



**TEST DATA**

**ON**

**10 MHz TO 18 GHz**

**LOW LOSS**

**HIGH SPEED**

**HIGH ISOLATION**

**ABSORPTIVE AND REFLECTIVE**

**SP7T & SP8T PIN DIODE SWITCHES**

**AMC MODEL Nos:**

**SWN-1170-7DT-00418 (1.25" dia. RADIAL DESIGN)**

**Serial No: 7MS60525**

**AND**

**SW-2181-8AT-00118 (RECTANGULAR DESIGN)**

**SWNR-218-8DT-00118 (2.0" dia. RADIAL DESIGN)**

**SLIMLINE MODELS:**

**SWN-218-8DT-00118 (RECTANGULAR DESIGN)**

**MSN-8DR/DT-05-10M18 (RECTANGULAR DESIGN)**

**MSN-8DR/DT-06-10M18 (RECTANGULAR DESIGN)**

**MSNC-8DR/DT-06-10M18 (RECTANGULAR DESIGN)**

**DESIGNED**

**BY**

**A. K. GORWARA**

**REPORTED**

**BY**

**P. D. WOOD**

**JUNE 1, 1998**

**WEBSITE: [HTTP://WWW.AMWAVE.COM](http://www.amwave.com)**

**E-MAIL: [AMCPMI@AOL.COM](mailto:AMCPMI@AOL.COM)**

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



**AMERICAN MICROWAVE  
CORPORATION**

**10 MHz TO 18 GHz  
ABSORPTIVE & REFLECTIVE  
LOW LOSS, HIGH ISOLATION  
SP7T & SP8T PIN DIODE SWITCHES**

- LOW LOSS
- ABSORPTIVE
- HIGH ISOLATION
- ULTRA-BROADBAND

**AMC MODEL Nos:**

**SWN-1170-7DT-00418 (RADIAL), SW-2181-8AT-00118 (RECTANGULAR)  
SWNR-218-8DT-00118 (RADIAL), SWN-218-8DT-00118 (RECTANGULAR)  
MSN-8DR/DT-05-10M18 (RECTANGULAR), MSN-8DR/DT-06-10M18 (RECTANGULAR)  
MSNC-8DR/DT-06-10M18 (RECTANGULAR)**

**SPECIFICATIONS:**

- **FREQUENCY RANGE** : 10 MHz TO 18 GHz
- **INSERTION LOSS** : 3.75 dB MAX. (For Absorptive, Non-Absorptive or Reflective reduces Loss by about 0.50dB)  
: 3.50 dB TYP. @ 0.01 GHz  
: 1.00 dB TYP. @ 2.0 GHz  
: 2.20 dB TYP. @ 10.0 GHz  
: 3.50 dB TYP. @ 18.0 GHz
- **ISOLATION** : 60 dB MIN.  
: 70 dB TYP. @ 0.05 GHz  
: 90 dB TYP. @ 2.0 GHz  
: 75 dB TYP. @ 12.0 GHz  
: 75 dB TYP. @ 18.0 GHz
- **VSWR** : 2.0:1
- **SWITCHING SPEED** : "RISE" : 10 nS MAX., 5nS TYP.  
: "FALL" : 10 nS MAX., 5nS TYP.  
: "ON" : 150nS MAX., 80nS TYP.  
: "OFF" : 50 nS MAX., 25nS TYP.
- **CONTROL** : TTL Compatible (Independent Control, Standard; 3-bit Binary Decoder Available)
- **VIDEO TRANSIENTS** : 2.0 V Peak to Peak in a 20 MHz BW (Without Video Filters)  
: 3.0 V Peak to Peak in a 300 MHz BW (Without Video Filters)
- **RF INPUT POWER** : +20 dBm Operating, 1 Watt Survival
- **DC POWER SUPPLY** : + 5vdc @ 250 mA MAX., <200 mA TYP. (±5vdc Standard, Other Voltage Options  
: - 5vdc @ 75 mA MAX., < 50 mA TYP. Also Available)
- **SIZE & WEIGHT** : SWN-1170-7DT (Radial) : 1.25" dia. X 0.70" @ <3.0 oz.  
: SWN-218-8DT (Rectangular) : 5.10" X 2.0" X 0.56" @ <7.0 oz.  
: SW-2181-8AT (Rectangular) : 5.10" X 2.0" X 0.75" @ <7.0 oz.  
: SWNR-218-8DT (Radial) : 2.0" dia. X 0.75" @ <4.5 oz.  
: MSN-8DR/DT-05-10M18 (Rectangular) : 4.00" X 1.5" X 0.40" @ <4.5 oz.  
: MSN-8DR/DT-06-10M18 (Rectangular) : 4.75" X 1.5" X 0.50" @ <4.5 oz.  
: MSNC-8DR/DT-06-10M18 (Rectangular) : 4.75" X 1.5" X 0.40" @ <4.5 oz.

**ABOVE DATA IS TYPICAL FOR ABSORPTIVE OR REFLECTIVE VERSIONS  
OTHER MULTI-THROW (SP2T, SP3T, SP4T, SP5T, SP6T & SP7T) DESIGNS AVAILABLE**

**WEBSITE: [HTTP://WWW.AMWAVE.COM](http://www.amwave.com)**

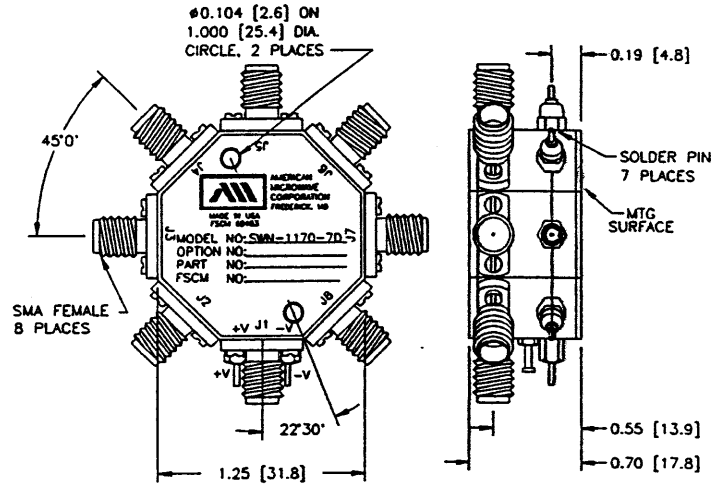
**E-MAIL: [AMCPMI@AOL.COM](mailto:AMCPMI@AOL.COM)**

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

**SUMMARY TEST DATA  
SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES**

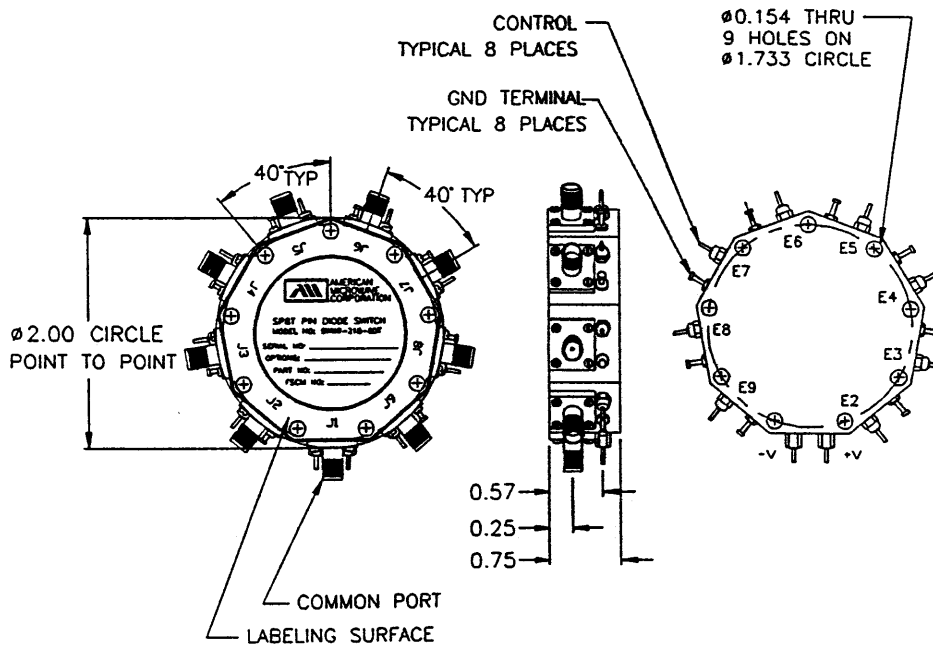


**MECHANICAL OUTLINES**



**SWN-1170-7DT**

0.4" Thick Option Available, Inquire with Factory for Details



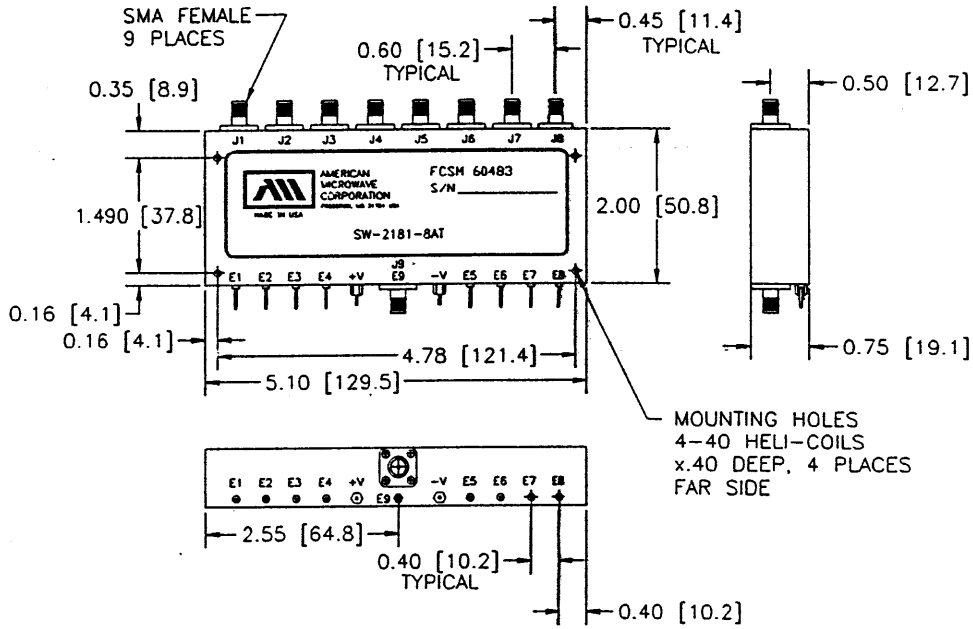
**SWNR-218-8DT (RADIAL)**

0.4" Thick Option Available, Inquire with Factory for Details  
TOLERANCES: X.XX ± 0.02 INCHES, X.XXX ± 0.005 INCHES

