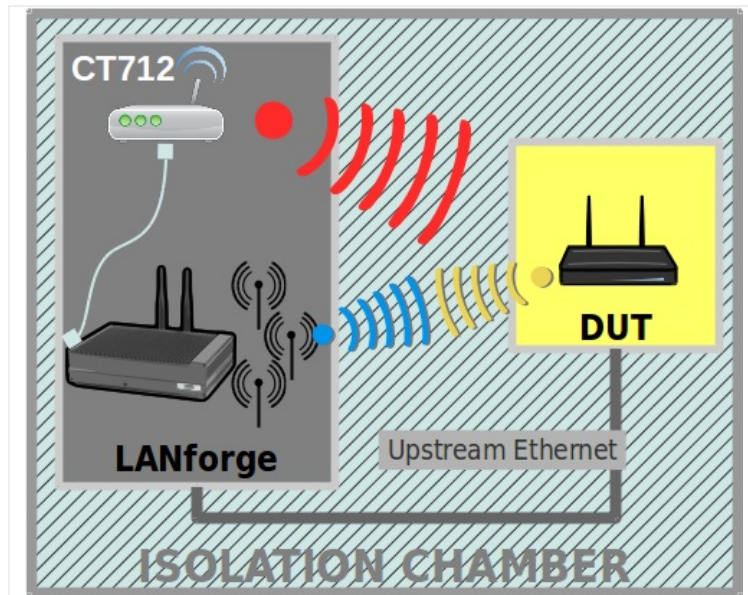


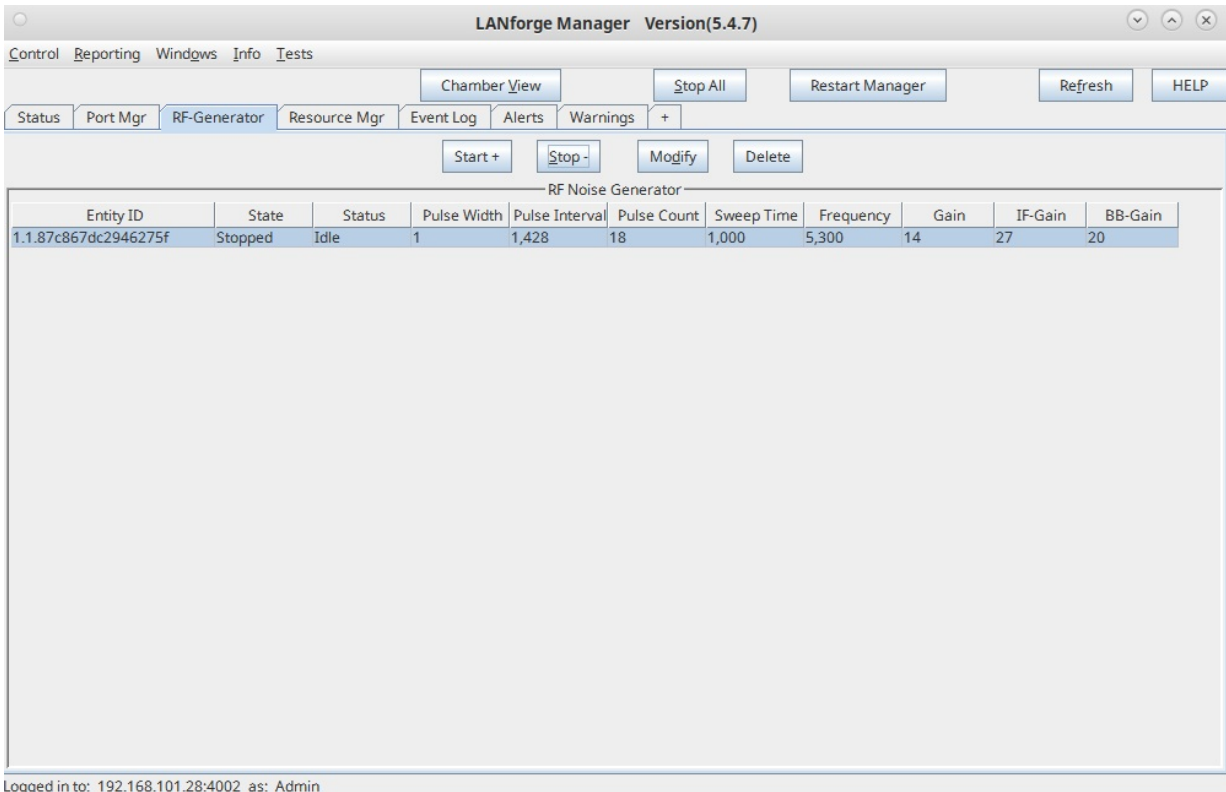
## Using CT712 RF Noise Generator and RADAR Simulator to test DFS channels

**Goal:** Generate RF pulses that simulate RADAR and cause an AP using DFS to exercise its detection and response abilities.

