

# KENWOOD



## KMC-51/52

### DSP Digital Noise-Canceling Speaker Microphone



Emergency scenes are often loud and noisy as well as chaotic. Airport ramp operations are constantly bathed in a mix of jet engine whine, service trucks and tow tug engines. Radio communications clarity is critical when seconds count and lives may hang in the balance. The Kenwood KMC-51/52 noise-canceling speaker microphones use digital technology to eliminate noise more effectively and accurately than previously possible. Sirens, horns, engine pumps, PA's and cutting saws are all silenced so voice communications that used to get drowned out now comes through loud and clear. Hear what you've been missing with the KMC-51/52.



KMC-51

KMC-52

### Main Features

- DSP signal analysis & superior noise-cancelling
- Rapid analysis & instant adaptation to noise-type & level changes
- Counters virtually all type noises
- PASS/LAA/Siren Tested
- Auto-adjusts for loud or low noise
- Voice Enhancement Technology
- Adjustable & Customizable Settings<sup>1</sup>
- Noise-Cancel Active LED
- Tactile PTT
- Recessed Emergency PF Key<sup>2</sup>
- Programmable Key<sup>2</sup>
- High/Low Volume Control<sup>2</sup>
- One-touch Fire Ground Access<sup>2</sup>
- 360° Rotating Clip
- 3.5 mm Earphone Jack
- MIL-STD C, D, E, F, G Certified
- IP67<sup>3</sup>, IP55/IP54 Certified (water & dust ingress)

1. Factory presets are programmable for various users environments. Customized flash firmware available for unique applications.

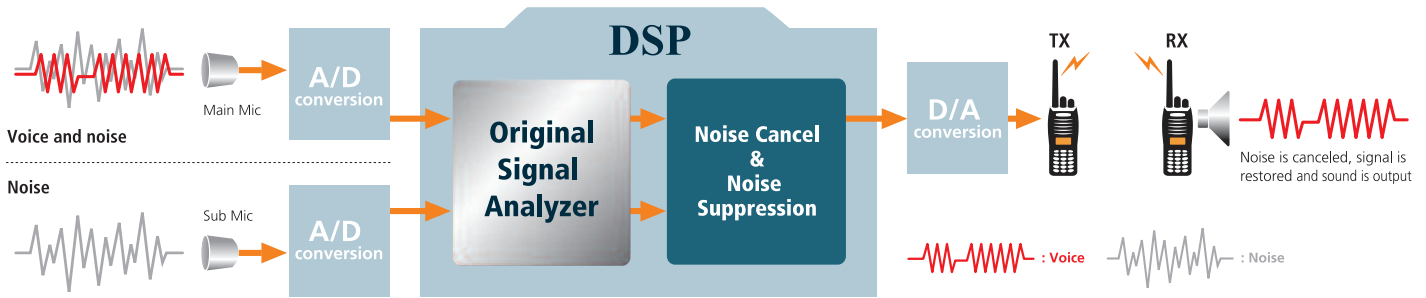
2. Both PF keys can be programmed for a variety of functions including Emergency, High /Low volume, one-touch channel selection.

3. Only the KMC-52 is IP67 compliant.



## DSP & Dual-Microphone System

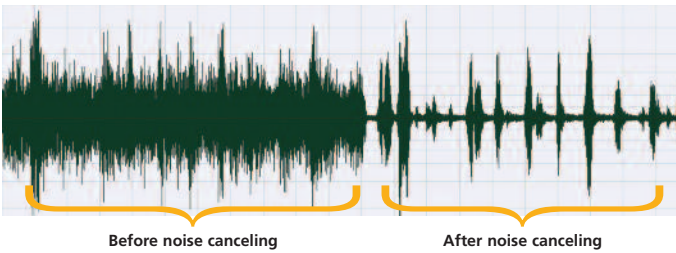
The dual-microphones pickup voice and voice with noise which are both digitized for DSP analysis. Noise components are determined and signals are generated to cancel and suppress the noise. Once the noise is removed, the sound is then returned to an analog signal for the portable radios transmitter.



