

MANUAL CHANGES

MANUAL DESCRIPTION

INSTRUMENT:	5342A Microwave Frequency Counter Operating and Service Manual
SERIAL PREFIX:	1840A
DATE PRINTED:	FEB 1979
HP PART NO:	05342-90013
MICROFICHE NO:	05342-90014

CHANGE DATE: February 14, 1980

(This change supersedes all earlier dated changes)

- Make all changes listed as ERRATA.
- Check the following table for your instrument's serial prefix or serial number and make listed change(s) to manual.

IF YOUR INSTRUMENT HAS SERIAL PREFIX OR SERIAL NUMBER	MAKE THE FOLLOWING CHANGES TO YOUR MANUAL	IF YOUR INSTRUMENT HAS SERIAL PREFIX OR SERIAL NUMBER	MAKE THE FOLLOWING CHANGES TO YOUR MANUAL
1904A	1	■ 2004A	1,2,3,4,5
1916A	1,2	■ 2008A	1,2,3,4,5,6
1936A	1,2,3		
1948A	1,2,3,4		

■ NEW OR REVISED ITEM

The following Service Notes are available from your local HP Sales and Service Office.

Service Note No.	Description
5342A-1	HP-IB Programming Notes All Serials
5342A-2	Capacitor De-bounce Addition to A2 Display Driver Fixes Keyboard Check (SET, SET, 8) Failures
5342A-3	Procedure for Selecting A3R15
5342A-4	Procedure to Select A3R16,C10
5342A-5	Procedures for Selecting A9R16
5342A-6	A14 Capacitor Addition to Fix Flickering Display Segments
5342A-7	Change in 5342A A14 ROMs
5342A-8	Increased Filtering of +5V Supply on Standard Oscillator
5342A-9	Procedure to Correct False Frequency Readout
5342A-10	Procedure for Replacing Low Frequency Input Fuse
5342A-11	Procedure for Replacing Ground Fingers on Assemblies A4, A5, and A8
5342A-12	Information to Aid in Troubleshooting A3, A4, A5, A6, A7, A8, A9, A11, A12, A13, A14, A25, and A26 Assemblies
5342A-13	"Talk Only" Problem
5342A-14	Information to Aid in Troubleshooting and Repair of A26 Sampler Driver Assembly
5342A-15	A15 HP-IB SRQ Jumper
5342A-16	Power Supply Adjustment Procedures
5342A-17	IF Troubleshooting Information
5342A-18	Power Supply Capacitor Voltage Ratings
5342A-19	Option 001 Stability Improvement

ERRATA

Page 1-5, Table 1-4, Recommended Test Equipment:

Add Frequency Counter capable of frequency measurements up to at least 350 MHz for troubleshooting A8, A9, and A10 Main Loop Synthesizer. The HP Model 5345A Electronic Counter is recommended. Use Channel A input set for 50Ω input impedance.

ERRATA (Cont'd)

Page 8-113, Table 8-15, Main Loop Synthesizer Troubleshooting:

Change text of first paragraph in step 2 to the following:

2. To test if the A8 Main VCO is operating properly, put the 5342A in MANUAL mode, 500MHz – 18GHz range, and set the MANUAL center frequency to the values in the following table. Connect a coax cable, with BNC connector on one end and alligator clips on the other, from XA5($\overline{10}$) to the 50 Ω Channel A input of a 5345A Electronic Counter. The 5345A counter will measure the MAIN OSC signal at XA5($\overline{10}$). Verify the 5345A measurement indicates the correct MAIN OSC frequency for each of the MANUAL center frequencies selected.

Page 6-32, Table 6-3, A24 (05341-60047) Replaceable Parts:

Add A24 MISCELLANEOUS; 0380-0044; CD=6; SPACER 0.25 INCH; 28480; 0380-0044.

Page 8-179, Figure 8-39, A16 (OPTION 002) Schematic Diagram:

Change color of cable to J7 pins 2 and 13 from ORN to RED.

