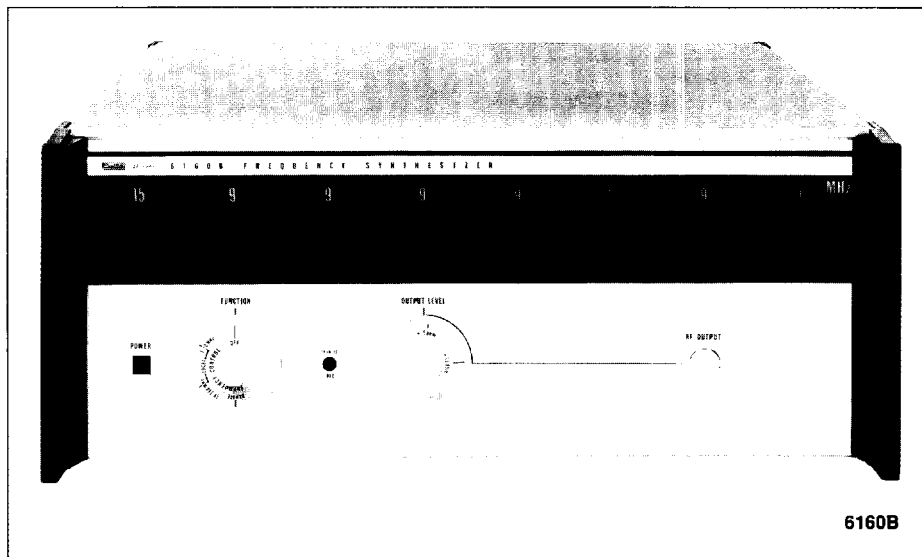


Synthesized RF Signal Generators

6160B



Specifications

Technical Specifications

Parameter		
FREQUENCY		
High Band Range	10 MHz to 160 MHz	
Minimum Step	1 Hz	
Low Band Range	1 MHz to 12 MHz	
Minimum Step	0.1 Hz	
Local Control	Front panel rotary switches	
Remote Control	BCD per decade, TTL, DTL positive true logic or contact closures. Logic "0" = 0 to 0.9V dc. Logic "1" = 2V to +5V dc or open circuit.	
Spectral Purity Non-Harmonic, Spurious	MHz	dBc
	1 to 20	-100
	20 to 40	-95
	40 to 80	-89
	80 to 160	-83
Harmonic, Spurious	<-25 dBc, typically <-30 dBc	
Amplitude Noise**	<-94 dBc (typical)	
Absolute Phase Noise**	<-62 dBc (typical)	
Residual Phase Noise**	<-74 dBc (typical)	
Phase Noise* Spectral Density 1 Hz Bandwidth	Offset from Carrier	SSB Noise
	1.2 kHz	<-115 dBc
	32 kHz	<-121 dBc
	600 kHz	<-135 dBc

OUTPUTS	
Main Output	Adjustable from +3 dBm to +13 dBm into 50Ω (0.3V to 001V rms) with front-panel control or external dc voltage. Level maintained ±1 dB into 50Ω
Other Outputs	5 MHz at nominally 1V rms into 50Ω
Output Options	Rear Panel, Opt -04

* Noise specifications are for frequencies from 80 MHz to 160 MHz. Noise performance improves for lower frequencies.

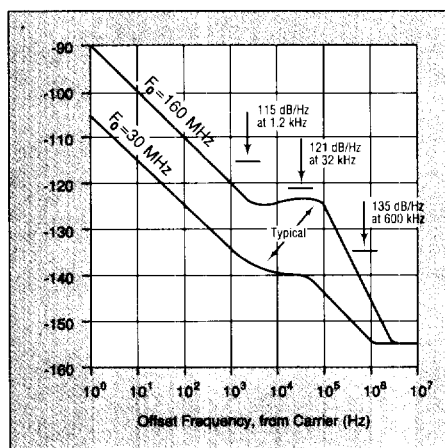
** Measured in a 30 kHz band excluding the 1 Hz band centered on the signal frequency.

6160B Frequency Synthesizer

The Fluke 6160B Frequency Synthesizer is the industry's most popular VHF synthesizer because of its high spectral purity. It produces frequencies from 1 MHz to 160 MHz in two ranges: 1 MHz to 12 MHz and 10 MHz to 160 MHz. Frequency resolution is 0.1 Hz on the 12 MHz range and 1.0 Hz on the 160 MHz range.

