

Avionics

RGS 2000 TCAS REPLY GENERATOR



AEROFLEX
A passion for performance.

Your complete RF source for the testing of TCAS Computers

The RGS 2000 TCAS Reply Generator is a self-contained RF Test Station designed to be a complete RF resource for the testing of TCAS (Traffic Alert and Collision Avoidance System) computers. User-friendly menus displayed on the electroluminescent flat panel display allow the operator to:

- Decode and display Mode S and Mode C Interrogation Data
- Measure and display port-to-port relative amplitude and phase of interrogation signal
- Measure and display interrogation pulse characteristics including peak pulse power, pulse frequency, pulse spacing, pulse width, and pulse rise/fall time
- Measure and display interrogation pulse frequency spectrum
- Simulate up to 154 intruders including generation of Mode S and Mode C instrument replies, Mode S squitter, Mode C fruit and intruder movement simulation
- Perform manual or GPIB controlled testing

GENERAL SPECIFICATIONS

TRANSMITTER OPERATION

FREQUENCY

Range

1025 to 1155 MHz

Resolution

0.1 MHz

Accuracy

± 0.1 MHz

POWER

Range

-85 to -20 dBm

Resolution

1.0 dB

Accuracy

± 1.0 dB

PULSE MODULATION

Rise Time

0.075 ± 0.02 μ S

Fall Time

0.150 ± 0.04 μ S

Width Mode C

0.450 ± 0.05 μ S[†]

Width Mode S

0.500 ± 0.05 μ S[†]

ON/OFF Ratio

>60 dB

Pulse Ripple

<1 dB

Ampl. Var.

<2 dB

UNWANTED OUTPUTS**Harmonics**

<60 dB

Spurious

<30 dB

BEARING SIMULATION**Port-to-Port Relative Phase**

Range 0 to 359°

Resolution 1.0°

Accuracy ±1.0°

Port-to-Port Relative Amplitude

Range -15 to 0 dB

Resolution 0.25 dB

Accuracy ±0.25 dB

RANGE SIMULATION**Range**

500 ft to 160 NMI

Resolution

0.01 NMI

Accuracy±0.01 nmi²**VELOCITY SIMULATION****Span**

-2000 kts to + 2000 kts

Resolution

1 kt

Accuracy1 kt²**ALTITUDE SIMULATION****Range**

-1000 to 126700 ft

Resolution

10 ft

Accuracy10 ft²**VERTICAL SPEED****Range**

-6000 to +6000 fpm

Resolution

1 fpm

Accuracy±1 fpm²**RECEIVER OPERATION**

Input VSWR

<1.2

UUT PEAK POWER MEASUREMENT**No Damage**

Max Peak 1000 W per port

Max CW 1 W per port

Normal OperationRange 0.03 W to 500 W peak per port. 1030
±10 MHz Video BW >12 MHz

Resolution 0.1 dB

Absolute Accuracy ±1 dB

Relative Accuracy ±0.25 dB

UUT FREQUENCY MEASUREMENT**Range**

1030 ±10 MHz

0.1 W to 500 W per port

Video BW >12 MHz

Resolution

1 kHz

Accuracy

± 1 kHz (sample averaging)

UUT RELATIVE PHASE MEASUREMENT**Range**

0 to 359°, 1030 ±10 MHz

0.1 W to 250 W per port, Video BW > 12 MHz

Resolution

1°

Accuracy

±1°

UUT PULSE CHARACTERISTICS MEASUREMENT**Pulse Width**

Range 0.7 to 32 μS

Resolution 0.01 μS

Accuracy 0.01 μS

Pulse Spacing

Range 0.5 to 32 μS

Resolution 0.01 μS

Accuracy 0.01 μS

Pulse Rise and Fall Times

Range 0.04 to 0.4 μS

Resolution	0.01 μ S
Accuracy	0.01 μ S

UUT SPECTRUM ANALYSIS

Scan Center

1030 MHz

Scan Width

\pm 90 MHz

Resolution

0.1 MHz

Accuracy

Amplitude

\pm 3 dB

Frequency

\pm 0.1 MHz

Input Power

125 W to 500 W

Dynamic Range

>60 dB

POWER REQUIREMENTS

Voltage

115/230 VAC, 175 W

Frequency

50/60 Hz

Note 1: Non-standard reply pulse widths may be specified via the GPIB

Note 2: Stated accuracy is valid for most scenarios. The maximum error shall not exceed the displacement of the intruder in 0.1 second as allowed by D0185 par. 2.4.1.2w.

PHYSICAL CHARACTERISTICS

Dimensions

19" W x 12.25" H x 20" D

Weight

109.5 lbs. (49.6 kg)

Height

12.25" (31.12 kg)

Width

19" (48.26 kg)

Depth

20" (50.80 kg)

ORDERING INFORMATION

RGS 2000-06	TCAS Reply Generator Collins ITS-700 Configuration
RGS 2000-11	TCAS Reply Generator Universal Configuration
RGS 2000-16	TCAS Reply Generator ATA TELI Configuration
RGS 2000-20	TCAS Reply Generator AlliedSignal GAA Configuration
RGS 2000-21	TCAS Reply Generator w/o Spectrum Analyzer

OPTIONAL ACCESSORIES

ACTTA-100	Universal TCAS Interface Unit
ACTTA-100A	TCAS Interface Unit (used in TPT-81A stations)

EXTENDED WARRANTY

WRGS/203C	Extended standard warranty 36 months with scheduled calibration
WRGS/205C	Extended standard warranty 60 months with scheduled calibration

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Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.