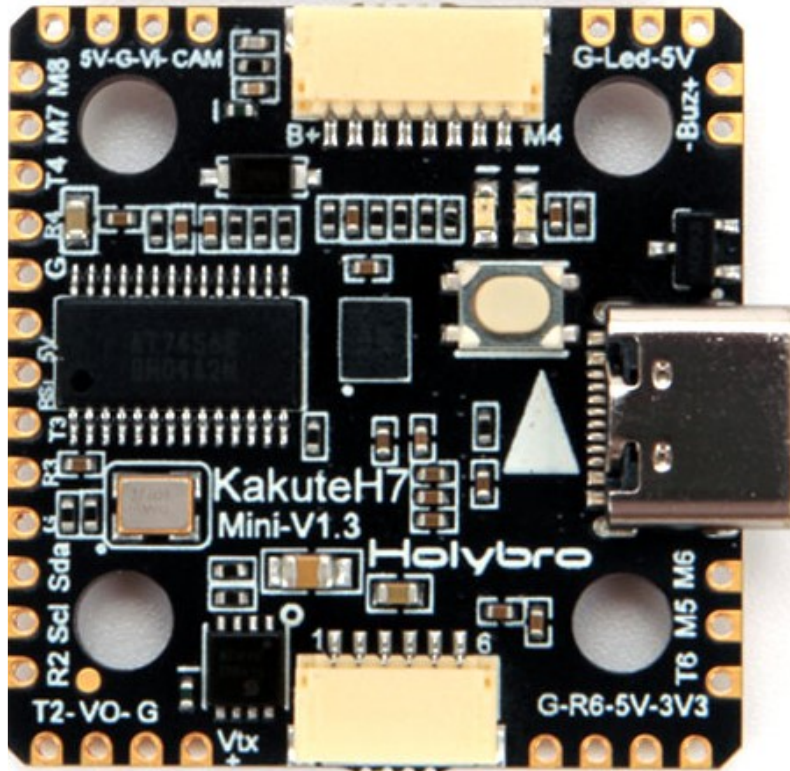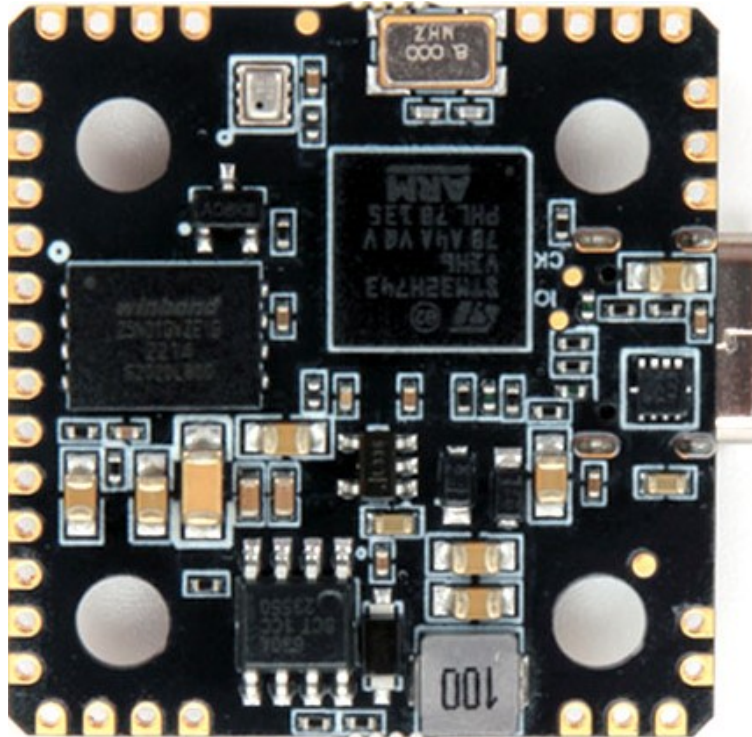# Holybro Docs

