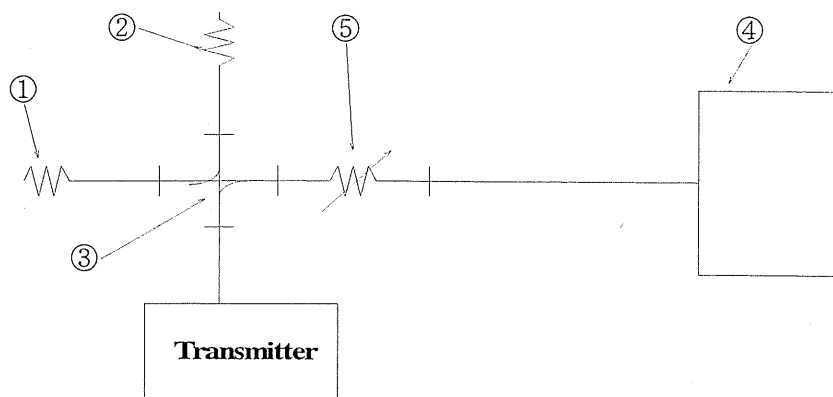




- | | | |
|--------------------------|--------|-----------------|
| 1. Dummy Load | 4D104 | HP |
| 2. High Power Dummy Load | 4D371A | Shimada |
| 3. Directional Coupler | 5D102A | Shimada |
| Coupling | -20 dB | |
| 4. Spectrum Analyzer | 8592A | HP |
| 5. Attenuator | | |
| Temperature Chamber | | Onishi Netugaku |

Measurement Procedure

- 1 The antenna pedestal, Transceiver and display unit were set up in the temperature chamber and the measurement equipment were set outside the temperature chamber.
- 2 With power removed, the temperature was decreased to $-30\text{ }^{\circ}\text{C}$ and permitted to stabilize for three hours. Power was applied and measured warm-up time. After 30 minutes place the radar in X-MIT, measured frequency at 24V, 32V.
- 3 With power off, the temperature was raised in $10\text{ }^{\circ}\text{C}$ steps. The sample was permitted to stabilize at each step for at least three hours. Power was applied and measured warm-up time. After 30 minutes place the radar in X-MIT, measured frequency at 24V, 32V.

[illegible]

Temperature [°C]	Operating Frequency [MHz]						Warm-Up Time (m) <X-MIT>
	0.8 μS Pulse		1.0 μS Pulse		1.2 μS Pulse		
	24.0	32.0	24.0	32.0	24.0	32.0	
- 15	9417	9417	9416	9416	9415	9415	30
- 5	9415	9415	9414	9414	9413	9413	30
+5	9413	9413	9412	9412	9411	9411	30
+15	9411	9411	9410	9410	9409	9409	30
+25	9409	9409	9048	9048	9407	9407	30
+35	9406	9406	9405	9405	9404	9404	30
+45	9404	9404	9403	9403	9402	9402	30
+55	9401	9401	9400	9400	9400	9400	30

SECTION 5

TEST: Spurious Emissions Field Strength

EQUIPMENT: JMA-5320 S/N LS59972

FCC SPECIFICATION: Sections 2.993 and 80.211.

MINIMUM STANDARD: Mean power of emissions originating in equipment lowest generated frequency to at least 40 GHz shall be attenuated below the mean power of the transmitter by at least 43 plus 10 log (mean power in watts) decibels. Since transmitter mean power is 1.94 watts maximum (long pulse) or 32.9 dBm:

$$\begin{aligned} \text{Emissions} &\leq 32.9 \text{ dBm} - [43 + 10 \log(1.94)] \text{ dBm} \\ &\leq -13.0 \text{ dBm} \end{aligned}$$

TEST RESULTS: No spurious emissions observed above minimum standard.

TEST CONDITIONS: $T_{amb} = 20^{\circ}\text{C}$ to 25°C $RH_{amb} = 40\% \sim 60\%$
Eut input = 24 VDC

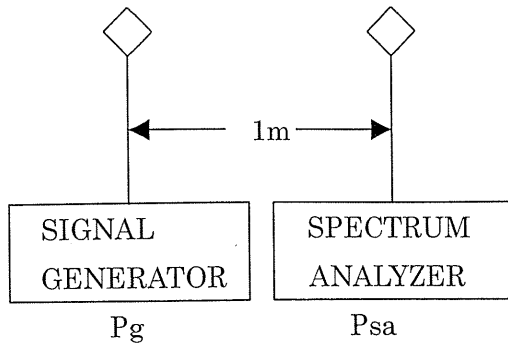
STABILIZATION: EUT energized for 10 minutes minimum.

TEST EQUIPMENT: JRC Original – Shielded Room
Other equipment – see test set-ups.

DATE: September, 9. 2004 and September, 10. 2004

TEST ENGINEER: G. KOIKE

CALIBRATION OF TESTS 1~5 (0~1GHz)



A signal source of known amplitude was used as a calibrating signal with identical antenna on the generator and the spectrum analyzer.

From previous testing in the shielded room, the antenna factors are considered much greater than path loss.

Hence half of the difference in signals Pg and Psa is due to each antenna.

The calibrating signal on the analyzer is therefore:

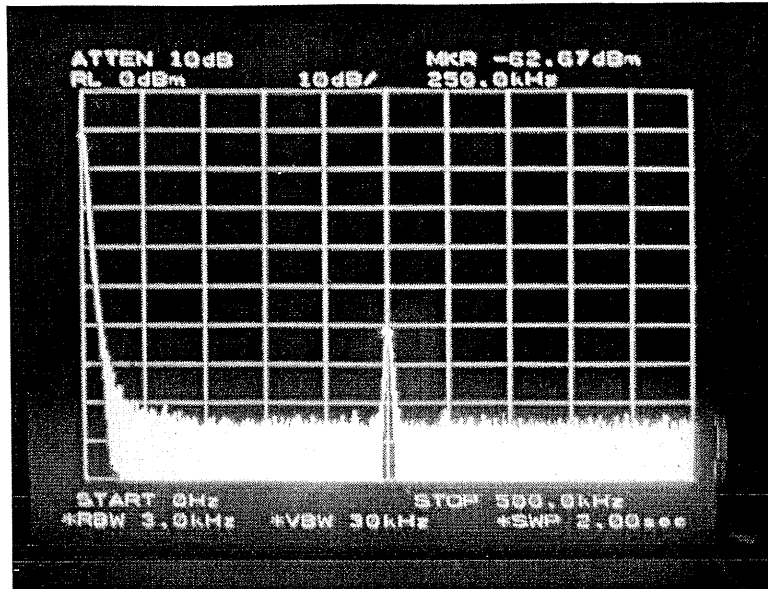
$$P_{cal} = P_{sa} - (P_{sa} - P_g) / 2 = (P_{sa} + P_g) / 2 \text{ dBm.}$$

The log ref level on the analyzer is adjusted so as to read other signals directly:

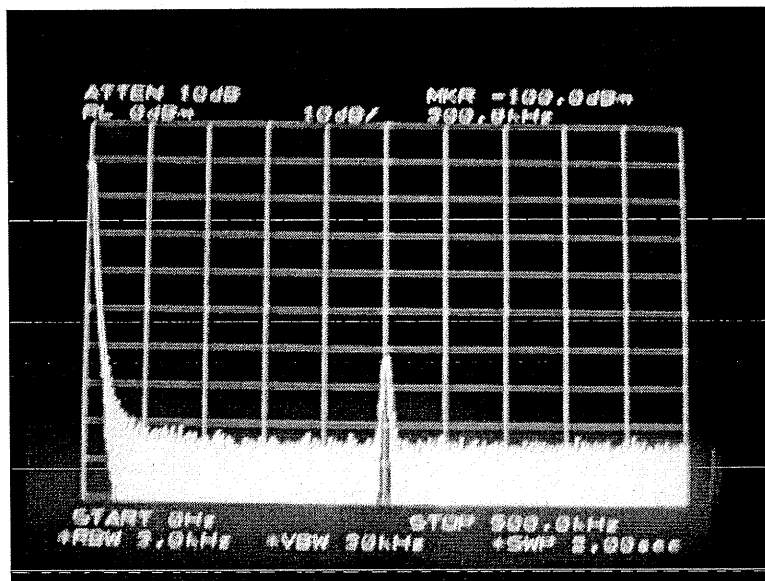
$$\text{LRL (adjusted)} = \text{LRL(set)} + P_{cal} - P_{sa} \text{ dBm.}$$

The calibrating signal used was selected on the basis of best average amplitude over the frequency range of interest.

