

## AT-FlexRay-Gateway 5003

### FlexRay-CAN-LIN-Ethernet-Gateway



#### Description

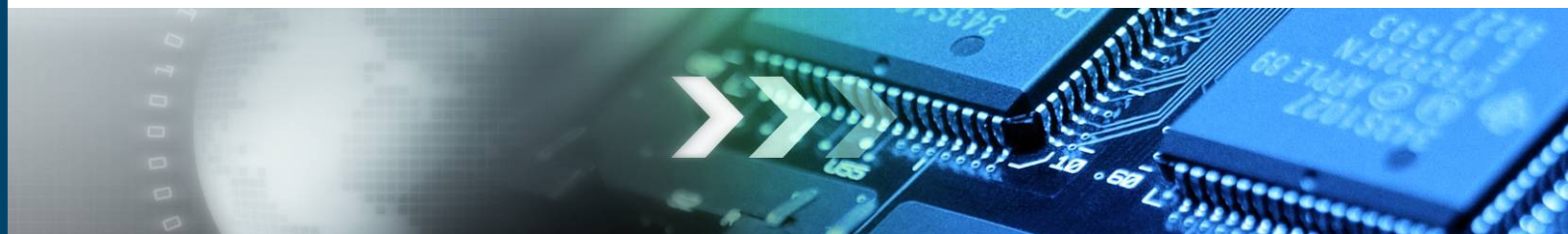
AT-FlexRay-Gateway 5003 is a universally configurable gateway module for the bus systems FlexRay, CAN, LIN, and Ethernet, which offers signal manipulation and the capability to include user applications. The module is available as a single or double gateway.

#### Features

- Signal routing between the bus systems FlexRay, CAN, LIN, Ethernet and serial 2-wire bus
- Wide range of signal manipulation options
- Including of external software modules (C functions) for complex signal manipulation and user applications
- Powerful configuration software: FIBEX, DBC support, interactive routing configuration, numerous automations, such as autorouting, network splitting and residual bus configuration
- Full real-time capability
- Interface to dSPACE HIL systems
- Data logging to USB data storage or via CAN interface
- Free programmable I/O interfaces (digital / analogue / PWM)
- Wake-up by external line or clamp 15 (optional by CAN and FlexRay)

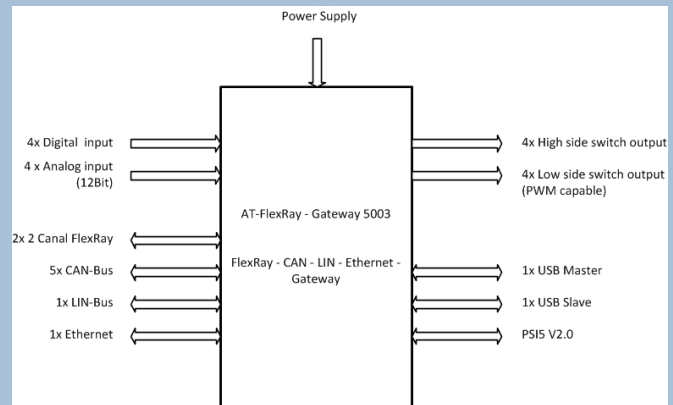
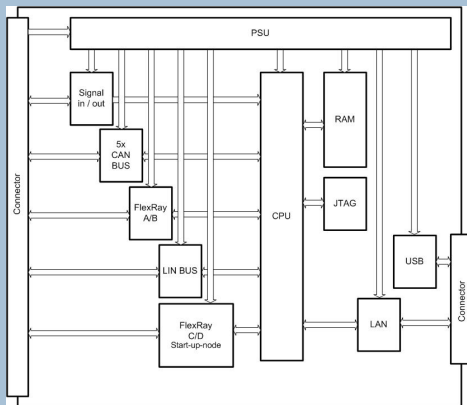
#### Range of Application

- Gateway with routing functionality to all directions  
FlexRay-FlexRay, FlexRay-CAN, FlexRay-LIN, FlexRay-Ethernet, CAN-LIN, CAN-Ethernet, LIN-Ethernet
- Data logging for FlexRay, CAN, LIN, Ethernet, I/O interfaces  
(ring buffer storage; can be triggered by bus signal or I/O interfaces; pre and post trigger)
- Use in vehicle for rapid prototyping with new developments
- Fault injection in real-time
- Control unit for test and development applications



