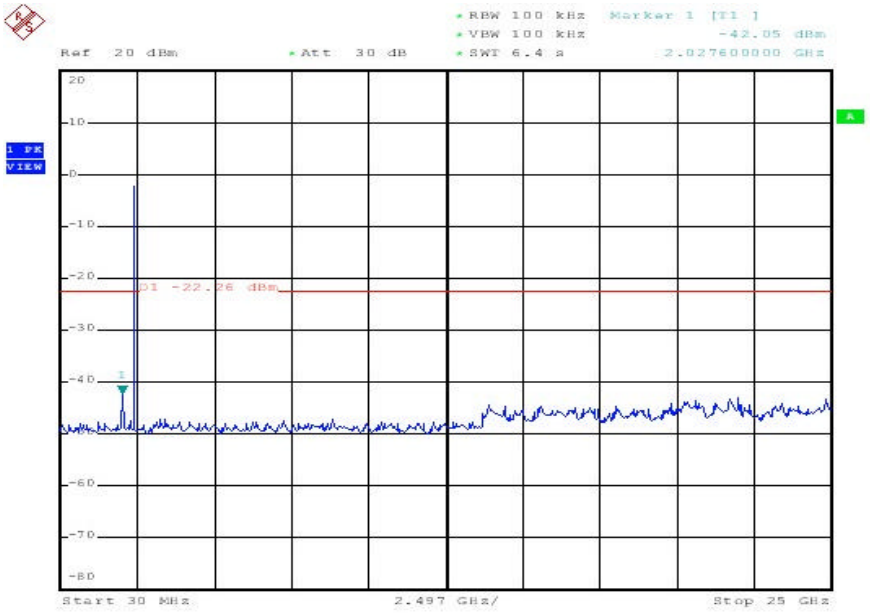
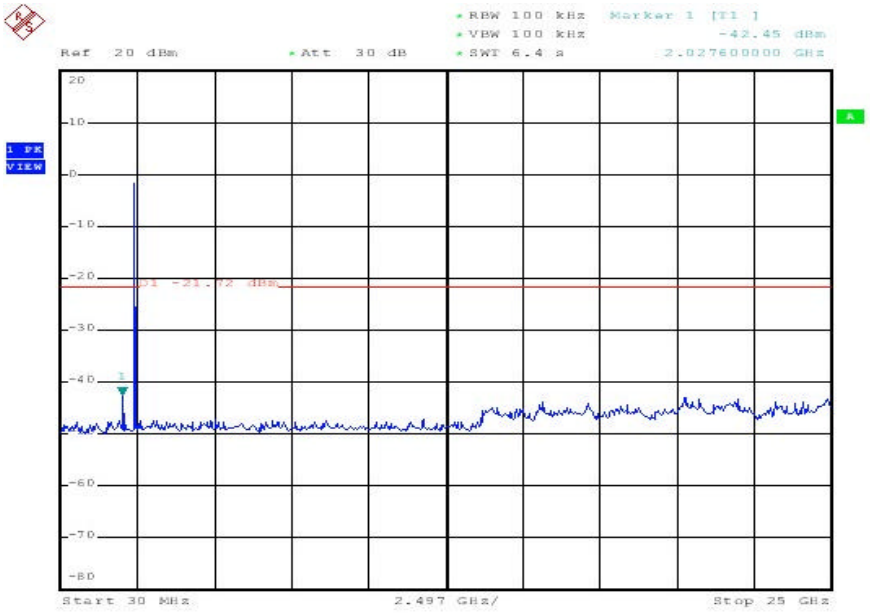
4.3. RF Portion

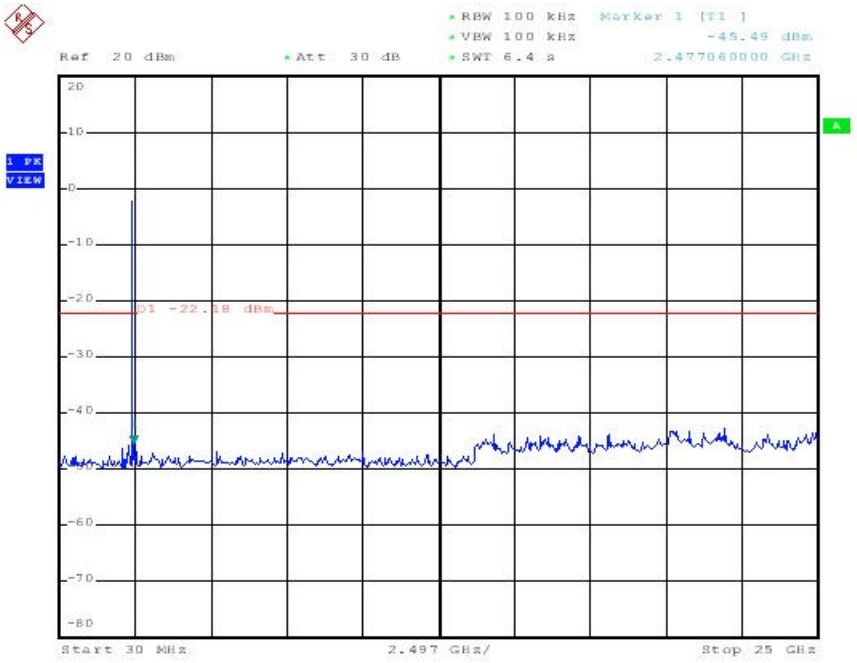
4.3.1. Test Result of Conducted Emission



Date: 30.SEP.2004 13:44:33



Date: 30.SEP.2004 13:46:49



Date: 30.SEP.2004 13:48:55

4.3.2. Test Result of Radiated Emission

Modulation Standard: IEEE 802.11b

a) Emission frequencies below 1 GHz Channel LO

Test Date: Oct. 08, 2004 Temperature: 24℃ Humidity: 59%

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result@3m (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)	Remark	Table Deg.	Ant High (m)
290.93	H	54.56	-12.56	41.99	46.00	-4.01	Peak	165	1.0
99.84	V	56.23	-17.47	38.77	43.50	-4.73	Peak	125	1.0
124.09	V	55.52	-15.74	39.78	43.50	-3.72	Peak	105	1.0
911.73	V	39.58	3.32	42.91	46.00	-3.09	Peak	150	1.0
935.98	V	39.07	3.96	43.03	46.00	-2.97	Q.P.	140	1.0

Notes:

