Complete Coverage in Electronic Test Instrumentation

Oscillators, voltmeters, generators, analyzers, amplifiers—frequency measuring, microwave coaxial or waveguide equipment—whatever your measuring needs, there's a precision-built -hp- instrument for the job. The -hp- line, world's most complete, includes over 200 tested and proved equipments for all types of measurement. Each gives you engineering economies of fast, accurate measurement, broad applicability, dependability, trouble-free service. Each has the traditional -hp- "family characteristics" of simple operation, minimum adjustment, independence of line voltage or tube changes, generous overload protection and highest quality design and construction. On these pages you'll find brief details of major -hp- instruments. For complete information, see your -hp- representative, or write factory direct.

Oscillators — Signal Generators

.01 to 10,000,000 cps

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Primary Uses</th>
<th>Frequency Range</th>
<th>Output</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>-hp- 200A</td>
<td>Audio tests</td>
<td>35 cps to 35 kc</td>
<td>1 watt/22.5v</td>
<td>$120.00</td>
</tr>
<tr>
<td>-hp- 200B</td>
<td>Audio tests</td>
<td>20 cps to 20 kc</td>
<td>1 watt/22.5v</td>
<td>$120.00</td>
</tr>
<tr>
<td>-hp- 200C</td>
<td>Audio and supersonic tests</td>
<td>20 cps to 200 kc</td>
<td>100 mw/10v</td>
<td>$150.00</td>
</tr>
<tr>
<td>-hp- 200D</td>
<td>Audio and supersonic tests</td>
<td>7 cps to 70 kc</td>
<td>100 mw/10v</td>
<td>$175.00</td>
</tr>
<tr>
<td>-hp- 200H</td>
<td>Carrier current, telephone tests</td>
<td>60 cps to 600 kc</td>
<td>10 mw/1v</td>
<td>$350.00</td>
</tr>
<tr>
<td>-hp- 200I</td>
<td>Interpolation and frequency measurements</td>
<td>6 cps to 6 kc</td>
<td>100 mw/10v</td>
<td>$225.00</td>
</tr>
<tr>
<td>-hp- 201B</td>
<td>High quality audio tests</td>
<td>20 cps to 20 kc</td>
<td>3w/42.5v</td>
<td>$250.00</td>
</tr>
<tr>
<td>-hp- 202A</td>
<td>Low frequency measurements</td>
<td>.01 cps to 1 kc</td>
<td>20 mw/1v</td>
<td>$450.00</td>
</tr>
<tr>
<td>-hp- 202B</td>
<td>Low frequency measurements</td>
<td>.1 cps to 50 kc</td>
<td>100 mw/10v</td>
<td>$550.00</td>
</tr>
<tr>
<td>-hp- 202D</td>
<td>Low frequency measurements</td>
<td>2 cps to 70 kc</td>
<td>100 mw/10v</td>
<td>$275.00</td>
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<tr>
<td>-hp- 204A</td>
<td>Portable, battery operated</td>
<td>2 cps to 20 kc</td>
<td>2.5 mw/5v</td>
<td>$175.00</td>
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<tr>
<td>-hp- 205A</td>
<td>High power audio tests</td>
<td>20 cps to 20 kc</td>
<td>5 watts</td>
<td>$300.00</td>
</tr>
<tr>
<td>-hp- 205AG</td>
<td>High power tests, gain measurements</td>
<td>20 cps to 20 kc</td>
<td>5 watts</td>
<td>$425.00</td>
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<tr>
<td>-hp- 205AH</td>
<td>High power supersonic tests</td>
<td>1 kc to 100 kc</td>
<td>5 watts</td>
<td>$500.00</td>
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<tr>
<td>-hp- 206A</td>
<td>High quality, high accuracy audio tests</td>
<td>20 cps to 20 kc</td>
<td>1-15 dbm</td>
<td>$550.00</td>
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<tr>
<td>-hp- 230A</td>
<td>Carrier test oscillator</td>
<td>35 cps to 35 kc</td>
<td>14 dbm/600 ohms</td>
<td>$275.00</td>
</tr>
<tr>
<td>-hp- 233A</td>
<td>Carrier test oscillator</td>
<td>50 cps to 500 kc</td>
<td>3w/600 ohms</td>
<td>$475.00</td>
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<tr>
<td>-hp- 234A</td>
<td>Carrier test oscillator</td>
<td>160 cps to 160 kc</td>
<td>14 dbm/600 ohms</td>
<td>$300.00</td>
</tr>
<tr>
<td>-hp- 650A</td>
<td>Wide range video tests</td>
<td>10 cps to 10 mc</td>
<td>15 mw/3v</td>
<td>$475.00</td>
</tr>
</tbody>
</table>

