**ModelSim test vectors**

Test vector for encryption and decryption of 256 bits

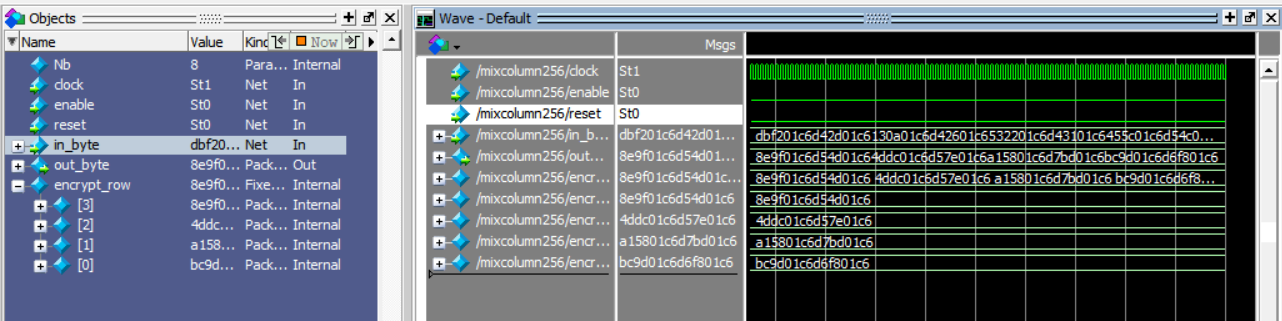
Input (256):

**256'h\_dbf201c6d42d01c6\_130a01c6d42601c6\_532201c6d43101c6\_455c01c6d54c01c6**

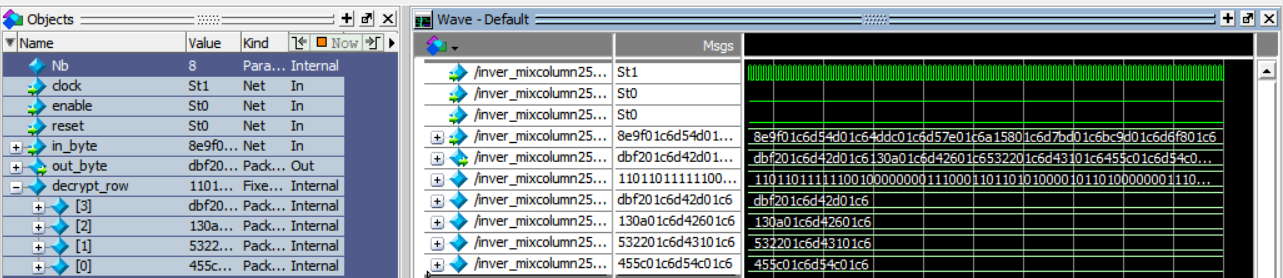
Output (256):

**256'h\_8e9f01c6d54d01c6\_4ddc01c6d57e01c6\_a15801c6d7bd01c6\_bc9d01c6d6f801c6**

**Mixcolumn256**

**For encrypt**

**Inver\_mixcolumn256**

**For decrypt**

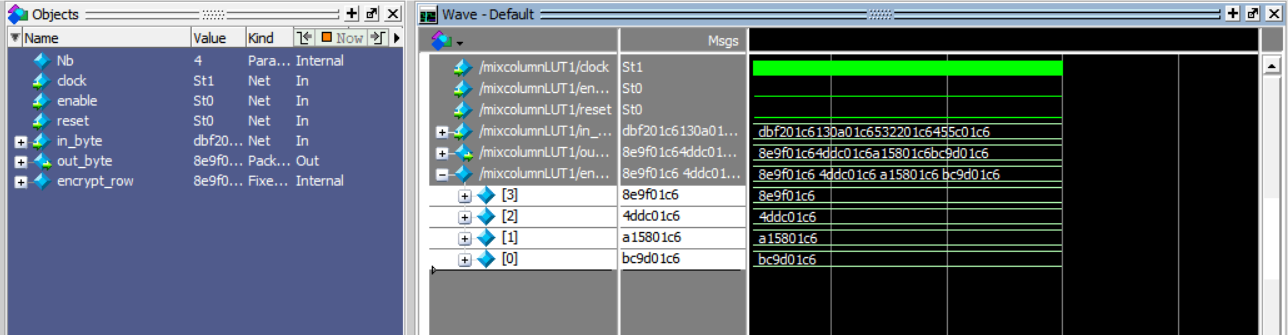
Test vector for encryption and decryption of 128 bits

