**文件说明：**

1. 请更新sdk时候，同时更新tools.
2. Update code的时候，请注意要整个release文件夹进行都进行比较，不要忽略了最上层文件夹的”.cproject”, “.project”, “boot.link”等
3. 对于结构体定义，目前的编译器配置是紧密排列(通讯协议的要求)。所以用户最好对自定义的结构体成员进行手动对齐，以提高访问效率。
4. **Notes:**
5. When sdk is updated, please update tools at the same time.
6. For structure definition, current compiler configuration is compactly arranged as specified by communication protocol. It’s highly recommended that users manually align self-defined structure members to improve access efficiency.

**主要修改：**

20200703 V1.P (2020/07/01 20:09:22 SHA-1: 6e51ec7625fa1b299fead4352cf1dde12c57d7b2)

**Fix bug：**

1.修复bug：当用户选择16M clock的时候（sdk缺省32M），并且APP连接参数里面的woffset=0(大部分情况下不会等于0)，连接会失败。

**Improve performance：**

1.OTA后，旧firmware的擦除动作执行，即erase\_ota\_data()，从cpu\_wakeup\_init() 更改到 user\_init()里面执行。

After rebooting from OTA success, erase the legacy version firmware in

user\_init()->erase\_ota\_data(), instead of cpu\_wakeup\_init()->erase\_ota\_data().

Bug fix:when choose 16M clock(default is 32M),and if woffset(one of master's connect parameters) is 0,the connection will failed.

2.上位机tl\_ble\_phone\_mesh2.exe的mesh INI命令由write request response改为write no response，和app同步。

Mesh INI command of tl\_ble\_phone\_mesh2.exe tool use write no response instead of write request response to sync APP.

3.浮点库更新为 RAM版本，并做了一些优化。 如需要使用原来的版本，把 改名，即可。

Update Float point library “libsoft-fp.a”, and some functions inside the new library was in \_attribute\_ram\_code\_. the “libsoft-fp\_no\_ramcode.a” is the version before update.

**New Feature：**

1. 更新8258 adc driver

update 8258 adc driver

2. 增加8258 1M flash 芯片的flash map.

Add flash map for chip of 8258 1M flash.

3.增加支持 8258 32M clock 的配置

Add setting to support 32M clock for 8258.

4. 增加8258 外置PA 功能，默认关闭。

Add outside chip PA function for 8258, default disable.

5. firmware最大size由固定的128k改为可通过宏FW\_SIZE\_MAX\_K设定

User can define max firmware size by setting FW\_SIZE\_MAX\_K intead of a fixed size of 128K.

6.增加flash size自适应机制。当Firmware是按512K配置，但是错误使用1M flash时，如果0x76000为空，且0xff000有mac，则MAC地址会自动切换到0xff000，(1M flash芯片出厂自带的mac的地址是0xff000)

Add auto adapt flash size function：When the firmware is configured for 512K flash, but it was download in 1M flash chip by mistake. In this case, if flash address 0x76000 is Null and there is mac in 0xff000 where is the address of 1M flash mac for Telink, firmware will read mac from 0xff000 instead of 0x76000.

20190925 V1.O (git 2019/9/25 11:38:07 SHA-1: ec0efec079d08e64d27ac0c9eeb99c9ef987bb5e)

1. 取消DEVICE\_NAME的memcpy动作，防止越界。

Cancel memcpy DEVICE\_NAME to avoid memory overflow.

2. 把ic\_tag相关处理提前，防止8258低功耗产品唤醒异常。

Fix ic\_tag in cstartup,preventing wakeup fail from deep sleep.

20190801 V1.N (git 2019/7/31 18:10:41 SHA-1: 210cb3b22126125b3681ce55a348e727ebb8e466)

1. 增加SIGMESH和私有mesh双模功能。默认不使能，DUAL\_MODE\_ADAPT\_EN 设置为 1使能。

Add dual mode between SIG MESH and priority MESH. Default is disable. Set DUAL\_MODE\_ADAPT\_EN as 1 to enable.

2. 8258：修复睡眠tick不能超过16秒的问题。

Fix the issue that deep sleep time can’t be longer than 16 second.

3. 8258：直接调用 cpu\_sleep\_wakeup进入retention唤醒后不能正常发广播包的问题。

Fix the issue that it can’t send adv after directly call cpu\_sleep\_wakeup() with retention.

4. 8266/8267/8269 master dongle 优化，加快上报广播包的速度

Improve the report speed of adv for 8266/8267/8269 master dongle.

5. 8258：增加gpio interrupt 配置相关接口

8258：Add gpio interrupt API.

20190514 V1.M (git 2019/05/14 21:56:03 SHA-1: 5a2fb0b01c083a8ef2a3012e089cb5ccf3d720cc)

1. 增加 8258 / 8267 LPN project. 增加 8258/8267 friend node功能，默认关闭，设置FEATURE\_FRIEND\_EN为1，打开此功能。

Add 8258 / 8267 LPN project. Add friend ship function, default is disable, set FEATURE\_FRIEND\_EN to 1 to enable.

2. 优化8258 switch低功耗模式：目前广播状态下采用retention模式，连接状态下suspend模式

Reduce power for 8258 switch project. Retention sleep used in adv mode, suspend is used when it was GATT connected.

3. 添加8258 硬件和模拟uart驱动。

Add 8258 UART driver: GPIO mode and Register mode.

20190329 V1.L (git 2019/03/29 15:00:40 SHA-1: c5b6a0009b04f057e671c310ae67cedccd815496)

1.增加8258 retention deep feature。

Add 8258 retention deep feature.

