



# REALTEK

**RTL8367SC-CG**

## **LAYER 2 MANAGED 5+2-PORT 10/100/1000M SWITCH CONTROLLER**

### **DATASHEET**

**(CONFIDENTIAL: Development Partners Only)**

**Draft**

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**USING THIS DOCUMENT**

This document is intended for the hardware and software engineer’s general information on the Realtek RTL8367SC IC.

Though every effort has been made to ensure that this document is current and accurate, more information may have become available subsequent to the production of this guide.

**REVISION HISTORY**

Revision	Release Date	Summary
Draft	2020	

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# 1. Features

- Single-chip 5+2-port 10/100/1000M non-blocking switch architecture
- Embedded 5-port 10/100/1000Base-T PHY
- Each port supports full duplex 10/100/1000M connectivity (half duplex only supported in 10/100M mode)
- Extra Interface (Extension GMAC1 and Extension GMAC2) supports
  - ◆ High SGMII (3.125GHz) Interface
  - ◆ SGMII (1.25GHz) Interface
- Full-duplex and half-duplex operation with IEEE 802.3x flow control and backpressure
- Supports 9216-byte jumbo packet length forwarding at wire speed
- Realtek Cable Test (RTCT) function
- Supports 96-entry ACL Rules
  - ◆ Search keys support physical port, Layer2, Layer3, and Layer4 information
  - ◆ Actions include mirror, redirect, dropping, priority adjustment, traffic policing, CVLAN decision, and SVLAN assignment GPIO control, force output tag format, interrupt and logging counter
  - ◆ Supports five types of user defined ACL rule format for 96 ACL rules
  - ◆ Optional per-port enable/disable of ACL function
  - ◆ Optional setting of per-port action to take when ACL mismatch
- Supports IEEE 802.1Q VLAN
  - ◆ Supports 4K VLANs and 32 Extra Enhanced VLANs
  - ◆ Supports Un-tag definition in each VLAN
  - ◆ Supports VLAN policing and VLAN forwarding decision
  - ◆ Port-based, Tag-based, and Protocol-based VLAN
  - ◆ Up to 4 Protocol-based VLAN entries
  - ◆ Per-port and per-VLAN egress VLAN tagging and un-tagging
- Supports IVL, SVL, and IVL/SVL
  - ◆ 2K-entry MAC address table with 4-way hash algorithm
  - ◆ Up to 2K-entry L2/L3 Filtering Database
  - ◆ Per-port MAC learning limitation
  - ◆ System-based MAC learning limitation
- Supports Spanning Tree Port Behavior configuration
  - ◆ IEEE 802.1w Rapid Spanning Tree
  - ◆ IEEE 802.1s Multiple Spanning Tree with up to 16 Spanning Tree instances
- Supports IEEE 802.1x Access Control Protocol
  - ◆ Port-Based Access Control
  - ◆ MAC-Based Access Control
  - ◆ Guest VLAN
- Supports Auto protection from Denial-of-Service attacks
- Supports H/W IGMP/MLD Snooping
  - ◆ IGMPv1/v2/v3 and MLD v1/v2
  - ◆ Supports Fast Leave
  - ◆ Static router port configuration
  - ◆ Dynamic router port learning and aging
- Supports Quality of Service (QoS)
  - ◆ Supports per port Input Bandwidth Control
  - ◆ Traffic classification based on IEEE 802.1p/Q priority definition, physical Port, IP DSCP field, ACL definition, VLAN