Page 6-7, Table 6-3, A2 Replaceable Parts:

Change "Reference Designation" for A2C6 (part number 0180-0106) from "A2C6" to A2C1.

Page 6-42, Table 6-7, Replaceable Parts:

Change "Reference Designation" for A2C3 (part number 0180-0106) from "A2C3" to A2C1.

Add A2C12, C14, C15; 0180-0230; CD=0; CAPACITOR-FXD 1UF $\pm 20\%$ 50VDC TA; 56289; 150D105X0050A2.

Add A2C13; 0160-3879; CD=6; CAPACITOR-FXD 0.01 UF $\pm 20\%$ 100VDC CER; 28480; 0160-3879.

Page 8-187, Figure 8-43, P/O A22 Motherboard Schematic:

Change reference designation for "OVEN TRANSFORMER" from "T4" to T1.

Add troubleshooting information in attached Table 1 on aprons of schematic diagrams as specified in the table.

Page 6-41, Table 6-6, Option 003 Miscellaneous Replaceable Parts:

Add 5000-9043; CD=6; PIN: P.C. BOARD EXTRACTOR; 28480; 5000-9043.

Add 5040-6852; CD=3; EXTRACTOR, ORANGE; 28480; 5040-6852.

Page 8-149, Figure 8-24, A2 REFERENCE DESIGNATIONS Table:

Change "C19" under "Deleted:" to C9.

Page 1-2, Table 1-1, Specifications:

Change 10544As Short Term Stability to $<1 \times 10^{-10}$ for 1 second average time.

Page 1-2, Table 1-1, Specifications:

Change "INPUT 1 INPUT CHARACTERISTICS" for "Manual Mode of Operation" to read as follows:

Manual: Center frequency entered to within ± 40 MHz TYPICAL of true value; ± 25 MHz TYPICAL for frequencies below 825 MHz.

NOTE — This change in specifications applies to all places in this manual where the center frequency for MANUAL operation states " ± 50 MHz."

ERRATA (Cont'd)

Table 1. Troubleshooting Information

The following charts are provided as an aid to troubleshooting 5342A assemblies A3 thru A9, A11 thru A14, A25, and A26. This information was to be published in the permanent 5342A manual but was inadvertently omitted. Its intended location was the apron of the appropriate assembly schematic diagram.

A3 DIRECT COUNT AMPLIFIER

CONDITIONS: No signal input and A17 removed from instrument.

Q1	Q2	Q3	Q4	Q5	Q6
E -0.8	D -0.09	D +5	E -1.2	E -1.0	E -5.15
B -0.1	S -5.0	S -0.09	B -1.9	B -0.3	B -4.4 (50Ω); -5.1 (1 MΩ)
C +5	G -5.15	G +0.0	C -5.15	C +0.0	C -5.1 (50Ω); -2.9 (1 MΩ)
Q7	Q8	Q9	Q10		
E -5.15	E -0.7	E -0.7	E -1.7		
B -5.1 (50Ω); -4.5 (1 MΩ)	B -0.72	B -0.04	B -1.0		
C -2.9 (50Ω); -5.1 (1 MΩ)	C -0.0	C -0.54	C -0.3		
U3	U5	U6	U7		
1 +0.27 (50Ω); +1.23 (1 MΩ)	1 -5.15	1 -5.15	1 -5.15		
2 -0.37	2 -0.64	2 -0.33	2 -1.93 (50Ω); -1.88 (1 MΩ)		
3 -0.37	3 -0.64	4 -0.37	3 -0.00		
4 -5.15	4 -0.64	7 -5.11	4 -1.74		
5 -1.4	5 0.0	8 -0.34	5 -1.74		
6 -1.3	6 0.0		5 -1.75		
7 +4.5	7 -1.8		6 -0.00		
8 +5.0	8 -0.37		7 -1.9 (50Ω); -3.3 (1 MΩ)		
			8 -3.3 (50Ω); -1.9 (1 MΩ)		

A4 OFFSET VCO ASSEMBLY

CONDITIONS: No signal input, 5342A in CHECK mode
Junction of varactors CR2 to CR3, V = +1.4 in CHECK mode.

