

4.4 CONDUCTED OUTPUT POWER

4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

Per KDB 662911 D01 Multiple Transmitter Output v02r01 Method of conducted output power measurement on IEEE 802.11 devices,

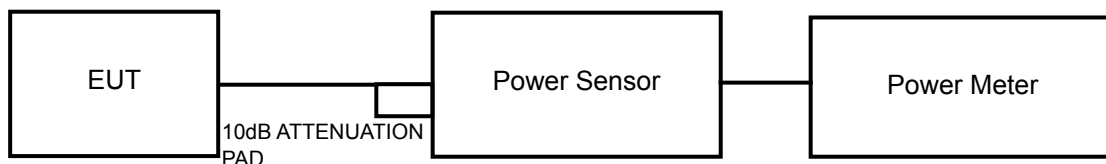
Array Gain = 0 dB (i.e., no array gain) for $NANT \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;

Array Gain = $5 \log(NANT/NSS)$ dB or 3 dB, whichever is less for 20-MHz channel widths with $NANT \geq 5$.

For power measurements on all other devices: Array Gain = $10 \log(NANT/NSS)$ dB.

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.4.4 TEST PROCEDURES

An average power sensor was used on the output port of the EUT. A power meter was used to read the response of the average power sensor. Record the power level.



A D T

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.2.6.

4.4.7 TEST RESULTS

TEST MODE A

802.11b

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	23.47	22.27	22.54	570.459	27.56	30	PASS
6	2437	22.60	21.21	22.28	483.144	26.84	30	PASS
11	2462	21.98	20.77	21.68	424.391	26.28	30	PASS

802.11g

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	20.34	19.12	19.48	278.517	24.45	30	PASS
6	2437	24.22	23.55	24.18	752.523	28.77	30	PASS
11	2462	20.33	19.26	19.82	288.168	24.60	30	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	16.40	15.18	15.41	111.367	20.47	30	PASS
6	2437	23.12	21.50	22.34	517.766	27.14	30	PASS
11	2462	17.61	16.24	17.22	152.473	21.83	30	PASS

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
3	2422	13.85	12.73	13.25	64.151	18.07	30	PASS
6	2437	17.05	16.21	16.91	141.573	21.51	30	PASS
9	2452	11.76	10.90	11.83	42.541	16.29	30	PASS

TEST MODE B

802.11b

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	12.35	11.43	11.67	45.768	16.61	23.5	PASS
6	2437	15.45	14.45	15.30	96.820	19.86	23.5	PASS
11	2462	14.52	13.47	14.67	79.856	19.02	23.5	PASS

NOTE: Antenna gain = 12.5dBi > 6dBi, so the power limit shall be reduced to $30-(12.5-6) = 23.5$ dBm.

802.11g

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	10.23	9.34	9.70	28.467	14.54	23.5	PASS
6	2437	12.51	11.50	12.00	47.798	16.79	23.5	PASS
11	2462	11.95	10.85	11.77	42.861	16.32	23.5	PASS

NOTE: Antenna gain = 12.5dBi > 6dBi, so the power limit shall be reduced to $30-(12.5-6) = 23.5$ dBm.

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	10.52	9.67	9.82	30.134	14.79	23.5	PASS
6	2437	12.24	11.19	12.17	46.383	16.66	23.5	PASS
11	2462	11.80	10.83	11.74	42.170	16.25	23.5	PASS

NOTE: Antenna gain = 12.5dBi > 6dBi, so the power limit shall be reduced to $30-(12.5-6) = 23.5$ dBm.

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
3	2422	6.55	5.64	6.13	12.285	10.89	23.5	PASS
6	2437	11.30	10.30	10.87	36.423	15.61	23.5	PASS
9	2452	5.50	4.55	5.41	9.874	9.94	23.5	PASS

NOTE: Antenna gain = 12.5dBi > 6dBi, so the power limit shall be reduced to $30-(12.5-6) = 23.5$ dBm.

TEST MODE C

802.11b

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	16.52	15.55	15.96	120.213	20.80	26.5	PASS
6	2437	22.03	20.25	21.27	399.481	26.01	26.5	PASS
11	2462	19.03	17.81	18.88	217.646	23.38	26.5	PASS

NOTE: Antenna gain = 9.5dBi > 6dBi, so the power limit shall be reduced to $30-(9.5-6) = 26.5$ dBm.

802.11g

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	15.62	14.23	14.78	93.021	19.69	26.5	PASS
6	2437	20.68	19.65	20.63	324.818	25.12	26.5	PASS
11	2462	15.42	14.47	15.53	98.551	19.94	26.5	PASS

NOTE: Antenna gain = 9.5dBi > 6dBi, so the power limit shall be reduced to $30-(9.5-6) = 26.5$ dBm.

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	14.23	13.16	13.70	70.628	18.49	26.5	PASS
6	2437	20.88	19.85	20.40	328.715	25.17	26.5	PASS
11	2462	14.66	13.72	14.61	81.699	19.12	26.5	PASS

NOTE: Antenna gain = 9.5dBi > 6dBi, so the power limit shall be reduced to $30-(9.5-6) = 26.5$ dBm.

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
3	2422	10.84	9.73	10.21	32.026	15.06	26.5	PASS
6	2437	16.51	15.13	15.73	114.766	20.60	26.5	PASS
9	2452	11.05	9.92	10.81	34.602	15.39	26.5	PASS

NOTE: Antenna gain = 9.5dBi > 6dBi, so the power limit shall be reduced to $30-(9.5-6) = 26.5$ dBm.

TEST MODE D

802.11b

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	20.95	20.93	21.22	380.765	25.81	30	PASS
6	2437	23.85	23.69	24.69	770.987	28.87	30	PASS
11	2462	19.72	18.13	19.31	244.079	23.88	30	PASS

802.11g

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	15.57	15.19	16.83	117.290	20.69	30	PASS
6	2437	21.33	21.27	22.38	442.781	26.46	30	PASS
11	2462	16.87	15.87	16.99	137.281	21.38	30	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	14.21	14.07	15.10	84.249	19.26	30	PASS
6	2437	19.87	18.99	19.97	275.613	24.40	30	PASS
11	2462	15.64	14.73	15.98	105.989	20.25	30	PASS

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
3	2422	11.01	10.67	11.50	38.411	15.84	30	PASS
6	2437	15.15	14.34	15.35	94.175	19.74	30	PASS
9	2452	11.46	11.14	11.79	42.099	16.24	30	PASS

TEST MODE E

802.11b

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	23.40	22.61	401.166	26.03	30	PASS
6	2437	26.67	25.83	847.340	29.28	30	PASS
11	2462	23.95	22.72	435.381	26.39	30	PASS

802.11g

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	20.88	20.05	223.620	23.50	30	PASS
6	2437	26.25	25.91	811.639	29.09	30	PASS
11	2462	20.27	19.64	198.459	22.98	30	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	18.57	17.80	132.201	21.21	30	PASS
6	2437	26.40	26.09	842.959	29.26	30	PASS
11	2462	18.78	18.25	142.343	21.53	30	PASS

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
3	2422	14.31	13.57	49.728	16.97	30	PASS
6	2437	18.81	17.75	135.599	21.32	30	PASS
9	2452	13.22	12.77	39.912	16.01	30	PASS

TEST MODE F

802.11b

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	19.44	18.02	17.32	205.240	23.12	30	PASS
6	2437	25.64	24.09	24.88	930.496	29.69	30	PASS
11	2462	20.72	18.46	17.98	250.984	24.00	30	PASS

802.11g

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	18.69	17.42	16.29	171.729	22.35	30	PASS
6	2437	21.74	20.45	20.31	367.595	25.65	30	PASS
11	2462	16.56	15.49	15.11	113.124	20.54	30	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	17.75	16.55	16.41	148.504	21.72	30	PASS
6	2437	20.54	18.54	15.80	222.709	23.48	30	PASS
11	2462	15.37	14.23	14.42	88.589	19.47	30	PASS

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
3	2422	12.35	11.58	10.92	43.926	16.43	30	PASS
6	2437	17.09	16.66	15.88	136.239	21.34	30	PASS
9	2452	10.90	9.89	8.63	29.348	14.68	30	PASS

TEST MODE G

802.11b

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	16.25	15.16	15.30	108.864	20.37	30	PASS
6	2437	21.34	20.24	21.21	373.956	25.73	30	PASS
11	2462	19.00	17.88	19.07	221.533	23.45	30	PASS

802.11g

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	15.79	14.59	14.72	96.353	19.84	30	PASS
6	2437	20.94	19.81	20.74	338.461	25.30	30	PASS
11	2462	15.98	14.61	15.88	107.261	20.30	30	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	14.10	12.79	13.22	65.704	18.18	30	PASS
6	2437	20.55	19.62	20.12	307.925	24.88	30	PASS
11	2462	15.29	14.19	15.08	92.259	19.65	30	PASS

802.11n (40MHz)

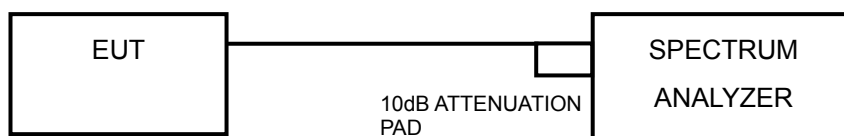
CHAN.	CHAN. FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
3	2422	10.75	9.44	9.88	30.402	14.83	30	PASS
6	2437	14.91	13.96	14.72	85.511	19.32	30	PASS
9	2452	8.88	8.01	8.32	20.843	13.19	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.5.4 TEST PROCEDURE

- Set the RBW = 3 kHz, VBW = 10 kHz, Detector = peak.
- Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

4.5.7 TEST RESULTS

TEST MODE A

802.11b

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-8.50	4.77	-3.73	4.23	PASS
	6	2437	-9.56	4.77	-4.79	4.23	PASS
	11	2462	-10.19	4.77	-5.42	4.23	PASS
1	1	2412	-8.39	4.77	-3.62	4.23	PASS
	6	2437	-10.73	4.77	-5.96	4.23	PASS
	11	2462	-10.65	4.77	-5.88	4.23	PASS
2	1	2412	-9.23	4.77	-4.46	4.23	PASS
	6	2437	-9.50	4.77	-4.73	4.23	PASS
	11	2462	-9.76	4.77	-4.99	4.23	PASS

NOTE: Directional gain = 5dBi + 10log(3) = 9.77dBi > 6dBi, so the power density limit shall be reduced to 8-(9.77-6) = 4.23dBm.

802.11g

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-11.94	4.77	-7.17	0.16	-7.01	4.23	PASS
	6	2437	-9.35	4.77	-4.58	0.16	-4.42	4.23	PASS
	11	2462	-13.05	4.77	-8.28	0.16	-8.12	4.23	PASS
1	1	2412	-12.89	4.77	-8.12	0.16	-7.96	4.23	PASS
	6	2437	-8.87	4.77	-4.10	0.16	-3.94	4.23	PASS
	11	2462	-14.33	4.77	-9.56	0.16	-9.40	4.23	PASS
2	1	2412	-13.49	4.77	-8.72	0.16	-8.56	4.23	PASS
	6	2437	-10.03	4.77	-5.26	0.16	-5.10	4.23	PASS
	11	2462	-13.53	4.77	-8.76	0.16	-8.60	4.23	PASS

NOTE:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 5dBi + 10log(3) = 9.77dBi > 6dBi, so the power density limit shall be reduced to 8-(9.77-6) = 4.23dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-17.03	4.77	-12.26	0.17	-12.09	4.23	PASS
	6	2437	-10.95	4.77	-6.18	0.17	-6.01	4.23	PASS
	11	2462	-16.03	4.77	-11.26	0.17	-11.09	4.23	PASS
1	1	2412	-17.96	4.77	-13.19	0.17	-13.02	4.23	PASS
	6	2437	-11.85	4.77	-7.08	0.17	-6.91	4.23	PASS
	11	2462	-16.79	4.77	-12.02	0.17	-11.85	4.23	PASS
2	1	2412	-18.77	4.77	-14.00	0.17	-13.83	4.23	PASS
	6	2437	-11.77	4.77	-7.00	0.17	-6.83	4.23	PASS
	11	2462	-16.57	4.77	-11.80	0.17	-11.63	4.23	PASS

NOTE:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 5dBi + 10log(3) = 9.77dBi > 6dBi, so the power density limit shall be reduced to 8-(9.77-6) = 4.23dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

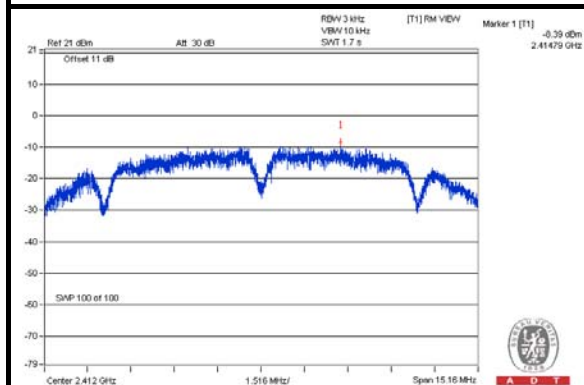
TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-23.34	4.77	-18.57	0.27	-18.30	4.23	PASS
	6	2437	-19.21	4.77	-14.44	0.27	-14.17	4.23	PASS
	9	2452	-24.48	4.77	-19.71	0.27	-19.44	4.23	PASS
1	3	2422	-22.55	4.77	-17.78	0.27	-17.51	4.23	PASS
	6	2437	-19.64	4.77	-14.87	0.27	-14.60	4.23	PASS
	9	2452	-24.22	4.77	-19.45	0.27	-19.18	4.23	PASS
2	3	2422	-22.09	4.77	-17.32	0.27	-17.05	4.23	PASS
	6	2437	-20.04	4.77	-15.27	0.27	-15.00	4.23	PASS
	9	2452	-21.76	4.77	-16.99	0.27	-16.72	4.23	PASS

NOTE:

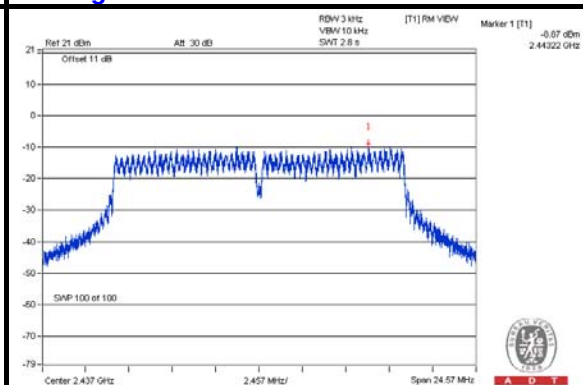
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 5dBi + 10log(3) = 9.77dBi > 6dBi, so the power density limit shall be reduced to 8-(9.77-6) = 4.23dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

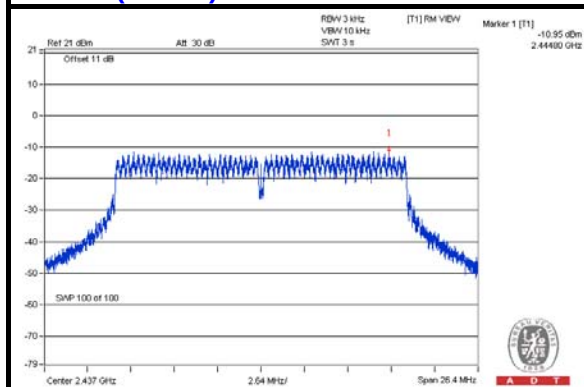
802.11b



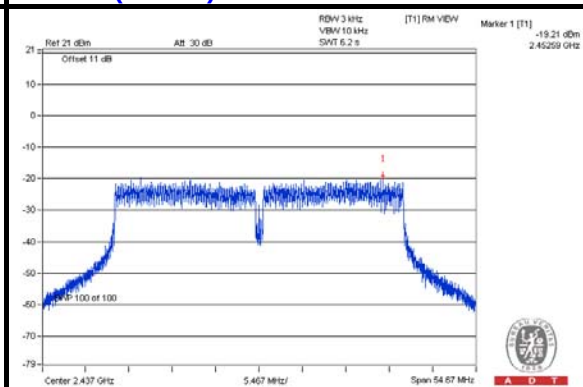
802.11g



802.11n (20MHz)



802.11n (40MHz)



TEST MODE B

802.11b

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-19.43	4.77	-14.66	-3.27	PASS
	6	2437	-16.00	4.77	-11.23	-3.27	PASS
	11	2462	-17.74	4.77	-12.97	-3.27	PASS
1	1	2412	-21.27	4.77	-16.50	-3.27	PASS
	6	2437	-18.19	4.77	-13.42	-3.27	PASS
	11	2462	-18.20	4.77	-13.43	-3.27	PASS
2	1	2412	-20.12	4.77	-15.35	-3.27	PASS
	6	2437	-15.17	4.77	-10.40	-3.27	PASS
	11	2462	-15.99	4.77	-11.22	-3.27	PASS

NOTE: Directional gain = $12.5\text{dBi} + 10\log(3) = 17.27\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(17.27-6) = -3.27\text{dBm}$.

802.11g

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-22.69	4.77	-17.92	0.16	-17.76	-3.27	PASS
	6	2437	-21.37	4.77	-16.60	0.16	-16.44	-3.27	PASS
	11	2462	-22.65	4.77	-17.88	0.16	-17.72	-3.27	PASS
1	1	2412	-24.47	4.77	-19.70	0.16	-19.54	-3.27	PASS
	6	2437	-22.65	4.77	-17.88	0.16	-17.72	-3.27	PASS
	11	2462	-23.28	4.77	-18.51	0.16	-18.35	-3.27	PASS
2	1	2412	-23.54	4.77	-18.77	0.16	-18.61	-3.27	PASS
	6	2437	-21.49	4.77	-16.72	0.16	-16.56	-3.27	PASS
	11	2462	-21.50	4.77	-16.73	0.16	-16.57	-3.27	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $12.5\text{dBi} + 10\log(3) = 17.27\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(17.27-6) = -3.27\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-23.78	4.77	-19.01	0.18	-18.83	-3.27	PASS
	6	2437	-22.35	4.77	-17.58	0.18	-17.40	-3.27	PASS
	11	2462	-22.09	4.77	-17.32	0.18	-17.14	-3.27	PASS
1	1	2412	-24.26	4.77	-19.49	0.18	-19.31	-3.27	PASS
	6	2437	-21.58	4.77	-16.81	0.18	-16.63	-3.27	PASS
	11	2462	-22.66	4.77	-17.89	0.18	-17.71	-3.27	PASS
2	1	2412	-23.72	4.77	-18.95	0.18	-18.77	-3.27	PASS
	6	2437	-21.47	4.77	-16.70	0.18	-16.52	-3.27	PASS
	11	2462	-22.01	4.77	-17.24	0.18	-17.06	-3.27	PASS

NOTE:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 12.5dBi + 10log(3) = 17.27dBi > 6dBi, so the power density limit shall be reduced to 8-(17.27-6) = -3.27dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

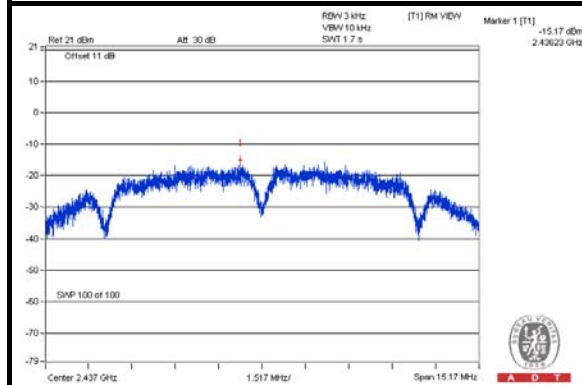
TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-29.66	4.77	-24.89	0.33	-24.56	-3.27	PASS
	6	2437	-26.41	4.77	-21.64	0.33	-21.31	-3.27	PASS
	9	2452	-31.78	4.77	-27.01	0.33	-26.68	-3.27	PASS
1	3	2422	-29.30	4.77	-24.53	0.33	-24.20	-3.27	PASS
	6	2437	-25.26	4.77	-20.49	0.33	-20.16	-3.27	PASS
	9	2452	-30.52	4.77	-25.75	0.33	-25.42	-3.27	PASS
2	3	2422	-29.20	4.77	-24.43	0.33	-24.10	-3.27	PASS
	6	2437	-24.10	4.77	-19.33	0.33	-19.00	-3.27	PASS
	9	2452	-30.94	4.77	-26.17	0.33	-25.84	-3.27	PASS

NOTE:

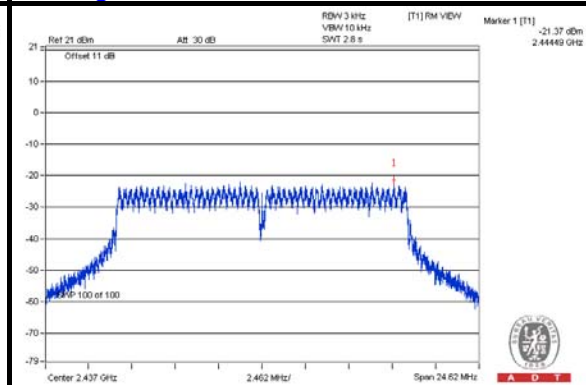
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 12.5dBi + 10log(3) = 17.27dBi > 6dBi, so the power density limit shall be reduced to 8-(17.27-6) = -3.27dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

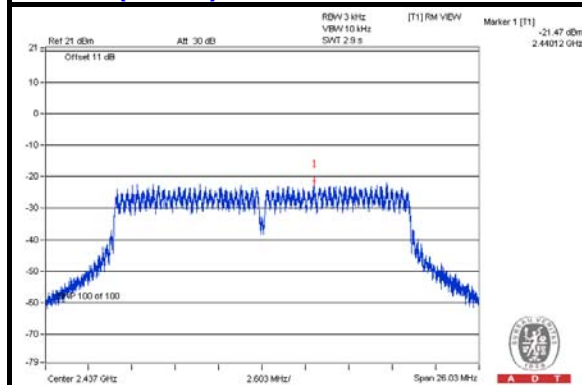
802.11b



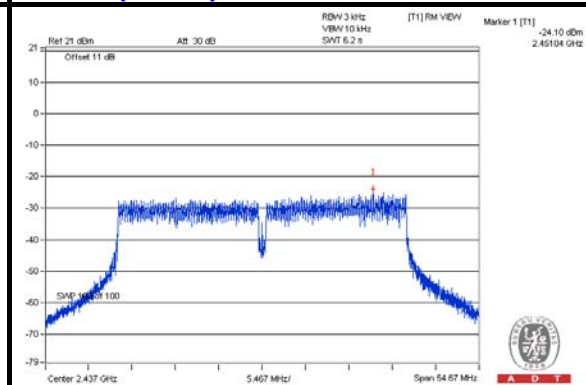
802.11g



802.11n (20MHz)



802.11n (40MHz)



TEST MODE C

802.11b

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-16.32	4.77	-11.55	-0.27	PASS
	6	2437	-10.27	4.77	-5.50	-0.27	PASS
	11	2462	-14.08	4.77	-9.31	-0.27	PASS
1	1	2412	-16.82	4.77	-12.05	-0.27	PASS
	6	2437	-10.74	4.77	-5.97	-0.27	PASS
	11	2462	-14.70	4.77	-9.93	-0.27	PASS
2	1	2412	-17.15	4.77	-12.38	-0.27	PASS
	6	2437	-10.77	4.77	-6.00	-0.27	PASS
	11	2462	-13.84	4.77	-9.07	-0.27	PASS

NOTE: Directional gain = $9.5\text{dBi} + 10\log(3) = 14.27\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(14.27-6) = -0.27\text{dBm}$.

