Rafael Micro

SubG Wake on Radio guide

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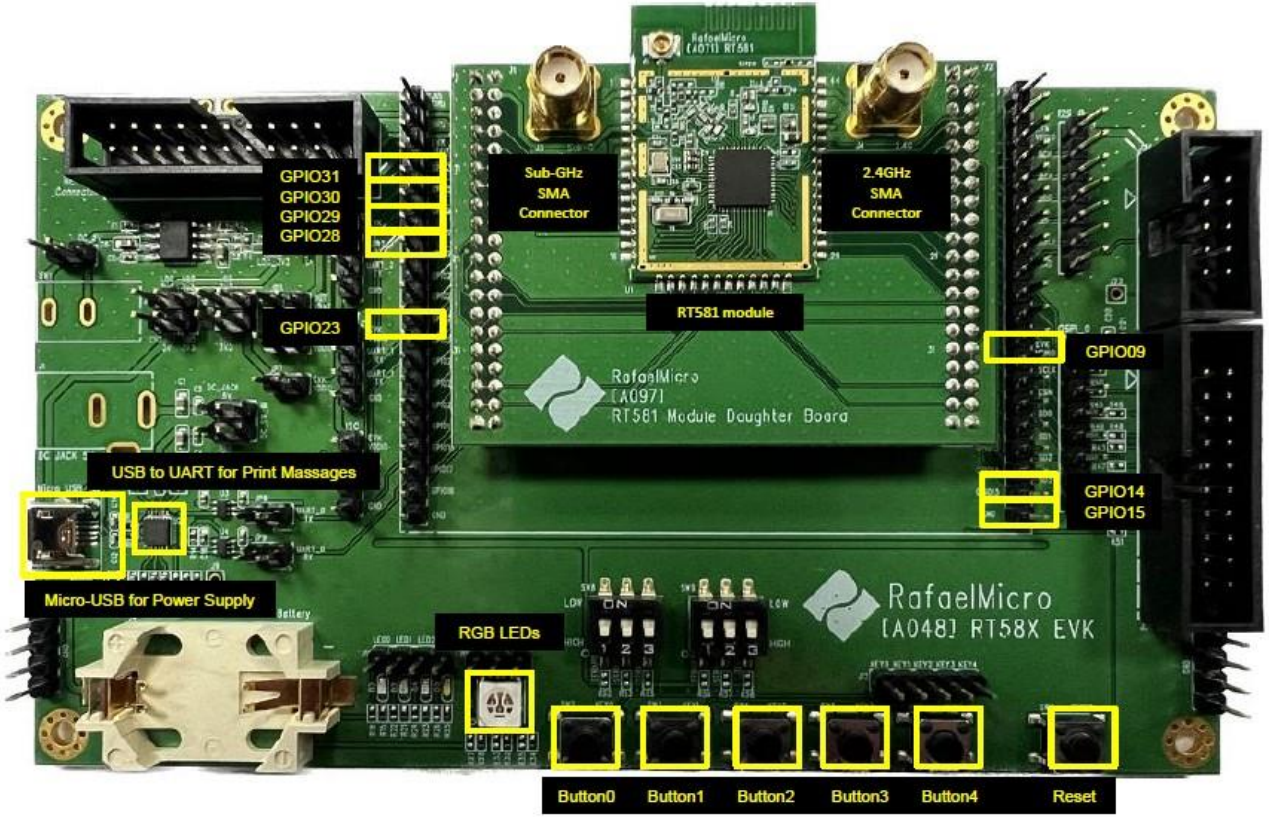
Michaelango, Leonardo da Vinci and Rafael (Raffaello Sanzio in Italian) are the famous three Masters of the Italian Renaissance.

They creatively excelled in both science and art so their works influenced the future of Western culture.

Radio frequency technology is commonly called RF thus we have adopted Rafael's name for its R and F.

Rafael Micro | RT581 EVK Button and Pins Definition

- The following image shows the GPIOs used by this sample and their corresponding positions.



