



APPENDIX **D**

Channels, Power Levels, and Antenna Gains

This appendix lists the IEEE 802.11a, b, and g channels supported by the world's regulatory domains as well as the maximum power levels and antenna gains allowed per data rate.

The following topics are covered in this appendix:

- [Channels, page D-2](#)
- [Maximum Power Levels and Antenna Gains, page D-4](#)

Channels

IEEE 802.11a

The channel identifiers, channel center frequencies, and regulatory domains of each IEEE 802.11a 20-MHz-wide channel are shown in [Table D-1](#).

Table D-1 Channels for IEEE 802.11a

Channel Identifier	Frequency (in MHz)	Regulatory Domains				
		America (-A)	EMEA (-E)	Japan (-J)	Japan (-P)	Rest of World (-W)
34	5170	—	—	X	X	—
36	5180	X	X	—	X	X
38	5190	—	—	X	X	—
40	5200	X	X	—	X	X
42	5210	—	—	X	X	—
44	5220	X	X	—	X	X
46	5230	—	—	X	X	—
48	5240	X	X	—	X	X
52	5260	X	X	—	X	X
56	5280	X	X	—	X	X
60	5300	X	X	—	X	X
64	5320	X	X	—	X	X
100	5500	X	X	—	—	X
104	5520	X	X	—	—	X
108	5540	X	X	—	—	X
112	5560	X	X	—	—	X
116	5580	X	X	—	—	X
120	5600	X	X	—	—	X
124	5620	X	X	—	—	X
128	5640	X	X	—	—	X
132	5660	X	X	—	—	X
136	5680	X	X	—	—	X
140	5700	X	X	—	—	X
149	5745	X	—	—	—	X
153	5765	X	—	—	—	X
157	5785	X	—	—	—	X
161	5805	X	—	—	—	X

**Note**

All channel sets are restricted to indoor usage except America (-A), which allows for indoor and outdoor use on channels 52 through 161 in the United States.

**Note**

The Japan (-J) channels apply only to AIR-CB21AG-J-K9 and AIR-PI21AG-J-K9 client adapters, and the Japan (-P) channels apply only to AIR-CB21AG-P-K9 and AIR-PI21AG-P-K9 client adapters.

IEEE 802.11b/g

The channel identifiers, channel center frequencies, and regulatory domains of each IEEE 802.11b/g 22-MHz-wide channel are shown in [Table D-2](#).

Table D-2 Channels for IEEE 802.11b/g

Channel Identifier	Frequency (in MHz)	Regulatory Domains			
		America (-A)	EMEA (-E)	Japan (-J)	Rest of World (-W)
1	2412	X	X	X	X
2	2417	X	X	X	X
3	2422	X	X	X	X
4	2427	X	X	X	X
5	2432	X	X	X	X
6	2437	X	X	X	X
7	2442	X	X	X	X
8	2447	X	X	X	X
9	2452	X	X	X	X
10	2457	X	X	X	X
11	2462	X	X	X	X
12	2467	–	X	X	X
13	2472	–	X	X	X
14	2484	–	–	X	–

**Note**

Mexico is included in the Rest of World regulatory domain; however, channels 1 through 8 are for indoor use only while channels 9 through 11 can be used indoors and outdoors. Users are responsible for ensuring that the channel set configuration is in compliance with the regulatory standards of Mexico.

**Note**

In Japan, channel 14 is not supported for 802.11g mode.

Maximum Power Levels and Antenna Gains

IEEE 802.11a

An improper combination of power level and antenna gain can result in equivalent isotropic radiated power (EIRP) above the amount allowed per regulatory domain. [Table D-3](#) indicates the maximum EIRP supported for all regulatory domains for each 5 GHz IEEE 802.11a data rate.

Table D-3 Maximum EIRP for IEEE 802.11a

Data Rate	Maximum EIRP for PC-Cardbus Card with 0-dBi Antenna Gain and PCI Card with 1-dBi Antenna Gain	
	mW	dBm
6 Mbps	40	16
9 Mbps	40	16
12 Mbps	40	16
18 Mbps	40	16
24 Mbps	40	16
36 Mbps	25.1	14
48 Mbps	20	13
54 Mbps	20	13

IEEE 802.11b

An improper combination of power level and antenna gain can result in equivalent isotropic radiated power (EIRP) above the amount allowed per regulatory domain. [Table D-4](#) indicates the maximum EIRP supported for all regulatory domains for each 2.4 GHz IEEE 802.11b data rate.

Table D-4 Maximum EIRP for IEEE 802.11b

Data Rate	Maximum EIRP for PC-Cardbus Card with 0-dBi Antenna Gain and PCI Card with 1-dBi Antenna Gain	
	mW	dBm
1 Mbps	100	20
2 Mbps	100	20
5.5 Mbps	100	20
11 Mbps	100	20

IEEE 802.11g

An improper combination of power level and antenna gain can result in equivalent isotropic radiated power (EIRP) above the amount allowed per regulatory domain. [Table D-5](#) indicates the maximum EIRP supported for all regulatory domains for each 2.4 GHz IEEE 802.11g data rate.

Table D-5 Maximum EIRP for IEEE 802.11g

Data Rate	Maximum EIRP for PC-Cardbus Card with 0-dBi Antenna Gain and PCI Card with 1-dBi Antenna Gain	
	mW	dBm
6 Mbps	50	17
9 Mbps	50	17
12 Mbps	50	17
18 Mbps	50	17
24 Mbps	50	17
36 Mbps	40	16
48 Mbps	31.6	15
54 Mbps	20	13

