# APRS à l'ouest 2018

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- Les trames APRS
- Simulateur de trames
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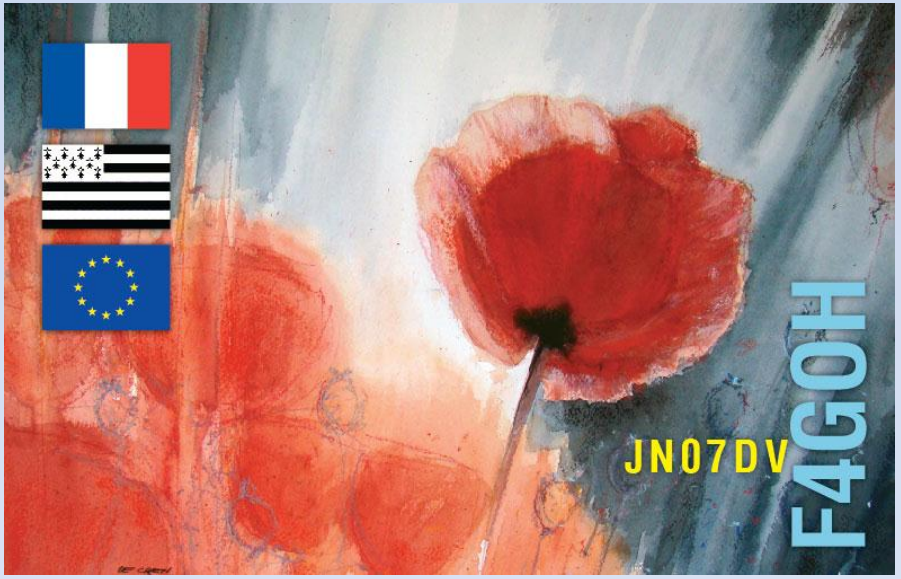
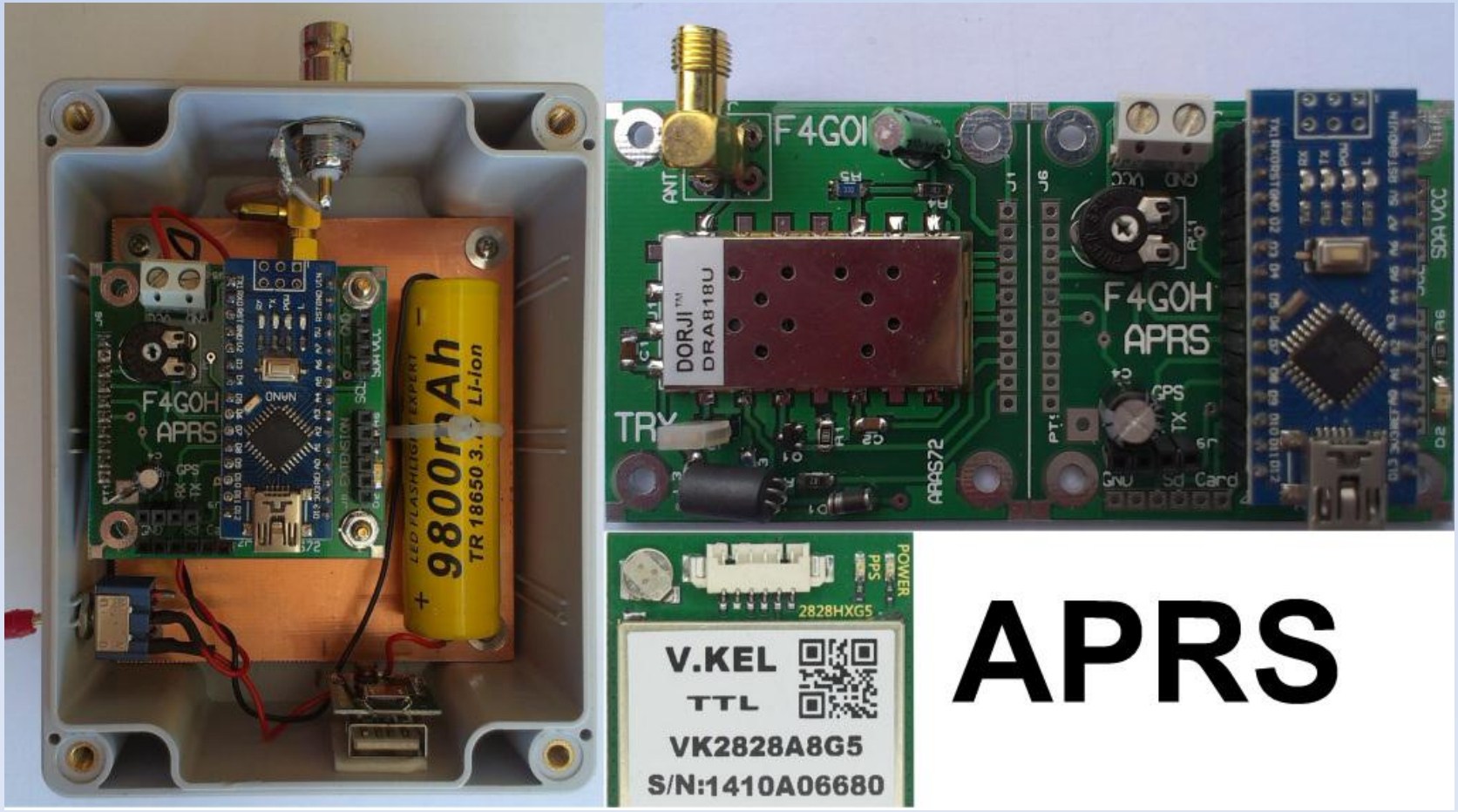
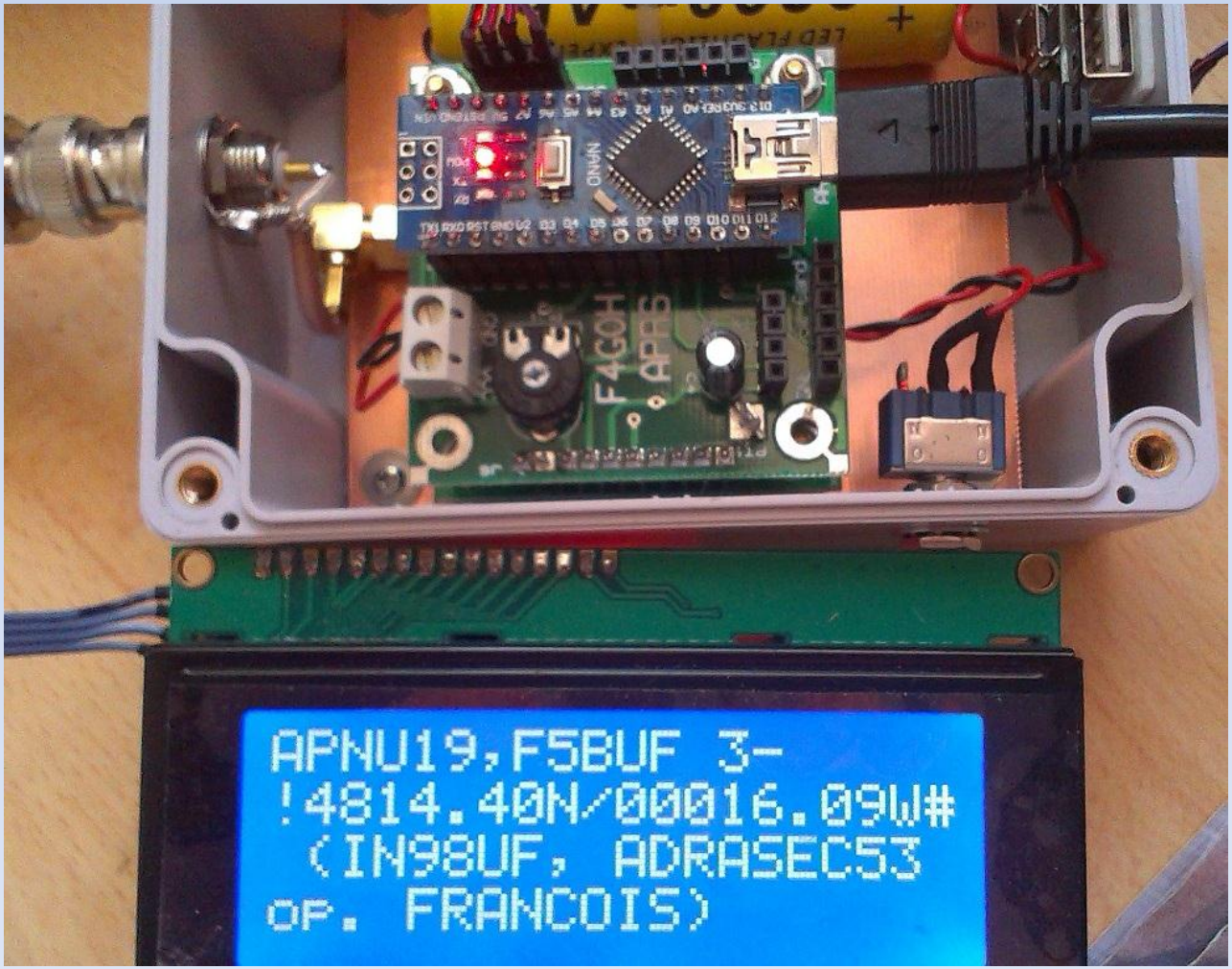
    - Météo
    - Télémesures
- Ballon 2019
- Squirrel C



