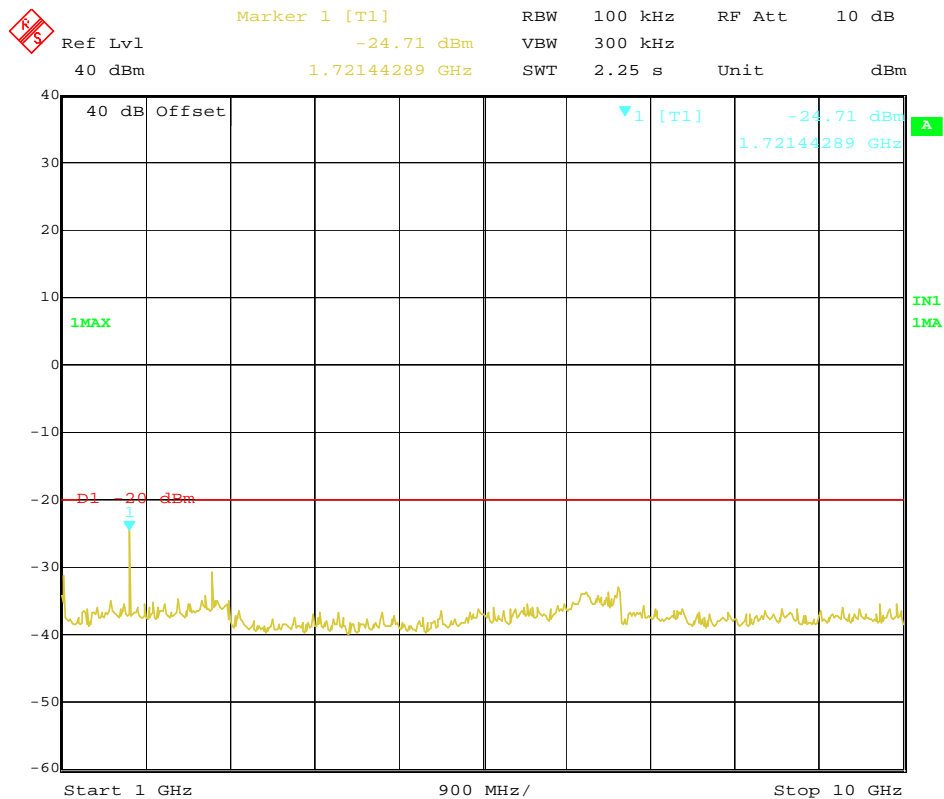


Date: 28.JUL.2012 17:51:41

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	High	868.5000	939.73	-26.12	1721.44	-24.71	-20dBm
Test Results				Compliance				

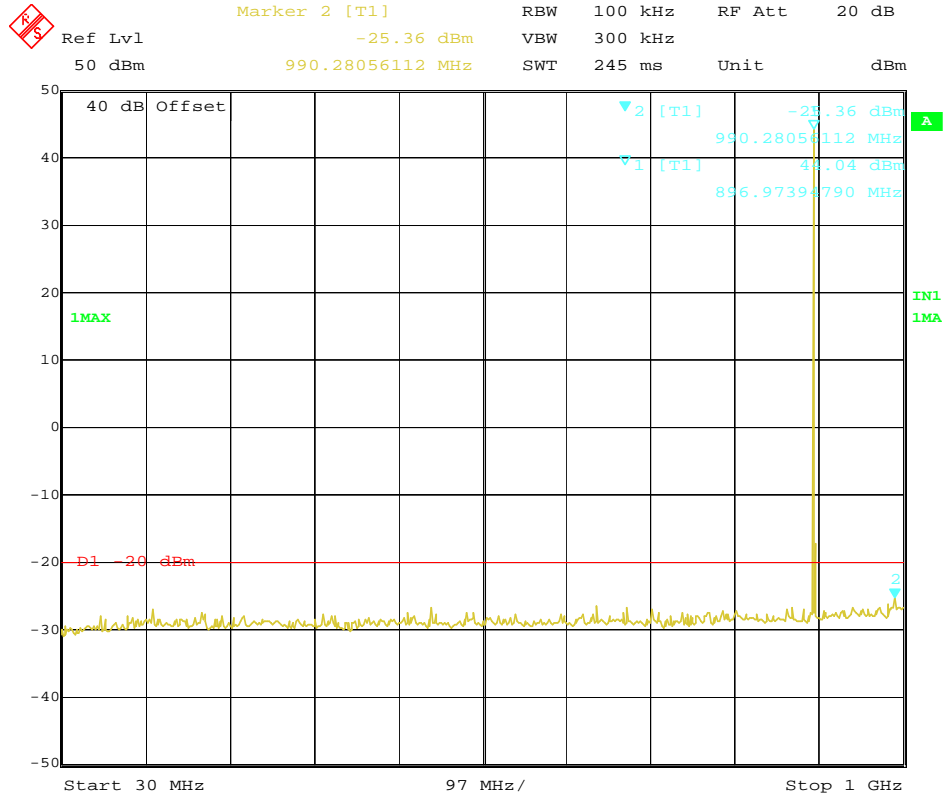


Date: 28.JUL.2012 17:26:36

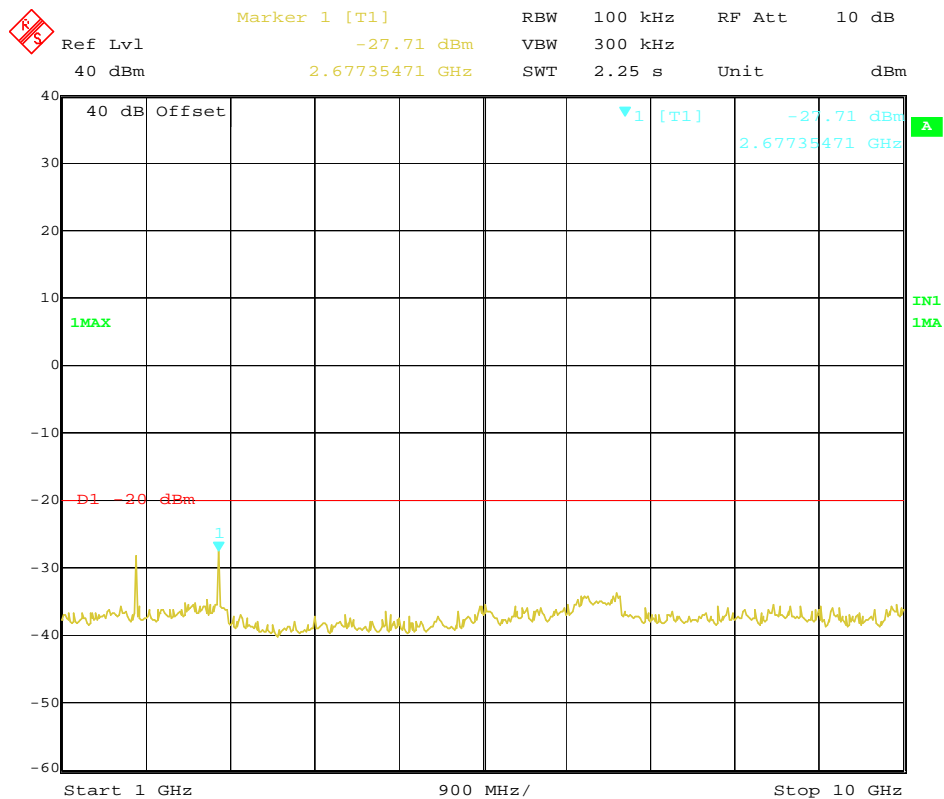


Date: 28.JUL.2012 17:52:22

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	Low	896.5000	990.28	-25.36	2677.35	-27.71	-20dBm
Test Results				Compliance				

