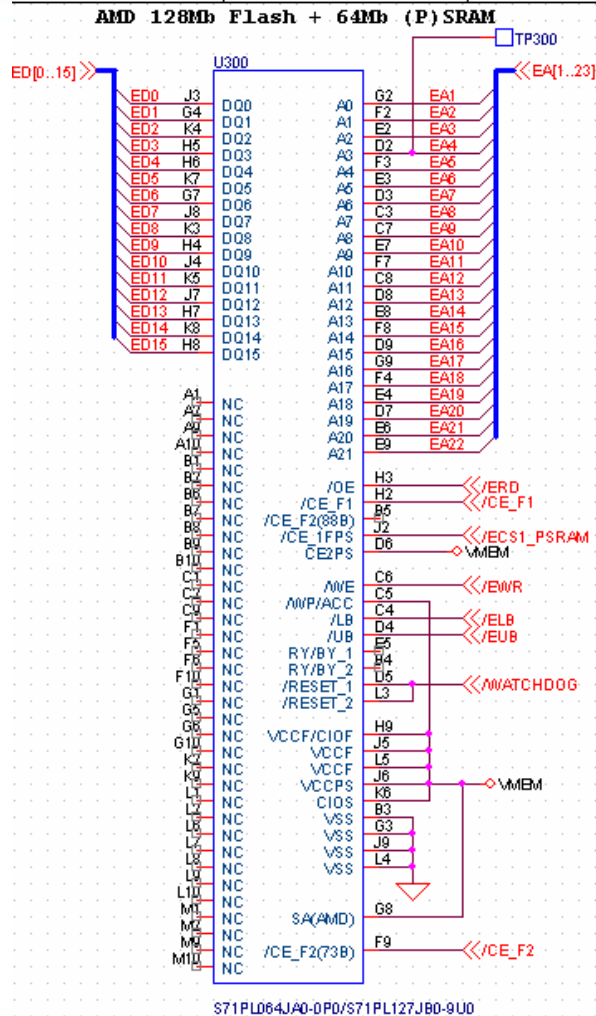


Base Band Circuit Introduction based on MT6219

External Memory Interface



- /CS3. Main LCM

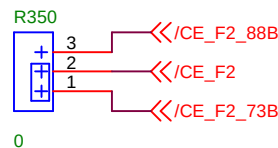
We have verify many MCP supplier's parts,
including Spansion, Toshiba, Renesas, Intel..

Pay attention to:

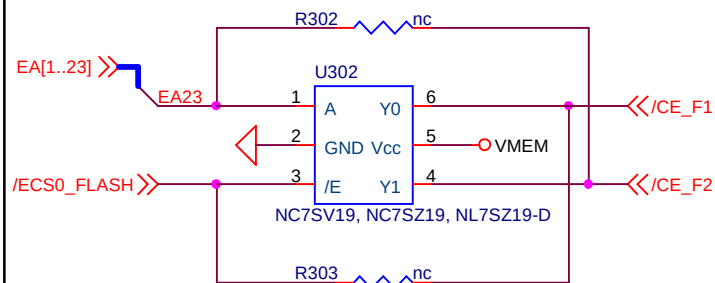
Renesas nor die or intel Tyax: /WP->GND

Others nor die: /WP->Vmen

MCP decoder

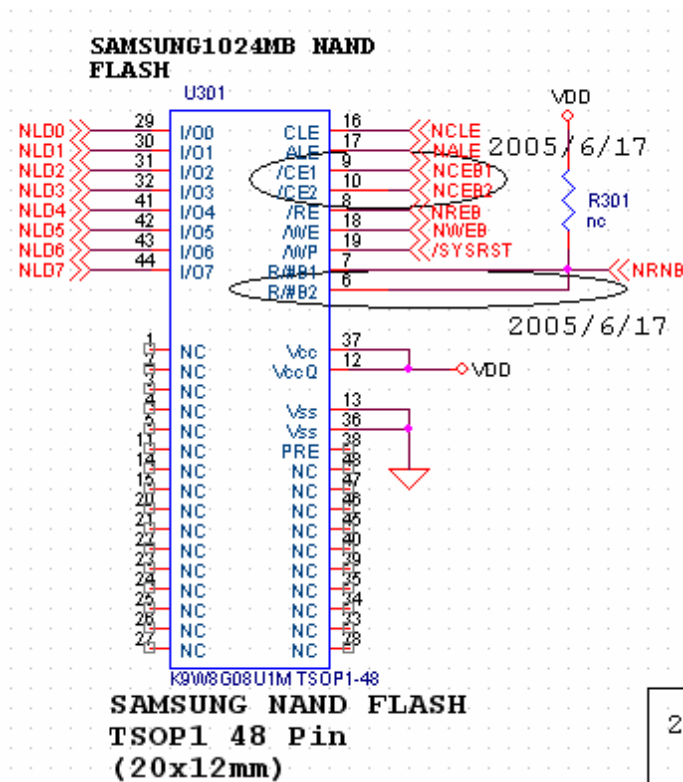


- R350 is a jumper for option the different package MCP



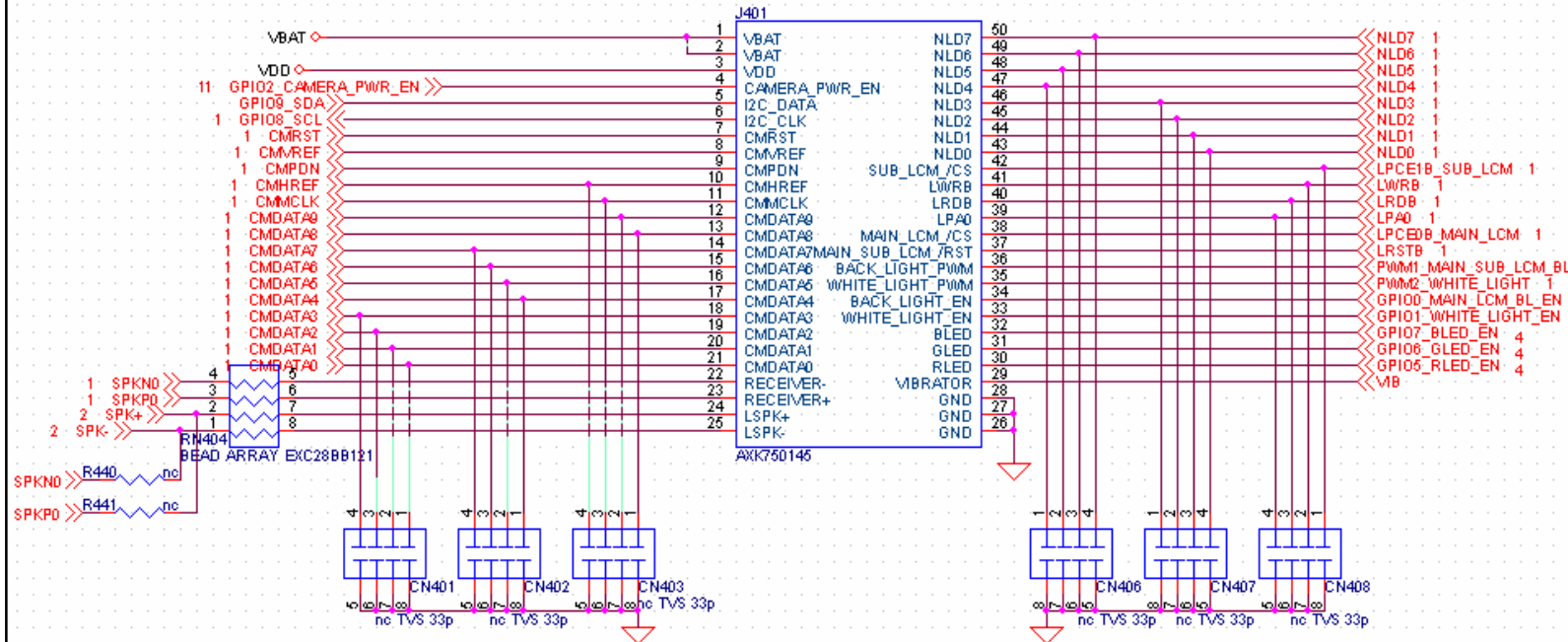
- In order to support two die Flash MCP.
- Use EA23 decide which die selected.
- If 64Mb only, R303 = 0 ohm and U302 and R302 NC
- For the GPRS and multi-media application, we suggest to use the MCP with page mode.