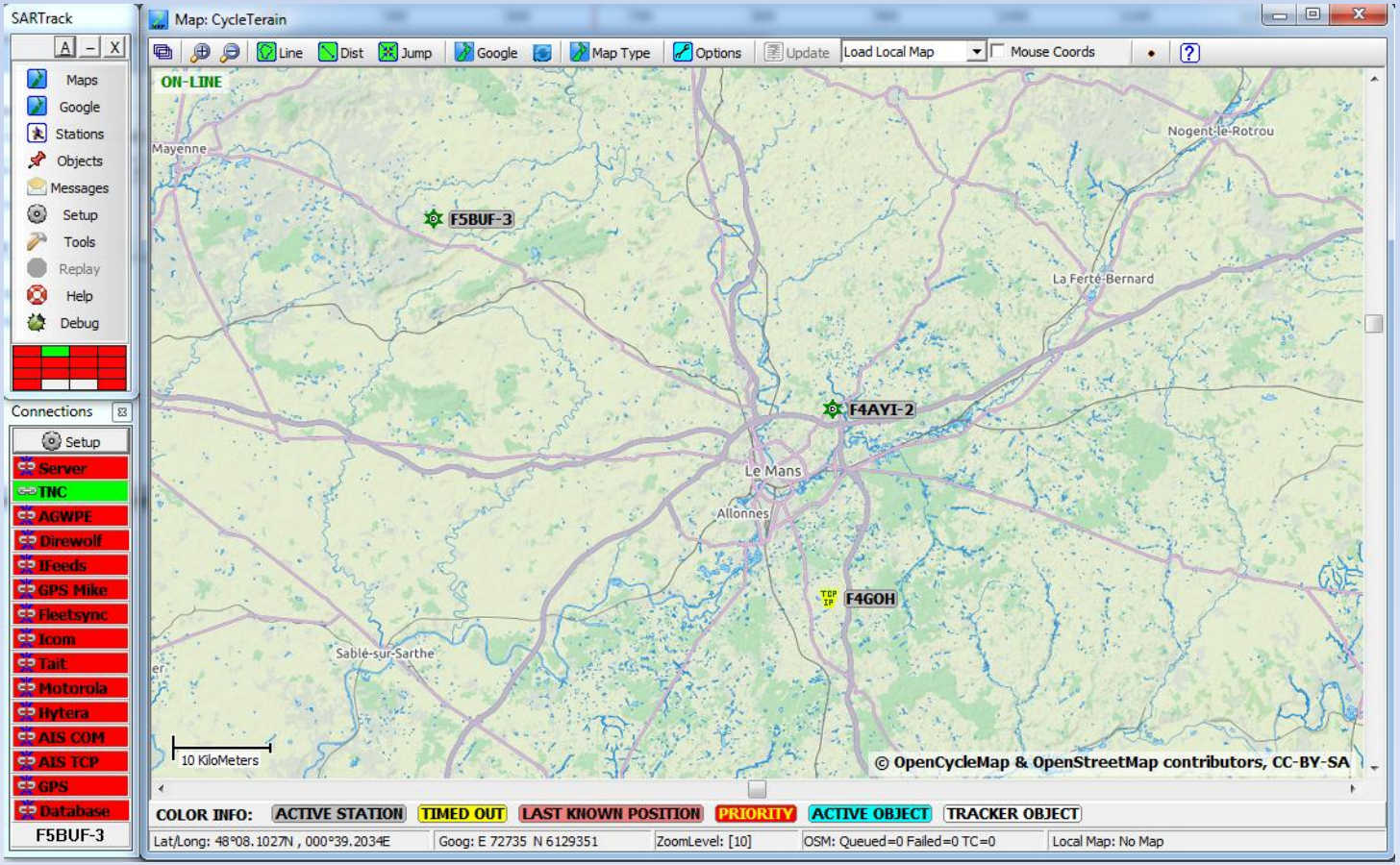
# Tracker VHF (DRA 818)



