

4.5. Modulation Characteristics

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

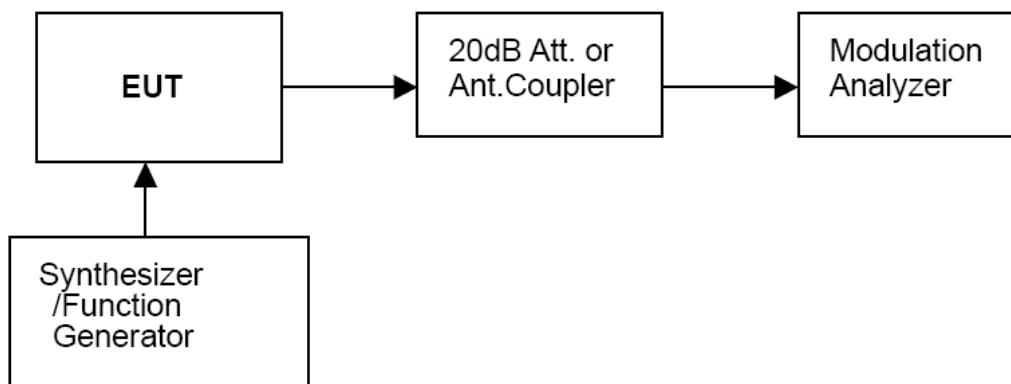
Modulation Limit

- 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 = $20\log_{10}(\text{Deviation of test frequency}/\text{Deviation of 1 KHz reference})$.

TEST CONFIGURATION



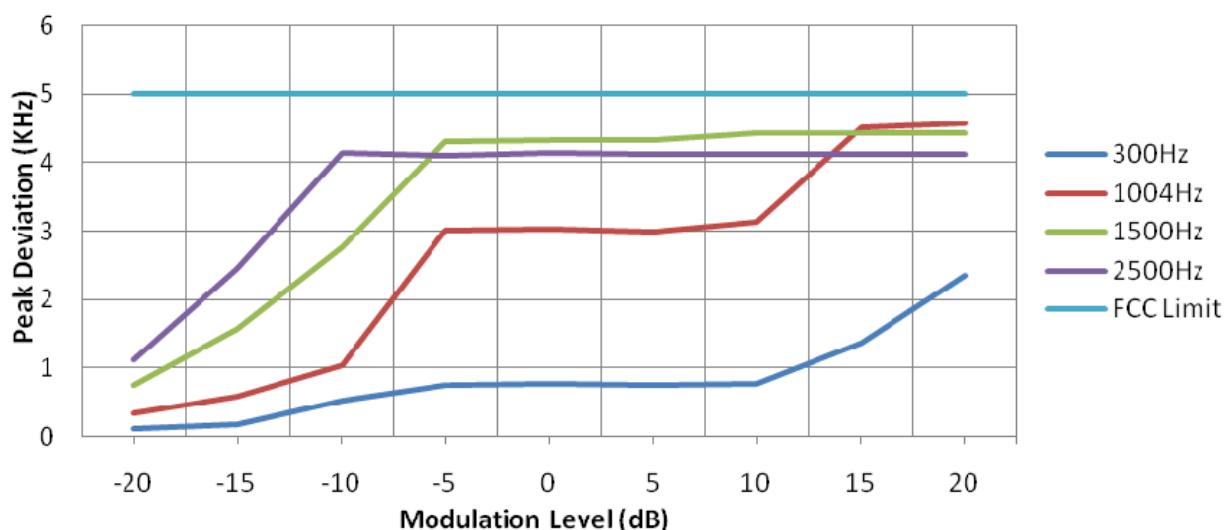
TEST RESULTS

Modulation Type: FM

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

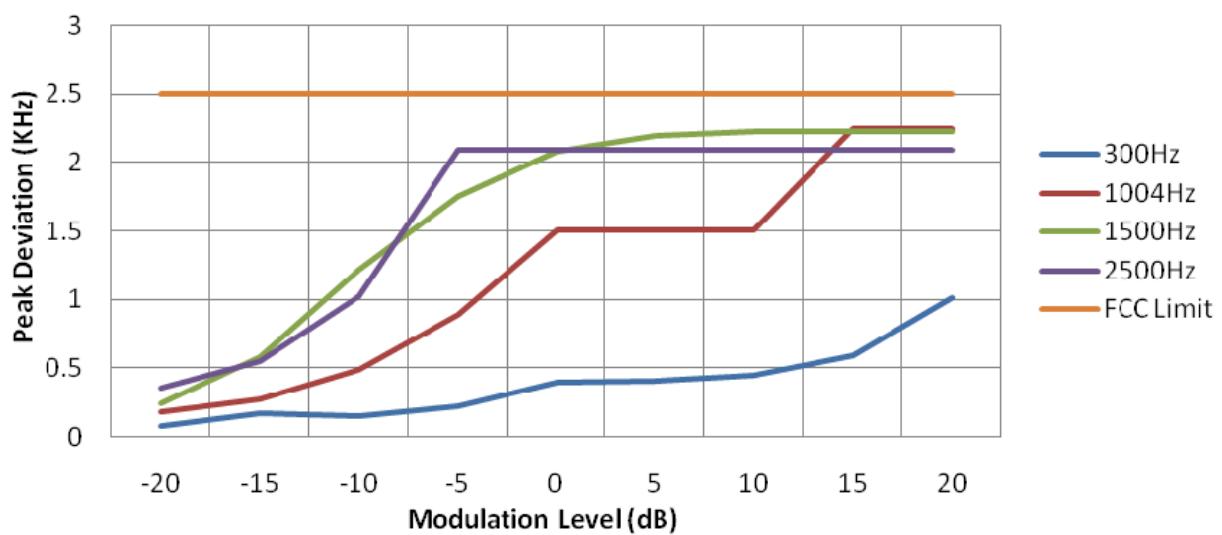
Modulation Limit for 25KHz



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

Modulation Limit for 12.5 KHz



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

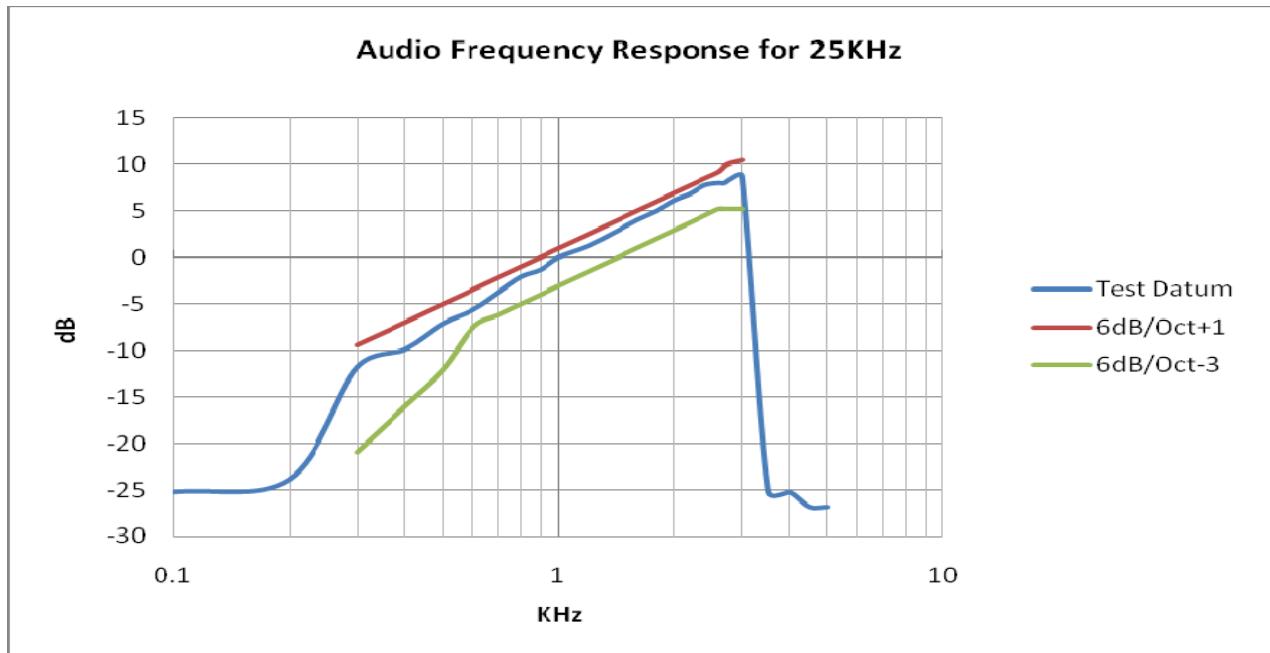
Test Audio Level (1 KHz and 20% maximum deviation) for 25 KHz channel separation is 2.25mv and 2.25mv for 12.5 KHz channel separation.

Note:

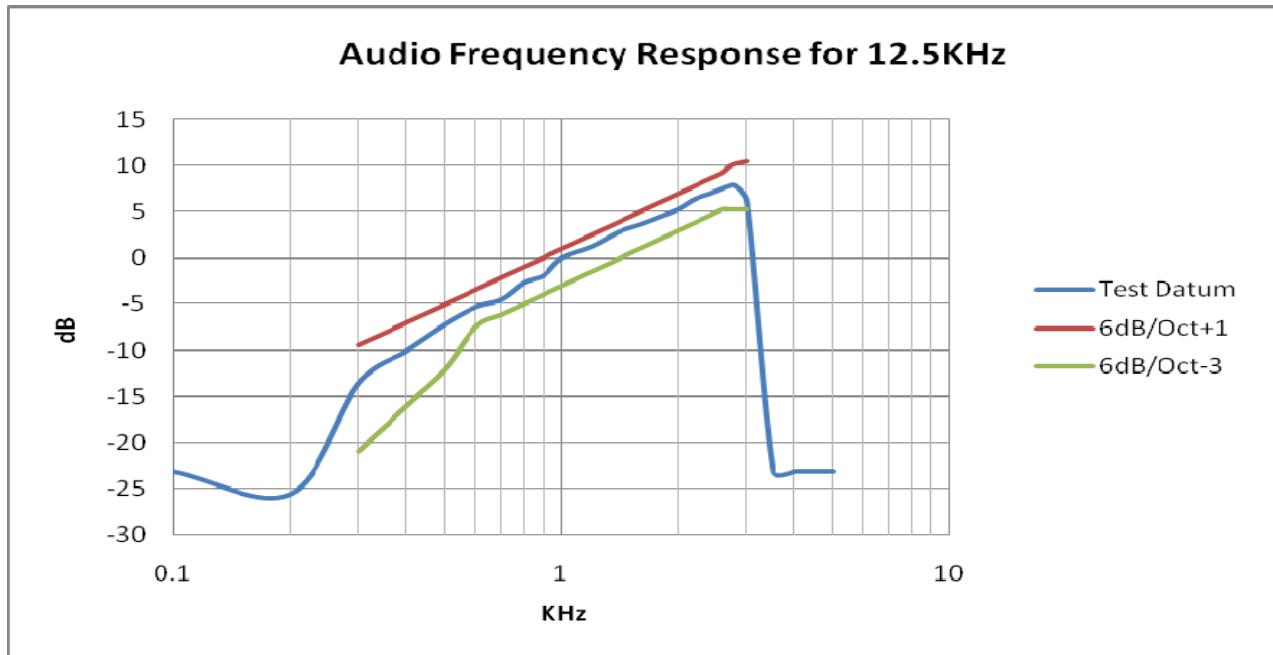
- 1 Not applicable to new standard. However, tests are conducted under FCC's recommendation.
- 2 The Audio Frequency Response is identical for 12.5 KHz and 25 KHz channel separation

For 25 KHz

Frequency (KHz)	Frequency Deviation (KHz)	1KHz Reference Deviation (KHz)	Audio Frequency Response (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

**For 12.5 KHz**

Frequency (KHz)	Frequency Deviation (KHz)	1KHz Reference Deviation (KHz)	Audio Frequency Response (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



Modulation type: 4FSK

Channel bandwidth: 12.5 kHz

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

4.6. Frequency Stability Test

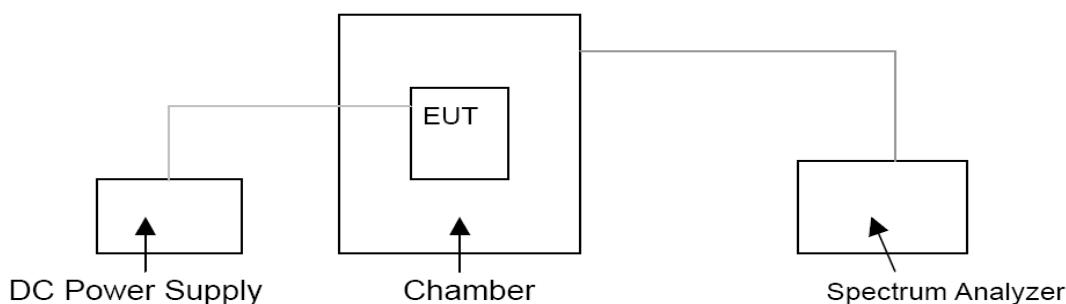
TEST APPLICABLE

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

Frequency range (MHz)	Fixed and base stations	Mobile stations	
		Over 2 watts output power	2 watts or less output power
Below 25	1.2.3 100	100	200
25-50	20	20	50
72-76	5	50
150-174	5.11 5	5	4.6 50
216-220	1.0	1.0
220-222 ¹²	0.1	1.5	1.5
421-512	7.11.14 2.5	5	8 5
806-809	14 1.0	1.5	1.5
809-824	14 1.5	2.5	2.5
851-854	1.0	1.5	1.5
854-869	1.5	2.5	2.5
896-901	14 0.1	1.5	1.5
902-928	2.5	2.5	2.5
902-928 ¹³	2.5	2.5	2.5
929-930	1.5
935-940	0.1	1.5	1.5
1427-1435	300	300	300
Above 2450 ¹⁰

TEST RESULTS

Modulation Type	Channel Separation	Test conditions		Frequency error (ppm)		
		Voltage(V)	Temp(°C)	806.5MHz	817.0MHz	823.5MHz
Analog/FM	25KHz	7.40	-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
			10	0.76	0.64	0.66
			20	0.67	0.62	0.60
			30	0.67	0.62	0.60
			40	0.71	0.76	0.69
			50	0.83	0.80	0.72
			6.67 (End point)	20	0.67	0.62
			6.29 (85% Rated)	20	0.67	0.77
			8.51 (115% Rated)	20	0.67	0.62
			Limit		1.50	2.50
Conclusion			Complies			

Modulation Type	Channel Separation	Test conditions		Frequency error (ppm)		
		Voltage(V)	Temp(°C)	851.5MHz	860.0MHz	868.5MHz
Analog/FM	25KHz	7.40	-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
			10	0.61	0.59	0.64
			20	0.57	0.53	0.51
			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
			6.29 (85% Rated)	20	0.57	0.59
			8.51 (115% Rated)	20	0.61	0.53
			Limit		1.50	2.50
Conclusion			Complies			

Modulation Type	Channel Separation	Test conditions		Frequency error (ppm)		
		Voltage(V)	Temp(°C)	806.5MHz	817.0MHz	823.5MHz
Analog/FM	12.5KHz	7.40	-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
			10	0.79	0.64	0.76
			20	0.67	0.64	0.64
			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
			6.29 (85% Rated)	20	0.67	0.64
			8.51 (115% Rated)	20	0.67	0.64
			Limit		1.50	2.50
Conclusion			Complies			

Modulation Type	Channel Separation	Test conditions		Frequency error (ppm)		
		Voltage(V)	Temp(°C)	851.5MHz	860.0MHz	868.5MHz
Analog/FM	12.5KHz	7.40	-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
			10	0.66	0.64	0.64
			20	0.57	0.59	0.55
			30	0.57	0.59	0.55
			40	0.66	0.61	0.61
			50	0.77	0.68	0.66
			6.67 (End point)	20	0.66	0.64
			6.29 (85% Rated)	20	0.57	0.64
			8.51 (115% Rated)	20	0.57	0.59
			Limit		1.50	2.50
Conclusion				Complies		

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

Modulation Type	Channel Separation	Test conditions		Frequency error (ppm)	
		Voltage(V)	Temp(°C)	935.5MHz	939.5MHz
Analog/FM	12.5KHz	7.40	-30	0.81	0.79
			-20	0.74	0.79
			-10	0.61	0.64
			0	0.55	0.55
			10	0.49	0.46
			20	0.40	0.37
			30	0.40	0.37
			40	0.48	0.49
			50	0.61	0.61
			6.67 (End point)	20	0.40
			6.29 (85% Rated)	20	0.40
			8.51 (115% Rated)	20	0.56
			Limit		1.50
Conclusion				Complies	

Modulation Type	Channel Separation	Test conditions		Frequency error (ppm)		
		Voltage(V)	Temp(°C)	806.5MHz	817.0MHz	823.5MHz
Digital/4FSK	12.5KHz	7.40	-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
			10	0.78	0.73	0.76
			20	0.69	0.64	0.62
			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
			6.29 (85% Rated)	20	0.69	0.64
			8.51 (115% Rated)	20	0.67	0.64
			Limit		1.50	2.50
			Conclusion		Complies	

Modulation Type	Channel Separation	Test conditions		Frequency error (ppm)		
		Voltage(V)	Temp(°C)	851.5MHz	860.0MHz	868.5MHz
Digital/4FSK	12.5KHz	7.40	-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
			10	0.71	0.66	0.61
			20	0.54	0.59	0.53
			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
			6.29 (85% Rated)	20	0.61	0.59
			8.51 (115% Rated)	20	0.64	0.64
			Limit		1.50	2.50
			Conclusion		Complies	

Modulation Type	Channel Separation	Test conditions		Frequency error (ppm)	
		Voltage(V)	Temp(°C)	896.5MHz	900.5MHz
Digital/4FSK	12.5KHz	7.40	-30	0.84	0.82
			-20	0.80	0.80
			-10	0.71	0.77
			0	0.62	0.62
			10	0.53	0.50
			20	0.44	0.41
			30	0.44	0.41
			40	0.56	0.59
			50	0.65	0.66
			6.67 (End point)	20	0.49
			6.29 (85% Rated)	20	0.44
			8.51 (115% Rated)	20	0.49
			Limit		1.50
			Conclusion		Complies

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

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

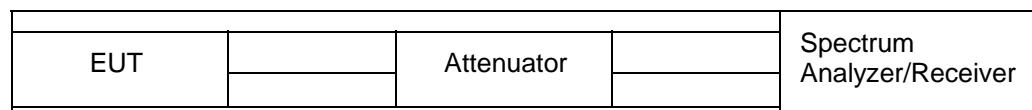
Measurements shall be made to establish the radio frequency power delivered by the transmitter the standard output termination. The power output shall be monitored and recorded and no adjustment shall be made to the transmitter after the test has begun, except as noted below:

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 Agilent E4407B conducted, external power supply with 7.40 V stabilized supply voltage.

TEST CONFIGURATION



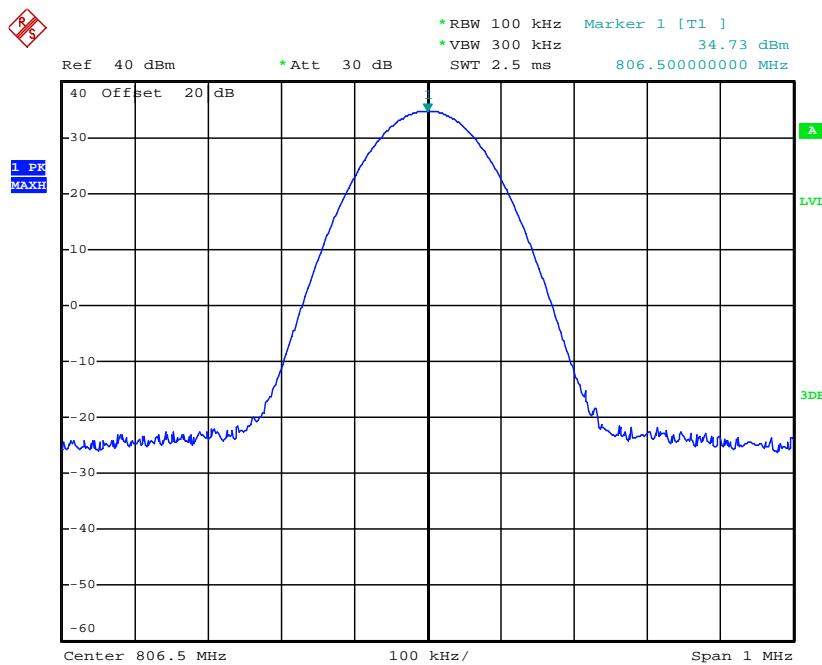
The EUT was directly connected to a RF Communication
Test set by a 20 dB attenuator

TEST RESULTS

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

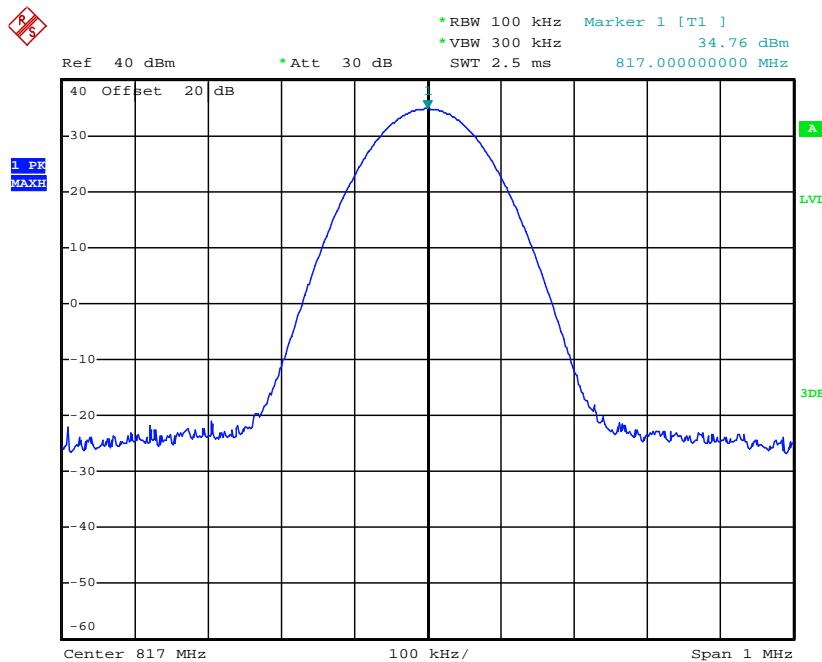
Plots of Maximum Transmitter Power Measurement

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



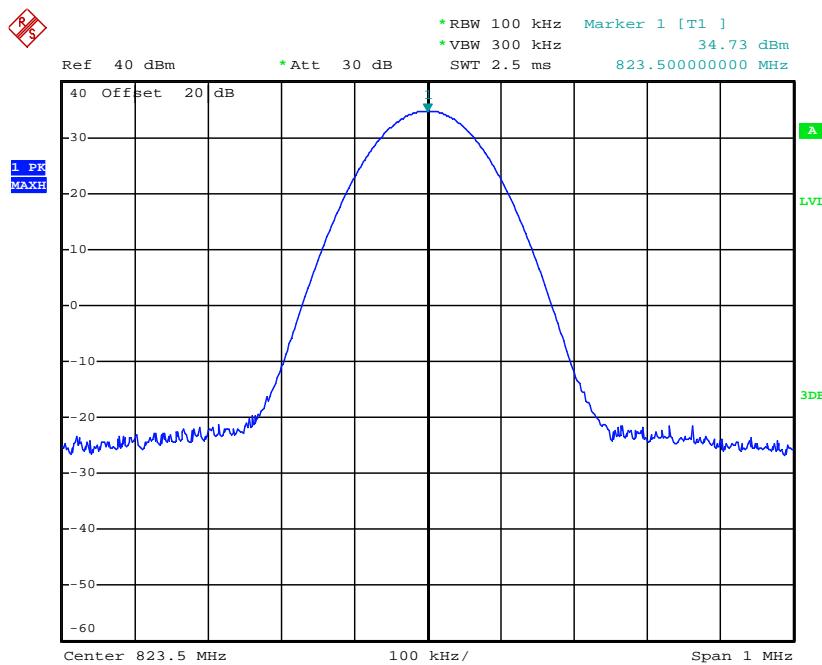
Date: 11.APR.2012 10:26:54

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



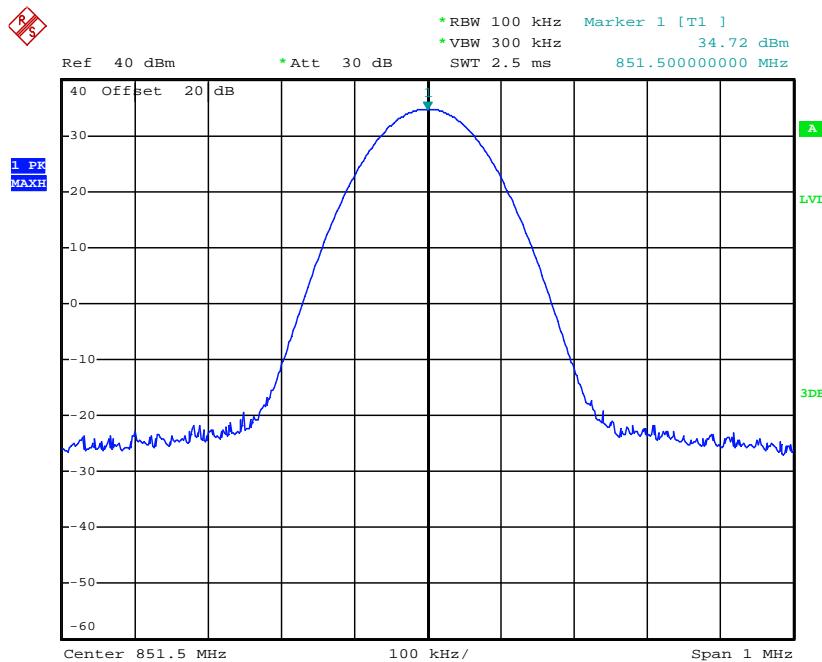
Date: 11.APR.2012 10:28:03

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



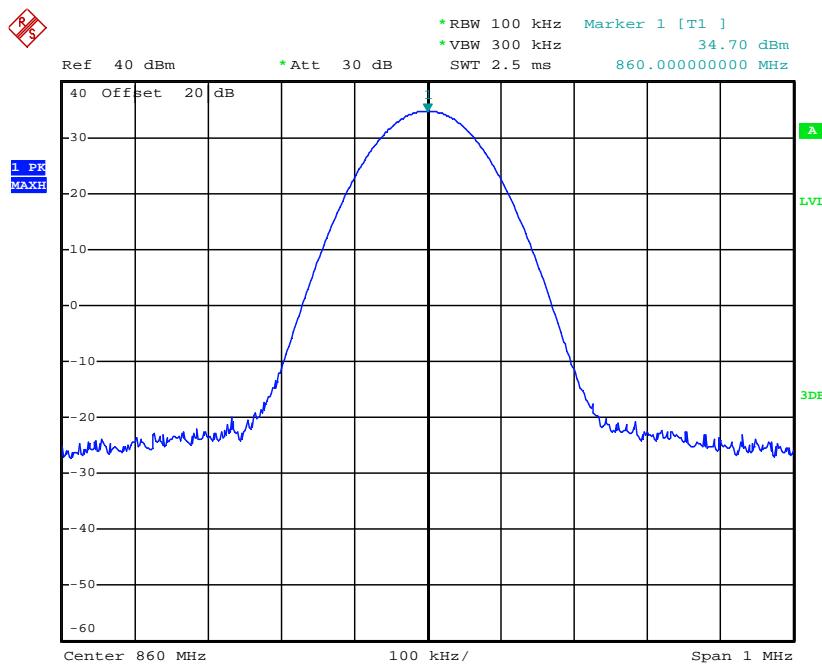
Date: 11.APR.2012 10:28:48

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



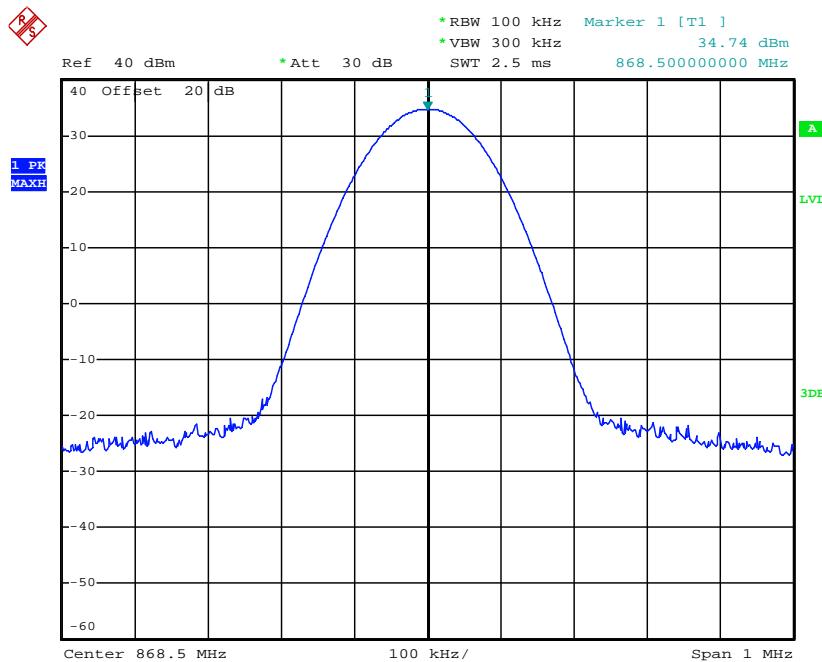
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Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	25 KHz	860.0000	2.5	34.70	Varies	Compliance



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

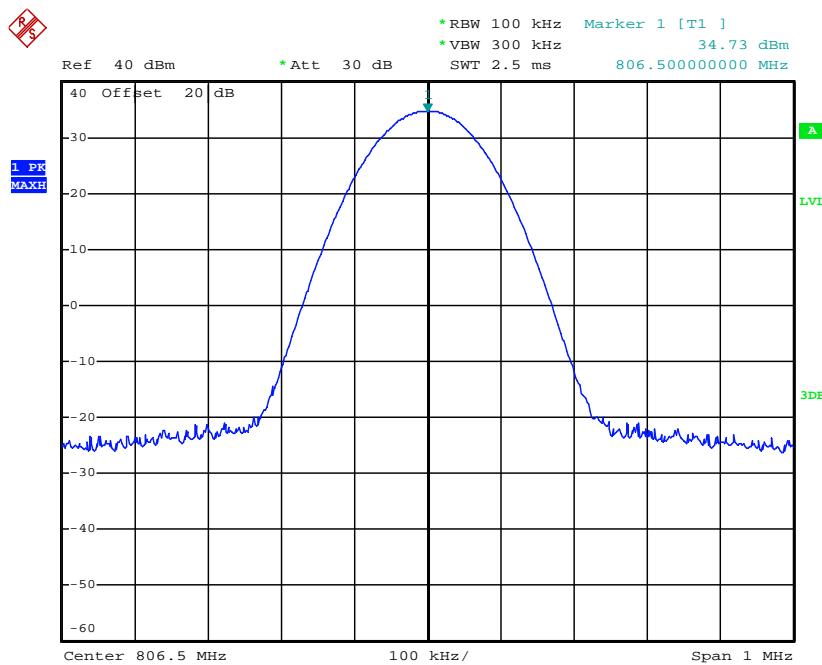
Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	25 KHz	868.5000	2.5	34.74	Varies	Compliance