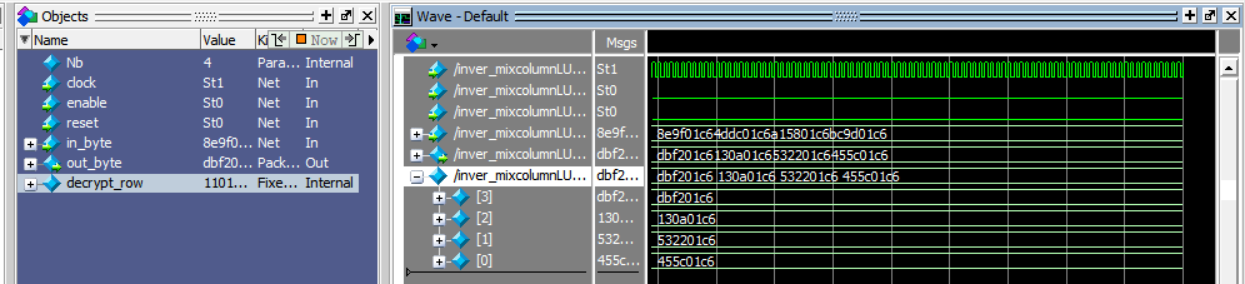
input (128):

**128'h\_dbf201c6\_130a01c6\_532201c6\_455c01c6**

output (128):

**128'h\_8e9f01c6\_4ddc01c6\_a15801c6\_bc9d01c6**

**For encrypt:**

**For decrypt:**

**Shiftrows**

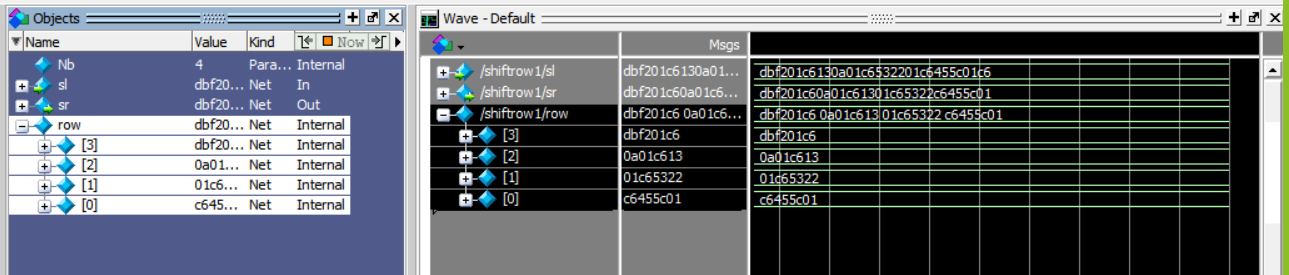
Test vector for encryption and decryption of 128 bits

