



BENEFITS

- Gateway generation for several bus systems, e.g. CAN-HS, CAN-FD, FlexRay, Ethernet, 100BASE-T1, 1000BASE-T1, LIN, SENT
- Signal manipulation: no coding required
- Remaining bus simulation (RBS)
- Easy-to-use GUI: Configuration in two minutes
- Synchronized FlexRay/FlexRay gateway
- Support for several devices: FlexDevice-M, FlexDevice-L, FlexDevice-L², FlexDevice-S

FLEXCONFIG RBS – OVERVIEW

FlexConfig RBS is a software to generate a hardware assisted RBS and Gateways. Several network description formats are supported. The generated RBS runs independently on a separate hardware.

FLEXCONFIG RBS

- Supported bus systems: CAN high-speed, CAN low-speed, CAN-FD, FlexRay, Ethernet, 100BASE-T1, 1000BASE-T1, LIN, SENT
- Creation, design and administration of several remaining bus simulations
- Embedded OS variants with multicore and FPU support available
- Support for DoIP and ISO-TP (on request)
- Updating existing projects with new network description files (Database Updater update).
- Backward compatibility guaranteed down to FlexConfig RBS 2.0
- Support of the network description formats FIBEX, AUTOSAR and CANdb
 - FIBEX (.xml): 2.0.0d, 2.01, 3.0.0, 3.1.0, 4.0, 4.1.1, FIBEX+ 1.4
 - AUTOSAR (.arxml): 3.02, 3.1.0, 3.1.4.DAI.2, 3.1.4.DAI.4, 3.2.2, 4.0.3, 4.1.1, 4.2.1, 4.2.2, 4.3.0, 4.3.1
 - CANdb (.dbc)
- Selection of the ECUs which should be simulated or a remaining bus simulation should be created for
- Creation and configuration of a CAN-HS RBS is possible without a network description file
- Handling of ECU families per selecting one ECU which should be simulated or generating dummy ECUs for the required ECU family
- Self synchronization of ECUs/clusters which have no cold start ability

- Support of user defined sync/startup frames
- Configurable cyclic timing for CAN and Ethernet (global and per message)
- Supported byte-orders: Big Endian, Little Endian, Mixed Endianess (within a PDU)
- Supports multiplexed PDUs
- Supports Container-PDUs (only for FlexDevice-S, FlexDevice-L/L²)
- Hard real-time support for CRC, alive/message counter and network management
- Supports AUTOSAR Timesync
- Supports SOME/IP
- Supports Secure Onboard Communication (only for FlexDevice-S, FlexDevice-L/L²)
- Using OEM specific (user defined) CRC / alive/message counter algorithm templates in OEM projects
- Support of configurable OEM specific project templates with presets for
 - standard signal handling
 - target IP address
 - Frame and PDU init values per bus
- Access RBS run-time parameters via Windows API over Ethernet:
 - Global Parameters (read/write)
 - Signals (read/write)
 - PDUs (read/write)
 - Bus Controller (switch on/off / read state)
 - Simulated ECUs (switch on/off / read state)
- Command line tool to build and download projects
- Device Manager

NETWORK TECHNOLOGY

ENERGY TECHNOLOGY

SENSOR-/ ACTUATOR TECHNOLOGY

FlexConfig RBS

TECHNICAL FEATURES

FlexConfig RBS

- Runs on Windows 7 (32-bit), 7 (64-bit), Windows 10 (64-bit)
- Automatic Update via Internet
- Automatic License update via internet
- Interface to user-defined CRC algorithms, alive/message counter and network management (ANSI-C code)
- E2E Protection for several OEMs
- Logging of bus data
 - Supports the internal SD card slot of a FlexDevice
 - Logging in *.mdf format
 - Timestamps with a resolution of 1 us possible
 - Upload of the *.mdf file to the host via ftp
- FlexConfig RBS includes FlexConfig Control for live manipulations
- User Function editor
 - Implementation of frame-based and pdu based TX and RX functions per drag and drop and user-defined algorithms
 - Implementation of interrupt-based CycleStartInterrupt functions per drag and drop user-defined algorithms for simulated FlexRay ECUs/clusters
 - User-defined .c/.h files and .a libraries can be included
 - Integration of I/Os per drag and drop
 - Signal and frame-based data handling with deposited functionality
 - RX User Functions: Payload access to last received frame (e.g. for CRC check)
 - Generation of additional TX events for the simulated TX frames (e.g. for transmitting CAN frames which don't have cyclic triggered timings)
 - Read/write access to PDU update bits
 - Enable/Disable simulated ECUs
 - Enable/Disable bus
 - Access to user-defines
 - Support of LIN. No support for LDF, manual coding required
 - Supports export of user functions (as *.c/*.h files)
 - Supports search for used elements (such as Bus, ECU, Signal, ...)

