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# 4.2.2 Emission Mask

Frequency Range (MHz)	Modulation Type	Channel Separation (KHz)	Test Channel	Test Frequency (MHz)	FCC Applicable Mask	RBW (Hz)
			Low	806.5000	В	300
		25	Middle	817.0000	В	300
	Analog/EM		High	823.5000	В	300
	Analog/FM		Low	806.5000	В	300
806-825 <sup>[1]</sup>		12.5	Middle	817.0000	В	300
			High	823.5000	В	300
			Low	806.5000	В	300
	Digital/4FSK	12.5	Middle	817.0000	В	300
			High	823.5000	В	300
			Low	851.5000	В	300
		25	Middle	860.0000	В	300
	Analog/EM		High	868.5000	В	300
	Analog/FM		Low	851.5000	В	300
851-870 <sup>[1]</sup>		12.5	Middle	860.0000	В	300
			High	868.5000	В	300
			Low	851.5000	В	300
	Digital/4FSK	12.5	Middle	860.0000	В	300
			High	868.5000	В	300
	Analog/EM		Low	896.5000	I	300
896-902	Analog/FM	12.5	High	900.5000	I	300
090-902	Digital/4FSK	12.5	Low	896.5000	I	300
	Digital/4F3K		High	900.5000	I	300
	Analog/EM		Low	935.5000	I	300
935-941	Analog/FM	12.5	High	939.5000	I	300
933-941	Digital/4ESI/	12.5	Low	935.5000	I	300
	Digital/4FSK		High	939.5000	I	300
	Test Results			Complia	nce	

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**

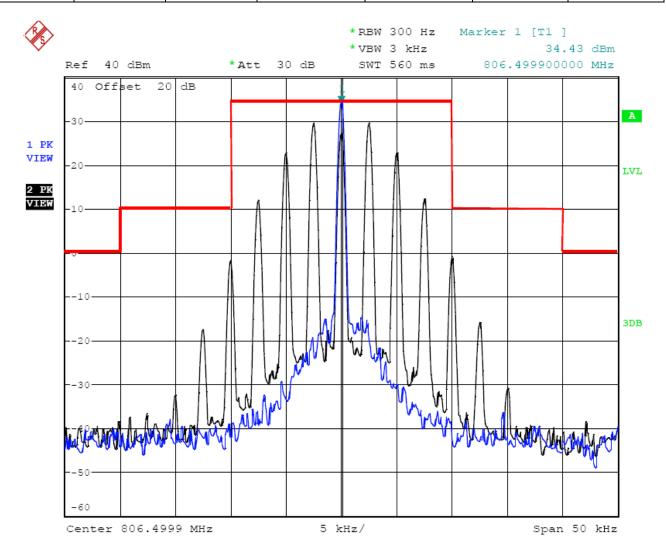
Referred as the attached plot hereinafter

Note: The dark blue curve represents unmodulated signal.

The black curve represents modulated signal.

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

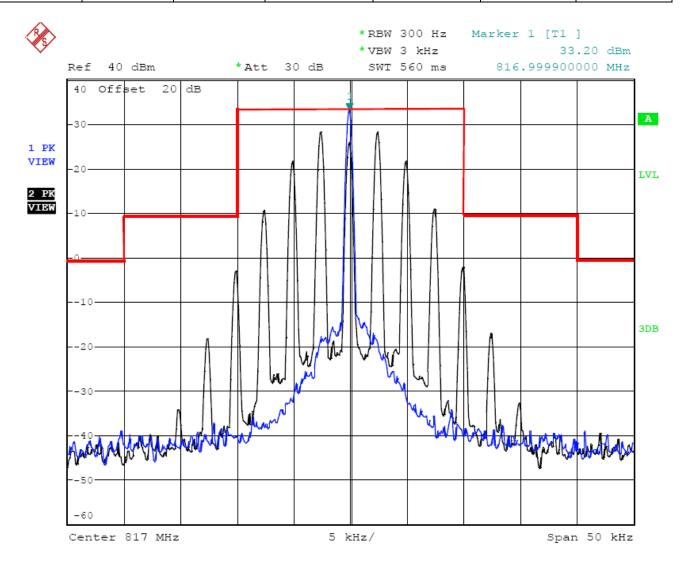


Date: 12.APR.2012 09:25:28

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

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

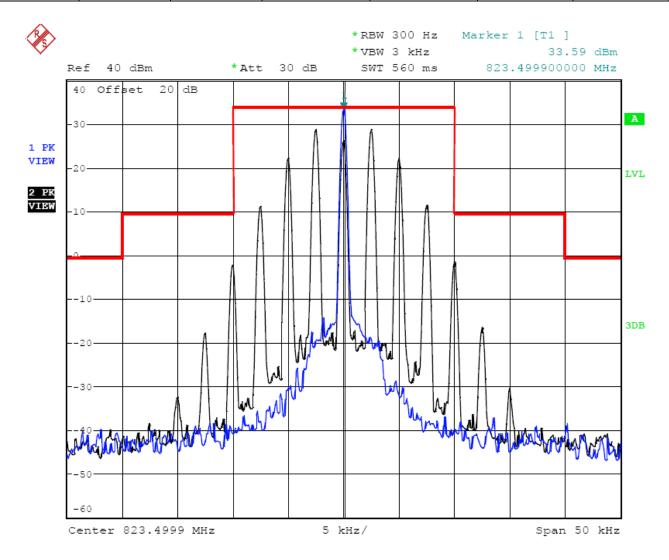


Date: 12.APR.2012 09:32:03

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

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

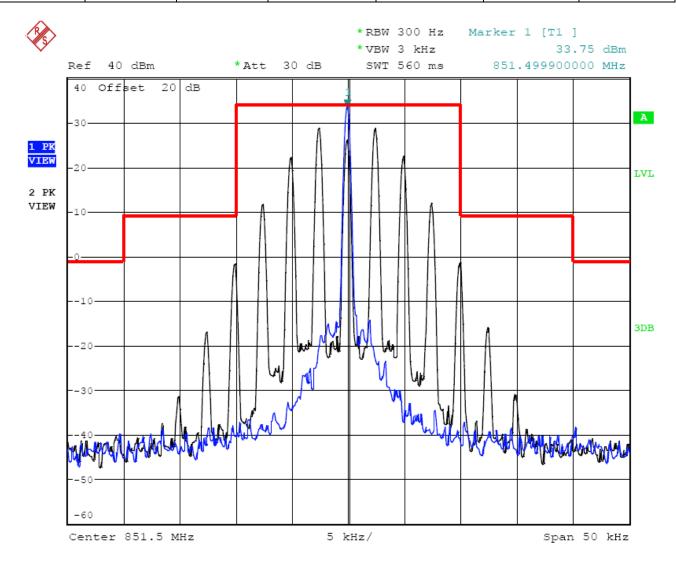


Date: 12.APR.2012 10:37:15

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

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

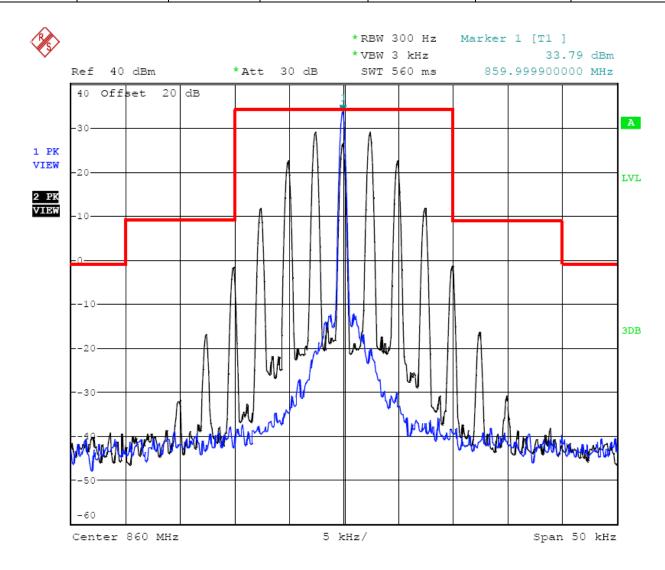


Date: 12.APR.2012 10:41:30

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

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

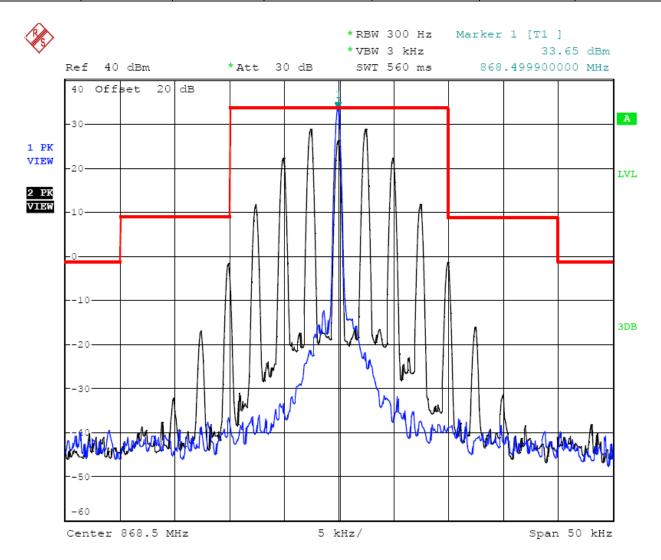


Date: 12.APR.2012 11:03:55

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

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

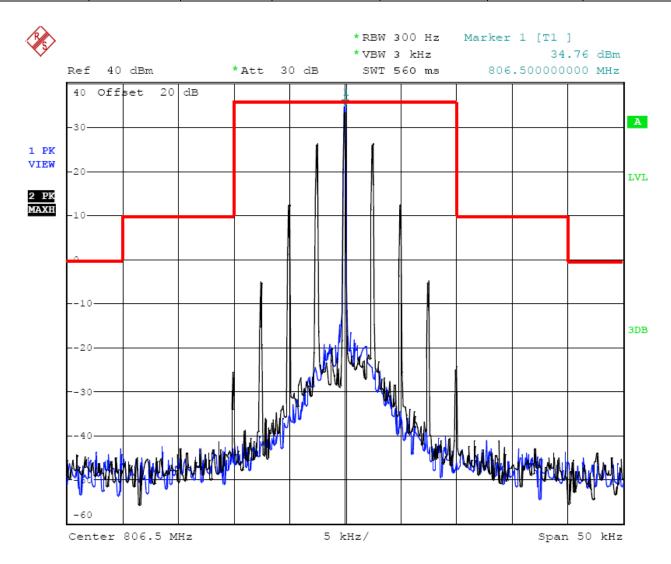


Date: 12.APR.2012 11:06:13

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

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

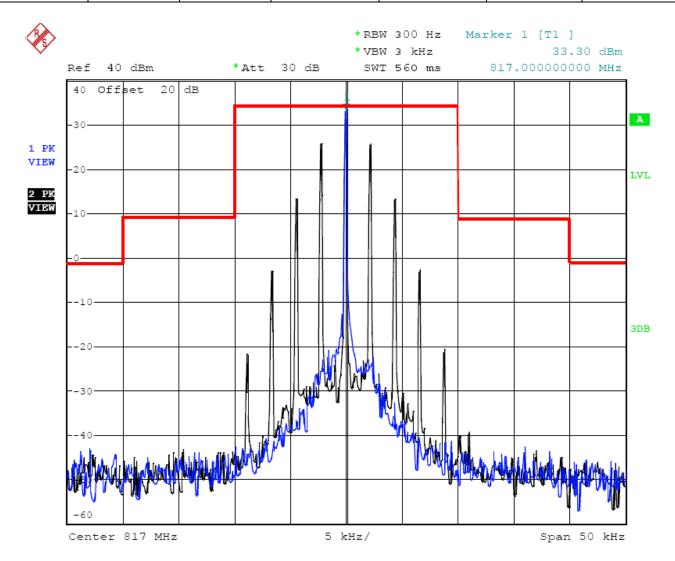


Date: 12.APR.2012 11:31:45

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

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

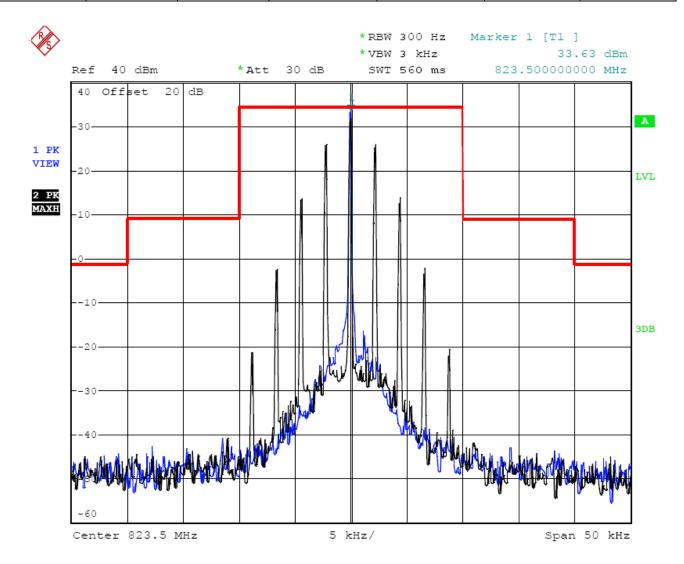


Date: 12.APR.2012 11:32:51

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

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

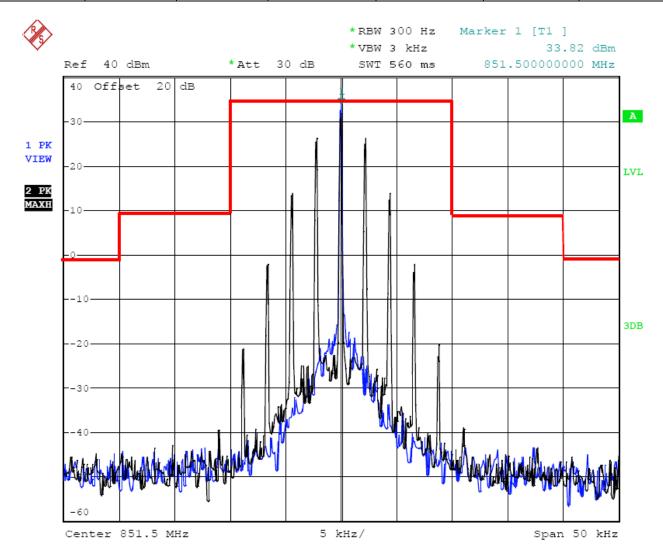


Date: 12.APR.2012 11:33:58

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

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

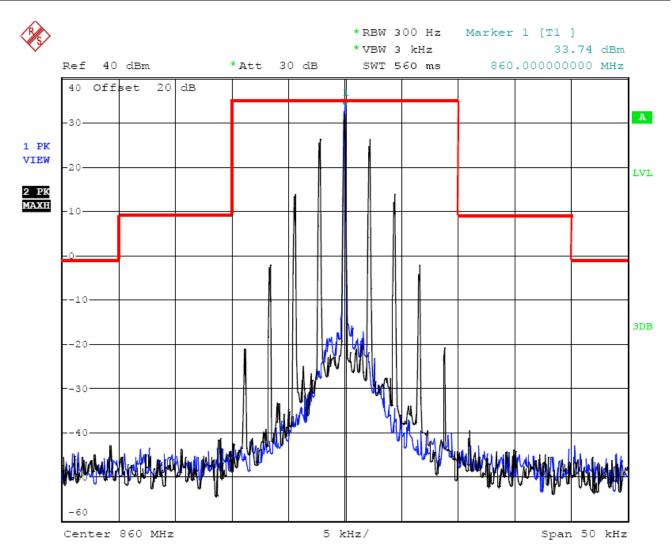


Date: 12.APR.2012 11:34:54

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

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

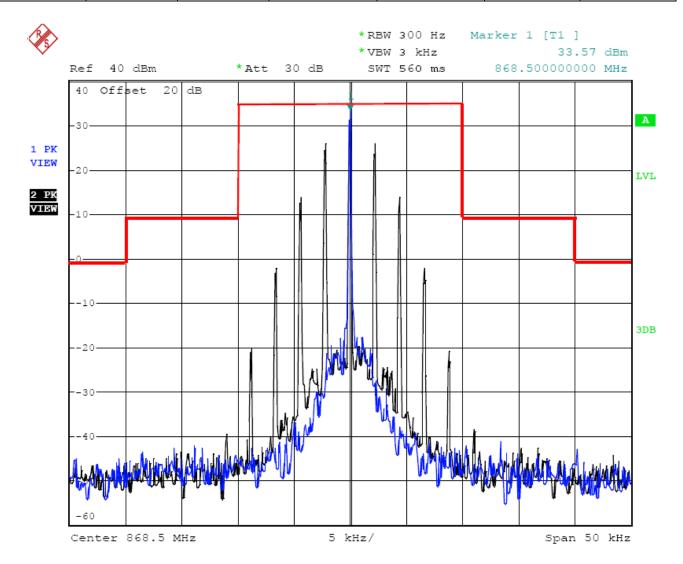


Date: 12.APR.2012 11:35:58

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

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

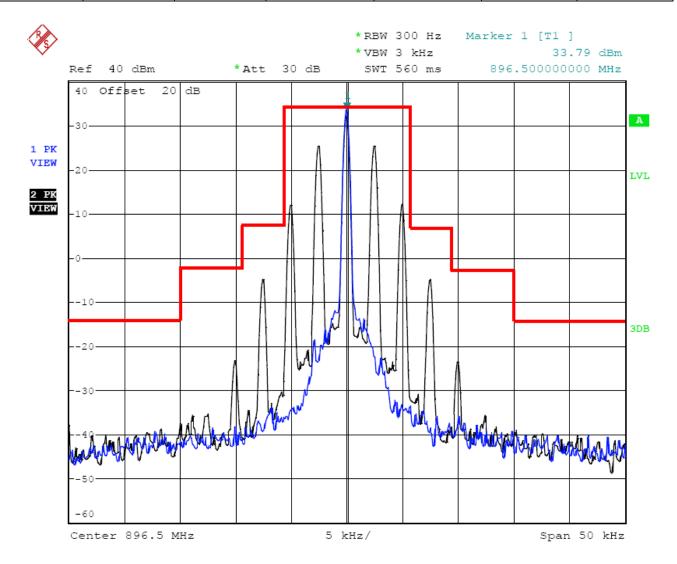


Date: 12.APR.2012 11:36:58

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

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Modulation Type	Channel Separation	Freq.(MHz)	FCC Applicable Mask	RBW	Audio Freq. (KHz)	Results
FM	12.5 KHz	896.5000	1	300Hz	2.5	Complicance

