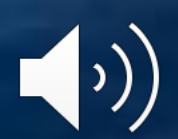


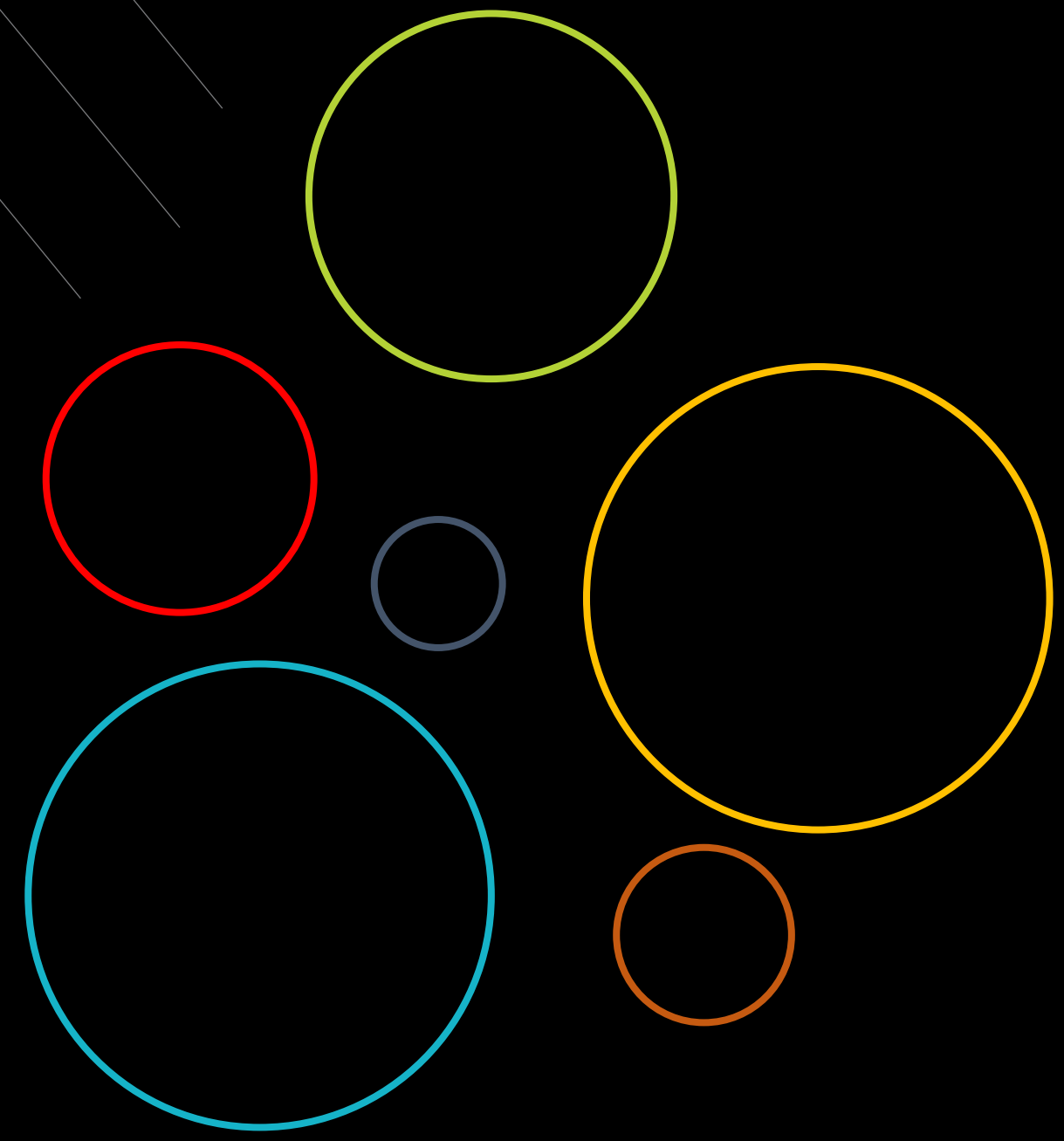


How to **Received Images** From Geo-Kompsat 2A Satellite (GK-2A)

JOKO SANTOSO | YC8NYJ 



Special Thanks



Sam

John Bell

Matt Painter

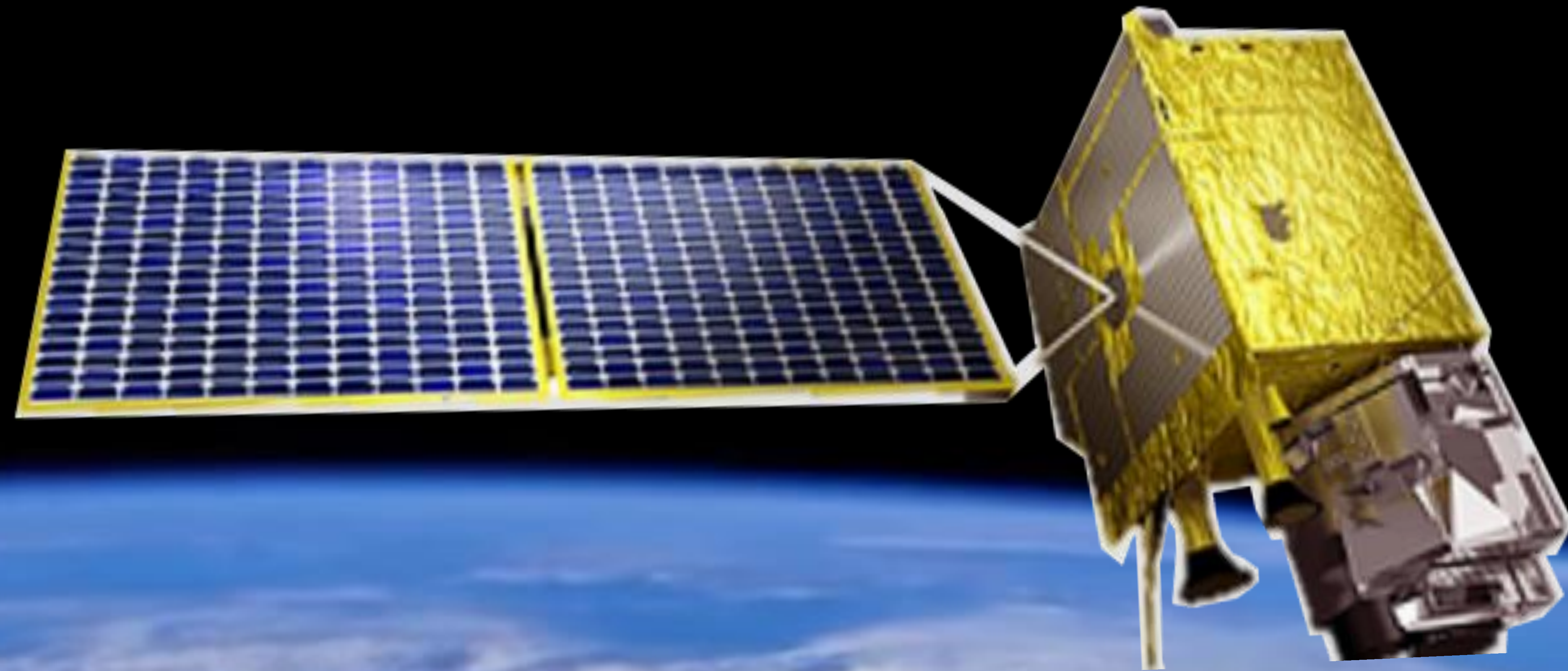
YC3BVG

YC2SAT

All Friends (AMSAT-ID)

