



Innovative Solution LLC

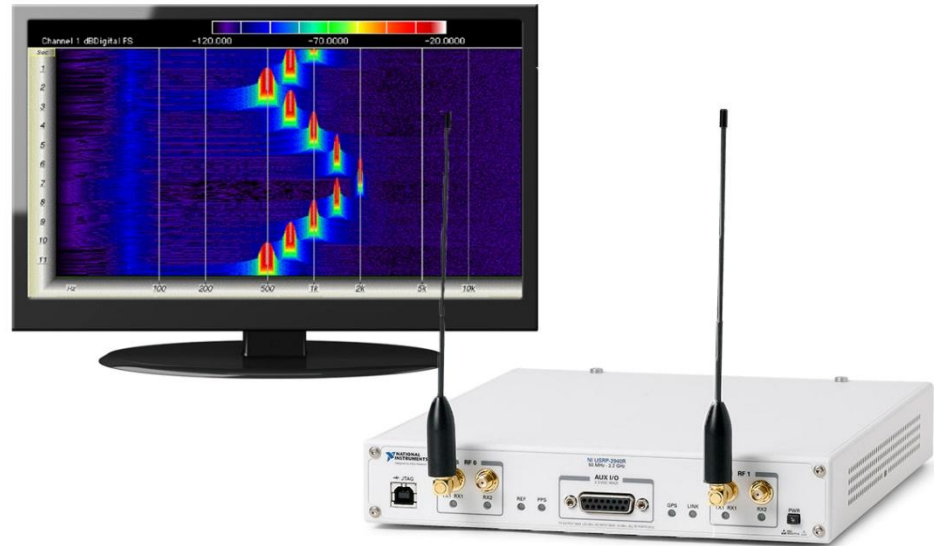
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Passive Smart Jammer



Overview

Traditional RF Jammers generate noise in the whole band. Passive Smart Jammer generates noise in that part of the band, where was detected an external signal.

The software is developed in the LabVIEW / LabVIEW FPGA graphical programming environment.

The system is based on USRP RIO.

Features

- WIFI signal jamming (depend on hardware)
- 3G signal jamming (depend on hardware)
- GSM signal jamming (depend on hardware)
- FM Radio signal jamming (depend on hardware)
- Frequency hopping signal jamming
- Measurement time up to 1ms
- Jamming time unlimited

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Rev. **0.1**



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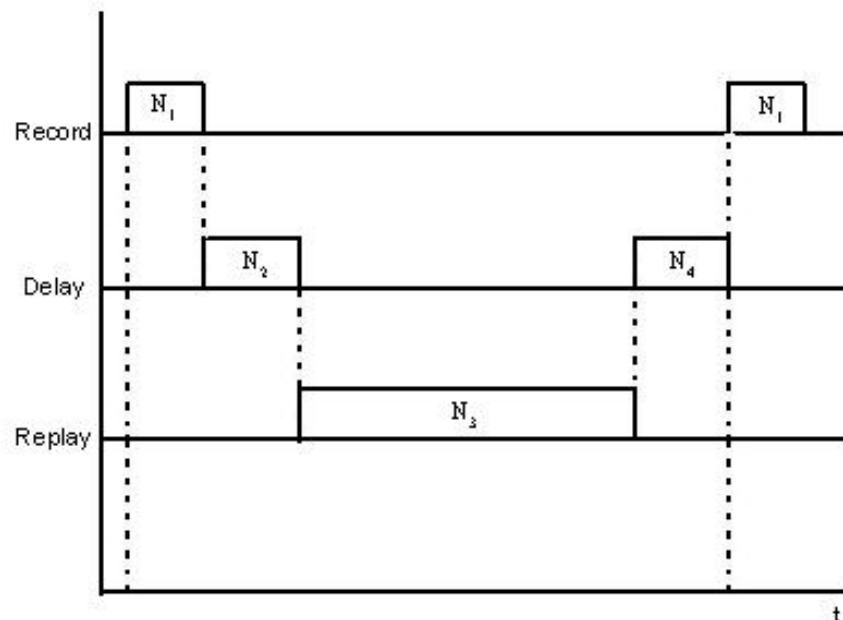
Technical characteristics

Jammer can work on USRP RIO such as *NI USRP-2940R*, *NI USRP-2942R*, *NI USRP-2943R*, *NI USRP-2950R*, *NI USRP-2952R*, *NI USRP-2953R*. The technical characteristics of Smart Jammer are given according to NI USRP-2952R module.

Measurement time	
Minimum (μ s)	100
Maximum (ms)	5
Jamming time	unlimited
Silence time	unlimited
Frequency	
Minimum (MHz)	400
Maximum (GHz)	4.4
Instantaneous bandwidth (MHz)	40
Output power	
Maximum output power (Pout)	50 mW to 100 mW (17 dBm to 20 dBm)

Jammer's operation principles

Smart Jammer's operation principle is shown below.





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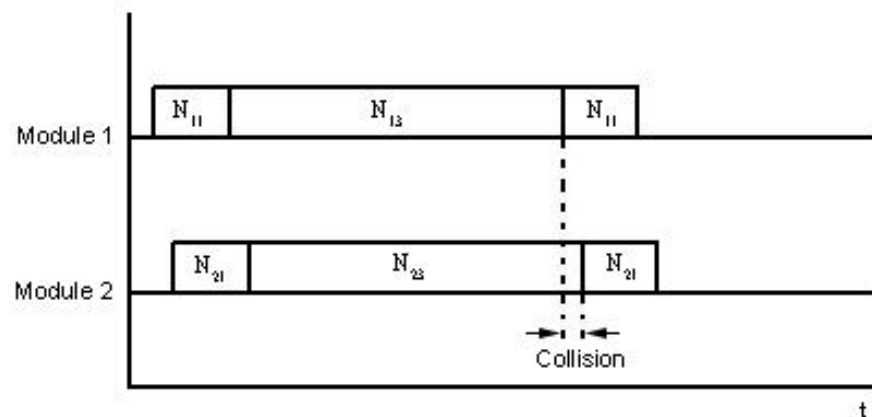
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Measurement mode: the system measures the signal for the configurable N_1 time period/number of samples.

Silence mode:* silence mode is the period of time (N_2, N_4) that was necessary to avoid TX/RX collision.

Generation mode: the system generates the signal for the configurable N_3 time period/number of samples. The frequency envelope of generated signal is the same as frequency envelope of signal measured at N_1 time period.

*for multiunit jammer there is the collision between the period of generation (N_{23}) and period of measurement (N_{11}).



Hardware Request

	Name
1	Express chassis
2	Express controller
3	FPGA
4	Multiplexer
5	Power amplifier

In future multiunit jammer will be developed for covering wide bandwidth.