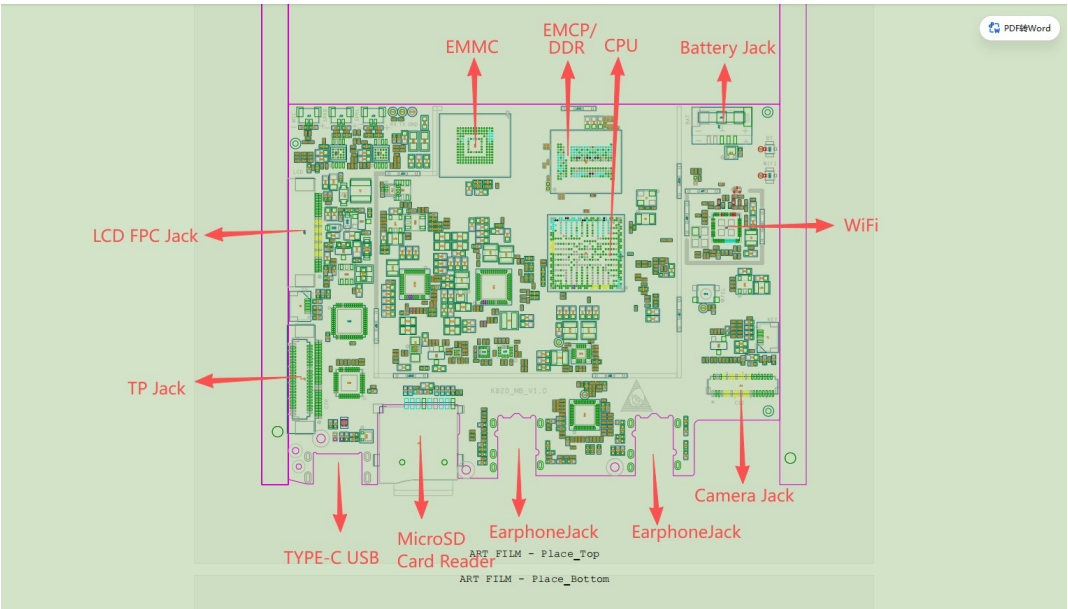
PRODUCT SPECIFICATION

PRODUCT NAME	**PCBA**
P/N	K820_MB_V1.0

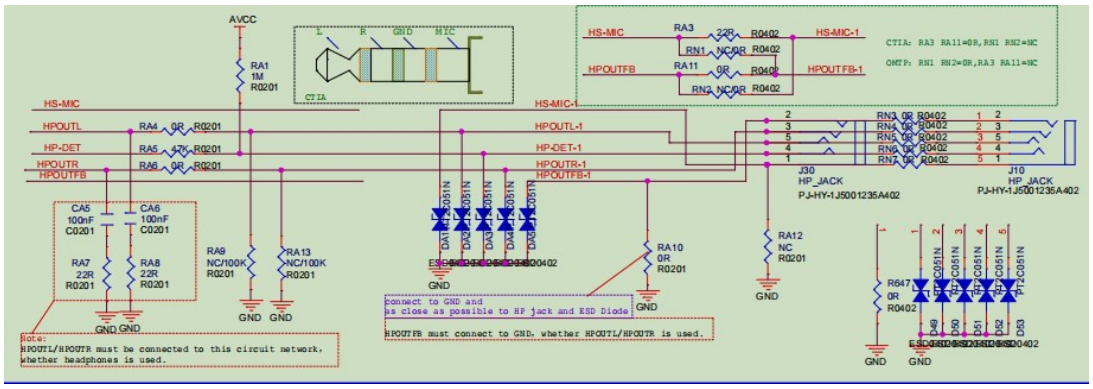
1. Outlooking:

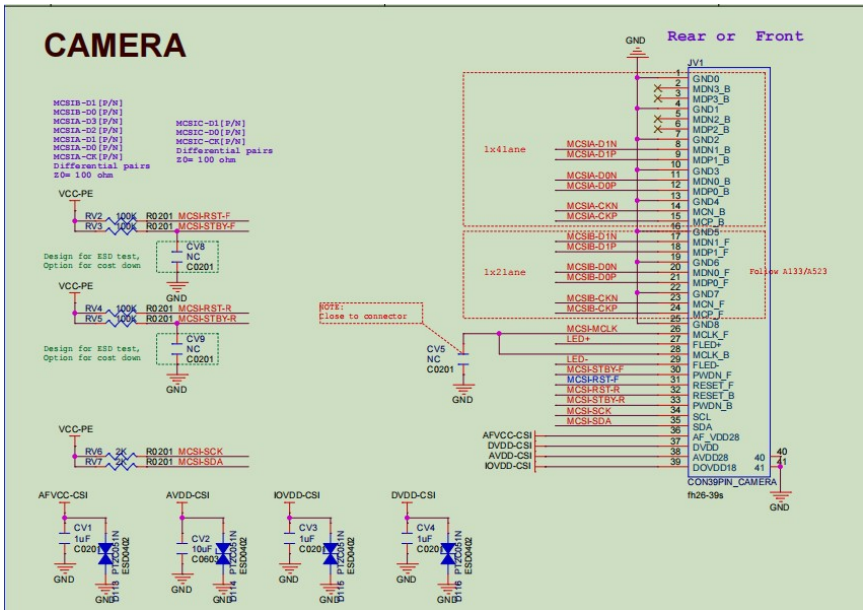


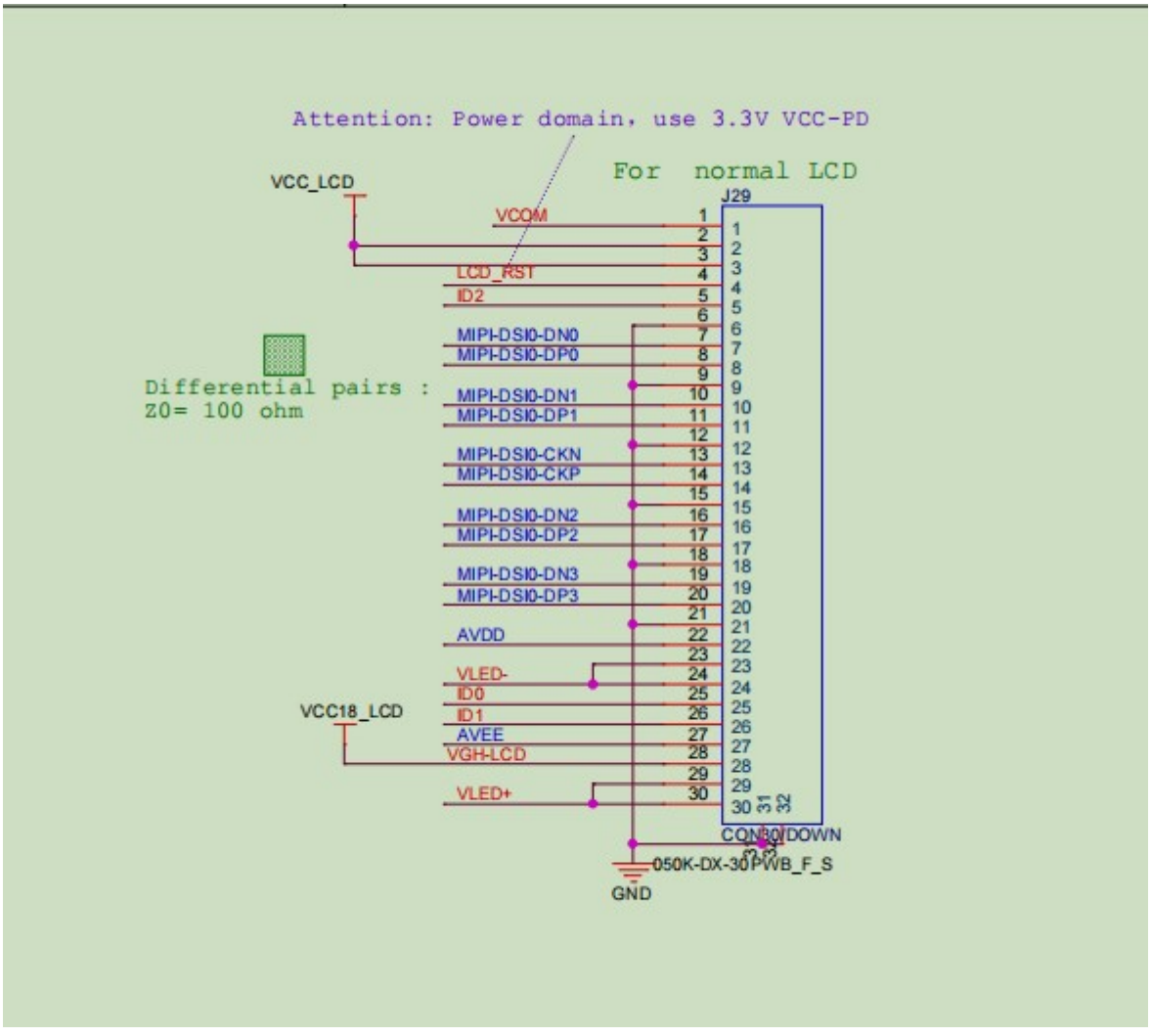
2. Spec

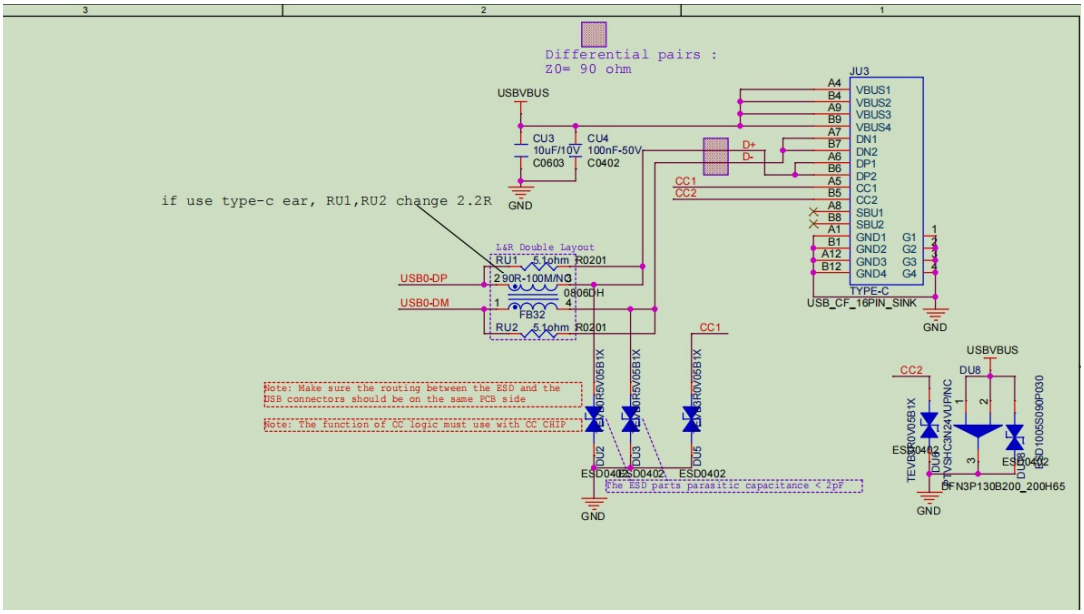
CPU: A333
Total Cores: 5
Burst Frequency: 1.8GHZ
Processor Base Frequency: 1.5GHZ
EMCP: 2GB LPDDR3 + 32GB EMMC