1. Result = Meter Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss – Amplifier

b) Emission frequencies above 1 GHz Channel LO

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result@3m (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)	Remark	Table Deg.	Ant High (m)
1845.0	H	54.72	-2.84	51.87	74	-22.13	Peak	130	1.5
2038.0	H	57.06	-1.81	55.25	74	-18.75	Peak	176	1.0
2038.0	H	46.10	-1.80	44.30	54	-9.70	Ave.	182	1.0
2605.5	H	50.57	0.20	50.77	74	-23.23	Peak	100	1.0
4825.4	H	55.15	7.22	62.37	74	-11.63	Peak	190	1.5
4825.4	H	33.28	7.26	40.53	54	-13.47	Ave.	195	1.5
1845.0	V	54.45	-3.48	50.97	74	-23.03	Peak	135	1.5
2038.0	V	57.89	-2.51	55.37	74	-18.63	Peak	196	1.0
2038.0	V	50.98	-2.50	48.48	54	-5.52	Ave.	180	1.0
4081.0	V	46.61	4.91	51.53	74	-22.47	Peak	200	1.5

Modulation Standard: IEEE 802.11b

a) Emission frequencies below 1 GHz Channel MID

Test Date: Oct. 08, 2004 Temperature: 24℃ Humidity: 59%

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result@3m (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)	Remark	Table Deg.	Ant High (m)
290.93	H	54.26	-12.56	41.69	46.00	-4.37	Peak	150	1.0
124.09	V	55.26	-15.74	39.52	43.50	-3.98	Peak	110	1.0
935.98	V	38.97	3.96	42.93	46.00	-3.07	Peak	140	1.0

Notes:

1. Result = Meter Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss – Amplifier

b) Emission frequencies above 1 GHz Channel MID

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result@3m (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)	Remark	Table Deg.	Ant High (m)
2053.00	H	54.00	-1.75	52.25	74	-21.75	Peak	182	1.0
1845.00	V	53.10	-3.48	49.62	74	-24.38	Peak	136	1.5
2053.00	V	55.69	-2.45	53.24	74	-20.76	Peak	185	1.0

Modulation Standard: IEEE 802.11b

a) Emission frequencies below 1 GHz Channel HI

Test Date: Oct. 08, 2004 Temperature: 24℃ Humidity: 59%

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result@3m (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)	Remark	Table Deg.	Ant High (m)
502.39	H	48.02	-6.22	41.80	46.00	-4.20	Peak	260	1.0
91.73	V	38.96	3.32	42.29	46.00	-3.71	Peak	148	1.0
124.09	V	55.03	-15.74	39.29	43.50	-4.21	Peak	120	1.0
935.98	V	39.02	3.96	42.98	46.00	-3.02	Peak	125	1.0

Notes:

1. Result = Meter Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss – Amplifier

b) Emission frequencies above 1 GHz Channel HI

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result@3m (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)	Remark	Table Deg.	Ant High (m)
1845.0	H	54.32	-2.84	51.48	74	-22.52	Peak	145	1.5
2079.0	H	52.28	-1.66	50.62	74	-23.38	Peak	192	1.0
2605.5	H	50.08	0.20	50.28	74	-23.72	Peak	100	1.0
2079.0	V	53.10	-2.36	50.74	74	-23.26	Peak	185	1.0
2293.5	V	52.18	-1.62	50.56	74	-23.44	Peak	260	1.5

