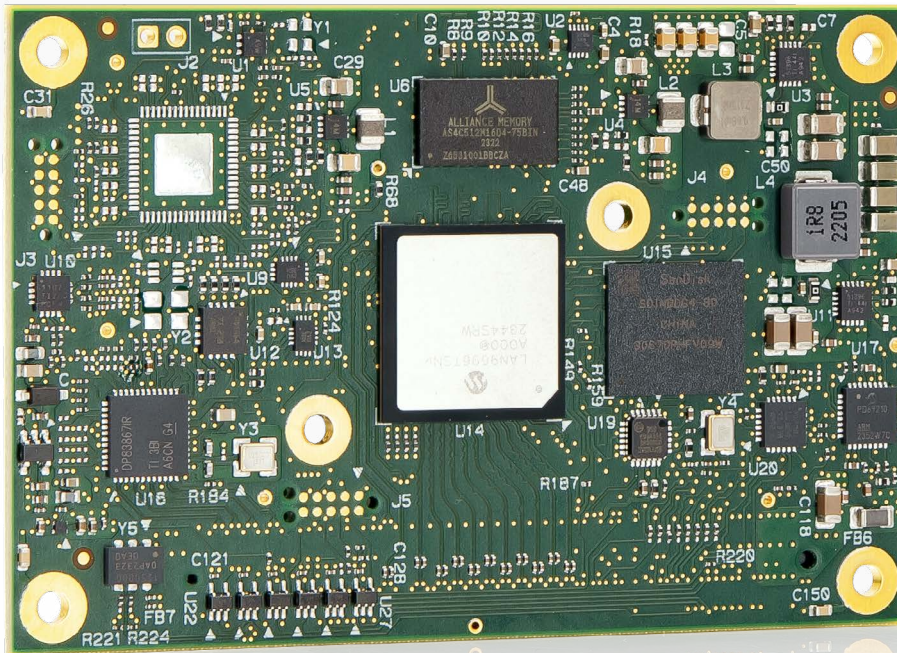


# KSwitch M20

## Embedded Ethernet Switch Module



## 1/2.5/5/10 Gigabit Ethernet Switch Module Series featured with Precision Time Protocol

- Managed Time Sensitive Networking (TSN) Ethernet Switch
- 44Gbps to 100Gbps scalable bandwidth
- Flexible port configuration via 10x 10G SerDes, up to 28 ports
- Industrial grade, highly reliable and long-term available
- IEEE1588v2 and PoE PSE support

## KSwitch M20

The Kontron KSwitch M20 is a modular non blocking fully managed L2/L3 1/2.5/5/10 Gigabit Ethernet Switch module with Precision Time Protocol that provides a rich and versatile feature set to integrate Ethernet switching functions on custom base board designs.

Whatever you need to integrate, the KSwitch M20 is the ideal fit for all kinds of high performance Ethernet switching, either in military, avionics or industrial applications. The IEEE1588v2 features enable precise timing synchronization and packet time stamping for time sensitive applications.

It also supports intelligent Power Over Ethernet devices by built in firmware.

### Bandwidth

The KSwitch M20 is designed for future oriented applications requiring out-standing bandwidth and communication safety. The 10 10Gbps SerDes interfaces allows flexible implementation of various physical interfaces and speeds which is an intrinsic value for today's investments. The default port configuration allows

6x QSGMII (24x 10/100/1000BASE-T) and

4x 10G-USXGMII (4x 1/2.5/5G/10GBASE-T)

with external PHYs.

On project request, support for up to 28 x 1Gb/s ports or 10x 10GBASE-T can be provided.

### Reliability

The robust design including components for extended temperature range provides the basis for rugged Ethernet switching devices. A 12 V single supply voltage gives the option for a broad portfolio of power supplies.

Built-In test capabilities enable effective switch maintenance.

### Management

The KSwitch M20 module can be monitored via SNMP over serial line or Ethernet. Web based management and a comprehensive commandline interface enable layer 2/3 management including full IPv6 support. Features like IP forwarding & Multicast, Routing & Switching, Quality of Service, VLANs etc. enable complex network routing.

