

## AN/GSM-397(V) Electronic Systems Test Set

### Portable, Automated, Quickly Deployed Test Equipment for the F-15



Northrop Grumman's Electronic Systems Test Set (ESTS) combines the versatility and flexibility of commercial VXI instrument standards with the requirement for rugged, sophisticated and readily transportable avionics test equipment. ESTS is part of the Integrated Family of Test Equipment (IFTE), a proven series of systems used for testing electronic and electro-optic weapons devices such as missile systems, vehicles and aircraft.

Using a combination of card-level and rack-mounted instruments, the ESTS offers state of the art digital, analog, video and RF test capability in a set of portable, environmentally secure transit cases that can be set up or torn down in less than 30 minutes. An entire ESTS system with all F-15 TPSs can be transported on fewer than three pallets.

ESTS' flexibility comes from its use of industry standards with open architecture and the ability to be used in different configurations and subsets. The unit also offers high reliability and ease of maintenance, with extensive use of commercial VXI instrumentation.

### Features

- Highly mobile; can be set up or taken down in less than 30 minutes
- VXI-based open architecture
- Expandable and reconfigurable; can be used in different configurations and subsets
- ESTS is transportable on one pallet
- High reliability and ease of maintenance
- Distributed LRU interface
- Cableless chassis interconnection
- Embedded standards for calibration
- Comprehensive test techniques minimize hardware requirements
- Automated tech orders development process
- UNIX operating system, TPSs



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### System Control

- Pentium 90 MHz
- 64 MB RAM, Expandable to 128 MB
- Math Coprocessor Built-in

### Interfaces

- MXI/VXI
- IEEE-488, Two Ports
- Parallel Centronics
- RS-232, Two Ports
- SCSI

### Mass Storage

- 1 GB Removable Hard Drive
- 1.44 MB 3.5 Inch Floppy Drive
- 2.1 GB Magneto-Optical Drive
- External CD-ROM

### Expansion Slots

- One Spare

### Display

- Color Active Matrix LCD
- 9" x 7" Viewing Area
- 640 x 480 Pixel Resolution (VGA)
- Touchscreen Operation

### Keyboard

- 101 Key Functionality

### Five 200 W DC Power Supplies

- Voltage: 0 to 32 VDC
- Current: 6.25 A Max

### One 2400 W DC Power Supply

- Voltage: 0 to 200 VDC
- Current: 12 A Max

### Four Single-Phase AC Power Supplies

- Configurable as:
  - Single Phase
  - Two Phase
  - Three Phase (Delta or Wye)
- Voltage: 0 to 135 Vrms
- Current: 7 A/Phase, Max
- Freq: 350 to 1000 Hz
- Phase Angle Programmable

### 12 DAC Voltage Sources

- Voltage: -16.2 to +16.2
- Current: 410 mA, Single Channel
- Prog. Resolution: 0.3 mV

### RF Stimuli

- Source No. 1
  - 10 MHz to 18 GHz, 1 Hz Res.
  - Output Power: +13 to -90 dBm
  - Power Resolution: 0.1 dB
  - Modulation: CW, AM, FM, PM
- Source No. 2
  - 10 MHz to 18 GHz, 1 Hz Res.
  - Output Power: +12 to -90 dBm
  - Power Resolution: 0.1 dB
  - Modulation: CW, AM, FM, PM

### RF Measurement

- Spectrum Analyzer
  - Freq Range: 30 Hz to 18 GHz
  - Power: +30 to -129 dBm
- Power Meter
  - Dual Sensors: CW and Peak
  - Freq Range: 10 to 18 MHz
  - Power: +20 to -70 dBm, 0.01 dB Res
- Frequency Counter
  - Modes: CW and Pulsed
  - Functions: Freq, Pulse Width, Period
  - Range: 100 Hz to 18 GHz
- Phase Noise Analysis
  - Freq. Range: 5 MHz to 18 GHz
  - Offsets: 1 kHz to 10 MHz
  - Phase Noise Floor: -107 to -155 dBc/Hz

### Digital

- Dynamic High Speed Modules
  - Real Time Bidirectional and Tristate
  - 96 I/O Pins
  - Programmable Response Delay
  - Memory Depth per Pin: 64 kbits
  - Test Rates: Static to 20 Mbits/sec
  - Programmable Logic Levels: +10 to -10 V
  - Dual Threshold Receivers
  - Pattern Match
  - Burst
  - Continuous Pattern
  - Handshake
  - Int/Ext Synchronization
- High Density Modules
  - 256 I/O Pins
  - Logic Family: TTL (Tristateable)
- H009 Bus Interface
  - Data Format: Biphasic
  - Two Channels: A and B
  - Each Channel: Clock and Data, Transformer Coupled
  - Data Rate: 1 MHz
  - Levels: 32±4 Vpp Transmit 1.5 Vpp Min Receive

- 1553 Bus
  - Two Dual-Redundant Channels
  - Transformer Coupled Outputs
  - Prog. Signal Level to 13.75 Vpp
  - Buffer Size: 32, 20-bit Words
  - Bus, Controller, Remote Terminal, or Monitor Operation
  - Prog. Message Delay to 65,535 µsec

### Analog Stimuli

- Arbitrary Waveform Generation
  - Sources: Two Independent
  - Operating Modes: Continuous, Sweep, Triggered, Burst Gated
  - Freq: DC to 25 MHz
  - Ampl: 0 to 15 V(pp)
  - Standard Waveforms: Six
  - Arbitrary: 5 to 2000 Segments/Cycle
- Synchro/Resolver
  - Three Simultaneous Channels
  - Static Angles and Rotation
  - Rotation: 0.1 to 1000 Deg/sec
  - Input Ref: 5 to 115 Vrms, 360 to 5 kHz
- AVS Video Generator
  - Modes: Stroke, Raster, Composite Video (RS-170 or RS-343)
  - Amplitude: 0 to 8 Vpp
  - White Positive or White Negative
  - Offset: -5 to +5 V
  - Comp Video Bandwidth: 50 MHz

### Analog Measurement

- Digital Multimeter
  - DC Volts: 100 mV to 200 V
  - AC Volts: 100 mV to 200 V
  - Res: 100 to 10M ohms
- Counter/Timer
  - Inputs: Channels A&B, Ext Gate
  - Freq: DC to 100 MHz
  - Time Interval: 10 nsec to 10,000 sec
  - Input Voltage: ±100 mV to ±100 V
- Digitizer
  - Inputs: Channels A&B, Ext Trigger
  - Bandwidth: 50 MHz
  - Sampling Interval: 10 nsec to 42.9 sec
  - Input Voltage: ±100 mV to ±100 V
- AVS Image Acquisition
  - Modes: Stroke, Raster, Composite Video (RS-170 and RS-343)
  - Digitizing Rate: 50 MHz max
  - Video Depth: 8 bits
  - Full Frame Acquisition
- Synchro/Resolver
  - Three Simultaneous Channels
  - Input Voltage: 3.5 to 100 V L-L
  - Freq Ref: 350 Hz to 5 kHz

For more information, please contact:

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Specifications and features subject to change without notice.