4.3.3. Photographs of Radiated Emission Test

FRONT VIEW

REAR VIEW

4.4. 6dB Bandwidth Measurement Data

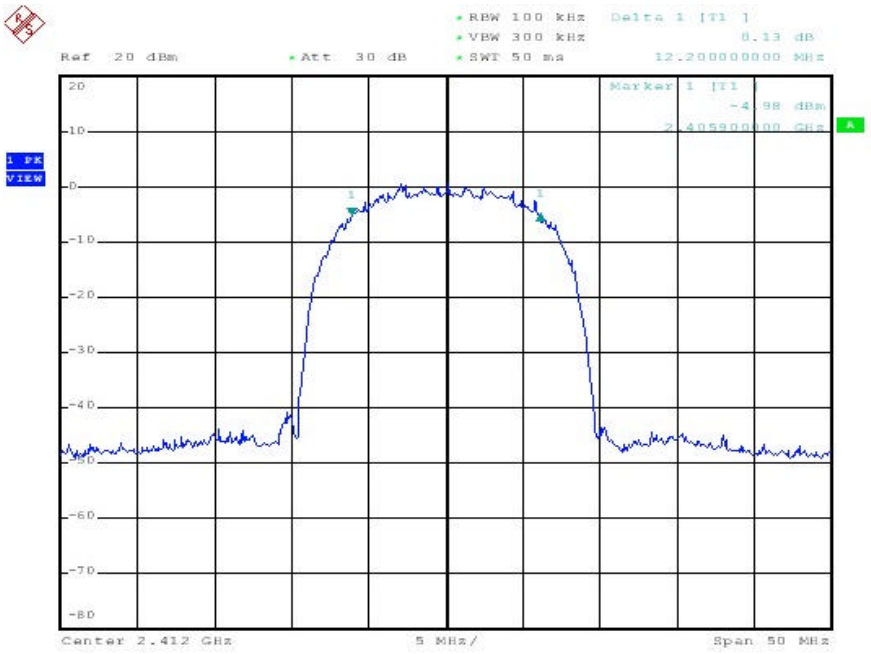
Modulation Standard: IEEE 802.11b

Test Date: Sep. 30, 2004 Temperature: 28℃ Humidity: 57%

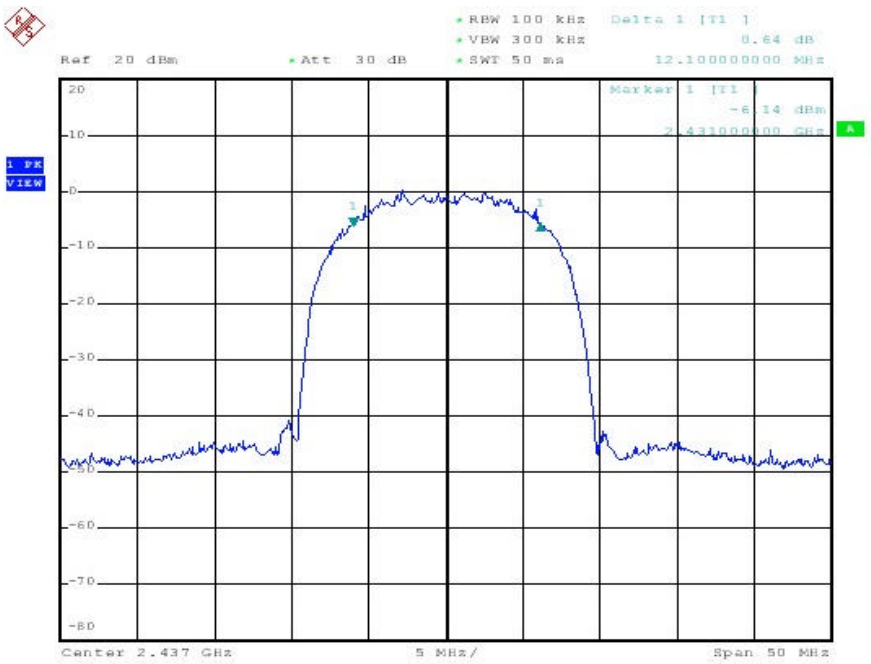
a) Channel 01: 6dB Emission Bandwidth is 12.2 MHz

b) Channel 06: 6dB Emission Bandwidth is 12.1 MHz

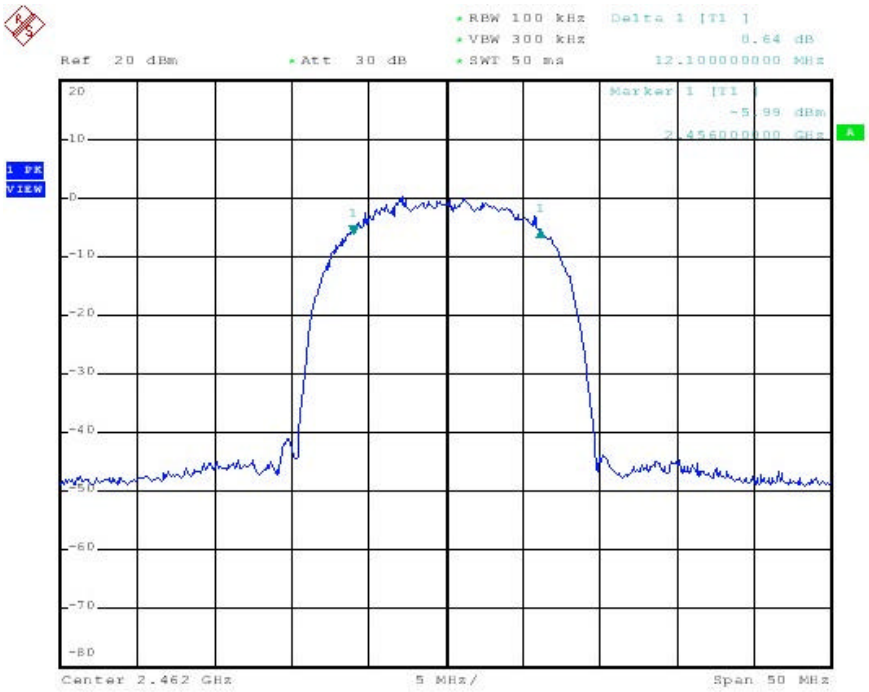
c) Channel 11: 6dB Emission Bandwidth is 12.1 MHz



Date: 30.SEP.2004 12:22:46



Date: 30.SEP.2004 12:24:52



Date: 30.SEP.2004 12:26:53

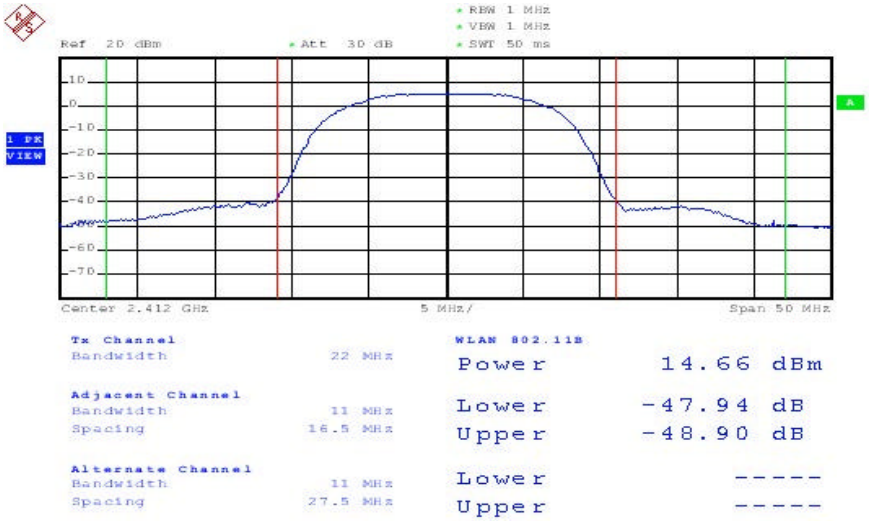
4.5. Peak Output Power Measurement Data

Modulation Standard: IEEE 802.11b

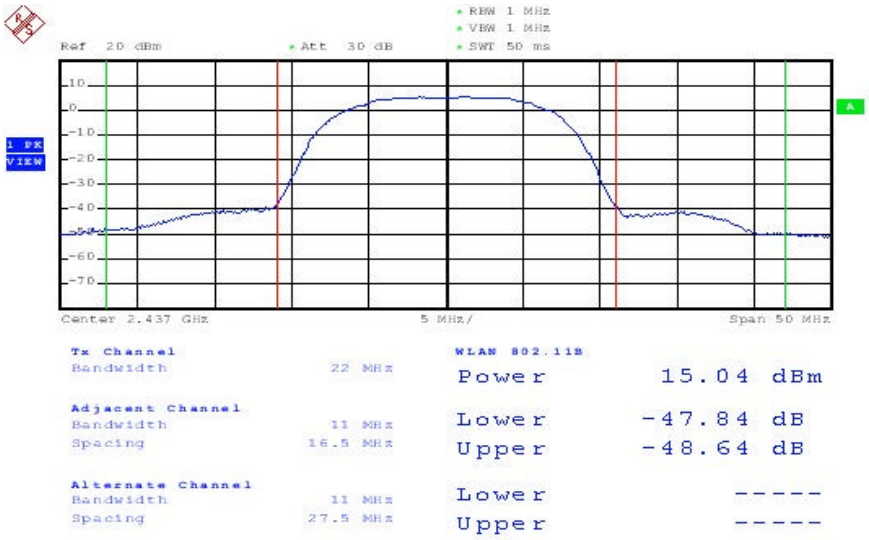
Test Date: Sep. 30, 2004 Temperature: 28℃ Humidity: 57%

a) Channel 01: Output Peak Power is	14.66	dBm or	29.242	mW
b) Channel 06: Output Peak Power is	15.04	dBm or	31.915	mW
c) Channel 11: Output Peak Power is	15.52	dBm or	35.645	mW

