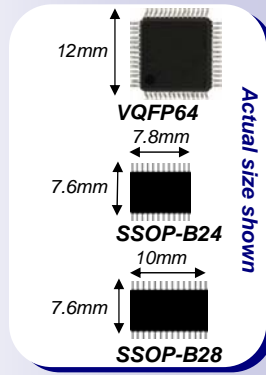




Voice Synthesis Series

Comfortable audio products for complex home/car appliances

VOICE SYNTH.	~128MB ROM I/F	BU6922KV	4 CH.	16bit DAC	VQFP64
VOICE SYNTH.	2MB Built-in ROM	BU6932FV	4 CH.	16bit DAC	Small Package SSOP-B24
VOICE SYNTH.	4MB Built-in ROM	BU6934FV	4 CH.	16bit DAC	Small Package SSOP-B24
VOICE SYNTH.	SPI I/F ROM	BU6930FV	2 CH.	16bit DAC	Small Package SSOP-B28



High Fidelity (HiFi) voice synthesis LSIs optimized for audio products

The trend in electrical appliances, car applications is toward increasing sophistication and greater functionality, ultimately resulting in increased complexity. However, the greater functionality is of value to consumers only if the appliance is easy to use. ROHM's voice synthesis LSIs feature HiFi quality natural sounding speech guidance capabilities and possibility to play a rich sound reproduction through up to 4 channels at the same time; Adjustable volume, auto fade-in and auto fade-out features are also built-in. Moreover, ROHM's unique compression method achieve to get the smallest package in its class*; allowing to be mounted everywhere in order to ensure full utilization of the capabilities of even the most advanced multi-function device, differentiating it from competitors. What's more, new voice synthesis use single voltage power supply for more flexibility and more easy use. ROHM products are both lead-free and RoHS-compliant.

*ROHM July-2006 study, refers to only to molded packages with built-in 4Mbit ROM

Block Diagrams

Built-in ROM

It allows to store 512 phrases. 2Mbit and 4Mbit correspond respectively to 256Kx16bit and 128Kx16bit.

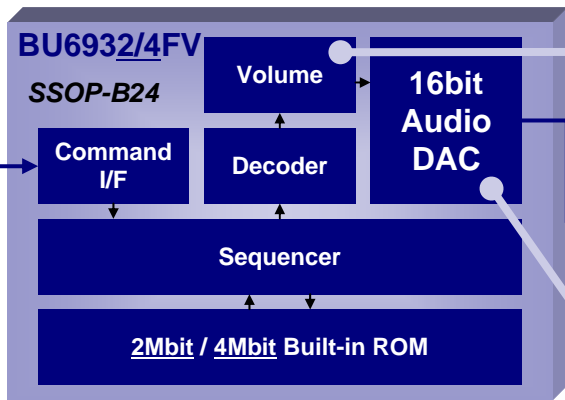
Host CPU or Sensor

With/without μ -controller

Voice synthesis can be controlled by using micro-controller or directly connected to sensor such as in alarm systems for example. Interface between micro-controller and voice synthesis LSI is serial and made of 3 wires:

RXD: serial receive data
TXD: serial transmit data
/RXC: serial clock bar
Sync_REQ: Sync. code request

Host CPU or Sensor



Adjustable volume

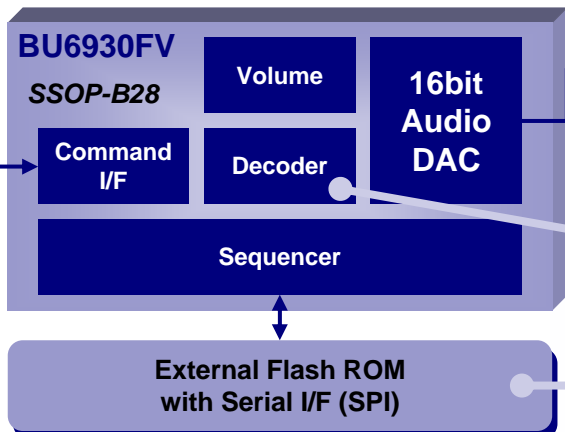
Voice synthesis LSIs can be adjust independently to each track. Volume is easily controlled by command setting.

MSOP8

Speaker Amp. BH7824FVM

Built-in DAC

Voice synthesis LSI integrate a 16bit MONO DAC (Digital to Analog Converter) core to output sound with high quality.



MSOP8

Speaker Amp. BH7824FVM

ROHM compression method

It allows to reduce the necessary storage space and to increase the sound reproduction time (multiplied by 4).

Serial I/F Flash ROM

Serial I/F (SPI type) allows to reduce the numbers of wires and pins between BU6930FV and the external ROM. Serial Flash memories can be provided by SST, Fujitsu, STmicro...

Applications

Car accessories/applications, Domestic/Home electric appliances (washing machine, oven, fridge, water boiler, coffee machine...), Audio manual for complex machine, security devices (camera, alarm...), Elevators, Games/Toys...

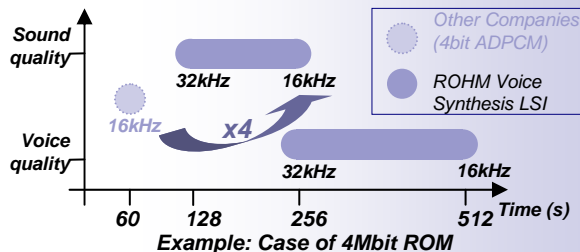
Small package and pin-to-pin compatibility

ROHM can offer with BU6930/2/4FV voice synthesis with ultra small packages, resulting a lower space on PCB, in order to be integrated easily in many kind of applications. BU6932FV (with built-in 2Mbit memory) and BU6934FV (with built-in 4Mbit memory) are pin-to-pin compatible. What is more, BU6930FV (with Serial I/F external ROM type) is 24 pin compatible with BU6932/4FV; the 8 remaining pins are used for SPI I/F between BU6930FV and External ROM.



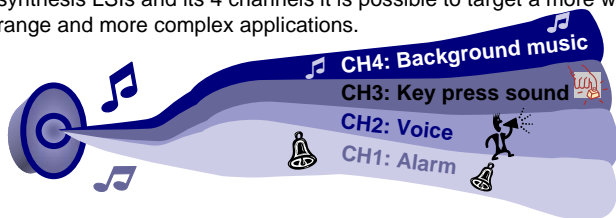
Compression → Higher storage capacity

For example, if classic voice reproduction LSIs enable to play 1 minute, ROHM's voice synthesis LSIs allow to play 4 minutes. Voice capacity is multiplied by 4 → Memory space economy!



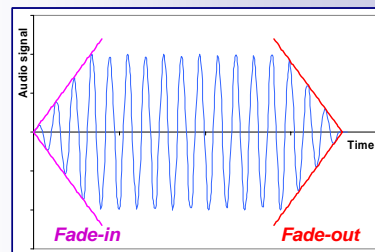
4CH. → Large applications possibilities

Other companies offers only 1 or 2 channels, with ROHM's voice synthesis LSIs and its 4 channels it is possible to target a more wide range and more complex applications.



Auto fade-in & auto fade-out

ROHM's voice synthesis LSIs integrate auto fade-in and fade-out features in order to respectively start and stop the sounds properly, avoiding "pop" sounds.



Part Number	Nb. of Channels	ROM	CPU Interface	Clock Frequency	Audio	Voltage	Package
BU6922KV	4CH.	External ROM ~128Mbit	Serial I/F (SIO)	16.384MHz	16bit DAC Fs: 16, 32kHz	I/O: 2.7~3.6V Core: 1.62~1.98V	VQFP64
BU6932FV	4CH.	Built-in ROM 2Mbit	Serial I/F (SIO)	2~16.384MHz	16bit DAC Fs: 16, 32kHz	Single voltage 2.7~5.5V	SSOP-B24
BU6934FV	4CH.	Built-in ROM 4Mbit	Serial I/F (SIO)	2~16.384MHz	16bit DAC Fs: 16, 32kHz	Single voltage 2.7~5.5V	SSOP-B24
BU6930FV*	2CH.	External ROM Serial I/F	Serial I/F (SIO)	2~16.384MHz	16bit DAC Fs: 16, 32kHz	Single voltage 2.7~5.5V	SSOP-B28

* Product under development (on January 2007), so please contact ROHM Sales

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ROHM ELECTRONICS GmbH

Karl-Arnold-Straße 15,
Willich-Munchheide D-47877 Germany
TEL: +49-2154-9210
FAX: +49-2154-921400

Kesselschmied Straße 10,
Freising D-85354 Germany
TEL: +49-8161-48310
FAX: +49-8161-483120

Zettachring 10 A,
Stuttgart D-70567 Germany
TEL: +49-711-72723710
FAX: +49-711-72723720

Helsingintie 7,
Salo FI-24100 Finland
TEL: +358-2-7332234
FAX: +358-2-7332237

Sluseholmen 2-4,
Copenhagen DK-2450 Denmark
TEL: +45-3694-4739
FAX: +45-3694-4789

e-mail contacts :

Germany sales@de.rohmeurope.com
France sales_paris@fr.rohmeurope.com
UK marketing@uk.rohmeurope.com

Centro de Empresas del Parque Tecnológico de
Andalucía, c/Severo Ochoa s/n
Malaga E-29590 Spain
TEL: +34-9520-20263
FAX: +34-9520-20023

c/Sant Christofol, 25 Local A+B, Oremia de Mar,
Barcelona E-08330 Spain
TEL: +34-9375-24320
FAX: +34-9375-24410

Wishniowy Bussiness Park, ul.Lzecka 26,
Warszawa PL-02-135 Poland
TEL: +48-22-5757213
FAX: +48-22-5757001

Noble House, Capital Drive, Linford Wood,
Milton Keynes, MK14 6QP U.K.
TEL: +44-0-1908-306700
FAX: +44-0-1908-235788

Sales Office Paris / Europe Design Center
12 rue d'Oradour sur Glane,
Paris F-75015 France
TEL: +33-1-5697-3060
FAX: +33-1-5697-3080

Towers Office Center, North Tower 2.Level,
Hermina ut.17, Hungaria Krt.
Budapest H-1146 Hungary
TEL: +36-1-4719338
FAX: +36-1-4719339

7th. Floor Regus Bussiness Center,
Smolenskaya Ploschad 3,
Moscow 121099 Russia
TEL: +7-95-980-6755
FAX: +7-95-937-8290