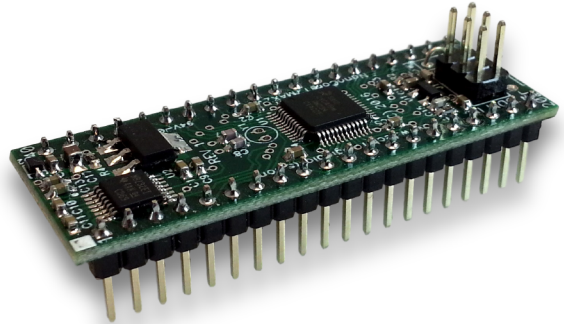# NanoCore12MAXZVC MagniV®
DIP Microcontroller Module (RS232/TTL)

Description

Designed primarily for automotive, robotics, mechatronics, and industrial applications, this module implements a fully-functional 16-bit microcontroller circuit in a convenient easy-to-use DIP format. Based on the advanced 16-bit Freescale/NXP 9S12ZVCA192 microcontroller, it offers unprecedented power and flexibility for a variety of applications, at a very attractive price. Suitable for educational and OEM applications.

The S12ZVC microcontroller integrates a sophisticated S12Z core together with a 12 V to 5 V voltage regulator and a CAN physical layer for automotive and industrial applications such as sensors, actuators, switch panels or other user interfaces.

NanoCore12MAXZVCR

Module Features

• high-reliability S12ZVCA192 microcontroller
• 5-Volt operation
• compatible with automotive power bus
• optional crystal
• standard 6-pin BDM connector
• compatible with USBDMLT low-cost BDM pod
• supported by CodeWarrior MCU v10.6 and higher
• integrated high speed CAN transceiver
• choice of RS232 or TTL levels on SCI1
• 40-pin standard NanoCore12MAX wide DIP format
• standard 0.025" (0.65mm) square pins
• quality 4-layer board
• RoHS-compliant
• industrial temperature range (-40C to +85C)
• OEM pricing available for 100+ units

S12ZVCA192 MCU Features

• powerful S12Z core with linear addressing
• 192K ECC Flash memory
• 2K ECC EEPROM
• 12K ECC RAM
• high-speed CAN physical layer
• 2 high-voltage inputs
• 4-channel open-drain GPIO
• SCI, SPI, IIC
• 4 + 4 16-bit timers (20ns resolution)
• 4 + 3 16-bit PWM channels (20 ns resolution)
• 10 12-bit ADC channels
• 8-bit DAC
• 2 Analog Compare (ACMP) with rail-to-rail inputs
• internal 1 Mhz oscillator
• up to 32Mhz bus speed via PLL

Order Codes

Modules:

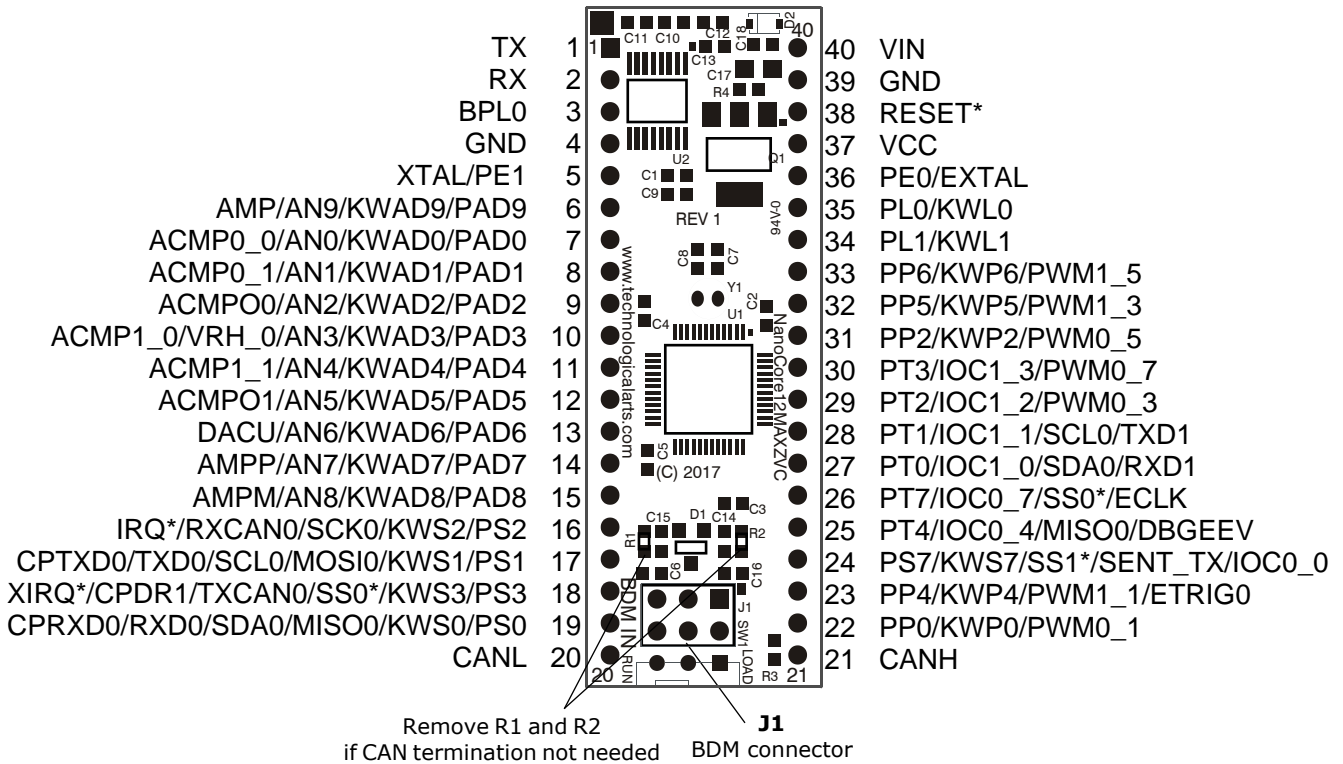|	
NanoCore12MAXZVC with RS232 Interface on SCI1, pre-soldered header pins	**NC12MAXZVCR**
NanoCore12MAXZVC with RS232 Interface on SCI1, no header pins	**NC12MAXZVCR-NP**
NanoCore12MAXZVC with TTL Interface on SCI1, pre-soldered header pins	**NC12MAXZVCT**
NanoCore12MAXZVC with TTL Interface on SCI1, no header pins	**NC12MAXZVCT-NP**

