

## LANforge CLI CT712 DFS / RF generation, FCC Functionality from command line

Goal: Show usage of lf\_hackrf\_dfs.py and lf\_pulse\_detect3.py for FCC DFS testing.

This document describes the command line interface to generate FCC pulses for DFS (Dynamic Frequency Selection) Testing.

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### FCC Functionality

Pulse description begins at page 10

[FCC\\_DFS.pdf](#)

FCC0-FCC6 implemented

#### Known issues

- FCC6 does not meet the 300 ms for all 100 pulses
- FCC5 the logs show what pulses were sent, need specific presentation to user.
- pulse detect - todo show modulated frequency
- pulse detect - todo show duty cycle

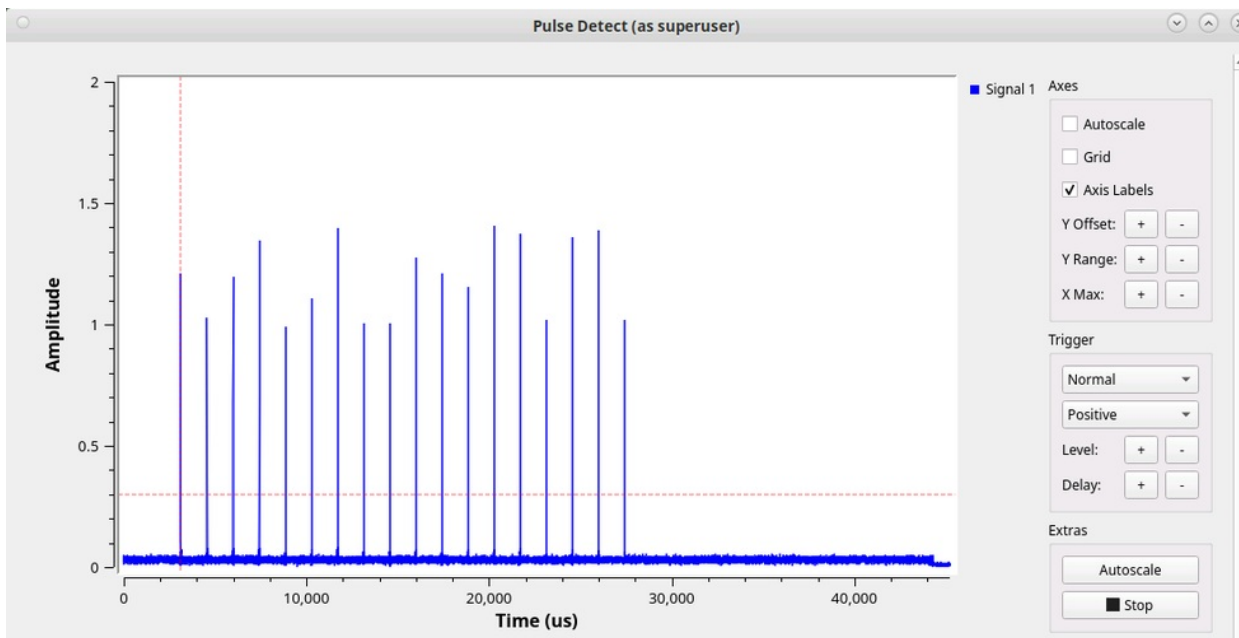
### Pulse Detect

Pulse detect may be used with a second hackrf to monitor the signals produced by the first hackrf.

- command line
  - `./lf_pulse__detect3_pw.py --freq <'center frequency in Mhz'> --lf_hackrf <'hackrf serial'>`
  - example
  - `./lf_pulse_detect3_pw.py --freq 5320 --lf_hackrf c2b4aa75f`