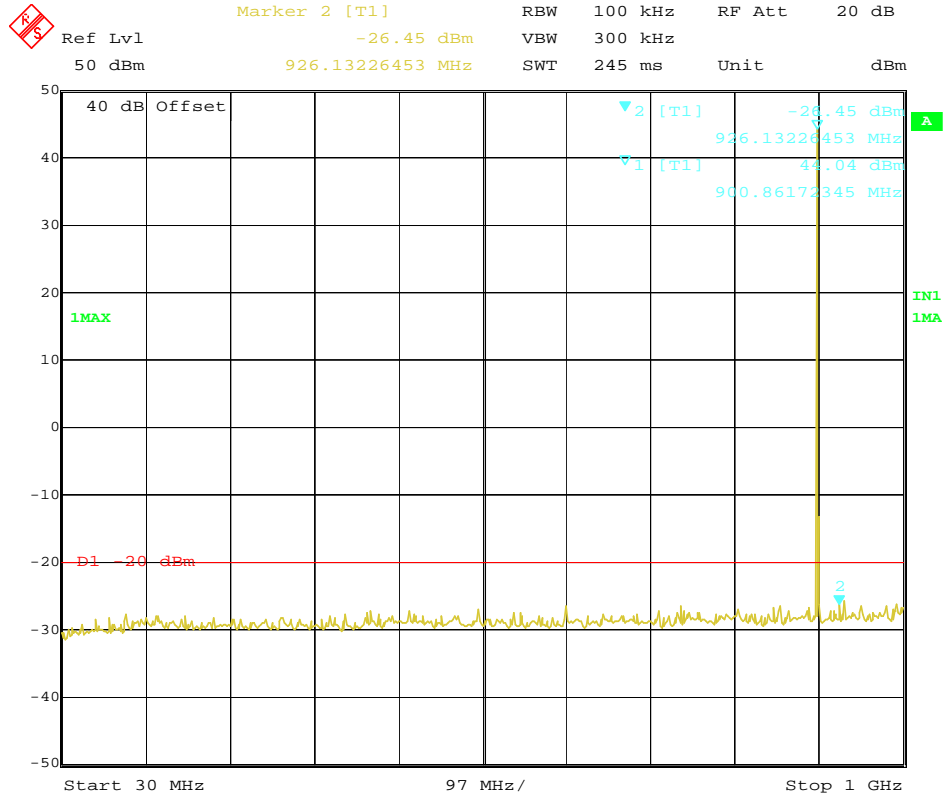


Date: 28.JUL.2012 17:27:26

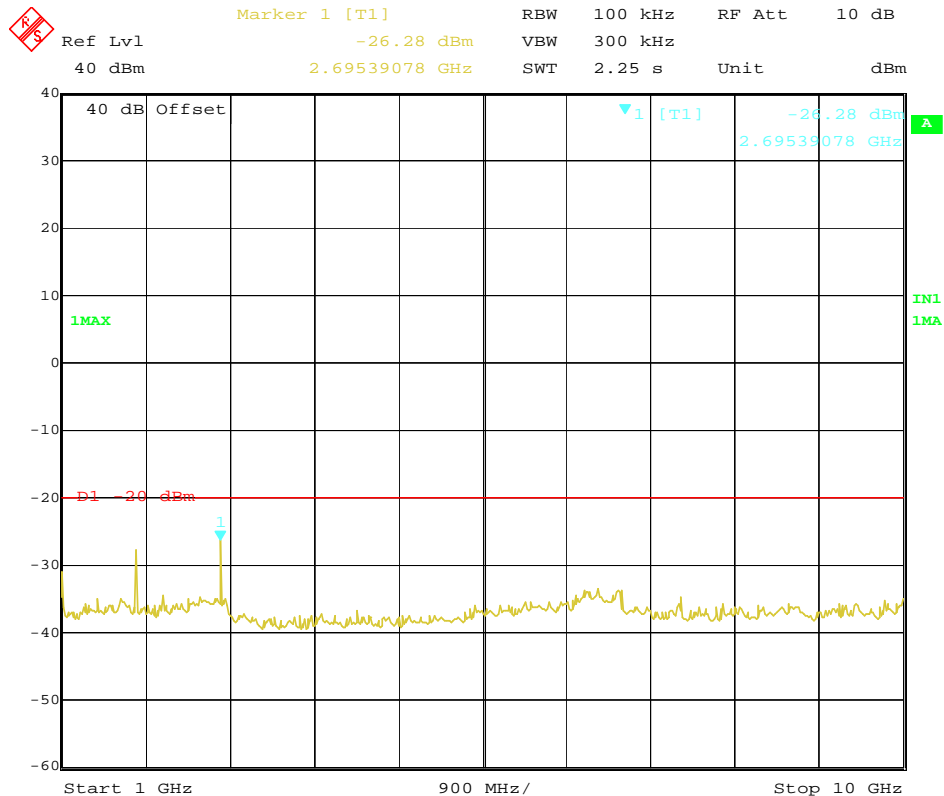


Date: 28.JUL.2012 17:52:48

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	High	900.5000	926.13	-26.45	2695.39	-26.28	-20dBm
Test Results				Compliance				

