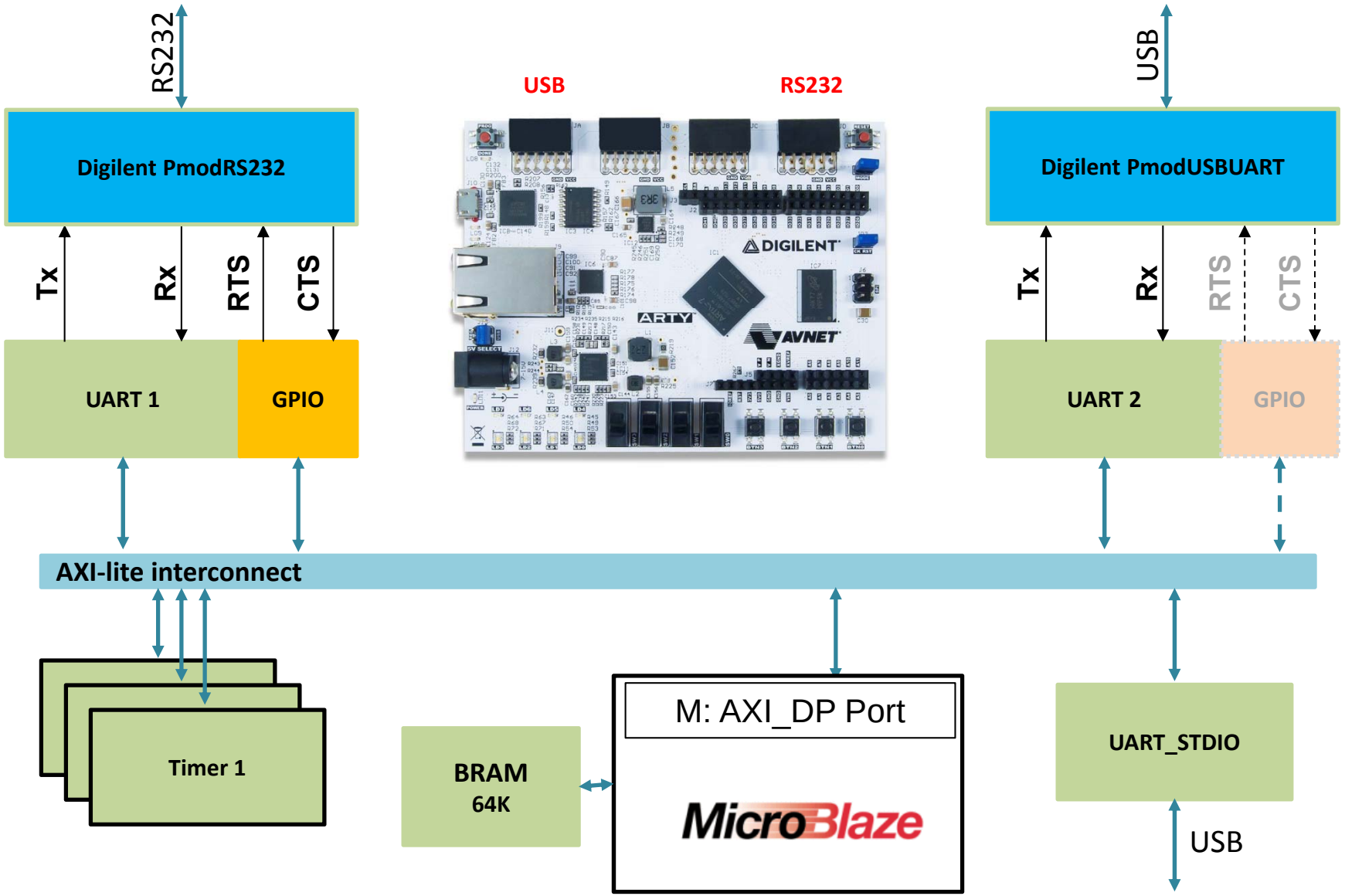
ARTY Architecture



UART Address Mapping and Characteristics

Peripherals	AXI-Lite Base Address	Depth (Bytes)	BAUD RATE	Number of Data bits	Parity
UART 1	0x4000_0000	0x10000	9600	8	None
UART1_FC*	0x4001_0000	0x10000	-	-	-
UART 2	0x4002_0000	0x10000	38400	8	None
UART2_FC*	0x4003_0000	0x10000	-	-	-
UART_STDIO	0x4060_0000	0x10000	9600	8	None

Implemented using GPIO IP core. RTS is connected in port 1 (Write only), CTS in port 2 (Read only).
More information:
http://www.xilinx.com/support/documentation/ip_documentation/axi_gpio/v2_0/pg144-axi-gpio.pdf

