DHS Science and Technology Directorate

Multi-Band Radio

Why It's Needed

Today, hand-held emergency response radios typically operate on only one band, which requires multiple agencies responding to an emergency to swap or share radios, use a patching system, relay messages through dispatchers, or use runners to hand-carry messages. Many agencies cannot communicate with those outside of their jurisdiction because they use different radio bands. Until recently, no public safety radio existed that was capable of operating on more than one radio band. To provide a successful coordinated response, emergency responders must be able to effectively communicate with all partners across jurisdictional lines, including local, regional, state, and Federal entities.

What It Does

At the request of emergency responders, the Science and Technology (S&T) Directorate partnered with responders and industry on the Multi-Band Radio (MBR) initiative to determine requirements and inform manufacturers in the development of a single mobile radio capable of operating across disparate radio bands. The MBR, a hand-held radio, allows emergency responders to communicate with partner agencies—regardless of the band on which they operate.

At a cost comparable to one high-end portable radio, the MBR provides responders with the cutting-edge communication capabilities necessary to respond to emergencies. To communicate with another agency, users simply select a pre-programmed channel or program other authorized channels directly to their radio. The MBR is capable of operating in bands between 136 and 870 MHz, including the primary public safety VHF and UHF bands and the 700 MHz and 800 MHz bands. When authorized, it also operates in the Department of Defense (DoD) bands and two Federal bands.

Current State

S&T's MBR initiative sparked industry development of multi-band radios that are commercially available today from three manufacturers with more on the horizon. As the production and availability of equipment with similar or advanced features enters the market, agencies will have the option of selecting multi-band radio equipment and accessories from multiple vendors.

Next Steps

DHS anticipates that the MBR will serve as a platform or prototype that will evolve into a voice capable land mobile radio with broadband features in the future that will provide both data and video applications as well. The MBR Pilot Report and Procurement Guide are now available online at www.firstresponder.gov. Grant funds through the Federal Emergency Management Agency can be used to acquire multi-band radios

Frequency Bands	138-144 MHz	150-174 MHz	162-174 MHz	380-400 MHz	406-420 MHz	450-470 MHz	470-512 MHz	700 MHz	800 MHz
Local and State Public Safety Agencies		✓				✓	✓	✓	✓
Department of Defense (DoD)	✓			✓					
Federal Agencies (non-DoD)			✓		✓				
Multi-Band Radio	✓	✓	✓	✓	✓	✓	✓	✓	✓

Homeland Security
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To learn more about the Multi-Band Radio initiative, contact SandTFRG@dhs.gov

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