

TEST DATA OF JMA-2344

| | | |
|--------------|---------------|-----------------|
| Type | JMA-2343 | Ser.No. LX54346 |
| Scanner Unit | NKE-249 | Ser.No. LX34431 |
| Display Unit | NCD-4170 | Ser.No. LX24346 |
| Ship's Main | DC10.8 - 42 V | |

Date October.28.2002

Section Chief A. Yoshida

inspector I. Nakamura

1. Mechanical Tests

Appearance and Structure

Scanner Unit Good

Display Unit Good

2. Electrical Tests

2.1 Working of each operation unit

Scanner Unit Good

Control Panel Good

STBY/OFF Key Good

X-MIT/OFF Key Good

EBL Key Good

VRM Key Good

BRIL/HL OFF Key Good

MENU Key Good

ENTER Key Good

Range Key Good

Cross Key Good

Soft Key 1 Good

Soft Key 2 Good

Soft Key 3 Good

Soft Key 4 Good

[TUNE] Control Good

[GAIN] Control Good

[STC] Control Good

[FTC] Control Good

2.2 Scanner Unit

| VSWR | frequency (MHz) | VSWR |
|------------------------|-----------------|--------|
| | 9380 | 1.2 |
| | 9410 | 1.2 |
| | 9440 | 1.2 |
| Scanner Rotation Speed | | 27 rpm |

2.3 Transmitter

| | |
|----------------------------------|--------------|
| Magnetron Ser.No. | E0099C |
| Operating Frequency | |
| (at 0.08 μ s PULS 0.75 n.m.) | 9415 MHz |
| (at 0.25 μ s PULS 3.0 n.m.) | 9415 MHz |
| (at 0.5 μ s PULS 6.0 n.m.) | 9414 MHz |
| (at 1.0 μ s PULS 12.0 n.m.) | 9413 MHz |
| Peak Output Power | |
| (at 0.08 μ s PULS 0.75 n.m.) | 4.33 kW |
| (at 0.25 μ s PULS 3.0 n.m.) | 4.63 kW |
| (at 0.5 μ s PULS 6.0 n.m.) | 4.87 kW |
| (at 1.0 μ s PULS 12.0 n.m.) | 4.95 kW |
| Pulse Length | |
| (at 0.08 μ s PULS 0.75 n.m.) | 0.08 μ s |
| (at 0.25 μ s PULS 3.0 n.m.) | 0.23 μ s |
| (at 0.5 μ s PULS 6.0 n.m.) | 0.44 μ s |
| (at 1.0 μ s PULS 12.0 n.m.) | 0.84 μ s |

2.3 Receiver

| | |
|-----------------------|------------|
| MIC Frontend Ser.No. | A0209A |
| Diode limiter Ser.No. | Q8154A |
| IF Center Frequency | 60 MHz |
| IF Bandwidth | 20/6/3 MHz |

2.4 Display

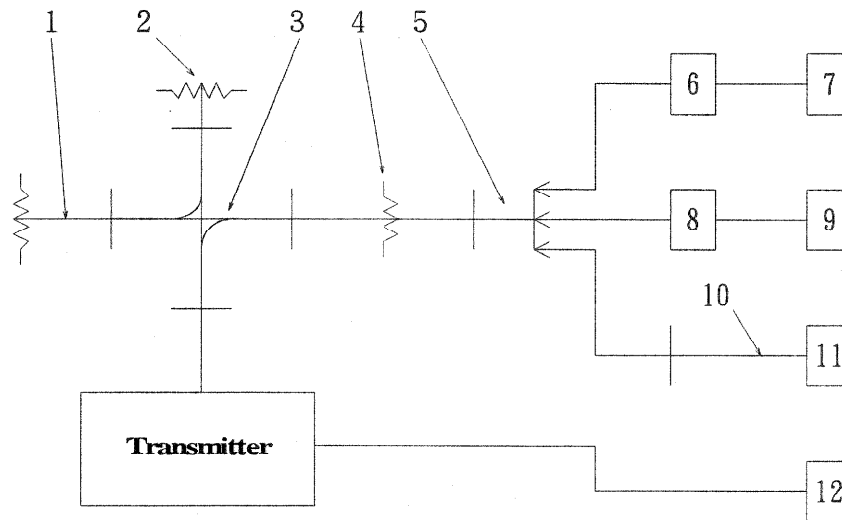
| | |
|---------------------------|--------------------|
| Input Voltage and Current | DC.24V 2.43A (58W) |
| Repetition Frequency | |
| (0.08 μ s) | 2250 Hz |
| (0.25 μ s) | 1700 Hz |
| (0.5 μ s) | 1200 Hz |
| (1.0 μ s) | 650 Hz |

3. Overall Test

| | |
|-----------------------------------|-------|
| Working Time of Timer | 1.5 m |
| Input Variation (10.8Vdc - 42Vdc) | Good |
| Overall Sensitivity | Good |
| Minimum Range | Good |
| Bearing Accuracy | Good |
| Mechanical Noise | Good |

(Sec. 2.985) 1.0 RF Power Output

(Sec. 2.989) 2.0 Occupied Bandwidth



| | | |
|-------------------------|--------|----------------|
| 1:Dummy Load | 4D104 | Shimada |
| 2:high power Dummy Load | 4D371A | Shimada |
| 3:Directional Coupler | 5D102A | Shimada |
| Coupling 30dB | | |
| Directivity 30dB | | |
| 4:Attenuator | S382C | HP |
| 5:Adaptor | S281A | HP |
| 6:Power Sensor | 8481A | HP |
| 7:Power Meter | 435A | HP |
| 8:Crystal Detector | 423B | HP |
| 9:Oscilloscope | 2445B | Tektronix |
| 10:Coaxial Cable | MI-04 | SONY/Tectronix |
| 11:Spectrum Analyzer | 8592A | HP |
| 12:Frequency Counter | 5300A | HP |

Measurement Point : Trasmmitter Output

FCC Submittal Material Data

(Sec. 2.985)

1.0 RF Power Output

1.1 Peak Power

| | |
|--------------------------------------|---------|
| (at 0.08 μ s PULS 0.75 n.m.) | 3.33 kW |
| (at 0.25 μ s PULS 1.5 n.m. long) | 3.33 kW |
| (at 0.5 μ s PULS 3 n.m. long) | 3.39 kW |
| (at 1.0 μ s PULS 12n.m.) | 3.39 kW |

