

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

MANUAL UPDATING COVERAGE	MANUAL IDENTIFICATION
This supplement adapts your manual to Serial Numbers prefixed through: 3708A	**Instrument:** HP 5087A Distribution Amplifier Operating and Service Manual **Manual Part Number:** 05087-90008 **Manual Print Date:** September 1996

ABOUT THIS SUPPLEMENT

The information in this supplement is provided to correct manual errors and to adapt the manual to instruments containing changes after the manual print date.

Change and correction information in this supplement is itemized by page numbers corresponding to the original manual pages. The pages in this supplement are organized in numerical order by manual page number.

HOW TO USE THIS SUPPLEMENT

Insert this title page in front of the title page in your manual.

Perform all changes specified for "All Serials", and all changes through the Series Prefix of your instrument or board.

Insert any complete replacement pages provided into your manual in the proper location. The following pages are included in this update package: Title Page, 6-13/14.

If your manual has been updated according to the last edition of this supplement, you need only perform those changes pertaining to the new series prefix; see List of Effective Pages. New information affecting "All Serials" will be indicated by a "#" in front of the change.

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

LIST OF EFFECTIVE PAGES

#All Serials..... Title Page, 1-2, 1-5, 5-9, 6-4 thru 6-12, 6-13/14, 8-15, 8-19, 8-25.

PLEASE NOTE

This instrument incorporates a new method for tracking changes to its circuit boards. Starting July 1, 1988, all circuit boards will be labeled with a unique serial number. The SERIAL number will replace the previously used SERIES number, even though there may have been no change to the circuit board. Thus, if changes were made after July 1, 1988, they will be documented in this change sheet using the new circuit board SERIAL number. Changes made before that time are documented with the SERIES number.

Therefore, Circuit changes described in this change sheet may reference either the older SERIES number or the new SERIAL number. Using both numbers enables this change sheet to support both older and newer products. To determine which changes apply to your instrument, find the instrument's serial number prefix located on the rear panel, and make the manual changes indicated in this change sheet for that serial number prefix. For example, if the serial number is 2804A12345, make changes to the manual indicated for serial prefix 2804.

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

MANUAL CHANGES, MODEL 5087A (05087-90008)

All affected pages
#All Serials
> Change "HP" to "Agilent" throughout
> Change "Hewlett-Packard Company" to "Agilent Technologies" throughout

PAGE 1-2. GENERAL INFORMATION:

All Serials — Table 1-1, Specifications:

> Change NON-HARMONIC DISTORTION specifications to read: Greater than 80 dB below rated output on 100 kHz, 1 MHz and 5 MHz outputs. Greater than 70 dB on 10 MHz outputs.

PAGE 1-5, TABLE 1-4, ASSEMBLIES USED IN THE 5087A DISTRIBUTION AMPLIFIER:

All Serials — > Change A1 Power Module from 5060-1189 to 0960-0504.

PAGE 5-9, PERFORMANCE CHECKS, 2. NON-HARMONICALLY RELATED SIGNALS:

All Serials — > Insert the following sentence after the first sentence of the paragraph: Greater than 70 dB on 10 MHz outputs.

PAGE 6-4, TABLE 6-2. A2 POWER SUPPLY ASSEMBLY REPLACEABLE PARTS:

All Serials — > Change A2 (05087-60008) SERIES from 1240 to 2208.

PAGE 6-4, TABLE 6-2. A3 MOTHER BOARD REPLACEABLE PARTS:

All Serials — > Change A3 HP and Mfr part numbers from 05087-60007 to 05087-60015.
> Change A3 (05087-60015) SERIES from 1620 to 2032.

PAGE 6-5, TABLE 6-2. A6 INPUT PREAMPLIFIER (05087-60005) REPLACEABLE PARTS:

All Serials — > Change A6 HP Part Number from 05087-60005 to 05087-60004, and change CD from 0 to 9.
> Change A6Q1, Q2 and Q4 description to TRANSISTOR SIM 2N2222A.

