MOD5213

Core Module

100 Version

NetBurner

DATASHEET

Key points

- Use as a high-performance single board computer or add to a new or existing design
- Industrial temperature range (-40°C to 85°C)
- Customize with development kit

Device connectivity

- 3 UARTs, I²C, CAN, SPI
- 33 digital I/Os
- Eight 12-bit analog-to-digital converters (ADC)
- Eight pulse width modulators (PWM)

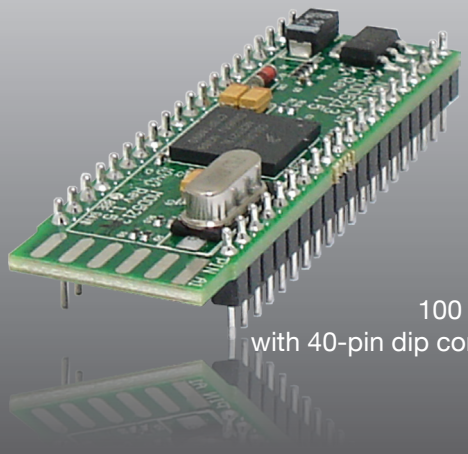
Performance and memory

- 32-bit 66 MHz processor
- 32KB SDRAM and 256KB Flash

Companion development kit

The following is available with the development kit:

- Customize any aspect of operation including data filtering, or custom applications
- Development software: NB Eclipse IDE, graphical debugger, deployment tools, and examples
- System software: uC/OS RTOS, ANSI C/C++ compiler and linker



100 Version
with 40-pin dip connector

Specifications

Processor
32-bit Freescale ColdFire 5213 CPU running at 66MHz

Data I/O Interface (P1)
- Up to 3 UARTs
- Up to 1 I²C
- Up to 1 CAN 2.0b controller
- Up to 1 SPI
- Up to 33 digital I/O
- Up to eight 12-bit analog-to-digital converters (ADC)
- Up to 8 pulse width modulators (PWM)
- Up to 4 external timer in or outputs
- Up to 3 external IRQs
- Up to 4 general purpose timers (GPT)

Serial Configurations
The UARTs can be configured in the following way:
- Up to 3 TTL ports
- Add external level shifter for RS-232
- Add external level shifter for RS-422/485 (up to one port)

Note: UART 1 also provides RTS/CTS hardware handshaking signals.

Physical Characteristics
Form Factor: Industry Standard 40-pin DIP (two standard single row 20-pin 0.1” headers)
Dimensions: 2.24” x .700”

Power
DC Input Voltage: 5V – 7V, or 3.3V Regulated
Max Operating Current: 120mA

Environmental Operating Temperature
-40° to 85° C

RoHS Compliance
The Restriction of Hazardous Substances guidelines ensure that electronics are manufactured with fewer environment harming materials.

Part Numbers

MOD5213 Core Module
Part Number: MOD5213-100IR

MOD5213 Development Kit
Part Number: NNDK-MOD5213-KIT
Kit includes all the hardware and software you need to customize the included platform hardware. See NetBurner Store product page for package contents.

Ordering Information

E-mail: sales@netburner.com
Online Store: www.NetBurner.com
Telephone: 1-800-695-6828

Pinout and Signal Description

The module has two 20-pin connectors that connect to one of our standard NetBurner development carrier boards, or a board you create on your own. Table 1 provides pin function descriptions of the module connector. Refrence Freescale Manual for CPU pin function details.

Table 1: **Pinout and Signal Descriptions for JP1 Connector** (1)

