ICS RADIATION TECHNOLOGIES, INC.
8416 FLORENCE AVENUE
SUITE 206
DOWNEY, CA. 90240 U.S.A.

June 2, 1987

RADIATION TEST PROCEDURE No. 036

Device Type: OP-42 Operational Amplifier
Manufacturer: PMI
Lot No: K5425403 Date Code: 8702
Package Type: 8 pin TO-99
No. of Devices Supplied: 9
No. of Devices to be tested: 6 + 3 controls/spares

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RADIATION CONDITIONS:

Facility: Co60 Energy: 1.25 MeV

Total Dose krad(Si)	10	30	100	300	1000	

Dose Rate rad(Si)/s	119

BIAS CONDITIONS DURING IRRADIATION:

Pin#	Name	Voltage
1	NULL	N.C.
2	I_N-	100 kΩ to GND, 1000 pF bypass
3	I_N+	100 kΩ to GND, 1000 pF bypass
4	V_S-	-15 V
5	NULL	N.C.
6	Output	10 kΩ to Summing Junction
7	V_S+	+15 V
8	N.C.	

See Figure 1, page 2 for bias cicuit drawing.

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Date: June 2, 1987

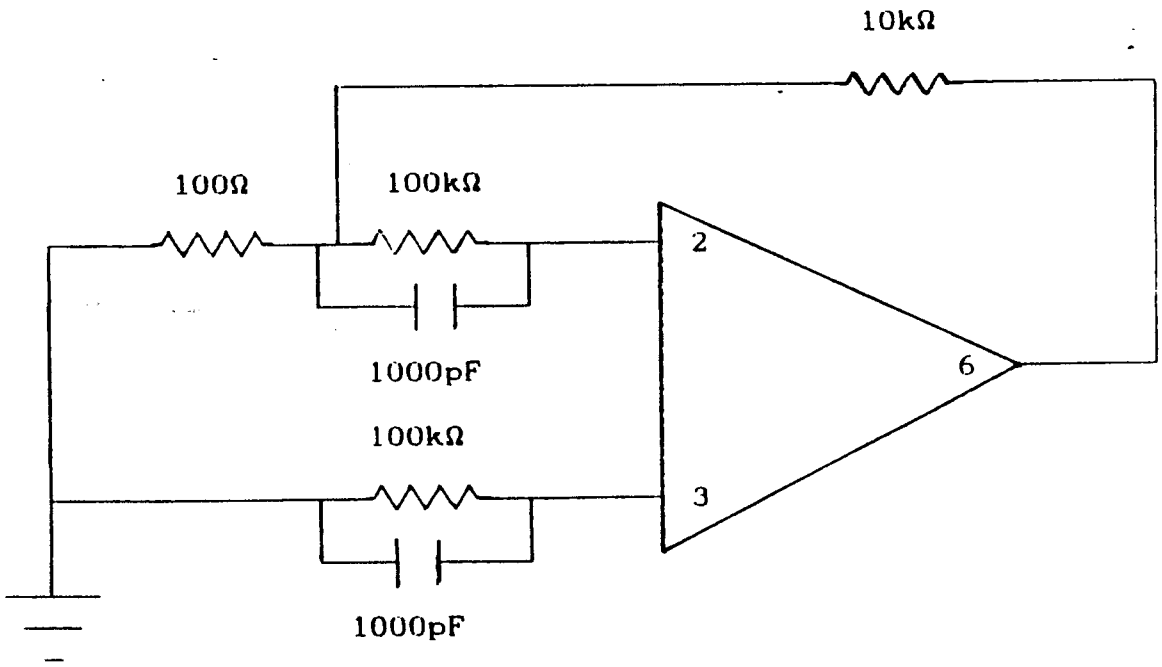

Figure 1. Bias Circuit for Irradiation of OP-42 Operational Amplifier

ICS RADIATION TECHNOLOGIES, INC.
8416 FLORENCE AVENUE
SUITE 206
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RADIATION TEST PROCEDURE No. 036

Device Type: OP-42, Operational Amplifier Date: June 2, 1987

Electrical Parameter Measurement Conditions*

TEST NUMBER	TEST NAME	TEST CONDITIONS**
1	V_{OS}	
2	I_{OS}	
3	I_B+	
4	I_B-	
5	$A_{OL}+$	
6	$A_{OL}-$	
7	$V_{OUT}+$	
8	$V_{OUT}-$	
9	I_S+	
10	I_S-	

*Measurements shall be made at room ambient temperature.

** Tests will be conducted on an Analog Devices LTS2020 Component Test System.

I C S Radiation Test Results
OP42 OP AMP

VOS (50 OHM) MV

FLUENCE	krad(Si)	INITIAL	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
FLUX	rad(Si)/sec		1.19E+02	1.19E+02	1.19E+02	1.19E+02	1.19E+02
	S/N						
CONTROL	2	-4.20E-01	-3.99E-01	-4.05E-01	-3.79E-01	-3.80E-01	-3.91E-01
	5	-5.45E-02	-1.09E-01	-1.76E-01	-1.55E+00	-2.70E+00	-2.49E+00
	6	3.50E-02	-5.06E-02	-2.32E-01	-6.73E-01	-1.26E+00	-2.61E+00
	7	1.40E-01	6.89E-02	-6.17E-02	-3.00E-01	2.50E-02	-1.29E+00
	8	-2.13E-01	-2.49E-01	-3.51E-01	-5.79E-01	-6.47E-01	-9.05E-01
	9	-1.47E-01	-1.72E-01	-2.02E-01	-1.02E+00	-1.63E+00	-1.00E+00
	10	4.05E-01	3.70E-01	2.83E-01	4.06E-02	-3.55E-01	-1.16E+00
	MINIMUM	-2.13E-01	-2.49E-01	-3.51E-01	-1.55E+00	-2.70E+00	-2.61E+00
	MEAN	2.75E-02	-2.37E-02	-1.23E-01	-6.79E-01	-1.10E+00	-1.57E+00
	MAXIMUM	4.05E-01	3.70E-01	2.83E-01	4.06E-02	2.50E-02	-9.05E-01
	P 50/90	1.55E-01	1.03E-01	2.31E-03	-3.62E-01	-5.30E-01	-1.14E+00
	P 50/90	-1.00E-01	-1.50E-01	-2.49E-01	-9.96E-01	-1.66E+00	-2.01E+00
	P 99/90	9.34E-01	8.72E-01	7.67E-01	1.57E+00	2.91E+00	1.53E+00
	P 99/90	-8.79E-01	-9.19E-01	-1.01E+00	-2.93E+00	-5.10E+00	-4.68E+00
	SIGMA	2.35E-01	2.32E-01	2.31E-01	5.83E-01	1.04E+00	8.04E-01