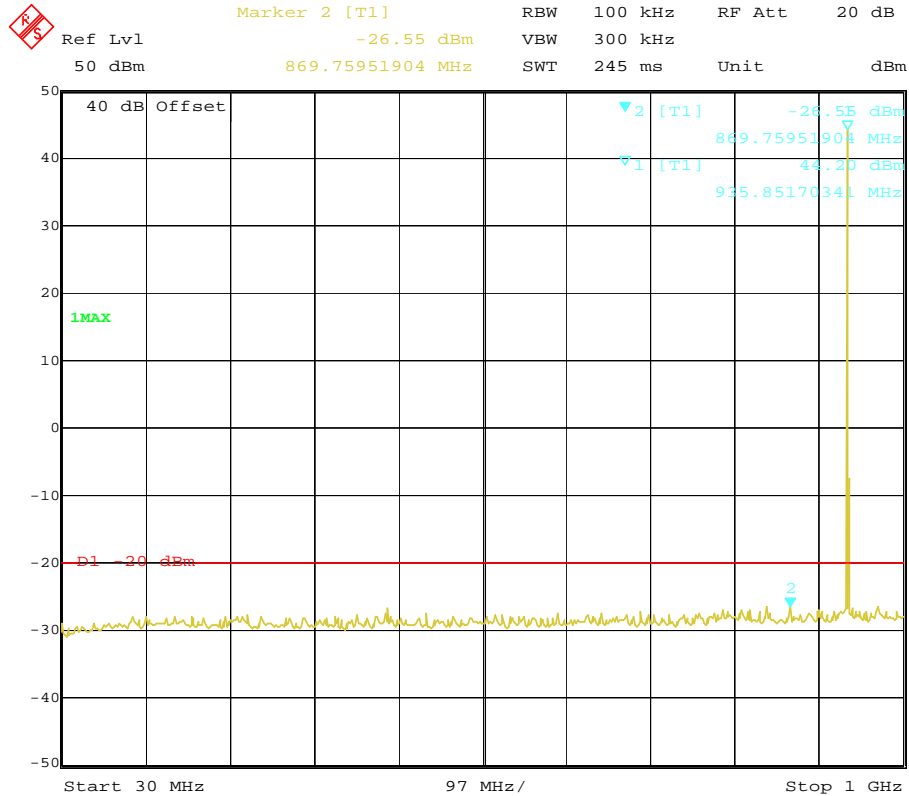


Date: 28.JUL.2012 17:28:08

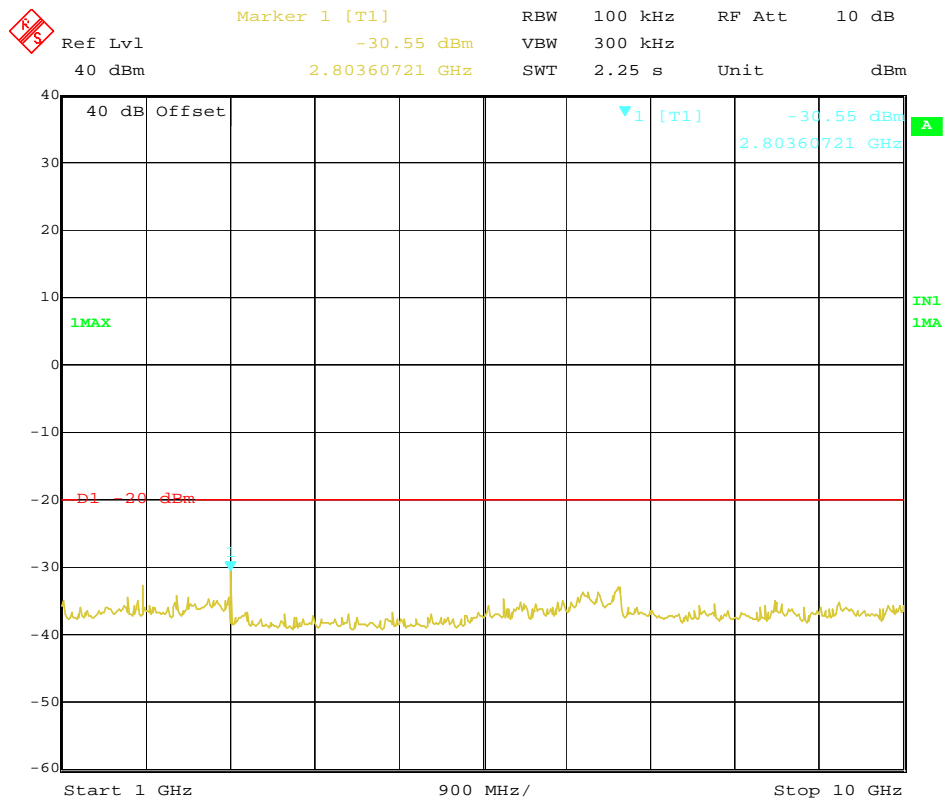


Date: 28.JUL.2012 17:53:05

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	Low	935.5000	869.75	-26.55	2803.60	-30.55	-20dBm
Test Results				Compliance				

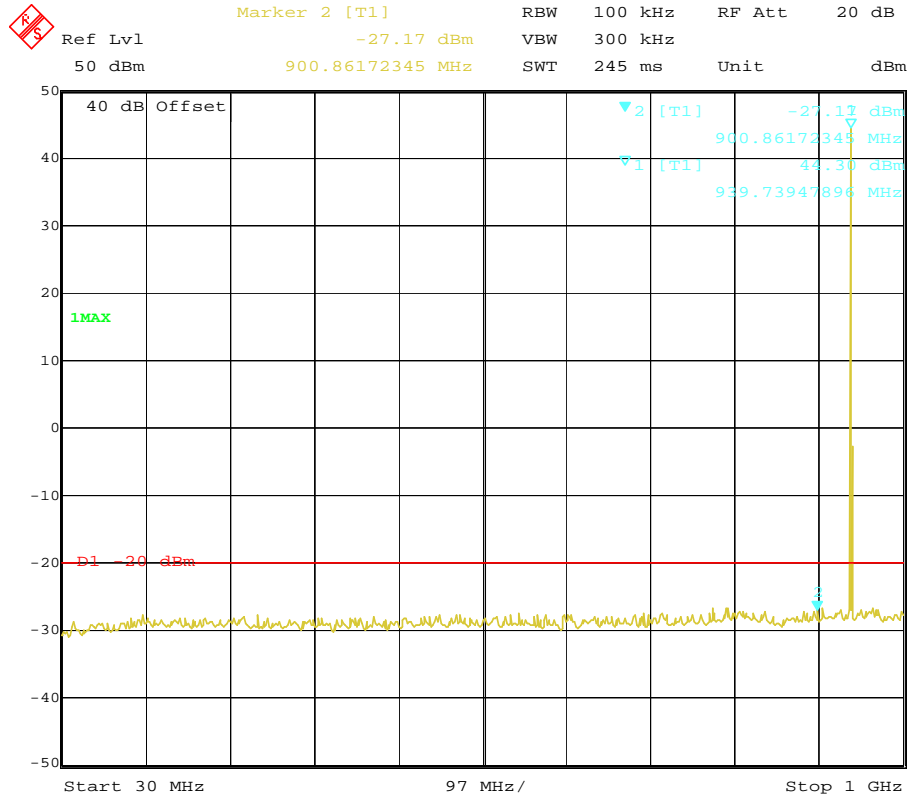


Date: 28.JUL.2012 17:28:56

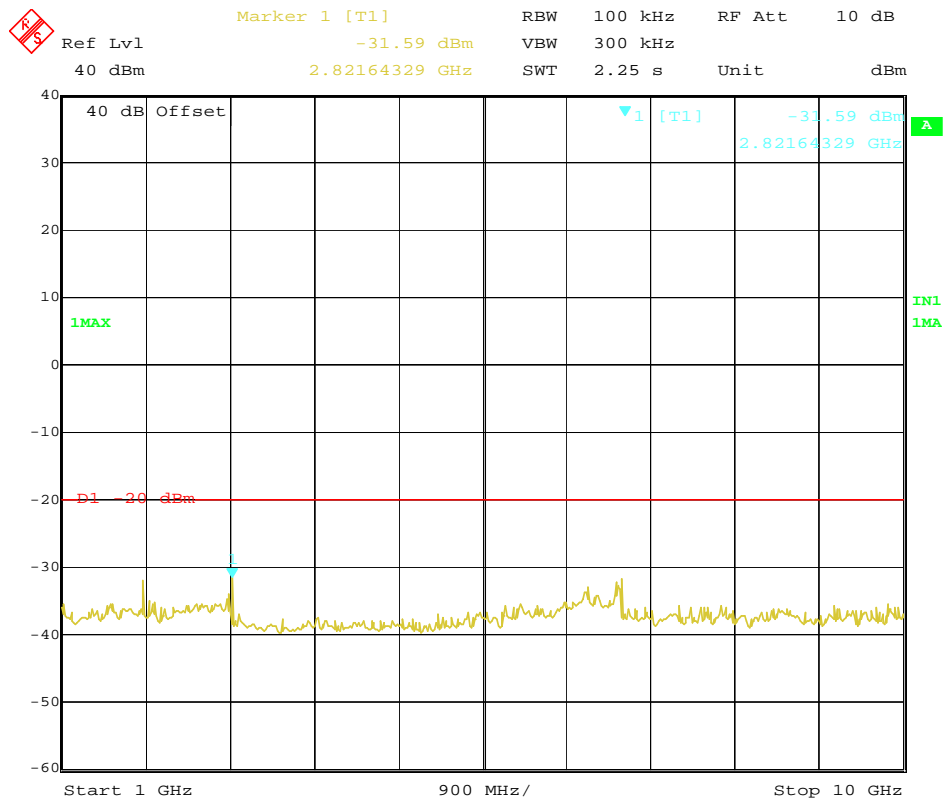


Date: 28.JUL.2012 17:53:26

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	High	939.5000	900.86	-27.17	2521.64	-31.59	-20dBm
Test Results				Compliance				