802.11g

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-18.12	4.77	-13.35	0.16	-13.19	-0.27	PASS
	6	2437	-13.44	4.77	-8.67	0.16	-8.51	-0.27	PASS
	11	2462	-19.07	4.77	-14.30	0.16	-14.14	-0.27	PASS
1	1	2412	-19.60	4.77	-14.83	0.16	-14.67	-0.27	PASS
	6	2437	-14.53	4.77	-9.76	0.16	-9.60	-0.27	PASS
	11	2462	-19.96	4.77	-15.19	0.16	-15.03	-0.27	PASS
2	1	2412	-19.52	4.77	-14.75	0.16	-14.59	-0.27	PASS
	6	2437	-14.01	4.77	-9.24	0.16	-9.08	-0.27	PASS
	11	2462	-19.11	4.77	-14.34	0.16	-14.18	-0.27	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $9.5\text{dBi} + 10\log(3) = 14.27\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(14.27-6) = -0.27\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-20.35	4.77	-15.58	0.17	-15.41	-0.27	PASS
	6	2437	-13.16	4.77	-8.39	0.17	-8.22	-0.27	PASS
	11	2462	-20.00	4.77	-15.23	0.17	-15.06	-0.27	PASS
1	1	2412	-20.26	4.77	-15.49	0.17	-15.32	-0.27	PASS
	6	2437	-14.87	4.77	-10.10	0.17	-9.93	-0.27	PASS
	11	2462	-20.38	4.77	-15.61	0.17	-15.44	-0.27	PASS
2	1	2412	-21.16	4.77	-16.39	0.17	-16.22	-0.27	PASS
	6	2437	-13.66	4.77	-8.89	0.17	-8.72	-0.27	PASS
	11	2462	-20.79	4.77	-16.02	0.17	-15.85	-0.27	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $9.5\text{dBi} + 10\log(3) = 14.27\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (14.27 - 6) = -0.27\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

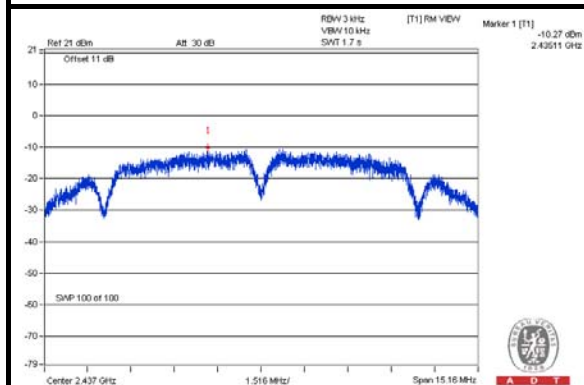
TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-24.82	4.77	-20.05	0.25	-19.80	-0.27	PASS
	6	2437	-21.67	4.77	-16.90	0.25	-16.65	-0.27	PASS
	9	2452	-26.22	4.77	-21.45	0.25	-21.20	-0.27	PASS
1	3	2422	-26.10	4.77	-21.33	0.25	-21.08	-0.27	PASS
	6	2437	-21.48	4.77	-16.71	0.25	-16.46	-0.27	PASS
	9	2452	-27.18	4.77	-22.41	0.25	-22.16	-0.27	PASS
2	3	2422	-25.60	4.77	-20.83	0.25	-20.58	-0.27	PASS
	6	2437	-20.21	4.77	-15.44	0.25	-15.19	-0.27	PASS
	9	2452	-26.44	4.77	-21.67	0.25	-21.42	-0.27	PASS

NOTE:

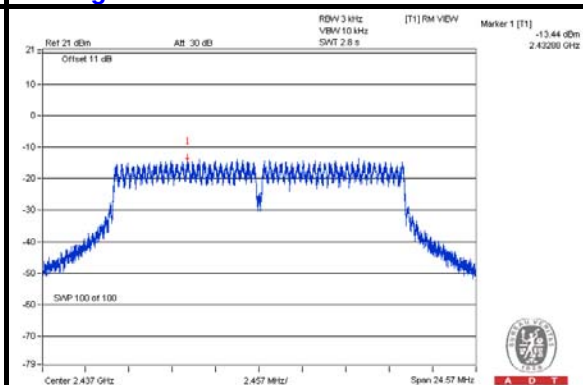
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $9.5\text{dBi} + 10\log(3) = 14.27\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (14.27 - 6) = -0.27\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

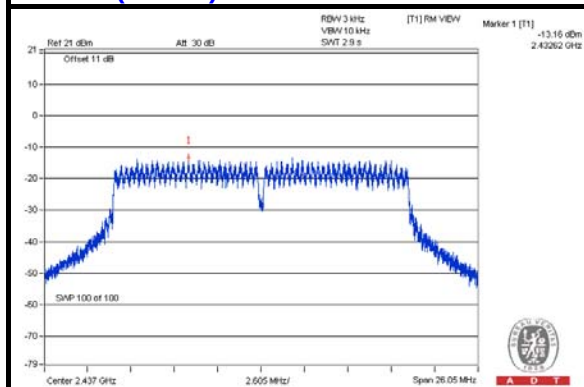
802.11b



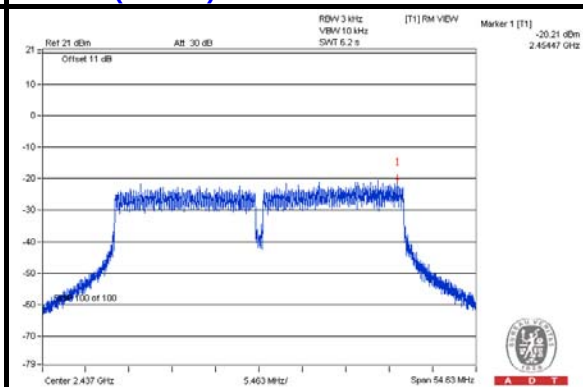
802.11g



802.11n (20MHz)



802.11n (40MHz)



TEST MODE D

802.11b

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-10.68	4.77	-5.91	7.23	PASS
	6	2437	-9.21	4.77	-4.44	7.23	PASS
	11	2462	-12.09	4.77	-7.32	7.23	PASS
1	1	2412	-11.24	4.77	-6.47	7.23	PASS
	6	2437	-8.04	4.77	-3.27	7.23	PASS
	11	2462	-13.67	4.77	-8.90	7.23	PASS
2	1	2412	-10.68	4.77	-5.91	7.23	PASS
	6	2437	-7.17	4.77	-2.40	7.23	PASS
	11	2462	-13.29	4.77	-8.52	7.23	PASS

NOTE: Directional gain = $2\text{dBi} + 10\log(3) = 6.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(6.77-6) = 7.23\text{dBm}$.

802.11g

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-17.47	4.77	-12.70	0.20	-12.50	7.23	PASS
	6	2437	-11.91	4.77	-7.14	0.20	-6.94	7.23	PASS
	11	2462	-16.82	4.77	-12.05	0.20	-11.85	7.23	PASS
1	1	2412	-16.95	4.77	-12.18	0.20	-11.98	7.23	PASS
	6	2437	-12.37	4.77	-7.60	0.20	-7.40	7.23	PASS
	11	2462	-17.44	4.77	-12.67	0.20	-12.47	7.23	PASS
2	1	2412	-17.63	4.77	-12.86	0.20	-12.66	7.23	PASS
	6	2437	-12.17	4.77	-7.40	0.20	-7.20	7.23	PASS
	11	2462	-17.43	4.77	-12.66	0.20	-12.46	7.23	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $2\text{dBi} + 10\log(3) = 6.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(6.77-6) = 7.23\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-18.49	4.77	-13.72	0.20	-13.52	7.23	PASS
	6	2437	-13.72	4.77	-8.95	0.20	-8.75	7.23	PASS
	11	2462	-18.38	4.77	-13.61	0.20	-13.41	7.23	PASS
1	1	2412	-19.75	4.77	-14.98	0.20	-14.78	7.23	PASS
	6	2437	-14.80	4.77	-10.03	0.20	-9.83	7.23	PASS
	11	2462	-19.79	4.77	-15.02	0.20	-14.82	7.23	PASS
2	1	2412	-20.48	4.77	-15.71	0.20	-15.51	7.23	PASS
	6	2437	-14.87	4.77	-10.10	0.20	-9.90	7.23	PASS
	11	2462	-18.88	4.77	-14.11	0.20	-13.91	7.23	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = 2dBi + 10log(3) = 6.77dBi > 6dBi, so the power density limit shall be reduced to 8-(6.77-6) = 7.23dBm.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

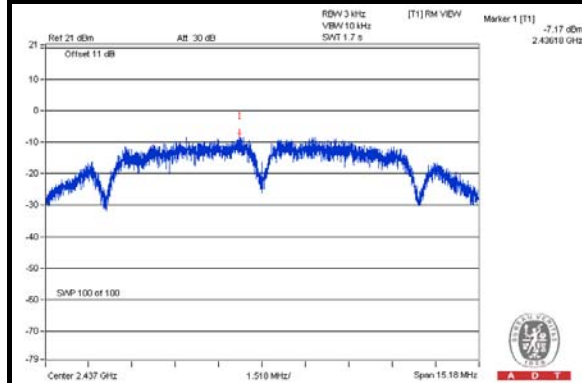
TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-24.75	4.77	-19.98	0.28	-19.70	7.23	PASS
	6	2437	-21.06	4.77	-16.29	0.28	-16.01	7.23	PASS
	9	2452	-24.74	4.77	-19.97	0.28	-19.69	7.23	PASS
1	3	2422	-25.00	4.77	-20.23	0.28	-19.95	7.23	PASS
	6	2437	-21.39	4.77	-16.62	0.28	-16.34	7.23	PASS
	9	2452	-25.62	4.77	-20.85	0.28	-20.57	7.23	PASS
2	3	2422	-25.70	4.77	-20.93	0.28	-20.65	7.23	PASS
	6	2437	-21.24	4.77	-16.47	0.28	-16.19	7.23	PASS
	9	2452	-24.65	4.77	-19.88	0.28	-19.60	7.23	PASS

NOTE:

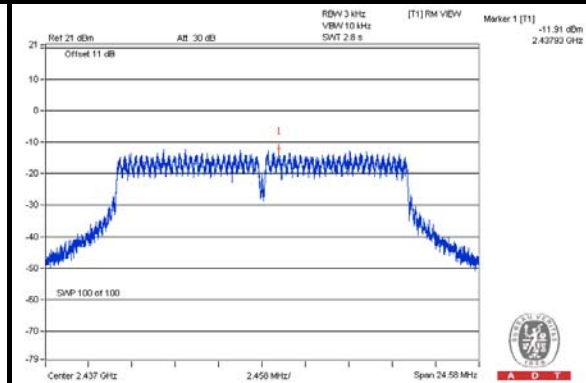
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = 2dBi + 10log(3) = 6.77dBi > 6dBi, so the power density limit shall be reduced to 8-(6.77-6) = 7.23dBm.
- Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

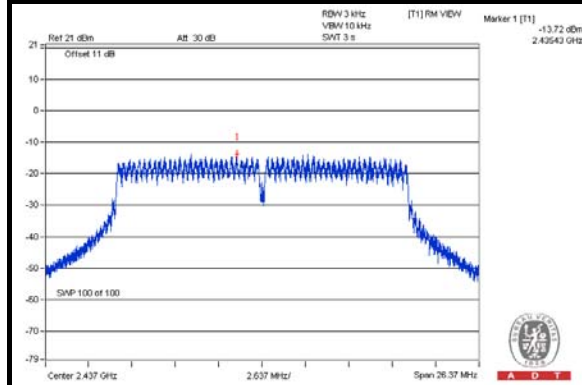
802.11b



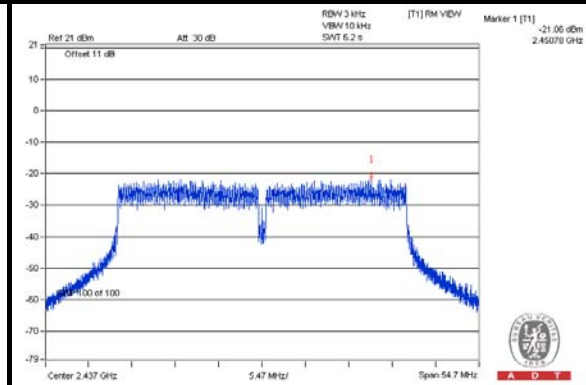
802.11g



802.11n (20MHz)



802.11n (40MHz)



TEST MODE E

802.11b

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-8.70	3.01	-5.69	8	PASS
	6	2437	-5.49	3.01	-2.48	8	PASS
	11	2462	-7.50	3.01	-4.49	8	PASS
1	1	2412	-9.30	3.01	-6.29	8	PASS
	6	2437	-5.81	3.01	-2.80	8	PASS
	11	2462	-9.07	3.01	-6.06	8	PASS

NOTE: Directional gain = 2dBi + 10log(2) = 5.01dBi < 6dBi, so the power density limit no need to reduced.

802.11g

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-13.29	3.01	-10.28	0.24	-10.04	8	PASS
	6	2437	-8.09	3.01	-5.08	0.24	-4.84	8	PASS
	11	2462	-13.51	3.01	-10.50	0.24	-10.26	8	PASS
1	1	2412	-13.22	3.01	-10.21	0.24	-9.97	8	PASS
	6	2437	-8.81	3.01	-5.80	0.24	-5.56	8	PASS
	11	2462	-14.98	3.01	-11.97	0.24	-11.73	8	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = 2dBi + 10log(2) = 5.01dBi < 6dBi, so the power density limit no need to reduced.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-14.21	3.01	-11.20	0.17	-11.03	8	PASS
	6	2437	-7.37	3.01	-4.36	0.17	-4.19	8	PASS
	11	2462	-15.09	3.01	-12.08	0.17	-11.91	8	PASS
1	1	2412	-16.61	3.01	-13.60	0.17	-13.43	8	PASS
	6	2437	-8.76	3.01	-5.75	0.17	-5.58	8	PASS
	11	2462	-16.38	3.01	-13.37	0.17	-13.20	8	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = 2dBi + 10log(2) = 5.01dBi < 6dBi, so the power density limit no need to reduced.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

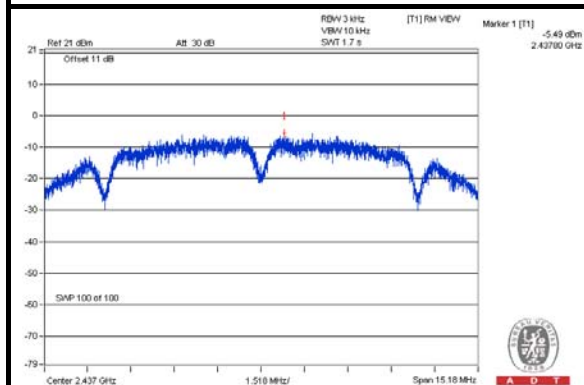
TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-22.99	3.01	-19.98	0.30	-19.68	8	PASS
	6	2437	-18.43	3.01	-15.42	0.30	-15.12	8	PASS
	9	2452	-23.66	3.01	-20.65	0.30	-20.35	8	PASS
1	3	2422	-21.15	3.01	-18.14	0.30	-17.84	8	PASS
	6	2437	-17.96	3.01	-14.95	0.30	-14.65	8	PASS
	9	2452	-24.58	3.01	-21.57	0.30	-21.27	8	PASS

NOTE:

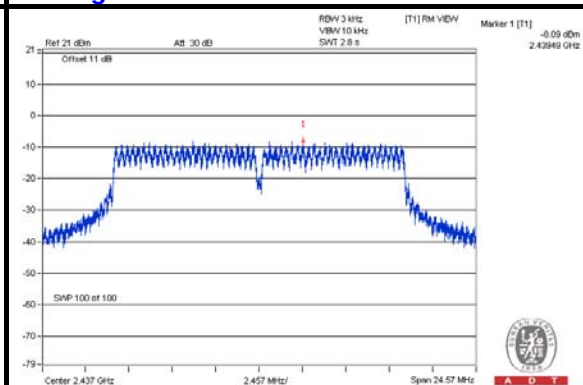
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = 2dBi + 10log(2) = 5.01dBi < 6dBi, so the power density limit no need to reduced.
- Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

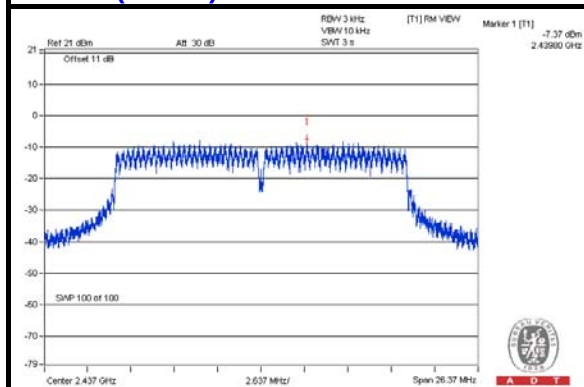
802.11b



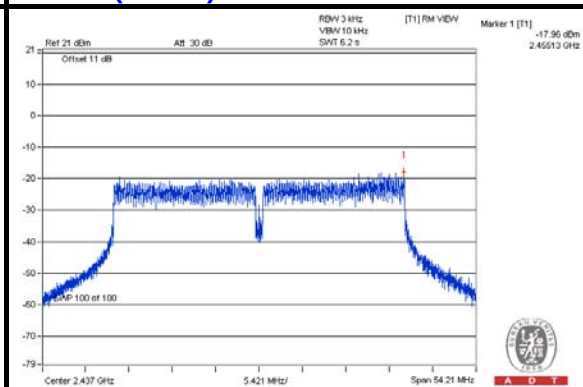
802.11g



802.11n (20MHz)



802.11n (40MHz)



TEST MODE F

802.11b

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-12.06	4.77	-7.29	4.23	PASS
	6	2437	-6.90	4.77	-2.13	4.23	PASS
	11	2462	-10.51	4.77	-5.74	4.23	PASS
1	1	2412	-11.12	4.77	-6.35	4.23	PASS
	6	2437	-6.05	4.77	-1.28	4.23	PASS
	11	2462	-11.85	4.77	-7.08	4.23	PASS
2	1	2412	-12.22	4.77	-7.45	4.23	PASS
	6	2437	-5.24	4.77	-0.47	4.23	PASS
	11	2462	-10.67	4.77	-5.90	4.23	PASS

NOTE: Directional gain = 5dBi + 10log(3) = 9.77dBi > 6dBi, so the power density limit shall be reduced to 8-(9.77-6) = 4.23dBm.

802.11g

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-13.54	4.77	-8.77	0.16	-8.61	4.23	PASS
	6	2437	-11.27	4.77	-6.50	0.16	-6.34	4.23	PASS
	11	2462	-16.11	4.77	-11.34	0.16	-11.18	4.23	PASS
1	1	2412	-14.13	4.77	-9.36	0.16	-9.20	4.23	PASS
	6	2437	-11.56	4.77	-6.79	0.16	-6.63	4.23	PASS
	11	2462	-15.90	4.77	-11.13	0.16	-10.97	4.23	PASS
2	1	2412	-14.03	4.77	-9.26	0.16	-9.10	4.23	PASS
	6	2437	-10.86	4.77	-6.09	0.16	-5.93	4.23	PASS
	11	2462	-15.04	4.77	-10.27	0.16	-10.11	4.23	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = 5dBi + 10log(3) = 9.77dBi > 6dBi, so the power density limit shall be reduced to 8-(9.77-6) = 4.23dBm.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-14.96	4.77	-10.19	0.17	-10.02	4.23	PASS
	6	2437	-12.08	4.77	-7.31	0.17	-7.14	4.23	PASS
	11	2462	-17.89	4.77	-13.12	0.17	-12.95	4.23	PASS
1	1	2412	-16.12	4.77	-11.35	0.17	-11.18	4.23	PASS
	6	2437	-12.43	4.77	-7.66	0.17	-7.49	4.23	PASS
	11	2462	-18.42	4.77	-13.65	0.17	-13.48	4.23	PASS
2	1	2412	-15.10	4.77	-10.33	0.17	-10.16	4.23	PASS
	6	2437	-12.90	4.77	-8.13	0.17	-7.96	4.23	PASS
	11	2462	-17.96	4.77	-13.19	0.17	-13.02	4.23	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = 5dBi + 10log(3) = 9.77dBi > 6dBi, so the power density limit shall be reduced to 8-(9.77-6) = 4.23dBm.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

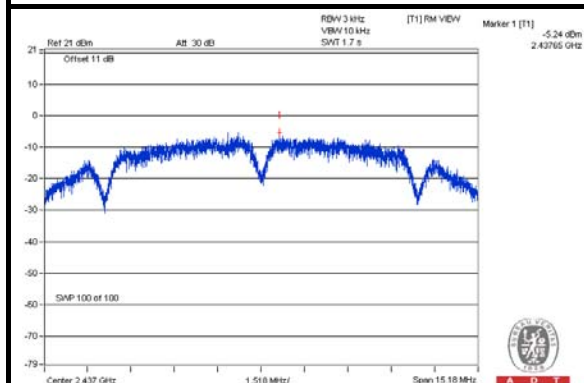
TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-23.94	4.77	-19.17	0.27	-18.90	4.23	PASS
	6	2437	-18.76	4.77	-13.99	0.27	-13.72	4.23	PASS
	9	2452	-25.75	4.77	-20.98	0.27	-20.71	4.23	PASS
1	3	2422	-23.60	4.77	-18.83	0.27	-18.56	4.23	PASS
	6	2437	-19.09	4.77	-14.32	0.27	-14.05	4.23	PASS
	9	2452	-24.60	4.77	-19.83	0.27	-19.56	4.23	PASS
2	3	2422	-24.58	4.77	-19.81	0.27	-19.54	4.23	PASS
	6	2437	-17.87	4.77	-13.10	0.27	-12.83	4.23	PASS
	9	2452	-24.83	4.77	-20.06	0.27	-19.79	4.23	PASS

NOTE:

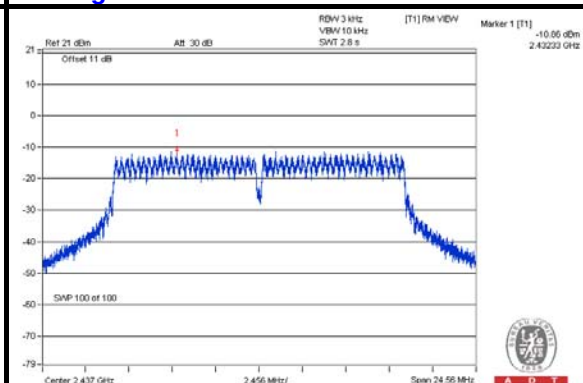
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = 5dBi + 10log(3) = 9.77dBi > 6dBi, so the power density limit shall be reduced to 8-(9.77-6) = 4.23dBm.
- Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

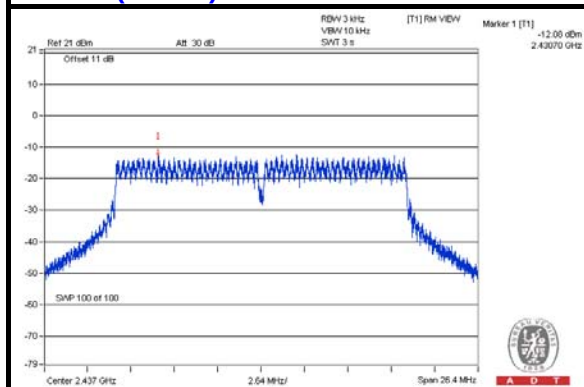
802.11b



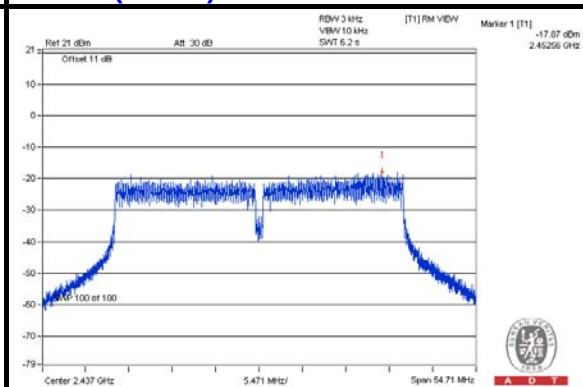
802.11g



802.11n (20MHz)



802.11n (40MHz)



TEST MODE G

802.11b

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-14.75	4.77	-9.98	3.23	PASS
	6	2437	-10.79	4.77	-6.02	3.23	PASS
	11	2462	-12.18	4.77	-7.41	3.23	PASS
1	1	2412	-15.84	4.77	-11.07	3.23	PASS
	6	2437	-10.83	4.77	-6.06	3.23	PASS
	11	2462	-12.30	4.77	-7.53	3.23	PASS
2	1	2412	-15.91	4.77	-11.14	3.23	PASS
	6	2437	-10.70	4.77	-5.93	3.23	PASS
	11	2462	-12.31	4.77	-7.54	3.23	PASS

NOTE: Directional gain = $6\text{dBi} + 10\log(3) = 10.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (10.77 - 6) = 3.23\text{dBm}$.

802.11g

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-17.09	4.77	-12.32	0.16	-12.16	3.23	PASS
	6	2437	-12.77	4.77	-8.00	0.16	-7.84	3.23	PASS
	11	2462	-16.91	4.77	-12.14	0.16	-11.98	3.23	PASS
1	1	2412	-18.12	4.77	-13.35	0.16	-13.19	3.23	PASS
	6	2437	-13.54	4.77	-8.77	0.16	-8.61	3.23	PASS
	11	2462	-18.94	4.77	-14.17	0.16	-14.01	3.23	PASS
2	1	2412	-18.28	4.77	-13.51	0.16	-13.35	3.23	PASS
	6	2437	-12.86	4.77	-8.09	0.16	-7.93	3.23	PASS
	11	2462	-18.01	4.77	-13.24	0.16	-13.08	3.23	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $6\text{dBi} + 10\log(3) = 10.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (10.77 - 6) = 3.23\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-20.20	4.77	-15.43	0.17	-15.26	3.23	PASS
	6	2437	-12.86	4.77	-8.09	0.17	-7.92	3.23	PASS
	11	2462	-17.93	4.77	-13.16	0.17	-12.99	3.23	PASS
1	1	2412	-20.77	4.77	-16.00	0.17	-15.83	3.23	PASS
	6	2437	-13.51	4.77	-8.74	0.17	-8.57	3.23	PASS
	11	2462	-18.85	4.77	-14.08	0.17	-13.91	3.23	PASS
2	1	2412	-19.96	4.77	-15.19	0.17	-15.02	3.23	PASS
	6	2437	-13.91	4.77	-9.14	0.17	-8.97	3.23	PASS
	11	2462	-18.50	4.77	-13.73	0.17	-13.56	3.23	PASS

NOTE:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = 6dBi + 10log(3) = 10.77dBi > 6dBi, so the power density limit shall be reduced to 8-(10.77-6) = 3.23dBm.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

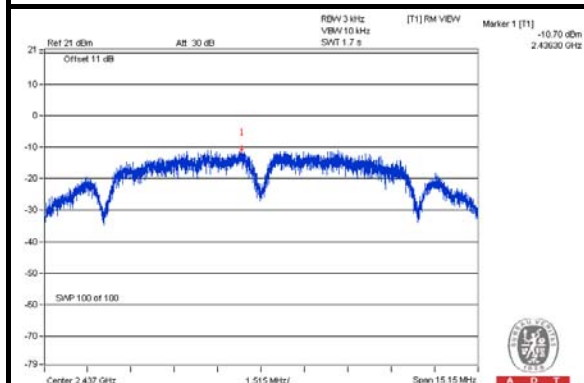
TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	Total PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-25.61	4.77	-20.84	0.25	-20.59	3.23	PASS
	6	2437	-22.30	4.77	-17.53	0.25	-17.28	3.23	PASS
	9	2452	-27.55	4.77	-22.78	0.25	-22.53	3.23	PASS
1	3	2422	-26.05	4.77	-21.28	0.25	-21.03	3.23	PASS
	6	2437	-21.95	4.77	-17.18	0.25	-16.93	3.23	PASS
	9	2452	-28.01	4.77	-23.24	0.25	-22.99	3.23	PASS
2	3	2422	-25.45	4.77	-20.68	0.25	-20.43	3.23	PASS
	6	2437	-21.72	4.77	-16.95	0.25	-16.70	3.23	PASS
	9	2452	-26.83	4.77	-22.06	0.25	-21.81	3.23	PASS

NOTE:

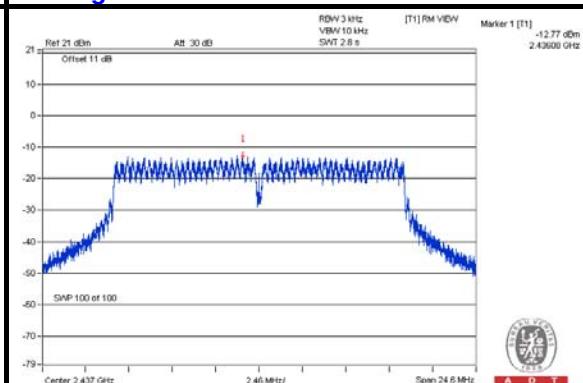
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = 6dBi + 10log(3) = 10.77dBi > 6dBi, so the power density limit shall be reduced to 8-(10.77-6) = 3.23dBm.
- Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

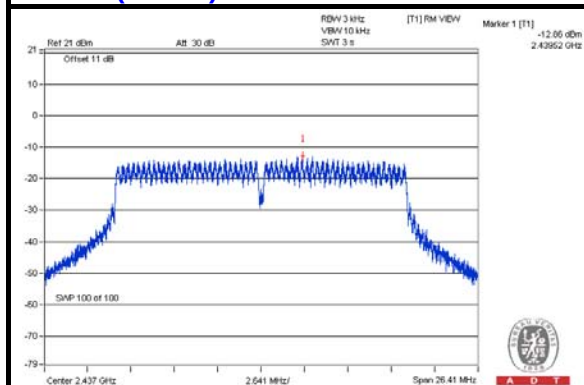
802.11b



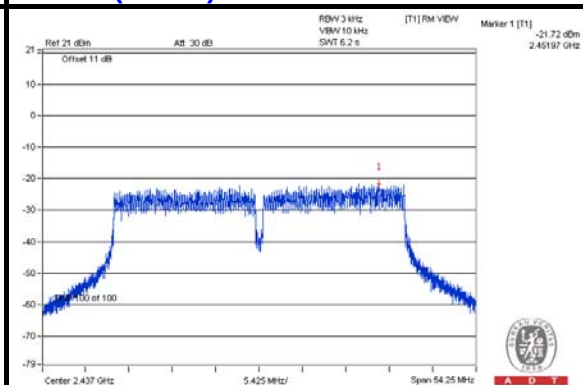
802.11g



802.11n (20MHz)



802.11n (40MHz)

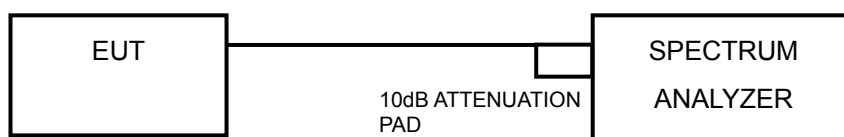


4.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT

Below -30dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW $\geq$ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 300 kHz.
3. Ensure that the number of measurement points $\geq$ span/RBW
4. According to measurement points to set differ measurement span.
5. Detector = peak.
6. Trace Mode = max hold.
7. Sweep = auto couple.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6

4.6.7 TEST RESULTS

The conducted emission test is performed on each TX port of operating mode without summing or adding $10\log(N)$ since the limit is relative emission limit.

