	Author	Approved by
	Xiang	Xiang
	Date	**Note**
REV1.0	2018/04/17	Initial Version
REV1.1	2018/05/30	1. remove network on PIN23 2. remove network on PIN7 and PIN8 of J50 3. add adjusted 4.2V LDO 4. U5 is changed to GD25Q16E 5. add 3V3 LDO 6. change C30 footprint to 0603C 7. add Flash RESET button 8. add JTAG connector and PE3 9. change C29 and C12 to 1uF/0402
REV1.2	2018/06/24	1. swap J56 2. network of TL_VBAT on J56 is changed to VBUS. 3. add resistor on J57 4. update symbol of J57 5. add a sop-208mil flash 6. add note about SW1 and SW2 7. add note about Line-in/out jack 8. add note about J56 9. change footprint of button 10. change footprint of U8 11. update resistor value used in LDO-4.2V 12. update symbol of TLSR9518A
REV1.3	2018/07/27	1. the network of J56`s PIN1 and U4`s PIN6 are changed to BEVK_3V3 2. the network of U4`s PIN1 and PIN5 are changed to VDD_L 3. the network of J51`s PIN9 and PIN11 are changed to VDD_L 4. the network of J51`s PIN10 is changed to TL_IO 5. the network of J51`s PIN12 is changed to TL_VBAT 6. swap the network of J24`s PIN2 and J24`s PIN3 7. correct the silkscreen of J20`s PIN1/3/5/7/9 8. update the value of C6/7, L1 9. update the value of L3/4.

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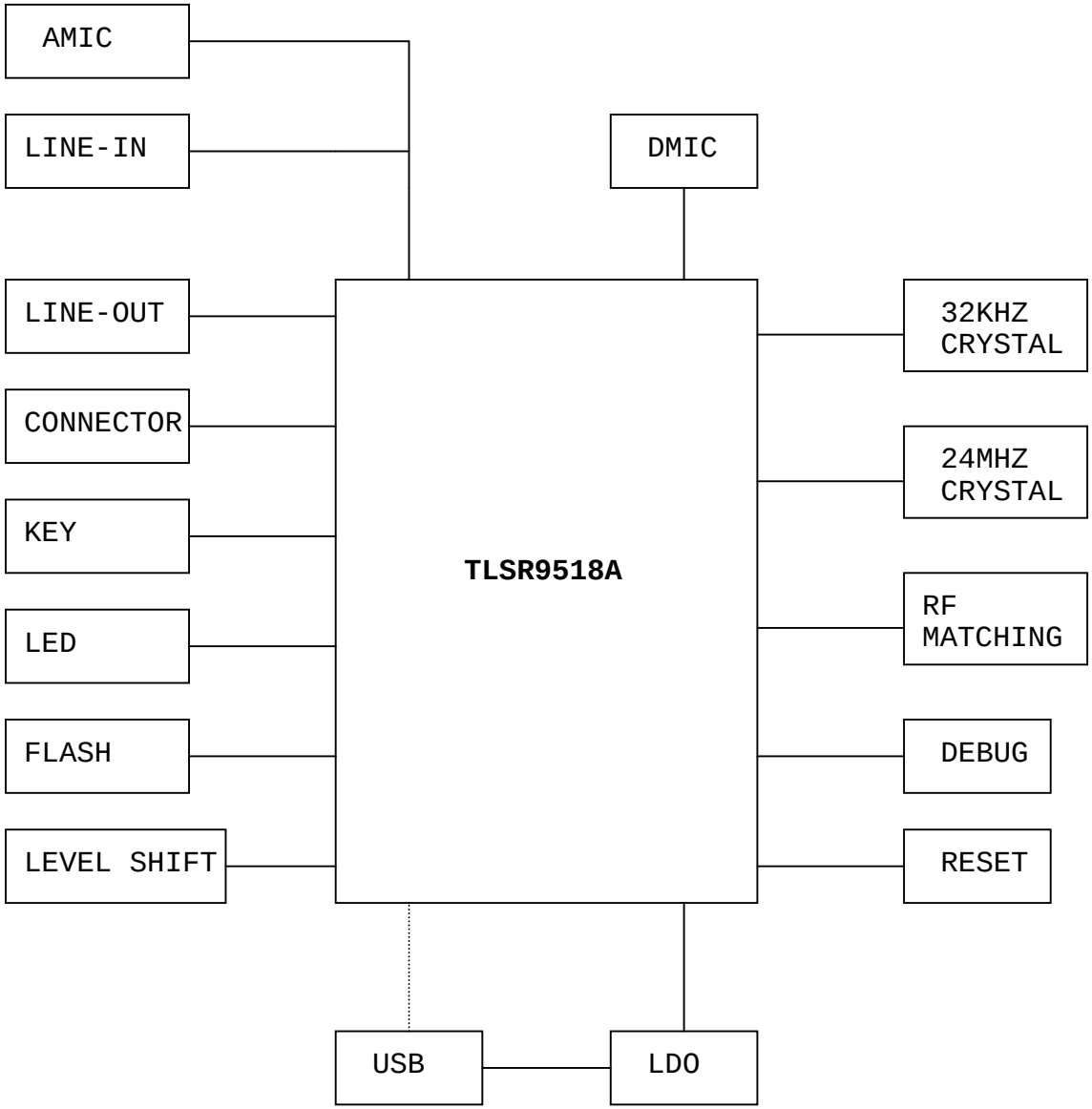

