

PROGRAMMABLE

MULTI-PURPOSE

NOISE

GENERATORS



### General Specifications:

|                           |   |
|---------------------------|---|
| Output                    | White Gaussian noise  |
| Attenuator                | 0 to 127 dB in 1 dB steps<br>0 to 79 dB above 2 GHz<br>(0.1 dB steps optional)                        |
| Control                   | Local and IEEE-488  |
| Impedance                 | 50 ohms<br>(others optional)  |
| Typical VSWR              | 1.5:1   |
| Standard output connector | SMA female<br>(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<br>(230 VAC, 50 Hz optional)   |
| Operating temperature     | -10° to +65°C   |

Specifications subject to change without notice.

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.

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    | $\pm 3$      |

### 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†                    |
| U7opt04       | Switch elements, 2 X SP6T for 4 subband filters, 1 thru path, 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†   |
| U7opt14       | Special frequency range (consult factory)  |

† 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

Lab Windows Drivers available  
from National Instruments

To order call 201-261-8797