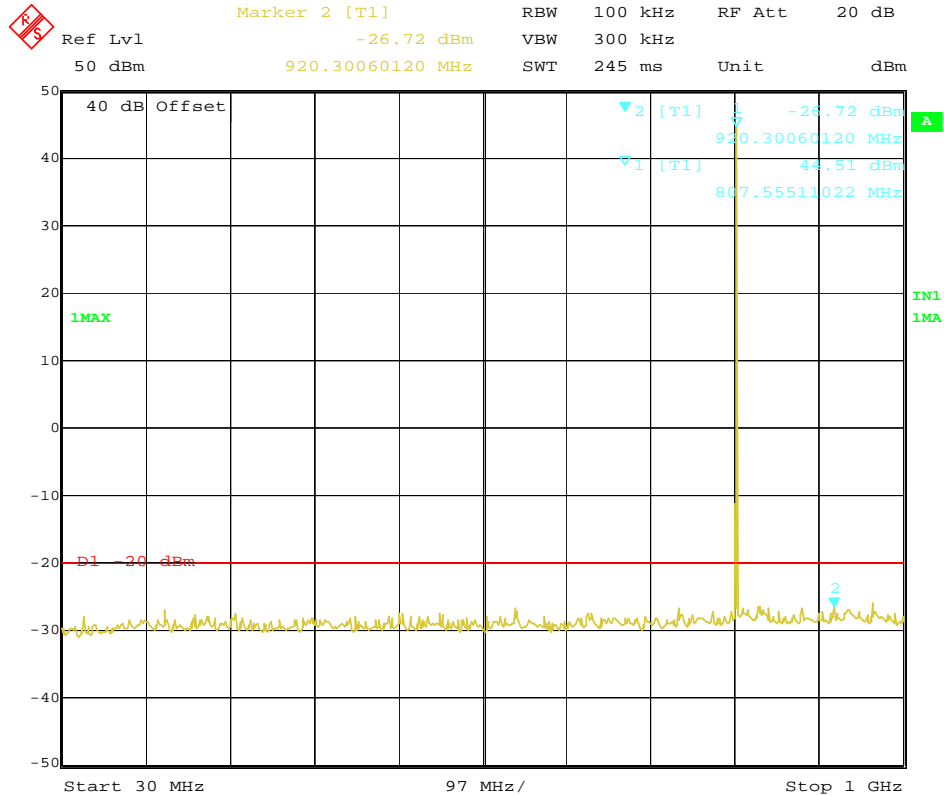


Date: 28.JUL.2012 17:29:46

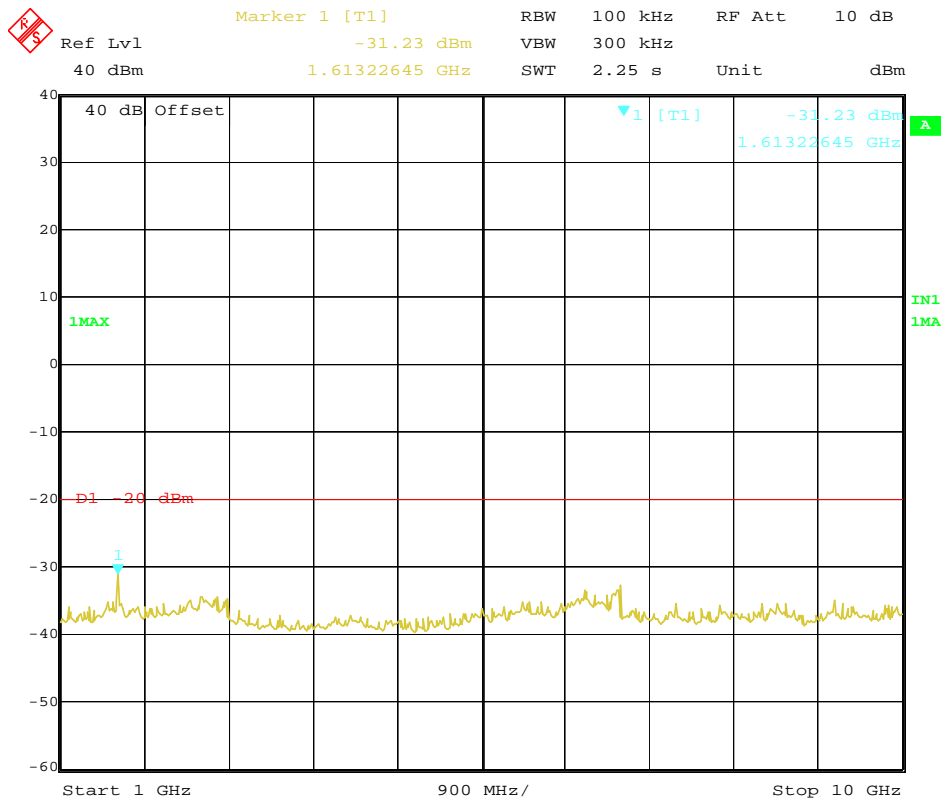


Date: 28.JUL.2012 17:53:41

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
4FSK	12.5KHz	Low	806.5000	920.30	-26.72	1613.22	-31.23	-20dBm
Test Results				Compliance				

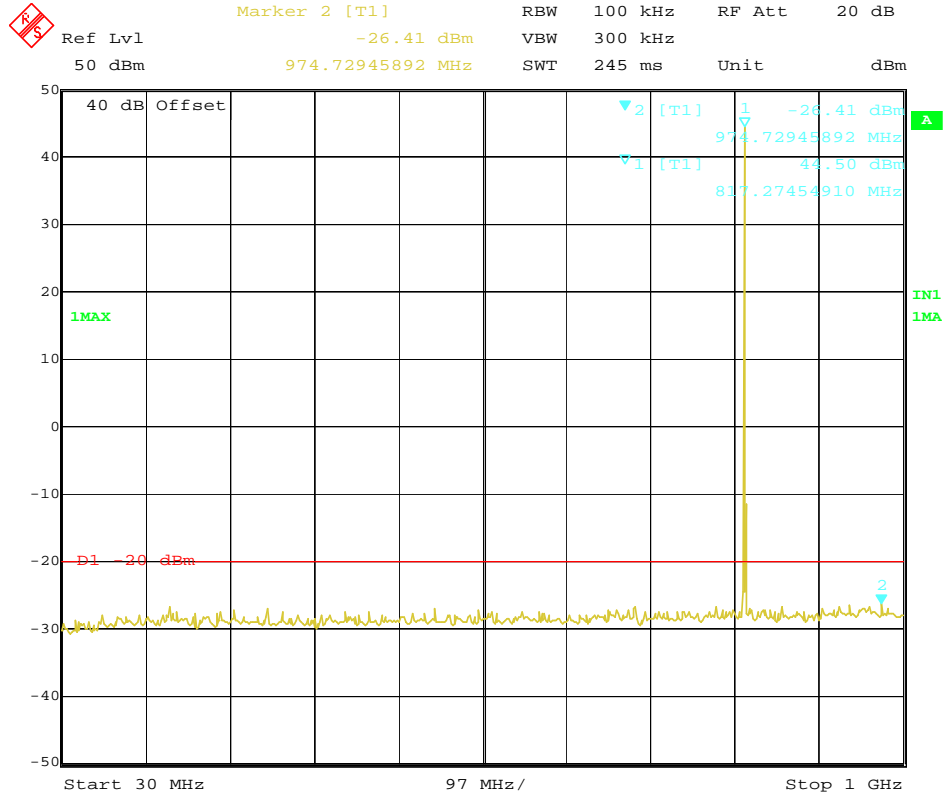


Date: 28.JUL.2012 17:37:19

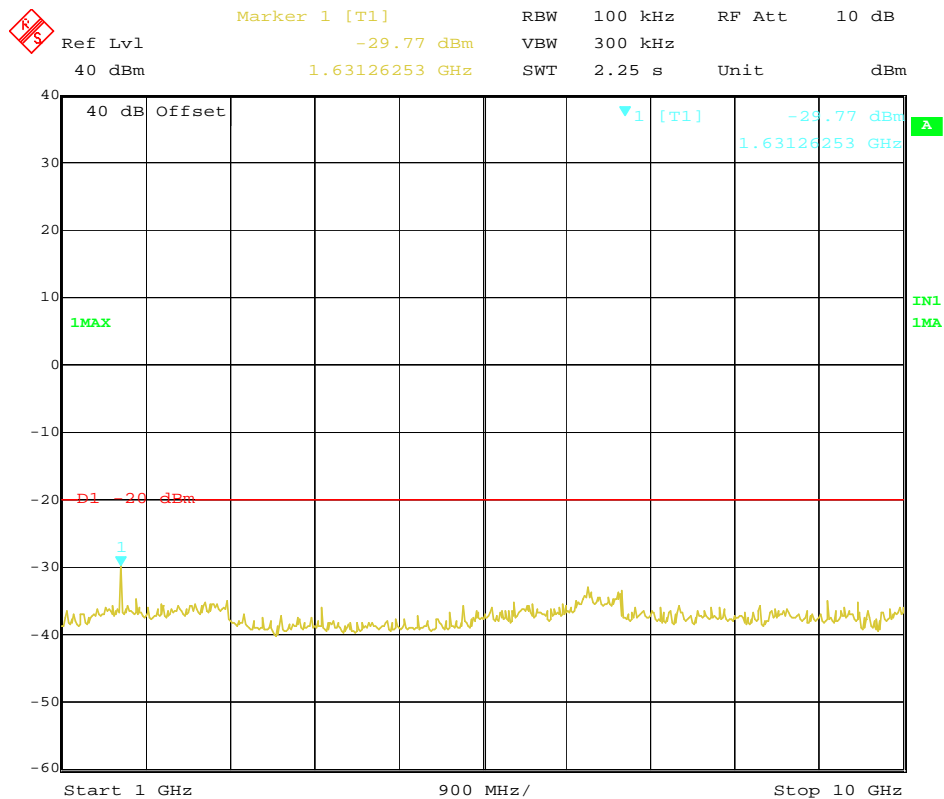


Date: 28.JUL.2012 17:59:43

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
4FSK	12.5KHz	Middle	817.0000	974.72	-26.41	1631.26	-29.77	-20dBm
Test Results				Compliance				