2. 增加8258 adc battery check driver以及 8258 I2C demo code

Add 8258 adc battery check driver, and 8258 I2C demo code.

3. 增加 SENSOR\_ENABLE功能，默认不打开。

Add SENSOR\_ENABLE function, default disable.

20190201 V1.K (git 2019/01/31 11:52:06 SHA-1: d97bd164c5ed6e05974dbec9d8465b424e443f5b)

1. 在firmware文件的固定位置(0x1C-0x1F)增加FW\_DEV\_INFO 字段(包含light mode)，并在GATT OTA and mesh OTA时进行判断。

add FW\_DEV\_INFO(include light mode), to fixed space of firmware 0x1C-0x1F. and check when OTA(both GATT OTA and mesh OTA).

2.增加两个8258工程：light\_switch\_8258/light\_gateway\_8258（需要更新上位机工具）

add light\_switch\_8258/light\_gateway\_8258(need to update tools)

3.在light\_8258工程里面增加低功耗mesh功能：需要开启宏定义WORK\_SLEEP\_EN，缺省约5%占空比，一旦建立连接，所有节点退出低功耗模式。

add 'duty cycle' function for light\_8258 : enable 'WORK\_SLEEP\_EN' ,once a node is connected,all of nodes will exit low\_power mode.

20181102 V1.J (git 2018/11/02 19:50:18 SHA-1: d971f5649dc08fee569b930bc38137df3951e3b5)

1.增加light 8258工程.(后续版本再添加8258的switch/gateway等。)

Add light 8258 project. (8258 switch / gateway will be ready in next version.)

2. light 8269增加温度检测，自动调整TP的功能(和8267的一样)，详见 ADC\_TEMP\_ENABLE 相关代码。

light 8269 add temperature sensor check. same with light 8267. detail refer to ADC\_TEMP\_ENABLE .

3. 增加通过mesh online status 数据包检测rssi的功能。

add rssi check by use mesh online status packet.

Note：8266/8267/8269 如果不使用上述功能，可以不更新此版本。

Note: 8266/8267/8269 no need update this version, if not care these function.

20180517 V1.I (git 2018/5/17 10:59:40 SHA-1: a1bfc3a7d88c2c5501b99756140f1b1af716be41)

1.修复V1.H版本 8267 / 8269 mesh ota 第二次升级失败的问题。(主要是更新library)

Fix V1.H: when run the second time mesh OTA with 8267 / 8269 would be failed.

2.增加8368工程。注意目前如果使用8368 switch工程的话，就不能启用mesh 组网功能。也就是MESH\_PAIR\_ENABLE和SW\_NO\_PAIR\_ENABLE不能同时设为1.

Add 8368\_switch project. Note: don’t set MESH\_PAIR\_ENABLE to 1 when use 8368 switch project.

20180429 V1.H(git 2018/4/29 16:21:28 SHA-1: eaac327e0eb67c1e2cfe3cc88a31e07c3d9aaa66)

1.mesh ota改善：支持连接任意节点对其它不同设备类型的节点进行mesh ota；支持连接断开期间，继续发送mesh ota数据；mesh ota补包阶段，默认超时时间为40min；

Improve mesh ota function: support mesh ota firmware to different device type node; support continue mesh ota process during BLE disconnected; phase of mesh ota resend missing data will be timeout after 40 minutes as default.

2.进一步完善mesh 组网功能

Improve mesh pair.

3.C7命令获取版本号信息，在版本信息后增加了light mode信息(2个byte)

C7 command to get version: add light mode after version data.

4.kick out命令增加延时参数功能

Kick out command: add delay time parameters.

20180131 V1.G(git 2018/1/30 18:04:48 SHA-1: f45d7e3e6e85ea81f9cac23b39be72a1a8b56445)

1.OTA增加固件内容校验功能（涉及更新.cproject/tl\_check\_fw.exe/tl\_check\_fw.sh）

add the function of firmware data check for ota(involving files:.cproject/tl\_check\_fw.exe/tl\_check\_fw.sh)

2.huawei p9 lite海外版兼容性

improve mobile compatibility:huawei p9 lite

3.mesh组网功能:灯端需要打开MESH\_PAIR\_ENABLE，上位机tl\_ble\_phone\_mesh2.exe上面已经增加mesh\_pair选项，目前只是修改所有节点的mesh info，还没有自动分配device address

add the function of mesh networking:light\_826x projects need enable the macro of MESH\_PAIR\_ENABLE.there is a 'Mesh Pair' checkbox on the UI of 'tl\_ble\_phone\_mesh2.exe',when select it,the 'set' button will change all nodes' mesh info in the mesh,not set device address yet.

4.gateway：支持uart接口，gateway需要打开PROVISIONING\_ENABLE，灯端需要打开MESH\_PAIR\_ENABLE，上位机tl\_gateway\_uart.exe，可以实现mesh组网，自动分配device address

gateway:support uart,need enable the macro of PROVISIONING\_ENABLE in 'light\_gateway\_826x.h'.light\_826x projects need enable the macro of MESH\_PAIR\_ENABLE. the tool of 'tl\_gateway\_uart.exe' can mesh networking and set device address.

