

# QUICK GUIDE: TDECK PLUS

By reading this guide, you will acquire the necessary knowledge to perform the basic initial setup, initial startup, and daily use of the TDECK PLUS product.

**Attention! You must first connect the supplied antenna with the device turned off, and only then turn it on.**

## Topics covered in the guide:

- FEATURES LIST
- GENERAL OPERATING PRINCIPLE
- LoRa MESHTASTIC:
  - General Configuration Management
  - Startup and Use

## Features list



MCU ESP32-S3FN16R8 Dual-core LX7 microprocessor	<input checked="" type="checkbox"/>
Wireless Connectivity 2.4 GHz Wi-Fi & Bluetooth 5 (LE)	<input checked="" type="checkbox"/>
GPS module	<input checked="" type="checkbox"/>
3,7v 2000 mA LiPo BATT	<input checked="" type="checkbox"/>
SD SLOT with 32GB micro SD card	<input checked="" type="checkbox"/>
Keyboard, trackball, speaker	<input checked="" type="checkbox"/>
2.8 inch LCD Resolution: 320 x 240 Full viewing angle	<input checked="" type="checkbox"/>
SX1262 LoRa Transceiver	<input checked="" type="checkbox"/>
External antenna, transmit power +22dBm	<input checked="" type="checkbox"/>
Band plan: one from 868 MHz, 433 MHz	<input checked="" type="checkbox"/>

## General operating principle

This handheld device runs the Meshtastic program, which is useful for interacting with the Meshtastic LoRa network.

The lithium battery and GPS module allow for field use. WiFi, Bluetooth, and LoRa connectivity are available, enabling a wide range of communication.

There are two main controls on the side of the device: an **ON/OFF** slider switch on the right and a **REBOOT** button on the left.

After attaching the supplied antenna and charging the battery, the device can be turned on and the screen shown in **Figure 1** will appear.



**Fig. 1**

## LoRa MESHTASTIC startup

This application program enables access to and use of group messaging and location services using the LoRa protocol network.

Two or more LoRa-enabled terminals can communicate with each other without the aid of other technologies (WiFi, cellular networks, etc.) as long as they are located within their direct range (a few kilometers) or using the "Meshed" network principle.

The Meshed network is implemented by each powered-on terminal, which automatically acts as an active repeater for messages from anyone within its range.

It goes without saying that through this "store & forward" mechanism, the Meshed network allows for a theoretical extension of the range up to several dozen kilometers.

Decisive for achieving this coverage extension is both the antenna system used by each terminal (internal or external) and the possible presence of fixed repeater terminals located in strategic positions for this purpose (typically at high altitudes) as well as terminals already active in a given area.

The services available in this area are:

- Encrypted short messaging: the ability to exchange short messages between members of a specific group or directly between two devices; messages are decrypted only by those members who hold the appropriate encryption key.
- Real-time group location: the position of group members can be automatically exchanged and displayed on a map.

**Tip:** General Atlas maps are provided as standard.

**Attention! You must first connect the supplied antenna with the device turned off, and only then turn it on.**

## LoRa MESHTASTIC configuration management

The LoRa Meshtastic program comes with a standard configuration based on the bandplan used (shown below).

**Tip:** The user interface makes it easy to consult the existing configuration. To fully modify it, you must use a smartphone with the Meshtastic app  installed, available from the app store, and connect it to the TDECK via Bluetooth:

1) Install and launch the Meshtastic app on your smartphone with Bluetooth enabled.

2) Activate the Bluetooth connection:

- From the main menu, select Settings & Tools - Reboot / Shutdown
- Select the Bluetooth icon and wait for the reboot.

**Tip:** To restore the native interface, simply select the Bluetooth icon and wait for the reboot.

3) Use the Meshtastic app on your smartphone to pair Bluetooth with TDECK.

4) Access the configuration menus, as per the manual available at:

- <https://meshtastic.org/>
- <https://www.loraitalia.it/>

### Configurazione standard rete LoRa Meshtastic bandplan 868 MHz

userconfig	Longname	default value editable
	Shortname	default value editable max 4 chars
	Licensed	NO
channels	Channel name	MediumFast
	PSK	AQ==
	position	YES
device	role	CLIENT
position	Smart enabled	YES
	GPS mode	ENABLED
LoRa	Use modem preset	YES
	Modem preset	MEDIUM_FAST
	hop	3
	TX enabled	YES
	TX power	27 dBm
	RX boosted gain	YES
	slot	1
	region	EU868 MHz

**Configurazione standard rete LoRa Meshtastic bandplan 433 MHz**

userconfig	Longname	HAM ID
	Shortname	HAM ID shorted (4 chars)
	Licensed	YES
channels	Channel name	MediumSlow
	PSK	Cfr <a href="https://www.loraitalia.it/">https://www.loraitalia.it/</a> FVNtESlvjcpere4TmMzt4BuL9u8hWj4lrlTvCskQqOoHk
	position	YES
device	role	CLIENT
position	Smart enabled	YES
	GPS mode	ENABLED
LoRa	Use modem preset	YES
	Modem preset	MEDIUM_SLOW
	hop	3
	TX enabled	YES
	TX power	21 dBm
	RX boosted gain	YES
	slot	4
	region	EU433 MHz

## MESHTASTIC: daily use



### ACCESS TO SYSTEM MENU:

- HOME icon takes you to the system menu, which displays:
  - New messages received
  - Number of online users
  - Operating frequency
  - Received signal strength
  - Sound type (enabled with a tap)
  - GPS coordinates (enabled with a tap)
- Online users icon:  
List of online or recently contacted users
- Group channels icon:  
Access to the channel currently in use for group chat
- Chats icon:  
Active group or direct chats; you can read and send messages from here.
- Maps icon:  
You can view the location of the group and all online users who have activated their location.
- Settings & Tools icon: You can check the configuration and activate diagnostic functions.



### ACCESS TO GROUP CHATS:

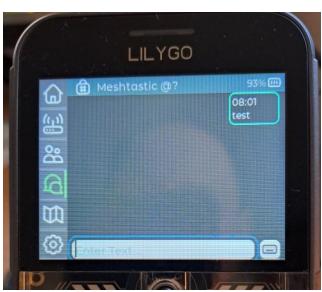
- From the system menu, access the group channels icon or the chats icon.
- Press the button for the channel with the padlock or group chats.
- Send messages to the group. A green box indicates successful forwarding to the network, a red box indicates forwarding problems, and a yellow box indicates awaiting feedback.





## ACCESS TO INDIVIDUAL CHATS:

- From the system menu, access the online users icon or the chats icon.
- Press the button for the user you wish to contact.
- Send messages to the individual user. A green box indicates successful forwarding to the network, a red box indicates forwarding problems, and a yellow box indicates awaiting a response.



## ACCESS TO LOCALIZATION MAPS:

- From the system menu, access the location map icon.
- The red pointer indicates our location; the colored ones indicate users belonging to our group.
- Use the Zoom/Pan controls to navigate the map.
- Selecting a pointer icon will take you to the specific user's information in the online users menu.
- The default maps are general Atlas, and you will need to ZOOM OUT before locating users.
- TIP:** GPS must be active and have a fixed location (FIX: Check the coordinates on the main page).

