AMERICAN MICROWAVE CORPORATION

TEST DATA

ON

5.5 GHz TO 6.0 GHz

VERY LOW INSERTION LOSS

HIGH SPEED

LOW VIDEO TRANSIENT

REFLECTIVE

SP6T

RADIAL SOLID STATE SWITCH
(SURFACE MOUNTABLE)

AMC MODEL No:
SWN-1140-6DR-DEC-SP OPTION FM10
(Serial Number: 6MS90495)

REPORTED AND PREPARED
BY
RENE AFABLE

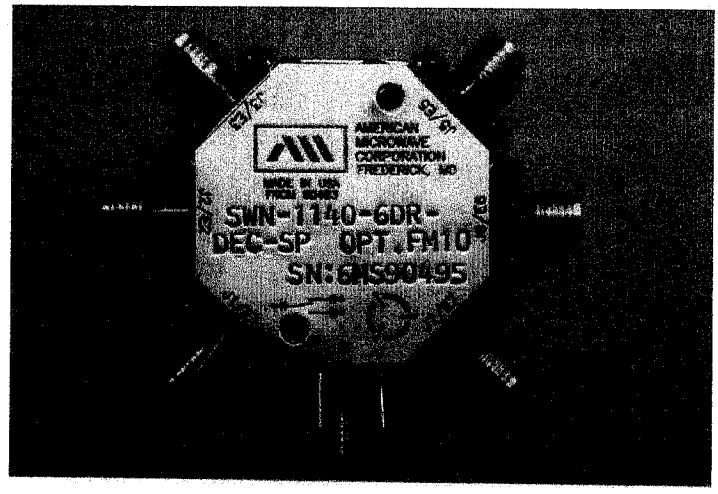
MAY 27, 1999

WEB PAGE: HTTP://WWW.AMWAVE.COM E-MAIL ADDRESS: AMCPMI@AOL.COM

7311 G GROVE ROAD, FREDERICK, MARYLAND 21704 • Tel. (301) 662-4700 • Fax (301) 662-4938

AMERICAN MICROWAVE CORPORATION

SP6T REFLECTIVE PIN-DIODE SWITCH



KEY FEATURES

- 5.5 GHz TO 6.0 GHz (10MHz to 18GHz optional)
- VERY LOW INSERTION LOSS
- HIGH SPEED
- TTL LOGIC COMPATIBLE
- SURFACE MOUNTABLE
- SLIMLINE

AMC MODEL No: SWN-1140-6DR-DEC-SP OPTION FM10

SPECIFICATIONS: (REFLECTIVE)

• FREQUENCY RANGE	:	5.5 GHz to 6.0 GHz (10MHz to 18GHz Optional)
• INSERTION LOSS	:	1.0 dB MAX. 0.8 dB TYP.
• ISOLATION	:	80 dB MIN.; 85 dB TYP.
• VSWR	:	2.0:1
• SWITCHING SPEED	:	"RISE" 15nS MAX., 10nS TYP.
	:	"FALL" 15nS MAX., 10nS TYP.
	:	"ON" 70nS MAX., 60nS TYP.
	:	"OFF" 70nS MAX., 60nS TYP.
• CONTROL	:	3 Bit Decoder (Independent control available)
• VIDEO TRANSIENTS	:	≤350 mV Peak to Peak, 300 MHZ Bandwidth
	:	≤100 mV Peak to Peak, 20 MHZ Bandwidth
• RF INPUT POWER	:	+20dBm Operating, 1 Watt Survival (Other power Levels available)
• DC POWER SUPPLY	:	+5vdc @ +320mA MAX.
(Other supply voltages available)	:	-12vdc @ -50mA MAX.
• SIZE	:	1.25" X 1.25" X 0.4"
• WEIGHT	:	≤ 2.0 oz.

MAY 27, 1999

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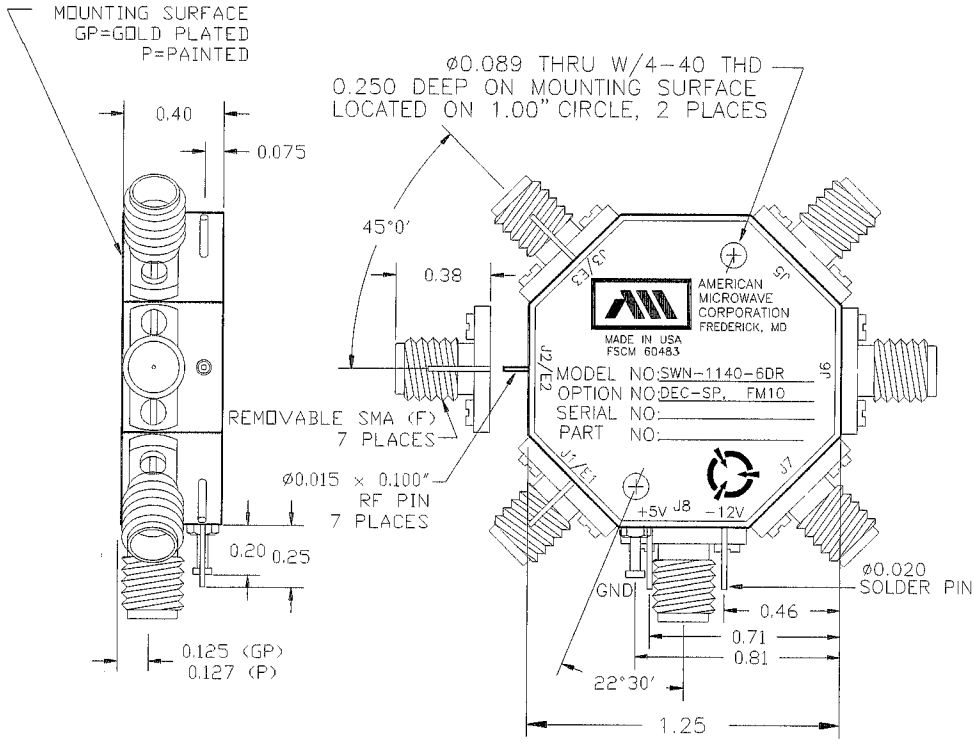
SUMMARY TEST DATA

MODEL NUMBER	**: SWN-1140-6DR-DEC-SP OPTION FM10**
SERIAL NUMBER	**: 6MS90495**
ENGINEER	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc: +313mA; -12vdc: -44mA**



ALL DIMENSIONS ARE IN INCHES
TOLERANCES:

X.XX	**±0.020**
X.XXX	**±0.010**

ENVIRONMENTAL RATINGS:

- **TEMPERATURE:..... -55°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.

MAY 27, 1999

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	–	ORIGINAL JOB# 901011E	08/04/00	

DESCRIPTION

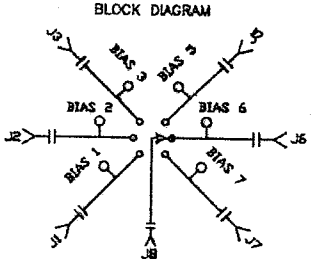
AMC MODEL SWN-1140-6DR-DEC-SP-FM10 IS A SINGLE POLE SIX THROW, REFLECTIVE SWITCH MODULE WITH VERY LOW INSERTION LOSS, HIGH SPEED, AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OR NARROW BAND OPERATIONS.

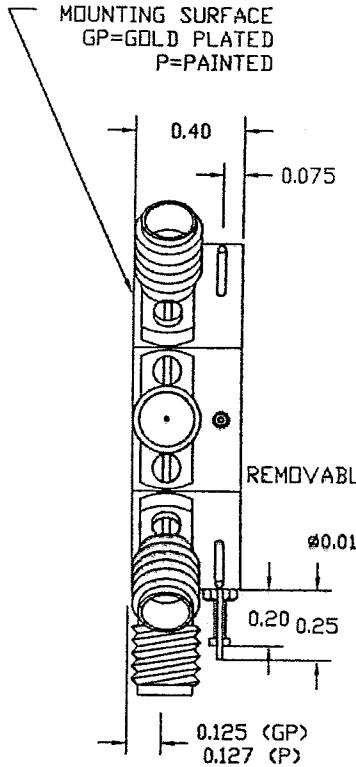
SPECIFICATIONS:

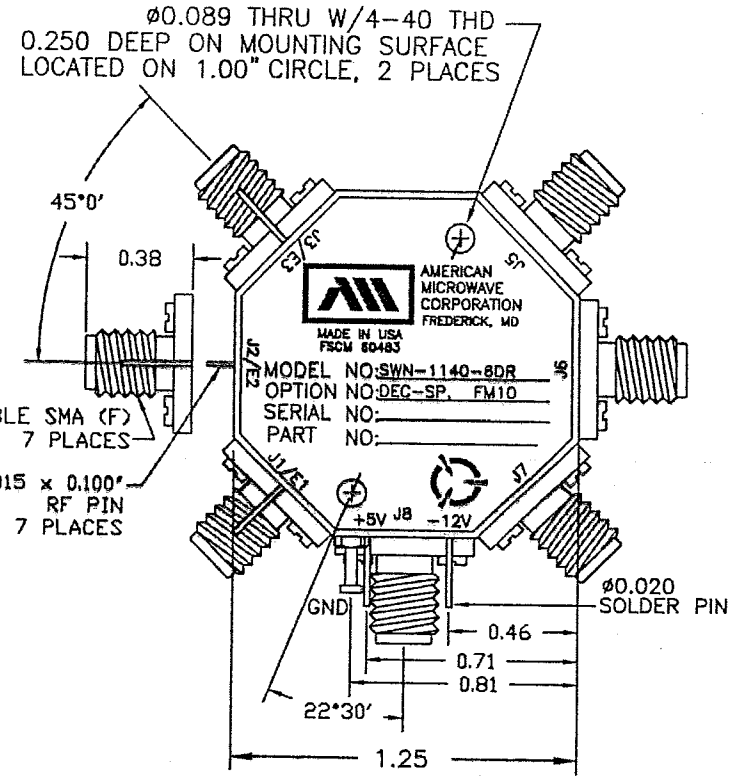
- FREQUENCY: 5.5 GHz TO 6.0 GHz
- INSERTION LOSS: 1.0 dB MAXIMUM
  0.8 dB TYPICAL
  0.6 dB GOAL
- ISOLATION: 40 dB MINIMUM
- VSWR: 2.0:1 MAXIMUM
- SPEED: TURN ON: 60ns MAXIMUM
  TURN OFF: 60ns MAXIMUM
- RF POWER INPUT: 0.25 WATT
- CONTROL: TTL SEE LOGIC TABLE
- POWER SUPPLY: +5V @ 320 mA MAXIMUM
  −12V@ 50mA MAXIMUM
- RF CONNECTORS REMOVABLE SMA FEMALE
- SIZE ø1.25 POINT TO POINT x 0.400 (H)
- WEIGHT 2.75 OUNCES

LOGIC TABLE			
E1	E2	E3	PATH ON
L	L	L	J1
H	L	L	J2
L	H	L	J3
H	H	L	J5
L	L	H	J6
H	L	H	J7

BLOCK DIAGRAM







NOTE:

DR=WITH DRIVER, REFLECTIVE

DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

ENVIRONMENTAL RATINGS:

- TEMPERATURE: −55°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

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

CONFIDENTIAL AND PROPRIETARY

CONTRACT NO.		AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND		
APPROVALS	DATE	TITLE: OUTLINE DRAWING SWN-1140-6DR-DEC-SP-FM10 REFLECTIVE RADIAL SOLID STATE SWITCH		
DRAWN WHS	08/08/00			
CHECKED	8/4/00			
ISSUED	8/4/00	SIZE A	FSCM NO. 60483	DWG NO. 100-4169-3 REV. –
		SCALE N/S		SHEET 1 of 3

DESCRIPTION

AMC MODEL SWN-1140-6DR/DT-STANDARD-FM10 IS A SINGLE POLE SIX THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH VERY LOW INSERTION LOSS, HIGH SPEED AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

SPECIFICATIONS:

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 2.5db
  ABSORPTIVE: 3.00db
- ISOLATION: 0.5 GHz TO 2 GHz: 85db
  2 GHz TO 6 GHz: 75db
  6 GHz TO 12 GHz: 65db
  12 GHz TO 18 GHz: 40db
- VSWR: REFLECTIVE IN/OUT: 2.0:1
  ABSORPTIVE IN/OUT: 2.0:1
  ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: RISE: 10ns TYPICAL, 15ns MAX.
  FALL: 10ns TYPICAL, 15ns MAX.
  DELAY ON: 75ns TYPICAL, 100ns MAX.
  DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0"=ON "1"=OFF
- POWER SUPPLY: +5V @ 320 mA MAX.
  -5V @ 75mA MAX.(RELECTIVE)
  100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE: 1.25" (L) x 1.25" (W) x 0.40" (H)
- WEIGHT: 2.0 oz.