Data subject to change without notice. Prices f.o.b. factory.

www.HPARCHIVE.com
-hp- Vacuum Tube Voltmeters — 2 to 700,000,000 cps

-hp- 4108 VACUUM TUBE VOLTMETER
Wide range, flat response ±1 db, 20 cps to 700 mc. Convenient, simple to use, occupies minimum bench space. Handy compartment for probe and leads. Diode probe places approximately 1.5 µfd capacity across circuit under test. This, plus high shunt impedance (10 megohms at low frequencies) means circuits under test are not disturbed, and true voltage readings are assured. Also measures dc voltage to 1,000 volts and resistances to 500 megohms. $245.00.

-hp- 400C Wide range ac measurements. High sensitivity. CW, pulsed or fm output. Internal square wave modulation. $2,250.00.

-hp- 330C, 330D FM. AM-FM MODELS
-measures distortion as low as 0.1% at any frequency, 20 cps to 20 kc. Measures noise voltages as low as 100 µv. High sensitivity, high stability, broad applicability for broadcast, laboratory or production problems. Wide band 20 db gain input amplifier. Built-in vacuum tube voltmeter usable separately. $395.00.

FM, AM-FM MODELS

-hp- Signal Generators — 10 to 10,000 mc

-HP- 618A SIGNAL GENERATOR
3,800 to 7,600 mc. Provides a 1 mw signal into a 50-ohm coaxial load (zero dbm). Output attenuator directly calibrated in dbm and volts, reduces output level to less than —100 dbm. Frequency dial directly calibrated, accuracy 1/2% of 1%. Repellor voltage automatically tracked. No adjustment during operation. CW, pulsed or fm output. Internal square wave modulation. $2,250.00.

-HP- 610A DISTORTION ANALYZER
Measures distortion as low as 0.1% at any frequency, 20 cps to 20 kc. Measures noise voltages as low as 100 µv. High sensitivity, high stability, broad applicability for broadcast, laboratory or production problems. Wide band 20 db gain input amplifier. Built-in vacuum tube voltmeter usable separately. $395.00.

FM, AM-FM MODELS

-HP- Distortion, Wave Form Analyzers — 20 cps to 20 kc

-HP- 300C DISTORTION ANALYZER
Measures distortion as low as 0.1% at any frequency, 20 cps to 20 kc. Measures noise voltages as low as 100 µv. High sensitivity, high stability, broad applicability for broadcast, laboratory or production problems. Wide band 20 db gain input amplifier. Built-in vacuum tube voltmeter usable separately. $395.00.

FM, AM-FM MODELS

-HP- 210A TRANSIENT and frequency response 20 cps to 10 kc Output 50 v peak-to-peak, 1.000 ohm impedance 150.00.

-HP- VOLTMETER Accessories (not listed) include voltage dividers, connectors, shunts and multipliers to extend the useful range of your equipment.

