

**TECHNICAL MANUAL**

**ORGANIZATIONAL, DIRECT SUPPORT, AND  
GENERAL SUPPORT MAINTENANCE  
REPAIR PARTS AND SPECIAL TOOLS LISTS**

**FOR**

**SIGNAL GENERATOR  
(HEWLETT-PACKARD 8656A)**

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**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**24 SEPTEMBER 1984**

Technical Manual  
 No. 11-6625-3062-24P

HEADQUARTERS  
 DEPARTMENT OF THE ARMY  
 Washington, DC, 24 September 1984

ORGANIZATIONAL, DIRECT SUPPORT, AND GENERAL SUPPORT  
 MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST  
 FOR  
 SIGNAL GENERATOR 8656A (HP)

Current as of 13 June 1984

**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, NJ 07703.

In either case, a reply will be furnished direct to you.

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## SECTION I INTRODUCTION

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### 1. Scope

This manual lists spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE), and other special support equipment required for performance of organizational, direct support, and general support maintenance of the 8656A (HP). It authorizes the requisitioning and issue of spares and repair parts as indicated by the source and maintenance codes.

### 2. General

This Repair Parts and Special Tools List is divided into the following sections:

a. Section II. Repair Parts List. A list of spares and repair parts authorized for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in numeric sequence, with the parts in each group listed in figure and item number sequence.

b. Section III. Special Tools List. Not applicable.

c. Section IV. National Stock Number and Part Number Index. A list, in National item identification number (NIIN) sequence, of all National stock numbers (NSN's) appearing in the listings, followed by a list, in alphameric sequence, of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance.

### 3. Explanation of Columns

a. Illustration. This column is divided as follows:

- (1) Figure number. Indicates the figure number of the illustration on which the item is shown.
- (2) Item number. The number used to identify item called out in the illustration.

b. Source, Maintenance, and Recoverability (SMR) Codes.

(1) Source code. Source codes indicate the manner of acquiring support items for maintenance, repair, or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows:

<u>Code</u>	<u>Definition</u>
PA--	Item procured and stocked for anticipated or known usage.
PB--	Item procured and stocked for insurance purpose because essentiality dictates that a minimum quantity be available in the supply system.
PC--	Item procured and stocked and which otherwise would be coded PA except that it is deteriorative in nature.
PD--	Support item, excluding support equipment, procured for initial issue or outfitting and stocked only for subsequent or additional initial issues or outfitting. Not subject to automatic replenishment.
PE--	Support equipment procured and stocked for initial issue or outfitting to specified maintenance repair activities.
PF--	Support equipment which will not be stocked but which will be centrally procured on demand.
PG--	Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item peculiar to the equipment which, because of probable discontinuance or shutdown of production facilities, would prove uneconomical to reproduce at a later time.
KD--	An item of a depot overhaul/repair kit and not purchased separately. Depot kit defined as a kit that provides items required at the time of overhaul or repair.
KF--	An item of a maintenance kit and not purchased separately. Maintenance kit defined as a kit that provides an item that can be replaced at organizational or intermediate levels of maintenance.
KB--	Item included in both a depot overhaul/repair kit and a maintenance kit.

<u>Code</u>	<u>Definition</u>
MO--	Item to be manufactured or fabricated at organizational level.
MF--	Item to be manufactured or fabricated at the direct support maintenance level.
MH--	Item to be manufactured or fabricated at the general support maintenance level.
MD--	Item to be manufactured or fabricated at the depot maintenance level.
AO--	Item to be assembled at organizational level.
AF--	Item to be assembled at direct support maintenance level.
AH--	Item to be assembled at general support maintenance level.
AD--	Item to be assembled at depot maintenance level.
XA--	Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher assembly.
XB--	Item is not procured or stocked. If not available through salvage, requisition.
XC--	Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
XD--	A support item that is not stocked. When required, item will be procured through normal supply channels.

#### NOTE

**Cannibalization or salvage may be used as a source of supply for any items coded above except those coded XA and aircraft support items as restricted by AR 750-1.**

(2) Maintenance code. Maintenance codes are assigned to indicate the levels of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code format as follows:

(a) The maintenance code entered in the third position will indicate the lowest maintenance level authorized to remove, replace, and use the support item. The maintenance code entered in the third position will indicate one of the following levels of maintenance:

<u>Code</u>	<u>Application/Explanation</u>
C--	Crew or operator maintenance performed within organizational maintenance.
O--	Support item is removed, replaced, used at the organizational level.
F--	Support item is removed, replaced, used at the direct support level.
H--	Support item is removed, replaced, used at the general support level.
D--	Support item is removed, replaced, used at depot, mobile depot, or specialized repair activity only.

(b) The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). This position will contain one of the following maintenance codes:

<u>Code</u>	<u>Application/Explanation</u>
O--	The lowest maintenance level capable of complete repair of the support item is the organizational level.
F--	The lowest maintenance level capable of complete repair of the support item is the direct support level.
H--	The lowest maintenance level capable of complete repair of the support item is the general support level.
D--	The lowest maintenance level capable of complete repair of the support item is the depot level.
L--	Repair restricted to Specialized Repair Activity.
Z--	Nonreparable. No repair is authorized.
B--	No repair is authorized. The item may be reconditioned by adjusting, lubricating, etc., at the user level. No parts or special tools are procured for the maintenance of this item.

(1) Recoverability code. Recoverability codes are assigned to support items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the Uniform SMR Code format as follows:

Recoverability codes

Definition

- Z--Nonreparable item. When unserviceable, condemn and dispose at the level indicated in position 3.
- O--Reparable item. When uneconomically repairable, condemn and dispose at organizational level.
- F--Reparable item. When uneconomically repairable, condemn and dispose at the direct support level.
- H--Reparable item. When uneconomically repairable, condemn and dispose at the general support level.
- D--Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.
- L--Reparable item. Repair, condemnation, and disposal not authorized below depot/specialized repair activity level.
- A--Item requires special handling or condemnation procedures because of specific reasons (i.e., precious metal content, high dollar value, critical material or hazardous material). Refer to appropriate manuals/directives for specific instructions.

c. National Stock Number. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

d. Part Number. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

**NOTE**

**When a stock numbered item is requisitioned, the repair part received may have a different part number than the part being replaced.**

e. Federal Supply Code for Manufacturer (FSCM). The FSCM is a 5-digit numeric code listed in SB 708-41/42 which is used to identify the manufacturer, distributor, or Government agency, etc.

f. Description. Indicates the Federal item name and, if required, a minimum description to identify the item.

g. Unit of Measure (U/M). Indicates the standard of the basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr, etc.). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

h. Quantity Incorporated in Unit. Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly.

