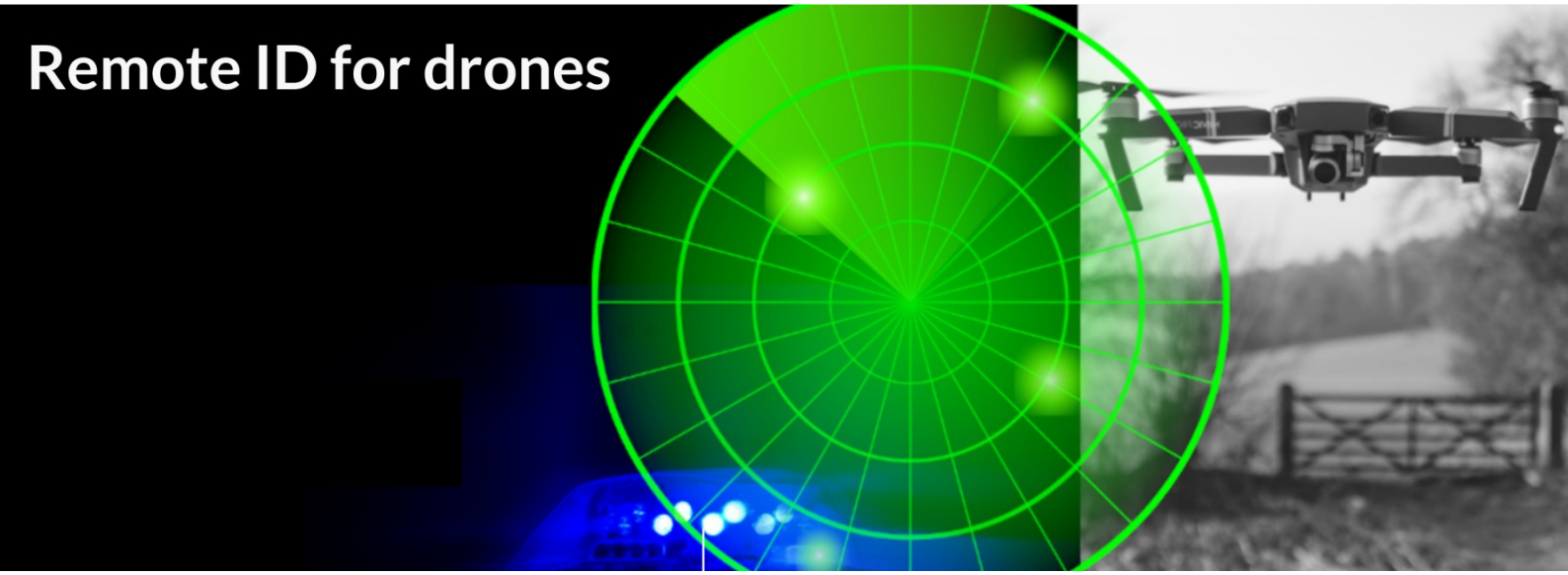
DroneScout LTE - Manual

April 2025 - version 1.1



The latest version of this manual is located here:
https://download.bluemark.io/ds_lte.pdf

Intended audience: system integrators

Disclaimer: we are not responsible or liable for errors or incomplete information in this document.

Version history

version	date	description
1.0	May 2024	● Initial release
1.1	April 2025	● Added information about LTE modem with the interface board

Contents

1 INTRODUCTION

The LTE option for DroneScout is a solution that adds LTE connectivity to DroneScout receivers such as the ds230/ds240.

1.1 Audience

This document is intended for system integrators that want to use the *LTE option* with DroneScout receivers. This product is not intended for end users!

2 INSTALLATION

2.1 hardware installation

- If you bought the DroneScout receiver with the LTE option, you can skip this step.
- Peel and stick the sticker antennas to inside the enclosure. Also stick the LTE modem with USB to mini-PCI adapter using a dual adhesive sticker to the enclosure.
- Use the USB extension cable to connect it from the LTE modem to one of the unused USB ports of the dronescout receiver.

