MXCHIP[®] 智能硬件解决方案提供商

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EMW3165 固件烧录手册

摘要 (Abstract)

本文基于 MiCOKit-3165 开发板描述了: EMW365 Wi-Fi 模块固件种类及烧录方法,旨在为开发者进行固件 烧录的指导。

适用对象(Suitable Readers)

本文适用于上海庆科公司 EMW3165 Wi-Fi 模块的开发使用者。

获取更多帮助(More Help)

MiCO 开发团队向您推荐:MiCO 开发者学习网站:http://mico.io/(开发者中心),获取更多最新资料。 手机微信"扫一扫"关注:"MiCO 总动员"公众号,获取 MiCO 团队小伙伴最新活动信息。



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MXCHIP Co., Ltd

2016.3.26

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1. 版本记录

日期	修改人	版本	更新内容
2016-3-26	Jenny Liu	V1.0	1.初始版本
2016-7-11	Jenny Liu	V1.1	1 修订版本 , 更改 3.2 小节中 , bootloader 波特率为 921600bps

2. 模块工作模式

EMW3165 模块的工作模式与引脚状态关系,如表 2.1。

BOOT	STATUS	工作模式
0	0	测试模式
0	1	BOOT 模式
1	1	正常工作模式

2.1 BOOT 模式

以 MiCOKit-3165 为例, BOOT 模式引脚状态: BOOT 脚 (ON) 拉低, STATUS 脚 (OFF) 拉高, 然后 RESET 重 启进入。进入该模式后,串口 log 信息如下():

MXCHIP> MICO bootloader for MiCOKit-3165, v2.1, HARDWARE_REVISION: MK3165_1

+ command	+	function+
0:BOOTUPDATE	<-r>	Update bootloader
1:FWUPDATE	<-r>	Update application
2:DRIVERUPDATE	<-r>	Update RF driver
3:PARAUPDATE	<-r><-e>	Update MICO settings
4:FLASHUPDATE	<-dev device>	
<pre> <-e><-r><-star</pre>	t addr><-end addr>	Update flash content
5:MEMORYMAP		List flash memory map
6:BOOT		Excute application
7:REBOOT		Reboot
(C) COPYRIGH	T 2015 MXCHIP Corpo	ration By William Xu
Notes:		
-e Erase only - -start flash st Example: Input "	r Read from flash - art address -end fl 4 -dev 0 -start 0x4	dev flash device number ash start address 00 -end 0x800": Update
flash d	evice 0 from 0x400	to 0x800

MXCHIP>

图 2.1 Bootloader 模式 log 信息

此时用户可以根据提示,输入命令码,执行相应的功能。包括:

表 2.2 Bootloader 模式命令功能

命令码	功能
0	更新 Bootloader 引导程序固件
4	更新 Application 应用程序固件
2	更新 RF Driver 射频驱动固件
3	查看,更新 MiCO 设置参数
4	查看,更新 Flash 指定地址空间内容
5	列出各 Flash 存储分区的起止地址
6	开始执行 Application 应用程序
7	重启 Wi-Fi 模块