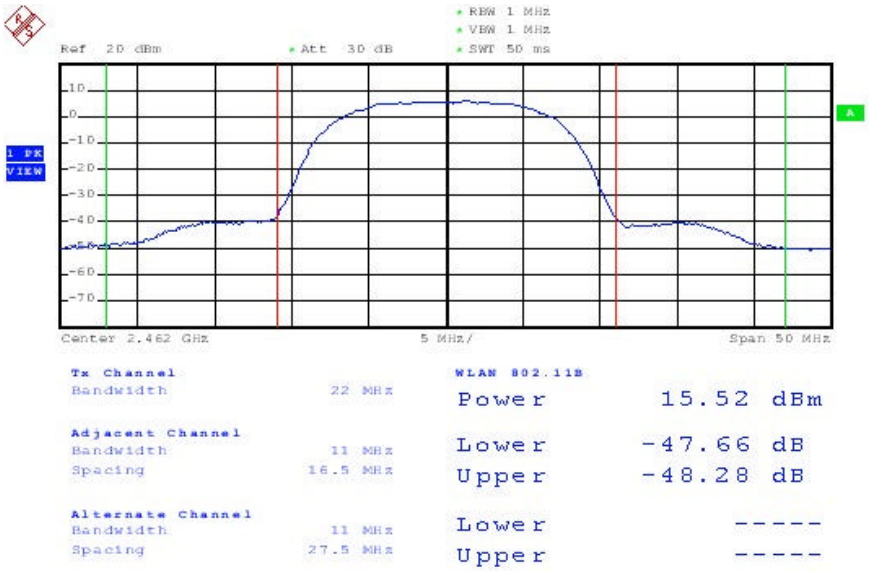
Note: Conducted Power = Reading Value + Cable Loss



Date: 30.SEP.2004 11:27:43



Date: 30.SEP.2004 11:29:51



Date: 30.SEP.2004 11:40:18

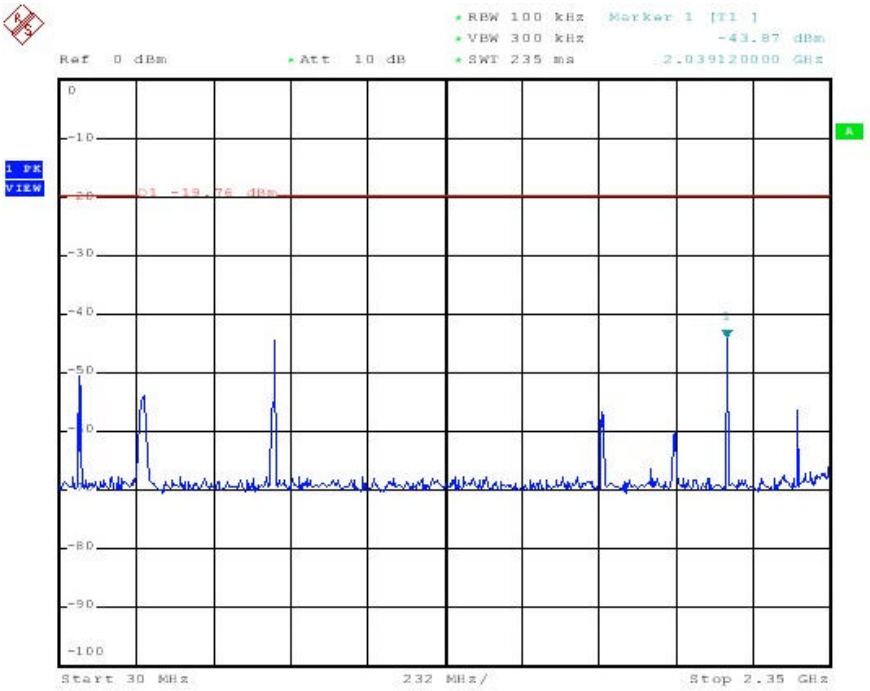
4.6. Band Edges Measurement Data

Modulation Standard: IEEE 802.11b

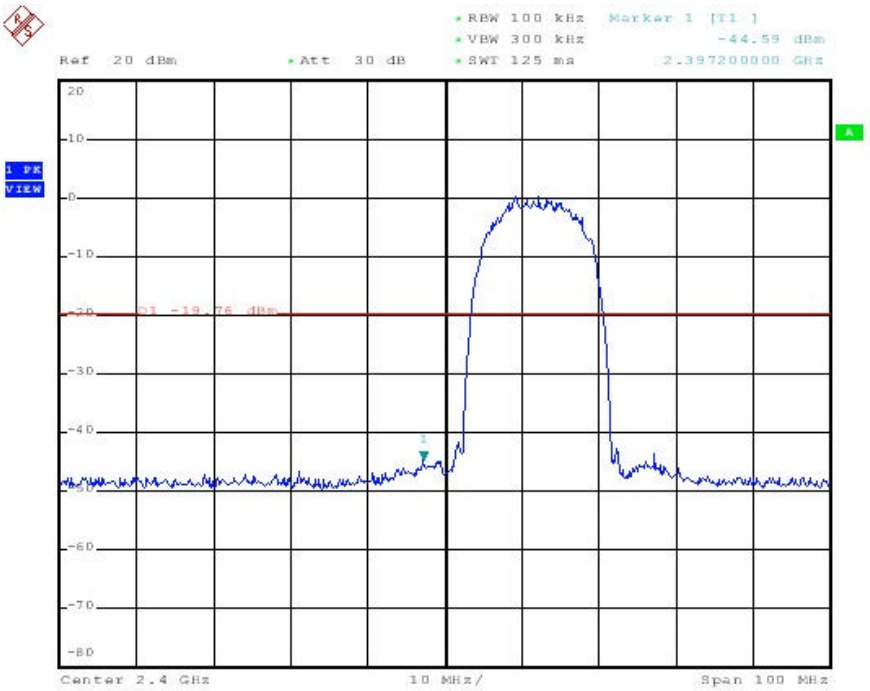
Test Date: Sep. 30, 2004 Temperature: 28℃ Humidity: 57%

a) Lower Band Edge: maximum value is -43.87 dBm that is attenuated more than 20dB

