

TEST DATA OF JMA-2343

Type	JMA-2343	Ser.No. LX54334
Scanner Unit	NKE-249	Ser.No. LX34338
Display Unit	NCD-4170	Ser.No. LX24334
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
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Display Unit	Good
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2. Electrical Tests

2.1 Working of each operation unit

Scanner Unit	Good
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Control Panel	Good
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STBY/OFF Key	Good
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X-MIT/OFF Key	Good
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EBL Key	Good
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VRM Key	Good
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BRIL/HL OFF Key	Good
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MENU Key	Good
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ENTER Key	Good
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Range Key	Good
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Cross Key	Good
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Soft Key 1	Good
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Soft Key 2	Good
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Soft Key 3	Good
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Soft Key 4	Good
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[TUNE] Control	Good
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[GAIN] Control	Good
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[STC] Control	Good
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[FTC] Control	Good
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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.	R3215C
Operating Frequency	
(at 0.08 μ s PULS 0.75 n.m.)	9400 MHz
(at 0.25 μ s PULS 3.0 n.m.)	9399 MHz
(at 0.5 μ s PULS 6.0 n.m.)	9399 MHz
(at 1.0 μ s PULS 12.0 n.m.)	9398 MHz
Peak Output Power	
(at 0.08 μ s PULS 0.75 n.m.)	3.33 kW
(at 0.25 μ s PULS 3.0 n.m.)	3.33 kW
(at 0.5 μ s PULS 6.0 n.m.)	3.39 kW
(at 1.0 μ s PULS 12.0 n.m.)	3.39 kW
Pulse Length	
(at 0.08 μ s PULS 0.75 n.m.)	0.10 μ s
(at 0.25 μ s PULS 3.0 n.m.)	0.27 μ s
(at 0.5 μ s PULS 6.0 n.m.)	0.47 μ s
(at 1.0 μ s PULS 12.0 n.m.)	0.88 μ s

2.3 Receiver

MIC Frontend Ser.No.	A0146A
Diode limiter Ser.No.	Q8262A
IF Center Frequency	60 MHz
IF Bandwidth	20/6/3 MHz

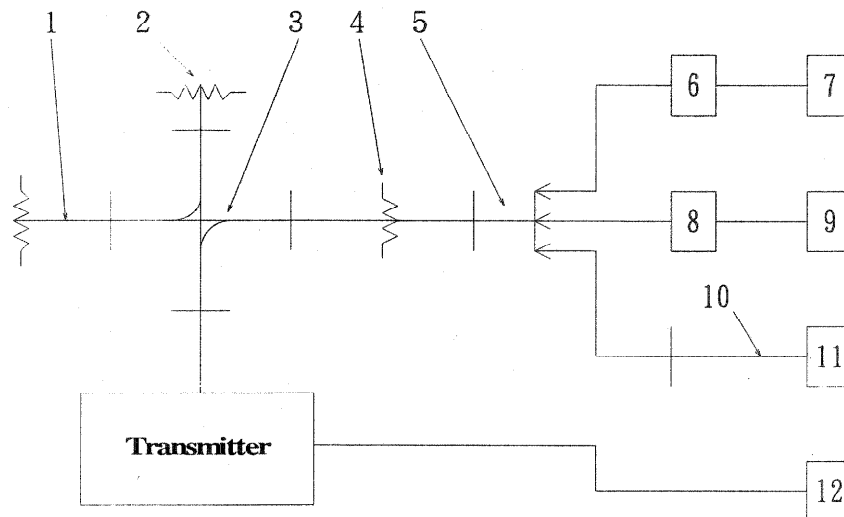
2.4 Display

Input Voltage and Current	DC.24V 1.95A (39W)
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 : Trasmitter 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.)	4.33 kW
(at 0.25 μ s PULS 1.5 n.m. long)	4.63 kW
(at 0.5 μ s PULS 3 n.m. long)	4.87 kW
(at 1.0 μ s PULS 12n.m.)	4.95 kW

1.2 Average Power

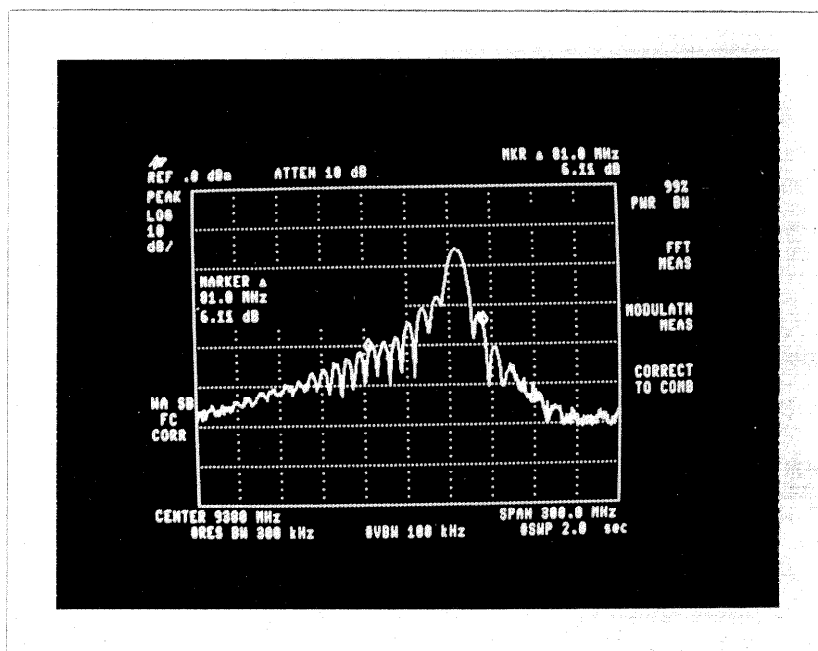
(at 0.08 μ s PULS 0.75 n.m.)	0.78 W
(at 0.25 μ s PULS 1.5 n.m. long)	1.81 W
(at 0.5 μ s PULS 3 n.m. long)	2.57 W
(at 1.0 μ s PULS 12n.m.)	2.7 W

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 0.08 μ S

Scale
 10dB/Div

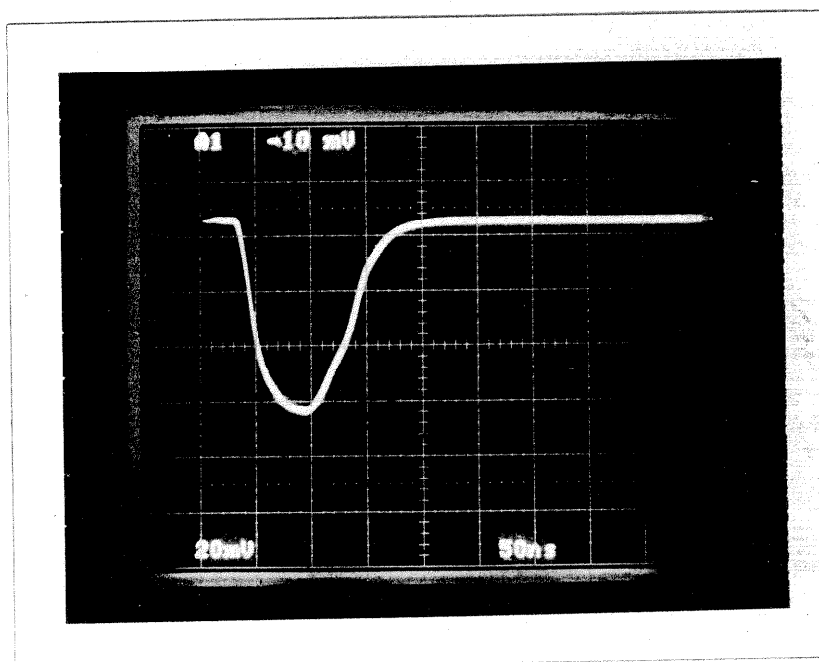


RF Spectrum
 0.08 μ S Pulse
 OBW=81.0MHz

Scale 30MHz/Div
 Center Frequency 9380MHz

(Sec. 2.987)

