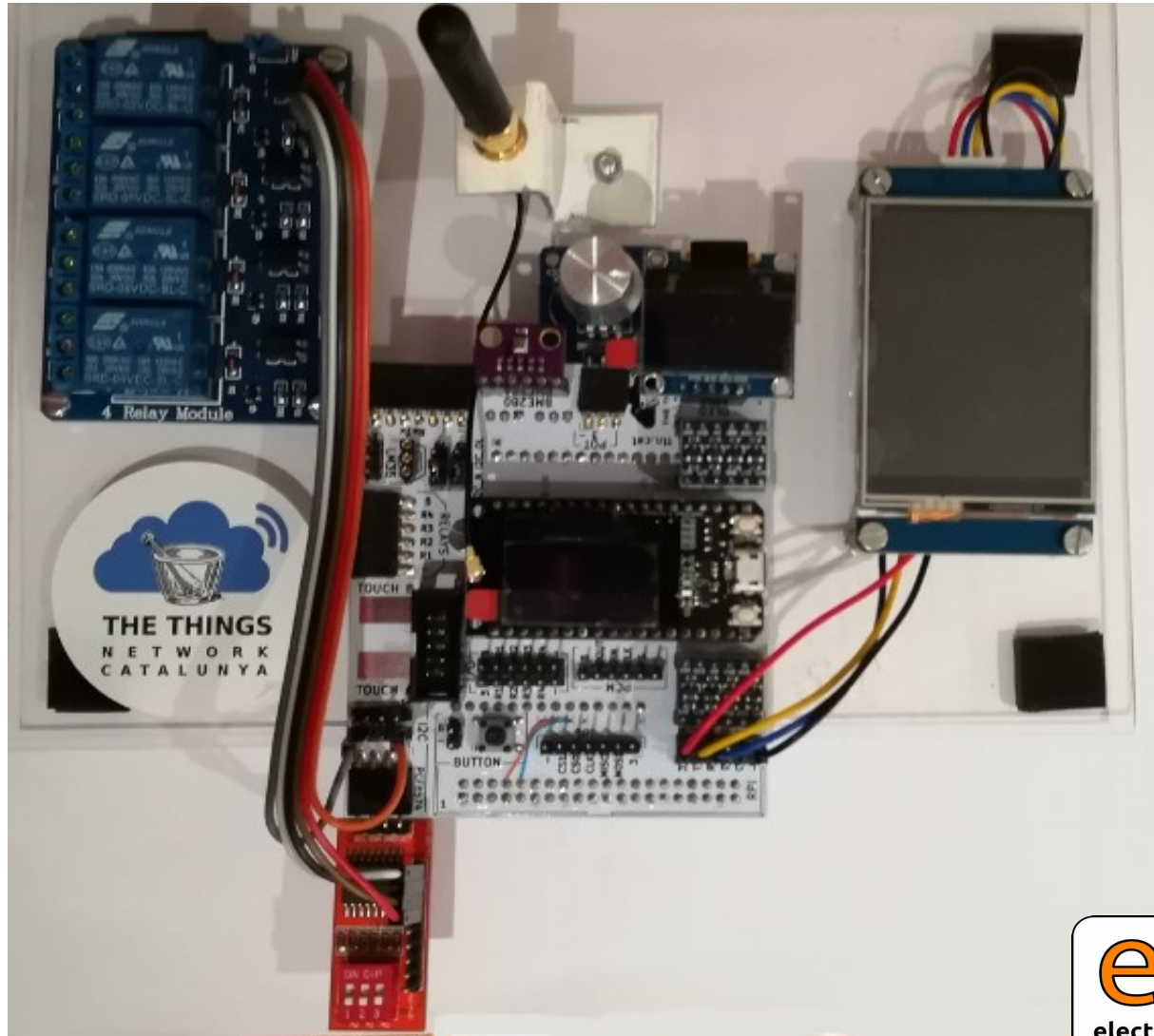


Conjunt IoT

Prova de connectivitat a The Things Network

