



TEST DATA

ON

10 MHz to 18 GHz

SPDT

LOW LOSS

ABSORPTIVE, PIN DIODE SWITCH

MODEL No: SWN-0118-2DT-133

(Serial No: 2MS411296)

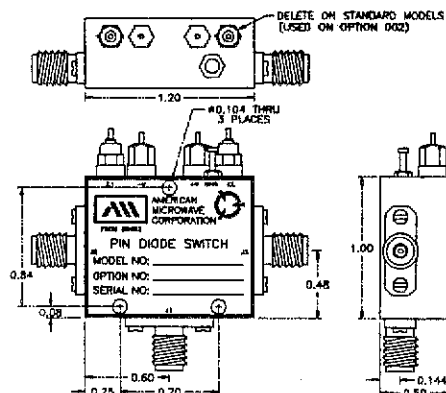
BY

**AMERICAN MICROWAVE
CORPORATION**

11 NOVEMBER 1994

SPDT 10 MHz to 18 GHz SWITCH/MODULATOR

- ABSORPTIVE
- ULTRA-WIDEBAND
- HIGH ISOLATION
- LOW CURRENT DRAW



AMC Model Number: SWN-0118-2DT-133

SPECIFICATIONS:

- **FREQUENCY** : 0.01 to 18.0 GHz
- **INSERTION LOSS** : 3.50dB MAX.
: ≤ 1.0 dB TYP. @ 0.01 to 0.5 GHz
: ≤ 1.7 dB TYP. @ 0.5 to 8.0 GHz
: ≤ 2.2 dB TYP. @ 8.0 to 14.0 GHz
: ≤ 3.0 dB TYP. @ 14.0 to 18.0 GHz
- **ISOLATION** : 60.0 dB MIN.
: > 70.0 dB TYP. @ 0.01 to 0.05 GHz
: ≥ 82.0 dB TYP. @ 0.05 to 1.0 GHz
: ≥ 80.0 dB TYP. @ 1.0 to 8.0 GHz
: ≥ 85.0 dB TYP. @ 8.0 to 18.0 GHz
- **VSWR** : 2.0:1 MAX.
- **SWITCHING SPEED** : On/Off 80nS MAX. (50nS Typical)
: Rise/Fall 20nS MAX. (10nS Typical)
- **DC POWER SUPPLY** : ± 5vdc @ ±50mA MAX. (Other Voltages Available)
- **RF INPUT POWER** : + 20 dBm Operating, 1 Watt Survival
- **SIZE SWN-218-2AT-133** : 1.2" X 1.0" X 0.5"
- **WEIGHT** : < 2.0 oz.

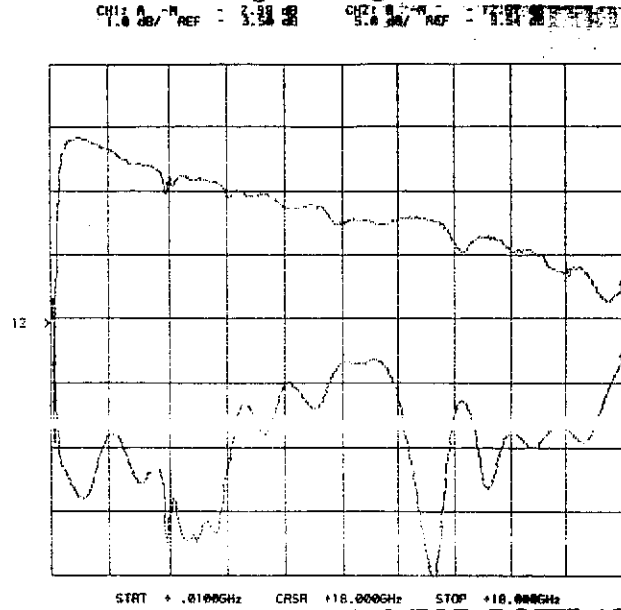
REFLECTIVE AND MULTI-THROW VERSIONS ALSO AVAILABLE

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SERIAL No : 2MS411296
 TECHNICIAN : RENE AFABLE
 CURRENT DRAW : +V = 20mA, -V = 17mA

INSERTION LOSS Vs VSWR
 J1 TO J2



TYPICAL MEASUREMENTS FOR BOTH ARMS:

FREQUENCY	INSERTION LOSS	RETURN LOSS
100 MHz	0.75 dB	20.50 dB
500 MHz	0.65 dB	20.00 dB
1.0 GHz	0.60 dB	22.40 dB
2.0 GHz	0.70 dB	17.50 dB
4.0 GHz	1.20 dB	24.50 dB
6.0 GHz	1.50 dB	15.50 dB
8.0 GHz	1.70 dB	15.00 dB
10.0 GHz	2.00 dB	12.50 dB
12.0 GHz	2.00 dB	29.54 dB
14.0 GHz	2.20 dB	21.54 dB
16.0 GHz	2.70 dB	16.70 dB
18.0 GHz	2.98 dB	12.57 dB