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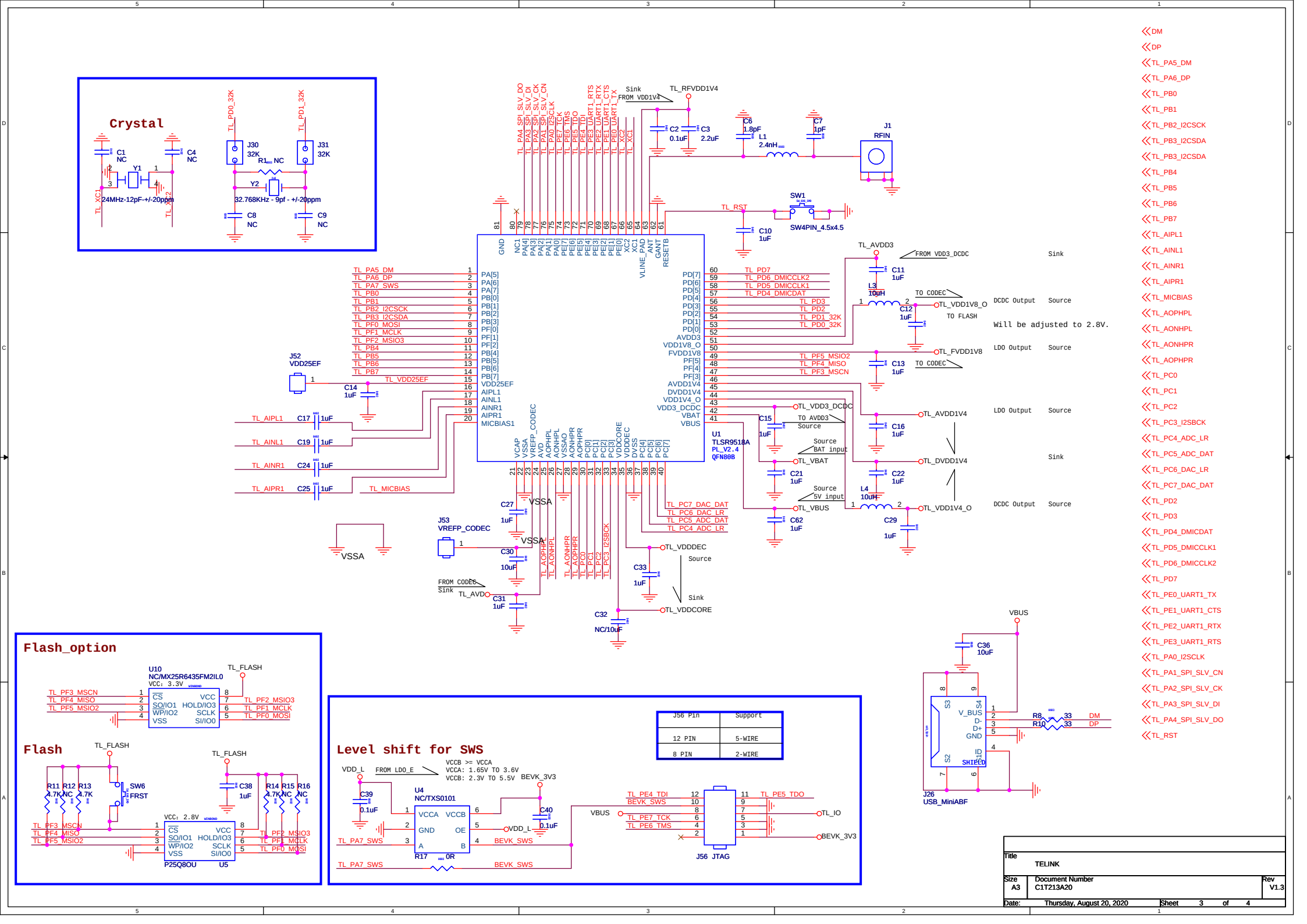
Crystal
C1 NC
C4 NC
Y1
TL_XC1
TL_XC2
24MHz-12pF-+/-20ppm
TL_PD0_32K
TL_PD1_32K
J30 32K
J31 32K
R1 NC
Y2
32.768KHz - 9pf - +/-20ppm
C8 NC
C9 NC
Sink FROM VDD1V4
TL_RFVDD1V4
C2 0.1uF
C3 2.2uF
C6 1.8pF
L1 2.4nH
C7 1pF
J1 RFIN
SW1
SW4PIN_4.5x4.5
TL_RST
C10 1uF
U1 TLSR9518A PL_V2.4 QFN80B
J52 VDD25EF
C14 1uF
TL_VDD25EF
TL_AIPL1 C17 1uF
TL_AINL1 C19 1uF
TL_AINR1 C24 1uF
TL_AIPR1 C25 1uF
TL_MICBIAS
J53 VREFP_CODEC
C27 1uF
C30 10uF
C31 1uF
C33 1uF
C32 NC/10uF
VSSA
FROM CODEC Sink
TL_AVDD
TL_VDDDEC
TL_VDDCORE
Source
Sink
TL_AVDD3
FROM VDD3_DCDC
Sink
C11 1uF
L3 10uH
TO CODEC
C12 1uF
TL_VDD1V8_O
DCDC Output
Source
TO FLASH
Will be adjusted to 2.8V.
TL_FVDD1V8
LDO Output
C13 1uF
C15 1uF
TL_VDD3_DCDC
TO AVDD3
C16 1uF
TL_AVDD1V4
C21 1uF
TL_VBAT
Source
BAT input
TL_DVDD1V4
C22 1uF
L4 10uH
TL_VBUS
Source
5V input
C62 1uF
C29 1uF
TL_VDD1V4_O
C36 10uF
VBUS