#### 4. Special Information

a. The following publication pertains to the 8656A and its components:

TM 11-6625-3062-14, Signal Generator 8656A (HP) (To be published).

b. National stock numbers (NSN's) that are missing from P source coded items have been applied for and will be added to this TM by future change/revision when they are entered in the Army Master Data File (AMDF). Until the NSN's are established and published, submit exception requisitions to: Commander, US Army Communications Electronics Command and Fort Monmouth, ATTN: DRSEL-MM, Fort Monmouth, NJ 07703 for the part required to support your equipment.

#### 5. How to Locate Repair Parts

a. When National stock number or part number is unknown.

(1) First. Using the table of contents, determine the functional group within which the item belongs. This is necessary since illustrations are prepared for functional groups and listings are divided into the same groups.

(2) Second. Find the illustration covering the functional group to which the item belongs.



(3) Third. Identify the item on the illustration and note the illustration figure and item number of the item.

(4) Fourth. Using the Repair Parts Listing, find the figure and item number noted on the illustration.

b. When National stock number or part number is known.

(1) First. Using the index of National Stock Numbers and Part Numbers, find the pertinent National stock number or part number. This index is in NIIN sequence followed by a list of part numbers in alphanumeric sequence, cross-referenced to the illustration figure number and item number.

(2) Second. After finding the figure and item number, locate the figure and item number in the repair parts list.

6. Abbreviations

Not applicable.

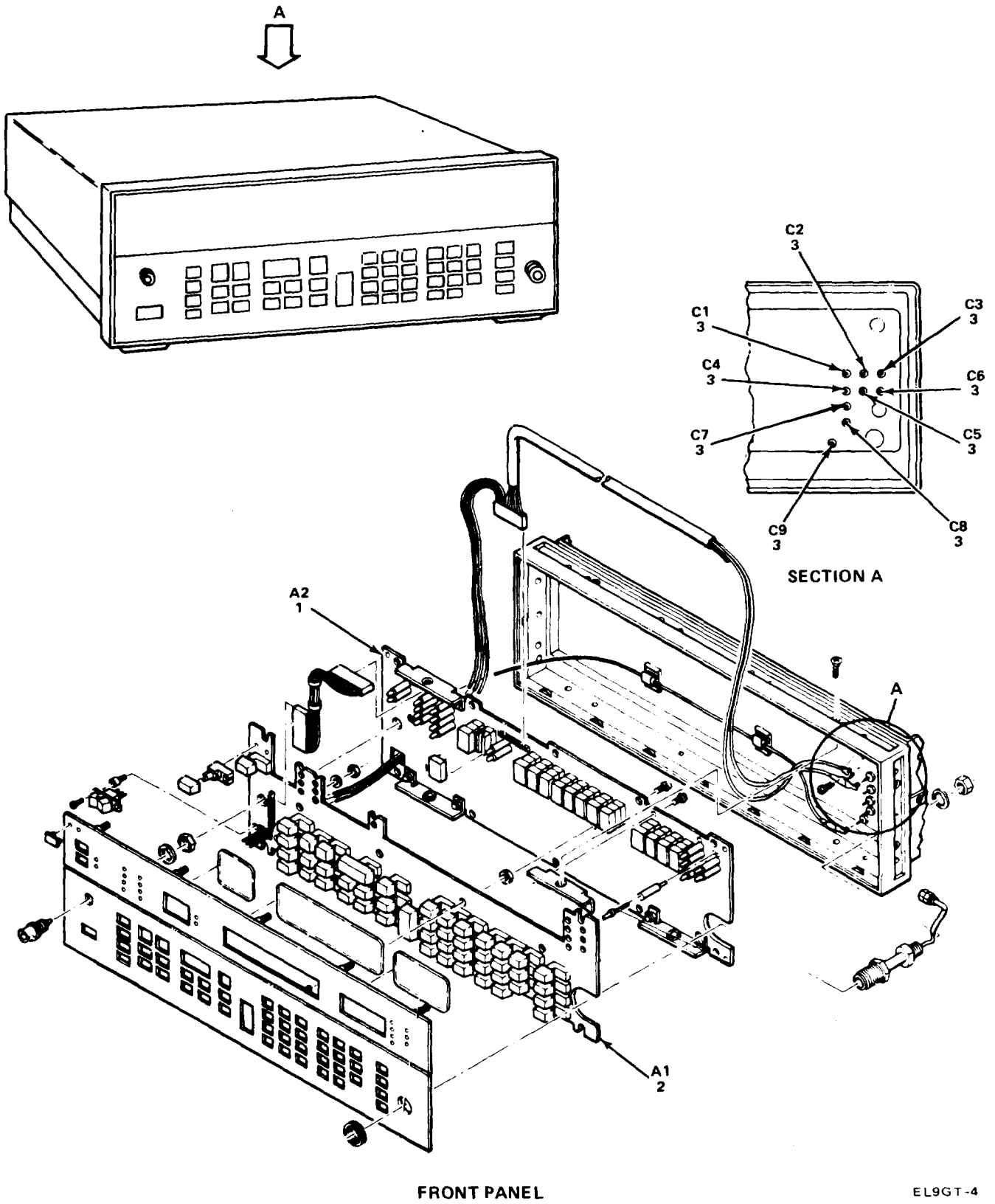


Figure 1. Signal Generator, 8656A (Sheet 1 of 6)

