



## RCHD-SPARX - NETWORKING SWITCH SOM

### High performance small footprint L2/L3 Ethernet solderable switch SoM.

RCHD-SPARX provides functionalities of a high performance switch in a small form factor solderable SoM. Up to 200 Gbit/s of switching bandwidth. Packed with hardware and software networking features.

High number of 1/2.5/5/10/25 Gbit/s ports allows for flexible configurations delivering high throughput and multi-port aggregation – for a maximum of 65 ports, up to 200 Gbit/s total bandwidth, with physical interfaces delivered through a dedicated baseboard. Its 105°C industrial temperature range allows implementations in harsh environments.

RCHD-SPARX switch can be optionally managed by an external CPU via PCIe endpoint interface.

#### Software Support:

- Linux 5.16 and newer
- U-Boot
- Yocto
- Buildroot
- FreeBSD
- OpenWrt
- Replica.one

#### Supported Interfaces:

- 1/2.5/5/10/25 Gbit/s Ethernet
- PCIe Gen2
- SPI
- I2C
- USB 2.0
- GPIO
- JTAG

#### Dimensions:

- 75 mm x 80 mm

#### Applicable for:

- Network aggregation for base stations
- Industrial networking
- Video surveillance
- Network storage and data buffering
- Enterprise L2/L3 management (L3-Lite)
- Enterprise edge networking
- WiFi aggregation
- Embedded and control plane switches
- Security appliances
- Baseband processor interconnections
- Customer Premises Equipment

- [conclusive.pl](https://conclusive.pl)
- [sales@conclusive.pl](mailto:sales@conclusive.pl)
- Ligocka 103/3  
40-568 Katowice, POLAND



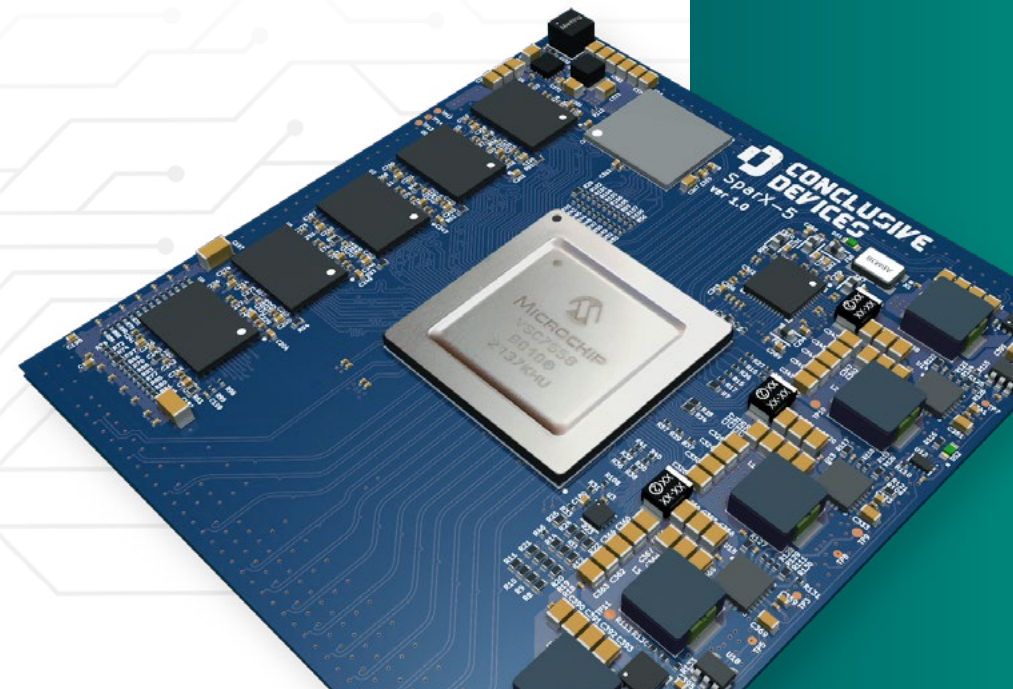
## High Performance Networking Switch SoM