DEVICE TYPE OP42 A-1 (PMI)
RADIATION SOURCE SHEPHERD (Co60)

D/C 8702 ;; PACKAGE TO-99 ;; LOT#
LOG# 0067 ;; TEST DATE 06-11-87 ;; RTP# 036

I C S RADIATION TECHNOLOGIES, INC.

6-17-87

I C S Radiation Test Results
OP42 OP AMP
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IOS NA
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FLUENCE	krad(Si)	INITIAL	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
FLUX	rad(Si)/sec		1.19E+02	1.19E+02	1.19E+02	1.19E+02	1.19E+02
S/N							
CONTROL	2	*********	*********	*********	*********	*********	*********
	5	*********	*********	*********	*********	*********	*********
	6	*********	*********	*********	*********	*********	*********
	7	*********	*********	*********	*********	*********	*********
	8	*********	*********	*********	*********	*********	*********
	9	*********	*********	*********	*********	*********	*********
	10	*********	*********	*********	*********	*********	*********
	MINIMUM	*********	*********	*********	*********	*********	*********
	MEAN	*********	*********	*********	*********	*********	*********
	MAXIMUM	*********	*********	*********	*********	*********	*********
	P 50/90	*********	*********	*********	*********	*********	*********
	P 50/90	*********	*********	*********	*********	*********	*********
	P 99/90	*********	*********	*********	*********	*********	*********
	P 99/90	*********	*********	*********	*********	*********	*********
	SIGMA	*********	*********	*********	*********	*********	*********

DEVICE TYPE OP42 A-1 (PMI)
RADIATION SOURCE SHEPHERD (Co60)

D/C 8702 ;; PACKAGE TO-99 ;; LOT#
LOG# 0067 ;; TEST DATE 06-11-87;; RTP# 036

I C S RADIATION TECHNOLOGIES, INC.

NOTE: asteriscs (*) indicate that the IOS measurements were too low for the tester to measure using the standard Socket Assembly and DUT Board utilized for these tests.

[illegible]

[illegible] Radiation Test Data
OP42 OP AMP
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+IB NA
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FLUENCE	Krad(Si)	INITIAL	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
FLUX	rad(Si)/sec		1.19E+02	1.19E+02	1.19E+02	1.19E+02	1.19E+02
S/N							
CONTROL	2	*********	*********	*********	*********	*********	*********
	5	*********	*********	*********	*********	*********	*********
	6	*********	*********	*********	*********	*********	*********
	7	*********	*********	*********	*********	*********	*********
	8	*********	*********	*********	*********	*********	*********
	9	*********	*********	*********	*********	*********	*********
	10	*********	*********	*********	*********	*********	*********
	MINIMUM	*********	*********	*********	*********	*********	*********
	MEAN	*********	*********	*********	*********	*********	*********
	MAXIMUM	*********	*********	*********	*********	*********	*********
	P 50/90	*********	*********	*********	*********	*********	*********
	P 50/90	*********	*********	*********	*********	*********	*********
	P 99/90	*********	*********	*********	*********	*********	*********
	P 99/90	*********	*********	*********	*********	*********	*********
	SIGMA	*********	*********	*********	*********	*********	*********

DEVICE TYPE OP42 A-1 (PMI)
RADIATION SOURCE SHEPHERD (Co60)

D/C 8702 :: PACKAGE TO-99 :: LOT#
LOG# 0067 :: TEST DATE 06-11-87:: RTP# 036

I C S RADIATION TECHNOLOGIES, INC.

NOTE: asteriscs (*) indicate that the +IB measurements were too low for the tester to measure using the standard Socket Assembly and DUT Board utilized for these tests.

I C S Radiation Test Systems
OP42 OP AMP
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-IB NA
======

FLUENCE	krad(Si)	INITIAL	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
FLUX	rad(Si)/sec		1.19E+02	1.19E+02	1.19E+02	1.19E+02	1.19E+02
S/N							
CONTROL	2	*********	*********	*********	*********	*********	*********
	5	*********	*********	*********	*********	*********	*********
	6	*********	*********	*********	*********	*********	*********
	7	*********	*********	*********	*********	*********	*********
	8	*********	*********	*********	*********	*********	*********
	9	*********	*********	*********	*********	*********	*********
	10	*********	*********	*********	*********	*********	*********
	MINIMUM	*********	*********	*********	*********	*********	*********
	MEAN	*********	*********	*********	*********	*********	*********
	MAXIMUM	*********	*********	*********	*********	*********	*********
	P 50/90	*********	*********	*********	*********	*********	*********
	P 50/90	*********	*********	*********	*********	*********	*********
	P 99/90	*********	*********	*********	*********	*********	*********
	P 99/90	*********	*********	*********	*********	*********	*********
	SIGMA	*********	*********	*********	*********	*********	*********

DEVICE TYPE OP42 A-1 (PMI)
RADIATION SOURCE SHEPHERD (Co60)

D/C 8702 ;; PACKAGE TO-99 ;; LOT#
LOG# 0067 ;; TEST DATE 06-11-87;; RTP# 036

I C S RADIATION TECHNOLOGIES, INC.

