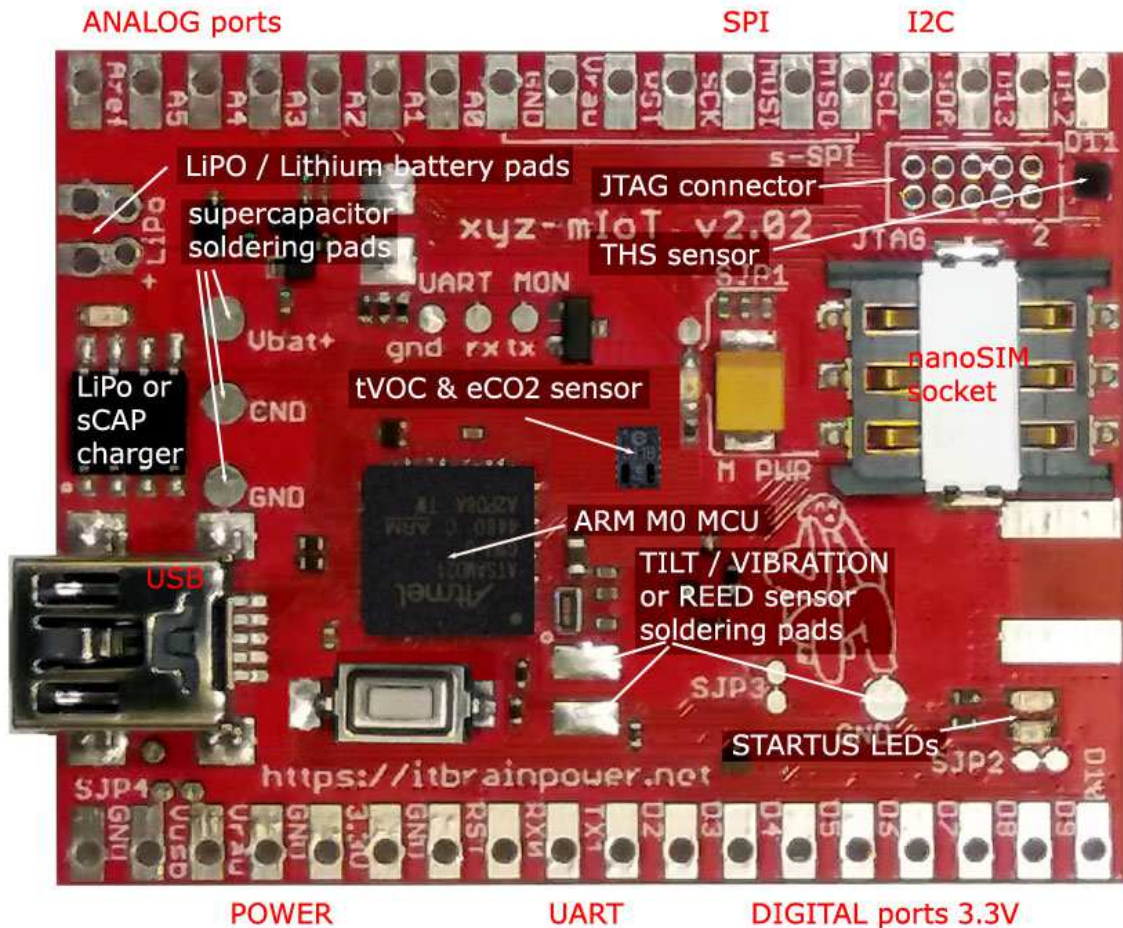


xyz-mIoT v2.09 by itbrainpower.net – IoT sensor platform w. LPWR LTE modem

itbrainpower.net xyz-mIoT it is the worldwide first and most compact board in this class, that combines the functionality of the ATSAMd21G ARM0 microcontroller (Arduino Zero compatible design), THS + tVOC + HALL + IR + tilt / vibration sensors bundled and global LPWR LTE (CATM1 or NB-IoT) / 3G / GSM connectivity.



In addition to already embedded sensors, the abundance of interfaces [I2C, SPI, UART, 13 digital I/O – 1WIRE and PWM capable, 5 analog inputs and more] combined with the power and the versatility of the ARM0 core provides endless devices / sensors / actuators interfacing IoT solution.

ARDUINO (arduino.cc v >= 1.8.5) programming support offers fast IoT to CLOUD integration time



Multiple LPWR LTE /3G /GSM modem options are available for your choice, covering your project budget and requirements. All GSM/3G/LPR LTE models share the very same 4.5x3.5cm unified design.



Multiple powering profiles are supported, as: LiPO, super-capacitor, 5V direct powering, power-harvesting mode [Eg.: small solar cell] and Lithium primer battery.

Beyond obvious target applications (smart modems with “last-gasp”, access control and environment monitoring for IoT gateways, air quality monitoring, smart metering, smart machinery for legacy controllers, smart bees farming (hives monitoring), smart city applications, security & tracking, emergency pagers, other...), itbrainpower.net xyz-mIoT is the ideal solution for integrators and DIY fans wanting to design and deploy in a timely manner their LPWR LTE (CAT M1 and NB-IoT) IoT projects regardless previous experience in modems and network technology.

Industrial Embedded SIM enables support for high volume MNO oriented solution.

xyz-mIoT modules are designed and manufactured in EU (Romania).

itbrainpower.net xyz-mIoT brief technical specifications:

Microcontroller	SAMD21 Cortex-M0+ 32bit low power ARM MCU
Power Supply (USB / VIN / Vcc)	5V / 5-7V / 3.6-4.2V
Supported LiPo Battery (integrated charger)	3.7V LiPo
Interfacing Voltage	3.3V
Digital I/O Pins	13
PWM Pins	12
UART (hardware)	1
SPI (hardware)	1
I2C (hardware)	1
Analog Input Pins	5 (ADC 8/10/12 bit)
External Interrupts	8
DC Current per I/O Pin	7 mA
Flash Memory / SRAM	256 KB / 32KB
Clock Speed	32.768 kHz (RTC), 48 MHz

On board Sensors (mix and match):

DHT sensor (optional)	HDC2010 (Temperature $\pm 0.2^{\circ}\text{C}$ typ. / Humidity $\pm 2\%$)
tVOC & eCO ₂ sensor (optional)	CCS811 (CO ₂ 400-8192ppm / tVOC 0-1187ppb)
HALL or IR sensor (optional)	DRV5032 or KP-2012P3C (IR 940 nM)
second IR sensor (optional)	KP-2012P3C (IR 940 nM)
TILT or REED sensor (optional)	SW200D (± 15 degree) / REED

LPWR LTE / 3G / GSM options:

2G modem	M95FA (quad band GSM, ww* coverage)
3G modem	UG96 (3G ww* + GSM900 + GSM 1800)
LTE CAT M1 modem	BG96 (LTE CAT M1 + NB IoT + GSM ww*)
LTE NB IoT modem	BC95G (NB IoT ww*)
Industrial Embedded SIM (optional)	VQFN-8 5.00*6.00 mm (Eg: SLM76CF3201P)

* ww - worldwide

GPS options:

GNSS [GPS + GLONASS] only for LTE CAT M1 variant; having *AAPM

* AAPM – active antenna power management

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