

## DATA ITEM DESCRIPTION

**Title:** Automatic Test Equipment (ATE) Interface Hardware Manual

**Number:** DI-TMSS-81711

**Approval Date:** 24 NOV 2006

**AMSC Number:** 7665

**Limitation:** N/A

**DTIC Applicable:** No

**GIDEP Applicable:** No

**Office of Primary Responsibility:** NS/I5222

**Applicable Forms:** N/A

### Use/Relationship:

The ATE Interface Hardware Manual is used to support installation, operation, and maintenance of interface hardware for automatic test equipment. This manual is directed toward technicians trained in the use of automatic test equipment to perform piece-part fault isolation.

This Data Item Description (DID) contains the format and content preparation instructions for the data product generated by the specific and discrete task requirement as delineated in the contract and paragraphs 2.6.8, 10.2.10.3-5 and 10.2.14 of DS-56, Data Standard for the Preparation of COMSEC Technical Manuals.

This DID is applicable to manuals prepared specifically for the Government.

### Requirements:

1. Reference Documents: The applicable issue of the documents cited herein, including their approval date and dates of any applicable amendments, notices, and revisions, shall be as stated herein. DS-56, Data Standard for the Preparation of COMSEC Technical Manuals, current edition, are available at the National Security Agency, 9800 Savage Rd, Suite 6718, Fort Meade, Md 20755-6718, Attn: I5222.
2. Format: The test program manual information that is computer generated shall be provided on IBM compatible magnetic tape conforming to specification No. W-T-0051, Class III, Size II (24,000 feet long) with the following characteristics:
  - A. 1600 BPI density/nine track.
  - B. EBCDIC character code.
  - C. Logical record length equal to 103 characters.
  - D. Block six equal to 4,120 characters or fixed length to an integer multiple of the logic record length, "see C above."
  - E. No recorded labels.
  - F. A gummed label indicating the document title, the date, logical record length, and the block size shall be affixed to the reel.

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3. Content: The front cover (handling instructions), Summary of Content page, Record of Amendments page, Table of Contents, List of Illustrations, List of Tables and Introduction, will be prepared by the Government at the time of final publication and are not deliverable items in accordance with this DID. The manual shall contain six chapters as described in DS-56, "Data Standard for the Preparation of COMSEC Technical Manuals", and outlined below.
  - 3.1 Chapter 1: Description of ATE interface hardware. Describe the ATE interface and its purpose, and include the following:
    - A. The nomenclature and classification of the ATE interface. Include test head adapter, matrix boards, probe boards, plug-in elements, ancillary units and a short explanation of reference designations.
    - B. A general description of the purpose and function of the ATE interface, including a description of the electrical capabilities.
    - C. A brief physical description of the ATE interface, including a table of sizes and weights.
    - D. A photograph (three quarter view) of the complete equipment with the accessories furnished by the manufacturer, and with major assemblies of the equipment identified.
    - E. Illustrations showing the position and identity of each plug-in unit, package, board, module, and chassis (including a table listing titles, part numbers, and reference designations).
  - 3.2 Chapter 2: Inspection. Provide instructions for unpacking, inspection, and preparing the equipment for reshipment. Also include the following information:
    - A. Step-by-step procedures necessary to prepare the ATE interface for initial use.
    - B. Instructions for preliminary mechanical adjustment/alignment.
    - C. Procedures for repacking the equipment for reshipment, including disassembly or dismantling procedures, and requirements for special handling.
  - 3.3 Chapter 3: Operating Procedures. Provide instructions to inform test station operators how to connect, adjust, and use the ATE interface hardware.
  - 3.4 Chapter 4: Principles of Operation. Provide a general description of overall ATE interface operation. Special emphasis shall be placed on electrical operation of any circuitry within the ATE interface.
  - 3.5 Chapter 5: Corrective Maintenance. Provide corrective maintenance data, including the following:
    - A. A list of necessary tools and test equipment.

