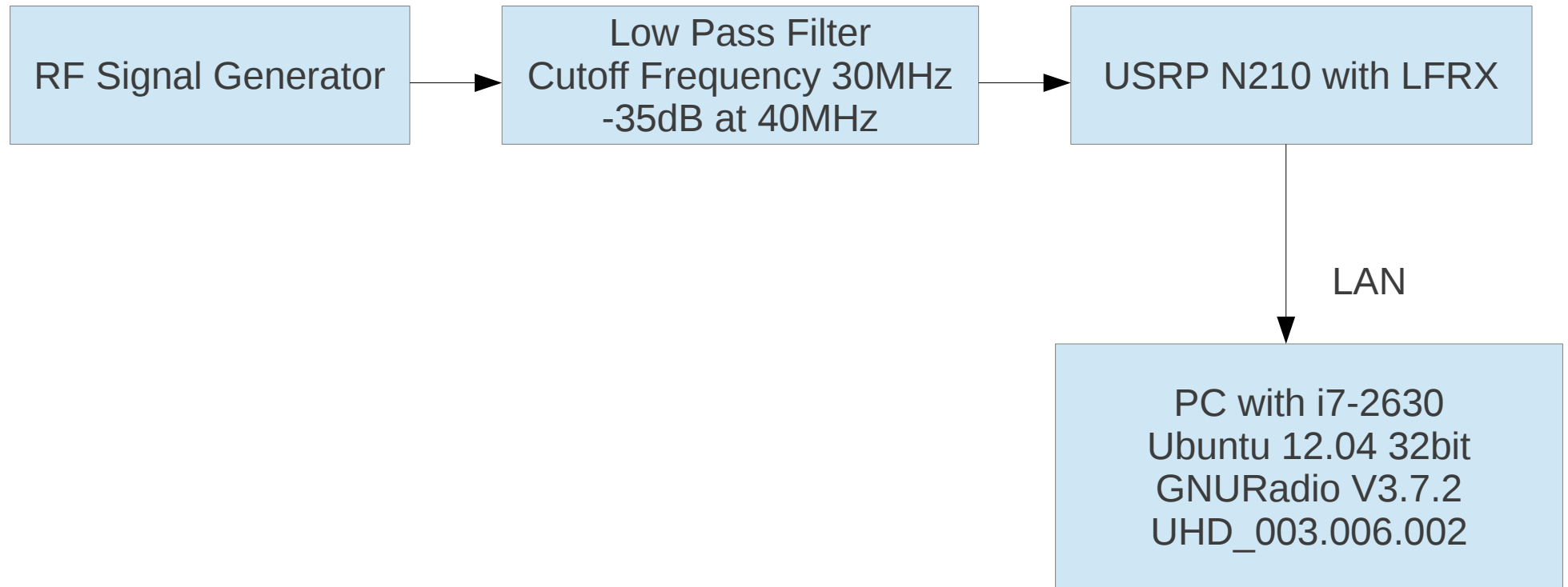


ETTUS USRP N210 with LFRX



Input Signal 28MHz, Wire Format Complex int16, Sample Rate 25Msp

The screenshot displays the GNU Radio Companion (GRC) interface for a project named "Rtsa Fospor Bw 50Mhz". The main flow graph includes the following components:

- Options:** ID: RTSA_fospor_BW_50MHz, Generate Options: WX GUI
- Variable:** ID: samp_rate, Value: 25M
- WX GUI Slider:** ID: freq, Default Value: 25M, Minimum: 0, Maximum: 50M, Converter: Float
- WX GUI Slider:** ID: g, Label: Gain, Default Value: 0, Minimum: -10, Maximum: 10, Converter: Float
- WX GUI Text Box:** ID: sr, Label: Sample Rate, Default Value: 25M, Converter: Float
- UHD: USRP Source:** Wire Format: Complex int16, Samp Rate (Sps): 25M, Ch0: Center Freq (Hz): 25M, Ch0: Gain (dB): 0
- WX GUI FFT Sink:** Title: FFT Plot, Sample Rate: 25M, Baseband Freq: 25M, Y per Div: 10 dB, Y Divs: 10, Ref Level (dB): -10, Ref Scale (p2p): 2, FFT Size: 1.024k, Refresh Rate: 15, Freq Set Varname: None

The FFT Plot window shows a spectrum with a prominent peak at 27.979 MHz with a power level of -52.457 dB. The plot title is "FFT Plot Spectrum OK". The y-axis is labeled "dB" and ranges from -110 to -10. The x-axis is labeled "MHz" and ranges from 15 to 35. The plot shows a noisy baseline with a sharp peak at the specified frequency.

