

NMIN-0803-H3

DSP56F803BU80

The NMIN-0803-H3 places the Motorola DSP56F803BU30 16-bit Digital Signal Processors on a small, user-accessible board along with supply circuits, RS-232 (or RS-422/485) drivers, CAN bus drivers, and 2 H-Bridge drivers.

FEATURES

- DSP56F803, DSP and MCU functionality in a unified architecture
- MCU- friendly instruction set supports both DSP and controller functions:
MAC, bit manipulation unit, 19 addressing modes
- Up to 40 MIPS at 80 MHZ core frequency
- Extensive on-chip Flash w/100,000 write cycles typical life
32K x 16-bits words Program Flash (less 512)
2K x 16-bit words BootFLASH
4K x 16-bit words Data Flash
- Word write (16-bit) 20us
- Page erase (512 bytes) 40ms
- Block erase (mass) 100ms
- On chip RAM
512 x 16-bit words Program Ram
2K x 16-bit words Data Ram
- Up to 64K x 16-bit words each of external program and data memory
- JTAG/OnCE port for debugging (BDM) Examine registers, memory, of peripherals
Set breakpoints
Step or trace instructions
- Serial Peripheral Interface (SPI)
Full-duplex synchronous operation on four-wire interface Master or Slave
- Serial Communication Interface (SCI) Full-duplex Serial Channel,
w/Optional Driver, either: TTL, or RS-232, or RS422/485
- CAN 2.0 A/B module
Programmable bit rate up to 1Mbit
Low power sleep mode
TJA1050 CAN Transceiver
Multiple boards can be networked (MSCA)
Ideal for harsh or noisy environments, like automotive applications
- 16 shared GPIO lines (depending on other features used)
Programmable Edge sensitive interrupts
- Two 4-channel 12-bit ADCs

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Single Conversion is 1.7us (8.5 ADC cycles)

Continuous Conversion is 1.2us (6 ADC cycles)

Simultaneous conversion on each ADC

Single ended or differential inputs

Signed or unsigned results

ADC can be sync'd with PWM

Optional interrupt:

at end of scan

out-of-range limit

zero crossing

Programmable high limit

Programmable low limit

Programmable offset

- Up to two General Purpose Quad Timers Each channel has its own timebase, 4 16-bit timers

Count up/down Cascadable Four channels, each programmable as input capture or output compare

Input capture trigger rising edge, falling edge, or any edge

Output capture action set, reset or toggle External sync input

- Quadrature Decoder

32-bit position counter

16-bit position counter

16-bit revolution counter (initialized by SW or external event)

40MHz count frequency (up to)

Logic to decode quadrature signals

Configurable digital filter for inputs

Watchdog timer to detect stalled shaft

- 6-channel PWM module

15-bit counter with programmable resolutions down to 25ns

Six independent outputs, or three complementary pairs of outputs

Center aligned or Edge aligned pulses Automatic dead time insertion for complementary outputs

3-TC4424 3-amp 18V dual MOSFET transistor driver chip Completed circuit for 3 H-Bridge

3-current sense pins

3-fault pins

- WatchDog Timer/COP module

12-bit counter for Watchdog time out

COP is CPU clock divided by 16384

- Low Voltage, Stop and Wait Modes

The NMIN-0803 is a complete system and ready to run dedicated applications.

Development of the user programming in internal **FLASH** facilitated through

JTAG/OnCE connections to host. The NMIN-0803-H3 makes a very cost effective

solution, suitable for dedicated control of DC motors, BDCM, stepper motors, solenoids,

and other bipolar power outputs, such as general converter/invertor applications, data

collection and many networked control applications.