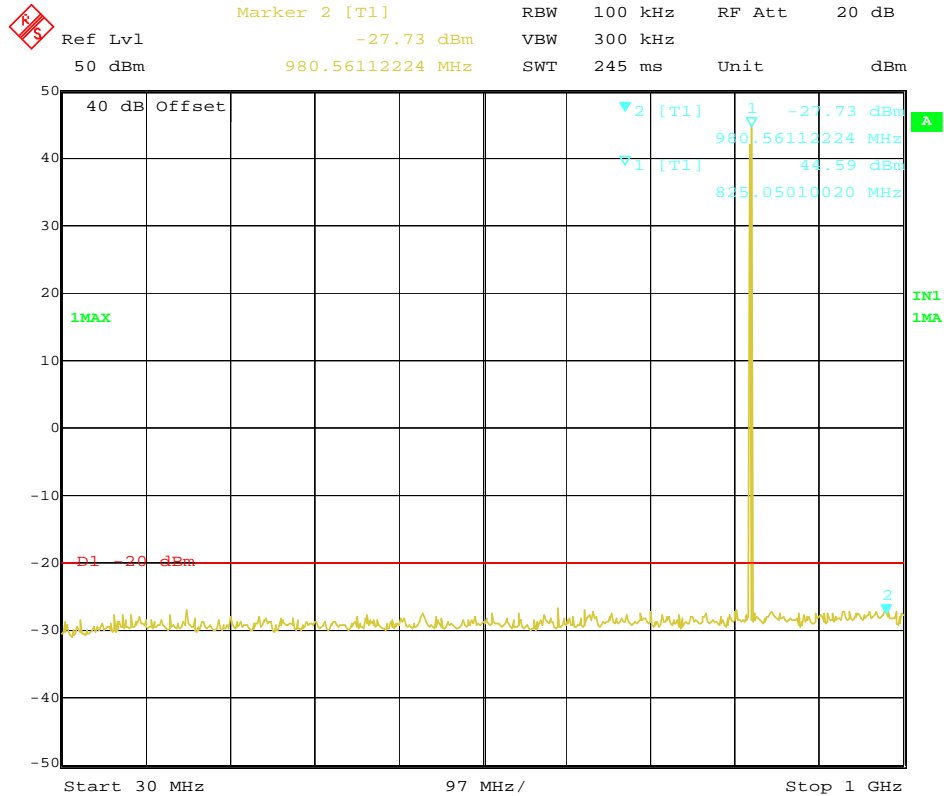


Date: 28.JUL.2012 17:37:50

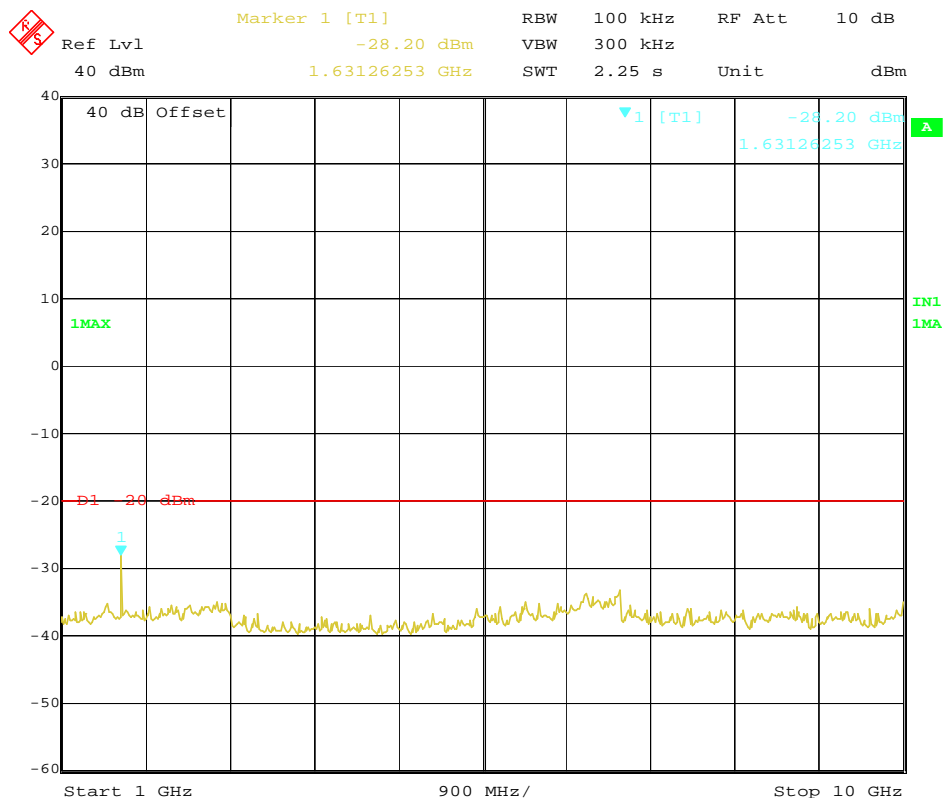


Date: 28.JUL.2012 18:00:00

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
4FSK	12.5KHz	High	823.5000	980.56	-27.73	1631.26	-25.20	-20dBm
Test Results				Compliance				