The "Properties: UHD: USRP Source" window is open, showing the following parameters:

Parameter	Value
ID	uhd_usrp_source_0
Output Type	Complex float32
Wire Format	Complex int16
Stream args	
Stream channels	[]
Device Addr	
Sync	don't sync
Clock Rate (Hz)	Default
Num Mboards	1
Mb0: Clock Source	Default
Mb0: Time Source	Default
Mb0: Subdev Spec	
Num Channels	1
Samp Rate (Sps)	samp_rate

The bottom status bar shows the following information:

- Opening a USRP2/N-Series device...
- Current recv frame size: 1472 bytes
- Current send frame size: 1472 bytes
- >>> Done
- Generating: "/home/ubuntu/Desktop/RTSA_fospor_BW_50MHz.py"
- Executing: "/home/ubuntu/Desktop/RTSA_fospor_BW_50MHz.py"
- linux; GNU C++ version 4.6.3; Boost_104601; UHD_003.006.002-release
- Using Volk machine: sse4_2_32
- Opening a USRP2/N-Series device...
- Current recv frame size: 1472 bytes

Input Signal 28MHz, Wire Format Complex int8, Sample Rate 25Msps

The screenshot displays the GNU Radio Companion (GRC) interface for a project named "Rtsa Fospor Bw 50Mhz".

Flow Graph: The main workspace shows a flow graph with the following components:

- Options:** ID: RTSA_fospor_BW_50Mhz, Generate Options: WX GUI
- Variable:** ID: samp_rate, Value: 25M
- WX GUI Slider:** ID: freq, Default Value: 25M, Minimum: 0, Maximum: 50M, Converter: Float
- WX GUI Slider:** ID: g, Label: Gain, Default Value: 0, Minimum: -10, Maximum: 10, Converter: Float
- WX GUI Text Box:** ID: sr, Label: Sample Rate, Default Value: 25M, Converter: Float
- UHD: USRP Source:** Wire Format: Complex int8, Stream args: peak=0.01, Samp Rate (Sps): 25M, Ch0: Center Freq (Hz): 25M, Ch0: Gain (dB): 0
- WX GUI FFT Sink:** Title: FFT Plot, Sample Rate: 25M, Baseband Freq: 25M, Y per Div: 10 dB, Y Divs: 10, Ref Level (dB): -10, Ref Scale (p2p): 2, FFT Size: 1.024k, Refresh Rate: 15, Freq Set Varname: None

FFT Plot: A spectrum plot titled "FFT Plot" showing a signal at 27.979 MHz with a power level of -55.220 dB. A pink arrow points to a smaller peak at approximately 15 MHz, labeled "Spectrum wrong". The plot has a Y-axis from -110 to -10 dB and an X-axis from 15 to 35 MHz. The "Options" panel on the right includes checkboxes for Average, Persistence, and Peak Hold, and a "Set dB/div" menu with options: 1 dB/div, 2 dB/div, 5 dB/div, 10 dB/div (selected), and 20 dB/div. The "Adj Ref Lvl" buttons are also visible.

