

## **WG7833-B0 Wifi module spec sheet**

WG7833/31/03/01-B0, a WiFi, BT, BLE SiP (system in package) module, is the most demanded design for mobile devices, Audio, Computer, PDA and embedded system applications with Wilink8 solution from TI.

### **General Features**

WLAN, Bluetooth, BLE, with Integrated RF Front-End Module (FEM), Power Amplifier (PA), and Power Management on a Single Module

- LGA106pin package
- Dimension 12.8mm(L) x 12.0mm(W) x 1.7mm(H)
- Provides efficient direct connection to battery by employing several integrated switched mode power supplies (DC2DC).
- Seamless Integration with TI Sitara™ and Other Application Processors
- WLAN and BT/BLE cores are software and hardware compatible with prior WL127x and WL128x offerings, for smooth migration to device.
- Shared HCI transport for BT/BLE over UART and SDIO for WLAN.
- Temperature detection and compensation mechanism ensures minimal variation in RF performance over the entire temperature range.
- BT 4.0, BLE and all audio processing features work in parallel and include full coexistence with WLAN
- Operating temperature: -40°C to 85°C

### **FUNCTIONAL FEATURES**

#### **WLAN Features**

- Integrated 2.4GHz for WLAN solution
- WLAN Baseband Processor and RF transceiver Supporting IEEE Std 802.11b/g/n
- WLAN 2.4GHz SISO (20/40 MHz channels)
- 2.4-GHz MRC Support for Extended Range

- Baseband Processor
  - IEEE Std 802.11b/g/n data rates and IEEE Std 802.11n data rates with 20 or 40 MHz SISO.
- Fully calibrated system. Production calibration not required.
- Medium Access Controller (MAC)
  - Embedded ARM™ Central Processing Unit (CPU)
  - Hardware-Based Encryption/Decryption using 64-, 128-, and 256-Bit WEP, TKIP or AES Keys,
  - Supports requirements for Wi-Fi Protected Access (WPA and WPA2.0) and IEEE Std 802.11i [includes hardware-accelerated Advanced Encryption Standard (AES)]
  - Designed to work with IEEE Std 802.1x
- IEEE Std 802.11d,e,h,i,k,r PICS compliant.
- New advanced co-existence scheme with BT/BLE.
- 2.4 GHz Radio
  - Internal LNA and PA
  - Supports: IEEE Std 802.11b, 802.11g and 802.11n
- Supports 4 bit SDIO host interface, including high speed (HS) and V3 modes.

### **Bluetooth Features**

- Supports Bluetooth 4.0 as well as CSA2
- Includes concurrent operation and built -in coexisting and prioritization handling of Bluetooth, BLE, audio processing and WLAN
- Dedicated Audio processor supporting on chip SBC encoding + A2DP:
  - Assisted A2DP (A3DP) support - SBC encoding implemented internally
  - Assisted WB-Speech (AWBS) support - modified SBC codec implemented internally

### **BLE Features**

- Fully compliant with BT4.0 BLE dual mode standard
- Support for all roles and role-combinations, mandatory as well as optional
- Supports up to 10 BLE connections

- Independent buffering for LE allows having large number of multiple connections without affecting BR/EDR performance

#### **Federal Communication Commission Interference Statement**

This equipment 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 radiate 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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 and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

#### **IMPORTANT NOTE:**

##### **FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

#### **Mobile Module Device**

**The module is limited to OEM installation ONLY.**

**This module is intended for OEM integrators under the following conditions:**

1. This module is restricted to installation in products for use only in mobile and fixed applications.

2. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons.
3. The antenna(s) used for this transmitter must not transmit simultaneously with any other antenna or transmitter.
4. OEM integrator has be limited the operation channels in channel 1-11 for 2.4GHz band.

**The OEM integrator is still responsible for**

1. ensuring that the end-user has no manual instructions to remove or install module
2. the FCC compliance requirement of the end product, which integrates this module.
3. Appropriate measurements (e.g. 15 B compliance) and if applicable additional equipment authorizations (e.g. Verification, Doc) of the host device to be addressed by the integrator/manufacture.
4. The separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and different antenna configurations

Guidance to the Host Manufacturer: The host manufacturer is responsible for additional testing to verify compliance as a composite system. When testing the host device for compliance with the Part 15 Subpart B requirements, the host manufacturer is required to show compliance with the Part 15 Subpart B while the transmitter module(s) are installed and operating. The modules should be transmitting and the evaluation should confirm that the module's intentional emissions are compliant (i.e. fundamental and out of band emissions) with the Radio essential requirements. The host manufacturer must verify that there are no additional unintentional emissions other than what is permitted in the Part 15 Subpart B or emissions are complaint with the Radio aspects.

1. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
2. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.
3. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.
4. The FCC part 15.19 statement: 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.

**Label of the end product:**

The final end product must be labeled in a visible area with the following " Contains TX  
FCC ID: **YHICE-IMX6-01**".

The end product shall bear the following 15.19 statement: 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 complies with Industry Canada's licence-exempt RSSs. 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.*

This radio transmitter IC: 9715A-CEIMX601 has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

*Le présent émetteur radio IC: 9715A-CEIMX601 a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.*

| Ant. | Port | Brand            | Model Name | Antenna Type | Connector |
|------|------|------------------|------------|--------------|-----------|
| 1    | 1    | SMARTEQ WIRELESS | LPCA-MINO  | OMNI Antenna | I-PEX     |

| Ant. | Gain (dBi) |      |
|------|------------|------|
|      | 2.4G       | BT   |
| 1    | 2.15       | 2.15 |

**IMPORTANT NOTE:**

**IC Radiation Exposure Statement:**

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance **20cm** between the radiator & your body.

*Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20cm de distance entre la source de rayonnement et votre corps*

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

**End Product Labeling**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains transmitter module IC: IC: 9715A-CEIMX601".

*Contient le module d'émission IC: IC: 9715A-CEIMX601*