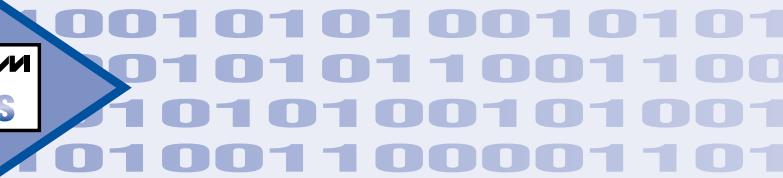
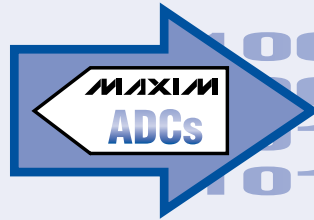
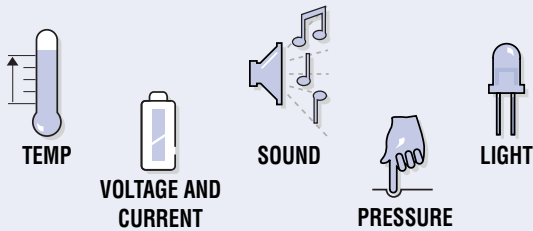
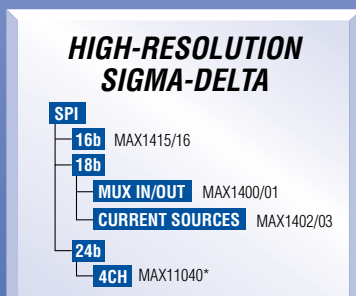
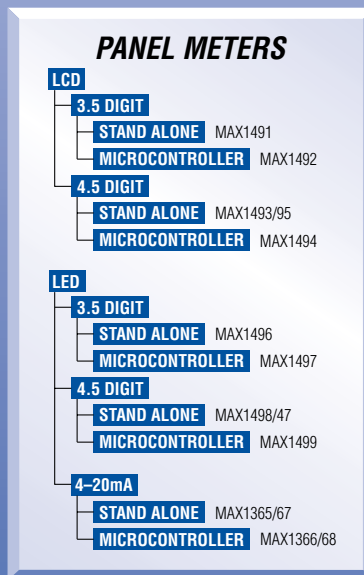
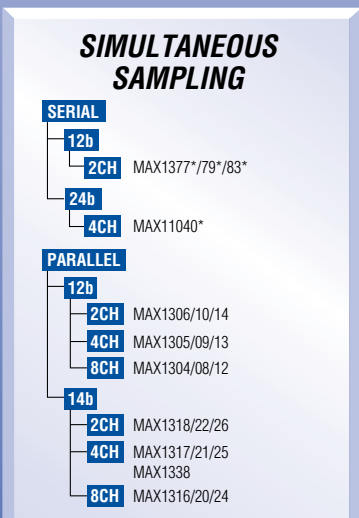
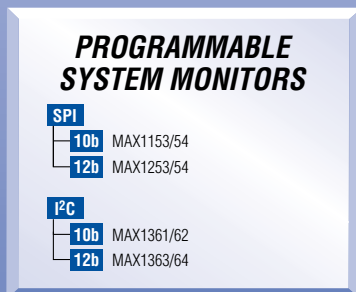
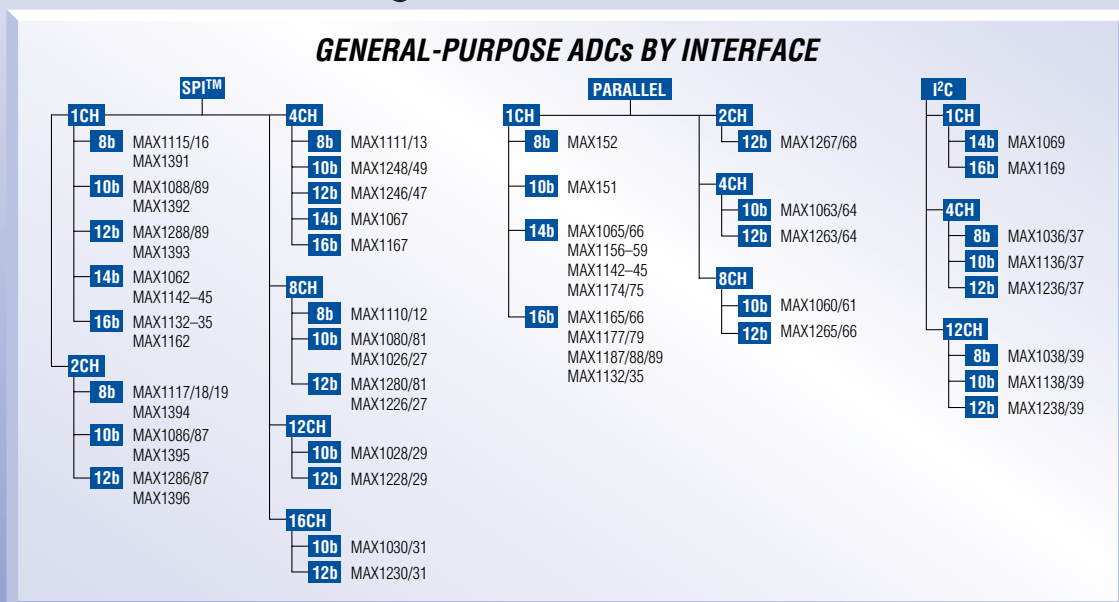


