



TEST REPORT

ON

SP2T

REFLECTIVE

6.0 TO 18.0 GHz

SOLID STATE SWITCH

AMC MODEL No:

SWNM-2181-2DR-STANDARD

Options HIT, 618, HPR4W

Serial Numbers: 2MSS1020, 2MS102086 THRU 2MS102089

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May 5, 2004

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ISO9001 : 2000 CERTIFIED

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**SINGLE POLE TWO THROW
REFLECTIVE SOLID STATE SWITCH
AMC MODEL No: SWNM-2181-2DR-STANDARD
OPTIONS: HIT, 618, HPR4W**

FEATURES:

- **MINIATURE PACKAGE**
- **HIGH SPEED**
- **60 dB HIGH ISOLATION**
- **REFLECTIVE**
- **REMOVABLE SMA RF CONNECTORS FOR SURFACE MOUNT CAPABILITY**
- **HIGH POWER OF 4 WATTS**
- **2.5 dB LOW INSERTION LOSS**
- **INTEGRAL TTL DRIVER**

SPECIFICATIONS:

- **FREQUENCY** : 6.0 TO 18.0 GHz
- **INSERTION LOSS** : 2.5 dB MAXIMUM
- **ISOLATION** : 60 dB MINIMUM
- **VSWR** : 2.0:1 MAXIMUM
- **SWITCHING SPEED** : 70 nSEC MAXIMUM
- **POWER HANDLING** : 4 WATTS MAXIMUM
- **TEMPERATURE** : -54^oC TO +100^oC
- **CONTROL** : TTL LOGIC WITH SINGLE CONTROL
 - : LOGIC "0" = PORT J3 TO J1 IS ON
 - : LOGIC "1" = PORT J3 TO J2 IS ON
- **POWER SUPPLY** : +5 V @ 75 mA MAXIMUM
 - : -15 V OR -12 V @ 50 mA MAXIMUM
- **RF CONNECTORS** : REMOVABLE SMA FEMALE
- **SIZE** : 0.8" (L) X 0.62" (W) X 0.3" (H)
- **WEIGHT** : 0.75 OUNCE TYPICAL
- **FINISH** : GOLD PLATED

PRODUCT FEATURE

| | | | | | |
|------------------------|--------|--------|----------|--------|--------|
| REV. 1 | REV. 2 | REV. 3 | REV. 4 | REV. 5 | REV. 6 |
| REVISIONS | | | | | |
| DESCRIPTION | | | DATE | | |
| ORIGINAL JOB # 909182E | | | 02/16/04 | | |

DESCRIPTION:
 AMC MODEL SWNM-2181-2DR-STANDARD OPTION HIT, 618, HPR4W IS A MINIATURE SINGLE POLE DOUBLE THROW, ABSORPTIVE/NON-REFLECTIVE SWITCH MODULE WITH LOW INSERTION LOSS, HIGH ISOLATION, INTEGRAL TTL DRIVER AND POWER HANDLING OF 4 WATTS CW OVER THE 5.0 TO 18 GHz BAND WITH SINGLE CONTROL.

SPECIFICATIONS:

- FREQUENCY: 5.0 GHz TO 18 GHz
- INSERTION LOSS: 2.5 dB MAXIMUM
- ISOLATION: 60 dB MINIMUM
- VSWR: 2.0:1 MAXIMUM
- SWITCHING SPEED: 70 nSEC MAXIMUM
- POWER HANDLING: 4 WATTS MAXIMUM
- TEMPERATURE: -54°C TO +100°C
- CONTROL: TTL LOGIC WITH SINGLE CONTROL
 LOGIC "0" = PORT J3 TO J1 IS ON
 LOGIC "1" = PORT J3 TO J2 IS ON
- POWER SUPPLY: +5V @ 75 mA MAXIMUM
 -15V OR -12V @ 50mA MAXIMUM
- RF CONNECTORS: REMOVABLE SMA FEMALE
- SIZE: 0.8" (L) x 0.62" (W) x 0.3" (H)
- WEIGHT: 0.75 OUNCE TYPICAL
- FINISH: GOLD PLATED
- MOUNTING: 150°C MAXIMUM FOR TWO MINUTES FOR MOUNTING TO PC BOARD

ENVIRONMENTAL RATINGS:

- TEMPERATURE: -54°C TO +100°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

STANDARD UNIT HAS SINGLE CONTROL TTL LOGIC (1 CONTROL PIN)
 LOGIC "0" = PORT J3 TO J1 IS ON
 LOGIC "1" = PORT J3 TO J2 IS ON

