

# STM32 STM32H743IIT6 MCU Core Board, Full IO Expander, JTAG/SWD Debug Interface

STANDALONE • PLUGGABLE

STM32H743I Onboard

# COREH743I

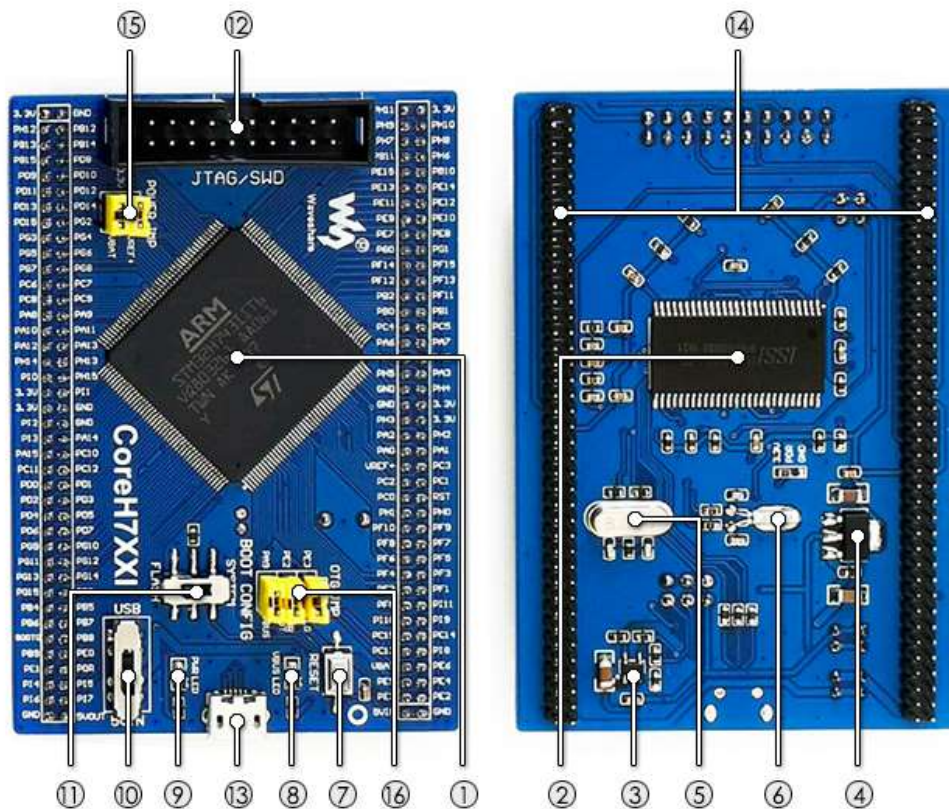


## Overview

CoreH743I is an STM32 MCU core board designed for **STM32H743IIT6**, supports further expansion. It is ideal for starting application development with STM32H family.

- Minimal ready-to-run system, integrates clock circuit, USB power management, USB connector, etc.
- Onboard 64M Bit SDRAM
- All the I/O ports are accessible on the pin headers
- JTAG/SWD programming/debugging interface
- **2.0mm** header pitch, allowed to be plugged-in your application board

