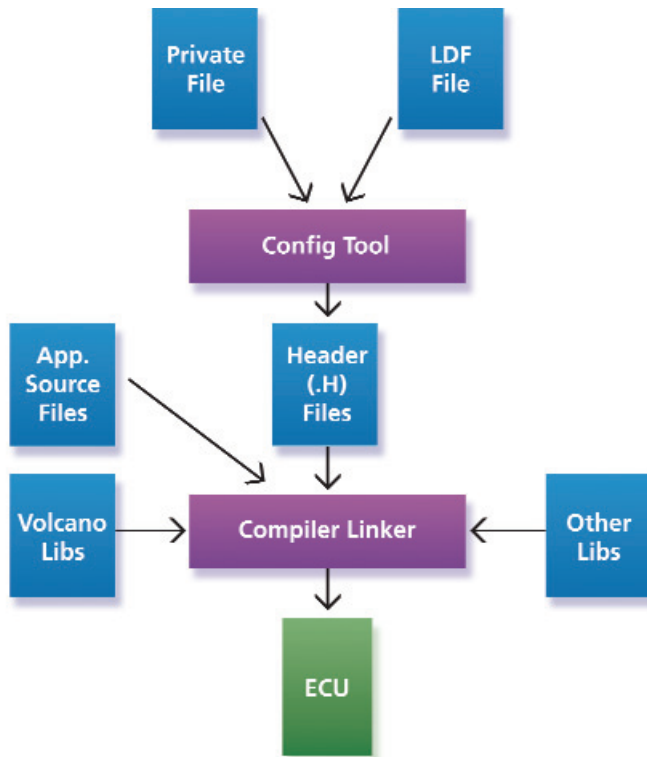


LIN Target Package

D A T A S H E E T



LIN Target Package Development Flow

The Volcano LIN Target Package (LTP) is a LIN-only product providing a resource-efficient implementation for LIN nodes according to the LIN 2.0 standard and 2.1 standards (2.x).

The LIN standard was the first standard to go beyond the protocol definition and also define the API, the network description file and the node capability file. As a founding member of the LIN Consortium and a major contributor to the LIN standard, Mentor Graphics (through acquisition of Volcano Communications Technologies) has created an implementation of the LIN 2.0 standard that fully supports a top-down design process for LIN networks.

Embedded Software Module

The embedded software module includes a hardware-specific device driver operating on real or software-emulated UART, SCI or other special LIN hardware drivers. The signal-based API is generated by the off-line configuration tool as a set of “C” macro definitions. The data consistency is guaranteed by enabling and disabling of the hardware-generated interrupts within the API macros. A LIN message buffer pool is shared between the device driver and the application program. The application program accesses the RAM buffer using the standardized signal-based API. In the case of a master implementation, the embedded software module also provides schedule table handling.

Product features

- Available as LIN 2.0 or LIN 2.1 compliant package
- Easily integrated using LIN 2.x standardized, signal-oriented API
- Configured using the LIN description file format
- Support for hard real-time periodical frames and for soft real-time event-triggered and sporadic frames
- Support for multiple schedule tables
- Standardized go-to-sleep and wake-up functionality
- Save-configuration and Conflict-resolving capability using the standardized diagnostic services in case of conflicting node or frame ID
- Traditional diagnostic service request/response support with optional ISO 15765-2 harmonized transport layer
- Delivered as precompiled and tested object library
- Optimized microcontroller resource utilization

The LIN Target Package is divided into two separate parts:

1. the embedded software module
2. the off-line configuration tool

Configuration Tool

The configuration tool requires two input files, the LDF file and the private file.

The LDF file format is part of the LIN standard. It describes a complete LIN cluster from the communication point of view.

The private file includes all hardware-related details for one of the selected nodes described in the LDF file, plus other private information for the application program developer, such as used flags and timeouts.

The configuration tool generates “C” macro definitions in a header file. The signal read and write macros will be invoked from the application to access a particular signal in RAM.

The application program will be compiled and linked together with a Volcano-provided LIN library (and other libraries if necessary). The generated binary image can be downloaded into the ECU.

Availability

The LIN Target Package is available for a wide range of microcontrollers:

- Analog Devices ADuC7032, ADuC7024
- Atmel ATtiny x7, ATmega88, ATmega168, ATmegaX4p
- Freescale MPC5xx, MP55xx, HC08, HC12, HCS12X
- Infineon TC179x
- Microchip PIC18Fx, PIC16Fx
- NEC V850, 78K0x, 78F0x
- Renesas M32C, M16C, R8C
- ST Microelectronics ST7
- Texas Instruments TMS470

Controller-specific application features (e.g. automatic baud rate adjustment, clock synchronization, DMA usage) guarantee an optimized solution in every use case.

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Corporate Headquarters
Mentor Graphics Corporation
8005 SW Boeckman Road
Wilsonville, OR 97070-7777
Phone: 503.685.7000
Fax: 503.685.1204

Sales and Product Information
Phone: 800.547.3000

Silicon Valley
Mentor Graphics Corporation
1001 Ridder Park Drive
San Jose, California 95131 USA
Phone: 408.436.1500
Fax: 408.436.1501

North American Support Center
Phone: 800.547.4303

Europe
Mentor Graphics
Deutschland GmbH
Arnulfstrasse 201
80634 Munich
Germany
Phone: +49.89.57096.0
Fax: +49.89.57096.400

Pacific Rim
Mentor Graphics (Taiwan)
Room 1001, 10F
International Trade Building
No. 333, Section 1, Keelung Road
Taipei, Taiwan, ROC
Phone: 886.2.87252000
Fax: 886.2.27576027

Japan
Mentor Graphics Japan Co., Ltd.
Gotenyama Garden
7-35, Kita-Shinagawa 4-chome
Shinagawa-Ku, Tokyo 140-0001
Japan
Phone: 81.3.5488.3033
Fax: 81.3.5488.3004



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