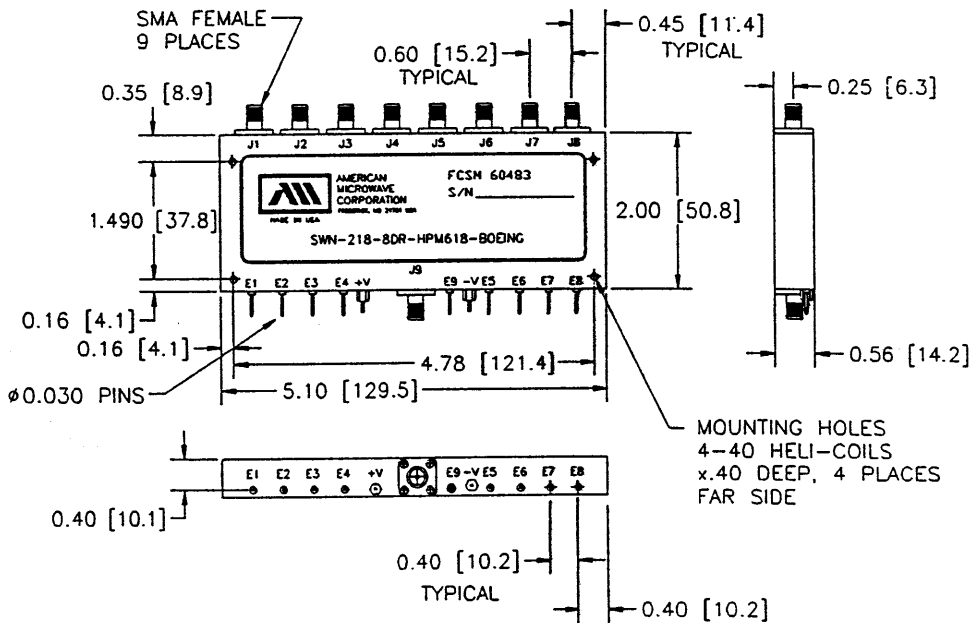
**SUMMARY TEST DATA  
SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES**



**MECHANICAL OUTLINES**



**SW-2181-8AT**



**SWN-218-8DT**

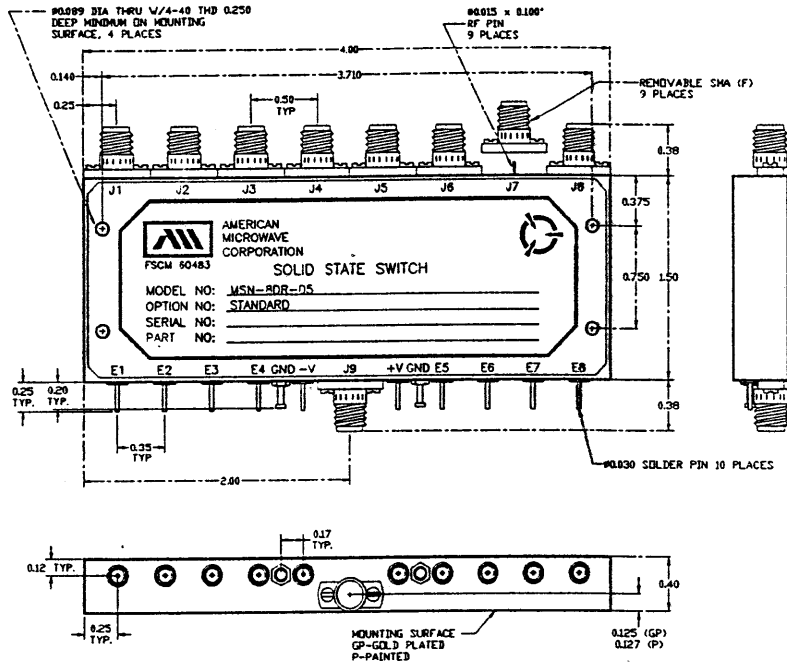
0.4" Thick Option Available, Inquire with Factory for Details  
TOLERANCES: X.XX ± 0.02 INCHES, X.XXX ± 0.005 INCHES

JUNE 1, 1998

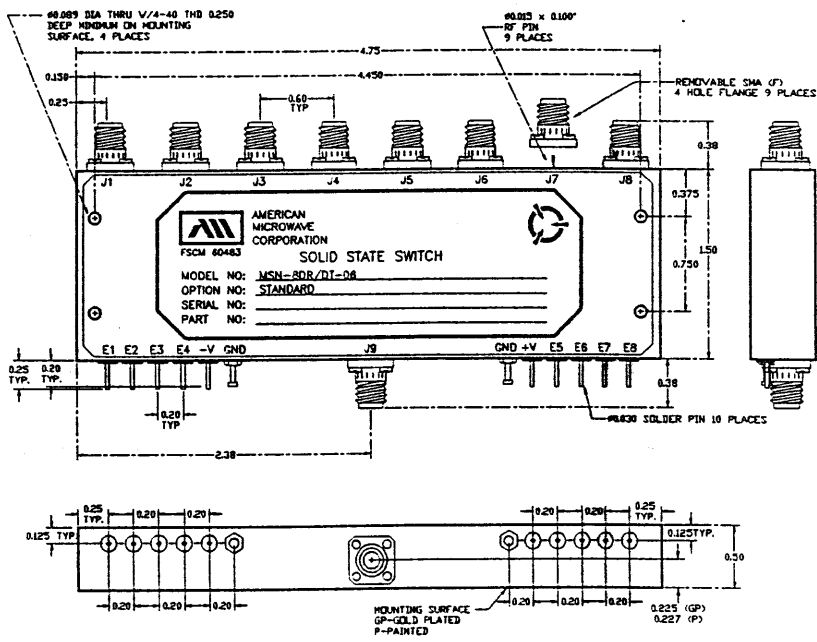
SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES



**MECHANICAL OUTLINES**  
 CONTINUED



**MSN-8DR/DT-05-STANDARD**



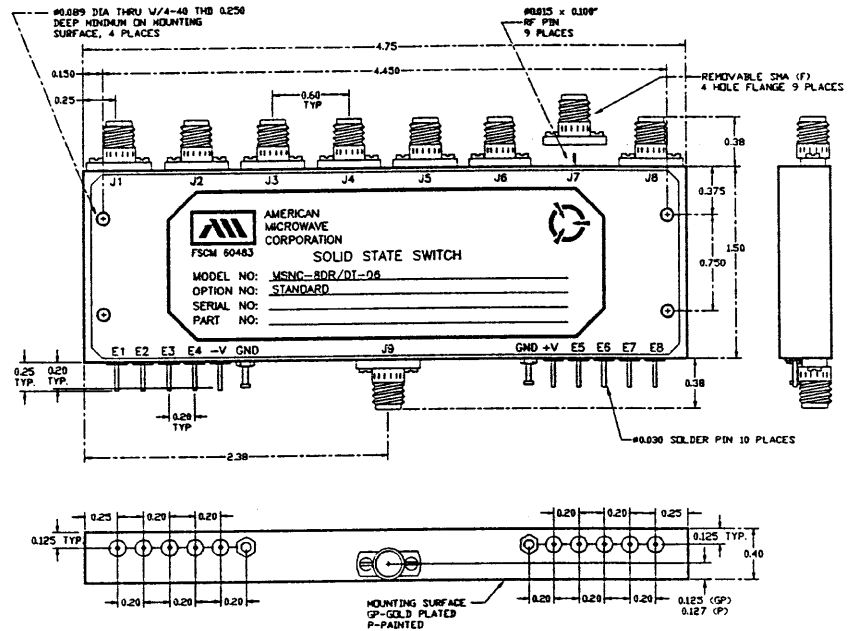
**MSN-8DR/DT-06-STANDARD**  
 Tolerance: X.XX ± 0.002", X.XXX ± 0.005"

JUNE 1, 1998

SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES



**MECHANICAL OUTLINES**  
 CONTINUED



**MSNC-8DR/DT-06-STANDARD  
 WITH INDEPENDENT CONTROLS**

**SUMMARY TEST DATA  
SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES**



**AVAILABLE OPTIONS  
AND  
HOW TO ORDER**

**EXAMPLE :**

**SWN - 218 - 8 D T - XXXX - ###**  
**1 2 3 4 5 6 7**

- 1. : SWN : Switch Designator (SW = Older Models, SWN = Newer Models)
- 2. : 218 : Series Designator (2181 = Older Models, 218 or 1170 = Newer Models)
- 3. : 8 : Number of Throws, ie: 3 (SP3T), 4 (SP4T), 5 (SP5T), 6 (SP6T), 7 (SP7T), 8 (SP8T)
- 4. : D : Indicates Integral Driver
- 5. : T : T = Terminated (Absorptive), R = Reflective (Non-Absorptive)
- 6. : XXXX : Frequency Range of Switch
- 7. : ### : Available Options as Noted Below