NAND Flash



- 8 bit NFI interface
- NFI interface power supply is VDD
- R/#B (Ready/Busy) pin pulled high (47K)
- 1 CS can support 8G bits
- 1 bit ECC SLC device
- Pay attention: **/WP -> /SYSRST**

MT6219 LCM Interface

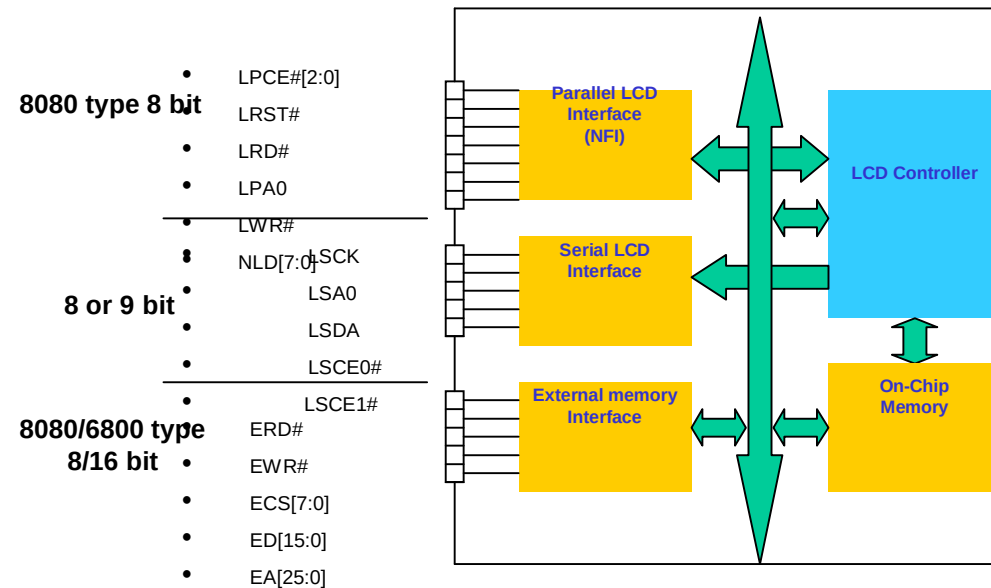


Pay attention that: GPIO[0:9] is internal pull down

Reverse CAP or Varistor Array for ESD, C_D should lower than 33pF

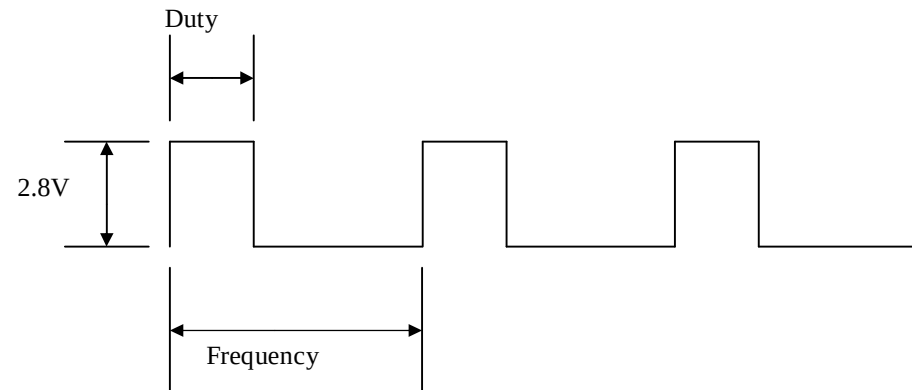
MT6217 LCM interface

- Suggestion: Parallel NFI interface for the Main / Sub dual LCM