Scale
 20mV/Div



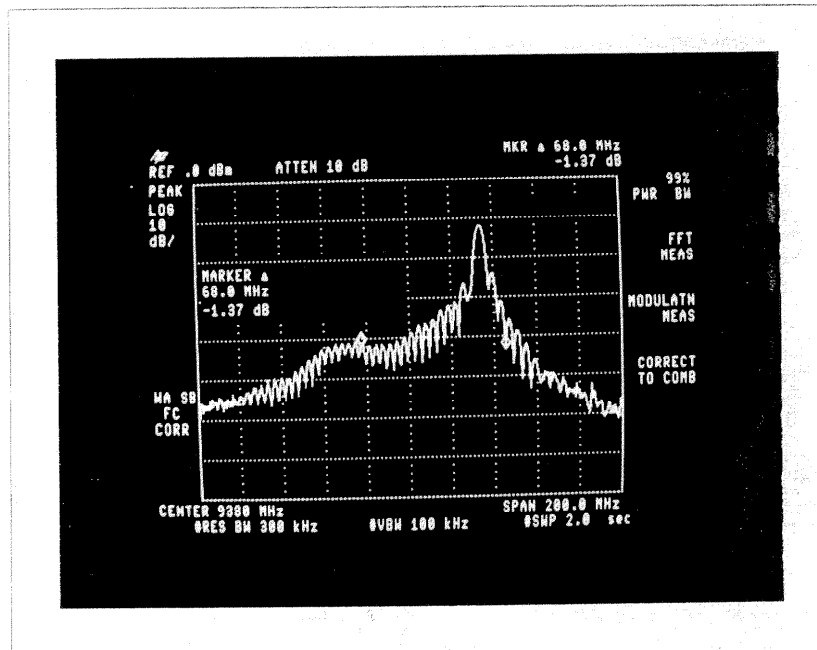
← -3 dB
 Detected RF
 Pulse
 0.08 μ S Pulse

Scale 0.05 μ S/Div

(Sec. 2.989)

2.2 0.25 μ S Pulse PRF 1700Hz
0.25 μ S Pulse Length 0.23 μ S

Scale
10dB/Div



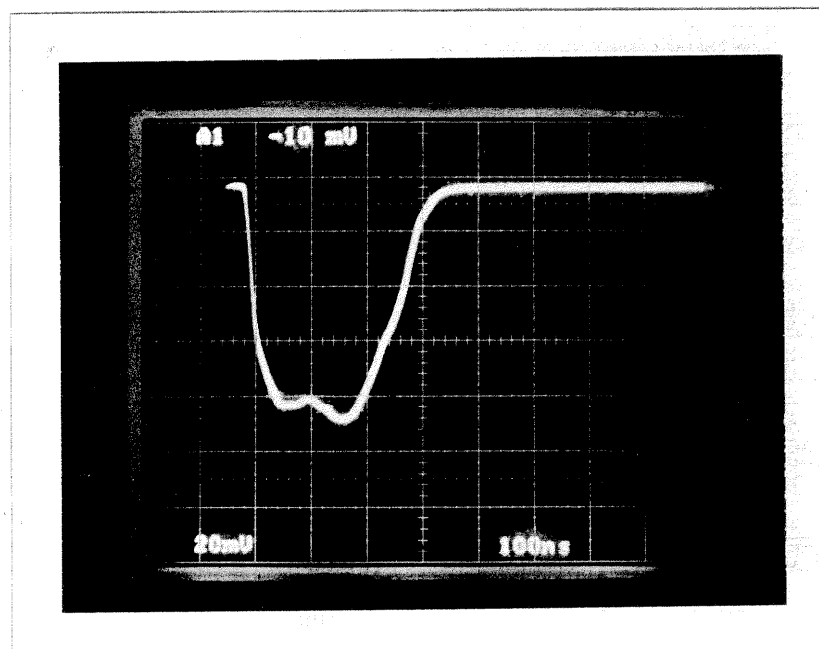
RF Spectrum
0.25 μ S Pulse

OBW=68.0MHz

Scale 20MHz/Div
Center Frequency 9380MHz

(Sec. 2.987)

Scale
20mV/Div



← - 3 dB

Detected RF
Pulse

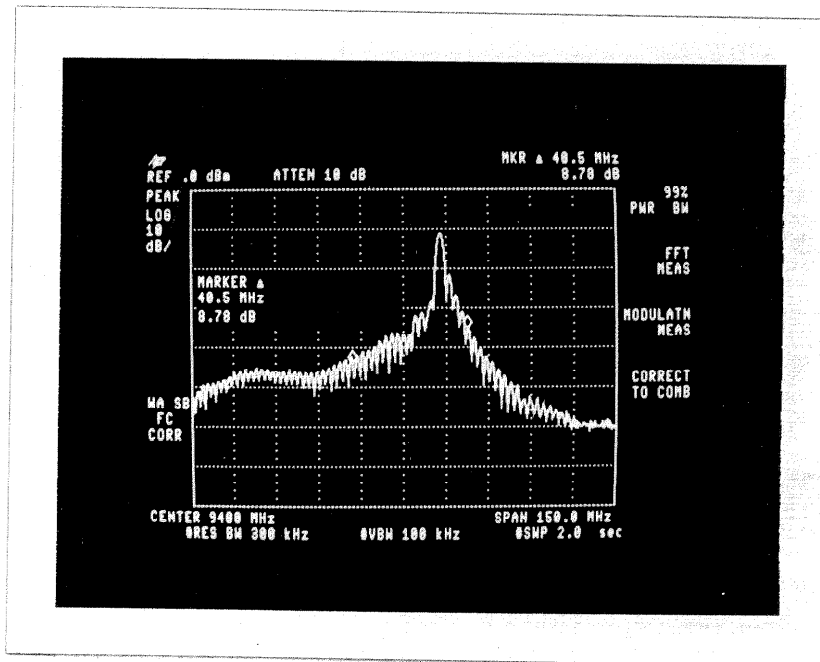
0.25 μ S Pulse

Scale 0.1 μ S/Div

(Sec. 2.989)

2.3 $0.5\ \mu\text{S}$ Pulse PRF 1200Hz
 $0.5\ \mu\text{S}$ Pulse Length $0.44\ \mu\text{S}$

Scale
 10dB/Div



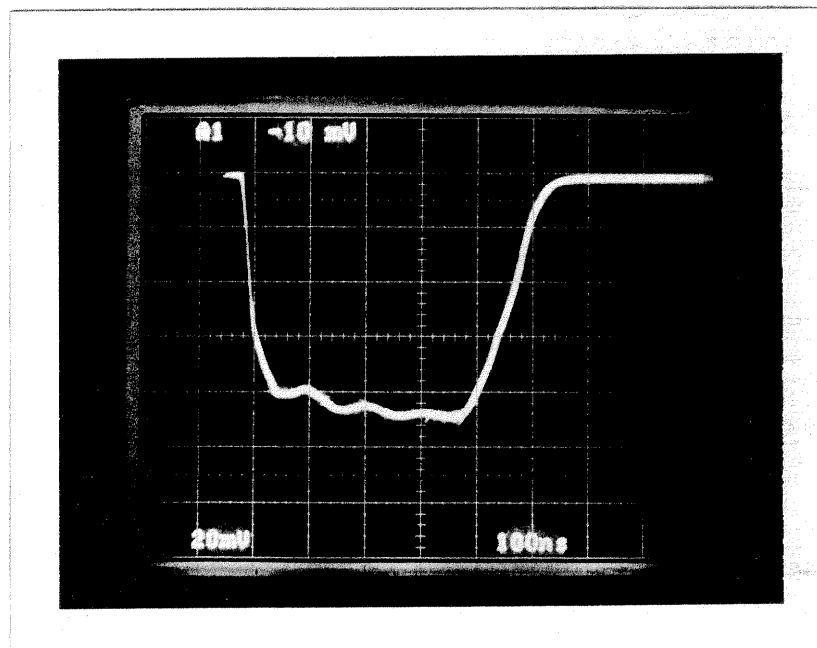
RF Spectrum
 $0.5\ \mu\text{S}$ Pulse

OBW=40.5MHz

Scale 15MHz/Div
Center Frequency 9400MHz

(Sec. 2.987)

