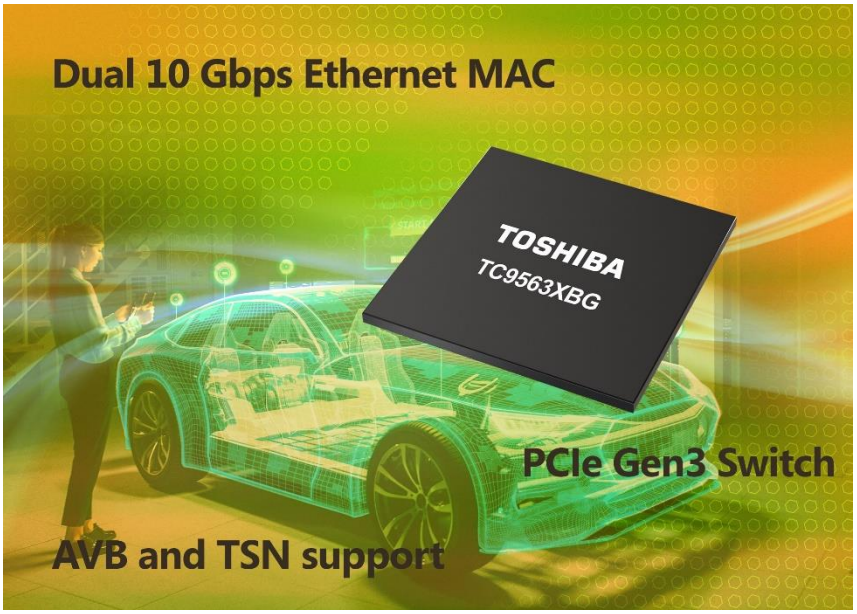

Toshiba launches high performance Ethernet PCIe® bridge IC

New device offers 10 Gbps Ethernet Ports for next-generation automotive networking

Düsseldorf, Germany, 12th January 2022 – Toshiba Electronics Europe GmbH ("Toshiba") has launched a new Ethernet bridge IC – the TC9563XBG -. It is intended for use in automotive zonal-architecture, infotainment, telematics or gateways as well as industrial equipment.

The new bridge IC incorporates two 10 Gbps Ethernet Media Access Controller (MAC) supporting a number of interfaces including USXGMII, XFI, SGMII, and RGMII[1]. Both ports support Ethernet IEEE802.1 audio/video bridging (AVB) for real-time processing and low-latency IEEE802.1 time-sensitive networking (TSN) for synchronous processing. The ports also support "simplified" single root I/O virtualization (SR-IOV) on PCIe devices.

The TC9563XBG includes a PCIe® Gen 3 switch with three external ports for communications with the host-controller SoC and additional devices equipped with PCIe interfaces like 5G-modem modules. The PCIe switch upstream port supports up to four lanes (32GT/s) for connection with the host SoC, whereas, depending on the configuration, the downstream ports can connect with one and two lanes to PCIe-capable devices.

Automotive networks are evolving toward zonal architecture that requires real-time transmission between the zones using multi-gigabit Ethernet communication. As such, the TC9563XBG with its dual 10 Gbps AVB and TSN capable Ethernet interfaces is ideal for next-generation automotive networking.

As automotive communication requirements increase in terms of the amount of data as well as the required speeds, the new bridge IC will support various automotive applications including in-vehicle infotainment (IVI) and telematics. It can also replace the existing ethernet-to-PCIe TC9560 and TC9562 bridges, thereby upgrading system throughput and performance.

Recently the use of PCIe interfaces has proliferated for device-to-device communication such as Wi-Fi, often leaving designers short of PCIe interfaces on the host SoC. Using the TC9563XBG's 3-port PCIe switch function for these connections will address this issue.

Housed in a 10mm x 10mm, 0.65mm pitch P-FBGA package, the TC9563XBG bridge IC will be compliant with AEC-Q100 (Grade 3).

Sample shipments started in December 2021 and volume production ramp-up will be in April 2022.

###

Notes:

[1] USXGMII, XFI, SGMII, RGMII: Standards for Ethernet interfaces. USXGMII = Universal Serial 10 Gigabit Media Independent Interface; XFI = 10 Gigabit serial Interface; SGMII = Serial Gigabit Media Independent Interface; RGMII = Reduced Gigabit Media Independent Interface.

About Toshiba Electronics Europe

Toshiba Electronics Europe GmbH (TEE) is the European electronic components business of Toshiba Electronic Devices and Storage Corporation. TEE offers European consumers and businesses a wide variety of innovative hard disk drive (HDD) products plus semiconductor solutions for automotive, industrial, IoT,

motion control, telecoms, networking, consumer and white goods applications. Next to HDDs, the company's broad portfolio encompasses power semiconductors and other discrete devices ranging from diodes to logic ICs, optical semiconductors as well as microcontrollers and application specific standard products (ASSPs) amongst others.

TEE has headquarters in Düsseldorf, Germany, with branch offices in France, Italy, Spain, Sweden and the United Kingdom providing marketing, sales and logistics services. The company president is Mr. Tomoaki Kumagai.

For more company information visit TEE's web site at www.toshiba.semicon-storage.com.

Contact details for publication:
Toshiba Electronics Europe GmbH, Hansaallee 181, D-40549 Düsseldorf, Germany
Tel: +49 (0) 211 5296 0 Fax: +49 (0) 211 5296 79197
Web: www.toshiba.semicon-storage.com/eu/company/news.html
E-mail: solution-marketing@toshiba-components.com

Contact details for editorial enquiries:
Michelle Shrimpton, Toshiba Electronics Europe GmbH
Tel: +44 (0)193 282 2832
E-mail: MShrimpton@teu.toshiba.de

Issued by:
Birgit Schöniger, Publitek
Tel: +49 (0) 4181 968098-13
Web: www.publitek.com
E-mail: birgit.schoeniger@publitek.com

January 2022 **Ref. 7368(A1)**