



USB-ZIGBEE® Dongle UBEE NANO

User Manual



Version 1.00

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I WARRANTY

The device supplied to the buyer and/or the recipient is guaranteed by CLEODE against any malfunctions originating from a design and/or manufacturing flaw, for a period of twelve (12) months following delivery. The buyer and/or recipient is (are) responsible for proving the existence of the said defects or flaws. This warranty is applicable in accordance with articles 1641 to 1648 of the French Civil Code and in compliance with the French statutory warranty. The warranty covers the replacement free of charge of devices and parts affected by a design and/or manufacturing flaw excluding conspicuous defects in the device that are covered by the buyer and/or the recipient.

In order to invoke the warranty, the buyer must immediately send written notice to CLEODE of the flaws that it attributes to the device. It must enable CLEODE to have access to the device to observe these defects and repair them. The warranty provided by CLEODE is strictly limited to the equipment provided and shall only have for effect the replacement or repair, at CLEODE's expense, on its own premises, of all devices or parts that are not functioning as a result of defects or flaws. CLEODE reserves the right to modify the devices in order to comply with the warranty.

The warranty does not apply to replacement or repairs that may result from normal wear and tear of devices, systems or products, damage or accidents resulting from negligence, failure to supervise or maintain, or incorrect use of the devices, systems and/or products.

The maintenance service is provided by CLEODE with all reasonable care possible and in compliance with the current state of the arts.

The exchange of parts or repairs performed under the warranty cannot result in extending the length of the warranty. In no event can the unavailability of the device due to servicing give rise to compensation for any reason whatsoever. The seller is released from all obligations relating to the warranty if the product or device has been modified without prior written consent, or if original parts have been replaced by parts which it has not manufactured without prior consent. If unforeseen damage is caused by the device, it is expressly agreed that the seller can only be liable for the reimbursement of monies received for the purchase of the device if it has been destroyed. Under no circumstances can the seller be held liable for indirect or contingent damage. The seller is released from any liability and the buyer waives any rights against it if an accident or direct or indirect damage is caused to the buyer following a defect, incorrect usage, incorrect maintenance or normal wear of the device sold.

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TABLE OF REVISIONS

Version	Author(s)	Version description	Date
0.1	CLEODE	Initial Version	02/05/2012
1.0	CLEODE	Validated document	08/11/2012

REFERENCE DOCUMENTS

N°	Document	Description
[1]	ZigBee_Cluster_Library_Public	Specification of the Zigbee Cluster Library
[2]	ZigBee_Home_Automation_Profile	Specification Home Automation profile
[3]	ZigBee_Specification	Specification ZigBee standard

I. INTRODUCTION

I.1 USB ZIGBEE® DONGLE PRESENTATION

The USB Stick UBEE NANO is a product developed by CLEODE that can control and supervise a network ZigBee® from the USB interface.

UBEE NANO is used as a ZigBee® coordinator in home network.

With additional parts as sensors (temperature), actuators, etc., it is possible to setup a home area network that controls the lights, security system, fire system, and the heating and air conditioning.

UBEE NANO is present in the following form:



Figure 1 : UBEE NANO representation

I.2 COPYRIGHT

The CLEODE trademark and the CLEODE logo are properties of CLEODE SA, France. This document also refers to trademarks and other product names that are registered trademarks of their respective owners.

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II. SOFTWARE INSTALLATION

II.1 DRIVER INSTALLATION

II.1.1 UBEE NANO Windows XP Driver

The UBEE NANO driver is provided on the Web Site (www.cleode.com) at the page Download – Drivers:

Nano Driver V1.0

When you plug the UBEE NANO in the PC, the Windows's device manager doesn't recognize the USB device, you must update the driver by selected the driver directory.

