



Cel-Fi QUATRA Helps Major Daily News Reporters Untether from Desks with Reliable Cellular Coverage



A major daily newspaper relies on its corporate AT&T subscription to ensure staff are connected while working in its Washington D.C. newsroom. However, reporters and other employees on the AT&T network experienced spotty coverage and dropped calls when using their cellphones inside the eight-story building that spans a city block and houses the newspaper's 350,000 sq. ft. headquarters.

ABOUT THE PROBLEM

"Reporters were actually walking outside the building to take their cell calls, or were stuck near their desks waiting for important calls to come in, which hurt productivity," says Dan Connelly, President of Rockville, MD-based Atlantic Technology Group, a provider of cellular based solutions for the middleprise. "They got a great signal outside, but the reception inside the building was really lousy."

A multitude of factors – mainly its location in the heart of Washington D.C. and its building materials (concrete and glass) – were blocking AT&T cellular signals inside the building. The passive DAS that was already in place in the office building did not improve the poor AT&T signal indoors.'

THE CHALLENGES: Media & Communications

- Major daily newspaper with a 350,000 ft², eight-story office building
- Has existing passive DAS, but can't get AT&T cellular coverage inside
- Poor cellular signal inside the building hinders reporters' productivity and mobility
- Busy downtown location and building materials block AT&T cellular signal

SOLUTION

To resolve the problem, Atlantic Technology Group proposed Cel-Fi QUATRA, an active DAS hybrid designed to bridge the price-performance gap for in-building wireless coverage in the middleprise. Unlike analog boosters and passive DAS technology, QUATRA delivers a cellular signal that is up to 1000x stronger, utilizing CAT 5e cabling and Power over Ethernet, with no signal attenuation right to the perimeter of a building.

"It's a revolutionary technology that's definitely shaking up the in-building cellular amplification game," says Keegan Harrington, project lead at Atlantic Technology Group.

PROOF OF CONCEPT EXPANDS CELLULAR COVERAGE

Before implementing Cel-Fi QUATRA throughout all eight floors, Atlantic Technology Group met with the client and agreed to set up one floor as a proof of concept using one QUATRA Network Unit (NU), which is the head end of the system, and three remote internal antennas, known as Coverage Units (CU). Based on the initial results, the newspaper agreed to expand the installation to all eight floors.

Since the building is leased, Atlantic Technology Group also reviewed the site survey with the building owner and got their approval for antenna placement on top of the building. "The nice thing about the Nextivity solution is that the antennas are very non-obtrusive. They're relatively small in size, not these big satellite antennas. Building owners are typically pleased with the size," says Harrington.

NOTHING WE COULDN'T WORK THROUGH

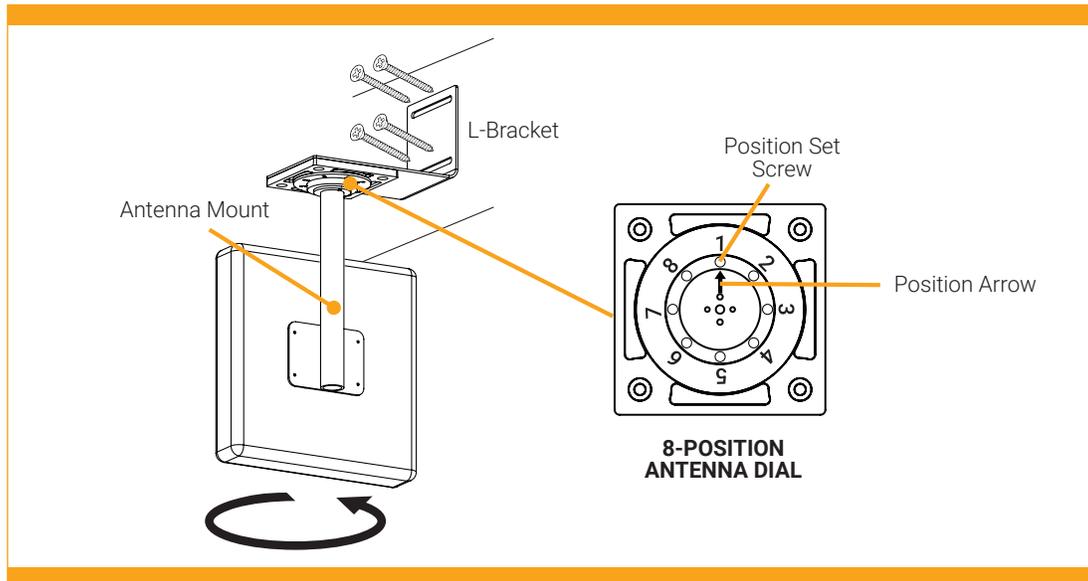
Washington D.C. is a very congested environment with a lot of interference from other cellular traffic. "In the heart of DC, no matter where you are, inside buildings the signal doesn't always give you a good signal to noise ratio," explains Harrington. "It was pretty bad on the roof, and we had to move the antennas many times to get the best signal."



Atlantic Technology Group

- Established in 2002
- Based in Rockville, MD
- Services include mobility applications, wireless devices and lifecycle management
- Customers include Healthcare, Fleet Management, Field Service, Business Continuity and Mobile Office

Harrington explained how they used the installation tools provided with Cel-Fi QUATRA to determine the best positioning of the antennas. “We used the Cel-Fi MIMO antennas, with data and voice on separate ports, and moved the antennas many times to get the best signal. We used Nextivity’s AntennaBoost solution to determine the best direction. Then we went into the individual NUs with Cel-Fi WAVE to see the Signal to Noise ratio and looked at the RSRQ and RSRP, RSSI and SINR to see the gain we were getting. In the end, we had to point the external roof antennas down to get out of the noise area.”



The 8-position dial base enables the antenna to be rotated in 45-degree increments, with real time performance data.

Hard ceilings in the building were another issue encountered by Atlantic Technology Group. This was resolved by putting the Cel-Fi QUATRA CUs in strategic locations, such as lights and access panels. Harrington explains that because QUATRA utilizes Power over Ethernet (PoE) and RF over Ethernet, there was a lot of flexibility on where the coverage units could be placed.

“With PoE it is easier because you don’t have to find a source to light up your coverage unit. Not too many companies have power sources in the ceiling. You would either have to get an electrician out to put in power or put in power cables hanging from the ceiling, which wouldn’t work,” says Harrington. “The client also really liked the way the coverage units look. They look like access points, so blend in well with their existing infrastructure.”

Atlantic Technology Group was also able to use the newspaper’s existing Cat 5 E and Cat 6 runs. “This saved the client money and saved us time. I like working with ethernet cable more than coax – it costs a lot less. It is also thinner, so it doesn’t snag as much if I have to go through holes. It’s also easier to run. The installation would have taken at least an extra week to run the cable if we didn’t use the existing cable. Almost one year after installation, Harrington reports that the client hasn’t called with issues relating to cellular coverage.

“I’ve found if you get the positioning and everything in the system right with Cel-Fi QUATRA, there are no problems thereafter unless an outdoor tower goes down, or multiple towers go down. Then all you have to adjust is the antenna,” concludes Harrington.



CEL-FI
QUATRA

**BEYOND
BETTER
COVERAGE**

- **High-quality solution for the middleprise**
- **Supports multi-carrier 3G/4G/LTE voice and data**
- **Carrier-approved and unconditionally network safe**
- **Can be monitored and managed using Cel-Fi WAVE**