PHYPLUS

Offline Writer User Guide

Version 2.1

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Security: Public

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Revision History

Revision	Author	Participant	Date	Description
V1.0	HQ		06/13/2018	Draft
V2.0	HQ		06/24/2018	1. Update the configuration information 2. Update on the cause of failure
V2.1	HQ		07/01/2019	Add FCT related content

Table of Contents

Figures and Tables

1 Hardware overview

This hardware consists of five parts, external device under test (DUT), test antenna, panel, DIP switch and buttons, as shown in Figure 1:

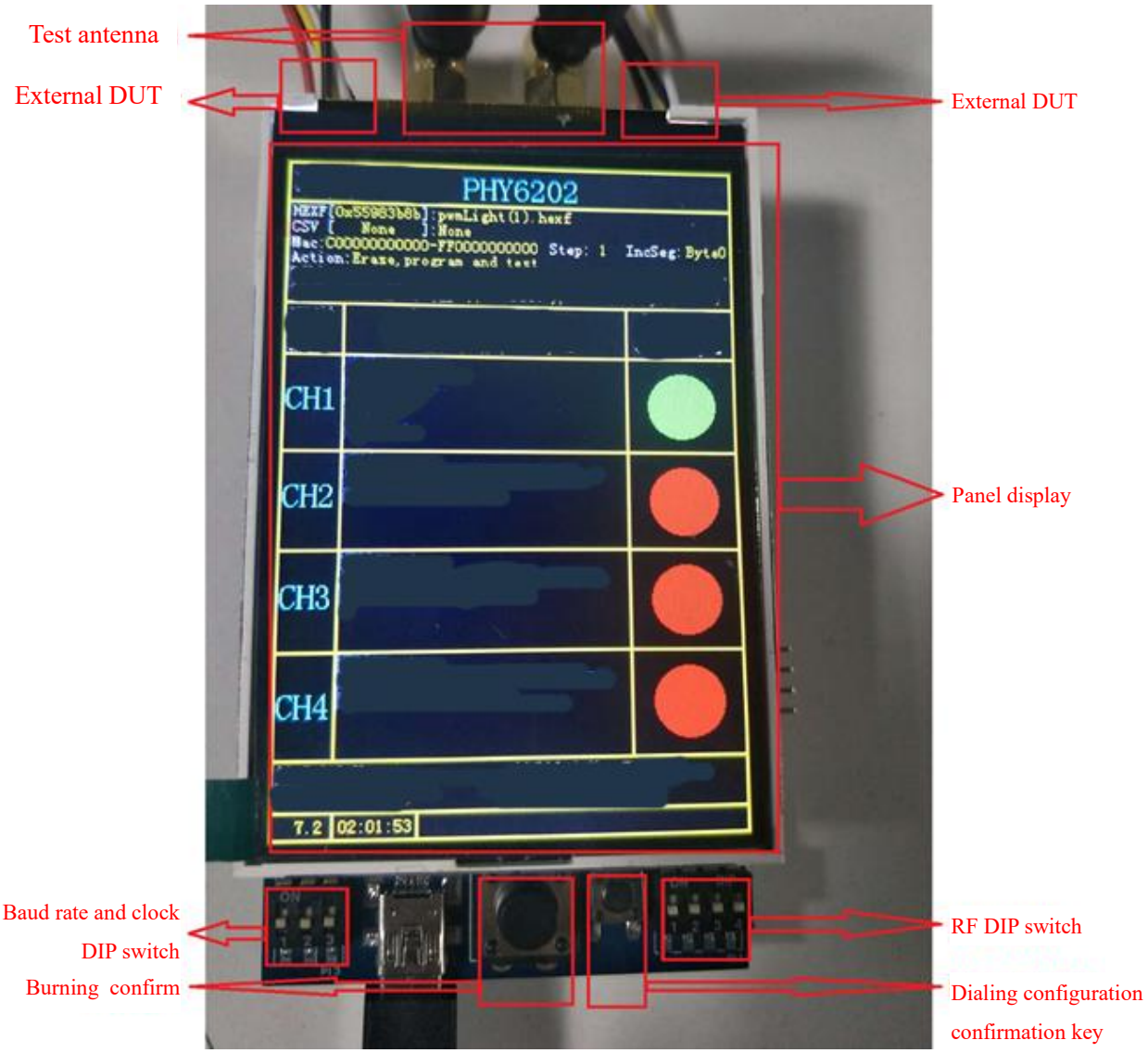


Figure 1: Correspondence between ADC Channel and GPIO

- External DUT is used to connect the device which will be tested and programmed
- External antenna is used to test RF, and it needs to cooperate with RF DIP switch
- Panel displays configuration details, test information and results and other information (see Chapter 2 for details)
- DIP switch includes: baud rate DIP switch, clock (DUT clock) DIP switch, RF channel DIP switch (see Chapter 3 for details)
- Keys include: burning confirmation key and dialing configuration confirmation key (see Chapter 4 for details)