Properties: UHD: USRP Source Dialog: The dialog shows the following parameters:

- ID: uhd_usrp_source_0
- Output Type: Complex float32
- Wire Format: Complex int8
- Stream args: peak=0.01
- Stream channels: []
- Device Addr: [redacted]
- Sync: don't sync
- Clock Rate (Hz): Default
- Num Mboards: 1
- Mb0: Clock Source: Default
- Mb0: Time Source: Default
- Mb0: Subdev Spec: [redacted]
- Num Channels: 1
- Samp Rate (Sps): samp_rate

Terminal: The terminal at the bottom shows the following output:

```
>>> Done
Generating: "/home/ubuntu/Desktop/RTSA_fospor_BW_50Mhz.py"
Executing: "/home/ubuntu/Desktop/RTSA_fospor_BW_50Mhz.py"
linux; GNU C++ version 4.6.3; Boost_104601; UHD_003.006.002-release
Using Volk machine: sse4_2_32
- Opening a USRP2/N-Series device...
- Current rcv frame size: 1472 bytes
```

Input Signal 28MHz, Wire Format Complex int8, Sample Rate 50MSPS

The screenshot displays the GNU Radio Companion (GRC) interface for a project named "Rtsa Fospor Bw 50MHz".

Flow Graph: The main workspace shows a "UHD: USRP Source" block connected to an "in" block. Several control blocks are visible, including "WX GUI Slider" for frequency (ID: freq, Default Value: 25M) and gain (ID: g, Default Value: 0), and "WX GUI Text Box" for sample rate (ID: sr, Default Value: 50M). A "WX GUI FFT Sink" block is also present, titled "FFT Plot".

Block Properties: The "Properties: UHD: USRP Source" window is open, showing the following parameters:

- ID: uhd_usrp_source_0
- Output Type: Complex float32
- Wire Format: Complex int8
- Stream args: peak=0.01
- Stream channels: []
- Device Addr: [redacted]
- Sync: don't sync
- Clock Rate (Hz): Default
- Num Mboards: 1
- Mb0: Clock Source: Default
- Mb0: Time Source: Default
- Mb0: Subdev Spec: [redacted]
- Num Channels: 1
- Samp Rate (Sps): samp_rate

FFT Plot: The "WX GUI FFT Sink" displays an FFT plot titled "Spectrum wrong FFT Plot". The y-axis is labeled "dB" and ranges from -110 to -10. The x-axis is labeled "MHz" and ranges from 0 to 45. The plot shows a spectrum with several peaks, notably around 20 MHz and 28 MHz. A pink arrow points to the peak at approximately 28 MHz, labeled "OK". Another pink arrow points to the peak at approximately 20 MHz, labeled "Spectrum wrong".

Terminal: The terminal window at the bottom left shows the following output:

```
Using Volk machine: sse4_2_32
-- Opening a USRP2/N-Series device...
-- Current recv frame size: 1472 bytes
-- Current send frame size: 1472 bytes
>>> Done
Generating: "/home/ubuntu/Desktop/RTSA_fospor_BW_50MHz.py"
Executing: "/home/ubuntu/Desktop/RTSA_fospor_BW_50MHz.py"
linux; GNU C++ version 4.6.3; Boost_104601; UHD_003.006.002-release
Using Volk machine: sse4_2_32
-- Opening a USRP2/N-Series device...
```

Input Signal 9MHz, Wire Format Complex int16, Sample Rate 25Mps

The screenshot displays the GNU Radio Companion (GRC) interface for a project named "Rtsa Fospor Bw 50Mhz".

Flow Graph: The main workspace shows a flow graph with the following components:

- UHD: USRP Source:** Wire Format: Complex int16, Samp Rate (Sps): 25M, Ch0: Center Freq (Hz): 12.5M, Ch0: Gain (dB): 0.
- WX GUI FFT Sink:** Title: FFT Plot, Sample Rate: 25M, Baseband Freq: 12.5M, Y per Div: 10 dB, Y Divs: 10, Ref Level (dB): -10, Ref Scale (p2p): 2, FFT Size: 1.024k, Refresh Rate: 15, Freq Set Varname: None.
- WX GUI Slider:** ID: freq, Default Value: 12.5M, Minimum: 0, Maximum: 50M, Converter: Float.
- WX GUI Slider:** ID: g, Label: Gain, Default Value: 0, Minimum: -10, Maximum: 10, Converter: Float.
- WX GUI Text Box:** ID: sr, Label: Sample Rate, Default Value: 25M, Converter: Float.

