KeyPAD
Key Product Application Diagrams
KeyPAD Instructions

• **Presentation Mode**: Navigate to “View” → “Full Screen Mode” in Adobe Reader and it will act exactly like a PowerPoint presentation.

• **Document Layout**: The first 70 or so slides contain block diagrams, and the rest are family part tables. If you click on any part in a block diagram, it will take you to a family part table inside the presentation.

• **Inside Presentation Navigation**: Page 3 has a condensed index that leads to each sections block diagram list, however in the bottom left hand corner there is a button for a “Full Index”. The “Full Index” button leads to a list of every block diagram in the presentation. If you click on any of the blocks on slide 3, it takes you to the title page for that section and lists out the available block diagrams.

• On Any block diagram slide, there is a “Return”, “Home” and title header button. The “Return” takes you back to what you were previously looking at, “Home” takes you to slide 3 (block index), and the title header button takes you to the title header page for that section.
Factory Automation
Test and Measurement
FPGA Power
Industrial
Motor Control
Communications / Wireless
Consumer
Medical Applications
Sensing Interface
Automotive
Disclaimer
- Communication Fieldbus Module
- IO-Link® and Digital Sensor Input Sensing and System Solution
- PLC – 12-Bit Analog Input (Voltage/Current)
- PLC - Analog Input (RTD/Thermocouple)
- PLC - Analog Output
- PLC - Digital Input
- PLC - Digital Output
- PLC – High-Resolution Analog Input (Voltage/Current)
Communication Fieldbus Module

- Secure Authentication
- Voltage Monitors
- Backplane Interface
- Sensor/Actuator Security
- Hot-Swap Control
- Watchdog Timer-Reset ICs
- Micro-Controller
- UART
- Ethernet
- Isolation
- Isolated RS-485 Profibus
- DC-DC Power
- Fault Protection

Data and Power Backplane

Field Bus

SECURE AUTHENTICATION

BACKPLANE INTERFACE

SENSOR/ACTUATOR SECURITY

HOT-SWAP CONTROL

WATCHDOG TIMER-RESET ICs

MICRO-CONTROLLER

UART

ETHERNET

ISOLATION

ISOLATED RS-485 PROFIBUS

DC-DC POWER

FAULT PROTECTION

FIELD BUS
IO-Link® and Digital Sensor Input Sensing and System Solution

- Binary (On/Off) Sensor
  - Sensor
  - Output Driver
- Secure Authentication
- Industry-Standard Connection
  - Sensor
  - Transceiver
  - Microcontroller
  - Step-Down DC-DC
- IO-Link Sensor
  - Sensor
  - Transceiver
- IO-Link Interface
  - Voltage/Current Protection Switch
  - IO-Link Master Transceiver
  - UART
  - Isolation
  - Sensor/Actuator Security
- Supervisory/Watchdog Timer
- Isolated Profibus RS-485
- Profibus RS-485
- Ethernet
- System Power
  - Over V1 Protection
  - Step-Down DC-DC
  - 24VDC
Programmable Logic Controllers (PLCs) – 12-Bit Analog Input

- **VOLTAGE SENSORS**
- **SECURE AUTHENTICATION**
- **OP AMP**
- **ADC**
- **VREF**
- **SIGNAL CHAIN**
- **REAL-TIME CLOCK**
- **LED DRIVER**
- **SUPERVISORY/WATCHDOG TIMER**
- **MICRO-CONTROLLER**
- **SENSOR/ACTUATOR SECURITY**
- **ISOLATION**
- **SYSTEM POWER ISOLATION ALTERNATIVES**
- **TEMP SENSOR**
- **OVER V/I POWER**
- **STEP-DOWN DC-DC**
- **TRANSFORMER DRIVER**
- **FLYBACK/BOOST CONVERTER**
- **ISO BUCK**
- **MOSFET DRIVER**

Factory Automation 7 | Maxim Integrated
Programmable Logic Controllers (PLCs) - RTD and/or Thermocouple Input
Programmable Logic Controllers (PLCs) – Analog Output

- **Supervisory/Watchdog Timer**
- **Microcontroller**
- **Secure Authentication**
- **Real-Time Clock**
- **LED Driver**
- **Signal Chain**
  - **Op Amp**
  - **DAC**
  - **Signal Conditioning Programmable Output (Plus Over Range)**
- **Buffered 5V Output**
- **Outputs**
  - ±10V
  - 0 to 10V
  - 0 to 5V
  - ±20V
  - 0 to 20mA
  - 4 to 20mA

**System Power**
- Temp Sensor
- Over V/I Power
- Step-Down DC-DC
- Transformer Driver
- Flyback/Boost Converter
- ISO Buck
- MOSFET Driver

**Isolation Alternatives**

Maxim Integrated
Programmable Logic Controllers (PLCs) – Digital Input

- Secure Authentication
- Digital Input
- Isolation
- Supervisory/Watchdog Timers
- Real-Time Clock
- Sensor/Actuator Security
- Microcontroller
- LED Driver
- System Power
  - Temp Sensor
  - Over V/I Power
  - Step-Down DC-DC
  - Transformer Driver
  - FLYBACK/BOOST Converter
  - ISO Buck
  - MOSFET Driver
- Isolation Alternatives
Programmable Logic Controllers (PLCs) – High-Resolution Analog Input

- High-Resolution Analog Input
- MICRO-CONTROLLER
- SIGNAL CHAIN
- VOLTAGE SENSORS
- SECURE AUTHENTICATION

- SIGNAL CHAIN
- MUX
- VREF
- OP AMP
- ADC
- ISOLATION

- MICRO-CONTROLLER
- SUPervisory/Watchdog Timer
- REAL-TIME CLOCK
- LED DRIVER
- SENSORS/ACTUATORS SECURITY

- SYSTEM POWER
- TEMP SENSOR
- OVER V/ POWER
- STEP-DOWN DC-DC
- TRANSFORMER DRIVER
- FLYBACK/BOOST CONVERTER
- ISO BUCK
- MOSFET DRIVER
Test & Measurement

- High-Resolution Medium-Speed DAS (Data Acquisition System)
- Power Grid Sampling Board
High-Resolution Medium-Speed DAS (Data Acquisition System)
Power Grid Sampling Board

LP Filter
DIFFERENTIAL OUTPUT
SYSTEM POWER
TEMP SENSOR
OVER V/I PROTECTION
STEP-DOWN DC-DC ISOLATED POWER
OVER V/I PROTECTION TEMP SENSOR
LDO STEP-DOWN DC-DC ISOLATED POWER OVER V/I PROTECTION TEMP SENSOR
REAL-TIME CLOCK ISOLATION RS-485 ISOLATION RS-485
RS-232
ETHERNET
BATTERY MANAGEMENT CHARGER FUEL GAUGE
• Kintex® UltraScale KCU105 Power (PMBus and Non-PMBus)
• Virtex® UltraScale VCU108/10 (PMBus and Non-PMBus)
• Xilinx® Remote Radio Head/Wireless Backhaul
• Xilinx® UltraScale FPGA Power
Kintex UltraScale KCU105 Power (PMBus and Non-PMBus)
Virtex UltraScale VCU108/10 (PMBus and Non-PMBus)
Xilinx Remote Radio Head/Wireless Backhaul

- PMBUS INTERFACE (PMBUS ONLY)
- $V_{IN} = 12V$
- $V_{REF}$
- SYSTEM MANAGER
- $V_{CC}$
- $V_{IN} = 12V$
- $0.72V @ 12A$
- $0.85V @ 3A$
- $1.8V @ 1A$
- $0.9V @ 2A$
- $1.2V @ 2A$
- $3.3V @ 0.1A$
- $1.8V @ 1A$
- $1.25V @ 0.001A$

ULTRASCALE ZU9/15EG

MAXIM INTEGRATED
Xilinx UltraScale FPGA
KCU-105 Power Supply Design without PMBus

STEP-DOWN DC-DC

- VCCINT: 0.95V @ 40A
- VCCAU: 1.8V @ 5A
- VCCAU: 1.8V @ 10A
- VCC1V8: 1.8V @ 2A
- VCC1V8: 0.95V @ 2A
- VCC1V2: 1.2V @ 3A
- MGTAVCC: 1.0V @ 5A
- MGTAVTT: 1.2V @ 5A
- UTIL_3V3: 3.3V @ 10A
- LDO: 1.8V @ 1A

TEMP SENSOR
FPGA KINTEX ULTRASCALE XCKU040

MONITOR AND CONTROL

- SEQUENCER AND VOLTAGE MONITOR

SYSTEM POWER

- V IN = 12V
- 5V @ 1A
- 1V @ 2A
- 1.8V @ 1A
- 2.5V @ 1A

LDO
- SYS_5V0
- SYS_1V0
- LDO SYS_1V8
- LDO SYS_2V5
• Asset Management
• Automated Test Equipment (ATE)
• Battery Test System
• Blockchain Encryption Machine
• Building Automation
• Distribution Automation: Load Tap Changer
• Distribution Automation: Recloser Controller
• Electricity Meter
• Fault Indicator
• Gas Detector
• General-Purpose Meters and Controllers
• LED Distributed Illumination
• Parking Garage Lot Vacancy Detection System
• Point-of-Sale System
• Portable Calibrator – Pressure
• Portable Calibrator - Temperature
• Portable Data Logger
• Refrigeration
• Portable Calibrator – Temperature RTD or Thermocouple
• Thermocouple Temperature Controllers
• Weigh Scale
GPS
RF IN
MAIN BATTERY POWER (24VDC)
OVER V/I
PROTECTION
STEP-DOWN
DC-DC
LDO
OVER V/I
PROTECTION
STEP-DOWN
DC-DC
BOOST
BATTERY MANAGEMENT
FUEL
GAUGE
BATTERY
CHARGER
CURRENT
SENSING
SUPERVISORY/
WATCHDOG TIMER
RS-232
REAL-TIME
CLOCK
USB
CAN
TRANSCEIVERS
ANALOG I/O
RS-485
SECURITY
GPS
TUNER
RF
COMMUNICATION
DIGITAL I/O
SENSOR/ACTUATOR
SECURITY
BLUETOOTH®
ETHERNET
MICRO-
CONTROLLER
ASSET MANAGEMENT
HOME
RETURN
INDUSTRIAL
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Automated Test Equipment (ATE)
Battery Test System

AC 220V

ISOLATED POWER

MOS DRIVER

PWM CONTROLLER

DC-DC

MOS DRIVER

CVCC CONTROLLER

REF

ADC

MUX

TEMP SENSOR

CURRENT SENSE AMP

AMP

BATTERY UNDER TEST

DAC

MCU

RS-485

SYSTEM POWER

LDO

STEP-DOWN DC-DC

ISOLATED POWER

OVER V/I PROTECTION

TEMP SENSOR

BATTERY MANAGEMENT

FUEL GAUGE

CHARGER

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Building Automation

- Ambient Light/Proximity Sensor
- Motor Current Sensing
- Microcontroller
- Temp Sensor
- Display Backlight
- Supervisory/Watchdog Timer
- Real-Time Clock
- Isolation
- RS-485
- RS-232
- Liquid/Gas Flow Rate Measurement
- Sensor/Actuator Security
- Wireless
- Signal Chain

- Pressure/Temperature Sensors
- Op Amp
- ADC
- Vref

- System Power
- MOSFET Driver
- LDO
- Step-Down DC-DC
- Isolated Power
- Over/Undervoltage Protection
- Step-Up DC-DC

- Battery Management
- Fuel Gauge
- Charger
Distribution Automation – Load Tap Changer

**COMMUNICATION**
- RS-485 ISOLATION
- RS-232 ISOLATION
- FIBER MODULE
- PLC
- RF TX/RX

**SYSTEM POWER**
- LDO
- STEP-DOWN DC-DC
- ISOLATED POWER
- OVER V/I PROTECTION

**SUPERVISORY**

**REAL-TIME CLOCK**

**DAC**

**TEMP SENSOR**

**SENSOR/ACTUATOR SECURITY**

**VREF**

**ISOLATION**
Distribution Automation – Recloser Controller

- Communication
  - RS-232
  - Fiber Module
  - PLC
  - RF TX/RX

- Supervisory
  - VREF
  - ADC
  - Isolation
  - Security
  - Real-time Clock

- System Power
  - LDO
  - Step-down DC-DC
  - Isolated Power
  - Over VI Protection

- Portable Power
  - Battery Chargers
  - Current Sensors
  - Fuel Gauge
Electricity Meter
Fault Indicator

- System Power
  - LDO
  - Step-Down DC-DC
  - Isolated Power
  - Over V/I Protection
  - Temp Sensor

- Battery Management
  - Fuel Gauge
  - Charger

- Battery
- Supercap
- Ideal Diodes
- Microcontroller
- ADC
- Op Amp
- Mux
- Boost
- Charger
- Step-Down DC-DC

- CT Powered
- Ac Measurement

- Sensor/Actuator Security
- Supervisory
- Vref

Return Home Industrial
Gas Detector
General-Purpose Meters/Controllers

- Signal Chain
- Microcontroller
- Supervisory/Watchdog Timer
  - Real-time Clock
  - Sensor/Actuator Security
- Isolation
  - RS-485
  - RS-232
- Display LED
- USB
- Control Signal
  - OP Amplifier
  - ADC
  - VREF
- Sensor Inputs
  - OP Amplifier
  - DAC
- System Power
  - LDO
  - Step-down DC-DC
  - Isolated Power
  - Over VI Protection

Maxim Integrated
LED Distributed Illumination

- SUPERVISORY
- REAL-TIME CLOCK
- WIRELESS
- SENSOR/ACTUATOR SECURITY
- AMBIENT LIGHT/PROXIMITY SENSOR
- TEMP SENSOR
- LED DRIVER
- AC/DC
- SYSTEM POWER
- STEP-DOWN DC-DC
- OVER V/I PROTECTION

System Power Protection

AC/DC
Parking Garage Lot Vacancy Detection System

**INFRARED SENSOR MODULE**
- INFRARED TX/RX CIRCUIT
- LED DRIVER
- LAMP DRIVER
- MICRO-CONTROLLER
- COMMUNICATION
  - RF TX/RX
  - RS-485
  - ETHERNET
- STEP-DOWN DC-DC

**ULTRASONIC SENSOR MODULE**
- ULTRASONIC TX/RX CIRCUIT
- LED DRIVER
- LAMP DRIVER
- MICRO-CONTROLLER
- COMMUNICATION
  - RF TX/RX
  - RS-485
  - ETHERNET
- STEP-DOWN DC-DC

**CENTRAL CONTROLLER**
- COMMUNICATION
  - WIFI
  - RS-485
  - ETHERNET
- ISOLATION
- MUX (16:1)
- STEP-DOWN DC-DC

**VACANCY DISPLAY**
- LED DRIVER
- LED DOT MATRIX DRIVER
- MICRO-CONTROLLER
- SENSOR/ACTUATOR SECURITY
- COMMUNICATION
  - RF TX/RX
  - RS-485
  - ETHERNET
- STEP-DOWN DC-DC
Point-of-Sale System

SUPervisory/Watchdog Timer

Real-Time Clock

Ethernet Phy

Wireless

Microcontroller

DeepCover Secure UC

Audio Amp

RS-485

RS-232

LCD Power

LCD Backlight

System Power

Battery Management

Battery Charger

Current Sensor

Fuel Gauge

LDO

Step-Down DC-DC

Over V/I Protection

Step-Up DC-DC

Temp Sensor
Portable Calibrator - Pressure

- **Microcontroller**
- **Supervisory/Watchdog Timer**
- **Real-Time Clock**
- **Isolation**
- **RS-232**
- **Display LCD**
- **USB**
- **Temperature Sensor**

**Signal Chain**
- **Op Amp**
- **ADC**
- **Vref**

**Internal Pressure Generation**
(HAND PUMP/COMPRESSOR)

**Battery Management**
- **Battery Charger**
- **Current Sensor**
- **Fuel Gauge**

**System Power**
- **LDO**
- **Step-Down DC-DC**
- **Isolated Power**
- **Over V/I Protection**

**Diagram Flow**
- **Sensor Inputs**
- **Battery Management**
- **System Power**
- **Microcontroller**
- **Supervisory/Watchdog Timer**
- **Real-Time Clock**
- **Isolation**
- **RS-232**
- **Display LCD**
- **USB**
- **Temperature Sensor**

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Portable Calibrator – Temperature RTD or Thermocouple

- RTD-to-Digital Converter
- Thermocouple-to-Digital Converter
- Supervisory/Watchdog Timer
- Real-Time Clock
- Isolation
- RS-232
- Display LCD
- USB
- LDO
- Step-Down DC-DC
- Isolated Power
- Over V/I Protection

System Power

Battery Management
- Battery Charger
- Current Sensor
- Fuel Gauge

Industrial

Home
Return
Portable Data Logger

- **Microcontroller**
- **Supervisory/Watchdog Timer**
- **Real-Time Clock**
- **Other Peripherals**
  - **Isolation**
  - **Temp Sensor**
  - **USB**
- **Signal Chain**
  - **Analog Inputs**
    - **Op Amp**
    - **ADC**
    - **Vref**
    - **Sensor/Actuator Security**
- **Portable Power**
  - **Step-Down DC-DC**
  - **LDO**
  - **Current Sensing**
  - **Isolated Power**
  - **Over/Under Protection**
- **Battery Management**
  - **Fuel Gauge**
  - **Charger**
- **RS-232**
Refrigeration

**SIGNAL CHAIN**
- TEMPERATURE SENSORS
- OP AMP
- ADC
- VREF
- SUPervisory/WATCHDOG TIMER
- REAL-TIME CLOCK
- ISOLATION
- DISPLAY BACKLIGHT
- RS-485
- RS-232

**MICRO-CONTROLLER**
- COOLANT FLOW RATE MEASUREMENT
- TEMP SENSOR

**SYSTEM POWER**
- LDO
- ISOLATED POWER
- STEP-DOWN DC-DC
- OVER V/I PROTECTION
- STEP-UP DC-DC
- MOSFET DRIVER

**Industrial 39**
RTD Temperature Controller
Thermocouple Temperature Controller

- Supervisory/Watchdog Timer
- Real-Time Clock
- Secure Auth
- Isolation
- Display LED
- USB
- RS-485
- RS-232
- Thermocouple-to-Digital Converter
- Signal Chain
- VRef
- DAC
- OP AMP
- Control Signal
- System Power
- LDO
- Step-Down DC-DC
- Isolated Power
- Over VI Protection
- Signal Chain

Maxim Integrated
Motor Control

- AC & BLDC Motor Controller – Inputs
- AC & BLDC Motor Controller – Outputs
- Brushed DC (PWM) Motor Control
- Brushed DC (Variable Voltage) Motor Control
- Hall Effect Current Sense AC/BLDC
- High-Side Current Sense AC/BLDC
- Low-Side Current Sense AC/BLDC
- Motor Monitoring: Encoder & Temp Sense
- Motor Monitoring: Resolver
- Stepper Motor Control
- Switched Reluctance Motor Control
AC Induction, BLDC, HV Brushed DC, HV Stepper Motor, Inputs

- **Sensor/Actuator Security**
- **Temp Sensor**
- **Real-Time Clock**
- **Field-Bus Interface**

**Digital Inputs**
- **Digital Input**
- **Isolation**

**Analog Inputs**
- **Op Amp**
- **ADC**
- **Isolation**
- **VRef**

**Microcontroller/DSP**
- **Supervisory/Watchdog Timer**

**Motor Inputs**
- **Isolation**
- **Interface Transceiver**
  - **Reference**
  - **ADC 2X**
  - **ADC 4X**

**System Power**
- **Step-Down DC-DC**
- **Isolated Power**
- **Over V/I Protection**
- **MOSFET Drivers**

**From Digital Encoders and Resolvers**
- **From Analog Encoders and Resolvers**
- **From Encoders/Resolvers and Current Sense**
- **From High-Side Current Sense**

**ADC**

**VRef**

**Isolation**

**Op Amp**
AC Induction, BLDC, HV Brushed DC, HV Stepper Motor, Outputs

- Analog Outputs
- Digital Outputs
- Real-Time Clock
- Temp Sensor
- Inverter
- Digital Output
- Isolation
- Signal Conditioner
- DAC
- Isolation
- VREF
- Supervisory/Watchdog Timer
- Sensor/Actuator Security
- MOSFET Driver
- Current-Sense Amp
- ADC
- ISOLATION
- VREF
- Step-Down DC-DC
- Isolated Power
- Over VI Protection
- System Power
- Supervisory/Watchdog Timer
- Microcontroller/DSP
- Current-Sense Amp
- ADC
- ISOLATION
- VREF
- Signal Conditioner/Actuator
- Security
Brushed DC (PWM) Motor Control

- Microcontroller
- Brushed DC Motor Control
- Driver/Switch
- Current-Sense Amp
- ADC
- ADC 2X
- Op Amp 2X
- RS-422 RX
- System Power
  - Step-Down DC-DC
  - Isolated Power
  - Over Voltage Protection
- Islanding
- Real-Time Clock
- Supervisor/Watchdog Timers
- Temp Sensor
- Fieldbus Interface
- Isolation
- Sensor/Actuator Security
- Security
- Motor Control
- MOSFET Driver
- Dc Motor
- Resolver
- Encoder
- Rs-422 Tx
- Maxim Integrated
Brushed DC (Variable Voltage) Motor Control
High-Side Current-Sense AC Induction, BLDC Motor

GATE DRIVERS
- MOSFET DRIVERS

ISOLATED DIFFERENTIAL ADC

MOTOR
- INCREMENTAL, ABSOLUTE ENCODER
  - OPTICAL
  - MAGNETIC

RESOLVER

TO MOTOR DRIVE CONTROLLER

ISOLATED ADC

SYSTEM POWER
- STEP-DOWN DC-DC
- ISOLATED POWER
- OVER V/I PROTECTION

VREF

ISOLATION

ADC

2X
Low-Side Current-Sense AC Induction, BLDC Motor

GATE DRIVERS

MOTOR

INCREMENTAL, ABSOLUTE ENCODER
OPTICAL
MAGNETIC

TO MOTOR DRIVE CONTROLLER

ADC

CURRENT-SENSE AMP

ADC

CURRENT-SENSE AMP

RESOLVER

SYSTEM POWER

STEP-DOWN DC-DC
ISOLATED POWER
OVER V/I PROTECTION
TEMP SENSOR

TO MOTOR DRIVE CONTROLLER

GATE DRIVERS

MOTOR

INCREMENTAL, ABSOLUTE ENCODER
OPTICAL
MAGNETIC

TO MOTOR DRIVE CONTROLLER

ADC

CURRENT-SENSE AMP

ADC

CURRENT-SENSE AMP

RESOLVER

SYSTEM POWER

STEP-DOWN DC-DC
ISOLATED POWER
OVER V/I PROTECTION
TEMP SENSOR

TO MOTOR DRIVE CONTROLLER

GATE DRIVERS

MOTOR

INCREMENTAL, ABSOLUTE ENCODER
OPTICAL
MAGNETIC

TO MOTOR DRIVE CONTROLLER

ADC

CURRENT-SENSE AMP

ADC

CURRENT-SENSE AMP

RESOLVER

SYSTEM POWER

STEP-DOWN DC-DC
ISOLATED POWER
OVER V/I PROTECTION
TEMP SENSOR
Hall Effect Current-Sense AC Induction, BLDC Motors
Motor Monitoring: Encoders and Temp Sensing

OPTICAL ENCODER

TO MOTOR DRIVE CONTROLLER

RS-422 2X
MICRO-CONTROLLER
VREF

ADC 2X
OP AMP 2X
OPTICAL

MAGNETIC ENCODER

TO MOTOR DRIVE CONTROLLER

RS-422 2X
MICRO-CONTROLLER
VREF

ADC 2X
OP AMP 2X
MAGNETIC

SINE
COSINE

TEMP SENSOR

TO MOTOR DRIVE CONTROLLER

SYSTEM POWER

STEP-DOWN DC-DC
ISOLATED POWER
OVER V/I PROTECTION

Motor

Control

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Motor Monitoring: Resolver

- TO MOTOR DRIVE CONTROLLER
  - ADC
  - OP AMP
  - VREF
- FROM MOTOR DRIVE CONTROLLER
  - CLASS D

SYSTEM POWER
- STEP-DOWN DC-DC
- ISOLATED POWER
- OVER V/I PROTECTION
Stepper Motor Control

- Sensor/Actuator Security
- Real-Time Clock
- Temp Sensor
- Supervisor
- Fieldbus Interface
- Isolation
- Microcontroller
- System Power
  - Step-Down DC-DC
  - Isolated Power
  - Over V/I Protection
- ADC
- Current-Sense Amp
- MOSFET Driver
- Driver/Switch
- DC Motor
- VDC
- 3,4

Maxim Integrated
Switched Reluctance Motor Control
• 400Gbps Optical Transceiver
• Cable Downstream RF Signal Chain
• Digital Video Broadcast (DVB)
• Macro Base Stations: TX Path
• Microwave Backhaul (5GHz)
• Radio Receiver
• Satellite Communications (VSAT) IDU
• Server/Data Center
• Small Cells, RRH, AAS (698-2700MHz)
• Switch/Router Card
• Tactical and Public Safety Mobile Radio
• VOIP
• Wideband RF Modem
• Wireless Backhaul Sub-3.8GHz
400Gbps Optical Transceiver

- **RX DATA**
  - +3.3V
  - INRUSH PROTECTION
  - LDO
  - STEP-DOWN
  - INVERTER
  - BOOST

- **SYSTEM POWER**
  - MICRO-CONTROLLER
  - EEPROM
  - CURRENT DAC
  - DAC
  - OP AMP
  - TRANSMITTER & LASER MODULATOR
  - LASERS X4
  - PHOTO DIODE X4
  - ADC
  - OP AMP
  - RECEIVER AND TRANSIMPEANCE AMP

- **TX DATA**
  - HOST INTERFACE
  - MICRO-CONTROLLER
  - MICRO-CONTROLLER
  - LEVEL TRANSLATOR

- **RX DATA**
  - MICRO-CONTROLLER

**Return** | **Home** | **Test and Measurement**
Cable Downstream RF Signal Chain

- Switch/Router Card
  - MPEG
  - Transport
  - Midplane

- Backplane
  - MPEG
  - Transport
  - Signal Integrity
  - FPGA
  - QAM Modulator
  - DUC
  - RFDAC
  - PLL/Synthesizer
  - Monitor and Control
  - VGA
  - Lowpass Filter
  - Log Detector
  - System Power
    - LDO
    - Step-down DC-DC
    - Temp Sensor
    - Over V/I Protection

