

# ATC-5000NG

## NextGen ATC/DME Test Set



### Product Specification

Cobham AvComm

#### 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	±1 dB [+5 to -100 dBm] ±3 dB [< -100 dBm] @ 1030 MHz
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 µs
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 µs
Accuracy	±10 nS
Mode C Interrogation P1-P3 default	21.0 µs
Accuracy	±10 nS
ATCRBS Interrogation P1-P2 default	2.0 µs
Accuracy	±10 nS
ATCRBS Interrogation P3-P4 default	2.0 µs
Accuracy	±10 nS
ATCRBS Interrogation Variation	±1.95 µs
Resolution	25 nS
Accuracy	±10 nS
Mode S Interrogation P1-P2 Default	2.0 µs
Accuracy	±10 nS
Mode S Interrogation P1-P2 Variation	±1.0 µs
Resolution	25 nS
Accuracy	±10 nS
Mode S Interrogation P1 to P6 Default	3.5 µs
Accuracy	±10 nS
Mode S Interrogation P6 Variation	±1.95 µs
Resolution	25 nS
Accuracy	±10 nS
Mode S Interrogation P2 to SPR Default	2.75 µs
Accuracy	±10 nS
Mode S Interrogation SPR Variation	±1.0 µs
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 µs
Resolution	25 nS
Accuracy	±10 nS
Interference Interrogation Signal #1	-44 to 400 µs
Resolution	25 nS
Accuracy	±10 nS
Interference Interrogation Signal #2	0 to 400 µs
Resolution	25 nS
Accuracy	±10 nS
Double Interrogation	0 to 400 µs
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

**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

<i>Dot Variation</i>	50 to 250 ms
<i>Resolution</i>	10 ms
<i>Accuracy</i>	± 1 ms
<i>Dash Default</i>	360 ms
<i>Accuracy</i>	± 1 ms
<i>Dash Variation</i>	150 to 750 ms
<i>Resolution</i>	10 ms
<i>Accuracy</i>	± 1 ms
<i>Space Default</i>	150 ms
<i>Accuracy</i>	± 1 ms
<i>Space Variation</i>	50 to 250 ms
<i>Resolution</i>	10 ms
<i>Accuracy</i>	± 1 ms
<i>Code Rate Default</i>	37 s
<i>Accuracy</i>	± 100 ms
<i>Code Rate Variation</i>	10 to 65 s
<i>Resolution</i>	0.1 s
<i>Accuracy</i>	± 100 ms
<i>Echo Power Variation</i>	-15 to +6 dB
<i>Resolution</i>	0.1 dB
<i>Accuracy</i>	± 0.25 dB
<i>Echo Range</i>	30 nmi
<i>Accuracy</i>	± 0.02 nmi
<i>Range</i>	0 to 400 nmi
<i>Resolution</i>	0.01 nmi
<i>Accuracy</i>	± 0.02 nmi
<i>Velocity</i>	0 to 10000 knots
<i>Resolution</i>	1 knot
<i>Accuracy</i>	± 0.001%
<i>Acceleration</i>	0 to 400 ft/s <sup>2</sup>
<i>Resolution</i>	1 ft/s <sup>2</sup>
<i>Accuracy</i>	± 0.05% of setting
<i>Squitter</i>	0 to 8000 Hz
<i>Resolution</i>	1 Hz
<i>Accuracy</i>	10 Hz or 2%, whichever is greater
<i>Spectrum at +/- 800 KHz Offset</i>	> 55dB below center frequency level
<i>Reply Efficiency</i>	0 to 100 %
<i>Resolution</i>	1%
<i>Accuracy</i>	± 0.5%

**Receiver**

<b>VSWR</b>	<1.4
<b>Max Input Power</b>	+60 dBm
<b>Receiver Decoding</b>	
<i>Messages</i>	ATCRBS Interrogation and Replies Mode S Interrogations and Replies UAT Ground and Airborne Messages [UAT Option]
<b>Dynamic Range</b>	
1090 MHz	>40 dB
UAT	>30 dB
<b>Channels</b>	
<i>No. of Channels</i>	2, Top/Bottom
<b>Measurement</b>	
<i>Power</i>	+17 to +60 dBm
<i>Resolution</i>	0.1 dB
<i>Accuracy</i>	± 0.5 dB
<i>Frequency</i>	
<i>Pulse Measurement Type</i>	1090 MHz ±3 MHz
<i>Resolution</i>	1 KHz
<i>Accuracy</i>	± 50 KHz
<i>Pulse Spacing</i>	
<i>Resolution</i>	1 nS
<i>Accuracy</i>	± 10 nS
<i>Pulse Width</i>	
<i>Resolution</i>	1 nS
<i>Accuracy</i>	± 10 nS
<i>Pulse Rise/Fall Time</i>	
<i>Resolution</i>	1 nS
<i>Accuracy</i>	± 20 nS
<i>ATCRBS Reply Delay</i>	
<i>Resolution</i>	25 nS
<i>Accuracy</i>	± 20 nS
<i>Mode S Reply Delay</i>	
<i>Resolution</i>	25 nS
<i>Accuracy</i>	± 20 nS
<i>Reply Jitter</i>	
<i>Resolution</i>	25 nS
<i>Accuracy</i>	± 20 nS

## Environmental

### Temperature

Full specified performance	23 ±5 degrees C
Operating	0 to 40 degrees C
Storage	0 to 71 degrees C
Relative Humidity	0 to 95% non-condensing

## Physical Characteristics

Height	10.5 inches (26.67 cm)
Width	19 inches (48.26 cm)
Depth	24 inches (60.96 cm)
Weight	41 lbs. (18.60 kg)
Shipping Weight	53 lbs. (24.04 kg)

## 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

## Compliance

CE  
UL/EN 61010-1 (Pending)  
EN 61326-1 (Pending)

For further information please contact:

**Cobham AvComm**  
10200 West York Street  
Wichita, KS 67215-8935 [USA]  
Phone: (316) 522-4981  
Fax: (316) 524-2623  
AvComm.TechSales@cobham.com

or contact your Cobham AvComm  
sales office