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## VENDORS SAY THEY ARE WORKING ON DIGITAL RADIO NOISE PROBLEMS

Apr 2, 2009 3:44 PM, By Glenn Bischoff

Two-way radio manufacturers are working diligently toward technology solutions, but for the foreseeable future a combination of best practices and training are the best way to combat the problems being encountered by firefighters when they use digital radios in very noisy environments, according to speakers at the recent [International Wireless Communications Exposition](#) in Las Vegas.

Among the solutions being considered by vendors include the use of boom microphones and dual microphones — one would be designed to pick up only speech while the other would pick up only background noise — as well as advanced noise-suppression and audio amplification solutions. Remote speaker microphones also are being reexamined. Vendors are mulling how they can be designed so that when they are grabbed by a firefighter wearing heavy gloves, the transmit audio isn't compromised.

[Motorola's](#) Mike Peterson said that vendors also are working more closely with manufacturers from outside the two-way radio sector to better integrate microphones with breathing masks and protective hoods. "The challenge is that we have to be careful not to compromise the function of the masks and hoods," Peterson said.

But all of these potential solutions are a long way from fruition. In the meantime, best practices — such as those suggested by the [International Association of Fire Chiefs](#) — offer the best chance to lessen the impact of ambient noise on firefighter communications.

During the panel discussion it was suggested that firefighters trigger their radios before their PASS (personal alert safety alarms) devices sound. Another suggestion was to simply hold the microphone closer to the face. A video was shown that clearly demonstrated the effectiveness of this simple tactic. However, Motorola's Peterson pointed out microphone mounting strategies will need to be addressed in order to maximize the effectiveness.

Yet another suggestion concerned training firefighters on their digital radios. It was pointed out during the discussion that firefighters receive a half-day of training on how to use an ax but virtually none on how to use their radios — which is particularly important in terms of using them in conjunction with their masks.

[EFJohnson Technologies'](#) Ed Kelly questioned whether digital trunking is even needed on the fireground. He said simplex operation, which provides radio-to-radio communications with no delays, might be a more effective approach because most firefighting communications are localized. (However, Kelly acknowledged that digital trunking provides needed interoperability for multi-jurisdictional events.)

One advantage of simplex operation is that it eliminates the need for in-building coverage, which is a real plus in a firefighting situation, Kelly said. "Vendors trying to improve in-building coverage often will install repeaters and bidirectional amplifiers," he said. "The problem is, when the building is on fire, what's going to happen to the in-building [system]?"

While a simplex system might be fine for agencies in smaller municipalities, it's not going to fly in a big city, said Tom Sorely, deputy director of [radio communications services for the city of Houston](#) and chairman of the [National Public Safety Telecommunications Council](#) (NPSTC) technology committee.

"The lack of available frequencies is a problem," Sorely said. "Taking trunking frequencies off the air and making them simplex isn't an option."

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While many in public safety eagerly are awaiting the chance to use spectrum in the 700 MHz band that is being made available as part of the digital television transition, Sorley said the impact of the new airwaves will be relatively small. "There are only about 50 frequencies in the 700 MHz band that will be available to public safety, not the hundreds that many people expect," he said.

Sorley suggested that fire departments put the squeeze on their vendors to ensure that communications on the fireground are what they should be. He said the city of Houston negotiated a deal with Motorola that subjects the vendor to the same tests that were conducted by the [National Information and Telecommunications Association](#) when it studied the problem last year. Should Motorola fail to pass all eight scenarios contained in the test it will overlay an analog network for free, according to Sorley.

"Of course, we have a \$100 million contract with Motorola, so that gives us a little leverage," he said.

Nevertheless, everything is open to negotiation, Sorley said.

"When you buy a new system, think about these things, work with your vendor — and put it in the contract."

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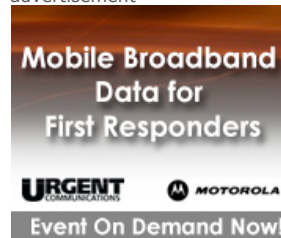
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