OPTIONS:

INDEPENDENT CONTROL WITH SOLDER PIN STANDARD

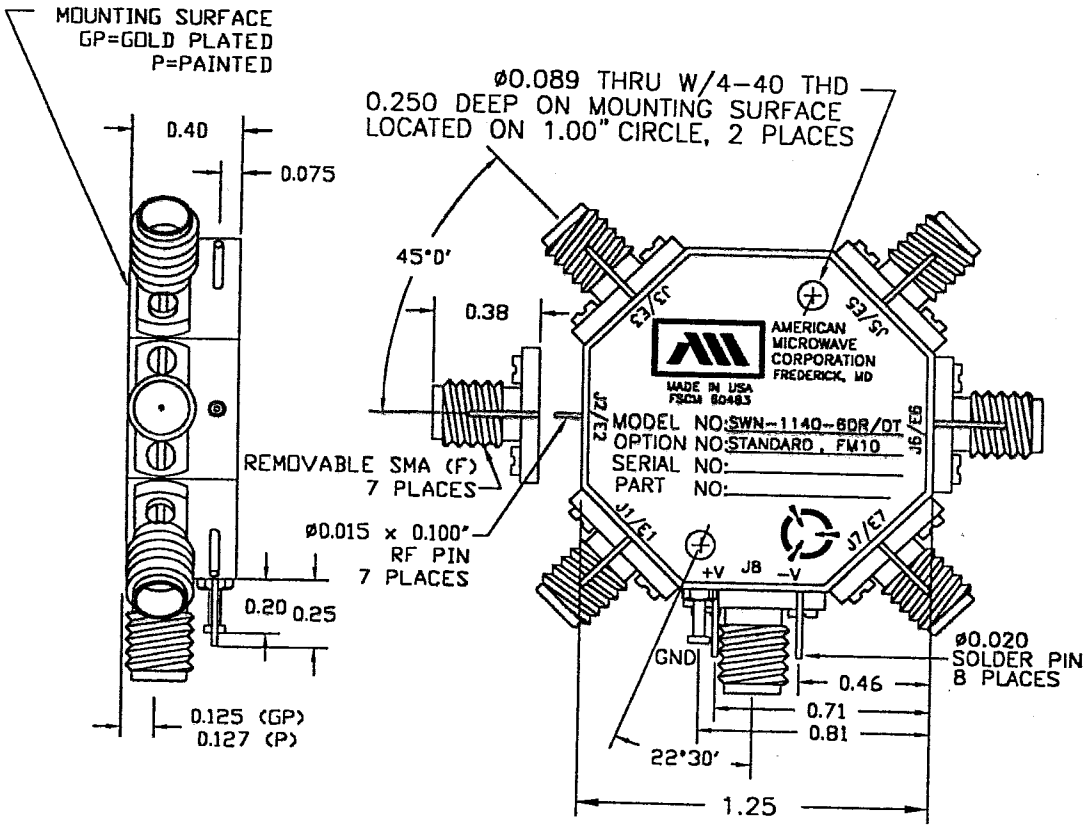
DEC-SP	3 BIT DECODER WITH SOLDER PIN
10M18	10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
100M18	100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
118	1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
218	2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
412	4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
618	6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
1218	12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
100M20	100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
220	2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
1020	10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
B01	-12V POWER SUPPLIES
B02	-15V POWER SUPPLIES
B03	REVERSE LOGIC "1"=ON "0"=OFF
B04	DRIVERLESS, CURRENT CONTROLLED
B05	HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
B06	HIGH POWER - SPECIFY CW POWER, PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
B07	CUSTOM DESIGNED PRODUCT- SPECIFY INITIALS OF CUSTOMER
B08	LOW VIDEO TRANSIENTS - SPECIFY VIDEO BANDWIDTH
B09	LOW INSERTION LOSS VERSION
B10	HIGHER ISOLATION VERSION
B11	0.70" THICK VERSION
B12	0.88" THICK VERSION

ENVIRONMENTAL RATINGS:

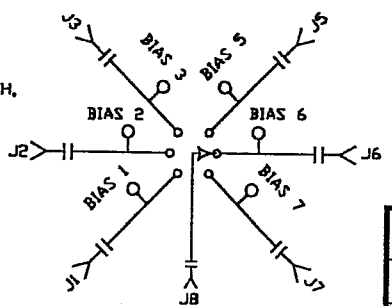
- TEMPERATURE: -55°C TO +85°C (OPERATING)
  -65°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B COND. B
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	-	ORIGINAL JOB# 901011E	08/02/00	



BLOCK DIAGRAM



NOTE:
DR=WITH DRIVER, REFLECTIVE
DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

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

CONFIDENTIAL AND PROPRIETARY

CONTRACT NO.		AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND
APPROVALS	DATE	
DRAWN WHY	08/02/00	TITLE: PRODUCT FEATURE SWN-1140-6DR/DT-STANDARD-FM10 REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE RADIAL SOLID STATE SWITCH
CHECKED	8/4/00	
ISSUED	8/4/00	SIZE A; FSCM NO. 60483; DWG NO. 100-4169-4; REV. -
		SCALE N/S; SHEET 1 of 3

DESCRIPTIO

AMC MODEL SWN-1140-6DR/DT-DEC-SP-FM10 IS A SINGLE POLE SIX THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH VERY LOW INSERTION LOSS, HIGH SPEED AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

SPECIFICATIONS:

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 2.5db
  ABSORPTIVE: 3.00db
- ISOLATION: 0.5 GHz TO 2 GHz: 85db
  2 GHz TO 6 GHz: 75db
  6 GHz TO 12 GHz: 65db
  12 GHz TO 18 GHz: 40db
- VSWR: REFLECTIVE IN/OUT: 2.0:1
  ABSORPTIVE IN/OUT: 2.0:1
  ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: RISE: 10ns TYPICAL, 15ns MAX.
  FALL: 10ns TYPICAL, 15ns MAX.
  DELAY ON: 75ns TYPICAL, 100ns MAX.
  DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0"=ON "1"=OFF
- POWER SUPPLY: +5V @ 320 mA MAX.
  -5V @ 75mA MAX.(RELECTIVE)
  100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE: 1.25" (L) x 1.25" (W) x 0.40" (H)
- WEIGHT: 2.0 oz.

OPTIONS:

INDEPENDENT CONTROL WITH SOLDER PIN STANDARD

DEC-SP	3 BIT DECODER WITH SOLDER PIN
10M18	10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
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118	1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
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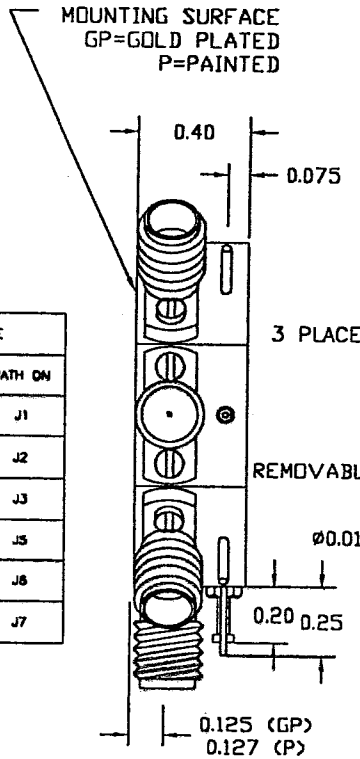
412	4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
618	6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
1218	12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
100M20	100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
220	2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
1020	10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
B01	-12V POWER SUPPLIES
B02	-15V POWER SUPPLIES
B03	REVERSE LOGIC "1"=ON "0"=OFF
B04	DRIVERLESS, CURRENT CONTROLLED
B05	HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
B06	HIGH POWER - SPECIFY CW POWER, PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
B07	CUSTOM DESIGNED PRODUCT- SPECIFY INITIALS OF CUSTOMER
B08	LOW VIDEO TRANSIENTS - SPECIFY VIDEO BANDWIDTH
B09	LOW INSERTION LOSS VERSION
B10	HIGHER ISOLATION VERSION
B11	0.70" THICK VERSION
B12	0.88" THICK VERSION

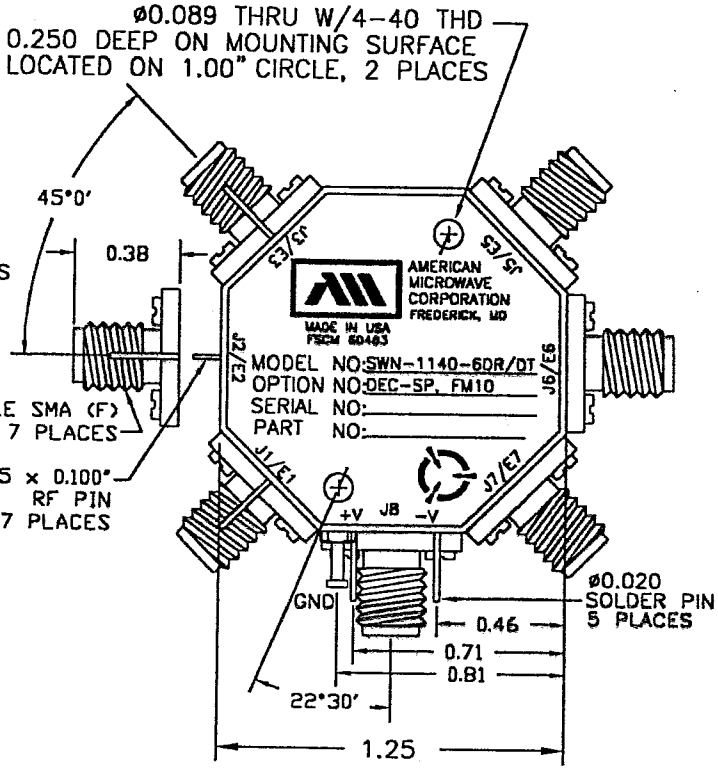
ENVIRONMENTAL RATINGS:

- TEMPERATURE: -55°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

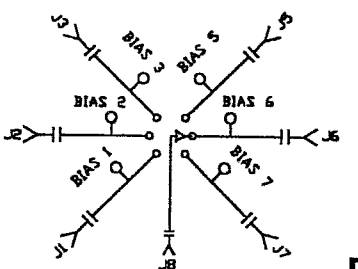
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

LOGIC TABLE			
E1	E2	E3	PATH ON
L	L	L	J1
H	L	L	J2
L	H	L	J3
H	H	L	J5
L	L	H	J6
H	L	H	J7





BLOCK DIAGRAM



NOTE:
DR=WITH DRIVER, REFLECTIVE
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TOLERANCES:
X.XX ±0.020
X.XXX ±0.010

CONFIDENTIAL AND PROPRIETARY

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	-	ORIGINAL JOB # 901011E	08/02/00	

CONTRACT NO.		
APPROVALS	DATE	
DRAWN WHS	08/02/00	
CHECKED	8/4/00	
ISSUED	8/4/00	

AMERICAN MICROWAVE CORPORATION
FREDERICK, MARYLAND

TITLE: PRODUCT FEATURE
SWN-1140-6DR/DT-DEC-SP-FM10
REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE
RADIAL SOLID STATE SWITCH

SIZE	FSCM NO.	DWG NO.	REV.
A	60483	100-4169-5	-

SCALE N/S SHEET 1 of 3

DESCRIPTION:

AMC MODEL SWN-1140-6DR/DT-STANDARD IS A SINGLE POLE SIX THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH HIGH ISOLATION, LOW LOSS, HIGH SPEED, AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	–	ORIGINAL RELEASE	08/04/00	

SPECIFICATIONS:

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 3.5db
ABSORPTIVE: 4.25db
- ISOLATION: 0.5 GHz TO 2 GHz: 60db
2 GHz TO 18 GHz: 70db
- VSWR: REFLECTIVE IN/OUT: 2.0:1
ABSORPTIVE IN/OUT: 2.0:1
ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: RISE: 10ns TYPICAL, 15ns MAX.
FALL: 10ns TYPICAL, 15ns MAX.
DELAY ON: 75ns TYPICAL, 100ns MAX.
DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0"=ON "1"=OFF
- POWER SUPPLY: +5V @ 300 mA MAX.
−5V @ 75mA MAX.(RELECTIVE)
100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE: 1.25" (L) x 1.25" (W) x 0.40" (H)
- WEIGHT: 2.0 oz.

