2. Generic Map

2.1 Generic Map Explanation

A generic map is the process of associating a generic value in an entity with a value in the architecture. Generics are parameters used to configure a component.

Some important points:

- **Generic**: A parameter to change the characteristics of an entity.
- **Generic Map**: Sets the value of the generic during instantiation.
- **Default Value**: Used if a value is not explicitly set.

2.2 Generic Map Example

```
entity Counter is
  generic (
    WIDTH: positive := 8;
    ENABLED: boolean := true
  );
  port (
    clk: in std_logic;
    reset: in std_logic;
    count: out std_logic_vector(WIDTH-1 downto 0)
  );
end entity;

architecture RTL of MyDesign is
  signal my_counter_output: std_logic_vector(7 downto 0);
begin
  my_counter_inst: Counter
    generic map (
      WIDTH => 8,
      ENABLED => true
    )
    port map (
      clk => system_clock,
```

```
      reset => reset_signal,
      count => my_counter_output
    );
end architecture;
```

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