## Counters Virtually All Types of Noise

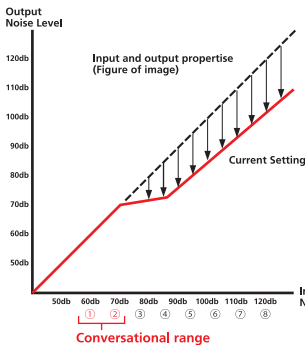
The KMC-51/52 adapts quickly to noise-type and level changes to cancel it in real time. Even low voice levels are not drowned out.

### Noise Cancel Effect



## Dynamic Self-Adapting

The noise-canceling effect automatically adjusts for extremely loud and very quiet environments to keep the original voice audio from degrading. In addition the microphones Voice Enhancement technology improves voice component clarity and recognition.



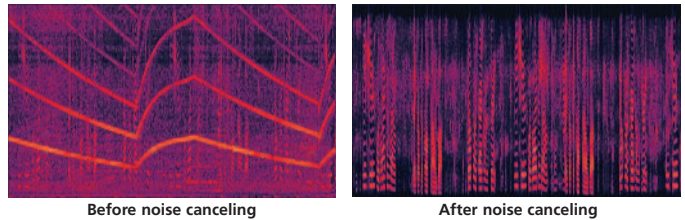
### Input Noise Level

- ①. 55dB Office or city residence at night
- ②. 64dB Interior of quiet car (40km/hr)
- ③. 72dB Bustling street corner
- ④. 82dB On subway, Surpassing can result in auditory disorder
- ⑤. 91dB Railway underpass, Noisy workplace
- ⑥. 100dB Car horn from 3m away
- ⑦. 110dB Motorbike 1m away
- ⑧. 120dB Rock band, Auditory limit

## PASS/LAA/Siren Tested

Sirens and equipment alarms are a typical instance where very high level and close proximity to the speaker microphone can overwhelm the voice digitizer (or VOCODER) in a digital LMR portable radio. The KMC-51/52 was specifically designed and tested to alleviate this problem as illustrated in the spectrograms (shown). The microphone recognizes unique sound source signals and removes them with a high degree of accuracy before passing them onto the radio transmitter. The result is clearer more intelligible voice communication for firefighters and EMS crews.

Sirens and other emergency sounds are identified and eliminated based on spectrogram-based detection



## Adjustable & Customizable

Since work environments differ, the KMC-51/52 factory presets can be PC-programmed with the KPG-147NC software to make finer adjustments. Also, for very unique environments custom firmware can be flashed to optimize certain settings according to requirements. Finer adjustments include: Noise Cancellation Effect Presets (for sirens, extreme noise levels and mid-to-low frequency noises), Noise Reduction Level (10 to -20dB), battery-save and sensitivity for the main and sub microphones.

## Specifications

Model	KMC-51/52
Operating Temperature	-30°C (-22°F) to +60°C (+140°F)
Operating Voltage	4 to 5.15 V DC
Current Drain	35 mA
Microphone Sensitivity	-39 dB ± 3.5 dB at 1kHz (0 dB = 1 V/Pa, 10 kΩ Load)
Microphone Impedance	600 Ω (max.)
Speaker Impedance	16 Ω ±15% at 1.0 v 1.2 kHz
Speaker Rated Audio Output Power	0.8 W

Model	KMC-51/52
Maximum Speaker Input	1.6 W
Dimensions (W x H x D)	67.8 x 91.5 x 43.3 mm (2.67 x 3.60 x 1.70 in)
Weight	260 g (9.2 oz.)
Other Compliances	RoHS compliant lead-free
Battery Life	with TK-5210 Approx. 12 hours w/ KNB-54N with NX-200/TK-5220 Approx. 10 hours w/ KNB-47L with TK-2180 Approx. 10 hours w/ KNB-33L

Specifications shown are typical. Specifications are subject to change without notice, due to advancements in technology.

# KENWOOD

Kenwood U.S.A. Corporation  
Communications Sector Headquarters

3970 Johns Creek Court, Suite 100, Suwanee, GA 30024-1265

Order Administration/Distribution

P.O. BOX 22745, 2201 East Dominguez St., Long Beach, CA 90801-5745

Kenwood Electronics Canada Inc.  
Canadian Headquarters and Distribution

6070 Kestrel Road, Mississauga, Ontario, Canada L5T 1S8



ISO9001 Registered  
Communications Equipment Division  
Professional Systems Business Group  
JVC KENWOOD Corporation