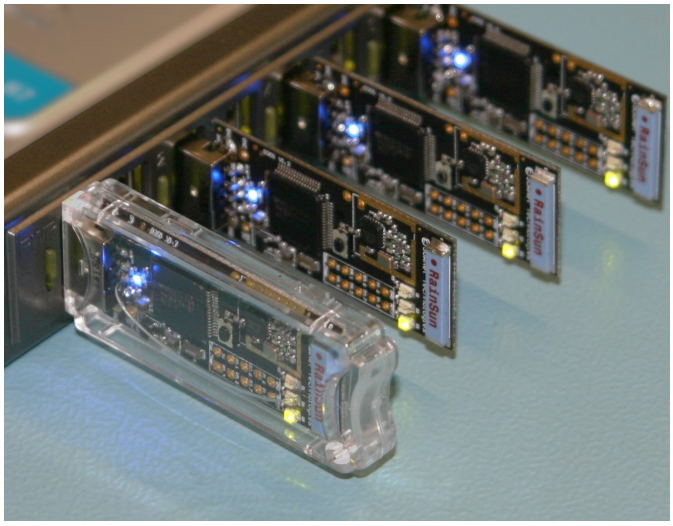
SOWNet technologies

SOWNet Technologies G-Node G301 Wireless Sensor Node

The SOWNet Technologies G-Node G301 is a latest technology Wireless Sensor Node featuring a packet radio, 16MHz top speed, 8KB RAM and 116KB ROM while still offering very low power consumption. The integrated USB re-programming capability and onboard antenna make the G-Node an all inclusive package, with only USB or battery power required to make it fully operational. Whether you want to experiment with wireless technology or make existing sensor technology wireless, the G-Node can do it all at a low price.



The SOWNet Technologies G-Node Wireless Sensor Node is a step forward in key aspects compared to our previous T -Node Wireless Sensor Node.

- Integrated USB programming capability
- Texas Instruments CC1101 packet radio
- Texas Instruments microcontroller with more RAM
- On-board antenna with decent range
- Higher maximum clock speed
- Small USB stick form factor with optional casing

While keeping all the good properties of the original

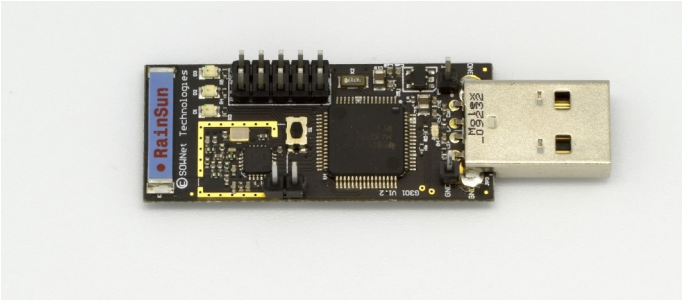
- Very low sleep current with wake-up timer running
- 3 debugging LEDs
- Switch for testing purposes or special function
- External flash chip for additional storage
- I/O pins for freedom of connectivity

With **8KB RAM, 116KB ROM and 16MHz top speed** the SOWNet G-Node G301 stands its ground. Allowing the platform to run and scale up even with more demanding (routing) protocols and applications. The USB programming feature does not take up any ROM, allowing all memory to be used for the application itself.

The G-Node is part of the SOWNet Technologies L-Nodes platform which is **fully supported in TinyOS 2.0**. A DVD with fully installed virtual machine containing the required platform definition files, programming tools, compiler and library support will get your first application up and running very quickly. The DVD also includes a step-by-step manual of how to run the virtual machine and get started developing for the L-Nodes platform.
If you need to have an application developed, please contact us with your project offer and requirements.

The USB connection can also be used as a bidirectional UART connection allowing **quick debugging and data logging**. The G-Node has been developed in cooperation with the Technical University of Delft and is used as the corner stone of their new Wireless Sensor Node Testbed consisting of 100 G-Nodes. For more information, please see our T301 Testbed product whitepaper.

The best feature of the G-Node is its price. For just € 129,- (or even less, check the website for current offers) you can buy our development kit consisting of 2 x G-Node and the getting started DVD containing the manual and all the development tools you will need. The G-Node is in production and in stock, so order you development kit today and we will ship your purchase out to you as soon as possible.



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SOWNet G-Node G301

Key Features

Main features:	- Texas Instruments MSP430F2418 microcontroller - Texas Instruments CC1101 radio chip - FTDI FT232RQ USB chip - 116 KB ROM - 8 KB RAM - 256B internal + AT45DB081D 8Mbit external FLASH
Communication:	- Output power can scale from +10dBm to –30dBm - Optimized for high density multi-hop usage - 10 to 20 m Indoor use*, over 30m in free space (+10dBm) - Over 400m possible with passive antenna, 112dBm receiver sensitivity - 0.8kbps up to 500 kbps data rates possible *exact range dependant on building structure and environment
Sensing:	- Internal temperature sensor of microcontroller - 12 bit ADC (1 channel external, contact us for more)
Interfaces:	- 9 I/O pins: SPI/I2C (3), UART (2), Interrupt (2), ADC (2) - 2 pins for powering sensors: 3V (max. 70 mA), GND - 3 user programmable LEDs, 1 USB power LED - USB connection (reprogrammable over both USB and JTAG)

Technical Specifications

Physical	
Housing:	Transparent ABS available
Colour:	Black PCB
Dimensions:	60 x 6 x 19 mm (wxhxd)
Weight (packed):	Less than 10 g
Environment:	Temp. -10° to 50°C
	RH 10% to 90% - non condensing
Antenna:	Onboard, connection can be used for external antenna
Electrical	
Input Voltage:	5V DC through USB
Battery:	Battery connector for 1.8-3.6V input
Battery life time:	>3 months (2xAAA 1000mAh, 1% duty cycle/400 µA avg.)
USB Supply current:	2 µA (node) + 15mA (USB) (Sleep) 30 µA (node) + 15mA (USB) (Idle) 35 mA (node) + 15mA (USB) = 50mA (Active) 50 mA (node) + 15mA (USB) + 70mA (I/O) = 135mA (Max)

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