UART 1 and UART 2 Registers

UART 1/2	Data Size (bits)	Depth	Access Permission	Address Offset	Interconnect
RECV_FIFO	32	16	R	0x00000000	AXI lite
TRAN_FIFO	32	16	W	0x00000004	AXI lite
STAT_REG	32	1	R	0x00000008	AXI lite
CONT_REG	32	1	W	0x0000000C	AXI lite

More information in:

http://www.xilinx.com/support/documentation/ip_documentation/axi_uartlite/v2_0/pg142-axi-uartlite.pdf

Pin Locations (Pmod_USB_UART)

UART 2	ARTY PIN	PmodUSBUART Pin
CTS	JA1	1
Tx	JA2	2
Rx	JA3	3
RTS	JA4	4
	GND	5
	VCC (3.3V)	6

Digilent PmodUSBUART use the new signal assignment convention. More information in:
https://digilentinc.com/Products/Detail.cfm?NavPath=2,401,928&Prod=PMOD-USB-UART

Pin Locations (RS232_PMODs)

UART 2	Zedboard PIN	Pmod RS232 Pin
CTS	JD1	1
RTS	JD2	2
Rx	JD3	3
Tx	JD4	4
	GND	5
	VCC (3.3V)	6

Digilent Pmods RS232 use the old UART interface. More info in:
https://digilentinc.com/Products/Detail.cfm?NavPath=2,401,463&Prod=PMOD-RS232

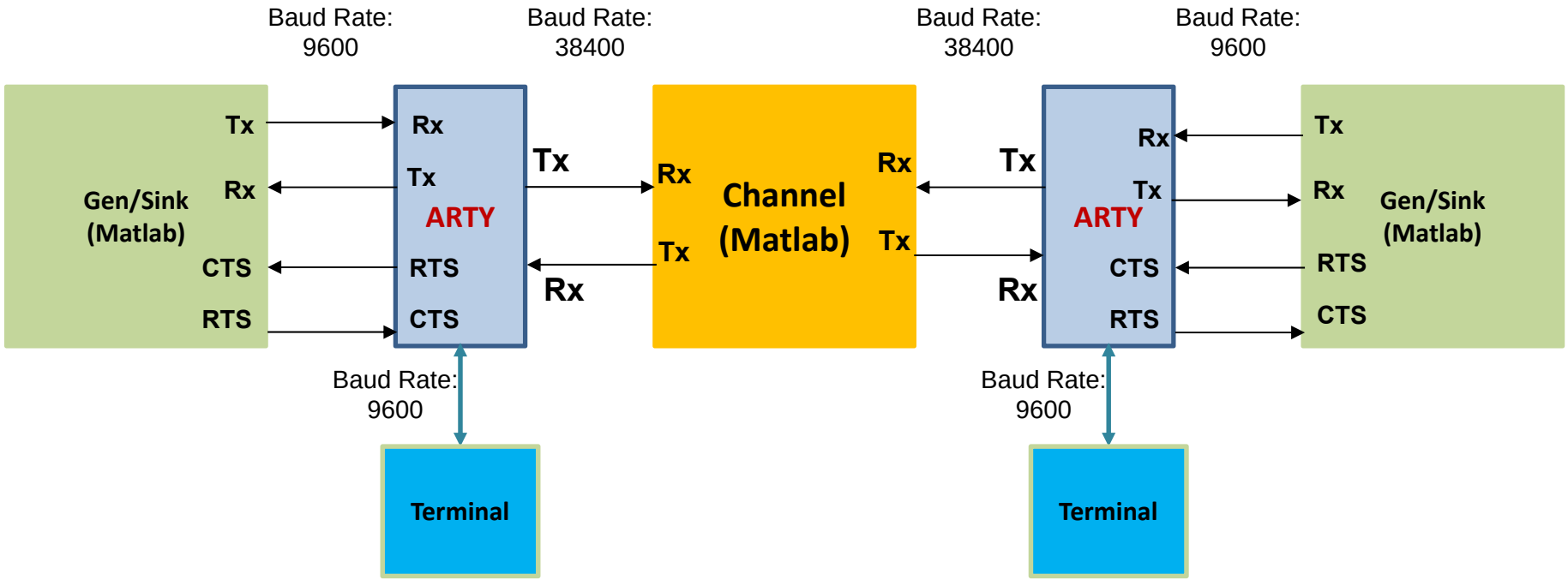
AXI Timers

Peripherals	AXI-Lite Base Address	Depth (Bytes)	Input clock Frequency
Timer_0	0x41C0_0000	0x10000	100 MHz
Timer_1	0x41C1_0000	0x10000	100 MHz
Timer_2	0x41C2_0000	0x10000	100 MHz