PAGE 6-6, TABLE 6-2. A7 1 MHZ TO 100 KHZ DIVIDER BOARD (05087-60006):

All Serials — > Change A7 description to 1 MHZ TO 100.0 KHZ DIVIDER ASSY (OPTION 006).
> Change A7C2 description to CAPACITOR-FXD 1000 PF 300V.
> Change A7C12 description to CAPACITOR-FXD 8200 PF 1%.
> Change A7Q1, Q2 and Q4 description to TRANSISTOR SIM 2N2222A.

PAGE 6-7, TABLE 6-2. A8 5 MHZ AMPLIFIER (05087-60001) REPLACEABLE PARTS:

All Serials — > Change A8T1 and A8T2 description to TRANSFORM RF; 5 MHZ, 14UH PRI IND.

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

MANUAL CHANGES, MODEL 5087A (05087-90008)

PAGE 6-8, TABLE 6-2. A9 1 MHZ AMPLIFIER (05087-60002) REPLACEABLE PARTS:

All Serials
> Change A9Q1 and Q2 description to TRANSISTOR SIM 2N2222A.
> Change A9R7 description to RESISTOR-FXD 82 2% .125W.

PAGE 6-9, TABLE 6-2. A10 100 KHZ AMPLIFIER (05087-60003) REPLACEABLE PARTS:

All Serials
> Change A10 description to 100 KHZ AMPLIFIER ASSY (OPTION 003).
> Change A10 Mfr Part Number from 05087-60002 to 05087-60003.
> Change A10Q1 and Q2 description to TRANSISTOR SIM 2N2222A.

PAGE 6-10, TABLE 6-2. A11 5 MHZ TO 10 MHZ DOUBLER (05087-60011) REPLACABLE PARTS:

All Serials
> Change A11 description to 5 MHZ TO 10 MHZ DOUBLER ASSY (OPTION 011)
> Change A11 Mfr Part Number from 05087-60002 to 05087-60011.
> Delete A11C8, 0141-0178, 1, 1, CAPACITOR-FXD 560PF 5%, 28480, 0141-0178.
> Add A11C8*, 0141-0234, 2, 1, CAPACITOR-FXD 500 PF +-1% 300 VDC MICA, 28480, 0140-0234.
> Add A11C8*, 0160-0363, 8, 1, CAPACITOR-FXD 620 PF +-1% 300 VDC MICA, 28480, 0160-0363.

PAGE 6-11, TABLE 6-2. A12 10 MHZ AMPLIFIER (05087-60012) REPLACEABLE PARTS:

All Serials
> Change A12 description to 10 MHZ AMPLIFIER ASSY (OPTION 012) (SERIES 1732)
> Add A12R16, 2, 1, 0757-0940; RESISTOR-FXD FLM 4700 OHM 2% 1/8W, 28480, 0757-0940.
> Change A12C9 description to CAPACITOR-FXD 33 PF 5% 300 VDC.
> Change A12Q3 and Q4 description to TRANSISTOR S1 NPN / 80131/SN3866.
> Change A12T1 and T2 description to TRANSFORMER RF; 5 MHZ, PRI IND.

PAGE 6-12, TABLE 6-2. A13 10-TO-5 MHZ DIVIDER (05087-60013) REPLACEABLE PARTS:

All Serials
> Change A13Q1, Q2 and Q4 description to TRANSISTOR SIM 2N2222A.

PAGE 8-15, FIGURE 8-6. A7 1.0 MHz TO 100.0 kHz DIVIDER BOARD:

All Serials
> Change input terminal 5,E to connect to B.
> Change input terminal 7,H to connect to C.

PAGE 8-19, FIGURE 8-8. A9 1.0 MHz AMPLIFIER BOARD:

All Serials
> Change A9R7 value from 100 ohms to 82 ohms.

PAGE 8-25, FIGURE 8-11. A12 10 MHz AMPLIFIER BOARD:

All Serials
> Change input terminal 5E, B to read 5, E connects to B.

