

VIAVI

RGS-2000NG

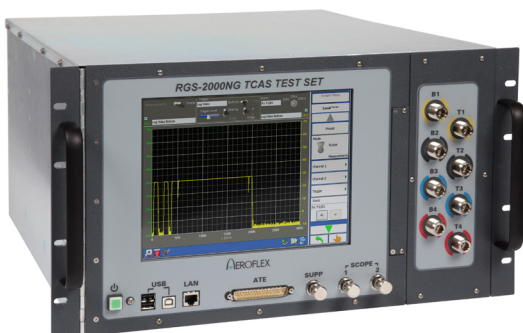
NextGen TCAS Test Set and ADS-B Target Generator

Transmitter

| Frequency | |
|------------------------|--|
| Range | 952 MHz to 1223 MHz |
| Resolution | 100 KHz |
| Accuracy | ±10 KHz |
| Phase Noise | >80 dBc/Hz @ 100 KHz |
| Power ¹ | |
| Range (TCAS) | -20 to -90 dBm [Low Power Mode] +1 to -69 dBm [High Power Mode] |
| Resolution | 1.0 dB |
| Accuracy | ±1 dB @ 1090 MHz |
| Range (Transponder) | -20 to -90 dBm |
| Resolution | 1.0 dB |
| Accuracy | ±1 dB @ 1030 MHz |
| Range (UAT) | +1 to -98 dBm |
| Resolution | 1.0 dB |
| Accuracy | ±1 dB @ 978 MHz |
| Range (Multi-Receiver) | -20 to -90 dBm [Low Power Mode] +1 to -69 dBm [High Power Mode] |
| Resolution | 1.0 dB |
| Accuracy | ±1 dB @ 1090 MHz |
| Range (DO-260B) | -20 to -90 dBm [Low Power Mode] +1 to -69 dBm [High Power Mode] |
| Resolution | 1.0 dB |
| Accuracy | ±0.5 dB at 1090MHz |

1 - High Power Mode is not available when Avidyne OEM is selected

| Range (Transmission Block) | -20 to -90 dBm [Low Power Mode] +1 to -69 dBm [High Power Mode] |
|---|--|
| Resolution | 1.0 dB |
| Accuracy | ±1 dB @ 1090 MHz |
| Spectral Purity | |
| Harmonics | >50 dBc |
| Spurious | >55 dBc, 350 to 1800 MHz |
| Residual FM | 250 Hz Peak |
| Channels | |
| Nº. of Channels | 6 |
| Diversity | |
| Power | ±20 dB |
| Resolution | 0.1 dB |
| Accuracy | ±1 dB |
| Timing | ±1 uS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Modulation | |
| Pulse On/Off Ratio | >80 dB |
| Pulse Position (high speed rise/fall time mode) | |
| ATCRBS Replies Default | 145 uS from previous pulse |
| Accuracy | ±10 nS |
| ATCRBS Replies Variation | F1: 0 to 100 nS in 25 nS steps All other pulses: ±1000 nS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Mode S Replies Default | P1: 0 uS, P2: 1 uS, P3: 3.5 uS, P4: 4.5 uS |
| Accuracy | ±10 nS |
| Mode S Replies Variation | P1: 0 to 1000 nS P2/P3/P4: ± 1000 nS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |



Pulse Position (high speed rise/fall time mode) (continued)

| | |
|---|---|
| Mode A Interrogation P1- P3 Default | 8.0 uS |
| Accuracy | ±10 nS |
| Mode C Interrogation P1- P3 Default | 21.0 uS |
| Accuracy | ±10 nS |
| ATCRBS Interrogation P1-P2 Default | 2.0 uS |
| Accuracy | ±10 nS |
| ATCRBS Interrogation P3-P4 Default | 2.0 uS |
| Accuracy | ±10 nS |
| ATCRBS Interrogation Variation | ±1.95 uS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Mode S Interrogation P1 to P2 Default | 2.0 uS |
| Accuracy | ±10 nS |
| Mode S Interrogation P1 to P2 Variation | ±1.0 uS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Mode S Interrogation P1 to P6 Default | 3.5 uS |
| Accuracy | ±10 nS |
| Mode S Interrogation P6 Variation | ±1.95 uS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Mode S Interrogation P2 to SPR Default | 2.75 uS |
| Accuracy | ±10 nS |
| Mode S Interrogation SPR Variation | ±1.0 uS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Mode S Interrogation P5 prior SPR Default | 400 nS |
| Accuracy | ±10 nS |
| Mode S Interrogation P5 Variation | ±1.95 uS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Interference Interrogation Signal #1 | -175 to 400 uS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Interference Interrogation Signal #2 | 0 to 400 uS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Double Interrogation | 0 – 400 uS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Pulse Width (high speed rise/fall time mode) | |
| ATCRBS Replies Default | 0.45 uS |
| Accuracy | ±10 nS |
| ATCRBS Replies Variation | F1: -400 to ±950 nS All other: ±400 nS |
| Resolution | 25 nS |
| Accuracy | ±10 nS (minimum 100 nS pulse width) |