Scale
 20mV/Div



← - 3 dB

Detected RF
Pulse

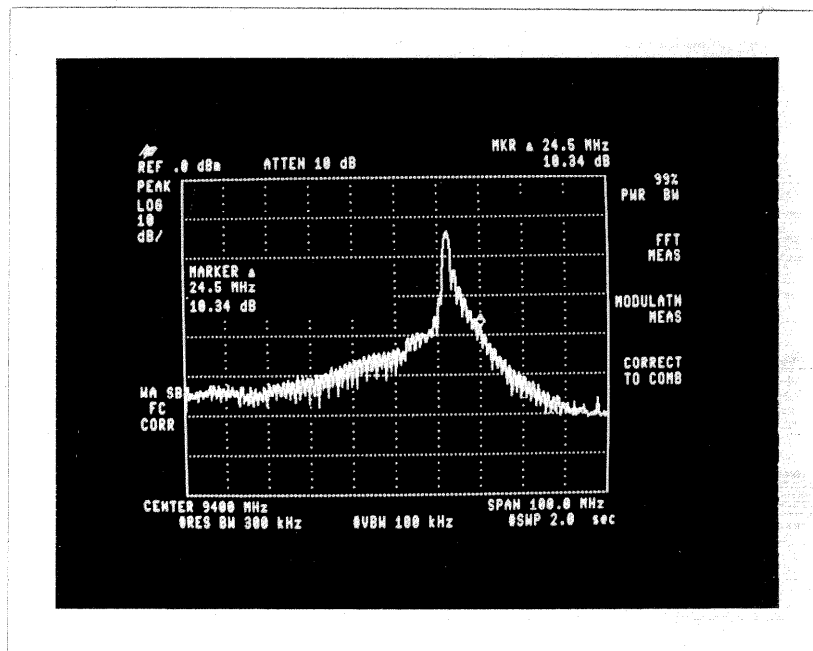
$0.5\ \mu\text{S}$ Pulse

Scale $0.1\ \mu\text{S/Div}$

(Sec. 2.989)

2.4 1.0 μ S Pulse PRF 650Hz
1.0 μ S Pulse Length 0.84 μ S

Scale
10dB/Div

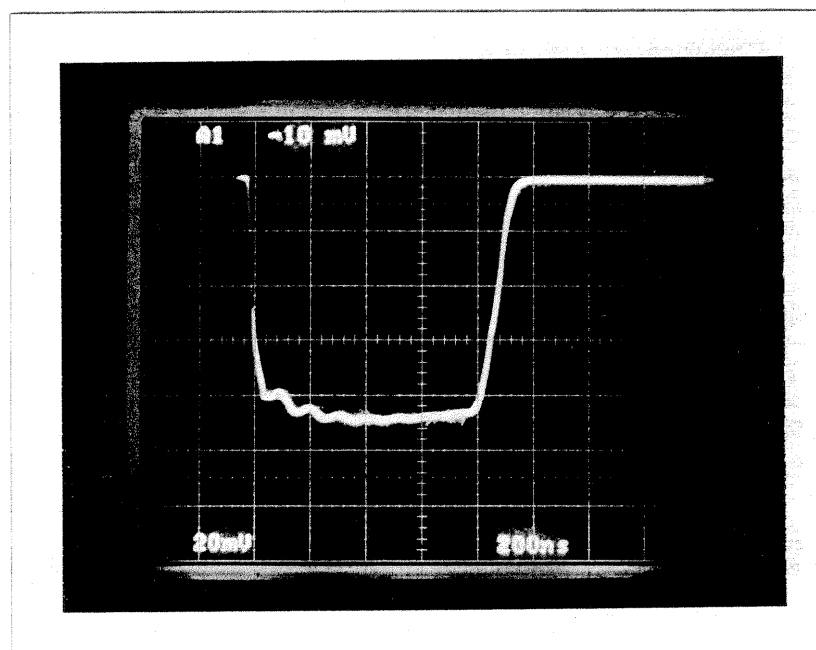


RF Spectrum
1.0 μ S Pulse
OBW=24.5MHz

Scale 10MHz/Div
Center Frequency 9400MHz

(Sec. 2.987)

Scale
20mV/Div



← - 3 dB

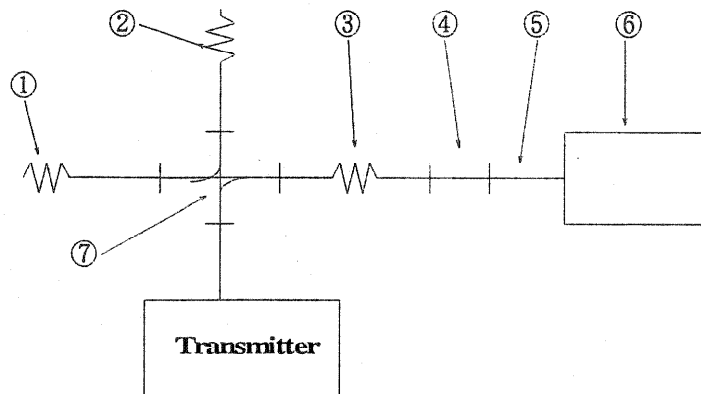
Detected RF
Pulse

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



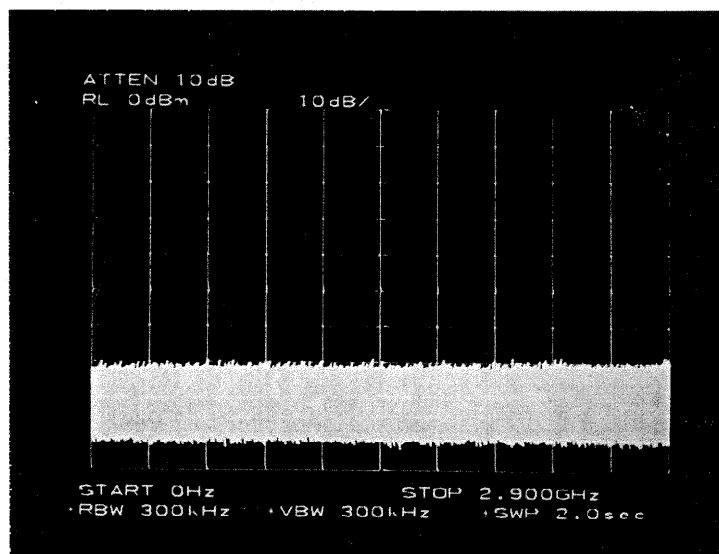
1. Dummy Load	4D104	Shimada
2. high power Dummy Load	4D371A	Shimada
3. Attenuator	S382C	HP
4. Adaptor	S281A	HP
5. Coaxial Cable	*****	HP
6. Spectrum Analyzer	8563A	HP
7. Direction Coupler	5D102A	Shimada
Coupling	30dB	
Directivity	30dB	

Attenuation 3 :30 dB

Measurement Point :Transmitter Output

(Sec. 2.991)