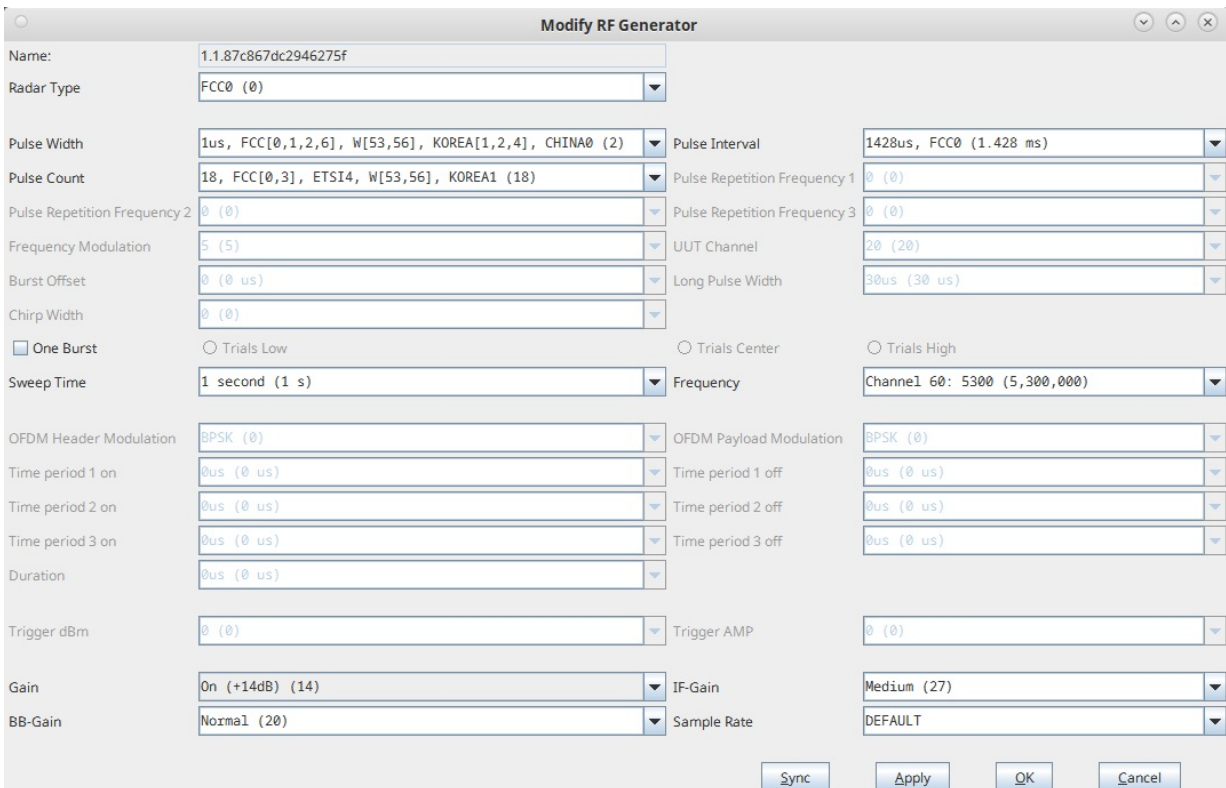
DFS (Dynamic Frequency Selection) allows an AP to use channels in the same spectrum that some RADAR systems use and provide a method of changing channels when RADAR signals are detected. In this example, we will use a LANforge CT712 which is our customized script and integrated GUI control for the HackRF-One Software-Defined Radio (SDR) to generate the RF pulses that simulate RADAR signals and cause a third-party AP under test to detect and change channels. It is recommended that this type of testing be done in a RF isolation chamber to limit interference to production WLAN and RADAR systems in use.