JP1 Connector							
Pin	**CPU Pin**	**Function 1**	**Function 2**	**Function 3**	**General Purpose I/0**	**Description**	**Max Voltage**
1	A3	$\overline{\text{RESET}}$				Processor Reset Input[2]	3.3VDC
2	D1	UART0_RX			Yes	UART 0 Receive	3.3VDC
3	D2	UART0_TX			Yes	UART 0 Transmit	3.3VDC
4	E2	I2C_SDA	CAN_RX	UART2_RX	Yes	I²C Serial Data or CAN Receive or UART 2 Receive	3.3VDC
5	E1	I2C_SCL	CAN_TX	UART2_TX	Yes	I²C Serial Clock or CAN Transmit or UART 2 Transmit	3.3VDC
6	C6	$\overline{\text{IRQ1}}$	SYNCA	PWM1	Yes	External Interrupt 1 or External Timer Clock Input A or PWM 1 Ouput Signal/Input Capture	3.3VDC
7	C5	$\overline{\text{IRQ4}}$			Yes	Externat Interrupt 4	3.3VDC
8	C4	$\overline{\text{IRQ7}}$			Yes	Externat Interrupt 7	3.3VDC
9	H8	VDDA				ADC Voltage Supply	3.3VDC
10	J8	VRH				ADC Reference Voltage High Input	3.3VDC
11	G6	ADC_IN2			Yes	Analog to Digital Converter Input 2	3.3VDC
12	H6	ADC_IN1			Yes	Analog to Digital Converter Input 1	3.3VDC
13	J6	ADC_IN0			Yes	Analog to Digital Converter Input 0	3.3VDC
14	G7	ADC_IN3			Yes	Analog to Digital Converter Input 3	3.3VDC
15	H9	ADC_IN7			Yes	Analog to Digital Converter Input 7	3.3VDC
16	G9	ADC_IN6			Yes	Analog to Digital Converter Input 6	3.3VDC
17	G8	ADC_IN5			Yes	Analog to Digital Converter Input 5	3.3VDC
18	F9	ADC_IN4			Yes	Analog to Digital Converter Input 4	3.3VDC
19	H7 J9	VSSA/VRL				ADC Reference Ground	-
20	J1	VSS				Core Ground	-
21	H3	T3IN	T3OUT	PWM6	Yes	Timer Input 3 or Timer Output 3 or PWM 6 Ouput Signal/Input Capture	3.3VDC
22	J3	T2IN	T2OUT	PWM4	Yes	Timer Input 2 or Timer Output 2 or PWM 4 Ouput Signal/Input Capture	3.3VDC
23	G4	T1IN	T1OUT	PWM2	Yes	Timer Input 1 or Timer Output 1 or PWM 2 Ouput Signal/Input Capture	3.3VDC
24	H4	T0IN	T0OUT	PWM0	Yes	Timer Input 0 or Timer Output 0 or PWM 0 Ouput Signal/Input Capture	3.3VDC
25	D8	GPT3		PWM7	Yes	General Purpose Timer 3 or PWM 7 Ouput Signal/Input Capture	3.3VDC
26	D9	GPT2		PWM5	Yes	General Purpose Timer 2 or PWM 5 Ouput Signal/Input Capture	3.3VDC
27	E9	GPT1		PWM3	Yes	General Purpose Timer 1 or PWM 3 Ouput Signal/Input Capture	3.3VDC

JP1 Connector							
28	F7	GPT0		PWM1	Yes	General Purpose Timer 0 or PWM 1 Ouput Signal/Input Capture	3.3VDC
29	B2	UART1_RX			Yes	UART 1 Receive	3.3VDC
30	A2	UART1_TX			Yes	UART 1 Transmit	3.3VDC
31	C3	$\overline{\text{UART1\_CTS}}$	SYNCA	UART2_RX	Yes	UART 1 Clear To Send or External Timer Clock Input A or UART 2 Receive	3.3VDC
32	B1	$\overline{\text{UART1\_RTS}}$	SYNCB	UART2_TX	Yes	UART 1 Request To Send or External Timer Clock Input B or UART 2 Transmit	3.3VDC
33	F2	$\overline{\text{SPI\_CS2}}$			Yes	SPI Chip Select 2[3]	3.3VDC
34	H2	$\overline{\text{SPI\_CS1}}$			Yes	SPI Chip Select 1[3]	3.3VDC
35	H1	$\overline{\text{SPI\_CS0}}$	SDA	$\overline{\text{UART1\_CTS}}$	Yes	SPI Chip Select 0[3] or I²C Serial Data or UART 1 Clear To Send	3.3VDC
36	G1	SPI_DOUT	CAN_TX	UART1_TX	Yes	SPI Data Out or CAN Transmit or UART 1 Transmit	3.3VDC
37	F3	SPI_DIN	CAN_RX	UART1_RX	Yes	SPI Data In or CAN Receive or UART 1 Receive	3.3VDC
38	G2	SPI_CLK	SCL	$\overline{\text{UART1\_RTS}}$	Yes	SPI Clock or I²C Serial Clock or UART 1 Request To Send[2]	3.3VDC
39	E3	VCC3V				Input Power 3.3 VDC	3.3VDC
40		Unregulated				Input Power 5-7 VDC	5-7VDC

Note:
1. Active low signals, such as $\overline{\text{RESET}}$, are indicated with an overbar.
2. Has an internal pull-up resistor; however, the use of an external resistor is very strongly recommended.
3. SPI_CSx can be configured as active high or low.

Mouser Electronics

Authorized Distributor

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