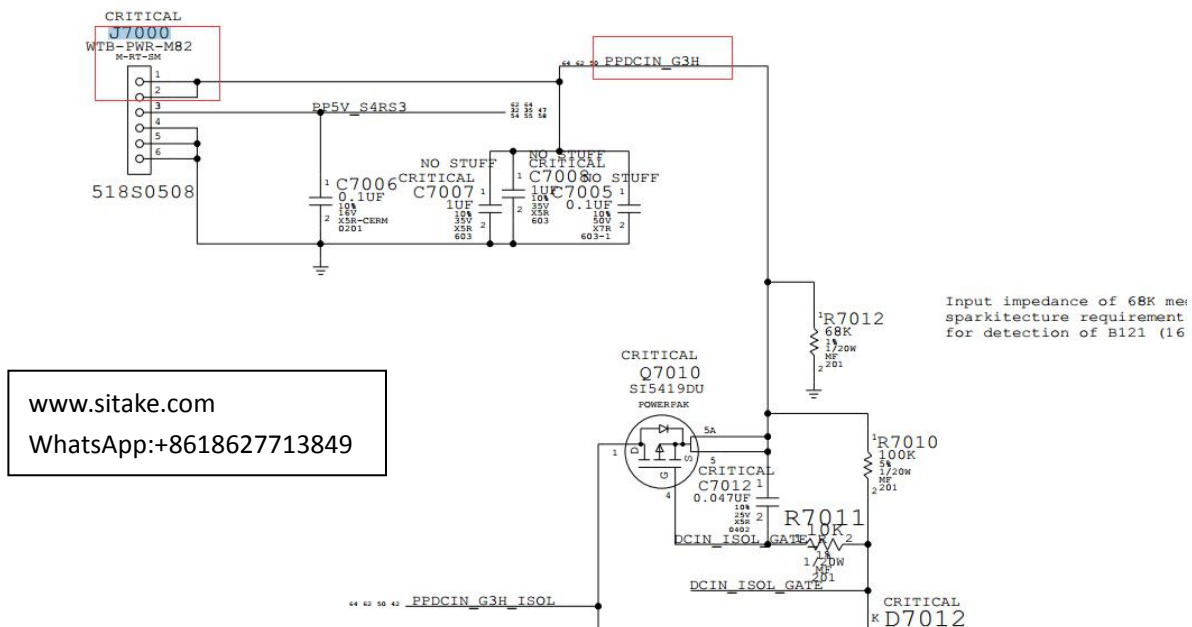
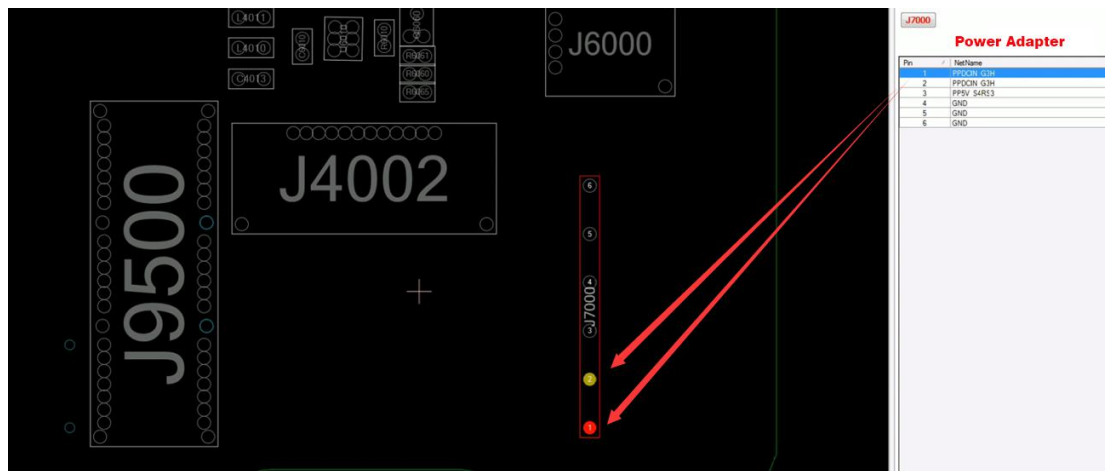