Accessories:

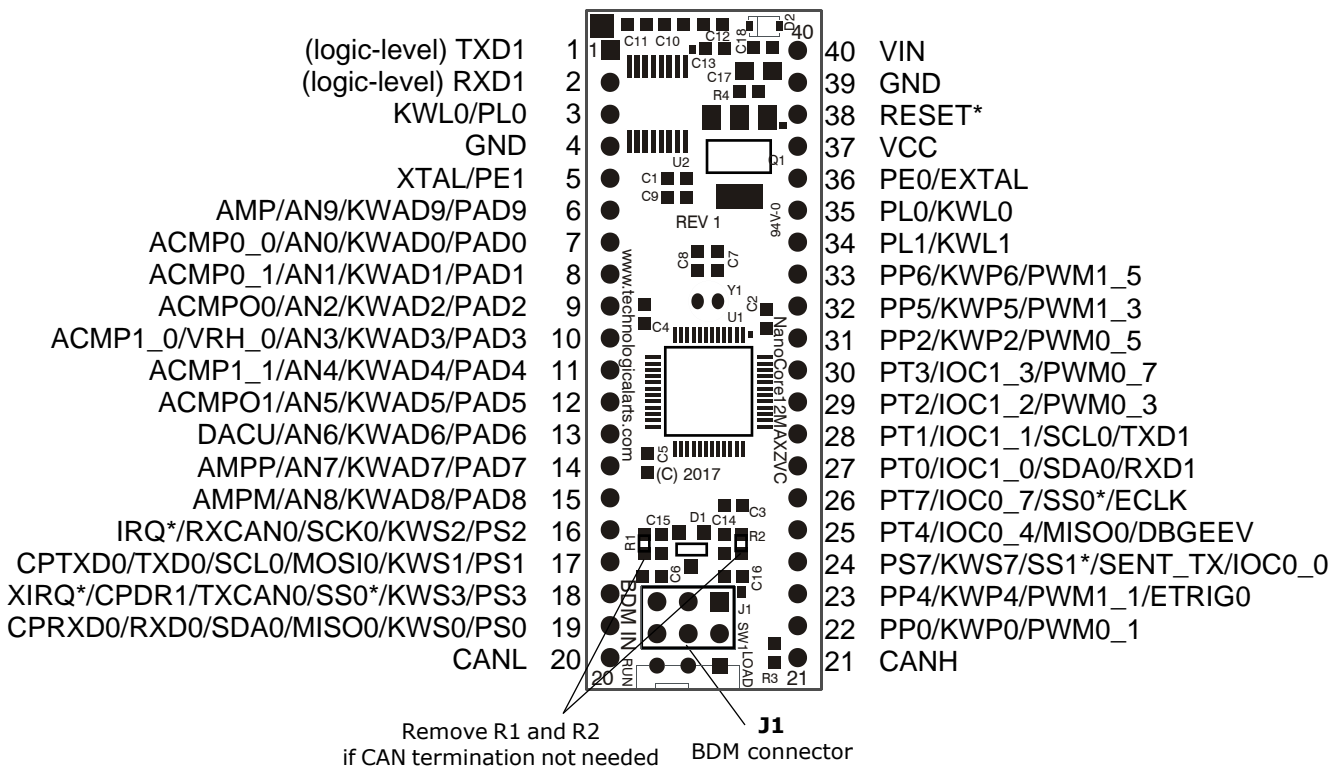|	
School Board for evaluating, teaching, and prototyping with NanoCore12MAXZVC-R	**NC12SB-ZVC**
Breadboard-compatible DB9 connector for quick prototyping with NanoCore12MAXZVC-R	**DB9S2SB4**