20171229 V1.F (git 2017/12/29 20:57:24 SHA-1: ff66b6c7310d938b3ce7a70eefde948a0328f65f)

1. 解决BLE5.0 无法连接的问题，本版本之前都无法和BLE5.0的手机进行连接，建议客户升级到本次最新版本，如不想升级，可以只更新V1.9--V1.D的lib (从论坛下载update\_lib\_for\_BT5.0\_V1.9-V1.D.rar获取)。
2. 改善带PA模组的BLE连接性能和通讯距离。
3. 修改telink mesh和sig mesh相互OTA的flag的存储扇区FLASH\_ADR\_MESH\_TYPE\_FLAG，从0x74000改为0x73000。
4. UART gateway增加通过发送mesh命令的方式进行组网，包括set name、set address等，目前默认关闭，如需要，把PROVISIONING\_ENABLE 置为1即可。
5. 改善PA模式以及16MHz模式时的OTA效果，改动后的方式为：BLE窗口接收ota数据到fifo中，在空闲窗口再把ota数据写入flash中。
6. 改善模拟I2C的驱动。

20171110V1.D(SHA-1: 04fbd2c753f6e6415d5a30c86f7272b5c52c95f9)

1. Add iBeacon
2. Update BLE connect interval requst: delay 1s after service discovery. For the compatibility of huawei honor 6X
3. Just for OTA:Change the judgment basis of mesh type(sig mesh or telink mesh)

201701013 V1.C(SHA-1: f422f5edcbb974a0c3b2e34f84e0459f998415de git 2017/10/13 18:45:41)

1 add the function of temperature detection for 8267 light.

2 improve the function of PA.

3 compatible with the ota function: from Telink mesh to SIG mesh

4 bug fix: LTK for the function of mesh pair.

5 add timeout method for direct\_OTA.

6 open some souce code,OTA….

201700614 V1.B\_beta(git 2017/06/14 17:12:07 merge)

1. add function of BQB
2. add projct of ‘light\_master\_8266’
3. improve some interface

20170522 V1.A (git 2017/05/22 11:38:02 merge)

1. 注意版本号是V1.A。
2. 完善mesh OTA功能：增加在发送mesh OTA数据期间可以接收APP发过来的命令；增加读取mesh OTA状态的命令；增加超时机制；
3. 修改UART 115200波特率的帧最大时间。解决某些UART master发送一帧数据期间，有时会出现短暂断续的问题。
4. 增加BQB的代码，默认关闭。
5. 当使用PA模块的时候，应该设置为0dbm。

20170401 V1.9\_fix 8269(git 2017/04/01 20:51:07)

1. 修正20170322 V1.9 版本关于8269 RAM的配置。
2. 优化功能，当LGT\_CMD\_USER\_NOTIFY\_REQ(0x2A)的目的地址为单播地址时，参数区不受5个字节的限制，可以使用全部参数(第一个表示bridge 次数的参数除外)。其它情况的双向命令保持原来的规则，request命令参数区最多能用5个，对应的response还是能用10个。(参考20160905的log)

此更新，进行简单的文件覆盖即可更新。版本号保持V1.9

20170322 V1.9(git 2017/03/22 11:18:55)----有使用gateway功能的，建议更新

1. add branch of ‘light\_gateway\_8266’ ‘light\_gateway\_8267’,支持USB/UART接口，默认是USB。

‘light\_gateway\_8267’和’light\_8267\_UART’功能基本一样，之前没有使用过light\_8267\_UART’的，如果要开发gateway功能，建议直接直接使用light\_gateway\_8267

1. improve gateway/adc/uart function.

Gateway：加快上报速度，由原来的最快一个interval(40ms)上报一个数据包，改为10ms

ADC:(1)增加auto mod，默认不使用。

(2)修正8266 ADC的ADC\_REF\_AVDD的值。如果有使用到使用ADC\_REF\_AVDD，还请重新确认该ADC功能。

3、add branch of ‘light\_8269’

20161227 V1.8(git 2016/12/27 10:55:04)

1 修改pa function调用引起scan rsp时间计算偏差，防止手机扫描设备失败，和V1.7相比，只需要替换lib文件.

20161216 V1.7(git 2016/12/16 17:27:45)

1 master dongle scan channel:38->37/38/39

2 improve pa function.

20161128 V1.6:(git 2016/11/28 19:27:47)

1 增加mesh OTA功能。详细使用请参考《MeshOTA参考文档.docx》

2 当连续调用light\_slave\_tx\_command()且需要保证每个命令都能转发足够的次数(8次)时，应该先进行判忙，使用方式参考light\_sim\_light2light()中的is\_tx\_cmd\_busy()。

3 串口当出现接收错误标记位为1时，需要进行清除，或者重启该模组，否则无法继续接收。目前有发现当模组设置115200波特率，但PC端以9600波特率向该模组发送数据时会出现接收错误标志为1。

4 把gate way功能中的部分全局变量变为局部变量，减少RAM使用。

5 8266/8267 switch增加分组命令

6 无源开关project部分功能优化：可以连续发送两个命令(100ms以上)；增加宏定义开关；清除编译警告；增强I2C接口兼容性；

20161026 V1.5:(git 2016/10/26 13:48:06)

针对8266 OTA 进行的改善：

1 8266light增加检测是否烧录了ota\_boot.bin，如果没有烧录，当开始OTA时，light会进入while(1),一直快速闪烁红灯.中断当前OTA进程。

2 针对8266 light使用2016 0805至2016 1011版本OTA后不能自动重启的问题进行改善(OTA实际已经成功，但是没能自动重启执行新的firmware,需要手动断电才能重启)。

3 建议用户更新ota\_boot.bin，更新为 \ble\_mesh\_release\tools\telink-ble-phone\ota\_boot\_20161026.bin(也可在本版本自行编译); 该版本改善ota后的重启函数，即使light使用2016 0805至2016 1011版本， OTA后也能自动重启。