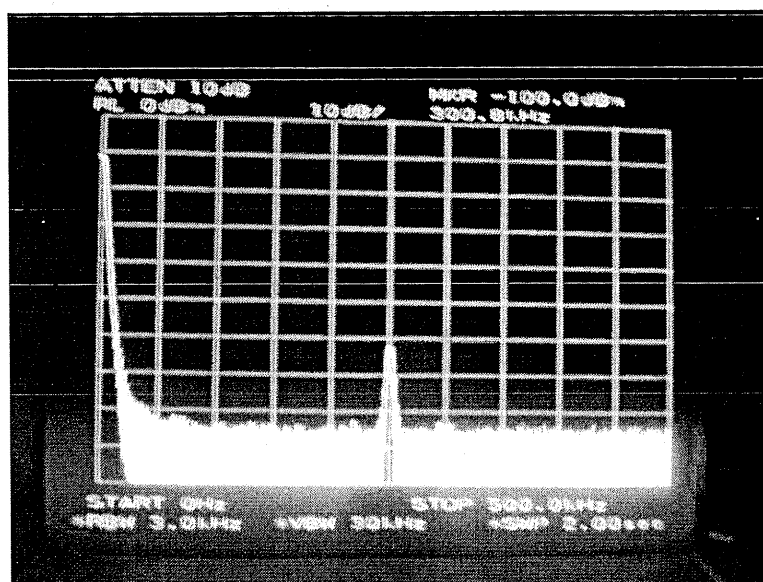
TEST	CAL sig	Psa	Pg	Pcal	LRL(set)	LRL(adj)
1	250 kHz	-62	0	-31	0	31
2	2.5 MHz	-47.3	0	-23.65	0	23.65
3	25 MHz	-36	0	-18	0	18
4	250 MHz	-19.3	0	-9.65	0	9.65
5	500 MHz	-44.3	0	-22.15	0	22.15