# Décodage

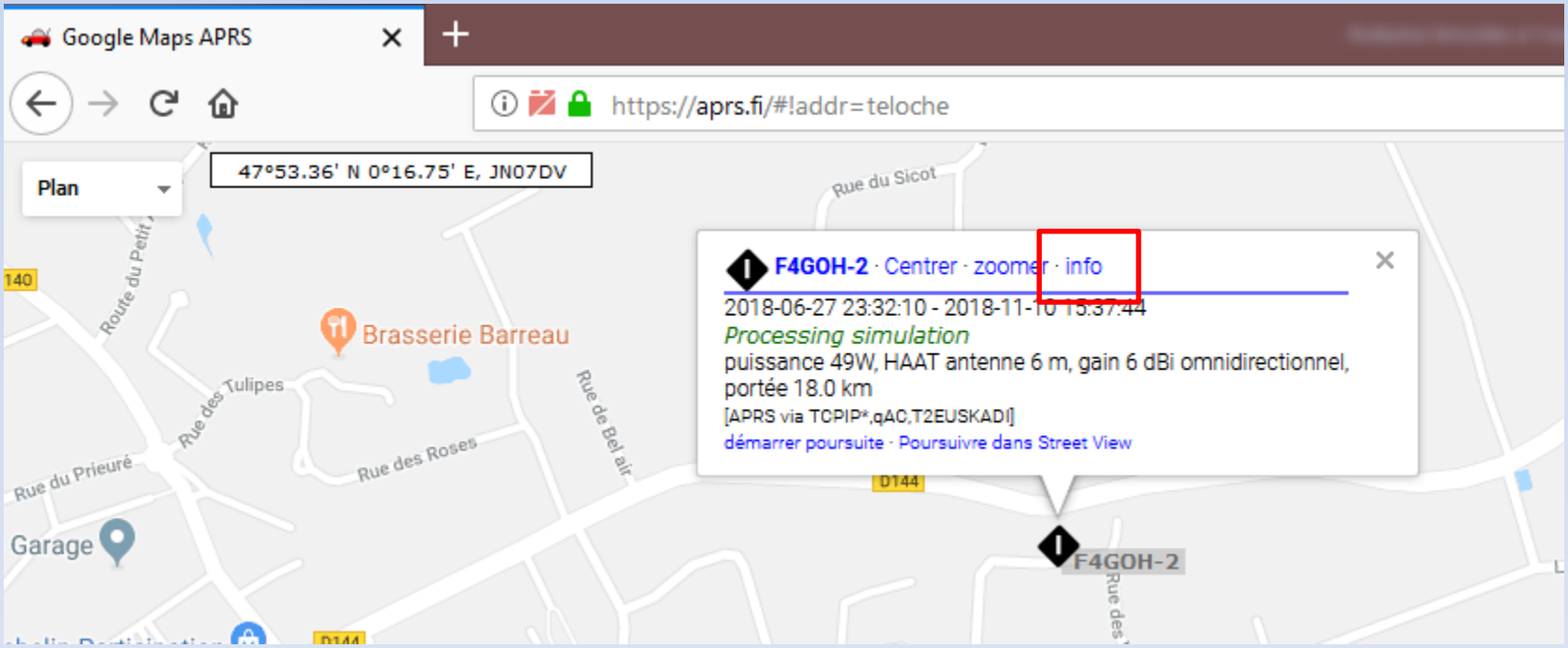

APNU19,F5BUF 3-
!4814.40N/00016.09W#
(IN98UF, ADRASEC53
op. FRANCOIS)

