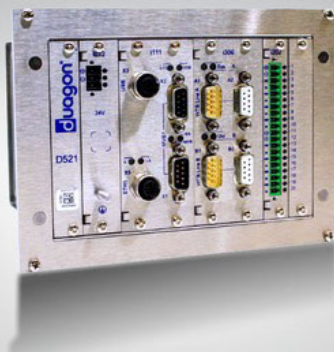




D521

Data Sheet

WTB to MVB Train Communication Gateway with Integrated I/O

Compact IEC 61375 / UIC 556 Compliant System for Rail Networks

- **Modern UIC 556 compliant WTB to MVB gateway**
- **Interoperable UIC mapping server**
- **Support for MVB devices up to class 4, including bus administrator functionality, process, and message data**
- **Optional Safe Data Transmission (UIC 556 Appendix L)**
- **Small form factor and available with various mounting options**

Technical Data

CPU

- AM335x, Arm Cortex-A8, 32-bit processor

Memory

- System RAM: 256 MB max., DDR2
- Non-volatile RAM (NVRAM): 64 kB FRAM

Interfaces

- MVB
 - 1 × D-Sub, 9-pin, plug
 - 1 × D-Sub, 9-pin, receptacle
 - D-Sub screw locks: M3, 4-40 UNC
 - Function: process data only, process and message data
 - Bus administrator options: with bus administrator, without bus administrator
 - Physical layer: EMD, ESD+

- WTB
 - 2 × D-Sub, 9-pin, plug
 - 2 × D-Sub, 9-pin, receptacle
 - D-Sub screw locks: M3, 4-40 UNC
 - Fritting: on connectors A2 and B1
- Digital I/O connector
 - 8 × digital inputs, isolated, Phoenix Contact FMC, 20-pin, plug
 - 8 × inputs/outputs, isolated, Phoenix Contact FMC, 20-pin, plug
- USB
 - 1 × USB 2.0, M12, A-coded, receptacle
- Ethernet
 - 1 × 100BASE-TX, M12, D-coded, receptacle
- Power
 - 1 × power in, Power Phoenix Contact MC, 3-pin, plug
- Earthing connection
 - M4 stud

Electrical Specifications

- Supply voltage
 - LV: 24 V DC
 - MV: 36 V DC to 48 V DC
 - EV: 72 V DC
 - HV: 96 V DC to 110 V DC
- Power consumption: 13 W max.

Mechanical Specifications

- Dimensions
 - (W) 147.4 mm, (D) 114 mm, (H) 100 mm (without mounting brackets)
 - (W) 147.4 mm, (D) 123 mm, (H) 112.5 mm (DIN rail)
 - (W) 182.7 mm, (D) 114.1 mm, (H) 128.6 mm (3U)
 - (W) 171.0 mm, (D) 120 mm, (H) 100 mm (wall)
- Weight: 1.7 kg (without mounting brackets)
- Mounting
 - DIN rail
 - Wall/flat surface
 - Rack in 19" cabinet
- Cooling
 - Air cooling, natural convection
- Protection rating
 - IP20

Product Compliance: Functions

- Ethernet
 - Ethernet: IEEE 802.3
 - Fast Ethernet (FE): IEEE 802.3u
 - Port-based network access control: IEEE 802.1X
 - Link Layer Discovery Protocol (LLDP): IEEE 802.1AB
- Train Communication Network (TCN)
 - Train Communication Network (TCN) – Part 1: General architecture: IEC 61375-1:2012
 - Train Communication Network (TCN) – Part 2: Wire Train Bus (WTB): IEC 61375-2-1:2012, IEC 61375-2-2:2012
 - Train Communication Network (TCN) – Part 3: Multifunction Vehicle Bus (MVB): IEC 61375-3-1:2012, IEC 61375-3-2:2012
- Information transmission in the train: UIC 556 Leaflet (5th ed. 2009)