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

AGILENT 5087A
DISTRIBUTION AMPLIFIER

OPERATING AND SERVICE MANUAL

AGILENT 5087A SERIAL NUMBER PREFIX: 3708A

This manual applies directly to AGILENT Model 5087A having serial number prefix 3708A and below.

NEWER INSTRUMENTS

This manual, with enclosed "Manual Changes" sheet, applies to AGILENT Models 5087A having serial number prefixes as listed on the "Manual Changes" sheets.

©AGILENT TECHNOLOGIES 1973, 1977, 1996, 2004
5301 STEVENS CREEK BLVD, SANTA CLARA, CA 95051-7299

Agilent Technologies

MANUAL PART NUMBER : 05087-90008

Printed: September 1996

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Table 6-2. Replaceable Parts (Continued)

Reference Designation	HP Part Number	C D	Qty	Description	Mfr Code	Mfr Part Number
A14	**05087-60014**	**1**	**1**	**BOARD, 1O-TO-1-MHZ DIVIDER (OPT 014)** (SERIES 1240)	**28480**	**05087-60014**
A14C1	0150-0093	0	3	CAPACITOR-FXD 0.01UF +80-20% 100VDC	72982	801-K800011
A14C2	0140-0198	3	2	CAPACITOR-FXD 200PF 5%	72136	RMD15F201J3C
A14C3	0150-0093	0		CAPACITOR-FXD 0.01UF +80-20% 100VDC	72982	801-K800011
A14C4	0180-0116	1	1	CAPACITOR-FXD 6.8 UF 10% 35VDCW	56289	150D685X903582-DYS
A14C5	0180-0117	2	3	CAPACITOR-FXD 2.7UF 10% 35VDCW	28480	0180-0117
A14C6	0180-0117	2		CAPACITOR-FXD 2.7UF 10% 35VDCW	28480	0180-0117
A14C7	0140-0198	5		CAPACITOR-FXD 200PF 5%	72136	RMD15F201J3C
A14C8	0140-0196	3	1	CAPACITOR-FXD 150 PF 5%	28480	0140-0196
A14C9	0150-0093	0		CAPACITOR-FXD 0.01UF +80-20% 100VDC	72982	801-K800011
A14C10	0140-2224	2	1	CAPACITOR-FXD 1800PF 5%	28480	0140-2224
A14C11	0180-0117	2		CAPACITOR-FXD 2.7UF 10% 35VDCW	28480	0180-0117
A14CR1	1901-3104	4	1	DIODE-BREAKDOWN 5.62V 5%	04713	SZ10939-110
A14CR2	1901-0040	1	2	DIODE 50 MA 30 MV	07263	FDG1088
A14CR3	1901-0040	1		DIODE 50 MA 30 MV	07263	FDG1088
A14L1	9140-0138	2	1	COIL-CHOKE 180UH 5%	28480	9140-0138
A14L2	9100-0129	7	1	COIL-CHOKE 220 UH 5%	28480	9100-0129
A14L3	9100-2282	7	1	COIL-CHOKE 330 UH 5%	99800	9100-2282
A14Q1, Q2, Q4	1854-0477	7	3	TRANSISTOR SS 2N2222A	28480	1854-0477
A14Q3	1854-0003	5	1	TRANSISTOR NPN	28480	1854-0003
A14R1	0757-0893	4	1	RESISTOR 51 OHM 2% 1/8W	28480	0757-0893
A14R2	0757-0939	9	1	RESISTOR 4.3K OHM 2% 1/8W	28480	0757-0939
A14R3	0757-0932	2	1	RESISTOR 2.2K OHM 2% 1/8W	28480	0757-0932
A14R4	0757-0920	8	1	RESISTOR 680 OHM 2% 1/8W	28480	0757-0920
A14R5	0757-0931	1	1	RESISTOR 2K OHM 2% 1/8W	28480	0757-0931
A14R6	0757-0928	6	1	RESISTOR 1.5K OHM 2% 1/8W	28480	0757-0928
A14R7	0757-0908	2	2	RESISTOR 220 OHM 2% 1/8W	28480	0757-0908
A14R8	0757-0923	1	1	RESISTOR 910 OHM 2% 1/8W	28480	0757-0923
A14R9	0757-0943	5	1	RESISTOR 6.2K OHM 2% 1/8W	28480	0757-0943
A14R10	0757-0934	4	1	RESISTOR 2.7K OHM 2% 1/8W	28480	0757-0934
A14R11	0757-0917	3	2	RESISTOR 510 OHM 2% 1/8W	28480	0757-0917
A14R12	0757-0908	2		RESISTOR 220 OHM 2% 1/8W	28480	0757-0908
A14R13	0757-0917	3		RESISTOR 510 OHM 2% 1/8W	28480	0757-0917
A14T1	107A-9H	6	1	TRANSFORMER ASSY, 1 MHZ	28480	107A-9H
A14U1	1820-0055	6	1	IC TTL DECADE COUNTER 10 MHZ MIN	01295	SN7490N
	8159-0005	0	1	JUMPER	28480	8159-0005