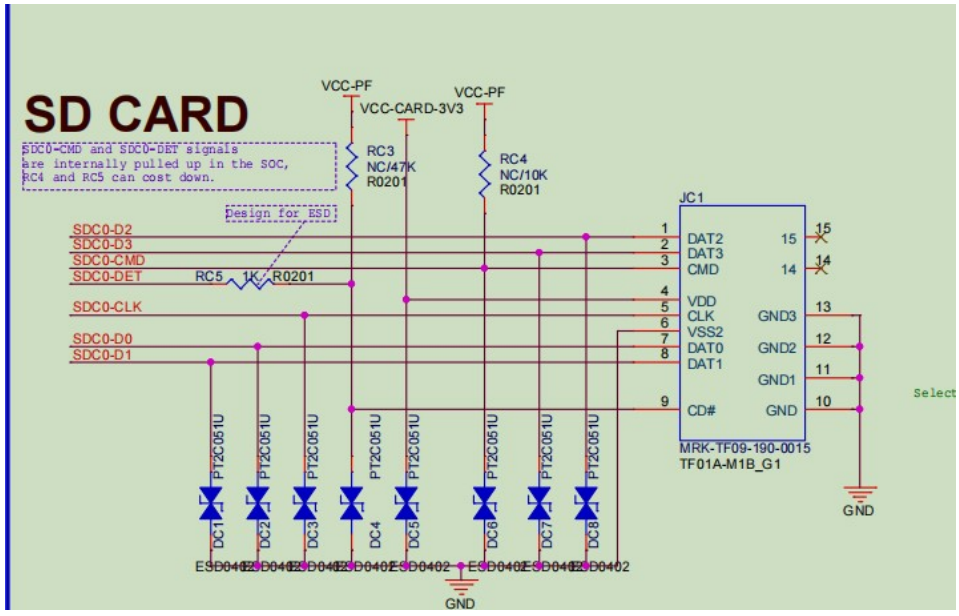
3. Drawing


AVCC
HS-MIC
HPOUTL
HP-DET
HPOUTR
HPOUTFB
RA1 1M R0201
RA4 0R R0201
RA5 47K R0201
RA6 0R R0201
CA5 100nF C0201
CA6 100nF C0201
RA7 22R R0201
RA8 22R R0201
RA9 NC/100K R0201
RA13 NC/100K R0201
GND
HS-MIC-1
HPOUTL-1
HP-DET-1
HPOUTR-1
HPOUTFB-1
RA3 22R R0402
RA11 0R R0402
RN1 NC/0R R0402
RN2 NC/0R R0402
CTIA: RA3 RA11=0R,RN1 RN2=NC
OMTP: RN1 RN2=0R,RA3 RA11=NC
RN3 0R R0402
RN4 0R R0402
RN5 0R R0402
RN6 0R R0402
RN7 0R R0402
J30 HP_JACK PJ-HY-1J5001235A402
J10 HP_JACK PJ-HY-1J5001235A402
RA10 0R R0201
RA12 NC R0201
R647 0R R0402
connect to GND and is close as possible to HP jack and ESD Diode
HPOUTFB must connect to GND. whether HPOUTL/HPOUTR is used.
Note: HPOUTL/HPOUTR must be connected to this circuit network, whether headphones is used.


CAMERA
Rear or Front
JV1
MCSIB-D1[P/N]
MCSIB-D0[P/N]
MCSIA-D3[P/N]
MCSIA-D2[P/N]
MCSIA-D1[P/N]
MCSIA-D0[P/N]
MCSIA-CK[P/N]
Differential pairs
Z0= 100 ohm
MCSIC-D1[P/N]
MCSIC-D0[P/N]
MCSIC-CK[P/N]
Differential pairs
Z0= 100 ohm
VCC-PE
RV2 100K R0201 MCSI-RST-F
RV3 100K R0201 MCSI-STBY-F
RV4 100K R0201 MCSI-RST-R
RV5 100K R0201 MCSI-STBY-R
RV6 2K R0201 MCSI-SCK
RV7 2K R0201 MCSI-SDA
Design for ESD test, Option for cost down
CV8 NC C0201
CV9 NC C0201
CV5 NC C0201
Note: close to connector
1x4lane
1x2lane
MCSIA-D1N
MCSIA-D1P
MCSIA-D0N
MCSIA-D0P
MCSIA-CKN
MCSIA-CKP
MCSIB-D1N
MCSIB-D1P
MCSIB-D0N
MCSIB-D0P
MCSIB-CKN
MCSIB-CKP
MCSI-MCLK
LED+
LED-
MCSI-STBY-F
MCSI-RST-F
MCSI-RST-R
MCSI-STBY-R
MCSI-SCK
MCSI-SDA
AFVCC-CSI
DVDD-CSI
AVDD-CSI
IOVDD-CSI
GND0
MDN3_B
MDP3_B
GND1
MDN2_B
MDP2_B
GND2
MDN1_B
MDP1_B
GND3
MDN0_B
MDP0_B
GND4
MCN_B
MCP_B
GND5
MDN1_F
MDP1_F
GND6
MDN0_F
MDP0_F
GND7
MCN_F
MCP_F
GND8
MCLK_F
FLED+
MCLK_B
FLED-
PWDN_F
RESET_F
RESET_B
PWDN_B
SCL
SDA
AF_VDD28
DVDD
AVDD28
DOVDD18
CON39PIN_CAMERA
fh26-39s
Follow A133/A523
CV1 1uF C0201
CV2 10uF C0603
CV3 1uF C0201
CV4 1uF C0201
PTZC051N
ESD0402


Attention: Power domain, use 3.3V VCC-PD
For normal LCD
VCC_LCD
VCOM
LCD_RST
ID2
MIPI-DSI0-DN0
MIPI-DSI0-DP0
MIPI-DSI0-DN1
MIPI-DSI0-DP1
MIPI-DSI0-CKN
MIPI-DSI0-CKP
MIPI-DSI0-DN2
MIPI-DSI0-DP2
MIPI-DSI0-DN3
MIPI-DSI0-DP3
AVDD
VLED-
ID0
ID1
AVEE
VGH-LCD
VLED+
VCC18_LCD
Differential pairs :
Z0= 100 ohm
J29
CON30VDOWN
050K-DX-30PWB_F_S
GND


