duagon

SAFETY & SECURITY

Cyber secure products and service packages focused on ensuring functional safety and secure, interference-free operation

With the rise of IoT and interconnectivity, systems have become fast and efficient – but also vulnerable to attacks. On the train, interfaces, e.g., are continuously exchanging control, monitoring and status data to ensure overall operation and safety. An increasing degree of rail automation systems also leads to higher functional safety requirements. Including safety-critical onboard applications such as Automatic Train Operation (ATO) and Automatic Train Protection (ATP) as well as in wayside applications like level-crossing or computer-based interlocking systems.

Any malicious interference with this data exchange and onboard computer systems, could result in a complete loss of control and safety. Cyber security is therefore necessary.

OUR OFFERING

With the rise of IoT and interconnectivity, systems have become fast and efficient – but also vulnerable. The importance of cyber security needs to be taken seriously, as the damage caused by cyber crime has increased significantly over the past few years. duagon offers cyber secure products and feature service packages that focus on ensuring a secure, interference-free operation of your application.

Functional Safety is already well established in mission-critical applications. True safety however cannot be achieved without adequate security measures. With a rapidly growing focus and increased investments, cyber security is essential in making any system or application future-proof.

Our structured development processes, our understanding of security features and extensive experience in embedded systems development, allow us to deliver our security products with all the necessary security requirements already fulfilled.

duagon offers cyber secure products and feature service packages for transport, medical and industrial applications that focus on ensuring a secure, interference-free operation of the respective application. Our cyber secure product portfolio includes secure computer systems, I/O devices, security gateways and network interface cards for future-proof critical applications.

For safety-critical onboard and wayside applications we offer components that come with certification packages for the hardware and the relevant platform software based on QNX. Due to the safety pre-certification up to SIL 4 of the parts our customers save costs, time in the overall certification process and risks.

duagon SAFE CONTROL

The duagon SAFE CONTROL (d-SC) platform is well suited for control of all safety-related functions in new train models as well as for refurbishment of trains.

Thanks to its modularity, it is easy to install and retrofit automation functions in combination with other parts of already existing train control equipment as well.

The d-SC system is a modular railway controller platform, certified to railway standards for functional safety up to SIL 4.

It is designed to operate both in safety-critical onboard applications such as Automatic Train Operation (ATO) and Automatic Train Protection (ATP) and in wayside applications like level-crossing or computer-based interlocking systems.

Cyber Security

A growing number of products from duagon offer ready to use security functions to reach a required security level according to EN 62443.
These can be an out-of-the-box unique, certificate-based identification using a TPM or integrated software features of our packages.

These packages are complemented with life cycle management services to ensure long-term maintenance.

Signalling Trackside, Interlocking Control

For safe computing for wayside communication railways, metros and other public transportation a fully customized solution with standard modules and certification according SIL4 was needed. A duagon 19" rack with 3 x G25A with Intel's Xeon D-1500, a custom watchdog board and a managed switch G101 was used.

Product:
High-performance computing platforms
G25A, G101, GE1, G501, G232, G211

APPLICATION EXAMPLES

Level-Crossing Controller

For next generation level-crossings duagon offers a central controller, based on the d-SC controller MH50C. It is connected to all components of the level-crossing, including signals, track circuits and more. It comes with a SIL 4 certification pack for F75P and I/O, PACY I/O framework and F75P QNX BSP.

Product:
d-SC system platform
MH50C

Communication Based Train Control

As redundant onboard vehicle controller inside the train and zone controller wayside to send critical vehicle information and receive moment authority limits, the d-sc controller MH50C is used. It provides safe CPU and safe I/O boards. Additionally included is a certification package for F75P and I/O. The MH50C is available with a board support package (BSP) for QNX for Safe CPU, approved by rolling stock and wayside standards as well as certified up to SIL4

Product:
d-SC system platform
MH50C, KT8

YOUR APPLICATION - OUR COMPETENCE

The duagon advantage

Complete service – reliable embedded electronic products and software, with integration and life cycle services.

› At duagon, our customers have the advantage of having everything they need for their secure application supplied by a single supplier. By having secure hardware products and software features all under one roof, our customers have one single point of contact working with them from the very beginning of their project, through to continued support once the system is running.

› For various train-borne communication network applications including network/zone separation, protocol translation and train backbone communication, duagon is your leading partner for reliable and secure data communication. Our systems are complemented by engineering services and high-quality application software support to provide the broadest range of train-borne communication protocols and key features like cyber security, virtualization and safe computing.

› duagon boards and systems are not only modular, customizable and secure but also developed to meet requirements such as temperature ranges between -40°C and +85°C through convection or conduction cooling, shock, vibration, chemical influence or the option of coating against humidity.

› duagon is certified according to ISO 9001 and ISO 14001, plus EN/AS 9100 (aerospace) and IRIS (railways) and provides systems according to ISO 7637-2 (road traffic) requirements.

› We carry out the preliminary qualifications in our own environmental test lab (temperature, shock, vibration, humidity), high-voltage and EMC chambers. We are accredited by DAkkS, according to DIN EN ISO 17025:2018 for EMC, environmental simulation tests and safety of electrical equipment.

AUSTRALIA

Artarmon
Phone +61 2 9966 9424
sales-aus@duagon.com

CHINA

Shanghai
Phone +86 159 0077 2985
sales-chn@duagon.com

FRANCE

Gaillard
Phone +33 450 955 312
sales-fra@duagon.com

GERMANY

Nuremberg
Phone +49 911 99 335 0
sales-deu@duagon.com

INDIA

Gurugram
Phone +91 95 60 29 00 21
sales-ind@duagon.com

SWITZERLAND (HQ)

Dietikon
Phone +41 44 743 73 00
sales@duagon.com

USA

Blue Bell
Phone +1 215 542 9575
sales-usa@duagon.com

duagon

www.duagon.com