BRIDGING THE GAP BETWEEN REAL-WORLD AND DIGITAL SIGNALS



With over 300 ADCs featuring industry-leading performance and features, Maxim has the largest product offering on the market and the ADC for your application. Here is a list of parts to get you started. If you do not see a part for your particular application, visit Maxim's data conversion website at www.maxim-ic.com/ADCs.

ADC Quick Selection Guide



SPI is a trademark of Motorola, Inc.

*Future product—contact factory for availability.

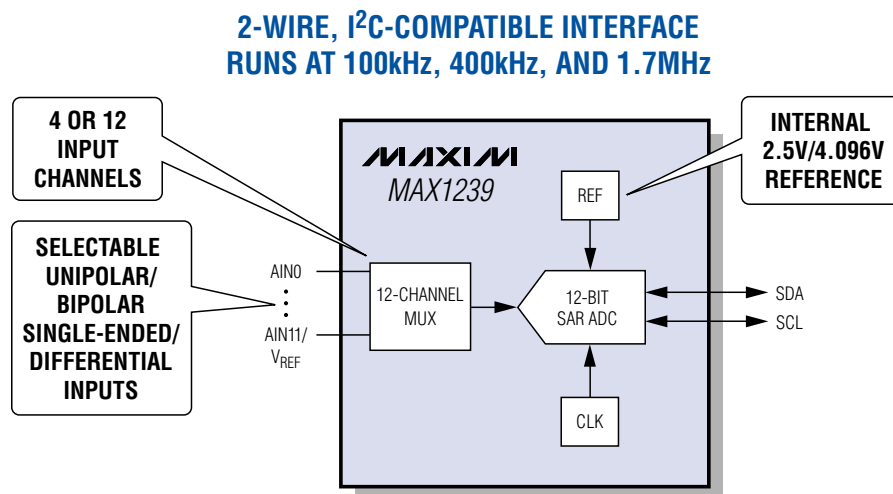
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Industry's Largest Selection of I²C-Compatible ADCs

