

# CASE STUDY

## United States Marine Corps



### Fortress Supports Wireless Reach-Back at U.S.M.C. Air Ground Combat Center (29 Palms)

#### Wireless Reach-Back Supports Range Modernization and Transformation Efforts

The Naval Surface Warfare Center, Corona Division was tasked with providing wideband wireless capabilities in support of fixed and mobile users on U.S.M.C. tactical training ranges, enabling them to pass critical information in a dynamic and highly volatile environment. The first installation of the project, known as the Wireless Reach-Back (WRB) program, was at the Marine Corps Air Ground Combat Center (MCAGCC) - 29 Palms, California.

"The aim of the WRB project is to improve ground and air tracking capability on training ranges," said Don Gunnell, Lead Engineer for the Corona Division. "This WRB program provides voice, video and data communications to military personnel on the range – whether on foot or in vehicles – ensuring important information is being relayed during training exercises. WRB will make these exercises safer and more effective."

As part of the project, Fortress teamed with Luxul Wireless, a leading innovator of patented high-performance wireless signal technologies, to enable the wireless signals to transmit over the 4.4 GHz band, which is specifically authorized for federal government users and limits interference that could negatively affect network performance. Fortress' Federal Information Processing Standards (FIPS) validated ES520 Secure Wireless Bridges were combined with Luxul Shock-WAV™ Frequency Translating Amplifiers (FTAs) to provide the secure wireless capability over the alternative spectrum. The Fortress solution was selected because it was able to meet both the distance and AES security requirements for the project.

"ES520s will be placed in National Electrical Manufacturers Association (NEMA) enclosures on towers on five mountain tops and other fixed user locations across the first training range," said Dana Kuntz, Vice President, Federal Sales, Fortress. "Combined with the Luxul FTAs, the solution provides high bandwidth voice, video and data functionality across long distances. In addition, the Fortress/Luxul combination received operational J/F-12 spectrum certification from the Department of Defense (DoD) for this solution, which enables the use of the 4.4 GHz band. This allows us to potentially replicate WRB at other DoD ranges within the United States and Possessions (US&P)."

The ES520 is an "all-in-one" network access device that combines the features of a wireless access point, bridge, Ethernet switch, and FIPS 140-2 validated AES encryption in a small, rugged, weatherized form factor. The Luxul Shock-WAV™ FTA converts commercial-off-the-shelf 5 GHz wireless LAN technologies to the secured 4.4 GHz government licensed band by using its bi-directional frequency translator and amplifier.

#### Bringing secure wireless connectivity anywhere

The Fortress ES520 Secure Wireless Bridge allows organizations to quickly establish networking and communications in environments with no available infrastructure. With a dual radio design that allows for simultaneous wireless backhaul and wireless access, the ES520 offers FIPS 140-2 validated security as well as industry leading radio range.

Combining these services along with an eight port Ethernet switch in a small and rugged form factor enables the ES520 to provide on-demand secure voice, video and data communications. Whether for rapidly deployable kits, vehicle area networks, emergency response or situational awareness, the Fortress ES520 is the proven choice to meet the most challenging deployable networking requirements.

#### Challenges

- Create wireless network in support of fixed and mobile users on the ranges
- Provide strong FIPS 140-2 security
- Support high-bandwidth multimedia applications

#### Solution

- Fortress ES520 Secure Wireless Bridges
- Luxul Shock-WAV™ Frequency Translating Amplifiers (FTAs)

#### Results

- Strong, FIPS 140-2 validated secure wireless network
- All applications are supported
- Secure wireless access available on U.S.M.C. tactical training ranges



For more information about Fortress:  
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