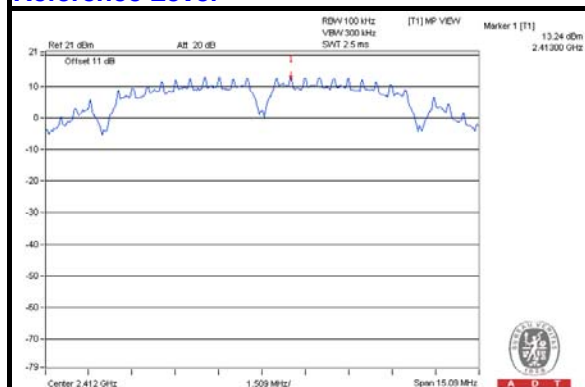
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.



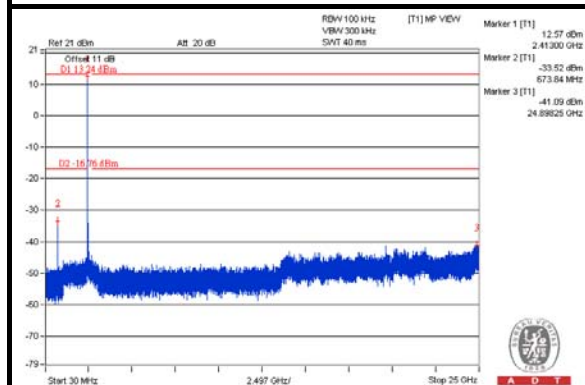
A D T

TEST MODE A
802.11b / CHAIN 0

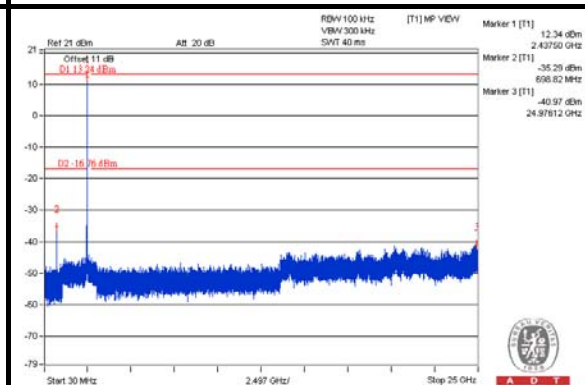
Reference Level



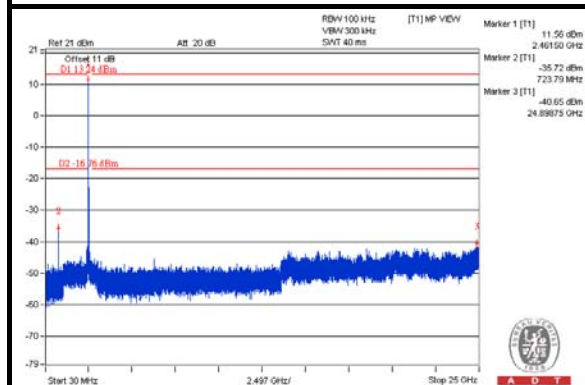
CH 1



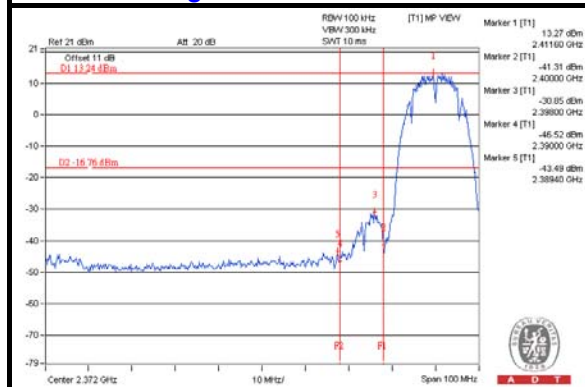
CH 6



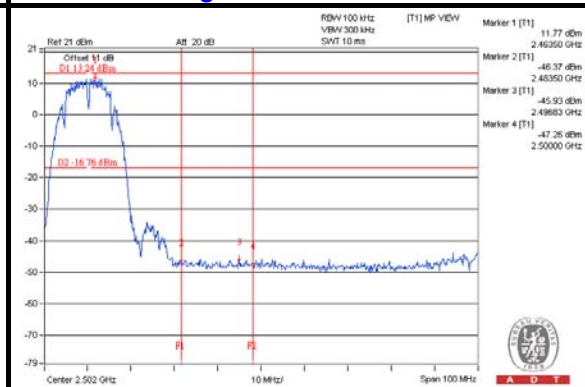
CH 11



CH 1 Band edge

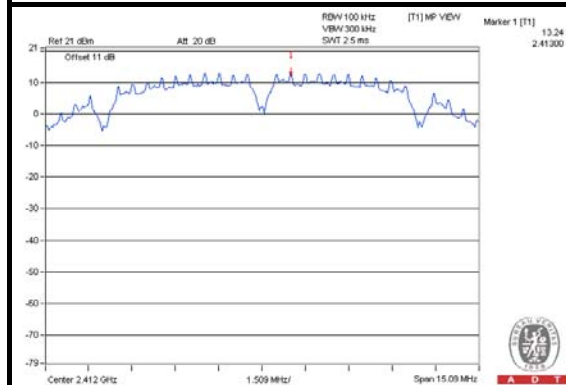


CH 11 Band edge

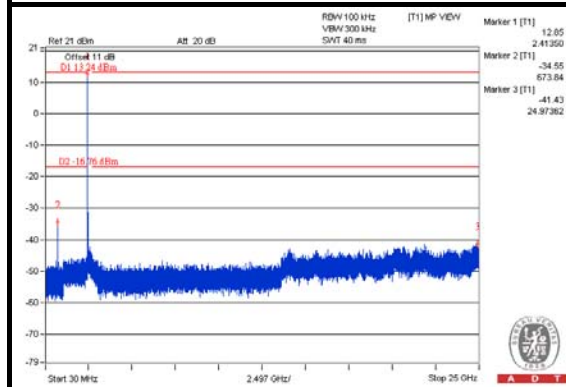


CHAIN 1

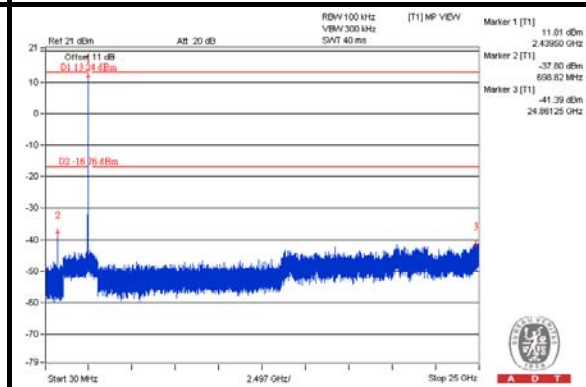
Reference Level



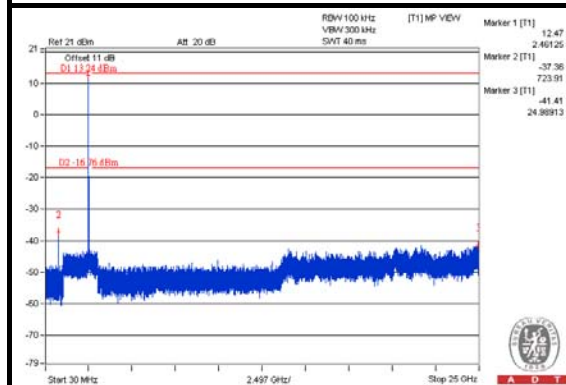
CH 1



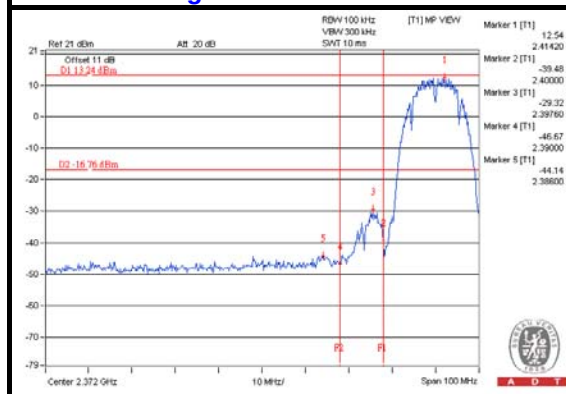
CH 6



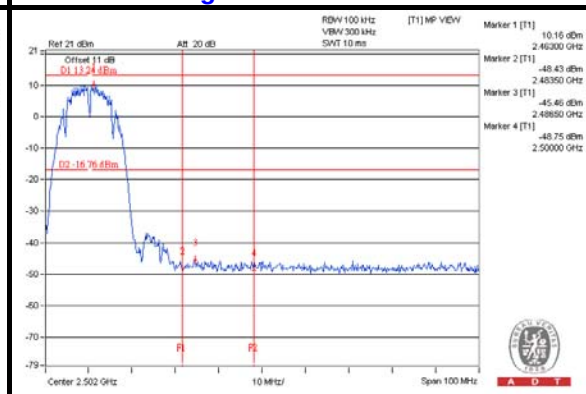
CH 11



CH 1 Band edge

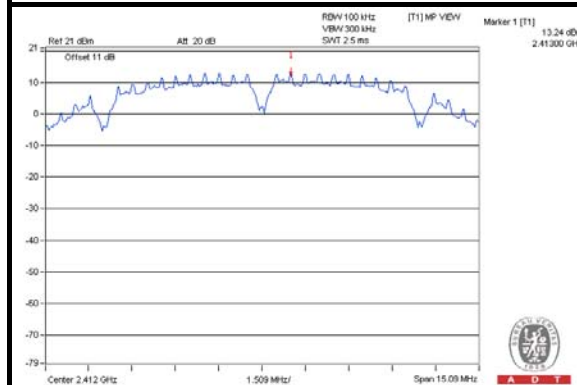


CH 11 Band edge

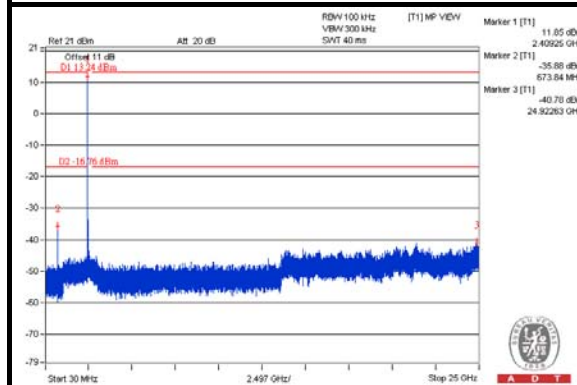


CHAIN 2

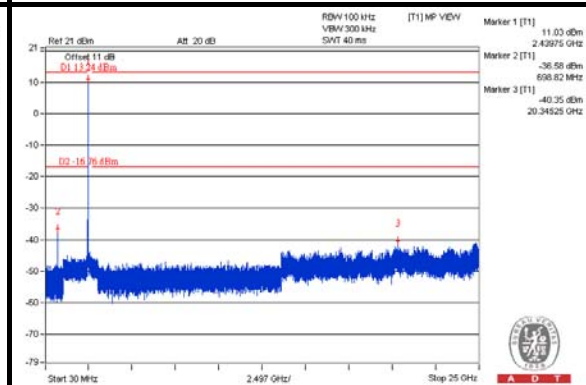
Reference Level



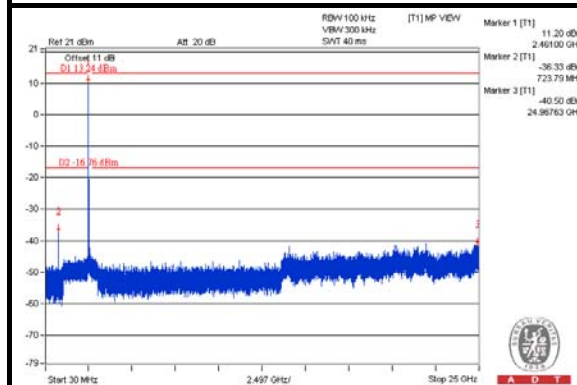
CH 1



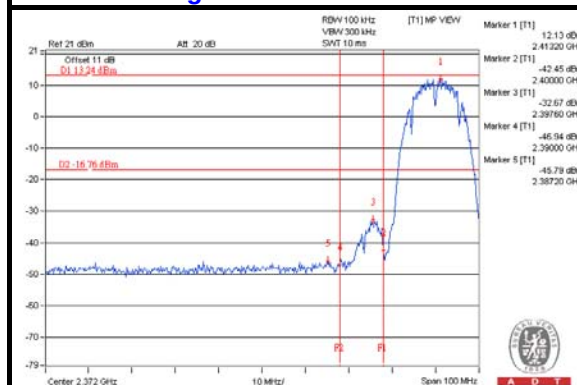
CH 6



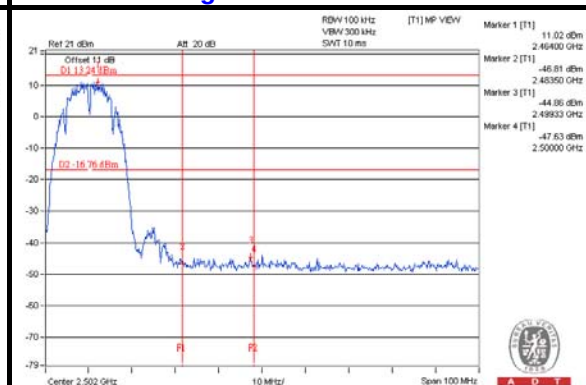
CH 11



CH 1 Band edge

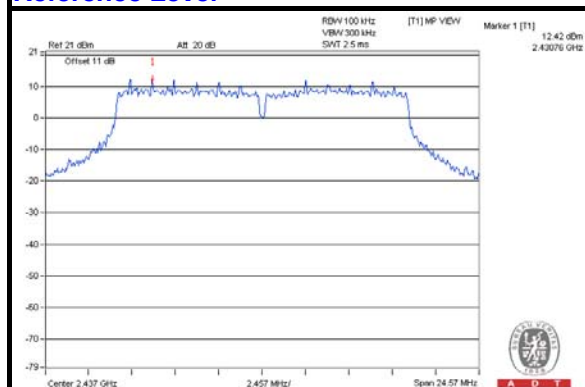


CH 11 Band edge

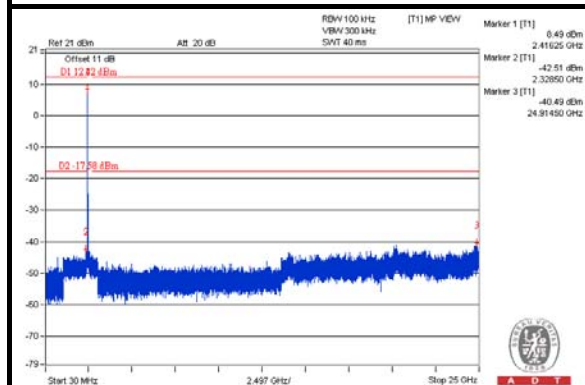


802.11g CHAIN 0

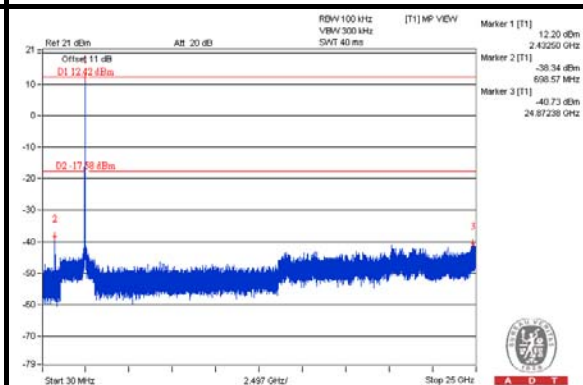
Reference Level



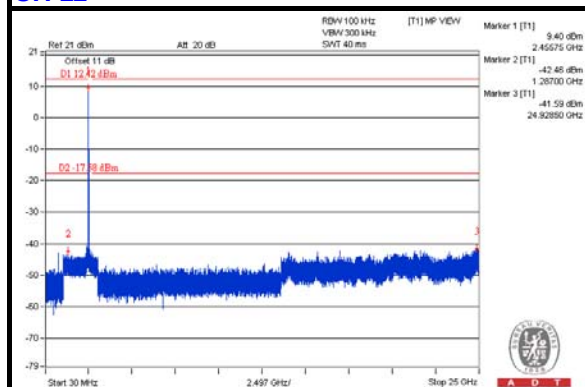
CH 1



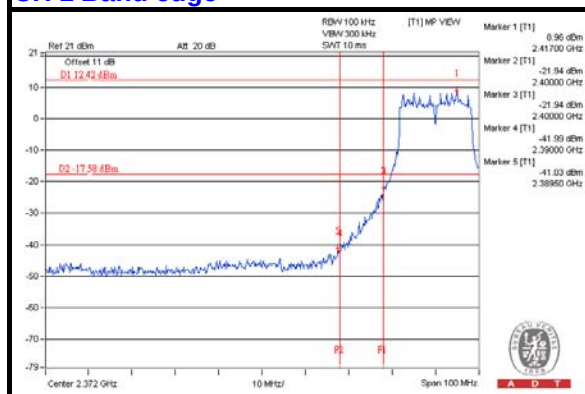
CH 6



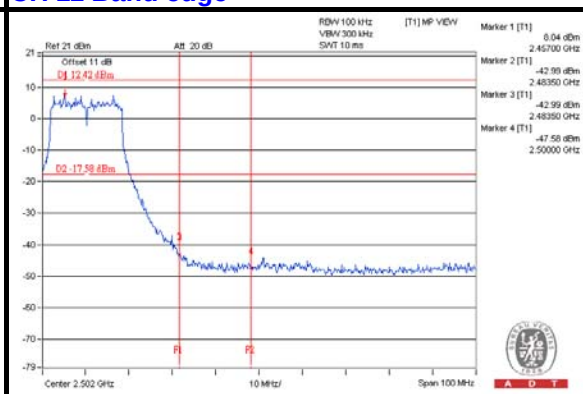
CH 11



CH 1 Band edge



CH 11 Band edge



Reference Level



CH 6



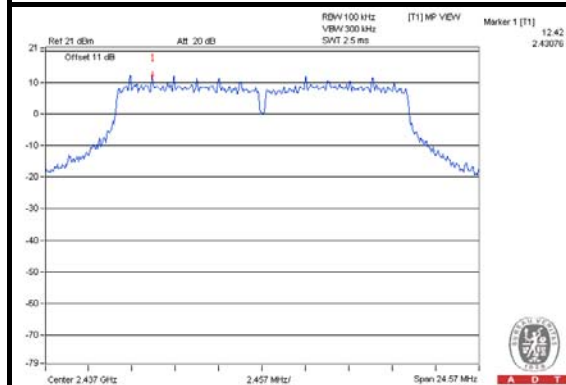


CH 11 Band edge

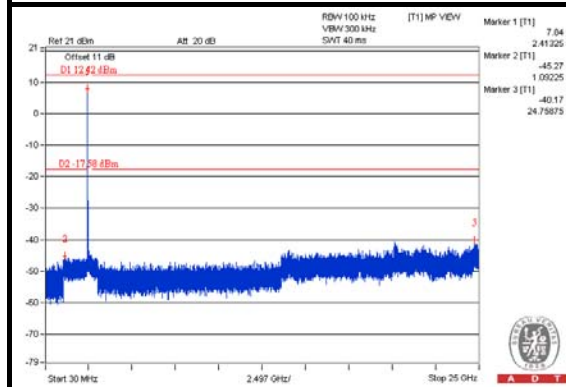


CHAIN 2

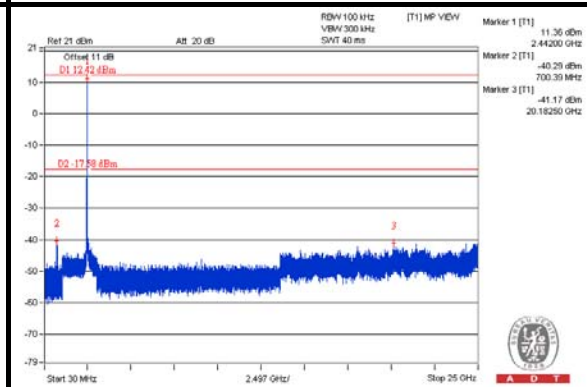
Reference Level



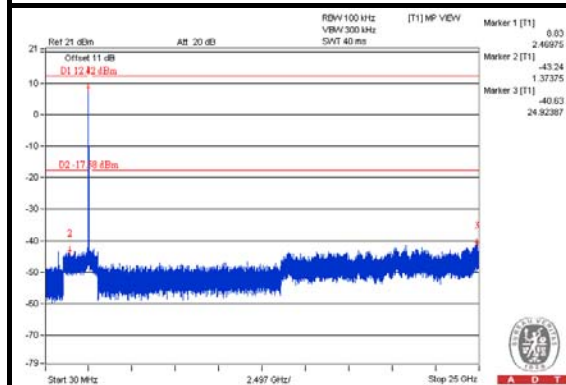
CH 1



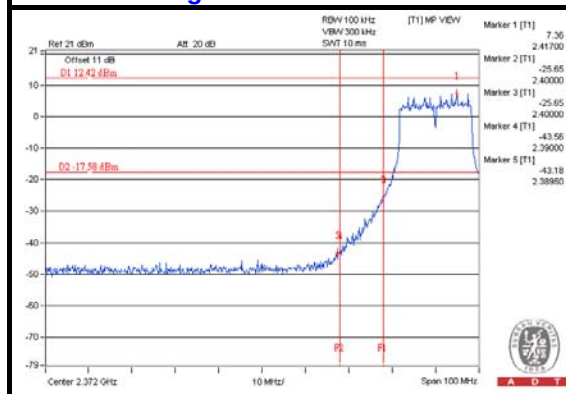
CH 6



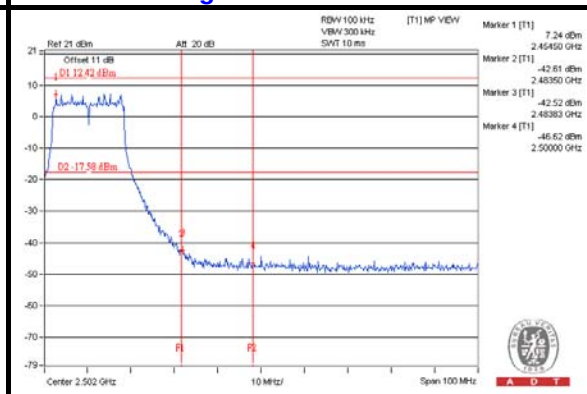
CH 11



CH 1 Band edge

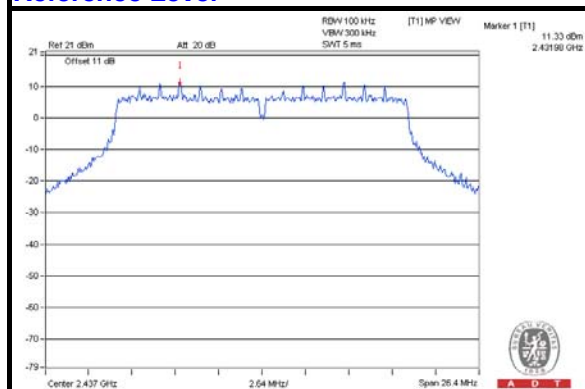


CH 11 Band edge

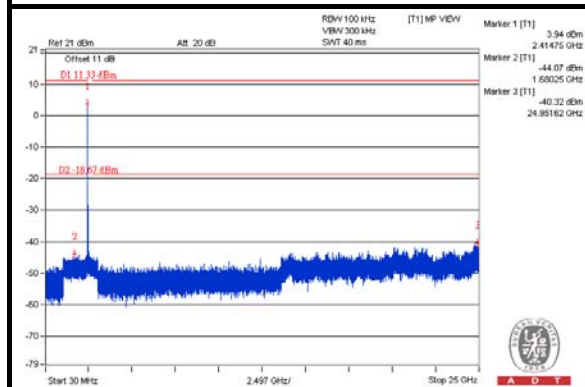


802.11n (20MHz) CHAIN 0

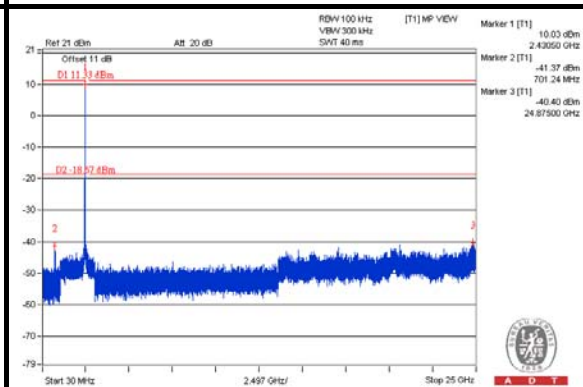
Reference Level



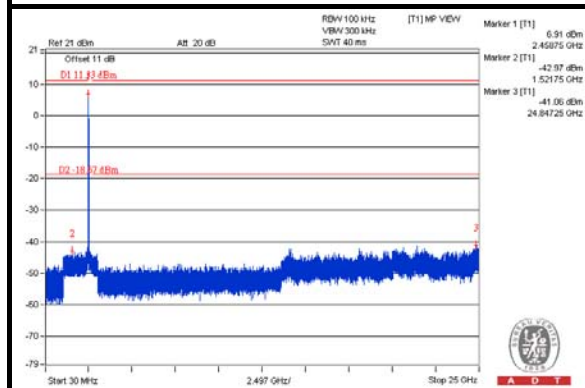
