



**ufx 7000 series**

**10 Hz to 40 GHz**

**PROGRAMMABLE**

**MULTI-PURPOSE**

**NOISE**

**GENERATORS**



The *UFX7000 Series* noise generating instruments are extremely easy to use, combining dedicated keys for control of operations and programming with a large 4 x 20 character LCD display for instant status information. The instruments are direct replacements for Noise Com's NC7000 Series instruments.

The *UFX7000 Series* instruments contain a Noise Com amplified noise source that is tuned to provide the best flatness at the instrument output.

The amplifier is optimized to deliver an output

with a Gaussian amplitude distribution. Noise output power level can be adjusted from 0 to 127 dB in 1 dB (optionally 0.1 dB) steps.

The output state is controlled by an RF switch. In the standby state, the noise is terminated into an RF load and in the "on" state it is directed to the output connector.

The instrument's flexible architecture allows many options to be specified:

*Switched filter bank:* Acts on noise and allows up to four filters to be connected. The filters can be specified in any combination of bandpass, lowpass, highpass, or notch. A thru line and set of terminations (RF loads) are also included. If no filters are specified, filter connections are supplied on the back panel. Available on signal side also.

*Output combiner:* Allows the user to inject a signal and add a controlled amount of noise.

*Signal attenuator:* Available in 0.1 or 1 dB steps to 127 dB.

**General Specifications:**

Output	White Gaussian noise
Attenuator	0 to 127 dB in 1 dB steps 0 to 79 dB above 2 GHz (0.1 dB steps optional)
Control	Local and IEEE-488
Impedance	50 ohms (others optional)
Typical VSWR	1.5:1
Standard output connector	SMA female (K female for UFX7240)
Dimensions	17 in. wide x 5.25 in. high x 12.5 in. deep
Mounting	Front panel handles and fold-down feet for bench mounting. Brackets included for 19 in. rack mounting
Power	120 VAC, 60 Hz (230 VAC, 50 Hz optional)
Operating temperature	-10° to +65°C

Specifications subject to change without notice.



The instruments allow the noise attenuator, noise filter, signal attenuator values, step size, and signal filter setting to be selected in three ways: at the front panel keypad, remotely via IEEE-488 bus, or automatically under program control.

Every front panel operation except instrument on/off is programmable. Programs are easily written using the program key, and information on the display guides the user through the next steps. Nine user-created programs that contain subroutines, delay times, and loops can be stored in non-volatile memory.

### Applications:

- Electromagnetic susceptibility
- Filter testing
- CATV gain (tilt) alignment
- Image and spurious rejection tests
- GPS receivers
- Disk drive testing
- Spectrum analyzer calibration
- Jamming systems
- Signal to noise measurement

### UFX7100, UFX7200 SERIES

MODEL	FREQUENCY RANGE	OUTPUT CHARACTERISTICS			
		POWER (dBm)	dBm/Hz	FLATNESS(dB)	$\mu\text{V}/\sqrt{\text{Hz}}$
UFX7101	10 Hz - 20 kHz	+13	-30	$\pm 0.5$	7071
UFX7103	10 Hz - 500 kHz	+13	-44	$\pm 0.5$	1414
UFX7105	10 Hz - 10 MHz	+13	-57	$\pm 0.5$	316
UFX7107	100 Hz - 100 MHz	+13	-67	$\pm 0.75$	100
UFX7108	100 Hz - 500 MHz	+10	-77	$\pm 1.0$	31.6
UFX7109	100 Hz - 1 GHz	+10	-80	$\pm 1.5$	22.4
UFX7110	100 Hz - 1.5 GHz	+10	-82	$\pm 1.5$	18.2
UFX7111	1 GHz - 2GHz	+10	-80	$\pm 1.5$	22.4
UFX7112	1 MHz - 2 GHz	0	-93	$\pm 2.0$	5.01
UFX7124	2 GHz - 4 GHz	-10	-103	$\pm 2.0$	1.58
UFX7218	2 GHz - 18 GHz	-20	-122	$\pm 2.0$	0.18
UFX7240	2 GHz - 40 GHz	-20	-126	$\pm 4.0$	0.11

### UFX7900 SERIES (1WATT OUTPUT)

MODEL	FREQUENCY RANGE	OUTPUT CHARACTERISTICS		
		POWER (dBm)	dBm/Hz	FLATNESS(dB)
UFX7903	500 Hz - 500 kHz	+30	-27	$\pm 2$
UFX7905	500 Hz - 10 MHz	+30	-40	$\pm 2$
UFX7907	250 kHz - 100 MHz	+30	-50	$\pm 2$
UFX7908	1 MHz - 200 MHz	+30	-53	$\pm 2$
UFX7909	1 MHz - 300 MHz	+30	-55	$\pm 2$
UFX7910	2 MHz - 500 MHz	+30	-57	$\pm 2$
UFX7911	5 MHz - 1 GHz	+30	-60	$\pm 3$

Lab Windows Drivers available  
from National Instruments

### OPTIONS

Option Number	Description
U7opt01	N female output connector
U7opt02	BNC female output connector
U7opt03	0 to 127.9 dB noise attenuator in 0.1 dB steps instead of 127 dB in 1 dB steps <sup>†</sup>
U7opt04	Switch elements, 2 X SP6T for 4 subband filters, 1 thruport, 1 termination (filters are optional)
U7opt05	N/A
U7opt06	75 ohm output impedance (6 dB loss in the noise path and 12 dB loss in the signal path)
U7opt07	Combiner for input signal (6 dB loss in noise and signal paths)
U7opt08	Double output terminals (switched)
U7opt09	Special configuration
U7opt10	Line power 230 VAC, 50 Hz
U7opt11	RS-232C, RS-422, RS-423, in addition to standard IEEE-488 interface
U7opt12	0 to 127 dB signal attenuator in 1 dB steps*
U7opt13	0 to 127.9 dB signal attenuator in 0.1 dB steps <sup>†</sup>
U7opt14	Special frequency range (consult factory)

<sup>†</sup> N/A for UFX7218 and UFX7240 (0 to 79.9 for UFX7124)

\* U7opt07 must also be included when ordering this option, 0 to 79 dB above 2 GHz