



TEST REPORT
ON
3.75 TO 6.0 GHz
SINGLE POLE EIGHT THROW
ABSORPTIVE / NON-REFLECTIVE SWITCH MODULE

AMC MODEL No:
MSN-8DT-05-STANDARD
OPTION 36, 12X, LVT

Serial Numbers: 8MS90982 THRU 8MS90987

DESIGNED
BY
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TESTED
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REPORTED
BY
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April 20, 2005

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ISO9001 : 2000 CERTIFIED

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SINGLE POLE EIGHT THROW ABSORPTIVE / NON-REFLECTIVE SWITCH MODULE AMC MODEL No: MSN-8DT-05-STANDARD OPTIONS 36, 12X, LVT

FEATURES:

- **3.75 TO 6.0 GHz FREQUENCY RANGE**
- **LOW INSERTION LOSS**
- **HIGH ISOLATION**
- **LOW VIDEO TRANSIENTS**
- **LOW HARMONIC DISTORTIONS**

SPECIFICATIONS:

● FREQUENCY	:	3.75 TO 6.0 GHz
● INSERTION LOSS	:	2.5 dB MAXIMUM, 2.0 dB TYPICAL
● ISOLATION (ANY PORT)	:	60 dB MINIMUM
● VSWR	:	1.8:1
● SWITCHING SPEED	:	< 30 nS
● RISE / FALL TIME	:	< 10 nS
● MAXIMUM TOGGLE RATE	:	> 20 MHz
● RF CONNECTORS	:	SMA FEMALE
● DC POWER SUPPLY	:	+5V ±10% @ 400 mA MAXIMUM -5V ±10% @ 100 mA MAXIMUM
● CONTROL	:	TTL LOGIC "0" = ON, "1" = OFF
● CONTROL INTERFACE	:	DC SOLDER PINS
● HARMONIC DISTORTION	:	≤70 dB @ +10 dBm I/P
● FLATNESS ACROSS BAND	:	±0.5 dB
● VIDEO LEAKAGE	:	100 mV PEAK TO PEAK, 500 MHz BANDWIDTH (-60 dBm to -65 dBm LEAKAGE POWER OR ENERGY IN THE BAND OF INTEREST)
● 1 dB COMPRESSION POINT	:	+20 dBm
● 2 TONE 3 RD ORDER INTERCEPT POINT	:	+35 dBm
● 2 TONE 2 ND ORDER INTERCEPT POINT	:	+55 dBm
● 0.1 dB PASS BAND	:	3.75 GHz TO 6.0 GHz
● WEIGHT	:	4.5 OUNCES TYPICAL
● SIZE	:	4.0" (L) x 1.5" (W) x 0.4" (H)



PRODUCT FEATURE

DATE	DESCRIPTION	DATE	APPROVAL
1/1/00	ORIGINAL RELEASE, JOB# 907134E-6	1/1/00/09	

MECHANICAL OUTLINE

AMERICAN MICROWAVE CORPORATION
SOLID STATE SWITCH
 MODEL NO: MSN-8DT-05-STANDARD
 OPTION NO: 36, 12X, LVT
 SERIAL NO:
 PART NO:

CONFIDENTIAL AND PROPRIETARY

APPROVALS	DATE	TITLE	AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND
WPC/J	1/1/00/02	PRODUCT FEATURE	
DESIGNED		MSN-8DT-05-STANDARD OPTION 36, 12X, LVT SOLID STATE SWITCH	
SCALE	N/S	DRAWING NO.	100-6832
		PART NO.	MSN-8DT-05
		SHEET	1 of 3

DESCRIPTION:
 AMC MODEL MSN-8DT-05-STANDARD OPTION 36, 12X, LVT IS A SINGLE POLE EIGHT THROW ABSORPTIVE/NON-REFLECTIVE SWITCH MODULE WITH VERY LOW INSERTION LOSS, HIGH ISOLATION AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR LOW VIDEO TRANSIENTS AND LOW HARMONIC DISTORTION OVER 3.75 TO 6.0 GHz BANDWIDTH.

SPECIFICATIONS:

- FREQUENCY: 3.75 GHz TO 6.0 GHz
- INSERTION LOSS: 2.5 dB MAXIMUM, 2.0 dB TYPICAL
- ISOLATION (ANY PORT): 80 dB MINIMUM
- VSWR (ANY PORT, ANY STATE): 1.8:1
- SWITCHING SPEED: <30 ns
- RISE/FALL TIME (10%/90% RF): <10 ns
- SQUISH TO 10% RF (10% TO 10% RF): >20 MHz
- MAXIMUM TOGGLE RATE: >20 MHz
- (50% DC)
- RF CONNECTORS: SMA FEMALE
- DC POWER SUPPLY: +5V ±10% @ 400 mA MAXIMUM
- CONTROL: TTL LOGIC 0=ON 1=OFF
- CONTROL INTERFACE: DC SOLDER PINS
- HARMONIC DISTORTION: ≤ 70dB @ +10 dBm I/P (ON STATE)
- FLATNESS ACROSS BAND: ±0.5dB
- VIDEO LEAKAGE: 100 mV PEAK TO PEAK, 500 MHz BANDWIDTH (-60 dBm TO -65 dBm LEAKAGE POWER OR ENERGY IN THE BAND OF INTEREST)
- 1 dB COMPRESSION POINT: +20 dBm
- 2 TONE 3RD ORDER INTERCEPT POINT, POUT 0dBm: +35 dBm
- 2 TONE 2ND ORDER INTERCEPT POINT, POUT 0dBm: +55 dBm
- 0.1 dB PASS BAND: 3.75 GHz TO 6.0 GHz
- WEIGHT: 4.5 OUNCES TYPICAL
- SIZE: 4.0 (L) X 1.50 (W) X 0.40 (H)

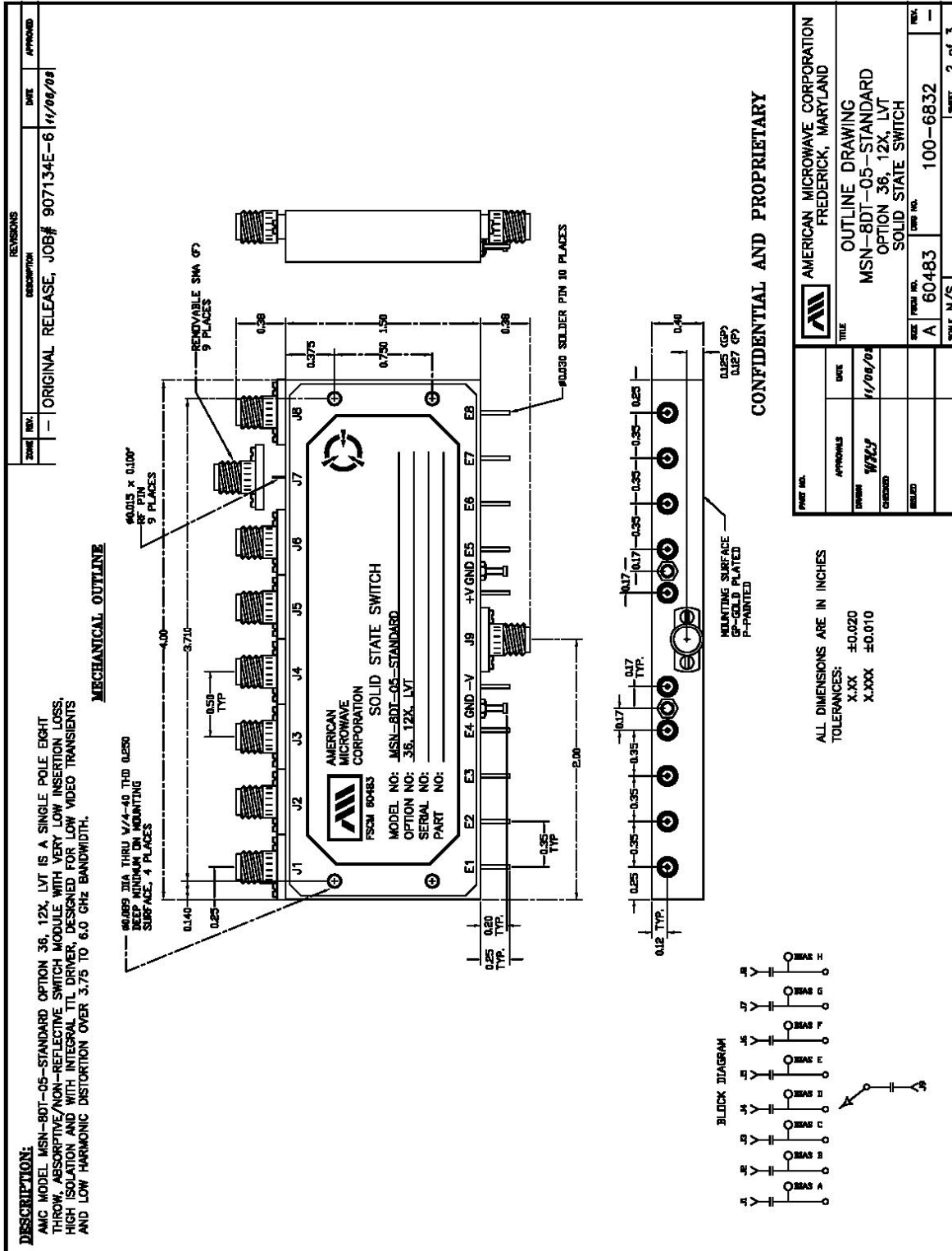
ALL DIMENSIONS ARE IN INCHES
 TOLERANCES:
 X.XX ±0.020
 X.XXX ±0.010

ENVIRONMENTAL RATINGS:

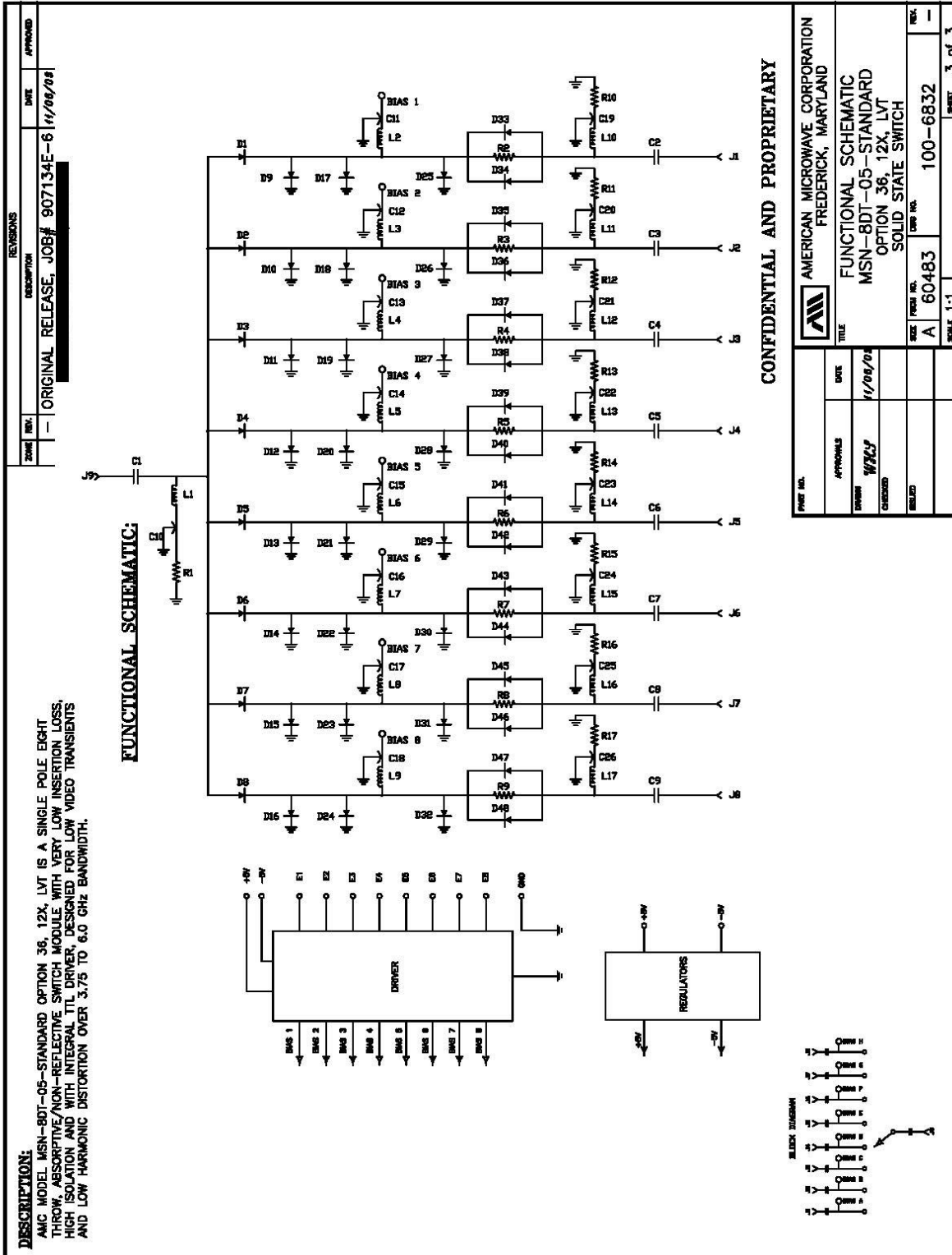
- TEMPERATURE: -10°C TO +55°C (OPERATING)
- TEMPERATURE: -40°C TO +71°C (STORAGE)
- HUMIDITY: 95% OVER TEMPERATURE
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

NOTE THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

OUTLINE DRAWING



FUNCTIONAL SCHEMATIC



FINAL TEST DATA

FINAL TEST DATA SHEETS

FOR

AMC MODEL NUMBER

MSN-8DT-05-STANDARD
OPTION 36, 12X, LVT

Serial Numbers:

8MS90982 THRU 8MS90987



FINAL TEST DATA

AMC MODEL NO: MSN-8DT-05-STANDARD OPTIONS 36, 12X, LVT, SERIAL NUMBER: 8MS90982

FORM: SW-DTA 28/1



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: 11/30/09

CUSTOMER: Teleonus TECHNICIAN: PA
 JOB NO: 902134E-6
 MODEL NO: MSN-8DT-05-STD OPTION NO: 36, 12X, LVT
 SERIAL NO: 8MS90982 SPECIFICATION:
 CURRENT DRAW: ± 5 VDC @ 250 mA; - 5 VDC @ 30 mA FREQUENCY RANGE: 3.75 to 6.6 Hz

INSERTION LOSS (WORST CASE)	RETURN LOSS (WORST CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J ₉ -J ₁ 1.77 dB	14.1 dB	1.49 : 1	15.5 dB	1.40 : 1	17.5 dB	1.30 : 1
J ₉ -J ₂ 1.73 dB	50.9 dB	1.37 : 1	15 dB	1.43 : 1	19.6 dB	1.23 : 1
J ₉ -J ₃ 1.62 dB	14 dB	1.49 : 1	13.6 dB	1.52 : 1	19.4 dB	1.23 : 1
J ₉ -J ₄ 1.48 dB	15.6 dB	1.39 : 1	18.6 dB	1.26 : 1	18.1 dB	1.28 : 1
J ₉ -J ₅ 1.43 dB	15.7 dB	1.38 : 1	18.4 dB	1.27 : 1	18.9 dB	1.25 : 1
J ₉ -J ₆ 1.70 dB	13.7 dB	1.51 : 1	13.3 dB	1.54 : 1	17.8 dB	1.29 : 1
J ₉ -J ₇ 1.84 dB	15.2 dB	1.42 : 1	15.8 dB	1.38 : 1	18.6 dB	1.26 : 1
J ₉ -J ₈ 1.82 dB	14.3 dB	1.42 : 1	15.4 dB	1.40 : 1	17 dB	1.33 : 1
dB	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J ₉ -J ₁ >60 dB	19 nS	6 nS	13 nS	14 nS
J ₉ -J ₂ >60 dB	17 nS	5 nS	14 nS	4 nS
J ₉ -J ₃ >60 dB	18 nS	5 nS	13 nS	4 nS
J ₉ -J ₄ >60 dB	19 nS	5 nS	13 nS	4 nS
J ₉ -J ₅ >60 dB	17 nS	4 nS	14 nS	5 nS
J ₉ -J ₆ >60 dB	18 nS	8 nS	10 nS	1 nS
J ₉ -J ₇ >60 dB	17 nS	4 nS	10 nS	1 nS
J ₉ -J ₈ >60 dB	17 nS	4 nS	12 nS	2 nS
dB	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: 835013 / 87579 HP

QA/QC APPROVAL: PA

DATED: 11/30/09



FINAL TEST DATA

AMC MODEL NO: MSN-8DT-05-STANDARD OPTIONS 36, 12X, LVT, SERIAL NUMBER: 8MS90983

FORM: SW-DTA 28/1



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: 11/30/99

CUSTOMER: Telemus TECHNICIAN: PA
 JOB NO: 902134E-6
 MODEL NO: MSN-8DT-05-STO OPTION NO: 36, 12X, LVT
 SERIAL NO: 8MS90983 SPECIFICATION:
 CURRENT DRAW: ± 5VDC @ 260 mA; - 5VDC @ 20 mA FREQUENCY RANGE: 3.75 to 6.6Hz

INSERTION LOSS (WORST CASE)	RETURN LOSS (WORST CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
<u>J₉-J₁ 1.43 dB</u>	<u>15.8 dB</u>	<u>1.38 : 1</u>	<u>16.7 dB</u>	<u>1.34 : 1</u>	<u>18.5 dB</u>	<u>1.26 : 1</u>
<u>J₉-J₂ 1.32 dB</u>	<u>16.8 dB</u>	<u>1.33 : 1</u>	<u>16.5 dB</u>	<u>1.35 : 1</u>	<u>19.1 dB</u>	<u>1.24 : 1</u>
<u>J₉-J₃ 1.29 dB</u>	<u>17.7 dB</u>	<u>1.30 : 1</u>	<u>16 dB</u>	<u>1.37 : 1</u>	<u>19.9 dB</u>	<u>1.22 : 1</u>
<u>J₉-J₄ 1.16 dB</u>	<u>19.9 dB</u>	<u>1.22 : 1</u>	<u>21.2 dB</u>	<u>1.19 : 1</u>	<u>20.5 dB</u>	<u>1.20 : 1</u>
<u>J₉-J₅ 1.16 dB</u>	<u>19.3 dB</u>	<u>1.24 : 1</u>	<u>19.8 dB</u>	<u>1.22 : 1</u>	<u>18.4 dB</u>	<u>1.27 : 1</u>
<u>J₉-J₆ 1.65 dB</u>	<u>15.9 dB</u>	<u>1.38 : 1</u>	<u>15.3 dB</u>	<u>1.41 : 1</u>	<u>19.9 dB</u>	<u>1.22 : 1</u>
<u>J₉-J₇ 1.29 dB</u>	<u>18.4 dB</u>	<u>1.27 : 1</u>	<u>17.4 dB</u>	<u>1.31 : 1</u>	<u>19.6 dB</u>	<u>1.23 : 1</u>
<u>J₉-J₈ 1.43 dB</u>	<u>14.9 dB</u>	<u>1.43 : 1</u>	<u>15.6 dB</u>	<u>1.39 : 1</u>	<u>17.1 dB</u>	<u>1.32 : 1</u>
dB	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
<u>J₉-J₁ >60 dB</u>	<u>14 nS</u>	<u>2 nS</u>	<u>13 nS</u>	<u>2 nS</u>
<u>J₉-J₂ >60 dB</u>	<u>12 nS</u>	<u>1 nS</u>	<u>13 nS</u>	<u>4 nS</u>
<u>J₉-J₃ >60 dB</u>	<u>13 nS</u>	<u>2 nS</u>	<u>12 nS</u>	<u>2 nS</u>
<u>J₉-J₄ >60 dB</u>	<u>11 nS</u>	<u>1 nS</u>	<u>14 nS</u>	<u>5 nS</u>
<u>J₉-J₅ >60 dB</u>	<u>12 nS</u>	<u>1 nS</u>	<u>14 nS</u>	<u>4 nS</u>
<u>J₉-J₆ >60 dB</u>	<u>12 nS</u>	<u>1 nS</u>	<u>14 nS</u>	<u>5 nS</u>
<u>J₉-J₇ >60 dB</u>	<u>11 nS</u>	<u>1 nS</u>	<u>10 nS</u>	<u>1 nS</u>
<u>J₉-J₈ >60 dB</u>	<u>12 nS</u>	<u>1 nS</u>	<u>14 nS</u>	<u>5 nS</u>
dB	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: 535013 / 87579A MP

QA/QC APPROVAL: PA

DATED: 11/30/99



FINAL TEST DATA

AMC MODEL NO: MSN-8DT-05-STANDARD OPTIONS 36, 12X, LVT, SERIAL NUMBER: 8MS90984

FORM: SW-DTA 28/1



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: 11/30/99

CUSTOMER: Tele. mms TECHNICIAN: Pa
 JOB NO: 902134E-G
 MODEL NO: MSN-8DT-05-STD OPTION NO: 36, 12X, LVT
 SERIAL NO: 848590984 SPECIFICATION:
 CURRENT DRAW: +5VDC @ 250 mA; -5VDC @ 250mA FREQUENCY RANGE: 3.75 to 6.6Hz

INSERTION LOSS (WORST CASE)	RETURN LOSS (WORST CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
<u>J9-J1 1.76 dB</u>	<u>13.8 dB</u>	<u>1.51 : 1</u>	<u>15.7 dB</u>	<u>1.38 : 1</u>	<u>15.6 dB</u>	<u>1.39 : 1</u>
<u>J9-J2 1.88 dB</u>	<u>14.3 dB</u>	<u>1.47 : 1</u>	<u>17.1 dB</u>	<u>1.32 : 1</u>	<u>18.6 dB</u>	<u>1.26 : 1</u>
<u>J9-J3 1.74 dB</u>	<u>15.3 dB</u>	<u>1.41 : 1</u>	<u>14.5 dB</u>	<u>1.46 : 1</u>	<u>18.8 dB</u>	<u>1.25 : 1</u>
<u>J9-J4 1.56 dB</u>	<u>14.3 dB</u>	<u>1.47 : 1</u>	<u>17.2 dB</u>	<u>1.31 : 1</u>	<u>20.6 dB</u>	<u>1.20 : 1</u>
<u>J9-J5 1.70 dB</u>	<u>14.1 dB</u>	<u>1.49 : 1</u>	<u>16.7 dB</u>	<u>1.34 : 1</u>	<u>18.5 dB</u>	<u>1.26 : 1</u>
<u>J9-J6 2.05 dB</u>	<u>15.2 dB</u>	<u>1.41 : 1</u>	<u>15.5 dB</u>	<u>1.40 : 1</u>	<u>21.9 dB</u>	<u>1.17 : 1</u>
<u>J9-J7 1.68 dB</u>	<u>17.1 dB</u>	<u>1.32 : 1</u>	<u>16.7 dB</u>	<u>1.34 : 1</u>	<u>19.1 dB</u>	<u>1.25 : 1</u>
<u>J9-J8 1.82 dB</u>	<u>14.4 dB</u>	<u>1.47 : 1</u>	<u>15.7 dB</u>	<u>1.39 : 1</u>	<u>16.9 dB</u>	<u>1.33 : 1</u>
dB	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
<u>J9-J1 >60 dB</u>	<u>12 nS</u>	<u>2 nS</u>	<u>10 nS</u>	<u>3 nS</u>
<u>J9-J2 >60 dB</u>	<u>13 nS</u>	<u>2 nS</u>	<u>13 nS</u>	<u>4 nS</u>
<u>J9-J3 >60 dB</u>	<u>12 nS</u>	<u>2 nS</u>	<u>14 nS</u>	<u>5 nS</u>
<u>J9-J4 >60 dB</u>	<u>12 nS</u>	<u>1 nS</u>	<u>14 nS</u>	<u>5 nS</u>
<u>J9-J5 >60 dB</u>	<u>14 nS</u>	<u>2 nS</u>	<u>12 nS</u>	<u>1 nS</u>
<u>J9-J6 >60 dB</u>	<u>13 nS</u>	<u>2 nS</u>	<u>15 nS</u>	<u>5 nS</u>
<u>J9-J7 >60 dB</u>	<u>12 nS</u>	<u>1 nS</u>	<u>10 nS</u>	<u>1 nS</u>
<u>J9-J8 >60 dB</u>	<u>13 nS</u>	<u>2 nS</u>	<u>11 nS</u>	<u>2 nS</u>
dB	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: 83503 / 87579 HP

QA/QC APPROVAL: [Signature]

DATED: 11/30/99



FINAL TEST DATA

AMC MODEL NO: MSN-8DT-05-STANDARD OPTIONS 36, 12X, LVT, SERIAL NUMBER: 8MS90985

FORM: SW-DTA 28/1



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

DATE: 11/30/99

FINAL TEST DATA
 ON
 MICROWAVE SWITCH

CUSTOMER: Telemus TECHNICIAN: RA
 JOB NO: 902134E-6
 MODEL NO: MSN-8DT-05-STO OPTION NO: 36, 12X, LVT
 SERIAL NO: 8MS90985 SPECIFICATION:
 CURRENT DRAW: +5VDC @ 250 mA; -5VDC @ 250 mA FREQUENCY RANGE: 3.75 to 6.6Hz

INSERTION LOSS (WORST CASE)	RETURN LOSS (WORST CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
<u>J9-J1 1.43 dB</u>	<u>15.9 dB</u>	<u>1.37 : 1</u>	<u>17.6 dB</u>	<u>1.30 : 1</u>	<u>20.2 dB</u>	<u>1.21 : 1</u>
<u>J4-J2 1.09 dB</u>	<u>19 dB</u>	<u>1.25 : 1</u>	<u>19.5 dB</u>	<u>1.23 : 1</u>	<u>20.5 dB</u>	<u>1.20 : 1</u>
<u>J9-J3 1.20 dB</u>	<u>15.8 dB</u>	<u>1.38 : 1</u>	<u>17.8 dB</u>	<u>1.29 : 1</u>	<u>19.4 dB</u>	<u>1.23 : 1</u>
<u>J4-J4 1.17 dB</u>	<u>17.6 dB</u>	<u>1.30 : 1</u>	<u>18.5 dB</u>	<u>1.26 : 1</u>	<u>19.8 dB</u>	<u>1.22 : 1</u>
<u>J9-J5 1.16 dB</u>	<u>18.3 dB</u>	<u>1.27 : 1</u>	<u>18.7 dB</u>	<u>1.26 : 1</u>	<u>18.9 dB</u>	<u>1.25 : 1</u>
<u>J9-J6 1.25 dB</u>	<u>15.8 dB</u>	<u>1.38 : 1</u>	<u>18.1 dB</u>	<u>1.28 : 1</u>	<u>19.4 dB</u>	<u>1.24 : 1</u>
<u>J9-J2 1.31 dB</u>	<u>17.2 dB</u>	<u>1.32 : 1</u>	<u>17.2 dB</u>	<u>1.31 : 1</u>	<u>18.7 dB</u>	<u>1.26 : 1</u>
<u>J5-J8 1.48 dB</u>	<u>14.4 dB</u>	<u>1.46 : 1</u>	<u>16.4 dB</u>	<u>1.35 : 1</u>	<u>16.2 dB</u>	<u>1.36 : 1</u>
dB	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
<u>J9-J1 >60 dB</u>	<u>12 nS</u>	<u>1 nS</u>	<u>13 nS</u>	<u>4 nS</u>
<u>J9-J2 >60 dB</u>	<u>13 nS</u>	<u>2 nS</u>	<u>14 nS</u>	<u>4 nS</u>
<u>J9-J3 >60 dB</u>	<u>15 nS</u>	<u>2 nS</u>	<u>10 nS</u>	<u>2 nS</u>
<u>J9-J4 >60 dB</u>	<u>13 nS</u>	<u>2 nS</u>	<u>14 nS</u>	<u>4 nS</u>
<u>J9-J5 >60 dB</u>	<u>13 nS</u>	<u>2 nS</u>	<u>14 nS</u>	<u>5 nS</u>
<u>J9-J6 >60 dB</u>	<u>12 nS</u>	<u>1 nS</u>	<u>10 nS</u>	<u>1 nS</u>
<u>J4-J7 >60 dB</u>	<u>11 nS</u>	<u>1 nS</u>	<u>13 nS</u>	<u>4 nS</u>
<u>J4-J8 >60 dB</u>	<u>12 nS</u>	<u>1 nS</u>	<u>13 nS</u>	<u>4 nS</u>
dB	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: 83503/8757A HP

QA/QC APPROVAL: [Signature]

DATED: 11/30/99



FINAL TEST DATA

AMC MODEL NO: MSN-8DT-05-STANDARD OPTIONS 36, 12X, LVT, SERIAL NUMBER: 8MS90986

FORM: SW-DTA 28/



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: 1/30/99

CUSTOMER: Telemus TECHNICIAN: PA
 JOB NO: 907134E-6
 MODEL NO: MSN-8DT-05-STO OPTION NO: 36, 12X, LVT
 SERIAL NO: 8MS90986 SPECIFICATION:
 CURRENT DRAW: +5VDC @ 200mA; -5VDC @ 200mA FREQUENCY RANGE: 3.75 to 6.6Hz

INSERTION LOSS (WORST CASE)	RETURN LOSS (WORST CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
<u>J9-J1 1.84 dB</u>	<u>14.5 dB</u>	<u>1.46 : 1</u>	<u>16.4 dB</u>	<u>1.35 : 1</u>	<u>19.1 dB</u>	<u>1.24 : 1</u>
<u>J9-J2 1.99 dB</u>	<u>15.4 dB</u>	<u>1.40 : 1</u>	<u>15.3 dB</u>	<u>1.41 : 1</u>	<u>19.8 dB</u>	<u>1.22 : 1</u>
<u>J9-J3 1.87 dB</u>	<u>15.7 dB</u>	<u>1.38 : 1</u>	<u>15.6 dB</u>	<u>1.39 : 1</u>	<u>20.1 dB</u>	<u>1.21 : 1</u>
<u>J9-J4 1.06 dB</u>	<u>18.4 dB</u>	<u>1.27 : 1</u>	<u>16.3 dB</u>	<u>1.36 : 1</u>	<u>22.5 dB</u>	<u>1.16 : 1</u>
<u>J9-J5 1.68 dB</u>	<u>16.4 dB</u>	<u>1.35 : 1</u>	<u>17.8 dB</u>	<u>1.29 : 1</u>	<u>19.9 dB</u>	<u>1.22 : 1</u>
<u>J9-J6 1.90 dB</u>	<u>16.2 dB</u>	<u>1.36 : 1</u>	<u>15.6 dB</u>	<u>1.39 : 1</u>	<u>18.2 dB</u>	<u>1.28 : 1</u>
<u>J9-J7 1.71 dB</u>	<u>15.3 dB</u>	<u>1.41 : 1</u>	<u>14.7 dB</u>	<u>1.44 : 1</u>	<u>15.5 dB</u>	<u>1.40 : 1</u>
<u>J9-J8 1.88 dB</u>	<u>14.7 dB</u>	<u>1.44 : 1</u>	<u>14.8 dB</u>	<u>1.44 : 1</u>	<u>16.1 dB</u>	<u>1.37 : 1</u>
dB	dB	: 1	dB	: 1	dB	: 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
<u>J9-J1 >60 dB</u>	<u>18 nS</u>	<u>5 nS</u>	<u>13 nS</u>	<u>4 nS</u>
<u>J9-J2 >60 dB</u>	<u>18 nS</u>	<u>5 nS</u>	<u>13 nS</u>	<u>4 nS</u>
<u>J9-J3 >60 dB</u>	<u>20 nS</u>	<u>6 nS</u>	<u>13 nS</u>	<u>4 nS</u>
<u>J9-J4 >60 dB</u>	<u>21 nS</u>	<u>7 nS</u>	<u>14 nS</u>	<u>5 nS</u>
<u>J9-J5 >60 dB</u>	<u>19 nS</u>	<u>6 nS</u>	<u>14 nS</u>	<u>5 nS</u>
<u>J9-J6 >60 dB</u>	<u>18 nS</u>	<u>5 nS</u>	<u>13 nS</u>	<u>4 nS</u>
<u>J9-J7 >60 dB</u>	<u>18 nS</u>	<u>5 nS</u>	<u>10 nS</u>	<u>2 nS</u>
<u>J9-J8 >60 dB</u>	<u>21 nS</u>	<u>7 nS</u>	<u>10 nS</u>	<u>1 nS</u>
dB	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: 835013 / 87579 MP

QA/QC APPROVAL: HP

DATED: 1/30/99



FINAL TEST DATA

AMC MODEL NO: MSN-8DT-05-STANDARD OPTIONS 36, 12X, LVT, SERIAL NUMBER: 8MS90987

FORM: SW-DTA 281



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: 11/30/99

CUSTOMER: Tele.mus TECHNICIAN: PA
 JOB NO: 907134E-6
 MODEL NO: MSN-8DT-05-STD OPTION NO: 36, 12X, LVT
 SERIAL NO: 8MS90987 SPECIFICATION:
 CURRENT DRAW: +5VDC @ 250mA; -5VDC @ 250mA FREQUENCY RANGE: 3.75 to 6.6Hz

INSERTION LOSS (WORST CASE)	RETURN LOSS (WORST CASE)					
	INPUT dB	INPUT VSWR	OUTPUT ON dB	OUTPUT ON VSWR	OUTPUT OFF dB	OUTPUT OFF VSWR
J ₉ -J ₁ 1.52 dB	14.2 dB	1.48 : 1	14.5 dB	1.45 : 1	17.5 dB	1.30 : 1
J ₉ -J ₂ 1.34 dB	16.4 dB	1.35 : 1	16.7 dB	1.34 : 1	19.6 dB	1.23 : 1
J ₉ -J ₃ 1.29 dB	14.7 dB	1.44 : 1	13.7 dB	1.51 : 1	19.1 dB	1.25 : 1
J ₉ -J ₄ 1.35 dB	13.8 dB	1.50 : 1	12.8 dB	1.59 : 1	16.1 dB	1.36 : 1
J ₉ -J ₅ 1.20 dB	18.5 dB	1.27 : 1	19.1 dB	1.24 : 1	20.2 dB	1.21 : 1
J ₉ -J ₆ 1.24 dB	16.2 dB	1.36 : 1	15.7 dB	1.38 : 1	20.6 dB	1.20 : 1
J ₉ -J ₇ 1.37 dB	18.6 dB	1.26 : 1	17.5 dB	1.30 : 1	20 dB	1.22 : 1
J ₉ -J ₈ 1.68 dB	13.9 dB	1.50 : 1	13.6 dB	1.52 : 1	14.3 dB	1.47 : 1
dB	dB	1. : 1	dB	1. : 1	dB	1. : 1

ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J ₉ -J ₁ >60 dB	21 nS	7 nS	13 nS	4 nS
J ₉ -J ₂ >60 dB	16 nS	4 nS	13 nS	4 nS
J ₉ -J ₃ >60 dB	22 nS	8 nS	13 nS	4 nS
J ₉ -J ₄ >60 dB	18 nS	4 nS	13 nS	4 nS
J ₉ -J ₅ >60 dB	18 nS	5 nS	14 nS	4 nS
J ₉ -J ₆ >60 dB	23 nS	8 nS	11 nS	2 nS
J ₉ -J ₇ >60 dB	17 nS	5 nS	10 nS	1 nS
J ₉ -J ₈ >60 dB	19 nS	5 nS	13 nS	4 nS
dB	nS	nS	nS	nS

NOTE: Any additional test data on back

TESTED ON: 835013 / 87579 HP

QA/QC APPROVAL: _____

DATED: 11/30/99