其中,命令码0,1,2是固件更新命令,命令使用方法请参考"EMW3154的 Bootloader 模式使用手册"。

2.2 测试模式

以 MiCOKit-3165 为例, 该模式进入需引脚状态:BOOT 脚(ON)拉低, STATUS(ON)脚拉低, 然后 RESET 重启。

该模式用于测试模块固件(包括 Bootloader 固件, RF Driver 固件和 Application 固件三个)是否烧录成功。

,模块固件全部烧录后,进入测试模式,串口输出如图2.2所示则证明:模块固件烧录成功,测试通过。

(1) MAC 为模块的正确 MAC 地址;(2) AP 扫描显示成功。



MXCHIP_MFMODE>

图 2.2 测试模式下 log 信息

2.3 正常工作模式

该模式下模块将执行应用程序固件功能。该模式下,用户可通过串口查看系统运行 log 输出,也可以通过输入串口调试命令查看系统信息。串口调试命令如表 2.3。

命令	功能
help	查看串口命令行命令,及相关输出信息
version	查看固件版本信息
echo	查看设备是否有回传功能

表 2.3 工作模式的串口调试命令

命令	功能		
exit	退出串口命令行		
scan			
wifistate	查看接入的 Wi-Fi 网络状态信息		
wifidebug	查看接入的 Wi-Fi 调试开启或关闭状态信息		
ifconfig	查看设备 IP 地址		
arp	arp 显示或清除信息		
ping	Ping 命令		
dns	dns 命令		
sockshow	查看所有 socket 信息		
tasklist	列出所有线程的名字和状态信息		
memshow	打印存储器信息		
memdum	寄存器地址及长度信息		
memset	寄存器设置命令		
тетр	打印寄存器列表		
wifidriver	显示 Wi-Fi 驱动器信息		
reboot	重启 MiCO 系统		

3. 固件分类及烧录测试

EMW3165 模块正常工作,通常需要 烧入三种固件,分别是:

(1) Bootloader (引导程序)

(2) RF Driver (射频驱动)

(3) Application (应用程序,如 AT 固件,Gagent 固件等)。

针对开发者和工厂批量烧录两种需求,上海庆科将提供不同形式的固件及烧录方法。

本部分主要针对开发者固件烧录方法进行介绍,

具体的,基于 MiCOKit-3165 开发板,可通过 JFlash 烧录和 SecureCRT 串口工具软件进行烧录。

3.1 Jlink 烧录方法

3.1.1 Bootloader 固件烧录方法

Bootloader 固件可通过 JLink 工具,借助 JFlash 软件烧录入 Wi-Fi 模块。具体步骤如下:

- 1、JFlash V4.96 安装程序下载、安装。
- 2、新建工程:打开 JFlash,新建工程命令如下图:

J	SEGGE	R J-Flas	sh V4.96	- [C:\Progr	am Files (x	86)\SEGG <mark>E</mark>
ile	Edit	View	Target	Options	Window	Help
	Open	data fi	le			Ctrl+O
	Merg	e data	file			
	Save	data file	e			Ctrl+S
	Save	data file	e as			
	New p	project				
	Open	projec	t			
	Save	project				
	Save	project	as			
	Close	projec	t			

3、工程设置

进入工程设置界面

SEGGER J-Flash V4.96 - [C:\Program Files (x86)\SEGGER\JLink_V496\Samples\JFlash\Pro

File Edit \	liew Target	Options Wi	ndow Help	p	
D Project -	ST D	Project s	ettings	Alt-F7	mware\Bootloader\Bootlo
Name	Value	Global s	ettings		
Connection	USB [Devi	ce 0]	-deciri li	000000000	

(1)选择 Device.

	Project settings				? ×	
	General Target Interface CPU	Flash Production J-Flash is a software for J-Li license, which can be obtain (www.segger.com).	nk. It requires a ned from SEGGER			
	j-link	This software is capable of memory of several ARM mic external Flash connected to	programming the flash ros, as well as ARM cores.			
		Connection to J-Link USB Device 0 CUSB SN 0	Select			
	User interface mode	C TCP/IP				5
	C Simplified (Less options, typically	used for production)				
			确定	取消	应用(A)	
(2)目标接口	Project settings		0		? ×	
	General Target Interface CPU	Flash Production]			
	SWD					
	SWD speed before init	SWD speed after C Auto selection € 4000 ▼	init kHz			
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						
			确定	取消	应用(A)	