CH 1



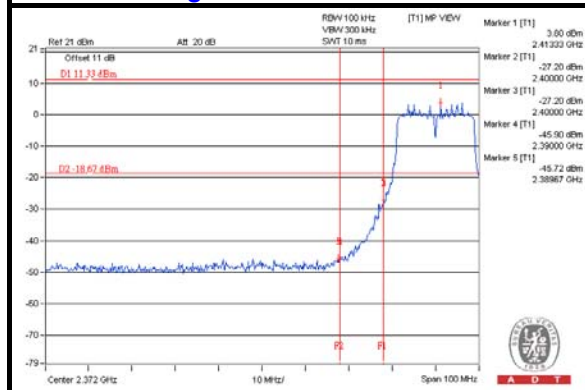
CH 6



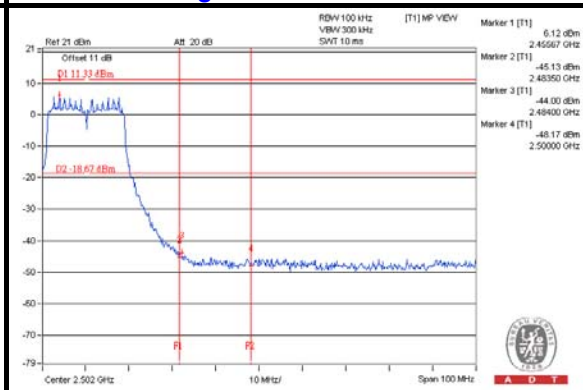
CH 11



CH 1 Band edge

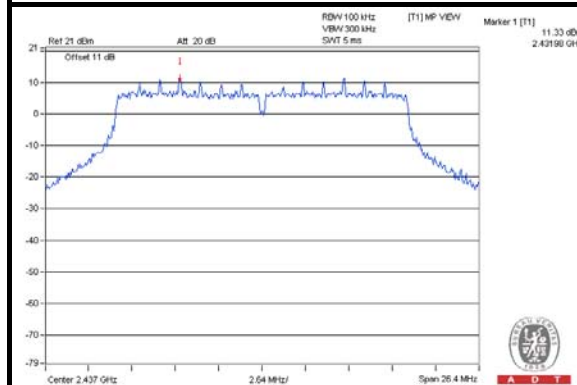


CH 11 Band edge

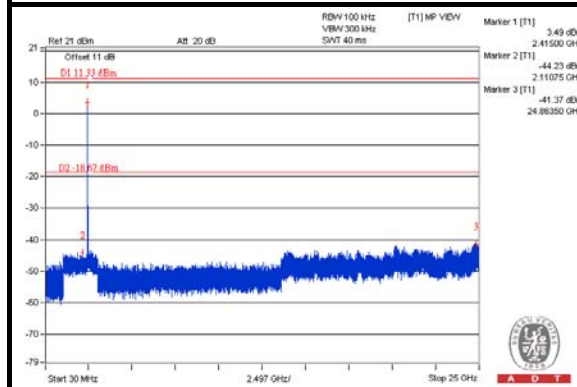


CHAIN 1

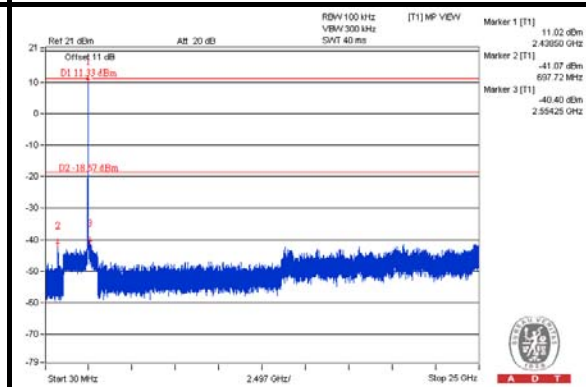
Reference Level



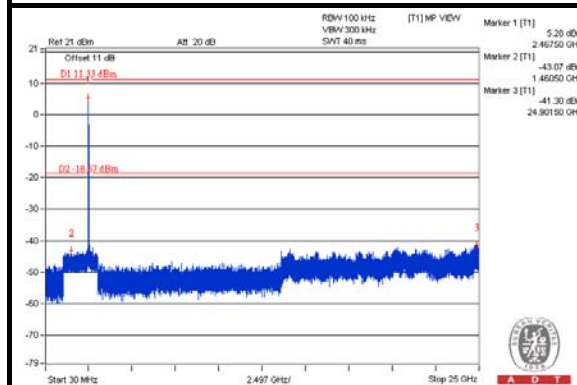
CH 1



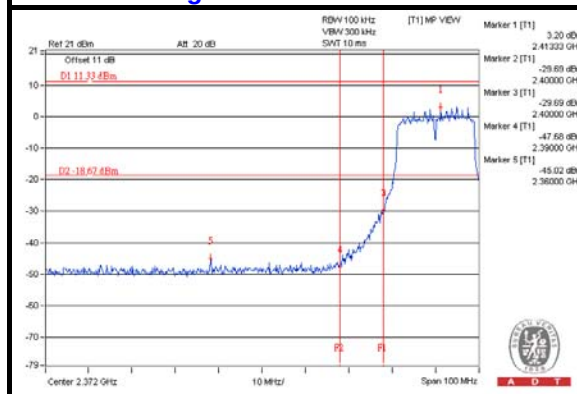
CH 6



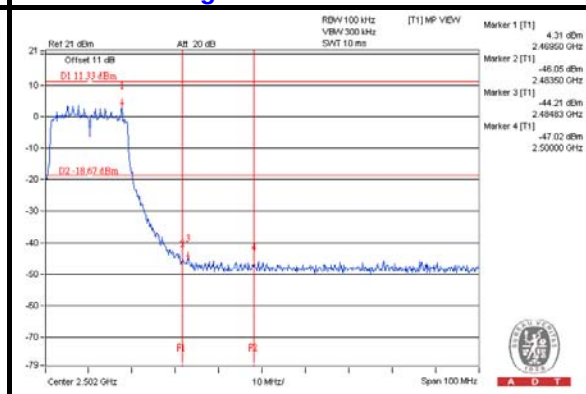
CH 11



CH 1 Band edge

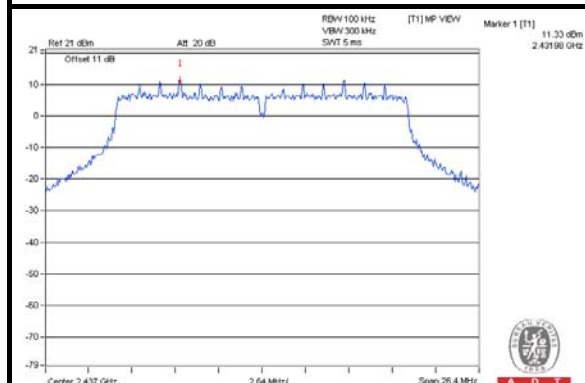


CH 11 Band edge

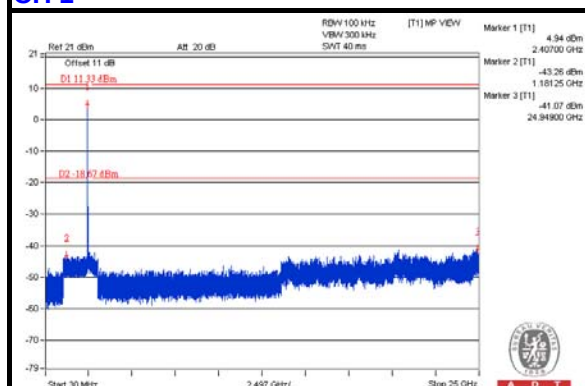


CHAIN 2

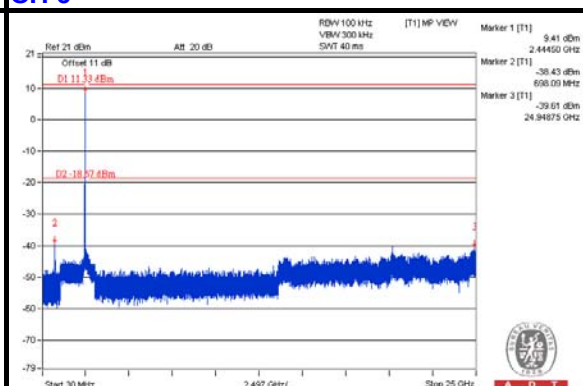
Reference Level



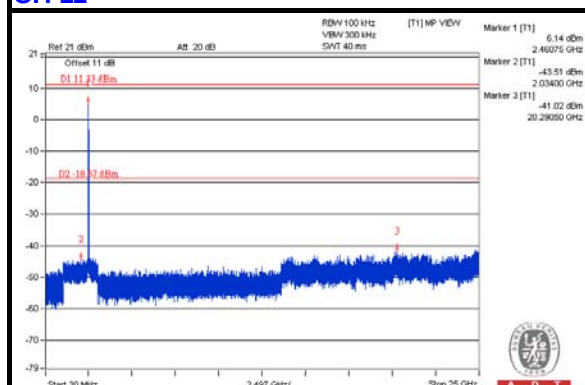
CH 1



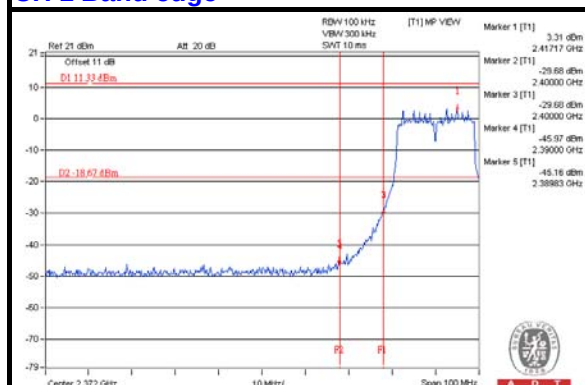
CH 6



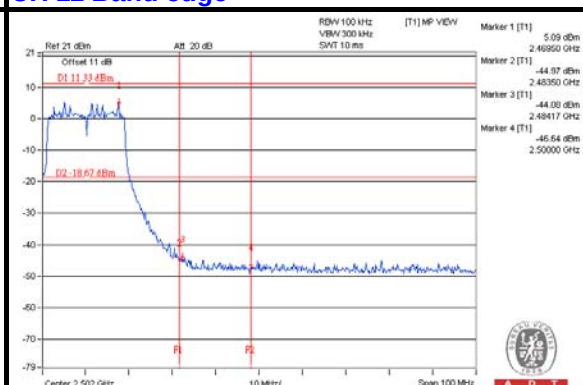
CH 11



CH 1 Band edge

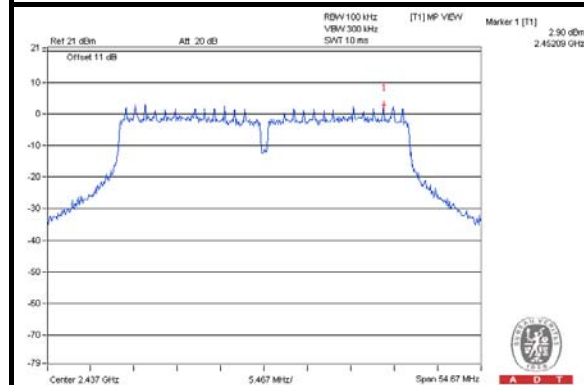


CH 11 Band edge

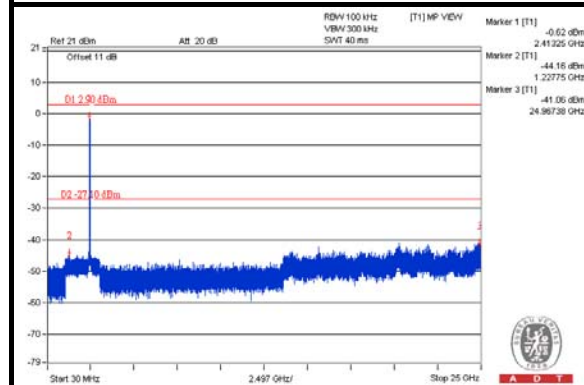


802.11n (40MHz) CHAIN 0

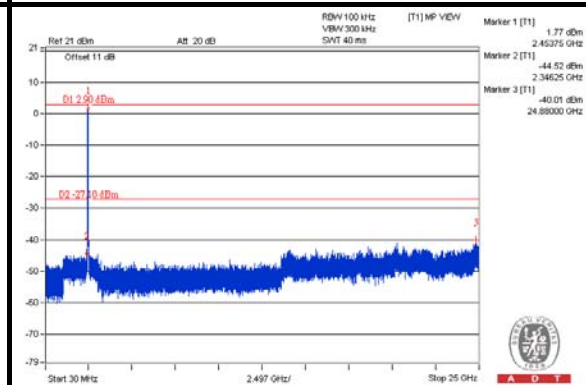
Reference Level



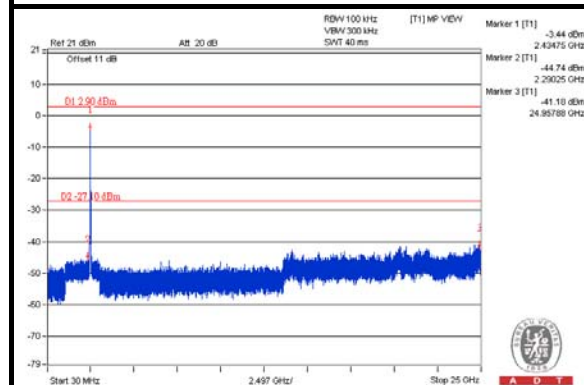
CH 3



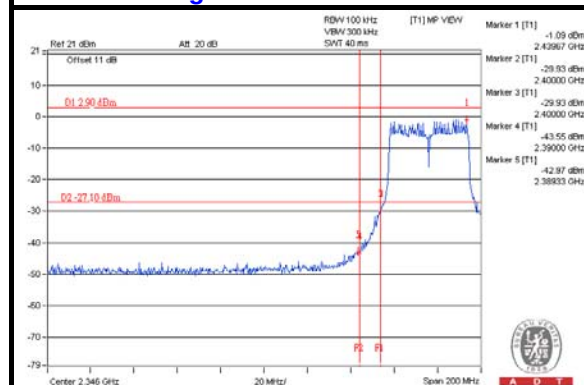
CH 6



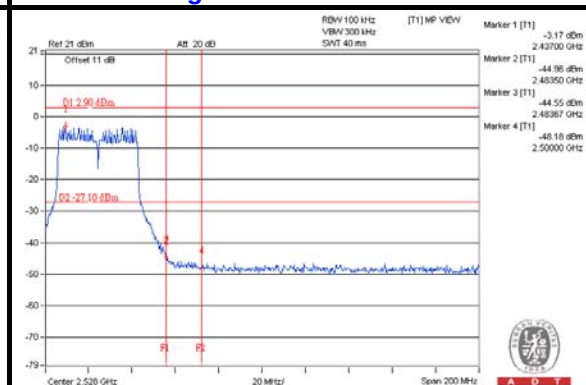
CH 9



CH 3 Band edge

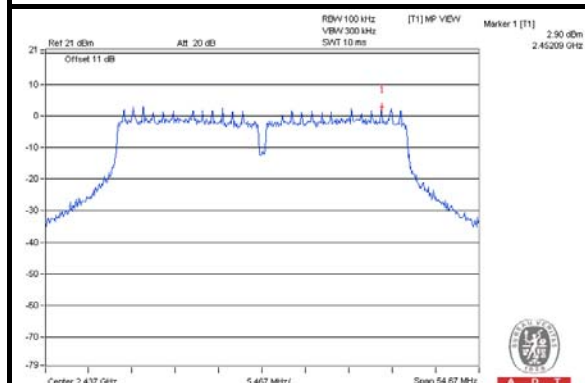


CH 9 Band edge

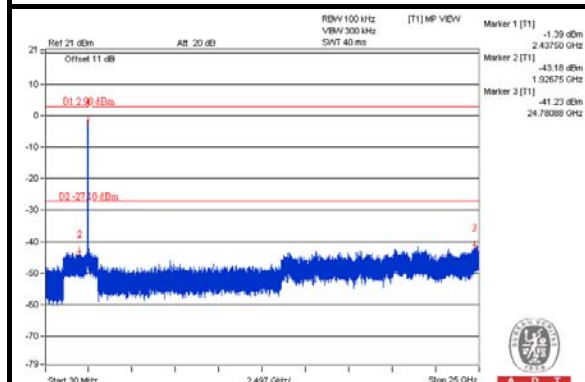


CHAIN 1

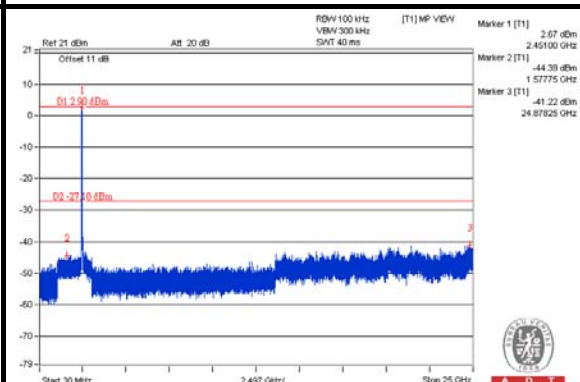
Reference Level



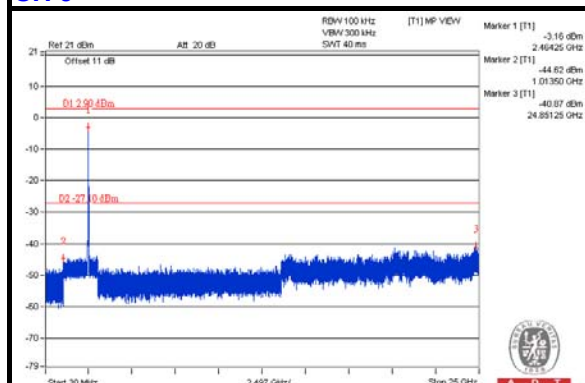
CH 3



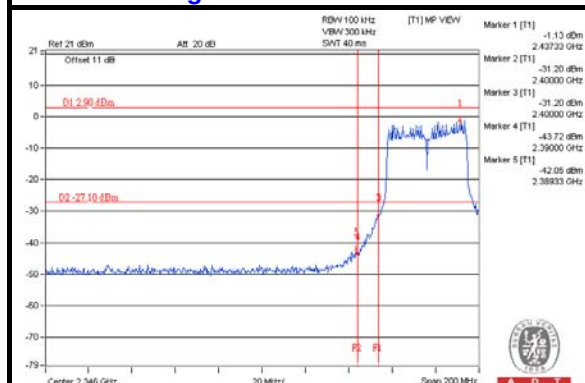
CH 6



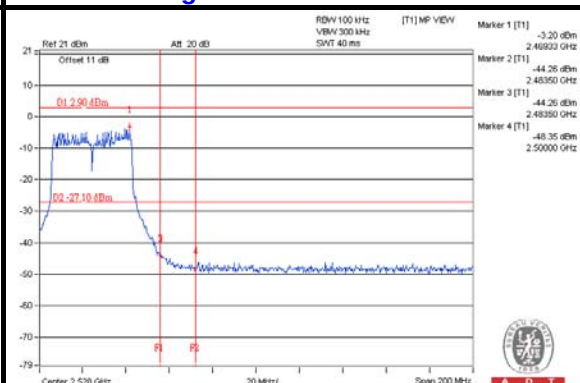
CH 9



CH 3 Band edge

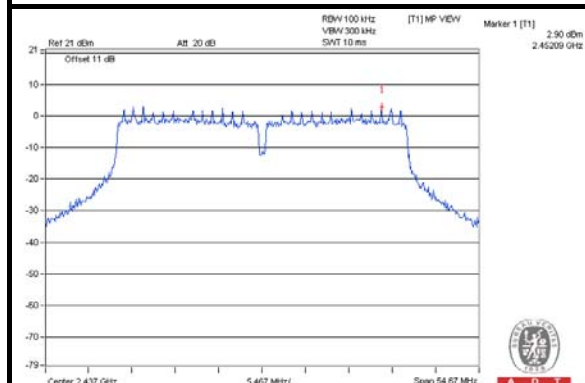


CH 9 Band edge

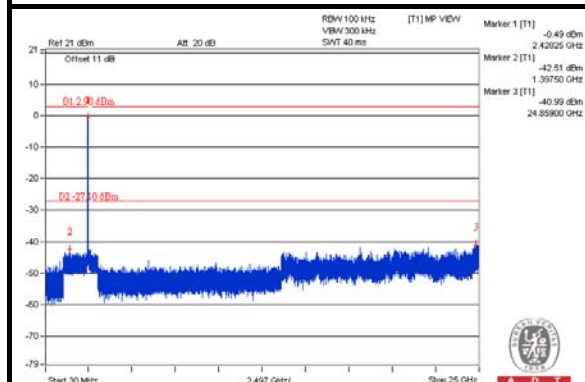


CHAIN 2

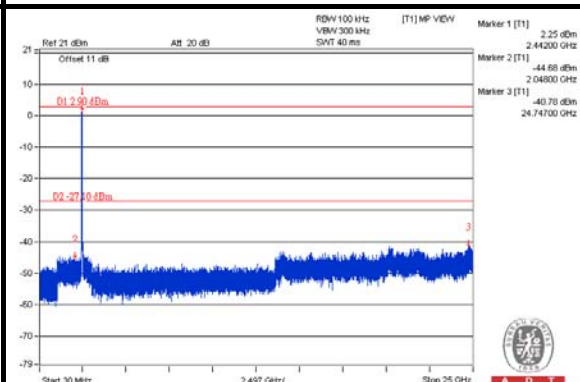
Reference Level



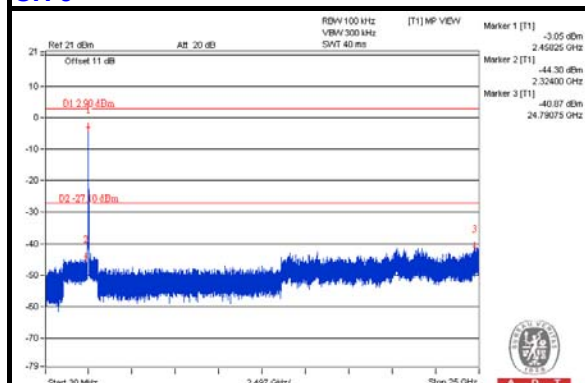
CH 3



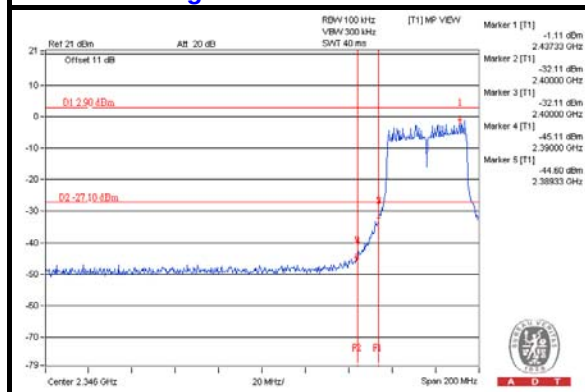
CH 6



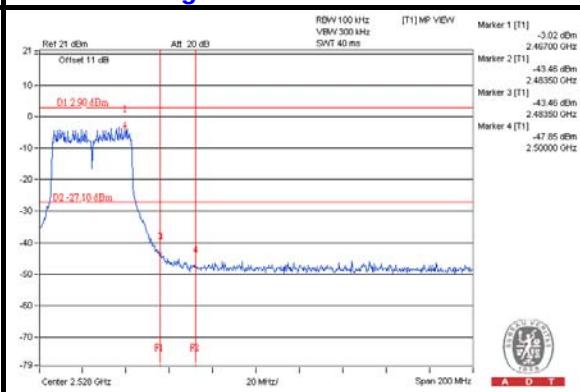
CH 9



CH 3 Band edge



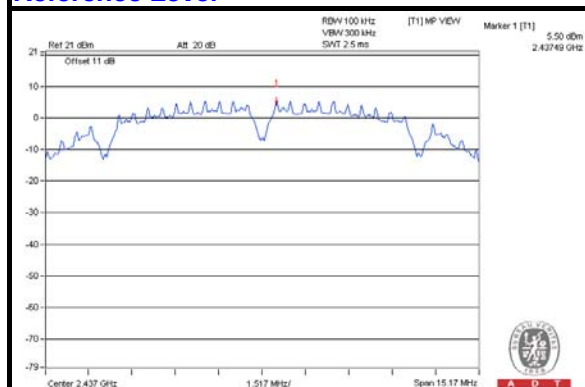
CH 9 Band edge



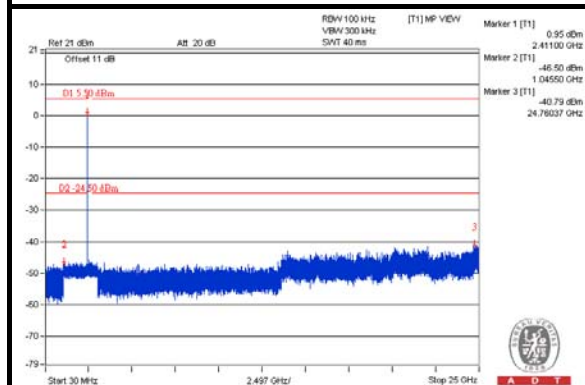
TEST MODE B

802.11b / CHAIN 0

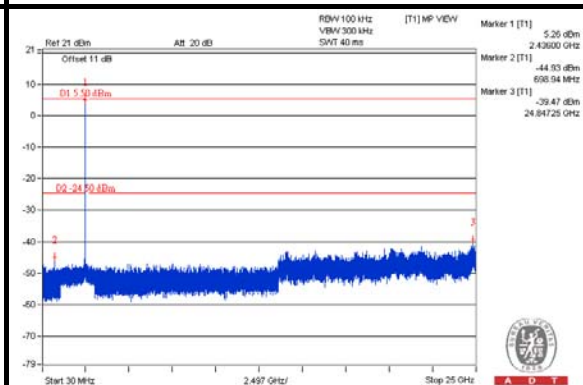
Reference Level