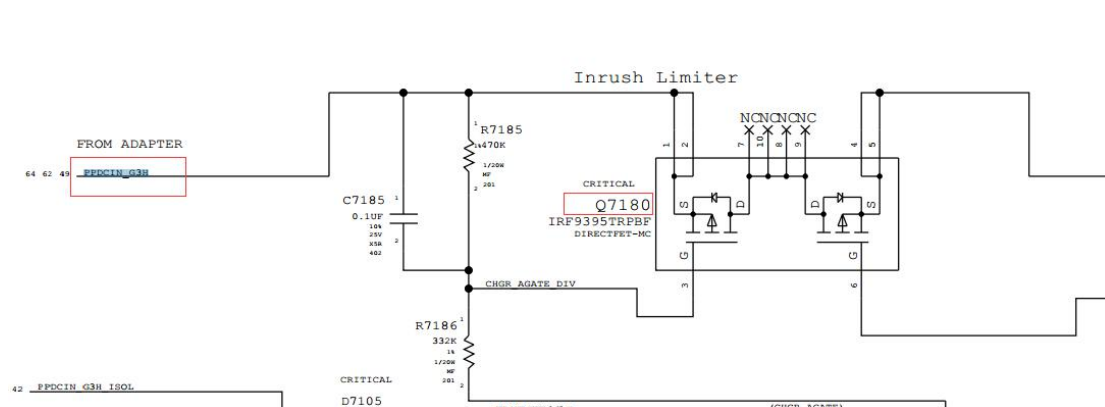