See introduction to this section for ordering information
*Indicates factory selected value

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Table 6-3. 5087A Chassis and Miscellaneous Parts

Reference Designation	HP Part Number	C D	Qty	Description	Mfr Code	Mfr Part Number
A1	0960-0504	5	1	LINE MODULE-UNFILTERED 6A230V	05245	F2418
A2	05087-60008	3	1	BD ASSEMBLY-POWER SUPPLY	28480	05087-60008
A3	05087-60007	2	1	BD ASSEMBLY-MOTHER	28480	05087-60007
A4	05087-60009	4	1	BD ASSEMBLY-CIRCUIT CHECK	28480	05087-60009
A5	05087-60004	9	1	BD ASSEMBLY-PREAMP (OPTS 004-031-032-033-034)	28480	05087-60004
A6	05087-60005	0	1	BD ASSEMBLY- 5/1 DIVIDER (OPTS 005-034)	28480	05087-60005
A7	05087-60006	1	1	BD ASSEMBLY- 1/.1 MHZ DIVIDER (OPTS 006-034)	28480	05087-60006
A8	05087-60001	6	1	BD ASSEMBLY- 5 MHZ AMP (OPTS 001-031-032-034)	28480	05087-60001
A9	05087-60002	0	1	BD ASSEMBLY- 1 MHZ AMP (OPTS 002-031-034)	28480	05087-60002
A10	05087-60003	8	1	BD ASSEMBLY- 100 KHZ AMP (OPTS 003-031-034)	28480	05087-60003
A11	05087-60011	8	1	BD ASSEMBLY-DOUBLER (OPTION 011)	28480	05087-60011
A12	05087-60012	9	1	BD ASSEMBLY- 10 MHZ AMP (OPTIONS 012-033)	28480	05087-60012
A13	05087-60013	0	1	BD ASSEMBLY- 10/5 DIVIDER (OPTION 013)	28480	05087-60013
A14	05087-60014	1	0	BD ASSEMBLY- 10/1 DIVIDER	28480	05087-60014
C1	0180-4764	3	1	CAPACITOR-FXD 1500 UF 50 V AL- ELECTR	56289	62D10013-DFP
DS1, DS2	1990-0534	5	2	LAMP, LED LUM INT=22MCD YELLOW	28480	1990-0534
	2110-0004	1	1	FUSE (INCH).25 A 250V NTD FE UL	75915	312.25
	2110-0012	1	1	FUSE (INCH) .5A 250 V NTD FE UL	75915	312.500
	2110-0043	8	1	FUSE (INCH) 1.5 A 250V NTD FE UL	75915	312.01.5
M1	1120-1565	1	1	METER 1.76" DIA 100 UA FSD	55026	1212C
MP1	0370-0112	0	1	KNOB- BASE BAR/SKIRT 3/4" BLACK	28480	0370-0112
MP2	0340-0162	7	1	INSULATOR- TRANSISTOR TO-66 ALUM	28480	0340-0162
MP3	1250-0870	4	15	CONNECTOR- RF BNC JACK	24931	28JS112-1
MP4	5000-0830	7	2	PLATE-FLUTED ALUMINUM	28480	5000-0830
MP5	5000-0829	3	2	COVER-SIDE	28480	5000-0829
MP6	5060-0729	3	2	FRAME ASSY 3X11	28480	5060-0729
MP7	5060-0767	9	5	FOOT ASSEMBLY	28480	5060-0767
MP8	5060-7213	1	1	TOP COVER ASSEMBLY	28480	5060-7213
