

WM-N-BM-30 User manual

USI CONFIDENTIAL

# HW Application note for WM-N-BM-30

Please find detail information from link as below,

<https://www.olimex.com/Products/ARM/JTAG/ARM-USB-TINY-H/>

## ARM-USB-TINY-H



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### Device summary

Part number	Order Code	Description
ST-LINK/V2	ST-LINK/V2	In-circuit debugger/programmer
	ST-LINK/V2-ISOL	In-circuit debugger/programmer with digital isolation



ST-LINK/V2



ST-LINK/V2-ISOL

ST-Link/v2 Utility :

[http://www.st.com/st-web-ui/static/active/en/st\\_prod\\_software\\_internet/resource/technical/software/utility/stsw-link004.zip](http://www.st.com/st-web-ui/static/active/en/st_prod_software_internet/resource/technical/software/utility/stsw-link004.zip)

ST-Link/v2 driver :

[http://www.st.com/st-web-ui/static/active/en/st\\_prod\\_software\\_internet/resource/technical/software/driver/st-link\\_v2\\_usbdriver.zip](http://www.st.com/st-web-ui/static/active/en/st_prod_software_internet/resource/technical/software/driver/st-link_v2_usbdriver.zip)

# 1. Characteristic Option

## 1.1 Boot mode

At startup, boot pins are used to select one out of three boot options:

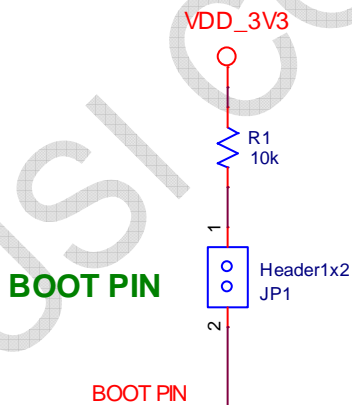
Boot from user Flash

Boot from system memory

Boot from embedded SRAM

The boot loader is located in system memory. It is used to reprogram the Flash memory by using USART1(PA9/10), USART2(PD5/6), USB OTG FS in device mode (PA11/12) through DFU (device firmware upgrade), I2C1(PB6/7), I2C2(PB10/3), I2C3(PA8/PB4), SPI1(PA4/5/6/7), SPI2(PB12/13/14/15) or SPI3(PA15, PC10/11/12).

BOOT0	Low	Boot from user Flash
	High	Boot from system memory / embedded SRAM



WM-N-BM-30 set the BOOT0 to GND, the Boot mode is Main Flash memory. When BOOT0 set to High, the BOOT mode is system memory.

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## 1.2 Low Power mode

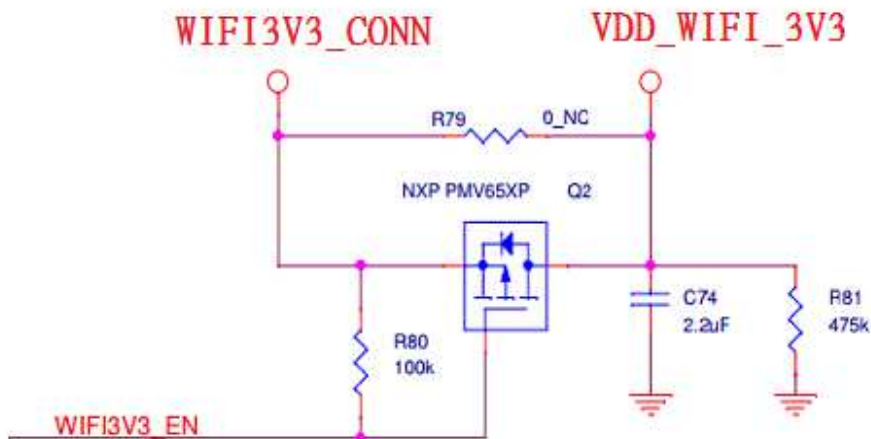
By default, the microcontroller is in Run mode after a system or a power-on reset. In Run mode the CPU is clocked by HCLK and the program code is executed. Several low-power modes are available to save power when the CPU does not need to be kept running, for example when waiting for an external event. It is up to the user to select the mode that gives the best compromise between low-power consumption, short startup time and available wakeup sources.

The devices feature three low-power modes:

- Sleep mode (Cortex™-M3 core stopped, peripherals kept running)
- Stop mode (all clocks are stopped)
- Standby mode (1.2 V domain powered off)

## 1.3 MOS for WIFI\_3V3 Power ON/OFF

External MOS for VDD\_WIFI\_3V3 power switch, can use one GPIO pin to control power ON/OFF



The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

### **End Product Labeling (FCC)**

When the module is installed in the host device, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily re-moved. If not, a second label must be placed on the outside of the final device that contains the following text:

“Contains FCC ID: COFWMNBM30”.

The grantee's FCC ID can be used only when all FCC compliance requirements are met.

### **Required FCC Compliance Statement for Host Integration**

To integrate this module into the host, the host manufacturer is responsible for the applicable FCC rules, including the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

In the user manual of the host device, the following statements are required to be included.

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiated radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

–Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**FCC Module Integration Restriction:**

This module has been certified by FCC as single module approval with the following restrictions:

1. The chip antenna with 2.04 dBi gain was verified in the conformity testing. Radiated transmit power must be equal to or lower than that specified in the FCC Grant of Equipment Authorization for FCC ID: COFWMNBM30. A separate approval is required for all other operating configurations.
2. This module can be installed in portable, mobile, or fixed application. To assure RF Exposure compliance, the antenna must not transmit simultaneously with any other antenna or transmitter, except in accordance with FCC multi transmitter product procedure.
3. If any other simultaneous transmission radio is installed in the host platform together with this module, or above restrictions cannot be kept, a separate RF exposure assessment and FCC equipment authorization is required.