Apple A1466 series protection isolation common point charging circuit explanation, Apple A1706 South Bridge ACPI module and PCH standby conditions

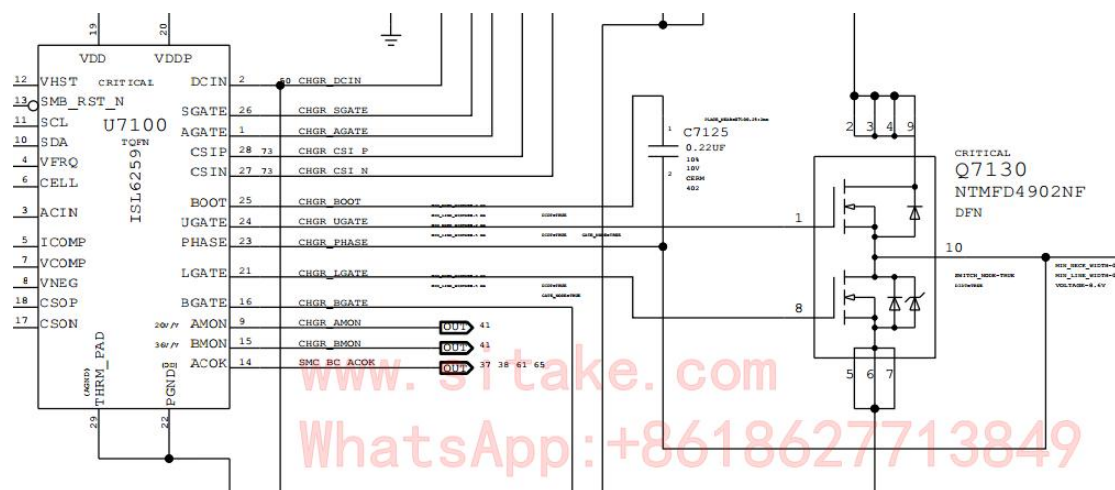
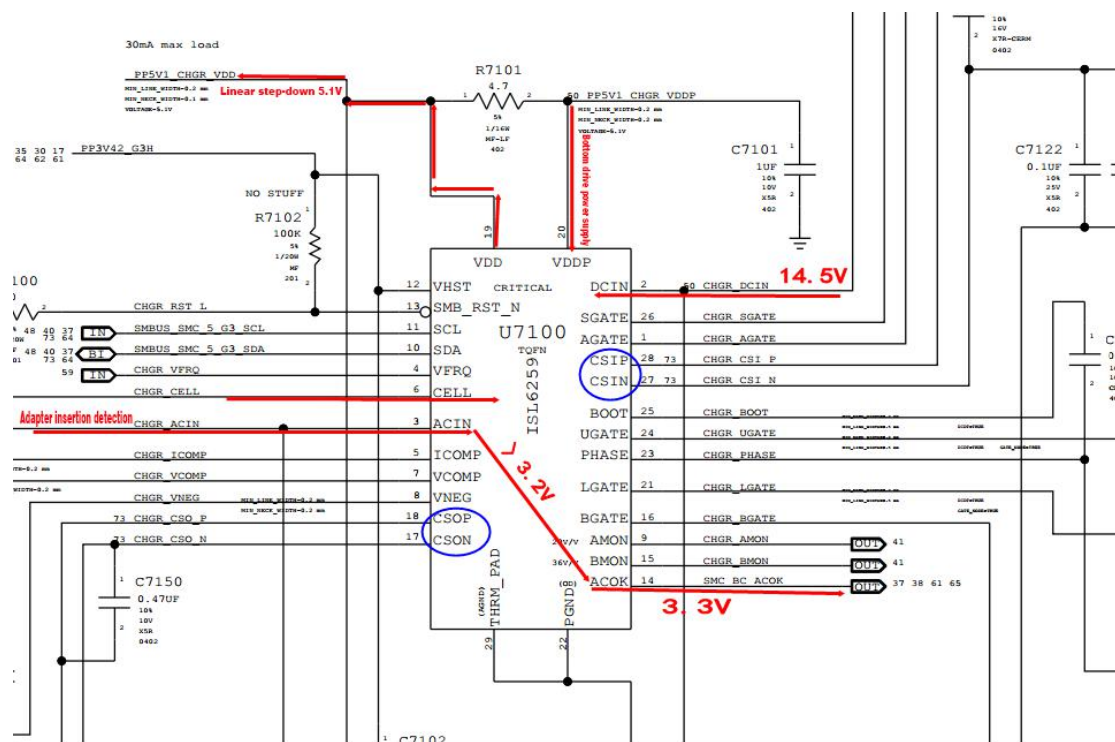


Search: PPDCIN\_G3H 14.8V

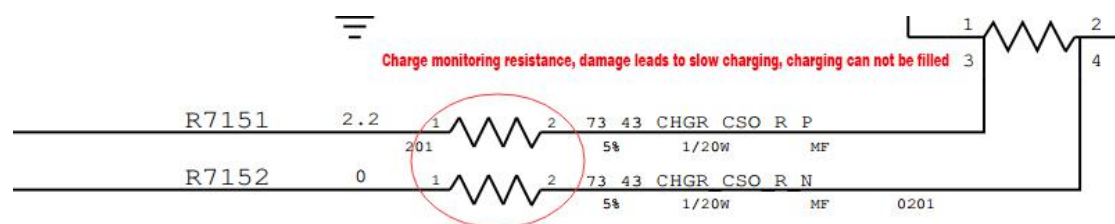


The protective isolation tube Q7180 is a composite MOS tube,

The charging chip U7100 controls Q7180 to turn on.