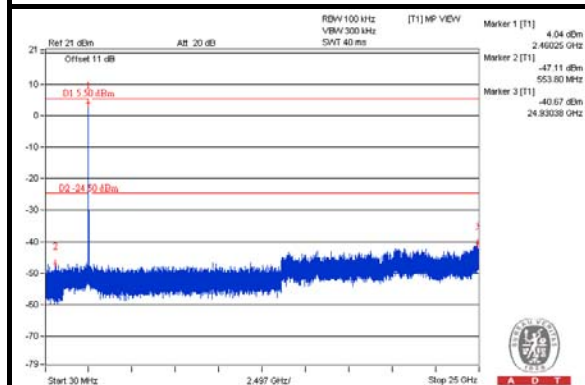
CH 1



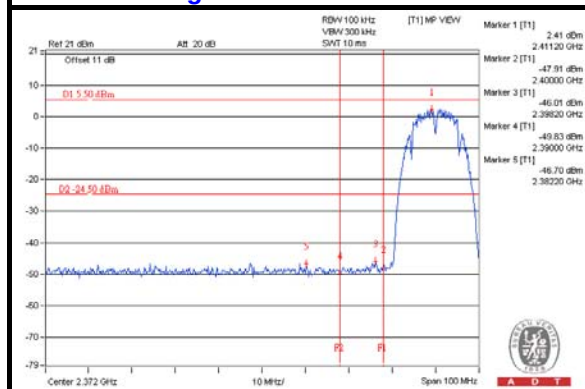
CH 6



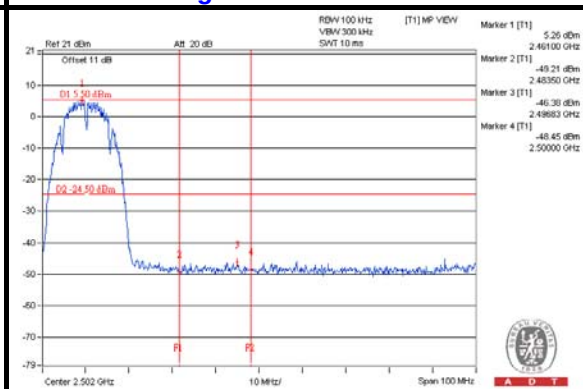
CH 11



CH 1 Band edge



CH 11 Band edge

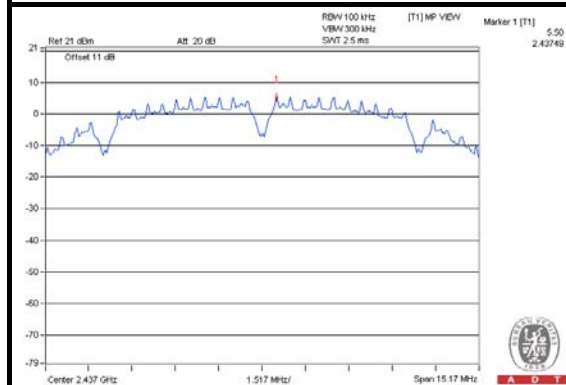




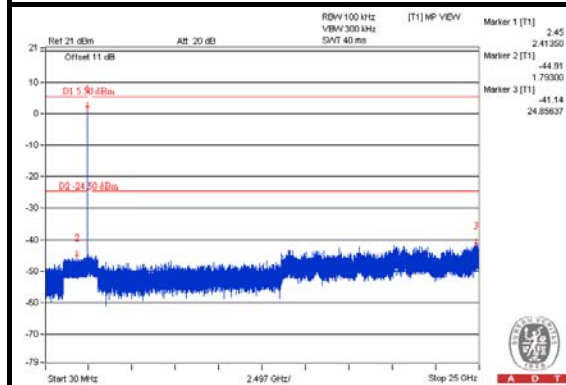
A D T

CHAIN 1

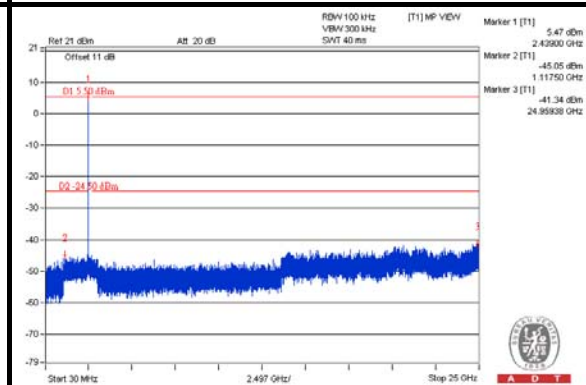
Reference Level



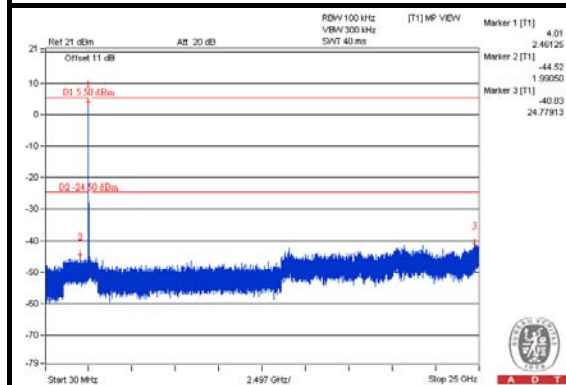
CH 1



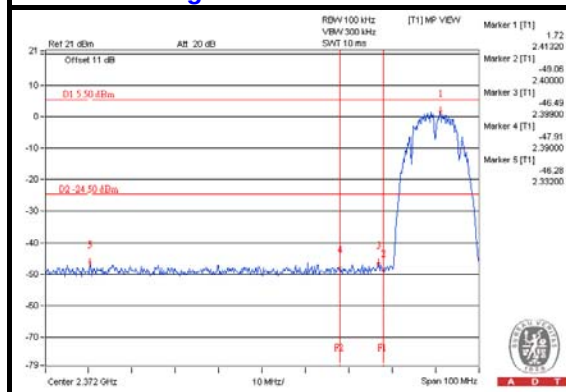
CH 6



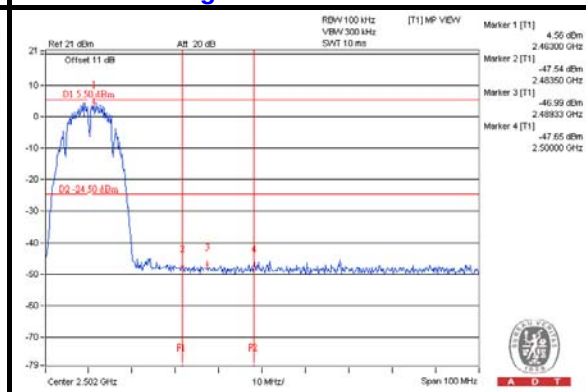
CH 11



CH 1 Band edge

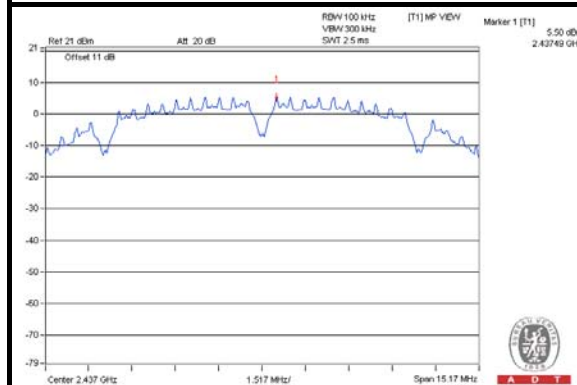


CH 11 Band edge

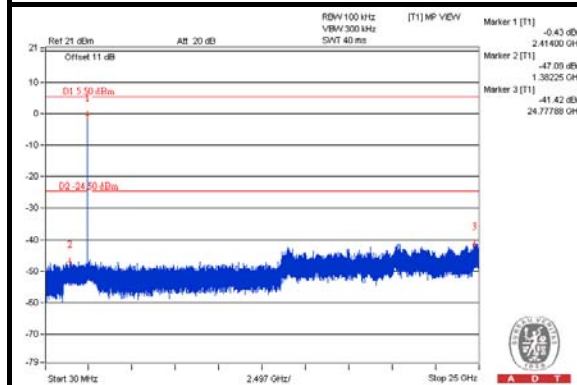


CHAIN 2

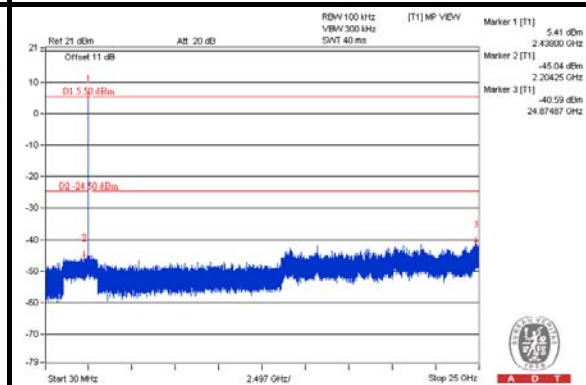
Reference Level



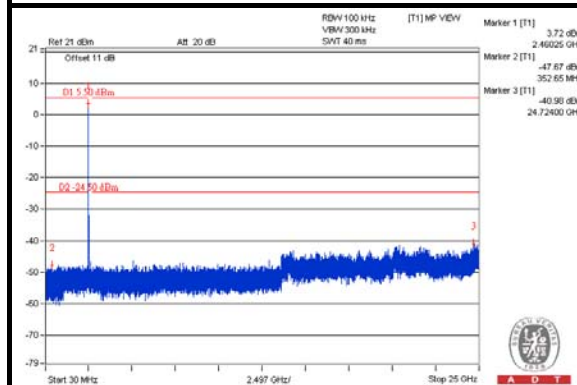
CH 1



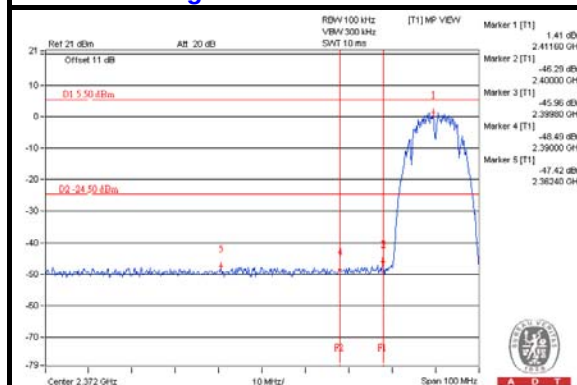
CH 6



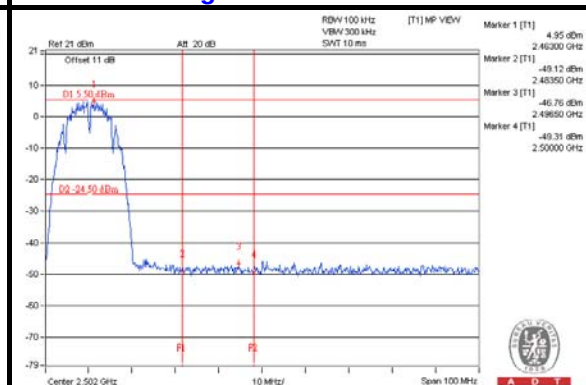
CH 11



CH 1 Band edge

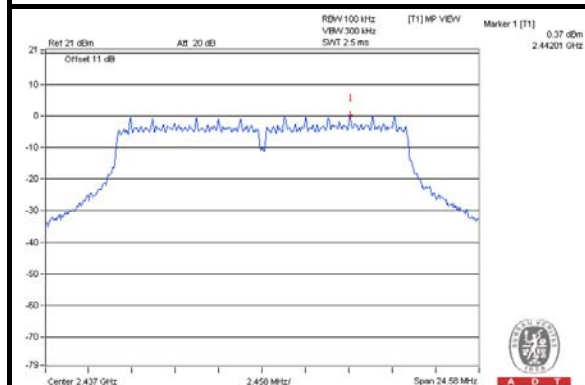


CH 11 Band edge

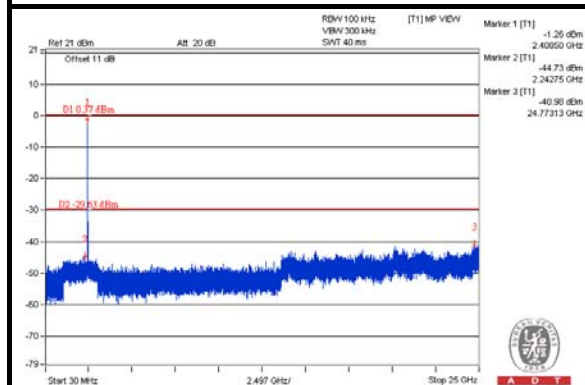


802.11g CHAIN 0

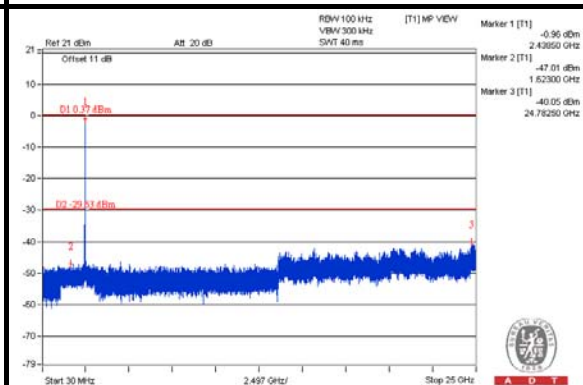
Reference Level



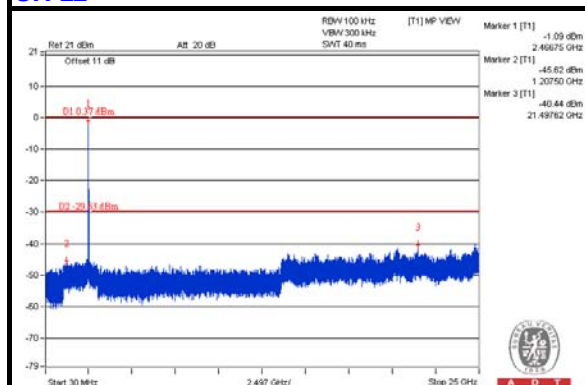
CH 1



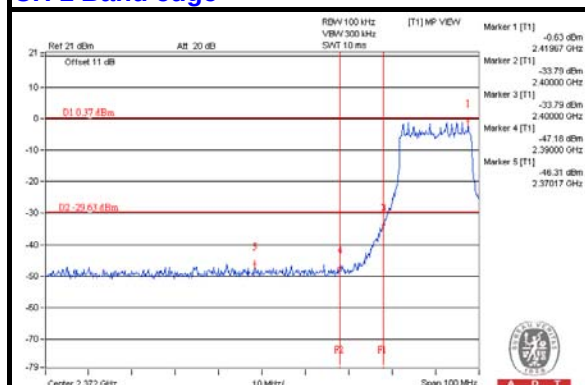
CH 6



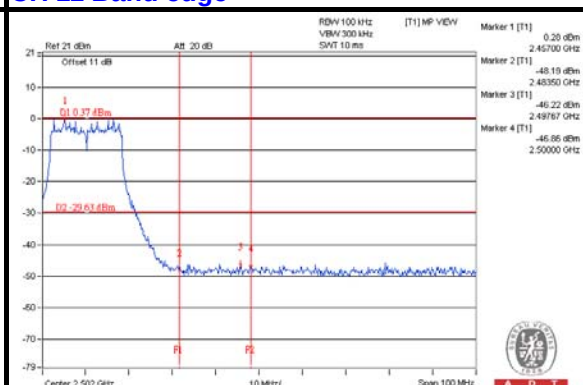
CH 11



CH 1 Band edge

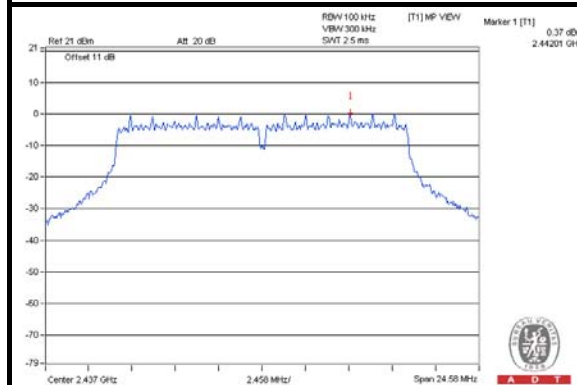


CH 11 Band edge

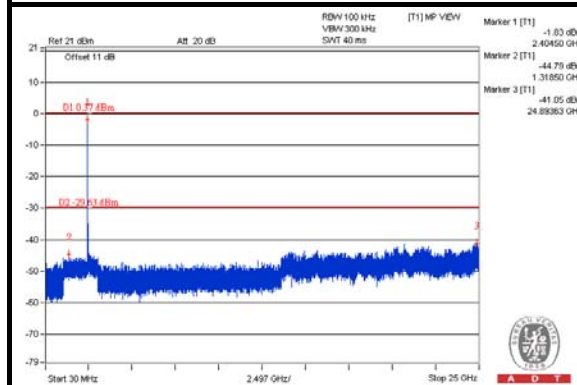


CHAIN 1

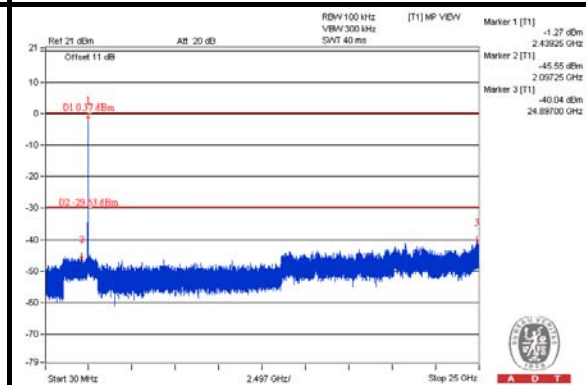
Reference Level



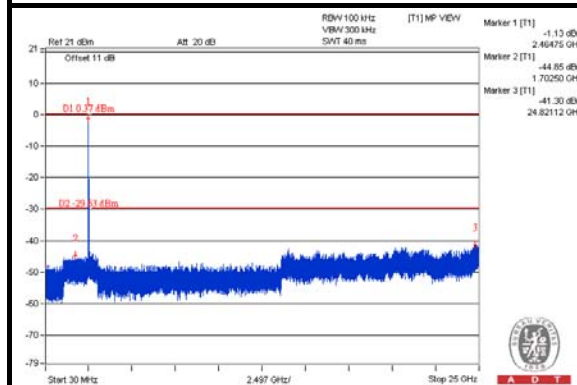
CH 1



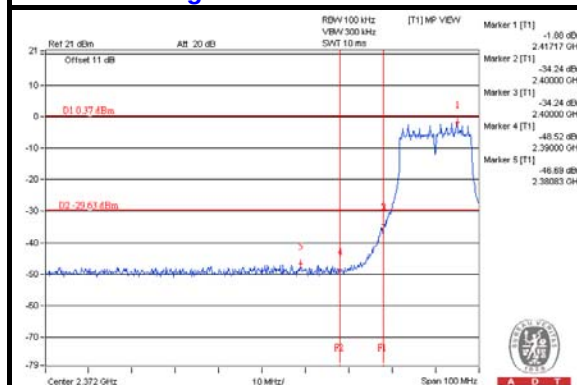
CH 6



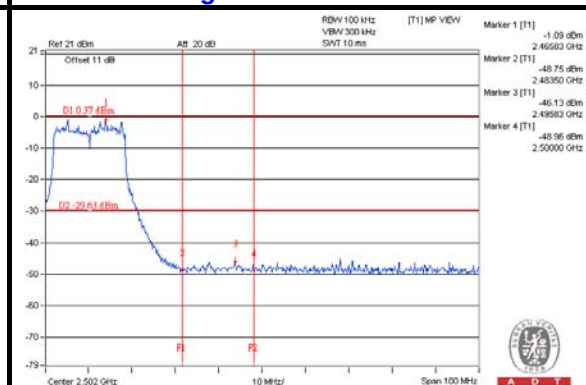
CH 11



CH 1 Band edge

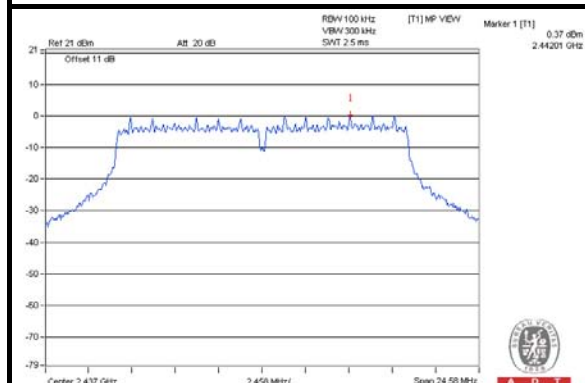


CH 11 Band edge

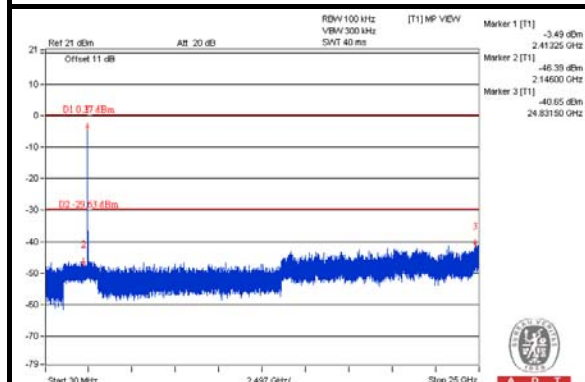


CHAIN 2

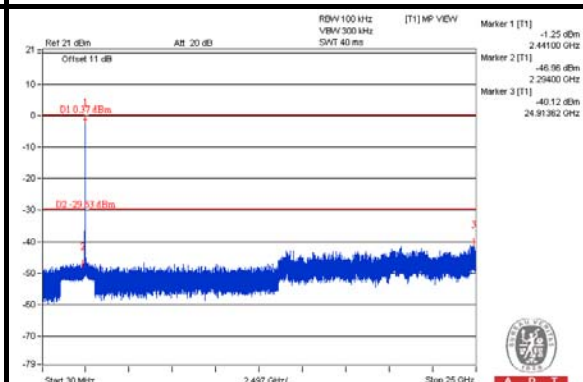
Reference Level



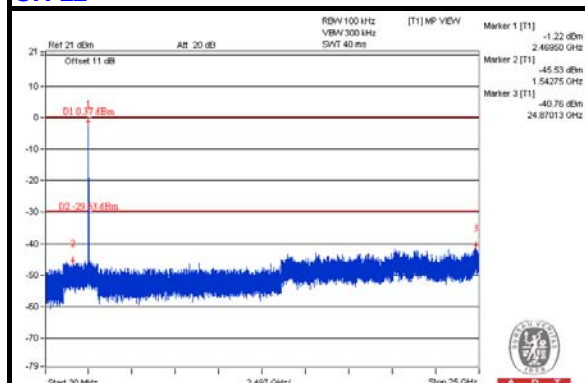
CH 1



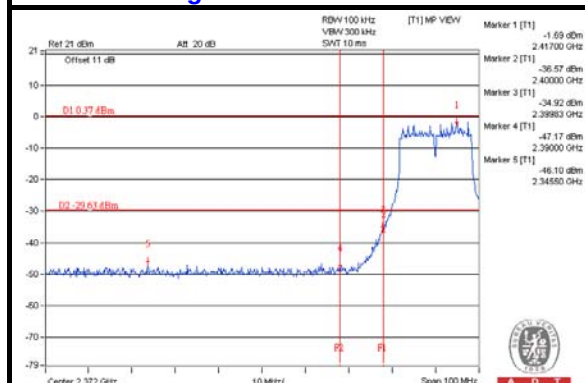
CH 6



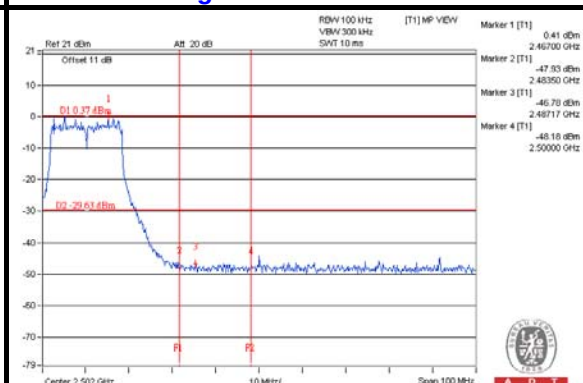
CH 11



CH 1 Band edge

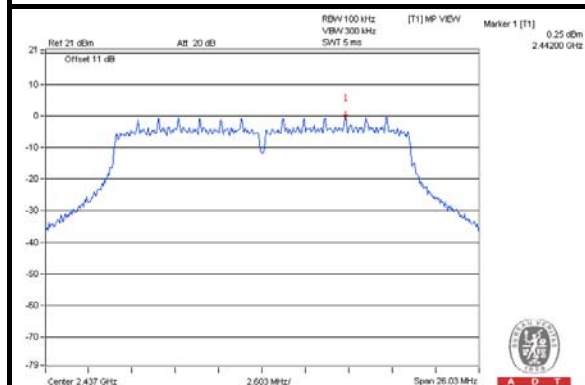


CH 11 Band edge

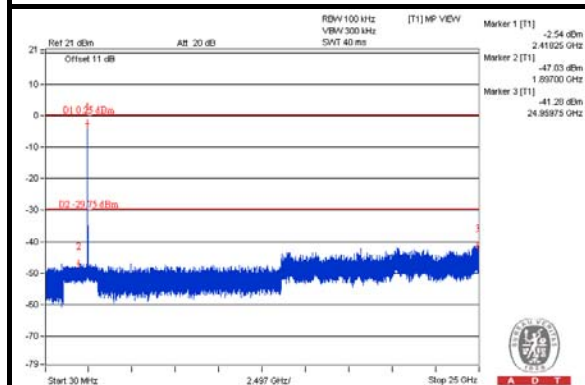


802.11n (20MHz) CHAIN 0

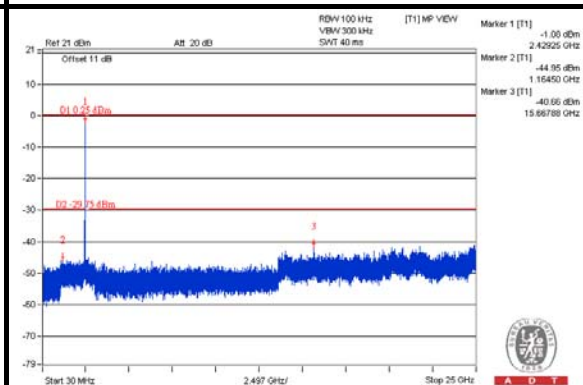