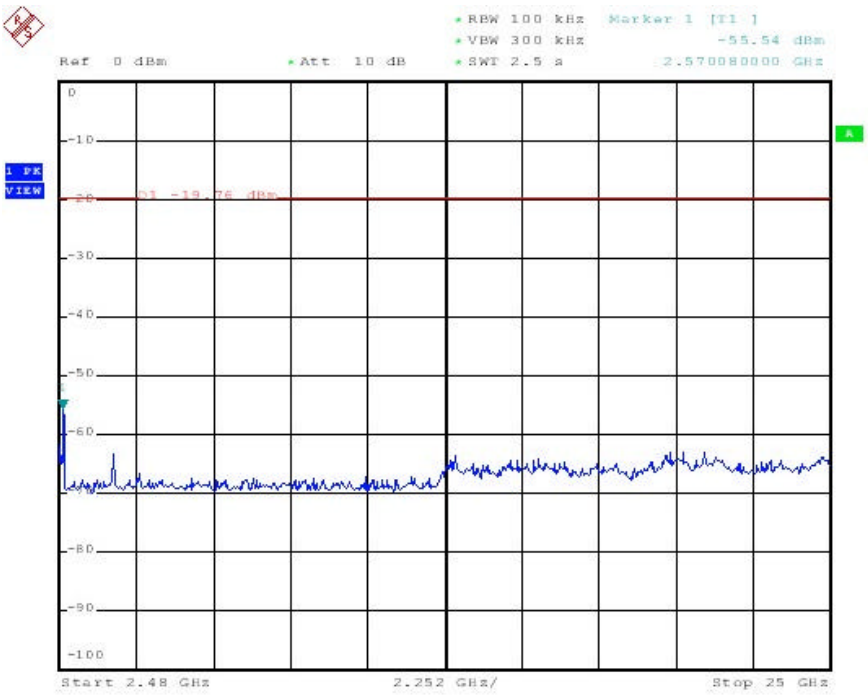
b) Upper Band Edge: maximum value is -46.03 dBm that is attenuated more than 20dB



