



MT7681 Uart Firmware Upgrade SOP

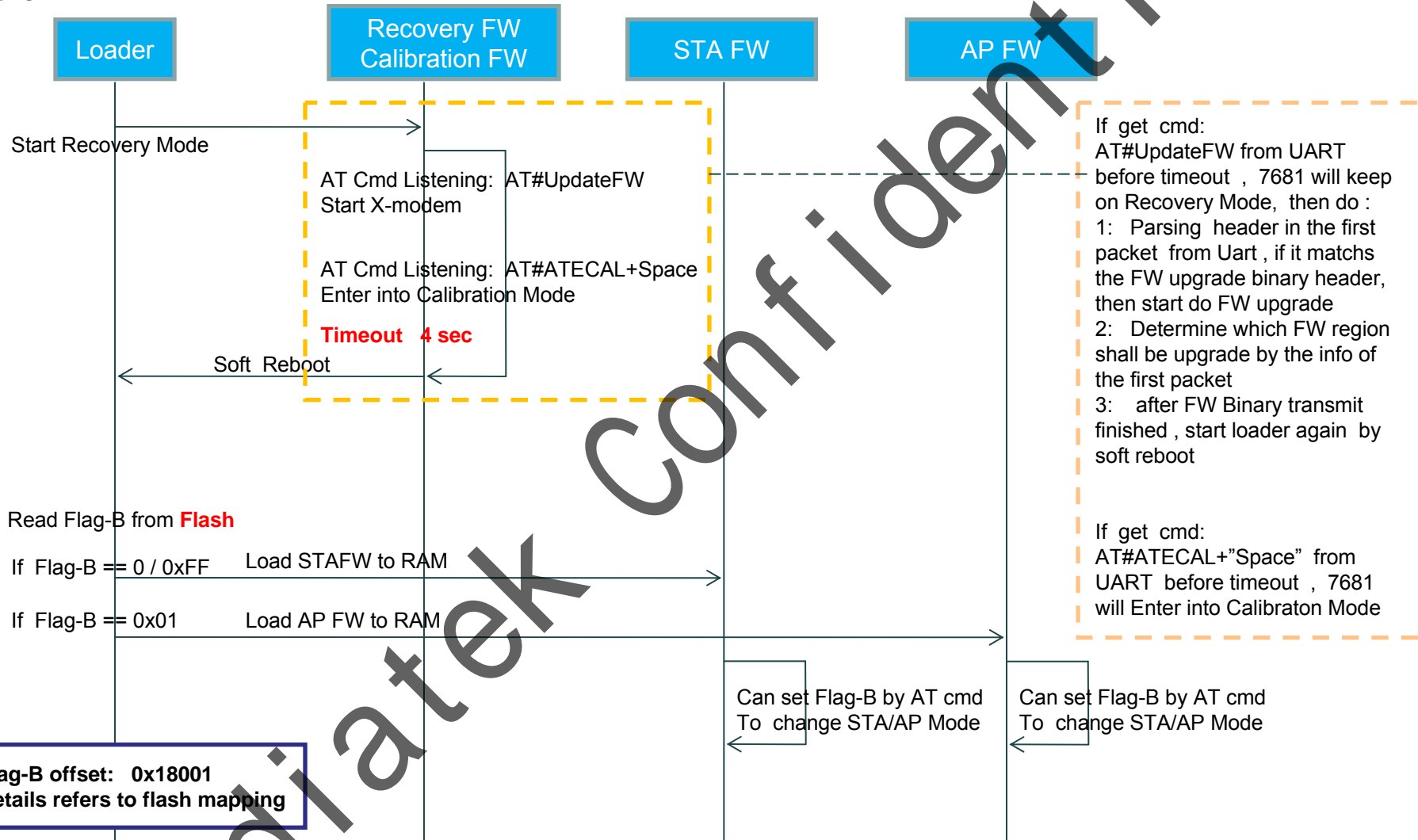
V0.06



Uart FW Upgrade Flow

Internal Use

Power On



Flash Layout

Internal Use



N is UART Update Type, This number shall be included in the update binary
To indicate which region of the Flash this binary shall be updated to