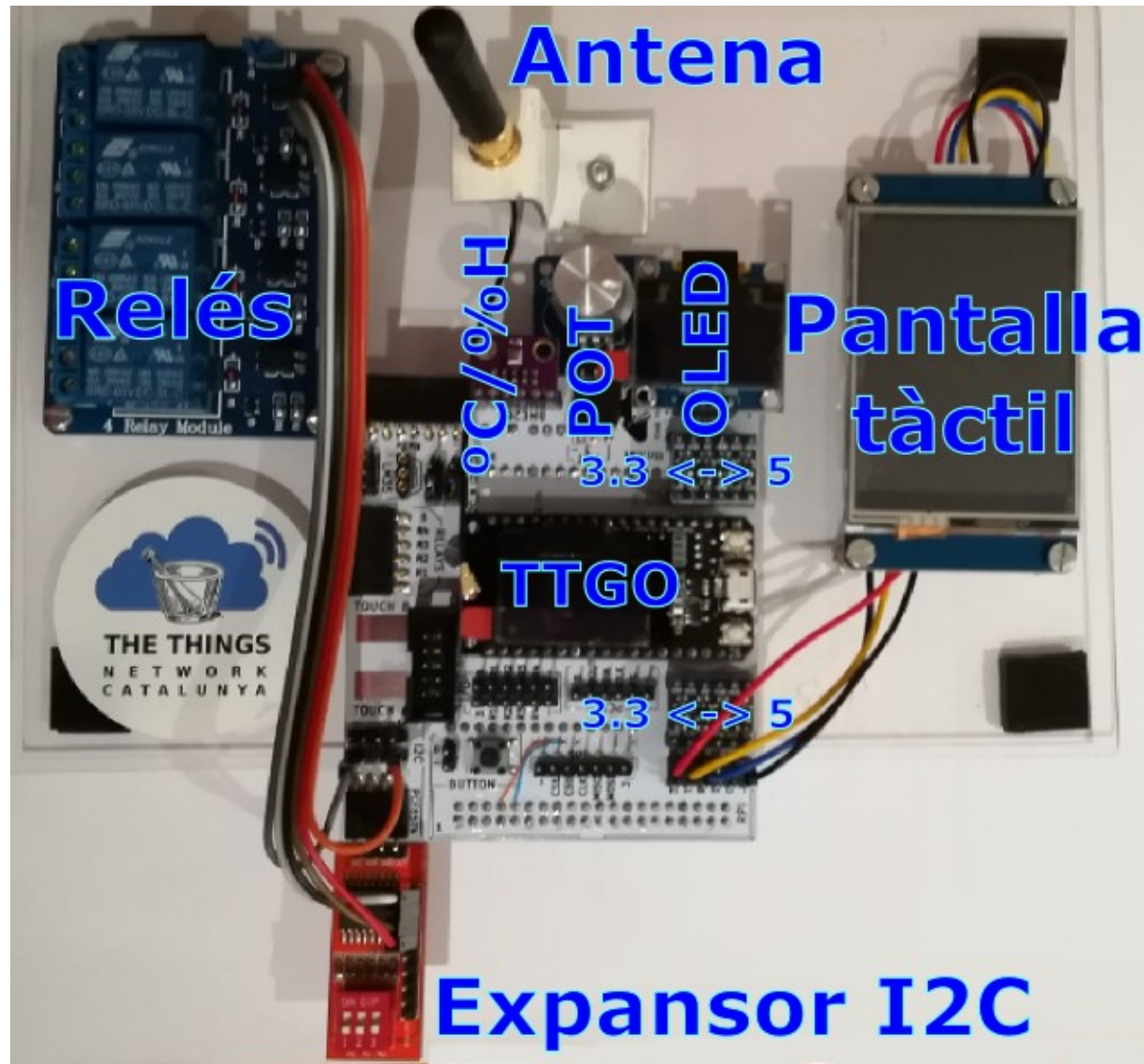


THE THINGS
NETWORK
CATALUNYA



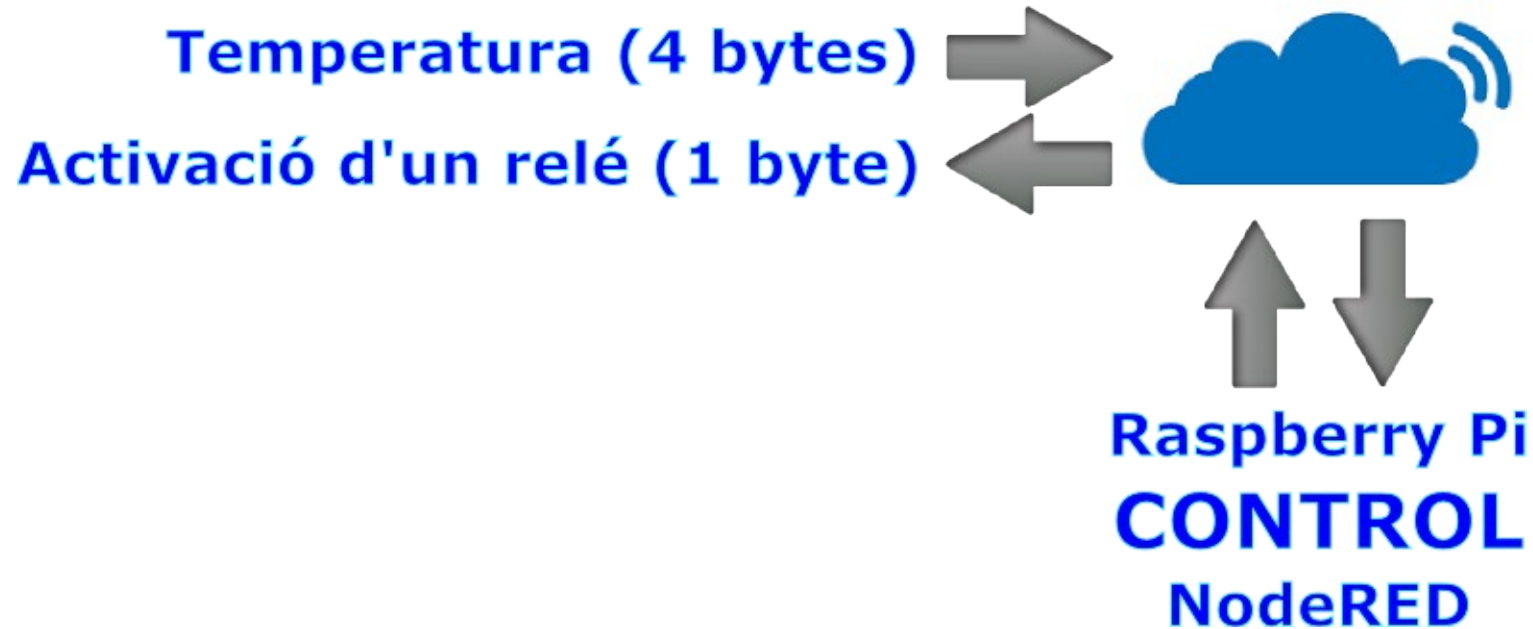
JESUÏTES El Clot
Escola del Clot