2 Panel display

Panel information includes: configuration information, burning information, result information, progress bar and time, as shown in Figure 2:

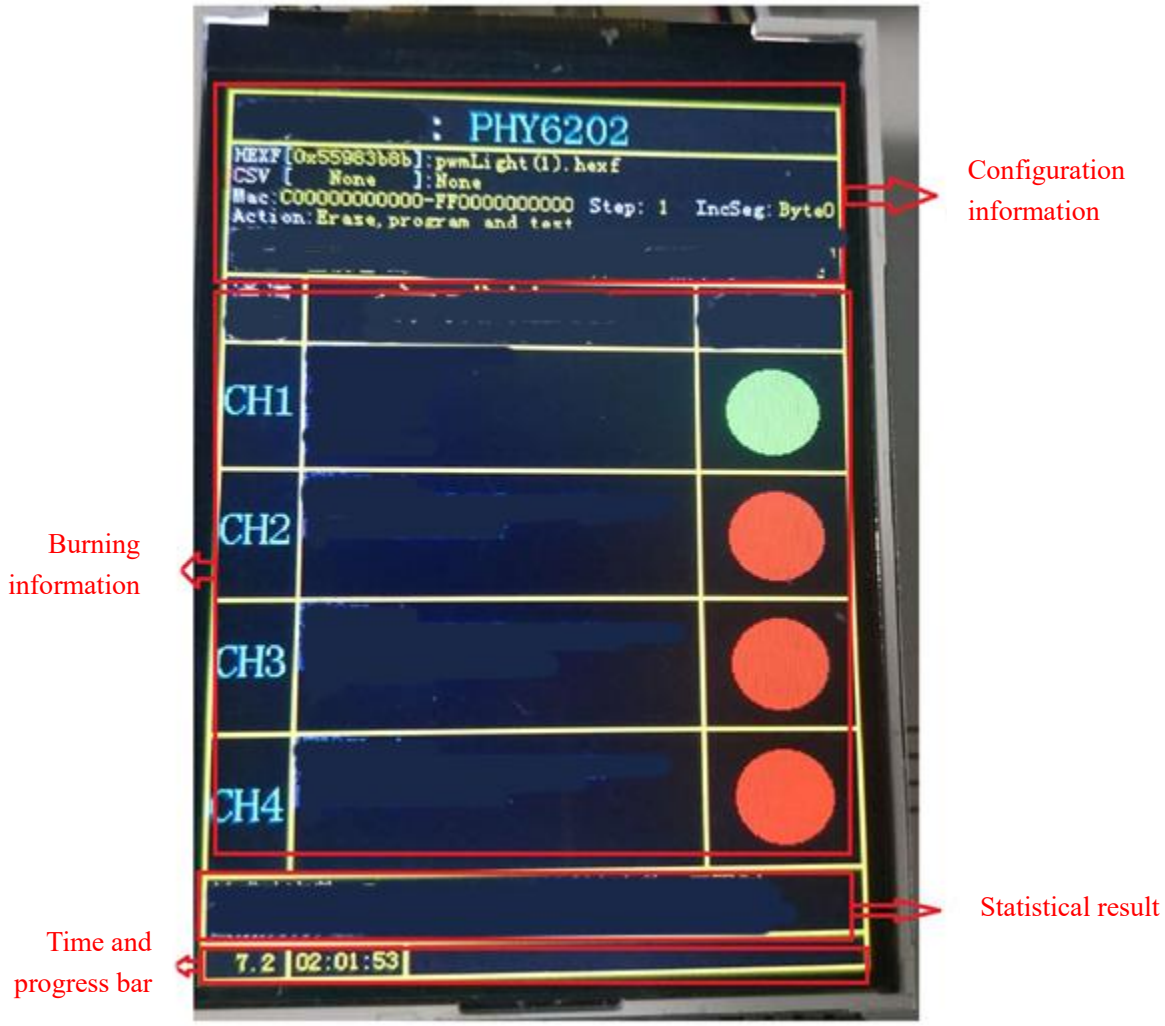


Figure 2: Panel Information

2.1 Configuration information

- Chip name: the chip name of the burned DUT, configured by Phy+ PhyWriter
- HEXF file check code: application file check code, configured by Phy+ PhyWriter
- CSV file check code: configuration file check code, configured by Phy+ PhyWriter
- Mac: mac address range, configured by Phy+ PhyWriter
- Step: mac address step value, configured by Phy+ PhyWriter
- IncSeg: The lowest byte of mac address increase, configured by Phy+ PhyWriter
- Action: burning project, configured by Phy+ PhyWriter
- Clock: the system clock of the DUT, configured by the DIP switch
- Baud rate: burning speed, uart baud rate, configured by DIP switch
- Band 1: Tested RF band 1 is configured by the DIP switch

- Band 2: Tested RF band 2 is configured by the DIP switch
- Calibration: Whether the writer has been calibrated, factory sets
- Buzzer: buzzer switch, configured by Phy+ PhyWriter
- FCT: FCT mode ON/OFF, configured by Phy+ PhyWriter
- Version: current firmware version number, factory settings

2.2 Burning information

Divided into four channels, including number, burning information and burning result
When burning, the corresponding item information will be printed out, as shown in Figure 3.

