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MIL-STD-683G

23 September 1992

SUPERSEDING

MIL-STD-683F

5 MAY 1978

MILITARY STANDARD

CRYSTAL UNITS (QUARTZ), CRYSTAL HOLDERS (ENCLOSURES) AND OSCILLATORS

SELECTION OF

AMSC N/A

FSC 5955

FOREWORD

1. This military standard is approved for use by all Departments and Agencies of the Department of Defense.

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, US Army Laboratory Command, ATTN: SLCET-R-S, Fort Monmouth, NJ 07703-5000 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

3. This standard provides a list of crystal units (quartz), crystal holders (enclosures), and crystal oscillators for design of military equipment.

4. The application information and performance characteristics contained in this standard are offered for guidance and are not to be considered as mandatory.

CONTENTS

1. SCOPE

1.1 Scope. This standard covers quartz crystal units, crystal holders (enclosures), and crystal oscillators designated as standard for use in new design of military equipment. Requirements for crystal units, crystal holders (enclosures), and crystal oscillators listed in this standard are covered in MIL-C-3098, MIL-H-10056, and MIL-O-55310 respectively. See 6.4 for International Standardization Agreements.

1.2 Purpose. The purpose of this standard is to:

a. Provide the designers of new equipment with a list of crystal units, crystal holders (enclosures), and crystal oscillators considered by the military departments to be standard for military applications.

b. Control and minimize the variety of crystal-units and crystal oscillators used in military equipment in order to facilitate effective support of equipment in the field, and to maximize economic support of production of the crystal units and crystal oscillators listed in this standard.

c. Outline criteria pertaining to the use of items for design purposes for new equipment.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

MILITARY

MIL-C-3098	-	Crystal Units, Quartz, General Specification For.
MIL-H-10056	-	Holders (Enclosures), Crystals, General Specification For.
MIL-O-55310	-	Oscillators, Crystal, General Specification For.

HANDBOOKS

FEDERAL

H-6	-	Alphabetic Index of Names.
H2-2	-	Cataloging Handbook.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. DEFINITIONS

3.1 Definition of item names (H-6). Definitions of item names are in the Federal Item Name Directory for Supply Cataloging, H-6, section A.

3.2 Definition of item names (H2-2). A complete list of item names in FSC 5955 can be found in Cataloging Handbook H2-2.

3.3 Definitions. The meanings of terms used in this standard are in accordance with referenced military specifications.

4. GENERAL REQUIREMENTS

4.1 Item identification. Part or Identifying Numbers (PIN's) are used to identify the items listed in this standard, and shall be as specified in the individual specifications.

4.2 Conflict of requirements. In the event of conflict between the technical requirements of items described in this standard and the applicable specification or drawing, the text of this document shall govern.

4.3 Criteria for inclusion in this standard. The criteria for inclusion in this standard are as follows:

a. The items are classified in FSC 5955.

b. The items shall be the best type available for general use in military equipment.

c. The items are covered by military specifications or drawings.

d. The items shall be available from at least one source.

e. The items shall be used for design purposes in new equipment.

4.4 Order of preference. The order of preference shall be as follows:

a. Military specification parts.

b. Military drawing parts.

c. Other parts.

5. DETAILED REQUIREMENTS

5.1 Classification of listed crystal-units types.

5.1.1 Standard crystal units. The crystal units listed in table I are designated as standard for use in military equipment.

5.1.2 Crystal-unit type listing. Crystal units, arranged by type, are listed in table II. (Table II also indicated NATO preferred or guidance types.)

5.1.3 Application and use of crystal units. The specified maximum and minimum parameters of the crystal units are limiting factors beyond the reliability of the crystal unit will be impaired from the viewpoint of life and satisfactory performance. The equipment designer has the responsibility of ascertaining that the crystal unit will be operated under conditions that are within the limits for the particular unit type required.

5.1.4 Conflict of requirements. In the event of conflict between technical requirements described in this standard and the applicable specification, the latter shall govern. However, any conflict, real or assumed, does not relieve the contractor of the responsibility to comply with 5.2 and 5.3.

5.2 Crystals units not listed in this standard.

5.2.1 Acquisition specification requirements (to be required upon approval of the Government for the use of a crystal unit not listed in this standard or covered by a specification under MIL-C-3098). Copies of the complete acquisition (engineering) specification, and all changes or revisions, shall be forwarded to the acquiring activity. All specifications, revisions, and associated data shall clearly indicate the use of the special crystal type by contract number, equipment nomenclature, number of the special units used per equipment, the number of equipments to be delivered under the contract or order, and the identification of the approval letter of the crystal unit. This requirement shall not be waived.