J26 USB_MiniABF
R8 33 DM
R10 33 DP
Flash_option
U10 NC/MX25R6435FM2IL0
VCC: 3.3V
TL_FLASH
TL_PF3_MSCN
TL_PF4_MISO
TL_PF5_MSIO2
TL_PF2_MSIO3
TL_PF1_MCLK
TL_PF0_MOSI
Flash
R11 4.7K NC
R12 4.7K
R13
SW6 FRST
C38 1uF
R14 4.7K NC
R15
R16 NC
VCC: 2.8V
P25Q80U
U5
Level shift for SWS
VDD_L
FROM LDO_E
VCCB >= VCCA
VCCA: 1.65V TO 3.6V
VCCB: 2.3V TO 5.5V
BEVK_3V3
C39 0.1uF
U4 NC/TXS0101
VCCA VCCB GND OE A B
C40 0.1uF
R17 0R
TL_PA7_SWS
BEVK_SWS
J56 Pin | Support
12 PIN | 5-WIRE
8 PIN | 2-WIRE
TL_PE4_TDI
TL_PE7_TCK
TL_PE6_TMS
TL_PE5_TDO
TL_IO
J56 JTAG
PA4_SPI_SLV_DO
PA3_SPI_SLV_DI
PA2_SPI_SLV_CK
PA1_SPI_SLV_CN
PA0_I2SCLK
PE7_TCK
PE6_TMS
PE5_TDO
PE4_TDI
PE3_UART1_RTS
PE2_UART1_RTX
PE1_UART1_CTS
PE0_UART1_TX
XC2
XC1
PA5_DM
PA6_DP
PA7_SWS
PB0
PB1
PB2_I2CSCK
PB3_I2CSDA
PF0_MOSI
PF1_MCLK
PF2_MSIO3
PB4
PB5
PB6
PB7
PD7
PD6_DMICCLK2
PD5_DMICCLK1
PD4_DMICDAT
PD3
PD2
PD1_32K
PD0_32K
PF5_MSIO2
PF4_MISO
PF3_MSCN
PC7_DAC_DAT
PC6_DAC_LR
PC5_ADC_DAT
PC4_ADC_LR
DM
DP