### Design In Support

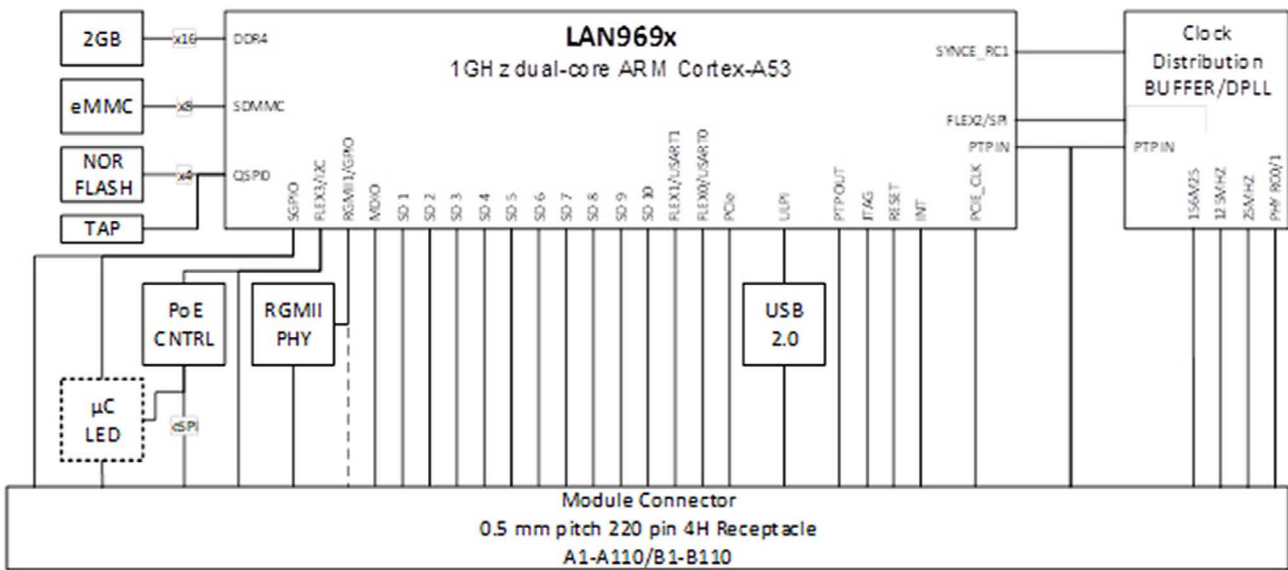
Kontron offers design-in guides for KSwitch M20 customer carrier development.

## Technical Information

<p><b>NETWORK</b></p>	<p><b>DEVICE OS OPERATION MODE</b></p> <p><b>INTERFACES</b></p> <p><b>PORT MAPPING</b></p>	<p>Microchip LAN969x TSN Switch Family Microchip iStaX Store and forward, full wire-speed, non-blocking switch core. Low latency cut-through forwarding mode Flexible port configuration via 10x 10Gbps SerDes: - 10GBASE-KR - 10GBASE-R - 10G-USXGMII - 5GBASE-KR - 5GBASE-R - 5G-USXGMII - QSGMII - 2.5GBASE-KX - 2.5GBASE-X - 2.5G SGMII - 1000BASE-KX - 1000BASE-X - SGMII - 100BASE-FX Initial Port Mapping 6x QSGMII (24x 10/100/1000BASE-T) 4x 10G-USXGMII (4x 10GBASE-T) other port maps on request</p>
<p><b>BRIDGE, VLANs, PROTOCOLS</b></p>	<p><b>SWITCHING ROUTING FLOW CONTROL MAX VLANs VLAN TYPES MULTICAST PROTOCOLS</b></p> <p><b>NETWORK DISCOVERY</b></p>	<p>IPv4/IPv6 unicast and multicast L2 switching IPv4/IPv6 unicast and multicast L3 forwarding with RPF IEEE 802.3x (full duplex) and back-pressure (half duplex) 4095 Port-based VLAN, IEEE 802.1Q tag-based VLAN IGMPv1, IGMPv2, IGMPv3, MLDv1 MLDv2 up to 255 multicast groups IGMP snooping, querying IEEE 802.1ab LLDP</p>