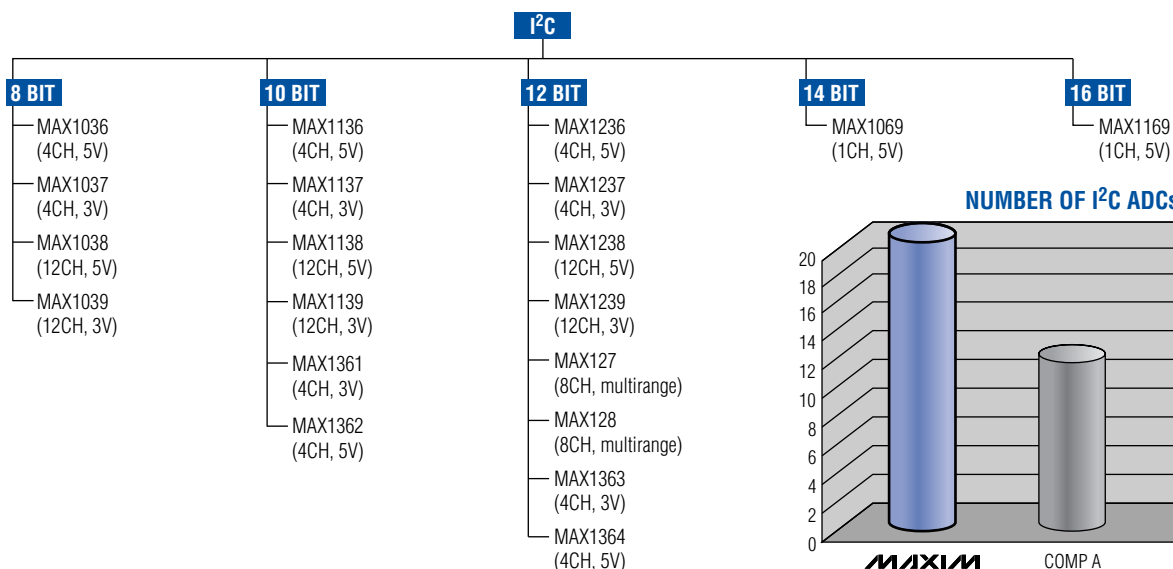
Choose from 20 ADCs

Since introducing the MAX127/MAX128 in 1998, Maxim has continued to expand its I²C ADC product portfolio. They were the industry's first 12-bit I²C ADCs and provided 8 channels with a software-programmable input range. We now offer 8-, 10-, and 12-bit ADCs with 4 and 12 channels, and 14- and 16-bit single-channel I²C ADCs. With 20 I²C-compatible ADCs, Maxim has a larger selection than the rest of the competition combined.



MAX1036–MAX1039, MAX1136–MAX1139, MAX1236–MAX1239

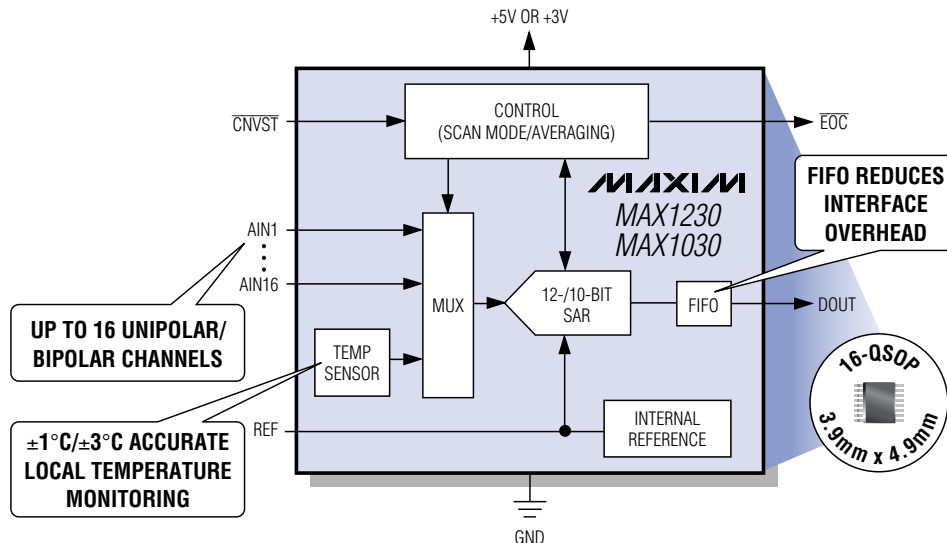
- 94.4ksps, ±1 LSB INL, ±1 LSB DNL
- Programmable Channel-Scan Mode with FIFO
- Multiple I²C Addresses Available
- Industry's Smallest Footprint
 - 4 Channels: 8-Pin SOT (8 Bit), 8-Pin μ MAX[®] (10/12 Bit)
 - 12 Channels: 16-Pin TSSOP



μ MAX is a registered trademark of Maxim Integrated Products, Inc.

