

2.8 Antenna Conducted Spurious Emission the Frequency Range 30 – 25000 MHz (FCC Section 15.247(c))

Spurious emissions in the frequency range 30 – 25000 MHz have been measured with a spectrum analyzer by connecting the spectrum analyzer directly via a short cable to the antenna output terminals or across the antenna leads on the PCB as specified by the manufacturer. The spectrum analyzer was set for a 50 Ω impedance with the RBW = 100 kHz & VBW > RBW. All spurious emissions were measured to be greater than 20 dB down from the fundamental. The results of conducted spurious emissions are given in Figure 4a through 4l.

Figure 4a
Antenna Conducted Spurious Emissions 15.247(c) (Low Channel)

NOTE: Due to large span used,
frequency appears off. Actual Frequency
of the fundamental is 903.12 MHz.

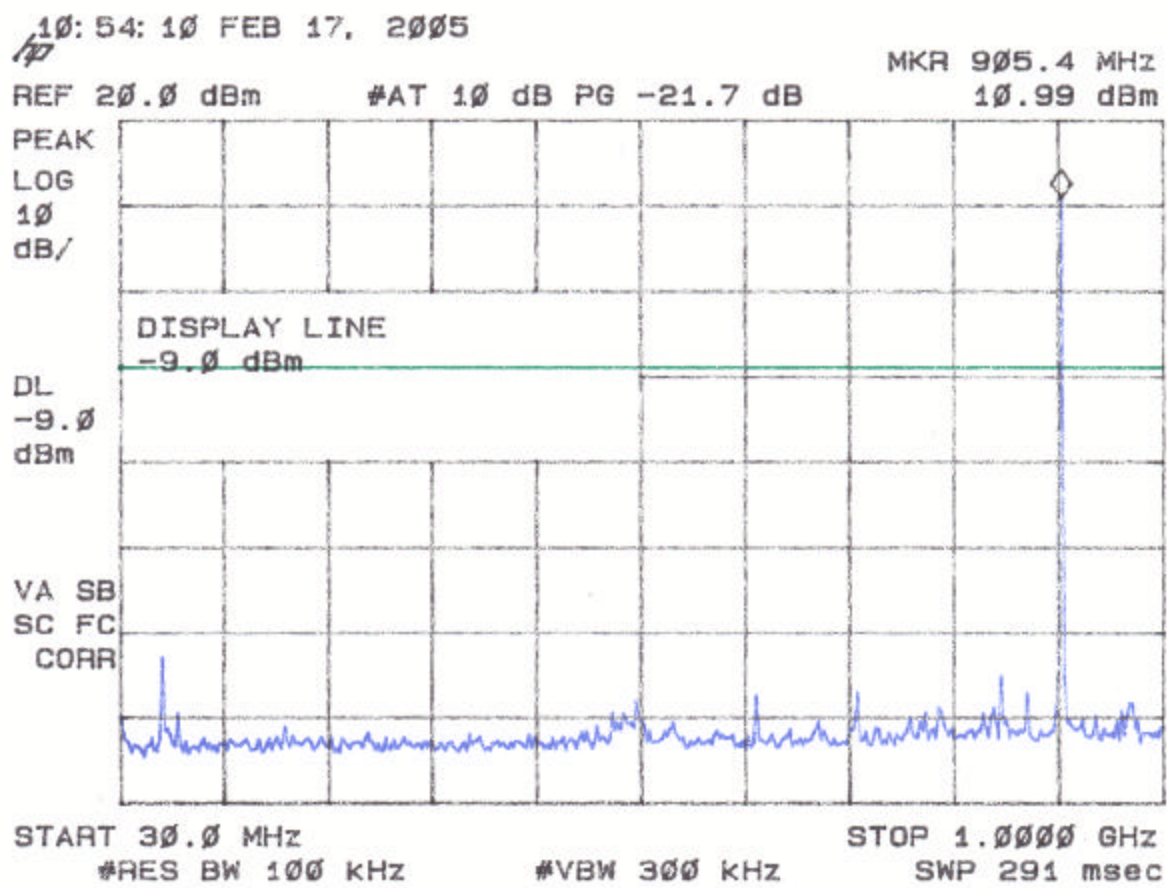


Figure 4b
Antenna Conducted Spurious Emissions 5.247(c) (Low Channel)

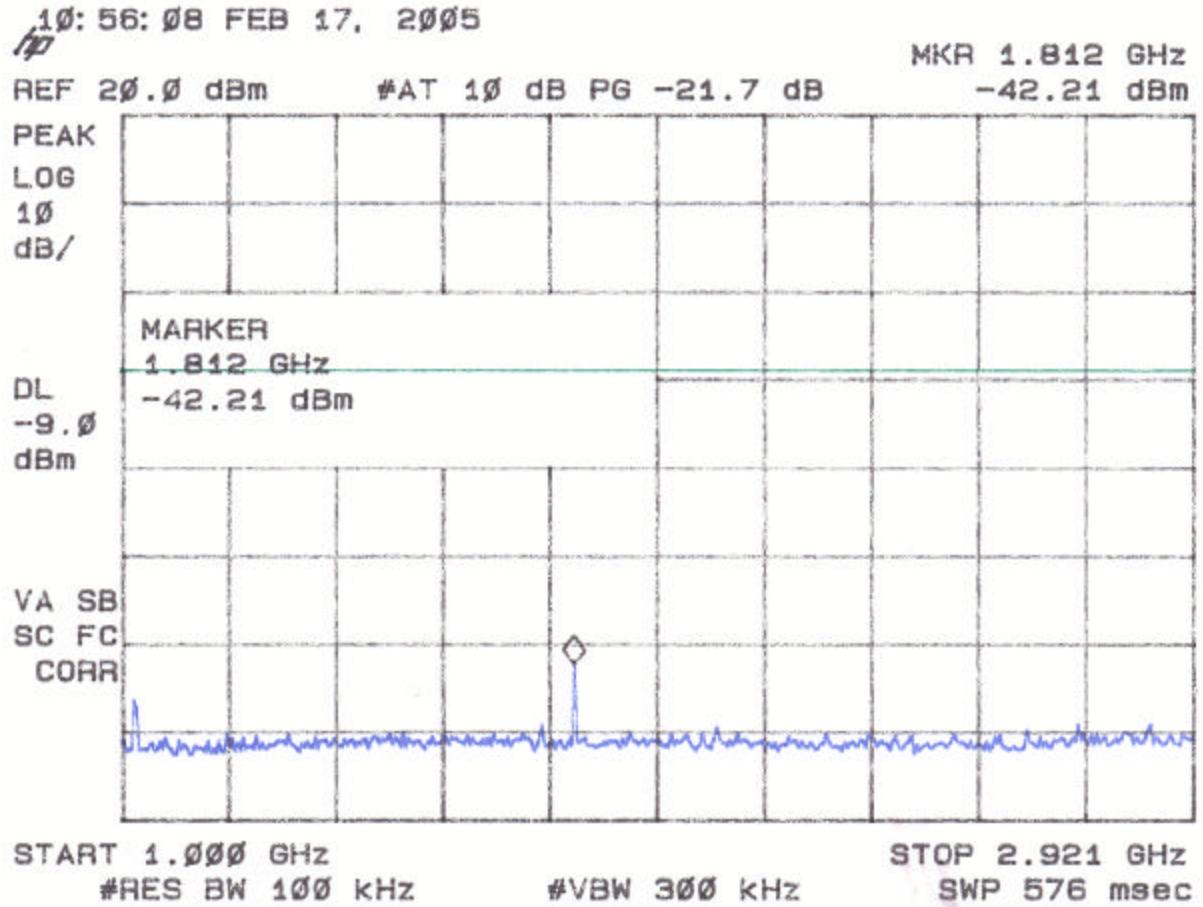


Figure 4c
Antenna Conducted Spurious Emissions 15.247(c) (Low Channel)

