DRAM

File: dram.kicad_sch

POWER

File: power.kicad_sch

IO1

File: io1.kicad_sch

IO2

File: io2.kicad_sch

USB-UART

File: usb_uart.kicad_sch

VCC_DRAM

R1 2k
C1 100n
SVREF
R2 2k
C2 100n
C3 1u
GND

C4 1u C5 1u C6 1u C8 1u C9 1u C10 1u C11 1u C12 1u C13 1u
VCC_DRAM +1V8 C14 1u
GND GND

U1A H616

Net	Pin	Signal
SA7	T21	SA0
SA11	U17	SA1
SA2	T18	SA2
SRAS	T16	SA3
SA13	R18	SA4
SA14	P15	SA5
SBA2	U20	SA6
SCS1	N19	SA7
SA10	U19	SA8
SCAS	N16	SA9
SA3	R19	SA10
SBA1	U15	SA11
SA4	U16	SA12
SA12	P16	SA13
SWE	V20	SA14
SA6	N13	SA15
SA15	U18	SA16
SODT1	N21	SBA0
SA1	R15	SBA1
SBA0	P20	SBG0
SCS0	P21	SBG1
SA0	P18	SACT
SA8	V17	SCS0
SA5	R20	SCS1
SA9	T20	SODT0
SODT0	N20	SODT1
SCKP	T14	SCKP
SCKN	U14	SCKN
SCKE0	V15	SCKE0
SCKE1	P13	SCKE1
SRST	U21	SRST
SDQS0P	R2	SDQS0P
SDQS0N	R1	SDQS0N
SDQS1P	U2	SDQS1P
SDQS1N	V2	SDQS1N
SDQS2P	V8	SDQS2P
SDQS2N	U8	SDQS2N
SDQS3P	V10	SDQS3P
SDQS3N	U10	SDQS3N
SDQM0	U1	SDQM0
SDQM1	R3	SDQM1
SDQM2	T9	SDQM2
SDQM3	N10	SDQM3

Signal	Pin	Net
SDQ0	N3	SDQ0
SDQ1	U4	SDQ1
SDQ2	N2	SDQ2
SDQ3	T4	SDQ3
SDQ4	U3	SDQ4
SDQ5	P1	SDQ5
SDQ6	T2	SDQ6
SDQ7	P2	SDQ7
SDQ8	P5	SDQ8
SDQ9	V3	SDQ9
SDQ10	P4	SDQ10
SDQ11	R4	SDQ11
SDQ12	R6	SDQ12
SDQ13	N4	SDQ13
SDQ14	P6	SDQ14
SDQ15	N5	SDQ15
SDQ16	T11	SDQ16
SDQ17	U12	SDQ17
SDQ18	T12	SDQ18
SDQ19	U9	SDQ19
SDQ20	T6	SDQ20
SDQ21	U5	SDQ21
SDQ22	T7	SDQ22
SDQ23	T5	SDQ23
SDQ24	R9	SDQ24
SDQ25	P7	SDQ25
SDQ26	N7	SDQ26
SDQ27	P9	SDQ27
SDQ28	P10	SDQ28
SDQ29	U11	SDQ29
SDQ30	P12	SDQ30
SDQ31	R12	SDQ31
SZQ	L15	
VCC_DRAM1	L9	
VCC_DRAM2	L10	
VCC_DRAM3	L11	VCC_DRAM
VCC_DRAM4	L12	
VCC_DRAM5	L13	
VDD18_DRAM	L14	+1V8

R3 240R GND

Net	Signal
SDQ4	DQ14
SDQ1	DQ10
SDQ7	DQ11
SDQ3	DQ8
SDQ0	DQ13
SDQ2	DQ15
SDQ5	DQ9
SDQ6	DQ12
SDQ8	DQ5
SDQ9	DQ0
SDQ10	DQ6
SDQ11	DQ2
SDQ12	DQ3
SDQ13	DQ4
SDQ14	DQ1
SDQ15	DQ7

DDR3

VCC_DRAM SVREF
VDD B2 VDDQ A1 VREFDQ H1 VREFCA M8

Net	Pin	Signal
SA0	N3	A0
SA1	P7	A1
SA2	P3	A2
SA3	N2	A3
SA4	P8	A4
SA5	P2	A5
SA6	R8	A6
SA7	R2	A7
SA8	T8	A8
SA9	R3	A9
SA10	L7	A10/AP
SA11	R7	A11
SA12	N7	A12/BC
SA13	T3	A13
SA14	T7	A14
SA15	M7	A15
SBA0	M2	BA0
SBA1	N8	BA1
SBA2	M3	BA2
SCKP	J7	CK
SCKN	K7	CK
SCKE0	K9	CKE
SRST	T2	RESET
SCS0	L2	CS
SRAS	J3	RAS
SCAS	K3	CAS
SWE	L3	WE
SODT0	K1	ODT