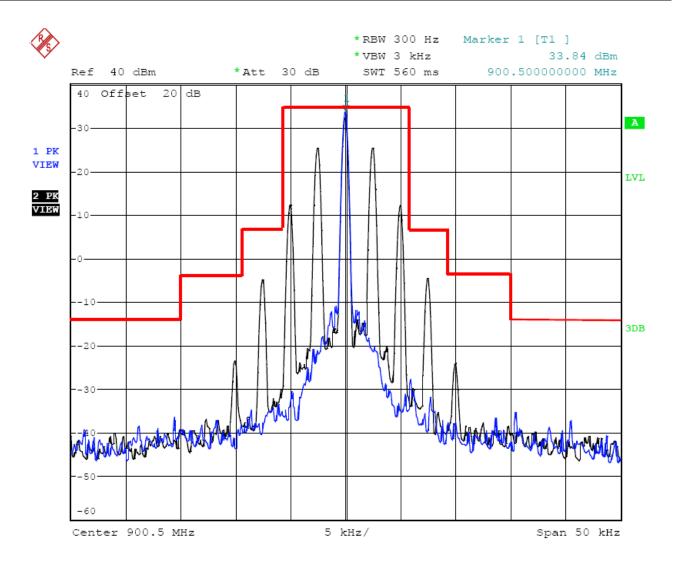


Date: 13.APR.2012 08:37:30

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

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

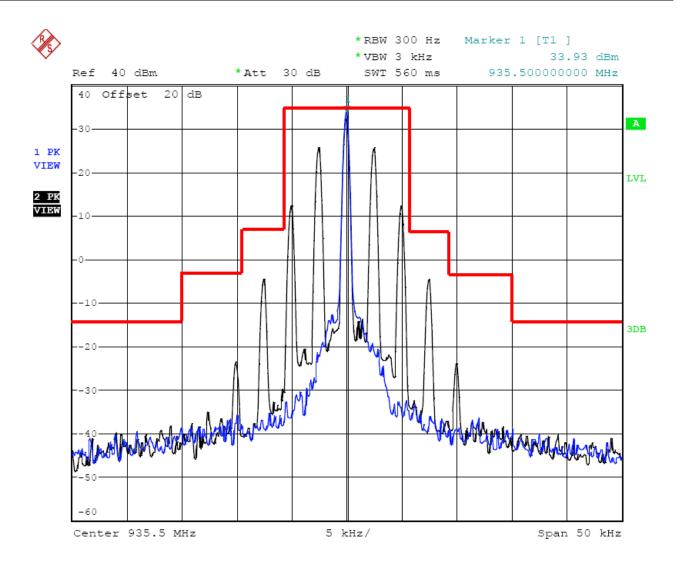


Date: 13.APR.2012 08:38:49

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

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

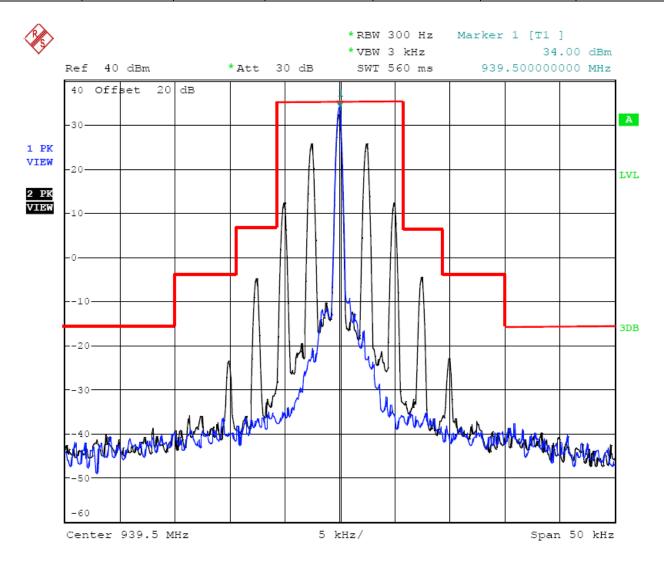


Date: 13.APR.2012 08:40:07

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

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

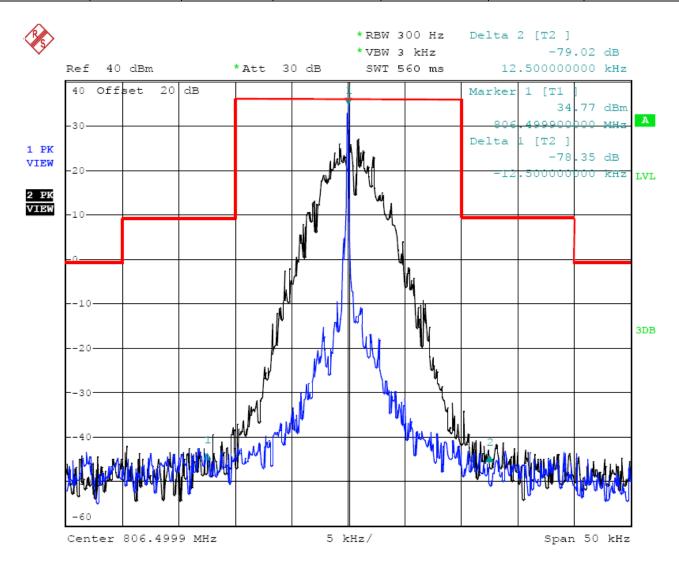


Date: 13.APR.2012 08:41:19

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

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

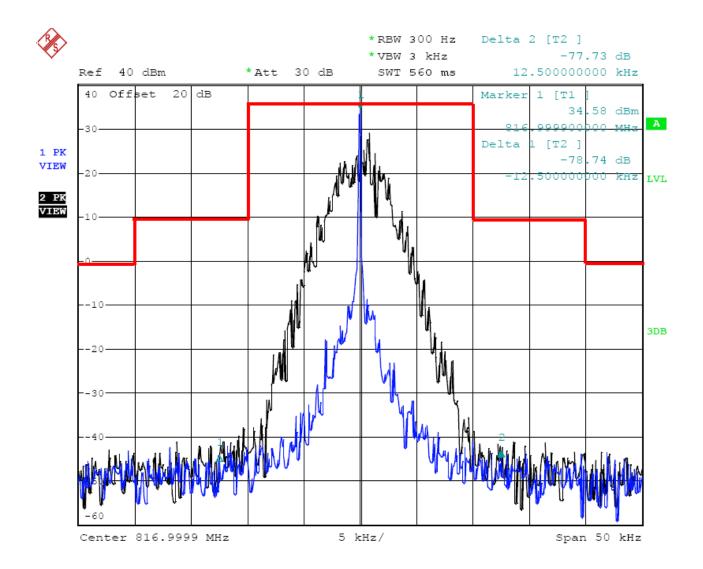


Date: 12.APR.2012 08:43:26

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

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

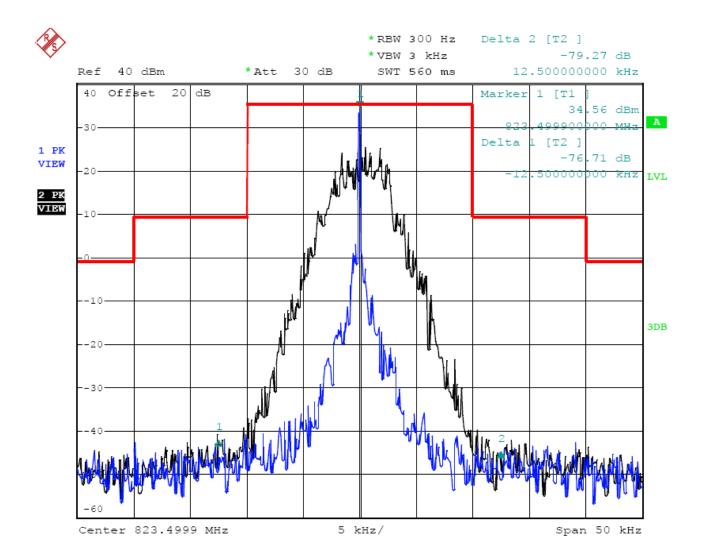


Date: 12.APR.2012 08:53:39

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

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

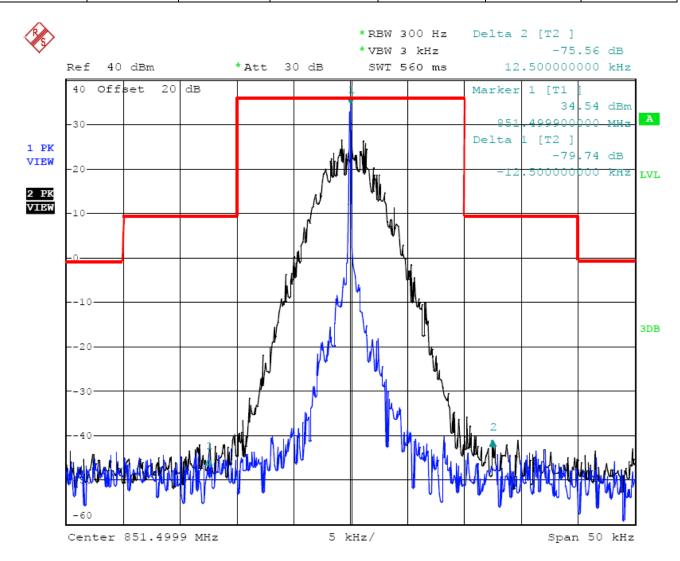


Date: 12.APR.2012 08:56:44

12.5 kHz Channel Spacing, 435.5000 MHz, 4FSK Modulation Only

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

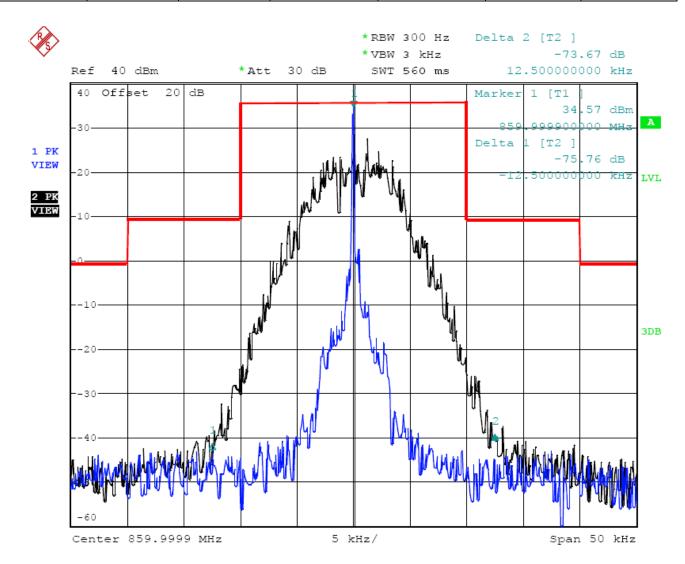


Date: 12.APR.2012 08:59:23

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

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

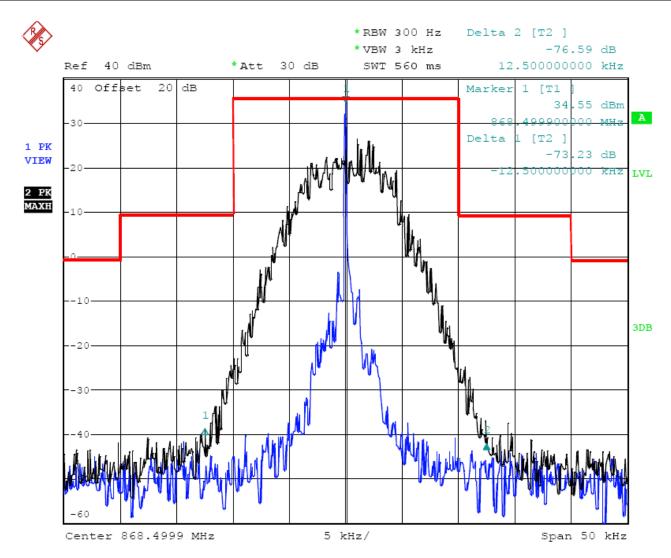


Date: 12.APR.2012 09:03:10

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

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

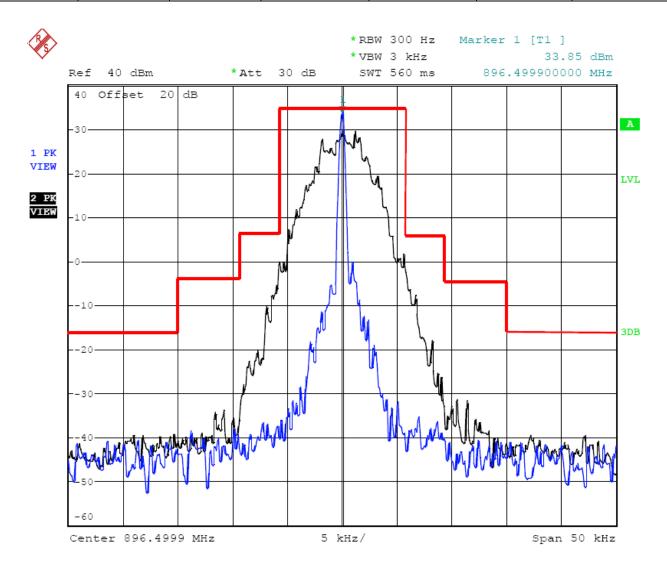


Date: 12.APR.2012 09:06:01

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

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

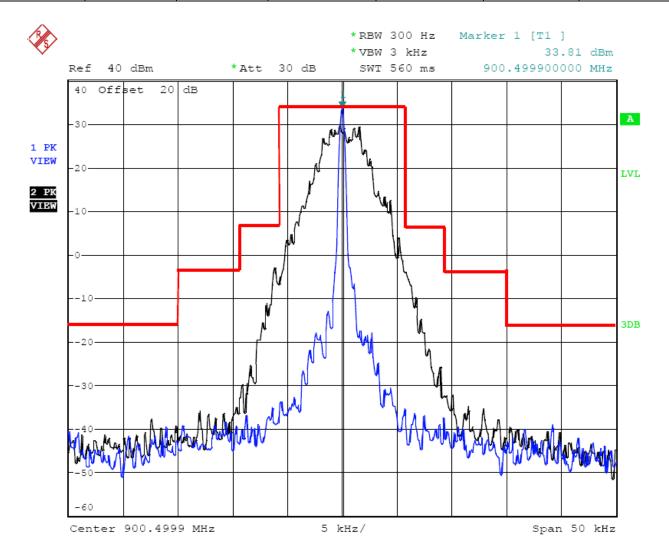


Date: 13.APR.2012 09:19:12

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

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

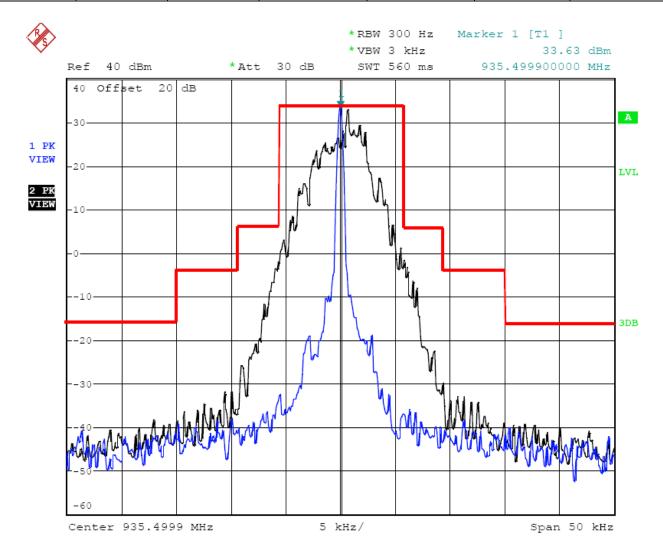


Date: 13.APR.2012 09:20:21

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

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

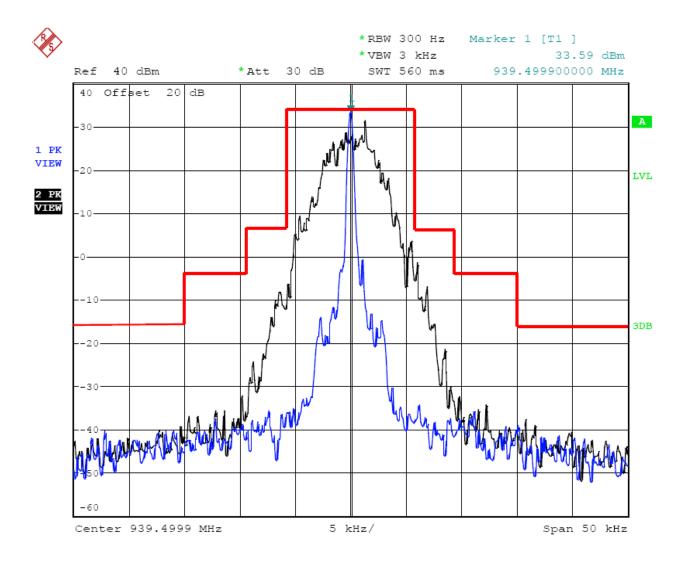


Date: 13.APR.2012 09:21:18

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

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



Date: 13.APR.2012 09:22:06

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

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# 4.3. Transmitter Radiated Spurious Emssion

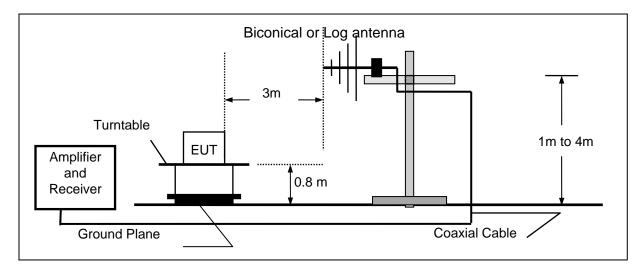
## **TEST APPLICABLE**

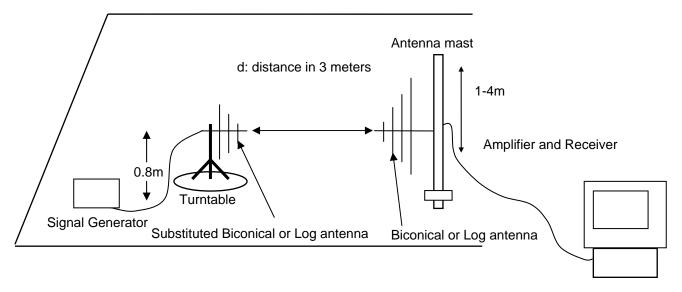
According to the TIA/EIA 603 test method, and according to Section 90.210, the power of each unwanted emission shall be less than Transmitted Power as specified below for transmitters designed to operate with 12.5 KHz channel bandwidth:

- 1 On any frequency removed from the center of the authorized bandwidth fo to 5.625 KHz removed from fo: Zero dB
- On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in KHz) fo 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 (fd in KHz) fo 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.
- On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43+10Log (P) dB.

# **TEST CONFIGURATION**

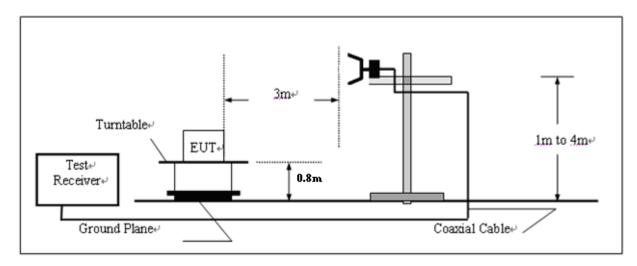
#### **Below 1GHz**

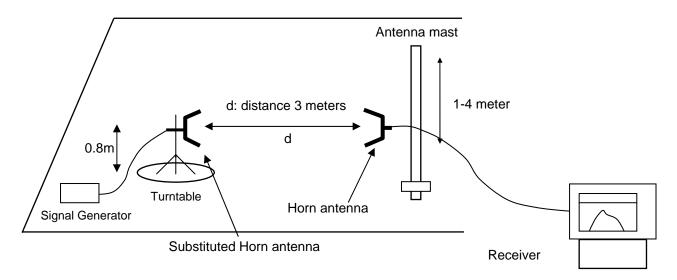




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#### **Above 1GHz**





# **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 (dBuV/m) = Reading (dBuV) + 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.

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- 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:

 $P = P_1 - L_1 = (P_2 + L_2) - L_1 = P_3 + A + L_2 - L_1$  $EIRP = P + G1 = P_3 + L_2 - L_1 + A + G_1$ 

ERP = EIRP - 2.15 dB

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.

P<sub>1</sub>: Power output from the signal generator

P<sub>2</sub>: Power measured at attenuator A input

P<sub>3</sub>: 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 (2.5Watt) and Rated low power (1Watt) 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:  $43 + 10 \log (Pwatts) = 43 + 10 \log (2.95) = 47.70 dB$ High:  $43 + 10 \log (Pwatts) = 43 + 10 \log (2.99) = 47.76 dB$ 

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 33.98 dBm.

Limit (dBm) =  $33.98-43-10\log 10$  (2.99) = -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:  $50 + 10 \log (Pwatts) = 50 + 10 \log (2.61) = 54.16 dB$ High:  $50 + 10 \log (Pwatts) = 50 + 10 \log (3.00) = 54.77 dB$ 

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 33.98 dBm.

Limit (dBm) =33.98-50-10log10 (3.00) = -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:  $50 + 10 \log (Pwatts) = 50 + 10 \log (2.88) = 54.60 dB$ High:  $50 + 10 \log (Pwatts) = 50 + 10 \log (2.98) = 54.74 dB$ 

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 33.98 dBm. Limit (dBm) =33.98-50-10log10 (2.98) = -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.

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

Modula	Modulation		FM	Channel Separation 25KHz					
Test Channel		Low (	Channel	Test Frequency		806.5	806.5000 MHz  ERP measured by		
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	63.63	Peak	Н	100	345	-32.82	-13	19.82	
2419.500	51.97	Peak	Н	128	121	-45.07	-13	32.07	
4032.5000	49.45	Peak	Н	150	96	-47.66	-13	34.66	
•••	•••		Н			•••			
1613.000	54.11	Peak	V	100	254	-42.82	-13	29.82	
2419.500	48.92	Peak	V	122	145	-46.39	-13	33.39	
4032.5000	48.72	Peak	V	105	172	-48.00	-13	35.00	
•••	•••		V			•••			

Modula	ation	I	FM	Channel Separation 25KHz					
Test Channel		Middle	Channel	Test Fro	equency	817.0	ERP neasured by Substitution Method (dBm) -33.07  Hargin (dBm)  Limit (dBm) (dBm)  20.07		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	measured by Substitution Method		Margin (dB)	
1634.000	63.18	Peak	Н	128	6	-33.07	-13	20.07	
2451.000	52.33	Peak	Н	120	325	-44.63	-13	31.63	
3265.000	49.66	Peak	Н	100	188	-47.21	-13	34.21	
•••	•••		Н			•••			
1634.000	54.37	Peak	V	150	296	-42.17	-13	29.17	
2451.000	50.90	Peak	V	108	147	-46.08	-13	33.08	
3265.000	48.61	Peak	V	100	165	-48.06	-13	35.06	
•••	•••		V			•••			

Modula	Modulation		FM	Channel Separation 25KHz					
Test Channel		High (	Channel	Test Fro	equency	823.	823.5000 MHz  ERP neasured by Substitution Method (dBm) -33.33 -13 20.33 -45.06 -13 32.06 -47.92 -13 34.9241.44 -13 28.44		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	measured by Substitution Method		Margin (dB)	
1647.000	63.14	Peak	Н	100	222	-33.33	-13	20.33	
3294.000	51.55	Peak	Н	150	340	-45.06	-13	32.06	
4117.500	48.52	Peak	Н	150	56	-47.92	-13	34.92	
•••			Н			•••			
1647.000	54.58	Peak	V	100	195	-41.44	-13	28.44	
3294.000	50.96	Peak	V	100	163	-46.11	-13	33.11	
4117.500	48.99	Peak	V	100	100	-48.05	-13	35.05	
•••	•••		V			•••			

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Modula	Modulation		FM	Channel Separation 25KHz						
Test Channel		Low (	Channel	Test Fro	equency	851.	- I Imit i Wardi			
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	61.51	Peak	Н	150	231	-35.63	-13	22.63		
2554.500	50.04	Peak	Н	128	147	-46.82	-13	33.82		
4257.500	47.84	Peak	Н	102	66	-48.79	-13	35.79		
•••	•••		Н			•••				
1703.000	62.11	Peak	V	150	126	-34.00	-13	31.00		
2554.500	51.52	Peak	V	100	84	-45.45	-13	32.45		
4257.500	59.46	Peak	V	136	193	-37.07	-13	34.07		
•••	•••		V			•••				

Modula	ation	ı	FM	Channel Separation 25KHz				
Test Ch	Test Channel		Channel	Test Fro	equency	860.0	860.0000 MHz  ERP neasured by Substitution Method (dBm) -37.55 -13 24.55 -43.41 -13 30.41 -48.63 -13 35.6334.54 -13 21.54 -44.12 -13 31.12 -48.17 -13 35.17	
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	measured by Substitution Method		Margin (dB)
1720.000	59.52	Peak	Н	150	347	-37.55	-13	24.55
2580.000	53.59	Peak	Н	122	300	-43.41	-13	30.41
4300.000	48.44	Peak	Н	150	174	-48.63	-13	35.63
•••	•••		Н			•••		
1720.000	61.71	Peak	V	129	320	-34.54	-13	21.54
2580.000	52.19	Peak	V	108	185	-44.12	-13	31.12
4300.000	48.68	Peak	V	100	69	-48.17	-13	35.17
•••	•••		V			•••		

Modula	ation		FM	Channel Separation 25KHz			5KHz		
Test Ch	Test Channel		Channel	Test Fro	equency	868.	868.5000 MHz  ERP neasured by Substitution Method (dBm) -37.46 -13 24.46 -45.09 -13 32.09 -47.55 -13 34.5534.74 -13 21.74 -44.03 -13 31.03		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	measured by Substitution Method		Margin (dB)	
1737.000	59.68	Peak	Н	100	333	-37.46	-13	24.46	
2605.500	51.73	Peak	Н	108	190	-45.09	-13	32.09	
4342.500	48.73	Peak	Н	124	154	-47.55	-13	34.55	
•••			Н			•••			
1737.000	61.44	Peak	V	150	244	-34.74	-13	21.74	
2605.500	52.69	Peak	V	124	165	-44.03	-13	31.03	
4342.500	58.55	Peak	V	112	23	-37.52	-13	24.52	
•••	•••		<b>V</b>			•••			

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Modula	Modulation		FM	Channel Separation 12.5KHz					
Test Channel		Low (	Channel	Test Fro	equency	806.	806.5000 MHz  ERP neasured by Substitution Method (dBm) -34.16 -45.15 -48.22 -20 28.2242.05 -20 22.05		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	measured by Substitution Method		Margin (dB)	
1613.000	61.92	Peak	Н	150	332	-34.16	-20	14.16	
2419.500	51.13	Peak	Н	100	170	-45.15	-20	25.15	
4032.5000	48.74	Peak	Н	145	289	-48.22	-20	28.22	
•••	•••		Н			•••			
1613.000	54.81	Peak	V	128	352	-42.05	-20	22.05	
2419.500	50.71	Peak	V	104	274	-46.36	-20	26.36	
4032.5000	48.22	Peak	V	124	144	-48.11	-20	28.11	
•••	•••		V			•••			

