



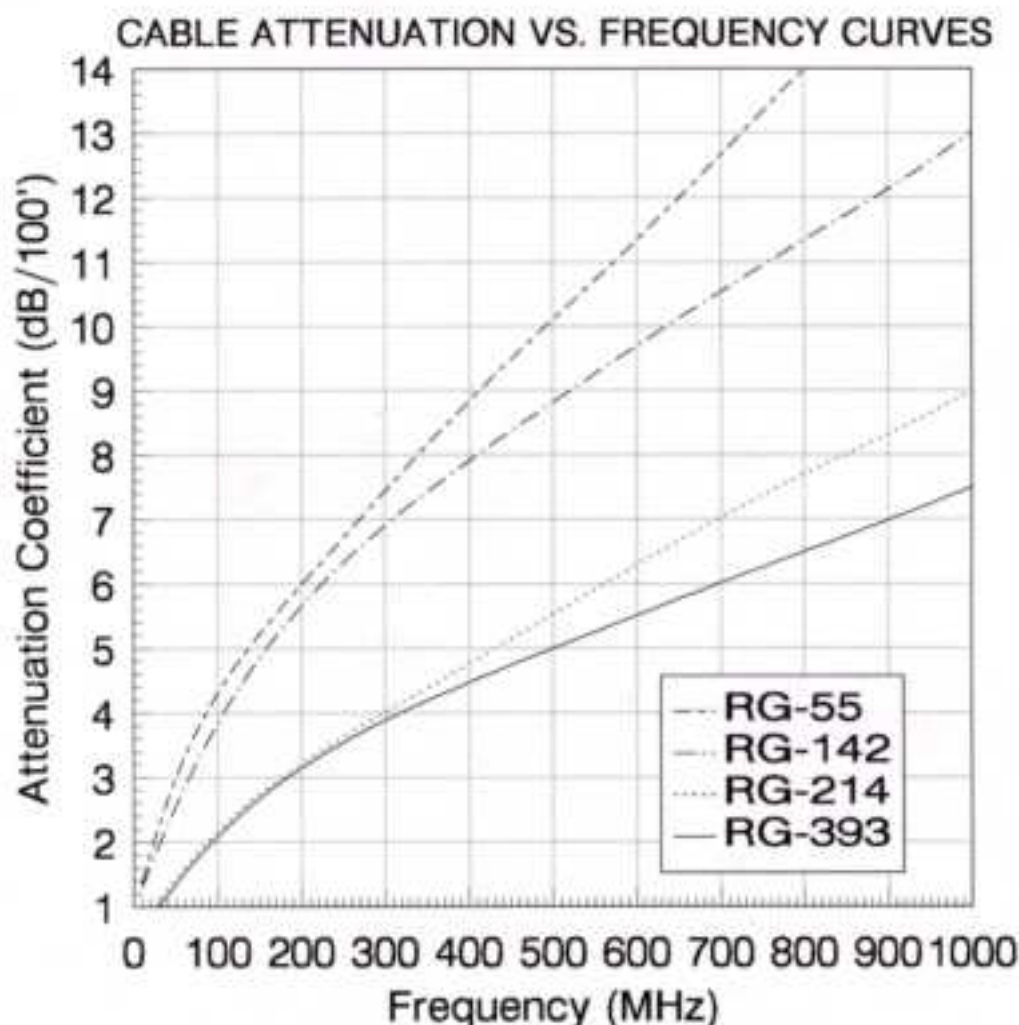
TECH-AID

No. 92003

Coaxial Cable Attenuation Data

Coaxial cable attenuation coefficients are necessary to estimate interconnect cable insertion loss in RF system design work. Attenuation data are available from cable manufacturers, but they are usually tabulated at wide frequency intervals that do not coincide with frequencies of practical interest to the system designer.

The curves and tables below are based on data published by Times Wire and Cable Company for 10, 50, 100, 200, 400 and 1,000 MHz. Fifth- and seventh-order polynomial regressions were performed to obtain curves that closely approach the original data points and provide accurate interpolations at 10-MHz intervals.



System RF power and operating frequency govern the choice of coaxial cable for a particular interconnection. Teflon-dielectric cable is preferred for high-power, high-temperature applications, due to its better impedance characteristics and long-term mechanical stability. Polyethylene dielectric tends to flow at high temperatures, allowing the center conductor to drift out of alignment and cause impedance changes.

RG-55 cable is used for low-power or receiving systems from VHF to 900 MHz frequencies. RG-142 cable is used for relatively short interconnections in a wide variety of filters, preselectors, duplexers and multicoupler systems. RG-214 cable is used primarily in low-power transmitting systems. RG-393 cable is used in all catalog transmitter multicoupler models and generally all high-power devices and systems.

DUPLEXERS • CAVITY FILTERS • MULTICOUPLER SYSTEMS • SIGNAL BOOSTER SYSTEMS • RF SYSTEM PRODUCTS

TX RX SYSTEMS INC. 8825 INDUSTRIAL PARKWAY, ANGOLA, NY 14006-8686
TELEPHONE 716-549-4700 FAX 716-549-4772 (24 HRS.)
A MEMBER OF BRD TECHNOLOGIES GROUP

D3007L92

CABLE ATTENUATION FACTOR (dB/100 ft)					
Range(MHz)	F(MHz)	RG-55	RG-142	RB-214	RG-393
30-50	30	2.28	1.96	1.09	1.01
	40	2.66	2.27	0.91	1.19
	50	3.00	2.57	1.09	1.35
66-88	60	3.31	2.85	1.60	1.51
	70	3.60	3.11	1.75	1.67
	80	3.85	3.37	1.90	1.81
118-174	90	4.09	3.61	2.03	1.95
	110	4.51	4.06	2.29	2.21
	120	4.70	4.27	2.41	2.34
	130	4.88	4.47	2.53	2.45
	140	5.05	4.66	2.64	2.56
	150	5.22	4.85	2.74	2.67
	160	5.38	5.02	2.84	2.77
	170	5.53	5.19	2.94	2.87
	180	5.69	5.35	3.04	2.97
215-300	210	6.13	5.80	3.30	3.23
	220	6.28	5.94	3.39	3.32
	230	6.43	6.08	3.47	3.29
	240	6.57	6.21	3.55	3.47
	250	6.72	6.33	3.63	3.54
	260	6.86	6.45	3.71	3.62
	270	7.01	6.57	3.79	3.69
	280	7.16	6.69	3.86	3.76
	290	7.30	6.80	3.94	3.82
	300	7.44	6.91	4.02	3.89
	400	8.84	7.91	4.76	4.47
400-530	410	8.97	8.00	4.84	4.52
	420	9.10	8.10	4.91	4.58
	430	9.23	8.19	4.99	4.63
	440	9.36	8.29	5.06	4.68
	450	9.48	8.37	5.14	4.74
	460	9.61	8.46	5.22	4.79
	470	9.74	8.55	5.29	4.84
	480	9.86	8.64	5.37	4.89
	490	9.98	8.73	5.45	4.95
	500	10.11	8.82	5.52	5.00
	510	10.13	8.91	5.60	5.05
	520	10.35	8.99	5.68	5.10
	530	10.47	9.08	5.76	5.15
	800	13.98	11.34	7.70	6.50
800-1000	810	14.11	11.42	7.77	6.55
	820	14.23	11.49	7.83	6.60
	830	14.35	11.57	7.89	6.65
	840	14.46	11.65	7.95	6.70
	850	14.58	11.73	8.01	6.74
	860	14.68	11.81	8.08	6.79
	870	14.79	11.89	8.14	6.84
	880	14.90	11.97	8.20	6.89
	890	15.00	12.04	8.26	6.94
	900	15.10	12.13	8.32	6.99
	910	15.20	12.21	8.38	7.04
	920	15.30	12.29	8.45	7.09
	930	15.41	12.37	8.51	7.14
	940	15.51	12.46	8.58	7.19
	950	15.62	12.55	8.64	7.24
	960	15.74	12.64	8.71	7.29
	970	15.87	12.73	8.78	7.34
	980	16.01	12.82	8.86	7.40
	990	16.67	12.92	8.93	7.45
	1,000	16.34	13.02	9.01	7.5