



**AMERICAN MICROWAVE
CORPORATION**

TEST DATA

ON

0.1 GHz TO 20 GHz
(10 MHz TO 20 GHz OPTIONAL)

AND

0.04 GHz TO 1 GHz

VERY HIGH ISOLATION \geq 100 dB

HIGH SPEED

LOW LOSS

NON-REFLECTIVE/ABSORPTIVE

SP4T

MULTI-THROW SOLID STATE SWITCH
(SURFACE MOUNTABLE)

AMC MODEL No:
SWN-1170-4DT-AKG-STANDARD OPTION 120
(Serial Number: 4MS905116)

**REPORTED AND PREPARED
BY
RENE AFABLE**

JULY 21, 1999

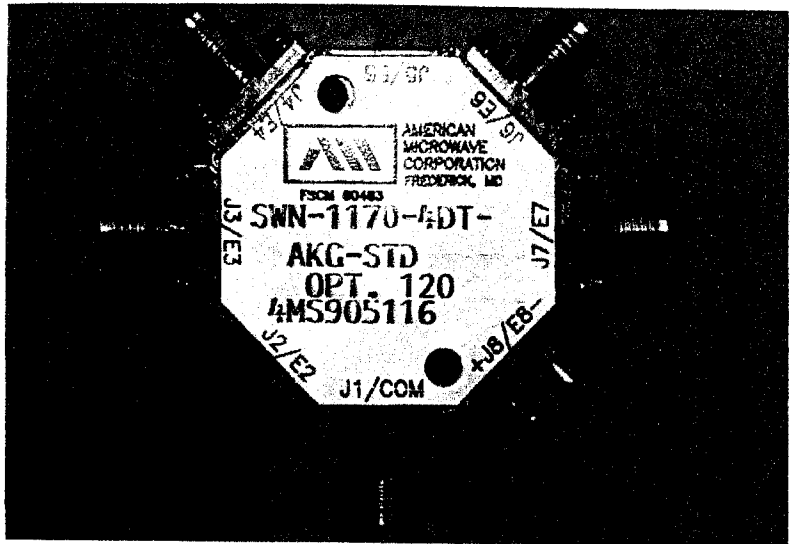
WEB PAGE: [HTTP://WWW.AMWAVE.COM](http://www.amwave.com)

E-MAIL ADDRESS: AMCPMI@AOL.COM

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



SP4T NON-REFLECTIVE/ABSORPTIVE SOLID STATE PIN DIODE SWITCH



KEY FEATURES

- 0.1 GHz TO 20 GHz
(10MHz to 20GHz optional)
- HIGH ISOLATION (≥ 100 dB)
- LOW INSERTION LOSS
- HIGH SPEED
- TTL LOGIC COMPATIBLE

AMC MODEL No: SWN-1170-4DT-AKG-STANDARD OPTION 120

SPECIFICATIONS: (NON-REFLECTIVE)

● FREQUENCY RANGE	:	0.1 GHz to 20 GHz (10MHz to 20GHz Optional)
● INSERTION LOSS	:	5.0 dB MAX.
	:	1.25 dB TYP. @ 2.0 GHz
	:	2.00 dB TYP. @ 6.0 GHz
	:	3.00 dB TYP. @ 12.0 GHz
	:	4.50 dB TYP. @ 20.0 GHz
● ISOLATION	:	≥ 100 dB MIN.
	:	≥ 110 dB TYP. @ 2.0 GHz
	:	≥ 110 dB TYP. @ 6.0 GHz
	:	≥ 100 dB TYP. @ 12.0 GHz
	:	≥ 100 dB TYP. @ 20.0 GHz
● VSWR	:	2.0:1
● SWITCHING SPEED	:	"RISE" 15nS MAX., 10nS TYP.
	:	"FALL" 15nS MAX., 10nS TYP.
	:	"ON" 100nS MAX., 75nS TYP.
	:	"OFF" 100nS MAX., 75nS TYP.
● CONTROL	:	Independent TTL Compatible (2 Bit Decoder available)
● VIDEO TRANSIENTS	:	≤ 1.14 V Peak to Peak, 300 MHZ Bandwidth
	:	≤ 600 mV Peak to Peak, 20 MHZ Bandwidth
● RF INPUT POWER	:	+20dBm Operating, 1 Watt Survival (Other power Levels available)
● DC POWER SUPPLY	:	+5vdc @ +200mA MAX.
(Other supply voltages available)	:	- 12vdc @ - 100mA MAX.
● SIZE	:	1.25" X 1.25" X 0.70"
● WEIGHT	:	≤ 1.5 oz.

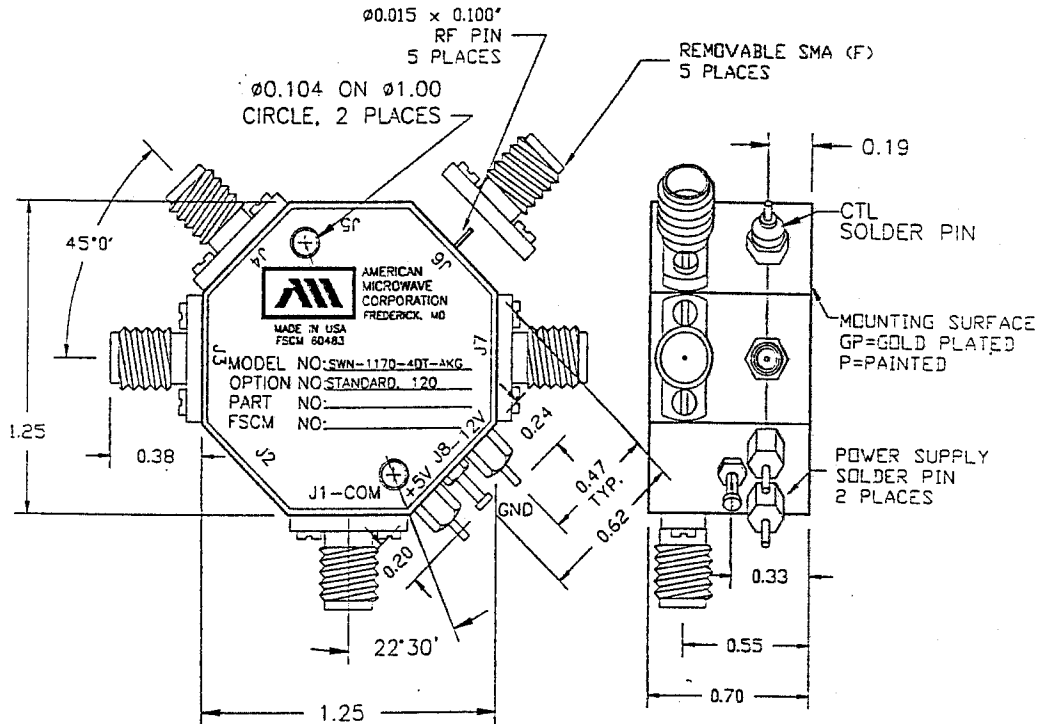
JULY 21, 1999

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SUMMARY TEST DATA

MODEL NUMBER	: SWN-1170-4DT-AKG-STD OPTION 120
SERIAL NUMBER	: 4MS905116
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: @+176mA; -12vdc: @ -48mA



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

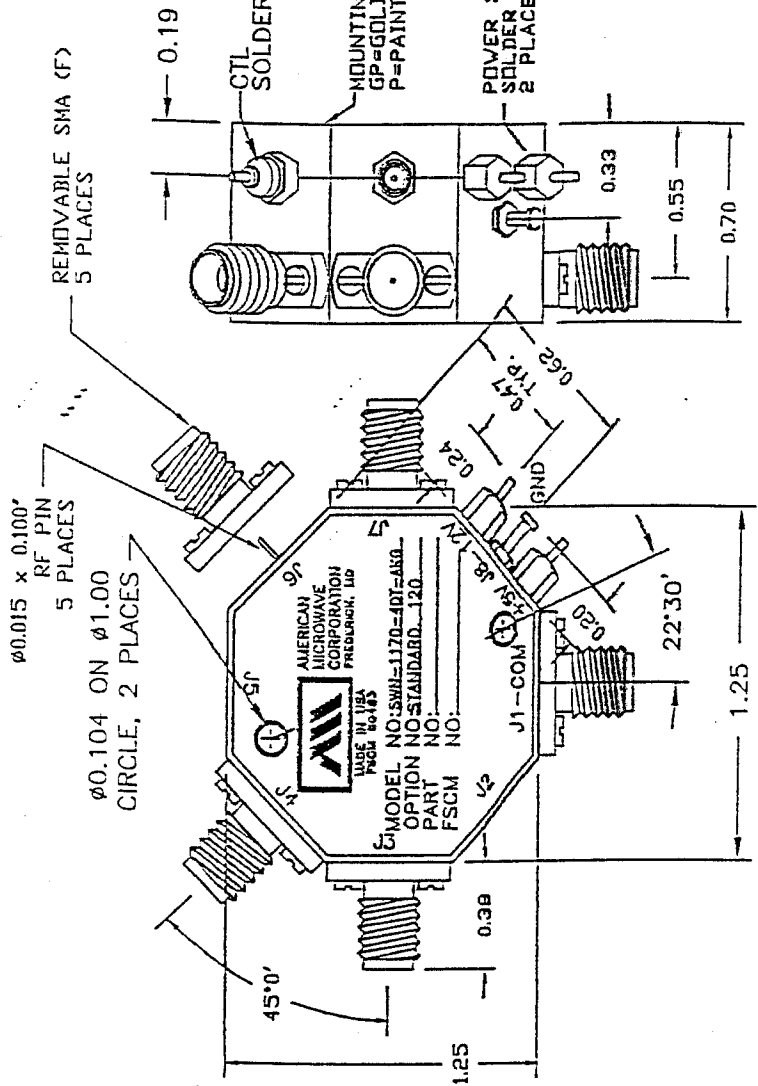
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION.

JULY 21, 1999

DESCRIPTION
-4DT-AKG-STANDARD OPTION 120 IS A SINGLE POLE FOUR THROW, NON-RE-
JE/ABSORPTIVE SWITCH MODULE WITH VERY HIGH ISOLATION, LOW LOSS, HIGH SPEED AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

SPECIFICATIONS:

- FREQUENCY: 0.1 GHz TO 20 GHz
- INSERTION LOSS: 5.0dB MAXIMUM
- ISOLATION: 110 MINIMUM
- VSWR (OH AND OFF): 2.0:1 MAXIMUM
- SWITCHING SPEED: 300 nsec (10%-90% RF)
- CONTROL LOGIC: TTL COMPATIBLE LOGIC "0"=ON "1"=OFF
- RF CONNECTORS SMA FEMALE
- OPERATING TEMPERATURE 0 TO 55°C
- POWER SUPPLY: +15V @ 100 mA MAXIMUM
 -12V @ 100 mA MAXIMUM
- RF POWER (SURVIVAL): +30 dBm (1 WATT)
- RF POWER (OPERATING): +20 dBm MAXIMUM
- RF PHASE TRACKING ± 2 DEGREES PER DEGREE C (ALL PORTS WITH RESPECT TO COMMON WITH TEMPERATURE)
- SIZE: 1.25" (L) x 1.25" (W) x 0.70" (H)
- WEIGHT 1.5 oz.



NOTE:

DR=WITH DRIVER, REFLECTIVE
DI=WITH DRIVER, NON-REFLECTIVE/ABSORPTIVE

ENVIRONMENTAL RATINGS:

- TEMPERATURE: 0°C TO +55°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

CONTRACT NO.		APPROVALS		DATE	
DRAWN: WJP, SRJ, d		CHECKED: WJP		DATE: 1/20/99	
ESSNO: PA		DATE: 1/21/99		REV: -	
TITLE: AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND		OUTLINE DRAWING			
SITE: A		FSCM NO: 60483		REV: 100-4789-3	
SCALE: N/S		SHEET: 1		OF 1	

DESCRIPTION

SW-4DR/DT-AKG-STANDARD IS A SINGLE POLE FOUR THROW, REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH VERY HIGH ISOLATION, LOW INSERTION LOSS, HIGH SPEED AND WITH INTEGRAL TIL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

SPECIFICATIONS:

- FREQUENCY: 0.5 GHz TO 18 GHz
- REFLECTIVE: 4.0dB
- ABSORPTIVE: 4.5dB
- ISOLATION: 6 GHz TO 18 GHz: 110dB
- 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 OFF: 75ns TYPICAL, 100ns MAX. (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- POWER INPUT: 1 WATT CW, 10 WATTS PEAK 1 usec
- SURVIVAL POWER: +5V @ 200 mA MAX.
- CONTROL: TIL LOGIC: 0"-ON 1"-OFF
- POWER SUPPLY: -5V @ 75mA MAX.(REFLECTIVE) 100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE: 1.25" (L) x 1.25" (W) x 0.70" (H)
- WEIGHT: 1.5 oz.

OPTIONS:

- INDEPENDENT CONTROL WITH SOLDER PIN STANDARD
- DEC-SP 2 BIT DECODER WITH SOLDER PIN
 - 10MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
 - 100MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
 - 1TB 1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
 - 4TB 2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
 - 6TB 4 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
 - 12TB 12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
 - 100MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
 - 2TB 2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
 - 10TB 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 0.40" THICK VERSION
- B12 0.88" THICK VERSION

ENVIRONMENTAL RATINGS:

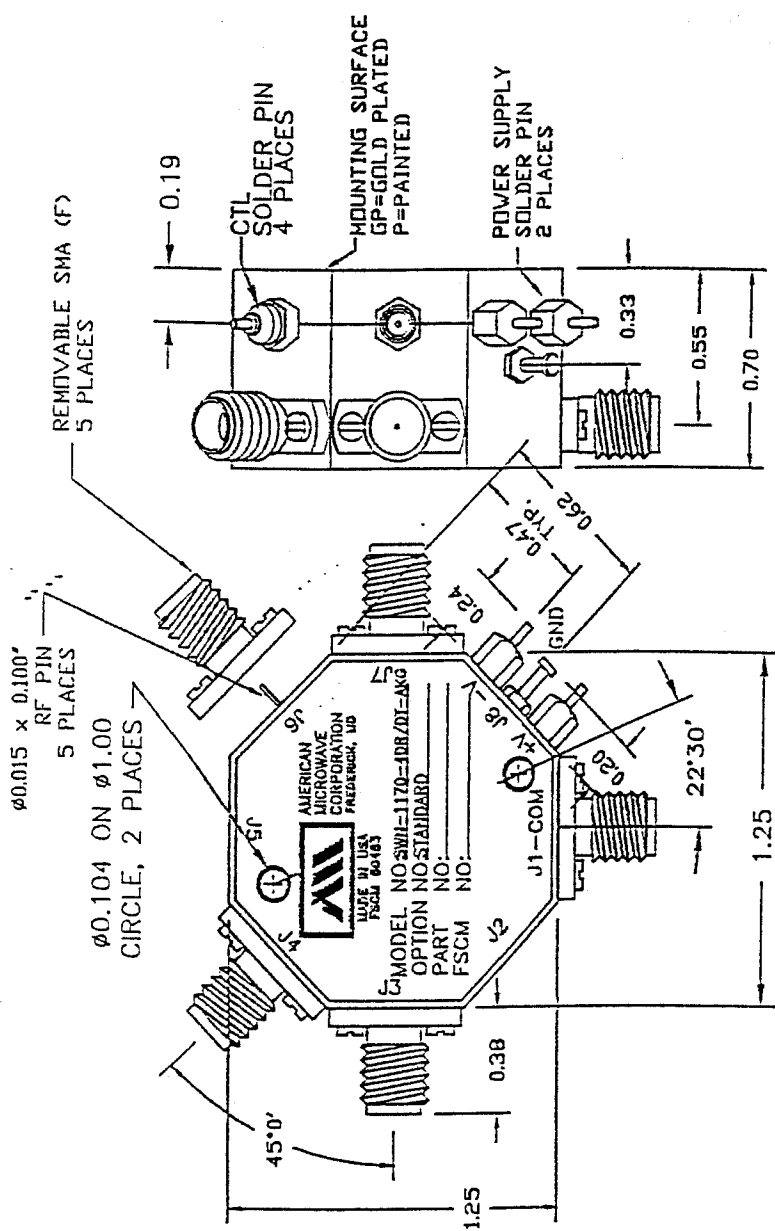
- TEMPERATURE: -55°C TO +85°C (OPERATING)
- -65°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B COND. B
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 204D COND. B
- ALTITUDES: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND.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

ZONE	REV.	DESCRIPTION	DATE	APPROVED
		ORIGINAL RELEASE	2/26/99	



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

CONTRACT NO.		APPROVALS		DATE
		DESIGNED	W.P.P.	1/24/99
		CHECKED	W.P.P.	
		ISSUED	W.P.P.	
TITLE		DATE		
AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND		1/24/99		
OUTLINE DRAWING				
SWN-1170-4DR/DT-AKG-STANDARD				
REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE				
RADIAL SOLID STATE SWITCH				
SIZE	FSCM NO.	DWG NO.	REV.	
A	60483	100-4789-1	-	
SCALE	N/S	SHEET	1 of 2	

REV. NO.	DATE	APPROVED
1	1/20/90	

REVISIONS
DESCRIPTION
ORIGINAL RELEASE

DESCRIPTION
AMC MODEL SW-1170-4DR/DT-AGK-DEC-SP IS A SINGLE POLE FOUR THROW, REFLECTIVE OR ABSORPTIVE SWITCH MODULE WITH VERY HIGH ISOLATION, LOW LOSS, HIGH SPEED AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR BROAD BAND OPERATIONS.