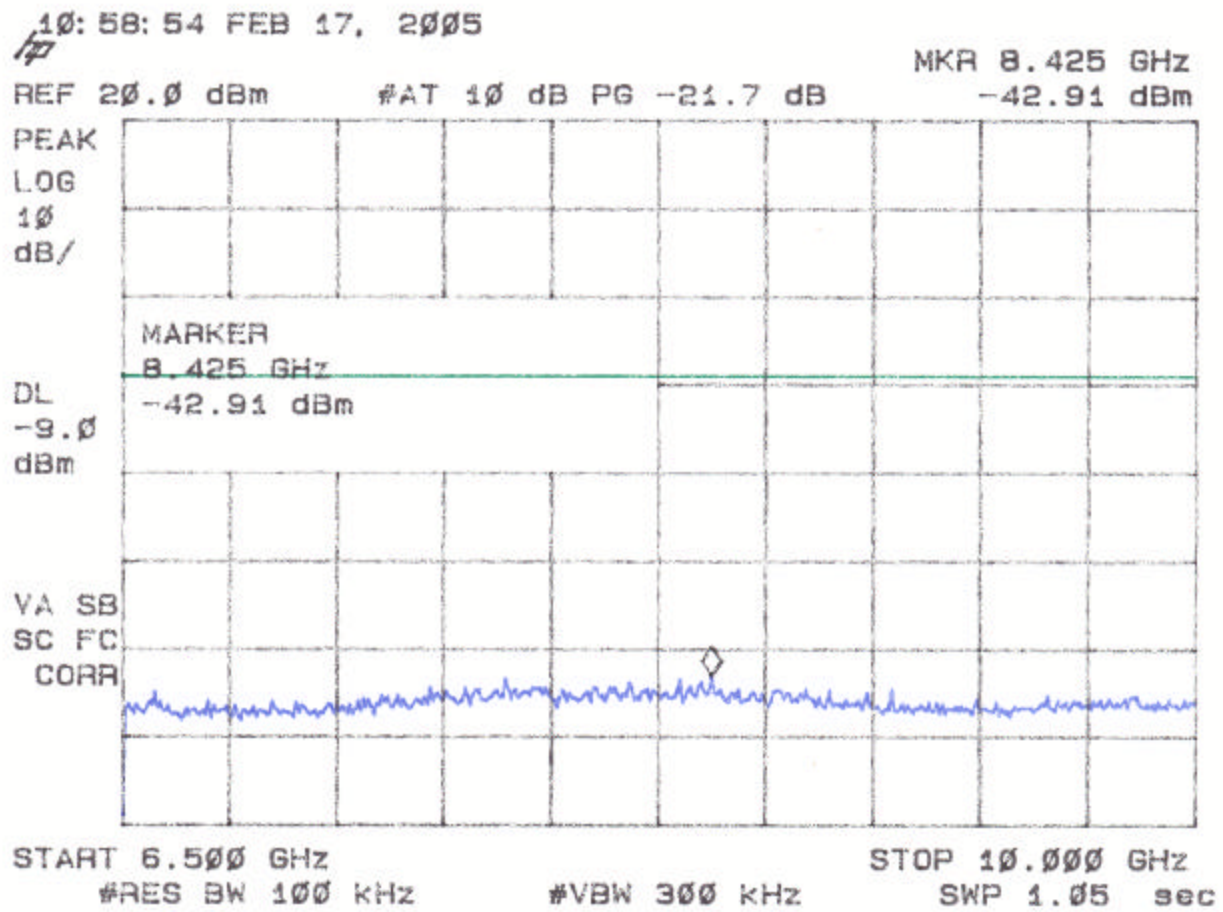


Figure 4d
Antenna Conducted Spurious Emissions 15.247(c) (Low Channel)

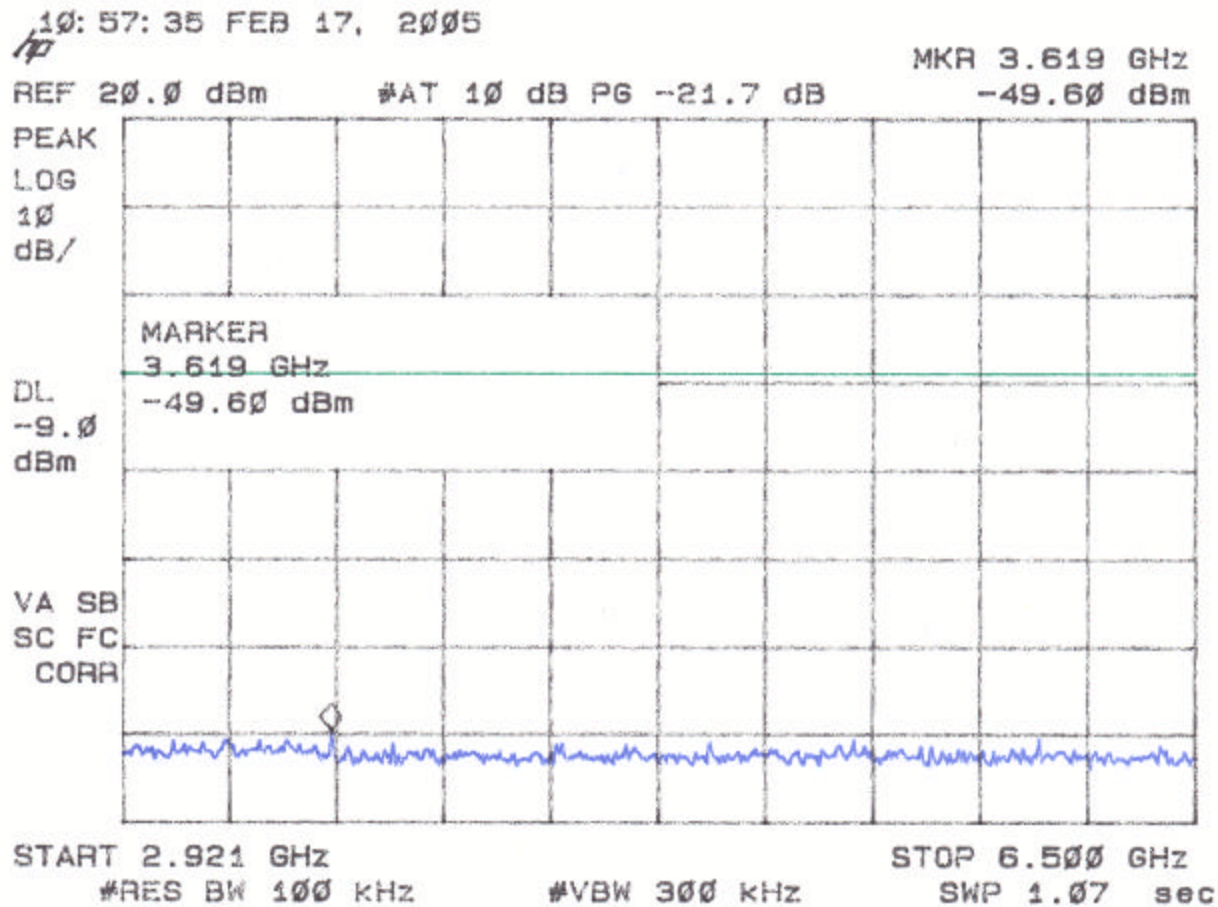


Figure 4e
Antenna Conducted Spurious Emissions 15.247(c)) (Mid Channel)

NOTE: Due to large span used, frequency appears off. Actual Frequency of the fundamental is 910.265 MHz.

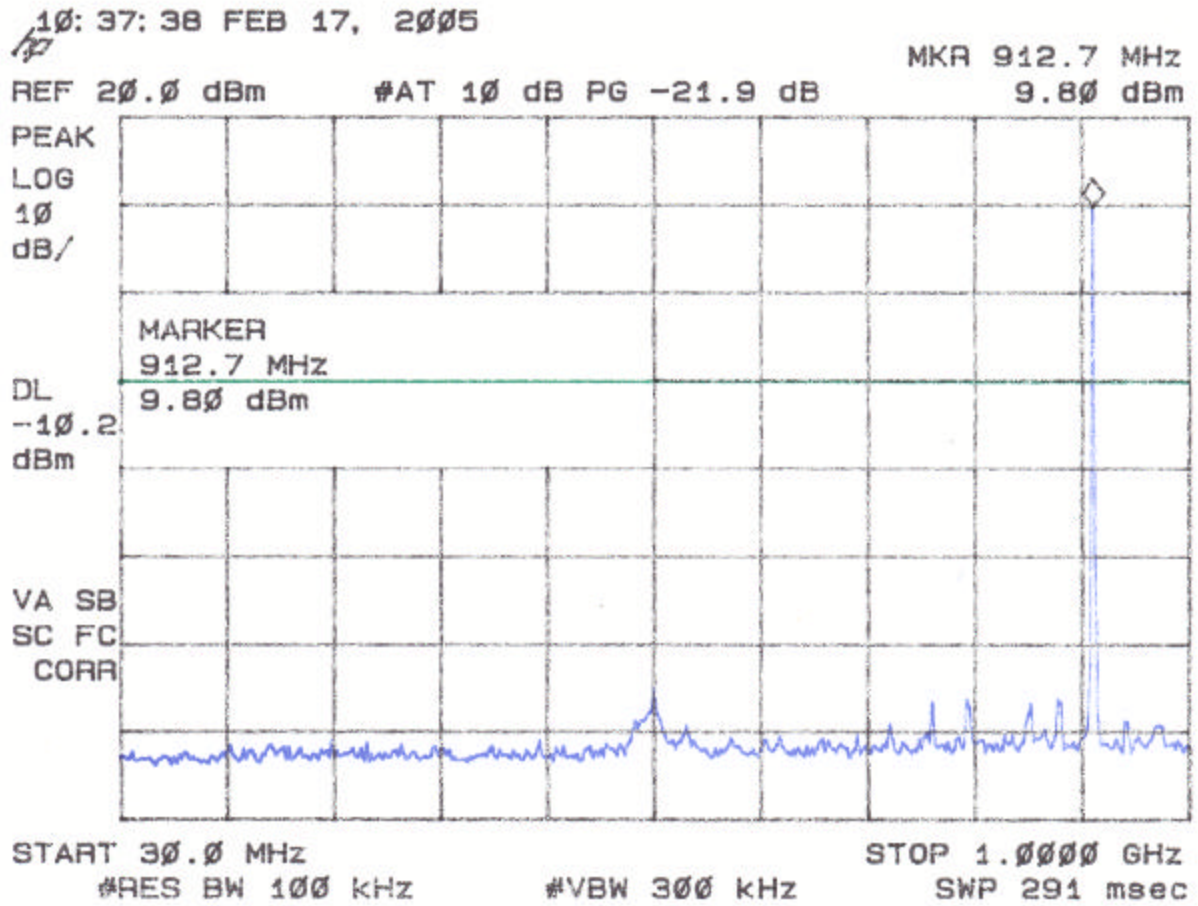


Figure 4f
Antenna Conducted Spurious Emissions 15.247(c) (Mid Channel)