Rafael Micro | Parameter Mapping Table

- Frequency Mapping Table

GPIO	Frequency(MHz)
31	470
30	474
29	478
28	482
23	486
14	490
9	494

- Data Rate Mapping Table

Switch	Data Rate(Kbps)
Button0 (GPIO0)	6.25
Button1 (GPIO1)	50
Button2 (GPIO2)	100
Button3 (GPIO3)	200
Button4 (GPIO4)	300

- Transfer Mapping Table

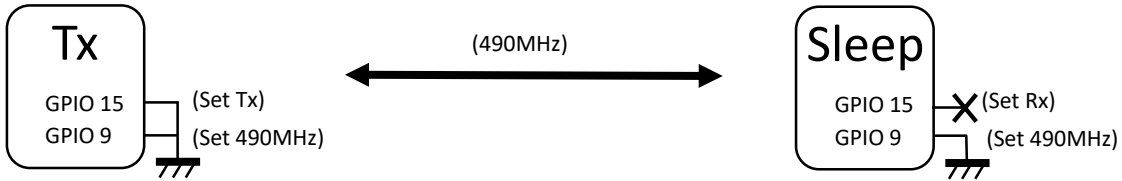
GPIO 15 State	Transfer
0	Tx mode
1	Sleep mode

- Tx power

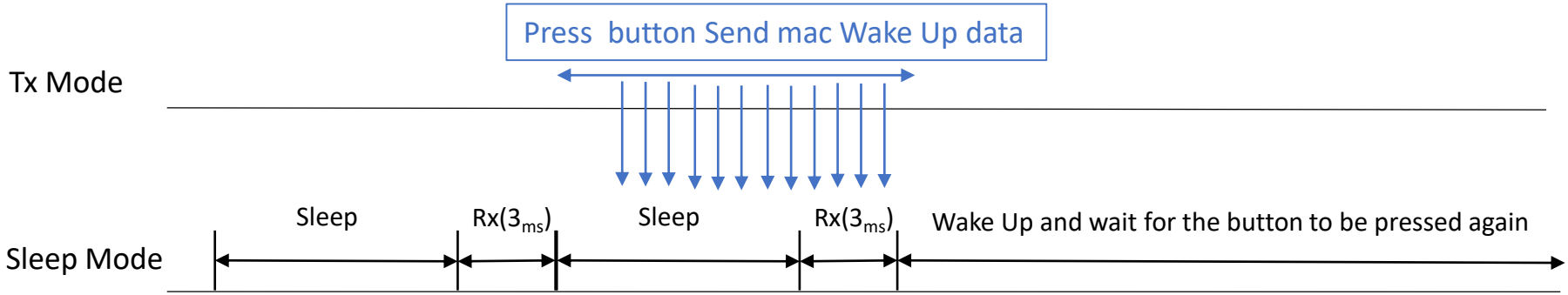
Tx Power	20 dBm

- EVK1 (TX Mode)
  - Connect GPIO 15 to ground.
  - Choose the frequency band, then connect the corresponding GPIO to ground.
  - Wait for EVK2 to enter sleep mode.
  - Once EVK2 is in sleep mode, press the same data rate button to send the wakeup message.
  - The red LED will turn on to show that the transmit test has started.

- EVK2 (Sleep Mode)
  - GPIO 15 should be left floating.
  - Choose the frequency band, then connect the corresponding GPIO to ground.
  - Choose the data rate and press the button to start the wake-on-radio protocol.
  - If the blue LED is off, the system is running; if it lights up, it means the system has been awakened.



- Sleep time default 1 Second
- Button 0 (6.25K) Rx time default 35 millisecond
- Button 1 (50K) Rx time default 8 millisecond
- Button 2 (100K) Rx time default 6 millisecond
- Button 3 (200K) Rx time default 4 millisecond
- Button 4 (300K) Rx time default 3 millisecond



Rafael Micro | average power consumption Table

Switch	Data Rate(Kbps)	Rx time	Sleep time	average power consumption
Button0 (GPIO0)	6.25	35 ms	1 s	468 uA
Button1 (GPIO1)	50	8 ms	1 s	113 uA
Button2 (GPIO2)	100	6 ms	1 s	103 uA
Button3 (GPIO3)	200	4 ms	1 s	70 uA
Button4 (GPIO4)	300	3 ms	1 s	58 uA

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Thank You

Rafael Micro create RF integrated circuits with this same aspiration by continuously pursuing innovation and unique creativity.