5.3 Requirements for nonexistent crystal units. Should an equipment development have need for crystal units that cannot be satisfied by any known existing specification, the government shall be so informed.

5.4 Standard crystal holders (enclosures). The following crystal holders (enclosures) are standard for use in the design of new quartz crystal units:

Holder (enclosure) type	Holder (enclosure) specification 1/
HC-6/U*	MIL-H-10056/2
HC-13/U*	MIL-H-10056/4
HC-18/U*	MIL-H-10056/9
HC-25/U*	MIL-H-10056/11
HC-26/U*	MIL-H-10056/13
HC-27/U*	MIL-H-10056/14
HC-28/U	MIL-H-10056/15
HC-29/U*	MIL-H-10056/16
HC-30/U**	MIL-H-10056/12
HC-32/U	MIL-H-10056/18
HC-33/U	MIL-H-10056/20
HC-34/U	MIL-H-10056/22
HC-35/U**	MIL-H-10056/21
HC-36/U	MIL-H-10056/23
HC-37/U**	MIL-H-10056/24
HC-38/U	MIL-H-10056/25
HC-39/U	MIL-H-10056/26
HC-40/U**	MIL-H-10056/27
HC-41/U	MIL-H-10056/28
HC-42/U	MIL-H-10056/29
HC-43/U	MIL-H-10056/30

Holder (enclosure) type	Holder (enclosure) specification 1/
HC-44/U	MIL-H-10056/31
HC-45/U	MIL-H-10056/32
HC-46/U	MIL-H-10056/33
HC-47/U	MIL-H-10056/34
HC-48/U	MIL-H-10056/35
HC-49/U	MIL-H-10056/36
HC-50/U	MIL-H-10056/37
HC-51/U	MIL-H-10056/38

5.5 Classification of listed oscillators types.

5.5.1 Part numbering for standard oscillators. Standard oscillators, shall be in accordance with 1.2.1 and 6.2.1 of MIL-O-55310.

5.5.2 Standard oscillators. The oscillators, crystal listed in table III are designated as standard for use in military equipment.

5.5.3 Oscillator type listing. Oscillators, arranged by type, are listed in table IV.

5.5.4 Application and use of oscillators. The specified maximum and minimum parameters of the oscillators are limiting factors, beyond which the reliability of the oscillator will be impaired from the viewpoint of life and satisfactory performance. The equipment designer has the responsibility of ascertaining that the oscillator will be operated under conditions that are within the limits for the particular unit type required.

5.6 Oscillator units not listed in this standard.

5.6.1 Acquisition specification requirements (to be required upon approval of the Government for the use of an oscillator unit not listed in this standard or covered by a specification under MIL-O-55310). Copies of the complete acquisition (engineering) specification, and all changes or revisions, shall be forwarded to the acquiring activity. All specifications, revisions, and associated data shall clearly indicate the use of the special oscillator type by contract number, equipment nomenclature, number of the special units used per equipment, the number of equipments to be delivered under the contract or order, and the identification of the approval letter of the oscillator. This requirement shall not be waived.

5.6.2 Requirements for nonexistent oscillator units. Should an equipment development have need for oscillator units that cannot be satisfied by any known existing specification, the government shall be so informed.

1/ Holder (enclosure specifications show standard holder enclosure design).
* NATO preferred item.
** NATO guidance item.

TABLE I. Standard crystal units (listed in order of low limit of frequency range).

Frequency range Hz	Crystal unit type	Frequency tolerance ppm	Operating temperature range (in °C)	Holder type	MIL-C -3098 /xx	Rated drive level, mW
90-250K	CR37A/U	200	-40 to +70	HC-13/U	17	2.0 ±0.4
	CR42A/U	30	+70 to +80	HC-13/U	21	2.0 ±0.4
190-500K	CR47A/U	20	+70 to +80	HC-6/U	26	2.0 ±0.4
200-555K	CR25B/U	100	-40 to +85	HC-6/U	7	2.0 ±0.4
	CR26A/U	20	+70 to +80	HC-6/U	8	2.0 ±0.4
	CR63B/U	100	-40 to +70	HC-6/U	41	2.0 ±0.4
200-580K	CR104/U	20	+70 to +80	HC-33/U	79	2.0 ±0.4
455K	CR45/U	200	-40 to +70	HC-6/U	24	2.0 ±0.4
0.8-20M	CR18/U	50	-55 to +10	HC-6/U	3	10.0 ±2.0 1/ 5.0 ±1.0 2/
	CR19A/U	50	-55 to +105	HC-6/U	4	10.0 ±2.0 1/ 5.0 ±1.0 2/
	CR27A/U	20	+70 to +80	HC-6/U	9	5.0 ±1.0 1/ 2.5 ±0.5 2/
	CR28A/U	20 3/	+70 to +80	HC-6/U	10	5.0 ±1.0 1/ 2.5 ±0.5 2/
	CR35A/U	20 4/	+80 to +90	HC-6/U	15	5.0 ±0.5 1/ 2.5 ±0.5 2/
	CR36A/U	20 4/	+80 to +90	HC-6/U	16	5.0 ±1.0 1/ 2.5 ±0.5 2/
	CR62/U	10 3/	+70 to +80	HC-6/U	40	5.0 ±1.0 1/ 2.5 ±0.5 2/
	CR85/U	20	-40 to +90	HC-6/U	56	10.0 ±2.0 1/ 5.0 ±1.0 2/
	CR157/U	50	-55 to +105	HC-33/U	137	10.0 ±2.0 1/ 5.0 ±1.0 2/
	CR119/U	50	-55 to +105	HC-6/U	95	10.0 ±2.0 1/ 5.0 ±1.0 2/
	CR130/U	20	-40 to +90	HC-6/U	109	10.0 ±2.0 1/ 5.0 ±1.0
	CR131/U	20	+70 to +80	HC-6/U	120	5.0 ±1.0 2.0 ±0.5

See footnotes at end of table.

TABLE I. Standard crystal units (listed in order of low limit of frequency range) - Continued.

Frequency range Hz	Crystal unit type	Frequency tolerance ppm	Operating temperature range (in °C)	Holder type	MIL-C -3098 /xx	Rated drive level, mW
2.9-3.8M	CR124/U	50	-55 to +100	HC-18/U	101	1.0 ±0.2
2.9-3.85M	CR114/U	50	-55 to +105	HC-25/U	90	1.0 ±0.2
2.12-6.2M	CR89/U	50	-55 to +90	HC-32/U	67	10.0 ±2.0
2.0-10M	CR121/U	5	+80 to +90	HC-27/U	98	2.0 ±0.4
10.5-11.5K	CR106/U	50	-55 to +105	HC-18/U	82	2.0 ±0.4
8.0-12M	CR136/U	25	+10 to +25 +30 to +80	HC-18/U	115	10.0 max
	CR129/U	35	-55 to +90	HC-18/U	110	5.0 ±1.0
2.2-20M	CR78A/U	50	-55 to +105	HC-25/U	62	5.0 ±1.0
2.4-20M	CR165/U	50	-55 to +105	HC-49/U	146	5.0 ±1.0
	CR64/U	50	-55 to +105	HC-18/U	42	5.0 ±1.0
2.9-20M	CR79/U	50	-55 to +105	HC-25/U	63	5.0 ±1.0
2.9-25M	CR69A/U	20 30	-40 to +90 -55 to -40 +90 to +105	HC-18/U	47	5.0 ±1.0
5.0-20M	CR60A/U	50	-55 to +105	HC-18/U	38	5.0 ±1.0
	CR112/U	25	-55 to +105	HC-18/U	88	5.0 ±1.0

See footnotes at end of table.

TABLE I. Standard crystal units (listed in order of low limit of frequency range) - Continued.

Frequency range Hz	Crystal unit type	Frequency tolerance ppm	Operating temperature range (in °C)	Holder type	MIL-C -3098 /xx	Rated drive level, mW
8.0-20M	CR159/U	50	-55 to +105	HC-35/U	140	2.0 ±1.0
10.0-11.5M	CR109/U	20	+80 to +90	HC-25/U	85	2.5 ±0.5
18.0-21M	CR134/U	25	+10 to +80	HC-18/U	113	5.0 ±1.0
20.0-22M	CR139/U	50	-55 to 105	HC-18/U	118	2.5 max
10.0-61M	CR52A/U	50	-55 to +105	HC-6/U	30	4.0 ±0.8 5/ 2.0 ±0.4 6/
	CR65/U	10 3/	+70 to +80	HC-6/U	43	2.0 ±0.4 5/ 1.0 ±0.2 6/
	CR113/U	10	+70 to +80	HC-18/U	89	2.0 ±0.4 5/ 1.0 ±0.2 6/
	CR148/U	50	-55 to +105	HC-6/U	129	2.0 ±0.4
16.0-61M	CR76A/U	20 30	-40 to +90 -55 to -40 +90 to +105	HC-18/U	53	2.0 ±0.4
	CR152/U	20 30	-40 to +90 -55 to -40 +90 to +105	HC-18/U	133	2.0 max
17.0-61M	CR61/U	20	+80 to +90	HC-18/U	39	2.0 ±0.4 5/ 1.0 ±0.2 6/
	CR73/U	30	-55 to +105	HC-29/U	54	2.0 ±0.4 7/
	CR84/U	20	+80 to +90	HC-25/U	61	2.0 ±0.4 5/ 1.0 ±0.2 6/
	CR128/U	50	-55 to +105	HC-18/U	108	2.0 ±0.4
	CR103/U	25	-55 to +105	HC-35/U	105	2.0 ±0.4 1.0 ±0.2 6/