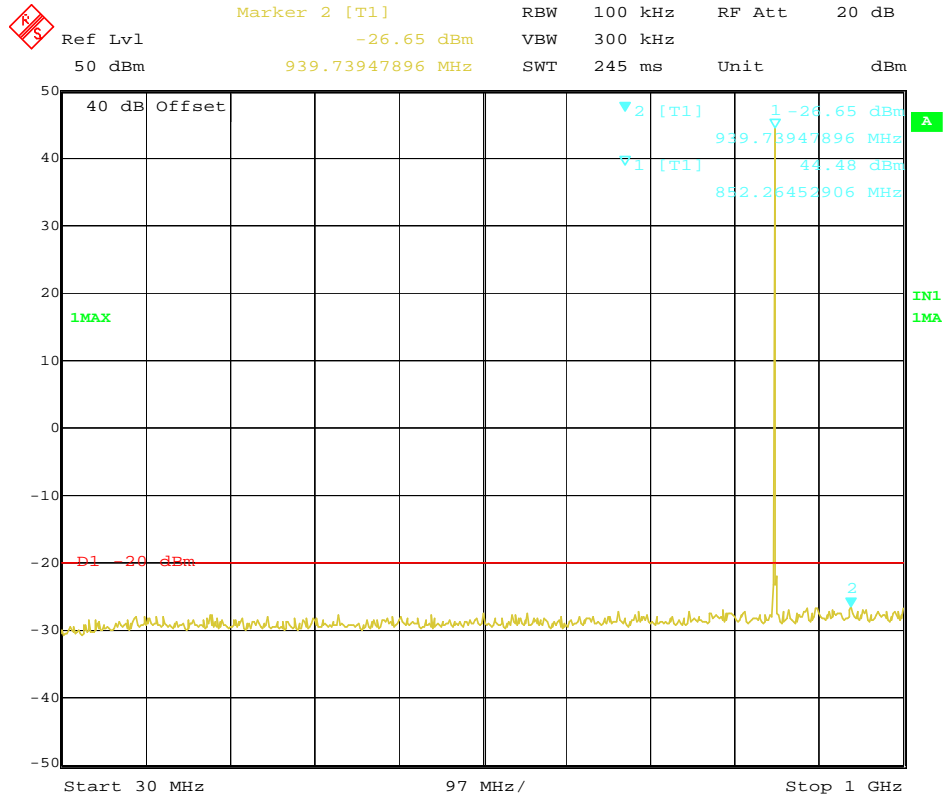


Date: 28.JUL.2012 17:38:27

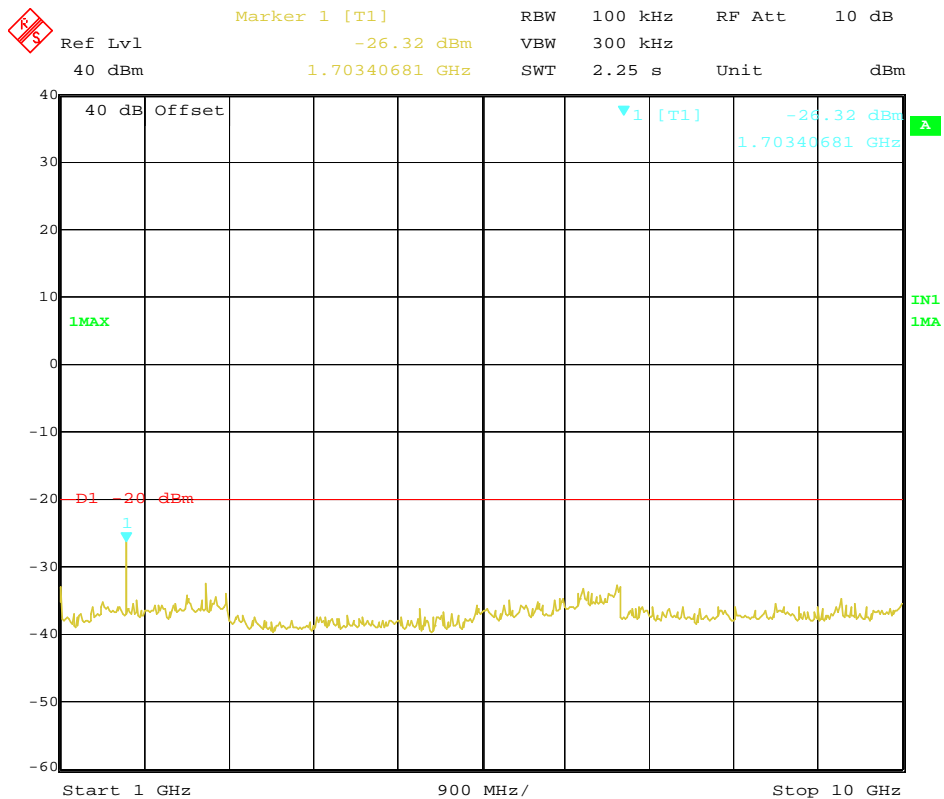


Date: 28.JUL.2012 18:00:16

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
4FSK	12.5KHz	Low	851.5000	939.73	-26.65	1703.40	-26.32	-20dBm
Test Results				Compliance				

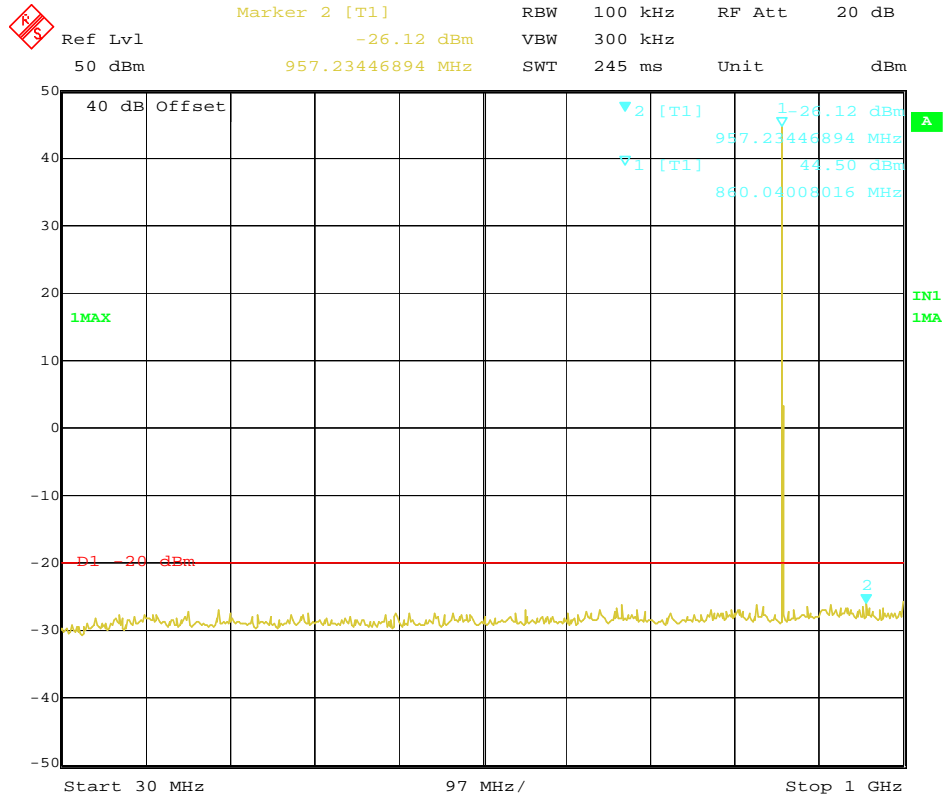


Date: 28.JUL.2012 17:39:16

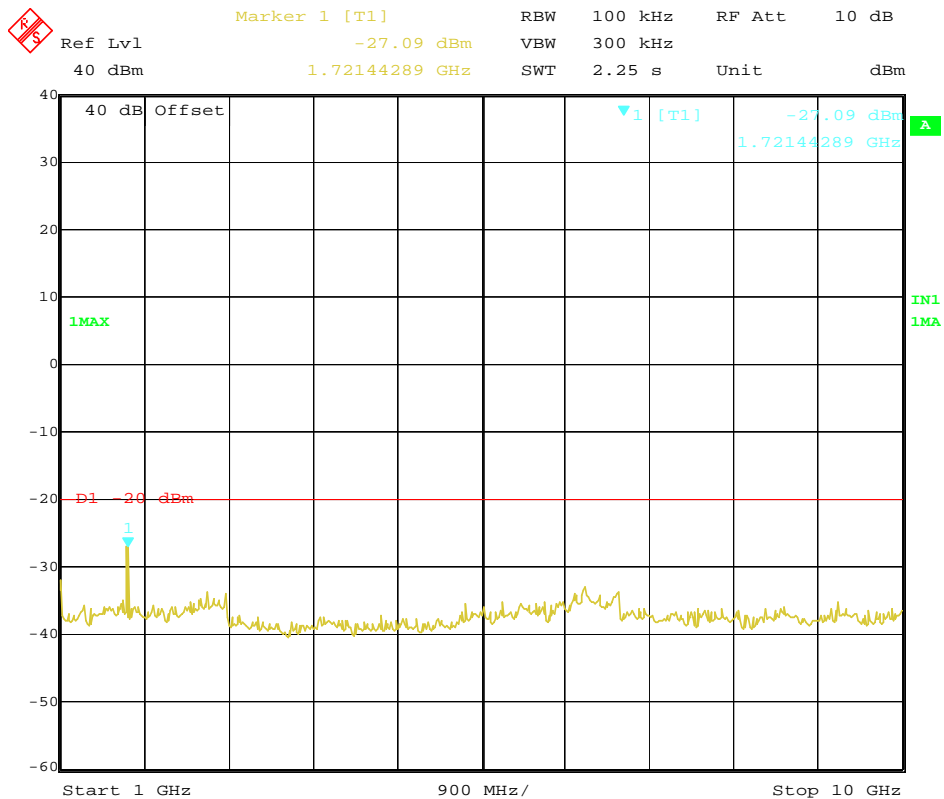


Date: 28.JUL.2012 18:00:32

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
4FSK	12.5KHz	Middle	860.0000	957.23	-26.12	1721.44	-27.09	-20dBm
Test Results				Compliance				