Flash Layout					
	Offset	Section	Size (KB)	HEX (Byte)	DEC Offset
1	0x0000	Loader	20	0x5000	0
	0x5000	reserved 1	4	0x1000	20480
2	0x6000	Recovery Mode FW	64	0x10000	24576
	0x16000	reserved 2	4	0x1000	90112
3	0x17000	EEPROM	4	0x1000	94208
	0x18000	Common config	4	0x1000	98304
	0x19000	Station Mode Config	4	0x1000	102400
	0x1A000	AP Mode Config	4	0x1000	106496
	0x1B000	User Config	4	0x1000	110592
	0x1C000	reserved 3	12	0x3000	114688
4	0x1F000	STA Mode FW	64	0x10000	126976
	0x2F000	reserved 4	4	0x1000	192512
	0x30000	STA Mode-XIP FW	60	0xF000	196608
	0x3F000	STA Mode-OVL FW	60	0xF000	258048
	0x4E000	reserved 5	4	0x1000	319488
6	0x4F000	AP Mode FW	64	0x10000	323584
	0x5F000	reserved 6	4	0x1000	389120
	0x60000	AP Mode-XIP FW	60	0xF000	393216
	0x6F000	AP Mode-OVL FW	60	0xF000	454656
	0x7E000	reserved 7	4	0x1000	516096
	0x7F000	Flash Write Buffer	1	0x1000	520192
	0x80000	reserved 8	0	0x0	524288

Store Loader program

loader.bin

Store Recovery Mode program

MT7681_recovery_.bin

Store Calibration Settings

MT7681E2_EEPROM layout.bin

Store Station Mode Program

MT7681_sta.bin

Store AP Mode Program

MT7681_ap.bin

Flash Write时的Data中转，
以减少RAM Buf Size

Precondition

Internal Use

- As description on the chart of "FW Boot Flow"
FW Upgrade by Uart is implemented by Recovery FW,
so FW Upgrade by Uart is only available while Loader + Recovery FW existed in Flash

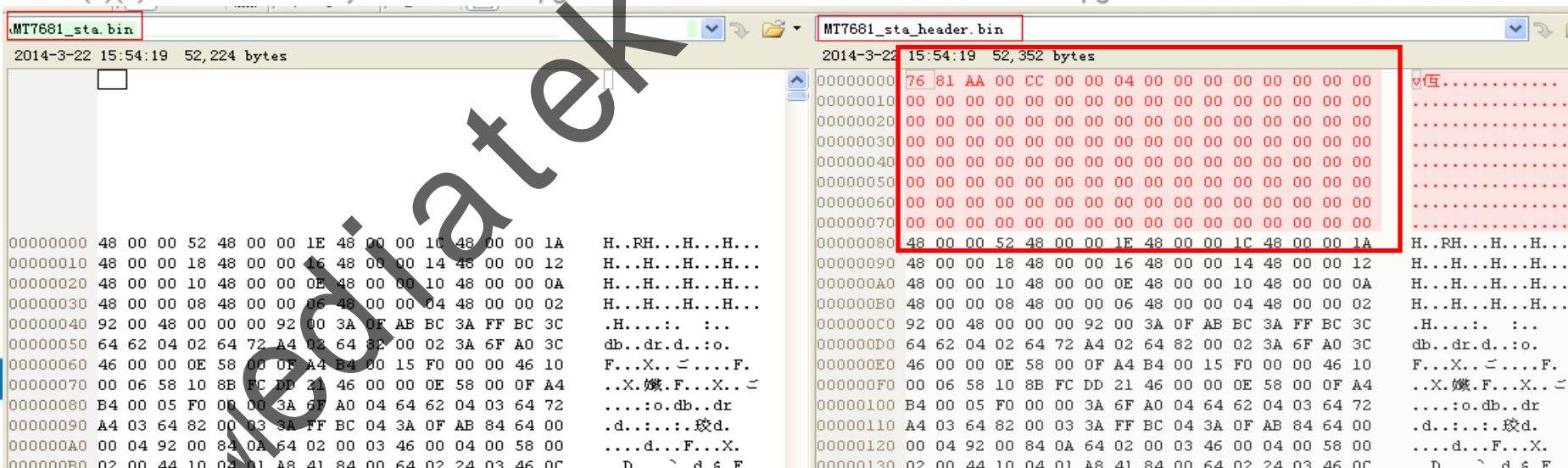
- After source code compiled, Two **types** of binary files shall be generated, one is include upgrade header, the other is not include upgrade header.

etc: MT7681_sta.bin MT7681_sta_header.bin

MT7681_sta.bin : is clean binary whose all content shall be written to STA Region of the flash
if we use flash writer to update Flash , please use this file to merge target Binary with loader.bin , EEPROM.bin
and Recovery.bin

MT7681_sta_header.bin : contains all content of the MT7681_sta.bin, and include upgrade header
if we use Uart to update Flash , please use this file

- If the XIP feature is enabled, four binary files shall be generated
- (1) MT7681_sta_ram.bin, (2) MT7681_sta_ram_header.bin,
 - (3) MT7681_sta_xip.bin, (4) MT7681_sta_xip_header.bin
- (1)(3) : are clean binary files used for flash writer FW upgrade
- (2)(4) : are the binary files include upgrade header which are used for Uart FW upgrade