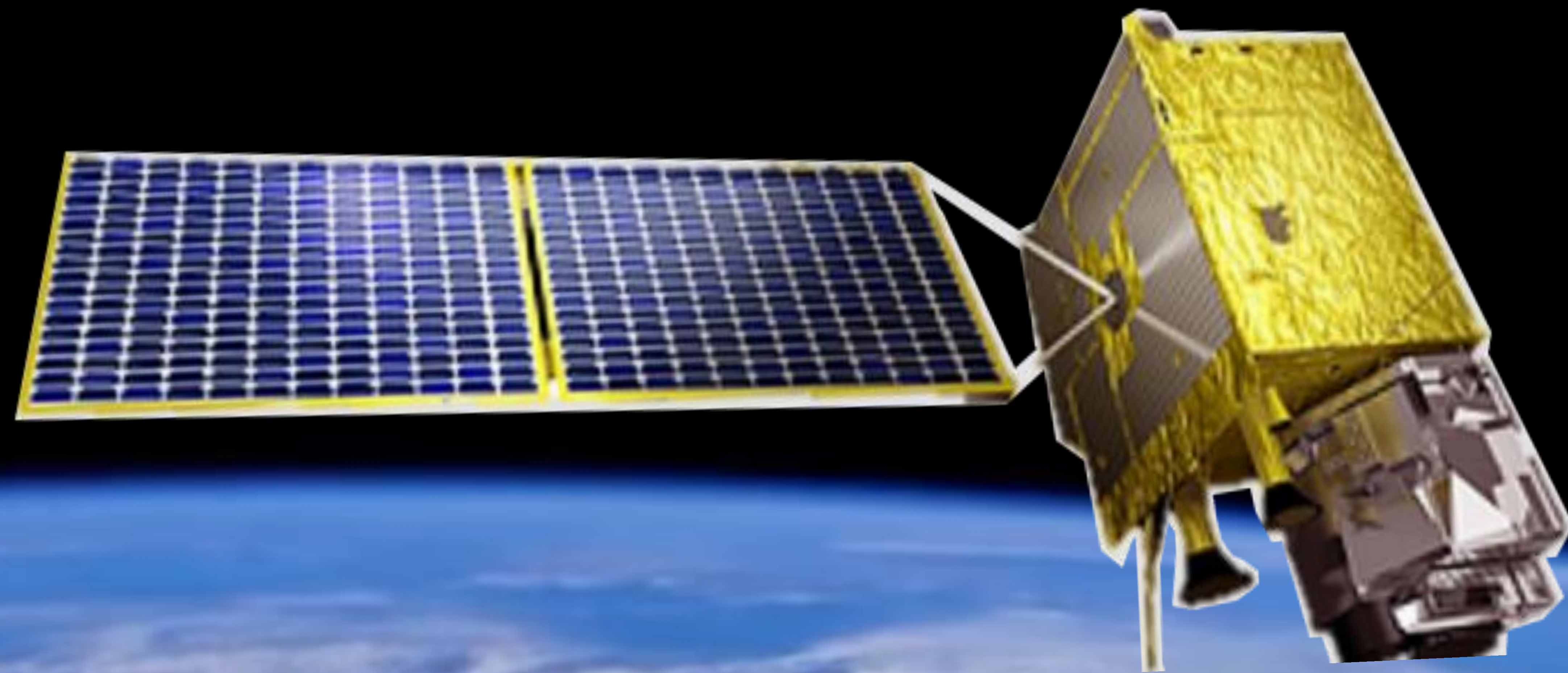


About GK2A Satellite



GEO-KOMPSAT-2A (GK-2A) adalah satelit cuaca geostasioner yang dioperasikan Badan Meteorologi Korea dan diluncurkan pada 5 Desember 2018 yang salah satu misinya untuk pemantauan fenomena cuaca buruk yang lebih cepat untuk mengurangi bencana meteorologi.





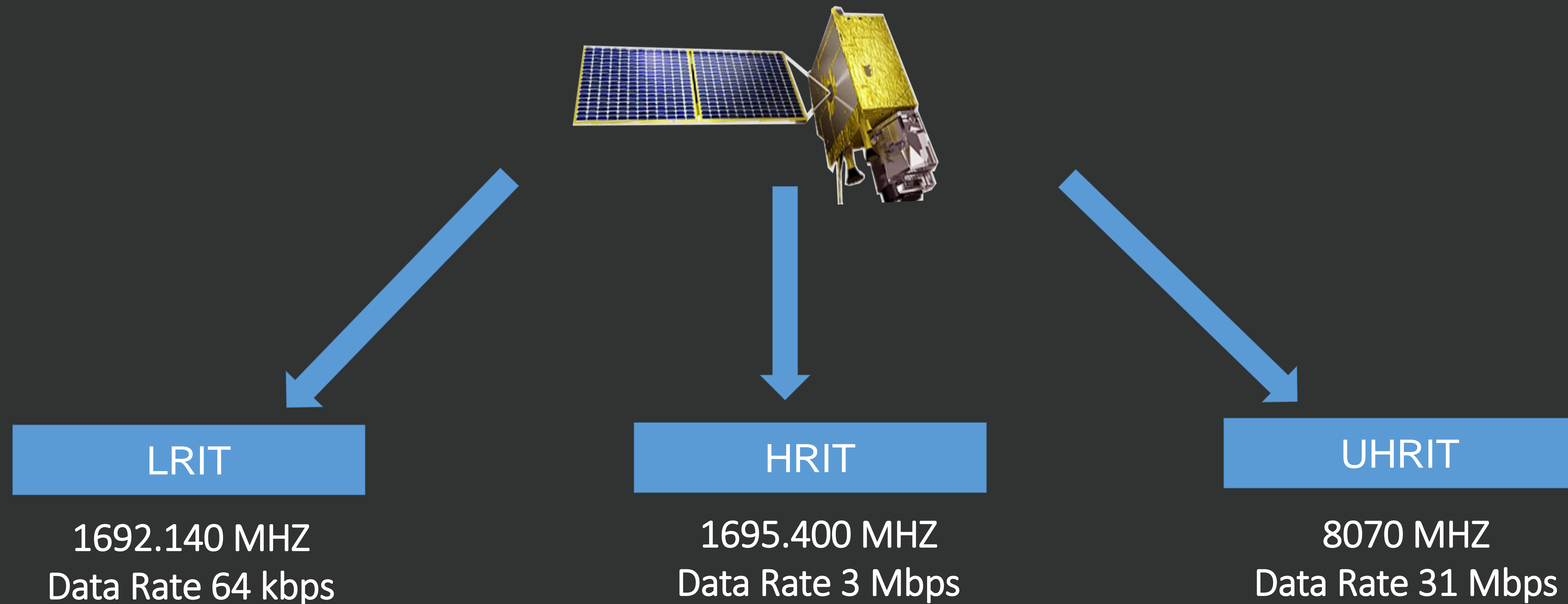
GEO-KOMPSAT-2A (GK-2A) mengorbit bumi diposisikan di atas ekuator pada $128,2^{\circ}$ E (Bujur Timur) yang terlihat dari Australia, New Zeland, India, Rusia Timur, Korea, Jepang, dan seluruh Asia Tenggara



