Secure boot command:

1. **Only `app.bin` and `bootloader.bin` are signed during secure boot, the partition table is not signed.**
2. **Use the "`espsecure.py generate_signing_key secure_boot_signing_key.pem --version 2`" command to get the secure boot key.**

```
espsecure.py generate_signing_key secure_boot_signing_key.pem --version 2
```

3. **Ues the "`espsecure.py sign_data --version 2 --keyfile secure_boot_signing_key.pem --output firmware_signed.bin firmware-unsigned.bin`" commad to get the signed firmware.**

```
espsecure.py sign_data --version 2 --keyfile secure_boot_signing_key.pem --output
firmware_signed.bin firmware-unsigned.bin
```

4. **Use the "`espsecure.py digest_rsa_public_key --keyfile secure_boot_signing_key.pem -o secure-bootloader-key.bin`" command to get the summary of the secure_boot_signing_key .**

```
espsecure.py digest_rsa_public_key --keyfile secure_boot_signing_key.pem -o
secure-bootloader-key.bin
```

5. **Ues the "`espefuse.py burn_key secure_boot_v2 secure-bootloader-key.bin`" command to write the summary of the secure_boot_signing_key to Efuse.**

```
espefuse.py burn_key secure_boot_v2 secure-bootloader-key.bin
```

6. **Use the "`espefuse.py -p COM4 burn_efuse ABS_DONE_1`" command to enable secure boot .**

```
 espefuse.py -p COM4 burn_efuse ABS_DONE_1
```

Flash Encryption command:

1. **Use the "`espsecure.py generate_flash_encryption_key my_flash_encryption_key.bin`" command to get the flash_encryption_key.**

```
espsecure.py generate_flash_encryption_key my_flash_encryption_key.bin
```

2. **Ues the follows commad to encryption the firmware**

```
espsecure.py encrypt_flash_data --keyfile my_flash_encryption_key.bin --address
0x1000 -o key_bootloader.bin bootloader.bin
```

```
espsecure.py encrypt_flash_data --keyfile my_flash_encryption_key.bin --address
0xa000 -o key_partition-table.bin partition-table.bin
```

```
espsecure.py encrypt_flash_data --keyfile my_flash_encryption_key.bin --address
0x20000 -o key_hello-world.bin hello_world.bin
```

3. **Use the "`espefuse.py burn_key my_flash_encryption_key.bin`" command write the my_flash_encryption_key.bin to Efuse .**

```
espefuse.py burn_key my_flash_encryption_key.bin
```

4. **Ues the "`espefuse.py burn_efuse FLASH_CRYPT_CONFIG 0xF FLASH_CRYPT_CNT 1` " command to enable the flash encryption.**

```
espefuse.py burn_efuse FLASH_CRYPT_CONFIG 0xF FLASH_CRYPT_CNT 1
```

- **To test PCBA hardware, you can use the production test tool .**
- **The esptool provides command support, please see esptool.py user guide.**