The following software workflow is based on the OTA_internal_flash project of PRBMD00

1. First of all, take a brief look at the document PHY62XX_OTA_Note_v2.0.pdf. This document explains the entire OTA upgrade related process. Combined with this document, you can basically understand the entire OTA process by looking at the source code and then typing the log. Now, for some things not mentioned in the document, make the following records.

2. The OTA_internal_flash project of 6212 supports single bank and dual bank. Switching these two modes defines CFG_OTA_BANK_MODE through the macro definition of MDK

3. Under normal circumstances, the Bluetooth project, such as the simplebleperipheral routine, will be run first, and the ota service will be added to this project. The steps are shown in the pdf document flow. First, the command OTAAPP_CMD_INFO sent by the mobile phone will be received, and then the OTAAPP_CMD_START_OTA command will be received. In this command, special attention should be paid to the set_ota_mode interface. This interface will write the ota mode to the OTA_MODE_SELECT_REG register. This register is in the ota project will be used in. The next step is to reset and jump to the OTA project.

4. In the main function of the ota project, the otaProtocol_BootMode function will be entered after the initialization is completed. In this function, the register OTA_MODE_SELECT_REG just now is used. After reading the value of this register, jump to the corresponding case branch (at the same time, the sdk version Write to OTA_MODE_SELECT_REG, the mode data of this register will be cleared at this time). Normally, the OTA_MODE_SELECT_REG register value is OTA_MODE_OTA. At this time, there is no case branch to jump to, and the program will go to the next program, which is the ota upgrade program.

5. The ota service is also added to the ota project, and the mobile phone sends commands or data to the ota project through these services. First, it will receive the OTA_EVT_CONTROL event and enter the OTA_CMD_START_OTA command of the process_ctrl_cmd function. Under this command, you will receive some information about the upgrade, such as the number of upgraded file partitions, the byte size of each transfer, and the flash address. Then, the OTA_CMD_PARTITION_INFO command is received, and the information of a single partition is received here, such as the idx, flash address, run address, data

size, checksum, etc. of the partition. Next, the OTA_EVT_DATA event will be received, and the OTA_ST_DATA command of the process_ota_data function will be entered. In this command, the data of a single partition will be received. After receiving a partition, the data of the partition will be written to the flash, and then the OTA_CMD_PARTITION_INFO of the next partition will be received. This cycle continues until all partition data is received, the phone will send the OTA_CMD_REBOOT command to reset the device.

6. After reset, jump to the ota project, and then enter the otaProtocol_BootMode function. In the function, the same operation as step 4 will be performed. At this time, the ota_mode read is 0, then the OTA_MODE_OTA_APPLICATION command will be entered, and then the program will be loaded from flash to ram, and run the program.

7. The single bank and dual bank mode switching is selected by the mdk macro definition CFG_OTA_BANK_MODE. The difference between the two modes is that the single bank mode only writes the upgrade firmware to the fixed app bank 0 (please refer to the flash partition), while the dual bank mode In the first upgrade, the upgrade firmware will be written to app bank 0, the second upgrade will write the upgrade firmware to app bank 1, and the next time it will be written from app bank 0, and so on.