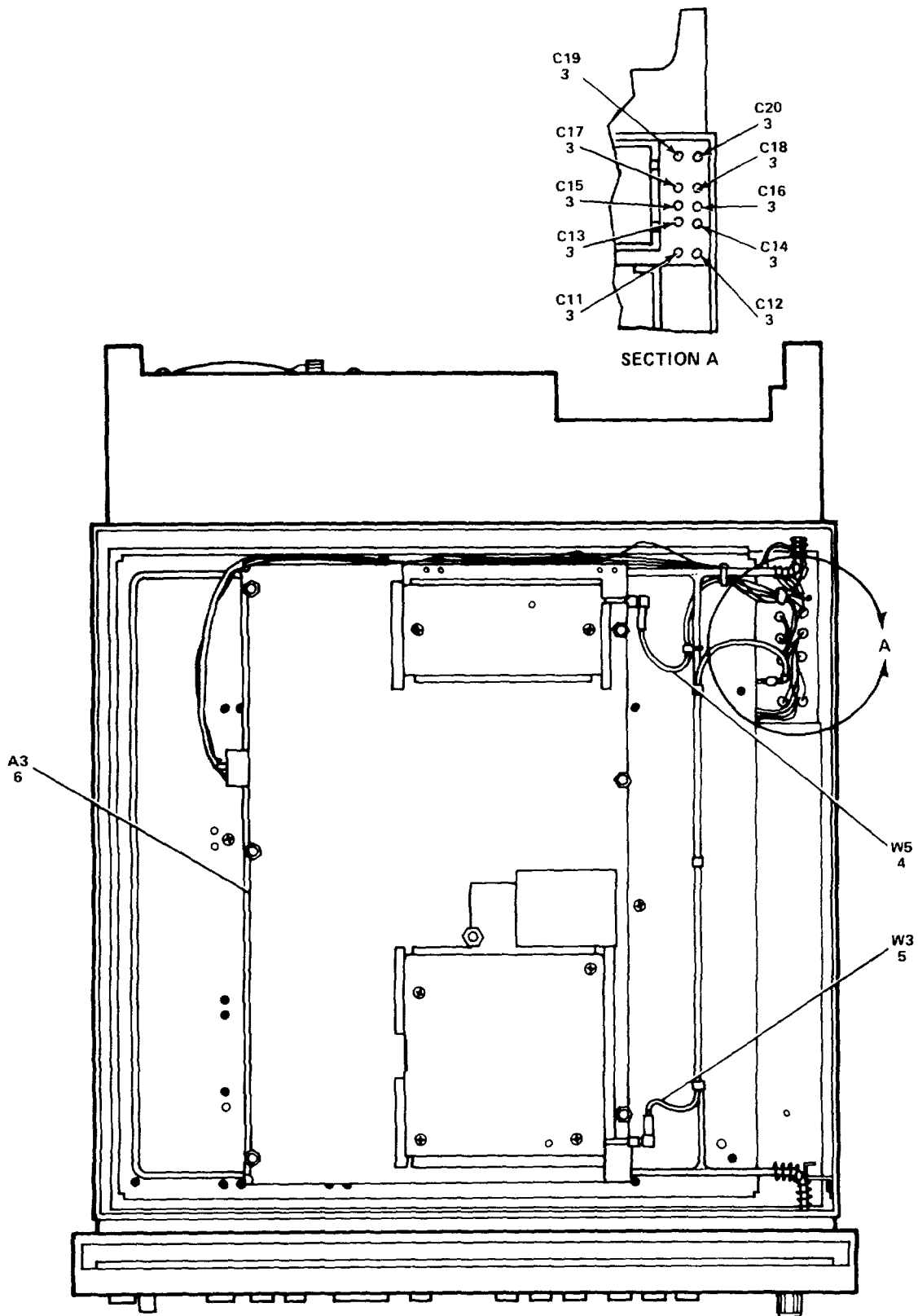
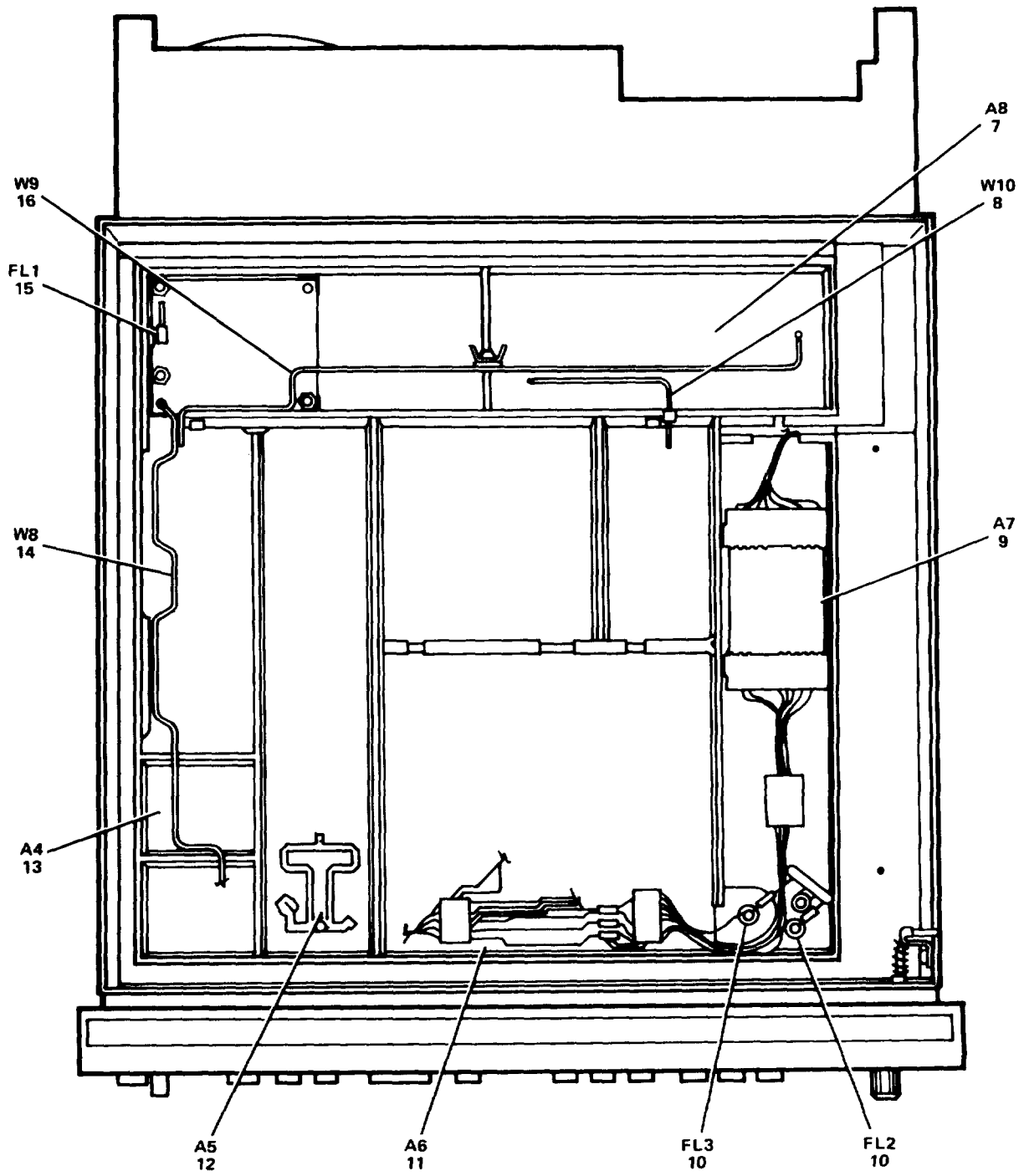