## What's on the CoreH743I



1. **STM32H743IIT6**: the high performance STM32 MCU which features:
  - **Core**: Cortex-M7 32-bit RISC + double-precision FPU + Chrom-ART graphic accelerator
  - **Feature**: single-cycle DSP instructions
  - **Operating Frequency**: 480MHz, 1027 DMIPS / 2.14 DMIPS/MHz
  - **Operating Voltage**: 1.62V-3.6V
  - **Package**: LQFP176
  - **Memories**: 2MB Flash, 1MB RAM (864KB User+192KB TCM+4KB Backup)
  - **MCU communication Interfaces**:
    - 6 x SPI, 4 x USART, 4 x UART, 1 x LPUART, 3 x I2S
    - 4 x I2C, 2 x FDCAN, 1 x QUAD-SPI, 1 x DCMI, 4 x SAI
    - 1 x FMC, 2 x SDMMC, 10 x TIM , 5 x LPTIM
    - 1 x LTDC, 1 x SPDIFRX, 1 x HDMI-CEC, 1 x SWPMI
    - 2 x COMP, 2 x OPAMP, 1 x HRTIM, 1 x RNG, 1 x DM2D, 1 x MDIO, 1 x SysTick
    - 1 x USB 2.0 OTG FS
    - 1 x USB 2.0 OTG HS (supports external HS PHY through ULPI)
    - 1 x 10/100 Ethernet MAC
  - **AD & DA converters**: 3 x AD (16-bit); 2 x DA (12-bit)
  - **Debugging/Programming**: supports JTAG/SWD interfaces, supports IAP
2. **IC42S16400J / IS42S16400J**: SDRAM 1 Meg Bits x 16 Bits x 4 Banks (64-MBIT)
3. **STMP2151STR**: onboard USB power management device
4. **AMS1117-3.3**: 3.3V voltage regulator
5. **8M crystal**
6. **32.768K crystal**, for internal RTC with calibration
7. **Reset button**
8. **VBUS LED**: USB port indicator
9. **PWR LED**: Power indicator
10. **Power supply switch**, powered from 5Vin or USB connection
11. **Boot mode selection**, for configuring BOOT0 pin
12. **JTAG/SWD interface**: for debugging/programming
13. **USB connector**, supports Device and/or Host
14. **MCU pins expander**, VCC, GND and all the I/O pins are accessible on expansion connectors for further expansion
15. **POWER jumper**
  - VBAT: short the jumper to use system power supply, open it to connect external power, such as battery
  - VREF: short the jumper to connect VREF+ to VCC, open it to connect VREF+ to other custom pin via jumper wire
16. **OTG jumper**
  - short the jumper when using USB OTG/HOST
  - open the jumper to disconnect from related I/O port

**Note: CoreH743I provides JTAG/SWD debugging interface, yet does NOT integrate any debugging function, a debugger is required.**

## JTAG/SWD interfaces

The figure 1, and 2 show the header pinouts of JTAG/SWD interface

Figure 1. JTAG Header Pinout

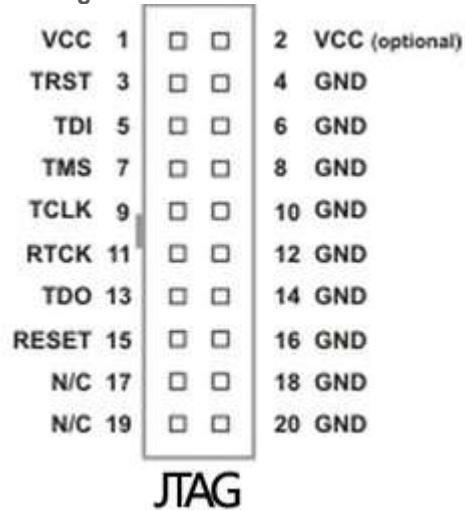
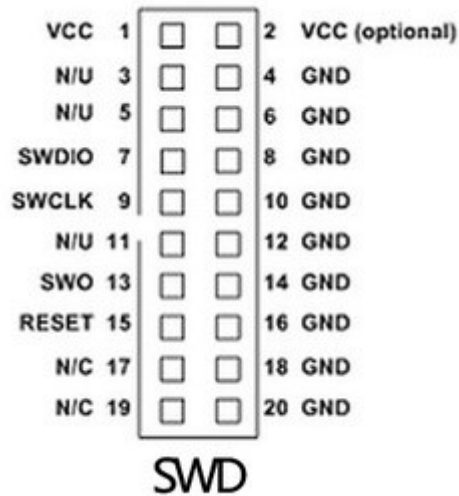