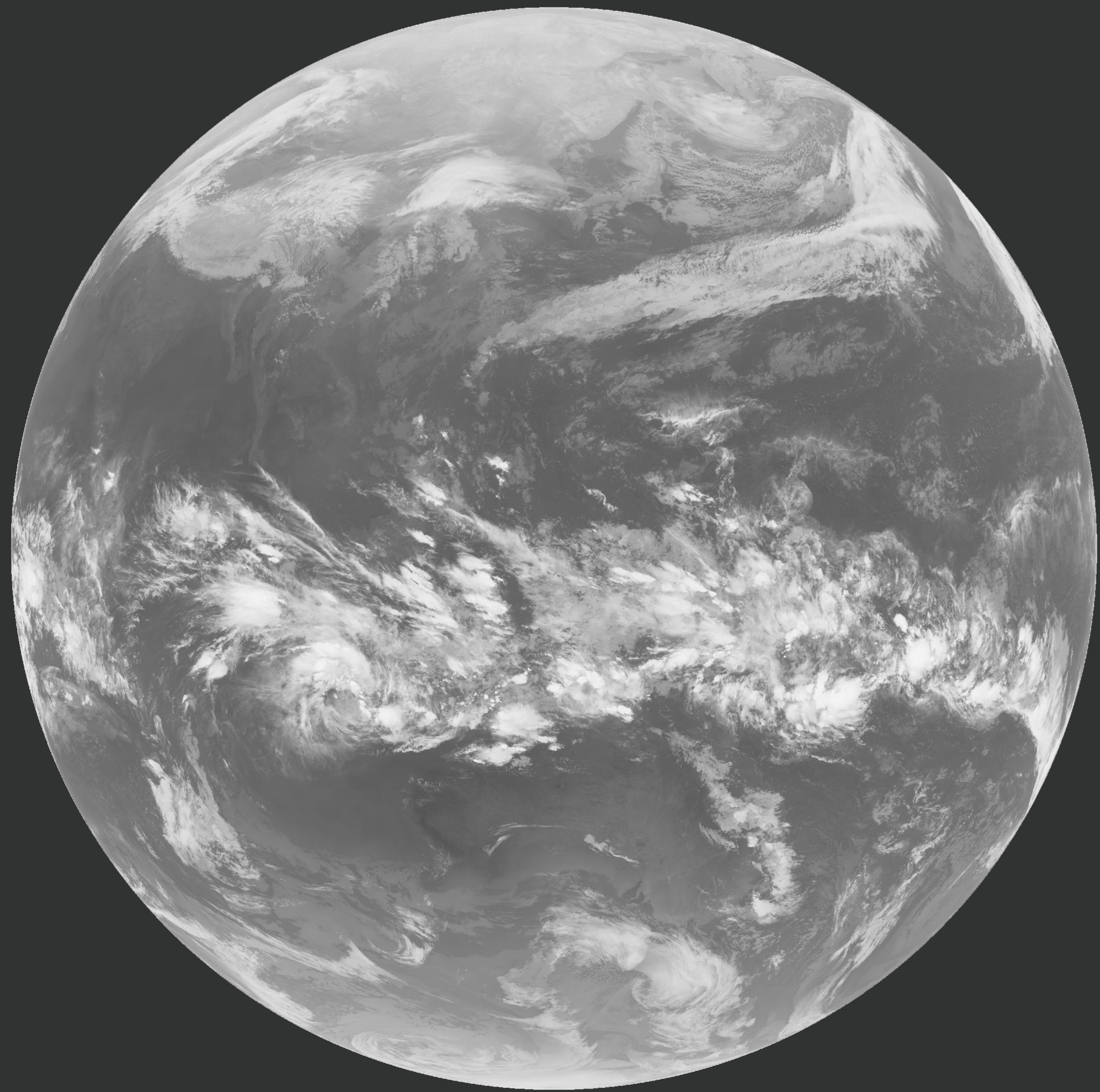
GEO-KOMPSAT-2A footprint



DOWNLINK FREQUWENSI GK2A (2 L-BAND & 1 X-BAND)