1.2 Average Power

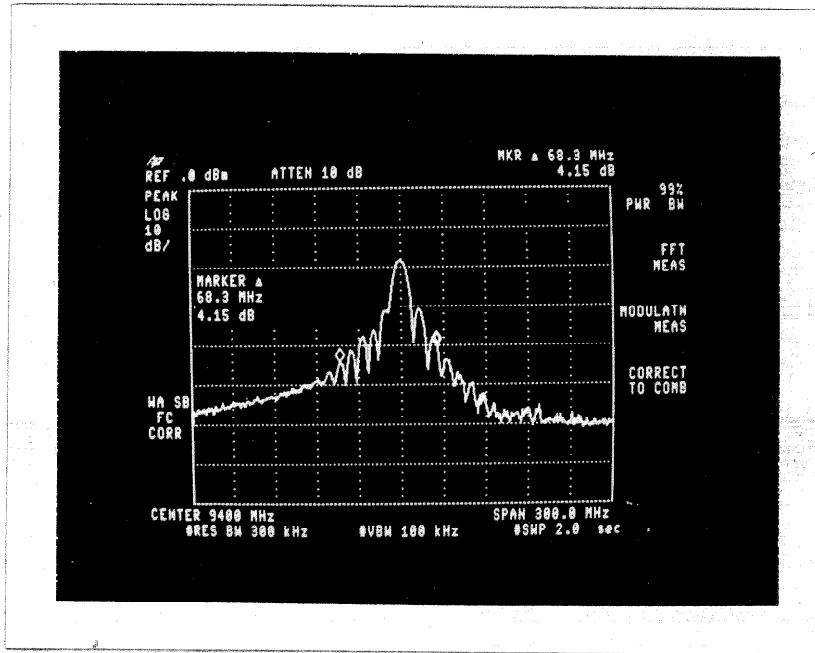
| | |
|--------------------------------------|--------|
| (at 0.08 μ s PULS 0.75 n.m.) | 0.75 W |
| (at 0.25 μ s PULS 1.5 n.m. long) | 1.53 W |
| (at 0.5 μ s PULS 3 n.m. long) | 1.91 W |
| (at 1.0 μ s PULS 12n.m.) | 1.94 W |

1.3 Load Impedance

VSWR 1.05 at 9.36 – 9.46 GHz

(Sec. 2.989) 2.0 Occupied Bandwidth
 2.1 0.08 μ S Pulse PRF 2250Hz
 0.08 μ S Pulse Length 0.10 μ S

Scale
 10dB/Div

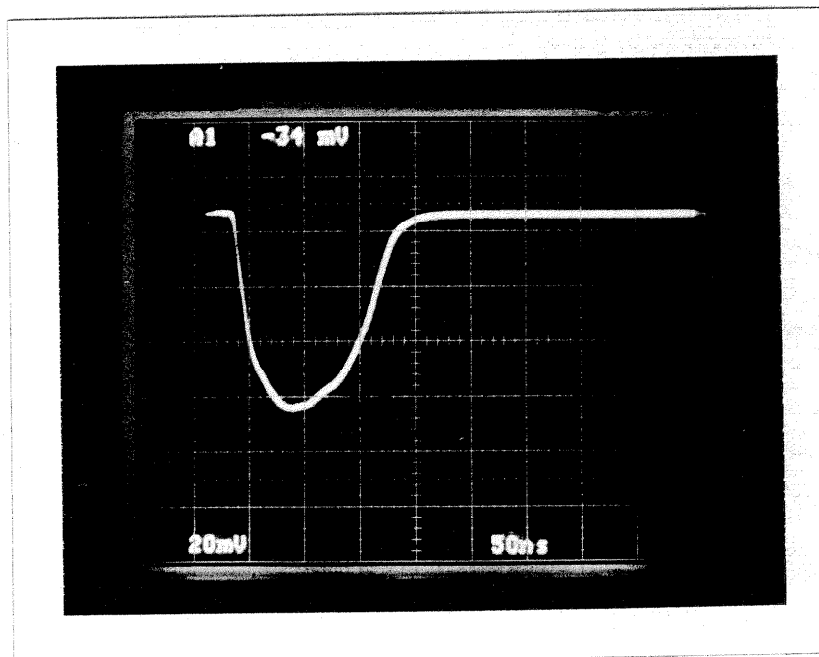


RF Spectrum
 0.08 μ S Pulse
 OBW=68.3MHz

Scale 30MHz/Div
 Center Frequency 9400MHz

(Sec. 2.987)

Scale
 20mV/Div



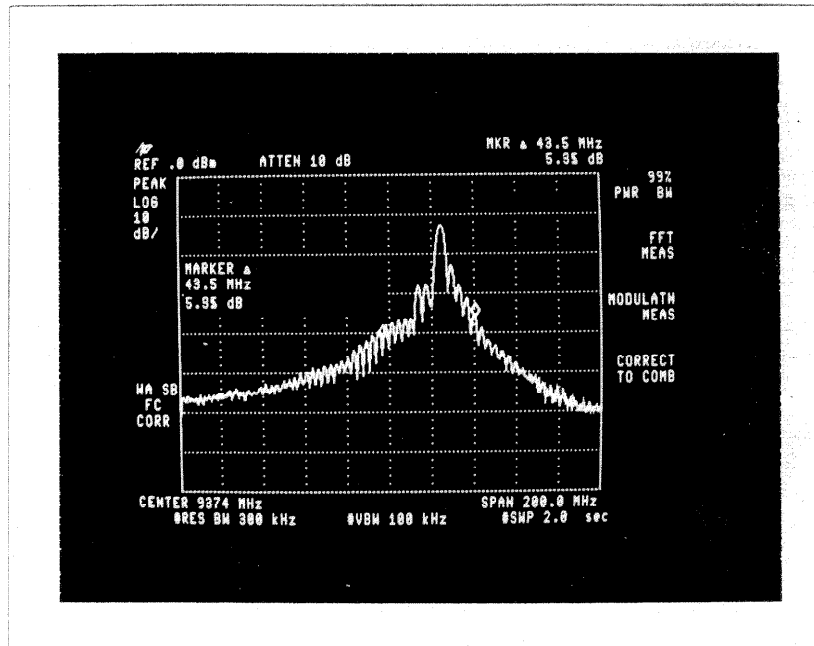
← - 3 dB
 Detected RF
 Pulse
 0.08 μ S Pulse

Scale 0.05 μ S/Div

(Sec. 2.989)

2.2 0.25 μ S Pulse PRF 1700Hz
0.25 μ S Pulse Length 0.27 μ S

Scale
10dB/Div

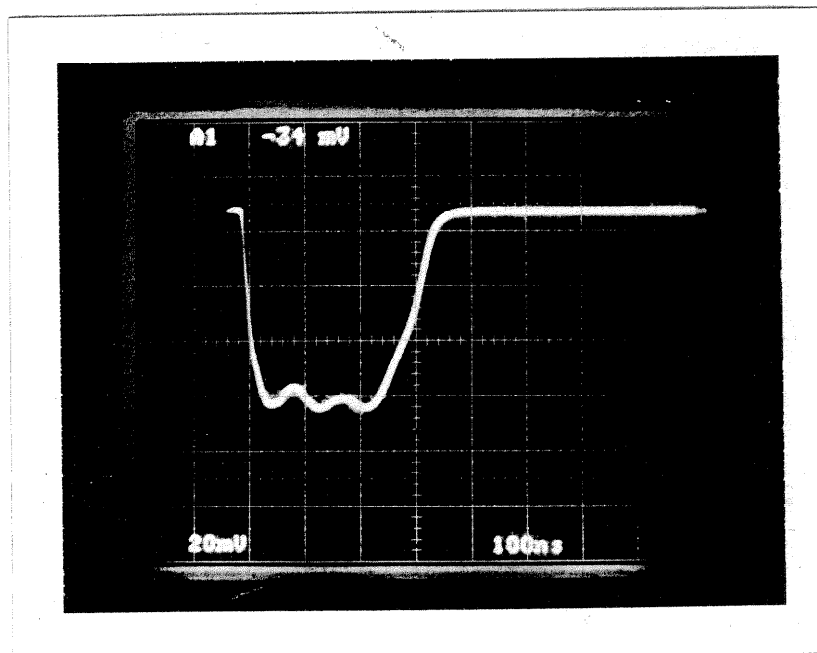


RF Spectrum
0.25 μ S Pulse
OBW=43.5MHz

Scale 20MHz/Div
Center Frequency 9374MHz

(Sec. 2.987)