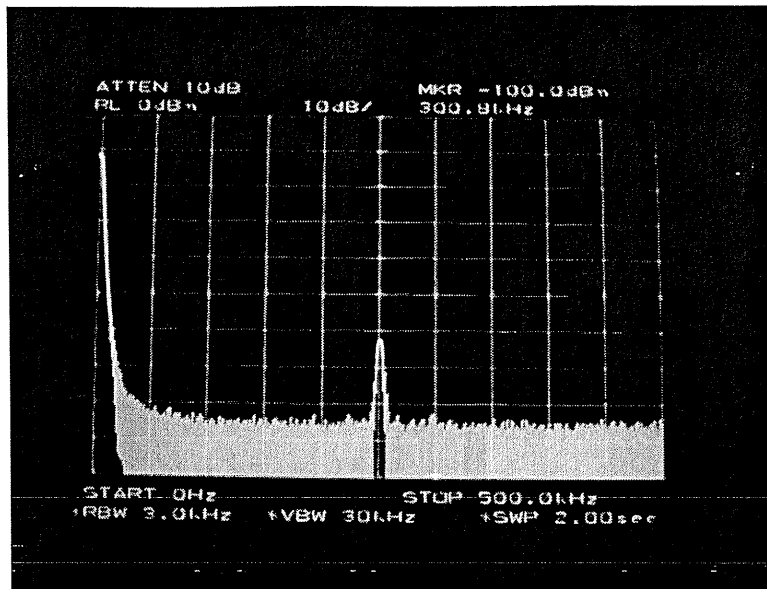
Ambient



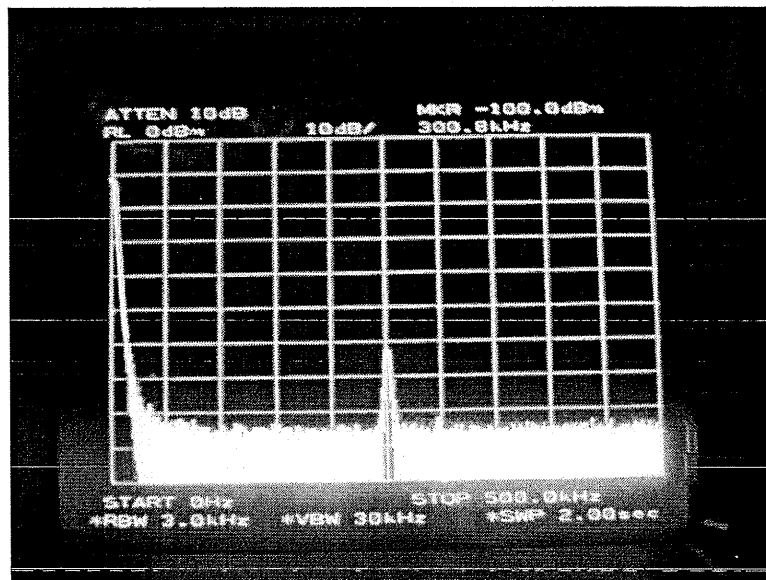
Stand-By



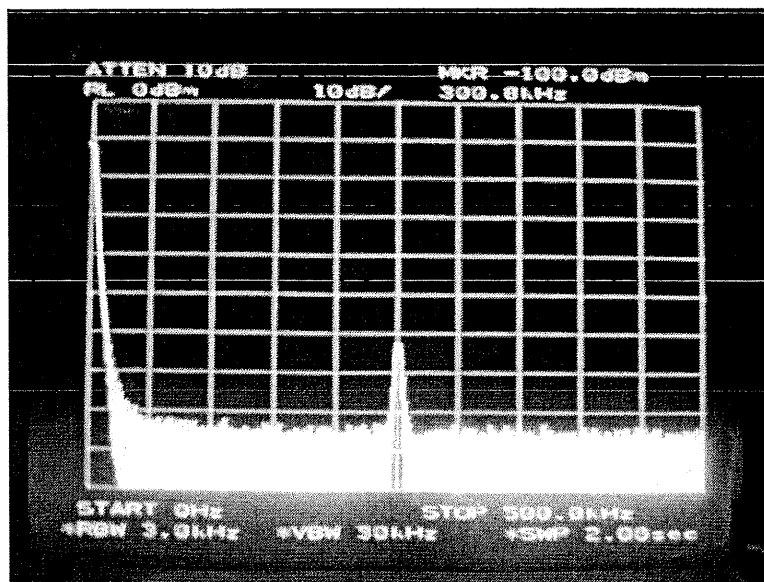
0.07 μ S Pulse



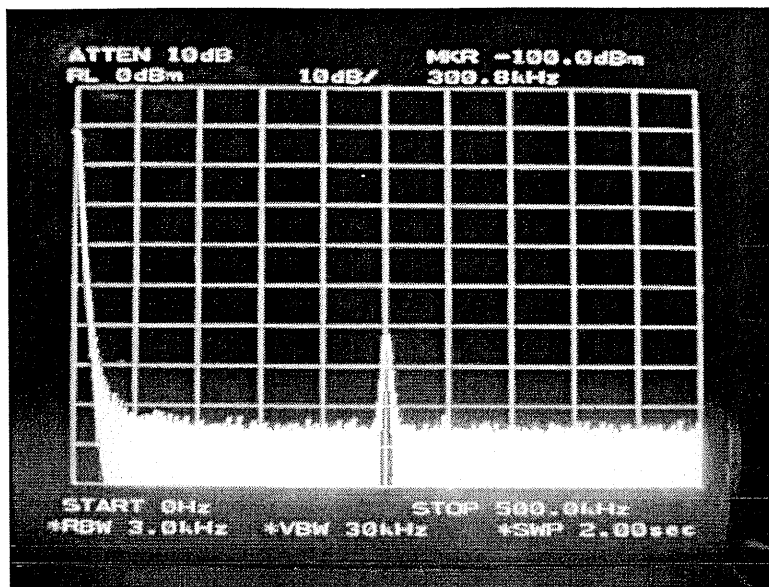
0.2 μ S Pulse



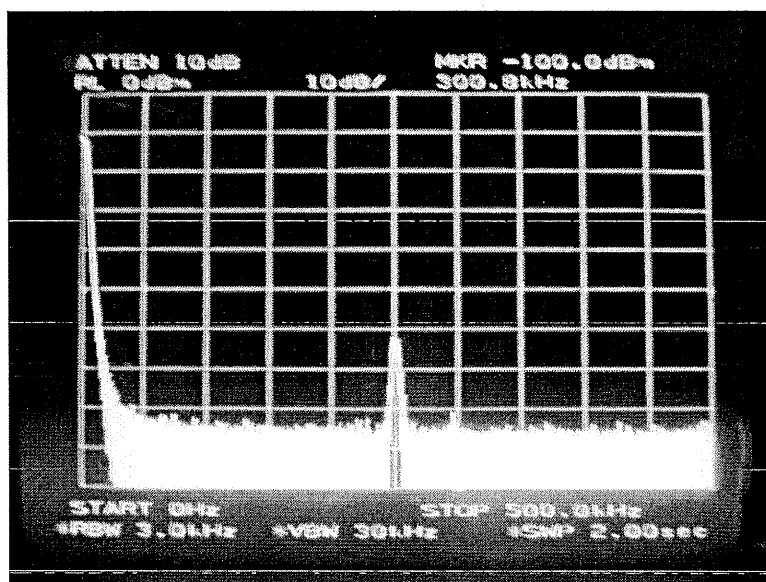
0.4 μ S Pulse