- Communications/Wireless

- Maxim Integrated
Digital Video Broadcast (DVB) Tx (Terrestrial, Cable, Satellite)

- FPGA BASEBAND I/Q DATA
- INTEGRATED DUC + DAC
  - Quad Mod + NCO
  - RFDAC
- LOWPASS FILTER
- VGA
- RF OUT

- PLL/VCO SYNTHESIZER

- SYSTEM POWER
  - LDO
  - STEP-DOWN DC-DC
  - TEMP SENSOR
  - OVER V/I PROTECTION
Macro Base Station: TX Path (Direct RF)
Microwave Backhaul (≥ 5GHz)

FROM IDU
IF2
VGA
RF POWER DETECTOR

TO IDU
IF2
RF POWER DETECTOR

AMP
VVA
PLL
CURRENT-SENSE AMP

RFPOWER DETECTOR
RFPAL
PA
RFOUT/ RFIN

* For LO >12GHz

* For LO >12GHz

RF POWER DETECTOR
RF POWER DETECTOR
PLL
PLL
CURRENT-SENSE AMP

* For LO >12GHz
Radio Receiver

MAIN RECEIVER

L0 BUFFER/SPLITTER

MIMO L0 DISTRIBUTION

MIMO PIPE4
MIMO PIPE3
MIMO PIPE2

MIMO PIPE4
MIMO PIPE3
MIMO PIPE2

DIVERSITY RECEIVE PATH

LNA

IMAGE FILTER

SAW

VVA/VGA

ADC BUFFER

RF POWER DETECTOR

PRECISION ADC

AGC CONTROL

LO

HIGH-SPEED ADC

DSP

SYSTEM POWER

POWER MANAGEMENT

LDO

STEP-DOWN DC-DC

ISOLATED POWER

OVER V/I PROTECTION

COMMUNICATIONS/WIRELESS

Maxim Integrated
Satellite Communications (VSAT) IDU

- **RF IN FROM LNB**
  - GAIN BLOCK
  - RF RECEIVER
  - PLL / VCO SYNTHESIZER
  - PROCESSOR
  - REAL-TIME CLOCK
  - LED DRIVER

- **RF OUT TO BUC**
  - RF VVA / VGA
  - RF POWER DETECTOR
  - CONTROL MONITOR
  - OP AMP
  - DAC
  - RF TRANSMITTER
  - OP AMP
  - Q

- **RF POWER**
  - LDO
  - TEMP SENSOR
Server/Data Center

48V

HOT SWAP

SUPervisory

RS-485

LEVEL TRANSLATORS

FAN CONTROLLER

TEMP SENSOR

DIGITAL ISOLATORS

SYSTEM POWER

LDO

STEP-DOWN DC-DC

ISOLATED POWER

OVER V/I PROTECTION

BATTERY MANAGEMENT

BATTERY CHARGERS

CURRENT SENSORS

FUEL GAUGE

CPU

CPLD

LED

FLASH

USB

POE

ETHERNET

RTC

RS-232

Home

Communications/Wireless

Return
Small Cells, RRH, AAS (225MHz to 3800MHz)
Switch/Router Card

- **Backplane Interface/Signal Integrity**
- **Switch Fabric**
- **Data Logging Memory**
- **Security**
- **RS-232**
- **Temp Sensor**
- **Reset and Watchdog Timer**

**Backplane**
- **DDR Regulator**
- **System Power Management**
- **Hot-Swap Control**
- **DC-DC**
- **LDO**
- **Oscillator**
- **Synchronization (Central)**
- **System Clocks**

**System Power Management**
- **3.125 GBPS**
- **6.25 GBPS**
- **10 GBPS**
- **12.5 GBPS**
Wideband RF Modem

- **AFE**
- **PA**
- **VVA**
- **ANALOG FRONT END**
- **BASEBAND ASIC or FPGA**
- **HIGH-SPEED ADCS + DACS**
- **CONTROL MONITOR**
- **CURRENT-SENSE AMP**
- **BATTERY MANAGEMENT**
  - **FUEL GAUGE**
  - **CHARGER**
- **RADIO POWER**
  - **LDO**
  - **TEMP SENSOR**

**Tx**

**Rx**

**BAND1**

**BAND2**

**PA**

**VVA**

**RF RECEIVER + TRANSMITTER**

**BATTERY MANAGEMENT**

**RADIO POWER**

**CURRENT-SENSE AMP**

**CONTROL MONITOR**

**COMMUNICATIONS/WIRELESS**

**MAXIM INTEGRATED**
Wireless Backhaul Sub-3.8GHz

Diagram showing the components and connections of a wireless backhaul system at 3.8GHz, including RF RX/TX, HS ADC, HS DAC, BASEBAND, RADIO POWER, LDO, CONTROL MONITOR, CURRENT-SENSE AMP, TEMP SENSOR, PA, RFPAL, and VVA.
Consumer

- Drone
- E-Bikes, E-Scooters, Fork Lifts
- E-Cigarette
- Education Video Accessory Box
- GPS/Navigation System
- GPS Watch
- Home Security Control Panel/Gateway
- Home Security Sensor
- Hydration Wearable
- Power Tools
- Toy Robot
- Smart Plug
- Tire Pressure Monitoring System
- Voice-Activated Consumer Device
- Wireless Hearables
- Wireless Speaker
E-Bikes, E-Scooters, Fork Lifts

- GPS
- RF IN
- LNA
- GNSS RCVR
- TEMP SENSOR
- REAL-TIME CLOCK
- HORN, LIGHTS, LCD
- DIGITAL, ANALOG, RELAY OUTPUTS
- BRAKE, THROTTLE, PEDAL ROTATION
- DIGITAL, ANALOG, RELAY INPUTS
- GYRO/ACCELEROMETER/MAGNETOMETER
- MOSFET DRIVER
- MICRO-CONTROLLER/DSP
- SUPERVISORY/WATCHDOG TIMER
- INVERTER
- MOTOR
- RESOLVER
- ISOLATION
- ADC
- OP AMP
- VREF

- SYSTEM POWER
- STEP-DOWN DC-DC
- ISOLATED POWER
- OVER V/I PROTECTION

- BATTERY MANAGEMENT
- STEP-DOWN DC-DC
- BATTERY CHARGER
- FUEL GAUGE
- HIGH CELL COUNT BATTERY MANAGEMENT

- BATTERY MANAGEMENT
- STEP-DOWN DC-DC
- BATTERY CHARGER
- FUEL GAUGE
- HIGH CELL COUNT BATTERY MANAGEMENT
Education Video Accessory Box

GPS Watch

- GPS
- RF IN
- System Power
- Over V/I Protection
- Step-Down DC-DC
- Step-Up DC-DC
- LDO
- Over V/I Protection
- PMIC

- Battery Management:
  - Temp Sensor
  - Battery Charger
  - Current Sensing
  - Ideal Diode
  - Fuel Gauge

- System Power:
  - Real-Time Clock
  - Bio Sensor
  - Audio Amp

- Microcontroller

- 3-Axis Gyroscope
- 3-Axis Accelerometer/Inertial Measurement
- Altimeter
- Humidity
- Magnetometer

- GPS Watch

- Maxim Integrated
Home Security Control Panel/Gateway

- Real-Time Clock
- ADC
- Vref
- DAC
- Audio
- USB
- Supervisory/Watchdog Timer
- Microcontroller
- Audio Codec
- Headphone Amp
- Isolated RS-485
- Isolation
- RS-485
- RS-232
- Sub 1GHz RF
- Ethernet
- System Power
  - LDO
  - Step-Down DC-DC
  - Isolated Power
  - Over V/I Protection
  - Temp Sensor
- Battery Management
  - Fuel Gauge
  - Charger

Home | Return | Consumer
Home Security Sensor

- Lithium Coin Battery
- IDEAL Diode
- Microcontroller
- ISM Transmitter
- Sensor (Magnet, Gas, Temp, Sound)
- Sensor/Actuator Security
- Reset
- Over V/I Protection
- Step-Down DC-DC
- Isolated Power
- Temperature Sensor
- Power Management IC (PMIC)
- Fuel Gauge
- Charger

System Power:
- LDO
- Step-Down DC-DC
- Isolated Power
- Over V/I Protection
- Temperature Sensor
- PMIC
Hydration Wearable
Toy Robot

![Toy Robot Diagram](image-url)
Smart Plug

- Microcontroller
- LED Driver
- Energy Processor
- Supervisory/Watchdog Timer
- Wireless Transceiver
- Real-Time Clock
- Step-Down DC-DC Controller
- OVER V/I Protection
- Isolated Power
- Temp Sensor
- V & I Sensors
- Wireless Transceiver
- System Power
- Controller
Tire Pressure Monitoring System (TPMS)
Voice-Activated Consumer Device

- **Supervisory/Watchdog Timer**
- **Ethernet Phy**
- **Microprocessor**
- **Wi-Fi**
- **LCD Backlight**
- **LCD Power**
- **Audio Amp**

**System Power**
- **LDO**
- **Step-Down DC-DC**
- **Step-Up DC-DC**
- **Temp Sensor**

**Battery Management**
- **Battery Charger**
- **Current Sensor**
- **Fuel Gauge**

84 | Maxim Integrated
Wireless Hearables

ACCELEROMETER

BLUETOOTH/BLE

MICRO-CONTROLLER

BIO SENSOR

TEMP SENSOR

AUDIO CODEC

OR

HEADPHONE AMP

PORTABLE POWER

STEP-DOWN DC-DC

STEP-UP DC-DC

PMIC

BATTERY MANAGEMENT

CHARGER

FUEL GAUGE

DISCRETE BATTERY MANAGEMENT

More Information at Maxim Hearables Page
Wireless Speaker

- Bluetooth Audio Receiver
- Input Mixer
- 2 Stage EQ
- Subwoofer
- Low Satellite
- High Satellite
- Speaker Amp
- Digital-to-Analog Converter (DAC)
- Op Amp
- Crossover
- Sub Gain
- Startup/Automatic Shutdown
- Portable Power
- Battery Charger
- Step-Down DC-DC
- Step-Up DC-DC
- Fuel Gauge
- System Power
- 5V LDO
- 3.3V LDO
- Temperature Sensor

Consumer 86 | Maxim Integrated
Medical Applications:

- CPAP (Continuous Positive Airway Pressure)
- Dialysis
- Glucose Meter
- Infusion Pump / Drug Delivery Systems
- Patient Monitoring/ECG Patch
- Pulse Oximetry
- Ventilator
Continuous Positive Airway Pressure Machine

- **Sensor Signal Chain**
  - Op Amp
  - Vref
  - Adc
  - Temp Sensor

- **System Power**
  - Ldo
  - Hv Buck
  - Isolated Power
  - Over V/I Protection

- **Battery Management**
  - Fuel Gauge
  - Battery Charger
  - Current Sensing

- **MICRO-Controller**

- **Supervisory/Watchdog Timer**

- **Real-Time Clock**

- **Audio Amp**

- **Isolation**

- **Rs-232**

- **Lcd Power**

- **Lcd Backlight**

- **12V-Bus**

- **Blower**

- **Humidity Temperature Flow Rate Sensor**

- **Dc Measure**

- **Low-Side Monitor Options**

- **High-Side Monitor Options**

- **Battery Management**

- **System Power**

- **Medical Applications**

- **Disclaimer**
Dialysis

- Sensor Signal Chain
  - Arterial Pressure
  - Level Sensing
  - Vent Valve
  - Pump Monitoring
  - Leak Detection
  - Pressure Sensing

- Control Signals
  - Valves
  - Pump
  - Motors

- System Power
  - Battery Management
    - Fuel Gauge
    - Battery Charger
    - Current Sensing
  - LDO
  - HV BUCK
  - Isolated Power
  - Over-voltage Protection
  - Boost

- Supervisory/Watchdog Timer
- Real-Time Clock
- Audio Amp
- Isolation
- RS-232
- LCD Power
- LCD Backlight
- LED Driver
- Temp Sensor
- Consumable

Medical Applications

Disclaimer
Glucose Meter

- **BATTERY MANAGEMENT**
  - BATTERY CHARGER
  - OVER V/I PROTECTION
  - CURRENT SENSING
  - BOOST
  - BUCK
  - FUEL GAUGE
  - PMIC

- **SUPERVISORY/ WATCHDOG TIMER**
  - SECURITY FOR CONSUMABLE
  - REAL-TIME CLOCK
  - LCD POWER
  - LCD BACKLIGHT

- **MICRO-CONTROLLER**
  - BIOCHEMICAL SENSORS (TEST STRIPS)
  - TEMPERATURE (THERMISTORS)

**Medical Applications**

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**Disclaimer**
Infusion Pump/Drug Delivery Systems

- SYSTEM POWER
  - OVER V/I
  - PROTECTION
  - ISOLATED POWER
  - STEP-DOWN DC-DC
  - PMIC

- BATTERY MANAGEMENT
  - CHARGER
  - BOOST
  - LV BUCK
  - FUEL GAUGE

- SUPervisory/Watchdog Timer

- Audio Amp
  - Real-Time Clock
  - Secure Authentication

- Sensors Signal Chain
  - Temp Sensor
  - Security for Consumable
  - Air Inline Sensor
  - Pressure / Force Sensor

- Microcontroller
  - Op Amp
  - Vref
  - Adc

- System Power
  - Ldo
  - Isolated Power
  - Over V/i Protection
  - Pmic

- Battery Management
  - Charger
  - Boost
  - LdO

- Secure Authentication

- Audio Amp

- Medical Applications

Disclaimer
Patient Monitoring/ECG Patch

- **SYSTEM POWER**
  - LDO
  - HV BUCK
  - ISOLATED POWER
  - OVER V/I PROTECTION

- **BATTERY MANAGEMENT**
  - FUEL GAUGE
  - CHARGER
  - BOOST
  - LV BUCK
  - CURRENT SENSING

- **SIGNAL CHAIN**
  - PULSE OXIMETRY
  - SECURE AUTHENTICATION
  - BLOOD PRESSURE

- **PROCESSOR**
  - SUPERVISORY/WATCHDOG TIMER
  - REAL-TIME CLOCK
  - SPEAKER AMP
  - AUDIO CODEC
  - ISOLATION
  - LCD POWER
  - LCD BACKLIGHT
  - RS-232

- **DISPLAY**
  - LCD POWER
  - BACKLIGHT

- **POWER MANAGEMENT**
  - HV BUCK ISOLATED POWER
  - LDO

- **MONITORING FUNCTIONS**
  - BLOOD PRESSURE
  - PULSE OXIMETRY
  - SECURE AUTHENTICATION

**Medical Applications**
Pulse Oximetry

- Supervisory/Watchdog Timer
- Real-Time Clock
- Integrated Pulse Ox Sensor
- PMIC with Battery Management
- Security for Consumable
- LED Driver
- ESD Protection
- Battery Authentication
- Battery Management: Fuel Gauge, Charger
Ventilator
Sensing Interface

- Pressure Sensing
- RTD-to-Digital Converters
- Thermocouple-to-Digital Converters
Pressure Sensing
RTD-to-Digital Converters

REFERENCE RESISTOR

RTD

OP AMP

VREF

MICRO-CONTROLLER

SENSOR/ACTUATOR

ADC

DISCRETE

INTEGRATED RTD TO DIGITAL

REFERENCE RESISTOR

RTD

VREF

SENSOR/ACTUATOR

MICRO-CONTROLLER
Thermocouple-to-Digital Converters

MICRO-CONTROLLER
INTEGRATED THERMOCOUPLE TO DIGITAL
TEMP SENSOR
COLD JUNCTION COMPENSATION
SIGNAL CHAIN
OP AMP
ADC
VREF

MICRO-CONTROLLER
SENSOR/ACTUATOR

COLD JUNCTION COMPENSATION
TEMP SENSOR
OP AMP
DISCRETE

Sensing Interface
98 | Maxim Integrated
- ADAS
- Automotive EV Power Train
- Automotive Infotainment Display
- Automotive Head Unit – Camera Display
- Automotive GPS/Navigation
- Automotive Tire Pressure Monitoring System

In Automotive block diagrams, gray outlined boxes indicate a product line which Maxim offers, but does not yet feature automotive qualified or /V versions.
Automotive Infotainment Display

- TFT BIAS
- TIMING CONTROLLER
- LEVEL SHIFTER
- SHIFT REGISTER (GATE DRIVER)
- DISPLAY
- VGH, VGL
- AVDD
- GAMMA BUFFER
- SOURCE DRIVER
- SUPERVISOR/WATCHDOG
- VCOM
- 1.8V, 3.3V, 5V

- TFT BIAS
- TIMING CONTROLLER
- LEVEL SHIFTER
- SHIFT REGISTER (GATE DRIVER)
- DISPLAY
- VGH, VGL
- AVDD
- GAMMA BUFFER
- SOURCE DRIVER
- SUPERVISOR/WATCHDOG
- VCOM
- 1.8V, 3.3V, 5V

- AUDIO AMP
- PROTECTION DEVICES
- SYSTEM POWER
- AUTOMOTIVE DC-DC BOOST
- AUTOMOTIVE DC-DC BUCK
- LED BACKLIGHTING
- LDO
- PWM/SPI/I2C
- 3.3V

- AUDIO AMP
- PROTECTION DEVICES
- SYSTEM POWER
- AUTOMOTIVE DC-DC BOOST
- AUTOMOTIVE DC-DC BUCK
- LED BACKLIGHTING
- LDO
- PWM/SPI/I2C
- 3.3V

- AUDIO AMP
- PROTECTION DEVICES
- SYSTEM POWER
- AUTOMOTIVE DC-DC BOOST
- AUTOMOTIVE DC-DC BUCK
- LED BACKLIGHTING
- LDO
- PWM/SPI/I2C
- 3.3V
Automotive Tire Pressure Monitoring System (TPMS)

TRANSMIT UNIT

- SENSOR SIGNAL CONDITIONER
- OP AMP
- ADC
- VREF
- MICRO-CONTROLLER

- TEMP SENSOR
- SUB-GHZ ISM
- SUPervisory/Watchdog TIMER

- SYSTEM POWER
- LDO
- STEP-DOWN DC-DC
- FUEL GAUGE

RECEIVE UNIT

- SUPERVISORY/Watchdog TIMER

- TEMP SENSOR
- SUB-GHZ ISM

- SYSTEM POWER
- LDO
- STEP-DOWN DC-DC
- ISOLATED POWER
- OVER V/I PROTECTION

HOME Return Automotive
Family Part Tables
# RS-232 Transceivers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX13234E/35E</td>
<td>Family of high-speed 1Tx/1Rx and 2Tx/2Rx transceivers with integrated VL pin and ESD protection</td>
<td>Highest Data Rate of 3Mbps, Integrated VL for easy interface with low-logic ASIC or microcontrollers down to 1.62V, Dual voltage supply 3V to 5.5V for ease of design</td>
</tr>
<tr>
<td>MAX3221E/23E</td>
<td>Family of 250kbps 1Tx/1Rx and 2Tx/2Rx transceivers with AutoShutdown™ and ESD protection</td>
<td>AutoShutdown activates when RS-232 is not connected for &gt; 30s, drawing only 1µA, Dual voltage supply 3V to 5.5V for ease of design</td>
</tr>
<tr>
<td>MAX3222E/32E</td>
<td>Family of 250kbps 2Tx/2Rx transceivers with low current shutdown mode and ESD protection</td>
<td>Very low shutdown current mode of 10nA for power savings, Dual voltage supply 3V to 5.5V for ease of design</td>
</tr>
</tbody>
</table>
## Half-Duplex RS-485 Transceivers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX14782E/83E</td>
<td>500kbps &amp; 42Mbps, dual-voltage transceivers with high ESD protection in SOIC-8 package</td>
<td>ESD HBM rating of ±35kV to eliminate or minimize external protection devices, Dual voltage supply 3V to 5.5V for ease of design</td>
</tr>
<tr>
<td>MAX14770E</td>
<td>20Mbps Profibus transceiver with high ESD protection in SOIC-8 package</td>
<td>Highest ESD-protected, compliant Profibus with ±35kV ESD HBM to eliminate or minimize external protection devices</td>
</tr>
<tr>
<td>MAX14780E</td>
<td>500kbps, 5V transceiver with high ESD protection in SOIC-8 package</td>
<td>High ±30kV ESD HBM to eliminate or minimize external protection devices</td>
</tr>
<tr>
<td>MAX3483AE/85AE</td>
<td>250kbps &amp; 20Mbps, 3.3V transceivers with ESD protection in SOIC-8 package</td>
<td>High ±20kV ESD HBM protection to eliminate or minimize external protection devices</td>
</tr>
<tr>
<td>MAX3440E/41E</td>
<td>250kbps &amp; 10Mbps, 5V transceivers with ESD protection and fault detection</td>
<td>Fault detection pin alerts local microcontroller when there is an open, short, exceeded CMR, or low receiver differential High ESD HBM protection</td>
</tr>
<tr>
<td>MAX13442E</td>
<td>±15kV ESD-protected, ±80V fault-protected, fail-safe RS-485/J1708 transceiver</td>
<td>Simplifies design and reduces board space by eliminating external components required for overvoltage protection up to ±80V, such as TVSs and PTCs</td>
</tr>
</tbody>
</table>
## Full-Duplex RS-485 Transceivers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
</table>
| MAX14789E   | 25Mbps, dual voltage transceiver with high ESD protection in SOIC-8 package | ESD HBM rating of ±35kV to eliminate or minimize external protection devices  
Dual voltage supply 3V to 5.5V for ease of design |
| MAX3490E/91E | +3.3V, 20Mbps transceivers with high ESD protection in SOIC-8 and SOIC-14 package | ±20kV ESD HBM protected to eliminate or minimize external protection devices |
| MAX13442E   | ±15kV ESD-protected, ±80V fault-protected, fail-safe RS-485/J1708 transceiver | Simplifies design and reduces board space by eliminating external components required for overvoltage protection up to ±80V, such as TVSs and PTCs |
| MAX13089E   | ±15kV ESD-protected, highly configurable RS-485 transceiver to cover most applications with flexible options | Configurable data rate of 250kbps, 500kbps, and 16Mbps,  
Configurable pin for half and full duplex operation  
Inverting pin for reversed polarity,  
Slew-rate limiting pin to minimize reflections on the line |
# CAN Transceivers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX13051</td>
<td>±80V fault-protected CAN transceiver with autobaud</td>
<td>Ideal for device net and other industrial network applications where overvoltage protection is required</td>
</tr>
<tr>
<td>MAX13050/52/53/54</td>
<td>1Mbps, high voltage fault-protected CAN transceivers with ESD protection and feature options</td>
<td>±80V fault-protected CAN transceivers provide highest data line fault protection, Multiple feature options to accommodate any CAN application with SPLIT, RS, S, VCC2, and REF pins</td>
</tr>
<tr>
<td>MAX3051</td>
<td>Smallest 3.3V CAN transceiver with four operating modes</td>
<td>Smallest packaged 3.3V CAN transceiver in 8-pin SOT-23, saving up to 70% PCB space versus SOIC-8 package, Flexible operation optimizes performance and power consumption with slew-rate control to minimize EMI, standby mode, low current shutdown mode, and high-speed operation</td>
</tr>
<tr>
<td>MAX14883E</td>
<td>CAN transceiver with ±60V fault protection selectable polarity</td>
<td>Robust CAN transceiver with selectable polarity increases up-time and reduces installation errors</td>
</tr>
</tbody>
</table>
## Digital Isolators Transceivers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX12930/31</td>
<td>Dual-channel family of 3kV digital isolators with low power consumption and low prop delay in compact SOIC-8 package</td>
<td>Lowest power isolators in the industry, consume only 0.65mW per channel at 1Mbps with 1.8V supply capable of supporting data rates up to 150Mbps</td>
</tr>
<tr>
<td>MAX12934/35</td>
<td>Dual-channel family of 5kV digital isolators with low power consumption and low prop delay in robust wide SOIC-16 package with 8mm of creepage and clearance</td>
<td>Lowest power isolators in the industry, consume only 0.65mW per channel at 1Mbps with 1.8V supply, and only isolators capable of supporting data rates up to 200Mbps</td>
</tr>
<tr>
<td>MAX22444/45/46</td>
<td>Quad-channel family of 5kV, VDE reinforced, dual isolation barrier digital isolators with low power consumption and low prop delay in robust wide SOIC-16 package with 8mm of creepage and clearance</td>
<td>Lowest power, lowest propagation delay, lowest jitter, highest data rate and most robust and reliable reinforced digital isolators in the industry</td>
</tr>
<tr>
<td>MAX14430/31/32</td>
<td>Quad-channel family of 3.75kV digital isolators with low power consumption and low prop delay in compact narrow SOIC-16 package</td>
<td>Lowest power isolators in the industry, consume only 0.58mW per channel at 1Mbps with 1.8V supply, and only isolators capable of supporting data rates up to 200Mbps with 10.5ns max prop delay</td>
</tr>
<tr>
<td>MAX14434/35/36</td>
<td>Quad-channel family of 5kV digital isolators with low power consumption and low prop delay in robust wide SOIC-16 package with 8mm of creepage and clearance</td>
<td>Lowest power isolators in the industry, consume only 0.58mW per channel at 1Mbps with 1.8V supply, and only isolators capable of supporting data rates up to 200Mbps with 10.5ns max prop delay</td>
</tr>
<tr>
<td>MAX14130/31</td>
<td>Quad-channel family of 1kV digital isolators with low prop delay in tiny QSOP-16 package</td>
<td>Smallest and lowest prop delay quad-channel isolators Capable of supporting data rates up to 150Mbps with only 8.3ns max prop delay</td>
</tr>
</tbody>
</table>
### Isolated RS-485