20161011 V1.4:(git 2016/10/11 14:32:35)

1 修正rtc.c中7月份的天数。

2 更改light默认的PWM频率由490Hz改为600Hz

3 增加功能：当mesh中的某个节点收到8263无源开关发过来的命令后，会调用tx command帮忙进行转发，改善无源开关命令发送时间短的问题。

20160928 V1.3:(git 2016/9/28 14:18:21)

1 改善Android 7的兼容性问题：ATT表获取异常。

2 整理硬件I2C 的master 和 slave的初始化的函数接口，详见I2C\_HW\_MODOULE\_EN。

3 增加BLE连接断开和pair失败(包括login和set name等)的回调函数指针：p\_cb\_ble\_slave\_disconnect、p\_cb\_pair\_failed

20160918 V1.2:(git 2016/9/18 18:00:32)

1只缓存需要响应的命令

2修改fw版本号获取方式，比如在getver.sh里面0x322e3156 表示 V1.2 (ASCII 码)

如果想保持之前的版本号方式，在user\_init()里面把u8 get\_version\_method; 这个变量初始化为0 即可。

20160905 :( git 2016/09/05 15:03:51)

1 8263\_switch 无源开关项目的开关命令参数有增加一个，当light的firmware使用新版本的SDK后(0905及以后)，无源开关的命令需要通过8266EVK进行重新配置。

2 tl\_ble\_phone\_mesh2.exe的ini配置命令的sno改为自动递增。**使用新的SDK请务必更新tl\_ble\_phone\_mesh2.exe 再进行测试。**

3 整理并简化gate way模式时的发送和接收数据的调用接口。

4 需要notify回复的命令(比如 USER\_ALL)，最多只能带5个参数，后5个为内部使用。(注： 这个要求针对的是下行的 请求 命令，对回复的 notify response 这个上行命令没有这个要求)

5 增加gpio\_set\_interrupt\_init()接口作为demo使用

6 增加no relay command组包接口：mesh\_push\_user\_command\_no\_relay()

20160805 :( git 2016/08/04 15:40:33)

1修正0708和0726版本8266 OTA时，数据传输完成后还需要等待135秒才闪灯指示OTA成功的问题。(8267无此问题)

2 整理代码，把8266/8267的ADC/UART/OTA erase做成统一的接口。

3 整理代码，把light\_switch.h拆分为 light\_switch\_8266.h和light\_switch\_8267.h，后续有某个项目添加新的芯片时也采用类似的代码结构。

4 把文件夹\vendor\light\_no\_mesh\_8267改名为\vendor\light\_no\_mesh，并添加light\_no\_mesh\_8266编译选项。(和switch一样，也是采用仅添加light\_no\_mesh\_8266.h的方式，其他代码部分light\_no\_mesh 8266和8267共用)

5 switch 8266/8267工程：改善参数使deep sleep的功耗由4.5uA降为1.8ua(需去掉电源检测的分压电阻)，suspend 电流也降低到15uA左右。

6 为更好的提升Android手机的兼容性(连接方面)：把广播包间隔由8 (320ms)改为4 (160ms)。

20160726 :( git 2016/07/26 15:56:09)

1 switch项目增加用组合按键触发factory reset机制。

2 增加软重启时，记忆重启前的开关灯状态，重启后还原。(断电重启不记忆)

20160708 :( git 2016/07/08 16:11:14)

1提升Android手机兼容性:改善兼容Android6.0及以上版本，以及其它在获取ATT表时会主动更改interval为7.5ms的Android BLE。比如三星S7、Nexus 6等

2 OTA机制改善：在收到最后一个包的时候，light主动发送terminate命令，快速断开连接。节省OTA时间。

3 20160528版本增加的密码加密后再保存的功能，用户可以选择关闭：把pair\_config\_pwd\_encode\_enable设为0即可。

4 对单灯地址进行开关的时候，增加功能： 在连续发送“关”或“开”的命令时，虽然状态没变化，但也会每次都上报状态信息。

5 场景命令生效的时候，如果当前正在进行渐变的动作，把渐变过程取消，避免产生场景没生效的假象。这个在快速发开关灯和切换场景的时候有可能会出现。

6 switch 和 motion sensor都增加kick out和set device address的功能。

20160615 :(git 2016/06/15 12:46:31)

1提升Android手机兼容性

2 当灯为on的状态时，确保online status的亮度值显示不为0。

20160612 :(git 2016/06/07 11:40:37)

1 和20160607的差异：仅更新 light\_switch.h 这个文件。

20160607 :(git 2016/06/07 11:40:37)

1 增加可配置广播包间隔和online status间隔，分别通过更改adv\_interval2listen\_interval和online\_status\_interval2listen\_interval来实现，默认的单位是40ms。

2 默认打开37/38/39三个广播通道。注意：量产的版本，必须打开。

20160528 :(git 2016/05/28 16:42:35)

1 mesh password经过加密后再存储到flash中，加密参数由MESH\_PWD\_ENCODE\_SK决定。需要注意的是：加密参数一旦确定，后续就不应该修改，以免前后两个版本不兼容。

2 增加读取灯的指定ID的闹钟或场景的命令。在该读取方式下，可以用组的方式去获取。

3 增加配置不发广播包的接口：send\_adv\_flag 设为0即可，默认为1.