Scale
20mV/Div



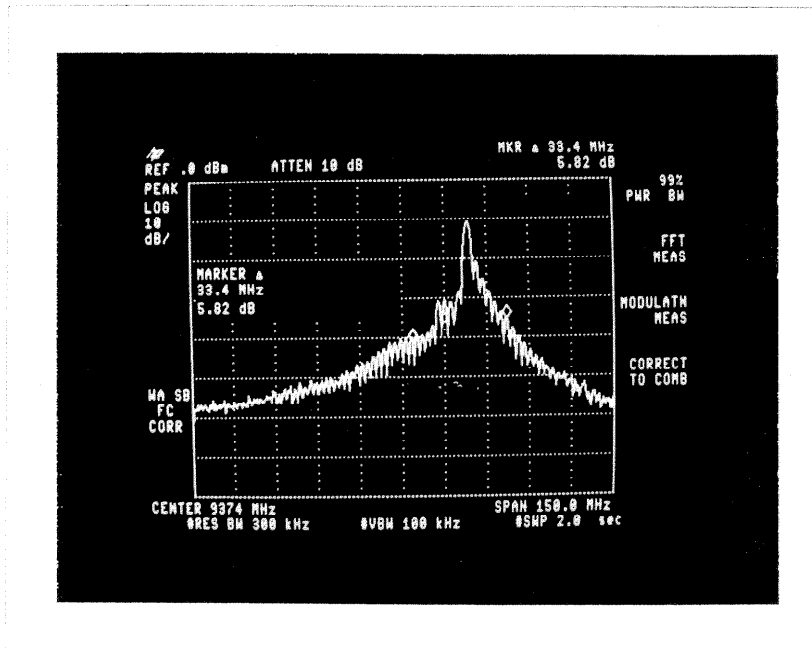
← -3 dB
Detected RF
Pulse
0.25 μ S Pulse

Scale 0.1 μ S/Div

(Sec. 2.989)

2.3 0.5 μ S Pulse PRF 1200Hz
0.5 μ S Pulse Length 0.47 μ S

Scale
10dB/Div

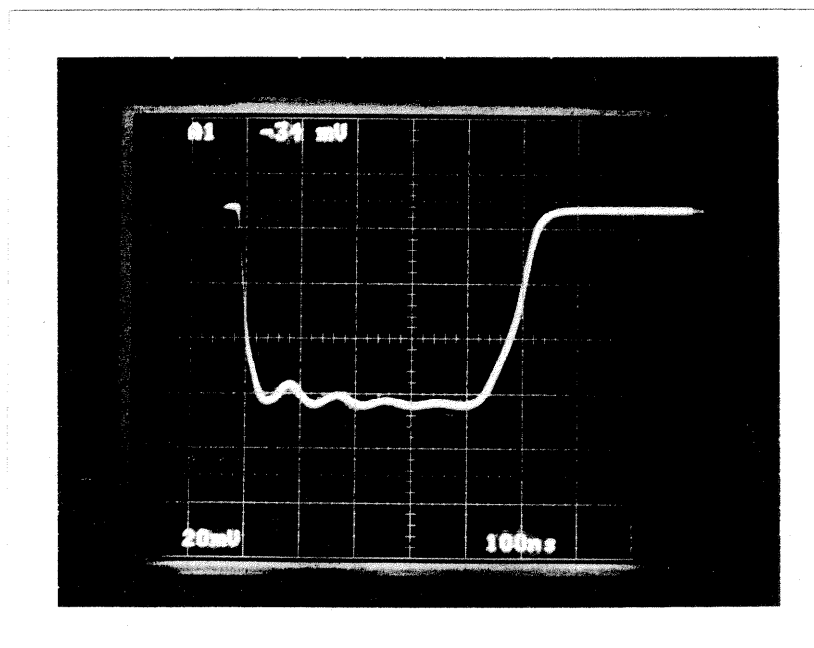


RF Spectrum
0.5 μ S Pulse
OBW=33.4MHz

Scale 15MHz/Div
Center Frequency 9374MHz

(Sec. 2.987)

Scale
20mV/Div



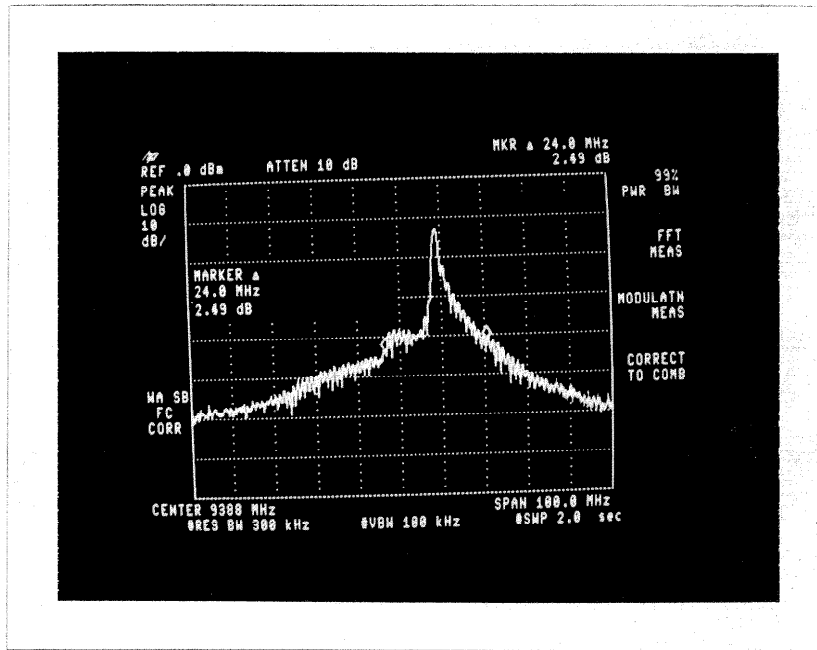
← -3 dB
Detected RF
Pulse
0.5 μ S Pulse

Scale 0.1 μ S/Div

(Sec. 2.989)

2.4 1.0 μ S Pulse PRF 650Hz
1.0 μ S Pulse Length 0.88 μ S

Scale
10dB/Div

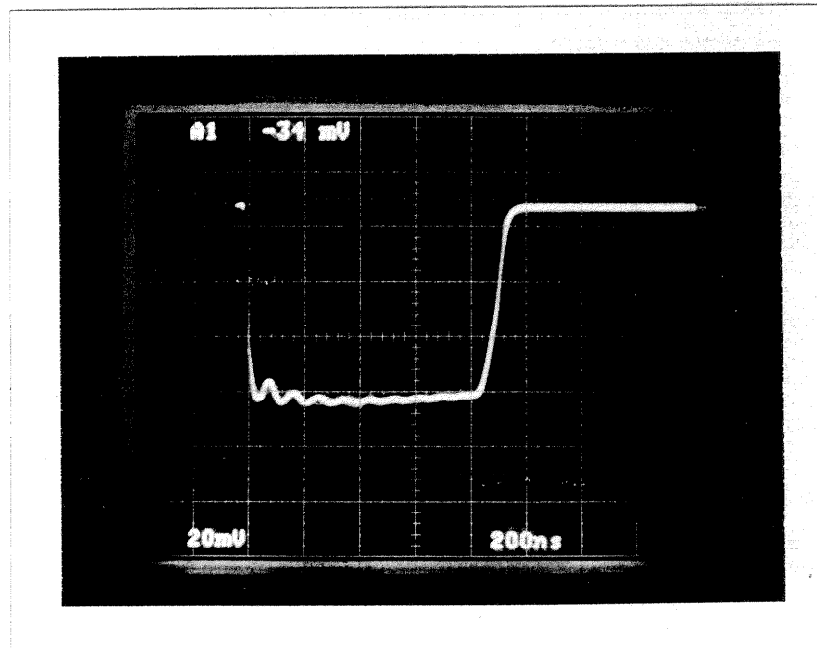


RF Spectrum
1.0 μ S Pulse
OBW=24.0MHz

Scale 10MHz/Div
Center Frequency 9388MHz

(Sec. 2.987)

