



**TEST REPORT**

**ON**

**0.5 TO 18 GHz**

**LOW LOSS**

**HERMETICALLY SEALED**

**ABSORPTIVE**

**SP6T SOLID STATE RADIAL SWITCH**

**AMC MODEL No:**

**SWN-1170-6DT-0518**

**Options HS, RSC**

**Serial Numbers: 6MS101001 THRU 6MS101003**

DESIGNED  
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**April 19, 2004**

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**ISO9001 : 1994 CERTIFIED**

*Handwritten signatures and initials:*  
pw, DRH, JDT, WST, etc.

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## SP6T, ABSORPTIVE, SOLID STATE SWITCH AMC MODEL No: SWN-1170-6DT-0518 OPTIONS HS, RSC

### FEATURES:

- **BROAD BAND**
- **HERMETICALLY SEALED**
- **LOW LOSS**
- **ABSORPTIVE**



### SPECIFICATIONS:

- **FREQUENCY** : 0.5 GHz TO 18.0 GHz
- **INSERTION LOSS** : 4.25 dB
- **ISOLATION** : 0.5 GHz TO 2 GHz: 60 dB  
2 GHz TO 18 GHz: 70 dB
- **VSWR** : 2.0:1
- **SPEED** : RISE: 10 nS TYPICAL, 15 nS MAXIMUM  
FALL: 10 nS TYPICAL, 15 nS MAXIMUM  
DELAY ON: 75 nS TYPICAL, 100 nS MAXIMUM  
DELAY OFF: 75 nS TYPICAL, 100 nS MAXIMUM
- **POWER INPUT** : (CW) +20 dBm
- **SURVIVAL POWER** : 1 WATT CW, 10 WATTS PEAK 1 usec
- **CONTROL** : TTL LOGIC "0"=ON, "1"=OFF
- **TEMPERATURE** : SCREENED AT -65°C
- **POWER SUPPLY** : +5V @ 300 mA MAXIMUM  
-5V @ 100 mA MAXIMUM
- **WEIGHT** : 1.6 OUNCES

**PRODUCT FEATURE**

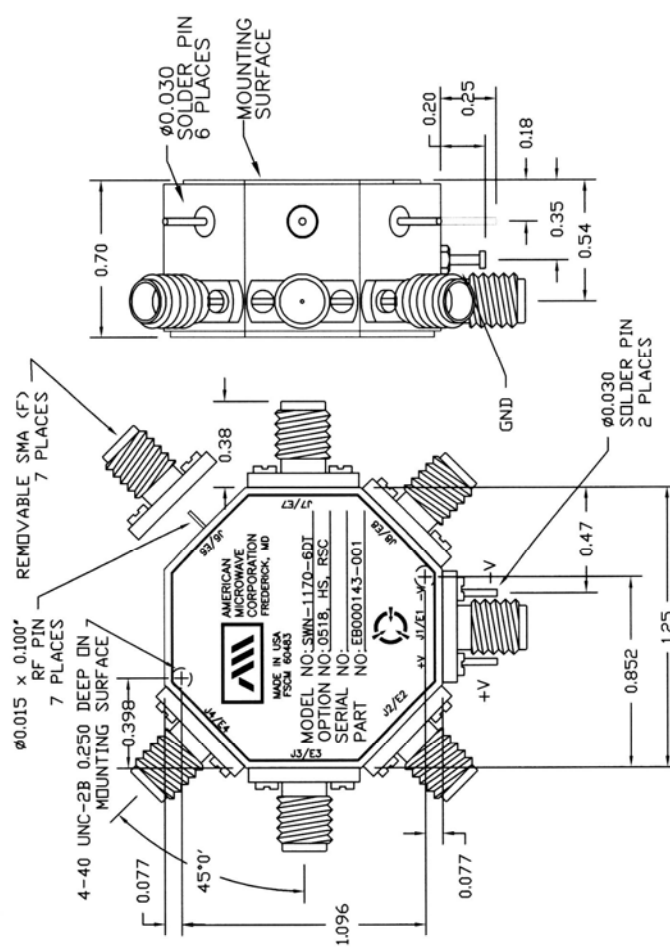
REV.	DESCRIPTION	DATE	APPROVED
A	ORIGINAL JOB# 003040E-1	09/21/00	