Scale
↑ 10dB/Div
→ 290MHz/Div

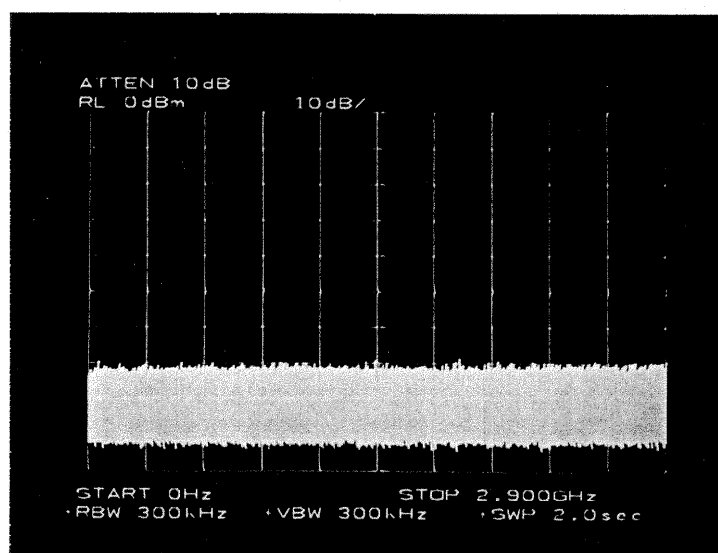


Spurious
Signal

OFF

0 to 2.9 GHz

Scale
↑ 10dB/Div
→ 290MHz/Div

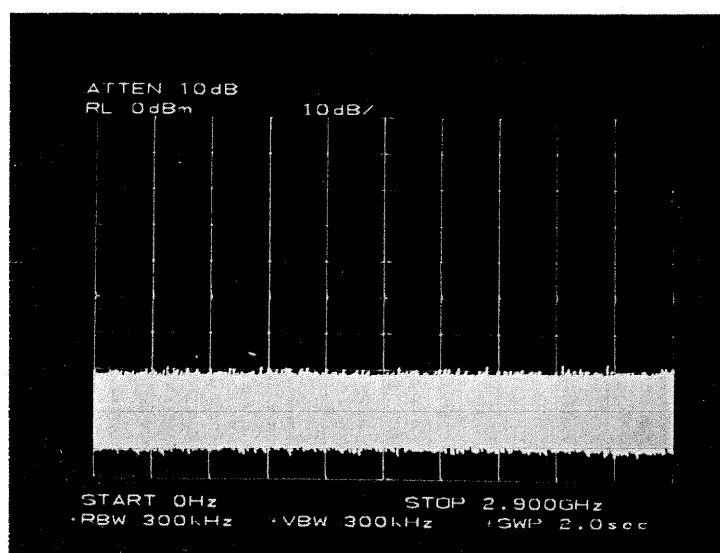


Spurious
Signal

Stand-By

0 to 2.9 GHz

Scale
↑ 10dB/Div
→ 290MHz/Div



Spurious
Signal

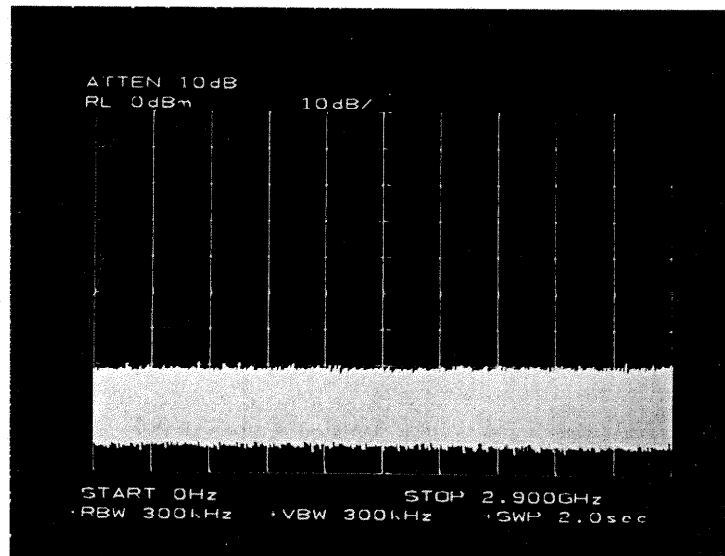
0.08 μ S Pulse

0 to 2.9 GHz

(Sec. 2.991)

Scale
↑ 10dB/Div

→ 290MHz/Div



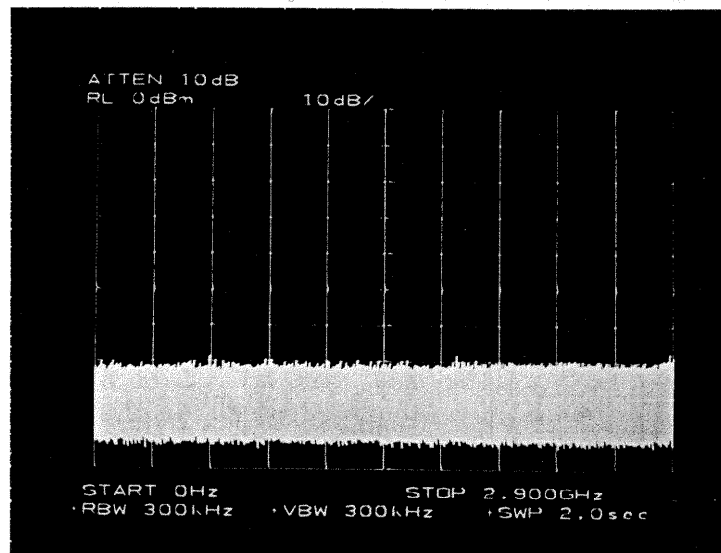
Spurious
Signal

0.25 μ S Pulse

0 to 2.9 GHz

Scale
↑ 10dB/Div

→ 290MHz/Div



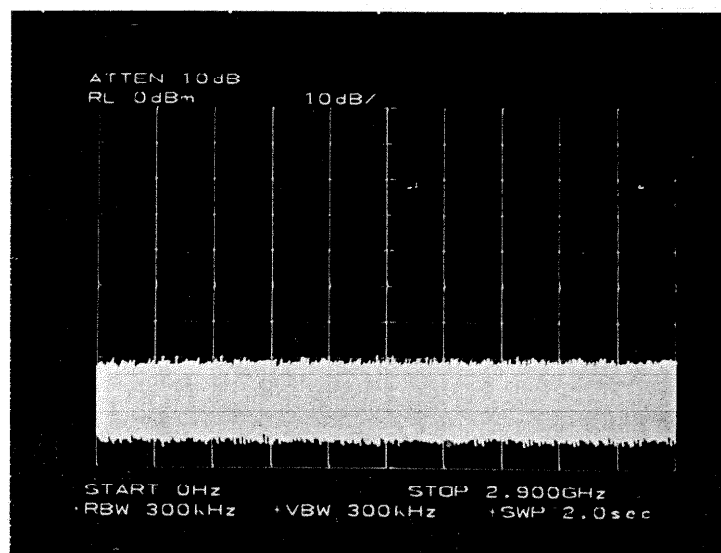
Spurious
Signal

0.5 μ S Pulse

0 to 2.9 GHz

Scale
↑ 10dB/Div

→ 290MHz/Div



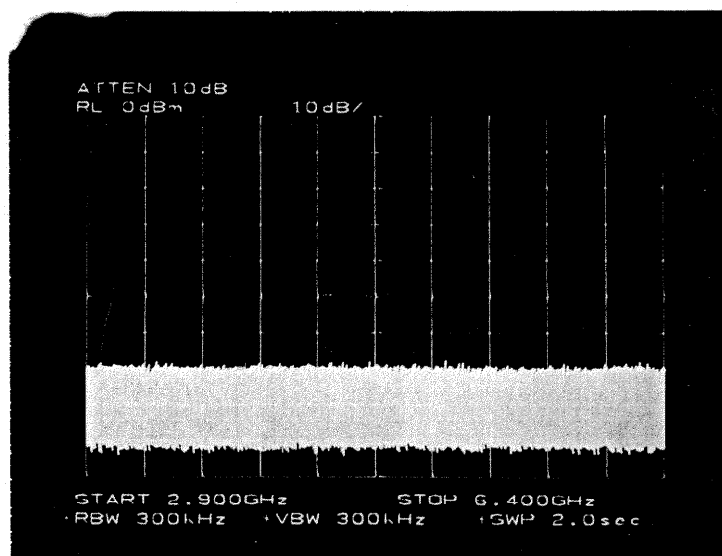
Spurious
Signal

1.0 μ S Pulse

0 to 2.9 GHz

(Sec. 2.991)