Scale
20mV/Div

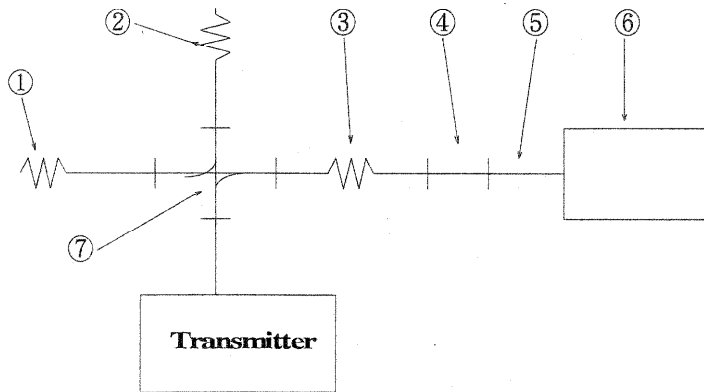


\leftarrow -3 dB
Detected RF
Pulse
1.0 μ S Pulse

Scale 0.2 μ S/Div

(Sec.2.991) 3.0 Spurious signal at antenna port

condition 1 : 0 to 20 GHz



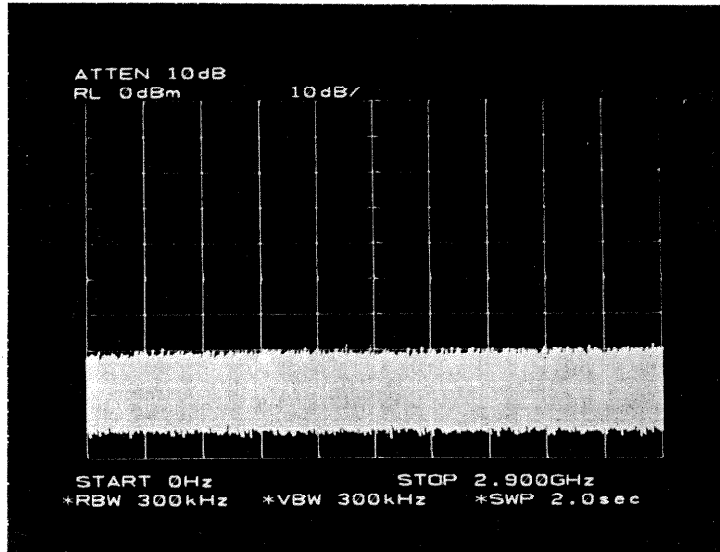
| | | |
|--------------------------|-------------|---------|
| 1. Dummy Load | 4D104 | Shimada |
| 2. high power Dummy Load | 4D371A | Shimada |
| 3. Attenuator | S382C | HP |
| 4. Adaptor | S281A | HP |
| 5. Coaxial Cable | ***** | HP |
| 6. Spectrum Analyzer | 8563A | HP |
| 7. Direction Coupler | 5D102A | Shimada |
| | Coupling | 30dB |
| | Directivity | 30dB |

Attenuation 3 :30 dB

Measurement Point :Transmitter Output

(Sec. 2.991)