### **End Product Labeling (IC)**

When the module is installed in the host device, the IC label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily re-moved. If not, a second label must be placed on the outside of the final device that contains the following text:

“Contains IC: 10293A-WMNBM30”.

The grantee's IC ID can be used only when all IC compliance requirements are met.

### **Required IC Compliance Statement for Host Integration**

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

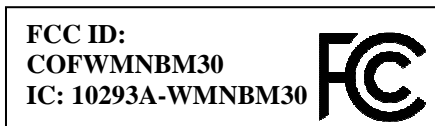
- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

CAN ICES-3(B)/ NMB-3(B)

### **IC Module Integration Restriction:**

1. The chip antenna with 2.04 dBi gain was verified in the conformity testing. In case any modification in the radio equipment which do change the electrical characteristics beyond the rated limits established by the manufacturer and accepted by Industry Canada for IC ID 10293A-WMNBM30, a separate approval is required.

2. This module can be installed in portable, mobile, or fixed application. To assure RF Exposure compliance, the antenna must not transmit simultaneously with any other antenna or transmitter, except in accordance with IC multi transmitter product procedure.
3. If any other simultaneous transmission radio is installed in the host platform together with this module, or above restrictions cannot be kept, the Canada authorization is no longer considered valid and the IC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Industry Canada authorization.





# R&TTE Regulation:

In all cases assessment of the final product must be met against the Essential requirements of the R&TTE Directive Articles 3.1(a) and (b), safety and EMC respectively, as well as any relevant Article 3.3 requirements.

1. The chip antenna (gain: 2.04 dBi) was verified in the conformity testing, and for compliance the antenna shall not be modified. A separate approval is required for all other operating configurations, including different antenna configurations.

2. If any other simultaneous transmission radio is installed in the host platform together with this module, or above restrictions cannot be kept, a separate RF exposure assessment and CE equipment certification is required.

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## 1.1 Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

EN 60950-1: 2006+A11:2009+A1:2010+A12:2011

EN 62311:2008

EN 62479 :2010

EN300 328 V 1.8.1:2012


EN 301 489-1 V1.9.2:2011





EN 301 489-17 V 2.2.1 :2012

National Authorities were informed according to Article 6.4 of Frequency Notification.

Special Requirements are considered. The product is labeled with CE Marking.

# CE 0560

 Český [Czech]	<i>[Jméno výrobce]</i> tímto prohlašuje, že tento <i>[typ zařízení]</i> je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
 Dansk [Danish]	Undertegnede <i>[fabrikantens navn]</i> erklærer herved, at følgende udstyr <i>[udstyrets typebetegnelse]</i> overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
 Deutsch [German]	Hiermit erkläre <i>[Name des Herstellers]</i> , dass sich das Gerät <i>[Gerätetyp]</i> in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
 Eesti [Estonian]	Käesolevaga kinnitab <i>[tootja nimi = name of manufacturer]</i> seadme <i>[seadme tüüp = type of equipment]</i> vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
 English	Hereby, <i>[name of manufacturer]</i> , declares that this <i>[type of equipment]</i> is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
 Español [Spanish]	Por medio de la presente <i>[nombre del fabricante]</i> declara que el <i>[clase de equipo]</i> cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
 Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ <i>[name of manufacturer]</i> ΔΗΛΩΝΕΙ ΟΤΙ <i>[type of equipment]</i> ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
 Français [French]	Par la présente <i>[nom du fabricant]</i> déclare que l'appareil <i>[type d'appareil]</i> est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
 Italiano [Italian]	Con la presente <i>[nome del costruttore]</i> dichiara che questo <i>[tipo di apparecchio]</i> è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo <i>[name of manufacturer / izgatavotāja nosaukums]</i> deklarē, ka <i>[type of equipment / iekārtas tips]</i> atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo <i>[manufacturer name]</i> deklaruoją, kad šis <i>[equipment type]</i> atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
 Nederlands [Dutch]	Hierbij verklaart <i>[naam van de fabrikant]</i> dat het toestel <i>[type van toestel]</i> in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
 Malti [Maltese]	Hawnhekk, <i>[isem tal-manifattur]</i> , jiddikjara li dan <i>[il-mudell tal-prodott]</i> jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn rilevanti li hemm fid-Dirrettiva 1999/5/EC.
 Magyar [Hungarian]	Alulírott, <i>[gyártó neve]</i> nyilatkozom, hogy a <i>[... típus]</i> megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
 Polski [Polish]	Niniejszym <i>[nazwa producenta]</i> oświadczam, że <i>[nazwa wyrobu]</i> jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami

	Dyrektywy 1999/5/EC.
 Português [Portuguese ]	[Nome do fabricante] declara que este [tipo de equipamento] está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
 Slovensko [Slovenian]	[Ime proizvajalca] izjavlja, da je ta [tip opreme] v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	[Meno výrobcu] týmto vyhlasuje, že [typ zariadenia] spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
 Suomi [Finnish]	[Valmistaja = manufacturer] vakuuttaa täten että [type of equipment = laitteen tyyppimerkintä] tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
 Svenska [Swedish]	Härmed intygar [företag] att denna [utrustningstyp] står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.