Scale
↑ 10dB/Div
→ 350MHz/Div

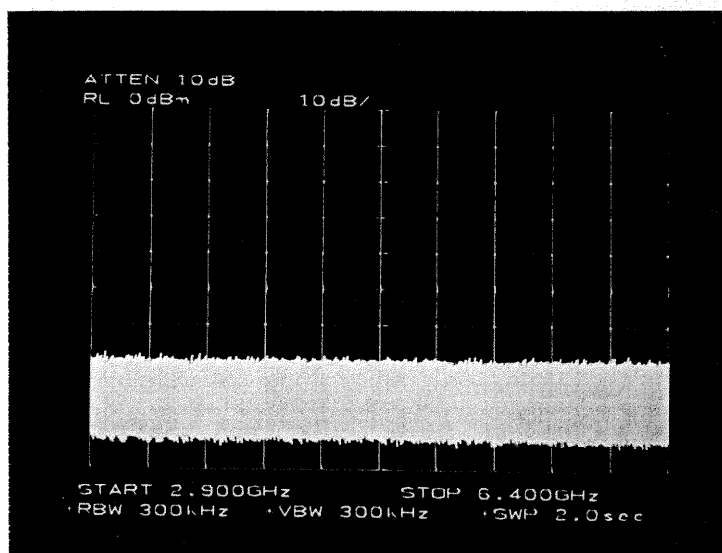


Spurious
Signal

OFF

2.9 to 6.4 GHz

Scale
↑ 10dB/Div
→ 350MHz/Div

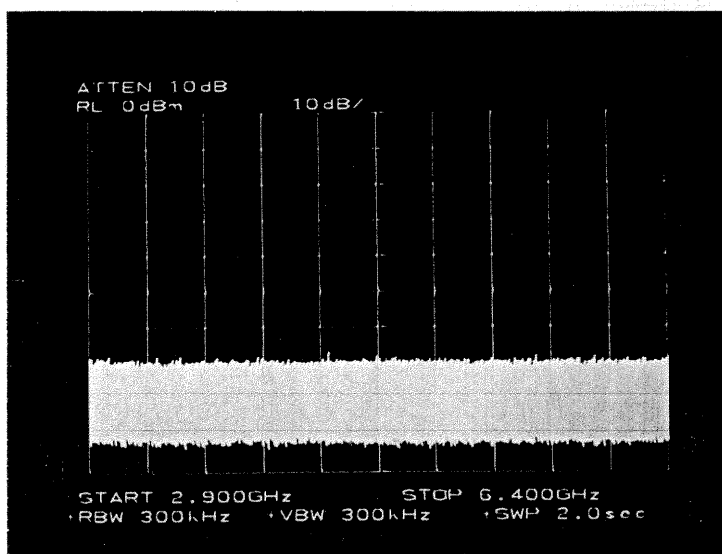


Spurious
Signal

Stand-By

2.9 to 6.4 GHz

Scale
↑ 10dB/Div
→ 350MHz/Div

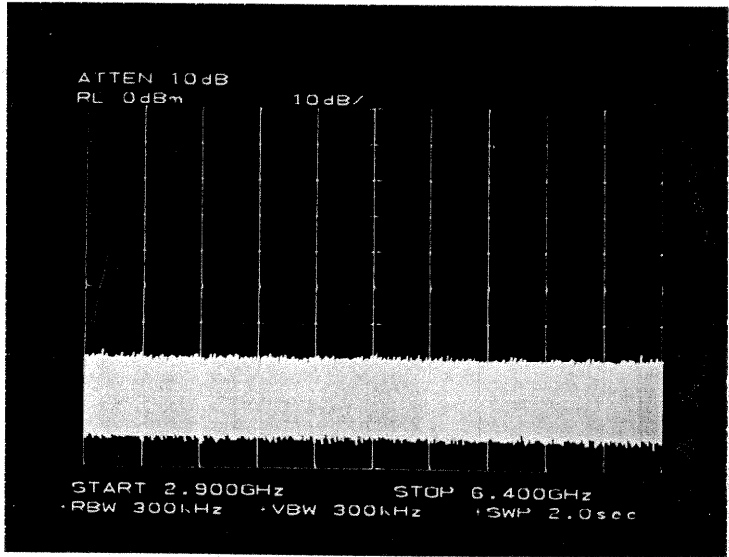


Spurious
Signal

0.08 μ S Pulse

2.9 to 6.4 GHz

Scale
↑ 10dB/Div
→ 350MHz/Div

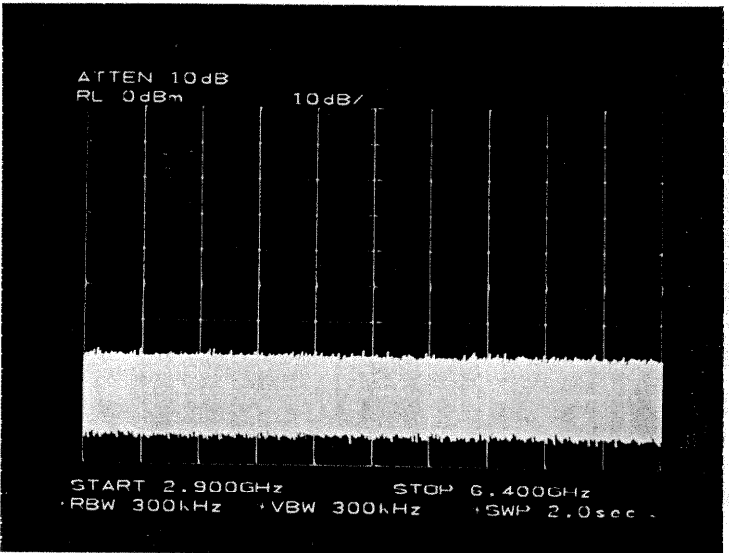


Spurious
Signal

0.25 μ S Pulse

2.9 to 6.4 GHz

Scale
↑ 10dB/Div
→ 350MHz/Div

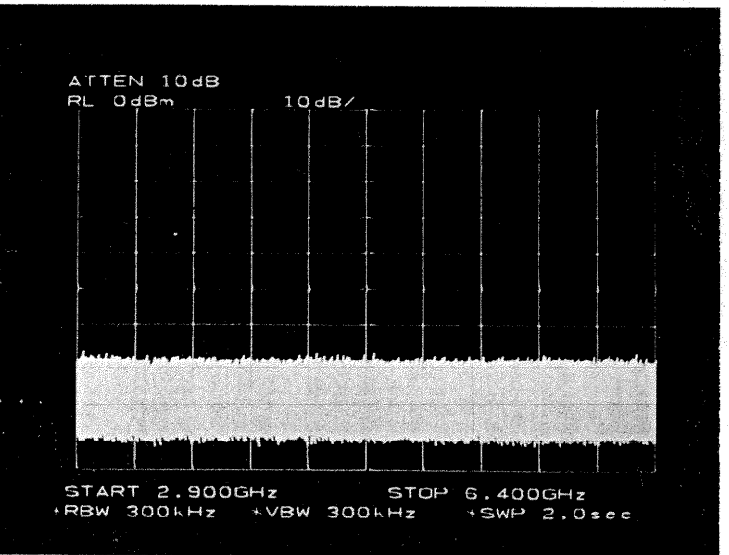


Spurious
Signal

0.5 μ S Pulse

2.9 to 6.4 GHz

Scale
↑ 10dB/Div
→ 350MHz/Div