Modula	ation	ı	FM	Channel Separation 12.5KHz					
Test Channel		Middle	Channel	Test Fro	equency	817.0	817.0000 MHz  ERP neasured by Substitution Method (dBm) -33.22 -20 13.22 -45.08 -20 25.08 -47.96 -20 27.9642.17 -20 22.17 -46.67 -20 26.67 -48.63 -20 28.63		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	measured by Substitution Method		Margin (dB)	
1634.000	63.04	Peak	Н	126	360	-33.22	-20	13.22	
2451.000	51.90	Peak	Н	125	236	-45.08	-20	25.08	
3265.000	48.44	Peak	Н	150	66	-47.96	-20	27.96	
•••	•••		Н			•••			
1634.000	54.65	Peak	V	150	72	-42.17	-20	22.17	
2451.000	49.58	Peak	V	100	9	-46.67	-20	26.67	
3265.000	47.47	Peak	V	120	113	-48.63	-20	28.63	
•••	•••		V			•••			

Modula	ation	ı	FM	Channel S	Channel Separation 12.5KHz				
Test Channel		High (	Channel	Test Fro	equency	823.5	823.5000 MHz  ERP easured by ubstitution Method (dBm) -34.18  ERP (dBm)  Limit (dBm) (dB)  Margir (dB)		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Antenna Polarization	Antenna Height (cm)	Table Angle (Degree)	measured by Substitution Method		Margin (dB)	
1647.000	62.95	Peak	Н	150	249	-34.18	-20	14.18	
3294.000	50.22	Peak	Н	122	246	-46.06	-20	26.06	
4117.500	48.05	Peak	Н	100	153	-48.66	-20	28.66	
•••			Н			•••			
1647.000	54.33	Peak	V	145	342	-41.70	-20	21.70	
3294.000	50.01	Peak	V	100	168	-46.96	-20	26.96	
4117.500	48.07	Peak	V	100	18	-48.99	-20	28.99	
•••	•••		V			•••			

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Modula	ation	I	FM	Channel S	Separation	12.5KHz		
Test Ch	annel	Low (	Channel	Test Fro	equency	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	61.33	Peak	Н	150	352	-35.82	-20	15.82
2554.500	50.82	Peak	Н	100	26	-46.08	-20	26.08
4257.500	47.42	Peak	Н	100	83	-49.11	-20	29.11
•••	•••		Н			•••		
1703.000	62.00	Peak	V	128	197	-35.02	-20	15.02
2554.500	50.29	Peak	V	124	12	-46.00	-20	26.00
4257.500	59.08	Peak	V	124	93	-37.55	-20	17.55
•••	•••		V			•••		

Modula	ation	ı	FM	Channel S	Separation	12.5KHz		
Test Ch	annel	Middle	Channel	Test Fro	equency	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	57.14	Peak	Н	100	349	-39.42	-20	19.42
2580.000	51.55	Peak	Н	150	144	-45.37	-20	25.37
4300.000	48.77	Peak	Н	150	265	-48.00	-20	28.00
•••	•••		Н			•••		
1720.000	60.71	Peak	V	108	107	-36.05	-20	16.05
2580.000	51.55	Peak	V	124	113	-45.63	-20	25.63
4300.000	51.33	Peak	V	122	188	-48.17	-20	28.17
•••	•••		V			•••		

Modula	ation	ı	FM	Channel S	Separation	12.5KHz		
Test Ch	annel	High (	Channel	Test Fro	equency	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	57.93	Peak	Н	136	79	-39.21	-20	19.21
2605.500	51.02	Peak	Н	150	293	-45.92	-20	25.92
4342.500	48.77	Peak	Н	108	147	-48.25	-20	28.25
•••			Н			•••		
1737.000	61.44	Peak	V	122	18	-35.66	-20	15.66
2605.500	52.17	Peak	V	100	169	-44.22	-20	24.22
4342.500	58.82	Peak	V	108	144	-37.90	-20	17.90
•••	•••		V			•••		

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Modula	ation	ı	FM	Channel S	Separation	12.5KHz		
Test Ch	annel	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	58.33	Peak	Н	150	56	-38.23	-20	18.23
2689.500	52.04	Peak	Н	100	125	-44.72	-20	24.72
4482.500	48.72	Peak	Н	125	299	-47.47	-20	27.47
•••	•••		Н			•••		
1793.000	62.66	Peak	V	124	124	-34.38	-20	14.38
2689.500	56.28	Peak	V	128	360	-40.56	-20	20.56
4482.500	51.77	Peak	V	102	360	-45.27	-20	25.27
•••	•••		V			•••		

Modula	ation	ı	FM	Channel S	Separation	12.5KHz		
Test Ch	annel	High (	Channel	Test Fro	equency	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	60.52	Peak	Н	124	360	-35.76	-20	15.76
2701.500	59.24	Peak	Н	124	129	-37.48	-20	17.48
3602.000	56.55	Peak	Н	100	16	-40.25	-20	20.25
•••	•••		Н			•••		
1801.000	62.66	Peak	V	108	342	-33.64	-20	13.64
2701.500	51.04	Peak	V	102	149	-45.17	-20	25.17
3602.000	60.11	Peak	V	100	66	-35.12	-20	15.12
•••	•••		V			•••		

Modula	ation	ı	FM	Channel S	Separation	12.5KHz		
Test Ch	annel	Low (	Channel	Test Fro	equency	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	59.17	Peak	Н	100	342	-36.95	-20	16.95
2806.500	51.22	Peak	Н	122	114	-44.82	-20	24.82
4677.500	48.15	Peak	Н	122	162	-48.03	-20	28.03
•••	•••		Н			•••		
1871.000	65.40	Peak	V	100	23	-31.55	-20	11.55
2806.500	52.96	Peak	V	100	11	-44.07	-20	24.07
4677.500	48.11	Peak	V	100	66	-48.00	-20	28.00
•••	•••		V			•••		

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Modula	ation	I	FM	Channel S	Separation	12.5KHz		
Test Ch	annel	High (	Channel	Test Fro	equency	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	69.27	Peak	Н	150	360	-27.11	-20	7.11
2818.500	53.46	Peak	Н	150	127	-42.72	-20	22.72
4697.000	48.59	Peak	Н	150	115	-47.70	-20	27.70
•••	•••		Н			•••		
1879.000	65.00	Peak	V	125	49	-32.04	-20	12.04
2818.500	55.77	Peak	V	128	163	-40.56	-20	20.56
4697.000	62.43	Peak	V	110	355	-34.28	-20	14.28
•••	•••		V			•••		

Modula	ation	41	FSK	Channel S	Separation	12.5KHz		
Test Ch	annel	Low (	Channel	Test Fro	equency	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	63.71	Peak	Н	100	258	-33.28	-20	13.28
2419.500	50.37	Peak	Н	100	27	-45.89	-20	25.89
4032.5000	48.80	Peak	Н	150	144	-47.66	-20	27.66
•••	•••		Н			•••		
1613.000	53.18	Peak	V	106	340	-42.67	-20	22.67
2419.500	50.37	Peak	V	150	125	-46.33	-20	26.33
4032.5000	47.85	Peak	V	140	301	-48.47	-20	28.47
•••	•••		V			•••		

Modula	ation	41	FSK	Channel S	Separation	12.5KHz		
Test Ch	annel	Middle	Channel	Test Fro	equency	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	63.06	Peak	Н	150	11	-32.56	-20	12.56
2451.000	51.28	Peak	Н	100	145	-45.82	-20	25.82
3265.000	49.24	Peak	Н	125	196	-47.14	-20	27.14
•••	•••		Н			•••		
1634.000	54.18	Peak	V	124	347	-42.03	-20	22.03
2451.000	49.27	Peak	V	128	333	-46.98	-20	26.98
3265.000	47.90	Peak	V	103	300	-48.41	-20	28.41
•••	•••		V			•••		

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Modula	ation	4FSK		Channel S	Separation	12.5KHz		
Test Ch	annel	High Channel		Test Fro	equency	823.5000 MHz		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)  Antenna Polarization  Antenna Height (cm)  Angle (Degree)  ERP measured by Substitution Method (dBm)		Limit (dBm)	Margin (dB)			
1647.000	62.17	Peak	Н	122	360	-34.85	-20	14.85
3294.000	48.59	Peak	Н	122	127	-46.67	-20	26.67
4117.500	48.92	Peak	Н	150	256	-48.04	-20	28.04
•••	•••		Н			•••		
1647.000	56.29	Peak	V	100	27	-40.77	-20	20.77
3294.000	49.33	Peak V		147	168	-47.68	-20	27.68
4117.500	48.01	Peak	V	143	270	-48.99	-20	28.99
•••	•••		V			•••		

Modula	ation	41	FSK	Channel S	Separation	12.5KHz			
Test Ch	annel	Low Channel		Test Fro	equency	851.	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	62.71	Peak	Н	100	303	-34.26	-20	14.26	
2554.500	49.19	Peak	Н	129	239	-46.88	-20	26.88	
4257.500	48.35	Peak	Н	150	122	-48.47	-20	28.47	
•••	•••		Н			•••			
1703.000	61.85	Peak	V	136	3	-34.33	-20	14.33	
2554.500	50.37	Peak	V	150	171	-46.69 -20 2			
4257.500	58.71	Peak	V	100	235	-37.55	-20	17.55	
•••	•••		V			•••			

Modula	ation	41	FSK	Channel S	Separation	12.5KHz		
Test Ch	annel	Middle Channel		Test Frequency		860.0000 MHz		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	Polarization Height Angle Substitution (dB)		Limit (dBm)	Margin (dB)		
1720.000	58.82	Peak	Н	100	156	-38.44	-20	18.44
2580.000	51.05	Peak	Н	150	98	-45.60	-20	25.60
4300.000	47.53	Peak	Н	100	342	-48.81	-20	28.81
•••	•••		Н			•••		
1720.000	61.33	Peak	V	128	185	-35.44	-20	15.44
2580.000	51.82	Peak	V	124	16	-45.00 -20		25.00
4300.000	48.06	Peak	V	124	179	-47.99	-20	27.99
•••	•••		V			•••		

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Modula	ation	41	FSK	Channel S	Separation	12.5KHz		
Test Ch	annel	High Channel		Test Fro	equency	868.5000 MHz		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	etector   Antenna   Height   Angle   Substitution   (d		Limit (dBm)	Margin (dB)		
1737.000	59.01	Peak	Н	100	345	-38.01	-20	18.01
2605.500	50.85	Peak	Н	150	330	-45.24	-20	25.24
4342.500	47.16	Peak	Н	128	129	-48.87	-20	28.87
			Н			•••		
1737.000	60.81	Peak	V	100	44	-35.47	-20	15.47
2605.500	50.77	Peak V 124 323 -45.63		-20	25.63			
4342.500	58.93	Peak	V	124	182	-37.44	-20	17.44
•••	•••		V			•••		

Modula	ation	41	FSK	Channel S	Separation	12.5KHz			
Test Ch	annel	Low Channel		Test Fro	equency	896.	896.5000 MHz		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	ctor Polarization Height Angle Substitution (dBm		Limit (dBm)	Margin (dB)			
1793.000	57.81	Peak	Н	100	59	-38.68	-20	18.68	
2689.500	55.93	Peak	Н	100	142	-44.17	-20	24.17	
4482.500	48.72	Peak	Н	124	142	-48.23	-20	28.23	
•••	•••		Н			•••			
1793.000	62.37	Peak	V	150	334	-34.38	-20	14.38	
2689.500	55.00	Peak	V	V 100 168 -41.29 -20			21.29		
4482.500	51.06	Peak	V	100	10	-45.88	-20	25.88	
•••	•••		V			•••			

Modula	ation	41	FSK	Channel S	Separation	12	12.5KHz		
Test Ch	annel	High Channel		Test Fro	equency	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	61.60	Peak	Н	125	360	-34.45	-20	14.45	
2701.500	59.63	Peak	Н	100	175	-37.11	-20	17.11	
3602.000	55.09	Peak	Н	100	144	-41.80	-20	21.80	
•••	•••		Н			•••			
1801.000	64.68	Peak	V	150	282	-32.39	-20	12.39	
2701.500	50.92	Peak	V	100	168			26.04	
3602.000	61.14	Peak	V	105	293	-35.03	15.03		
•••	•••		V			•••			

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Modula	ation	4FSK		Channel S	Separation	12.5KHz		
Test Ch	annel	Low Channel		Test Fro	equency	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	60.67	Peak	Н	150	1	-35.46	-20	15.46
2806.500	51.88	Peak	Н	100	254	-44.88	-20	24.88
4677.500	48.33	Peak	Н	150	57	-47.57	-20	27.57
•••	•••		Н			•••		
1871.000	63.99	Peak	V	125	196	-32.25	-20	12.25
2806.500	51.47	Peak	V	100	78	-44.78 -20		24.78
4677.500	47.85	Peak	V	103	263	-48.64	-20	28.64
•••	•••		V			•••		

Modula	ation	41	FSK	Channel S	Separation	12.5KHz		
Test Ch	annel	High Channel		Test Fro	equency	939.5000 MHz		
Frequency (MHz)	E-Field Level (dBuv/m)	EMI Detector (Peak/QP)	ector   Antenna   Height   Angle   Substitution   Limit   Colorization   Coloriza		Limit (dBm)	Margin (dB)		
1879.000	68.39	Peak	Н	133	360	-28.02	-20	8.02
2818.500	54.66	Peak	Н	100	16	-41.53	-20	21.53
4697.000	48.89	Peak	Н	150	172	-47.49	-20	27.49
•••	•••		Н			•••		
1879.000	64.09	Peak	V	128	360	-32.63	-20	12.63
2818.500	55.35	Peak	V	100	360	-41.25 -20		21.25
4697.000	62.93	Peak	V	104	155	-33.56 -20		13.56
•••	•••		V			•••		

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## 4.4. Spurious Emssion on Antenna Port

#### **TEST APPLICABLE**

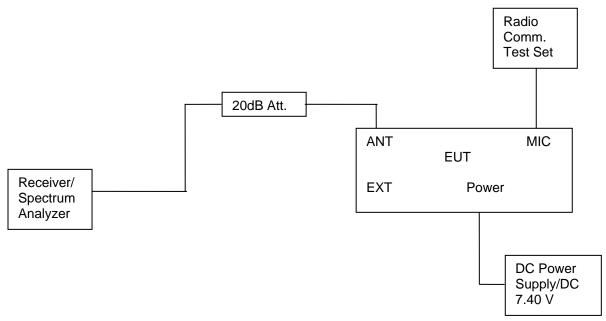
The same as Section 4.3

#### **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 10<sup>th</sup> 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:  $43 + 10 \log (Pwatts) = 43 + 10 \log (2.95) = 47.70 dB$ High:  $43 + 10 \log (Pwatts) = 43 + 10 \log (2.99) = 47.76 dB$ 

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 33.98 dBm.

Limit (dBm) =33.98-43-10log10 (2.99) = -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:  $50 + 10 \log (Pwatts) = 50 + 10 \log (2.61) = 54.16 dB$ High:  $50 + 10 \log (Pwatts) = 50 + 10 \log (3.00) = 54.77 dB$ 

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 33.98 dBm.

Limit (dBm) =  $33.98-50-10\log 10$  (3.00) = -20 dBm

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## **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:  $50 + 10 \log (Pwatts) = 50 + 10 \log (2.88) = 54.60 \text{ dB}$ High:  $50 + 10 \log (Pwatts) = 50 + 10 \log (2.98) = 54.74 \text{ dB}$ 

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 33.98 dBm.

Limit (dBm) =  $33.98-50-10\log 10$  (2.98) = -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 (2.5Watt)

Frequency		Channel	_	Maximu	ım Conducted (dE	Spurious Em	nissions	
Range	Modulation	Separation	Test	Below		Above	1GHz	
(MHz)	Туре	(KHz)	Channel	Frequency	Datum	Frequency	Datum	
				(MHz)	(dBm)	(MHz)	(dBm)	
			Low	988.36	-27.79	8470.00	-25.45	
		25	Middle	947.62	-30.09	9838.00	-25.40	
	Analog/FM		High	848.68	-28.24	4132.00	-25.29	
	Analog/i ivi		Low	970.90	-28.48	3142.00	-25.42	
806-825		12.5	Middle	951.50	-29.28	3304.00	-24.92	
			High	943.74	-28.75	3520.00	-24.60	
			Low	947.62	-28.69	3304.00	-25.57	
	Digital/4FSK	12.5	Middle	858.38	-30.95	8506.00	-25.34	
			High	904.94	-29.63	8920.00	-26.06	
			Low	935.98	-29.42	3322.00	-24.82	
		25	Middle	899.12	-28.34	3952.00	-26.06	
	Analog/FM		High 934.04 -29.00 8614.0				-25.36	
	Analog/Fivi		Low	939.86	-29.58	3358.00	-25.57	
851-870		12.5	Middle	972.84	-29.18	3142.00	-25.31	
			High	961.20	-28.12	3160.00	-24.37	
			Low	714.82	-28.08	3016.00	-25.88	
	Digital/4FSK	12.5	Middle	957.32	-29.75	3070.00	-25.08	
			High	961.20	-29.03	3196.00	-24.54	
	Analog/EM		Low	976.72	-29.42	3034.00	-25.08	
896-902	Analog/FM	12.5	High	934.04	-28.72	3232.00	-25.30	
090-902	Digital/4FSK	12.5	Low	928.22	-29.05	3664.00	-25.80	
	Digital/4F3K		High	953.44	-28.39	3646.00	-24.51	
	Analog/FM		Low	765.26	-28.95	3214.00	-24.84	
935-941	Analog/Fivi	12.5	High	831.22	-29.19	3124.00	-25.44	
933-941	Digital/4FSK	12.5	Low	986.42	-30.12	3124.00	-25.41	
	Digital/4F3K		High	988.36	-28.73	3214.00	-25.86	
1;	mit		-13dl	3m for 25KHz	Channel Sepa	artion		
LI	11111	-20dBm for 12.5KHz Channel Separtion						
Test F	Results			Comp	liance			

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## For Rated Low Power (1.0Watt)

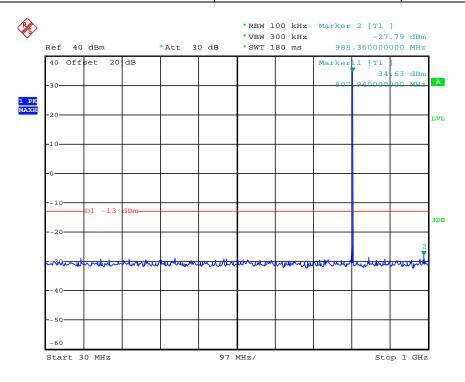
Frequency		Channel		Maximu	ım Conducted (dE	Spurious Em	nissions		
Range	Modulation	Separation	Test	Below		Above	1GHz		
(MHz)	Туре	(KHz)	Channel	Frequency	Datum	Frequency	Datum		
,		, ,		(MHz)	(dBm)	(MHz)	(dBm)		
			Low	957.32	-30.08	3124.00	-24.61		
		25	Middle	947.62	-29.57	3142.00	-25.42		
	Analog/FM		High	935.98	-28.08	3106.00	-25.98		
	Analog/Fivi		Low	967.02	-29.69	3106.00	-25.27		
806-825		12.5	Middle	941.80	-29.25	3124.00	-25.25		
			High	951.50	-29.76	3106.00	-25.49		
			Low	879.72	-28.96	8596.00	-25.33		
	Digital/4FSK	12.5	Middle	858.38	-28.30	8722.00	-26.16		
			High	904.94	-28.06	8920.00	-26.06		
			Low	924.34	-29.00	3160.00	-25.24		
		25	Middle	930.16	-30.66	3646.00	-25.56		
	Analog/FM		High	976.72	-28.64	9604.00	-25.33		
	Analog/Fivi		Low	935.98	-29.24	3124.00	-25.35		
851-870		12.5	Middle	922.40	-28.56	3304.00	-25.49		
			High	949.56	-29.80	3160.00	-24.81		
			Low	947.62	-28.87	8002.00	-26.01		
	Digital/4FSK	12.5	Middle	990.30	-30.01	3016.00	-24.92		
			High	916.58	-28.42	3142.00	-24.13		
	Analog/EM		Low	930.16	-29.01	3088.00	-25.13		
896-902	Analog/FM	12.5	High	965.08	-29.69	9244.00	-25.04		
090-902	Digital/4FSK	12.5	Low	970.90	-29.21	3142.00	-25.47		
	Digital/4F3K		High	953.44	-29.53	3304.00	-25.98		
	Analog/FM		Low	833.16	-28.61	3160.00	-24.48		
935-941	Analog/Fivi	12.5	High	769.14	-28.38	3574.00	-25.13		
933-941	Digital/4FSK	12.5	Low	976.20	-30.63	3160.00	-25.59		
	Digital/4F3K		High	976.72	-29.66	3088.00	-25.57		
1 ;	mit			3m for 25KHz					
	LIIIIL		-20dBm for 12.5KHz Channel Separtion						
Test I	Results			Comp	liance				

# Plots of Spurious Emission on Antenna Port Measurement

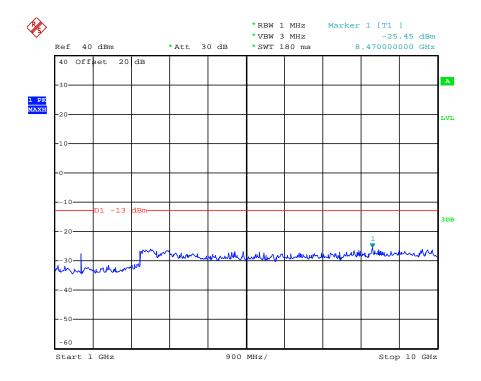
For Rated High Power (2.5Watt)

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Modulation Type			Test Frequency	Maximum Conducted Spurious Emissions Below 1GHz		Maximum ( Spurious I Above	Emissions 1GHz	FCC Limit
. , , , ,	opa.a	•	(MHz)	Frequency	Datum	Frequency	Datum	
				(MHz)	(dBm)	(MHz)	(dBm)	
FM	25KHz	Low	806.5000	988.36	-27.79	8470.00	-25.45	-13dBm
	Test Results				C	Compliance		



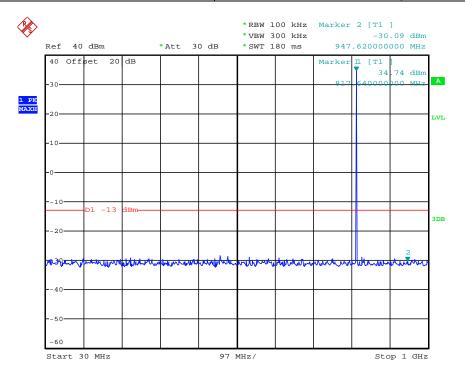
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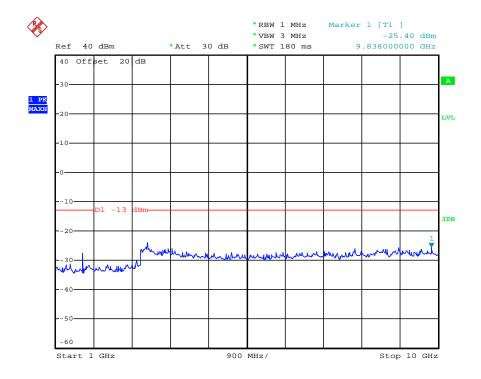
Date: 12.APR.2012 04:04:41

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)		Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	25KHz	Middle	817.0000	947.62	-30.09	9838.00	-25.40	-13dBm
	Test Results				C	Compliance		