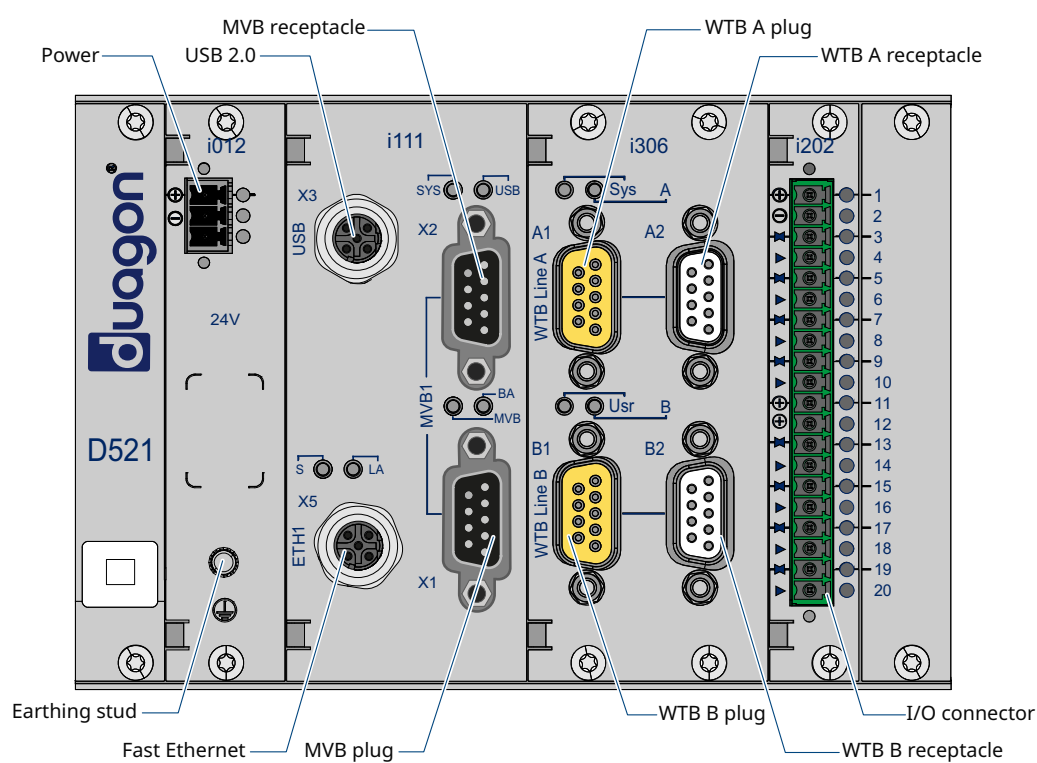
Product Compliance: Rail - Rolling Stock

- Operating temperature: -40 °C to +70 °C (EN 50155:2021, class OT4, ST0)
- Storage temperature: -40 °C (EN 50155:2021) to +85 °C (EN 60068-2-2, Bb)
- Humidity: yearly average 75 % max., 95 % for 30 consecutive days max.
- Shock: 30 ms @ 50 m/s² (EN 61373:2010/AC:2017-09, vehicle body, cat. 1, class B)
- Vibration: 10 min @ 1.01 m/s² (functional) and 5 h @ 5.72 m/s² (long-life) (EN 61373:2010/AC:2017-09, vehicle body, cat. 1, class B)
- Fire protection: EN 45545-2:2020, HL3
- EMC emission: EN 50121-3-2:2016 + A1:2019
- EMC immunity: EN 50121-3-2:2016 + A1:2019
- Useful life: 20 years (EN 50155:2021, class L4)

Software Support

- UIC Mapping Server Application
- UIC layer
 - UIC Mapping Server
 - Safe Data Transmission (SDTv2) (optional)

Interfaces



Ordering Information

Ordering Options

D521 - [1] - [2] - [3] - [4] - [5] - [6] - [7] - [8] - [9]

D521 - 1 - 64k - O - LV - UIC - P - D - M3 - W (example)

Position	Description	Options	Code
1	Flash file system	1 GB	-1
2	FRAM	64 KB	-64k
3	I/O	8 In, 8 In/Out	-O
4	Power Supply	24 V DC	-LV
		36 to 48 V DC	-MV
		72 V DC	-EV
		96 to 110 V DC	-HV
5	UIC layer	with UIC Mapping Server	-UIC
6	MVB function	Process data only	-P
		Process and message data	-PM
		Process data and Bus Administrator	-PB
		Process data, message data and Bus Administrator	-PMB
7	MVB Physical Layer	ESD+	-D
		EMD	-T
8	D-Sub screw locks	M3 (standard)	-M3
		4-40 UNC	-UNC
9	Mounting	Wall	-W
		DIN rail	-D
		3U	-3U

Standard Models

D521-1-64k-O-LV-UIC-PMB-D/T-M3-3U

WTB to MVB gateway with process and message data, 24 V DC, 3U mounting

D521-1-64k-O-LV-UIC-PMB-D/T-M3-W

WTB to MVB gateway with process and message data, 24 V DC, wall mounting

D521-1-64k-O-LV-UIC-PMB-D/T-M3-D

WTB to MVB gateway with process and message data, 24 V DC, DIN rail mounting

D521-1-64k-O-HV-UIC-PMB-D/T-M3-3U

WTB to MVB gateway with process and message data, 96 to 110 V DC, 3U mounting

D521-1-64k-O-HV-UIC-PMB-D/T-M3-W

WTB to MVB gateway with process and message data, 96 to 110 V DC, wall mounting

D521-1-64k-O-HV-UIC-PMB-D/T-M3-D

WTB to MVB gateway with process and message data, 96 to 110 V DC, DIN-rail mounting

► **Contact duagon** for availability and lead times for product models not listed above.