Spectrum Plot: A window titled "Spectrum OK FFT Plot" shows a frequency spectrum. The x-axis is labeled "MHz" (0 to 20) and the y-axis is labeled "dB" (-110 to -10). A prominent peak is visible at approximately 9 MHz. The plot includes options for Average, Persistence, Peak Hold, and dB/div settings (1, 2, 5, 10, 20 dB/div).

Properties: UHD: USRP Source: A dialog box shows the following settings:

- ID: uhd_usrp_source_0
- Output Type: Complex float32
- Wire Format: Complex int16
- Stream args: []
- Stream channels: []
- Device Addr: []
- Sync: don't sync
- Clock Rate (Hz): Default
- Num Mboards: 1
- Mb0: Clock Source: Default
- Mb0: Time Source: Default
- Mb0: Subdev Spec: []
- Num Channels: 1
- Samp Rate (Sps): samp_rate
- Ch0: Center Freq (Hz): freq
- Ch0: Gain (dB): g

Terminal: The terminal window at the bottom shows the following output:

```
>>> Done
Generating: "/home/ubuntu/Desktop/RTSA_fospor_BW_50MHz.py"
Executing: "/home/ubuntu/Desktop/RTSA_fospor_BW_50MHz.py"
linux; GNU C++ version 4.6.3; Boost_104601; UHD_003.006.002-release
Using Volk machine: sse4_2_32
- Opening a USRP2/N-Series device...
- Current rcv frame size: 1472 bytes
```

Input Signal 9MHz, Wire Format Complex int8, Sample Rate 25Msp

The screenshot displays the GNU Radio Companion (GRC) interface for a project named "Rtsa Fospor Bw 50Mhz".

Flow Graph: The graph includes an "UHD: USRP Source" block with the following settings:

- Wire Format: Complex int8
- Stream args: peak=0.01
- Samp Rate (Sps): 25M
- Ch0: Center Freq (Hz): 12.5M
- Ch0: Gain (dB): 0

The output of the source is connected to an "WX GUI FFT Sink" block with settings:

- Title: FFT Plot
- Sample Rate: 25M
- Baseband Freq: 12.5M
- Y per Div: 10 dB
- Y Divs: 10
- Ref Level (dB): -10
- Ref Scale (p2p): 2
- FFT Size: 1.024k
- Refresh Rate: 15
- Freq Set Varname: None

FFT Plot: The plot shows a spectrum with a peak at approximately 9 MHz. A pink arrow points to this peak with the text "Spectrum wrong". Another pink arrow points to a peak at approximately 21.5 MHz with the text "ok". A tooltip for the 21.5 MHz peak shows "21.509 MHz dB=-49.160 div". The plot title is "Spectrum wrong FFT Plot".

Properties: UHD: USRP Source: A detailed view of the source block settings:

- ID: uhd_usrp_source_0
- Output Type: Complex float32
- Wire Format: Complex int8
- Stream args: peak=0.01
- Stream channels: []
- Device Addr: [redacted]
- Sync: don't sync
- Clock Rate (Hz): Default
- Num Mboards: 1
- Mb0: Clock Source: Default
- Mb0: Time Source: Default
- Mb0: Subdev Spec: [redacted]
- Num Channels: 1
- Samp Rate (Sps): samp_rate
- Ch0: Center Freq (Hz): freq
- Ch0: Gain (dB): g

Terminal: The terminal window shows the following output:

```
>>> Done
Generating: "/home/ubuntu/Desktop/RTSA_fospor_BW_50Mhz.py"
Executing: "/home/ubuntu/Desktop/RTSA_fospor_BW_50Mhz.py"
linux; GNU C++ version 4.6.3; Boost_104601; UHD_003.006.002-release
Using Volk machine: sse4_2_32
- Opening a USRP2/N-Series device...
- Current recv frame size: 1472 bytes
- Current send frame size: 1472 bytes
```