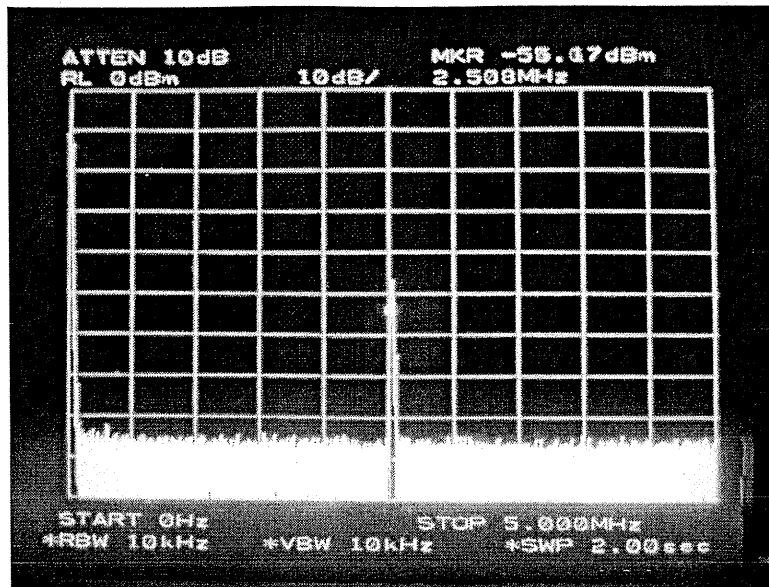
0.8 μ S Pulse



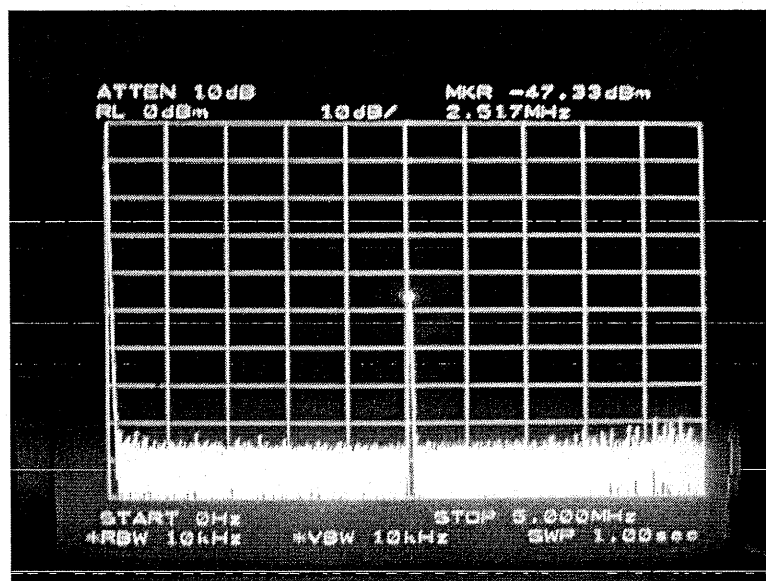
1.0 μ S Pulse



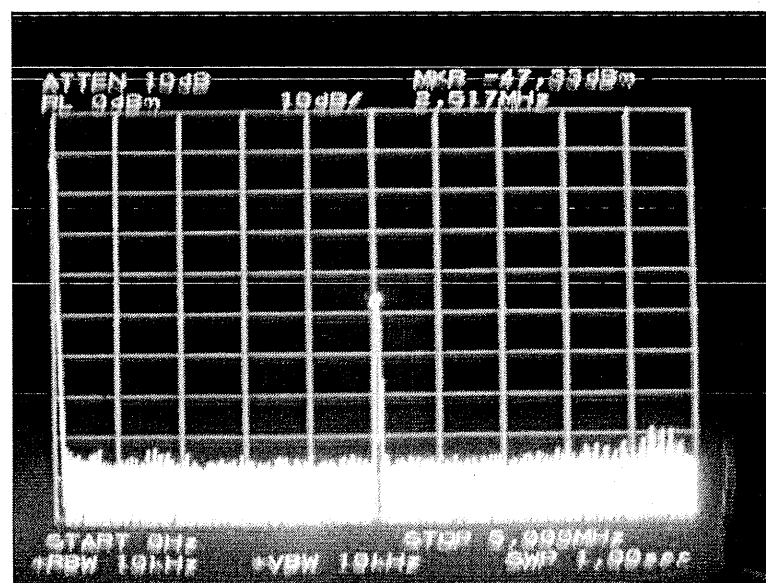
1.2 μ S Pulse

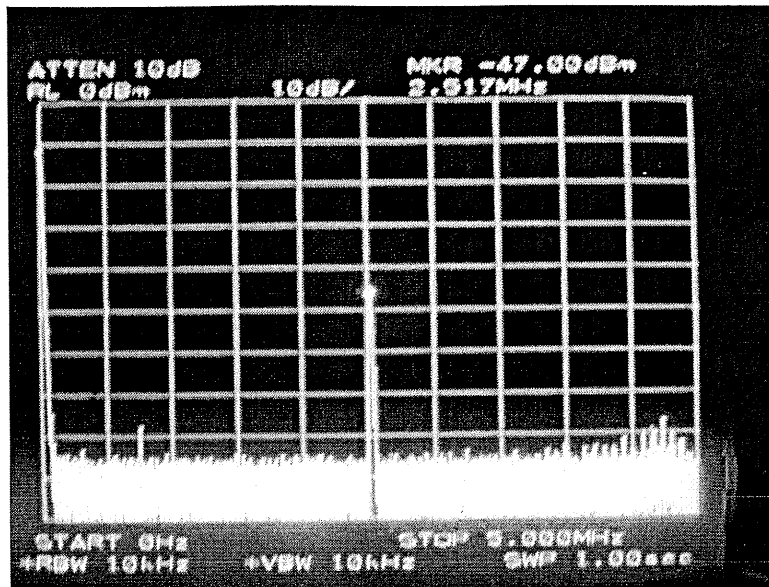
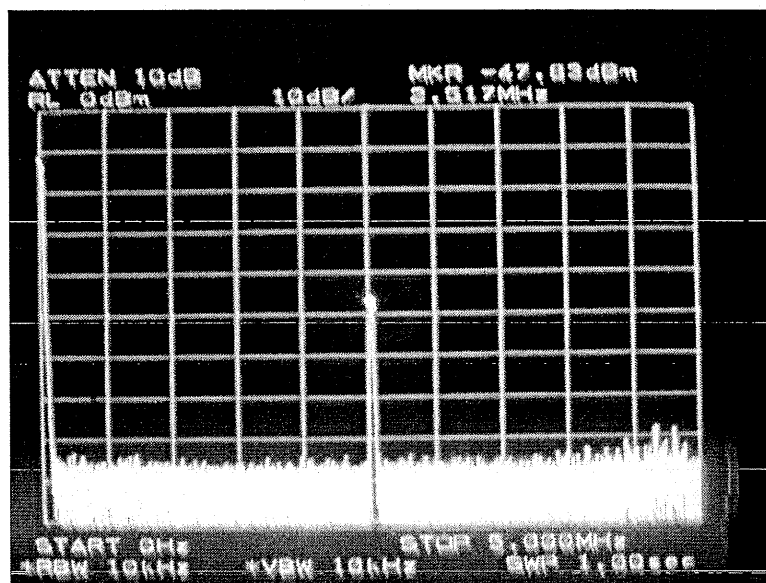
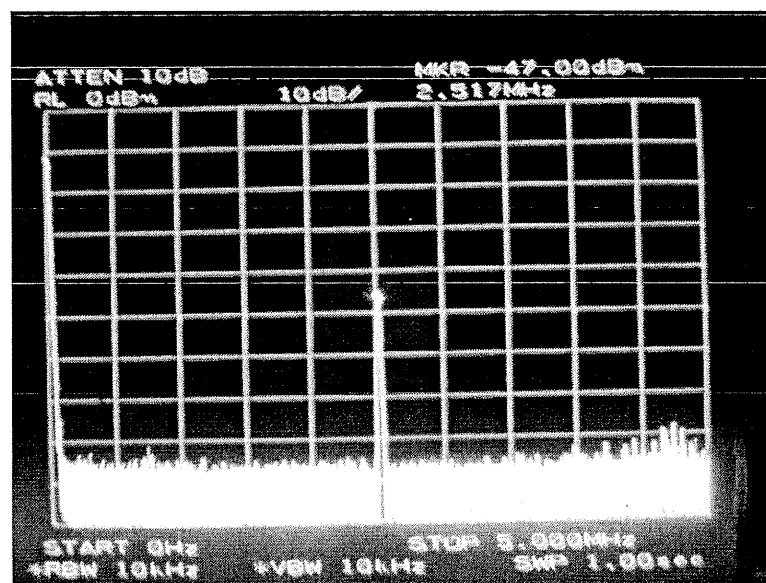