<table>
<thead>
<tr>
<th>Part Number</th>
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<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX14940/46</td>
<td>2.75$kV_{RMS}$ isolated RS-485 transceivers, 500kbps &amp; 20Mbps data rate with integrated transformer driver &amp; LDO</td>
<td>Widest input supply voltage (1.71V to 5.5V) on primary side, highest ESD of ±35kV, most robust insulation material, and integrated LDO to power external circuitry on secondary side</td>
</tr>
<tr>
<td>MAX14943/49</td>
<td>5$kV_{RMS}$ isolated RS-485 transceivers, 500kbps &amp; 20Mbps data rate with integrated transformer driver &amp; LDO</td>
<td>Widest input supply voltage (1.71V to 5.5V) on primary side, highest ESD of ±35kV, most robust insulation material, and integrated LDO to power external circuitry on secondary side</td>
</tr>
</tbody>
</table>
## LNAs

<table>
<thead>
<tr>
<th>Part Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>MAX2659</strong></td>
<td>GPS/GNSS low-noise amplifier</td>
<td>0.8dB Noise Figure, 20dB Gain, GPS Low-Noise Amplifier (LNA) Improves Performance over Your Existing Solution</td>
</tr>
<tr>
<td><strong>MAX2686L/MAX2693L</strong></td>
<td>GPS/GNSS low-noise amplifiers with integrated LDO</td>
<td>Low-noise-figure GPS LNA in an ultra-small WLP; Versions available with different levels of gain</td>
</tr>
<tr>
<td><strong>MAX2667/ MAX2669</strong></td>
<td>GPS/GNSS ultra-low-noise-figure low-noise amplifiers</td>
<td>Ultra-low-noise figure, high gain, Optimized for low current (MAX2667) or high linearity (MAX2669) to best meet system requirements</td>
</tr>
<tr>
<td><strong>MAX2640</strong></td>
<td>300MHz to 1500MHz SiGe ultra-low-noise amplifier</td>
<td>Ultra low-noise figure, high gain and best linearity/mA provide high-performance operation</td>
</tr>
<tr>
<td><strong>MAX2641</strong></td>
<td>1400MHz to 2500MHz SiGe ultra-low-noise amplifier</td>
<td></td>
</tr>
<tr>
<td><strong>MAX2692</strong></td>
<td>WLAN low-noise amplifier</td>
<td>Ultra low-noise figure, high gain and best linearity/mA provide high-performance operation</td>
</tr>
</tbody>
</table>
## GNSS Receivers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX2769C</td>
<td>Universal GNSS Receiver</td>
<td>GPS L1, Galileo E1, GLONASS G1, and BeiDou B1 support excellent RF performance with 1.4dB cascaded noise figure highly flexible with programmable IF and IF bandwidth</td>
</tr>
<tr>
<td>MAX2769</td>
<td>Universal GPS Receiver</td>
<td>Improve GPS and GALILEO Performance and Reduce Cost with the First Fully Programmable, Universal GNSS RF Receiver</td>
</tr>
<tr>
<td>MAX2769B</td>
<td>Universal GPS Receiver</td>
<td>High-Performance, Automotive-Grade GPS, GLONASS, Galileo, and Compass RF Receiver</td>
</tr>
</tbody>
</table>
## RF Power Amplifier Linearizers (RFPAL)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SC1894</strong></td>
<td>Single-channel RF Power Amplifier Linearizer (RFPAL) 225MHz to 3800MHz</td>
<td>Ease of Implementation, Reduces System Power Consumption and OPEX, Reduces BOM Costs, Area, and Total Volume</td>
</tr>
<tr>
<td><strong>SC2200</strong></td>
<td>Dual RF Power Amplifier Linearizer (RFPAL) 698MHz to 2700MHz</td>
<td>Ease of Implementation, Reduces System Power Consumption and OPEX, Reduces BOM Costs, Area, and Total Volume</td>
</tr>
</tbody>
</table>
## LO Buffers/Splitters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9989</td>
<td>+14dBm to +20dBm LO Buffers</td>
<td>Excellent ±1dB output power variation over supply, temperature, and input power, Precision output power control from +14dBm to +20dBm, 40dB reverse isolation prevents LO pulling</td>
</tr>
<tr>
<td>MAX9990</td>
<td>(DCS/PCS/UMTS bands)</td>
<td>(Cellular/GSM bands)</td>
</tr>
</tbody>
</table>
## VCO/PLL

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX2871</td>
<td>23.5MHz to 6000MHz Fractional/Integer-N Synthesizer/VCO</td>
<td>High-performance (low phase noise), wide-frequency PLL with integrated VCOs simplifies signal chain and improves performance</td>
</tr>
<tr>
<td>Part Number</td>
<td>Description</td>
<td>Key Advantages</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td>----------------</td>
</tr>
<tr>
<td>MAX2880</td>
<td>250MHz to 12.4GHz, high-performance, fractional/integer-N PLL</td>
<td>High-Performance (Ultra-Low Phase Noise) Wide-Frequency Simplifies Signal Chain and Improves Performance</td>
</tr>
</tbody>
</table>
## RF Tuners

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX2112</td>
<td>Complete, Direct-Conversion Tuner for DVB-S2 Applications</td>
<td>3.3V Tuner Provides DVB-S2 Performance at Only 330mW High integration reduces system cost</td>
</tr>
<tr>
<td>MAX2121</td>
<td>Complete Direct-Conversion L-Band Tuner</td>
<td>Excellent RF performance High integration reduces system cost</td>
</tr>
</tbody>
</table>
# Single and Dual Mixers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX19985A/95A</td>
<td>Dual, SiGe, High-Linearity, 700MHz to 1000MHz/1700MHz to 2200MHz</td>
<td>Excellent linearity and noise performance</td>
</tr>
<tr>
<td></td>
<td>Down-conversion Mixers with LO Buffer/Switch</td>
<td>Highly integrated with two double-balanced passive mixer cores, two LO buffers, a dual-input LO selectable switch, a pair of differential IF output amplifiers and on-chip Baluns</td>
</tr>
<tr>
<td>MAX19997A/99</td>
<td>Dual, SiGe, High-Linearity, 1800MHz to 2900MHz/3000MHz to 4000MHz</td>
<td>Excellent linearity and noise performance</td>
</tr>
<tr>
<td></td>
<td>Down-conversion Mixers with LO Buffer</td>
<td>Highly integrated with Baluns in the RF and LO ports, an LO buffer, two double-balanced mixers, and a pair of differential IF output amplifiers</td>
</tr>
<tr>
<td>MAX2680/81/82</td>
<td>400MHz to 2.5GHz, Low-Noise, SiGe Downconverter Mixers</td>
<td>Exceptional Input IP3 performance versus current consumption ratio</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-6.9dBm at 5.0mA (MAX2680)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+1.0dBm at 8.7mA (MAX2681)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+3.2dBm at 15.0mA (MAX2682)</td>
</tr>
</tbody>
</table>
## Gain Block

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX2615</td>
<td>40MHz to 4GHz Linear Broadband Amplifier</td>
<td>High-Performance broadband amplifier with low NF and exceptional &lt; 0.5dB gain flatness</td>
</tr>
</tbody>
</table>
## VVA/VGA

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAX19790</strong></td>
<td>250MHz to 4000MHz Dual, Analog Voltage Variable Attenuator</td>
<td>Features 44dB of Linearly Controlled Dynamic Range and Excellent Attenuation Flatness</td>
</tr>
<tr>
<td><strong>MAX19791/93/94</strong></td>
<td>Dual Analog Voltage Variable Attenuator with On-Chip 10-Bit SPI-Controlled DAC 50MHz to 4000MHz/1.5GHz to 6GHz/10MHz to 500MHz</td>
<td>High-Performance RF VVA Features 46dB of Linearly Controlled Dynamic Range and Excellent Attenuation Flatness</td>
</tr>
<tr>
<td><strong>MAX2090/92</strong></td>
<td>50MHz to 1000MHz/700MHz to 2700MHz Analog VGA with Threshold Alarm Circuit and Error Amplifier for Level Control</td>
<td>Industry's Highest Linearity Analog RF VGA with Integrated Alarm and Leveling Control</td>
</tr>
<tr>
<td>Part Number</td>
<td>Description</td>
<td>Key Advantages</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td>----------------</td>
</tr>
<tr>
<td>MAX9930</td>
<td>2MHz to 1.6GHz 45dB RF-Detecting Controllers</td>
<td>Temperature Stable – Linear in dB response. Power-on-Delay – 2.5μs for glitch-free controller output. Three different input voltage ranges eliminate the need for external attenuators, thus simplifying PA control-loop design.</td>
</tr>
<tr>
<td>MAX9931</td>
<td>50MHz to 1000MHz, 75dB Log Detector/Controller</td>
<td>50MHz to 1000MHz, 75dB RF Log Detector/Controller Delivers the Best Dynamic Range and Precision Over Temperature.</td>
</tr>
<tr>
<td>MAX9932</td>
<td>LF-to-2.5GHz Dual Logarithmic Detector/Controller for Power, Gain, and VSWR Measurements</td>
<td>Dual RF Power Detector Delivers 80dB Dynamic Range at 900MHz.</td>
</tr>
<tr>
<td>MAX2014</td>
<td>100MHz to 2500MHz, 45dB RF Detector</td>
<td>Features a power-on delay, which holds the detector output (OUT) low for approximately 5μs to ensure glitchless controller output, Low cost.</td>
</tr>
<tr>
<td>MAX2015</td>
<td>0.1GHz to 3GHz, 75dB Logarithmic Detector/Controller</td>
<td>0.1GHz to 3GHz, 75dB RF Log Detector/Controller Delivers Best Dynamic Range and Precision Over Temperature.</td>
</tr>
</tbody>
</table>
# Sub-GHz ISM

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX7034</td>
<td>300MHz to 450MHz ASK Image-Rejection Receiver</td>
<td>Low 6.7mA Supply Current with Best-in-class Sensitivity at -114dBm</td>
</tr>
<tr>
<td>MAX7044</td>
<td>300MHz to 450MHz High-Efficiency ASK Transmitter</td>
<td>Lowest 7.7mA Supply Current at High +13dBm Output Power, Automatic shutdown Feature with Data Activity Detector</td>
</tr>
<tr>
<td>MAX7032</td>
<td>300MHz to 450MHz Programmable ASK/FSK Transceiver</td>
<td>Fractional-N PLL, Auto-polling Low-power Management at &lt;23.5μA Polling-mode Current</td>
</tr>
<tr>
<td>MAX7037</td>
<td>300MHz to 930MHz Ultra-Low-Power, ASK/FSK Transceiver with Integrated 8051 MCU</td>
<td>Industry’s Lowest Shutdown Current at 100nA, Wide 2.1-5.5V Supply Range</td>
</tr>
</tbody>
</table>
## Real-Time Clocks (RTCs)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS3231M</td>
<td>Extremely Accurate, I²C Real-Time Clock (RTC) with Integrated MEMS Resonator</td>
<td>Greater Accuracy and Stability Across Temperature (&lt; ±5ppm, All Conditions)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Frequency Shift after Reflow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Aging</td>
</tr>
<tr>
<td>DS3232M</td>
<td>Extremely Accurate, I²C Real-Time Clock (RTC) with Integrated MEMS Resonator and 236-Bytes of Battery-Backed SRAM</td>
<td>Greater Accuracy and Stability Across Temperature (&lt; ±5ppm, All Conditions)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Frequency Shift after Reflow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Aging</td>
</tr>
<tr>
<td>DS1338</td>
<td>Low-Power, Full Binary-Coded Decimal (BCD) Clock/Calendar Plus 56-bytes of NV SRAM.</td>
<td>Low-Power Operation Extends Battery Backup Run Time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Automatic Power-Fail Detect and Switch Circuitry</td>
</tr>
</tbody>
</table>
## High-Density QAM Modulators (Cable Downstream Transmitter)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Features and Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAX5862</strong></td>
<td>8/16/24/32 QAM Channels</td>
<td>High density, symbols-to-QAM RF solution</td>
</tr>
<tr>
<td></td>
<td>High-Density Downstream Cable QAM Modulator, DUC + RFDAC</td>
<td>Highly flexible and configurable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scalable capacity via pin-compatible family</td>
</tr>
<tr>
<td><strong>MAX5860</strong></td>
<td>32/48/64/96/128 QAM Channels</td>
<td>Significantly less power/QAM than FPGA+RFDAC. Lower cooling cost and operating expense.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Feature set eases RF design</td>
</tr>
</tbody>
</table>
## Integrated DUC + DAC
Digital Video Broadcast (DVB) Transmitters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Features and Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX5868</td>
<td>16-Bit, 5Gsp Interpolating/Modulating RFDAC with Parallel LVDS Interface</td>
<td>Simplifies RF design, reduces solution cost, and enables new communications architectures. Enables multi-band RF modulation. Enables software-defined radio transmitter.</td>
</tr>
<tr>
<td>MAX5869</td>
<td>16-Bit, 5.9Gsp Interpolating/Modulating RFDAC with JESD204B Interface and VCO/PLL</td>
<td>Eliminates I/Q imbalance and LO feedthrough. Direct RF synthesis of 500MHz/600MHz bandwidth up to 2.2GHz/2.8GHz (MAX5868/MAX5869).</td>
</tr>
</tbody>
</table>
# High-Speed ADCs (Radio Receiver High-IF Sampling)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX12557/8/9</td>
<td>Dual 14-bit ADCs</td>
<td>65/80/96Msps Direct IF sampling up to 400MHz</td>
</tr>
<tr>
<td>MAX12527/8/9</td>
<td>Dual 12-bit ADCs</td>
<td>Eliminates down-conversion stages simplifying system design and reducing cost</td>
</tr>
<tr>
<td>MAX19515/6/7</td>
<td>Dual 10-bit ADCs</td>
<td>65/100/130Msps</td>
</tr>
<tr>
<td>MAX19505/6/7</td>
<td>Dual 8-bit ADCs</td>
<td></td>
</tr>
</tbody>
</table>
## High-Speed 10-/8-Bit ADCs and DACs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
</table>
| MAX19515/6/7  | Dual 10-bit ADCs    | 65/100/130Msps | Highly flexible and configurable  
• ADC: Programmable data timing and clock divider  
• DAC: Programmable I/Q gain matching  
• Interleaved data mode for single/dual-port operation  
• Standby and power-down operation modes |
| MAX19505/6/7  | Dual 8-bit ADCs     |                                                                              | Low power, complementary Rx/Tx solution with exceptional RF performance |
| MAX5854/3     | Dual 10-bit DACs    | 165/80Msps                  |                                                                            |
# Analog Front-End

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX19713/0 (Full Duplex)</td>
<td>High-Speed Analog Front-Ends 45/22/11/7.5Msps</td>
<td>Highly Integrated: Dual 10-Bit ADCs and DACs, Auxiliary ADC/DACs for Monitor/Control, Optional Tx filter Eliminates analog converters from digital baseband ASIC • No NRE • Faster time-to-market • No mixed-signal test • Use fine-geometry CMOS for ASIC • Lower implementation risk</td>
</tr>
<tr>
<td>MAX19707/6/8/5 (Half Duplex)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Normal Precision ADCs and Integrated Converters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX11300</td>
<td>20-Port Programmable Mixed-Signal I/O with 12-Bit ADC, 12-Bit DAC, Analog Switches, and GPIO</td>
<td>Flexible Design&lt;br&gt;Configurability adapts to requirements&lt;br&gt;Reduces BOM Cost</td>
</tr>
<tr>
<td>MAX11105</td>
<td>2Msps/3Msps, Low-Power, Serial 12-/10-/8-Bit ADC with SPI Interface</td>
<td>Higher speed for better performance&lt;br&gt;Minimize Power consumption&lt;br&gt;Small size saves area</td>
</tr>
<tr>
<td>MAX11128</td>
<td>1Msps, Low-Power, Serial 12-/10-/8-Bit, 4-/8-/16-Channel ADCs with SPI Interface</td>
<td>Higher speed&lt;br&gt;Minimize Power consumption&lt;br&gt;Sequencer for flexible design</td>
</tr>
<tr>
<td>MAX11629</td>
<td>12-/10-/8- Bit, 4-/8-/12-/16-Chs, 300ksps SAR ADC with SPI Interface</td>
<td>Minimize Power consumption&lt;br&gt;Integration saves cost and area</td>
</tr>
<tr>
<td>MAX14001/02</td>
<td>Configurable, Isolated 10-bit ADCs for Multi-Range Binary Inputs</td>
<td>Industry’s First Integrated Solution for Detection of Multi-Voltage Binary Inputs</td>
</tr>
</tbody>
</table>
## High-Precision SAR ADCs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAX11168</strong></td>
<td>16-Bit, 1-Channel, 500ksps, ±5V SAR ADC with ±7ppm/°C Internal Reference in Tiny 10-pin µMAX®</td>
<td>True Bipolar support with single supply, High DC/AC Performance Accuracy, Integration; saves cost and space</td>
</tr>
<tr>
<td><strong>MAX1301</strong></td>
<td>16-Bit, 4/8-Channel, 115ksps, Up to ±12.288V programmable multi-range input SAR ADC</td>
<td>S/W programmable input range, Integrated Reference, Over voltage protection</td>
</tr>
<tr>
<td><strong>MAX11163</strong></td>
<td>16-Bit, 1-Channel, 250ksps, 5V Unipolar Input SAR ADC in Tiny 10-pin µMAX</td>
<td>High DC/AC Performance Accuracy, 19mW Power consumption at 250ksps, Industry-standard package</td>
</tr>
<tr>
<td><strong>MAX11905</strong></td>
<td>20-Bit, 1-Channel, 1.6Msps, Low-Power, Fully Differential SAR ADC with Integrated Reference Buffers</td>
<td>Highest Precision with the Lowest Power, Integration simplifies Design, Scalable power with Speed</td>
</tr>
<tr>
<td><strong>MAX11046</strong></td>
<td>8-Channel, 16 Bit, Simultaneous-Sampling ADC</td>
<td>Industry’s First Single-Supply Bipolar ADC with High-Impedance Input</td>
</tr>
</tbody>
</table>
## High-Precision Sigma-Delta ADCs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX11270</td>
<td>24-Bit, 1-Ch, 10mW, 130dB SNR, 64ksps Delta-Sigma ADC with Integrated low-noise PGA</td>
<td>Wide dynamic range with Precision Low power savings and sleep mode Integration saves cost and area</td>
</tr>
<tr>
<td>MAX11410</td>
<td>24-Bit Multi-Channel Low-Power 1.9ksps Delta-Sigma ADC with PGA and Excitation sources</td>
<td>Programmable Excitation sources Flexible channel assignment Low Power for efficient systems</td>
</tr>
<tr>
<td>MAX11200</td>
<td>24-Bit, Single-Channel, Ultra-Low Power, 0.48ksps Delta-Sigma ADC with GPIO</td>
<td>Minimize Power consumption Increase System Accuracy Integration saves cost and area</td>
</tr>
<tr>
<td>MAX11254</td>
<td>24-Bit, 6-Channel, 64ksps, 6.2nV/√Hz PGA, Delta-Sigma ADC with Sequencer</td>
<td>Wide dynamic range with Precision Active sensor control for Power Saving Enables System Integration</td>
</tr>
<tr>
<td>MAX11040K</td>
<td>24-/16-Bit, 4-Channel, Simultaneous-Sampling, Cascadeable, Sigma-Delta ADC</td>
<td>Sigma-Delta ADC Cascadeable Up to 32 Simultaneous Channels</td>
</tr>
</tbody>
</table>
## High-Precision DACs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX5216</td>
<td>14-/16-Bit, Low-Power, Buffered Output, Rail-to-Rail DAC with SPI Interface</td>
<td>Saves Application Power and Board Space with Less than 80µA $I_Q$ and a 3mm x 5mm, 8-Pin µMAX Package</td>
</tr>
<tr>
<td>MAX5816</td>
<td>Ultra-Small, Quad-Channel, 12-Bit Buffered Output DAC with Internal Reference and I²C Interface</td>
<td>Complete 4-Channel DAC Saves PCB Area with Integrated Reference and Output Buffer</td>
</tr>
<tr>
<td>MAX5134</td>
<td>Low-Power, 4-Channel, 16-Bit, Buffered Voltage-Output, high-linearity SPI DAC</td>
<td>Complete 4-Channel DAC Saves PCB Area with Integrated Reference and Output Buffer with Daisy-Chaining capability</td>
</tr>
<tr>
<td>MAX5180/1/2/3</td>
<td>2-Channel, Lower-Power, 10-Bit, Simultaneous-update, current output, Parallel DAC</td>
<td>True 2-Channel ±0.5LSB INL DAC with the lowest possible power dissipation of 1µA (max) shutdown current</td>
</tr>
<tr>
<td>MAX5187/90/91</td>
<td>18-Bit, High-Accuracy Voltage Output DAC with Digital Gain, Offset Control, and SPI Interface</td>
<td>Lowest Noise, Fast-Settling Precision 18-Bit DAC</td>
</tr>
<tr>
<td>MAX5719</td>
<td>16- and 20-Bit Voltage DAC</td>
<td>Industry’s Highest Performance DAC in 14 Pin Standard Pin-Out</td>
</tr>
</tbody>
</table>
## General-Purpose DACs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX5705</td>
<td>12-Bit, low-Power, Buffered Output DAC with internal Reference and SPI interface</td>
<td>Complete 1-Channel ±1LSB INL DAC Saves PCB Area with Integrated Reference and Output Buffer</td>
</tr>
<tr>
<td>MAX5702</td>
<td>Ultra-Small, Quad-Channel, 12-Bit Buffered Output DAC with Internal Reference and SPI Interface</td>
<td>Complete 2-Channel ±1LSB INL DAC Saves PCB Area with Integrated Reference and Output Buffer</td>
</tr>
<tr>
<td>MAX5715</td>
<td>Low-Power, 4-Channel, 12-Bit, Buffered Voltage-Output, high-linearity SPI DAC</td>
<td>Power and Space-saving 4-Channel ±1LSB INL DAC Saves PCB Area with Integrated Reference and Output Buffer in a very small 3.5mm x 3.5mm 12-Pin WLP package</td>
</tr>
<tr>
<td>MAX5825</td>
<td>Ultra-Small, Octal Channel, 8-/10-/12-Bit Buffered Output DAC with Internal Reference and I²C Interface</td>
<td>Feature-Rich, 8-Channel DAC Family Offered in a 5.75mm² WLP Footprint</td>
</tr>
<tr>
<td>MAX5386</td>
<td>Dual, 256-Tap, Volatile Low-Voltage Linear Taper Digital Potentiometer</td>
<td>Dual, 256-Step, Digital Potentiometer with a 2.6V Supply in a 3mm x 3mm TQFN</td>
</tr>
<tr>
<td>MAX5394</td>
<td>Single, 256-Tap Volatile, SPI, Low-Voltage Linear Taper Digital Potentiometer</td>
<td>Industry’s Smallest, Lowest Power, Lowest Voltage Digital Potentiometer</td>
</tr>
<tr>
<td>Part Number</td>
<td>Description</td>
<td>Key Advantages</td>
</tr>
<tr>
<td>------------------</td>
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</tr>
<tr>
<td>MAX17523</td>
<td>36V, 1A Adjustable Overcurrent and Overvoltage Protector with High Accuracy</td>
<td>Industry's Most Integrated OCP and OVP Solution with More Robust Reverse-Current Blocking Capability</td>
</tr>
<tr>
<td>MAX14588</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAX17561/2/3</td>
<td>40V, 4.2A Adjustable Overvoltage and Overcurrent Protectors with High Accuracy</td>
<td>Industry's Most Integrated OCP and OVP Solution with More Robust Reverse-Current Blocking Capability</td>
</tr>
<tr>
<td>MAX14571/2/3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAX17608/9/10</td>
<td>60V, 1A Adjustable Overcurrent, Overvoltage, Overtemperature and Reverse Protection</td>
<td>Industry's Most Integrated OCP and OVP Solution with More Robust Reverse-Current Blocking Capability</td>
</tr>
<tr>
<td>MAX17561/2/3</td>
<td>40V, 4.2A Adjustable Overvoltage and Overcurrent Protectors with High Accuracy</td>
<td>Industry's Most Integrated OCP and OVP Solution with More Robust Reverse-Current Blocking Capability</td>
</tr>
<tr>
<td>MAX14721/2/3</td>
<td>60V, 2A Adjustable Overcurrent and Overvoltage Protectors with Thermal Foldback</td>
<td>Industry's Most Integrated Current-Limit and Overvoltage-Protection Solutions</td>
</tr>
<tr>
<td>MAX14691/2/3, MAX17525</td>
<td>60V, 6A Adjustable Overcurrent and Overvoltage Protectors with Thermal Foldback</td>
<td>Industry's Most Integrated Current-Limit and Overvoltage-Protection Solutions</td>
</tr>
<tr>
<td>MAX6495</td>
<td>72V, Overvoltage-Protection Switch/Limiter Controller External MOSFET</td>
<td>Small, Low-current, Overvoltage-Protection Circuit for High-Voltage Transient Systems</td>
</tr>
<tr>
<td>MAX16126-29</td>
<td>Load-Dump/Reverse-Voltage Protection Circuits</td>
<td>Wide Input-Voltage Protection Range with Fast Gate Shutoff During Fault Conditions withComplete Load Isolation and Automotive Qualified</td>
</tr>
</tbody>
</table>

