

Table 4-10: Summary of Reported WLAN Chipset Performance

Vendor	Intersil – Virata	Atheros	Broadcom	Broadcom	Resonext	Marvell	Athens	AMD	Thomson
Part # (s)	Prism 2	? 2002	BCM2050, 4306	BCM 2060, 4306	Unknown	Unknown	Unknown	Unknown	Unknown
Protocols supported	802.11 classic, b	802.11a	802.11b,g	802.11a	802.11a	802.11b	802.11a	802.11b	802.11a
Chips in radio	5?	1	1	1	1	1	1	1	1
Chips in MAC/ baseband	2?	1	1	1	1	1	1	1	1
Radio chip area	?	22 mm ²	11.7 mm ²	11.7 mm ²	13 mm ²	16 mm ²	18.5 mm ²	10 mm ²	17 mm ²
Architecture	Superhet	Superhet	Direct conversion	Direct conversion	Direct conversion	Superhet	Direct conversion	Direct conversion	Superhet dual conv
Technology	0.35 μ m SiGe	0.25 μ m CMOS	0.18 μ m CMOS	0.18 μ m CMOS	0.18 μ m CMOS	0.25 μ m CMOS	0.18 μ m CMOS	0.25 μ m CMOS	0.5 μ m SiGe
IF (MHz)	BICMOS	1000							BICMOS
TX P1dB		22 dBm		19 dBm			0 dBm		1225, 60
TX OIP3			18 dBm		15 dBm				15 dBm
TX P (CCK)			5 dBm			20 dBm			
TX P (OFDM)		18 dBm	5 dBm	15 dBm	5 dBm			0 dBm	
TX EVM			-27 dB @ 54 Mbps		-28 dB @ 54 Mbps				
RX NF		8 dB	4 dB	4 dB	7 dB		5.5 dB	5 dB	5 dB
RX IPI dB		-8.5 dBm					-20 dBm		
(max gain)									
RX IIP3 (max gain)			-16 dBm		-18 dBm	-10 dBm	-17 dBm	-8.5 dBm	
RX sensitivity, lowest rate			-97 dBm @ 1 Mbps	-94 dBm @ 6 Mbps		-95 dBm @ 1 Mbps		-96 dBm @ 1 Mbps	
Phase noise		-112 dBc/Hz @ 1 MHz		-100 dBc/Hz @ 30 KHz	-110 dBc/Hz @ 1 MHz	-110 dBc/Hz @ 1 MHz	-115 dBc/Hz @ 1 MHz	-111 dBc/Hz @ 1 MHz	-88 dBc/Hz @ 10 KHz
Integrated phase noise					1.5° 10 KHz to 10 MHz		-37 dBc 1 KHz-10 MHz (1.6°?)	1 b	
DAC resolution		8 b	8 b	8 b		9 b 88 Msps			8 b 160 Msps
ADC resolution		8 b	8 b	8 b		6 b 44 Msps			8 b 80 Msps
DC power: TX		0.8 W	144 mW	380 mW	138 mW	1250 mW	302 mW	290 mW	920 mW
DC power: RX		0.4 W	200 mW	150 mW	171 mW	350 mW	248 mW	322 mW	200 mW
Reference	Published datasheets	Su et al. ISSCC 2002 5.4	Trachewsky et al. HotChips 2003	Trachewsky et al. HotChips 2003	Zhang et al. ISSCC 2003 paper 20.3	Chien et al. ISSCC 2003 paper 20.5	Bouras et al. ISSCC 2003 paper 20.2	Khige et al. ISSCC 2003 paper 20.6	Schwanenberger et al. ISSCC 2003 paper 20.1