



DIMITECH

DTX2-4008C

Banguino

8-bit Processing Module
Arduino-Compatible

DATA SHEET

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1. Overview

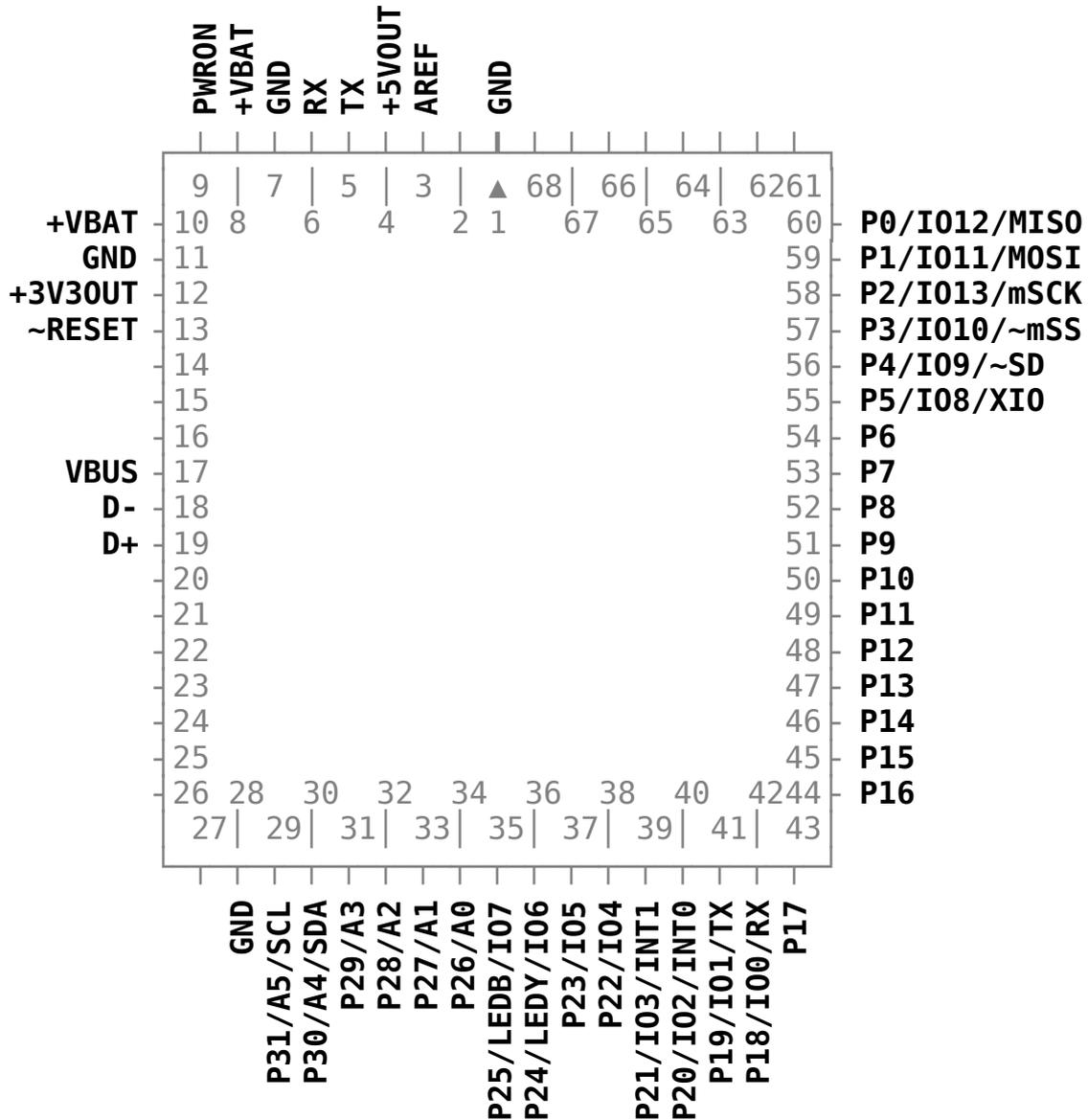
Feature Highlights

68-pin device in standard PLCC68 package; three possible ways of PCB mounting
DTX bus pin-compatible (**5V logic levels**)
Wide range input 5-20V DC power supply with capability of provision to external circuit
Fully self-contained – does not need any external components to run
“Arduino Uno[®]”-compatible
Up to 30 I/O lines plus two dedicated analogue inputs
microSD card connector on board
Five built-in LEDs, two of which accessible by software
Tag-Connect[®] pads on board for bootloader/firmware programming
RoHS compliant

