

## High Voltage Test Set for CPI High Power Amplifiers (HPAs)

### HV Test Set

*For verification  
and calibration of  
TWT and Klystron  
operating voltages*

### Test Equipment



#### Helps to Maximize Operating Life

The High Voltage (HV) Test Set is a portable, self-powered, precision instrument for monitoring and calibrating all system TWT or Klystron/Power Supply voltages. It is essential that on-going verification and calibration of tube operating voltages be made as part of routine preventive maintenance and repair procedures to maximize the operating life of the tube. The HV Test Set can be used where the system does not provide such measurements, or when the voltages require precise adjustment.

The HV Test Set uses precision HV dividers to reduce the tube voltages to safe operating levels (less than 20 VDC). These low voltages can be measured with a digital volt meter at test points located on the front panel of the Breakout Box.

The HV Test Set includes an isolated, digital volt meter in the Breakout Box for safe, direct

measurement of the TWT filament (heater) voltage. The precise setting and maintenance of this voltage is critical for maximizing tube life.

#### Worldwide Support

Backed by over three decades of satellite communications experience, and CPI's worldwide 24-hour customer support network that includes thirteen regional factory Service Centers.

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# Test Equipment

## HV Test Set Components

The **Breakout Box** is the key component of the test set. It is a self-contained amplifier voltage measurement device contained in an environmentally sealed package. The unit consists of monitoring circuits for all traveling wave tube (TWT) or klystron electrode voltages. The test points on the face of the box are banana plug receptacles for use with a conventional digital volt meter.

### THE HIGH VOLTAGE TEST SET:

- Breakout Box
- High Voltage Cables
- Filament Load Resistor Assembly/ Test Plug or Calibration Module
- Operator's Manual
- Carrying Case

**High Voltage Interconnect Cables** provide secure connections between the Breakout Box and the HPA being tested. All HPAs use two high voltage interconnect cables, except the 3 kW TWTA (one), the Millitron (three), the VSTAR 30 (five) and the millimeter wave J-Rack (five).

A **Filament Load Resistor Assembly**, a **Test Plug**, or a **Calibration Module** can be used to calibrate and monitor the power supply without a TWT or RF drawer.

An **operation manual** and **Carrying Case** are included with each HV Test Set.



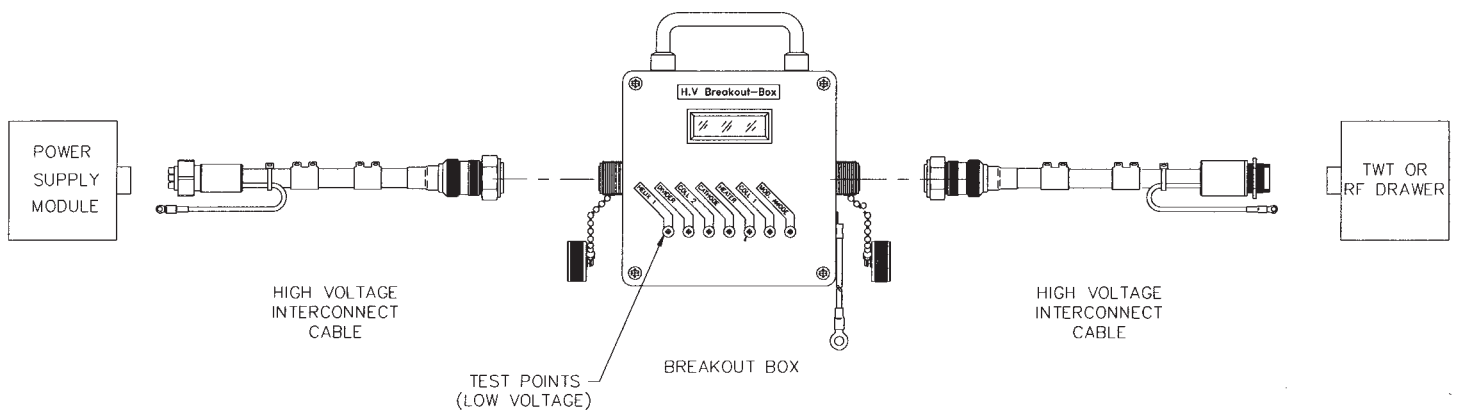
## SPECIFICATIONS, High Voltage Test Set

### Operating Conditions

|                 |                          |
|-----------------|--------------------------|
| Maximum Voltage | 15 kVDC                  |
| Maximum Current | 7.5 amps                 |
| Altitude        | Sea level to 10,000 feet |
| Temperature     | 0°C to +50°C             |

### Mechanical

|                              |   |
|------------------------------|---|
| Breakout Box                 |   |
| Weight                       | 7 lbs. (3.18 kg)                                  |
| Dimensions (W x H x D)       | 7.7 x 6.3 x 3.8 inches<br>(195.6 x 160 x 96.5 mm) |
| Case, HV Test Set and Manual |   |
| Weight                       | 20 lbs. max. (9.1 kg)                             |
| Dimensions (W x H x D)       | 19.5 x 15 x 9 inches<br>(469.9 x 381 x 228.6 mm)  |



For more detailed information, please refer to the corresponding CPI Technical Description.