See footnotes at end of table.

TABLE I. Standard crystal units (listed in order of low limit of frequency range) - Continued.

Frequency range Hz	Crystal unit type	Frequency tolerance ppm	Operating temperature range (in °C)	Holder type	MIL-C -3098 /xx	Rated drive level, mW
17.0-62M	CR55A/U	50	-55 to +105	HC-18/U	33	2.0 ±0.4
	CR67A/U	25	-55 to +105	HC-18/U	45	2.0 ±0.4
	CR77/U	20	-40 to +90	HC-25/U	55	2.0 ±0.4
	CR111/U	50	-55 to +105	HC-18/U	87	2.0 ±0.4
17.0-65M	CR81/U	50	-55 to +105	HC-25/U	58	2.0 ±0.4
62.0-75M	CR110A/U	30	-40 to +85	HC-18/U	86	2.0 ±0.4
48.0-90M	CR141/U	25	-30 to +55	HC-18/U	122	2.0 ±0.4
50.0-93M	CR108/U	10	+80 to+90	HC-26/U	84	2.0 ±0.4
45.0-100M	CR150/U	5	+70 to +80	HC27/UM	131	1.0 ±0.2
50.0-100M	CR151/U	35	-30 to +25 +30 to +70	HC-18/U	132	2.0 ±0.4
45.0-125M	CR74/U	10	+80 to +90	HC-26/U	51	1.0 ±0.2
48-125K	CR105/U	25	-40 to +90	HC-18/U	80	2.0 ±0.5
50.0-125M	CR54A/U	50	-55 to +105	HC-6/U	32	2.0 ±0.4
	CR56A/U	50	-55 to +105	HC-18/U	34	2.0 ±0.4
	CR59A/U	20	+80 to +90	HC-18/U	37	1.0 ±0.4
	CR75/U	10	+70 to +80	HC-6/U	52	1.0 ±0.2
	CR80/U	20	-40 to +90	HC-18/U	57	2.0 ±0.4
	CR82/U	50	-55 to +105	HC-25/U	59	2.0 ±0.4
	CR83/U	20	-40 to +90	HC-25/U	60	2.0 ±0.4
	CR102/U	25	-55 to +105	HC-35/U	104	2.0 ±0.4
	CR107/U	50	-55 to +105	HC-18/U	83	2.0 ±0.4
	CR116/U	25	-55 to +105	HC-18	92	2.0 ±0.4
	CR122/U	10	+80 to +90	HC-18/U	99	1.0 ±0.2
	CR123/U	10	+80 to +90	HC-18/U	100	2.0 ±0.4

See footnotes at end of table.

TABLE I. Standard crystal units (listed in order of low limit of frequency range) - Continued.

Frequency range Hz	Crystal unit type	Frequency tolerance ppm	Operating temperature range (in °C)	Holder type	MIL-C -3098 /xx	Rated drive level, mW
50.0-134M	CR98/U	15	-30 to +71	HC-25/U	73	2.0 ±0.4

1/ For frequencies up to and including 10 MHz.
2/ For frequencies above 10 MHz.
3/ Frequency tolerance at 23° temperature: ±70 ppm.
4/ Frequency tolerance at 23° temperature: ±80 ppm.
5/ For frequencies up to and including 25 MHz.
6/ For frequencies above 25 MHz.
7/ For frequencies of 17 to 30 MHz.

TABLE II. Reference listing by type designation.