OPTION NO:	MULTI-THROW SWITCH OPTIONS
001	<b>SMA Male RF Connectors</b> (Increases Insertion Loss by 0.25dB per Arm)
002	<b>Inverted Logic, "0" = ON</b> (Standard TTL Logic is "1" = ON)
003	<b>+ 12vdc DC Power Supply</b> (Standard is $\pm$ 5vdc)
004	<b>+ 15vdc DC Power Supply</b> (Standard is $\pm$ 5vdc)
005	<b>3-bit Binary Decoder</b> (Available with Solder Pin Controls Only on Radial designs and either Solder Pins or Multipin Connectors on Rectangular designs)
006	<b>- 12vdc DC Power Supply</b> (Standard is $\pm$ 5vdc)
007	<b>- 15vdc DC Power Supply</b> (Standard is $\pm$ 5vdc)
008	<b>MULTIPIN CONNECTOR</b> (Available on Rectangular models only)
009	<b>0.4" THICK OPTION (WHERE AVAILABLE)</b>
103	<b>Integral Band Pass Video Filters</b> (Only available on units with Frequency Ranges starting above 2.0 GHz) (Increases Insertion Loss by 0.75dB, overall)
XXXX	Indicates the Frequency for which the Switch has been Adjusted For Example: 00418 = 40 MHz to 18.0 GHz 00118 = 10 MHz to 18.0 GHz 0012 = 10 MHz to 2.0 GHz 48 = 4.0 to 8.0 GHz

**AMERICAN MICROWAVE CORPORATION**  
**7311-G GROVE ROAD, FREDERICK, MARYLAND 21704**  
**TELEPHONE NUMBER : 301-662-4700**  
**FACIMILE NUMBER : 301-662-4938**

PLEASE CALL OR FAX FOR CATALOGS, TEST REPORTS AND ORDERING INFORMATION ON ANY OF OUR PRODUCTS

JUNE 1, 1998

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SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES



**AVAILABLE OPTIONS AND HOW TO ORDER**  
**MSN SERIES OF SWITCHES**

EXAMPLE :

MSN - 8 DR/DT - 05 - XXXX - ###

1 2 3 4 5 6

- 1. : MSN : Switch Designator Microwave Switch New
- 2. : 8 : Number of Throws, ie: 3 (SP3T), 4 (SP4T), 5 (SP5T), 6 (SP6T), 7 (SP7T), 8 (SP8T)
- 3. : DT/DR : D=Integral Driver, T = Terminated (Absorptive), R = Reflective (Non-Absorptive)
- 4. : 05 : 05=0.5" between SMA connectors center to center, 06=0.6" between SMA connectors center to center
- 5. : XXXX : Available Options as Noted Below
- 6. : ### : Frequency Range of Switch as Illustrated Below

OPTION:	MSN MULTI-THROW SWITCH OPTIONS
(NOTE)	INDEPENDENT CONTROL WITH SOLDER PINS IN STANDARD
DEC-MP	3-BIT BINARY DECODER WITH MULTIPIN CONNECTOR
DEC-SP	3-BIT BINARY DECODER WITH SOLDER PINS
MP-IND	INDEPENDENT CONTROL WITH MULTIPIN CONNECTOR
10M2	10 Mhz TO 2.0 GHZ FREQUENCY RANGE
10M18	10 Mhz TO 18.0 GHZ FREQUENCY RANGE (INSERTION LOSS INCREASES BY 1.5 dB AT 10 MHz AND 0.5 dB AT 18 GHz)
100M18	100 Mhz TO 18.0 Ghz (INSERTION LOSS INCREASES BY 1.5 dB at 100 MHz AND 0.5 dB 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 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 20.0 Ghz (INSERTION LOSS INCREASES BY 1.5 dB at 10 MHz AND 1.0 dB AT 20 GHz)
220	2 Ghz TO 20 Ghz (INSERTION LOSS INCREASES BY 1.0 dB AT 20 GHz)
1020	10 Ghz TO 20 Ghz (INSERTION LOSS INCREASES BY 1.0 dB AT 20 GHz)
B01	-12 VOLT POWER SUPPLIES
B02	-15 VOLT POWER SUPPLIES
B03	REVERSE LOGIC "1" = ON, "0" = OFF
B04	DRIVERLESS CONFIGURATION (CURRENT CONTROLLED)
B05	HIGH SPEED, TURNON/TURNOFF 20 nS MAXIMUM WHEN APPLICABLE
B06	HIGH POWER - SPECIFY CW & PEAK POWER, PULSE WIDTH, DUTY CYCLE, RF FREQUENCY AND BANDWIDTH
B07	CUSTOM DESIGNED PRODUCT - SPECIFY WITH INITIALS OF CUSTOMER
B08	LOW VIDEO TRANSIENTS - SPECIFY VIDEO BANDWIDTH
B09	LOW INSERTION LOSS VERSION
B10	HIGHER ISOLATION VERSION

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**AMERICAN MICROWAVE  
CORPORATION**

**ACTUAL  
TEST DATA  
ON  
ABSORPTIVE  
SP7T**

**PIN DIODE SWITCH**

**AMC MODEL No: SWN-1170-7DT-00418  
SERIAL No: 7MS60525**

**APPLICABLE  
FOR ALL TYPES**

**10 MHz TO 18 GHz OR 40 MHz TO 18 GHz**

**ABSORPTIVE OR REFLECTIVE**  
(REFLECTIVE SWITCHES OFFER APPROXIMATELY 0.5 dB LESS INSERTION LOSS)

**SP7T OR SP8T**

**PIN DIODE SWITCHES**

SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

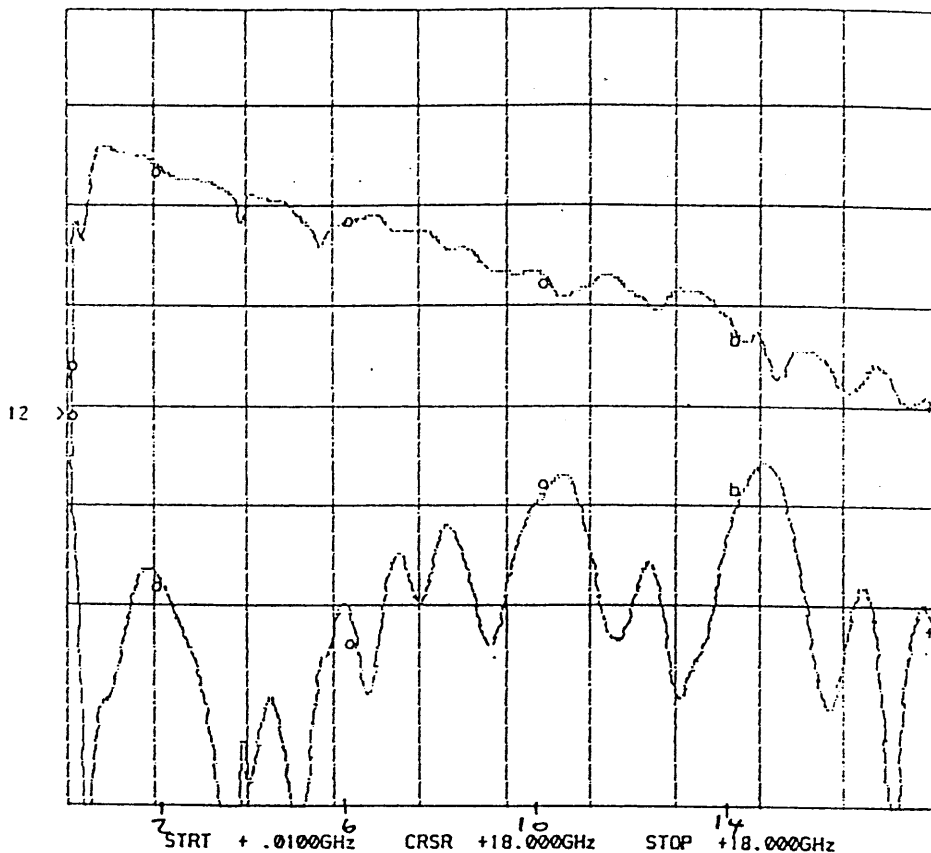


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

INSERTION LOSS & RETURN LOSS  
 J1 TO J2

CH1: A -M - 3.50 dB      CH2: B -M - 20.78 dB  
 1.0 dB/ REF - 3.50 dB      5.0 dB/ REF - 9.54 dB



Markers		I.L.		R.L.	
No.	Frequency (Hz)	Chan. 1 (dB)	Chan. 2 (dB)	Chan. 1 (dB)	Chan. 2 (dB)
10 MHz	1E+07	- 3.594	- 7.292		
2 GHz	1.9989E+09	- 1.031	- 18.653		
6 GHz	5.991674E+09	- 1.536	- 21.333		
10 GHz	9.994452E+09	- 2.255	- 13.418		
14 GHz	1.399723E+10	- 2.804	- 13.703		
Cursors					
18 GHz	1.8E+10	- 3.480	- 20.740		

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SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

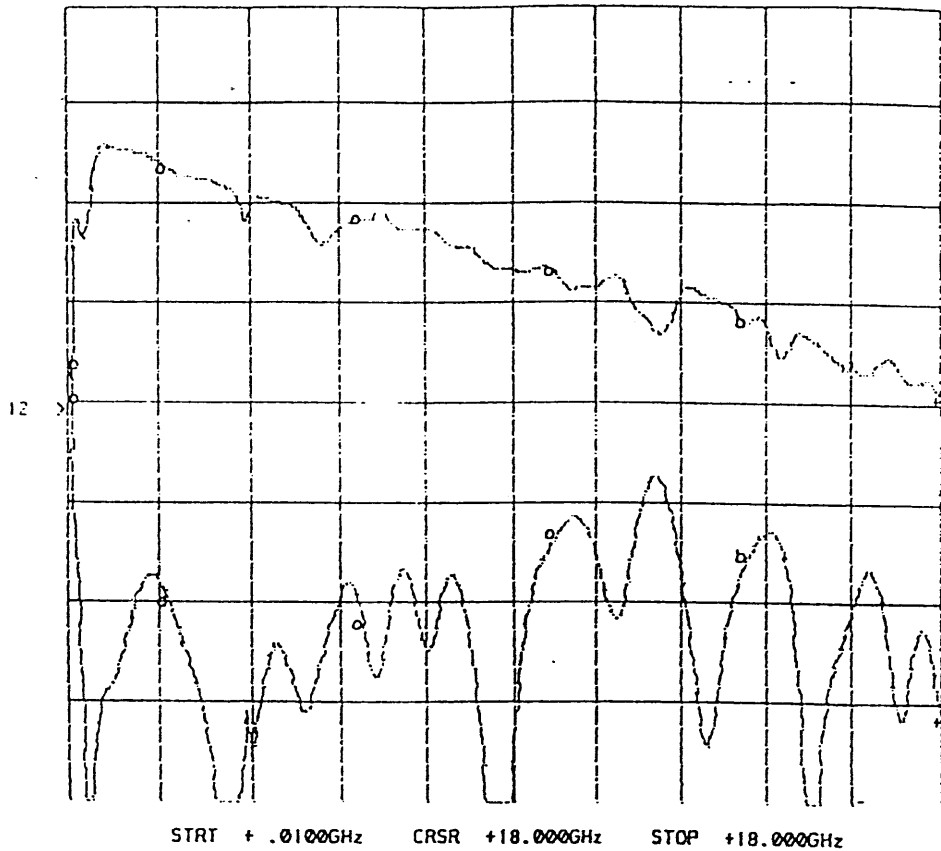


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

INSERTION LOSS & RETURN LOSS  
 J1 TO J3

CH1: A -M - 3.45 dB      CH2: B -M - 25.57 dB  
 1.0 dB/ REF - 3.50 dB      5.0 dB/ REF - 9.54 dB



