

# Radioberry juice

beta 2



Windows

Getting your radioberry and radioberry juice running the following activities must be executed.

Get release and unzip t

Connect the radioberry juice board (USB-C) to a computer

- Do not apply the 12V
- Do not connect the radioberry.
- **Execute :**
  - Setup the radioberry juice board.

Use the radio

- Click the radioberry on top of the radioberry juice.
- Apply 12 V to the juice board via the power jack.
- Connect USB cable.
- **Execute:**
  - Run the firmware radioberry-juice.exe
  - Start SDR program.

The execute steps are described in more detail on the next pages.

## Setup the radioberry juice board.

For the boards i have delivered this step is already done.

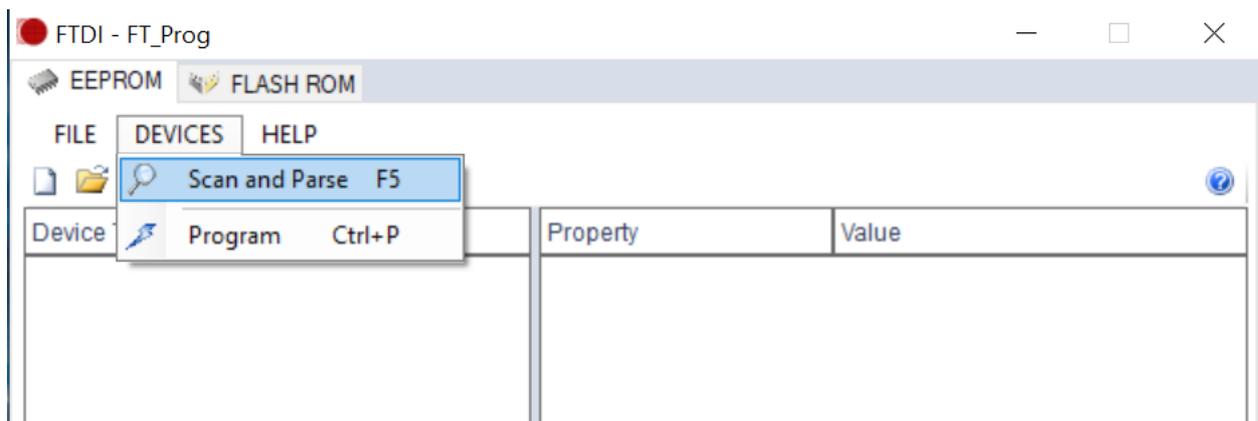
@Windows

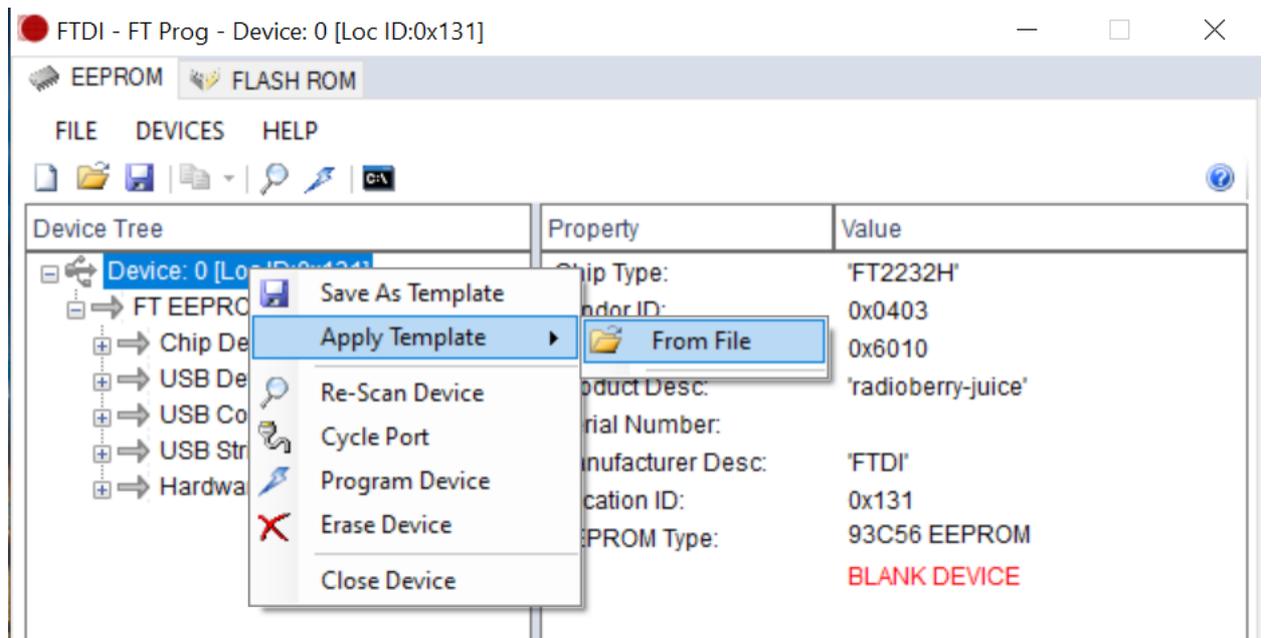
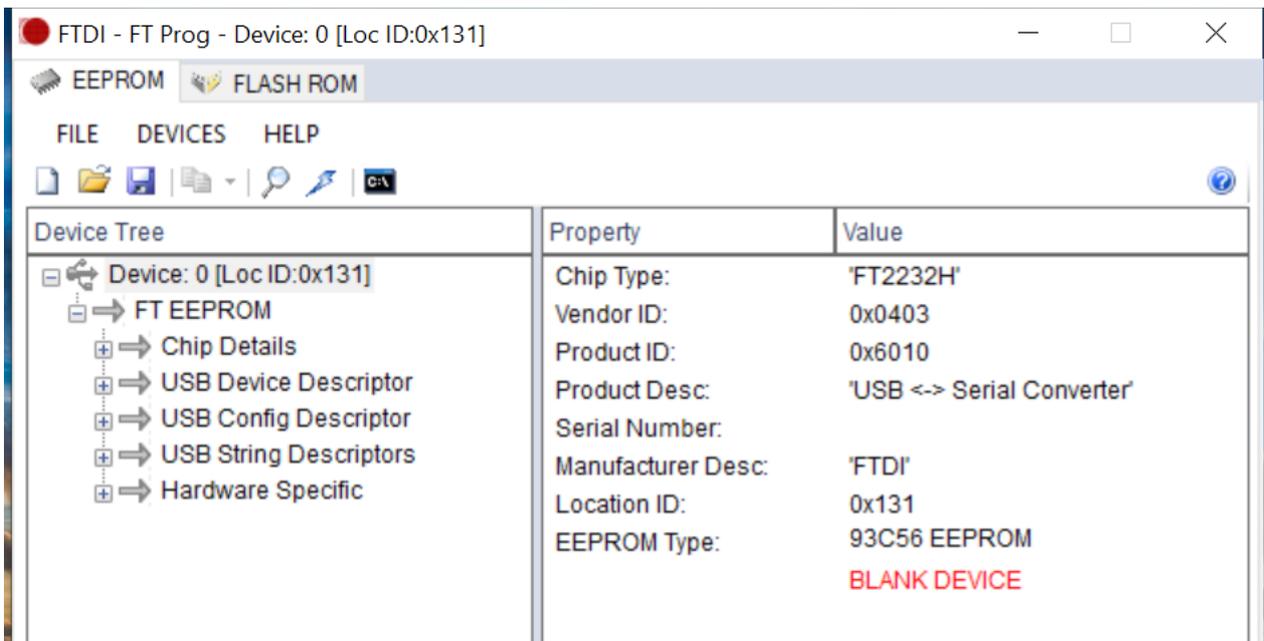
The radioberry juice board uses an eeprom to configure the FTDI FT2232H chip.

FTDI does provide a program called 'FT\_Prog' for setting FTDI chips.

In the release folder a ft2232h-radiojuice-template is provided.

The print screen is guiding to setup the juice board.





FTDI - FT Prog - Device: 0 [Loc ID:0x131]

EEPROM FLASH ROM

FILE DEVICES HELP

Device Tree

- Device: 0 [Loc ID:0x131]
  - FT EEPROM
    - Chip Data
    - USB Device
    - USB Config
    - USB String
    - Hardware

Property Value

Chip Type:	'FT2232H'
Vendor ID:	0x0403
Product ID:	0x6010
Product Desc:	'radioberry-juice'
Serial Number:	
Manufacturer Desc:	'FTDI'
Location ID:	0x131
EEPROM Type:	93C56 EEPROM
	<b>BLANK DEVICE</b>

Save As Template  
Apply Template  
Re-Scan Device  
Cycle Port  
Program Device  
Erase Device  
Close Device

EEPROM FLASH ROM

FILE DEVICES HELP

Device Tree

- Device: 0 [Loc ID:0x131]
  - FT EEPROM
    - Chip Details
    - USB Device Descriptor
    - USB Config Descriptor
    - USB String Descriptors
    - Hardware Specific

Property Value

Chip Type:	'FT2232H'
Vendor ID:	0x0403
Product ID:	0x6010
Product Desc:	'radioberry-juice'
Serial Number:	
Manufacturer Desc:	'FTDI'
Location ID:	0x131
EEPROM Type:	93C56 EEPROM
	<b>BLANK DEVICE</b>

Operation Successful

 The template was successfully applied.

OK

view gives a representation  
or more detail.

FTDI - FT Prog - Device: 0 [Loc ID:0x131]

EEPROM FLASH ROM

FILE DEVICES HELP

Device Tree

- Device: 0 [Loc ID:0x131]
  - FT EEPROM
    - Chip Details
    - USB Device Descriptor
    - USB Config Descriptor
    - USB String Descriptors
    - Hardware Specific

Property	Value
Chip Type:	'FT2232H'
Vendor ID:	0x0403
Product ID:	0x6010
Product Desc:	'radioberry-juice'
Serial Number:	FT6N6IW5
Manufacturer Desc:	'FTDI'
Location ID:	0x131
EEPROM Type:	93C56 EEPROM

## Use the radio

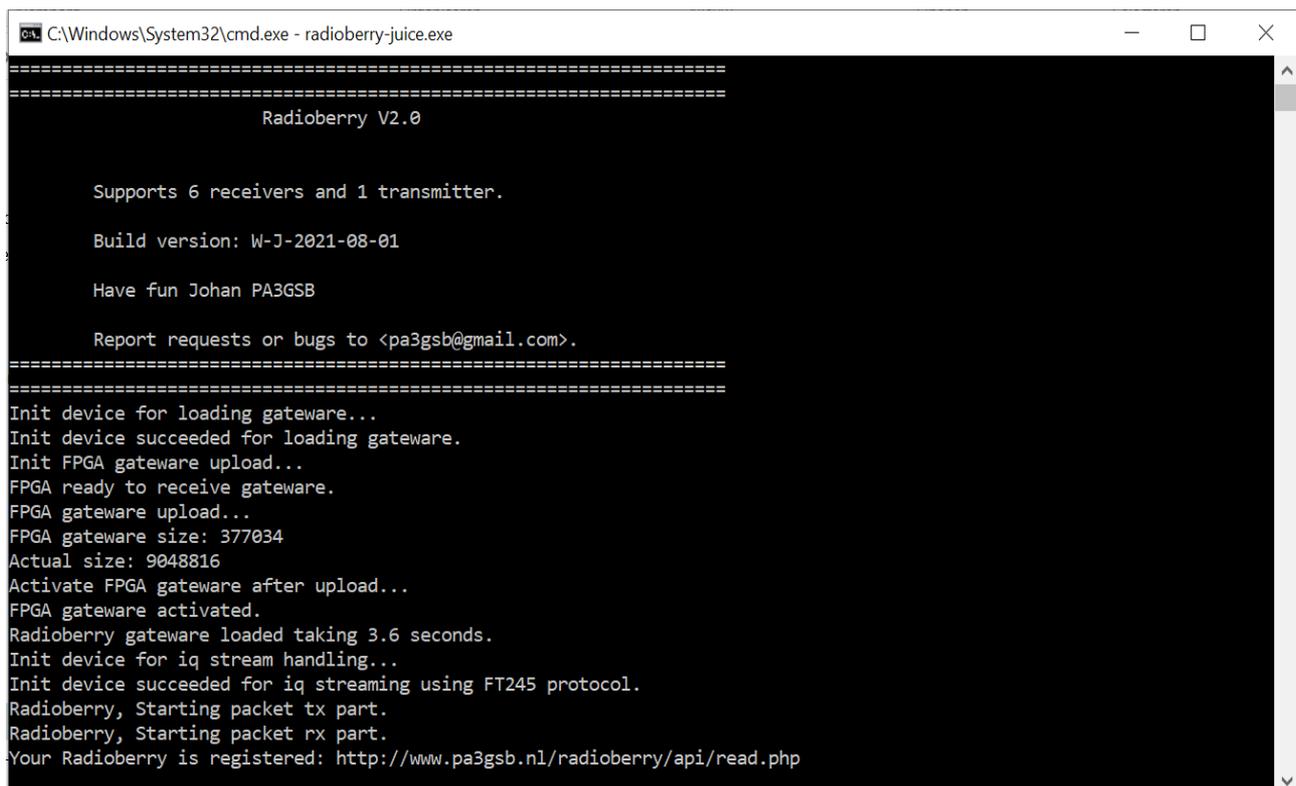
The radioberry connected on top of the juice board.

Start the radioberry-juice application;

start a command window; executed radioberry-juice.

This application is doing the following:

- is loading the gateway into the FPGA of the radioberry
- registering your radio : <http://www.pa3gsb.nl/radioberry/api/read.php>
- does start the openhpsdr protocol 1 which makes it possible to control the radioberry from a SDR program like Thetis.



```
C:\Windows\System32\cmd.exe - radioberry-juice.exe
=====
Radioberry V2.0

Supports 6 receivers and 1 transmitter.

Build version: W-J-2021-08-01

Have fun Johan PA3GSB

Report requests or bugs to <pa3gsb@gmail.com>.
=====
Init device for loading gateway...
Init device succeeded for loading gateway.
Init FPGA gateway upload...
FPGA ready to receive gateway.
FPGA gateway upload...
FPGA gateway size: 377034
Actual size: 9048816
Activate FPGA gateway after upload...
FPGA gateway activated.
Radioberry gateway loaded taking 3.6 seconds.
Init device for iq stream handling...
Init device succeeded for iq streaming using FT245 protocol.
Radioberry, Starting packet tx part.
Radioberry, Starting packet rx part.
Your Radioberry is registered: http://www.pa3gsb.nl/radioberry/api/read.php
```

To get your call registered please modify the radioberry.props file:

```
#Replace CALL by your call  
call=CALL  
#Replace LOC by your locator  
locator=LOC
```

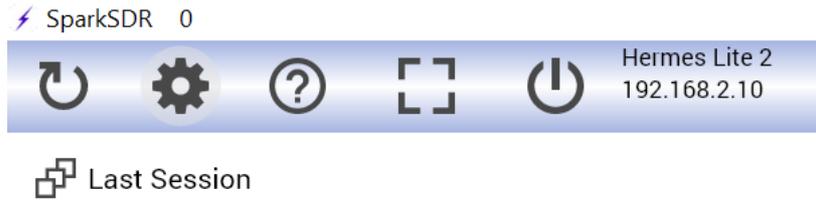
<http://www.pa3gsb.nl/radioberry/api/read.php>

F4:8C:50:FD:AB:D3	-	-	73.0	02.12.36	W-J-2021-08-01	CL025	2022-01-03 16:33:20
F4:8C:50:FD:AB:D3	PA3GSB	JO22XE	73.0	02.12.36	W-J-2021-08-01	CL025	2022-01-03 16:37:46