NOTE: asteriscs (*) indicate that the -IB measurements were too low for the tester to measure using the standard Socket Assembly and DUT Board utilized for these tests.

I C S Radiation Test Results
OP42 OP AMP

AOL DB (+)

FLUENCE	krad(Si)	INITIAL	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
FLUX	rad(Si)/sec		1.19E+02	1.19E+02	1.19E+02	1.19E+02	1.19E+02
S/N							
CONTROL	2	1.16E+02	1.13E+02	1.15E+02	1.16E+02	1.16E+02	1.16E+02
	5	1.14E+02	1.13E+02	1.12E+02	1.09E+02	1.08E+02	1.10E+02
	6	1.14E+02	1.14E+02	1.12E+02	1.09E+02	1.08E+02	1.11E+02
	7	1.15E+02	1.14E+02	1.13E+02	1.09E+02	1.09E+02	1.16E+02
	8	1.13E+02	1.13E+02	1.12E+02	1.09E+02	1.09E+02	1.29E+02
	9	1.14E+02	1.14E+02	1.12E+02	1.09E+02	1.09E+02	1.13E+02
	10	1.14E+02	1.14E+02	1.13E+02	1.10E+02	1.09E+02	1.15E+02
	MINIMUM	1.13E+02	1.13E+02	1.12E+02	1.09E+02	1.08E+02	1.10E+02
	MEAN	1.14E+02	1.14E+02	1.12E+02	1.09E+02	1.08E+02	1.16E+02
	MAXIMUM	1.15E+02	1.14E+02	1.13E+02	1.10E+02	1.09E+02	1.29E+02
	P 50/90	1.15E+02	1.14E+02	1.13E+02	1.09E+02	1.09E+02	1.20E+02
	P 50/90	1.14E+02	1.13E+02	1.12E+02	1.09E+02	1.08E+02	1.12E+02
	P 99/90	1.17E+02	1.15E+02	1.15E+02	1.11E+02	1.10E+02	1.43E+02
	P 99/90	1.12E+02	1.12E+02	1.10E+02	1.08E+02	1.06E+02	9.82E+01
	SIGMA	6.88E-01	4.94E-01	5.95E-01	3.34E-01	5.17E-01	7.17E+00

DEVICE TYPE OP42 A-1 (PMI)
RADIATION SOURCE SHEPHERD (Co60)

D/C 8702 ;; PACKAGE TO-99 ;; LOT#
LOG# 0067 ;; TEST DATE 06-11-87;; RTP# 036

I C S RADIATION TECHNOLOGIES, INC.

6-17-87

I C S Radiation Test Results
OP42 OP AMP

OL DB (-)

FLUENCE	krad(Si)	INITIAL	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
FLUX	rad(Si)/sec		1.19E+02	1.19E+02	1.19E+02	1.19E+02	1.19E+02
S/N							
CONTROL	2	1.05E+02	1.05E+02	1.05E+02	1.05E+02	1.05E+02	1.05E+02
	5	1.03E+02	1.03E+02	1.02E+02	1.01E+02	9.98E+01	1.00E+02
	6	1.04E+02	1.03E+02	1.02E+02	1.01E+02	9.97E+01	1.00E+02
	7	1.05E+02	1.04E+02	1.03E+02	1.01E+02	1.00E+02	1.01E+02
	8	1.03E+02	1.02E+02	1.02E+02	1.00E+02	1.00E+02	1.01E+02
	9	1.03E+02	1.03E+02	1.02E+02	1.01E+02	1.00E+02	1.01E+02
	10	1.04E+02	1.03E+02	1.03E+02	1.01E+02	1.01E+02	1.01E+02
	MINIMUM	1.03E+02	1.02E+02	1.02E+02	1.00E+02	9.97E+01	1.00E+02
	MEAN	1.04E+02	1.03E+02	1.02E+02	1.01E+02	1.00E+02	1.01E+02
	MAXIMUM	1.05E+02	1.04E+02	1.03E+02	1.01E+02	1.01E+02	1.01E+02
	P 50/90	1.04E+02	1.04E+02	1.03E+02	1.01E+02	1.00E+02	1.01E+02
	P 50/90	1.03E+02	1.03E+02	1.02E+02	1.01E+02	9.99E+01	1.01E+02
	P 99/90	1.06E+02	1.06E+02	1.04E+02	1.02E+02	1.02E+02	1.03E+02
	P 99/90	1.01E+02	1.01E+02	1.00E+02	9.91E+01	9.86E+01	9.87E+01
	SIGMA	6.10E-01	6.44E-01	4.99E-01	4.27E-01	3.92E-01	3.86E-01

DEVICE TYPE OP42 A-1 (PMI)
RADIATION SOURCE SHEPHERD (Co60)

D/C 8702 ;; PACKAGE TO-99 ;; LOT#
LOG# 0067 ;; TEST DATE 06-11-87;; RTP# 036

I C S RADIATION TECHNOLOGIES, INC.

