

联盛德

W800 WLAN射频指标测试

测试条件：常温常压
测试设备：Litepoint IQNXXN
测试样品：W800开发板

1、TX power (Transmit power levels)

发射功率

单位：dBm

	Mode	Rate (Mbps)	Ch 1	Ch 7	Ch 13	Spec	增益配置
11B+11G	11b CCK	1	19.3	19.4	19.2	18±2	0x17
		2M	19.3	19.4	19.2	18±2	0x17
		5.5	19.5	19.7	19.4	18±2	0x17
		11	19.6	19.7	19.5	18±2	0x17
	11g OFDM	6	16.4	16.6	16.4	17±2	0x2C
		9	16.5	16.6	16.4	17±2	0x2C
		12	16.4	16.6	16.4	17±2	0x2C
		18	16.5	16.6	16.5	17±2	0x2C
		24	16.5	16.7	16.5	17±2	0x2C
		36	16.5	16.7	16.5	17±2	0x2C
		48	16.6	17	16.5	17±2	0x2C
		54	15.9	16.1	15.9	16±2	0x2A
11n	20M	MCS0	16.5	16.7	16.5	17±2	0x2C
		MCS1	16.5	16.6	16.5	17±2	0x2C
		MCS2	16.8	17	16.9	17±2	0x2C
		MCS3	16.8	17	16.8	17±2	0x2C
		MCS4	16.8	17	16.8	17±2	0x2C
		MCS5	16.8	17	16.8	17±2	0x2C
		MCS6	16	16.2	16	16±2	0x2A
		MCS7	13.5	13.7	13.5	13±2	0x1D
	40M	MCS0	15	15	14.9	15±2	0x2C
		MCS1	14.9	14.9	14.9	15±2	0x2C
		MCS2	14.9	14.9	14.9	15±2	0x2C
		MCS3	14.9	14.9	14.8	15±2	0x2C
		MCS4	14.9	14.9	14.8	15±2	0x2C
		MCS5	14.9	15	14.9	15±2	0x2C
		MCS6	14.1	14.1	14	14±2	0x2A
		MCS7	10.5	10.6	10.4	11±2	0x1D

2、EVM

单位：dB

	Mode	Rate (Mbps)	Ch 1	Ch 7	Ch 13	Spec(dB)	Spec(R MS%)
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B+G	11b CCK	1	-47	-47	48	≤ -10	
		2	-45	-41	-44	≤ -10	
		5.5	-42	-40	-43	≤ -10	
		11	-38	-40	-43	≤ -10	
	11g OFDM	6	-24.4	-24.3	-24.2	≤ -5	
		9	-24.9	-24.4	-24.9	≤ -8	
		12	-24.5	-24.3	-24.2	≤ -10	
		18	-24.8	-24.8	-25	≤ -13	
		24	-24.6	-24.8	-24.9	≤ -16	
		36	-25.4	-25.5	-24.9	≤ -19	
		48	-25.4	-24.2	-24.9	≤ -22	
		54	-26.8	-25.9	-26.5	≤ -25	
11N	20M	MCS0	-24.2	-24.8	-24.4	≤ -5	
		MCS1	-25.1	-24.7	-24.6	≤ -10	
		MCS2	-24.9	-24	-24	≤ -13	
		MCS3	-24.6	-24.5	-24.4	≤ -16	
		MCS4	-25	-24.5	-24.9	≤ -19	
		MCS5	-24.5	-24.7	-24.8	≤ -22	
		MCS6	-26.3	-25.5	-26.3	≤ -25	
		MCS7	-29	-29.6	-28.7	≤ -28	
	40M	MCS0	-25.1	-25.7	-25.7	≤ -5	
		MCS1	-25.6	-25.2	-25.4	≤ -10	
		MCS2	-25.6	-25.4	-25.8	≤ -13	
		MCS3	-25.6	-26.1	-25.5	≤ -16	
		MCS4	-25.4	-25.1	-25.6	≤ -19	
		MCS5	-26	-25.7	-25.6	≤ -22	
		MCS6	-26.9	-26	-25.8	≤ -25	
		MCS7	-28.1	-29	-28.6	≤ -28	

3、RX sensitivity 接收灵敏度

单位：dBm

Mode	Rate (Mbps)	Ch 1	Ch 7	Ch 13	Spec	Result
11b CCK	1	-96	-96	-96	< -76	
	2	-91	-91	-91	< -76	
	5.5	-90	-90	-90	< -76	
	11	-87	-86	-86	< -76	
11g OFDM	6	-90	-90	-90	< -82	
	9	-90	-90	-89	< -81	
	12	-87	-87	-87	< -79	
	18	-86	-85	-86	< -77	
	24	-82	-81	-82	< -74	
	36	-79	-79	-79	< -70	
	48	-74	-74	-74	< -66	

	54	-73	-73	-73	<-65	
11n 20M	MCS0 6.5/7.2	-90	-90	-89	<-80	
	MCS1	-86	-86	-86	<-77	
	MCS2	-84	-84	-84	<-75	
	MCS3	-81	-81	-82	<-72	
	MCS4 39/43.3	-82	-81	-81	<-68	
	MCS5	-74	-74	-74	<-64	
	MCS6	-73	-72	-72	<-63	
	MCS7 65/72.2	-71	-70	-71	<-62	
11n 40M	MCS0 6.5/7.2	-87	-87	-87	<-77	
	MCS1	-83	-83	-83	<-74	
	MCS2	-81	-81	-82	<-72	
	MCS3	-78	-78	-78	<-69	
	MCS4 39/43.3	-75	-75	-75	<-65	
	MCS5	-75	-75	-75	<-61	
	MCS6	-68	-69	-69	<-60	
	MCS7 65/72.2	-67	-67	-68	<-59	