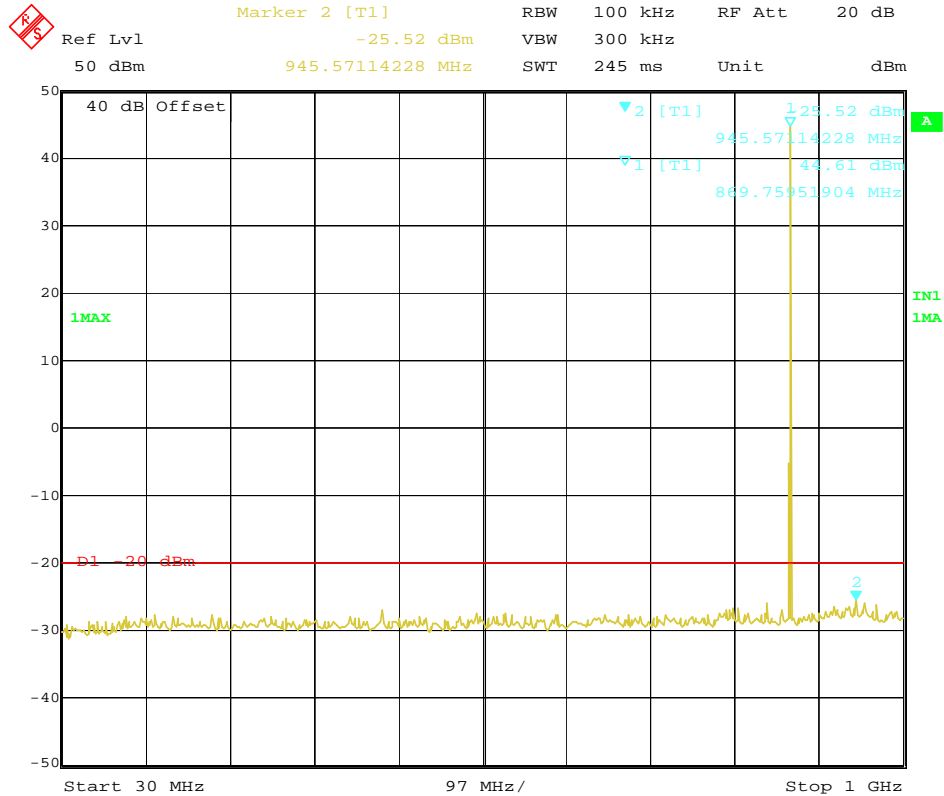


Date: 28.JUL.2012 17:39:51

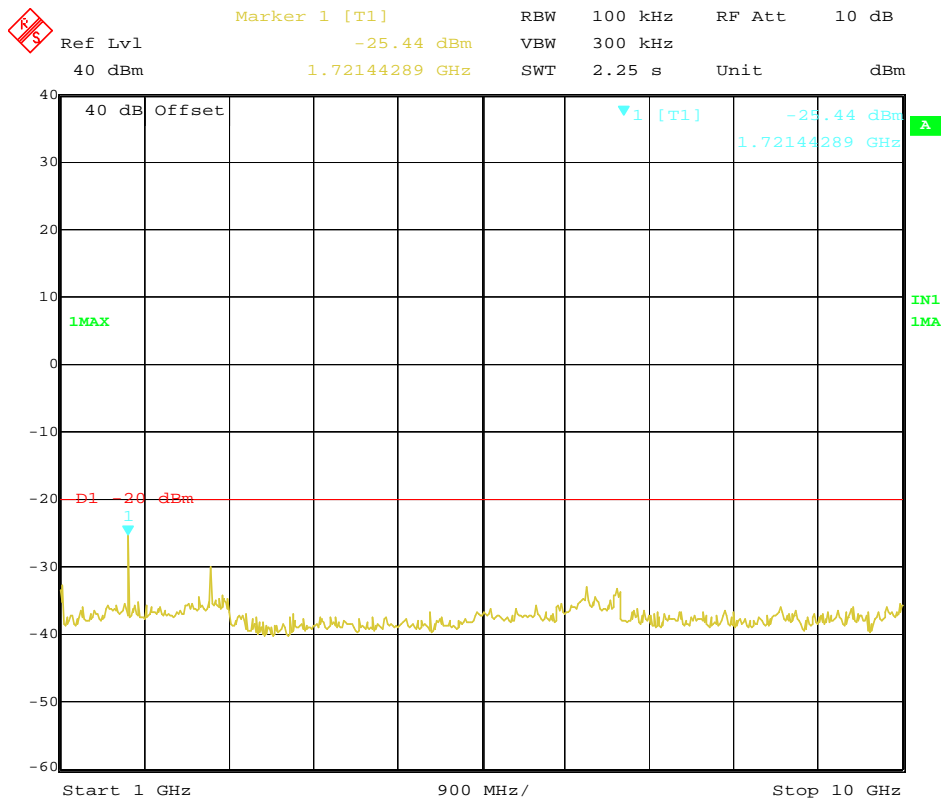


Date: 28.JUL.2012 18:00:46

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
4FSK	12.5KHz	High	868.5000	945.57	-25.52	1721.44	-25.44	-20dBm
Test Results				Compliance				