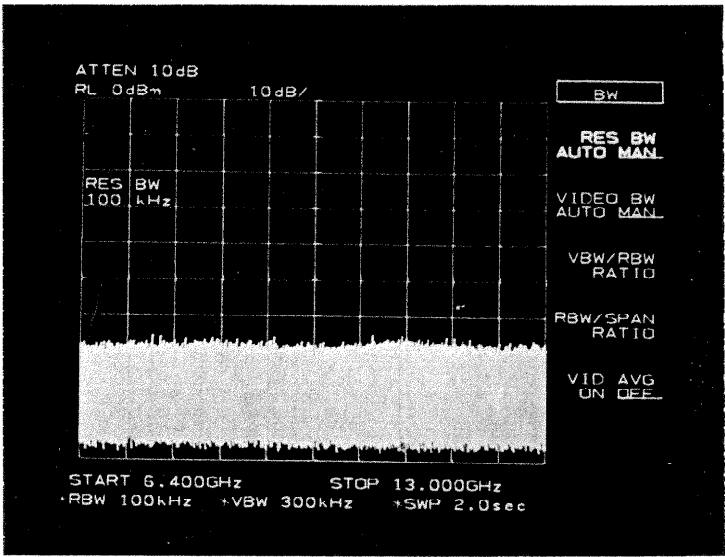
Spurious
Signal

1.0 μ S Pulse

2.9 to 6.4 GHz

(Sec. 2.991)

Scale
↑ 10dB/Div
→ 660MHz/Div

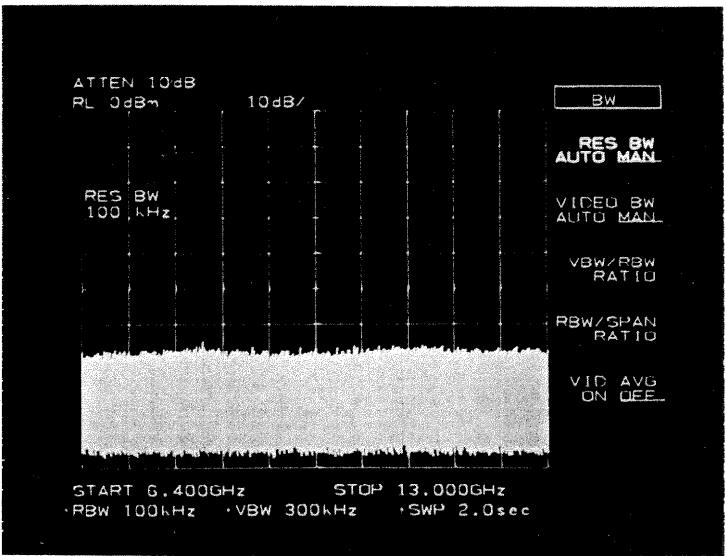


Spurious
Signal

OFF

6.4 to 13.0 GHz

Scale
↑ 10dB/Div
→ 660MHz/Div

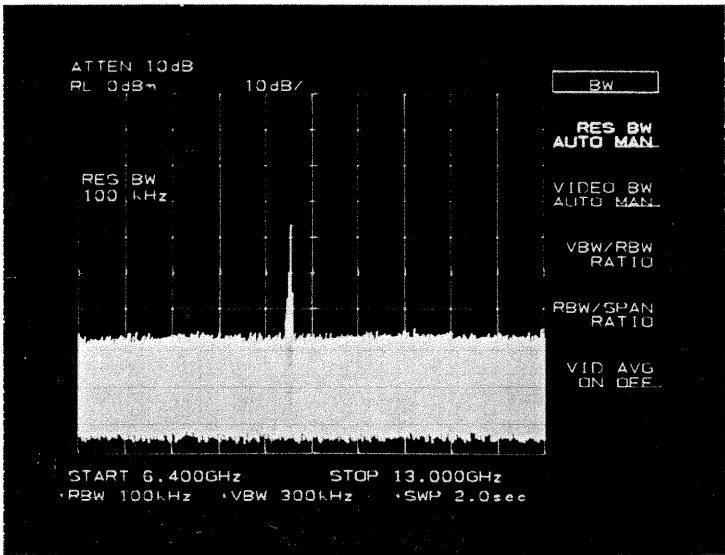


Spurious
Signal

Stand-By

6.4 to 13.0 GHz

Scale
↑ 10dB/Div
→ 660MHz/Div



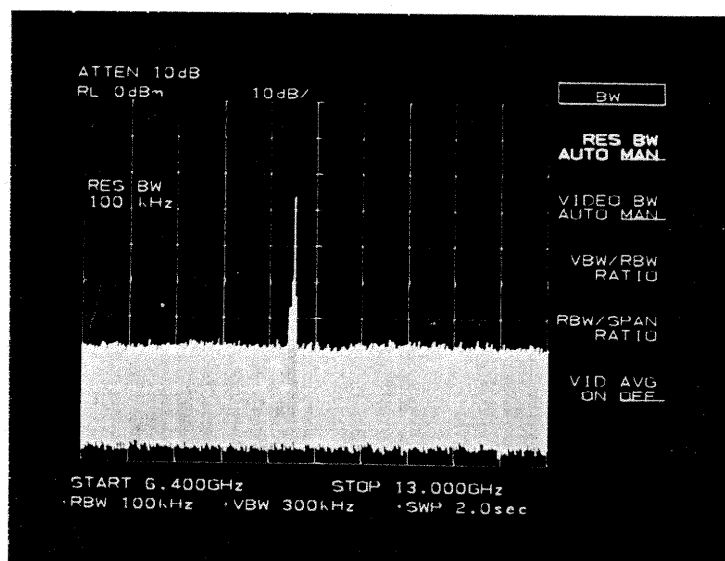
Spurious
Signal

0.08 μS Pulse

6.4 to 13.0 GHz

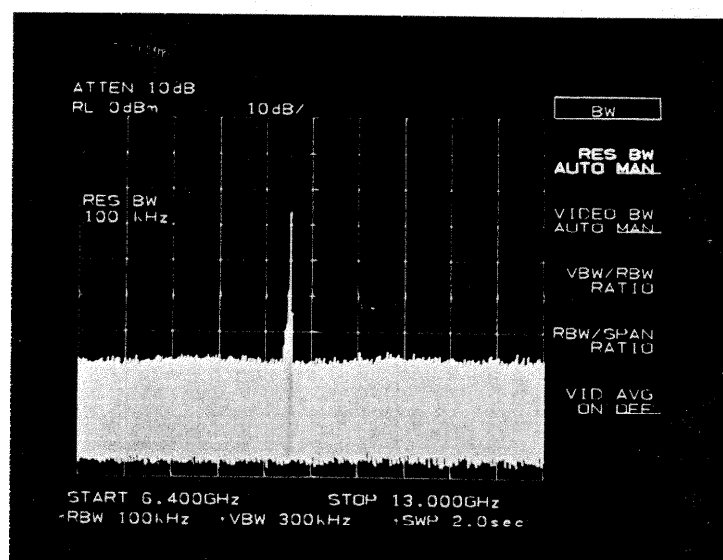
(Sec. 2.991)

Scale
↑ 10dB/Div
→ 660MHz/Div



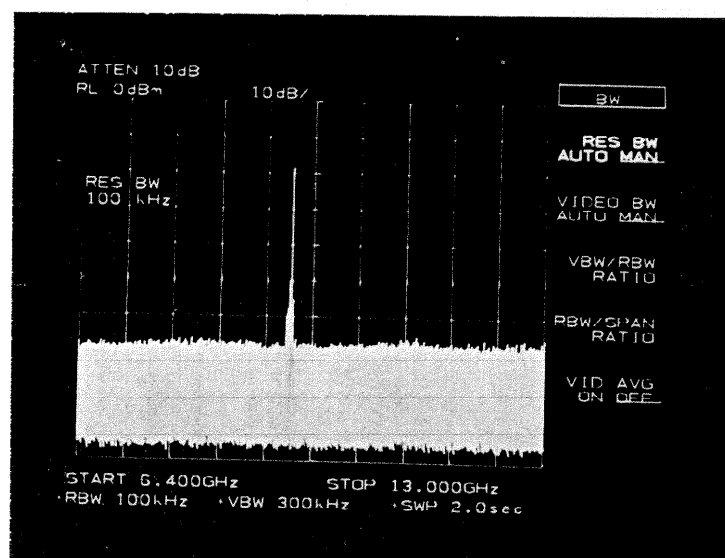
Spurious
Signal
0.25 μ S Pulse
6.4 to 13.0 GHz