# Igate et cartographie




- http://www.sartrack.co.nz/

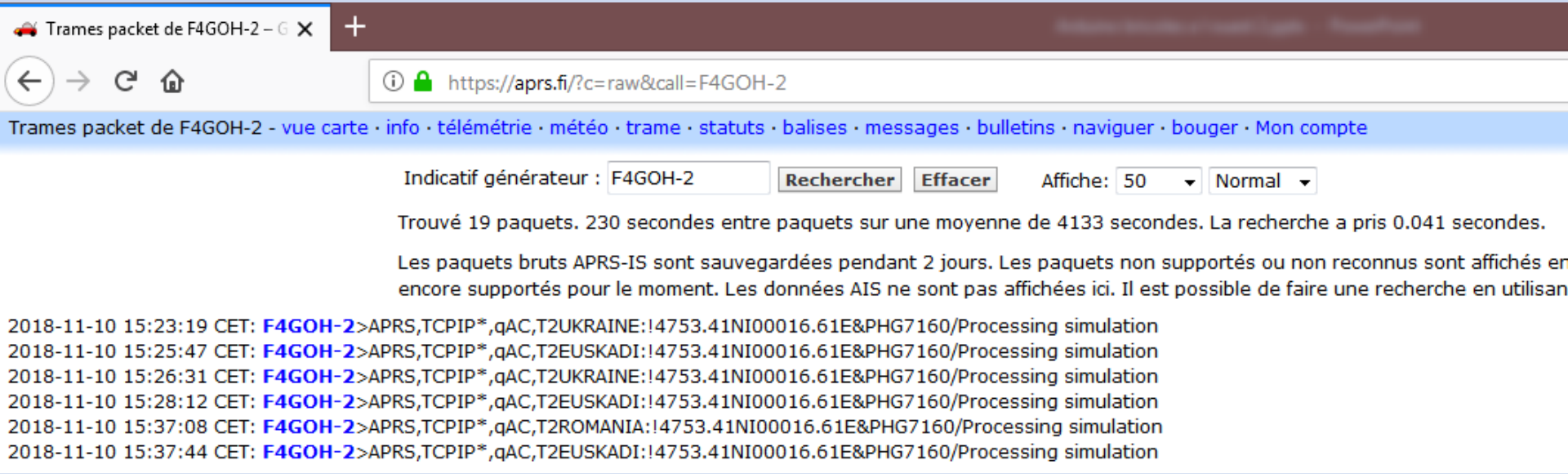
# APRS.FI


Google Maps APRS
https://aprs.fi/#!addr=teloche
47°53.36' N 0°16.75' E, JN07DV
Plan
Rue du Sicot
F4GOH-2 · Centrer · zoomer · info
2018-06-27 23:32:10 - 2018-11-10 15:37:44
Processing simulation
puissance 49W, HAAT antenne 6 m, gain 6 dBi omnidirectionnel, portée 18.0 km
[APRS via TCPIP*,qAC,T2EUSKADI]
démarrer poursuite · Poursuivre dans Street View
Brasserie Barreau
Rue des Tulipes
Rue des Roses
Rue du Prieuré
Garage
D144
F4GOH-2
140

# Trame


Informations de la station F4GO
https://aprs.fi/info/a/F4GOH-2
Information station - vue carte · info · télémétrie · météo · trame · statuts · balises · messages · bulletins · naviguer · bouger · Mon compte
Indicatif, nom du navire ou locator: F4GOH-2
Rechercher
Effacer
Création des statistiques complètes (prendra 0.037 s).
Il est possible de faire une recherche en utilisant des jokers (* ?) après le préfixe. Exemple : OH*
Station APRS F4GOH-2 - Graphiques d'activité
Commentaire: Processing simulation
Position: 47°53.41' N 0°16.61' E - locator JN07DV33FP - Carte - Carte statique
496.3 m Nord-est Cap 64° de Teloché, Département de la Sarthe, Pays de la Loire, France [?]
3.1 km Sud-est Cap 139° de Mulsanne, Département de la Sarthe, Pays de la Loire, France
13.5 km Sud-est Cap 155° de Le Mans, Département de la Sarthe, Pays de la Loire, France
77.7 km Nord-est Cap 52° de Angers, Département de Maine-et-Loire, Pays de la Loire, France
Dernière position 2018-11-10 15:37:44 CET (49m34s Il y a)
2018-11-10 15:37:44 CET Heure locale Teloché, France [?]
Appareil: Unknown: Unknown
Dernier chemin: F4GOH-2>APRS via TCPIP*,qAC,T2EUSKADI
Positions enregistrées 6
Débit de paquets: 230 secondes entre paquets sur une moyenne de 4133 secondes.
Autres SSID : F4GOH F4GOH-1 F4GOH-10 F4GOH-11 F4GOH-12 F4GOH-9 F4GOH-B