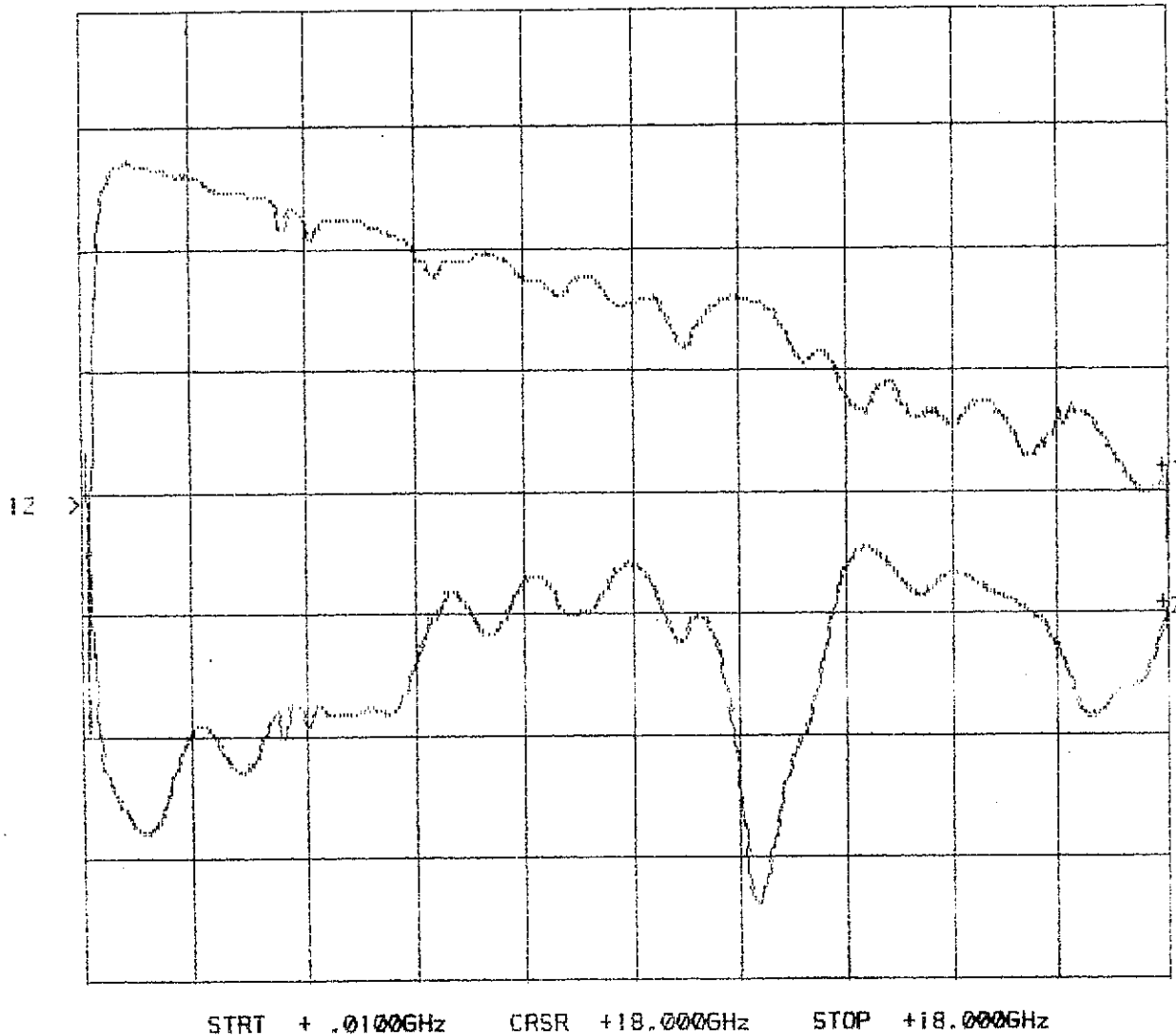
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SERIAL No : 2MS411296
TECHNICIAN : RENE AFABLE
CURRENT DRAW : +V = 20mA, -V = 17mA

INSERTION LOSS Vs VSWR J1 TO J3

CH1: A -M - 3.30 dB CH2: B -M - 14.17 dB
1.0 dB/ REF - 3.50 dB 5.0 dB/ REF - 9.54 dB



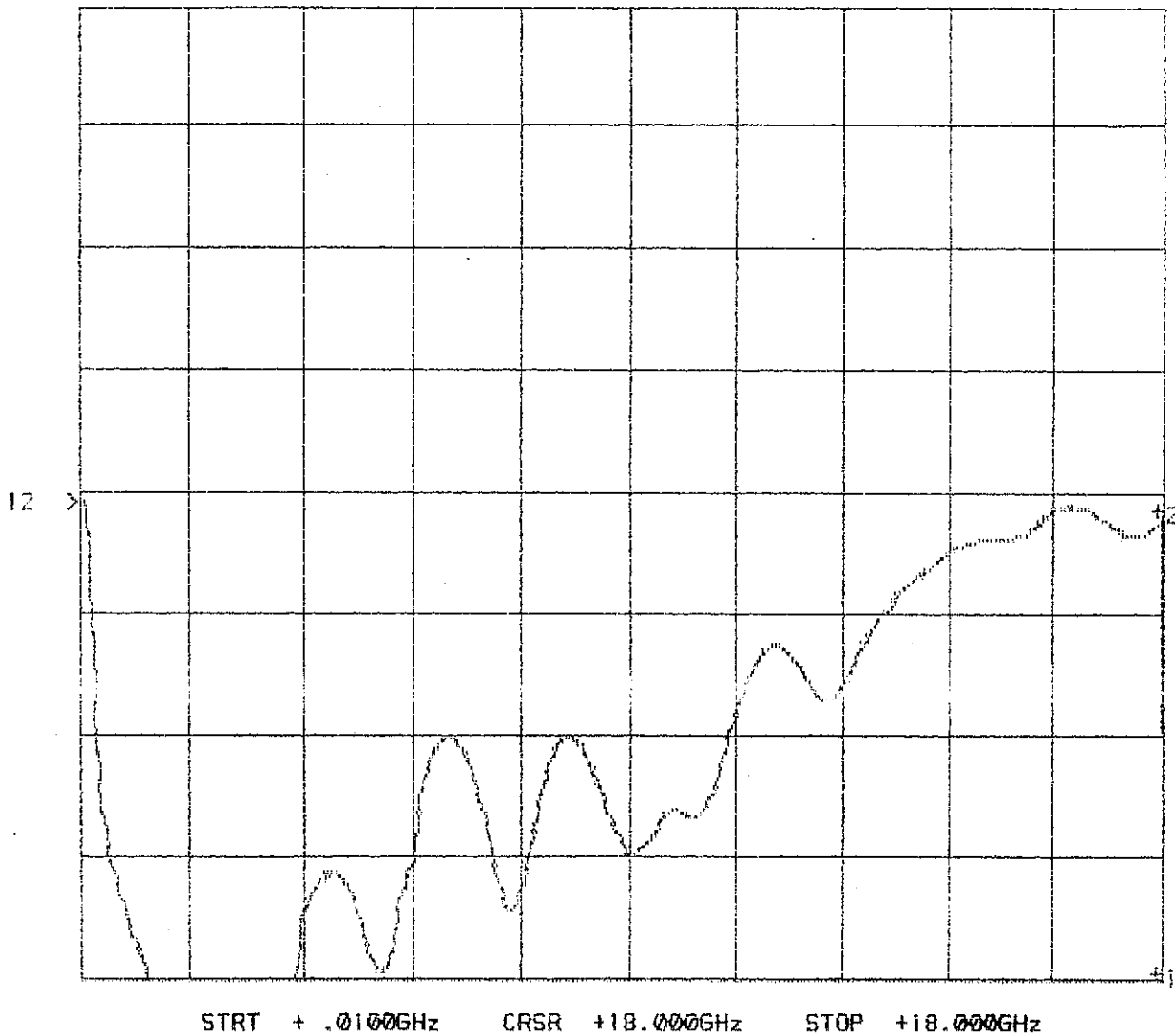
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SERIAL No : 2MS411296
TECHNICIAN : RENE AFABLE
CURRENT DRAW : +V = 20mA, -V = 17mA

VSWR INPUT OFF
J2 TO J1

CH1: A -M - 52.12 dB CH2: B -M - 10.30 dB
1.0 dB/ REF - 3.50 dB 5.0 dB/ REF - 9.54 dB



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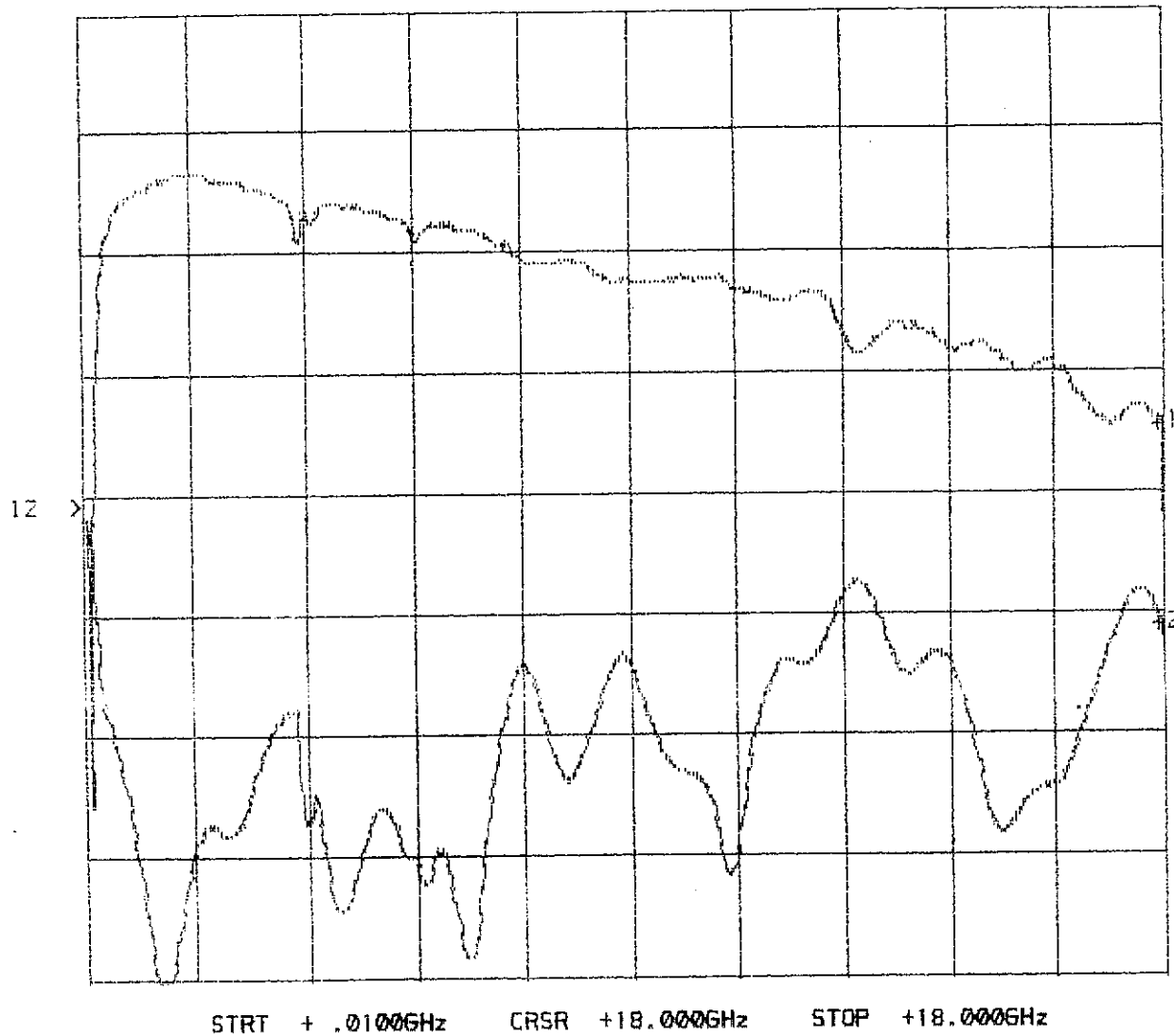
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SERIAL No : 2MS411296
TECHNICIAN : RENE AFABLE
CURRENT DRAW : +V = 20mA, -V = 17mA

VSWR OUTPUT ON
J2 TO J1

CH1: A -M - 2.96 dB CH2: B -M - 15.14 dB
1.0 dB/ REF - 3.50 dB 5.0 dB/ REF - 9.54 dB



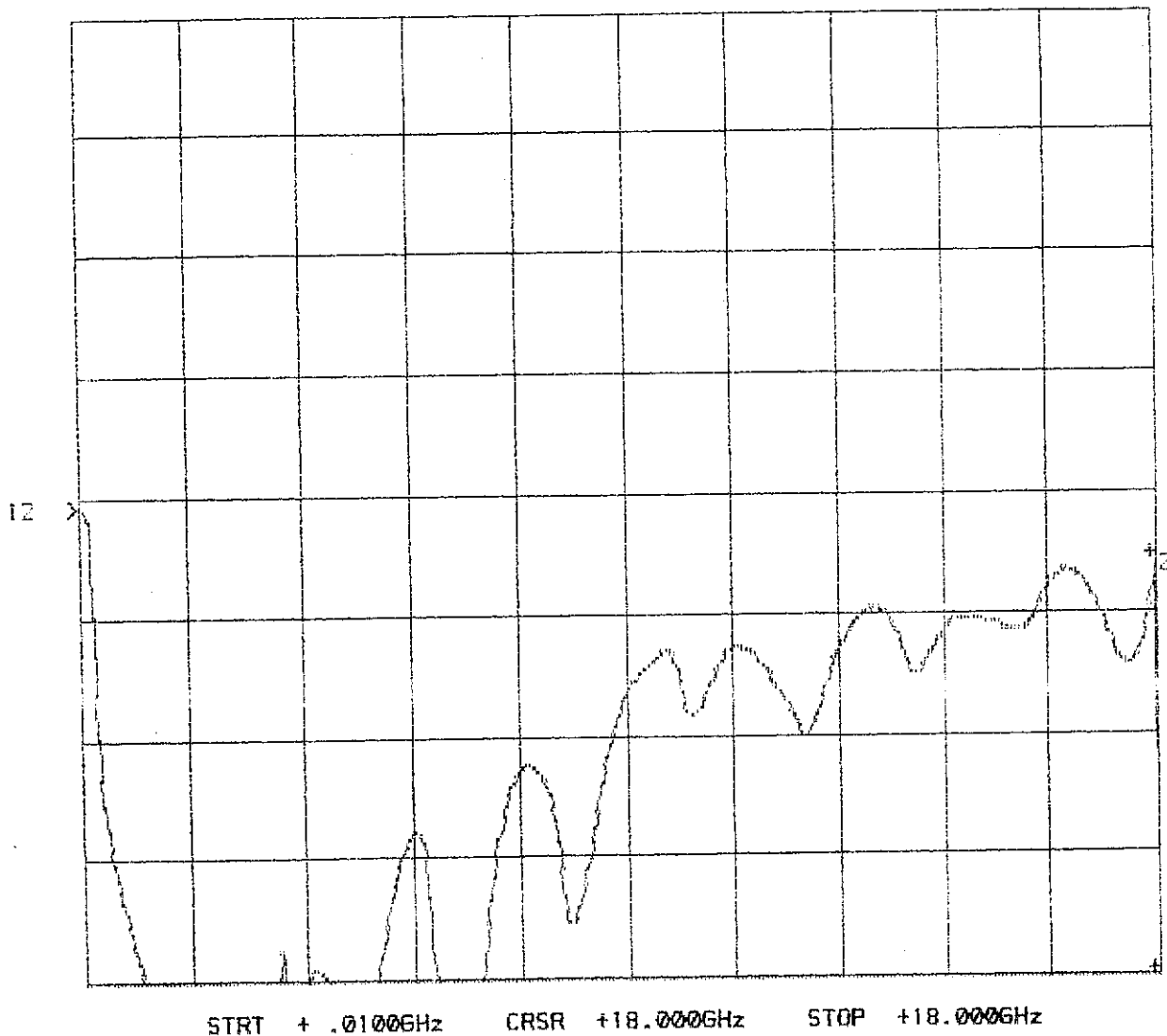
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SERIAL No : 2MS411296
TECHNICIAN : RENE AFABLE
CURRENT DRAW : +V = 20mA, -V = 17mA

VSWR OUTPUT OFF J3 TO J1

CH1: A -M - 52.07 dB CH2: B -M - 10.00 dB
1.0 dB/ REF - 3.50 dB 5.0 dB/ REF - 9.54 dB



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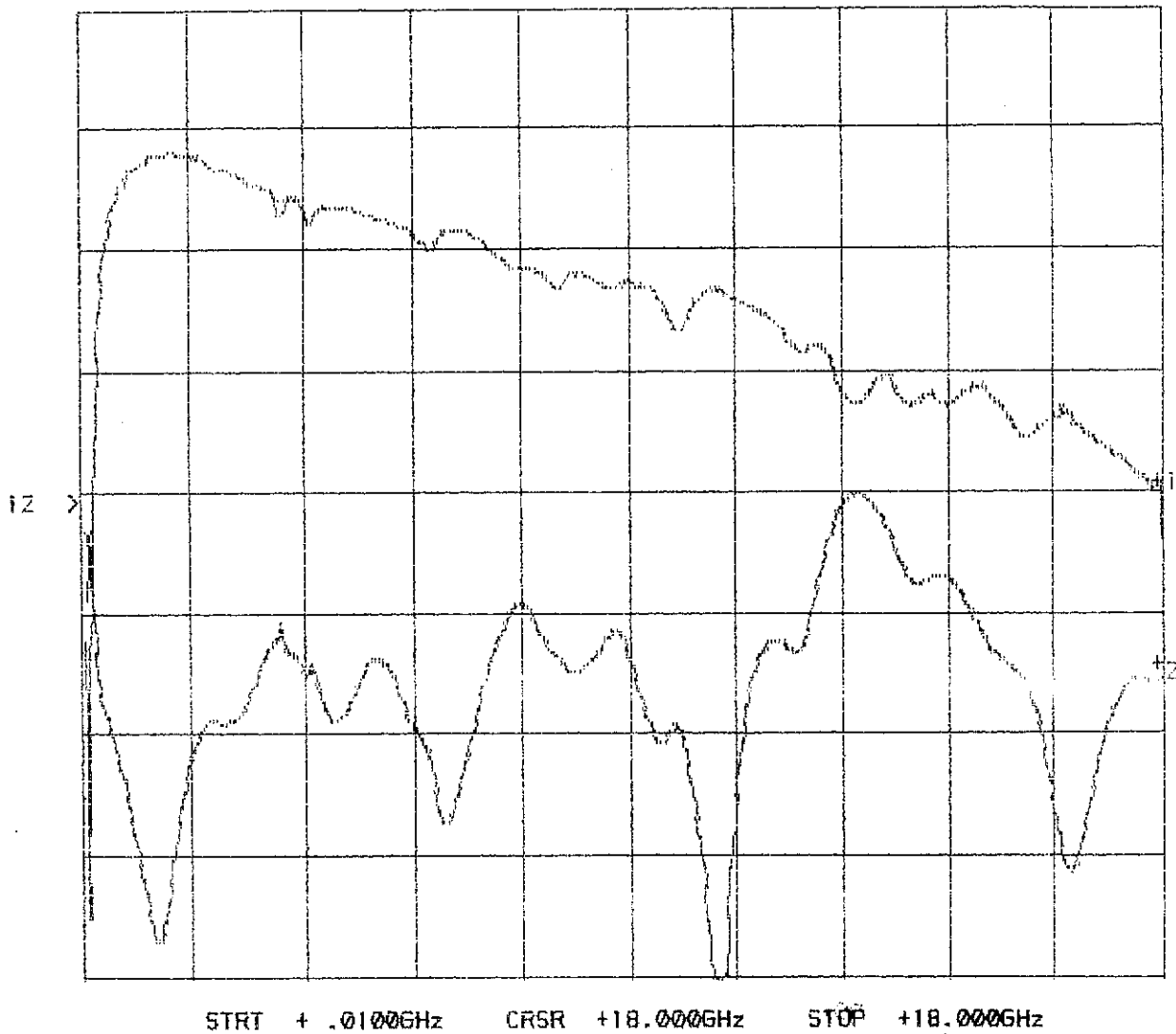
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SERIAL No : 2MS411296
TECHNICIAN : RENE AFABLE
CURRENT DRAW : +V = 20mA, -V = 17mA

VSWR OUTPUT ON
J3 TO J1

CH1: A -M - 3.43 dB CH2: B -M - 16.73 dB
1.0 dB/ REF - 3.50 dB 5.0 dB/ REF - 9.54 dB



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SERIAL No : 2MS411296
TECHNICIAN : RENE AFABLE
CURRENT DRAW : +V = 20mA, -V = 17mA

ISOLATION
(MEASURED ON A SPECTRUM ANALYZER AND RECORDED)

FREQUENCY	MEASURED ISOLATION
0.01 GHz	62dB
0.02 GHz	74dB
0.03 GHz	78dB
0.05 GHz	74dB
0.1 GHz	84dB
0.25 GHz	82dB
0.5 GHz	80dB
1.0 GHz	82dB
2.0 GHz	90dB
4.0 GHz	90dB
6.0 GHz	84dB
8.0 GHz	84dB
10.0 GHz	> 90dB
12.0 GHz	88dB
14.0 GHz	82dB
18.0 GHz	76dB

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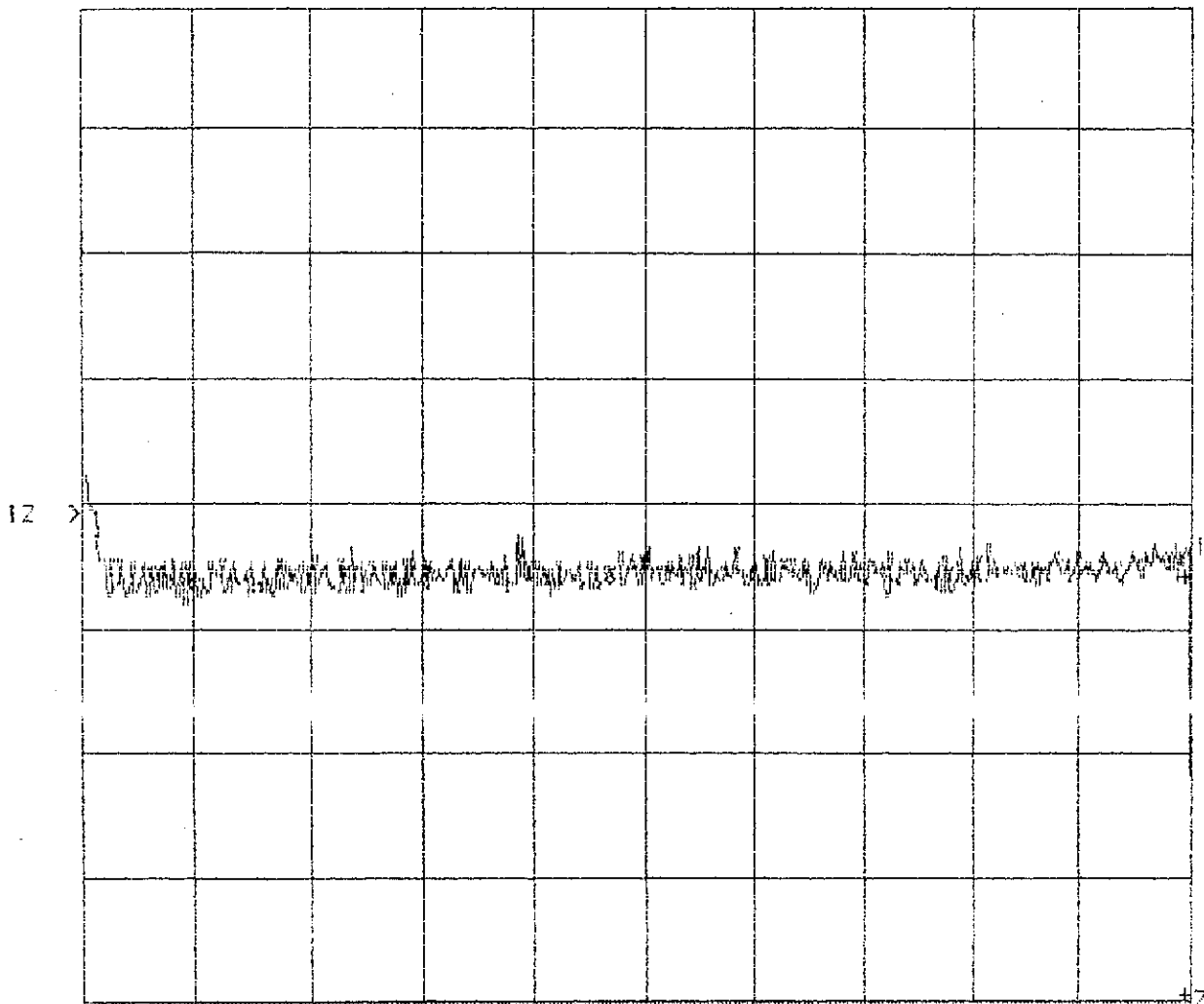


SERIAL No : 2MS411296
TECHNICIAN : RENE AFABLE
CURRENT DRAW : +V = 20mA, -V = 17mA

**ISOLATION
J1 TO J2**

(AS MEASURE ON A NETWORK ANALYSER)

CH1: A	-M	- 71.80 dB	CH2: B	-M	- 48.45 dB
20.0 dB/	REF	- 60.00 dB	5.0 dB/	REF	- 9.54 dB



STRT + .0100GHz CRSR +18.000GHz STOP +18.000GHz

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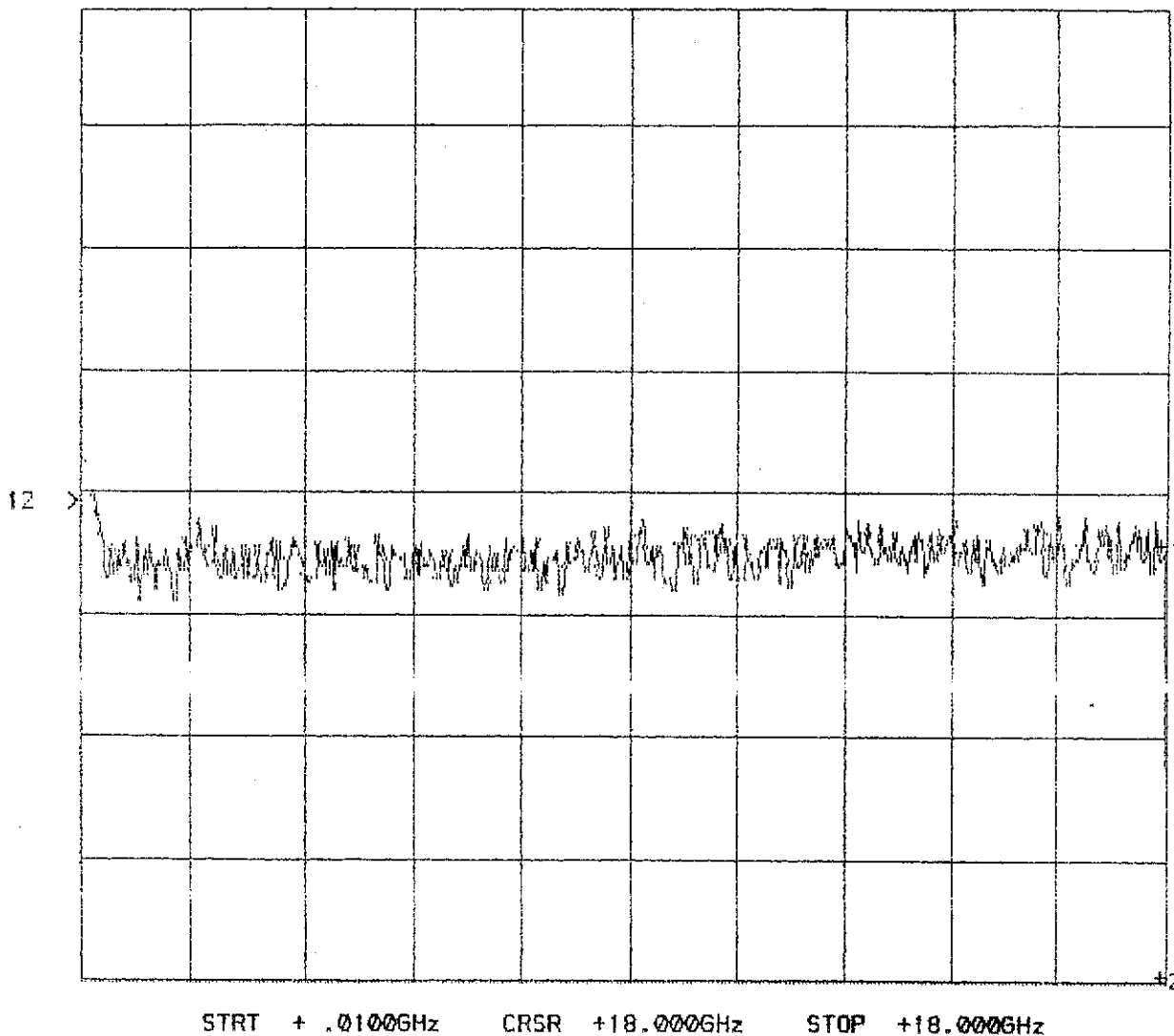


SERIAL No : 2MS411296
TECHNICIAN : RENE AFABLE
CURRENT DRAW : +V = 20mA, -V = 17mA

ISOLATION J1 TO J3

(AS MEASURE ON A NETWORK ANALYSER)

CH1: A -M - 68.83 dB CH2: B -M - 47.33 dB
20.0 dB/ REF - 60.00 dB 5.0 dB/ REF - 9.54 dB



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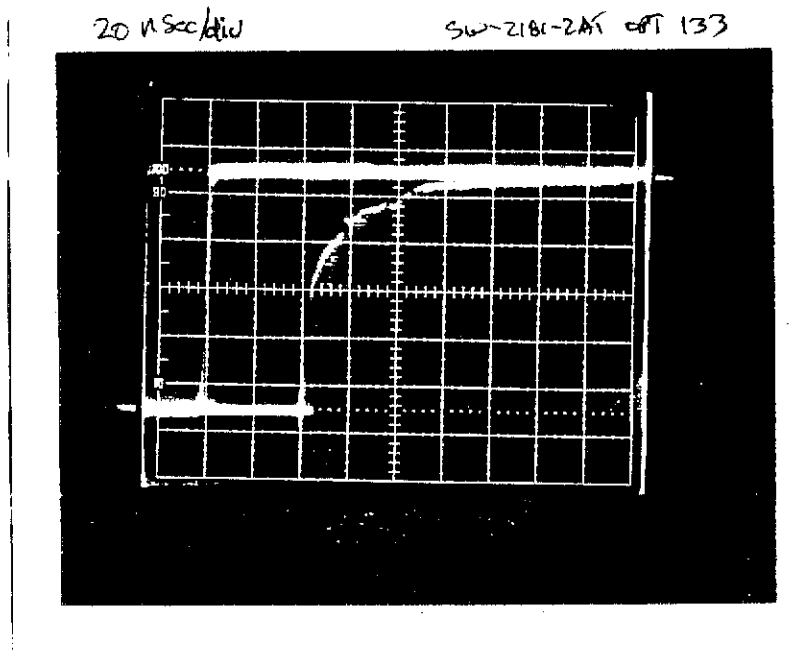


SERIAL No : 2MS411296
TECHNICIAN : RENE AFABLE
CURRENT DRAW : +V = 20mA, -V = 17mA

SWITCHING SPEED

20nS PER DIVISION

DELAY ON:



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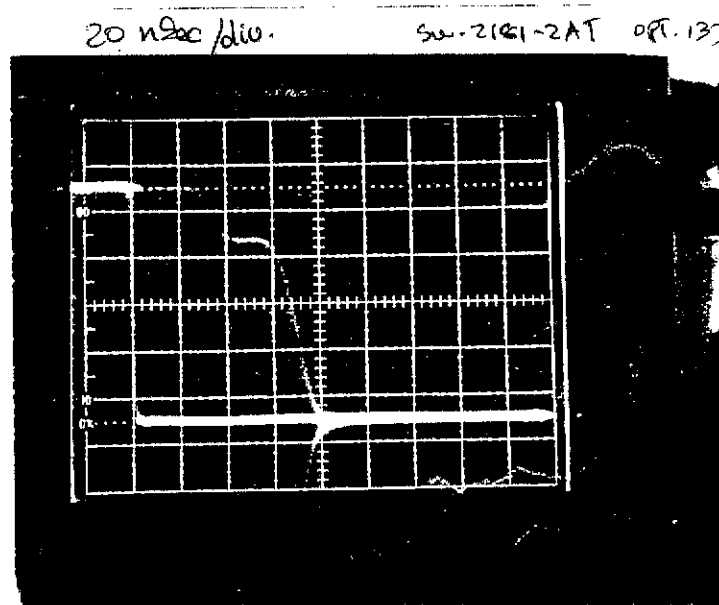


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TECHNICIAN : RENE AFABLE
CURRENT DRAW : +V = 20mA, -V = 17mA

SWITCHING SPEED

20nS PER DIVISION

DELAY OFF:



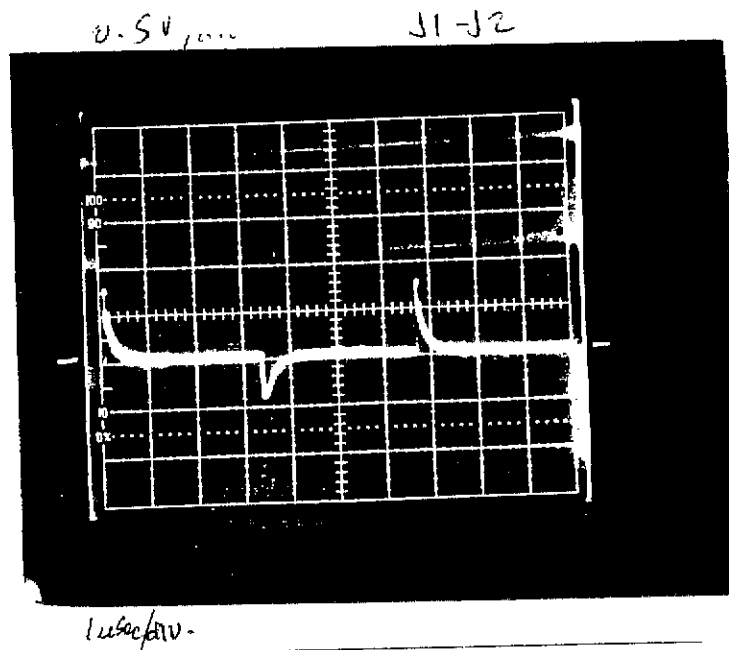
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SERIAL No : 2MS411296
TECHNICIAN : RENE AFABLE
CURRENT DRAW : +V = 20mA, -V = 17mA

VIDEO TRANSIENTS
J1 TO J2

Vertical
Scale:
0.5 volts
Per Division



Horizontal Scale: 1μSec Per Division

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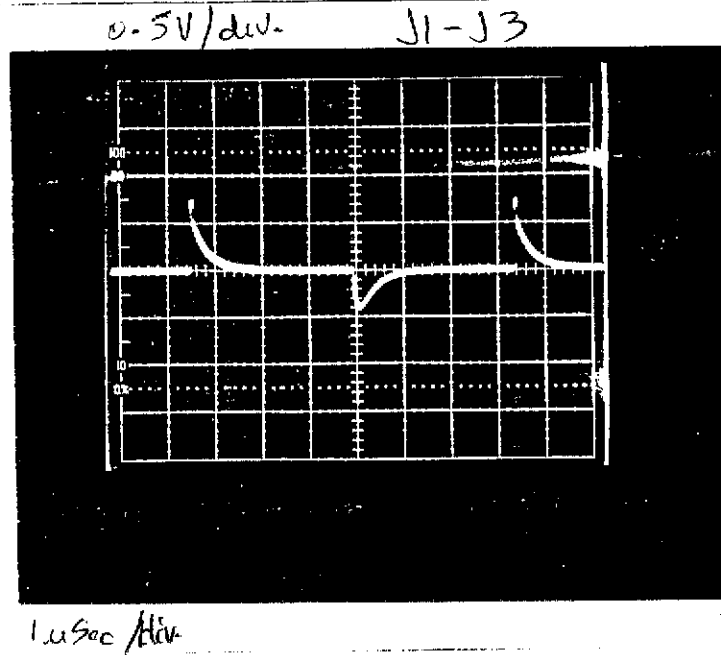
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SERIAL No : 2MS411296
TECHNICIAN : RENE AFABLE
CURRENT DRAW : +V = 20mA, -V = 17mA

VIDEO TRANSIENTS
J1 TO J3

Vertical
Scale:
0.5 volts
Per Division



Horizontal Scale: 1 μ Sec Per Division

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