

Picking a cellular modem for out-of-band access with Uplogix

Uplogix offers multiple modem options for out-of-band over cellular. All Uplogix cellular modems are modular cards, allowing you to choose the out-of-band option type for each deployment. Here are some considerations for choosing your cellular options.

LTE Modem Types

CAT-4 LTE Modems

Similar to what you'd find in your phone, these modems offer high download (150 Mbps) and upload (50 Mbps) speeds. The benefits of higher bandwidth are the ability to move OS and configuration files more rapidly, as well as using the WAN Traffic Failover (WTF) functionality in Uplogix that utilizes the out-of-band modem to move essential network traffic when the primary network is down.

Uplogix has a CAT-4 LTE Verizon/AT&T combo modem, a version for the Sprint network and a EU/UK/AUS/NZ network model.

CAT-M1 LTE Modems

These modems utilize the low end of the LTE spectrum for longer range and deeper signal penetration. Standard LTE modems can struggle with in-building or underground deployments requiring remote antenna placement. CAT-M1 modems are designed to overcome these limitations while moving traffic at a lower maximum download rate of 300 Kbps and uploads at 100 Kbps. CAT-M1 modems also use less power, but as a module in the Uplogix appliance, this isn't a real consideration.

Uplogix offers a CAT-M1 LTE combo modem for Verizon/AT&T.

ABOUT MODEM SPEED FOR OUT-OF-BAND

Most traffic, including the periodic "heartbeat" from an Uplogix appliance in the field to the Uplogix Control Center requires very little data.

Running the command line interface over an out-of-band link also requires limited data. The CAT-M1 speed resembles a dial-up IP (53K) connection and uses half-duplex communications in most carriers. It also is difficult to move large files over CAT-M1.

CAT-4 resembles ethernet attached speeds and is a superior interactive experience. Still, Uplogix deploys in highly remote locations (think the energy industry and defense) with a dial-up Iridium satellite link which operates at just 2,400 bps, so slower speeds are still effective.

The choice of CAT-4 or CAT-M1 comes down to convenience of deployment and signal reliability vs. speed and use of WTF functionality. Both run over the existing LTE networks.

	CAT-4	CAT-M1
Max System Bandwidth	20 MHz	1.4 MHz
Download Peak Rate	150 Mbps	300 Kbps
Uplink Peak Rate	50 Mbps	100 Kbps
Duplex	Full Duplex	Half Duplex
Number of Antennas	2	1
Transmit Power (UE)	23 dBm	20 dBm

DEPLOYMENT & SIGNAL RELIABILITY

Uplogix modems include a standard magnetic mount antenna with cable. This allows you to place the antenna at a optimum location for signal strength. Alternate antennas can also be used including high-gain omnidirectional and directional YAGI antennas that can be pointed at the most accessible cell tower.

The benefits of using the faster modems with a strong signal are the higher bandwidths for moving files as well as failover traffic. With the CAT-M1 modems, the reliability of getting a good signal, even in a more obstructed deployment, is more likely. This can make standardization of deployments more possible because there won't be as many issues around signal strength and antenna placement.