

FORM: 159-ATT-DTA

DATE: 3/6/06



PLANAR MONOLITHICS INDUSTRIES

**FINAL TEST DATA
ON
ATTENUATOR ASSEMBLY**

CUSTOMER: NORTHROP GRUMMAN
 JOB NO: P508039
 MODEL NO: SAA-218-6-093-013542
 SERIAL NO: PM602924
 CURRENT DRAW: + 5 VDC @ 240 mA; - 5 VDC @ 264 mA

TECHNICIAN: E. ELDER
 NGC P/N: 037-005334-0001
 OPTION NO: HERM
 SPECIFICATION: _____
 FREQUENCY RANGE: 2 - 18 GHz

INSERTION LOSS (WORST CASE)	RETURN LOSS (WORST CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON db	OUTPUT ON VSWR	OUTPUT OFF db	OUTPUT OFF VSWR
J2-J8 "1" 2.71 dB @ 2-18 GHz	12.93 dB	1.58 : 1	13.11 dB	1.57 : 1	dB	: 1
J2-J8 "0" 19.51 dB @ 2-18 GHz	14.06 dB	1.49 : 1	11.14 dB	1.77 : 1	dB	: 1
J3-J9 "1" 2.72 dB @ 2-18 GHz	11.51 dB	1.72 : 1	14.07 dB	1.49 : 1	dB	: 1
J3-J9 "0" 19.25 dB @ 2-18 GHz	15.29 dB	1.42 : 1	11.29 dB	1.75 : 1	dB	: 1
J4-J10 "1" 2.92 dB @ 2-18 GHz	11.64 dB	1.71 : 1	11.85 dB	1.69 : 1	dB	: 1
J4-J10 "0" 19.67 dB @ 2-18 GHz	14.21 dB	1.48 : 1	12.31 dB	1.64 : 1	dB	: 1
J5-J11 "1" 2.74 dB @ 2-18 GHz	11.84 dB	1.69 : 1	12.29 dB	1.64 : 1	dB	: 1
J5-J11 "0" 19.71 dB @ 2-18 GHz	14.64 dB	1.46 : 1	11.58 dB	1.72 : 1	dB	: 1
J6-J12 "1" 2.71 dB @ 2-18 GHz	11.44 dB	1.73 : 1	11.27 dB	1.75 : 1	dB	: 1
J6-J12 "0" 19.29 dB @ 2-18 GHz	10.91 dB	1.80 : 1	16.07 dB	1.37 : 1	dB	: 1
J7-J13 "1" 2.65 dB @ 2-18 GHz	13.86 dB	1.51 : 1	12.99 dB	1.58 : 1	dB	: 1
J7-J13 "0" 19.33 dB @ 2-18 GHz	14.67 dB	1.45 : 1	12.66 dB	1.61 : 1	dB	: 1
RESPONSE TIME						
J2 - J8	60 nS					
J3 - J9	60 nS					
J4 - J10	60 nS					
J5 - J11	60 nS					
J6 - J12	60 nS					
J7 - J13	60 nS					

NOTE: Any additional test data on back

TESTED ON: HP 8720D

QA/QC APPROVAL: _____



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**FINAL TEST DATA
ON
ATTENUATOR ASSEMBLY**

CUSTOMER: NORTHROP GRUMMAN
 JOB NO: P508039
 MODEL NO: SAA-218-6-093-013542
 SERIAL NO: PM602925
 CURRENT DRAW: + 5 VDC @ 240 mA; - 5 VDC @ 264 mA