A unique feature of the 6160B is that the highest internally-generated frequency is that of the output VCO, i.e., 80 to 160 MHz. This makes servicing easier, and eliminates UHF EMC problems. Since the output VCO operates from 80 to 160 MHz, frequency division is employed for coverage of lower frequencies. This results in improved spurious specifications for frequencies lower than 80 MHz. Phase noise is similarly reduced for lower bands.

Built-in remote programming is DTL/TTL, BCD, positive true logic or by contact closures. Programming of frequency is via 34 parallel lines, and a remote flag and power flag are provided. Switching is fast, output level is electrically adjustable. Compatibility with GPIB/IEEE-488*-1978 is achieved using the Fluke 1120A Translator and 6XXXA-529 Interface.



* The terms GPIB and IEEE-488 may be used interchangeably throughout this catalog.

MISCELLANEOUS													
Reference Frequency	External, 5 MHz at 0 dBm to +16 dBm into 50Ω												
Level Control	External, 0.1 to 0.8V dc nominal into >2 kΩ produces an output level change of from +3 dBm to +13 dBm												
Switching Speed	<800 μs to be within 50 Hz of final frequency (applies for frequencies from 80 MHz to 160 MHz. Improves at lower frequencies)												
Internal 5 MHz Frequency Option -02, -05, or Other Source	<table border="0"> <tr> <td>Option</td> <td>Aging Rate</td> </tr> <tr> <td>-02</td> <td>±2 x 10⁻⁹/day</td> </tr> <tr> <td>-05</td> <td>±5 x 10⁻⁶/yr</td> </tr> <tr> <td colspan="2">Temp. Stability</td> </tr> <tr> <td></td> <td>1 x 10⁻⁸, 0°C to 50°C</td> </tr> <tr> <td></td> <td>1 x 10⁻⁶, 0°C to 50°C</td> </tr> </table>	Option	Aging Rate	-02	±2 x 10 ⁻⁹ /day	-05	±5 x 10 ⁻⁶ /yr	Temp. Stability			1 x 10 ⁻⁸ , 0°C to 50°C		1 x 10 ⁻⁶ , 0°C to 50°C
Option	Aging Rate												
-02	±2 x 10 ⁻⁹ /day												
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	1 x 10 ⁻⁶ , 0°C to 50°C												

*Noise specifications are for frequencies from 80 MHz to 160 MHz. Noise performance improves for lower frequencies.

** Measured in a 30 kHz band excluding the 1 Hz band centered on the signal frequency.

General Specifications

Altitude: To 3048 meters (10,000 feet), operating; 15,240 meters (50,000 feet), non-operating
Temperature: 0°C to 50°C, operating; -62°C to +70°C, non-operating
Relative Humidity: ≤80% to 50°C
Power: 115V or 230V ac ±10%, switch-selectable, 50 to 440 Hz. 80W
Size: 48.3 cm W x 17.8 cm H x 50.8 cm L (19 in W x 7 in H x 20 in L)
Weight: 20.5 kg (45 lb)
Included with Instrument: Manual, power cord, mating connector for programming input lines, serialized and dated calibration certificate

Ordering Information

Model January 1990 prices
6160B* Frequency Synthesizer \$10,450

Options (for 6160B)

-02* Frequency Std. 2x10⁻⁹/day \$ 1030
-04 Rear Panel RF Output 60
-05* Frequency Std. 5x10⁻⁶/year 480
-522K 1120A Interface, field installable 325
-529** IEEE-488 Interface 380

*Option -02, -05 or an external 5 MHz time base is required. Option -02 and -05 Frequency Standards are installable at Factory

** Requires 1120A IEEE-488 Translator. Includes 6XXXA-522K and Y7205 Cable

Accessories (Also see Section 17)

1120A IEEE-488 Translator \$ 640
Y7205 6 ft Ribbon Cable for -522K 75
Y9111 3 ft (0.93m) 50Ω BNC Cable 20
Y9112 6 ft (1.85m) 50Ω BNC Cable 20
M07-205-600 7" Rack Adapter 110
M00-280-610 24" Rack Slides (Rack Adapter required) 130

Customer Support Services

Warranty

One-year product warranty. See Section 16 for further information on warranty terms and conditions.

Extended Warranty

A 10% discount is available when you order the following at the time of the instrument purchase or when ordered within the factory warranty period.

SC1-6160B Repair \$ 375
SC2-6160B Calibration 63
SC3-6160B Full Service 399
SC4-6160B Performance Verification-Plus 38

Note: Incoming and/or outgoing calibration readings are available as an option.