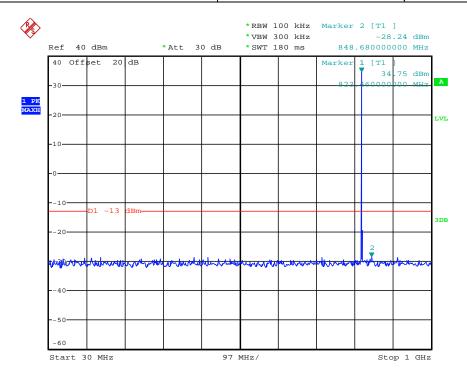
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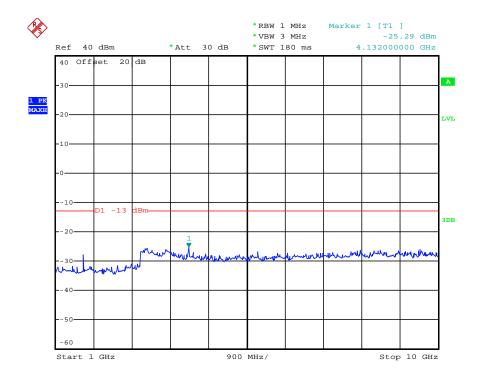
Date: 12.APR.2012 04:04:04

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Modulation Channel Type Sparation		Test Channel	Test Frequency	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
Турс	Oparation	Chamilei	(MHz)	Frequency	Datum	Frequency	Datum	LIIIII
				(MHz)	(dBm)	(MHz)	(dBm)	
FM	25KHz	High	823.5000	848.68	-28.24	4132.00	-25.29	-13dBm
	Test Results				C	Compliance		



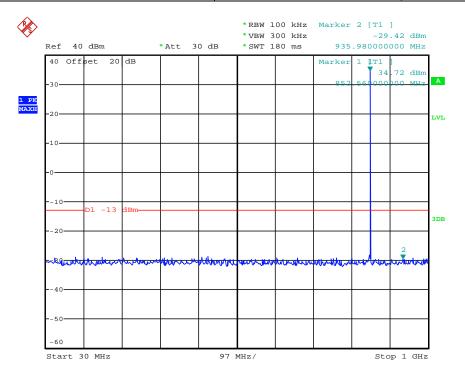
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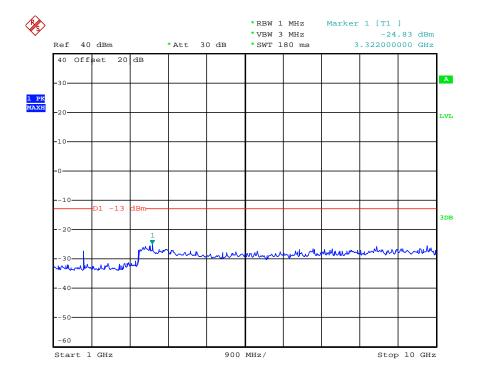
Date: 12.APR.2012 04:03:32

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Modulation Channe Type Sparatio		Test Channel	Test Frequency	Maximum ( Spurious I Below	Emissions	Maximum ( Spurious E Above	Emissions 1GHz	FCC Limit
1 ) PO	Oparation	Onamo	(MHz)	Frequency	Datum	Frequency	Datum	Littie
				(MHz)	(dBm)	(MHz)	(dBm)	
FM	25KHz	Low	851.5000	935.98	-29.42	3322.00	-24.82	-13dBm
	Test Results				C	Compliance		



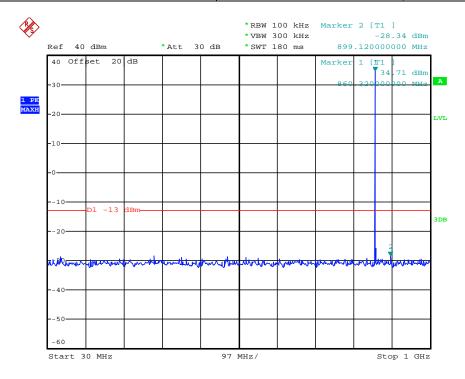
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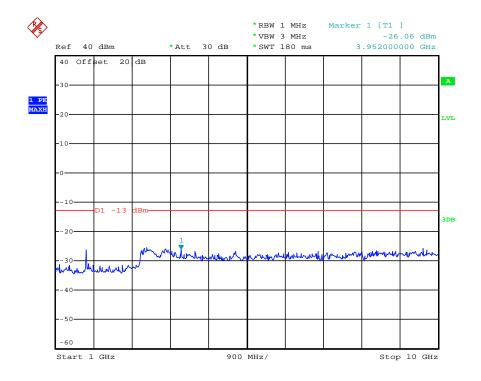
Date: 12.APR.2012 04:02:45

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Spurious I			Emissions 1GHz Datum	FCC Limit
FM	25KHz	Middle	860.0000	899.12	-28.34	3952.00	-26.06	-13dBm
	Test Results				C	Compliance		



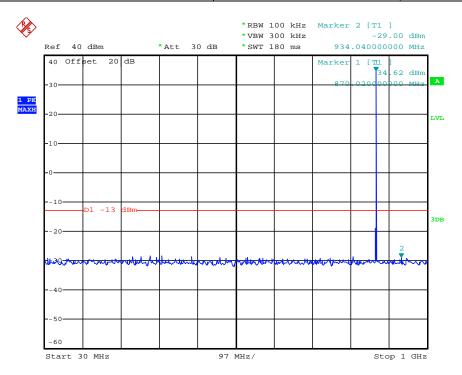
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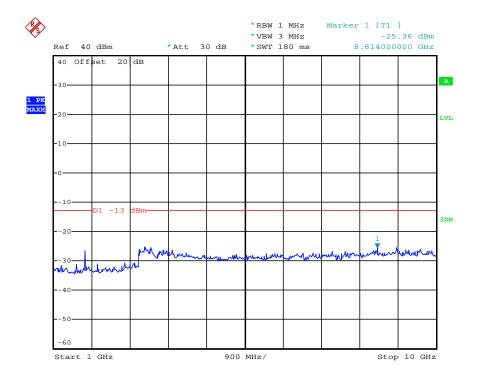
Date: 12.APR.2012 04:01:48

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Modulation Channel Type Sparation		Test Channel	Test Frequency	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
Турс	Oparation	Onamici	(MHz)	Frequency	Datum	Frequency	Datum	Littill
				(MHz)	(dBm)	(MHz)	(dBm)	
FM	25KHz	High	868.5000	934.04	-29.00	8614.00	-25.36	-13dBm
	Test Results				C	Compliance		



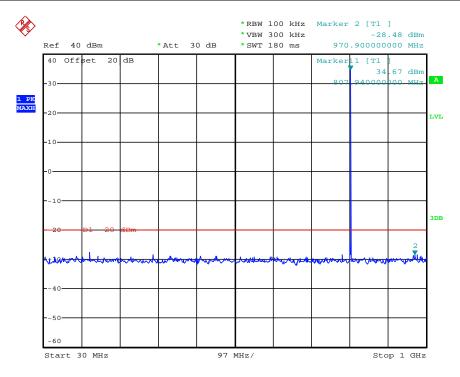
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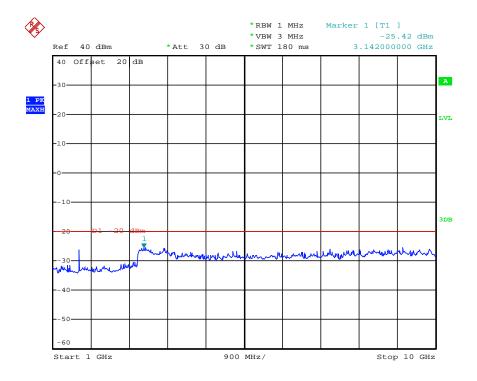
Date: 12.APR.2012 04:01:14

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)		Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	12.5KHz	Low	806.5000	970.90	-28.48	3142.00	-25.42	-20dBm
	Test Results				C	Compliance		



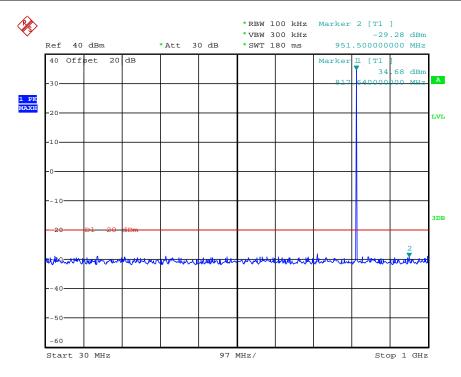
Date: 12.APR.2012 03:41:26



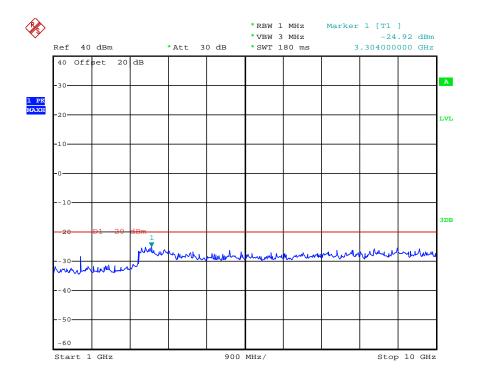
Date: 12.APR.2012 03:33:22

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	12.5KHz	Middle	817.0000	951.50	-29.28	3304.00	-24.92	-20dBm
	Test Results				C	Compliance		



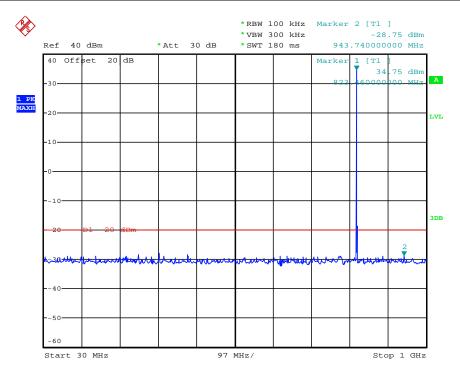
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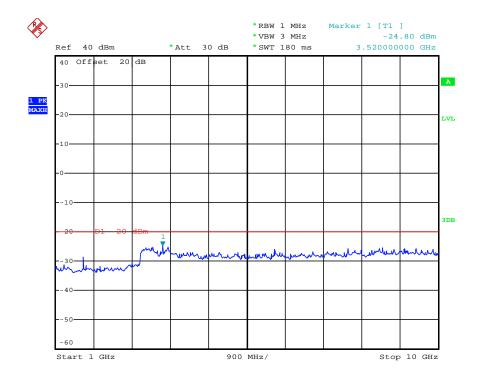
Date: 12.APR.2012 03:38:54

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	12.5KHz	High	823.5000	943.74	-28.75	3520.00	-24.60	-20dBm
	Test Results				C	Compliance		



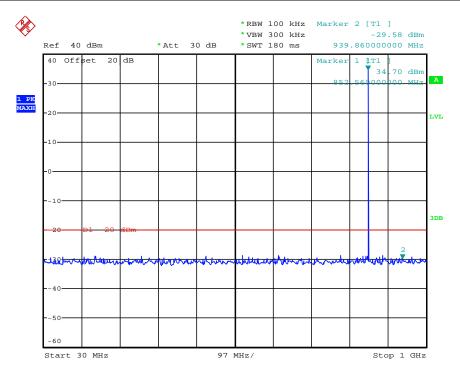
Date: 12.APR.2012 03:43:04



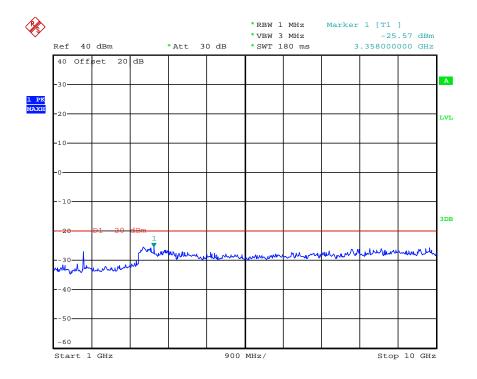
Date: 12.APR.2012 03:32:03

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	12.5KHz	Low	851.5000	939.86	-29.58	3358.00	-25.57	-20dBm
	Test Results				C	Compliance		



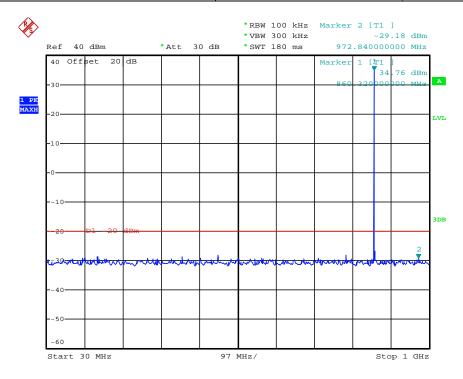
Date: 12.APR.2012 03:44:27



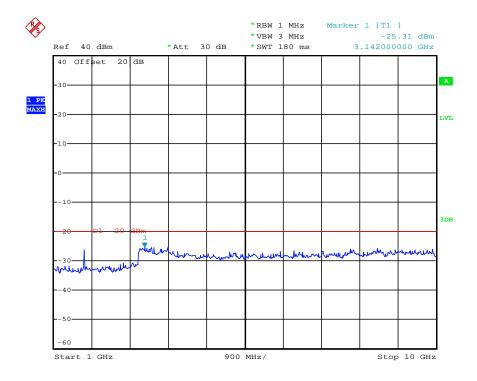
Date: 12.APR.2012 03:30:29

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHzMaximum Conducted Spurious Emissions Above1GHzFrequency (MHz)Datum (dBm)Frequency (MHz)Datum (dBm)		Emissions 1GHz Datum	FCC Limit	
FM	12.5KHz	Middle	860.0000	972.84	-29.18	3142.00	-25.31	-20dBm
Test Results				C	Compliance			



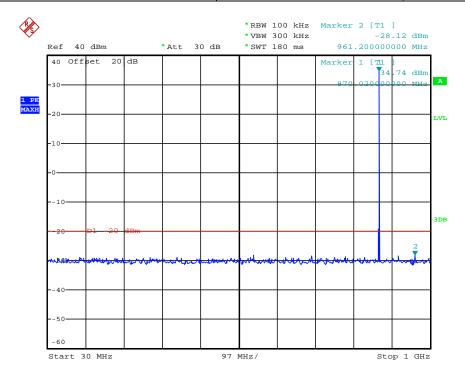
Date: 12.APR.2012 03:44:51



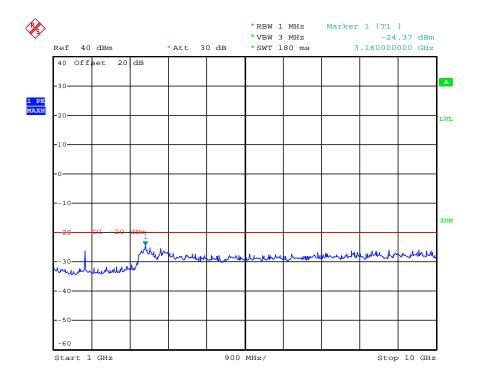
Date: 12.APR.2012 03:30:00

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHzMaximum Conducted Spurious Emissions Above1GHzFrequency (MHz)Datum (dBm)Frequency (MHz)Datum (dBm)		FCC Limit		
FM	12.5KHz	High	868.5000	961.20	-28.12	3160.00	-24.37	-20dBm
Test Results				C	Compliance			



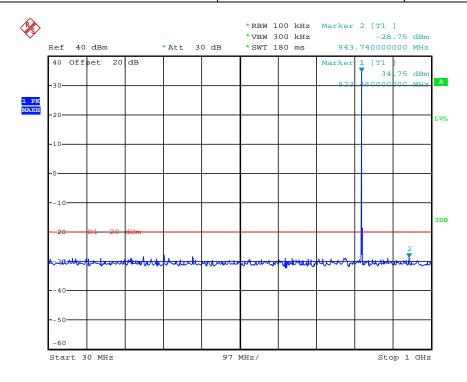
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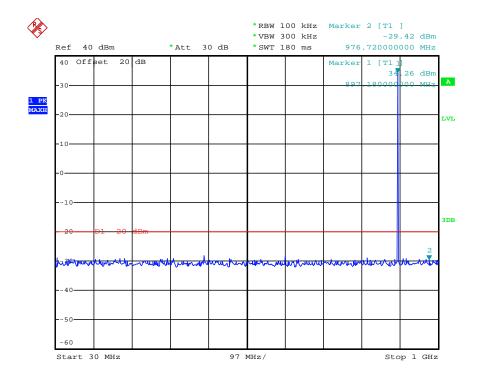
Date: 12.APR.2012 03:29:06

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Modulation Chann Type Sparati		Test Channel	Test Frequency	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
Турс	Oparation	Charine	(MHz)	Frequency	Datum	Frequency	Datum	LIIIII
				(MHz)	(dBm)	(MHz)	(dBm)	
FM	12.5KHz	Low	896.5000	976.72	-29.42	3034.00	-25.08	-20dBm
	Test Results				C	Compliance		



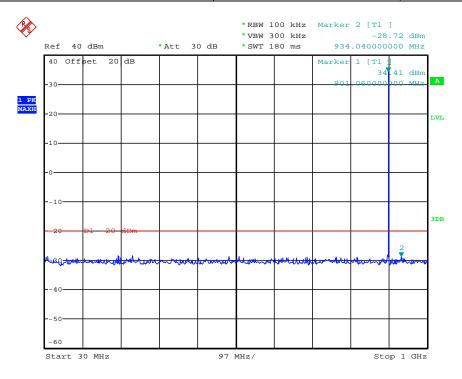
Date: 12.APR.2012 03:43:04



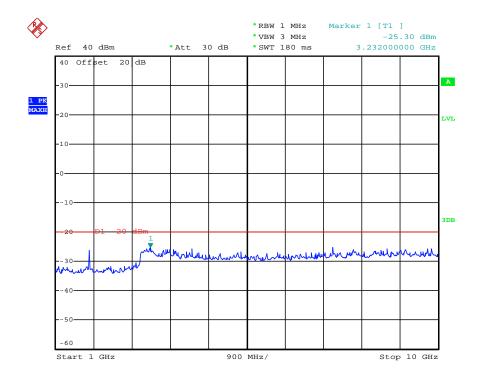
Date: 12.APR.2012 03:46:36

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Spurious I			Emissions 1GHz	FCC Limit
FM	12.5KHz	High	900.5000	934.04	-28.72	3232.00	-25.30	-20dBm
Test Results					C	Compliance		



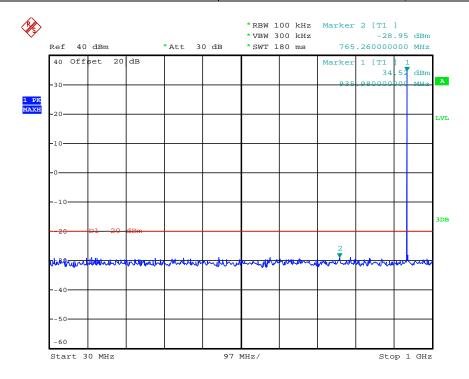
Date: 12.APR.2012 03:48:02



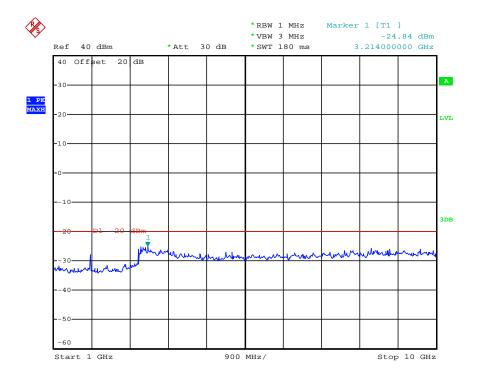
Date: 12.APR.2012 03:27:52

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)		Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	12.5KHz	Low	935.5000	765.26	-28.95	3214.00	-24.84	-20dBm
	Test Results				C	Compliance		



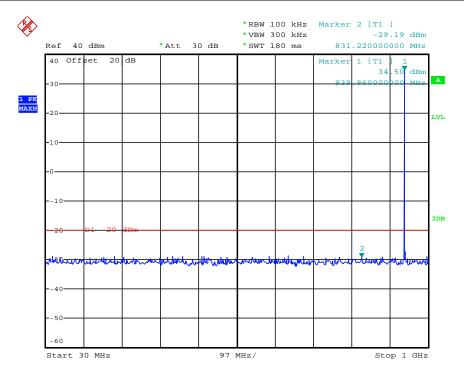
Date: 12.APR.2012 03:48:58



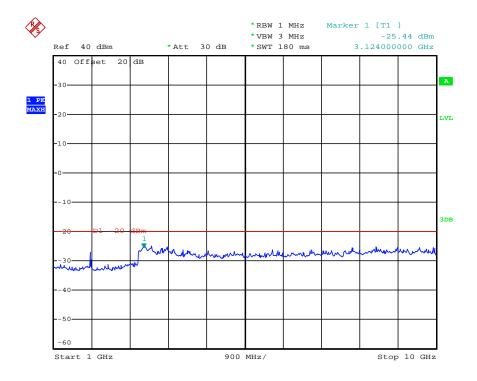
Date: 12.APR.2012 03:27:27

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)		Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	12.5KHz	High	939.5000	831.22	-29.19	3124.00	-25.44	-20dBm
Test Results				C	Compliance			



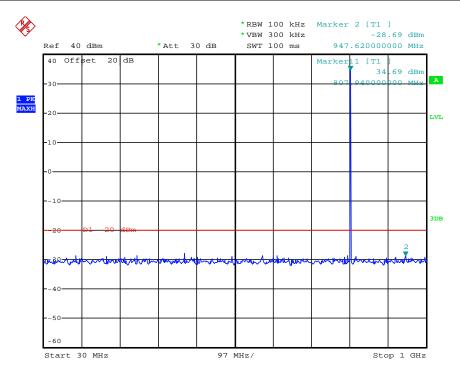
Date: 12.APR.2012 03:50:27



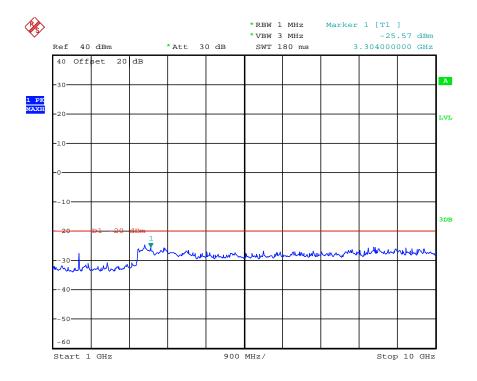
Date: 12.APR.2012 03:26:03

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)		Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit		
4FSK	12.5KHz	Low	806.5000	947.62	-28.69	3304.00	-25.57	-20dBm		
	Test Results				C	Compliance		-20dBm		