#### (3)选择 CPU 型号

	Project settings	? ×	
	General Target Interface CPU Flash Production		
	Use J-Link script file		
	C Core ⓒ Device ♥ Check core ID		
	Little endian V Mask FFFFFFF		
	Use target RAM (faster) Addr (2000000 96 KB V		
	# Action         Value0         Value1         Comment		
	0 Reset 0 0 ms Reset and halt target		
			D
	Add Insert Delete Edit Up Down		
		应用(A)	
( 4 ) Flash 设置			
	Project settings	? ×	
	General Target Interface CPU Flash Production		
	FlashBank     Bank 0     Rename     Add     Delete		
	Use custom RAMCode		
	Base Addr 08000000 Organization 32  Bits x 1  Chip(s)		
	Manufachurar IST		
•	Chip STM32F407xE internal		
0	Size 512 KB Sectors 8		
	Start /End sector Individual sectors		
	End Addr Sector[7]: 0x807FFFF Sector[1]: 0x8004000 - 0x800FFF Sector[2]: 0x8008000 - 0x8008FFF Sector[2]: 0x8008000 - 0x8008FFF		
	Selected range: 8 Sectors, 1 Range: 0x8000000 - 0x807FFFF ○ Sector[5] 0x8020000 - 0x803FFFF ○ Sector[5] 0x8020000 - 0x803FFFF		
	Sector[6]: 0x8040000 - 0x805FFFF     Sector[6]: 0x8040000 - 0x805FFFF     Sector[6]: 0x8040000 - 0x803FFFF     Sector[6]: 0x804000 - 0x803FFFF     Sector[6]: 0x80400 - 0x804000 - 0x803FFFF     Sector[6]: 0x80400 - 0x804000 - 0x804000 - 0x8040000 - 0x8040000 - 0x8040000 - 0x8040000 - 0x8040000 - 0x8040000 - 0x80400000 - 0x8040000 - 0x80400000 - 0x804000000 - 0x8040000000000000000000000000000000000		
	All None Invert		
		应用(A)	

• (5) production 设置



#### 点击上图中 Erase 命令,对Wi-Fi 模块的 MCU 内部 flash 内容进行擦除。log 如下:

```
Erasing chip ...

- Erasing 8 sectors, 1 range, 0x8000000 - 0x807FFFF

- RAM tested 0.K.

- Erasing bank 0, sector 0, 1

- Erase operation completed successfully - Completed after 0.894 sec
```

#### 6、打开 bin 文件

#### 菜单命令打开 bin 文件,如下图:

F

🔜 SEGGER J-Flash V4.96 - [C:\Program Files (x86)\SEGGER\

ile	Edit View Target Option	s Window Help		
	Open data file	Ctrl+O	Enter start address X	
	Merge data file Save data file Save data file as New project Open project	Ctrl+S	Start address 8000000 OK Cancel	
:	Opening data file [F:	Wićo SDK\MID Firmws	re\Bootloader\Bootloader_3165.bin]	

Log 输出如下:

Opening data file [F:\MiCO SDK\MID Firmware\Bootloader\Bootloader_3165.bin] .. - Data file opened successfully (20266 bytes, 1 range, CRC = 0x9EE5566B)

#### 7、烧录文件

选择 "Program" 烧录,界面显示如下图:

Roject - ST	Connect		DK\	,MID	Firm	ware	e∖Bo	otloa	ader	Boo	tloa	der_	3165	.bin								
Name 💦	Disconnect		)x800	00000		_	x1	x2	x4													
Connection I Target interface	Show CFI info		Ø	1	2	3	4	5	6	7	8	9	A	B	С	D	E	F	ASCII			_
Init JTAG speed	Test	>	50	FØ	00	20	19	03	00	08	25	03	00	08	25	03	00	08	Р	×.	%	•
JTAG speed TAP number	Secure chip		25 00	03 00	00 00	08 00	25 00	03 00	00 00	08 00	25 00	03 00	00 00	08 00	ии 25	03 00	00 00	08 08	**		×	-
IRPre ·	Unsecure chip		25	03	00	08	00	00	00	00	25	03	00	08	25	03	00	08	×	×.	×	
MCU :	Check blank	F2	81 Ø8	68 32	07 02	EØ 60	Ø2 C2	68 68	11 91	68 42	53 F4	68 DØ	89 4A	18 1C	5B 82	18 60	C3 Ø8	60 78	.h	h.hSh h.B	[ J`.	×
Check core Id	Fill with zero	50	70	47	38	B5	04	46	ØD	46	AØ	68	E1	68	88	42	12	D1	pG8	F.F.h	.h.B.	•
Use target RAM	Erase sectors	F3 F4	20 01	68 68	61 Ø2	68 B1	88 49	42 44	Ø8 A1	ВF 60	00 42	FØ 68	C3 52	F8 18	20 08	68 30	22 E2	7C 60	hah. .hI	B D.`Bh	h" RØ.	1
RAM address	Dra succes		91	42	20	60	EC	DØ	ÂØ	68	40	10	ÂØ	60	00	F8	01	5D	.в`.	h0.	•••••	1
Flash memory 1	Program & Verify	F5 F6	31 52	BD Ø8	2D Ø1	E9 FB	FØ C2	41 Ø1	8A Ø6	BØ 91	00 00	F1 21	08 07	01 91	Ø5 Ø8	91 91	02 01	68 68	1 R	A	• • • • •	h h
Manufacturer ! Size !	Auto	F7	49	Ø8	00	EB	C1	Ø1	Ø8	31	00	91	Ø1	79	01	FØ	Ø1	Ø1	I	1	.y	
Flash Id I Check flash Id I	Verify	F8	8D 00	F8 20	10 02	10 90	40 03	68 90	00 84	99 БЙ	40 05	Ø8 A8	01 FF	EB F7	CØ 69	00 FF	01 04	90 46	e	h@.		F
Base address I Organization	Verify CRC	>	14	FØ	03	06	Ø3	D1	Ø5	A8	FF	F7	A2	FF	C6	10	25	09			×	
-	Read back	>	0F 05	2D 98	1B Ø1	D1 68	Ø5 Ø8	A8 18	FF Ø5	F7 99	9B 07	FF 90	00 49	F1	ØF ØR	05 18	15 Ø8	E0 90	 h		 Тh	•
<	Start application	F9	00 RE	00	90	20	NC	00	60 00	00	00	00	00	40	50	10	10	10	н.		р 0	ſ
LOG			·																			
- Data file open onnecting - Connecting via - J-Link firmwar - Target interfa - Initializing CU	ed successfully (20266 by USB to J-Link device O e: V1.20 (J-Link ARM V8 c ce speed: 4000 kHz (Fixed 91 core (Init sequence)	tes, 1 r ompiled 1 )	ange, Nov 2	CRC :8 20	= 0x	:9EE5 3:44:	5C6B 46)	)														
- Initialized - Target interfa - Connected succ pening data file - Data file	successfully ce speed: 4000 kHz (Fixed essfully [F:\MiCO SDK\MID Firmwar d successfully (20266 by	) e\Bootlo	ader\	Boot	loade = 0	er_31	65. b	in].														
Dara Tire open	a successivity (20200 by	Les, I I	auge,	Cht	- 03	COLLO	CCOD	, 														

烧录完成, log 如下图:

```
Programming target (20266 bytes, 1 range) ...

- RAM tested O.K.

- Erasing affected sectors ...

- Erasing bank O, sector O, 1

- Erase operation completed successfully

- Target programmed successfully - Completed after 8.864 sec
```

#### 8、烧录结果验证

通过串口调试工具查看,参数设置如下图:

	Quick Connect			$\times$	
	Protocol:	Serial	~		
	Port:	COM2 ~	Flow Control		
	Baud rate:	115200 ~	DTR/DSR		
	Data bits:	8 ~			
	Parity:	None $\sim$			
	Stop bits:	1 ~			
	Show quick co	onnect on startup	Save session	Cancel	
重启 , 查看正确 log 输出:					
	MXCHIP> MICO bootloader + command 0:BOOTUPDATE 1:FWUPDATE 2:DRIVERUPDATE 4:FLASHUPDATE 4:FLASHUPDATE 4:FLASHUPDATE 5:MEMORYMAP 6:BOOT 7:REBOOT 7:REBOOT 7:REBOOT 0(C) COPYRI NOTES: -e Erase only -start flash Example: Input flash MXCHIP>	for EMW3165, v2 <-r> <-r> E <-c> -r> c-dev device> art addr><-end a GHT 2015 MXCHIP -r Read from fl start address -e "4 -dev 0 -star device 0 from 0	.1, HARDWARE_REVISIC Update applica Update applica Update applica Update RF drii Update MICO se ddr> Update flash de List flash mem Excute applica Reboot Corporation By Will ash -dev flash devic dflash start addre t 0x400 -end 0x800";	DN: MK3165_1 dder   ttion   ver   content   iony map  ation   liam Xu   ce number sss Update	

至此, Bootloader 固件已正确烧录完成。

90,

#### 3.1.2 RF Driver

EMW3165 模块 RF 射频驱动不支持 JFlash 烧录。

3.1.3 Application 固件烧录方法

EWM3165的 Application 固件可通过 JFlash 进行烧录,具体步骤与 Bootloader 固件烧录类似,如下:

- 1、JFlash V4.96 安装程序下载、安装。
- 2、新建工程:打开 JFlash,新建工程命令如下图:



#### (1)选择 Device.

	Project set	tings				?	$\times$
	General	Target Interface CPU	Flash Production				
es es		jere jere	J-Flash is a software for J-L license, which can be obta (www.segger.com). This software is capable of memory of several ARM min external Flash connected to Connection to J-Link © USB Device 0 C USB SN 0 C TCP/IP	ink. It requires a ined from SEGGER programming the fl cros, as well as ARM cores.	ash		
	Userin © En C Sin	terface mode	ally used for setup) used for production)				
				确定	取消	应用	(A)

#### (2)目标接口



(4) Flash 设置

P	roject settings ? ×
	General Target Interface CPU Flash Production
	FlashBank     Bank 0     Rename     Add     Delete
	Use custom RAMCode
	Base Addr 08000000 Organization 32 - Bits x 1 - Chip(s)
	Manufacturer ST
	Chip STM32F407xE internal
	Size 512 KB Sectors 8
	Start/End sector     Individual sectors
	Ford Addr Sector(0): 0x8000000 · 0x8003FFF Sector(1): 0x8004000 · 0x8003FFF ✓ Sector(1): 0x8004000 · 0x8003FFF
	Selected ranges:
	8 Sectors, 1 Range: 0x8000000 - 0x807FFFF
	✓ Sector[6]: 0x8040000 - 0x805FFFF
	All None Invert
	<b>後守 取当</b> (立田(Δ)
5) productic	n 设置
	Project settings ? X
	General Target Interface CPU Flash Production
	Production mode
	Delay before start 20 ms Voltage threshold 3000 mV Delay before start 500 ms
	Program serial number
	Next SN 1 Increment 1
	Actions performed by "Auto"
	✓         Program
	Start application
$\langle O$	
0	
(0	

## 4、连接模块

点击下图中菜单命令 连接模块。

File Edit View	sh V4.96 - [C:\Program Files ()	(86) He
Project - ST.	Connect	
Name	Disconnect	
Connection Target interface	Show CFI info	
Init JTAG speed	Test	>
JTAG speed TAP number	Secure chip	
IRPre	Unsecure chip	
MCU Endian Check core Id	Check blank Fill with zero	F2

