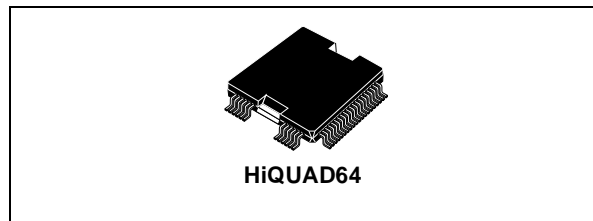


**SUPER SMART MIRROR WITH EMBEDDED MCU**

DATA BRIEF

1 FEATURES

- 8-18V Supply Operating Range
- 16 MHz Maximum Oscillator Frequency
- 8 MHz Maximum Internal Clock Frequency
- Fully Static operation.
- Low consumption ($\leq 100\text{mA}$) mode.
- -40°C to $+150^{\circ}\text{C}$ Temperature Range
- ROM: 8Kbytes
- Data RAM: 256 bytes
- 64 pin HiQuad package
- 5 multifunctional bidirectional I/O lines
- 16-bit Timer, featuring:
 - 2 Input Captures
 - 2 Output Compares
 - External Clock input
 - PWM and Pulse Generator modes
- UART peripheral including Bus line interface according ISO9141 specifications
- Serial Peripheral Interface (SPI).
- 8-bit Analog-to-Digital Converter with 2 dedicated inputs.
- Programmable Watchdog for system integrity
- Master Reset and Power-On Reset
- Two $200\text{m}\Omega$ Half-Bridges, Two $400\text{m}\Omega$ Half-Bridges for sequential driving of 3 DC motors.
- $50\text{m}\Omega$ High-Side driver (Defroster function)
- $300\text{m}\Omega$ High-Side driver (Sidemarker function)
- $400\text{m}\Omega$ High-Side driver (Puddle Lamp function)
- $300\text{m}\Omega$ High-Side driver + Parallel Voltage Regulator (Electro Chrome function)
- 8-bit Data Manipulation
- 63 basic Instructions and 17 main Addressing Modes
- 8 x 8 Unsigned Multiply Instruction
- True Bit Manipulation
- Complete Development Support on DOS/WINDOWS™ Real-Time Emulator

**Table 1. Order Codes**

Part Number	Package
L9813	HiQUAD64

- Full Software Package on DOS/WINDOWS™ (C-Compiler, Cross-Assembler, Debugger)

2 DESCRIPTION

The L9813 Microcontroller Unit (MCU) is a member of the ST7 family of Microcontrollers.