Uart FW upgrade step

Internal Use

- **Step 1: MT7681 Power On**

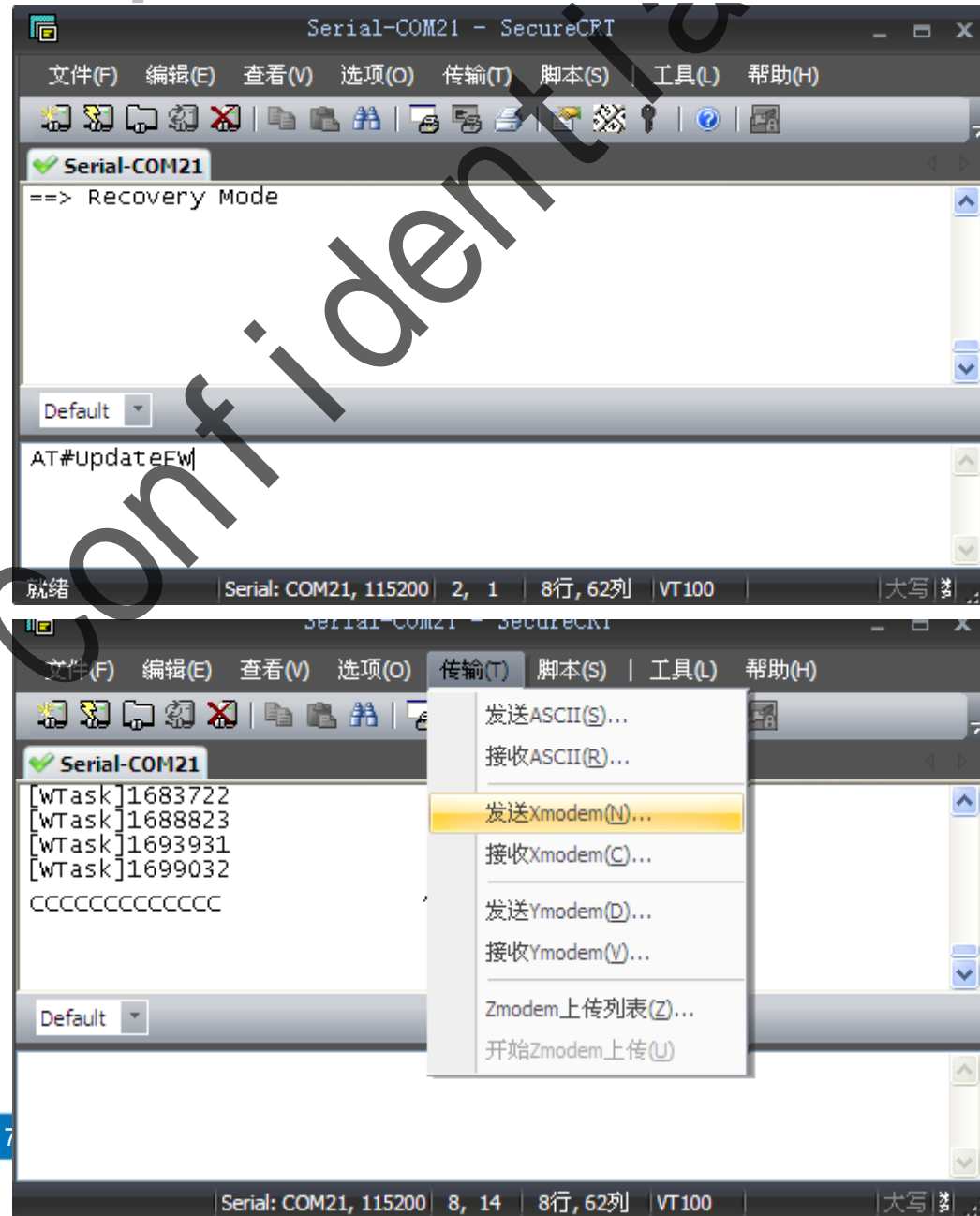
while string "==> Recovery Mode" showing
input cmd **AT#UpdateFW** within 4 sec

then 'c' shall be printed with 1sec interval
it means MT7681 start X-modem, and
ready to receive binary file from uart

