



# MK105 Bluetooth Gateway Plug Product Specification

Version V1.1

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# 1. Product Introduction

**MK105** is a small Bluetooth gateway plug that integrates **WIFI** and **Bluetooth Low Energy** technology. Its communication protocol is based on MQTT 3.1.1, can access to multiple MQTT servers such as standard MQTT broker, AWS IOT and Aliyun IOT.

MK105 gateway is suitable for type E and type F socket, and has a small and compact design. The plug works as a BLE scanner to gather Bluetooth broadcast data of BLE device nearby, and upload these data frames to MQTT server through 2.4Ghz WIFI. It is mainly used for position tracking and BLE sensors monitoring.

## 1.1 Key Features

- Built-in ESP32 module and MOKO standard firmware
- 130 meters Bluetooth scanning range in open space
- 150 Bluetooth frames scanned per second
- 100 meters WIFI connection range
- Multi-color LED indicates device working status
- Firmware update over the air (OTA)
- Supports multiple MQTT servers connection such as MQTT broker, AWS IOT, and Ali IOT
- Supports Android & IOS APP SDK for APP development
- Schematic diagrams are available for customers to develop firmware
- EU directives compliance: RED 2014/53/EU

## 1.2 Applications

- Location tracking in room
- Health/fitness monitoring in hospital
- Environmental monitoring
- Temperature sensor monitoring
- Beacon & Sensor Data & BLE device raw data collecting

## 2. Physical Characteristics

NO.	Item	Remarks
1	Wireless technology	WIFI&Bluetooth
2	Input voltage	230VAC, 50/60HZ
3	Output voltage	230VAC
4	Max load	16A, 3680W continuous load
5	Operation temperature	0 °C~ 40 °C ( 32°F ~ 104°F )
6	Plug type	Type E/F
7	EU directives compliance	RED 2014/53/EU

## 3. Technology Parameters

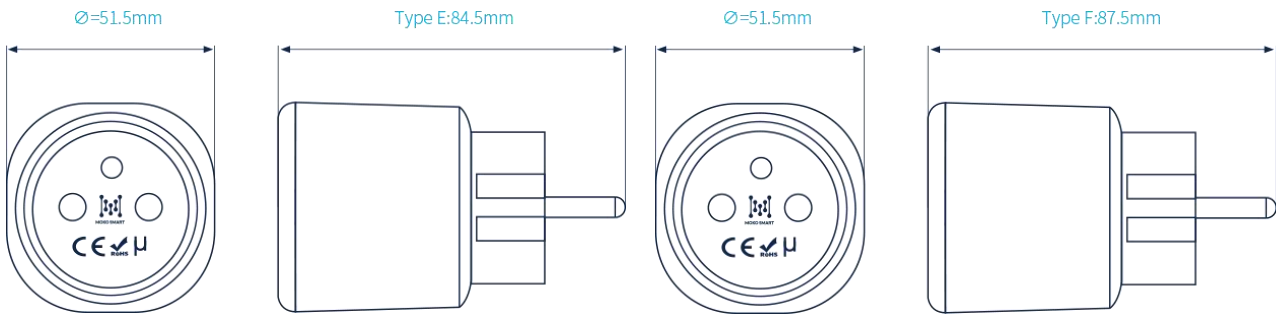
NO.	Item	Remarks
Hardware	MCU	ESP32
Software	Communication protocol	MQTT V3.1.1
	Encryption mode	TCP/SSL
	Firmware	Built-in MOKO standard firmware, also provide schematic diagrams for customers to develop firmware
	APP configuration	Mokoscanner APP supports IOS & Android, MOKO also provides APP SDK for customers to develop their own APP
WIFI specification	Frequency	2.4GHz-2.5Ghz (2400MHz-2483.5MHz)
	Protocol	802.11b/g/n
	Coverage	100 meters in open space
	Encryption mode	OPEN/WEP/WPA_PSK/WPA2_PSK/WPA_WPA2_PSK

Bluetooth specification	Bluetooth standard	Bluetooth 4.2
	Max scanning range	130m in open space
	Scanning rate	150 times/s (150 Bluetooth frames per second)
	Max scanning capacity	100 BLE devices max
	Receiving sensitivity	-97dB

## 4. Indicator & Button Status

Item	Indicator status	Operation
Factory reset	Flash green and blue alternately once	Press and hold the button for 10s
Bluetooth OFF	LED off	When Bluetooth is advertising, click the button to turn OFF the device Bluetooth
Bluetooth advertising	Flash green	When Bluetooth is OFF, click the button to turn ON the device Bluetooth
Bluetooth connected	Solid green	Device Bluetooth is connected by APP
Network connection	Flash blue	Device is connecting to router and server
Network connected	Solid blue	Device has connected to router and server
OTA upgrading	Flash green	To indicate OTA process
OTA successful	Solid green	To indicate OTA result
OTA failed	Solid red	To indicate OTA result

## 5. Dimensions



**Dimensions (diameter x height):**

**Type E: 51.5mm x 84.5 mm/Type F: 51.5mm x 87.5 mm**

## 6. Development Document


MOKO provides the following documents for customers to test products and develop their own firmware/APP, and supports to flash custom firmware during production.

File	Versio	Description
<a href="#">MK105 Product Specification</a>	V1.1	This document introduces MK105 product.
<a href="#">MK105 User Manual</a>	V1.0	This document instructs users how to configure and manage the gateway with MOKO APP
<a href="#">MK105 Communication Protocol</a>	V1.0	This document describes the configuring commands and management commands supported on MK105
<a href="#">APP SDK</a>	V1.0	iOS: <a href="https://github.com/MokoScanner/MokoScannerSDK-iOS">https://github.com/MokoScanner/MokoScannerSDK-iOS</a> Android: <a href="https://github.com/MokoScanner/MokoScannerSDK_Android.git">https://github.com/MokoScanner/MokoScannerSDK_Android.git</a> The APP SDK includes the source code of the Mokoscanner APP. Customers can quickly develop their own APP with it.
<a href="#">Development Document</a>	V1.0	The document includes the schematic diagram and test points related to firmware development and download. With this document, customers can develop their own firmware and download the firmware to the MOKO hardware.


## 7. Revision History

Revision	Description	Editor	Date
V1.0	Initial Release	Weiguifen	2020.10.21
V1.1	Modify product specification	Weiguifen	2022.7.21

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