-HP- SIGNAL GENERATORS 10 to 10,000 mc

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Frequency Range</th>
<th>Characteristics</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>-HP- 607A</td>
<td>10 to 500 mc</td>
<td>Output 0.1 µv to 1 v into 50 ohm load, Pulse, CW or FM modulation. Direct calibration.</td>
<td>$850.00</td>
</tr>
<tr>
<td>-HP- 610B</td>
<td>400 to 1,200 mc</td>
<td>Output 0.1 µv to 1 v into 50 ohm load, Pulse, CW or Square wave modulation. Direct calibration.</td>
<td>$1,950.00</td>
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<tr>
<td>-HP- 614A</td>
<td>800 to 2,100 mc</td>
<td>Output 0.1 µv to 0.223 v into 50 ohm load, Pulse, CW or FM modulation. Direct calibration.</td>
<td>$1,950.00</td>
</tr>
<tr>
<td>-HP- 616A</td>
<td>1,000 to 4,000 mc</td>
<td>Output 0.1 µv to 0.223 v into 50 ohm load, Pulse, CW or FM modulation. Direct calibration.</td>
<td>$1,950.00</td>
</tr>
<tr>
<td>-HP- 618A</td>
<td>3,800 to 7,600 mc</td>
<td>Output 0.1 µv to 0.223 v into 50 ohm load, Pulse, CW or Square wave modulation. Direct calibration.</td>
<td>$2,250.00</td>
</tr>
<tr>
<td>-HP- 623A</td>
<td>5,925 to 7,725 mc</td>
<td>Output 0.1 µv to 0.223 v into 50 ohm load, Pulse, CW or Square wave modulation. Separate power meter and wave meter section.</td>
<td>$1,650.00</td>
</tr>
<tr>
<td>-HP- 624A</td>
<td>8,500 to 10,000 mc</td>
<td>Output 0.1 µv to 0.223 v into 50 ohm load, Pulse, CW or Square wave modulation. Separate power meter and wave meter section.</td>
<td>$2,250.00</td>
</tr>
</tbody>
</table>

-HP- 210A TRANSIENT and frequency response 20 cps to 10 kc Output 50 v peak-to-peak, 1.000 ohm impedance 150.00.

Data subject to change without notice. Prices f.o.b. factory.

HEWLETT-PACKARD COMPLETE COVERAGE
HEWLETT - PACKARD COMPLETE COVERAGE

- **Typical Power Meter Settings**

  - **Range**: 200 to 4,000 mc, high accuracy, high stability, negligible slope. Type N connectors.
  - **Price**: $200.00.

- **Section and Connector VSWR**

  - For use with 803A, 806A coaxial slotted sections. Range 500 to 4,000 mc. High accuracy, negligible slope, minimum leakage. Exclusive parallel plane design. High stability, negligible slope, minimum leakage. Available for use with 803A/B coaxial slotted sections. 3,000 mc to 12,000 mc. For use with 805A, 806B coaxial slotted sections.
  - **Price**: $475.00.

- **Coaxial Slotted Section**

  - For use with 803A, 806A coaxial slotted sections. Range 500 to 4,000 mc. Measures VSWR of basic section and connectors, -hp- 805B, -hp- 806B.
  - **Price**: $476B.

- **Universal Probe Carriage**

  - Performs various power readings, direct in all or most of all frequencies for which there are suitable broadband probe tips.
  - **Price**: $50.00.

- **Universal Bolometer Mounts**

  - For use with bolometer, -hp- 430A, -hp- 803A, -hp- 476A, -hp- 475B.
  - **Price**: $160.00.

- **Standing Wave Indicator**

  - For use with 803A Bridge; 809B carriage, is a flanged waveguide section with accurately machined slot tapered at ends to minimize reflection. Available for 2.6 to 3.95 kmc band only. (See table on preceding page for data, prices.)

- **Super-regenerative receiver**

  - Gives direct readings in frequency control, 0.3 p.v. sensitivity, 60 db flatness. 495.00.

- **Hewlett-Packard Equipment**

  - **476A Universal Probe Carriage**
    - For Coaxial and Waveguide Systems
  - **805A/B COAXIAL SLOTTED SECTION**
    - Measured SWR, % reflected power, VHF system
  - **803A VHF BRIDGE**
  - **415A Standing Wave Indictor**
    - For use with 803A Bridge; 809B carriage, is a flanged waveguide section with accurately machined slot tapered at ends to minimize reflection. Available for 2.6 to 3.95 kmc band only. (See table on preceding page for data, prices.)
  - **475B Universal Bolometer Mount**
    - VSWR less than 1.25 for use with -hp- 430B or -hp- 476A bolometer. Mounts; also 805A/B Slotted Sections. -hp- 810B, $200.00.

Data subject to change without notice. Prices F.O.B. factory.
**-hp- Frequency Measuring and Monitoring Equipment**

**-hp- 100D SECONDARY FREQUENCY STANDARD**

Swift, sure frequency comparison, new convenience in standardizing with minimum external equipment. 100 cps time markers, built-in oscilloscope, sine or rectangular waves. Low output impedance; short-time stability 1/1,000,000. Performs most functions of expensive primary standards in audio, rf or supersonic ranges. $600.00.

