



JMA Wireless ensures cellular connectivity at the world renowned Gemelli Hospital in Rome, Italy.

SOLUTION BRIEF: HEALTHCARE

Enabling Today's High-Tech Healthcare Facilities

OVERVIEW

The increasing mobile communications needs of staff, patients and visitors

Today's healthcare facilities have transformed into high-tech hubs that not only demand robust cellular connectivity in-building, but often across expansive outdoor environments too. A medical center's wireless network is critical for multiple purposes such as enhancing patient care and safety, increasing staff productivity, improving operations, and keeping family and friends connected. To accommodate these various needs healthcare facilities are turning to converged networks. The wireless system must support a wide range of frequencies, any protocol and any modulation scheme as well as be future-proofed. The ultimate goal is to provide strong wireless connectivity in-building and outdoors with an affordable TCO (Total Cost of Ownership).

Solution brief: Healthcare

SITUATION

Many wireless network challenges

Ensuring good wireless coverage on a medical campus is not always an easy feat. First, the buildings are constructed of concrete and steel, and have metal film window tint - materials which impede wireless signals from the surrounding cellular towers. In recent years "low-E" (low emissive) glass has been installed to reduce operating costs and increase indoor comfort by transmitting visible light while controlling the amount of solar heat that enters the facility. However, low-E glass presents another deterrent to powerful in-building wireless coverage. Inside, ubiquitous cellular connectivity is impeded further by leadlined X-ray rooms that act as shields to wireless signals. These sensitive areas in particular present cell phone coverage issues.

Next, a hospital's wireless network must be capable of supporting many different types of mobile communications. Machine-to-machine communications (M2M) along with many telemedicine applications are expanding rapidly.

According to Gartner 80% of wireless networks installed today will be obsolete in 18 months; therefore, it is critical to deploy a network, which is capable of supporting these growing use cases of tomorrow.

Finally, medical centers have turned into expansive campuses that not only require in-building cellular communications, but seamless wireless connectivity must be prevalent across the outdoor environment also. Staff need to stay connected and informed as they travel from building to building.

SOLUTION

A Leading Edge Cellular Communications Solution

JMA Wireless offers an extensive portfolio of innovative solutions that support the demanding, mission-critical wireless connectivity needs of today's medical campuses. Its JMA DAS (Distributed Antenna System), state-of-the-art antennas, and renowned compression connectors cost effectively enhance and protect the integrity of wireless signals in outdoor environments and in-building.

The end-to-end DAS platform from JMA Wireless has been installed in healthcare facilities around the globe to address critical wireless communications. The versatile, modular system supports multiple operators and bands, along with a full range of mobile technologies such as LTE Advanced, UMTS and others.

The first step in deploying a DAS is precise and careful planning concerning the placement of the low and high power Remote Units (RUs). With a single optical fiber the rack mounted Master Unit distributes multiple frequency bands and multiple carriers to each Remote Unit or to several RUs to create coverage redundancy with MIMO (multiple input multiple output). The Master Unit driving the RUs is done by way of an integrated platform and common optical transceivers, sub-racks, power supply and supervision modules. The solution supports the different power level units automatically and brings the proper level to the BTS (Base Transceiver Station).

This equipment can be located conveniently in an onsite IDF (Independent Distribution Facility), which the IT department can access easily. However, the unique elements of the JMA platform design allow for a Centralized DAS (C-DAS) deployment topology too – enabling critical mobile processing equipment

to be offpremise, while robust antenna and amplifier technologies are onsite. This approach preserves valuable facility real estate and enables greater economies of scale.

In addition, JMA Wireless offers the Multiband Spectrum Analyzer (MSA), which is an efficient way for the IT department to remotely monitor and optimize the Quality of Service (QoS) delivered by the JMA DAS components. The MSA addresses uplink and downlink signal quality issues, such as uplink noise level rise and hard-to-detect degrading interferences common in a medical facility. The RF spectrum is measured and recorded for each sector and Remote Unit. Fortunately, performance-degrading interference can be identified quickly with the MSA and costly repeat visits to client facilities can be reduced, resulting in overall cost savings.

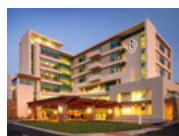
The JMA DAS platform is built with the future in mind, resulting in even further cost savings for a hospital. There is no need to “rip and replace” every time a new technology is introduced or the facility expands. With its transparently adaptable modulation, new technologies can be introduced without the need for additional hardware or configuration changes. Existing fiber can be leveraged too for these newer technologies. The adaptable BTS interface options enable reuse of existing sub-rack designs to support different interface technologies, new sectors or services. Finally, the software configurable DAS tray also easily supports new technologies.

RESULT

A Single Source, A Single System

JMA Wireless is more than just a manufacturer of DAS equipment. The company works with the most knowledgeable system integrators and service providers to ensure the right wireless network is installed to meet a facility's present and future communication needs. In addition, JMA not only manages the technical aspects of a network, but also offers innovative funding alternatives with JMA Capital.

OTHER JMA HEALTHCARE INSTALLATIONS



Gwinnett Medical Center
Duluth, GA
Kaseman



Presbyterian Hospital
Albuquerque,



NM Niguarda Hospital
Milan, Italy

About JMA Wireless

JMA Wireless is the leading global innovator in mobile wireless connectivity solutions that ensure infrastructure reliability, streamline service operations, and maximize wireless performance. Employing powerful, patented innovations their solutions portfolio is proven to lower the cost of operations while ensuring lifetime quality levels in equipment and unrivaled performance for coverage and high-speed mobile data.

JMA Wireless solutions cover macro infrastructure, outdoor and indoor distributed antenna systems and small cell solutions. JMA Wireless corporate headquarters are located in Syracuse, NY, with manufacturing, R&D, and sales operations in over 20 locations worldwide.

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