For microphone integration in the iPhone X, Apple has chosen the market’s top three microphone suppliers: Goertek, Knowles, and AAC Technologies.

The Apple iPhone X has four MEMS microphones: a front-facing top microphone, two front-facing bottom microphones, and a rear-facing top microphone. This layout is similar to previous iPhones, but the front-facing bottom-right microphone is now integrated in the speaker module. All four microphones share the same Apple-specific package dimensions, but with a different internal structure (number of substrate metal layers, embedded capacitance, ASIC, etc.).

In the iPhone X, we’ve observed changes to the microphones provided by Apple’s three suppliers:

Goertek, which still relies on Infineon for die manufacturing, integrates Infineon’s technology with a double backplate, delivering a differential MEMS microphone. For the ASIC, Goertek has considerably reduced the die area by around 40% compared to the previous die.

Knowles uses the same technologies as before, but one part has a new MEMS design and another part has an existing MEMS design.

AAC uses the same MEMS microphone die as Goertek, but with a different ASIC.

Infineon is a big winner. By providing ASIC and MEMS dies to all of Goertek’s and AAC Technologies’ products, it now possesses a large share of the MEMS microphone market.
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