

EPSON Voice/Audio Solutions for Talking equipment

February 2022



Advantages (Value add)

For users:

- Quick understanding how to operate a device
- No reading of user manual necessary (Even to fix errors)
- Acoustic feedback when a product finishes a task
- Possible to check results quick and easy (with display)
- Accurate voice warnings to avoid serious situations
- More relaxed working style by minor time pressure in emergency cases



For suppliers:

- Generate unique product feature and higher product value*
- Simplify the attached user manual
- Reduce accidents
- Less workload for call centers



*Talking equipment is often chosen by sons and daughters for their aging parents.



Application Examples of Voice/Audio Support



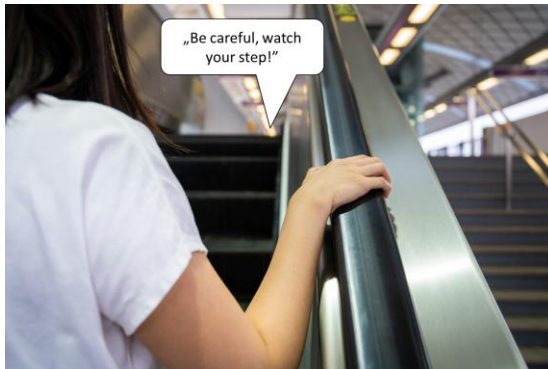
White Goods



Cleaning Robot



Door lock



Escalator



Ticket automat



Toys



Vending machine



Smoke detector



And More Target Applications

Over 100 products have already used EPSON Voice/Audio solution (* Sep. 2019)



Rice cooker



IH cooking heater



Kerosene fan heater



Blood pressure meter



Body thermometer



Smart home controller



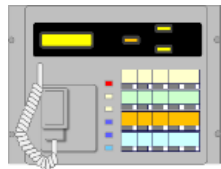
Entrance door phone (intercom)



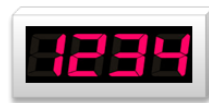
Automotive safety equipment



Massage chair



Building Controller



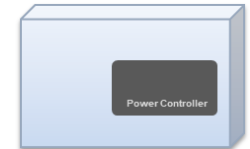
Waiting ticket system



Laboratory equipment



Handy Printer



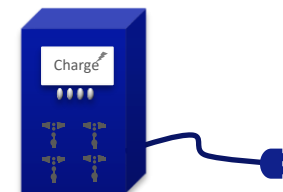
Power Controller



Digital tachometer



Office printer

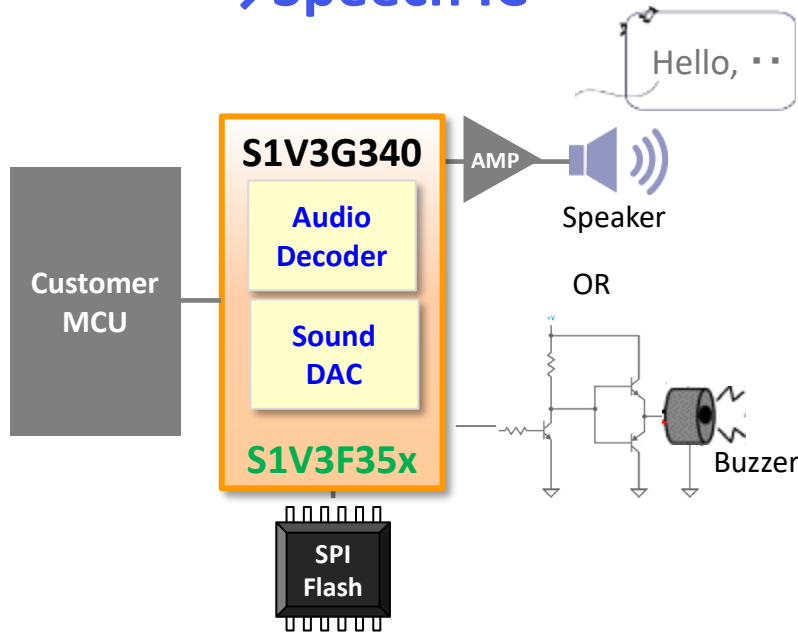


Emergency Battery / UPS (Uninterruptible Power Supply)