Typical Applications

- Hobby and academic projects
- Robotics and various toys
- Automotive and industrial automation devices
- Portable electronics
- Data logging

2. Pinout



Pinout Summary

Pin	Name	Type	Description
1	GND	P	Ground
2			No connection
3	AREF	I	Analogue reference voltage
4	+5VOUT	P	+5V output from the internal regulator; can be used to supply power to external components and circuits

5	TX	O	UART "data transmit" line
6	RX	I	UART "data receive" line
7	GND	P	Ground
8	+VBAT	P	Positive power lead
9	PWRON	I	Power enabling input (can be connected directly to +VBAT); active high
10	+VBAT	P	Positive power lead
11	GND	P	Ground
12	+3V3OUT	P	+3.3V output from the internal regulator; can be used to supply power to external components and circuits
13	~RESET	I,5V	$\overline{\text{RESET}}$ line; internally biased to +5V
14			No connection
15			No connection
16			No connection
17	VBUS	I,5V	I/O port or USB Vbus power detection input
18	D-	I,O	I/O port or USB D- line
19	D+	I,O	I/O port or USB D+ line
20			No connection
21			No connection
22			No connection
23			No connection
24			No connection
25			No connection
26			No connection
27			No connection
28	GND	P	Ground
29	P31/A5/SCL	A,I,O,5V	General purpose A/I/O port; I ² C SCL line A5/SCL in Arduino
30	P30/A4/SDA	A,I,O,5V	General purpose A/I/O port; I ² C SDA line A4/SDA in Arduino
31	P29/A3	A,I,O,5V	General purpose A/I/O port A3 in Arduino
32	P28/A2	A,I,O,5V	General purpose A/I/O port A2 in Arduino
33	P27/A1	A,I,O,5V	General purpose A/I/O port A1 in Arduino
34	P26/A0	A,I,O,5V	General purpose A/I/O port A0 in Arduino
35	P25/LEDB/IO7	I,O,5V	General purpose I/O port; Blue LED IO7 in Arduino

36	P24/LEDY/IO6	I,O,5V	General purpose I/O port; Yellow LED <i>IO6 in Arduino</i>
37	P23/IO5	I,O,5V	General purpose I/O port <i>IO5 in Arduino</i>
38	P22/IO4	I,O,5V	General purpose I/O port <i>IO4 in Arduino</i>
39	P21/IO3/INT1	I,O,5V	General purpose I/O port <i>IO3/INT1 in Arduino</i>
40	P20/IO2/INT0	I,O,5V	General purpose I/O port <i>IO2/INT0 in Arduino</i>
41	P19/IO1/TX	I,O,5V	General purpose I/O port <i>IO1/TX in Arduino</i>
42	P18/IO0/RX	I,O,5V	General purpose I/O port <i>IO0/RX in Arduino</i>
43	P17	A	Dedicated ADC7 input
44	P16	A	Dedicated ADC6 input
45	P15	I,OD,5V	General purpose I/OD port <i>available through the SPI I/O expander</i>
46	P14	I,OD,5V	General purpose I/OD port <i>available through the SPI I/O expander</i>
47	P13	I,OD,5V	General purpose I/OD port <i>available through the SPI I/O expander</i>
48	P12	I,OD,5V	General purpose I/OD port <i>available through the SPI I/O expander</i>
49	P11	I,OD,5V	General purpose I/OD port <i>available through the SPI I/O expander</i>
50	P10	I,OD,5V	General purpose I/OD port <i>available through the SPI I/O expander</i>
51	P9	I,OD,5V	General purpose I/OD port <i>available through the SPI I/O expander</i>
52	P8	I,OD,5V	General purpose I/OD port <i>available through the SPI I/O expander</i>
53	P7	I,OD,5V	General purpose I/OD port <i>available through the SPI I/O expander</i>
54	P6	I,OD,5V	General purpose I/OD port <i>available through the SPI I/O expander</i>
55	P5/IO8/XIO	I,O,5V	General purpose I/O port high level selects the SPI I/O expander <i>[IO8 in Arduino]</i>
56	P4/IO9/~SD	I,O,5V	General purpose I/O port low level selects the SPI uSD card <i>[IO9 in Arduino]</i>
57	P3/IO10/~mSS	I,O,5V	General purpose I/O port <i>IO10/SS in Arduino</i>

