

# Avionics

## RGS-2000NG TCAS Test Set



NextGen TCAS Test Set

The RGS-2000NG TCAS Test Set is an RF signal generator/receiver for testing TCAS (Traffic Alert and Collision Avoidance System) with an option available for testing transponder LRUs. The RGS-2000NG was designed with modern software-driven digital modulation technology and is the RGS-2000 replacement for engineering development, design validation, manufacturing and return-to-service testing.

### Features

- More test capability than any tester in the market, all packed into one box
- Command set emulation of the RGS-2000
- 10.4 inch touch screen LCD display for operator control of all test set capabilities or can be remotely controlled via GPIB or Ethernet
- Simulates 32 dynamic/400 static intruders
- ADS-B squitter encode/decode
- Four port antenna simulation
- Hybrid surveillance
- Six independent transmitters and two receivers
- Data parsing for analysis
- Pulse and frequency measurement
- Software-driven design allows for field updates for adding new features, capability or modifications due to industry changes
- Transponder test option for Modes A, C, S

# TCAS MODE SPECIFICATIONS

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## TRANSMITTER

### **Frequency**

Range	1025 MHz to 1155 MHz
Resolution	100 KHz
Accuracy	$\pm 10$ KHz

### **Power**

Range	-10 to -90 dBm per element
Resolution	1 dB
Accuracy	$\pm 1$ dB @ 1090 MHz
Port	Top (4 elements) Bottom (4 elements) Any individual element

### **Pulse Modulation**

Accuracy	$\pm 0.05$ uSec
On/Off Ratio	>80 dB
Rise/Fall Time	Normal: <100 nS Slow: 600 nS

External Pulse Modulation

### **Phase Simulation**

Range	0 to 359°
Resolution	1°
Accuracy	Typical < $\pm 1^\circ$ , max $\pm 3^\circ$ (4 port simulation)

### **Range Simulation**

Range	0 to 150 NMI
Resolution	12.5 ft.
Accuracy	$\pm 200$ ft.

### **Velocity Simulation**

Range	0 to 2000 Kts
Resolution	1 Kt/hr

### **Vertical Speed Simulation**

Range	$\pm 32608$ ft./min.
Resolution	64 ft./min.

### **Altitude Simulation**

Range	-1000 to 126,700 ft.
Mode	Gilham and 25 ft.
Resolution	25/100 ft. up to 50,175 ft. 100 ft. above 50,175 ft.

## RECEIVER

### **VSWR**

<1.4

### **Max Input Power**

+57 dBm

### **Internal Ant. Simulation**

### **1030 Rcvr with BPSK Demod**

### **1090 Receiver**

### **Dynamic Range**

40 dB

### **Dual Receiver**

Top/Bottom

### **Power Measurement**

Range	+17 to +57 dBm
Resolution	0.1 dB
Accuracy	$\pm 1$ dB @ 1030 MHz

### **Relative Phase Measurement**

Range	0° to 359°
Resolution	1°
Accuracy	$\pm 4^\circ$

### **Frequency Measurement**

Resolution	1 KHz
Accuracy	$\pm 1$ KHz (using special test mode)

### **Pulse Characteristic Measurement**

Resolution	10 nS
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# TRANSPONDER MODE SPECIFICATIONS

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(Included with RGSNGOPT10 only)

## TRANSMITTER

### **Frequency**

Range	965 MHz to 1095 MHz
Resolution	100 KHz
Accuracy	$\pm 10$ KHz

### **Power**

Range	-10 to -90 dBm
Resolution	1 dB
Accuracy	$\pm 1$ dB @ 1030 MHz
Port	Top and bottom

### **Pulse Modulation**

Accuracy	$\pm 0.05$ uSec
On/Off Ratio	>80 dB
Rise/Fall Time	<100 nS)
External Pulse Modulation	

## RECEIVER

### **VSWR**

<1.4

### **Max Input Power**

+57 dBm

### **1090 Receiver**

### **Dynamic Range**

40 dB

### **Dual Receiver**

Top/Bottom

### **Power Measurement**

Range	+17 to +57 dBm
Resolution	0.1 dB
Accuracy	$\pm 1$ dB @ 1090 MHz

### **Frequency Measurement**

Resolution	10 KHz
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### **Pulse Characteristic Measurement**

Resolution	10 nS
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## **PHYSICAL CHARACTERISTICS**

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Power	115/230 VAC, 50/60 Hz
Height	10.5 inches (26.6 cm)
Width	19 inches (48.2 cm)
Depth	16.5 inches (41.9 cm)
Weight	44 lbs. (19.9 kg)

## **FUNCTIONAL CHARACTERISTICS**

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### **REMOTE INTERFACE**

*Command set emulation of the RGS-2000*

*Ethernet*

*GPIB*

### **INPUTS/OUTPUTS**

*Suppression bus (front/back)*

*ATE lines (front/back)*

*429 Tx/Rx (front/back)*

*2 scope BNC outputs (front/back)*

*LAN (front/back)*

*USB Type B control (front)*

*2 USB Type A (front) for HID/flash drives*

*6 external pulse modulation inputs (back)*

*Top/bottom receiver coupled outputs*

## **ORDERING INFORMATION**

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<b>Order Number</b>	<b>Description</b>
113956	RGS-2000NG TCAS Test Set <i>(Option RGSNGOPT01 and/or Option RGSNGOPT02 required)</i>
114343	RGSNGOPT01 - Rockwell Collins compatibility option
114344	RGSNGOPT02 - Honeywell compatibility option
114342	RGSNGOPT10 - Transponder test option

**CHINA Beijing**

Tel: [+86] (10) 6539 1166  
Fax: [+86] (10) 6539 1778

**CHINA Shanghai**

Tel: [+86] 21 2028 3588  
Fax: [+86] 21 2028 3558

**CHINA Shenzhen**

Tel: [+86] (755) 3301 9358  
Fax: [+86] (755) 3301 9356

**FINLAND**

Tel: [+358] (9) 2709 5541  
Fax: [+358] (9) 804 2441

**FRANCE**

Tel: [+33] 1 60 79 96 00  
Fax: [+33] 1 60 77 69 22

**GERMANY**

Tel: [+49] 89 99641 0  
Fax: [+49] 89 99641 160

**INDIA**

Tel: [+91] 80 [4] 115 4501  
Fax: [+91] 80 [4] 115 4502

**JAPAN**

Tel: [+81] (3) 3500 5591  
Fax: [+81] (3) 3500 5592

**KOREA**

Tel: [+82] (2) 3424 2719  
Fax: [+82] (2) 3424 8620

**SCANDINAVIA**

Tel: [+45] 9614 0045  
Fax: [+45] 9614 0047

**SINGAPORE**

Tel: [+65] 6873 0991  
Fax: [+65] 6873 0992

**TAIWAN**

Tel: [+886] 3 5500 338  
Fax: [+886] 3 5502 065

**UK Stevenage**

Tel: [+44] (0) 1438 742200  
Fax: [+44] (0) 1438 727601  
Freephone: 0800 282388

**USA**

Tel: [+1] (316) 522 4981  
Fax: [+1] (316) 522 1360  
Toll Free: 800 835 2352



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