## Specification (Single-Gateway)

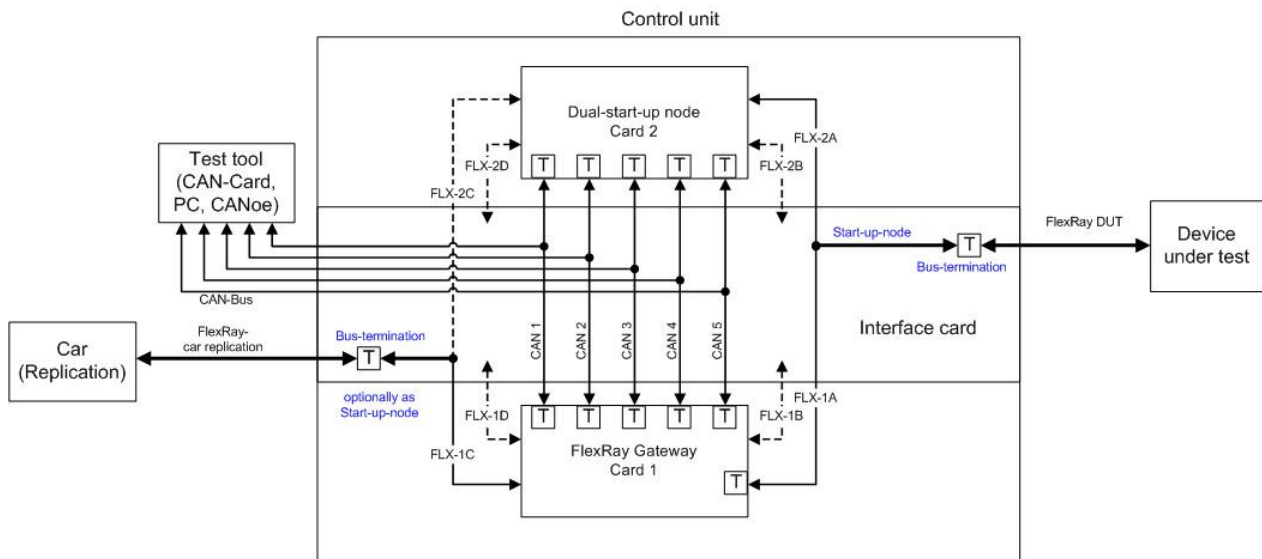
Parameters		Specification
Power supply	Voltage supply	9 ... 16 V <sub>DC</sub>
	Power consumption	Max. 500 mA (without peripherals)
Processor	MPC5567	128 MHz
Memory	Flash	2 MByte internal
	RAM	64 kByte internal, up to 8 MByte external (depending on configuration)
FlexRay interfaces	Number	2 FlexRay interfaces (two channels each)
	Data rate	10 MBit/s
	Specifics	Dual-start-up capability for linking non-start-up nodes
CAN interfaces	Number	5 CAN-Bus interfaces
	Data rate	High-speed CAN (1 MBit/s) or low-speed CAN (125 kBit/s)
	Specifics	2 interfaces can be configured as high-speed or low-speed CAN, 3 are explicit high-speed CAN interfaces
LIN interface	Number	1 LIN-Bus interface
	Data rate	20 kBit/s
	Specifics	LIN-Master / LIN-Slave-Mode configurable
Ethernet interface	Number	1 Ethernet interface
	Data rate	10 MBit/s or 100 MBit/s
USB interface	Number	2 USB 2.0 compatible
	Specifics	1 USB Master (for connection to data storage) 1 USB Slave (for connection to PC)
I/O interfaces	Digital I/O	2-wire bus (PSI5 [V2.0] ready)
	Analog inputs	4 ADC with 12 bit quantification
	Digital inputs	4 Schmitt trigger inputs
	Digital outputs	4 High side switch outputs
	Analog outputs	4 Low side switch outputs (PWM capable)
Connector	Type	Customisable (Sub-D, Lemo, Tyco, ...)
Casing	Materials	Robust aluminium casing



# Specifications (Double Gateway)

The double gateway provides twice as many I/O and bus interfaces, dependent on the hardware design of the customer specific circuit board. The control unit features 4 independent 2-channel FlexRay interfaces and is thus capable of quad start-up. This enables the simultaneous synchronisation of two FlexRay clusters that are not enabled for start-up. The power supply of the gateway occurs via a joint interface.

The following diagram shows the possible circuitry of the control unit within the main system.



The bus termination can be configured between the bus end node and the non-end node.

Product	Order Number
Single gateway with 2 MByte SRAM extension	TEM_FRGW_SINGLE_HW Ver 04.01
Single gateway with 8 MByte SRAM extension	TEM_FRGW_SINGLE_HW Ver 04.02
Single gateway in waterproof IP65 casing	TEM_FRGW_SINGLE_HW Ver 04.03
Single gateway with customised switches	TEM_FRGW_SINGLE_HW Ver 04.04
Double gateway with 2 MByte SRAM extension	TEM_FRGW_DOUBLE_HW Ver 04.01
Double gateway with 8 MByte SRAM extension	TEM_FRGW_DOUBLE_HW Ver 04.02
Double gateway with waterproof IP65 casing	TEM_FRGW_DOUBLE_HW Ver 04.03
Double gateway with customised switches	TEM_FRGW_DOUBLE_HW Ver 04.04
<b>Cable Set</b>	
Cable set for bus interfaces (HD SUB-D 26pol.)	TEM_FRGW_BUS_CON Ver 02.01
Cable set for I/O interfaces (SUB-D 50pol.)	TEM_FRGW_IO_CON Ver 01.01
<b>Software Tools</b>	
Software flash tool for using flash via Ethernet	TEM_FRGW_FLASH_SW Ver 01.02
Software code generator / routing editor	TEM_FRGW_CGEN_SW Ver 01.10

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