



UNMISTAKABLE AUDIO PERFORMANCE WHEN IT MATTERS MOST

# APX SERIES AUDIO QUALITY

**WAILING SIRENS. HOWLING WINDS. HIGH-PITCHED PASS ALARMS.**

In high noise settings and high stress situations, how do you communicate effectively? You simply can't duck into a quieter place or dial down external sound.

The fact is, when you're trying to talk into your radio, high background noise and wind can severely impact audio clarity and intelligibility. Transmissions get distorted, words dropped, messages garbled and safety compromised. Also, you must be able to hear every word loud and clear on your radio, especially if you're patrolling a packed stadium or commanding a noisy fireground.

The APX™ Series is the mission critical advantage for responders in mission critical environments. We designed our APX P25 radios and remote speaker microphones (RSMs) for the absolute rigors of these situations.

APX audio aggressively cancels out background and wind noise. Where other portable radios wash out, APX stands out with the loudest, clearest audio available. So whether you're speaking to a dispatcher, team member or another agency, APX ensures voice communications are loud, clear and understandable.

# TALK OVER COMMOTION. BE HEARD CLEARLY. WITH EXCEPTIONAL APX AUDIO.

## HOW DO WE DEVELOP THE LOUDEST, CLEAREST RADIOS ON THE MARKET?

We start with the latest Digital Signal Processor (DSP) technology, then add custom high-power loudspeakers and precise acoustic microphones to achieve outstanding noise cancelling, exceptional loudness and clarity, and unparalleled intelligibility for mission critical communications.

Every APX P25 radio has a unique dual-sided design – with two speakers and two microphones\* – for superior noise suppression, speech clarity and loudness in some of the noisiest and windiest environments.

And every APX portable features a radio profile that can be programmed to adjust audio levels to suit a your specific needs. So whatever environment the user is operating in, the audio will be optimized. No other radio on the market can do this.

## TRANSMIT AUDIO: REMOVES BACKGROUND NOISE WHEN YOU TALK

Imagine you're a police officer trying to talk into a radio as traffic rushes by or a firefighter near a diesel engine reporting to incident command. Background noise can overwhelm your transmission. Not if you're using APX radios.

The exceptional audio on every APX radio starts with two highly sensitive, calibrated microphones—one on the audio side and one on the data side. This two-sided design allows you to speak into either side of the radio or switch sides while talking without missing a word.

## HOW APX OVERCOMES NOISE:

1) The DSP technology on every APX radio automatically **identifies and tracks the talker in real time, adapting to every move**, while it suppresses interfering background noise. This allows the talker to speak from any direction. Since the radio adapts to the user, it means the talker can concentrate on the task, not the radio.

2) Then a noise-cancelling algorithm distinguishes the speech from background noise and **aggressively removes that background noise** from that audio source. This enables APX radios to detect and compensate for rapid changes in noise levels.

3) APX's advanced noise suppression technology has a built-in feature that **minimizes the effect of wind** hitting the microphones. It also **removes noise from speech** when the radio is in analog mode and no vocoder is involved.

4) The AMBE+2 vocoder on every APX radio provides the final stages of noise suppression before encoding the digital audio stream and processing noise free speech. In addition to providing excellent noise cancelling in digital mode, the same technology is available when the radio operates in analog mode.

The result is **unparalleled communication in both digital and analog modes** in a quiet office or at a clamorous scene.

## EXTREME AUDIO PROFILE FOR EXTREMELY LOUD ENVIRONMENTS

**Only APX portable radios feature an Extreme Audio Profile that overcomes very high noise levels on the fireground –such as PASS alarms, exhaust fans and pumper trucks.**

This profile is an aggressive form of the noise-cancelling algorithm designed to work in extremely loud environments where speech is elevated because of the exceedingly high level of background noise. An intelligent 2-microphone noise reduction software dynamically adapts to these changing and challenging environments.

This Extreme Audio Profile is standard on our APX 7000XE and 6000XE portables, and available as an option on all other APX portable radios.