Conjunt de proves



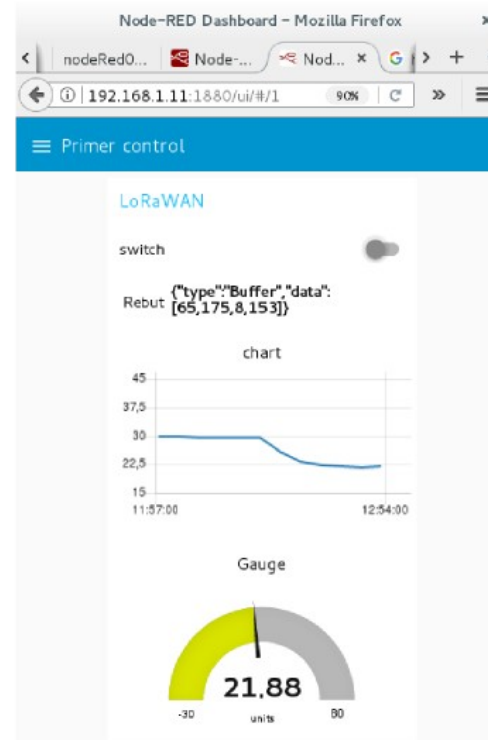
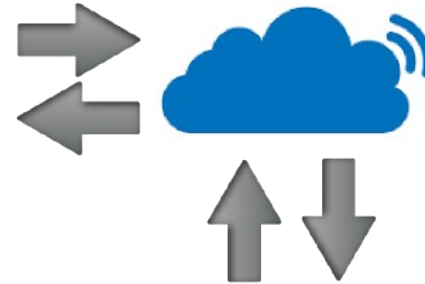
LoRaWAN™