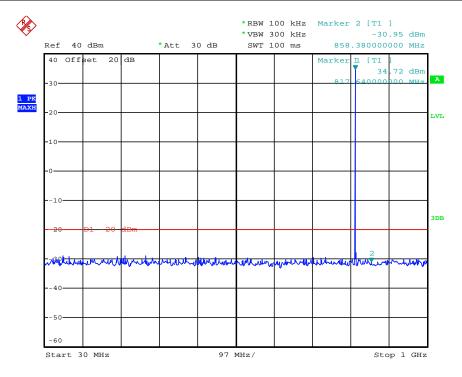
Date: 11.APR.2012 11:13:32



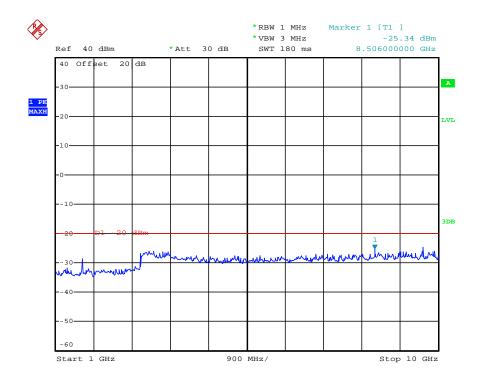
Date: 11.APR.2012 11:14:43

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz  Frequency (MHz)  Maximum Conducted Spurious Emissions Above1GHz Frequency (MHz)  Maximum Conducted Spurious Emissions Above1GHz (MHz)  (MHz)  Maximum Conducted Spurious Emissions (MHz)  (MHz)  Maximum Conducted Spurious Emissions (MHz)  (MHz)  (MHz)  Maximum Conducted Spurious Emissions (MHz)		Emissions 1GHz	FCC Limit	
4FSK	12.5KHz	Middle	817.0000	858.38	-30.95	8506.00	-25.34	-20dBm
	Test Results				C	Compliance		



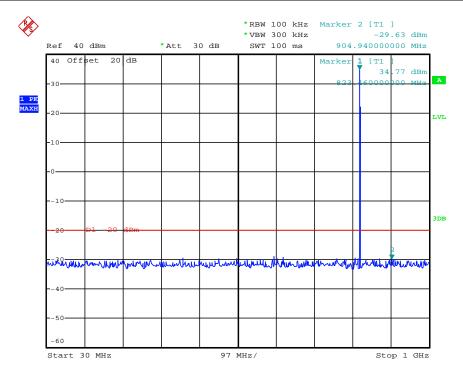
Date: 11.APR.2012 11:12:28



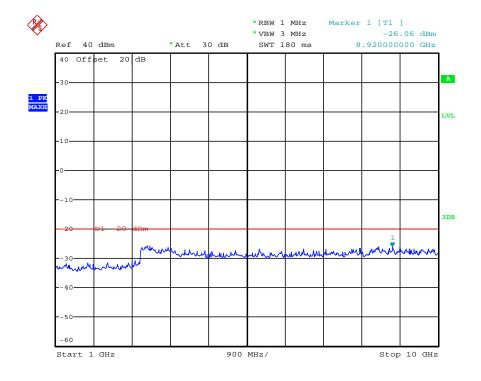
Date: 11.APR.2012 11:15:29

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
4FSK	12.5KHz	High	823.5000	904.94	-29.63	8920.00	-26.06	-20dBm
	Test Results				C	Compliance		



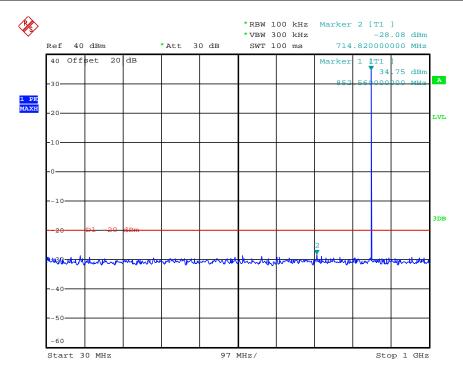
Date: 11.APR.2012 11:11:21



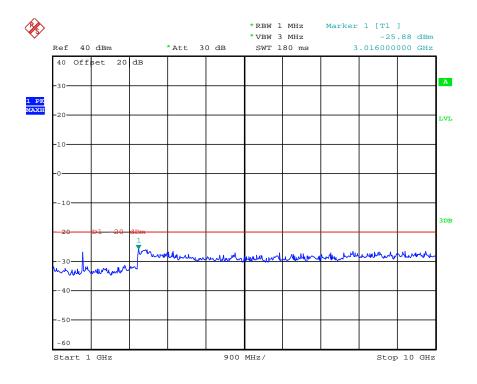
Date: 11.APR.2012 11:15:46

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
4FSK	12.5KHz	Low	851.5000	714.82	-28.08	3016.00	-25.88	-20dBm
	Test Results				C	Compliance		



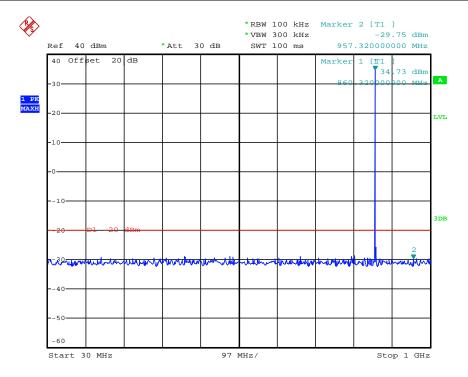
Date: 11.APR.2012 11:10:10



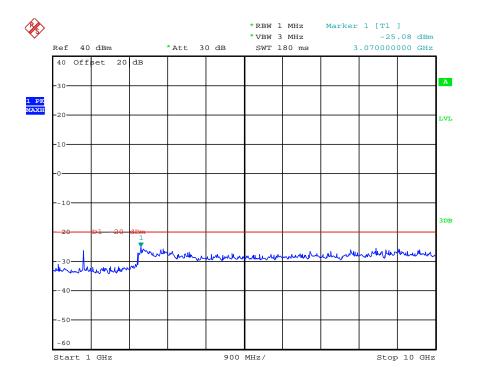
Date: 11.APR.2012 11:16:31

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)		Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
4FSK	12.5KHz	Middle	860.0000	957.32	-29.75	3070.00	-25.08	-20dBm
	Test Results				C	Compliance		



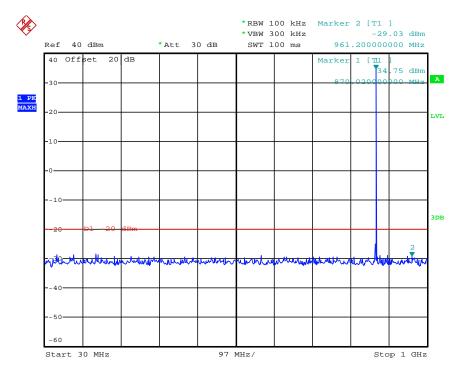
Date: 11.APR.2012 11:08:46



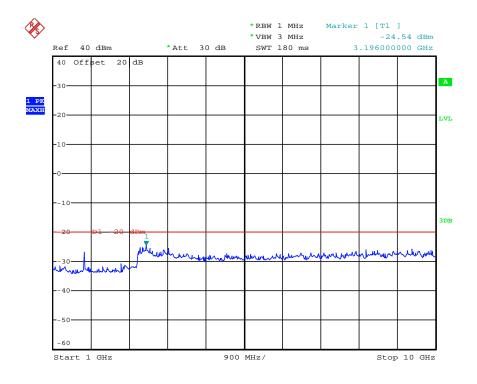
Date: 11.APR.2012 11:17:17

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit		
4FSK	12.5KHz	High	868.5000	961.20	-29.03	3196.00	-24.54	-20dBm		
	Test Results				C	Compliance		-20dBm		



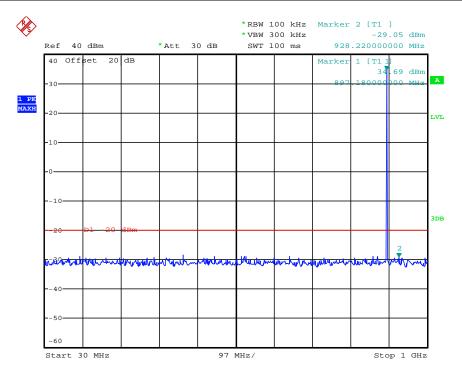
Date: 11.APR.2012 11:07:27



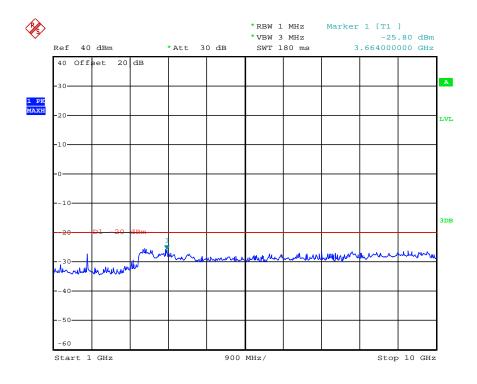
Date: 11.APR.2012 11:17:59

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
4FSK	12.5KHz	Low	896.5000	928.22	-29.05	3664.00	-25.80	-20dBm
	Test Results				C	Compliance		



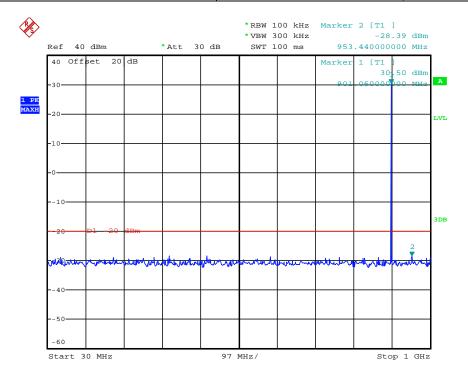
Date: 11.APR.2012 11:05:36



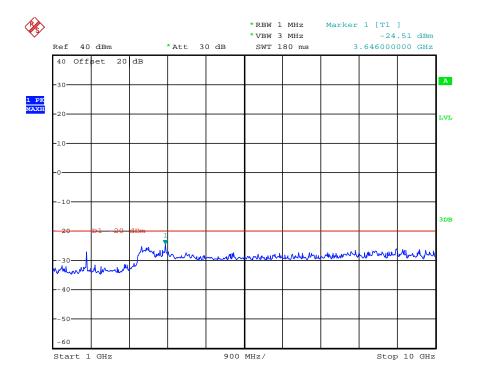
Date: 11.APR.2012 11:18:33

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Modulation Channel Type Sparation		Test Channel	Test Frequency	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
Турс	Oparation	Onamici	(MHz)	Frequency	Datum	Frequency	Datum	Littill
				(MHz)	(dBm)	(MHz)	(dBm)	
4FSK	12.5KHz	High	900.5000	953.44	-28.39	3646.00	-24.51	-20dBm
	Test Results				C	Compliance		



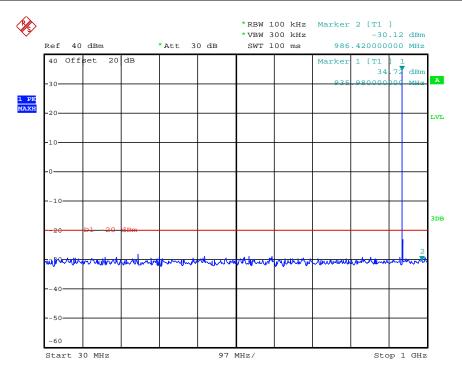
Date: 11.APR.2012 11:03:53



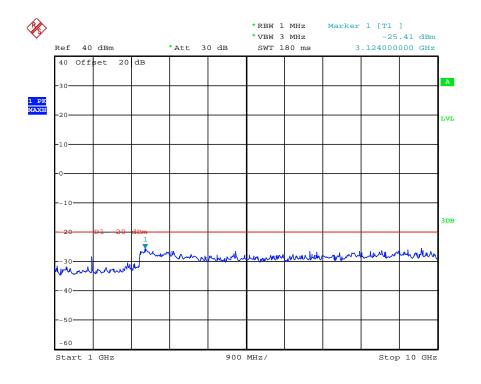
Date: 11.APR.2012 11:19:07

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit			
4FSK	12.5KHz	Low	935.5000	986.42	-30.12	3124.00	-25.41	-20dBm			
	Test Results				C	Compliance		-20dBm			



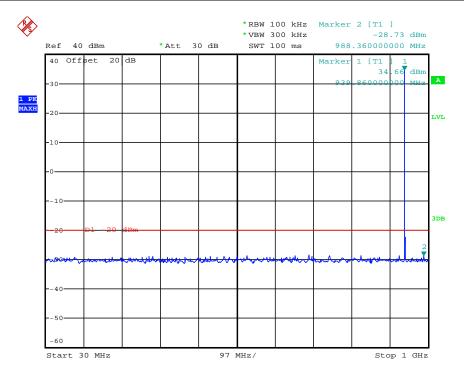
Date: 11.APR.2012 11:03:20



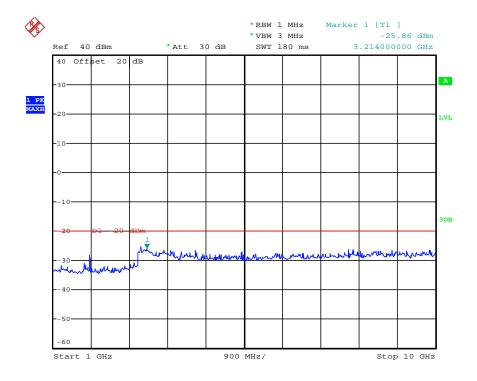
Date: 11.APR.2012 11:19:26

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
4FSK	12.5KHz	High	939.5000	988.36	-28.73	3214.00	-25.86	-20dBm
	Test Results				C	Compliance		



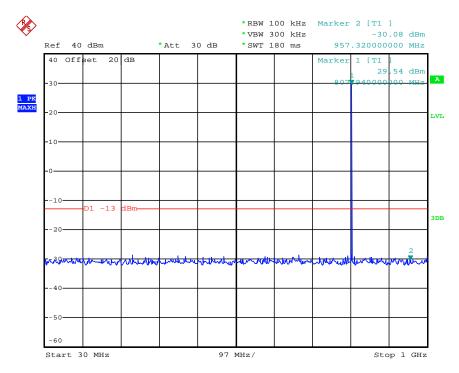
Date: 11.APR.2012 11:01:28



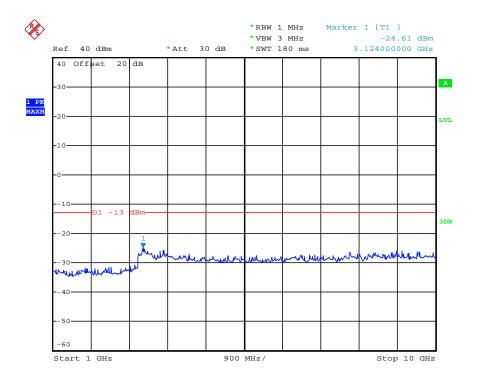
Date: 11.APR.2012 11:20:07

### For Rated Low Power (1Watt)

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency	Datum	Frequency	Datum	LIIIIII
				(MHz)	(dBm)	(MHz)	(dBm)	
FM	25KHz	Low	806.5000	957.32	-30.08	3124.00	-24.61	-13dBm
Test Results				Compliance				



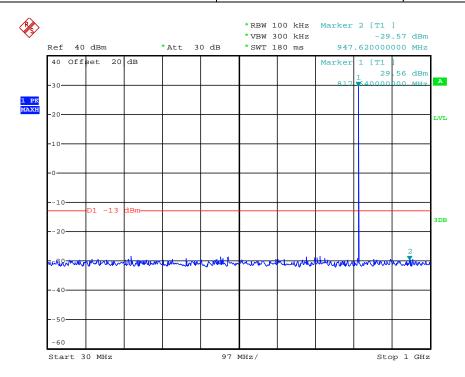
Date: 12.APR.2012 03:52:46



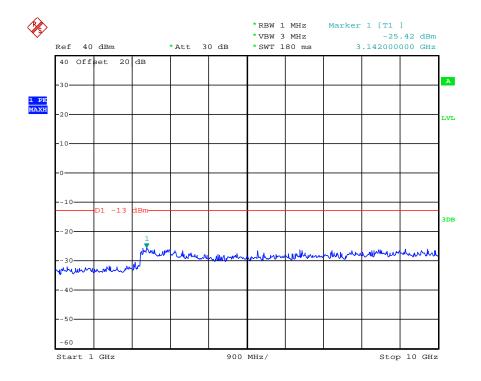
Date: 12.APR.2012 04:04:28

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency	Datum	Frequency	Datum	LIIIII
				(MHz)	(dBm)	(MHz)	(dBm)	
FM	25KHz	Middle	817.0000	947.62	-29.57	3142.00	-25.42	-13dBm
Test Results				Compliance				



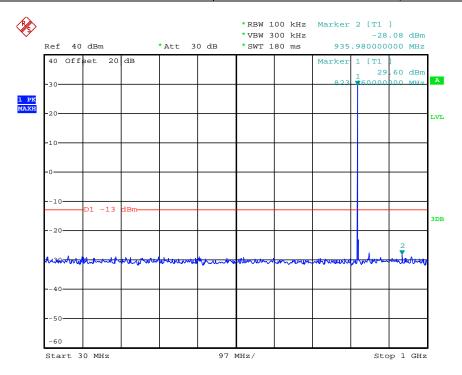
Date: 12.APR.2012 03:53:09



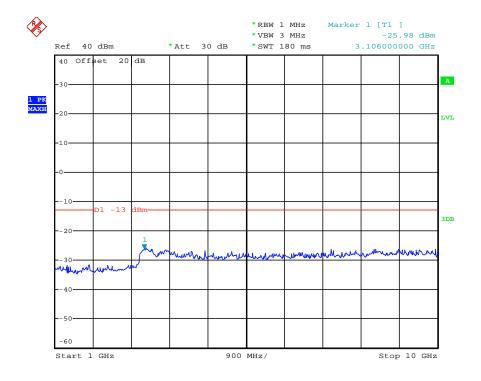
Date: 12.APR.2012 04:03:50

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Modulation Type	Channel Sparation	Test Channel	Test Frequency	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
Турс	Oparation	Onamici	(MHz)	Frequency	Datum	Frequency	Datum	Littill
				(MHz)	(dBm)	(MHz)	(dBm)	
FM	25KHz	High	823.5000	935.98	-28.08	3106.00	-25.98	-13dBm
Test Results				Compliance				



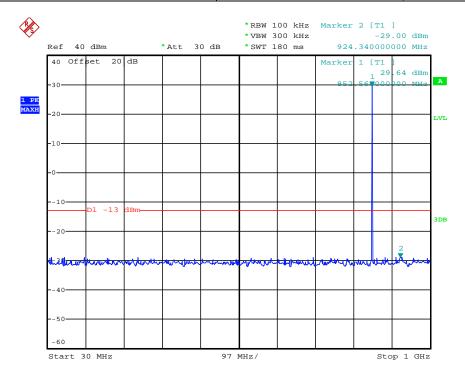
Date: 12.APR.2012 03:56:05



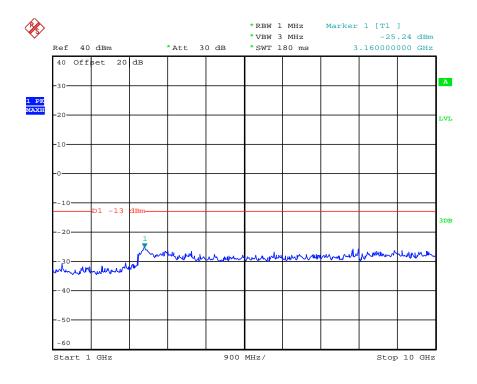
Date: 12.APR.2012 04:03:18

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Modulation Type	Channel Sparation	Test Channel	Test Frequency	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
Турс	Oparation	Onamici	(MHz)	Frequency	Datum	Frequency	Datum	Littie
				(MHz)	(dBm)	(MHz)	(dBm)	
FM	25KHz	Low	851.5000	924.34	-29.00	3160.00	-25.24	-13dBm
Test Results				Compliance				



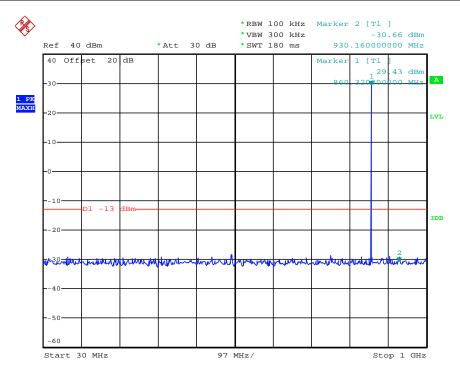
Date: 12.APR.2012 03:57:25



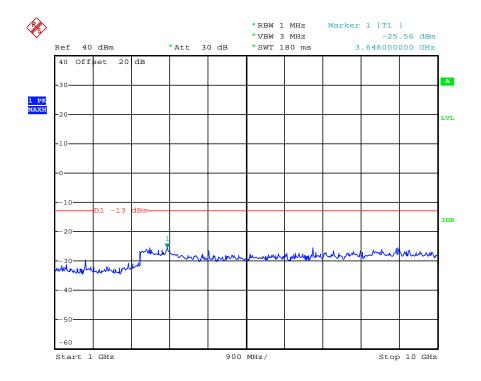
Date: 12.APR.2012 04:02:56

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	25KHz	Middle	860.0000	930.16	-30.66	3646.00	-25.56	-13dBm
Test Results				C	Compliance			



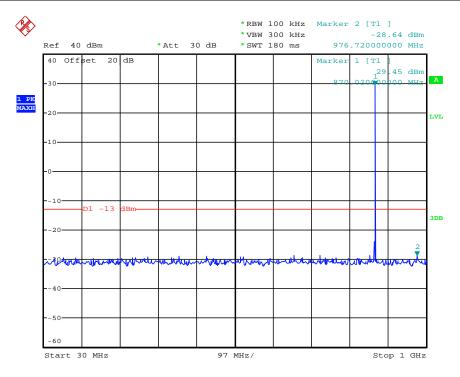
Date: 12.APR.2012 03:58:14



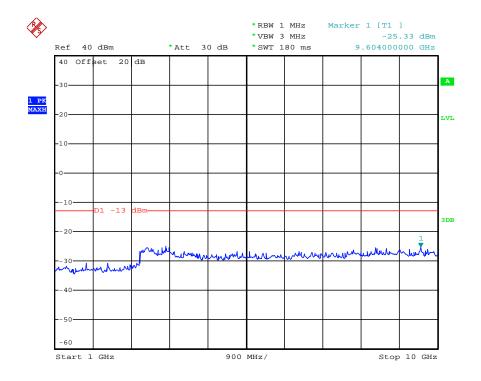
Date: 12.APR.2012 04:01:31

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)		Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	25KHz	High	868.5000	976.72	-28.64	9604.00	-25.33	-13dBm
	Test Results				C	Compliance		