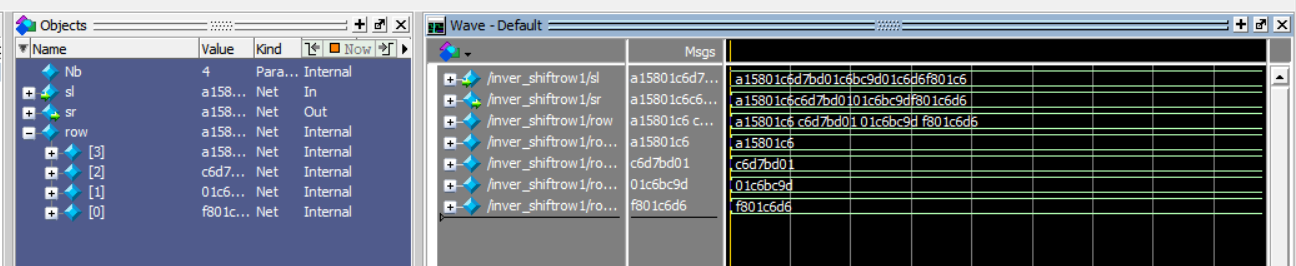
input (128):

**128'h\_dbf201c6\_130a01c6\_532201c6\_455c01c6**

output (128):

**128'h\_8e9f01c6\_4ddc01c6\_a15801c6\_bc9d01c6**

**For encrypt:**

**For decrypt:**

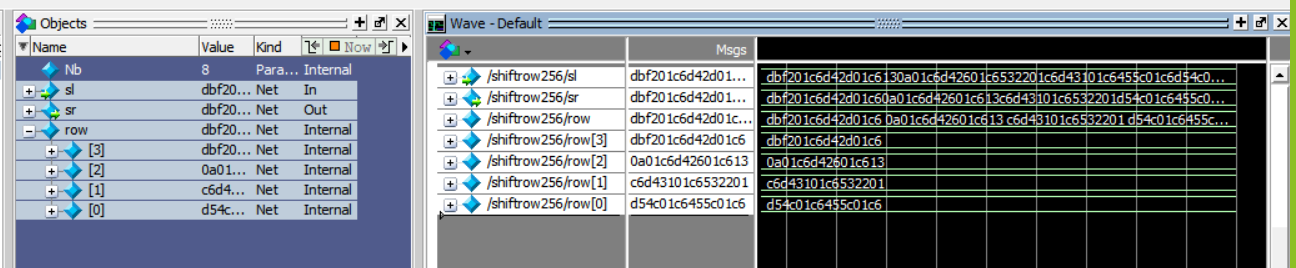
Test vector for encryption and decryption of 256 bits

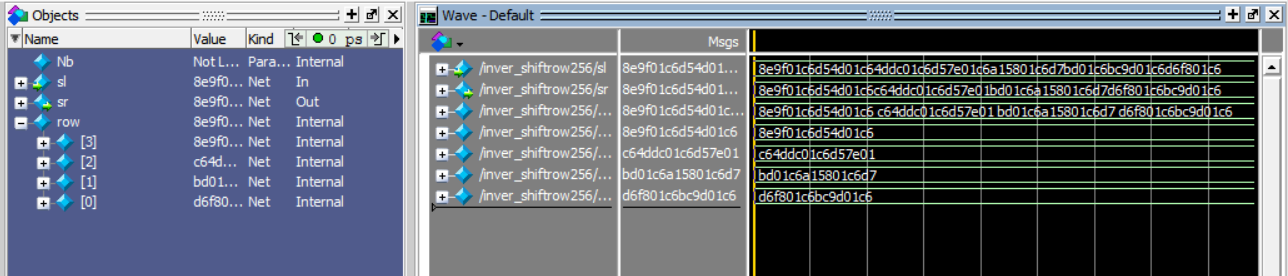
Input (256):

**256'h\_dbf201c6d42d01c6\_130a01c6d42601c6\_532201c6d43101c6\_455c01c6d54c01c6**

Output (256):

**256'h\_8e9f01c6d54d01c6\_4ddc01c6d57e01c6\_a15801c6d7bd01c6\_bc9d01c6d6f801c6**

**For encrypt:**

**For decrypt:**

**Reference:**<https://cryptography.fandom.com/wiki/Rijndael_mix_columns?fbclid=IwAR0Fqefhd66yHrwmBUBrAPQ-GDj7Fyvd-cNOkfvMJbS2VabpFWirSRo9W5A>