Scale
↑ 10dB/Div
→ 660MHz/Div



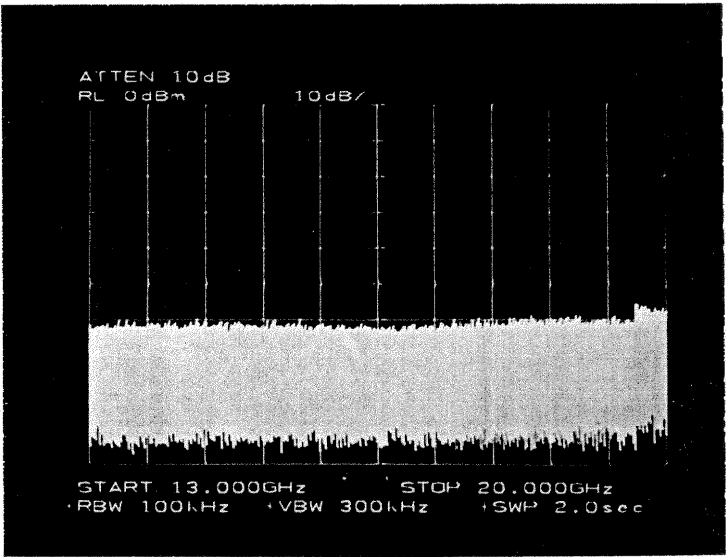
Spurious
Signal
0.5 μ S Pulse
6.4 to 13.0 GHz

Scale
↑ 10dB/Div
→ 660MHz/Div



Spurious
Signal
1.0 μ S Pulse
6.4 to 13.0 GHz

Scale
↑ 10dB/Div
→ 700MHz/Div

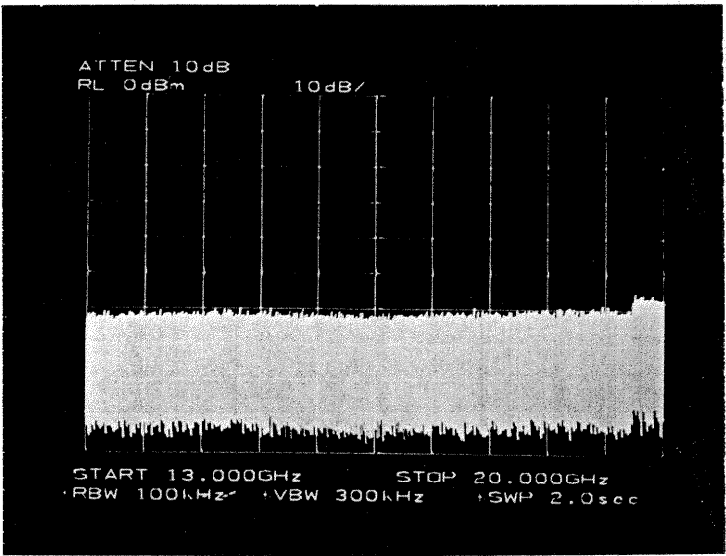


Spurious
Signal

OFF

13.0 to 20 GHz

Scale
↑ 10dB/Div
→ 700MHz/Div

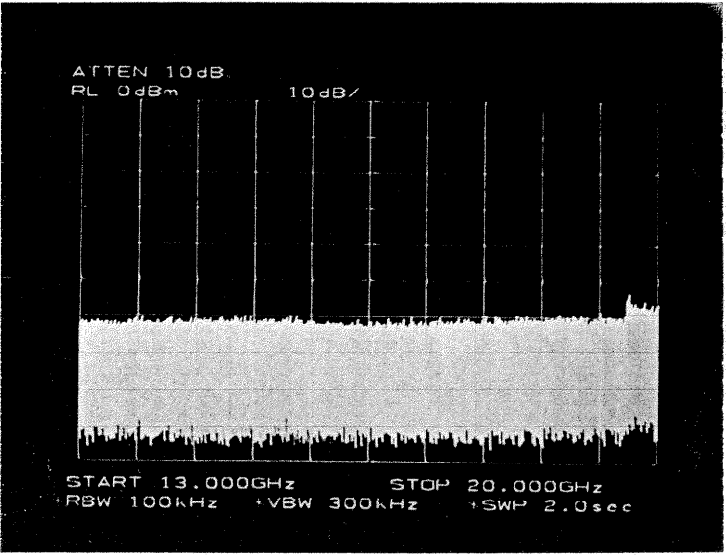


Spurious
Signal

Stand-By

13.0 to 20 GHz

Scale
↑ 10dB/Div
→ 700MHz/Div



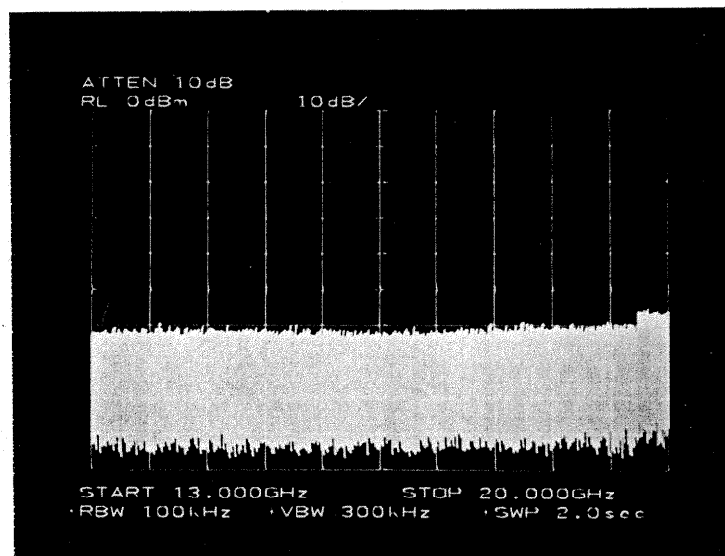
Spurious
Signal

0.08 μ S Pulse

13.0 to 20 GHz

(Sec. 2.991)