Objectiu



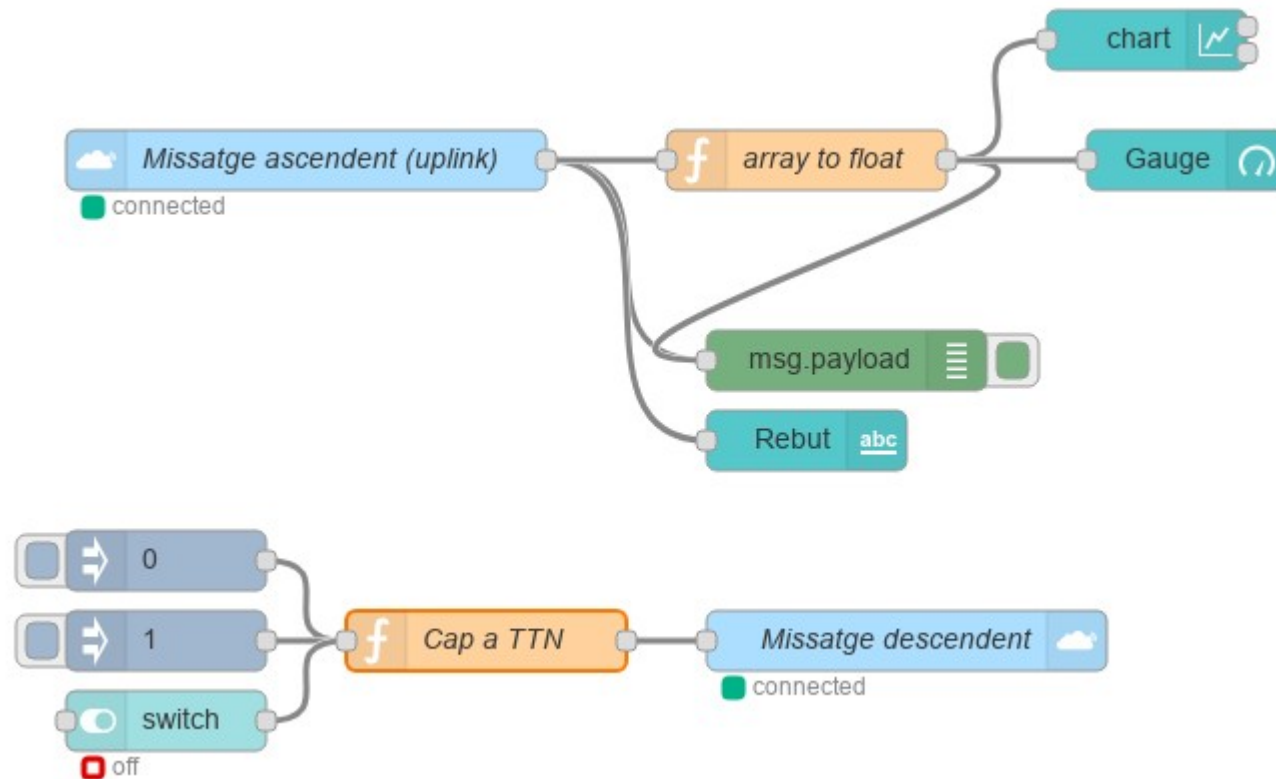
LoRaWAN™

Objectiu



LoRaWAN™

Com fer-ho



Podeu prémer el botó dret i desar al vostre ordinador aquest codi:
<https://www.binefa.cat/loT/nodeRed/prj/ttnCtrl/ttnCtrl.nodered.txt>