**DESCRIPTION:**  
 AMC MODEL SWN-1170-6DT-0518 OPTIONS HS, RSC IS A HERMETICALLY SEALED HIGH SPEED NON-REFLECTIVE/ABSORPTIVE SINGLE POLE SIX THROW SWITCH MODULE WITH LOW INSERTION LOSS, HIGH ISOLATION AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR 0.5 GHz TO 18 GHz OPERATION.

**SPECIFICATIONS:**

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: 4.25db
- ISOLATION: 0.5 GHz TO 2 GHz: 60db  
2 GHz TO 18 GHz: 70db
- VSWR: 2.0:1
- SPEED: RISE: 10ns TYPICAL, 15ns MAXIMUM  
FALL: 10ns TYPICAL, 15ns MAXIMUM  
DELAY ON: 75ns TYPICAL, 100ns MAXIMUM  
DELAY OFF: 75ns TYPICAL, 100ns MAXIMUM  
(CW)+20dBm
- POWER INPUT: 1 WATT CW, 10 WATTS PEAK 1 usec
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0"=ON "1"=OFF
- TEMPERATURE: SCREENED AT -65°C
- POWER SUPPLY: +5V @ 300 mA MAXIMUM  
-5V @ 100mA MAXIMUM
- WEIGHT: 1.6 OUNCES



**ENVIRONMENTAL RATINGS:**

- TEMPERATURE: -65°C TO +85°C (OPERATING)  
-65°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B COND. B
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

