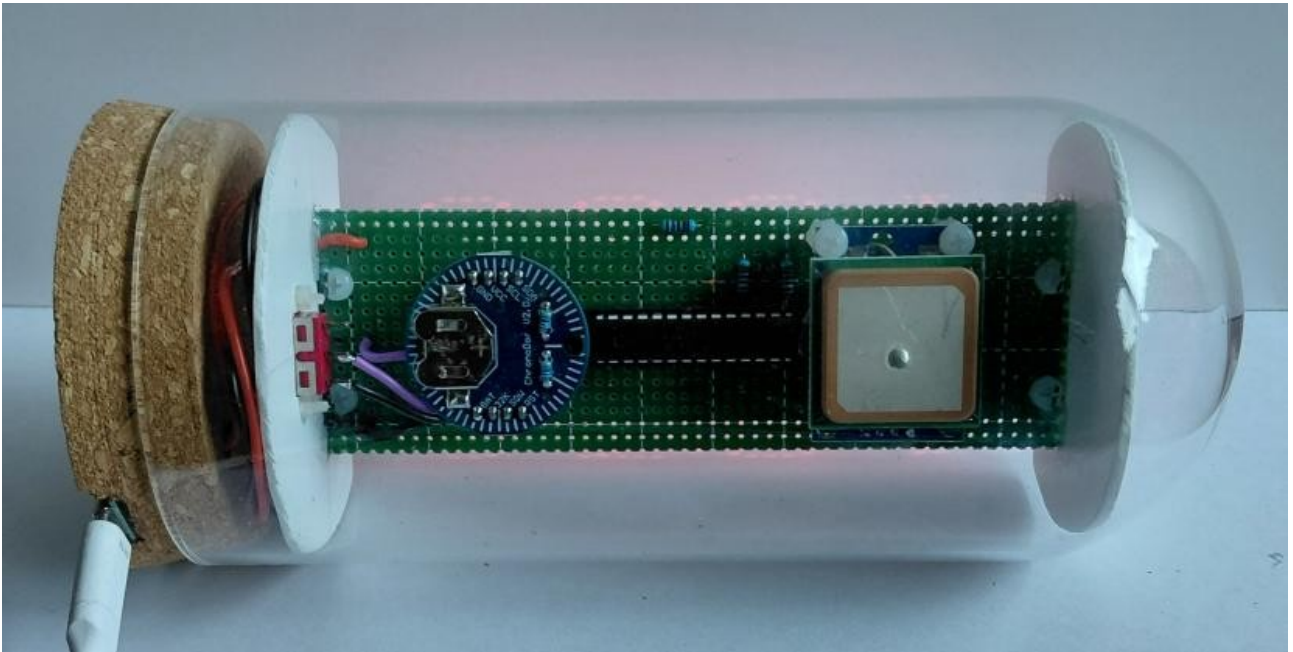
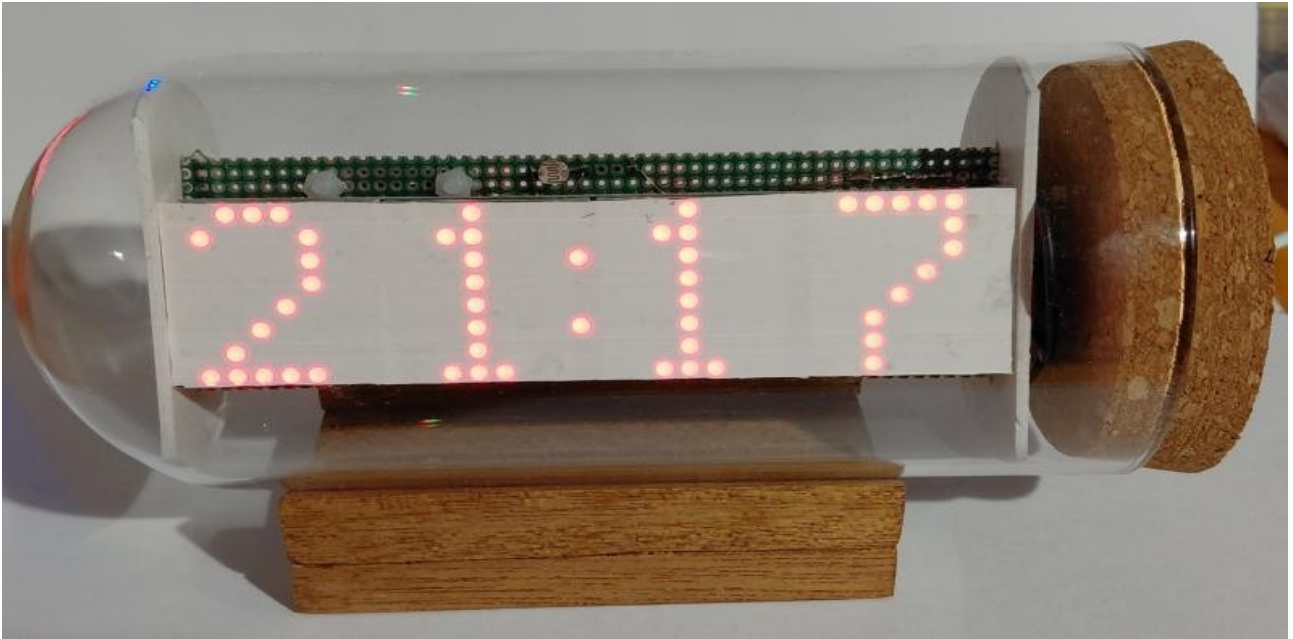