Scale
↑ 10dB/Div
→ 290MHz/Div

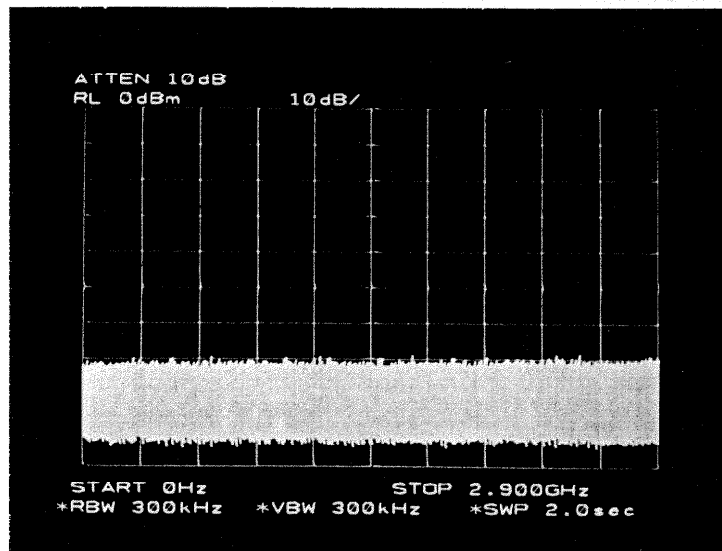


Spurious
Signal

OFF

0 to 2.9 GHz

Scale
↑ 10dB/Div
→ 290MHz/Div

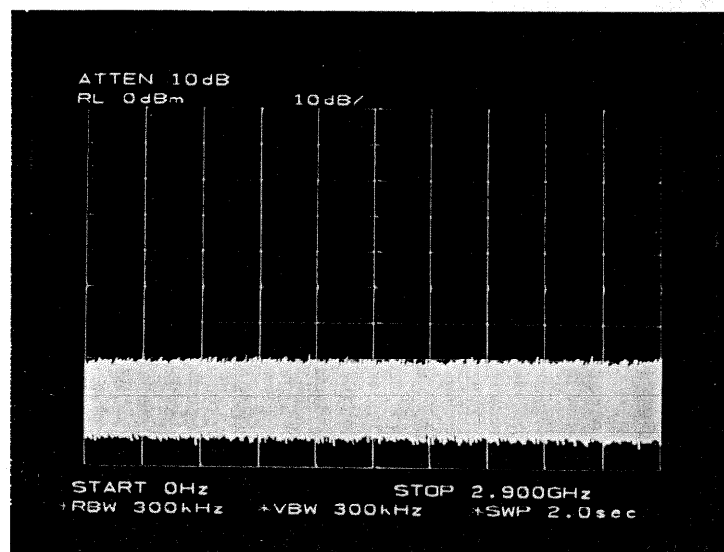


Spurious
Signal

Stand-By

0 to 2.9 GHz

Scale
↑ 10dB/Div
→ 290MHz/Div



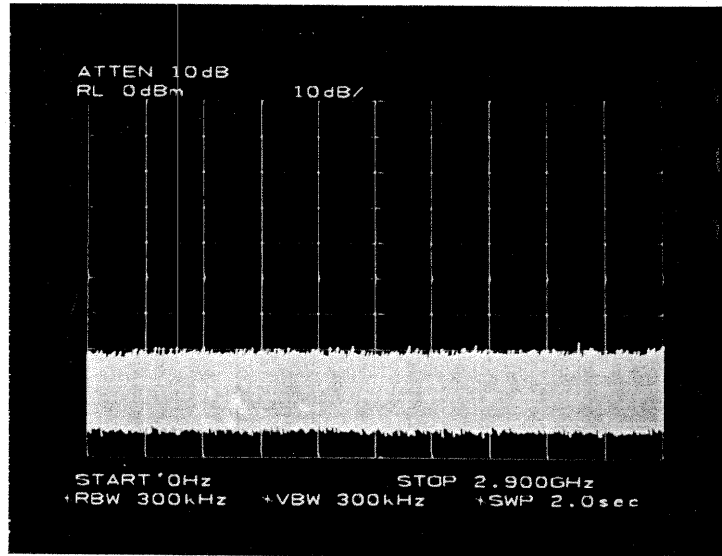
Spurious
Signal

0.08 μ S Pulse

0 to 2.9 GHz

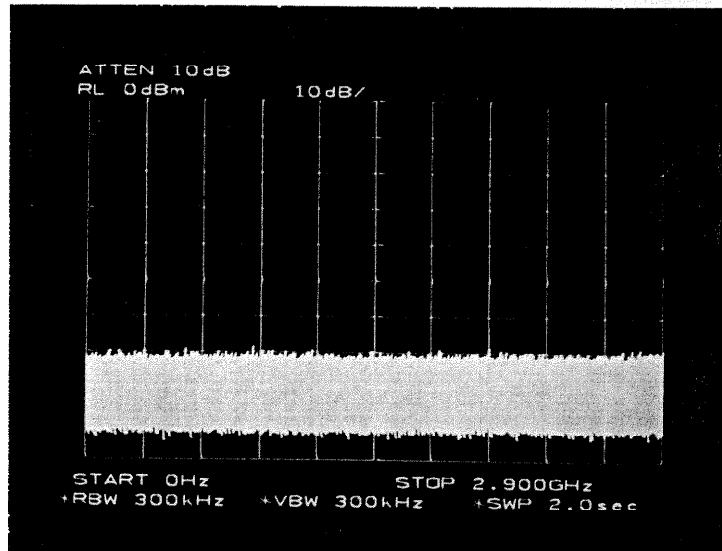
(Sec. 2.991)

Scale
↑ 10dB/Div
→ 290MHz/Div



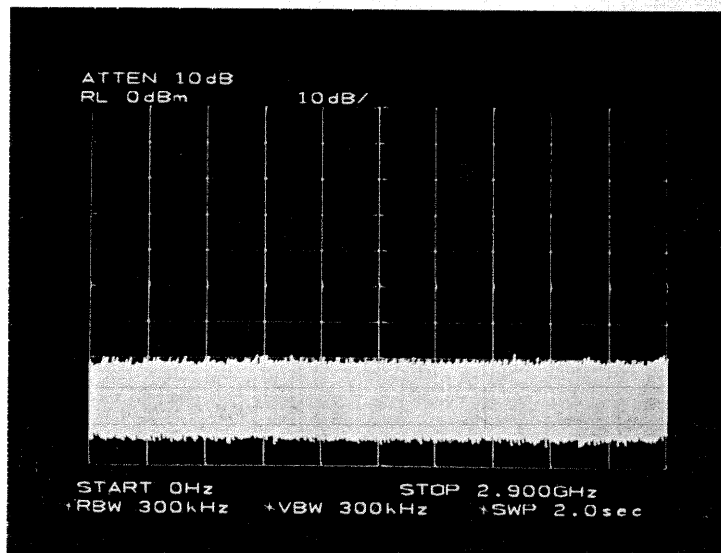
Spurious
Signal
0.25 μ S Pulse
0 to 2.9 GHz

Scale
↑ 10dB/Div
→ 290MHz/Div



Spurious
Signal
0.5 μ S Pulse
0 to 2.9 GHz

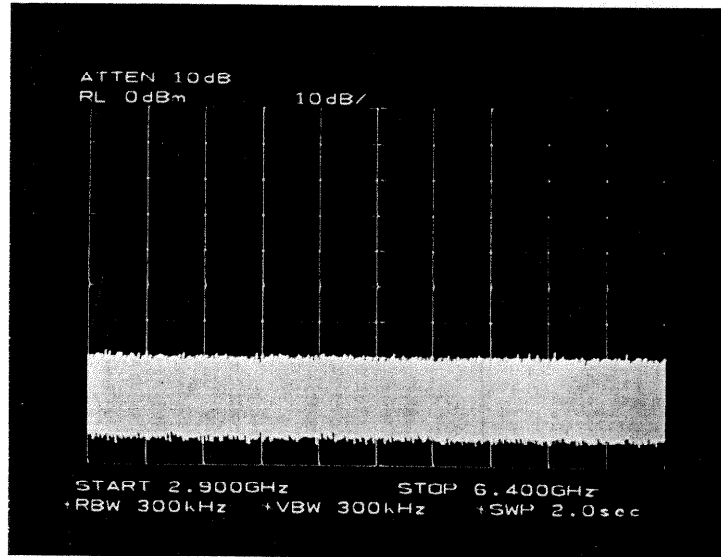
Scale
↑ 10dB/Div
→ 290MHz/Div



Spurious
Signal
1.0 μ S Pulse
0 to 2.9 GHz

(Sec. 2.991)