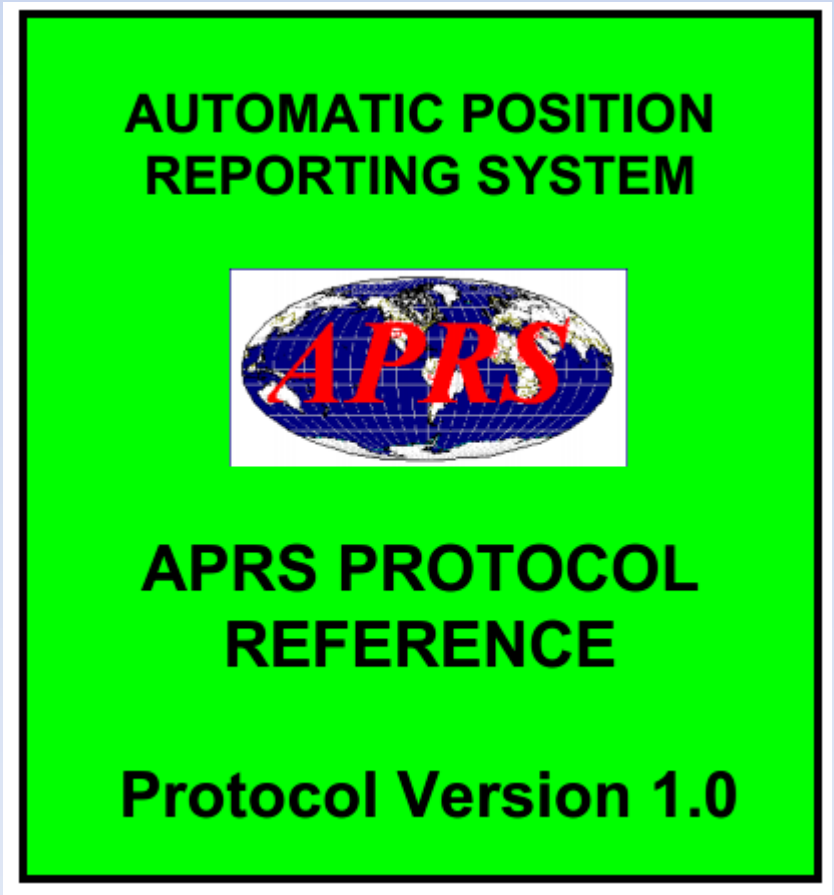
# Liste des trames



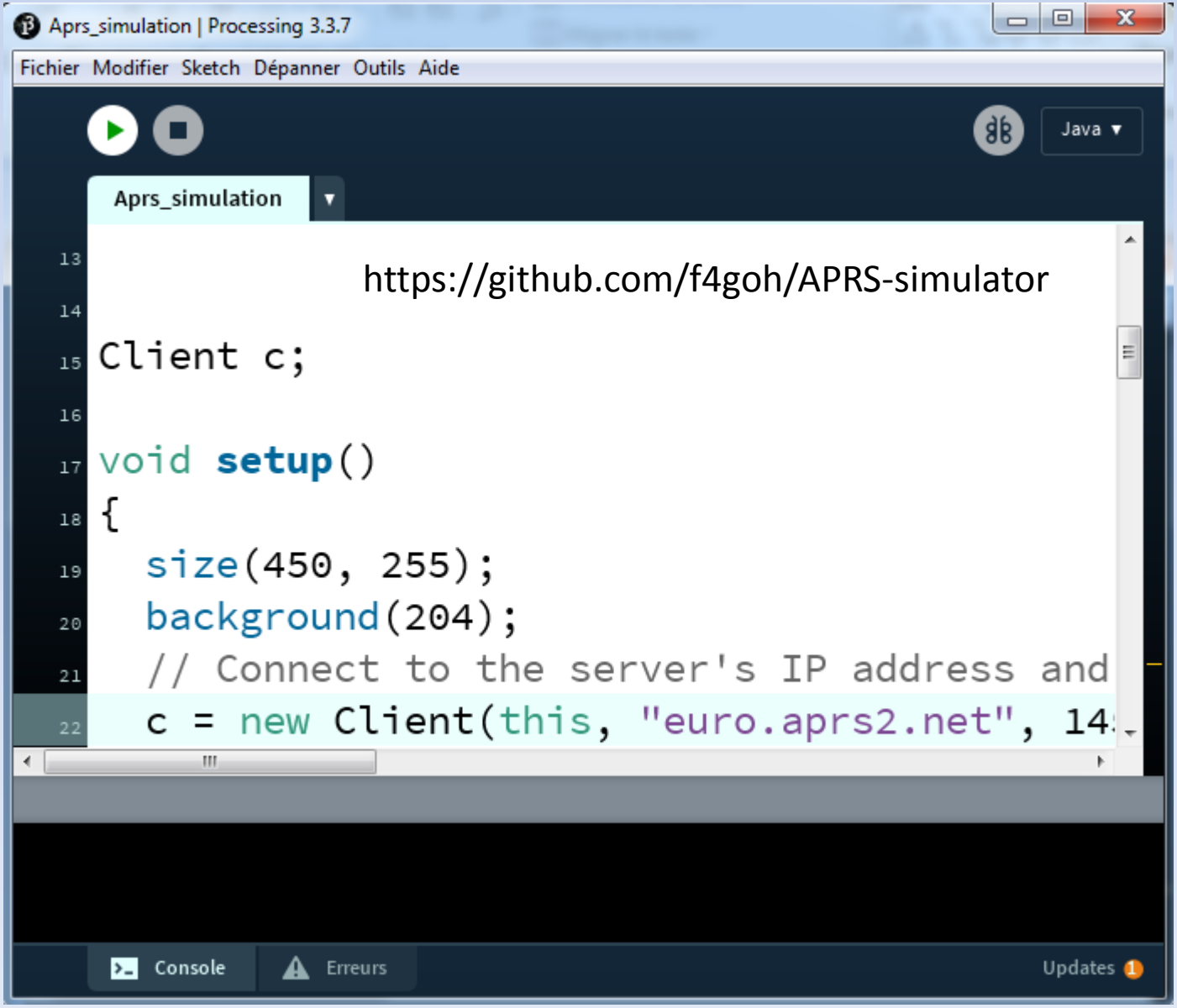
# Processing.org

# Documentation

- http://www.aprs.org/doc/APRS101.PDF



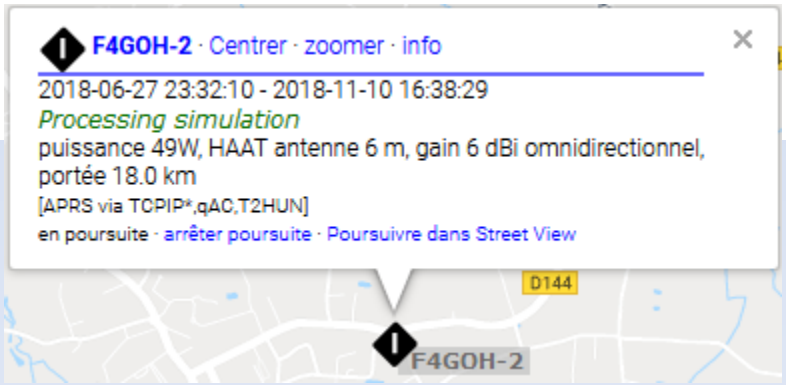
# Simulateur de trames



# Connexion au serveur

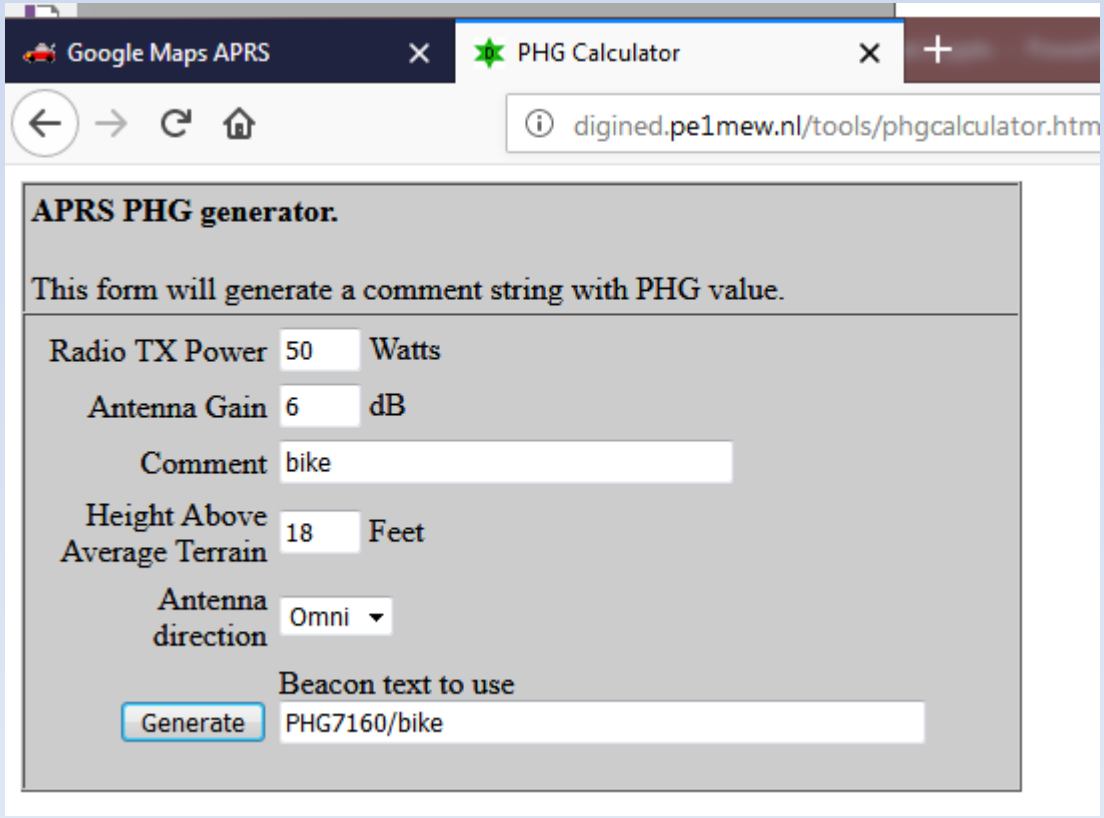
```
Client c;

void setup()
{
  size(450, 255);
  background(204);
  // Connect to the server's IP address and port
  c = new Client(this, "euro.aprs2.net", 14580);
  if (c.active() == true) {
    println("connecte au serveur");
    c.write("user F4GOH-2 pass xxxxx vers Processing simulation filter b/F4GOH-11\n");
    c.write("F4GOH-2>APRS:!4753.41NI00016.61E&PHG7160/Processing simulation\n");
  } else {
    println("non connecte au serveur");
  }
}
```



# PHG : Power Height Gain

http://digined.pe1mew.nl/tools/phgcalculator.htm