Markers

No.	Frequency (Hz)	Chan. 1 (dB)	Chan. 2 (dB)
1	1E+07	- 3.749	- 7.282
2	1.9389E+09	- 1.295	- 19.548
3	5.391674E+09	- 1.521	- 20.592
4	9.994452E+09	- 2.155	- 16.170
act	1.399723E+10	- 2.529	- 17.098

Cursors

1	1.8E+10	- 3.409	- 25.453
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SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

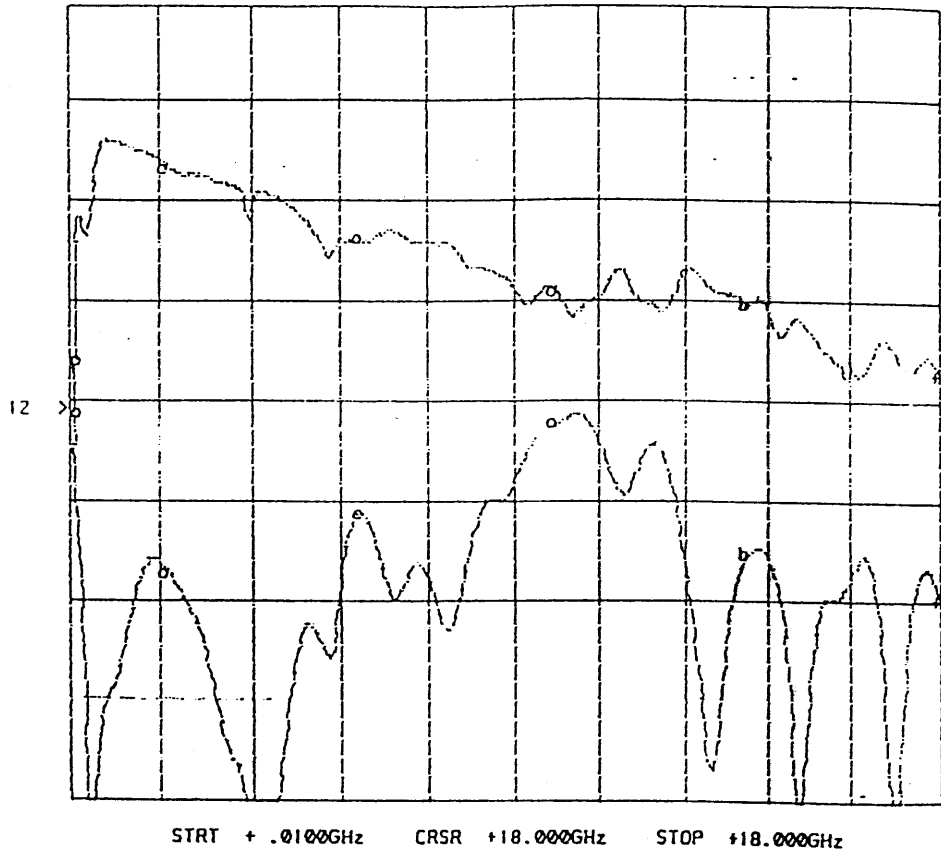


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

INSERTION LOSS & RETURN LOSS  
 J1 TO J4

CH1: A -M - 3.27 dB      CH2: B -M - 19.47 dB  
 1.0 dB/ REF - 3.50 dB      5.0 dB/ REF - 9.54 dB



Markers

No.	Frequency (Hz)	Chan. 1 (dB)	Chan. 2 (dB)
1	1E+07	- 3.595	- 7.397
2	1.9889E+09	- 1.134	- 18.136
3	5.991674E+09	- 1.838	- 15.120
4	9.994452E+09	- 2.365	- 10.605
act	1.399723E+10	- 2.486	- 17.027

Cursors

1	1.8E+10	- 3.238	- 19.510
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SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

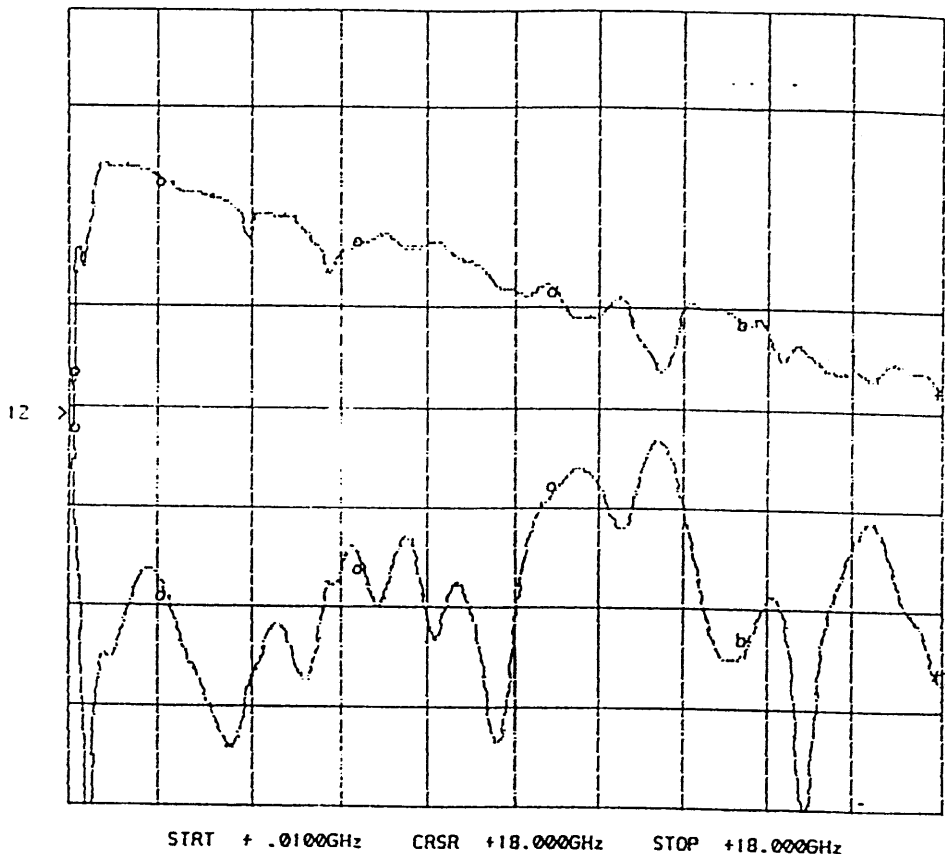


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

INSERTION LOSS & RETURN LOSS  
 J1 TO J5

CH1: A -M - 3.30 dB      CH2: B -M - 22.68 dB  
 1.0 dB/ REF - 3.50 dB      5.0 dB/ REF - 9.54 dB



<u>Markers</u>			
No.	Frequency (Hz)	Chan. 1 (dB)	Chan. 2 (dB)
1	1E+07	- 3.793	- 7.545
2	1.9889E+09	- 1.244	- 19.164
3	5.991674E+09	- 1.799	- 17.609
4	3.994452E+09	- 2.332	- 13.418
act	1.399723E+10	- 2.645	- 21.191

<u>Cursors</u>			
No.	Frequency (Hz)	Chan. 1 (dB)	Chan. 2 (dB)
1	1.8E+10	- 3.315	- 22.778

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SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

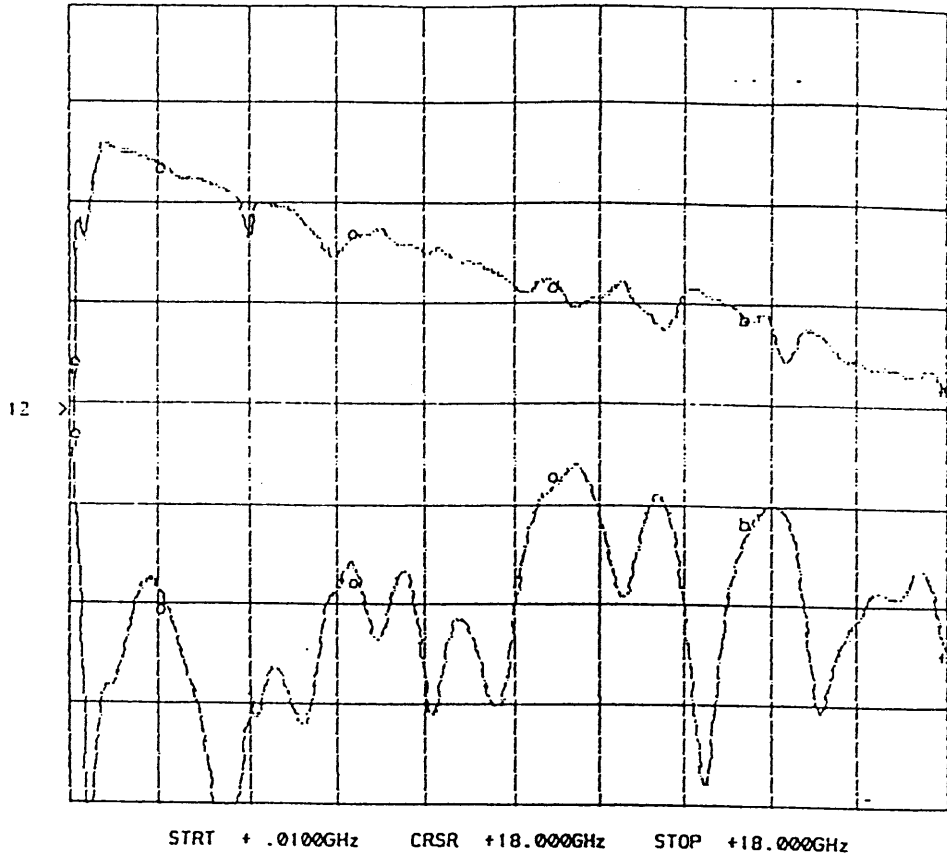


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

INSERTION LOSS & RETURN LOSS  
 J1 TO J6

CH1: A -M - 3.35 dB      CH2: B -M - 22.08 dB  
 1.0 dB/ REF - 3.50 dB      5.0 dB/ REF - 9.54 dB