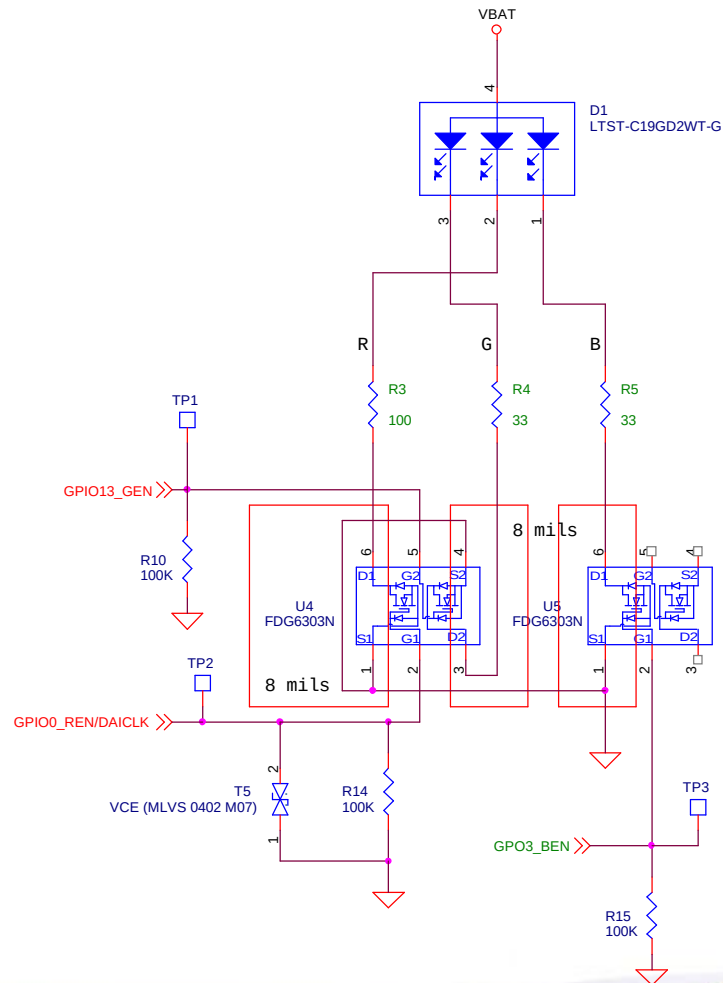


LCM BL Control

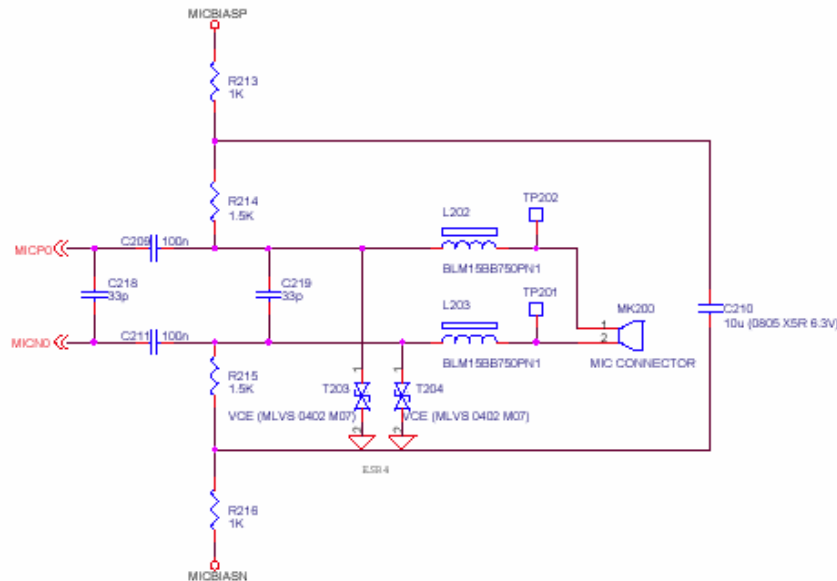
- Provide two pins to control BL on/off and brightness
 1. GPIO enable
 2. PWM dimming control



LCD Backlight



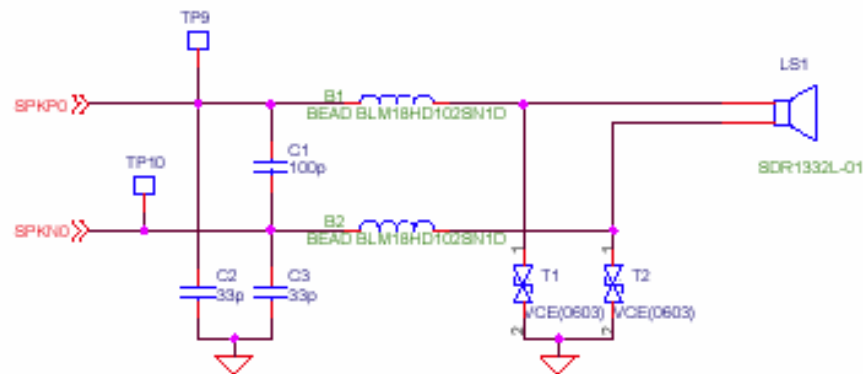
1. Use 3 GPIO pins for RGB
2. Set R3, R4 and R5 to limit Current to 20mA(Max)



Differential mode:
MICBIASP=2.2V
MICBIASN=0.3V

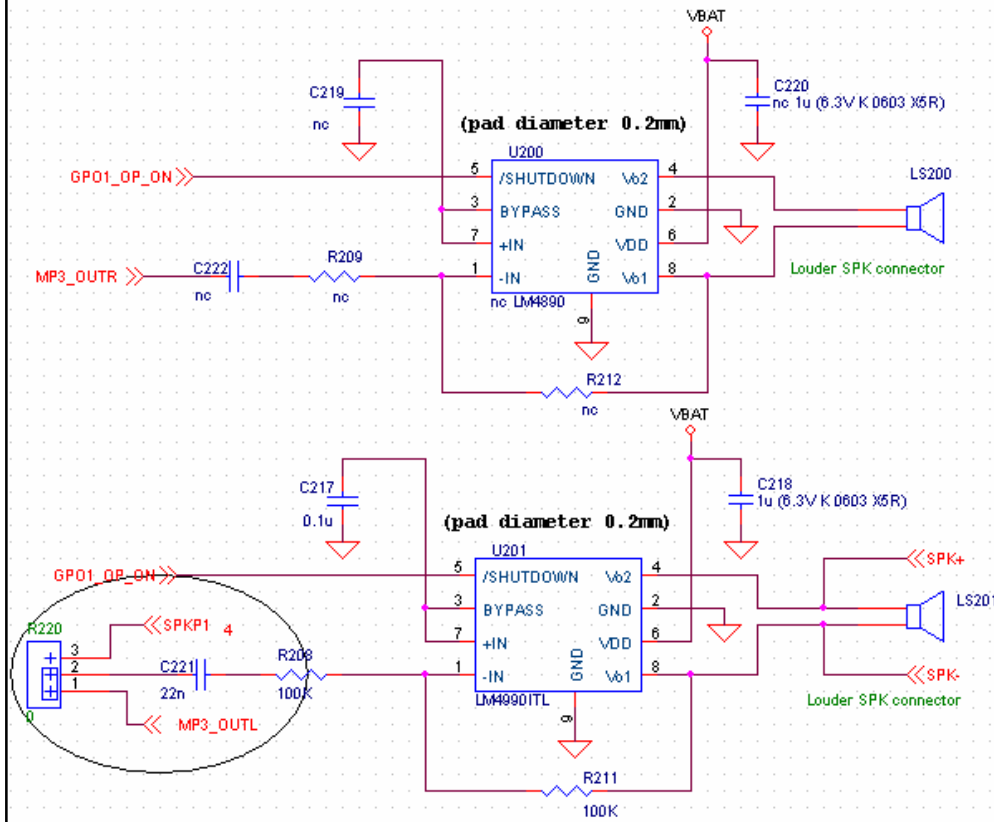
Single-end mode:
MICBIASP=1.9V
MICBIASN=0V

