

# Specifications

## MICROWAVE INPUT (C Input)

|   |   |
|---|---|
| <b>Range:</b>                                       | 500 MHz to 20 GHz   |
| Model 6420  | 500 MHz to 20 GHz   |
| Model 6430  | 500 MHz to 26.5 GHz   |
| <b>Sensitivity:</b>                                 | -25 dBm to 12.4 GHz   |
|   | -20 dBm to 20 GHz   |
|   | -15 dBm to 26.5 GHz   |
| <b>Impedance:</b>                                   | 50 ohm, nominal   |
| <b>Coupling:</b>                                    | AC  |
| <b>Connector:</b>                                   |   |
| Model 6420  | Type N female   |
| Model 6430  | Type SMA-3mm  |
| <b>Maximum Input:</b>                               | +20 dBm prior to acquisition, +27 dBm after.  |
| <b>Operative Dynamic Range:</b>                     | 55 dB to 12.4 GHz   |
|   | 50 dB to 20 GHz   |
|   | 45 dB to 26.5 GHz   |
| <b>Acquisition Time:</b>                            | 60 ms mean typical  |
| <b>Amplitude Discrimination of Two Frequencies:</b> | 20 dB amplitude separation (10 dB typical)  |
| <b>AM Tolerance:</b>                                | Any modulation index provided the minimum voltage level is not less than the specified sensitivity.                     |
| <b>FM Tolerance:</b>                                | Frequency and rate dependent, typically >100 MHz (p-p) at rates to 10 kHz, decreasing to 10 MHz (p-p) at a 10 MHz rate. |
| <b>VSWR:</b>  | <2:1 to 10 GHz, <2.5:1 to 18 GHz,<br><3:1 to 26.5 GHz.  |
| <b>Kick Back Noise:</b>                             | -65 dBm typical.  |

## MID RANGE INPUT (B Input)

|                                 |                           |
|---------------------------------|---------------------------|
| <b>Range:</b>                   | 100 MHz to 512 MHz        |
| <b>Sensitivity:</b>             | -25 dBm (-35 dBm typical) |
| <b>Impedance:</b>               | 50 ohm nominal            |
| <b>Coupling:</b>                | AC                        |
| <b>Connector:</b>               | BNC female                |
| <b>Maximum Input:</b>           | +27 dBm, fuse protected   |
| <b>Operative Dynamic Range:</b> | 52 dB                     |

## LOW RANGE INPUT (A Input)

|                       |   |
|-----------------------|---|
| <b>Range:</b>         | 10 Hz to 100 MHz  |
| <b>Sensitivity:</b>   | 25 mV rms (15 mu typical)   |
| <b>Impedance:</b>     | 1M ohm/25 pf  |
| <b>Coupling:</b>      | AC  |
| <b>Connector:</b>     | BNC female  |
| <b>Maximum Input:</b> | 250V rms (10 Hz to 10 kHz), 50V rms (10 kHz to 2 MHz), 5V rms (2 MHz to 100 MHz). |

## TIME BASE

|                                  |   |
|----------------------------------|---|
| <b>Time Base Output:</b>         | 1 MHz, 1 volt p-p into 50 ohms                                  |
| <b>External Time Base Input:</b> | 1 MHz or 10 MHz, 1 volt rms into 500 ohms, automatic selection. |

## GENERAL

|                               |   |
|-------------------------------|---|
| <b>Display:</b>               | 10 digit in-line, 0.4 inch LED, automatic leading zero suppression. |
| <b>Test:</b>                  | Measures 1 MHz  |
| <b>Resolution:</b>            | 1 Hz to 10 kHz in decade steps                                      |
| <b>Reset:</b>                 | Manual or automatic   |
| <b>Recycle Rate:</b>          | 50 ms to 5 sec, plus hold   |
| <b>Gate Indicator:</b>        | Front panel lamp to indicate when gate is open.                     |
| <b>Dimensions:</b>            | 5" H x 8 $\frac{3}{8}$ " W x 13 $\frac{1}{2}$ " D                   |
| <b>Weight:</b>                | Approximately 10 lbs. net; 20 lbs shipping                          |
| <b>Accuracy:</b>              | $\pm 1$ count $\pm$ time base error                                 |
| <b>Operating Temperature:</b> | 0 to 50°C   |
| <b>Power Requirements:</b>    | 100/115 or 200/230 volts ( $\pm 10\%$ ), 48 to 440 Hz, 35 watts     |
| <b>Accessories Furnished:</b> | AC power cord, manual   |
| <b>Keyboard:</b>              | Numerical entry via keypad.   |

|  | STANDARD   | OPTION 13  |
|--|--|--|
| <b>Aging Rate After Warm-Up</b>                              | $\pm 1$ part in $10^6$ /year                       | $\pm 5$ parts in $10^6$ /24 hours<br>72 hours          |
| <b>Frequency Retrace for Off Periods to Approx. 24 Hours</b> | $\pm 5$ parts in $10^7$ within<br>15 minutes       | 1 hour typical to reach $\pm 5$<br>parts in $10^9$     |
| <b>Short-Term Aging Rate</b>                                 | $\pm 5$ parts in $10^9$ /day<br>average for 3 days | $\pm 5$ parts in $10^{11}$ rms for<br>1 second average |
| <b>Temperature Variation</b>                                 | TCXO. 1 part in $10^6$<br>over 0 to +50°C          | $< \pm 2$ parts in $10^{10}$ /C°,<br>typical           |
| <b><math>\pm 10\%</math> Change in Line Voltage</b>          | $\pm 5$ parts in $10^8$                            | $\pm 2$ parts in $10^{10}$                             |
| <b>Long-Term Aging Rate</b>                                  | $\pm 3$ parts in $10^7$ for<br>30 days             | $\pm 1.5$ parts in $10^8$ for<br>30 days               |

## ORDERING INFORMATION

|                 |                            |
|-----------------|----------------------------|
| <b>Models:</b>  |                            |
| 6420            | 20 GHz Microwave Counter   |
| 6430            | 26.5 GHz Microwave Counter |
| <b>Options:</b> |                            |
| Option 05       | IEEE-STD-488               |
| Option 13       | Oscillator                 |

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