Markers

No.	Frequency (Hz)	Chan. 1 (dB)	Chan. 2 (dB)
1	1E+07	- 3.799	- 7.402
2	1.9889E+09	- 1.134	- 19.790
3	5.991674E+09	- 1.788	- 18.416
4	9.994452E+09	- 2.316	- 13.126
act	1.399723E+10	- 2.623	- 15.373

Cursors

1	1.8E+10	- 3.332	- 22.059
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SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

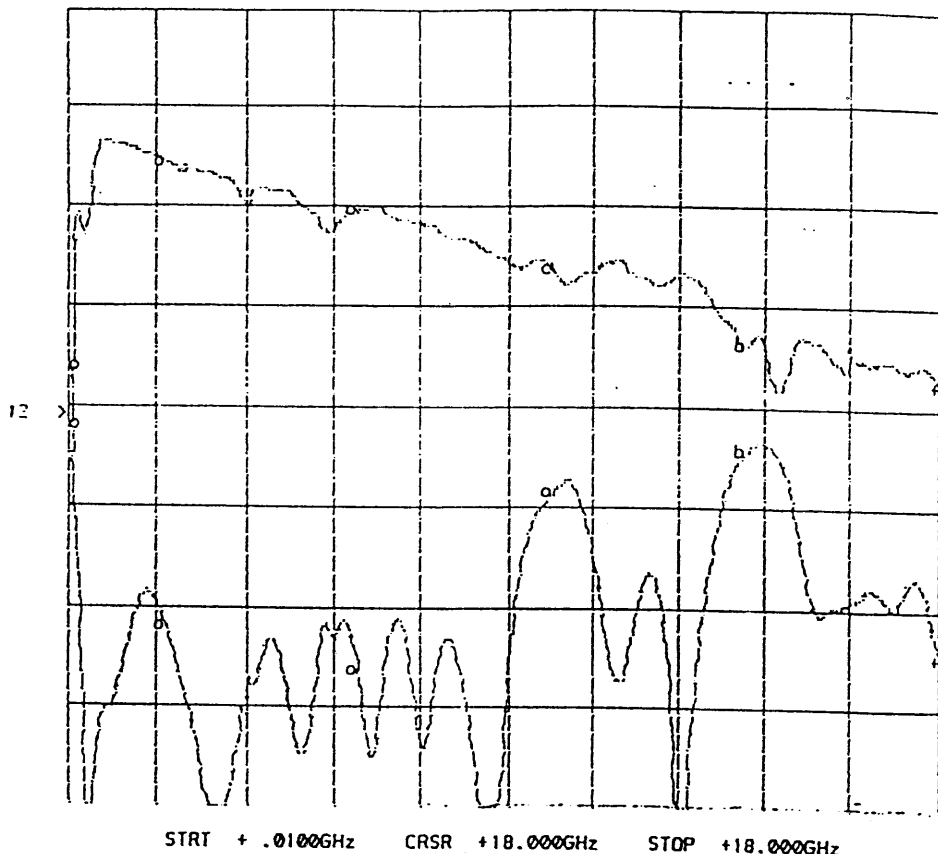


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

INSERTION LOSS & RETURN LOSS  
 J1 TO J7

CH1: A -M - 3.28 dB      CH2: B -M - 22.08 dB  
 1.0 dB/ REF - 3.50 dB      5.0 dB/ REF - 9.54 dB



Markers

No.	Frequency (Hz)	Chan. 1 (dB)	Chan. 2 (dB)
1	1E+07	- 3.617	- 7.375
2	1.9889E+09	- 1.014	- 20.444
3	5.991674E+09	- 1.503	- 22.553
4	9.994452E+09	- 2.085	- 13.731
act	1.399723E+10	- 2.843	- 11.627

Cursors

1	1.8E+10	- 3.260	- 22.037
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SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

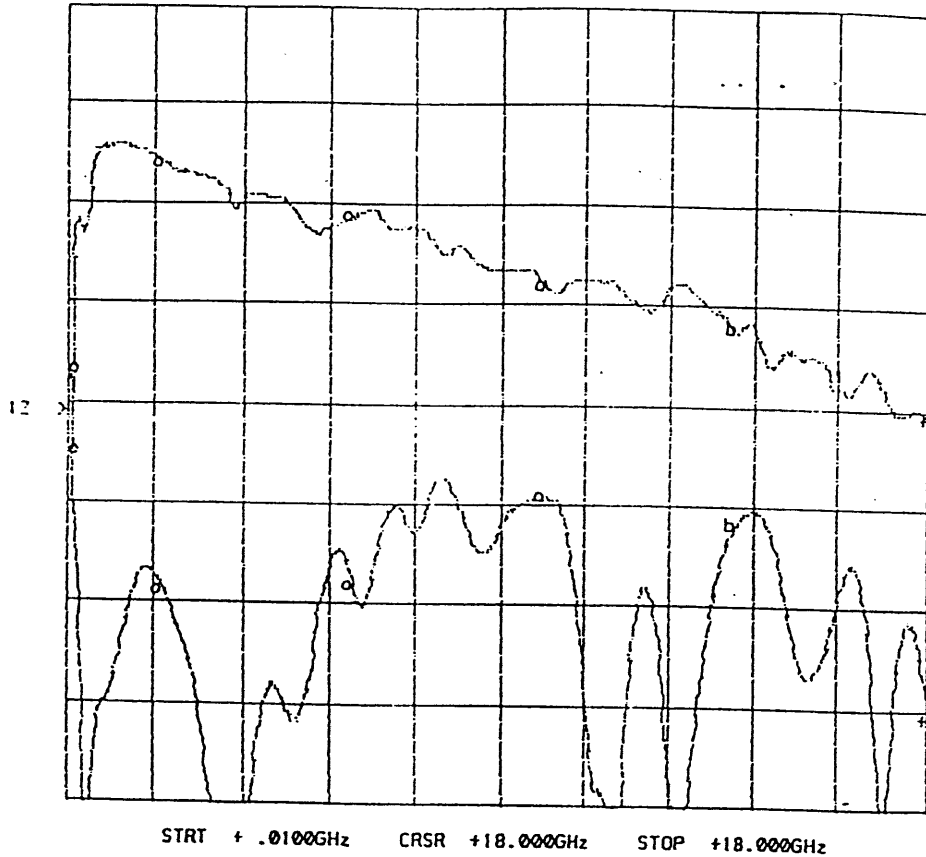


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

INSERTION LOSS & RETURN LOSS  
 J1 TO J8

CH1: A -M - 3.61 dB      CH2: B -M - 25.02 dB  
 1.0 dB/ REF - 3.50 dB      5.0 dB/ REF - 9.54 dB



Markers

No.	Frequency (Hz)	Chan. 1 (dB)	Chan. 2 (dB)
1	1E+07	- 3.996	- 7.622
2	1.9889E+09	- 1.053	- 18.872
3	5.991674E+09	- 1.595	- 18.581
4	9.994452E+09	- 2.277	- 14.044
act	1.399723E+10	- 2.700	- 15.340

Cursors

1	1.8E+10	- 3.585	- 25.036
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SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

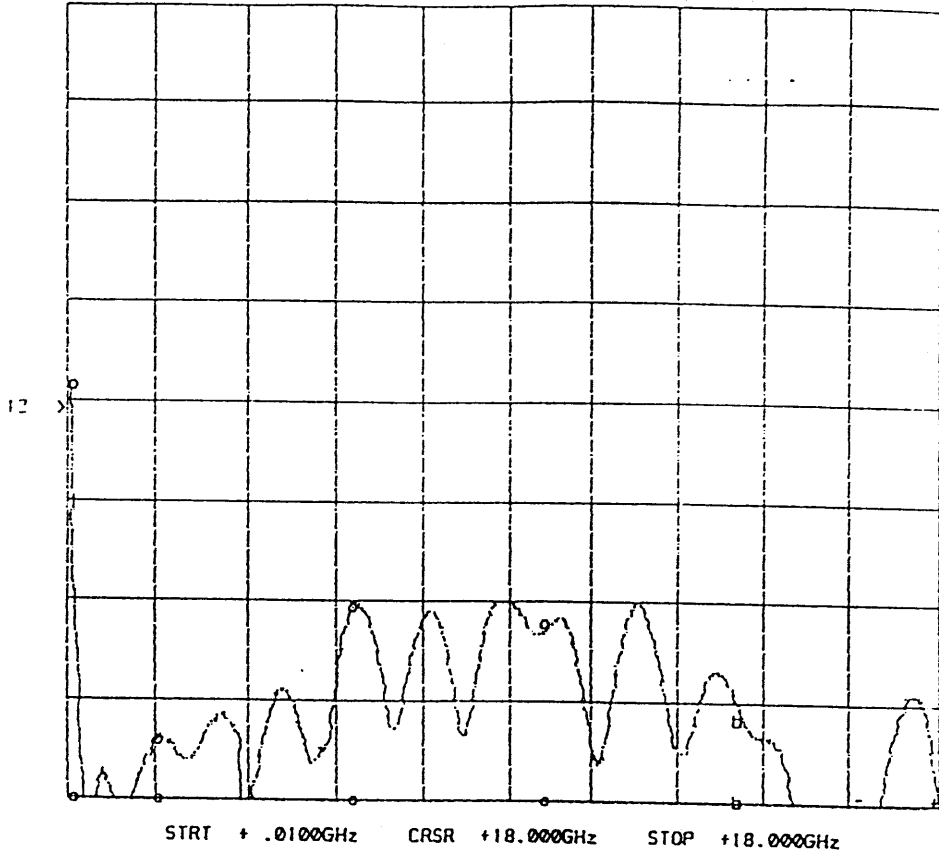


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

OFF-ARM TERMINATION  
 J1-J2

CH1: A -M - 45.48 dB      CH2: B -M - 31.53 dB  
 1.0 dB/ REF - 3.50 dB      5.0 dB/ REF - 9.54 dB