# Position

| Lat/Long Position Report Format — with Timestamp | | | | | | |
|---|---|---|---|---|---|---|
| / or @ | Time DHM / HMS | Lat | Sym Table ID | Long | Symbol Code | Comment (max 43 chars) |
| 1 | 7 | 8 | 1 | 9 | 1 | 0-43 |

Examples

`/092345z4903.50N/07201.75W>Test1234` with timestamp, no APRS messaging, zulu time, with comment.

`@092345/4903.50N/07201.75W>Test1234` with timestamp, with APRS messaging, local time, with comment.

```
String heure=horaire();
if (key=='p') {
  c.write("F4GOH-10>APRS,WIDE1-1,WIDE2-1,qAR,F4GOH-2:/"+heure+"4753.42N/00016.62Eb/bike\n");
  println("position...");
}
```

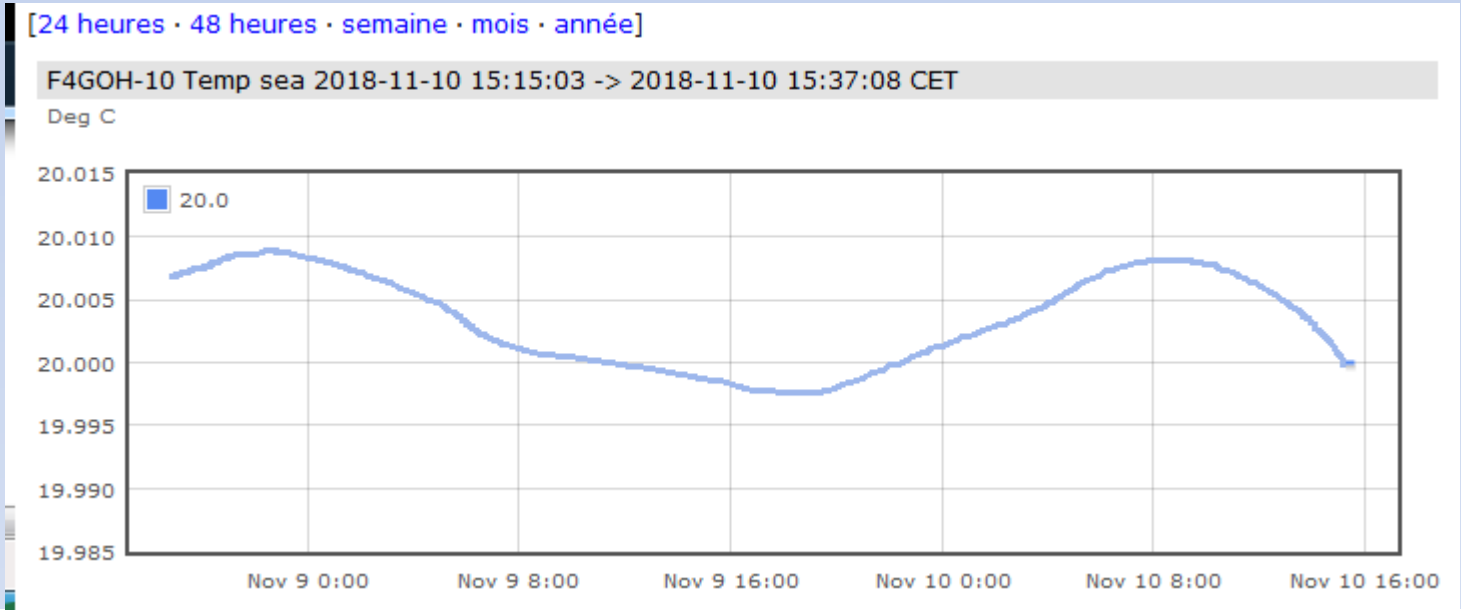
# Météo

```
if (key=='w') {
  c.write("F4GOH-9>APRS,WIDE1-1,WIDE2-1,qAR,F4GOH-2:/"+heure+"4753.43N/00016.60E_.../...g...t0020r...p...P...h60b10130\n");
  println("Weather...");
}
```