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|--|--|
| Mode S Replies Preamble Default | 0.5 uS |
| Accuracy | ±10 nS |
| Mode S Replies Preamble Variation | ±400 nS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Mode S Reply Data Bits (Manchester) | 0.5 uS |
| Accuracy | ±10 nS |
| Mode S Reply Data Variation | ±100 nS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| ATCRBS Interrogation P1/P2/P3 Default | 0.8 uS |
| Accuracy | ±10 nS |
| ATCRBS Interrogation P4 Short | 0.8 uS |
| Accuracy | ±10 nS |
| ATCRBS Interrogation P4 Long | 1.6 uS |
| Accuracy | ±10 nS |
| ATCRBS Interrogation P1/P2/P3/P4 Variation | 0 to 1.95 uS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Mode S Interrogation P1/P2 Default | 0.8 uS |
| Accuracy | ±10 nS |
| Mode S Interrogation P1/P2 Variation | 0 to 1.95 uS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Mode S Interrogation P6 Short Default | 16.25 uS |
| Accuracy | ±10 nS |
| Mode S Interrogation P6 Long Default | 30.25 uS |
| Accuracy | ±10 nS |
| Mode S Interrogation P6 Variation | P6 Overall: -0.5 to ±1.45 uS (offset range) P6 End: 0 to 1.95 uS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Mode S Interrogation P5 Default | 0.8 uS |
| Accuracy | ±10 nS |
| Interference Pulse Width | 0.2 to 32.0 uS |
| Resolution | 25 nS |
| Accuracy | ±10 nS |
| Pulse Rise/Fall Time | |
| TCAS | 75/75 nS ² 100/200 nS ² 230/230 nS ² 600/600 nS ² <50/<50 nS |
| Accuracy | ±25 nS; <50 nS for <50/<50 |
| Transponder | <50/<50 nS |
| Accuracy | <50 nS |

| Pulse Amplitude | |
|---------------------------------|---|
| ATCRBS Replies Variation | All pulses: 0 or -1 dB |
| Mode S Reply Variation | All preamble: 0 or -1 dB |
| Video Data Block Variation | +3 to -4 dB |
| Resolution | 1 dB |
| Accuracy | ±1 dB |
| ATCRBS Interrogation Variation | +9 to -19 dB |
| Resolution | 1 dB |
| Accuracy | ±1 dB |
| Interference | +9 to -19 dB |
| Resolution | 1 dB |
| Accuracy | ±1 dB |
| Pulse Enable | |
| ATCRBS Replies | All pulses: on/off |
| Mode S Reply | All preamble: on/off |
| Block Transmissions | |
| TCAS | 1000 messages |
| XPDR | 2000 messages |
| No. of Blocks | 1 to 50,000 or indefinite |
| Interrogation Rate within Block | User defines spacing between interrogations |
| Period | 10 ms to 90 seconds |
| Resolution | 1 ms |
| Accuracy | ±1 ms |
| PRF | |
| ATCRBS Interrogations | 1 to 10,000 Hz |
| Resolution | 1 Hz |
| Accuracy | 0.1% of setting |
| Mode S Interrogations | 1 to 2500 Hz |
| Resolution | 1 Hz |
| Accuracy | 0.1% of setting |
| Double Interrogation | |
| Each message: | 1 to 2500 Hz PRF in sync or non-sync |
| Resolution | 1 Hz |
| Accuracy | 0.1% of setting |
| Interlace | 1 to 400 Hz |
| Resolution | 1 Hz |
| Accuracy | 0.1% of setting |