Over V/I Protection – Surge Stopper, Efuse, Current Limiters
# Supervisory/Watchdog Timers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX6369/73</td>
<td>Pin-Selectable Watchdog Timers</td>
<td>Precision Watchdog Timer for Critical μP Applications</td>
</tr>
<tr>
<td>MAX16134</td>
<td>Low-Voltage, Precision, Single/Dual/Triple/Quad-Voltage μP Supervisor</td>
<td>OV/UV 1% Accurate Three-Channel Monitor with Supervisory in Small SOT23</td>
</tr>
<tr>
<td>MAX16125</td>
<td>Dual Pushbutton Controller in Tiny 6-Bump WLP Package</td>
<td>New Pushbutton Controller Offer Hardware Solutions to Eliminate the Need to Program a μC</td>
</tr>
<tr>
<td>MAX16056-59</td>
<td>125nA Supervisory Circuits with Capacitor-Adjustable Reset and Watchdog Timeouts</td>
<td>Capacitor-Adjustable Nanopower Supervisory Circuit</td>
</tr>
<tr>
<td>MAX6814</td>
<td>5-Pin Watchdog Timer Circuit</td>
<td>Low-power watchdog circuit in a tiny 5-pin SC70 package</td>
</tr>
<tr>
<td>MAX6746</td>
<td>μP Reset Circuit with Capacitor-Adjustable Reset/Watchdog Timeout Delay</td>
<td>Low-power μP supervisory circuit monitor single/dual system supply voltages from 1.575V to 5V</td>
</tr>
<tr>
<td>MAX6766/69</td>
<td>Automotive Micropower Linear Regulators with Supervisor</td>
<td>Low-quiescent-current, high-voltage linear regulators operate from 4V to 72V and deliver up to 100mA of load current</td>
</tr>
<tr>
<td>MAX16074</td>
<td>NanoPower μP Supervisory Circuit in a 4-Bump (1mm x 1mm) Chip-Scale Package</td>
<td>μP Supervisor Offered in a Space-Saving, 1mm x 1mm Package and Consume Very Little Power</td>
</tr>
<tr>
<td>MAX6880</td>
<td>Dual-/Triple-Voltage, Power-Supply Sequencer/Supervisor</td>
<td>Dual-/triple-voltage monitor are designed to sequence power supplies during power-up condition</td>
</tr>
</tbody>
</table>
# Step-Down DC-DC Converters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>60V/42V Himalaya ICs</td>
<td>4.5V to 60V&lt;sub&gt;INV&lt;/sub&gt;, 25mA to 25A, High-Efficiency, Synchronous Step-Down DC-DC Converters (Dual channel available)</td>
<td>Industry’s Smallest, thermally efficient High-Voltage Synchronous Buck Regulators, Passed CISPR22 EMI</td>
</tr>
<tr>
<td>60V/42V Himalaya Power Modules</td>
<td>4.5V to 60V&lt;sub&gt;INV&lt;/sub&gt;, 25mA to 6A, High-Efficiency, Synchronous Step-Down DC-DC Power Modules</td>
<td>Industry’s Smallest, thermally efficient Wide-Voltage Synchronous Buck Power Modules, Passed CISPR22 EMI</td>
</tr>
<tr>
<td>MAX17244/5</td>
<td>3.5V to 36V, 2.5A/3.5A, Synchronous Buck Converters with 15µA Quiescent Current and Reduced EMI</td>
<td>Reliable Operation (42V Input Transient Protection), Long Battery Life (15µA I&lt;sub&gt;Q&lt;/sub&gt;)</td>
</tr>
<tr>
<td>MAX17620</td>
<td>2.7V to 5.5V, 4MHz, Miniature 600mA, Synchronous Step-Down DC-DC Converter with Integrated MOSFETs</td>
<td>High-Efficiency Synchronous Buck Regulator Offers High Performance, Wide Temp Range, and Small Size</td>
</tr>
<tr>
<td>MAX17509</td>
<td>4.5V to 16V, Dual 3A, High-Efficiency, Synchronous Step-Down DC-DC Converter with Resistor Programmability</td>
<td>High integration value with dual outputs; Passed EN55022 EMI standard</td>
</tr>
<tr>
<td>MAX8640</td>
<td>2.7V to 5.5V, Tiny 500mA, 4MHz/2MHz Synchronous Step-Down DC-DC Converters</td>
<td>PWM mode operation for low output ripple and noise immunity; Small Solution Size (1µH Inductor)</td>
</tr>
<tr>
<td>MAX1836/7</td>
<td>24V Internal Switch, 100% Duty Cycle, Step-Down Converters</td>
<td>High-efficiency, small package ideal for low-cost, low-power, space-sensitive applications</td>
</tr>
<tr>
<td>MAX15023/6</td>
<td>Low-Cost, Wide 4.5V to 28V Input, Dual-Output Synchronous Buck Controller</td>
<td>Low-Cost, Dual DC-DC Controller Operates from 4.5V to 28V Suitable for Multiple Applications</td>
</tr>
<tr>
<td>MAX17761</td>
<td>4.5V to 76V&lt;sub&gt;INV&lt;/sub&gt;, 1A, High-Efficiency, Synchronous Step-Down DC-DC Converter and Power Module</td>
<td>Industry’s Smallest, High-Voltage and thermally efficient, passed CISPR 22 EMI</td>
</tr>
</tbody>
</table>
# Step-Up DC-DC Converters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX17222-MAX17225</td>
<td>400mV to 5.5V Input, nanoPower Synchronous Boost Converters with True Shutdown™</td>
<td>nanoPower Boost Converters Extend Battery Life and Reduce Solution Size</td>
</tr>
<tr>
<td>MAX668/9</td>
<td>1.8V to 28V Input, PWM Step-Up Controllers in µMAX</td>
<td>Flexible topology: Step-Up, SEPIC, Flyback and Isolated; PWM and Idle modes; Small solution size</td>
</tr>
<tr>
<td>MAX17290/2</td>
<td>2.5V to 36V, 2.5MHz, PWM Boost Controllers with 4µA Shutdown Current and Reduced EMI</td>
<td>Extends battery life; Flexible topology; Robust operation with 42V transient protection</td>
</tr>
<tr>
<td>MAX8815</td>
<td>1.2V to 5.5V Input, 1A, 97% Efficiency, 30µA Quiescent Current, Step-Up Converter with True Shutdown</td>
<td>True Shutdown minimizes battery current leakage; Overload/Short-Circuit Protection guarantees robust operation</td>
</tr>
<tr>
<td>MAX17597</td>
<td>4.5V to 36V&lt;sub&gt;IN&lt;/sub&gt;, 250V&lt;sub&gt;OUT&lt;/sub&gt;, 4A, 100kHz-1MHz, ext FET</td>
<td>Suitable for industrial holdup and piezo control</td>
</tr>
<tr>
<td>MAX17498B</td>
<td>4.5V to 36V&lt;sub&gt;IN&lt;/sub&gt;, 60V&lt;sub&gt;OUT&lt;/sub&gt;, 2A, 500kHz, internal FET</td>
<td>Suitable for holdup and dying gasp for 12/24/48V&lt;sub&gt;IN&lt;/sub&gt;</td>
</tr>
<tr>
<td>MAX17497B</td>
<td>4.5V to 36V&lt;sub&gt;IN&lt;/sub&gt;, 60V&lt;sub&gt;OUT&lt;/sub&gt;, 2A, 500kHz, internal FET &amp; 3.3V&lt;sub&gt;OUT&lt;/sub&gt; Buck</td>
<td>Built-in buck for remote radio terminals in water meters, gas meters</td>
</tr>
<tr>
<td>MAX77801</td>
<td>High-Efficiency Buck–Boost Regulator</td>
<td>2A High-Efficiency Buck and Boost Operating Including Seamless Transition Between Buck and Boost Mode</td>
</tr>
</tbody>
</table>
## LDOs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX8902A / B</td>
<td>Low-Noise 500mA LDO Regulators in a 2mm x 2mm TDFN Package</td>
<td>Low-Noise, Low-Dropout, High-PSRR, 500mA Linear Regulators in a 2mm x 2mm TDFN Package</td>
</tr>
<tr>
<td>MAX8510</td>
<td>Ultra-Low-Noise, High PSRR, Low-Dropout, 120mA Linear Regulator</td>
<td>Low-Noise, Low-Dropout, 120mA Linear Regulator Fits in an SC70 Package without Compromising Performance</td>
</tr>
<tr>
<td>MAX8880</td>
<td>12V, Ultra-Low-I&lt;sub&gt;Q&lt;/sub&gt;, Low-Dropout Linear Regulator with POK</td>
<td>Ultra-Low Supply Current, Low-Dropout Linear Regulator, Capable of Delivering up to 200mA</td>
</tr>
<tr>
<td>MAX1806</td>
<td>2.5V to 5.5V, 500mA, Low-Voltage Linear Regulator in µMAX</td>
<td>0.8V Output Voltage Enables Wide Range of Applications; Low 175mV Dropout at 500mA reduces heat dissipation</td>
</tr>
<tr>
<td>MAX15027</td>
<td>1.425V to 3.6V Input, 1A Low-Dropout Regulator with BIAS Input</td>
<td>High-Performance LDO Delivers 1A of Output Current</td>
</tr>
<tr>
<td>MAX8842</td>
<td>Ultra-Low-Noise, High PSRR, Low-Dropout, 150mA Linear Regulators in µDFN</td>
<td>Ultra-Low-Noise, Low-Dropout, 150mA Linear Regulator Requires Only 3.9mm&lt;sup&gt;2&lt;/sup&gt; Total Solution Size without Compromising Performance</td>
</tr>
<tr>
<td>MAX17651</td>
<td>4V to 60V, 100mA LDO with ±2% accuracy over temperature. -40°C to 125°C</td>
<td>Highly versatile, low I&lt;sub&gt;Q&lt;/sub&gt; 0.9μA shutdown, small TSOT package</td>
</tr>
<tr>
<td>MAX38902</td>
<td>12μV&lt;sub&gt;RMS&lt;/sub&gt; Low-Noise 500mA LDO Linear Regulator</td>
<td>12μV&lt;sub&gt;RMS&lt;/sub&gt;, Low-Noise, Low-Dropout, 500mA Linear Regulator in a 2mm x 2mm TDFN Package</td>
</tr>
</tbody>
</table>
## Battery Chargers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX8903</td>
<td>Dual-Input 2A Switch-Mode Charger with PowerPath</td>
<td>Dual input allows power from USB or AC adapter; Tiny solution size due to 4MHz switching (small inductor), integrated FETs and current sensing</td>
</tr>
<tr>
<td>MAX8808</td>
<td>1A Linear Li+ Battery Charger with Integrated Pass FET and Thermal Regulation</td>
<td>Integrated current-sense, MOSFET, thermal-regulation circuitry eliminates the reverse-blocking Schottky diode to create the simplest charging solution in 2mm x 2mm TDFN package</td>
</tr>
<tr>
<td>MAX8971</td>
<td>Industry’s Smallest 1.55A 1-Cell Li+ DC-DC Charger</td>
<td>Switching Charger Delivers High Efficiency (90%~92%)</td>
</tr>
<tr>
<td>MAX1737</td>
<td>28V, Stand-Alone Switch-Mode Lithium-Ion Battery-Charger Controller</td>
<td>Stand-Alone Charger for Up to Four Li+ Cell</td>
</tr>
</tbody>
</table>
## Operational Amplifiers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX44260/61/63</td>
<td>1.8V, 15MHz Low-Offset, Low-Power, Rail-to-Rail I/O Op Amp</td>
<td>On-Demand Calibration Provides Accuracy Over Time and Temperature</td>
</tr>
<tr>
<td>MAX44280</td>
<td>1.8V, 50MHz, Low-Offset, Rail-to-Rail I/O Op Amp</td>
<td>High Bandwidth, Excellent $V_{OS}$ Accuracy Over Time &amp; Temperature</td>
</tr>
<tr>
<td>MAX4232</td>
<td>High-Output-Drive, 10MHz, 10V/µs, Rail-to-Rail I/O Op Amp with Shutdown in SC70</td>
<td>Dual, High-Output Drive CMOS Op Amp Features 200mA of Peak Output Current, Rail-to-Rail Input, and Output Capability from Single 2.7V to 5.5V Supply</td>
</tr>
<tr>
<td>MAX40006</td>
<td>Micropower, Rail-to-Rail, 300kHz Op Amp with Shutdown in a Tiny, 6-Bump WLP</td>
<td>Save Power and Board Space—Op Amp Consumes Only 4.5μA and Offers 300kHz BW in 0.73mm x 1.07mm WLP and SOT23</td>
</tr>
<tr>
<td>MAX44241/46</td>
<td>36V, Low-Noise, Precision, Single/Quad/Dual Op Amps</td>
<td>Precision, Low-Noise Performance in High-Voltage Applications</td>
</tr>
<tr>
<td>MAX44242</td>
<td>20V, Low Input Bias-Current, Low-Noise, Dual Op Amplifier</td>
<td>Dual Amplifier Offers a Combination of Very Low Bias Current and Low Noise Per Unit of Power</td>
</tr>
<tr>
<td>MAX4238/9</td>
<td>Ultra-Low Offset/Drift, Low-Noise, Precision SOT23 Amplifiers</td>
<td>Low-noise, low-drift, ultra-high precision amplifiers in 8-pin narrow SO, 6-pin TDFN and SOT23 packages.</td>
</tr>
<tr>
<td>MAX4477</td>
<td>SOT23, Low-Noise, Low-Distortion, Wide-Band, Rail-to-Rail Op Amp</td>
<td>Wideband, low-noise, low-distortion operational amplifier in space-saving, 6-pin SOT23 and TDFN packages.</td>
</tr>
</tbody>
</table>
## Current-Sense Amplifiers/Ideal Diode/Comparators

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9918</td>
<td>-20V to +75V Input Range, Precision Uni-/Bidirectional, Current-Sense Amplifier</td>
<td>Current-Sense Amplifier with Input Common Range that Extends Well Below Ground (-20V)</td>
</tr>
<tr>
<td>MAX4372</td>
<td>Low-Cost, UCSP/SOT23, Micropower, High-Side Current-Sense Amplifier with Voltage Output</td>
<td>Space-saving 5-pin SOT23 package and three gain versions (T = 20V/V, F = 50V/V, and H = 100V/V)</td>
</tr>
<tr>
<td>MAX9611/12</td>
<td>High-Side, Current-Sense Amplifiers with 12-Bit ADC and Op Amp/Comparator</td>
<td>Current-Sense Amplifiers with Digital Output and 60V Common-Mode Range</td>
</tr>
<tr>
<td>MAX44284</td>
<td>36V, Input Common-Mode, High-precision, Low-Power Current-Sense Amplifier</td>
<td>Measures Four Decades of Dynamic Range without Increasing Measurement Errors</td>
</tr>
<tr>
<td>MAX4080</td>
<td>76V, High-Side, Current-Sense Amplifier</td>
<td>Current-Sense Amplifier Achieves 0.1% Accuracy</td>
</tr>
<tr>
<td>MAX9938</td>
<td>nanoPower, 4-Bump UCSP/SOT23, Precision Current-Sense Amplifier</td>
<td>Industry's Smallest Current-Sense Amplifier: 1mm x 1mm with I&lt;sub&gt;CC&lt;/sub&gt; &lt; 1µA, V&lt;sub&gt;OS&lt;/sub&gt; &lt; 500µV, Gain Error &lt; 0.5%</td>
</tr>
<tr>
<td>MAX40200</td>
<td>Ultra-Tiny Micropower, 1A Ideal Diode with Ultra-Low Voltage Drop</td>
<td>Current Switch/Ideal Diode Saves Space and Offers 10x Lower Voltage Drop Than Schottkys</td>
</tr>
<tr>
<td>MAX40004</td>
<td>nanoPower 4-Bump Comparator in Ultra-Tiny 0.73mm x 0.73mm WLP/SOT23 Packages</td>
<td>nanoPower Comparator Offers Industry’s Smallest Package (0.73 x 0.73mm)</td>
</tr>
</tbody>
</table>
## Speaker Amplifiers

### Mid-power amps

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX98372</td>
<td>Digital Class D Amp with Active Edge Limiting and Spread Spectrum Modulation</td>
<td>High-Power Digital Class D with Brownout Protection and DHT Requires No Programming</td>
</tr>
<tr>
<td>MAX98400A/B</td>
<td>Stereo, High-Power, Class D Amplifier</td>
<td>Differential Input, Power Limiting, Anti-clipping, Thermal Foldback, and Excellent EMI Performance</td>
</tr>
</tbody>
</table>

### Low power amps

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX98357</td>
<td>PCM Input Class D Audio Power Amplifier</td>
<td>Supports I²S and 8-Channel TDM Data</td>
</tr>
<tr>
<td>MAX98300</td>
<td>Mono 2W Class D Amplifier</td>
<td>Latest Generation Class D Technology Features the Industry’s Best EMI Performance with Low 0.8mA $I_Q$</td>
</tr>
<tr>
<td>MAX98306</td>
<td>Stereo 3.7W Class D Amplifier</td>
<td>Big 3.7W/Channel Power in a Small, 14-Pin TDFN Package</td>
</tr>
</tbody>
</table>
## Voltage References

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX6070/B</td>
<td>Low-Noise, High-Precision Series Voltage References</td>
<td>Highest Performance SOT23 Voltage References with 6ppm/°C Maximum Temperature Coefficient</td>
</tr>
<tr>
<td>MAX6126</td>
<td>Ultra-High-Precision, Ultra-Low-Noise, Series Voltage Reference</td>
<td>Ultra-High-Precision, Ultra-Low-Noise, Series Voltage Reference Features 3ppm/°C (max) Temperature Coefficients and an Excellent ±0.02% (max) Initial Accuracy</td>
</tr>
<tr>
<td>MAX6325</td>
<td>1ppm/°C, Low-Noise, +2.5V/+4.096V/+5V Voltage Reference</td>
<td>Low-noise, Precision Voltage Reference with Extremely Low, 0.5ppm/°C Typical Temperature Coefficients and Excellent, ±0.02% Initial Accuracy</td>
</tr>
<tr>
<td>LM4040</td>
<td>Micropower Shunt Voltage Reference with Multiple Reverse Breakdown Voltages</td>
<td>Precision two-terminal shunt mode reference, bandgap voltage reference in 3-pin SC70/SOT23 packages</td>
</tr>
<tr>
<td>MAX6025</td>
<td>Precision, Low-Power, Low-Dropout, SOT23-3 Voltage Reference</td>
<td>Precision, low-dropout, micropower voltage reference in miniature SOT23-3 packages</td>
</tr>
<tr>
<td>Part Number</td>
<td>Description</td>
<td>Key Advantages</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MAX1553/4</td>
<td>High-Efficiency, 40V Step-Up Converters for 2 to 10 White LEDs</td>
<td>Smallest, Highest Efficiency, 40V Driver for Up to 10 White LEDs</td>
</tr>
<tr>
<td>MAX8901A</td>
<td>Highest Efficiency Supply for 2 to 6 Series WLEDs in a 2mm x 2mm TDFN Package</td>
<td>Drives a String of 2 to 6 WLEDs for 1.5in to 4in LCD Backlighting Used in Battery-Operated Devices</td>
</tr>
<tr>
<td>MAX8831</td>
<td>High-Efficiency White LED Step-Up Converter with I²C Interface in 2mm x 2mm WLP</td>
<td>Easily Drives Five Banks of 9 LEDs with Over 90% Efficiency Using an I²C Interface in a 2mm x 2mm WLP</td>
</tr>
<tr>
<td>MAX6950/51</td>
<td>+2.6V to +5.5V multi-segment LED driver with RAM, brightness control, and multiplexing</td>
<td>Drive 7-segment digits, or 40 discrete LEDs with 50% reduction of drive lines by multiplexing technique</td>
</tr>
<tr>
<td>MAX7219/21</td>
<td>+5V multi-segment LED drivers with RAM, brightness control, and integrated BCD code-B decoder</td>
<td>Drive 8-Digit 7-segment or 64 individual LEDs with SPI interface and integrated decoder</td>
</tr>
</tbody>
</table>
## USB

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX3421E</td>
<td>USB Peripheral/Host Controller with SPI Interface</td>
<td>A Single IC with USB Functionality</td>
</tr>
<tr>
<td>MAX3349EA</td>
<td>USB 2.0 Full-Speed Transceiver with UART Multiplexing Mode</td>
<td>Increased Hysteresis on VBUS detection and control overshoot on D+/D- lines</td>
</tr>
</tbody>
</table>
## Isolated Power

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MAX13253</td>
<td>1A Spread-Spectrum Push-Pull Transformer Driver for Isolated Power Supplies</td>
<td>Simplifies Isolated Power Designs</td>
</tr>
<tr>
<td>MAX13256</td>
<td>36V H-Bridge Transformer Driver</td>
<td>Wide-Range Transformer Driver Simplifies Design</td>
</tr>
<tr>
<td>MAX17681</td>
<td>4.5V to 42V Input, 5W High-Efficiency, Iso-Buck DC-DC Converter with internal FETs</td>
<td>Reduces ext components, 2X higher efficiency than transformer driver, No optocoupler, 10% accuracy</td>
</tr>
<tr>
<td>MAX17682</td>
<td>4.5V to 42V Input, 10W High-Efficiency, Iso-Buck DC-DC Converter with internal FETs</td>
<td>Reduces ext components, 2X higher efficiency than transformer driver, No optocoupler, 10% accuracy</td>
</tr>
<tr>
<td>MAX17690</td>
<td>4.5V to 60V Input, Patented No-Opto Flyback DC-DC Controller with external MOSFETs</td>
<td>2X higher efficiency than a transformer driver, Eliminates optocoupler, 5% accuracy</td>
</tr>
<tr>
<td>MAX17595/6</td>
<td>Universal AC-DC and 36/72V\textsubscript{IN} DC-DC PWM Controllers for Flyback applications in 3x3 TQFN</td>
<td>Unique adjustable switching frequency 100kHz to 1MHz helps mitigate EMI issues</td>
</tr>
<tr>
<td>MAX17598/9</td>
<td>Universal AC-DC and 36/72V\textsubscript{IN} DC-DC PWM Controllers for Active Clamp in 3x3 TQFN</td>
<td>Unique adjustable switching frequency 100kHz to 1MHz helps mitigate EMI issues</td>
</tr>
<tr>
<td>MAX17606</td>
<td>4.5V to 36V Secondary synch driver replaces diode</td>
<td>Improve flyback controller efficiency by 3 to 4%</td>
</tr>
</tbody>
</table>
# Temp Sensors

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS1775</td>
<td>Digital Thermometer and Thermostat in SOT23</td>
<td>Measures Temperatures from -55°C to +125°C (-67°F to +257°F) without external components.</td>
</tr>
<tr>
<td>DS600</td>
<td>±0.5°C Accurate Analog-Output Temperature Sensor</td>
<td>Analog Temperature Sensor Is ±0.5°C Accurate Over Entire 2.7V to 5.5V Operating Voltage Range, and Wide -20°C to +100°C Temperature Range</td>
</tr>
<tr>
<td>MAX31725</td>
<td>±0.5°C Local Temperature Sensor</td>
<td>Ultra-Accurate Temperature Sensor Offers ±0.5°C (max) Accuracy Over a Wide -40°C to +105°C Range</td>
</tr>
<tr>
<td>DS1631</td>
<td>High-Precision Digital Thermometer and Thermostat</td>
<td>High-Precision Digital Thermometer and Thermostat Provide 9-/10-/11-/12-Bit Temperature Readings Over a -55°C to +125°C Range</td>
</tr>
<tr>
<td>DS18B20</td>
<td>Programmable Resolution 1-Wire® Digital Thermometer</td>
<td>High-Precision Temperature Monitoring with Minimal Connections Ideal for Multi-sensor Systems</td>
</tr>
<tr>
<td>DS75</td>
<td>Digital Thermometer and Thermostat</td>
<td>Ideal for Personal Computers, Cellular Base Stations, Office Equipment, or Any Thermally Sensitive System</td>
</tr>
</tbody>
</table>
### Sensor Output Drivers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX14832</td>
<td>One-Time Programmable Industrial Sensor Output Driver</td>
<td>Industry's First 100mA Robust OTP Output Driver</td>
</tr>
<tr>
<td>MAX14836</td>
<td>24V Dual-Output Sensor Transceiver</td>
<td>Most Feature-Rich Dual Sensor Transceiver with Integrated LDOs and &lt; 1.8V Output Voltage Drop</td>
</tr>
<tr>
<td>MAX14838/39</td>
<td>24V Pin-Configurable Industrial Sensor Output Drivers</td>
<td>Simplify and Shrink Sensor Designs by 25x</td>
</tr>
</tbody>
</table>
## IO-Link Transceivers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX14824</td>
<td>IO-Link Master Transceiver</td>
<td>Easily Scalable to 16 Channels with Auto Wake-Up Polarity Generation</td>
</tr>
<tr>
<td>MAX14821</td>
<td>IO-Link Device Transceiver</td>
<td>Industry's Smallest Full-Featured IO-Link Device Transceiver in 2.5mm x 2.5mm, 25-Bump WLP</td>
</tr>
<tr>
<td>MAX14826</td>
<td>IO-Link Device Transceiver</td>
<td>SPI and Pin-Programmable IO-Link Transceiver Reduces Design SKUs</td>
</tr>
<tr>
<td>MAX14827A</td>
<td>Low-Power, Ultra-Small, Dual Driver, IO-Link Device Transceiver</td>
<td>Tiny, Low-Power Dual IO-Link Transceiver</td>
</tr>
<tr>
<td>MAX14819</td>
<td>Dual IO-Link Master Transceiver with Integrated Framers and L+ Supply Controllers</td>
<td>Low-power, dual-channel, IO-Link master transceiver with sensor/actuator power-supply controllers</td>
</tr>
<tr>
<td>MAX14828</td>
<td>Low-Power, Ultra-Small IO-Link Device Transceiver</td>
<td>Low-Power, Ultra-Small, Robust IO-Link Transceiver</td>
</tr>
</tbody>
</table>
# System Power Management

