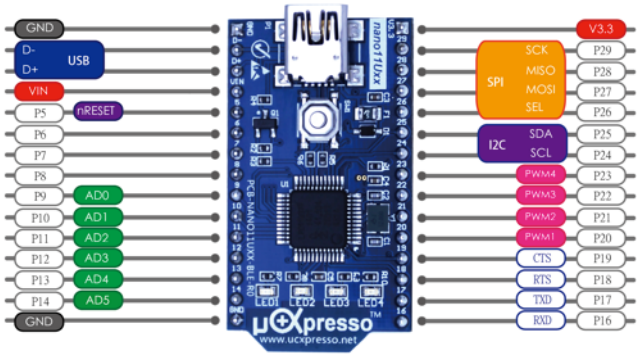
nano11U37-BLE

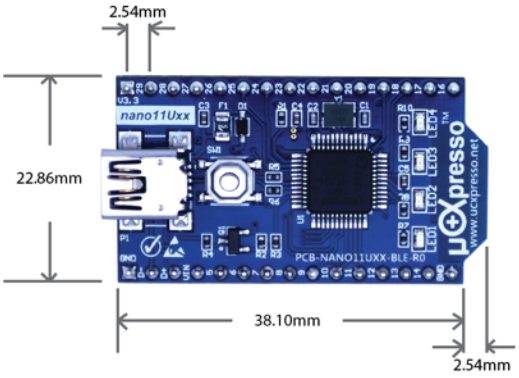
Pin Configurations



Overview

The nano11U37-BLE is small RTOS module and includes the Bluetooth Low Energy (BLE) features. This module platform provides the Real-Time and Multi-Tasking to handle the BLE transceiver in the background and works with your applications together. The nano11U37-BLE also provides the uCXpresso C/C++ framework to easy to make your RTOS & BLE applications in the Object-Oriented concept, and works on the free charge of LPCXpresso IDE (Eclipse).

Dimension:



uCXpresso.BLE RTOS C++ Framework

- Kernel : FreeRTOS v8.x and later
- Driver Class Library : CPin , CBus, SPI, I2C, CAdc, Serial, bleSerial, bleProximity, bleBattery ...
- RTOS Class Library : CThread, CSemaphore, CMutex, CMailBox, Gabrage Collector ...
- Advanced Memory Management.

Specification

NXP LPC11U37	Bluetooth Low Energy (BT 4.0)
● ARM Cortex-M0 / 48MHz ● 128K Flash Code Size (User's code size 120KB) ● 8K RAM Size + 2KB USB RAM buffer ● 4K EEPROM (100000~1000000 write cycles) ● Full Speed USB CDC/MSC Supported ● GPIO x 24, Flex Interrupt x 8 ● ADC x 6 (10 bits) ● PWM x 4 (Frequency Range 20Hz ~ 25KHz) ● SPI x 1 (Max 25Mb/s) ● I2C x 1 (Max 400KHz) ● UART x 1 (with RTS/CTS, Max 115200bps)	● Full Bluetooth v4.0 low energy compliant ● 0、-6、-12 and -18dBm programmable Tx Power ● 1Mb on air data rate ● -87dBm RX sensitivity at 1Mbps ● Excellent co-existence performance ● LL, L2CAP, GAP, SM, ATT and GATT mandatory ● GATT Client and GATT ● Full Bluetooth Qualified
On Board Temperature Sensor (for nano11U37-BLE) On Board Voltage Monitor (for nano11U37-BLE) Power-On Reset (POR) Temperature range - 20 ° C to +70 ° C.	

Three ways to provide the power:

	PIN	Voltage Range	Power Consumption
Mini USB		DC 5.0V	Active : 20mA / Power Save: <4mA
VIN	P4	DC 5.0~9.0V	Active : 20mA / Power Save: <4mA @DC5V
V3.3	P30	DC 3.3V (2.0~3.6V)	Active : 15~20mA / Power Save: <100uA [1]

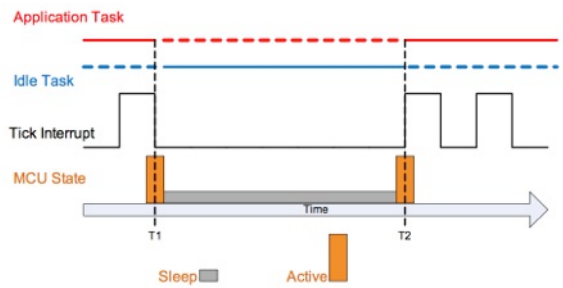
Note:

It depends on your hardware design. As the result, the power will be lower than 1mA, and take advantage of the Tickless Low Power Feature.

Multiple BLE Operating Simultaneously (V2)

Service	Characteristic	UUID	AIR	Size	Descriptions
Device Name			Adv.	16	
UART		6E400001-B5A3-F393-E0A9-E50E24DCCA9E			
	RXD	6E400002-B5A3-F393-E0A9-E50E24DCCA9E	D < H	20	Write
	TXD	6E400003-B5A3-F393-E0A9-E50E24DCCA9E	D > H	20	Notify
Battery		180F			
	Battery Level	2A19	D > H	1	0~100 (%)
Health Therm.		1809	Adv.		
	Temp. Measure.	2A1C	D > H	4	Indicate
	Temp. Type	2A1D	D > H	1	Read
	Measure. Interval	2A21	D > H	2	Read
Heart Rate		180D	Adv		
	Measurement	2A37	D > H	19	Notify
	Sensor Location	2A38	D > H	1	Read
	Control Point	2A39	D < H	1	Write
Tx Power		1804	Adv.		
	Tx Power Level	2A07	D > H	1	Read, +20 ~ -100
RSC		1814	Adv.		
	Measurement	2A53	D > H	10	Notify
	Feature	2A54	D > H	2	Read
CSC		1816			
	Measurement	2A5B	D > H	11	Notify
	Feature	2A5C	D > H	2	Read
Device Info.		180A			
	Model Number Str	2A24	D > H	12	Read
	Serial Number Str	2A25	D > H	10	Read
	Hardware Rev. Str	2A27	D > H	2	Read
	Firmware Rev. Str	2A26	D > H	8	Read
	Manufacture Name	2A29	D > H	20	Read
Reserve For ODM					

Low Power Strategies (Tickless Technology)



The Tickless Technology stops the periodic main clock (Enter to Deep-Sleep or Power-Down mode) during idle periods (periods when there are no application tasks that are able to execute), then makes a correcting adjustment to the RTOS tick count value when the main clock is restarted. Repeats the ON and OFF to save the power and keep the system in Activity.

Order Information

P/N	Flash / RAM	BLE	Supply Voltage (DC)	Operation Temperature Range
nano11U37-BLE	128 KB / (8+2) KB	1	Pin 30 : 2.0 ~ 3.6V or Pin 4 : 5.0 ~ 9.0V	-20 ~ +70 ℃ (Commerce Grade)
nano11U37-00		0	Pin 30 : 2.0 ~ 3.6V or Pin 4 : 5.0 ~ 9.0V	
nano11U37I-BLE		1	Pin 30 : 2.0 ~ 3.6V or Pin 4 : 5.0 ~ 9.0V	-40 ~ +85 ℃ [2] (Industry Grade)
nano11U37I-00		0	Pin 30 : 2.0 ~ 3.6V or Pin 4 : 5.0 ~ 9.0V	