CONFIDENTIAL B



RF&Modem技术月刊 (专用文档,请勿转发)





2017年08月刊

Outline

- > RF information share
- ✓ Update 201704 期月刊中" LTE B34 support status" patch 需求的说明
- [MT6179]for TDD DL CA when two bands of TDD CA share the same ASM port
- ✓ [MT6179]Split band setting
- ✓ [MT6169]SVLTE C2K BPI notice
- ✓ 关于SKY7792X系列TXM 配置说明
- > RF case share
- ✓ [MT6176]Band26 6.6.3.3 NS_15 Fail

Update 201704 期月刊中"LTE B34 support status" patch 需求的说明

> 如果要支持B34,需根据对应的SW版本,确认是否包含以下Patch

MD Gen	Branch	SW patch						
MT6169	LR9.W1444.MD.LWTG.MP	MOLY00168238						
	LR11.W1539.MD.CMCC.MP	MOLY00221378						
MT6176	LR11.W1603.MD.MP	MOLY00225226						
	LR11.W1603.MD.TC16.JAD.SP	MOLY00227493						
	LR11.W1630.MD.MP	MOLY00225228						
	LR11.W1630.MD.TC10.SP	MOLY00222883						



[MT6179]for TDD DL CA when two bands of TDD CA share the same ASM port

▶ 如果是用B39+B41 dual SAW 做 TDD CA, 即B39和B41的RX共用同一个 ASM 的TRx端口,例如: 搭配Phase2 (or Phase3 DP18T) TXM or Diversity ASM), 请将B39/B41 Tx/Rx ASM off 的command移除, 以避免其中一个CC 提早关掉的时候, 关掉共用的ASM 而影响另外一个CC.

> 类似如下主集连接 RF B5 TRX TXM TRX9 RFIN L RF B7 TRX TXM GND 39 GND D GND RF B34 PRX TXM RF B40B41 TRX TXM BYPASS RF B40 TRX TXM RF B39B41 TRX TXN RF B1B3 TRX TXM RF B8 TRX TXM

B39/B41 dip-SAW can support both non-CA and B39/41 CA, the CA feature depands on CA modern development done.





[MT6179]Split band setting

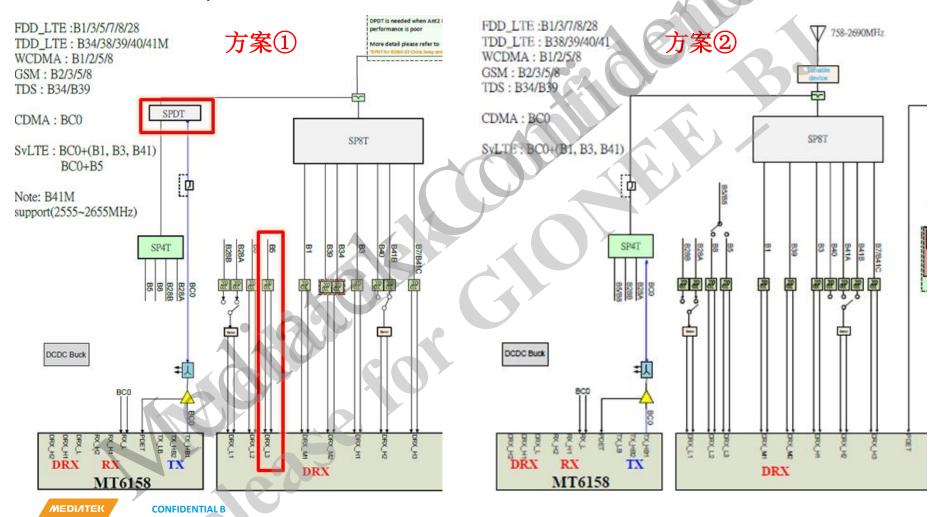
▶ MT6179不支持split band分布在不同的Part里,即所有split子频段都必须在同一个Part里[PART0(RX1-11)/PART1(RX12-22)],最好是在同一个group里。