OPTIONS:

	INDEPENDENT CONTROL WITH SOLDER PIN STANDARD
DEC-SP	3 BIT DECODER WITH SOLDER PIN
10M18	10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
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B01	−12V POWER SUPPLIES
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B05	HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
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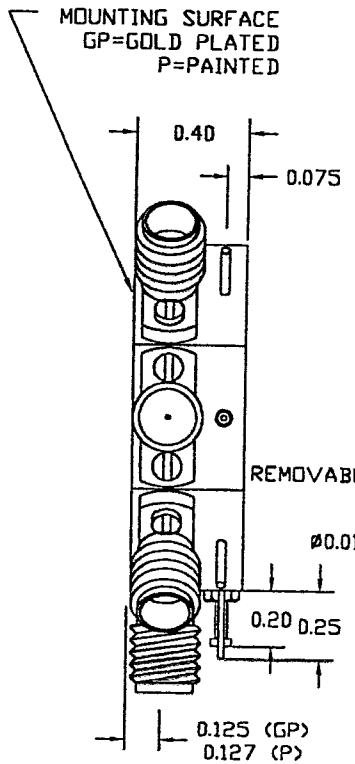
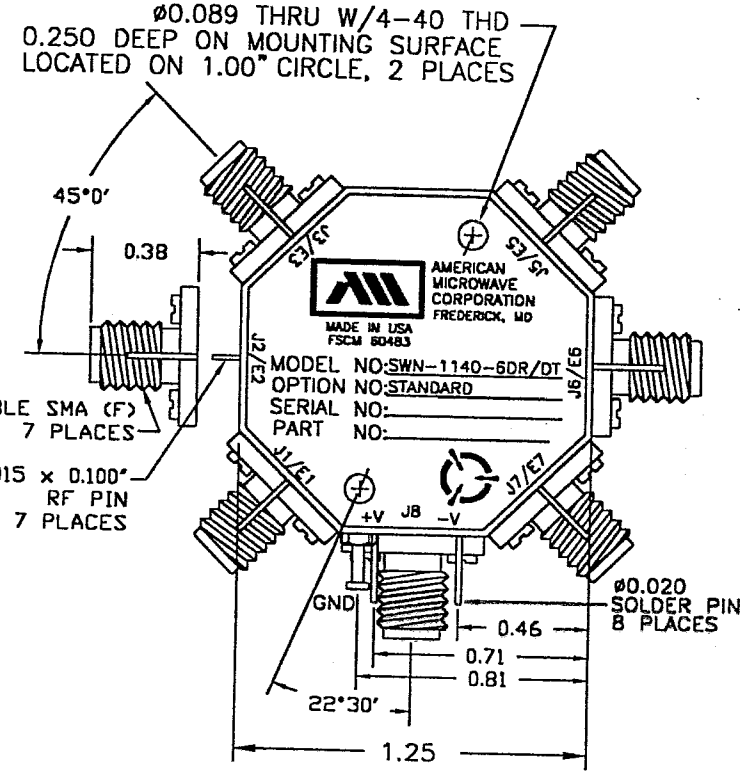
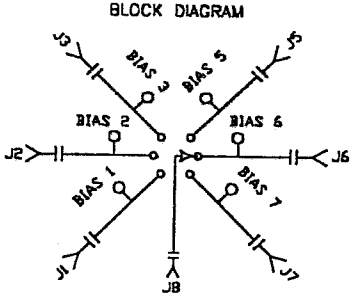




BLOCK DIAGRAM



NOTE:
DR=WITH DRIVER, REFLECTIVE
DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

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

CONFIDENTIAL AND PROPRIETARY

CONTRACT NO.		AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND		
APPROVALS	DATE	TITLE: PRODUCT FEATURE SWN-1140-6DR/DT-STANDARD REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE RADIAL SOLID STATE SWITCH		
DRAWN WHS	08/04/00			
CHECKED	8/4/00			
ISSUED	8/7/00	SIZE A	FSCM NO. 60483	DWG NO. 100-4169-1 REV. –
		SCALE N/S		SHEET 1 of 3

DESCRIPTION

AMC MODEL SWN-1140-6DR/DT-DEC-SP IS A SINGLE POLE SIX THROW, REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH HIGH ISOLATION, LOW LOSS, HIGH SPEED, AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

SPECIFICATIONS:

- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: REFLECTIVE: 3.5db
ABSORPTIVE: 4.25db
- ISOLATION: 0.5 GHz TO 2 GHz: 60db
2 GHz TO 18 GHz: 70db
- VSWR: REFLECTIVE IN/OUT: 2.0:1
ABSORPTIVE IN/OUT: 2.0:1
ABSORPTIVE OUT/OFF: 2.0:1
- SPEED: RISE: 10ns TYPICAL, 15ns MAX.
FALL: 10ns TYPICAL, 15ns MAX.
DELAY ON: 75ns TYPICAL, 100ns MAX.
DELAY OFF: 75ns TYPICAL, 100ns MAX.
- POWER INPUT: (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usec
- CONTROL: TTL LOGIC "0"=ON "1"=OFF
- POWER SUPPLY: +5V @ 300 mA MAX.
-5V @ 75mA MAX.(RELECTIVE)
100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE: 1.25" (L) x 1.25" (W) x 0.40" (H)
- WEIGHT: 2.0 oz.

OPTIONS:

INDEPENDENT CONTROL WITH SOLDER PIN STANDARD

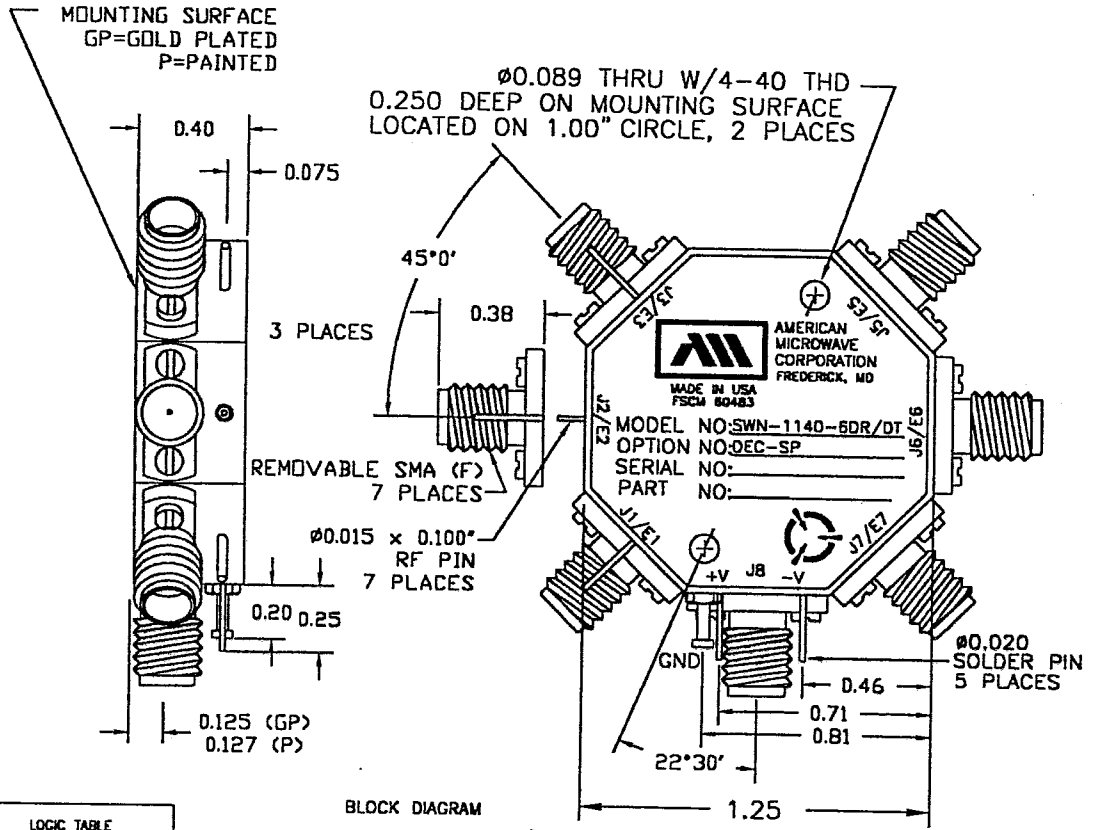
DEC-SP	3 BIT DECODER WITH SOLDER PIN
10M18	10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
100M18	100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
118	1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
218	2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
412	4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
618	6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
1218	12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
100M20	100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
220	2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
1020	10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
B01	-12V POWER SUPPLIES
B02	-15V POWER SUPPLIES
B03	REVERSE LOGIC "1"=ON "0"=OFF
B04	DRIVERLESS, CURRENT CONTROLLED
B05	HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
B06	HIGH POWER - SPECIFY CW POWER, PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
B07	CUSTOM DESIGNED PRODUCT- SPECIFY INITIALS OF CUSTOMER
B08	LOW VIDEO TRANSIENTS - SPECIFY VIDEO BANDWIDTH
B09	LOW INSERTION LOSS VERSION
B10	HIGHER ISOLATION VERSION
B11	0.70" THICK VERSION
B12	0.88" THICK VERSION

ENVIRONMENTAL RATINGS:

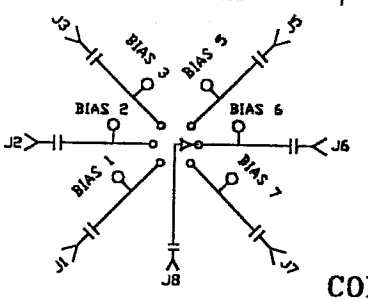
- TEMPERATURE: -55°C TO +85°C (OPERATING)
-65°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B COND. B
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	-	ORIGINAL RELEASE	08/04/00	



BLOCK DIAGRAM



LOGIC TABLE			
E1	E2	E3	PATH ON
L	L	L	J1
H	L	L	J2
L	H	L	J3
H	H	L	J5
L	L	H	J6
H	L	H	J7

NOTE:
DR=WITH DRIVER, REFLECTIVE
DT=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

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

CONFIDENTIAL AND PROPRIETARY

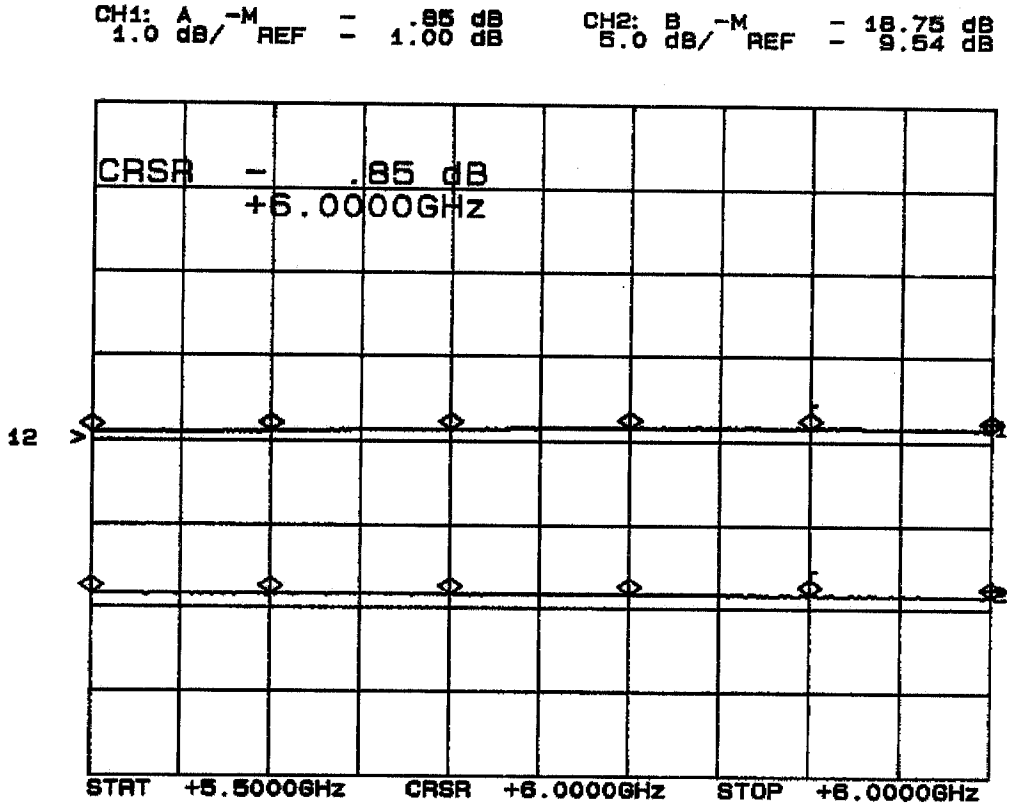
CONTRACT NO.		AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND
APPROVALS	DATE	TITLE: PRODUCT FEATURE SWN-1140-6DR/DT-DEC-SP REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE RADIAL SOLID STATE SWITCH
DRAWN WHS	08/04/00	
CHECKED	8/4/00	
ISSUED	8/4/00	SIZE A; FSCM NO. 60483; DWG NO. 100-4169-2; REV. -
		SCALE N/S; SHEET 1 of 3

SUMMARY TEST DATA

MODEL NUMBER	: SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER	: 6MS90495
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: +313mA; -12vdc: -44mA