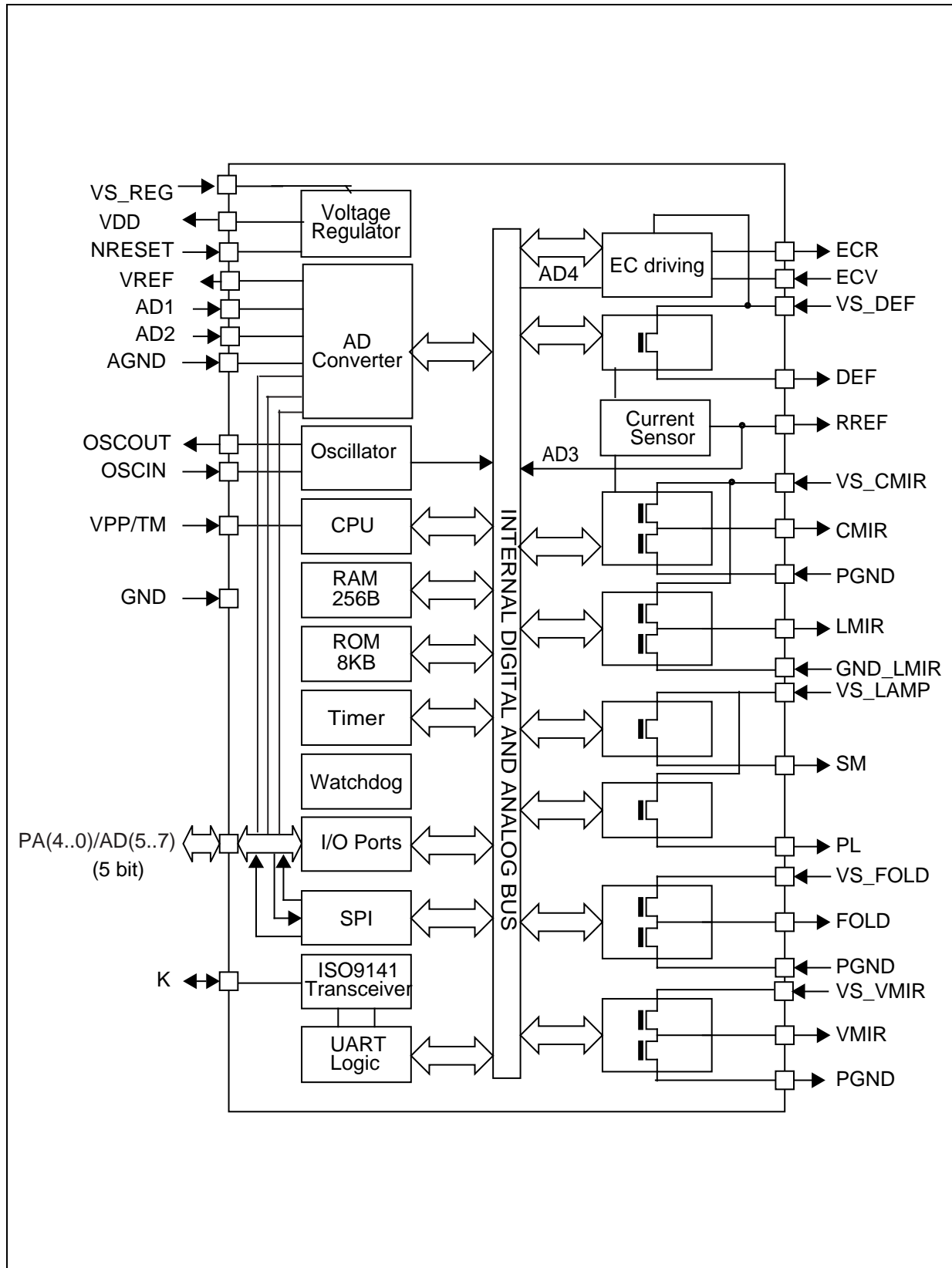
The device is based on an industry-standard 8-bit core and features an enhanced instruction set.

The device is normally operated at an 16MHz oscillator frequency. Under software control, the L9813 may be placed in either Wait, Slow or Halt modes, thus reducing power consumption.

The enhanced instruction set and addressing modes afford real programming potential. In addition to standard 8-bit data management, the L9813 features true bit manipulation, 8x8 unsigned multiplication and indirect addressing modes.

The device includes an internal oscillator, CPU, ROM/OTP/EPROM, RAM, 5 I/O lines and the following on-chip peripherals: Analog-to-Digital converter (ADC) with 5 multiplexed analog inputs, industry standard synchronous SPI and asynchronous SCI serial interfaces, digital Watchdog, 16-bit Timer, 2 Input Captures and 2 Output Compares.