MT6179	LNA group	Group 9		Group 8			Group 7		Group 6		Group 5				Group 4			Group 3		Group 2			Group 1		
	Freq range	LAA		UНВ/НВ		нв/мв		MB/LB		LB				нв/инв			нв/мв		MB/LB			LB			
	LNA port#	LAA2	LAA1	RX22	RX21	RX20	RX19	RX18	RX17	RX16	RX15	RX14	RX13	RX12	RX11	RX10	RX9	RX8	RX7	RX6	RX5	RX4	RX3	RX2	RX1
Global SKU	PRX	252 255		40	41 (38)		1	4 (66)	11 21 32	2 (25)	5 (26/ 18/ 19)	13 27	8	12 (17)	42 43		22	7	30		3	34 39 2GH B	28B 29	20	28A
	DRX	252 255		40	41 (38)		1	4 (66)	2 (25)	11 21 32	12 (17)	13 27	8	5 (26/ 18/ 19)	42 43		22	7	30		3	34 39 2GH B	28B 29	28A	20



[MT6169]SVLTE C2K BPI notice

▶ 越来越多的客户在做SVLTE时增加除LTE Band5以外的其他低频频段, 比如Band8/Band28等,而采用的线路连接有以下两种:



[MT6169]SVLTE C2K BPI notice

- ➤ 需要特别注意的是: 所有与C2K有关的BPI必须是BPI5~BPI20中的
 - ➤ 在方案①中,SPDT所使用的BPI,其所对应的<mark>高电平</mark>逻辑所控制的RF port 必须给C2K BC0使用
 - ➤ 在方案②中,SP4T所使用的BPI,给C2K使用的RF port必须是所有BPI都是 高电平所控制的那个端口
 - ▶ 为什么?
 - ▶ 这些BPI控制逻辑如果在C2K和LTE同时使用时,会进行"或"运算:比如,C2K BC0工作时的逻辑为(1,1,0),而此时LTE Band8也开始工作,且逻辑为(1,1,1),那么经过"或"之后,这三个逻辑就最终被置为(1,1,1),那么C2K BC0就会断开,LTE Band8 工作,这会导致违反语音优先的要求
 - ▶ 所以,控制C2K的逻辑必须全部都为1,这样才能保证C2K只要开始工作,就不会被其他LTE 频段抢
- ➤ Tx相关的PA enable,PA mode以及DCDC enable的控制BPI必须使用BPI15~BPI20中的
- ➤ BPI setting must be Aux Func.2 for DWS



Background

- From SKY77927/928 APP Note, to avoid possible TX MIPI corruption,
 SKWS advise to send "software reset" when TX/RX off
- The solution applies to all TDD RAT: GMSK, TD-SCDMA, TDD-LTE

To avoid possible TX MIPI corruption, any unused ASM registers (Reg2, Reg3, Reg5) and Coupler register (Reg4) should be reset to 0x00.

Another option is to send "software reset", code 0x80 → reg 0x23. This will reset all user defined registers, but requires extended MIPI write.

TX Power can be reduced or lost if non-zero values are written to unused ASM or Coupler registers. Applies to all modes; GMSK, 8PSK, TD-SCDMA, TDD-LTE.

Please double confirm the system timing with platform vendor after adding software reset code.



SKWS TXM add Software reset

- Add "TXM Software reset" cmd:
 - 2G: add into TX_OFF/RX_OFF event
 - TDS: add into TX_OFF/RX_OFF event
 - TDD-LTE: add into TX_OFF/RX_OFF event

