



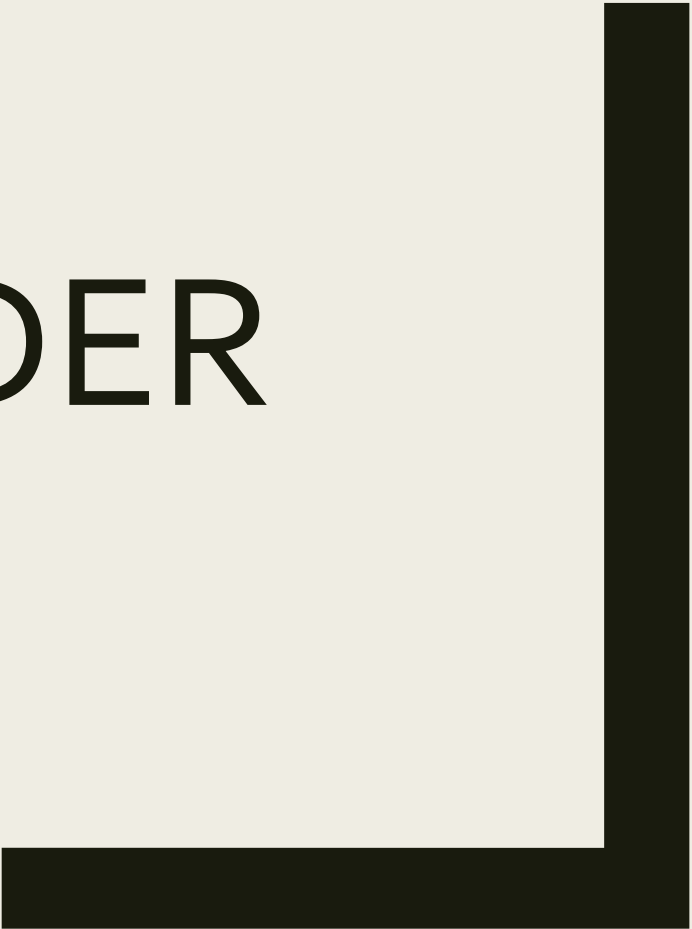
CRC₁₆ ENCODER

P2

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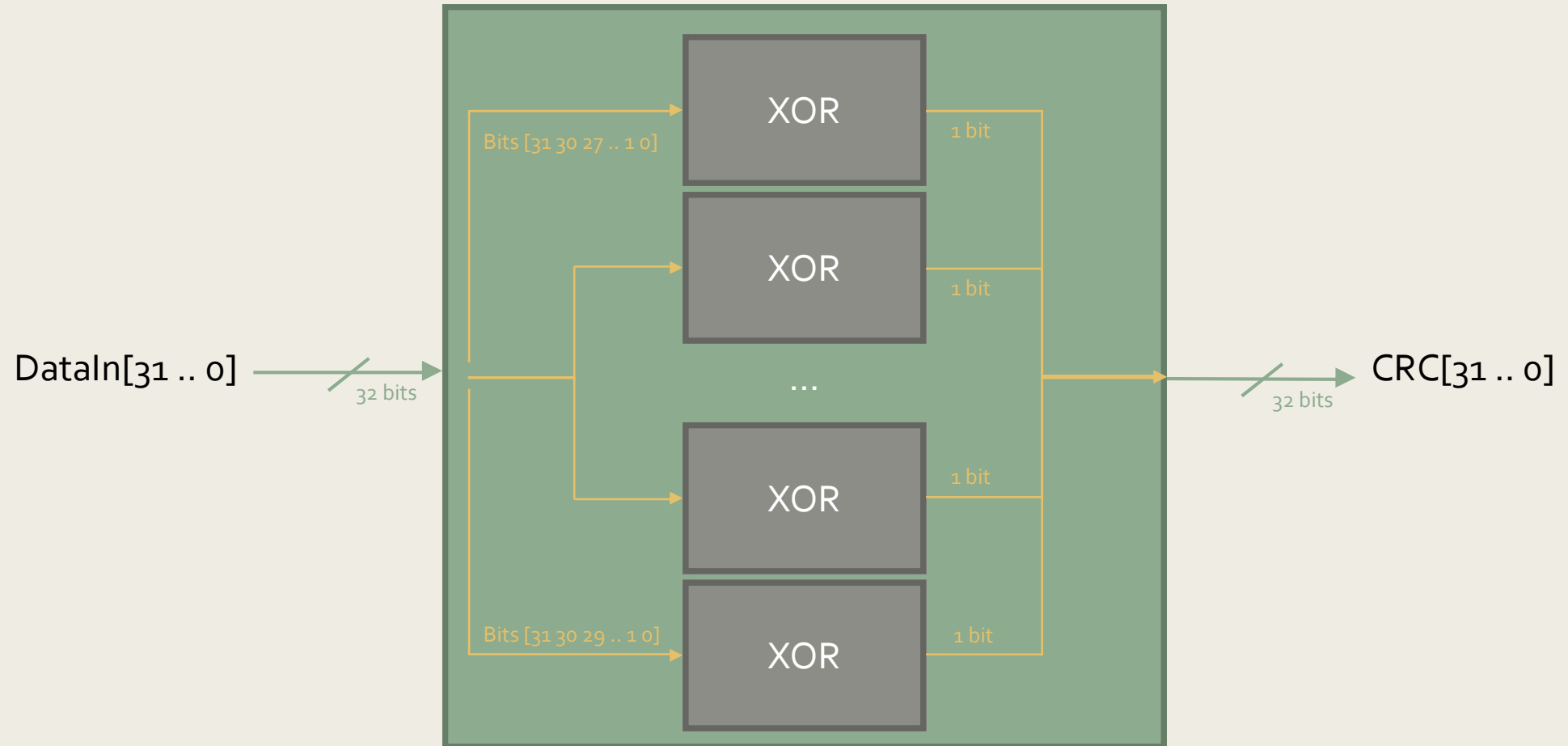
Descrição