4、 Receiver maximum input level 接收机最大输入电平

单位:dBm

	Rate (Mbps)	Ch 1	Ch 7	Ch 13	Spec	Result
B+G	11	-5	-5	-5	-10	
	54	-5	-5	-5	-15	
N	MCS0	-5	-5	-5	-15	
	MCS7	-5	-5	-5	-15	

5、 Transmit center frequency tolerance

中心频率容限

单位 : ppm

	Rate (Mbps)	Ch 1	Ch 7	Ch 13	Spec	Result
B+G	11	0.6	-0.2	-0.6	±20	
	54	-1.6	-2.1	-2.3	±20	
	MCS0	-1.7	-2.1	-2.4	±25	
N	MCS7	-1.9	-2.2	-2.4	±25	

6、 power on/off ramp 802.11b

上升时间/下降时间

单位 : us

	channel	Rate (Mbps)	on	off	spec	Result
B	1	11	PASS	PASS	<2us	
	7	11	PASS	PASS	<2us	
	13	11	PASS	PASS	<2us	

7、 Transmit Spectrum Mask 频谱模板

在模板内

B+G	Mode	Rate (Mbps)	Ch 1	Ch 7	Ch 13	spec	Result
	11b	1	OK	OK	OK	模板内	
	11g	6	OK	OK	OK	模板内	
N	20M	MCS0	OK	OK	OK	模板内	
	40M	MCS0	OK	OK	OK	模板内	

8、 RF carrier suppression 载波抑制

B	Rate (Mbps)	Ch 1	Ch 7	Ch 13	Spec	Result
	1	PASS	PASS	PASS	>15dB	
	11	PASS	PASS	PASS	>15dB	

9、 Transmitter spectral flatness 频谱平坦度

G	Rate (Mbps)	Ch 1	Ch 7	Ch 13	Spec	Result
	54				范围内	
N	MCS0	OK	OK	OK	subcarriers($\pm 16 \sim \pm 1$) ± 2 dB subcarriers($\pm 28 \sim \pm 17$) - 4~2dB	
	MCS7	OK	OK	OK	subcarriers($\pm 16 \sim \pm 1$) ± 2 dB subcarriers($\pm 28 \sim \pm 17$) - 4~2dB	

**10、 谐波
11b**

Harmonic 谐波		Rate (Mbps)	Ch 1	Ch 7	Ch 13	Spec
	Spurious Emissions & Harmonics 30MHz - 1GHz	1				-36
			-61	-61	-61	-36
						-36
		11				-36
			-61	-61	-61	-36
						-36

TX	Spurious Emissions & Harmonics 1GHz - 12.75GHz	LO	1				-32
							-32
		2nd har		-50	-50	-49	-32
		3rd har					-32
		4th har					-32
		5th har					-32
		6th har					-32
		LO	11				-32
							-32
		2nd har		-49	-49	-49	-32
		3rd har					-32
		4th har					-32
		5th har					-32
		6th har					-32
RX	Radio receiver spurious emission 30M ~ 1G	1					-57
			-61	-61	-61		-57
		11					-57
			-61	-61	-61		-57
							-57
	Radio receiver spurious emission 1G ~ 12.75G	1					-47
			-51	-51	-51		-47
		11					-47
			-51	-51	-51		-47
							-47

11G

Harmonic 谐波			Rate (Mbps)	Ch 1	Ch 7	Ch 13	Spec
TX	Spurious Emissions & Harmonics 30MHz - 1GHz	6					-36
			-61	-61	-61		-36
							-36
		54					-36
			-61	-61	-61		-36
							-36
	Spurious Emissions & Harmonics 1GHz -	6	LO				-32
							-32
			2nd har	-51	-51	-51	-32
			3rd har				-32
			4th har				-32
			5th har				-32
			6th har				-32

	12.75GHz	LO	54				-32
							-32
		2nd har		-51	-51	-51	-32
		3rd har					-32
		4th har					-32
		5th har					-32
		6th har					-32
RX	Radio receiver spurious emission 30M ~ 1G		6				-57
				-61	-61	-61	-57
							-57
			54				-57
				-61	-61	-61	-57
							-57
	Radio receiver spurious emission 1G ~ 12.75G		6				-47
				-51	-51	-51	-47
							-47
			54				-47
				-51	-51	-51	-47
							-47

11N

Harmonic 谐波			Rate (Mbps)	Ch 1	Ch 7	Ch 13	Spec
TX	Spurious Emissions & Harmonics 30MHz - 1GHz		MCS0				-36
				-61	-61	-61	-36
							-36
			MCS7				-36
				-61	-61	-61	-36
							-36
	Spurious Emissions & Harmonics 1GHz - 12.75GHz	LO 3666.384M HZ	MCS0				-32
							-32
		2nd har		-51	-51	-51	-32
		3rd har					-32
		4th har					-32
		5th har					-32
		6th har					-32
		LO	MCS7				-32
							-32
		2nd har		-51	-51	-51	-32
		3rd har					-32
		4th har					-32

		5th har					-32
		6th har					-32
RX	Radio receiver spurious emission 30M ~ 1G	MCS0					-57
			-61	-61	-61		-57
							-57
		MCS7					-57
			-61	-61	-61		-57
							-57
	Radio receiver spurious emission 1G ~ 12.75G	MCS0					-47
			-51	-51	-51		-47
							-47
		MCS7					-47
			-51	-51	-51		-47
							-47

备注：

TX测试maxhold BW=100k vbw=300K@<1G

TX测试Maxhold BW=1M vbw=3M@1G<RF<12.75G

在上述条件下测试，所有的杂散信号基本上都低于仪器底噪

上述值基本上是记录仪器底噪值

仪器最高频率受限，谐波只测试二次谐波