Complete Selection of SPI-/QSPI™-/MICROWIRE™-Compatible ADCs

8- to 16-Bit Resolution and 1- to 16-Channel Inputs



SPI	
1CH	
8b	MAX1115/16 MAX1391
10b	MAX1088/89 MAX1392
12b	MAX1288/89 MAX1393
14b	MAX1062 MAX1142-45
16b	MAX1132-35 MAX1162
2CH	
8b	MAX1117/18/19 MAX1394
10b	MAX1086/87 MAX1395
12b	MAX1286/87 MAX1396
4CH	
8b	MAX1111/13
10b	MAX1248/49
12b	MAX1246/47
14b	MAX1067
16b	MAX1167
8CH	
8b	MAX1110/12
10b	MAX1080/81 MAX1026/27
12b	MAX1280/81 MAX1226/27
12CH	
10b	MAX1028/29
12b	MAX1228/29
16CH	
10b	MAX1030/31
12b	MAX1230/31

Features

- Automatic Power-Down
- Programmable Channel-Scan Mode
- Single-Ended or Differential Inputs
- Programmable Unipolar or Bipolar Input
- Internal Digital Averaging
- Integrated Reference
- Internal FIFO Reduces Interface Overhead
- Internal Temperature Sensor
- V_{DD} Monitors
- Small Footprint
 - 2 Channels in an 8-Pin SOT
 - 16 Channels in a 28-Pin TQFN



INDUSTRIAL DATA ACQUISITION



MOTOR CONTROL

Applications

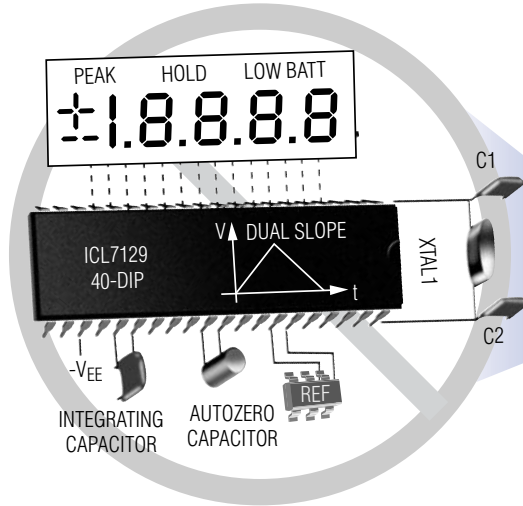
- Motor Control
- Medical Instruments
- Industrial I/O Modules
- Data-Acquisition Systems
- Industrial Process Control
- Battery-Powered Instruments

QSPI is a trademark of Motorola, Inc.
MICROWIRE is a trademark of National Semiconductor Corp.

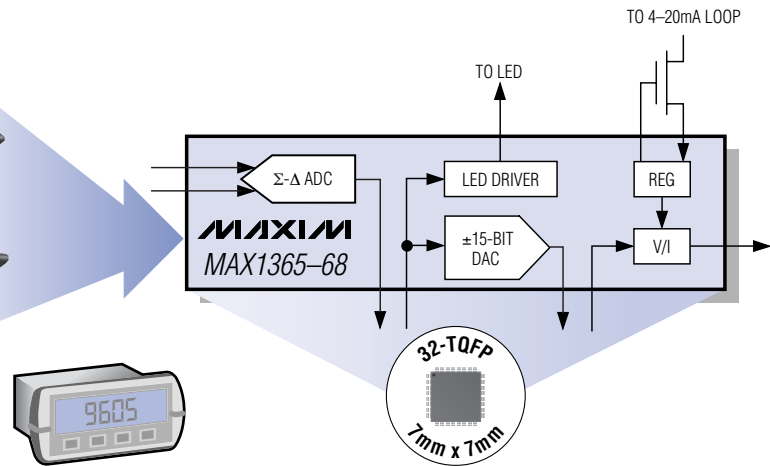
3.5-/4.5-Digit Panel-Meter ICs Reduce Footprint by 90%

