


## TinyGateway WiFi BLE

### Bluetooth Low Energy gateway

#### Data sheet

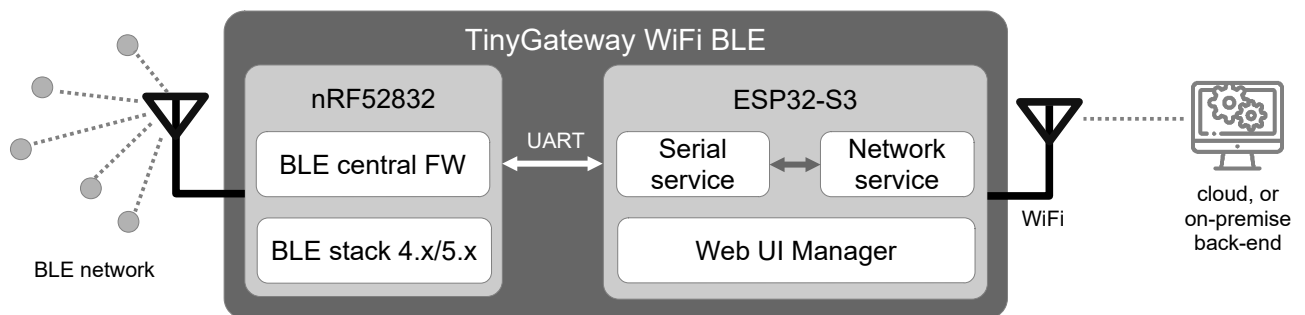


#### Key features

- Low-power and low-cost gateway
- WiFi connectivity based on ESP32 SoC (IEEE 802.11 b/g/n)
- Based on Nordic nRF52832 for BLE advertising
- Network communication protocols: HTTP(S), MQTT(S), UDP, TCP
- Compact light-weight plastic enclosure
- Dual power-supply: USB-C or internal connector

| Key features  |
|---|
| Low-power Bluetooth Low Energy gateway with WiFi connectivity   |
| Supported Bluetooth LE stack: 4.x and 5.x   |
| Operating modes: Bluetooth LE central   |
| Network interface: Wireless LAN   |
| Support of the following set of connection protocols: HTTP(S), MQTT(S), UDP, TCP                        |
| Multiple data encoding options: JSON, ASCII, raw-data   |
| Easy-to-use web UI manager dashboard for configuration and management                                   |
| Complete remote configurability via HTTP or MQTT API  |
| Possibility to operate simultaneously in scanning mode (BLE receiver) and advertising mode (BLE beacon) |

TinyGateway WiFi BLE: architecture and interfaces



| Device specifications   |  |
|-------------------------|--|
| Hardware specifications |  |
| Platform                | Espressif Systems ESP32S3WROOM-1   |
| Processor               | ESP32-S3 series, Xtensa® dual-core 32-bit LX7 microprocessor, up to 240MHz |
| Memory                  | 384 KB ROM, 512 KB SRAM, Up to 8 MB PSRAM                                  |



|  |  |
|--|--|
| Connectivity                               | WiFi (802.11), Bluetooth Low Energy (v4.x / 5.x)   |
| User interfaces                            | Power-on LED, Bluetooth LE LED, WiFi RGB LED, factory-reset button   |
| <b>WiFi specifications</b>                 |  |
| Core module                                | Espressif Systems ESP32-S3   |
| Protocol                                   | IEEE 802.11 b/g/n  |
| Authentication                             | WPA/WPA2/WPA2 Enterprise (EAP-TLS, EAP-PEAP, EAP-TTLS)   |
| Frequency band                             | 2.412 to 2.484 GHz   |
| Channel spacing                            | 20 MHz (802.11 b/g/n), 40MHz (802.11n)   |
| Sensitivity                                | -98 dBm (802.11b, 1 Mbps)  |
| TX Power                                   | 20.5dBm (max, 802.11b, 1 Mbps)   |
| Antenna type                               | Meander Planar Inverted F-antenna  |
| Antenna gain                               | 0dBi   |
| <b>Bluetooth Low Energy specifications</b> |  |
| Core module                                | Nordic Semiconductor nRF52832 SoC, 32-bit ARM Cortex-M4  |
| Protocol                                   | Bluetooth Low Energy (v4.x / 5.x)  |
| Frequency band                             | 2.402 to 2.480 GHz   |
| Channel spacing                            | 2 MHz  |
| Sensitivity                                | -96 dBm  |
| TX power                                   | 4dBm (max)   |
| Antenna type                               | Planar Inverted F-antenna  |
| Antenna gain                               | 2dBi   |
| Power voltage                              | <ul style="list-style-type: none"><li>5 Vdc (USB)</li><li>4.5 to 30 Vdc (internal 2-port)</li></ul>  |
| Power connector                            | <ul style="list-style-type: none"><li>USB: USB-C connector</li><li>Internal 2-port: pluggable connector, Würth series 301/3157 compatible. Rear knockout for cable entry (20mm diameter)</li></ul> |
| Current                                    | 240 mA @5Vdc (max, with 802.11b, 1 Mbps, @20.5 dBm)  |
| <b>Mechanical specifications</b>           |  |
| Material                                   | Recyclable ABS plastic (flame-resistant UL94V-0)   |
| Color                                      | White  |
| Size                                       | 74 x 74 x 25.5 mm  |
| Weight                                     | 50 gr  |
| Protection                                 | IP40   |
| Assembly                                   | Front and back clip together construction (tool required for disassembly once mounted)   |
| Mounting options                           | Dual-adhesive or screws  |
| <b>Environmental specifications</b>        |  |
| Operating temperature                      | -40°C to +65°C   |
| Storage temperature                        | -40°C to +105°C  |

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