I C S Radiation Test Results
OP42 OP AMP

+ V OUT V

FLUENCE	krad(Si)	INITIAL	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
FLUX	rad(Si)/sec		1.19E+02	1.19E+02	1.19E+02	1.19E+02	1.19E+02
S/N							
CONTROL	2	1.22E+01	1.22E+01	1.22E+01	1.22E+01	1.21E+01	1.22E+01
	5	1.22E+01	1.21E+01	1.21E+01	1.20E+01	1.20E+01	1.21E+01
	6	1.22E+01	1.22E+01	1.21E+01	1.20E+01	1.20E+01	1.21E+01
	7	1.22E+01	1.21E+01	1.21E+01	1.20E+01	1.20E+01	1.21E+01
	8	1.22E+01	1.22E+01	1.21E+01	1.20E+01	1.20E+01	1.21E+01
	9	1.22E+01	1.22E+01	1.21E+01	1.20E+01	1.20E+01	1.21E+01
	10	1.22E+01	1.22E+01	1.21E+01	1.20E+01	1.20E+01	1.21E+01
	MINIMUM	1.22E+01	1.21E+01	1.21E+01	1.20E+01	1.20E+01	1.21E+01
	MEAN	1.22E+01	1.22E+01	1.21E+01	1.20E+01	1.20E+01	1.21E+01
	MAXIMUM	1.22E+01	1.22E+01	1.21E+01	1.20E+01	1.20E+01	1.21E+01
	P 50/90	1.22E+01	1.22E+01	1.21E+01	1.20E+01	1.20E+01	1.21E+01
	P 50/90	1.22E+01	1.21E+01	1.21E+01	1.20E+01	1.20E+01	1.21E+01
	P 99/90	1.22E+01	1.22E+01	1.21E+01	1.21E+01	1.21E+01	1.22E+01
	P 99/90	1.22E+01	1.21E+01	1.21E+01	1.20E+01	1.19E+01	1.20E+01
	SIGMA	9.55E-03	1.54E-02	1.15E-02	1.29E-02	2.13E-02	1.57E-02

DEVICE TYPE OP42 A-1 (PMI)
RADIATION SOURCE SHEPHERD (Co60)

D/C 8702 ;; PACKAGE TO-99 ;; LOT#
LOG# 0067 ;; TEST DATE 06-11-87;; RTP# 036

I C S RADIATION TECHNOLOGIES, INC.

06-17-87

I C S Radiation Test Results
OP42 OP AMP

- V OUT V

FLUENCE	krad(Si)	INITIAL	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
FLUX	rad(Si)/sec		1.19E+02	1.19E+02	1.19E+02	1.19E+02	1.19E+02
	S/N						
CONTROL	2	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01
	5	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01
	6	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01
	7	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01
	8	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.22E+01
	9	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01
	10	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.22E+01
	MINIMUM	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.22E+01
	MEAN	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01
	MAXIMUM	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01
	P 50/90	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01
	P 50/90	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.21E+01	-1.22E+01
	P 99/90	-1.20E+01	-1.20E+01	-1.20E+01	-1.20E+01	-1.20E+01	-1.21E+01
	P 99/90	-1.22E+01	-1.22E+01	-1.22E+01	-1.22E+01	-1.22E+01	-1.22E+01
	SIGMA	2.53E-02	2.54E-02	2.54E-02	2.37E-02	2.14E-02	1.99E-02

DEVICE TYPE OP42 A-1 (PMI)
RADIATION SOURCE SHEPHERD (Co60)

D/C 8702 ;; PACKAGE TO-99 ;; LOT#
LOG# 0067 ;; TEST DATE 06-11-87;; RTP# 036

I C S RADIATION TECHNOLOGIES, INC.

06-17-87

I C S Radiation Test Results
OP42 OP AMP

+IS MA

FLUENCE / FLUX	krad(Si) / rad(Si)/sec	INITIAL	1.00E+01 1.19E+02	3.00E+01 1.19E+02	1.00E+02 1.19E+02	3.00E+02 1.19E+02	1.00E+03 1.19E+02
S/N							
CONTROL	2	5.36E+00	5.37E+00	5.38E+00	5.37E+00	5.38E+00	5.38E+00
	5	5.21E+00	5.28E+00	5.44E+00	5.64E+00	5.65E+00	5.35E+00
	6	5.35E+00	5.42E+00	5.57E+00	5.77E+00	5.76E+00	5.48E+00
	7	5.16E+00	5.23E+00	5.40E+00	5.55E+00	5.53E+00	5.28E+00
	8	5.23E+00	5.31E+00	5.48E+00	5.67E+00	5.60E+00	5.33E+00
	9	5.42E+00	5.51E+00	5.68E+00	5.88E+00	5.87E+00	5.57E+00
	10	5.23E+00	5.30E+00	5.47E+00	5.64E+00	5.60E+00	5.35E+00
	MINIMUM	5.16E+00	5.23E+00	5.40E+00	5.55E+00	5.53E+00	5.28E+00
	MEAN	5.27E+00	5.34E+00	5.51E+00	5.69E+00	5.67E+00	5.39E+00
	MAXIMUM	5.42E+00	5.51E+00	5.68E+00	5.88E+00	5.87E+00	5.57E+00
	P 50/90	5.32E+00	5.40E+00	5.56E+00	5.76E+00	5.74E+00	5.46E+00
	P 50/90	5.21E+00	5.28E+00	5.45E+00	5.62E+00	5.60E+00	5.33E+00
	P 99/90	5.66E+00	5.76E+00	5.91E+00	6.16E+00	6.17E+00	5.85E+00
	P 99/90	4.87E+00	4.93E+00	5.10E+00	5.22E+00	5.16E+00	4.94E+00
	SIGMA	1.02E-01	1.08E-01	1.05E-01	1.22E-01	1.31E-01	1.19E-01

DEVICE TYPE OP42 A-1 (PMI)
RADIATION SOURCE SHEPHERD (Co60)

D/C 8702 ;; PACKAGE TO-99 ;; LOT#
LOG# 0067 ;; TEST DATE 06-11-87;; RTP# 036

I C S RADIATION TECHNOLOGIES, INC.