**CONFIDENTIAL AND PROPRIETARY**

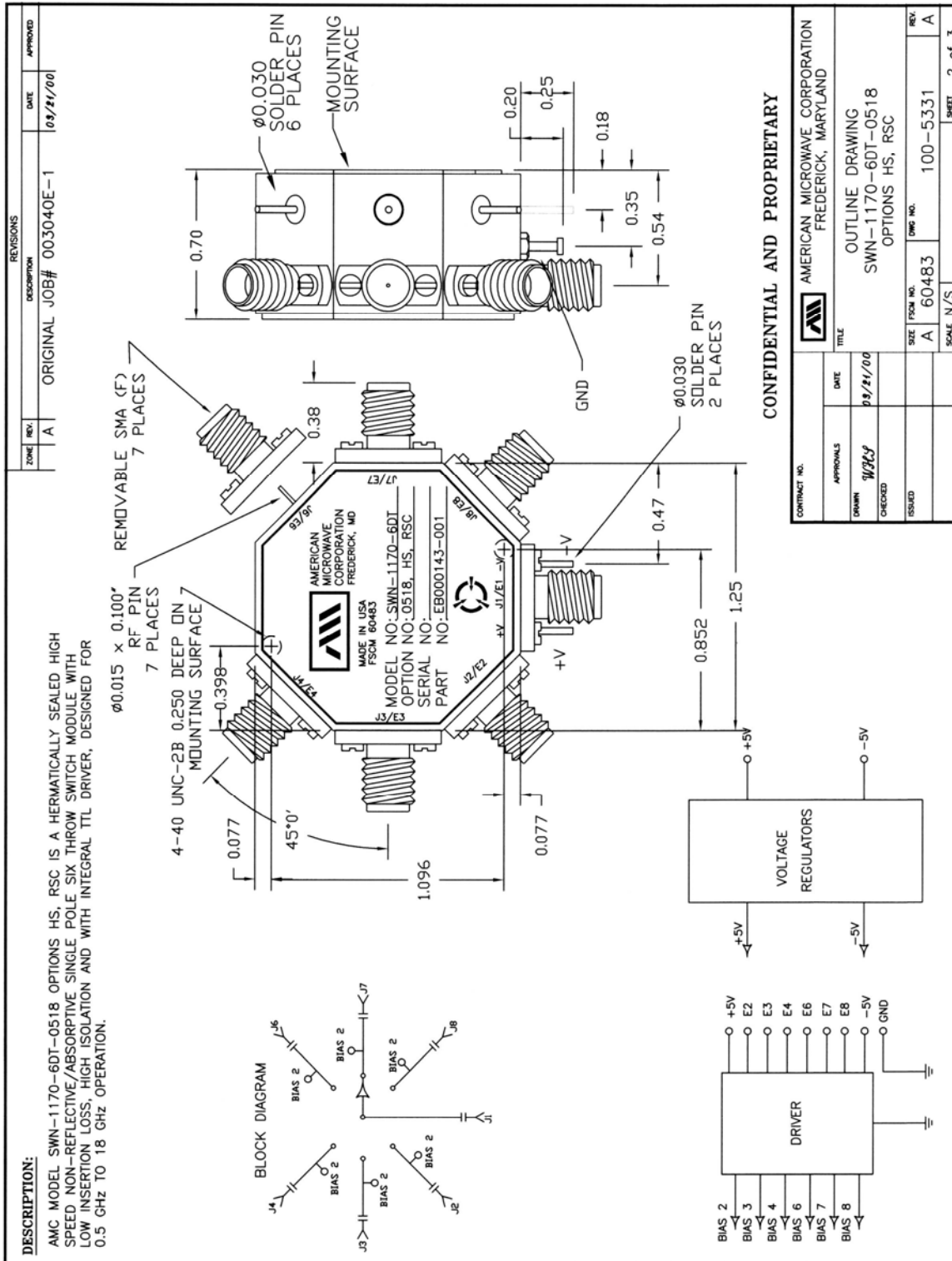
AMERICAN MICROWAVE CORPORATION  
 FREDERICK, MARYLAND

PRODUCT FEATURE  
 SWN-1170-6DT-0518  
 OPTIONS HS, RSC

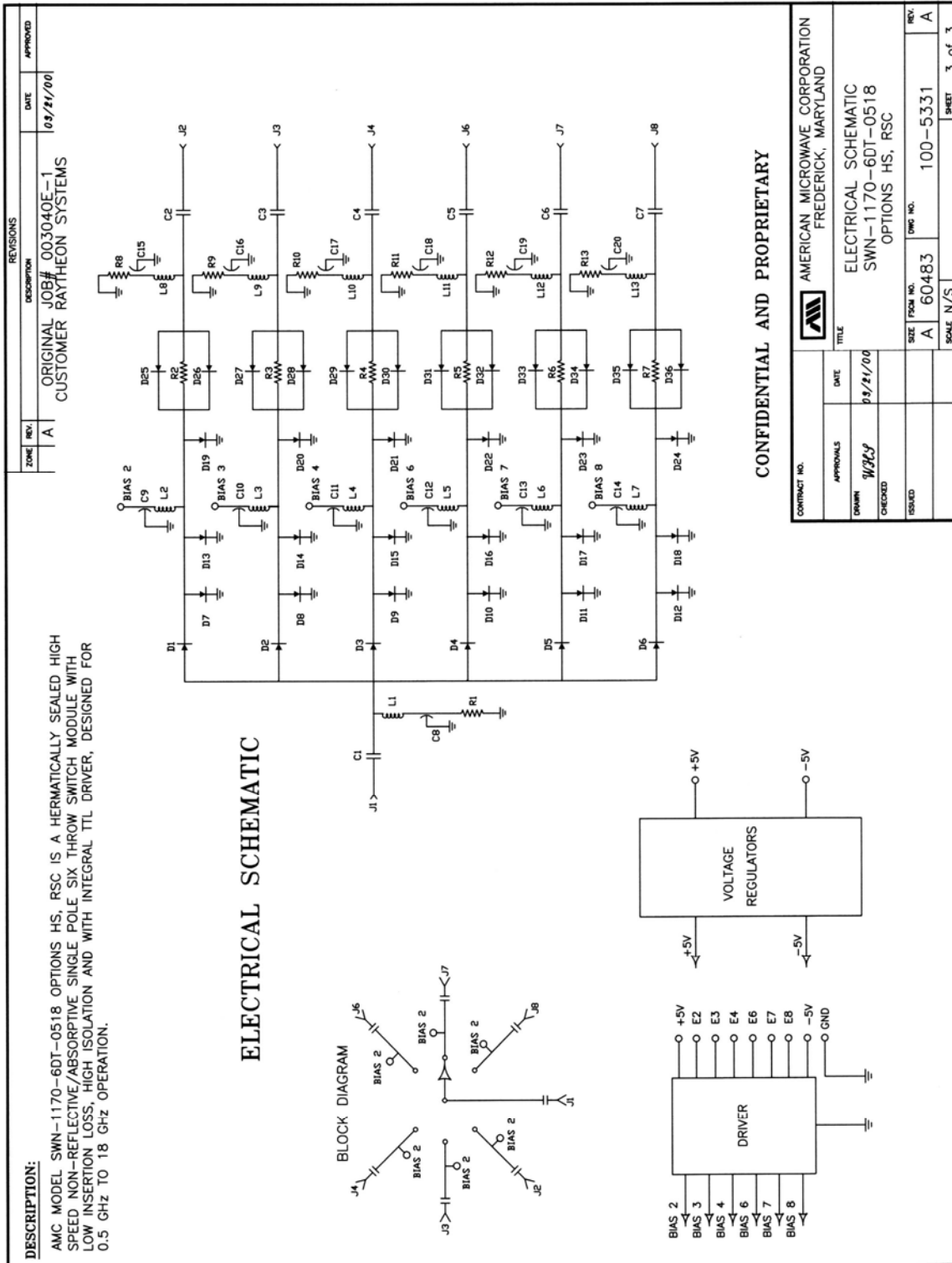
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 DRAWN: WPC/J  
 CHECKED:  
 ISSUED:  
 SIZE FROM NO. A 60483  
 DWG NO. 100-5331  
 SCALE N/S  
 SHEET 1 of 3



