

Vector Capture and Playback Strategies



The VECUTIL Vector Utility Verification Module

- **VECUTIL** is a verification module used by Sunburst Design to capture and selectively playback test vectors
- **`ifdef GENVEC** - Vector Capture mode
 - capture **invec** patterns (**input wire invec**)
- **`elsif PLAYBACK** - Play back captured vectors
 - drive **invec** patterns (**output reg invec**)
- **`else** - allow testbench to generate stimulus but compare outputs against captured vectors

Enabled with
+define+GENVEC

Enabled with
+define+PLAYBACK

Vector Capture Block Diagram

Not active in **PLAYBACK** mode



Testbench

wire {outputs}

These ``ifdef`-ed input declarations become quite verbose for large models

VECUTIL usage #1 declarations

```
`ifdef GENVEC
VECUTIL V
wire (inputs)
```

VECUTIL usage #2 declarations

```
`elsif PLAYBACK
VECUTIL V
reg (inputs)
```

The proposed `wire` enhancement would cut these declarations in half!

```
initial begin // stimulus
{inputs} = ... ;
...
end
```

clk generation clk

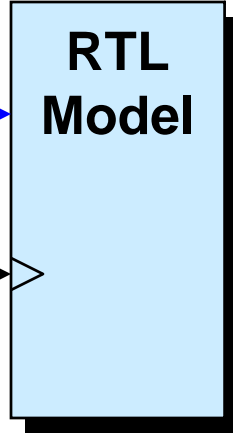
```
`ifdef GENVEC
input wire (inputs) invec
input wire outvec outvec
input wire clk
...
endif
```

```
...
`elsif PLAYBACK
output reg (inputs) invec
input wire outvec outvec
input wire clk
`endif
...
endif
```

```
...
`else
input wire (inputs) invec
input wire outvec outvec
input wire clk
`endif
```

GENVEC only used to generate "golden" input and output pattern files

Same declarations as **GENVEC** mode



{outputs}