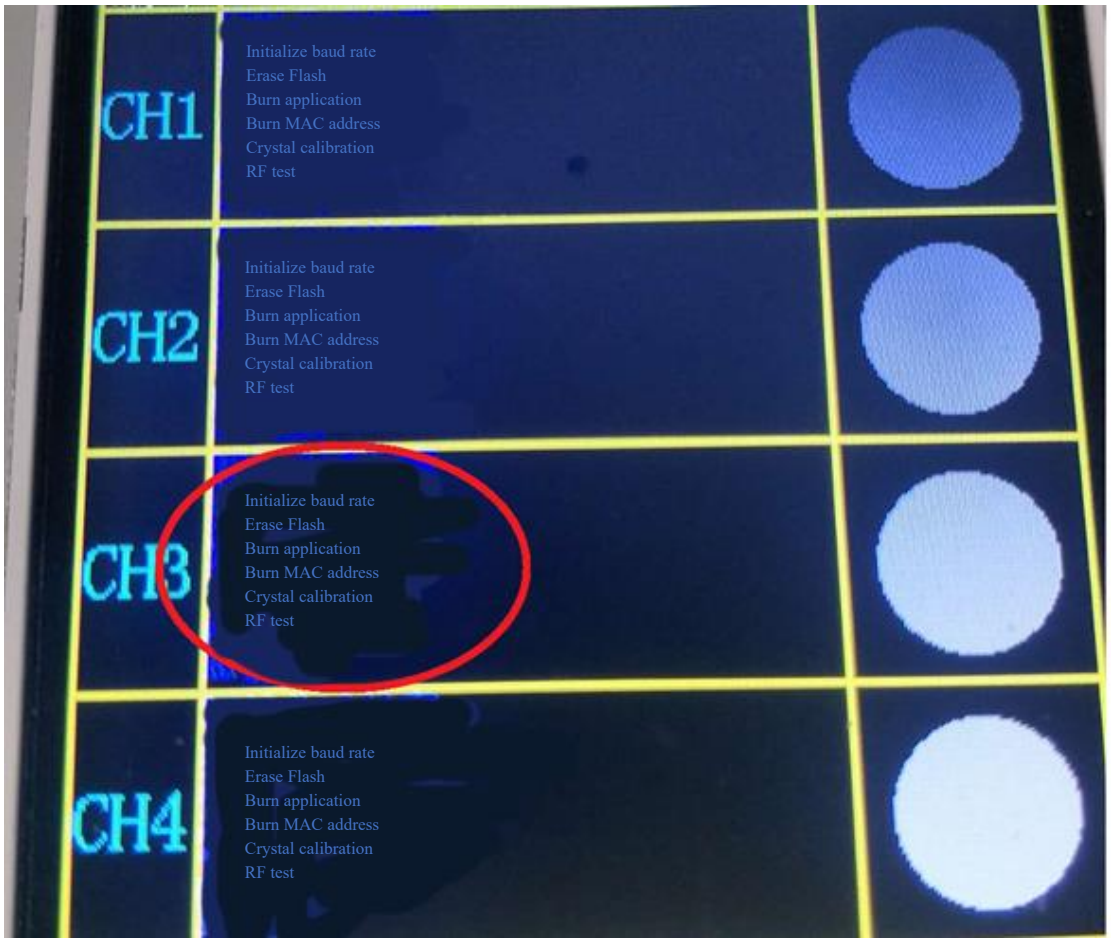


Figure 3: Burning Information

Programming is successful, and the result bar is green, as shown in Fig. 4. If the buzzer is turned on, a beep will be emitted at the end of the burning.

