



Small Form Factor Antenna Enables Seamless Wi-Fi on Tampa Bay Area Buses

Executive Summary

Client:

UDT / Hillsborough Area Regional Transit Authority (HART)

Client Challenge:

Offer high-speed Wi-Fi on the buses to enable riders to use their tablets, phones and laptops for work or school while commuting.

Product Solution:

Micro Omni Wi-Fi Antenna

TESSCO No. 520175

Ventev's TerraWave Dual Band Micro Omni Wi-Fi Antenna includes three dual-band Wi-Fi pigtailed and RPTNC connectors. The antenna is an ideal partner for three connector dual-band Wi-Fi Access Points where low profile and/or aesthetics is a major deployment consideration.

- Ensures seamless, high speed Wi-Fi
- Small form factor allows inconspicuous installation
- Dual band for improved user experience and fast data throughput
- Robust construction withstands harsh elements and bus vibrations

ALSO AVAILABLE:

Micro Omni Wi-Fi Antenna with four RPTNC leads, TESSCO No. 539824



Hillsborough Area Regional Transit Authority (HART) is the mass transit bus system that serves the Tampa, St. Petersburg and Clearwater areas of Florida. A large percentage of the nearly 50,000 bus riders each day are students attending area colleges. In a strategic initiative to increase ridership, HART elected to offer free, high-speed Wi-Fi on the buses to enable riders to use their tablets, phones and laptops for work or school while commuting. By offering their riders greater productivity while commuting, HART anticipated that riding the bus would gain a significant advantage over commuting by car.

United Data Technologies, a leading provider of technology solutions, was selected by HART to install the Wi-Fi. Tony Best, director of Engineering, and Winston Laing, wireless engineer with UDT worked closely with Gabriel Quinones, director of IT for HART to establish a plan to provide the Wi-Fi coverage and capacity needed on the buses.

“Enabling mobile wireless, in essence making the bus a rolling hotspot, allows riders to have a remote office while commuting,” says Best. “Users have the ability to access the internet, engage in WebEx meetings and participate in any other Wi-Fi enabled activities while riding the bus.”

An additional objective for HART was to connect the buses to the central transit terminal to allow download of data such as bus maintenance statistics to determine the health of the buses, as well as security surveillance video of passenger activity, which is recorded daily on every bus.

UDT designed the wireless network to provide both LTE and Wi-Fi connectivity using the Cisco 819 integrated services router. The Wi-Fi antenna was placed on the exterior roof to enable internal passenger connections and external network connections; propagation through the roof is possible since the bus roofs are not made of metal. “Initially, we spec'd in a traditional omni antenna,” says Best. “But it sat too high on the bus and there was a risk of it being damaged when traveling under low hanging trees and overpasses.”

Fortunately, Winston Laing had recently learned about Ventev's new, 2.4/5 GHz Micro Omni Wi-Fi Antenna at a trade show. The Micro Omni Wi-Fi Antenna is similar in size to a hockey puck, and measures just 3.5 inches in diameter and 1.5 inches high, allowing it to sit almost flush with the top of the bus. The antenna's 2.4 GHz frequency ensured that passengers stayed connected throughout their commute, while the 5 GHz frequency allowed faster data throughput to offload the security surveillance video at the UDT/HART terminal. The antenna's robust construction allows it to withstand harsh elements and the constant motion of the bus.

After testing a small sample of the antennas, the new Micro Omni Wi-Fi Antenna was selected for the initial rollout of 187 buses. “We launched the new Wi-Fi enabled buses in early April, and they are working out quite well,” says Best. “We expect to deploy on another 100 buses in the next phase.”

In fact, the solution has been so successful, UDT is in talks with several other municipalities that are also interested in enabling Wi-Fi on their buses.