Input Signal 9MHz, Wire Format Complex int8, Sample Rate 50MSPS

RTSA Fospor Bw 50Mhz - GNU Radio Companion

Options
ID: RTSA_fospor_BW_50MHz
Generate Options: WX GUI

Variable
ID: samp_rate
Value: 50M

WX GUI Slider
ID: freq
Default Value: 25M
Minimum: 0
Maximum: 50M
Converter: Float

WX GUI Slider
ID: g
Label: Gain
Default Value: 0
Minimum: -10
Maximum: 10
Converter: Float

WX GUI Text Box
ID: sr
Label: Sample Rate
Default Value: 50M
Converter: Float

UHD: USRP Source
Wire Format: Complex int8
Stream args: peak=0.01
Samp Rate (Sps): 50M
Ch0: Center Freq (Hz): 25M
Ch0: Gain (dB): 0

WX GUI FFT Sink
Title: FFT Plot
Sample Rate: 50M
Baseband Freq: 25M
Y per Div: 10 dB
Y Divs: 10
Ref Level (dB): -10
Ref Scale (p2p): 2
FFT Size: 1.024k
Refresh Rate: 15
Freq Set Varname: None

Properties: UHD: USRP Source

ID	uhd_usrp_source_0
Output Type	Complex float32
Wire Format	Complex int8
Stream args	peak=0.01
Stream channels	[]
Device Addr	
Sync	don't sync
Clock Rate (Hz)	Default
Num Mboards	1
Mb0: Clock Source	Default
Mb0: Time Source	Default
Mb0: Subdev Spec	
Num Channels	1
Samp Rate (Sps)	samp_rate
Ch0: Center Freq (Hz)	freq
Ch0: Gain (dB)	g