Reference Level



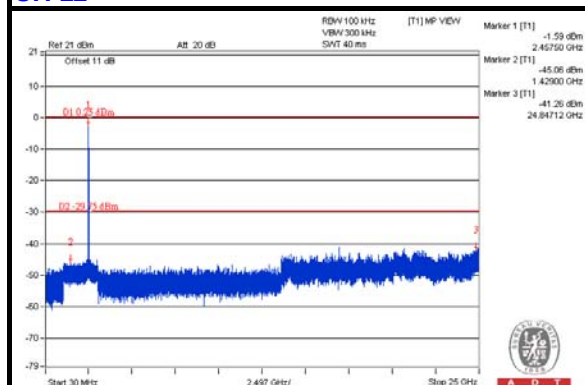
CH 1



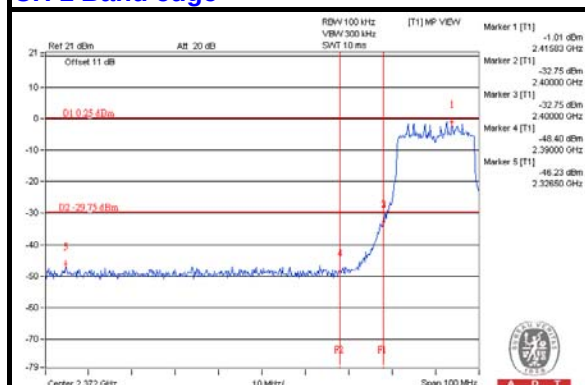
CH 6



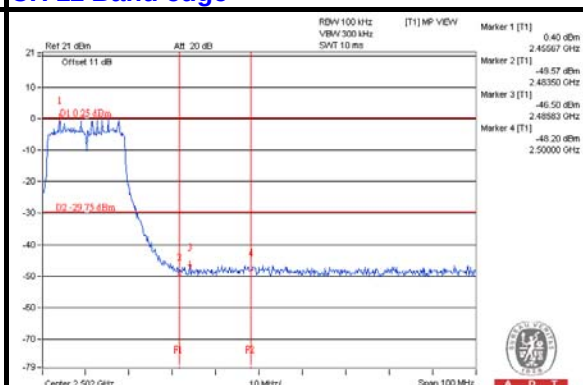
CH 11



CH 1 Band edge

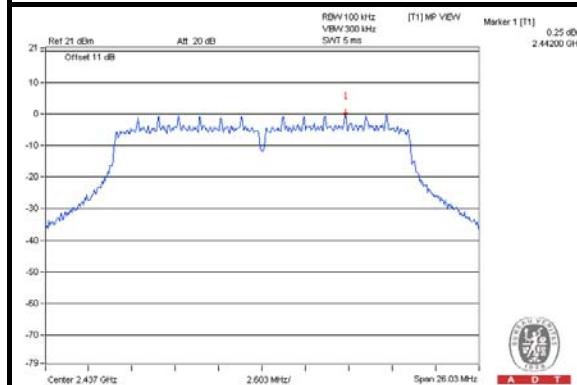


CH 11 Band edge

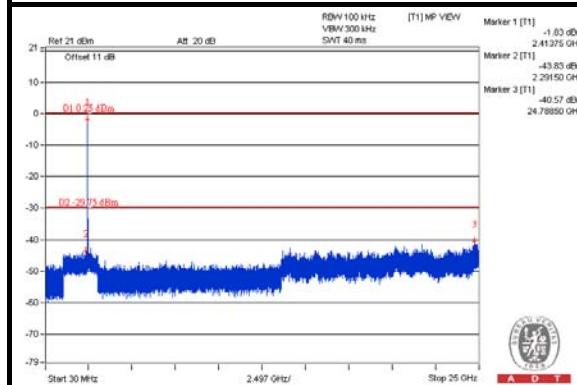


CHAIN 1

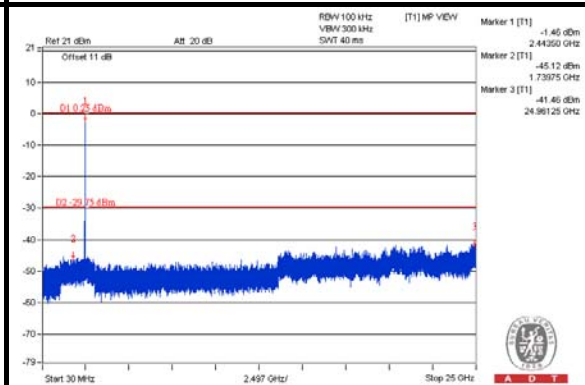
Reference Level



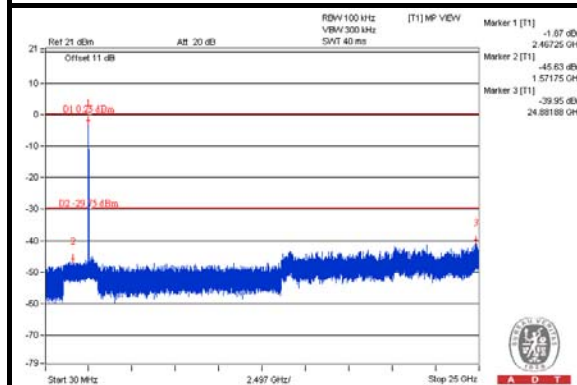
CH 1



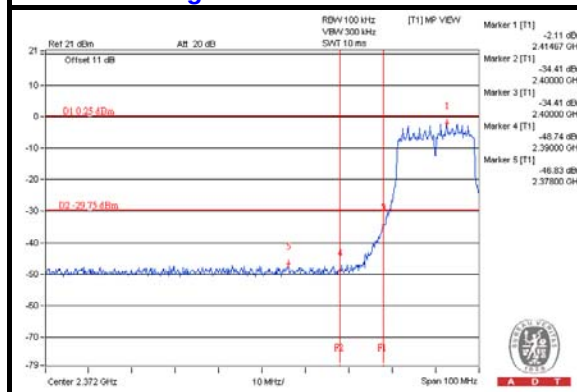
CH 6



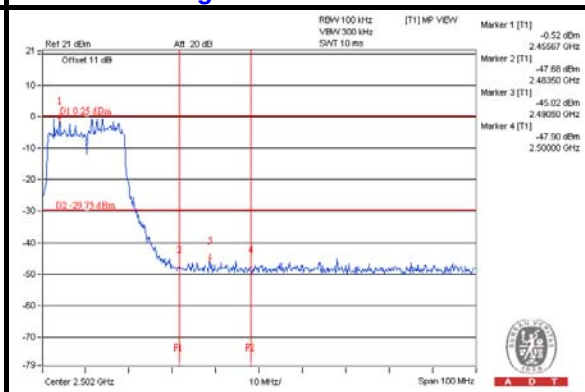
CH 11



CH 1 Band edge

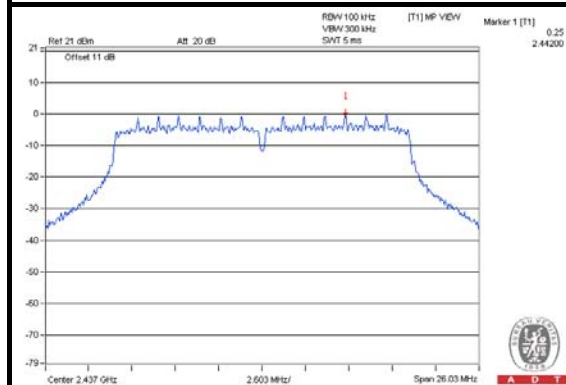


CH 11 Band edge

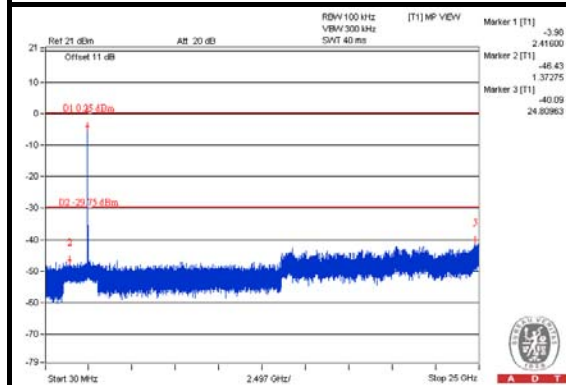


CHAIN 2

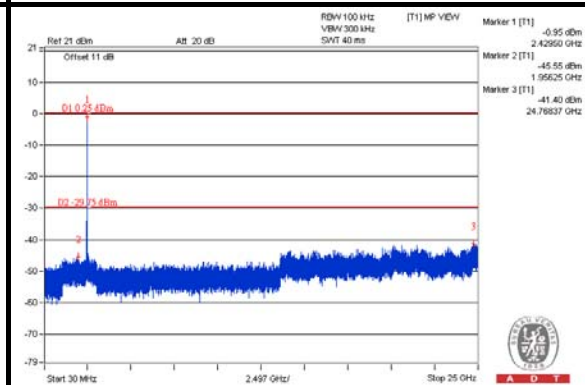
Reference Level



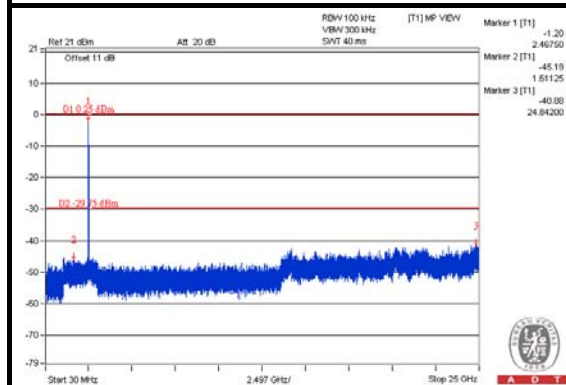
CH 1



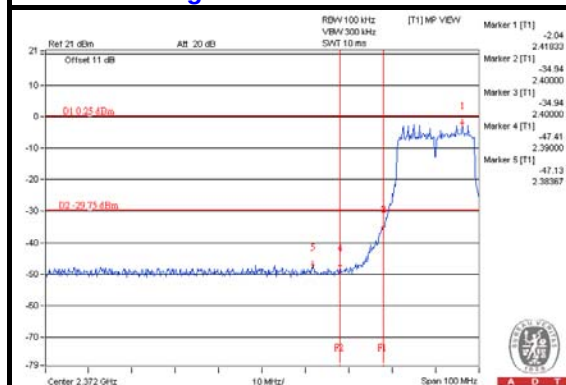
CH 6



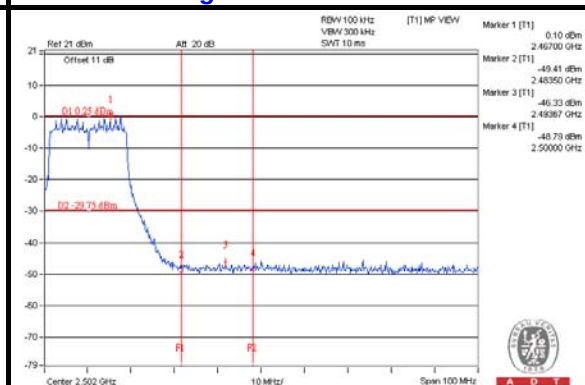
CH 11



CH 1 Band edge

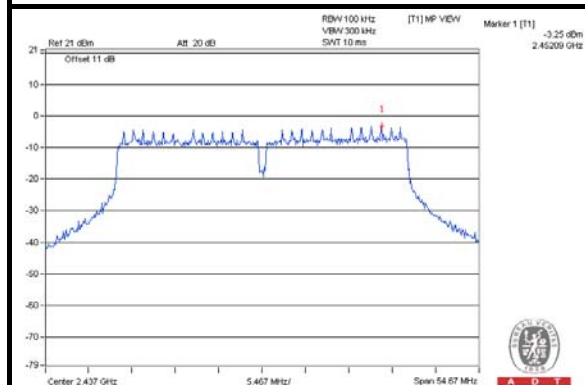


CH 11 Band edge

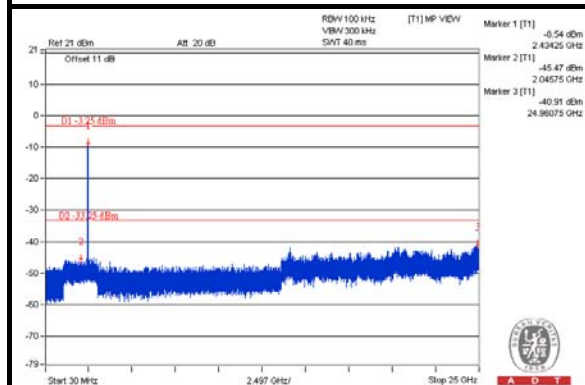


802.11n (40MHz) CHAIN 0

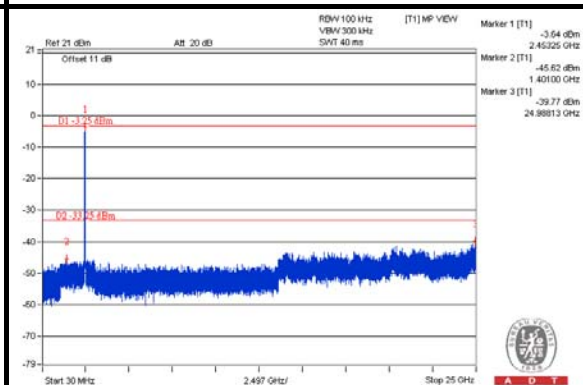
Reference Level



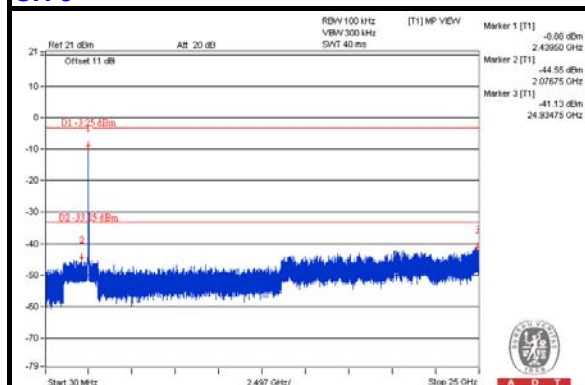
CH 3



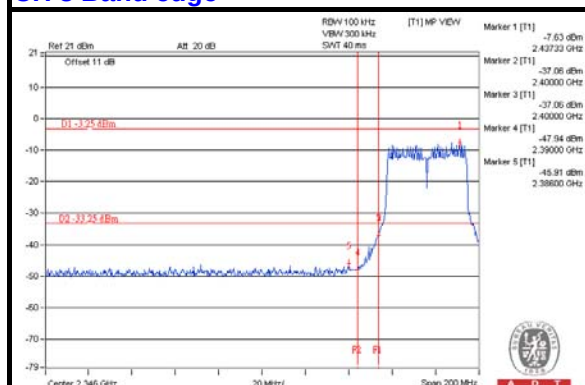
CH 6



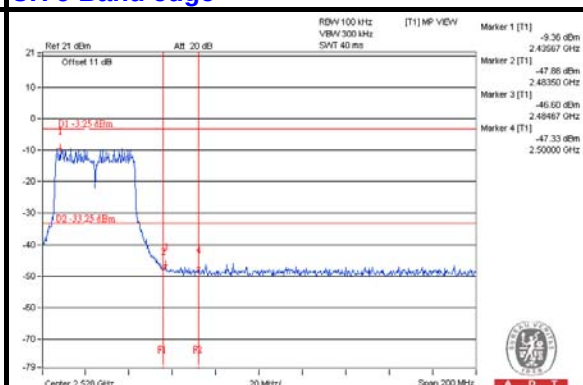
CH 9



CH 3 Band edge

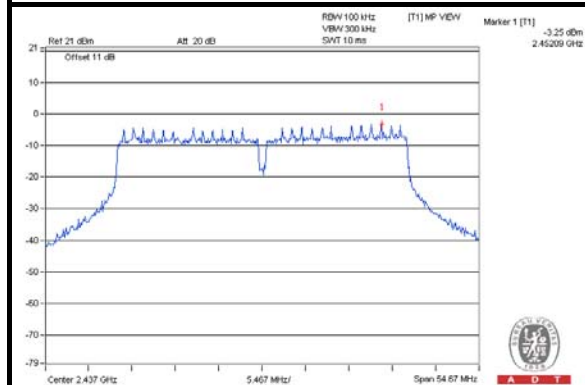


CH 9 Band edge

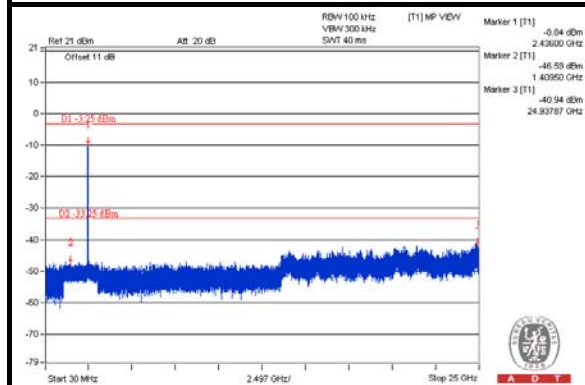


CHAIN 1

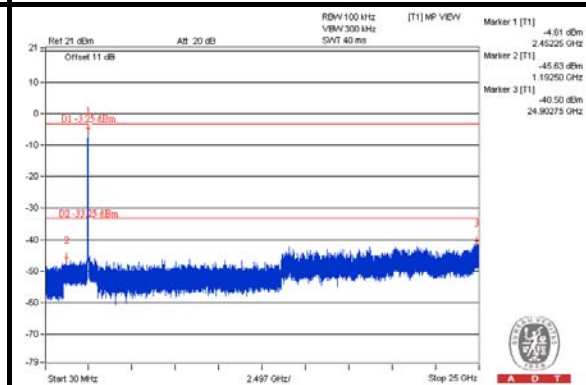
Reference Level



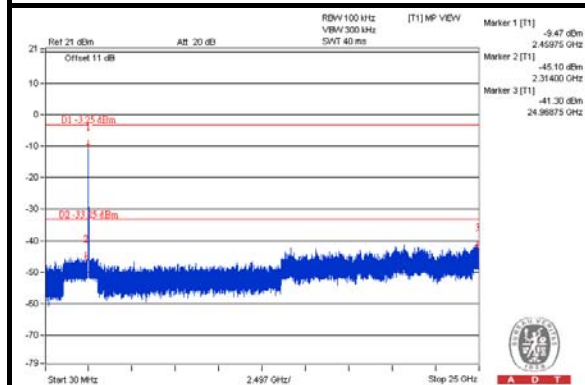
CH 3



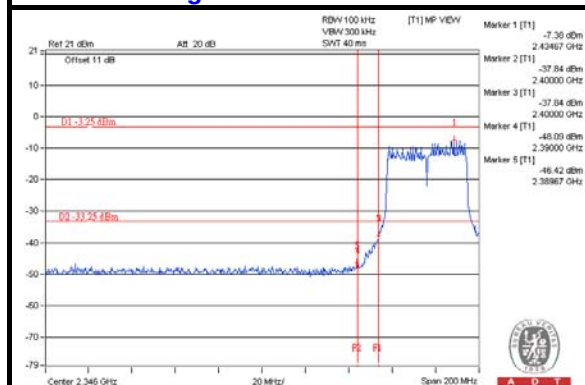
CH 6



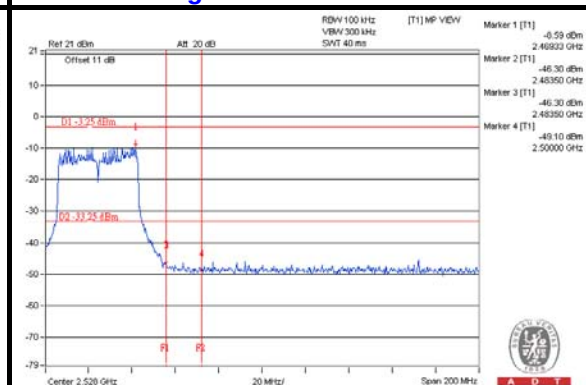
CH 9



CH 3 Band edge

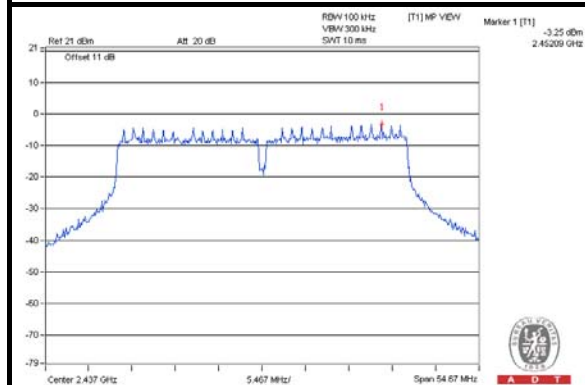


CH 9 Band edge

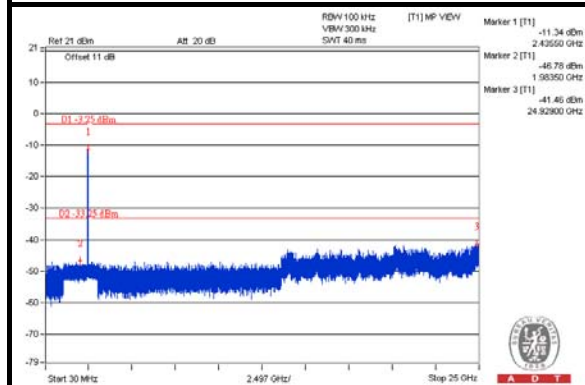


CHAIN 2

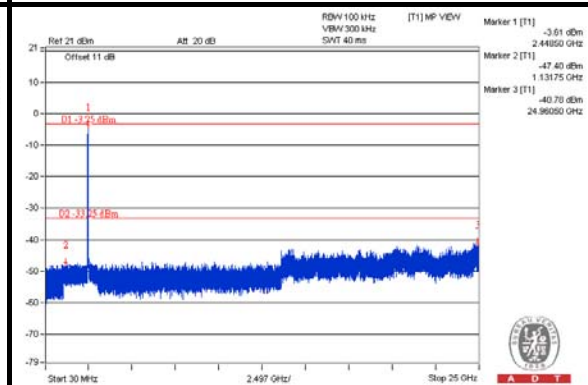
Reference Level



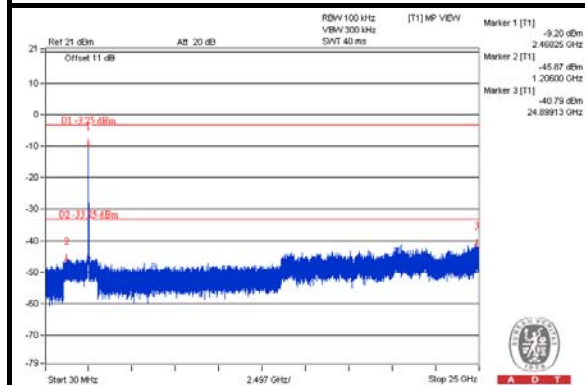
CH 3



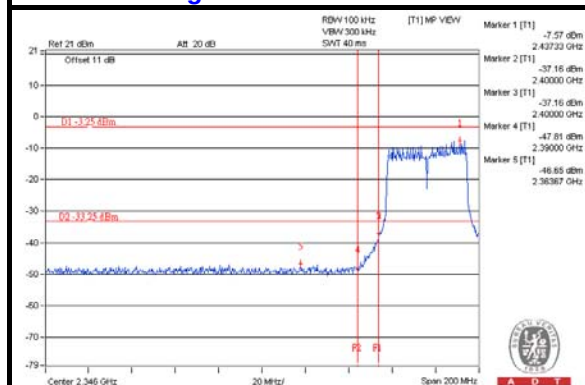
CH 6



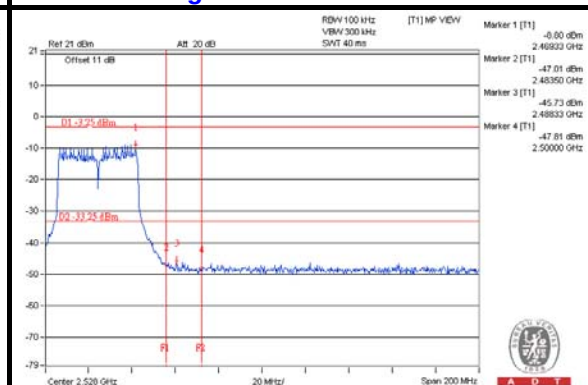
CH 9



CH 3 Band edge



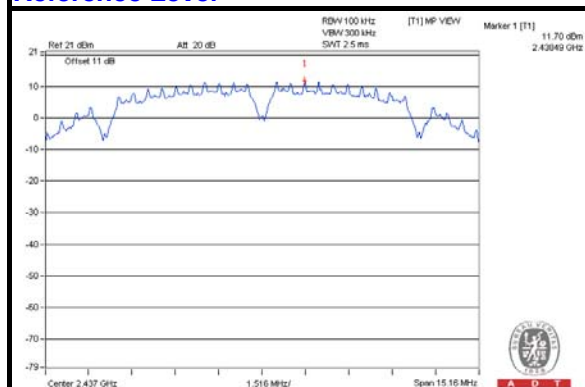
CH 9 Band edge



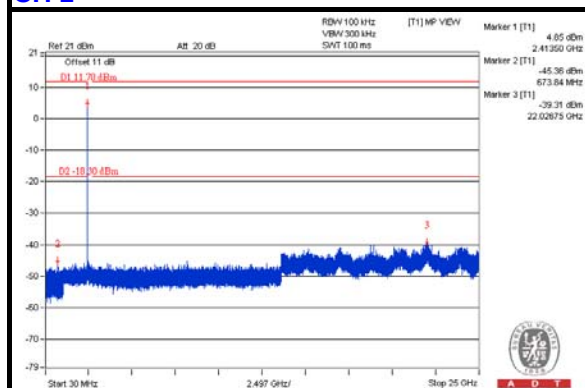
TEST MODE C

802.11b / CHAIN 0

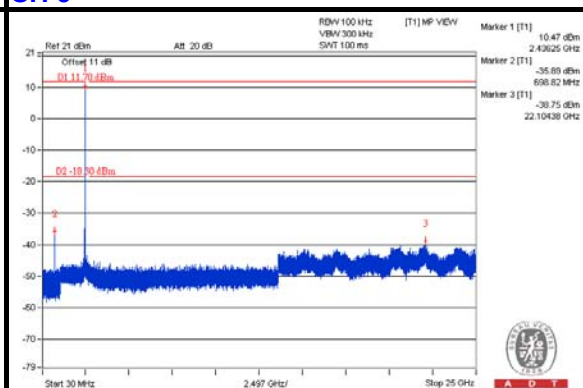