- **Step2: Start X-modem on PC**

see picture as right

Notice: MT7681 only support X-modem
128Byte Mode



Uart FW upgrade step

Internal Use

- Step 3: while Binary transmit finished

Show "update Region[N] Successful, please Reboot! "

if upgrade fail, it will show msg

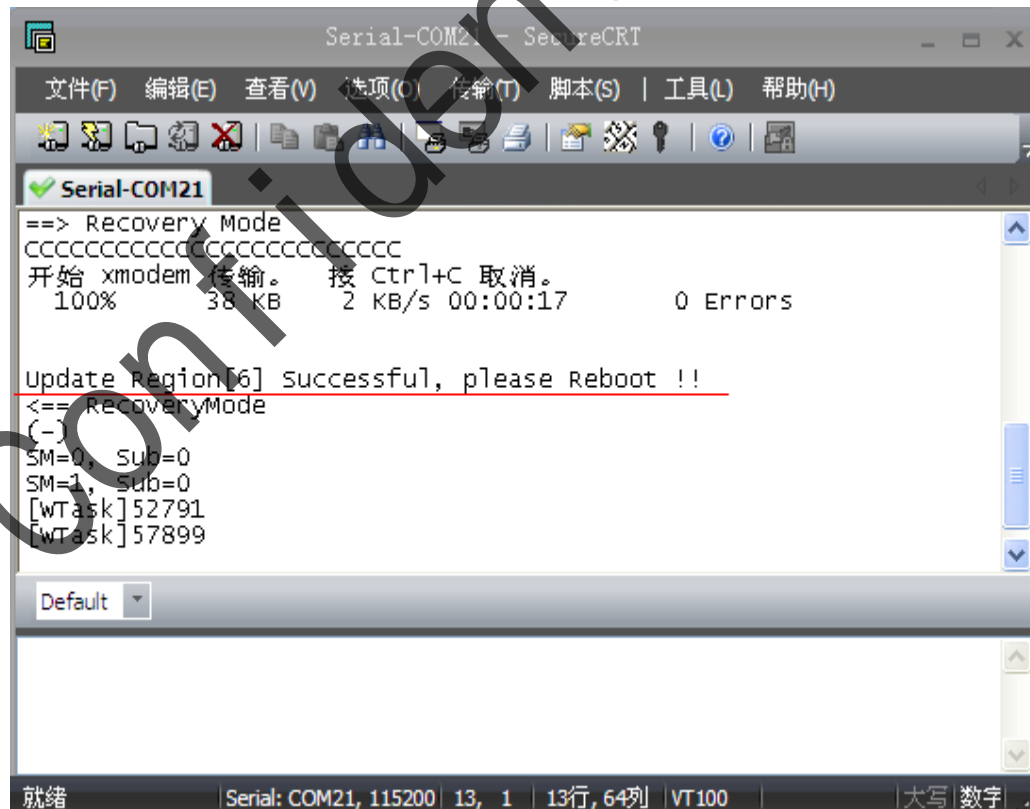
like this : "**Err : 205**"

it could be caused by flash write fail

or transmitted FW has an illegal header

Notice:

- * If upgrade STA/AP FW or EEPROM fail, you can use Uart to update it again
- * if upgrade Loader/Recovery fail, you need update the image by flash writer



```
Serial-COM21 - SecureCRT
文件(F) 编辑(E) 查看(V) 选项(O) 传输(T) 脚本(S) | 工具(L) 帮助(H)

Serial-COM21
==> Recovery Mode
CCCCCCCCCCCCCCCCCCCCCCCCCCCC
开始 xmodem 传输。 按 Ctrl+C 取消。
100% 38 KB 2 KB/s 00:00:17 0 Errors

Update Region[6] Successful, please Reboot !!
<== RecoveryMode
(-)
SM=0, Sub=0
SM=1, Sub=0
[wTask] 52791
[wTask] 57899

Default

就绪 | Serial: COM21, 115200 | 13, 1 | 13行, 64列 | VT100 | 大写 数字
```

* if XIP feature is enabled, you need implement above steps twice,

one is to upgrade "MT7681_ram_header.bin", the other is to upgrade "MT7681_sta_xip_header.bin"

How to change STA/AP mode

Internal Use

Step1: 通过Flash Writer 烧录
MT7681_all_v1.20.bin 到Flash

Step2: 开机后显示 如下信息, 表示进入到STA Mode

==> Recovery Mode

<== RecoveryMode

(-)

SM=0, Sub=0

SM=1, Sub=0

[WTask]9811

Step3: 通过 AT#Flash 命令读取0x18001 位置的
BootIndex值 double Check

AT#FLASH -r98305

[0x18001]=[0x00] 表示Boot as STA mode,

[0x18001]=[0x01] 表示Boot as AP mode

Step4: 通过 AT#Flash 命令修改0x18001 位置的BootIndex值 为1
AT#FLASH -s98305 -v1

Step5: 7681重新上电后, 会以AP mode方式启动,
Apmode的SSID 为“MT7681_Softap”, 且只
Support Open Mode

AP Mode启动的LOG:

==> Recovery Mode

<== RecoveryMode

(-)

APStartUp ok

Start AP ...

[WTask]9318

[WTask]14322

如果此时有手机连接上来, 会显示如下连线信息

Assoc request sanity success

i = 5, j = 0

client ip addr: 192.168.81.2

[WTask]39372

[WTask]44373