ADSB Feed to Multiple Sites on STB (Armbian) V2

By YD0NXX

Overview: Document to help installing ADSB receiver using RTL-SDR dongle, and feed to 6 (six) ADSB monitoring sites, using a repurposed ipTV STB (Set Top Box) running Armbian Buster.

This procedure mimics the following discussion of installation on Raspberry Pi:
https://forum.flightradar24.com/forum/radar-forums/flightradar24-feeding-data-to-flightradar24/10903-how-to-feed-data-to-multiple-sites-a-brief-guide

Strategy:

- Install readsb
- Then multiple feed:
    - FlightRadar24
    - PlaneFinder
    - RadarBox24
    - ADSB Exchange
    - FlightAware
    - OpenSky
    - (BONUS) NeoSky (has to be on a Rpi board)
- Technical detail:
    - readsb is serving on 127.0.0.1:30005
    - All feeders pick-up from port 30005

Note:

1. Using *readsb* as the ADSB receiver using SDR dongle is better compared to *dump1090-fa* as the local map interface has more technical data, such as *rssi* (received signal strength indicator)
2. Requires recompilation due to STB is *arm64* platform as all packages were built for Raspberry Pi (*armhf* platform)

Actions:

1. Fresh install Armbian on MSD card
    a. Boot and find IP number
    b. Connect using *ssh* and configure:
        i. armbian-config
        ii. Select 2, Change hostname (to “STB-ADSB-Multi”)
        iii. Reboot
    c. Check disk space, make sure there is plenty of space remaining

2. Install **readsb** as ADSB decoder using RTL-SDR Dongle

Ref: https://github.com/wiedehopf/readsb

```
apt -y update
cd /tmp

The next 3 lines is a single continuous line
sudo bash -c "$(wget -q -O -
https://raw.githubusercontent.com/wiedehopf/adsb-scripts/master/readsb-install.sh)"
```

Edit config file

```
vi /etc/default/readsb
        edit the PPM value of the SDR dongle
```

Set location and Reboot to reload RTL-SDR dongle

```
readsb-set-location -6.258576 106.779264
reboot
```

Check status

```
systemctl status readsb
```

Check (new) web interface: http://<ip-of-the-STB>/tar1090/

To install the old (*radar*) web interface

Goto: https://github.com/wiedehopf/adsb-scripts/commit/6c24c9a77b3d76cca76f4fb72bb620ee03b2924b

Scroll down to readsb-old-webinterface.sh

Copy and paste the script

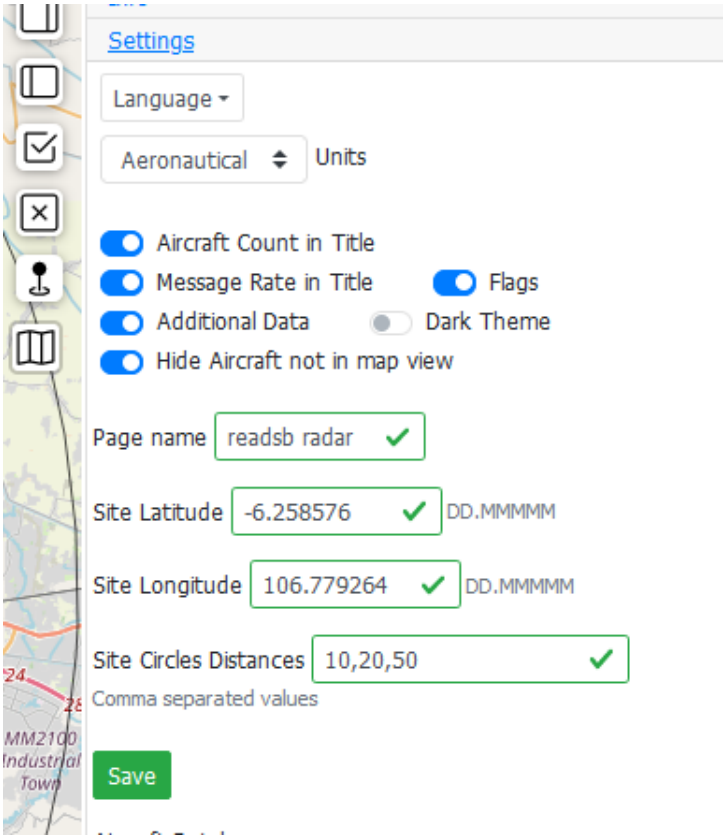
```
vi readsb-old-webinterface.sh

<paste the code and save the file>

bash readsb-old-webinterface.sh
```