PA5_DM
PA6_DP
PB0
PB1
PB2_I2CSCK
PB3_I2CSDA
PB3_I2CSDA
PB4
PB5
PB6
PB7
AIPL1
AINL1
AINR1
AIPR1
MICBIAS
AOPHPL
AONHPL
AONHPR
AOPHPR
PC0
PC1
PC2
PC3_I2SBCK
PC4_ADC_LR
PC5_ADC_DAT
PC6_DAC_LR
PC7_DAC_LR
PD2
PD3
PD4_DMICDAT
PD5_DMICCLK1
PD6_DMICCLK2
PD7
PE0_UART1_TX
PE1_UART1_CTS
PE2_UART1_RTX
PE3_UART1_RTS
PA0_I2SCLK
PA1_SPI_SLV_CN
PA2_SPI_SLV_CK
PA3_SPI_SLV_DI
PA4_SPI_SLV_DO
RST
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DM
DP
TL_PA5_DM
TL_PA6_DP
TL_PB0
TL_PB1
TL_PB2_I2CSCK
TL_PB3_I2CSDA
TL_PB3_I2CSDA
TL_PB4
TL_PB5
TL_PB6
TL_PB7
TL_AIPL1
TL_AINL1
TL_AINR1
TL_AIPR1
TL_MICBIAS
TL_AOPHPL
TL_AONHPL
TL_AONHPR
TL_AOPHPR
TL_PC0
TL_PC1
TL_PC2
TL_PC3_I2SBCK
TL_PC4_ADC_LR
TL_PC5_ADC_DAT
TL_PC6_DAC_LR
TL_PC7_DAC_DAT
TL_PD2
TL_PD3
TL_PD4_DMICDAT
TL_PD5_DMICCLK1
TL_PD6_DMICCLK2
TL_PD7
TL_PE0_UART1_TX
TL_PE1_UART1_CTS
TL_PE2_UART1_RTX
TL_PE3_UART1_RTS
TL_PA0_I2SCLK
TL_PA1_SPI_SLV_CN
TL_PA2_SPI_SLV_CK
TL_PA3_SPI_SLV_DI
TL_PA4_SPI_SLV_DO
TL_RST

