

# $\mu$ PD98421

## High-speed Address Search Engine

### Features

- 64-bit  $\times$  8K entry memory size
- 64-bit read/write bus
- Supports 3 types of search modes
  - Full Match mode
  - Full Match with Mask mode
  - Longest Prefix Match mode
- High-speed synchronous operation, maximum operation frequency : 33/50 MHz
  - Full Match mode                      Search time 30 ns at 33 MHz
  - Full Match with Mask mode        Search time 30 ns at 33 MHz
  - Longest Prefix Match mode        Search time 60 ns at 33 MHz
- Reads/writes data at high-speed synchronous operation (Memory operation)
- Entry expandable by connecting multiple devices
- 3.3 V single power supply, 240-pin plastic FBGA

### Functional Description

The  $\mu$ PD98421 is CAM (Content Addressable Memory) which has 64-bit  $\times$  8K entry memory size and can realize high-speed search. High performance switches, routers and bridges can be realized by using the  $\mu$ PD98421.

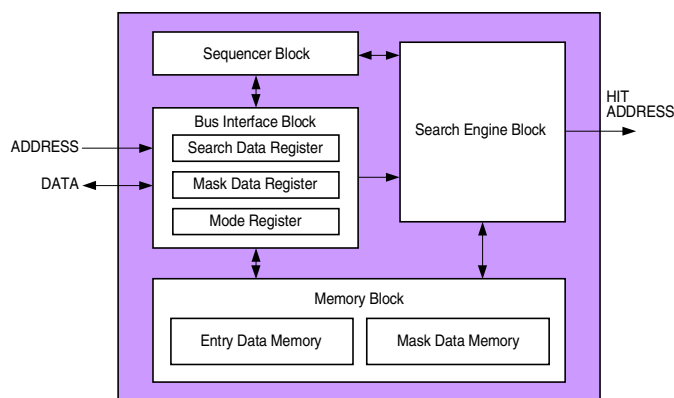
The  $\mu$ PD98421 can be operated at high-speed synchronous operation up to 33/50 MHz and has 3 types of search modes.

A longest Prefix match mode can output the longest matched address as searched data at only 2 clocks with masked entry data. This function is very useful to search an appropriate forwarding port for routers and Layer3 switches.

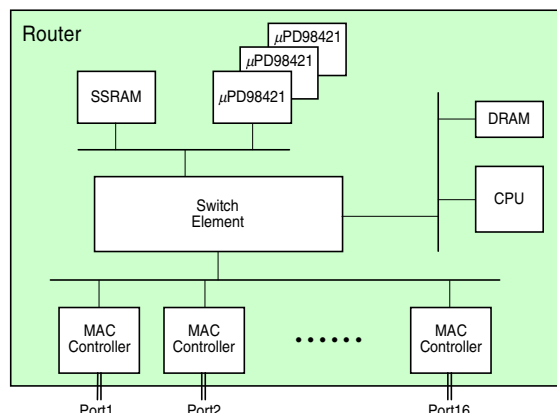
- Full Match mode  
High-speed search time 30 ns at 33 MHz  
1 mask register for search  
64-bit  $\times$  8K entry
- Full Match with Mask mode  
High-speed search time 30 ns at 33 MHz  
Each entry mask for search  
64-bit  $\times$  4K entry
- Longest Prefix Match mode  
High-speed search time 60 ns at 33 MHz  
Searches longest match address by each entry mask  
64-bit  $\times$  4K entry

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## Block Diagram



## Application Example



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