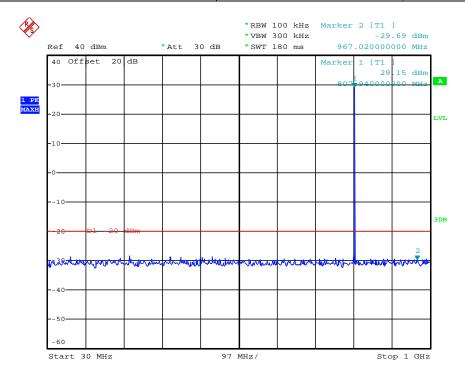
Date: 12.APR.2012 04:00:18



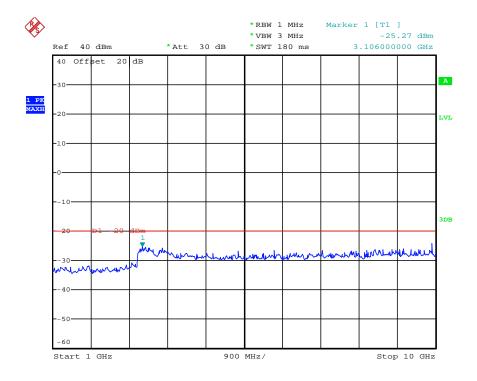
Date: 12.APR.2012 04:00:59

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Modulation Type			st Frequency	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
71 -			(MHz)	Frequency	Datum	Frequency	Datum	
				(MHz)	(dBm)	(MHz)	(dBm)	
FM	12.5KHz	Low	806.5000	967.02	-29.69	3106.00	-25.27	-20dBm
	Test Results				C	Compliance		



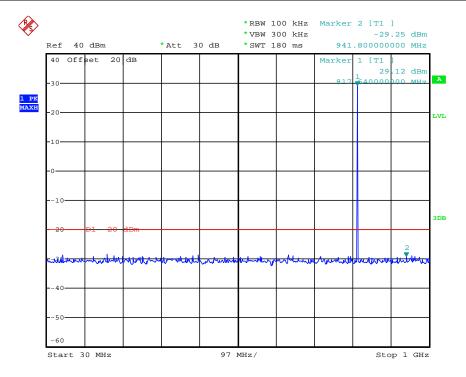
Date: 12.APR.2012 03:41:55



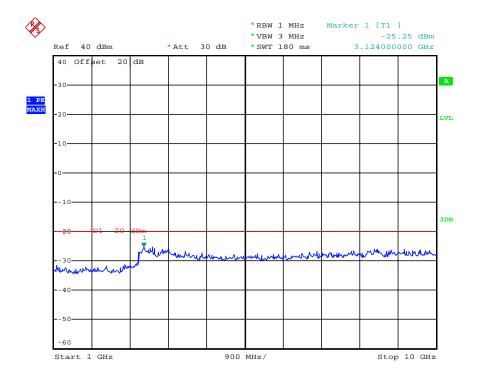
Date: 12.APR.2012 03:32:46

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit		
FM	12.5KHz	Middle	817.0000	941.80	-29.25	3124.00	-25.25	-20dBm		
Test Results				C	Compliance					



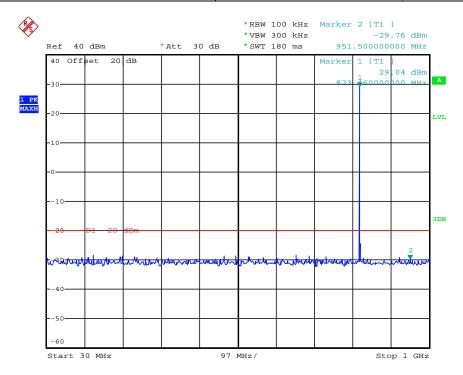
Date: 12.APR.2012 03:42:23



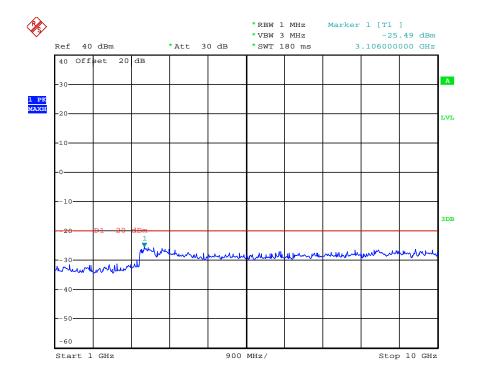
Date: 12.APR.2012 03:39:14

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Modulation Type			Test Frequency	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
71 -			(MHz)	Frequency	Datum	Frequency	Datum	
				(MHz)	(dBm)	(MHz)	(dBm)	
FM	12.5KHz	High	823.5000	951.50	-29.76	3106.00	-25.49	-20dBm
Test Results				C	Compliance			



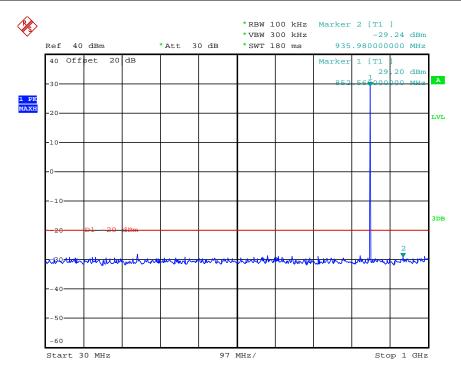
Date: 12.APR.2012 03:43:32



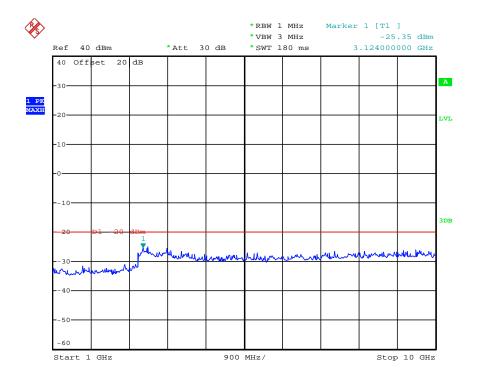
Date: 12.APR.2012 03:30:58

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	12.5KHz	Low	851.5000	935.98	-29.24	3124.00	-25.35	-20dBm
	Test Results				C	Compliance		



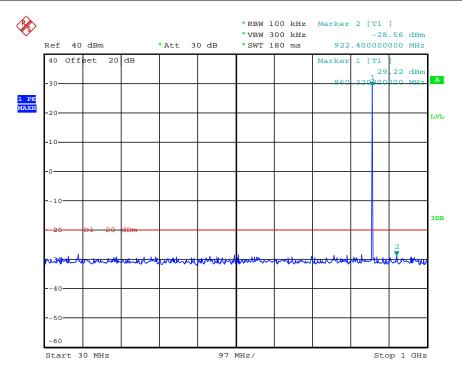
Date: 12.APR.2012 03:44:05



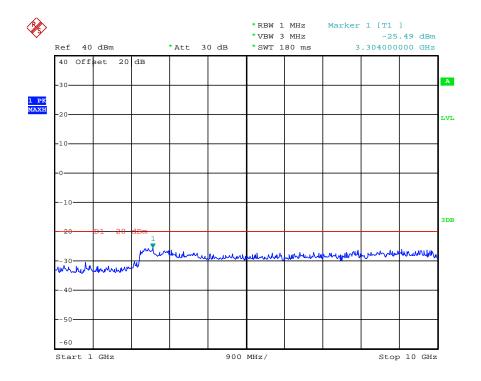
Date: 12.APR.2012 03:30:40

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	12.5KHz	Middle	860.0000	922.40	-28.56	3304.00	-25.49	-20dBm
	Test Results				C	Compliance		



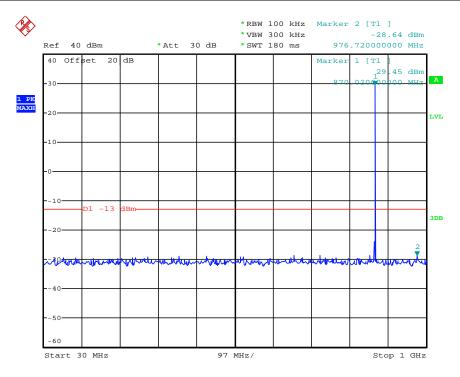
Date: 12.APR.2012 03:45:17



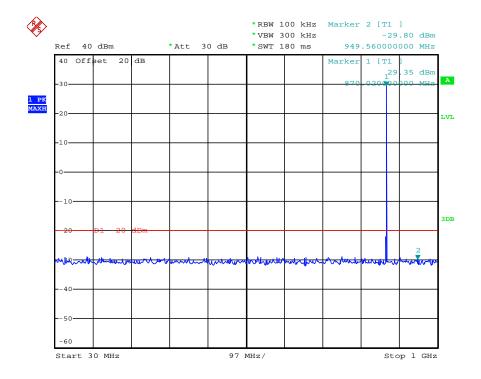
Date: 12.APR.2012 03:29:43

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	12.5KHz	High	868.5000	949.56	-29.80	3160.00	-24.81	-20dBm
Test Results				C	Compliance			



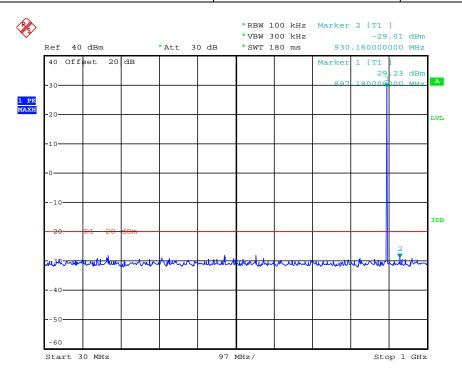
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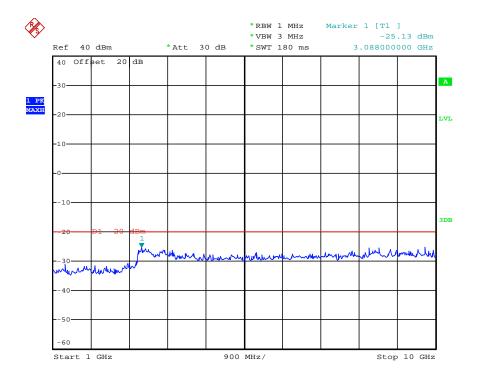
Date: 12.APR.2012 03:45:46

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Modulation Type			Test Frequency	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
1 )   0	Oparation	Channel	(MHz)	Frequency	Datum	Frequency	Datum	Littie
				(MHz)	(dBm)	(MHz)	(dBm)	
FM	12.5KHz	Low	896.5000	930.16	-29.01	3088.00	-25.13	-20dBm
	Test Results				C	Compliance		



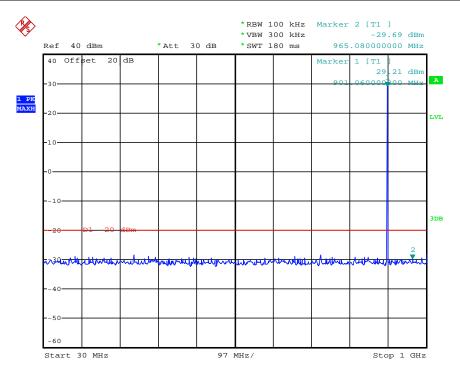
Date: 12.APR.2012 03:47:00



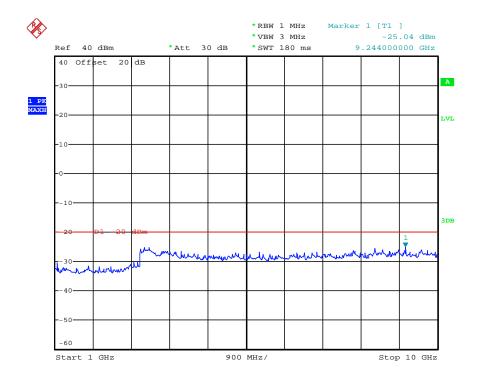
Date: 12.APR.2012 03:28:30

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	12.5KHz	High	900.5000	965.08	-29.69	9244.00	-25.04	-20dBm
Test Results				C	Compliance			



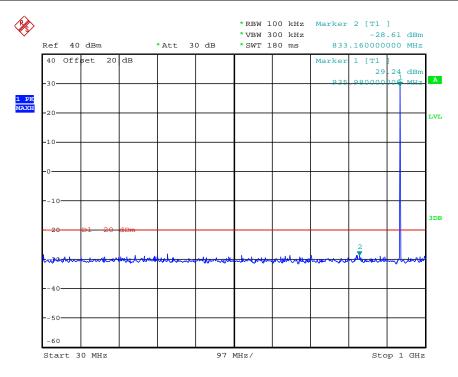
Date: 12.APR.2012 03:47:38



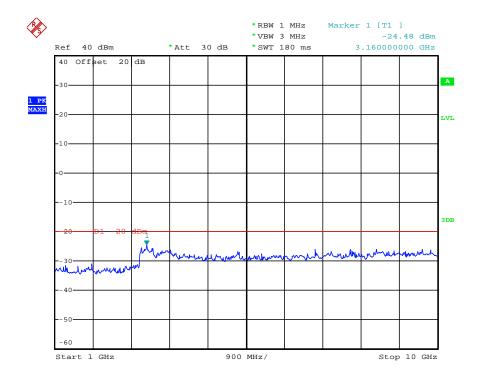
Date: 12.APR.2012 03:28:11

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)		Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
FM	12.5KHz	Low	935.5000	833.16	-28.61	3160.00	-24.48	-20dBm
Test Results				C	Compliance			



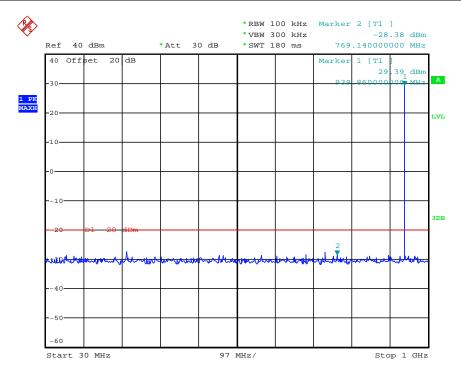
Date: 12.APR.2012 03:49:33



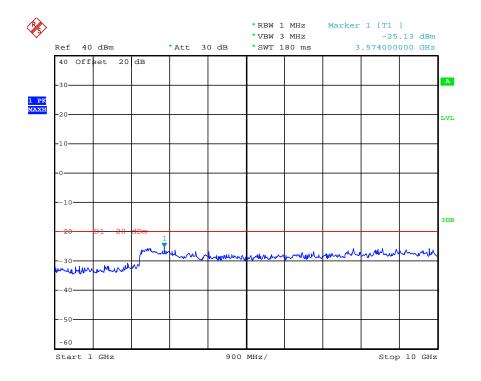
Date: 12.APR.2012 03:27:10

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit			
FM	12.5KHz	High	939.5000	769.14	-28.38	3574.00	-25.13	-20dBm			
	Test Results				C	Compliance		55   20 <b>0</b> 2111			



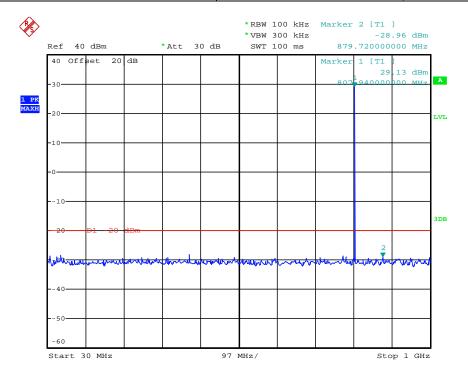
Date: 12.APR.2012 03:50:11



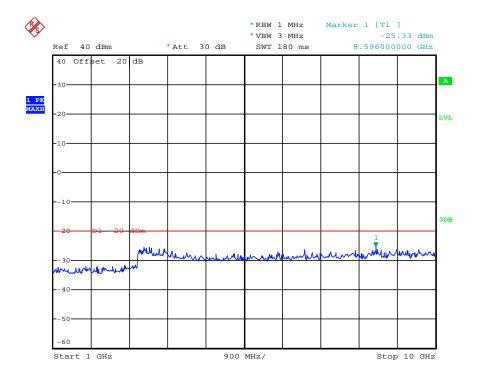
Date: 12.APR.2012 03:26:49

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Modulation Type	Channel Sparation	Test Channel	Test Frequency	Maximum ( Spurious I Below	Emissions 1GHz	Maximum ( Spurious I Above	Emissions 1GHz	FCC Limit
. , , , ,	opana	· · · · · · · · · · · · · · · · · · ·	(MHz)	Frequency	Datum	Frequency	Datum	
				(MHz)	(dBm)	(MHz)	(dBm)	
4FSk	12.5KHz	Low	806.5000	879.72	-28.96	8596.00	-25.33	-20dBm
	Test R	esults			C	Compliance		



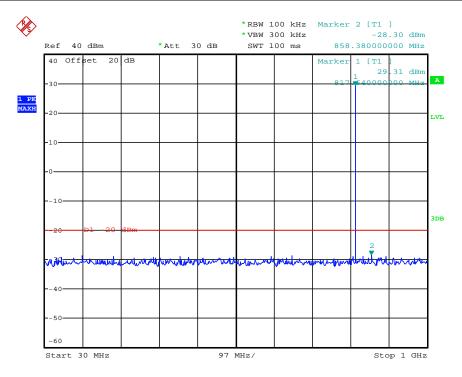
Date: 11.APR.2012 11:13:02



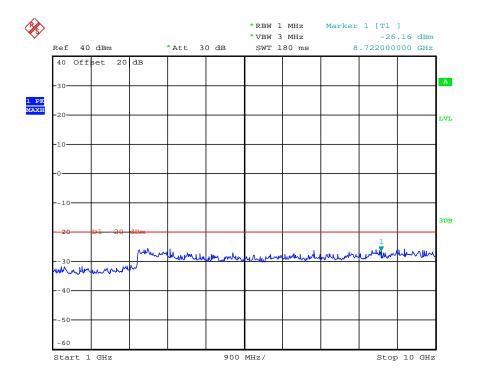
Date: 11.APR.2012 11:14:58

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
4FSK	12.5KHz	Middle	817.0000	858.38	-28.30	8722.00	-26.16	-20dBm
Test Results			Compliance					



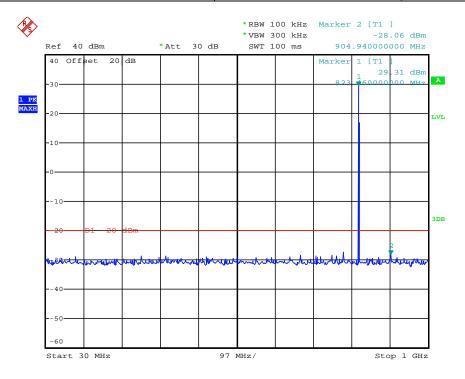
Date: 11.APR.2012 11:12:10



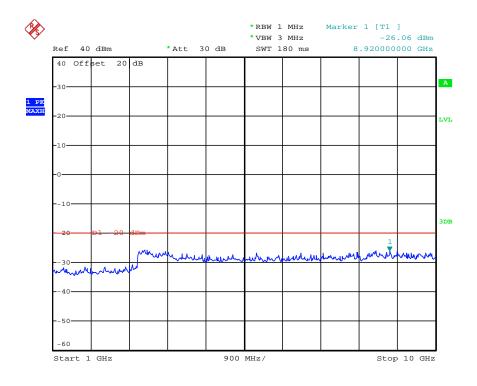
Date: 11.APR.2012 11:15:16

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Modulation Type	Channel Sparation	Test Channel	Test Frequency	Maximum ( Spurious I Below	Emissions 1GHz	Maximum ( Spurious I Above	Emissions 1GHz	FCC Limit
71 -			(MHz)	Frequency	Datum	Frequency	Datum	
				(MHz)	(dBm)	(MHz)	(dBm)	
4FSK	12.5KHz	High	823.5000	904.94	-28.06	8920.00	-26.06	-20dBm
Test Results			Compliance					



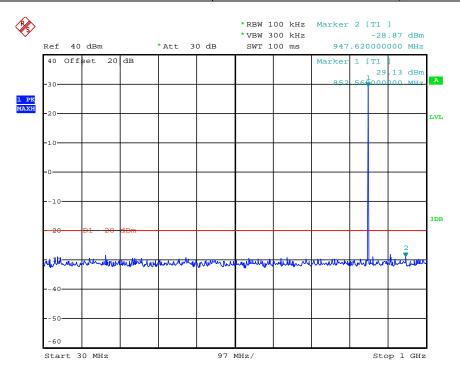
Date: 11.APR.2012 11:11:02



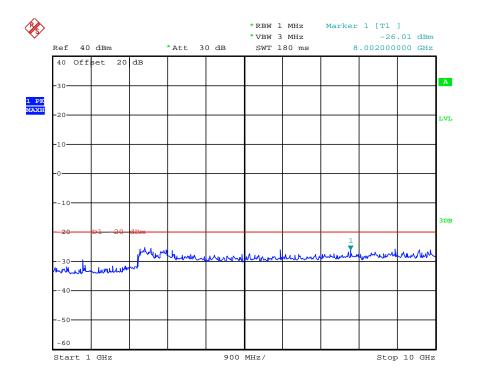
Date: 11.APR.2012 11:15:46

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Modulation Type	Channel Sparation	Test Channel	Test Frequency	Maximum ( Spurious I Below	Emissions 1GHz	Maximum ( Spurious E Above	Emissions 1GHz	FCC Limit
71	'		(MHz)	Frequency	Datum	Frequency	Datum	
				(MHz)	(dBm)	(MHz)	(dBm)	
4FSK	12.5KHz	Low	851.5000	947.62	-28.87	8002.00	-26.01	-20dBm
	Test R	esults			C	Compliance		



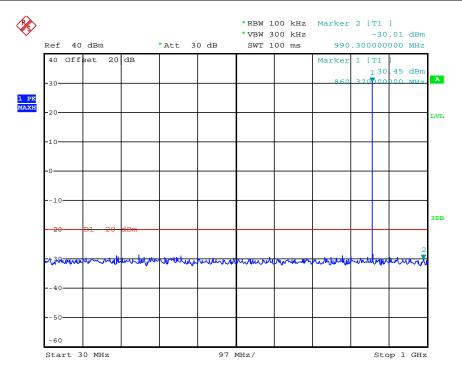
Date: 11.APR.2012 11:09:40



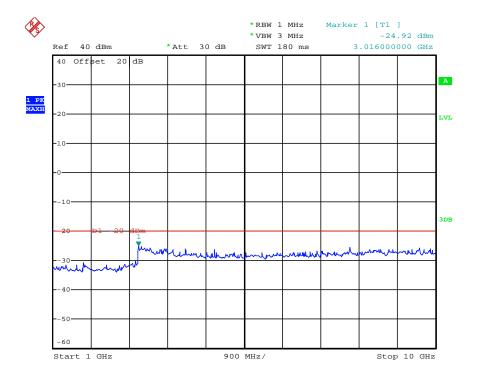
Date: 11.APR.2012 11:16:19

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)		Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
4FSK	12.5KHz	Middle	860.0000	990.30	-30.01	3016.00	-24.92	-20dBm
Test Results			Compliance					



