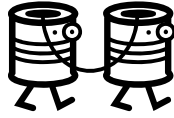


## CAN Demonstration & Development Kit



Please make sure you have a copy of **CAN-D-Kit-Demonstration-and-Expansion-Manual** when using the Can D-Kit.

## Features to point out

- + Designed to provide customers with a network-ready kit to easily jump-start evaluating CAN
- + The Kit contains everything necessary to start developing application code
- + Contains a detailed application note describing the use of the Renesas M16C CAN peripheral API
- + An elaborate firmware application showing in practical detail how to use the Renesas CAN API
- + The kit contains *all* necessary contacts and cables. They are daisy-chain powered via the E8 Debugger/Programmer
- + All boards contain LEDs, A-D, pushbuttons, and easily accessible port terminals and an LCD to display data
- + The Kit may consist of any combination of the following Renesas Starter Kit boards; RSK-R8C23, RSK-M16C29, RSK-M16C6NK
- + Contains a CAN bus sniffer that shows traffic on the bus and data frame content. This sniffer may be upgraded for DeviceNet, CANopen etc.
- + M16C CAN features
  - o 16 transmit/receive message boxes
  - o Acceptance filtering
  - o Receive and transmit interrupting
  - o Extended or Standard ID
  - o Timestamps
  - o Rx & Tx error counters
  - o etc.

### **MCU data**

#### **R8C23**

The R8C/23 is based on the R8C/Tiny CPU Core and has 1MB of memory space. Maximum operating frequency is 20MHz. A Flash Memory Version is available. Internal Flash Memory is programmable on a single power source.

- 8-bit Multifunction Timer with 8-bit prescaler (Timer RA and RB): 2 channels
- Input Capture/Output Compare Timer (Timer RD): 16-bit x 2 channels
- Timer with compare match function (Timer RE): 1 channel
- UART/Clock Synchronous Serial Interface: 1 channel
- UART: 1 channel
- I<sup>2</sup>C-bus™ Interface (IIC)/Chip-select Clock Synchronous Serial Interface (SSU): 1 channel

- LIN Module: 1 channel (Timer RA, UART0)
- CAN Module (2.0B): 1 channel, 16 slots
- 10-bit A/D Converter: 12 channels
- Watchdog Timer
- Clock Generating Circuits: XIN Clock Generation Circuit, On-chip Oscillator (High/Low Speed)
- Oscillation Stop Detection Function
- Voltage Detection Circuit
- Power-On Reset Circuit
- I/O Ports: 41
- Interrupts: 14 internal factors, 6 external factors, 4 software factors
- RAM 2K, Data Flash: 2KB (Flash Memory Version only)
- ROM Flash 32-64K
- 3.0 to 5.5 @ 20MHz, 2.7 to 5.5 @ 10MHz

## M16C29

M16C/29 is based on the M16C/60 CPU Core and has 1MB memory space. Maximum operating frequency is 20MHz. Mask ROM and Flash Memory versions are available. Internal Flash memory is programmable on a single power source.

- 16-bit Multifunction Timer (Timer A and B, incl. 3-phase inverter motor control function): 8 channels
- Input Capture/Output Compare Timer (Timer S)
  - Base Timer: 16-bit x 1 channel
  - I/O: 8 channels
- UART/Clock Synchronous Serial Interface: 3 channels
- Clock Synchronous Serial Interface: 2 channels\*
- Multi-Master I<sup>2</sup>C-bus™: 1 channel
- 10-bit A/D Converter: 27 channels\*
- DMAC: 2 channels
- CAN: 1 channel (2.0B)
- CRC Calculation Circuit
- Watchdog Timer
- Clock Generation Circuits: Main Clock Generation Circuit, Sub Clock Generation Circuit, On-chip Oscillator, PLL Synthesizer
- Oscillation Stop Detection Function
- Voltage Detection Circuit (Option) (Except for T Version and V Version)
- I/O Ports: 71\*
- Interrupts: 28 internal factors, 8 external factors, 4 software factors
- RAM 4-8K, Data Flash: 2KB x 2 blocks (Flash Memory Version only)
- ROM Flash 64-128K
- 3.0 to 5.5 @ 20MHz, 2.7 to 5.5 @ 10MHz

**M16C6NK** The M16C/6N Group (M16C/6NK, M16C/6NL, M16C/6NM, M16C/6NN) of single-chip microcomputers are built using the high-performance silicon gate CMOS process using an M16C/60 Series CPU core and are packaged in 100-pin and 128-pin plastic molded LQFP. These single-chip microcomputers operate using sophisticated instructions featuring a high level of instruction efficiency. With 1 Mbyte of address space, they are capable of executing instructions at high speed. Being equipped with CAN (Controller Area Network) modules in M16C/6N Group (2 channels for M16C/6NK, M16C/6NM; 1 channel for M16C/6NL, M16C/6NN), the microcomputer is suited to car audio and industrial control systems. The CAN modules comply with the 2.0B specification. In addition, this microcomputer contains a multiplier and DMAC which combined with fast instruction processing capability, makes it suitable for control of various OA and communication equipment which requires high-speed arithmetic/logic operations.