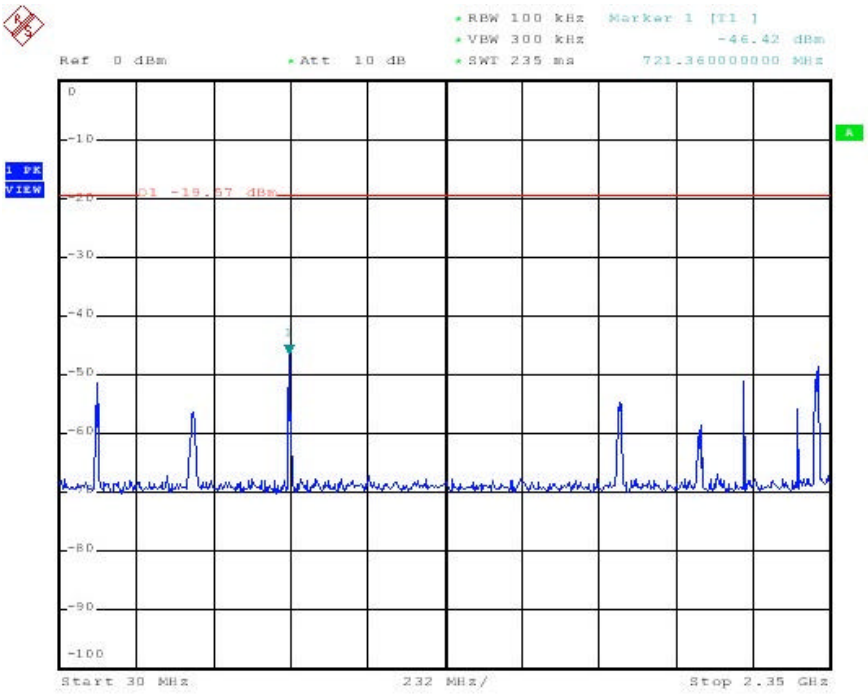
Date: 30.SEP.2004 14:28:43



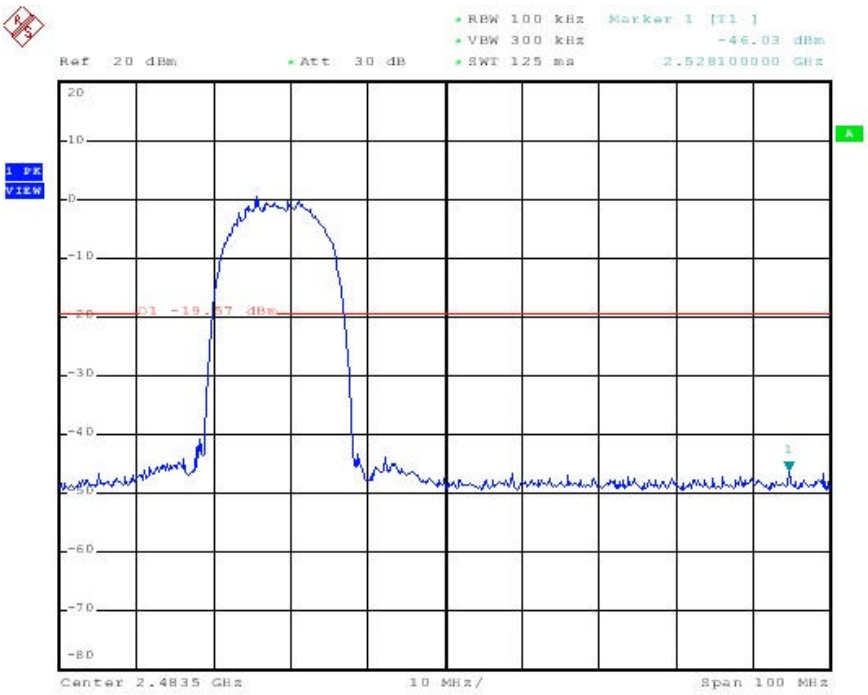
Date: 30.SEP.2004 14:27:30



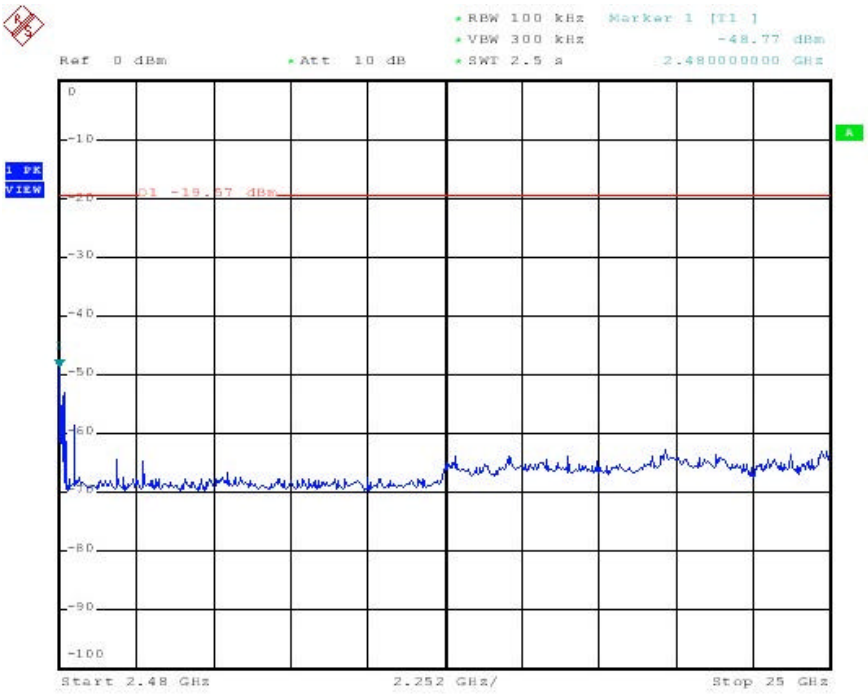
Date: 30.SEP.2004 14:30:07



Date: 30.SEP.2004 14:34:04



Date: 30.SEP.2004 14:32:54



Date: 30.SEP.2004 14:35:05

4.6.1. Note on Band edge Emission

Modulation Standard: IEEE 802.11b

Test Date: Sep. 30, 2004 Temperature: 28℃ Humidity: 57%

a) Channel 1

Fundamental Frequency: 2412 MHz

Frequency (MHz)	Level (dBV)	Polarization	Remark	Limit@3m (dBuV/m)		Margin (dB)	Table Deg. (Deg.)	Ant High (m)
				Peak	Ave.			
2389.356	52.24	H	Peak	74	54	-21.76	186	1.5
2389.356	---	H	Ave.	74	54	---	---	---
2324.688	49.82	V	Peak	74	54	-24.18	211	1.5
2324.688	---	V	Ave.	74	54	---	---	---

b) Channel 11

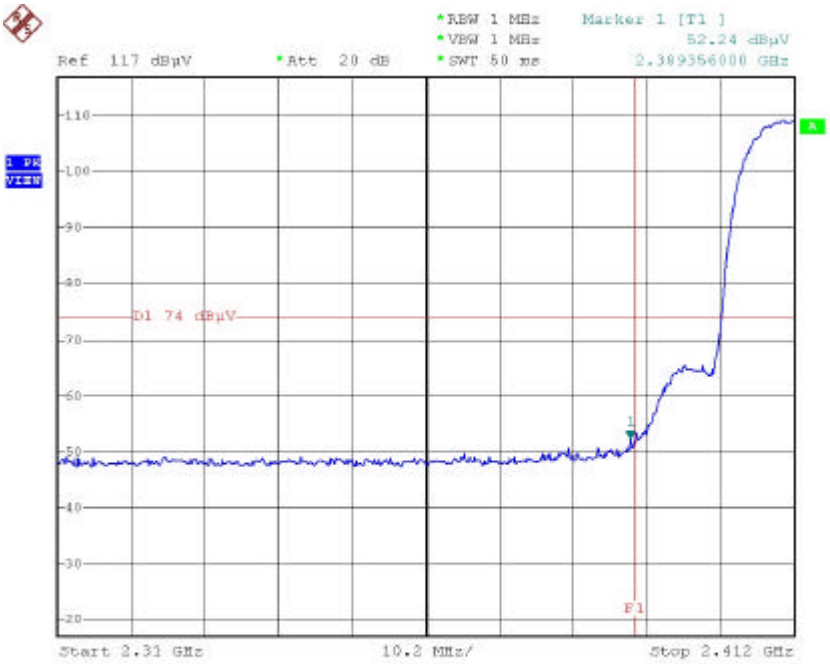
Fundamental Frequency: 2462 MHz

Frequency (MHz)	Level (dBuV)	Polarization	Remark	Limit@3m (dBuV/m)		Margin (dB)	Table Deg. (Deg.)	Ant High (m)
				Peak	Ave.			
2494.452	50.08	H	Peak	74	54	-23.92	193	1.5
2494.452	---	H	Ave.	74	54	---	---	---
2495.516	49.70	V	Peak	74	54	-24.30	189	1.5
2495.516	---	V	Ave.	74	54	---	---	---

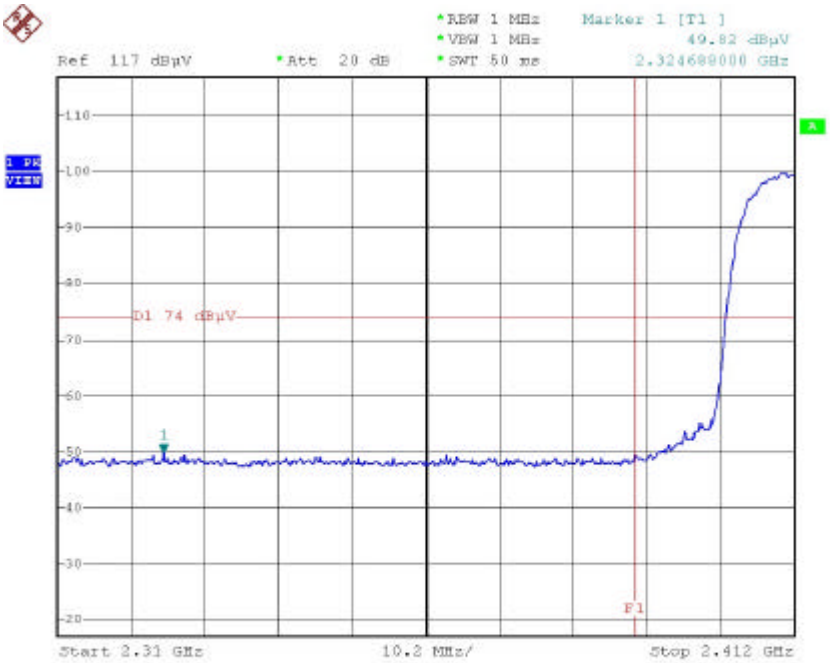
Notes:

1. Level = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss – Amplifier Factor

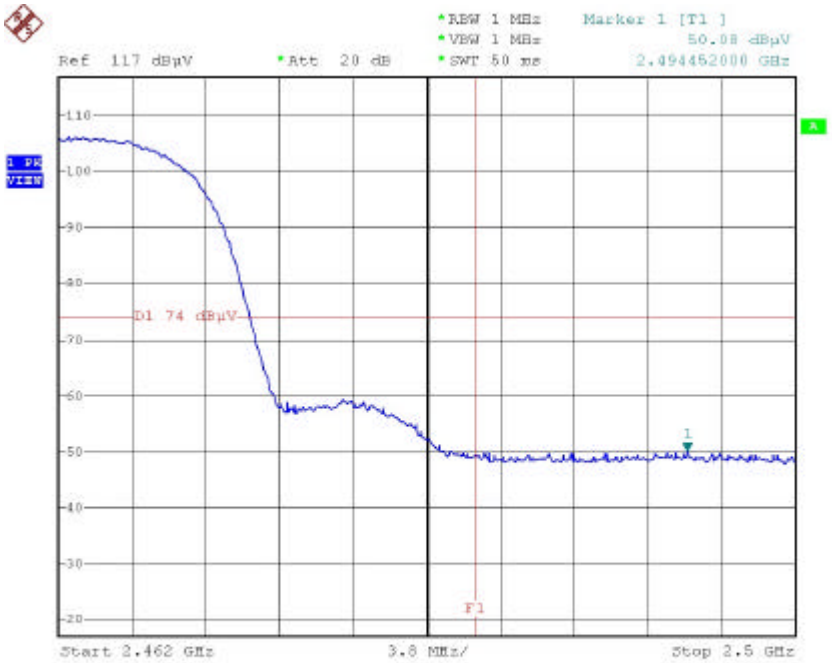
Modulation Standard: IEEE 802.11b
Pol/Phase: Horizontal and Vertical