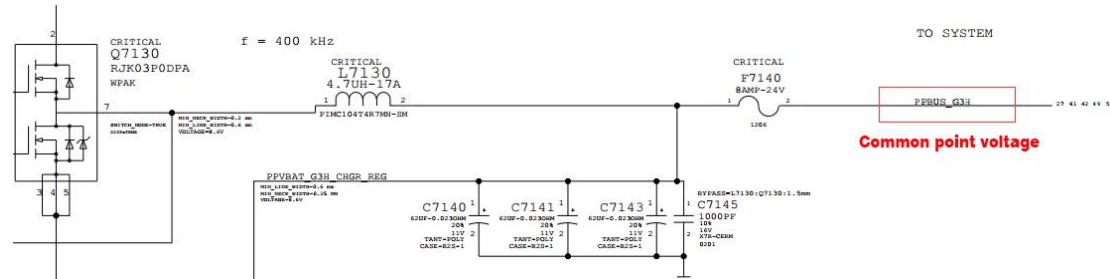


The 26-pin SGATE and 1-pin AGATE of U7100 control the protection isolation tube; 28-pin CSIP and 27-pin CSIN monitor the adapter current; 25-pin, 24-pin, 23-pin, and 21-pin drive charging tube output charging voltage (common point voltage ); 6-pin battery core quantity setting (damage will affect the common point voltage); 5-pin, 7-pin, 8-pin current and voltage compensation setting, voltage detection; 18-pin CSOP, 17CSON pin to monitor the charging current.

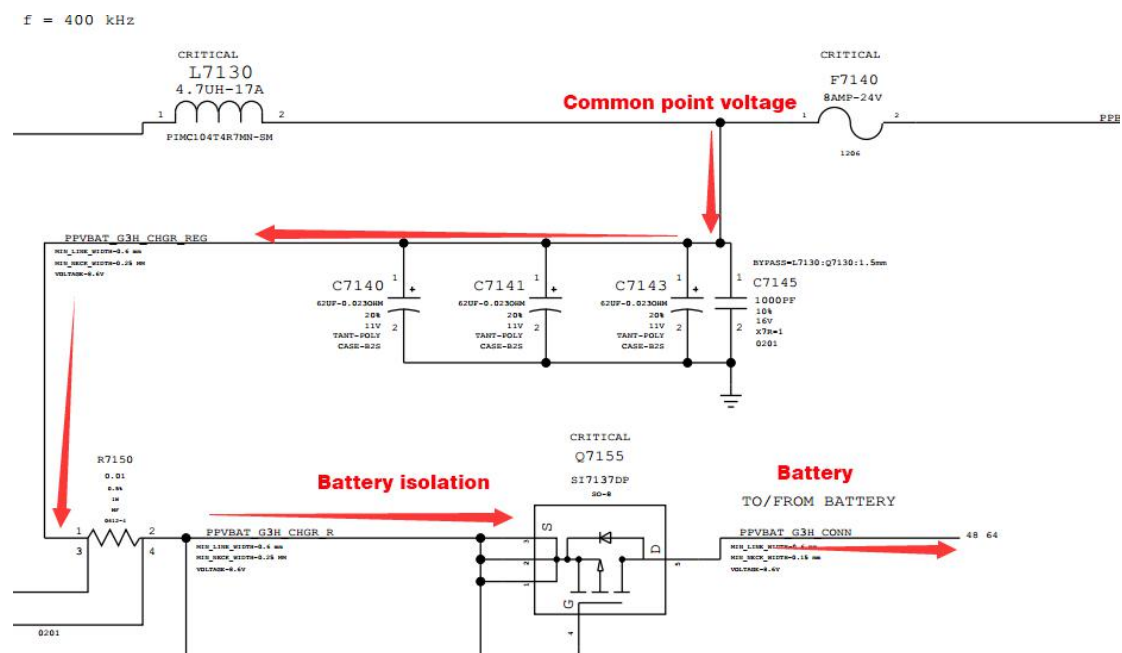


9-pin AMON system current monitoring and feedback output; 15-pin BMON charging current size monitoring; 4-pin charging frequency setting; 10-pin 11-pin is the I2C bus of EC control charging chip; 12-pin VHST is I2C bus power supply; 13-pin is reset Signal.

Q7130 is a charging tube.



The voltage used by most of the chips in the motherboard is called the common point, which is equivalent to the common point voltage of the VCC\_MAIN apple in the mobile phone = the charging voltage. If the common point voltage is not available, it cannot be turned on.



Q7155 battery charging protection isolation tube.