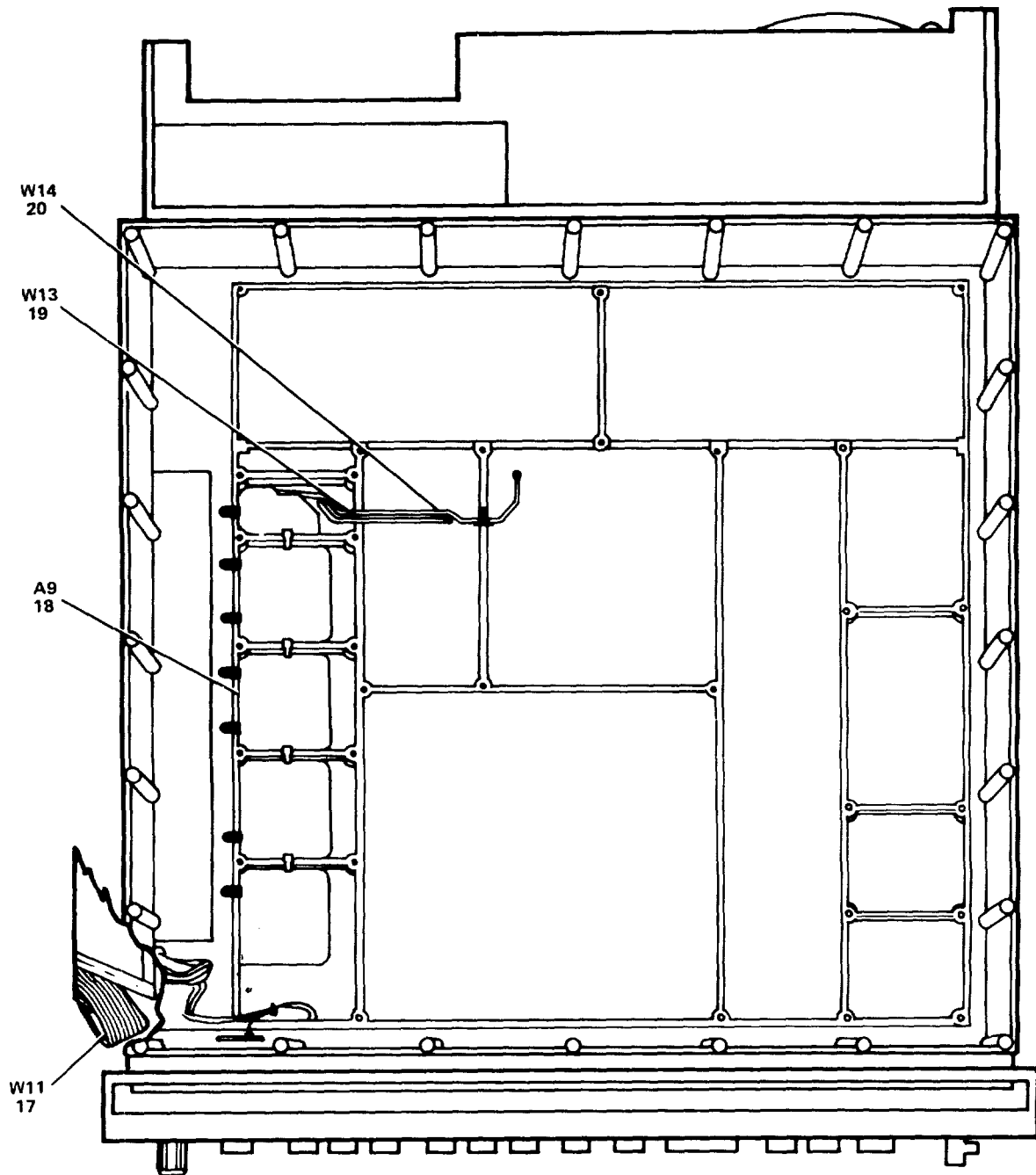
FIG. 1

Figure 1. Signal Generator, 8656A (Sheet 2 of 6)