Reference Level



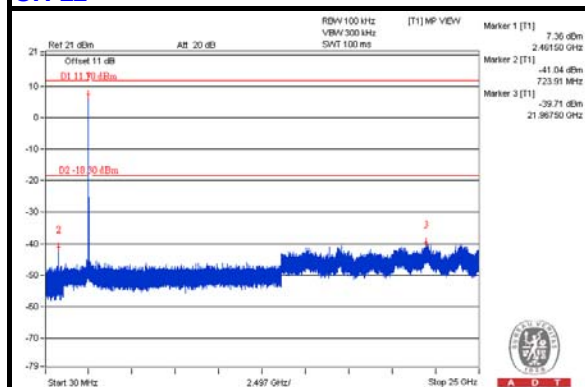
CH 1



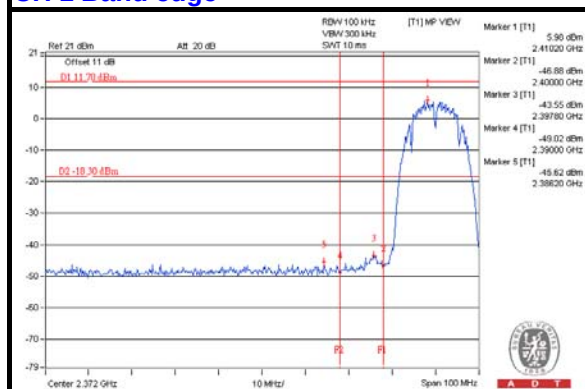
CH 6



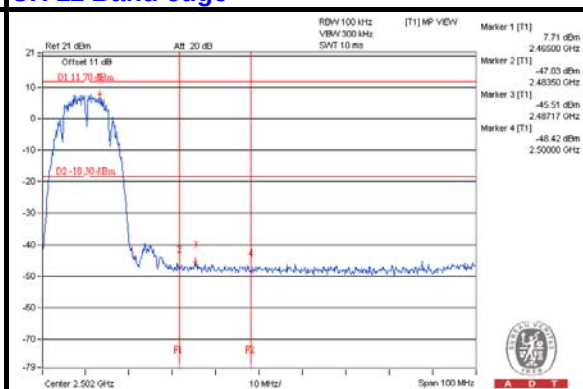
CH 11



CH 1 Band edge



CH 11 Band edge

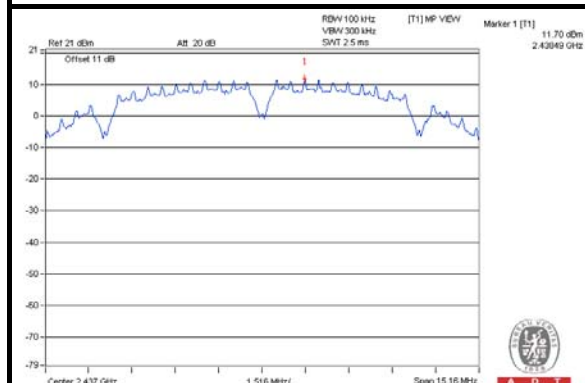




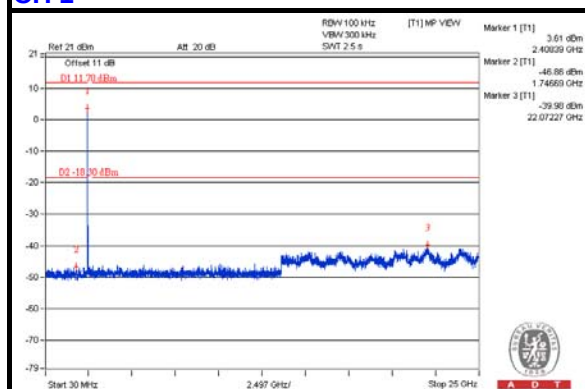
A D T

CHAIN 1

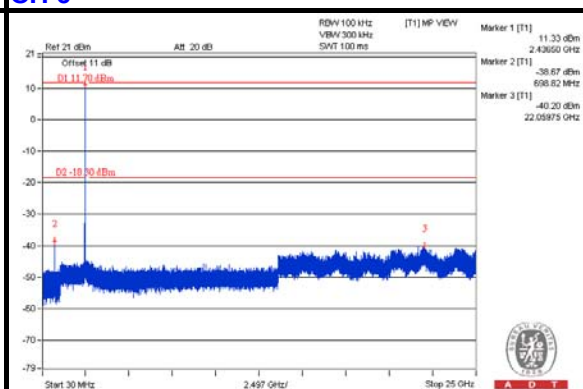
Reference Level



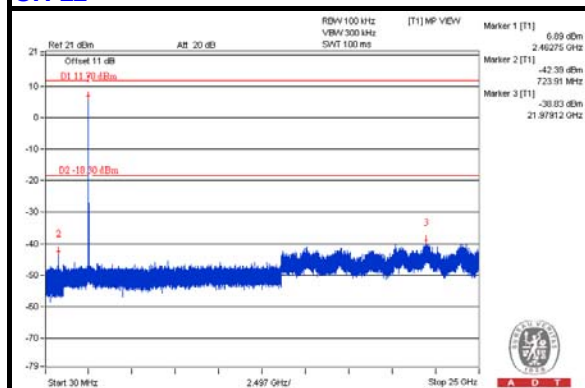
CH 1



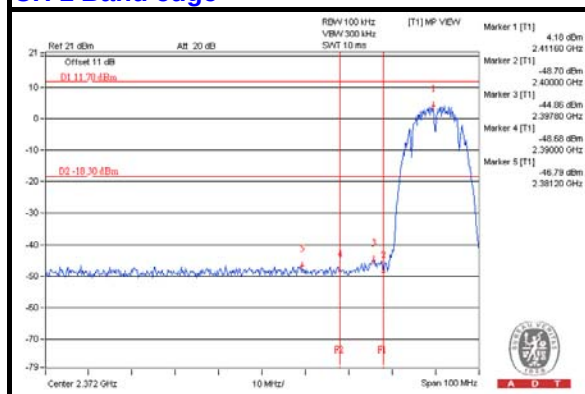
CH 6



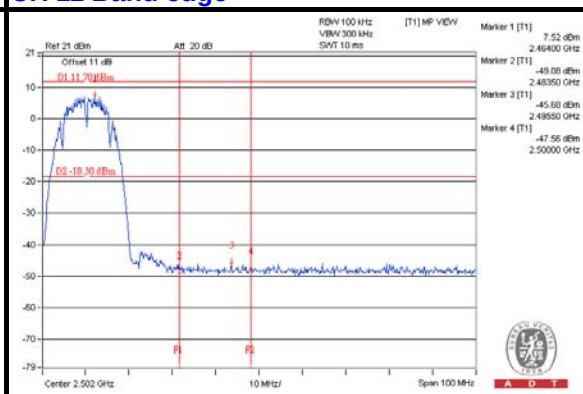
CH 11



CH 1 Band edge

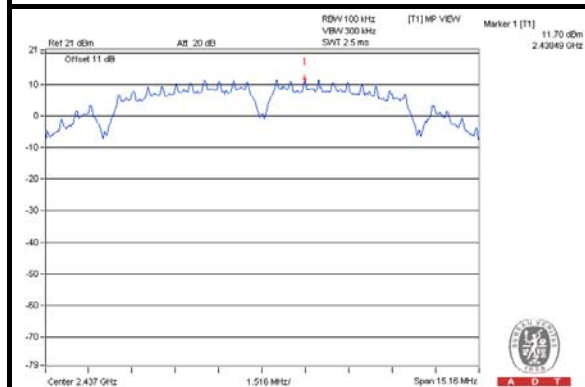


CH 11 Band edge

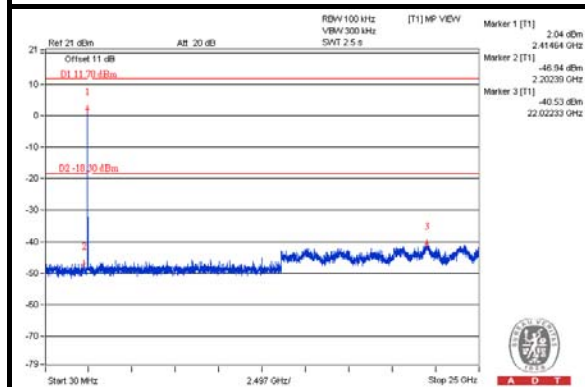


CHAIN 2

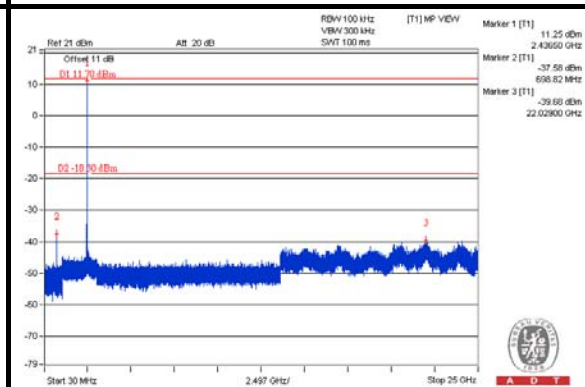
Reference Level



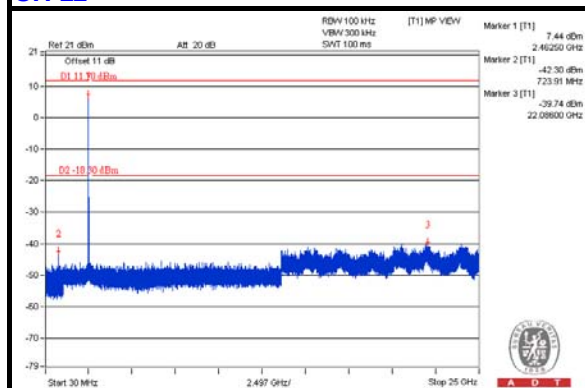
CH 1



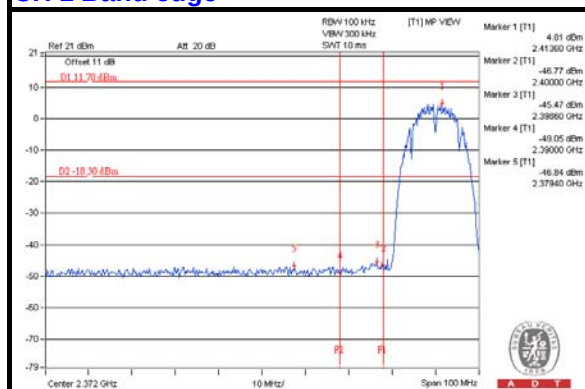
CH 6



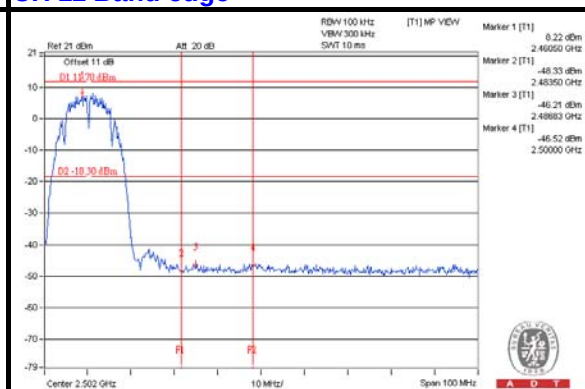
CH 11



CH 1 Band edge



CH 11 Band edge

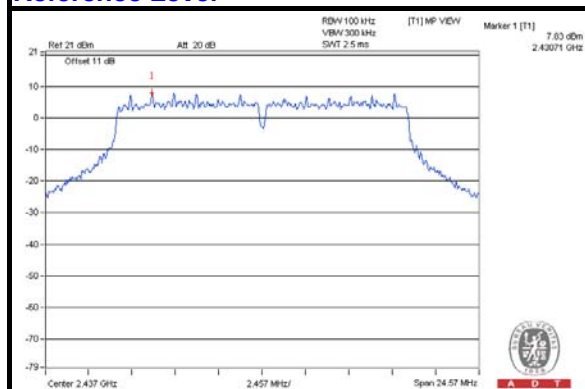




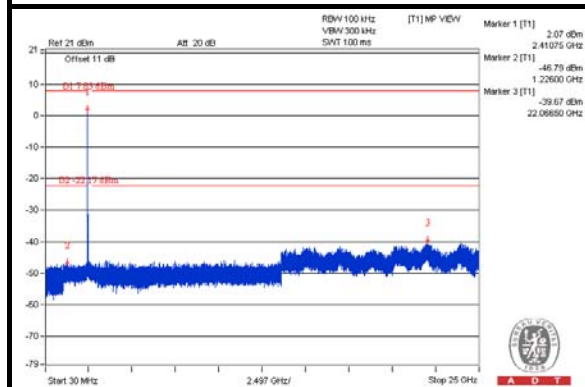
A D T

802.11g CHAIN 0

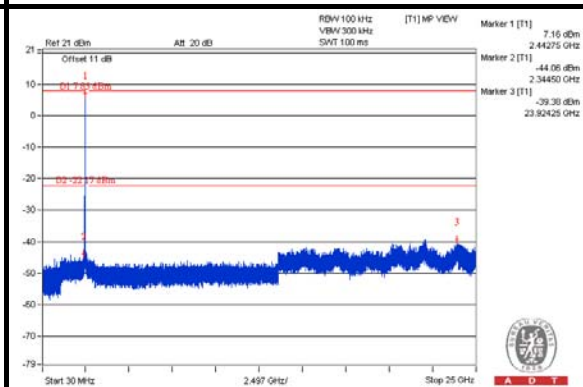
Reference Level



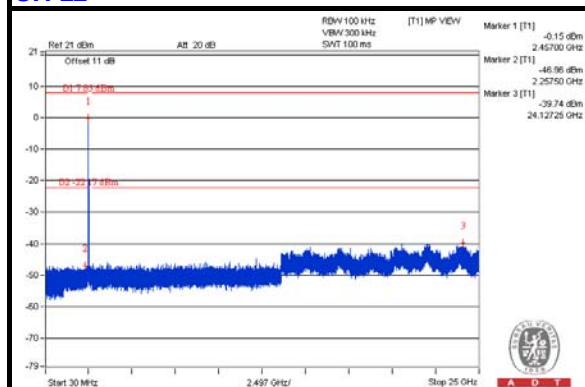
CH 1



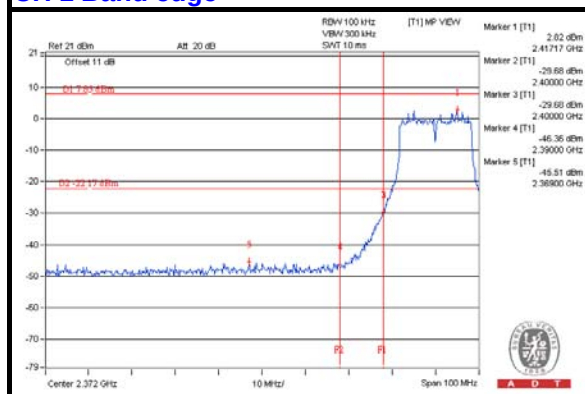
CH 6



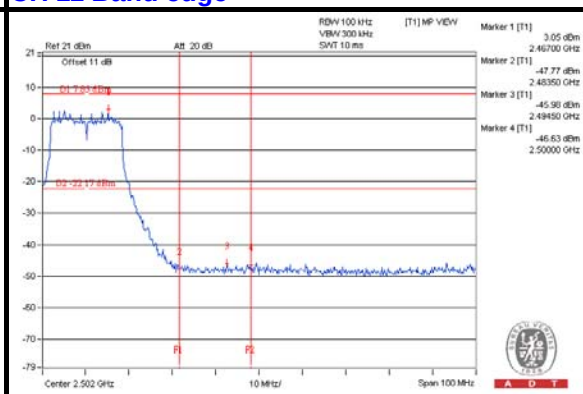
CH 11



CH 1 Band edge

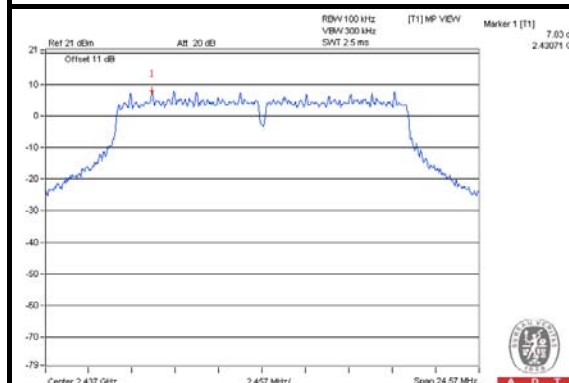


CH 11 Band edge

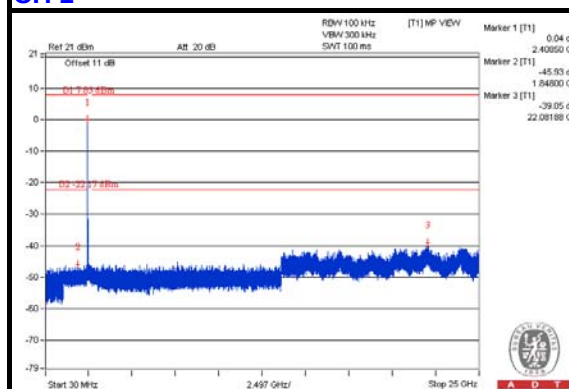


CHAIN 1

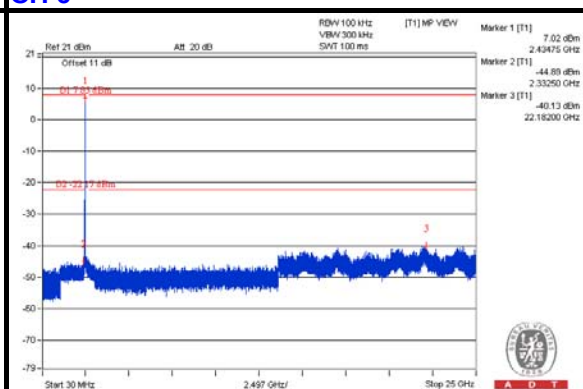
Reference Level



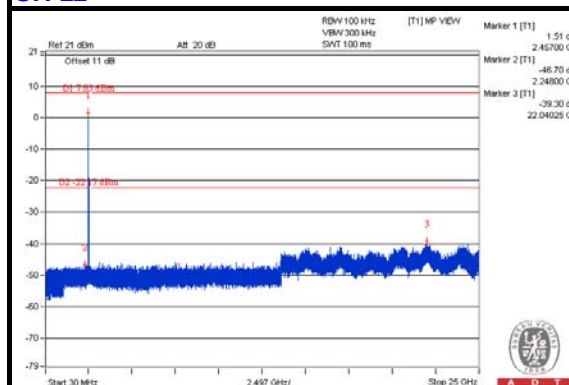
CH 1



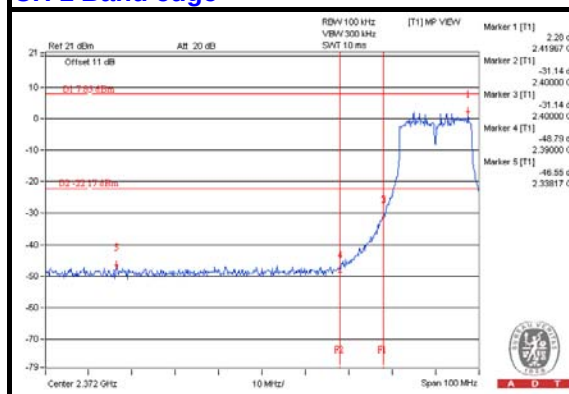
CH 6



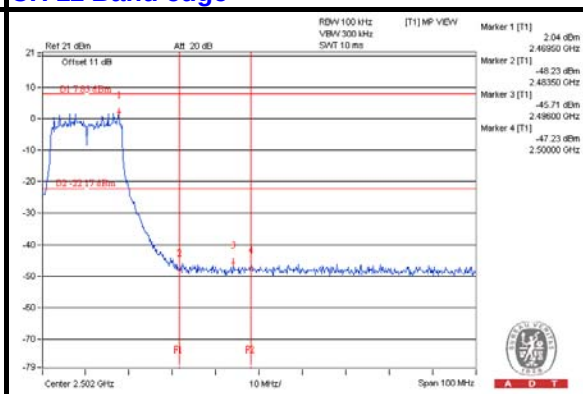
CH 11



CH 1 Band edge

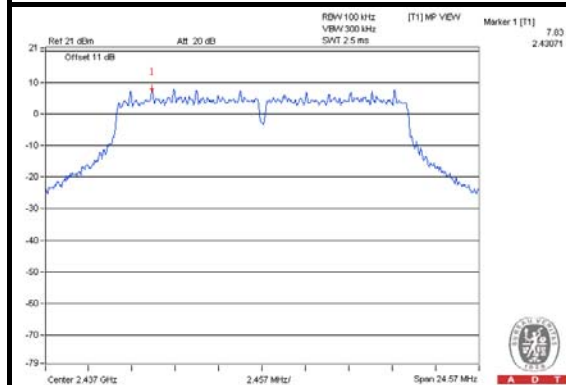


CH 11 Band edge

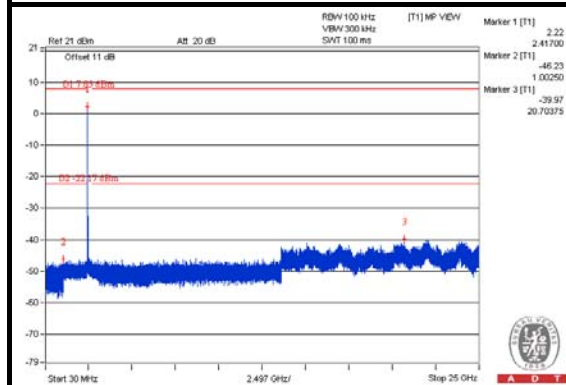


CHAIN 2

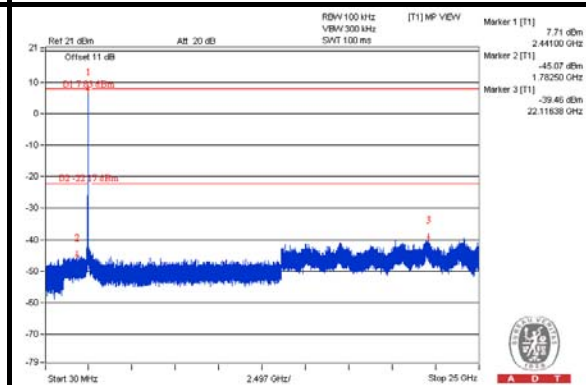
Reference Level



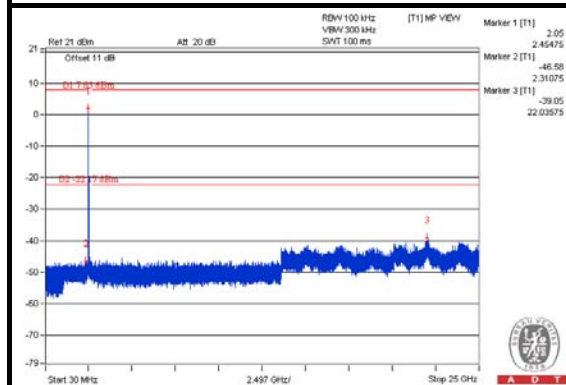
CH 1



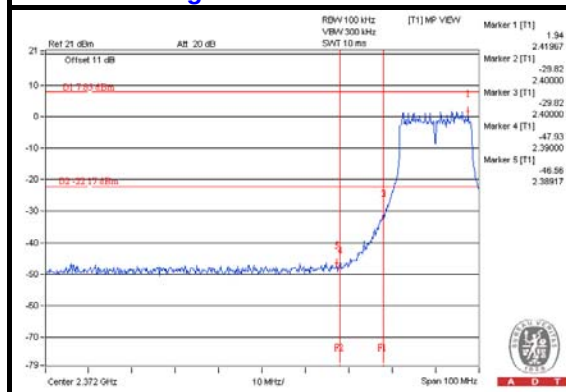
CH 6



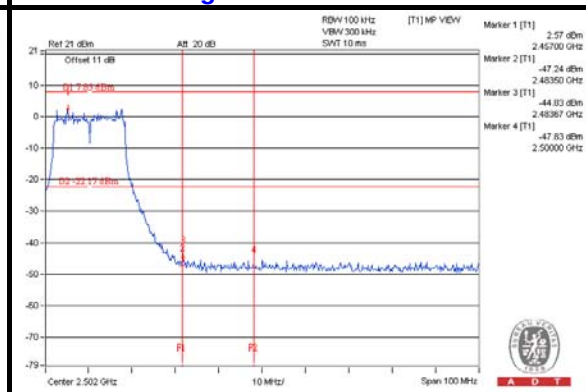
CH 11



CH 1 Band edge



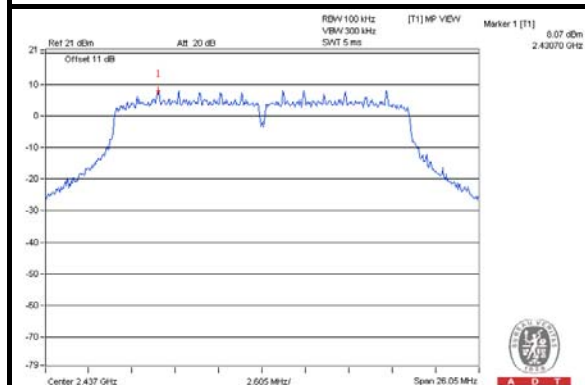
CH 11 Band edge



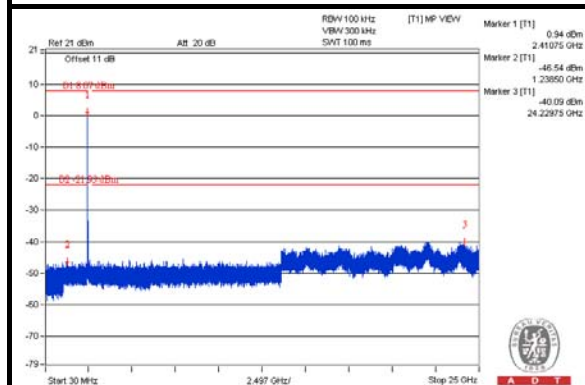
802.11n (20MHz)

