

Morpheans.com / Sharpikkeebo

UPDATE : 10/04/2023

HOW TO SET SHARPIKKEBO TO TALK TO THE RAK3172 RADIO MODULE

The RAK3172 is talking to the RASPBERRY PI ZERO via AT Commands. We made the Sharpikkeebo capable of using UART1 to talk to the RAK module. TX is GPIO14, RX is GPIO15

To configure the RPI ZERO

Enable UART communications

```
sudo cp /boot/cmdline.txt /boot/cmdline.txt.old
```

The original file (fresh installation of Raspberry Pi OS) contains ON A SINGLE LINE:

```
console=serial0,115200 console=tty1 root=PARTUUID=75afe894-02 rootfstype=ext4  
elevator=deadline fsck.repair=yes rootwait quiet splash plymouth.ignore-serial-consoles
```

Open it with nano (on the Raspberry Pi)

```
sudo nano /boot/cmdline.txt
```

Delete this text: `console=serial0,115200`

And Reboot

```
sudo reboot
```

Once rebooted start a

```
sudo raspi-config
```

1. Go to INTERFACE OPTIONS then SERIAL PORT
2. Select NO on serial login
3. Select YES on ACTIVATE on SERIAL PORT HARDWARE TO BE ENABLE

Then reboot.

```
sudo reboot
```

Disable Bluetooth

You need to add a line to the `/boot/config.txt` file to apply this overlay:

Open the file with nano

```
sudo nano /boot/config.txt
```

And at the very bottom of the file, add:

```
dtoverlay=disable-bt
```

Save the file and reboot Raspberry Pi OS for the modification to take effect.

```
sudo reboot
```

Disable system service

disable-bt that we just used disables the Bluetooth device and makes PL011 (UART0) the primary UART. You also need to disable the system service that initializes the modem so that it doesn't connect to the UART, using the command:

```
sudo systemctl disable hciuart
```

Enable the physical UART

In /boot/config.txt if it's not already done automatically, change the line

```
enable_uart=0
```

to

```
enable_uart=1
```

To take all this into account, reboot your Raspberry Pi

```
sudo reboot
```

Install a test terminal software such as minicom

```
sudo apt install minicom
```

Start minicom with this command line

```
minicom -D /dev/ttyAMA0
```

Set it to the appropriate communication parameters with : CTRL-A P

Set:


- 115200 bauds
- 8 bits of data

- Parity : No parity
- 1 stop bit


and save


Put minicom in ECHO MODE : **CTRL-A E**


And type **ATZ**. You should get an answer from the RAK CHIP



RAK3172
DEVEUI: XXXXX
XXXXXXXXXXXX
FCC ID: 2AF68-RAK3172
IC: 22908-RAK3172
Made in China

Product Overview 

Quick Start Guide 

AT Command Manual 

Introduction ▶

```
ccadic@sharpkeebo: ~  
Welcome to minicom 2.8  
OPTIONS: I18n  
Port /dev/ttyAMA0, 18:30:30  
  
Press CTRL-A Z for help on special keys  
  
ATZ  
AT ERROR  
arYZ: Command not found!!  
atz  
  
RAKwireless RAK3172-E Example  
-----  
Current Work Mode: LoRaWAN.  
█
```

Your done