



TEST REPORT
ON
8.2 TO 10.0 GHz
REFLECTIVE
1 WATT HIGH POWER
SP2T, PIN DIODE SWITCH
WITH
INDEPENDENT SMC CONTROLS
AND
LOW INSERTION LOSS

AMC MODEL No:
SWSH-810-2DR-IND-SMC
SERIAL NUMBER: 2MS204343

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DECEMBER 07, 2002



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NOVEMBER 25, 2002

AMC MODEL No:
SWSH-810-2DR-IND-SMC
REFLECTIVE, SP2T, PIN DIODE SWITCH



FEATURES:

- **LOW INSERTION LOSS**
- **HIGH ISOLATION**
- **HIGH POWER**
- **SMALL SIZE**



ELECTRICAL SPECIFICATIONS:

- | | | |
|----------------------------------|---|--|
| ● FREQUENCY RANGE | : | 8.2 to 10.0 GHz |
| ● RF INPUT POWER @ +30°C | : | 1 Watt Peak |
| ● VSWR | : | 2.0:1 Maximum |
| ● ISOLATION | : | 55 dB Minimum |
| ● INSERTION LOSS | : | 1.5 dB Maximum |
| ● SWITCHING SPEED | : | 2 μSec Maximum Plus Trigger Delay |
| ● POWER | : | 1.7 Watt Maximum |
| ● TTL LOGIC LOW | : | -0.3 vdc to +0.7 vdc |
| ● TTL LOGIC HIGH | : | +2.5 vdc to +5.0 vdc |
| ● BIAS AND SUPPLY VOLTAGE | : | + 5.0 vdc ±0.5 vdc |
| ● IMPEDENCE | : | 50 Ω |
| ● SIZE | : | 1.18" X 0.97" X 0.37" |

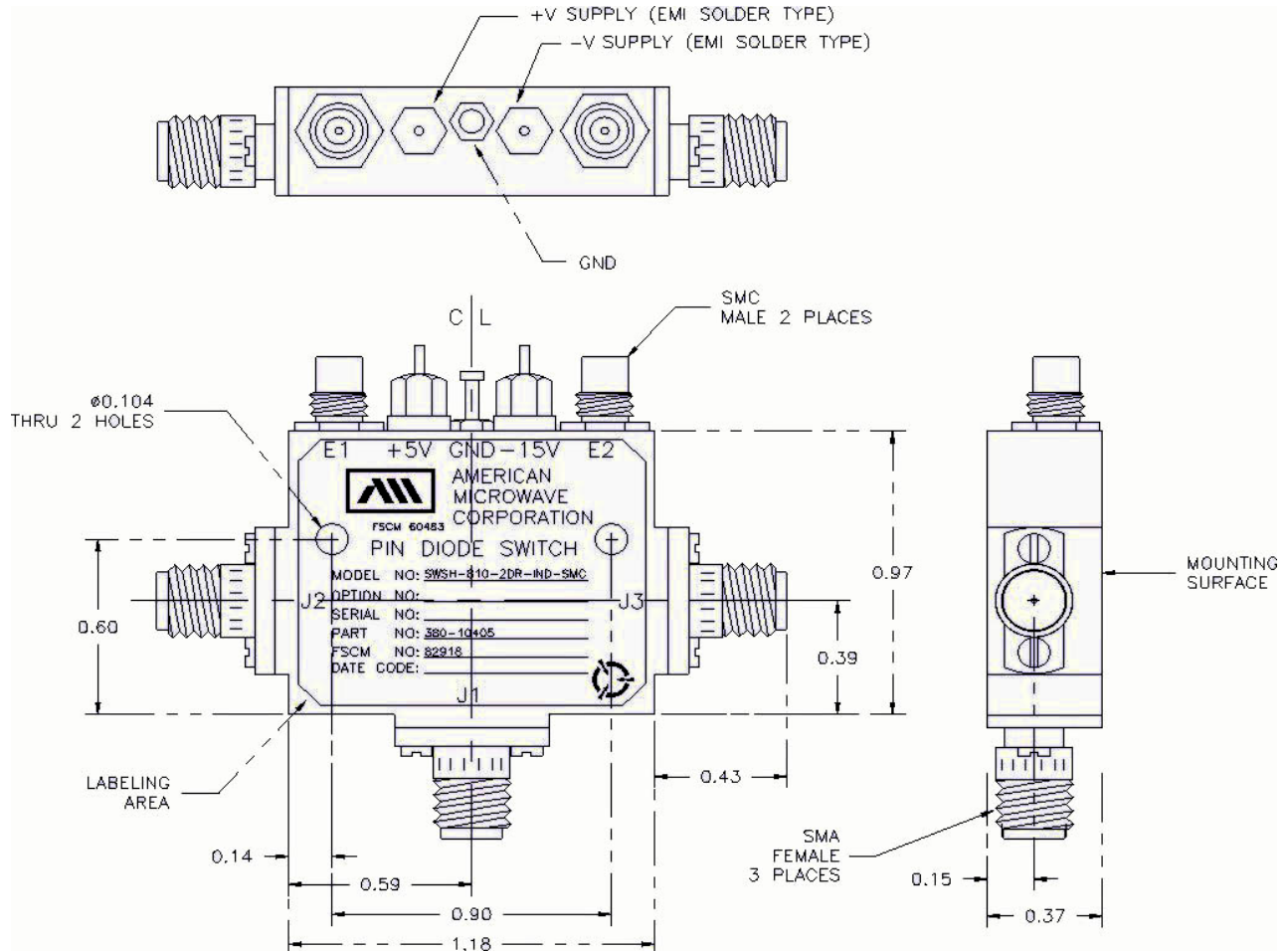
ENVIRONMENTAL SPECIFICATIONS:

- | | | |
|------------------------------|---|---|
| ● TEMPERATURE RANGE | : | -55° C to +110° C (Operating) |
| ● HUMIDITY | : | MIL-STD-202, Method 106 |
| ● THERMAL SHOCK/CYCLE | : | MIL-STD-202F, Method 107D, Cond. A |
| ● SHOCK | : | MIL-STD-202F, Method 213B, Cond. B |
| ● VIBRATION | : | MIL-STD-202F, Method 204D, Cond. D |
| ● ALTITUDE | : | MIL-S-3928, Paragraph 3.11 |
| ● SAND AND DUST | : | MIL-S-3928 |
| ● SALT SPRAY | : | MIL-S-3928 |

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MECHANICAL OUTLINE



AMC MODEL No: SWSH-810-2DR-IND-SMC



PRODUCT FEATURE

MECHANICAL DRAWING

REVISIONS: ORIGINAL JOB# 108140E DATE 10/2/06/02

CONFIDENTIAL AND PROPRIETARY

AMERICAN MICROWAVE CORPORATION
 FREDERICK, MARYLAND

PRODUCT FEATURE
 SWSH-810-2DR-IND-SMC
 380-10405

DATE FROM NO. A 60483 REV. -
 SCALE N/A 100-6276 1 OF 3

PRODUCT DESCRIPTION:
 AMC MODEL SWSH-810-2DR-IND-SMC IS A 8.2 TO 10.0 GHz REFLECTIVE SP2T SWITCH, WITH LOW INSERTION LOSS IN A COMPACT PACKAGE.

SPECIFICATIONS:

- FREQUENCY RANGE: 8.2 TO 10.0 GHz
- RF POWER AT (+30°C): 1 WATT PEAK
- IMPEDANCE: 50 OHMS
- VSWR: 55 dB MAXIMUM
- ISOLATION: 1.5 dB MINIMUM
- INSERTION LOSS: 2 dB MAXIMUM PLUS TRIGGER DELAY
- SWITCHING SPEED: 1.7 WATT MAXIMUM
- POWER: -0.3 VOLTS TO +0.7
- TTL LOGIC LOW: +2.5 VOLTS TO +5.0 VOLTS
- TTL LOGIC HIGH: +5.0V ± 0.5 VDC, -15.0V ± 0.5 VDC
- BIAS AND SUPPLY VOLTAGE:

ENVIRONMENTAL RATINGS:

- TEMPERATURE: -55°C TO +110°C (OPERATING)
- HUMIDITY: MIL-STD-202, METHOD 105
- THERMAL SHOCK: MIL-STD-202F, METHOD 107D COND. A
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 204D COND. D
- ALTITUDE: MIL-S-3828
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

LOGIC TABLE

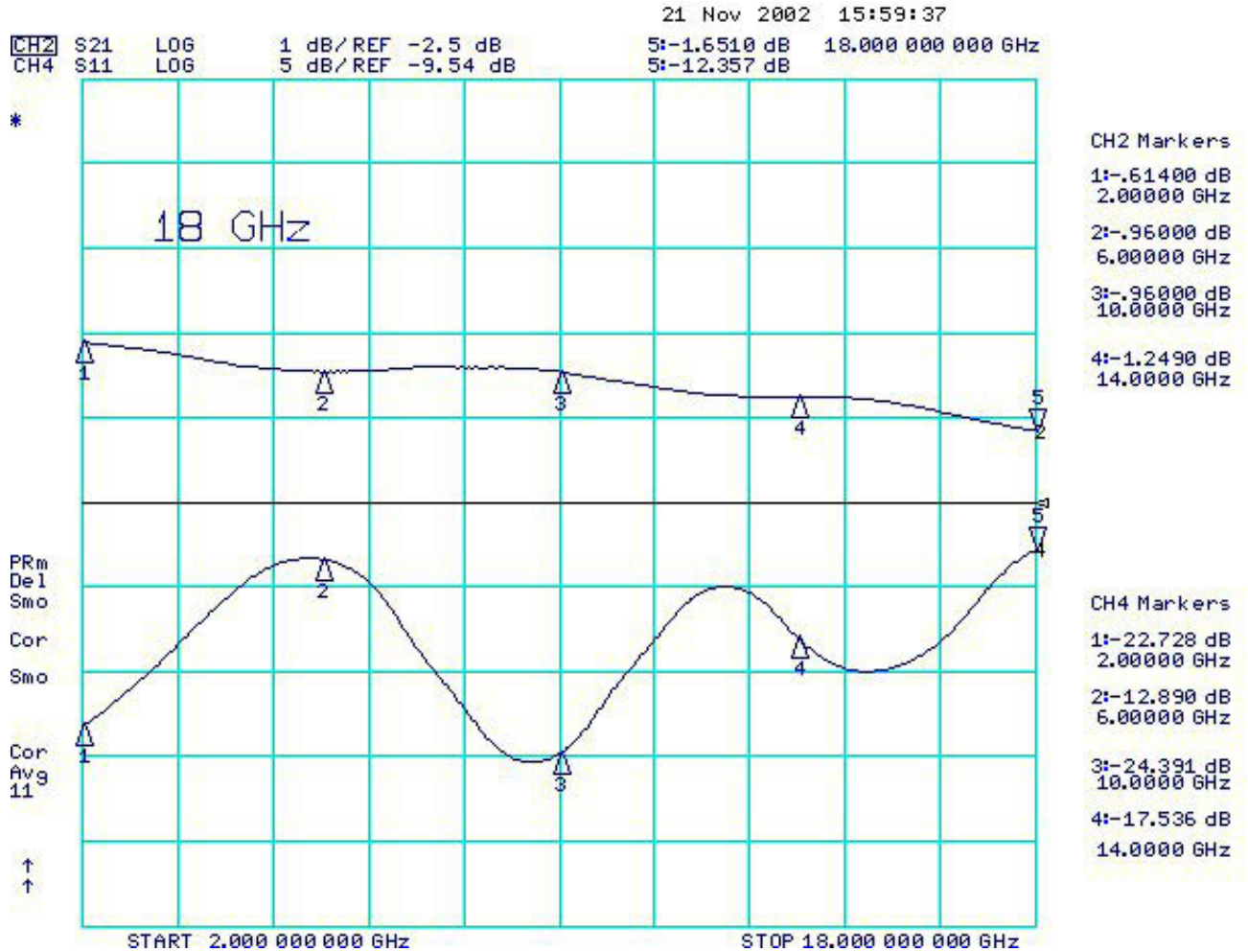
TTL STATE	INSERTION LOSS (dB)
P ₄ P ₁ J ₁ -J ₂ J ₁ -J ₃	LOW
0 0 LOW LOW	ISOLATED
0 1 LOW LOW	ISOLATED
1 0 ISOLATED LOW	ISOLATED
1 1 ISOLATED ISOLATED	ISOLATED

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

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

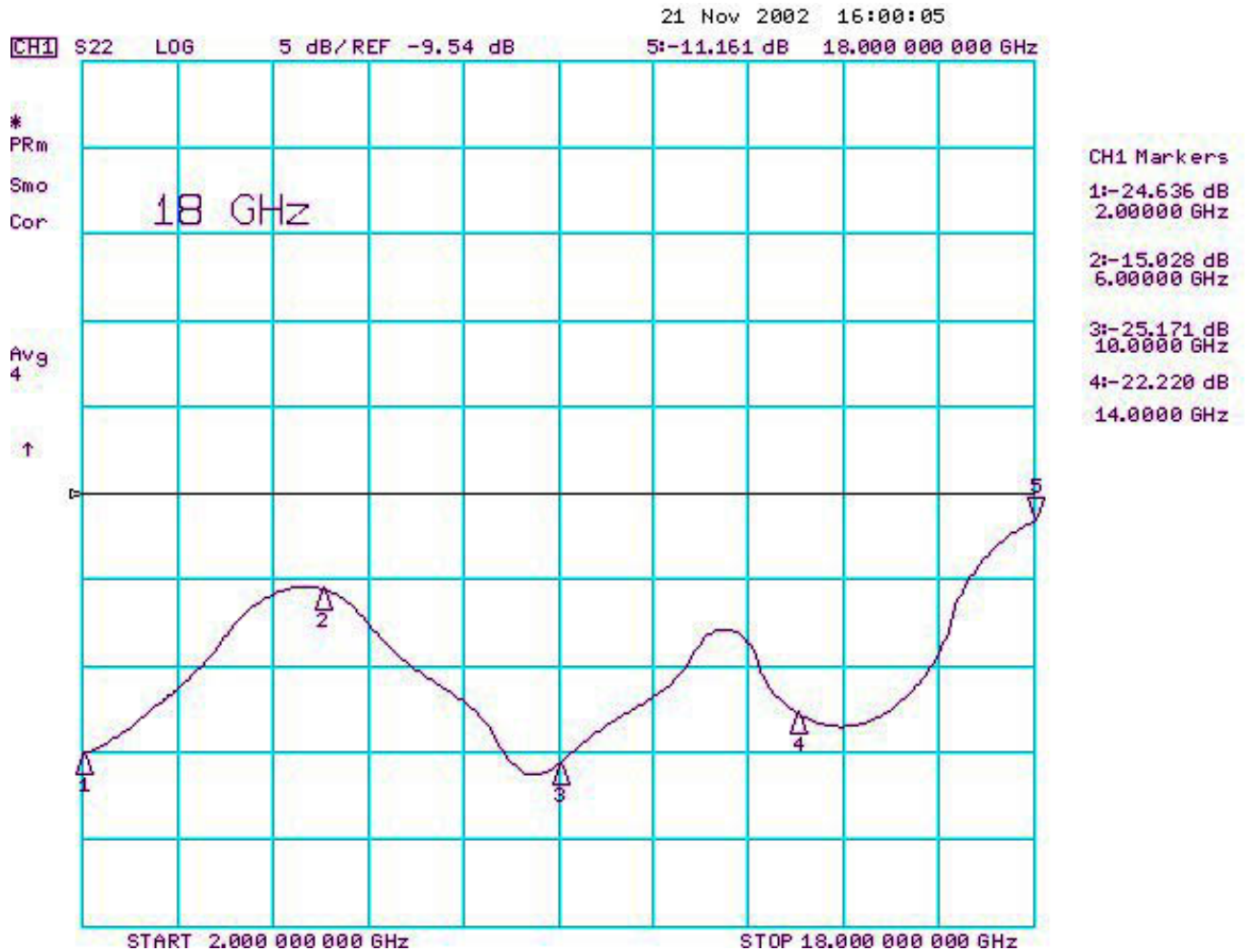


INSERTION LOSS AND VSWR J1 TO J2
FROM 2.0 TO 18.0 GHz



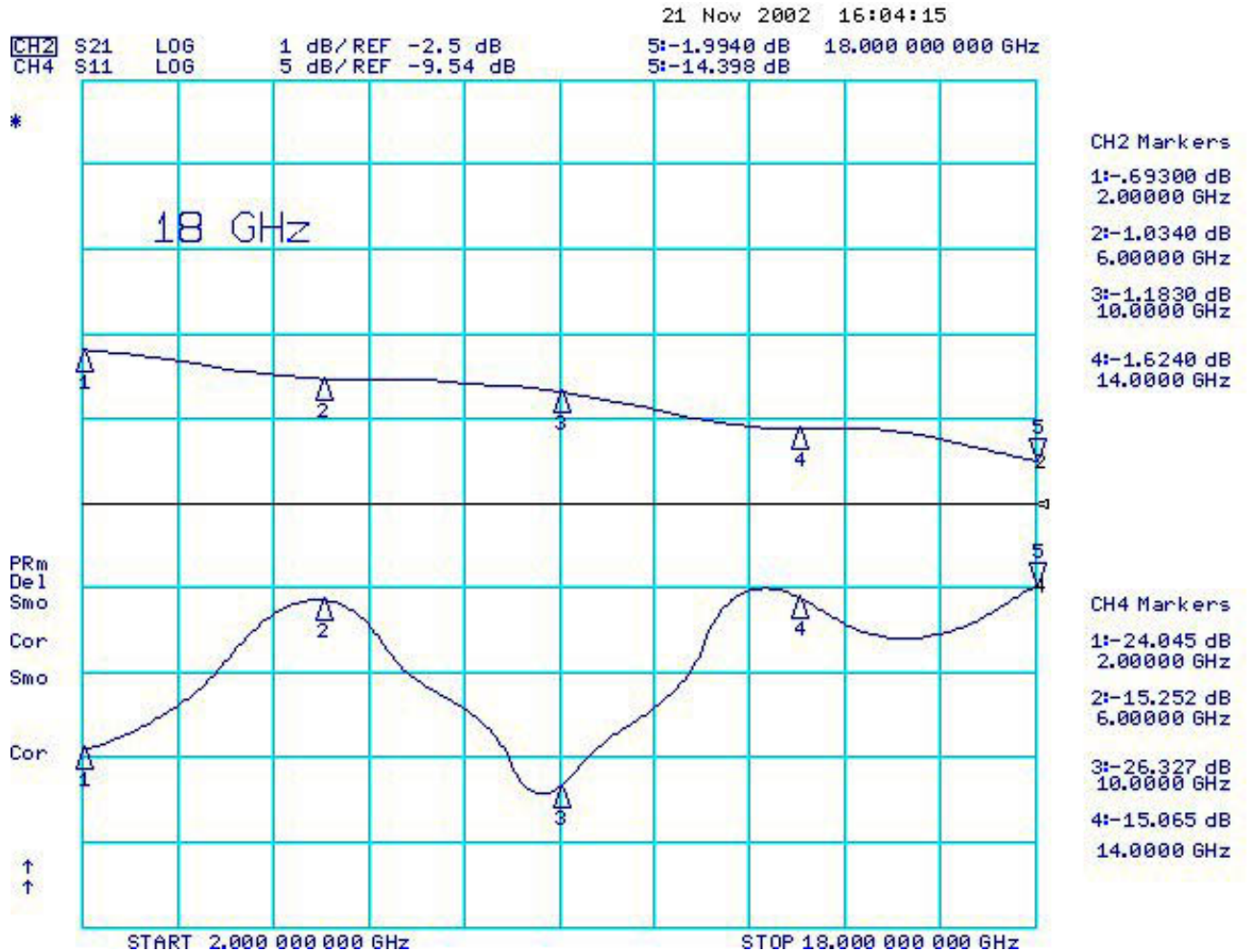


OUTPUT VSWR J1 TO J2
FROM 2.0 TO 18.0 GHz



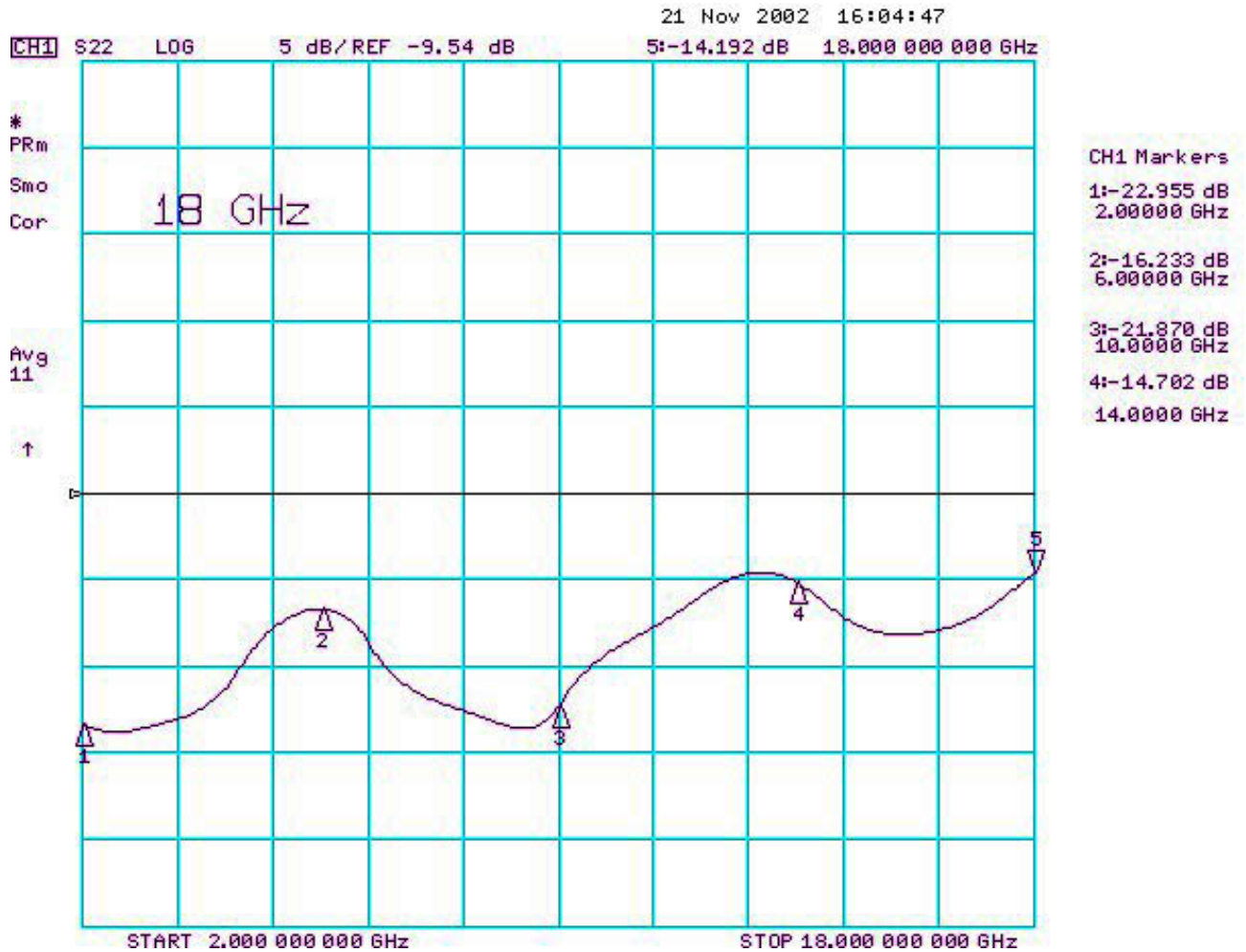


INSERTION LOSS AND VSWR J1 TO J3
FROM 2.0 TO 18.0 GHz



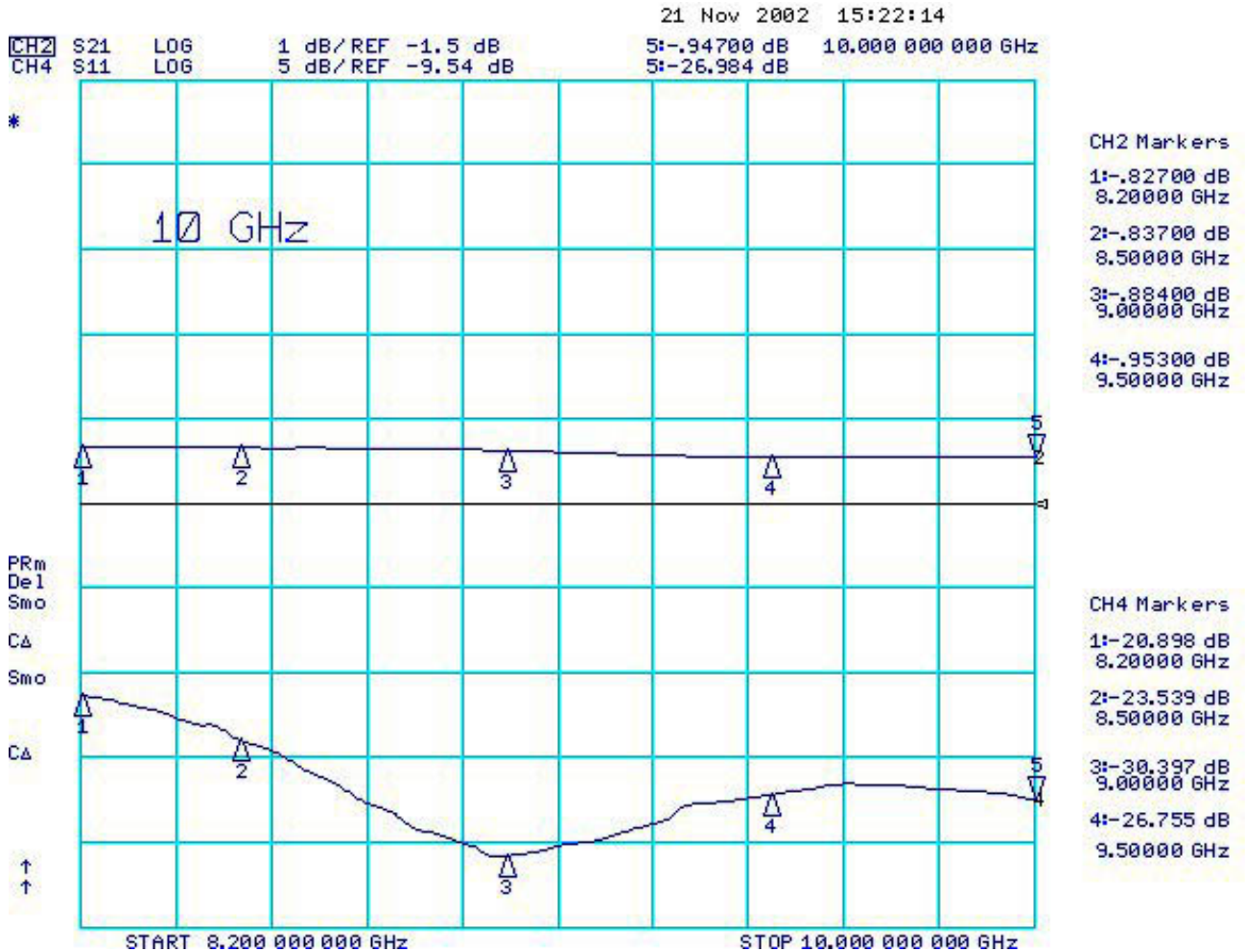


OUTPUT VSWR J1 TO J3 FROM 2.0 TO 18.0 GHz



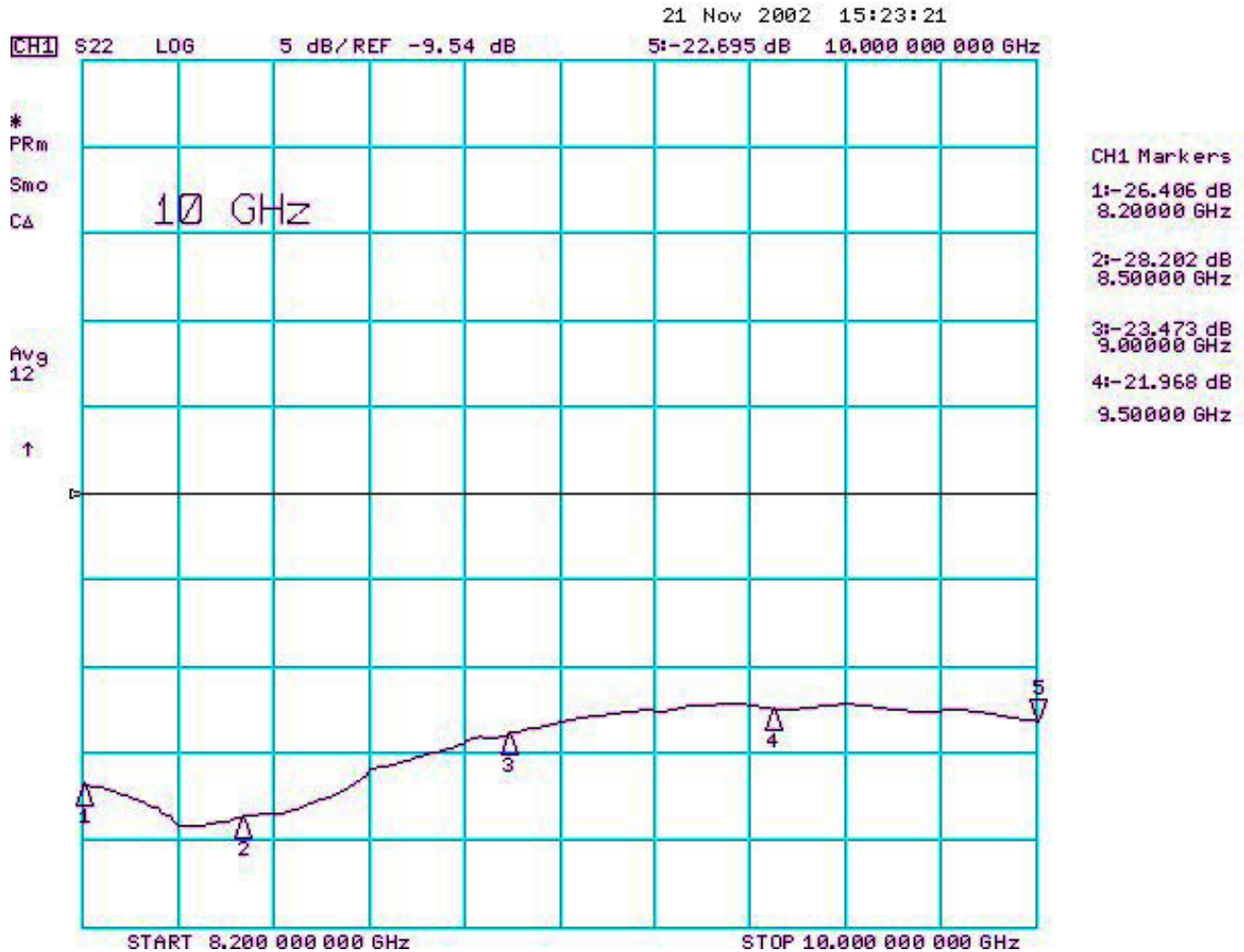


INSERTION LOSS AND VSWR J1 TO J2 FROM 8.2 TO 10.0 GHz



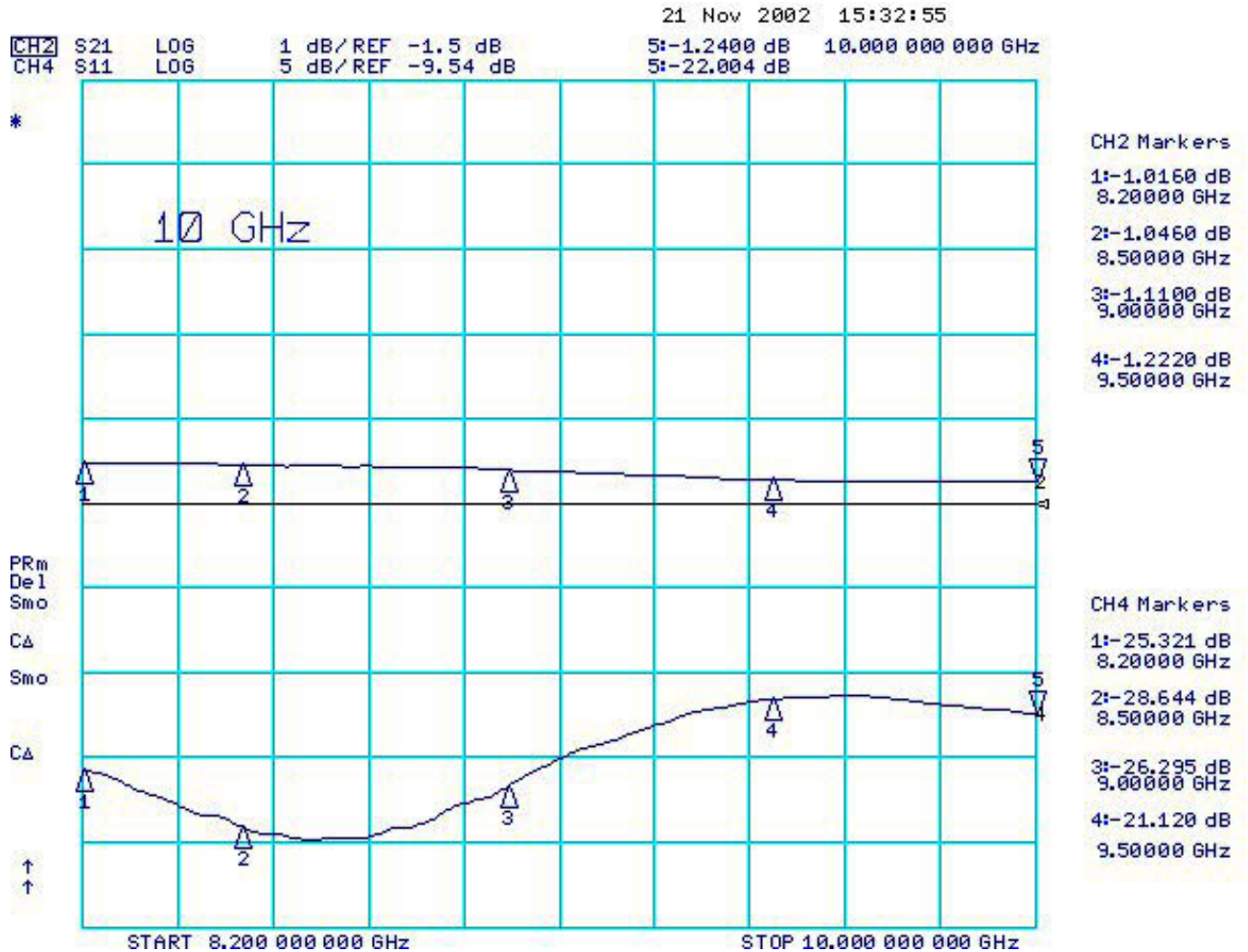


OUTPUT VSWR J1 TO J2
FROM 8.2 TO 10.0 GHz



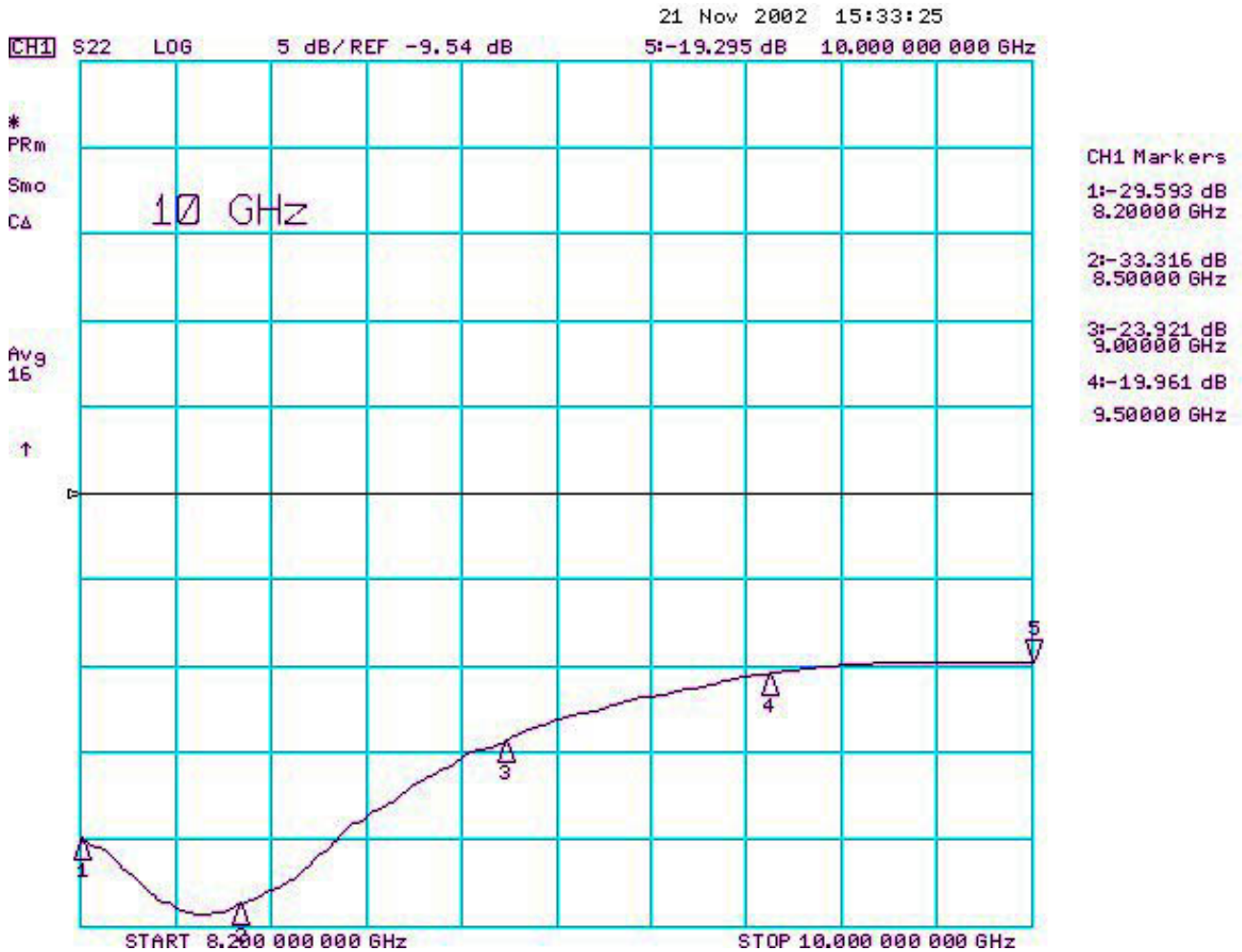


INSERTION LOSS AND VSWR J1 TO J3
FROM 8.2 TO 10.0 GHz



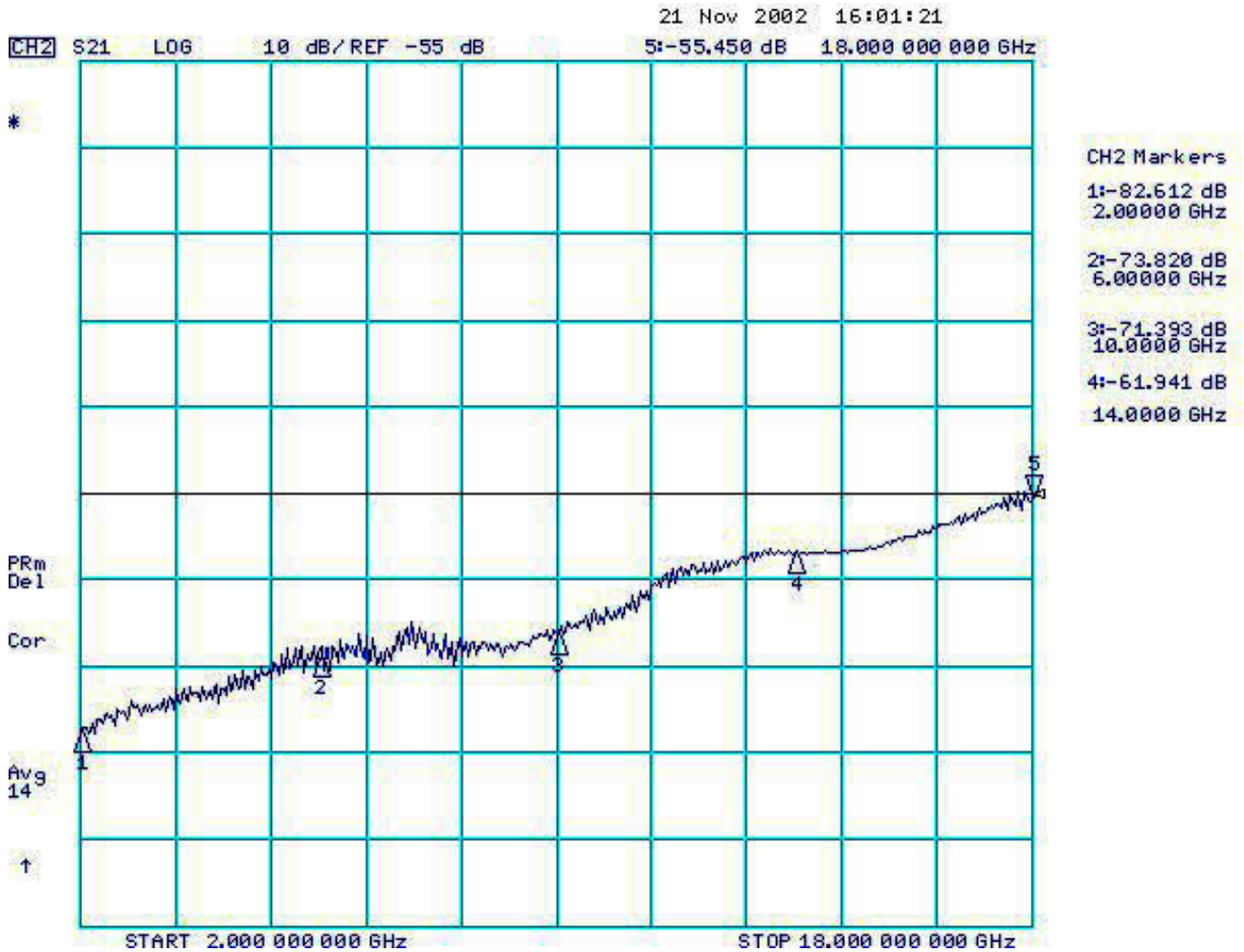


OUTPUT VSWR J1 TO J3
FROM 8.2 TO 10.0 GHz





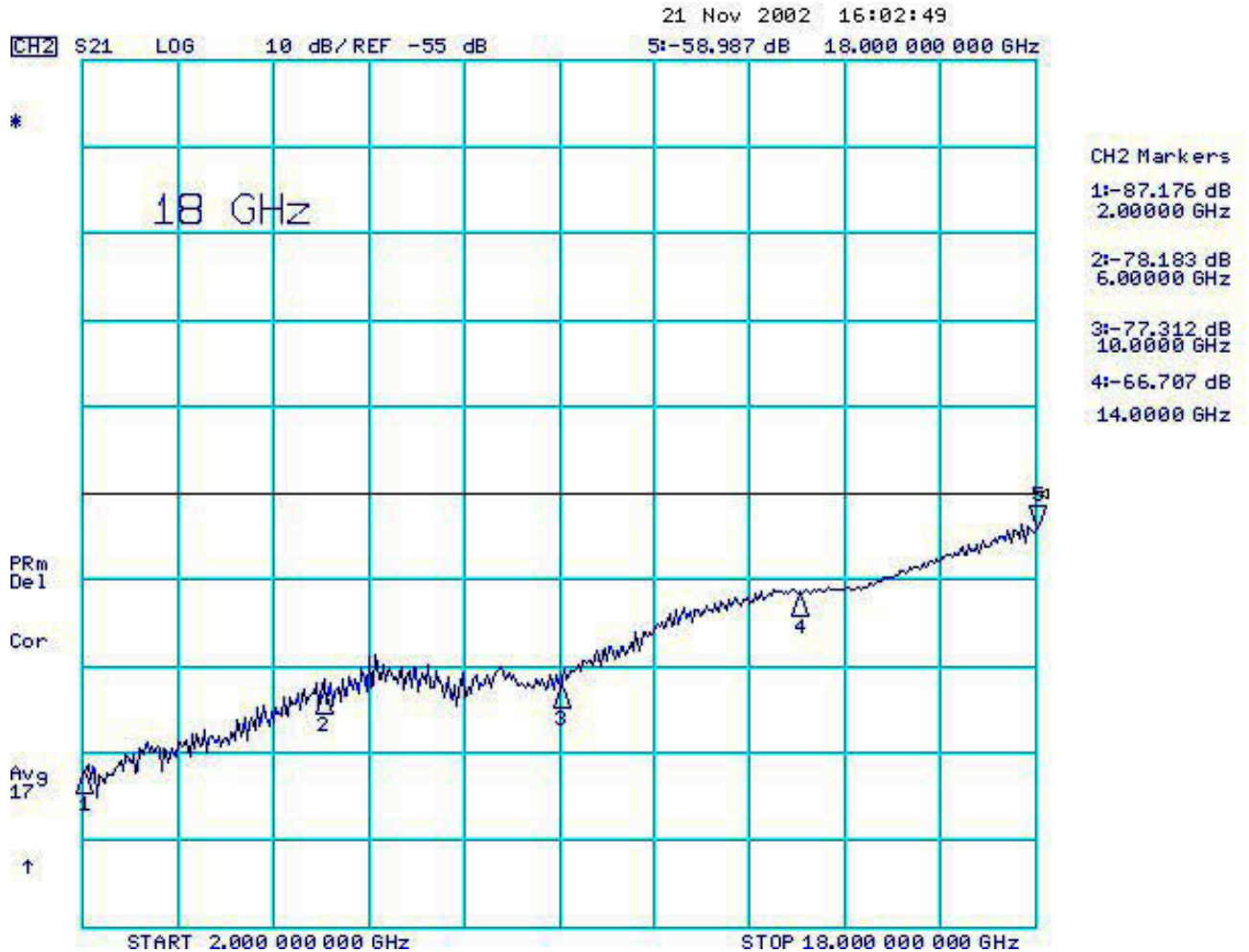
ISOLATION
As Measured from 2.0 to 18.0 GHz and from J1 to J2





ISOLATION

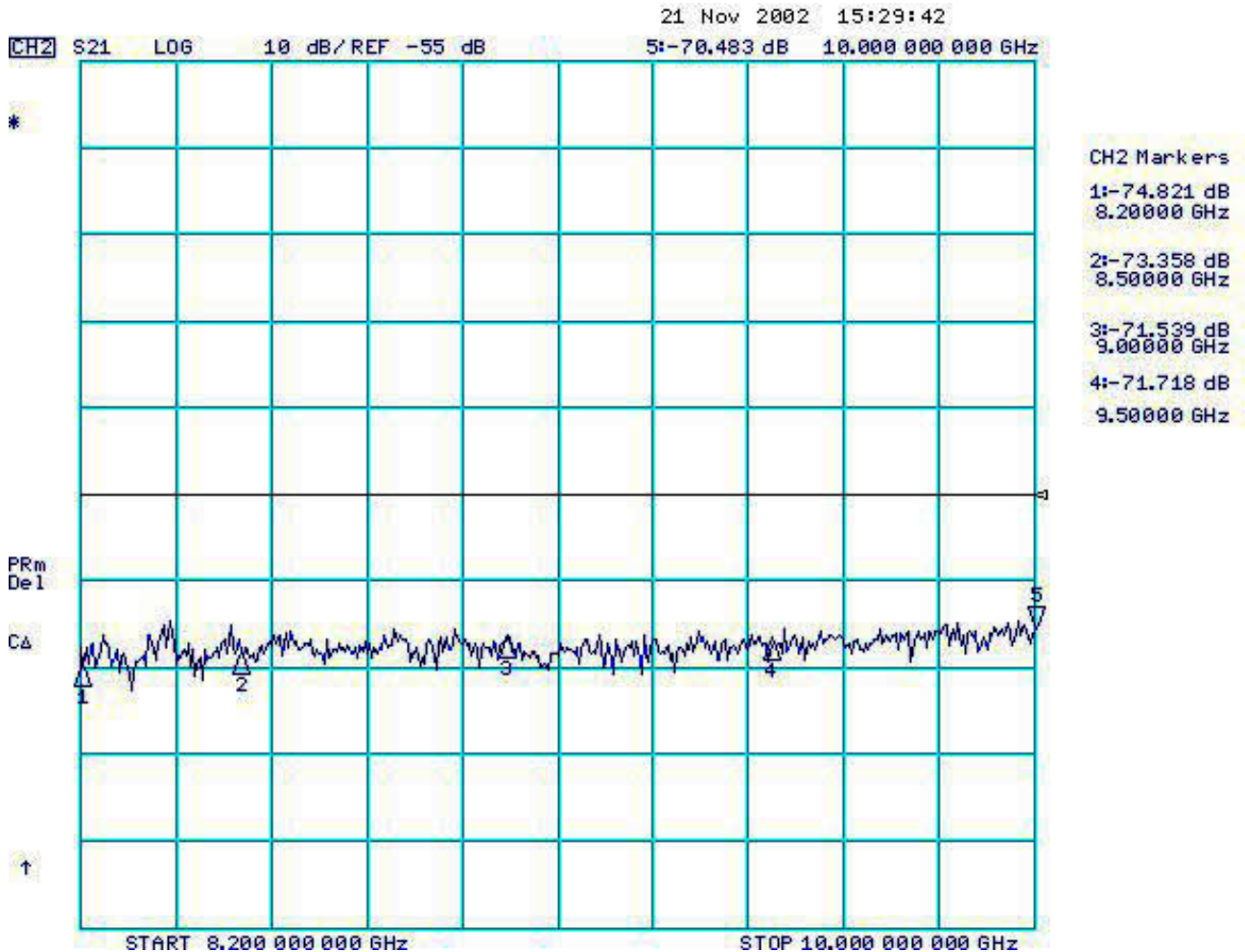
As Measured from 2.0 to 18.0 GHz and from J1 to J3





ISOLATION

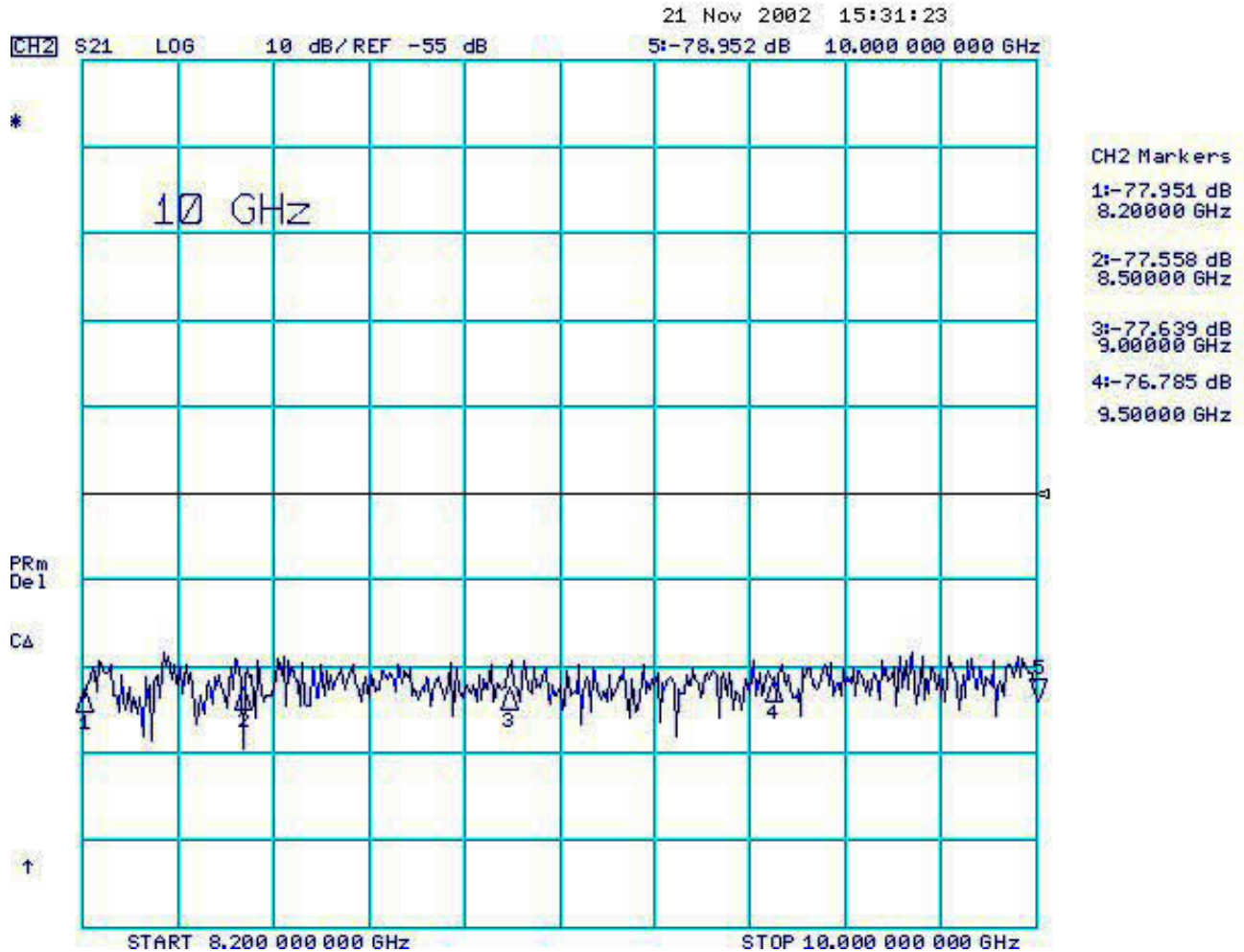
As Measured from 8.2 to 10.0 GHz and from J1 to J2