## GPS Klok



## Specificaties

Klok wordt elk uur gesynchroniseerd met de GPS ontvanger (indien satelliet ontvangst).  
Altijd de juiste tijd.

Lijn 80 van GPS\_klok.ino

```
#define UTC_OFFSET 1
```

Vul hier jouw locale UTC\_OFFSET in

Zomer tijd / Winter tijd eenvoudig te selecteren met schakelaar

Automatische display intensiteit in functie van omgevingslicht.

Gemakkelijk te bouwen en geen aanslag op de financiën.

## Onderdelen

1x Arduino bord met ATMEGA328P  
of  
1x ATMEGA328P

1x DS3231SN ChronoDot V2.0 + 2x R4K7 >> R1/R2  
[https://nl.aliexpress.com/item/1005009332338476.html?spm=a2g0o.productlist.main.2.75333802dqmLMH&algo\\_pvid=2c384a74-2384-4a96-950e-c35de5cb4fa8&algo\\_exp\\_id=2c384a74-2384-4a96-950e-c35de5cb4fa8-1&pdp\\_ext\\_f=%7B%22order%22%3A%225%22%2C%22eval%22%3A%221%22%7D&pdp\\_npi=4%40dis%21EUR%214.69%212.34%21%21%2138.51%2119.25%21%40211b6c1917536370904658336e3432%212000048781236369%21sea%21BE%21924161374%21X&curPageLogUid=JFnu30FcKDPL&utparam-url=scene%3Asearch%7Cquery\\_from%3A](https://nl.aliexpress.com/item/1005009332338476.html?spm=a2g0o.productlist.main.2.75333802dqmLMH&algo_pvid=2c384a74-2384-4a96-950e-c35de5cb4fa8&algo_exp_id=2c384a74-2384-4a96-950e-c35de5cb4fa8-1&pdp_ext_f=%7B%22order%22%3A%225%22%2C%22eval%22%3A%221%22%7D&pdp_npi=4%40dis%21EUR%214.69%212.34%21%21%2138.51%2119.25%21%40211b6c1917536370904658336e3432%212000048781236369%21sea%21BE%21924161374%21X&curPageLogUid=JFnu30FcKDPL&utparam-url=scene%3Asearch%7Cquery_from%3A)

1 x CR1225 voor ChronoDot V2.0  
<https://www.netwerkkabelshop.nl/camelion-cr1225-bp5-lithium-knoopcel-batterij?sqr=cr1225>

1x NEO-7M met antenne  
[https://nl.aliexpress.com/item/1005007175919889.html?spm=a2g0o.productlist.main.3.3e5e16b5VFbpEV&algo\\_pvid=adbeae3c-4e04-4cfa-bd0f-96d03d9617db&algo\\_exp\\_id=adbeae3c-4e04-4cfa-bd0f-96d03d9617db-2&pdp\\_ext\\_f=%7B%22order%22%3A%222038%22%2C%22eval%22%3A%221%22%7D&pdp\\_npi=4%40dis%21EUR%211.34%211.34%21%21%2111.04%2111.04%21%4021039a5b17536374796012318ee9d1%2112000039706177745%21sea%21BE%21924161374%21X&curPageLogUid=BAHXqFwy2k1M&utparam-url=scene%3Asearch%7Cquery\\_from%3A](https://nl.aliexpress.com/item/1005007175919889.html?spm=a2g0o.productlist.main.3.3e5e16b5VFbpEV&algo_pvid=adbeae3c-4e04-4cfa-bd0f-96d03d9617db&algo_exp_id=adbeae3c-4e04-4cfa-bd0f-96d03d9617db-2&pdp_ext_f=%7B%22order%22%3A%222038%22%2C%22eval%22%3A%221%22%7D&pdp_npi=4%40dis%21EUR%211.34%211.34%21%21%2111.04%2111.04%21%4021039a5b17536374796012318ee9d1%2112000039706177745%21sea%21BE%21924161374%21X&curPageLogUid=BAHXqFwy2k1M&utparam-url=scene%3Asearch%7Cquery_from%3A)