- CRC (Cyclic Redundancy Check) de 16 bits dada uma palavra de 32 bits
- Método de cálculo de CRC baseado nas propriedades do resto da divisão
- Polinómio gerador: $x^{16} + x^{15} + x^2 + 1$

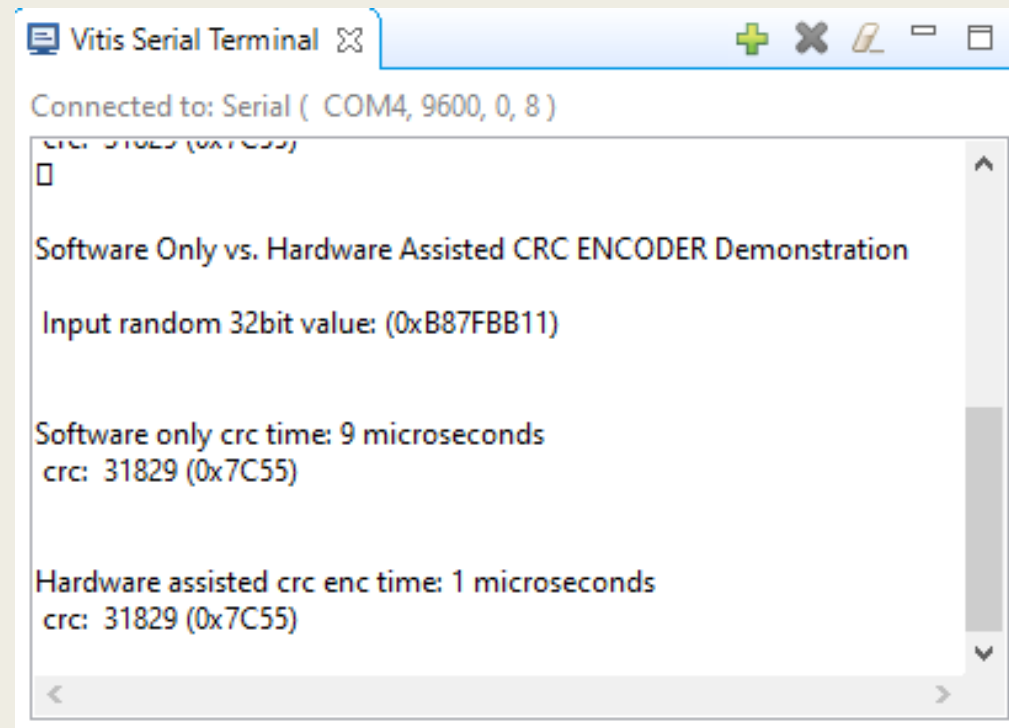
Implementação

Word Bit / CRC bit	r^{15}	r^{14}	r^{13}	r^{12}	r^{11}	r^{10}	r^9	r^8	r^7	r^6	r^5	r^4	r^3	r^2	r^1	r^0
a0	1													1		1
a1	1												1	1	1	1
a2	1											1	1		1	1
a3	1										1	1			1	1
a4	1									1	1				1	1
a5	1								1	1					1	1
a6	1							1	1						1	1
a7	1						1	1							1	1
a8	1					1	1								1	1
a9	1				1	1									1	1
a10	1			1	1										1	1
a11	1		1	1											1	1
a12	1	1	1												1	1
a13		1													1	1
a14	1													1	1	1
a15	1												1			1
a16	1											1		1	1	1
a17	1										1		1		1	1
a18	1									1		1			1	1
a19	1								1		1				1	1
a20	1							1		1					1	1
a21	1						1		1						1	1
a22	1					1		1							1	1
a23	1				1		1								1	1
a24	1			1		1									1	1
a25	1		1		1										1	1
a26	1	1		1											1	1
a27			1												1	1
a28		1												1		
a29	1													1		
a30	1											1	1	1		1
a31	1										1	1	1	1	1	1

Diagrama de Blocos



Resultados



Vitis Serial Terminal

Connected to: Serial (COM4, 9600, 0, 8)

```
CRC 32bit (0x7C55)  
[  
  
Software Only vs. Hardware Assisted CRC ENCODER Demonstration  
  
Input random 32bit value: (0xB87FBB11)  
  
Software only crc time: 9 microseconds  
crc: 31829 (0x7C55)  
  
Hardware assisted crc enc time: 1 microseconds  
crc: 31829 (0x7C55)
```