SPECIFICATIONS:

- FREQUENCY: 0.5 GHz TO 18 GHz
- REFLECTIVE: 4.0dB
- ABSORPTIVE: 4.5dB
- ISOLATION: 0.5 GHz TO 6 GHz: 110dB
- 6 GHz TO 18 GHz: 100dB
- 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: 0.1ns TYPICAL, 100ns MAX. DELAY OFF: 75ns TYPICAL, 100ns MAX. (CW)+20dBm (STANDARD), +10 dBm (HIGH SPEED)
- POWER INPUT: SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 usage
- CONTROL: TTL LOGIC "0"-ON "1"-OFF
- POWER SUPPLY: +5V @ 200 mA MAX. +5V @ 75mA MAX.(REFLECTIVE) 100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE: 1.25" (L) x 1.25" (W) x 0.70" (H)
- WEIGHT: 1.5 oz.

OPTIONS:

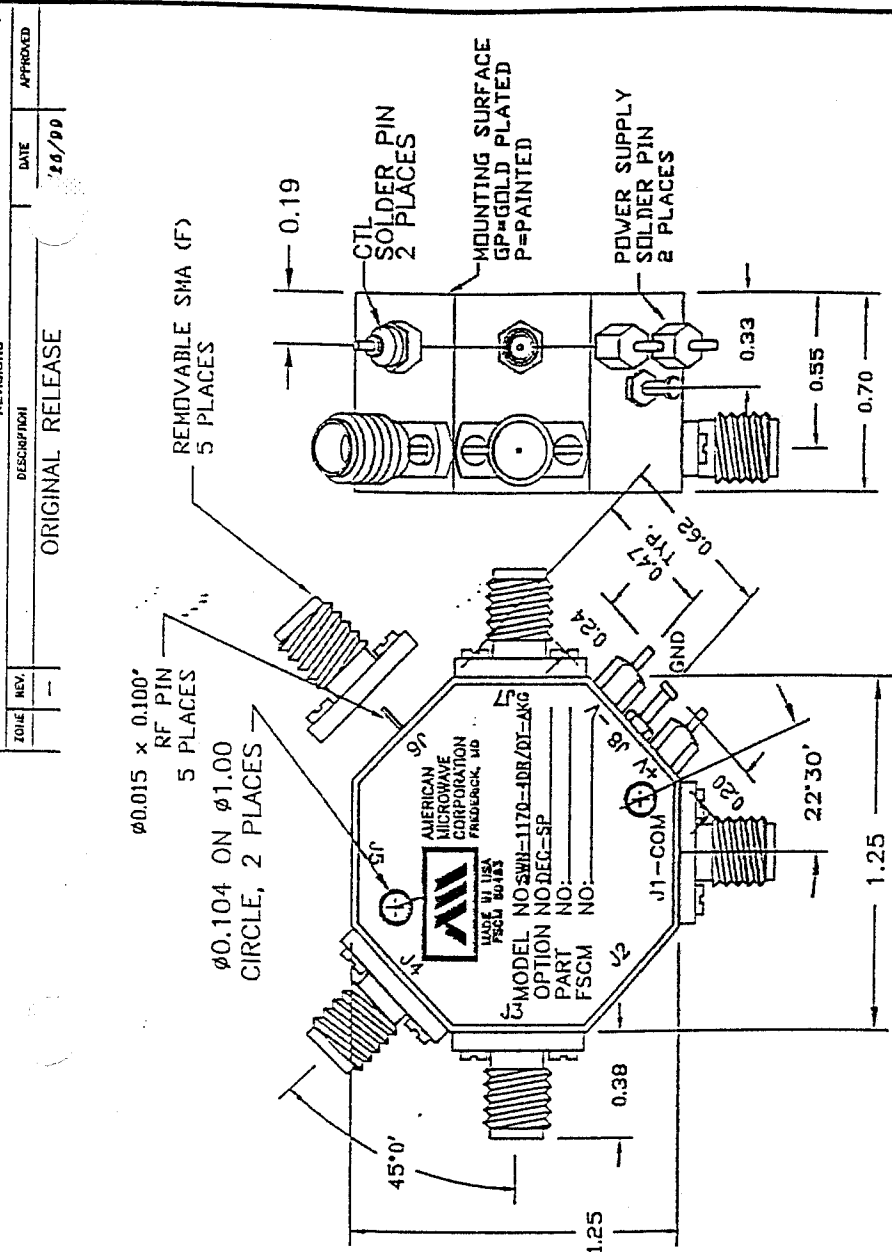
INDEPENDENT CONTROL WITH SOLDER PIN STANDARD

- DEC-SP 10M18: 10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5dB AT 10 MHz AND 0.8dB AT 18 GHz)
- 100M18: 100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5dB AT 100 MHz AND 0.5dB AT 18 GHz)
- 11B: 1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 21B: 2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 41B: 4 GHz TO 12.4 GHz (NO CHANGE IN INSERTION LOSS)
- 61B: 6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 121B: 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, 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: 0.40" THICK VERSION
- B12: 0.88" THICK VERSION

ENVIRONMENTAL RATINGS:

- TEMPERATURE: -55°C TO +85°C (OPERATING) -85°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



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

E6	E7	RF ON
L	L	J3
H	L	J4
L	H	J6
H	H	J7

CONTRACT NO.	APPROVALS	DATE	TITLE
	WSP, JRP	1/20/90	AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND
	WSP	1/29/90	OUTLINE DRAWING
	JA	1/29/90	SWN-1170-4DR/DT-AGK-DEC-SP REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE RADIAL SOLID STATE SWITCH
SIZE	FSCJ NO.	DWG NO.	REV.
A	60483	100-4789-2	-
SCALE	N/S	SHEET	1 of 2

DESCRIPTION
 AMC MODEL SW
 REFLECTIVE OR ABSORPTIVE SWITCH MODULE WITH HIGH ISOLATION,
 D, AND WITH INTEGRAL TIL DRIVER, DESIGNED FOR BROAD
 BAND OPERATIONS.

SPECIFICATIONS:

- FREQUENCY: 0.5 GHz TO 18 GHz
- REFLECTIVE: 3.0db
- ABSORPTIVE: 3.75db
- 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
- SPEED: RISE: 10ns TYPICAL, 15ns MAX
 FALL: 10ns TYPICAL, 15ns MAX
 DELAY TIME: 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 @ 200 mA MAX.
 -5V @ 75mA MAX.(REFLECTIVE)
 1.00mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE: 1.25" (L) x 1.25" (W) x 0.70" (H)
- WEIGHT: 1.5 oz.

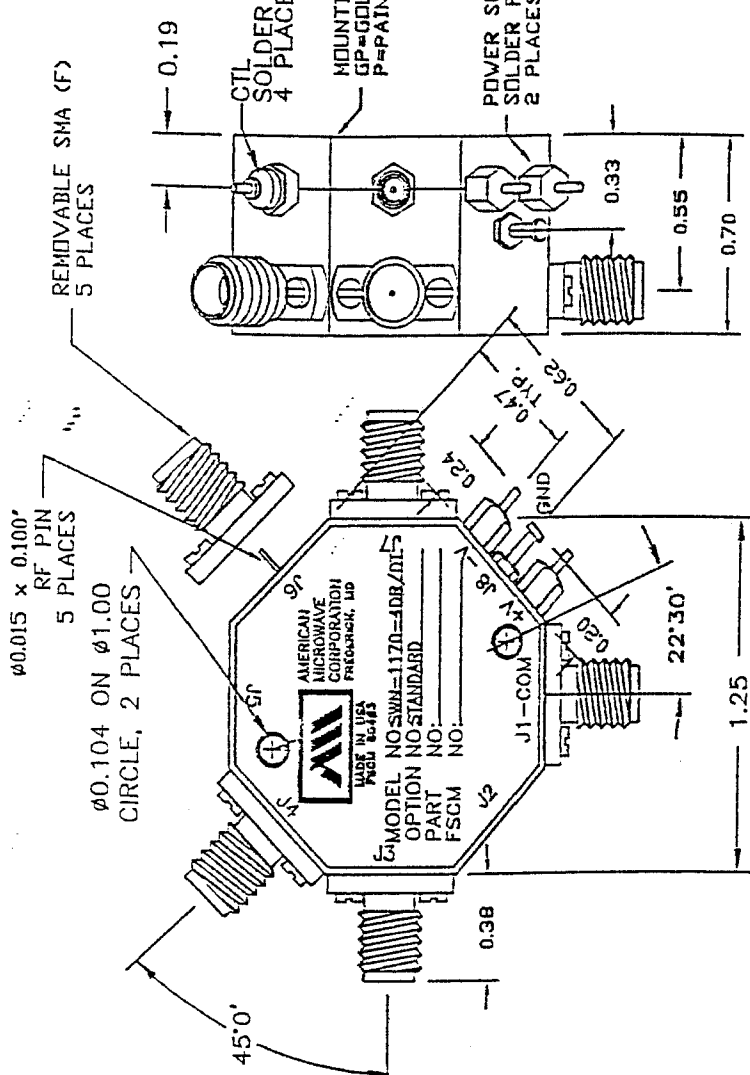
OPTIONS:

- INDEPENDENT CONTROL WITH SOLDER PIN STANDARD
- DEC-SP
- 10 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 10 MHz AND 0.5db AT 18 GHz)
- 100 MHz TO 18 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 0.5db AT 18 GHz)
- 1 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 2 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 4 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 6 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 12 GHz TO 18 GHz (NO CHANGE IN INSERTION LOSS)
- 100 MHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.5db AT 100 MHz AND 1.0db AT 20 GHz)
- 2 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
- 10 GHz TO 20 GHz (INSERTION LOSS INCREASES BY 1.0db AT 20 GHz)
- -12V POWER SUPPLIES
- -15V POWER SUPPLIES
- REVERSE LOGIC "1"-ON "0"-OFF
- DRIVERLESS, CURRENT CONTROLLED
- HIGH SPEED, TURNON/TURNOFF 20 nsec MAXIMUM WHEN APPLICABLE OR OPTION HS
- HIGH POWER - SPECIFY CW POWER, PULSE POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
- CUSTOM DESIGNED PRODUCT - SPECIFY INITIALS OF CUSTOMER
- LOW VIDEO TRANSIENTS - SPECIFY VIDEO BANDWIDTH
- LOW INSERTION LOSS VERSION
- HIGHER ISOLATION VERSION
- B11 - 0.40" THICK VERSION
- B12 - 0.80" 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-S10-202F, METHOD 204D COND. B
- ALTITUDE: MIL-S10-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-S10-202F, METHOD 107D COND. A

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION



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

APPROVALS	DATE	TITLE
SWN WSP, R.R.d	1/16/99	AMERICAN MICROWAVE CORPORATION FREDERICK, MARYLAND
CHECKED WSP	7/29/99	OUTLINE DRAWING
ISSUED PA	7/29/99	SWN-1170-4DR/DT-STANDARD REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE RADIAL SOLID STATE SWITCH
CONTRACT NO.	FSCJ NO. A 60483	SIZE A
	DWG NO. 100-4172-1	REV. -
	SCALE N/S	SHEET 1 of 2

DESCRIPTION
AMC MODEL SV
REFLECTIVE/ABSORPTIVE SWITCH MODULE WITH HIGH ISOLATION,
LOW LOSS, HIGH
BAND OPERATIONS.

SPECIFICATIONS:

- FREQUENCY: 0.5 GHz TO 18 GHz
- REFLECTIVE: 3.0db
- ABSORPTIVE: 3.75db
- 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)+20.08m (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 @ 200 mA MAX.
-5V @ 75mA MAX.(REFLECTIVE)
100mA MAX.(ABSORPTIVE/NON-REFLECTIVE)
- SIZE: 1.25" (L) x 1.25" (W) x 0.70" (H)
- WEIGHT: 1.5 oz.

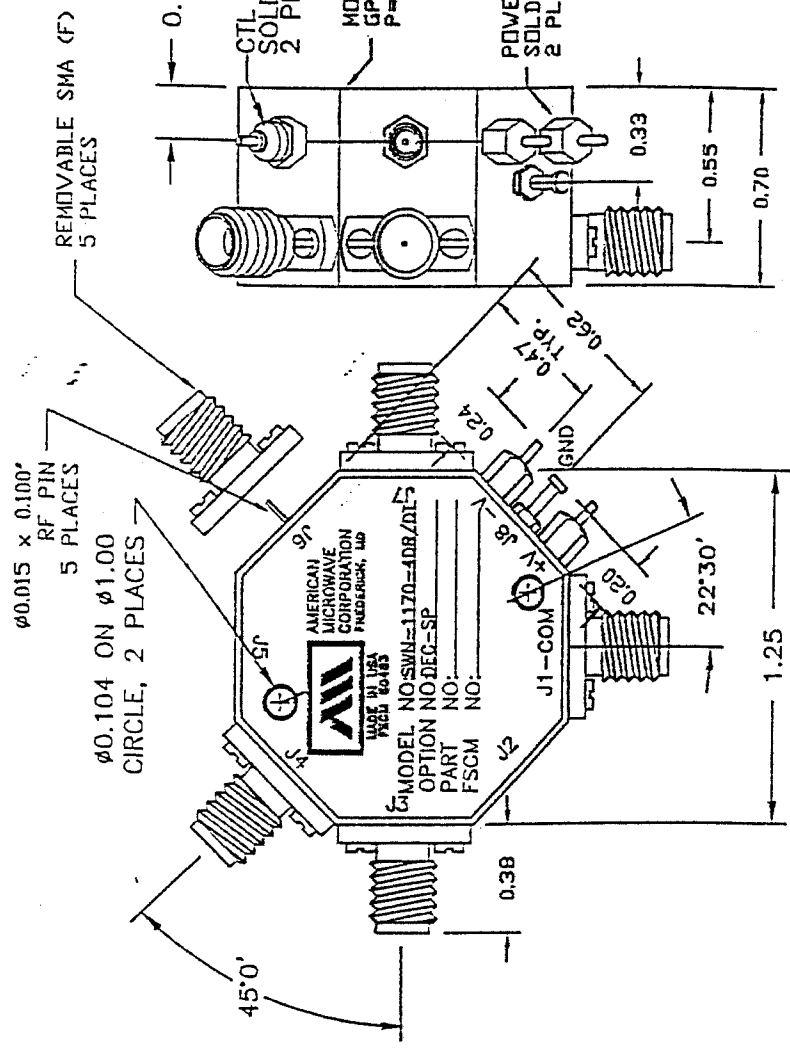
OPTIONS:

- INDEPENDENT CONTROL WITH SOLDER PIN STANDARD
- DEC-SP
- 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)
- 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, 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: 0.40" THICK VERSION
- B12: 0.68" 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



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

LOGIC TABLE

E6	E7	RF ON
L	L	J3
H	L	J4
L	H	J6
H	H	J7

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

APPROVALS		DATE	TITLE
DESIGNED	WSP, RSD	7/26/99	OUTLINE DRAWING
CHECKED	WSP	7/29/99	REFLECTIVE OR NON-REFLECTIVE/ABSORPTIVE
ISSUED	PA	7/29/99	RADIAL SOLID STATE SWITCH
CONTRACT NO.		SIZE	DWG NO.
		A	60483
SCALE		N/S	100-4172-2
SHEET			1 of 2

AMERICAN MICROWAVE CORPORATION
FREDERICK, MARYLAND

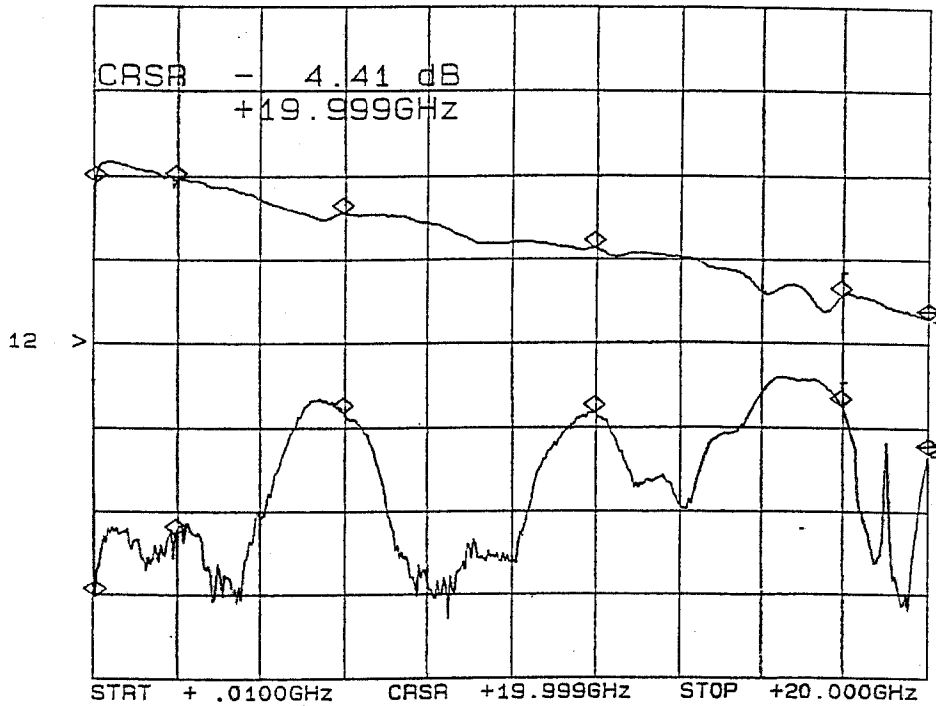


SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS* J1-J3

CH1: A -M - 4.41 dB CH2: B -M - 15.98 dB
 2.0 dB/ REF - 5.00 dB 5.0 dB/ REF - 9.54 dB