The above is the generation principle of the protective isolation circuit and the common point voltage







Summary of South Bridge ACPI module and PCH standby conditions:

DCIN\_G3H→protection isolation tube→charging tube→common point→



ACIN is greater than 3.2V to supply power to the charging chip → ACOK → EC ( SMC ) →

SMC\_PM\_G2\_EN→Standby chip→PP3V3\_S5→PCH(VCCDSW3\_3)



S5\_PWRGD



EC ( SMC )



PM\_DSW\_PWRGD



PCH



SLP\_SUS



PP3V3\_SUS



PCH

PP3V3\_S5 →



RSMRST



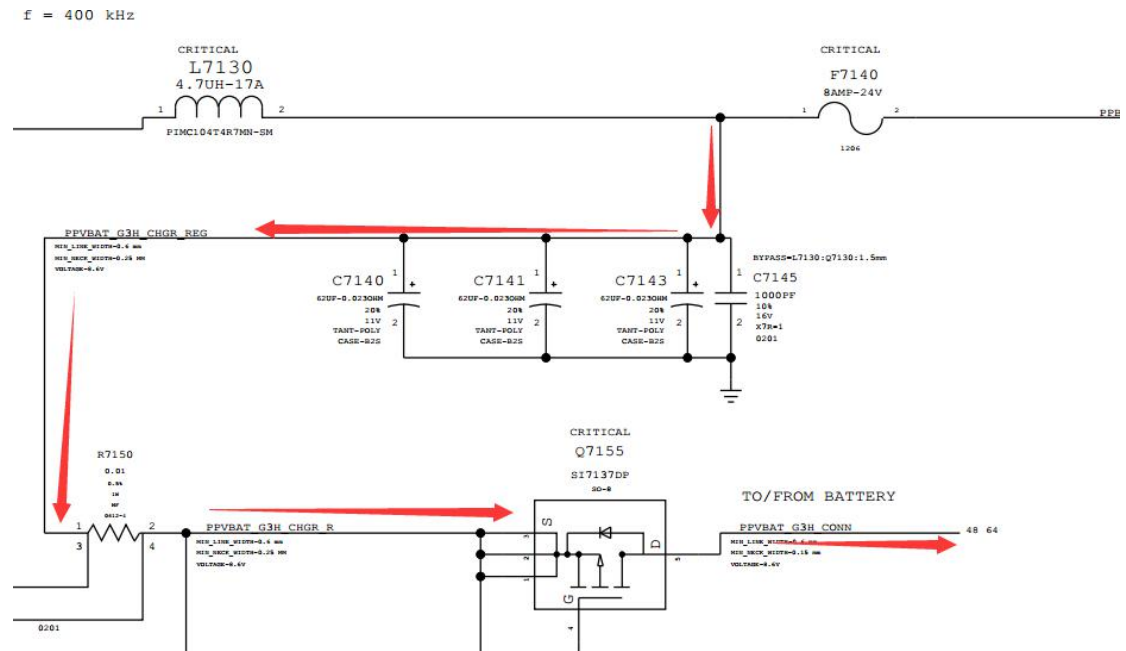
PWRBTN

PP3V3\_SUS →

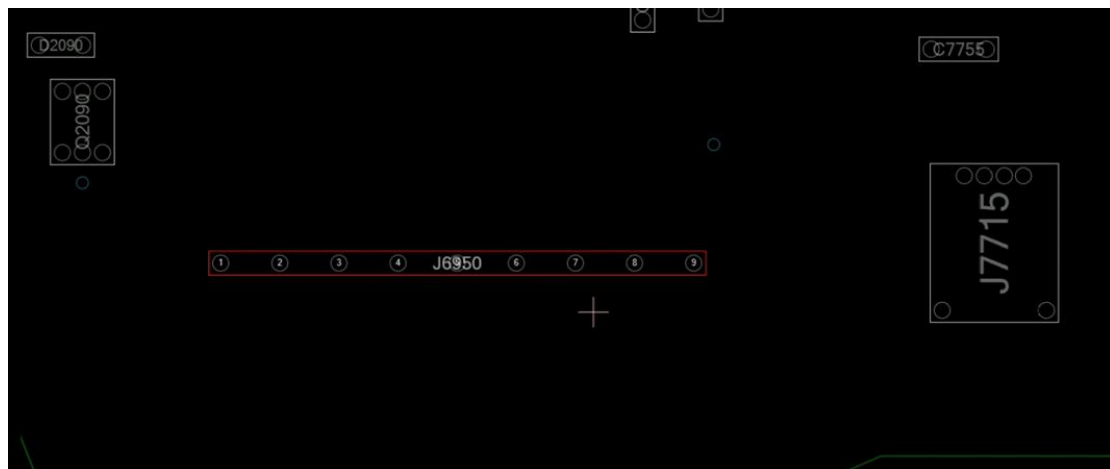
The above are the standby conditions for the ACPI module and PCH of the South Bridge

