

# Avionics

## ATC-600A Portable Transponder/DME Test Set

**AEROFLEX**  
A passion for performance.



A portable transponder/DME ramp test set, the rugged ATC-600A is the ideal solution for both ramp or bench use.

- Read XPDR code and altitude numerically
- Measure transponder frequency and check for correct DME channel
- Measure transponder receiver sensitivity
- Performs all tests required by the revised Federal Aviation Regulations (91.177 and 43 Appendix F)
- Two-year limited warranty

*Aeroflex is a leader in the design, manufacture and marketing of Avionics test systems.*

*A portable transponder/DME ramp test set, the rugged ATC-600A is the ideal solution for both ramp or bench use. Providing simulation of the ground station or airborne environment, the ATC-600A meets the latest ARINC specifications and FAA regulations concerning transponder receiver sensitivity and SLS tests.*

*Transponder tests allow quick determination of transmitter power, frequency, percent reply, pilot's code and encoded altitude. For DME testing, the unit includes accurate range and velocity simulation, power and frequency and PRF measurements.*

### Performance Features

The ATC-600A will perform, with radiated signals, all the tests required by the revised Federal Aviation Regulations (91.177 and 43 Appendix F, as amended December 19, 1973).

- Reads out XPDR code and altitude numerically and also displays binary pulse information for code and altitude
- Measures transponder frequency and checks for correct DME channel
- Front panel connector provided to directly check the output of altitude encoders
- Capable of checking XPDR input pulse decoder gate for marginal operation
- Checks position of XPDR second framing pulse relative to F<sub>1</sub>
- Measures transponder receiver sensitivity and SLS tests
- Precision DME range and velocity signals, both X and Y channel
- Uses remote tripod mounted antenna - can be accurately spaced from aircraft antenna for power measurements

### SPECIFICATION

#### TRANSPONDER

##### Interrogations Output

##### Frequency

1030 MHz ( $\pm 0.006\%$ )

##### Level

Variable from -66 to -79 dBm ( $\pm 1.5$  dBm) with 34 dB pad or radiat-

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ed with properly spaced antenna

### Modes

A/C, Altitude or Pilot Code, 2:1 interlace, or Mode A  
(Mode B available on request)

### Pulse Spacing

Mode A	$P_1$ to $P_3$	8 $\mu$ s ( $\pm 0.1$ $\mu$ s)
Mode C	$P_1$ to $P_3$	21 $\mu$ s ( $\pm 0.1$ $\mu$ s) (In A/C Modes)
Mode C	$P_1$ to $P_3$	17 $\mu$ s ( $\pm 0.1$ $\mu$ s)
SLS	$P_1$ to $P_2$	$\pm 0.1$ $\mu$ s

### Variable Spacing

$P_2$  and  $P_3$  variable with respect to  $P_1$  ( $\pm 1$   $\mu$ s),  $\pm 1$   $\mu$ s from nominal for input decoder gate tests

### PRF

235 Hz ( $\pm 10\%$ )

### SLS Test

$\pm 1.0$  dB  $P_2$  inserted at 0 or -9 dB relative to  $P_1$

## REPLY MEASUREMENTS

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### Power (UUT)

10 W to 1.5 kW peak ( $\pm 20\%$ ); direct with 34 dB pad  
 $\pm 3$  dB radiated with properly spaced antenna

### Frequency Check

1086 to 1093 MHz ( $\pm 0.3$  MHz)

### Altitude Code

Binary and Numerical Readout, -1.0 to 126.7 thousand feet

### Pilot Code

Binary and Numerical Readout, 0000 to 7777

### Percent Reply

0% to 100%, either A/C or A(B) modes

### F<sub>2</sub> Pulse Position

Measurement of rising and falling edge  $\pm 0.5$   $\mu$ s from nominal ( $\pm 0.05$   $\mu$ s)

### Status Lamps

Ident Pulses, Invalid Altitude Code and No Altitude Code

### Encoder Test

Direct connection accepts altitude encoder

## DME

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### Interrogations Measurements

#### PRF

Track PRF	0 to 30 Hz	$\pm 5\%$ full scale
Search PRF	0 to 300 Hz	$\pm 5\%$ full scale

#### Power (UUT)

10 W to 1.5 kW peak ( $\pm 20\%$ ); direct with 34 dB pad  
 $\pm 3$  dB radiated with properly spaced antenna

### Frequency Check

1038 to 1045 MHz ( $\pm 0.3$  MHz)

### Reply Output

#### Frequency

17X-channel:	978 MHz	$\pm 0.006\%$ (108.00 MHz paired)
17Y-channel:	1104 MHz	$\pm 0.006\%$ (108.05 MHz paired)
18X-channel:	979 MHz	$\pm 0.006\%$ (108.10 MHz paired)

#### Level

Approximately -45 direct with 34 dB pad or radiated with properly spaced antenna

#### Reply Pulses

3.5  $\mu$ s wide ( $\pm 0.5$   $\mu$ s)

#### Pulse Spacing

X channel: 12  $\mu$ s wide ( $\pm 0.2$   $\mu$ s)  
Y channel: 30  $\mu$ s wide ( $\pm 0.2$   $\mu$ s)

#### Range

0 to 399 NM in 1 NM steps. Accuracy  $\pm 0.07$  NM ( $\pm 0.02\%$ )

#### Velocity

Crystal-controlled digital velocity with rates of 50, 75, 100, 150, 200, 300, 400, 600, 800, 1200, 1600 and 2400 knots ( $\pm 0.02\%$  of setting). Inbound or outbound starting from any selected range. Range steps in velocity mode are 0.025 NM (system), 0.1 NM displayed.

#### Percent Reply

50% or 100%

#### Squitter

2700 PRF ( $\pm 50$  Hz)

#### Ident Tone

1350 Hz ( $\pm 8$  Hz) with equalizing pulses

## GENERAL

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### ENVIRONMENTAL

#### Temperature

-20° to 55°C

#### Relative Humidity

$\leq 80\%$  for temperature up to 31°C, decreasing linearly to 50% at 40°C (Non-condensing)

#### Altitude

$\leq 4000$  meters (13,124 feet)

### GENERAL

#### Calibration Interval

1 year

#### Power

102 to 120 VAC, 220 to 240 VAC, 50 Hz to 400 Hz,  $\leq \pm 10\%$  of the nominal voltage, 24 W maximum

Internal 2.0 AH NICAD battery operation for approximately 2 hours

## DIMENSIONS

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Housed in a portable case 290 mm wide, 130 mm high, 410 mm deep

Housed in a portable case 11.4 in. wide, 5.1 in. high, 16.1 in. deep

**Weight**

8.1 kg (18 lbs.) approximately

**Electromagnetic Compatibility**

Complies with the limits in the following standards:

EN 55011 Class B

EN 50082-1

**Safety**

Complies with EN 61010-1 for class 1 portable equipment and is for use in a pollution degree 2 environment. The instrument is designed to operate from an installation category 1 or 2 supply.

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**VERSIONS AND ACCESSORIES**

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When ordering please quote the full ordering number information.

**Ordering Numbers**

**Versions**

600-110	ATC-600A	Transponder/DME Equipment, 110 VAC operation	Ramp	Test
600-220	ATC-600A	Transponder/DME Equipment, 220 VAC operation	Ramp	Test

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All Aeroflex Avionics products delivered with Factory Certificate Of Calibration

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