## 5、打开 bin 文件

菜单	自命令打	开 bin วี	之件,如	下图:					
J FLASH	SEGGER J-F	lash V4.96	- [C:\Progr	am Files (x	86)\SEGGER				
File	Edit Vie	w Target	Options	Window	Help			L.	
	Open data	file			Ctrl+O	Enter start a	ddress	>	
	Merge dat Save data Save data	ta file file file as			Ctrl+S	Start address	800C000	OK	
	New proje Open proj	ect						Cancel	
Log	g 输出如	ጉ: 1							
			G						
		- I - Targ - Conr Opening - Data	initiali set inte nected s data f file o	zed succ rface sp uccessfu ile [F: pened su	cessfully peed: 400 ully MiCO SDK nccessful	, 10 kHz (Fixe (\MID Firmwaz 1y (360010 )	d) re\AT\AT1.1.0\A: bytes, 1 range,	TV1.1.0@EMW3165 CRC = 0x5AF3F3	5.bin] SFO)
							· · ·		

### 6、烧录文件

选择"Program" 烧录, 界面显示如下图:



#### 8、烧录结果验证

通过串口调试工具查看,应用程序功能是否成功烧录,如本例为 AT 固件,进入指令模式, log 信息正确。

至此, Application 应用程序固件成功烧录。

؇ serial-com11	×	
a+OK		

### 3.2 串口烧录

除 Jflash 工具外, EMW3165 还可以通过串口,借助于 SecureCRT 软件完成固件烧录任务。

前提是: EMW3165 模块的 Bootloader 固件已经成功烧录了。

EWM3165 需要首先进入 Bootloader 模式,通过发送指令的方式进行固件烧录。具体步骤如下。

#### 1、安装 USB 转串口驱动程序

4

下载地址: <u>http://www.ftdichip.com/Drivers/VCP.htm</u>

- 2、模块进入 Bootloader 模式,并通过 USB 串口供电。
- 3、打开串口调试工具,找到对应串口并设置串口如下图。

Category:	
Connection Cogn Actions Serial Terminal Generation Modes Mapped Keys Advanced Appearance Advanced Advanced Advanced Advanced Advanced	Port:     COM2 ▼       Baud rate:     921600 ▼       Data bits:     8       Parity:     None ▼       Stop bits:     1
Window Log File Printing X/Y/Zmodem	Serial break length: 100 📩 milliseconds
	OK Cancel

4、模块复位,(若出现乱码,请重新创建串口连接,或重启 secureCRT),串口打印窗口出现如下信息

✓ serial-com2 ×	
MICO bootloader for EMW3165, v2.1, H + command 0:BOOTUPDATE <-r> 1:FWUPDATE <-r> 2:DRIVERUPDATE <-r> 3:PARAUPDATE <-r> 4:FLASHUPDATE <-dev device> <-e><-r><-start addr><-end addr> 5:MEMORYMAP 6:BOOT 7:REBOOT	HARDWARE_REVISION: MK3165_1 - function Update bootloader Update application Update RF driver Update MICO settings Update flash content List flash memory map Excute application Reboot
<ul> <li>(C) COPYRIGHT 2015 MXCHIP COPPO Notes:         <ul> <li>E Erase only -r Read from flash - -start flash start address -end flash</li> <li>Example: Input "4 -dev 0 -start 0x4 flash device 0 from 0x400</li> </ul> </li> </ul>	oration By William Xu   dev flash device number lash start address 400 -end 0x800": Update to 0x800
MXCHIP>	

#### 5、输入烧写命令

输入0,更新 Bootloader 固件,输入1,更新 Application 固件。输入2,烧录 RF 固件,回车。

示意如下图:



#### 8、发送 bin 文件

🛩 serial-com2 🛛 🗙			✓ serial-com2 ×		
MICO bootloade + command 0:BOOTUPDATE 1:FWUPDATE 2:DRIVERUPDA 3:PARAUPDAT 4:FLASHUPDAT -SAS-CP>-5 5:MEMORTMAP 6:BOOT 7:REBOOT	er for EMW3165, v2.1, + <pre>&lt;-r&gt; <pre>vTE &lt;-r&gt; <pre>vTE &lt;-r&gt; <pre>&lt;-r&gt; <pre>&lt;-e&gt; E &lt;-dev device&gt; tart addr&gt;&lt;-end addr&gt;</pre></pre></pre></pre></pre>	HARDWARE_REVISION: MK3165_1 function	MICO boolloader for + command 0:BOOTUPDATE < 2:DRIVERUPDATE < 3:PARAUPDATE < 4:FLASHUPPATE < <-e><-r>>-start 5:MENORYMAP 6:BOOT 7:REBOOT	EMW3165, v2.1, HA > > > > > -dev device> addr><-end addr>	ARDWARE_REVISION: MK3165_1 function update bootloader Update application Update R driver Update f driver Update flash content List flash memory map Excute application Reboot
(C) COPYF Notes: -e Erase only -start flasf Example: Inpu flas	RIGHT 2015 MXCHIP Corpo - r Read from flash - start address -end fl it "4 -dev 0 -start 0x4 th device 0 from 0x400	oration By William Xu dev flash device number lash start address 100 -end 0x800": Update to 0x800	(C) COPYRIGHT Notes: -e Erase only -r -start flash star Example: Input "4 flash dev	2015 MXCHIP Corpor Read from flash -d t address -end fla -dev 0 -start 0x40 rice 0 from 0x400 t	ation By William Xu dev flash device number ash start address 00 -end 0x800": Update co 0x800
MXCHIP> 1			MXCHIP> 2		
Updating appli Waiting for th CCCCCCCCCCCC Starting ymode Transferring 3 11% 38	cation he file to be sent ccccccccccc m transfer. Press Ctr 165_at03.bin KB 4 KB/sec	(press 'a' to abort) 'l+C to cancel. 00:01:09 ETA 0 Errors	Updating RF driver. Waiting for the fil CCCCCCCCCCCCC Starting ymodem tra Transferring 43362A 7% 14 KB	 e to be sent ( nsfer. Press Ctr] 2-5.90.230.10.bin. 2 KB/sec 0	(press 'a' to abort) I+C to cancel. 00:01:07 ETA O Errors
『 禄完成 ✓ serial-com2 ×			estistents x	•	xO
♥ 示 の w serial-com2 x	for EMW2165 v2 1	HARDWARE DEVISION: MV2165 1	✓ serial-com2 ×	•	xO
■ with serial-com2 × with serial-com2 × with serial-com2 × with serial-com2 × 0:BOOTUPATE 1:FWUPDATE 1:FWUPDATE 1:FWUPDATE 2:DRIVERUPATE 2:DRIVERUPATE 3:PARUPDATE 4:FLASHUPDATE 4:FLASHUPDATE 5:MEMORYMAP 6:BOOT 7:REBOOT 7:REBOOT	for EMW3165, v2.1, <-r> <-r> <-r> <-r> <-r> <-r> <-r> <-r>	HARDWARE_REVISION: MK3165_1 + function	✓ serial-com2 × MICO bootloader ft + command O:BOOTUPDATE 1:FWUPDATE 2:DRIVERUPDATE 3:PARAUPDATE 4:FLASHUPDATE -<=><-F><-Start 5:MEMORYMAP 6:BOOT 7:REBOOT	or EMW3165, v2.1, <-r> <-r> <-r> <-r> <-c+	HARDWARE_REVISION: MK3165_1 - function - update bootloader Update application Update RF driver Update MICO settings > Update flash content List flash memory map Excute application Reboot
■ SREAC Serial-com2 × MICO bootloader + command 0:BOOTUPDATE 1:FWUPDATE 2:DRIVERUPDAT 2:DRIVERUPDAT 4:FLASHUPDATE 4:FLASHUPDATE 4:FLASHUPDATE 5:MEMORYMAP 6:BOOT 7:REBOOT CC)COPYR: Notes: - e Erase only - start flash Example: Input flasi	<pre> for EMW3165, v2.1,</pre>	HARDWARE_REVISION: MK3165_ + function	✓ serial-com2 × MICO bootloader fo + command	or EMW3165, v2.1, <> <->> <->> <-/> <-dev device> t addr><-end addr> T 2015 MXCHIP Corp r Read from flash art address -end f 4 -dev 0 -start 05 wice 0 from 0x400	HARDWARE_REVISION: MK3165_1 - functionto- update application update Ardniver update Mico Settings ) update flash content List flash memory map Excute application poration By William Xu -dev flash device number flash start address X400 -end 0X800": update 0 to 0X800
■ SSRSCAC Serial-com2 × MICO bootloader + command 0:BOOTUPDATE 1:FWUPDATE 2:DRIVERUPDAT 2:DRIVERUPDATE 4:FLASHUPDATE 4:FLASHUPDATE 5:MEMORYMAP 6:BOOT 7:REBOOT 7:REBOOT COCOPYR: NoteS: - e Erase only - start flash Example: Input flash MXCHIP> 1	for EMW3165, v2.1, -r> -r> F <-r> F <-r> E <-rb> = <-dev device> tart addr><-end addr> tGHT 2015 MXCHIP Corp -r Read from flash start address -end f start address -end f t "4 -dev 0 -start 0x h device 0 from 0x400	HARDWARE_REVISION: MK3165_ + function	✓ serial-com2 × MICO bootloader fo + command	or EMW3165, v2.1, <> <->> <->> <-dev device> t addr><-end addr> T 2015 MXCHIP Corp r Read from flash art address -end f 4 -dev 0 -start 0s evice 0 from 0x400	HARDWARE_REVISION: MK3165_1 - functiontoreater Update application Update Application Update MICO Settings Update flash content List flash memory map Excute application poration By William Xu -dev flash device number flash start address X400 -end 0X800": Update 0 to 0X800

