



RFS and Blue Danube Systems Announce First Active Passive Antenna (APA)

Combines Massive MIMO mid-band and passive low band

Munich, Germany and Santa Clara, USA - February 21, 2018 - RFS and Blue Danube have demonstrated the first Active Passive Antenna (APA) that combines a 96 element Hybrid Massive MIMO antenna for mid band frequencies (1700-2300 MHz) and a low band passive antenna for low band frequencies (600-900 MHz). Outdoor testing results confirm APA performance is uncompromised by the integration. Several variants have been tested, with gains over 23 dBi gain in the mid band active antenna and 17 dBi in the low band passive antenna. The first commercial system trial will begin in March. The APA supports today's LTE 4G systems and is upgradeable to 5G. The product will be showcased at Mobile World Congress in both the RFS and Blue Danube booths. The APA is contained in one panel and does not increase the site antenna counts. The system provides increased capacity while reducing the OPEX of a multiple antenna solution.

"Wireless networks must address not only future capacity but existing tower top and siting challenges. Massive MIMO offers significant gains in wireless data rates," said Mihai Banu, CTO at Blue Danube. "By combining Massive MIMO with a passive low band we are providing operators a flexible solution for site implementation."

"RFS provides a full range of antenna solutions for the Wireless industry. We are proud to announce the APA as an extension to our product line. APA is a major technical enabler for the evolution of 4G and 5G networks as it simplifies adding and deploying Massive MIMO systems on existing crowded macro sites," said André Doll, CTO at RFS. "RFS will continue to innovate in this integration of passive and active antennas to bring solutions to our customers."

As network demand grows, operators have to rely on acquiring more sites, obtaining additional spectrum and deploying multiple frequency bands. This results in a shift towards complex multiband passive antennas to reduce OPEX and meet zoning and environmental regulations. With the introduction of Massive MIMO active antennas for 4G LTE today and 5G in the future, a new dimension of complexity is added to existing deployments. By integrating Massive MIMO systems with passive antennas into an APA, a number of potential issues can be solved. APA's do not increase the site antenna counts with a minimal size increase to reduce visual impact and wind loading. APA's also help solve some technical challenges faced by Massive MIMO radios such as thermal dissipation and number of RF connections. All of these will ease and reduce site negotiations and its related OPEX and CAPEX.



About RFS

Radio Frequency Systems (RFS) is a global designer and manufacturer of cable, antenna and tower systems, plus active and passive RF conditioning modules, providing total-package solutions for wireless infrastructure.

RFS serves OEMs, distributors, system integrators, operators and installers in the broadcast, wireless communications, land-mobile and microwave market sectors. As an ISO compliant organization with manufacturing and customer service facilities that span the globe, RFS offers cutting-edge engineering capabilities, superior field support and innovative product design. RFS is a leader in wireless infrastructure.

Trademarks

RFS® is a registered trademark of Radio Frequency Systems. All other trademarks are the property of their respective owners.

RFS Participation at Mobile World Congress 2018

RFS participates at Mobile World Congress Barcelona. A range of demos and solutions will be showcased on hospitality stand 2LV24, Hall 2.

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About Blue Danube Systems

Blue Danube Systems is a privately held start-up backed by Sequoia Capital and Silver Lake along with other investors including AT&T. Blue Danube's unique, award-winning technology combines intelligent software and hardware into a Massive MIMO solution that enables a significant increase in network capacity, utilizing existing infrastructure and today's mobile devices. For more information, please visit www.bluedanube.com.

Blue Danube Participation at Mobile World Congress 2018

Blue Danube will have representatives at Mobile World Congress from February 26 through March 1n Barcelona. Blue Danube can be found in Hall 2, hospitality stand 2L10.

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