**OUTLINE DRAWING**



## ELECTRICAL SCHEMATIC



**FINAL TEST DATA**

**FINAL TEST DATA SHEETS**

**FOR**

**AMC MODEL NUMBER**

**SWN-1170-6DT-0518**  
**OPTION HS, RSC**

**Serial Numbers:**

**6MS101001 THRU 6MS101003**

**FINAL TEST DATA**

AMC MODEL NO: SWN-1170-6DT-0518 OPTIONS HS, RSC, SERIAL NUMBER: 6MS101001

FINAL TEST DATA ON MICROWAVE SWITCH DATE: 3/17/01

CUSTOMER: RAYTHEON SYSTEMS      TECHNICIAN: T. Phung / H. Nino  
 JOB NO: 003040E -3  
 MODEL NO: SWN-1170-6DT-0518      OPTION NO: HS, RSC  
 SERIAL NO: 6MS101001      SPECIFICATION:  
 CURRENT DRAW: +5 VDC @ 30mA; -5 VDC @ 50 mA      FREQUENCY RANGE: 0.5 GHz TO 18.0 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
J1-J2 4.2 dB	11.5 dB	1.73 : 1	10.6 dB	1.84 : 1	12.9 dB	1.59 : 1
J1-J3 4.0 dB	10.5 dB	1.85 : 1	10.9 dB	1.80 : 1	10.5 dB	1.85 : 1
J1-J4 4.2 dB	10.1 dB	1.91 : 1	9.60 dB	1.99 : 1	11.1 dB	1.77 : 1
J1-J5 4.2 dB	10.3 dB	1.88 : 1	9.82 dB	1.95 : 1	12.9 dB	1.59 : 1
J1-J6 4.2 dB	11.3 dB	1.75 : 1	9.77 dB	1.96 : 1	10.9 dB	1.80 : 1
J1-J7 4.1 dB	9.87 dB	1.95 : 1	13.1 dB	1.57 : 1	10.9 dB	1.80 : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J3 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J4 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J6 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J7 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J8 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
	nS	nS	nS	nS
	nS	nS	nS	nS
	nS	nS	nS	nS