至此, RF Driver 和 Application 固件烧录完成

#### 10、烧录结果验证

固件烧录完成后,将 BOOT 引脚和 STATUS 引脚 均置 L,重启模块。

串口 log 输出扫描到的 AP 的 SSID 和信号强度,如下:

```
山吉 与 独反 , 以口 ト :

MAC: C8-93-46-4F-3B-C5

Scan AP Success:

SSID: ChinaNet-buci, RSSI: -61

SSID: Bruce, RSSI: -57

SSID: wells, RSSI: -59

SSID: solar wifi, RSSI: -56

SSID: mxchip_guest, RSSI: -75

SSID: ssid_2, RSSI: -60

SSID: AristonwiFi, RSSI: -65

SSID: FAE_TE00, RSSI: -60

SSID: AristonwiFi, RSSI: -63

SSID: William Xu, RSSI: -43

SSID: 11, RSSI: -48

SSID: 11, RSSI: -48

SSID: mxchip_phone, RSSI: -52

SSID: hello, RSSI: -50

SSID: hello, RSSI: -55

SSID: hello, RSSI: -55

SSID: J, RSSI: -75

SSID: hello, RSSI: -54

SSID: J, RSSI: -75

SSID: ssid, RSSI: -48

SSID: J, RSSI: -75

SSID: SSID: RSSI: -75

SSID: xinggong, RSSI: -48

SSID: Xinggong, RSSI: -48

SSID: Xiaomi.Router, RSSI: -42

SSID: HiwiFi_0DB866, RSSI: -42

SSID: TP-LINK_6EBE, RSSI: -58

SSID: TP-LINK_6EBE, RSSI: -58

SSID: WangSq_test, RSSI: -56

MXCHIP_MFMODE>
```

## 4. 技术支持

关于基于 MiCO 系统的 EMW3165 二次开发更多内容,可参考: http://mico.io/wiki/doku.php。

如有需要,可在办公时间拨打电话咨询上海庆科信息技术有限公司。

办公时间:星期一至星期五 上午 9:00~12:00,下午 13:00~18:00

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