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NC12MAXZVCR (RS232 Version)

Left Pin	#		#	Right Pin
TX	1		40	VIN
RX	2		39	GND
BPL0	3		38	RESET*
GND	4		37	VCC
XTAL/PE1	5		36	PE0/EXTAL
AMP/AN9/KWAD9/PAD9	6		35	PL0/KWL0
ACMP0_0/AN0/KWAD0/PAD0	7		34	PL1/KWL1
ACMP0_1/AN1/KWAD1/PAD1	8		33	PP6/KWP6/PWM1_5
ACMPO0/AN2/KWAD2/PAD2	9		32	PP5/KWP5/PWM1_3
ACMP1_0/VRH_0/AN3/KWAD3/PAD3	10		31	PP2/KWP2/PWM0_5
ACMP1_1/AN4/KWAD4/PAD4	11		30	PT3/IOC1_3/PWM0_7
ACMPO1/AN5/KWAD5/PAD5	12		29	PT2/IOC1_2/PWM0_3
DACU/AN6/KWAD6/PAD6	13		28	PT1/IOC1_1/SCL0/TXD1
AMPP/AN7/KWAD7/PAD7	14		27	PT0/IOC1_0/SDA0/RXD1
AMPM/AN8/KWAD8/PAD8	15		26	PT7/IOC0_7/SS0*/ECLK
IRQ*/RXCAN0/SCK0/KWS2/PS2	16		25	PT4/IOC0_4/MISO0/DBGEEV
CPTXD0/TXD0/SCL0/MOSI0/KWS1/PS1	17		24	PS7/KWS7/SS1*/SENT_TX/IOC0_0
XIRQ*/CPDR1/TXCAN0/SS0*/KWS3/PS3	18		23	PP4/KWP4/PWM1_1/ETRIG0
CPRXD0/RXD0/SDA0/MISO0/KWS0/PS0	19		22	PP0/KWP0/PWM0_1
CANL	20		21	CANH

Remove R1 and R2
if CAN termination not needed

J1
BDM connector

NC12MAXZVCT (TTL Version)

Left Pin	#		#	Right Pin
(logic-level) TXD1	1		40	VIN
(logic-level) RXD1	2		39	GND
KWL0/PL0	3		38	RESET*
GND	4		37	VCC
XTAL/PE1	5		36	PE0/EXTAL
AMP/AN9/KWAD9/PAD9	6		35	PL0/KWL0
ACMP0_0/AN0/KWAD0/PAD0	7		34	PL1/KWL1
ACMP0_1/AN1/KWAD1/PAD1	8		33	PP6/KWP6/PWM1_5
ACMPO0/AN2/KWAD2/PAD2	9		32	PP5/KWP5/PWM1_3
ACMP1_0/VRH_0/AN3/KWAD3/PAD3	10		31	PP2/KWP2/PWM0_5
ACMP1_1/AN4/KWAD4/PAD4	11		30	PT3/IOC1_3/PWM0_7
ACMPO1/AN5/KWAD5/PAD5	12		29	PT2/IOC1_2/PWM0_3
DACU/AN6/KWAD6/PAD6	13		28	PT1/IOC1_1/SCL0/TXD1
AMPP/AN7/KWAD7/PAD7	14		27	PT0/IOC1_0/SDA0/RXD1
AMPM/AN8/KWAD8/PAD8	15		26	PT7/IOC0_7/SS0*/ECLK
IRQ*/RXCAN0/SCK0/KWS2/PS2	16		25	PT4/IOC0_4/MISO0/DBGEEV
CPTXD0/TXD0/SCL0/MOSI0/KWS1/PS1	17		24	PS7/KWS7/SS1*/SENT_TX/IOC0_0
XIRQ*/CPDR1/TXCAN0/SS0*/KWS3/PS3	18		23	PP4/KWP4/PWM1_1/ETRIG0
CPRXD0/RXD0/SDA0/MISO0/KWS0/PS0	19		22	PP0/KWP0/PWM0_1
CANL	20		21	CANH

Remove R1 and R2
if CAN termination not needed

J1
BDM connector

Note: PIN1 of all through-hole components
is indicated by square pad on circuit board.

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