*J1: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
100 MHz	1.11 dB	24.5 dB
2.0 GHz	1.98 dB	20.8 dB
6.0 GHz	1.87 dB	13.6 dB
12.0 GHz	2.71 dB	13.6 dB
18.0 GHz	3.87 dB	13.2 dB
20.0 GHz	4.41 dB	15.9 dB



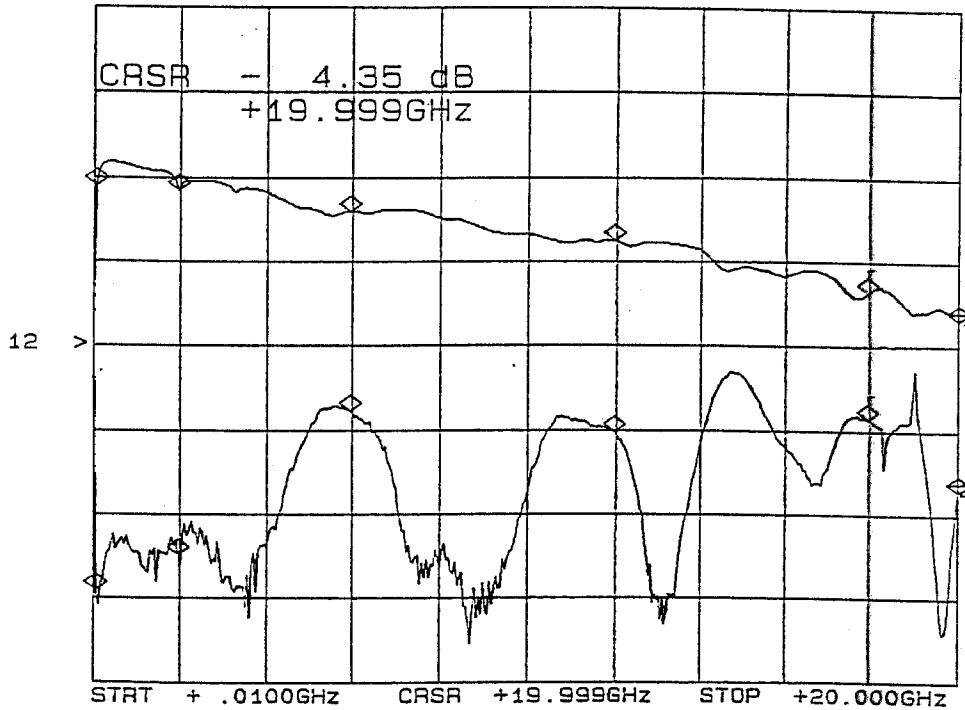
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J1-J4

CH1: A -M - 4.35 dB CH2: B -M - 18.07 dB
 2.0 dB/ REF - 5.00 dB 5.0 dB/ REF - 9.54 dB



*J1: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
100 MHz	1.18 dB	23.9 dB
2.0 GHz	1.27 dB	21.8 dB
6.0 GHz	1.77 dB	13.3 dB
12.0 GHz	2.48 dB	14.5 dB
18.0 GHz	3.70 dB	13.8 dB
20.0 GHz	4.35 dB	18.0 dB



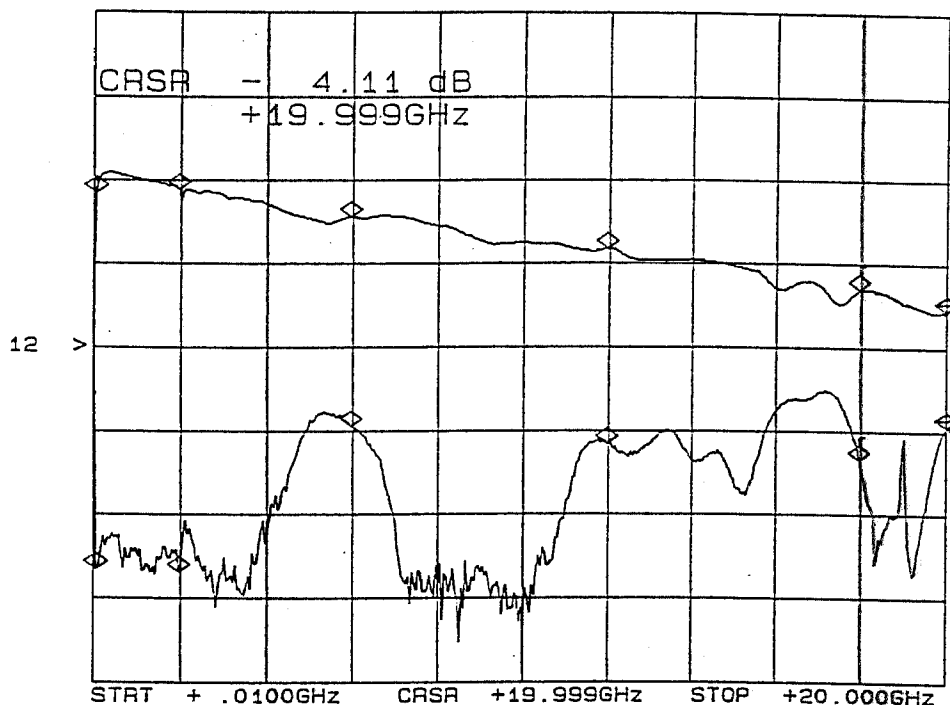
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J1-J6

CH1: A -M - 4.11 dB CH2: B -M - 14.16 dB
 2.0 dB/ REF - 5.00 dB 5.0 dB/ REF - 9.54 dB



*J1: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
100 MHz	1.27 dB	22.8 dB
2.0 GHz	1.22 dB	22.9 dB
6.0 GHz	1.87 dB	14.1 dB
12.0 GHz	2.62 dB	15.2 dB
18.0 GHz	3.60 dB	16.2 dB
20.0 GHz	4.11 dB	14.1 dB

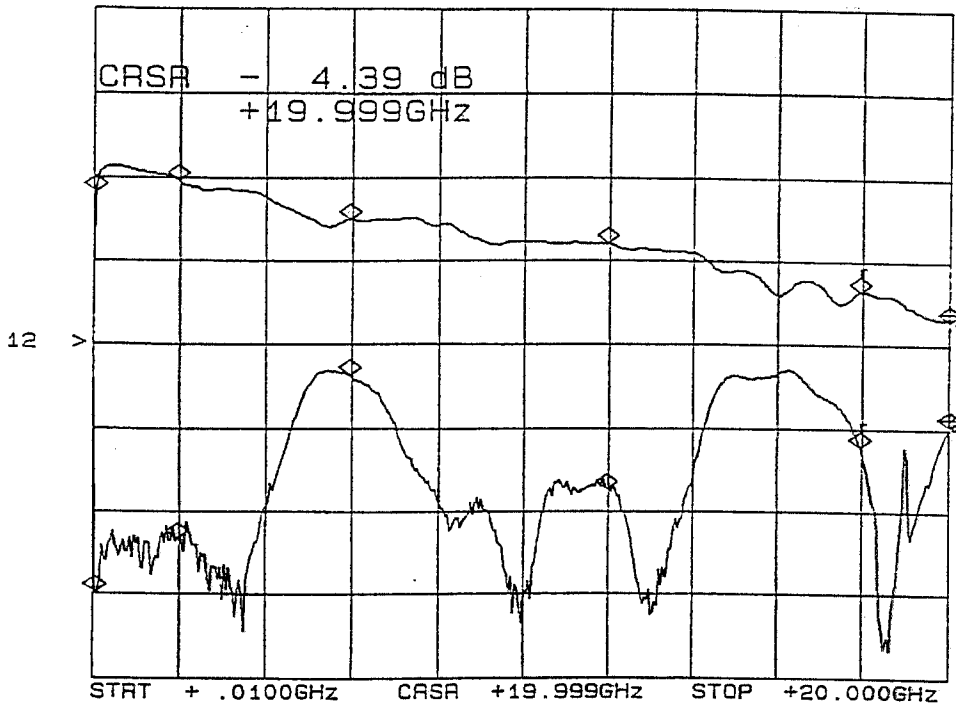


SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS* J1-J7

CH1: A -M REF - 4.39 dB CH2: B -M REF - 14.30 dB
 2.0 dB/ 5.00 dB 5.0 dB/ 9.54 dB



*J1: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
100 MHz	1.31 dB	24.4 dB
2.0 GHz	1.06 dB	21.1 dB
6.0 GHz	1.98 dB	11.3 dB
12.0 GHz	2.56 dB	18.1 dB
18.0 GHz	3.70 dB	15.5 dB
20.0 GHz	4.39 dB	14.3 dB



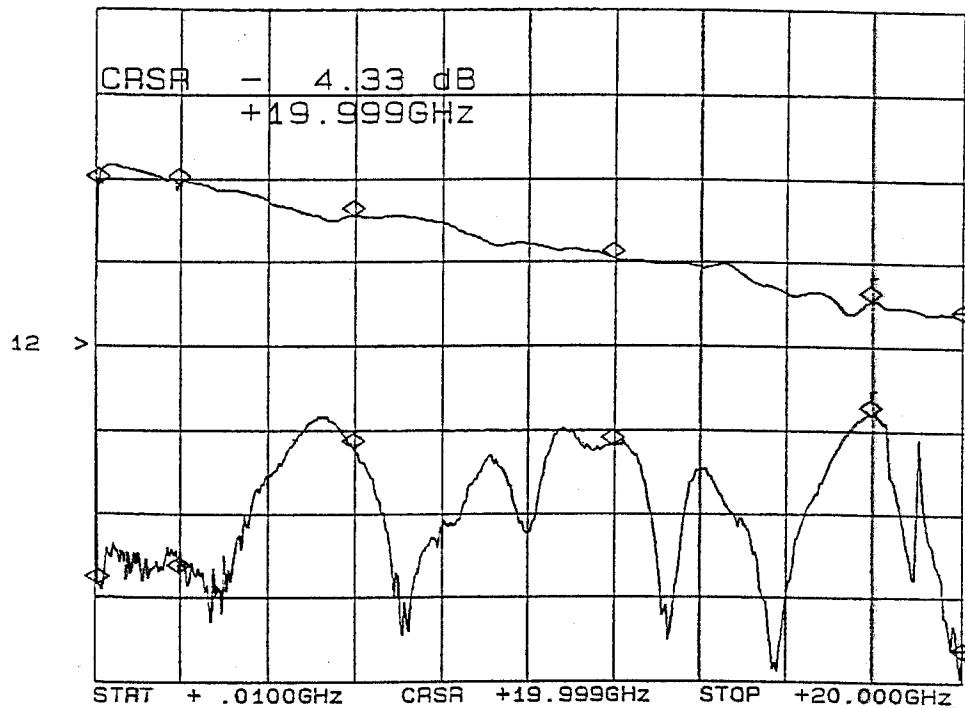
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
 SERIAL NUMBER : 4MS905116
 ENGINEER : RENE AFABLE
 VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J3-J1

CH1: A -M - 4.33 dB CH2: B -M - 28.05 dB
 2.0 dB/ REF - 5.00 dB 5.0 dB/ REF - 9.54 dB



*J3: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
100 MHz	1.10 dB	23.7 dB
2.0 GHz	1.08 dB	23.0 dB
6.0 GHz	1.86 dB	15.5 dB
12.0 GHz	2.89 dB	15.3 dB
18.0 GHz	3.89 dB	15.5 dB
20.0 GHz	4.33 dB	28.0 dB



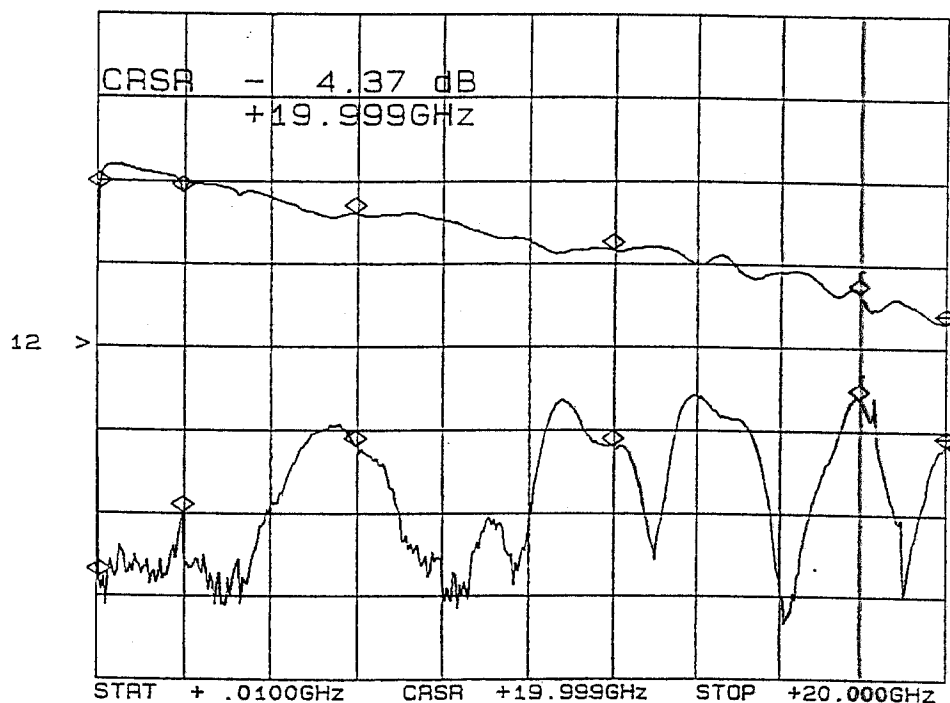
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
 SERIAL NUMBER : 4MS905116
 ENGINEER : RENE AFABLE
 VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J4-J1

CH1: A -M - 4.37 dB CH2: B -M - 15.39 dB
 2.0 dB/ REF - 5.00 dB 5.0 dB/ REF - 9.54 dB



*J4: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
100 MHz	1.16 dB	23.3 dB
2.0 GHz	1.25 dB	19.3 dB
6.0 GHz	1.75 dB	15.4 dB
12.0 GHz	2.65 dB	15.4 dB
18.0 GHz	3.65 dB	12.5 dB
20.0 GHz	4.37 dB	15.3 dB

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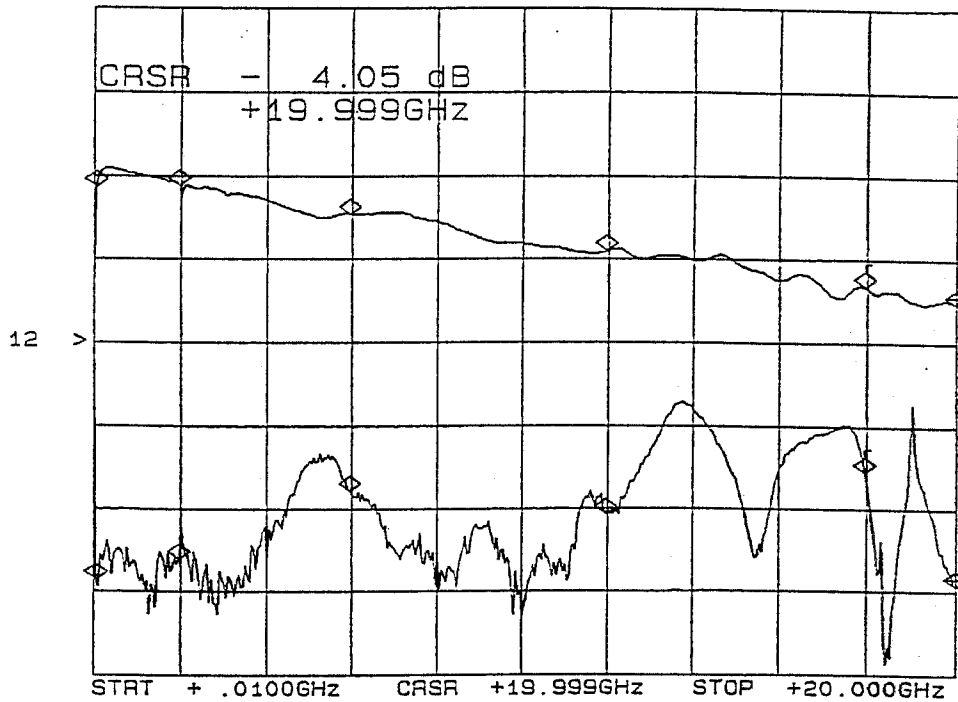
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J6-J1

CH1: A -M - 4.05 dB CH2: B -M - 24.22 dB
 2.0 dB/ REF - 5.00 dB 5.0 dB/ REF - 9.54 dB



*J6: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
100 GHz	1.26 dB	23.8 dB
2.0 GHz	1.21 dB	22.5 dB
6.0 GHz	1.88 dB	18.3 dB
12.0 GHz	2.79 dB	19.8 dB
18.0 GHz	3.65 dB	17.2 dB
20.0 GHz	4.05 dB	24.2 dB