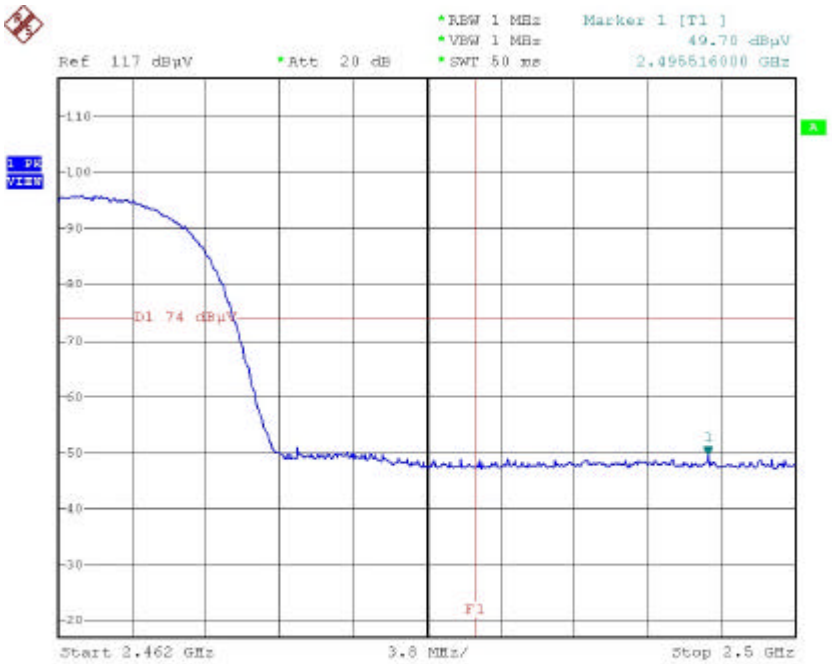
Date: 8.OCT.2004 10:35:11



Date: 8.OCT.2004 11:06:31



Date: 8.OCT.2004 10:50:07



Date: 8.OCT.2004 11:00:12

4.7. Power Spectral Density Measurement Data

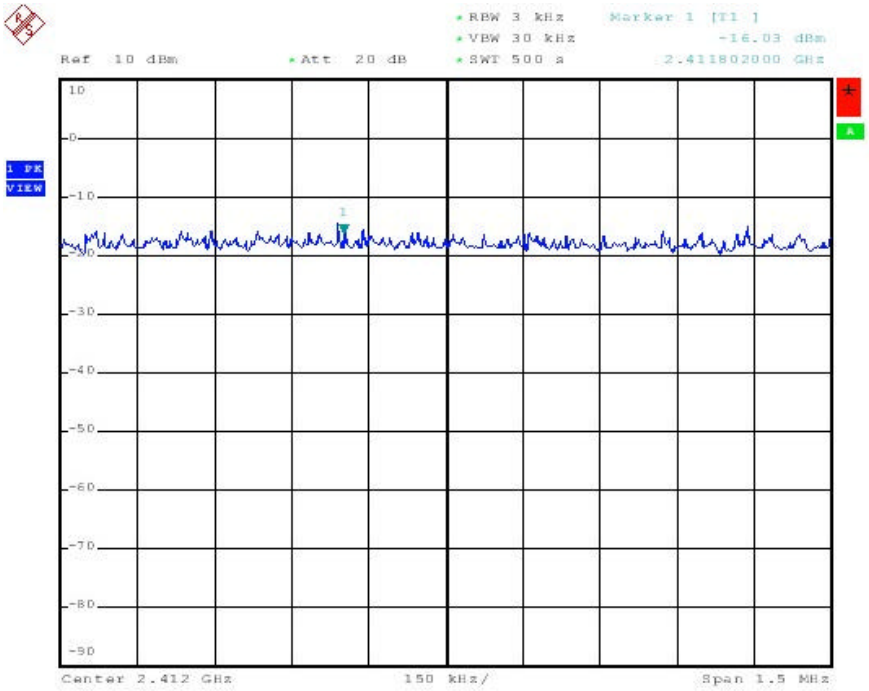
Modulation Standard: IEEE 802.11b

Test Date: Sep. 30, 2004 Temperature: 28℃ Humidity: 57%

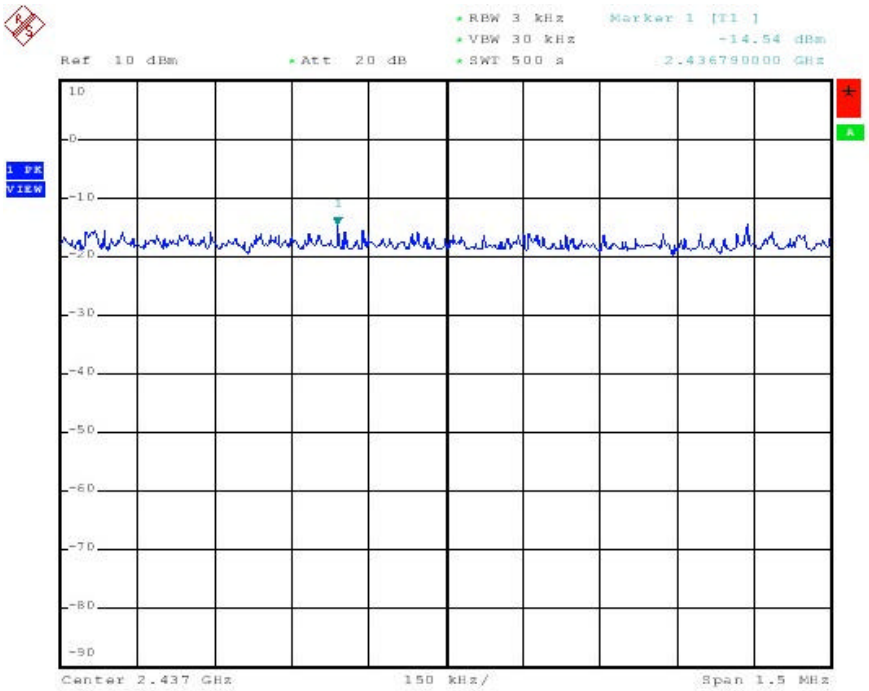
a) Channel 01: Maximum Power Density of 3 kHz Bandwidth is -16.03 dBm

b) Channel 06: Maximum Power Density of 3 kHz Bandwidth is -14.54 dBm

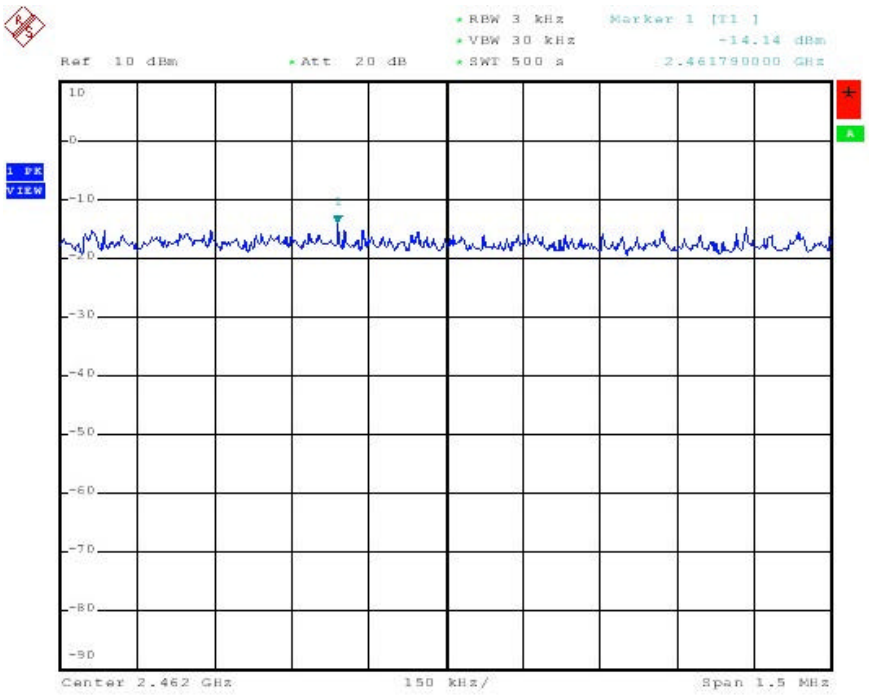
c) Channel 11: Maximum Power Density of 3 kHz Bandwidth is -14.14 dBm



Date: 30.SEP.2004 15:46:26



Date: 30.SEP.2004 15:58:21



Date: 30.SEP.2004 15:04:24

5. List of Measuring Equipment Used

No	Instrument/Ancillary	Type	Manufacturer	Serial No.	Valid Date.
1	Bilog Antenna	CBL6111C	Schaffner	2762	2004/11/03
2	Preamplifier	RFP4002	Schaffner	010	2004/11/03
3	Receiver	SCR3501	Schaffner	437	2004/11/03
4	Signal Generator	8648B	HP	3629U00612	2006/02/09
5	Spectrum Analyzer	8594E	HP	3520A01913	2005/01/15
6	Amplifier	8447D	Agilent	2443A04650	2005/02/02
7	Amplifier	8447D	Agilent	2944A10531	2005/06/30
8	Series Power Meter	E4416A	Agilent	GB41292146	2005/10/11
9	Power Sensor	E9327A	Agilent	US40441392	2005/10/11
10	Dipole Antenna	AD-100	COM-Power	721011	2004/12/02
11	Dipole Antenna	AD-100	COM-Power	721010	2004/12/02
12	Spectrum Analyzer	R3131A	Advantest	131000021	2004/11/24
13	Spectrum Analyzer	FSP40	R&S	100047	2004/12/16
14	Preamplifier	8449B	Agilent	3008A01954	2005/01/04
15	Horn Antenna	3115	EMCO	31601	2005/01/13
16	Horn Antenna	3115	EMCO	31589	2005/01/13
17	Horn Antenna	3116	EMCO	31970	2005/01/29
18	Horn Antenna	3116	EMCO	31974	2005/01/29
19	EMI Receiver	8546A	HP	3807A00454	2005/02/12
20	RF Filter Section	85460A	HP	3704A00386	2005/02/12
21	Signal Generator	83640A	HP	2927A00107	2006/04/02
22	Attenuator	8491B	Agilent	50703	2004/12/16
23	Attenuator	8491B	Agilent	50705	2004/12/16
24	Temperature Chamber	TMJ-9712	T Machine	T-12-040111	2005/02/05
25	High Pass Filter	84300-80038	HP	002	N/A
26	High Pass Filter	84300-80038	HP	006	N/A
27	DC Power Supply	GPD-3030	GM	7020936	N/A
28	AC Power Converter	AFC-11005	APC	F103120008	N/A