Please double confirm the timing by case after add software reset event



2G Custom file

Add into RX OFF event/data:

```
/* GGE MIPI_CTRL_TABLE_GSM850.mipi_rx_ctrl_table.mipi_rxctrl_event[]
                                                   event type
                      type
                                                                                 QB MIPI RX ONO Set0
              0 */ GGE MIPI ASM , {
                                                 }, GGE_MIPI_TRX_ON
              1 */ GGE_MIPI_ASM ,
                                                                                 QB MIPI RX ON2 Set0
                                                 }, GGE_MIPI_TRX_ON
                                                                                 QB MIRI RX ON1 Set0
              1 */ GGE MIPI ASM , {
                                                   }, GGE MIPI TRX ON
                                                                                 OB MIPI RX OFFO Set0
              2 */ GGE MIPI ASM ,
                                                  }, GGE MIPI TRX OFF
GGE MIPI CTRL TABLE GSM850.mipi rx ctrl table.mipi rxctrl data[] */
                                                                                     , { subband arfcn, addr, data }.
             elm type , port select
                                              data format
                                                                                                                      { subband ar
                                                GGE_MIPI_REG_W
                                                                          MIRI USID ASMO Set0
      0 */ GGE MIPI ASM , GGE MIPI PORTO
      1 */ GGE MIPI ASM , GGE MIPI PORTO
                                               GGE MIPI REG W
                                                                          MIPI USID ASMO Set0
                                                                                                                      0x05, 0x00 }
      2 */ GGE MIPI ASM , GGE MIPI PORTO
                                                                          MIPI USID ASMO SetO
                                                GGE MIPI REG W
                                                                                                                      0x03, 0x00 }
      3 */ GGE_MIPI_ASM , GGE_MIPI_PORTO
                                                GGE MIPI REG W
                                                                          MIPI USID ASMO SetO
                                                                                                       251
                                                                                                                       0x02, 0x03 }
                                                GGE_MIPI REG W
                                                                          ,MIPI USID ASMO SetO
   /* 4 */ GGE_MIPI_ASM , GGE_MIPI_PORTO
                                                                                                       251
                                                                                                                      0x02, 0x00 }
     5 */ GGE MIPI ASM , GGE MIPI PORTO
                                                GGE MIPI REG W EXT 1ST
                                                                          MIPI USID ASMO Set0
                                                                                                                      0x23, 0x80 }
```

Add into TX OFF event/data:

```
GGE MIPI CTRL TABLE GSM850 mipi tx ctrl table.mipi txctrl data[] */
                                                   data format
            GGE MIPI ASM ,
                            GGE MIPI PORTO
                                                  GGE MIPI REG W
                                                                             ,MIPI USID ASM0 Set0
           GGE MIPI ASM , GGE MIPI PORTO
                                                   GGE_MIPI_REG_W
                                                                             ,MIPI USID ASMO Set0
                                                                                                             251
                            GGE_MIPI_PORTO
            GGE MIPI ASM ,
                                                  GGE_MIPI_REG_W
                                                                             ,MIPI_USID_ASM0_Set0
                                                                                                             251
                                                  GGE MIPI REG W
            GGE MIPI ASM , GGE MIPI PORTO
                                                                             ,MIPI USID ASMO SetO
                                                                                                             251
            GGE MTPI ASM ,
                                                  GGE MIPI REG W
                                                                             ,MIPI USID ASM0 Set0
                                                                                                             251
                           GGE MIPI PORTO
      5 */ GGE MIPI ASM ,
                            GGE MIPI PORTO
                                                  GGE_MIPI_REG_W
                                                                             ,MIPI USID ASM0 Set0
                                                                                                             251
                            GGE MIPI PORTO
                                                  GGE_MIPI_REG_W
                                                                             ,MIPI_USID_ASMO_Set0
                                                                                                             251
  /* 6 */ GGE MIPI ASM ,
 /* 7 */ GGE MIPI ASM ,
                            GGE MIPI PORTO
                                                   GGE MIPI REG W EXT 1ST
                                                                             MIPI USID ASMO SetO
                                                                                                                           , 0x23, 0x80 },
```

TDSCDMA Custom file

Add into RX OFF data:

Add into TX OFF data:





TDD-LTE Custom file

Add into RX OFF event/data:

```
LTE_MIPI_EVENT_TABLE_T LTE_Band39_MIPI_RX_EVENT_Set0[] =
   /* No.
                                                                                 , evt offset
                                                                                 , LTE TDD MIPI ASM RX ONO Set0
            */ LTE MIPI ASM , { 0
                                                     }, LTE_MIPI_TRX_ON
                                                    }, LTE MIPI TRX OFF
                                                                               , LTE TDD MIPI ASM RX OFF0 Set0
                                                     }, LTE MIPI EVENT NULL, 0
    { /* 2 */ LTE MIPI NULL, { 0
LTE_MIPI_DATA_SUBBAND_TABLE_T LTE_Band39_MIPI_RX_DATA_Set0[] =
                                                                                                   ,addr ,data }, { subband-1 freq
                                                                                     ,{ { 18800 /*100 kHz*/ ,0x1C ,0x38 }, { 18900 /*100 kHz*/ ,0x1C ,0x38 },
           */ LTE MIPI ASM , LTE MIPI PORTO
                                              , LTE REG W
                                                              , MIPI USID ASMO SetO
                                                                                     , { { 18800 /*100 kHz*/ ,0x05 ,0x02 }, { 18900 /*100 kHz*/ ,0x05 ,0x02 },
            */ LTE MIPI ASM , LTE MIPI PORTO
                                                              , MIPI USID ASMO Set0
          */ LTE MIPI ASM , LTE MIPI PORTO
                                                              , MIPI USID ASMO Set0
                                                                                   , { { 18800 /*100 kHz*/ ,0x1C ,0x38 }, { 18900 /*100 kHz*/ ,0x1C ,0x38 },
          */ LTE MIPI ASM , LTE MIPI PORTO
                                                              , MIPI_USID_ASMO_Set0 , { { 18800 /*100 kHz*/ ,0x1C ,0x38 }, { 18900 /*100 kHz*/ ,0x1C ,0x38 },
                                                                                   ,{ { 18800 /*100 kHz*/ ,0x1C ,0x38 }, { 18900 /*100 kHz*/ ,0x1C ,0x38 },
            */ LTE MIPI ASM , LTE MIPI PORTO
                                                              , MIPI USID ASMO SetO
                                                                                     ,{ { 18800 /*100 kHz*/ ,0x1C ,0x38 }, { 18900 /*100 kHz*/ ,0x1C ,0x38 },
            */ LTE MIPI ASM , LTE MIPI PORTO
                                              , LTE REG W
                                                              , MIPI_USID_ASM0_Set0
            */ LTE_MIPI_ASM , LTE_MIPI_PORTO
                                              , LTE_REG_W
                                                                                               /*100 kHz*/ ,0x05 ,0x00 }, { 18900 /*100 kHz*/ ,0x05 ,0x00 },
                                                              , MIPI_USID_ASM0_Set0
            */ LTE_MIPI_ASM , LTE_MIPI_PORTO
                                              , LTE_REG_W
                                                                                     ,{ { 18800 /*100 kHz*/ ,0x1C ,0x38 }, { 18900 /*100 kHz*/ ,0x1C ,0x38 },
                                                              , MIPI_USID_ASM0_Set0
            */ LTE_MIPI_ASM , LTE_MIPI_PORTO
                                              , LTE REG W
                                                              , MIPI_USID_ASM0_Set0
                                                                                     ,{ { 18800 /*100 kHz*/ ,0x1C ,0x38 }, { 18900 /*100 kHz*/ ,0x1C ,0x38 },
                                                                                    ,{ { 18800 /*100 kHz*/ ,0x1C ,0x38 }, { 18900 /*100 kHz*/ ,0x1C ,0x38 },
            */ LTE MIPI ASM , LTE MIPI PORTO
                                              , LTE REG W
                                                              , MIPI USID ASMO Set0
                                                                                      ,{ { 18800 /*100 kHz*/ ,0x23 ,0x80 }, { 18900 /*100 kHz*/ ,0x23 ,0x80 },
```

Add into TX OFF event/data:

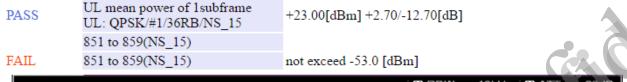
```
LTE_MIPI_EVENT_TABLE_T LTE_Band39_MIPI_TX_EVENT_Set0[]
                                                                                 evt_offset
    /* No.
                                                                                 LTE TDD MIPI PA TX ONO Set0 }, //PA On
            */ LTE MIPI PA
                                                                                LTE TDD MIPI PA TX OFFO Set0 }, //PA Off
    { /* 2 */ LTE MIPI ASM
                                                                                  LTE_TDD_MIPI_ASM_TX_ONO_Set0 }, //TDD ASM at Tx on
                                                                                  LTE TDD MIPI ASM TX OFFO Set0 },//TDD ASM at Tx off
                        , port_sel
                                                                                                   ,addr ,data }, { subband-1 freq ,addr ,data }, { sub
          */ LTE_MIPI_PA , LTE_MIPI_PORTS
                                                             , MIPI USID PAO SetO
                                                                                    ,{ { 18800 /*100 kHz*/ ,0x00 , 0x00}, { 18900 /*100 kHz*/ ,0x00 , 0x00},
                                               LTE REG W
                                                             , MIPI_USID_PAO_Set0
                         , LTE MIPI PORTS
                                                                                    ,{ { 18800 /*100 kHz*/ ,0x02 , 0xE0}, { 18900 /*100 kHz*/ ,0x02 , 0xE0},
          */ LTE_MIPI_PA , LTE_MIPI_PORTO
                                                             , MIPI USID ASMO SetO
                                                                                    .{ { 18800 /*100 kHz*/ .0x04 . 0x10}, { 18900 /*100 kHz*/ .0x04 . 0x10}.
          */ LTE_MIPI_PA LTE_MIPI_PORTS
                                             , LTE REG W
                                                              MIPI USID PAO SetO
                                                                                    ,{ { 18800 /*100 kHz*/ ,0x00 , 0x00}, { 18900 /*100 kHz*/ ,0x00 , 0x00},
          */ LTE_MIPI_PA , LTE_MIPI_PORTO
                                             , LTE_REG W
                                                              MIPI USID ASMO Set0 , { { 18800 /*100 kHz*/ ,0x04 , 0x00}, { 18900 /*100 kHz*/ ,0x04 , 0x00},
          */ LTE_MIPI_ASM , LTE_MIPI_PORTO
                                             , LTE REG W
                                                             , MIPI_USID_ASM0_Set0
                                                                                  ,{ { 18800 /*100 kHz*/ ,0x1C , 0x38}, { 18900 /*100 kHz*/ ,0x1C , 0x38},
          */ LTE MIPI ASM , LTE MIPI PORTO
                                                              MIPI USID ASMO Set0
                                                                                  ,{ { 18800 /*100 kHz*/ ,0x1C , 0x38}, { 18900 /*100 kHz*/ ,0x1C , 0x38},
          */ LTE MIPI ASM , LTE MIPI PORTO
                                             , LTE REG W
                                                              MIPI_USID_ASM0_Set0
                                                                                   ,{ { 18800 /*100 kHz*/ ,0x1C , 0x38}, { 18900 /*100 kHz*/ ,0x1C , 0x38},
          */ LTE MIPI ASM , LTE MIPI PORTO
                                             , LTE REG W
                                                             , MIPI USID ASMO SetO
                                                                                    ,{ { 18800 /*100 kHz*/ ,0x05 , 0x05}, { 18900 /*100 kHz*/ ,0x05 , 0x05},
          */ LTE MIPI ASM , LTE MIPI PORTO
                                                             , MIPI USID ASMO SetO
                                                                                    ,{ { 18800 /*100 kHz*/ ,0x1C , 0x38}, { 18900 /*100 kHz*/ ,0x1C , 0x38},
           */ LTE MIPI ASM , LTE MIPI PORTO
                                                              , MIPI_USID_ASM0_Set0 , { { 18800 /*100 kHz*/ ,0x1C , 0x38}, { 18900 /*100 kHz*/ ,0x1C , 0x38
          */ LTE_MIPI_ASM , LTE_MIPI_PORTO
                                              , LTE_REG_W
                                                              , MIPI_USID_ASM0_Set0 , { { 18800 /*100 kHz*/ ,0x1C , 0x38}, { 18900 /*100 kHz*/ ,0x1C , 0x38
          */ LTE MIPI ASM , LTE MIPI PORTO
                                                             , MIPI_USID_ASMO_Set0 __, { { 18800 /*100 kHz*/ ,0x1C , 0x38}, { 18900 /*100 kHz*/ ,0x1C , 0x38},
  { /* 13 */ LTE MIPI ASM , LTE MIPI PORTO
                                                             , MIPI USID ASMO Set0 , { { 18800 /*100 kHz*/ ,0x05 , 0x00}, { 18900 /*100 kHz*/ ,0x05 , 0x00},
  { /* 14 */ LTE MIPI ASM , LTE MIPI PORTO
                                                             , MIPI USID ASMO Set0 , { { 18800 /*100 kHz*/ ,0x1C , 0x38}, { 18900 /*100 kHz*/ ,0x1C , 0x38},
  { /* 15 */ LTE_MIPI_ASM , LTE_MIPI_PORTO
                                             , LTE_REG_W
                                                             , MIPI_USID_ASMO_Set0 , { { 18800 /*100 kHz*/ ,0x1C , 0x38}, { 18900 /*100 kHz*/ ,0x1C , 0x38},
  { /* 16 */ LTE_MIPI_ASM , LTE_MIPI_PORTO
                                               LTE_REG_W
                                                             , MIPI_USID_ASM0_Set0
                                                                                    ,{ { 18800 /*100 kHz*/ ,0x1C , 0x38}, { 18900 /*100 kHz*/ ,0x1C , 0x38},
```