**-hp- 335 FM, TV MONITORS**

Precision frequency and modulation meters providing reliable, accurate monitoring of transmitters over long periods of time. No adjustment during operation, no reset. F.C.C. approved. Model 335B, 88 to 108 mc, for FM only. 335C, for aural monitoring TV Channels 2 thru 6. 335D, same except for Channels 7 thru 13. See table for prices.

**-hp- 334A FREQUENCY COUNTER**

Measures instantly, automatically, presents results directly—determines any frequency from 0.01 cps to 10 mc. This one instrument combines functions of a frequency standard, interpolating meter and detector. Outstandingly simple operation, easily used by non-technical personnel. Just connect unknown to input terminal, and exact frequency appears automatically on front panel. Result is presented repetitively or may be “held” by depressing “manual” button. Time of count can be adjusted to 10, 1, .1, .01, or .001 seconds. Accuracy of measurement ± 1 count ± crystal stability (2/1,000,000 per week). For low frequency study, instrument measures duration of one low frequency cycle in microseconds, based on a 10 cycle sample. Accuracy .03%. External higher-accuracy standards usable if desired. Minimum voltage of unknown, 1 volt peak. $2,000.00.

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<table>
<thead>
<tr>
<th>Instrument</th>
<th>Primary Uses</th>
<th>Frequency Range</th>
<th>Characteristics</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>-hp- 100C</td>
<td>Audio, superc</td>
<td>100 kc, 10 kc, 1</td>
<td>Accurate within ±</td>
<td>$450.00</td>
</tr>
<tr>
<td>-hp- 100A</td>
<td>Frequency, time</td>
<td>100 kc, 10 kc, 1</td>
<td>Stability 1/1,000,000</td>
<td>$600.00</td>
</tr>
<tr>
<td>-hp- 333B</td>
<td>FM broadcast station monitor</td>
<td>88 to 108 mc</td>
<td>Frequency deviation ± .2 kc</td>
<td>$925.00</td>
</tr>
<tr>
<td>-hp- 333C</td>
<td>TV station aural monitor</td>
<td>59.75 to 87.75 mc</td>
<td>Frequency deviation ± 2 kc</td>
<td>$925.00</td>
</tr>
<tr>
<td>-hp- 332D</td>
<td>TV station aural monitor</td>
<td>179.75 mc to 213.75 mc</td>
<td>Frequency deviation ± 1 kc</td>
<td>$925.00</td>
</tr>
<tr>
<td>-hp- 336C</td>
<td>TV station video monitor</td>
<td>59.75 to 87.75 mc</td>
<td>Frequency deviation ± 2 kc</td>
<td>$400.00</td>
</tr>
<tr>
<td>-hp- 336D</td>
<td>TV station video monitor</td>
<td>179.75 to 213.75 mc</td>
<td>Frequency deviation ± 2 kc</td>
<td>$400.00</td>
</tr>
<tr>
<td>-hp- 337A</td>
<td>Communication service monitor</td>
<td>30 to 175 mc</td>
<td>Frequency deviation ± 5 kc</td>
<td>$300.00</td>
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<tr>
<td>-hp- 337B</td>
<td>Communication service monitor</td>
<td>30 to 175 mc</td>
<td>Same as 337A</td>
<td>$350.00</td>
</tr>
<tr>
<td>-hp- 500A</td>
<td>Rapid frequency measurements</td>
<td>10 cps to 50 kc</td>
<td>10 ranges ± 2% accuracy</td>
<td>$210.00</td>
</tr>
<tr>
<td>-hp- 335A</td>
<td>Measurements of high speed machinery</td>
<td>600 to 3,000,000 rpm</td>
<td>10 ranges ± 2% accuracy</td>
<td>$530.00</td>
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<tr>
<td>-hp- 500B</td>
<td>Same as 500A</td>
<td>10 to 50,000 cps</td>
<td>Same as 500A except calibrated in cps</td>
<td>$300.00</td>
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<tr>
<td>-hp- 310A</td>
<td>Measure frequency continuously with -hp- 500A and 100 D/C</td>
<td>20 cps to 200,000 cps</td>
<td>Meas two frequencies, defines difference to -hp- 500A</td>
<td>$200.00</td>
</tr>
<tr>
<td>-hp- 500A</td>
<td>For counting high frequency pulses</td>
<td>Capacity 100 counts in 2 seconds, 10,000,000 pips counting rate</td>
<td>100.1 divider for operation of low speed scalers</td>
<td>$600.00</td>
</tr>
<tr>
<td>-hp- 524A</td>
<td>Frequency Counter</td>
<td>.01 cps to 10 mc</td>
<td>Direct reading, no interpolation, accuracy about 2,000,000 / week</td>
<td>$2,000.00</td>
</tr>
</tbody>
</table>