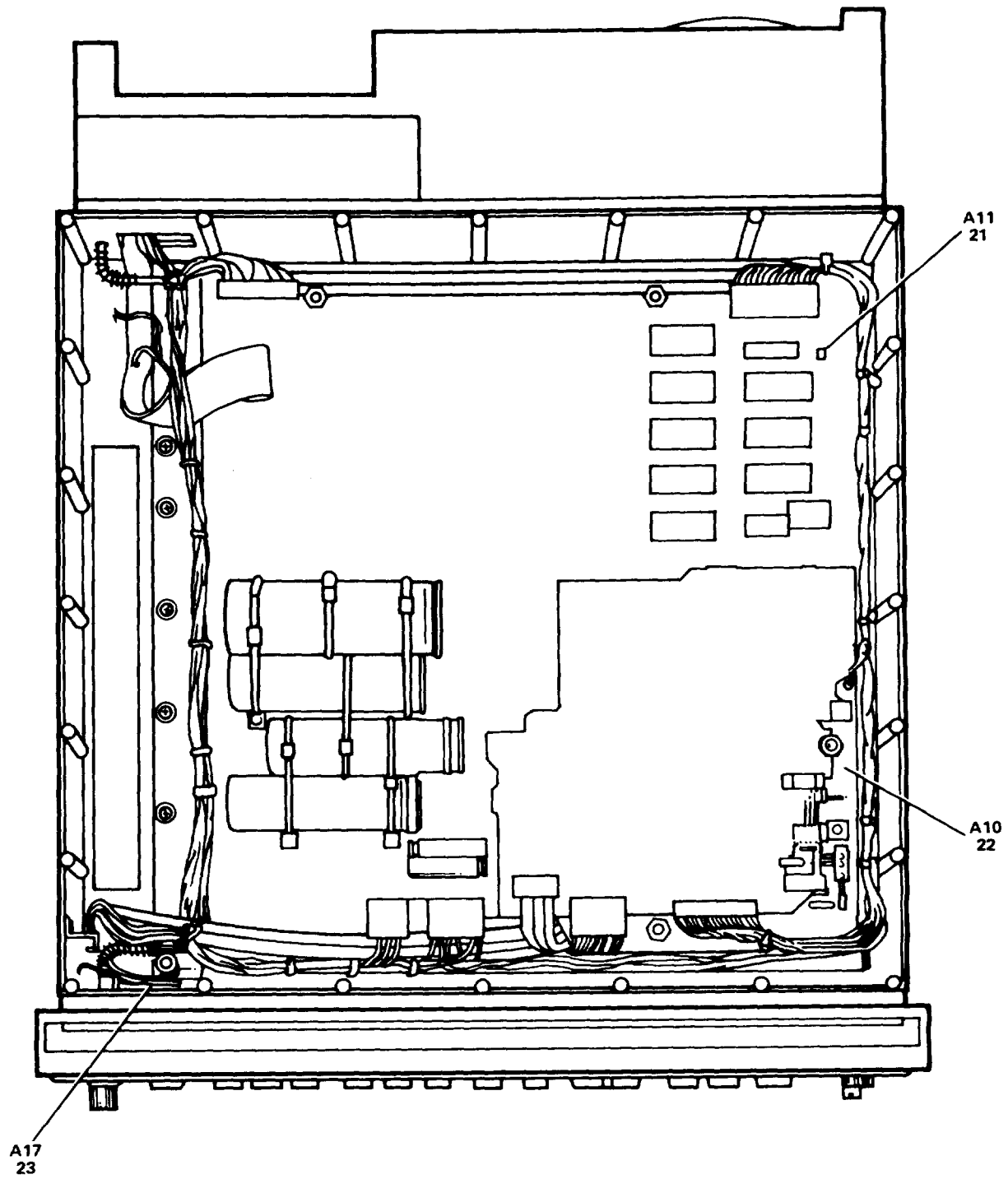
EL9GT-6

Figure 1. Signal Generator, 8656A (Sheet 3 of 6)



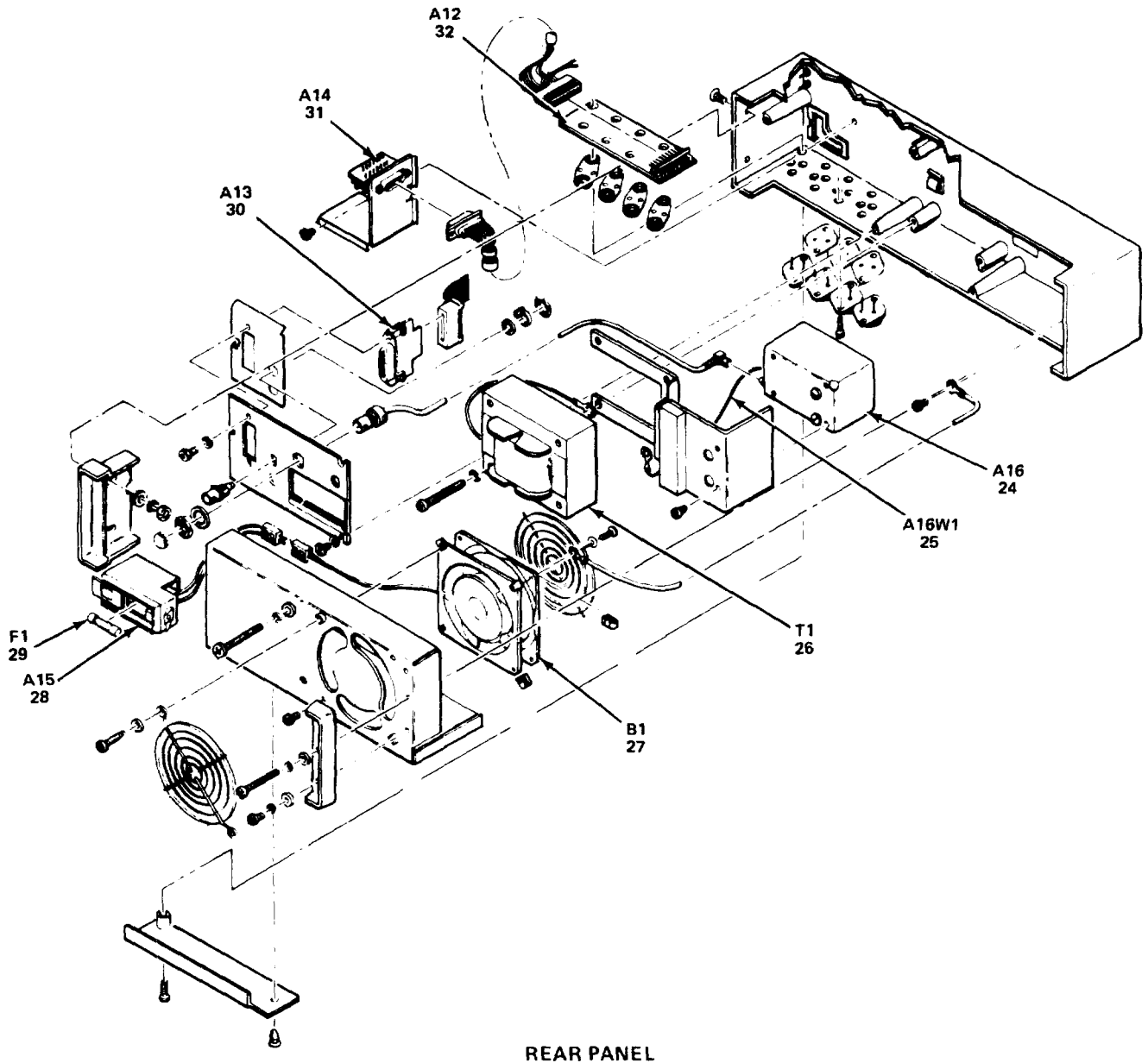
EL9GT-8

Figure 1. Signal Generator, 8656A (Sheet 4 of 6)



EL9GT-9

Figure 1. Signal Generator, 8656A (Sheet 5 of 6)



REAR PANEL

Figure 1. Signal Generator, 8656A (Sheet 6 of 6)