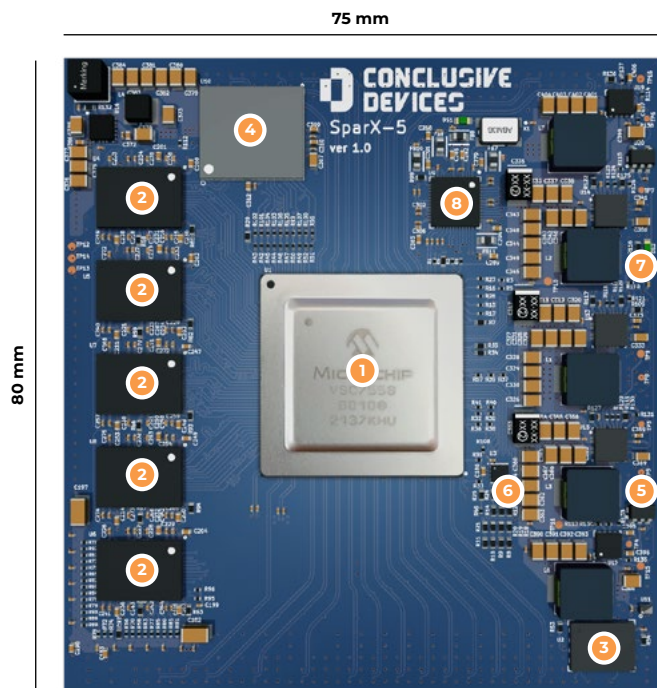
# ORCHID

## RCHD-SPARX

 Dual-core 1 GHz ARM Cortex-A53	 up to <b>4 GB</b> DDR4 RAM	 up to <b>200</b> Gbit/s bandwidth	 up to 8x <b>25 GbE</b> ports
 <b>65</b> configurable Ethernet ports	 L2/L3 switching with QoS	 PoE++ controller	 PCIe Gen2



### ORCHID RCHD-SPARX Networking Switch SoM



- 1 SparX-5 VSC7552, VSC7556, VSC7558**
  - Support for passive cooling
  - Dual-core 1 GHz ARM Cortex-A53 CPU
  - ARM Cortex-M3 CPU
- VSC7552**  
128 Gbit/s total bandwidth
- VSC7556**  
160 Gbit/s total bandwidth
- VSC7558**  
200 Gbit/s total bandwidth

- 2 DDR4 SDRAM with ECC support (1-4 GB)**
- 3 SPI NAND flash for bootloader (8 MB)**
- 4 eMMC storage for OS (4-64 GB)**
- 5 EEPROM**

- 6 Temperature sensor**
- 7 Status LEDs: power, reset, general purpose**
- 8 Clock generation and distribution**
- TPM 2.0 (optional)**

### RCHD-SPARX Features

- ✓ **Microchip SparX-5 VSC7552/6/8 Ethernet Switch.**  
128, 160 or 200 Gbit/s total switching bandwidth in configurable port layouts  
Built-in 1 GHz dual-core ARM® Cortex-A53® ARM Cortex-M3 CPU core for PCIe bootup and PoE
- ✓ **eMMC storage**  
(4-64 GB)
- ✓ **L2/L3 switching with QoS**
- ✓ **TCAM with dedicated content-aware VCAP processor**  
Fast VLAN, ACL and QoS processing
- ✓ **VRF-Lite and IP tunneling**
- ✓ **DDR4 RAM with ECC support**  
(1-4 GB)
- ✓ **Up to 65 Ethernet ports in configurable layouts**  
Supporting i.e. QSGMII, USGMII, USXGMII, HSGMII, SGMII, 10GBase-R, 25GBase-R
- ✓ **Console and OOB management**
- ✓ **PCIe 2.0 port**  
Configurable as root complex or endpoint mode
- ✓ **18K IPv4/9K IPv6 L3 unicast entries**
- ✓ **9K IPv4/3K IPv6 L3 multicast groups**
- ✓ **Optional support for matching LGA socket**
- ✓ **IEEE1588 Precision Time Protocol & SyncE Synchronous Ethernet**

### RCHD-SPARX Baseboards

#### Baseboard A:

- 8x 25 GbE SFP28
- 12x 10 GbE RJ-45 PoE++
- 24x 2.5 GbE RJ-45 PoE++

#### Baseboard B:

- 8x 25 GbE SFP28
- 48x 2.5 GbE RJ-45 PoE++

#### Baseboard C:

- 8x 25 GbE SFP28
- 12x 10 GbE SFP+
- 12x 5 GbE RJ-45 PoE++

#### Baseboard features:

- Ethernet OOB management and debug
- PoE++ power supply delivery
- Redundant power supply support
- I/O voltage monitoring
- Temperature monitoring
- Fan speed monitoring and control