LoRaWAN™ Com fer-ho

Device Address

<> ↕ 26 01 14 92

Network Session Key

<> ↕

App Session Key

<> ↕

Status ● 1 minute ago

Frames up 5 [reset frame counters](#)

Frames down 82

Podeu copiar a un editor de text pla:

- 1) Device Address
- 2) Network Session Key
- 3) App Session Key

LoRaWAN™

Com fer-ho

```
esp32_lorawan_ttnEsp32_ttgo_multichannel_02  credentials.h  pinMapping.h
#define LORA_MODE_ABP 0
#define LORA_MODE_OTAA 1

#define LORA_MODE LORA_MODE_ABP

#if LORA_MODE == LORA_MODE_ABP
  /* NWKSKEY, APPSKEY and DEVADDR should be modified by your actual values */
  //static const PROGMEM u1_t NWKSKEY[16] = { 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0:
  //static const u1_t PROGMEM APPSKEY[16] = { 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0:
  //static const u4_t DEVADDR = 0x00000000 ;

  static const PROGMEM u1_t NWKSKEY[16] = { 0xC3, 0xA9, 0x7C, 0x21, 0x69, 0x07, 0x1!
  static const u1_t PROGMEM APPSKEY[16] = { 0x46, 0x1D, 0xBD, 0x77, 0xDC, 0xF9, 0x0'
  static const u4_t DEVADDR = 0x26011492 ;

#endif

#if LORA_MODE == LORA_MODE_OTAA
  // De moment no és operatiu a aquesta versió
  const char *appEui = "";
  const char *appKey = "";
#endif
```

Codi font per a actualitzar amb els valors de The Things Network:
https://github.com/jordibinefa/arduino-IDE-codes/tree/master/esp32_lorawan_ttn



LoRaWAN™

Com fer-ho



Applications > node-portatil-01

Application ID node-portatil-01

Description Node per al curset

Created 5 months ago

Handler ttn-handler-eu (current handler)

Al NodeRED heu de posar el nom de l'aplicació.

The screenshot shows the NodeRED interface. On the left, a flow contains a node labeled "Missatge ascendent (uplink)" with a "connected" status. On the right, the "Edit ttn uplink node" configuration panel is open, showing the following fields:

- Name:** Missatge ascendent (uplink)
- App:** node-portatil-00
- Device ID:** (empty field)
- Field:** (empty field)



LoRaWAN™ Com fer-ho



CONSOLE
COMMUNITY EDITION

Applications Gateways Support



Jordi



Applications > node-portatil-01

ACCESS KEYS

[manage keys](#)

default key devices messages

..... base64

Copieu i enganxeu la clau d'accés des de The Things Network al NodeRED.

Flow 1 | Flow 2 | F

Edit ttn uplink node > **Edit ttn app node**

Delete Cancel **Update**

App ID

Access Key

Discovery address

Missatge ascendent (uplink)
connected

LoRaWAN™

Com fer-ho

The screenshot displays the configuration interface for a LoRaWAN node. On the left, a node named "Missatge ascendent (uplink)" is shown in a "connected" state. The right panel, titled "Edit ttn downlink node", contains the following configuration fields:

- Delete** (button)
- Cancel** (button)
- Done** (button)
- node properties** (expanded section)
 - Name**: Missatge descendent
 - App**: node-portatil-00
 - Device ID**: (empty field)
 - Port**: (empty field)
 - Confirmed**:
 - Schedule**: replace

Configuració del missatge ascendent (*uplink*)



LoRaWAN™



Com fer-ho

Edit function node

Delete Cancel Done

node properties

Name
array to float

Function

```
1 var data = msg.payload;
2 // Create a buffer
3 var buf = new ArrayBuffer(4);
4 // Create a data view of it
5 var view = new DataView(buf);
6 // set bytes
7 data.forEach(function (b, i) {
8   view.setUint8(i, b);
9 });
10 // Read the bits as a float; note that by doing this
11 // converting it from a 32-bit float into JavaScript
12 var num = view.getFloat32(0);
13 num = Math.round(num*100)/100;
14 // Done
15 msg.payload = num;
16
17 return msg;
```

Outputs 1

See the Info tab for help writing functions.