Markers

No.	Frequency (Hz)	Chan. 1 (dB)	Chan. 2 (dB)
1	1E+07	- 43.169	- 7.853
2	1.9889E+09	- 45.273	- 26.525
3	5.991674E+09	- 44.158	- 19.691
4	9.994452E+09	- 48.481	- 20.608
act	1.399723E+10	- 43.499	- 25.382

Cursors

1	1.8E+10	- 45.240	- 31.815
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SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

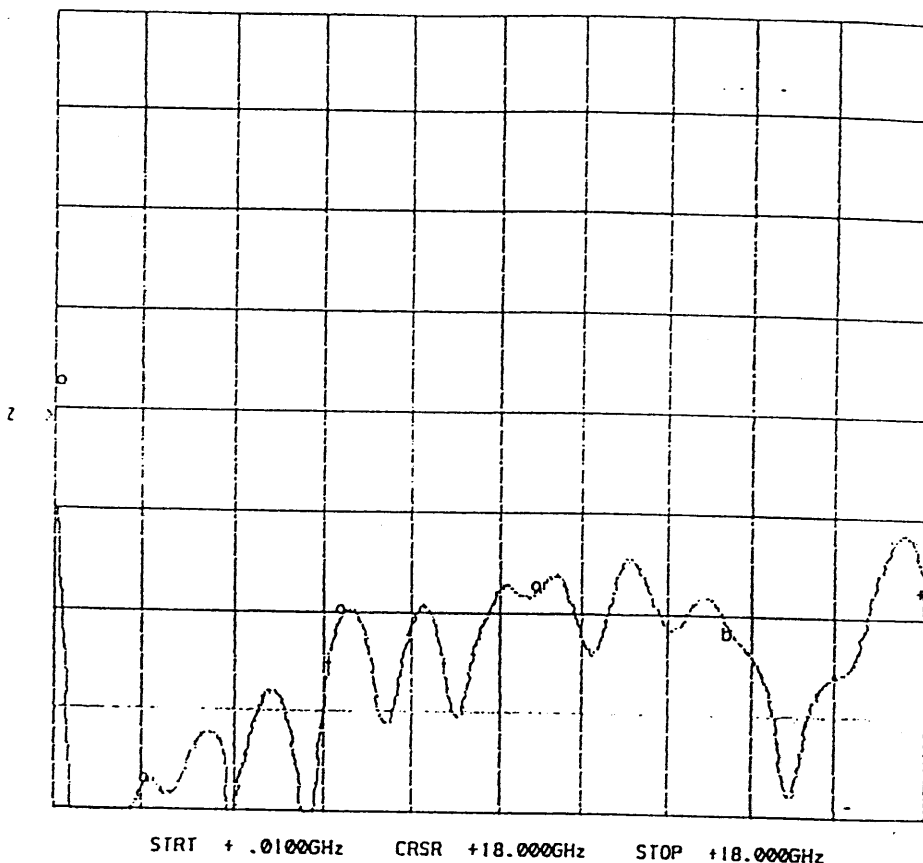


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

OFF-ARM TERMINATION  
 J1-J3

CHZ: B -H - 18.25 dB  
 S.0 dB/ REF - 9.54 dB



Markers

No.	Frequency [Hz]	Chan. 2 (dB)
1	1E+07	- 7.886
2	1.9889E+09	- 20.013
3	5.991674E+09	- 19.268
4	9.994453E+09	- 18.103
act	1.399723E+10	- 20.460

Cursors

1	1.8E+10	- 18.230
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SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

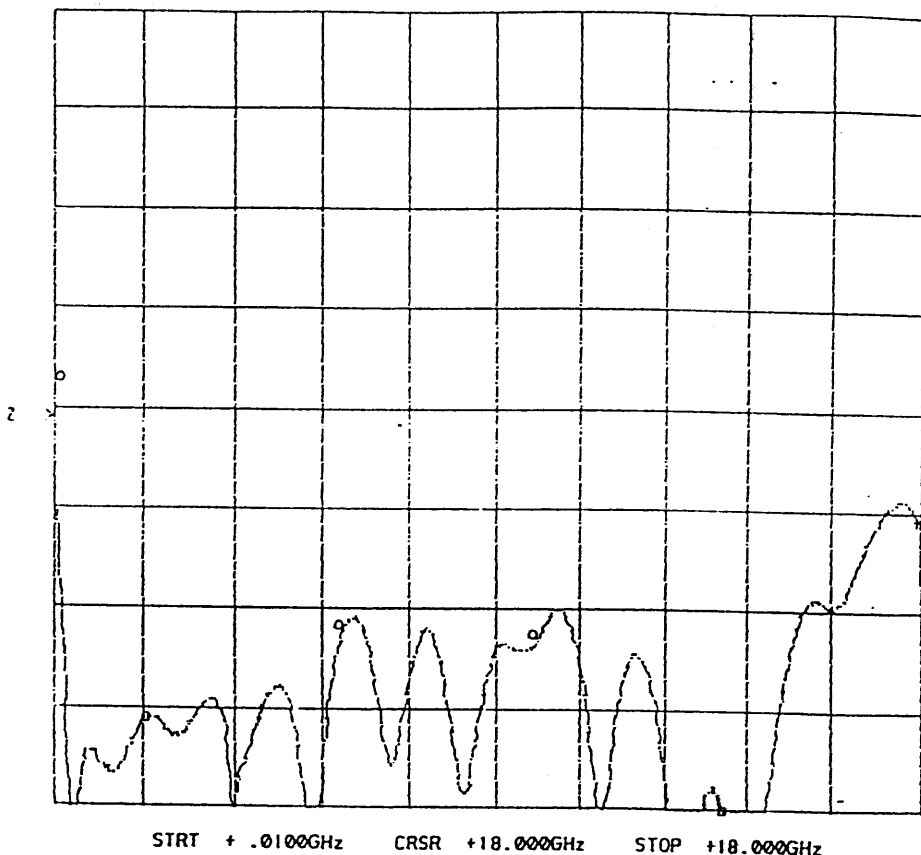


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

OFF-ARM TERMINATION  
 J1-J4

CHZ: B -M - 14.95 dB  
 5.0 dB/ REF - 9.54 dB



Markers

No.	Frequency (Hz)	Chan. 2 (dB)
1	1E+07	- 8.226
2	1.9889E+09	- 24.954
3	5.991674E+09	- 20.257
4	9.994452E+09	- 20.751
act	1.399723E+10	- 31.595

Cursors

1	1.8E+10	- 14.967
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JUNE 1, 1998

SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

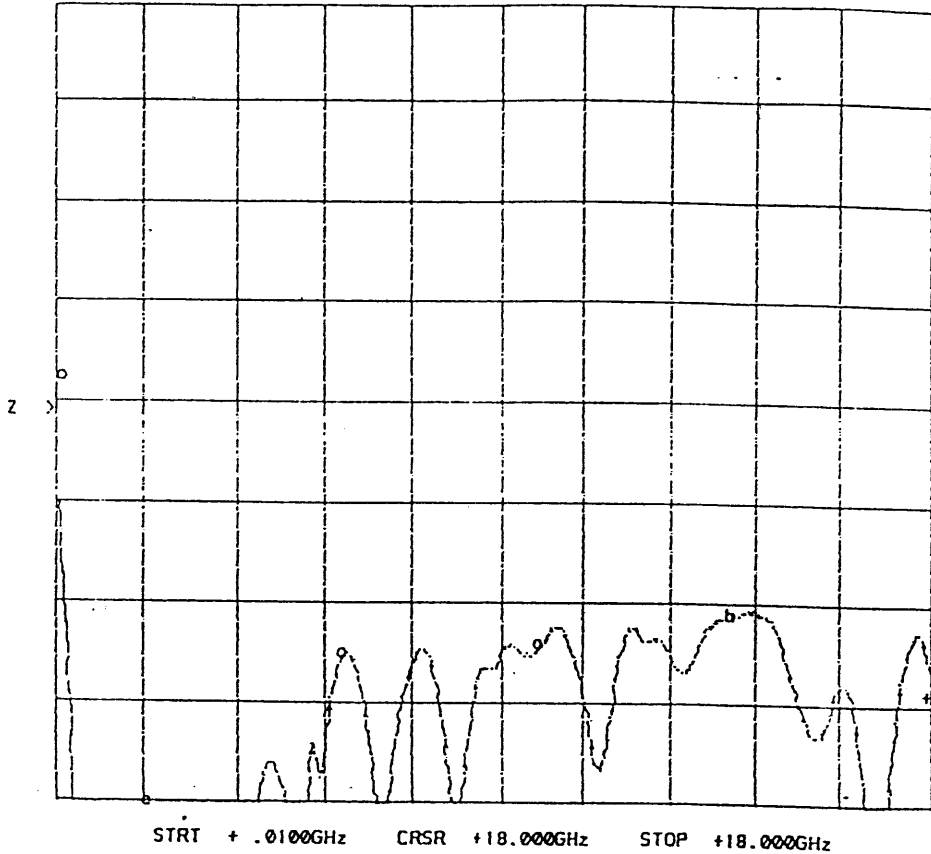


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

OFF-ARM TERMINATION  
 J1-J5

CHZ: B -M - 24.14 dB  
 5.0 dB/ REF - 9.54 dB



Markers

No.	Frequency (Hz)	Chan. 2 (dB)
1	1E+07	- 7.968
2	1.9889E+09	- 31.057
3	5.991674E+09	- 22.135
4	9.994452E+09	- 21.427
act	1.399723E+10	- 20.037

