P4
Header 3
VBATT
3.3V

R1 470
R2 470
R3 470
R4 470
R5 470
R6 470
R7 470
R8 470

D1 D2 D3 D4 D5 D6 D7 D8

LED1 LED2 LED3 LED4 LED5 LED6 LED7 LED8

Infrared Transmitter

P5
Header 3
3.3V
VBATT
R14
TBD
D9
IR LED

Infrared Receiver

P6
Header 3
3.3V
VBATT
R15
47
C12 47uF, 6V
C13 0.1uF
U3
VCC
OUT
GND
GP1US301XP
R18 100
C14
0.001uF

R16 220
R17
100k
Q1
MMBT4401

P7
Header 3
IRDAO

P10
Header 3
IRDAI

SW_MODE
SW1 SPST

SecureDigital (SD) Card Interface

J1
SD_CARD_SOCKET
DAT1
DAT2
VDD
VSS1
VSS2
DAT0
CMD
CLK
CS/DAT3
COM
WP_SW
CD_SW
3.3V
MISO
MOSI
SD_CLK
CS
CD_SW
WP_SW

U1
MC9S08JM60CLHE

PTB0/MISO2/ADP0
PTB1/MOSI2/ADP1
PTB2/SPSCK2/ADP2
PTB3/SS2/ADP3
PTB4/KBIP4/ADP4
PTB5/KBIP5/ADP5
PTB6/ADP6
PTB7/ADP7

PTE0/TxD1
PTE1/RxD1
PTE2/TPM1CH0
PTE3/TPM1CH1
PTE4/MISO1
PTE5/MOSI1
PTE6/SPSCK1
PTE7/SS1

PTC0/SCL
PTC1/SDA
PTC2
PTC3/TxD2
PTC4
PTC5/RxD2
PTC6

PTF0/TPM1CH2
PTF1/TPM1CH3
PTF2/TPM1CH4
PTF3/TPM1CH5
PTF4/TPM2CH0
PTF5/TPM2CH1
PTF6
PTF7

PTD0/ADP8/ACMP+
PTD1/ADP9/ACMP-
PTD2/KBIP2/ACMPO
PTD3/KBIP3/ADP10
PTD4/ADP11
PTD5
PTD6
PTD7

PTG0/KBIP0
PTG1/KBIP1
PTG2/KBIP6
PTG3/KBIP7
PTG4/XTAL
PTG5/EXTAL

IRQ/TPMCLK
RESET
BKGD/MS

PTA0
PTA1
PTA2
PTA3
PTA4
PTA5

VUSB33
USBDN
USBDP

VDD
VDDAD
VREFH
VREFL
VSSAD
VSS
VSSOSC

LED1
LED8
LED2
LED3
LED4
LED5
LED6
LED7
IR_OUT
IR_IN

Infrared (IrDA) Transceiver

P8
Header 3
3.3V
VBATT

P9
Header 3
IRDAI

U2
TFDU4300-TT
VLOGIC
RXD
A
K
GND
VCC
SD
TXD

R19 47
C11 0.1uF
R10 TBD
C3
4.7uF, 16V

IRDAO

P11
Header 3

Background Debug Mode (BDM)

J2
Header 2X3
BKGD
/RESET
3.3V
R9
10k
C2
0.1uF

C1 15pF NP0
Y1
12MHz
R11
1.0M
C4 15pF NP0

USB Bootloader/
Debug Console Interface

J3
USB Mini B
VUSB
3.3V
R12 33 ohm, 1%
R13 33 ohm, 1%

VBATT
BT1
AAA
BT2
AAA

P2
Header 2
P1
Header 2
P3
Header 2
VBATT

C5 0.47uF
C6 4.7uF, 16V
C7 10uF, 16V
C8 0.1uF
C9 0.1uF
C10 0.1uF

NOTE: RESISTORS ARE IN OHMS +/- 5% AND CAPACITORS ARE IN MICROFARADS, X7R UNLESS OTHERWISE NOTED. SEE BOM FOR ACTUAL VOLTAGE AND SPECIFICATION.

GRAND idea studio

TITLE					
DEFCON 16 Badge Development Board					
DATE	FILENAME	SIZE		DRAWN BY	REV
5/19/2008		B	SHT 1 OF 1	Joe Grand	1.0