INSERTION LOSS & RETURN LOSS*

J8-J1



*J8: INPUT ARM

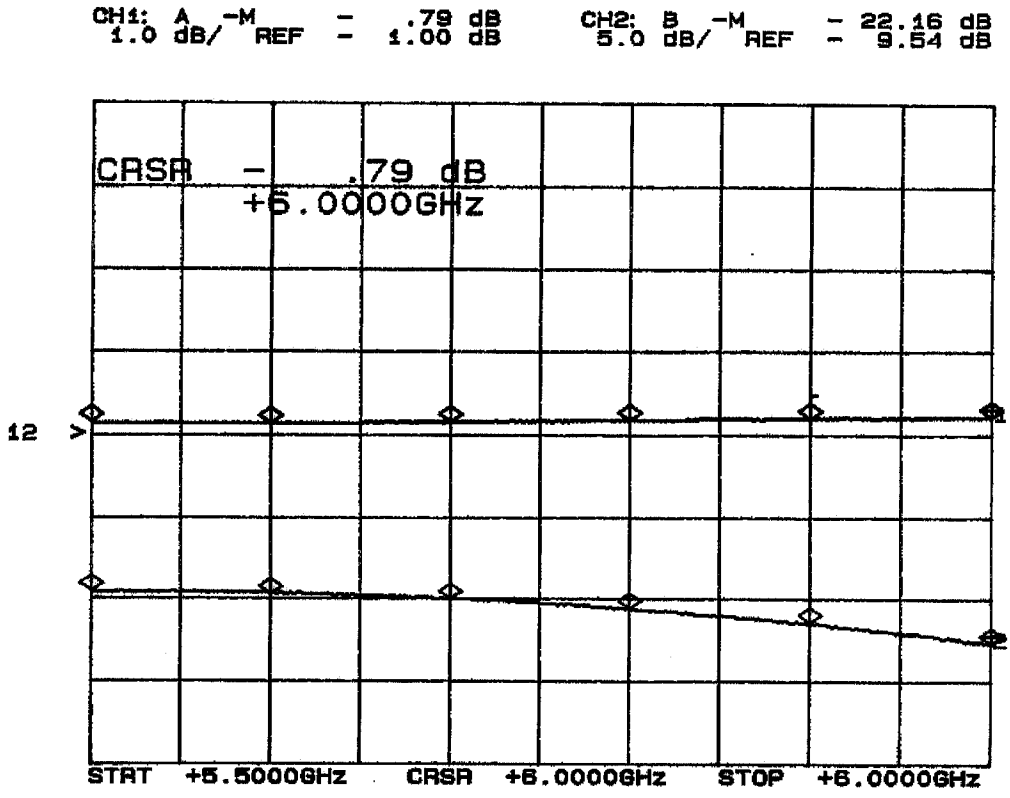
FREQUENCY	INSERTION LOSS	RETURN LOSS
5.5 GHz	0.88 dB	18.6 dB
5.6 GHz	0.87 dB	18.6 dB
5.7 GHz	0.84 dB	18.6 dB
5.8 GHz	0.83 dB	18.6 dB
5.9 GHz	0.82 dB	18.6 dB
6.0 GHz	0.85 dB	18.7 dB

SUMMARY TEST DATA

MODEL NUMBER	: SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER	: 6MS90495
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: +313mA; -12vdc: -44mA

INSERTION LOSS & RETURN LOSS*

J8-J2



*J8: INPUT ARM

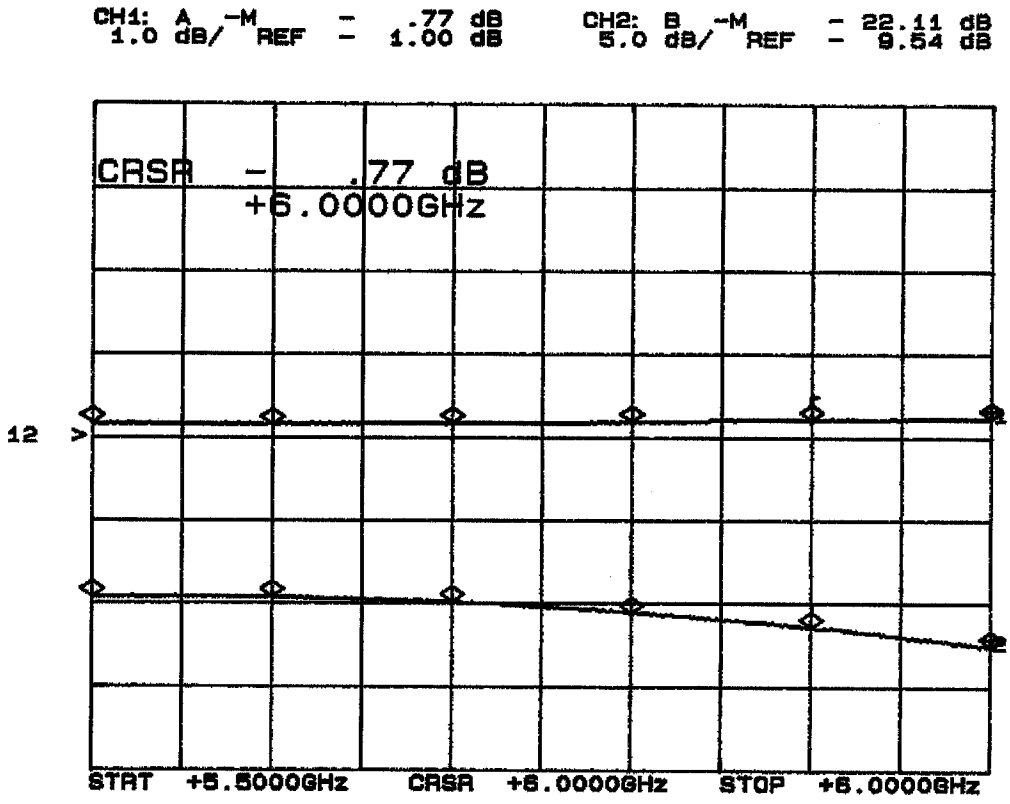
FREQUENCY	INSERTION LOSS	RETURN LOSS
5.5 GHz	0.84 dB	19.0 dB
5.6 GHz	0.85 dB	19.1 dB
5.7 GHz	0.84 dB	19.4 dB
5.8 GHz	0.81 dB	20.0 dB
5.9 GHz	0.79 dB	20.9 dB
6.0 GHz	0.79 dB	22.1 dB

SUMMARY TEST DATA

MODEL NUMBER	: SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER	: 6MS90495
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: +313mA; -12vdc: -44mA

INSERTION LOSS & RETURN LOSS*

J8-J3



*J8: INPUT ARM

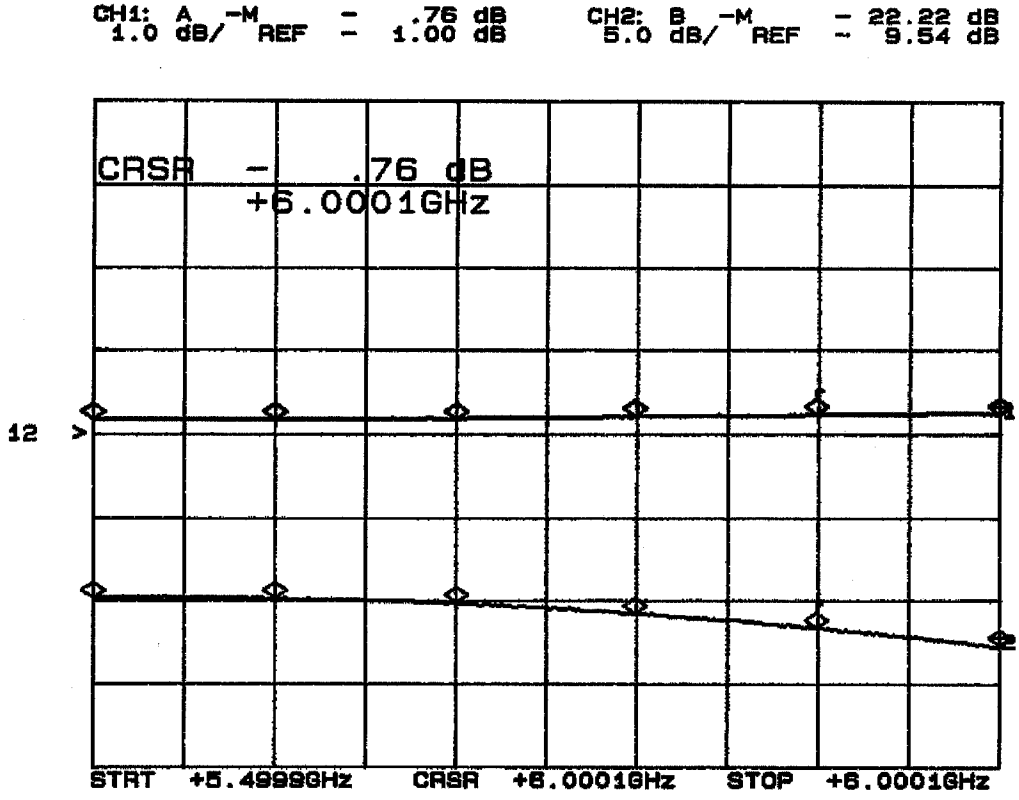
FREQUENCY	INSERTION LOSS	RETURN LOSS
5.5 GHz	0.83 dB	19.0 dB
5.6 GHz	0.83 dB	19.1 dB
5.7 GHz	0.82 dB	19.4 dB
5.8 GHz	0.80 dB	20.0 dB
5.9 GHz	0.77 dB	20.9 dB
6.0 GHz	0.77 dB	22.1 dB

SUMMARY TEST DATA

MODEL NUMBER	: SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER	: 6MS90495
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: +313mA; -12vdc: -44mA

INSERTION LOSS & RETURN LOSS*

J8-J5



*J8: INPUT ARM

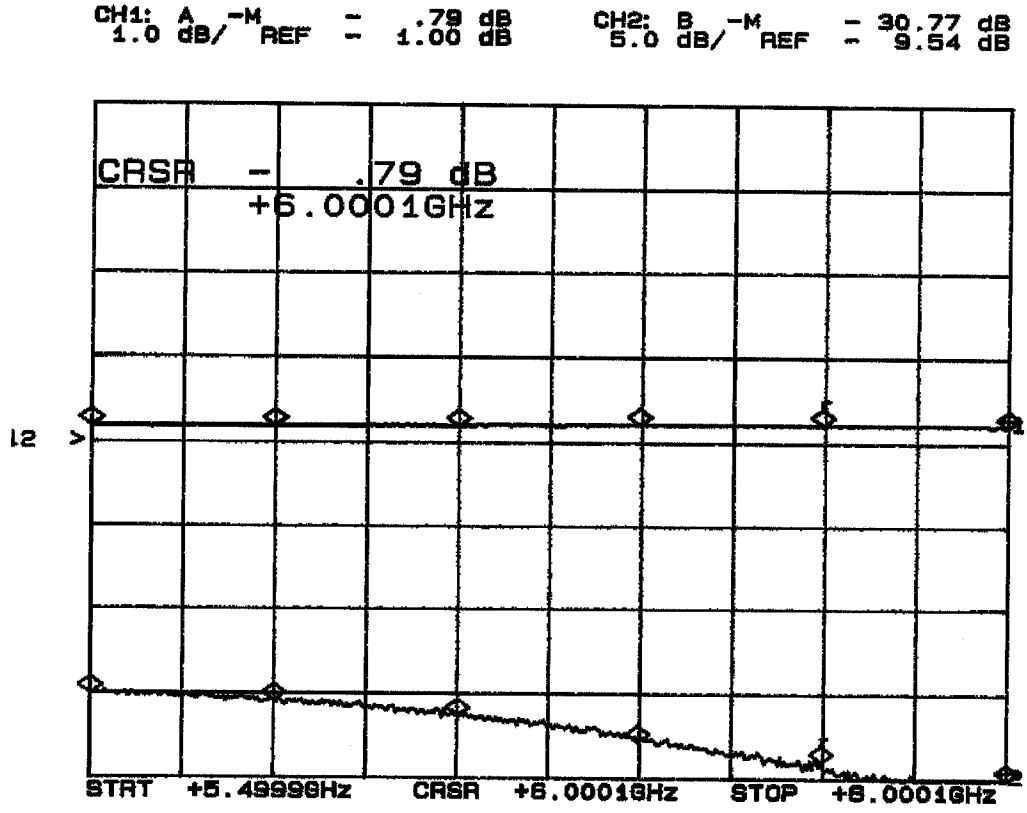
FREQUENCY	INSERTION LOSS	RETURN LOSS
5.5 GHz	0.81 dB	19.2 dB
5.6 GHz	0.81 dB	19.2 dB
5.7 GHz	0.80 dB	19.6 dB
5.8 GHz	0.78 dB	20.2 dB
5.9 GHz	0.76 dB	21.1 dB
6.0 GHz	0.76 dB	22.2 dB

SUMMARY TEST DATA

MODEL NUMBER	: SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER	: 6MS90495
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: +313mA; -12vdc: -44mA

INSERTION LOSS & RETURN LOSS*

J8-J6



*J8: INPUT ARM

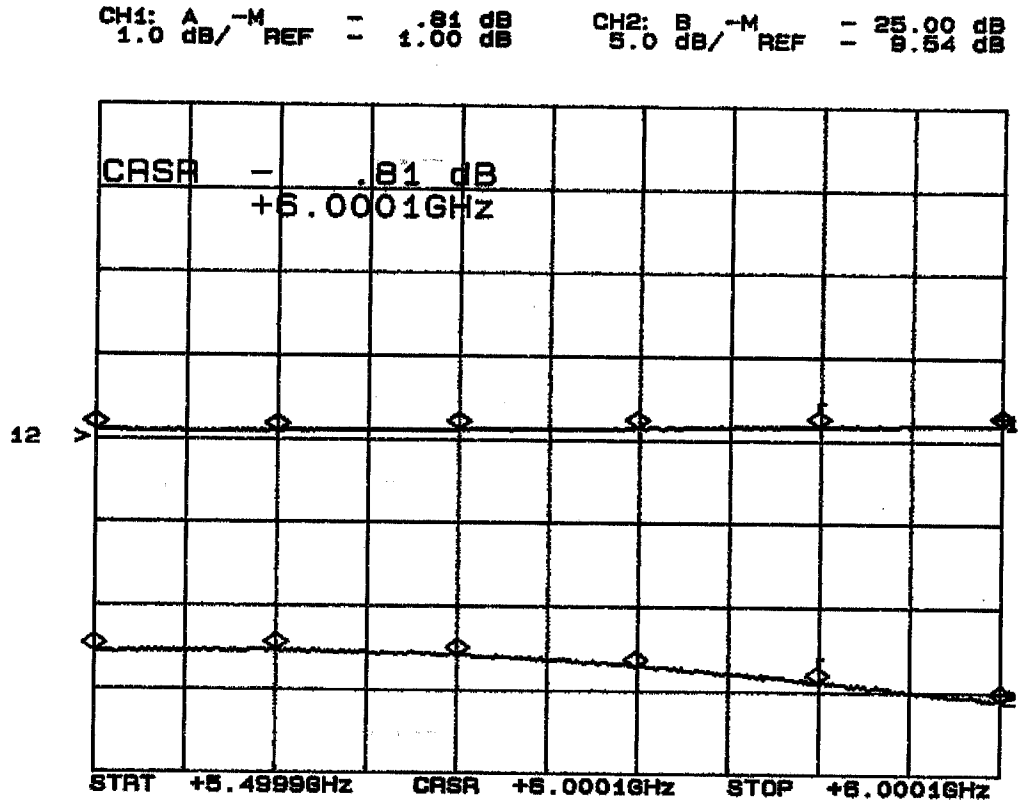
FREQUENCY	INSERTION LOSS	RETURN LOSS
5.5 GHz	0.79 dB	24.4 dB
5.6 GHz	0.79 dB	24.8 dB
5.7 GHz	0.79 dB	25.7 dB
5.8 GHz	0.78 dB	26.9 dB
5.9 GHz	0.77 dB	28.9 dB
6.0 GHz	0.79 dB	30.7 dB

