



Robonode is a highly efficient, low-latency, long-range data radio optimized for drones and robotic missions. Designed for critical communication in unmanned systems, this radio features Wi-Fi broadcasting with Forward Error Correction (FEC), fast frequency shifting, narrow channels, and additional capabilities to ensure stable and reliable connectivity in demanding environments.

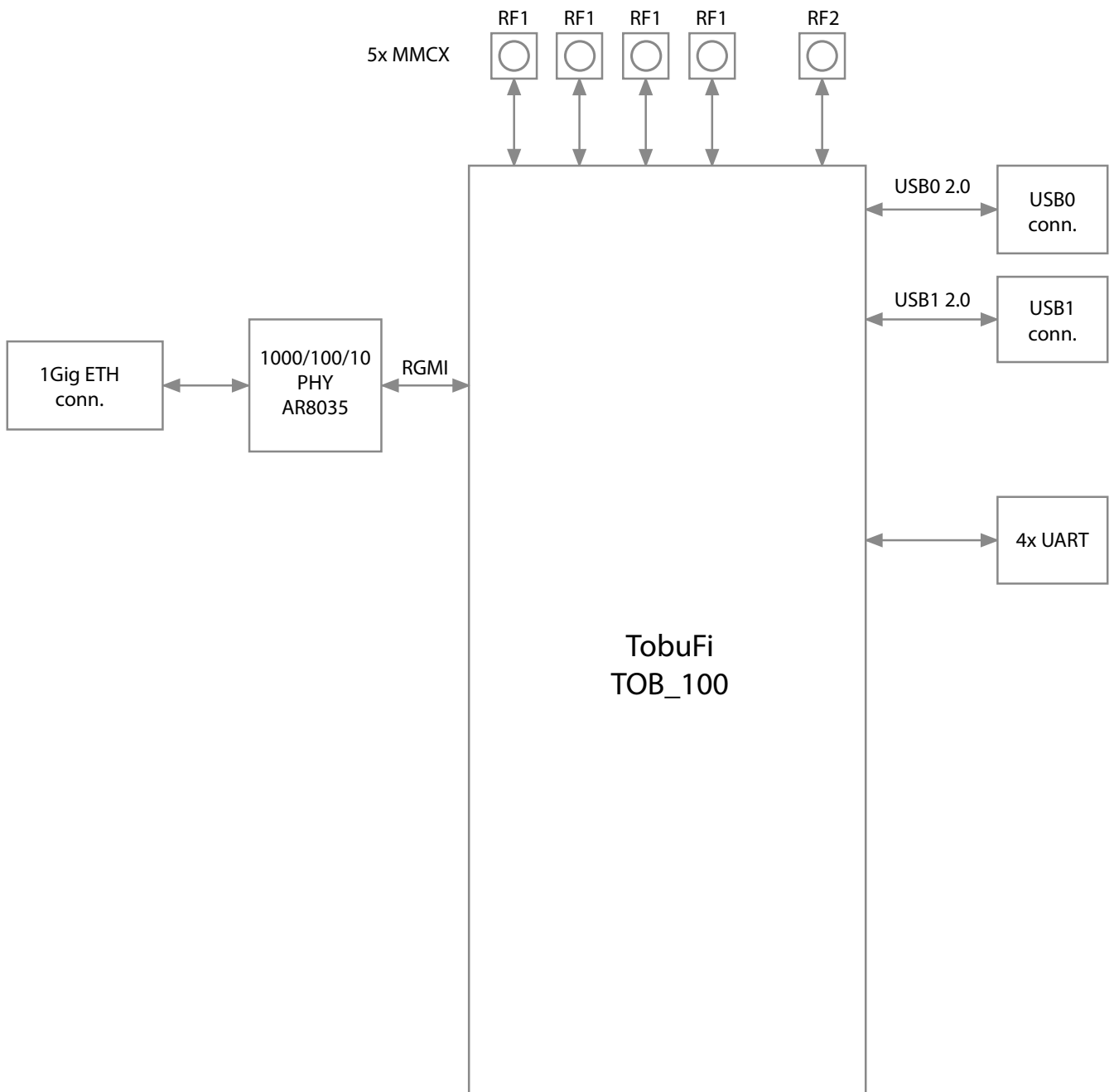
Powered by the advanced Qualcomm® QCS405 system-on-chip, it integrates a high-performance, dual-band Wi-Fi 6 radio using the QCN9074 chipset. The unit is enclosed in a durable aluminum housing with an integrated ventilator for superior cooling efficiency.

Quick Specs

- Main SoC: Qualcomm QCS405;
- 2 Wi-Fi radios:
 - Qualcomm QCN9074 Wi-Fi 6 SoC (802.11a/g/n/ac/ax) – for main connectivity;
 - Qualcomm WCN3980 Wi-Fi 5 SoC (802.11a/g/n/ac)- for local connectivity.
- Radio mode: MU-MIMO;
- Extended operating frequency ranges (preliminary):
 - 2360–3150 MHz for 2.4 GHz band operation;
 - 4550–6630 MHz for 5 GHz band operation;
 - 5325–7495 MHz for 6 GHz band operation.

These values are based on initial validation data and remain subject to further optimization. Ranges may be extended in future revisions.
- Maximum output power: 29 dBm per chain (RF chain configuration 2x4);
- Memory: 1024MB LPDDR3;
- Storage: 8192MB eMMC;
- Size 108.5 x 73.5 x 20 mm;
- Weight: 178 g;
- WiFi broadcast with FEC (Forward Error Correction);
- Narrow channels (5, 10, 20, 40 MHz);
- Fast frequency shifting;
- Easy USB configuration;
- OpenHD support;
- Available interfaces: 2x USB 2.0, 4x BLS (UART, I2C or SPI), 16x GPIO, 1Gig ETH port, 1x user configurable reset button;
- Aluminum housing;

Block diagram



HW Feature List

Feature	Description
CPU	Qualcomm QCS405 Arm Cortex A53 quad-core; 1.4GHz; 64-bit
Memory	LPDDR3 1GB + eMMC 8GB
Graphics	Qualcomm® Adreno™ 306 graphics processing unit (GPU) with 64-bit addressing; 600MHz
DSP	Qualcomm® Hexagon™ QDSP6 v66 with Low Power Island and Voice accelerators Qualcomm® Hexagon™ QDSP6 v66 ML accelerator for neural network applications
Wi-Fi	Qualcomm QCN9074 Wi-Fi 6 (802.11a/g/n/ac/ax), operating on either 2.4 GHz or 5/6 GHz, with 2x4 (2 transmit chains and 4 receive chains) MU-MIMO, 20/40/80/160 MHz; 2.4 GHz up to 29 dBm, 5/6 GHz up to 26 dBm RF output power per chain; Qualcomm WCN3980 Wi-Fi 5 (802.11a/g/n/ac), operating on either 2.4 GHz or 5 GHz with 1x1 MU-MIMO 20/40/80 2.4 GHz up to 16dBm; 5 GHz 16dBm RF output power per chain
USB	USB 2.0, USB 3.0
Ethernet	RGMII
Interfaces	DMIC; UART; SPI; I2C; GPIO; FAN for active cooling
Push buttons	x1 Reset, x1 USB Boot, x1 GPIO
Slide-Switch	x1 Cut USB0 Power for USB recovery mode, x1 GPIO
LEDs	x3 GPIOs programmable, x1 power, x1 USB0, x1 USB1

SW Feature List

- Wi-Fi broadcast with FEC (Forward Error Correction)
- Narrow channels
- Wide frequency ranges
- Fast frequency shifting
- Easy USB configuration
- OpenHD support

Dimensions