Eliminate Costly External Components

OLD SOLUTION REQUIRED
COSTLY EXTERNAL COMPONENTS



SELF-CONTAINED PANEL-METER SOLUTION
USES A SIGMA-DELTA ADC TO SAVE COST



- $\pm 1999/\pm 19999$ Resolution (3.5/4.5 Digit)
- 20-Bit, Sigma-Delta ADC
- > 100dB of 50Hz/60Hz Noise Rejection
- 2.7V to 5.25V Single-Supply Operation
- Eliminate Several Board Components
 - Integrating and Autozero Capacitors
 - External Clock Source
 - External Voltage Reference

- Stand-Alone or μC Interface
 - SPI-/QSPI-/MICROWIRE-Compatible Interface Allows Measurements to Be Processed with a μC
- ± 15 -Bit Resolution Output DAC (MAX1365–MAX1368)
 - 14-Bit Linear V/I Converter
 - Unipolar or Bipolar Mode
 - Selectable 0 to 16mA or 4–20mA Current Output to Drive a Remote Display
 - Separate 7V to 30V Supply for Current-Loop Output

Choose the Maxim Panel-Meter IC That Is Right for Your Application

CHOOSE BETWEEN LCD OR LED DISPLAY

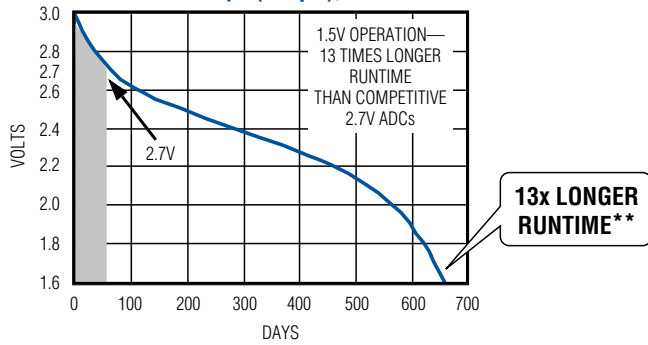
Part	Resolution (Digit)	Display	Interface	Current Output (mA)	Package
MAX1365/MAX1367	3.5/4.5	LED	Stand-alone	4–20 or 0 to 16	32-TQFP
MAX1366/MAX1368			μC		
MAX1491/MAX1492	3.5	LCD	Stand-alone/ μC	—	28-SSOP/PDIP
MAX1496/MAX1497		LED		—	
MAX1493/MAX1495	4.5	LCD	Stand-alone	—	32-TQFP
MAX1498/MAX1447		LED		—	
MAX1494		LCD	μC	—	
MAX1499		LED		—	