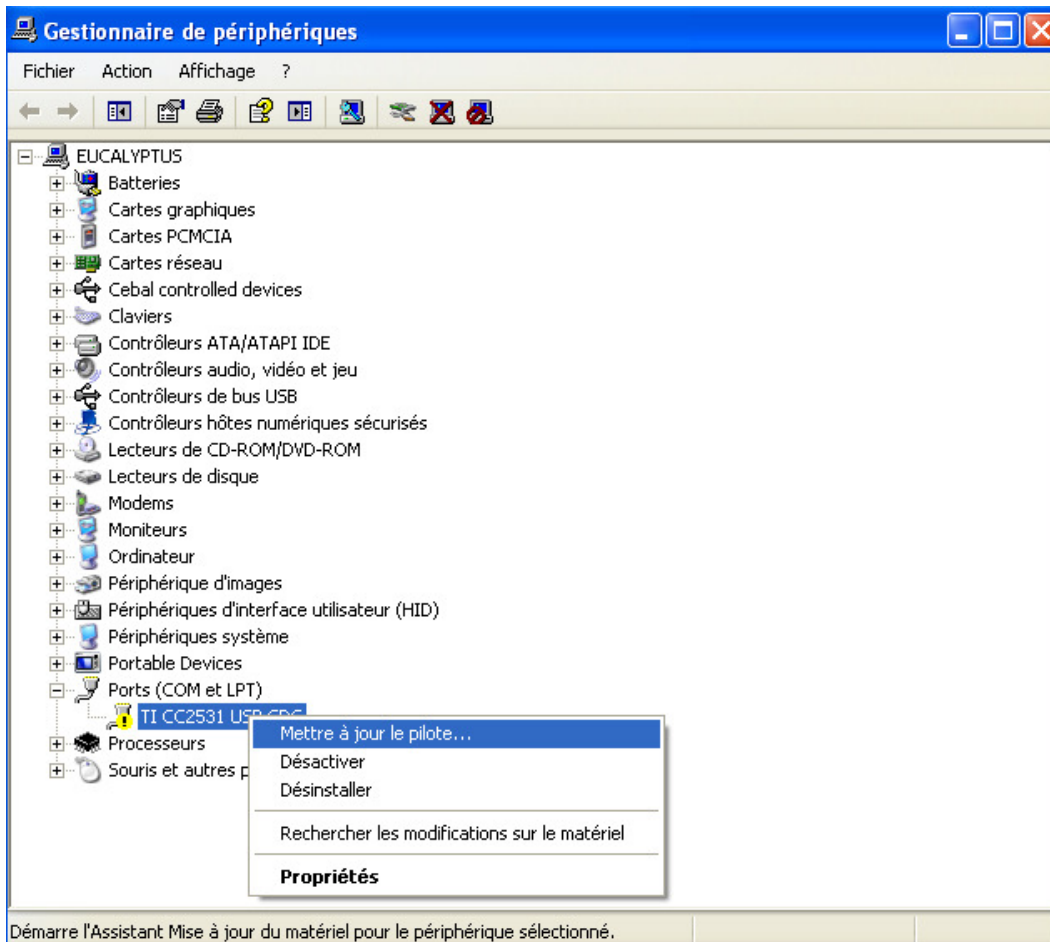


Figure 2 : Driver update

You can verify the right installation by displaying the UBEE NANO in the Windows's device manager.

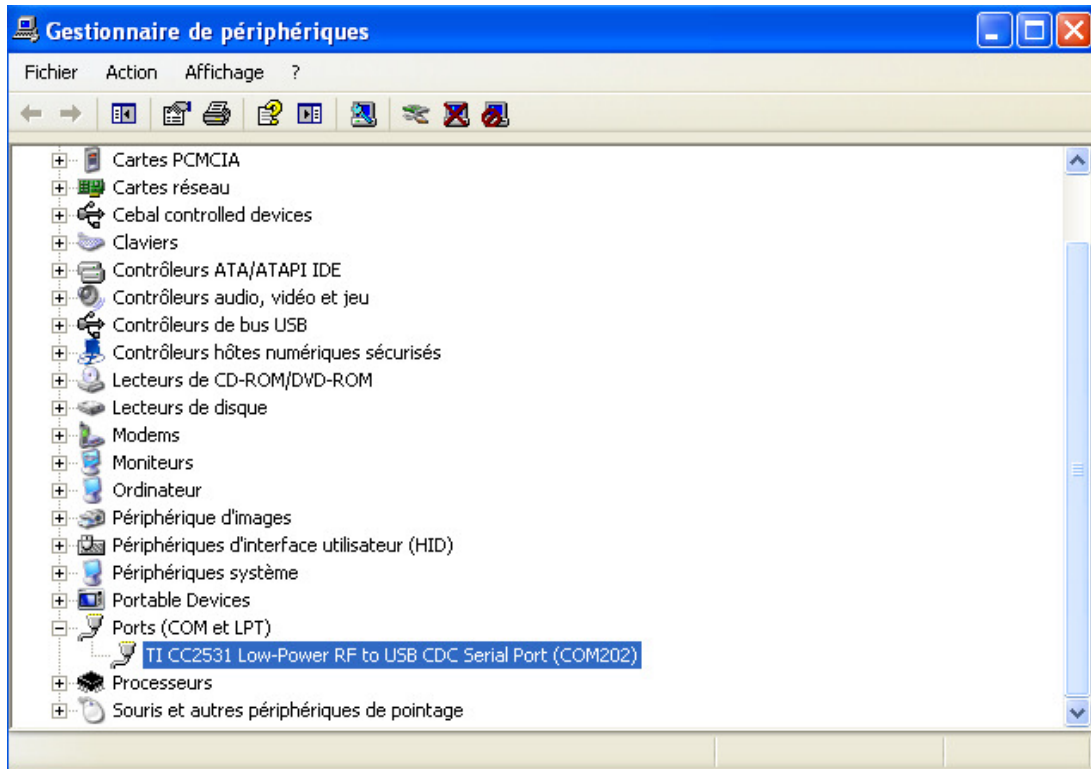


Figure 3 : UBEE NANO dongle in the Window's device manager

The driver created a virtual COM Port noted here: *TI CC2531 Low-Power RF to USB CDC Serial Port (COM202)*.