\*Not available on Model I radios



## RECEIVE AUDIO: HEAR LOUD AND CLEAR WITHOUT DISTORTION

For the federal officer receiving an alert at the border or the fire chief listening to multiple conversations from multiple agencies, how can they hear clearly without interference and without bringing the radio up to the ear, especially when it's under a protective gear or on a belt?

APX solves that challenge with radios designed for exceptional clarity, especially in difficult and demanding conditions. The APX 7000 and APX 7000XE are 50% louder and clearer than comparable radios in their class and have a large, powerful 1-watt speaker for unparalleled clarity and loudness. A small speaker on the data side provides optimal sound quality from virtually any angle or distance.\*

The APX 6000 and APX 6000XE feature a 500-milliwatt speaker with custom algorithms to achieve better clarity than the XTS radio. The result is loud, clean, clear audio – especially important in high noise environments.

### How APX Optimizes Clarity:

- 1) Innovative signal processing algorithms actively manage distortion. This dramatically improves audio clarity and virtually **eliminates the buzzing when the volume is turned up** to maximum levels.
- 2) APX radios have a custom, high power loudspeaker for optimal speech reproduction in high noise. It is acoustically engineered to **maximize loudness while minimizing distortion**.
- 3) As the volume gets louder, APX radios retain overall speech dynamics and **preserve voice quality**.
- 4) The result is a high level of clarity and **clear, natural sounding speech** in both quiet and noisy environments.

## THE APX FAMILY OF AUDIO STAND-OUTS

Every APX radio and accessory provides best-in-class dual-microphone noise suppression. This advanced technology locates the talker and cancels out background noise. External noise is cut so effectively, the talker can be heard over diesel engines, power equipment and sirens.

**APX 7000 P25 PORTABLE** – Best-in-class audio combined with innovative, mission critical features in a multiband radio made for seamless interoperability

**APX 7000XE P25 PORTABLE** – Extreme ergonomics, best-in-class audio and innovative fire features in an ultra-rugged multiband radio made for extreme environments

**APX 6000 P25 PORTABLE** – Excellent audio and advanced features in a small single band radio

**APX 6000XE P25 PORTABLE** – Extreme ergonomics, excellent audio and advanced fire features in a small single band radio

**APX XE Remote Speaker Microphone** – The ideal complement to any APX portable with the same extreme attributes

\*Not available on Model I radios

## APX REMOTE SPEAKER MICROPHONES

### **CRISP AND CLEAR. EVERY WORD, EVERY MISSION.**

All APX™ Remote Speaker Microphones (RSMs) deliver audio that is clearer, easier to understand and up to 50% louder than XTS-series RSMs. That's because they contain the same speaker technology found in our APX 7000 and APX 7000XE portable radios for the best-in-class accessory audio available.

Even with the din of traffic or the commotion of pumper trucks, you can carry on a conversation clearly with an APX RSM clipped to your turnout gear. Our leading-edge, smart IMPRES technology communicates directly with the APX radio to suppress background noise, improve speech clarity and amplify loudness, no matter the weather or workplace.

### **HANDLES HARSH WIND AND WEATHER**

Whether you're on a congested street or in a crowded stadium, the Windporting feature available on most APX RSMs dramatically reduces the noise caused by howling winds and harsh weather. Plus, it prevents water from clogging the microphone and distorting your transmission. The result is enhanced audio quality and clearer communications in unforgiving conditions.

### **AN EXTREME RSM FOR EXTREME NOISE**

The APX XE RSM represents noise suppression at its best. The ideal complement to any APX radio, it's the first accessory with dual microphones to locate the talker and cancel out background sounds. Ambient noise is negated so effectively, you can be heard over diesel engines, power equipment or wailing sirens.

A large speaker delivers the loudest, clearest accessory audio available – 50% louder and clearer – so transmissions are clear and intelligible, not garbled or distorted. And because the audio technology inside XE RSM complements the exceptional noise suppression capabilities of our best-in-class APX radios, you can be heard and be clearly understood in all types of extremes.

For more information on how to get unmistakable audio performance when it matters most, visit [motorolasolutions.com/apx](http://motorolasolutions.com/apx)

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