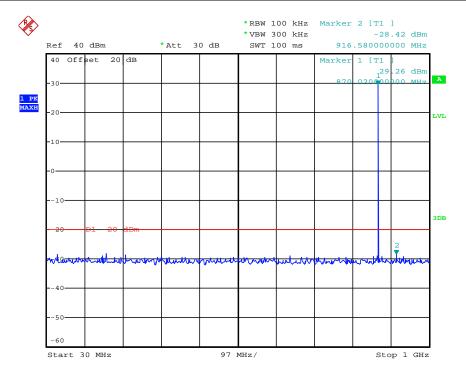
Date: 11.APR.2012 11:08:19



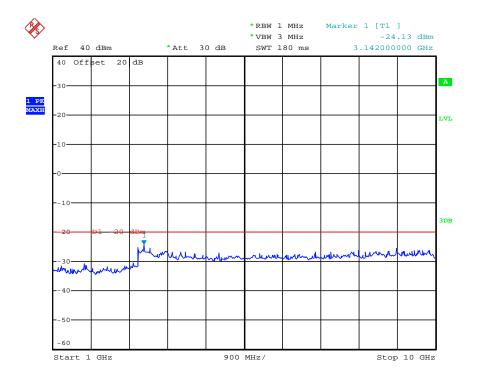
Date: 11.APR.2012 11:16:59

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency (MHz)	Emissions	Maximum ( Spurious E Above Frequency (MHz)	Emissions	FCC Limit
4FSK	12.5KHz	High	868.5000	916.58	-28.42	3142.00	-24.13	-20dBm
Test Results			Compliance					



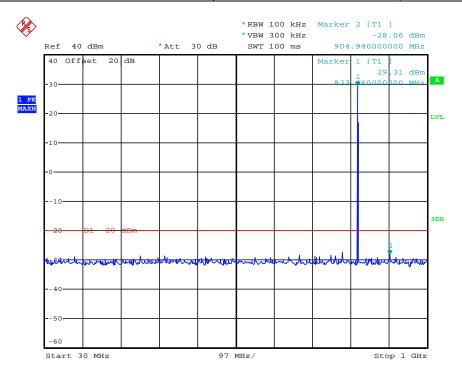
Date: 11.APR.2012 11:06:43



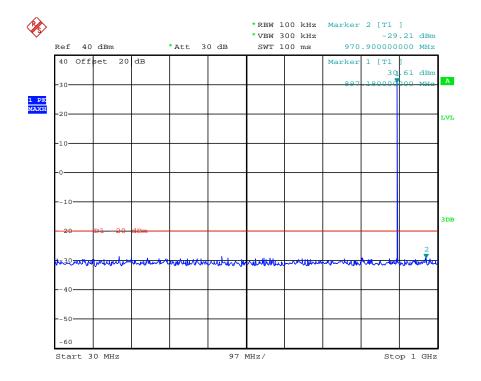
Date: 11.APR.2012 11:17:39

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Modulation Type	Channel Sparation	Test Channel	Test Frequency	Maximum ( Spurious I Below	Emissions 1GHz	Maximum ( Spurious E Above	Emissions 1GHz	FCC Limit
. )   0	Oparation	O Harmon	(MHz)	Frequency	Datum	Frequency	Datum	
				(MHz)	(dBm)	(MHz)	(dBm)	
4FSK	12.5KHz	Low	896.5000	970.90	-29.21	3142.00	-25.47	-20dBm
Test Results			Compliance					



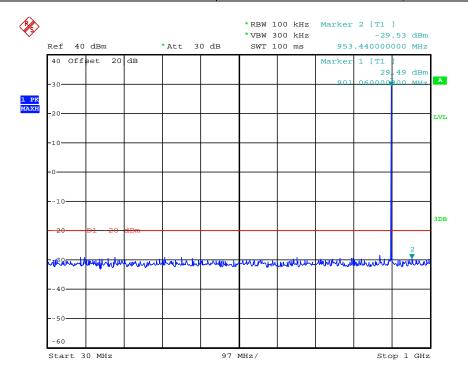
Date: 11.APR.2012 11:11:02



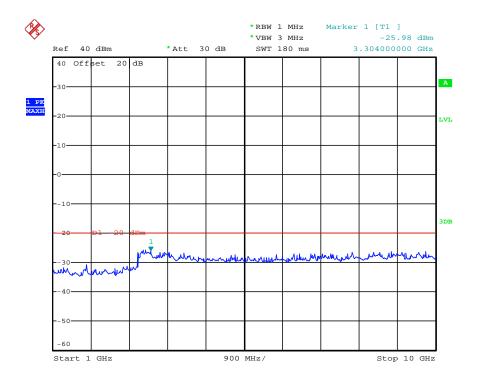
Date: 11.APR.2012 11:04:48

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Modulation Type	Channel Sparation	Test Channel	Test Frequency	Maximum ( Spurious I Below	Emissions 1GHz	Maximum ( Spurious I Above	Emissions 1GHz	FCC Limit
. , , , ,	opana	•	(MHz)	Frequency	Datum	Frequency	Datum	
				(MHz)	(dBm)	(MHz)	(dBm)	
4FSK	12.5KHz	High	900.5000	953.44	-29.53	3304.00	-25.98	-20dBm
Test Results			Compliance					



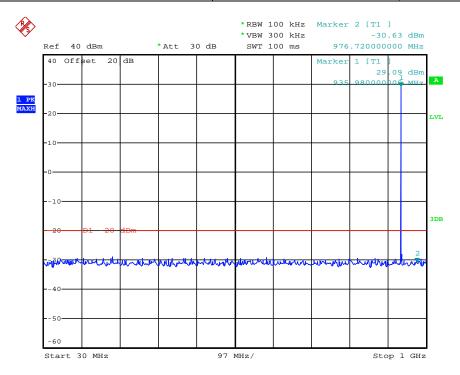
Date: 11.APR.2012 11:04:17



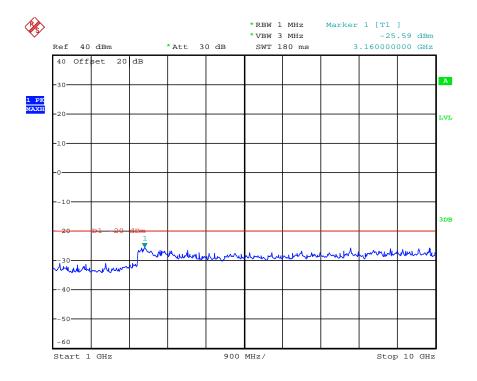
Date: 11.APR.2012 11:18:55

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Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum ( Spurious I Below Frequency	Emissions	Maximum ( Spurious E Above Frequency	Emissions	FCC Limit
			,	(MHz)	(dBm)	(MHz)	(dBm)	
4FSK	12.5KHz	Low	935.5000	976.20	-30.63	3160.00	-25.59	-20dBm
Test Results			Compliance					



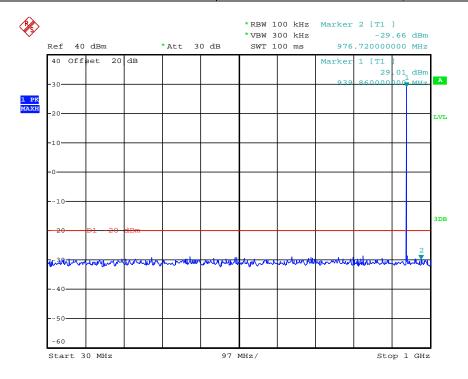
Date: 11.APR.2012 11:02:56



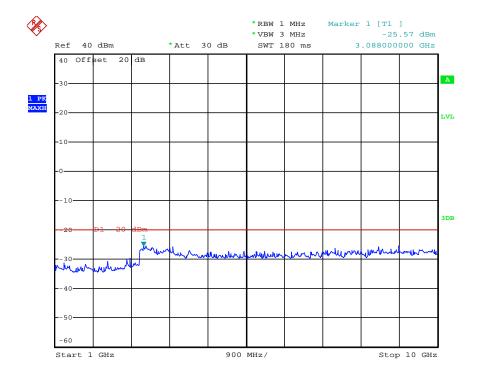
Date: 11.APR.2012 11:19:45

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Modulation Type	Channel Sparation	Test Channel	Test Frequency	Maximum ( Spurious I Below	Emissions 1GHz	Maximum ( Spurious I Above	Emissions 1GHz	FCC Limit
1 ) PO	Oparation	Onamo	(MHz)	Frequency	Datum	Frequency	Datum	Littie
				(MHz)	(dBm)	(MHz)	(dBm)	
4FSK	12.5KHz	High	939.5000	976.72	-29.66	3088.00	-25.57	-20dBm
	Test R	esults			C	Compliance		



Date: 11.APR.2012 11:02:20



Date: 11.APR.2012 11:20:21

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# 4.5. Modulation Charcateristics

# **TEST APPLICABLE**

According to CFR47 section 2.1047(a), for Voice Modulation Communication Equipment, the frequency response of the audio modulation circuit over a range of 100 to 5000Hz shall be measured.

# **TEST PROCEDURE**

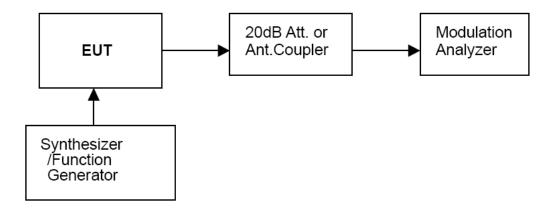
#### **Modulation Limit**

- 1 Configure the EUT as shown in figure 1, adjust the audio input for 60% of rated system deviation at 1 KHz using this level as a reference (0dB) and vary the input level from –20 to +20dB. Record the frequency deviation obtained as a function of the input level.
- 2 Repeat step 1 with input frequency changing to 300, 1004, 1500 and 2500Hz in sequence.

# **Audio Frequency Response**

- 1 Configure the EUT as shown in figure 1.
- 2 Adjust the audio input for 20% of rated system deviation at 1 KHz using this level as a reference (0dB).
- 3 Vary the Audio frequency from 100 Hz to 3 KHz and record the frequency deviation.
- 4 Audio Frequency Response =20log10 (Deviation of test frequency/Deviation of 1 KHz reference).

#### **TEST CONFIGURATION**

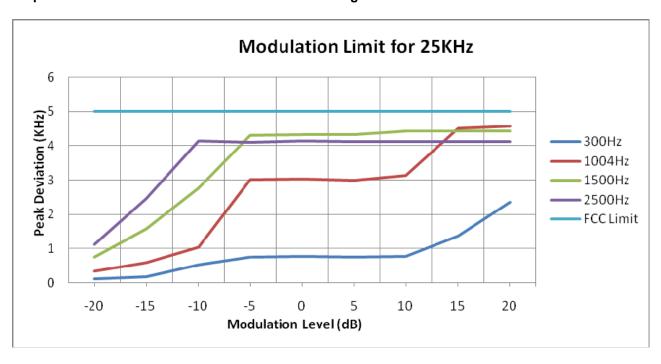


## **TEST RESULTS**

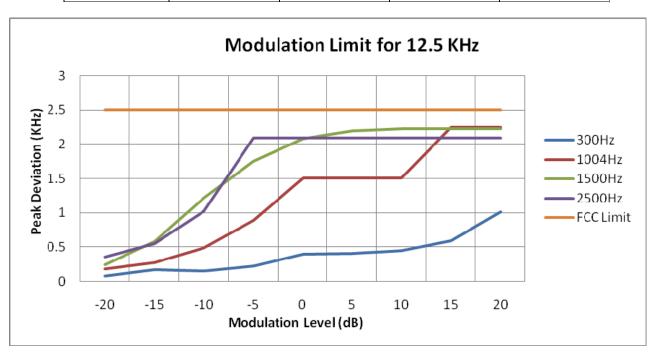
**Modulation Type: FM** 

25 KHz Channel Separation	25	KHz	Channel	Separation
---------------------------	----	-----	---------	------------

Modulation Level(dB)	Peak Freq. Deviation At 300 Hz(KHz)	Peak Freq. Deviation At 1004 Hz(KHz)	Peak Freq. Deviation At 1500 Hz(KHz)	Peak Freq. Deviation At 2500 Hz(KHz)
-20	0.11	0.34	0.75	1.12
-15	0.18	0.58	1.57	2.46
-10	0.53	1.04	2.77	4.15
-5	0.76	3.00	4.32	4.11
0	0.77	3.04	4.33	4.14
+5	0.76	2.99	4.34	4.12
+10	0.78	3.13	4.44	4.13
+15	1.36	4.50	4.44	4.13
+20	2.36	4.57	4.44	4.12



12.5 KHz Channel Separation							
Modulation Level(dB)	Peak Freq. Deviation At 300 Hz(KHz)	Peak Freq. Deviation At 1004 H(KHz)	Peak Freq. Deviation At 1500 Hz(KHz)	Peak Freq. Deviation At 2500 Hz(KHz)			
-20	0.08	0.18	0.24	0.35			
-15	0.17	0.27	0.58	0.55			
-10	0.15	0.49	1.22	1.02			
-5	0.22	0.89	1.76	2.09			
0	0.40	1.51	2.09	2.09			
+5	0.41	1.51	2.20	2.09			
+10	0.45	1.51	2.23	2.09			
+15	0.59	2.25	2.23	2.09			
+20	1.01	2.25	2.23	2.09			



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# Modulation type: 4FSK

Channel bandwidth: 12.5 kHz

It is not applicable for devices which operate with the digitized voice/data modulation type.

## b). Audio Frequency Response:

Rule Part No.: Part 2.1407(a) (b)

#### **Method of Measurement:**

The audio frequency response was measured in accordance with TIA/EIA Specification 603 with no exception. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 300-3000Hz shall be submitted and Audio Post Limiter Low Pass Filter Response from 3.0 KHz to 50KHz.However, the audio frequency response should test from 100Hz to 5.0 KHz according to FCC Part 90.

# **Modulation Type: FM**

The audio frequency response curve is show below.and

Test Audio Level (1 KHz and 20% maximum deviation) for 25 KHz channel separation is 2.25mv and 2.25mv for 12.5 KHz channel separation.

#### Note:

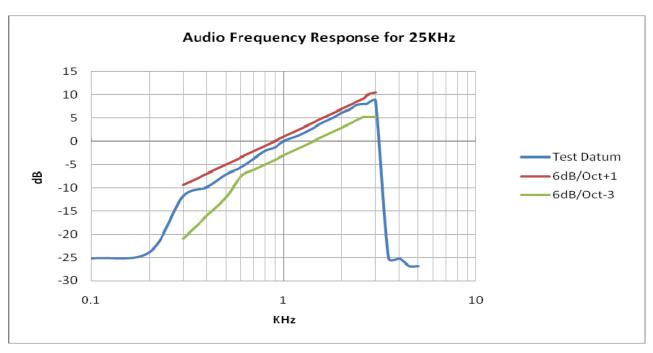
- 1 Not applicable to new standard. However, tests are conducted under FCC's recommendation.
- 2 The Audio Frequency Response is identical for 12.5 KHz and 25 KHz channel separation

#### For 25 KHz

Frequency	Frequency Deviation	1KHz Reference Deviation	Audio Frequency Response
(KHz)	(KHz)	(KHz)	(dB)
0.1	0.06	1.09	-25.18
0.2	0.07	1.09	-23.84
0.3	0.28	1.09	-11.80
0.4	0.35	1.09	-9.86
0.5	0.48	1.09	-7.12
0.6	0.57	1.09	-5.63
0.7	0.71	1.09	-3.72
0.8	0.86	1.09	-2.05
0.9	0.94	1.09	-1.28
1.0	1.09	1.09	0.00
1.2	1.26	1.09	1.26
1.4	1.49	1.09	2.72
1.6	1.73	1.09	4.01
1.8	1.94	1.09	5.01
2.0	2.21	1.09	6.14
2.2	2.40	1.09	6.86
2.4	2.67	1.09	7.79
2.6	2.74	1.09	8.01
2.7	2.74	1.09	8.01
2.8	2.88	1.09	8.44
3.0	3.00	1.09	8.80
3.5	0.06	1.09	-25.18
4.0	0.06	1.09	-25.18
4.5	0.05	1.09	-26.76
5.0	0.05	1.09	-26.76

FCC ID: YAMPD70XGU5

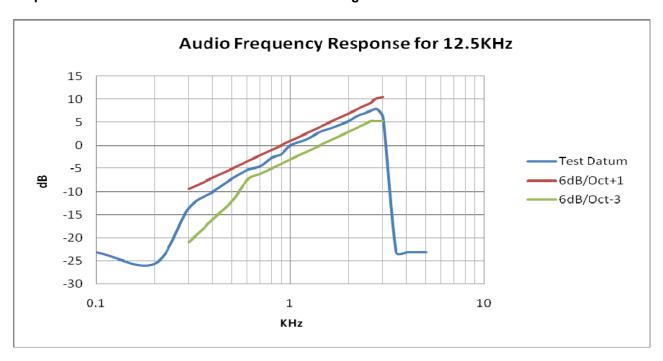
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For 12.5 KHz

Frequency	Frequency Deviation	1KHz Refenerce Deviation	Audio Frequency Response
(KHz)	(KHz)	(KHz)	(dB)
0.1	0.04	0.57	-23.07
0.2	0.03	0.57	-25.57
0.3	0.12	0.57	-13.53
0.4	0.18	0.57	-10.01
0.5	0.25	0.57	-7.15
0.6	0.31	0.57	-5.29
0.7	0.34	0.57	-4.48
0.8	0.42	0.57	-2.65
0.9	0.46	0.57	-1.86
1.0	0.57	0.57	0.00
1.2	0.66	0.57	1.28
1.4	0.79	0.57	2.84
1.6	0.87	0.57	3.68
1.8	0.96	0.57	4.53
2.0	1.05	0.57	5.31
2.2	1.19	0.57	6.40
2.4	1.27	0.57	6.96
2.6	1.36	0.57	7.56
2.7	1.40	0.57	7.81
2.8	1.41	0.57	7.87
3.0	1.15	0.57	6.10
3.5	0.04	0.57	-23.07
4.0	0.04	0.57	-23.07
4.5	0.04	0.57	-23.07
5.0	0.04	0.57	-23.07

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# **Modulation type: 4FSK**

Channel bandwidth: 12.5 kHz

It is not applicable for devices which operate with the digitized voice/data modulation type.

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# 4.6. Frequency Stability Test

#### **TEST APPLICABLE**

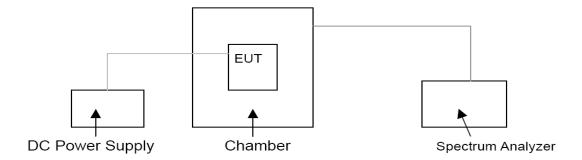
1 According to FCC Part 2 Section 2.1055 (a)(1), the frequency stability shall be measured with variation of ambient temperature from -30℃ to +60℃ centigrade.

- According to FCC Part 2 Section 2.1055 (a) (2), for battery powered equipment, the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point, which is specified by the manufacture.
- 3 Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and voltage end point was 6.67V.
- 4 According to §90.213, the frequency stability limit is 2.5 ppm for 806-809MHz/851-854MHz/896-901MHz/935-940MHz and 1.5ppm for 809-824MHz/854-869MHz.

## **TEST PROCEDURE**

The EUT was set in the climate chamber and connected to an external DC power supply. The RF output was directly connected to Spectrum Analyzer ESI 26. The coupling loss of the additional cables was recorded and taken in account for all the measurements. After temperature stabilization (approx. 20 min for each stage), the frequency for the lower, the middle and the highest frequency range was recorded. For Frequency stability Vs. Voltage the EUT was connected to a DC power supply and the voltage was adjusted in the required ranges. The result was recorded.

## **TEST CONFIGURATION**



## **TEST LIMITS**

According to 90.213, Transmitters used must have minimum frequency stability as specified in the following table.

		Mobile s	stations
Frequency range (MHz)	Fixed and base stations	Over 2 watts output power	2 watts or less output power
Below 25 25–50 72–76 150–174 216–220 220–222 12 421–512 806–809 809–824 851–854 854–869 896–901 902–928 902–928 13 929–930	1.2.3 100 20 5 5.115 1.0 0.1 7.11.14 2.5 14 1.0 14 1.5 1.0 1.5 14 0.1 2.5 2.5 1.5	100 20 *5 1.5 *5 1.5 2.5 1.5 2.5 2.5 2.5	200 50 50 50 4.8 50 1.5 8 5 1.5 2.5 1.5 2.5 2.5 2.5
935–940 1427–1435	0.1 9.300	1.5 300	1.5 300
Above 2450 10			

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# **TEST RESULTS**

Modulation	Channel	Test conditio	ns	Fre	quency error (pp	om)
Туре	Separation	Voltage(V)	Temp(°C)	806.5MHz	817.0MHz	823.5MHz
			-30	1.02	1.00	0.98
			-20	1.00	1.00	0.94
			-10	0.94	0.95	0.88
			0	0.85	0.79	0.71
		7.40	10	0.76	0.64	0.66
Analog/EM	25KHz		20	0.67	0.62	0.60
Analog/FM	ZONHZ			0.60		
			40	0.71	.5MHz 817.0MHz .02 1.00 .00 1.00 .94 0.95 .85 0.79 .76 0.64 .67 0.62 .71 0.76 .83 0.80 .67 0.62 .67 0.62 .67 0.62 .67 0.62	0.69
			50	0.83	0.80	0.72
		6.67 (End point)	20	0.67	0.62	0.60
		6.29 (85% Rated)	20	0.67	0.77	0.60
		8.51 (115% Rated)	20	0.67	0.62	0.60
	Limit			1.50	2.50	2.50
	Conclusio	n	Complies			

Modulation	Channel	Test conditio	ns	Frequency error (ppm)		
Type	Separation	Voltage(V)	Temp(°C)	851.5MHz	860.0MHz	868.5MHz
			-30	0.94	0.92	0.91
			-20	0.90	0.88	0.88
			-10	0.88	0.84	0.80
			0	0.74	0.77	0.76
		7.40	10	0.61	0.59	0.64
Analog/FM	25KHz		20	0.57	0.53	0.51
Analog/Fivi	25KHZ		30	0.57	0.59	0.51
			40	0.66	0.61	0.56
			50	0.70	0.68	0.66
		6.67 (End point)	20	0.57	0.53	0.51
		6.29 (85% Rated)	20	0.57	0.59	0.56
		8.51 (115% Rated)	20	0.61	0.53	0.56
	Limit			1.50	2.50	2.50
_	Conclusio	n	Complies			

Modulation	Modulation Channel Test conditions		Frequency error (ppm)			
Type	Separation	Voltage(V)	Temp(°C)	806.5MHz	817.0MHz	823.5MHz
			-30	1.02	1.01	0.99
			-20	1.02	1.00	0.91
			-10	0.96	0.91	0.88
			0	0.85	0.81	0.73
		7.40	10	0.79	0.64	0.76
Analog/FM	12.5KHz		20	0.67	0.64	0.64
Analog/Fivi	12.3KHZ		30	0.67	0.64	0.64
			40	0.73	0.76	0.69
			50	0.83	0.82	0.77
		6.67 (End point)	20	0.67	0.62	0.64
		6.29 (85% Rated)	20	0.67	0.64	0.64
		8.51 (115% Rated)	20	0.67	0.64	0.64
Limit			1.50	2.50	2.50	
	Conclusio	n		Cor	nplies	

Modulation	Channel	Test conditio	ns	Fre	quency error (pr	om)
Туре	Separation	Voltage(V)	Temp(°C)	851.5MHz	860.0MHz	868.5MHz
			-30	0.96	0.92	0.91
			-20	0.92	0.90	0.90
			-10	0.90	0.87	0.84
			0	0.79	0.74	0.70
		7.40	10	0.66	0.64	0.64
Analog/FM	10 51/⊔-	Hz	20	0.57	0.59	0.55
Allalog/Fivi	12.5KHz		30	0.57	0.59	0.55
			40	0.66	0.96         0.92           0.92         0.90           0.90         0.87           0.79         0.74           0.66         0.64           0.57         0.59           0.57         0.59	0.61
			50	0.77	0.68	0.66
		6.67 (End point)	20	0.66	0.64	0.55
		6.29 (85% Rated)	20	0.57	0.64	0.61
		8.51 (115% Rated)	20	0.57	0.59	0.61
	Limit			1.50	2.50	2.50
	Conclusio	n	Complies			