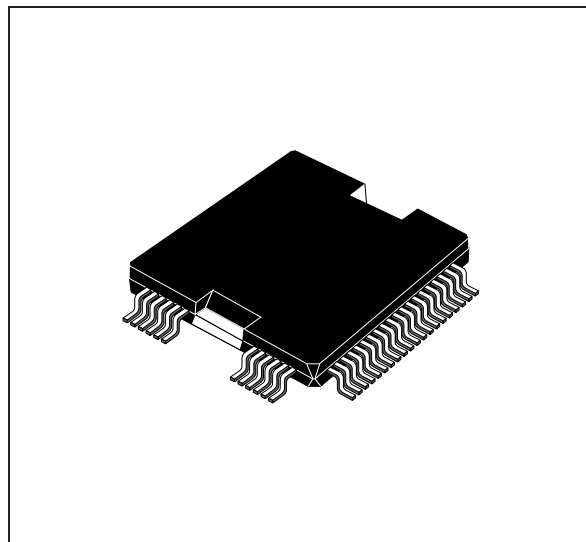
Figure 1. Block Diagram



DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			3.15			0.124
A1	0		0.25	0		0.010
A2	2.50		2.90	0.10		0.114
A3	0		0.10	0		0.004
b	0.22		0.38	0.008		0.015
c	0.23		0.32	0.009		0.012
D	17.00		17.40	0.669		0.685
D1 (1)	13.90	14.00	14.10	0.547	0.551	0.555
D2	2.65	2.80	2.95	0.104	0.110	0.116
E	17.00		17.40	0.669		0.685
E1 (1)	13.90	14.00	14.10	0.547	0.551	0.555
e		0.65			0.025	
E2	2.35		2.65	0.092		0.104
E3	9.30	9.50	9.70	0.366	0.374	0.382
E4	13.30	13.50	13.70	0.523	0.531	0.539
F		0.10			0.004	
G		0.12			0.005	
L	0.80		1.10	0.031		0.043
N	10°(max.)					
S	0°(min.), 7°(max.)					

(1): "D1" and "E1" do not include mold flash or protusions
 - Mold flash or protusions shall not exceed 0.15mm(0.006inch) per side

OUTLINE AND MECHANICAL DATA



HiQUAD-64

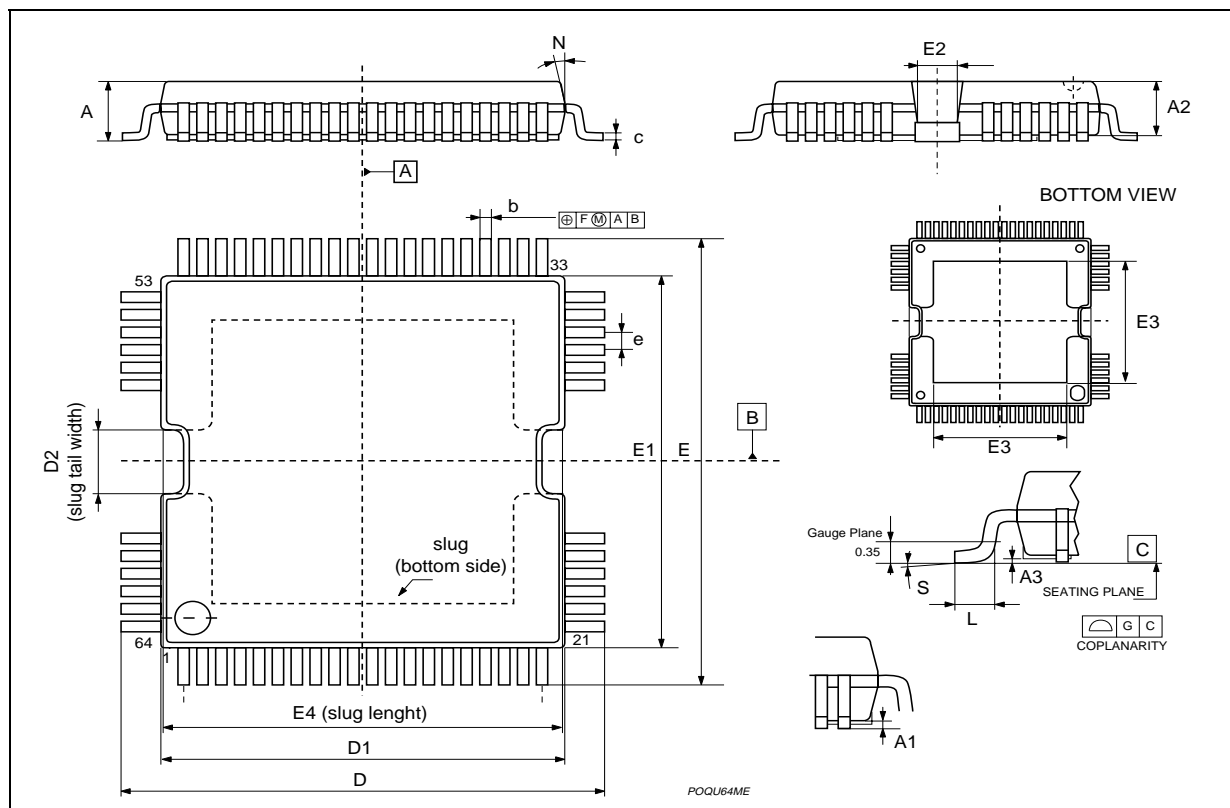


Table 2. Revision History

Date	Revision	Description of Changes
March 2004	1	First Issue
April 2004	2	Modified the style sheet following Design Guide last rev. rules.

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