

```
LIBRARY ieee;
USE ieee.std_logic_1164.all;
use IEEE.NUMERIC_STD.ALL;

entity observer is
generic (
  observernumber:unsigned(15 downto 0):=x"0001"  -- how many observer are instantiated
);
port (
  clk           :in  std_logic;
  reset         :in  std_logic;
  enable_in     :in  std_logic;
  invariance_tau :in  std_logic_vector(7 downto 0);
  signal_phi    :in  std_logic;
  output        :out std_logic;
  enable_out    :out std_logic
);
end entity;
```