Easy to add /
Keep current system

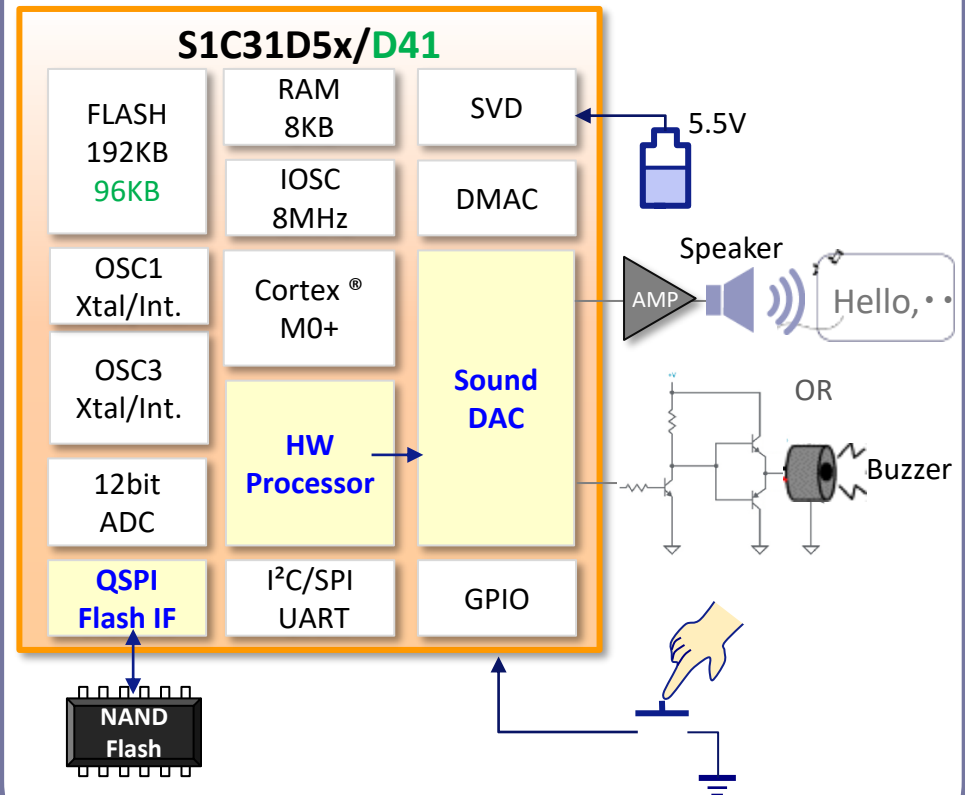
→ Speech IC



SPI-Flash is an option

Single Chip Solution

→ Voice/Audio MCU

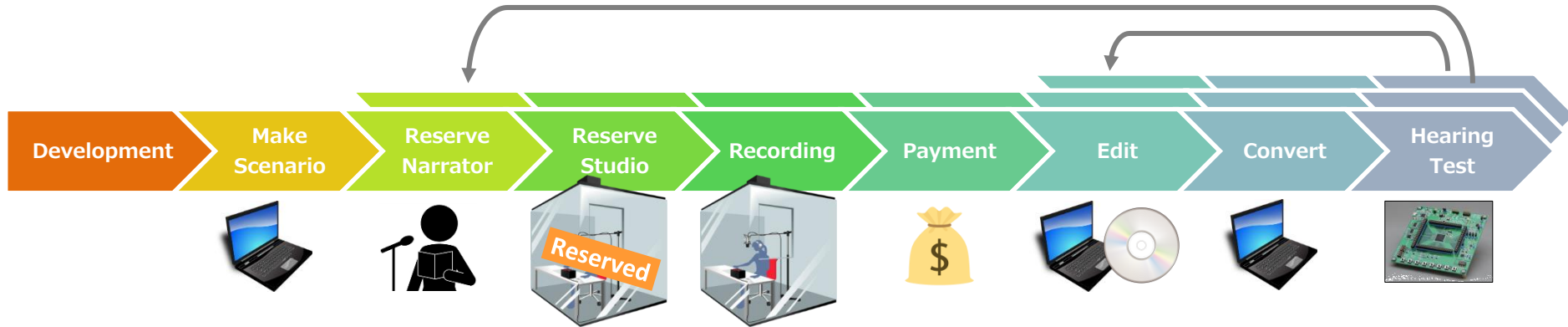


SPI-Flash is an option. (max. 120min)