1x MAX7219 Dot Matrix module  
[https://nl.aliexpress.com/item/1005005855156717.html?gps-id=pcStoreLeaderboard&scm=1007.22922.271278.0&scm\\_id=1007.22922.271278.0&scm-url=1007.22922.271278.0&pvid=3fe1b220-b1d7-4e2f-b5e3-d1e34e24bb32&t=gps-id%3ApcStoreLeaderboard%2Cscm-url%3A1007.22922.271278.0%2Cpvid%3A3fe1b220-b1d7-4e2f-b5e3-d1e34e24bb32%2Ctp\\_buckets%3A668%232846%238114%231999&pdp\\_ext\\_f=%7B%22order%22%3A%22870%22%2C%22eval%22%3A%221%22%2C%22sceneId%22%3A%2212922%22%7D&pdp\\_npi=4%40dis%21EUR%211.81%211.81%21%21%212.08%212.08%21%40210390c917536376260361998e258a%2112000034586876016%21rec%21BE%21924161374%21XZ&spm=a2g0o.store\\_pc\\_home.smartLeaderboard\\_2003967183209.1005005855156717&gatewayAdapt=glo2nld](https://nl.aliexpress.com/item/1005005855156717.html?gps-id=pcStoreLeaderboard&scm=1007.22922.271278.0&scm_id=1007.22922.271278.0&scm-url=1007.22922.271278.0&pvid=3fe1b220-b1d7-4e2f-b5e3-d1e34e24bb32&t=gps-id%3ApcStoreLeaderboard%2Cscm-url%3A1007.22922.271278.0%2Cpvid%3A3fe1b220-b1d7-4e2f-b5e3-d1e34e24bb32%2Ctp_buckets%3A668%232846%238114%231999&pdp_ext_f=%7B%22order%22%3A%22870%22%2C%22eval%22%3A%221%22%2C%22sceneId%22%3A%2212922%22%7D&pdp_npi=4%40dis%21EUR%211.81%211.81%21%21%212.08%212.08%21%40210390c917536376260361998e258a%2112000034586876016%21rec%21BE%21924161374%21XZ&spm=a2g0o.store_pc_home.smartLeaderboard_2003967183209.1005005855156717&gatewayAdapt=glo2nld)

4x R10K

1x LDR  
[https://nl.aliexpress.com/item/1005007463254941.html?spm=a2g0o.productlist.main.5.6ae2fcecZH1UEF&algo\\_pvid=b9d35416-3c93-4f23-bfcd-35de0e45df83&algo\\_exp\\_id=b9d35416-3c93-4f23-bfcd-35de0e45df83-4&pdp\\_ext\\_f=%7B%22order%22%3A%2263%22%2C%22eval%22%3A%221%22%7D&pdp\\_npi=4%40dis%21EUR%213.44%212.15%21%21%2128.27%2117.70%21%40210384b217536377355288146ebdfc%2112000040858660182%21sea%21BE](https://nl.aliexpress.com/item/1005007463254941.html?spm=a2g0o.productlist.main.5.6ae2fcecZH1UEF&algo_pvid=b9d35416-3c93-4f23-bfcd-35de0e45df83&algo_exp_id=b9d35416-3c93-4f23-bfcd-35de0e45df83-4&pdp_ext_f=%7B%22order%22%3A%2263%22%2C%22eval%22%3A%221%22%7D&pdp_npi=4%40dis%21EUR%213.44%212.15%21%21%2128.27%2117.70%21%40210384b217536377355288146ebdfc%2112000040858660182%21sea%21BE)

[%21924161374%21X&curPageLogUid=Sql3HwjHsM&utparam-url=scene%3Asearch%7Cquery\\_from%3A#nav-specification](#)

1x ON/OFF schakelaar >> zomer / winter tijd

1x glazen stolp 18cm x 8cm

[https://nl.aliexpress.com/item/1005003248974462.html?  
spm=a2g0o.productlist.main.2.7b426oPW6oPWpP&algo\\_pvid=2d75ec80-ec9f-4ddf-8adc-  
22a1df8dcdbd1&algo\\_exp\\_id=2d75ec80-ec9f-4ddf-8adc-22a1df8dcdbd1-1&pdp\\_ext\\_f=%7B  
%22order%22%3A%22174%22%2C%22eval%22%3A%221%22%7D&pdp\\_npi=4%40dis  
%21EUR  
%213.59%213.59%21%21%2129.48%2129.48%21%402103856417536380090745199eb900%211  
2000040699183119%21sea%21BE  
%21924161374%21X&curPageLogUid=zXQY1aUUsCZe&utparam-url=scene%3Asearch  
%7Cquery\\_from%3A](https://nl.aliexpress.com/item/1005003248974462.html?spm=a2g0o.productlist.main.2.7b426oPW6oPWpP&algo_pvid=2d75ec80-ec9f-4ddf-8adc-22a1df8dcdbd1&algo_exp_id=2d75ec80-ec9f-4ddf-8adc-22a1df8dcdbd1-1&pdp_ext_f=%7B%22order%22%3A%22174%22%2C%22eval%22%3A%221%22%7D&pdp_npi=4%40dis%21EUR%213.59%213.59%21%21%2129.48%2129.48%21%402103856417536380090745199eb900%2112000040699183119%21sea%21BE%21924161374%21X&curPageLogUid=zXQY1aUUsCZe&utparam-url=scene%3Asearch%7Cquery_from%3A)

*Opmerking in verband met glazen stolp.*

*3 stuks besteld en alle 3 in goede staat aangekomen.*

1x Voeding 5V.

MAX7219 Dot Matrix module is NIET 3.3V compatibel.

## Verbindungen

### GPS

VCC	>>	+5V
GND	>>	GND
RX	>>	3
TX	>>	4

### DS3231SN

VCC	>>	+5V
GND	>>	GND
SDA	>>	SDA (18 / A4)
SCL	>>	SCL (19 / A5)

+5V ----<R10K>----- 2 (INT0)  
                  |  
                  SQW

PC board ChronoDot V2.0

R1	>>	4K7
R2	>>	4K7

### DOT MATRIX DISPLAY

VCC	>>	+5V
GND	>>	GND
CLK	>>	13
CS	>>	10
DIN	>>	11

### SWITCH ZOMER / WINTER

GND ----| |---- 14 (A0)  
          N.O.

Contact open	>>	summer time
Contact close	>>	winter time

### LDR

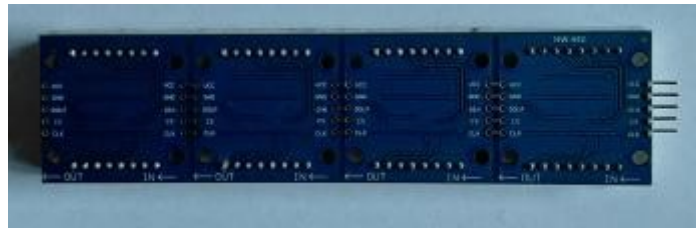
+5V ----<LDR>-----<R10K>---- GND  
                  |  
                  15 (A1)

## Enkele bouwtips

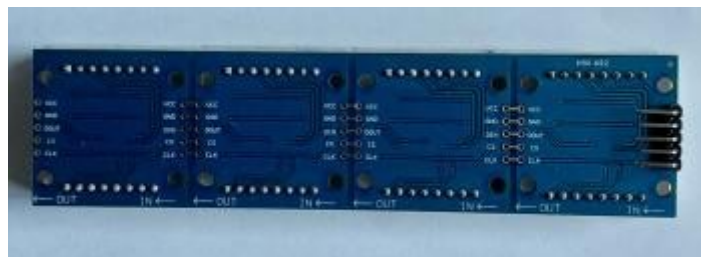
### Dot matrix display

Om plaats te besparen verwijder de gemonteerde pinheader en plaats een nieuwe, maar dan 180° gedraaid. Zie afbeeldingen hieronder.