4 RTC机制完善。

20160513 :(git 2016/05/13 15:10:05)

1 增加ota写flash check机制，防止写flash失败。

2 场景配置生效的时候，不修改本地保存的亮度、rgb值。

3 增加可选功能：上电一定时间后不再响应修改mesh info命令。

20160429: (git 2016/04/29 17:18:20)

1. 增加eddystone beacon 功能。
2. 重新上电后，日期和时间还没同步前，所有的闹钟都设为不响应。

20160422: (git 2016/04/22 14:54:06)

1. 增加TIMER0的配置，默认关闭。详看IRQ\_TIMER0\_ENABLE。需要注意的是，现在已经在库函数中添加了清中断动作和定义了中断回调函数irq\_timer0(); 如果客户端之前也已经添加了清中断的动作，升级到该版本时，请去掉该动作，并把time0的中断处理代码迁移到irq\_timer0()中。
2. Online status功能，增加状态变化的回调函数。调用注册函数register\_mesh\_node\_status\_callback()后，当发现新的节点，或者节点数据变化的时候，会回调注册的light\_node\_status\_change\_cb()函数。缺省为非注册状态。
3. Online status功能，可以指定上报某个device addr的数据。
4. BLE连接成功后，默认请求更改连接参数。IOS可成功更改，大部分Android可以，少部分因为对更改的参数有特别的要求，所以会不成功。详看rf\_link\_slave\_connect\_callback()。
5. 提高系统内部软件RTC的精度，改善后的RTC误差只取决于晶振的偏差。

20160406: (git 2016/04/05 16:04:34)

1. 更新UART连续发送时的bug
2. 优化RAM，节省1.1K RAM.
3. OTA数据擦除由前往后擦除改为由后往前擦除，避免擦除过程中被意外断电产生异常。
4. 修正8267 switch的OTA功能
5. 针对switch和motion sensor在广播响应包中增加类型识别

20160314: (git 2016/03/14 14:13:15)

1. 修正20160212和20160309 这两个版本的一个bug：(当light使用light\_slave\_tx\_command()命令的时候请务必更新，仅switch使用的话，则不必须)。具体的异常是：改善前，如果light使用light\_slave\_tx\_command()来发送命令，则mesh中的light会再次收到最近一次app发送的命令。
2. 增加支持mesh中的任意一个节点上报notify数据，可以用于上报一些不经常变化的，类似 低电量检测之类的信息。对应的代码请参考LIGHT\_NOTIFY\_MESH\_EN(默认是关闭)
3. 增加8267master dongle编译选项

20160309: (git 2016/03/07 19:42:35)

1. Switch在adv和connect状态时的电流比之前更优化
2. 增加堆栈溢出检测，需要测试时可打开STACK\_CHECK\_ENABLE，正式产品建议关闭。
3. 对ota等数据，在login成功前，收到的所有的write数据或命令都将被直接丢弃。
4. 用户可以配置是否使用ALARM 和 SCENE，不需要该功能时可屏蔽此功能，以节省RAM的使用(对应ALARM\_EN和SCENE\_EN)
5. 用户可以配置online status的自定义字节数，对应修改

(1). 修改MESH\_NODE\_ST\_VAL\_LEN。

(2). 在需要更新的地方调用device\_status\_update()更新数据到online status的buff中，注意，只有调用了device\_status\_update()，APP端才能收到对应的数据更新。

(3). 在device\_status\_update()填写online status 参数，目前只填写了亮度值，其他保留值都是填充的0xff。

注意：MESH\_NODE\_ST\_VAL\_LEN 不等于4的时候，不能直接使用我们release的phone.exe工具进行测试，请使用你们对应修改好解析online status格式的APP来进行测试；

当自定义字节数增大时，会影响实时效果，且有可能需要把ONLINE\_STATUS\_TIMEOUT的值增大。所以需要尽量缩小自定义字节数。

20160212: (git 2016/02/12 14:23:17)

1. 修正UART 同时产生TX、RX时的处理
2. 增加单独配置某个IO口上下拉电阻的配置接口。
3. 完善ADC样例

20160203:

1. watchdog timeout时间从1s修改为2s
2. switch端增加deep sleep之前保存数据到flash，缺省关闭。

20160129:

1. switch低功耗模式
2. enable watchdog

20160114:

1. 更新flash\_write\_page()驱动，务必更新。
2. PWM管脚的上下拉电阻由上拉修改为下拉。避免可能产生一个小的脉冲。
3. 修正闹钟功能的get\_week()函数。务必更新。
4. 增加8266/8267的emi工程

1224:

1. 屏蔽switch端的proc\_debug()函数，(其他project的proc\_debug()函数在早期的版本已经去掉)。请务必去掉此函数。
2. User\_All命令可以带参数，并可在rf\_link\_response\_callback()中获取，此功能可用于定义User\_All命令的子命令等。
3. 对处于BLE连接状态的light，增加可以主动上报notify的接口：light\_notify()
4. kick\_out命令增加一个参数，当没有带这个参数，或者这个参数为0时，会设置light的mesh name为“out\_of\_mesh”；当这个参数为1时，会恢复light的mesh name为初始值“telink\_mesh1”。
5. 《APP通信协议.pdf》整理并更名为《AN\_BLE-15120203-C2\_Communication Protocol for Telink BLE Mesh Light APP.pdf》

1204:

1. OTA期间，如果BLE连接断开，则中断OTA过程并重新初始化light 端。
2. 降低遥控器峰值脉冲电流
3. 添加LIGHT\_MODE到广播包回应包**(adv\_rsp\_pri\_data)**的**ProductUUID字段**中，app可通过此字段来查询LIGHT\_MODE。

1126:

1 修改LGT\_CMD\_READ\_SCENE和LGT\_CMD\_SCENE\_RSP命令码，确保0x30—0x3f可供用户自定义

1119:

1 增加场景定义功能

2 增加iBeacon开关IBEACON\_ENABLE

3 增加PA开关 PA\_ENABLE

1103:

1、8267 ota function bug fix.

