NMIN-0803-Mini
DSP56F803BU80

The NMIN-0803-Mini places the Motorola DSP56F803BU30 16-bit Digital Signal
Processors on a small, user-accessible board along with supply circuits, RS-232 drivers, CAN
bus drivers, and LCD interfacing and 2 LED indicators.

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

NMIN-0803-H3
DSP56F803BU80

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

- 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.