CHAIN 0

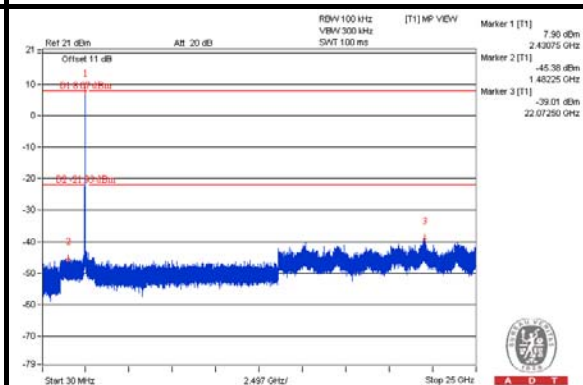
Reference Level



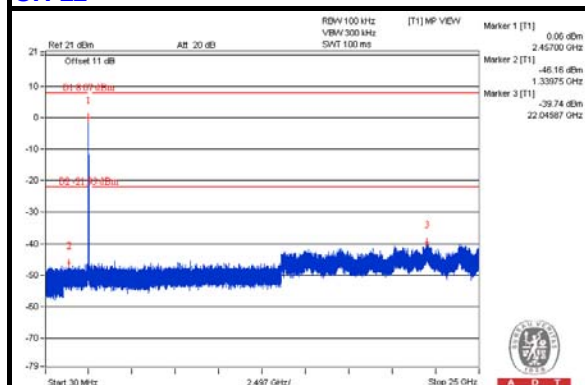
CH 1



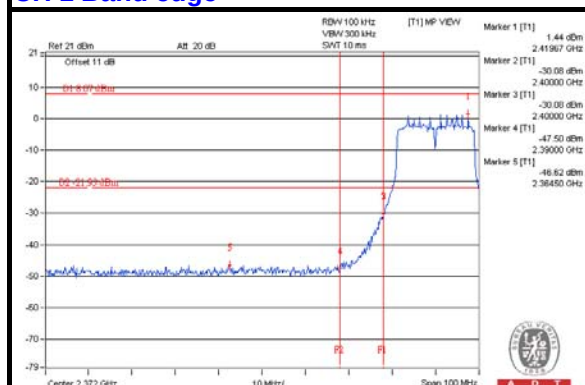
CH 6



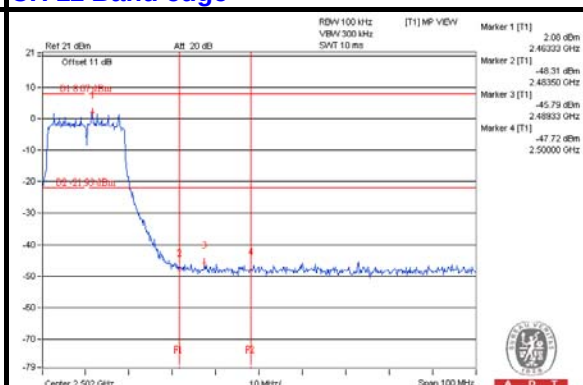
CH 11



CH 1 Band edge



CH 11 Band edge

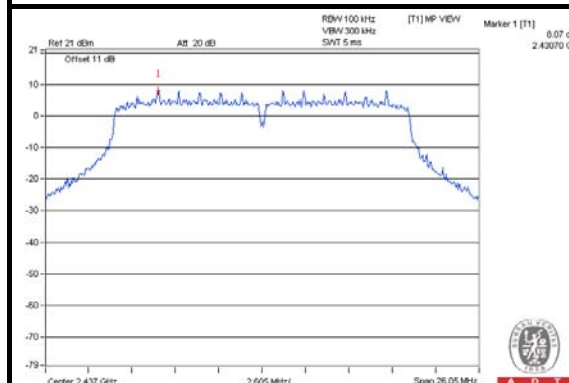




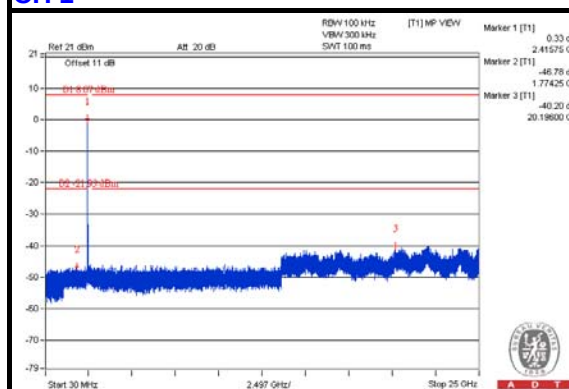
A D T

CHAIN 1

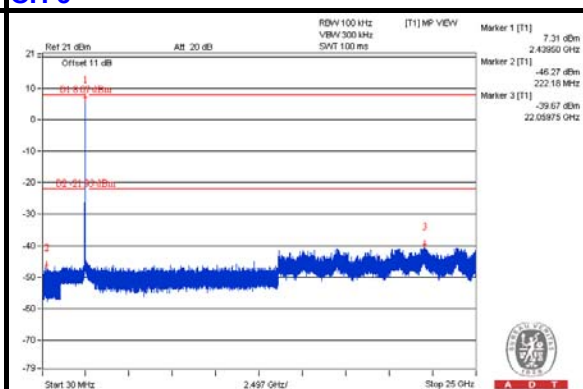
Reference Level



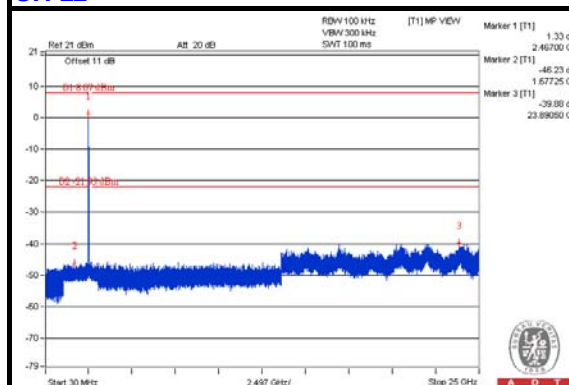
CH 1



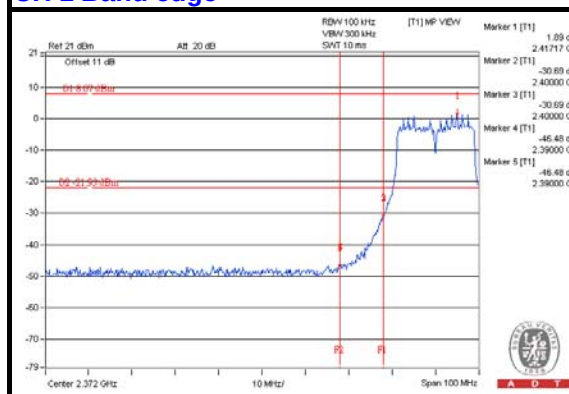
CH 6



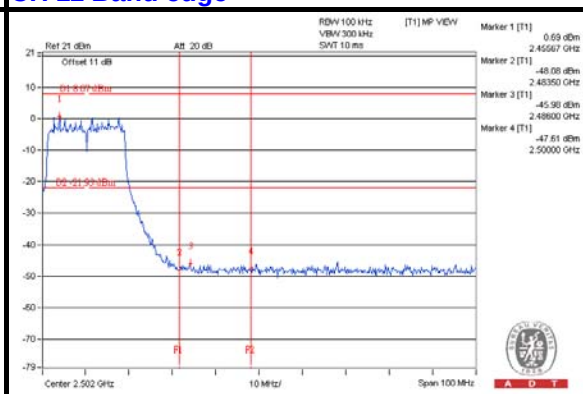
CH 11



CH 1 Band edge

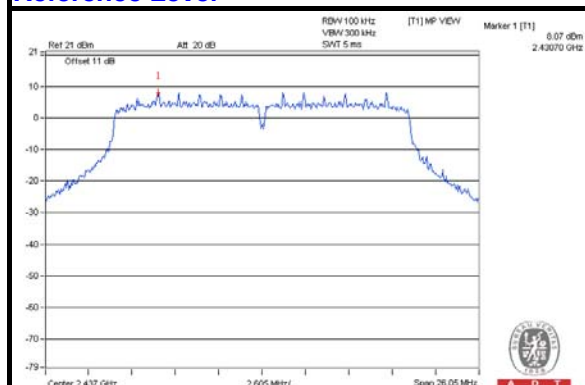


CH 11 Band edge

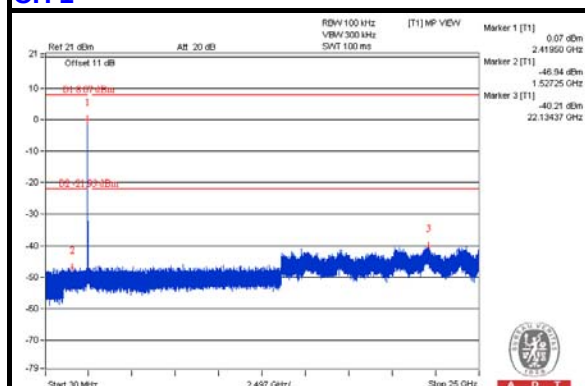


CHAIN 2

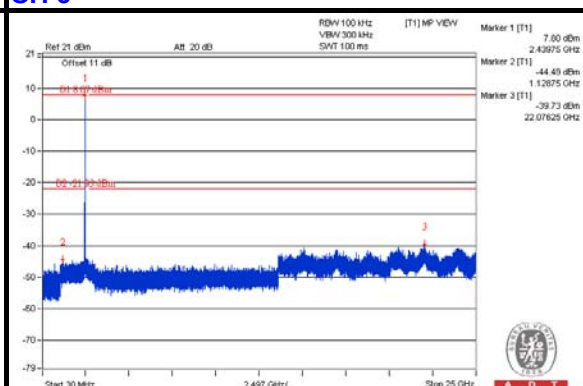
Reference Level



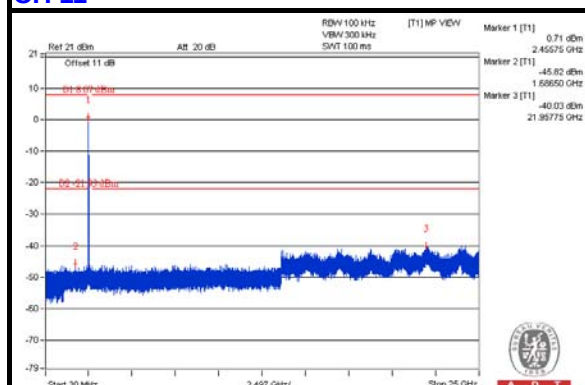
CH 1



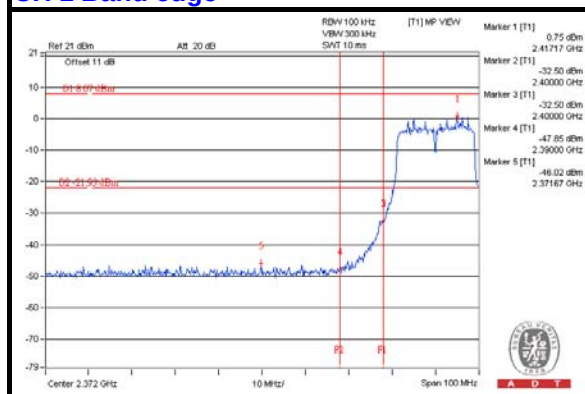
CH 6



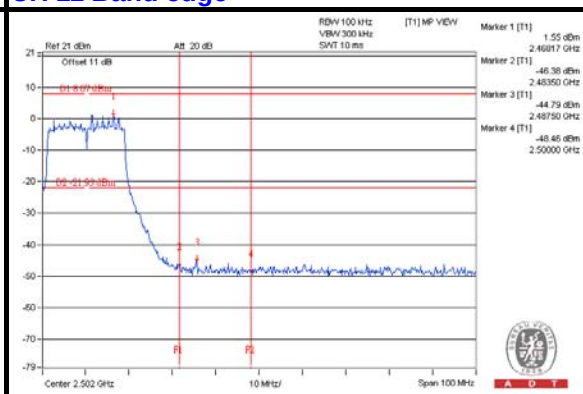
CH 11



CH 1 Band edge

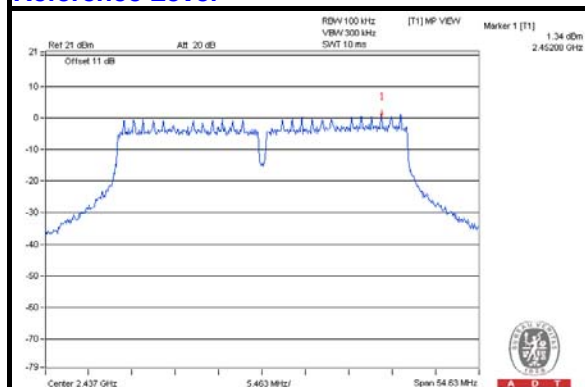


CH 11 Band edge

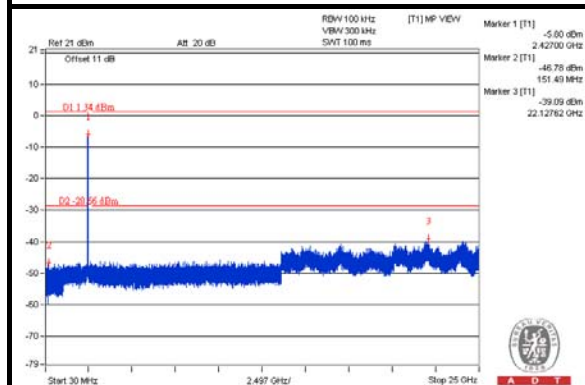


802.11n (40MHz) CHAIN 0

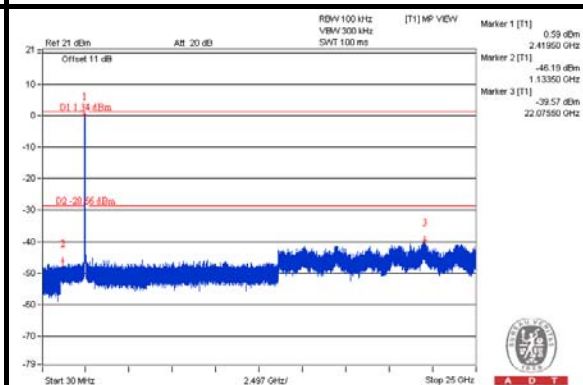
Reference Level



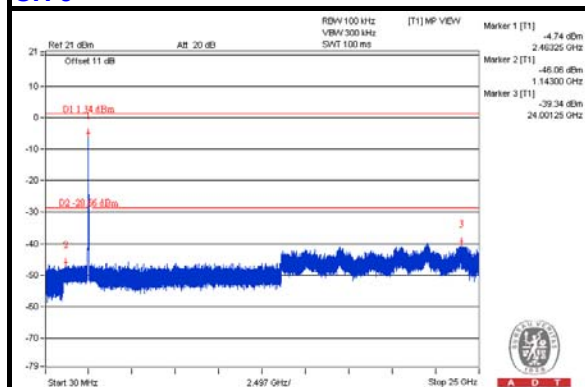
CH 3



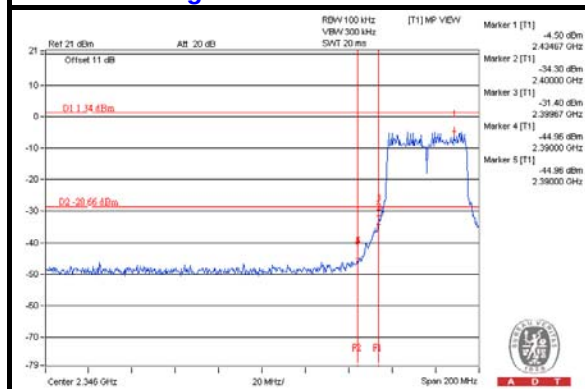
CH 6



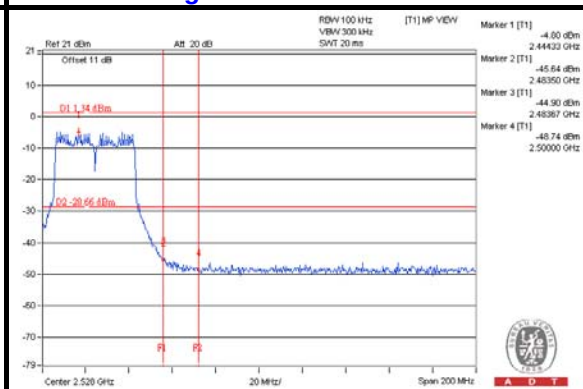
CH 9



CH 3 Band edge

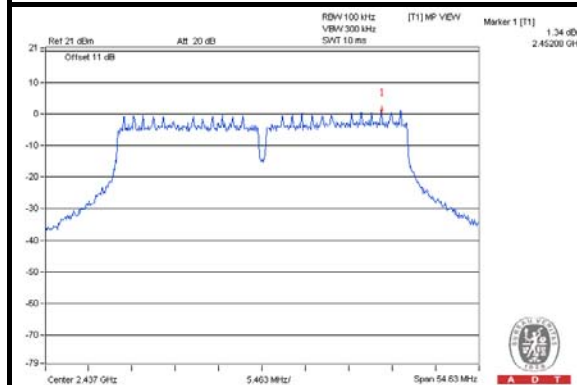


CH 9 Band edge

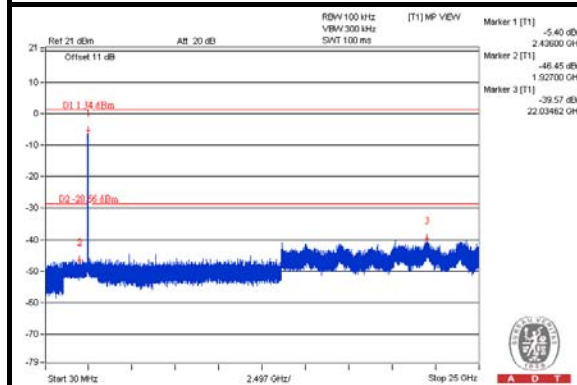


CHAIN 1

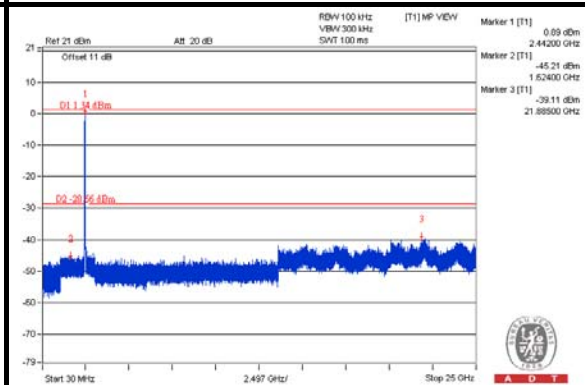
Reference Level



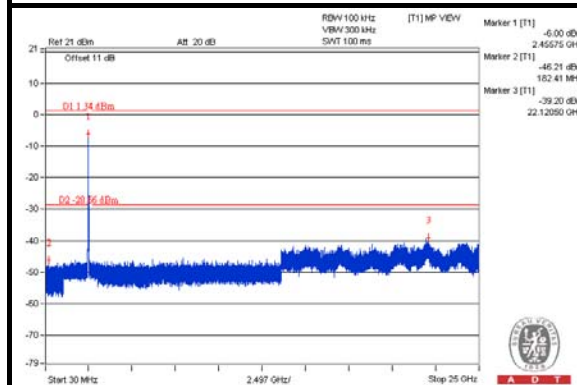
CH 3



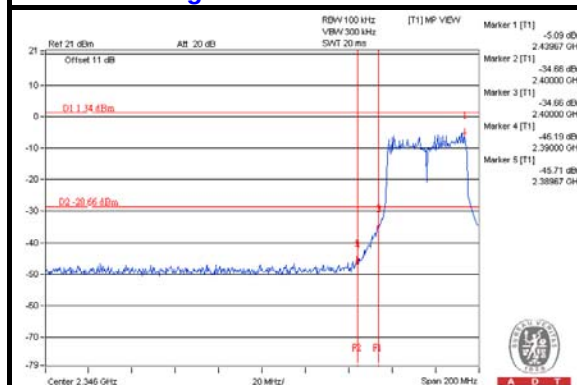
CH 6



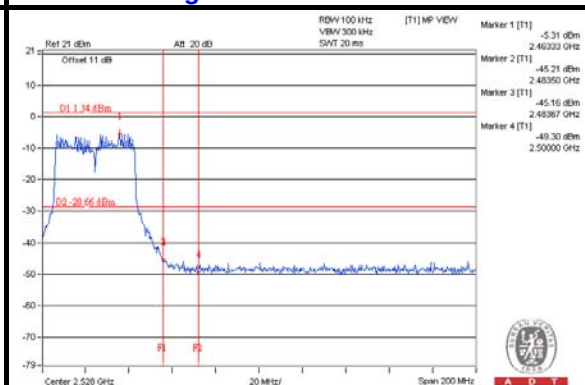
CH 9



CH 3 Band edge

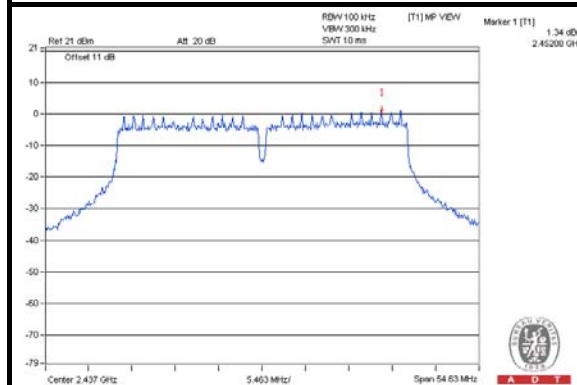


CH 9 Band edge

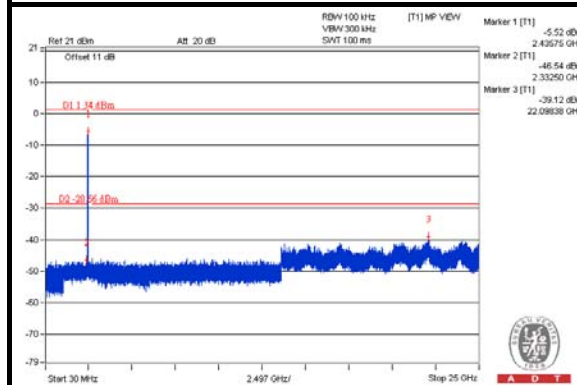


CHAIN 2

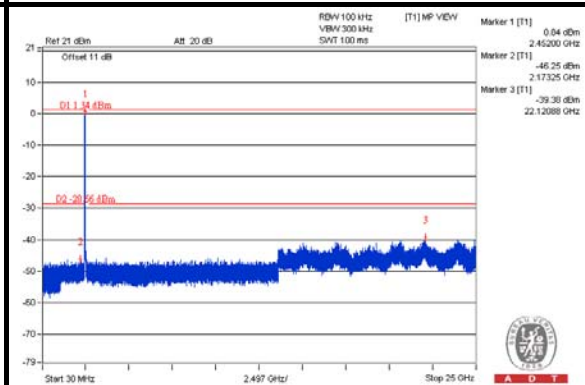
Reference Level



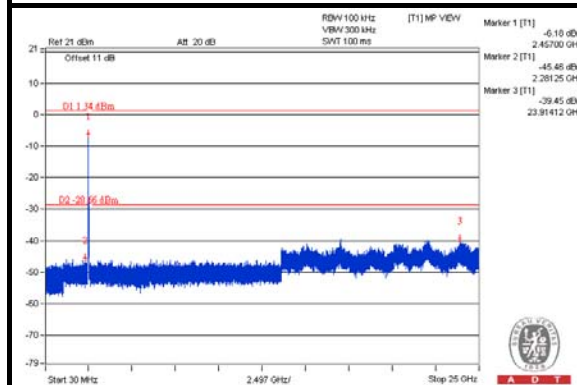
CH 3



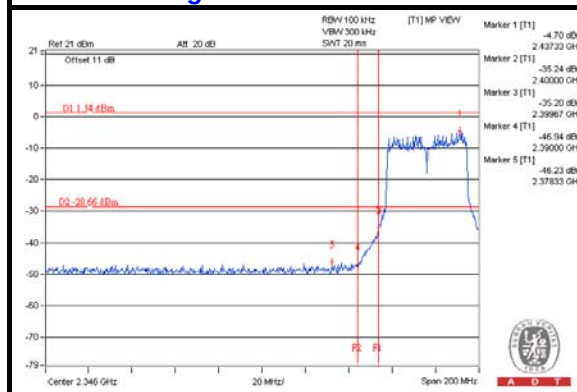
CH 6



CH 9



CH 3 Band edge



CH 9 Band edge