06-17-87

I C S Radiation Test Results
OP42 OP AMP
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-IS MA
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FLUENCE	krad(Si)	INITIAL	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
FLUX	rad(Si)/sec		1.19E+02	1.19E+02	1.19E+02	1.19E+02	1.19E+02
S/N							
CONTROL	2	-5.34E+00	-5.33E+00	-5.35E+00	-5.34E+00	-5.34E+00	-5.35E+00
	5	-5.19E+00	-5.26E+00	-5.42E+00	-5.61E+00	-5.61E+00	-5.34E+00
	6	-5.31E+00	-5.39E+00	-5.54E+00	-5.73E+00	-5.75E+00	-5.45E+00
	7	-5.12E+00	-5.20E+00	-5.36E+00	-5.52E+00	-5.49E+00	-5.24E+00
	8	-5.18E+00	-5.28E+00	-5.44E+00	-5.64E+00	-5.56E+00	-5.30E+00
	9	-5.39E+00	-5.48E+00	-5.64E+00	-5.86E+00	-5.82E+00	-5.54E+00
	10	-5.21E+00	-5.28E+00	-5.42E+00	-5.62E+00	-5.56E+00	-5.33E+00
	MINIMUM	-5.39E+00	-5.48E+00	-5.64E+00	-5.86E+00	-5.82E+00	-5.54E+00
	MEAN	-5.23E+00	-5.32E+00	-5.47E+00	-5.67E+00	-5.63E+00	-5.37E+00
	MAXIMUM	-5.12E+00	-5.20E+00	-5.36E+00	-5.52E+00	-5.49E+00	-5.24E+00
	P 50/90	-5.18E+00	-5.26E+00	-5.41E+00	-5.60E+00	-5.56E+00	-5.30E+00
	P 50/90	-5.29E+00	-5.37E+00	-5.53E+00	-5.73E+00	-5.70E+00	-5.43E+00
	P 99/90	-4.84E+00	-4.91E+00	-5.06E+00	-5.19E+00	-5.12E+00	-4.92E+00
	P 99/90	-5.63E+00	-5.72E+00	-5.88E+00	-6.14E+00	-6.14E+00	-5.81E+00
	SIGMA	1.02E-01	1.05E-01	1.06E-01	1.24E-01	1.32E-01	1.26E-01