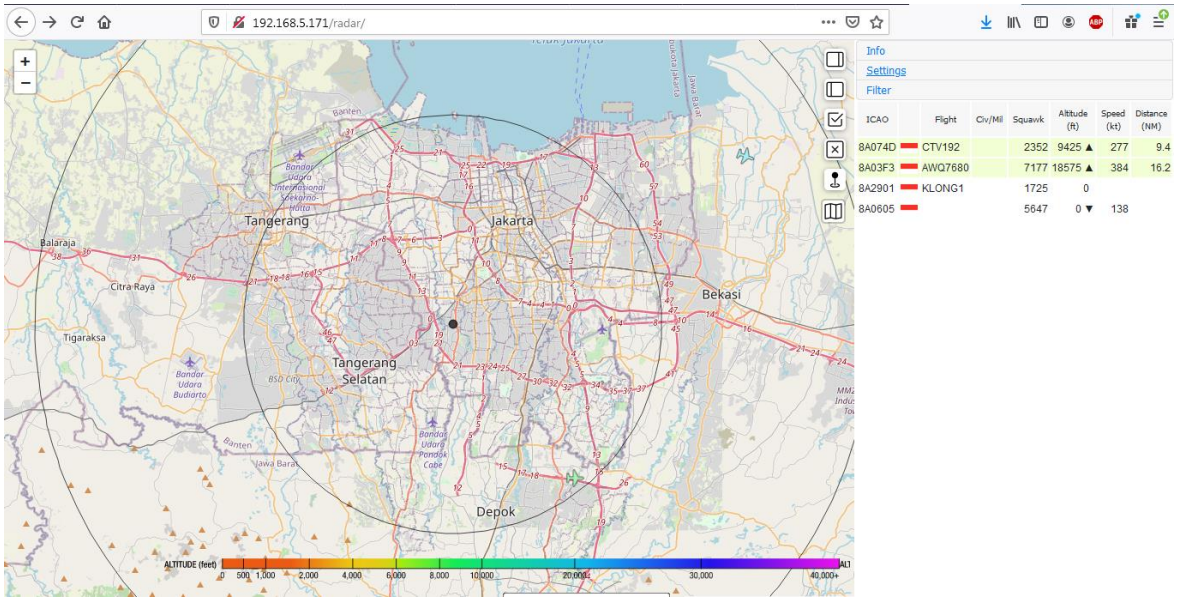
Restart lighttpd

```
systemctl restart lighttpd
```

Check web interface: http://<ip-of-the-STB>/radar/

Klik on Settings to fill-in location info





Click on a plane to see detail ADSB information, including autopilot setting and position resolution.

3. Install **FlightRadar24** feed

   Link: https://www.flightradar24.com/share-your-data

   ```
   sudo bash -c "$(wget -O - https://repo-feed.flightradar24.com/install_fr24_rpi.sh)"
   ```

   Configuration:

   - Email:
   - Key:
   - MLAT calculation: yes
   - Location (lat, lon and elevation)
   - Do not select AutoConfig
     - Select 4 – ModeS Beast
     - Select 1 – Network
     - IP number: 127.0.0.1
     - Port number: 30005

   How to find the key: https://www.flightradar24.com/account/data-sharing

   ```
   sudo vi /etc/fr24feed.ini
   ```

   Restart service:

   ```
   sudo systemctl restart fr24feed
   ```

   Debug:

   ```
   ps -ax | grep feed
   Find fr24feed
   ```

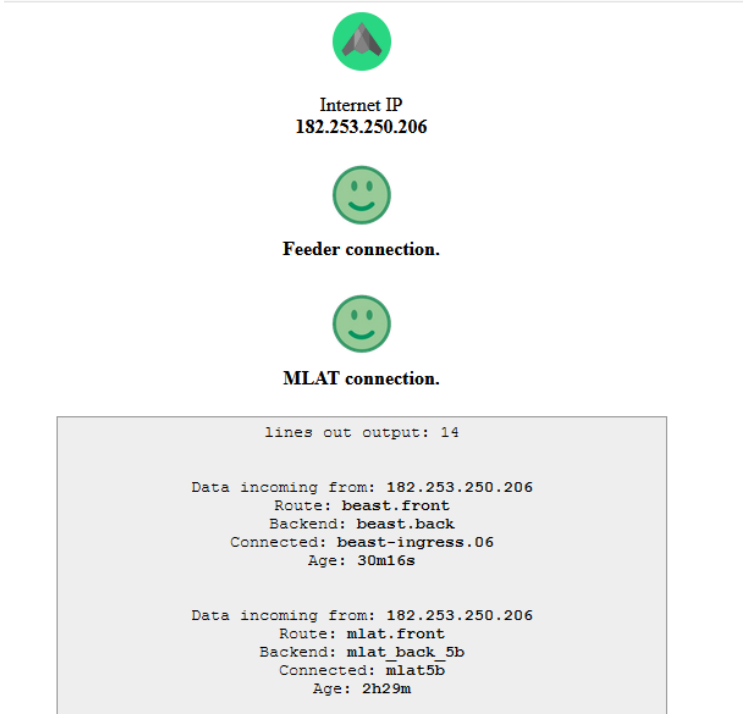
4. Install **ADSB-Exchange** feed

   Reference: https://www.adsbexchange.com/how-to-feed/

   ```
   wget -O /tmp/axfeed.sh https://adsbexchange.com/feed.sh
   sudo bash /tmp/axfeed.sh

     Click YES
     Type in site name       YD0NXX
     Type in latitude
     Type in longitude
     Type in elevation       40m
     Click YES to proceed

   Wait for around 10 minutes for the install script to complete
   ```

   Check web interface: https://www.adsbexchange.com/myip/

   There should be 2 Green Smiley face



i. Also check on : https://adsbx.org/sync/5B/
ii. Scroll down to find <your-site-name>

Debug:

```
ps -ax | grep adsbex
Find adsbexchange
```

5. Install RadarBox24 **COMPLETED**

Link: https://www.radarbox.com/blog/radarbox24-raspberry-pi-client (See CATEGORY A)

sudo bash -c "$(wget -O - http://apt.rb24.com/inst_rbfeeder.sh)"

if there is error then repeat

Restart service

```
systemctl restart rbfeeder
```

For a new installation → Get sharing key

```
sudo rbfeeder –showkey

You can link this sharing key to your account at
http://www.radarbox24.com
```

For reinstallation → Install sharing key

```
rbfeeder --setkey <your assigned sharing key>
```

Check status: https://www.radarbox.com/stations/raspberry-pi
Local map: https://www.radarbox.com/stations/<your-station-ID>

Install MLAT

```
# bash -c "$(wget -O - http://apt.rb24.com/inst_rbfeeder.sh)"
apt-get install mlat-client -y
reboot or systemctl restart mlat-client
```

Debug:

```
ps -ax | grep rbfee
Find rbfeeder
```

Config file:

```
sudo vi /etc/rbfeeder.ini
```

6. Install **PlaneFinder**

```
cd /tmp
wget http://client.planefinder.net/pfclient_4.1.1_armhf.deb
sudo dpkg -i pfclient_4.1.1_armhf.deb
```

Configure:

http: //<ip-address-of-STB>:30053/setup.html

For a new site: Choose option to I'd like to create a new sharecode

```
Type in Email address, Latitude and Longitude\
```

For a reinstall: Choose option to Assign sharecode

```
Type in Sharecode, Latitude and Longitude
```

Setting:

Receiver data format: Beast
Network Address = 127.0.0.1
Port = 30005
Click on "Complete configuration"

Check local map: http://<ip-address-of-STB>:30053/map.html
http:// <ip-address-of-STB>:30053/map.html (shows planes on Google Map)
http:// <ip-address-of-STB>:30053/stats.html (shows stats of your receiver)
http:// <ip-address-of-STB>:30053/logs.html (shows logs of your receiver)

Debug:

```
ps -ax
Find pfclient
```

7. Install **FlightAware** feed

Install from github

```
apt -y install tclx itcl3 tcl8.6-dev
apt -y install tcllib libboost-filesystem1

cd /tmp
git clone https://github.com/yd0nxx/Armbian64/
cd Armbian64
apt -y remove tcl-tls
dpkg -i tcl-tls*.deb
dpkg -i piaware*.deb
```

If error then do:

```
apt --fix-broken install
```

Claim FlightAware site:

https://flightaware.com/adsb/piaware/claim

Check Statistics: https://flightaware.com/adsb/stats/user/<your-site-ID>

Debug to check daemon is running:

```
ps -ax
Find piaware
```

8. Install OpenSky Network

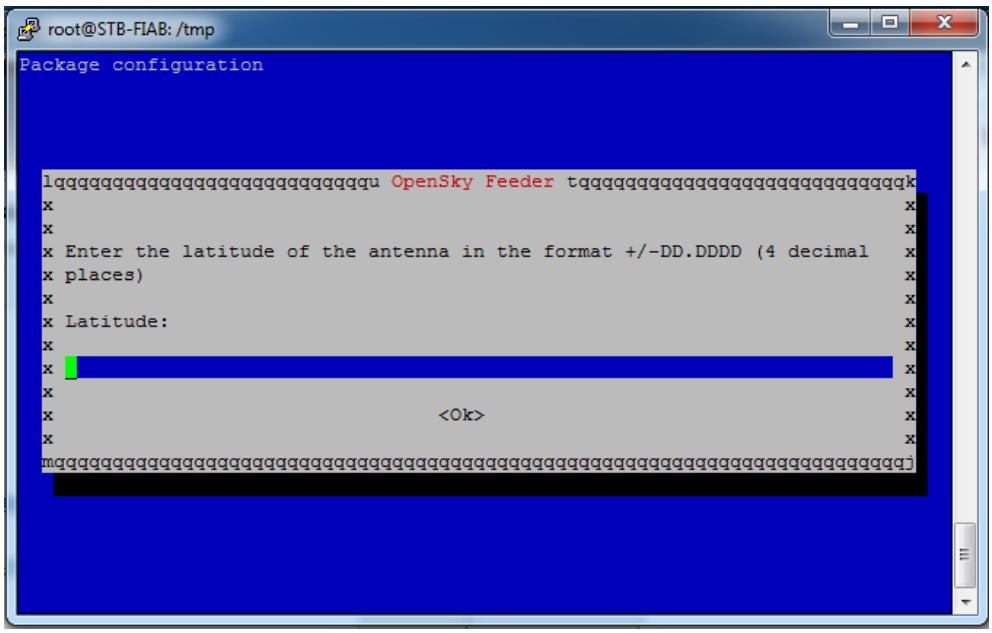
Ref: https://opensky-network.org/community/projects/30-dump1090-feeder

Create an account on: https://opensky-network.org/my-opensky/my-sensors

Installation:

```
cd /tmp
wget https://opensky-network.org/files/firmware/opensky-feeder_latest_armhf.deb
dpkg -i opensky-feeder_latest_armhf.deb
```

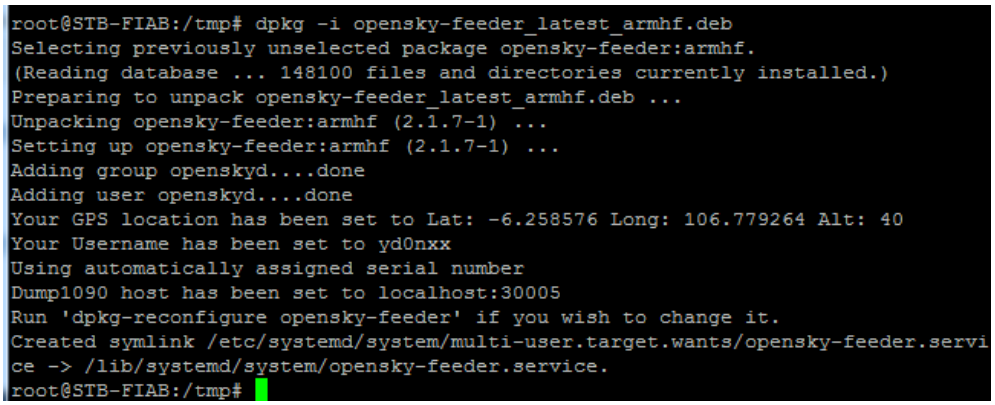
Type in the station location:



Then the following data:

- Longitude
- Altitude (meter ASL)
- Dump1090 branch: default
- Username: <your OpenSky username>
- Serial Number: <your serial number>
- Dump1090 Feeder Port: 30005 (press TAB then Enter)
- Dump1090 Feeder Host: localhost (press TAB then Enter)

Continue with the installation script




```
Serial Number:
Check webpage: https://opensky-network.org/receiver-profile
Completed
```

Debug to check daemon is running:

```
ps -ax | grep opens
Find openskyd-dump1090
```

9. Install NeoSky (Beta) (Not Working in STB due to no unique host ID, use Raspberry Pi instead and set up using STB as the data source)

Ref: https://suite.neosky.id/register/

```
mkdir neosky
cd neosky
wget https://www.neosky.id/public/myfeed-opi0.gz
gunzip myfeed-ood.gz
chmod ugo+x myfeed-opi0
./myfeed-opi0 start
```

Goto webpage for registration

Yono Adisoemarta – YD0NXX

- V1: 4 January 2021 (using *dump1090-fa* as receiver)
- V2: 6 January 2021 (using *readsb* as receiver)
- V2.1: 24 January 2021 (using *readsb* as receiver and *radar* as webpage)

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