FlexConfig Control

- Fast and efficient Signal/PDU/Frame/ECU manipulation with the provided GUI
- Configuration via drag and drop mechanism
- Various methods to manipulate data
 - Loss, Factor, Freeze, Fix Value, Offset, Drift, Ramp
- The duration and the delay of a manipulation can be adjusted
 - Events, Milliseconds, Cycles (FlexRay only)
- Various trigger options
 - Trigger operators are '==', '!=', '>', '<', '>=', '<=' and 'Edge'
 - Link up to four triggers
- Enable manipulations via Hotkey
- With the help of a sequence editor various manipulation groups can be stored
- Manipulations can be controlled via a Windows API and Ethernet
- Manipulable elements are ECU, Frames, PDUs, Switches (of multiplexed PDUs), Signals, Global variables
- Save manipulations at the target platform

FlexConfig Gateway

- Automated generation of transparent FlexRay/FlexRay and CAN/CAN gateways
- Creation, design and administration of CAN-HS, CAN-FD, FlexRay, OABR and Ethernet gateways
- Partly automated routing of complete buses

- Automatic and manual scaling of signals (only for signal routings)
- Exporting of the configured routings and of the available source and target elements as CSV file or Excel file
- Printing the configured routings and of the available source and target elements
- Search and filtering in source, target and routing lists
- Highlight matching for source and target elements for routings
- Mark/highlight elements and element groups in different colors
- Cluster synchronization for FlexRay/FlexRay gateways
 - In-Cycle synchronization
 - Cycle + In-Cycle synchronization
- Gateway mappings can be created for Frames, PDUs and signals
- Transparent gateway configuration supports excluding of ECUs

SERVICES:

- Configuration design and test
- User code implementation
- Customer specific extensions
- Training courses

SCOPE OF DELIVERY:

- FlexConfig RBS
- Documentation

ORDER INFORMATION FLEXCONFIG RBS

Configuration Software

Product	Description	Order number
FlexConfig RBS	Software license for the usage of FlexConfig RBS for all supported bussystems. Requires „FlexConfig RBS runtime“ on each device.	3-V0160B01
FlexConfig RBS Starter	Software license for the usage of FlexConfig RBS only for the bussystems CAN-FD/-HS and LIN. Requires „FlexConfig RBS runtime“ on each device.	3-V0161J01

ORDER INFORMATION HARDWARE RUNTIMES

Hardware / Runtime software

Product	Description	Order number
FlexConfig RBS Gateway	Extension for creating Gateway configurations with FlexConfig RBS. Requires "Flex-Config Gateway runtime" on each device.	3-V0160N01
FlexConfig RBS OEM Package	Extension for OEM specific configurations. Available for several OEMs.	on request
FlexConfig RBS Update	Onetime update to the latest FlexConfig RBS Release.	3-V0160U01
FlexConfig RBS Maintenance	Includes all updates of FlexConfig RBS for one year.	3-V0160M01
FlexConfig Compact Course	1-day basic training	on request
FlexConfig RBS runtime	Runtime license for RBS execution. Required once per device.	3-00700J01
FlexConfig Gateway runtime	Runtime license for gateway execution. Required once per device. (Requires "Flex-Config RBS runtime")	3-00701E01
FlexConfig Control runtime	Runtime license for signal manipulation. Required once per device. (Requires "Flex-Config RBS runtime")	3-00701G01
FlexConfig Analyzing runtime	Runtime license for analyzing bus data. Required once per device.	3-00701J01
FlexConfig Logging runtime	Runtime license for recording bus data. Required once per device.	3-00701O01