TinyGateway Flex BLE
Bluetooth Low Energy gateway
Data sheet

Key features

- **Long-range BLE gateway**
- **Based on Nordic nRF52832 for BLE**
- **Network communication protocols: HTTP(S), MQTT(S), UDP, TCP**
- **Circularly-polarized directive BLE antenna**
- **Compact form-factor for indoor installation**
- **Multiple power-supply options**

Key features

Long-range Bluetooth Low Energy gateway with Ethernet (PoE), WiFi and WiFi Mesh (proprietary)
Directive circularly-polarized antenna (alternative option: SMA connector for external antenna)
Supported Bluetooth LE stack: 4.x and 5.x
Operating modes: Bluetooth LE central
Network interface: Ethernet (PoE IEEE 802.3af), WiFi (IEEE 802.11 b/g/n)
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)

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	Ethernet (PoE IEEE 802.3af) WiFi (IEEE 802.11 b/g/n) Bluetooth Low Energy (v4.x / 5.x)
User interfaces	Power-on LED, Bluetooth LE LED, Status LED, factory-reset button
Digital IOs	Optional version with 1 digital input and 1 digital output

Ethernet specifications	
Protocol	IEEE 802.3af (PoE)
Connector	RJ45

WiFi specifications	
Protocol	IEEE 802.11 b/g/n WiFi Mesh (proprietary)
Antenna	Integrated planar inverted antenna

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	-109 dBm (1Mbps BLE mode)
TX power	20dBm (max, configurable)
Antenna type	Planar circularly-polarized array antenna
Antenna gain	6dBi

Power supply	
Power voltage	• USB: 5Vdc • PoE (802.3af): 44 – 57Vdc (PoE Class: 0) • VDC: 6-30Vdc
Power connector	• USB: USB-C connector • PoE (802.3af): RJ45 connector • VDC: 2-poles connector
Current	• USB: max 350 mA @5Vdc • PoE (802.3af): 60 mA typ. @48Vdc, 80 mA max @48Vdc

Mechanical specifications	
Material	Recyclable ABS plastic (flame-resistant UL94V-0)
Color	White
Size	155 x 125 x 40 mm (including flanges)
Weight	300 gr (including flanges)
Protection	IP40
Opening	4x M2.5 self-healing screws on back panel
Wall fastening	2x Ø3.5mm screws (not included) for lateral wall-mounting flanges

Environmental specifications	
Operating temperature	-20°C to +65°C
Storage temperature	-40°C to +85°C

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