

# Unmatched Flexibility, Reduced Operational Costs

## Software Defined Remote Unit is an Industry Game Changer

**The market for distributed antenna systems is growing rapidly. To keep pace with this growth, a flexible solution is needed. It must not only be easy and fast to deploy initially, but to also upgrade and expand due to phased roll-outs.**

### Network Expansion Issues

A DAS covers multiple bands and multiple carriers. However, with today's business model, the venue owner or neutral host is often paying for the DAS. Cellular operators and different frequency bands are only brought onto the system as needed. This type of network deployment is generally cost prohibitive and presents many challenges.

With current traditional solutions, every time a new band or carrier is added to a DAS, each remote unit must be physically opened and upgraded. This means the seal and the integrity of the unit are compromised. Most enclosures can be opened only a limited number of times before the seal is damaged permanently. Every time a remote unit is opened, it is also exposed to the elements – rain, snow, and condensation due to humidity. All these can damage the electronics in the remote unit and compromise its IP66/ NEMA-4X rating. Another factor that can impact the remote unit is exposure to possible chemicals, such as grease, on the installer's hands. These potential issues may affect the sensitive electronics encased in the remote unit, often resulting in latent failures.

Physically upgrading each and every remote unit with additional hardware to allow for new frequency bands or additional carriers is a very costly proposition. It can result in costs upwards of \$1,500 per remote unit per upgrade. In a given year multiple upgrades may be performed at different venues to support more carriers and frequency bands at significant cost and time to the system owner. For these upgrades, certified technicians, at a minimum, are required because the entire system may have to be recommissioned, the new RF simulation must also be verified, and coverage has to be confirmed. Furthermore, a bucket truck is often necessary to reach the remote units as they are often in hard to reach places, and depending upon the remote units' locations, even a police escort may be required.

System uptime is another factor when upgrading remote units. Since each remote unit has to be upgraded individually the system may be down for an extensive period of time. Permission to upgrade the system with the necessary downtime must be sought from the current tenants and an agreement must be reached first. If it is an outdoor DAS, the weather must be clear during the entire time. Downtime can result in significant lost revenue for the venue owner.



Connecting the Mobile World



## The Industry's First Software Defined Remote Unit

JMA Wireless, a company known for its cutting-edge technology, is first to market once again. This time the company has produced the industry's first software defined remote unit (SDRU). Unlike other remote units in the market today, the SDRU is fully integrated, thereby eliminating multiple points of failure while easily maintaining the integrity of its IP66/NEMA-4X rating. There is never a need to open the SDRUs when adding new carriers and/or bands.

The SDRU allows for time and cost savings. There is no need to ship new modules and install them into currently deployed remote units. Instead the SDRUs are upgraded using the Internet. A SDRU panel containing the serial numbers of every remote unit, its power classes and the bands enabled will be available in every deployed SDRU system. With an encryption key provided by the customer service team, each SDRU can be updated easily within seconds, and they can all be upgraded with just a few simple clicks. No downtime, no bucket trucks to reach remote units in distant locations, and no additional cabling or onsite personnel are necessary.

The SDRUs come with any two selectable frequency bands, but four additional bands can be licensed at any time. In addition, the software defined remote units come in two power classes. They are available as 1 watt remote units and 10 watt remote units that can be upgraded to 2 watts and 20 watts, respectively. All band and power management is conducted via the SDRU software panel and can be applied in seconds.

This innovative approach enables neutral hosts / 3rd party operators (3PO) to significantly reduce costs from day one. In fact, it provides a cost reduction of up to 50 percent when compared to a fixed configuration. With the SDRU solution, projects involving only one carrier are now possible because the 3PO can implement a "pay as you grow" model, allowing additional bands and power classes to be enabled when other carriers join the system.

Similar to other solutions in the JMA Wireless TEK0 DAS portfolio, the SDRU is backwards compatible with the company's current products. Since the SDRU is a component of the popular TEK0 DAS solution, it can be added to any existing system, even one with standard remote units deployed in a complex environment.

In addition, the SDRU maintains the JMA Wireless tradition of having the smallest footprint in the industry, making it easy to deploy. Many other competitive offerings are much heavier and cumbersome. The excellent RF performance that JMA wireless is known for is maintained in this new offering. The EVM of less than one percent guarantees that the system will be ready for 256 QAM LTE modulation, if and when needed, while allowing for more traffic or capacity. The highly linear power amplifiers ensure that the DAS is 5G ready and allows for peace of mind with changes in 5G technology.

## About JMA Wireless

JMA Wireless is the leading global innovator in mobile wireless connectivity solutions that ensures infrastructure reliability, streamline service operations, and maximize wireless performance. Employing powerful, patented innovations its 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 visit [jmawireless.com](http://jmawireless.com) or follow JMA Wireless on Twitter at @JMAwireless.

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