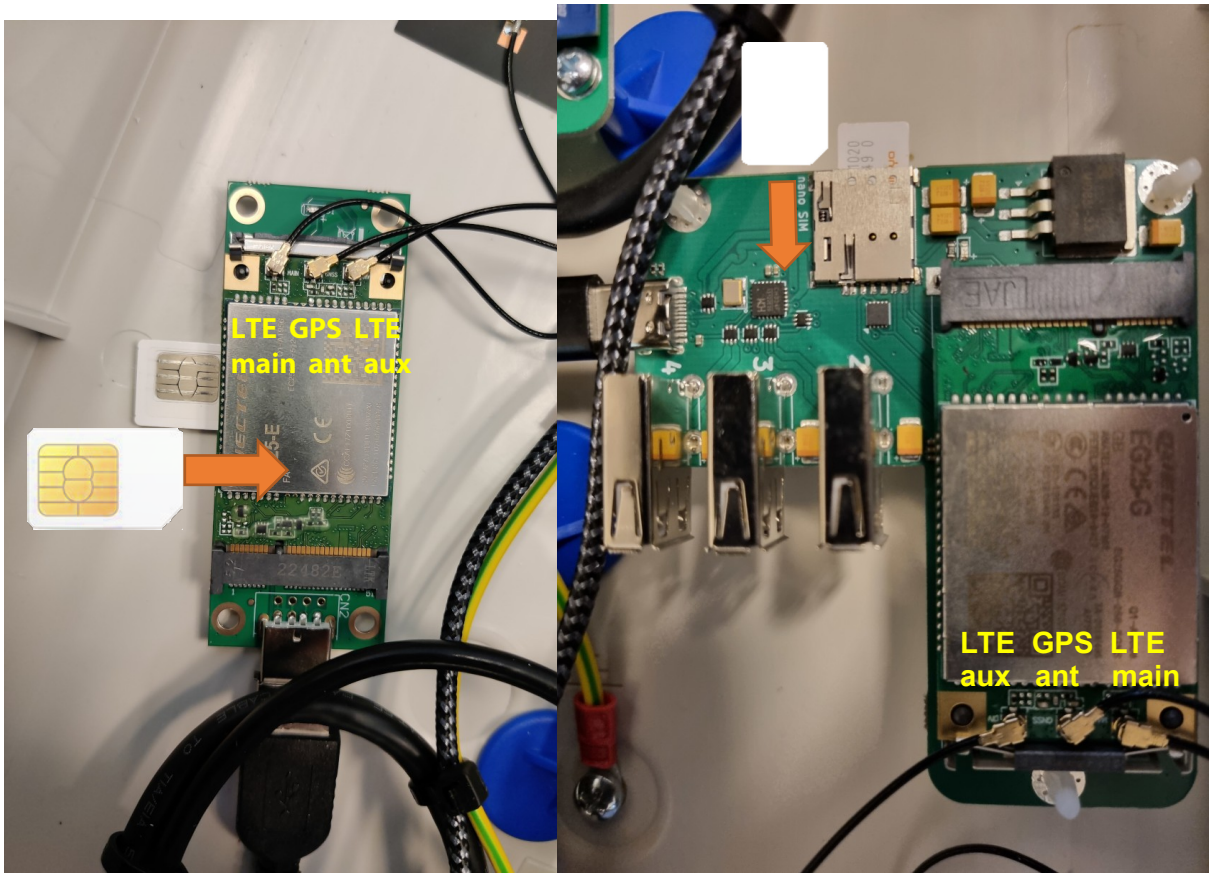


Figure 1 - LTE modem Quectel EC25 with miniPCI to USB adapter (left), on the right the Quectel EG25-G with the interface board