<b>TRAFFIC MANAGEMENT &amp; QOS</b>	<b>PRIORITY NUMBER OF QUEUES PER PORT SCHEDULING SCHEMES</b>	IEEE 802.1p QoS 8 Strict Priority Queuing (SPQ), Deficit-Weighted Round Robin Queuing (DWRR)
<b>TIME SENSITIVE NETWORKING</b>	<b>SHAPING &amp; FILTERING</b>  <b>REDUNDANCY / RELIABILITY</b>  <b>FORWARDING SCHEME TIMING &amp; SYNCHRONIZATION</b>	IEEE 802.1Qbv-2015 Time Aware Shaping IEEE 802.1Qbu/802.3br – Frame Preemption IEEE 802.1Qav AVB traffic shaping IEEE 802.1Qci-2017 per Stream Filtering and Policing Redundancy with IEEE 802.1CB Frame Replication and Elimination for Reliability (FRER) Protection switching (line or ring) Cut-through option per TSN Stream and Store and Forward IEEE 802.1AS-2020 1-step and 2-step IEEE 1588v2 1-step and 2-step for Ordinary Clock, Boundary Clock and Transparent Clock.
<b>NETWORK REDUNDANCY</b>	<b>SPANNING TREE PROTOCOL PORT TRUNK / LACP</b>	IEEE 802.1D/1w/1S, STP/RSTP/MSTP Static trunk or LACP (Link Aggregation Control Protocol) G.8032, MRP IEC-62439-2 2016
<b>SECURITY</b>	<b>PORT SECURITY</b>  <b>STORM CONTROL</b>	IP and MAC-based Access Control/Filter, Auth User / Privilege Level Control, IEEE802.1X Multicast / Broadcast / Flooding Storm Control / Port Access Control / Limiters
<b>MANAGEMENT</b>	<b>USER MANAGEMENT INTERFACES</b>  <b>MANAGEMENT SECURITY UPGRADE &amp; RESTORE</b>  <b>DIAGNOSTIC</b>  <b>DHCP NETWORK TIME SYNCHRONIZATION SYSTEM STATUS GREEN ETHERNET</b>	Web-based management, Command Line Interface SNMP V1, V2c, Trap, Telnet (5 sessions) RFC 3411 SNMP Management Frameworks RFC 3414 User-based Security Model for SNMPv3 RFC 3415 View-based access Control Model for SNMP RFC 2613 SMON - PortCopy HTTPs, SSH, Access Management, Loop Protection TFTP/HTTP for Configuration Import / Export TFTP/HTTP for firmware upgrade Syslog, Level Info / Warning / Error Port Mirror, Per VLAN mirroring, CPU Load Monitor, Traffic Counter ICMP Ping Client Mode, Server Mode, Relay Mode, Snooping NTP client  Device info/status; Ethernet port status Port power savings
<b>POWER</b>	<b>INPUT VOLTAGE POWER CONSUMPTION</b>	12VDC +/- 20% approx. 5W
<b>INDICATORS</b>	<b>POWER STATUS ETHERNET PORT</b>	Power Good LED Link and Speed LED Bus
<b>ENVIRONMENTAL &amp; COMPLIANCE</b>	<b>OPERATING TEMPERATURE STORAGE TEMPERATURE HUMIDITY EMC SAFETY ROHS &amp; WEEE ALTITUDE</b>	-40°C - +85°C -40°C - +85°C 5 - 93 % (non-condensing @40 °C) EN 55032, EN 55035, EN 61000-6-2:2005, EN 61000-6-4, FCC EN 62368-1; designed to meet UL RoHS (Pb free), REACH and WEEE compliant 3000m
<b>MECHANICAL</b>	<b>DIMENSION (H X D) WEIGHT INSTALLATION</b>	85 x 55 approx. 50g Screw mount

Possible line for footnotes 5pt/6pt light black, cells connected without cell color



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