CHOOSE BETWEEN STAND-ALONE OR μC INTERFACE

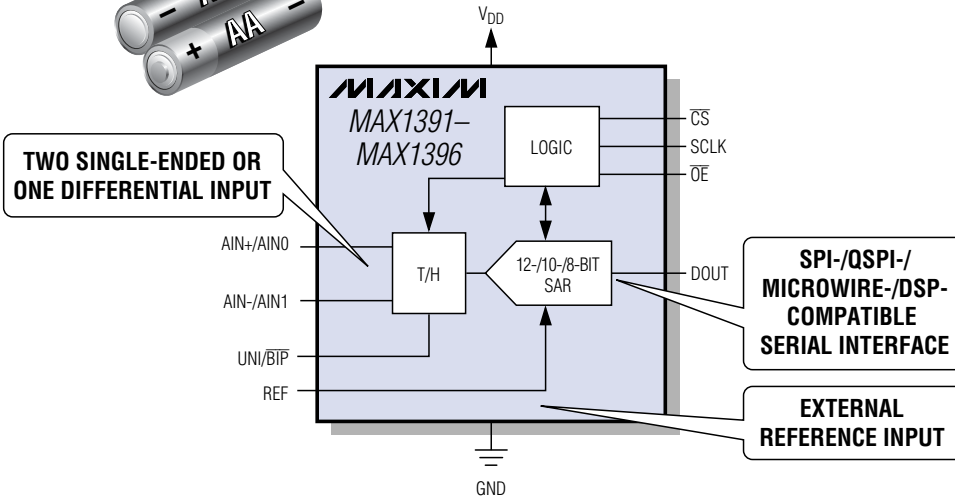
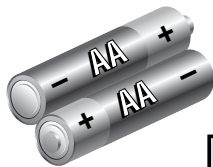
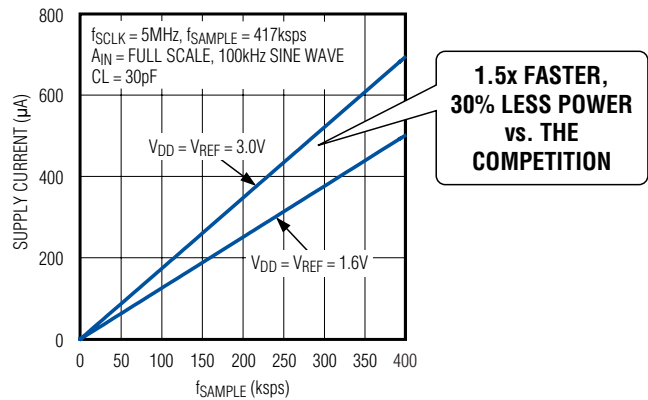
1.5V to 3.6V Serial, 12-/10-/8-Bit ADCs Run on Two AA Batteries* for 1.8 Years at 100ksps

Adjustable Ultra-Low-Power ADCs Are Ideal for Portable Applications

TYPICAL TWO AA DISCHARGE CURVE AT 100ksps (210µA), +25°C



SUPPLY CURRENT vs. CONVERSION RATE



- 1.5V to 3.6V Low-Power Operation
- 0 to V_{DD} External Reference Input
- 0.2µA Shutdown Current
- Unipolar or Bipolar Operation
- One Differential or Two Single-Ended Inputs

Part	Resolution (Bits)	No. of Input Channels	Speed (ksps)	INL (LSB)	DNL (LSB)	TUE	SINAD (dB)	Package (mm x mm)
MAX1396	12	2 SE	300	±1	±1	±2	70	10-TDFN (3 x 3)
MAX1393		1 diff						
MAX1395	10	2 SE	350	±0.5	±0.5	±1	61	
MAX1392		1 diff						
MAX1394	8	2 SE	400	±0.25	±0.25	±0.3	49	
MAX1391		1 diff						

*3300mAh AA alkaline battery (LR6).