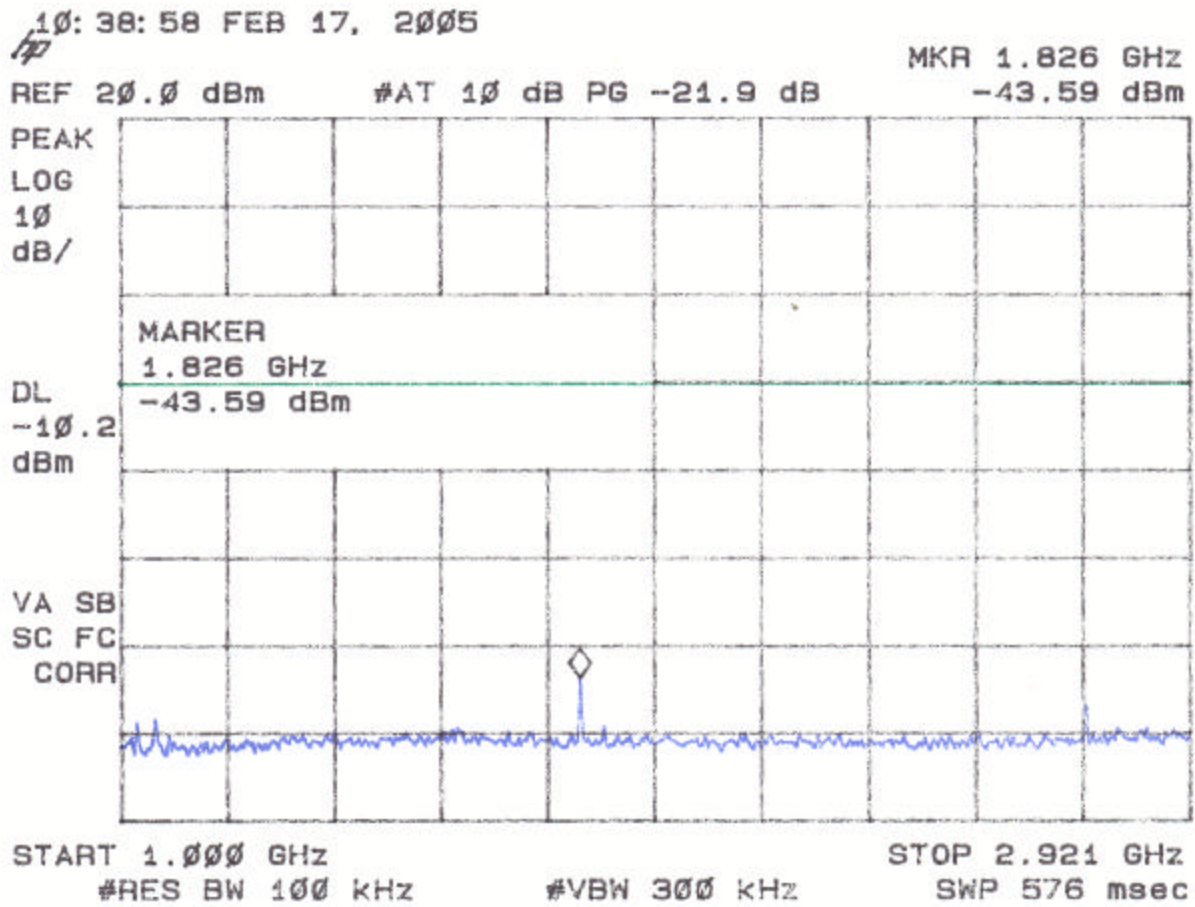


Figure 4g
Antenna Conducted Spurious Emissions 15.247(c) (Mid Channel)

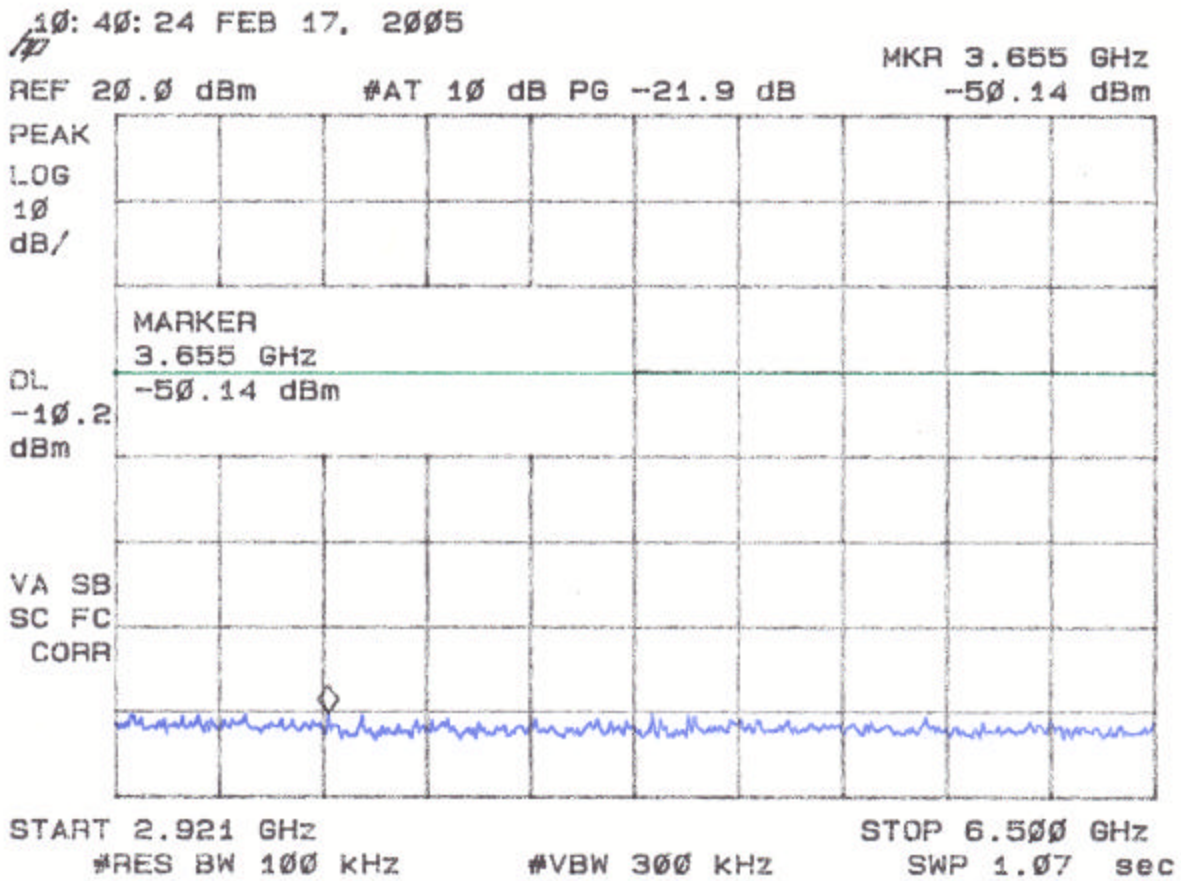


Figure 4h
Antenna Conducted Spurious Emissions 15.247(c) (Mid Channel)

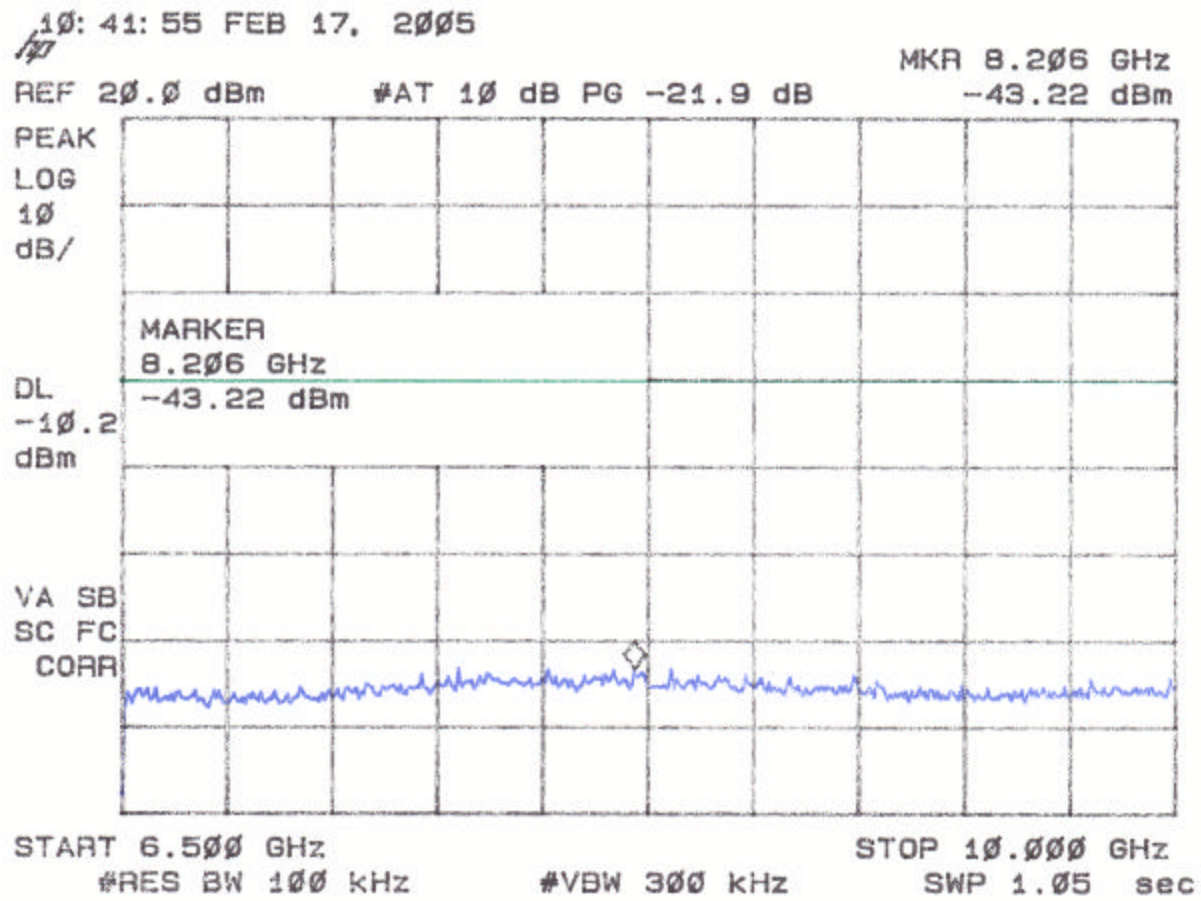


Figure 4i
Antenna Conducted Spurious Emissions 15.247(c) (High Channel)

NOTE: Due to large span used, frequency appears off. Actual Frequency of the fundamental is 917.795 MHz.