Scale
↑ 10dB/Div
→ 350MHz/Div

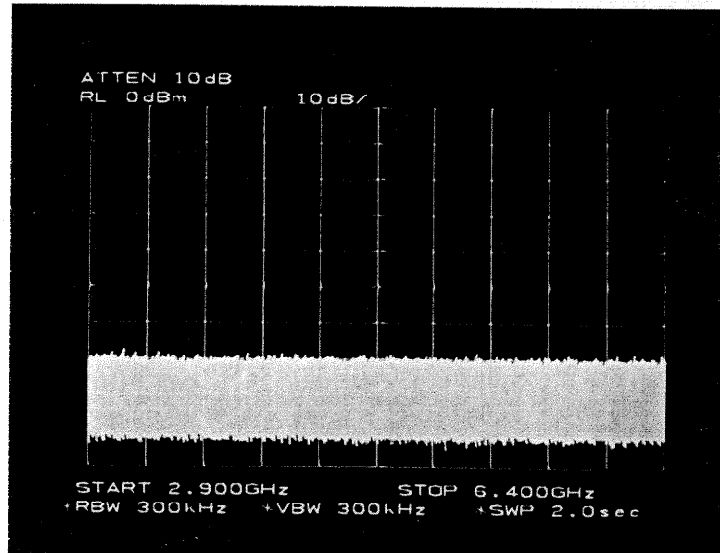


Spurious
Signal

OFF

2.9 to 6.4 GHz

Scale
↑ 10dB/Div
→ 350MHz/Div

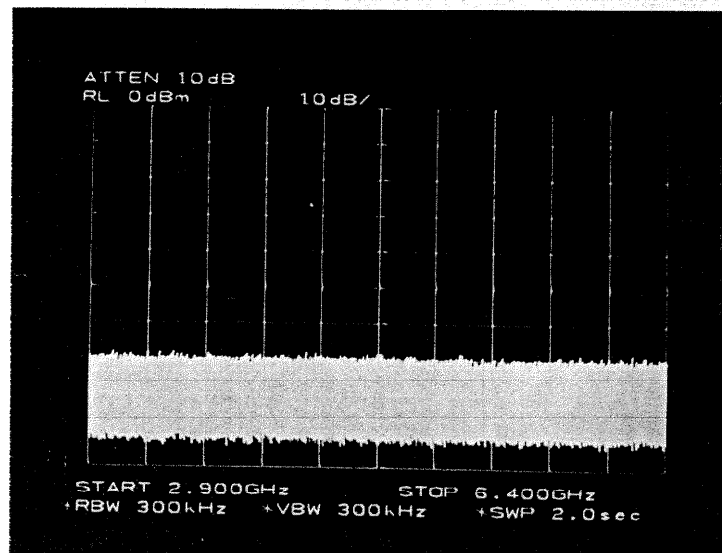


Spurious
Signal

Stand-By

2.9 to 6.4 GHz

Scale
↑ 10dB/Div
→ 350MHz/Div



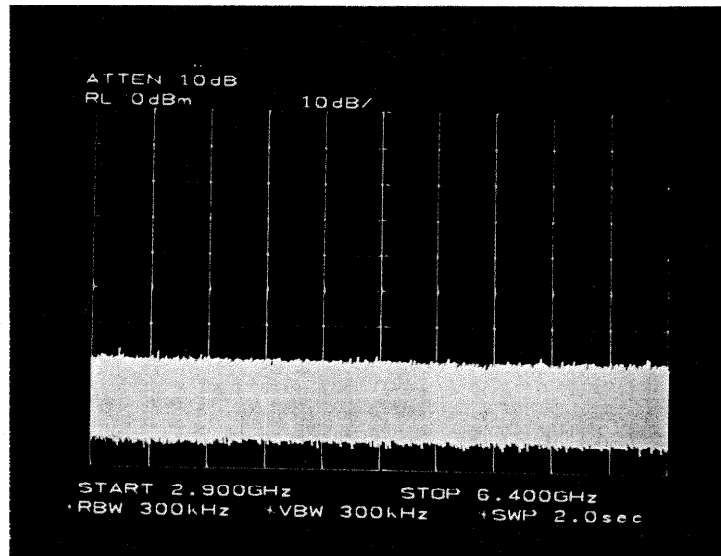
Spurious
Signal

0.08 μ S Pulse

2.9 to 6.4 GHz

(Sec. 2.991)

Scale
↑ 10dB/Div
→ 350MHz/Div

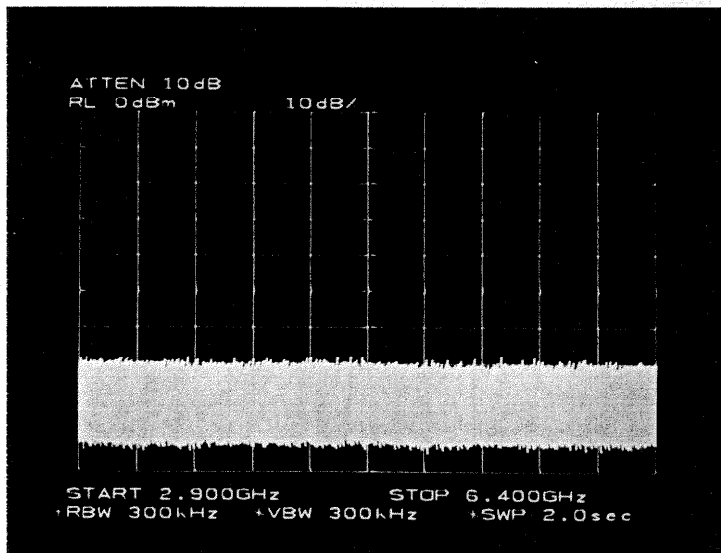


Spurious
Signal

0.25 μ S Pulse

2.9 to 6.4 GHz

Scale
↑ 10dB/Div
→ 350MHz/Div

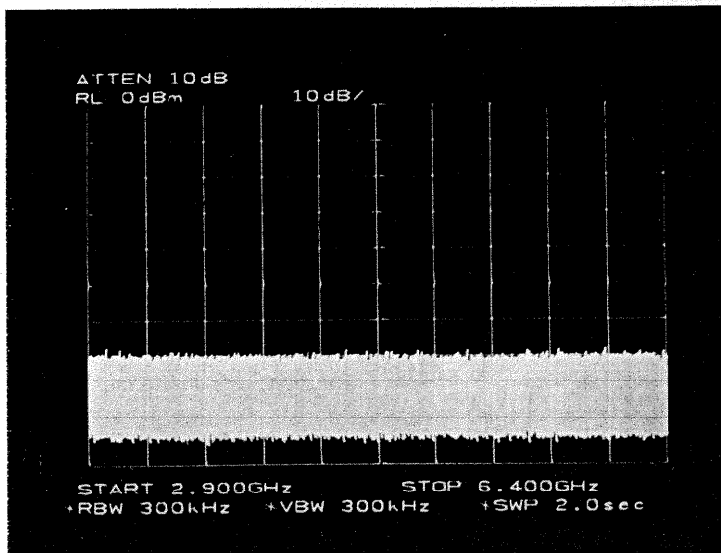


Spurious
Signal

0.5 μ S Pulse

2.9 to 6.4 GHz

Scale
↑ 10dB/Div
→ 350MHz/Div



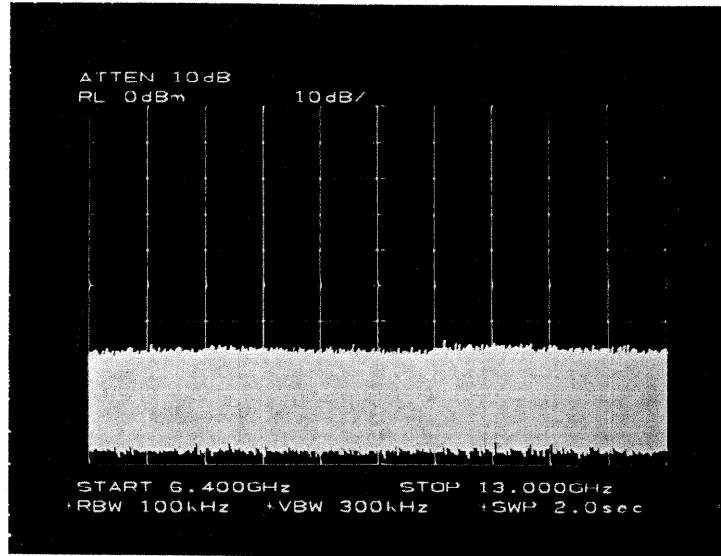
Spurious
Signal

1.0 μ S Pulse

2.9 to 6.4 GHz

(Sec. 2.991)

Scale
↑ 10dB/Div
→ 660MHz/Div

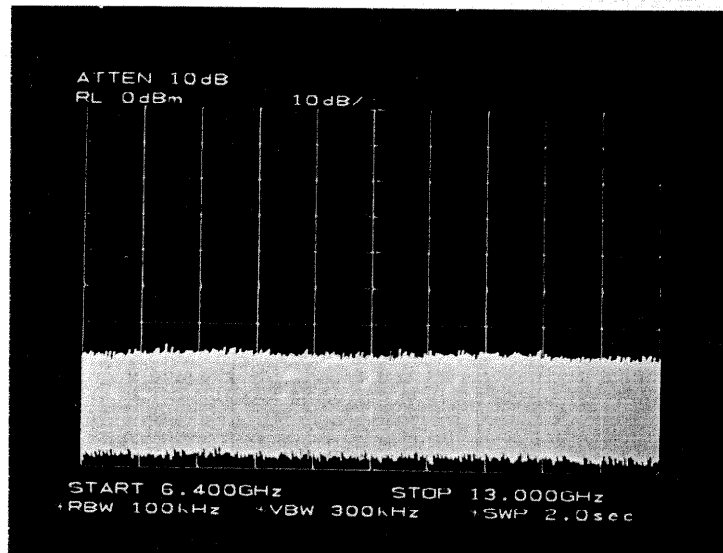


Spurious
Signal

OFF

6.4 to 13.0 GHz

Scale
↑ 10dB/Div
→ 660MHz/Div

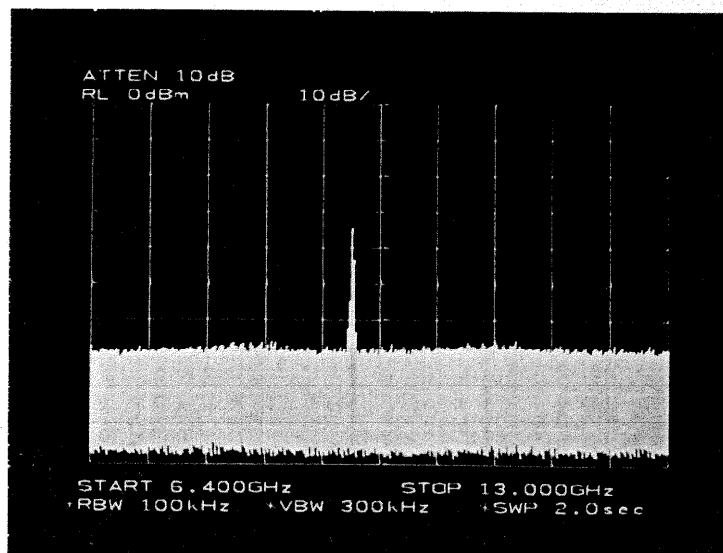


Spurious
Signal

Stand-By

6.4 to 13.0 GHz

Scale
↑ 10dB/Div
→ 660MHz/Div



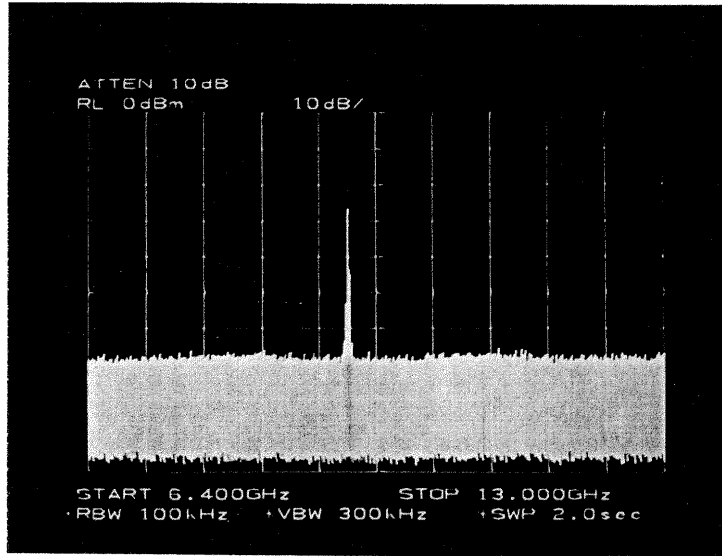
Spurious
Signal

0.08 μ S Pulse

6.4 to 13.0 GHz

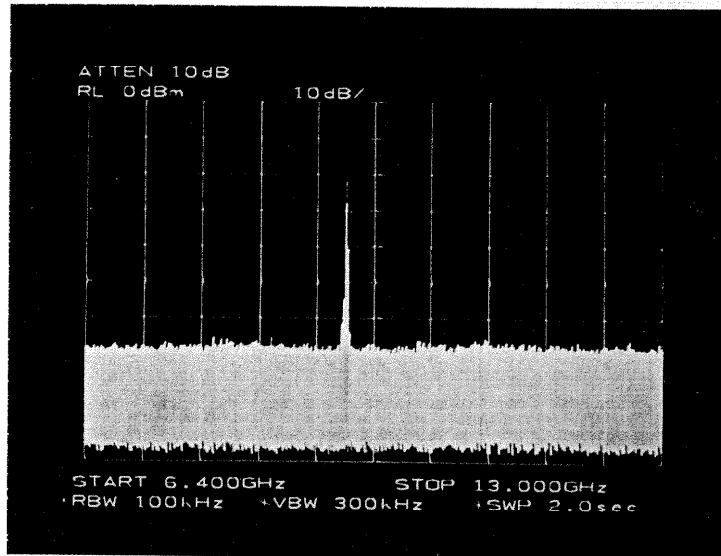
(Sec. 2.991)

Scale
↑ 10dB/Div
→ 660MHz/Div



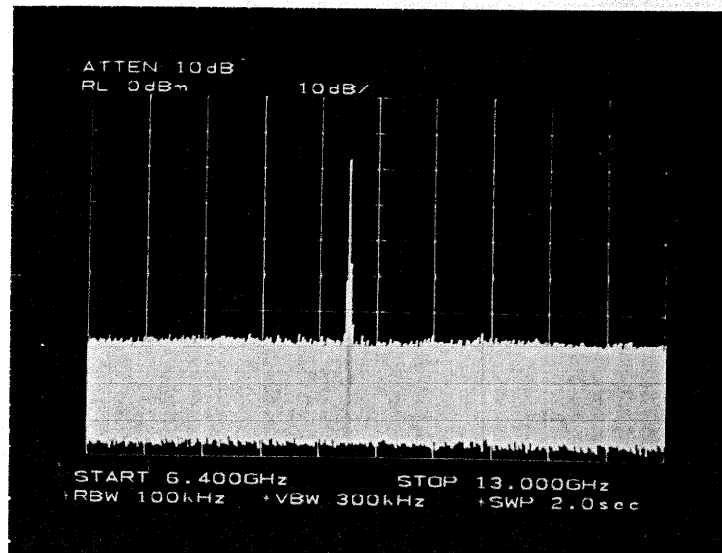
Spurious
Signal
0.25 μ S Pulse
6.4 to 13.0 GHz

Scale
↑ 10dB/Div
→ 660MHz/Div



Spurious
Signal
0.5 μ S Pulse
6.4 to 13.0 GHz

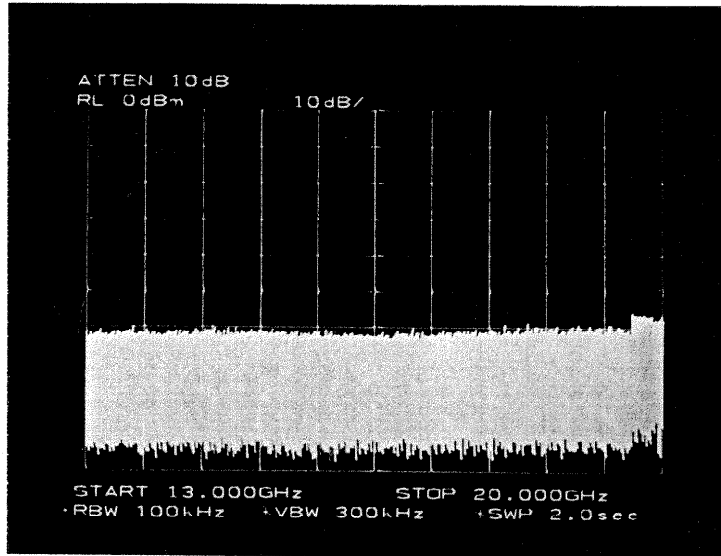
Scale
↑ 10dB/Div
→ 660MHz/Div



Spurious
Signal
1.0 μ S Pulse
6.4 to 13.0 GHz

(Sec. 2.991)