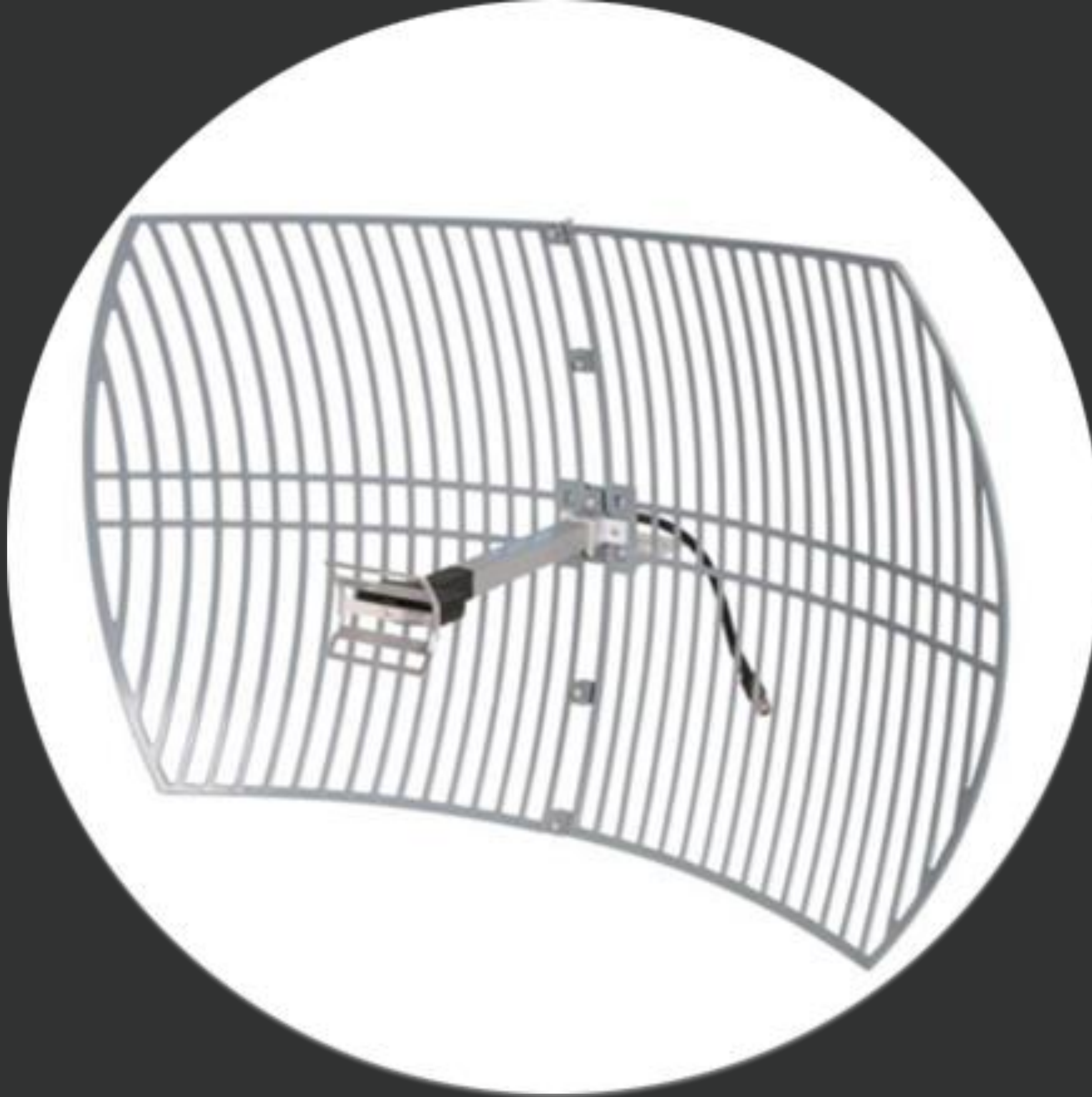


Capture Images GK2A Satellite



Setiap 10 menit, instrumen Advanced Meteorological Imager (AMI) on-board GK-2A melakukan observasi disk secara penuh. Proses pengambilan citra Bumi dalam 16 panjang gelombang cahaya yang berbeda, empat di antaranya adalah cahaya tampak. 12 panjang gelombang yang tersisa adalah berbagai kombinasi inframerah dekat dan inframerah gelombang menengah / panjang.





ANTENA

Antena Grid 2,4 Ghz



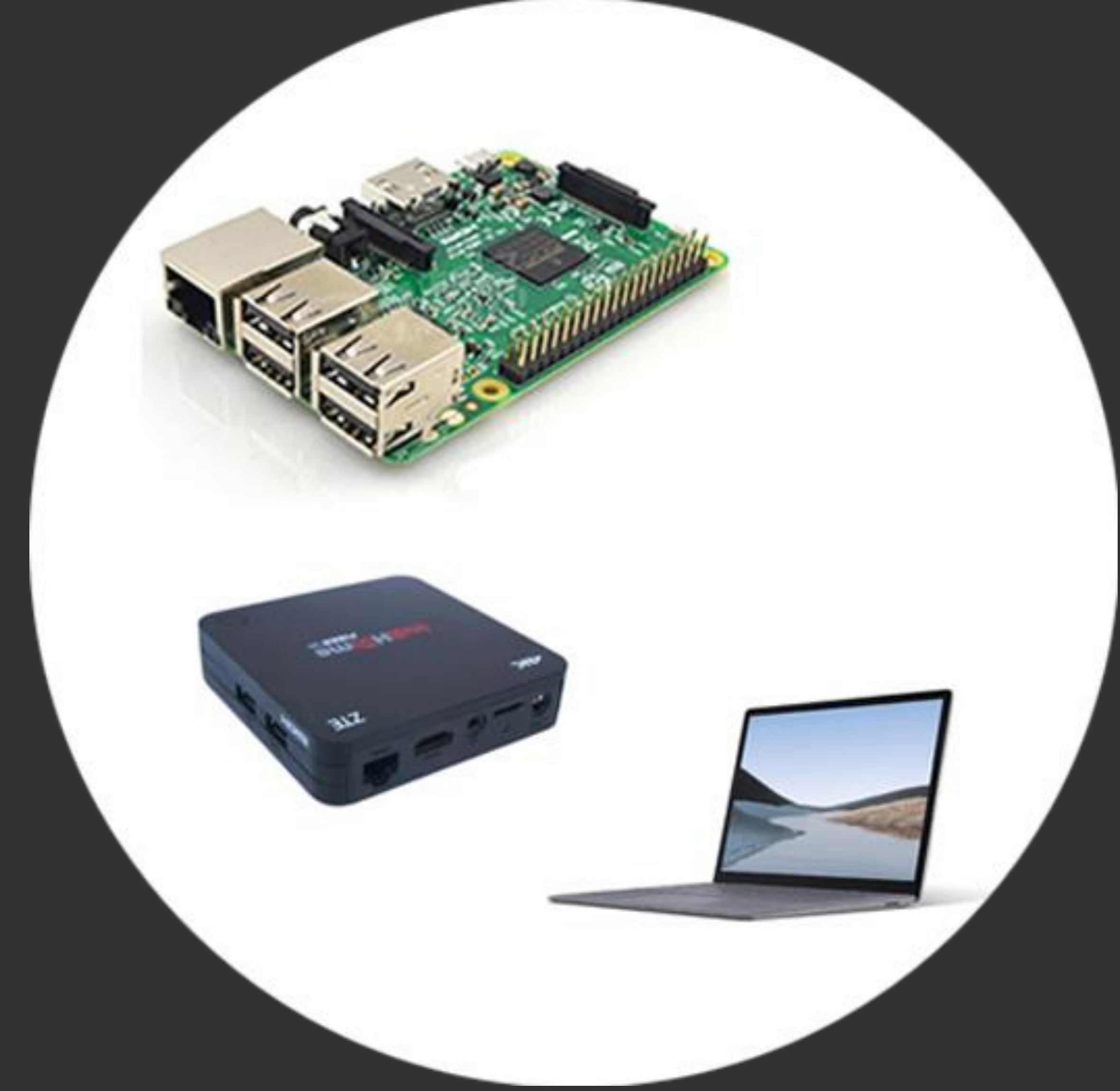
LNA

Dengan penguatan 20-35 dB



RTL-SDR V3 / Nooelec

Range Freq up to 2 Ghz



Mini PC /PC

Bisa menggunakan

- Raspberry Pi (raspian)
- STB dah di root (armbian)
- PC/Laptop (Os Linux)

Equipment RX Images GK2A



1

Goesrecv

<https://github.com/sam210723/goestools>

2

Xrit-rx

<https://github.com/sam210723/xrit-rx>

3

Goesrecv-monitor

<https://github.com/sam210723/goesrecv-monitor/releases/latest/download/goesrecv-monitor.zip>

4

Plugin GK2A GIMP(underlay/warna)

https://github.com/eswnl/Plugins_for_GK-2A

5

Sanchez (underlay/warna)

<https://github.com/nullpainter/sanchez>

Panduan instalasi semua ada website :

