FOR ENERGY EFFICIENT INNOVATIONS

THINK ON.

www.onsemi.com

Voice Controlled Bluetooth Speaker

Embedded World 2020

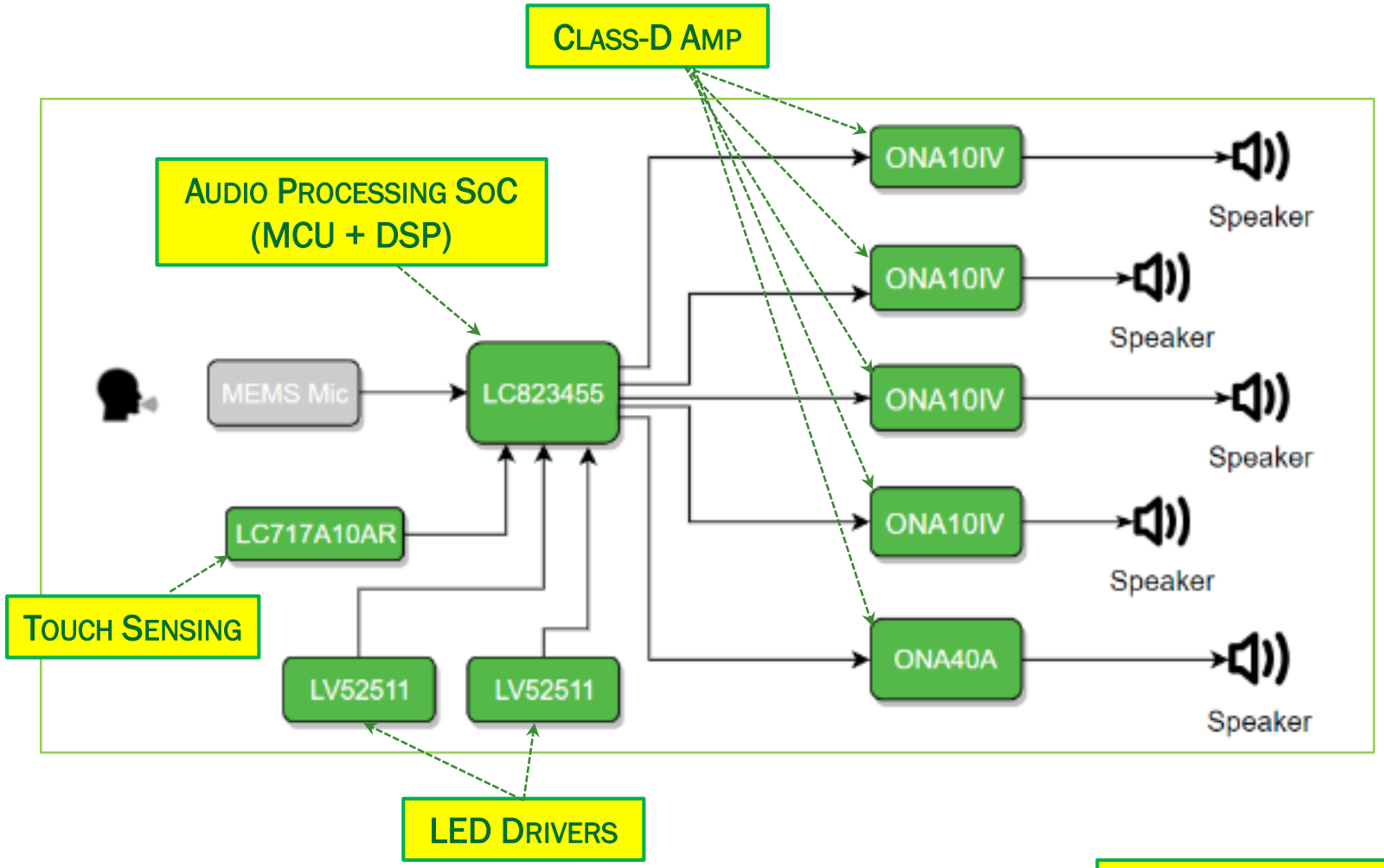
Public Information

Voice Controlled Bluetooth® Speaker

- **Power efficient 4x1 stereo system featuring:**
  - 4x16W Class-D Amplifiers (ONA10IV)
  - 1x40W Class-D Amplifier (ONA40A) – used for bass
- **Controlled by the LC823455,** Low Power & High-Res Audio Processing System LSI SoC.
- **Capable of streaming music over Bluetooth**
- **Voice User Interface (VUI)** responding to vocal commands
- **Capacitive touch sensing HMI keyboard** based on **LC717A10**
- **Multichannel LED Drivers – LV52511**
- **PC GUI interface with STRATA**