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- B. A procedure for trouble shooting the ATE interface. This description should reference specific tests within the stimuli test of the ATE test program, and relate those tests to specific circuits within the ATE interface.
  - C. Additional test procedures, other than the stimuli test of the ATE Test Program, which are necessary to isolate the trouble.
  - D. Detailed disassembly procedures, if necessary, to gain access to or remove assemblies.
  - E. A procedure for repair of the ATE interface, including specific procedures and techniques. Supporting illustrations, as necessary, shall also be included.
  - F. Timing, schematic, and wiring diagrams. Timing diagrams should relate to the actual signals that are being processed in the stimuli test of the ATE test program. The schematic diagrams should be the same as that used in the test program manual.
- 3.6 Chapter 6: Replaceable Parts. This chapter shall include a Group Assembly Parts List (GAPL) for each plug-in assembly and chassis assembly, including those parts mounted on panels, cases, covers, etc. The Government will provide the GAPL. The contractor shall provide parts location illustrations, as required, to support the GAPL for location and identification of all parts included in the GAPL (see paragraph 10.2.14 of DS-56).
- 3.7 Security Classification. It is anticipated that the security classification of the interface hardware manual will be UNCLASSIFIED. Unclassified manual will be marked FOR OFFICIAL USE ONLY (FOUO).
- 3.8 Illustrations. Illustrations shall be prepared in accordance with paragraph 2.6.8 of NSA DS-56, Data Standard for the Preparation of COMSEC Technical Manuals.
- 3.9 Block Diagrams. Block diagrams shall contain the functional units of the ATE interface, and be drawn as rectangles enclosing the names given to the functions performed. Block diagrams show the relationship of the functions to each other by interconnecting lines. Simplified block diagrams will show only the major functional units. A detailed block diagram will show all the functions within each block of a simplified block diagram. If a block diagram is spread over two or more sheets, interconnections between sheets shall be clearly indicated.
- 3.10 Equipment Logic Diagrams.
- A. The reference designation of each circuit board shall be included on these diagrams.
  - B. Show the schematic type representations of R-C networks, filters, etc. The component reference designation and value shall be shown (R1, 10K; C1, 10pf) and the type of module.
  - C. The logic diagrams shall list the names of all input or output signals to or from the

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ATE interface, the pin numbers to which they are applied, or from which they are taken, and their origins or destinations. If a logic function is spread over two or more sheets, interconnections between sheets shall be clearly indicated.

- D. All test points, plugs, receptacles, and pin numbers shall be shown and identified by reference designation.
- E. Major logic functions shall be identified by name in a larger size type immediately adjacent to the circuitry for those functions.

3.11 Schematic Diagrams. The requirements identified in paragraphs 10.2.10.3, 4, and 5 of DS-56

also apply to schematics.

3.12 Timing Diagrams. Timing diagrams shall show a sequence of operations and interrelationships. These shall be graphic presentations in which a change of state is plotted against time and should relate to the actual signals being processed in the stimuli tests in the ATE test programs.

3.13 Wiring Diagrams. Wiring diagrams (or complete wire lists, including source and destination) shall show the connections between the ATE tester, all plug-in wiring boards, lamps, switches, etc.

3.14 Parts Location Illustrations. Parts location illustrations shall show the location of all parts for each ATE interface including those parts mounted on panels, cases, covers, etc. Each part shall be identified either by reference designations or by find number in a manner that will facilitate correlation between the GAPL and the parts location illustrations. If possible, the parts location illustrations shall be reproducible copies of the appropriate assembly drawings modified to remove notices, dimensions, find numbers and leader lines for non-maintenance items, and other such details that are not required for location and identification of parts included in the GAPL. These requirements may necessitate preparing additional views as required for clarity.

3.15 Location of Illustrations. When possible, page-size and smaller illustrations shall be located on pages facing the text/tabular pages that make the first reference to them, or as soon as practicable following the first reference. All foldout illustrations shall be grouped at the rear of the manual and shall be assigned numbers prefixed with the letters "FO\_" followed by a dash and the figure number. The foldout illustrations shall be assigned figure numbers consecutively beginning with "FO-1\_" for the first, FO-2 for the second, etc. All sheets of a multiple sheet illustration shall be assigned the same figure number, with the individual sheets identified in parentheses following the figure title.

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3.16 Engineering Drawings. If engineering drawings, schematics, etc., being prepared on the same contract fulfill the basic requirements, they shall be used in the manual.

Cost for these drawings, except for reproduction expense, should not be applied to this data item.

4. END OF DI-TMSS-81711