| ***Positionless Weather Data*** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ***Wind Direction*** **c**ccc | ***Wind Speed*** **s**sss | ***Gust*** **g**ggg | ***Temp*** **t**ttt | ***Rain Last Hr*** **r**rrr | ***Rain Last 24 Hrs*** **p**ppp | ***Rain Since Midnight*** **P**PPP | ***Humidity*** **h**hh | ***Barometric Pressure*** **b**bbbbb |
| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 5 |

where:
- **c** = wind direction (in degrees).
- **s** = sustained one-minute wind speed (in mph).
- **g** = gust (peak wind speed in mph in the last 5 minutes).
- **t** = temperature (in degrees Fahrenheit). Temperatures below zero are expressed as -01 to -99.
- **r** = rainfall (in hundredths of an inch) in the last hour.
- **p** = rainfall (in hundredths of an inch) in the last 24 hours.
- **P** = rainfall (in hundredths of an inch) since midnight.
- **h** = humidity (in %. 00 = 100%).
- **b** = barometric pressure (in tenths of millibars/tenths of hPascal).

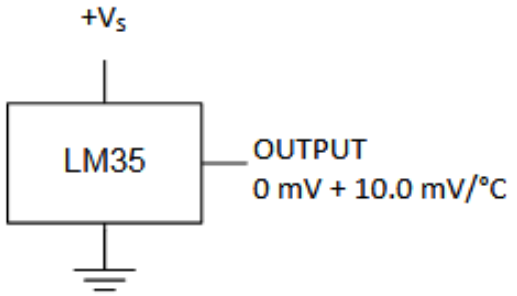
# Télémesures

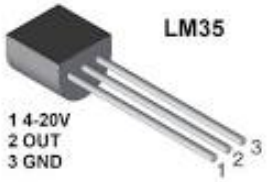



```
if (key=='u') {
  c.write("F4GOH-10>APRS,WIDE1-1,WIDE2-1,qAR,F4GOH-2::F4GOH-10 :PARM.Temp sea,Temp ext,Vbat,Ocean waves\n");
  c.write("F4GOH-10>APRS,WIDE1-1,WIDE2-1,qAR,F4GOH-2::F4GOH-10 :UNIT.Deg C,Deg C,Volts,Meters\n");
  c.write("F4GOH-10>APRS,WIDE1-1,WIDE2-1,qAR,F4GOH-2::F4GOH-10 :EQNS.0,1,-100,0,1,-100,0,0.1,0,0,0.1,0\n");
  c.write("F4GOH-10>APRS,WIDE1-1,WIDE2-1,qAR,F4GOH-2::F4GOH-10 :BITS.00000000,Telemetry\n");
  println("telemetry Units...");
}
if (key=='t') {
  c.write("F4GOH-10>APRS,WIDE1-1,WIDE2-1,qAR,F4GOH-2:T#002,120,115,135,5,000,00000000\n"); //page 74
  println("telemetry Data...");
}
```

,F4GOH-2:T#002,120,115,135,5,000,00000000
,F4GOH-2:T#003,120,115,135,5,000,00000000

# EQNS




$$ax^2 + bx + c$$

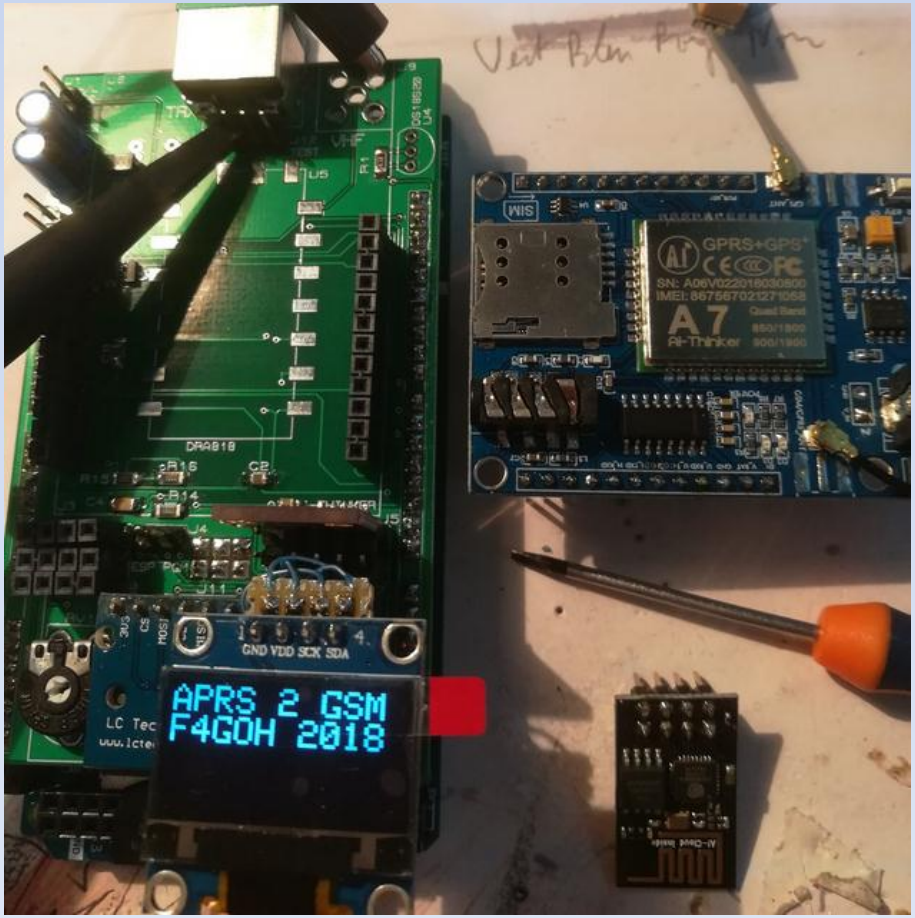
**Tempature de 20 °C**
**Tension est de 0.2V**
**N=(256/5)*0.2=10**
**rapport-> 20/10 =2**
**Equation linéaire**