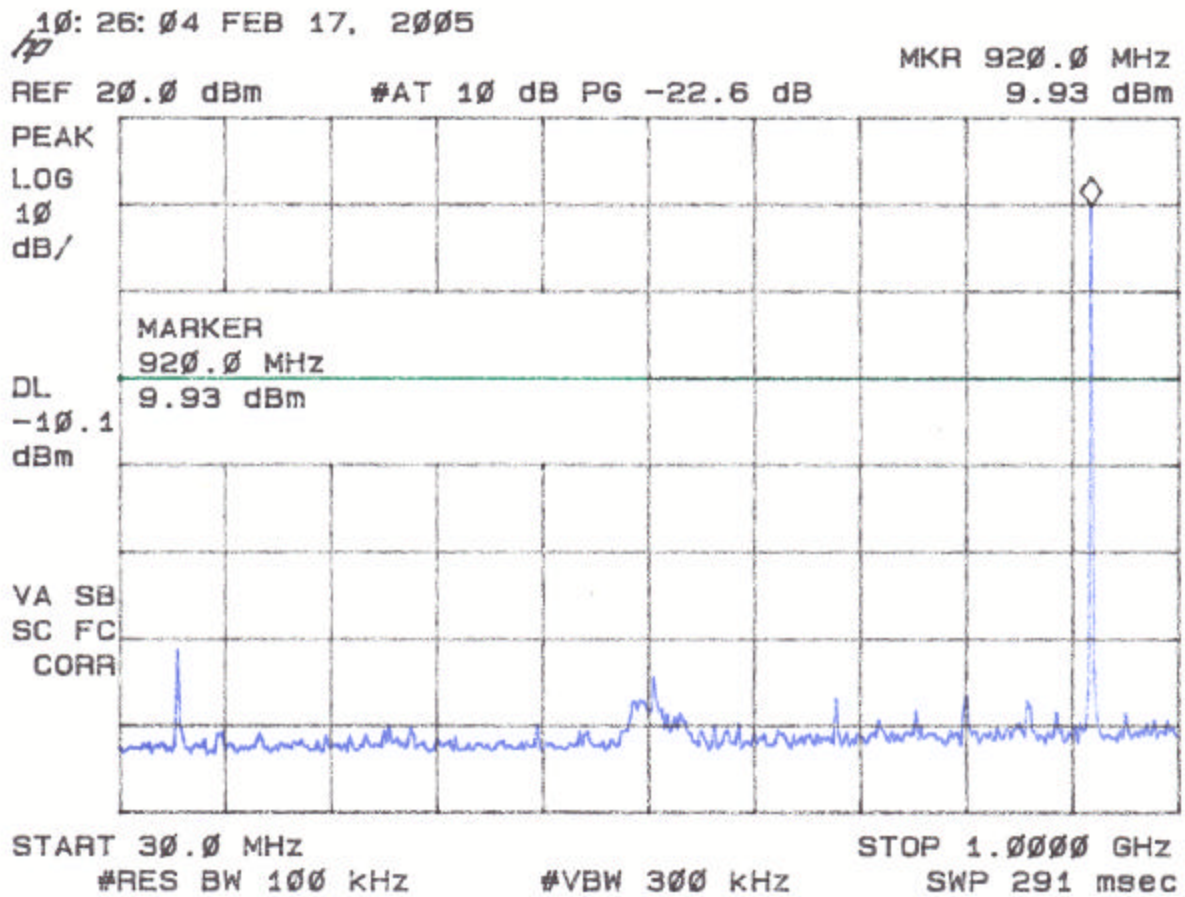


Figure 4j
Antenna Conducted Spurious Emissions 15.247(c) (High Channel)

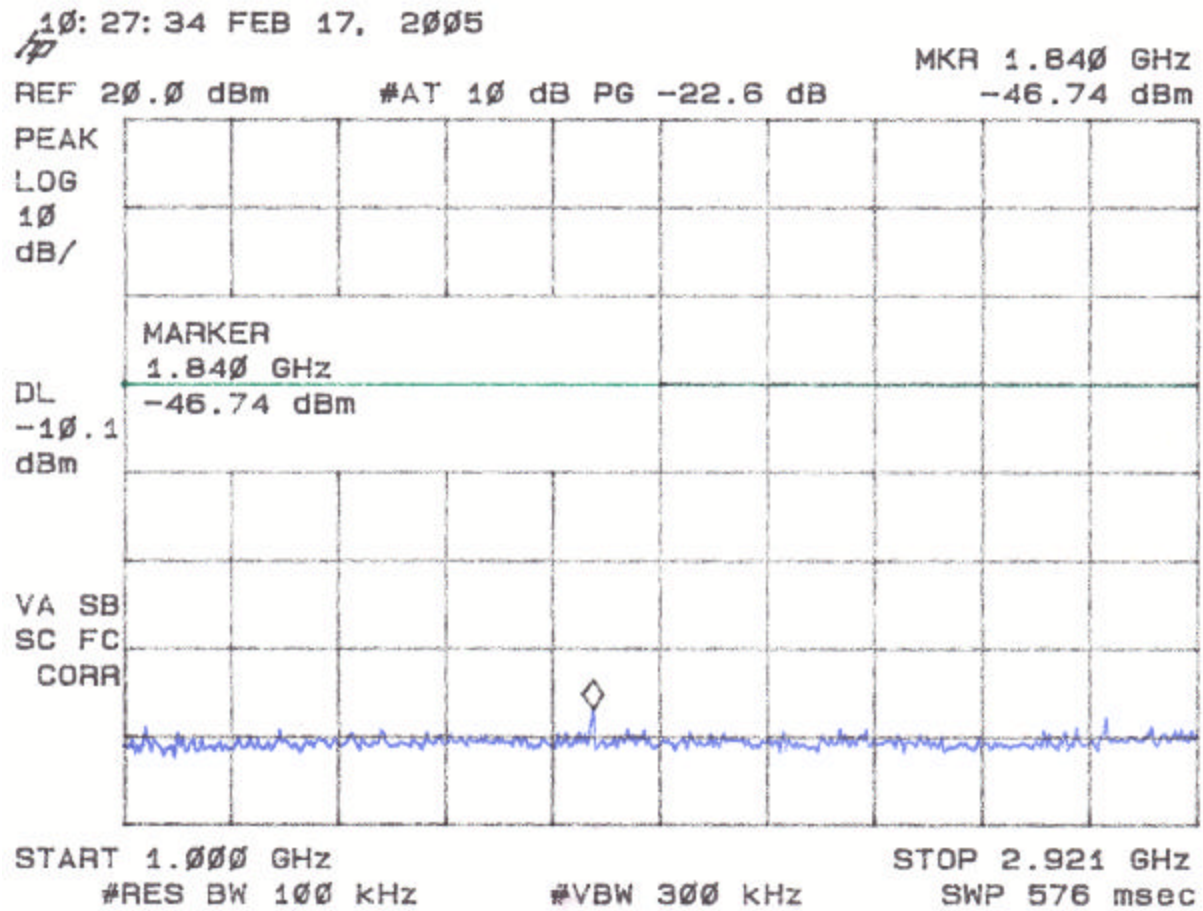


Figure 4k
Antenna Conducted Spurious Emissions 15.247(c) (High Channel)

