ST10F276-6QR3

MCU 16-bit ST10 CISC/RISC 832KB Flash 5V Automotive 144-Pin PQFP T/R

Images are for reference only

Inquiry

Manufacturer:	STMicroelectronics, Inc
Package/Case:	QFP
Product Type:	Embedded Processors & Controllers
Lifecycle:	NRND

General Description

The architecture of the ST10F276E combines advantages of both RISC and CISC processors and an advanced peripheral subsystem. The block diagram gives an overview of the different on-chip components and the high bandwidth internal bus structure of the ST10F276E.

Key Features

Highly performance 16-bit CPU with DSP functions

31.25ns instruction cycle time at 64MHz max CPU clock

Multiply/accumulate unit (MAC) 16 x 16-bit multiplication, 40-bit accumulator

Enhanced boolean bit manipulations

Single-cycle context switching support

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Single-cycle context switching support

On-chip memories

512 Kbyte Flash memory (32-bit fetch)

320 Kbyte extension Flash memory (16-bit fetch)

Single voltage Flash memories with erase/program controller and 100K erasing/programming cycles

Up to 16 Mbyte linear address space for code and data (5 Mbytes with CAN or I2C)

2 Kbyte internal RAM (IRAM)

66 Kbyte extension RAM (XRAM)

512 Kbyte Flash memory (32-bit fetch)

320 Kbyte extension Flash memory (16-bit fetch)

Single voltage Flash memories with erase/program controller and 100K erasing/programming cycles

Up to 16 Mbyte linear address space for code and data (5 Mbytes with CAN or I2C)

2 Kbyte internal RAM (IRAM)

66 Kbyte extension RAM (XRAM)

External bus

Programmable external bus configuration & characteristics for different address ranges

5 programmable chip-select signals

Hold-acknowledge bus arbitration support

Programmable external bus configuration & characteristics for different address ranges

5 programmable chip-select signals

Hold-acknowledge bus arbitration support

Interrupt

8-channel peripheral event controller for single cycle interrupt driven data transfer

16-priority-level interrupt system with 56 sources, sampling rate down to 15.6ns

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Timers

2 multi-functional general purpose timer units with 5 timers

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Two 16-channel capture / compare units

4-channel PWM unit + 4-channel XPWM

A/D converter

24-channel 10-bit

3 µs minimum conversion time

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3 µs minimum conversion time

Serial channels

2 synch. / asynch. serial channels

2 high-speed synchronous channels

1 I2C standard interface

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2 high-speed synchronous channels

1 I2C standard interface

2 CAN 2.0B interfaces operating on 1 or 2 CAN busses (64 or 2x32 message, C-CAN version)

Fail-safe protection

Programmable watchdog timer

Oscillator watchdog

Programmable watchdog timer

Oscillator watchdog

On-chip bootstrap loader

Clock generation

On-chip PLL with 4 to 12 MHz oscillator

Direct or prescaled clock input

On-chip PLL with 4 to 12 MHz oscillator

Direct or prescaled clock input

Real-time clock and 32 kHz on-chip oscillator

Up to 111 general purpose I/O lines

Individually programmable as input, output or special function

Programmable threshold (hysteresis)

Individually programmable as input, output or special function

Programmable threshold (hysteresis)

Idle, power down and stand-by modes

Single voltage supply: 5V ±10% (embedded regulator for 1.8 V core supply)

Recommended For You

STA013

STMicroelectronics, Inc

SOP28

STPCI2GDYI

STMicroelectronics, Inc

BGA

STDP8028-AB

STMicroelectronics, Inc

BGA

STM8AF52AATCX

STMicroelectronics, Inc

LQFP100

STM8AF5289TCX

STMicroelectronics, Inc

LQFP-64

STM32WB55RCV6

STMicroelectronics, Inc

QFN68

STM32WLE5CCU6

STMicroelectronics, Inc

QFN48

STM32WB55VGQ6

STMicroelectronics, Inc

BGA129

STM32WB55VGY6TR

STMicroelectronics, Inc

WLCSP100

STM32WB35CEU6A

STMicroelectronics, Inc

UFQFPN-48

STM32WL55CCU6

STMicroelectronics, Inc

UFQFN48

STM32WB10CCU5

STMicroelectronics, Inc

QFN48

STM32MP151AAD3

STMicroelectronics, Inc

BGA257

STM32WB55RGV6

STMicroelectronics, Inc

VFQFPN68

STM32MP157CAC3

STMicroelectronics, Inc

TFBGA361