Signal	Pin	Net
DQ0	E3	DQ0
DQ1	F7	DQ1
DQ2	F2	DQ2
DQ3	F8	DQ3
DQ4	H3	DQ4
DQ5	H8	DQ5
DQ6	G2	DQ6
DQ7	H7	DQ7
DQ8	D7	DQ8
DQ9	C3	DQ9
DQ10	C8	DQ10
DQ11	C2	DQ11
DQ12	A7	DQ12
DQ13	A2	DQ13
DQ14	B8	DQ14
DQ15	A3	DQ15
LDM	E7	SDQM1
UDM	D3	SDQM0
LDQS	F3	SDQS1P
LDQS	G3	SDQS1N
UDQS	C7	SDQS0P
UDQS	B7	SDQS0N
ZQ	L8	
ODT1	J1	SODT1
CKE1	J9	SCKE1
CS1#	L1	SCS1
ZQ1	L9	

R6 240R GND
R5 240R GND

VSS A9 VSSQ B1
GND GND

U2
DDR3 FBGA-96

R4 100R
SCKP SCKN
C7 2.2p

+5VP

10u 10u 10u 10u
C26 C27 C28 C34
GND

VDD_GPU
2.2u 2.2u 2.2u 2.2u 2.2u 2.2u 2.2u
C40 C42 C44 C46 C48 C49 C50
GND

VDD_CPU
2.2u 2.2u 2.2u 2.2u
C41 C43 C45 C47
GND

C74
C73
10u 10u
VCC_DRAM

R28
NC

R27
NC

C72 1u
GND

PMU_SDA
PMU_SCK 1,5uH
VDD_CPUFB

+5VP
C30 10u
C33 10u

C29 10u
1,5uH L2

VDD_CPUFB

U5
1 DCDC2 VIN2 20
2 VIN3 LX2 19
3 LX3 LX1 18
4 DCDC3 VIN1 17
5 SDA DCDC1 16
6 SCL ALDO1 15
7 RTCLDO0 PWROK 14
8 VREF PWROK 13
9 GND DLDO1 12
10 NC IRQ 11

VDD_GPUFB

+3,3V
+1V8
10u
10u
C36 C35
GND

R29
0R

AP_RESET

TP1
TestPoint

GND L1 1,5uH

VDD_CPU
C32 C31 C70 C71
10u 10u 10u 10u
VDD_GPU

TP2
TestPoint VDD_CPU

TP3
TestPoint VDD_GPU

TP4
TestPoint VCC_DRAM

TP5
TestPoint +3.3V

TP7
TestPoint +1V8

TP8
TestPoint +5VP

TP9
TestPoint

TP10
TestPoint
GND

U1D   H616
F11 VDD_SYS1   GND16 H13
F12 VDD_SYS2   GND17 H14
F13 VDD_SYS3   GND18 H15
G10 VDD_SYS4   GND19 H19
G11 VDD_SYS5   GND20 J12
G12 VDD_SYS6   GND21 J13
               GND22 J14
H8 VDD_CPU1   GND23 J15
H9 VDD_CPU2   GND24 M1
J8 VDD_CPU3   GND25 K8
J9 VDD_CPU4   GND26 K9
J10 VDD_CPU5   GND27 K10
J11 VDD_CPU6   GND28 K11
L8 VDD_CPUFB   GND29 K12
               GND30 K13
F9 VDD_GPU1   GND31 K14
F10 VDD_GPU2   GND32 K15
G8 VDD_GPU3   GND33 L21
G9 VDD_GPU4   GND34 M2
F8 VDD_GPUFB   GND35 M3
               GND36 N6
D10 VCC_IO   GND37 N9
               GND38 N12
A1 GND1   GND39 N15
A10 GND2   GND40 N18
A18 GND3   GND41 P3
A21 GND4   GND42 R5
B6 GND5   GND43 R21
B16 GND6   GND44 T1
D19 GND7   GND45 T3
F14 GND8   GND46 T8
F15 GND9   GND47 T10
G13 GND10   GND48 T15
G14 GND11   GND49 T17
G15 GND12   GND50 U6
H10 GND13   GND51 U13
H11 GND14   GND52 V1
H12 GND15   GND53 V5
               GND54 V12
               GND55 V19
               GND56 V21
GND

VDD_GPU
VDD_CPU
VDD_CPUFB
VDD_GPU
VDD_GPUFB
+3.3V
GND

+3.3V +1V8

C52 C53
2.2u 2.2u

GND GND

U1B H616

+3.3V

R26
10k

B1	PC0	PH0	D16	RXConvIn
C2	PC1	PH1	D15	TXConvOut
C1	PC2	PH2	B15
D1	PC3	PH3	C15
D2	PC4	PH4	A14
D3	PC5	PH5	B14
E2	PC6	PH6	C14
F4	PC7	PH7	B12
E3	PC8	PH8	C13
F1	PC9	PH9	A12
F2	PC10	PH10	B13
F3	PC11
G2	PC12
G3	PC13
H1	PC14
H2	PC15
H3	PC16