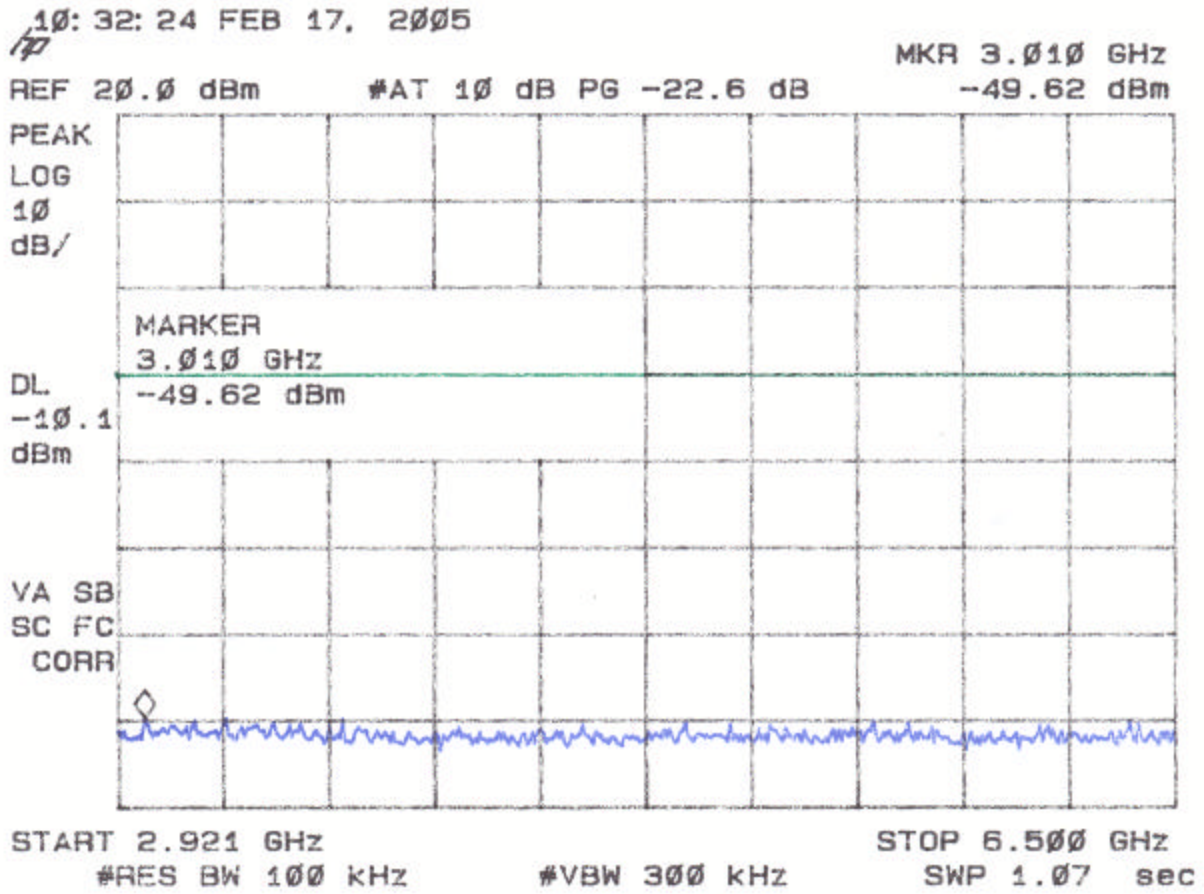
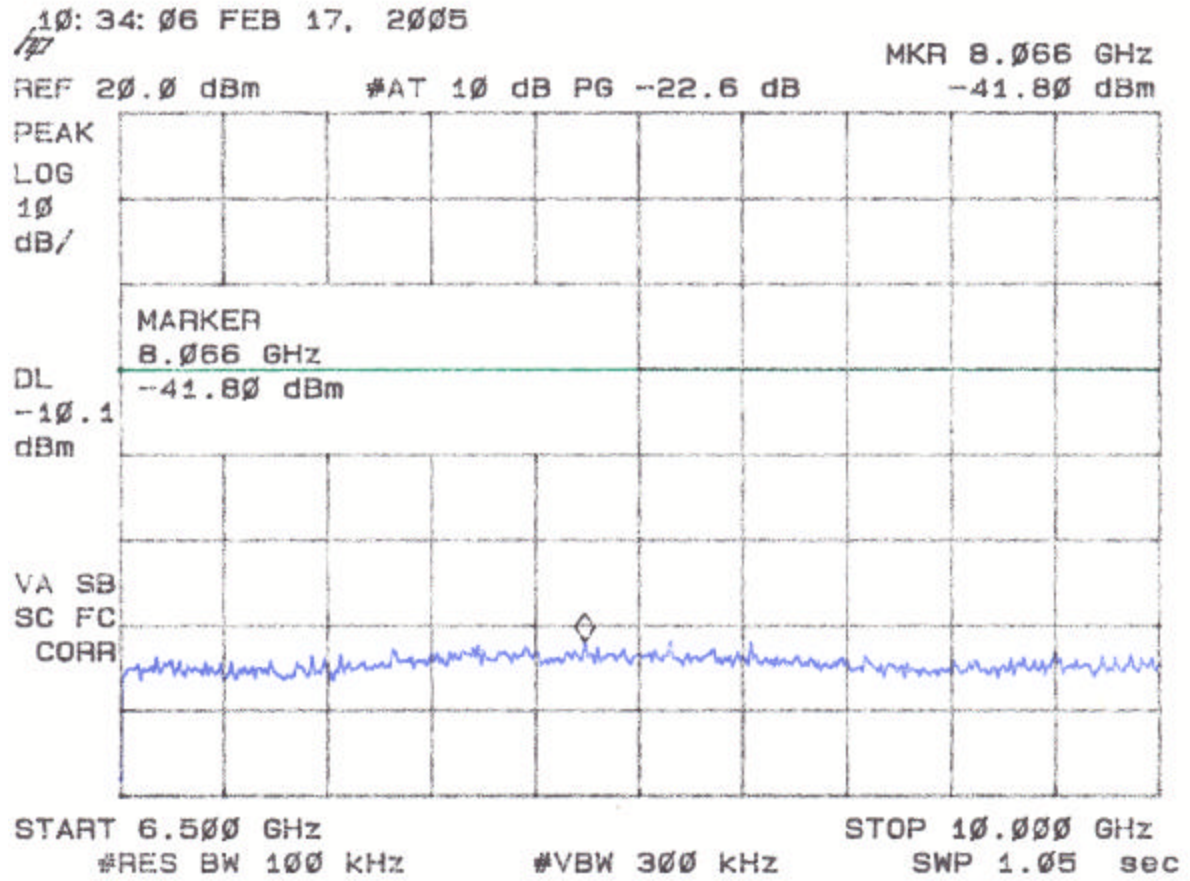


Figure 4I
Antenna Conducted Spurious Emissions 15.247(c) (High Channel)



2.9 Peak Radiated Spurious Emission in the Frequency Range 30 -25000 MHz (FCC Section 15.247(c))

The EUT was hop-stopped and when possible, placed into a continuous transmit mode of operation. A preliminary scan was performed on the EUT to determine frequencies that were caused by the transmitter portion of the product. Significant emissions that fell within restricted bands were then measured on an OAT's site. Radiated measurements below 1 GHz were tested with a RBW = 120 kHz. Radiated measurements above 1 GHz were measured using a RBW = VBW = 1 MHz. The results of peak radiated spurious emissions falling within restricted bands are given in Table 4a –4c and Figure 5a1 – Figure 5c7.

TABLE 4a PEAK RADIATED SPURIOUS EMISSIONS (Low Channel)

Peak Radiated Emissions									
Test By:	Test:	FCC Part 15.247, Low Channel				Client:	The Bodine Company		
DPB	Project:	05-0069	Class:		NA	Model:	FEBnet node		
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Distance /	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	Polarity	(dB)	/ QP
903.10	-26.4	2LP3mV	80.6	30.6	361503.1		3m./VERT		PK
959.4	-88.1	2LP3mV	18.9	31.2	321.4	36150.3	3m./VERT	41.0	PK
333.1	-90.7	2LP3mV	16.3	18.8	57.0	5000.0	3m./VERT	38.9	PK
975.3	-87.4	2LP3mV	19.6	31.4	356.5	5000.0	3m./VERT	22.9	PK
1806.25	-44.6	2HN3m	62.4	-7.1	581.6	36150.0	3m./HORZ	35.9	PK
2709.35	-54.6	2HN3m	52.4	-2.5	312.3	5000.0	3m./HORZ	24.1	PK
3612.6	-46.7	2HN3m	60.3	0.9	1145.9	5000.0	3m./HORZ	12.8	PK
4516.13	-64.5	2HN3m	42.5	4.6	227.5	5000.0	3m./HORZ	26.8	PK
5418.73	-70.0*	2HN3m	37.0	6.8	154.6	5000.0	3m./HORZ	30.2	PK
6322.2	-70.0*	2HN3m	37.0	8.1	179.7	36150.0	3m./HORZ	46.1	PK

Data corrected by 1 dB for loss of high pass filter except for fundamental frequency

* Data conversion from 1 meter to 3 meters = -9.54

SAMPLE CALCULATION:

RESULTS (uV/m @ 3m) = Antilog ((-44.6 + -7.1 + 107)/20) = 581.6

CONVERSION FROM dBm TO dBuV = 107 dB

Test Date: February 15, 2005

Tester

Signature:  **Name: David Blethen**

Figure 5a-1
Peak Radiated Spurious Emission 15.247(c) Low Channel –
Fundamental

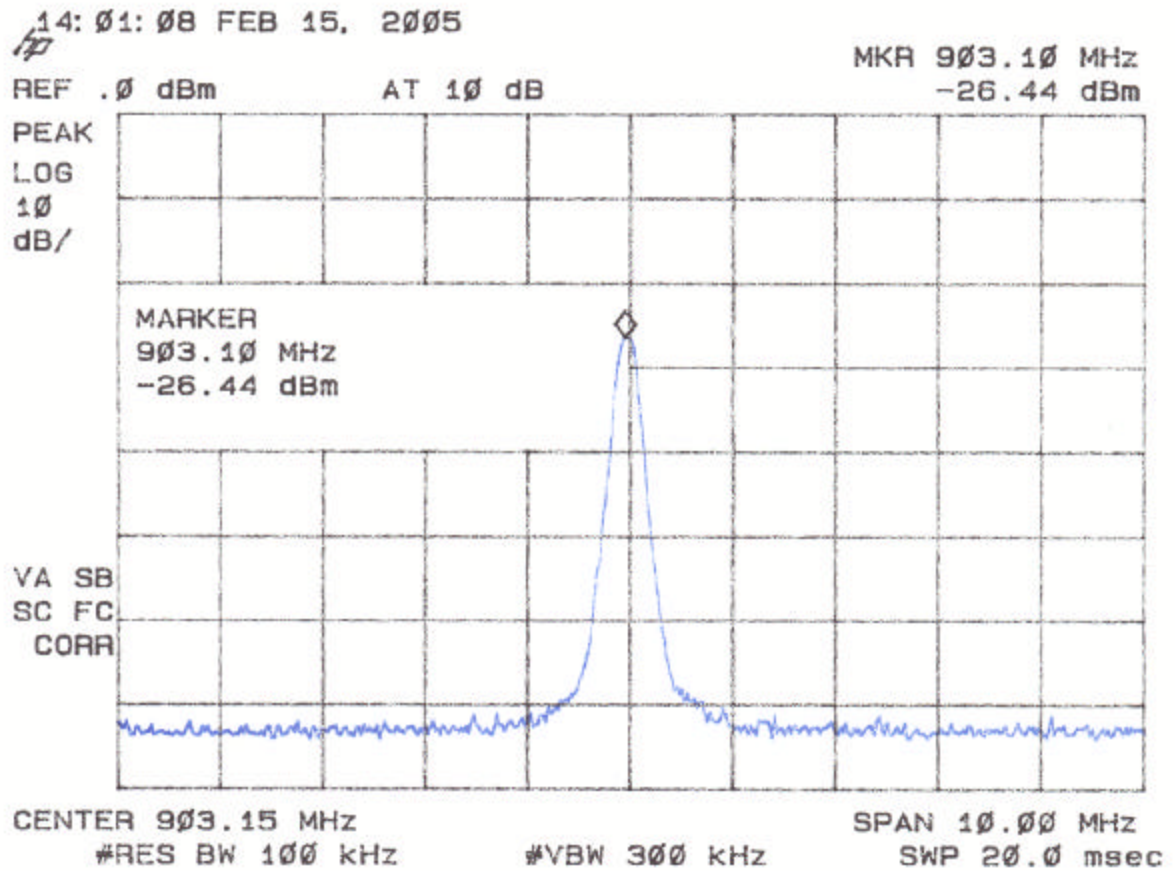


Figure 5a-2
Peak Radiated Spurious Emission 15.247(c) Low Channel –
Sub Harmonics

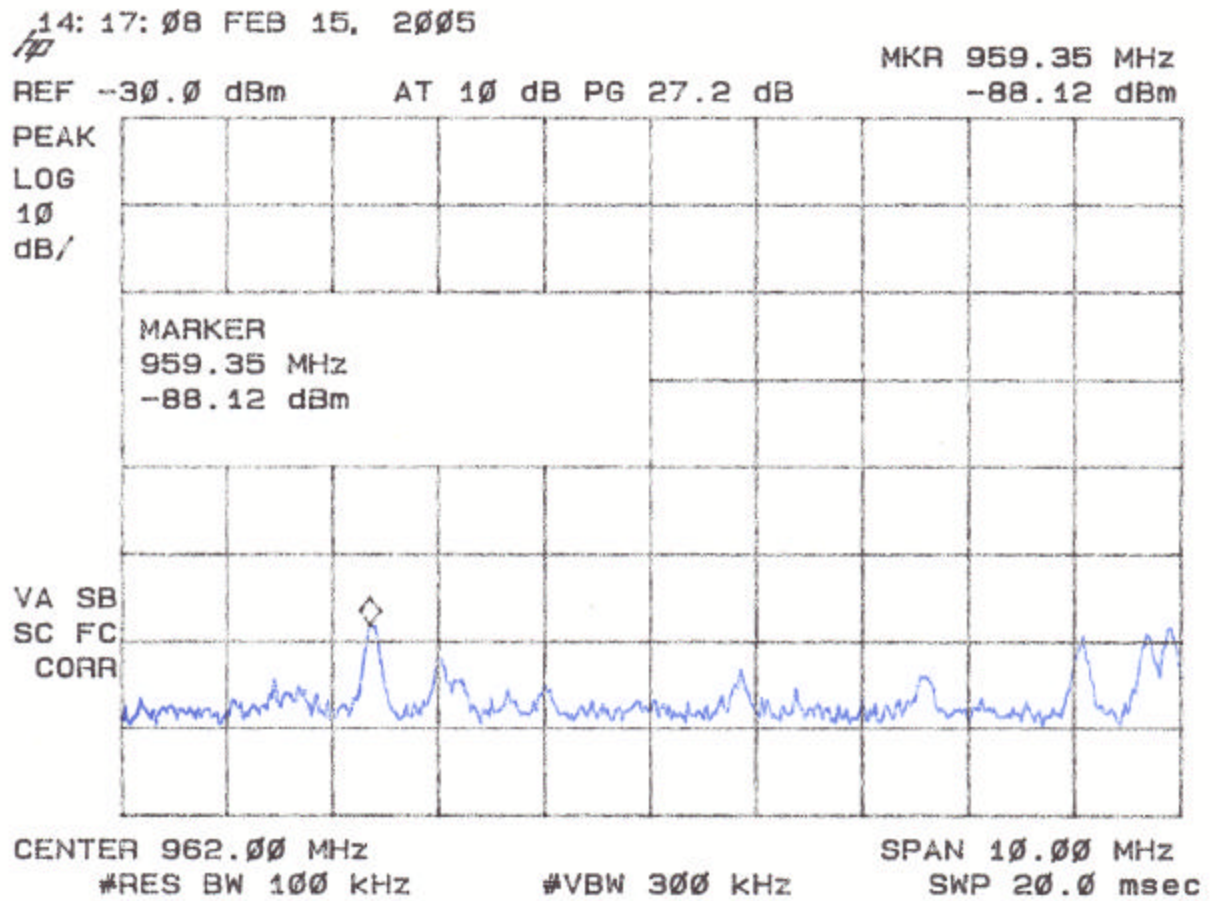


Figure 5a-3
Peak Radiated Spurious Emission 15.247(c) Low Channel –
Sub Harmonics

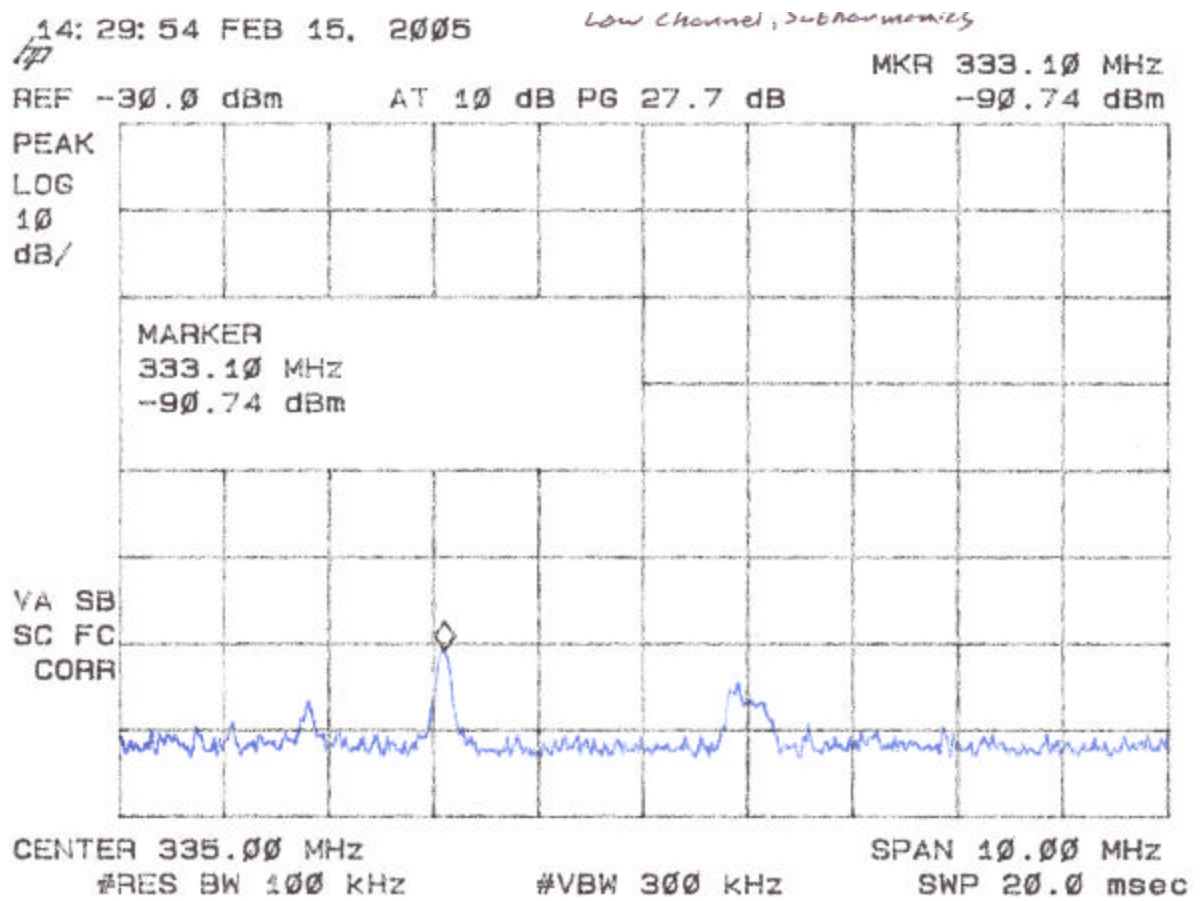


Figure 5a-4
Peak Radiated Spurious Emission 15.247(c) High Channel –
Sub Harmonics