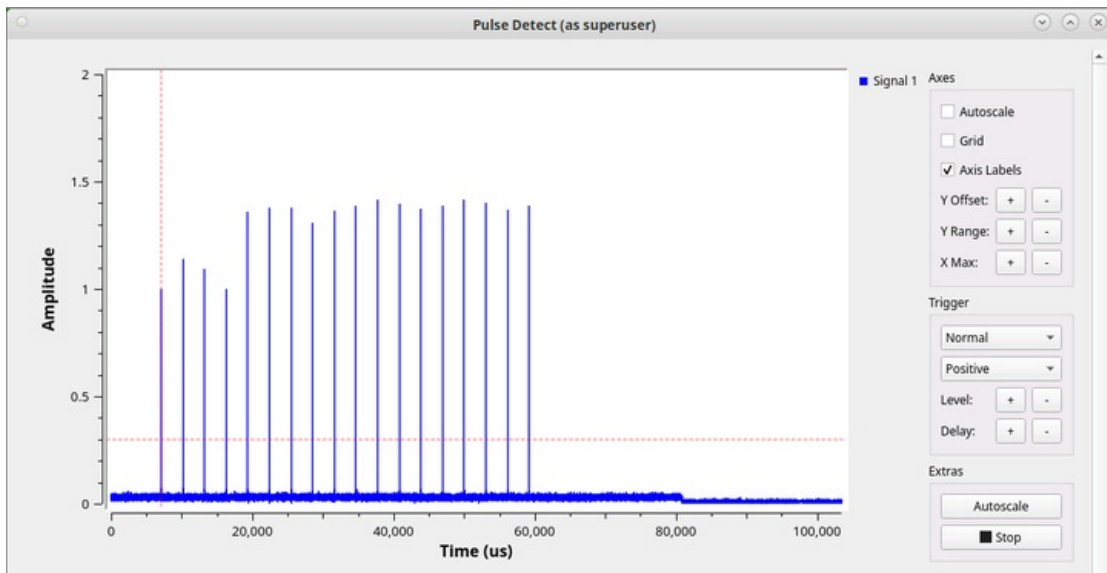
### FCC0

- command line
  - `./lf_hackrf_dfs.py --freq <'center frequency'> --rf_type FCC0,.,<pri (pulse interval)>, , <tx_sample_rate Mhz> --lf_hackrf`
  - example:
  - `./lf_hackrf_dfs.py --freq 5320000 --rf_type FCC0,1,1428,18,20 --lf_hackrf 22276763`



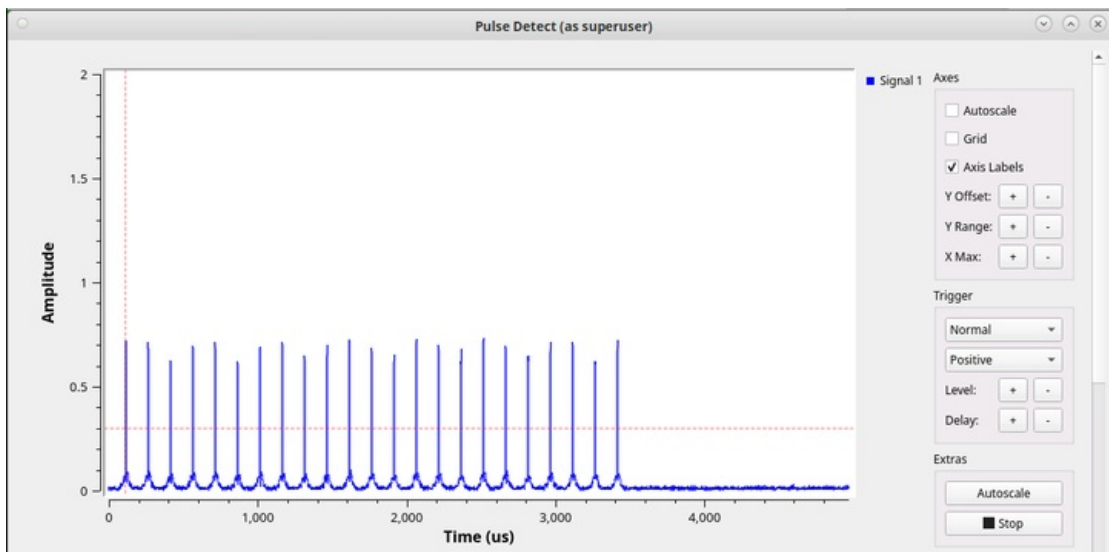
## FCC1

- RF Description
- command line
  - `./lf_hackrf_dfs.py --freq <'center frequency'> --rf_type FCC1,,<pri (pulse interval)>, , <tx_sample_rate Mhz> --lf_hackrf`
    - $\text{pri} = \text{round up } (1/360) * ((19 * 10e6)/\text{PRI})$
    - example
  - `./lf_hackrf_dfs.py --freq 5320000 --rf_type FCC1,1,3066,18,20 --lf_hackrf 22276763`



