

Operating Outside North America

LoRa mesh hardware designed for North America operates on 902-928 MHz, which is an ISM band in the US and Canada but is *not* an ISM band in most of the rest of the world. Traveling or deploying internationally requires care.

European Union: 868 MHz

Europe uses 863-870 MHz for LoRa operations, under ETSI EN 300 220 harmonized standards. EU regulations differ from US Part 15:

- **Frequency: 863-870 MHz** - 915 MHz hardware will not meet EU spectrum regulations and may cause interference with other licensed services
- **Duty cycle limits** - EU regulations impose maximum duty cycle limits (e.g., 1% in some sub-bands) that are not required in the US. This significantly limits how frequently nodes can transmit
- **Power limits** - Most EU sub-bands are limited to 25 mW ERP, but the 869.4-869.65 MHz sub-band used by Meshtastic's EU_868 default allows 500 mW ERP with a 10% duty cycle - still far below the US 4 W EIRP
- **CE marking required** for devices placed on the EU market

US hardware (915 MHz) must not be operated in EU countries. If you are deploying in Europe, purchase EU 868 MHz hardware specifically.

Australia and New Zealand

Australia (ACMA) and New Zealand (Radio Spectrum Management) allow LoRa operation on 915-928 MHz under license-exempt rules broadly equivalent to US Part 15. US-band hardware covers the AU/NZ 915-928 MHz range (set region to ANZ), but check that the device carries Australian/NZ RCM compliance marking - FCC certification alone does not authorize sale or use.

Asia-Pacific

Regulations vary significantly by country:

- **Japan** - 920-928 MHz is available under the ARIB STD-T108 standard. Power limits differ from US.
- **South Korea** - 920-923 MHz available under MSIT/RRA regulations (Meshtastic KR region).
- **China** - 470-510 MHz and 779-787 MHz LoRa bands; 915 MHz is NOT a license-exempt band in China.
- **India** - 865-867 MHz for LoRa under WPC guidelines.

General International Guidance

- Before operating in any country, verify local spectrum regulations for the frequency band of your hardware
- Do not assume US-certified hardware is legal to operate in other countries
- When traveling, check the destination country's rules before bringing or operating LoRa gear; FCC certification does not authorize operation outside the US. Consider not transmitting at all unless you confirm legality.
- Consider purchasing locally-certified hardware for extended international deployments

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