TWILIO electric imp

PRODUCT BRIEF

imp006

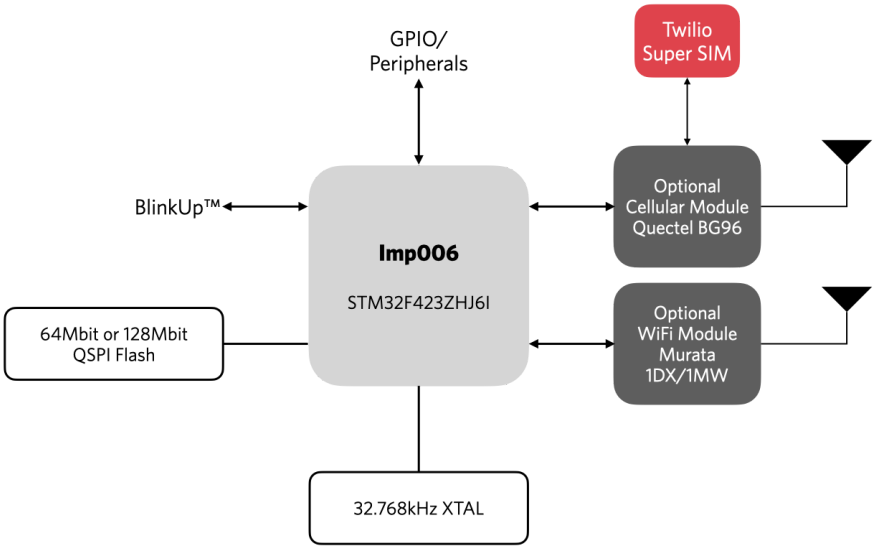
Highly flexible Internet of Things node with fully customizable wireless Internet connectivity

Key Features

- Custom STM32F423ZHJ6I Microcontroller:
  - Integrated real-time operating system, impOS™
  - 96MHz, 32-bit ARM Cortex M4F core
  - 240KB application RAM
  - 512KB application Flash area
- Rich peripheral support:
  - 54x General Purpose I/O*
  - 4x SPI channels*
  - 7x UART channels*
  - 3x I^2C channels*
  - 8x PWM channels*
  - ADC/DAC support*
  - DFSDM digital audio input support*
- Low power:
  - impOS-managed idle mode with full RAM preservation and wake on timer or GPIO, typically 40µA
  - Ultra-low 6µA sleep mode with RTC and GPIO wake
- Secure by default, secure for life:
  - OS, network and security stack updates provided by Twilio for the lifetime of the device
  - MCU ships with full hardware protection enabled
  - Independently certified to the UL2900-2-2 cybersecurity for industrial control systems standard
- Flexible wireless support:
  - Choose cellular only, WiFi only, or cellular and WiFi
  - Global cellular connectivity powered by Twilio Super SIM
  - Murata single- and dual-band WiFi + BLE modules supported, with impOS™-maintained BLE stack
  - Quectel BG96 cellular radio provides global Cat-M, 2G and NB connectivity
  - Full support for BG96 GNSS including cloud-assisted warm start
- Works in partnership with impCloud™ platform:
  - Secure, managed cloud connection via TLS1.2
  - Mutual authentication and state of the art EDH (Elliptic-curve Diffie-Hellman) forward secrecy
  - Secure, failsafe OTA OS and application upgrades
  - Cloud-side companion agent for each device
- System-managed QSPI flash for OS and application use:
  - 64Mbit and 128Mbit chips supported
  - 32Mbit to 96Mbit available for application use
- Multiple provisioning options:
  - End-user BlinkUp™ for easy, secure setup, either optically or via BLE where available
  - In-factory provisioning for zero-touch end-user install

* All interfaces supported at the OS level and accessible from application code

System Diagram



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