- based priority, MAC based priority and SVLAN based priority
- ◆ Eight Priority Queues per port
- ◆ Per queue flow control
- ◆ Min-Max Scheduling
- ◆ Strict Priority and Weighted Fair Queue (WFQ) to provide minimum bandwidth
- ◆ One leaky bucket to constrain the average packet rate of each queue
- Supports rate limiting (32 shared meters, with 8kbps granulation or packets per second configuration)
- Supports RFC MIB Counter
  - ◆ MIB-II (RFC 1213)
  - ◆ Ethernet-Like MIB (RFC 3635)
  - ◆ Interface Group MIB (RFC 2863)
  - ◆ RMON (RFC 2819)
  - ◆ Bridge MIB (RFC 1493)
  - ◆ Bridge MIB Extension (RFC 2674)
- Supports Stacking VLAN and Port Isolation with eight Enhanced Filtering Databases
- Supports IEEE 802.1ad Stacking VLAN
  - ◆ Supports 64 SVLANs
  - ◆ Supports 32 L2/IPv4 Multicast mappings to SVLAN
  - ◆ Supports MAC-based 1:N VLAN
- Supports two IEEE 802.3ad Link aggregation port groups
- Supports Port Mirror function for one monitor port for multiple mirroring ports
- Supports OAM and EEE LLDP (Energy Efficient Ethernet Link Layer Discovery Protocol)
- Supports Loop Detection
- Security Filtering
  - ◆ Disable learning for each port
  - ◆ Disable learning-table aging for each port
  - ◆ Drop unknown DA for each port
- Broadcast/Multicast/Unknown DA storm control protects system from attack by hackers
- Supports IEEE 802.3az Energy Efficient Ethernet (EEE)
- Supports Realtek Green Ethernet features
  - ◆ Link-On Cable Length Power Saving
  - ◆ Link-Down Power Saving
- Supports one interrupt output to external CPU for notification
- Each port supports 3 LED outputs
- Management Interface Supports
  - ◆ EEPROM SMI Slave interface
  - ◆ Media Independent Interface Management (MIIM)
  - ◆ SPI Slave Interface
- Supports 32K-byte EEPROM space for configuration
- Integrated 8051 microprocessor.
- 25MHz crystal or 3.3V OSC input
- 14x14 LQFP 128-Pin E-Pad Package