Overview

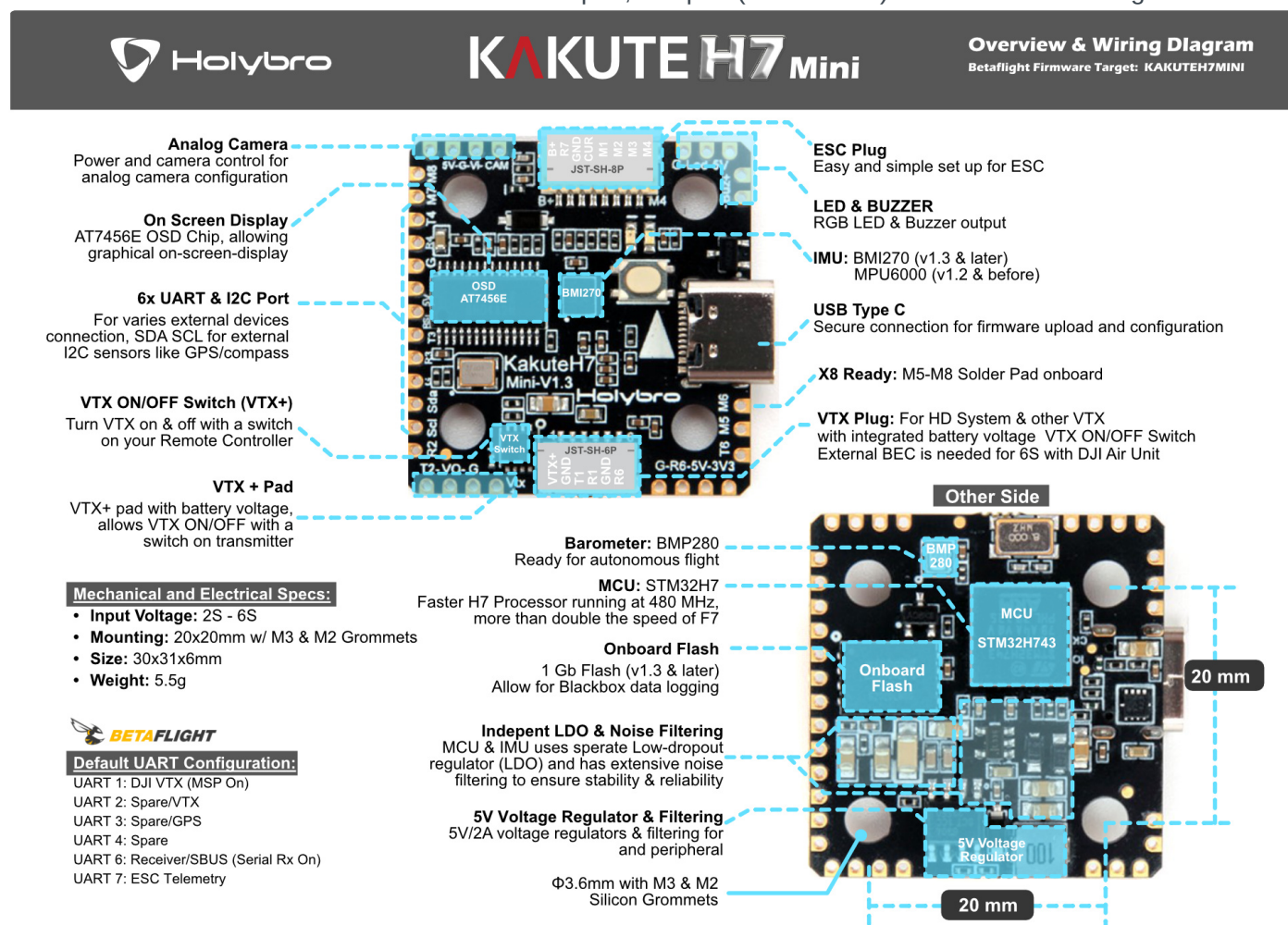Top View

Bottom View

Description:

The Holybro Kakute H7 Mini is a Flight Controller full of features including onboard VTX ON/OFF Pit Switch with battery voltage, HD System/VTX & 4in1 ESC plugs, barometer, OSD, 6x UARTs, easy soldering layout and much more.

