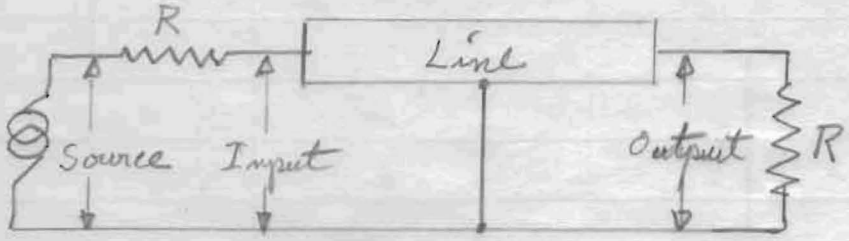
23/12/64

Attenuation of Delay Lines

Line A

Line Frequency MC	ADYU, 1μs, 600Ω Volts Source	Input	Output	Loss DB	G.R. 22/12/64, 0.35μs 1500Ω Volts Source	Input	Output	Loss DB
.005	1.76	1.00	.89	1.01	1.82	1.00	1.00	0
.01	1.82		.89	1.01	1.86		1.00	0
.02	1.90		.89	1.01	1.98		1.00	0
.05	1.86		.89	1.01	2.00		.99	.08
.1	1.82		.88	1.10	1.98		.99	.08
.2	1.92		.88	1.10	2.00		.98	.18
.5	1.90		.84	1.52	2.02		.98	.18
1.0	1.98		.82	1.72	1.90		.92	.72
2	2.08		.77	2.26	2.22		1.15	-1.22
5	1.88		.48	6.38	2.80		1.41	-3.00
10	2.04		.32	9.90	1.92		.69	3.22
20	1.86		.11	19.16	2.44		.51	5.84
50	1.80		.02	34	4.10		.12	18.41



Voltmeter has 1 pf capacity. This is 16000 ohms at 10 mc

Probably 1700 ohms would be optimum for G.R. 22/12/64

Continuously Variable Delay line type 509
ADYU Electronics Lab., Inc., Passaic, New Jersey

See AD-YU data sheet for Line A with 1500Ω termination

Line A

Same, 1000Ω

Line Frequency MC	Volts Source	Volts Input	Volts Output	Loss DB
.005	1.76	1.00	.99	.08
.01	1.80		.99	.08
.02	1.94		.99	.08
.05	1.90		.98	.18
.1	1.82		.95	.44
.2	1.80		.91	.81
.5	1.50		.72	2.85
1.0	1.42		.67	3.48
2	1.66		.83	1.61
5	2.00		1.15	-1.21
10	1.62		.62	4.15
20	1.80		.45	6.94
50	2.92	↓	.12	18.4

Line A.

Same, 2210Ω

Volts Source	Volts Input	Volts Output	Loss DB
1.86		1.00	0
1.95		1.00	0
2.03		1.00	0
2.04		1.00	0
2.05		1.00	0
2.20		1.06	-0.50
2.85		1.29	-2.21
2.78		1.26	-2.00
2.96		1.29	-2.21
3.50		1.52	-3.64
2.20		.75	2.50
2.88		.59	4.58
6.12	↓	.12	18.4

ADYU Type 509 is line about $\frac{1}{4}$" dia, 16" long formed into a circle $5\frac{1}{4}$" dia. It is tight wound enamelled wire about 0.007" dia over a slit copper covering on form. Length of line = 64 times diameter = 0.41 meter. = 1 microsecond.

Velocity = 0.41/300 = .0014 C = C/700 which is very low.

$= \frac{41}{10^{-6}} = .41 \cdot 10^{8}$ cm/sec, Z = 600Ω