C218, C219, L202 and L203 are for
noise reduction



C1, C2, C3, B1 and B2 are for
noise reduction

Audio Interface



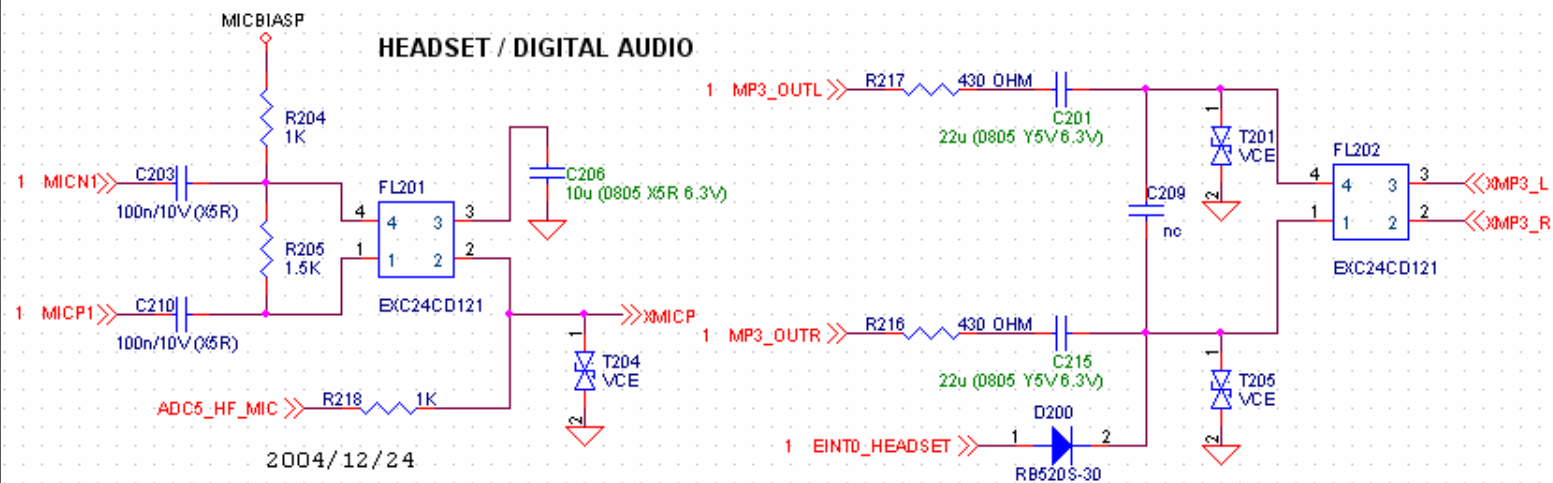
- High pass filter

$$f_c = \frac{1}{2\pi \cdot R_{in} \cdot C_{in}}$$

$$= \frac{1}{2\pi \cdot 22n \cdot 20K} = 80Hz$$
- C218/C220 bypass cap for power supply filtering
- C217/C219 bypass cap for half-supply filtering
- External OP gain

$$= 100K/20K = 14 \text{ dB}$$
- GPO1 is 0 during Sys reset
- Suggest add BEAD on Louder Speaker traces

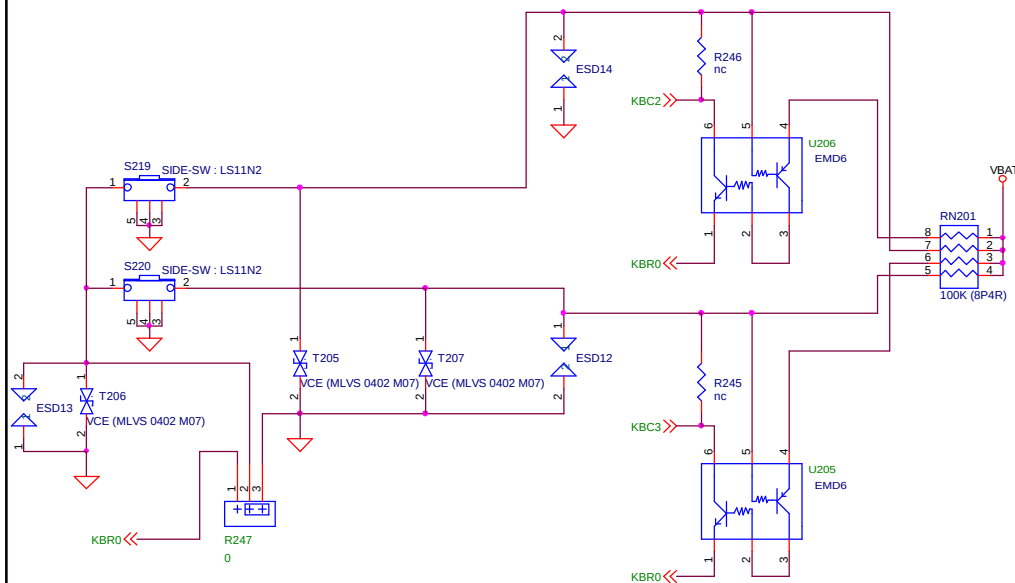
Stereo Headset



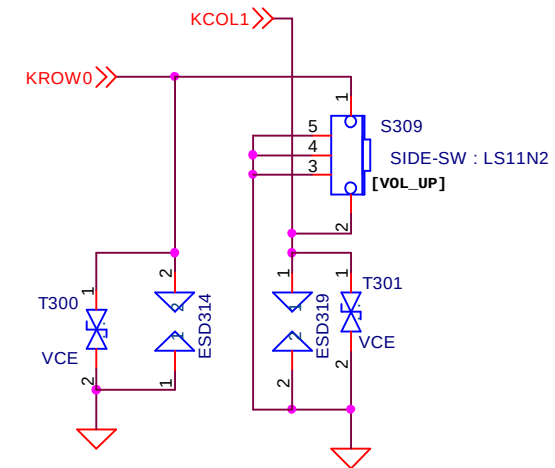
1. MP3_OUTR and MP3_OUTL for stereo headset.
2. Modify the R217 and R216 to trade-off the volume between loud speaker and headset mode.
3. Use MP3_OUTR to create interrupt signal (EINT0_HEADSET)
4. ADC5 for send-end Key detection

Side Key

Case 1



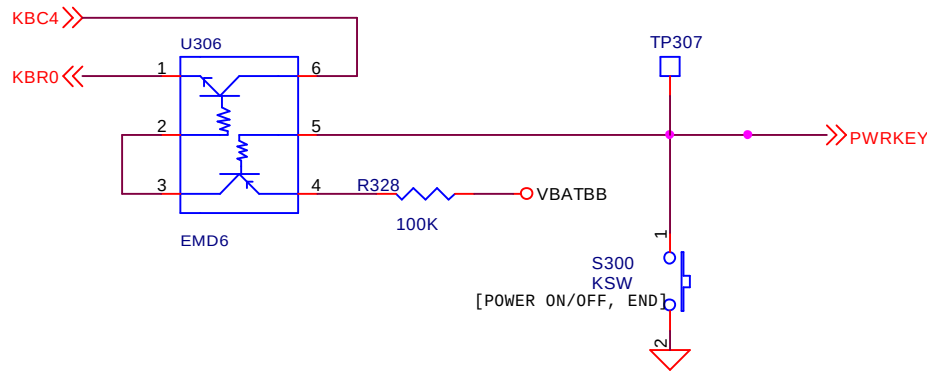
Case 2



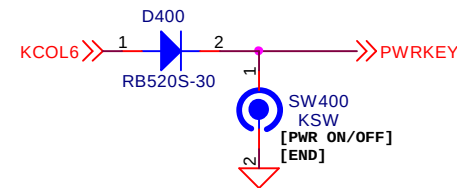
- Use two dual transistors to strengthen the ESD protection in the side key.
- If no ESD issue, short R245 and R246 to reduce components.

