YOUR PARTNER IN INNOVATION™

PRODUCT PREVIEW Ultra Low PowerMAX

At TES Electronic Solutions GmbH we have extensive experience of designing custom semiconductor solutions for a wide variety of customers applications and environments e.g. Automotive, Avionics & Space, and Industrial applications.

Our experience of integrating embedded microprocessor, DSP functionality together with analog mixed signal circuitry and also RF/telemetry into a single Silicon chip device allows for optimum, system performance, lifetime, power consumption and cost. We specialise in "tailoring" the device to the exact technical and commerical specifiaction the customer requires.

TES-DST is a full spectrum electronics design service company & can offer customers a complete range of design services, from straight forward design consultancy, to full turnkey System-on-Silicon (ASIC/FPGA) design development and delivery of devices to meet the stringent requirements of our customers applications.

TES-DST design services include:

- Turnkey designs for complete products including hardware, software and mechanics, system or subsystem design
- IP delivery and support
- System on Chip (SOC/ ASIC) design and all associated services
- FPGA design and design verification
- New Product Introduction (NPI)/industrialisation service
- Electronics manufacturing through our partners
- Dedicated expert consultancy

For more information how we may be able to help you realise your design, please contact us or visit our website.

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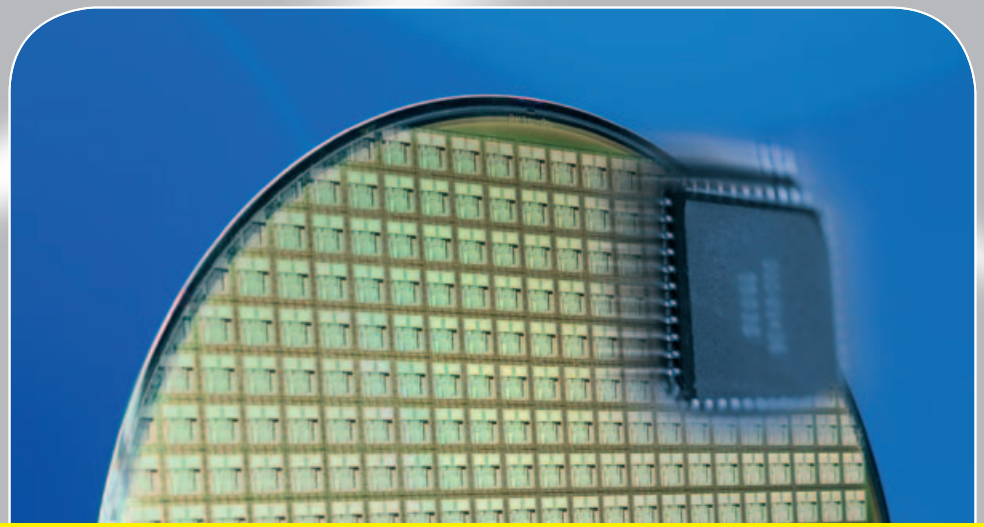
TES_ULPowerMAX-11-02 Design: delightdesign-komm.de



Ultra Low PowerMAX

PRODUCT PREVIEW

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Semi-Customisable ASIC Platforms with Embedded MCU

Ultra Low PowerMAX is a semicustomisable ASIC Platform from TES Electronics Solutions GmbH.

It provides embedded microcontroller capabilities with customisable functionality to allow a device to be tailored to the unique requirements of the intended application.

What sets Ultra Low PowerMAX apart from other custom solutions is that it offers the advantages of customisation with none of the associated risks and costs.

The device comprises of two user customisable areas plus a standard predefined area containing an embedded microcontroller, peripherals ADC, Memory etc.

These two customisable areas are both mask level configured i.e. configured during device manufacture. One area provides up to 50k gates of digital logic; the other, provides a number of analog functions; op-amps, comparators, current sources, voltage references etc. This enables the customer to easily integrate sensor interface or analog front end circuitry into the device providing higher levels of integration, reliability and system level performance at lower power consumption levels.

The benefits of this approach are many:

It allows the customer to tailor a device directly to meet the performance requirements of the application.

However since the majority of the device has already been predefined, designed, verified and laid-out, Ultra Low PowerMAX offers this customisation without the typical high engineering (NRE) charges, at considerably lower risk, and also supports a much faster time to market than traditional custom solutions.

Customisable Analog Area
- Mask Configurable: OP Amps, Voltage References, Comparators, Current sources, DACs

Customisable Digital Area
- Up to 50 k Gates High-Speed 8051 µC Core
- Pipe-lined instruction architecture
- 25 MIPS with 25 MHz clock

Memory
- 1024 bytes internal data RAM
- 16 kB Flash, In-system programmable

Digital Peripherals
- 16 port I/O, 5 V
- UART & SPI
- 2 general purpose 16-bit counter/timers
- 16-bit programmable counter with six capture/compare modules
- watchdog timer

Ultra-Low Power Modes
- < 0.1 uA off mode

Supply Voltage
- 2.5 to 5.5 V
- Built-in LDO

Analog to Digital Converter
- 200 ksps 10-bit
- 4 external inputs
- External pin or internal VREF

2 Analog Comparators:
- Programmable Thresholds

Low Power Oscillator
- No external components required

On-Chip Debug
- On-chip debug block facilitates, non-intrusive full speed in system debug (i.e no emulator required)

Package:
- QFN28

Temperature Range
- 40 to +125°

Typical Applications Include
- Applications that typically use standard microcontrollers but in addition need extremely low power.
- Applications that typically are space constrained or require specific or unique integrated functionality. For example:

Industrial Automation Instruments:
- Sensors & Controls, HMI etc.

Security
- Alarm/Intruder Panels, Detectors/Sensors, Smoke/Fire Detectors etc.

Motor Control
- White Goods Washing Machine/Refrigeration etc., Stepper Motors, Low Voltage Brushless DC motors

Automotive
- Motion Control, Exhaust Control, Fan Control, Battery monitoring etc.

Features
- Customisable Analog & Digital
- Pre laid-out design & Pre Verified functions
- Embedded 8-bit industry standard
- MCU Core

Benefits
- Supports very high level of integration & unique application specific functions
- Reduces Cost & Time to market & Reduces Risk
- Easy to integrate std. MCU application functions