



CASE STUDY

MOBIUS 700-2700MHZ ANTENNA

MP ANTENNAS ACHIEVE COVERAGE INTO LEAD LINED RADIOLOGY LAB

MODEL NO:

08-ANT-0885



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Exact RF Broadcast and Wireless, based in Central New Jersey, is a full-spectrum wireless services company. Whether it be construction of macrocells, P2P terrestrial microwave, or in-building repeater systems, Exact RF has extensive experience in the design, implementation, and maintenance of all wireless communications systems.

Recently, Exact RF teamed up with a major New York City hospital to address concerns they were having with a previously-installed in-building repeater system. The hospital had subpar performance in the areas already covered by the system, and also needed to expand the footprint, all while keeping the system as “stealth” as possible. The building itself presented a challenge for any repeater system; lead-lined walls, miles of pipe and conduit in every floor and ceiling, and postwar solid-concrete construction. Upon completion of a site survey, all four national carriers had almost no (-102dB or worse) signal in the existing coverage area. To make things worse, the proposed expansion area was absolutely devoid of cellular penetration.

Enter MP Antenna. Exact RF had become aware of new Multi-Polarized antenna technology and its success in difficult-to-penetrate locations, and teamed up with MP to test the technology in a real world dynamic. MP Antenna supplied a case of their Mobius antennas for the repair of the existing system, and worked closely with the Exact RF team on the design of the expansion project. Simply by changing the donor antenna to an MP Mobius, the system saw a 15dB improvement! Dropped calls were reduced, and reliability increased. The next step was to replace the indoor antennas. Another 10dB of improvement! Initial tests showed 50 out of 50 connected calls from locations throughout the building. Furthermore, select employees of the hospital were asked to track the signal levels on their handsets for a two-week time period, and at the conclusion of the study period, everyone had reported at least a “two-bar” improvement over the old system. Calls were being completed reliably, and data transmitting and receiving quickly.

The expansion is really the most impressive story. In a facility that had ZERO cellular penetration beforehand, Exact RF utilized a combination of a CSI 51075/C/P BDA and (6) MP Mobius antennas to design and implement a carrier-agnostic repeater system to cover the crucial, 10000+sq. ft. emergency department of the hospital. After the system was up and running, all four major carriers were supported with signal levels reaching an astonishing -52dB. Not one inch of the emergency department was left with less than “four-bar” signal levels. Data throughput was measured at up to 5Mb downstream and 2.25Mb upstream. Ping times were in the 150ms range, a truly incredible improvement. The most astonishing result, though, was achieved when Exact RF technicians were able to stream video on their smartphones from inside the lead-lined radiology department with the door closed. Immediately, the Exact RF team contacted MP antenna looking for an explanation of the impossible. The question posed was: “How is this possible, RF cannot penetrate lead?” The answer provided was quite simple “Can you see the space at the bottom of and around the door? Multi-Polarized signals create a fog like pattern that find paths around the obstructions.”

Both systems have been up and running for three months as of this writing, with not a single complaint from the staff or patrons of the hospital facility. Exact RF looks forward to continuing to partner with MP antenna for every Distributed Antenna System (DAS) they install.