UART

Verification Plan

Version 1.0

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Parameter Name	Parameter Values	Description
Function_TYPE	ACTIVE , PASSIVE	Active or passive behaviour selection

1 UART Compliance Plan

This section identifies the features of the UART and describes the functional specification for each feature. Feature-related implementation details are also described when appropriate. Section weights, goals and required number of samples are included here or within a perspective.

1.1 Serial Data Interface

Logical Instances: UART_AGENT

The UART transmits and receives serial data. The data formats and speed are configurable to match those of an industry standard 16c550a UART.

1.1.1 Legal Interface Behavior

The UART can receive and transmit data in a configurable word format and size. These configuration features are common to both the Rx and Tx traffic. All combinations of configuration shall be tested except for baud rate. A range of baud rate values shall be tested and should include the slowest and fastest rate available.

Some testing of the Rx link enabled alone (without the Tx) shall be tested to ensure there are no design dependencies on the Tx link. Similarly, some testing of the standalone Tx link shall be conducted.

Name	Item Pattern	Bucket Filter	Parameters
Word Length Configuration	UART_AGENT.Rx.monitor.uart_trans_frame_cg .DATA_LENGTH		
Stop Bits Configuration	UART_AGENT.Rx.monitor.uart_trans_frame_cg .NUM_STOP_BITS		
Parity Mode	UART_AGENT.Rx.monitor.uart_trans_frame_cg .PARITY_MODE		

1.1.2 DUV Traffic

A randomized range of data values shall be transmitted to ensure to ensure correct DUV frame detection. The data values used shall include all possible variables of data LSB and MSB, as these data bits are next to the start bit or parity/stop bit in a data frame and so are the most probable to cause any frame timing problems.

Name	Item Pattern	Bucket Filter	Parameters
RX_Msb_Lsb	UART_AGENT.Rx.monitor.rx_traffic_cg.FRAME_MSB_LSB		
Tx_Msb_Lsb	UART_AGENT.Tx.monitor.tx_traffic_cg.FRAME_MSB_LSB		

1.2 Black Box Behavior

`Logical Instances:` `UART_AGENT`

1.2.1 Handled Serial IF Protocol Exceptions

The UARTs handle various exceptions, e.g. ignoring the frames. Added some of those, contribute to module level verification.

Name	Item Pattern	Bucket Filter	Parameters
Rx Frame Break	UART_AGENT.Rx.monitor.rx_protocol_cg.FRAME_BREAK		
Parity Error	UART_AGENT.Rx.monitor.uart_trans_frame_cg.PARITY_ERROR		
Tx Frame Break	UART_AGENT.Tx.monitor.tx_protocol_cg.FRAME_BREAK		