Modulation	Channel	Test conditi	ons	Frequency	error (ppm)
Type	Separation	Voltage(V)	Temp(°C)	896.5MHz	900.5MHz
			-30	0.84	0.84
			-20	0.80	0.84
			-10	0.69	0.77
			0	0.57	0.64
		7.40	10	0.49	0.50
Analog/FM	12.5KHz		20	0.44	0.41
Analog/Fivi			30	0.44	0.41
			20     0.44     0.       30     0.44     0.       40     0.56     0.       50     0.61     0.	0.59	
			50	0.61	0.66
		6.67 (End point)	20	0.44	0.41
		6.29 (85% Rated)	20	0.44	0.41
		8.51 (115% Rated) 20		0.44	0.41
Limit				1.50	1.50
	Conclusion			Complies	

Modulation	Channel	Test condition	ons	Frequency	error (ppm)
Type	Separation	Voltage(V)	Temp(°C)	935.5MHz	939.5MHz
			-30	0.81	0.79
			-20	0.74	0.79
			-10	0.61	0.64
			7.40 0 0.55 10 0.49 20 0.40	0.55	
		7.40	10	0.49	0.46
Analog/FM	12.5KHz		20	0.40	0.37
Analog/Fivi	12.5KHZ		30	935.5MHz 93 0.81 0.74 0.61 0.55 0.49	0.37
			40		0.49
			50	0.61	0.61
		6.67 (End point)	20	0.40	0.46
		6.29 (85% Rated)	20	0.40	0.37
		8.51 (115% Rated)	20	0.56	0.37
	Limit			1.50	1.50
	Conclusion			Complies	

Modulation	Channel	Test conditio	ns	Fre	quency error (pp	om)
Туре	Separation	Voltage(V)	Temp(°C)	806.5MHz	817.0MHz	823.5MHz
			-30	1.00	1.01	1.00
			-20	0.97	0.95	0.92
			-10	0.96	0.88	0.84
			0	0.86	0.81	0.76
		7.40	10	0.78	0.73	0.76
Digital/4FSK	12.5KHz	Hz	20	0.69	0.64	0.62
Digital/4FSK	12.3802		30	0.67	0.64	0.62
			40	0.77	0.74	0.69
			50	0.83	0.82	0.77
		6.67 (End point)	20	0.69	0.64	0.62
		6.29 (85% Rated)	20	0.69	0.64	0.64
		8.51 (115% Rated)	20	0.67	0.64	0.64
Limit			1.50	2.50	2.50	
	Conclusio	n	Complies			

Modulation	Channel	Test conditio	ns	Fre	quency error (pp	om)
Туре	Separation	Voltage(V)	Temp(°C)	851.5MHz	860.0MHz	868.5MHz
			-30	0.96	0.95	0.91
			-20	0.93	0.91	0.88
			-10	0.88	0.85	0.81
			0	0.80	0.74	0.74
		7.40	10	0.71	0.66	0.61
Digital/4FSK	12.5KHz		20	0.54	0.59	0.53
Digital/4F3K	1/4FSK 12.5KHZ		30	0.54	0.59	0.55
			40	0.66	0.63	0.61
			50	0.73	0.71	0.72
		6.67 (End point)	20	0.54	0.59	0.53
		6.29 (85% Rated)	20	0.61	0.59	0.66
		8.51 (115% Rated)	20	0.64	0.64	0.66
Limit			1.50	2.50	2.50	
	Conclusio	n	Complies			

Modulation	Channel	Test conditi	ons	Frequency	error (ppm)	
Type	Separation	Voltage(V)	Temp(°C)	896.5MHz	900.5MHz	
			-30			
			-20	0.80	0.80	
			-10	0.71	0.77	
			0	0.62	0.62	
		7.40 10 0.53 20 0.44	0.50			
Digital/4ESK	12.5KHz		20	0.44	0.41	
Digital/4FSK	12.3NHZ		30	0.44	0.41	
			40	0.56	0.82 0.80 0.77 0.62 0.50 0.41 0.41 0.59 0.66 0.41 0.41 0.41 1.50	
			50	0.65	0.66	
		6.67 (End point)	20	0.49	0.41	
		6.29 (85% Rated)	20	0.44	0.41	
		8.51 (115% Rated)	20	0.49	0.41	
	Lir	nit		1.50	1.50	
	Conclusion		Complies			

Modulation	Channel	Test condition	ons	Frequency	error (ppm)	
Туре	Separation	Voltage(V)	Temp(°C)	935.5MHz	939.5MHz	
	12.5KHz		-30	0.82	0.80	
			-20	0.77	0.79	
			-10	0.66	0.64	
			0	0.58	0.55	
		7.40	10	0.51	0.49	
Digital/4FSK			20	0.40 0.3	0.37	
Digital/4F3N			30	0.40	0.37	
			40	0.46 0.49	0.49	
			50	0.62	0.61	
		6.67 (End point)	20	0.40	0.46	
		6.29 (85% Rated)	20	0.40	0.37	
		8.51 (115% Rated)	20	0.40	0.37	
	Lir	mit		1.50	1.50	
	Conclusion		Complies			

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# 4.7. Maximum Transmitter Power

## **TEST APPLICABLE**

Per FCC «2.1046 and «90.205: Maximum ERP is dependent upon the station's antenna HAAT and required service area.

## **TEST PROCEDURE**

Measurements shall be made to establish the radio frequency power delivered by the transmitter the standard output termination. The power output shall be monitored and recorded and no adjustment shall be made to the transmitter after the test has begun, except as noted bellow:

If the power output is adjustable, measurements shall be made for the highest and lowest power levels. The EUT connect to the Receiver through 20 dB attenuator.

Measurement with Spectrum Analyzer FSP40 or Aglient E4407B conducted, external power supply with 7.40 V stabilized supply voltage.

#### **TEST CONFIGURATION**

FUT	Attenuator	Spectrum
LOT	Atteridator	Analyzer/Receiver

The EUT was directly connected to a RF Communication Test set by a 20 dB attenuator

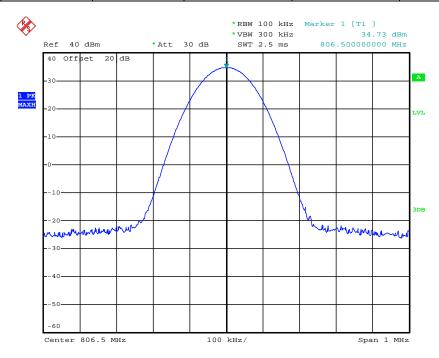
# **TEST RESULTS**

Frequency Range	Modulation Type	Channel Separation	Test Channel	. (dE	Power Test Results Bm)	
(MHz)	туре	(KHz)	Charine	Rated High Power	Rated Low Power	
			Low	34.73	29.31	
		25	Middle	34.76	29.20	
	Analog/EM		High	34.73	29.20	
	Analog/FM		Low	34.73	29.23	
806-825		12.5	Middle	34.67	29.16	
			High	34.76	29.18	
			Low		29.57	
	Digital/4FSK	12.5	Middle	34.71	29.52	
			High	34.74	29.56	
			Low	34.72	29.29	
		25	Middle	34.70	29.38	
	Analog/EM		High	34.74	29.47	
	Analog/FM		Low	34.73	29.29	
851-870		12.5	Middle	34.75	29.35	
			High	34.60	29.41	
			Low	34.63	29.67	
	Digital/4FSK	12.5	Middle	34.74	29.62	
			High	34.73	29.59	
	Analog/FM		Low	34.26	29.36	
896-902	Arialog/Fivi	12.5	High	34.16	29.37	
090-902	Digital/4FSK	12.5	Low	34.70	29.52	
	Digital/4F3K		High	34.61	29.41	
	Analog/FM		Low	34.44	29.37	
935-941	Alialog/I W	12.5	High	34.77	29.19	
300-341	Digital/4FSK	12.0	Low	34.72	29.02	
	J		High	34.64	29.25	
Limit	The limit is dependent upon the station's antenna HAAT and required service area.					
Test Results	Compliance					

## Plots of Maximum Transmitter Power Measurement

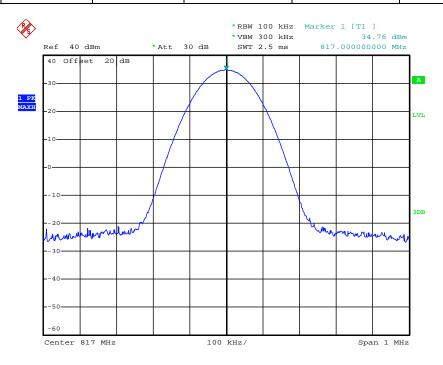
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Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	25 KHz	806.5000	2.5	34.73	Varies	Complicance



Date: 11.APR.2012 10:26:54

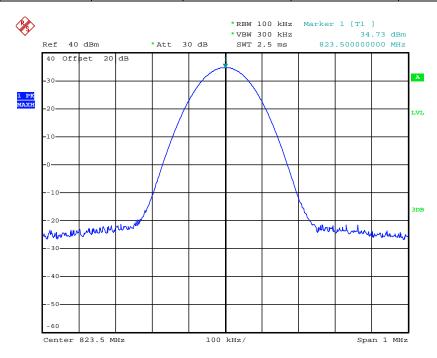
Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	25 KHz	817.0000	2.5	34.76	Varies	Complicance



Date: 11.APR.2012 10:28:03

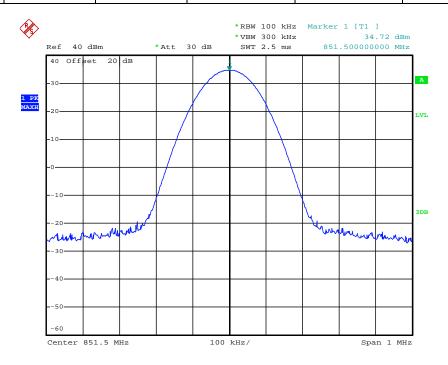
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Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results	
FM	25 KHz	823.5000	2.5	34.73	Varies	Complicance	



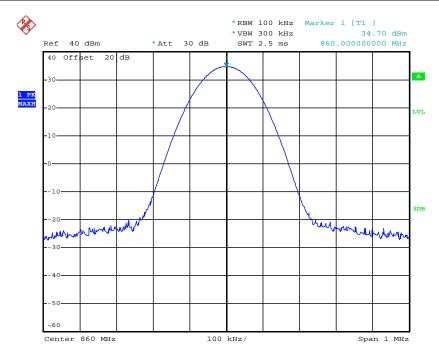
Date: 11.APR.2012 10:28:48

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	25 KHz	851.5000	2.5	34.72	Varies	Complicance



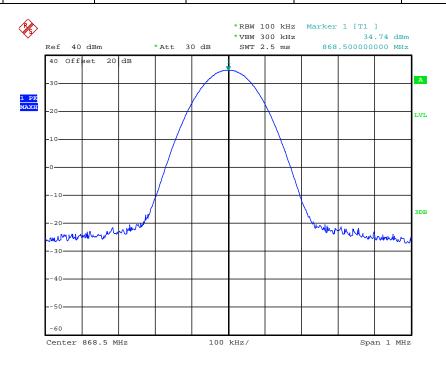
Date: 11.APR.2012 10:29:29

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	25 KHz	860.0000	2.5	34.70	Varies	Complicance



Date: 11.APR.2012 10:30:26

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	25 KHz	868.5000	2.5	34.74	Varies	Complicance

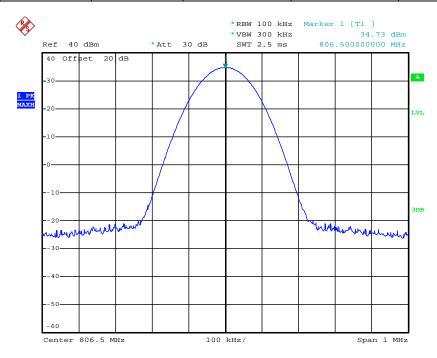


Date: 11.APR.2012 10:31:09

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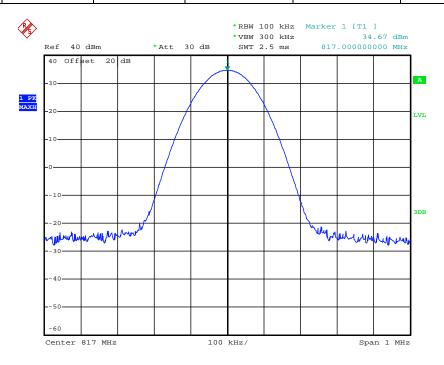
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Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	806.5000	2.5	34.73	Varies	Complicance



Date: 11.APR.2012 10:32:15

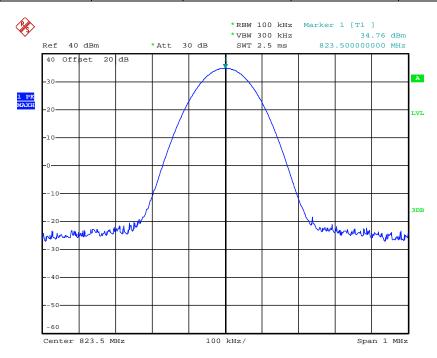
Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	817.0000	2.5	34.67	Varies	Complicance



Date: 11.APR.2012 10:32:54

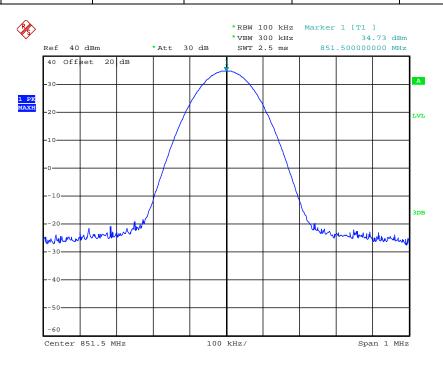
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Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results	
FM	12.5 KHz	823.5000	2.5	34.76	Varies	Complicance	



Date: 11.APR.2012 10:33:31

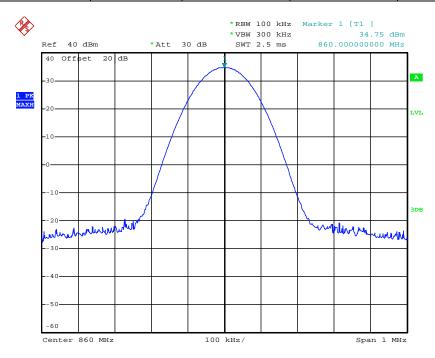
Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	851.5000	2.5	34.73	Varies	Complicance



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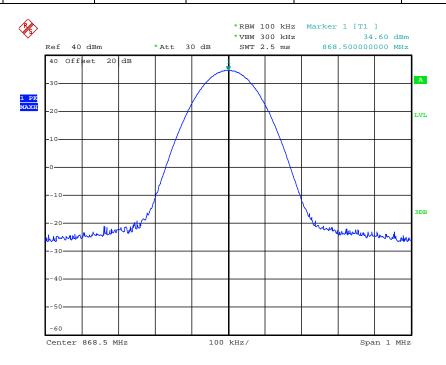
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Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	860.0000	2.5	34.75	Varies	Complicance



Date: 11.APR.2012 10:37:07

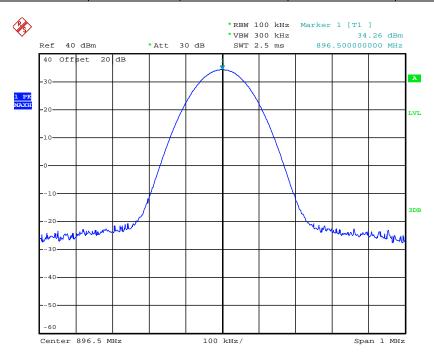
Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	868.5000	2.5	34.60	Varies	Complicance



Date: 11.APR.2012 10:37:47

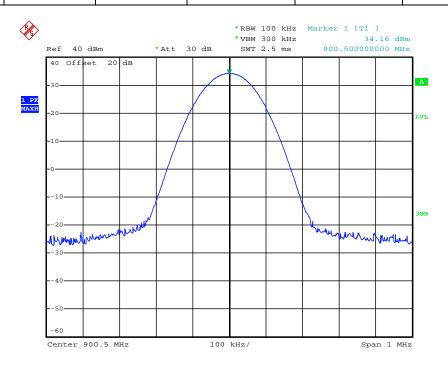
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Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	896.5000	2.5	34.26	Varies	Complicance



Date: 11.APR.2012 10:38:48

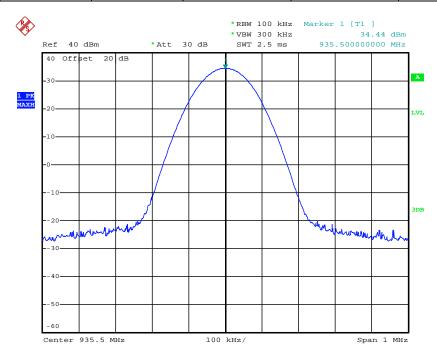
Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	900.5000	2.5	34.16	Varies	Complicance



Date: 11.APR.2012 10:39:43

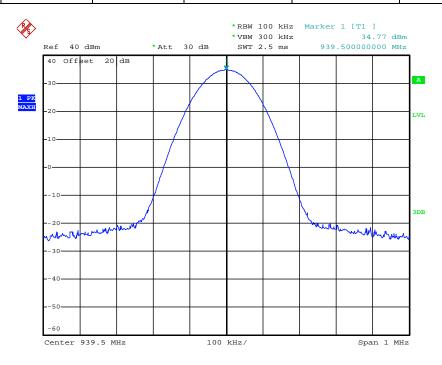
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Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	935.5000	2.5	34.44	Varies	Complicance



Date: 11.APR.2012 10:40:58

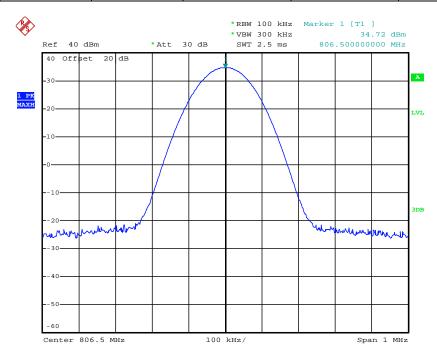
Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	939.5000	2.5	34.77	Varies	Complicance



Date: 11.APR.2012 10:59:12

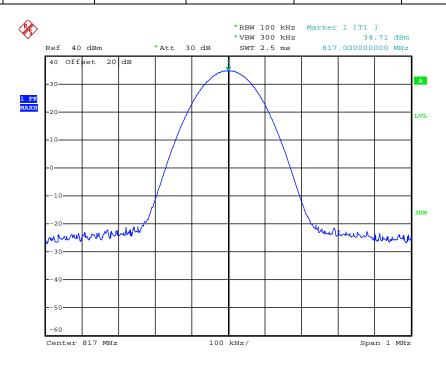
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Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	806.5000	2.5	34.72	Varies	Complicance



Date: 11.APR.2012 10:44:49

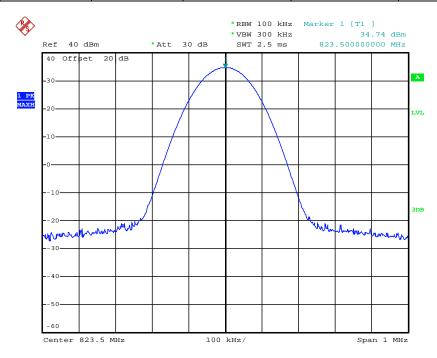
Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	817.0000	2.5	34.71	Varies	Complicance



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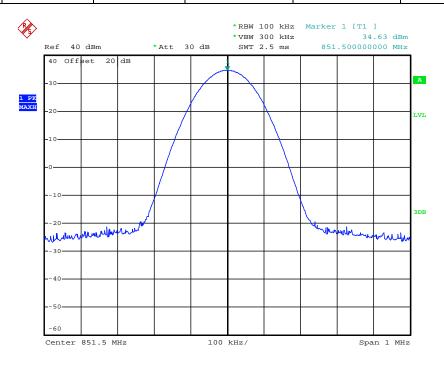
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Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	823.5000	2.5	34.74	Varies	Complicance



Date: 11.APR.2012 10:46:00

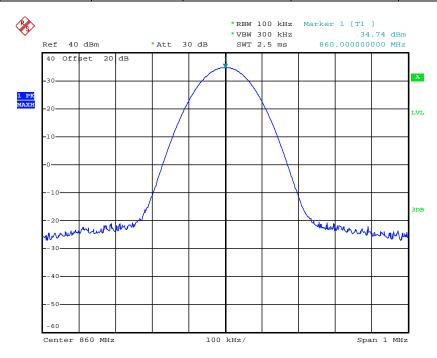
Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	851.5000	2.5	34.63	Varies	Complicance



Date: 11.APR.2012 10:46:37

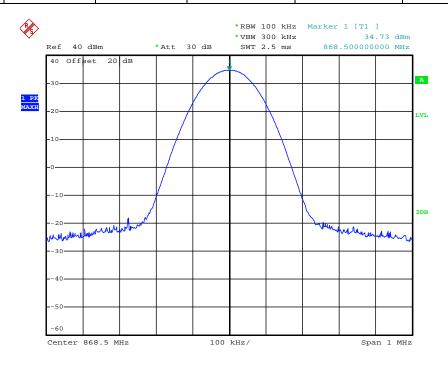
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Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	860.0000	2.5	34.74	Varies	Complicance



Date: 11.APR.2012 10:47:43

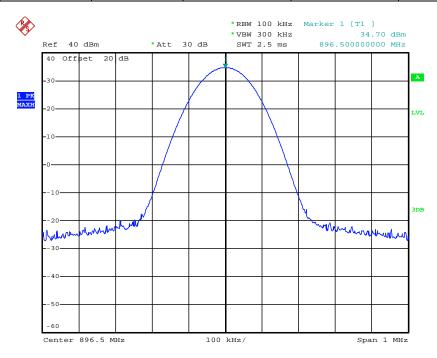
Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	868.5000	2.5	34.73	Varies	Complicance



Date: 11.APR.2012 10:54:01

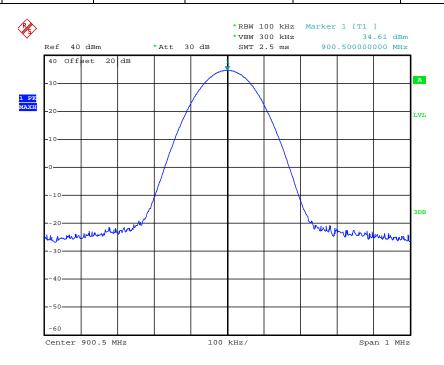
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Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	896.5000	2.5	34.70	Varies	Complicance



Date: 11.APR.2012 10:55:08

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	900.5000	2.5	34.61	Varies	Complicance



Date: 11.APR.2012 10:55:51