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX34440</td>
<td>PMBus™ 6-Channel Power-Supply Manager</td>
<td>Power-Supply Manager Provides Unparalleled &quot;Black Box&quot; Failure Logging for Improving System Performance</td>
</tr>
<tr>
<td>MAX16024</td>
<td>Battery-Backup Circuit with Regulated Output Voltage</td>
<td>Low-Power Battery-Backup Circuit with Regulated Output Reduce Total Number of External Components</td>
</tr>
<tr>
<td>MAX6715</td>
<td>Dual/Triple Ultra-Low-Voltage SOT23 µP Supervisory Circuit</td>
<td>Integrated dual/triple supervisory circuit significantly improve system reliability and reduce size</td>
</tr>
<tr>
<td>MAX6381</td>
<td>SC70/µDFN, Single/Dual Low-Voltage, Low-Power µP Reset Circuit</td>
<td>Monitor power-supply voltage from +1.8V to +5.0V while consuming only 3µA of supply current at +1.8V</td>
</tr>
<tr>
<td>MAX5978</td>
<td>0 to 16V, Hot-Swap Controller with 10-Bit Current, Voltage Monitor, and 4 LED Driver</td>
<td>Industry's First Hot-Swap Controller Operates Down to 0V and Integrates a Voltage and Current Monitor</td>
</tr>
<tr>
<td>MAX34565</td>
<td>12V Hot-Plug Switch in TDFN Package</td>
<td>Integrated, Self-Protected Electronic Switch Allows the Safe Insertion and Removal of Equipment Into 12V Backplanes</td>
</tr>
<tr>
<td>MAX34461</td>
<td>PMBus 16-Channel Voltage Monitor and Sequencer</td>
<td>Provides Unparalleled Sequencing, Monitoring, and &quot;Black Box&quot; Fault Logging of Up to 16 POL Power Supplies</td>
</tr>
</tbody>
</table>
## Above-1GHz ISM, Wi-Fi and Small Cell Transceivers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX2832</td>
<td>High-Performance Universal 2.4GHz ISM Transceiver</td>
<td>Fully Integrated 2.4GHz Radio Front-End with 40MHz BW and 2.6dB NF</td>
</tr>
<tr>
<td>MAX2850/51</td>
<td>4.9GHz to 5.9GHz MIMO 40MHz Transceivers Radio Front-End</td>
<td>MAX2850: 4 Transmitters, 1 Receiver MAX2851: 1 Transmitter, 5 Receivers</td>
</tr>
<tr>
<td>MAX2829</td>
<td>Dual-band 2.4GHz to 5GHz and 4.9GHz to 5.8GHz 40MHz BW Transceiver</td>
<td>Low NF Enabling &lt;-75dBm Sensitivity 3.5dB Noise Figure at 2.4GHz 4.5dB Noise Figure at 5GHz</td>
</tr>
<tr>
<td>MAX2550/51</td>
<td>3G Femtocell Transceivers for Bands I, II, V, VIII</td>
<td>WCDMA/CDMA2000 with Downlink/2G sniff, DC offset and I/Q Calibration</td>
</tr>
<tr>
<td>MAX2838</td>
<td>3.3GHz to 3.9GHz Wireless Broadband RF Transceiver</td>
<td>Industry's First Production-Ready, Single-Chip 3.3GHz to 3.9GHz WiMAX RF Transceiver</td>
</tr>
<tr>
<td>MAX2837</td>
<td>2.3GHz to 2.7GHz Wireless Broadband RF Transceiver</td>
<td>Industry's First Production-Ready, Single-Chip 2.3GHz to 2.7GHz WiMAX RF Transceiver</td>
</tr>
<tr>
<td>MAX2828</td>
<td>Single-/Dual-Band 802.11a/b/g World-Band Transceiver</td>
<td>802.11a and 802.11a/g RF Transceiver Supports Pre-802.11n MIMO and Smart-Antenna Radio Systems</td>
</tr>
</tbody>
</table>
## Monitor and Control

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX11618</td>
<td>10-Bit, 300ksps ADC with FIFO and Internal Reference</td>
<td>Low-Cost 10-Bit 4-Channel ADC with Internal Reference, FIFO, and SPI Interface</td>
</tr>
<tr>
<td>MAX5714</td>
<td>Ultra-Small, Quad-Channel, 8-/10-/12-Bit Buffered Output DAC with Internal Reference and SPI Interface</td>
<td>Feature-Rich, 4-Channel DAC Offered in a 3.5mm² WLP Footprint</td>
</tr>
<tr>
<td>MAX1042</td>
<td>10-Bit, Multichannel ADC/DAC with FIFO, Temperature Sensing, and GPIO Ports</td>
<td>Integrates a multichannel, 10-bit, analog-to-digital converter (ADC) and a quad, 10-bit, digital-to-analog converter (DAC) in a single IC</td>
</tr>
<tr>
<td>MAX1058</td>
<td>10-Bit, Multichannel ADC/DAC with FIFO, Temperature Sensing, and GPIO Ports</td>
<td>Integrates a multichannel, 10-bit, analog-to-digital converter (ADC) and an octal, 10-bit, digital-to-analog converter (DAC) in a single IC</td>
</tr>
</tbody>
</table>
# Secure Authenticators

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Crypto Engine</th>
<th>Interface</th>
<th>User Memory</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS28C36</td>
<td>ECC-P256</td>
<td>I²C 1-Wire</td>
<td>4kb</td>
<td>Includes bidirectional asymmetric key authentication, ECDH key exchange, HMAC, user-accessible FIPS RNG, and two secure authenticated GPIOs</td>
</tr>
<tr>
<td>DS28E36</td>
<td>SHA-256</td>
<td>I²C 1-Wire</td>
<td>4kb</td>
<td>Supports all the features of the DS28C36 with added coprocessor functions</td>
</tr>
<tr>
<td>DS2476</td>
<td>ECC-P256</td>
<td>I²C 1-Wire</td>
<td>4kb</td>
<td>Supports all the features of the DS28C36 with added coprocessor functions</td>
</tr>
<tr>
<td>DS28E15</td>
<td>SHA-256</td>
<td>1-Wire</td>
<td>512b 2kb 4kb</td>
<td>Includes bidirectional symmetric key authentication, user-programmable and irreversible EEPROM protection modes with minimalist 1-Wire interface</td>
</tr>
<tr>
<td>DS28E22</td>
<td>SHA-256</td>
<td>1-Wire</td>
<td>512b</td>
<td>Supports host-side SHA-256 coprocessor with integrated 1-Wire master function</td>
</tr>
<tr>
<td>DS28E25</td>
<td>SHA-256</td>
<td>I²C 1-Wire</td>
<td>512b</td>
<td>Supports host-side SHA-256 coprocessor with integrated 1-Wire master function</td>
</tr>
<tr>
<td>MAX66240</td>
<td>SHA-256</td>
<td>NFC</td>
<td>4kb</td>
<td>Includes bidirectional symmetric key authentication, user-programmable and irreversible EEPROM protection modes with wireless NFC interface</td>
</tr>
<tr>
<td>MAX66242</td>
<td>SHA-256</td>
<td>NFC/I²C</td>
<td>4kb</td>
<td>Includes bidirectional symmetric key authentication, user-programmable and irreversible EEPROM protection modes with wireless NFC interface</td>
</tr>
<tr>
<td>MAX66300</td>
<td>SHA-256</td>
<td>NFC</td>
<td>1kb</td>
<td>Supports host-side SHA-256 coprocessor with integrated NFC reader</td>
</tr>
<tr>
<td>Part Number</td>
<td>Description</td>
<td>Key Advantages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAX5974A</td>
<td>Active-Clamped, Spread-Spectrum, Current-Mode PWM Controller</td>
<td>Active-Clamped, Spread-Spectrum, Current-Mode PWM Controller with Adjustable Frequency from 100kHz to 600kHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAX5982A</td>
<td>IEEE 802.3af/at-Compliant, Powered Device Interface Controller with Integrated 70W High-Power MOSFET</td>
<td>70W, PoE Powered Device Interface Controller with Integrated MOSFET</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAX17599</td>
<td>4.5V to 36V, Active Clamp Current-Mode PWM Controller with flexible protection</td>
<td>Extended $V_{IN}$, -45°C to +125°C temp range, 100kHz to 1MHz extended frequency, flexible UVLO enhancements to MAX5974</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAX17503 and other Himalaya DC-DC</td>
<td>4.5V to 60V, 2.5A regulator &amp; family for POE not needing isolation</td>
<td>Simplify design by replacing isolated with non-isolated in security cameras, IP Phones</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAX5969A</td>
<td>IEEE 802.3af/at-Compliant, Powered Device Interface Controller with Integrated Power MOSFET</td>
<td>IEEE 802.3af/at-Compliant Power-Device Interface Controllers Target PoE+ Applications</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Signal Integrity

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX3987</td>
<td>8.5Gbps Quad Equalizer and Preemphasis Driver</td>
<td>Best-in-Class Redriver Can Equalize 25in to 30in of FR4</td>
</tr>
<tr>
<td>MAX3983</td>
<td>Quad Copper-Cable Signal Conditioner</td>
<td>2.5Gbps to 3.2Gbps Quad, Copper-Cable Signal Conditioner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provides Compensation for 4x Copper Infiniband and 10Gbase-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cx4 Ethernet Links, Allowing Spans of 20m with 24AWG and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15m with 28AWG</td>
</tr>
<tr>
<td>MAX3804</td>
<td>12.5Gbps Settable Receive Equalizer</td>
<td>Industry's First 12.5Gbps Equalizer Extends Reach to 30in of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FR4 in Serial Communications</td>
</tr>
<tr>
<td>MAX3785</td>
<td>6.25Gbps, 1.8V PC Board Equalizer</td>
<td>Industry’s Smallest Backplane Equalizer Measures Only 1.5mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x 1.5mm</td>
</tr>
<tr>
<td>MAX3980</td>
<td>3.125Gbps XAUI Quad Equalizer</td>
<td>Achieve Clean 3.125Gbps XAUI Interfaces over 40in Backplanes</td>
</tr>
</tbody>
</table>
## Bias Control

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX11008</td>
<td>Dual RF LDMOS Bias Controller with Nonvolatile Memory</td>
<td>Offers Integration and Reduces Cost with Power Savings</td>
</tr>
</tbody>
</table>
# UART

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX14830</td>
<td>Quad Serial UART with 128-Word FIFOs</td>
<td>Industry's First Quad SPI/I²C UART</td>
</tr>
<tr>
<td>MAX3109</td>
<td>Dual Serial UART with 128-Word FIFOs</td>
<td>Industry's Most Advanced Dual SPI/I²C UART</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increases System Flexibility</td>
</tr>
</tbody>
</table>
## Multiplexers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX14752</td>
<td>8-Channel/Dual 4-Channel 72V Analog Multiplexers</td>
<td>Ideal for Industrial Applications such as PLCs, Industrial Controllers and ATE Equipment</td>
</tr>
<tr>
<td>MAX14753</td>
<td>Dual ±25V Above- and Below-the-Rails 4:1 Analog Multiplexer</td>
<td>Simplifies Designs with the Industry’s First ±25V Above- and Below-the-Rails Multiplexer</td>
</tr>
<tr>
<td>MAX14778</td>
<td>Dual ±25V Above- and Below-the-Rails 4:1 Analog Multiplexer</td>
<td></td>
</tr>
</tbody>
</table>

Home

Return

160 | Maxim Integrated
## Signal Conditioners

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX15500</td>
<td>(0 to 4.096V) Industrial Analog Current/Voltage Output Conditioners</td>
<td>Industry's First Programmable Outputs—Current Up to ±24mA or Voltage Up to ±12V</td>
</tr>
<tr>
<td>MAX15501</td>
<td>(0 to 2.5V)</td>
<td></td>
</tr>
</tbody>
</table>
## Backplane Interface

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9259</td>
<td>Gigabit Multimedia Serial Link with Spread Spectrum and Full-Duplex Control Channel</td>
<td>Single-Link Serializer/Deserializer Chipset with Integrated Control Channel Is Ideal for Digital Video Applications</td>
</tr>
<tr>
<td>MAX4986</td>
<td>SAS/SATA Single Lane 2:1/1:2 Multiplexer/Demultiplexer Plus Redriver with Equalization</td>
<td>1:2/2:1 Active Mux with Redrive Maintains Signal Integrity While Providing High-Frequency Performance at SAS/SATA 2.0s</td>
</tr>
<tr>
<td>MAX4888B</td>
<td>Up to 8.0Gbps Dual Passive Switch</td>
<td>Supports Multiple High-Speed Interfaces up to 8.0Gbps While Maintaining Signal Integrity in the Application</td>
</tr>
</tbody>
</table>
# RS-422/RS-485 Receivers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX3280E/81E/83E/84E</td>
<td>Dual-voltage, high-speed, single-channel receivers with integrated ESD, and true fail-safe feature in a tiny form factor</td>
<td>Packaged in a 5-pin SOT23, saving more than 70% PCB space compared to 8-pin SO package. 52Mbps bandwidth covers high-speed motors for dependable tracking. 3V to 5.5V operation simplifies power rail requirements.</td>
</tr>
<tr>
<td>MAX14890E</td>
<td>Highly configurable, 35Mbps four-differential receiver and two single-ended receiver with high CMR, ESD, and FP.</td>
<td>Configurable with SPI or pins for RS-422, TTL, and HTL receive signals. ±20V common-mode range, ±40V fault protected, ±25kV ESD HBM, and fault detection for robust communication.</td>
</tr>
<tr>
<td>MAX14891E</td>
<td>Quad-channel 35Mbps RS-422/RS-485 receiver with high CMR, ESD, and FP</td>
<td>±20V common-mode range, ±40V fault protected, ±25kV ESD HBM, and fault detection for robust communication.</td>
</tr>
<tr>
<td>MAX14783</td>
<td>High-Speed 3.3V/5V RS-485/RS-422 Transceiver with ±35kV HBM ESD Protection</td>
<td>Industry’s Fastest Dual-Voltage RS-485/RS-422 Transceiver with Highest ESD Protection</td>
</tr>
</tbody>
</table>
## Security Managers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS3600</td>
<td>DeepCover® Security Manager with 64B Nonimprinting, Battery-Backed Encryption Key SRAM</td>
<td>Single-Chip Solution Integrates Advanced Physical Security to Protect Against Physical and Environmental Tamperings</td>
</tr>
<tr>
<td>DS3605</td>
<td>DeepCover Security Manager for NV SRAM Control with RTC and Thermal Tamper Detection</td>
<td>Single-Chip Solution Integrates Advanced Physical Security to Protect Against Physical and Environmental Tamperings</td>
</tr>
<tr>
<td>DS3640</td>
<td>DeepCover Security Manager with I²C Interface and 1KB Nonimprinting Battery-Backed Encryption Key SRAM</td>
<td>Single-Chip Solution Integrates Advanced Physical Security to Protect Against Physical and Environmental Tamperings</td>
</tr>
<tr>
<td>DS3645</td>
<td>DeepCover Security Manager with 4KB Secure Memory and Tamper Protection</td>
<td>Single-Chip Solution Integrates Advanced Physical Security with On-Chip Encryption Key Memory</td>
</tr>
</tbody>
</table>
# Sequencing and Monitoring

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS4402</td>
<td>Two/Four-Channel, I²C Adjustable Current DAC</td>
<td>Two and Four I²C Adjustable Current Sources Capable of Sinking or Sourcing Current</td>
</tr>
<tr>
<td>DS4412/32</td>
<td>Dual-Channel, I²C Adjustable Sink/Source Current DACs</td>
<td>Inexpensive Power-Supply Control Made Easy</td>
</tr>
<tr>
<td>DS4422</td>
<td>Two-/Four-Channel, I²C, 7-Bit Sink/Source Current DAC</td>
<td>Low-Cost, Sink/Source Current DAC Simplifies Power-Supply Margin Testing</td>
</tr>
<tr>
<td>MAX16050</td>
<td>Voltage Monitor/Sequencer Circuit with Reverse-Sequencing Capability</td>
<td>Easy-to-Use, Four-/Five-Voltage, Power-Up/Power-Down Sequencer/Monitor</td>
</tr>
<tr>
<td>MAX16052</td>
<td>High-Voltage, Adjustable Sequencing/Supervisory Circuit</td>
<td>Simple Reset and Supervisory Circuit Operates from High Voltage and are Fully Adjustable</td>
</tr>
<tr>
<td>MAX16025</td>
<td>Dual-/Triple-/Quad-Voltage, Capacitor-Adjustable, Sequencing/Supervisory Circuit</td>
<td>Dual-/Triple-/Quad-Voltage Sequencer/Monitor with Capacitor-Adjustable Timing</td>
</tr>
<tr>
<td>MAX6895</td>
<td>Ultra-Small, Adjustable Sequencing/Supervisory Circuit</td>
<td>Small, low-power, voltage-monitoring circuit with sequencing capability</td>
</tr>
</tbody>
</table>
### Oscillators

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS4156</td>
<td>DS4-XO Series Clock Oscillator</td>
<td>Crystal Oscillator Features Small 5mm x 3.2mm Outline, High-Frequency Differential Outputs to 622.08MHz</td>
</tr>
<tr>
<td>DS4100H</td>
<td>100MHz HCSL Clock Oscillator</td>
<td>Only Oscillator Module Provides a Direct 100MHz HCSL Output</td>
</tr>
</tbody>
</table>
# Ambient and Proximity Sensor

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX44009</td>
<td>Industry’s Lowest Power Ambient Light Sensor with ADC</td>
<td>Reduces System Cost and Simplifies System Design</td>
</tr>
</tbody>
</table>
# Simultaneous Sampling ADCs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX11190</td>
<td>4-Channel, Dual, Simultaneous-Sampling, 2.2V to 3.6V, 12-Bit, 3Msps SAR ADC in Tiny 3mm x 3mm TQFN Package</td>
<td>High-Speed, Ultra-Low-Power Simultaneous-Sampling SAR ADC in a Small Form Factor</td>
</tr>
<tr>
<td>MAX1377</td>
<td>Dual, 12-Bit, 1.25Msps, Simultaneous-Sampling ADC with Serial Interface</td>
<td>12-Bit Simultaneous Sampling, 2x2 Muxed ADC is Ideal for Motor Control with No Pipeline Delay</td>
</tr>
<tr>
<td>MAX11040K/60</td>
<td>24-/16-Bit, 4-Channel, Simultaneous-Sampling, Cascadable, Sigma-Delta ADC</td>
<td>Sigma-Delta ADC Cascadable Up to 32 Simultaneous Channels</td>
</tr>
<tr>
<td>MAX11046</td>
<td>16-Bit, 4-/6-/8-Channel, 250ksps, Simultaneous-Sampling ±5V SAR ADC with Internal Reference</td>
<td>Simultaneous sampling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Integration simplifies Design</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total system accuracy</td>
</tr>
<tr>
<td>MAX11192/95/98</td>
<td>12-/14-/16-Bit, 2Msps, Dual Simultaneous-Sampling SAR ADCs with Internal Reference</td>
<td>Industry’s smallest dual simultaneous-sampling ADC with Reference in 2mm x 3mm package</td>
</tr>
</tbody>
</table>
# Temperature Sensor Digitizers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX31865</td>
<td>RTD-to-Digital Converter</td>
<td>Complete Solution Provides a Digital Temperature Reading from an RTD with Fault Detection and Input Voltage Protection</td>
</tr>
<tr>
<td>MAX31855</td>
<td>Cold-Junction Compensated Thermocouple-to-Digital Converter</td>
<td>Accurate Thermocouple-to-Digital Converter IC Simplifies Designs and Lowers System Cost</td>
</tr>
<tr>
<td>MAX31856</td>
<td>Precision Thermocouple-to-Digital Converter with Linearization</td>
<td>Simplifies Thermocouple Designs with Integrated Automatic Cold-Junction Compensation and Linearization Correction</td>
</tr>
</tbody>
</table>
DARWIN Ultra-Low-Power Microcontrollers

DARWIN is a new breed of low-power microcontrollers built to thrive in the rapidly evolving Internet of Things (IoT). They are smart, with the biggest memories in their class and a massively scalable memory architecture. They run forever, thanks to wearable-grade power technology. They are also tough enough to withstand the most advanced cyberattacks. DARWIN microcontrollers are designed to run any application imaginable—in places where you would not dream of sending other microcontrollers.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Core</th>
<th>( F_{\text{max}} )</th>
<th>Flash</th>
<th>SRAM</th>
<th>Key advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX32650/51/52</td>
<td>Cortex®-M4F</td>
<td>120MHz</td>
<td>3MB</td>
<td>1MB</td>
<td>Biggest memory low-power micro, 104mW/MHz highly integrated (SD, USB 2.0 HS, TFT controller…). Advanced security engines.</td>
</tr>
<tr>
<td>MAX32630/31</td>
<td>Cortex-M4F</td>
<td>96MHz</td>
<td>2MB</td>
<td>512KB</td>
<td>Best-in-industry SRAM retention in backup mode (3.4mW retains 512KB). Wide range of memory sizes. Security engines to build a trusted IoT.</td>
</tr>
<tr>
<td>MAX32620/21</td>
<td>Cortex-M4F</td>
<td>96MHz</td>
<td>1MB to 2MB</td>
<td>256KB</td>
<td></td>
</tr>
<tr>
<td>MAX32625/26</td>
<td>Cortex-M4F</td>
<td>96MHz</td>
<td>256kB to 512kB</td>
<td>128kB to 160kB</td>
<td></td>
</tr>
<tr>
<td>MAX32660</td>
<td>Cortex-M4F</td>
<td>96MHz</td>
<td>64kB to 256kB</td>
<td>32kB to 96kB</td>
<td>The smallest Cortex M4F in the world. Pick your power profile (down to 45mW/MHz @ 24MHz ( f_{\text{max}} )).</td>
</tr>
</tbody>
</table>

170 | Maxim Integrated
DeepCover Secure Microcontrollers

Designed to thwart attackers and protect critical infrastructure, DeepCover Secure Microcontrollers integrate advanced security features that help detect and react to physical attacks. Raise the bar on security for mission critical applications with technology proven through over 20 years as the leading player in financial transaction security.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Core</th>
<th>$F_{\text{max}}$</th>
<th>Flash</th>
<th>SRAM</th>
<th>Key advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX32550</td>
<td>Cortex-M3</td>
<td>108MHz</td>
<td>1MB</td>
<td>256kB</td>
<td>Family of compatible highly secure microcontrollers with advanced security features to protect critical equipment.</td>
</tr>
<tr>
<td>MAX32552</td>
<td>Cortex-M3</td>
<td>108MHz</td>
<td>1MB</td>
<td>384kB</td>
<td>Secure PKI bootloader and architecture for highest assurance. Option for contactless interface (MAX32560).</td>
</tr>
<tr>
<td>MAX32555</td>
<td>Cortex-M3</td>
<td>60MHz</td>
<td>512kB</td>
<td>96kB</td>
<td></td>
</tr>
<tr>
<td>MAX32560</td>
<td>Cortex-M3</td>
<td>108MHz</td>
<td>1MB</td>
<td>384kB</td>
<td></td>
</tr>
</tbody>
</table>
## RF Transmitter/I and Q Modulator

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Features and Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX2150</td>
<td>Wideband I/Q Modulator with Sigma-Delta Fractional-N Synthesizer</td>
<td>Integrated broadband I/Q modulator, internally matched broadband output driver amplifier, fractional-N frequency synthesizer, LO buffer amplifier, and low-noise crystal oscillator circuit reduces BOM cost</td>
</tr>
</tbody>
</table>
## Digital Input/Output

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX31910/11</td>
<td>Ultra-Low-Power, Industrial, Octal, Digital Input Translators/Serializers</td>
<td>8 High-Voltage Input Channels (36V max)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wide Operating Field Supply Range of 7V to 36V</td>
</tr>
<tr>
<td>MAX14900E</td>
<td>Octal, High-Speed, Industrial, High-Side Switch</td>
<td>Industry's Lowest Latency and Fastest 24V Driver, Capable of 100kHz Switching</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rate, Improves Factory Throughput</td>
</tr>
<tr>
<td>MAX14912/13</td>
<td>Octal High-Speed, High-Side Switch/Push-Pull Driver</td>
<td>Industry's Most Robust and Fastest 24V Driver, Capable of 200kHz Switching</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rate, Improves Factory Throughput</td>
</tr>
<tr>
<td>MAX14914</td>
<td>High-Side Switch with Settable Current-Limiting, Push-Pull Driver Option,</td>
<td>Ultra Robust, Configurable Driver facilitates High Speed</td>
</tr>
<tr>
<td></td>
<td>and Digital Input Configuration</td>
<td>and Safety Digital I/O module Designs</td>
</tr>
</tbody>
</table>
## DC Motor Driver

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX14870</td>
<td>Compact 4.5V to 36V Full-Bridge DC Motor Driver</td>
<td>Industry’s Smallest 4.5V to 36V DC Brushed Motor Drivers/Relay Drivers</td>
</tr>
</tbody>
</table>
## MOSFET Drivers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAX5048C, MAX15070</strong></td>
<td>4V to 14V( _{\text{IN}} ), 3/7A source/sink, single-channel, TTL/CMOS logic in SOT23</td>
<td>Fast 8ns/12ns propagation delays. Used with microcontroller or PWM controller to drive MOSFETs. Also enhancement GaN</td>
</tr>
<tr>
<td><strong>MAX15024/5</strong></td>
<td>4.5V to 28V, 2/4A and 4/8A source/sink, dual-channel, TTL/CMOS, Inverting/noninverting, 10-pin TDFN</td>
<td>Fast 16ns propagation delays. Used with microcontroller or PWM controller to drive MOSFETs.</td>
</tr>
<tr>
<td><strong>MAX17600/1/2/3/4/5</strong></td>
<td>4.5V to 14V, 4/4A source/sink, dual-channel, TTL/CMOS, Inverting/noninverting, SO-8, TDFN-8, μMAX-8</td>
<td>12ns propagation delays. P2P to TI and Microchip</td>
</tr>
</tbody>
</table>
# Isolated Data Converters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX14001/02</td>
<td>Configurable, Isolated 10-bit ADCs for Multi-Range Binary Inputs</td>
<td>Industry's First Integrated Solution for Detection of Multi-Voltage Binary Inputs</td>
</tr>
</tbody>
</table>
### Fuel Gauges