Type CR_/U	MIL-C-3098/	Remarks	Type CR_/U	MIL-C-3098/	Remarks
1D	76	Special	63B*	41	Standard-table I
5A	77	"	64*	42	"
6A	78	"	65*	43	"
8A	111	"	67A*	45	"
18A	3	Standard-table I	69A*	47	"
19A	4	"	71*	49	Special
25A*	7	"	72	50	USAF
26B*	8	"	73**	54	Standard-table I
27A*	9	"	74**	51	"
28A*	10	"	75**	52	"
33A	14	Special	76A*	53	"
35A*	15	Standard-table I	77*	55	"
36A	16	"	78A*	62	"
37A*	17	"	79**	63	"
42A	21	"	80**	57	"
45	24	"	81*	58	"
46B	25	Special	82*	59	"
47A*	26	Standard-table I	83**	60	"
52A*	30	"	84**	61	"
54A*	32	"	85**	56	"
55A*	33	"	89	67	Army-ER
56A**	34	"	91	68	Special
58A	36	Maintenance only	95	70	USAF
59A*	37	Standard-table I	96	71	"
60A*	38	"	97	72	Standard-table I
61*	39	"	98	73	USAF
62	40	"	101	103	Standard-table I

* NATO Preferred Item.
** Nato Guidance Item.

TABLE II. Reference listing by type designation - Continued.

Type CR_/U	MIL-C-3098/	Remarks	Type CR_/U	MIL-C-3098/	Remarks
102	104	Standard-table I	127	106	Special
103	105	"	128	108	Standard-table I
104	79	USAF	129	110	"
105	80	Standard-table I	130	109	Special
106	82	"	131*	120	"
107	83	Standard-table I	135	114	USAF
108	84	USAF	136	115	Standard-table I
109	85	"	137	116	"
110A	86	Standard-table I	139	118	"
111	87	"	141	122	Standard-table I
112	88	Standard-table I	143	123	USAF
113	89	"	134	113	Standard-table I
114	90	USAF	148	129	USAF
116	92	Standard-table I	149	130	Standard
117	93	"	150	131	Army-ER
119*	95	Special	151	132	Special
122	99	Standard-table I	152	133	Special
123	100	"	157	137	Standard-table I
124	101	"	159	140	"
125	102	USAF	165	146	"

* NATO Preferred Item.
** Nato Guidance Item.

TABLE III. Standard oscillators, crystal.

Military Specification	Title
MIL-O-55310/4	Oscillators, Crystal, Type 3 (Temperature Compensated (TCXO)), 750 kHz Through 10 MHz, Solder Seal, Square Wave, CMOS
MIL-O-55310/5	Oscillators, Crystal, Type 3 (Temperature Compensated (TCXO)), 1 MHz Through 10 MHz, Solder Seal, Square Wave, TTL
MIL-O-55310/6	Oscillator, Crystal, Type 1 (Crystal Oscillator (XO)), 15.7 kHz Through 10 MHz, Solder Seal, Square Wave, TTL
MIL-O-55310/7	Oscillators, Crystal, Type 3 (Temperature Compensated (TCXO)), 10 MHz Through 90 MHz, Solder Seal, Sine Wave
MIL-O-55310/8	Oscillators, Crystal, Type 1 (Crystal Oscillator (XO)), 50 Hz Through 50 MHz, Hermetic Seal, Square Wave, TTL
MIL-O-55310/9	Oscillators, Crystal, Type 1 (Crystal Oscillator (XO)), 400 kHz Through 60 MHz, Hermetic Seal, Square Wave, TTL
MIL-O-55310/10	Oscillators, Crystal, Type 1 (Crystal Oscillator (XO)), 1 kHz Through 60 MHz, Hermetic Seal, Square Wave, TTL
MIL-O-55310/11	Oscillators, Crystal, Type 1 (Crystal Oscillator (XO)), 0.05 Through 10 MHz, Hermetic Seal, Square Wave, CMOS
MIL-O-55310/12	Oscillators, Crystal, Type 1 (Crystal Oscillator (XO)), 0.05 Through 10 MHz, Hermetic Seal, Square Wave, CMOS
MIL-O-55310/13	Oscillators, Crystal, Type 1 (Crystal Oscillator (XO)), 300 Hz Through 10 MHz, Hermetic Seal, Square Wave, CMOS
MIL-O-55310/14	Oscillators, Crystal, Type 1 (Crystal Oscillator (XO)), 0.1 Hz Through 25 MHz, Hermetic Seal, Square Wave, TTL
MIL-O-55310/15	Oscillators, Crystal, Type 1 (Crystal Oscillator (XO)), 0.01 Hz Through 10 MHz, Hermetic Seal, Square Wave, CMOS

TABLE III. Standard oscillators, crystal - Continued.

