USB<->UART BLOCK

PWR_FLAG
+5V

J1
USB_B
VBUS
D+
D-
Shield GND

FB1
330ohm at 100MHz

C1 0.01uF
C2 47pF
C3 47pF
C4 4.7uF
C5 0.1uF
C6 0.1uF

GND

U1
FT232RL
3V3OUT
VCCIO
VCC
TXD — U1_TXD
RXD — U1_RXD
RTS
CTS
DTR
DCR
DCD
RI
RESET
OSCI
OSCO
TEST
AGND
GND GND GND GND
CBUS0
CBUS1
CBUS2
CBUS3
CBUS4

U1_TXD
U1_RXD

AVR GAME BOY BUS CONTROLLER BLOCK

+5V
VCC
J2
AVR-ISP-6
MISO
MOSI
SCK
RST
GND

RESET SIGNAL BLOCK

+5V
R1 33Kohm
D1 1N4148
+5V
C10 1uF
GND
RESET_N

It takes 33ms until 66% of Vdd with 33kohm/1uF

+5V
C7 0.1uF
GND

U2
ATtiny2313A-20PU
PA2/RESET
PA0/XTAL1
PA1/XTAL2
VCC
PB0
PB1
PB2
PB3
PB4
PB5
PB6
PB7
PD0
PD1
PD2
PD3
PD4
PD5
PD6
GND

U6_Q7
GB_WRB
GB_RDB
GB_CSB
SHIFT_CLK
RCLK
U5_OEB
U3_SER

U1_TXD
U1_RXD
U6_PLB
GB_RSTN

Y1 18.432MHz
C8 22pF
C9 22pF
GND

ADDRESS/DATA SHIFT REG BLOCK

GND
U3 74HC595
C11 0.1uF
+5V

U3_SER — SER VCC
SHIFT_CLK — SRCLK
RESET_N — SRCLR
RCLK — RCLK
OE
QA — GB_A00
QB — GB_A01
QC — GB_A02
QD — GB_A03
QE — GB_A04
QF — GB_A05
QG — GB_A06
QH — GB_A07
QH'
GND

C12 0.1uF GND

U4 74HC595
SER VCC
SHIFT_CLK — SRCLK
RESET_N — SRCLR
RCLK — RCLK
OE
QA — GB_A08
QB — GB_A09
QC — GB_A10
QD — GB_A11
QE — GB_A12
QF — GB_A13
QG — GB_A14
QH — GB_A15
QH'
GND

C13 0.1uF GND

U5 74HC595
SER VCC
SHIFT_CLK — SRCLK
RESET_N — SRCLR
RCLK — RCLK
U5_OEB — OE
QA
QB
QC
QD
QE
QF
QG
QH
QH'
GND

U6 74HC165
CE
CP — SHIFT_CLK
PL
D7
D6
D5
D4
D3
D2
D1
D0
DS
Q7
Q7 — U6_Q7
VCC
GND
C14 0.1uF
+5V
U6_PLB — PL
GND

GB_D00 GB_D01 GB_D02 GB_D03 GB_D04 GB_D05 GB_D06 GB_D07

PULLUP AND PROTECTOR BLOCK

J3
Game Boy cartridge connector
+5V   GND

R2 510ohm R6 510ohm R10 510ohm R14 510ohm R18 510ohm R22 510ohm R26 510ohm R30 510ohm
R3 510ohm R7 510ohm R11 510ohm R15 510ohm R19 510ohm R23 510ohm R27 510ohm R31 510ohm
R4 510ohm R8 510ohm R12 510ohm R16 510ohm R20 510ohm R24 510ohm R28 510ohm
R5 510ohm R9 510ohm R13 510ohm R17 510ohm R21 510ohm R25 510ohm R29 510ohm

GB_WRB
GB_RDB
GB_CSB
GB_A00
GB_A01
GB_A02
GB_A03
GB_A04
GB_A05
GB_A06
GB_A07
GB_A08
GB_A09
GB_A10
GB_A11
GB_A12
GB_A13
GB_A14
GB_A15
GB_D00
GB_D01
GB_D02
GB_D03
GB_D04
GB_D05
GB_D06
GB_D07
GB_RSTN

R32 100k R36 100k R40 100k R44 100k R48 100k R52 100k R56 100k R60 100k
R33 100k R37 100k R41 100k R45 100k R49 100k R53 100k R57 100k R61 100k
R34 100k R38 100k R42 100k R46 100k R50 100k R54 100k R58 100k
R35 100k R39 100k R43 100k R47 100k R51 100k R55 100k R59 100k

GND   +5V