2、增加adc通道选择等功能

3、8267 switch 功能实现 SWITCH\_TYPE\_SEL

1023:

1. fix master把ble interval设置太小问题
2. fix 8267 tp value，否则小米手机搜索不到

1009:

1. 优化渐开渐关效果
2. 增加音乐效果功能
3. Clean编译过程中的warning
4. 增加tp校对(夹具配合)，如果没有则用缺省值

0921

1.增加LGT\_CMD\_USER\_NOTIFY\_REQ命令，用户可以在rf\_link\_response\_callback()的GET\_USER\_NOTIFY分支里面填充需要notify给master的数据，最多10bytes。对应tool里面的

2. LGT\_CMD\_LIGHT\_READ\_STATUS正常返回灯端pwm值，当灯在off状态下返回0

3. 如果device address没有配置，其低字节将会使用mac地址的最低byte，(1~255)，高字节为0.在online status返回信息中使用device address的低字节作为识别灯的依据。即返回信息为address(1byte)+sno(1bytes)+lumem(1byte)+rsv(1byte)，每个灯为4个字节，每个notify数据包最多10bytes，所以可以填充2个灯的数据。lumem(1byte)+rsv(1byte)这两个字节，如果应用需要，用户可以通过device\_status\_update()的参数来填充。如果这个参数值有变化，灯会以notify方式通知master。

4. online status offline的更新时间，开放给用户，定义在ONLINE\_STATUS\_TIMEOUT，缺省2s，根据device个数来调整这个定义。

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0917

1. 修正设置device address时的device address合法性判断。
2. 增加开关灯命令时，渐变的效果，LIGHT\_ADJUST\_STEP\_EN 设为1即可，默认是1
3. 为当前使用的flash型号：MD25D40 and GD25Q40B，增加保护功能。默认是关闭的。如果需要打开此功能，可把FLASH\_PROTECT\_ENABLE置一即可。另外需要更新master\_dongle.bin(在新的sdk中编译即可得到，更改的地方为在发送第一个OTA数据包后延时300ms再发送下一个数据包，目的是留时间给Flash去保护)

(注：目前我们的EVK还没添加Flash去保护的命令，所以建议暂时不要打开此功能，避免误操作后不能重新更新程序。后续会提供相应的去保护工具)

1. 为了方便做Flash code的保护，现把参数地址从0x30000--0x3ffff迁移并缩小至0x76000--0x7ffff
2. 增加固定rands的接口，如果需要固定rands以方便调试加密，可在user\_init()中把rands\_fix\_flag设为1,(在user\_init()函数最后，目前默认是关闭的)
3. 广播包的scan\_rsp包，把未用到的rsv字段填充常量，供演示。
4. 进行RGB set之前要确保灯处于开的状态，否则不响应。

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0902

更新《APP通信协议\_V1.5.pdf》和《BLE\_LIGHT加密流程简介V1.7.pdf》，更新内容详见文件第一页的Revision History

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0828

1 增加定时任务功能，支持按日期时分秒和星期时分秒两种时间格式，操作类型目前支持开、关两种。

2 操作switch的左右键调节rgb值，5s之后灯端自动保存该结果。

3 增加ota timeout时间，防止firmware太大时，ota超时失败。注意：此处改的是master\_dongle.bin，用户需要重新clean编译ble\_master\_dongle项目，然后更新新的master\_dongle.bin到工具中。

4 fix bug : 通过直连灯设置mesh内其他灯的device address时设置出错。

5 为了和homekit升级兼容，灯端的参数信息保存地址变更，起始地址从之前flash 0x10000 修改为 0x30000

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0807

1 非加密版本连接之后也需要login

2 非加密版本收到加密版本的状态广播包之后不处理，防止无效node进来

3 fix一些bug，比如get ltk之后重新login的bug，非加密状态下灰化ltk功能

4 回退ltk为16进制显示

5 优化ota处理，防止mesh包太多时ota失败

6 不响应亮度值为0的设置命令

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0803

增加版本号显示，在app端

增加踢出网络命令kick\_out

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0730

防止有些andriod手机重复发送req，造成get service失败

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0728

1.fix display of rf\_len and l2cap\_len

2.set bridge times of geting group as 0x10. Be sure the same times with tl\_ble\_mesh\_light.ini

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0726

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稳定性保护处理，防止连接断开。

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0724

1 亮度值为5%~100%

2 ui修改

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=====================ENGLISH history log====================

**3. Main modifications:**

20171229 V1.F (git 2017/12/29 20:57:24 SHA-1: ff66b6c7310d938b3ce7a70eefde948a0328f65f)

1. Fix can not connect to some Phone with BLE5.0. We suggest update to this version. If don’t want to update version, update library for V1.9 to V1.D is needed. Library is attached in <update\_lib\_for\_BT5.0\_V1.9-V1.D.rar>
2. PA module : Improve BLE connection and communication distance for PA module.
3. Modify OTA flag save address(FLASH\_ADR\_MESH\_TYPE\_FLAG) from flash sector 0x74000 to 0x73000
4. UART gateway: use mesh command to setup mesh, include set name, set device address, etc. default is disable now. if want to use this function, please set PROVISIONING\_ENABLE to 1. more details refer to code with PROVISIONING\_ENABLE.
5. Improve OTA function for PA mode or 16MHz mode: receive ota data to buffer in BLE receive window in one interval, and then save to flash in bridge window.
6. Improve driver for simulated I2C.