Differential pairs :
Z0= 90 ohm
USBVBUS
JU3
CU3
10uF/10V
C0603
CU4
100nF-50V
C0402
GND
if use type-c ear, RU1,RU2 change 2.2R
L&R Double Layout
RU1 5.1ohm R0201
USB0-DP
USB0-DM
90R-100M/NQ
0806DH
FB32
RU2 5.1ohm R0201
CC1
CC2
D+
D-
VBUS1
VBUS2
VBUS3
VBUS4
DN1
DN2
DP1
DP2
CC1
CC2
SBU1
SBU2
GND1
GND2
GND3
GND4
TYPE-C
USB_CF_16PIN_SINK
Note: Make sure the routing between the ESD and the USB connectors should be on the same PCB side
Note: The function of CC logic must use with CC CHIP
ESD0402
The ESD parts parasitic capacitance < 2pF
DU8
DFN3P130B200_200H65


SD CARD
SDC0-CMD and SDC0-DET signals are internally pulled up in the SOC, RC4 and RC5 can cost down.
VCC-PF
VCC-CARD-3V3
RC3
NC/47K
R0201
RC4
NC/10K
R0201
Design for ESD
SDC0-D2
SDC0-D3
SDC0-CMD
SDC0-DET
RC5 1K R0201
SDC0-CLK
SDC0-D0
SDC0-D1
JC1
DAT2
DAT3
CMD
VDD
CLK
VSS2
DAT0
DAT1
CD#
GND3
GND2
GND1
GND
MRK-TF09-190-0015
TF01A-M1B_G1
PT2C051U
ESD0402
GND

FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

Note: The Grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. such modifications could void the user's authority to operate the equipment.

The device has been evaluated to meet general RF exposure requirement.
To maintain compliance with FCC's RF exposure guidelines, the distance must be at least 20 cm between the radiator and your body, and fully supported by the operating and installation configurations of the transmitter and its antenna(s).

2.2 List ofapplicable FCC rules
FCC Part 15 Subpart C 15.247 &15.407

2.3 Specific operational use conditions
The module can be used for mobile applications with a maximum 1.65dBi antenna. The hostmanufacturer installing this module into their product must ensure that the final composite product complies with the FCC requirements by a technical assessment or evaluation to the FCC rules, including the transmitter operation. The host manufacturer has to be aware not toprovide information to the end user regarding how to install or remove this RF module in theuser's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual

2.4 Limited module procedures
The device is a Single module and complies with the requirement of FCC Part 15.212

2.5 Trace antenna designs
Not applicable, The module has its own antenna, and does n' t need a host sprinted board micro strip trace antenna etc

2.6 RF exposure considerations
The device has been evaluated to meet general RF exposure requirement. The device can beused in portable exposure condition without restriction, and if RF exposure statement or module layout is changed, then the host product manufacturer required to take responsibility of the module through a change in FCC ID or new application The FCC ID ofthemodule cannot be used on the final product In these circumstances, the host manufacturer will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization

2.7 Antennas
Antenna Specification are as follows.
Lype of antenna: FPC Antenna
Gain of antenna: 2.4GHz@ 1.65dBi Max. 5GHz@ 1.29dBi
This device is intended only for host manufacturers under the following conditions: The transmitter module may not be co-located with any other transmitter or antenna,
The module shall be only used with the internal antenna(s) that has been originally tested and certified with this module. The antenna must be either permanently attached or employa "unique" antenna couplerAs long as the conditions above are met, further transmitter test will not be required
However, the host manufacturer is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digitaldevice emissions, PC peripheral requirements, etc)

2.8 Label and compliance information
Host product manufacturers need to provide a physical or e-label stating " Contains FCC ID FCC ID:2AAWC-SKD822 "with their finished product

2.9 Information on test modes and additional testing requirements
Host manufacturer must perform test of radiated & conducted emission and spurious emission, e.t.c according to the actual test modes for a stand-alone modular transmitter in ahost, as well as for multiple simultaneously transmitting modules or other transmitters in a host product.Only when all the test results oftest modes comply with FCC requirements, then the endproduct can be sold legally.

2.10 Additional testing, Part 15 Subpart B disclaimer
The modular transmitter is only FCC authorized for FCC Part 15 Subpart C 15.247&15.407 and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.If the grantee markets their product as being Part 15 Subpart B compliant (when it also contains unintentional-radiator digital circuit), then the grantee shall provide a notice stating that the final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed