



TEST DATA
ON
0.5 GHz TO 20 GHz
BROADBAND
LOW CURRENT
REFLECTIVE
SP10T
RECTANGULAR SWITCH
AMC MODEL No:
MSN-0520-10DR-S OPTION RS
(Serial Number: 10MS212007)

PREPARED AND TESTED
BY
RENE AFABLE

JANUARY 7, 2003

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

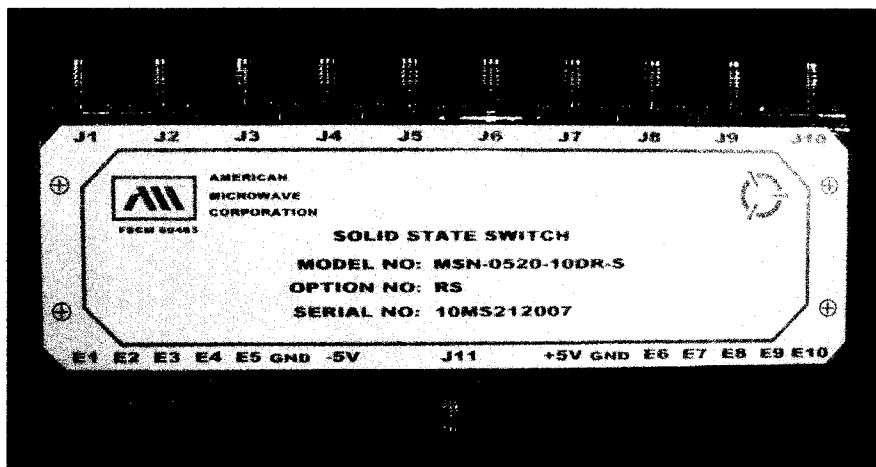


**AMERICAN MICROWAVE
CORPORATION**

SP10T REFLECTIVE RECTANGULAR SWITCH

KEY FEATURES

- 0.5 GHz TO 20 GHz
- BROADBAND
- LOW CURRENT
- TTL LOGIC COMPATIBLE



AMC MODEL No: MSN-0520-10DR-S OPTION RS

SPECIFICATIONS: (REFLECTIVE)

- | | | |
|-----------------------------------|---|---|
| ● FREQUENCY RANGE | : | 0.5 GHz to 20 GHz (Other Frequencies Available) |
| ● INSERTION LOSS | : | SEE PLOTS |
| ● ISOLATION | : | SEE PLOTS |
| ● VSWR | : | 2.0:1 |
| ● SWITCHING SPEED | : | "RISE" 50nS MAX., 30nS TYP. |
| | : | "FALL" 150nS MAX., 120nS TYP. |
| | : | "ON" 200nS MAX., 120nS TYP. |
| | : | "OFF" 200nS MAX., 120nS TYP. |
| ● CONTROL | : | TTL Compatible (Independent control available) |
| ● VIDEO TRANSIENTS | : | ≤5 V Peak to Peak @ 300 MHZ Bandwidth |
| | : | ≤3 V Peak to Peak @ 20 MHZ Bandwidth |
| ● RF INPUT POWER | : | +20 dBm (Other power Levels available) |
| ● DC POWER SUPPLY | : | +5vdc @ 10mA MAX.; -5VDC @ 60mA MAX. |
| (Other supply voltages available) | : | |
| ● SIZE | : | 5.00"(L) X 1.50"(W) X 0.40"(H) |
| ● WEIGHT | : | ≤ 5.5 oz. |

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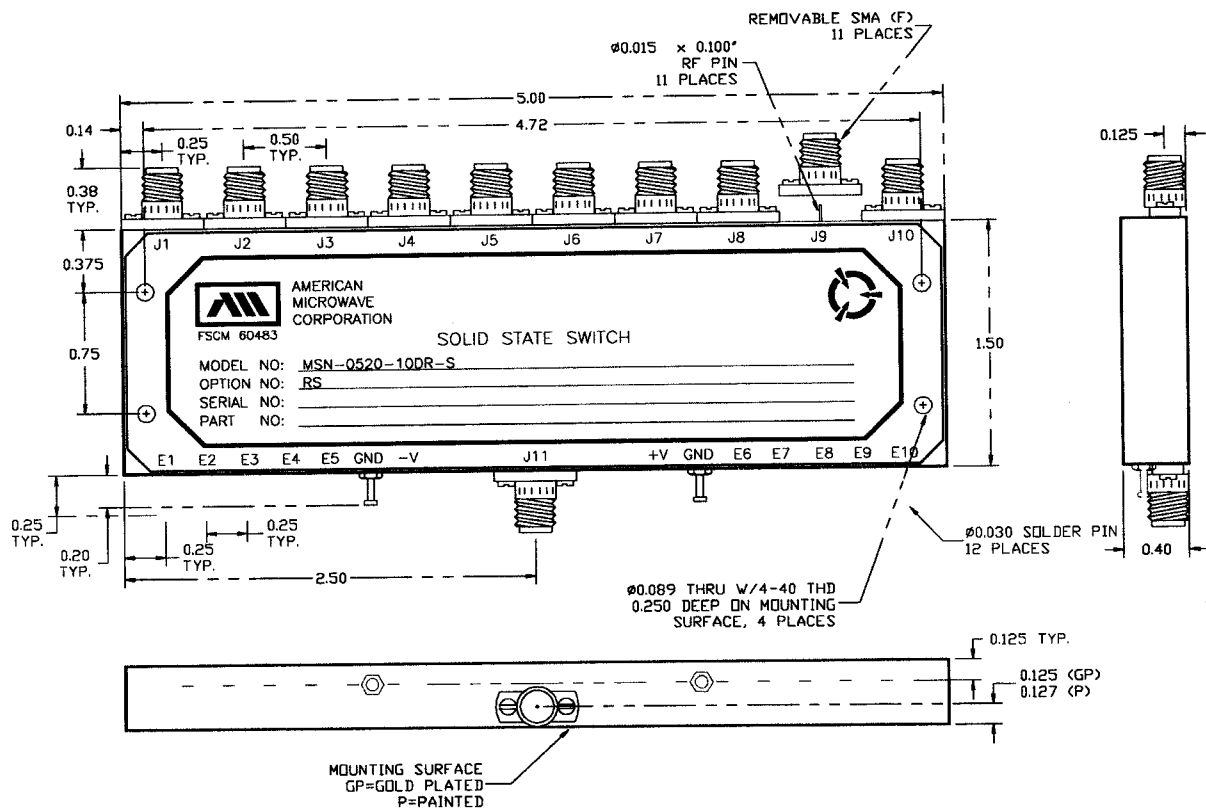
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SUMMARY TEST DATA

MODEL NUMBER
 SERIAL NUMBER
 ENGINEER
 VOLTAGE & CURRENT DRAW

: MSN-0520-10DR-S OPTION RS
 : 10MS03001
 : RENE AFABLE
 : +5vdc @ 7mA; -5vdc @ 40mA



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.

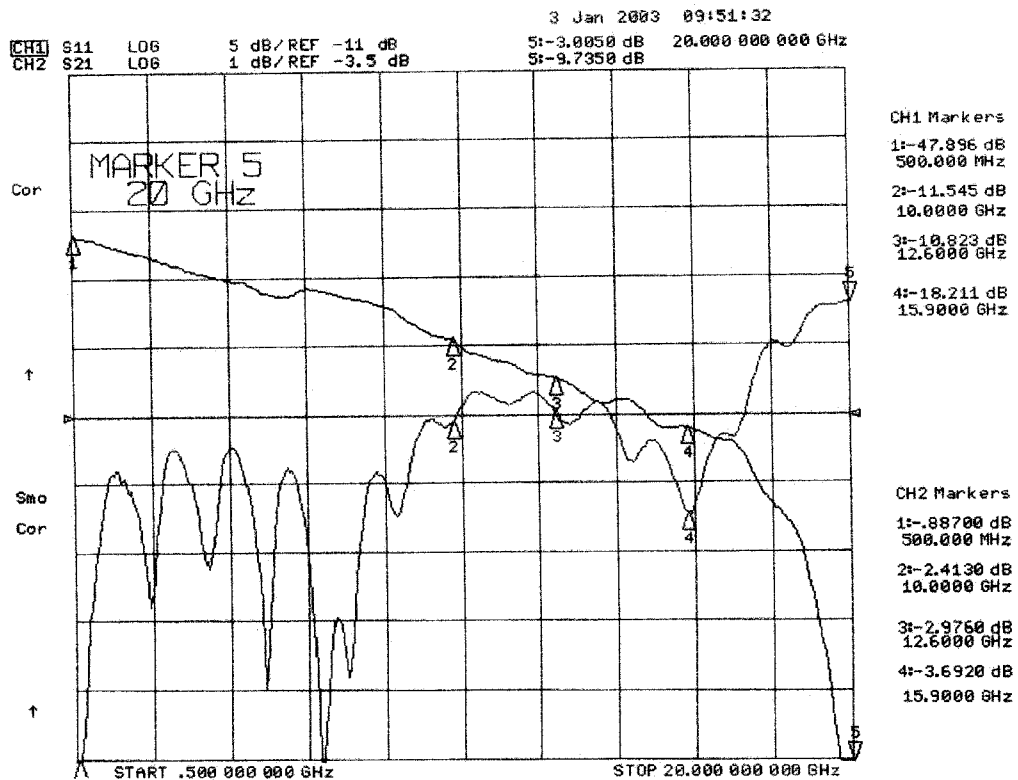


SUMMARY TEST DATA

MODEL NUMBER
 SERIAL NUMBER
 ENGINEER
 VOLTAGE & CURRENT DRAW

: MSN-0520-10DR-S OPTION RS
 : 10MS03001
 : RENE AFABLE
 : +5vdc @ 7mA; -5vdc @ 40mA

INSERTION LOSS PLOTS J11-J1



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SUMMARY TEST DATA

MODEL NUMBER

SERIAL NUMBER

ENGINEER

VOLTAGE & CURRENT DRAW

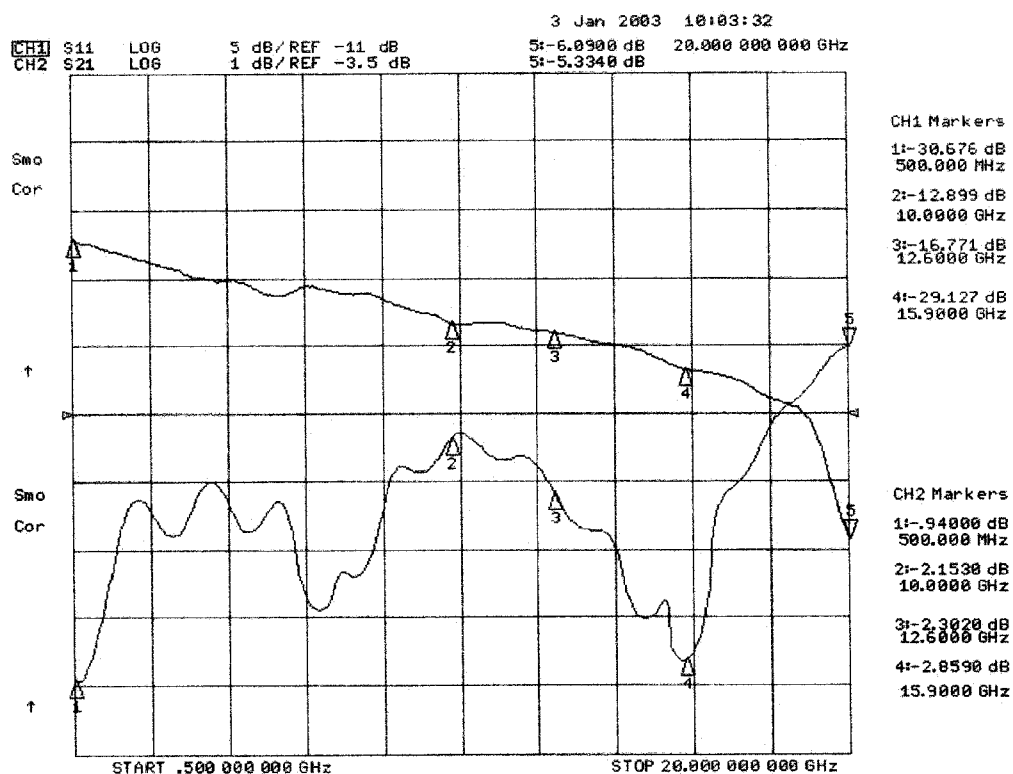
: MSN-0520-10DR-S OPTION RS

: 10MS03001

: RENE AFABLE

: +5vdc @ 7mA; -5vdc @ 40mA

INSERTION LOSS PLOTS J11-J2



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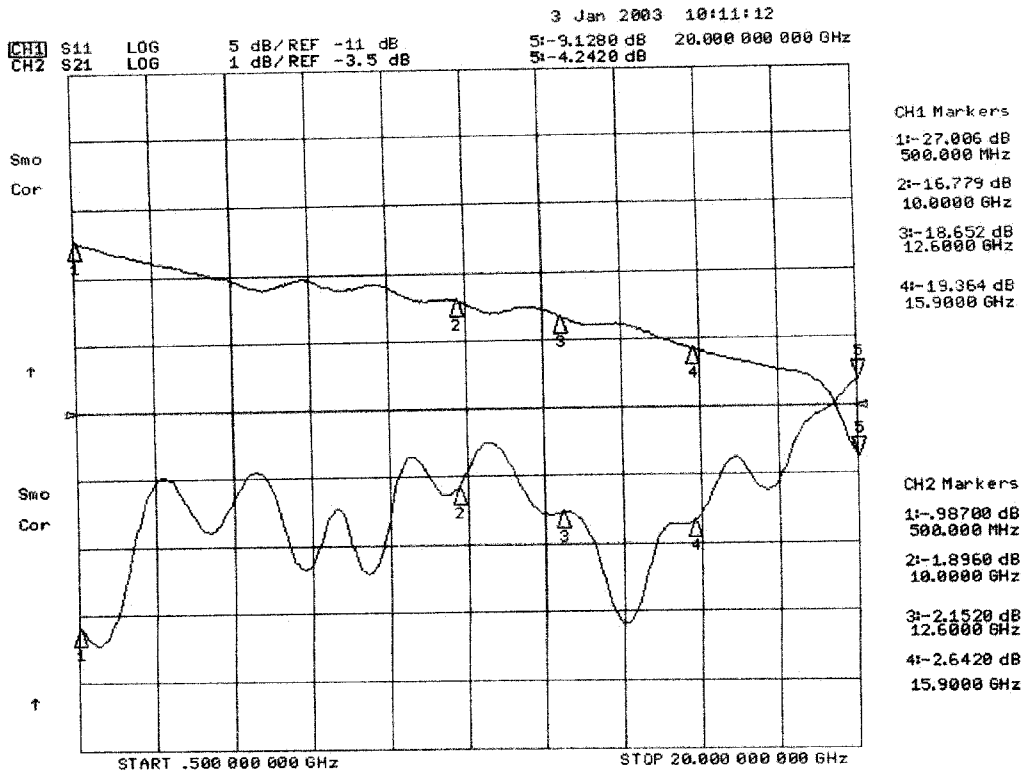


SUMMARY TEST DATA

MODEL NUMBER
 SERIAL NUMBER
 ENGINEER
 VOLTAGE & CURRENT DRAW

: MSN-0520-10DR-S OPTION RS
 : 10MS03001
 : RENE AFABLE
 : +5vdc @ 7mA; -5vdc @ 40mA

INSERTION LOSS PLOTS J11-J3



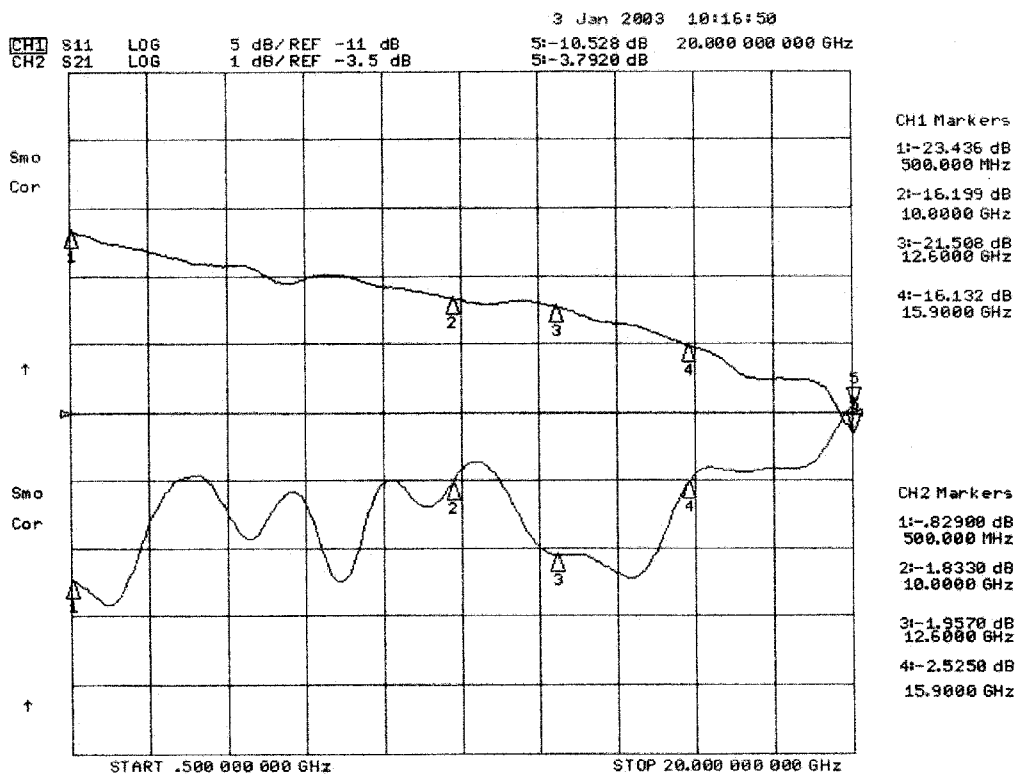
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SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

INSERTION LOSS PLOTS J11-J4



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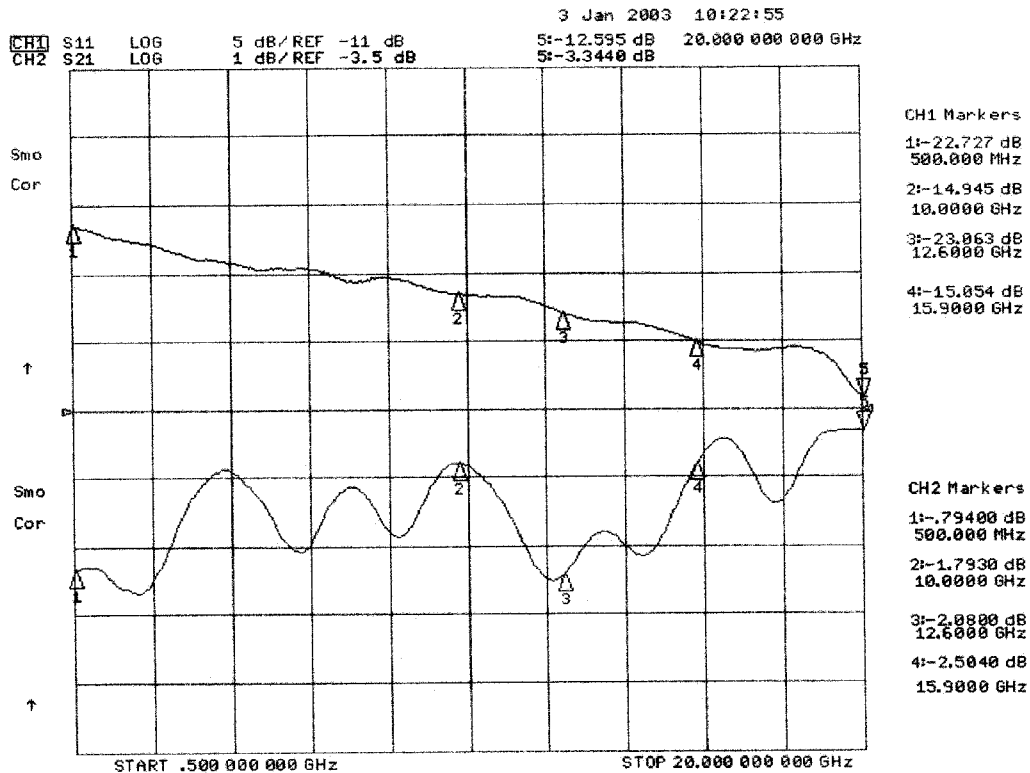


SUMMARY TEST DATA

MODEL NUMBER
 SERIAL NUMBER
 ENGINEER
 VOLTAGE & CURRENT DRAW

: MSN-0520-10DR-S OPTION RS
 : 10MS03001
 : RENE AFABLE
 : +5vdc @ 7mA; -5vdc @ 40mA

INSERTION LOSS PLOTS J11-J5



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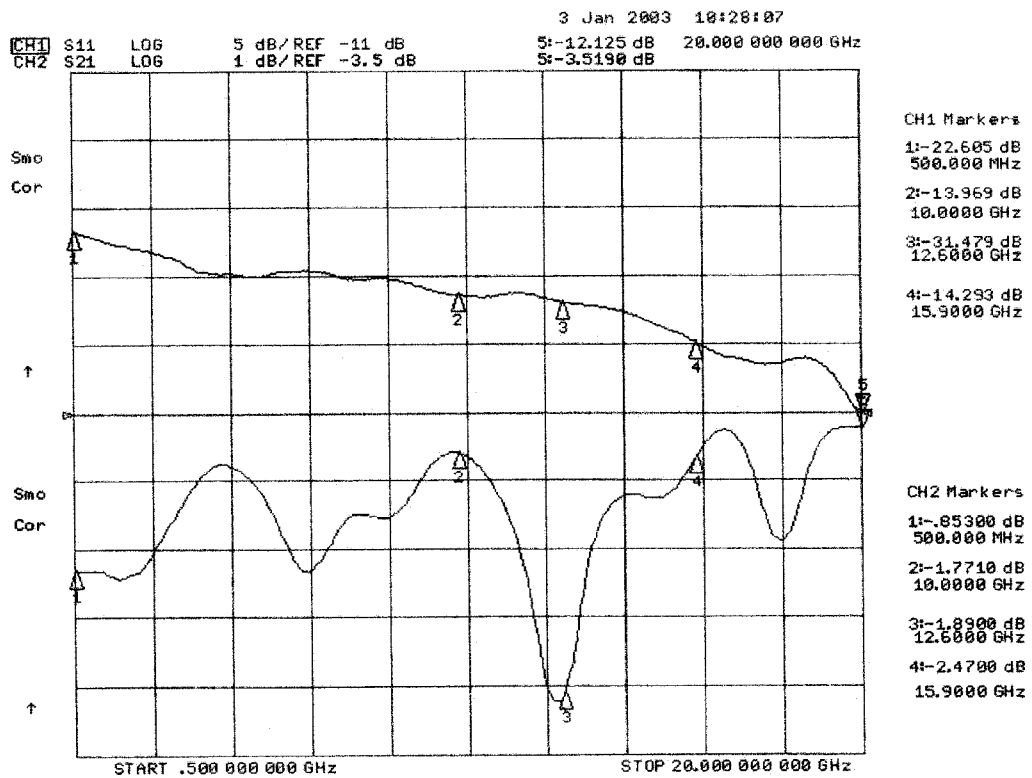


SUMMARY TEST DATA

MODEL NUMBER
SERIAL NUMBER
ENGINEER
VOLTAGE & CURRENT DRAW

: MSN-0520-10DR-S OPTION RS
: 10MS03001
: RENE AFABLE
: +5vdc @ 7mA; -5vdc @ 40mA

INSERTION LOSS PLOTS J11-J6



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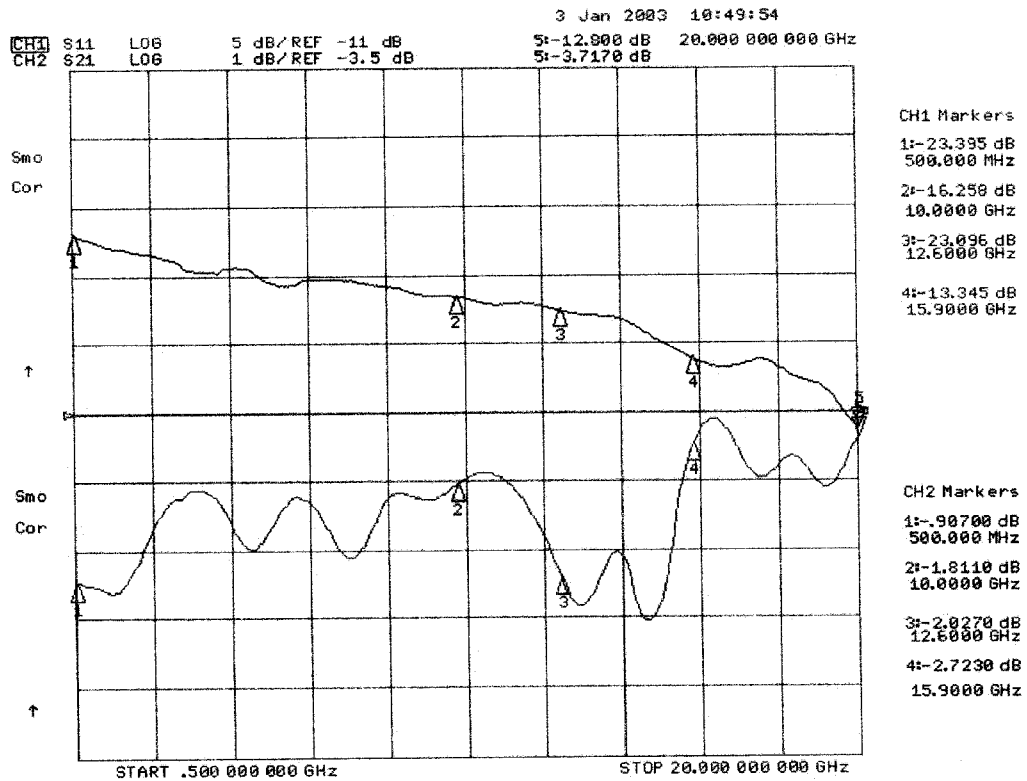


SUMMARY TEST DATA

MODEL NUMBER
SERIAL NUMBER
ENGINEER
VOLTAGE & CURRENT DRAW

: MSN-0520-10DR-S OPTION RS
: 10MS03001
: RENE AFABLE
: +5vdc @ 7mA; -5vdc @ 40mA

INSERTION LOSS PLOTS J11-J7



JANUARY 7, 2003

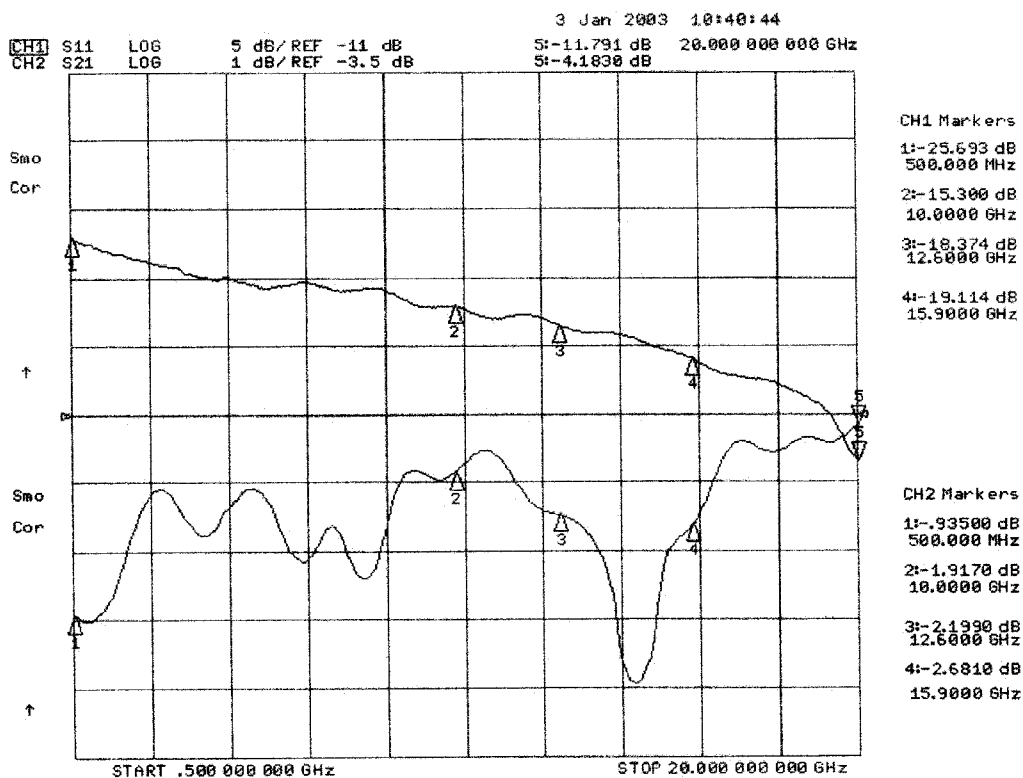


SUMMARY TEST DATA

MODEL NUMBER
 SERIAL NUMBER
 ENGINEER
 VOLTAGE & CURRENT DRAW

: MSN-0520-10DR-S OPTION RS
 : 10MS03001
 : RENE AFABLE
 : +5vdc @ 7mA; -5vdc @ 40mA

INSERTION LOSS PLOTS J11-J8



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SUMMARY TEST DATA

MODEL NUMBER

: MSN-0520-10DR-S OPTION RS

SERIAL NUMBER

: 10MS03001

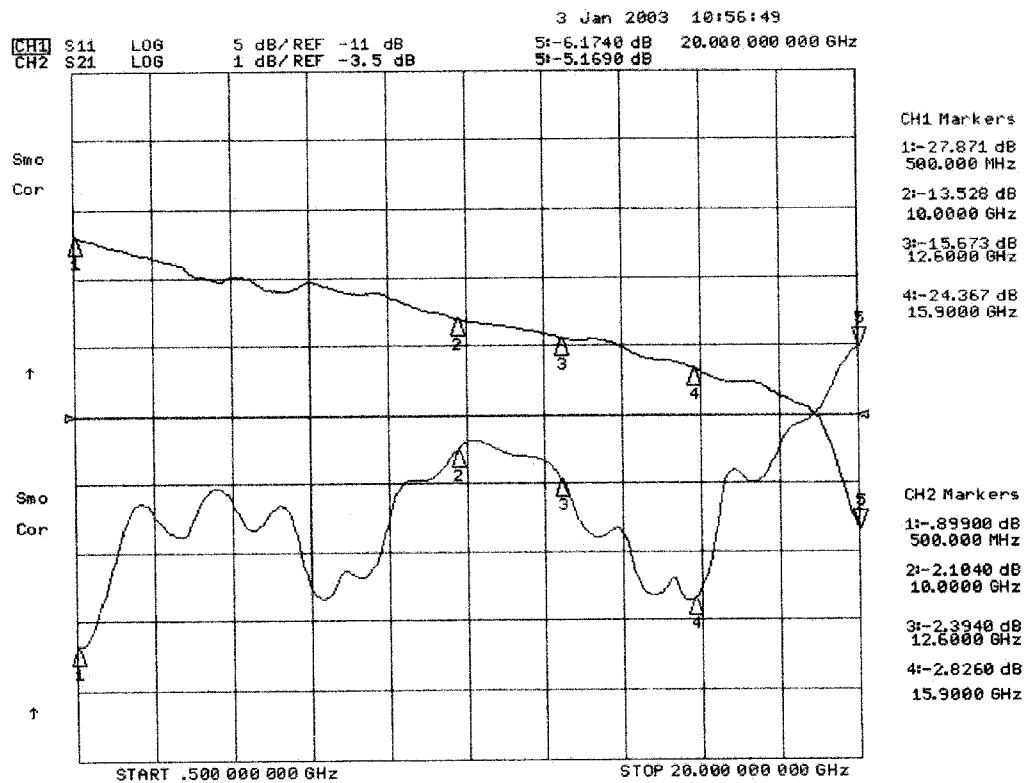
ENGINEER

: RENE AFABLE

VOLTAGE & CURRENT DRAW

: +5vdc @ 7mA; -5vdc @ 40mA

INSERTION LOSS PLOTS J11-J9



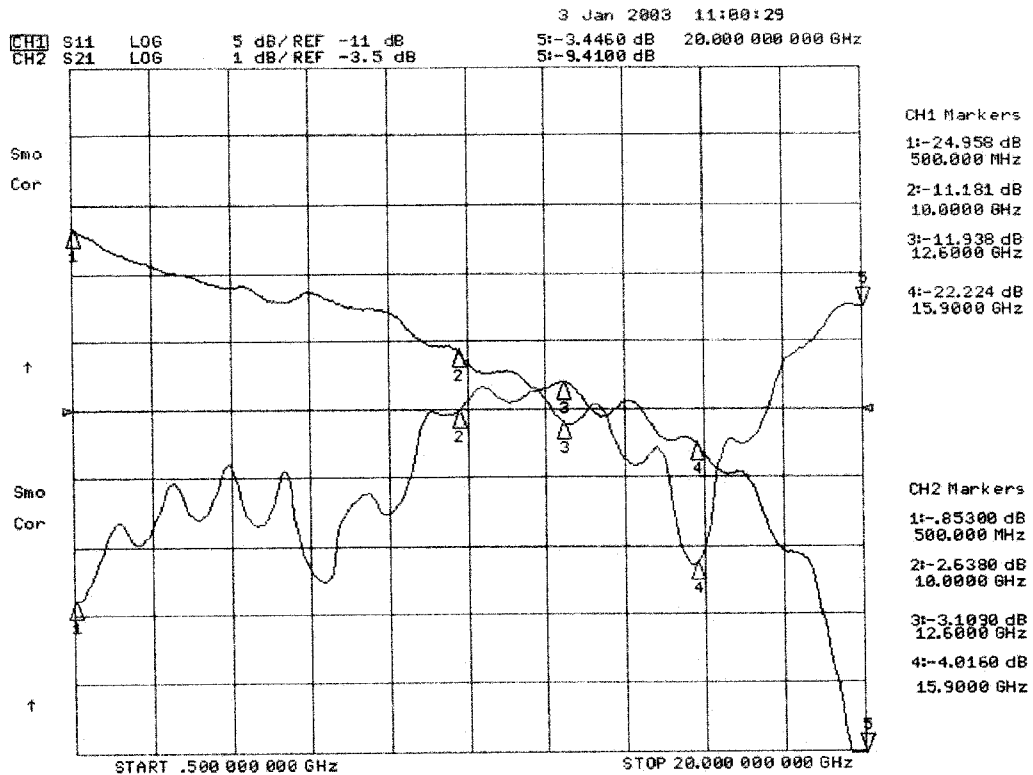
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

INSERTION LOSS PLOTS J11-J10



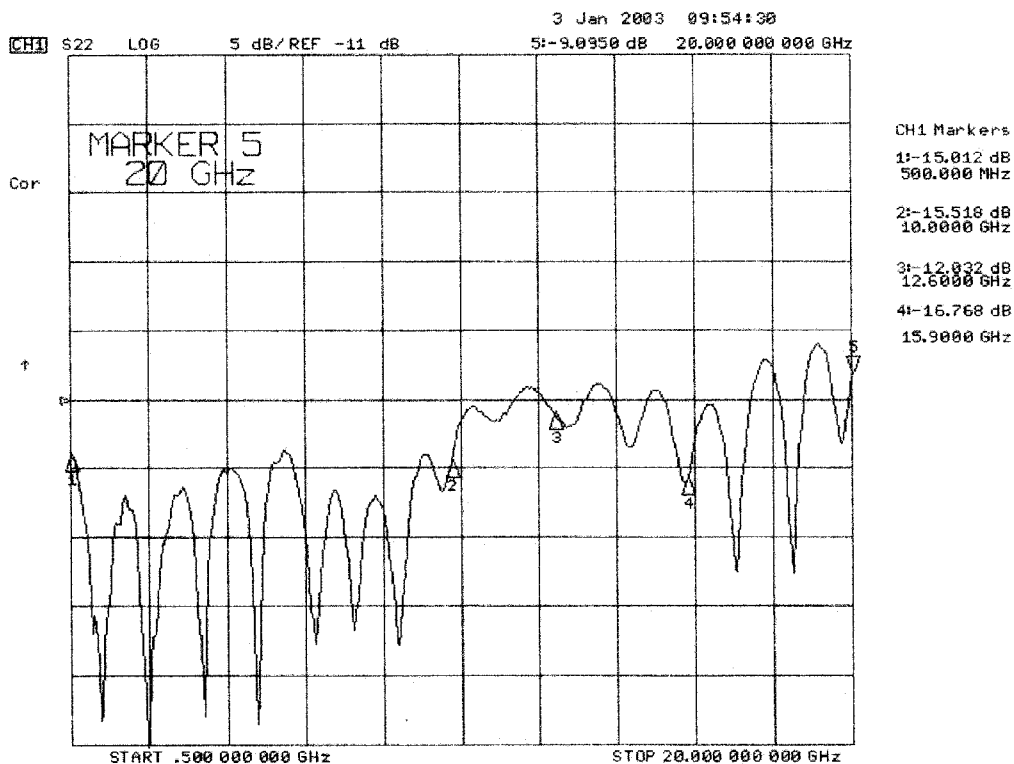
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

OUTPUT VSWR J1-J11



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SUMMARY TEST DATA

MODEL NUMBER

: MSN-0520-10DR-S OPTION RS

SERIAL NUMBER

: 10MS03001

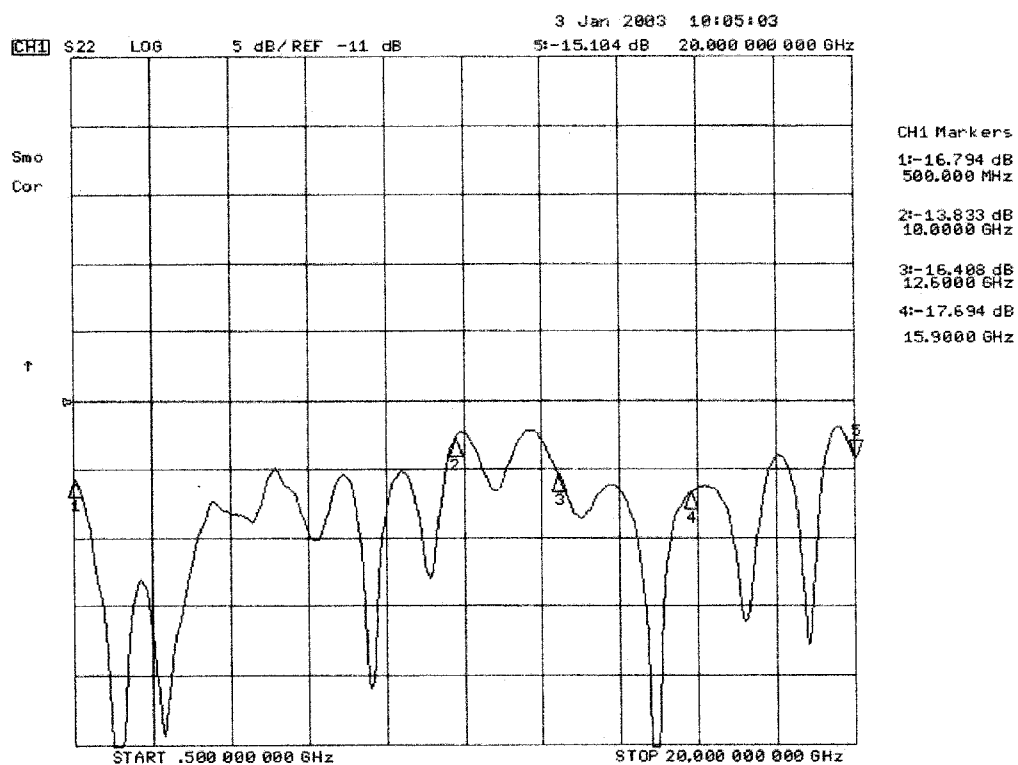
ENGINEER

: RENE AFABLE

VOLTAGE & CURRENT DRAW

: +5vdc @ 7mA; -5vdc @ 40mA

OUTPUT VSWR J2-J11



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SUMMARY TEST DATA

MODEL NUMBER

: MSN-0520-10DR-S OPTION RS

SERIAL NUMBER

: 10MS03001

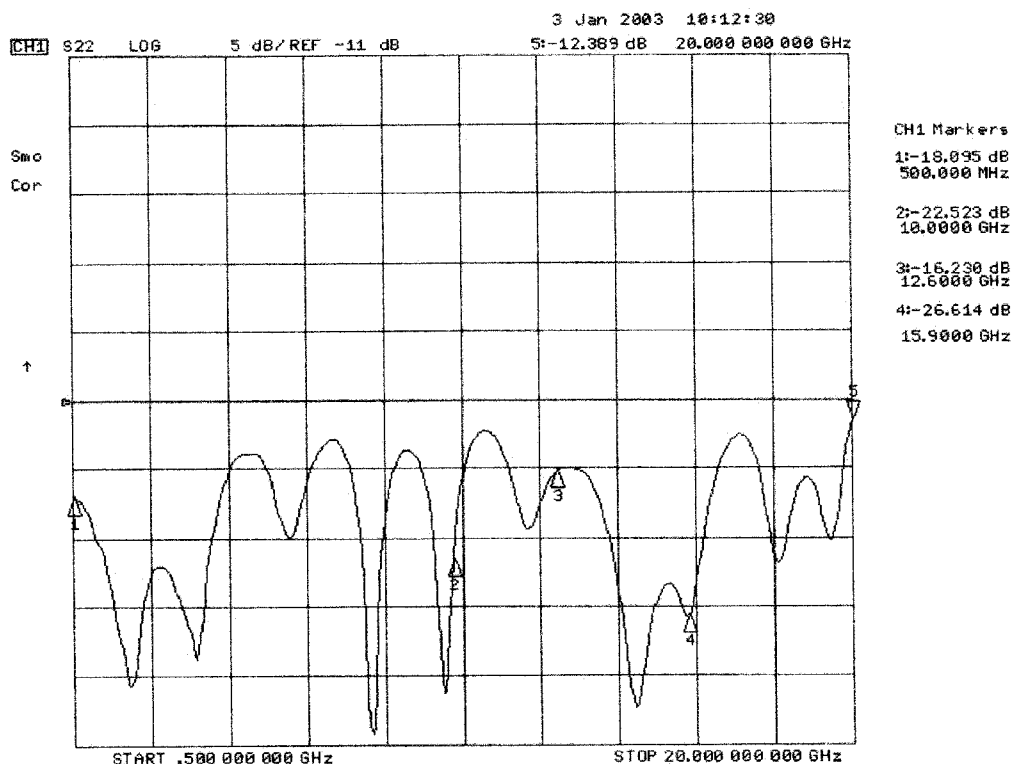
ENGINEER

: RENE AFABLE

VOLTAGE & CURRENT DRAW

: +5vdc @ 7mA; -5vdc @ 40mA

OUTPUT VSWR J3-J11



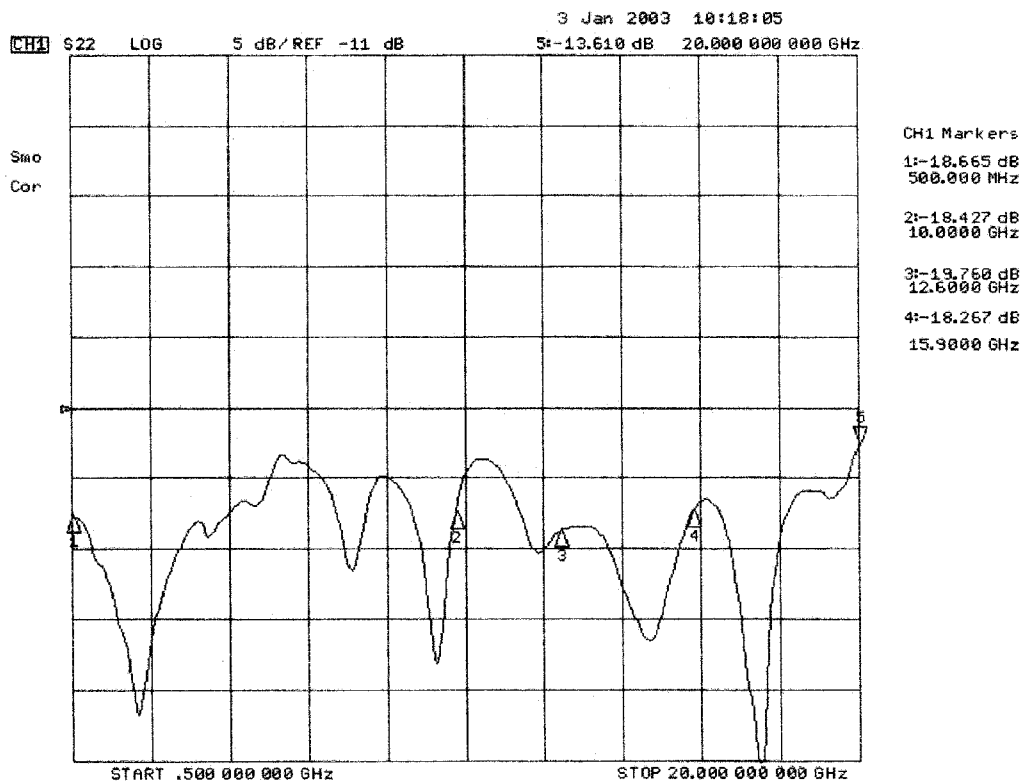
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

OUTPUT VSWR J4-J11



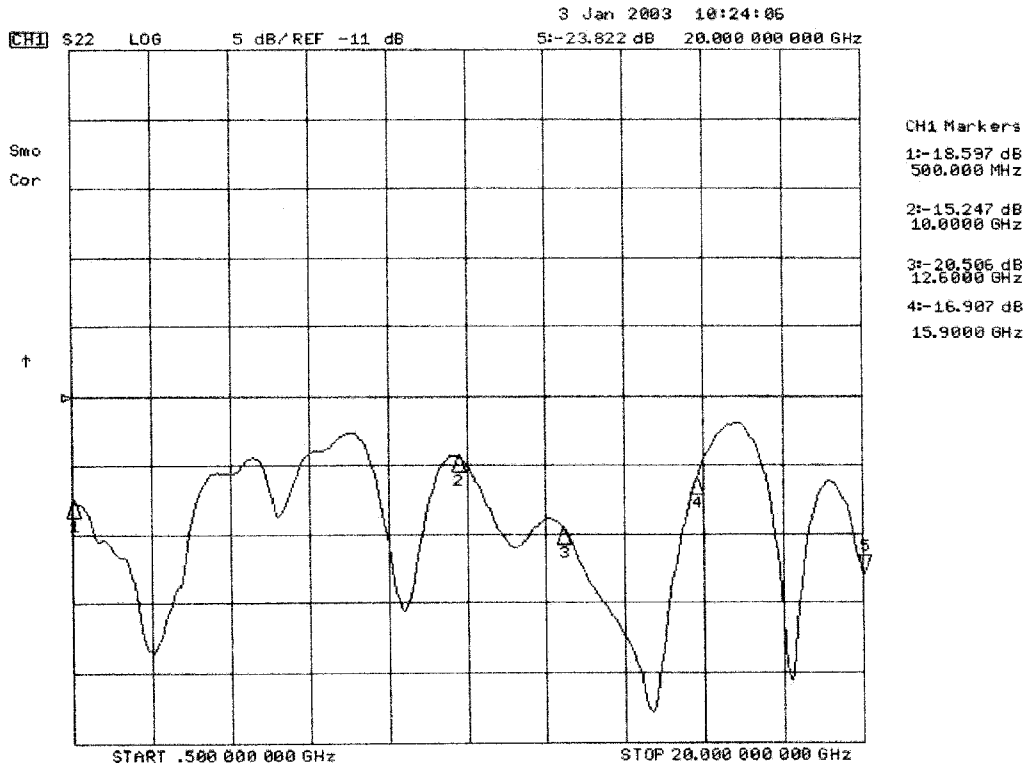
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

**OUTPUT VSWR
J5-J11**



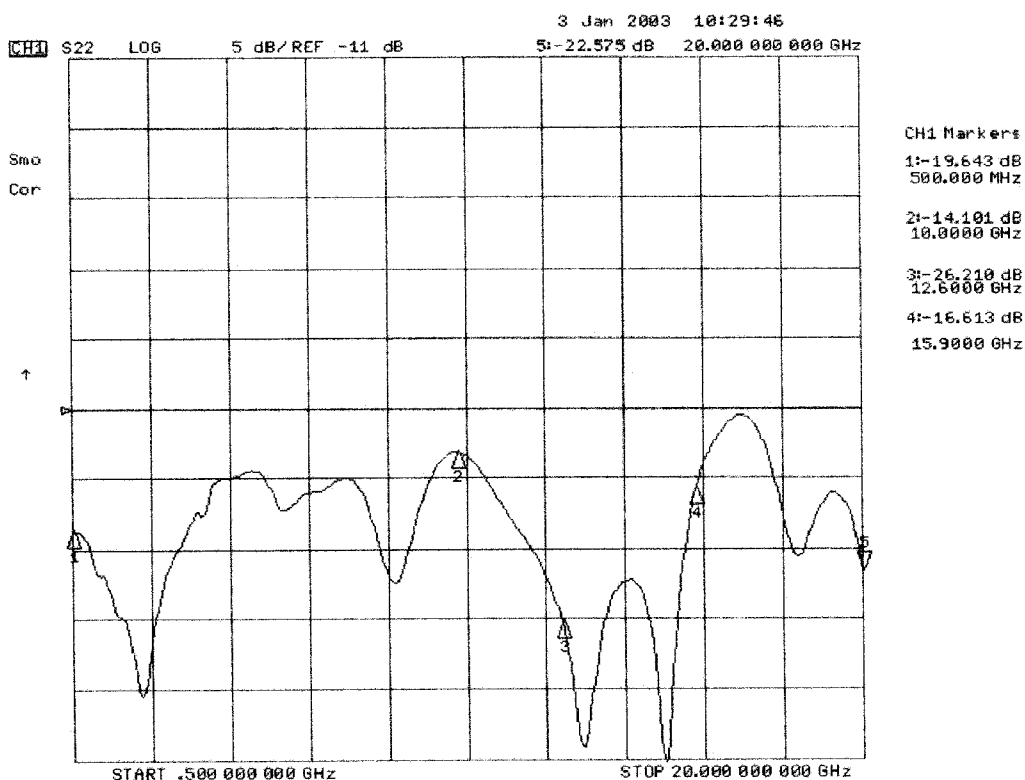
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

OUTPUT VSWR J6-J11



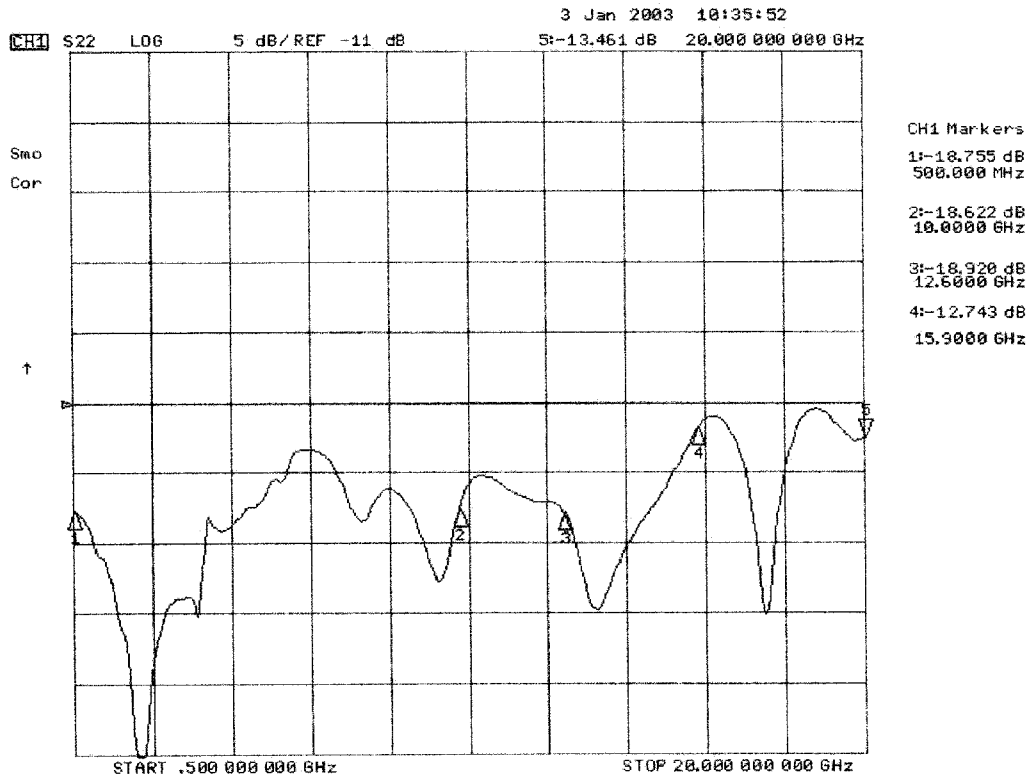
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

OUTPUT VSWR J7-J11



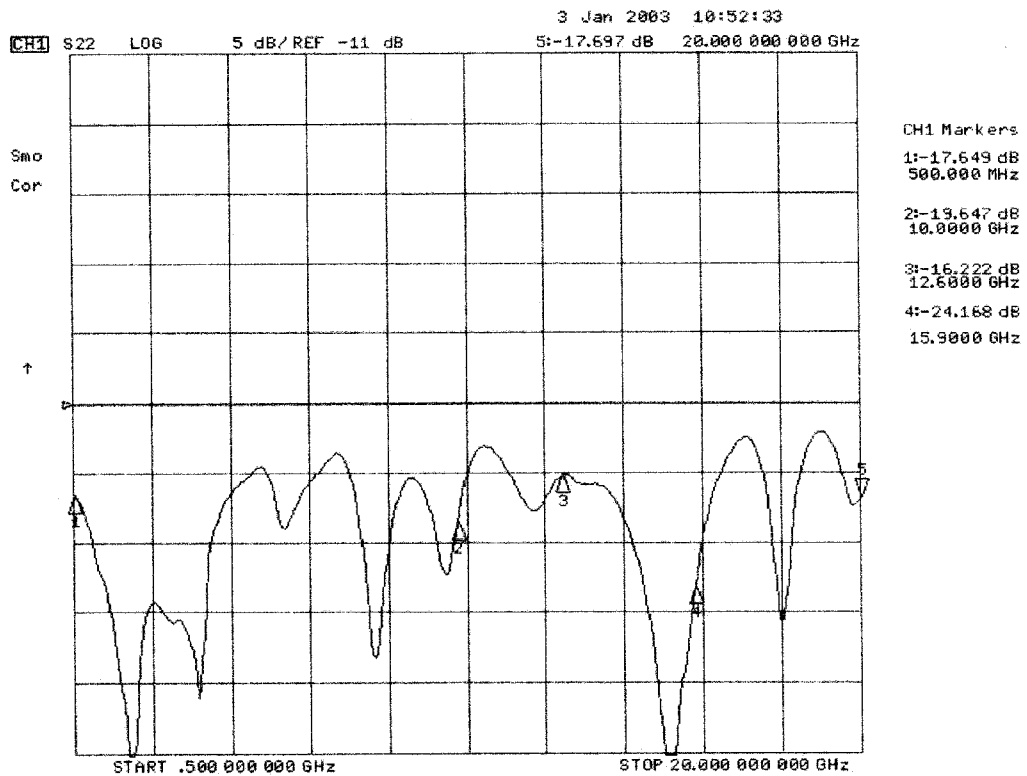
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

OUTPUT VSWR J8-J11



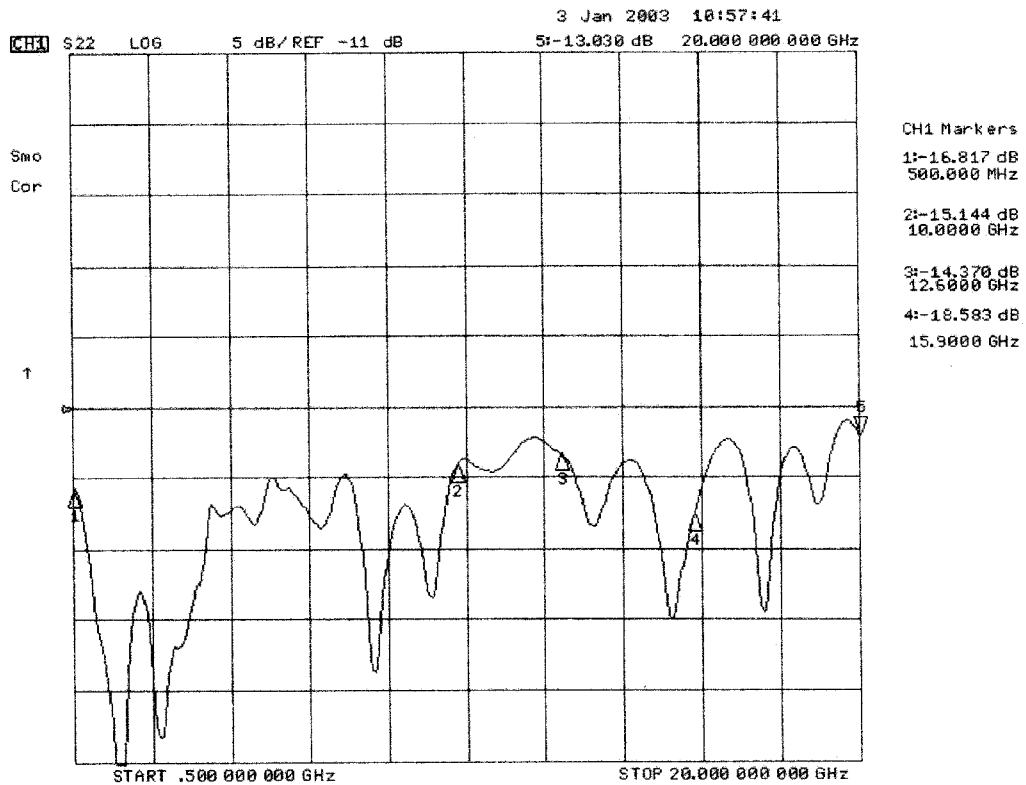
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

OUTPUT VSWR J9-J11



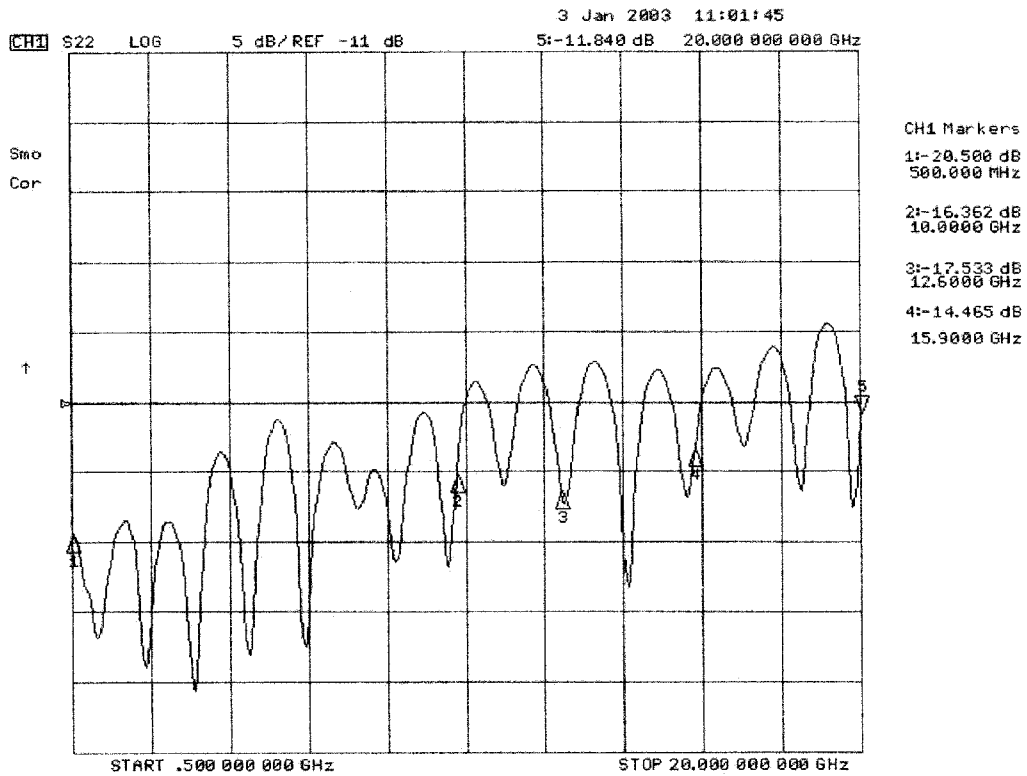
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

OUTPUT VSWR J10-J11



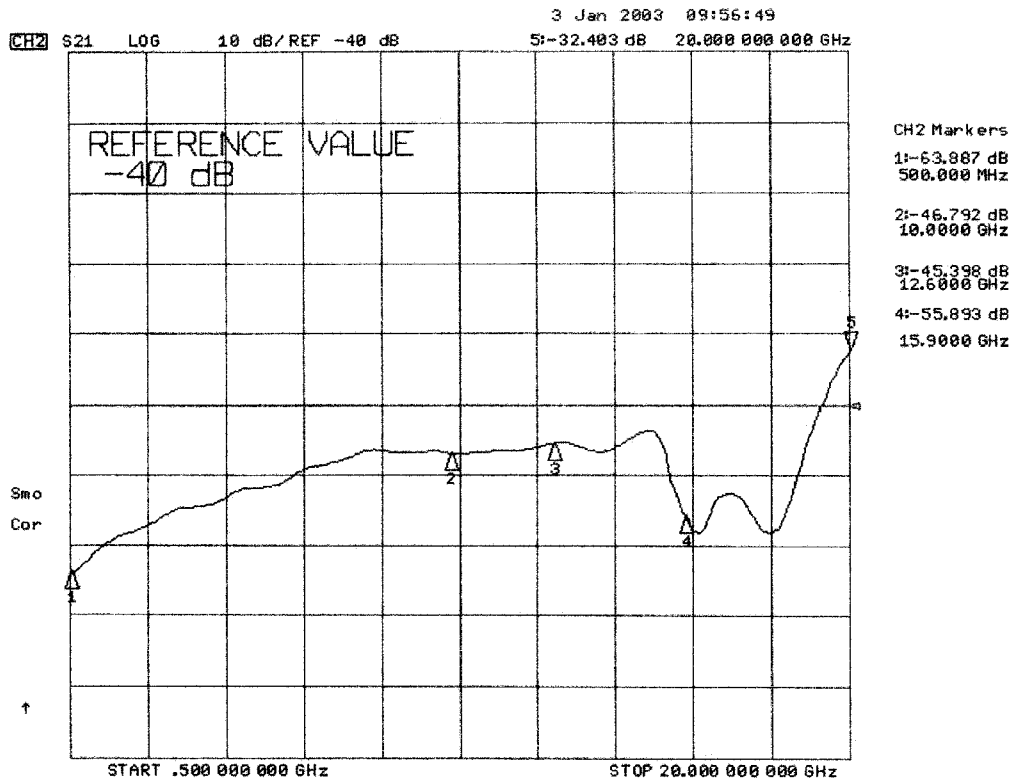
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

ISOLATION J11-J1



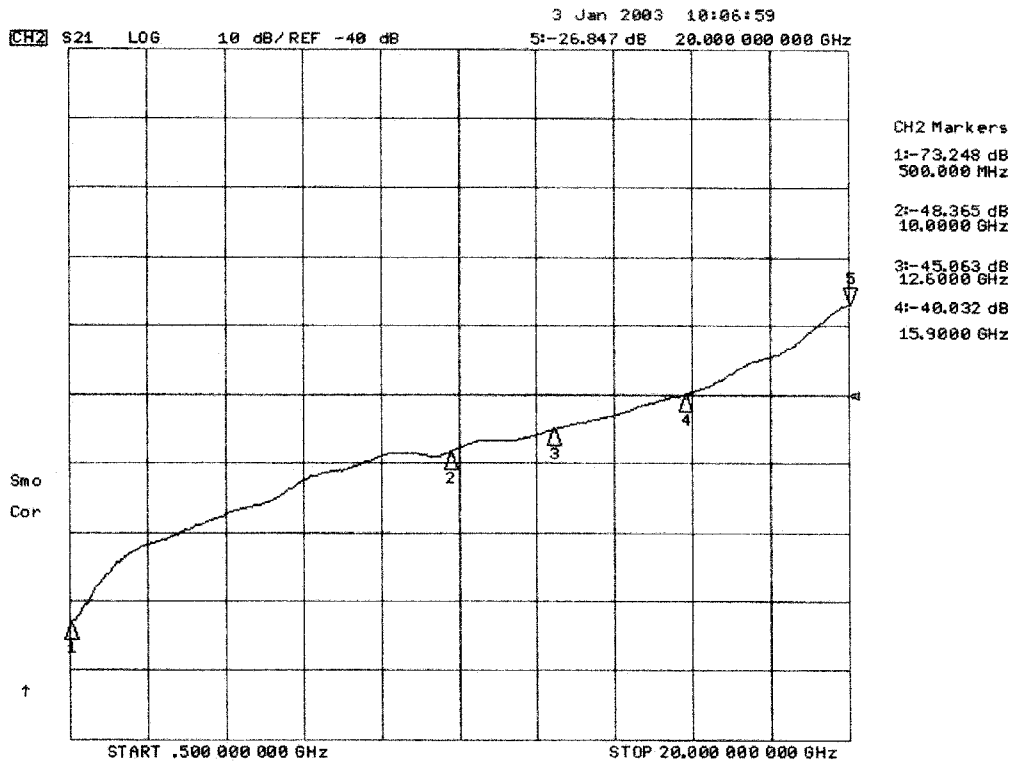
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

**ISOLATION
J11-J2**



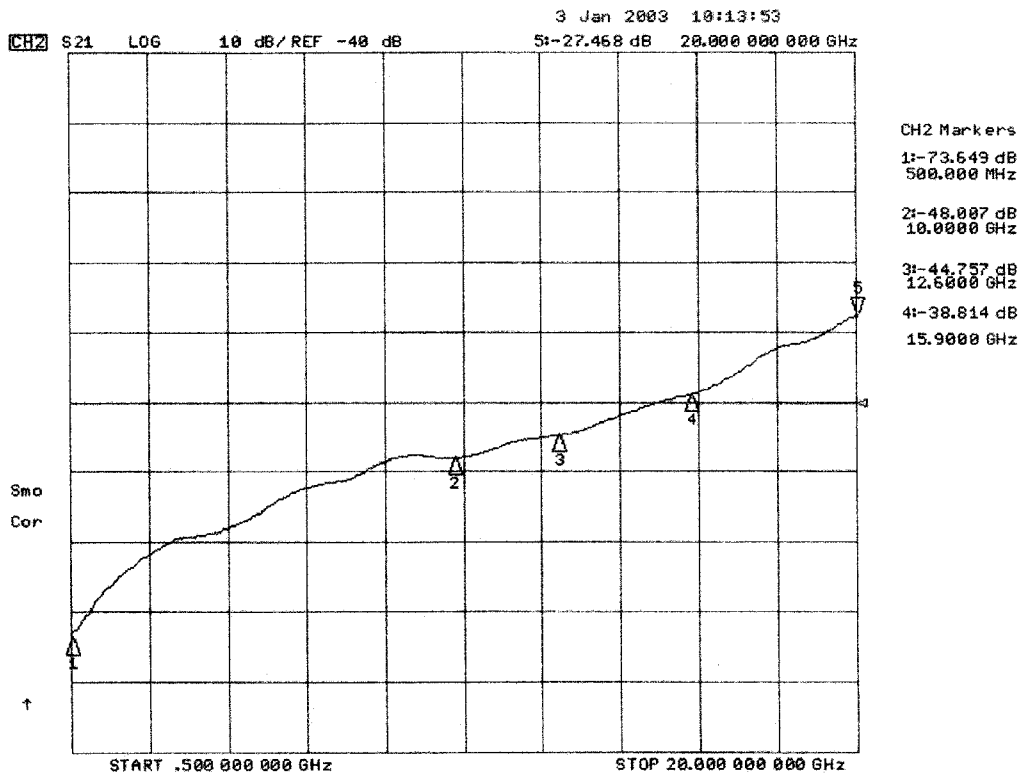
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

ISOLATION J11-J3



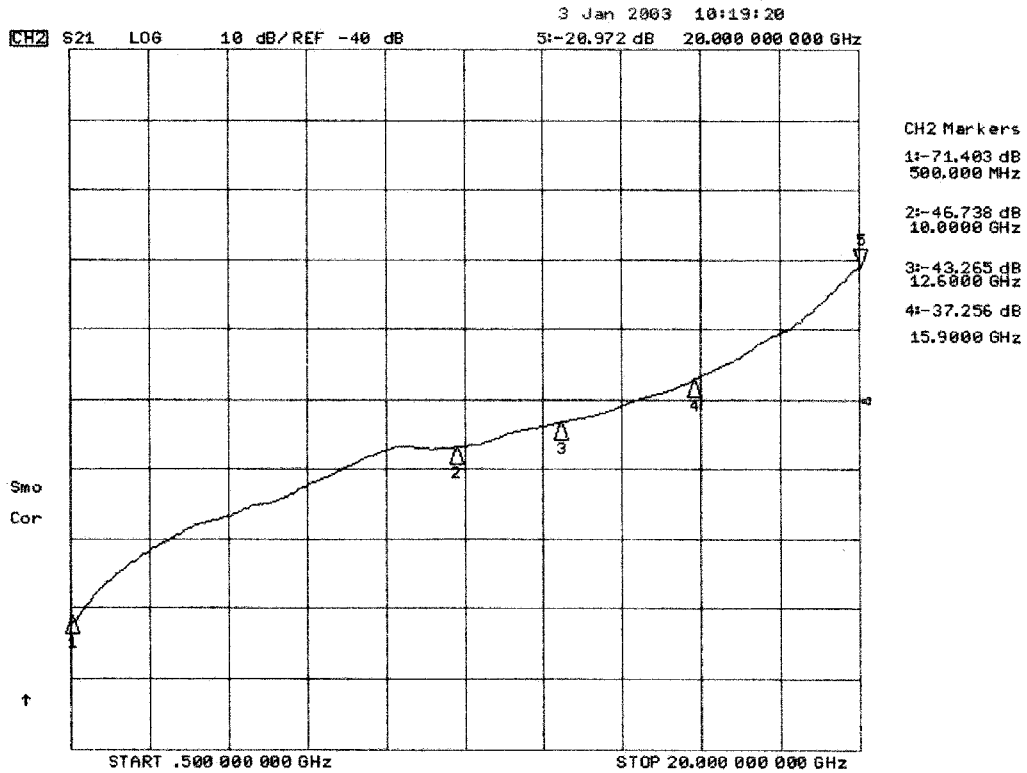
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

ISOLATION J11-J4



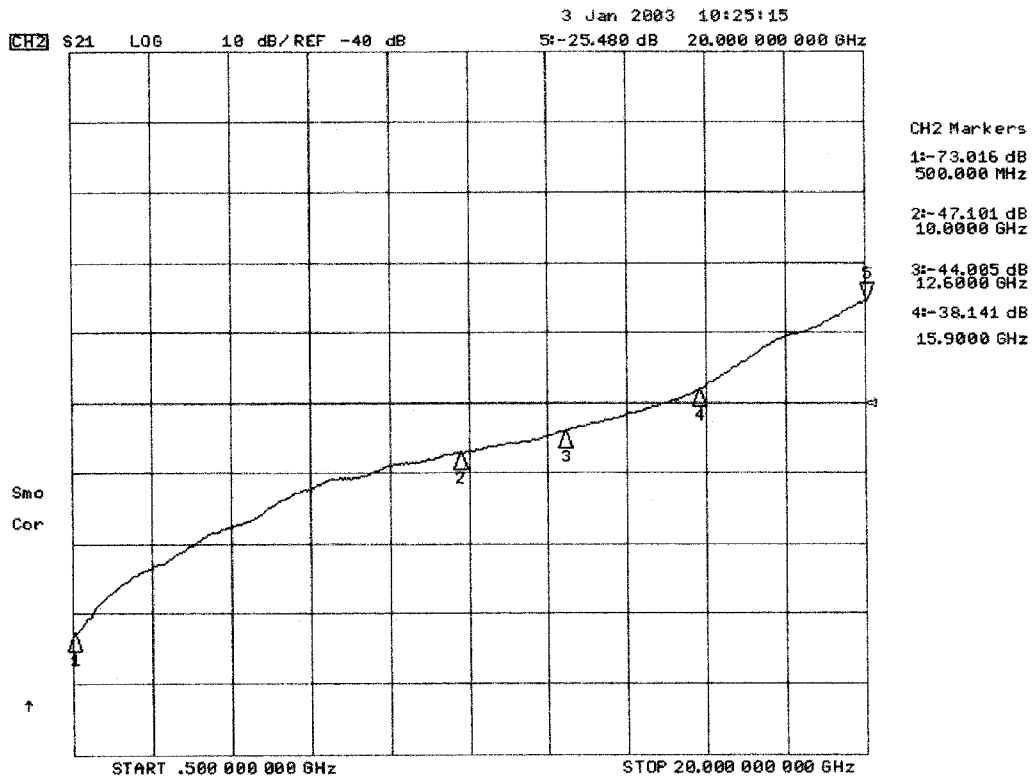
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

ISOLATION J11-J5



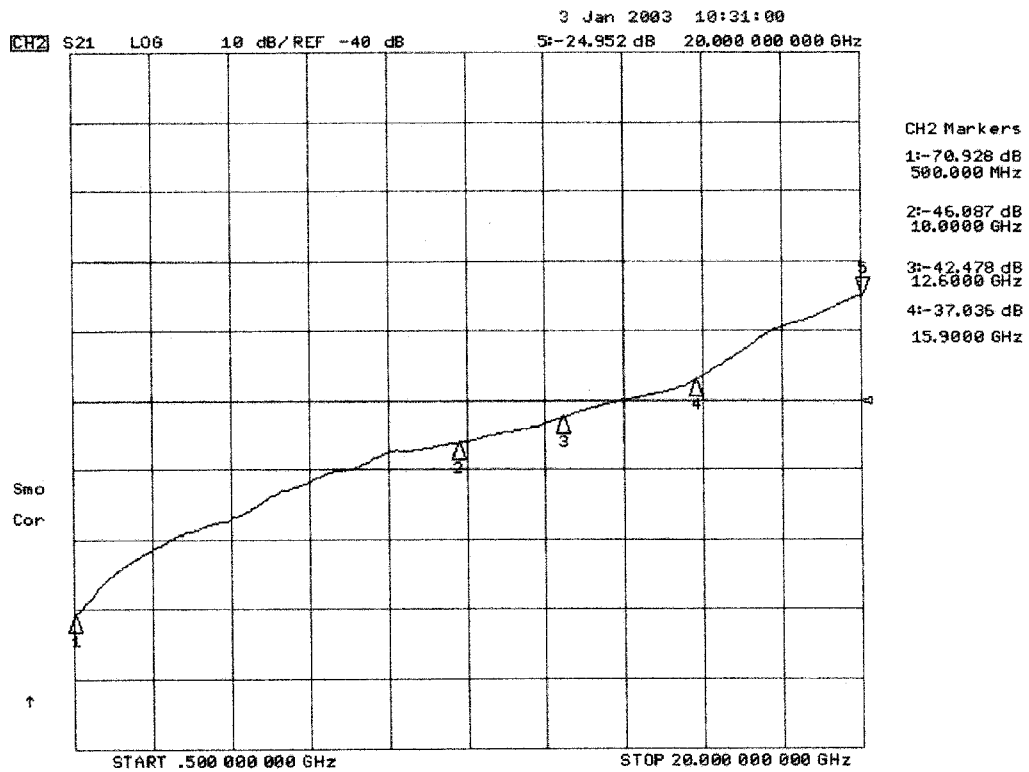
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

ISOLATION J11-J6



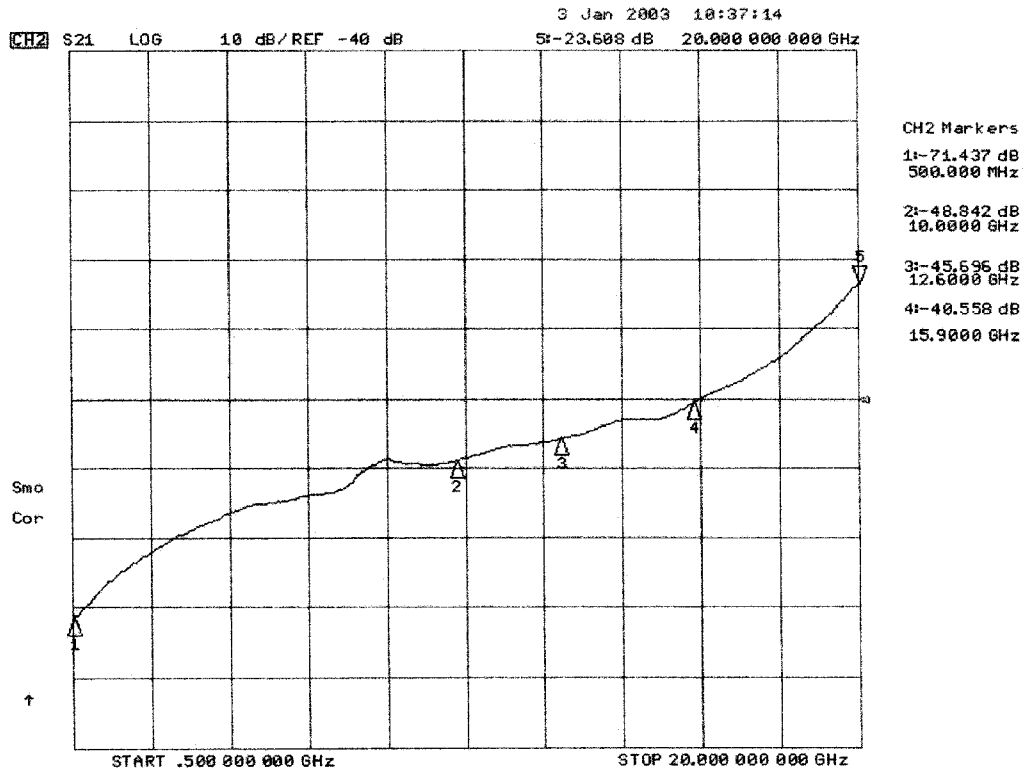
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

ISOLATION J11-J7



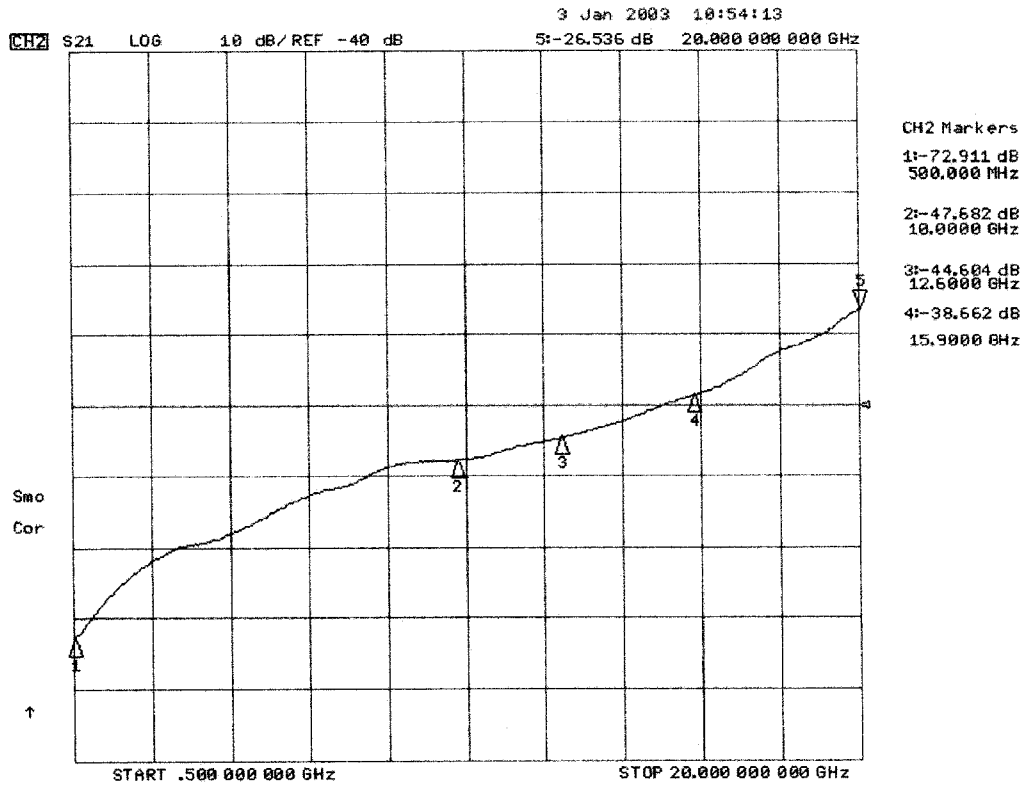
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

ISOLATION J11-J8



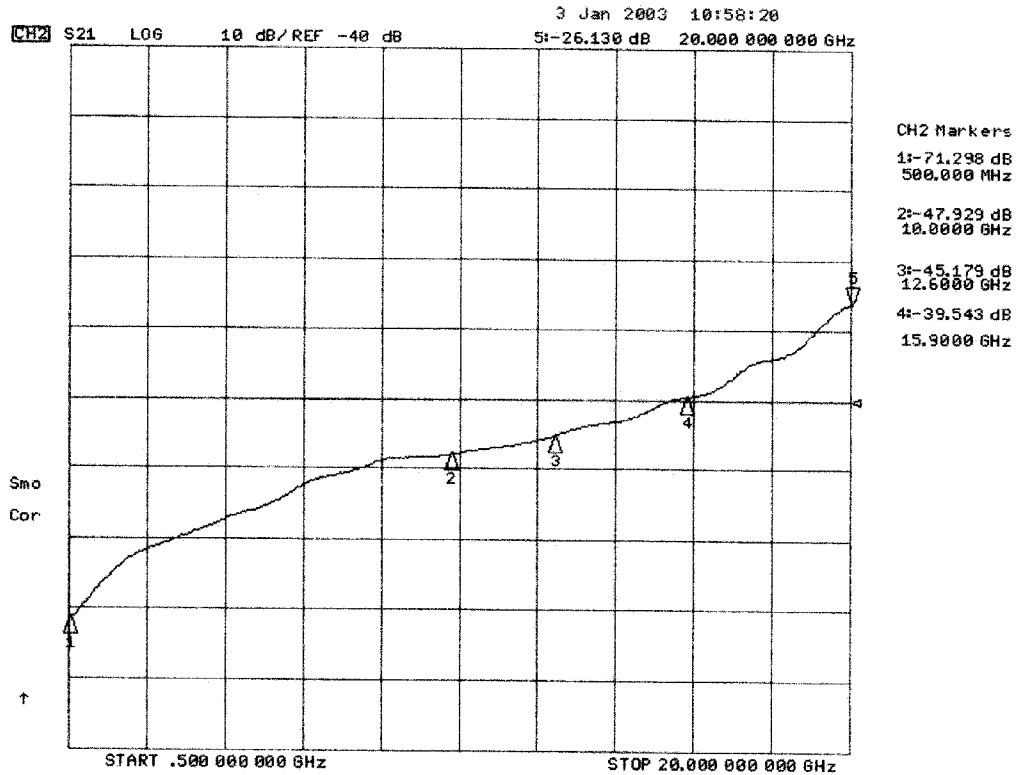
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

ISOLATION J11-J9



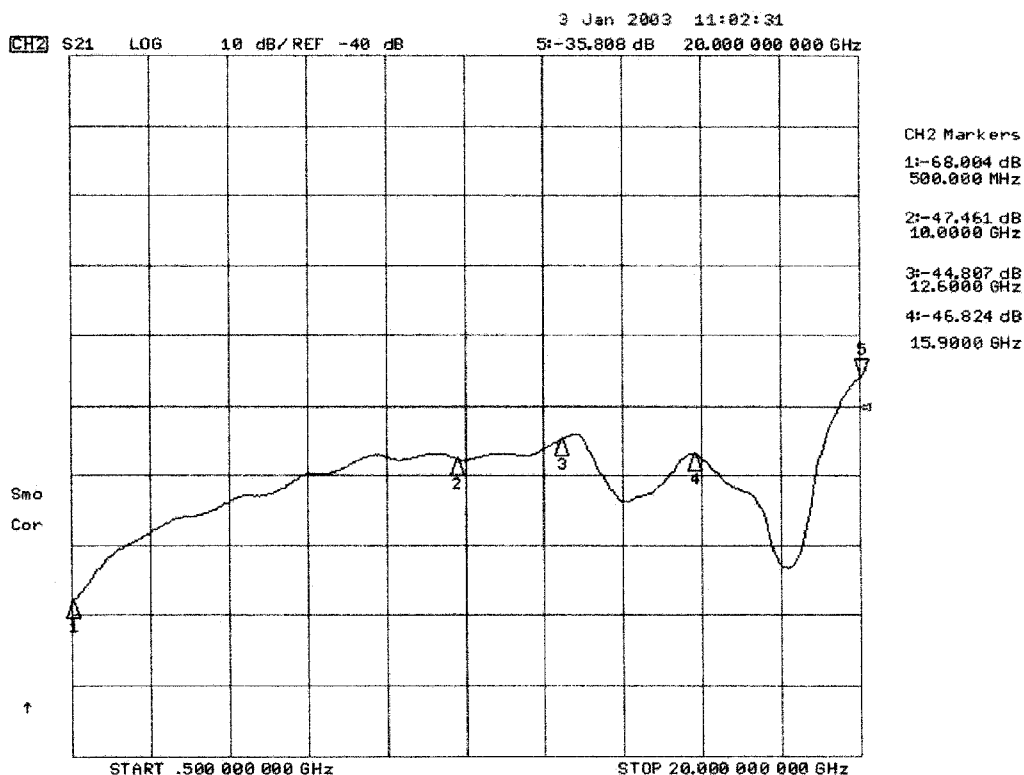
JANUARY 7, 2003



SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

ISOLATION J11-J10



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SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

SWITCHING SPEED

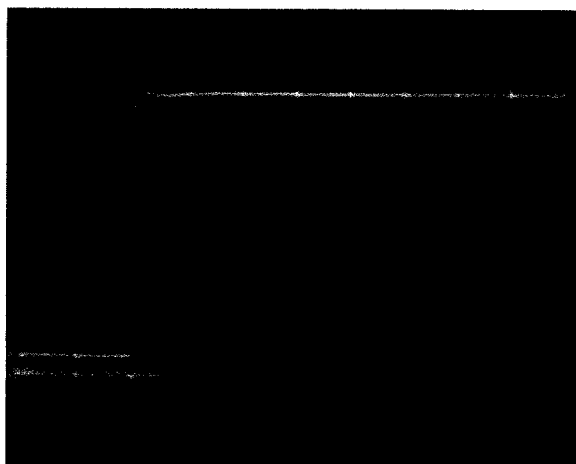
"Rise/Fall" Time: 10% RF to 90% RF & 90% RF to 10% RF
 "On/Off" Time: 50% TTL to 90% RF or 10% RF

TYPICAL OF ALL ARMS

"DELAY ON": 56 nS
 "RISE TIME": 18 nS

HORIZONTAL SCALE:
 50 nS PER DIVISION

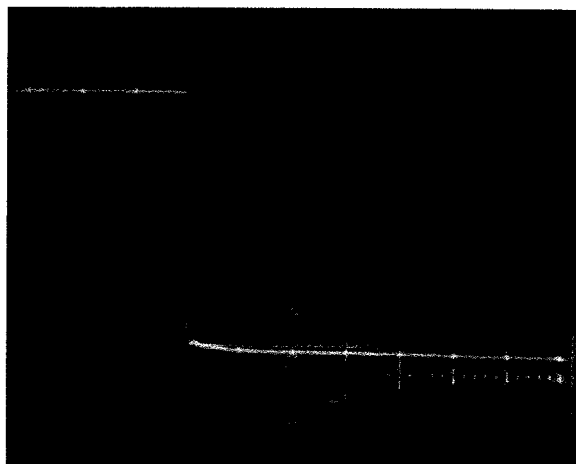
VERTICAL SCALE:
 20 mV PER DIVISION



"DELAY OFF": 160 nS
 "FALL TIME": 110 nS

HORIZONTAL SCALE:
 50 nS PER DIVISION

VERTICAL SCALE:
 20 mV PER DIVISION



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SUMMARY TEST DATA

MODEL NUMBER	: MSN-0520-10DR-S OPTION RS
SERIAL NUMBER	: 10MS03001
ENGINEER	: RENE AFABLE
VOLTAGE & CURRENT DRAW	: +5vdc @ 7mA; -5vdc @ 40mA

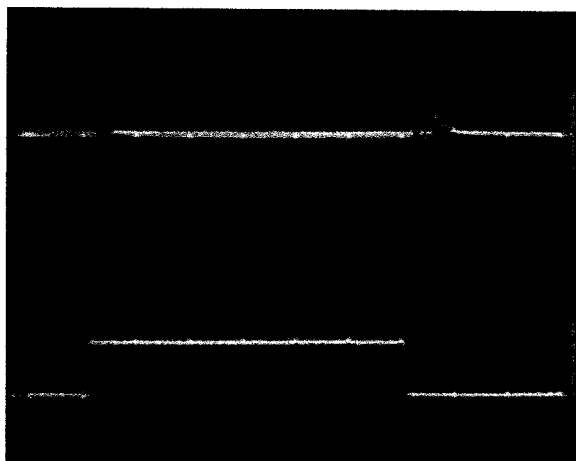
VIDEO TRANSIENTS

TYPICAL OF ALL ARMS

≤4.8 V P-P
MEASURED IN A
300 MHZ BANDWIDTH

VERTICAL SCALE:
1 V PER DIVISION

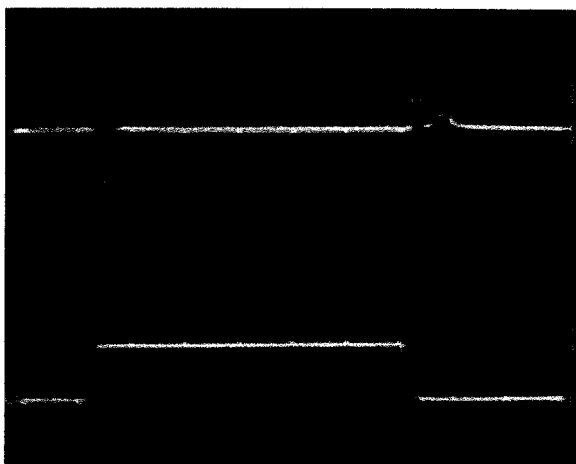
HORIZONTAL SCALE:
100 nS PER DIVISION



≤2.1 V P-P
MEASURED IN A
20 MHZ BANDWIDTH

VERTICAL SCALE:
1 V PER DIVISION

HORIZONTAL SCALE:
100 nS PER DIVISION



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