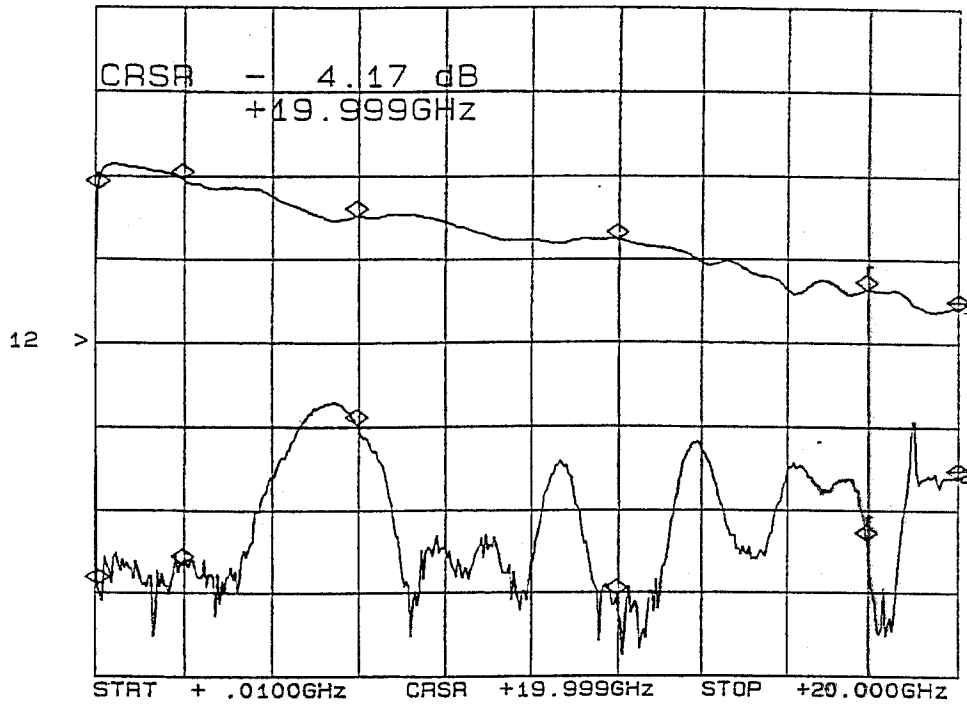
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J7-J1

CH1: A -M REF - 4.17 dB CH2: B -M REF - 17.53 dB
 2.0 dB/ 5.00 dB 5.0 dB/ 9.54 dB



*J7: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
100 MHz	1.28 dB	24.0 dB
2.0 GHz	1.05 dB	22.7 dB
6.0 GHz	1.95 dB	14.3 dB
12.0 GHz	2.50 dB	24.7 dB
18.0 GHz	3.71 dB	21.2 dB
20.0 GHz	4.17 dB	17.5 dB



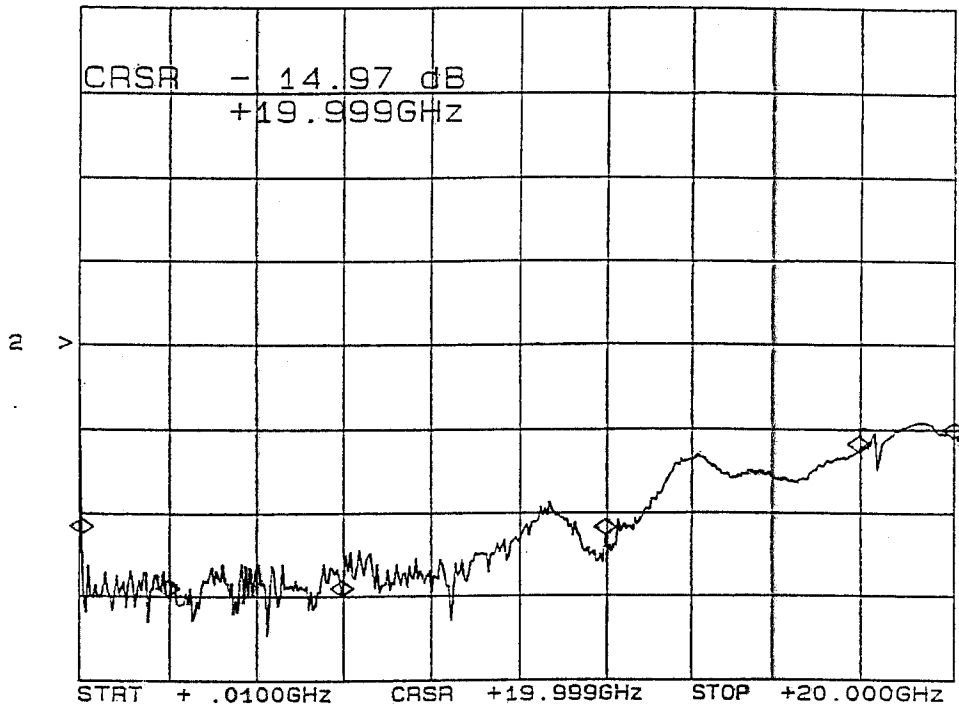
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

OFF ARM TERMINATION*

J3

CH2: B -M - 14.97 dB
 5.0 dB/ REF - 9.54 dB



*J3: INPUT ARM

FREQUENCY	RETURN LOSS
0.1 GHz	20.7 dB
2.0 GHz	24.5 dB
6.0 GHz	24.5 dB
12.0 GHz	20.8 dB
18.0 GHz	15.8 dB
20.0 GHz	14.9 dB



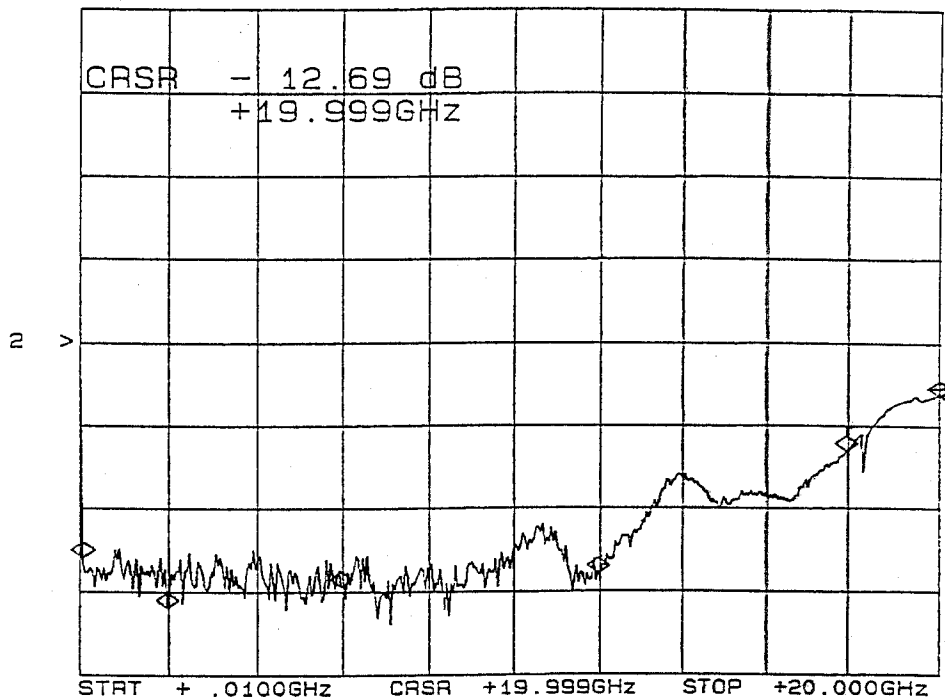
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

OFF ARM TERMINATION*

J4

CH2: B -M - 12.69 dB
 5.0 dB/ REF - 9.54 dB



*J4: INPUT ARM

FREQUENCY	RETURN LOSS
0.1 GHz	22.5 dB
2.0 GHz	25.4 dB
6.0 GHz	24.2 dB
12.0 GHz	23.4 dB
18.0 GHz	16.0 dB
20.0 GHz	12.6 dB



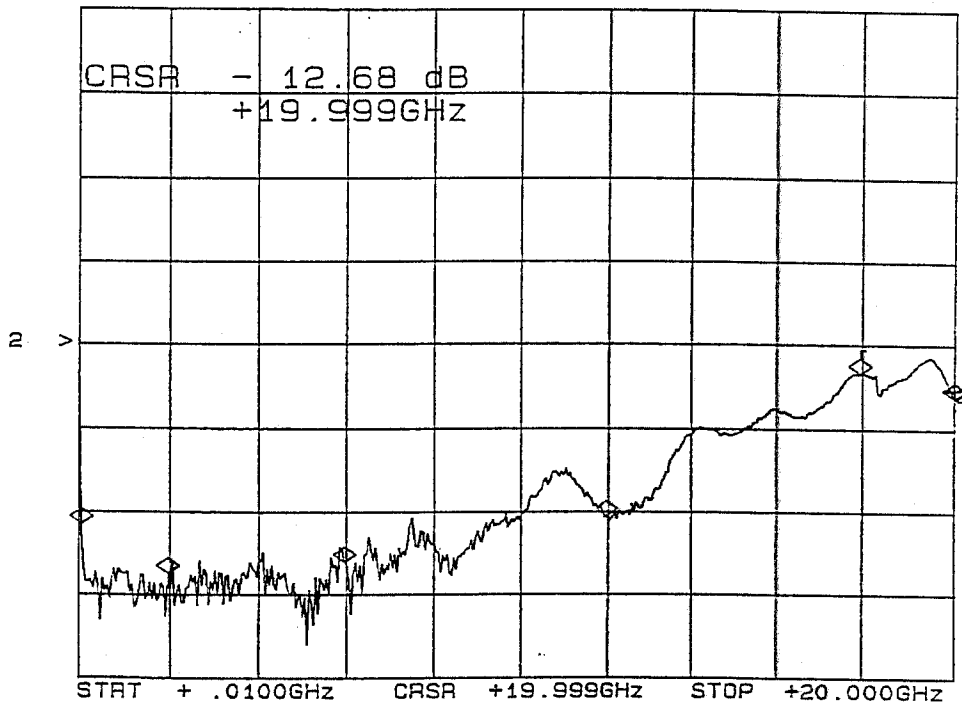
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

OFF ARM TERMINATION*

J6

CH2: B -M - 12.68 dB
 5.0 dB/ REF - 9.54 dB



*J6: INPUT ARM

FREQUENCY	RETURN LOSS
0.1 GHz	20.2 dB
2.0 GHz	23.2 dB
6.0 GHz	22.5 dB
12.0 GHz	19.7 dB
18.0 GHz	11.1 dB
20.0 GHz	12.6 dB



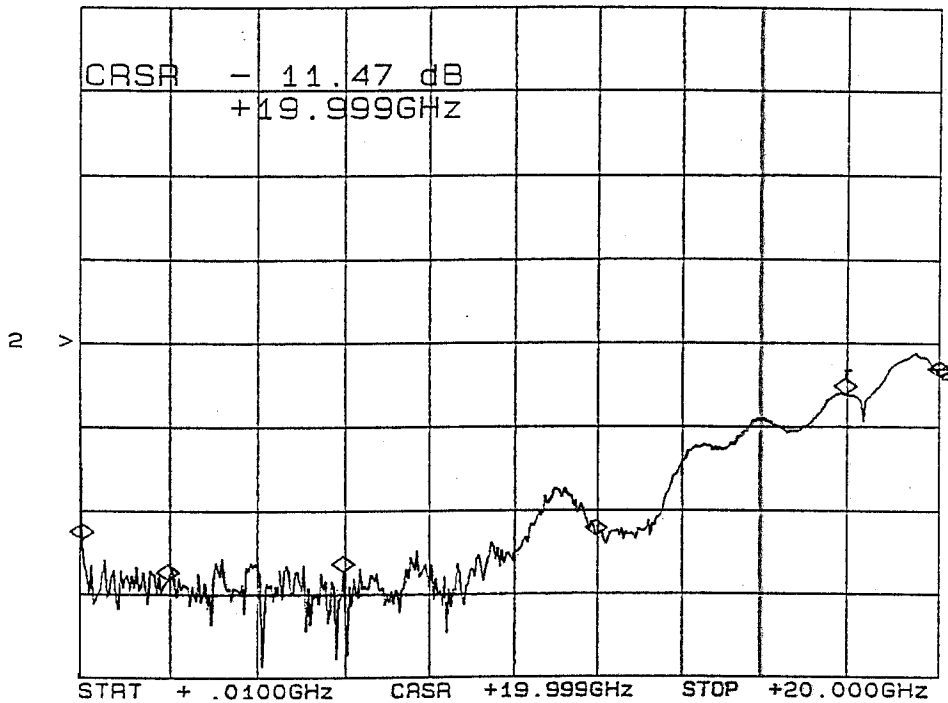
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

OFF ARM TERMINATION*

J7

CH2: B -M - 11.47 dB
 5.0 dB/ REF - 9.54 dB



*J7: INPUT ARM

FREQUENCY	RETURN LOSS
0.1 GHz	21.1 dB
2.0 GHz	23.5 dB
6.0 GHz	23.1 dB
12.0 GHz	21.0 dB
18.0 GHz	12.5 dB
20.0 GHz	11.4 dB



SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTION 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

ISOLATION*

(AS MEASURED ON A SPECTRUM ANALYZER)

FREQUENCY	J3	J4	J6	J7
50 MHz	102 dB	106 dB	109 dB	108 dB
100 MHz	100 dB	100 dB	100 dB	100 dB
500 MHz	108 dB	110 dB	110 dB	109 dB
1 GHz	> 110 dB	> 110 dB	> 110 dB	> 110 dB
2 GHz	> 110 dB	> 110 dB	> 110 dB	> 110 dB
4 GHz	> 110 dB	> 110 dB	> 110 dB	> 110 dB
6 GHz	> 110 dB	> 110 dB	> 110 dB	> 110 dB
8 GHz	> 105 dB	> 105 dB	> 105 dB	> 105 dB
10 GHz	102 dB	103 dB	102 dB	103 dB
12 GHz	104 dB	104 dB	104 dB	104 dB
14 GHz	102 dB	102 dB	104 dB	104 dB
16 GHz	101 dB	101 dB	101 dB	101 dB
18 GHz	101 dB	101 dB	101 dB	101 dB
20 GHz	100 dB	100 dB	100 dB	100 dB

* J1: INPUT ARM

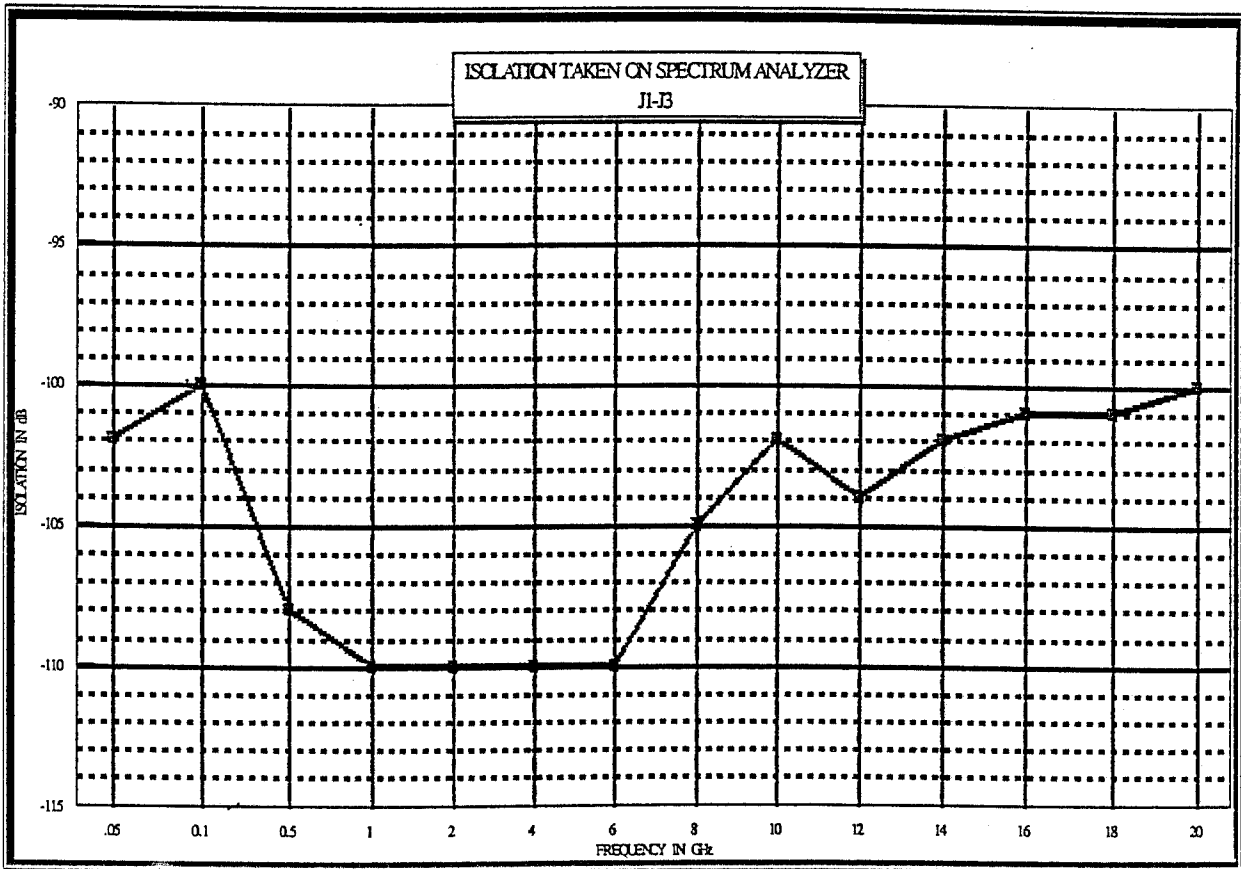
JULY 21, 1999



SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTION 120
 SERIAL NUMBER : 4MS905116
 ENGINEER : RENE AFABLE
 VOLTAGE & CURRENT DRAW : +5vdc: @ +176mA; -12vdc @ -48mA