20171110V1.D(SHA-1: 04fbd2c753f6e6415d5a30c86f7272b5c52c95f9)

1. Add iBeacon
2. Update BLE connect interval requst: delay 1s after service discovery. For the compatibility of huawei honor 6X
3. Just for OTA:Change the judgment basis of mesh type(sig mesh or telink mesh)

201701013 V1.C(SHA-1: f422f5edcbb974a0c3b2e34f84e0459f998415de git 2017/10/13 18:45:41)

1 add the function of temperature detection for 8267 light.

2 improve the function of PA.

3 compatible with the ota function: from Telink mesh to SIG mesh

4 bug fix: LTK for the function of mesh pair.

5 add timeout method for direct\_OTA.

6 open some souce code,OTA….

201700614 V1.B\_beta(git 2017/06/14 17:12:07 merge)

1. add function of BQB
2. add projct of ‘light\_master\_8266’
3. improve some interface

20170522 V1.A (git 2017/05/22 11:38:02 merge)

1. Attention: Version is V1.A.
2. Improve mesh OTA function: APP can send command during sending mesh OTA data; add command to read mesh OTA status; add timeout processing.
3. Fix Margin of one UART frame (only for baud rate 115200), because some UART master should break a short time during one UART frame.
4. Add BQB function, disable as default.
5. Should be set to 0dbm when use PA function.

20170401 V1.9\_fix 8269(git 2017/04/01 20:51:07)

Fix RAM configure of 20170322 V1.9 version。

20170322 V1.9 (git 2017/03/22 11:18:55)

1. add branch of ‘light\_gateway\_8266’ ‘light\_gateway\_8267’,support USB/UART interface, USB default。
2. improve gateway /adc/uart function.

Gateway：speed up report notify interval from 40ms to 10ms

ADC:(1)add auto mod，disable default。

(2)fix ADC\_REF\_AVDD of 8266 ADC

1. add branch of ‘light\_8269’

20161216 V1.8(git 2016/12/27 10:55:04)

1 fix: scan rsp time error for pa function, compared with V1.7,just replace lib file .

20161216 V1.7(git 2016/12/16 17:27:45)

1 master dongle scan channel:38->37/38/39

2 improve pa function.

20161128 V1.6:(git 2016/11/28 19:27:47)

1 Add mesh OTA function, details please refer to 《AN\_16112900-E1\_Telink BLE Mesh OTA Guide.docx》

2 It should check busy before call light\_slave\_tx\_command(), if want enough bridges(default is BRIDGE\_MAX\_CNT 8). Details please refer to is\_tx\_cmd\_busy() in light\_sim\_light2light().

3 Error flag should be cleared when UART RX error occur, if not, it will not received UART data any more.This case occur when baud rate of UART TX is 115200 and baud rate of UART RX(8266/8267) was 9600.

4 Save RAM for gate way function.

5 Add set group function for 8266/8267 switch.

6 Passive switch project: (1)add MACRO. (2) clean warning of compile. (3) improve interface of I2C.

20161026 V1.5:(git 2016/10/26 13:48:06)

Only Improve for 8266 OTA:

1 8266light: add checking whether exist ota\_boot.bin or not, if not, light will flash red light forever after start OTA.

2 Fix 8266 light can not auto reboot after OTA when use firmware version from 2016 0805 to 2016 1011.(need turn off and turn on power to reboot)

3 Please update ota\_boot.bin with

“\ble\_mesh\_release\tools\telink-ble-phone\ota\_boot\_20161026.bin”.Then 8266 light can auto reboot even using firmware version from 2016 0805 to 2016 1011.

20161011 V1.4:(git 2016/10/11 14:32:35)

1. Fix days of July.
2. Modify PWM frequency of light from 490Hz to 600Hz.
3. Add function: when light nod of mesh received command from passive switch, it will call tx\_command to resent this command.

20160928 V1.3:(git 2016/9/28 14:18:21)

1. Improve [compatibility](javascript:void(0);) for Android 7.
2. Add initial interface for I2C.(master and slave mode). Detail for I2C\_HW\_MODOULE\_EN.
3. Add callback function pointer : p\_cb\_ble\_slave\_disconnect、p\_cb\_pair\_failed.

20160918 V1.2:(git 2016/9/18 18:00:32)

1. Just cache the commands that need to respond.
2. Change the function of mesh\_get\_fw\_version (),0x322e3156 means ‘ V1.2’ in the file of getver.sh.

20160905 :( git 2016/09/05 15:03:51)

1. 8263\_switch project: add a parameter for light on/off command. When firware of light was updated to this version, command of 8263\_switch should be updated by 8266EVK.
2. Must updated tl\_ble\_phone\_mesh2.exe before updated SDK. because command’s sno in INI file have been modified to increase automatically.
3. Simple TX/RX interface of gate way.
4. Parameter length of requested notify command(USER\_ALL for example), should be less than 5 BYTES. (Note: it is needed only for request command, but response)
5. Add interface of gpio\_set\_interrupt\_init() as demo.
6. Add interface of mesh\_push\_user\_command\_no\_relay().

20160805: (git 2016/08/04 15:40:33)

1. For 8266 OTA function in 0708 and 0726 versions, after data transfer, LED light needs to wait for 135s, and then starts blinking to indicate OTA success (8267 doesn’t have this problem).

In 0805 version, this problem is fixed.

1. Unified ADC/UART/OTA erasing interface function of 8266 and 8267.
2. Disassembled “light\_switch.h” into “light\_switch\_8266.h” and “light\_switch\_8267.h”.

To add new chip in the following project, similar code structure will be adopted.