Public Information

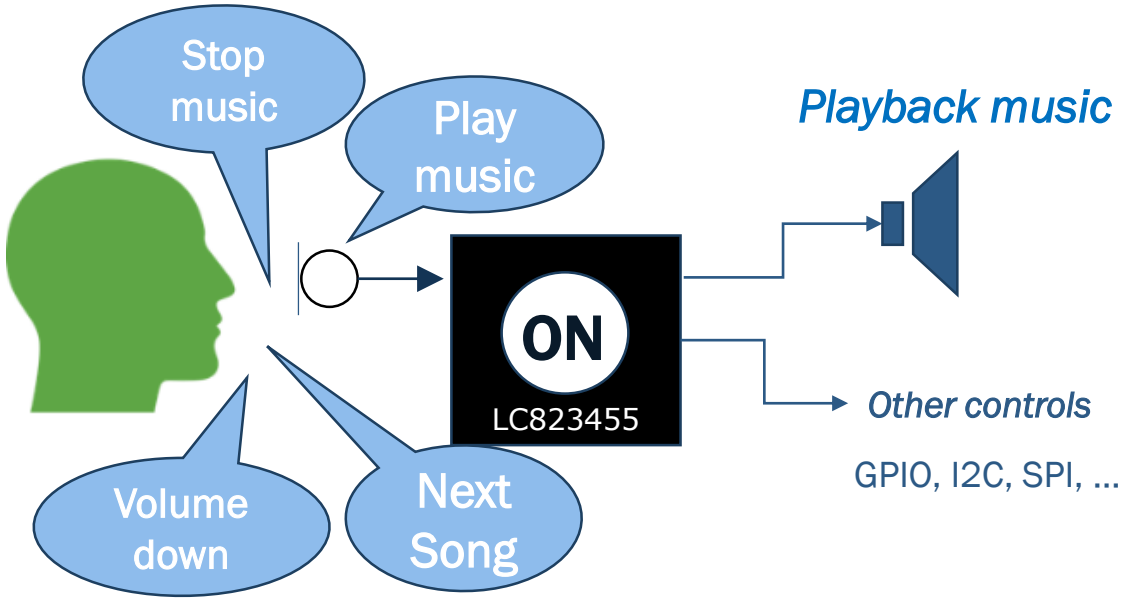
Voice Controlled Bluetooth® Speaker – Full System Solution