Power Key

•MT6205

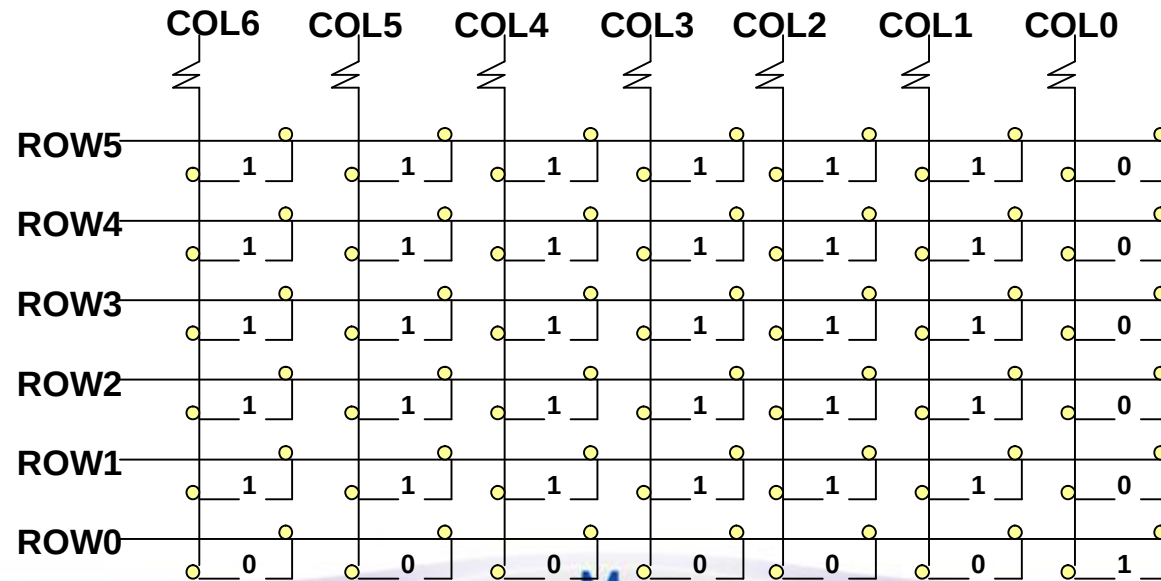
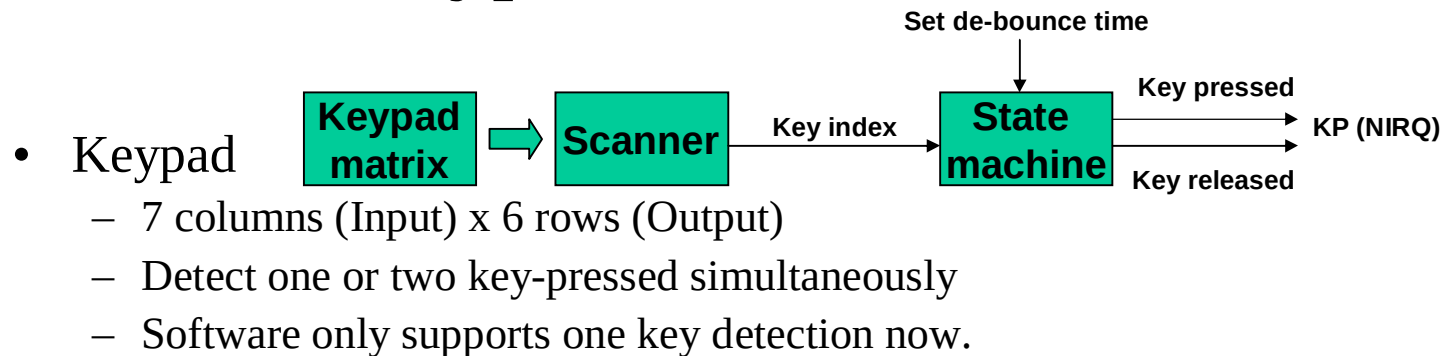


•MT6218

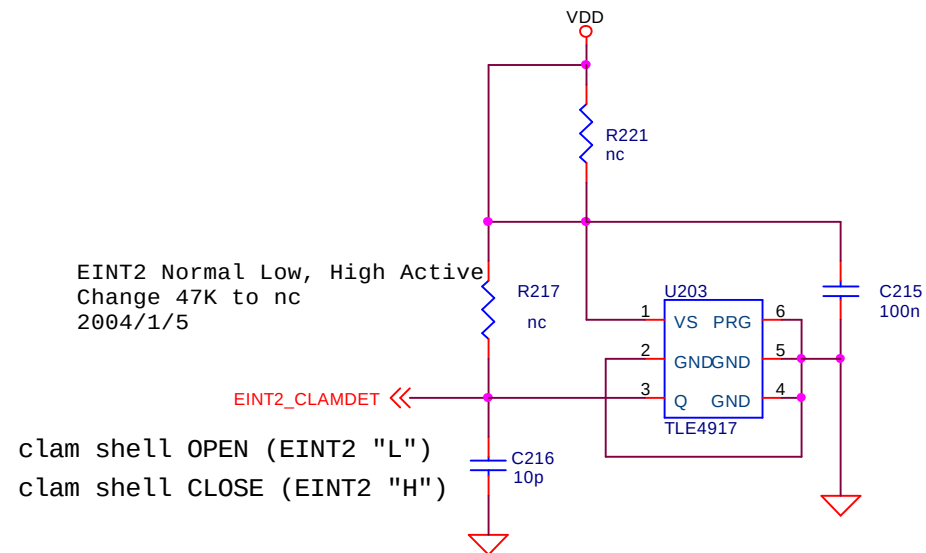


- “Low level” on the PWRKEY pin of the PMIC to turn on the LDOs
- Software must check whether it is “power key” then show normal power on MMI.