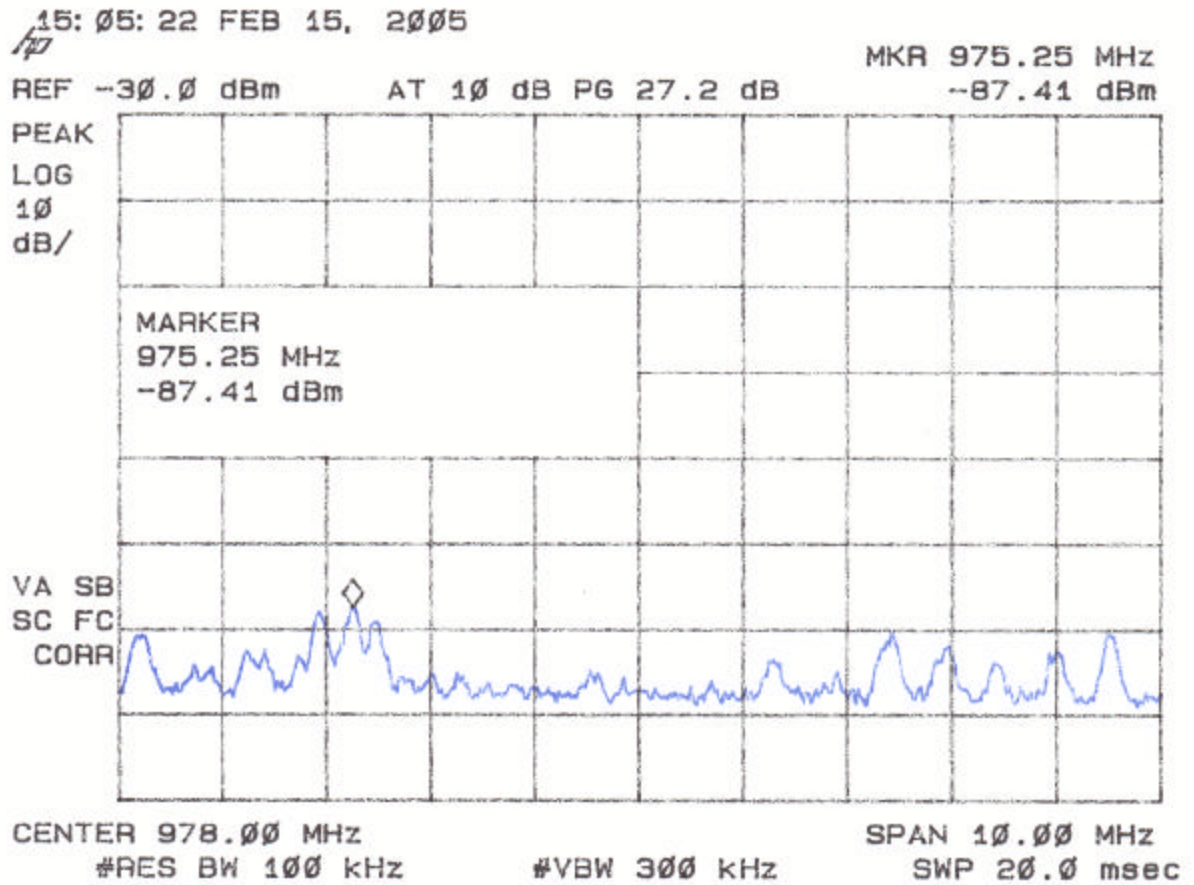


Figure 5a-5
Peak Radiated Spurious Emission 15.247(c) Low Channel –
2nd Harmonic

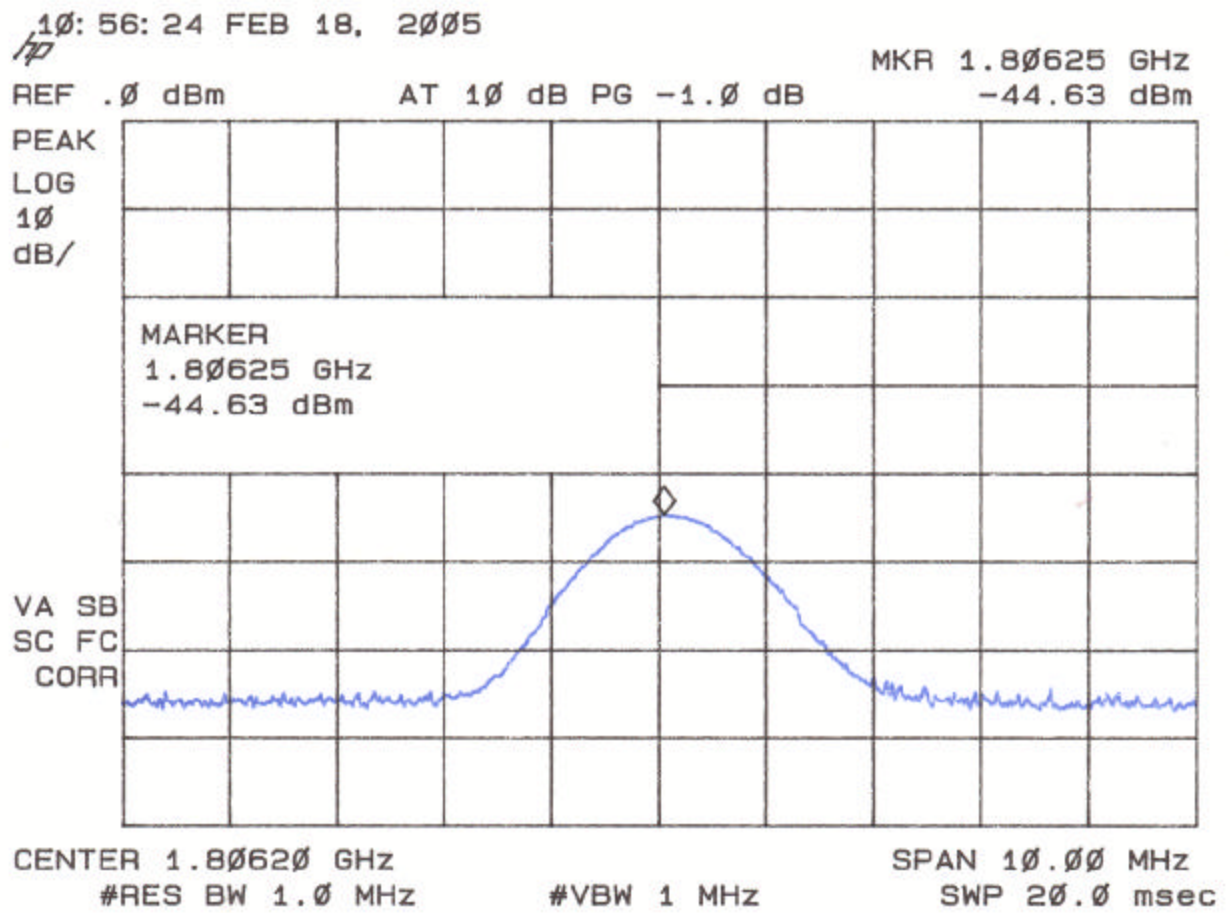


Figure 5a-6
Peak Radiated Spurious Emission 15.247(c) Low Channel –
3rd Harmonic

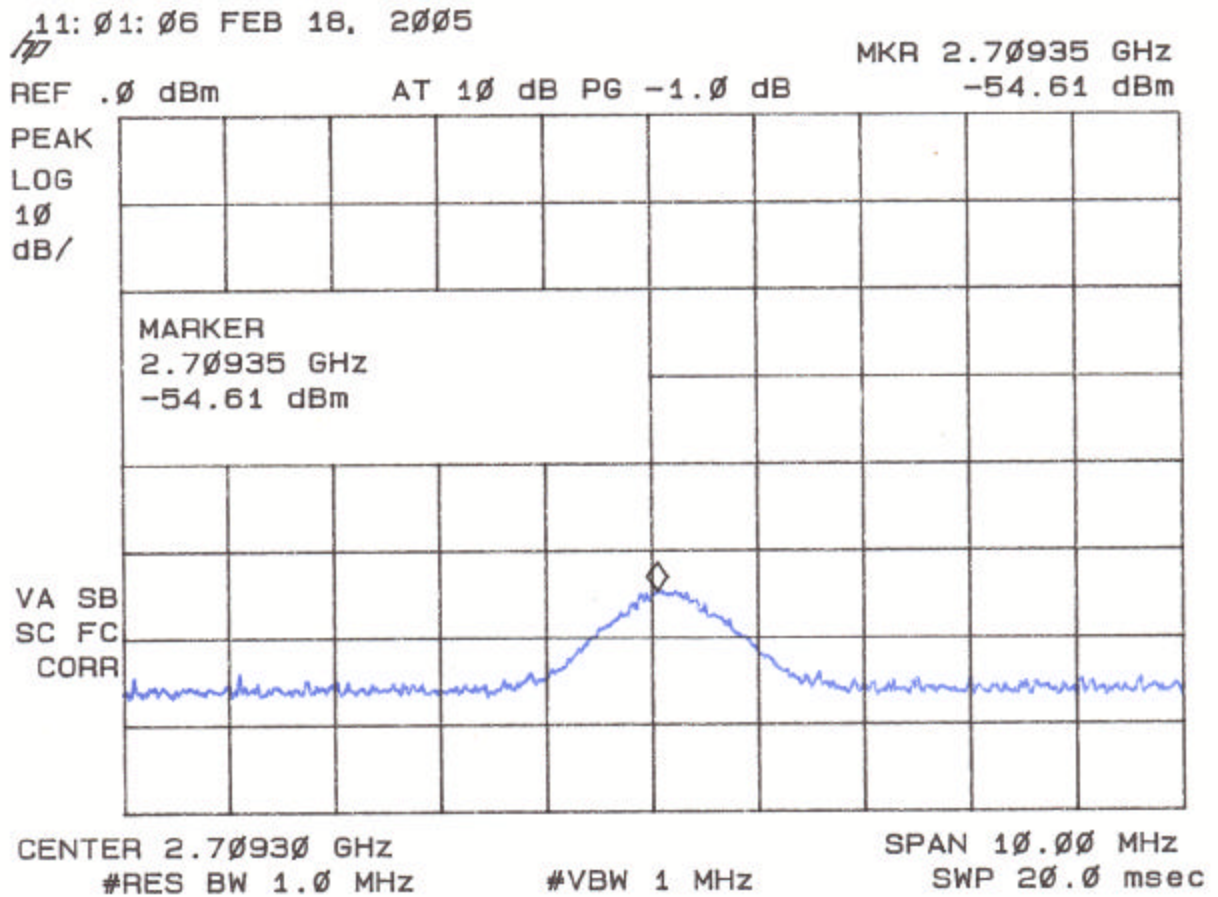


Figure 5a-7
Peak Radiated Spurious Emission 15.247(c) Low Channel –
4th Harmonic