TECHNICIAN: E. ELDER
 NGC P/N: 037-005334-0001
 OPTION NO: HERM
 SPECIFICATION: _____
 FREQUENCY RANGE: 2 - 18 GHz

INSERTION LOSS (WORST CASE)	RETURN LOSS (WORST CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON db	OUTPUT ON VSWR	OUTPUT OFF db	OUTPUT OFF VSWR
J2-J8 "1" 2.85 dB @ 2 - 18 GHz	14.18 dB	1.49 : 1	16.17 dB	1.37 : 1	dB	: 1
J2-J8 "0" 19.54 dB @ 2 - 18 GHz	13.70 dB	1.52 : 1	12.98 dB	1.58 : 1	dB	: 1
J3-J9 "1" 2.71 dB @ 2 - 18 GHz	12.25 dB	1.65 : 1	13.55 dB	1.53 : 1	dB	: 1
J3-J9 "0" 19.83 dB @ 2 - 18 GHz	11.36 dB	1.74 : 1	11.74 dB	1.70 : 1	dB	: 1
J4-J10 "1" 2.81 dB @ 2 - 18 GHz	12.59 dB	1.61 : 1	12.74 dB	1.60 : 1	dB	: 1
J4-J10 "0" 19.41 dB @ 2 - 18 GHz	15.33 dB	1.41 : 1	11.55 dB	1.72 : 1	dB	: 1
J5-J11 "1" 2.83 dB @ 2 - 18 GHz	16.16 dB	1.37 : 1	15.01 dB	1.43 : 1	dB	: 1
J5-J11 "0" 19.33 dB @ 2 - 18 GHz	13.72 dB	1.52 : 1	14.11 dB	1.49 : 1	dB	: 1
J6-J12 "1" 2.85 dB @ 2 - 18 GHz	12.57 dB	1.62 : 1	12.42 dB	1.63 : 1	dB	: 1
J6-J12 "0" 19.82 dB @ 2 - 18 GHz	14.37 dB	1.47 : 1	14.21 dB	1.48 : 1	dB	: 1
J7-J13 "1" 2.85 dB @ 2 - 18 GHz	11.91 dB	1.68 : 1	11.70 dB	1.70 : 1	dB	: 1
J7-J13 "0" 19.23 dB @ 2 - 18 GHz	12.72 dB	1.60 : 1	11.91 dB	1.68 : 1	dB	: 1
RESPONSE TIME						
J2 - J8	60 nS					
J3 - J9	60 nS					
J4 - J10	60 nS					
J5 - J11	60 nS					
J6 - J12	60 nS					
J7 - J13	60 nS					

NOTE: Any additional test data on back

TESTED ON: HP 8720D

QA/QC APPROVAL: _____

DATED: 3/6/06



**FINAL TEST DATA
ON
ATTENUATOR ASSEMBLY**

CUSTOMER: NORTHROP GRUMMAN
 JOB NO: P508039
 MODEL NO: SAA-218-6-093-013542
 SERIAL NO: PM602926
 CURRENT DRAW: + 5 VDC @ 240 mA; - 5 VDC @ 264 mA

TECHNICIAN: E. ELDER
 NGC P/N: 037-005334-0001
 OPTION NO: HERM
 SPECIFICATION: _____
 FREQUENCY RANGE: 2 - 18 GHz

INSERTION LOSS (WORST CASE)	RETURN LOSS (WORST CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON db	OUTPUT ON VSWR	OUTPUT OFF db	OUTPUT OFF VSWR
J2-J8 "1" 2.52 dB @ 2-18 GHz	11.21 dB	1.76 : 1	11.26 dB	1.75 : 1	dB	: 1
J2-J8 "0" 21.66 dB @ 2-18 GHz	11.46 dB	1.73 : 1	15.24 dB	1.42 : 1	dB	: 1
J3-J9 "1" 2.79 dB @ 2-18 GHz	12.42 dB	1.63 : 1	12.23 dB	1.65 : 1	dB	: 1
J3-J9 "0" 19.76 dB @ 2-18 GHz	15.95 dB	1.38 : 1	13.92 dB	1.50 : 1	dB	: 1
J4-J10 "1" 2.46 dB @ 2-18 GHz	12.19 dB	1.65 : 1	12.39 dB	1.63 : 1	dB	: 1
J4-J10 "0" 20.47 dB @ 2-18 GHz	10.94 dB	1.79 : 1	10.68 dB	1.83 : 1	dB	: 1
J5-J11 "1" 2.82 dB @ 2-18 GHz	11.30 dB	1.75 : 1	13.27 dB	1.55 : 1	dB	: 1
J5-J11 "0" 19.52 dB @ 2-18 GHz	14.51 dB	1.46 : 1	13.45 dB	1.54 : 1	dB	: 1
J6-J12 "1" 2.68 dB @ 2-18 GHz	12.62 dB	1.61 : 1	13.81 dB	1.51 : 1	dB	: 1
J6-J12 "0" 21.74 dB @ 2-18 GHz	11.19 dB	1.76 : 1	11.82 dB	1.69 : 1	dB	: 1
J7-J13 "1" 2.83 dB @ 2-18 GHz	11.29 dB	1.75 : 1	10.64 dB	1.83 : 1	dB	: 1
J7-J13 "0" 20.25 dB @ 2-18 GHz	14.33 dB	1.48 : 1	13.69 dB	1.52 : 1	dB	: 1
RESPONSE TIME						
J2 - J8	60 nS					
J3 - J9	60 nS					
J4 - J10	60 nS					
J5 - J11	60 nS					
J6 - J12	60 nS					
J7 - J13	60 nS					

NOTE: Any additional test data on back

TESTED ON: HP 8720D

QA/QC APPROVAL: _____



DATED: 3/3/06