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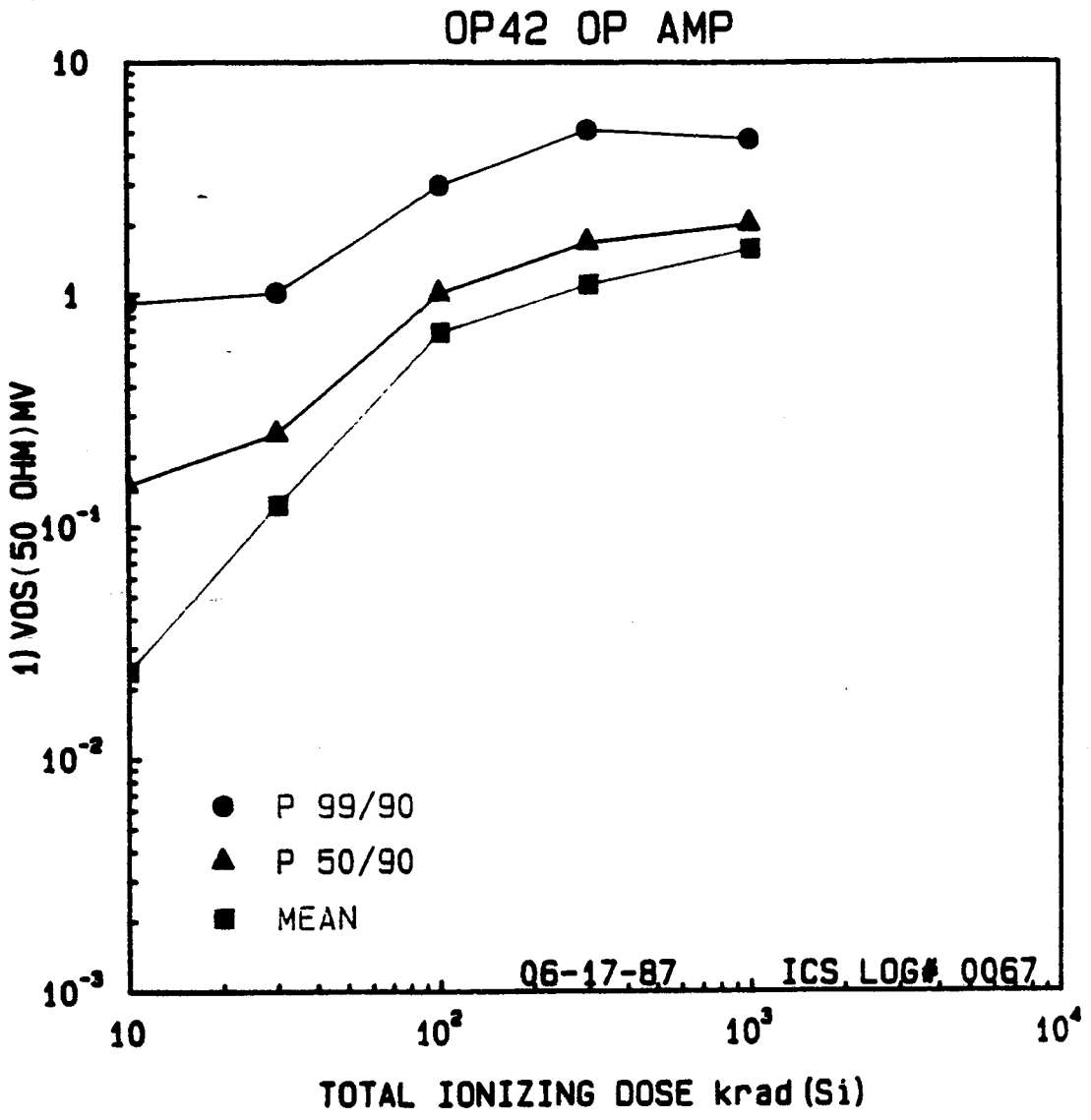
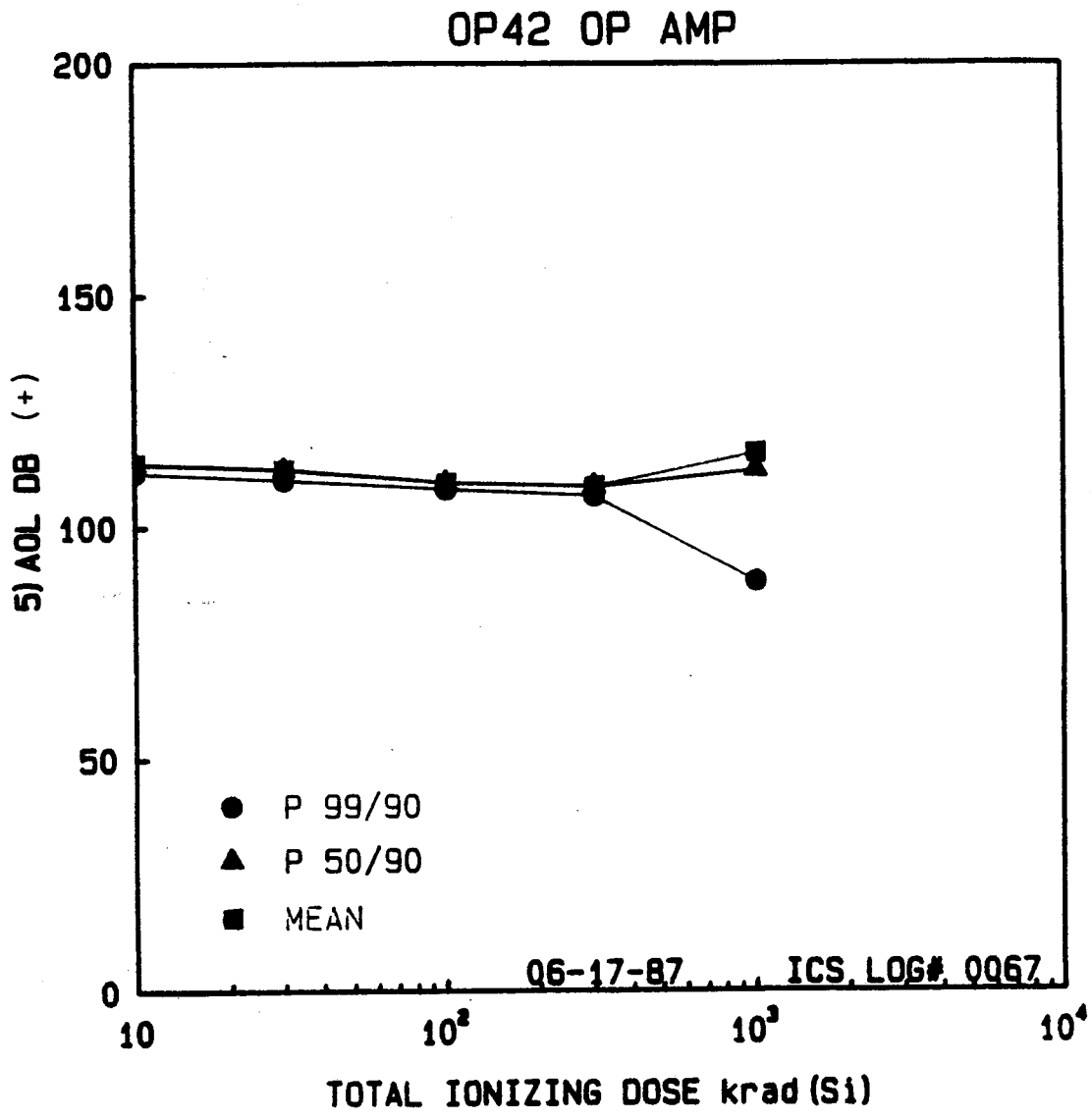
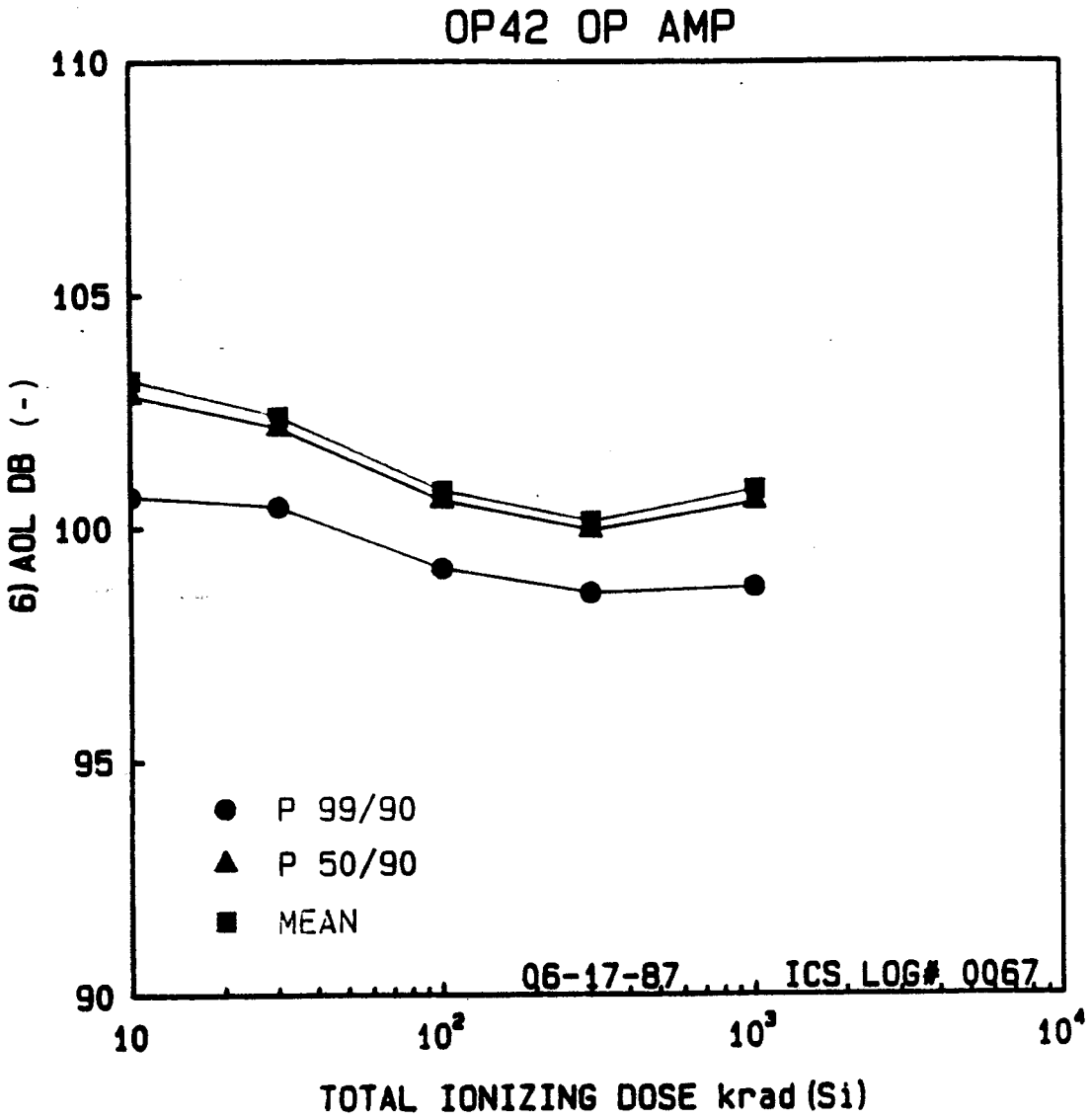
RADIATION SOURCE SHEPHERD (Co60)

