

STRAPPING CHARTS FOR 359A AND 359D EQUALIZERS OR 4182C NETWORK

1. GENERAL

1.01 This section gives prescription settings for voice-frequency applications of the 359A equalizer when using a 227A, B, C, D, E, or F amplifier and the 359D equalizer when using an 849B network. The 849B network is placed in the receive amplifier position and an 849A network will generally be in the transmit amplifier position. The settings for the 359D equalizer may also be used for the 4182C network.

1.02 This section is reissued to include strapping charts for 25-gauge metropolitan area trunk (MAT) cable. Charts 19 and 20 are added for the 359A and D equalizer settings for H88 loaded MAT cable. Change arrows normally used to indicate changes are not used due to the extensive revision.

1.03 The 227A and 227B amplifiers have been manufacture-discontinued (MD) and functionally replaced by the 227E and 227F amplifiers, respectively. Since 227A and 227B amplifiers may still be in use, this section includes charts for their adjustment also.

1.04 The 227C and 227D amplifiers were developed for use in high-speed, low error rate data circuits requiring reduced low-frequency delay distortion. The gain-frequency characteristics of the 227D and early 227C, below 200 Hz (Section 024-140-103, Fig. 7), can cause low-frequency singing problems if proper equalization is not provided.

Therefore, the 227E and 227F amplifiers are recommended for use in voice services. However, for those instances where these amplifiers would be impractical, the following charts include equalizer settings for 227C and 227D amplifiers used for voice services.

1.05 The high- and low-frequency sections are adjusted by means of the faceplate screw-type switches. The capacitors in the low-frequency section are added to the circuit when the associated screw-type switches are closed (turned in) and are removed when the switches are opened (turned out). The resistors in both the high- and low-frequency sections are bypassed when the associated screw-type switches are closed and are placed in the circuit when the switches are opened. The screw-type switch designated IN puts the high-frequency section in the circuit when closed and removes the high-frequency section when opened.

1.06 When 359A or D equalizers are used with H88 loaded MAT cable, the high-frequency section of the equalizer must be removed from the circuit. (The IN screw-type switch must be turned out three turns.)

2. STRAPPING CHARTS

2.01 Table A lists the various charts for the 359A equalizer settings and Table B lists the charts used for the 359D equalizer and 849B network (also may be used for 4182C network).

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TABLE A

STRAPPING CHARTS FOR 359A EQUALIZER

CHART NO.	TYPE AMPLIFIER (227)	CABLE LENGTH (kft)	CABLE GAUGE	END SECTION (feet)	PAGE NO.
1	A, B, E or F	0 to 135	19D88 HC	1200 to 3400	4
2	C or D	0 to 135	19D88 HC	1200 to 3400	5
3	A, B, E or F	0 to 99	22D88	1200 to 3400	6
4	C or D	0 to 99	22D88	1200 to 3400	7
5	A, B, E or F	0 to 81	24D88	1200 to 3400	8
6	C or D	0 to 63	24D88	1200 to 3400	9
7	A, B, E or F	0 to 49.5	26D88	1200 to 3400	10
8	C or D	0 to 45.0	26D88	1200 to 3400	11
9	A, B, E or F	0 to 150	19H88 LC	1500 to 4500	12
10	C or D	0 to 150	19H88 LC	1500 to 4500	13
11	A, B, E or F	0 to 150	19H88 HC	1500 to 4500	14
12	C or D	0 to 150	19H88 HC	1500 to 4500	15
13	A, B, E or F	0 to 108	22H88 HC	1500 to 4500	16
14	C or D	0 to 102	22H88 HC	1500 to 4500	17
15	A, B, E or F	0 to 72	24H88 HC	1500 to 4500	18
16	C or D	0 to 66	24H88 HC	1500 to 4500	19
17	A, B, E or F	0 to 42	26H88 HC	1500 to 4500	20
18	C or D	0 to 30	26H88 HC	1500 to 4500	21
19	A, B, E or F	0 to 60	25H88 LC	1500 to 4500	22
20	C or D	0 to 42	25H88 LC	1500 to 4500	23

HC = High Capacitance Cable (.083 μ F/mile)

LC = Low Capacitance Cable (.064 μ F/mile)