ISOLATION*
 (AS MEASURED ON A SPECTRUM ANALYZER)
 J1-J3



*J1: INPUT ARM

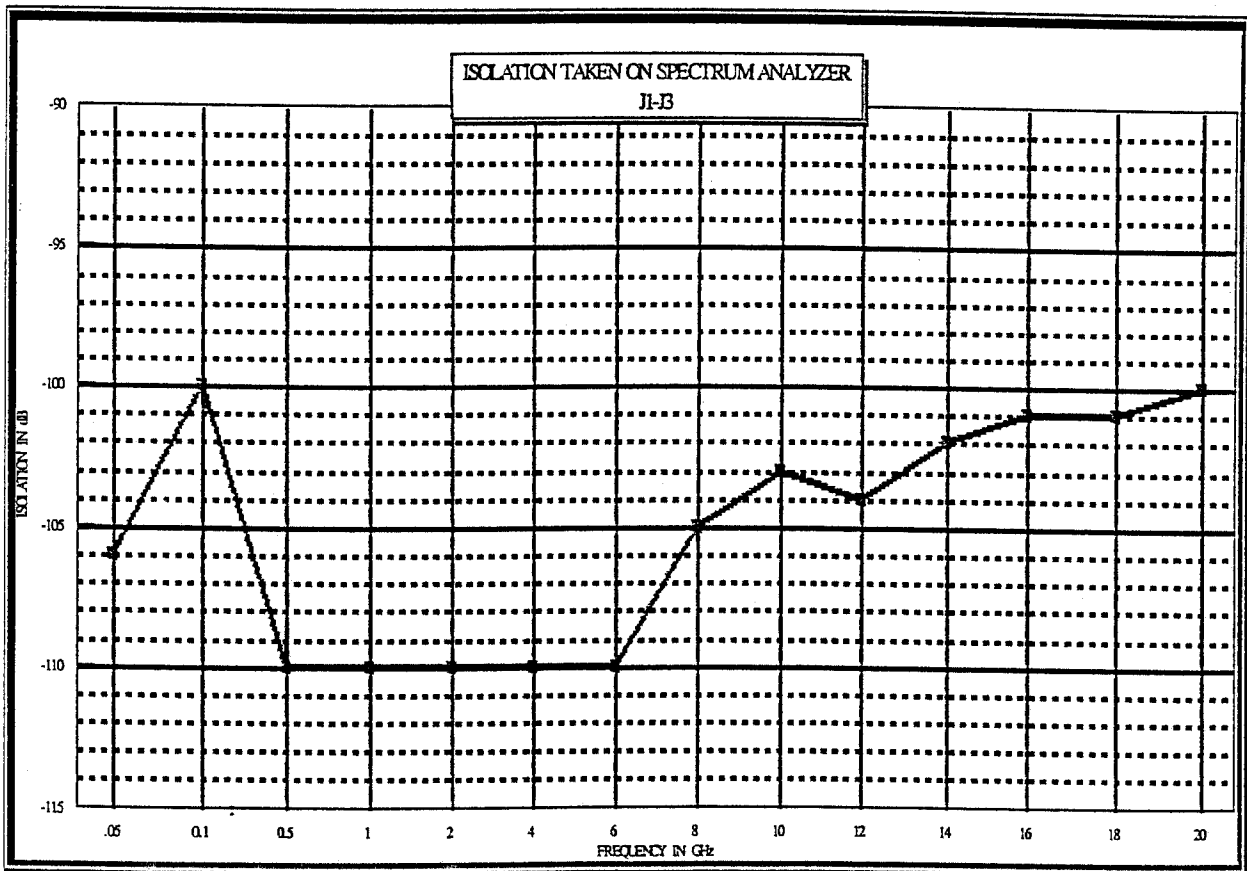
JULY 21, 1999



SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTION 120
 SERIAL NUMBER : 4MS905116
 ENGINEER : RENE AFABLE
 VOLTAGE & CURRENT DRAW : +5vdc: @ +176mA; -12vdc @ -48mA

ISOLATION*
 (AS MEASURED ON A SPECTRUM ANALYZER)
 J1-J4



*J1: INPUT ARM

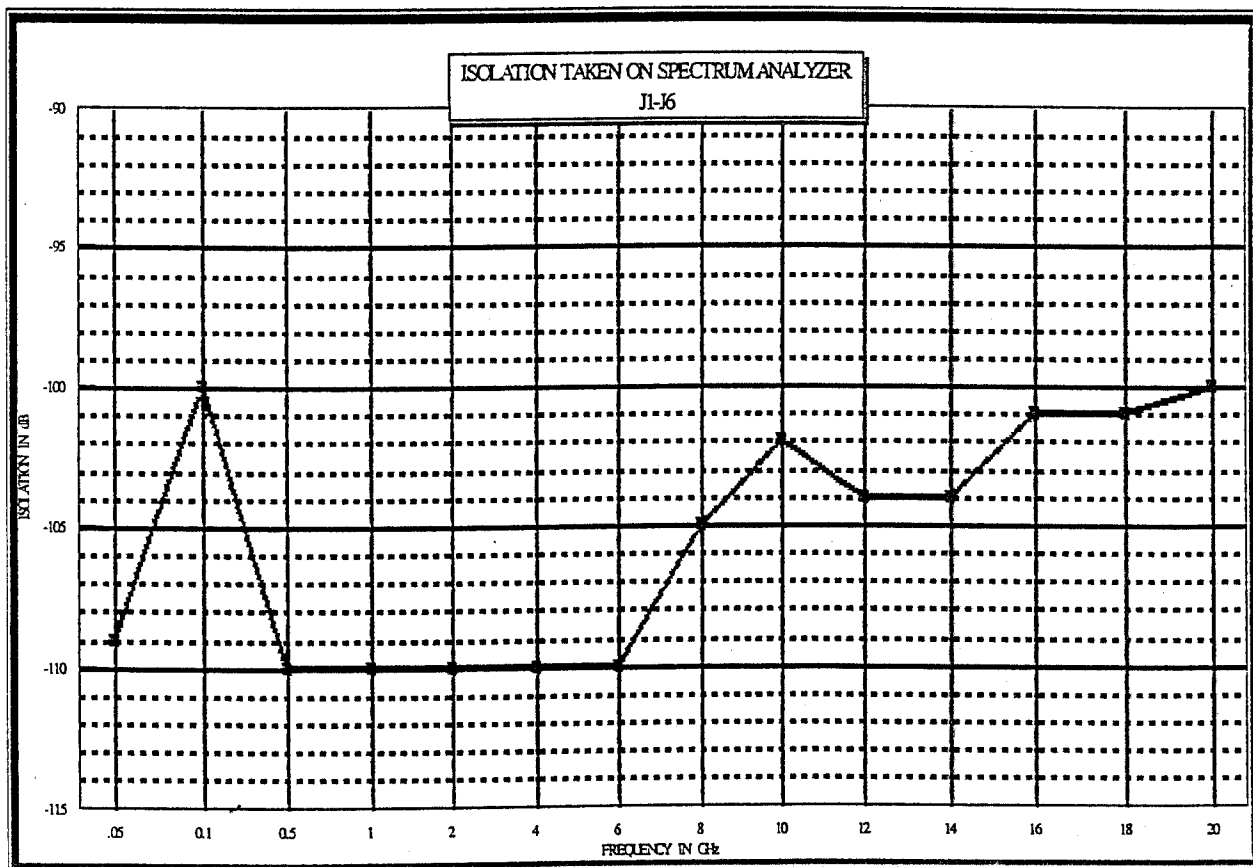
JULY 21, 1999



SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTION 120
 SERIAL NUMBER : 4MS905116
 ENGINEER : RENE AFABLE
 VOLTAGE & CURRENT DRAW : +5vdc: @ +176mA; -12vdc @ -48mA

ISOLATION*
 (AS MEASURED ON A SPECTRUM ANALYZER)
 J1-J6



*J1: INPUT ARM

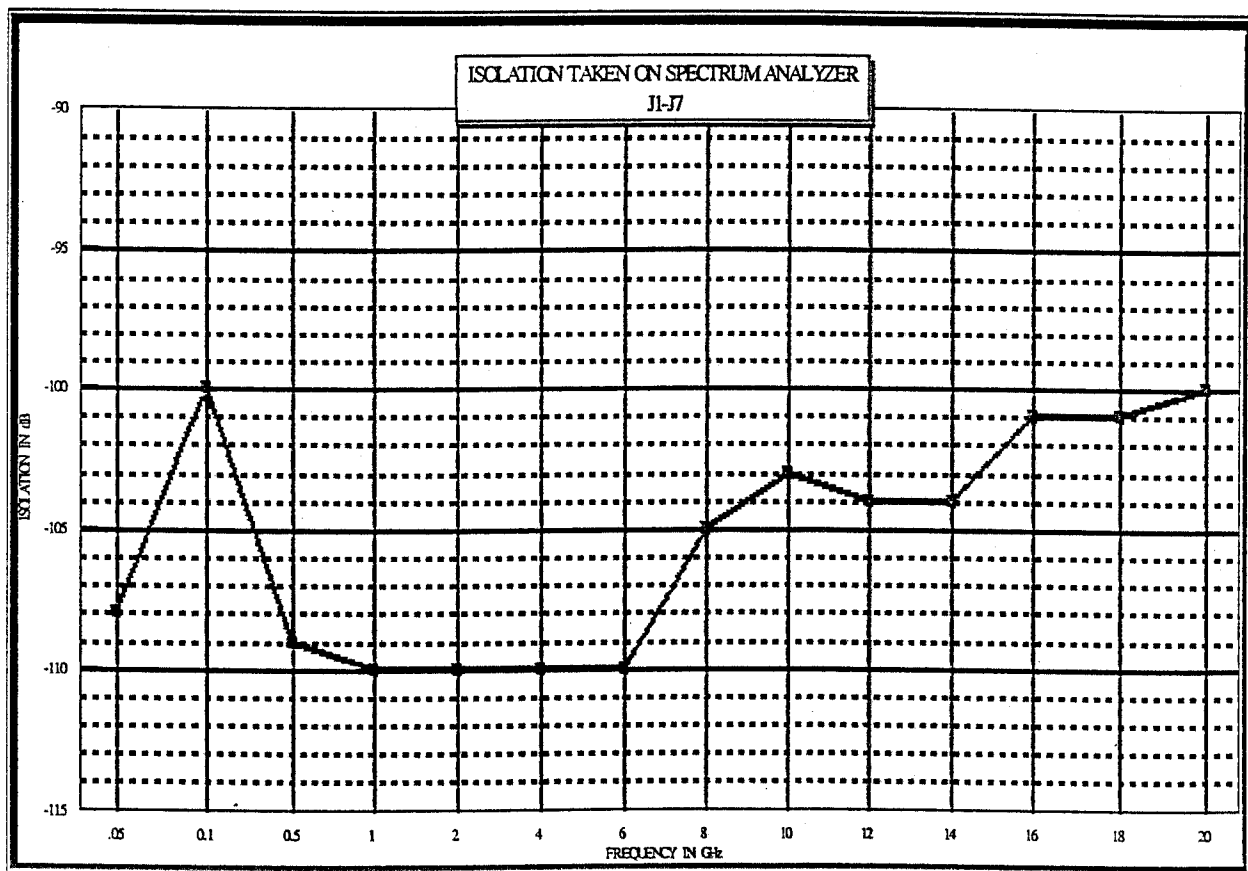
JULY 21, 1999



SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTION 120
 SERIAL NUMBER : 4MS905116
 ENGINEER : RENE AFABLE
 VOLTAGE & CURRENT DRAW : +5vdc @ +176mA; -12vdc @ -48mA

ISOLATION*
 (AS MEASURED ON A SPECTRUM ANALYZER)
 J1-J7



*J1: INPUT ARM

JULY 21, 1999



AMERICAN MICROWAVE
CORPORATION

TEST DATA

FROM

0.04 GHz TO 1 GHz

ON

SP4T

MULTI-THROW SOLID STATE SWITCH
(SURFACE MOUNTABLE)

AMC MODEL No:
SWN-1170-4DT-AKG-STANDARD OPTION 120
(Serial Number: 4MS905116)

JULY 21, 1999



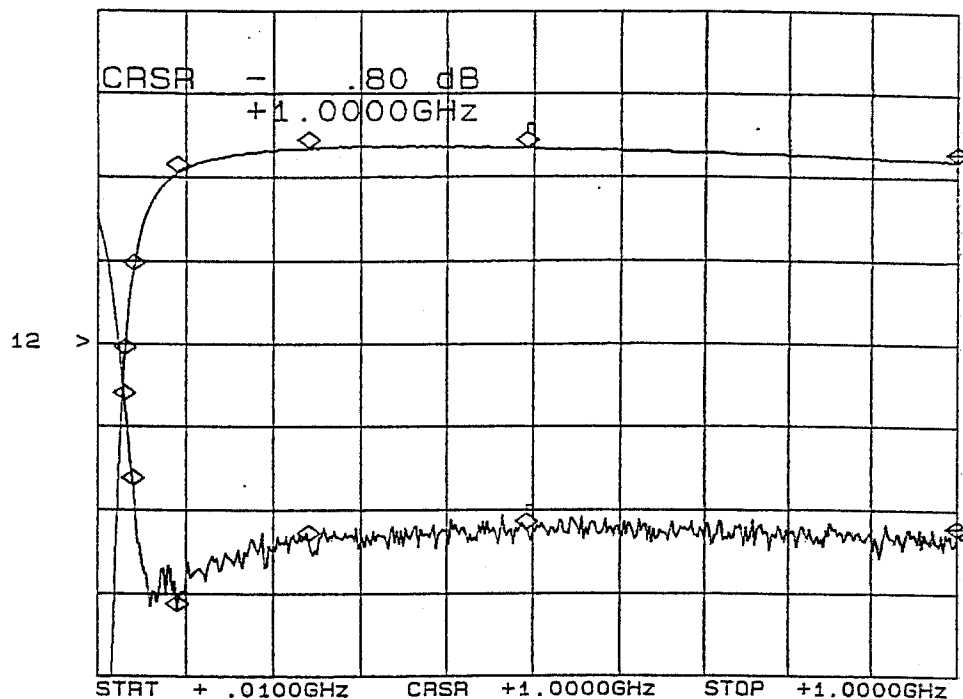
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
 SERIAL NUMBER : 4MS905116
 ENGINEER : RENE AFABLE
 VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J1-J3

CH1: A -M - .80 dB CH2: B -M - 21.01 dB
 1.0 dB/ REF - 3.00 dB 5.0 dB/ REF - 9.54 dB



*J1: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
40 MHz	3.12 dB	12.9 dB
50 MHz	2.10 dB	18.0 dB
100 MHz	0.94 dB	25.5 dB
250 MHz	0.65 dB	21.2 dB
500 MHz	0.64 dB	20.6 dB
1 GHz	0.80 dB	21.0 dB

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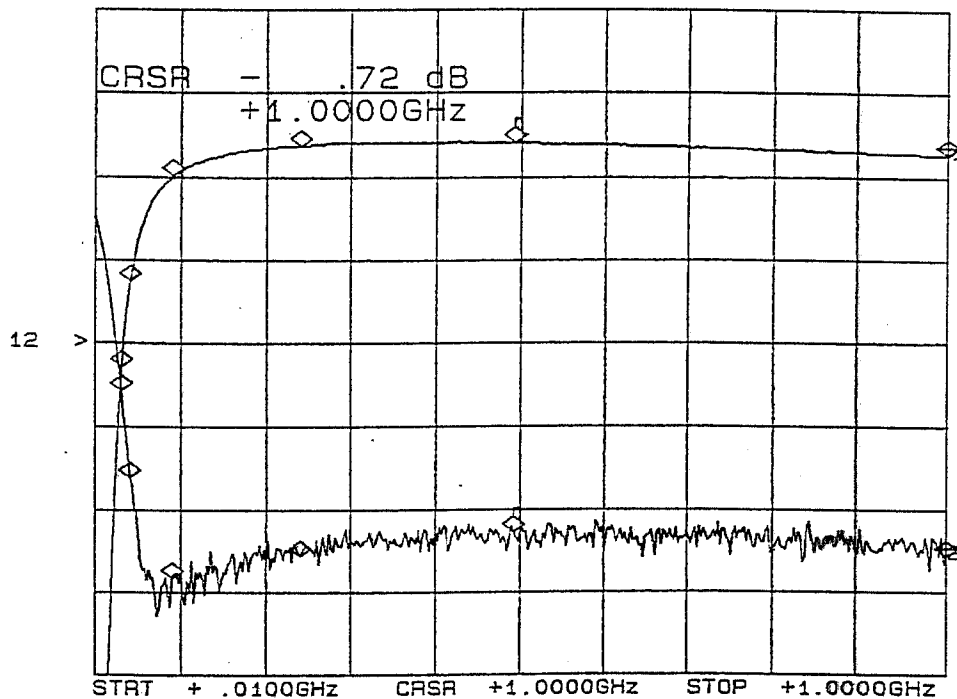
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
 SERIAL NUMBER : 4MS905116
 ENGINEER : RENE AFABLE
 VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J1-J4

CH1: A -M - .72 dB CH2: B -M - 22.28 dB
 1.0 dB/ REF - 3.00 dB 5.0 dB/ REF - 9.54 dB



*J1: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
40 MHz	3.27 dB	12.4 dB
50 MHz	2.24 dB	17.5 dB
100 MHz	0.97 dB	23.6 dB
250 MHz	0.62 dB	22.2 dB
500 MHz	0.59 dB	20.8 dB
1 GHz	0.72 dB	22.2 dB