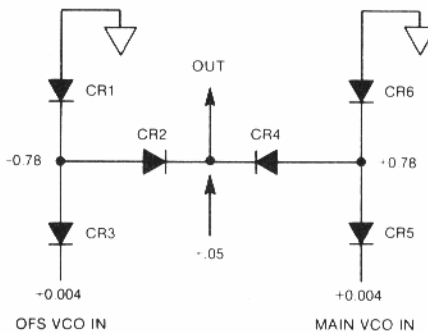
Q1	Q2	U1	U2
E +8.0	E +3.0	1 -0.02	1 -0.03
B +8.6	B +3.5	3 -2.27	3 -3.02
C +15.1	C +7.5	5 +4.0	5 +3.55
		7 +4.83	7 +4.78
		8 +4.02	8 +3.67

A5 RF MULTIPLEXER ASSEMBLY

CONDITIONS: 5342A in CHECK mode. Disconnect A5W1 from A26J2.

U1	U2	U3	U4	Q1	Q2	Q3
1 0.0	1 0.0	1 -0.74	1 0.0	E +3.56	E +2.2	E +2.2
3 -2.36	2 -0.68	2 -0.74	3 -2.36	B +2.85	B +1.50	B +3.6
5 +3.91	3 -0.68	3 -0.74	5 +3.91	C +2.2	C +0.82	C -0.8
7 +4.58	3 -0.68	3 -0.74	7 +4.58			
8 +3.85	4 +0.05	4 0.0	8 +3.84			
	5 +4.38	5 +4.2				
	8 +4.38					

DIODE SWITCH SIMPLIFIED DRAWING



ERRATA (Cont'd)

Table 1. Troubleshooting Information (Continued)

The following charts are provided as an aid to troubleshooting 5342A assemblies A3 thru A9, A11 thru A14, A25, and A26. This information was to be published in the permanent 5342A manual but was inadvertently omitted. Its intended location was the apron of the appropriate assembly schematic diagram.

A6 OFFSET LOOP AMPLIFIER ASSEMBLY

CONDITIONS: No signal input, 5342A in CHECK mode

Q1	Q2	Q3	Q4	U2	NOTE Junction of CR4, CR3: +1.58V
E +1.3	E +12.4	E -12.1	E +5.05	2 +1.6	
B +0.7	B +13.0	B -12.8	B +5.3	3 +1.6	
C -11.0	C +15.1	C -14.7	C 0.0	4 -12.1	
				6 +1.9	
				7 +12.4	

CONDITIONS: A7 Assembly removed; 5342A in CHECK mode

Q4	U2	NOTE
E -5.05	2 +1.54	Junction of CR4, CR3: +1.54
B -4.42	3 +1.58	
C -4.37	4 -12.1	
	6 +0.15	
	7 +12.4	

A7 MIXER/SEARCH CONTROL ASSEMBLY

CONDITIONS: A4 and A8 VCO assemblies removed from instrument.

U3	U4	Q1	Q2	Q3	Q4	Q5	Q6
1 -0.01	1 -0.01	E -0.75	E 0.0	E -1.3	E -0.7	E 0.0	E -0.7
3 -2.4	3 -3.5	B -0.00	B -0.5	B -0.6	B -0.1	B -0.6	B 0.0
5 +3.8	5 +3.1	C -0.5	C +4.8	C -4.8	C -4.8	C -4.8	C 0.0
7 +4.7	7 +4.6						
8 +4.1	8 +3.5						

CONDITIONS: 5342A in CHECK MODE

NOTE U3 and U4 voltages approximately the same as with VCO's removed.