## 2. System Applications

- 5-Port 1000Base-T Switch
- 5-Port 1000Base-T Router with Dual HSGMII/SGMII

## 3. Application Examples

### 3.1. 5-Port 1000Base-T Switch

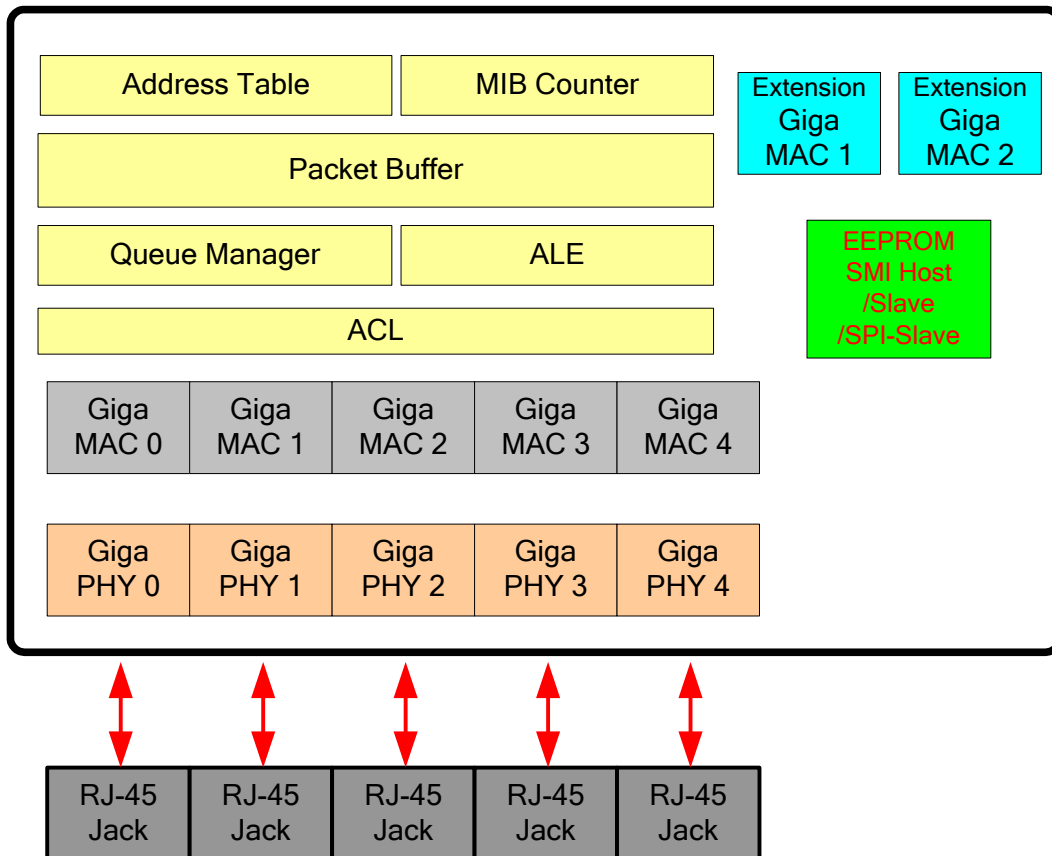
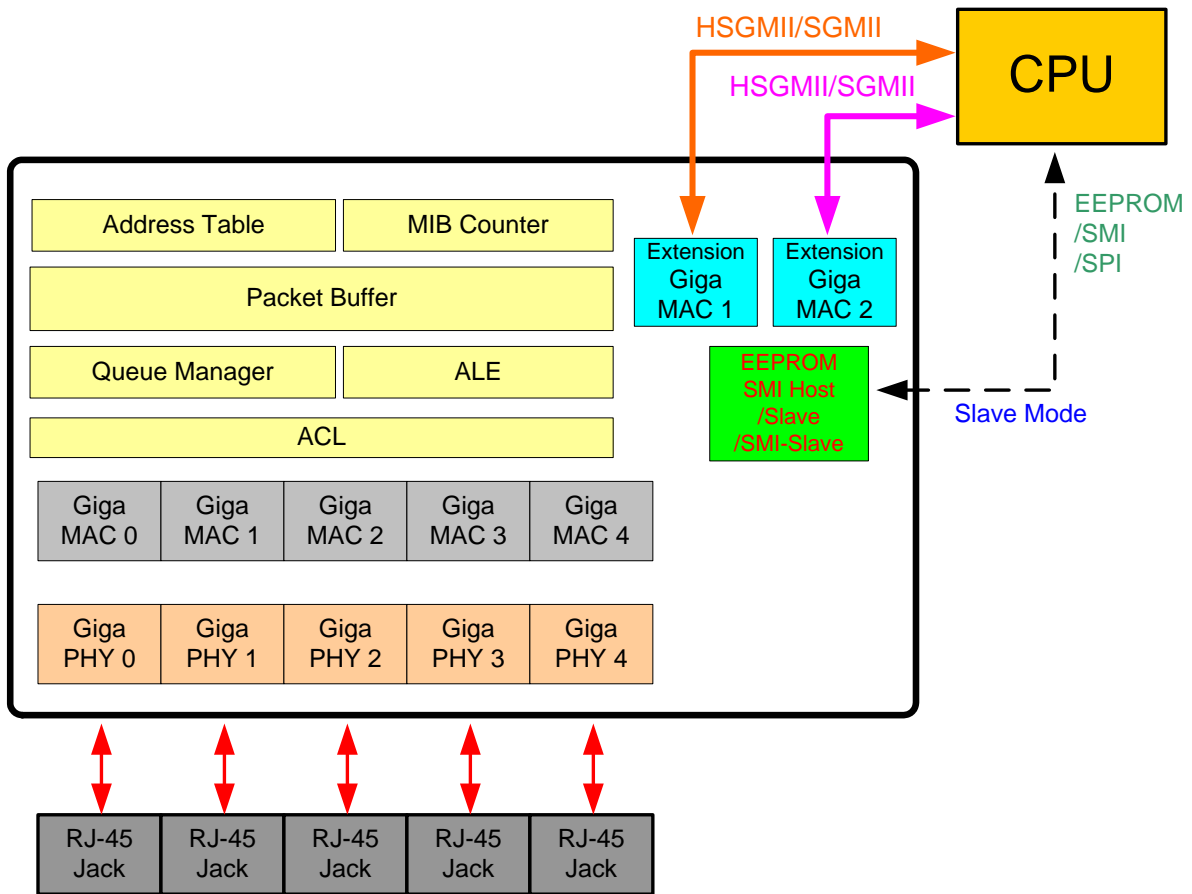