Cursors

1	1.8E+10	- 24.135
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JUNE 1, 1998

SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

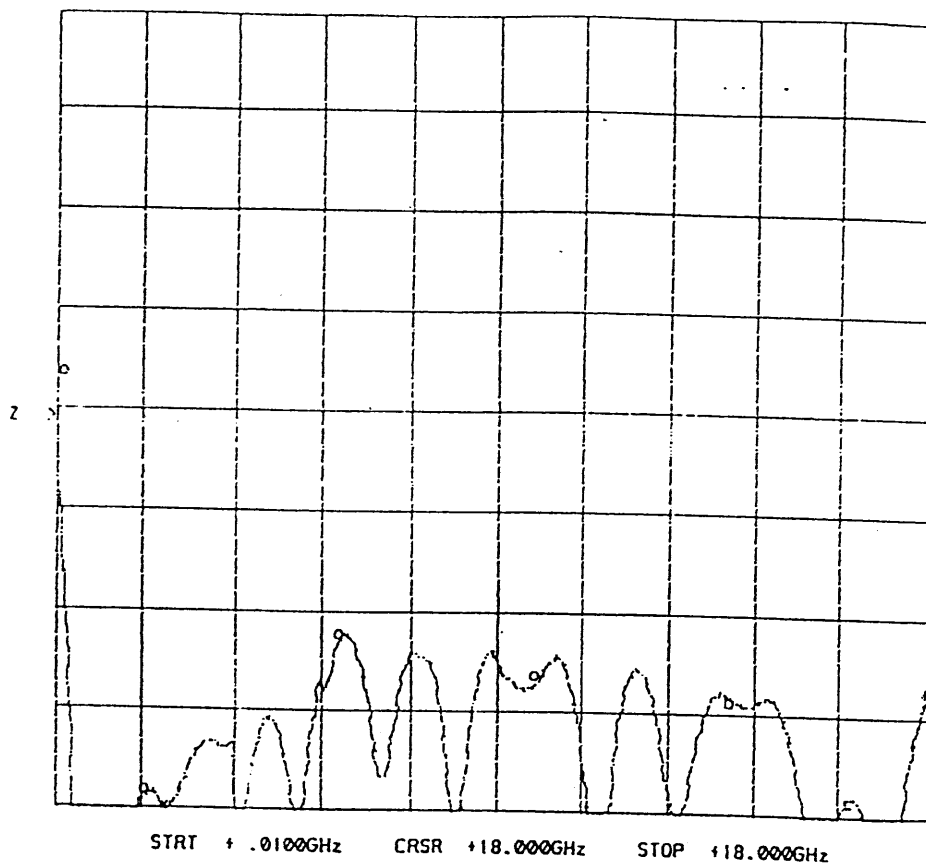


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

OFF-ARM TERMINATION  
 J1-J6

CH2: B -M - 23.38 dB  
 5.0 dB/ REF - 9.54 dB



Markers

No.	Frequency (Hz)	Chan. 2 (dB)
1	1E+07	- 7.292
2	1.9889E+09	- 28.738
3	5.991674E+09	- 20.614
4	9.994452E+09	- 22.509
act	1.399723E+10	- 23.822

Cursors

1	1.8E+10	- 23.349
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JUNE 1, 1998

SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

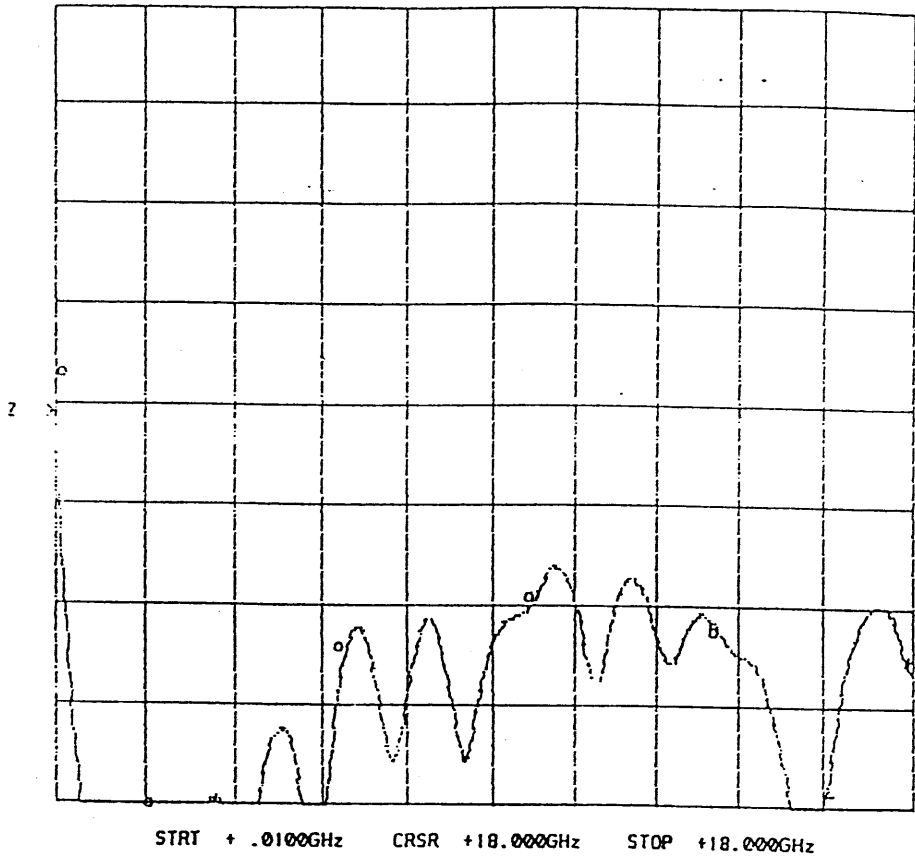


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

OFF-ARM TERMINATION  
 J1-J7

CHZ: B -R - 22.29 dB  
 5.0 dB/ REF - 9.54 dB



<u>Markers</u>		
<u>No.</u>	<u>Frequency (Hz)</u>	<u>Chan. 2 (dB)</u>
1	1E+07	- 7.545
2	1.9889E+09	- 34.040
3	5.991674E+09	- 21.663
4	9.994452E+09	- 18.993
act	1.399723E+10	- 20.878
<u>Cursors</u>		
1	1.8E+10	- 22.273

JUNE 1, 1998

SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES

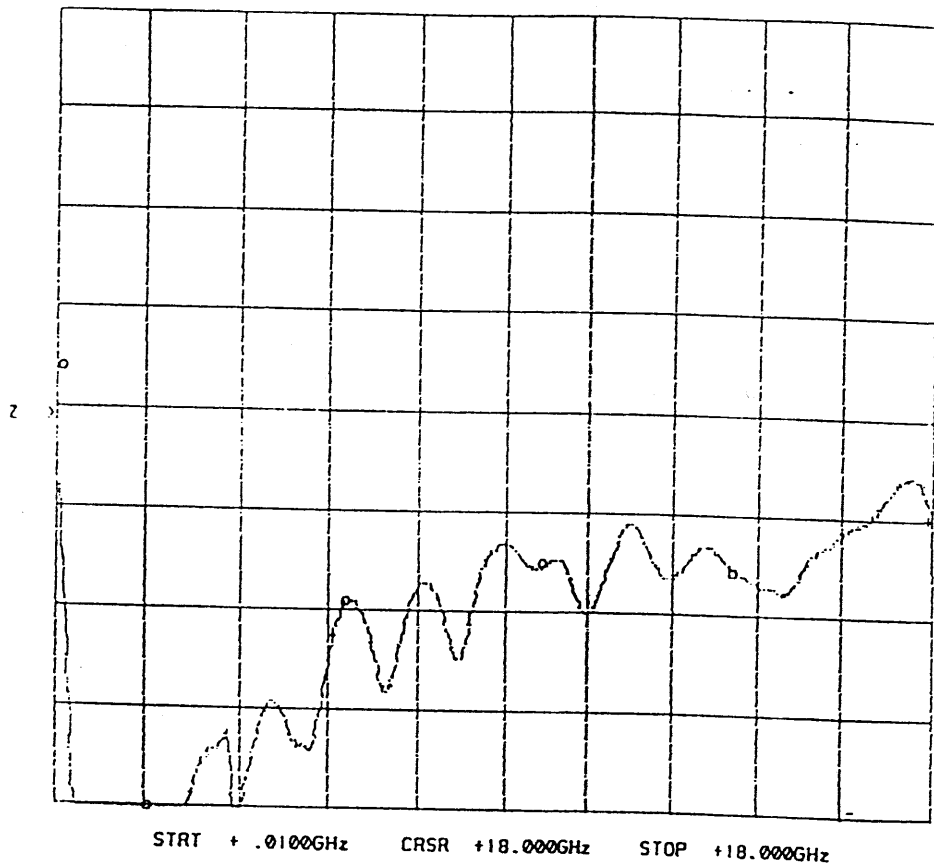


SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

OFF-ARM TERMINATION  
 J1-J8

CH2: B -M - 14.51 dB  
 5.0 dB/ REF - 9.54 dB



Markers

No.	Frequency (Hz)	Chan. 2 (dB)
1	1E+07	- 7.298
2	1.9889E+09	- 30.277
3	5.991674E+09	- 19.048
4	9.994452E+09	- 16.972
act	1.399723E+10	- 17.433