TABLE B
STRAPPING CHARTS FOR 359D EQUALIZER WITH 849B NETWORK
OR 4182C NETWORK

CHART NO.	NETWORK	CABLE LENGTH (kft)	CABLE GAUGE	END SECTION (feet)	PAGE NO.
2	849B	0 to 135	19D88 HC	1200 to 3400	5
4	849B	0 to 99	22D88	1200 to 3400	7
6	849B	0 to 63	24D88	1200 to 3400	9
8	849B	0 to 45	26D88	1200 to 3400	11
10	849B	0 to 150	19H88 LC	1500 to 4500	13
12	849B	0 to 150	19H88 HC	1500 to 4500	15
14	849B	0 to 102	22H88 HC	1500 to 4500	17
16	849B	0 to 66	24H88 HC	1500 to 4500	19
18	849B	0 to 30	26H88 HC	1500 to 4500	21
20	849B	0 to 42	25H88 LC	1500 to 4500	23

HC = High Capacitance Cable (.083 μ F/mile)

LC = Low Capacitance Cable (.064 μ F/mile)

CHART 1
PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF
359A EQUALIZER WITH A 227A, B, E OR F AMPLIFIER

Cable End Sections		1200 to 3400 Feet					
Gauge of Cable		19D88 HC					
Cable Length in Kilofeet*		0 to 63	81	99	117	135	
Cable Length in Miles*		0 to 11.9	15.3	18.8	22.2	25.6	
Screw Designation							
HF	IN 75 150 300	Resistance	○	●	●	●	●
	600 1200 2400	Resistance	○	○	○	○	●
LF	0.25 0.50 1.0 2.0	Capacitance	○	○	○	○	○
	250 500 1000 2000	Resistance	●	●	●	●	●
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz			0 4.5	5.8	7.1	8.4	9.7
Loss of Equalizer (dB) at 1 kHz		359A	6.2	6.7	6.9	7.5	7.7
HF Total Res (Ohms)			∞	4725	3000	1800	1500
LF Total Cap. (μF)			0	0	0	0	0
LF Total Res (Ohms)			0	0	0	0	0

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 81 kft, use the adjustment for the range 63 to 81 kft.

○ Indicates "screw up" (3 full turns)

● Indicates "screw down"

CHART 2

PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF 359A EQUALIZER
WITH A 227C OR D AMPLIFIER OR 359D EQUALIZER WITH AN 849B NETWORK
OR 4182C NETWORK

Cable End Sections		1200 to 3400 Feet						
Gauge of Cable		19D88 HC						
Cable Length in Kilofeet*		0 to 45	63	81	99	117	135	
Cable Length in Miles*		0 to 8.5	11.9	15.3	18.8	22.2	25.6	
Screw Designation								
HF	IN 75 150 300 Resistance	○ ○ ○ ○	○ ○ ○ ○	● ● ● ○	● ● ○ ●	● ● ● ●	● ● ● ○	
	600 1200 2400 Resistance	○ ○ ○	○ ○ ○	○ ○ ●	○ ○ ●	○ ○ ●	● ○ ●	
LF	0.25 0.50 1.0 2.0 Capacitance	● ● ● ●	● ● ● ●	● ● ● ●	● ● ○ ●	● ● ○ ●	● ○ ○ ●	
	250 500 1000 2000 Resistance	○ ○ ○ ○	○ ● ○ ●	○ ○ ● ●	○ ○ ● ●	○ ● ○ ●	○ ● ○ ●	
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	3.2	4.5	5.8	7.1	8.4	9.7
Loss of Equalizer (dB) at 1 kHz		359D	0.1	0.1	1.1	1.2	1.3	1.5
		359A	6.3	6.3	7.3	7.4	7.5	7.7
HF Total Res	(Ohms)	∞	∞	2100	1950	1800	1500	
LF Total Cap.	(μF)	3.75	3.75	3.75	2.75	2.75	2.25	
LF Total Res	(Ohms)	3750	1250	750	750	1250	1250	

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 81 kft, use the adjustment for the range 63 to 81 kft.

○ Indicates "screw up" (3 full turns)

● Indicates "screw down"

CHART 3

PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF
359A EQUALIZER WITH A 227A, B, E OR F AMPLIFIER

Cable End Sections		1200 to 3400 Feet					
Gauge of Cable		22D88					
Cable Length in Kilofeet*		0 to 27	45	63	81	99	
Cable Length in Miles*		0 to 5.1	8.5	11.9	15.3	18.8	
Screw Designation							
HF	Resistance	IN	o	o	o	o	•
		75	o	o	o	o	o
		150	o	o	o	o	o
		300	o	o	o	o	o
	Resistance	600	o	o	o	o	o
		1200	o	o	o	o	o
2400		o	o	o	o	o	
LF	Capacitance	0.25	o	•	•	o	o
		0.50	o	•	o	o	•
		1.0	o	•	o	o	•
		2.0	o	•	•	•	o
	Resistance	250	•	o	•	•	o
		500	•	o	•	o	o
		1000	•	o	o	o	o
		2000	•	o	o	•	•
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	3.6	5.9	8.3	10.7	13.1
Loss of Equalizer (dB) at 1 kHz		359A	6.2	6.2	6.3	6.3	6.9
HF Total Res	(Ohms)	∞	∞	∞	∞	4725	
LF Total Cap.	(μF)	0	3.75	2.25	2.0	1.50	
LF Total Res	(Ohms)	0	3750	3000	1500	1750	

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 45 kft, use the adjustment for the range 27 to 45 kft.

o Indicates "screw up" (3 full turns)

• Indicates "screw down"

CHART 4

PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF 359A EQUALIZER
WITH A 227C OR D AMPLIFIER OR 359D EQUALIZER WITH AN 849B NETWORK
OR 4182C NETWORK

Cable End Sections		1200 to 3400 Feet					
Gauge of Cable		22D88					
Cable Length in Kilofeet*		0 to 9	27	45	63	81	99
Cable Length in Miles*		0 to 1.7	5.1	8.5	11.9	15.3	18.8
Screw Designation							
HF	IN	○	○	○	○	○	●
	75	○	○	○	○	○	○
	150	○	○	○	○	○	○
	300	○	○	○	○	○	○
	600	○	○	○	○	○	○
	1200	○	○	○	○	○	○
LF	2400	○	○	○	○	○	○
	0.25	○	●	●	●	○	●
	0.50	○	○	●	○	○	●
	1.0	○	●	●	●	●	○
	2.0	○	●	○	○	○	○
	250	●	○	○	○	○	○
LF	500	●	○	○	○	○	○
	1000	●	○	○	○	○	○
	2000	●	○	○	○	○	○
	1200-Ohm Insertion Loss (dB) of Cable at 1 kHz	0	1.2	3.6	5.9	8.3	10.7
Loss of Equalizer (dB) at 1 kHz	359D	0	0.1	0.1	0.1	0.2	0.7
	359A	6.2	6.3	6.3	6.3	6.4	6.9
HF Total Res	(Ohms)	∞	∞	∞	∞	∞	4725
LF Total Cap.	(μF)	0	3.25	1.75	1.25	1.0	0.75
LF Total Res	(Ohms)	0	3750	3750	3750	3750	3750

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 63 kft, use the adjustment for the range 45 to 63 kft.

○ Indicates "screw up" (3 full turns)

● Indicates "screw down"

CHART 5
PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF
359A EQUALIZER WITH A 227A, B, E OR F AMPLIFIER

Cable End Sections		1200 to 3400 Feet				
Gauge of Cable		24D88				
Cable Length in Kilofeet*		0 to 18	45	63	81	
Cable Length in Miles*		0 to 3.4	8.5	11.9	15.3	
Screw Designation						
HF	Resistance	IN	○	○	○	○
		75	○	○	○	○
		150	○	○	○	○
		300	○	○	○	○
	Resistance	600	○	○	○	○
		1200	○	○	○	○
		2400	○	○	○	○
			○	○	○	○
LF	Capacitance	0.25	○	○	●	●
		0.50	○	○	○	●
		1.0	○	○	●	○
		2.0	○	●	○	○
	Resistance	250	●	●	●	○
		500	●	○	○	○
		1000	●	○	○	○
		2000	●	●	●	○
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	3.7	9.1	12.8	16.5
Loss of Equalizer (dB) at 1 kHz		359A	6.2	6.3	6.4	6.6
HF Total Res	(Ohms)	∞	∞	∞	∞	
LF Total Cap.	(μF)	0	2.0	1.25	0.75	
LF Total Res	(Ohms)	0	1500	1500	3750	

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 45 kft, use the adjustment for the range 18 to 45 kft.

○ Indicates "screw up" (3 full turns)

● Indicates "screw down"

CHART 6

PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF 359A EQUALIZER
WITH A 227C OR D AMPLIFIER OR 359D EQUALIZER WITH AN 849B NETWORK
OR 4182C NETWORK

Cable End Sections		1200 to 3400 Feet				
Gauge of Cable		24D88				
Cable Length in Kilofeet*		0 to 9	27	45	63	
Cable Length in Miles*		0 to 1.7	5.1	8.5	11.9	
Screw Designation						
HF	IN	○	○	○	○	
	75 Resistance	○	○	○	○	
	150	○	○	○	○	
	300	○	○	○	○	
HF	600 Resistance	○	○	○	○	
	1200	○	○	○	○	
	2400	○	○	○	○	
LF	0.25 Capacitance	●	○	○	●	
	0.50	●	●	○	●	
	1.0	●	●	●	○	
	2.0	●	○	○	○	
LF	250 Resistance	○	○	●	○	
	500	○	○	●	○	
	1000	○	○	○	○	
	2000	○	○	●	○	
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	1.8	5.5	9.1	12.8
Loss of Equalizer (dB) at 1 kHz	359D	0.1	0.1	0.2	0.3	
	359A	6.3	6.3	6.4	6.5	
HF Total Res	(Ohms)	∞	∞	∞	∞	
LF Total Cap.	(μF)	3.75	1.50	1.0	0.75	
LF Total Res	(Ohms)	3750	3750	1000	3750	

* For an exact cable length shown at the top of the range 27 to 45 kft. lengths.

Example: For 45 kft, use the adjustment for the range 18 to 45 kft.

○ Indicates "screw up" (3 full turns)

● Indicates "screw down"

CHART 7
PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF
359A EQUALIZER WITH A 227A, B, E OR F AMPLIFIER

Cable End Sections		1200 to 3400 Feet						
Gauge of Cable		26D88						
Cable Length in Kilofeet*		0 to 13.5	22.5	31.5	40.5	49.5		
Cable Length in Miles*		0 to 2.6	4.3	6.0	7.7	9.4		
Screw Designation								
HF	Resistance	IN	○	○	○	○	○	
		75	○	○	○	○	○	
		150	○	○	○	○	○	
		300	○	○	○	○	○	
	Resistance	600	○	○	○	○	○	
		1200	○	○	○	○	○	
2400		○	○	○	○	○		
LF	Capacitance	0.25	●	●	●	●	○	
		0.50	●	○	●	●	●	
		1.0	●	●	○	○	○	
		2.0	●	○	○	○	○	
	Resistance	250	○	●	●	○	○	
		500	○	○	●	○	○	
1000		○	●	●	○	○		
2000		○	○	○	●	○		
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	3.9	6.7	9.5	12.2	15.0	
Loss of Equalizer (dB) at 1 kHz		359A		6.2	6.4	6.6	6.6	6.9
HF Total Res (Ohms)		∞	∞	∞	∞	∞		
LF Total Cap. (μF)		3.75	1.25	0.75	0.75	0.5		
LF Total Res (Ohms)		3750	2500	2000	1750	3750		

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 31.5 kft, use the adjustment for the range 22.5 to 31.5 kft.

- Indicates "screw up" (3 full turns)
- Indicates "screw down"

CHART 8

PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF 359A EQUALIZER
WITH A 227C OR D AMPLIFIER OR 359D EQUALIZER WITH AN 849B NETWORK
OR 4182C NETWORK

Cable End Sections		1200 to 3400 Feet				
Gauge of Cable		26D88				
Cable Length in Kilofeet*		0 to 13.5	22.5	31.5	45.0	
Cable Length in Miles*		0 to 2.6	4.3	6.0	8.5	
Screw Designation						
HF	IN	○	○	○	○	
	75 Resistance	○	○	○	○	
	150	○	○	○	○	
	300	○	○	○	○	
	600 Resistance	○	○	○	○	
	1200	○	○	○	○	
	2400	○	○	○	○	
LF	0.25	○	●	●	○	
	0.50 Capacitance	●	○	●	●	
	1.0	●	●	○	○	
	2.0	○	○	○	○	
	250	○	○	●	○	
	500 Resistance	○	○	○	○	
	1000	○	●	○	○	
	2000	○	●	●	○	
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	3.9	6.7	9.5	13.5
Loss of Equalizer (dB) at 1 kHz	359D	0.1	0.2	0.4	0.7	
	359A	6.3	6.4	6.6	6.9	
HF Total Res (Ohms)		∞	∞	∞	∞	
LF Total Cap. (μF)		1.5	1.25	0.75	0.5	
LF Total Res (Ohms)		3750	750	1500	3750	

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 31.5 kft, use the adjustment for the range 22.5 to 31.5 kft.

○ Indicates "screw up" (3 full turns)

● Indicates "screw down"

CHART 9

PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF
359A EQUALIZER WITH A 227A, B, E OR F AMPLIFIER

Cable End Sections		1500 to 4500 Feet								
Gauge of Cable		19H88 LC								
Cable Length in Kilofeet*		0 to 42	60	78	96	114	132	150		
Cable Length in Miles*		0 to 8.0	11.4	14.8	18.2	2.16	25.0	28.4		
Screw Designation										
HF	IN	•	•	•	•	•	•	•		
	75 Resistance	○	○	○	○	○	•	•		
	150	○	•	○	○	○	•	○		
	300	○	○	•	•	•	•	○		
	600 Resistance	○	○	•	○	○	○	•		
	1200	○	•	•	○	○	○	○		
LF	2400	○	○	○	•	•	•	•		
	0.25 Capacitance	○	○	○	•	•	•	•		
	0.50	○	○	○	•	•	•	•		
	1.0	○	○	○	•	•	○	○		
	2.0	○	○	○	•	•	•	•		
	250 Resistance	•	•	•	○	○	○	•		
500	•	•	•	○	○	•	•			
1000	•	•	•	○	○	•	•			
2000	•	•	•	○	•	○	○			
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	3.0	4.3	5.5	6.8	8.1	9.4	10.7	
Loss of Equalizer (dB) at 1 kHz		359A		6.7	6.8	7.1	7.4	7.4	7.8	7.9
HF Total Res (Ohms)		4725	3375	2625	2025	2025	1800	1650		
LF Total Cap. (μF)		0	0	0	3.75	3.75	2.75	2.75		
LF Total Res (Ohms)		0	0	0	3750	1750	2250	2000		

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 60 kft, use the adjustment for the range 42 to 60 kft.

○ Indicates "screw up" (3 full turns)

• Indicates "screw down"

CHART 10

**PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF 359A EQUALIZER
WITH A 227C OR D AMPLIFIER OR 359D EQUALIZER WITH AN 849B NETWORK
OR 4182C NETWORK**

Cable End Sections		1500 to 4500 Feet							
Gauge of Cable		19H88 LC							
Cable Length in Kilofeet*		0 to 42	60	78	96	114	132	150	
Cable Length in Miles*		0 to 8.0	11.4	14.8	18.2	21.6	25.0	28.4	
Screw Designation									
HF	IN	•	•	•	•	•	•	•	
	75 Resistance	○	•	•	•	•	•	•	
	150	○	•	•	•	•	•	○	
	300	○	•	•	•	○	•	○	
	600 Resistance	○	○	○	•	○	○	•	
	1200	○	○	•	•	○	○	○	
	2400	○	○	○	○	•	•	•	
LF	0.25	•	○	○	•	•	•	○	
	0.50	○	•	○	•	•	•	•	
	1.0 Capacitance	•	○	○	•	•	•	•	
	2.0	•	•	•	○	○	○	○	
	250 Resistance	○	○	○	•	•	•	•	
	500	○	○	○	•	•	•	•	
	1000	○	○	○	○	○	○	○	
	2000	○	○	○	○	○	○	○	
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	3.0	4.3	5.5	6.8	8.1	9.4	10.7
Loss of Equalizer (dB) at 1 kHz	359D	0.6	0.7	0.9	1.2	1.3	1.5	1.6	
	359A	6.8	6.9	7.1	7.4	7.5	7.7	7.8	
HF Total Res (Ohms)		4725	4200	3000	2400	2100	1800	1650	
LF Total Cap. (μF)		3.25	2.50	2.00	1.75	1.75	1.75	1.50	
LF Total Res (Ohms)		3750	3750	3750	3000	3000	3000	3000	

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 60 kft, use the adjustment for the range 42 to 60 kft.

○ Indicates "screw up" (3 full turns)

• Indicates "screw down"

CHART 11

PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF
359A EQUALIZER WITH A 227A, B, E OR F AMPLIFIER

Cable End Sections		1500 to 4500 Feet							
Gauge of Cable		19H88 HC							
Cable Length in Kilofeet*		0 to 42	60	78	96	108	114	150	
Cable Length in Miles*		0 to 8.0	11.4	14.8	18.2	20.5	21.6	28.4	
Screw Designation									
HF	IN	o	•	•	•	•	•	•	
	75 Resistance	o	•	•	•	•	•	•	
	150	o	•	•	o	•	o	•	
	300	o	o	•	o	o	•	•	
HF	600 Resistance	o	•	•	o	o	o	o	
	1200	o	o	o	•	•	•	•	
	2400	o	•	•	•	•	•	•	
LF	0.25 Capacitance	o	o	o	o	o	o	o	
	0.50	o	o	o	o	o	o	o	
	1.0	o	o	o	o	o	o	o	
	2.0	o	o	o	o	o	o	o	
LF	250 Resistance	•	•	•	•	•	•	•	
	500	•	•	•	•	•	•	•	
	1000	•	•	•	•	•	•	•	
	2000	•	•	•	•	•	•	•	
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	3.4	4.8	6.3	7.7	8.7	9.2	12.1
Loss of Equalizer (dB) at 1 kHz		359A	6.2	7.6	8.0	8.3	8.6	9.0	9.2
HF Total Res	(Ohms)	∞	1500	1200	1050	900	750	675	
LF Total Cap.	(μF)	0	0	0	0	0	0	0	
LF Total Res	(Ohms)	0	0	0	0	0	0	0	

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 60 kft, use the adjustment for the range 42 to 60 kft.

** Dummy equalizer (359E or 359J), which has no adjustments and no loss, is preferred.

o Indicates "screw up" (3 full turns)

• Indicates "screw down"

CHART 12

**PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF 359A EQUALIZER
WITH A 227C OR D AMPLIFIER OR 359D EQUALIZER WITH AN 849B NETWORK
OR 4182C NETWORK**

Cable End Sections		1500 to 4500 Feet									
Gauge of Cable		19H88 HC									
Cable Length in Kilofeet*		0 to 42	60	78	96	114	132	150			
Cable Length in Miles*		0 to 8.0	11.4	14.8	18.2	21.6	25.0	28.4			
Screw Designation											
HF	Resistance	IN	•	•	•	•	•	•			
		75	•	○	•	•	•	○			
		150	•	○	•	○	○	○			
		300	•	○	•	○	○	•			
	Resistance	600	○	•	•	○	○	○			
		1200	•	○	○	•	•	•			
2400		○	•	•	•	•	•				
LF	Capacitance	0.25	•	○	•	○	•	○			
		0.50	•	•	○	○	•	•			
		1.0	•	○	○	○	•	•			
		2.0	•	•	•	•	○	○			
	Resistance	250	○	○	○	•	•	•			
		500	○	○	○	○	•	•			
		1000	○	○	○	○	○	○			
		2000	○	○	○	○	○	○			
		1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	3.4	4.8	6.8	7.7	9.3	10.6	12.1
		Loss of Equalizer (dB) at 1 kHz	359D	0.9	1.4	1.9	2.2	2.2	2.5	3.0	
359A	7.1		7.6	7.1	8.6	8.4	8.7	9.2			
HF Total Res	(Ohms)	3000	1725	1200	1050	1050	825	675			
LF Total Cap.	(μ F)	3.75	2.50	2.25	2.0	1.75	1.50	1.50			
LF Total Res	(Ohms)	3750	3750	3750	3500	3000	3000	3000			

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 60 kft, use the adjustment for the range 42 to 60 kft.

○ Indicates "screw up" (3 full turns)

• Indicates "screw down"

CHART 13

PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF
359A EQUALIZER WITH A 227A, B, E OR F AMPLIFIER

Cable End Sections		1500 to 4500 Feet						
Gauge of Cable		22H88 HC						
Cable Length in Kilofeet*		0 to 18	24	60	90	108		
Cable Length in Miles*		0 to 3.4	4.5	11.4	17.0	20.5		
Screw Designation								
HF	IN	○	●	●	●	●		
	75 Resistance	○	●	●	●	●		
	150	○	●	●	●	○		
	300	○	●	●	○	○		
	600 Resistance	○	●	●	●	○		
	1200	○	○	●	○	●		
LF	2400	○	○	○	●	●		
	0.25	○	●	○	○	●		
	0.50 Capacitance	○	●	●	○	○		
	1.0	○	●	●	○	●		
	2.0	○	●	●	●	○		
	250 Resistance	●	●	●	●	●		
500	●	●	●	●	●			
1000	●	○	○	○	●			
2000	●	○	○	○	○			
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	2.7	3.6	9.0	13.4	16.1	
Loss of Equalizer (dB) at 1 kHz		359A		6.2	6.7	7.1	7.6	8.3
HF Total Res	(Ohms)	∞	3600	2400	1500	1050		
LF Total Cap.	(μF)	0	3.75	3.5	2.0	1.25		
LF Total Res	(Ohms)	0	3000	3000	3000	2000		

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 60 kft, use the adjustment for the range 24 to 60 kft.

** Dummy equalizer (359E or 359J), which has no adjustments and no loss, is preferred.

○ Indicates "screw up" (3 full turns)

● Indicates "screw down"

CHART 14

**PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF 359A EQUALIZER
WITH A 227C OR D AMPLIFIER OR 359D EQUALIZER WITH AN 849B NETWORK
OR 4182C NETWORK**

Cable End Sections		1500 to 4500 Feet					
Gauge of Cable		22H88 HC					
Cable Length in Kilofeet*		0 to 18	42	60	72	102	
Cable Length in Miles*		0 to 3.4	8.0	11.4	13.6	19.3	
Screw Designation							
HF	IN	•	•	•	•	•	
	75 Resistance	•	•	•	○	•	
	150	•	•	•	○	•	
	300	○	○	•	•	•	
	600 Resistance	•	○	•	•	•	
	1200	•	•	•	○	○	
	2400	○	○	○	•	•	
LF	0.25	•	•	○	○	•	
	0.50 Capacitance	○	○	○	○	•	
	1.0	○	•	•	•	○	
	2.0	•	○	○	○	○	
	250 Resistance	•	○	•	•	○	
	500	○	•	○	○	○	
	1000	•	•	○	○	○	
	2000	•	○	•	•	○	
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	2.7	6.2	9.0	10.7	15.4
Loss of Equalizer (dB) at 1 kHz	359D	1.0	0.9	1.2	1.7	2.2	
	359A	7.2	7.1	7.4	7.9	8.4	
HF Total Res	(Ohms)	2700	3300	2400	1425	1200	
LF Total Cap.	(μ F)	2.25	1.25	1.0	1.0	0.75	
LF Total Res	(Ohms)	500	2250	1500	1500	3750	

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 60 kft, use the adjustment for the range 42 to 60 kft.

○ Indicates "screw up" (3 full turns)

• Indicates "screw down"

CHART 15

PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF
359A EQUALIZER WITH A 227A, B, E OR F AMPLIFIER

Cable End Sections		1500 to 4500 Feet					
Gauge of Cable		24H88 HC					
Cable Length in Kiloft*		0 to 18	30	42	60	72	
Cable Length in Miles*		0 to 3.4	5.7	8.0	11.4	13.6	
Screw Designation							
HF	Resistance	IN	○	●	●	●	●
		75	○	●	●	●	●
		150	○	●	●	●	●
		300	○	●	●	○	●
	Resistance	600	○	○	●	●	●
		1200	○	○	●	○	○
2400		○	○	○	●	●	
LF	Capacitance	0.25	○	○	○	○	●
		0.50	○	●	●	○	●
		1.0	○	●	●	●	○
		2.0	○	○	○	○	○
	Resistance	250	●	○	●	○	●
		500	●	●	○	○	●
		1000	●	●	●	●	○
		2000	●	●	●	●	●
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	4.0	6.8	9.5	13.7	16.4
Loss of Equalizer (dB) at 1 kHz		359A	6.2	6.7	7.1	7.6	8.0
HF Total Res (Ohms)		∞	4200	2400	1500	1200	
LF Total Cap. (μF)		0	1.5	1.5	1.0	0.75	
LF Total Res (Ohms)		0	250	500	750	1000	

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 42 kft, use the adjustment for the range 30 to 42 kft.

** Dummy equalizer (359E or 359J), which has no adjustment and no loss, is preferred.

○ Indicates "screw up" (3 full turns)

● Indicates "screw down"

CHART 16

**PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF 359A EQUALIZER
WITH A 227C OR D AMPLIFIER OR 359D EQUALIZER WITH AN 849B NETWORK
OR 4182C NETWORK**