Start Spark SDR

```
C:\Windows\System32\cmd.exe - radioberry-juice.exe  
Init device succeeded for loading gateway.  
Init FPGA gateway upload...  
FPGA ready to receive gateway.  
FPGA gateway upload...  
FPGA gateway size: 377034  
Actual size: 9048816  
Activate FPGA gateway after upload...  
FPGA gateway activated.  
Radioberry gateway loaded taking 1.6 seconds.  
Init device for iq stream handling...  
Init device succeeded for iq streaming using FT245 protocol.  
Radioberry, Starting packet tx part.  
Radioberry, Starting packet rx part.  
Your Radioberry is registered: http://www.pa3gsb.nl/radioberry/api/read.php  
Discovery packet received  
SDR Program IP-address 192.168.2.10  
Discovery Port 59776  
Received packages not for me!  
Discovery packet received  
SDR Program IP-address 172.21.160.1  
Discovery Port 59777  
Received packages not for me!  
Discovery packet received  
SDR Program IP-address 127.0.0.1  
Discovery Port 59778  
Received packages not for me!  
Discovery packet received  
SDR Program IP-address 192.168.2.10  
Discovery Port 59775
```

## Successful Discovery:



## Spark SDR started:

The interface shows the SparkSDR 0 logo and a status bar with several icons: a refresh icon, a gear icon, a question mark icon, a square icon, and a power icon. The text 'Hermes Lite 2' and '192.168.2.10' is displayed on the right. A green bar indicates 'USB 14095600 0'. Below the status bar, there is a frequency spectrum plot with a range from -20 to 14.100.000. A terminal window is open, displaying the following text:

```
C:\Windows\System32\cmd.exe - radioberry-juice.exe
FPGA ready to receive gateway.
FPGA gateway upload...
FPGA gateway size: 377034
Actual size: 9048816
Activate FPGA gateway after upload...
FPGA gateway activated.
Radioberry gateway loaded taking 1.6 seconds.
Init device for iq stream handling...
Init device succeeded for iq streaming using FT245 protocol.
Radioberry, Starting packet tx part.
Radioberry, Starting packet rx part.
Your Radioberry is registered: http://www.pa3gsb.nl/radioberry/api/read.php
Discovery packet received
SDR Program IP-address 192.168.2.10
Discovery Port 59776
Received packages not for me!
Discovery packet received
SDR Program IP-address 172.21.160.1
Discovery Port 59777
Received packages not for me!
Discovery packet received
SDR Program IP-address 127.0.0.1
Discovery Port 59778
Received packages not for me!
Discovery packet received
SDR Program IP-address 192.168.2.10
Discovery Port 59775
Start Port 62680
SDR Program sends UDP Start command
```

## SDR Stopped:

SparkSDR 0



Hermes Lite 2  
192.168.2.10

Last Session

```
C:\Windows\System32\cmd.exe - radioberry-juice.exe
FPGA gateway size: 377034
Actual size: 9048816
Activate FPGA gateway after upload...
FPGA gateway activated.
Radioberry gateway loaded taking 1.6 seconds.
Init device for iq stream handling...
Init device succeeded for iq streaming using FT245 protocol.
Radioberry, Starting packet tx part.
Radioberry, Starting packet rx part.
Your Radioberry is registered: http://www.pa3gsb.nl/radioberry/api/read.php
Discovery packet received
SDR Program IP-address 192.168.2.10
Discovery Port 59776
Received packages not for me!
Discovery packet received
SDR Program IP-address 172.21.160.1
Discovery Port 59777
Received packages not for me!
Discovery packet received
SDR Program IP-address 127.0.0.1
Discovery Port 59778
Received packages not for me!
Discovery packet received
SDR Program IP-address 192.168.2.10
Discovery Port 59775
Start Port 62680
SDR Program sends UDP Start command
SDR Program sends Stop command
SDR Program sends UDP Stop command
```

– End –