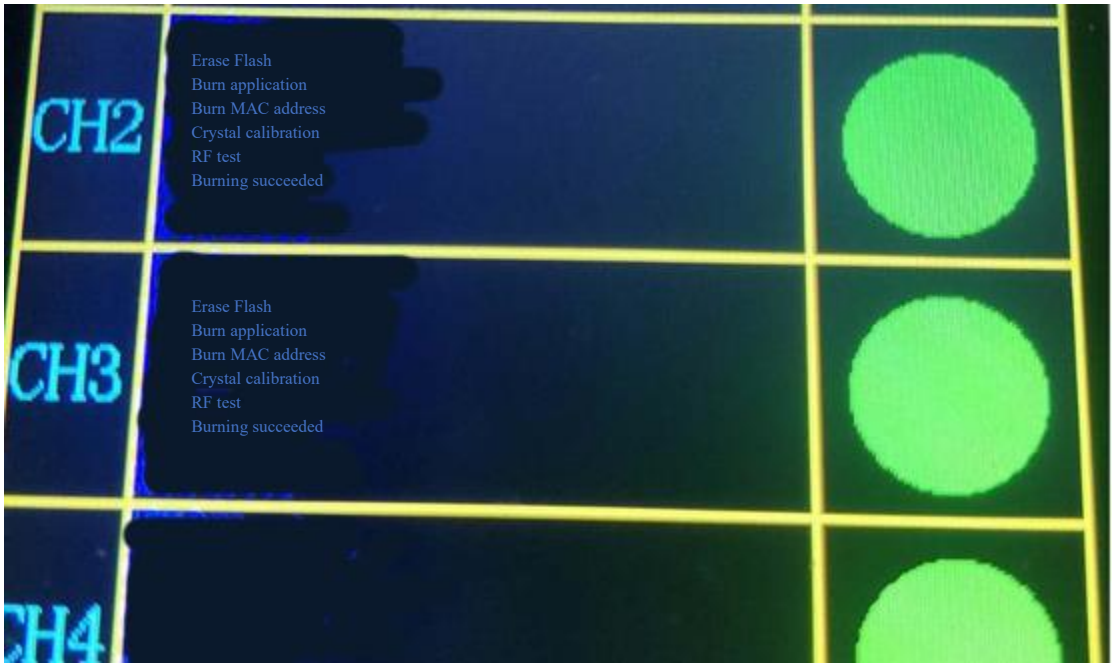


Figure 4: Burning Succeeded

If the burning fails, the result bar is red, as shown in Fig. 5. If the buzzer is turned on, there will be three rapid beeps after the burning is over.