<http://vksdr.com/xrit-rx>

Software RX Images GK2A

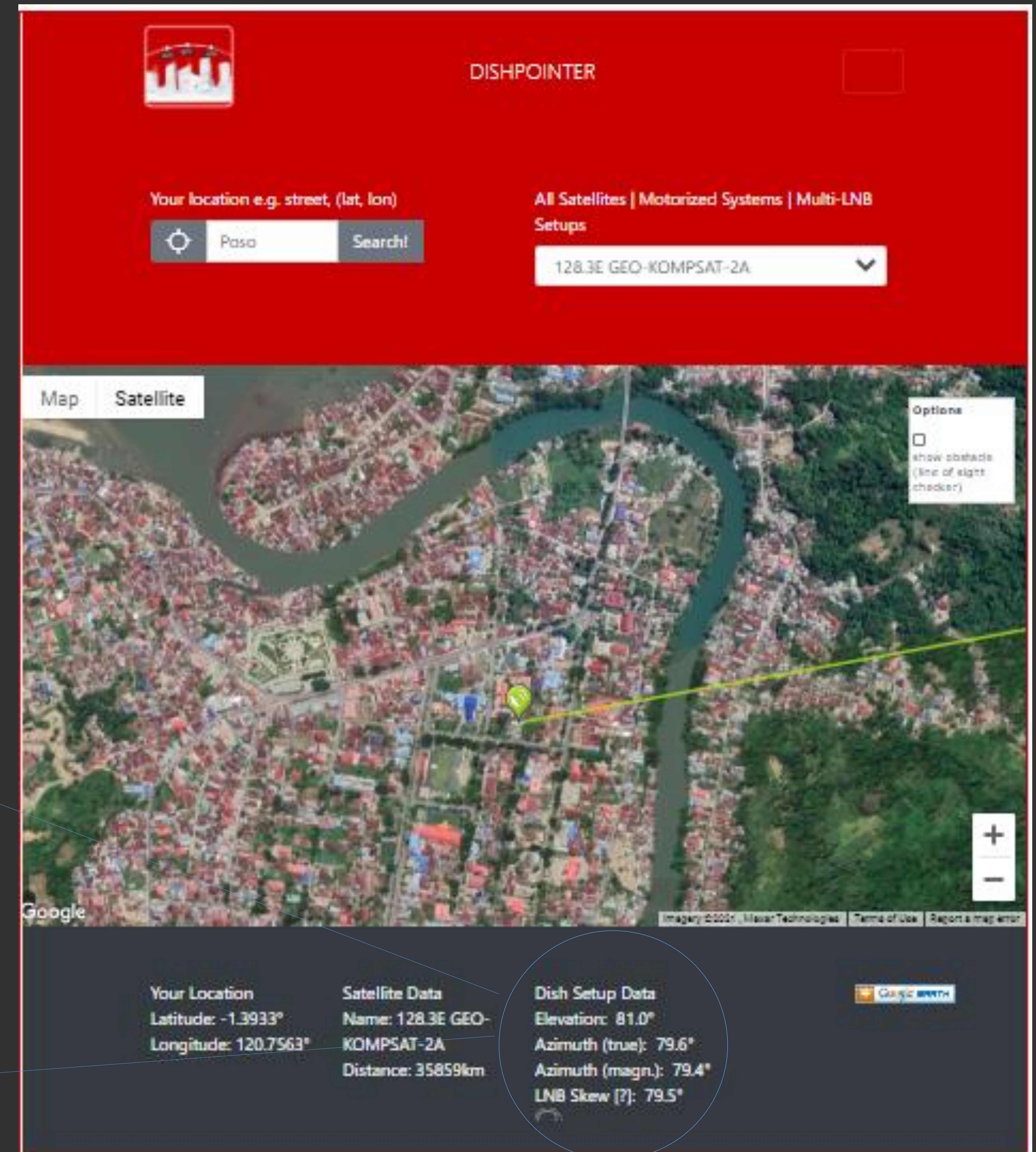


Preparation

Hunting Posisi Satelit dari tempat kita dengan aplikasi web :

Dishpointer akses di website:
<https://www.dishpointer.com/>

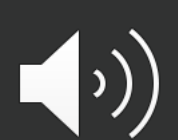
Dish Setup Data
Elevation: 81.0°
Azimuth (true): 79.6°
Azimuth (magn.): 79.4°
LNB Skew [?]: 79.5°



Preparation

Hunting Posisi Satelit dari tempat kita.
dengan aplikasi android

- Aplikasi Android “ Satellite AR “



Pointing Disk Antena ke Satelit GK2A



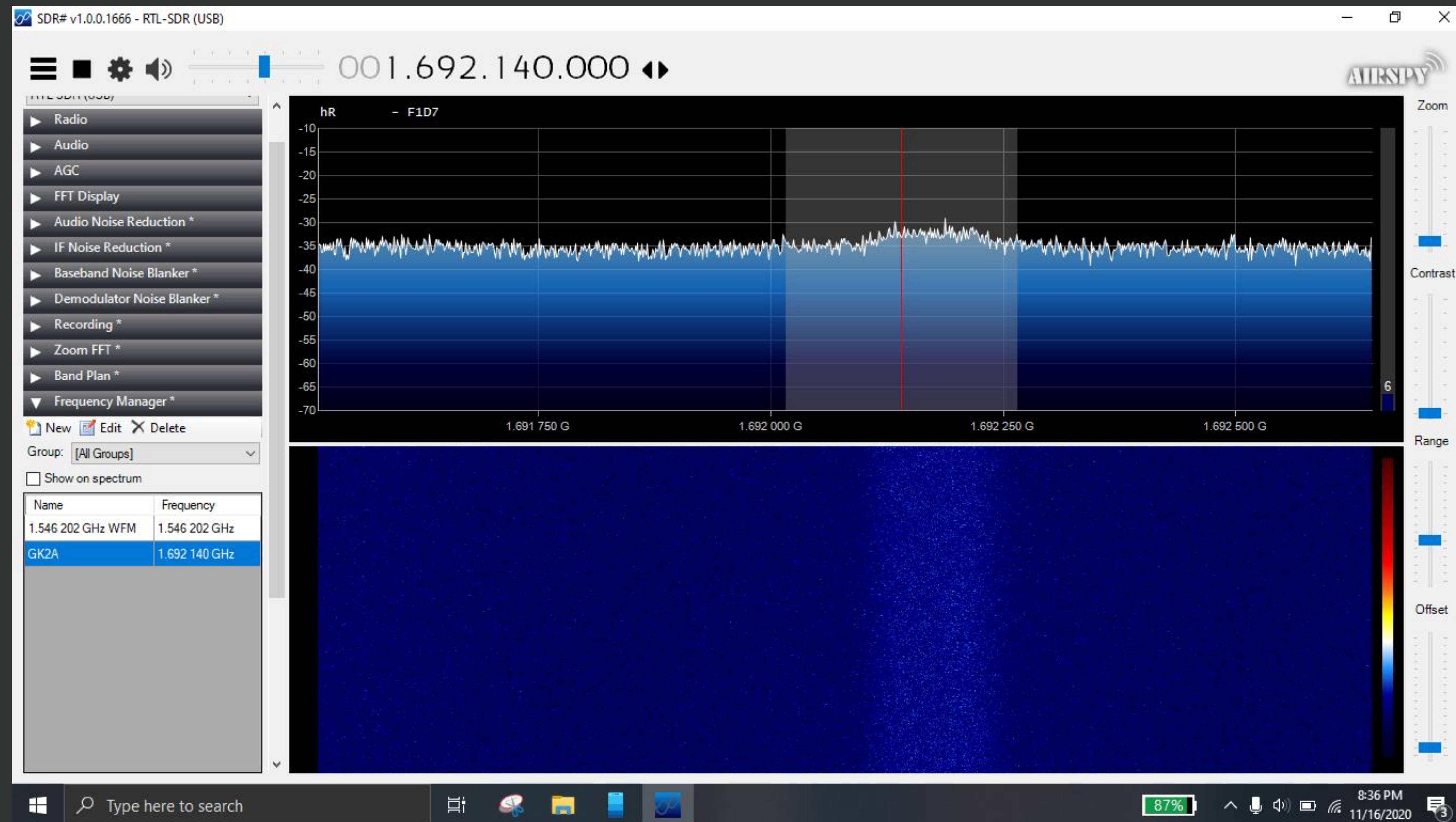
Sesuaikan Elevasi dan Azimuth yang di dapat dari aplikasi distpointer atau aplikasi lainnya yang sejenis