#### Origineel



#### Gedraaid



De kunstofcirkels, gebruikt om alles op zijn plaats te houden zijn gemaakt van

Foamalux Light PVC wit DIY 2mm

In België verkrijgbaar bij

Gamma

Brico

Plaat 0.5m x 1m x 2mm

Gamma artikel nummer 26649

Linker cirkel diameter      72mm

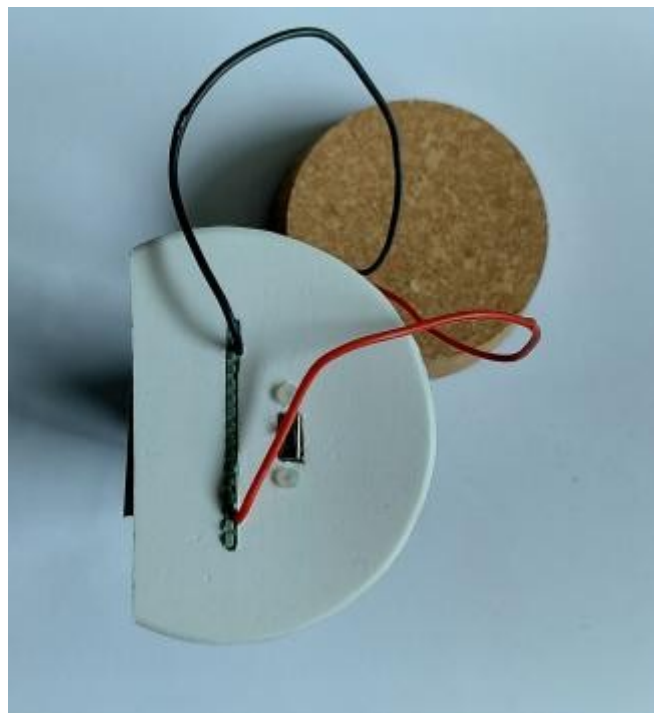
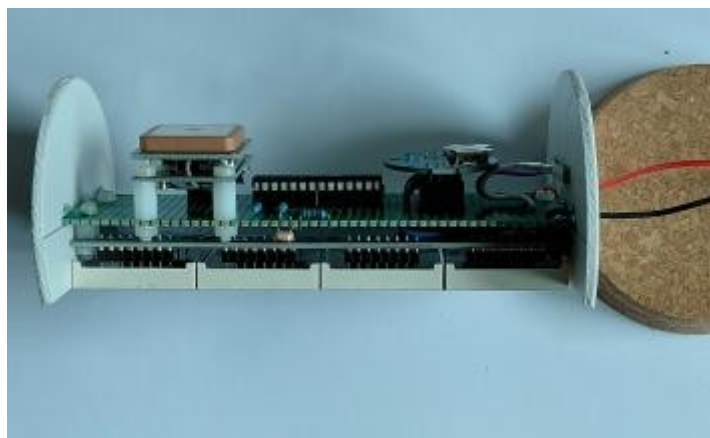
Rechter cirkel diameter      75mm

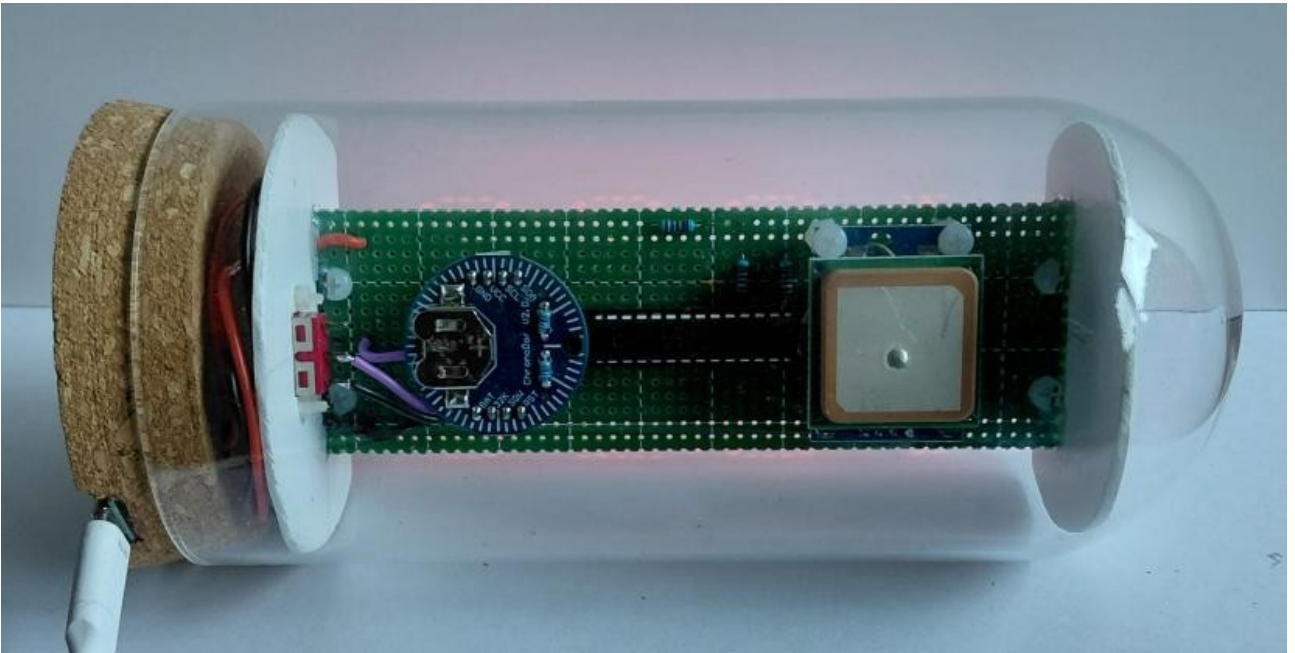
Dit kan gemakkelijk met een schaar geknipt worden.

