B bmc::board > Docs & Files > mini::base ••• Last updated by Sebastian K. on Aug 18 **Datasheet** Microcontroller • Manufacturer: ST • Architecture: ARM®32-bit Cortex®-M3 CPU Core • Type: <u>STM32F103CBT6</u> Mouser • Datasheet: STM32F103x8 STM32F103xB Medium-density performance line ARM®-based 32-bit MCU with 64 or 128 KB Flash, USB, CAN, 7 timers, 2 ADCs, 9 com. interfaces Features ARM® 32-bit Cortex®-M3 CPU Core 72 MHz maximum frequency, VFQFPN366×6 mm UFQFPN487×7 mm 1.25 DMIPS/MHz (Dhrystone 2.1) performance at 0 wait state memory Single-cycle multiplication and hardware UFBGA100 7 x 7 mm BGA64 5 x 5 mm Memories Debug mode - 64 or 128 Kbytes of Flash memory Serial wire debug (SWD) & JTAG 20 Kbytes of SRAM interfaces Clock, reset and supply management 7 timers 2.0 to 3.6 V application supply and I/Os - Three 16-bit timers, each with up to 4 - POR, PDR, and programmable voltage IC/OC/PWM or pulse counter and detector (PVD) quadrature (incremental) encoder input 4-to-16 MHz crystal oscillator - 16-bit, motor control PWM timer with dead- Internal 8 MHz factory-trimmed RC time generation and emergency stop Internal 40 kHz RC 2 watchdog timers (Independent and PLL for CPU clock Window) 32 kHz oscillator for RTC with calibration SysTick timer 24-bit downcounter Low-power Up to 9 communication interfaces - Sleep, Stop and Standby modes Up to 2 x I²C interfaces (SMBus/PMBus) V_{BAT} supply for RTC and backup registers - Up to 3 USARTs (ISO 7816 interface, LIN, 2 x 12-bit, 1 µs A/D converters (up to 16 IrDA capability, modern control) channels) Up to 2 SPIs (18 Mbit/s) - Conversion range: 0 to 3.6 V CAN interface (2.0B Active) Dual-sample and hold capability USB 2.0 full-speed interface - Temperature sensor CRC calculation unit, 96-bit unique ID Packages are ECOPACK[®] 7-channel DMA controller - Peripherals supported: timers, ADC, SPIs, Table 1. Device summary I²Cs and USARTs Part number Reference STM32F103x8 STM32F103C8, STM32F103R8 STM32F103V8, STM32F103T8 STM32F103xB STM32F103V8, STM32F103CB, STM32F103TB 26/37/51/80 I/Os, all mappable on 16 external interrupt vectors and almost all Datasheet STM32F103CBT6 Microcontroller · 1.68 MB · <u>View full-size</u> · <u>Download</u> **Key Features** ARM®32-bit Cortex®-M3 CPU Core • 72 MHz maximum frequency,1.25 DMIPS/MHz (Dhrystone 2.1) performance at 0 wait state memory access • Single-cycle multiplication and hardware division Memories • 64 or 128 Kbytes of Flash memory • 20 Kbytes of SRAM Clock, reset and supply management • 2.0 to 3.6 V application supply and I/Os • POR, PDR, and programmable voltage detector (PVD) • 4-to-16 MHz crystal oscillator • Internal 8 MHz factory-trimmed RC • Internal 40 kHz RC PLL for CPU clock • 32 kHz oscillator for RTC with calibration Low-power • Sleep, Stop and Standby modes VBAT supply for RTC and backup registers 2 x 12-bit, 1 µs A/D converters (up to 16 channels) • Conversion range: 0 to 3.6 V • Dual-sample and hold capability Temperature sensor DMA • 7-channel DMA controller • Peripherals supported: timers, ADC, SPIs, I2Cs and USARTs Up to 80 fast I/O ports • 26/37/51/80 I/Os, all mappable on 16 external interrupt vectors and almost all 5 Vtolerant Debug mode • Serial wire debug (SWD) & JTAG interfaces 7 timers • Three 16-bit timers, each with up to 4 IC/OC/PWM or pulse counter and quadrature (incremental) encoder input • 16-bit, motor control PWM timer with dead-time generation and emergency stop • 2 watchdog timers (Independent and Window) • SysTick timer 24-bit downcounter Up to 9 communication interfaces • Up to 2 x I2C interfaces (SMBus/PMBus) • Up to 3 USARTs (ISO 7816 interface, LIN, IrDA capability, modem control) • Up to 2 SPIs (18 Mbit/s) • CAN interface (2.0B Active) • USB 2.0 full-speed interface CRC calculation unit, 96-bit unique ID Packages are ECOPACK® **Board** MINI-BASE-A001-1.0.0-front.PNG · 214 KB · View full-size · Download • Size: 54mm x 42.5 mm - exactly half a credit card Mounting Holes: • ø 3.2mm (for M3 bolt) • spaced 48mm and 36.5mm from each other • Voltage transformer for external power: • up to 24V input • up to 1.2A @ 5V output • up to 1A @ 3,3V output • Board-to-Board Connectors: • 2x Würth WR-MM Female 26p, 690367182672 • pinout symmetrical - top boards can be rotated USB Type C connector • JAE DX07S016JA1R1500 • micro SD Card slot • CAN connection available on board-to-board connector pins 5 and 6 • transceiver equipped: <u>SN65HVD230</u> • terminating resistor equipped, switchable in software • pressure, altitude and temperature combined sensor • sensor equipped: MPL3115A2 • quality suitable for environmental measurements: barometric pressure, etc programm settings • board: generic STM32F103C series • variant: STM32F103CB (20k RAM, 128k flash) • upload method: STM32duino bootloader • CPU speed: 72 MHz optimize: smallest(default) internal IOs CAN • CAN TX - PB9 • CAN RX - PB8 • CAN termination - PAO (high=on) SD card • CS - PA4 • MISO - PA6 • MOSI - PA7 • SCK - PA5 temp. sensor • SCL - PB6 • SDA - PB7 user led • led - PC13 (low=on) 87 **Discussion** Florian Eich **turned on** public link sharing for this document Add a comment or upload a file... 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