Scale
↑ 10dB/Div
→ 700MHz/Div

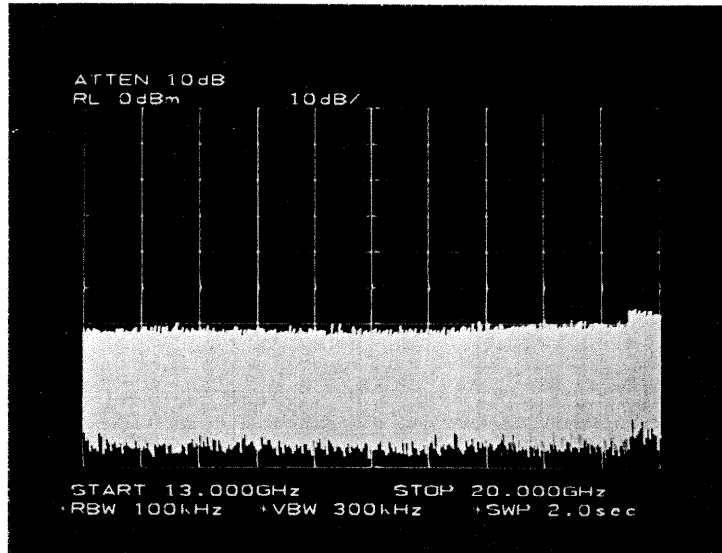


Spurious
Signal

OFF

13.0 to 20 GHz

Scale
↑ 10dB/Div
→ 700MHz/Div

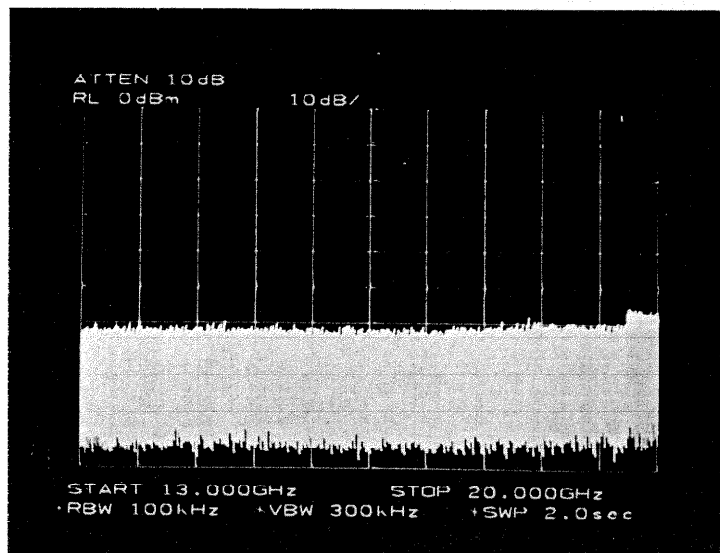


Spurious
Signal

Stand-By

13.0 to 20 GHz

Scale
↑ 10dB/Div
→ 700MHz/Div



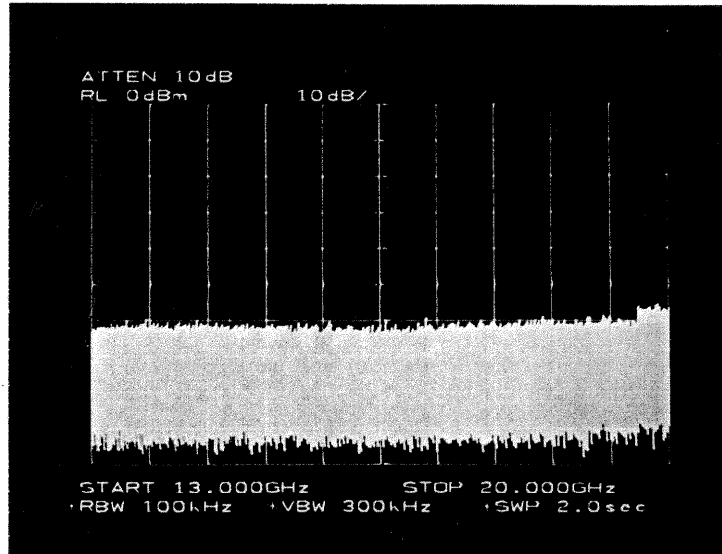
Spurious
Signal

0.08 μ S Pulse

13.0 to 20 GHz

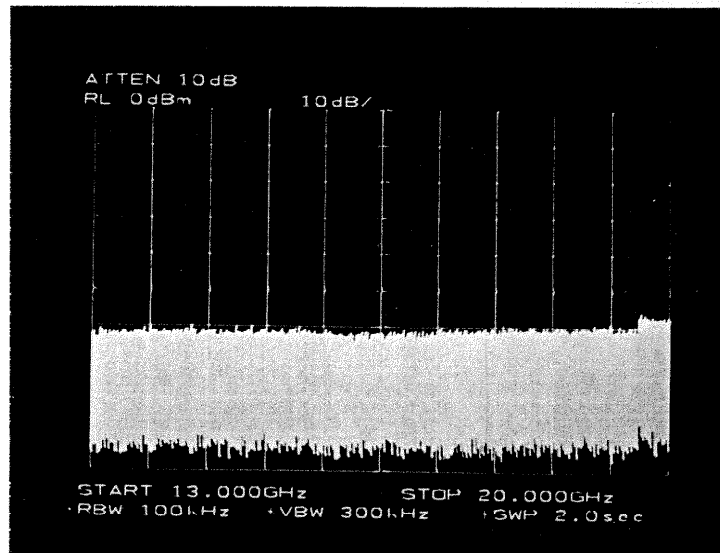
(Sec. 2.991)

Scale
↑ 10dB/Div
→ 700MHz/Div



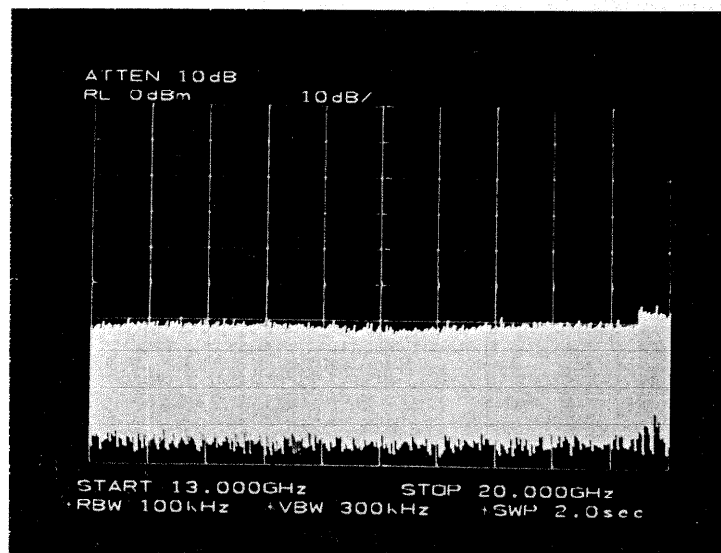
Spurious
Signal
0.25 μ S Pulse
13.0 to 20 GHz

Scale
↑ 10dB/Div
→ 700MHz/Div



Spurious
Signal
0.5 μ S Pulse
13.0 to 20 GHz

Scale
↑ 10dB/Div
→ 700MHz/Div



Spurious
Signal
1.0 μ S Pulse
13.0 to 20 GHz