# DSP Controller Board
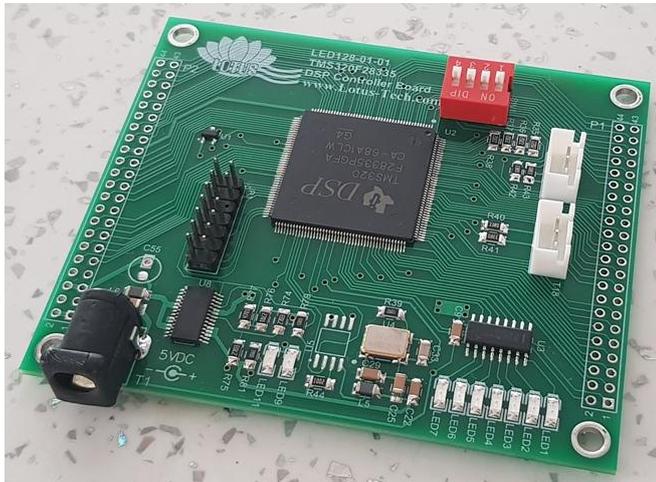


## برد راه انداز پردازنده TMS320F28335

❖ در اختیار بودن کلیه پین های پردازنده

❖ امکان تغذیه از طریق پین هدر

❖ مناسب برای کلیه کاربردهای پردازش سیگنال

❖ دارای پورت CAN و RS232

❖ دارای اسیلاتور ۳۰ مگاهرتز

## مشخصات فنی برد

| | |
|---|---|
| ۵ V | ولتاژ تغذیه |
| ۲۵۰ mA | حداکثر جریان مصرفی |
| ۱۲ عدد | تعداد خروجی PWM |
| ۵۰ عدد | تعداد GPIO در دسترس |
| ۱۶ عدد | تعداد ورودی آنالوگ |
| ۱۰×۱۰×۱ | ابعاد طول×عرض×ارتفاع (سانتی‌متر) |
| ۵ عدد | تعداد LED متصل به GPIO |

## مشخصات فنی پروسسور استفاده شده

- Highlights
  - High-Efficiency 32-Bit CPU ( TMS320C28x™)
  - 60-MHz, 50-MHz, and 40-MHz Devices
  - Single 3.3-V Supply
  - Integrated Power-on and Brown-out Resets
  - Two Internal Zero-pin Oscillators
  - Up to 22 Multiplexed GPIO Pins
  - Three 32-Bit CPU Timers
  - On-Chip Flash, SARAM, OTP Memory
  - Code-security Module
  - Serial Port Peripherals (SCI/SPI/I2C)

- Low Device and System Cost:
  - Single 3.3-V Supply
  - No Power Sequencing Requirement
  - Integrated Power-on and Brown-out Resets
  - Small Packaging, as Low as 38-Pin Available
  - Low Power
  - No Analog Support Pins
- Clocking:
  - Two Internal Zero-pin Oscillators
  - On-Chip Crystal Oscillator/External Clock Input

- – Enhanced Control Peripherals
  - • Enhanced Pulse Width Modulator (ePWM)
  - • High-Resolution PWM (HRPWM)
  - • Enhanced Capture (eCAP)
  - • Analog-to-Digital Converter (ADC)
  - • On-Chip Temperature Sensor
  - • Comparator
  - – 38-Pin and 48-Pin Packages
- • High-Efficiency 32-Bit CPU ( TMS320C28x™)
  - – 60 MHz (16.67-ns Cycle Time)
  - – 50 MHz (20-ns Cycle Time)
  - – 40 MHz (25-ns Cycle Time)
  - – 16 x 16 and 32 x 32 MAC Operations
  - – 16 x 16 Dual MAC
  - – Harvard Bus Architecture
  - – Atomic Operations
  - – Fast Interrupt Response and Processing
  - – Unified Memory Programming Model
  - – Code-Efficient (in C/C++ and Assembly)
- • Endianness: Little Endian

- – Dynamic PLL Ratio Changes Supported
- – Watchdog Timer Module
- – Missing Clock Detection Circuitry
- • Up to 22 Individually Programmable, Multiplexed GPIO Pins With Input Filtering
- • Peripheral Interrupt Expansion (PIE) Block That Supports All Peripheral Interrupts
- • Three 32-Bit CPU Timers
- • Independent 16-Bit Timer in Each ePWM Module
- • On-Chip Memory
  - – Flash, SARAM, OTP, Boot ROM Available
- • 128-Bit Security Key/Lock
  - – Protects Secure Memory Blocks
  - – Prevents Firmware Reverse Engineering
- • Serial Port Peripherals
  - – One SCI (UART) Module
  - – One SPI Module
  - – One Inter-Integrated-Circuit (I2C) Bus
- • Advanced Emulation Features
  - – Analysis and Breakpoint Functions
  - – Real-Time Debug via Hardware
- • 2802x, 2802xx Packages
  - – 38-Pin DA Thin Shrink Small-Outline Package (TSSOP)
  - – 48-Pin PT Low-Profile Quad Flatpack (LQFP)