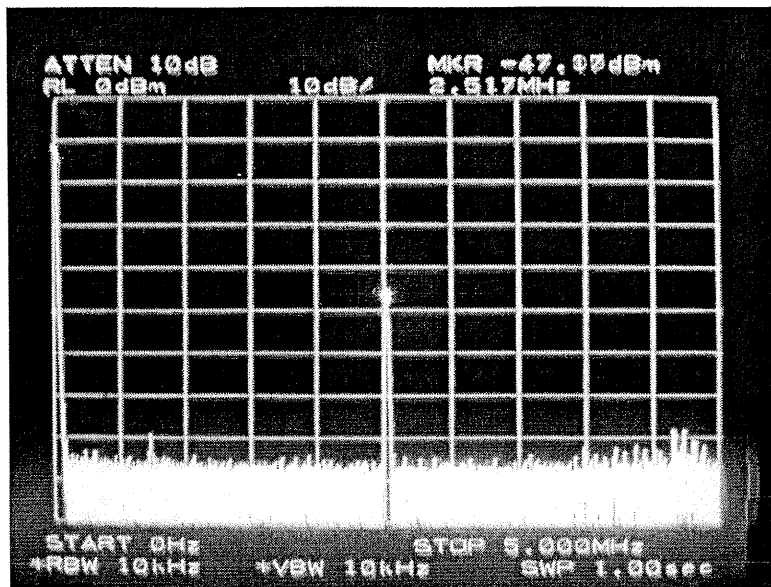
Ambient



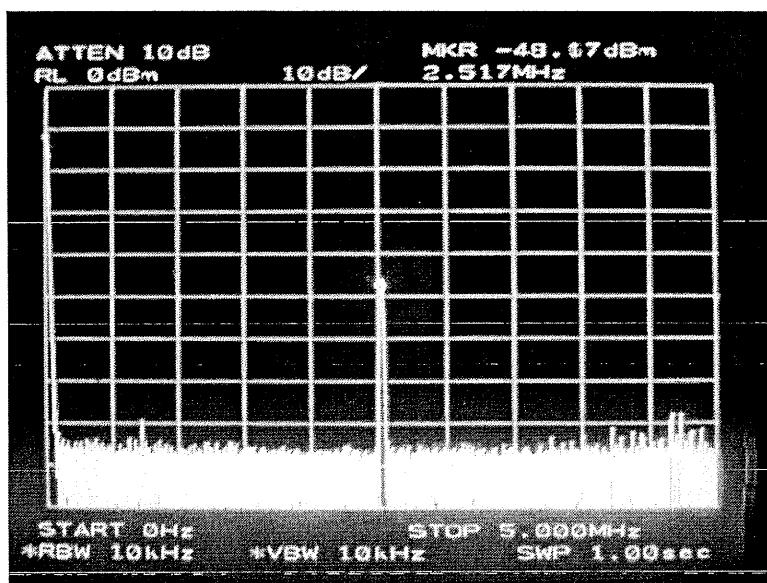
Stand-By

0.07 μ S Pulse

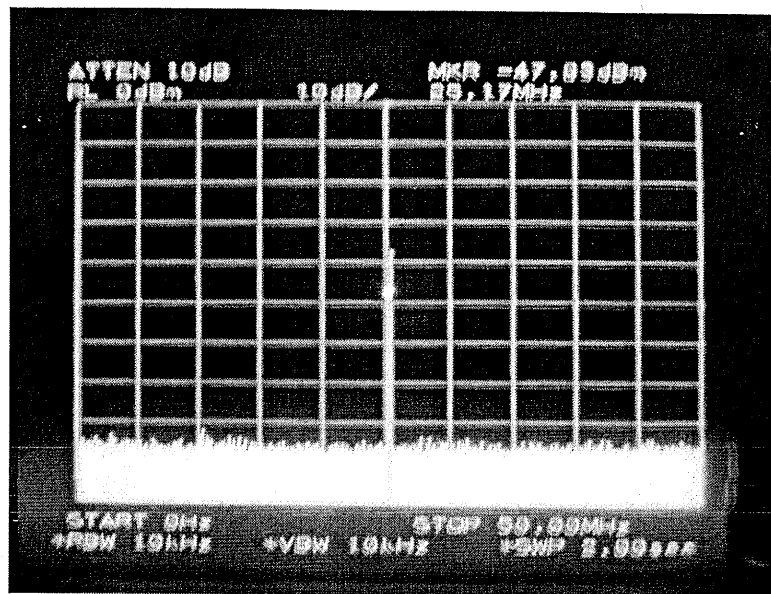
0.2 μ S Pulse0.4 μ S Pulse0.8 μ S Pulse



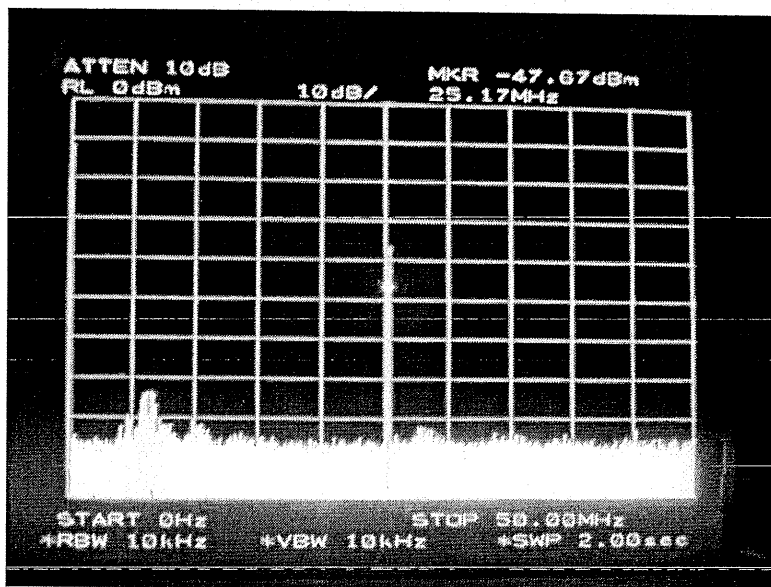
1.0 μ S Pulse



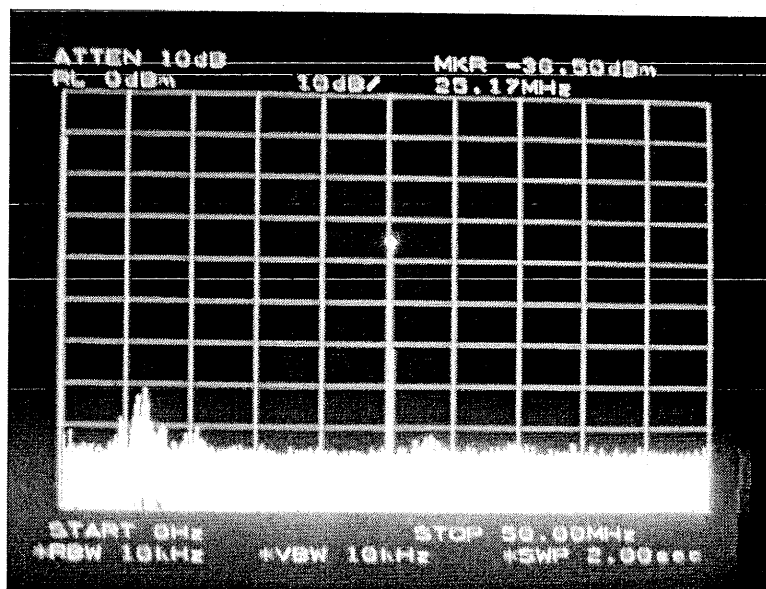
1.2 μ S Pulse



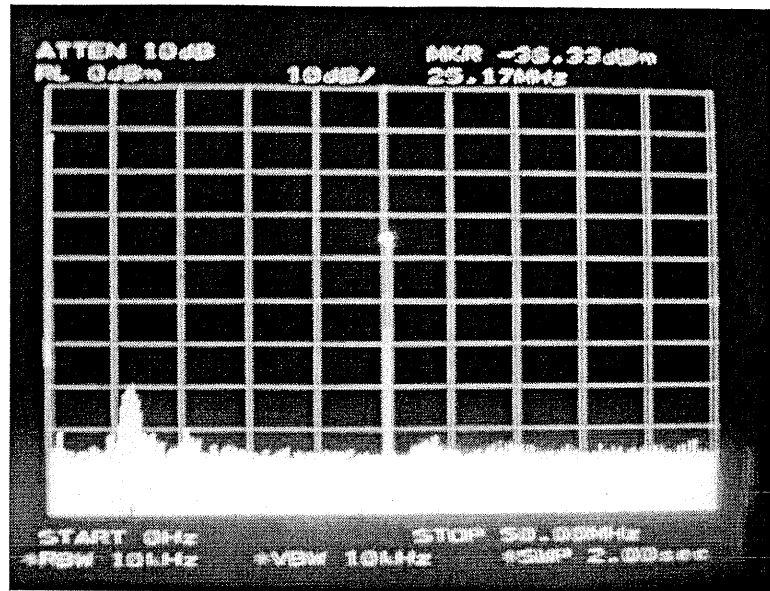
Ambient



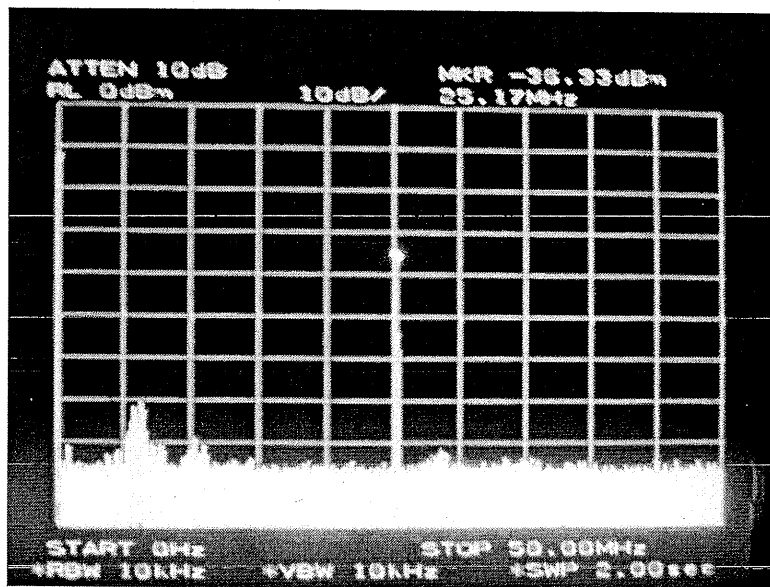
Stand-By



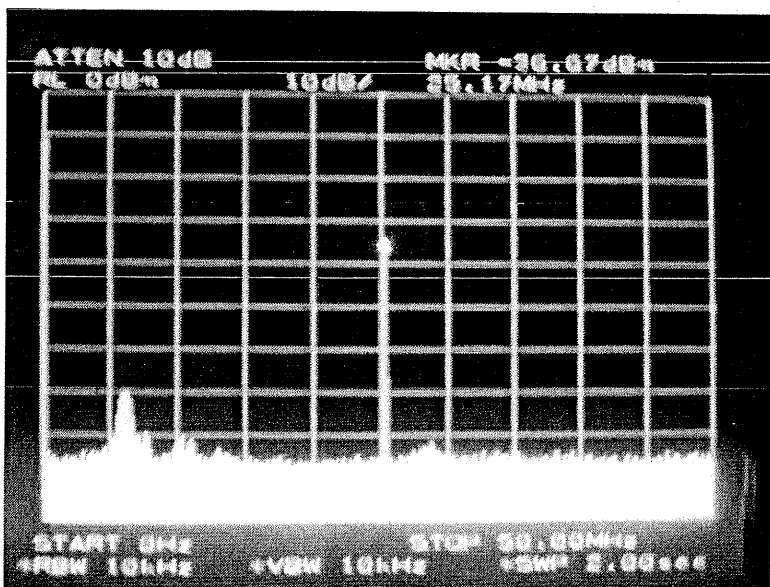