SUMMARY TEST DATA

MODEL NUMBER	: SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER	: 6MS90495
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: +313mA; -12vdc: -44mA

INSERTION LOSS & RETURN LOSS*

J8-J7



*J8: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
5.5 GHz	0.88 dB	22.2 dB
5.6 GHz	0.88 dB	22.1 dB
5.7 GHz	0.86 dB	22.3 dB
5.8 GHz	0.84 dB	23.0 dB
5.9 GHz	0.81 dB	23.9 dB
6.0 GHz	0.81 dB	25.0 dB

SUMMARY TEST DATA

MODEL NUMBER : SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER : 6MS90495
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: +313mA; -12vdc: -44mA

ISOLATION*

(AS MEASURED ON A SPECTRUM ANALYZER)

FREQUENCY	J1	J2	J3	J5	J6	J7
500 MHZ	98 dB	92 dB	90 dB	96 dB	94 dB	90 dB
1 GHz	90 dB	92 dB	89 dB	102 dB	102 dB	88 dB
2 GHz	90 dB	90 dB	102 dB	100 dB	100 dB	88 dB
4 GHz	82 dB	85 dB	94 dB	94 dB	92 dB	84 dB
6 GHz	78 dB	80 dB	90 dB	92 dB	90 dB	80 dB
8 GHz	72 dB	80 dB	86 dB	84 dB	82 dB	75 dB
10 GHz	68 dB	73 dB	86 dB	80 dB	78 dB	70 dB
12 GHz	67 dB	72 dB	78 dB	76 dB	74 dB	70 dB
14 GHz	68 dB	64 dB	72 dB	66 dB	66 dB	60 dB
16 GHz	60 dB	62 dB	66 dB	62 dB	62 dB	58 dB
18 GHz	40 dB	40 dB	56 dB	60 dB	62 dB	56 dB

* J8: INPUT ARM

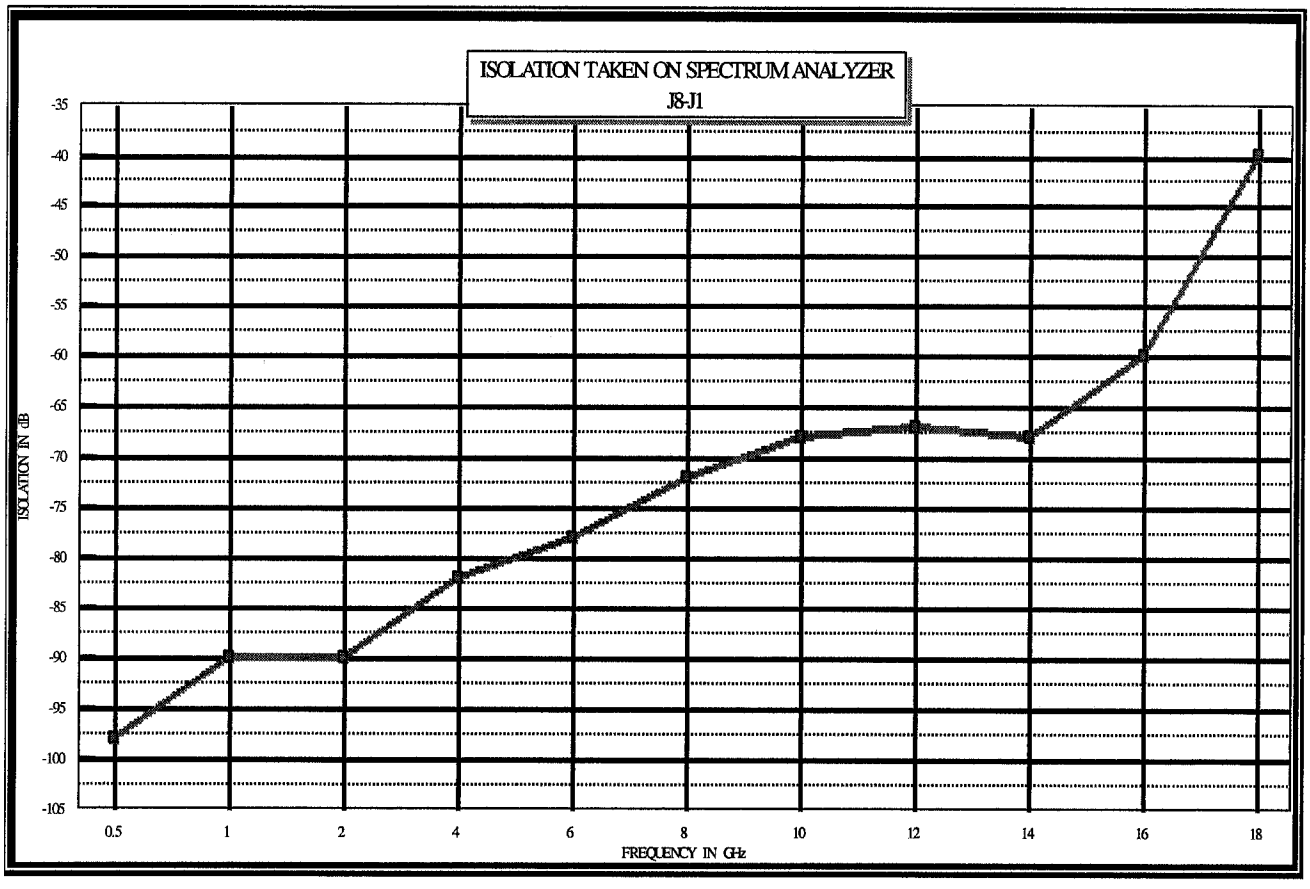
MAY 27, 1999

SUMMARY TEST DATA

MODEL NUMBER	**: SWN-1140-6DR-DEC-SP OPTION FM10**
SERIAL NUMBER	**: 6MS90495**
ENGINEER	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc: +313mA; -12vdc: -44mA**

ISOLATION*

(AS MEASURED ON A SPECTRUM ANALYZER)
J8-J1



***J8: INPUT ARM**

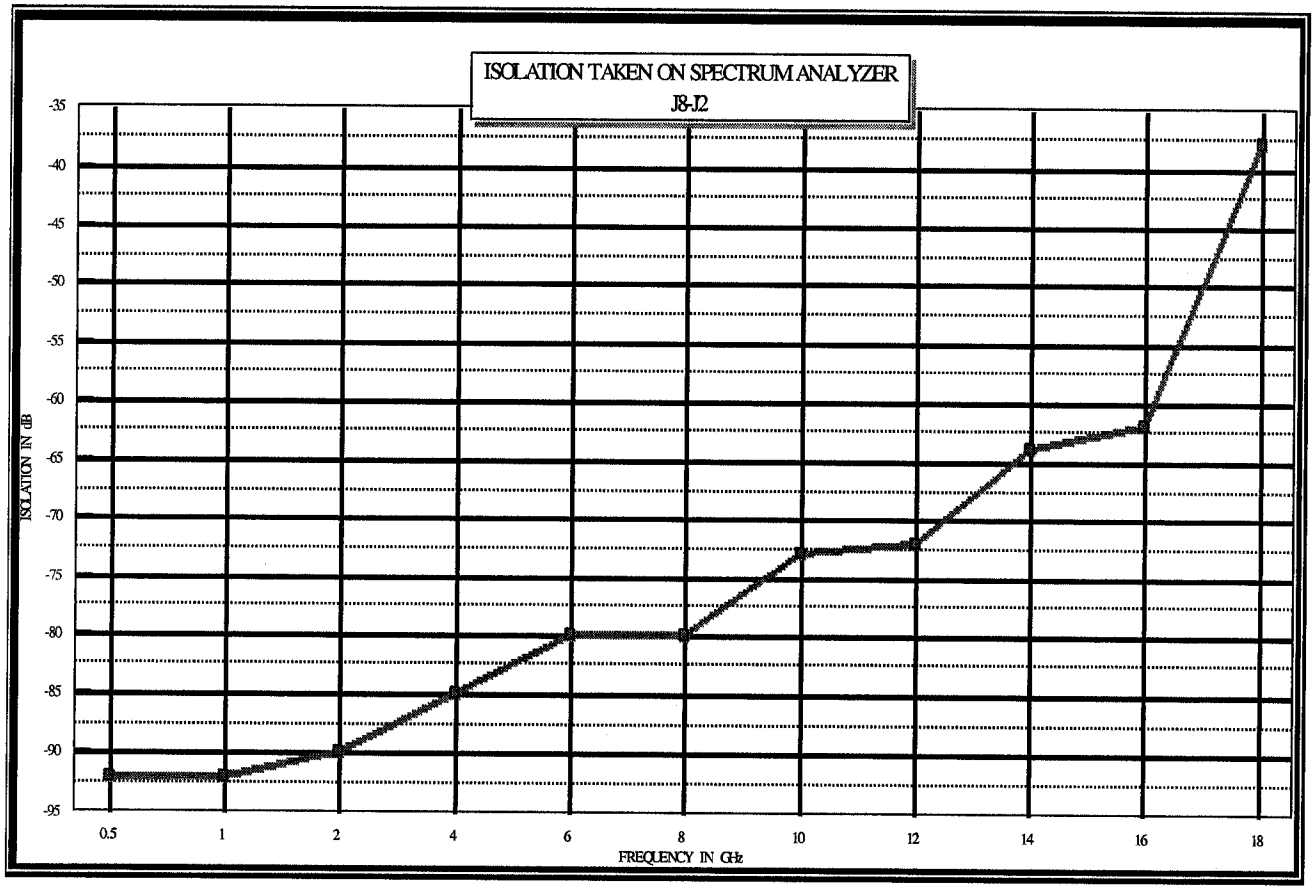
MAY 27, 1999

SUMMARY TEST DATA

MODEL NUMBER	**: SWN-1140-6DR-DEC-SP OPTION FM10**
SERIAL NUMBER	**: 6MS90495**
ENGINEER	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc: +313mA; -12vdc: -44mA**