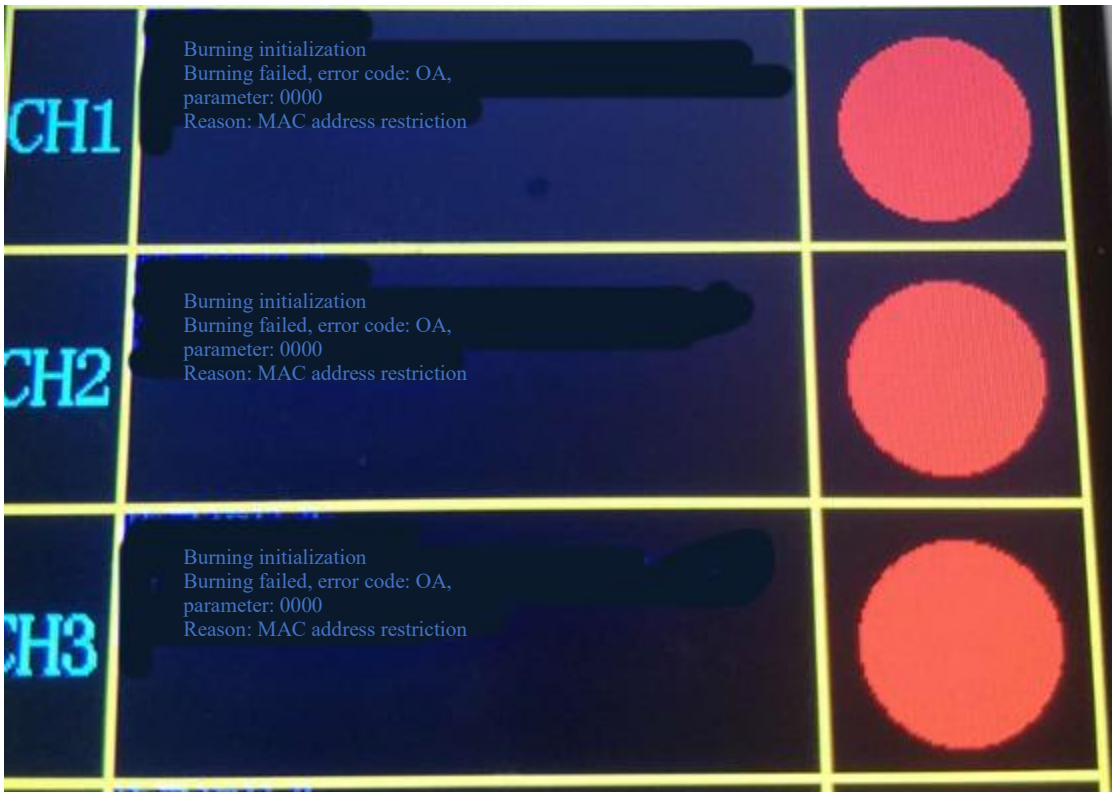


Figure 5: Burning Failed

Reasons for burning failure are shown in Table 1:

Error code	Cause for error
0x01	EEPROM hardware error
0x02	SPIFLASH hardware error
0x03	Burning times exceed the limit
0x04	Device is not calibrated
0x05	Error in setting information
0x06	Invalid HEX file
0x07	HEX file CRC32 error
0x08	CSV file CRC32 error
0x09	IC model error
0x0A	MAC address restrictions
0x0B	CSV profile restrictions
0x0C	No devices detected
0x0D	Erase failed
0x0E	4K erase failed
0x0F	Cpnum command failed
0x10	Cpbin command failed
0x11	HEX file download failed
0x12	HEX file verification failed
0x13	Failed to write FLASH
0x14	Read operation failed
0x15	Serial port baud rate change failed
0x16	DUT frequency change failed
0x17	DUT FIFO change failed
0x18	Failed to write register
0x19	Failed to read register
0x1A	PWM output failed
0x1B	Frequency offset error
0x1C	Crystal calibration failed

0x1D	Golden did not detect the device
0x1E	RF test did not receive data
0x1F	RF test failed
0x20	Error in writing FCT configuration
0x21	Error in reading FCT configuration

Table 1: Failure Code

2.3 Statistical results

Total successful times: the total number of successful burning after downloading the configuration (including power down)
Current successful times: the number of successful burning
Total remaining times: remaining times
Current failure times: the number of failed burning attempts

2.4 Time and progress bar

As shown in Figure 6.

Figure 6: Time and Progress Bar

- 1 - Burning time
- 2 - Time for power-on operation
- 3 - Burning progress

3 DIP switch configuration

The DIP switch includes three parts: baud rate, clock and RF channel, the distribution is shown in Figure 7, the ON side represents 1, and the opposite site represents 0.