EL9GT-1

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6) DESCRIPTION	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	FSCM	PART NUMBER	USABLE ON CODE	U/M	QTY INC IN UNIT
						GROUP 00 SIGNAL GENERATOR 8656A (HP)		
1	1	PAHDO	5820-01-132-7403	28480	08656-60009	CIRCUIT CARD ASSEMB.....	EA	1
1	2	PAHDO	5815-01-142-1393	28480	08656-60065	KEYBOARD-TRANSMITTER .....	EA	1
1	3	PAHZZ		72982	2425-01-X5U0-10 2-M	CAPACITOR.....	EA	19
1	4	PAHZZ	6625-01-159-3114	28480	08656-60019	CABLE ASSEMBLY, SPEC .....	EA	1
1	5	PAHZZ	6625-01-159-3113	28480	08656-60020	CABLE ASSEMBLY, SPEC .....	EA	1
1	6	PAHDD	5820-01-119-4709	28480	08656-60003	ELECTRONIC COMPONENT.....	EA	1
1	7	PAHDO	5820-01-132-2933	28480	08656-60004	CIRCUIT CARD ASSEMB.....	EA	1
1	8	PAHZZ	6625-01-159-3117	28480	08656-20073	CABLE ASSEMBLY.....	EA	1
1	9	PAHZZ	5820-01-132-7872	28480	08656-60063	CIRCUIT CARD ASSEMB.....	EA	1
1	10	PAHZZ	5915-01-133-3635	28480	9135-0099	FILTER.....	EA	2
1	11	PAHDD	5895-01-142-0286	28480	08656-60118	CIRCUIT CARD ASSEMB.....	EA	1
1	12	PAHDD	5820-01-132-2939	28480	08656-60013	CIRCUIT CARD ASSEMB.....	EA	1
1	13	PAHDD	5820-01-132-2932	28480	08656-60001	CIRCUIT CARD ASSEMB.....	EA	1
1	14	PAHZZ	6625-01-159-3115	28480	08656-20022	CABLE ASSEMBLY.....	EA	1
1	15	PAHZZ	5915-01-133-3634	28480	08656-60005	FILTER.....	EA	1
1	16	PAHZZ	6625-01-159-3116	28480	08656-20019	CABLE ASSEMBLY.....	EA	1
1	17	PAHZZ	6625-01-159-3118	28480	08656-20117	CABLE ASSEMBLY.....	EA	1
1	18	PAHZZ	5985-01-117-5271	28480	08656-60018	ATTENUATOR ASSY.....	EA	1
1	19	PAHZZ	6625-01-159-3119	28480	08656-20021	CABLE ASSEMBLY.....	EA	1
1	20	PAHZZ	6625-01-159-3120	28480	08656-20017	CABLE ASSEMBLY.....	EA	1
1	21	PAHDO	5895-01-141-7311	28480	08656-60121	CIRCUIT CARD ASSEMB.....	EA	1
1	22		5895-01-141-7312	28480	08656-60006	CIRCUIT CARD ASSY .....	EA	1
1	23	PAHZZ	6625-01-159-3112	28480	08656-60081	FRONT FEED THRU ASSE .....	EA	1
1	24	PAHDD	5820-01-140-6016	28480	095-0411	OSCILLATOR SUBASSEM .....	EA	1
1	25	PAHZZ	6625-01-159-3111	28480	08656-60066	CABLE ASSEMBLY. SPEC .....	EA	1
1	26	PAHZZ	5950-01-135-2485	28480	9100-5000	TRANSFORMER, POWER.....	EA	1
1	27	PAFZO	4140-01-159-2189	28480	3160-0383	FAN, TUBEAXIAL .....	EA	1
1	28	PAHZZ	5625-00-169-8770	28480	0960-0443	TEST SET SUBASSEMBLY .....	EA	1
1	29	PAHZZ	5920-00-284-9454	75915	3131-25	FUSE, CARTRIDGE.....	EA	1
1	30	PAHZZ	6625-01-143-3924	28480	08656-60064	CIRCUIT CARD ASSEMB.....	EA	1
1	31	PAHZZ	6625-01-159-3082	28480	08656-60078	FILTER BANK ASSEMBL.....	EA	1
1	32	PAHZZ	6110-01-140-5766	28480	08656-60016	REGULATOR ASSEMBLY .....	EA	1



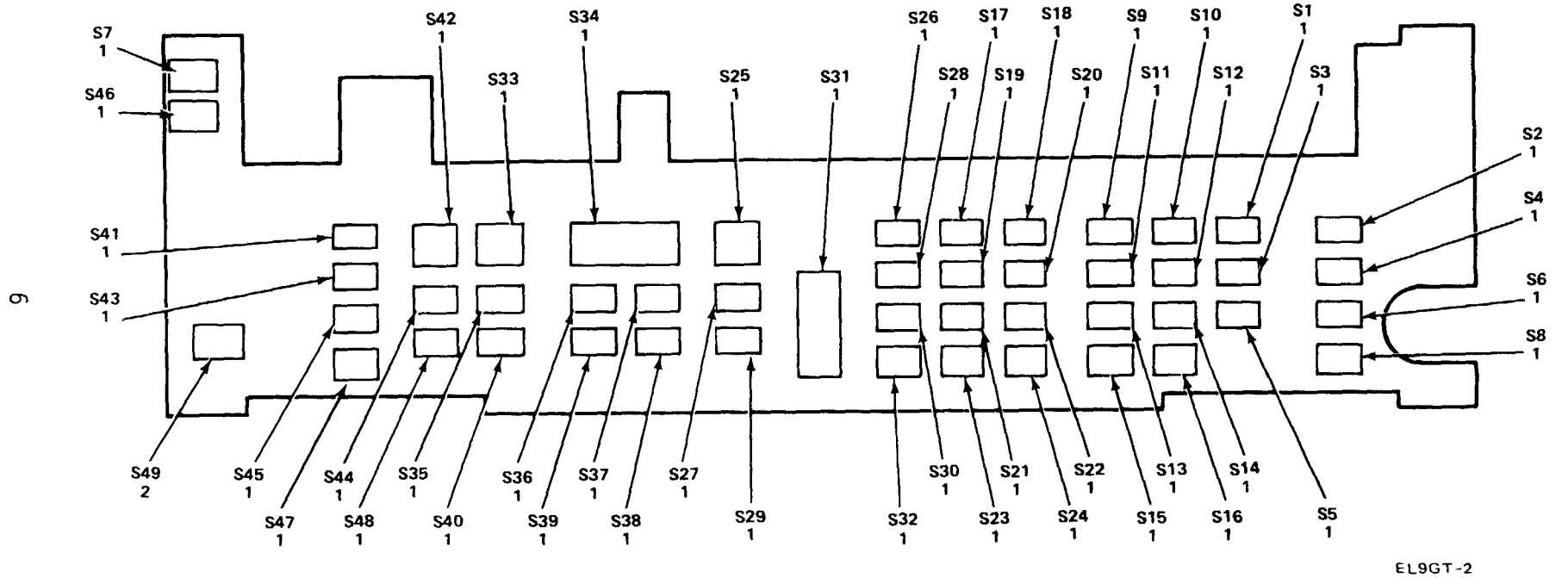


Figure 2. Keyboard Assy, 08656-60065, A1

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6) DESCRIPTION	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	FSCM	PART NUMBER	USABLE ON CODE	U/M	QTY INC IN UNIT
						GROUP 01 KEYBOARD ASSY 08656-60065 A1		
2	1	PAHZZ	5930-01-082-4289	28480	5060-9436	SWITCH, PUSH.....	EA	48
2	2	PAHZZ	5930-01-134-2827	28480	3101-2382	SWITCH, TOGGLE.....	EA	1