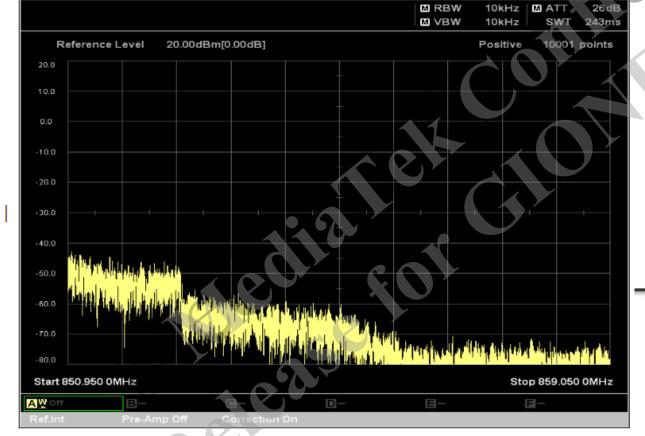


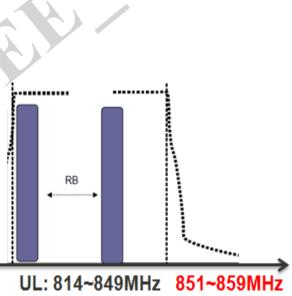
RF Case share

[MT6176]Band26 6.6.3.3 NS_15 Fail

现象:







+/-0.58 [dBm]

+/-0.90 [dBm]

[MHz]

851.042900

-50.92

RF Case share

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[MT6176]Band26 6.6.3.3 NS_15 Fail

Solution:

- Pa control dc2dc level=0.6V,0.9V,1.1V,1.5V,2.0V,2.6V,3.0V,3.4V
- Pa control
 prf=0.00000,6.00000,10.00000,13.00000,16.00000,18.00000,20.00000,23.0
 0000
- · 修改对应功率档位的TPC bias, 改善该档位的ACLR后测试Pass

```
MIPI USID PA1 P3,
                                             /*USID*X
                               / PA SEC DATAO, PA SEC DATA1, PA SEC DATA2, PA SEC DATA3, PA SEC DATA4
 结论:改善测试fail
                                    dr, data}, {addr, data}, {addr, data}, {addr, data}, {addr, data}
                                  0x1, 0x14, { 0x3, 0x80}, { 0x0, 0x1E}, { 0x0, 0x0 }, { 0x0, 0x0 }}},
case对应的功率档
                                   0x1, 0x26, { 0x3, 0x80}, { 0x0, 0x1E}, { 0x0, 0x0 }, { 0x0, 0x0 }}},
                                   0x1, 0x26, { 0x3, 0x80}, { 0x0, 0x1E}, { 0x0, 0x0 }, { 0x0, 0x0 }}},
位的线性度或ACLR
                                         x36}, { 0x3, 0x80}, { 0x0, 0x1E}, { 0x0, 0x0 }, { 0x0, 0x0 }}},
                              \{\{ \{ 0x1, 0x26\}, \{ 0x3, 0x80\}, \{ 0x0, 0x1E\}, \{ 0x0, 0x0 \}, \{ 0x0, 0x0 \} \} \},
                              \{\{\{0x1, 0x37\}, \{0x3, 0x88\}, \{0x0, 0x1C\}, \{0x0, 0x0\}, \{0x0, 0x0\}\}\},\
                             \{\{\{0x1, 0x48\}, \{0x3, 0x88\}, \{0x0, 0x1C\}, \{0x0, 0x0\}, \{0x0, 0x0\}\}\},
                              \{\{\{0x1, 0x49\}, \{0x3, 0x88\}, \{0x0, 0x1C\}, \{0x0, 0x0\}, \{0x0, 0x0\}\}\},
                               { { 0x1, 0x49}, { 0x3, 0x88}, { 0x0, 0x1C}, { 0x0, 0x0 }, { 0x0, 0x0 }}},//SRS
```



MEDIATEK

everyday genius

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