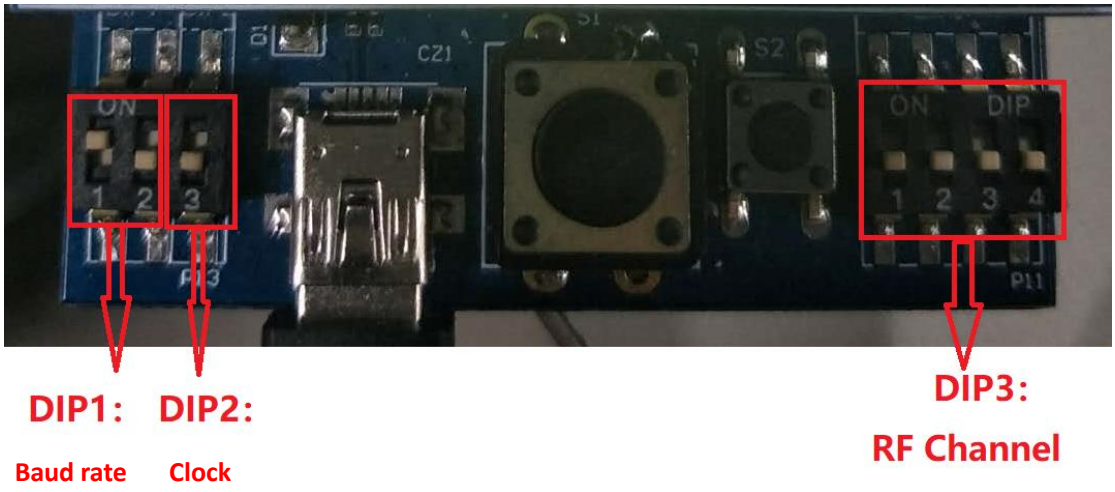


Figure 7: DIP Switch

3.1 Baud rate configuration

DIP1 value (from right to left)	Baud rate (bit/s)
00	115200
01	500000
10	1000000
11	1500000

Table 2: Baud Rate Configuration

3.2 Clock configuration

DIP2 value	Clock (MHz)
0	16
1	48

Table 3: Clock Configuration

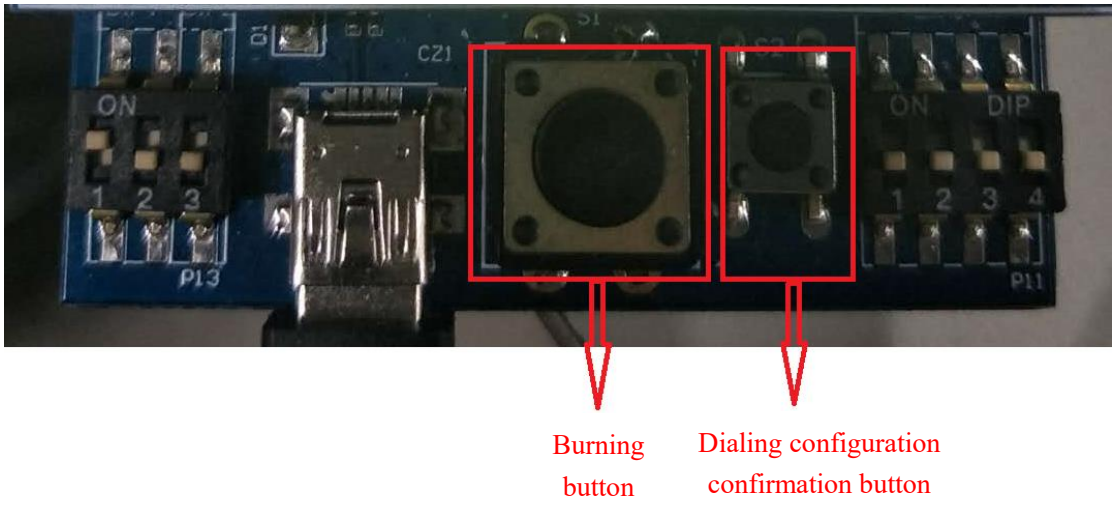
3.3 RF Channel configuration

DIP3 value (from right to left)	Band 1 (MHz)	Band 2 (Band 2)
0000	2403	2406
0001	2409	2412
0010	2419	2422
0011	2425	2428
0100	2435	2438
0101	2441	2444
0110	2451	2454
0111	2457	2460
1000	2467	2470
1001	2473	2476
1010	2483	2486
1011	2489	2492
1100	2499	2502
1101	2505	2508
1110	2515	2518
1111	2521	2524

Table 4: RF Channel Configuration

4 Buttons

The buttons include the burning button and the DIP switch configuration confirmation button, as shown in Figure 8.



4.1 Burning button

PhyWriter is ready, press this button to start burning.

4.2 Confirmation of dialing configuration

After the DIP switch configuration is completed, press this key so that the configuration takes effect, and the new configuration information will be displayed on the panel.