ISOLATION*

(AS MEASURED ON A SPECTRUM ANALYZER)
J8-J2



***J8: INPUT ARM**

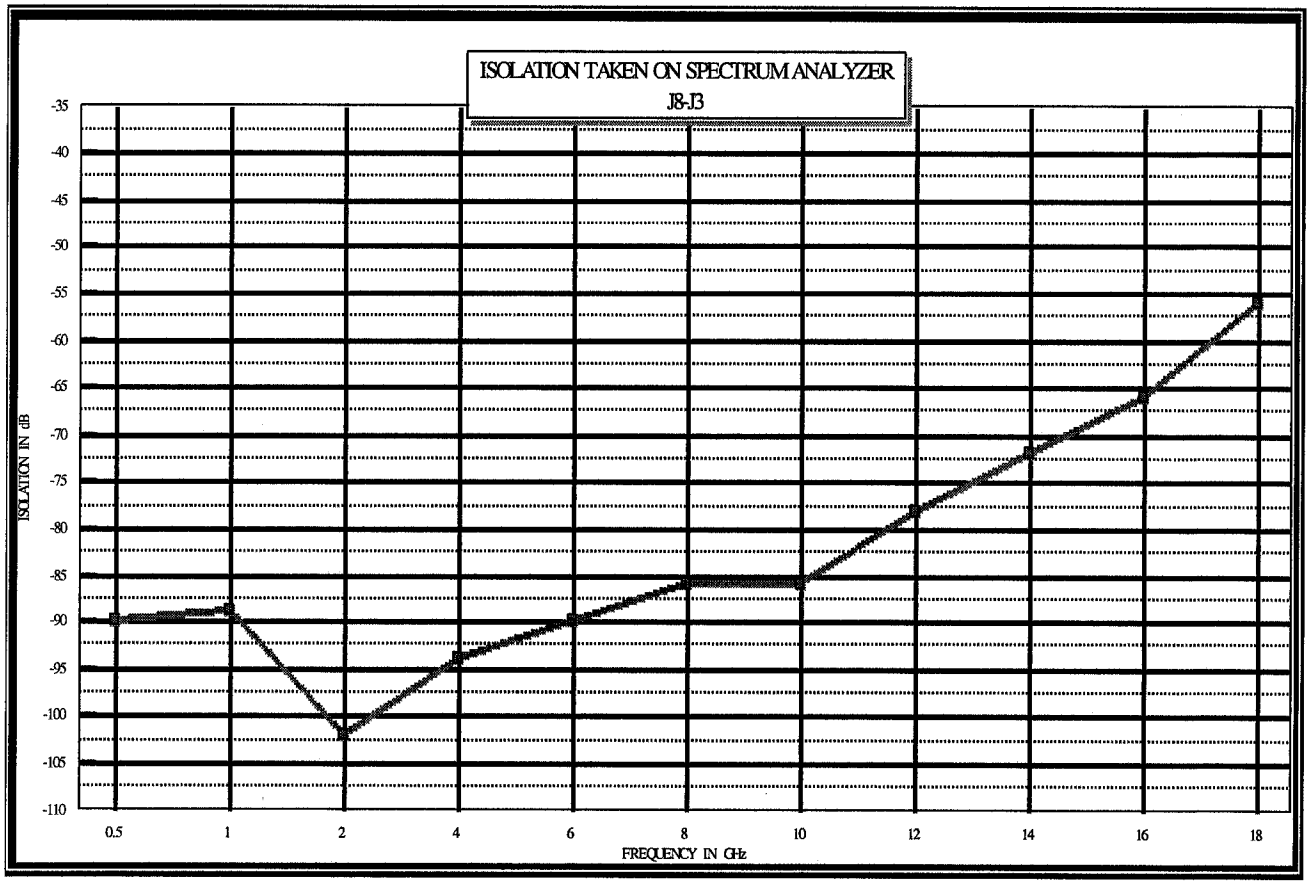
MAY 27, 1999

SUMMARY TEST DATA

MODEL NUMBER	**: SWN-1140-6DR-DEC-SP OPTION FM10**
SERIAL NUMBER	**: 6MS90495**
TECHNICIAN	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc: +313mA; -12vdc: -44mA**

ISOLATION*

(AS MEASURED ON A SPECTRUM ANALYZER)
J8-J3



***J8: INPUT ARM**

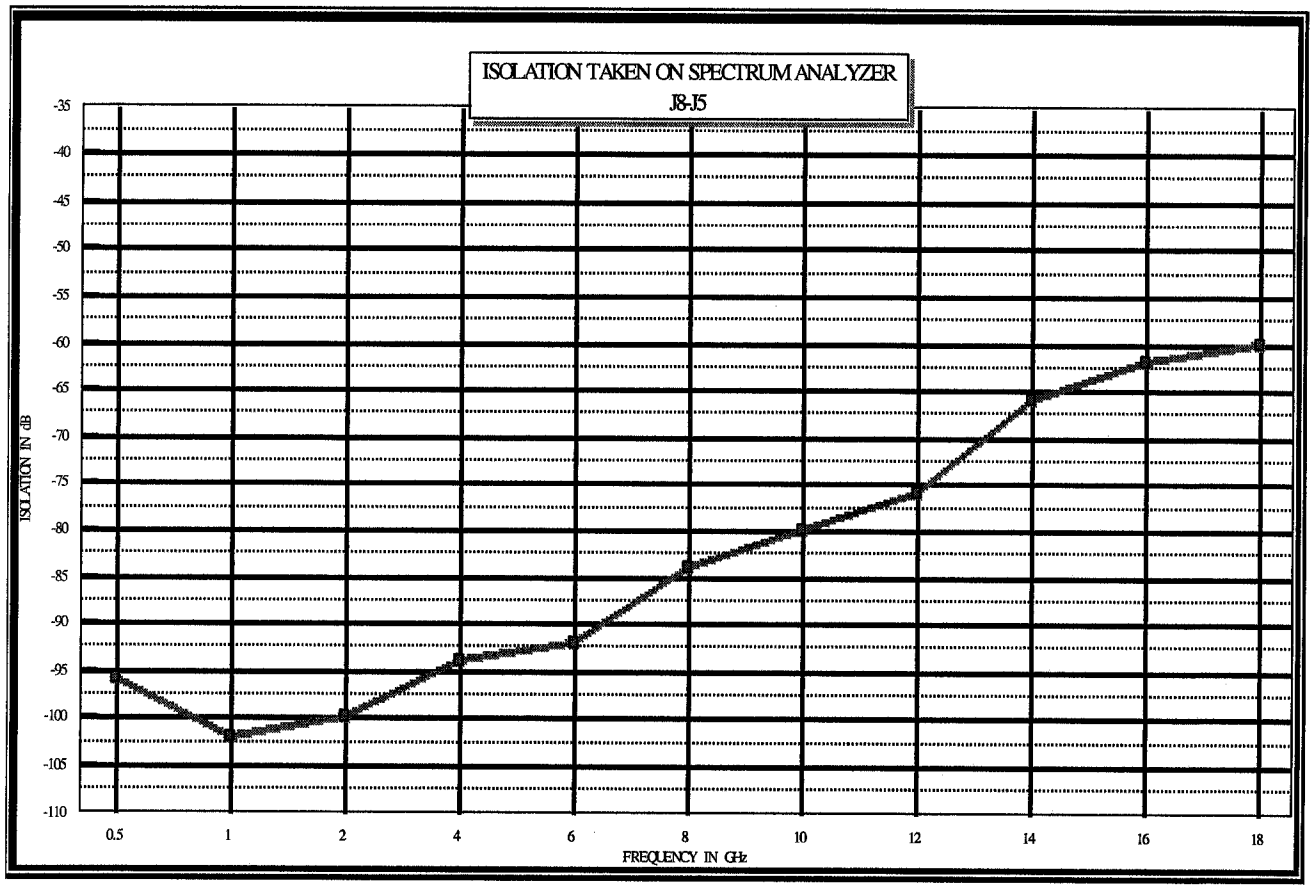
MAY 27, 1999

SUMMARY TEST DATA

MODEL NUMBER	**: SWN-1140-6DR-DEC-SP OPTION FM10**
SERIAL NUMBER	**: 6MS90495**
TECHNICIAN	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc: +313mA; -12vdc: -44mA**

ISOLATION*

(AS MEASURED ON A SPECTRUM ANALYZER)
J8-J5



***J8: INPUT ARM**

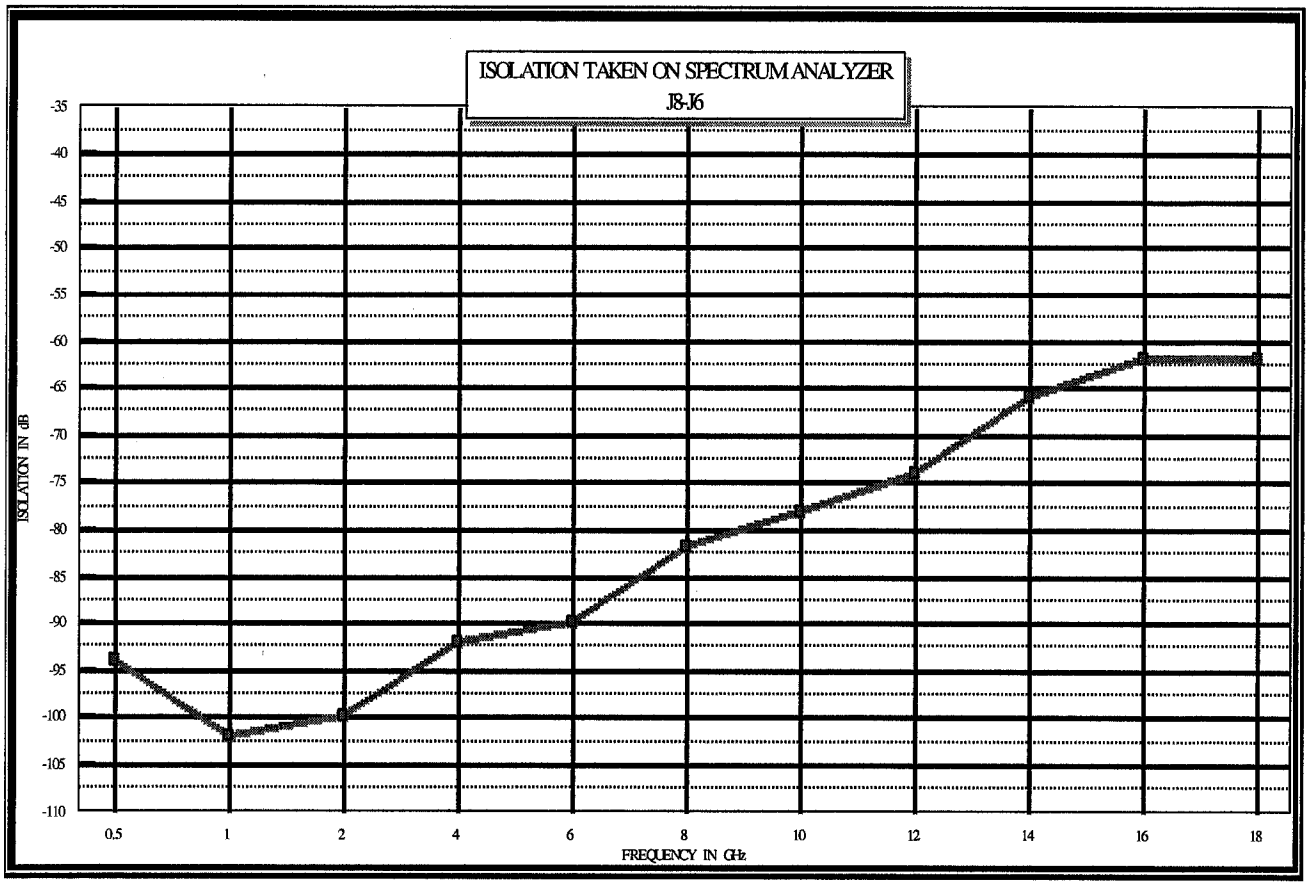
MAY 27, 1999

SUMMARY TEST DATA

MODEL NUMBER	**: SWN-1140-6DR-DEC-SP OPTION FM10**
SERIAL NUMBER	**: 6MS90495**
TECHNICIAN	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc: +313mA; -12vdc: -44mA**

ISOLATION*

(AS MEASURED ON A SPECTRUM ANALYZER)
J8-J6



***J8: INPUT ARM**

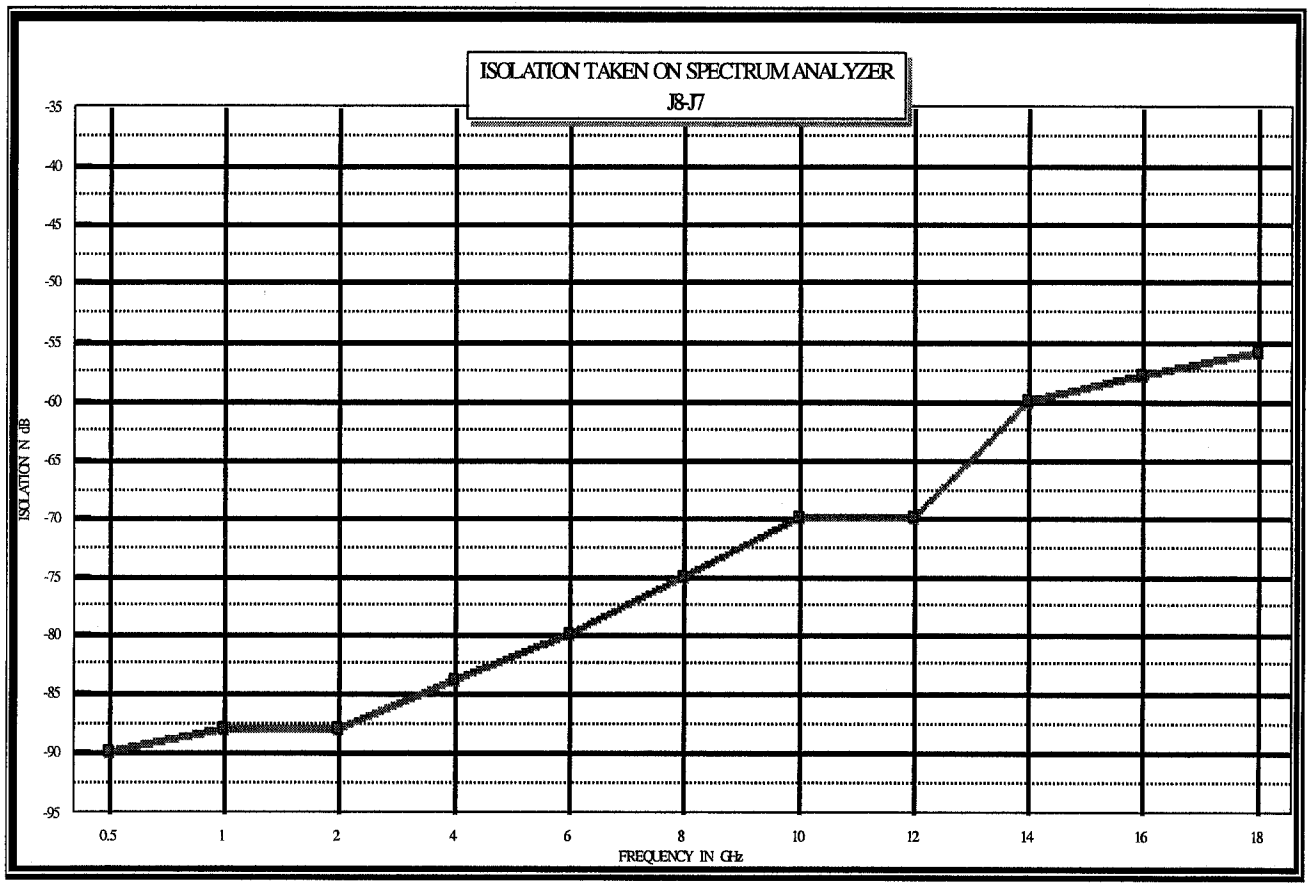
MAY 27, 1999

SUMMARY TEST DATA

MODEL NUMBER	**: SWN-1140-6DR-DEC-SP OPTION FM10**
SERIAL NUMBER	**: 6MS90495**
TECHNICIAN	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc: +313mA; -12vdc: -44mA**

ISOLATION*

(AS MEASURED ON A SPECTRUM ANALYZER)
J8-J7



***J8: INPUT ARM**

MAY 27, 1999

SUMMARY TEST DATA

MODEL NUMBER	: SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER	: 6MS90495
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: +313mA; -12vdc: -44mA

SWITCHING SPEED

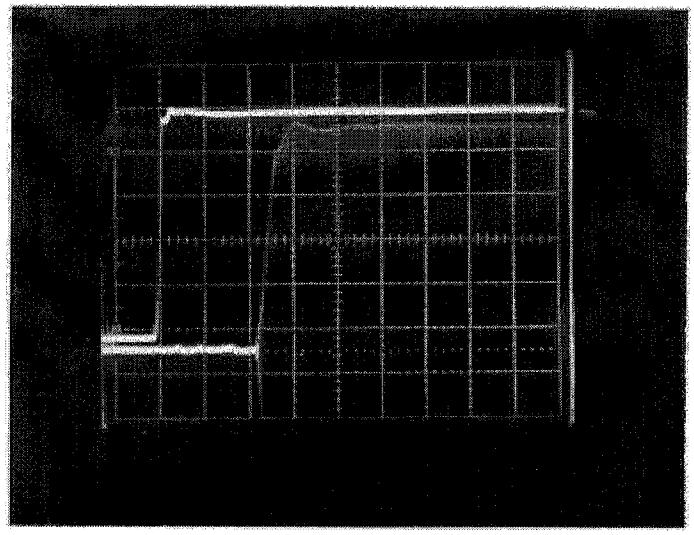
"Rise/Fall" Time: 10% RF to 90% RF & 90% RF to 10% RF
"On/Off" Time: 50% TTL to 90% RF or 10% RF

TYPICAL OF ALL ARMS

"DELAY ON": 54 nS
"RISE TIME": 9 nS

HORIZONTAL SCALE:
20 nS PER DIVISION

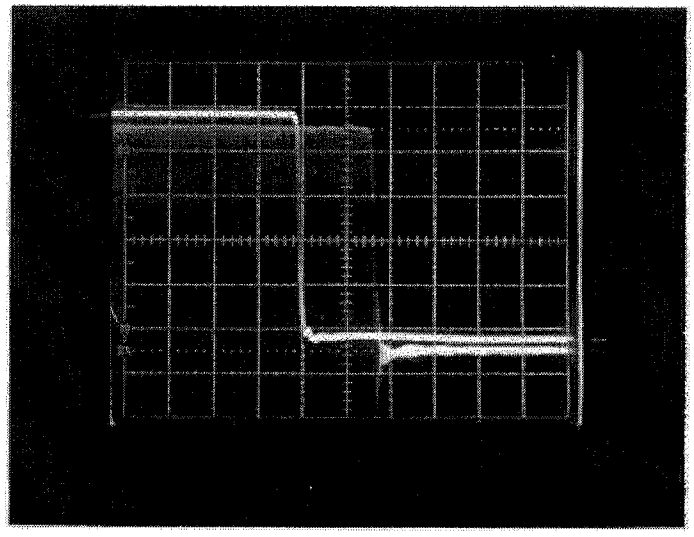
VERTICAL SCALE:
10 mV PER DIVISION



"DELAY OFF": 36 nS
"FALL TIME": 5 nS

HORIZONTAL SCALE:
20 nS PER DIVISION

VERTICAL SCALE:
10 mV PER DIVISION



MAY 27, 1999

SUMMARY TEST DATA

MODEL NUMBER	**: SWN-1140-6DR-DEC-SP OPTION FM10**
SERIAL NUMBER	**: 6MS90495**
ENGINEER	**: RENE AFABLE**
VOLTAGE & CURRENT DRAW	**: +5vdc: +313mA; -12vdc: -44mA**

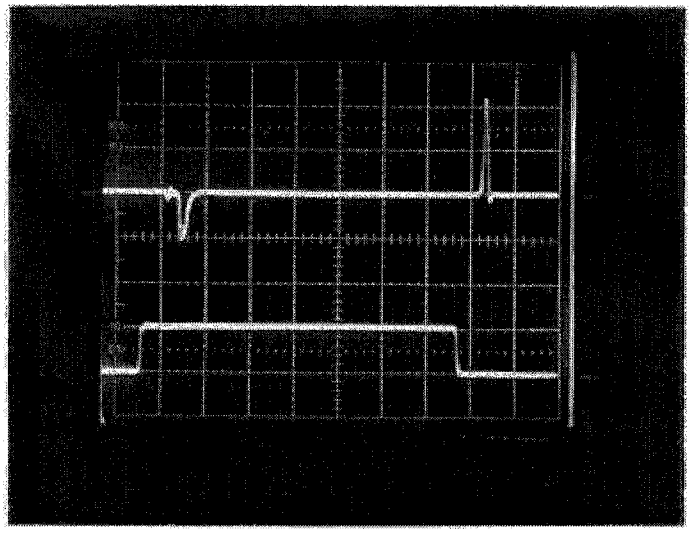
VIDEO TRANSIENTS

TYPICAL OF ALL ARMS

≤320 mV P-P
MEASURED IN A
300 MHZ BANDWIDTH

VERTICAL SCALE:
100 mV PER DIVISION

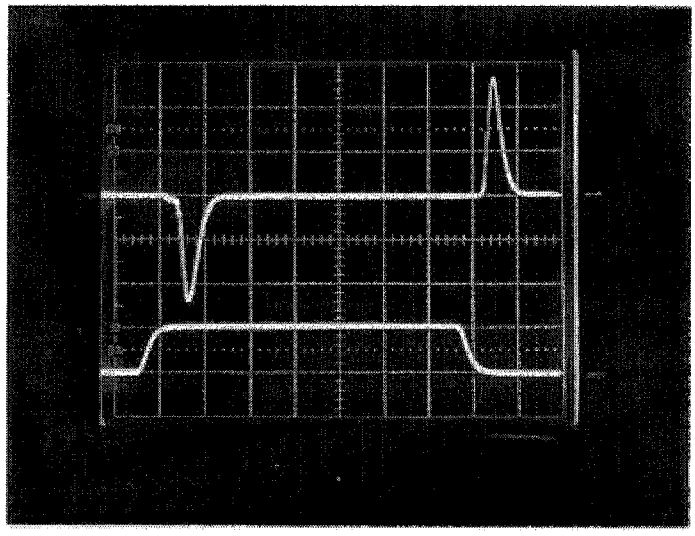
HORIZONTAL SCALE:
50 nS PER DIVISION



≤100 mV P-P
MEASURED IN A
20 MHZ BANDWIDTH

VERTICAL SCALE:
20 mV PER DIVISION

HORIZONTAL SCALE:
20 nS PER DIVISION



MAY 27, 1999

AMERICAN MICROWAVE CORPORATION

APPENDIX A

MISCELLANEOUS

TEST DATA AND PLOTS

ON

ISOLATION

AS

MEASURED

ON A SCALAR NETWORK

ANALYZER

(NOISE FLOOR OF SCALAR NETWORK ANALYZER IS -70 dB)

ON A

SP6T

RADIAL SOLID STATE SWITCH

(SURFACE MOUNTABLE)

AMC MODEL No:
SWN-1140-6DR-DEC-SP OPTION FM10

(Serial Number: 6MS90495)

FROM 5.5 GHz TO 6.0 GHz

MAY 27, 1999

7311 G GROVE ROAD, FREDERICK, MARYLAND 21704 • Tel. (301) 662-4700 • Fax (301) 662-4938

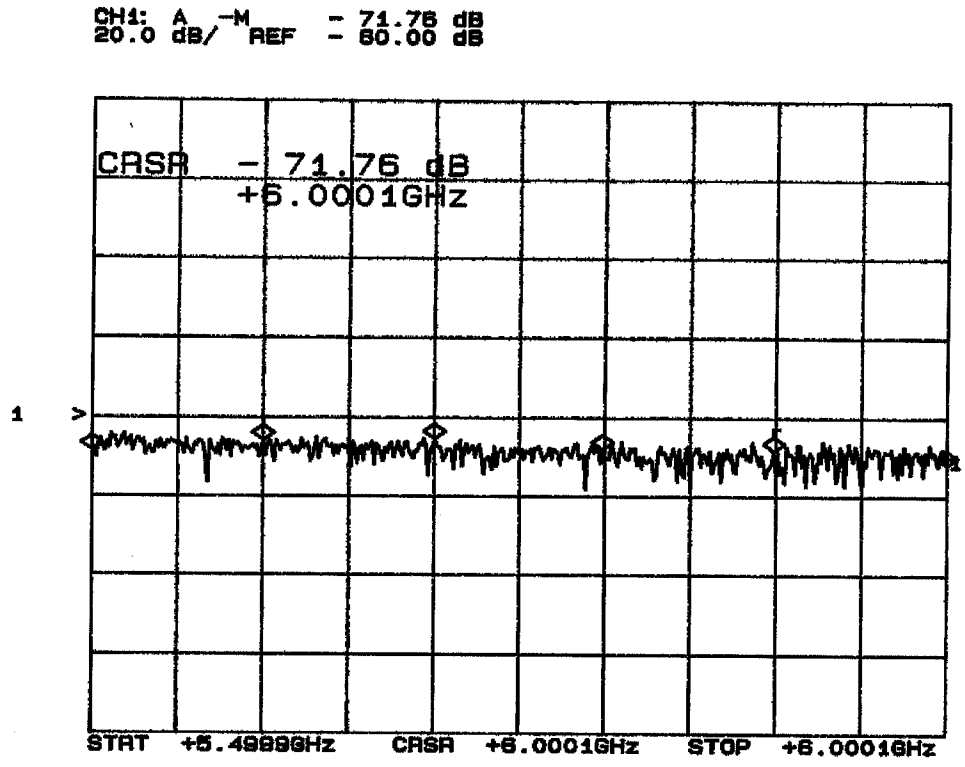
SUMMARY TEST DATA

MODEL NUMBER	: SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER	: 6MS90495
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: +313mA; -12vdc: -44mA

ISOLATION*

(AS MEASURED ON A SCALAR NETWORK ANALYZER)

J8-J1



*J8: INPUT ARM

FREQUENCY	ISOLATION
5.5 GHz	68.2 dB
5.6 GHz	66.7 dB
5.7 GHz	66.3 dB
5.8 GHz	67.4 dB
5.9 GHz	69.3 dB
6.0 GHz	71.7 dB

MAY 27, 1999

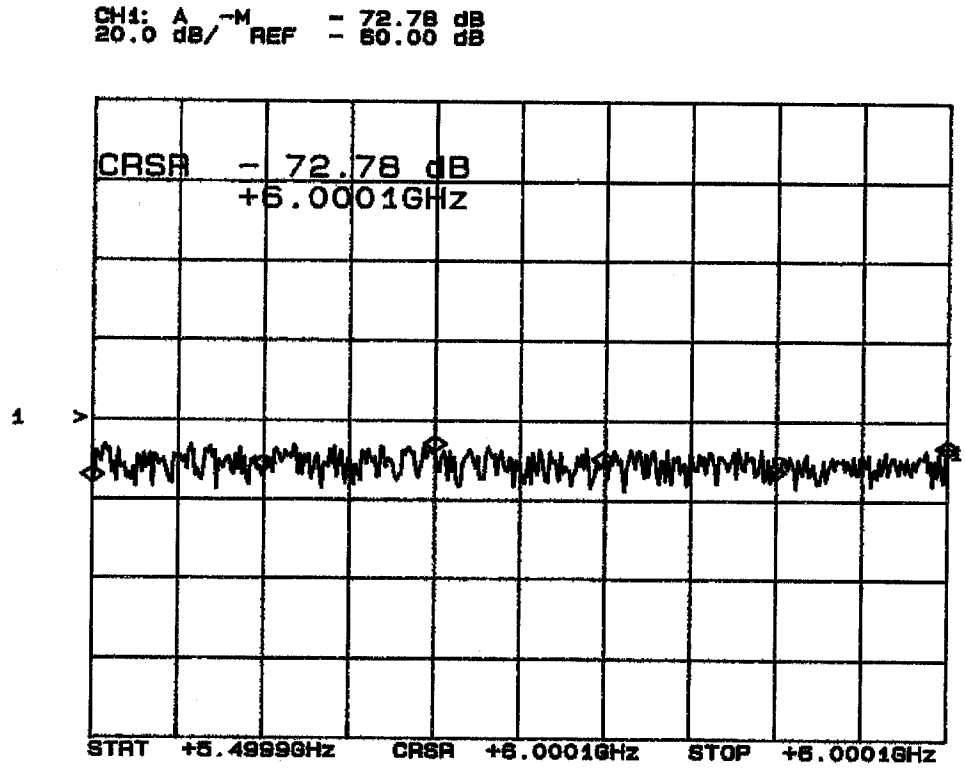
SUMMARY TEST DATA

MODEL NUMBER	: SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER	: 6MS90495
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: +313mA; -12vdc: -44mA

ISOLATION*

(AS MEASURED ON A SCALAR NETWORK ANALYZER)

J8-J2



*J8: INPUT ARM

FREQUENCY	ISOLATION
5.5 GHz	67.1 dB
5.6 GHz	71.0 dB
5.7 GHz	72.3 dB
5.8 GHz	75.9 dB
5.9 GHz	68.7 dB
6.0 GHz	72.7 dB

MAY 27, 1999

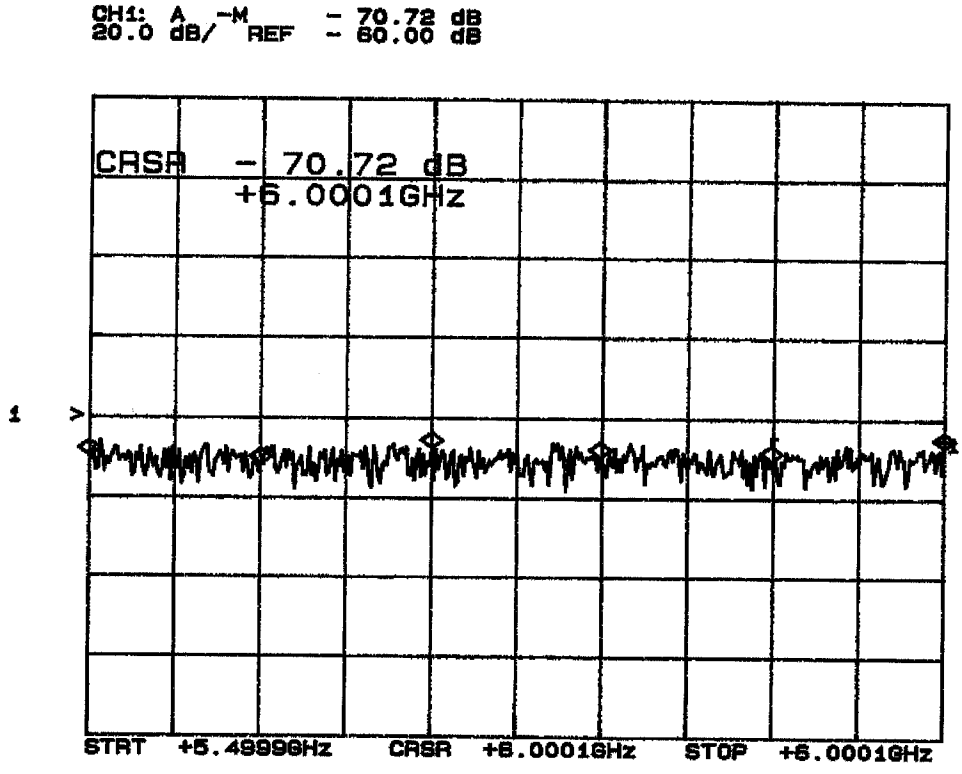
SUMMARY TEST DATA

MODEL NUMBER	: SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER	: 6MS90495
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: +313mA; -12vdc: -44mA

ISOLATION*

(AS MEASURED ON A SCALAR NETWORK ANALYZER)

J8-J3



*J8: INPUT ARM

FREQUENCY	ISOLATION
5.5 GHz	67.6 dB
5.6 GHz	72.0 dB
5.7 GHz	70.8 dB
5.8 GHz	68.4 dB
5.9 GHz	75.0 dB
6.0 GHz	70.7 dB

MAY 27, 1999

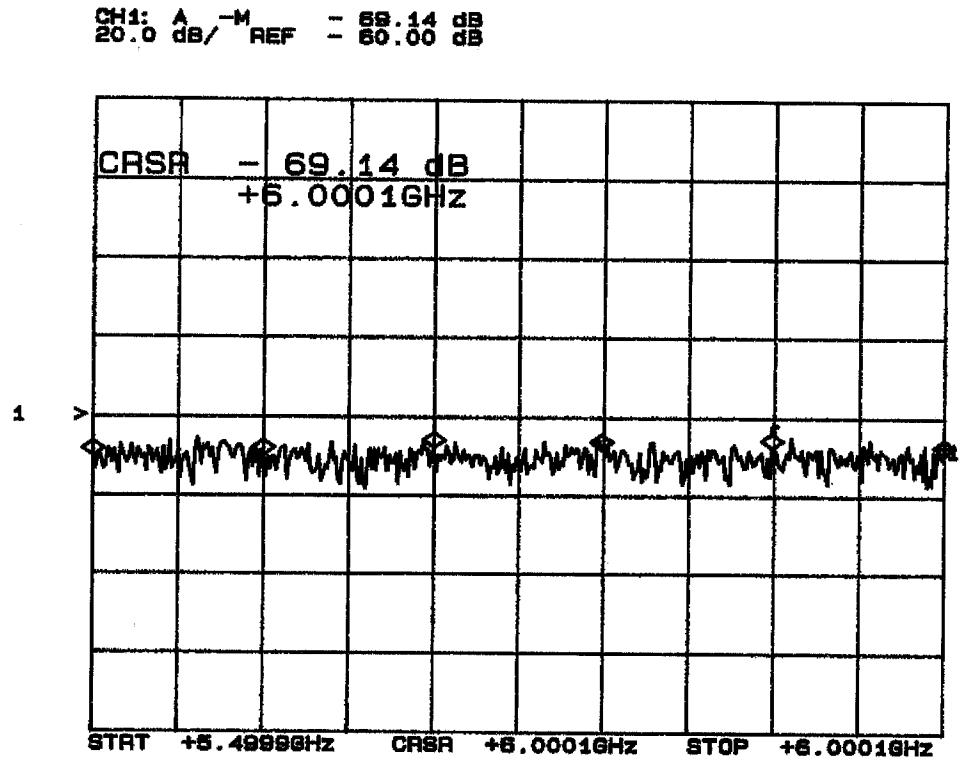
SUMMARY TEST DATA

MODEL NUMBER	: SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER	: 6MS90495
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: +313mA; -12vdc: -44mA

ISOLATION*

(AS MEASURED ON A SCALAR NETWORK ANALYZER)

J8-J5



*J8: INPUT ARM

FREQUENCY	ISOLATION
5.5 GHz	67.9 dB
5.6 GHz	73.9 dB
5.7 GHz	71.9 dB
5.8 GHz	66.2 dB
5.9 GHz	66.8 dB
6.0 GHz	69.1 dB

MAY 27, 1999

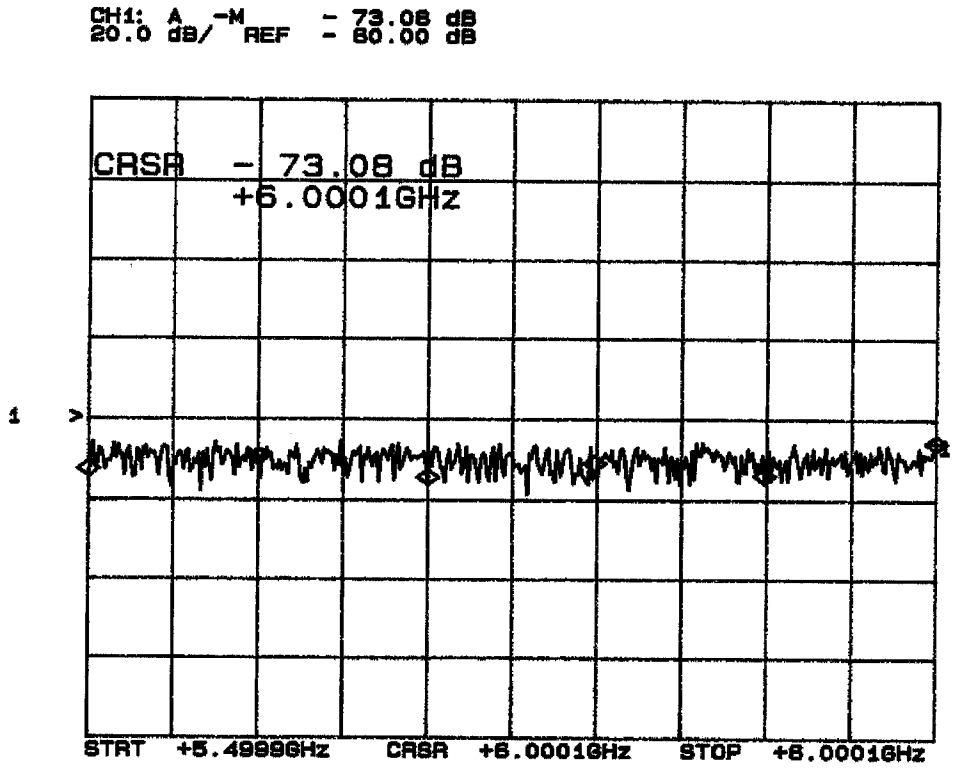
SUMMARY TEST DATA

MODEL NUMBER	: SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER	: 6MS90495
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: +313mA; -12vdc: -44mA

ISOLATION*

(AS MEASURED ON A SCALAR NETWORK ANALYZER)

J8-J6



*J8: INPUT ARM

FREQUENCY	ISOLATION
5.5 GHz	71.7 dB
5.6 GHz	69.6 dB
5.7 GHz	70.4 dB
5.8 GHz	70.7 dB
5.9 GHz	71.8 dB
6.0 GHz	73.0 dB

MAY 27, 1999

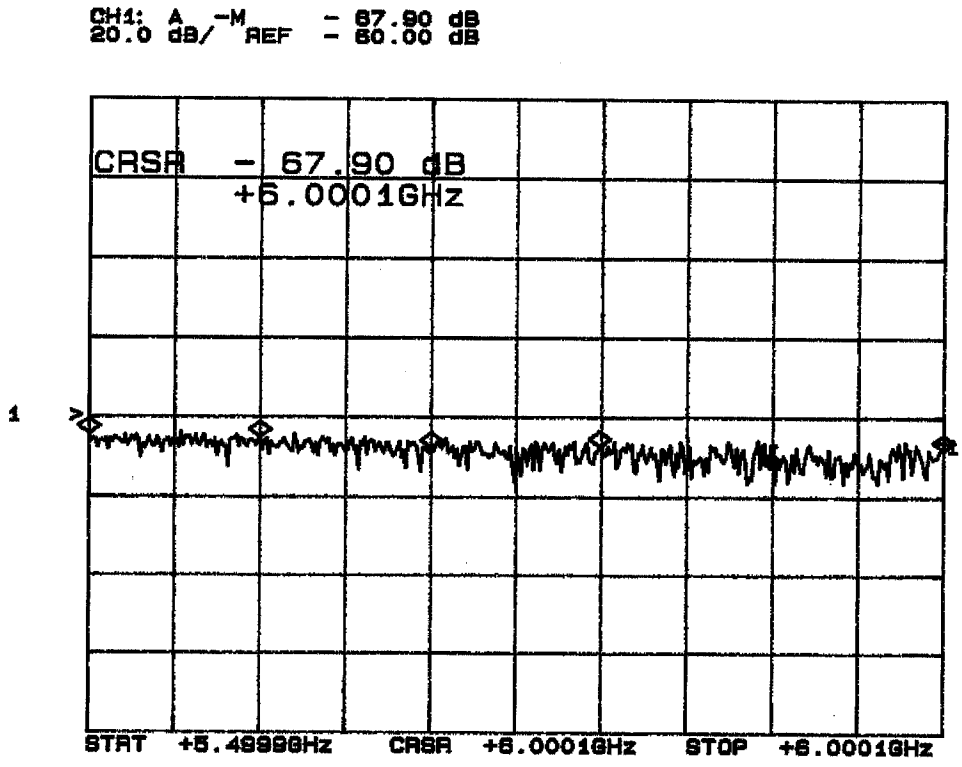
SUMMARY TEST DATA

MODEL NUMBER	: SWN-1140-6DR-DEC-SP OPTION FM10
SERIAL NUMBER	: 6MS90495
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: +313mA; -12vdc: -44mA

ISOLATION*

(AS MEASURED ON A SCALAR NETWORK ANALYZER)

J8-J7



*J8: INPUT ARM

FREQUENCY	ISOLATION
5.5 GHz	65.0 dB
5.6 GHz	66.2 dB
5.7 GHz	67.0 dB
5.8 GHz	69.0 dB
5.9 GHz	70.0 dB
6.0 GHz	67.9 dB

MAY 27, 1999