

# VIAVI

## ATC-5000NG

### NextGen ATC/DME Test Set and ADS-B Target Generator

#### Transmitter

Frequency	
Range	952 MHz to 1223 MHz
Resolution	100 KHz
Accuracy	2.5 ppm
Phase Noise	>80 dBc/Hz @ 100 KHz
Power	
Range (Transponder)	+5 to -110 dBm
Resolution	0.1 dB
Accuracy @ 1030 MHz	±1 dB [+5 to -100 dBm] ±3 dB [< -100 dBm]
Range (UAT)	+5 to -110 dBm
Resolution	0.1 dB
Accuracy	±1 dB @ 978 MHz
Range (DME)	+5 to -110 dBm
Resolution	0.1 dB
Accuracy	±1 dB [+1 to -100 dBm] ±3 dB [< -100 dBm] 952 to 1223 MHz

Spectral Purity	
Harmonics	>50 dBc
Spurious	>55 dBc, 350 to 1800 MHz
Residual FM	250 Hz Peak
Channels	
No. of Channels	4 (XPDR/UAT) 6 (ADS-B Option)
Diversity	
Power	±20 dB
Resolution	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)	
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



## Transmitter (continued)

Pulse Position (high speed rise/fall time mode) - (continued)	
Mode S Interrogation P1-P2 Default	2.0 uS
Accuracy	±10 nS
Mode S Interrogation P1-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	-44 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 to 400 us
Resolution	25 nS
Accuracy	±10 nS
Pulse Width (high speed rise/fall time mode)	
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
Mode S Interrogation P5 Variation	0.2 to 1.95 uS
Resolution	25 nS
Accuracy	±10 nS
Interference Pulse Width	0.2 to 32.0 uS
Resolution	25 nS
Accuracy	±10 nS
Pulse Rise/Fall Time	
Transponder	<50 / <50 nS
Accuracy	<50 nS
Pulse Amplitude	
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

## Transmitter (continued)

Block Transmissions	
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
DME Simulation	
Ident Frequency	1350 Hz
Accuracy	±0.02%
Dot Default	120 ms
Accuracy	±1 ms
Dot Variation	50 to 250 ms
Resolution	10 ms
Accuracy	±1 ms
Dash Default	360 ms
Accuracy	±1 ms
Dash Variation	150 to 750 ms
Resolution	10 ms
Accuracy	±1 ms
Space Default	150 ms
Accuracy	±1 ms
Space Variation	50 to 250 ms
Resolution	10 ms
Accuracy	±1 ms
Code Rate Default	37 s
Accuracy	±100 ms

Code Rate Variation	10 to 65 s
Resolution	0.1 s
Accuracy	±100 ms
Echo Power Variation	-15 to +6 dB
Resolution	0.1 dB
Accuracy	±0.25 dB
Echo Range	30 nmi
Accuracy	±0.02 nmi
Range	0 to 400 nmi
Resolution	0.01 nmi
Accuracy	±0.02 nmi
Velocity	0 to 10000 knots
Resolution	1 knot
Accuracy	±0.001%
Acceleration	0 to 400 ft/s <sup>2</sup>
Resolution	1 ft/s <sup>2</sup>
Accuracy	±0.05% of setting
Squitter	0 to 8000 Hz
Resolution	1 Hz
Accuracy	10 Hz or 2%, whichever is greater
Spectrum at ±800 KHz Offset	> 55dB below center frequency level
Reply Efficiency	0 to 100 %
Resolution	1%
Accuracy	±0.5%

## Receiver

### VSWR

<1.4

### Max Input Power

+60 dBm

### Receiver Decoding

Messages	ATCRBS Interrogation and Replies
	Mode S Interrogations and Replies
	UAT Ground and Airborne Messages [UAT Option]

### Dynamic Range

1090 MHz	>40 dB
UAT	>30 dB

### Channels

No. of Channels	2, Top/Bottom
-----------------	---------------

### Measurement

Power	+17 to +60 dBm
Resolution	0.1 dB
Accuracy	± 0.5 dB

## Receiver (continued)

Measurement (continued)	
Frequency	
Pulse Measurement Type	1090 MHz $\pm$ 3 MHz
Resolution	1 KHz
Accuracy	$\pm$ 50 KHz
Pulse Spacing	
Resolution	1 nS
Accuracy	$\pm$ 10 nS
Pulse Width	
Resolution	1 nS
Accuracy	$\pm$ 10 nS
Pulse Rise/Fall Time	
Resolution	1 nS
Accuracy	$\pm$ 20 nS
ATCRBS Reply Delay	
Resolution	25 nS
Accuracy	$\pm$ 20 nS
Mode S Reply Delay	
Resolution	25 nS
Accuracy	$\pm$ 20 nS
Reply Jitter	
Resolution	25 nS
Accuracy	$\pm$ 20 nS

## Environmental

Temperature	
Full specified performance	23 °C, $\pm$ 5 °C (73.4 °F, $\pm$ 41 °F)
Operating	0 to +40 °C (32° to 104 °F)
Storage	0 to +71 °C (32° to 159.8 °F)
Relative Humidity	0 to 95% noncondensing

## Physical Characteristics

Dimensions	10.5 in x 19 in x 24 in (26.7 cm x 48.3 cm x 60.9 cm)
Weight	41 lbs (18.6 kg) test set only 53 lbs (24.04 kg) shipping weight 89 lbs (40.37 kg) shipping weight with optional transit case

## Functional Characteristics

Remote Interface	
Optional Command set emulation of the SDX-2000, ATC-1400A and S-1403DL	
Ethernet	
GPIB	
Inputs/Outputs	
Suppression bus (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	
Test Set Certifications	
MIL-PRF-28800F (Class 3 Device)	
CE	
UL/EN 61010-1	
EN 61326-1	



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

To reach the VIAMI office nearest you, visit  
[viavisolutions.com/contact](http://viavisolutions.com/contact).

© 2018 VIAMI Solutions Inc.  
Product specifications and descriptions in this document are subject to change without notice.  
ATC5000NG-ss-avi-nse-ae  
30186498 900 0818