Edit function node

Delete Cancel Done

node properties

Name
Cap a TTN

Function

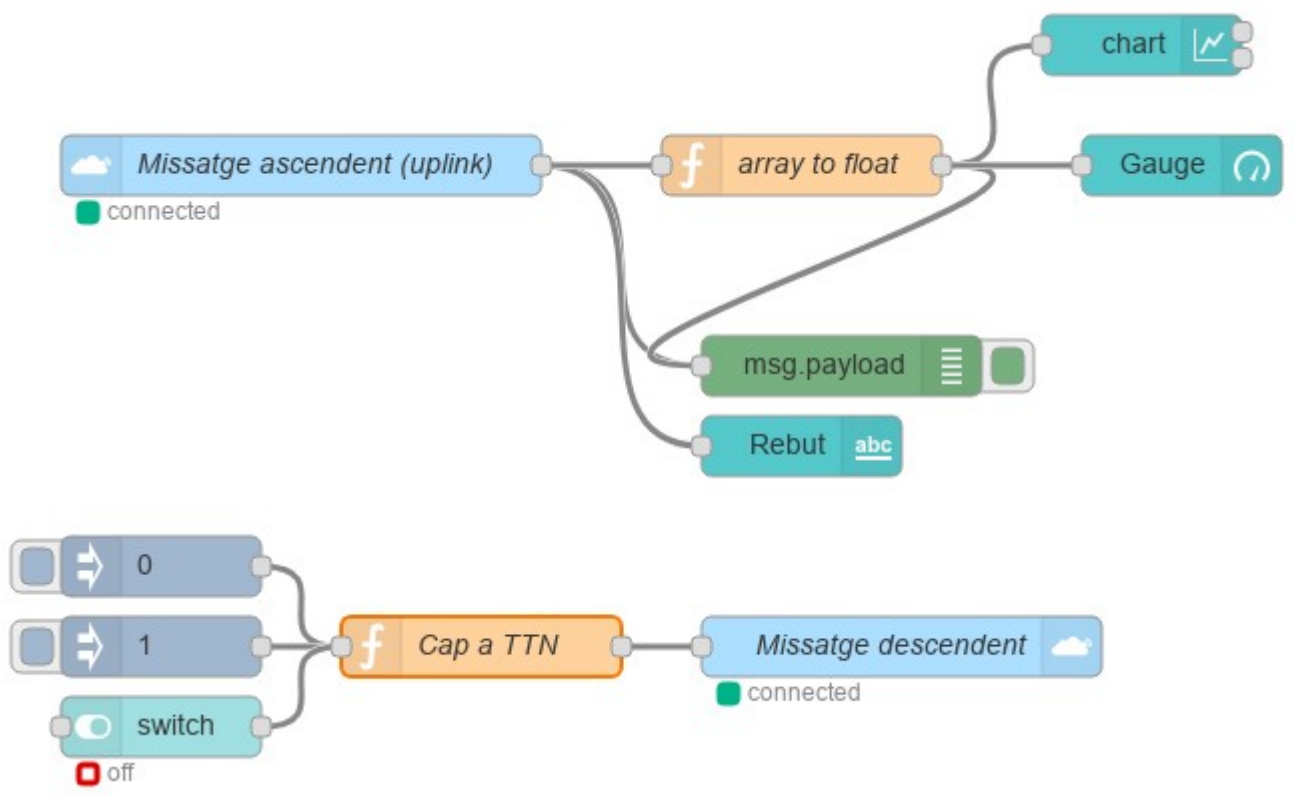
```
1
2 return {
3   dev_id: "lopy-node-00",
4   port: msg.port,
5   schedule: "replace",
6   confirmed: false,
7   payload: Buffer.from([msg.payload ? 0x71:0x51])
8 };
```

Outputs 1

See the Info tab for help writing functions.



LoRaWAN™ Com fer-ho



192.168.1.11:1880/ui/#/1

Primer control

LoRaWAN

switch

Rebut `{"type":"Buffer","data":[65,158,141,142]}`

chart

Gauge

19.82
units