DTD

DATA DIODE
EN 50155 RAILWAY SYSTEM
FOR CYBERSECURITY APPLICATIONS

The DATA DIODE (or DTD) technology is a one-way unidirectional communication device that enables the secure transfer of data between two domains, with different levels of security clearance. It provides a physical barrier that blocks any traffic in one way, while allowing data to flow freely in the opposite direction.

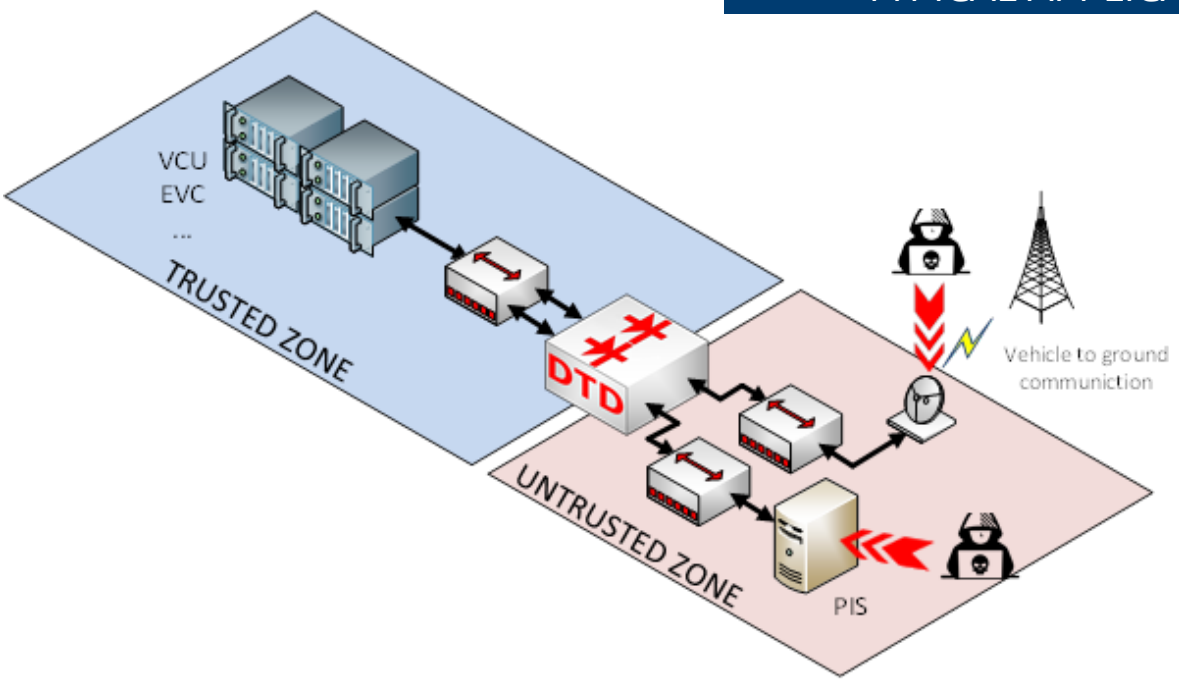
MAIN FEATURES

- EN 50155:2021 fully compliant
- Hardware guaranteed unidirectional traffic
- Protocol break technology
- 2x 100Mbits/s independent and isolated channels
- Low-latency transfer (250µs)
- ARP on each Ethernet interface
- Operating temperature : -40°C to +70°C
- Full range power supply : 24Vdc to 110Vdc
- 2x independent password protected maintenance ports
- Dedicated network diagnosis LEDs on each Ethernet port

MECHANICAL INTEGRATION

- Size-1U - half 19” rack-mount solution
- Reduced weight (< 1Kg)
- All communication ports available on front panel

TYPICAL APPLICATION



ENVIRONMENTAL QUALIFICATION TESTS

EMC TESTS				
NF EN 50121-3-2	2017+ A1:2019	Railway applications - Electromagnetic compatibility		
NF EN IEC 61000-6-4	2020	Generic standards - Emission standard for industrial environments		
NF EN 61000-4-2	2009	ESD	Enclosure contact: ±6kV Enclosure air: ±8kV	Criterion B
NF EN IEC 61000-4-3	2021	Radiated immunity RFI	80MHz… 1GHz: 20V/m 1.4GHz… 2.1GHz: 10V/m 2.1GHz… 2.5GHz: 5V/m 5.1GHz… 6.0GHz: 3V/m	Criterion A
NF EN 61000-4-4	2013	Fast burst	±2kV direct/indirect	Criterion A
NF EN 61000-4-5	2014 + A1:2018	Transient surge	±2kV MC ±1kV MD	Criterion B
NF EN 61000-4-6	2014	Conducted immunity RFI	10Vrms	Criterion A
NF EN 55016-2-1 **NF EN 55016-2-3**	2014 + A1:2018 2017 + A1:2019	Measuring radiated/conducted emissions	150kHz…500kHz 500kHz…30MHz 30MHz…230MHz 230MHz…1GHz 1GHz…3GHz 3GHz…6GHz	<99dBµV Qpk <93dBµV Qpk <50dBµV/m at 3m <57dBµV/m at 3m <76dBµV/m Pk & <56dBµV/m AVG <80dBµV/m Pk & 60dBµV/m AVG

CLIMATIC TESTS				
NF EN 60068-2-1	2007	Cold storage	-40°C / 16 hours	Criterion A
NF EN 60068-2-1	2007	Cold start	-40°C / 2H	Criterion A
NF EN 60068-2-2	2007	Dry heat	+70°C / +85°C	Criterion A
NF EN 60068-2-30	2006	Damp test, cyclic	+55°C 95% humidity 2x24 hours	Criterion A
NF EN IEC 60068-2-11	2021	Salt mist	48 hours (ST3)	Criterion A

FIRE PROTECTION			
NF EN 45545-1	2013	Railway applications /Fire protection on railway vehicles – General	HL3
NF EN 45545-2	2020	Railway applications /Fire protection on railway vehicles – Requirements for fire behavior of materials and components	

MECHANICAL TESTS				
NF EN 61373	2011	Railway applications/Rolling stock equipment/Shock and vibration tests	50m/s² XYZ-30ms 7.9m/s² XYZ-5 hours	Criterion A