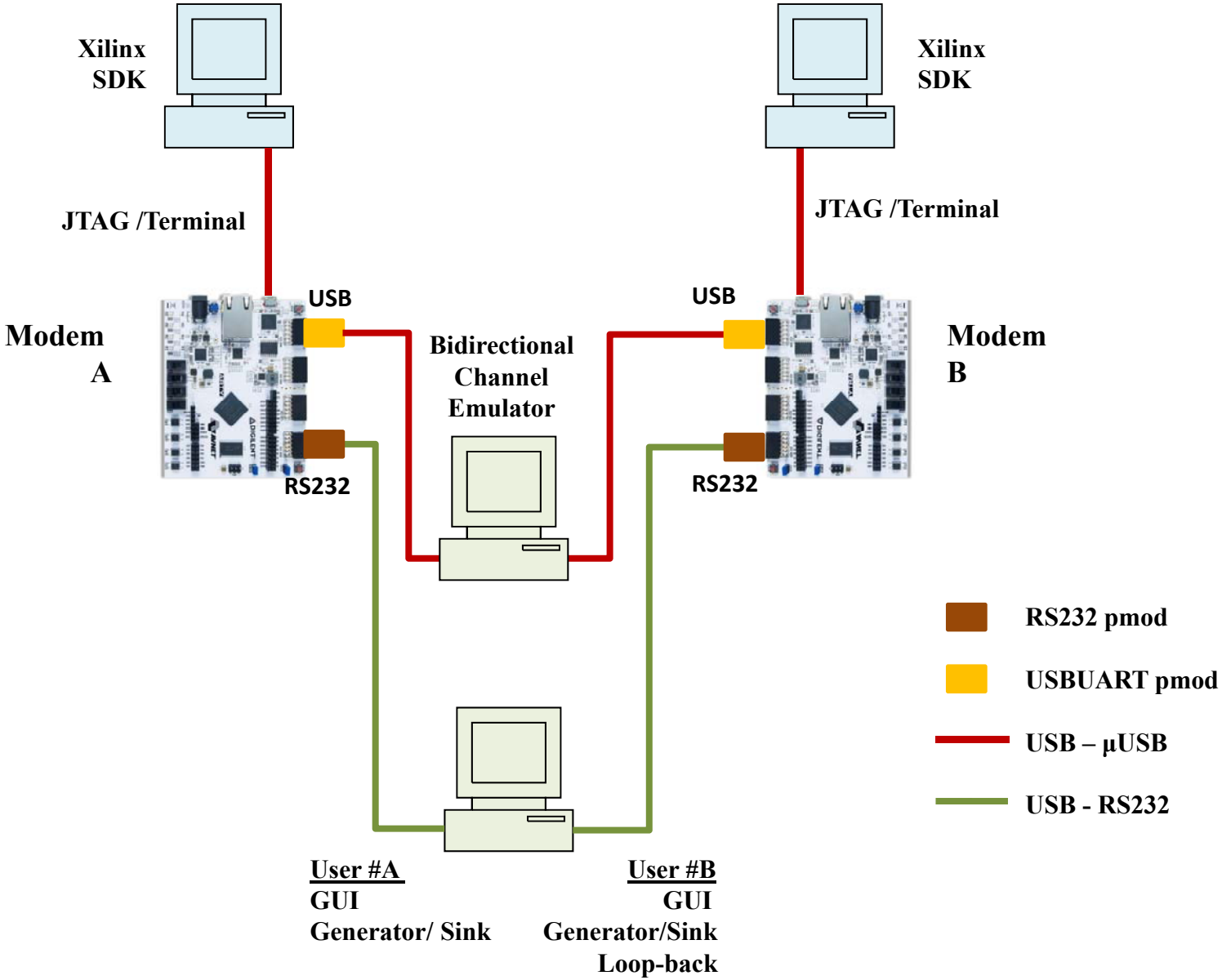
More information in:

http://www.xilinx.com/support/documentation/ip_documentation/axi_timer/v2_0/pg079-axi-timer.pdf

Reference Setup



Συνδεσμολογία



Additional Documentation

- ***Digilent ARTY***
  https://reference.digilentinc.com/doku.php?id=arty
- ***Xilinx SDK User Guide***
  http://www.xilinx.com/support/documentation/sw_manuals/xilinx2014_4/SDK_Doc/index.html
- ***MicroBlaze version 9.5***
  http://www.xilinx.com/support/documentation/sw_manuals/xilinx2014_4/ug984-vivado-microblaze-ref.pdf
- ***AXI Interrupt Controller version 4.1***
  http://www.xilinx.com/support/documentation/ip_documentation/axi_intc/v4_1/pg099-axi-intc.pdf
- ***AXI UARTlite version 2.0***
  http://www.xilinx.com/support/documentation/ip_documentation/axi_uartlite/v2_0/pg142-axi-uartlite.pdf
- ***AXI GPIO version 2.0***
  http://www.xilinx.com/support/documentation/ip_documentation/axi_gpio/v2_0/pg144-axi-gpio.pdf
- ***AXI Timer version 2.0***
  http://www.xilinx.com/support/documentation/ip_documentation/axi_timer/v2_0/pg079-axi-timer.pdf