

LGT8F88A VS ATmega88A – 01: Features [功能]

LGT8F88A

LGT8XM 8bit RISC Core (AVR8 Compatible)

- 131 Instructions, **80% in one cycle**
- 32x8 General purpose Registers
- **one cycle 8x8 multiplier**
- running up to **32MHz**

8KB FLASH

1KB SRAM

504B Data FLASH (E2PROM I/F)

Creative FLASH encryption algorithm based on status change

Two 8bit Timers & One 16bit Timers

RTC with Separate Oscillator

Six PWM Channels

8-channel 10bit ADC

Temperature Measurement

USART/SPI/TWI(I2C)/WDT

On-chip Analog Comparator

External Interrupts and Pin Change Interrupts

POR/BOR

Internal 32MHz Calibrated Oscillator

Operating Voltage : 1.8V ~ 5V

Temperature Range: -40 ~ 85C

Speed Grade: 0~32MHz @1.8V~5.5V

QFP32L: **30 I/O**

SSOP28L: **26 I/O**

12-channel Touch-key inputs

8-channel High sink NMOS I/O (driving up to 80mA)

Difference inputs with Gain control supported by ADC

Internal 32KHz calibration oscillator (1%)

ATmega88A

AVR 8bit RISC Core

- 131 Instructions, **70% in one cycle**
- 32x8 General purpose Registers
- **two cycle 8x8 multiplier**
- running up to **20MHz**

8KB FLASH

1KB SRAM

512B E2PROM

Lock bits for FLASH encryption

Two 8bit Timers & One 16bit Timers

RTC with Separate Oscillator

Six PWM Channels

8-channel 10bit ADC

Temperature Measurement

USART/SPI/TWI(I2C)/WDT

On-chip Analog Comparator

External Interrupts and Pin Change Interrupts

POR/BOR

Internal 32MHz Calibrated Oscillator

Operating Voltage : 1.8V ~ 5V

Temperature Range: -40 ~ 85C

Speed Grade: 0~20MHz @1.8V~5.5V

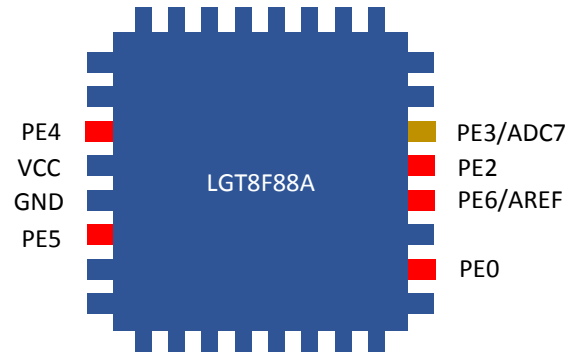
QFP32L: **25 I/O**

DIP28: **23 I/O**

LGT8F88A VS ATmega88A – 02: PINOUT [封装, 引脚]

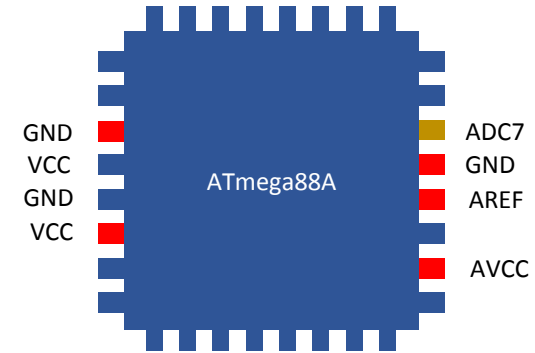
LGT8F88A

LQFP32L fully compatible with ATmega88A-QFP32L



ATmega88A

LQFP32L



LGT8F88A-QFP32L is fully compatible with ATmega88A-QFP32L.

You can replace ATmega88A without any change of your print circuit board.

LGT8F88A is powered by PIN4/5, which is compatible with ATmega88A's PIN4/5.

LGT8F88A change all other power pin to I/O pin. DO NOT USE these I/O if they are tied to GND/VCC on your board.

LGT8F88A also change ADC7/AREF to combo with GPIO function, which is not supported in ATmega88A.

LGT8F88A

Supported IDE for development and debug

- AVR Studio 4/6
- IAR workbench for AVR
- ImageCraft IDE for ICCAVR
- CVAVR
- WinAVR(AVRGCC)

Debug & ISP hardware adaptor

- LGTSWD-mkII from LogicGreen

ATmega88A

Supported IDE for development and debug

- AVR Studio 4/6
- IAR workbench for AVR
- ImageCraft IDE for ICCAVR
- CVAVR
- WinAVR(AVRGCC)

Debug & ISP hardware adaptor

- All hardware provided by Atmel & 3'rd party

By now, LGT8F88A only supported by debugger & ISP tool suites provided by LogicGreen.
You can request those software and hardware directly from our official website.

www.lgtic.com

LGT8F88A

LGT8F88A Fuse definitions:

- BOR configuration
- IRC calibration
- GUID

ATmega88A

ATmega88A Fuse definitions

- Reset timing
- Clock source
- IRC calibration
- Lock bit
- Boot bit
- Signatures

LGT8F88A reduce fuse configuration to make easy usage and avoid dead-lock by misoperation
In LGT8F88A, all fuse configuration can be set from I/O register by software except GUID which is read only.

LGT8F88A clock source can only be configured via PMCR register from software

LGT8F88A

LGT8F88A Support 4 power mode

SM2	SM1	SM0	Sleep Mode
0	0	0	Idle
0	0	1	ADC Noise Reduce
0	1	0	Power/down
0	1	1	Power/off
1	0	0	Power/off lock
-	-	-	Reserved

ATmega88A

ATmega88A support 6 power mode

SM2	SM1	SM0	Sleep Mode
0	0	0	Idle
0	0	1	ADC Noise Reduce
0	1	0	Power-down
0	1	1	Power-save
1	1	0	Standby
1	1	1	External Standby
-	-	-	Reserved

LGT8F88A Support only 4 power modes.

All analog/digital mode should be disabled before sleep if not used.

In Idle, ADC NR and Power/down modes, it recommend to disable main IRC and switch to 32KHz IRC

Before sleep, any unused pin should be set to known level to reduce leakage.

Power/off lock should be set by software earlier in system initial stage if power/off mode is used.