ChronoDot V2.0

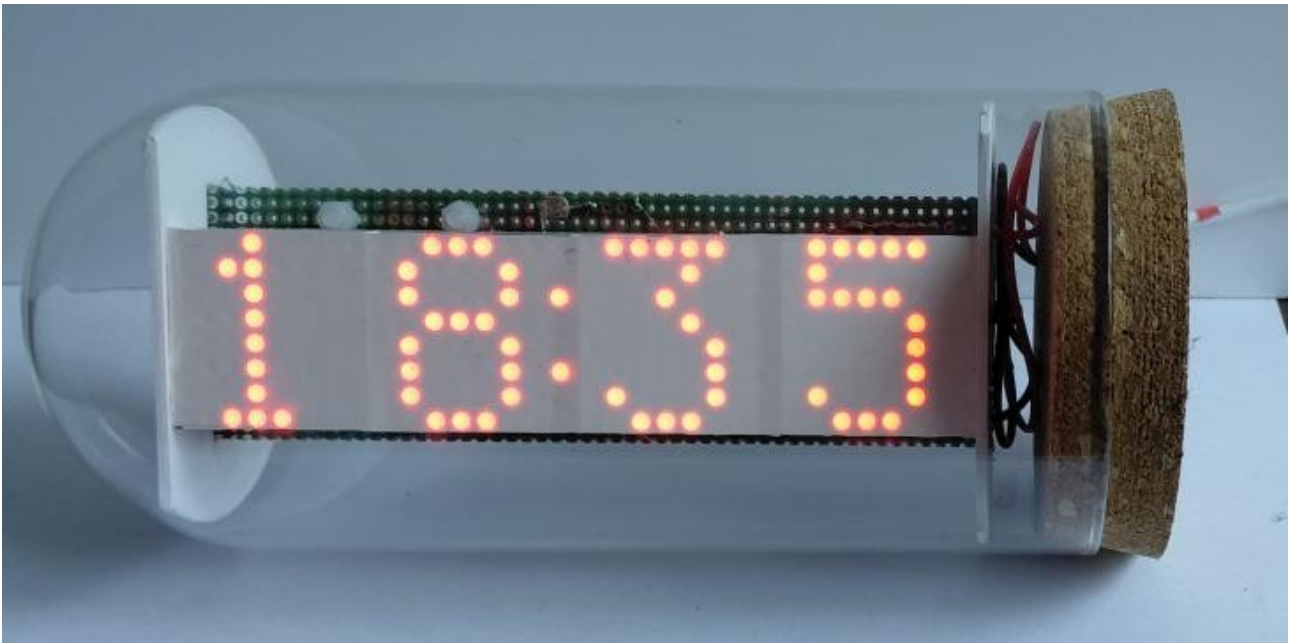
Plaats weerstanden van 4K7 in de posities R1 en R2

Enkele afbeeldingen van alles samen









Voor programma zie:

<https://github.com/thieu-b55/GPS-synchronized-clock>

dat was het,  
groeten en veel bouwplezier,

thieu-b55  
augustus 2025