**Note:** Specifications may change without notice as a result of additional data or product refinement.

Please contact CPI before using this information for system design.

## HV Test Set Matrix

| Product  | HV Test Set | Breakout Box | Cable Assy, High Voltage Interconnect     | Filament Load Resistor Assy | Calibration Module | Carrying Case              | Manual   |
|--|-------------|--------------|---|-----------------------------|--------------------|----------------------------|----------|
| Single Drawer 200-400 W Rack, 500-750W ODUs, M-band J-Rack | 01022894-00 | 01020673-00  | 01020681-00<br>01020682-00                | 01022898-02                 | NOT REQUIRED       | 01026110-00                | 01026664 |
| Single Drawer 500-750 W Rack, L- and S/C-band J-Racks      | 01022894-01 | 01020673-00  | 01020681-00<br>01020682-00                | 01022898-02                 | NOT REQUIRED       | 01026110-00                | 01026664 |
| 2-drawer "F Series" 300-750 W TWTAs                        | 01022895-00 | 01020673-00  | 01020683-00<br>01020684-00                | 01022898-02                 | NOT REQUIRED       | 01026110-00                | 01026664 |
| 2-drawer 2.25 kW TWTAs (C- and X-band)                     | 01022892-00 | 01020673-00  | 01020675-00<br>01020676-00                | 01022898-00                 | NOT REQUIRED       | 01026110-00                | 01026664 |
| 3.0 kW TWTA**  | 01022891-00 | 01020673-00  | 01022213-00                               | 01024476-00                 | NOT REQUIRED       | 01026110-00                | 01026664 |
| 125 W Ku-band Outdoor Unit (ODU)                           | 01027464-00 | 01020673-00  | 01027462-00<br>01027463-00                | 01022898-02                 | NOT REQUIRED       | 01026110-00                | 01026664 |
| GEN IV Klystron HPA  | 01027825-00 | 01020673-01  | 01027823-00<br>01027824-00<br>01020798-00 | 01027822-00                 | NOT REQUIRED       | 01026110-00                | 01026664 |
| 200 W Ku-band ODU  | 01035319-00 | 01020673-00  | 01020687-00<br>01020688-00                | 01022898-02                 | NOT REQUIRED       | 01026110-00                | 01026664 |
| Ka-band TWTA ODU (with NEC TWT)                            | 01035299-00 | 01020673-00  | 01020679-01<br>01020680-01                | 01022898-02                 | NOT REQUIRED       | 01026110-00                | 01026664 |
| 400 W ODU, 270 W ODU                                       | 01022897-00 | 01020673-00  | 01020685-00<br>01020686-00                | 01022898-02                 | NOT REQUIRED       | 01026110-00                | 01026664 |
| 2.25 kW Super Linear TWTA (single-drawer)                  | 01032115-00 | 01020673-01  | 01020679-02<br>01020680-02                | 01022898-00                 | NOT REQUIRED       | 01026110-00                | 01026664 |
| Millitron Ka-band  | 01032360-00 | 01022901-01  | 01024852-00<br>01032361-00<br>01032362-00 | NOT REQUIRED                | 01024880-00        | 01026150-06<br>01026150-07 | 01026671 |
| VSTAR 30   | 01022896-00 | 01022891-00  | 01024852-00 (qty 2)<br>01026197-00        | NOT REQUIRED                | 01024880-00        | 01026150-06<br>01026150-07 | 01026671 |
| J-RACK (18.0 - 26.5 GHz and 26.0 - 40.0 GHz)               | 01024871-00 | 01022901-00  | 01017058-02<br>01017059-03                | NOT REQUIRED                | 01024880-01        | 01026150-06<br>01026150-07 | 01026671 |
| 600 W Tri-band ODU   | 01038757-00 | 01020673-01  | 01020681-01<br>01020682-01                | 01022898-02                 | NOT REQUIRED       | 01026110-00                | 01026664 |
| Compact Klystron Power Amplifier (CKPA)                    | 01027831-00 | 01020673-00  | 01027823-00<br>01027824-00                | 01027822-00                 | NOT REQUIRED       | 01026110-00                | 01026664 |

For more detailed information, please refer to the corresponding CPI Technical Description.

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\*\*3.0 kW TWTA Test Kit also contains a Test Plug, Part Number 01022899-00.

## Satcom Customer Support

| Location/Address   | Territory/Telephone   | Location/Address   | Territory/Telephone                              |
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*not up in the air*



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