JMA WIRELESS

# SOLUTION BRIEF: **AIRPORTS**

## Improving the Passenger Experience at Airports with Proven Mobile Connectivity

*Passenger terminal in the International Airport, Vienna, Austria*

# Keeping Travelers Connected on the Fly

Around the globe billions of people engage in air travel every year. According to the International Air Transport Association (IATA) the airlines expect to double the number of passengers by 2034, bringing the total number of travelers to seven billion annually[1]. Airlines as well as airports are seeking ways to improve the experience for these travelers and keep air travel on the upswing. Implementing different technologies is one way to enhance the passenger experience. Airports are dedicating a larger portion of their revenue to technology with the top investments being made in passenger processing (59%), passenger and airport security (50%), and operations (41%). In fact, according to the 2016 SITA survey, 71% of airport CIOs received a larger budget than in 2015[2]. Whether walking through a terminal or sitting at a gate passengers expect mobile connectivity to continue their daily work routine or to stay in touch with family and friends. However, airports can be one of the most challenging environments for enabling wireless communications due to the complex steel and concrete structures with varying ceiling heights, the many competing technologies, and just the sheer number of passengers and moving objects at any given time. Fortunately, there are effective and cost efficient wireless solutions to meet the many needs of today's airports.

### THE SOLUTION PROVIDER - JMA WIRELESS

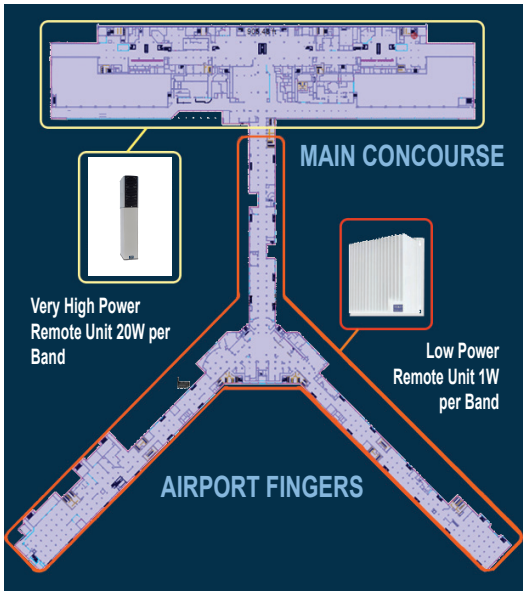
Mobile connectivity innovator, JMA Wireless, enables exceptional wireless coverage with its extensive portfolio of robust solutions. As an industry leader, it offers unique cutting edge connectors and components, RF repeaters and active distributed antenna system (DAS) technology. With over a century of experience and 400 plus patents JMA Wireless is the company of choice for enhancing and protecting the integrity of wireless signals in all types of environments including airports, trains/rail stations, sporting complexes, corporate campuses and many other locations.

[1]International Air Transport Association (IATA) Annual Review 2016

[2]2016 Air Transport Industry Insights - Airport IT Trends Survey by SITA (Société Internationale de Télécommunications Aéronautiques)

# A Flexible and Straightforward Solution with Many Benefits

Even though airports present many challenges to enabling mobile connectivity, the DAS from JMA Wireless meets the capacity and coverage needs at many of the busiest airports in the world. The solution's rack mounted master unit combines different high speed wireless technologies such as LTE, UMTS and others, with multiple bands to serve the various needs of an airport environment. The master unit simultaneously drives throughout the facility and surrounding outdoor areas both high-power and low-power remote units (RU) by way of an integrated platform and common optical transceivers, subracks, power supply and supervision modules. Often times in the gates or fingers of an airport low power units may be used while in the larger open spaces such as check-in, the baggage drop area and parking lots high-power units are installed to provide mobile connectivity. The solution supports the various power level units automatically and brings the proper level to the BTS (base transceiver station). There is no need to balance the gain. It is simply plug and play.




The DAS is a very cost effective solution for airports too because it minimizes the number of fibers that are needed to connect the many buildings and parking lots. This is accomplished by three technologies developed and produced internally by JMA Wireless:

- WDM (Wavelength Division Multiplexing): WDM filters are integrated in optical modules, which allow a single fiber per remote unit be used to support two different wavelengths for uplink and downlink transmissions.
- Point-to-Point Link: With a single fiber up to 16 remote units belonging to a sector and one MIMO (multiple input multiple output) path can be connected. Once the remote building is reached, a star topology is used to connect all RU locations throughout the facility.
- DWDM (Dense Wavelength Division Multiplexing): DWDM mux/demux are integrated in the head-end rack at the BTS hotel and in the remote location to further minimize the number of fibers needed between buildings. With DWDM filters up to four sectors or 64 total remote units can be supported by a single fiber, as compared to the 64 separate fibers often required by the competition.

This type of deployment not only results in reduced cost and complexity, but in better performance as well. Both in the point-to-point modules and in the remote units the DAS solution acts on ad-hoc settings in order to find the optimal trade-off between system noise and robustness (i.e. intermodulation performance).

JMA Wireless' cutting-edge solutions are accompanied by deep technical knowledge and experience. All the components included in the DAS solution are engineered, designed and manufactured in-house. No need to deal with multiple vendors, but with only one partner – JMA Wireless.

### A GLOBAL MARKET LEADER

From Reno to Rome, JMA Wireless has been enabling exceptional mobile connectivity at many airports with its robust portfolio of solutions. Just a few examples of airport deployments are included here.

### About JMA Wireless

*JMA Wireless is the leading global innovator in mobile wireless connectivity solutions that assure 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 Liverpool, NY, with manufacturing, R&D, and sales operations in over 20 locations worldwide. For more information see* ***jmawireless.com***.

| MEMPHIS AIRPORT | BALTIMORE-WASHINGTON INTERNATIONAL AIRPORT | DETROIT METROPOLITAN AIRPORT |
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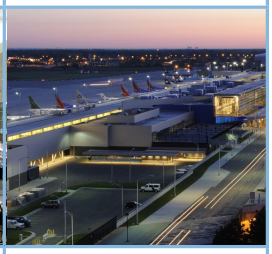
|  |  |  |
| Due to FedEx, it is the busiest cargo airport in the western hemisphere and the second-busiest cargo airport in the world. | Served almost 24 million passengers in 2015. | In 2016 there was an increase of almost one million passengers compared to the previous year. |