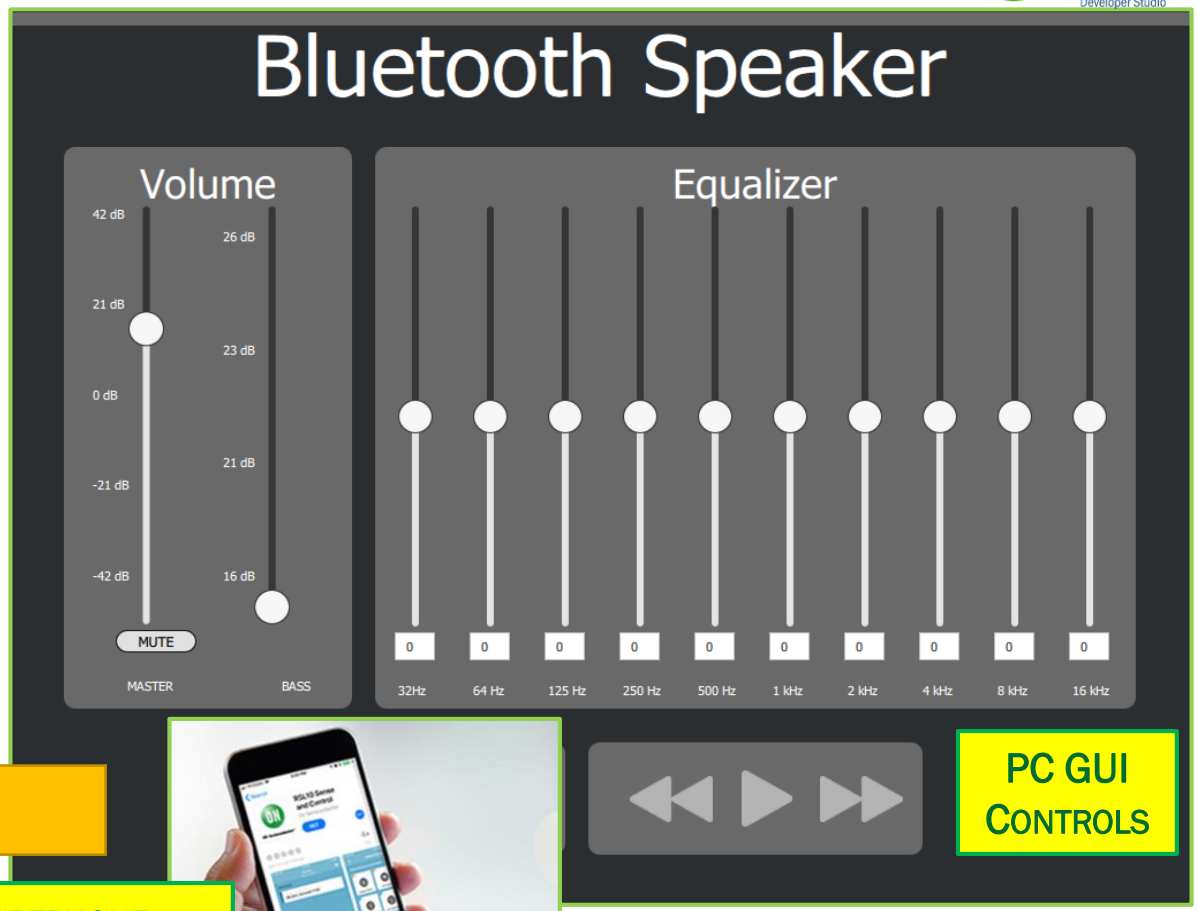


PLUS OTHER PARTS SUCH AS USB-C CONTROLLER, DIGITAL MIC, POL...

Public Information

Voice Controlled Bluetooth® Speaker – Connectivity & Software



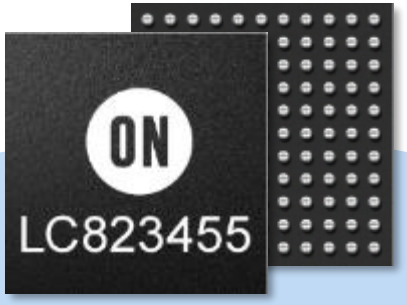


SMARTPHONE MUSIC STREAMING

Public Information

Voice Controlled Bluetooth® Speaker – Audio System on Chip

✓ *Extensive Capability*
Codecs, peripherals, …



✓ *Superior performance*
Dual MCU + DSP

✓ *Smallest size*

✓ *Ultra Low Power*

Voice Recorders

Music Players

Sports Headsets

Bluetooth Speakers

WLAN Speakers

Smart Home with WLAN / BT

Voice User Interface

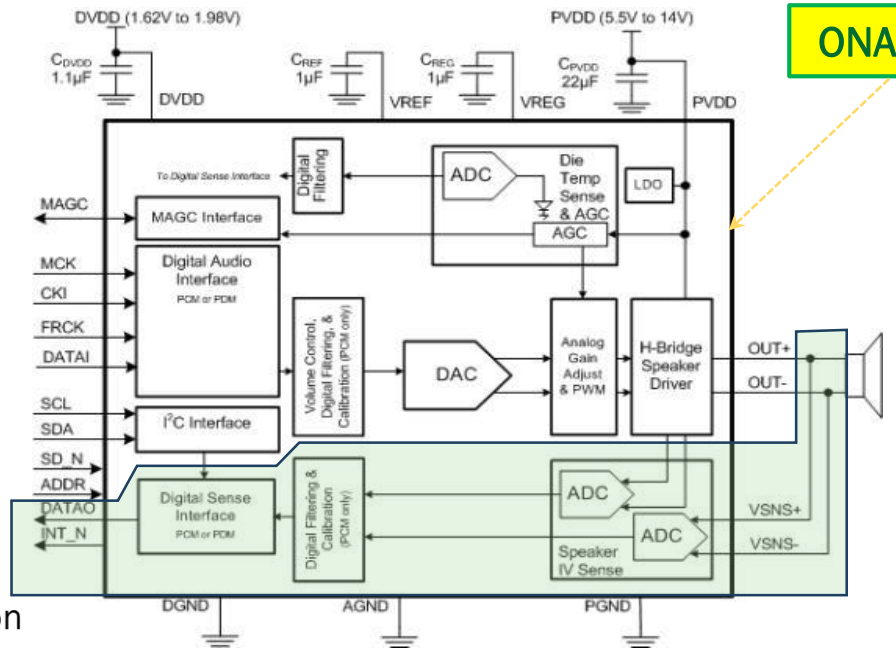
Voice Controlled Bluetooth® Speaker – Class-D Amplifier (ONA10IV)

The **ONA10IV** is a 16W digital input, mono Class−D audio amplifier featuring:

a) real time, integrated current and voltage loudspeaker sensing.
b) data transmission to the host through a separate digital output;
c) Possibility to directly connected to 2S or 3S
d) Fast automatic gain control (AGC) for brownout protection

Benefits of Speaker I/V sense:

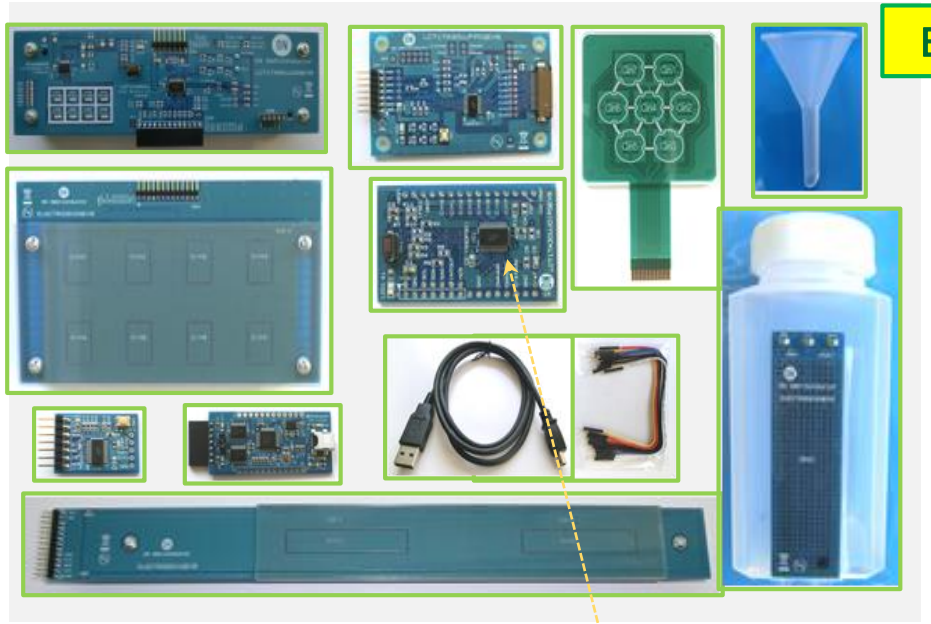
1) Fast Speaker Integrity and Quality Assurance
2) Impedance & Resonance Measurement.
3) Diagnostics
4) Speaker Specific Characterization (aging)
5) Fault discovery
6) Frequency Response Monitoring
7) Speaker Protection
8) Over Drive Damage Prevention
9) Audio Algorithm Effects Feedback



Voice Controlled Bluetooth® Speaker – Capacitive Touch Sensing

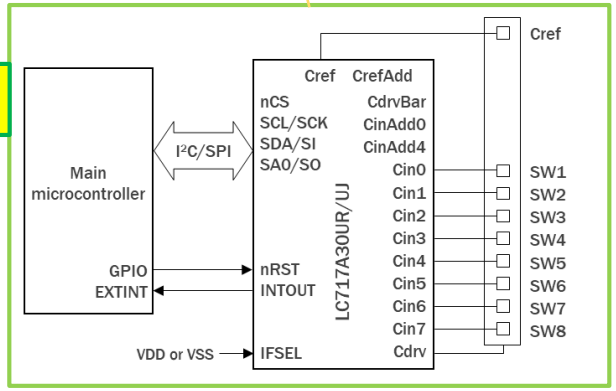
The **LC717A10AJ** is a **high-performance – high sensitivity** and **low-cost** capacitance-digital-converter LSI for **electrostatic capacitive touch sensing human machine interfaces (HMI)**

SMART HOME APPLICATIONS EXAMPLES



EVK

APP DIAGRAM



Public Information