The Kakute H7 Mini builds upon the best features of its F7 predecessor and further improves on hardware components and layout. HD ready, it has an easy plug to power HD system like Caddx Vista while supporting analog system.

It features an onboard "VTX ON/OFF Pit Switch" that allows you to completely power off the video transmitter using a switch on your RC transmitter. Great if you are working on your drone, waiting for the GPS to get a fix, getting ready for a race while preventing it from overheating or interfering with others flying.
It has 6x dedicated UART ports with built-in inversion for peripherals, 4in1 ESC plug, and x8 compatible with M5-M8 Signal Pads, allowing easy support for x8 Octocopter configuration.

The integrated BetaFlight OSD makes it easy to display important information on your FPV display like battery voltage, flight time, warnings, RSSI, smart audio features and more. It is also ready for autonomous flight with the on-board barometer. There are LED & buzzer pad, I2C pad (SDA & SCL) for external GPS/Magnetometers.

KAKUTE H7 Mini
Overview & Wiring Diagram
Betaflight Firmware Target: KAKUTEH7MINI

Analog Camera
Power and camera control for analog camera configuration

On Screen Display
AT7456E OSD Chip, allowing graphical on-screen-display

6x UART & I2C Port
For varies external devices connection, SDA SCL for external I2C sensors like GPS/compass

VTX ON/OFF Switch (VTX+)
Turn VTX on & off with a switch on your Remote Controller

VTX + Pad
VTX+ pad with battery voltage, allows VTX ON/OFF with a switch on transmitter

Mechanical and Electrical Specs:
- **Input Voltage:** 2S - 6S
- **Mounting:** 20x20mm w/ M3 & M2 Grommets
- **Size:** 30x31x6mm
- **Weight:** 5.5g

BETAFLIGHT
Default UART Configuration:
UART 1: DJI VTX (MSP On)
UART 2: Spare/VTX
UART 3: Spare/GPS
UART 4: Spare
UART 6: Receiver/SBUS (Serial Rx On)
UART 7: ESC Telemetry

ESC Plug
Easy and simple set up for ESC

LED & BUZZER
RGB LED & Buzzer output

IMU: BMI270 (v1.3 & later)
MPU6000 (v1.2 & before)

USB Type C
Secure connection for firmware upload and configuration

X8 Ready: M5-M8 Solder Pad onboard

VTX Plug: For HD System & other VTX with integrated battery voltage VTX ON/OFF Switch External BEC is needed for 6S with DJI Air Unit

Other Side

Barometer: BMP280
Ready for autonomous flight

MCU: STM32H7
Faster H7 Processor running at 480 MHz, more than double the speed of F7

Onboard Flash
1 Gb Flash (v1.3 & later)
Allow for Blackbox data logging

Indepent LDO & Noise Filtering
MCU & IMU uses sperate Low-dropout regulator (LDO) and has extensive noise filtering to ensure stability & reliability

5V Voltage Regulator & Filtering
5V/2A voltage regulators & filtering for and peripheral

Φ3.6mm with M3 & M2
Silicon Grommets

20 mm

20 mm

Specification:

- MCU - STM32H743 32-bit processor running at 480 MHz
- IMU - BMI270 (v1.3 & later) or MPU6000 (v1.2 & before)
- Barometer - BMP280
- OSD - AT7456E
- Onboard Flash: 1Gbit (v1.3 & later)
- VTX ON/OFF Pit Switch – Switch can be enable using USER1 in Betaflight Mode tab. Warning: Do not enable this pit switch if you are using DJI FPV Remote Controller
- 6x UARTs (1,2,3,4,6,7)
- 9x PWM Outputs (8 Motor Output, 1 LED)
- Battery input voltage: 2S-6S
- BEC 5V 2A

Mechanical

- Mounting - 20 x 20mm, Φ3.6mm hole with M3 & M2 Grommets
- Dimension - 31x30x6mm
- Weight – 5.5g
- JST-SH1.0_8pin port * 2 (For 4in1 ESCs)
- JST-GH1.25_6pin port (For DJI/Caddx HD System and other VTX)