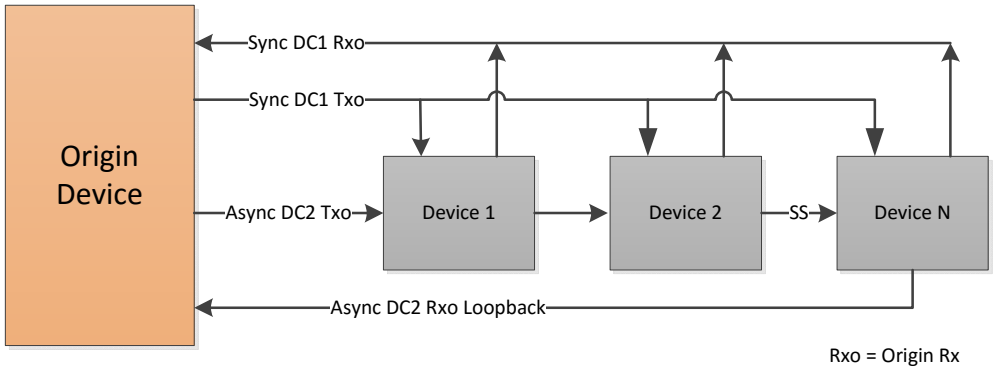
BLUE STORM ENGINEERING

Inter-Process Protocol (I2P)

Dual-UART Bus Configuration



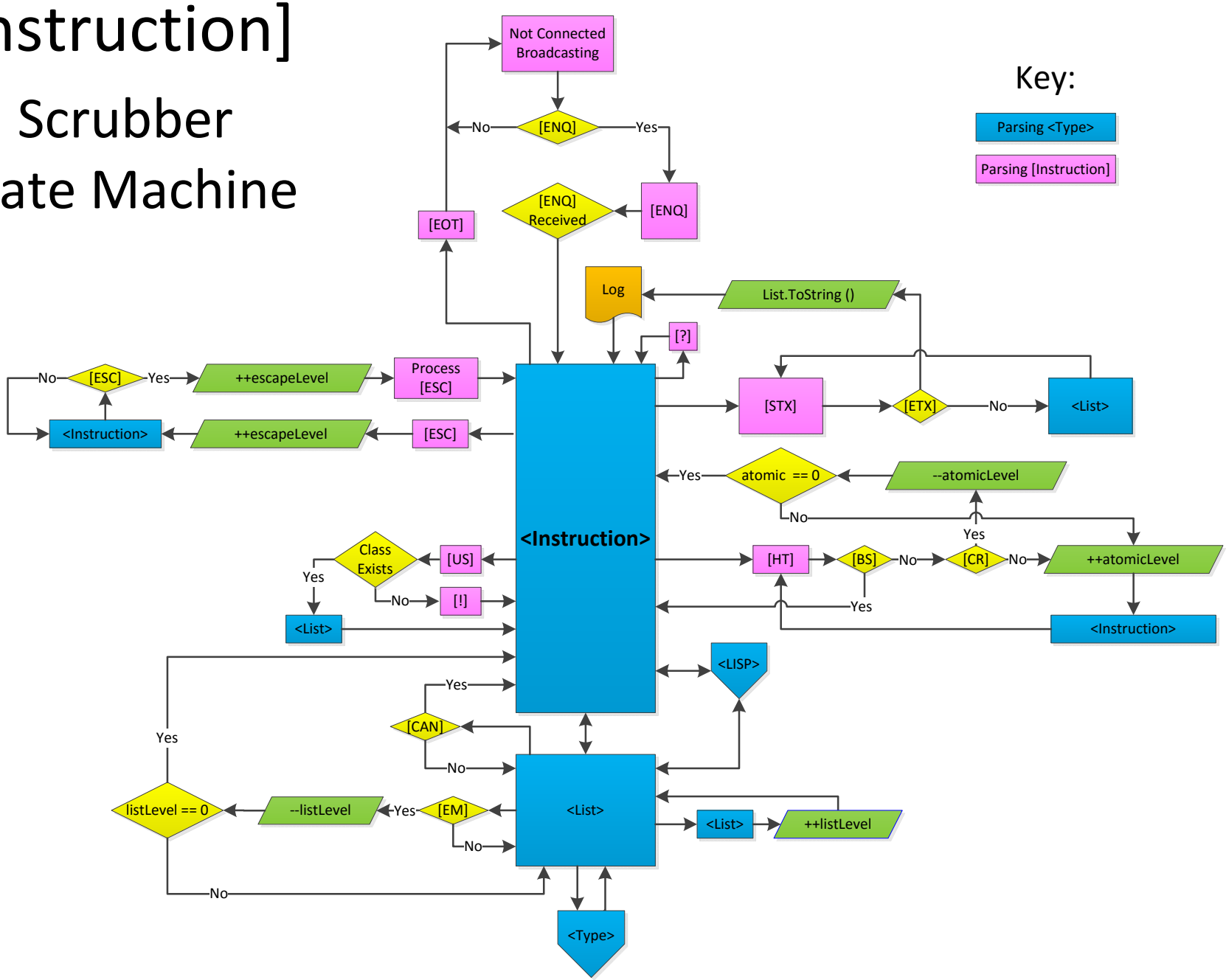
Rxo = Origin Rx
Txo = Origin Tx

Synchronous Channel (DC1):
The Synchronous Device Control (DC1) Txo is routed in a parallel daisy-chain to reduce propagation delay in accordance to RS485 guidelines, though it could be on a PCB without any buffers. Only the origin may talk to the devices on DC1 Txo, and only one selected device is allowed to talk on the DC1 Rxo. In order to get permission to talk on DC1, devices must submit an asynchronous request to the Origin via the loopback. Only the origin may select who is talking using only DC1. DC2 cannot be used to select devices to talk.

Asynchronous Channel (DC2):
The UART bus on DC2 is daisy chained Rx to Tx for each node with the final node's Tx looping back into DC2 Rxo. Because there is propagation delay between devices and bus traffic, this channel serves to process messages asynchronous because they will arrive at the destination at an indeterminate time. Devices on this channel must wait till the current async message is done being passed through before sending a message. DC2 is similar to passing messages between threads.

[Instruction]

Scrubber State Machine



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Scrubber
State Machine