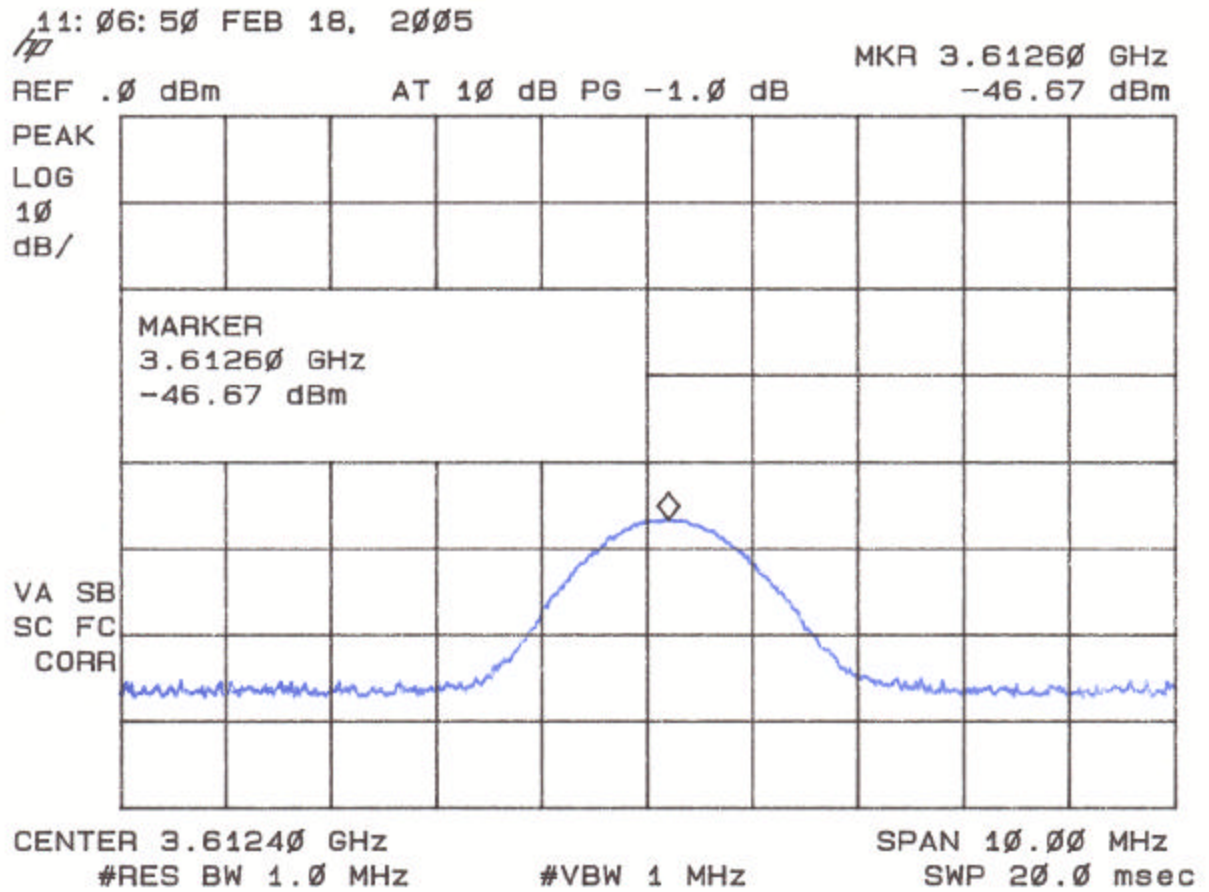


Figure 5a-8
Peak Radiated Spurious Emission 15.247(c) Low Channel –
5th Harmonic

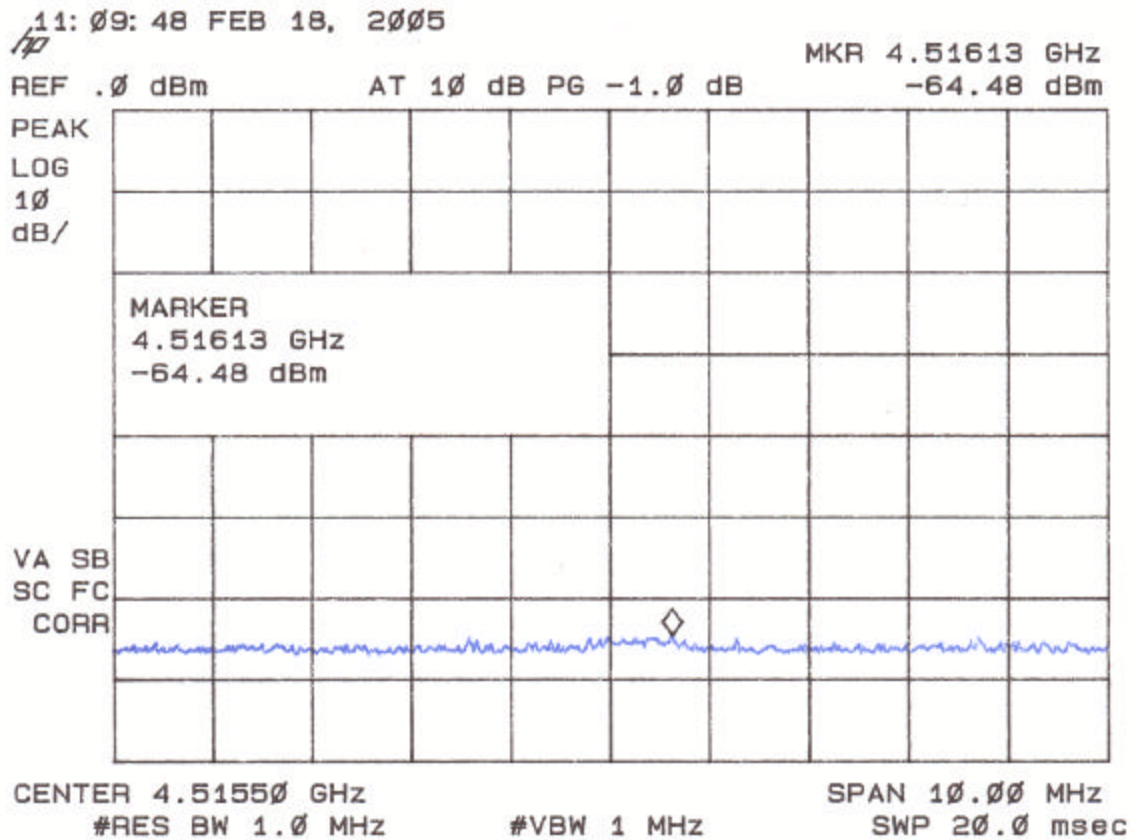


Figure 5a-9
Peak Radiated Spurious Emission 15.247(c) Low Channel –
6th Harmonic

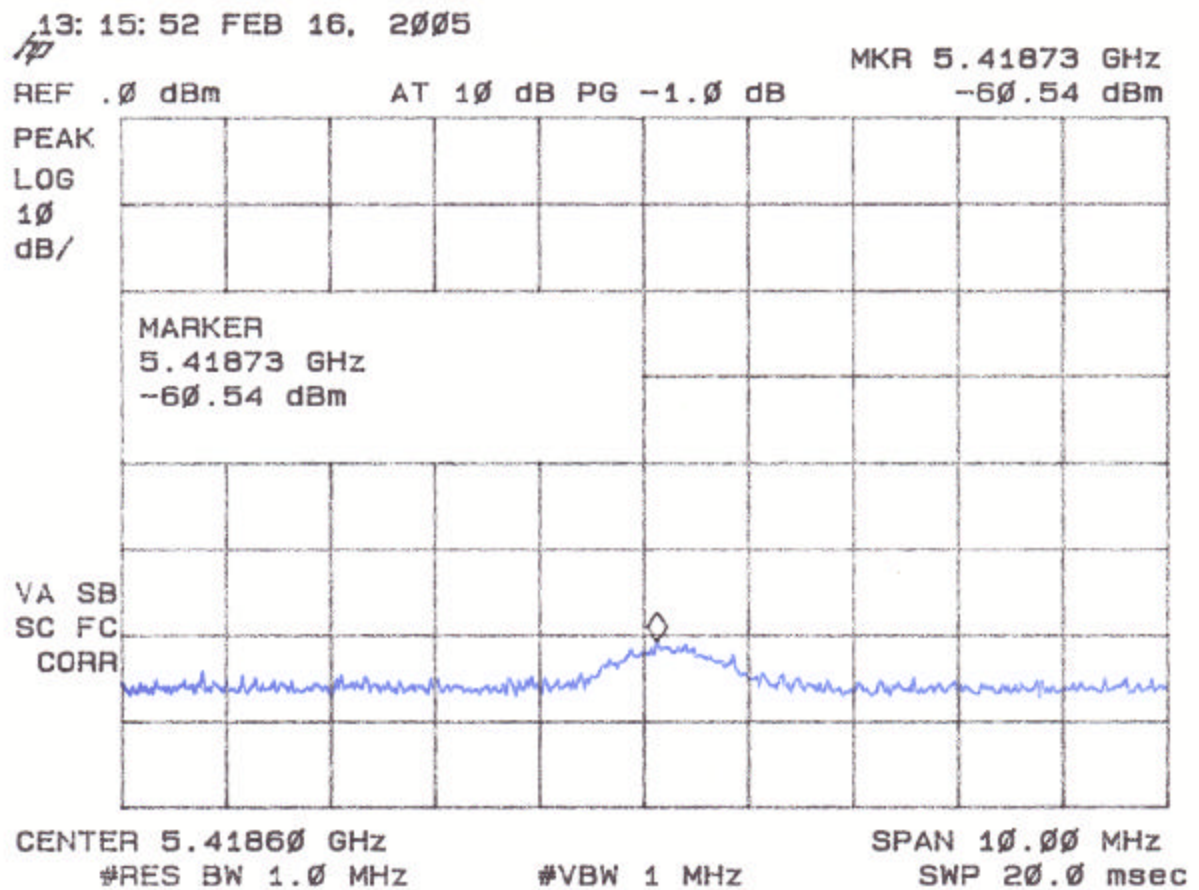


Figure 5a-10
Peak Radiated Spurious Emission 15.247(c) Low Channel –
7th Harmonic