58	P2/IO13/mSCK	I,O,5V	General purpose I/O port <i>IO13/SCK in Arduino</i>
59	P1/IO11/MOSI	I,O,5V	General purpose I/O port <i>IO11/MOSI in Arduino</i>
60	P0/IO12/MISO	I,O,5V	General purpose I/O port <i>IO12/MISO in Arduino</i>
61			No connection
62			No connection
63			No connection
64			No connection
65			No connection
66			No connection
67			No connection
68			No connection

Legend:

I – input with CMOS level

A – analogue input

O – digital output

P – power pin

5V – 5 volt tolerant pin

OD – open drain output

Errata information concerning the earliest batch of boards only

1. Extra I/O ports provided by U4 cannot be read but only written

2. LED5 is missing

Programming note

Banguino comes with pre-loaded bootloader. Auto-reset feature is currently not supported and the board must be placed in reset state immediately before uploading a new sketch through the bootloader. Resetting the board too early or too late will result in an error generated by the Arduino IDE uploading module.

3. Electrical Parameters

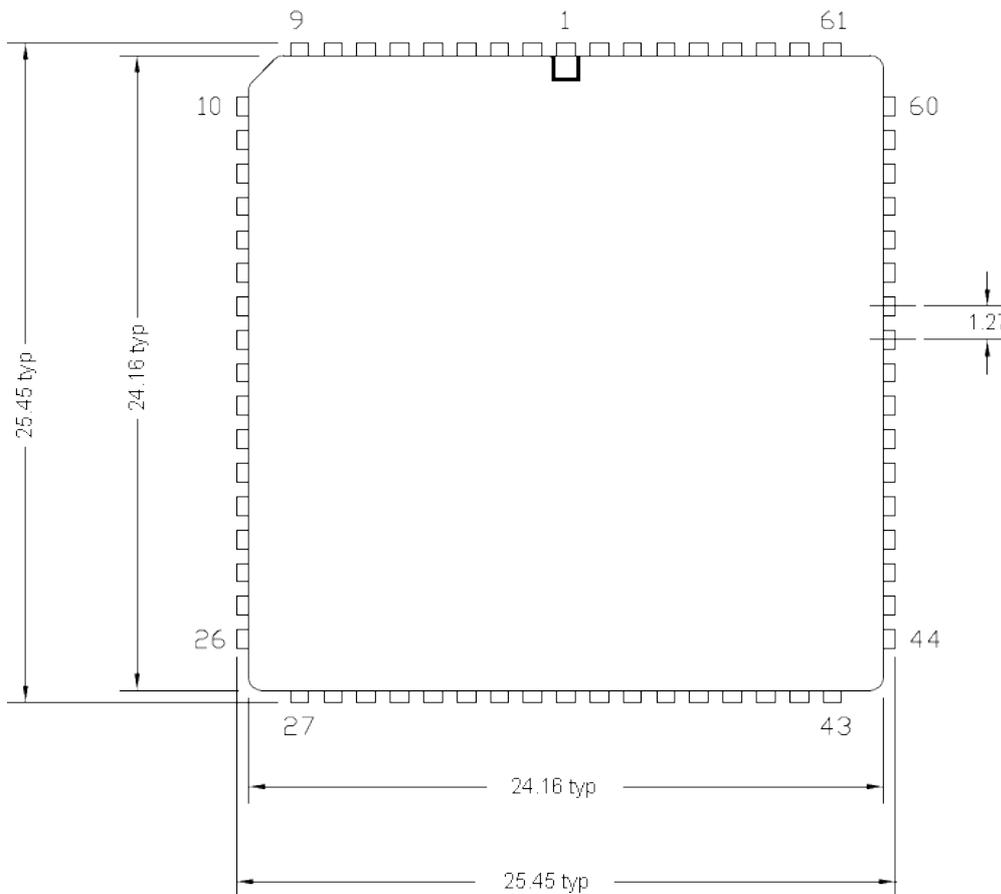
ABSOLUTE MAXIMUM RATINGS:

Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

parameter	min	typ	max	units
Power supply voltage range, pin +VBAT with respect to GND	5	9	20	V
Safe load on +5VOUT pin			400	mA
Safe load on +3V3OUT pin			80	mA
Parameters of all other functional pins	According to function and IC manufacturer's recommendation			
Operating free-air temperature range	-20		+85	°C
Storage temperature range	-40		+90	°C

4. Mechanical Parameters

Note: All dimensions are given in millimetres



Dimitech Pty Ltd provides CAD schematic symbols and PCB footprints for the DTX series modules. For more information please visit our website: <http://www.dimitech.com/>.