NOTE: Any additional test data on back      TESTED ON: HP 8720D  
 QA/QC APPROVAL: Q4 Donald Harmon      DATED: 3/19/01



**FINAL TEST DATA**

AMC MODEL NO: SWN-1170-6DT-0518 OPTIONS HS, RSC, SERIAL NUMBER: 6MS101002

FINAL TEST DATA ON MICROWAVE SWITCH DATE: 3/17/01

CUSTOMER: RAYTHEON SYSTEMS      TECHNICIAN: T. Phung / H. Nino  
 JOB NO: 003040E -3  
 MODEL NO: SWN-1170-6DT-0518      OPTION NO: HS, RSC  
 SERIAL NO: 6MS101002      SPECIFICATION:  
 CURRENT DRAW: +5 VDC @ 300mA; -5 VDC @ 50 mA      FREQUENCY RANGE: 0.5 GHz TO 18.0 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
J1-J2 4.2 dB	9.78 dB	1.96 : 1	9.65 dB	1.98 : 1	9.75 dB	1.96 : 1
J1-J3 4.0 dB	9.72 dB	1.97 : 1	11.4 dB	1.74 : 1	11.9 dB	1.68 : 1
J1-J4 4.0 dB	9.96 dB	1.93 : 1	9.74 dB	1.97 : 1	11.5 dB	1.73 : 1
J1-J5 4.2 dB	10.1 dB	1.92 : 1	10.7 dB	1.82 : 1	12.3 dB	1.64 : 1
J1-J6 4.3 dB	9.95 dB	1.93 : 1	10.9 dB	1.80 : 1	13.2 dB	1.56 : 1
J1-J7 4.3 dB	10.0 dB	1.92 : 1	9.79 dB	1.96 : 1	13.1 dB	1.57 : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J3 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J4 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J6 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J7 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J8 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
	nS	nS	nS	nS
	nS	nS	nS	nS
	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: HP8720D

QA/QC APPROVAL: Q4 Donald Harmon      DATED: 3/19/01

**FINAL TEST DATA**

AMC MODEL NO: SWN-1170-6DT-0518 OPTIONS HS, RSC, SERIAL NUMBER: 6MS101003

FINAL TEST DATA ON MICROWAVE SWITCH DATE: 3/17/01

CUSTOMER: RAYTHEON SYSTEMS TECHNICIAN: T. Phung / H. Nino  
 JOB NO: 003040E -3  
 MODEL NO: SWN-1170-6DT-0518 OPTION NO: HS, RSC  
 SERIAL NO: 6MS101003 SPECIFICATION:  
 CURRENT DRAW: +5 VDC @ 306mA; -5 VDC @ 50 mA FREQUENCY RANGE: 0.5 GHz TO 18.0 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
J1-J2 4.3 dB	12.7 dB	1.60 : 1	11.2 dB	1.76 : 1	10.4 dB	1.87 : 1
J1-J3 4.5 dB	10.0 dB	1.92 : 1	11.0 dB	1.78 : 1	11.5 dB	1.73 : 1
J1-J4 4.3 dB	9.87 dB	1.95 : 1	9.54 dB	2.00 : 1	12.0 dB	1.67 : 1
J1-J5 4.4 dB	10.2 dB	1.89 : 1	9.49 dB	2.00 : 1	13.1 dB	1.57 : 1
J1-J6 4.5 dB	10.1 dB	1.91 : 1	10.0 dB	1.92 : 1	9.85 dB	1.95 : 1
J1-J7 4.2 dB	11.8 dB	1.69 : 1	10.8 dB	1.81 : 1	13.9 dB	1.51 : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1
	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J3 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J4 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J6 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J7 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
J1-J8 >60 dB	<100 nS	<15 nS	<100 nS	<15 nS
	nS	nS	nS	nS
	nS	nS	nS	nS
	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: HP 8720B

QA/QC APPROVAL: Q4 Donald Harmon DATED: 3/19/01