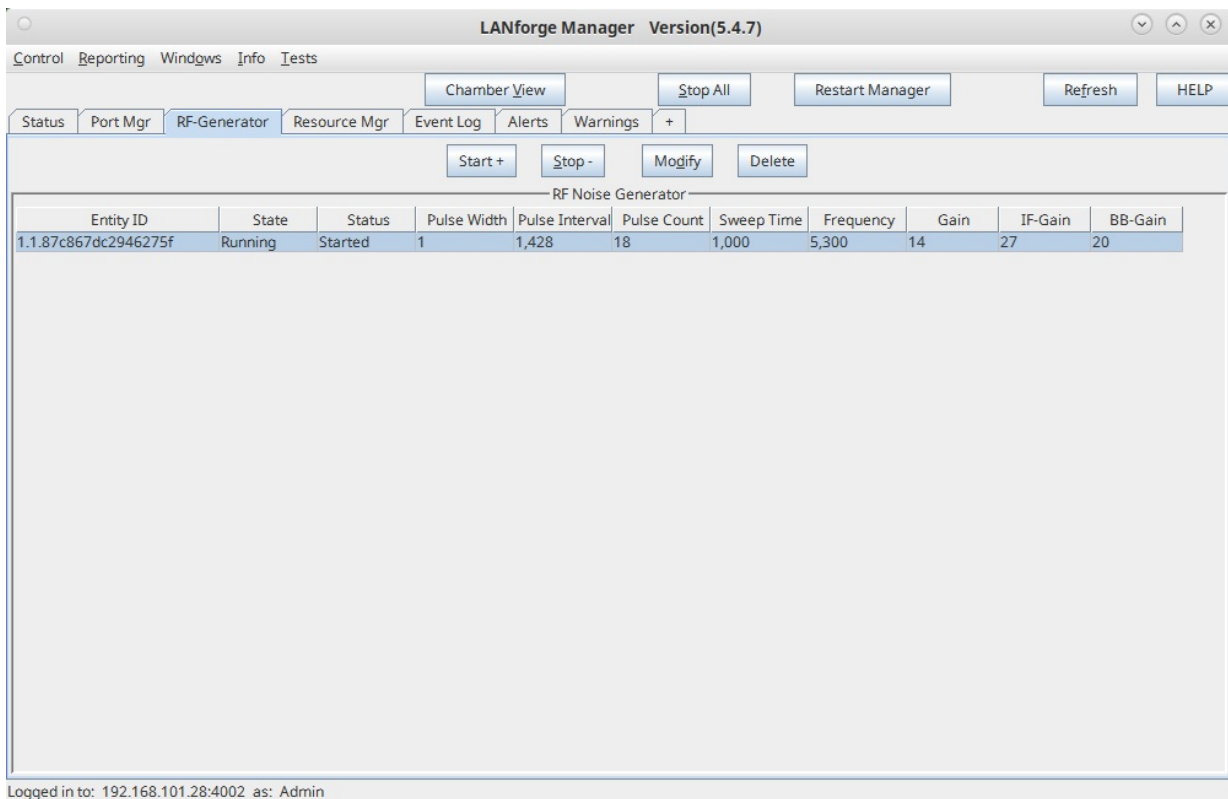
1. Verify a client is connected to a third-party AP using a DFS channel.  
For more information see  
[Wikipedia: 5GHz Channels](#)  
[WLAN Pros WiFi Channel Reference](#)
2. On the RF Generator tab, modify the device that corresponds to the CT712 USB device to set the desired channel and pulse characteristics.  
**NOTE:** The different RADAR types are defined as described in the document [FCC DFS Compliance Procedures](#). RF pulses defined outside of these parameters can be used for other RF noise and interference tests.



3. Select a FCC RADAR type preset button or enter specific values to set the desired pulse characteristics, then set the transmit frequency, then select OK.



4. Highlight the RF Generator entry and select the Start+ button to start transmitting. In some versions, you may have to select Start+ twice in order to start transmitting



Logged in to: 192.168.101.28:4002 as: Admin

5. When the CT712 is activated, the Status will show Started and the HackRF-One device's TX LED should show a red light. The AP under test should detect RADAR within 10 seconds, change to an available channel and not be able to use the previous channel again for 30 minutes.

For more information see

[WiFi Alliance: DFS Best Practices](#)

6. An alternate method of controlling the CT712 HackRF-One device is to use the rf\_helper script in the /home/lanforge directory:

- A. Open a terminal window on the LANforge system.
- B. cd to /home/lanforge
- C.

```

./rf_helper --help

Usage FCC0-4:
./rf_helper --sdr_serial_num= --freq=5320000 --gain=50 --rf_type=FCC0,,, -log_level debug

FCC0-4 Sample Commands
./rf_helper --sdr_serial_num=22276763 --freq=5320000 --gain=50 --rf_type=FCC0,1,1428,18,10 --log_level=d
./rf_helper --sdr_serial_num=22276763 --rf_type=FCC1,1,3066,18,20 --freq=5320000 --gain=50 --log_level=
./rf_helper --sdr_serial_num=22276763 --rf_type=FCC2,5,230,23,5 --freq=5320000 --gain=50 --log_level=de
./rf_helper --sdr_serial_num=22276763 --rf_type=FCC3,10,500,18,5 --freq=5320000 --gain=50 --log_level=d
./rf_helper --sdr_serial_num=22276763 --rf_type=FCC4,20,500,16,5 --freq=5320000 --gain=50 --log_level=d

Usage FCC5: --rf_type=,,,,,
./rf_helper --sdr_serial_num=22276763 --rf_type=FCC5,14,10,0,0,20,10,20 --freq=5320000 --gain=50 --log

Usage FCC6: --rf_type=, :
./rf_helper --sdr_serial_num=22276763 --rf_type=FCC6 --freq=5320000 --gain=50 --log_level=debug --one_b
FCC6 the sample rate is 10 Mhz

Usage ETSI0-4: --rftype=,,,
ETSI0-4 Sample Commands
./rf_helper --sdr_serial_num=22276763 --rf_type=ETSI0,1,700,5 --freq=5320000 --gain=50 --log_level=debu
./rf_helper --sdr_serial_num=22276763 --rf_type=ETSI1,,5,1000,10 --freq=5320000 --gain=50 --log_level=d
./rf_helper --sdr_serial_num=22276763 --rf_type=ETSI2,5,1600,10 --freq=5320000 --gain=50 --log_level=d

```