TP11
TP12
TP13

D1
LED

R15
2k

D2
LED

R16
2k

GND

+3.3V F5 VCC_PC

		PI0	H6	RXD3
		PI1	D4	RXD2
		PI2	G6	RXD1
		PI3	E4	RXD0
		PI4	G5	RXC
		PI5	H4	RXCTL
		PI6	H5	
		PI7	G4	TXD3
		PI8	E6	TXD2
		PI9	D5	TXD1
		PI10	L5	TXD0
		PI11	K4	TXC
		PI12	K5	TXCTL
		PI13	E5	CLK125
		PI14	L6	MDC
		PI15	L4	MDIO
		PI16	K6	

SDC0_D1 J2 PF0
SDC0_D0 J3 PF1
SDC0_CLK K1 PF2
SDC0_CMD K3 PF3
SDC0_D3 L2 PF4
SDC0_D2 L3 PF5
SDC0_DET K2 PF6

VCC_PI J6 +3.3V

+1V8

R17 R18
2k 2k

A6	PG0
C7	PG1
C6	PG2
B5	PG3
C5	PG4
B7	PG5
A4	PG6
B4	PG7
C4	PG8
B3	PG9
C8	PG10
B10	PG11
C9	PG12
C10	PG13
B9	PG14
A8	PG15
B8	PG16
C3	PG17
A2	PG18
B2	PG19

PL0 C18 PMU_SCK
PL1 B18 PMU_SDA

+1V8 D7 VCC_PG

+3.3V

R10
1R SD_VDD

C51
10u

GND

J1 GND Micro_SD_Card_Det2

+3.3V

R12
10k

DAT2	1	SDC0_D2
DAT3/CD	2	SDC0_D3
CMD	3	SDC0_CMD
VDD	4	SD_VDD
CLK	5	SDC0_CLK
VSS	6	
DAT0	7	SDC0_D0
DAT1	8	SDC0_D1
DET_A	10	
DET_B	9	SDC0_DET

R11 33R

GND

+3.3V

R13
10k

R14
1k

GND

11 SHIELD

GND

+1V8

+3.3V

C58
100n

C61
100n

C62
100n

GND

GND

U1C   H616

E19	HTX0P	EPHY_RTX	B19
E20	HTX0N	EPHY_TXP	A19
D20	HTX1P	EPYH_TXN	A20
D21	HTX1N	EPHY_RXP	B20
C19	HTX2P	EPHY_RXN	B21
C20	HTX2N	VCC_EPHY	E18
F20	HTXCP		
F21	HTXCN	USB0_DM	J19
F19	HSCL	USB0_DP	J20
G21	HSDA	USB1_DM	M19
G17	HCEC	USB1_DP	M20
G18	HHPD	USB2_DM	K19
F18	VCC_HDMI	USB2_DP	K20
		USB3_DM	L19
J18	VRA1	USB3_DP	L20
J17	VRA2	VCC_USB	M18
K18	REXT		
H17	AVCC	RESET	A16
G19	LINEOUTL	FEL	B17
G20	LINEOUTR	JTAG_SEL	C16
H18	AGND	LRADC	L18
J21	TV_OUT	PLLTEST	D14
H20	VCC_TV	VCC_PLL	D12
		DXIN	B11
D18	AC_AVCC	DXOUT	C12
C17	AC_VRA1	REFCLK_OUT	C11
		DXLDO_OUT	D13
		VCC_DCXO	D11

+3.3V

D−
D+

+3.3V

+3.3V

R20
10k

AP_RESET

C64
1n

GND

+1V8
SOC_XIN
SOC_XOUT

+1V8

C63
220n

GND

+1V8

C54
470n

C55
470n
+1V8

R19
150k

GND

TV_OUT   GND

+1V8

C56
2.2u

C57
1u

GND

Y1
25MHz

C59   18p   SOC_XIN

C60   18p   SOC_XOUT

GND   GND

+5VP

C67
47u
C66
47u
C69
47u
C68
4.7u

GND

+5VP

U4

TXConvOut	26 TXD
RXConvIn	25 RXD
	24 RTS
	23 CTS
	27 DSR
	28 DTR
	1 DCD
	2 RI/CLK

VDD 6
VREGIN 7
RST 9

R25
10k

+5VP

VBUS 8
D− 5
D+ 4

UART_D−
UART_D+

12 SUSPEND
11 SUSPEND

19 TXT/GPIO.0
18 RXT/GPIO.1
17 RS485/GPIO.2
16 WAKEUP/GPIO.3
22 GPIO.4
21 GPIO.5
20 GPIO.6

13 CHREN
15 CHR0
14 CHR1

GND 3

GND

CP2102N−Axx−xQFN28

D3
SP0502BAHT

GND

+5VP
A4 VBUS

R21 5.1k
A5 CC1
R22 5.1k
B5 CC2

GND

A7 D−
B7 D−
A6 D+
B6 D+

A8 SBU1
B8 SBU2

J2
USB_C_Receptacle_USB2.0

A1 GND   SHIELD S1

GND

GND 4   5

D−   2 D−
D+   3 D+   Shield

J3
USB_A

+5VP   D4 D_Schottky   1 VBUS
C65
4.7u

GND