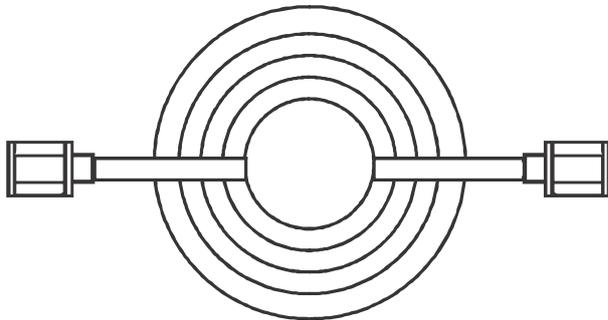


Precision Delay Lines



DELAY CALCULATION FORMULA

Length of Cable = $V_p \times Dt (1) / 1.016$

Where: V_p = Velocity of Propagation

Dt = Delay in nanoseconds

Length = Cable length in feet

PACKAGING: Delay lines are supplied in circular coils with cable ties. Connectors can be bulkheads/4-hole panel types.

We specialize in making **Precision Coaxial Delay Lines**. These are used for delay, calibration and filtering signals.

TECHNICAL DATA & FEATURES

- Standard tolerances : ± 0.5 nanosecond
- Special tolerance: ± 20 picosecond
- DC~18 GHz frequency range
- Delay Lines DL04 use highly phase stable LDPTFE cable which is stable over $-40^\circ \sim +85^\circ\text{C}$. This minimizes system compensation needed for delay variations.
- Delay Lines DL02 are lower cost type.
- Low attenuation per nanosecond of delay

APPLICATIONS

- Radar systems • ECM systems • Altimeters

DL02 Electrical & Mechanical Specifications

Dimensions	inches	mm
Jacket	0.163	4.14
Bend Radius (min)	0.8	21
Weight	0.033 (lb/ft)	0.047 Kg/m
Temperature Range	$-55^\circ \sim +125^\circ\text{C}$	
Impedance	50 ohms	
Velocity of Propagation	70 %	
Delay	4.76 ns/m	
Shielding Effectiveness	Better than 90 dB	
Capacitance	29.9 pF/ft	

DL02 Attenuation & Power Handling Data

Freq. GHz	Insertion Loss		Power Watts
	dB/ft	dB/m	
2	0.17	0.56	190
3	0.23	0.75	150
6	0.32	1.07	100
12	0.51	1.67	60
13.5	0.55	1.80	55
18	0.66	2.16	45

DL04 Electrical & Mechanical Specifications

Dimensions	inches	mm
Jacket	< 0.180	< 4.8
Bend Radius (min)	0.9	23
Weight	0.054 kg/m	
Temperature Range	$-55^\circ \sim +200^\circ\text{C}$	
Impedance	50 ohms	
Velocity of Propagation	76 %	
Delay	4.39 nS/m	
Shielding Effectiveness	> -90 dB	
Capacitance	26.7 pF/ft	

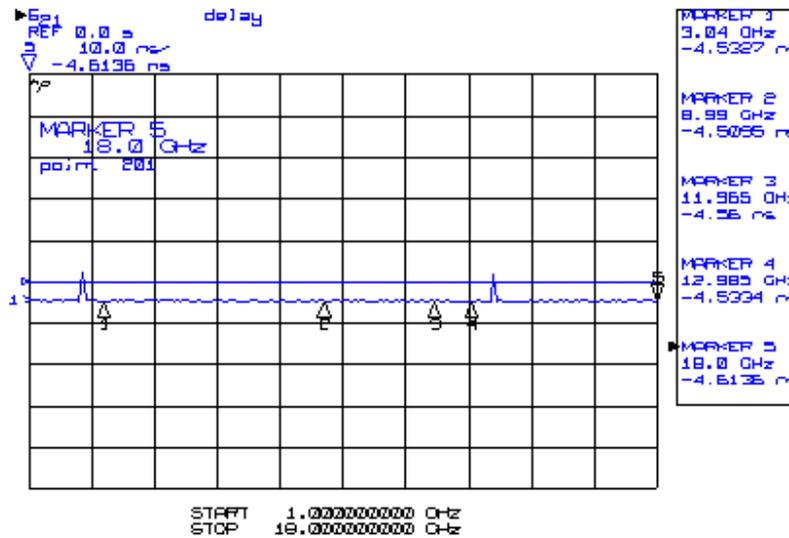
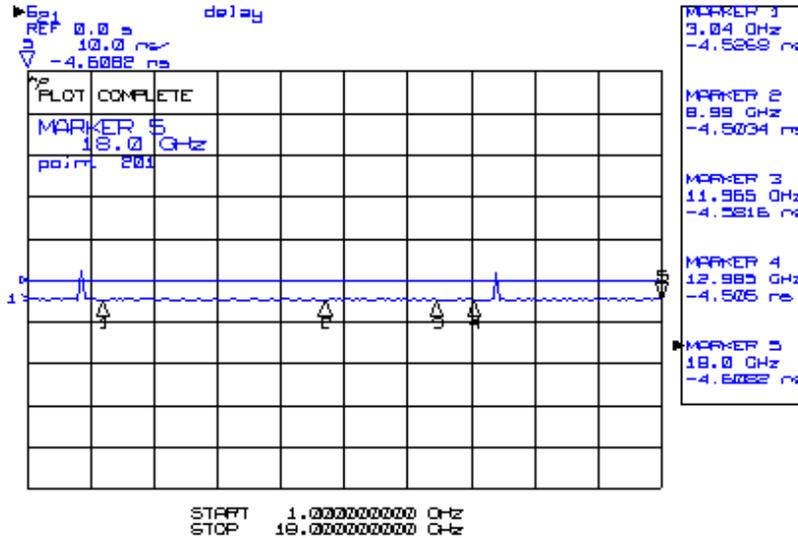
DL04 Attenuation & Power Handling Data

Freq. GHz	Insertion Loss		Power Watts
	dB/ft	dB/m	
0.4	0.07	0.23	900
1	0.10	0.33	550
3	0.19	0.62	290
6	0.25	0.83	210
10	0.36	1.18	150
18	0.49	1.62	110

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Precision Delay Lines DL04 Series with a delay of 4.5ns ± 0.5ns



Ordering Codes Description

(Type) (Connector 1) (Connector 2) (Delay)

DL - □ - □ (□ / □) - □ (□ / □) - □

X **1 2 3** **1 2 3** **Z**

X	Type	02 = low loss ; 04 = ultra low loss
1	Connector Series	SMA = SMA ; TNC = TNC
2	Male/Female Designator	M = Male
3	Orientation of Connector	ST = Straight
Z	Delay (nanosecond)	100 nanosecond = 100NS ; 25 nanosecond = 25NS

Delay line of 50 nanosecond with SMA (Male) on both sides = DL-04-SMA(M/ST)-SMA(M/ST)-50NS

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