Q1	Q2	Q3	Q4	Q5	Q6
E -0.5	E 0.0	E -1.3	E -2.8	E 0.0	E -0.5
B -0.0	B +0.36	B -0.6	B -3.4	B -0.7	B -0.01
C +0.7	C -1.7	C +4.8	C +4.8	C +0.02	C 0.0

A8 MAIN VCO ASSEMBLY

CONDITIONS: 5342A In CHECK mode

Q1	Q2	U1	U2	U3
E +2.8	E +7.5	1 -0.01	1 -0.02	1 -0.02
B +3.4	B +8.2	3 -2.3	3 -2.8	3 -3.0
C +7.1	C +15.1	5 +4.0	5 +3.7	5 +3.5
		7 +4.8	7 +4.7	7 +4.7
		8 +4.0	8 +3.7	8 +3.6

A9 MAIN LOOP AMPLIFIER ASSEMBLY

CONDITIONS: 5342A in CHECK mode

Q1	Q2	Q3	Q4	U2
E -5.3	E +5.7	E -5.7	E -5.7	2 -1.57
B -5.9	B +5.0	B +6.2	B +6.3	3 -1.58
C -14.7	C +5.7	C -5.3	C +15.1	6 -1.79

CONDITIONS: 5342A NOT in CHECK mode

Q2	Q3
E +5.7	E -5.7
B -6.2	B +5.0
C -5.3	C +5.7

ERRATA (Cont'd)

Table 1. Troubleshooting Information (Continued)

The following charts are provided as an aid to troubleshooting 5342A assemblies A3 thru A9, A11 thru A14, A25, and A26. This information was to be published in the permanent 5342A manual but was inadvertently omitted. Its intended location was the apron of the appropriate assembly schematic diagram.

A11 IF LIMITER ASSEMBLY

CONDITIONS: No input signal, NOT in CHECK mode

U1 (With 5342A in CHECK mode)

U1	U2	
1 0.0	1 0.0	2 +0.24
2 +0.18	3 -3.25	3 +0.05
3 +0.25	5 +3.3	7 +4.9
4 -5.1	7 +4.3	
5 +4.8	8 +3.2	
7 +0.19		
8 +5.0		

A12 IF DETECTOR ASSEMBLY

CONDITIONS: No input signal, NOT in CHECK mode

U2	U4	Q1		NO INPUT SIGNAL	CHECK MODE
1 0.0	1 0.0	E -1.6			
3 -3.3	3 -3.5	B -1.3		TP1 +0.27	-0.25
5 +3.0	5 +2.1	C +1.6		TP2 +0.05	+0.10
7 +4.2	7 +4.2			TP3 +0.18	+4.8
8 +3.1	8 +2.8	grounded case			

A13 COUNTER ASSEMBLY

CONDITIONS: No input signal; SAMPLE RATE to HOLD

Q1	Q2	Q3
E -2.4	E -1.9	E -1.9
B -1.8	B -1.3	B -1.7
C -0.0	C +5.0	C +5.0

A14 MICROPROCESSOR ASSEMBLY

Signature Chart:

With the test set-up described in Table 8-9, steps 1, 2, 3, the following signatures should be observed:

PIN	U5	U6	U8	U9	U10	U11	U13	U17	U18	U20	U22	U14	U16
1	----	3281	0000	0003	0003	0003	0356	4378	0000	UUUF	0003*	U75A	0000
2	----	0000*	0002	0003	0000	0003	1H3U	P760	U759	FFFU	0000*	6F99	UUUU
3	0000	3282	0001	486C	4FC9	0000	5P44	1U5H	U75A	8487	0003*	7792	UUUF
4	P076	560P	9UP1	9UP2	4FCA	0000	C531	F963	7791	1C2C	0000*	0000*	8484
5	84UA	3281	9UP2	0001	0355	0000	8487	2U28	7792	0000*	0003*	3APP	8487
6	648F	648F	4868	5FUA	0356	0003	18AP	1P2A	37C5	0003	0003*	6322	1U5P
7	0000	0000	486C	0000	0000	0000	0000	CC1A	37C6	FF48	0000	1H3U	1U5H
8	0003*	0003	0000	32U8	6U28	AH9F	3APP	0000	0000	0000	U05H	0000	0000
9	0000*	0000	4FC9	4FC9	6U2C	C532	32U8	9H1F	6U2C	7311	9H1F	0C6A	0355
10	0000*	0000	4FCA	6U2C	0003	8487	5FUA	6H41	6U28	9FF7	6H41	P076	0356
11	0003	9UP2	0003	37C6	0000	0003	4378	1C2C	6322	A732	0000*	84UA	P760
12	0000	486C	0000	3282	C532	560P	1H3U	C531	6321	A9FU	0000*	9569	P763
13	6322	3281	AH9F	3281	C531	0000	0355	1U5H	6F99	6A70	0003	94F1	FFFU
14	0003	0003	0003	0003	0003	0003	0003	P760	6F9A	1A9U	0003	CCUC	FFFF
15	----	----	AH9F	----	----	----	----	5P44	0000	46A4	----	9945	0000
16	----	----	0003	----	----	----	----	0003	0003	0003	----	0003	0003

*Probe blinks

ERRATA (Cont'd)

Table 1. Troubleshooting Information (Continued)

The following charts are provided as an aid to troubleshooting 5342A assemblies A3 thru A9, A11 thru A14, A25, and A26. This information was to be published in the permanent 5342A manual but was inadvertently omitted. Its intended location was the apron of the appropriate assembly schematic diagram.

A25 PREAMPLIFIER ASSEMBLY

CONDITIONS:

No Input Signal.
 No Sampler Driver Input (Disconnect cable from A26J2)
 Be sure to ground A26 ground to chassis ground with clip lead.

Q1	Q2	U1	U2	U3	Q3
E +0.09	E +0.04	(7) +4.36	(7) +4.37	(2) -0.28	E -12.11
B +0.87	B +0.79	(8) +3.51	(8) +3.07	(3) +0.28	B -11.37
C +4.34	C +5.00	(1) -0.01	(1) +0.02	(7) +0.30	C -12.10
		(5) +3.51	(5) +4.02		
		(3) -2.93	(3) -2.90		

Q4

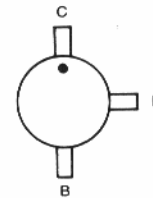
E 0V
 B 0.685 [-.16 if LOVL line grounded (U4, pin 3)]
 C 0.03 [14.54 if LOVL line grounded (U4, pin 3)]

Q5

E +12.16 [14.55 if LOVL line grounded (U4, pin 3)]
 B +11.41 [14.55 if LOVL line grounded (U4, pin 3)]
 C +12.15 [9.81 if LOVL line grounded (U4, pin 3)]

Q6

E +12.16 [+9.81 if LOVL line grounded (U4, pin 3)]
 B +11.45 [+9.115 if LOVL line grounded (U4, pin 3)]
 C +12.16 [+9.80 if LOVL line grounded (U4, pin 3)]



Q1 AND Q2

A26 SAMPLER DRIVER ASSEMBLY

CONDITIONS:

Ground sampler driver to chassis.
 Disconnect cable at A26J2.
 No signal input, no output.

Q1	U1	CR2	CR1
E -5.19	1 +2.75	Anode -5.187	Anode 0V
B -5.19	2 -1.55	Cathode -5.19	Cathode -0.03
C -0.17	3 -0.82		
	4 0 (Not Used)		
	5 0 (Not Used)		
	6 -0.80		
	7 -0.16		
	8 +5.02		

■ **ERRATA (Cont'd)**

- Page 8-183, Figure 8-41, Reference Designation and Table of Active Elements:
Change both tables to agree with the following tables:

REFERENCE DESIGNATIONS	TABLE OF ACTIVE ELEMENTS		
A17	REFERENCE DESIGNATION	HP PART NUMBER	MFR OR INDUSTRY PART NUMBER
C1-C19	CR1	1902-3182	FZ7268
CR1	Q1	1854-0560	SP36740
Q1, Q2	Q2	1853-0036	Same
R1-R23	U1, U2	1820-1430	AM74LS161N
TP1-TP8	U3, U8, U12, U13	1820-1197	SN74LS00N
U1-U20	U4, U5, U7	1820-1433	SN74LS164N
	U6	1820-1211	SN74LS86N
	U9, U14, U15	1820-1112	SN74LS74N
	U10	1820-1202	9LS10PC
	U11	1820-1442	SN74LS290N
	U16	1820-1180	MK5009P
	U17	1820-1225	MC10231P
	U18	1820-1254	DM8095N
	U19	1820-1196	AM74LS174N
	U20	1820-1255	DM8098N

CHANGE 1 (Serial Prefix 1904A)

Pages 6-33 and 6-34, Table 6-3, A25 (05342-60025) Replaceable Parts:

- Change A25 from SERIES 1804 to SERIES 1904.
- Delete A25C32 capacitor HP Part No. 0160-4082.
- Delete A25CR3 and CR4 diodes HP Part No. 1901-0040.
- Delete A25Q3 transistor HP Part No. 1854-0071.
- Delete A25R35 resistor HP Part No. 0698-7241.
- Delete A25R37 resistor HP Part No. 0698-7259.
- Delete A25R38 resistor HP Part No. 0698-7253.

NOTE: The above parts serve no electrical function on circuit board assembly A25.

Page 8-191, Figure 8-45, A25 Schematic Diagram:

- Change series number at top of diagram from 1804 to 1904.
- Delete A25C32, CR3, CR4, Q3, R35, R37, and R38.
- Make appropriate changes in REFERENCE DESIGNATIONS table and TABLE OF ACTIVE ELEMENTS.

Page 6-36, Table 6-3, Miscellaneous Replaceable Parts:

- Add 1400-0985; CD=1; CLAMP, RIBBON CABLE; 28480; 1400-0985.

CHANGE 2 (Serial Prefix 1916A)

Page 6-5, Table 6-3, A1 (05342-60001) Replaceable Parts:

- Change A1 from SERIES 1720 to SERIES 1916.
- Change A1DS1 thru A1DS8 to 1990-0670 in HP Part Number and Mfr Part Number columns.
- Change CD column from "7" to "0".

Page 8-149, Figure 8-24, A1 Schematic Diagram:

- Change SERIES 1720 at top of A1 diagram of Display Assembly to SERIES 1916.

NOTE — Instruments with a Serial Prefix of 1916A and serial numbers listed below have SERIES 1936 circuit boards for A21. See CHANGE 3 for details on SERIES 1936 circuit boards for A21.

- 1916A02021, 02070, 02076, 02078 thru 02081, 02083, 02085, 02086, 02089 thru 02091, 02098 thru 02104, 02106 thru 02109, 02112, 02113, 02114, 02116, 02117, 02119, 02120, and 02125 thru 02175.

CHANGE 3 (Serial Prefix 1936A)

Page 6-30, Table 6-3, A21 (05342-60021) Replaceable Parts:

Change A21 from "(SERIES 1804)" to (SERIES 1936).

Change A21C6 from 0180-0210 (3.3UF 15V) to 0180-0291; CD=3; CAPACITOR-FXD 1UF +-10% 35VDC TA; 56289; 150D105X9035A2.

Change A21C9 from 0180-0210 to 0180-0230; CD=0; CAPACITOR-FXD 1UF +-20% 50VDC TA; 56289; 150D105X0050A2.

Page 8-187, Figure 8-43, A21 (05342-60021) Schematic Diagram:

Change A1 from SERIES 1804 to SERIES 1936.

Change the values of A21C6 and C9 from 3.3 to 1.0 UF.

Page 6-32, Table 6-3, A22 (05342-60022) Replaceable Parts:

Change A22 series number from 1720 to 1936.

Page 8-189, Figure 8-44, A24 Schematic Diagram:

Add a connection between XA24 terminals 10, $\overline{10}$ and 11, $\overline{11}$.

