

MIL-T-28816(EC)  
 AMENDMENT 1  
25 April 1975

# MILITARY SPECIFICATION

## TIME-FREQUENCY STANDARD, DISCIPLINED, AN/URQ-23, GENERAL SPECIFICATION FOR

This amendment forms a part of Military Specification MIL-T-28816(EC), dated 4 April 1975.

### Page 1

1.2.1, line 1: Delete "class 4" and substitute "Range 4".

1.2.2, line 1: Delete "class 2" and substitute "Range 2".

### Page 2

2.1, STANDARDS, MILITARY: After "MIL-STD-1364" add "MIL-STD-1472 - Naval Engineering Design Criteria for Military Systems, Equipments, and Facilities".

2.1, HANDBOOKS, MILITARY: Delete "MIL-HDBK-472 - Maintainability Prediction".

### Page 4

3.5: Delete and substitute:

3.5 Reliability requirements.

"3.5.1 Reliability. The standard shall have a specified mean-time-between-failure (MTBF),  $6_0$ , as defined by MIL-STD-781, of 2500 hours under shipboard conditions.

"3.5.2 Equipment conditioning. All equipment shall be subjected to a temperature burn-in with the environment temperature equal to or greater than those specified in 1.2 with the equipment operating in the worst case mode for a cumulative operating time of 48 hours. Failures occurring during the last 24 hours shall be repaired and the burn-in resumed with a minimum of 24 hours of equipment conditioning without further failure. Equipment monitoring during burn-in shall include as a minimum the functional checks to assure proper operation under the worst case operating mode. No adjustments of the equipment (for example, manual compensation for drift in V.O's), other than normal operating mode changes, shall be allowed during burn-in."

FSC 6625

MIL-T-28816(EC)  
AMENDMENT 1

Page 10

Table IV, Aging rate column, 5th line: Delete "0.6610<sup>10</sup>" and substitute "0.66PP10<sup>10</sup>".

Page 12

3.7.9, line 4: After "MIL-STD-454" add "and MIL-STD-1472".

Page 18

3.17: Delete and substitute:

"3.17 Maintainability. The standard shall have a median corrective maintenance time ( $M_{ct}$ ) not exceeding 15 minutes when repair is accomplished at the organizational level (see 6.4.7) of maintenance by the replacement of subassemblies (including modules and printed circuit boards) and chassis-mounted parts (electronic, electrical, electromechanical, and mechanical parts). Corrective maintenance time shall include localization, isolation, disassembly, interchange, reassembly, alignment, and checkout for all maintenance tasks."

Page 32

4.4.2.3: Delete "One out of every ten standards shall be subjected to the following tests."

Page 41

4.4.2.4: Delete.

Page 43

4.4.3.2.2, line 2: After "environmental" add "equipment conditioning (burn-in)".

Page 44

4.4.4, 4.4.4.1, and 4.4.4.1.1: Delete and substitute:

"4.4.4 Reliability demonstration. Reliability demonstration shall be performed in accordance with MIL-STD-781, except as hereinafter specified. Reliability shall be performed as part of first article inspection only.

"4.4.4.1 Reliability testing. Reliability testing shall be conducted as required by 4.4.4.1.1 and 4.4.4.1.2.

"4.4.4.1.1 First article testing. Reliability demonstration testing shall be performed to test level E in accordance with test plan IV except as specified in 4.4.4.2. Testing shall proceed to a decision in accordance with the specified criteria in MIL-STD-781 for test plan IV. This testing shall be performed during first article.

"4.4.4.1.2 Production sampling testing. Reliability sampling tests shall be conducted throughout production to ensure continued manufacture of acceptable equipment. Sampling testing shall be at test level C to test plan IV of MIL-STD-781 except as specified by 4.4.4.2. The number of units to be randomly selected from each month's production for reliability sampling tests shall be in accordance with Table 5 of MIL-STD-781. Testing shall proceed to a decision in accordance with the criteria specified in MIL-STD-781 for test plan IVA.

"4.4.4.1.3 Equipment conditioning. Debugging and burn-in of equipment, assemblies, or parts prior to performance of the reliability testing shall be limited to that required by 3.5.2. A performance check shall be conducted a minimum of twice every 24 hours and just prior to the end of burn-in."

4.4.4.2.2: Delete and substitute:

"4.4.4.2.2 Temperature. Testing shall be performed at a temperature not lower or greater than those specified in 1.2."

Add new paragraphs:

"4.4.4.3 Preventive maintenance. Except for normal battery replacement on equipment powered by self-contained batteries, no preventive maintenance shall be performed during the reliability test.

"4.4.4.4 Maintainability demonstration. Conformance with the equipment maintainability requirement shall be demonstrated in accordance with the requirements of MIL-STD-471 by replacement of subassemblies and chassis-mounted components corresponding to organizational level corrective maintenance. The contractor shall determine 30 candidate faults for the maintainability demonstration in accordance with Appendix A of MIL-STD-471. The procuring activity shall select 20 faults to be used for the demonstration. For fault simulation, a number shall be assigned to each part, including those that are contained in subassemblies. Faults for the demonstration shall be created by introduction of faulty parts or simulation of such faults in parts corresponding to the number selected.

"4.4.5.1 Rejection. If a reject decision is reached, the procuring activity shall be immediately notified. The contractor, at no additional

MIL-T-28816(EC)  
AMENDMENT 1

cost to the Government: (a) develop an approach for redesign or correction of all deficiencies, and (b) upon approval of a documented approach, the contractor shall repeat the demonstration until an accept decision is reached.

"4.4.5.2 Technical documentation. Technical documentation to be used in the demonstration shall be limited to the technical manual."

Preparing activity:

Navy - EC

(Project No. 6625-N663)