0.07 μ S Pulse



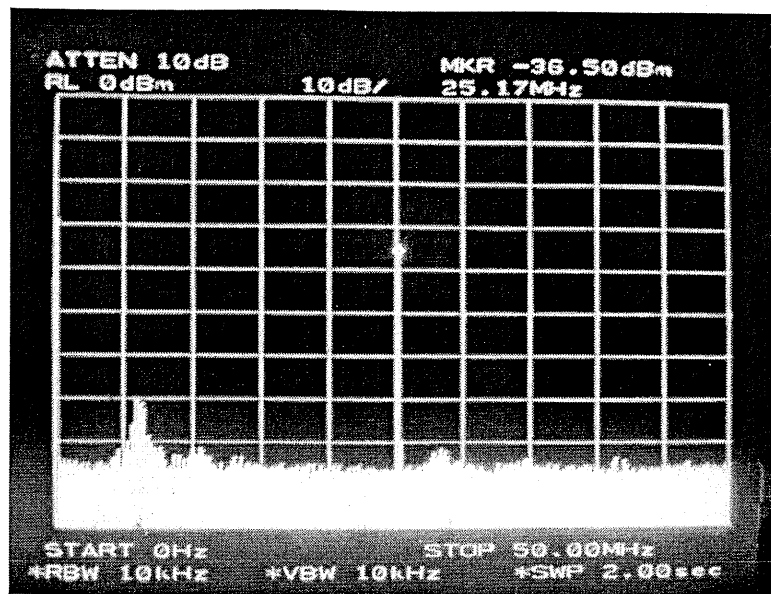
0.2 μ S Pulse



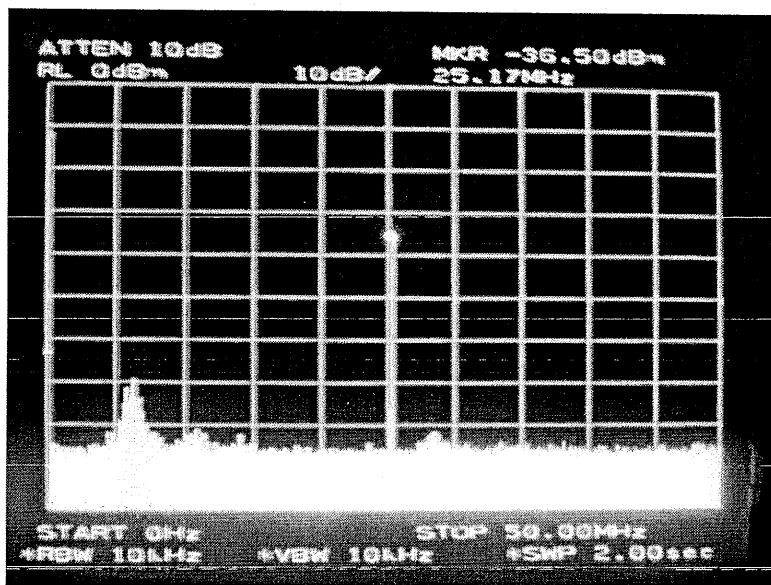
0.4 μ S Pulse



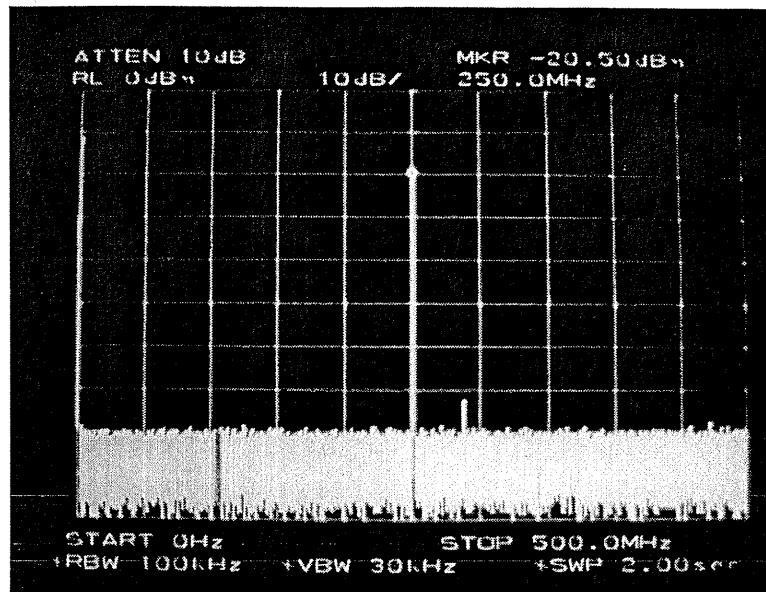
0.8 μ S Pulse



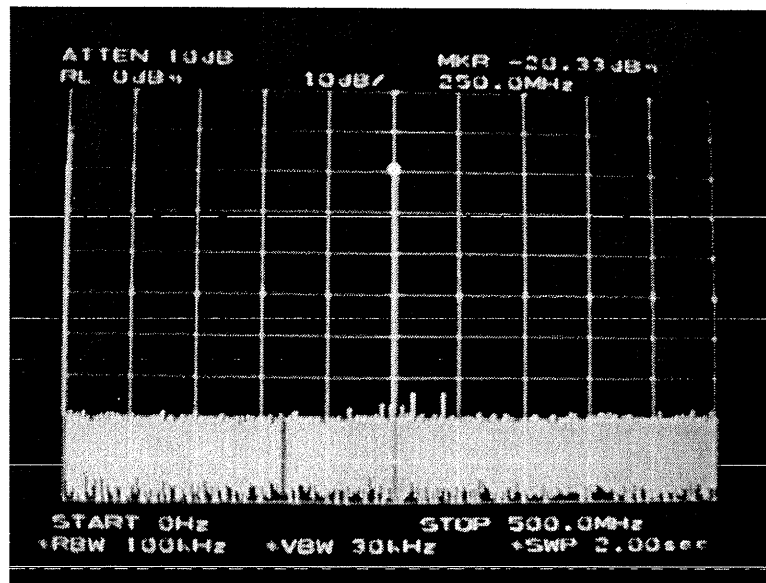
1.0 μ S Pulse



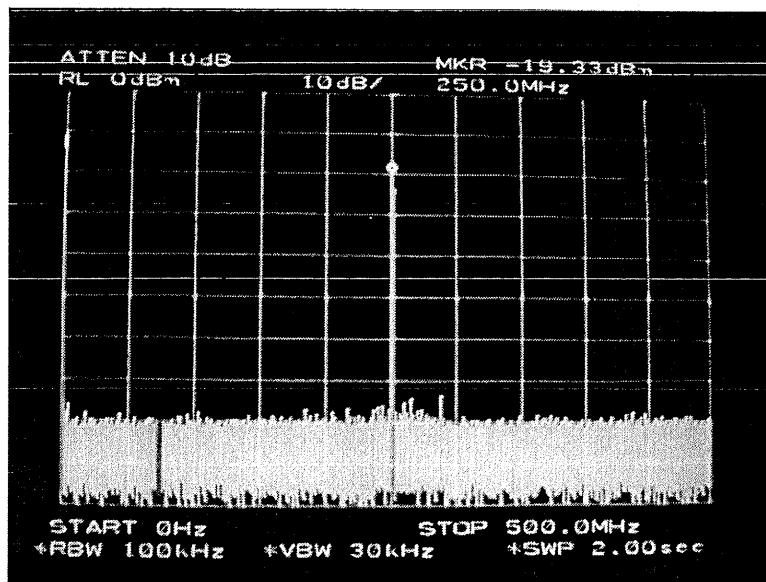
1.2 μ S Pulse



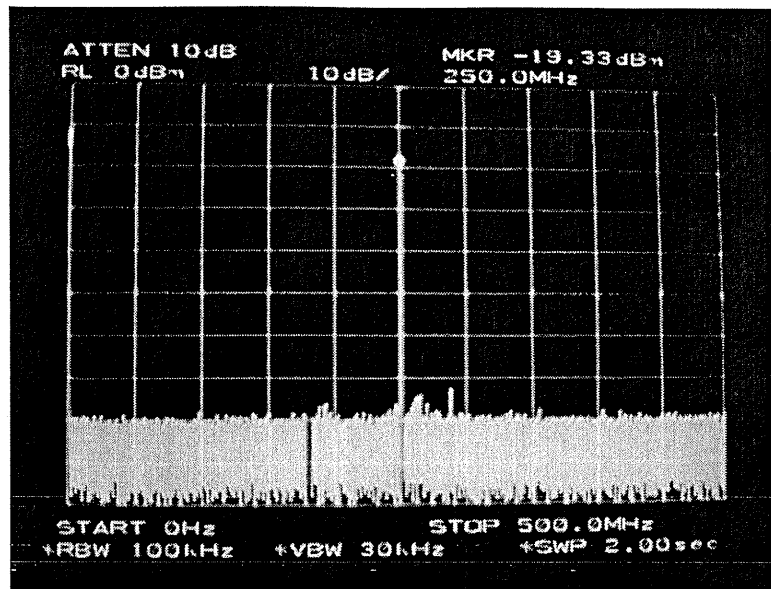
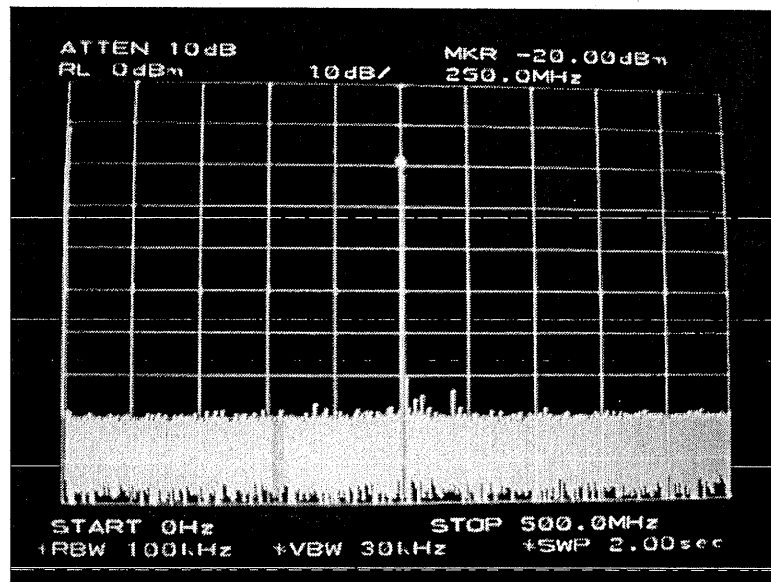
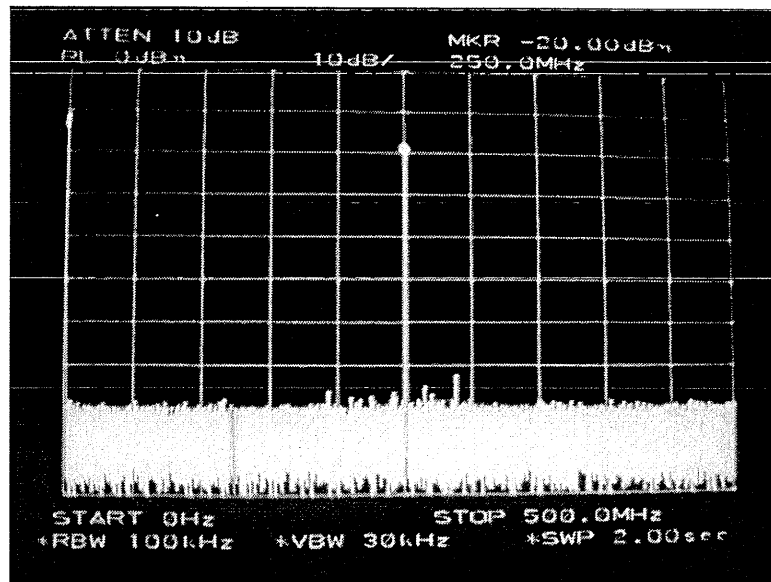
Ambient