Scale
↑ 10dB/Div
→ 700MHz/Div

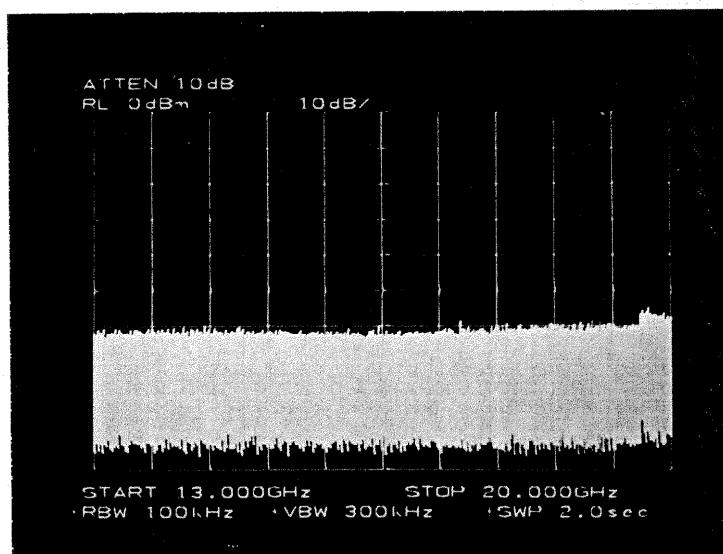


Spurious
Signal

0.25 μ S Pulse

13.0 to 20 GHz

Scale
↑ 10dB/Div
→ 700MHz/Div

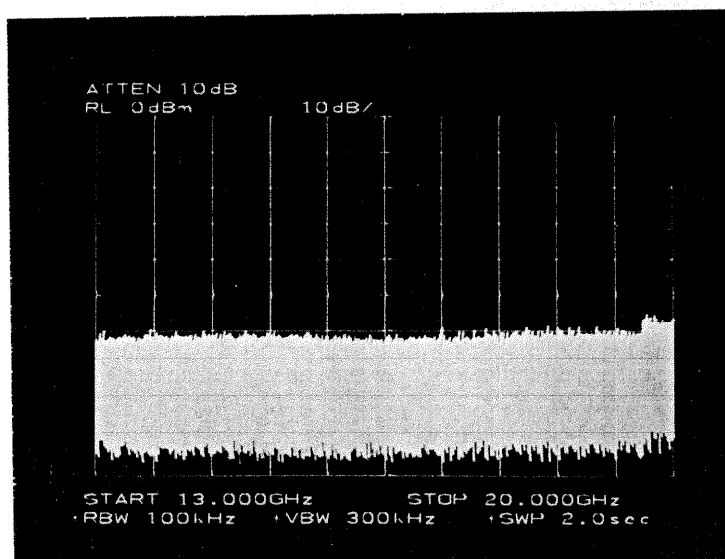


Spurious
Signal

0.5 μ S Pulse

13.0 to 20 GHz

Scale
↑ 10dB/Div
→ 700MHz/Div

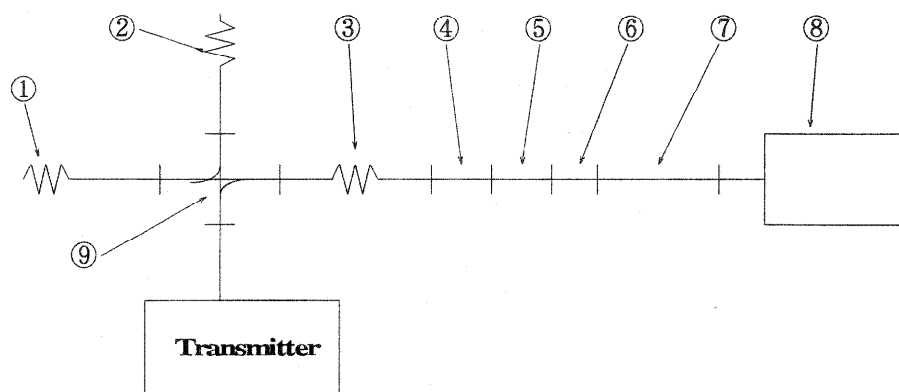


Spurious
Signal

1.0 μ S Pulse

13.0 to 20 GHz

Condition 12.0 – 28.0 GHz



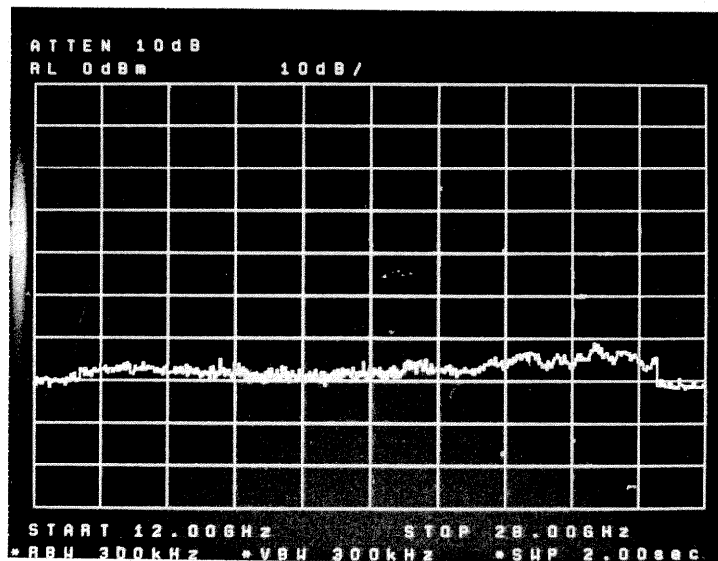
1. Dummy Load	4D104	Shimada
2. high power Dummy Load	4D371A	Shimada
3. Attenuator	S382C	HP
4. Taperd W/G	195-X KU	AIRCOM
5. Taperd W/G	****	**
6. Adapter	BL00-6255-00	Oriet Microwave
7. Coaxial Cable	SF101	HUBER+SUHNER
8. Spectrum Analyzer	8565EC	HP
9. Directional Coupler	5D102A	Shimada
Coupling 30 dB		
Directivity 30 dB		

Attenuation 3 : 30 dB

Measurement Point : Transmitter Output

(Sec. 2.991)

Scale
↑ 10dB/Div
→ 1.6GHz/Div

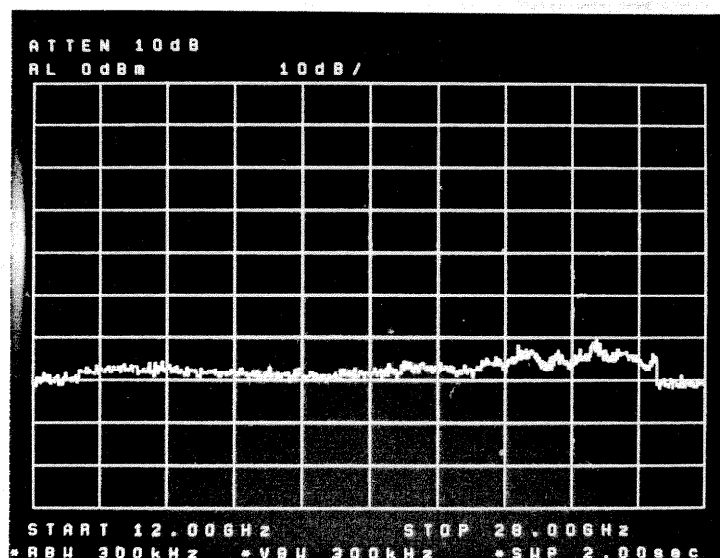


Spurious
Signal

OFF

12 to 28 GHz

Scale
↑ 10dB/Div
→ 1.6GHz/Div

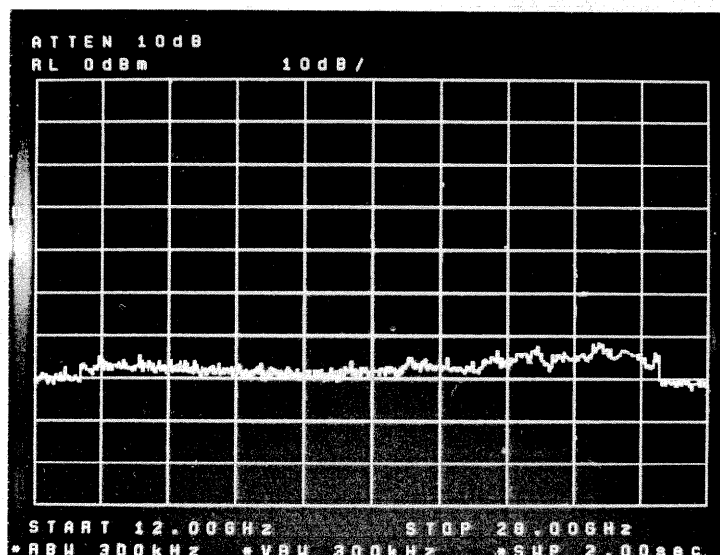


Spurious
Signal

Stand-By

12 to 28 GHz

Scale
↑ 10dB/Div
→ 1.6GHz/Div



Spurious
Signal

0.08 μ S Pulse

12 to 28 GHz