



## FlexDevice-S

[www.star-cooperation.com](http://www.star-cooperation.com)

### BENEFITS

- ARM Cortex A9 Dual Core (800 MHz) with 1 GByte DDR3 RAM
- Up to 10 bus channels
- 8 hardwired bus channels
  - 2 x CAN-HS channels
  - 2 x CAN-FD channels\*
  - 1 x FlexRay A channel (Self-Sync)\*
  - 1 x FlexRay B channel (Self-Sync)\*
  - 1 x 100BASE-T1 channel\*
  - 1 x LIN channel
- 1 flexible FlexTiny3 Slot for additional bus transceivers (2 x CAN- or 2 x FlexRay- or 2 x 100BASE-T1- channels)
- Integrated WiFi module
- D-sub connectors for automotive bus systems
- Wake-up / sleep mode support
- Startup <200 ms possible
- Micro SD card slot
- IP20
- Temperature range -40°C to +85°C

\* The base unit provides the bus systems CAN-HS and LIN. To use the bus systems FlexRay, CAN-FD or 100BASE-T1, additional licenses are required

### FLEXDEVICE-S - THE MULTIFUNCTIONAL BUS CONTROL UNIT

FlexDevice-S is the starter of the FlexDevice product family which is used and recognized by many car manufacturers and component suppliers in their automotive electronics development. The FlexDevice family provides manifold solutions for

- gateways between different automotive bus systems
- bus interfaces
- remaining bus simulation
- signal manipulation
- data logging
- rapid prototyping

The multifunctional bus control unit FlexDevice-S supports the current and upcoming bus systems and has one variable interface, so it covers most of the application fields where bus interfaces are required. This device is appreciated by embedded software developers since it facilitates the implementation and testing of even very tricky gateway applications and prototyping functionalities.

Together with the comprehensive FlexConfig software family, the developers are enabled to set up and control their bus systems and ECU environment in a smart manner.

# FlexDevice-S

## TECHNICAL FEATURES

- Altera Cyclone V SOC (integrated ARM Cortex A9 Dual Core CPU)
- 1 GByte DDR3 RAM
- 3 D-sub bus connectors with fixed and pluggable transceivers
  - Up to 4 bus interfaces on each connector
- Supported automotive bus systems
  - Up to 4 FlexRay controllers ( Bosch E-Ray cores)\*
  - Up to 2 FlexRay channels (2 channel A and 2 channel B) available on the connectors
  - A connector with 2 FlexRay cores provides self-synchronization
  - Up to 4 CAN-FD controllers\*
  - Up to 6 CAN-HS controllers\*
  - Up to 3 100 Mbit/s Ethernet controllers\*
- Wake-up / sleep mode support (wake-up possible via FlexRay or CAN)
- 1 Gbit/s Ethernet configuration interface via RJ45
- Integrated 1 Gbit/s Ethernet switch
- Micro SD card slot
- 4 digital inputs/outputs, or analog inputs (ADIO) via D-sub

\*several bus combinations are possible, please contact us regarding your desired bus configuration.

## SOFTWARE SUPPORT

The device is supported by FlexConfig RBS starting with version 4.4.

## HARDWARE

### Electrical characteristics

Supply voltage	8-42 VDC
Supply current (Sleep Mode)	<10 mA (@ 12 V)
Supply current (Operation Mode)	<500 mA (@ 12 V)

### Physical characteristics

Power	Binder series 702/712 – 2 pol.
ADIO	D-Sub female– 9 pol.
Ethernet	RJ45 – 8 pol.
Con 1 - 3	D-Sub male – 9 pol
Weight approx.	665 g
Dimensions (L x W x H)	166 x 124 x 36 mm

### Environmental conditions

Temperature	Operating / Storage: -40 °C to +85 °C
IP-Code	IP20
Relative humidity	Operating / Storage: 0% to 90% rH, condensing

## SCOPE OF DELIVERY

- FlexDevice-S
- Documentation

## ORDER INFORMATION FLEXDEVICE-S

Product	Description	Order number
FlexDevice-S	The FlexDevice-S is a multifunctional autonomous bus system platform.	3-V0860A01

## ORDER INFORMATION ACCESSORY PARTS

Product	Description	Order number
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 "FlexConfig RBS runtime")	3-00701E01
FlexConfig Control runtime	Runtime license for signal manipulation. Required once per device. (Requires "FlexConfig 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
CAN-FD runtime	Runtime license for enabling the CAN-FD bus system on the FlexDevice-S. Required once per device.	3-00701K01
FlexRay runtime	Runtime license for enabling the FlexRay bus system on the FlexDevice-S. Required once per device.	3-00701L01
Ethernet runtime	Runtime license for enabling the Ethernet bus system on the FlexDevice-S. Required once per device. Note: This license is not necessary for the ethernet configuration interface.	3-00701M01
FlexTiny3 1000BASE-T1	Pluggable transceiver module with two 1000BASE-T1 transceivers (88Q2112-A2-NYD2A000, Marvell)	3-00882H02
FlexTiny3 100BASE-T1	Pluggable transceiver module with two 100BASE-T1 transceivers (BCM89810A2AMLG, Broadcom)	3-00882C02
FlexTiny3 100BASE-T1 switch	Pluggable transceiver module with one 100BASE-T1 switch (BCM89500BQLEG, Broadcom)	3-00882D01
FlexTiny3 100BASE-TX switch	Pluggable transceiver module with one 100BASE-TX switch (88E6350RA1-TFJ21000, Marvell)	3-00882B01
FlexTiny3 FlexRay	Pluggable transceiver module with two FlexRay transceivers (TJA1081BTS, NXP)	3-00880A01
FlexTiny3 4x CAN-FD/HS	Pluggable transceiver module with four CAN-FD/HS transceivers (MCP2562FD, Micrel)	3-00881G02
FlexTiny3 2x CAN-FD/HS	Pluggable transceiver module with two CAN-FD/HS transceivers (TJA1145T/FD, NXP)	3-00881E01
FlexTiny3 4x LIN & 2x SENT	Pluggable transceiver module with four LIN (TJA1021T, NXP) and two SENT transceivers	3-00884A02
FlexTiny3 K-Line & UART & SPI	Pluggable transceiver module with one K-Line (TJA1021T, NXP), one UART and one SPI transceivers	3-00884B01
Power cable (2 m)	2 pole Binder male to 2 banana male connector	3-00341D02
Standard D-Sub 4x Y-bus cable (unshielded, 2 m)	9 pole D-Sub female to 4 x 9 pole D-Sub female, unshielded	3-00343A01