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX17055</td>
<td>7µA 1-Cell Fuel Gauge with ModelGauge™ m5 EZ</td>
<td>Industry's Lowest $I_Q$ Fuel Gauge with ModelGauge m5 EZ Eliminates Battery Characterization</td>
</tr>
<tr>
<td>MAX17201/05</td>
<td>Stand-Alone ModelGauge m5 Fuel Gauges with SHA-256 Authentication</td>
<td>Industry's First Stand-Alone ModelGauge m5 Fuel Gauge with SHA-256 Authentication</td>
</tr>
<tr>
<td>Part Number</td>
<td>Description</td>
<td>Key Advantages</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MAX30101/02</td>
<td>High-Sensitivity Pulse Oximeters and Heart-Rate Sensors for Wearable Health</td>
<td>High-Sensitivity Pulse Oximeter and Heart-Rate Sensor for Fitness &amp; Healthcare</td>
</tr>
<tr>
<td>MAX86160</td>
<td>Integrated Heart-Rate Sensor for In-Ear Applications</td>
<td>Smallest Integrated Optical Heart Rate Sensor</td>
</tr>
<tr>
<td>MAX30001</td>
<td>Ultra-Low-Power, Single-Channel Integrated Biopotential (ECG, R-to-R, and Pace Detection) and Bioimpedance (BioZ) AFE</td>
<td>Biopotential and bioimpedance (BioZ), analog front-end (AFE) solution for wearable applications</td>
</tr>
<tr>
<td>MAX86140</td>
<td>Best-in-Class Optical Pulse Oximeter and Heart-Rate Sensor for Wearable Health</td>
<td>Ultra-low-power, completely integrated, optical data acquisition systems</td>
</tr>
</tbody>
</table>
## Audio CODECs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX98090</td>
<td>Ultra-Low-Power Stereo Audio Codec</td>
<td>Small, Ultra-Efficient, High-Performance, Stereo Codec with integrated headphone and speaker amps</td>
</tr>
<tr>
<td>MAX9867</td>
<td>Low-Power, Stereo Audio Codec</td>
<td>Integrates Auxiliary Battery-Measurement ADC and Capacitorless Headphone Amps</td>
</tr>
</tbody>
</table>
### PMICs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX77650/1</td>
<td>Ultra-Low Power PMICs with 3-Output SIMO and Charger Optimized for Small Li+ Batteries</td>
<td>Highly Integrated battery-charging and power solution for low power, size-constrained applications with Ultra-Low 6.5µA Operating Current</td>
</tr>
<tr>
<td>MAX20310</td>
<td>Wearable Power Management Solution for Primary Cells</td>
<td>Wearable Power Management for single-cell Zinc Air, Silver Oxide and Alkaline Battery Architectures</td>
</tr>
<tr>
<td>MAX14745</td>
<td>PMIC with Ultra-Low I&lt;sub&gt;Q&lt;/sub&gt; Voltage Regulators and Battery Charger for Small Lithium Ion Systems</td>
<td>Extends Battery Life of Wearable Electronics</td>
</tr>
<tr>
<td>MAX20303</td>
<td>Wearable Power Management Solution</td>
<td>Extends Battery Life of Wearable Electronics</td>
</tr>
<tr>
<td>MAX14720/50</td>
<td>Power-Management Solution</td>
<td>Extend Battery Life of Wearable Electronics</td>
</tr>
</tbody>
</table>
## Low-Current USB Protectors

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX20046/2F</td>
<td>Automotive Hi-Speed USB 2.0 Protectors</td>
<td>Tiny Solution for Module-to-Module Connections with Best-in-Class Eye Diagram and Integrated Protection</td>
</tr>
</tbody>
</table>
# Headphone Amplifiers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9722/3</td>
<td>Stereo DirectDrive® Headphone Amplifiers with BassMax, Volume Control, and I²C</td>
<td>Next-Generation DirectDrive Headphone Amplifiers Offer Differential Inputs and 5V Operation</td>
</tr>
<tr>
<td>MAX97220</td>
<td>Differential Input DirectDrive Line Driver/Headphone Amplifier</td>
<td>Dual-Use Headphone Amplifier and Line Driver with Flexible Gains and Low Noise Performance</td>
</tr>
<tr>
<td>MAX9890</td>
<td>Audio Click-Pop Suppressor</td>
<td>Low current suppression of clicks and pops</td>
</tr>
</tbody>
</table>
## VCC Non-PMBus

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX20751</td>
<td>Multiphase Master with PMBus Interface and Internal Buck Converter</td>
<td>PMBus-compliant multiphase master IC, with extensive status and parameter monitoring, is capable of driving up to four smart-slave integrated power devices.</td>
</tr>
<tr>
<td>MAX15023</td>
<td>Wide 4.5V to 28V Input, Dual-Output Synchronous Buck Controller</td>
<td>Low-Cost, Dual DC-DC Controller Operates from 4.5V to 28V Suitable for Multiple Applications</td>
</tr>
<tr>
<td>MAX17509</td>
<td>4.5V to 16V, Dual 3A, High-Efficiency, Synchronous Step-Down DC-DC Converter with Resistor Programmability</td>
<td>Highly Customizable Buck Regulator Can Be Configured for Two Independent 3A Outputs or a Dual-Phase 6A Single Output</td>
</tr>
<tr>
<td>MAX17504/06</td>
<td>4.5V to 60V, 3.5A/5A, High-Efficiency, Synchronous Step-Down DC-DC Converters with Internal Compensation</td>
<td>Industry's Only 60V, 3.5A Internal FET Synchronous Buck Converter</td>
</tr>
<tr>
<td>MAX15046</td>
<td>40V, High-Performance, Synchronous Buck Controller</td>
<td>40V Industrial Controller Operates at 1MHz</td>
</tr>
<tr>
<td>MAX8869</td>
<td>1A, Microcap, Low-Dropout, Linear Regulator</td>
<td>Compact, 1A, Low-Dropout Linear Regulator Requires Just 1µF Output Capacitor!</td>
</tr>
<tr>
<td>MAX15066</td>
<td>High-Efficiency, 4A, Step-Down DC-DC Regulator with Internal Power Switches</td>
<td>Smallest, Efficient, 4A DC-DC Converter for 5V/12V Applications</td>
</tr>
</tbody>
</table>
# System Power Supplies

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX17542</td>
<td>42V, 1A, Ultra-Small, High-Efficiency, Synchronous Step-Down DC-DC Converter</td>
<td>42V Synchronous Buck Converter with Internal FETs Enables High Efficiency</td>
</tr>
<tr>
<td>MAX15053</td>
<td>High-Efficiency, 2A, Current-Mode Synchronous, Step-Down Switching Regulator</td>
<td>Smallest, Most Efficient 2A Solution in the Market</td>
</tr>
<tr>
<td>MAX15027</td>
<td>1.425V to 3.6V Input, 1A Low-Dropout Regulator with BIAS Input</td>
<td>High-Performance LDO Delivers 1A of Output Current</td>
</tr>
<tr>
<td>Part Number</td>
<td>Description</td>
<td>Key Advantages</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td>----------------</td>
</tr>
<tr>
<td>MAX20730</td>
<td>Integrated, Step-Down Switching Regulator with PMBus</td>
<td>Monolithically Integrated, PMBus-Enabled Step-Down Switching Regulator with High-Power Density and Low Component Count</td>
</tr>
<tr>
<td>MAX15303</td>
<td>6A Digital PoL DC-DC Converter with InTune™ Automatic Compensation</td>
<td>6A InTune Automatically Compensated Converter with PMBus Telemetry</td>
</tr>
<tr>
<td>MAX8869</td>
<td>1A, Microcap, Low-Dropout, Linear Regulator</td>
<td>Compact, 1A, Low-Dropout Linear Regulator Requires Just 1µF Output Capacitor!</td>
</tr>
<tr>
<td>MAX17541G</td>
<td>42V, 500mA, Ultra-Small, High-Efficiency, Synchronous Step-Down DC-DC Converter</td>
<td>42V Synchronous Buck Converter with Internal FETs Enables High Efficiency</td>
</tr>
<tr>
<td>Part Number</td>
<td>Description</td>
<td>Key Advantages</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td>----------------</td>
</tr>
<tr>
<td>MAX20743</td>
<td>Integrated, Step-Down Switching Regulator with PMBus</td>
<td>Monolithically Integrated, PMBus Enabled Step-Down Switching Regulator with High Power Density and Low Component Count</td>
</tr>
<tr>
<td>MAX15303</td>
<td>6A Digital PoL DC-DC Converter with InTune Automatic Compensation</td>
<td>6A InTune Automatically Compensated Converter with PMBus Telemetry</td>
</tr>
<tr>
<td>MAX17509</td>
<td>4.5V to 16V, Dual 3A, High-Efficiency, Synchronous Step-Down DC-DC Converter with Resistor Programmability</td>
<td>Highly Customizable Buck Regulator Can Be Configured for Two Independent 3A Outputs or a Dual-Phase 6A Single Output</td>
</tr>
<tr>
<td>MAX17510</td>
<td>Low-Voltage DDR Linear Regulator</td>
<td>Low-Cost, Low-Voltage DDR Linear Regulator Source and Sink Up to 3A Peak (typ) Using Internal n-Channel MOSFETs</td>
</tr>
<tr>
<td>MAX17541G</td>
<td>42V, 500mA, Ultra-Small, High-Efficiency, Synchronous Step-Down DC-DC Converter</td>
<td>42V Synchronous Buck Converter with Internal FETs Enables High Efficiency</td>
</tr>
<tr>
<td>MAX8559</td>
<td>Dual, 300mA, Low-Noise Linear Regulator with Independent Shutdown in UCSP or TDFN</td>
<td>Dual, low-noise, low-dropout (LDO) linear regulator operates from a 2.5V to 6.5V input voltage</td>
</tr>
<tr>
<td>Part Number</td>
<td>Description</td>
<td>Key Advantages</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td>----------------</td>
</tr>
<tr>
<td>MAX20751</td>
<td>Multiphase Master with PMBus Interface and Internal Buck Converter</td>
<td>PMBus-compliant multiphase master IC, with extensive status and parameter monitoring, is capable of driving up to four smart-slave integrated power devices.</td>
</tr>
<tr>
<td>MAX15301</td>
<td>InTune Automatically Compensated Digital PoL Controller with Driver and PMBus Telemetry</td>
<td>Only Digital Power IC To Meet Transient and Light-Load Efficiency Performance Metrics Set by Analog Controllers</td>
</tr>
<tr>
<td>MAX20743</td>
<td>Integrated, Step-Down Switching Regulator with PMBus</td>
<td>Monolithically Integrated, PMBus-Enabled Step-Down Switching Regulator with High Power Density and Low Component Count</td>
</tr>
</tbody>
</table>
# VCC VCU108/10 Non-PMBus

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX20751</td>
<td>Multiphase Master with PMBus Interface and Internal Buck Converter</td>
<td>The MAX20751 PMBus-compliant multiphase master IC, with extensive status and parameter monitoring, is capable of driving up to four smart-slave integrated power devices.</td>
</tr>
<tr>
<td>MAX15301</td>
<td>InTune Automatically Compensated Digital PoL Controller with Driver and PMBus Telemetry</td>
<td>Only Digital Power IC To Meet Transient and Light-Load Efficiency Performance Metrics Set by Analog Controllers</td>
</tr>
<tr>
<td>MAX20745</td>
<td>Integrated, Step-Down Switching Regulator</td>
<td>Monolithically Integrated, Step-Down Switching Regulator with High Power Density and Low Component Count</td>
</tr>
<tr>
<td>MAX20733</td>
<td>Integrated, Step-Down Switching Regulator</td>
<td>Monolithically Integrated, Step-Down Switching Regulator with High Power Density and Low Component Count</td>
</tr>
</tbody>
</table>
## Board Functions

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX16052</td>
<td>High-Voltage, Adjustable Sequencing/Supervisory Circuit</td>
<td>Simple Reset and Supervisory Circuit Operates from High Voltage and is Fully Adjustable</td>
</tr>
<tr>
<td>MAX8892</td>
<td>High PSRR, Low-Dropout, 150mA Linear Regulator</td>
<td>Low-Dropout Linear Regulator Designed for Ultra-Low Noise in a SC70 Package</td>
</tr>
<tr>
<td>MAX13035</td>
<td>6-Channel High-Speed Logic-Level Translator</td>
<td>High-Speed (100Mbps), 6-Channel Translator Compatible with 4mA Drivers</td>
</tr>
<tr>
<td>MAX6816</td>
<td>±15kV ESD-Protected, Single/Dual/Octal, CMOS Switch Debouncer</td>
<td>Industry's-first SOT Switch Debouncer Features ±15kV ESD Protection and ±25V Fault Tolerance</td>
</tr>
</tbody>
</table>
# Fan Controllers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX31790</td>
<td>6-Channel PWM-Output Fan RPM Controller</td>
<td>Versatile Fan RPM Controller Can Be Configured for Closed-Loop Control for Up to 6 Fans or Monitoring for Up to 12 Fans</td>
</tr>
<tr>
<td>MAX6650</td>
<td>Fan-Speed Regulator and Monitor with SMBus-Compatible Interface</td>
<td>Controls and Monitors Fan Speed for High-Performance Thermal Management</td>
</tr>
<tr>
<td>MAX6651</td>
<td>Fan-Speed Regulator and Monitor with I²C-Compatible Interface</td>
<td></td>
</tr>
<tr>
<td>MAX31760</td>
<td>Precision Fan-Speed Controller with Nonvolatile Lookup Table</td>
<td>Customizable Lookup Table-Based Fan Controller Enables Smooth Control of Fan Speed to Reduce Acoustic Noise</td>
</tr>
<tr>
<td>MAX31782</td>
<td>System Management Microcontroller</td>
<td>Industry’s First Microcontroller with Six Independent Channels of Closed-Loop Fan Control</td>
</tr>
</tbody>
</table>
# Hot-Swap

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX15090</td>
<td>2.7V to 18V, 12A, Hot-Swap Solution with Current Report Output</td>
<td>Smallest and Most integrated Hot Swap for 12V Applications</td>
</tr>
<tr>
<td>MAX15096</td>
<td>2.7V to 18V, 6A Integrated Hot-Swap/Electronic Circuit Breaker</td>
<td>Smallest 6A Hot-Swap Solution with Only 12mΩ $R_{DSON}$ and 10% Circuit Breaker Threshold Accuracy</td>
</tr>
<tr>
<td>MAX15068</td>
<td>Dual ORing, Single Hot-Swap Controller with Accurate Current Monitoring</td>
<td>Board-Saving, 0.6% Current-Sense Accuracy, Single Chip for Both ORing and Hot-Swap SOA Control</td>
</tr>
</tbody>
</table>
# Level Translators

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAX13035E</strong></td>
<td>6-Channel High-Speed Logic-Level Translator</td>
<td>High-Speed (100Mbps), 6-Channel Translator Compatible with 4mA Drivers</td>
</tr>
<tr>
<td><strong>MAX3394E/5E</strong></td>
<td>±15kV ESD-Protected, High-Drive Current, Dual/Quad-Level Translators with Speed-Up Circuitry</td>
<td>Internal slew-rate enhancement circuitry features 10mA current-sink and 15mA current-source drivers to isolate capacitive loads from lower current drivers.</td>
</tr>
<tr>
<td><strong>MAX3373E/78E</strong></td>
<td>±15kV ESD-Protected, 1µA, 16Mbps, Dual/Quad Low-Voltage Level Translators in UCSP</td>
<td>Industry’s Smallest Level Translators</td>
</tr>
<tr>
<td><strong>MAX9912/13</strong></td>
<td>200kHz, 4µA, Rail-to-Rail I/O Op Amps with Shutdown</td>
<td>Feature a maximized ratio of gain bandwidth (GBW) to supply current and are ideal for battery-powered applications</td>
</tr>
</tbody>
</table>
# High Cell-Count Battery Management

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX14920/21</td>
<td>High-Accuracy 12-/16-Cell Measurement AFEs</td>
<td>Industry’s Most Accurate and Flexible Battery Management System Building Blocks</td>
</tr>
</tbody>
</table>
## DDR Regulators

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX1510</td>
<td>Low-Voltage DDR Linear Regulators</td>
<td>Low-Cost, Low-Voltage DDR Linear Regulators Source and Sink Up to 3A Peak (typ) Using Internal n-Channel MOSFETs</td>
</tr>
<tr>
<td>MAX8632</td>
<td>Integrated DDR Power-Supply Solution for Desktops, Notebooks, and Graphic Cards</td>
<td>Integrates a synchronous-buck PWM controller to generate $V_{DDQ}$, a sourcing and sinking LDO linear regulator to generate VTT, and a 10mA reference output buffer to generate VTTR</td>
</tr>
</tbody>
</table>
## Liquid/Gas Flow Rate Measurement

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX35102/3</td>
<td>Time-to-Digital Converter Without RTC and Reduced Power Time-to-Digital Converter with AFE, RTC, and Flash</td>
<td>Accurate Low-Flow Measurement with Low Power Consumption</td>
</tr>
<tr>
<td>MAX35104</td>
<td>Gas Flow Meter SoC</td>
<td>Industry’s First Integrated SoC Designed to Address the Unique Requirements of Natural Gas Meters</td>
</tr>
</tbody>
</table>
## Clock Distribution/High-Speed Signaling

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9110/2</td>
<td>Single/Dual LVDS Line Drivers with Ultra-Low</td>
<td>Industry’s Lowest Pulse-Skew LVDS Drivers</td>
</tr>
<tr>
<td></td>
<td>Differential Skew in SOT23</td>
<td></td>
</tr>
</tbody>
</table>
## Switches and Relay Drivers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX312</td>
<td>10Ω, Quad, SPST, CMOS Analog Switch</td>
<td>Precision, Dual Supply, SPST, Analog CMOS Switch</td>
</tr>
<tr>
<td>MAX4554</td>
<td>Force-Sense Switch</td>
<td>High-current, low-resistance switches for forcing current, and higher resistance switch</td>
</tr>
<tr>
<td>MAX4822</td>
<td>+3.3V/+5V, 8-Channel, Relay Driver with Fast Recovery Time and Power-Save Mode</td>
<td>Octal Relay Driver for Non-Latching Relays or Dual-Coil Latching Relays</td>
</tr>
<tr>
<td>MAX4896</td>
<td>Space-Saving, 8-Channel Relay/Load Driver</td>
<td>Built-in inductive kickback protection, drive for latching/nonlatching or dual-coil relays, and open-load and short-circuit fault detection</td>
</tr>
<tr>
<td>MAX4655</td>
<td>High-Current, 10Ω, SPST, CMOS Analog Switch</td>
<td>Can replace reed relays with a million times the speed and virtually unlimited number of lifetime cycles</td>
</tr>
<tr>
<td>MAX4659</td>
<td>High-Current, 25Ω, SPDT, CMOS Analog Switch</td>
<td>Medium voltage CMOS analog switch with a low on-resistance of 25Ω max specifically designed to handle large switch currents</td>
</tr>
</tbody>
</table>
## Pin Electronics

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9964</td>
<td>Quad Low-Power 500Mbps ATE Driver/Comparator</td>
<td>High-speed pin electronics driver and comparator IC includes, for each channel, a three-level pin driver, a dual comparator, and variable clamps</td>
</tr>
<tr>
<td>MAX9967</td>
<td>Dual, Low-Power, 500Mbps ATE Driver/Comparator with 35mA Load</td>
<td>High-speed, pin electronics driver/comparator/load (DCL) IC includes, for each channel, a three-level pin driver, a dual comparator, variable clamps, and an active load</td>
</tr>
<tr>
<td>MAX9969</td>
<td>Dual, Low-Power, 1200Mbps ATE</td>
<td>High-speed, pin electronics driver/comparator with 35mA load IC includes, for each channel, a three-level pin driver, a dual comparator, variable clamps, and an active load</td>
</tr>
<tr>
<td>MAX9972</td>
<td>Quad, Ultra-Low-Power, 300Mbps ATE Driver/Comparator</td>
<td>Low Cost, Low-Power ATE Pin Electronics for Memory, Burn-In, and Structural ATE</td>
</tr>
<tr>
<td>MAX9957</td>
<td>Fast Dual Driver for ATE with Waveform Shaping</td>
<td>DDR2 Memory Testers, GDDR3, and GDDR4 for ATE Applications Requiring 2Gbps Performance and Waveform Fidelity Control</td>
</tr>
<tr>
<td>MAX9979</td>
<td>Dual 1.1Gbps Pin Electronics with Integrated PMU and Level-Setting DACs</td>
<td>Integrates Levels, Active Load, Driver, Comparator, and Switches, While Maintaining Discrete Device Performance</td>
</tr>
</tbody>
</table>
**Parametric Measurement Unit (PMU)**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9951</td>
<td>Dual Per-Pin Parametric Measurement Units</td>
<td>Featuring a small package size, wide force and measurement range, and high accuracy</td>
</tr>
<tr>
<td>MAX9959</td>
<td>25V Span, 800mA Device Power Supply (DPS)</td>
<td>Fully Integrated 25V Span, 800mA Device Power Supply for Industrial Test and Instrumentation Applications</td>
</tr>
</tbody>
</table>
# Device Power Supply

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9959</td>
<td>25V Span, 800mA Device Power Supply (DPS)</td>
<td>Fully Integrated 25V Span, 800mA Device Power Supply for Industrial Test and Instrumentation Applications</td>
</tr>
</tbody>
</table>
# Sensor Signal Conditioners

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX1454</td>
<td>Precision Sensor Signal Conditioner with Overvoltage Protection</td>
<td>Low-Cost, Precision Sensor Signal Conditioner</td>
</tr>
<tr>
<td>MAX1358</td>
<td>16-Bit, Data-Acquisition System with ADC, DACs, UPIOs, RTC, Voltage Monitors, and Temp Sensor</td>
<td>Smart data-acquisition system (DAS) is based on a 16-bit, sigma-delta analog-to-digital converter (ADC) and system-support functionality for a microprocessor (µP)-based system</td>
</tr>
<tr>
<td>MAX11359</td>
<td>16-Bit, Data-Acquisition System with ADC, DAC, UPIOs, RTC, Voltage Monitors, and Temp Sensor</td>
<td>Provides a Highly Integrated AFE Offering Higher Accuracy and Lower Cost</td>
</tr>
<tr>
<td>MAX1455</td>
<td>Low-Cost Precision Sensor Signal Conditioner</td>
<td>Highly integrated, sensor signal processor for resistive element sensors</td>
</tr>
<tr>
<td>MAX1452</td>
<td>Low-Cost Precision Sensor Signal Conditioner</td>
<td>Low-Cost, Precision Sensor Signal Conditioner</td>
</tr>
</tbody>
</table>
## Automotive Supervisory

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX6369</td>
<td>Pin-Selectable Watchdog Timer</td>
<td>Supervises microprocessor (µP) activity and signal when a system is operating improperly</td>
</tr>
<tr>
<td>MAX6746</td>
<td>µP Reset Circuit with Capacitor-Adjustable Reset/Watchdog Timeout Delay</td>
<td>Low-power microprocessor (µP) supervisory circuit monitors single/dual system supply voltages from 1.575V to 5V</td>
</tr>
<tr>
<td>MAX6769</td>
<td>Automotive Micropower Linear Regulator with Supervisor</td>
<td>Low-quiescent-current, high-voltage linear regulator that operates from 4V to 72V</td>
</tr>
<tr>
<td>MAX6320</td>
<td>5-Pin µP Supervisory Circuit with Watchdog and Manual Reset</td>
<td>Versatile, Customizable SOT Reset + Watchdog IC Offers 3,224 Unique Options</td>
</tr>
<tr>
<td>MAX6765</td>
<td>Automotive Micropower Linear Regulator with Supervisor</td>
<td>Features a push-pull or open-drain, active-low RESET output with either fixed or adjustable thresholds</td>
</tr>
<tr>
<td>MAX6412</td>
<td>Low-Power, Dual-Voltage µP Reset Circuit with Capacitor-Adjustable Reset Timeout Delay</td>
<td>Small, Low-Power, Dual-Voltage µP Reset Circuit with Adjustable Reset Timeout Provides Flexibility</td>
</tr>
<tr>
<td>MAX16132/3/4/5</td>
<td>Low-Voltage, Precision, Single/Dual/Quad-Voltage µP Supervisors</td>
<td>Highly Accurate Three-Channel Voltage Monitoring Supervisory in Small SOT23</td>
</tr>
<tr>
<td>Part Number</td>
<td>Description</td>
<td>Key Advantages</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td>----------------</td>
</tr>
<tr>
<td>MAX96706/08</td>
<td>14-Bit GMSL Deserializers with Coax or STP Cable Input</td>
<td>Compact 1.6Gbps Deserializer with Eye-Width Monitor and CRC Protection of Video and Control Data for ADAS Applications</td>
</tr>
<tr>
<td>MAX9208</td>
<td>10-Bit Bus LVDS Deserializer</td>
<td>Transform a high-speed serial bus low-voltage differential signaling (BLVDS) data stream into 10-bit-wide parallel LVCMOS/LVTTL data and clock</td>
</tr>
<tr>
<td>MAX9288</td>
<td>3.12Gbps GMSL Deserializer for Coax or STP Input and MIPI CSI-2 Output</td>
<td>Deserializer Enables Use of Coax Cables, Reducing Weight and Cost of Cabling in Automotive Infotainment</td>
</tr>
<tr>
<td>MAX9276A</td>
<td>3.12Gbps GMSL Deserializer for Coax or STP Input and Parallel Output</td>
<td>Deserializer Enables Use of Coax Cables, Reducing Weight and Cost of Cabling in Automotive Infotainment</td>
</tr>
<tr>
<td>MAX9280A</td>
<td>3.12Gbps GMSL Deserializer for Coax or STP Input and Parallel Output</td>
<td>Deserializer Enables Use of Coax Cables, Reducing Weight and Cost of Cabling in Automotive Infotainment</td>
</tr>
<tr>
<td>MAX9278A</td>
<td>3.12Gbps GMSL Deserializer for Coax or STP Input and LVDS Output</td>
<td>Deserializer Enables Use of Coax Cables, Reducing Weight and Cost of Cabling in Automotive Infotainment</td>
</tr>
<tr>
<td>MAX9282A</td>
<td>3.12Gbps GMSL Deserializer for Coax or STP Input and LVDS Output</td>
<td>Deserializer Enables Use of Coax Cables, Reducing Weight and Cost of Cabling in Automotive Infotainment</td>
</tr>
<tr>
<td>MAX9288</td>
<td>3.12Gbps GMSL Deserializer for Coax or STP Input and MIPI CSI-2 Output</td>
<td>Deserializer Enables Use of Coax Cables, Reducing Weight and Cost of Cabling in Automotive Infotainment</td>
</tr>
<tr>
<td>MAX9290</td>
<td>3.12Gbps GMSL Deserializer for Coax or STP Input and MIPI CSI-2 Output</td>
<td>Deserializer Enables Use of Coax Cables, Reducing Weight and Cost of Cabling in Automotive Infotainment</td>
</tr>
</tbody>
</table>