Charging process:

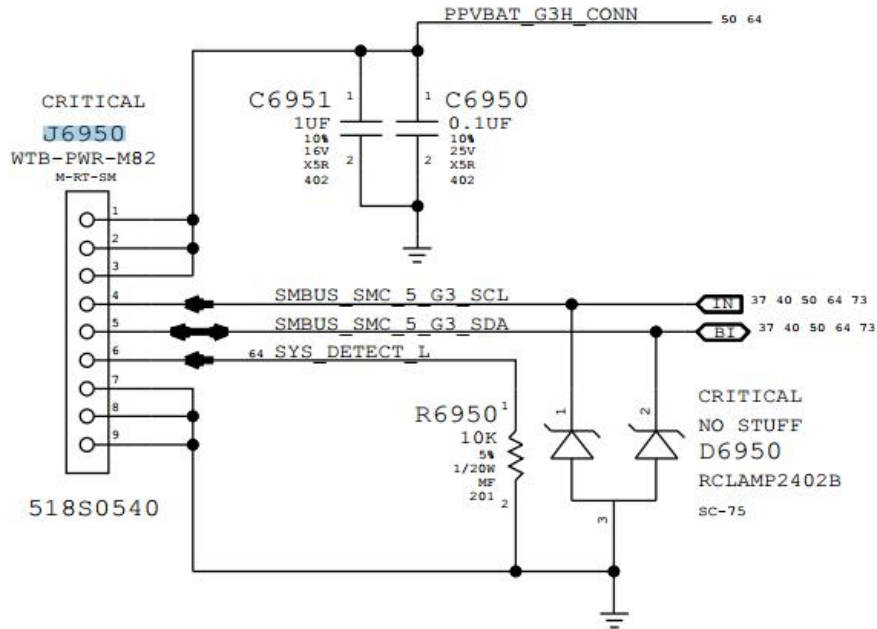
Supplement: If you cannot charge, you can use the original charger and the assembled (sub-factory) charger to test the machine separatel



The common point voltage (charging voltage) charges the battery after passing the resistor R7150, Q7155 battery charging protection isolation tube.



# 13" SPECIFIC Battery Connector



- Pin 1, Pin 2, and Pin 3 are battery positive
- Pin 4 and Pin 5 are I2C bus
- Pin 6 is the battery detection signal
- Pin 7, Pin 8, and Pin 9 are grounded

If it does not charge or is not fully charged, the system reacts very slowly. Check and repair:

- 1: Can the battery be recognized, if the battery cannot be recognized, check and repair the I2C bus of the battery
- 2: The adapter can be read and the green light can be lit. SMC reads the ADP adapter signal SMC\_ADAPTER\_EN
- 3: Working conditions of the charging chip: CSOP, CSON, VHST, SMB\_RST\_N, SCL, SDA, ICOMP, VCOMP, VRFQ, AMON, BMON
- 4: The charging tube is damaged
- 5: The charging chip/SMC chip is damaged
- 6: Battery detection pin

The common point voltage is low:

- 1: Check whether the subsequent load of the common point is short-circuited
- 2: Check the CELL pin of the charging chip. If the battery core setting pin is damaged, the voltage will be abnormal (8.4V only 4.2V, or 12.6V only 8.4V)
- 3: CSIP, CSIN resistance is damaged
- 4: The charging chip itself is damaged

Protection isolation:

