

IEEE 802.11 WLAN Standards

	802.11	802.11b	802.11a	802.11g	802.11n	802.11ad	802.11ac	802.11af	802.11ah
Year	1997	1999	1999	2003	2009	2012	2013	-	-
Max Data Rate	2 Mb/s	11 Mb/s	54 Mb/s	54 Mb/s	600 Mb/s	6.76 Gb/s	6.93 Gb/s	26.7 Mb/s	40 Mb/s
Freq Band	2.4 GHz	2.4 GHz	5 GHz	2.4 GHz	2.4GHz, 5 GHz	60 GHz	5 GHz	54-790 MHz	900 MHz
Modulation Schemes & Technologies	DSSS, FHSS	DSSS, CCK	OFDM	DSSS, OFDM	OFDM (+MIMO)	SC, OFDM (TxB)	OFDM (MIMO)	SC, OFDM	SC, OFDM
Modulation Schemes	BPSK to 256QAM	BPSK to 256QAM	BPSK to 256QAM	BPSK to 256QAM	BPSK to 256QAM	BPSK to 256QAM	BPSK to 256QAM	BPSK to 256QAM	BPSK to 256QAM
Range	20m	35m (Indoor) 140m (Outdoor)	35m (Indoor) 120m (Outdoor)	70m (Indoor) 140m (Outdoor)	70m (Indoor) 250m (Outdoor)	10m	35m	1km www.networkwalks.com	1km
Max Tx Power	100mW	100mW	100mW	100mW	100mW	10mW	160mW	100mW	100mW

WLAN Security Standards

	WEP	WPA	WPA2 (802.11i)
Year	1997	2003	2005
Key Distribution	Static	Static, Dynamic	Static, Dynamic
Key Management	-	802.1x, EAP, PSK	802.1x, EAP, PSK
Encryption Type	RC4	RC4/TKIP	AES
User/Device Auth	No/YES	YES/YES	YES/YES

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WLAN Signal Deteriorations

Interference

- ✓ Co-Channel Interference
- ✓ Neighboring Channel Interference, Non-802.11 Interference

Losses

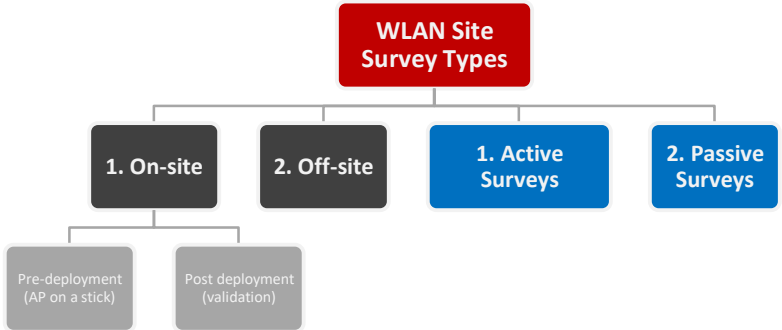
- ✓ Free Space Path Loss

Physical Objects Deteriorations:

- ✓ Reflection, Absorption, Scattering
- ✓ Refraction, Diffraction, Fresnel Zones



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