Pointing Antena

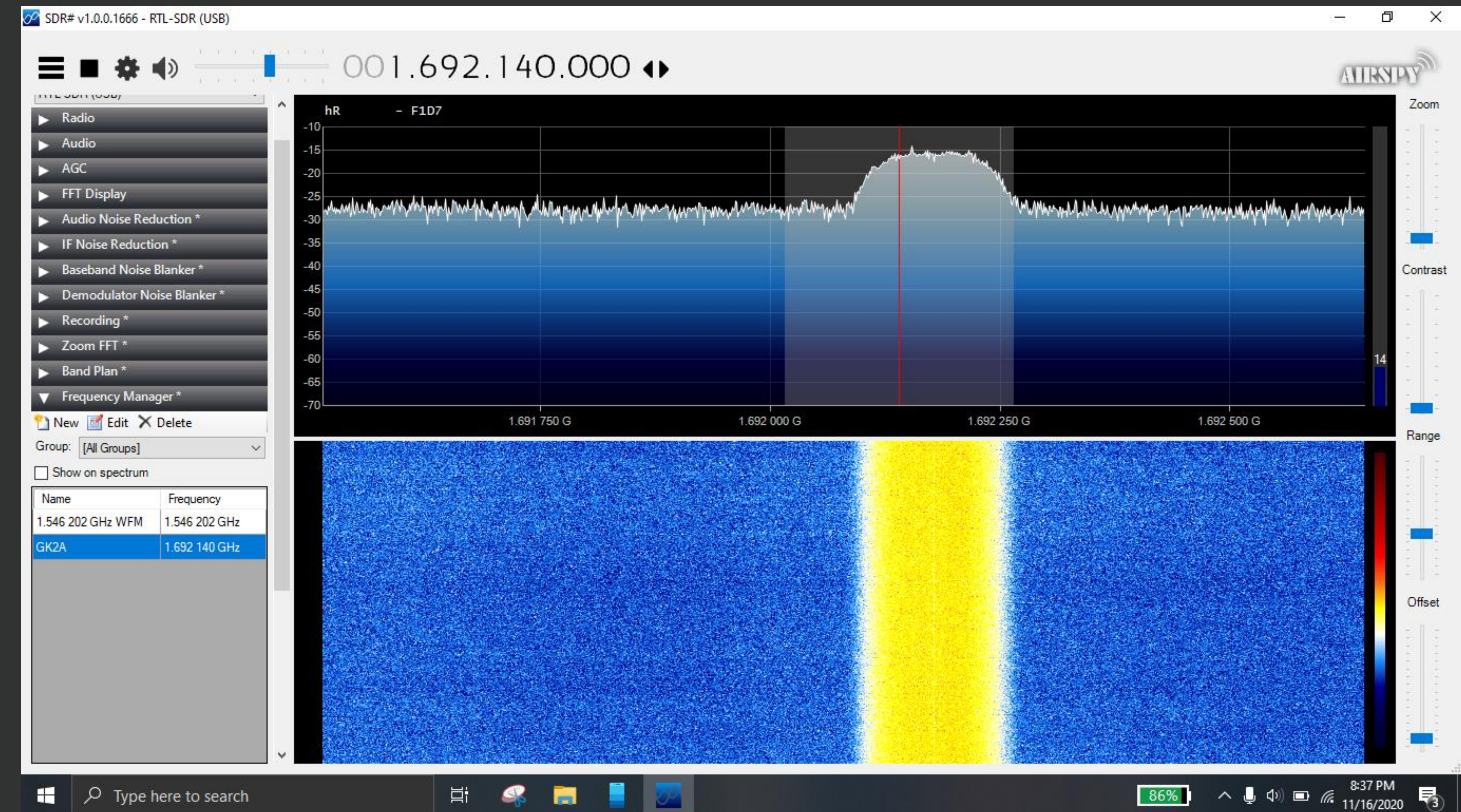


Ceking Signal

Setup device (Antena,LNA,Rtl-SDR) ke PC/Laptop dan cek sinyal lewat software “SDRSharp” atau aplikasi sejenis. Tunning di frekwensi 1.691.140.000



Tanpa LNA



Pakai LNA



Try to RX

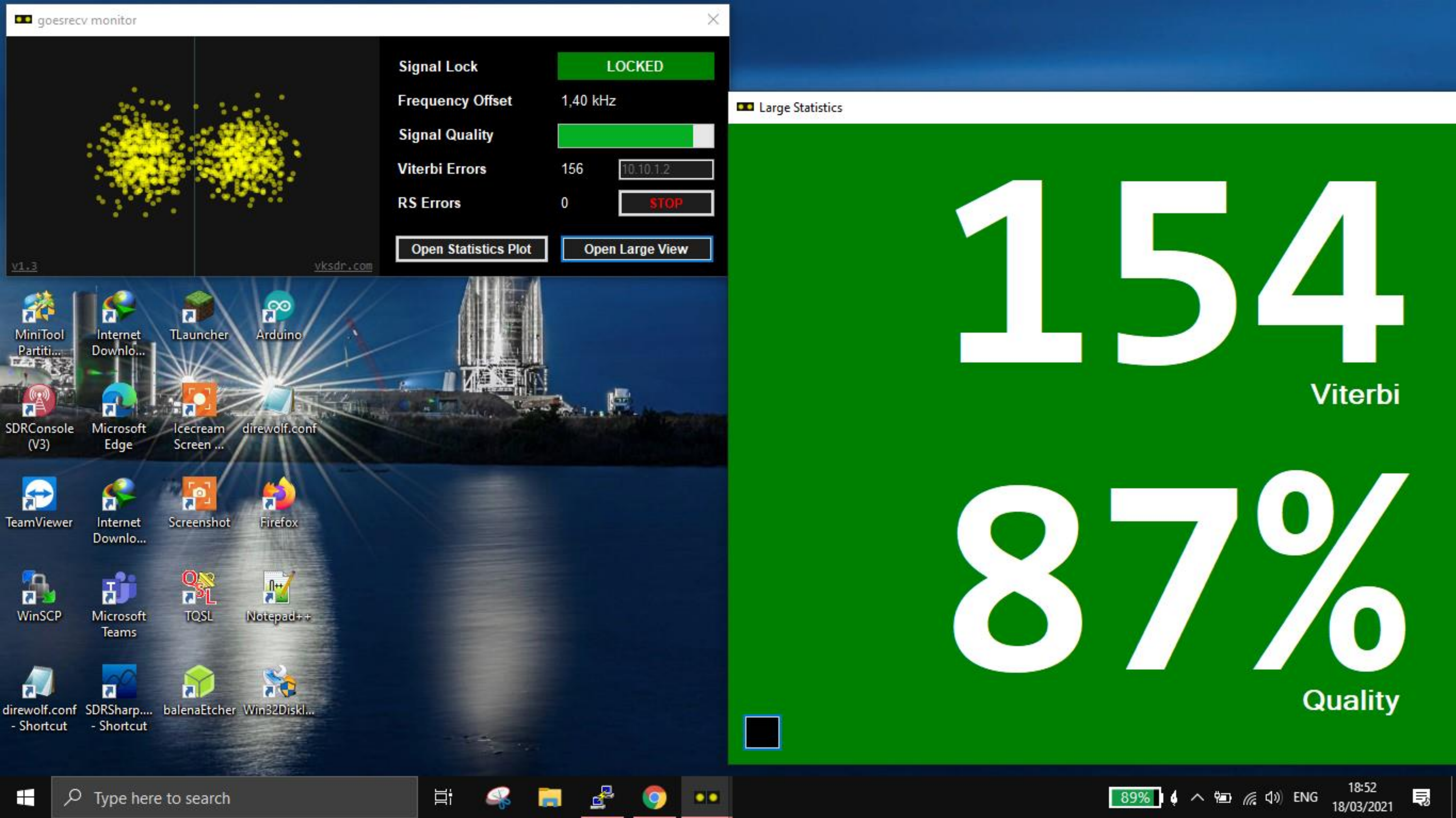
Hubungkan rtl-SDR ke Raspi lalu via terminal/ssh jalankan “goesrecv”