Keypad Scanner

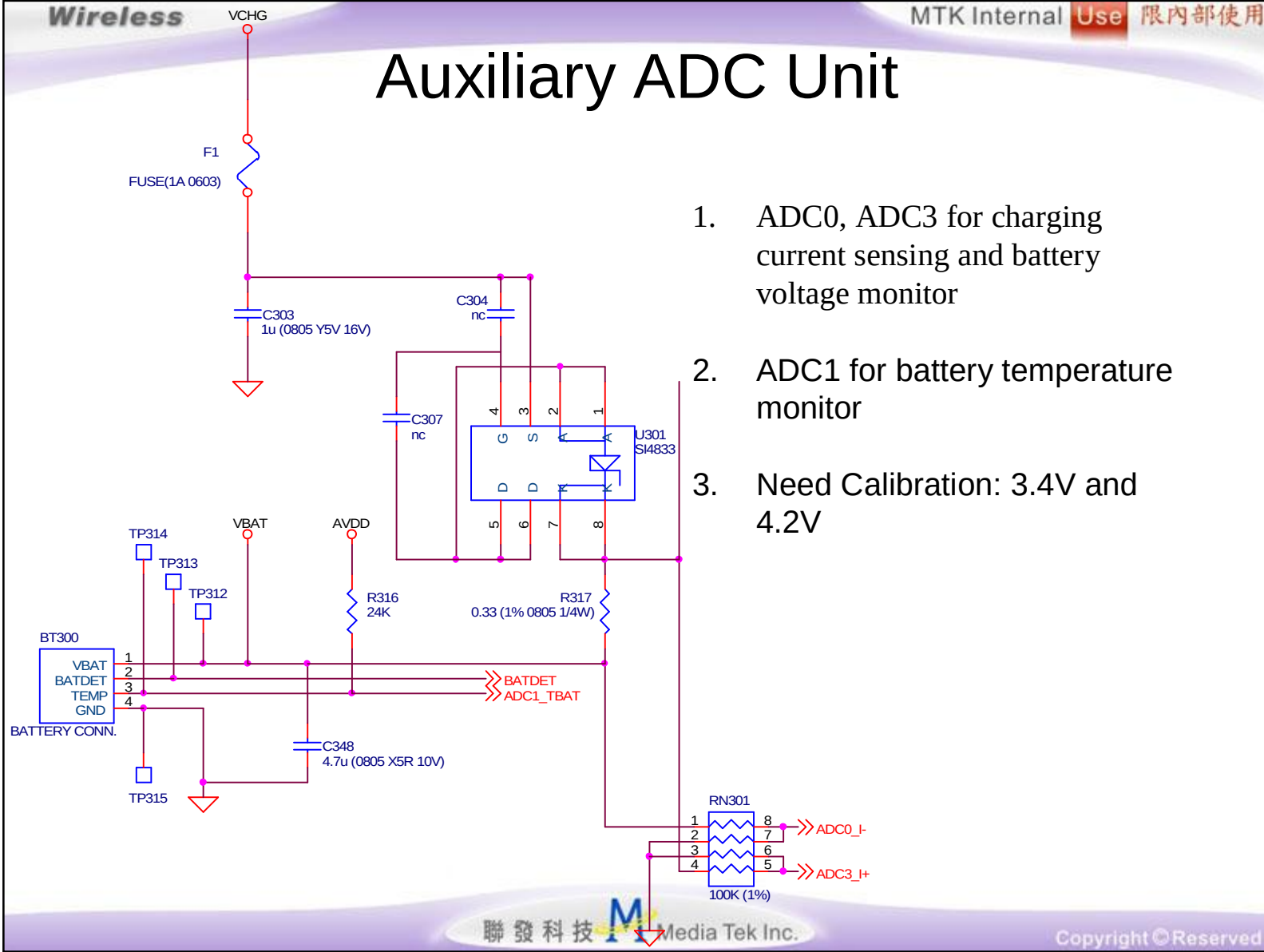


Hall Sensor IC



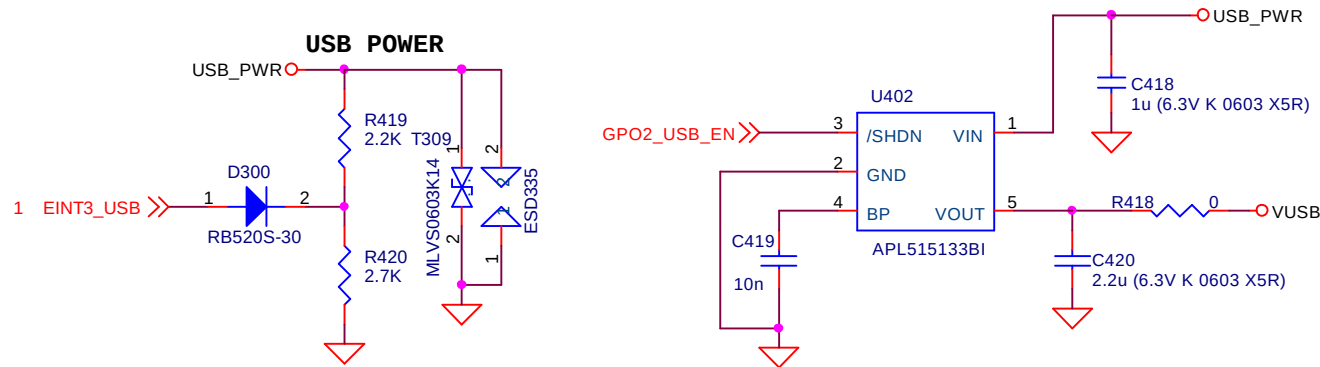
- PRG pin “Low”: magnet close à EINT goes “H”
- magnet open à EINT goes “L”

Auxiliary ADC Unit



1. ADC0, ADC3 for charging current sensing and battery voltage monitor
2. ADC1 for battery temperature monitor
3. Need Calibration: 3.4V and 4.2V

USB



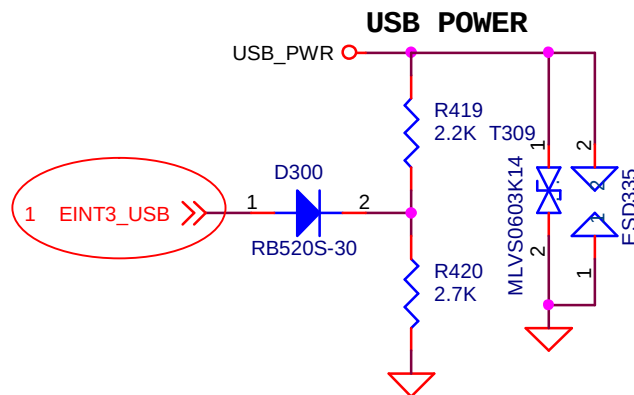
- Without external USB transceiver for USB port.
- Support USB1.1 and Microsoft Windows driver compatible
- Divide the USB_PWR (5V) by R419 and R420 to create EINT3 signal (must over $0.8 \times 2.8V = 2.24$). 35uA leakage current. “Trade-off !”
- 3.3V LDO to provide VUSB power to BB USB block
- **Short the USB_PWR and CHR pins in the USB cable !**

Reason 1: Charging power on the handset when USB plugged in

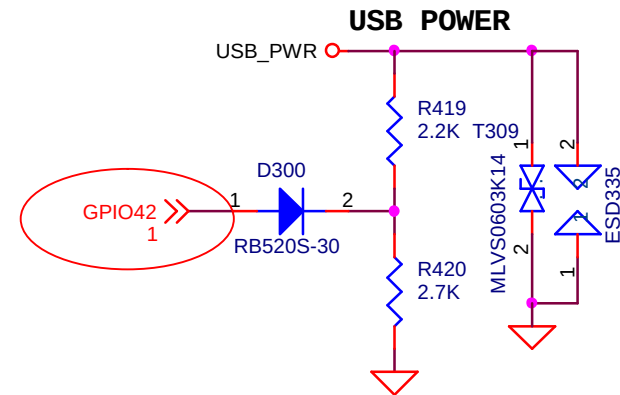
Reason 2: BB can handle the USB charging function (Option)