ISOLATION

As Measured from 8.2 to 10.0 GHz and from J1 to J3





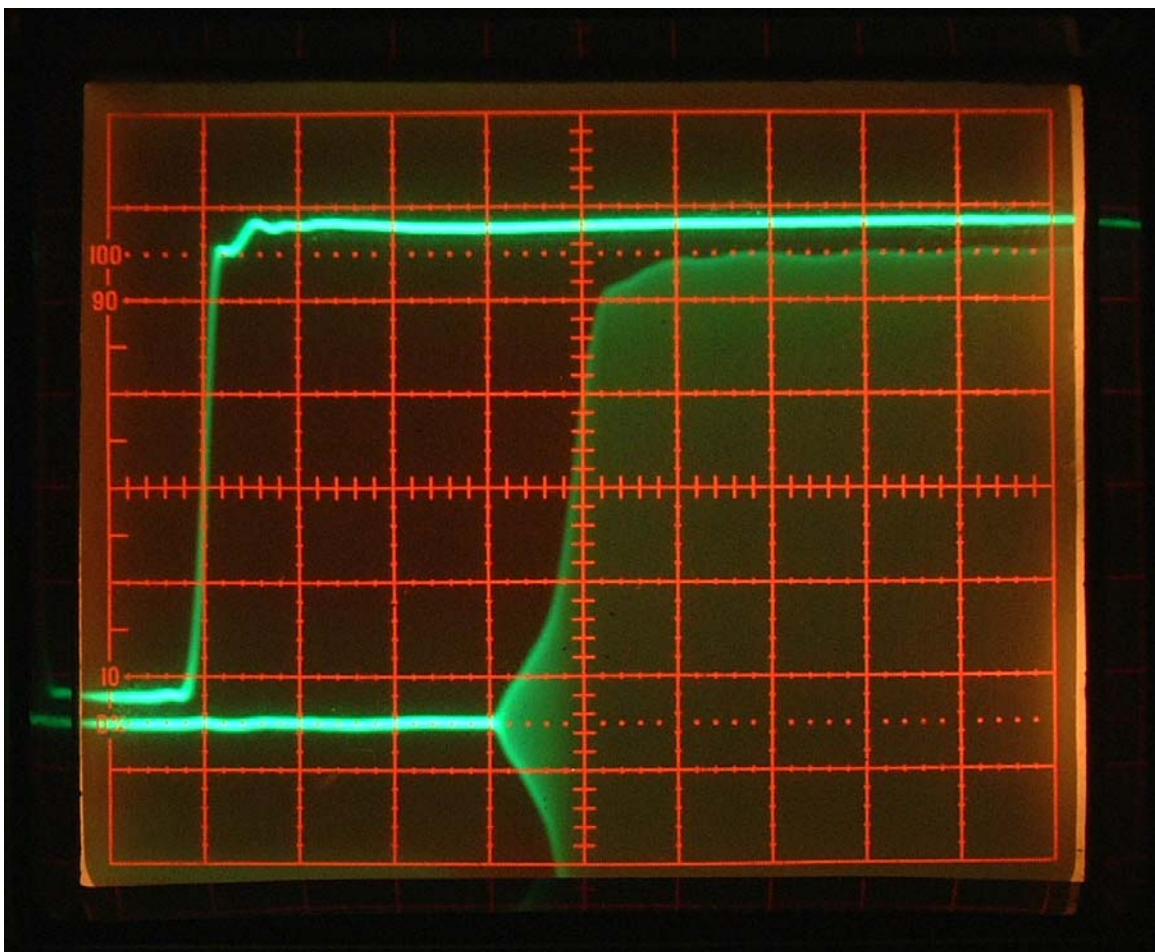
SWITCHING SPEED

Horizontal Scale is 10nS/Division, Vertical Scale is 10mV/Division

DEFINITIONS:

- “ON” : 50% Control Signal to 90% RF
- “OFF” : 50% Control Signal to 10% RF
- “Rise” : 10% RF to 90% RF
- “Fall” : 90% RF to 10% RF

“ON”



Showing a “Rise” Time of 7nS and an “ON” Time of 42nS



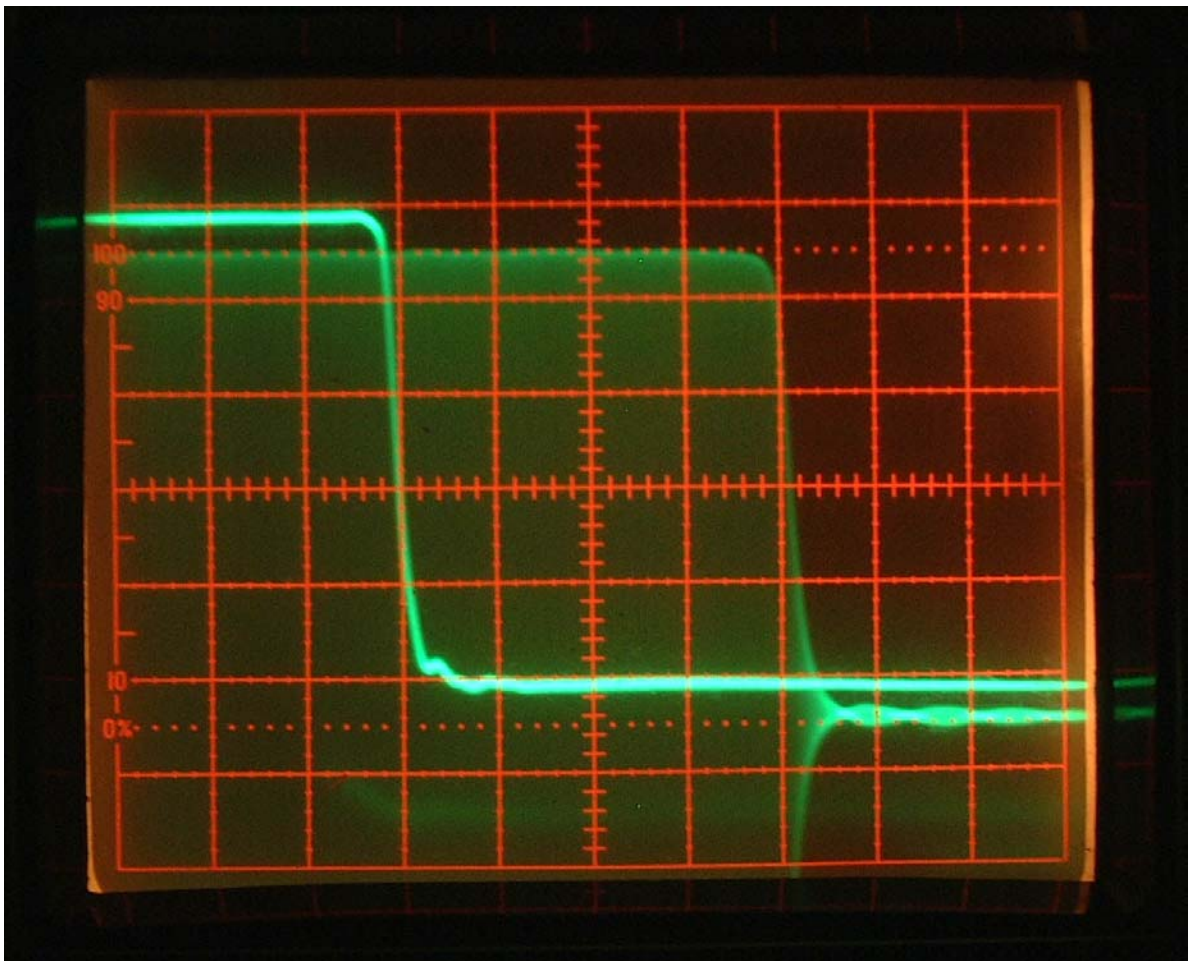
SWITCHING SPEED

Horizontal Scale is 10nS/Division, Vertical Scale is 10mV/Division

DEFINITIONS:

- “ON” : 50% Control Signal to 90% RF
- “OFF” : 50% Control Signal to 10% RF
- “Rise” : 10% RF to 90% RF
- “Fall” : 90% RF to 10% RF

“OFF”



Showing a “Fall” Time of 3nS and an “OFF” Time of 44nS

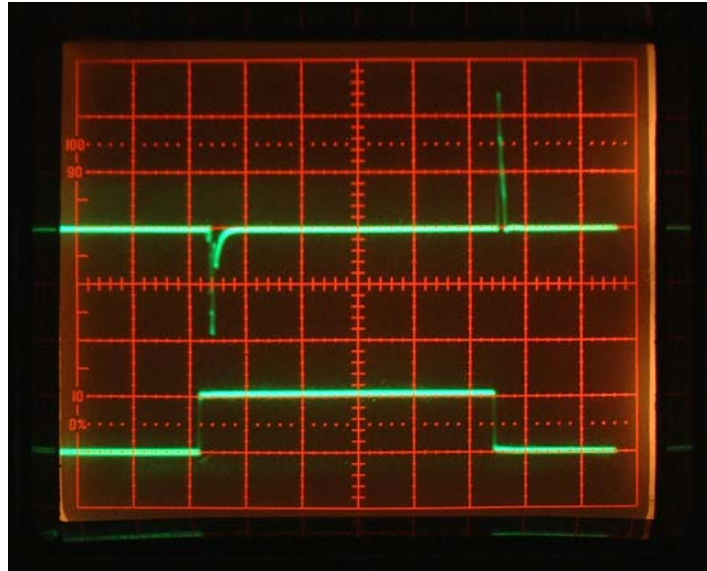


VIDEO TRANSIENTS

Horizontal Scale is 20mV/Division, Vertical Scale is 200nS/Division

AS MEASURED IN A 300 MHz BANDWIDTH

Showing a
Video Transient
of 88mV
Peak to Peak



AS MEASURED IN A 20 MHz BANDWIDTH

Showing a
Video Transient
of 44mV
Peak to Peak

