

Komikan is a dual-band 802.11ac Wave2 module with BT v4.1 support. Two integrated radios (2.4 and 5GHz) can achieve up to 1.166Gbps data rates and are backed by a powerful 1GHz MIPS24Kc CPU. The module is in LGA (land grid array) form and is ideal for designs restricted by space. Komikan does not require heat-sink like other 802.11ac Wave2 modules and has low power consumption specs. It has multiple I/O interfaces to connect peripherals and comes with OpenWRT Linux operating system.

## Quick specs

- Wi-Fi 5 (802.11a/n/ac Wave2) 5GHz with 2x2 MU-MiMo, 866.7Mbps data-rate
- Wi-Fi 4 (802.11b/g/n) 2.4GHz, 300Mbps data-rate
- Bluetooth 2.1/3.0/4.1
- 32 MB FLASH, 128 MB RAM
- OpenWRT Linux flash image and source code are available for download on [www.8devices.com/wiki\\_komikan](http://www.8devices.com/wiki_komikan)
- CPU – RTL8197FS (1 GHz CPU based on MIPS 24Kc core) + RTL8822BEH
- 22 dBm per chain RF output power
- Small form factor – 37.5 by 21.3mm
- Surface mountable (LGA form), single side design
- Available interfaces – 44 x GPIO, 2 x USB 2.0 host, 4 x UART (one for BT), RGMII, 2 x SPI, PWM, MDIO, eMMC, JTAG, 2 x I2S, PCM, 2 x I2C, P-NAND, 100 Base-T

# Features

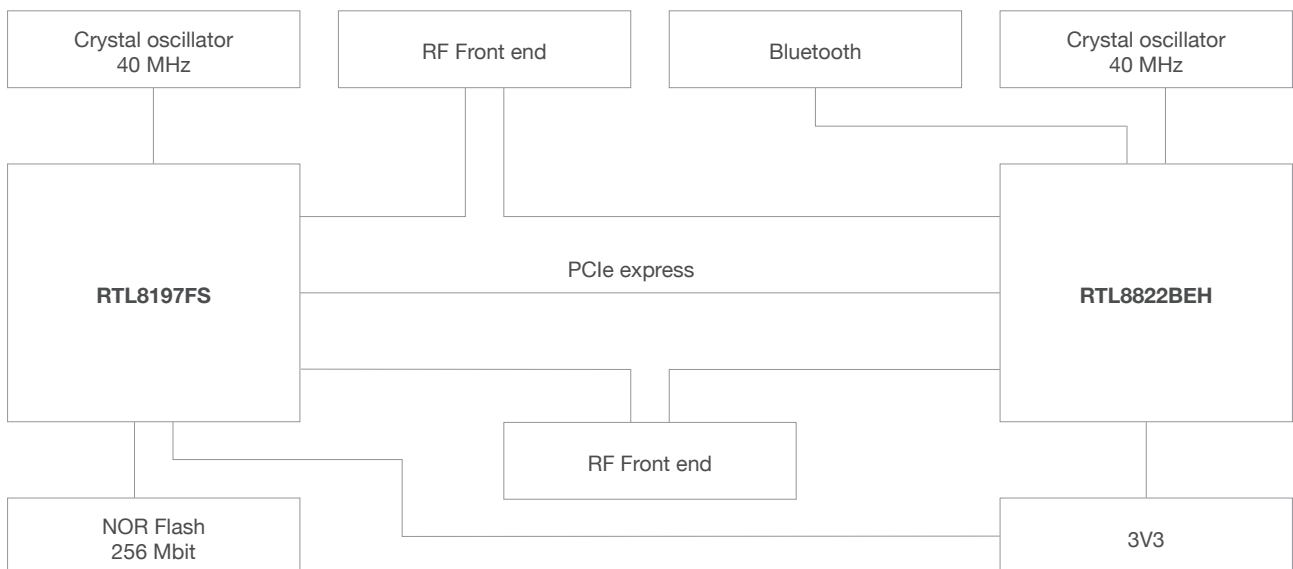
## KOMIKAN FEATURES

Feature list	
<b>Integrated core</b>	MIPS 24Kc core with 1000MHz maximum clock frequency
<b>Memory</b>	DRAM 128MB, NOR SPI FLASH 32MB
<b>Wi-Fi</b>	Wi-Fi 4 (802.11 b/g/n) 2.4GHz 20/40 MHz (2x2), Wi-Fi 5 (802.11 b/g/n/acWave2) 5GHZ 20/40/80MHz with 2x2 MU-MiMo Bluetooth 2.1/3.0/4.1
<b>Power supply</b>	3.3V
<b>Peripherals</b>	44 x GPIO, 2 x USB 2.0 host, 1 x UART (console), 2 x HS UART, 1 x HS UART (Bluetooth), 1 x RGMII 2 x SPI, 1 x PWM, 1 x MDIO, 1 x eMMC, 1 x JTAG, 1 x I2S, 1 x PCM, 2 x I2C, 1 x P-NAND, 100 Base-T

## Block diagram

The following figure provides a basic overview of the Komikan module.