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

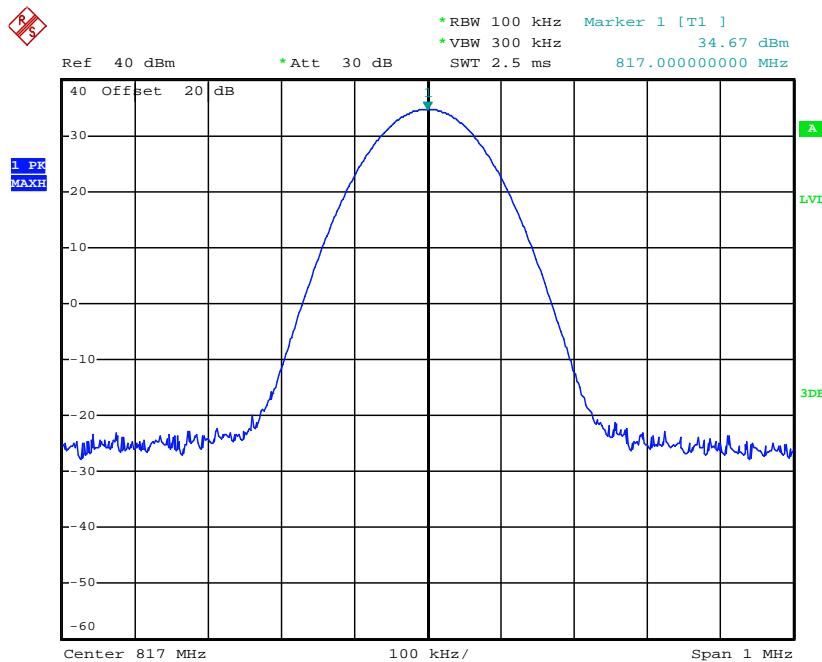
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Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	806.5000	2.5	34.73	Varies	Compliance



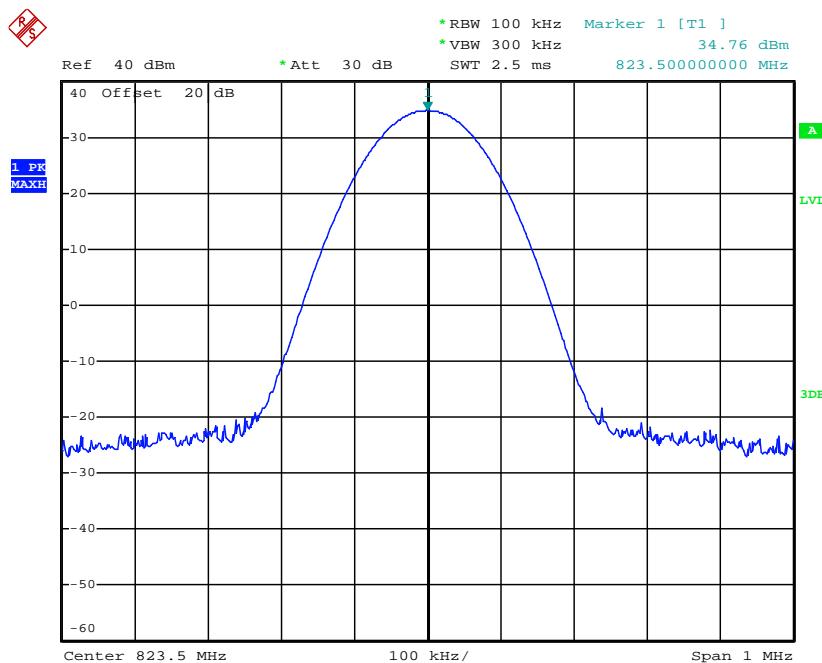
Date: 11.APR.2012 10:32:15

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	Compliance



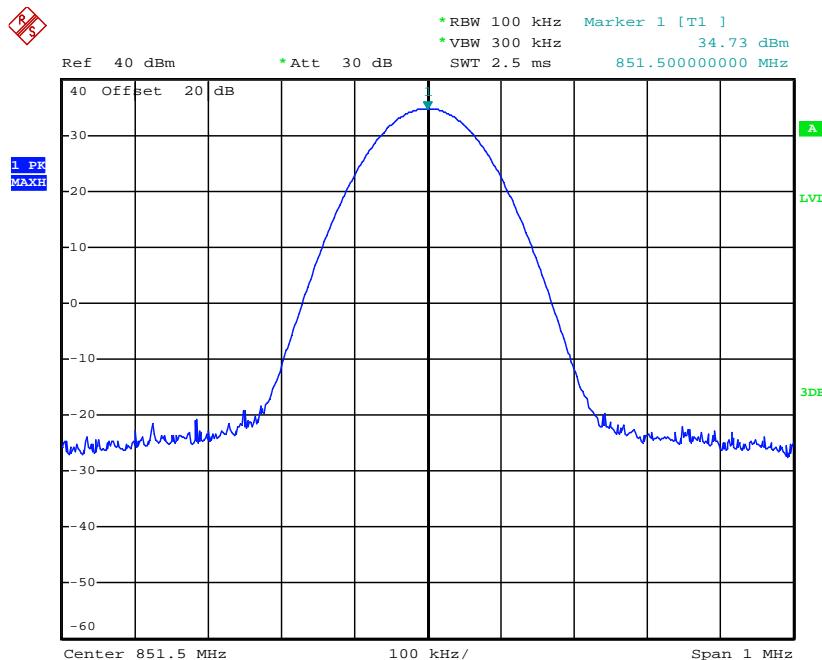
Date: 11.APR.2012 10:32:54

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	Compliance



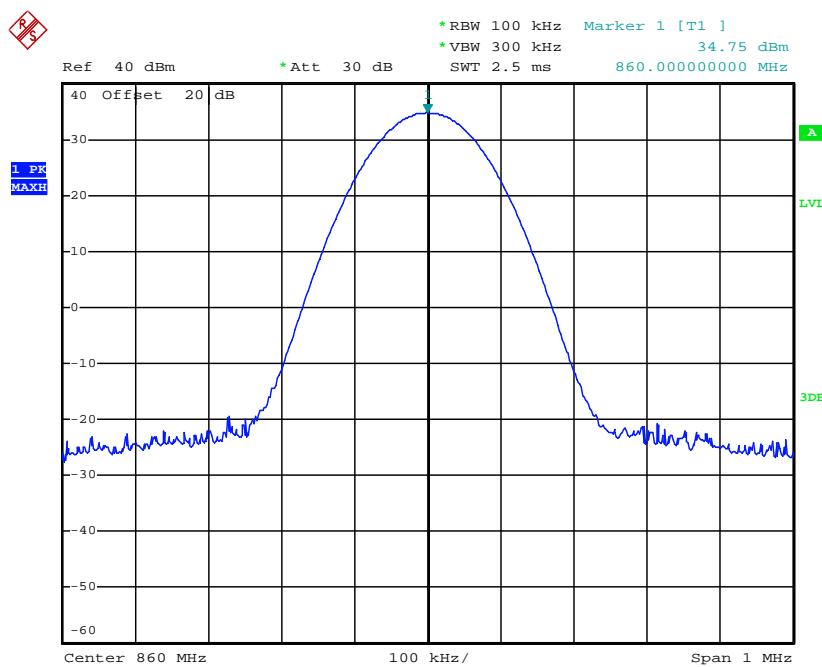
Date: 11.APR.2012 10:33:31

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	Compliance



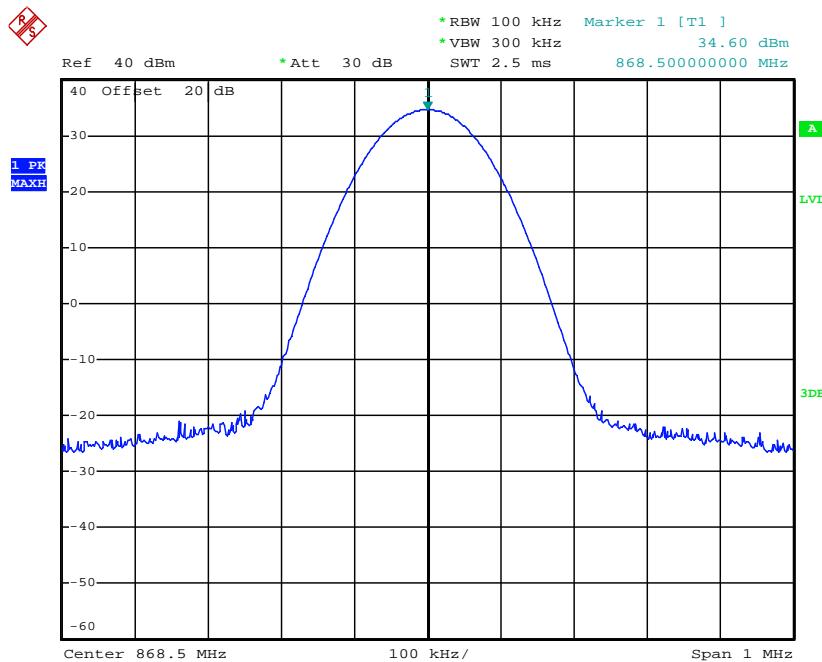
Date: 11.APR.2012 10:36:23

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	Compliance



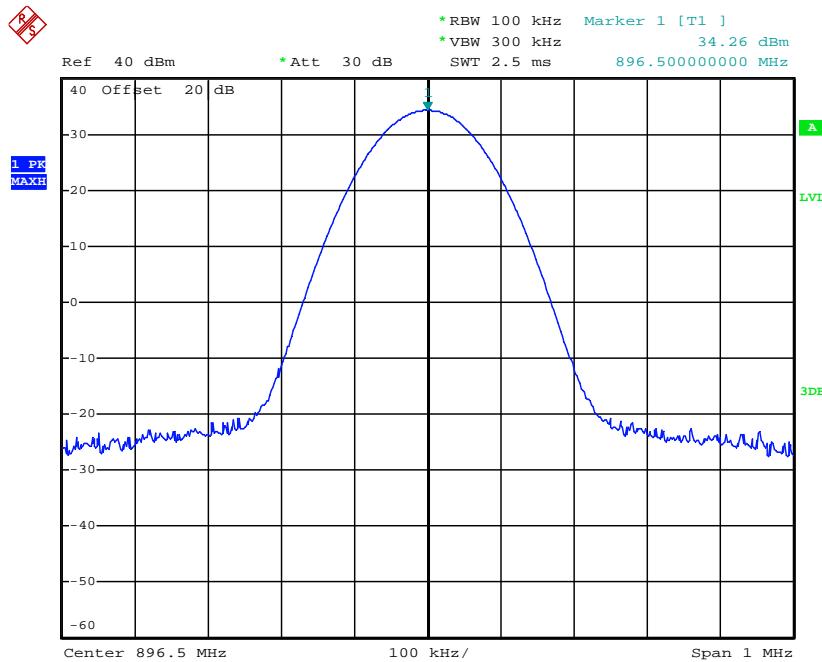
Date: 11.APR.2012 10:37:07

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	Compliance



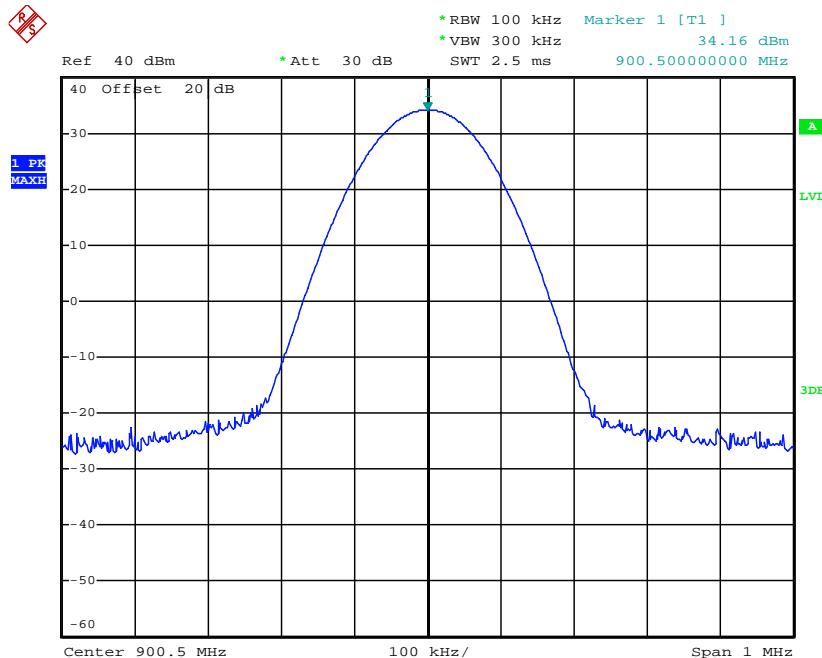
Date: 11.APR.2012 10:37:47

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	Compliance



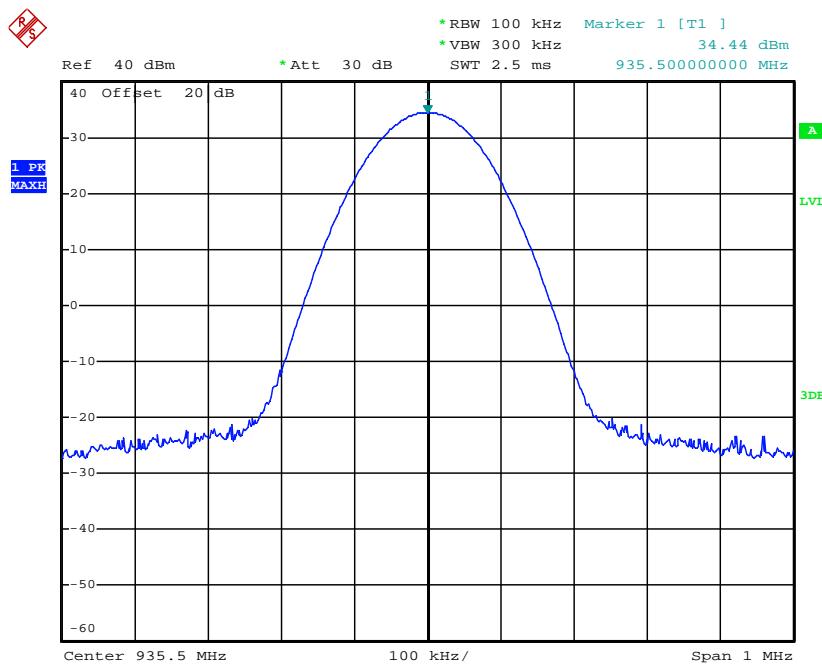
Date: 11.APR.2012 10:38:48

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	Compliance



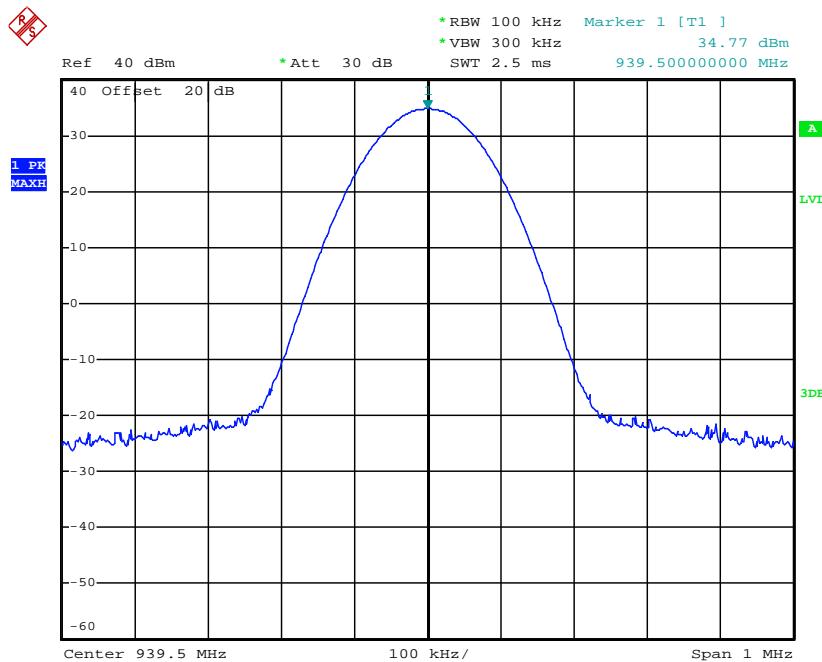
Date: 11.APR.2012 10:39:43

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	Compliance



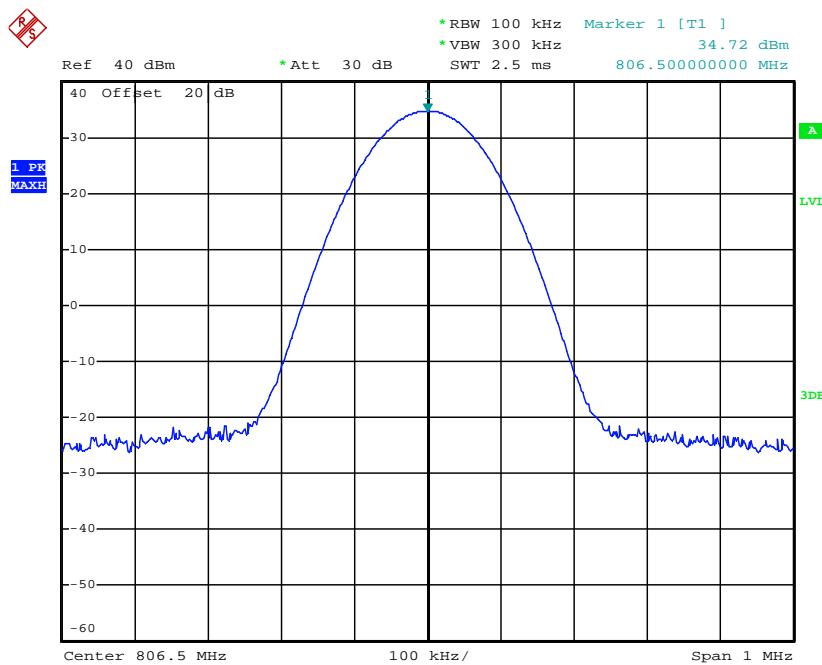
Date: 11.APR.2012 10:40:58

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	Compliance



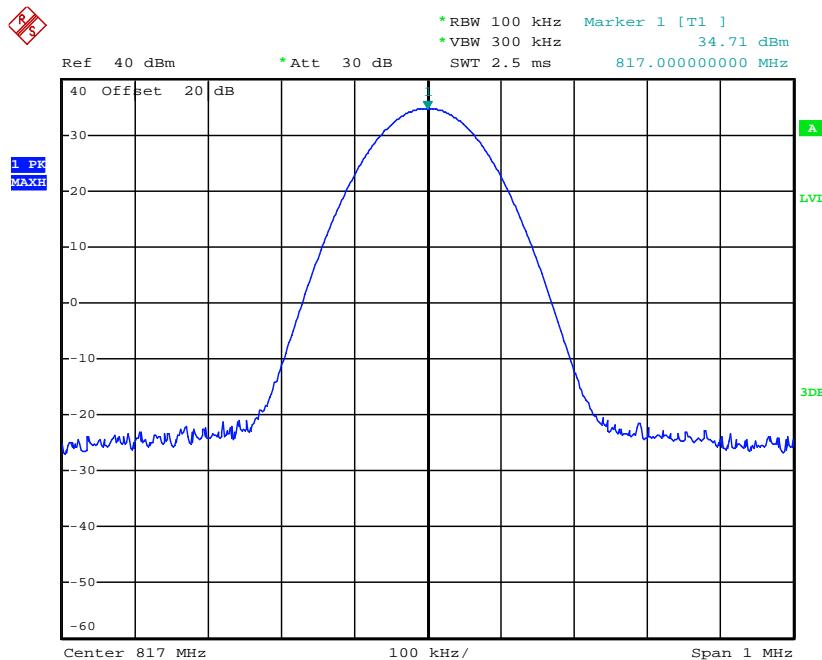
Date: 11.APR.2012 10:59:12

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	Compliance



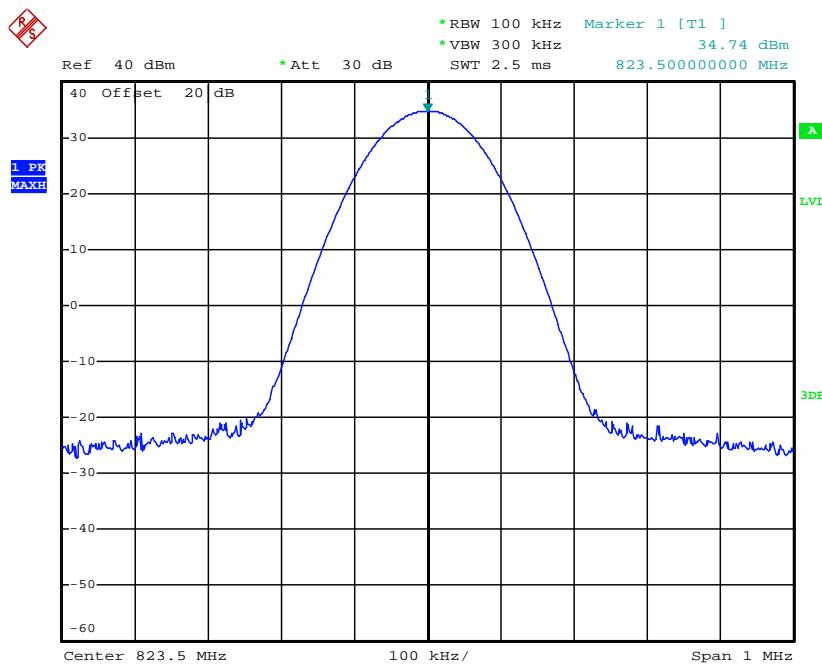
Date: 11.APR.2012 10:44:49

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	Compliance



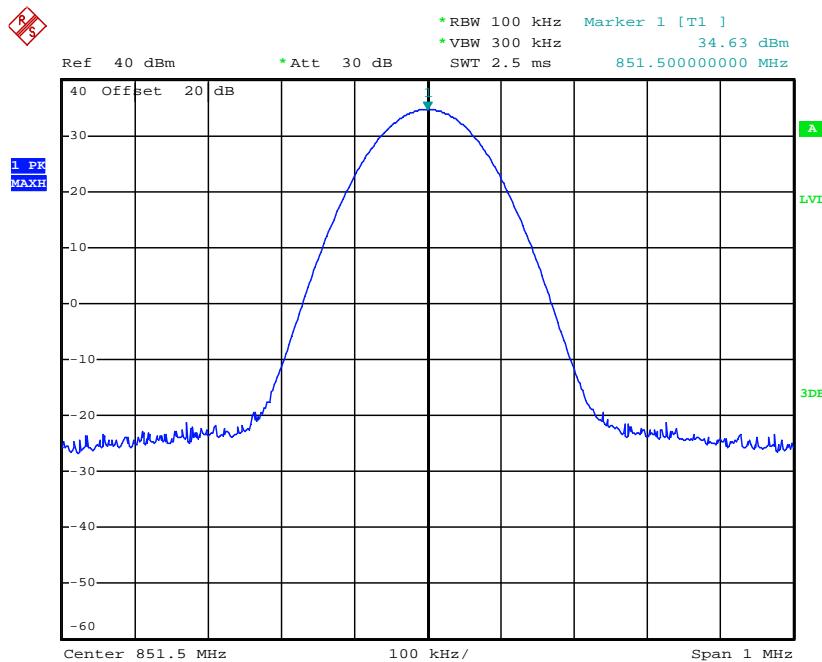
Date: 11.APR.2012 10:45:33

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	Compliance



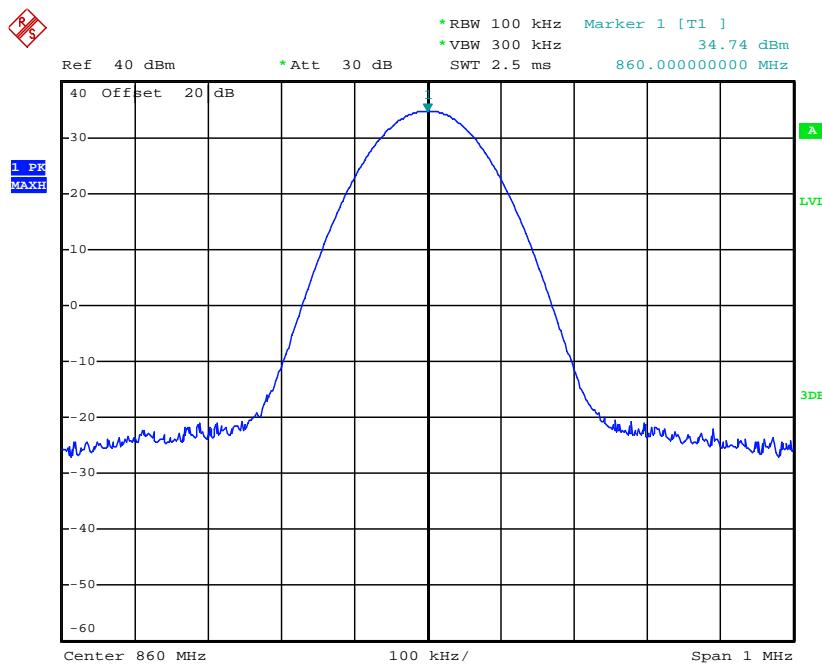
Date: 11.APR.2012 10:46:00

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	Compliance



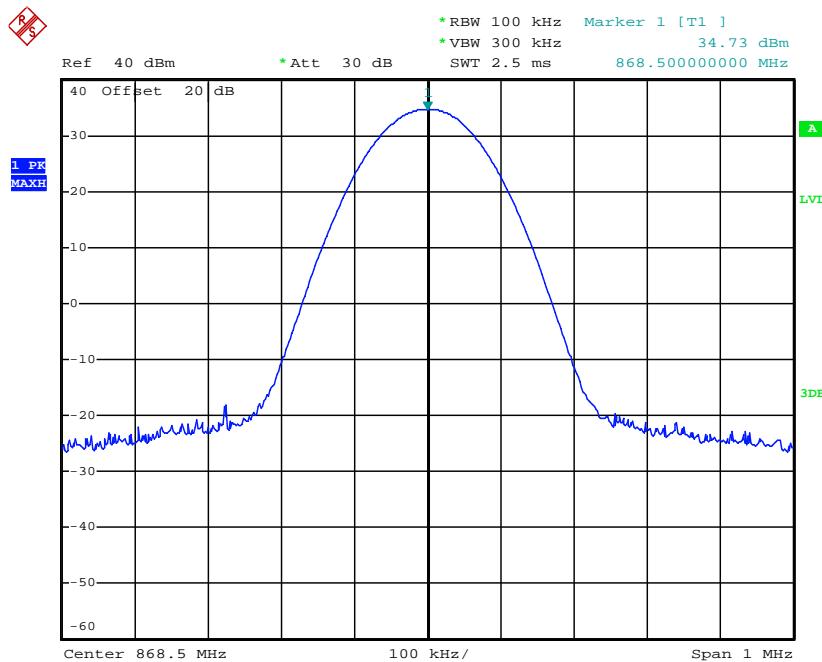
Date: 11.APR.2012 10:46:37

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	Compliance



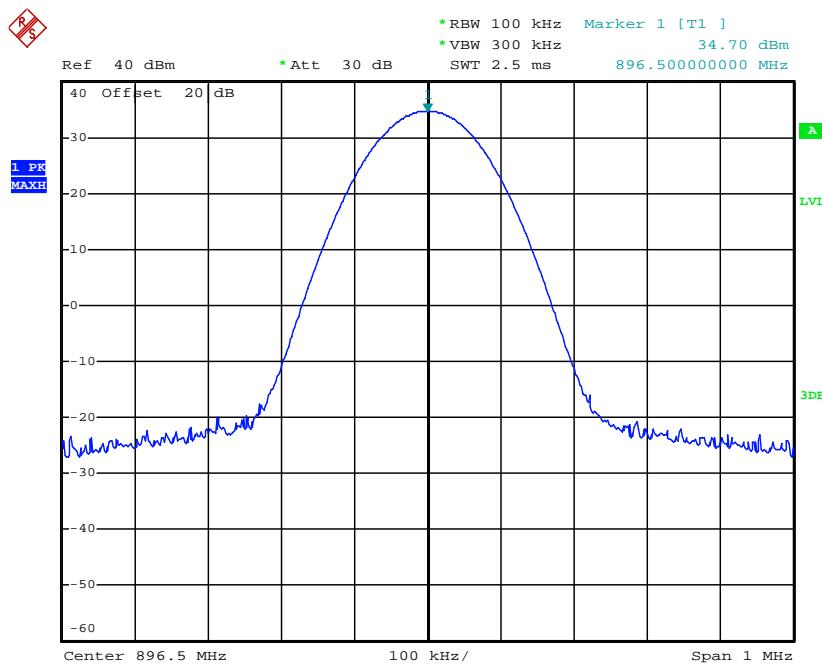
Date: 11.APR.2012 10:47:43

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	Compliance



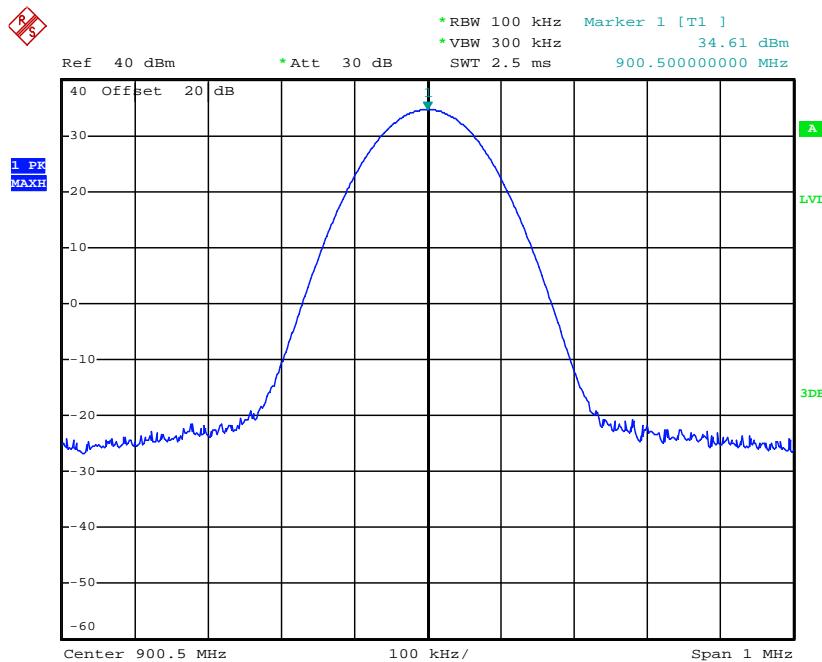
Date: 11.APR.2012 10:54:01

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	Compliance



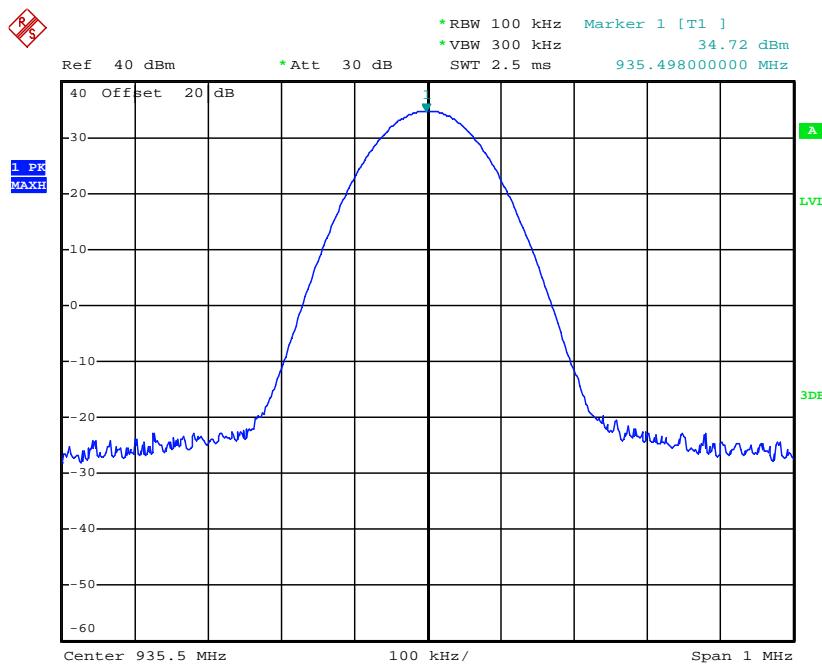
Date: 11.APR.2012 10:55:08

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	Compliance



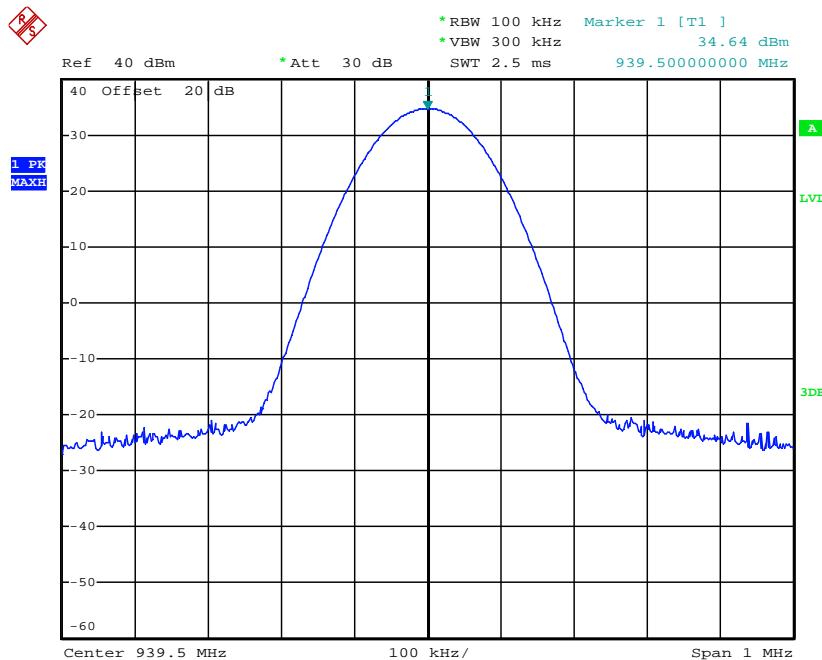
Date: 11.APR.2012 10:55:51

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	935.5000	2.5	34.72	Varies	Compliance