Military Specification	Title
MIL-O-55310/16	Oscillators, Crystal, Type 1 (Crystal Oscillator (XO)), 0.01 Hz Through 80 MHz, Hermetic Seal, Square Wave, TTL
MIL-O-55310/17	Oscillators, Crystal, Type 1 (Crystal Oscillator (XO)), Gated, 250 kHz Through 50 MHz, Hermetic Seal, Square Wave, TTL
MIL-O-55310/18	Oscillators, Crystal, Type 1 (Crystal Oscillator (XO)), 0.1 Hz Through 15.0 MHz, Hermetic Seal, Square Wave, CMOS
MIL-O-55310/19	Oscillators, Crystal, Type 1 (Crystal Oscillator (XO)), 1.0 MHz Through 60.0 MHz, Hermetic Seal, Square Wave, TTL
MIL-O-55310/20	Oscillators, Crystal, Type 1 (Crystal Oscillator (XO)), 40 kHz Through 60.0 MHz, Hermetic Seal, Square Wave, TTL
MIL-O-55310/26	Oscillators, Crystal Controlled, Type 1 (Crystal Oscillator (XO)), 100 kHz Through 65 MHz, Hermetic Seal, Square Wave, High Speed CMOS

TABLE IV. Oscillator type listing.

Type 1	(XO)	Crystal Oscillators
Type 2	(VCXO)	Voltage Controlled Crystal Oscillators
Type 3	(TCXO)	Temperature Compensated Crystal Oscillators
Type 4	(OCXO)	Oven Controlled Crystal Oscillators
Type 5	(TCVCXO)	Temperature Compensated-Voltage Controlled Crystal Oscillators
Type 6	(OCVCXO)	Oven Controlled-Voltage Controlled Crystal Oscillators
Type 7	(MCXO)	Microcomputer Compensated Crystal Oscillators
Type 8	(RbXO)	Rubidium-Crystal Oscillators

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Documents conforming to the requirements of this standard are intended for the use as military standardization documents and are listed in the DODISS. The purpose of this standard is to standardize the preparation of military standards, handbooks, drawings, and bulletins to ensure the inclusion of data and descriptions essential to the selection and application of items and processes, and to aid in the use and analysis of DOD standardization documents.

6.2 Improvements. Crystal units and oscillators having technological improvements are under experimental development. When development work of this nature has been successfully completed and the sources become available, the improved crystal units will then be recommended for inclusion as standard for new design.

6.3 Subject term (key word) listing.

Case, crystal unit
Case, crystal unit set
Crystal controlled
Crystal unit set, quartz
CMOS logic
ECL logic
Frequency standard
Microprocessor compensated
Noncrystal controlled
Oven controlled
Oven controlled, voltage controlled
Temperature compensated
Temperature compensated, voltage controlled
TTL logic
Voltage controlled

6.4 International standardization agreement. Certain provisions of this standard are the subject of international standardization agreement, NEPR No. 39. When amendment, revision, or cancellation of this standard is proposed, the department custodians will inform their respective Department Standardization Offices so that appropriate action may be taken in respect to the international agreement concerned. The United States, by the international agreement (NEPR), has agreed to the use of types of crystal units designated by NATO Nomenclature, i.e., NXT1/A on new equipment design.

6.5 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:
Army - ER
Navy - EC
Air Force - 85

Review activities:
Army - AR, MI, SM
Navy - SH
Air Force - 17, 19
DLA - ES

User activities:
Navy - AS, MC, OS

Preparing activities:
Army - ER

Agent:
DLA - ES

(Project 5955-0653)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER	2. DOCUMENT DATE (YYMMDD)
	MIL-STD-683G	23 September 1992

3. DOCUMENT TITLE: CRYSTAL UNITS(QUARTZ),CRYSTAL HOLDER (ENCLOSURES) AND OSCILLATORS

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)	b. ORGANIZATION	
c. ADDRESS (Include Zip Code)	d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (If applicable)	e. DATE SUBMITTED (YYMMDD)

8. PREPARING ACTIVITY

a. NAME	b. TELEPHONE (Include Area Code) (1) Commercial	(2) AUTOVON
Commander LABCOM	(908) 544-3441	995-3441
c. ADDRESS (Include Zip Code) ATTN: SLCET-RS Fort Monmouth, NJ 07703	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	

DD Form 1426, OCT 89 — Previous editions are obsolete. — 198/290