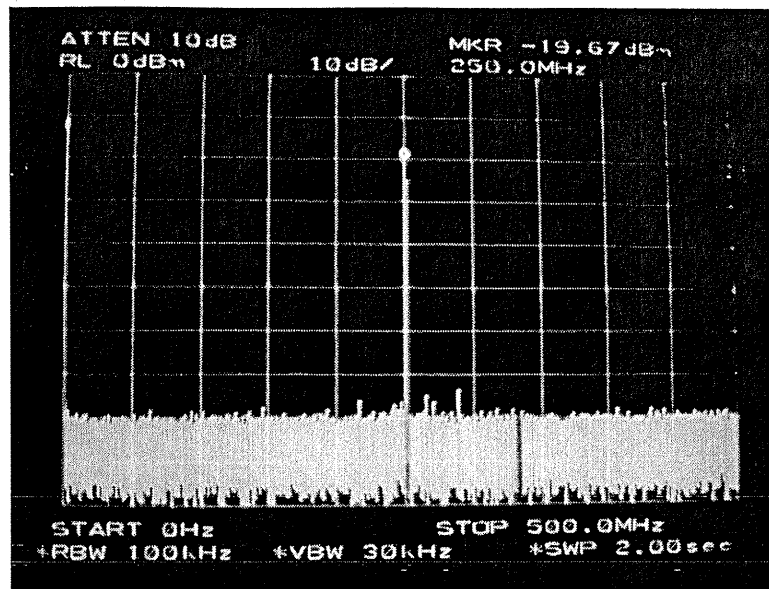
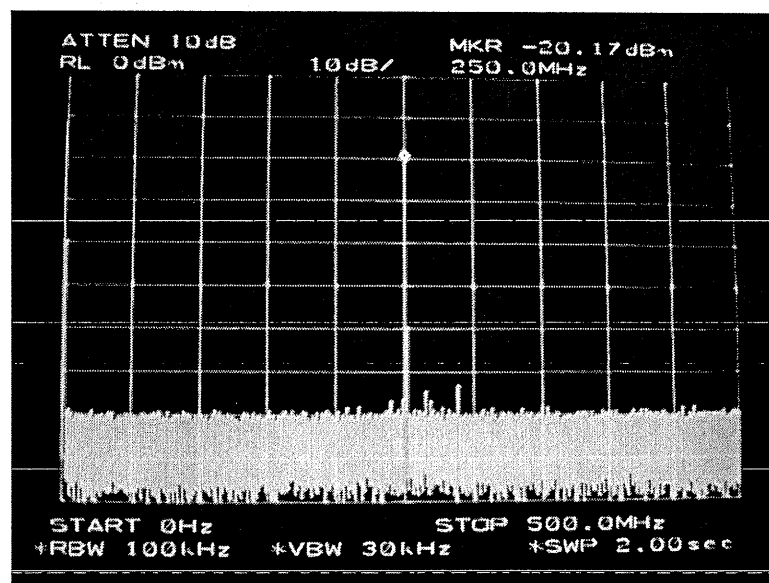