USB Detection Method Supplement

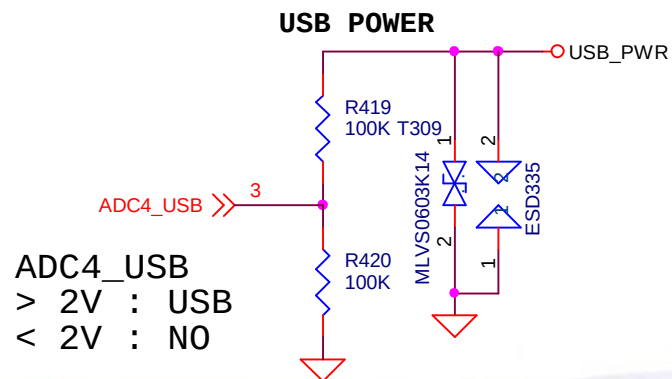
1. Dedicated EINT from USB_PWR



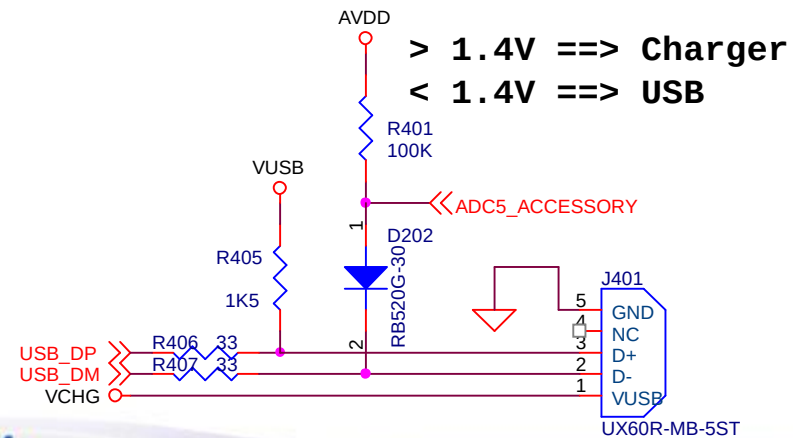
2. GPIO – Input mode



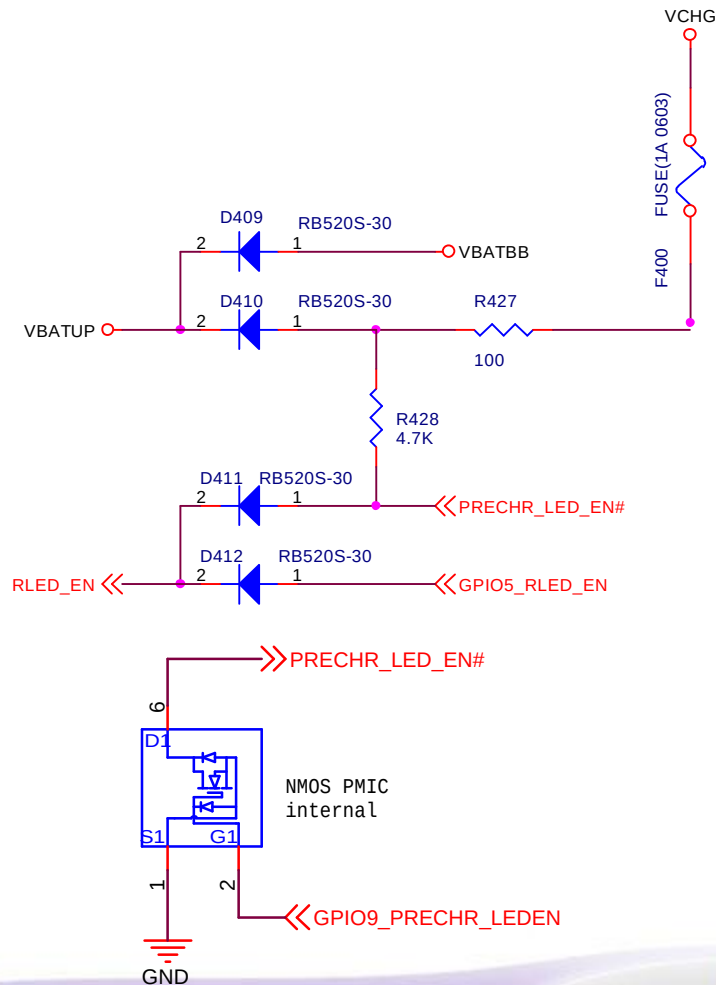
3. ADC – Measure USB_PWR



4. ADC – Measure D-



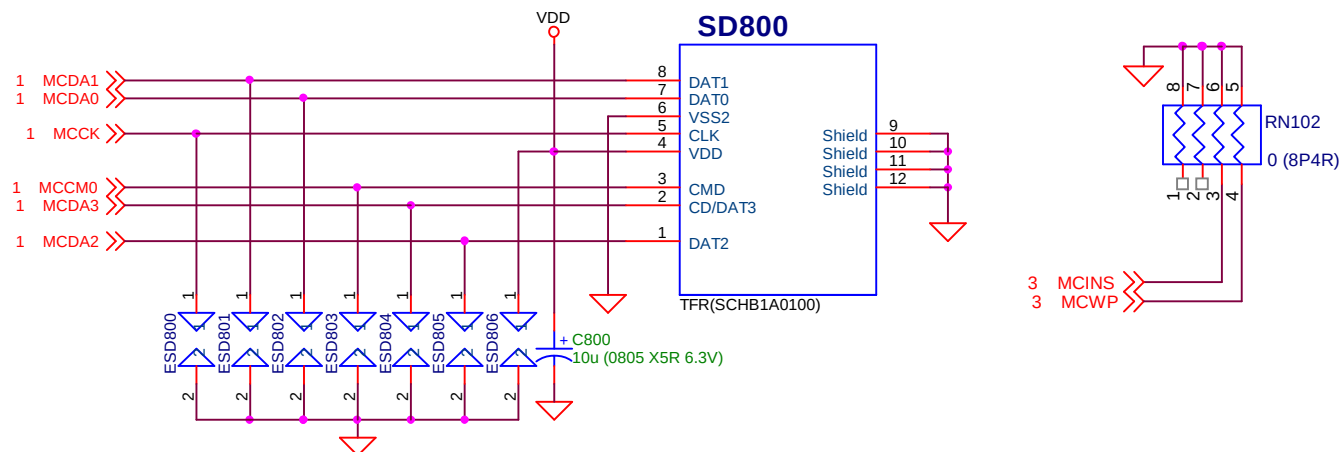
Pre-charge LED indicator



- GPIO9 internal pull low. (default low)
- When it is in the pre-charging mode, NMOS is open, PRECHR_LED_EN# pull high by VCHG to turn Red LED. (Provide VCHG to upcase as LED power)
- When it is in the Normal charging mode, GPIO9 will go high by software to turn on the NMOS, then PRECHR_LED_EN# goes low and RED LED off.