`goesrecv - v - i 1 - c goesrecv.conf`

```
root@gk2a: ~
2021-03-18T10:47:54Z [monitor] gain: 65.92, freq: 1497.1, omega: 18.750, vit (avg): 143, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:47:55Z [monitor] gain: 66.19, freq: 1493.3, omega: 18.750, vit (avg): 152, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:47:56Z [monitor] gain: 66.60, freq: 1520.7, omega: 18.750, vit (avg): 144, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:47:57Z [monitor] gain: 67.14, freq: 1480.0, omega: 18.750, vit (avg): 138, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:47:58Z [monitor] gain: 67.50, freq: 1502.9, omega: 18.750, vit (avg): 142, rs (sum): 0, packets: 7, drops: 0
2021-03-18T10:47:59Z [monitor] gain: 67.45, freq: 1502.4, omega: 18.750, vit (avg): 142, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:48:00Z [monitor] gain: 67.44, freq: 1505.8, omega: 18.750, vit (avg): 148, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:48:01Z [monitor] gain: 67.47, freq: 1464.9, omega: 18.750, vit (avg): 143, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:48:02Z [monitor] gain: 67.47, freq: 1482.3, omega: 18.750, vit (avg): 142, rs (sum): 0, packets: 7, drops: 0
2021-03-18T10:48:03Z [monitor] gain: 67.59, freq: 1482.4, omega: 18.750, vit (avg): 130, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:48:04Z [monitor] gain: 67.64, freq: 1468.4, omega: 18.750, vit (avg): 145, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:48:05Z [monitor] gain: 67.66, freq: 1462.3, omega: 18.750, vit (avg): 134, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:48:06Z [monitor] gain: 67.78, freq: 1466.7, omega: 18.750, vit (avg): 139, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:48:07Z [monitor] gain: 67.95, freq: 1425.1, omega: 18.750, vit (avg): 138, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:48:08Z [monitor] gain: 68.14, freq: 1454.6, omega: 18.750, vit (avg): 132, rs (sum): 0, packets: 7, drops: 0
2021-03-18T10:48:09Z [monitor] gain: 68.20, freq: 1458.7, omega: 18.750, vit (avg): 136, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:48:10Z [monitor] gain: 68.13, freq: 1451.9, omega: 18.750, vit (avg): 143, rs (sum): 0, packets: 8, drops: 0
2021-03-18T10:48:11Z [monitor] gain: 68.06, freq: 1466.9, omega: 18.750, vit (avg): 140, rs (sum): 0, packets: 8, drops: 0
```



Cek kualitas signal dengan aplikasi [goesrecv-monitor.exe](#)



Jalankan **xrit-rx** pada terminal yang berbeda dengan perintah :

python3 xrit-rx.py

```
root@arm-64: ~/xrit-rx

xrit-rx
LRIT/HRIT Downlink Processor

@sam210723      vksdr.com/xrit-rx

SPACECRAFT:      GK-2A
DOWNLINK:        LRIT (64 kbps)
INPUT SOURCE:    goesrecv (github.com/sam210723/goestools)
OUTPUT PATH:     /root/xrit-rx2/received
IGNORED VCIDS:   None
KEY FILE:        EncryptionKeyMessage.bin
DASHBOARD:       ENABLED (port 1692)
VERSION:         1.3.1

Connecting to goesrecv (10.10.1.2)...CONNECTED
DECRYPTION KEYS LOADED

[VCID 63] GK-2A: IDLE

[VCID 0] GK-2A: FULL DISK
[PRODUCT] FD #87      14:40:06 UTC      18/03/2021
IR105 [REDACTED] 10/10
Saved "received/LRIT/20210318/FD/IMG_FD_087_IR105_20210318_144006.jpg"

[VCID 63] GK-2A: IDLE

[VCID 0] GK-2A: FULL DISK
[PRODUCT] FD #88      14:50:06 UTC      18/03/2021
IR105 [REDACTED] 2/10
```



Hasil capturenya dapat dilihat di dashboard dengan mengakses IP raspi dengan port 1692

Telegram Web

GK-2A LRIT - xrit-rx v1.3.1

+

← → ↺

Not secure | 10.10.6.2:1692

🔍

☆

🔴

⚙️

👤

⋮

GK-2A LRIT Dashboard

xrit-rx [v1.3.1](#)