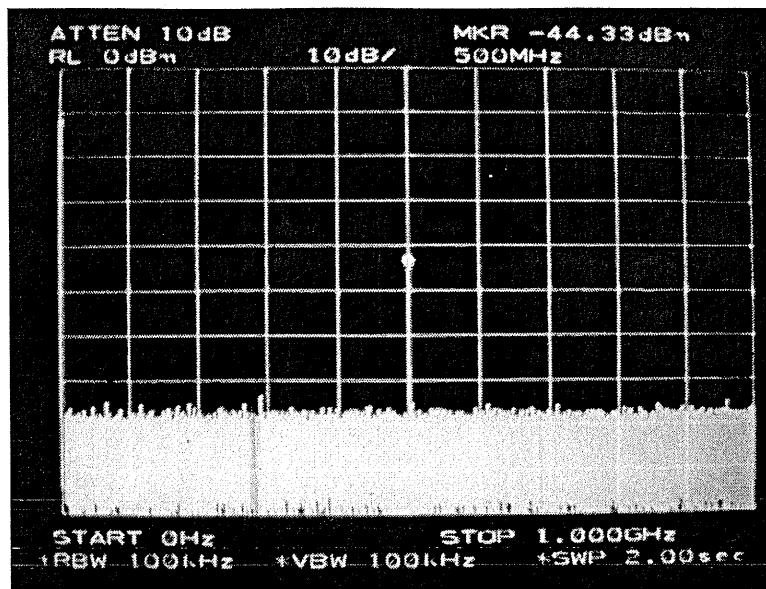
Stand-By



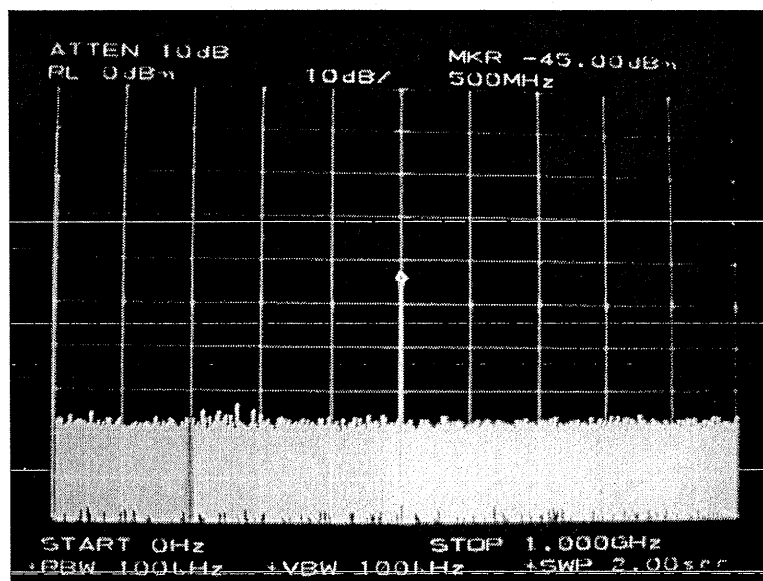
0.07 μ S Pulse

0.2 μ S Pulse0.4 μ S Pulse0.8 μ S Pulse

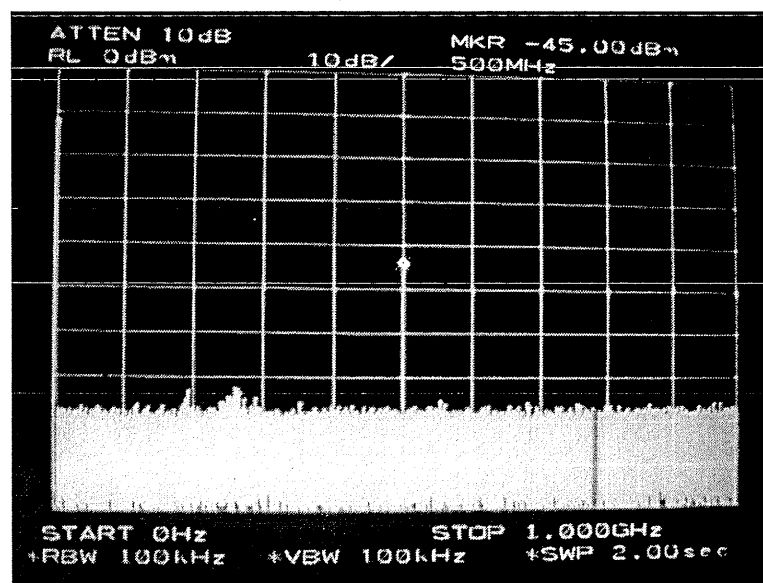
1.0 μ S Pulse1.2 μ S Pulse

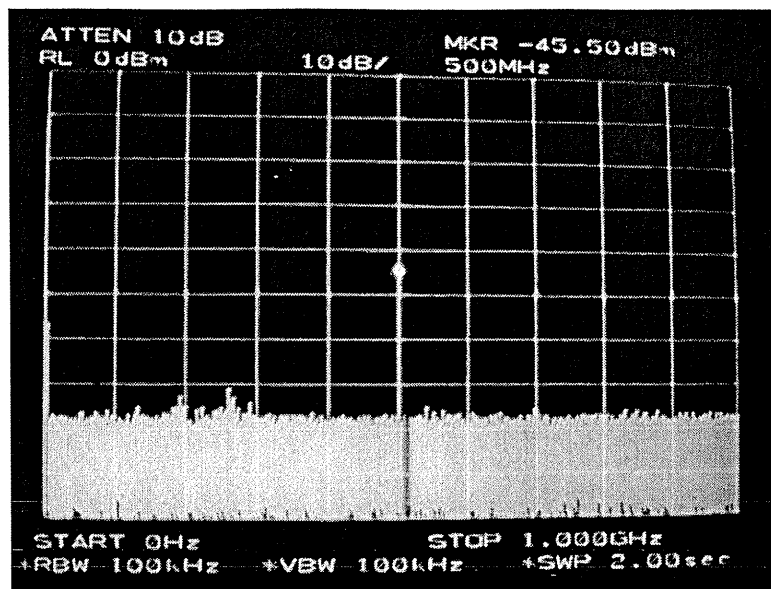
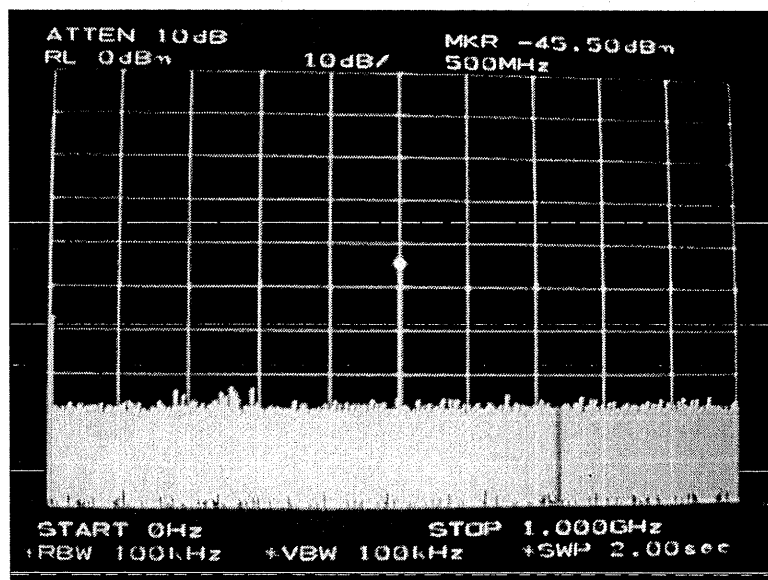
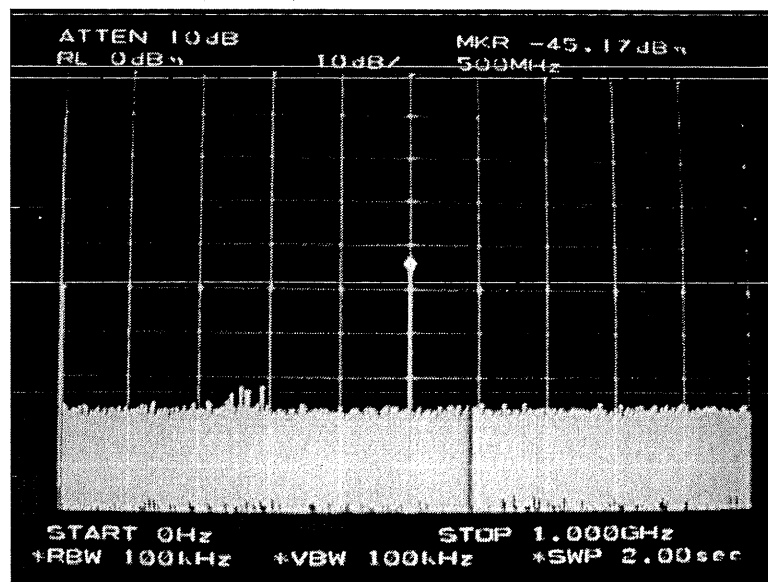


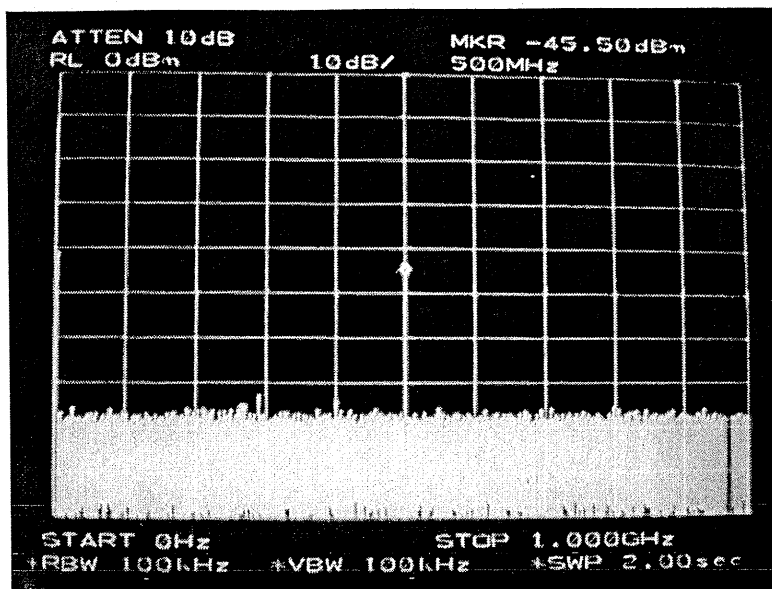
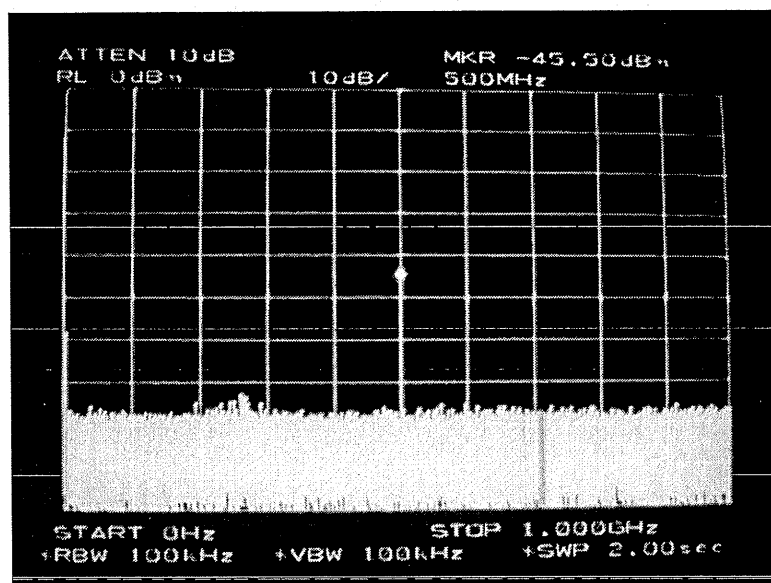
Ambient



Stand-By

0.07 μ S Pulse

0.2 μ S Pulse0.4 μ S Pulse0.8 μ S Pulse

1.0 μ S Pulse1.2 μ S Pulse