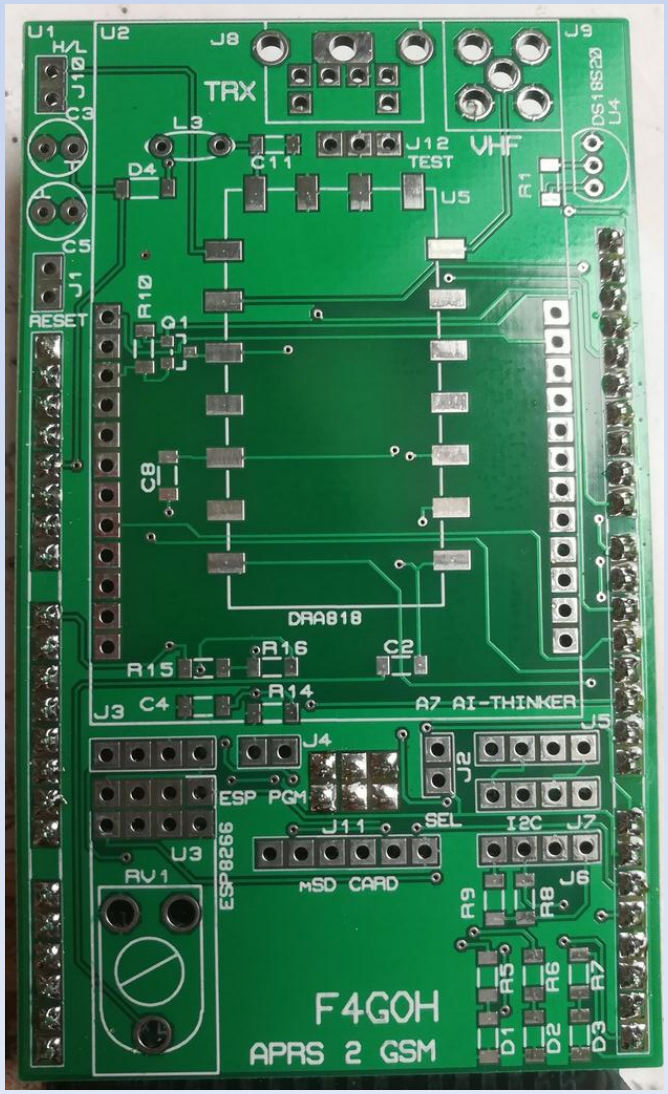
**a=0**
**b=2**
**c=0**


**Entrée analogique**

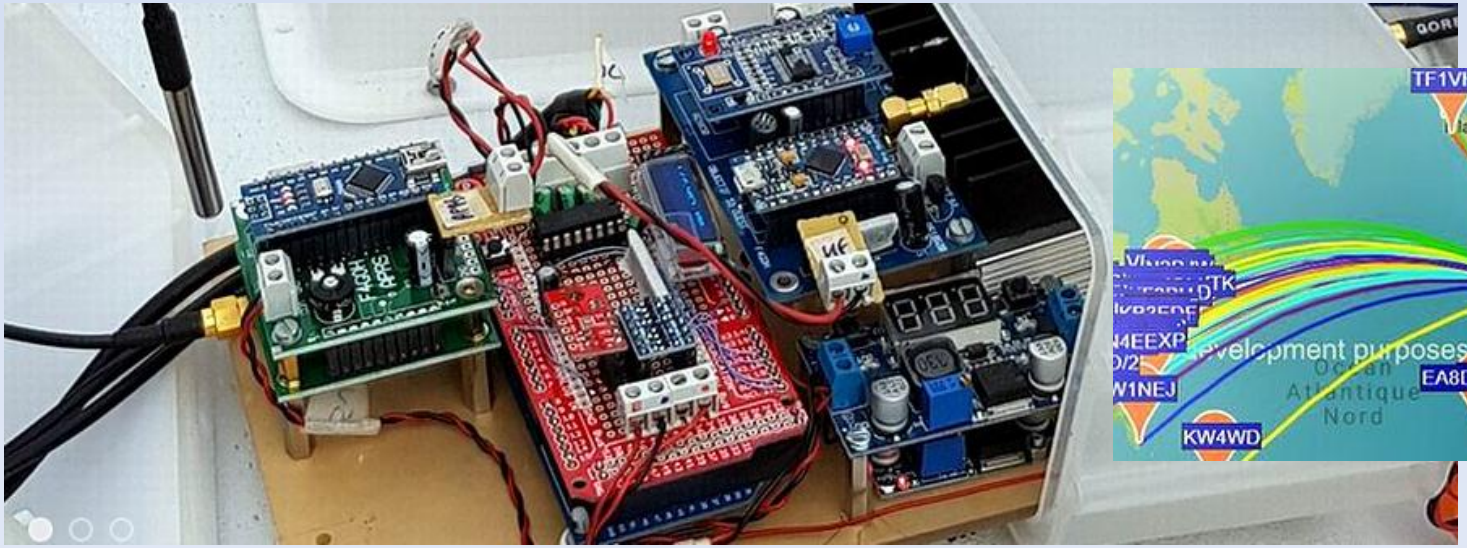
**0 à 5V**
**0 à 1023 10 bits**
**divise par 4**
**0 à 255 8 bits**

# Ballon 2019


APRS 2 GSM
F4GOH 2018
GND VDD SCK SDA
GPRS+GPS
A7
Ai-Thinker


TRX
VHF
TEST
RESET
DRA818
A7 AI-THINKER
ESP PGM
SEL
I2C
MSD CARD
ESP8266
F4GOH
APRS 2 GSM

# http://squirrelc.fr/

# 73 et à bientôt

F4GOH@orange.fr