203 | Maxim Integrated
# Automotive Remote Antenna

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX16946</td>
<td>Remote Antenna, Current-Sense and LDO/Switch</td>
<td>Fault Protection and Diagnostics for Automotive Antenna and Remote Modules</td>
</tr>
<tr>
<td>MAX16948</td>
<td>Automotive Dual Remote Antenna Current-Sense LDO/Switch</td>
<td>Dual Antenna Phantom Supply Provides Diagnostics for Multiband Antenna Systems</td>
</tr>
<tr>
<td>MAX16913</td>
<td>Remote Antenna Current-Sense Amplifier and Switch</td>
<td>Precision Current-Sense Amplifier and Integrated High-Voltage Switch Protect Phantom Power to Automotive LNA</td>
</tr>
</tbody>
</table>
## Automotive Radio LNAs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX2180A</td>
<td>AM/FM Car Antenna Low-Noise Amplifier</td>
<td>Industry-Leading AM/FM LNA with Adjustable Gain Control Saves Space, Cost and Improves Functionality</td>
</tr>
<tr>
<td>MAX2181</td>
<td>FM Automotive Low-Noise Amplifier</td>
<td>Highly Integrated FM Variable-Gain Low-Noise Amplifier Ideal for Use in Automotive FM and FM-Diversity</td>
</tr>
<tr>
<td>MAX2181A</td>
<td>FM Automotive Low-Noise Amplifier</td>
<td>Smaller BOM and Cost with Programmable Attack Point and Gain</td>
</tr>
</tbody>
</table>
# Automotive Camera Display Serializers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MAX96705</td>
<td>16-Bit GMSL Serializer with High-Immunity/Bandwidth Mode and Coax/STP Cable Drive</td>
<td>Compact 1.6Gbps Serializer with Crosspoint and CRC Protection of Video and Control Data for ADAS Applications</td>
</tr>
<tr>
<td>MAX96709</td>
<td>14-Bit GMSL Serializer with High-Immunity Mode and Coax/STP Cable Drive</td>
<td>1.6Gbps Serializer in 4mm × 4mm TQFN with Crosspoint and CRC Protection of Video Data for ADAS Applications</td>
</tr>
<tr>
<td>MAX96711</td>
<td>Coax/STP Cable Drive</td>
<td>Compact 1.6Gbps Serializer with Line-Fault Detection and CRC Protection of Video and Control Data for ADAS Applications</td>
</tr>
</tbody>
</table>
# Automotive Display Serializers

<table>
<thead>
<tr>
<th>Part Number</th>
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<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9275</td>
<td>3.12Gbps GMSL Serializer for Coax or STP Output Drive and Parallel Input</td>
<td>Enable Use of Coax Cables, Reducing Weight and Cost of Cabling in Automotive Infotainment</td>
</tr>
<tr>
<td>MAX9277</td>
<td>3.12Gbps GMSL Serializer for Coax or STP Output Drive and LVDS Input</td>
<td>Enable Use of Coax Cables, Reducing Weight and Cost of Cabling in Automotive Infotainment</td>
</tr>
</tbody>
</table>
## Automotive GPS LNAs

<table>
<thead>
<tr>
<th>Part Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MAX2678</td>
<td>GPS/GNSS Front-End Amplifier</td>
<td>Dual-Stage, Low-Noise Amplifier Solution Includes Gain-Step Control</td>
</tr>
<tr>
<td>MAX2659</td>
<td>GPS/GNSS Low-Noise Amplifier</td>
<td>0.8dB Noise Figure, 20dB Gain, GPS Low-Noise Amplifier (LNA) Improves Performance over Existing Solution</td>
</tr>
</tbody>
</table>
## Automotive USB Charger and Protection

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX16984</td>
<td>Automotive High-Current Step-Down Converter with USB Protection/Host Charger Adapter Emulator</td>
<td>Industry’s First USB Data Protection Switch that Integrates a High-Voltage, Feedback-Adjustable DC-DC Converter</td>
</tr>
<tr>
<td>MAX20037</td>
<td>Automotive High-Current Step-Down Converter with USB Protection/Host Charger Adapter Emulation</td>
<td>Industry’s first Synchronous USB Buck Converter with I²C and Protection/Host Charge Emulator</td>
</tr>
<tr>
<td>MAX16942E</td>
<td>Automotive Hi-Speed USB 2.0 Protector</td>
<td>Industry’s First Automotive-Grade USB Protectors for Automotive Radio, Navigation, Connectivity, and USB Hub Applications</td>
</tr>
<tr>
<td>MAX16969</td>
<td>500mA to 3A Automotive Hi-Speed USB Protector with Apple® iPod® Fast-Charge Detection and USB Host-Charger Port Detection</td>
<td>Fully Integrated Automotive-Grade USB Protector with Apple and USB Host Charger Detection</td>
</tr>
</tbody>
</table>
# Automotive Display Deserializers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9282</td>
<td>3.12Gbps GMSL Deserializer for Coax or STP Input and LVDS Output</td>
<td>Deserializer Enables Use of Coax Cables, Reducing Weight and Cost of Cabling in Automotive Infotainment</td>
</tr>
<tr>
<td>MAX9276A/8A</td>
<td>3.12Gbps GMSL Deserializers for Coax or STP Input and Parallel Output</td>
<td>Deserializers Enable Use of Coax Cables, Reducing Weight and Cost of Cabling in Automotive Infotainment</td>
</tr>
</tbody>
</table>
### Automotive LDOs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAX1792</strong></td>
<td>500mA, Low-Dropout Linear Regulator in µMAX</td>
<td>0.5A LDO Has Only 130mV Dropout Voltage, Fits in 1.3W Power µMAX Package</td>
</tr>
<tr>
<td><strong>MAX8891</strong></td>
<td>High PSRR, Low-Dropout, 150mA Linear Regulator</td>
<td>Low-Dropout Linear Regulator Designed for Ultra-Low Noise in a SC70 Package</td>
</tr>
<tr>
<td><strong>MAX8902</strong></td>
<td>Low-Noise 500mA LDO Regulator in a 2mm x 2mm TDFN Package</td>
<td>Low-Noise, Low-Dropout, High-PSRR, 500mA Linear Regulator in a 2mm x 2mm TDFN Package</td>
</tr>
<tr>
<td><strong>MAX15027</strong></td>
<td>1.425V to 3.6V Input, 1A Low-Dropout Regulator with BIAS Input</td>
<td>High-Performance LDO Delivers 1A of Output Current</td>
</tr>
<tr>
<td><strong>MAX16910</strong></td>
<td>200mA, Automotive, Ultra-Low Quiescent Current, Linear Regulator</td>
<td>Ideal for Low-Quiescent Current, Always-On Applications</td>
</tr>
<tr>
<td><strong>MAX15006/07</strong></td>
<td>40V, Ultra-Low Quiescent Current Linear Regulators in 6-Pin TDFN/8-Pin SO</td>
<td>Low 9µA Quiescent-Current Linear Regulators Ideal for Always-On Automotive Applications</td>
</tr>
</tbody>
</table>
## Automotive DC-DC Converters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX16962</td>
<td>4A, 2.2MHz, Synchronous Step-Down DC-DC Converter</td>
<td>Industry’s First Automotive-Grade Synchronous Step-Down DC-DC Converter that Delivers Up to 4A</td>
</tr>
<tr>
<td>MAX16963</td>
<td>Dual 2.2MHz, Low-Voltage Step-Down DC-DC Converter</td>
<td>Automotive-Grade Dual DC-DC Converter Offers Two 1.5A Rails in a Small Footprint</td>
</tr>
<tr>
<td>MAX20021/22</td>
<td>Automotive Quad, Low-Voltage Step-Down DC-DC Converters</td>
<td>Four Integrated Power Rails and High Operating Frequency Minimize Solution Size for Multirail Point-of-Load Regulation</td>
</tr>
<tr>
<td>MAX16935</td>
<td>36V, 3.5A, 2.2MHz Step-Down Converter with 28µA Quiescent Current</td>
<td>3.5A, 36V, 2MHz Automotive Buck Converter with Low I&lt;sub&gt;Q&lt;/sub&gt; and EMI Management</td>
</tr>
<tr>
<td>MAX16936</td>
<td>36V, 220kHz to 2.2MHz Step-Down Converter with 28µA Quiescent Current</td>
<td>2.5A Automotive Buck with FPWM Capability at Light Loads for EMI Management</td>
</tr>
<tr>
<td>MAX16930</td>
<td>2MHz, 36V, Dual Buck with Preboost and 20µA Quiescent Current</td>
<td>Industry’s Highest Performance Automotive Dual Buck Controller with Preboost Enables a Space-Efficient, Crank-Ready Design</td>
</tr>
<tr>
<td>MAX16932</td>
<td>2.2MHz, 36V, Dual Buck with 20µA Quiescent Current</td>
<td>Low I&lt;sub&gt;Q&lt;/sub&gt;, High-Frequency, Dual Buck Controller Saves Board Space and Meet Automotive OEM Power-Consumption Requirements</td>
</tr>
<tr>
<td>MAX16956</td>
<td>36V, 300mA, Mini Buck Converter with 1.1µA I&lt;sub&gt;Q&lt;/sub&gt;</td>
<td>Industry’s Lowest I&lt;sub&gt;Q&lt;/sub&gt; Automotive Buck Converter Replaces Always-On LDO</td>
</tr>
<tr>
<td>MAX20002/03</td>
<td>36V, 220kHz to 2.2MHz, 2A/3A Fully Integrated Step-Down Converters with 15µA Operating Current</td>
<td>2A/3A Automotive Synchronous Step-Down Converter with Low I&lt;sub&gt;Q&lt;/sub&gt;</td>
</tr>
<tr>
<td>MAX15026</td>
<td>Low-Cost, Small, 4.5V to 28V Wide Operating Range, DC-DC Synchronous Buck Controller</td>
<td>Low-Cost, Versatile DC-DC Controller Operates from 4.5V to 28V Suitable for Multiple Applications</td>
</tr>
<tr>
<td>MAX16922</td>
<td>2.2MHz, Dual, Step-Down DC-DC Converter, Dual LDO, and Active-Low RESET</td>
<td>Automotive Converter in a 5mm x 5mm Package</td>
</tr>
</tbody>
</table>
## Automotive LED Boost Drivers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX16814</td>
<td>Integrated, 4-Channel, High-Brightness LED Driver with High-Voltage DC-DC Controller</td>
<td>Multistring Driver Provides Highest Efficiency and Complete Fault Protection with the Lowest External Component Count</td>
</tr>
<tr>
<td>MAX16813</td>
<td>Integrated, 4-Channel, High-Brightness LED Driver with High-Voltage DC-DC Controller and Battery Disconnect</td>
<td>Multistring Driver Provides Highest Efficiency and Complete Fault Protection with the Lowest External Component Count</td>
</tr>
<tr>
<td>MAX16833</td>
<td>High-Voltage HB LED Driver with Integrated High-Side Current Sense</td>
<td>LED Driver Substantially Reduces Costs of EMI Filter, Load Dump Filter, and Short-Circuit Protection Components</td>
</tr>
<tr>
<td>MAX16815/28</td>
<td>High-Voltage, 100mA/200mA Adjustable Linear High-Brightness LED Drivers with PWM Dimming</td>
<td>High-Voltage LED Drivers with Adjustable LED Current and High-Voltage Dimming Input Ease Driver Design</td>
</tr>
<tr>
<td>MAX16823</td>
<td>High-Voltage, 3-Channel Linear High-Brightness LED Driver with Open LED Detection</td>
<td>Highly Integrated, High-Voltage LED Driver Ideal for Automotive Applications</td>
</tr>
<tr>
<td>MAX16835</td>
<td>High-Voltage, 350mA, Adjustable Linear High-Brightness LED Driver</td>
<td>350mA LED Driver Provides 3.5% Current Accuracy for Long LED Strings</td>
</tr>
<tr>
<td>MAX16836</td>
<td>High-Voltage, 350mA, High-Brightness LED Driver with PWM Dimming and 5V Regulator</td>
<td>350mA LED Driver Provides 3.5% Current Accuracy for Long LED Strings and PWM Dimming</td>
</tr>
</tbody>
</table>
## VCC PMBus

<table>
<thead>
<tr>
<th>Part Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>MAX20751</strong></td>
<td>Multiphase Master with PMBus Interface and Internal Buck Converter</td>
<td>PMBus-compliant multiphase master IC, with extensive status and parameter monitoring, is capable of driving up to four smart-slave integrated power devices.</td>
</tr>
<tr>
<td><strong>VT1697</strong></td>
<td>Smart-Slave IC with Integrated Current and Temperature Sensors</td>
<td>High-Current, Smart-Slave IC with Integrated Current and Temperature Sensors</td>
</tr>
<tr>
<td><strong>MAX15303AA00</strong></td>
<td>6A Digital PoL DC-DC Converter with InTune Automatic Compensation</td>
<td>6A InTune Automatically Compensated Converter with PMBus Telemetry</td>
</tr>
<tr>
<td><strong>MAX20730</strong></td>
<td>Integrated, Step-Down Switching Regulator with PMBus</td>
<td>Monolithically Integrated, PMBus-Enabled Step-Down Switching Regulator with High-Power Density and Low Component Count</td>
</tr>
<tr>
<td><strong>MAX15301AA02</strong></td>
<td>InTune Automatically Compensated Digital PoL Controller with Driver and PMBus Telemetry</td>
<td>Only Digital Power IC To Meet Transient and Light-Load Efficiency Performance Metrics Set by Analog Controllers</td>
</tr>
<tr>
<td><strong>MAX8869</strong></td>
<td>1A, Microcap, Low-Dropout Linear Regulator</td>
<td>Compact, 1A, Low-Dropout Linear Regulator Requires Just 1µF Output Capacitor!</td>
</tr>
</tbody>
</table>
Automotive TFT Power Supply

<table>
<thead>
<tr>
<th>Part Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MAX16928</td>
<td>Automotive TFT-LCD Power Supply with Boost Converter and Gate Voltage Regulators</td>
<td>Rugged Automotive TFT-LCD Power Supply Operates at 2.2MHz to Reduce Solution Size and Minimize AM Band Interference</td>
</tr>
<tr>
<td>MAX16945</td>
<td>30mA Inverting Charge Pump in SOT23 for EMI-Sensitive Automotive Applications</td>
<td>Low-EMI, Automotive-Qualified Charge Pump in SOT23 Package that Operates at 105°C</td>
</tr>
<tr>
<td>MAX16927</td>
<td>Automotive TFT-LCD Power Supply with Boost, Buck, and Cuk Converters, VCOM Buffers, Gate Drivers, and SPI Interface</td>
<td>Complete Automotive TFT-LCD Bias Power Supply</td>
</tr>
<tr>
<td>MAX16929</td>
<td>Automotive TFT-LCD Power Supply with Boost Converter and Gate Voltage Regulators</td>
<td>High-Voltage TFT-LCD Power Supply Offers a Wide Array of Trim Options to Fit Any Automotive Display Power Requirements</td>
</tr>
<tr>
<td>MAX17075</td>
<td>Boost-Regulator with Integrated Charge Pumps, Switch Control, and High-Current Op Amp</td>
<td>Integrated Power Solution for LCD Monitors Saves Cost and Design Time</td>
</tr>
<tr>
<td>MAX20067</td>
<td>Automotive 3-Channel Display Bias IC with VCOM Buffer, Level Shifter, and I²C Interface</td>
<td>Industry’s First Integrated Power Solution for TFT-LCD with Synchronous Boost, Gate-Shading and I²C</td>
</tr>
<tr>
<td>MAX20070</td>
<td>Integrated TFT Power Supply and LED Backlight Drivers</td>
<td>Integrated TFT Power Supplies and LED Backlight Driver Reduce System Component Count</td>
</tr>
</tbody>
</table>
# Automotive Universal GPS Receiver

<table>
<thead>
<tr>
<th>Part Number</th>
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<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX2769B</td>
<td>Universal GPS Receiver</td>
<td>High-Performance, Automotive Grade GPS, GLONASS, Galileo, and Compass RF Receiver</td>
</tr>
</tbody>
</table>
# Automotive AM/FM Tuners

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX2175</td>
<td>RF to Bits® Automotive Radio Tuner</td>
<td>Analog/Digital Radio Receiver Supports Remote Tuners and Software-Defined Radios</td>
</tr>
<tr>
<td>MAX2173</td>
<td>RF to Bits Tuner for Digital Audio Broadcast</td>
<td>RF to Bits DAB/FM Front-End Helps Reduce the DSP MIPS with Internal Digital Filtering</td>
</tr>
<tr>
<td>MAX2172</td>
<td>Direct-Conversion to Low-IF Tuner for Digital Audio Broadcast</td>
<td>High-Performance Digital Radio Tuner Incorporates Fast and Accurate RSSI Function</td>
</tr>
<tr>
<td>MAX2170/1</td>
<td>Direct-Conversion to Low-IF Tuners for Digital Audio Broadcast</td>
<td>Highest Performance, Most Integrated Triple-Band Receivers for T-DMB/DAB/FM Digital Radios</td>
</tr>
<tr>
<td>MAX2140</td>
<td>Complete SDARS Receiver</td>
<td>Includes a fully monolithic VCO and only needs a SAW at the IF and a crystal to generate the reference frequency</td>
</tr>
</tbody>
</table>
## Current DACs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX5112</td>
<td>9-Channel, 14-Bit, Current DAC with I²C Interface</td>
<td>Multichannel Current-Output DAC Optimized to Bias Fiber Optic Tunable Laser Sources</td>
</tr>
<tr>
<td>MAX5113</td>
<td>9-Channel, 14-Bit Current DAC with SPI Interface</td>
<td>Multichannel Current-Output DAC Optimized to Bias Fiber Optic Tunable Laser Sources</td>
</tr>
<tr>
<td>MAX5550</td>
<td>Dual, 10-Bit, Programmable, 30mA High-Output-Current DAC</td>
<td>Sources up to 30mA per DAC, making it ideal for PIN diode biasing applications</td>
</tr>
</tbody>
</table>
# Body Temperature Sensor

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX30205</td>
<td>Human Body Temperature Sensor</td>
<td>Clinical-Grade Temperature Sensor Offers ±0.1°C (max) Accuracy for Thermometer Applications</td>
</tr>
</tbody>
</table>
# Automotive Display Backlight

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX16813</td>
<td>Integrated, 4-Channel, High-Brightness LED Driver with High-Voltage DC-DC Controller and Battery Disconnect</td>
<td>Multistring Driver Provides Highest Efficiency and Complete Fault Protection with the Lowest External Component Count</td>
</tr>
<tr>
<td>MAX16814</td>
<td>Integrated, 4-Channel, High-Brightness LED Driver with High-Voltage DC-DC Controller</td>
<td>Multistring Driver Provides Highest Efficiency and Complete Fault Protection with the Lowest External Component Count</td>
</tr>
<tr>
<td>MAX16838</td>
<td>Integrated, 2-Channel, High-Brightness LED Driver with High-Voltage Boost and SEPIC Controller</td>
<td>Industry’s Only 2-String HB LED Driver for Automotive Applications Provides a Highly Integrated, Cost-Effective Solution</td>
</tr>
</tbody>
</table>
## Automotive VREF

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LM4040</strong></td>
<td>Improved Precision Micropower Shunt Voltage Reference with Multiple Reverse Breakdown Voltages</td>
<td>Ideal for space-critical applications, the LM4040 is offered in the subminiature 3-pin SC70 surface-mount package</td>
</tr>
<tr>
<td><strong>LM4050</strong></td>
<td>50ppm/°C Precision Micropower Shunt Voltage Reference with Multiple Reverse Breakdown Voltages</td>
<td>Industry Standard 50ppm/°C Voltage Reference Fits in SC70</td>
</tr>
<tr>
<td><strong>MAX6070/1</strong></td>
<td>Low-Noise, High-Precision Series Voltage References</td>
<td>Highest Performance SOT23 Voltage References with 6ppm/°C Maximum Temperature Coefficient</td>
</tr>
<tr>
<td><strong>MAX6174/5</strong></td>
<td>High-Precision Voltage References with Temperature Sensor</td>
<td>Low-noise, high-precision voltage references. The devices feature a proprietary temperature-coefficient curvature-correction circuit and laser-trimmed thin-film resistors that result in a very low 3ppm/°C temperature coefficient and excellent ±0.06% initial accuracy</td>
</tr>
</tbody>
</table>
# Automotive Reverse-Battery Overvoltage Protection

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX6495/96/99</td>
<td>72V, Overvoltage-Protection Switches/Limiter Controllers with an External MOSFET</td>
<td>Small, low-current, overvoltage-protection circuits for high-voltage transient systems such as those found in automotive and industrial applications</td>
</tr>
<tr>
<td>MAX16914/15</td>
<td>Ideal Diode, Reverse-Battery, and Overvoltage Protection Switch/Limiter Controllers with External MOSFETs</td>
<td>Overvoltage Protection Devices are Ideal Diodes with Reverse-Current Protection and Small Forward Drop</td>
</tr>
<tr>
<td>MAX16126</td>
<td>Load-Dump/Reverse-Voltage Protection Circuit</td>
<td>Protect Power-Supply Inputs from Automotive Voltage Transients, Including Load Dump</td>
</tr>
<tr>
<td>MAX16141</td>
<td>3.5V to 36V Ideal Diode Controller with Voltage and Current Circuit Breaker</td>
<td>Protect Automotive Supplies from Reverse Current Conduction and Down Stream Loads from High Voltage/Current Transients</td>
</tr>
</tbody>
</table>
## Automotive ADCs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX11043</td>
<td>4-Channel, 16-Bit, Simultaneous Sampling ADC with PGA, Filter, and 8-/12-Bit Dual-Stage DAC</td>
<td>Industry's First Integrated Signal Converter for Automotive Adaptive Cruise Control</td>
</tr>
<tr>
<td>MAX1111</td>
<td>+2.7V, Low-Power, Multichannel, Serial, 8-Bit ADC</td>
<td>Lowest-Power 8-Bit 4-Channel ADC has Internal Reference</td>
</tr>
<tr>
<td>MAX1240</td>
<td>+2.7V, Low-Power, 12-Bit Serial ADC in 8-Pin SO</td>
<td>Features a 7.5µs successive-approximation ADC, a fast track/hold (1.5µs), an on-chip clock, and a high-speed, 3-wire serial interface</td>
</tr>
<tr>
<td>MAX11254</td>
<td>24-Bit, 6-Channel, 64ksps, 6.2nV/√Hz PGA, Delta-Sigma ADC with SPI Interface</td>
<td>24-Bit Delta-Sigma ADC Offers 10X Less Power with Superior Noise Performance</td>
</tr>
</tbody>
</table>
# Automotive Current-Sense Amplifiers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9918/19/20</td>
<td>-20V to +75V Input Range, Precision Uni-/Bidirectional, Current-Sense Amplifiers</td>
<td>Current-Sense Amplifiers with Input Common Range that Extends Well Below Ground (-20V)</td>
</tr>
<tr>
<td>MAX4376</td>
<td>Single High-Side Current-Sense Amplifier with Internal Gain</td>
<td>Industry’s-First SOT23 High-Side Current-Sense Amplifier with Buffered Output</td>
</tr>
<tr>
<td>MAX16913/A</td>
<td>Remote Antenna Current-Sense Amplifiers and Switches</td>
<td>Precision Current-Sense Amplifiers and Integrated High-Voltage Switches Protect Phantom Power to Automotive LNA</td>
</tr>
</tbody>
</table>
## Automotive PMICs

<table>
<thead>
<tr>
<th>Part Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MAX16993</td>
<td>Step-Down Controller with Dual 2.1MHz Step-Down DC-DC Converter</td>
<td>Highly Integrated Automotive PMIC with Three DC-DC Step-Down Outputs, Low IQ, and Low Minimum On-Time</td>
</tr>
<tr>
<td>MAX16922</td>
<td>2.2MHz, Dual, Step-Down DC-DC Converter, Dual LDO, and Active-Low RESET</td>
<td>Four Automotive Converters in a 5mm x 5mm Package</td>
</tr>
</tbody>
</table>
## Automotive Load Disconnect

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>MAX16126</td>
<td>Load-Dump/Reverse-Voltage Protection Circuit</td>
<td>Protects Power-Supply Inputs from Automotive Voltage Transients, Including Load Dump</td>
</tr>
<tr>
<td>MAX16141</td>
<td>3.5V to 36V Ideal Diode Controller with Voltage and Current Circuit Breaker</td>
<td>Protects Automotive Supplies from Reverse Current Conduction and Down Stream Loads from High Voltage/Current Transients</td>
</tr>
</tbody>
</table>
## Automotive Oscillators

<table>
<thead>
<tr>
<th>Part Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MAX31180</td>
<td>Spread-Spectrum Crystal Multiplier</td>
<td>Ideal for Applications Requiring a Clock with a Precise Center Frequency, Yet Need to Modulate Frequency to Reduce EMI at the Center Frequency and Its Harmonics</td>
</tr>
<tr>
<td>DS1080L</td>
<td>Spread-Spectrum Crystal Multiplier</td>
<td>Ideal for Applications Requiring a Clock with a Precise Center Frequency, Yet Need to Modulate Frequency to Reduce EMI at the Center Frequency and Its Harmonics</td>
</tr>
<tr>
<td>DS1091L</td>
<td>Automotive Temperature Range Spread-Spectrum EconOscillator™</td>
<td>Industry's Only 3V All-Silicon Center Spread Clock Generator to Reduce EMI in the Automotive Temperature Range</td>
</tr>
<tr>
<td>DS1090</td>
<td>Low-Frequency, Spread-Spectrum EconOscillator</td>
<td>Industry's Only Spread-Spectrum Resistor-Programmable Oscillator</td>
</tr>
<tr>
<td>MAX31091</td>
<td>Automotive Temperature Range Spread-Spectrum EconOscillator</td>
<td>Automotive-Qualified, Feature-Rich, Spread-Spectrum Clock Generator to Reduce EMI</td>
</tr>
</tbody>
</table>
## Automotive Level Shift

<table>
<thead>
<tr>
<th>Part Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>MAX3378E</strong></td>
<td>±15kV ESD-Protected, 1μA, 16Mbps, Dual/Quad Low-Voltage Level Translator in UCSP</td>
<td>Industry's Smallest Level Translator</td>
</tr>
<tr>
<td><strong>MAX3001E</strong></td>
<td>+1.2V to +5.5V, ±15kV ESD-Protected, 0.1μA, 35Mbps, 8-Channel Level Translator</td>
<td>Industry's First Bidirectional Octal Level Translator</td>
</tr>
</tbody>
</table>
# Automotive Audio Amplifiers

