

T-EMU: GRLIB APBUART Device Model Manual



Prepared

Mattias Holm
Technical Manager

Approved

Michela Alberti
General Manager

Checked

Dan Søren Nielsen
QA Manager

Record of Changes

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1. Introduction

The APBUART is part of the GRLIB device library from Gaisler. The ApbUart model supports both infinite speed UARTs (where bytes are sent when the register is written) and the emulation of FIFOs and send times based on the scaler.

2. Properties

pnP.config	APB plug and play config word
pnP.bar	APB plug and play bar register
config.infiniteUartSpeed	Set to 1 to enable infinite UART speed.
config.fifoSize	The FIFO size of the UART, set to 1 for FIFO free UARTs.
config.interrupt	The interrupt this UART will raise.
data	ApbUart data register. Writing to this will put a byte in the FIFO.
status	Status register.
control	Control register.
scaler	Scaler register.
fifo_debug	FIFO debug register (not supported).
tx	Serial interface destination
queue	EventIface (normally provided by the CPU or machine object)
irqCtrl	IRQ controller that the UART should send IRQs to.

rxFifo.start	Read location for Rx fifo
rxFifo.usage	Current bytes in Rx fifo
rxFifo.size	Fifo size
rxFifo.data	Fifo data buffer
txFifo.start	Read location for Tx fifo
txFifo.usage	Current bytes in Tx fifo
txFifo.size	Fifo size
txFifo.data	Fifo data buffer
txShift	Shift register. Only used when UART speed is non-infinite.

3. Interfaces

MemAccessIface	Type = MemAccessIface. Handles MMIOs.
UartIface	Type = SerialIface. Serial interface for the receiver.
DeviceIface	Type = DeviceIface.
ApbIface	Type = ApbIface. PnP access interface.

4. Limitations

- Loop back mode is not presently supported.
- Control flow (cts) is not supported