**1.5V operation extends runtime by 13x compared to similar 2.7V ADCs.

16-Bit Data-Acquisition Systems with 12-Bit DACs Support Your μC

Tiny, 6mm x 6mm TQFN Package

Precision Analog

MAX1329*/MAX1330*

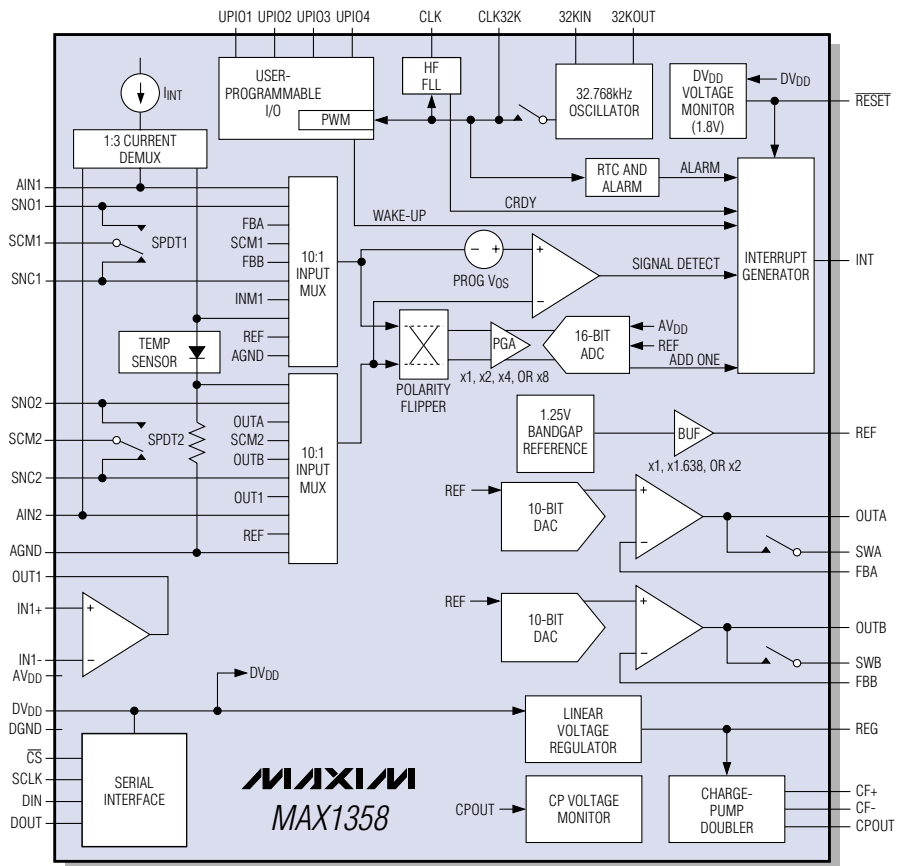
- 16-Bit ADC at 1ksps and Fast 12-Bit Mode at 300ksps
- Dual 12-Bit F/S** DACs

MAX1358/MAX1359

- 16-Bit, Sigma-Delta ADC
- Dual 10-Bit F/S DACs

Common Features

- 1.8V to 3.6V Low-Power Operation
- PGA with Gains of 1, 2, 4, and 8
- $\pm 0.5^\circ\text{C}$ Internal/External Temp Sensor
- Low-Leakage SPDT and SPST Switches
- Internal Selectable Reference
- Low-Noise Op Amps
- Charge Pump Provides 3V at 10mA
- V_{DD} Supply Monitors



μC Support

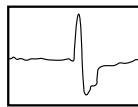
- 32kHz Internal Oscillator with FLL Multiplier and Clock Output
- General-Purpose I/O
- Programmable Interrupts/Alarms
- Watchdog Timer
- RTC with 1/256s Resolution



PORTABLE MEDICAL DEVICES



INDUSTRIAL DATA ACQUISITION



MEDICAL INSTRUMENTS

Part	Resolution	No. of Input Channels	Speed (ksps)	On Current (mA)	Sleep Current (μA)	Shutdown Current (μA)	No. of DACs	No. of Op Amps	No. of GPIOs	No. of Switches SPDT/SPST
MAX1329*	16-bit, 12-bit fast mode	2	1 (16 bit), 300 (12 bit)	2	1.2	0.4	2 x 12-bit F/S	1	2 x 4	2/3
MAX1330*							1 x 12-bit F/S	2		
MAX1358	16-bit sigma delta	2	0.01 to 0.512	1.36	6.1	1.6	2 x 10-bit F/S	1	4	2/3
MAX1359							1 x 10-bit F/S	2		

*Future product—contact factory for availability.

