OPERATIONAL DESCRIPTION

1.1 Block diagram

The ST17H26 is designed to offer ultra-low cost, low power Bluetooth Smart application capabilities, which integrates powerful 32-bit MCU, advanced BLE, 16KB on-chip OTP, 6KB on-chip SRAM, a 10bit ADC, a quadrature decoder (QDEC), up to four-channel PWM, flexible I/O interfaces, and nearly all of the peripheral blocks needed for Bluetooth Low Energy applications development.

1.2 Key features

1.2.1 General features

General features are as follows:

1) Embed 32-bit high performance MCU with clock up to 48MHz.

2) Program memory: 16KB on-chip OTP.

3) Data memory: 6KB on-chip SRAM.

4) 16/12MHz Crystal and 32KHz/32MHz embedded RC oscillator.

5) Up to 38/14/9/3 GPIOs depending on package option, with configurable internal pull-up or pull-down resistors.

6) Debug interface: SWS (Single Wire Slave).

7) Supports MSPI (only for ST17H38ET48 & ST17H30ET24) and I2C Slave (except ST17H28EP8) interface.

8) Embeds a SAR ADC: Up to 10bit resolution and 4 input channels.

9) Embeds one quadrature decoder (QDEC).

10) Supports up to four-channel PWM output.

11) Embeds three general 32-bit timers Timer0~Timer2.

Timer0~Timer2 are available in active mode

Timer0~Timer1 supports four modes

Generally Timer2 is programmable as watchdog

12) A low-frequency 32K timer LTIMER available in suspend mode or deep sleep mode.

13) Operating temperature: -40℃~+85℃ industrial temperature range.

1.2.2 RF Features

RF features include:

1) BLE RF transceiver embedded, working in worldwide ISM band.

2) Adaptive frequency hopping.

3) Bluetooth 4.0 Compliant, 1Mbps data rate mode.

4) Rx Sensitivity: -94dBm at 1Mbps mode.

5) Auto acknowledgement and retry.

6) Single-pin antenna interface.

7) RSSI monitoring.

1.2.3 Features of power management module

Features of power management module include:

1) Power supply of 1.9V~3.6V.

2) Embedded LDO.

3) Battery monitor: Embedded low battery detection.

4) Multiple stage power management to minimize power consumption.

5) Low power consumption:

Transmitter mode current: 15mA @ 0dBm power, 22mA @ max power

Receiver mode current: 12mA

Suspend mode current: 10uA

Deep sleep mode current: 0.7uA

When the external crystal oscillator and power supply conditions are satisfied, Bluetooth data transmission and control can be carried out according to the program set by the user.

Frequency Range: 2402-2480MHz