1. Modified folder name “\vendor\light\_no\_mesh\_8267” as “\vendor\light\_no\_mesh”, and added the compiling option “light\_no\_mesh\_8266”. (Same as Switch, only “light\_no\_mesh\_8266.h” is added, 8266 and 8267 share “light\_no\_mesh” for other code part.)
2. Switch 8266/8267 project: Improved parameters to decrease 4.5uA deep sleep current to 1.8uA (need to delete divider resistor for battery detect), and decrease suspend current to 15uA or so.
3. Improved compatibility with Android phones: Configured advertising packet interval as “4 (160ms)” instead of “8 (320ms)”.

20160726: (git 2016/07/26 15:56:09)

1. Added factory reset triggered by combination keys for switch project.
2. Added light status (on/off) retention for software reset, i.e. light status after software reset will be restored to the status before software reset. (No retention for power on reset).

20160708: (git 2016/07/08 16:11:14)

1. Improved Android phone compatibility to Android 6.o or above version, as well as Android phone which will actively modify BLE interval as 7.5ms temporarily when obtaining ATT table. E.g. Samsung S7, Nexus 6, etc.
2. Improved OTA mechanism: When Light receives the final packet, it will actively send terminate command to fast terminate the connection so as to decrease time needed for OTA.
3. User can determine whether to enable or disable the function “Mesh password will be encrypted and then stored into flash” which is added in 20160528 version. Setting “pair\_config\_pwd\_encode\_enable” as “0” is to disable this function.
4. Added function for single node on/off: When switch on/off commands are successively sent to single light node, status information will be reported each time, although status is not updated.
5. Canceled scene gradual change process when scene command takes effect, so as to avoid the illusion that the scene fails to take effect. It may appear when “on/off” or “switch scene” commands are sent fast and frequently.
6. Added “kick out” and “set device address” function for both switch and motion sensor project.

20160615: (git 2016/06/15 12:46:31)

1. Improved Android phone compatibility.
2. Ensure luminance for “online status” shows non-zero value when light status is “on”.

20160612: (git 2016/06/07 11:40:37)

1. Updated light\_switch.h file.

20160607: (git 2016/06/07 11:40:37)

1. Added configurable advertising packet interval and online status interval, which are realized by modifying “adv\_interval2listen\_interval” and “online\_status\_interval2listen\_interval”, respectively. The default unit is 40ms.
2. The three advertising channels including channel 37, 38 and 39 are enabled by default.

**Note:** For mass production versions, the three adv channels must be enabled.

20160528: (git 2016/05/2816:42:35)

1. Mesh password will be encrypted and then stored into flash. Encryption parameters are determined by “MESH\_PWD\_ENCODE\_SK”.

**Note:** Users should not modify encryption parameters once they are determinedin order to avoid version incompatibility.

1. Added commands that can read alarm clock or scene for specified light ID .user can use group ID as destination address in this case.
2. Added the interface that configures device not to send adv packet: Set “send\_adv\_flag” (default value is 1) as 0.
3. Improved RTC mechanism.

20160513: (git 2016/05/13 15:10:05)

1. Added the check mechanism when ota writes flash in order to avoid flash writing failure.
2. When scene configuration takes effect, locally stored brightness and rgb values won’t be modified.
3. Added optional function: When specific duration elapses after power on, mesh info modification command won’t be responded.

20160429: (git 2016/04/29 17:18:20)

1. Added eddystone beacon function.
2. After power cycle, all alarm clocks are configured not to respond before date and time synchronization.

20160422: (git 2016/04/22 14:54:06)

1. Added TIMER0 configuration (it’s disabled by default). Please refer to “IRQ\_TIMER0\_ENABLE” for details.

**Note:** In current library function, interrupt clearing action is added and interrupt callback function “irq\_timer0();” is defined. If in previous version the interrupt clearing action has already been added on client side, please delete this action and transfer timer0 interrupt handler code into irq\_timer0() when it’s upgraded to this version.

1. Online status function: Added callback function for node status update. After the register function “register\_mesh\_node\_status\_callback()” is invoked, when new node is found or node data are updated, the registered “light\_node\_status\_change\_cb()” function will be called. It’s not registered by default.
2. Online status function: Data of specified device addr can be reported.
3. After successful BLE connection, it requests for connection parameter update by default. IOS and most Android devices can succeed in updating connection parameters; only a few Android devices may fail since they have special requirements for parameters to be updated. Please refer to “rf\_link\_slave\_connect\_callback()” for details.
4. Improved internal software RTC accuracy. The error for improved RTC is only determined by crystal deviation.

20160406: (git 2016/04/05 16:04:34)

1. Updated the bug for continuous UART transmission.
2. Optimized RAM and saved 1.1K RAM.
3. OTA data erasing order is inverted (from lower addr to higher addr -> from higher addr to lower addr) in order to avoid erasing abnormity due to unexpected power down.
4. Revised OTA function for 8267 switch.
5. Added type identification in adv response packet for switch and motion sensor.

20160314: (git 2016/03/14 14:13:15)

1. Revised a bug in version 20160212 and 20160309: (It must be updated when light uses “light\_slave\_tx\_command()”; if only switch uses it, it’s optional.)

The abnormity is: Before improvement, if light uses “light\_slave\_tx\_command()” to send command, lights within mesh will receive the command recently sent by app again.

1. Added support for notify data report by any node within mesh. The function can be used to report some information which does not frequently change (e.g. low battery level detection result). Please refer to “LIGHT\_NOTIFY\_MESH\_EN” for corresponding code (It’s disabled by default).
2. Added compiling option for 8267 master dongle.