*Use crystals and oven. Crystal & oven per frequency, $27.50.

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**HEWLETT - PACKARD COMPLETE COVERAGE**

- No computation!
- No complex setup!
- Usable by anyone!
- Instantaneous results!
- Broad coverage!
-hp- Waveguide Test Equipment — 2.6 to 18 kmc

Basic, low-cost elements offer utmost flexibility for assembly of exact instrument requirements. Each unit covers entire range of its waveguide size. Simple, sturdy mechanical design; accurate, multi-purpose operation.

### Instrument

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Coupling Type N Conn.</th>
<th>&quot;G&quot;</th>
<th>&quot;H&quot;</th>
<th>&quot;X&quot;</th>
<th>&quot;Y&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapters, Waveguide to Coax</td>
<td>501A 70.00</td>
<td>501A 55.00</td>
<td>501A 45.00</td>
<td>501A 35.00</td>
<td></td>
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<tr>
<td>Cover to choke Range</td>
<td>502A 140.00</td>
<td>502A 120.00</td>
<td>502A 100.00</td>
<td>502A 80.00</td>
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<tr>
<td>Attenuators, Fixed 6, 10, 20 db</td>
<td>503A 75.00</td>
<td>503A 65.00</td>
<td>503A 55.00</td>
<td>503A 45.00</td>
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<tr>
<td>Flaps, 25 db max.</td>
<td>505A 50.00</td>
<td>505A 45.00</td>
<td>505A 40.00</td>
<td>505A 35.00</td>
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<tr>
<td>Calibrated</td>
<td>506A 35.00</td>
<td>506A 30.00</td>
<td>506A 25.00</td>
<td>506A 20.00</td>
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<tr>
<td>Detector Mounts</td>
<td>440A $85.00</td>
<td>440A $75.00</td>
<td>440A $65.00</td>
<td>440A $55.00</td>
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<tr>
<td>Frequency Meters, Reaction</td>
<td>507A 100.00</td>
<td>507A 90.00</td>
<td>507A 80.00</td>
<td>507A 70.00</td>
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<tr>
<td>Directional Couplers, Cross Guide, 20, 30 db</td>
<td>508A 150.00</td>
<td>508A 140.00</td>
<td>508A 130.00</td>
<td>508A 120.00</td>
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<tr>
<td>Directional Couplers, Multi Hole, 10, 20 db</td>
<td>509A 45.00</td>
<td>509A 40.00</td>
<td>509A 35.00</td>
<td>509A 30.00</td>
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<tr>
<td>Slotted Sections, Waveguide</td>
<td>510A 140.00</td>
<td>510A 130.00</td>
<td>510A 120.00</td>
<td>510A 110.00</td>
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<tr>
<td>Waveguide Tee, Series</td>
<td>511A 60.00</td>
<td>511A 55.00</td>
<td>511A 50.00</td>
<td>511A 45.00</td>
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<tr>
<td>Shunt</td>
<td>512A 50.00</td>
<td>512A 45.00</td>
<td>512A 40.00</td>
<td>512A 35.00</td>
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<tr>
<td>Transformer, Slide Screw</td>
<td>513A 90.00</td>
<td>513A 80.00</td>
<td>513A 70.00</td>
<td>513A 60.00</td>
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<tr>
<td>Terminations, Low Power</td>
<td>514A 45.00</td>
<td>514A 40.00</td>
<td>514A 35.00</td>
<td>514A 30.00</td>
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<tr>
<td>Terminations, High Power</td>
<td>515A 125.00</td>
<td>515A 115.00</td>
<td>515A 105.00</td>
<td>515A 95.00</td>
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<tr>
<td>Moving Load</td>
<td>516A 80.00</td>
<td>516A 70.00</td>
<td>516A 60.00</td>
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<tr>
<td>Adjustable Shunts</td>
<td>517A 80.00</td>
<td>517A 70.00</td>
<td>517A 60.00</td>
<td>517A 50.00</td>
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<tr>
<td>Broad Band Probe</td>
<td>441A $75.00</td>
<td>All Frequencies</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Broad Band Probe, Untuned</td>
<td>444A $50.00</td>
<td>All Frequencies</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Equipment below available for most waveguide bands. Table above shows data, prices.