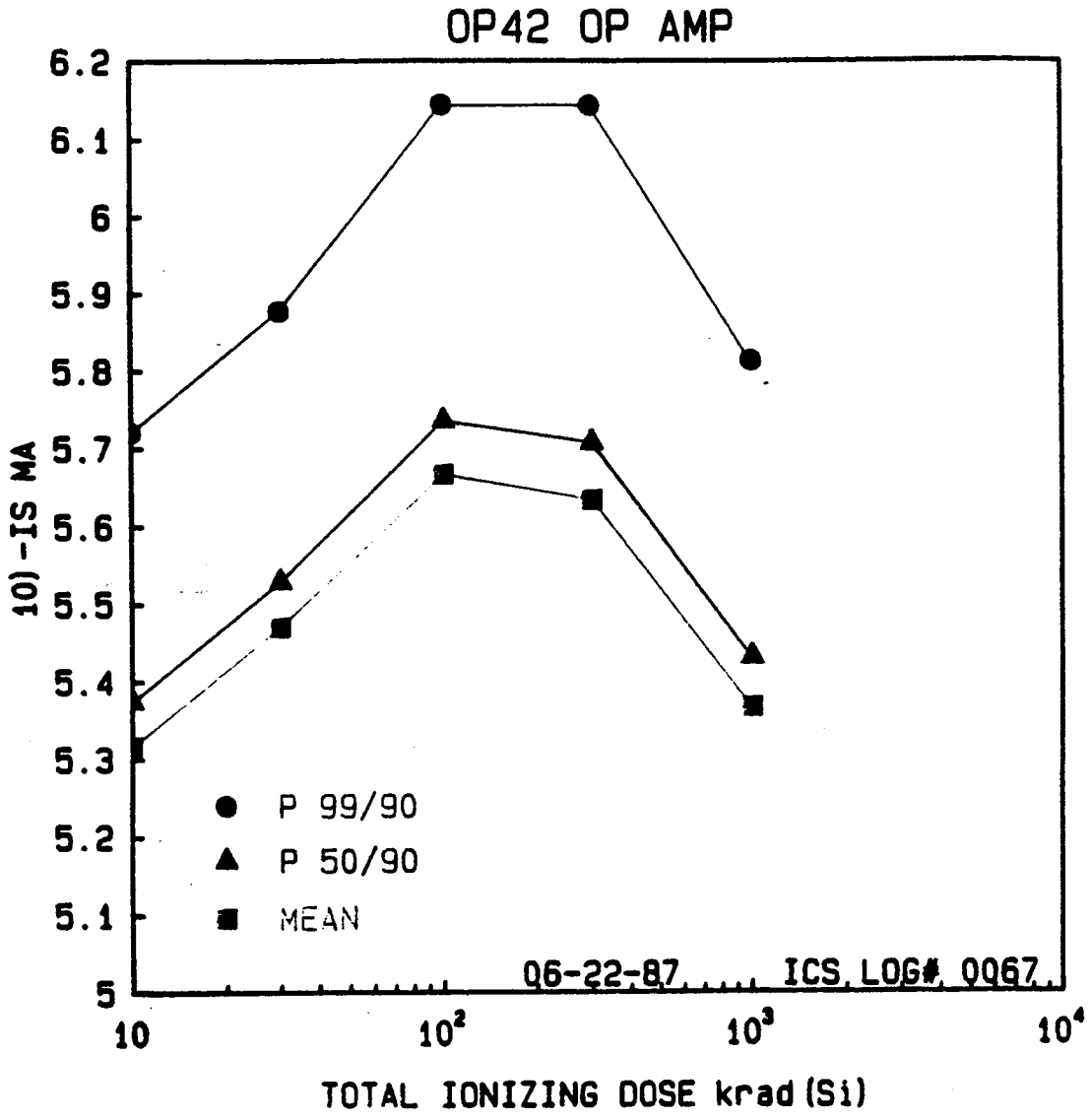
D/C 8702 ;; PACKAGE TO-99 ;; LOT#
LOG# 0067 ;; TEST DATE 06-11-87;; RTP# 036