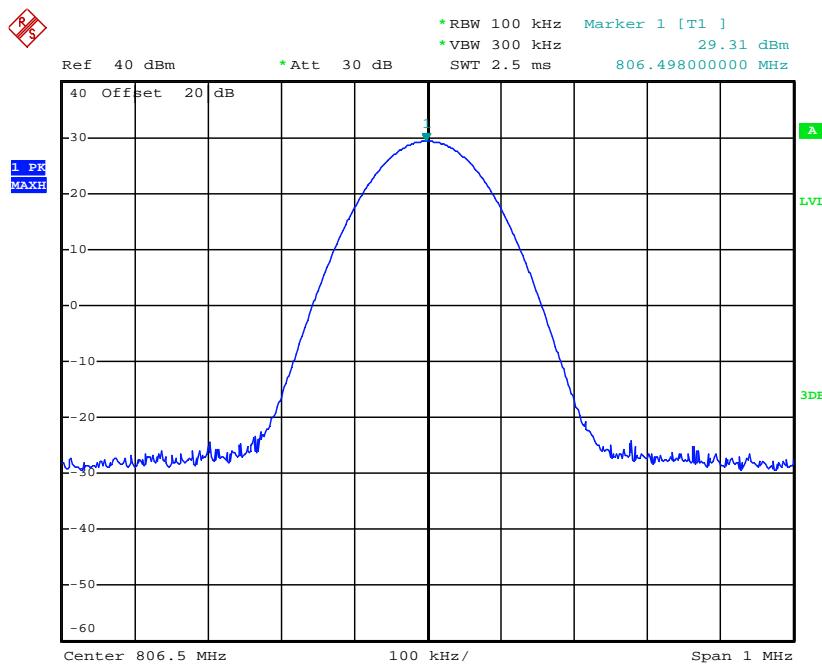
Date: 11.APR.2012 10:56:30

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	939.5000	2.5	34.64	Varies	Compliance



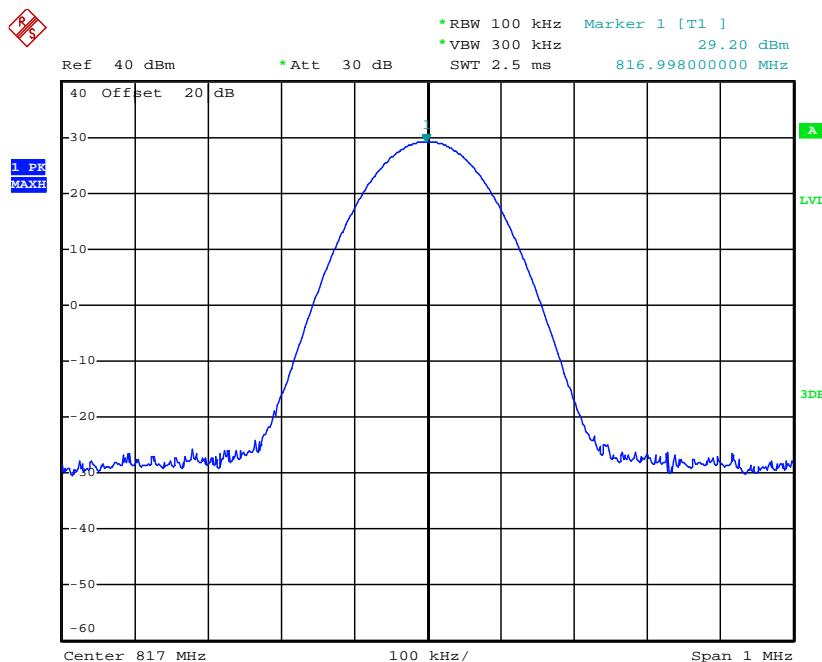
Date: 11.APR.2012 10:57:39

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	25 KHz	806.5000	1	29.31	Varies	Compliance



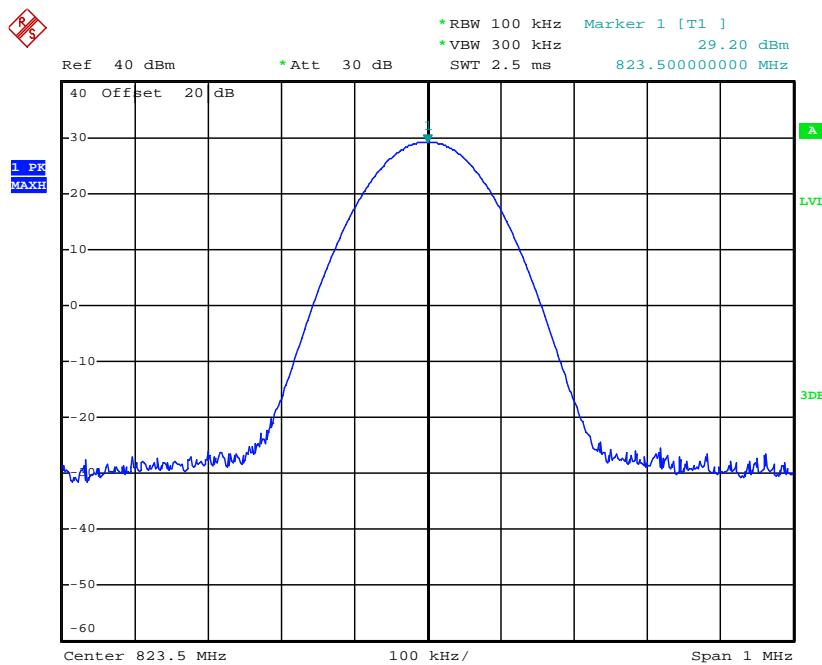
Date: 11.APR.2012 10:27:37

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	25 KHz	817.0000	1	29.20	Varies	Compliance



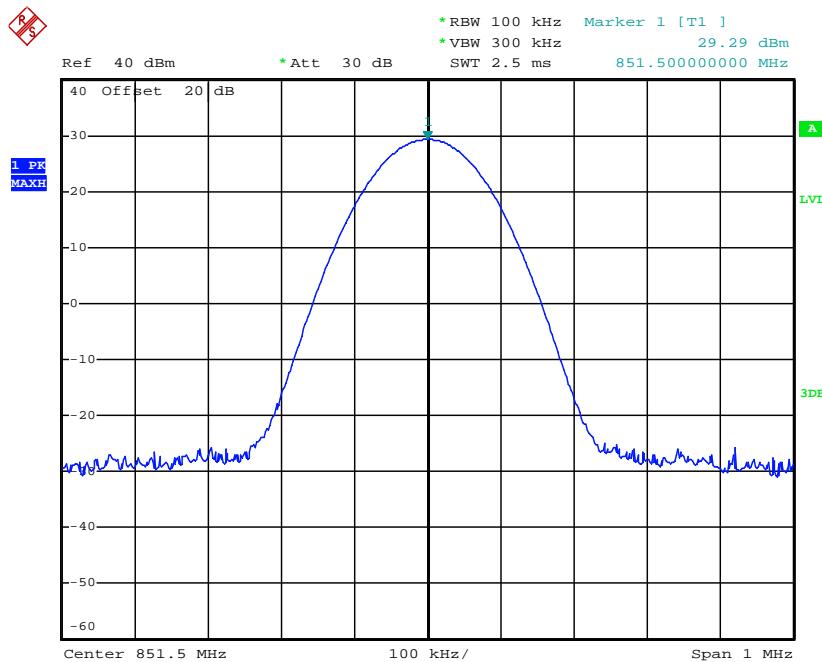
Date: 11.APR.2012 10:28:24

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	25 KHz	823.5000	1	29.20	Varies	Compliance



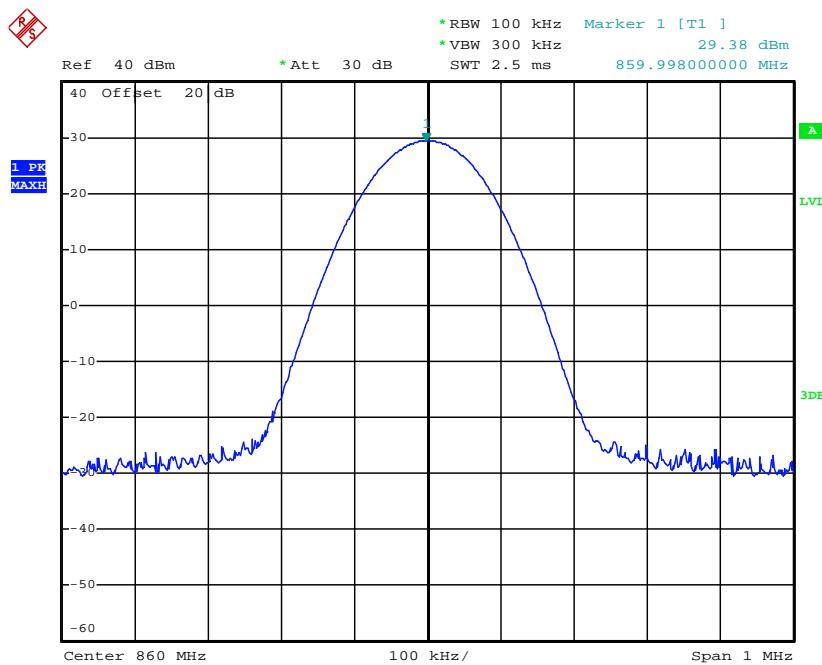
Date: 11.APR.2012 10:29:01

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	25 KHz	851.5000	1	29.29	Varies	Compliance



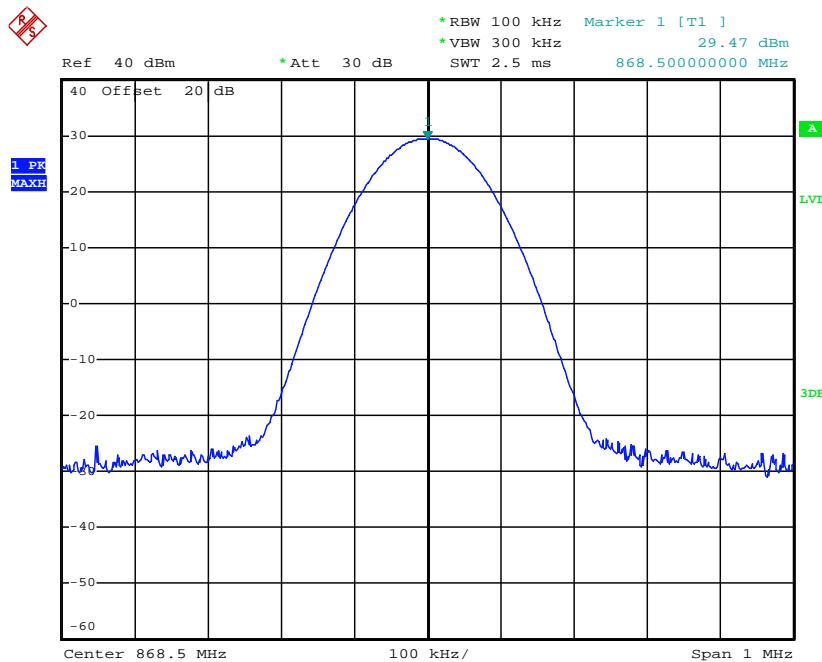
Date: 11.APR.2012 10:29:43

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	25 KHz	860.0000	1	29.38	Varies	Compliance



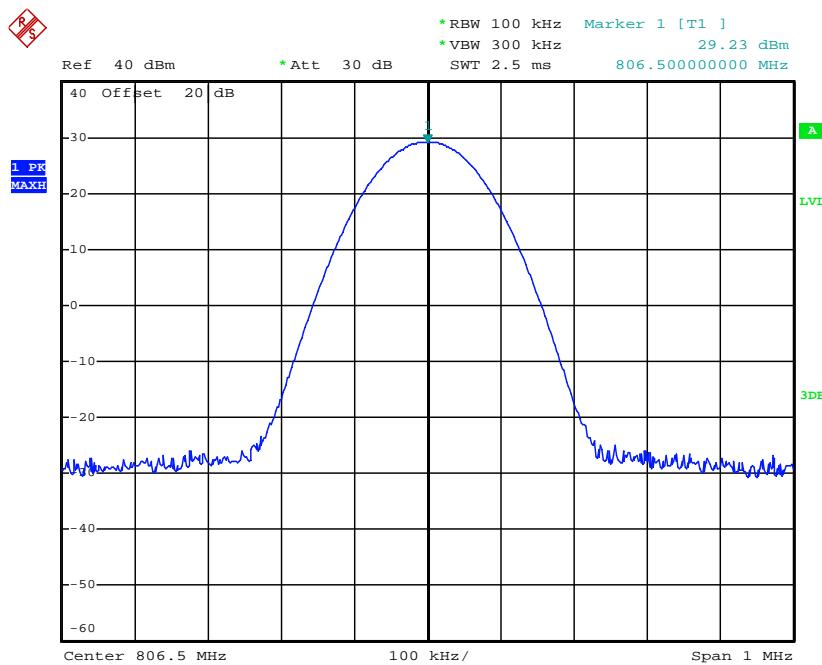
Date: 11.APR.2012 10:30:40

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	25 KHz	868.5000	1	29.47	Varies	Compliance



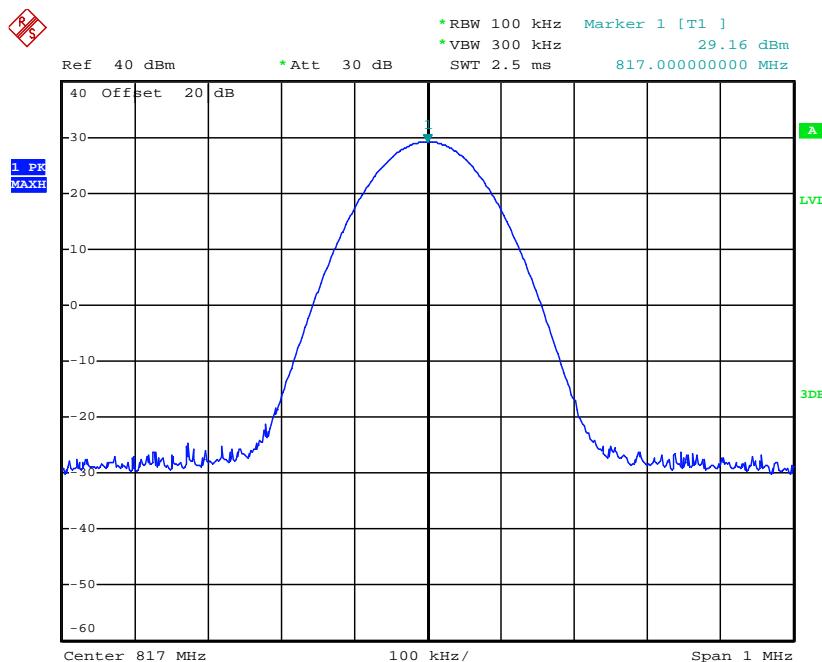
Date: 11.APR.2012 10:31:22

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	806.5000	1	29.29	Varies	Compliance



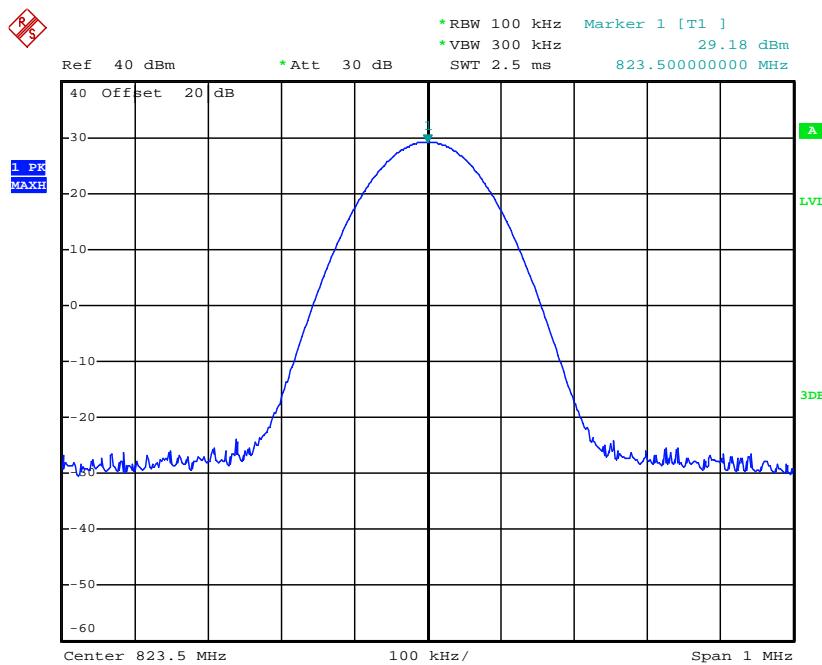
Date: 11.APR.2012 10:32:30

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	817.0000	1	29.16	Varies	Compliance



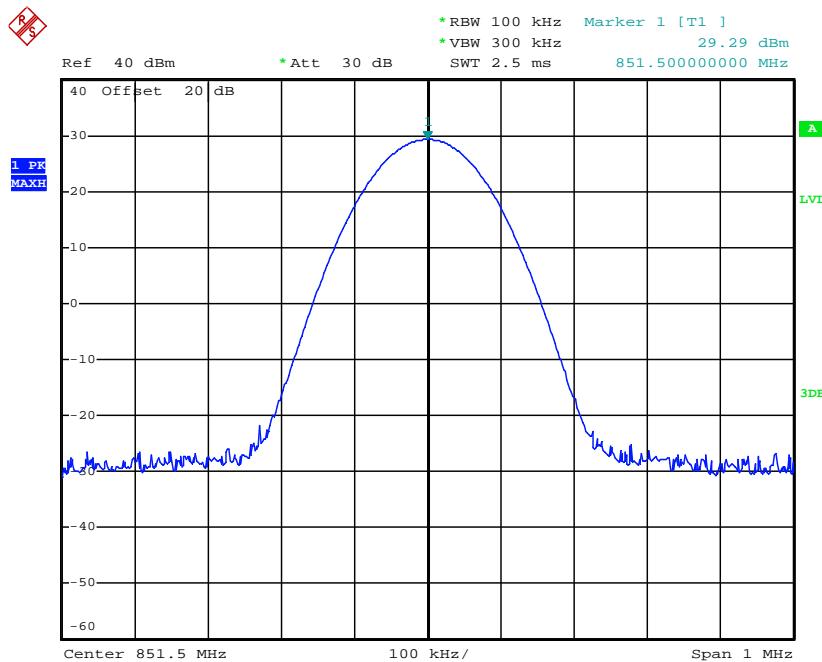
Date: 11.APR.2012 10:33:11

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	823.5000	1	29.18	Varies	Compliance



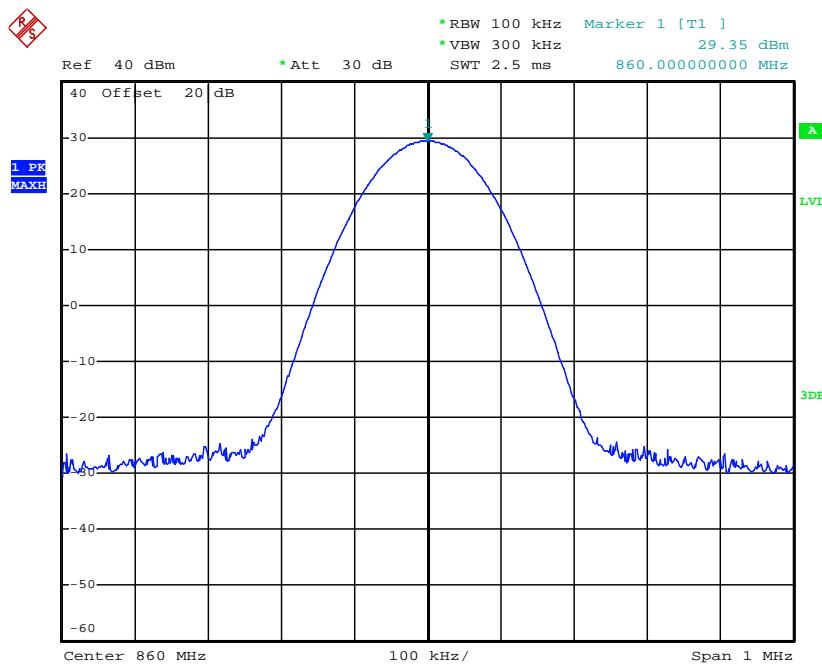
Date: 11.APR.2012 10:36:04

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	851.5000	1	29.29	Varies	Compliance



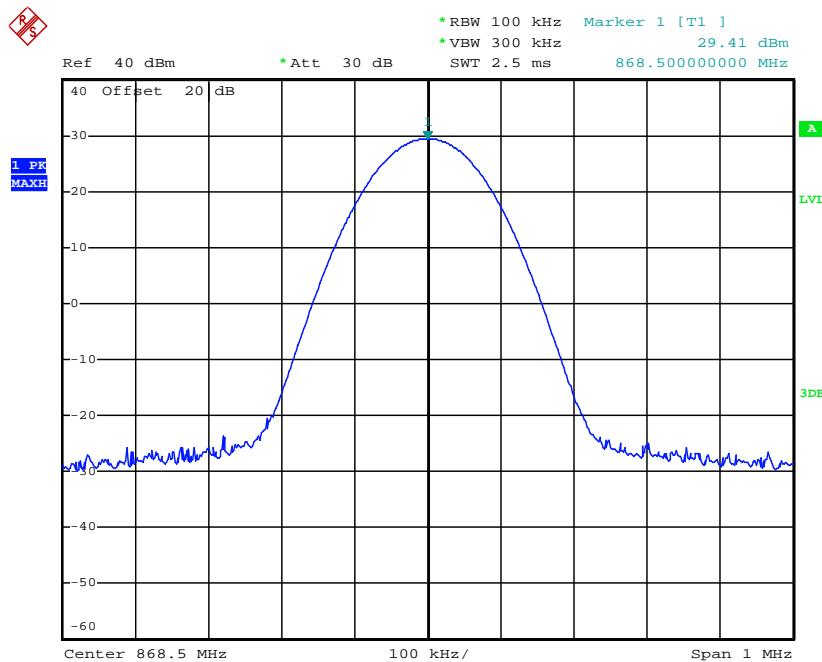
Date: 11.APR.2012 10:36:46

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	860.0000	1	29.35	Varies	Compliance



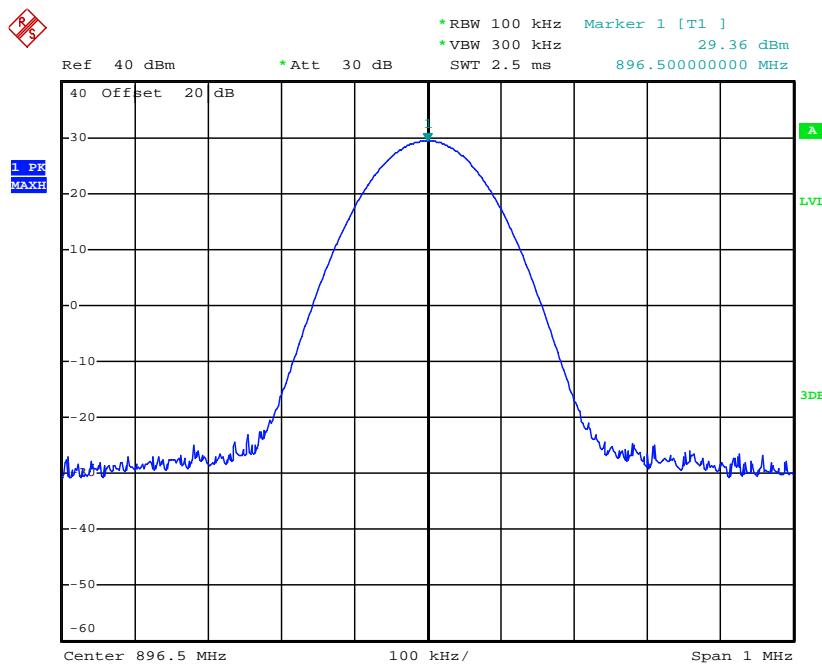
Date: 11.APR.2012 10:37:19

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	868.5000	1	29.41	Varies	Compliance



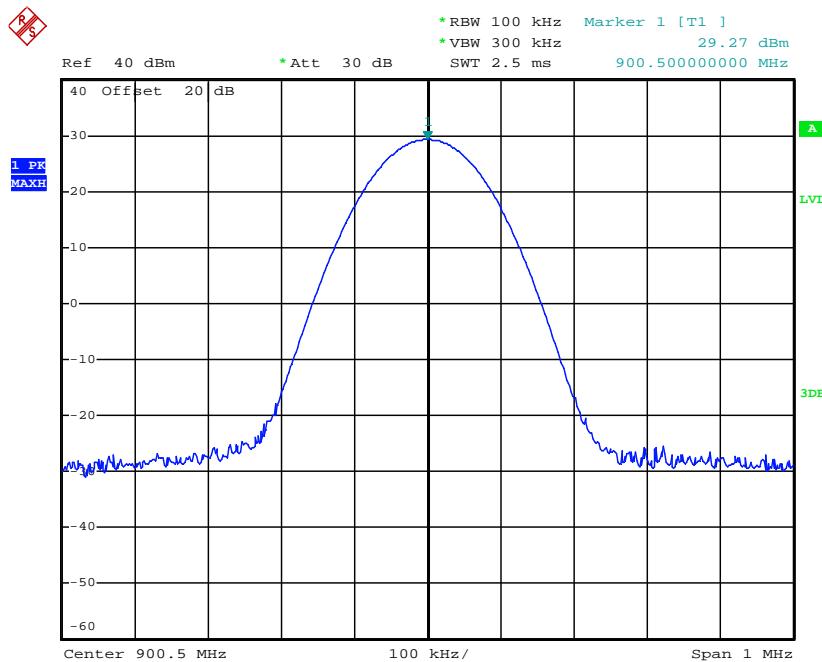
Date: 11.APR.2012 10:38:02

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	896.5000	1	29.36	Varies	Compliance



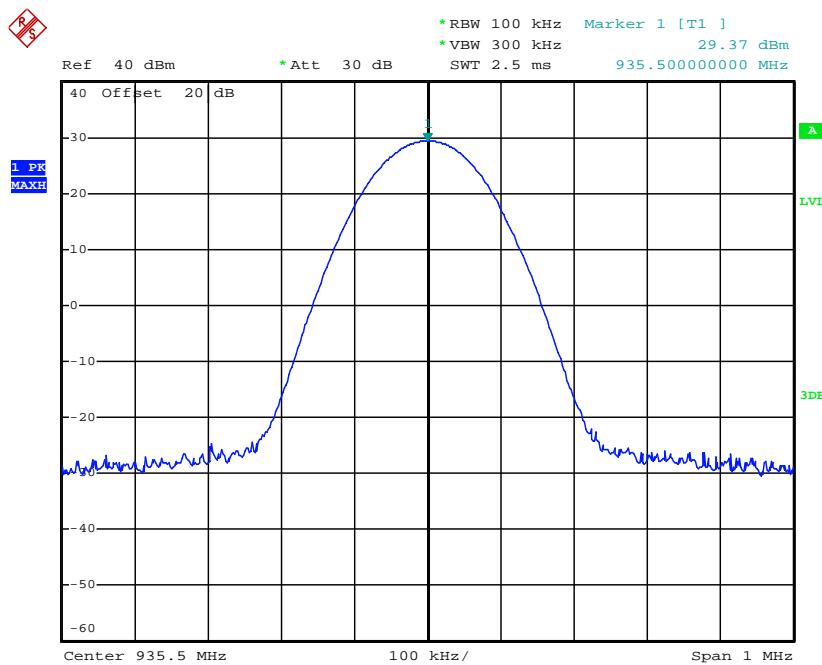
Date: 11.APR.2012 10:39:09

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	900.5000	1	29.27	Varies	Compliance



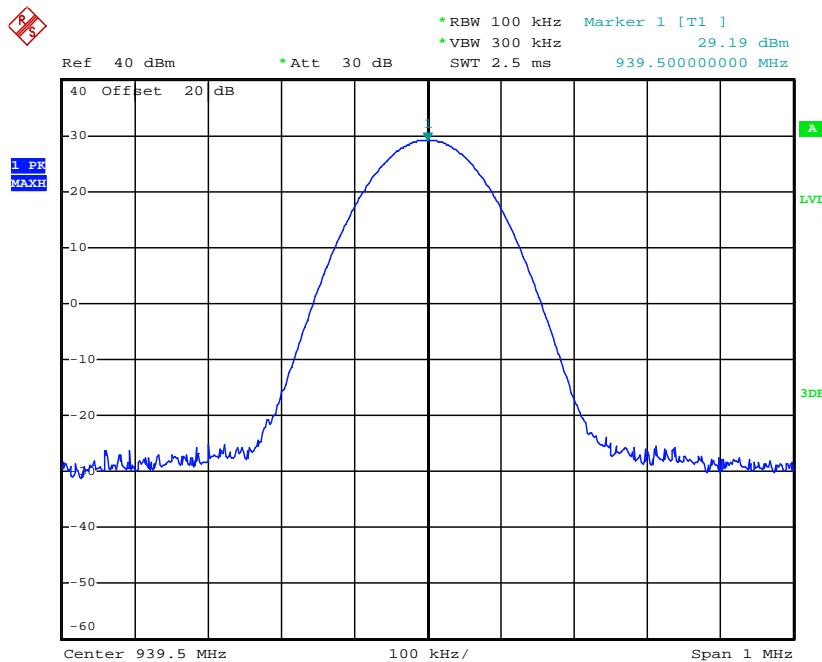
Date: 11.APR.2012 10:39:58

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	935.5000	1	29.37	Varies	Compliance



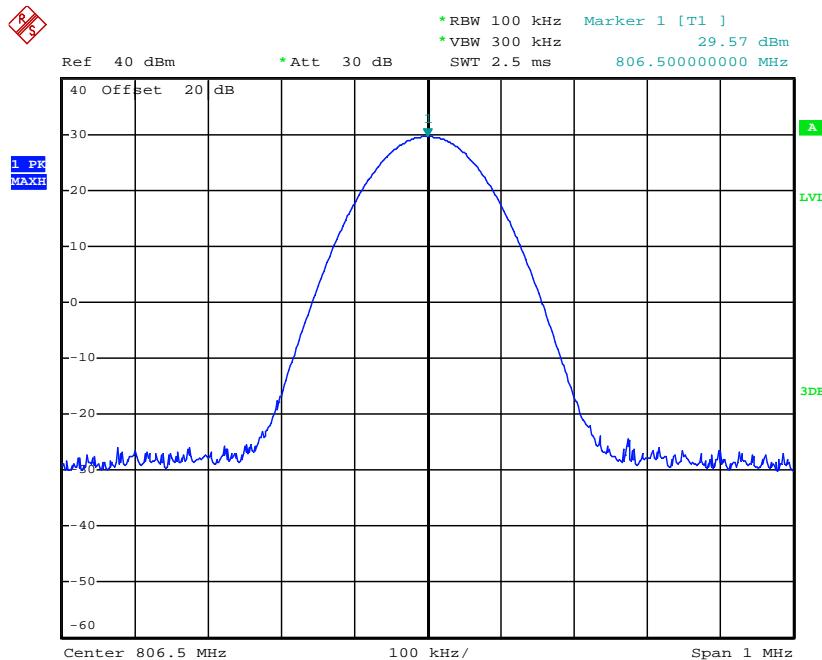
Date: 11.APR.2012 10:41:34

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
FM	12.5 KHz	939.5000	1	29.19	Varies	Compliance



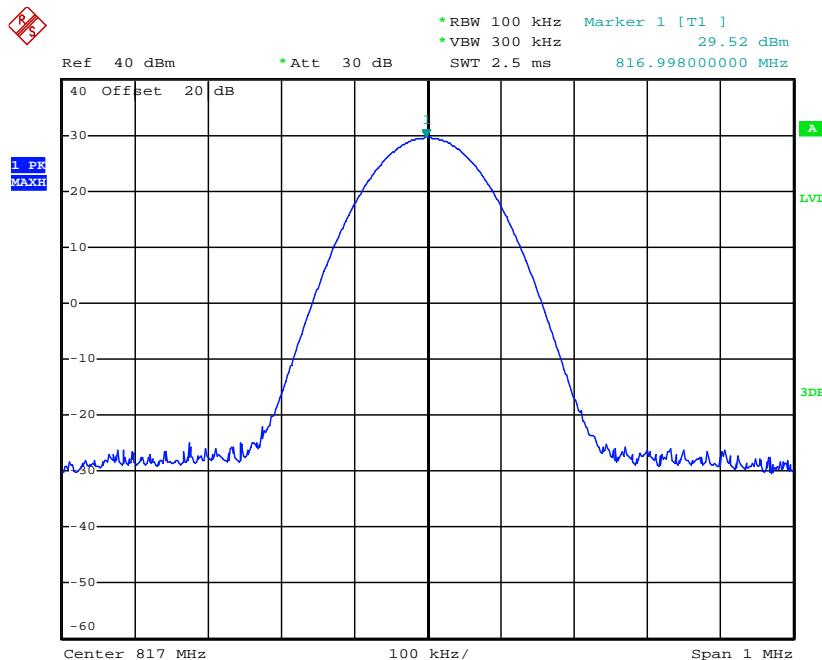
Date: 11.APR.2012 10:59:32

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	806.5000	1	29.57	Varies	Compliance



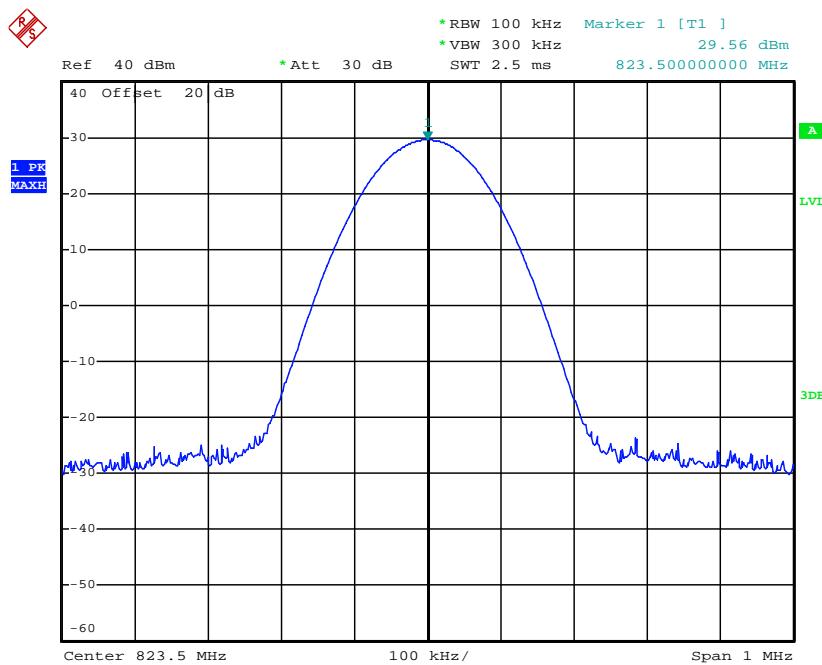
Date: 11.APR.2012 10:45:13

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	817.0000	1	29.52	Varies	Compliance



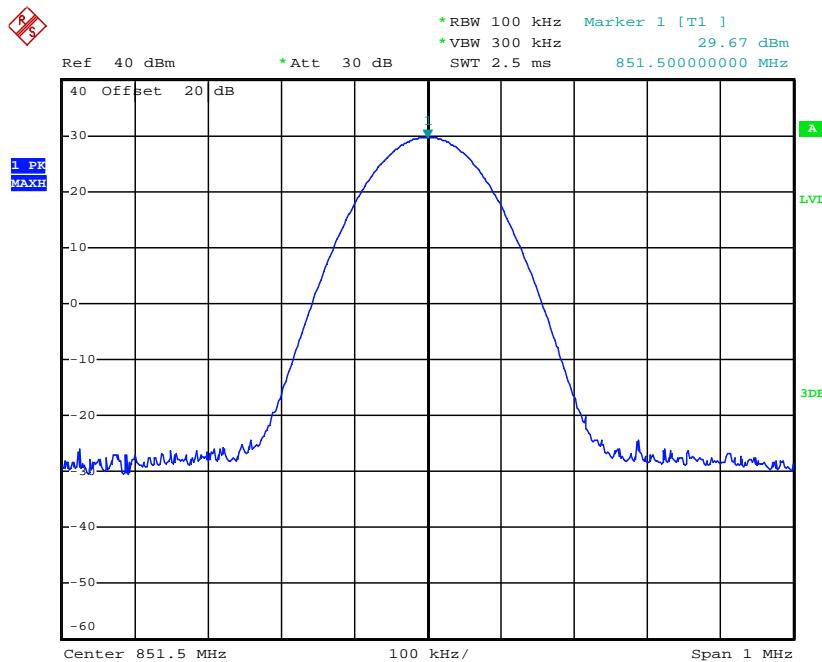
Date: 11.APR.2012 10:45:45

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	823.5000	1	29.56	Varies	Compliance



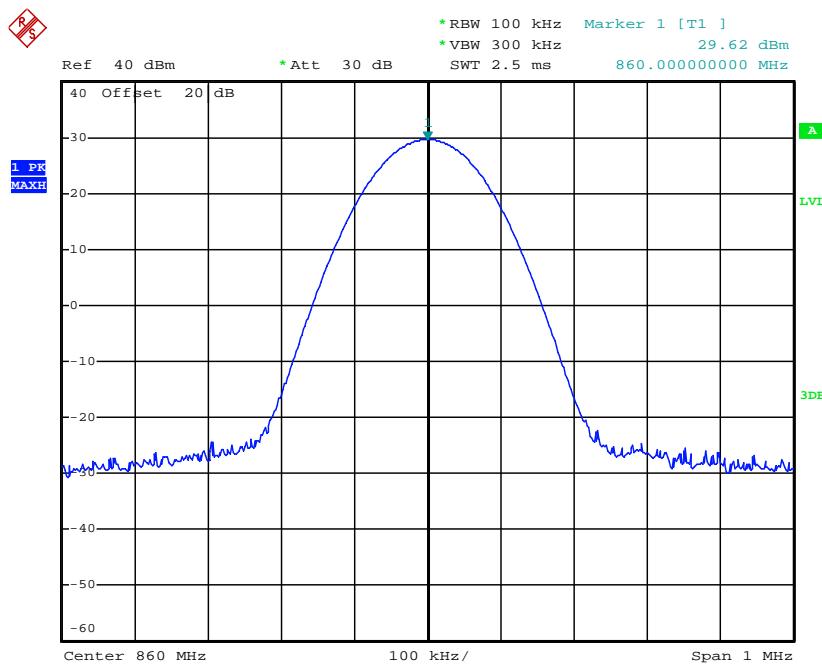
Date: 11.APR.2012 10:46:12

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	851.5000	1	29.67	Varies	Compliance



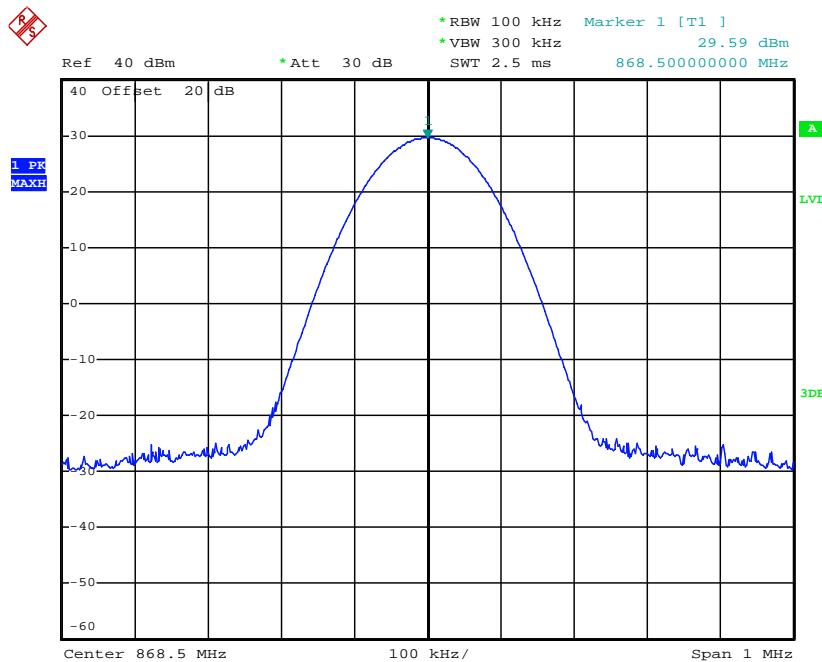
Date: 11.APR.2012 10:46:53

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	860.0000	1	29.62	Varies	Compliance



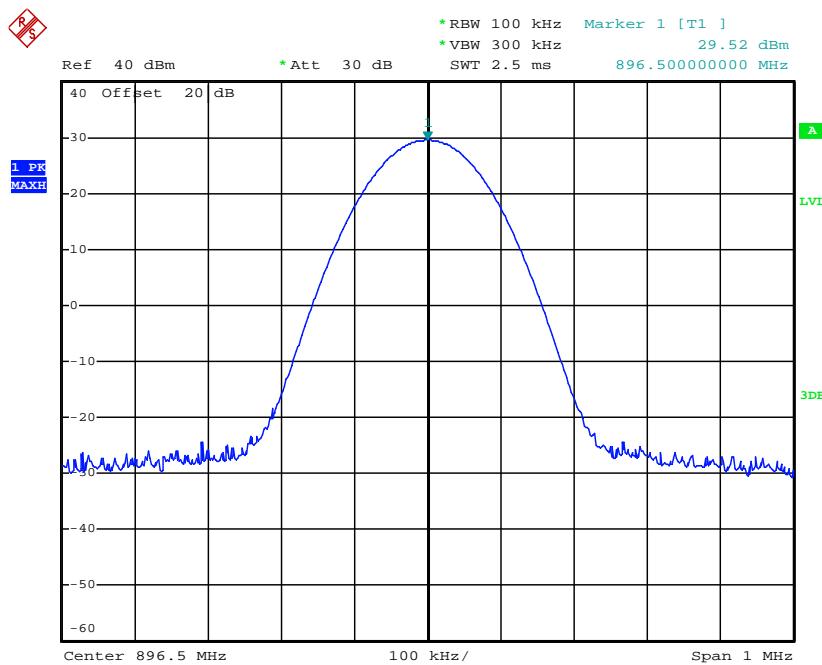
Date: 11.APR.2012 10:48:00

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	868.5000	1	29.59	Varies	Compliance



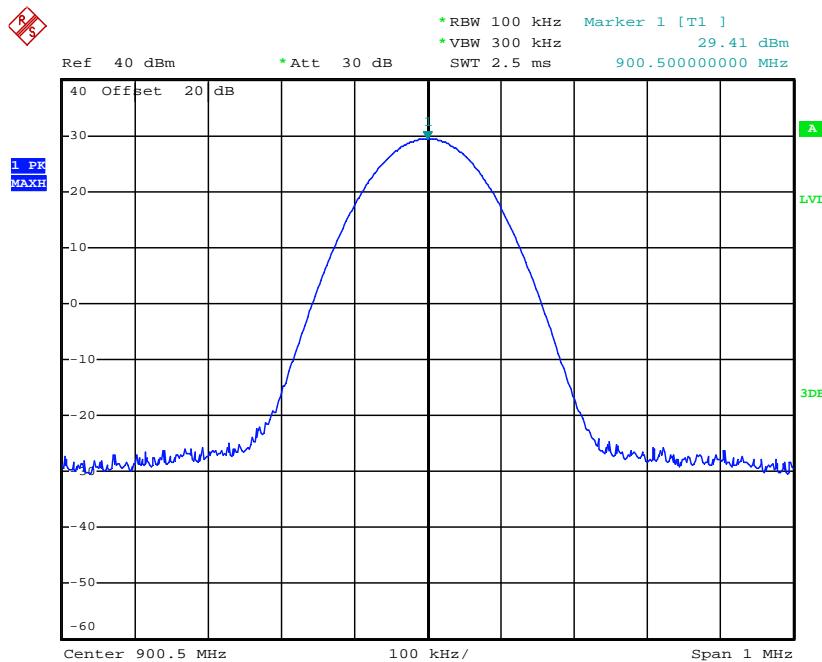
Date: 11.APR.2012 10:54:23

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	896.5000	1	29.52	Varies	Compliance



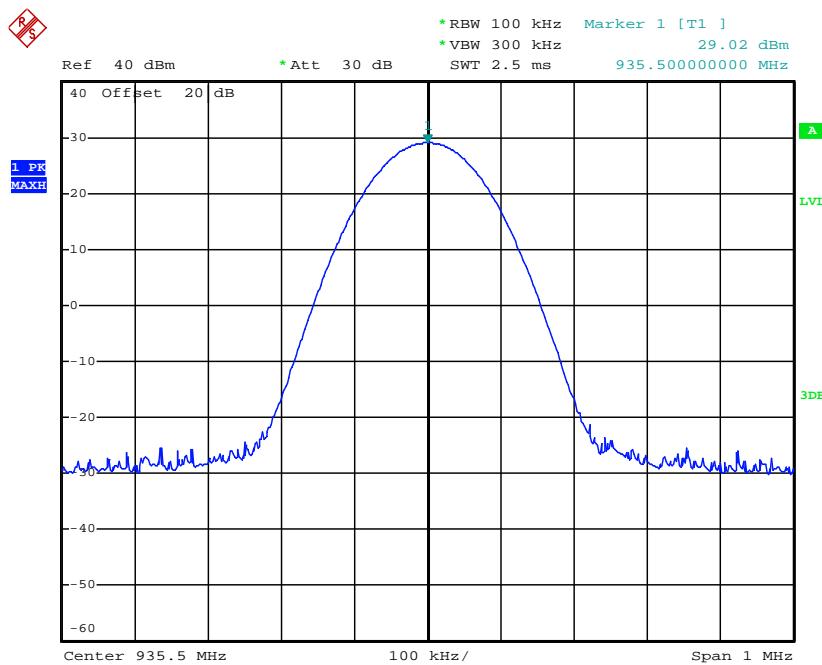
Date: 11.APR.2012 10:55:22

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	900.5000	1	29.41	Varies	Compliance



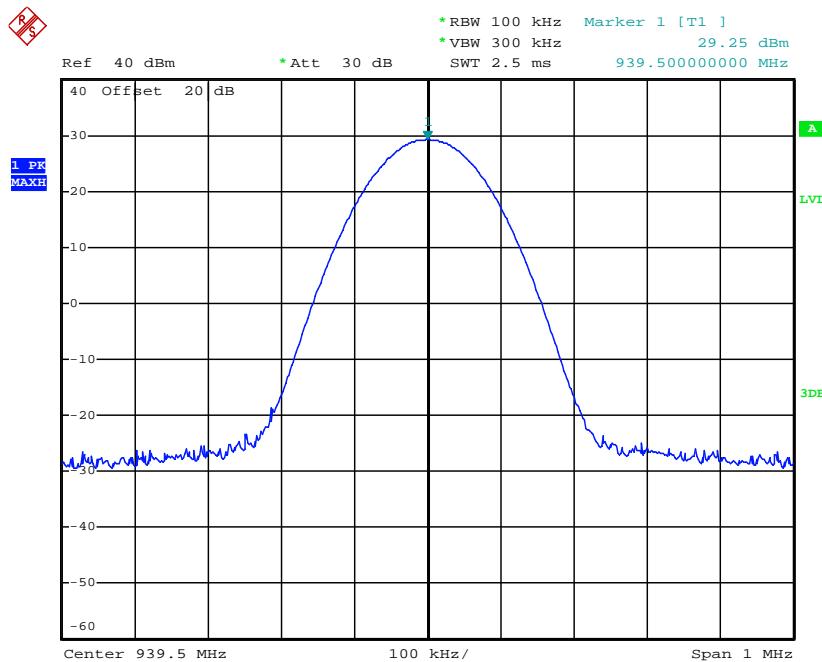
Date: 11.APR.2012 10:56:01

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	935.5000	1	29.02	Varies	Compliance



Date: 11.APR.2012 10:56:50

Modulation Type	Channel Separation	Freq.(MHz)	Rated Power (Watt)	Measurement (dBm)	FCC Limit	Results
4FSK	12.5 KHz	939.5000	1	29.25	Varies	Compliance



Date: 11.APR.2012 10:57:57

4.8. Receiver Radiated Spurious Emission

TEST APPLICABLE

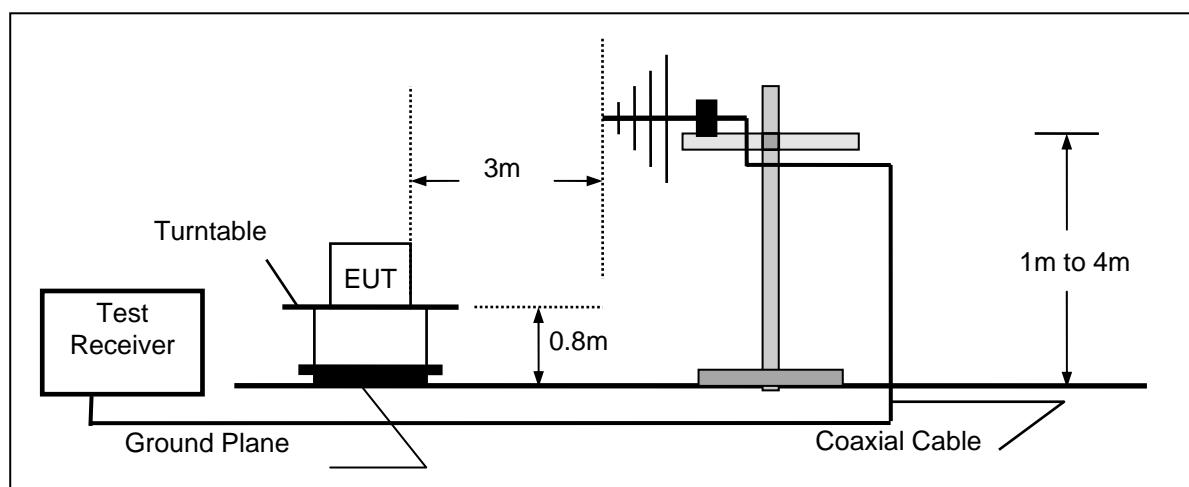
The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

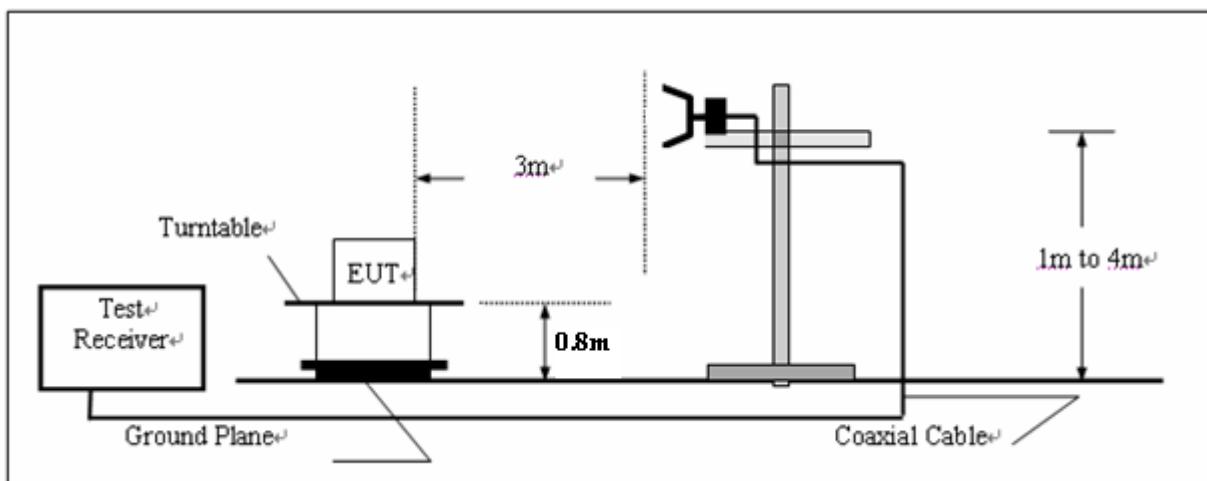
Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

TEST CONFIGURATION

(A) Radiated Emission Test Set-Up, Frequency below 1000MHz



(B) Radiated Emission Test Set-Up, Frequency above 1000MHz



TEST PROCEDURE

- 1 The EUT was placed on a turn table which is 0.8m above ground plane.
- 2 Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0°C to 360°C to acquire the highest emissions from EUT
- 3 And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 4 Repeat above procedures until all frequency measurements have been completed.

RECEIVER RADIATED SPOUIOUS LIMIT

For unintentional device, according to § 15.109(a) and RSS-Gen, except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance (Meters)	Radiated (dB μ V/m)	Radiated (μ V/m)
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

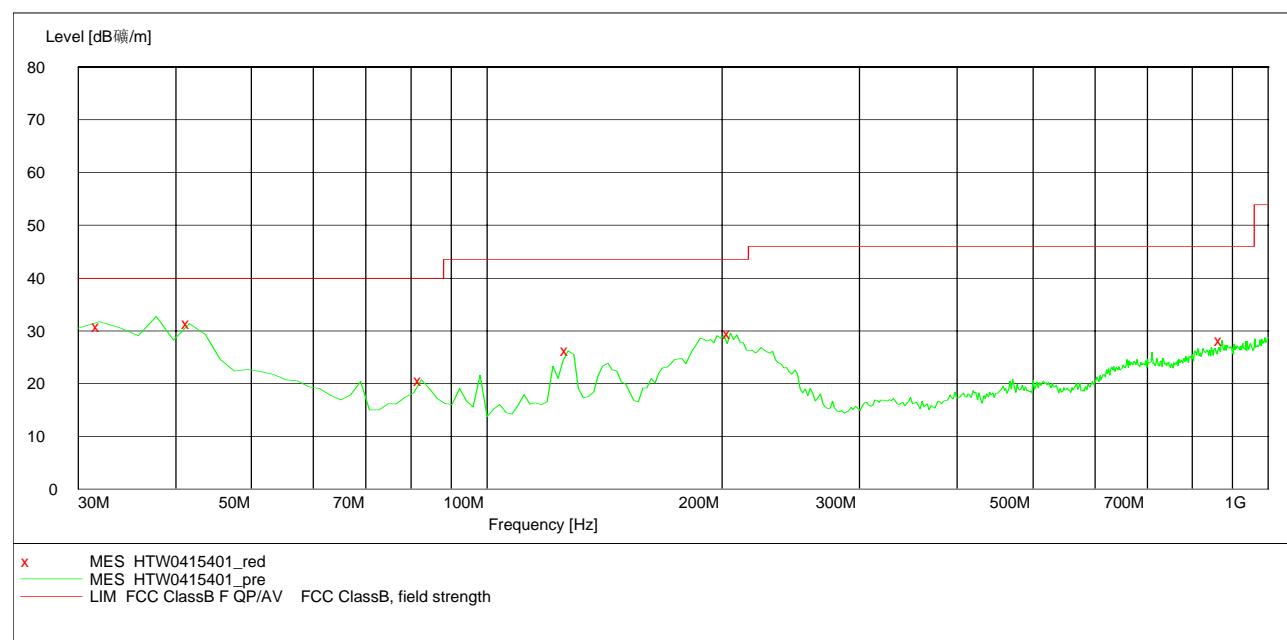
TEST RESULTS

The Radiated Measurement are performed to the five channels (the top channel, the middle channel and the bottom channel), the datum recorded below is the worst case for each channel separation;and the EUT shall be scanned from 30 MHz to the 5th harmonic of the highest oscillator frequency in the digital devices or 1 GHz whichever is higher.

Modulation Type	Channel Separation	Test Frequency (MHz)	Polar.	Maximum Radiated Emissions		FCC Limit (dBuV/m)
				Frequency (MHz)	Datum (dBuV/m)	
FM	25 KHz	806.5000	H	41.66	31.40	40.00
			V	33.99	30.80	40.00
Test Results				Compliance		

SWEET TABLE: "test (30M-1G)"

Short Description: Field Strength
 Start Stop Detector Meas. IF Transducer
 Frequency Frequency Time Bandw.
 30.0 MHz 1.0 GHz MaxPeak Coupled 120 kHz HL562 201106

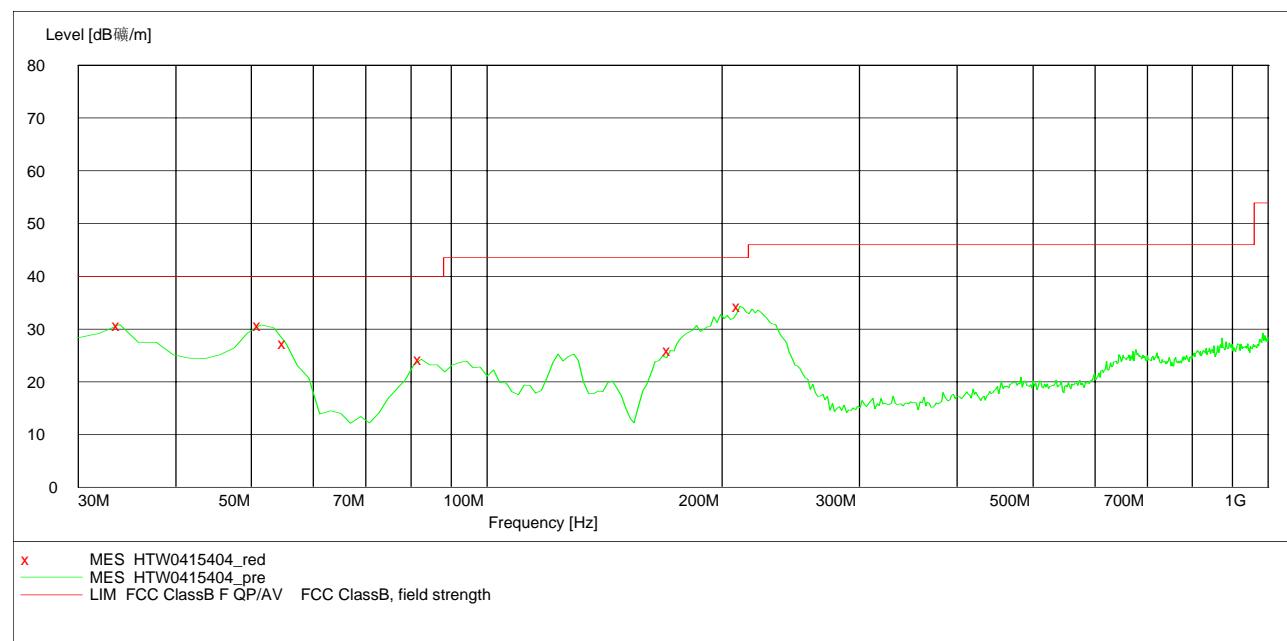
**MEASUREMENT RESULT: "HTW0415401_red"**

4/16/2012 8:27AM

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
31.943888	30.80	-12.3	40.0	9.2	Peak	100.0	14.00	HORIZONTAL
41.663327	31.40	-17.6	40.0	8.6	Peak	300.0	38.00	HORIZONTAL
82.484970	20.70	-21.6	40.0	19.3	Peak	300.0	315.00	HORIZONTAL
127.194389	26.20	-20.0	43.5	17.3	Peak	300.0	172.00	HORIZONTAL
204.949900	29.60	-21.2	43.5	13.9	Peak	100.0	86.00	HORIZONTAL
873.647295	28.30	-7.0	46.0	17.7	Peak	300.0	68.00	HORIZONTAL

SWEET TABLE: "test (30M-1G)"

Short Description: Field Strength
 Start Stop Detector Meas. IF Transducer
 Frequency Frequency Time Bandw.
 30.0 MHz 1.0 GHz MaxPeak Coupled 120 kHz HL562 201106

**MEASUREMENT RESULT: "HTW0415404_red"**

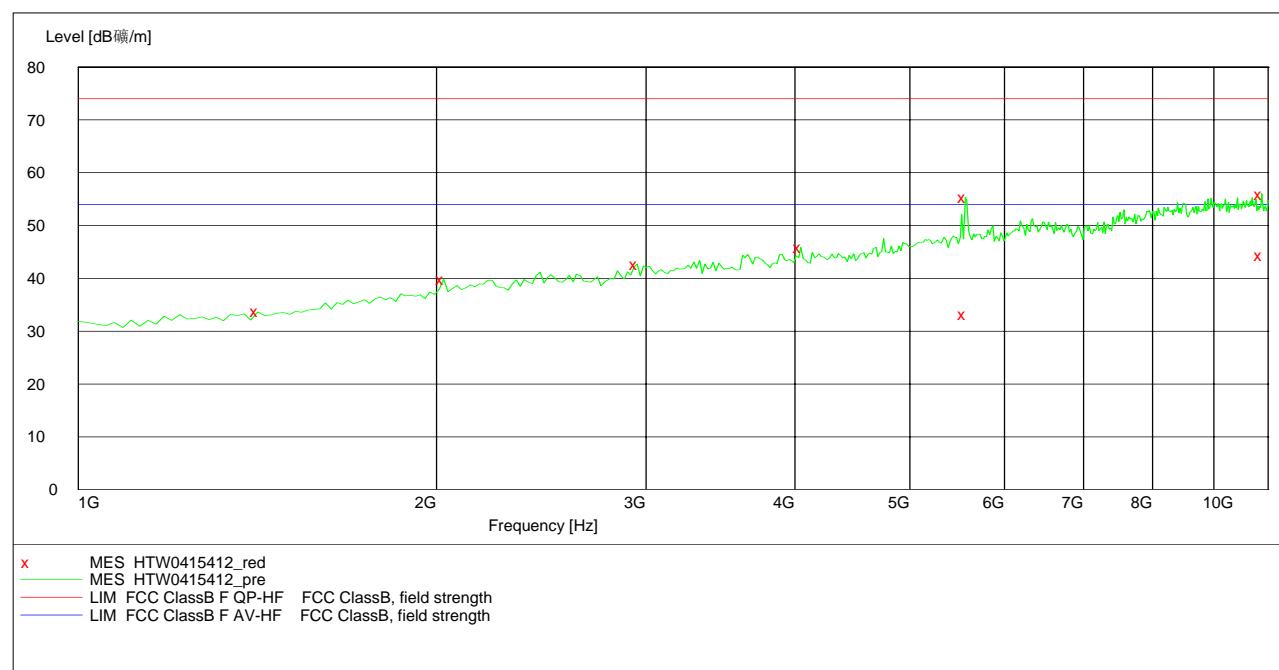
4/15/2012 7:35PM

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
33.887776	30.80	-13.3	40.0	9.2	Peak	100.0	139.00	VERTICAL
51.382766	30.80	-22.8	40.0	9.2	Peak	100.0	314.00	VERTICAL
55.270541	27.30	-23.9	40.0	12.7	Peak	100.0	314.00	VERTICAL
82.484970	24.30	-21.6	40.0	15.7	Peak	100.0	86.00	VERTICAL
171.903808	25.90	-23.2	43.5	17.6	Peak	100.0	145.00	VERTICAL
210.781563	34.30	-20.8	43.5	9.2	Peak	100.0	139.00	VERTICAL

Modulation Type	Channel Separation	Test Frequency (MHz)	Polar.	Maximum Radiated Emissions		FCC Limit (dBuV/m)
				Frequency (MHz)	Datum (dBuV/m)	
FM	25 KHz	806.5000	H	9873.74	44.30	54.00
			V	9963.93	45.30	54.00
Test Results				Compliance		

SWEET TABLE: "test (1G-18G) P"

Short Description: EN 55022 Field Strength
 Start Stop Detector Meas. IF Transducer
 Frequency Frequency Time Bandw.
 1.0 GHz 18.0 GHz MaxPeak Coupled 1 MHz HF906 2011
 Average

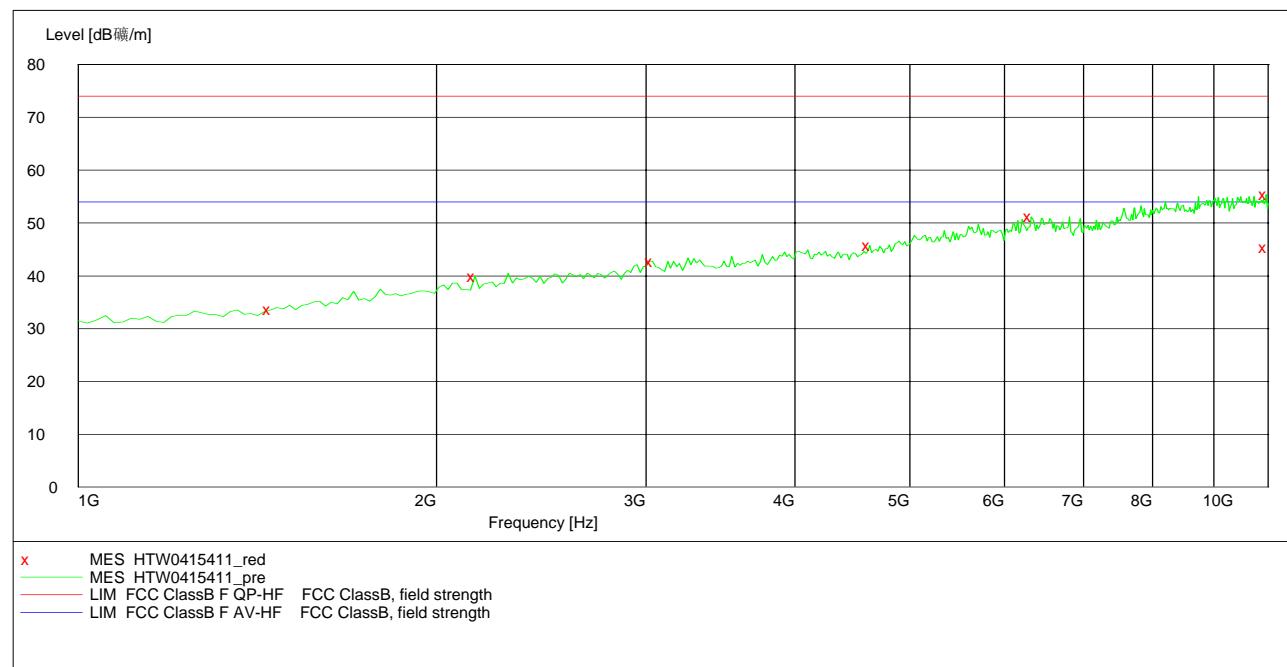
**MEASUREMENT RESULT: "HTW0415412_red"**

4/16/2012 8:42AM

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1414.829659	33.70	-24.1	54.0	20.3	Peak	100.0	139.00	HORIZONTAL
2028.056112	39.90	-19.4	54.0	14.1	Peak	100.0	272.00	HORIZONTAL
2947.895792	42.70	-15.5	54.0	11.3	Peak	100.0	278.00	HORIZONTAL
4048.096192	45.90	-12.9	54.0	8.1	Peak	100.0	86.00	HORIZONTAL
5563.126253	55.40	-9.9	74.0	18.6	Peak	100.0	118.00	HORIZONTAL
5563.126253	33.20	-9.9	54.0	20.8	AV	100.0	118.00	HORIZONTAL
9873.747495	56.00	-2.1	74.0	18.0	Peak	100.0	320.00	HORIZONTAL
9873.747495	44.30	-2.1	54.0	9.7	AV	100.0	320.00	HORIZONTAL

SWEET TABLE: "test (1G-18G) P"

Short Description: EN 55022 Field Strength
 Start Stop Detector Meas. IF Transducer
 Frequency Frequency Time Bandw.
 1.0 GHz 18.0 GHz MaxPeak Coupled 1 MHz HF906 2011
 Average

***MEASUREMENT RESULT: "HTW0415411_red"***

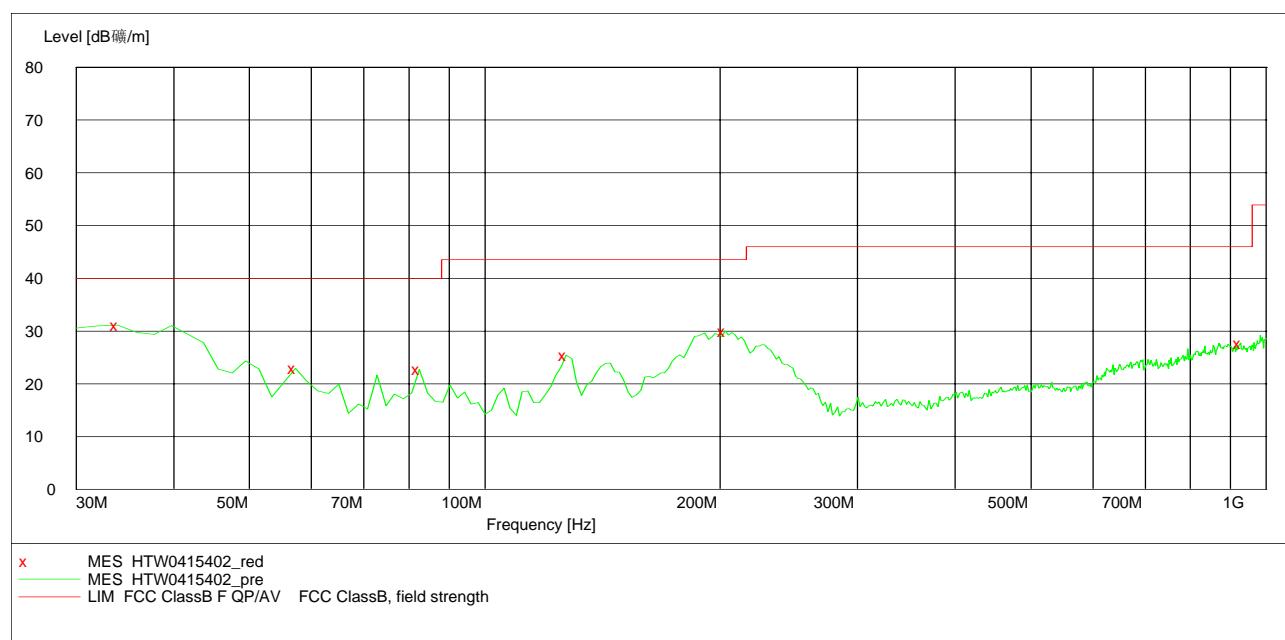
4/16/2012 8:40AM

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1450.901804	33.60	-23.9	54.0	20.4	Peak	100.0	196.00	VERTICAL
2154.308617	39.90	-18.7	54.0	14.1	Peak	100.0	51.00	VERTICAL
3038.076152	42.80	-15.2	54.0	11.2	Peak	100.0	86.00	VERTICAL
4625.250501	45.70	-12.6	54.0	8.3	Peak	100.0	269.00	VERTICAL
6320.641283	51.20	-8.4	54.0	2.8	Peak	100.0	134.00	VERTICAL
9963.927856	55.40	-2.2	74.0	18.6	Peak	100.0	145.00	VERTICAL
9963.927856	45.30	-2.2	54.0	8.7	AV	100.0	145.00	VERTICAL

Modulation Type	Channel Separation	Test Frequency (MHz)	Polar.	Maximum Radiated Emissions		FCC Limit (dBuV/m)
				Frequency (MHz)	Datum (dBuV/m)	
FM	12.5 KHz	806.5000	H	33.89	31.10	40.00
			V	30.00	32.50	40.00
Test Results				Compliance		

SWEET TABLE: "test (30M-1G)"

Short Description: Field Strength
 Start Stop Detector Meas. IF Transducer
 Frequency Frequency Time Bandw.
 30.0 MHz 1.0 GHz MaxPeak Coupled 120 kHz HL562 201106

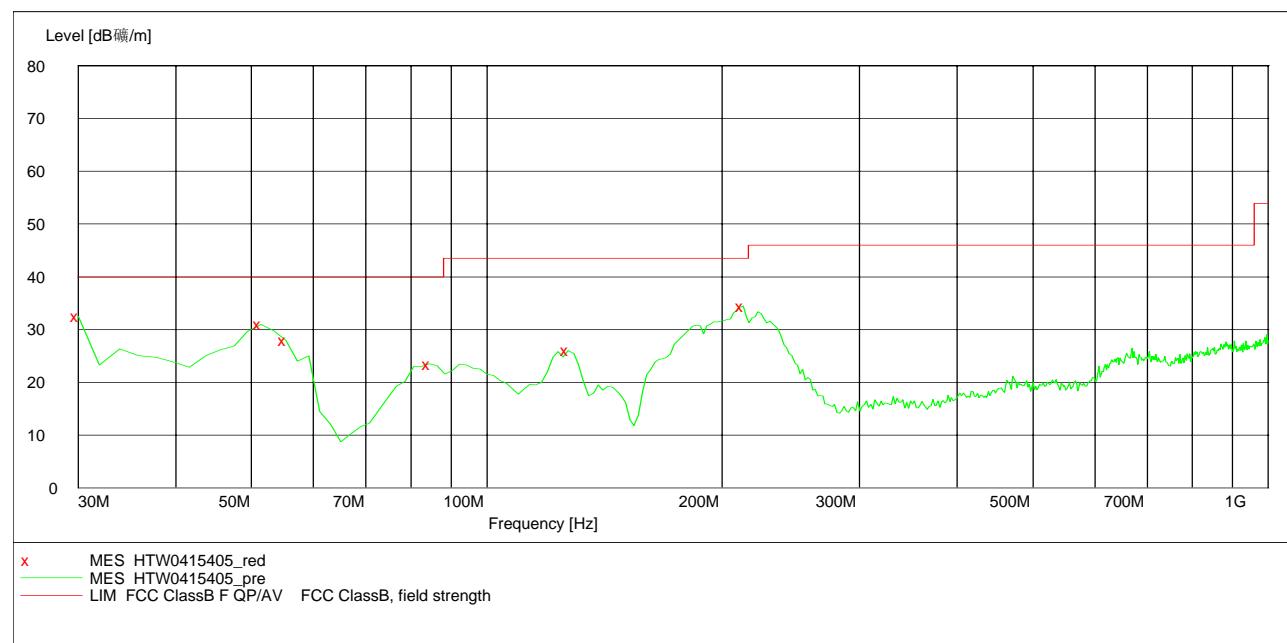
***MEASUREMENT RESULT: "HTW0415402_red"***

4/16/2012 8:29AM

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det. Peak	Height cm	Azimuth deg	Polarization
33.887776	31.10	-13.3	40.0	8.9	Peak	300.0	262.00	HORIZONTAL
57.214429	22.90	-24.6	40.0	17.1	Peak	300.0	63.00	HORIZONTAL
82.484970	22.70	-21.6	40.0	17.3	Peak	300.0	188.00	HORIZONTAL
127.194389	25.40	-20.0	43.5	18.1	Peak	300.0	161.00	HORIZONTAL
203.006012	30.00	-21.3	43.5	13.5	Peak	100.0	74.00	HORIZONTAL
928.076152	27.70	-7.1	46.0	18.3	Peak	300.0	18.00	HORIZONTAL

SWEET TABLE: "test (30M-1G)"

Short Description:		Field Strength			
Start Frequency	Stop Frequency	Detector	Meas.	IF Time	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	120 kHz	HL562 201106

**MEASUREMENT RESULT: "HTW0415405_red"**

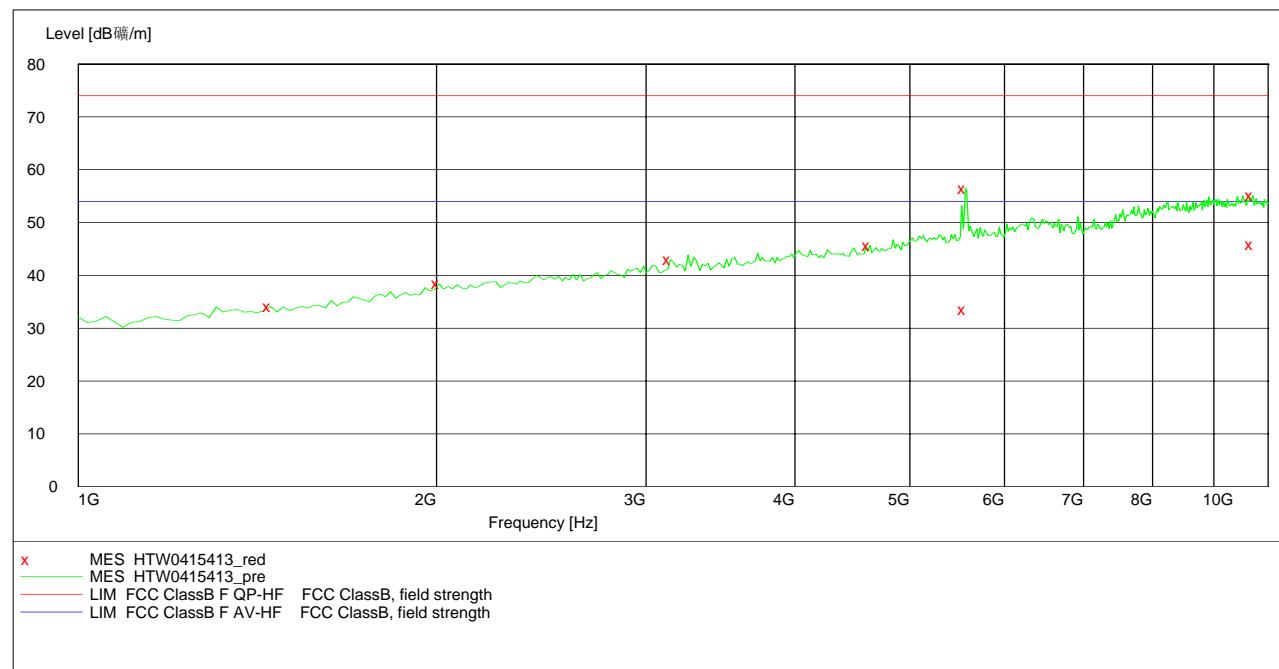
4/15/2012 7:37PM

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	32.50	-11.3	40.0	7.5	Peak	100.0	92.00	VERTICAL
51.382766	31.00	-22.8	40.0	9.0	Peak	100.0	349.00	VERTICAL
55.270541	28.00	-23.9	40.0	12.0	Peak	100.0	357.00	VERTICAL
84.428858	23.50	-21.2	40.0	16.5	Peak	100.0	81.00	VERTICAL
127.194389	26.00	-20.0	43.5	17.5	Peak	100.0	228.00	VERTICAL
212.725451	34.50	-20.8	43.5	9.0	Peak	100.0	148.00	VERTICAL

Modulation Type	Channel Separation	Test Frequency (MHz)	Polar.	Maximum Radiated Emissions		FCC Limit (dBuV/m)
				Frequency (MHz)	Datum (dBuV/m)	
FM	12.5 KHz	806.5000	H	9711.42	45.90	54.00
			V	9549.10	44.80	54.00
Test Results				Compliance		

SWEET TABLE: "test (1G-18G) P"

Short Description: EN 55022 Field Strength
 Start Stop Detector Meas. IF Transducer
 Frequency Frequency Time Bandw.
 1.0 GHz 18.0 GHz MaxPeak Coupled 1 MHz HF906 2011
 Average

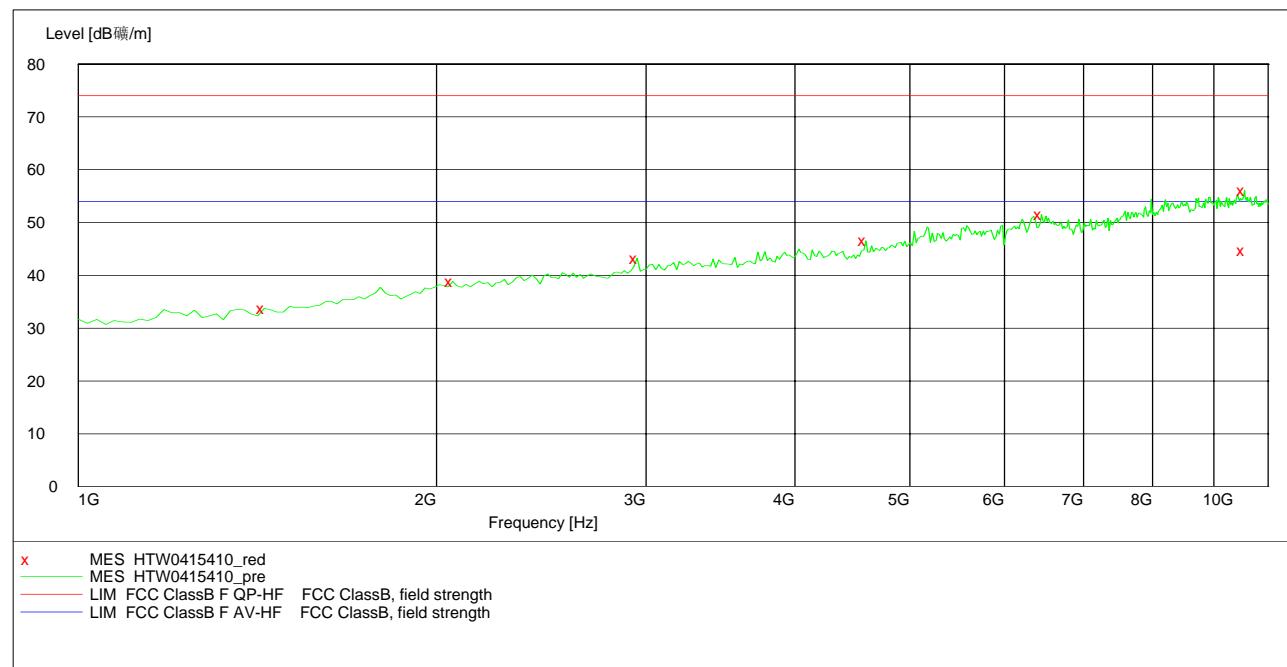
**MEASUREMENT RESULT: "HTW0415413_red"**

4/16/2012 8:44AM

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1450.901804	34.20	-23.9	54.0	19.8	Peak	100.0	24.00	HORIZONTAL
2010.020040	38.50	-19.5	54.0	15.5	Peak	100.0	154.00	HORIZONTAL
3146.292585	43.00	-15.0	54.0	11.0	Peak	100.0	181.00	HORIZONTAL
4625.250501	45.70	-12.6	54.0	8.3	Peak	100.0	45.00	HORIZONTAL
5563.126253	56.50	-9.9	74.0	17.5	Peak	100.0	71.00	HORIZONTAL
5563.126253	33.60	-9.9	54.0	20.4	AV	100.0	71.00	HORIZONTAL
9711.422846	55.10	-1.8	74.0	18.9	Peak	100.0	51.00	HORIZONTAL
9711.422846	45.90	-1.8	54.0	8.1	AV	100.0	51.00	HORIZONTAL

SWEET TABLE: "test (1G-18G) P"

Short Description: EN 55022 Field Strength
 Start Stop Detector Meas. IF Transducer
 Frequency Frequency Time Bandw.
 1.0 GHz 18.0 GHz MaxPeak Coupled 1 MHz HF906 2011
 Average

***MEASUREMENT RESULT: "HTW0415410_red"***

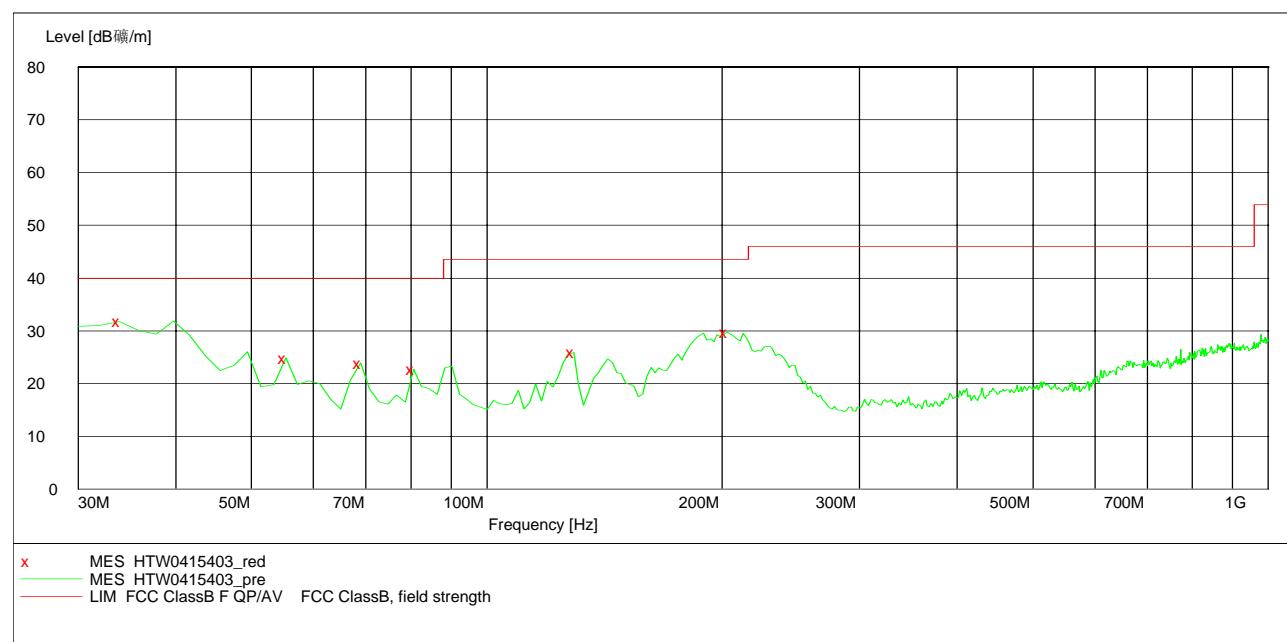
4/16/2012 8:38AM

Polarization	Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Det.	Height cm	Azimuth deg
	1432.865731	33.70	-24.0	54.0	20.3	Peak	100.0	278.00 VERTICAL
	2064.128257	38.80	-19.2	54.0	15.2	Peak	100.0	211.00 VERTICAL
	2947.895792	43.30	-15.5	54.0	10.7	Peak	100.0	211.00 VERTICAL
	4589.178357	46.60	-12.7	54.0	7.4	Peak	100.0	51.00 VERTICAL
	6446.893788	51.50	-8.0	54.0	2.5	Peak	100.0	57.00 VERTICAL
	9549.098196	56.10	-1.6	74.0	17.9	Peak	100.0	237.00 VERTICAL
	9549.098196	44.80	-1.6	54.0	9.2	AV	100.0	237.00 VERTICAL

Modulation Type	Channel Separation	Test Frequency (MHz)	Polar.	Maximum Radiated Emissions		FCC Limit (dBuV/m)
				Frequency (MHz)	Datum (dBuV/m)	
4FSK	12.5 KHz	806.5000	H	33.89	31.70	40.00
			V	31.94	32.10	40.00
Test Results				Compliance		

SWEET TABLE: "test (30M-1G)"

Short Description: Field Strength
 Start Stop Detector Meas. IF Transducer
 Frequency Frequency Time Bandw.
 30.0 MHz 1.0 GHz MaxPeak Coupled 120 kHz HL562 201106

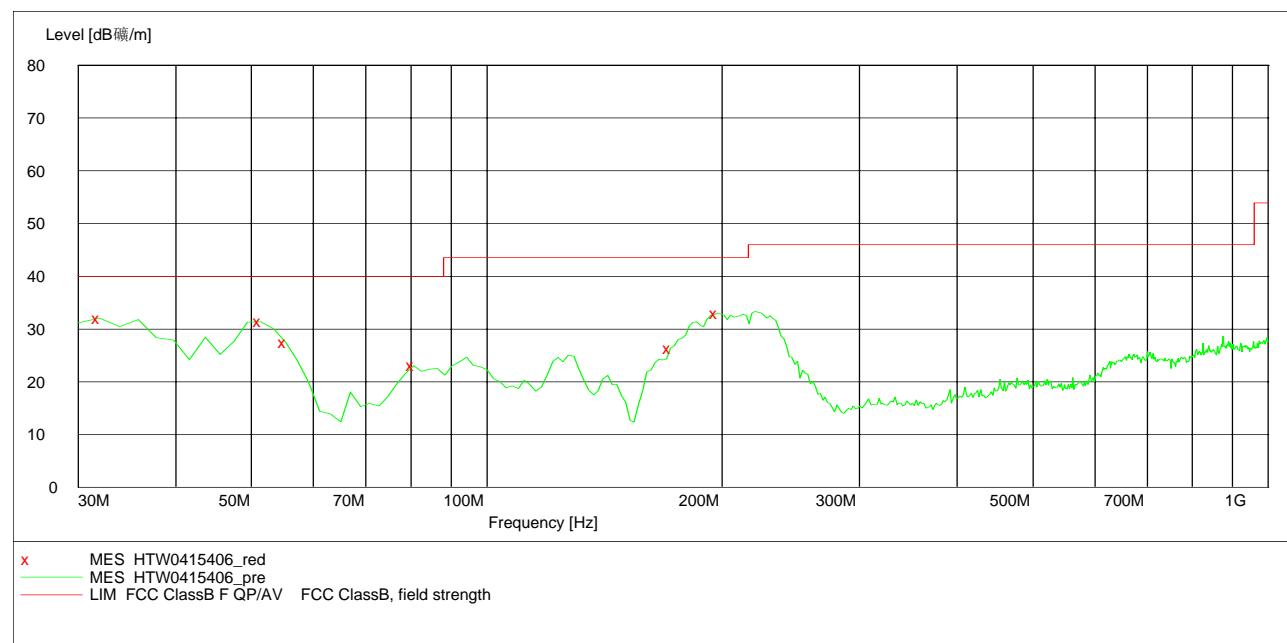
**MEASUREMENT RESULT: "HTW0415403_red"**

4/16/2012 8:29AM

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
33.887776	31.70	-13.3	40.0	8.3	Peak	100.0	57.00	HORIZONTAL
55.270541	24.90	-23.9	40.0	15.1	Peak	100.0	125.00	HORIZONTAL
68.877756	23.90	-23.3	40.0	16.1	Peak	300.0	200.00	HORIZONTAL
80.541082	22.70	-22.1	40.0	17.3	Peak	300.0	289.00	HORIZONTAL
129.138277	25.90	-20.3	43.5	17.6	Peak	300.0	159.00	HORIZONTAL
203.006012	29.80	-21.3	43.5	13.7	Peak	100.0	90.00	HORIZONTAL

SWEET TABLE: "test (30M-1G)"

Short Description: Field Strength
 Start Stop Detector Meas. IF Transducer
 Frequency Frequency Time Bandw.
 30.0 MHz 1.0 GHz MaxPeak Coupled 120 kHz HL562 201106

***MEASUREMENT RESULT: "HTW0415406_red"***

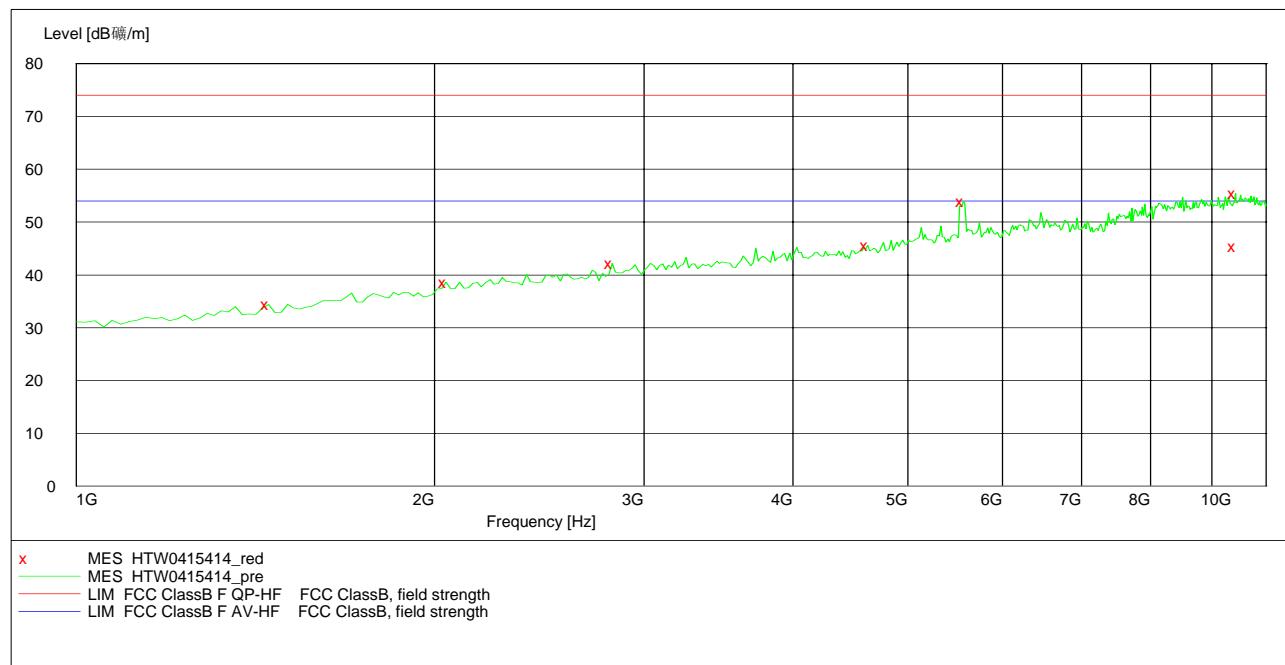
4/16/2012 8:32AM

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
31.943888	32.10	-12.3	40.0	7.9	Peak	100.0	340.00	VERTICAL
51.382766	31.40	-22.8	40.0	8.6	Peak	100.0	334.00	VERTICAL
55.270541	27.40	-23.9	40.0	12.6	Peak	100.0	359.00	VERTICAL
80.541082	23.10	-22.1	40.0	16.9	Peak	100.0	86.00	VERTICAL
171.903808	26.40	-23.2	43.5	17.1	Peak	100.0	113.00	VERTICAL
197.174349	33.00	-21.6	43.5	10.5	Peak	100.0	139.00	VERTICAL

Modulation Type	Channel Separation	Test Frequency (MHz)	Polar.	Maximum Radiated Emissions		FCC Limit (dBuV/m)
				Frequency (MHz)	Datum (dBuV/m)	
4FSK	12.5 KHz	806.5000	H	9422.85	45.40	54.00
			V	9657.31	45.00	54.00
Test Results				Compliance		

SWEET TABLE: "test (1G-18G) P"

Short Description: EN 55022 Field Strength
 Start Stop Detector Meas. IF Transducer
 Frequency Frequency Time Bandw.
 1.0 GHz 18.0 GHz MaxPeak Coupled 1 MHz HF906 2011
 Average

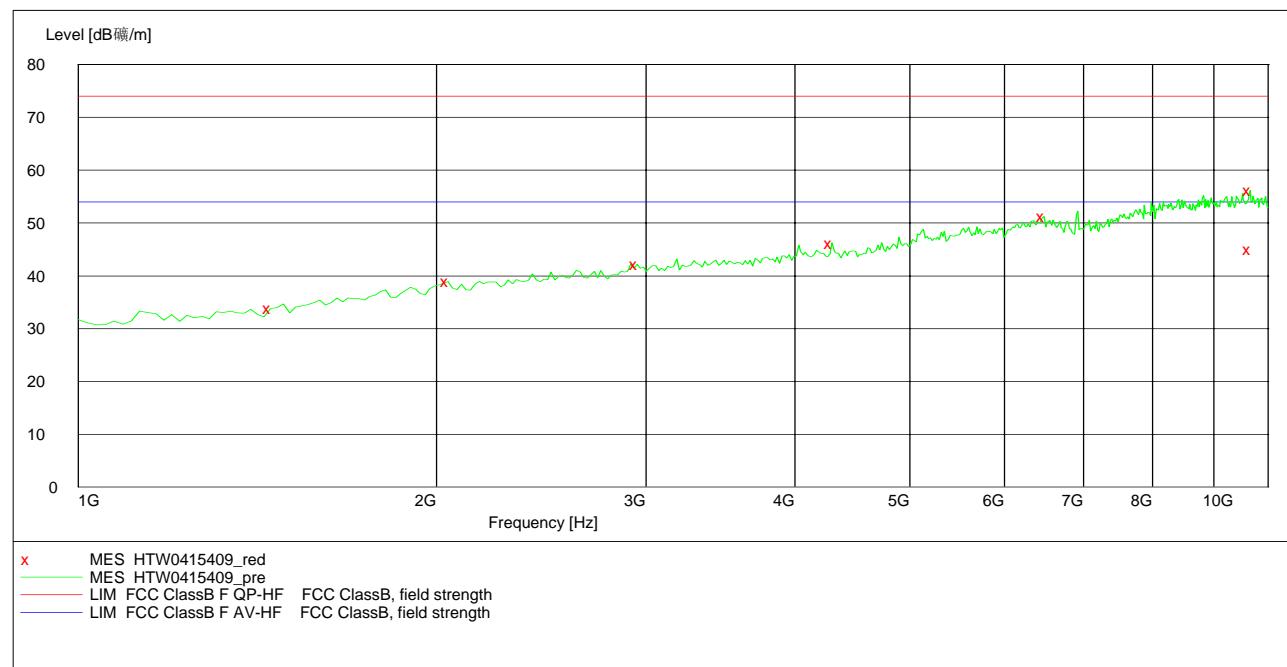
***MEASUREMENT RESULT: "HTW0415414_red"***

4/16/2012 8:46AM

Frequency	Level	Transd	Limit	Margin	Det.	Height	Azimuth	Polarization
MHz	dBuV/m	dB	dBuV/m	dB		cm	deg	
1450.901804	34.40	-23.9	54.0	19.6	Peak	100.0	51.00	HORIZONTAL
2046.092184	38.60	-19.3	54.0	15.4	Peak	100.0	338.00	HORIZONTAL
2821.643287	42.20	-15.9	54.0	11.8	Peak	100.0	359.00	HORIZONTAL
4625.250501	45.60	-12.6	54.0	8.4	Peak	100.0	125.00	HORIZONTAL
5563.126253	53.90	-9.9	54.0	0.1	Peak	100.0	113.00	HORIZONTAL
9422.845691	55.40	-1.7	74.0	18.6	Peak	100.0	0.00	HORIZONTAL
9422.845691	45.40	-1.7	54.0	8.6	AV	100.0	0.00	HORIZONTAL

SWEET TABLE: "test (1G-18G) P"

Short Description: EN 55022 Field Strength
 Start Stop Detector Meas. IF Transducer
 Frequency Frequency Time Bandw.
 1.0 GHz 18.0 GHz MaxPeak Coupled 1 MHz HF906 2011
 Average

***MEASUREMENT RESULT: "HTW0415409_red"***

4/16/2012 8:36AM

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1450.901804	33.80	-23.9	54.0	20.2	Peak	100.0	31.00	VERTICAL
2046.092184	38.90	-19.3	54.0	15.1	Peak	100.0	110.00	VERTICAL
2947.895792	42.20	-15.5	54.0	11.8	Peak	100.0	54.00	VERTICAL
4300.601202	46.20	-13.0	54.0	7.8	Peak	100.0	7.00	VERTICAL
6482.965932	51.20	-7.9	54.0	2.8	Peak	100.0	273.00	VERTICAL
9657.314629	56.20	-1.7	74.0	17.8	Peak	100.0	263.00	VERTICAL
9657.314629	45.00	-1.7	54.0	9.0	AV	100.0	263.00	VERTICAL

4.9. Receiver Conducted Spurious Emssion

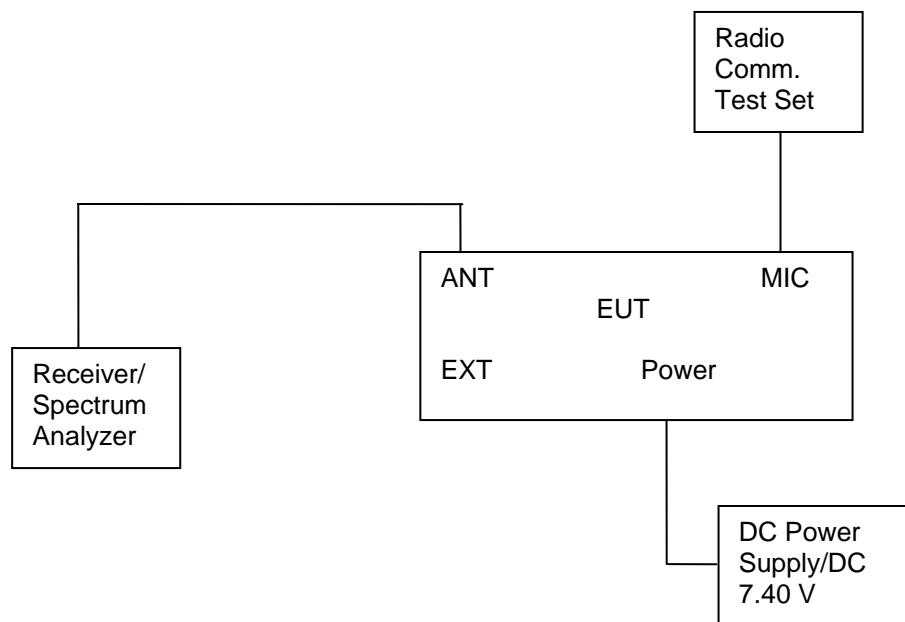
TEST APPLICABLE

The same as Section 4.3

TEST PROCEDURE

The spectrum analyzer was connected to the RF output power of the EUT, the EUT was setup in receiving mode; The RBW of the spectrum analyzer was set to 100 kHz and the VBW set to 300 KHz below the test frequency 1GHz. While the RBW of the spectrum analyzer was set to the 1MHz and VBW set to the 3MHz from 1GHz to the 10th harmonic.

TEST CONFIGURATION



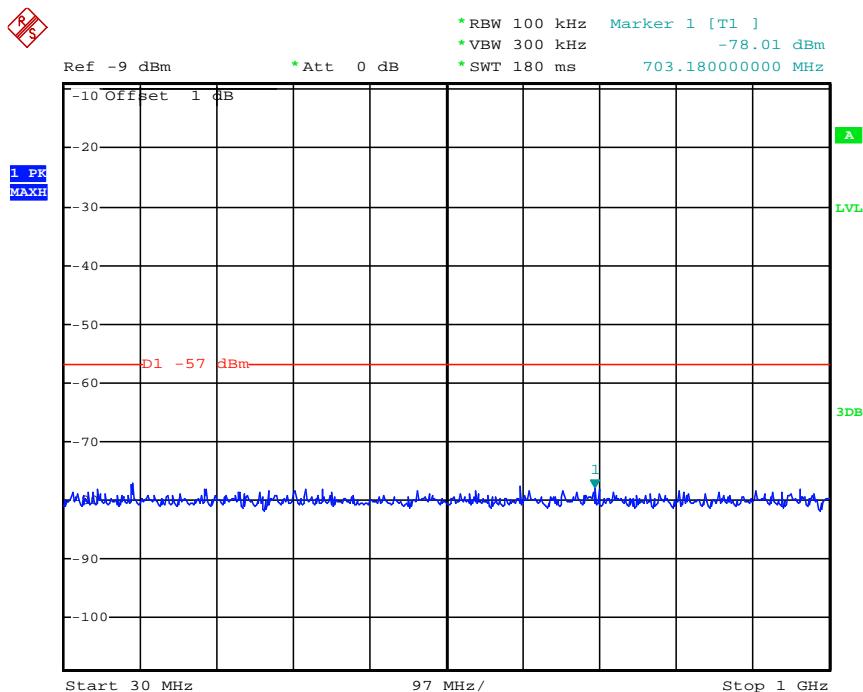
LIMIT

The power at the antenna terminal shall not exceed 2.0 nanowatts (-57dBm).

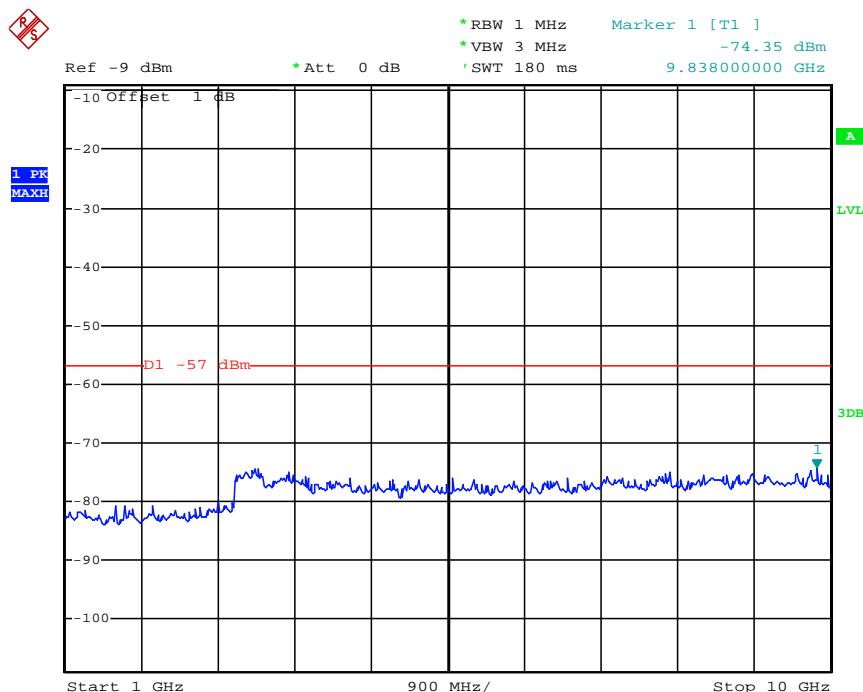
TEST RESULTS

The Receiver Conducted Spurious Emssions Measurement is performed to the thre channels (the top channel, the middle channel and the bottom channel), the datums recorded below were for the three channels; and the EUT shall be scanned from 30 MHz to the 10 GHz.

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	25KHz	Low	851.5000	703.18	-78.01	9838.00	-74.35	-57dBm
Test Results				Compliance				

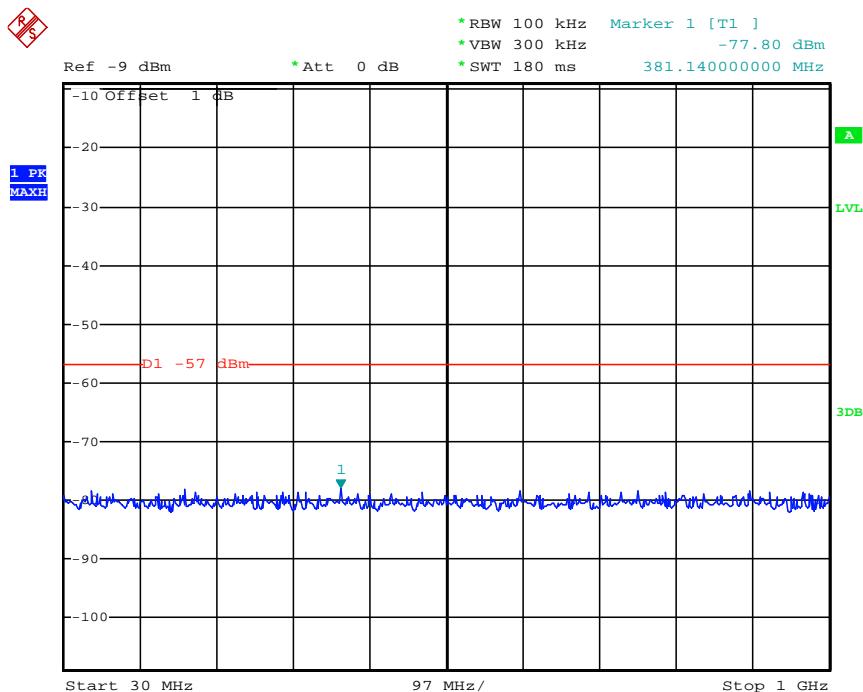


Date: 12.APR.2012 04:09:16

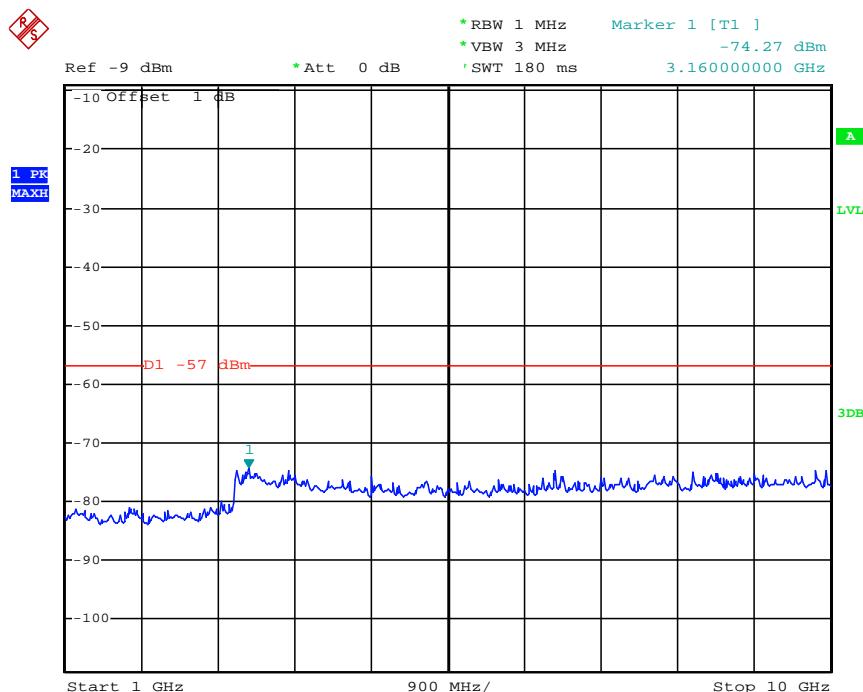


Date: 12.APR.2012 04:07:54

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	25KHz	Middle	860.0000	381.14	-77.80	3160.00	-74.27	-57dBm
Test Results				Compliance				

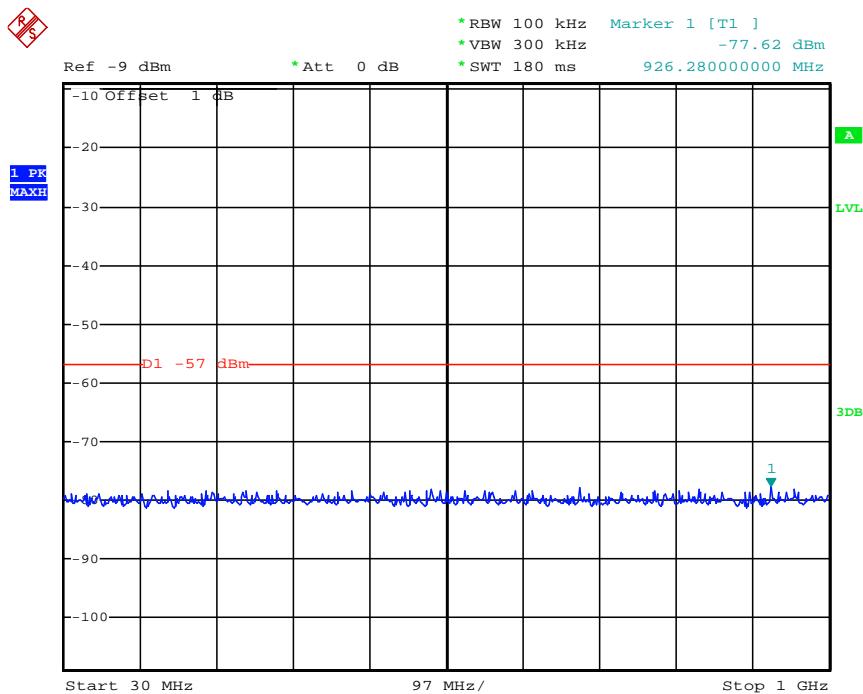


Date: 12.APR.2012 04:09:04

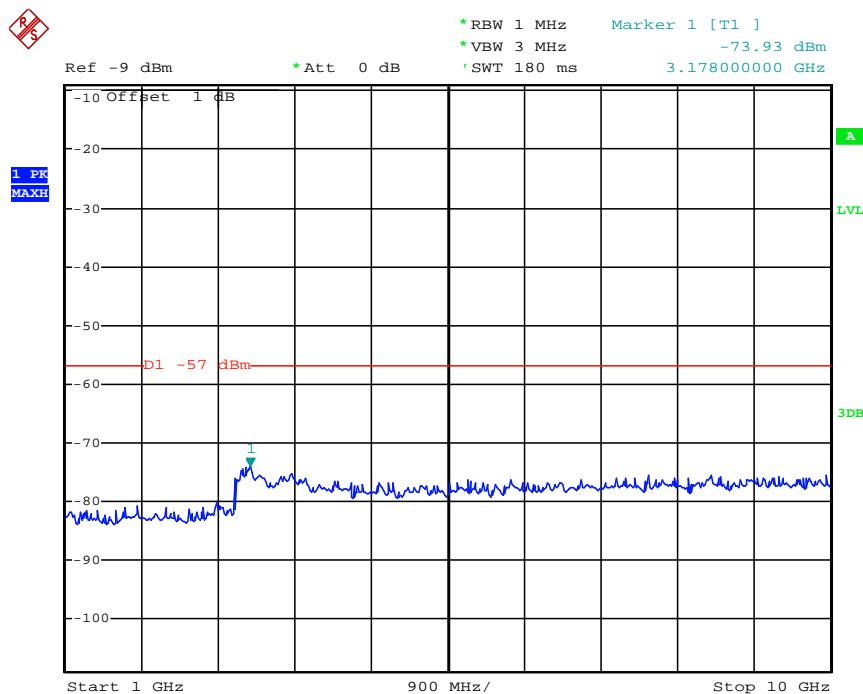


Date: 12.APR.2012 04:08:09

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	25KHz	High	868.5000	926.28	-77.62	3178.00	-73.93	-57dBm
Test Results				Compliance				

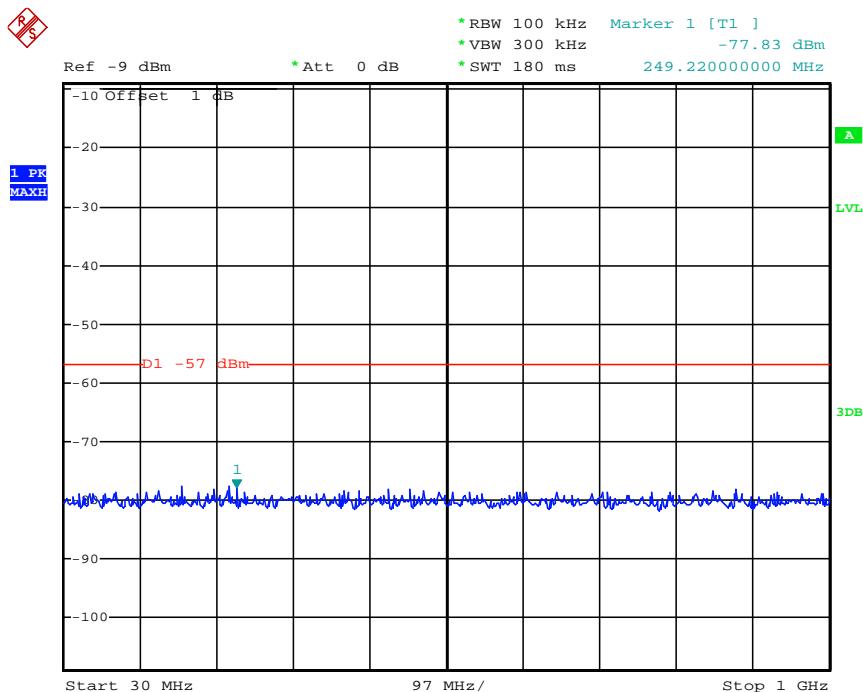


Date: 12.APR.2012 04:08:48

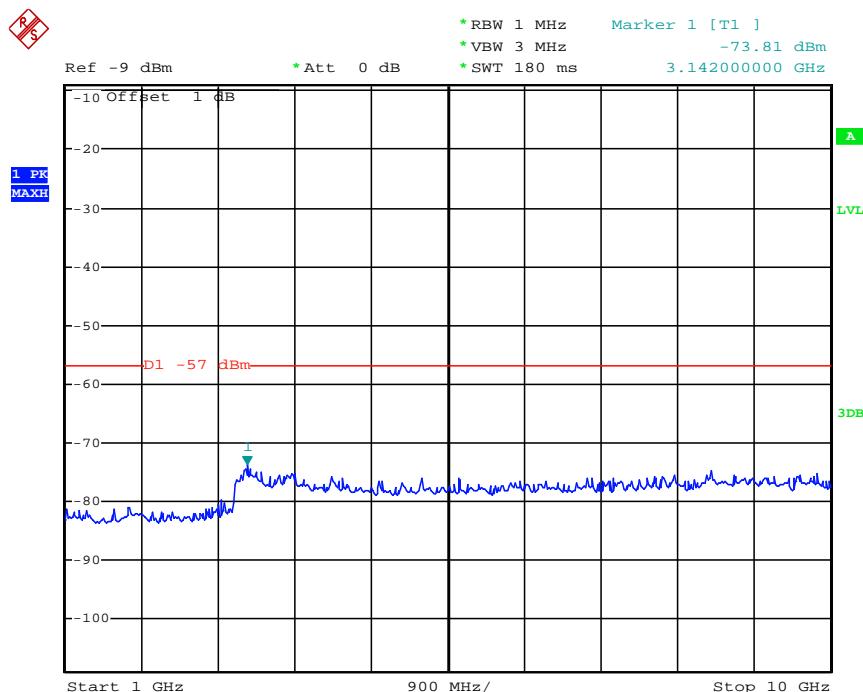


Date: 12.APR.2012 04:08:19

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	Low	851.5000	249.22	-77.82	3142.00	-73.81	-57dBm
Test Results				Compliance				

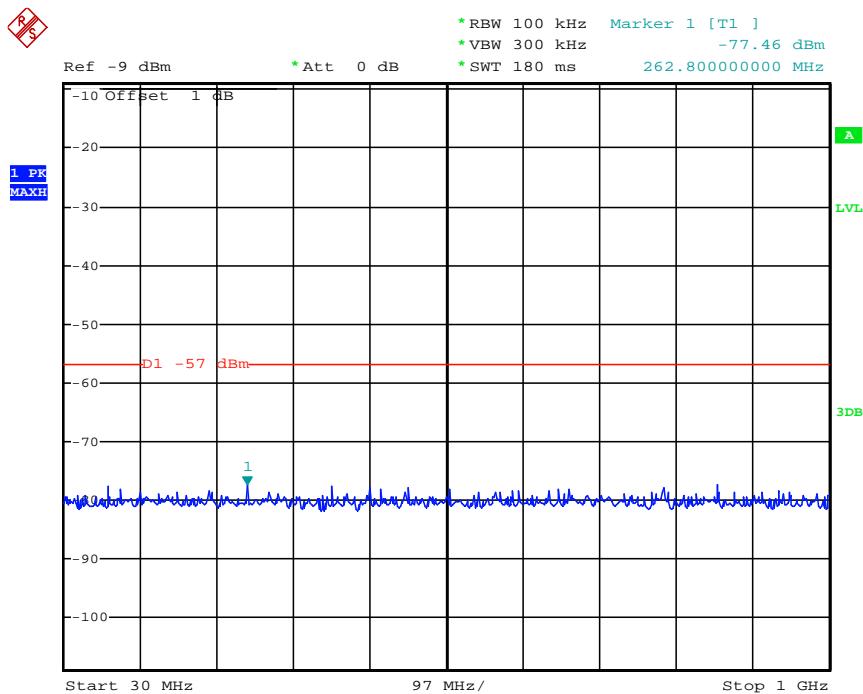


Date: 12.APR.2012 04:11:08

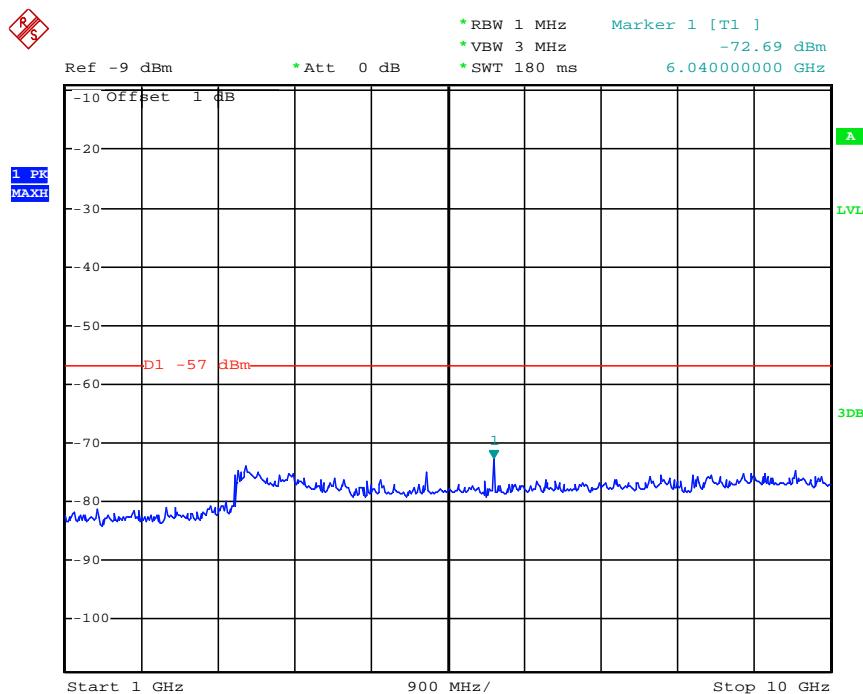


Date: 12.APR.2012 04:14:53

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	Middle	860.0000	262.80	-77.46	6040.00	-72.69	-57dBm
Test Results				Compliance				

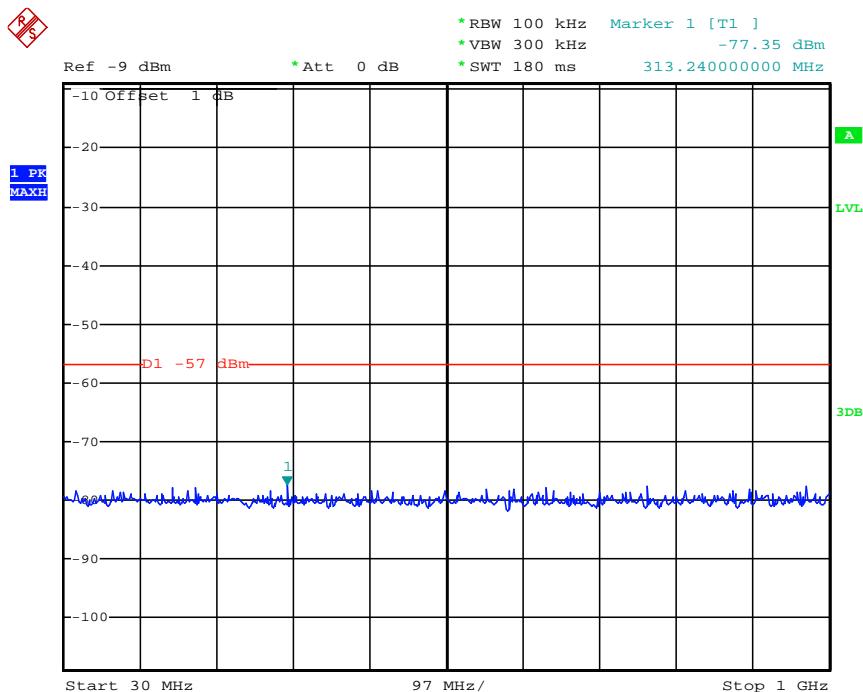


Date: 12.APR.2012 04:11:20

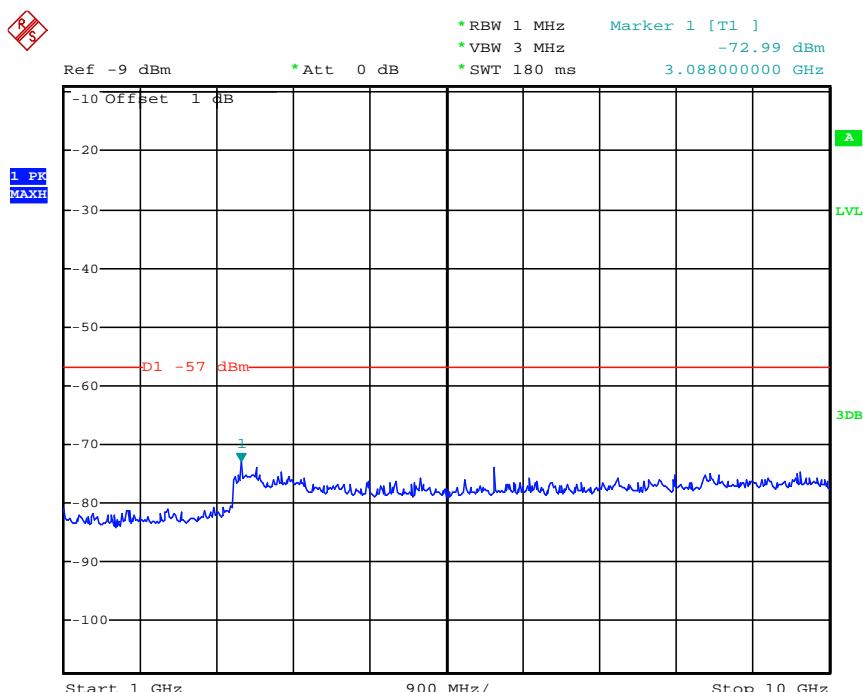


Date: 12.APR.2012 04:14:37

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	High	868.5000	313.24	-77.35	3088.00	-72.99	-57dBm
Test Results				Compliance				