II.1.2 UBEE NANO Linux 2.6 Driver

In most cases, the USB driver necessary for the UBEE NANO dongle is included in the Linux 2.6 kernel. If this is not the case, contact CLEODE for installation specific to your kernel version.

The Linux codes are located under the directory: **linux-2.6/drivers/usb/class** of your kernel and includes two main files:

- cdc-acm.c
- cdc-acm.h

When inserting the UBEE NANO™ dongle in a USB port, the driver creates an inode like `/dev/ttyACMx`. To verify that the installation is successful, enter the command: `dmesg`

It should appear a line like this:

```
cdc_acm 5-1:1.0: ttyACM0: USB ACM Device
```

III. SOFTWARE INTERFACE

III.1 TEXAS INSTRUMENTS API

Texas Instruments API is programmed in the UBEE NANO. This API provides a list of commands and messages which can be used to develop your own ZigBee® software with UBEE NANO.

This API is described in the *Z-Stack Monitor and Test API.pdf* document. This document is provided with the Zstack of Texas Instruments.

III.2 ZIGBEE® DESCRIPTION

This product UBEE NANO is fully compliant with ZigBee® PRO 2007 specification and it is in conformance with the Home Automation profile.

For more details on the data exchanged, please refer to documents [1], [2] et [3].

UBEE NANO is a *Configuration Tool* device.

III.2.1 Description of the application configuration Tool

This application supports these clusters :

Server-side	Client-side
Basic (0x0000)	Basic (0x0000)
Identify (0x0003)	Power Configuration (0x0001)
/	Device Temperature Configuration (0x0002)
/	Identify (0x0003)
/	On/Off (0x0006)
/	On/Off Switch Configuration (0x0007)
/	Level Control (0x0008)
/	Alarms (0x0009)
/	Time (0x000A)
/	Analog Input (0x000C)
/	Shade Configuration (0x0100)
/	Door Lock (0x0101)
/	Window Covering (0x0102)
/	Thermostat (0x0201)
/	Fan Control (0x0202)
/	Dehumidification Control (0x0203)

Server-side	Client-side
/	Thermostat User Interface Configuration (0x0204)
/	Color Control (0x0300)
/	Illuminance Measurement (0x0400)
/	Illuminance Level Sensing (0x0401)
/	Temperature Measurement (0x0402)
/	Pressure Measurement (0x0403)
/	Flow Measurement (0x0404)
/	Relative Humidity Measurement (0x0405)
/	Occupancy sensing (0x0406)
/	IAS Zone (0x0500)
/	Simple metering (0x0702)
/	Pilot Control (0xFC01)

III.2.2 Description of the server clusters

Here is a brief description of the server clusters and of the attributes implemented in the UBEE NANO. For more details on the operation of these, please refer to document [1].

- Cluster Basic :

This cluster hosts versions information, manufacturer's name, model of the object, etc...

Attribute	Identifier of the attribute
ZCLVersion	0x0000
ApplicationVersion	0x0001
StackVersion	0x0002
HWVersion	0x0003
ManufacturerName	0x0004
ModelIdentifier	0x0005
DateCode	0x0006
PowerSource	0x0007
LocationDescription	0x0010
PhysicalEnvironment	0x0011
DeviceEnabled	0x0012
AlarmMask	0x0013

- Cluster Identify :

This cluster is used to identify the object in the physical network. On the writing of the attribute value *IdentifyTime*, the LED of the object will flash during a time specified by this value (in second).

Attribute	Identifier of the attribute
IdentifyTime	0x0000

IV. UBEE NANO DONGLE USER GUIDE

IV.1 POWERING

The user powers on UBEE NANO by plug it on the USB host (PC or box for example).

IV.2 ASSOCIATION PERMIT

After UBEE NANO brings up the network, it doesn't allow associations devices.
To allow devices join the network, it is necessary to send an order of association to the dongle.

IV.3 RESET THE NETWORK PARAMETERS

The UBEE NANO save all its network parameters in flash memory (associated devices, PANID, channel, etc...). To reset these parameters, it is necessary to send a specific order to reset network settings.

V. TECHNICAL CHARACTERISTICS

Parameters	Value
Frequency	2405 – 2480 Mhz
Radio Data rate	250 kbps
SerialPort baudrate	57600 bauds
Output Power	+4 dbm
Voltage	5 V
Consumption	
▪ TX	34 mA to +4 dbm
▪ RX	24 mA
Sensitivity	-97 dbm
Range (in open field)	150 m to +4 dbm
Dimension (L/D/H)	19 * 12 * 4,5 mm
Security	128 bit AES
Antenna	PCB Antenna
Temperature	-20 ° to + 70 °C

VI. TECHNICAL SUPPORT

Defective equipments shall be returned to CLEODE with the following documents:

- A copy of the delivery slip
- A detailed description of the default and the test context

The maintenance period is typically four (4) weeks starting from the date of reception of the equipment at the CLEODE headquarters.

The repair is ensured by the manufacturers of the hardware for not to void the warrenty of the item.

The serial number may be requested by CLEODE to identify your hardware.

All support requests should be sent to the following address or by email to contact@cleode.com



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