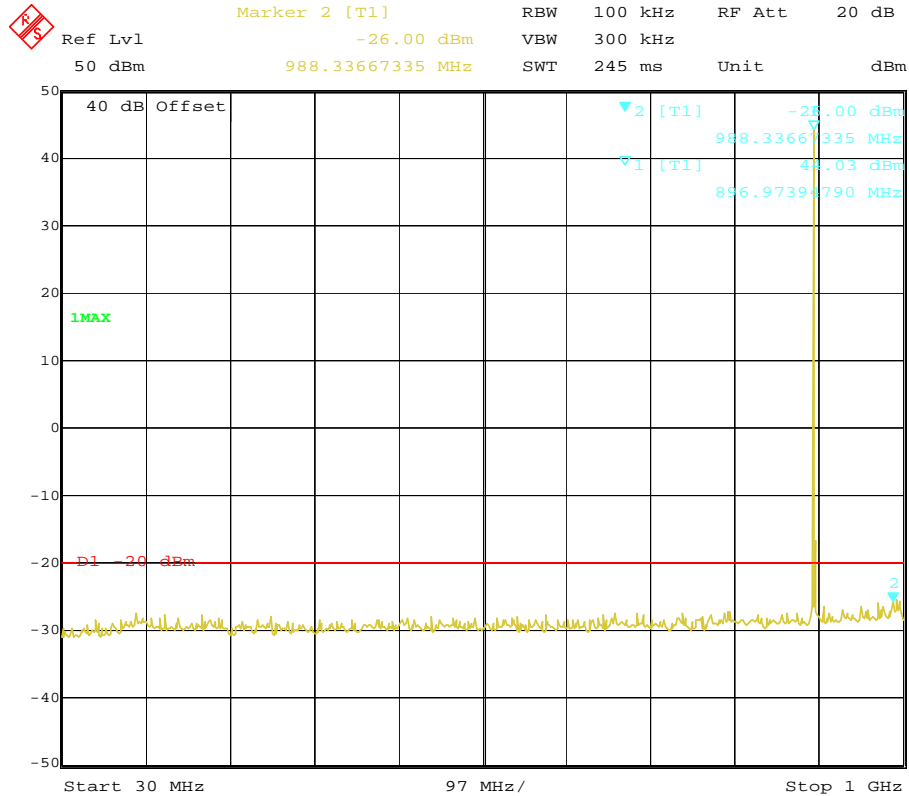


Date: 28.JUL.2012 17:40:28

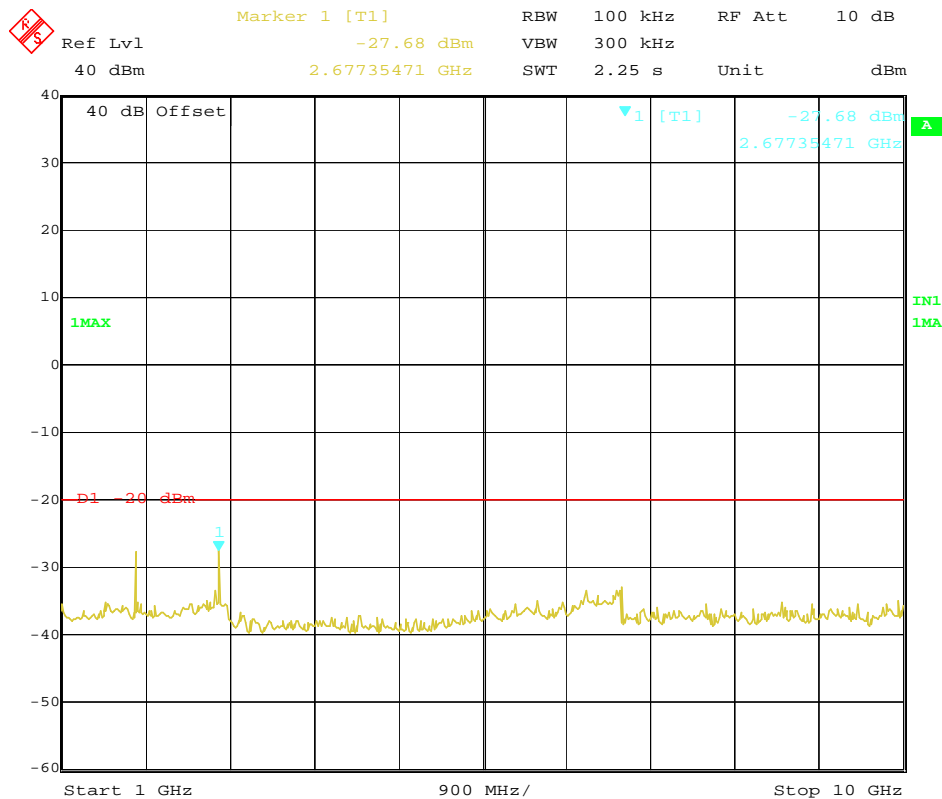


Date: 28.JUL.2012 18:01:02

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
4FSK	12.5KHz	Low	896.5000	988.33	-26.00	2677.35	-27.68	-20dBm
Test Results				Compliance				

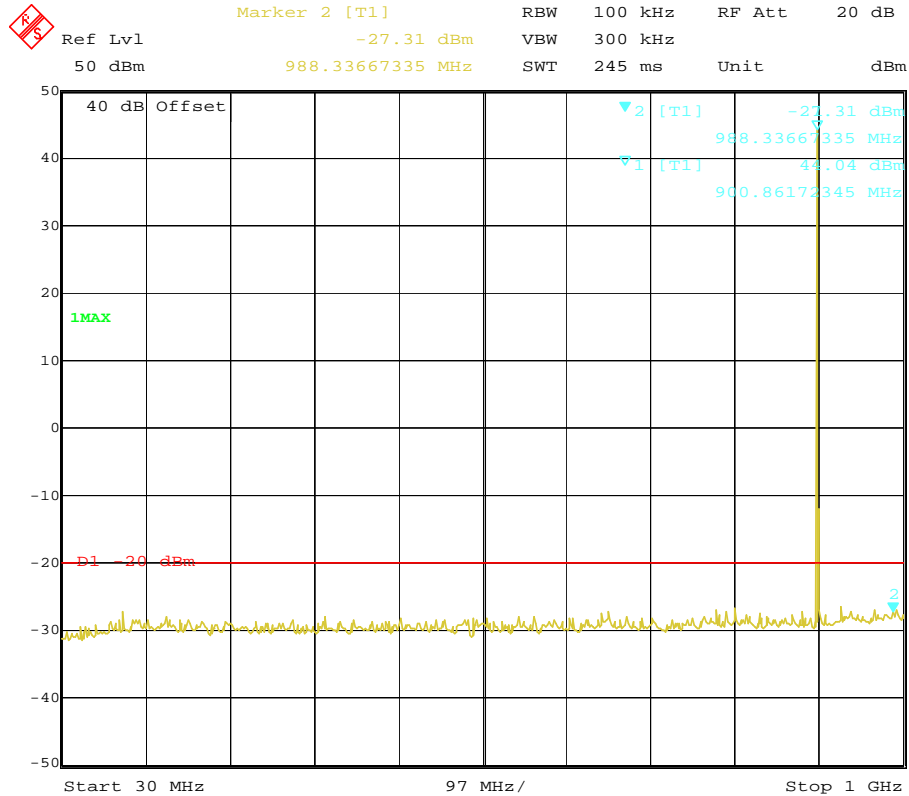


Date: 28.JUL.2012 17:41:38

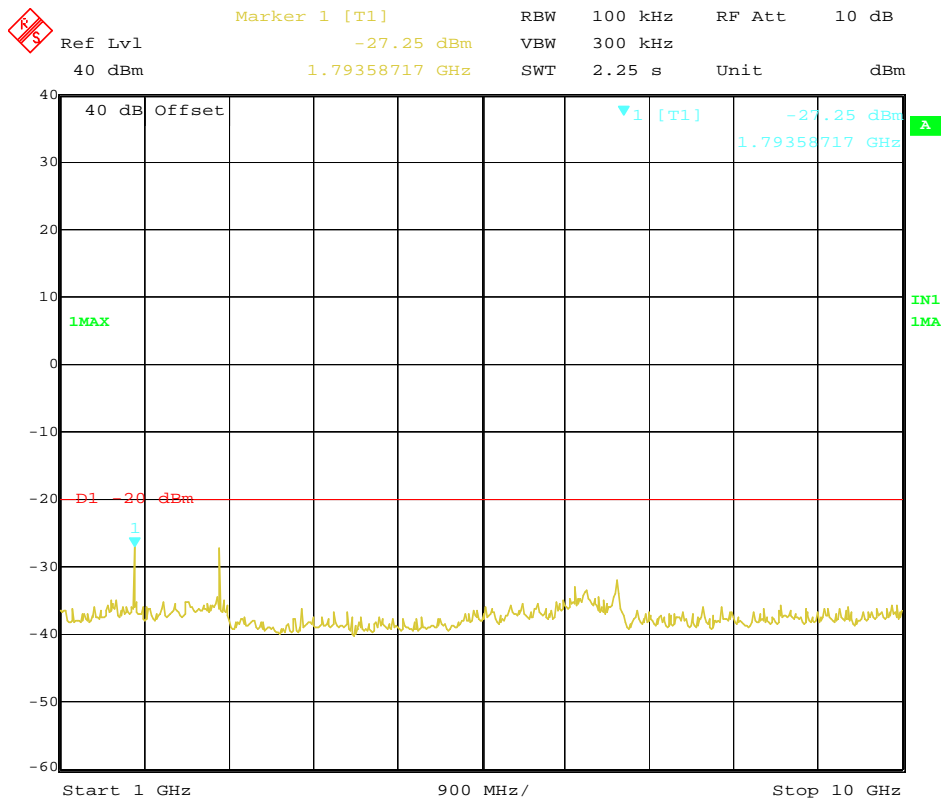


Date: 28.JUL.2012 18:01:19

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above 1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
4FSK	12.5KHz	High	900.5000	988.33	-27.31	1793.55	-27.25	-20dBm
Test Results				Compliance				



Date: 28.JUL.2012 17:42:07



Date: 28.JUL.2012 18:01:31