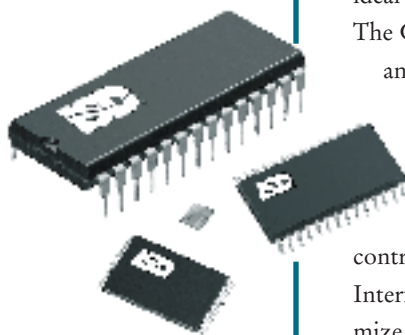


# ISD33000 Series

**Single-Chip Voice Record/Playback Devices**  
**60-, 75-, 90- and 120-Second Durations and 2-, 2.5-, 3- and 4-Minute Durations**



The ISD33000 ChipCorder® Series provides high-quality, 3-volt, single-chip record/playback solutions for 1- to 4-minute messaging applications which are ideal for cellular phones and other portable products. The CMOS devices include an on-chip oscillator, antialiasing filter, smoothing filter, AutoMute® feature, audio amplifier and high density, multilevel storage array. The ISD33000 series is designed to be used in a microprocessor- or microcontroller-based system. Address and control are accomplished through a Serial Peripheral Interface (SPI) or Microwire serial interface to minimize pin count.

Recordings are stored in on-chip nonvolatile memory cells, providing zero-power message storage. This unique, single-chip solution is made possible through ISD's patented multilevel storage technology. Voice and audio signals are stored directly into memory in their natural form, providing high-quality, solid-state voice reproduction.

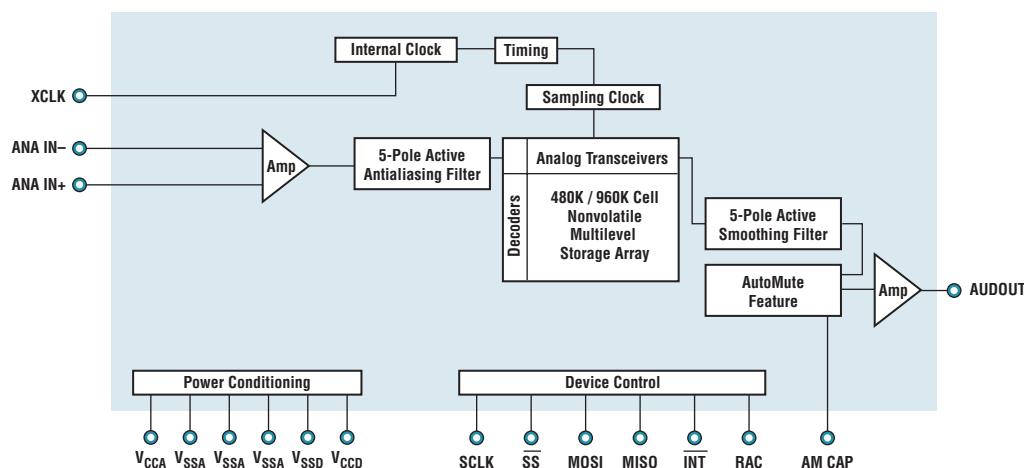
## ISD33000 SERIES CAN BE USED IN VARIOUS APPLICATIONS:

- Cellular phones
- Personal Digital Recorders (PDR)
- Automotive
- Personal Digital Assistants (PDA)