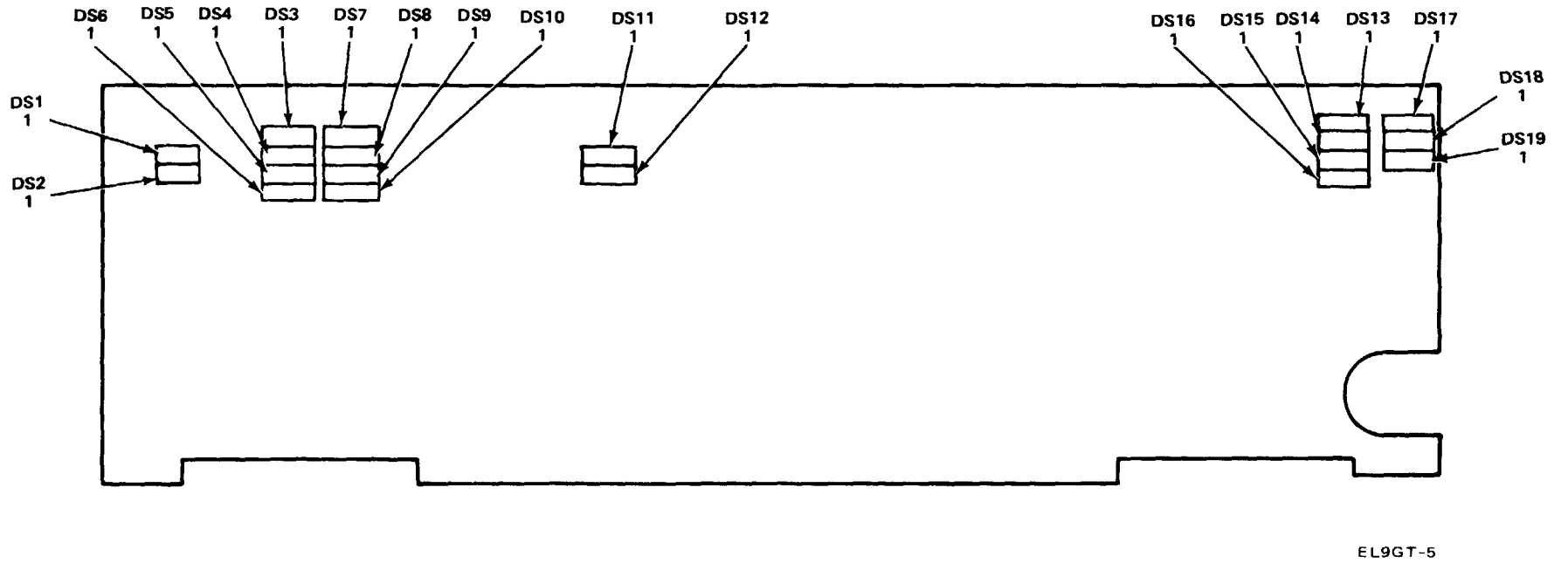


Figure 3. Display Assy, 08656-60009, A2

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6) DESCRIPTION	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	FSCM	PART NUMBER	USABLE ON CODE	U/M	QTY INC IN UNIT
3	1	PAHZZ	5961-01-081-9940	28480	5082-4684	GROUP 02 DISPLAY ASSY 08656-60009 A2 LIGHT EMITTING DIOD.....	EA	19