**F/S = force/sense.

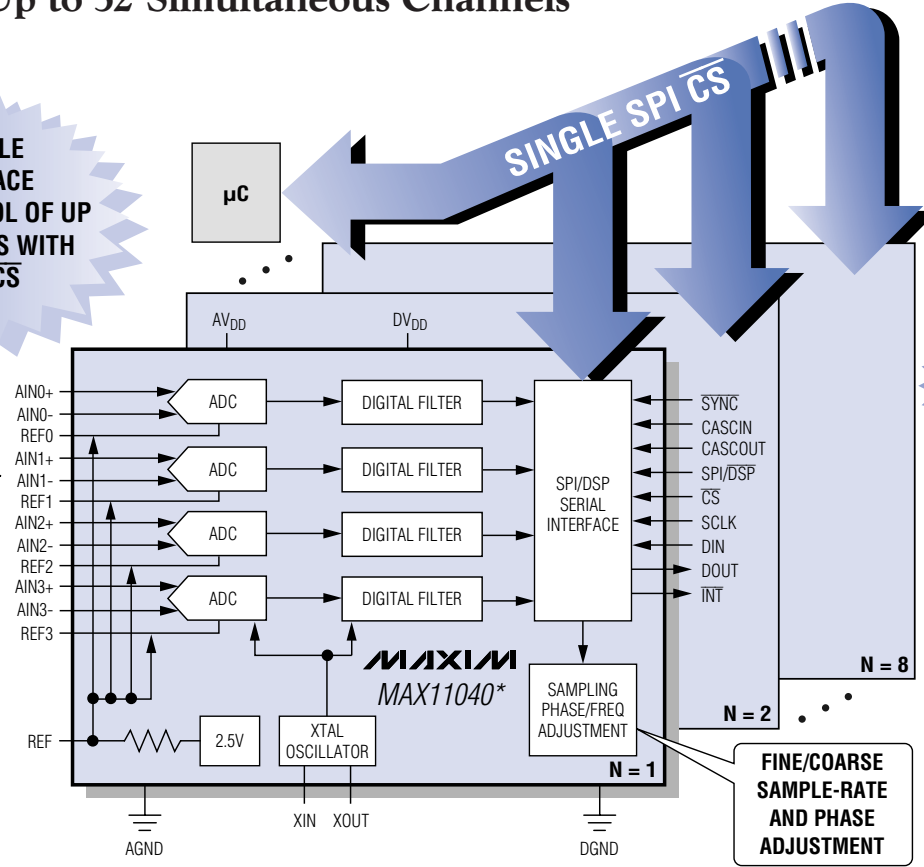


Quad, 24-Bit Sigma-Delta ADC Simultaneously Samples Four Differential Channels at 64ksps

Cascadable Up to 32 Simultaneous Channels

**CASCADABLE SPI INTERFACE
ALLOWS CONTROL OF UP TO EIGHT PARTS WITH A SINGLE CS SIGNAL**

4-CHANNEL, FULLY DIFFERENTIAL BIPOLAR INPUTS



105dB SNR AT 16ksps

FINE/COARSE SAMPLE-RATE AND PHASE ADJUSTMENT

Features

- Programmable Sampling Phase: 0 to 333µs Phase Delay in 1.33µs Steps
- Programmable Data-Rate Resolution
 - 0.25ksps to 64ksps Coarse (adj)
 - 0.06% Fine (adj)
- Four Simultaneous ADC Channels
- Input Overvoltage Protection Up to ±6V
- SYNC Pin Allows External Synchronization of Multiple MAX11040* Devices
- 24-Bit Data Format or 19-Bit plus Channel Address Tags Data Format
- < 0.1% Error over 1000:1 Dynamic Range

Applications

- Power-Protection Relay Equipment
- Industrial Data-Acquisition Systems
- Multiphase Power Systems
- Medical Instruments

Part	AV _{DD} (V)	DV _{DD} (V)	Input Range (V)	Reference** (V)	Supply Current (mA)
MAX11040*	3.0 to 3.6	2.7 to AV _{DD}	±2.2	I2.5/E	44

*Future product—contact factory for availability.
**I = internal reference, E = external reference.