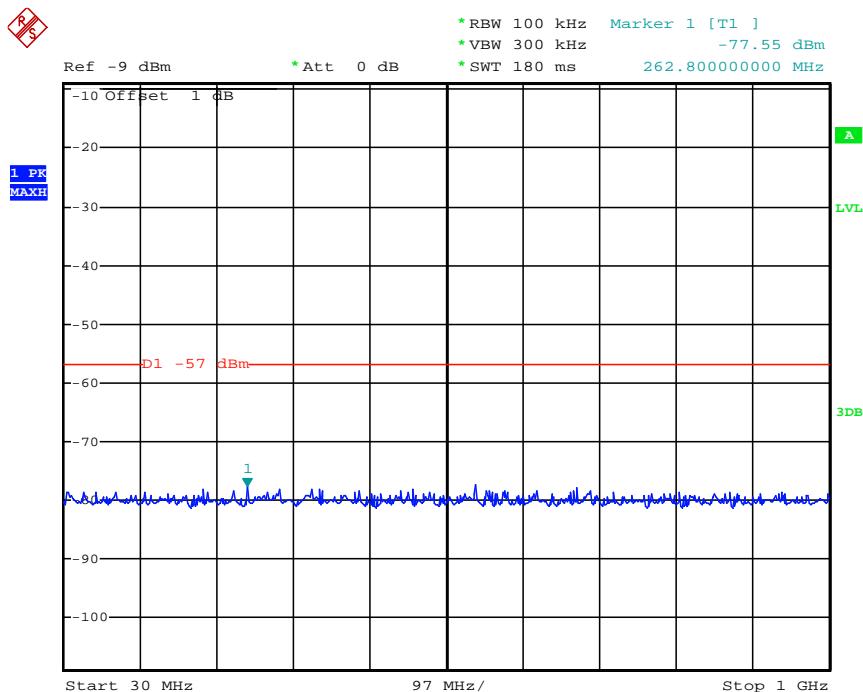


Date: 12.APR.2012 04:11:33

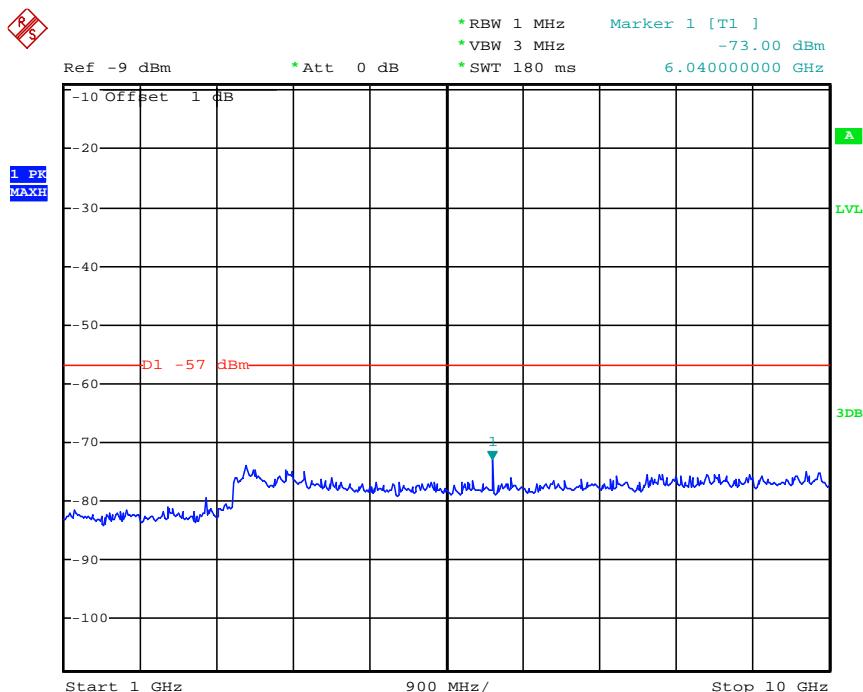


Date: 12.APR.2012 04:14:14

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	Low	935.5000	262.80	-77.55	6040.00	-73.00	-57dBm
Test Results				Compliance				

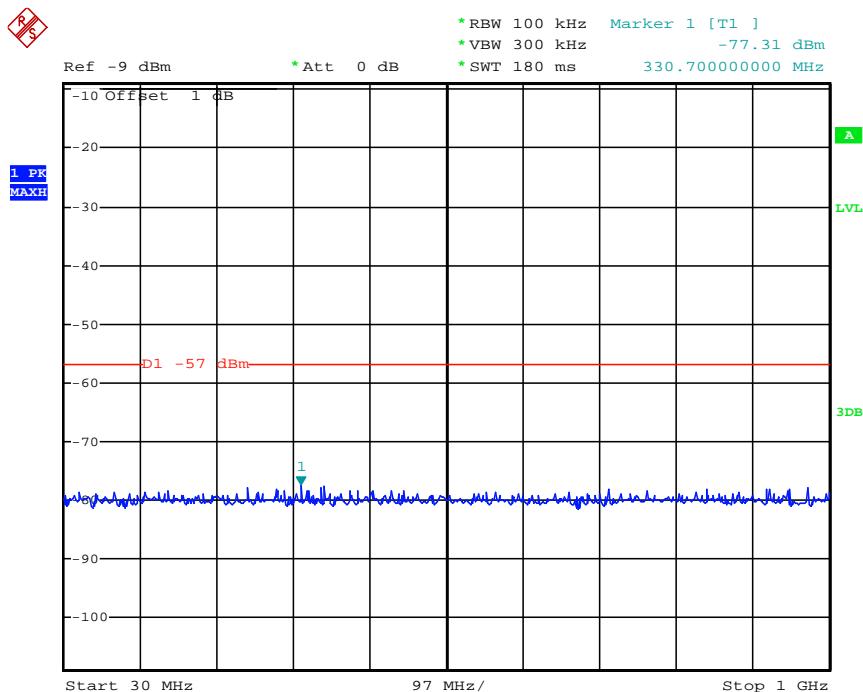


Date: 12.APR.2012 04:13:10

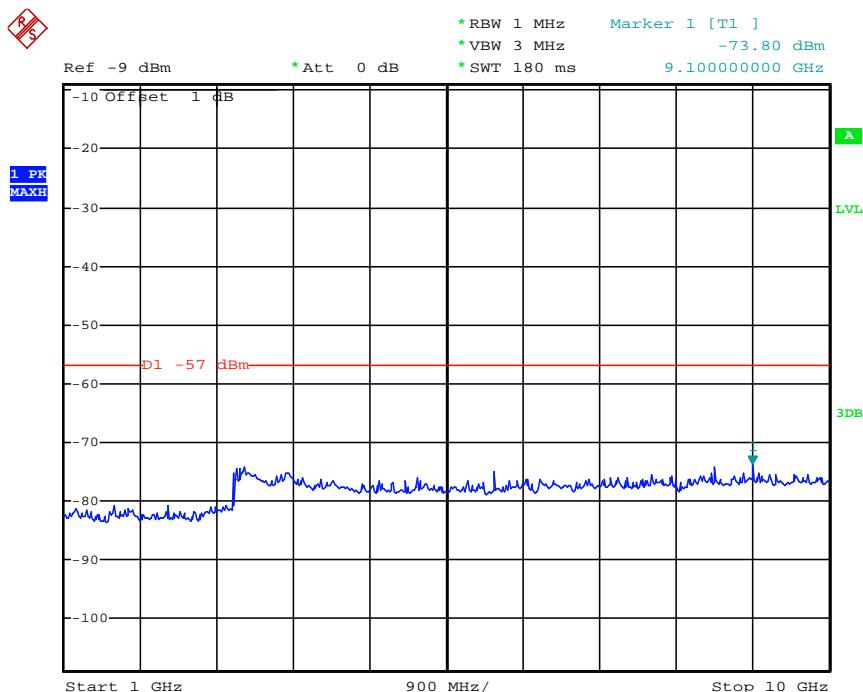


Date: 12.APR.2012 04:14:05

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FM	12.5KHz	High	939.5000	330.70	-77.31	9100.00	-73.80	-57dBm
Test Results				Compliance				

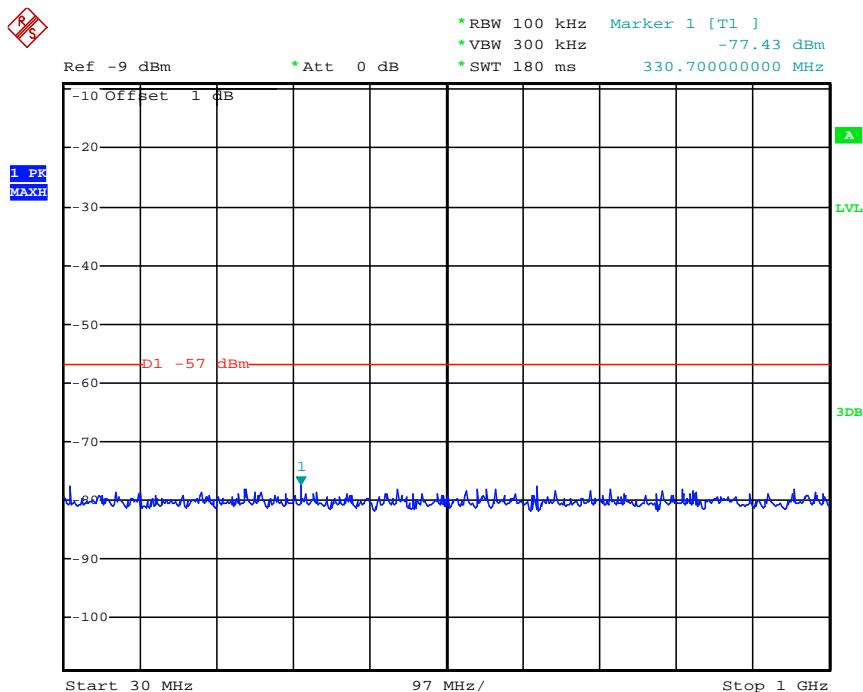


Date: 12.APR.2012 04:13:22

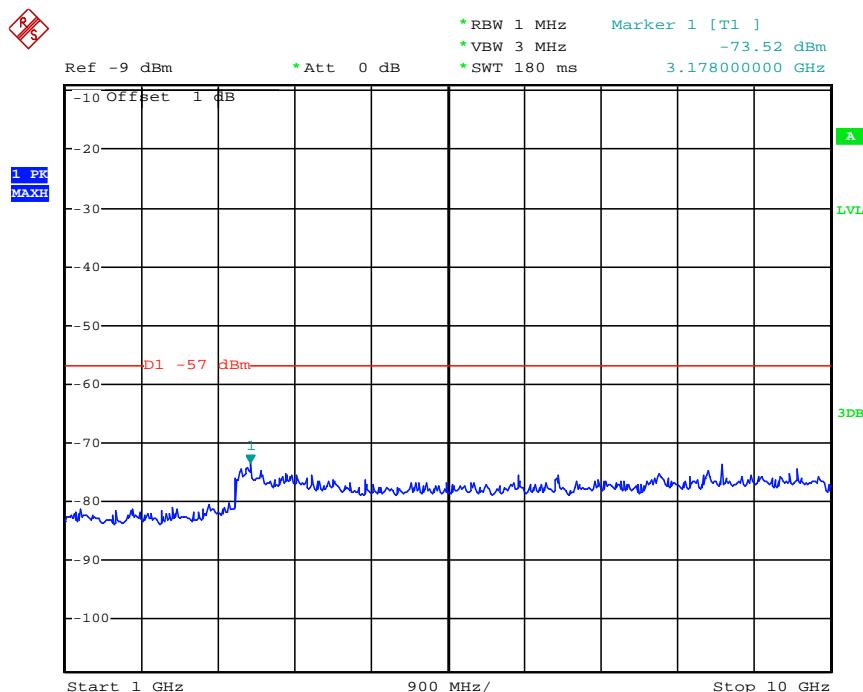


Date: 12.APR.2012 04:13:51

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FSK	12.5KHz	Low	851.5000	330.70	-77.43	3178.00	-73.52	-57dBm
Test Results				Compliance				

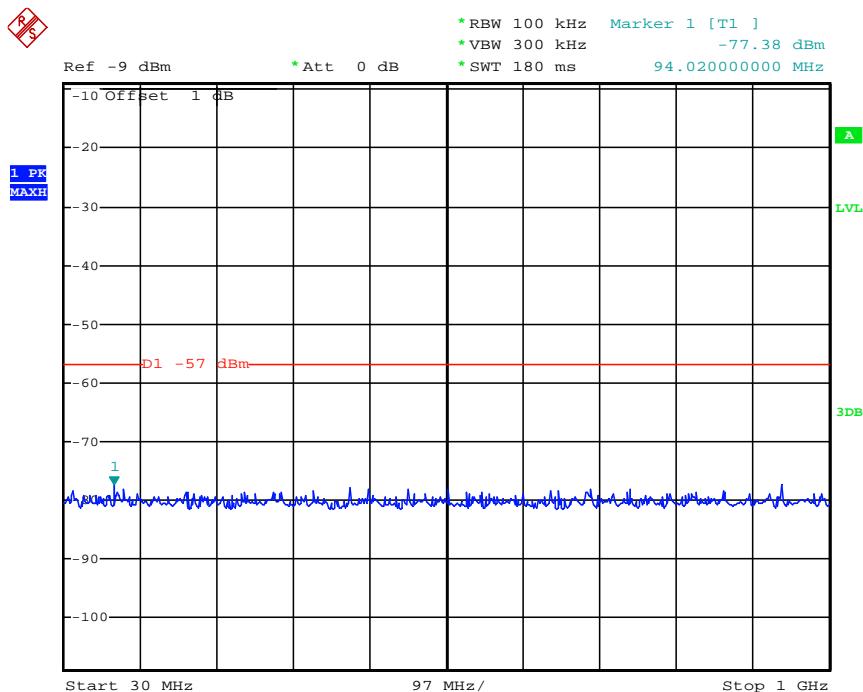


Date: 12.APR.2012 04:20:42

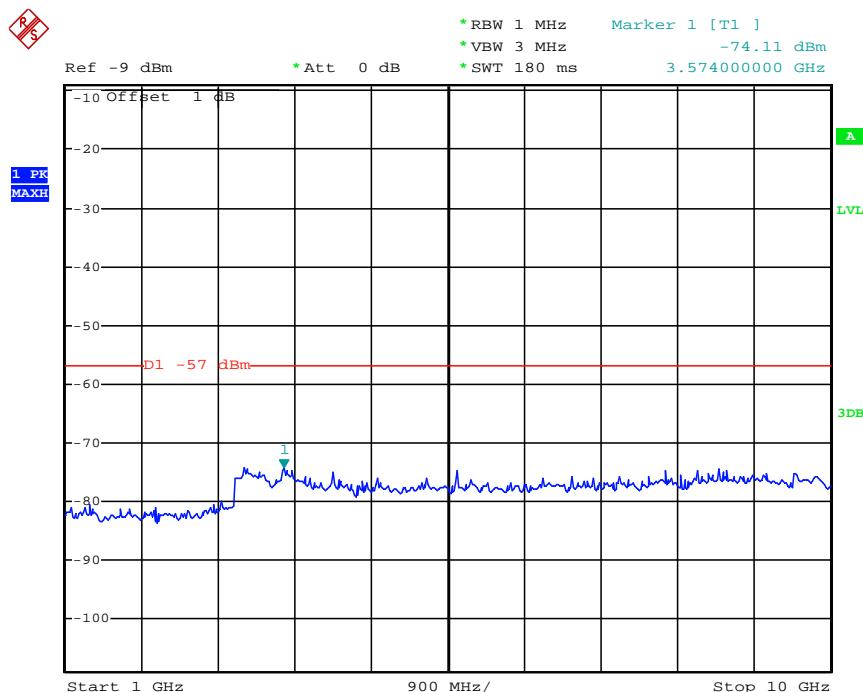


Date: 12.APR.2012 04:17:38

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FSK	12.5KHz	Middle	860.0000	94.02	-77.38	3574.00	-74.11	-57dBm
Test Results				Compliance				

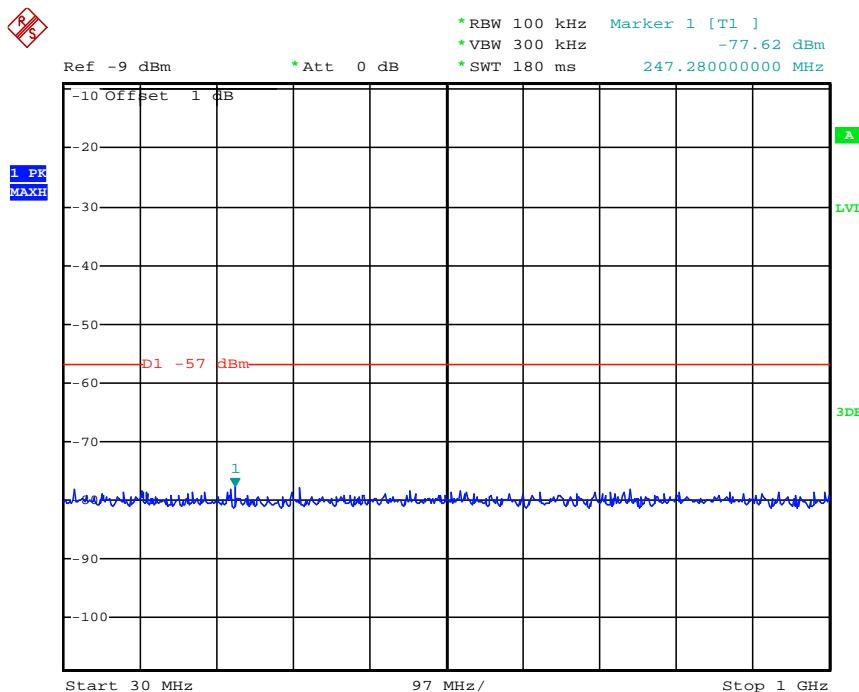


Date: 12.APR.2012 04:20:32

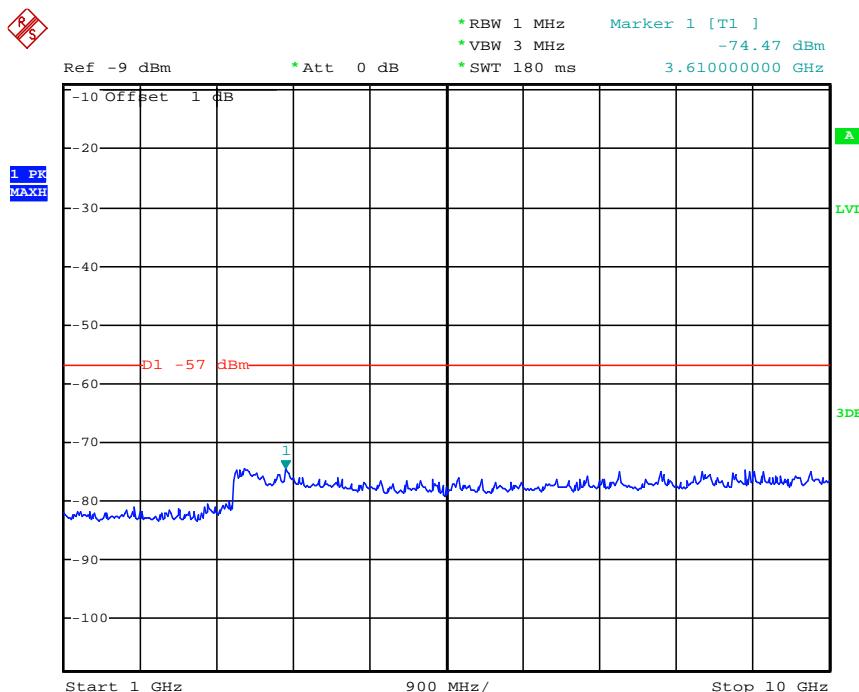


Date: 12.APR.2012 04:17:50

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FSK	12.5KHz	High	868.5000	247.28	-77.62	3610.00	-74.47	-57dBm
Test Results				Compliance				

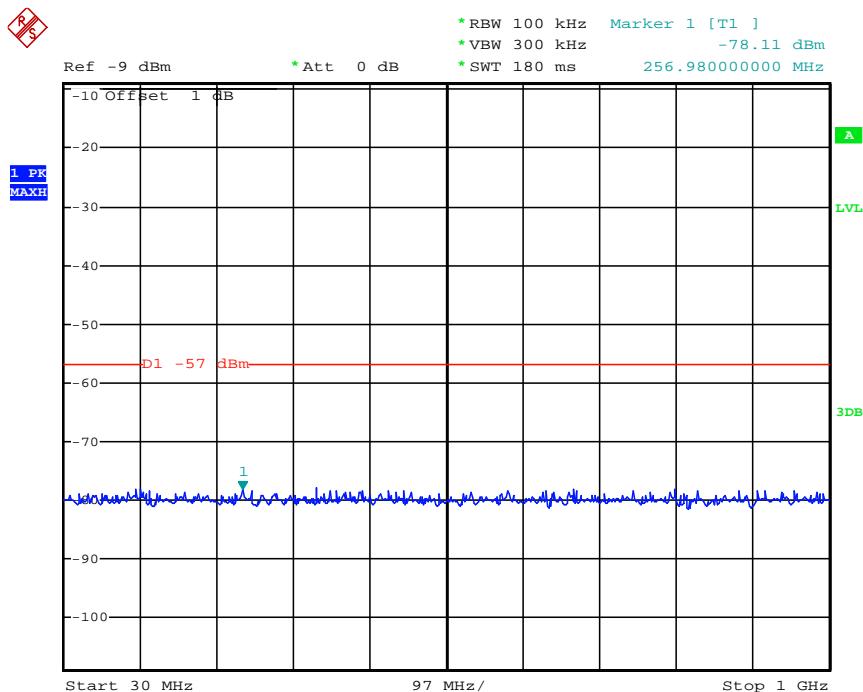


Date: 12.APR.2012 04:20:24

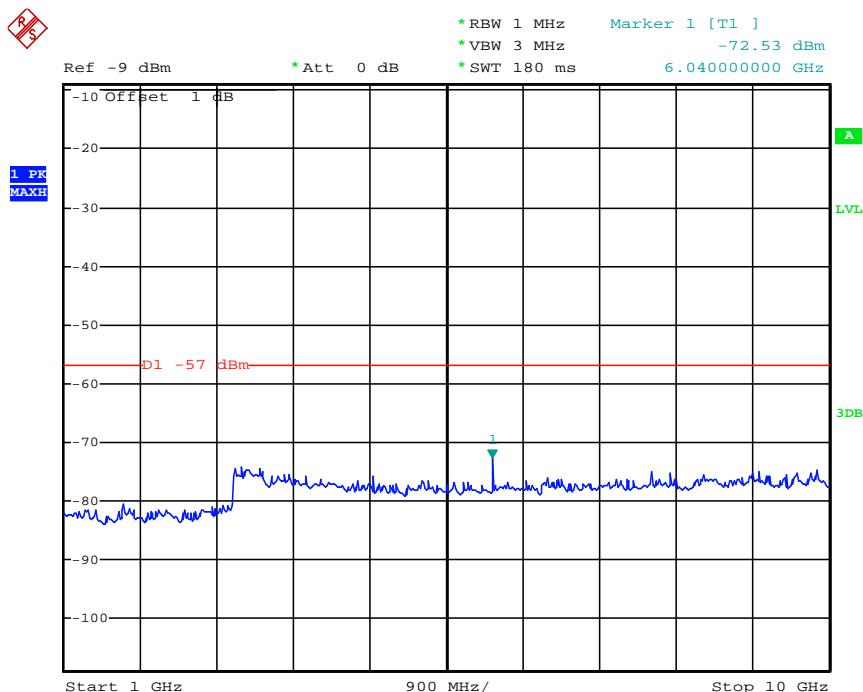


Date: 12.APR.2012 04:18:01

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FSK	12.5KHz	Low	935.5000	256.98	-78.11	6040.00	-72.53	-57dBm
Test Results				Compliance				

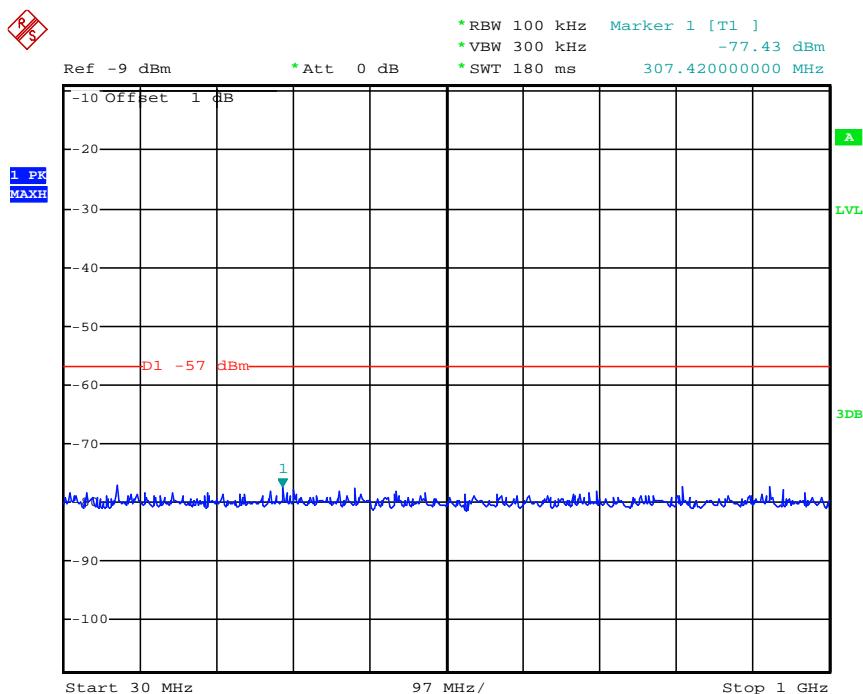


Date: 12.APR.2012 04:19:46

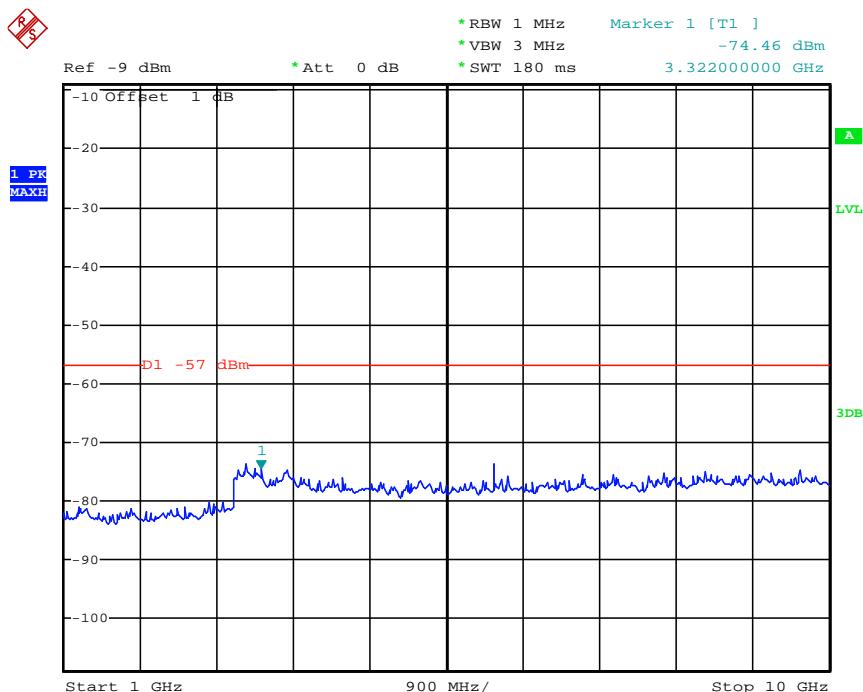


Date: 12.APR.2012 04:18:40

Modulation Type	Channel Sparation	Test Channel	Test Frequency (MHz)	Maximum Conducted Spurious Emissions Below 1GHz		Maximum Conducted Spurious Emissions Above1GHz		FCC Limit
				Frequency (MHz)	Datum (dBm)	Frequency (MHz)	Datum (dBm)	
FSK	12.5KHz	High	939.5000	307.42	-77.43	3322.00	-74.46	-57dBm
Test Results				Compliance				

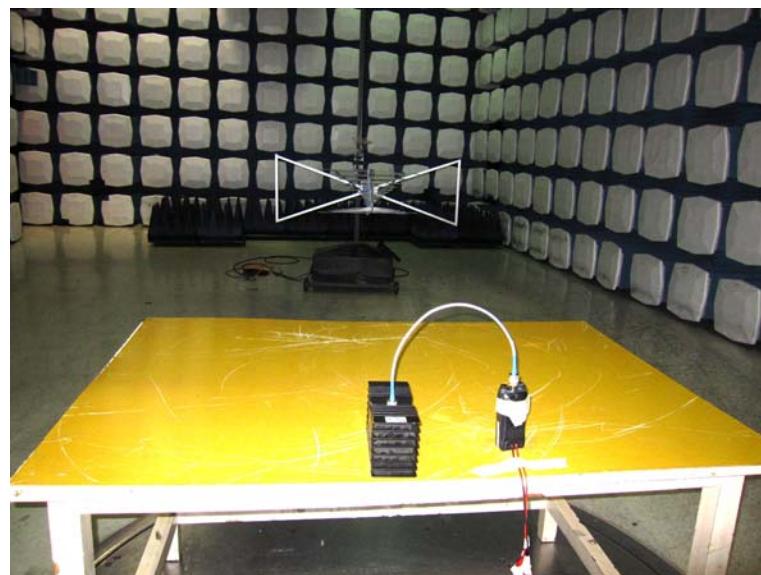
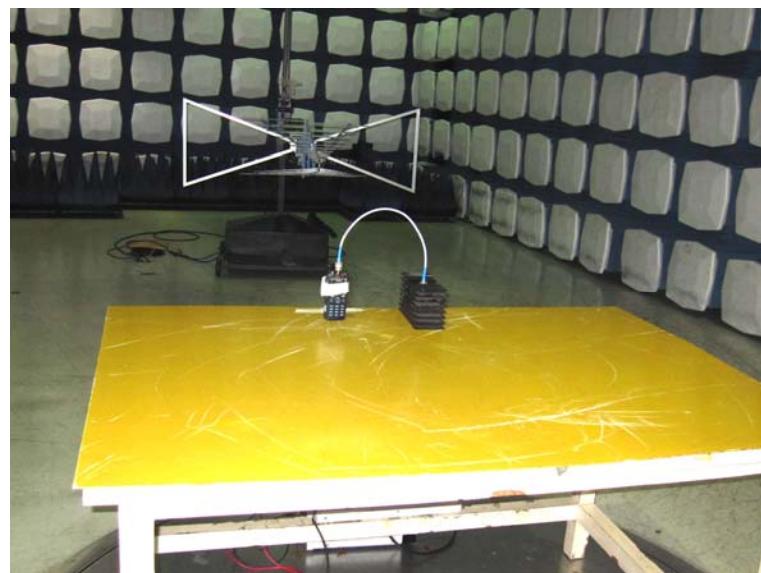