- **-hp- 281A Waveguide-Coax Adapters**
  
  For convenient transition between waveguide and coax systems. Each unit covers a full waveguide range with VSWR less than 1.25. Equipped with Type N connectors.

- **-hp- 530A Frequency Meters**
  
  General-purpose reaction meter. Covers a complete "G" frequency range. High "Q" resonant cavity tuned by plunger. Quick-reference chart converts microvoltmeter reading to frequency. Accuracy 0.1%. No spurious modes or resonances.

- **-hp- 375A Flap Attenuators**
  
  Simplifies adjusting power level in waveguide. Attenuation is quickly adjustable 0 thru 20 db. Approximate calibration. VSWR less than 1.15 over attenuation range. No leakage.

- **-hp- 750 Cross-Guide Couplers**
  
  Directional couplers offered in 2 models with coupling factors of 10 and 20 db ± 0.7 db over full range of a waveguide. VSWR less than 1.15; directivity approx. 20 db. Available as a 4-terminal network.

- **-hp- 870A Slide Screw Tuners**
  
  For flattening waveguide systems. The position and penetration of a probe is adjusted to set up a VSWR which is used to cancel existing VSWR in system. VSWR values up to 20 can be corrected with accuracy of 1.02 VSWR.

- **-hp- 485B Detector Mounts**
  
  To measure power over complete waveguide range in conjunction with -hp- 430B Power Meter and barretter. Also measures relative level, or detects rf energy using IN21 or IN23 crystal. Semitruncated by movable short to VSWR 1.25.

- **-hp- 444A Untuned Probe**
  
  A 1N26 crystal plus small antenna in a convenient, easy-to-use housing. Variable penetration depth, no tuning required. Sensitivity equal to single- or double-tuned probes. Frequency range: 2.6 to 18.0 kmc. Mounts in 809B carriage. (See next page.)

- **-hp- 914A Moving Load**
  
  Low-reflection load covering full frequency range of guide. Load position variable at least 1/2 wavelength to reverse phase of reflection so that small residual reflections can be evaluated. Coefficient of reflection less than 1/2%.

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Data subject to change without notice. Prices f.o.b. factory.
-hp- POWER SUPPLIES

- hp - 715A (illustrated) is a versatile source of regulated beam and reflector voltage for operating most test bench klystron tubes. Beam voltage 250 to 400 v; reflector voltage 0 to 900 v; 6.3 v filament. Internal, 1,000 cps square wave modulation, also 60 cps FM modulation, both on reflector voltage. $300.00.

- hp - 710A—Highly stable regulated dc supply, output variable 180 to 360 v at 75 ma., 6.3 v filament. Either terminal may be grounded. Hum and noise less than 5 mv. $85.00.

- hp - 212A—Stabilized, variable power supply providing 0 to 500 v at 200 ma and 5% regulation. Also variable bias voltages, 0 to 150 v at 5 ma, and 6.3 v filament at 10 amps. Main supply completely metered. Either terminal may be grounded. Hum less than 8 mv. For laboratory, production or general use. $250.00.

- hp - 450A Amplifier—general purpose instrument, 20 db or 40 db gain, for use wherever wide frequency range and high stability are needed. 10 cps to 1 mc. Negligible phase shift, no spurious responses. $140.00.

- hp - 451A Bridging Amplifier. For connecting to high impedance circuits without disturbing or affecting operating conditions. 83 megohms impedance probe readily connects to any point in circuit. Amplifier repeats this voltage accurately, without distortion, for operation of VTVM, distortion analyzer, oscilloscope, etc. Frequency 20 cps to 1 mc. $100.00.

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