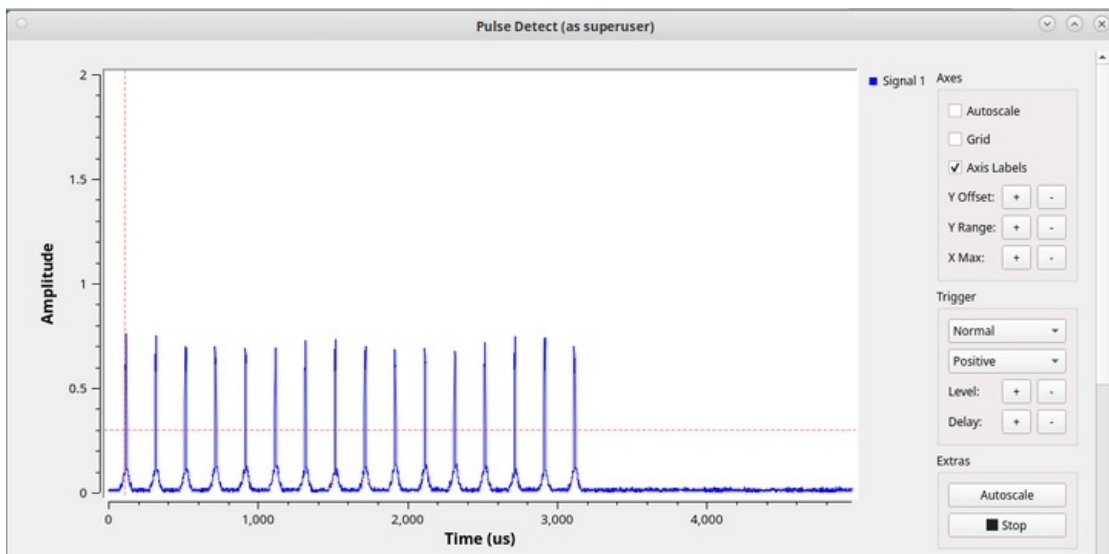
## FCC2

- command line
  - `./lf_hackrf_dfs.py --freq <'center frequency'> --rf_type FCC2,,<pri (pulse interval)>, , <tx_sample_rate Mhz> --lf_hackrf`
  - example:
    - `./lf_hackrf_dfs.py --freq 5320000 --rf_type FCC2,5,150,23,20 --lf_hackrf 22276763`



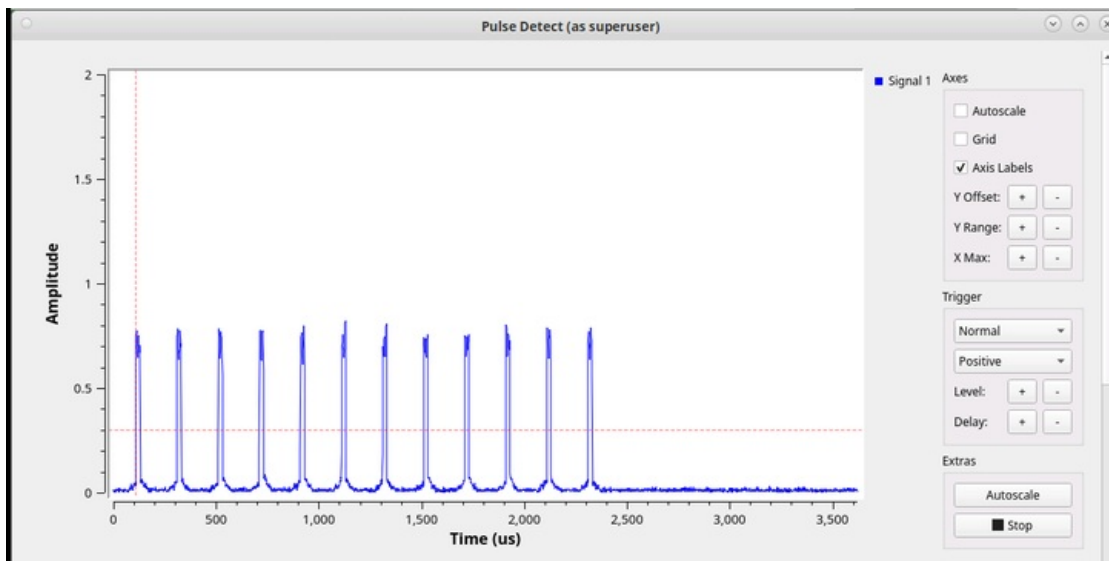
## FCC3

- command line
  - `./lf_hackrf_dfs.py --freq <'center frequency'> --rf_type FCC3,,<pri (pulse interval)> , , <tx_sample_rate Mhz> --lf_hackrf`
  - example
    - `./lf_hackrf_dfs.py --freq 5320000 --rf_type FCC3,10,200,16,20 --lf_hackrf 22276763`