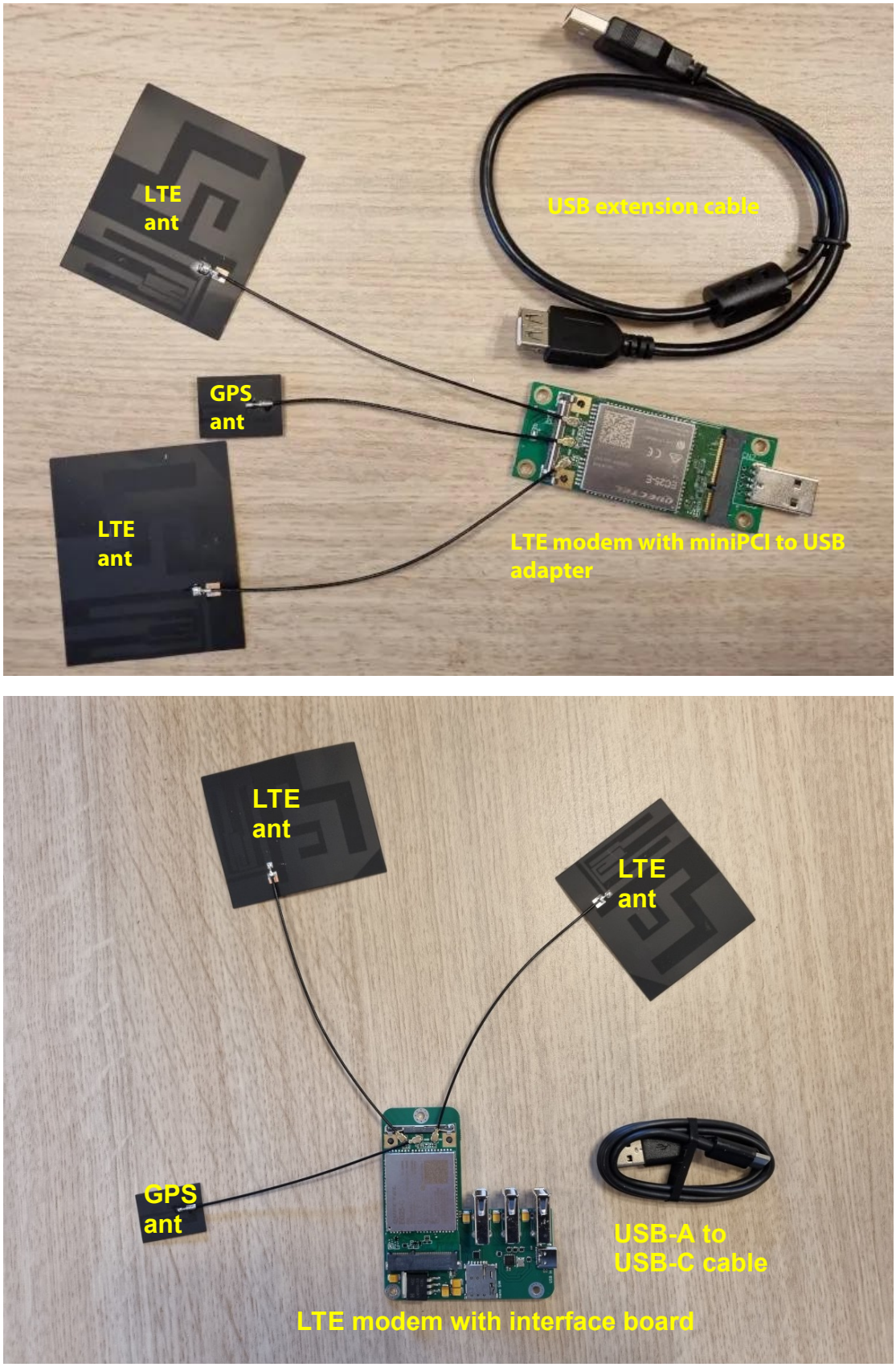


Figure 2 - LTE modem with all components (top with miniPCI to USB bridge, bottom, interface board)

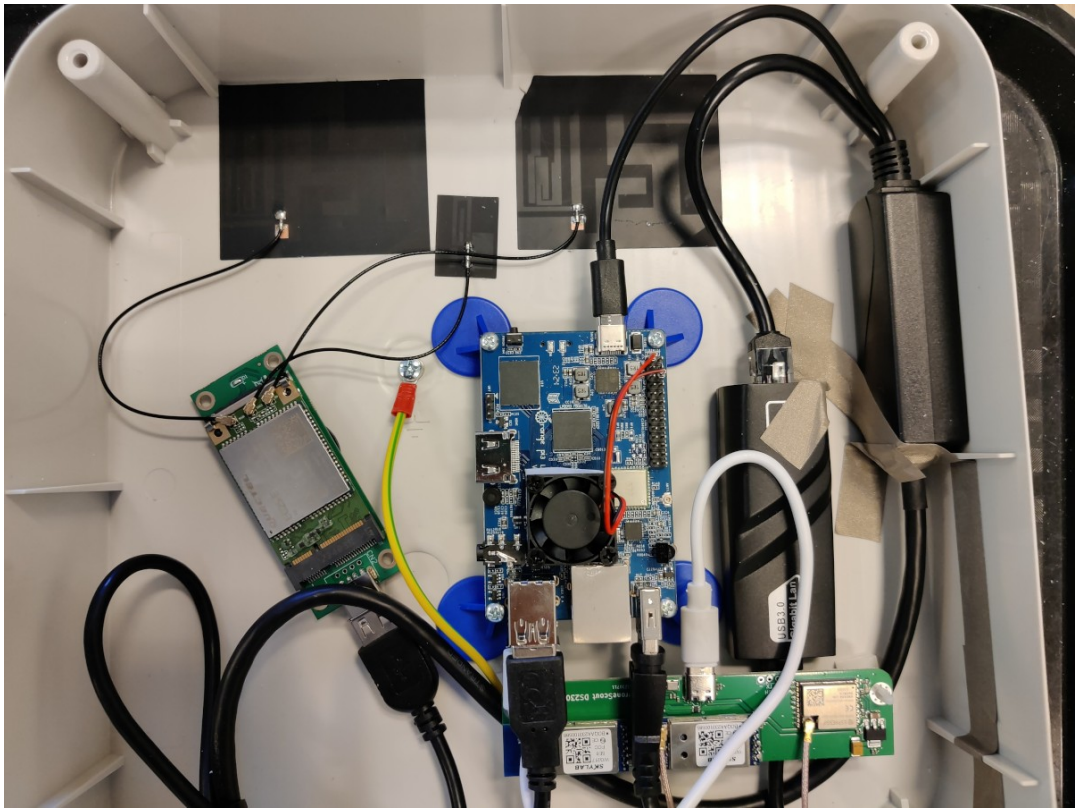


Figure 3 - LTE option installed in the enclosure

1.2 software installation

Install the ppp package. Login using SSH and enter these commands. If you bought the DroneScout receiver with the LTE option, you can skip this step.

- Install the PPP package

```
mount -t sysfs none /media/root-ro/sys
mount -t proc none /media/root-ro/proc
mount --bind /dev/ /media/root-ro/dev
mount --bind /tmp/ /media/root-ro/tmp
mount --bind /dev/pts /media/root-ro/dev/pts
mount -o bind /etc/resolv.conf /media/root-ro/etc/resolv.conf
overlayroot-chroot
apt update; apt install -y ppp
exit
```

- Download and install the LTE software package:

```
curl https://download.bluemark.io/dronescout/lte/install.sh |
bash
```

3 CONFIGURATION

After the modem is installed inside the enclosure and you installed the LTE software package, you can configure it. The LTE software package uses the PPP/UART interface for setting up LTE connection. This turned out to be the most robust interface. If the sensor cannot reach internet, it will restart the LTE connection.

The main configuration file is `/root/lte.sh`

In it, there are these 3 lines (line 17 to 19):

```
export LTE_APN=internet
export LTE_USERNAME=
export LTE_PASSWORD=
```

Change the variable `LTE_APN, LTE_username, LTE_password` to your needs. Most SIM cards only need an APN. Default the APN is set to “internet”.

```
overlayroot-chroot
nano /root/lte.sh
#save
exit
```

In case your SIM card has a PIN code, uncomment the line *# AT+CPIN=<PIN number>* in file /etc/ppp/peers/quectel-chat-connect. Change <PIN number> accordingly.

Note to make changes permanently you need to enter the command `overlayroot-chroot` first.

4 TROUBLE SHOOTING

There is no LTE connectivity.

This can have multiple causes. Check the output of the script that sets up the LTE connection:
`screen -R LTE`

Some SIM cards/network carriers can need some changes to the ppp configuration. This file can be found `/etc/ppp/peers/quectel-ppp`

Note to make changes permanently you need to enter the command `overlayroot-chroot` first.

5 MORE INFORMATION

If you need more information, please contact us at info@bluemark.io or by phone: +31 53 711 2104.

All contact information can be found at the *DroneScout* contact page:
https://dronescout.co/contact/