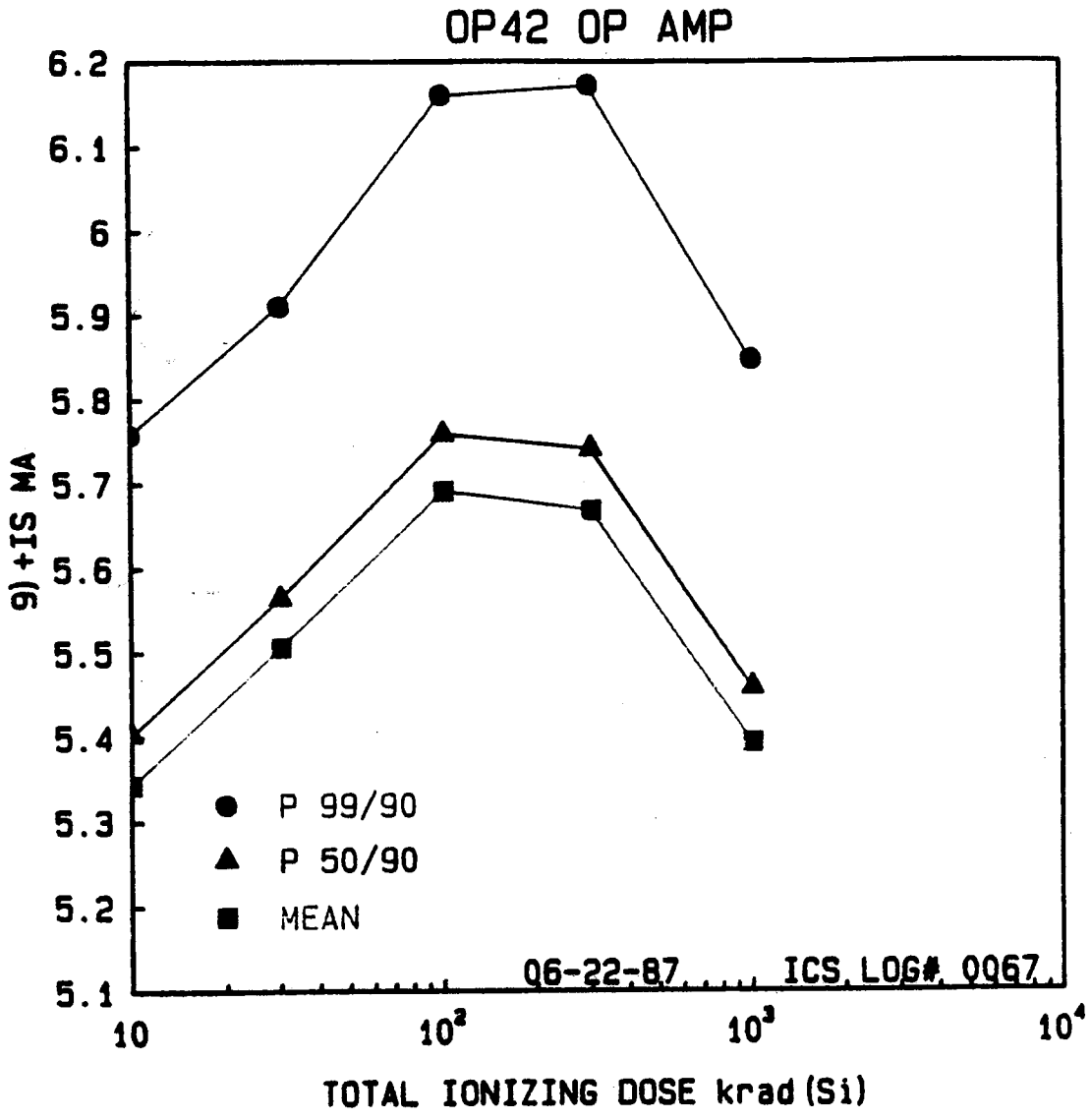
I C S RADIATION TECHNOLOGIES, INC.


OP42 OP AMP
10
1
10^{-1}
10^{-2}
10^{-3}
1) VOS(50 OHM)MV
P 99/90
P 50/90
MEAN
06-17-87
ICS LOG# 0067
10
10^2
10^3
10^4
TOTAL IONIZING DOSE krad(Si)


OP42 OP AMP
200
150
100
50
0
5) AOL DB (+)
P 99/90
P 50/90
MEAN
06-17-87
ICS LOG# 0067
10
10²
10³
10⁴
TOTAL IONIZING DOSE krad (Si)


OP42 OP AMP
110
105
100
95
90
6) AOL DB (-)
P 99/90
P 50/90
MEAN
06-17-87
ICS LOG# 0067
10
10²
10³
10⁴
TOTAL IONIZING DOSE krad (Si)


OP42 OP AMP
6.2
6.1
6
5.9
5.8
5.7
5.6
5.5
5.4
5.3
5.2
5.1
5
10) -IS MA
P 99/90
P 50/90
MEAN
06-22-87
ICS LOG# 0067
10
10²
10³
10⁴
TOTAL IONIZING DOSE krad (Si)


OP42 OP AMP
6.2
6.1
6
5.9
5.8
5.7
5.6
5.5
5.4
5.3
5.2
5.1
9) +IS MA
P 99/90
P 50/90
MEAN
06-22-87
ICS LOG# 0067
10
10²
10³
10⁴
TOTAL IONIZING DOSE krad(Si)