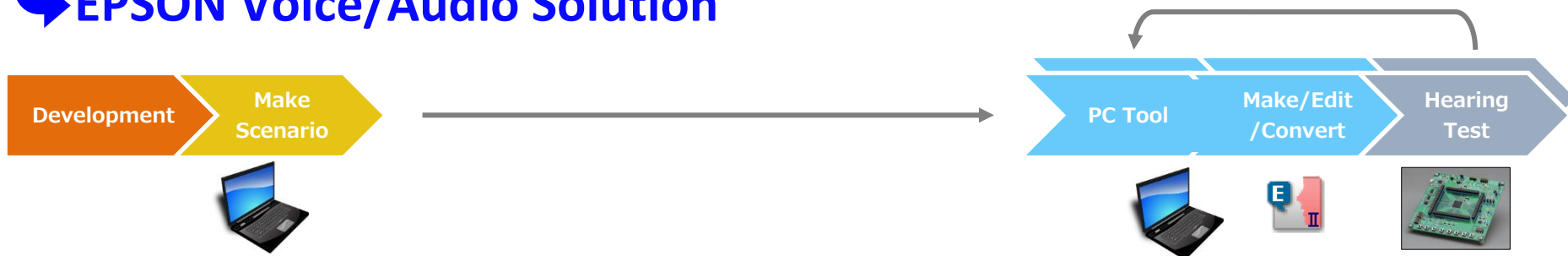
How to add Voice/Audio function ?

Common solution is very time consuming and expensive...



Disadvantage: In case of any voice/audio updates it is always necessary to book a studio again and reserve same narrator

EPSON Voice/Audio Solution

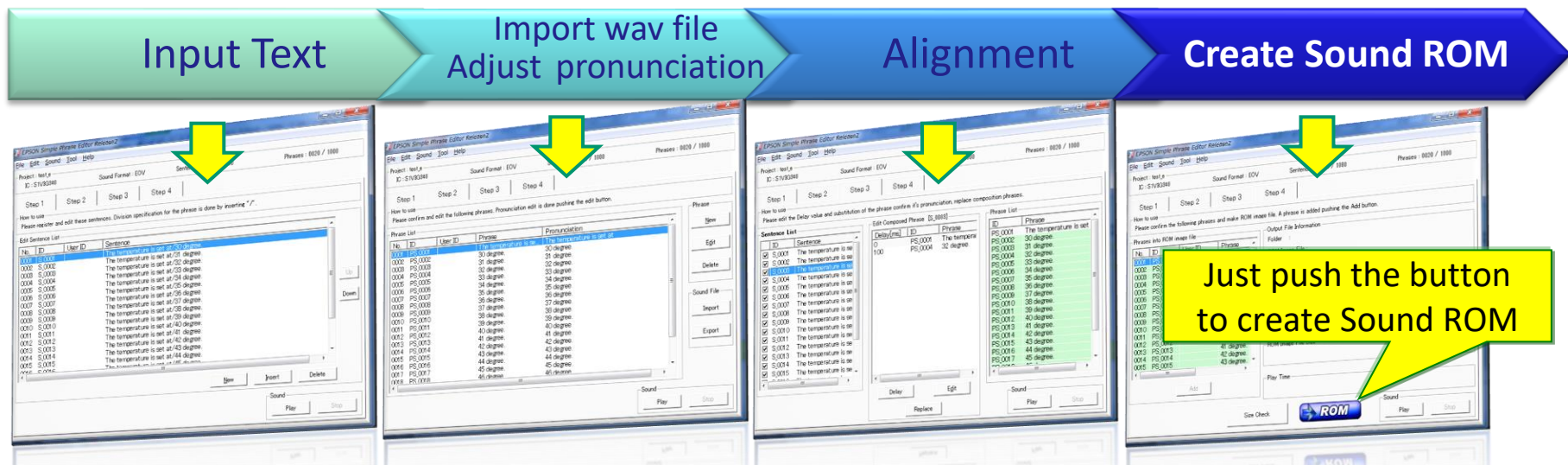


Advantage: Any voice/audio updates can be done very **SIMPLE** by ESPER2 Voice Creation PC Tool which is available **FREE of CHARGE!**



ESPER2: Voice Creation Software PC Tool

- If Voice/Audio data need to be changed frequently and for emergency case, it can be done very easily without additional costs
- Deep neural network speech synthesis engine generates HQ voice data



Support Language

Europe



- ✓ British English
- ✓ German
- ✓ French
- ✓ Spanish
- ✓ Italian
- ✓ Russian

America



Asia



- ✓ American English
- ✓ American Spanish
- ✓ Canadian French
- ✓ Japanese
- ✓ Chinese(Mandarin)
- ✓ Korean



Advantages of Epson

1. Easy to combine Music, Sound Effects and Prerecorded Voice Data



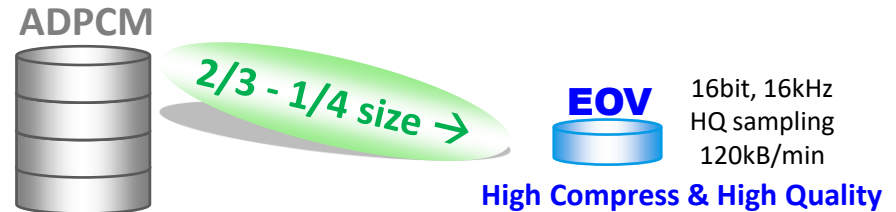
2. Voice/Audio Data Minimization function

1. The temperature is 15 degrees.
2. The temperature is 16 degrees.
3. The temperature is 17 degrees.



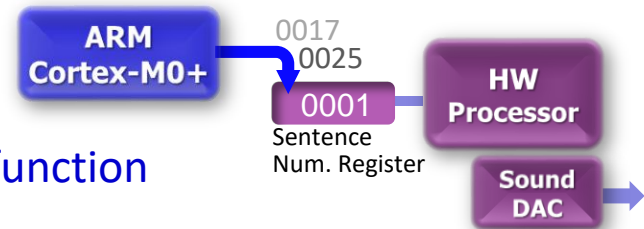
The temperature is, 15, 16, 17, degrees.
+ Sentence Info (Look up table)

3. Highly compressed Voice/Audio data algorithm & HW decoder



4. Easy to Play Voice/Audio data

- Just set a sentence number by application program
- No CPU resource needed during Voice/Audio output function

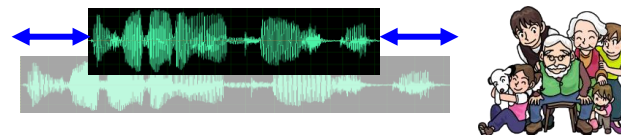


5. 2ch Mixing Play & 2ch Volume Control HW

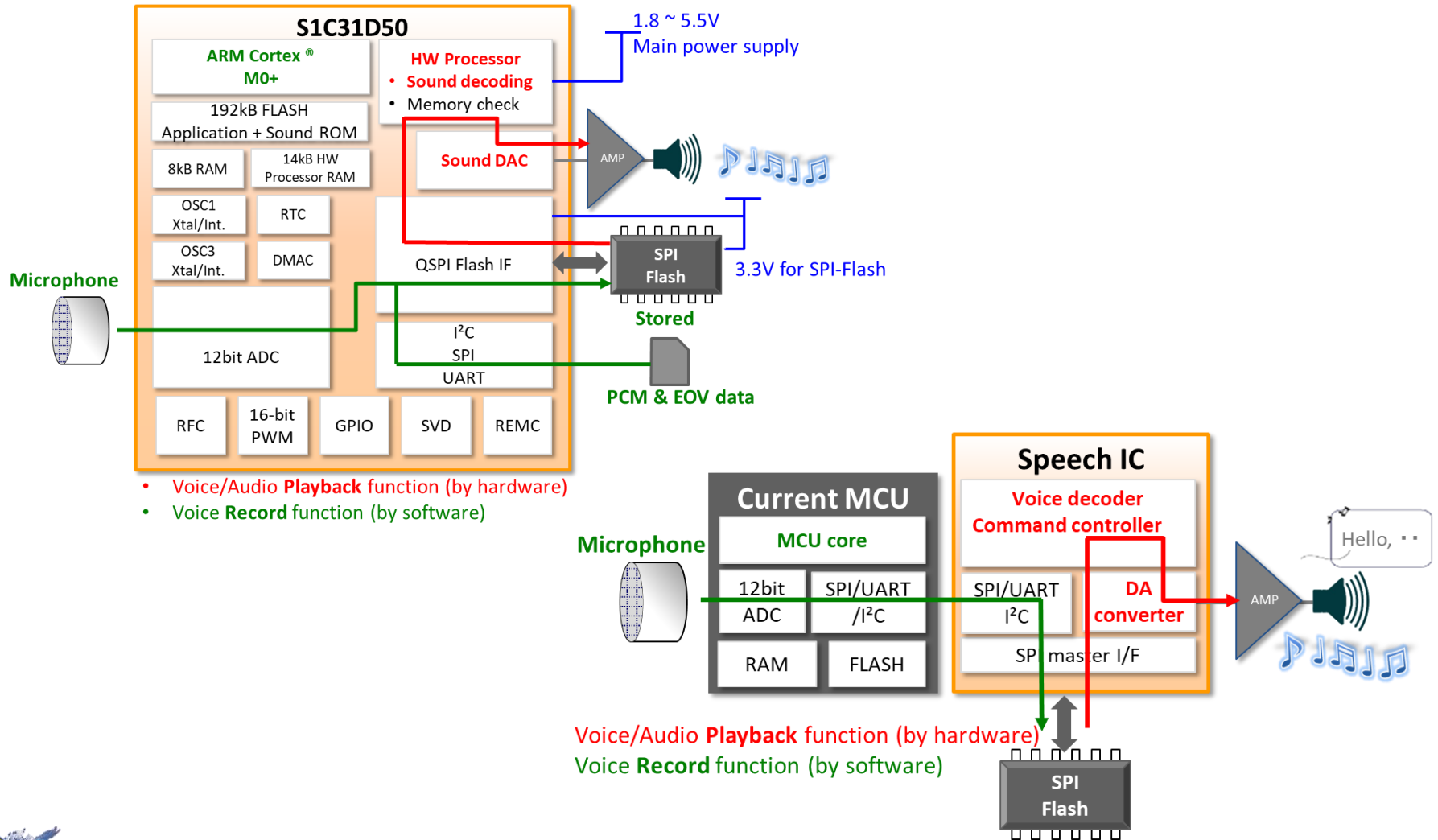


6. Voice Speed Conversion HW

7. Recording function (by software)

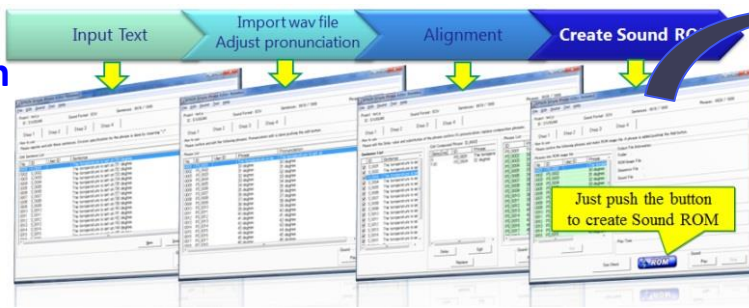


Recording function of Epson Solution

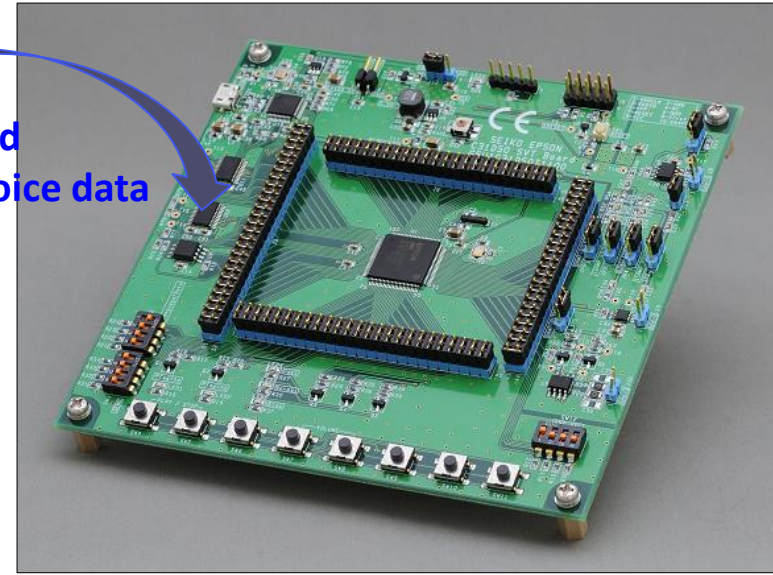


Voice/Audio Evaluation Demonstration Board

ESPER II
Voice Creation
Tool



Load
Voice data



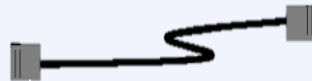
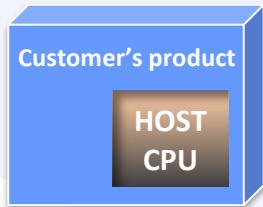
Voice MCU - S1C31D50 evaluation board
(S5U1C31D50T1)



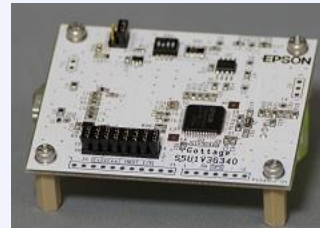
<https://youtu.be/j-t7pqkzrSg>
<https://youtu.be/MfX8mu9k6g>



Streaming
Command/
Load Voice data



UART/SPI
Command



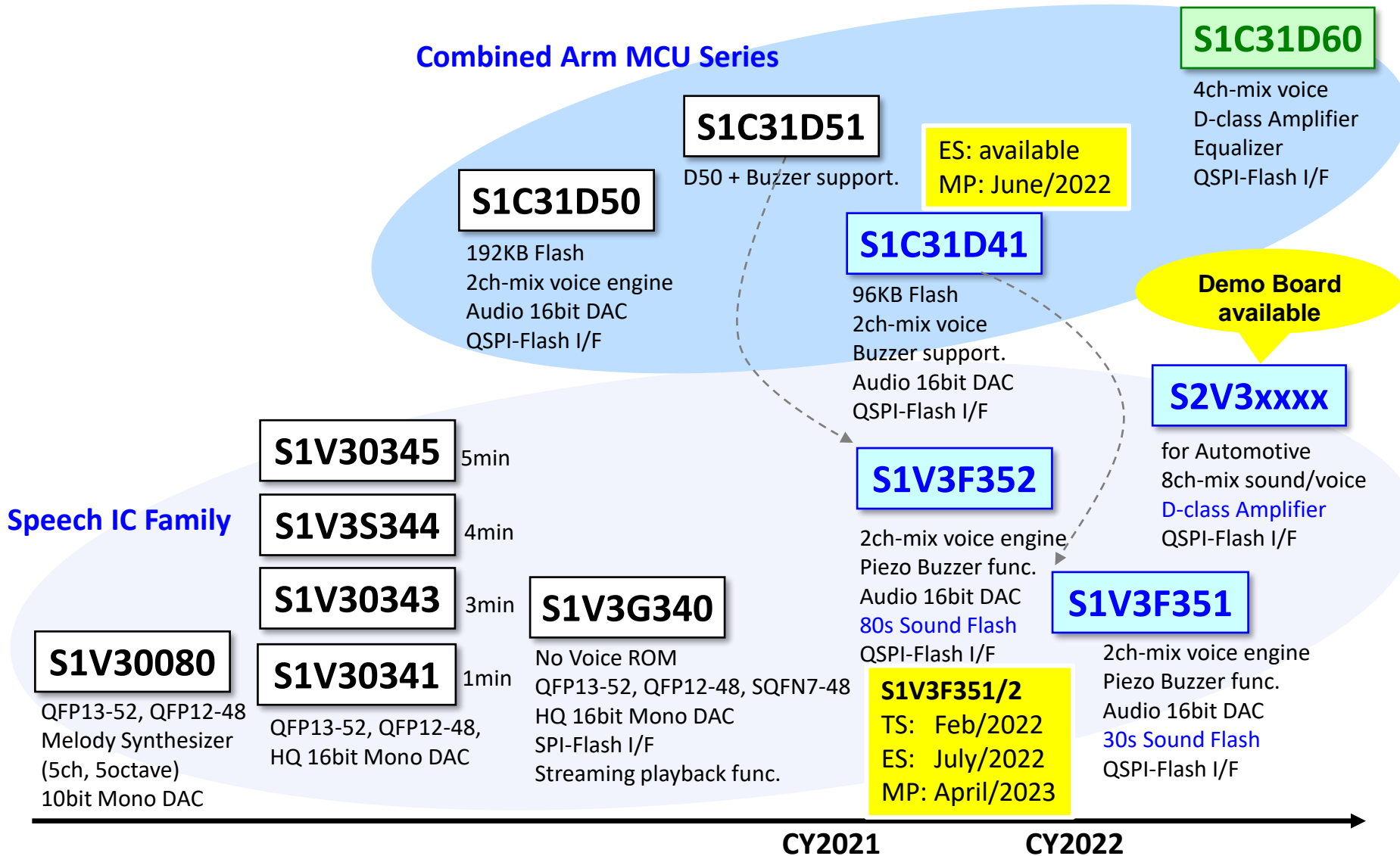
Speech IC - S1V3G340
evaluation board
(S5U1V3G340)



Voice MCU - S1C31D51 evaluation board
(S5U1C31D51T1 & S5U1C31D51T2)



EPSON Voice/Audio Device Lineup

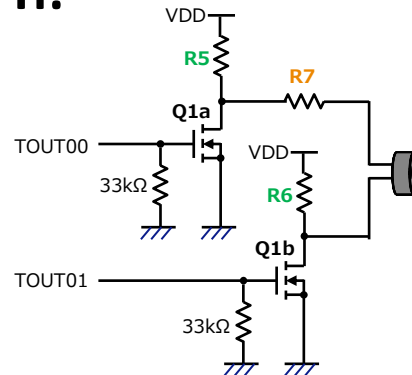
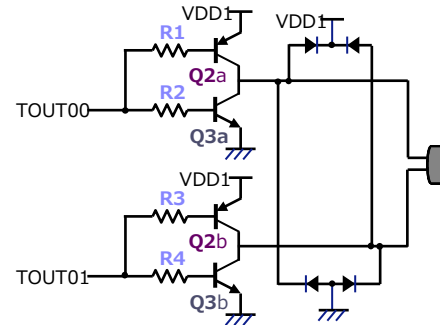


MP Under development Under Investigation Idea level



S1C31D51/D41, S1V3F351/2 support 4 different configurations.

- **Speaker + Amplifier**
- **Speaker + Tr.**
- **Electromagnetic buzzer + Tr.**
- **Piezo buzzer + Tr.**



Higher sound quality



Lower current consumption

Lower space

Lower BOM cost



EPSON

EXCEED YOUR VISION

Thank you!!

Exceed Your Vision

Epson always tries to offer products and services that exceed your expectations and thoughts and help you create colorful and affluent life.

