

S12ZVH Mixed-Signal Microcontrollers

S12 MagniV Single-Chip Solution for Automotive Instrument Clusters

Product One-Sheet

[Get Sample](#)

[Data Sheet](#)

[Tools](#)

S12Z core architecture—16-bit microcontroller at 32 MHz bus

Cluster integration—single-chip instrument cluster solution integrates an automotive voltage regulator operating between 5 and 18 volts

Connectivity—CAN, LIN, SPI, I²C, analog comparators, multiple timers with PWM functionality

Connectivity—CAN/LIN physical layers, LCD display controller and instrument cluster gauge drivers with stepper stall detection (SSD)

S12ZVH Specifications

PART NUMBER	S12ZVH128CLQ	S12ZVH128CLL	S12ZVHL64CLQ	S12ZVHL64CLL
PACKAGE DESCRIPTION	LQFP 144 20*20*1.4P0.5	LQFP 100 14*14*1.4P0.5	LQFP 144 20*20*1.4P0.5	LQFP 100 14*14*1.4P0.5
INTERNAL FLASH	128 KB	128 KB	64 KB	64 KB
RAM	8 KB	8 KB	4 KB	4 KB
EEPROM	4 KB	4 KB	2 KB	2 KB
STEPPER MOTOR CONTROLLER	4	2	2	2
LCD SEGMENTS	40 x 4	32 x 4	40 x 4	32 x 4
CAN PHY	1	–	–	–
LIN PHY	–	–	1	1

Features



S12Z core, 32 MHz bus



CAN/LIN physical layer



4 KB EEPROM, 128 KB flash with ECC



Built-in automotive voltage regulator from 5 to 18 V at -40 °C to +105 °C

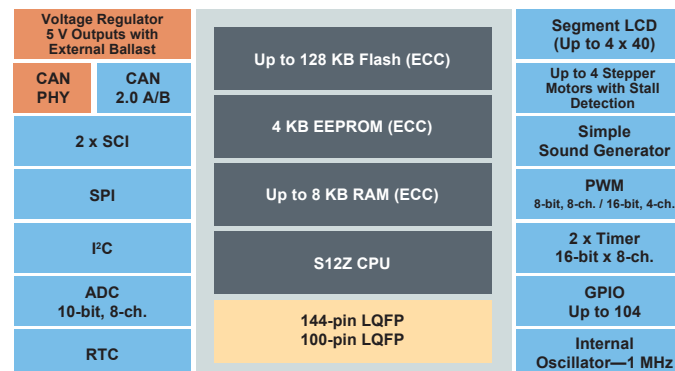


4 up-to-four stepper motor drivers with stall detect



Real-time clock with calendaring

S12ZVH: S12 MagniV Mixed-Signal MCU Block Diagram



Target Applications

- ▶ Automotive instrument clusters
- ▶ Heating ventilation and air conditioning (HVAC)

Enablement Tools

- ▶ S12ZVH low-cost evaluation board
 - Part number: TRK-S12ZVH128
 - Custom 4 x 40 LCD glass
 - CAN connector interfaced with MCU internal CAN PHY
 - Serial communications LIN, SCI, SPI and I²C
 - LEDs connected to PWM channels
 - Four pushbuttons connected to KBI inputs
 - Four motor control headers, 4 x 1 pins
 - 32 kHz oscillator for real-time counter
 - Piezoelectric speaker with amplification circuit
- ▶ P&E MULTILINK
- ▶ CodeWarrior development tool suite
- ▶ Cosmic software

www.nxp.com/S12ZVH

NXP, the NXP logo, CodeWarrior, Freescale and MagniV are trademarks of NXP B.V. All other product or service names are the property of their respective owners. © 2016 NXP B.V.

Document Number: S12ZVHFS REV 1