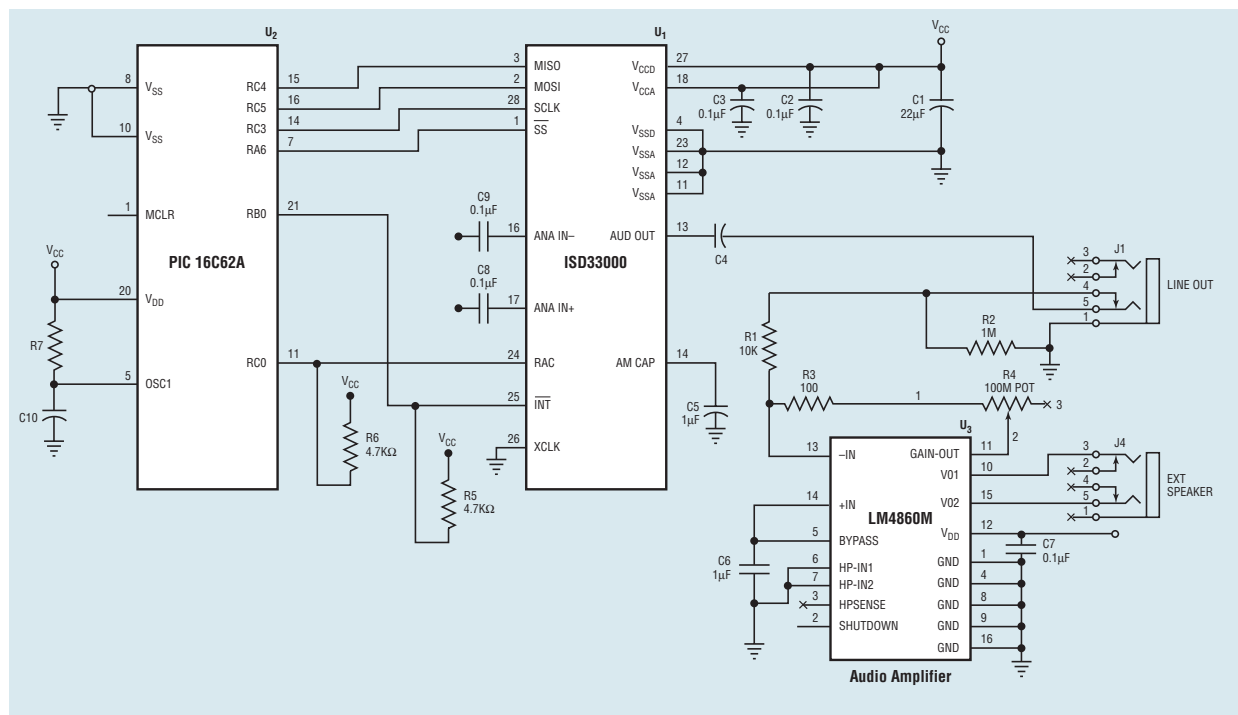
## FEATURES

- Single-chip voice record/playback solution
- Single +3 volt supply
- Low-power consumption
- Operating current:
  - $I_{CC}$  Play = 25 mA (typical)
  - $I_{CC}$  Rec = 30 mA (typical)
- Standby current 1  $\mu$ A (typical)
- Single-chip durations of 60, 75, 90 and 120 seconds; 2, 2.5, 3 and 4 minutes
- High-quality, natural voice/audio reproduction
- AutoMute feature provides background noise attenuation during periods of silence
- No algorithm development required
- Microcontroller SPI or Microwire serial interface
- Fully addressable to handle multiple messages
- Nonvolatile message storage
- Power consumption controlled by SPI or microwire control register
- 100-year message retention (typical)
- 100,000 record cycles (typical)
- On-chip clock source
- Available in die form, PDIP, SOIC and TSOP packaging
- Extended temperature ( $-20^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ ) and industrial temperature ( $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ ) versions available

## ISD33000 SERIES BLOCK DIAGRAM



## ISD33000 SERIES APPLICATION EXAMPLE



ISD33000 SERIES PACKAGE AND TEMPERATURE AVAILABILITY	ISD33060 (60 Seconds), ISD33075 (75 Seconds) ISD33090 (90 Seconds), ISD33120 (2 Minutes) ISD33150 (2.5 Minutes), ISD33180 (3 Minutes)				ISD33120-4 (120 Seconds)				ISD33240 (4 Minutes)			
	TSOP	PDIP	SOIC	DIE	TSOP	PDIP	SOIC	DIE	TSOP	PDIP	SOIC	DIE
Commercial Die (0° to +50°)				•				•				•
Commercial Packaged (0° to +70°)	•	•	•		•				•	•	•	
Extended (-20° to +70°)	•	•	•									
Industrial (-40° to +85°)	•	•	•						•			

## ORDERING THE ISD33000 PRODUCTS

## ISD33

Product Series	Duration	Package Type	Special Temperature Field
ISD33000 Series	060 = 60 sec. 075 = 75 sec. 090 = 90 sec. 120-4 = 120 sec. 120 = 2.0 min. 150 = 2.5 min. 180 = 3.0 min. 240 = 4.0 min.	E = 28 Lead 8 × 14.4mm TSOP P = 28 Lead 0.600-inch PDIP S = 28 Lead 0.300-inch SOIC X = Die	Blank = Commercial Die (0°C to +50°C) or Commercial Packaged (0°C to +70°C) D = Extended (-20°C to +70°C) I = Industrial (-40°C to +85°C)

## PRODUCT SUMMARY

Duration	Input Sample Rate (KHz)	Typical Filter Pass Band (KHZ)
060 = 60 sec.	8.0	3.4
075 = 75 sec.	6.4	2.7
090 = 90 sec.	5.3	2.3
120-4 = 120 sec.	4.0	1.7
120 = 2.0 min.	8.0	3.4
150 = 2.5 min.	6.4	2.7
180 = 3.0 min.	5.3	2.3
240 = 4.0 min.	4.0	1.7



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408-544-1786 (Fax)

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