CHANGE 4 (Serial Prefix 1948A)

Page 6-17, Table 6-3, Replaceable Parts:

Change A10 05342-60010 from Series 1720 to 1948.

Add A10XU12 1200-0473 1 Socket IC.

Page 8-166, Figure 8-33, A10 Component Locator:

Add, near photo, NOTE: U12 is in socket (Serial Prefix 1948) at top of schematic, change Serial Prefix to 1948.

Same instruments with Serial Prefix 1936A also have the following changes:

Page 6-5, Table 6-3, A1 (05342-60001) Replaceable Parts:

Change A1 series number from 1916 to 1948.

Change A1Q3 and Q12 from 1853-0318 to 1853-0016; CD=8; TRANSISTOR PNP SI PD=300MW FT=100 MHz; 28480; 1853-0316.

Page 8-149, Figure 8-24, A1 Schematic Diagram:

Change A1 series number from 1916 to 1948.

Change A1Q3 and Q12 in TABLE OF ACTIVE ELEMENTS to 1853-0016.

NOTE — The 1853-0016 transistor is recommended for replacement of A1Q3 and Q12 in all 5342A instruments.

■ **CHANGE 5 (Serial Prefix 2004A)**

■ Page 1-2, Table 1-1, Specifications:

Change "Maximum Input" level for "INPUT 1:" to +7 dBm.

■ Page 3-3, Paragraph 3-37, Maximum Input Signal Power:

Change +5 dBm to +7 dBm in lines 2, 5, and 6.

■ **NOTE** — The maximum input level should be considered to be +7 dBm anywhere in the Operating Service Manuals where +5 dBm is specified.

Page 1-3, Table 1-1, Model 5343A Specifications (Cont'd):

Add the following:

FREQUENCY EXTENSION TO 24 GHz OPTION 005

Option 005 provides the ability to measure frequency up to 24 GHz. Option 005 is not compatible with Options 002 or 003.

INPUT 1:

Frequency Range: 500 MHz to 24 GHz.

Sensitivity: 18 GHz to 24 GHz -15 dBm.

Maximum Operating Level: +7 dBm.

Dynamic Range: 18 GHz to 24 GHz 22 dB.

Temperature Range: 0°C—50°C, nominal.

Damage Level: +25 dBm, peak

SWR: <3:1 TYPICAL.

Page 6-36, Table 6-3, Replaceable CHASSIS PARTS:

Add U1; 5088-7052; CD=7; SAMPLER ASSEMBLY (OPTION 005 ONLY); 28480; 5088-7052.

NOTE — The following Serial Prefix 1936A instruments have Option 005:

1936A02331	1936A02364
1936A02352	1936A02377
1936A02359	1936A02425

- Page 3-17, Paragraph 3-52, Operator Error Displays:
Delete "Excessive Signal Level Display" for "Frequency" and "Amplitude (Option 002)".
Delete footnote indicated by †.
- Page 8-59, Paragraph 8-124, A12 Bit D4 LOVL Input:
Delete all of paragraph 8-214.
- Page 8-171, Figure 8-35, A12 Schematic Diagram:
Change "FROM A25, C29" at A12 pin 14 to NOT USED.
- Page 8-191, Figure 8-45, A25 Schematic Diagram:
Change "TO XA12(14) VIA A22" AT "OVL" terminal to NOT USED.
- **CHANGE 6 (Serial Prefix 2008A)**
- Page 6-42, Table 6-7, A2 (05342-60028) Replaceable Parts:
Change A2 series number from 1828 to 2008.
- Page 8-151, Figure 8-25, A2 Option 004 Schematic Diagram:
Add SERIES 2008 at top of diagram.
Add a connection between A2J2 common and chassis ground.

NOTE — This ground connection consists of an added trace on the A2 circuit board between the shell of A2J2 and a ground pad for an adjacent circuit board mounting screw. All instruments with Serial Prefix 2008A or above will have this added connection.