Figure 2. SWD Header Pinout

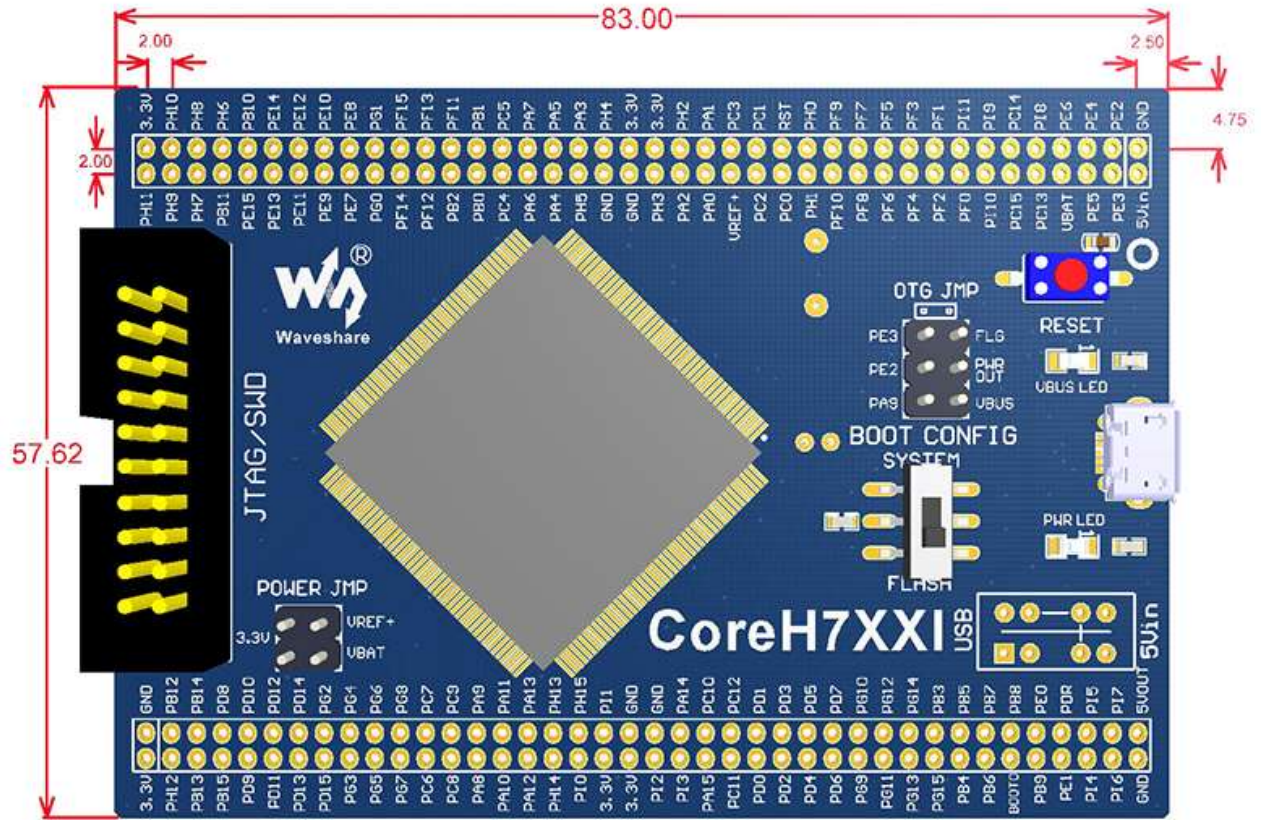


## Development Resources

- Schematic
- Demo code (examples in C, FreeRTOS,  $\mu$ C/OS-III)
- STM32 development software (KEIL, STM32CubeMX, etc.)
- STM32 datasheets
- STM32 development documentations

Wiki: [www.waveshare.com/wiki/CoreH743I](http://www.waveshare.com/wiki/CoreH743I)

# Dimensions



**Unit: mm**