<table>
<thead>
<tr>
<th>Part Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MAX13301</td>
<td>4-Channel, Automotive Class D Audio Amplifier</td>
<td>Offers Wide Operating Voltage Range (6V to 25.5V) with Full Automotive Diagnostics and Load-Dump Protection</td>
</tr>
<tr>
<td>MAX13331</td>
<td>Automotive DirectDrive® Headphone Amplifier with Output Protection and Diagnostics</td>
<td>Industry's First Automotive Headphone Amplifier with Output Protection Up to 45V and Short-Circuit Diagnostics</td>
</tr>
<tr>
<td>MAX98357</td>
<td>Tiny, Low-Cost, PCM Class D Amplifier with Class AB Performance</td>
<td>Supports I²S and 8-Channel TDM Data</td>
</tr>
</tbody>
</table>
# Automotive Display Serializers

<table>
<thead>
<tr>
<th>Part Number</th>
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<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9257A</td>
<td>Programmable Serializer/Deserializer with UART/I²C Control Channel</td>
<td>Single-Link Serializer/Deserializer with Integrated Control Channel Ideal for Digital Video Applications</td>
</tr>
<tr>
<td>MAX9249</td>
<td>Gigabit Multimedia Serial Link Serializer with LVDS System Interface</td>
<td>Single-Link Serializer with LVDS Interface and Integrated Control Channel Is Ideal for Digital Video Applications</td>
</tr>
<tr>
<td>MAX9265</td>
<td>HDCP Gigabit Multimedia Serial Link Serializer with LVDS System Interface</td>
<td>LVDS Interface Serializer with Integrated Control Channel Is Ideal for Digital Video Applications</td>
</tr>
</tbody>
</table>
### Automotive LV Step-Down DC-DC Converters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX20022</td>
<td>Automotive Quad, Low-Voltage Step-Down DC-DC Converter</td>
<td>Four Integrated Power Rails and High Operating Frequency Minimize Solution Size for Multirail Point-of-Load Regulation</td>
</tr>
<tr>
<td>MAX16904</td>
<td>2.1MHz, High-Voltage, 600mA Mini-Buck Converter</td>
<td>600mA Automotive Buck Converter Integrates High-Side and Low-Side FETs and Uses Only 25µA Quiescent Current</td>
</tr>
<tr>
<td>MAX16903</td>
<td>2.1MHz, High-Voltage, 1A Mini-Buck Converter</td>
<td>1A Automotive Buck Converter Integrates High- and Low-Side FETs and Uses Only 25µA Quiescent Current</td>
</tr>
</tbody>
</table>
# Automotive VCOM

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAX16927</strong></td>
<td>Automotive TFT-LCD Power Supply with Boost, Buck, and Cuk Converters, VCOM Buffers, Gate Drivers, and SPI Interface</td>
<td>Complete Automotive TFT-LCD Bias Power Supply</td>
</tr>
<tr>
<td><strong>MAX9650</strong></td>
<td>High-Current VCOM Drive Op Amp for TFT LCDs</td>
<td>High Current and Fast Settling Time Quickly Restores VCOM Voltage for TFT LCDs</td>
</tr>
</tbody>
</table>
## Automotive DC-DC Boost Controllers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX16990</td>
<td>36V, 2.5MHz Automotive Boost/SEPIC Controller</td>
<td>2.5MHz Automotive PWM Controller Enables Space-Efficient Preboost Supplies for Cold/Warm Crank Applications</td>
</tr>
<tr>
<td>MAX16992</td>
<td>36V, 2.5MHz Automotive Boost/SEPIC Controller</td>
<td>2.5MHz Automotive PWM Controller Enables Space-Efficient Preboost Supplies for Cold/Warm Crank Applications</td>
</tr>
</tbody>
</table>
# Automotive Integrated Display Driver

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX16928</td>
<td>Automotive TFT-LCD Power Supply with Boost Converter and Gate Voltage Regulators</td>
<td>Rugged Automotive TFT-LCD Power Supply Operates at 2.2MHz to Reduce Solution Size and Minimize AM Band Interference</td>
</tr>
</tbody>
</table>
## Automotive Serial Interface

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX16928</td>
<td>Automotive TFT-LCD Power Supply with Boost Converter and Gate Voltage Regulators</td>
<td>Rugged Automotive TFT-LCD Power Supply Operates at 2.2MHz to Reduce Solution Size and Minimize AM Band Interference</td>
</tr>
<tr>
<td>MAX13444</td>
<td>±15kV ESD-Protected, ±80V Fault-Protected, Fail-Safe RS-485/J1708 Transceiver</td>
<td>Simplifies Design and Reduces Board Space by Eliminating External Components Required for Overvoltage Protection Up to ±80V, Such as TVSs and PTCs</td>
</tr>
<tr>
<td>MAX3077E</td>
<td>+3.3V, ±15kV ESD-Protected, Fail-Safe, Hot-Swap, RS-485/RS-422 Transceiver</td>
<td>±15kV ESD-Protected, +3.3V, Fail-Safe, Hot-Swap, RS-485/RS-422 Transceiver</td>
</tr>
<tr>
<td>MAX3222E</td>
<td>±15kV ESD-Protected, Down to 10nA, 3.0V to 5.5V, Up to 1Mbps, True RS-232 Transceiver</td>
<td>Communications interface devices feature low power consumption, high data-rate capabilities, and enhanced electrostatic-discharge (ESD) protection</td>
</tr>
<tr>
<td>MAX3227E</td>
<td>±15kV ESD-Protected, 1µA, 1Mbps, 3.0V to 5.5V, RS-232 Transceiver with AutoShutdown Plus™</td>
<td>Communications interfaces with automatic shutdown/wakeup features, high data-rate capabilities, and enhanced electrostatic discharge (ESD) protection</td>
</tr>
<tr>
<td>MAX3280E</td>
<td>±15kV ESD-Protected 52Mbps, 3V to 5.5V, SOT23 RS-485/RS-422 True Fail-Safe Receiver</td>
<td>Industry's First RS-485/RS-422 SOT Receiver</td>
</tr>
<tr>
<td>MAX3295</td>
<td>20Mbps, +3.3V, SOT23 RS-485/RS-422 Transmitter</td>
<td>±15kV ESD-Protected, 20Mbps +3.3V, SOT23 RS-485/RS-422 Transmitter</td>
</tr>
<tr>
<td>MAX3420E</td>
<td>USB Peripheral Controller with SPI Interface</td>
<td>Add USB Functionality with a Single IC</td>
</tr>
</tbody>
</table>
Security for Consumables

Unique Identification
Cost-effective universally unique ID number plus user-programmable memory. Not rigorous from a security standpoint, but provides a low cost way to track assets and potentially detect fraud.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Crypto</th>
<th>Interface</th>
<th>User Memory</th>
<th>Key advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS2401</td>
<td>N/A</td>
<td>1-Wire</td>
<td>None</td>
<td>Unique 64-bit ROM ID. Minimalist 1-Wire interface.</td>
</tr>
<tr>
<td>DS28E07</td>
<td>N/A</td>
<td>1-Wire</td>
<td>128B</td>
<td>Unique 64-bit ROM ID, 1-Wire interface, user-programmable EEPROM</td>
</tr>
</tbody>
</table>

Authentication
Cryptographically rigorous mechanism for validating that the consumable is of correct origin. Availability of coprocessors provides very low overhead means of adding security to your system.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Crypto</th>
<th>Interface</th>
<th>User Memory</th>
<th>Coprocessor</th>
<th>Key advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS28E15/22/25</td>
<td>SHA-256</td>
<td>1-Wire</td>
<td>Up to 512B</td>
<td>DS2465</td>
<td>Bidirectional symmetric authentication</td>
</tr>
<tr>
<td>MAX66240/242</td>
<td>SHA-256</td>
<td>NFC, I2C</td>
<td>512B</td>
<td>MAX66300</td>
<td>Bidirectional symmetric authentication over NFC</td>
</tr>
</tbody>
</table>
Transmitter & Laser Modulator | Receiver and Transimpedance Amp

• For more information on Maxim’s advanced high-speed optical products, please contact your local Maxim representative: Maxim Optical Communications
## Automotive Battery Measurement and Communication

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX17841B</td>
<td>Automotive SPI Communication Interface (ASCI)</td>
<td>Enables Robust Daisy-Chain EMC/EMI Performance and Cost-Effective Isolation Solution</td>
</tr>
<tr>
<td>MAX17843</td>
<td>12-Channel, High-Voltage Smart Sensor Data-Acquisition Interface</td>
<td>Industry-leading ASIL D Battery Monitor ASIC</td>
</tr>
<tr>
<td>MAX17830</td>
<td>12-Channel, High-Voltage Battery Sensor with Advanced SMBus Ladder and External Cell Balancing</td>
<td>Meets the Industry's Toughest Automotive OEM Standards for Safety, Performance, and Reliability</td>
</tr>
</tbody>
</table>
### Automotive Camera Integrator

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9286</td>
<td>Quad 1.5Gbps GMSL Deserializer with Coax or STP Input and CSI-2 Output</td>
<td>Integrated GMSL Deserializer Receives and Automatically Synchronizes Video from Up to Four Serializers</td>
</tr>
</tbody>
</table>
Security for Sensors/Actuators

Unique Identification
Cost-effective universally unique ID number plus user-programmable memory. Asset tracking, calibration, and supply chain flexibility.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Crypto</th>
<th>Interface</th>
<th>User Memory</th>
<th>Key advantages</th>
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</thead>
<tbody>
<tr>
<td>DS2401</td>
<td>N/A</td>
<td>1-Wire</td>
<td>None</td>
<td>Unique 64-bit ROM ID. Minimalist 1-Wire interface.</td>
</tr>
<tr>
<td>DS28E07</td>
<td>N/A</td>
<td>1-Wire</td>
<td>128B</td>
<td>Unique 64-bit ROM ID, 1-Wire interface, user-programmable EEPROM</td>
</tr>
</tbody>
</table>

Authentication
Proves through rigorous cryptographic algorithms that a device is valid. Also use it to validate sensor data and commands.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Crypto</th>
<th>Interface</th>
<th>User Memory</th>
<th>Coprocessor</th>
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<td>Bidirectional symmetric authentication</td>
</tr>
<tr>
<td>MAX66240/242</td>
<td>SHA-256</td>
<td>NFC, I2C</td>
<td>512B</td>
<td>MAX66300</td>
<td>Bidirectional symmetric authentication over NFC</td>
</tr>
</tbody>
</table>

Secure Communication
Use a secure coprocessor when the data needs to be encrypted, or to add a fully flexible cryptographic block next to an existing microcontroller.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Crypto</th>
<th>Interface</th>
<th>User Memory</th>
<th>Key advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXQ1061</td>
<td>Includes AES-128/256, ECC-P256/521/384, SHA-256/384/512…</td>
<td>I²C, SPI</td>
<td>32KB</td>
<td>Turnkey cryptographic coprocessor for certificate management, TLS, and general-purpose crypto toolbox.</td>
</tr>
</tbody>
</table>
## Automotive Flux Sensor

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9924</td>
<td>Variable-Reluctance Sensor Interface with Differential Input and Adaptive Peak Threshold</td>
<td>Industry's First Single-Chip Solution for Variable-Reluctance Sensor Interface and Adaptive Peak Threshold</td>
</tr>
</tbody>
</table>
### Automotive CAN Transceiver

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAX13041</strong></td>
<td>±80V Fault-Protected High-Speed CAN Transceiver with Low-Power Management and Wake-On CAN</td>
<td>GIFT Certified CAN Transceiver Offering ±80V Fault Protection, Consuming Only 18µA Sleep Current</td>
</tr>
</tbody>
</table>
## Automotive Memory Power

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX17510</td>
<td>Low-Voltage DDR Linear Regulator</td>
<td>Low-Cost, Low-Voltage DDR Linear Regulator Source and Sinks Up to 3A Peak (typ) Using Internal n-Channel MOSFETs</td>
</tr>
</tbody>
</table>
# Automotive Input Protector

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX20087</td>
<td>Dual/Quad Camera Power Protector</td>
<td>Industry’s Only ASIL-Grade Camera Protector with integrated I²C-Based Diagnostics</td>
</tr>
</tbody>
</table>
## Automotive Gamma Buffer

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9669</td>
<td>10-Bit Programmable Gamma Reference System with MTP for TFT LCDs</td>
<td>10-Bit DAC Resolution and MTP Memory Provides Nonvolatile Memory, Eliminating the Need for External EEPROM</td>
</tr>
</tbody>
</table>
# Automotive Rotation Sensor

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX9924</td>
<td>Variable-Reluctance Sensor Interface with Differential Input and Adaptive Peak Threshold</td>
<td>Industry’s First Single-Chip Solution for Variable-Reluctance Sensor Interface and Adaptive Peak Threshold</td>
</tr>
</tbody>
</table>
## Automotive Power Switches

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX15024</td>
<td>Single, 16ns, High Sink/Source Current Gate Driver</td>
<td>4A, 20ns, Dual MOSFET Driver Available in 3mm x 3mm, Thermally Enhanced TDFN Package</td>
</tr>
<tr>
<td>MAX5048</td>
<td>7.6A, 12ns, SOT23/TDFN MOSFET Driver</td>
<td>High-speed MOSFET driver capable of sinking/sourcing 7.6A/1.3A peak currents</td>
</tr>
<tr>
<td>MAX15012</td>
<td>175V/2A, High-Speed, Half-Bridge MOSFET Driver</td>
<td>175V/2A Half-Bridge Driver with Low 35ns Propagation Delay and 8ns Propagation Delay Matching Between Drivers</td>
</tr>
</tbody>
</table>
# Automotive Temperature Sensors

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
</table>
# Automotive Load Switches

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX16913</td>
<td>Remote Antenna Current-Sense Amplifier and Switches</td>
<td>Precision Current-Sense Amplifier and Integrated High-Voltage Switches Protect Phantom Power to Automotive LNA</td>
</tr>
<tr>
<td>MAX16946</td>
<td>Remote Antenna, Current-Sense and LDO/Switches</td>
<td>Fault Protection and Diagnostics for Automotive Antenna and Remote Modules</td>
</tr>
<tr>
<td>MAX16948</td>
<td>Automotive Dual Remote Antenna Current-Sense LDO/Switch</td>
<td>Dual Antenna Phantom Supply Provides Diagnostics for Multiband Antenna Systems</td>
</tr>
</tbody>
</table>
Automotive Sub-1GHz ISM

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX7036</td>
<td>300MHz to 450MHz ASK Receiver with Internal IF Filter</td>
<td>Provides Excellent Receive Sensitivity, While Reducing the Overall Component Count and System Cost</td>
</tr>
<tr>
<td>MAX1471</td>
<td>315MHz/434MHz Low-Power, 3V/5V ASK/FSK Superheterodyne Receiver</td>
<td>300MHz to 450MHz Superheterodyne ASK/FSK Receiver with Integrated Image Rejection Operates from 3V or 5V Supply</td>
</tr>
<tr>
<td>MAX7060</td>
<td>280MHz to 450MHz Programmable ASK/FSK Transmitter</td>
<td>Maximizes Output Transmit Power While Complying with Regulatory (FCC, ETSI, etc.) Requirements</td>
</tr>
<tr>
<td>Part Number</td>
<td>Description</td>
<td>Key Advantages</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td>----------------</td>
</tr>
<tr>
<td>MAX9650</td>
<td>High-Current VCOM Drive Op Amp for TFT LCDs</td>
<td>High Current and Fast Settling Time to Quickly Restore VCOM Voltage for TFT LCDs</td>
</tr>
<tr>
<td>MAX4232/34</td>
<td>High-Output-Drive, 10MHz, 10V/μs, Rail-to-Rail I/O Op Amps with Shutdown in SC70</td>
<td>Single/dual/quad, high-output drive CMOS op amps feature 200mA of peak output current, rail-to-rail input, and output capability from single 2.7V to 5.5V supply</td>
</tr>
<tr>
<td>MAX4238/39</td>
<td>Ultra-Low Offset/Drift, Low-Noise, Precision SOT23 Amplifiers</td>
<td>Offer near-zero DC offset and drift through the use of autocorrelating zeroing techniques</td>
</tr>
<tr>
<td>MAX4475/77/78/89</td>
<td>SOT23, Low-Noise, Low-Distortion, Wide-Band, Rail-to-Rail Op Amps</td>
<td>Offer rail-to-rail outputs and single-supply operation down to 2.7V</td>
</tr>
<tr>
<td>MAX4257</td>
<td>UCSP, Single-Supply, Low-Noise, Low-Distortion, Rail-to-Rail Op Amp</td>
<td>Offer rail-to-rail outputs and single-supply operation down to 2.4V</td>
</tr>
</tbody>
</table>
## Inverters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Key Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAX1687</strong></td>
<td>Step-Up DC-DC Converter with Precise, Adaptive Current Limit for GSM</td>
<td>Reduces GSM Battery Peak Current by 6x, Eliminates DC-DC Noise during Transmission with User Selectable Disable</td>
</tr>
<tr>
<td><strong>MAX1852/53</strong></td>
<td>SC70 Inverting Charge Pumps with Shutdown</td>
<td>SC70 Inverting Charge Pump with Shutdown</td>
</tr>
<tr>
<td><strong>MAX889</strong></td>
<td>High-Frequency, Regulated, 200mA, Inverting Charge Pump</td>
<td>Regulated Inverting Charge Pump Delivers 200mA for Negative Supply without Inductors</td>
</tr>
<tr>
<td><strong>MAX1719</strong></td>
<td>SOT23, Switched-Capacitor Voltage Inverter with Shutdown</td>
<td>Smallest, High-Efficiency Bias for Small LCD/GaAsFET PA Bias: Small Cap Size, No Inductors and Low Supply Current</td>
</tr>
</tbody>
</table>
Factory Automation

- Communication Fieldbus Module
- IO-Link® and Digital Sensor Input Sensing and System Solution
- PLC – 12-Bit Analog Input (Voltage/Current)
- PLC - Analog Input (RTD/Thermocouple)
- PLC - Analog Output
- PLC - Digital Input
- PLC - Digital Output
- PLC – High-Resolution Analog Input (Voltage/Current)

Consumer

- Drone
- E-Bikes, E-Scooters, Fork Lifts
- E-Cigarette
- Education Video Accessory Box
- GPS/Navigation System
- GPS Watch
- Home Security Control Panel/Gateway
- Home Security Sensor
- Hydration Wearable
- Power Tools
- Toy Robot
- Smart Plug
- Tire Pressure Monitoring System
- Voice-Activated Consumer Device
- Wireless Headphones
- Wireless Speaker

FPGA

- Kintex® UltraScale KCU105 Power (PMBus and Non-PMBus)
- Virtex® UltraScale VCU108/10 (PMBus and Non-PMBus)
- Xilinx® Remote Radio Head/Wireless Backhaul
- Xilinx® UltraScale FPGA Power

Sensing Interface

- Pressure Sensing
- RTD-to-Digital Converters

Communications/Wireless

- 400Gbps Optical Transceiver
- Cable Downstream RF Signal Chain
- Digital Video Broadcast (DVB)
- Macro Base Stations: TX Path
- Microwave Backhaul (5GHz)
- Radio Receiver
- Satellite Communications (VSAT) IDU
- Server/Data Center
- Small Cells, RRH, AAS (698-2700MHz)
- Switch/Router Card
- Tactical and Public Safety Mobile Radio
- VOIP
- Wideband RF Modem
- Wireless Backhaul Sub-3.8GHz

Motor Control

- AC & BLDC Motor Controller – Inputs
- AC & BLDC Motor Controller – Outputs
- Brushed DC (PWM) Motor Control
- Brushed DC (Variable Voltage) Motor Control
- Hall Effect Current Sense AC/BLDC
- High-Side Current Sense AC/BLDC
- Low-Side Current Sense AC/BLDC
- Motor Monitoring: Encoder & Temp Sense
- Motor Monitoring: Resolver
- Stepper Motor Control
- Switched Reluctance Motor Control

Medical Applications

- CPAP (Continuous Positive Airway Pressure)
- Dialysis
- Glucose Meter
- Infusion Pump / Drug Delivery Systems
- Patient Monitoring/ECG Patch
- Pulse Oximetry
- Ventilator

Industrial

- Asset Management
- Automated Test Equipment (ATE)
- Battery Test System
- Blockchain Encryption Machine
- Building Automation
- Distribution Automation: Load Tap Changer
- Distribution Automation: Recloser Controller
- Electricity Meter
- Fault Indicator
- Gas Detector
- General-Purpose Meters and Controllers
- LED Distributed Illumination
- Parking Garage Lot Vacancy Detection System
- Point-of-Sale System
- Portable Calibrator – Pressure
- Portable Calibrator - Temperature
- Portable Data Logger
- Refrigeration
- Portable Calibrator – Temperature RTD or Thermocouple
- Thermocouple Temperature Controllers
- Weigh Scale

Test and Measurement

- High-Resolution Medium-Speed DAS (Data Acquisition System)
- Power Grid Sampling Board

Automotive

- ADAS
- Automotive EV Power Train
- Automotive Infotainment Display
- Automotive Head Unit – Camera Display
- Automotive GPS/Navigation
- Automotive Tire Pressure Monitoring System
### Part Family Tables

- **Above -1GHz ISM, Wi-Fi and Small Cell Transceivers**
- **Ambient and Proximity Sensor**
- **Analog Front End**
- **Audio CODEC**
- **Backplane Interface**
- **Battery Charger**
- **Bias Control**
- **Biopotential Sensors**
- **Board Functions**
- **Body Temperature**
- **CAN Transceiver**
- **Clock Distribution/High Speed Signaling**
- **Current DAC**
- **Current Sense Amplifiers/ Ideal Diode/ Comparators**
- **DC Motor Driver**
- **DDR Regulator**
- **DeepCover Secure Microcontrollers**
- **Device Power Supply**
- **Digital Input/Output**
- **Digital Isolators**
- **Fan Controllers**
- **Fuel Gauge**
- **Full-Duplex RS-485 Transceivers**
- **Gain Block**
- **General Purpose DAC**
- **GNSS Receiver**
- **Half-Duplex RS-485 Transceivers**
- **Headphone Amplifiers**
- **High Cell Count Battery Management**
- **High Density QAM Modulator (Cable Downstream Transmitter)**
- **High-Precision DAC**
- **High-Precision SAR ADC**
- **High-Precision Sigma-Delta ADC**
- **High-Speed 10/8-Bit ADC and DAC Selection Table**
- **High-Speed ADC (Radio Receiver High IF Sampling)**
- **Hot Swap**
- **Integrated DUC + DAC Digital Video Broadcast (DVB) Transmitter**
- **Inverters**
- **IQ-Link Transceivers**
- **ISO/POE Power (VIN = 48V)**
- **Isolated Data Converter**
- **Isolated Power**
- **Isolated RS-485**
- **LDO**
- **LED Driver**
- **Level Translators**
- **Liquid/Gas Flow Rate Measurement**
- **LNAs**
- **LO Buffer/Splitter**
- **Low Current USB Protector**
- **Microcontroller**
- **Monitor and Control**
- **MOSFET Drivers**
- **Multiplexer**
- **Normal Precision ADC and Integrated Converters**
- **Operational Amplifiers**
- **Oscillators**
- **Over V/I Protection – Surge Stopper, Efuse, Current Limiters**
- **Parametric Measurement Unit (PMU)**
- **Pin Electronics**
- **PLL**
- **PMIC**
- **Real-Time Clock (RTC)**
- **RF Power Detector/Controller**
- **RF Transmitter / I and Q Modulator**
- **RF Tuner**
- **RFPAL**
- **RRH VCC**
- **RS-232 Transceivers**
- **RS-422/485 Receivers**
- **Secure Authenticator**
- **Security for Consumables**
- **Security for Sensors/Actuators**
- **Security Manager**
- **Sensor Output Driver**
- **Sensor Signal Conditioner**
- **Sequencing and Monitoring**
- **Signal Conditioner**
- **Signal Integrity**
- **Simultaneous Sampling ADCs**
- **Single and Dual Mixers**
- **Speaker Amp**
- **Step-Down DC-DC**
- **Step-Up DC-DC**
- **Sub-GHz ISM**
- **Supervisory/Watchdog Timer**
- **Switches and Relay Drivers**
- **System Power Management**
- **System Power Supplies**
- **Temp Sensor**
- **Temperature Sensor Digitizers**
- **Transmitter & Laser Modulator | Receiver and Transimpedance Amp**
- **UART**
- **USB**
- **VCC Non PMBus**
- **VCC PMBus**
- **VCC VCU108/10 non PMBus**
- **VCC VCU108/10 PMBus**
- **VCO/PLL**
- **Voltage Reference**
- **VVA/VGA**
- **WBH VCC**
Automotive Part Family Tables

- Automotive ADCs
- Automotive AM/FM Tuner
- Automotive Audio Amplifier
- Automotive Battery Measurement and Communication
- Automotive Camera Display Serializer
- Automotive Camera GMSL Deserializer
- Automotive Camera Integrator
- Automotive CAN Transceiver
- Automotive Current Sense Amplifiers
- Automotive DC-DC
- Automotive DC-DC Boost Controllers
- Automotive Display Backlight
- Automotive Display Deserializer
- Automotive Display Serializer
- Automotive Flux Sensor
- Automotive Gamma Buffer
- Automotive GPS LNA
- Automotive Input Protector
- Automotive Integrated Display Driver
- Automotive LDO
- Automotive LED Boost Driver
- Automotive Level Shift
- Automotive Load Disconnect
- Automotive Load Switches
- Automotive LV Step-Down DC-DC Converters
- Automotive Memory Power
- Automotive Operational Amplifiers
- Automotive Oscillator
- Automotive PMIC
- Automotive Power Switches
- Automotive Radio LNA
- Automotive Remote Antenna
- Automotive Reverse-Battery Overvoltage Protection
- Automotive Rotation Sensor
- Automotive Serial Interface
- Automotive Sub 1GHz ISM
- Automotive Supervisory
- Automotive Temperature Sensors
- Automotive TFT Power Supply
- Automotive Universal GPS Receiver
- Automotive USB Charger and Protection
- Automotive VCOM
- Automotive VFEF