Gain: 0
freq: 25M

FFT Plot wrong spectrum

8.984 MHz dB=-60.250

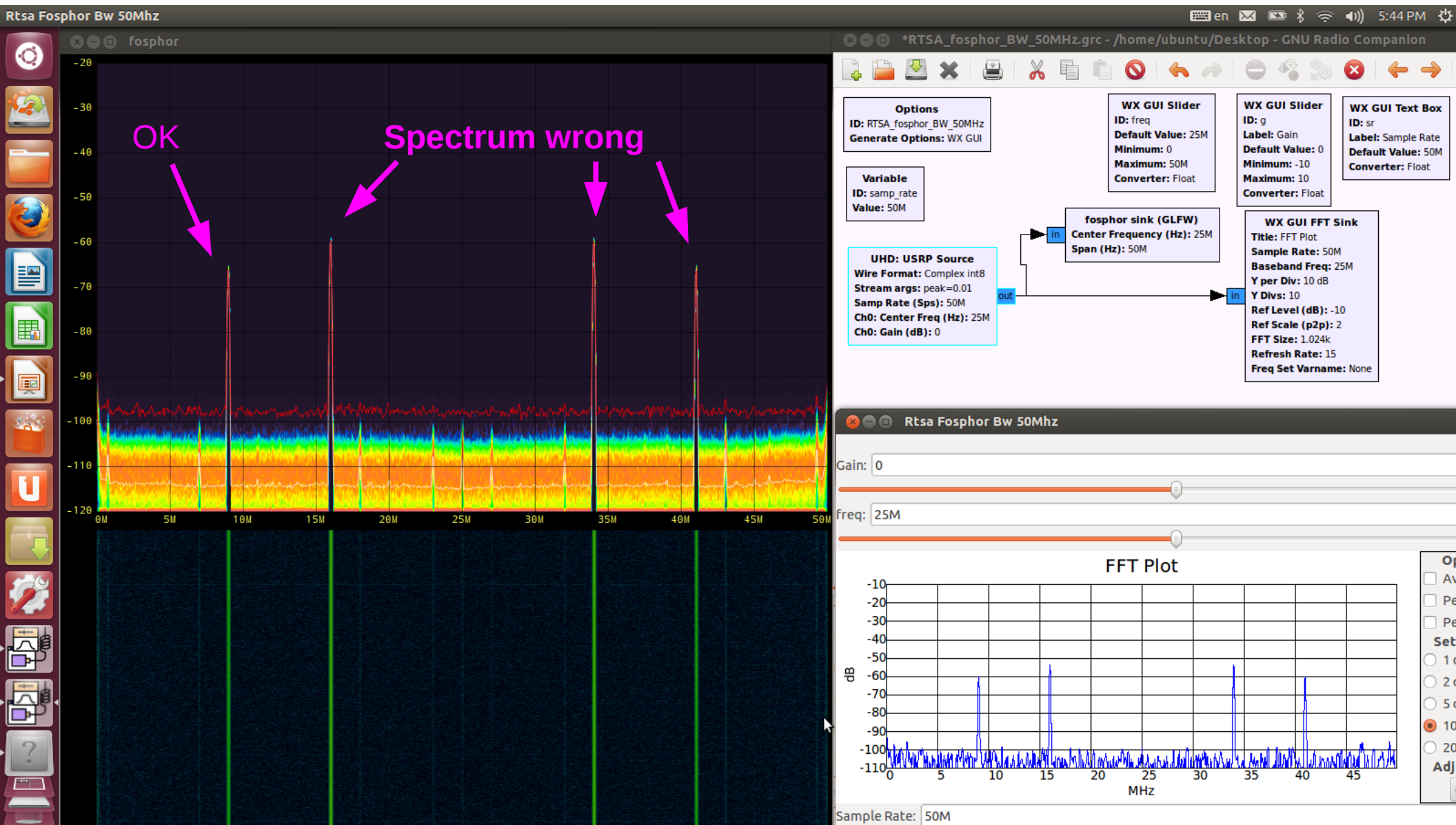
Sample Rate: 50M

- [Impairment Models]
- [Instrumentation]
- [Level Controllers]
- [Math Operators]
- [Measurement Tools]
- [Message Tools]
- [Misc]
- [Modulators]
- [Networking Tools]
- [NOAA]
- [OFDM]
- [Packet Operators]
- [Pager]
- [Peak Detectors]
- [Resamplers]
- [Sinks]
- [Sources]
- [Stream Operators]

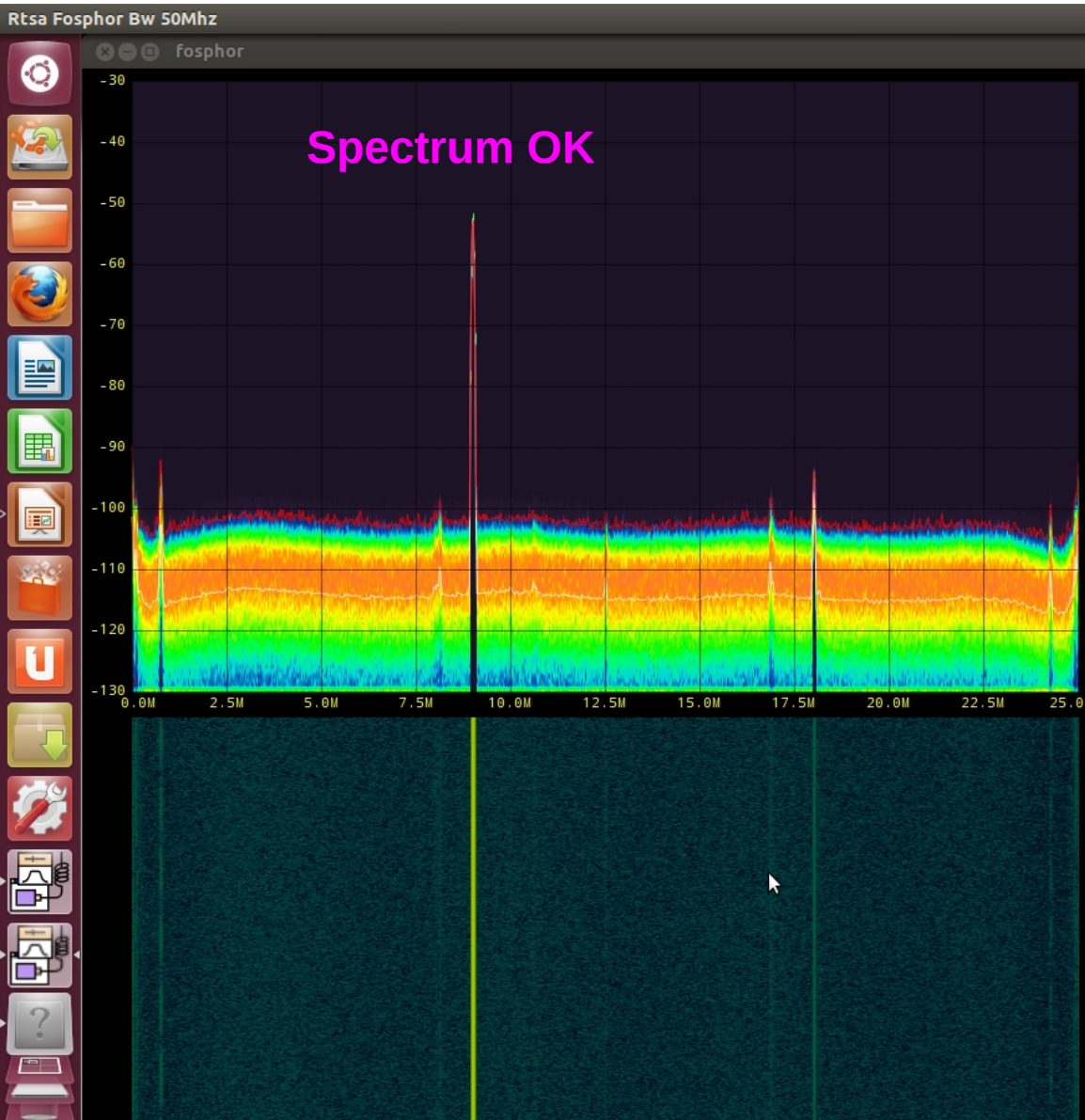
Options:
 Average
 Persistence
 Peak Hold
Set dB/div:
 1 dB/div
 2 dB/div
 5 dB/div
 10 dB/div
 20 dB/div
Adj Ref Lvl: + -