## FCC4

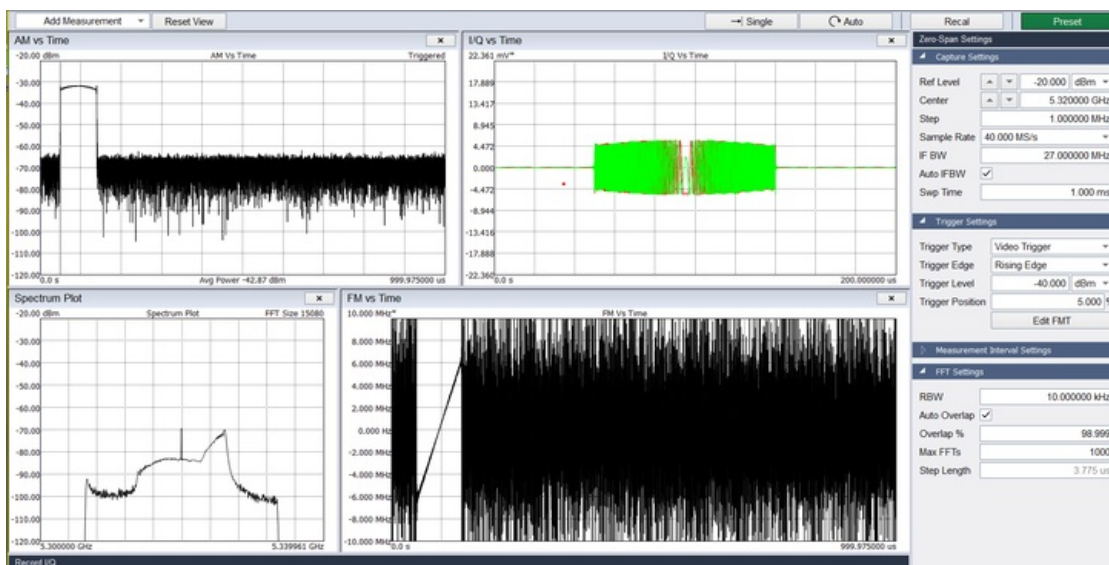
- command line
  - `./lf_hackrf_dfs.py --freq <'center frequency'> --rf_type FCC4,,<pri (pulse interval)> , , <tx_sample_rate Mhz> --lf_hackrf`
  - example
    - `./lf_hackrf_dfs.py --freq 5320000 --rf_type FCC4,20,200,12,20 --lf_hackrf 22276763`



## FCC5

- pulses per burst are randomly chosen between 1 - 3
- command line
  - `./lf_hackrf_dfs.py --freq <'center frequency'> --rf_type FCC5,<number_bursts in trial>,<trials_center>,<trials_low>,<trials_high>,<uut_channel>,<tx_sample_rate Mhz>`
  - example

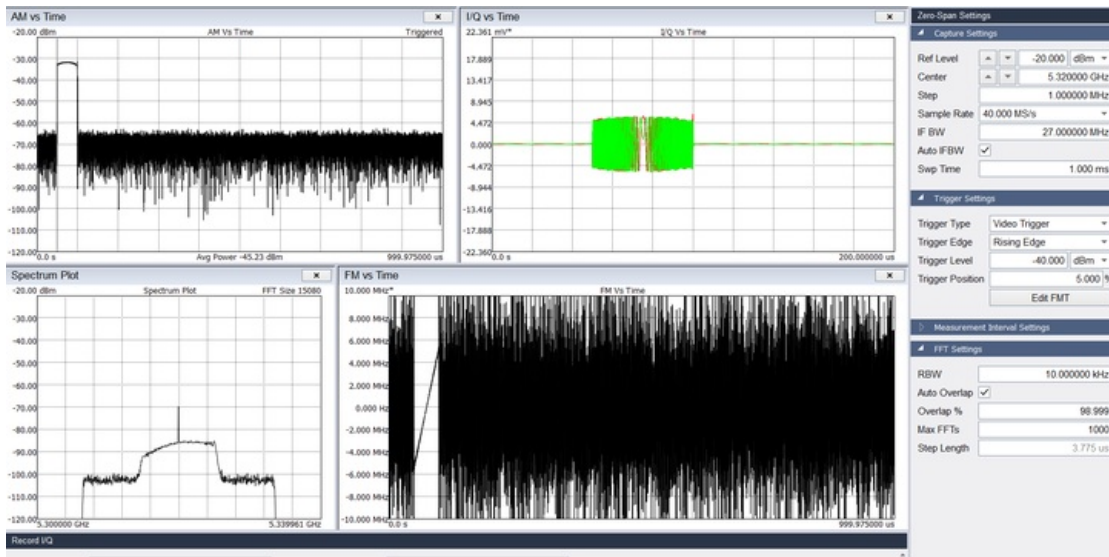
■ `./lf_hackrf_dfs.py --freq 5320000 --rf_type FCC5,10,1,0,0,20,15,20 --lf_hackrf 22276763`



## FCC5B (FCC5 single chirp burst)

- command line
  - `./lf_hackrf_dfs.py --freq <'center frequency'> --rf_type FCC5B,,,<pulse rate frequency 2>,<pulse rate frequency 3>,,<tx_sample_rate Mhz>`
  - example

■ `./lf_hackrf_dfs.py --rf_type FCC5B,0,50,12,500,600,700,3,20,5320,20 --lf_hackrf 22276763`



## FCC6

- command line
  - `./lf_hackrf_dfs.py --freq <'center frequency'> --rf_type FCC6,<fcc6_bursts>`
  - example
    - `./lf_hackrf_dfs.py --freq 5320000 --rf_type FCC6,100 --lf_hackrf 22276763`

