

TinyGateway WiFi Outdoor BLE

Bluetooth Low Energy gateway

Data sheet



Key features

- Low-power and low-cost outdoor gateway
- WiFi connectivity based on ESP32 SoC (IEEE 802.11 b/g/n)
- Based on Nordic nRF52832 for BLE
- Network communication protocols: HTTP(S), MQTT(S), UDP, TCP
- Compact light-weight IP65 plastic enclosure
- Internal 2-port power-supply connector

Key features

Outdoor rugged 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

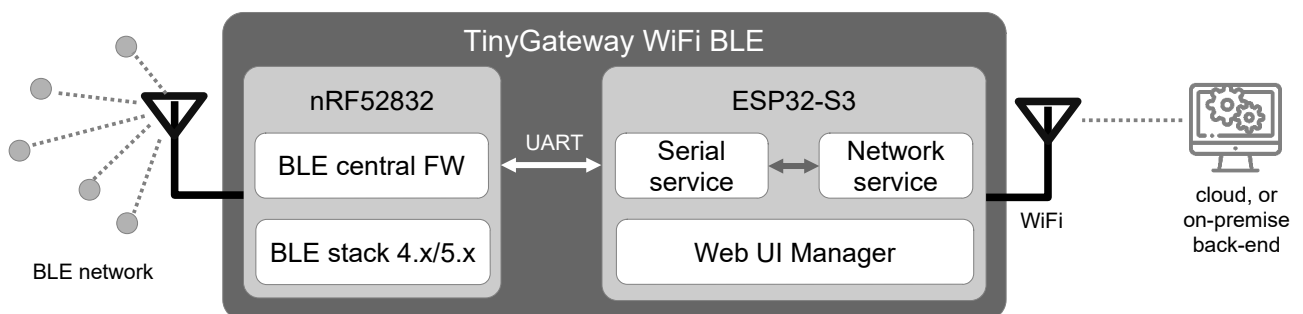
Multiple data encoding options: JSON, ASCII, raw-data

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	(internal) Power-on LED, Bluetooth LE LED, WiFi RGB LED, factory-reset button
WiFi specifications	
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
Bluetooth Low Energy specifications	
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 supply	
Power voltage	4.5 to 30 Vdc (internal 2-port)
Power connector	Internal 2-port: pluggable connector, Würth series 301/3157 compatible. Cable-gland for cable entry
Current	100 mA @12Vdc (max, with 802.11b, 1 Mbps, @20.5 dBm)
Mechanical specifications	
Material	Polycarbonate (PC) plastic
Color	Light grey
Size	105 x 105 x 45 mm (excluding flanges)
Weight	200 gr
Protection	IP65



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Mechanical specifications (cont.)	
Assembly	Lid with screw lock (4 screws included)
Mounting options	Screws for rear flanges
Environmental specifications	
Operating temperature	-20°C to +65°C
Storage temperature	-40°C to +85°C
Certifications	
CE (RED), FCC	

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