ReSpeaker Core V2 – high performance voice interactive solution

Product Overview

Seeed's ReSpeaker Core v2 is designed for voice interactive applications. It based on quad-core ARM Cortex-A7, up to 1.5Ghz, and 1GB RAM on-board. Besides, it features six microphone array with necessary speech algorithm, like DoA(Direction of arrival), BF(Beam-Forming), AEC(Acoustic echo cancellation) and etc.

ReSpeaker Core v2 runs GNU/Linux operation system. It benefits from powerful and active community, we can use lot of existing software/tools for development, testing and deploy, so that rapid product development become available.

ReSpeaker Core v2 is not only designed for makers/enthusiast, but also a turnkey solution for business company. The hardware consists of two parts, one is the minimized SoC module which is small and easy to manufacturing and ready for final product. Another is a bottom board can be full customizable.

Key Benefits

- Debian-based Linux system
- SDK for speech algorithm with Full documents
- C++ SDK and Python wrapper
- Speech algorithms and features
  - Keyword wake-up
  - BF(Beam-Forming)
  - DoA(Direction of arrival)
  - NS(Noise suppression)
  - AEC(Acoustic echo cancellation) and AGC(Automatic gain control)
- All-in-one solution with high performance SoC
- 8 channel ADCs for 6 microphone array and 2 loopback(hardware loopback)

Hardware Features

- ARM Quad-core Cortex-A7 up to 1.5GHz

- ARM Mail-400MP2 GPU

- 1GB RAM DDR3

- Audio and Video

    - 8 channel ADCs for 6 microphone array and 2 loopback

    - 3.5mm audio headset connector

    - JST 2.0 output connector for 8 Ohm Speaker

    - HDMI 2.0*

- Connectivity:

    - WiFi b/g/n

    - Bluetooth 4.0 and Low Energy dual-mode

    - Ethernet

- Storage

    - 4GB eMMC on-board

    - SD card slot

- Peripheral

    - 1 x USB Host/OTG

    - 1 x USB power

    - 1 x Grove socket, support I2C and digital port

    - 6 x GPIO

    - 1 x UART

    - 12 x programmable LEDs

Applications

- Smart speaker

- Intelligent voice assistant systems

- Voice recorders

- Voice conferencing system

- Meeting communicating equipment

- Voice interacting robot

- Car voice assistant

- Other scenarios need voice command

Hardware Overview

100 mm

96 mm

18 mm

USB & Ethernet

eMMC & SD card

WiFi/Bluetooth

Core Module

USB Host/OTG & 3.5mm Audio Jack

LED

Mic