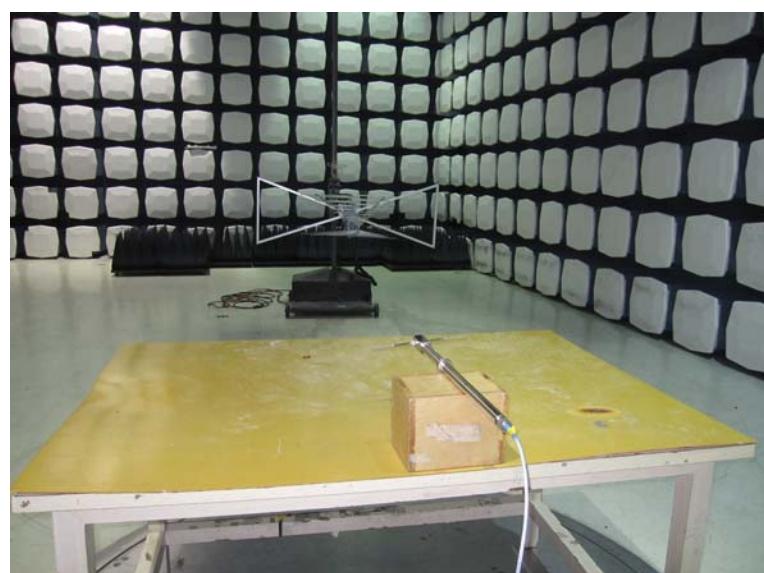
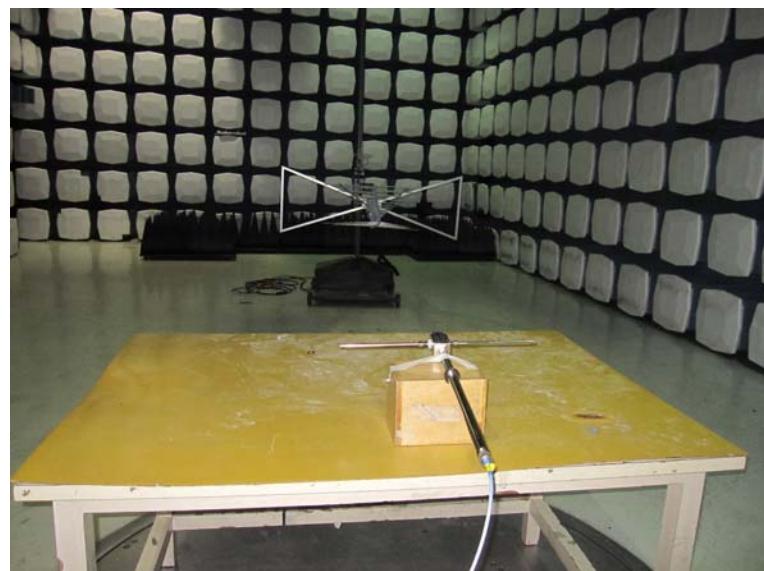
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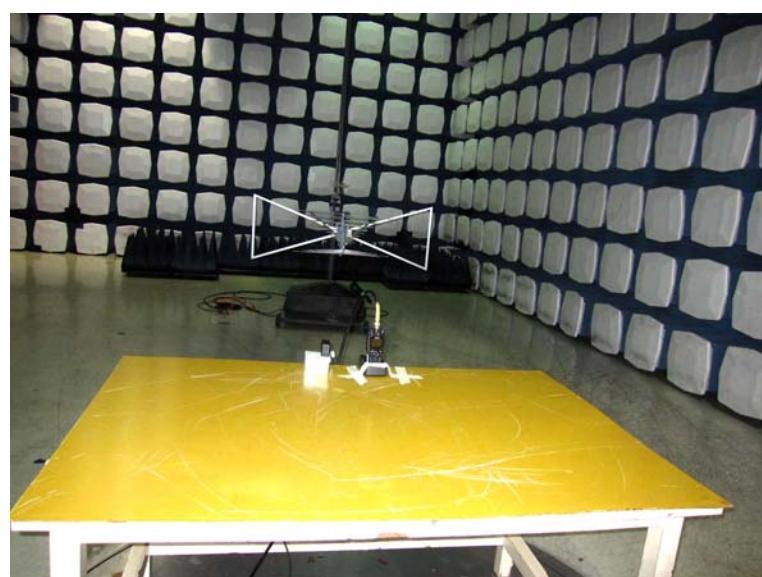
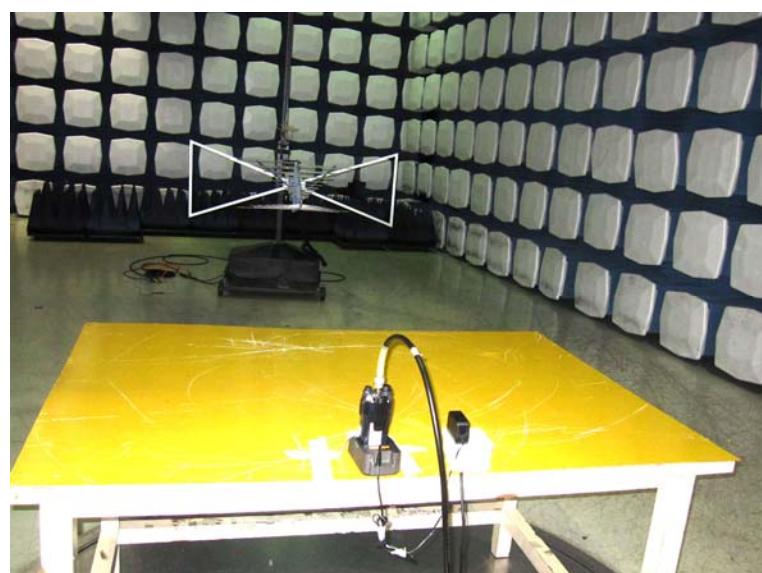
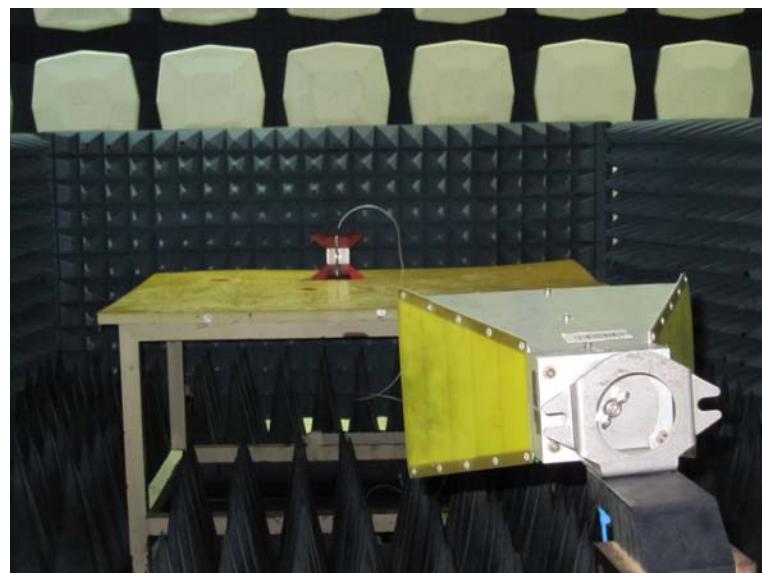


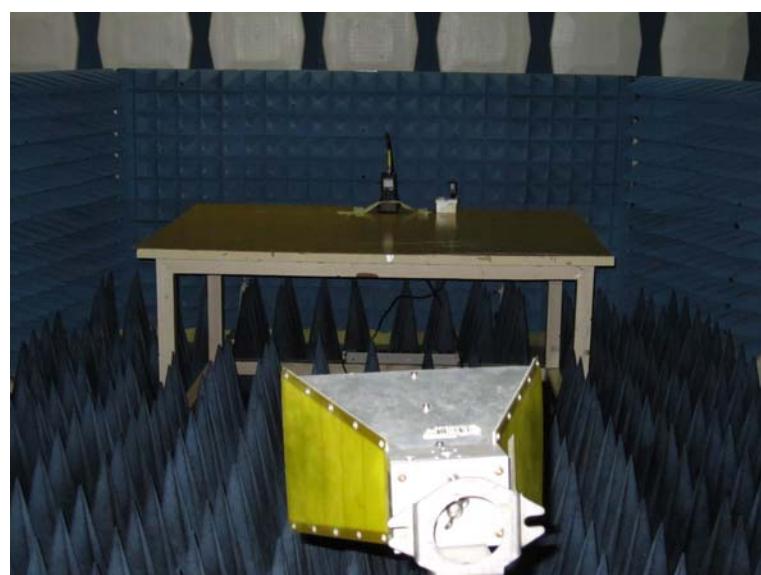
Date: 12.APR.2012 04:18:51

5. Test Setup Photos of the EUT









6. External and Internal Photos of the EUT

External photos of the EUT



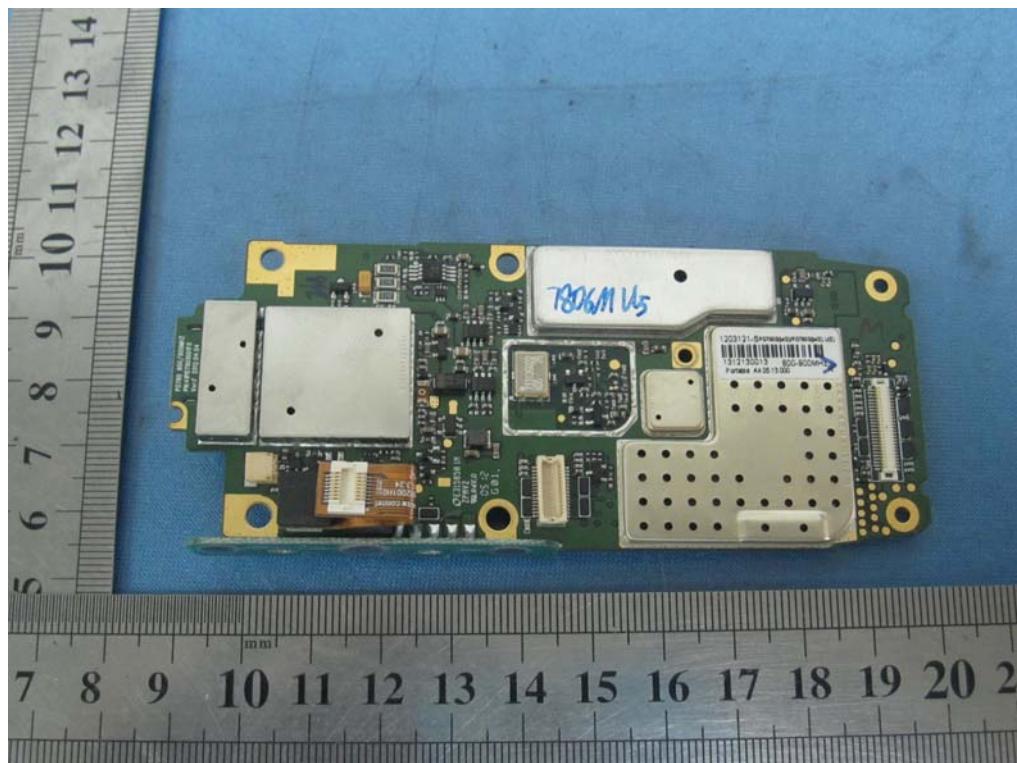
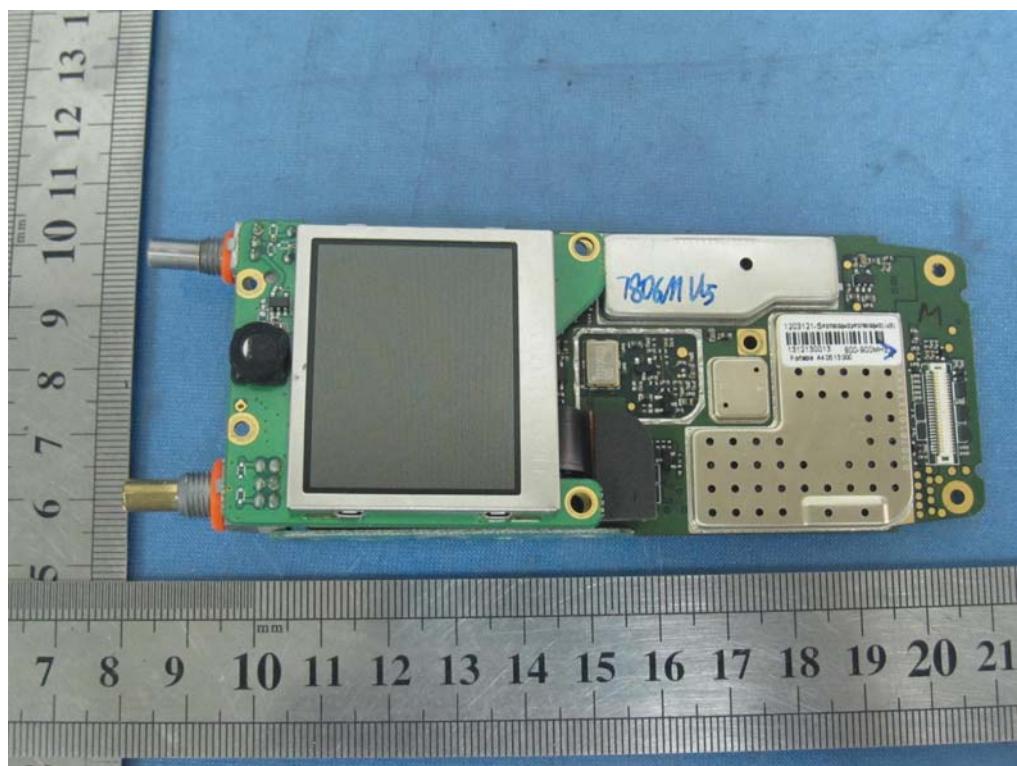


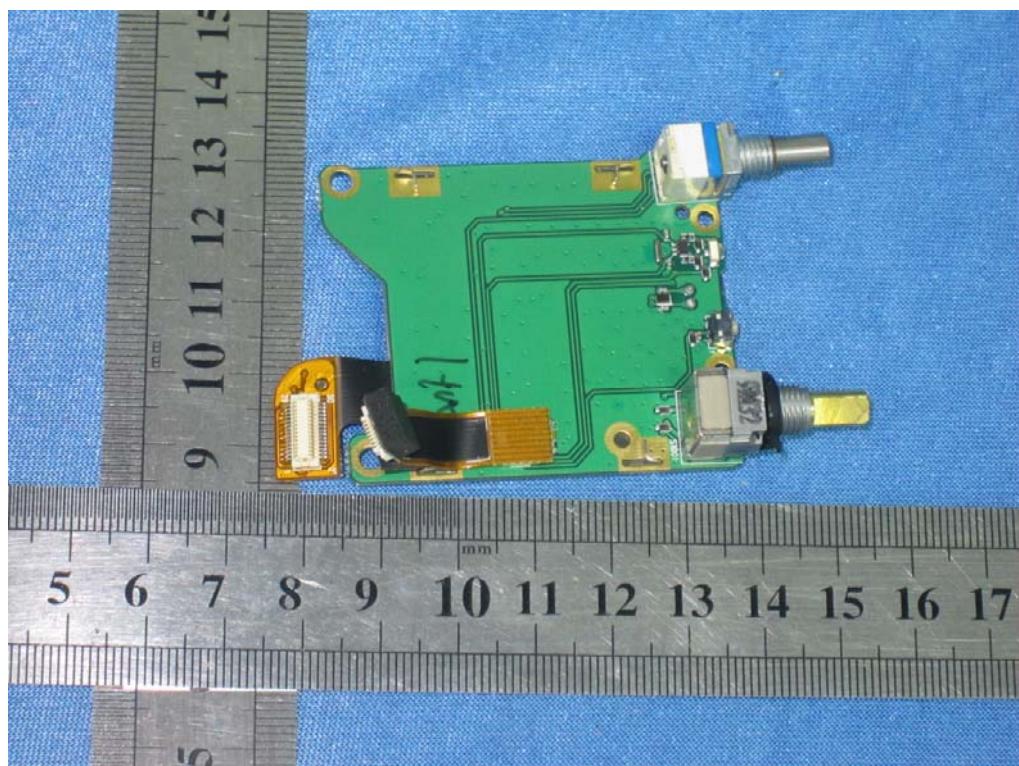


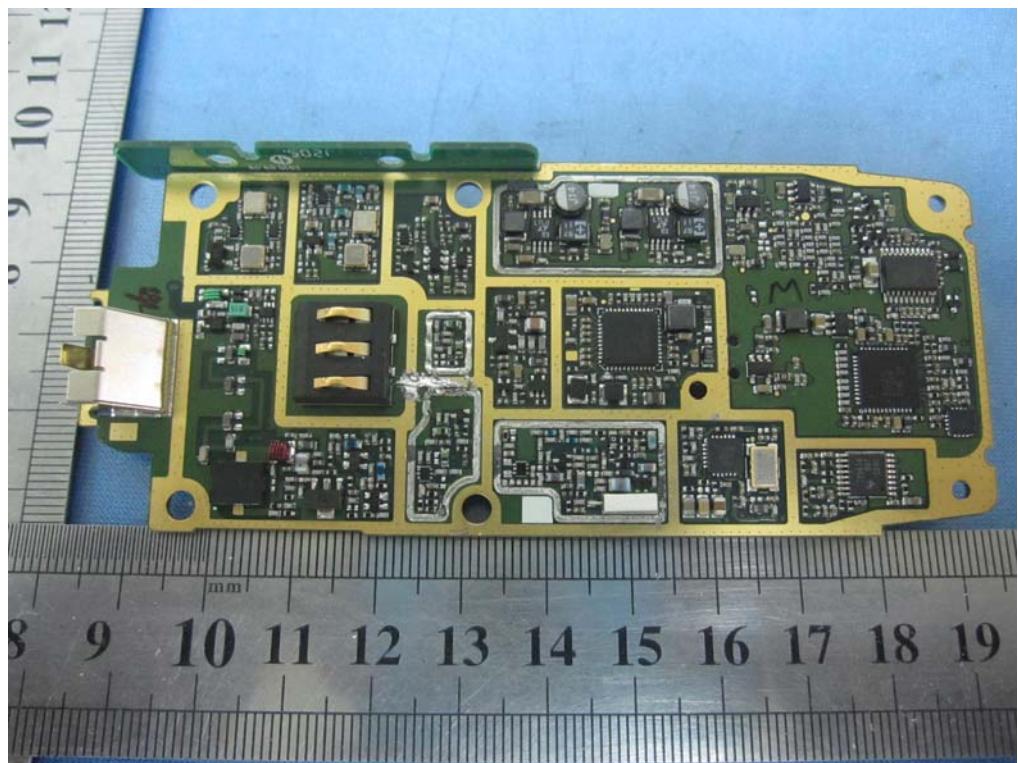
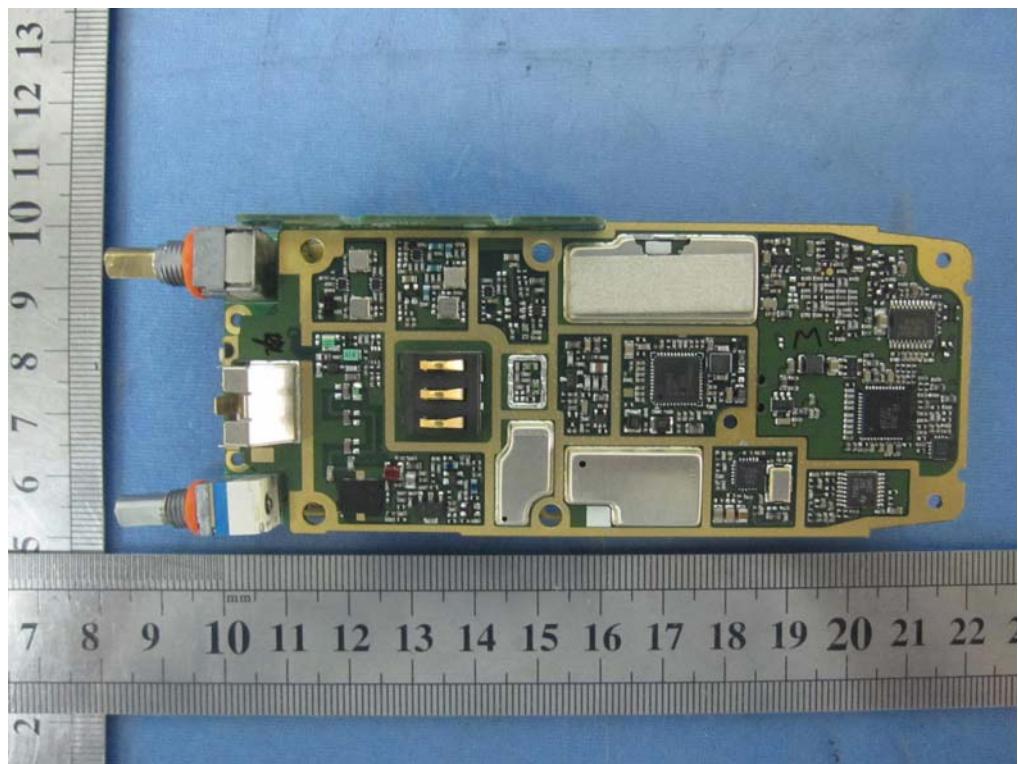


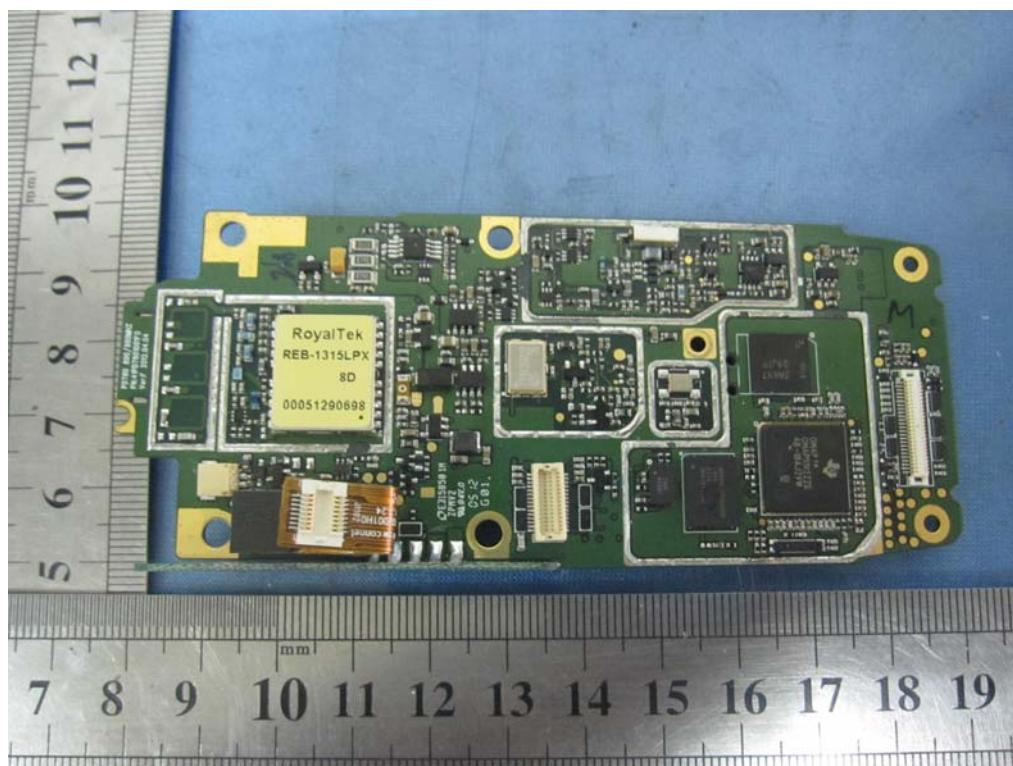
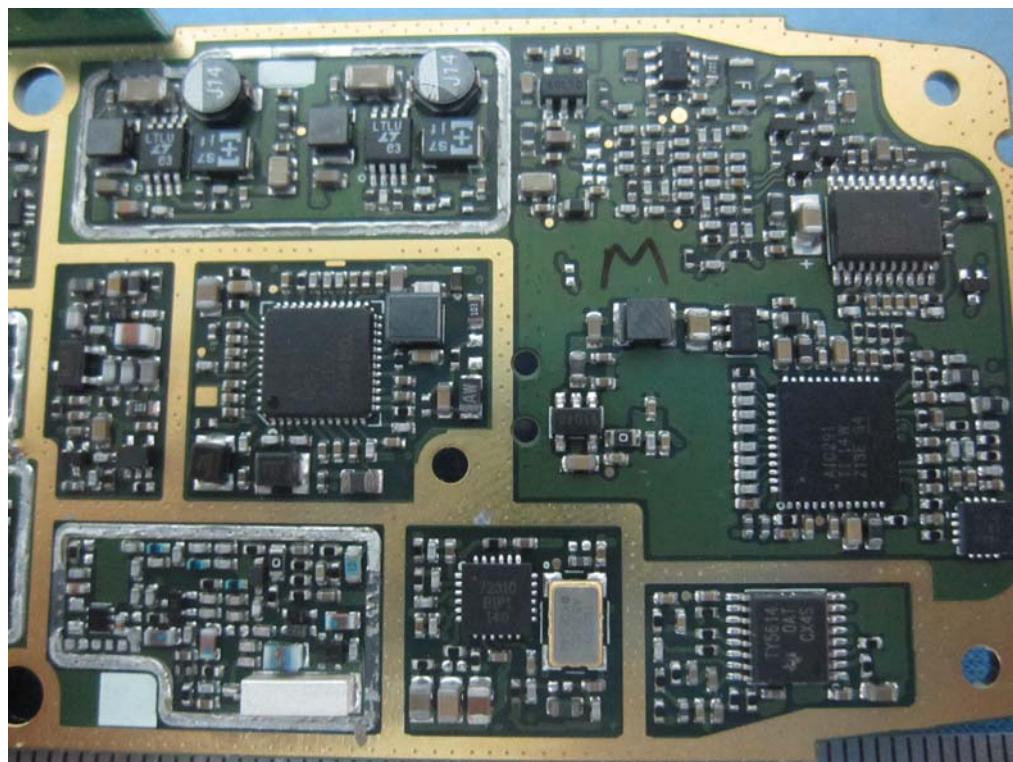
Internal photos of the EUT

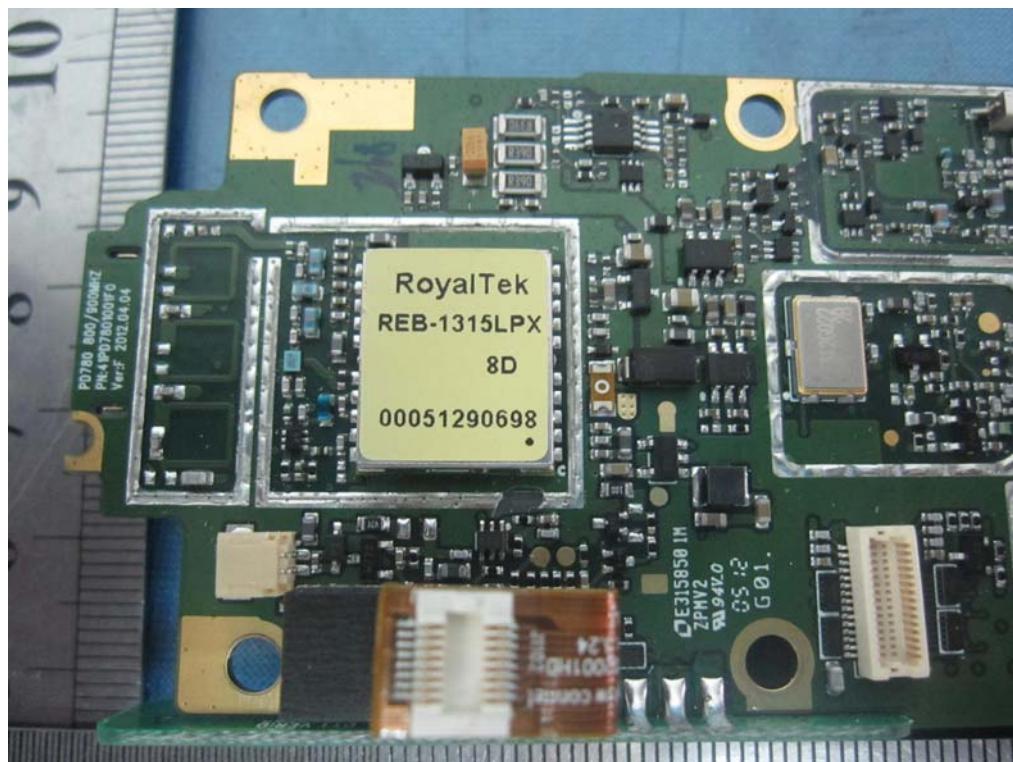
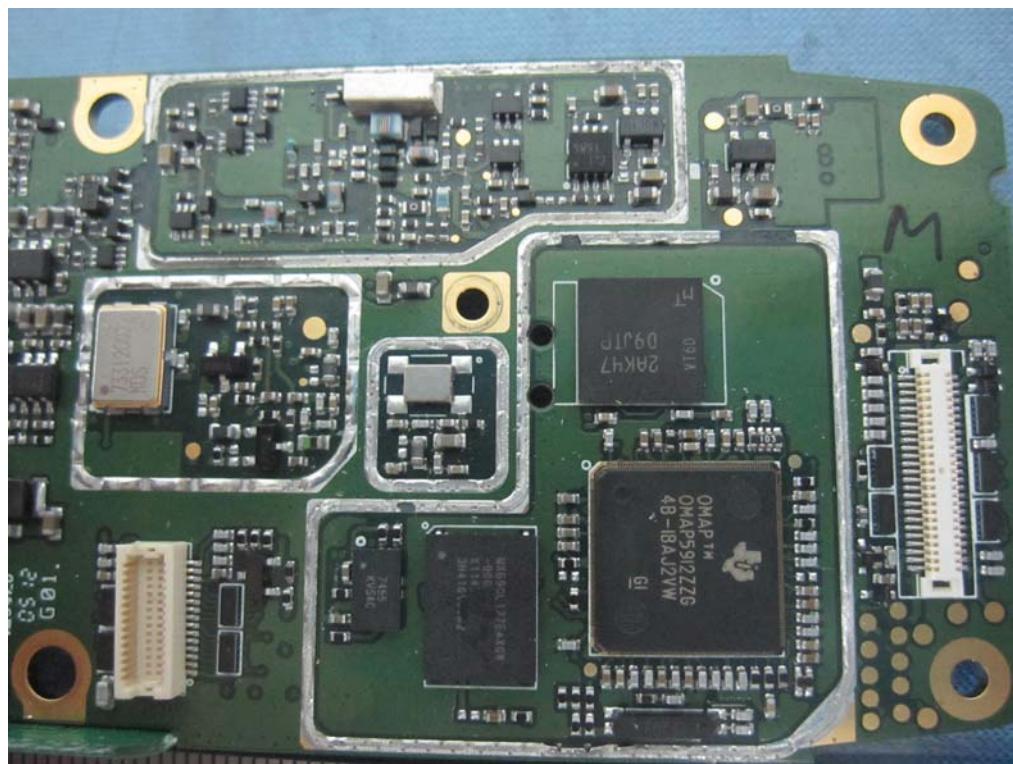












.....End of Report.....