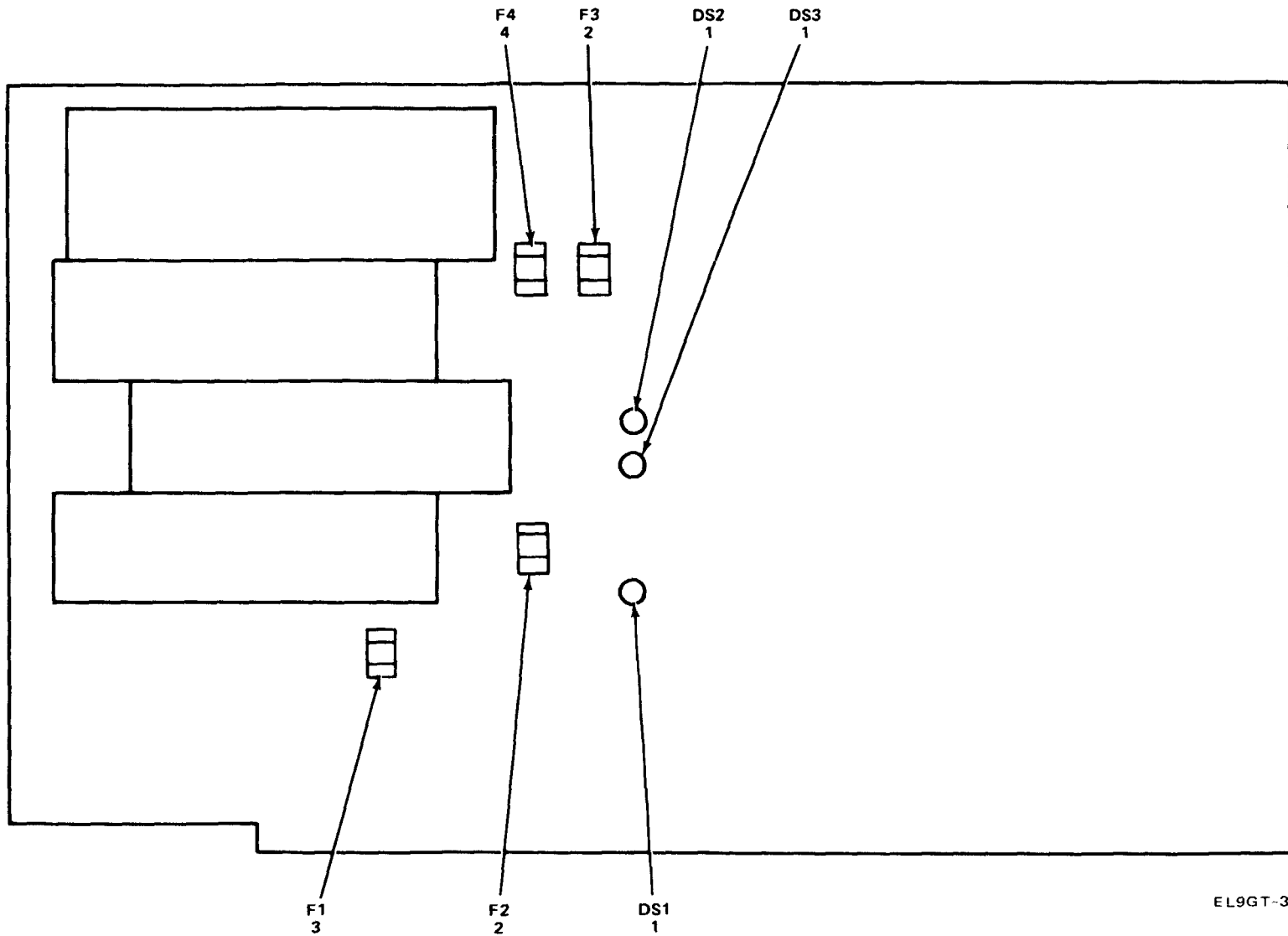


Figure 4. Audio/Power Supply Assy, 08656-60006, A10

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6) DESCRIPTION	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	FSCM	PART NUMBER	USABLE ON CODE	U/M	QTY INC IN UNIT
						GROUP 03 AUDIO/POWER SUPPLY ASSY 08656-60006 A10		
4	1	PAHZZ	5961-01-086-6619	28480	5082-4950	LIGHT EMITTING DIOD.....	EA	3
4	2	PAHZZ	5920-00-939-6968	75915	27300	FUSE, CARTRIDGE.....	EA	2
4	3	PAHZZ	5920-00-717-4488	75915	273004	FUSE, CARTRIDGE.....	EA	1
4	4	PAHZZ	5920-00-903-1008	75915	273005	FUSE., CARTRIDGE.....	EA	1

## SECTION IV

## NATIONAL STOCK NUMBER AND PART NUMBER INDEX

TM 11-6525-3062-24P

STOCK NUMBER	FIGURE NO.	ITEM NO.	STOCK NUMBER	FIGURE NO.	ITEM NO.
6625-00-169-8770	1	28	6110-01-140-5766	1	32
5920-00-284-9454	1	29	5820-01-140-6016	1	24
5920-00-717-4488	4	3	5895-01-141-7311	1	21
5920-00-903-1008	4	4	5895-01-141-7312	1	22
5920-00-939-6968	4	2	5895-01-142-0286	1	11
5961-01-081-9940	3	1	5815-01-142-1393	1	2
5930-01-082-4289	2	1	6625-01-143-3924	1	30
5961-01-086-6639	4	1	4140-01-159-2189	1	27
5985-01-117-5271	1	18	6625-01-159-3082	1	31
5820-01-119-4709	1	6	6625-01-159-3111	1	25
5820-01-132-2932	1	13	6625-01-159-3112	1	23
5320-01-132-2933	1	7	6625-01-159-3113	1	5
5820-01-132-2939	1	12	6625-01-159-3114	1	4
5820-01-132-7403	1	1	6625-01-159-3115	1	14
5820-01-132-7872	1	9	6625-01-159-3116	1	16
5915-01-133-3634	1	15	6625-01-159-3117	1	8
5915-01-133-3635	1	10	6625-01-159-3118	1	17
5930-01-134-2827	2	2	6625-01-159-3119	1	19
5950-01-135-2485	1	26	6625-01-159-3120	1	20

FSCM	PART NUMBER	FIGURE NO.	ITEM NO.	FSCM	PART NUMBER	FIGURE NO.	ITEM NO.
28480	08656-20017	1	20	28480	08656-60066	1	25
28480	08656-20019	1	16	28480	08656-60078	1	31
28480	08656-20021	1	19	28480	08656-60081	1	23
28480	08656-20022	1	14	28480	0865660118	1	11
28480	08656-20023	1	8	28480	08656-6021	1	21
28480	08656-20117	1	17	28480	0950-0411	1	24
28480	08656-60301	1	13	28480	D960-0443	1	28
28480	08656-60003	1	6	72982	2425-011-X5U0-102-M	1	3
28480	08656-60004	1	7	75915	273001	4	2
28480	08656-60005	1	15	75915	273004	4	3
28480	08656-60006	1	22	75915	273005	4	4
28480	08656-60009	1	1	28480	3101-2382	2	7
28480	08656-60013	1	12	75915	3131-25	1	29
28480	09656-60016	1	32	28480	3160-0383	1	27
28480	08656-60018	1	18	28480	5060-9436	2	1
28480	08656-60019	1	4	28480	5082-4684	3	1
28480	08656-60020	1	5	28480	5082-4950	4	1
28480	08656-60063	1	9	28480	9100-5000	1	26
28480	08656-60064	1	30	28480	9135-0099	1	10
28480	08656-60065	1	2				

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## The Metric System and Equivalents

### *Linear Measure*

1 centimeter = 10 millimeters = .39 inch  
 1 decimeter = 10 centimeters = 3.94 inches  
 1 meter = 10 decimeters = 39.37 inches  
 1 dekameter = 10 meters = 32.8 feet  
 1 hectometer = 10 dekameters = 328.08 feet  
 1 kilometer = 10 hectometers = 3,280.8 feet

### *Weights*

1 centigram = 10 milligrams = .15 grain  
 1 decigram = 10 centigrams = 1.54 grains  
 1 gram = 10 decigrams = .035 ounce  
 1 decagram = 10 grams = .35 ounce  
 1 hectogram = 10 decagrams = 3.52 ounces  
 1 kilogram = 10 hectograms = 2.2 pounds  
 1 quintal = 100 kilograms = 220.46 pounds  
 1 metric ton = 10 quintals = 1.1 short tons

### *Liquid Measure*

1 centiliter = 10 milliliters = .34 fl. ounce  
 1 deciliter = 10 centiliters = 3.38 fl. ounces  
 1 liter = 10 deciliters = 33.81 fl. ounces  
 1 dekaliter = 10 liters = 2.64 gallons  
 1 hectoliter = 10 dekaliters = 26.42 gallons  
 1 kiloliter = 10 hectoliters = 264.18 gallons

### *Square Measure*

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch  
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches  
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet  
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet  
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres  
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

### *Cubic Measure*

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch  
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches  
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

## Approximate Conversion Factors

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

## Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
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**PIN: 056519-000**