| Interlace Ratio | |
|--------------------------------|--|
| Ratio | 1:1 to 1:1000 |
| TCAS Bearing Simulation | |
| Bearing ³ | 0 to 359 degrees |
| Resolution | 1 degree |
| Accuracy | <u>Phase Bearing</u> 4-Port Formula: ±2 degrees 4-Port Standard Deviation: <1 deg at any simulated bearing Port-to-Port: ±4 degrees max to min deviation between any two adjacent ports <u>Magnitude Bearing</u> 4-Port Formula: ±2 degrees Power Table: ±0.556 dB (equivalent to ±2 degrees) |
| OEM | Honeywell Phase Collins Phase/Magnitude ACSS Magnitude Garmin Phase Avidyne Magnitude |
| TCAS Range Simulation | |
| Range | Mode S: 0 to 160 nmi Mode C: 0.5 to 160 nmi |
| Resolution | 0.001 nmi |
| Accuracy | ±0.01 nmi from 500 ft. to 30 nmi ±0.10 nmi from >30 nmi |
| TCAS Velocity Simulation | |
| Velocity | ±2000 kts |
| Resolution | 1 kt |
| Accuracy | ±1 kt |
| TCAS Vertical Speed Simulation | |
| Vertical Speed | ±32608 ft/min |
| Resolution | 64 ft/min |
| Accuracy | ±64 ft/min |
| TCAS Altitude Simulation | |
| Altitude | -1000 to 126700 ft |
| Resolution | 25/100 ft up to 50175 ft 100 ft above 50175 ft |
| Accuracy | ±25 ft |
| Mode | Gilham/Binary |

³ - Bearing accuracy specifications apply to the top antenna only when Avidyne OEM is selected.

Receiver

| | |
|----------------------------------|---|
| VSWR | |
| < 1.4 (1030 MHz and 1090 MHz) | |
| Max Input Power | |
| +60 dBm | |
| Antenna Simulation | |
| OEM | Honeywell Phase |
| | Collins Phase/Magnitude |
| | ACSS Magnitude |
| | Garmin Phase |
| | Avidyne Magnitude |
| Antenna Resistors (Internal) | Honeywell Phase |
| | Collins Phase/Magnitude |
| | ACSS Magnitude |
| | RGS-2000NG can handle Collins Magnitude DC voltages to antenna |
| Arrangement | RGS-2000NG ports are arranged in the same manner as antenna. |
| | RGS-2000NG B2 and B4 are swapped for RGS-2000 B2 and B4 |
| Cross-Coupling | Adjacent and Non-adjacent Ports: -15 to -19 dB |
| Receiver Decoding | |
| Messages | ATCRBS Interrogation and Replies Mode S Interrogations and Replies (T1 and B1 ports only) UAT Ground and Airborne Messages [UAT Option], (B1 port only) |
| Dynamic Range | |
| 1030/1090 MHz | +17 to +60 dBm |
| UAT | +30 to +57 dBm |
| Channels | |
| No. of Channels: | 2, Top/Bottom |
| Measurement | |
| Power | +17 to +60 dBm |
| Resolution | 0.1 dB |
| Accuracy | ±0.5 dB |
| TCAS Relative Phase | 0 to 359 degrees; any port reference to T1/B1 Phase |
| Resolution | 1 degree |
| Accuracy | ±4 degree |
| Frequency Pulse Measurement Type | 1030 MHz (±3 MHz) |
| Resolution | 1 KHz |
| Accuracy | ±50 KHz |

| | |
|---------------------------------|------------------|
| Frequency 1030 Measurement Type | 1030 MHz ±50 KHz |
| Resolution | 100 KHz |
| Accuracy | ±1 KHz |
| Pulse Spacing | |
| Resolution | 1 nS |
| Accuracy | ±10 nS |
| Pulse Width | |
| Resolution | 1 nS |
| Accuracy | ±15 nS |
| Pulse Rise/Fall Time | |
| Resolution | 1 nS |
| Accuracy | ±20 nS |
| ATCRBS Reply Delay | |
| Resolution | 25 nS |
| Accuracy | ±20 nS |
| Mode S Reply Delay | |
| Resolution | 25 nS |
| Accuracy | ±50 nS |
| Reply Jitter | |
| Resolution | 25 nS |
| Accuracy | ±20 nS |

Environmental

| | |
|----------------------------|-------------------------------|
| Temperature | |
| Full specified performance | 23°C ±5° (73.4°F ±5°) |
| Operating | 0° to +40°C (32° to +104°F) |
| Storage | 0° to +71°C (32° to +159.8°F) |
| Relative Humidity | 0 to 95% non-condensing |

Physical Characteristics

| | |
|---------------------|---|
| Size: Test Set Only | 10.5"H x 19"W x 24" D (26.67 cm x 48.26 cm x 60.9 cm) |
| Weight | 43 lbs. (19.5 kg) |
| Shipping Weight | 58 lbs. (26.3 kg) |

| | |
|---------------------------------|--|
| Compliance | |
| CE | |
| UL/EN 61010-1 | |
| EN 61326-1 | |
| MIL-PRF-28800F (Class 3 Device) | |



Contact Us +1 316 522 4981
AvComm.Sales@viavisolutions.com

To reach the VIAMI office nearest you, visit
viavisolutions.com/contact.

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30187394 900 1018