Virtual Channel

FD
VCID 0

ANT
VCID 4

ADD
VCID 5

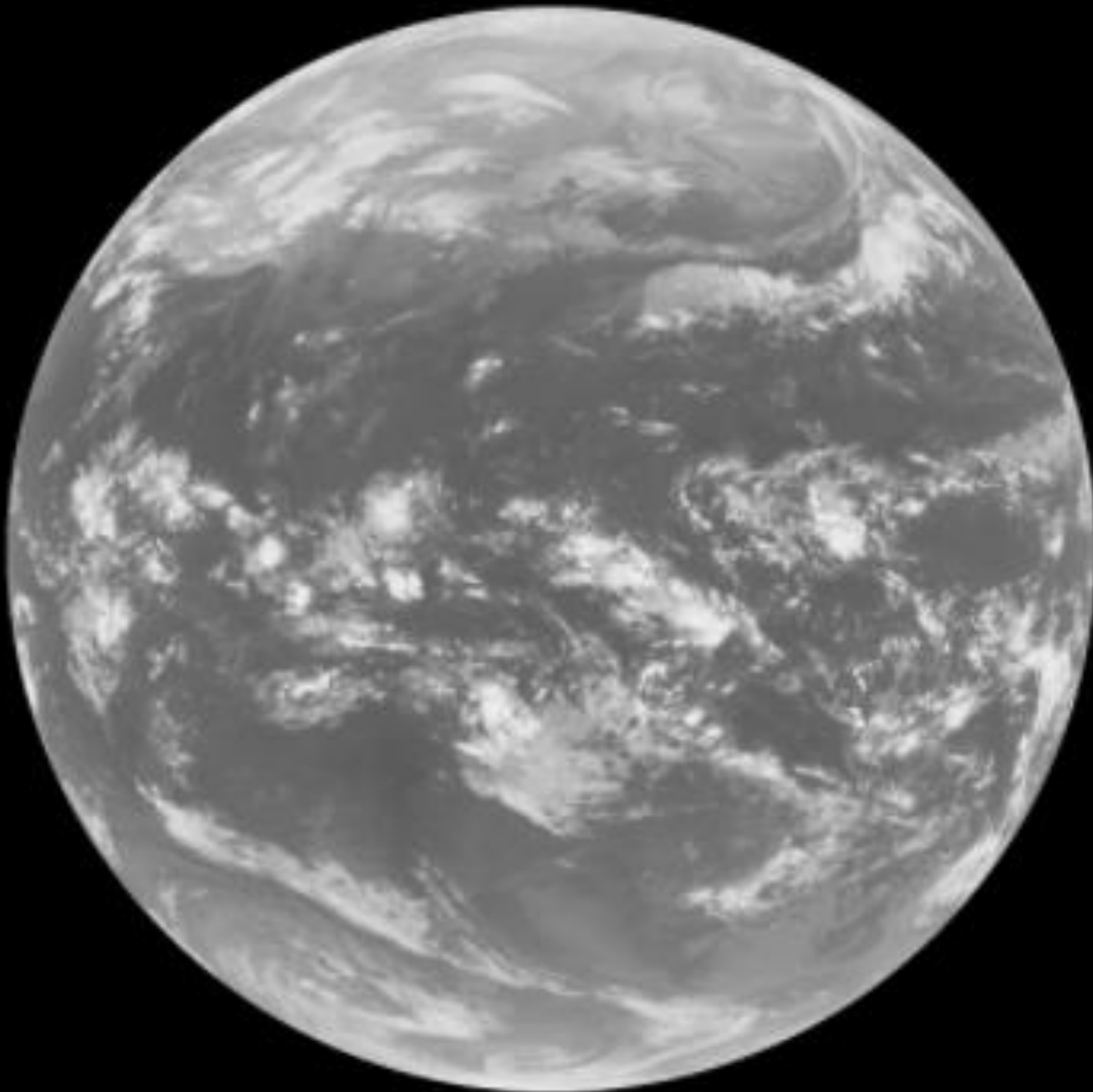
IDLE
VCID 63

Time

22:50:39
Local

14:50:39
UTC

Latest Image



IMG_FD_087_IR105_20210318_144006

GK-2A LRIT Schedule

Start (UTC)	End (UTC)	Type	ID
14:30:06	14:32:36	FD	086
14:40:06	14:42:36	FD	087
14:50:06	14:52:36	FD	088
15:00:06	15:02:36	FD	089
15:05:00	15:06:30	SUFA12	002
15:07:00	15:08:40	SUFF24	002
15:10:06	15:12:36	FD	090
15:13:00	15:15:20	UP50F24	002
15:15:25	15:17:45	UP50F48	002
15:20:06	15:22:36	FD	091
15:23:00	15:23:30	RWW3F	031
15:23:35	15:24:05	RWW3F	032

Windows Start Button

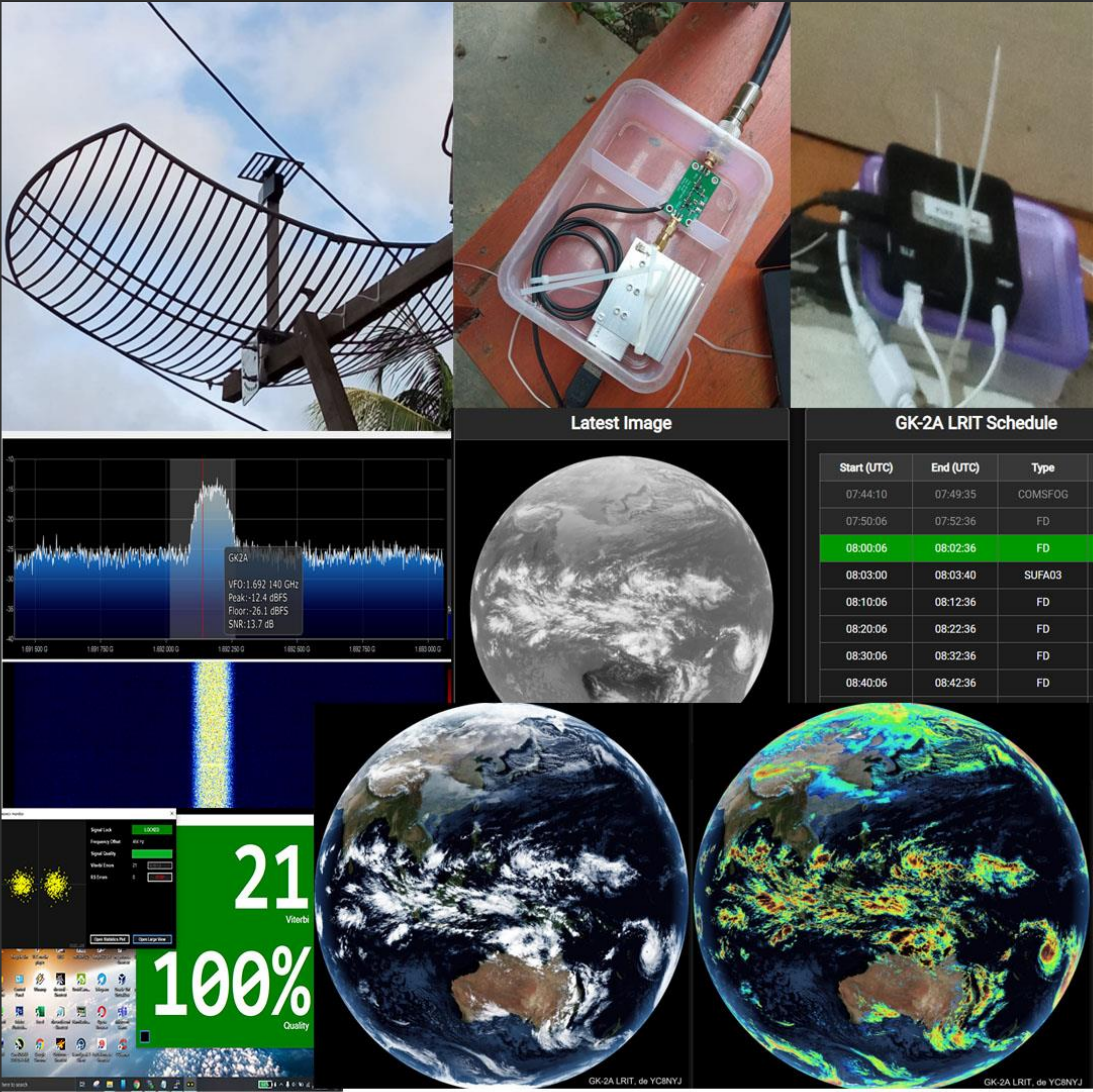
Type here to search

Taskbar Icons: File Explorer, Edge, PowerPoint, etc.

89%

System Tray: Network, Volume, Date/Time (22:50 18/03/2021), Language (ENG)





TERIMA KASIH

