New MikroElektronika Click Boards™ feature Toshiba digital isolators for isolated signal transmission in industrial applications

5kV$_{rms}$/150Mbps 4-channel ICs for SPI, UART, and general I/O isolation now available on evaluation boards

Düsseldorf, Germany, 2nd November 2023 – Toshiba Electronics Europe GmbH ("Toshiba") has announced that the essential functionalities of its digital isolator ICs can now be evaluated with two new add-on boards from MikroElektronika (MIKROE). The DIGI Isolator Click and SPI Isolator 5 Click, joining the MIKROE Click Board™ portfolio, enable microprocessor-based control via mikroBUS™, accelerating the development of diverse industrial applications.

The two compact boards feature different variants from the new DCL54xx01 series of digital isolators that Toshiba announced in H1 2023. They support a maximum data rate of 150Mbps and can withstand voltages up to 5kV$_{rms}$.

The DIGI Isolator Click, containing two DCL540C01 quad-channel digital isolator ICs, provides galvanic isolation and signal conditioning for one serial peripheral interface (SPI) and one UART interface. To maximise flexibility for users, the board makes available two further isolated pins. DIGI Isolator Click is suitable for diverse applications including general SPI-bus and UART isolation, industrial automation systems, motor controls, and inverters.

The SPI Isolator 5 Click, also available, contains a single DCL541A01 quad-channel isolator to provide isolation for one SPI connection. Outstanding performance characteristics of the DCL541A01 are achieved by Toshiba CMOS technology and the magnetic coupling structure.

Toshiba's isolators operate from a 2.25V-5.5V external supply voltage and thus support different signal amplitudes in the isolated supply voltage domains. In addition, the devices offer a high immunity to common mode transient immunity (CMTI).

The complete DCL54xx01 family of digital isolator ICs comprises six devices that provide different combinations of channel directions, output logic and enable controls. The DCL540C01 and DCL540D01 have four forward channels. The DCL540L01 and DCL540H01 have four forward channels and also feature an output enable pin. The DCL541A01 and DCL541B01 have three forward and one reverse channel, with an input disable function for all channels. All devices are certified in accordance with UL 1577 and related safety specifications.

MIKROE Click Boards come with a software library that contains easy-to-use functions and example code to accelerate development. Users can also take advantage of the MIKROE Software Development Kit, mikroSDK, which contains open-source software libraries, a unified API, and software development tools to accelerate time to market.

For further information on the DCL540C01 and DCL541A01 digital isolator ICs please visit
https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/detail.DCL540C01.html
https://toshiba.semicon-storage.com/eu/semiconductor/product/isolators-solid-state-relays/detail.DCL541A01.html

For further information about the MIKROE DIGI Isolator Click, please visit https://www.mikroe.com/digi-isolator-click

For further information about the MIKROE SPI Isolator 5 Click, please visit https://www.mikroe.com/spi-isolator-5-click

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Notes:
Click Board is a trademark of MIKROE

About Toshiba Electronics Europe
Toshiba Electronics Europe GmbH (TEE) offers European consumers and businesses a wide variety of 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.

In addition, TEE also offers Toshiba's SCiB™ battery cells and modules with lithium titanium oxide (LTO) for heavy-duty applications and Silicon Nitride (SiN) ceramic substrates used in power semiconductor modules, inverters and converters for their heat dissipation characteristics and strength.

TEE has its headquarters in Düsseldorf, Germany, with branch offices in France, Italy, Spain, Sweden and the United Kingdom providing marketing, sales and logistics services.

Visit Toshiba's websites at www.toshiba.semicon-storage.com, www.scib.jp/en and www.toshiba-tmat.co.jp/en/ for further company and product information.

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