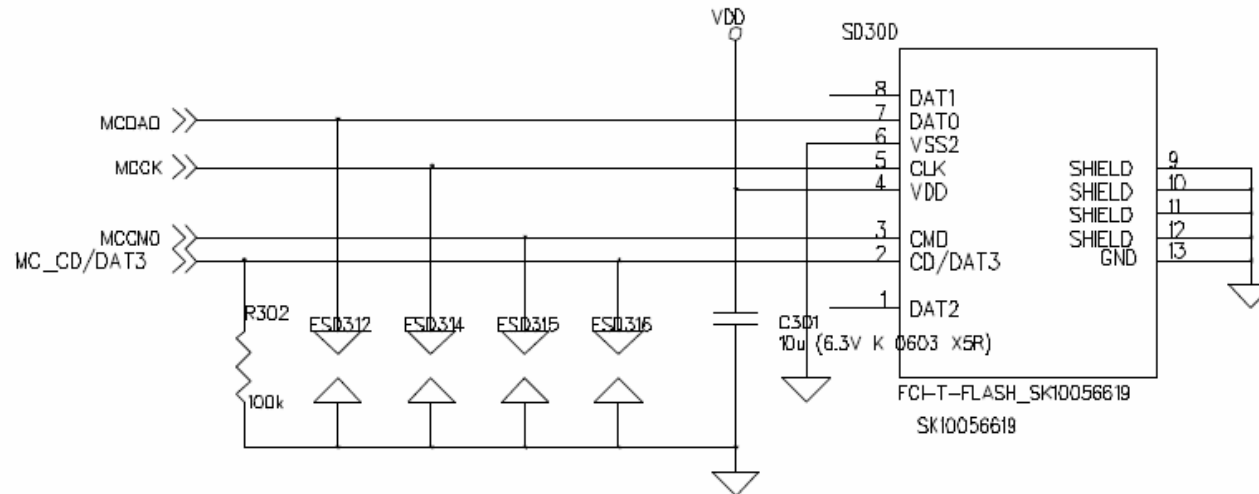
Storage-not support hot plug

T-Flash



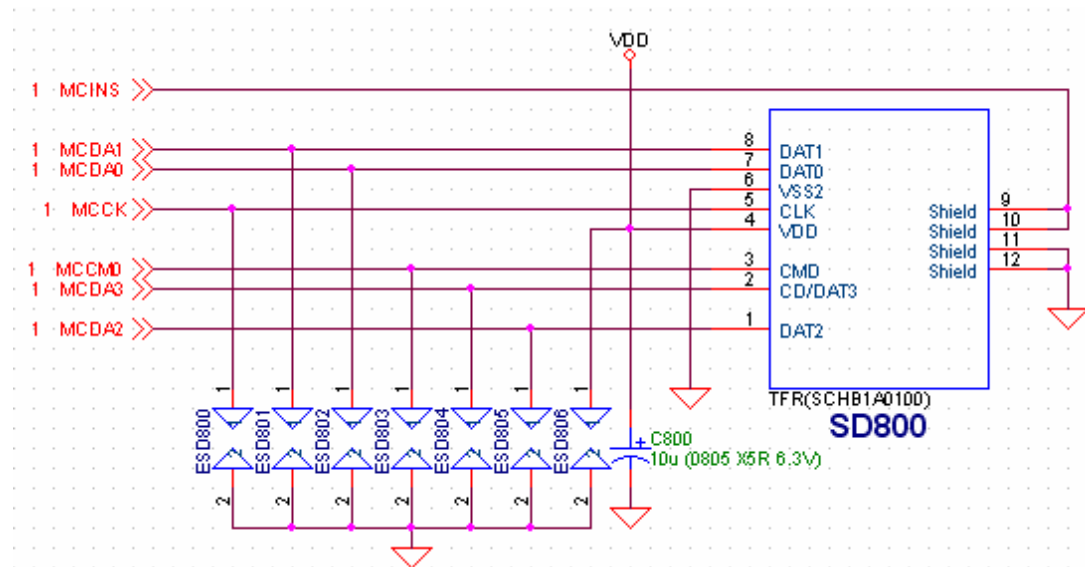
Pay attention that: MCCK is 24MHz in the new S/W architecture, after 05B
The CAP parallel on the signal must lower than 33pF

Storage-support hot plug 1/3



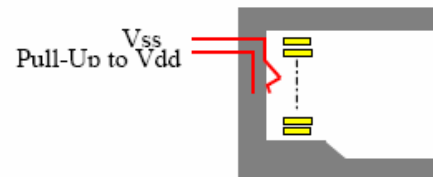
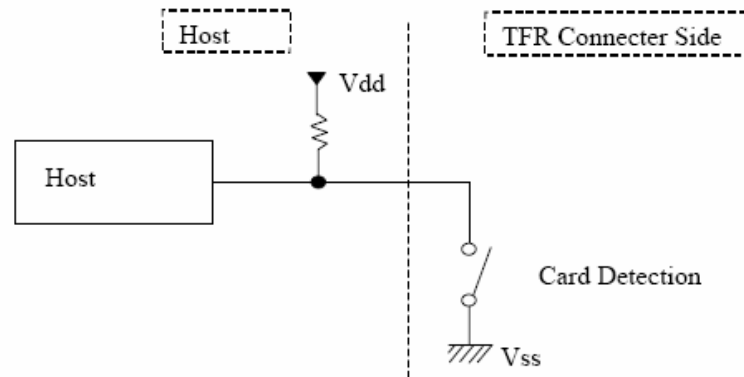
1. This connection suit that **Cards connector can not support hot plug**, use CD/DAT3 of SD300 for detect pin.
2. **One bit**, Floating MCDA1, MCDA2 and MCDA3 of MT6219
3. Connect MC_CD/DAT3 to MCINS of MT6219
4. **S/W should disable the pull up resistor in MCINS of MT6219**
5. CD/DAT3 is pull up by an 50k resistor in T-Flash cards or MicroSD, so low to high of MCINS indicate cards plug in, high to low indicate cards plug out.

Storage-support hot plug 2/3



1. MCINS is pull high in MT6219
2. Connector can be divided into normal **OPEN** or **CLOSE** types
3. For normally Open type, high to low of MCINS indicate Card plug in, low to high indicate cards plug out, vice versa!
4. Pay attention to the Varistor CAP parameter

Storage-support hot plug 3/3



Module Detection Switch Types	TF-R is Removed	TF-R is Inserted
Normally Open	OFF (open)	ON (closed)
Normally Closed	ON (closed)	OFF (open)

Thank You!

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