Opening a USRP2/N-Series device...
Current recv frame size: 1472 bytes
Current send frame size: 1472 bytes
>>> Done
Generating: "/home/ubuntu/Desktop/RTSA_fospor_BW_50MHz.py"
Executing: "/home/ubuntu/Desktop/RTSA_fospor_BW_50MHz.py"
linux; GNU C++ version 4.6.3; Boost_104601; UHD_003.006.002-release
Using Volk machine: sse4_2_32
Opening a USRP2/N-Series device...
Current recv frame size: 1472 bytes

Input Signal 9MHz, Wire Format Complex int8, Sample Rate 50MSPs



Input Signal 9MHz, Wire Format Complex int16, Sample Rate 25MSPS



The figure shows the GNU Radio Companion (GRC) interface for the flow graph "RTSA_fospor_BW_50MHz.grc". The flow graph consists of the following blocks:

- UHD: USRP Source**: Wire Format: Complex int16, Samp Rate (Sps): 25M, Ch0: Center Freq (Hz): 12.5M, Ch0: Gain (dB): 0.
- fospor sink (GLFW)**: Center Frequency (Hz): 12.5M, Span (Hz): 25M.
- WX GUI FFT Sink**: Title: FFT Plot, Sample Rate: 25M, Baseband Freq: 12.5M, Y per Div: 10 dB, Y Divs: 10, Ref Level (dB): -10, Ref Scale (p2p): 2, FFT Size: 1.024k, Refresh Rate: 15, Freq Set Varname: None.

The GUI below the flow graph shows the following controls:

- Gain**: 0
- freq**: 12.5M
- FFT Plot**: A plot showing the signal spectrum with a peak at 9 MHz. The y-axis is labeled "dB" and ranges from -110 to -10. The x-axis is labeled "MHz" and ranges from 0 to 20.
- Sample Rate**: 25M
- Options**: Average, Persist, Peak H, Set dB/d, 1 dB/d, 2 dB/d, 5 dB/d, 10 dB/d (selected), 20 dB/d, Adj Ref, +, -.