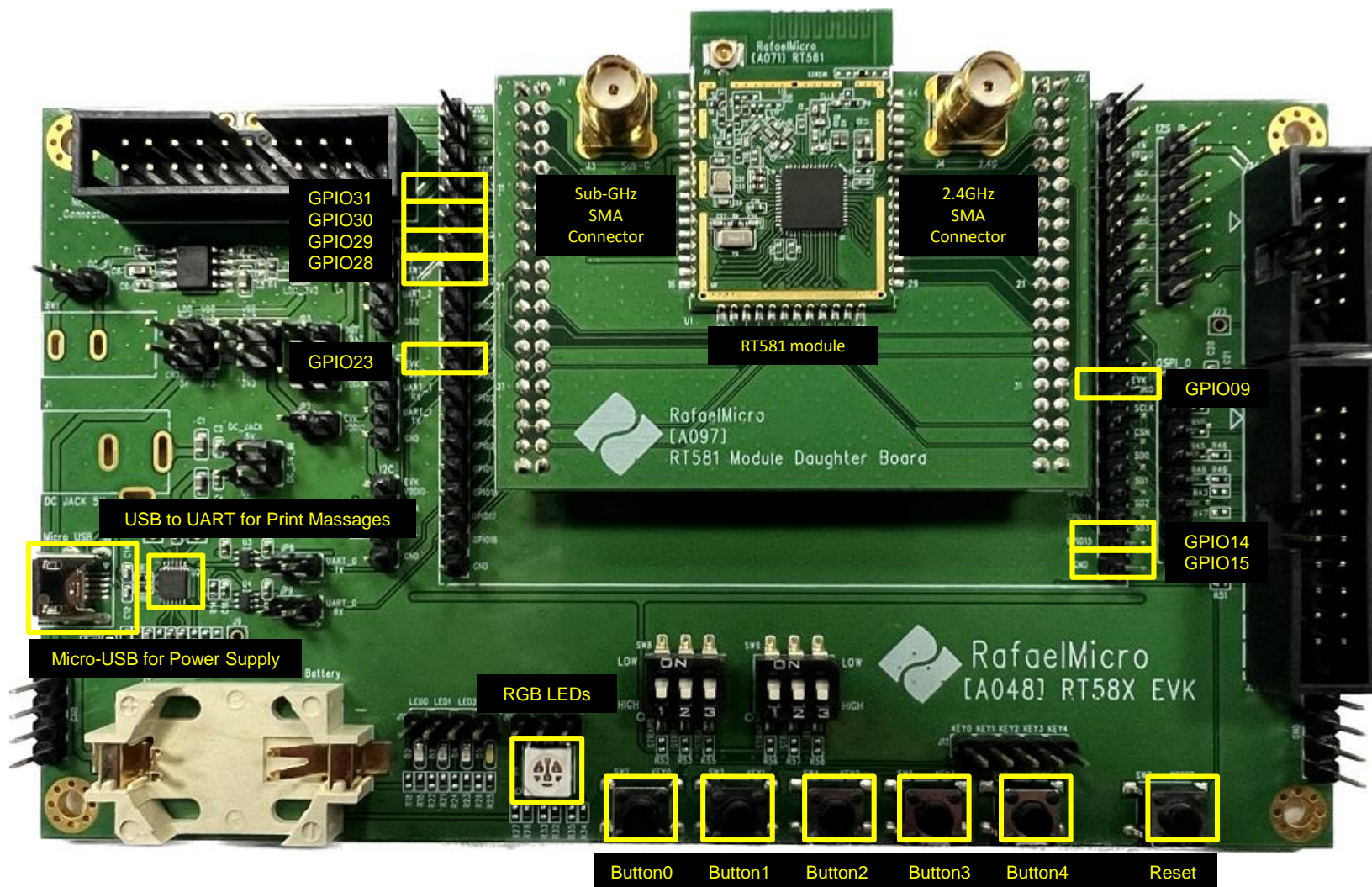




# **RT581 SubG Field Test User Guide**

*V1.0  
Prepare By Rafael*

# RT581 EVK Buttons and Pins Definition



# RT581 SubG Parameter Selection

Frequency (MHz)	903 / 907 / 911 / 915 / 919 / 923 / 927 (7 Channels)
Data Rate (kbps)	6.25 / 50 / 100 / 200 / 300
Tx Power (dBm)	20

**Select frequency with these IO**

GPIO	Frequency (MHz)
31	903
30	907
29	911
28	915
23	919
14	923
9	927

**Select frequency with these Buttons**

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

**Select frequency with GPIO15**

GPIO	Tx / Rx
15	0: Rx, 1: Tx



- Connect GPIOxx to GND before Power on or Rest to select the frequency to test  
(ex. connect GPIO28 to GND frequency is 915MHz )
- Connect GPIO15 to GND before Power on or Rest as SubG Rx  
(ex. connect GPIO15 to GND as Rx, GPIO15 NC as Tx )





## RT581 SubG Tx Test Procedure

- Press Button0~4 once to select the data rate to test (ex. Press Button0 once to select 6.25Kbps to test )
- Press the same button second time to start Tx (ex. Press button0 second time to start Tx)
- Press the same button third time to stop Tx (ex. Press button0 third time to stop Tx)

```
VT COM48 - Tera Term VT
文件(F) 編輯(E) 設定(S) 控制(O) 視窗(W) 幫助(H)
Test Case: RFB_PCI_FSK_BURST_TX_TEST
RFB Firmware version: 20221129
Tx: OQPSK 6.25K, RFB KEYING OQPSK Press once
Tx (len:109)done total:1 Fail:0 CaFail:0 NoAck:0 TxFail0
Tx (len:109)done total:2 Fail:0 CaFail:0 NoAck:0 TxFail0
Tx (len:109)done total:3 Fail:0 CaFail:0 NoAck:0 TxFail0
Tx (len:109)done total:4 Fail:0 CaFail:0 NoAck:0 TxFail0
Tx: OQPSK_6.25K, RFB_KEYING_OQPSK Press third time
```



## RT581 SubG Rx Test Procedure

- Press Button0~4 once to select the data rate to test (ex. Press Button0 once to select 6.25Kbps to test )
- Press the same button second time to start Rx (ex. Press button0 second time to start Rx)
- Press the same button third time to stop Rx (ex. Press button0 third time to stop Rx)

```
COM4 - Tera Term VT
文件(F) 編輯(E) 設定(S) 控制(O) 視窗(W) 幫助(H)
Test Case: RFB_PCI_FSK_RX_TEST
RFB Firmware version: 20221129
TRx: OQPSK 6.25K, RFB KEYING OQPSK
RX (len:108) done, Success:1 Fail:0
RX (len:108) done, Success:2 Fail:0
RX (len:108) done, Success:3 Fail:0
RX (len:108) done, Success:4 Fail:0
TRx: OQPSK 6.25K, RFB KEYING OQPSK
```

Press once

Press second time

Press third time



## RT581 SubG Tx LED Indication

- Tx / Rx frequency, data rate must be the same
- Press the same button second time to start Tx and blue LED turn on  
(Tx sends 300 packets each time)
- Check the Packet ACK Rate(PAR) after 300 packets of Tx completed
  - $PAR > 30\%$  red LED turn on (Fail)
  - $PAR < 30\%$  green LED turn on (Pass)



## RT581 SubG Rx LED Indication

- Press the same button second time to start Rx and red LED turn on
- If Rx does not receive any signal for more than 1 second, the red LED flashing
- If Rx receives the signal again, the red LED stays on
- Stop Rx function red LED turn off



# Thank You

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