### KOMIKAN MODULE BLOCK DIAGRAM

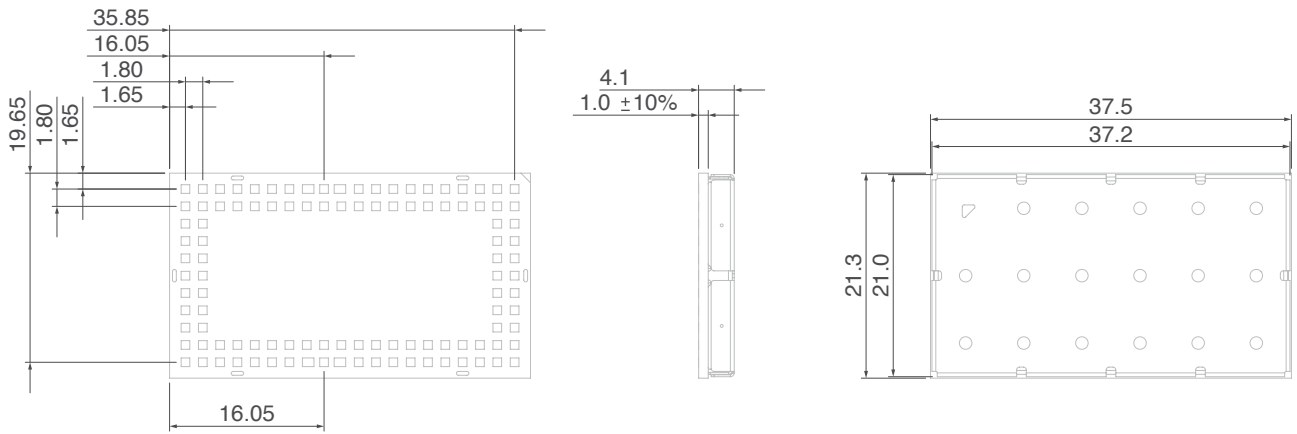


# Module pinout and pin description

## PIN ASSIGNMENTS

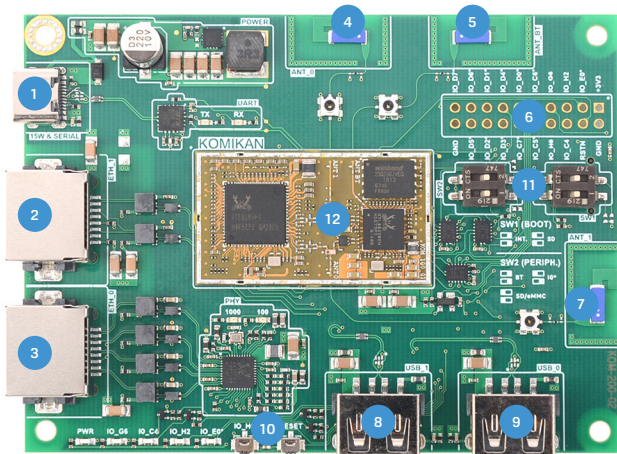


# Mechanical characteristics

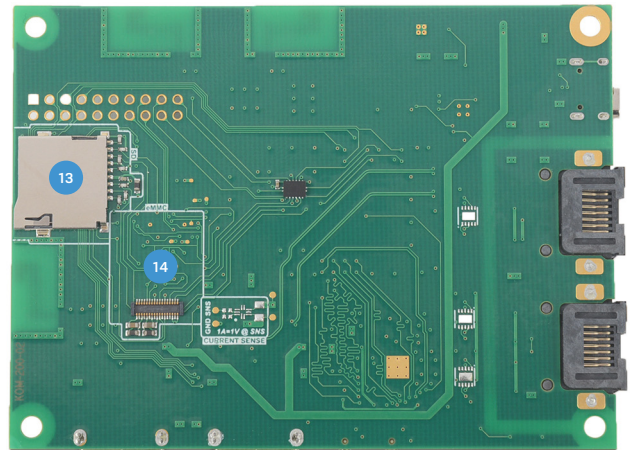


# Development kit

DEVELOPMENT BOARD TOP SIDE



DEVELOPMENT BOARD BOTTOM SIDE



DEVELOPMENT BOARD DETAILS

Nr	Description
1	USB – C (Power supply, UART console)
2	Ethernet port 100/10 Mbps
3	Ethernet port 1000/100/10 Mbps
4	WiFi antenna (2.4/5G)
5	Bluetooth antenna
6	GPIO header
7	WiFi antenna (2.4/5G)
8	USB type A (2.0)
9	USB type A (2.0)
10	Buttons (Reset, GPIO)
11	Dip switches (bootstrap and peripheral selection)
12	Komikan module
13	SD card reader
14	eMMC module connector

DEVELOPMENT BOARD SWITCHES

SW1 (boot)	Position	
Internal	0	1
	0	1
SD	1	0
	1	0

SW2 (periph)	Position	
BT	0	1
	0	1
SD/eMMC	1	0
	1	0
GPIO	1	0
	0	1