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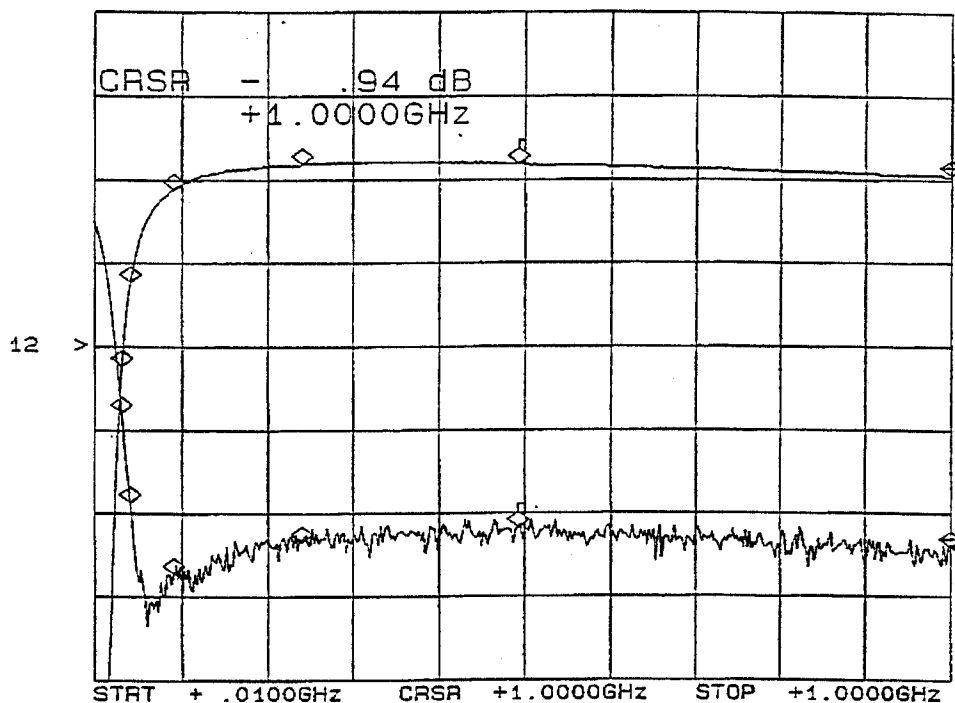
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
 SERIAL NUMBER : 4MS905116
 ENGINEER : RENE AFABLE
 VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J1-J6

CH1: A -M - .94 dB CH2: B -M - 21.48 dB
 1.0 dB/ REF - 3.00 dB 5.0 dB/ REF - 9.54 dB



*J1: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
40 MHz	3.21 dB	13.4 dB
50 MHz	2.22 dB	18.7 dB
100 MHz	1.10 dB	23.1 dB
250 MHz	0.80 dB	21.1 dB
500 MHz	0.79 dB	20.3 dB
1 GHz	0.94 dB	21.4 dB



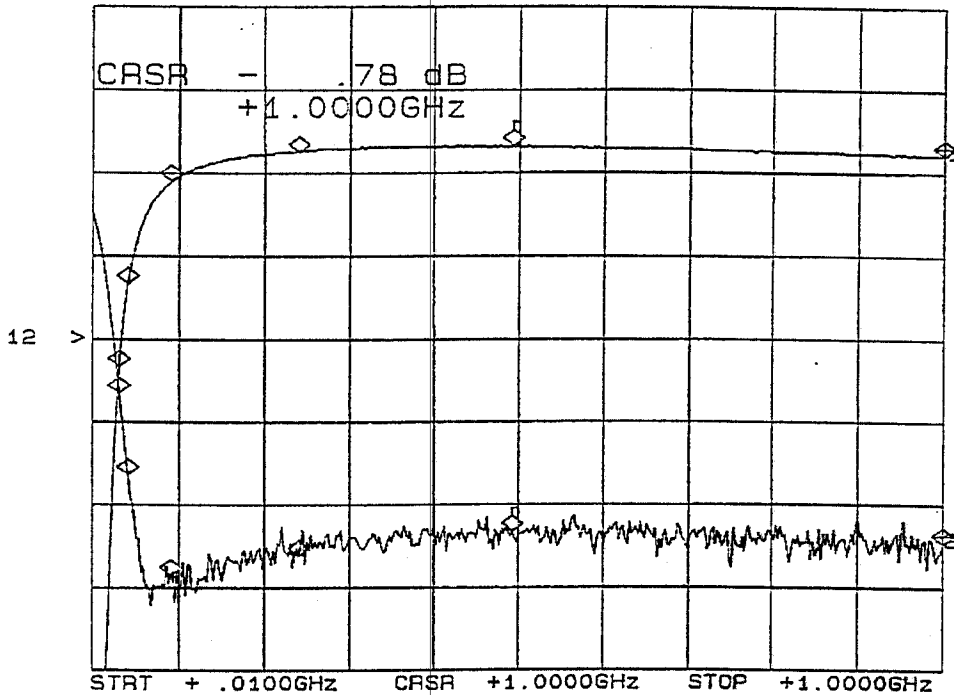
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J1-J7

CH1: A -M - .78 dB CH2: B -M - 21.84 dB
 1.0 dB/ REF - 3.00 dB 5.0 dB/ REF - 9.54 dB



*J1: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
40 MHz	3.31 dB	12.7 dB
50 MHz	2.32 dB	17.6 dB
100 MHz	1.09 dB	23.7 dB
250 MHz	0.73 dB	22.5 dB
500 MHz	0.67 dB	21.1 dB
1 GHz	0.78 dB	21.8 dB



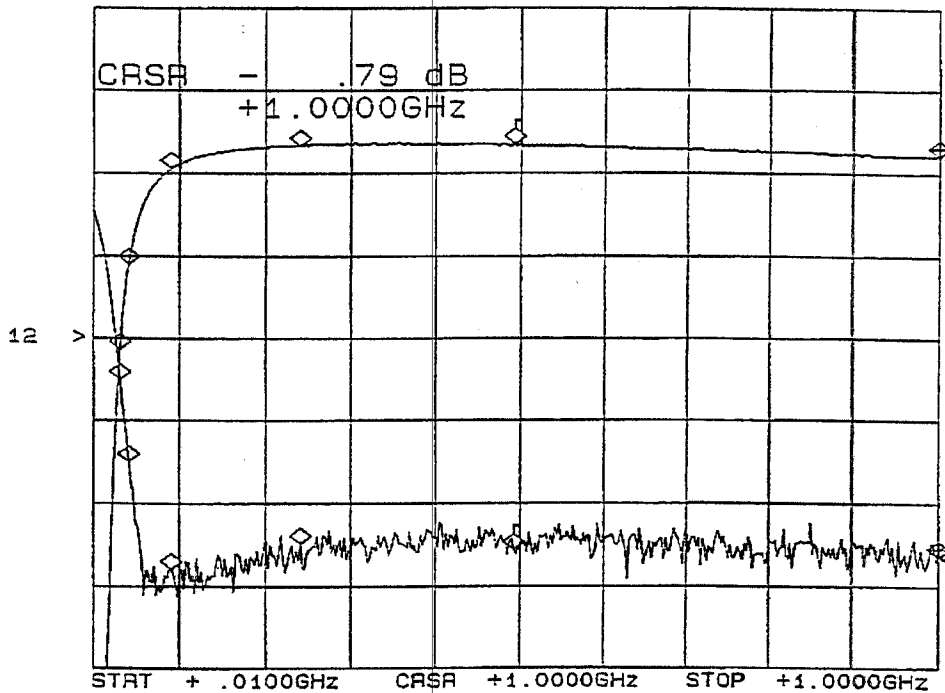
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J3-J1

CH1: A -M - .79 dB CH2: B -M - 22.68 dB
 1.0 dB/ REF - 3.00 dB 5.0 dB/ REF - 9.54 dB



*J3: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
40 MHz	3.12 dB	12.0 dB
50 MHz	2.09 dB	16.9 dB
100 MHz	0.93 dB	23.4 dB
250 MHz	0.65 dB	21.8 dB
500 MHz	0.65 dB	22.3 dB
1 GHz	0.79 dB	22.6 dB



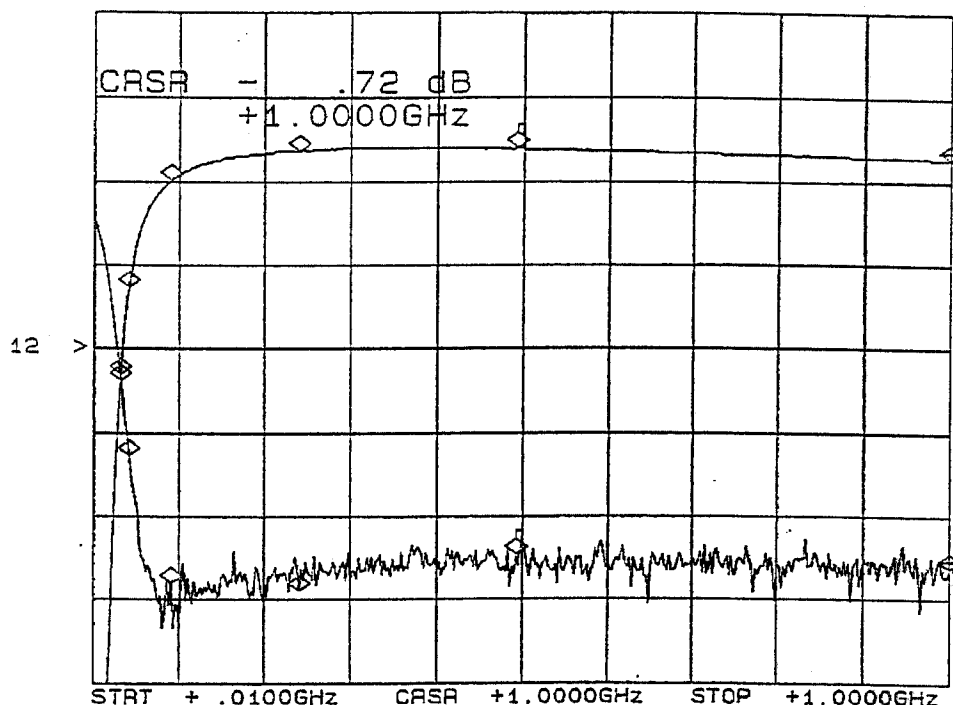
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J4-J1

CH1: A -M REF - .72 dB 1.0 dB/ REF - 3.00 dB
 CH2: B -M REF - 22.69 dB 5.0 dB/ REF - 9.54 dB



*J4: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
40 MHz	3.29 dB	11.4 dB
50 MHz	2.25 dB	15.8 dB
100 MHz	0.97 dB	23.5 dB
250 MHz	0.62 dB	23.9 dB
500 MHz	0.59 dB	21.8 dB
1 GHz	0.72 dB	22.6 dB



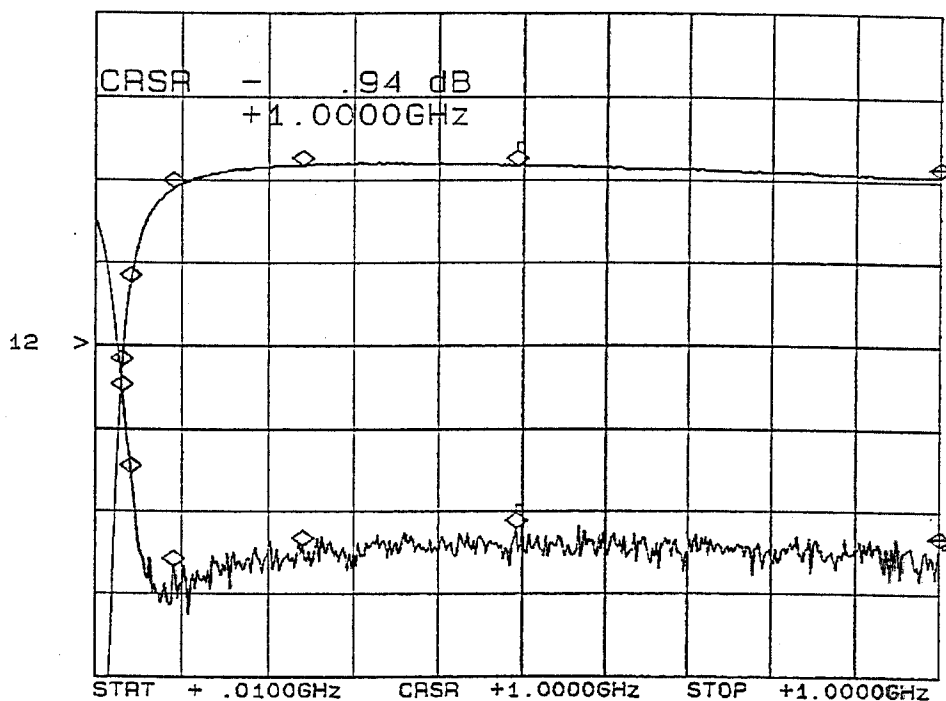
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J6-J1

CH1: A -M - .94 dB CH2: B -M - 21.63 dB
 1.0 dB/ REF - 3.00 dB 5.0 dB/ REF - 9.54 dB



*J6: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
40 MHz	3.23 dB	12.2 dB
50 MHz	2.23 dB	17.2 dB
100 MHz	1.09 dB	22.8 dB
250 MHz	0.81 dB	21.6 dB
500 MHz	0.81 dB	20.5 dB
1 GHz	0.94 dB	21.6 dB

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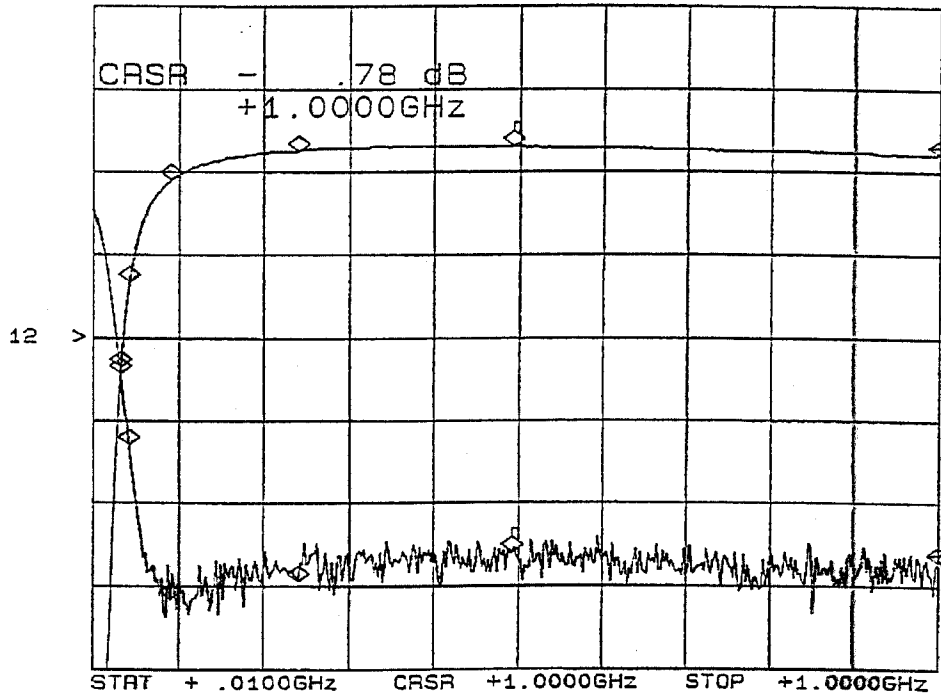
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

INSERTION LOSS & RETURN LOSS*

J7-J1

CH1: A -M - .78 dB CH2: B -M - 23.01 dB
 1.0 dB/ REF - 3.00 dB 5.0 dB/ REF - 9.54 dB



*J7: INPUT ARM

FREQUENCY	INSERTION LOSS	RETURN LOSS
40 MHz	3.34 dB	11.6 dB
50 MHz	2.32 dB	15.9 dB
100 MHz	1.09 dB	25.2 dB
250 MHz	0.73 dB	24.2 dB
500 MHz	0.67 dB	22.4 dB
1 GHz	0.78 dB	23.0 dB



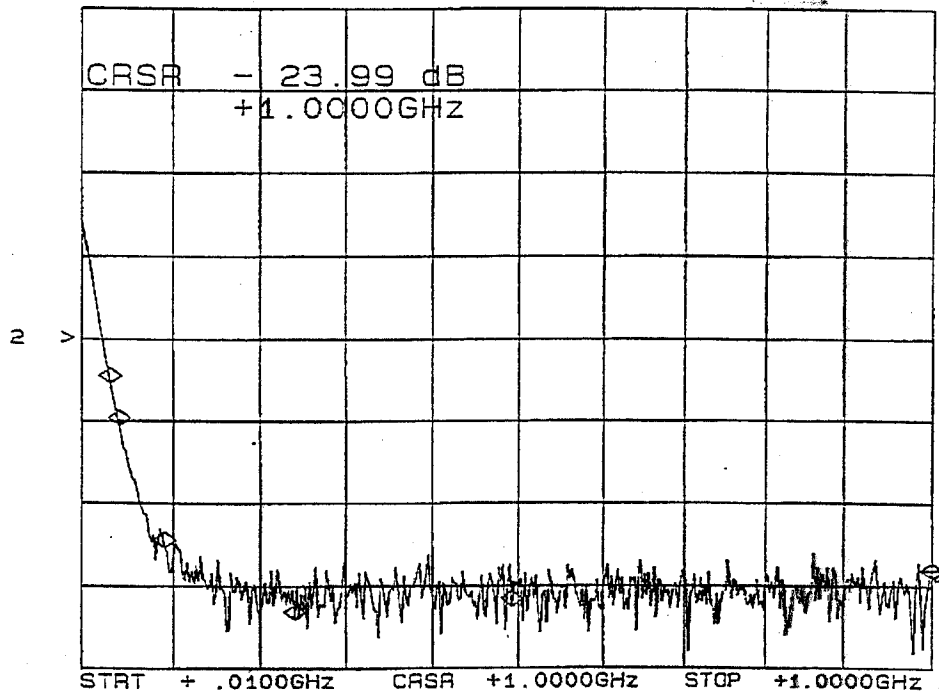
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
 SERIAL NUMBER : 4MS905116
 ENGINEER : RENE AFABLE
 VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

OFF ARM TERMINATION*

J3

CH2: B -M - 23.99 dB
 5.0 dB/ REF - 9.54 dB



*J3: INPUT ARM

FREQUENCY	RETURN LOSS
40 MHz	12.2 dB
50 MHz	14.7 dB
100 MHz	22.2 dB
250 MHz	26.4 dB
500 MHz	25.7 dB
1 GHz	23.9 dB

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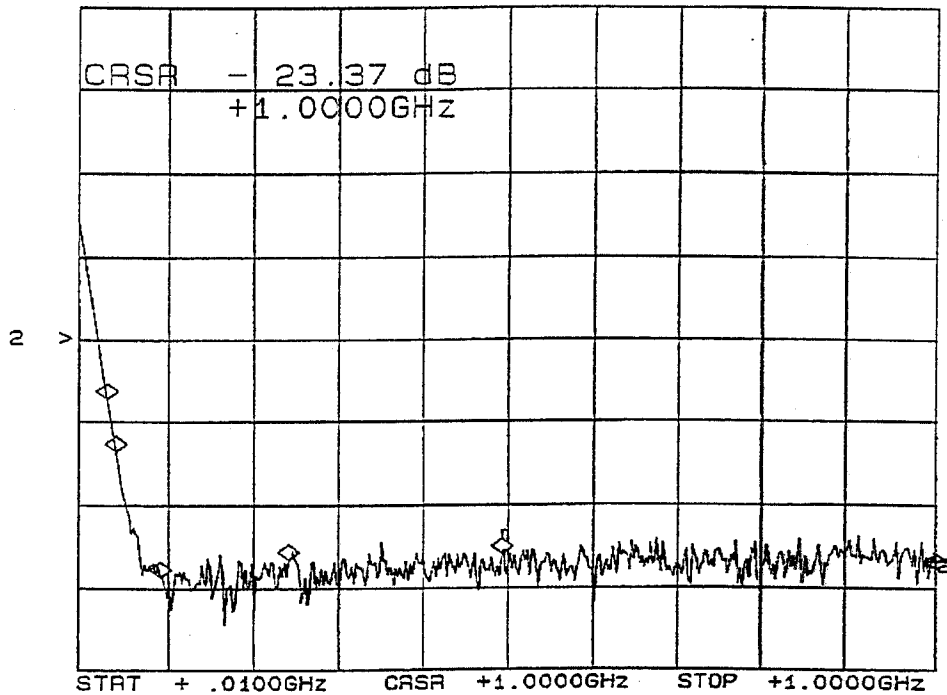
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD **OPTIONS** 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

OFF ARM TERMINATION*

J4

CH2: B -M - 23.37 dB
 5.0 dB/ REF - 9.54 dB



*J4: INPUT ARM

FREQUENCY	RETURN LOSS
40 MHz	13.1 dB
50 MHz	16.3 dB
100 MHz	23.7 dB
250 MHz	22.7 dB
500 MHz	22.4 dB
1 GHz	23.3 dB



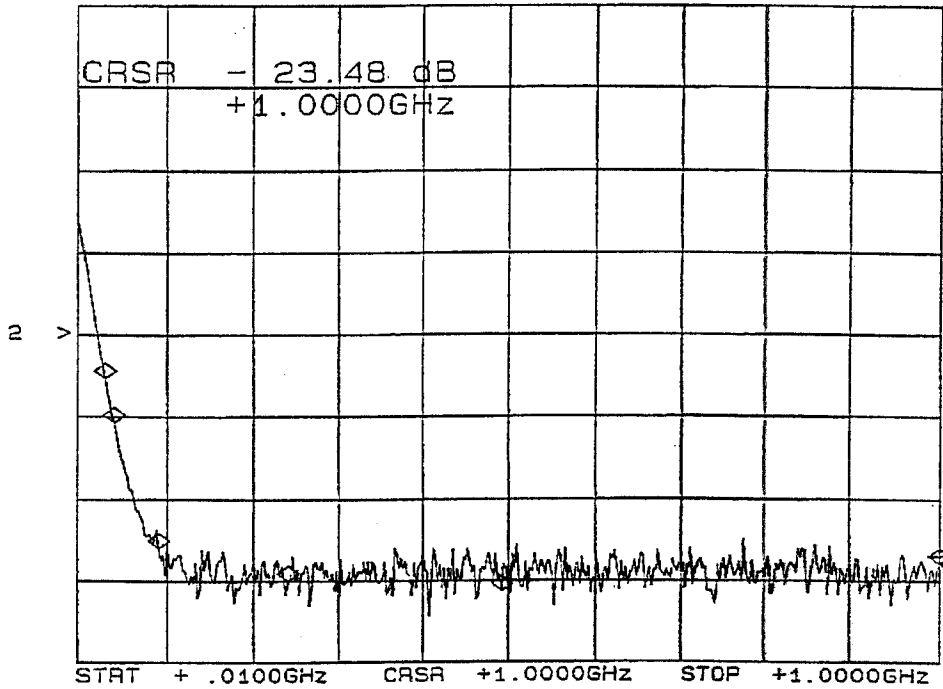
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD **OPTIONS** 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

OFF ARM TERMINATION*

J6

CH2: B -M - 23.48 dB
 5.0 dB/ REF - 9.54 dB



*J6: INPUT ARM

FREQUENCY	RETURN LOSS
40 MHz	12.1 dB
50 MHz	14.9 dB
100 MHz	22.4 dB
250 MHz	24.4 dB
500 MHz	25.1 dB
1 GHz	23.4 dB



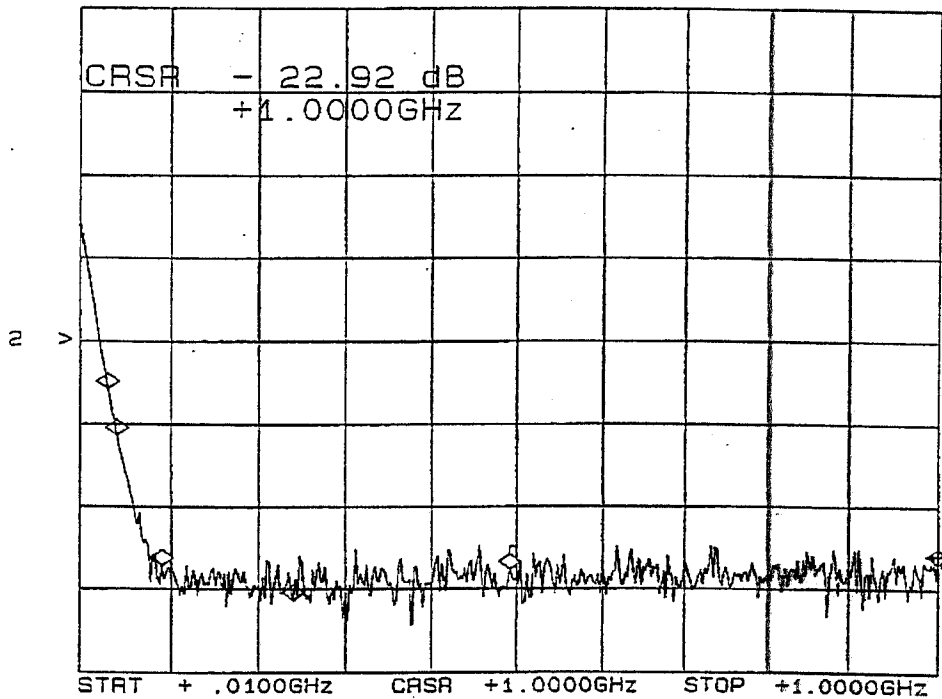
SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTIONS 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

OFF ARM TERMINATION*

J7

CH2: B -M - 22.92 dB
5.0 dB/ REF - 9.54 dB



*J7: INPUT ARM

FREQUENCY	RETURN LOSS
40 MHz	12.3 dB
50 MHz	15.1 dB
100 MHz	23.0 dB
250 MHz	25.1 dB
500 MHz	23.3 dB
1 GHz	22.9 dB



SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-~~DT~~-AKG-STD OPTION 120
 SERIAL NUMBER : 4MS905116
 ENGINEER : RENE AFABLE
 VOLTAGE & CURRENT DRAW : +5vdc: @+176mA; -12vdc: @ -48mA

SWITCHING SPEED

"Rise/Fall" Time: 10% RF to 90% RF & 90% RF to 10% RF

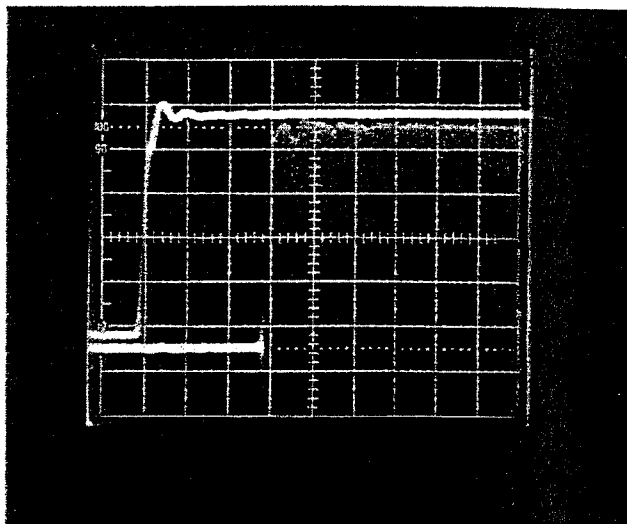
"On/Off" Time: 50% TTL to 90% RF or 10% RF

TYPICAL OF ALL ARMS

"DELAY ON": 60 nS
 "RISE TIME": 4 nS

HORIZONTAL SCALE:
 20 nS PER DIVISION

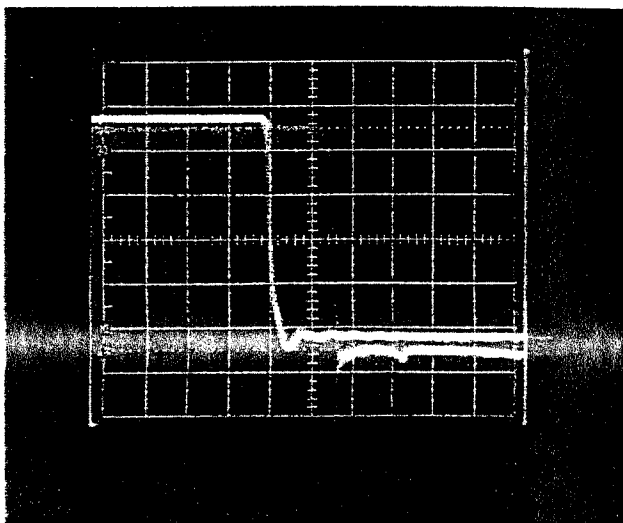
VERTICAL SCALE:
 10 mV PER DIVISION



"DELAY OFF": 32 nS
 "FALL TIME": 4 nS

HORIZONTAL SCALE:
 20 nS PER DIVISION

VERTICAL SCALE:
 10 mV PER DIVISION



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SUMMARY TEST DATA

MODEL NUMBER	: SWN-1170-4DT-AKG-STD OPTION 120
SERIAL NUMBER	: 4MS905116
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc: @+176mA; -12vdc: @ -48mA

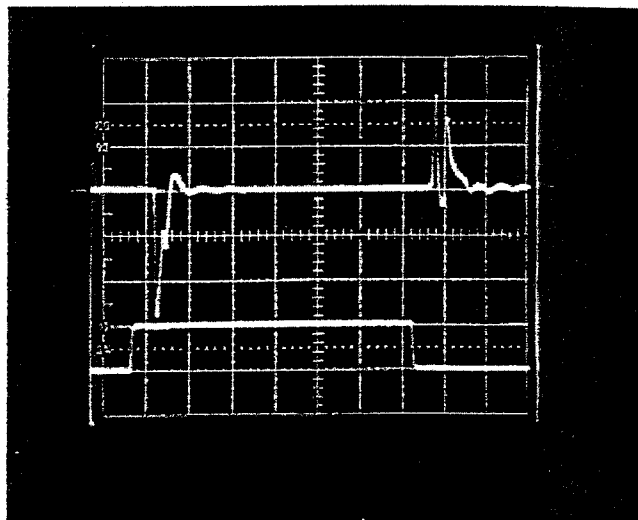
VIDEO TRANSIENTS

TYPICAL OF ALL ARMS

≤ 1.14 V P-P
MEASURED IN A
300 MHZ BANDWIDTH

VERTICAL SCALE:
0.2 V PER DIVISION

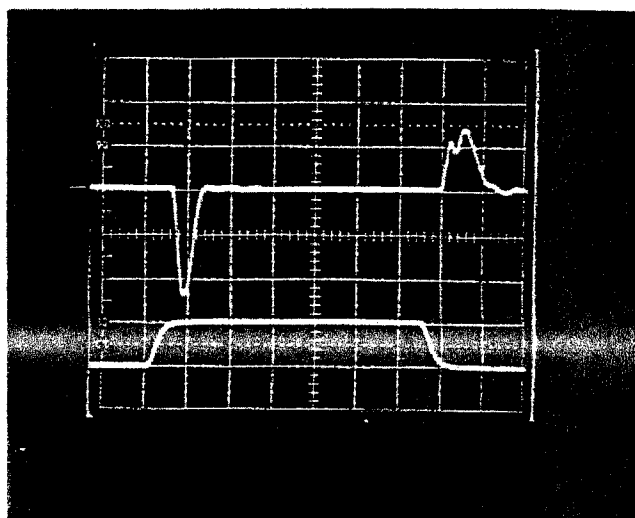
HORIZONTAL SCALE:
50 nS PER DIVISION



≤ 600 mV P-P
MEASURED IN A
20 MHZ BANDWIDTH

VERTICAL SCALE:
0.2 V PER DIVISION

HORIZONTAL SCALE:
50 nS PER DIVISION



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AMERICAN MICROWAVE
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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
SP4T
MULTI-THROW SOLID STATE SWITCH
(SURFACE MOUNTABLE)

AMC MODEL No:
SWN-1170-4DT-AKG-STANDARD OPTION 120
(Serial Number: 4MS905116)

FROM 0.1 GHz TO 20 GHz

AND

FROM 0.04 GHz TO 1 GHz

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SUMMARY TEST DATA

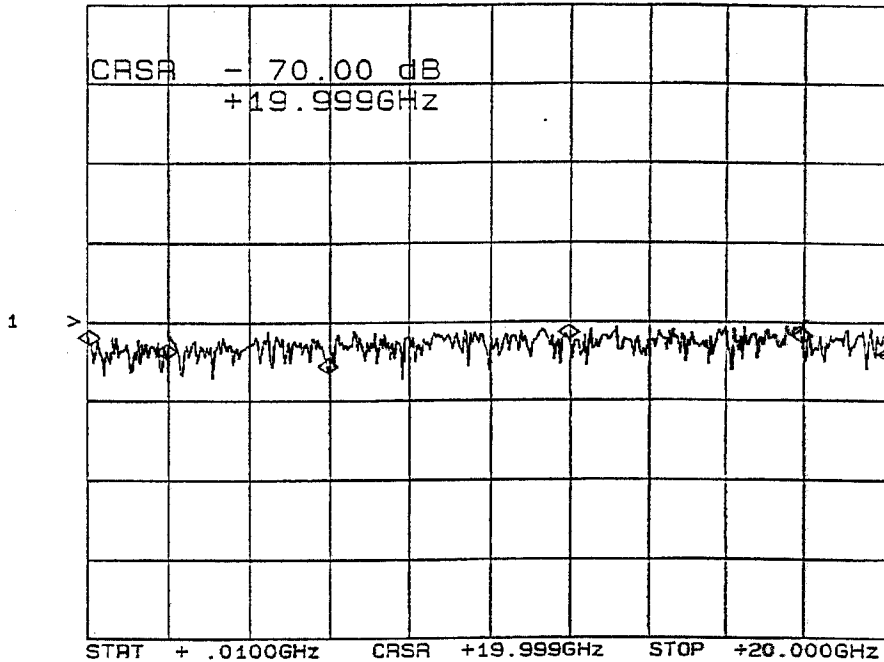
MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTION 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @ +176mA; -12vdc @ -48mA

ISOLATION*

(AS MEASURED ON A SCALAR NETWORK ANALYZER)

J1-J3

CH1: A -M - 70.00 dB
 20.0 dB/ REF - 60.00 dB



*J1: INPUT ARM

FREQUENCY	ISOLATION
0.1 GHz	65.6 dB
2.0 GHz	68.9 dB
6.0 GHz	72.8 dB
12.0 GHz	64.2 dB
18.0 GHz	65.3 dB
20.0 GHz	70.0 dB

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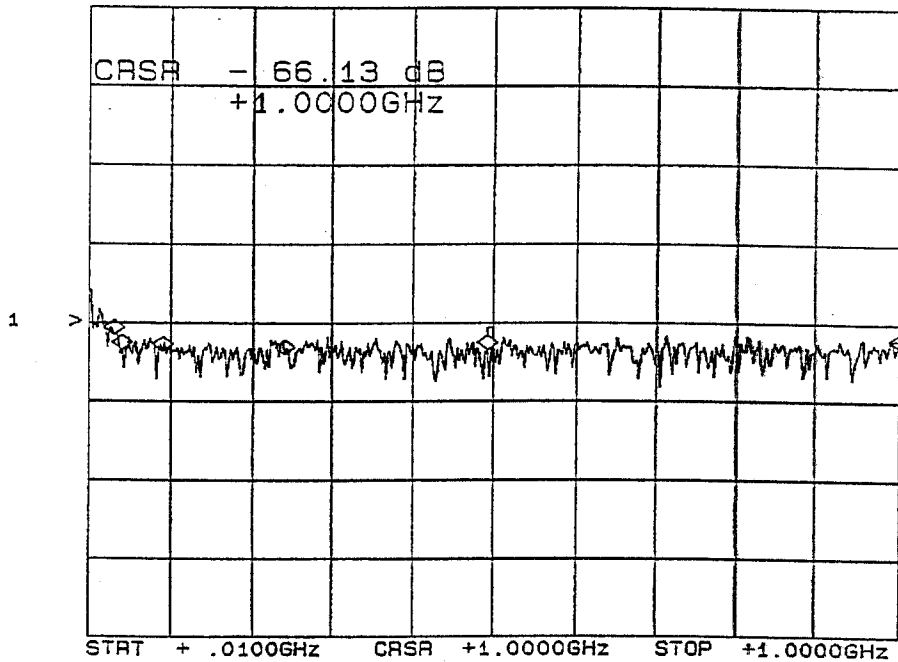


SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTION 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @ +176mA; -12vdc @ -48mA

ISOLATION*
 (AS MEASURED ON A SCALAR NETWORK ANALYZER)
J1-J4

CH1: A -M - 66.13 dB
 20.0 dB/ REF - 60.00 dB



***J1: INPUT ARM**

FREQUENCY	ISOLATION
0.1 GHz	67.9 dB
2.0 GHz	65.3 dB
6.0 GHz	68.3 dB
12.0 GHz	66.1 dB
18.0 GHz	66.0 dB
20.0 GHz	66.1 dB

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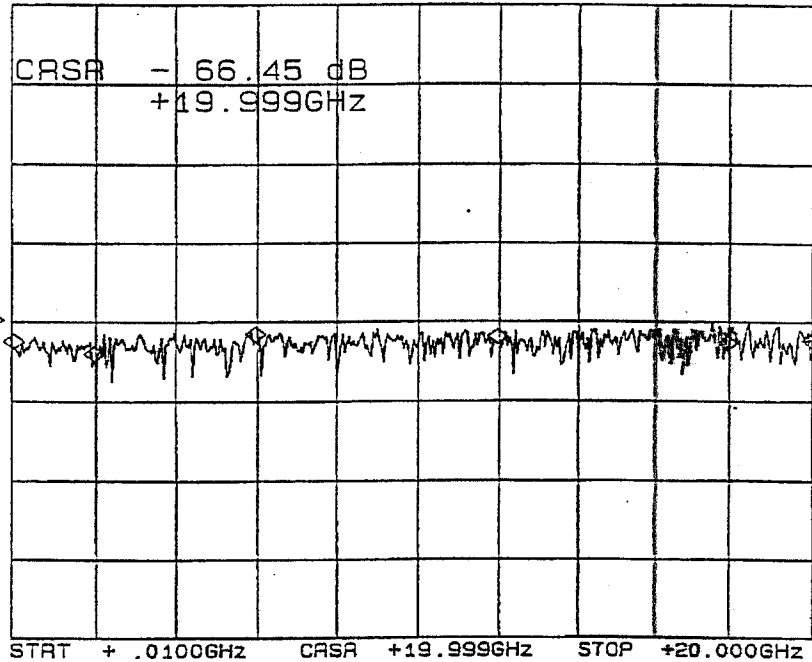


SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTION 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc: @ +176mA; -12vdc @ -48mA

ISOLATION*
 (AS MEASURED ON A SCALAR NETWORK ANALYZER)
 J1-J6

CH1: A -M - 66.45 dB
 20.0 dB/ REF - 60.00 dB



*J1: INPUT ARM

FREQUENCY	ISOLATION
0.1 GHz	66.6 dB
2.0 GHz	69.8 dB
6.0 GHz	64.7 dB
12.0 GHz	65.4 dB
18.0 GHz	67.0 dB
20.0 GHz	66.4 dB

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SUMMARY TEST DATA

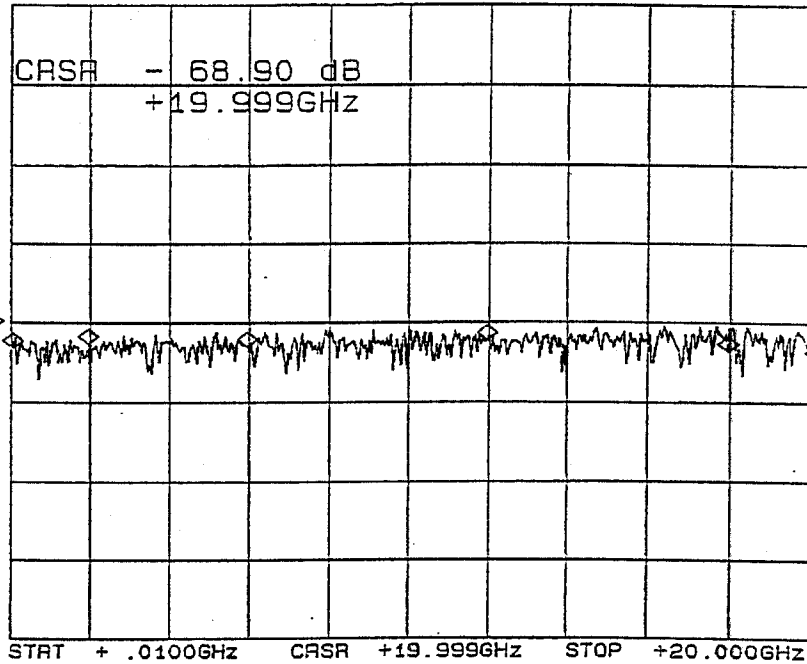
MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTION 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc @ +176mA; -12vdc @ -48mA

ISOLATION*

(AS MEASURED ON A SCALAR NETWORK ANALYZER)

J1-J7

CH1: A -M - 68.90 dB
 20.0 dB/ REF - 60.00 dB



*J1: INPUT ARM

FREQUENCY	ISOLATION
0.1 GHz	66.3 dB
2.0 GHz	65.0 dB
6.0 GHz	66.0 dB
12.0 GHz	64.4 dB
18.0 GHz	67.2 dB
20.0 GHz	68.9 dB

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**AMERICAN MICROWAVE
CORPORATION**

**ISOLATION
DATA AND PLOTS
FROM
0.04 GHz TO 1 GHz
AS
MEASURED
ON A SCALAR NETWORK
ANALYZER
(NOISE FLOOR OF SCALAR NETWORK ANALYZER IS -70 dB)
ON A
SP4T
MULTI-THROW SOLID STATE SWITCH
(SURFACE MOUNTABLE)
AMC MODEL No:
SWN-1170-4DT-AKG-STANDARD OPTION 120
(Serial Number: 4MS905116)
JULY 21, 1999**



SUMMARY TEST DATA

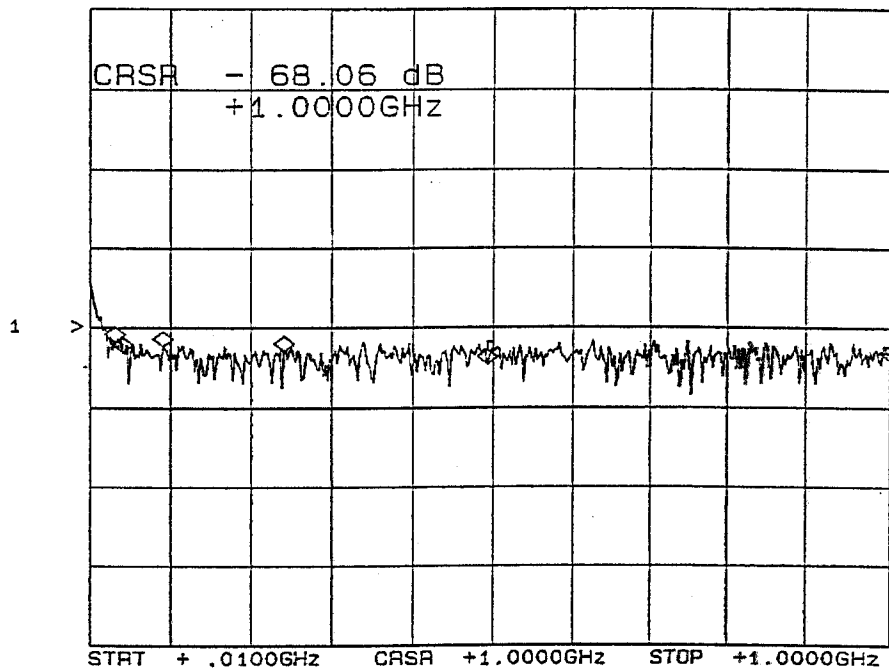
MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTION 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc @ +176mA; -12vdc @ -48mA

ISOLATION*

(AS MEASURED ON A SCALAR NETWORK ANALYZER)

J1-J3

CH1: A -M - 68.06 dB
 20.0 dB/ REF - 60.00 dB



*J1: INPUT ARM

FREQUENCY	ISOLATION
40 MHz	63.2 dB
50 MHz	66.0 dB
100 MHz	64.4 dB
250 MHz	65.5 dB
500 MHz	69.1 dB
1 GHz	68.0 dB

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SUMMARY TEST DATA

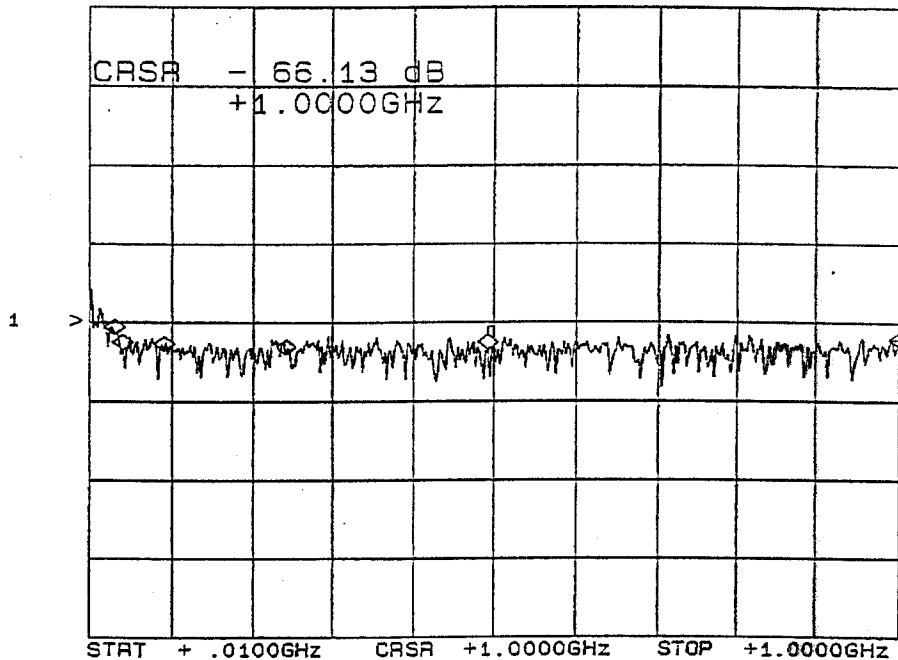
MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTION 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc @ +176mA; -12vdc @ -48mA

ISOLATION*

(AS MEASURED ON A SCALAR NETWORK ANALYZER)

J1-J4

CH1: A -M - 66.13 dB
 20.0 dB/ REF - 60.00 dB



*J1: INPUT ARM

FREQUENCY	ISOLATION
40 MHz	62.8 dB
50 MHz	66.6 dB
100 MHz	67.1 dB
250 MHz	67.9 dB
500 MHz	66.7 dB
1 GHz	66.1 dB

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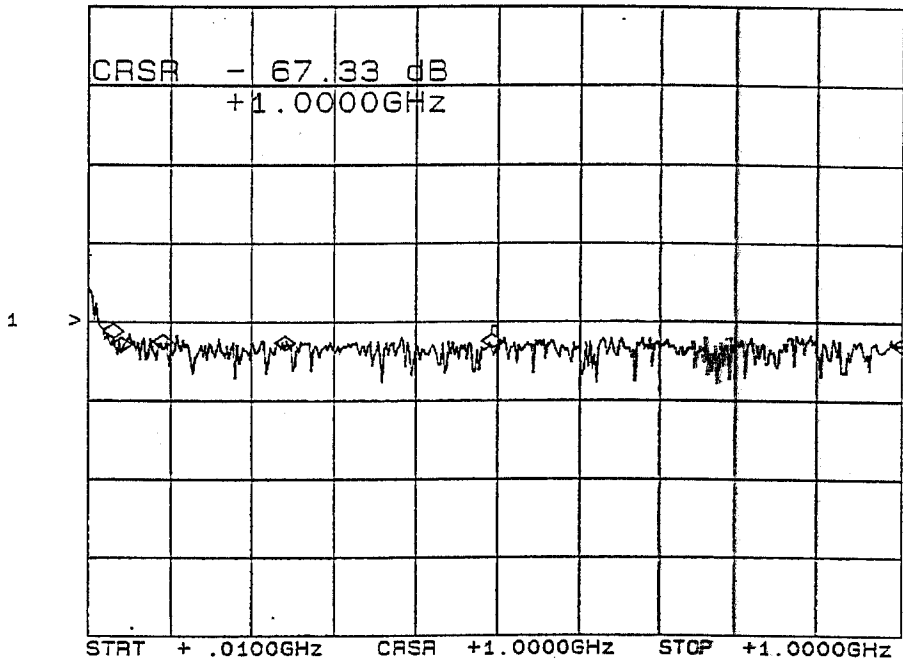


SUMMARY TEST DATA

MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTION 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc @ +176mA; -12vdc @ -48mA

ISOLATION*
 (AS MEASURED ON A SCALAR NETWORK ANALYZER)
 J1-J6

CH1: A -M - 67.33 dB
 20.0 dB/ REF - 60.00 dB



*J1: INPUT ARM

FREQUENCY	ISOLATION
40 MHz	64.1 dB
50 MHz	67.6 dB
100 MHz	66.3 dB
250 MHz	67.0 dB
500 MHz	66.3 dB
1 GHz	67.3 dB

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SUMMARY TEST DATA

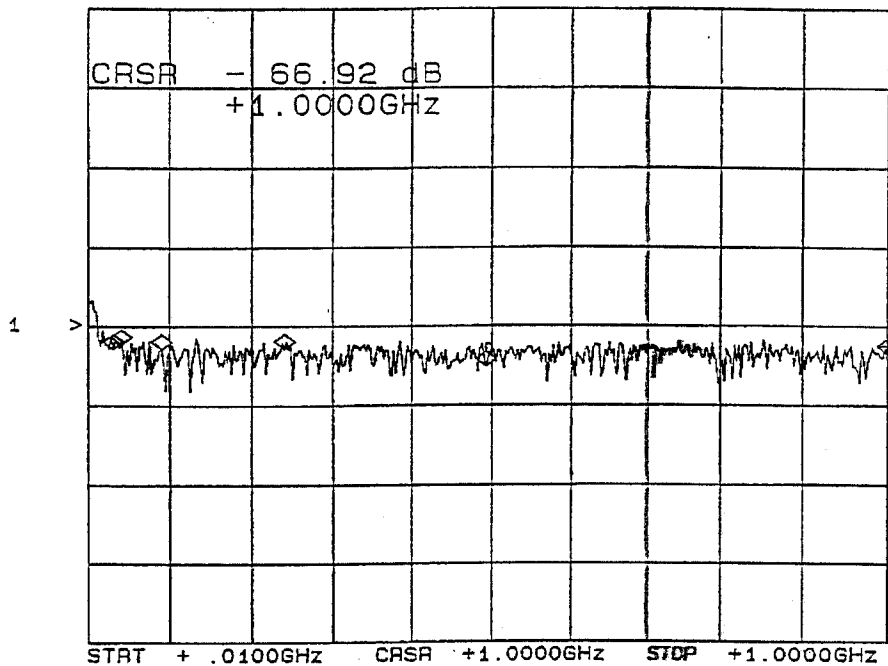
MODEL NUMBER : SWN-1170-4DT-AKG-STD OPTION 120
SERIAL NUMBER : 4MS905116
ENGINEER : RENE AFABLE
VOLTAGE & CURRENT DRAW : +5vdc @ +176mA; -12vdc @ -48mA

ISOLATION*

(AS MEASURED ON A SCALAR NETWORK ANALYZER)

J1-J7

CH1: A -M - 66.92 dB
 20.0 dB/ REF - 60.00 dB



*J1: INPUT ARM

FREQUENCY	ISOLATION
40 MHz	65.4 dB
50 MHz	64.5 dB
100 MHz	65.7 dB
250 MHz	65.7 dB
500 MHz	70.3 dB
1 GHz	66.9 dB

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