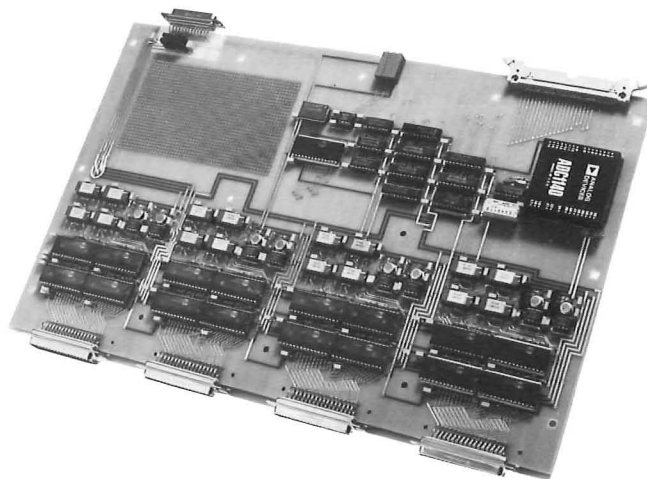
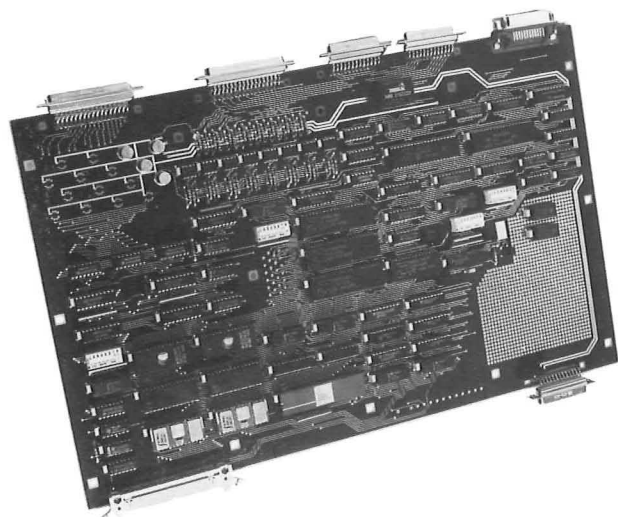


# Generic Automated Powerplant Test Unit



## STATE OF THE ART AUTOMATION GENERAL

- MICRO-PROCESSOR CONTROLLED REAL TIME DATA ACQUISITION
- 32 BIT PROCESSOR WITH 4 MB MEMORY
- CONDITIONS ALL TYPES OF ENGINE AND TEST CELL SENSORS
- LARGE SYSTEM BOARD DESIGN FOR INCREASED RELIABILITY
- INTEGRAL SOLID STATE DISC
- SUPPORTS EXISTING HOL ENGINE TEST SOFTWARE

The Generic Automated Powerplant Test Unit (GAPTU) provides a low cost, reliable, accurate and repeatable data acquisition sub-system. The GAPTU conditions all types of engine parameters. Self calibration and self-test ensures a high operational availability.

The GAPTU provides the operator with the means of acquiring accurate and repeatable data. It provides the basis for automated engine test and performance evaluation with immediate and significant savings in fuel costs. Additionally it facilitates the collection of data for engine health and trend monitoring.

HOL computer software can be supplied for specific engine types ranging from performance calculations and data display through to a fully "cued" integrated test and diagnostic program.

The small size and low power consumption of the GAPTU provides a simple and effective solution for retrofit into existing engine test facilities. The Interface within the GAPTU is via an IEEE 488 bus. This allows easy communication with external devices.

## GENERIC AUTOMATED POWERPLANT TEST UNIT TYPE 90-203-04

The GAPTU is a 19 inch rack-mounted unit which comprises five printed circuit boards:

- Processor Module
- Solid State Disc Unit
- Analogue Interface Module
- Pre-Conditioning Module
- Digital Interface Module

The GAPTU includes self test features which enable the Processor to establish total confidence in the operational status of the GAPTU. Self calibration of the analogue channels is performed every major cycle to ensure that the GAPTU maintains its high accuracy and integrity at all times.

Versions of the GAPTU are available to meet Military Environmental and EMC Specifications.

All versions feature small physical size, low power, low height and high reliability.

## Processor Module 270-33946

### PRIMARY CHARACTERISTICS

- Single board computer on 15" x 15" board
- Includes 8 serial ports and remote diagnostics capability
- 32 Bit processor with Floating point and 4 MB memory
- Performance in excess of 1 MiP
- 7" x 15" IEEE 488 module
- Complete range of Data General Software available

## Solid State Memory Modules 270-33947

### PRIMARY CHARACTERISTICS

- No rotating, mechanical, or magnetic parts
- 15" x 15" Board holds up to 5 MB of executive and generic software
- 500kB Removable test application program cartridge
- 500kB EEPROM Removable Data entry log cartridge
- Up to 6 Application program or data log cartridges may be used
- Full Data general software support. Solid state memory emulates existing DG Disk Systems

## Digital Interface Module 270-33925

### PRIMARY CHARACTERISTICS

- 16 bit microprocessor
- 64K bytes of static RAM
- 128K bytes of non-volatile store
- Real-time clock
- Versatile Interrupt Controller
- Comprehensive Self Test and Fault Diagnosis

### INPUT/OUTPUT SIGNAL TYPES

- 16 Discrete Inputs (28V)
- 16 Discrete Outputs
- 6 Frequency or Period Inputs

### INTERFACES

- IEEE-STD-488 talker/listener
- 2 RS232 Serial Interfaces

## Analogue Interface Module 270-33932

### PRIMARY CHARACTERISTICS

- High Speed 16 bit A to D converter
- High resolution track and hold amplifier
- 96 analogue input channels
- Total channel conversion time of 75  $\mu$ seconds
- Integral voltage references for self calibration
- Inputs can be between 10mV and 10V full scale
- Rates of up to 10 000 conversions a second are accommodated

### B.I.T.E.

- The self calibration feature provides fault diagnosis

## Pre-Conditioning Module 270-33937

### PRIMARY CHARACTERISTICS

- Precision current sources for excitation of sensors
- Precision voltage references for pressure transducers
- Integral cold junction compensation for thermocouples
- Buffering and a.g.c. to provide TTL compatible frequency signals
- Pre-scaling and filtering of d.c. signals
- Conversion of a.c. pick-off signals to digital format
- On board signal simulations provide fault diagnosis

### INPUT SIGNAL TYPES

- Thermobulbs
- Thermocouples
- D.C. Signals
- A.C. pick-off signals, synchros and resolvers

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