J3
AIL1
1 VSSA
2 AINL1_LINEIN
4
3 AIPL1_LINEIN
5 VSSA

J23
AIR1
1 VSSA
2 AINR1_LINEIN
4
3 AIPR1_LINEIN
5 VSSA

U2
MWW7037AT2
MICBIAS_AIL1 R2 2.2K
C41 1uF
VSSA
VSSA R3 2.2K
VDD OUTPUT GND GND
AIPL1_MIC
AINL1_MIC

U3
MWW7037AT2
MICBIAS_AIR1 R4 2.2K
C42 1uF
VSSA
VSSA R5 2.2K
VDD OUTPUT GND GND
AIPR1_MIC
AINR1_MIC

U6
SPM0423HM4H-WB
100K R9
GND CLOCK
SE DATA
GND POWER
DMICCK1
DMICDAT
TL_IO
C23 0.1uF

U7
SPM0423HM4H-WB
100K R19
GND CLOCK
SE DATA
GND POWER
TL_IO
DMICCK2
DMICDAT
TL_IO
C26 0.1uF

J34
HEADER 18X2
TOP LEFT
DM 2 1 TL_PA5_DM
DP 4 3 TL_PA6_DP
TL_PE1_UART1_CTS 6 5 TL_PE0_UART1_TX
TL_PE2_UART1_RTX 8 7 TL_PE3_UART1_RTS
TL_PA0_I2SCLK 10 9 TL_PA2_SPI_SLV_CK
TL_PA4_SPI_SLV_DO 12 11 TL_PA1_SPI_SLV_CN
TL_PA3_SPI_SLV_DI 14 13 TL_PB1
TL_PB0 16 15 TL_PB3_I2CSDA
TL_PB2_I2CSCK 18 17
TL_PB4 20 19 LED_B
TL_PB5 22 21 LED_G
TL_PB6 24 23 LED_W
TL_PB7 26 25 LED_R
AIPL1_MIC 28 27 TL_AIPL1
AINL1_MIC 30 29 TL_AINL1
AIPL1_LINEIN 32 31 TL_AIPL1
AINL1_LINEIN 34 33 TL_AINL1
MICBIAS_AIL1 36 35 TL_MICBIAS

PIN3 to 4: JTAG, 2 wire
PIN1 to 2: JTAG, 4 wire
J57
DIP_2X2
R29 1K
TL_IO
R18 1M

J20
HEADER 18X2
TOP RIGHT
TL_PD3 2 1 TL_RST
TL_PD2 4 3 TL_PD7
DMICCK2 6 5 TL_PD6_DMICCLK2
DMICCK1 8 7 TL_PD5_DMICCLK1
DMICDAT 10 9 TL_PD4_DMICDAT
TL_PC7_DAC_DAT 12 11 TL_PC6_DAC_LR
TL_PC5_ADC_DAT 14 13 TL_PC4_ADC_LR
TL_PC2 16 15 TL_Key1
TL_PC0 18 17 TL_Key2
TL_PC3_I2SBCK 20 19 TL_Key3
TL_PC1 22 21 TL_Key4
TL_AOPHPR 24 23 TL_AONHPR
TL_AONHPL 26 25 TL_AOPHPL
TL_AIPR1 28 27 AIPR1_MIC
TL_AINR1 30 29 AINR1_MIC
TL_AIPR1 32 31 AIPR1_LINEIN
TL_AINR1 34 33 AINR1_LINEIN
TL_MICBIAS 36 35 MICBIAS_AIR1

J24
AOPHR
1 VSSA
2
4
3 TL_AONHPL
5 VSSA
R6 NC
C34 NC
TL_AOPHPL

J27
AOPHR
1 VSSA
2
4
3 TL_AONHPR
5 VSSA
R7 NC
C37 NC
TL_AOPHPR

J50
HEADER 12X2
BOTOM LEFT
Source VBUS 2 1 TL_VBUS Sink
Sink TL_RFVDD1V4 4 3
Source TL_AVDD1V4 6 5
Source TL_VDD1V4_O 8 7
Sink TL_DVDD1V4 10 9
Source TL_VDDCORE 12 11
14 13 TL_VDDDEC Sink
16 15
18 17
20 19
22 21
24 23

J51
HEADER 12X2
BOTTOM RIGHT
2 1 TL_VDD1V8_O Source
Source TL_IO 4 3 TL_FVDD1V8 Source
Source TL_VBAT 6 5 TL_FLASH Sink
Sink TL_AVDD3 8 7 TL_AVD Sink
Source TL_VBAT_ADJ 10 9
VUP 12 11 VDD_L Sink
VDW 14 13 TL_VDD3_DCDC Source
16 15 TL_VBAT Sink
18 17 VCOM
20 19
22 21
24 23

VOUT=1.25V*(1+R21/R22)

VUP-VCOM-VDW
4.2V: NC/NC/C
3.8V: NC/C/NC
3.3V: NC/C/C
1.8V: C /C/C

U8
LM1117-ADJ
VIN VOUT VOUT ADJ
VBUS
C44 10uF
VUP VCOM VDW
R25 430R
R26 1.15K
R27 787R
R28 464R
1K R24
1.8V/3.3V/4.2V
TL_VBAT_ADJ
C45 10uF

U9
CE1132-33M
VBUS
C49 10uF
VIN VOUT
VSS
CE NC
TL_IO
C48 10uF

LED_B LED_G LED_W LED_R
R22 1K R21 1K R23 1K R20 1K
D1 Blue D2 Green D3 White D4 Red

SW2 Key1 TL_Key1 TL_Key3
SW3 Key2 TL_Key4
SW4 Key3 TL_Key2
SW5 Key4

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