Cursors

1	1.8E+10	- 14.527
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JUNE 1, 1998

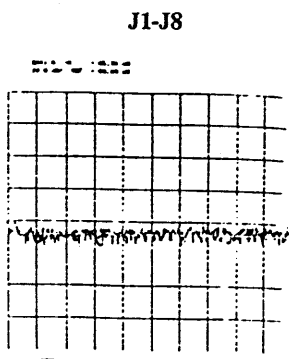
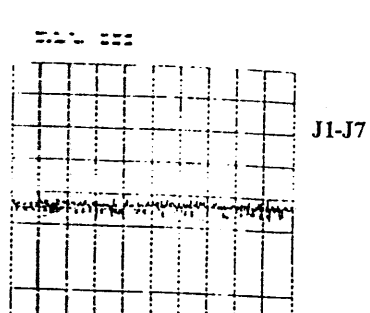
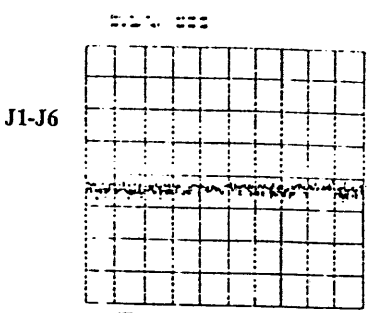
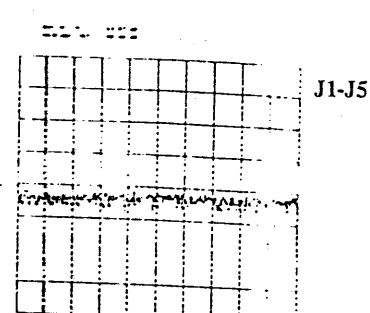
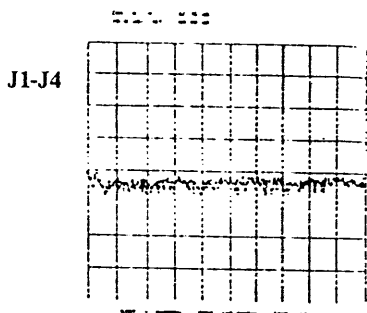
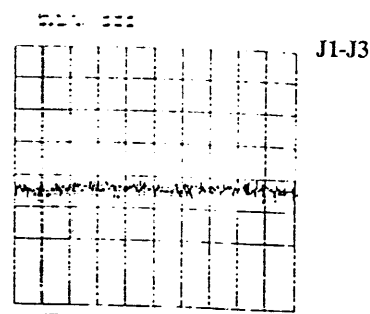
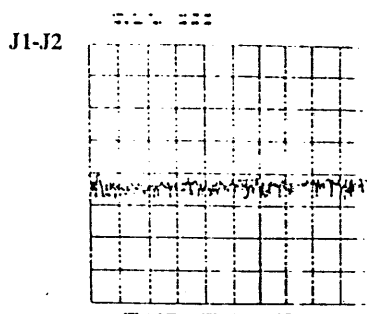
SUMMARY TEST DATA  
SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES



SERIAL NUMBER  
TECHNICIAN

: 7MS60525  
: R. AFABLE

ISOLATION  
AS MEASURED ON A NETWORK ANALYSER



JUNE 1, 1998

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SUMMARY TEST DATA  
 SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES



SERIAL NUMBER  
 TECHNICIAN

: 7MS60525  
 : R. AFABLE

**ISOLATION**  
 ISOLATION AS MEASURED ON A SPECTRUM ANALYSES

J1 (COMMON ARM) TO:

	J2	J3	J4	J5	J6	J7	J8
20 MHz	78 dB	71 dB	98 dB	98 dB	96 dB	98 dB	82 dB
50 MHz	68 dB	68 dB	83 dB	78 dB	87 dB	98 dB	74 dB
500 MHz	64 dB	63 dB	66 dB	66 dB	76 dB	78 dB	66 dB
2.0 GHz	91 dB	94 dB	98 dB	98 dB	98 dB	98 dB	94 dB
4.0 GHz	92 dB	92 dB	94 dB	94 dB	94 dB	92 dB	90 dB
6.0 GHz	80 dB	88 dB	90 dB	95 dB	94 dB	96 dB	95 dB
8.0 GHz	74 dB	88 dB	88 dB	86 dB	84 dB	88 dB	88 dB
10.0 GHz	79 dB	87 dB	84 dB	89 dB	89 dB	88 dB	84 dB
12.0 GHz	74 dB	76 dB	83 dB	86 dB	85 dB	81 dB	82 dB
14.0 GHz	80 dB	80 dB	80 dB	84 dB	80 dB	85 dB	76 dB
16.0 GHz	79 dB	72 dB	76 dB	72 dB	78 dB	75 dB	76 dB
18.0 GHz	74 dB	76 dB	76 dB	76 dB	76 dB	76 dB	78 dB

JUNE 1, 1998

SUMMARY TEST DATA  
SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES



SERIAL NUMBER  
TECHNICIAN

: 7MS60525  
: R. AFABLE

SWITCHING SPEED  
TYPICAL FOR ALL ARMS

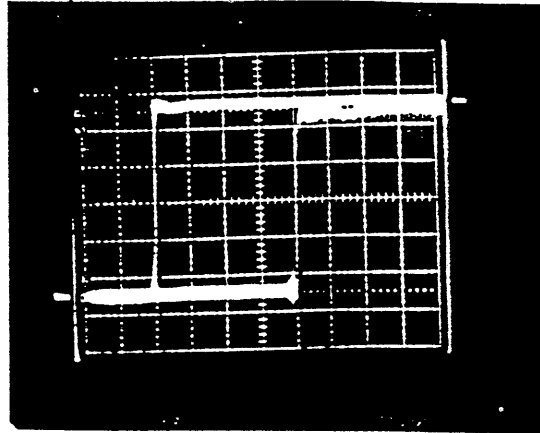
"RISE/FALL" TIME: 10%RF TO 90%RF & 90%RF TO 10%RF  
"ON/OFF" TIME: 50%TTL TO 90%RF OR 10%RF

"ON" 80nS, "RISE" 5nS

HORIZONTAL SCALE:  
20nS/DIVISION

VERTICAL SCALE:  
5mV/DIVISION

20nS/div. SWN-1170-7DT-0048



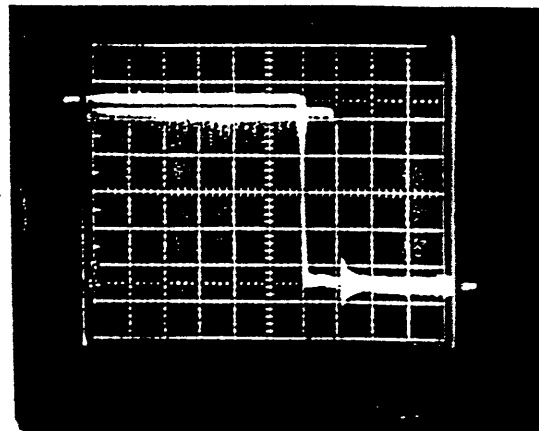
5mV/div. (VERTICAL SCALE)

"OFF" 25nS, "FALL" 10nS

HORIZONTAL SCALE:  
20nS/DIVISION

VERTICAL SCALE:  
5mV/DIVISION

20nS/div. SWN-1170-7DT-0048



5mV/div. (VERTICAL SCALE)

JUNE 1, 1998

SUMMARY TEST DATA  
SP7T & SP8T ABSORPTIVE & REFLECTIVE SWITCHES



SERIAL NUMBER  
TECHNICIAN

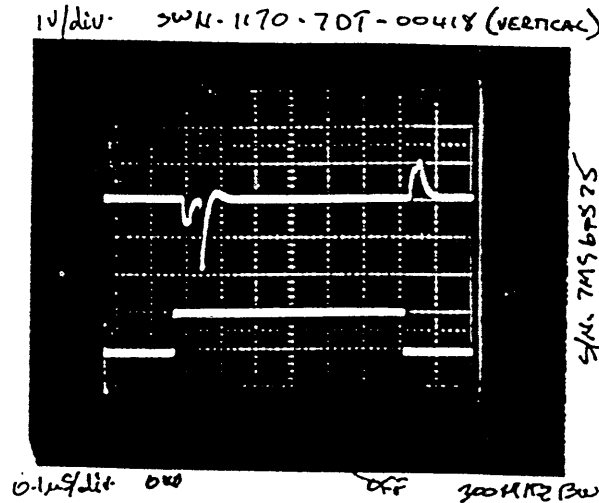
: 7MS60525  
: R. AFABLE

VIDEO TRANSIENTS  
TYPICAL FOR ALL ARMS

AS MEASURED IN A  
300MHz BANDWIDTH

HORIZONTAL SCALE:  
0.1 $\mu$ S/DIVISION

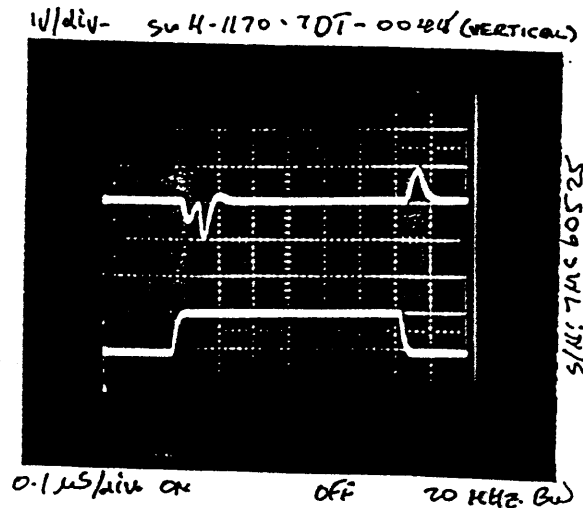
VERTICAL SCALE:  
1.0 V/DIVISION



AS MEASURED IN A  
20MHz BANDWIDTH

HORIZONTAL SCALE:  
0.1 $\mu$ S/DIVISION

VERTICAL SCALE:  
1.0 V/DIVISION



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