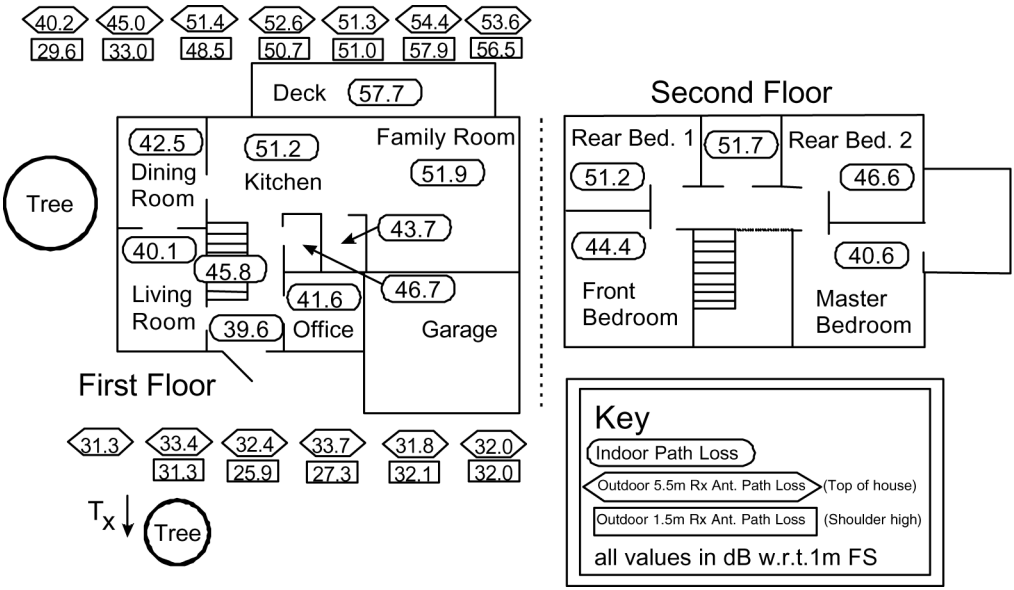

Figure 2.16 Measured values of path loss using a street-mounted lamp-post transmitter at 5.8 GHz, for various types of customer premise antenna [from [Dur98], ©IEEE].

located on the bottom left of Figure 2.16. It can be seen that the signal level in the kitchen (51.2 dB loss) is 11.5 dB weaker than the signal level at the front door (39.6 dB), and the signal on the back deck is 18.1 dB weaker than the signal level at the front door.

Knowing the specific signal loss values throughout a home or neighborhood is vital for determining the coverage, capacity, and cost of a contemplated system. Work in [Dur98], [Mor00], [Hen01], and [Rap00] shows definitively that extremely accurate predictions of coverage, WLAN end-user performance, infrastructure cost, and overall network capacity can be found easily and directly by using just a small amount of site-specific blue print information [Dur98].

2.5 Bluetooth and Personal Area Networks (PANs)

Given the revolutionary strides that wireless technology has made during the past two decades, electronics manufacturers recently realized there is huge consumer appreciation for "removing the wire." The ability to replace the cumbersome cords that connect devices to one another (such as printer cables, headphone cables, wires that run from a personal computer to a mouse) with an invisible, low power short-range wireless connection, would provide convenience and flexibility. Furthermore, wireless connectivity would allow the ability to move equipment throughout an office, and would allow collaborative communication between individuals, their appliances, and their environment.