MP9	5060-7214	9	1	BOTTOM COVER ASSEMBLY	28480	5060-7214
MP10	5060-8739	1	1	KIT-RACK MOUNT (OPTION 908)	28480	5060-8739
MP11	3050-0005	5	2	WASHER-SHOULDER NO.6.14-IN-ID.375-OD	00000	ORDER BY DESCRIPTION
MP12	05087-00001	0	1	PANEL-FRONT	28480	05087-00001
MP13	05087-00002	1	1	PANEL-REAR	28480	05087-00002
MP14	05087-00003	2	1	CHASSIS-MAIN	28480	05087-00003
MP15	05087-00004	3	1	CHASSIS-POWER SUPPLY	28480	05087-00004
MP16	05087-00005	4	15	SHIELD-BOARD	28480	05087-00005
MP17	05087-00006	5	1	SHIELD-MAIN		
Q1	1854-0072	8	1	TRANSISTOR-NPN 2N3054SI TO-66 PD=25W	04713	2N3054
T1	9100-3023	6	1	TRANSFORMER-POWER	28480	9100-3023
W2	8120-1378	1	1	CABLE AY-POWER	28480	8120-1378
W3	05087-60026	5	3	CABLE AY-RF 4" J1 (INPUT A)	28480	05087-60026
W4	05087-60026	5		CABLE AY-RF 4" J2 (INPUT B)	28480	05087-60026
W5	05087-60026	5		CABLE AY-RF 4" J3 (INPUT C)	28480	05087-60026
W6	05087-60027	6	6	CABLE AY-RF 5.5" J4 (OUTPUT 1)	28480	05087-60027
W7	05087-60027	6		CABLE AY-RF 5.5" J5 (OUTPUT 2)	28480	05087-60027
W8	05087-60027	6		CABLE AY-RF 5.5" J6 (OUTPUT 3)	28480	05087-60027
W9	05087-60027	6		CABLE AY-RF 5.5" J7 (OUTPUT 4)	28480	05087-60027
W10	05087-60027	6		CABLE AY-RF 5.5" J8 (OUTPUT 5)	28480	05087-60027
W11	05087-60027	6		CABLE AY-RF 5.5" J9 (OUTPUT 6)	28480	05087-60027
W12	05087-60028	7	3	CABLE AY-RF 6" J10 (OUTPUT 7)	28480	05087-60028
W13	05087-60028	7		CABLE AY-RF 6" J11 (OUTPUT 8)	28480	05087-60028
W14	05087-60028	7		CABLE AY-RF 6" J12 (OUTPUT 9)	28480	05087-60028
W15	05087-60029	8	3	CABLE AY-RF 6.6" J13 (OUTPUT 10)	28480	05087-60029
W16	05087-60029	8		CABLE AY-RF 6.6" J14 (OUTPUT 11)	28480	05087-60029
W17	05087-60029	8		CABLE AY-RF 6.6" J15 (OUTPUT 12)	28480	05087-60029
XF1	2110-0564	8	1	FUSEHOLDER, BODY 12A MAX FOR UL	H9027	031.1657
	2110-0565	9	1	FUSEHOLDER, CAP 12A MAX FOR UL	H9027	031.1666
	2110-0569	3	2	NUT-FUSEHOLDER M12.7 BY 1.5 POLYCARB	H9027	098-0043
W16	05087-60029	8		CABLE AY-RF 6.6" J14 (OUTPUT 11)	28480	05087-60029
W17	05087-60029	8		CABLE AY-RF 6.6" J15 (OUTPUT 12)	28480	05087-60029

See introduction to this section for ordering information
*Indicates factory selected value

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP