

### Effective Peak Power (EFF)

Effective Peak Power (EFF), displayed on the Panel Meter located on the front panel, quantifies the effects of phase modulation in the magnetron replacing the requirement for the use of a spectrum analyzer. The EFF function allows the operator to choose the optimum tracking frequency in the presence of modes and phase pulling in the magnetron pulse. Using the EFF meter function in conjunction with the heterodyne monitor output verifies the frequency tracking accuracy of the test set, replacing the need for the echo box which is used for AFC centering.

### Contour Mode

The Contour Mode provides for rapid calibration and checking of contour threshold circuits, receiver color and intensity response and sensitivity by means of an additional 0 to 20 dB amplitude boost above the selected output level.

### Other Features

- Heterodyne monitor output
  - (EFF) Transmitter effective peak pulse power measurements
  - Built-in PRF generator and digital read-out
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- Contour boost capabilities for testing contour threshold circuits
  - Video detector, frequency discriminator and spectrum analyzer outputs
  - Respond to radar transmitter pulse widths of 50 ns to 30  $\mu$ s

## SPECIFICATIONS

### *Variable Mode Frequency*

*Continuously variable from 9.295 to 9.500 GHz*

### *Tracking Mode*

*Tracks radar transmitter frequencies 9.295 to 9.500 GHz and transmitter power from 0.1 to 12 kW*

### *Tracking Accuracy*

### *Radar Transmitter*

### *Pulse Width Maximum Error*

30 to 2  $\mu$ s 25 kHz\*

<2 to 0.5  $\mu$ s 60 kHz

<0.5 to 0.1  $\mu$ s 600 kHz

<0.1 to 0.05  $\mu$ s 2 MHz

(\* 10 kHz typical)

### *Output Power*

-50 to -127 dBm in 1 and 10 dB steps calibrated at R/T. Accuracy is  $\pm 2$  dB.

### *RF Pulse Width*

0.05 to 500  $\mu$ s continuously variable

### *RF ON/ OFF Ratio*

70 dB minimum

1 kHz AM

30% AM nominal (1 kHz [ $\pm 100$  Hz])

### *Source VSWR at Waveguide Coupler*

1.25:1 maximum

## MODULATION MODE

### *Track*

*PRF same as Radar-Under-Test (50 Hz to 20 kHz)*

*INTL (internal)*

*PRF continuously variable from 50 to 5000 Hz*

### *CW*

*Continuous wave output*

*INTL/EXT AM*

*50 Hz to 50 kHz*

### *Resolution*

*1 dB or 10 dB steps*

## Range

### Range 1

0.1 to 999.9 [s or nautical miles (NM). Time referenced to the 50% point of leading edge of detected radar transmitter pulse.

### Range 2

0.2 to 999.9 [s or nautical miles (NM). Time referenced to the 50% point of the leading edge of detected radar transmitter pulse.

Residual delay 0.4 to 0.05 [s

### Range Accuracy

Residual delay  $\pm 0.01\%$  of selected range delay. Range delay is referenced to 12.3589 [s/NM.

### Range Rings 1, 2, 3, 4, 5

Selectable multiples of Range 1

## FREQUENCY COUNTER

### RF

#### Resolution

10 kHz

#### Accuracy

$\pm 250$  kHz

### IF

#### Resolution

$\pm 1$  kHz

#### Accuracy

0.01%

### PRF

#### Resolution

1 Hz

#### Accuracy

$\pm 1$  Hz plus 0.01%

## POWER METER

### Range

0.1 to 12 kW peak standard

(1.0 to 120 kW optional)\*

(10 to 1200 W optional)\*

\*Optional power ranges include an external 10 dB attenuator not calibrated in the system.

### Accuracy

Calibrated at R/T  $\pm 0.6$  dB from 1 to 12 kW peak standard

### Load VSWR

1.25:1 maximum

## OUTPUTS

### HET Monitor

Oscilloscope display of magnetron pulse

### DET (Detector)

Detected radar transmitter signal (into 50  $\Omega$  load)

### Spectrum Analyzer

Attenuated RF sample of radar transmitter signal (Back Panel)

### DSCRM (Discriminator)

Frequency discriminator output 0.1 V/MHz  $\pm 10\%$  (into 50  $\Omega$  load)

### SYNC (Scope Sync)

Positive polarity pulse simultaneous with radar transmitter pulse in

Track Mode, Internal PRF Generator in Internal Mode, or External

Trigger in EXT (+) or EXT (-) Mode.

### DLYD SYNC (Delayed Sync)

Simultaneous with Range 1 and Range 2 generator pulses

### SCOPE SWEEP

100 Hz ramp output approximately 5 Vp-p

### AUX RF OUT (Back Panel)

Auxiliary RF output from X-Band front end

### VCO OUT (Back Panel)

Sample L-Band signal from VCO

## GENERAL

### Power

105 to 125 VAC or 210 to 250 VAC, 50 to 460 Hz, 150 W

### Dimensions

422 mm wide, 185 mm high, 467 mm deep

16.7 in. wide, 7.311 in. high, 18.4 in. deep

### Weight

19 kg (42 lbs.)

Waveguide Accessories

1.4 kg (3 lbs.)

## VERSIONS AND ACCESSORIES

*When ordering please quote the full ordering number information.*

Ordering Numbers

Versions

RD-301A Weather Radar Bench Test Equipment

Accessories (Supplied)

Calibrated Coaxial Cable

Dummy Load

Waveguide Directional Coupler

All Aeroflex Avionics products delivered with Factory Certificate Of Calibration