Figure 1. 5-Port 1000Base-T Switch

### 3.2. 5-Port 1000Base-T Router with Dual HSGMII/SGMII



**Figure 2. 5-Port 1000Base-T Router with Dual HSGMII/SGMII**

*Note: Extra Interface (Extension GMAC1 and Extension GMAC2) in HSGMII/SGMII Mode.*



## 4. Block Diagram

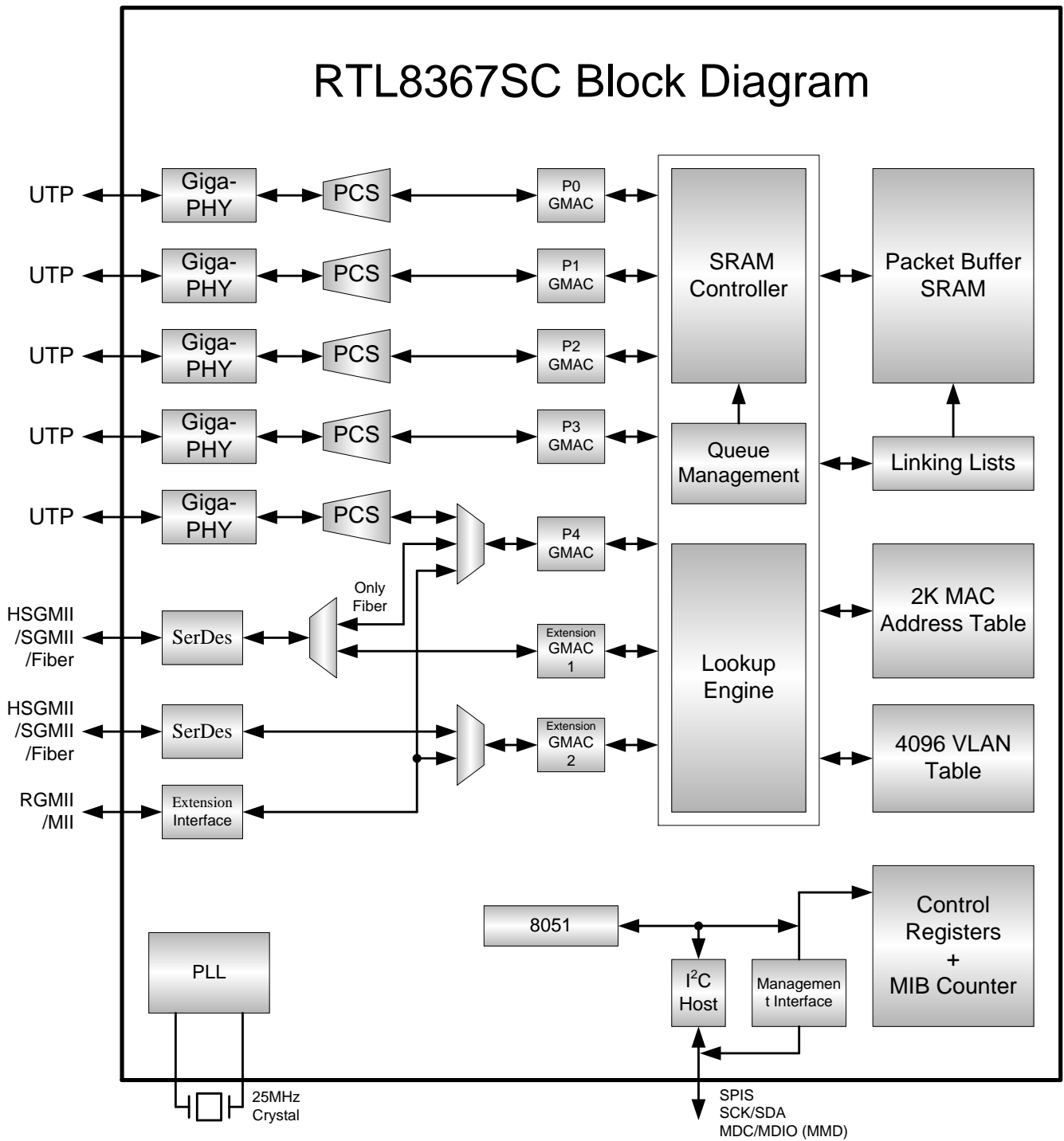
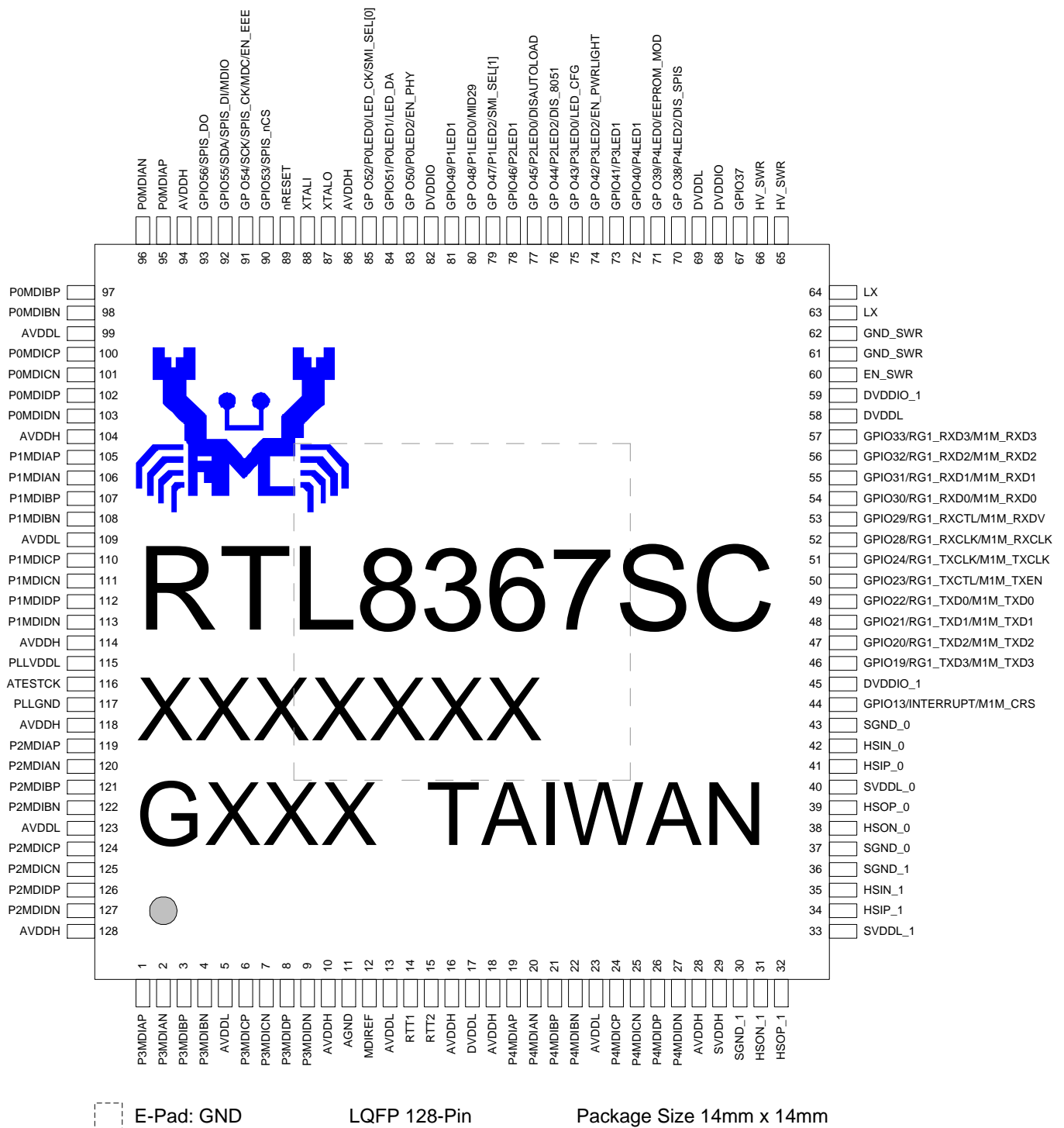


Figure 3. Block Diagram

## 5. Pin Assignments



**Figure 4. Pin Assignments**

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