Description of Caterpillar p/n 239-9955 (WiFi Comm Adapter)

The Caterpillar 239-9955, commonly referred to as the WiFi, or Wireless Comm Adapter (WCA) is an off-board device intended to facilitate communications between off-board diagnostic tools (such as Electronic Technician (ET)), and Caterpillar Electronic Control Modules (ECMs) installed on earthmoving and construction equipment and engines.

The off-board tools reside on a service technician's laptop computer. For many years the service technician has used a "wired" Communications Adapter to connect his computer to the ECMs to perform troubleshooting, check on the health of the system, monitor data (such as engine speed, oil pressure, etc.), or flash new software. Since Caterpillar ECMs typically support at least two datalink formats on each control (one for interfacing with generic troubleshooting tools and industry-standard components, and one for proprietary communications with other Cat ECMs and diagnostic tools), and these are different for over-the-road truck engines compared to earthmoving machines, the Communications Adapter had the ability to translate messages to and from a total of three datalink formats. These are CDL (Cat Data Link), J1939, and ATA (also known as SAE J1708).

The WCA performs this exact same function in allowing a laptop computer to communicate with Caterpillar ECMs, but the "wired" connection to the Service Port is now replaced with an 802.11 wireless connection. This allows the service technician more flexibility and gives him more options.

The 802.11 format is well-suited for this application because the max. bandwidth (max. 11 Mb/s) is much greater than the fastest of the three datalinks (J1939 is 250Kb/s), and it has a suitable communications range (1,000 ft. max.).

The WCA functions as a slave to both the ECM, and the 802.11 connection in that it only translates messages between the two, it does not initiate any communications activity, nor any other tasks.