OPTION IND HAS INDEPENDANT CONTROL TTL LOGIC (2 CONTROL PINS)
 LOGIC "0" = INSERTION LOSS
 LOGIC "1" = ISOLATION

ALL DIMENSIONS ARE IN INCHES
 TOLERANCES:
 X.XX ±0.020
 X.XXX ±0.010

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

FINAL TEST DATA

FINAL TEST DATA SHEETS

FOR

AMC MODEL No:
**SWNM-2181-2DR-STANDARD
OPTIONS HIT, 618, HPR4W**

Serial Numbers:

2MSS1020, 2MS102086 THRU 2MS102089



FINAL TEST DATA

AMC MODEL NUMBER: SWNM-2181-2DR-STANDARD OPTIONS HIT, 618, HPR4W
 SERIAL NUMBER: 2MS102088

FORM: 100-5997



AMERICAN MICROWAVE CORPORATION
 7311-G GROVE RD., FREDERICK MD. 21704
 TEL: 301-662-4700 FAX: 301-662-4938

FINAL TEST DATA
 ON
 MICROWAVE SWITCH

DATE: 6/19/01

CUSTOMER: HI-TECH
 JOB NO: 909182E
 MODEL NO: SWN-2181-2DR-STANDARD
 SERIAL NO: 2MS 102088
 CURRENT DRAW: +5 VDC @ 668 mA; -15 VDC @ 49 mA

TECHNICIAN: R. Apple
 OPTION NO: HIT, 618, HPR4W
 SPECIFICATION:
 FREQUENCY RANGE: 6.0 MHz - 18.0 MHz

| 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 2.41 dB | 11.67 dB | 1.71 : 1 | 11.95 dB | 1.68 : 1 | 10.39 dB | 1.87 : 1 |
| J1-J3 2.59 dB | 10.18 dB | 1.90 : 1 | 10.05 dB | 1.92 : 1 | 7.31 dB | 2.04 : 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 |
| | 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 |
| | dB | 1. : 1 | dB | 1. : 1 | dB | 1. : 1 |

| ISOLATION | SWITCHING SPEED | | | |
|--------------|-----------------|-----------|-----------|-----------|
| | DELAY ON | RISE TIME | DELAY OFF | FALL TIME |
| J1-J2 >60 dB | < 70 nS | nS | < 70 nS | nS |
| J1-J3 >60 dB | < 70 nS | nS | < 70 nS | nS |
| | nS | nS | nS | nS |
| | nS | nS | nS | nS |
| | nS | nS | nS | nS |
| | nS | nS | nS | nS |
| | nS | nS | nS | nS |
| | nS | nS | nS | nS |

NOTE: Any additional test data on back

TESTED ON: HP 8757A/8350B
 QA/QC APPROVAL: [Signature] DATED: 6/21/01



FINAL TEST DATA

AMC MODEL NUMBER: SWNM-2181-2DR-STANDARD OPTIONS HIT, 618, HPR4W
 SERIAL NUMBER: 2MS102089

FORM: 100-5997



AMERICAN MICROWAVE CORPORATION
 7311-G GROVE RD., FREDERICK MD. 21704
 TEL: 301-662-4700 FAX: 301-662-4938

FINAL TEST DATA
 ON
 MICROWAVE SWITCH

DATE: 6/19/01

CUSTOMER: HI-TECH
 JOB NO: 909182E
 MODEL NO: SWN-2181-2DR-STANDARD
 SERIAL NO: 2MS 102089
 CURRENT DRAW: +5 VDC @ 66 mA; -15 VDC @ 50 mA

TECHNICIAN: R. Afede
 OPTION NO: HIT, 618, HPR4W
 SPECIFICATION:
 FREQUENCY RANGE: 6.0 MHz - 18.0 MHz

| 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 2.51 dB | 11.22 dB | 1.76 : 1 | 11.66 dB | 1.71 : 1 | 12.32 dB | 1.64 : 1 |
| J1-J3 2.51 dB | 13.51 dB | 1.54 : 1 | 13.74 dB | 1.52 : 1 | 10.03 dB | 1.92 : 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 |
| | 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 |
| | 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 | <70 nS | nS | <70 nS | nS |
| J1-J3 >60 dB | <70 nS | nS | <70 nS | nS |
| | nS | nS | nS | nS |
| | nS | nS | nS | nS |
| | nS | nS | nS | nS |
| | nS | nS | nS | nS |
| | nS | nS | nS | nS |
| | nS | nS | nS | nS |
| | nS | nS | nS | nS |

NOTE: Any additional test data on back

TESTED ON: HP 8757A/8350B

QA/QC APPROVAL: Q2 Ken Whitham [Signature] DATED: 6/21/01