

Iteadmaple 1.0



Overview

Iteadmaple is a microcontroller board based on Leaf Maple. The Iteadmaple can achieve the maximum 72 MHz, it has 39 digital input/output pins, 16 analog inputs, native full speed USB, 3 USARTs (hardware serial ports), integrated SPI/I2C support, with power jack, and reset button. Iteadmaple is programmable over USB via a provided DFU bootloader, no extra hardware required! Users can also program the onboard program flash via external X-link/X-linkEx JTAG interface. Iteadmaple offers security support for read/write protected addresses, as well as User and Handler processor modes. Iteadmaple can be powered by USB or external power supply.

Basic features

- 72MHz ARM Cortex M3 core; 20KB SRAM and 128KB Flash
- 64 channel nested vector interrupt handle
- 7 channels of Direct Memory Access(DMA)
- Wide range external input from and USB supply adaptive
- Maple pins map full compatible for Arduino shield
- X-link/X-linkEx full compatible

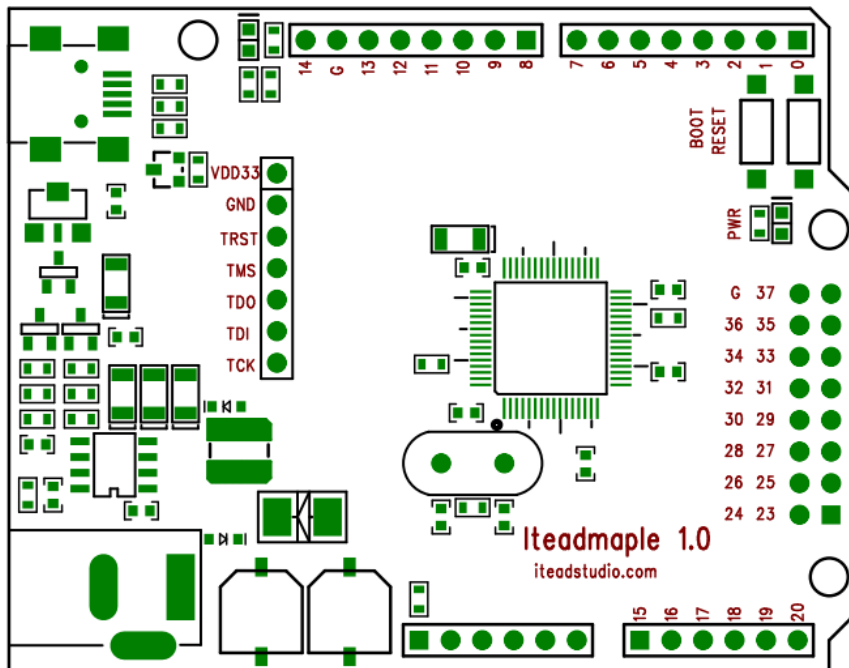
Specifications

Microprocessor	STM32F103RB
PCB size	10mm X 82mm X 1.6mm
Indicators	Power,D13
Power supply(recommended)	6-23V DC
Power supply(limits)	23 VDC (max)
Communication Protocol	UART,SPI,IIC
Clock Speed	8~72MHz
RoHS	Yes

Electrical Characteristics

Specification	Min	Type	Max	Unit
Input voltage	7	-	23	VDC
Operating Voltage	-	3.3/5	-	VDC
DC Current per I/O Pin	-	15	-	mA

Hardware



Pin Map array

Pin	STM32	ADC	Timer	IIC	UART	SPI	5V
D0	PA3	ADC3	T2_C4	-	U2_RX	-	N
D1	PA2	ADC2	T2_C3	-	U2_TX	-	N
D2	PA0	ADC0	T2_C1	-	U2CTS	-	N
D3	PA1	ADC1	T2_C2	-	U2RTS	-	N
D4	PB5	-	-	I2C1_SMBAL	-	-	N
D5	PB6	-	T4_C1	I2C1_SCL	-	-	Y
D6	PA8	-	T1_C1	-	U1_CK	-	Y
D7	PA9	-	T1_C2	-	U1_TX	-	Y
D8	PA10	-	T1_C3	-	U1_RX	-	Y
D9	PB7	-	T4_C2	I2C1_SDA	-	-	Y
D10	PA4	ADC4	-	-	U2_CK	S1NSS	N
D11	PA7	ADC7	T3_C2	-	-	S1MO	N
D12	PA6	ADC6	T3_C1	-	-	S1MI	N
D13	PA5	ADC5	-	-	-	S1SCK	N
D14	PB8	-	T4_C3	-	-	-	Y
D15	PC0	ADC10	-	-	-	-	N
D16	PC1	ADC11	-	-	-	-	N
D17	PC2	ADC12	-	-	-	-	N
D18	PC3	ADC13	-	-	-	-	N
D19	PC4	ADC14	-	-	-	-	N
D20	PC5	ADC15	-	-	-	-	N
D23	PC15	-	-	-	-	-	N
D24	PB9	-	T4_C4	-	-	-	Y
D25	PD2	-	T3ETR	-	-	-	Y
D26	PC10	-	-	-	-	-	Y
D27	PB0	ADC8	T3_C3	-	-	-	N
D28	PB1	ADC9	T3_C4	-	-	-	N
D29	PB10	-	-	I2C2_SCL	U3_TX	-	Y
D30	PB11	-	-	I2C2_SDA	U3_RX	-	Y
D31	PB12	-	T1BKIN	I2C2_SMBAL	U3_CK	S2NSS	Y
D32	PB13	-	T1C1N	-	U3CTS	S2SCK	Y
D33	PB14	-	T1C2N	-	U3RTS	S2MI	Y
D34	PB15	-	T1C3N	-	-	S2MO	Y
D35	PC6	-	-	-	-	-	Y
D36	PC7	-	-	-	-	-	Y
D37	PC8	-	-	-	-	-	Y

More about Maple

- <http://leaflabs.com/devices/maple/> : The introduction of Maple from Leaflabs.com.
- <http://leaflabs.com/docs/ide.html> : The introduction of Maple IDE and example code.

What are the changes from Maple to Iteadmaple

1. Auto USB/ External power switch
2. Easier access to reset button
3. Re-route PCB for analog/digital part
4. Wide range external input from 6-23V
5. An X-link/X-linkEx JTAG interface.

Programming

Iteadmaple can be programmed using an Arduino-style, sketch-based programming environment, which is open-source and can be downloaded online at our website. The Cortex-M3 on Iteadmaple comes pre-programmed with a boot-loader – allowing users to upload new code onto it using the USB interface (supported directly by the Cortex-M3), without the need for an external hardware programmer. You can also program the microcontroller directly with an external JTAG interface.

Links and References

- Itead Studio Site: iteadstudio.com

- Maple site: <http://leaflabs.com>

Revision History

Rev.	Description	Release date
v1.0	Initial version	2011-9-5