Cable End Sections		1500 to 4500 Feet					
Gauge of Cable		24H88 HC					
Cable Length in Kilofeet*		0 to 18	30	42	60	66	
Cable Length in Miles*		0 to 3.4	5.7	8.0	11.4	12.5	
Screw Designation							
HF	IN	•	•	•	•	•	
	Resistance	○	○	•	•	○	
HF	150	○	○	•	•	•	
	300	○	○	•	○	○	
HF	600	○	○	•	○	•	
	Resistance	○	○	•	○	○	
LF	1200	○	○	•	•	•	
	2400	○	○	○	•	•	
LF	0.25	•	○	•	○	○	
	Capacitance	○	○	•	•	•	
LF	0.50	○	○	•	•	•	
	1.0	•	•	○	○	○	
LF	2.0	○	○	○	○	○	
	Resistance	○	•	○	•	○	
LF	250	○	•	○	•	○	
	500	•	○	○	○	○	
LF	1000	•	○	○	○	○	
	2000	•	•	•	○	○	
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	4.0	6.8	9.5	12.2	13.5
Loss of Equalizer (dB) at 1 kHz	359D	1.0	0.8	1.6	1.8	2.2	
	359A	7.2	7.0	7.8	8.0	8.4	
HF Total Res	(Ohms)	4725	4725	2400	2100	1575	
LF Total Cap.	(μ F)	1.25	1.0	0.75	0.5	0.5	
LF Total Res	(Ohms)	250	1500	1750	3500	3750	

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 42 kft, use the adjustment for the range 30 to 42 kft.

○ Indicates "screw up (3 full turns)"

• Indicates "screw down"

CHART 17
PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF
359A EQUALIZER WITH A 227A, B, E OR F AMPLIFIER

Cable End Sections		1500 to 4500 Feet						
Gauge of Cable		26H88 HC						
Cable Length in Kilofeet*		0 to 12	18	24	30	36	42	
Cable Length in Miles*		0 to 2.3	3.4	4.5	5.7	6.8	8.0	
Screw Designation								
HF	Resistance	IN	○	●	●	●	●	●
		75	○	○	○	○	○	○
		150	○	○	○	○	○	○
		300	○	○	○	○	○	○
	Resistance	600	○	○	○	○	○	○
		1200	○	○	○	○	○	○
2400		○	○	○	○	○	○	
LF	Capacitance	0.25	○	●	●	●	○	○
		0.50	○	●	●	●	●	●
		1.0	○	○	○	○	○	○
		2.0	○	○	○	○	○	○
	Resistance	250	●	○	●	○	○	●
		500	●	●	○	○	●	●
		1000	●	●	●	●	○	●
		2000	●	●	●	●	●	○
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	3.7	5.8	7.9	9.9	11.9	14.0
Loss of Equalizer (dB) at 1 kHz		359A	6.2	6.6	6.6	6.6	6.6	6.6
HF Total Res (Ohms)		∞	4725	4725	4725	4725	4725	
LF Total Cap. (μF)		0	0.75	0.75	0.75	0.5	0.5	
LF Total Res (Ohms)		0	250	500	750	1250	2000	

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 30 kft, use the adjustment for the range 24 to 30 kft.

** Dummy equalizer (359E or 359J), which has no adjustments and no loss, is preferred.

○ Indicates "screw up" (3 full turns)

● Indicates "screw down"

CHART 18

PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF 359A EQUALIZER WITH A 227C OR D AMPLIFIER OR 359D EQUALIZER WITH AN 849B NETWORK OR 4182C NETWORK

Cable End Sections		1500 to 4500 Feet				
Gauge of Cable		26H88 HC				
Cable Length in Kilofeet*		0 to 12		18	24	30
Cable Length in Miles*		0 to 2.3		3.4	4.5	5.7
Screw Designation						
HF	Resistance	IN	•	•	○	○
		75	○	○	○	○
		150	○	○	○	○
		300	○	○	○	○
	Resistance	600	○	○	○	○
		1200	○	○	○	○
2400		○	○	○	○	
LF	Capacitance	0.25	•	•	○	○
		0.50	•	•	•	•
		1.0	○	○	○	○
		2.0	○	○	○	○
	Resistance	250	○	•	•	•
		500	•	○	•	○
		1000	•	•	○	○
		2000	•	•	•	•
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	3.7	5.8	7.9	9.9
Loss of Equalizer (dB) at 1 kHz	359D	1.4	1.3	1.1	1.0	
	359A	7.6	7.5	7.3	7.2	
HF Total Res	(Ohms)	4725	4725	∞	∞	
LF Total Cap.	(μF)	0.75	0.75	0.50	0.50	
LF Total Res	(Ohms)	250	500	1000	1500	

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.

Example: For 30 kft, use the adjustment for the range 24 to 30 kft.

○ Indicates "screw up" (3 full turns)

• Indicates "screw down"

CHART 19
PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF
359A EQUALIZER WITH A 227A, B, E OR F AMPLIFIER

Cable End Sections 1500 to 4500 Feet							
Gauge of Cable		25H88 LC (MAT) Cable					
Cable Length in Kilofeet*		0 to 12 †	18	24	42	60	
Cable Length in Miles*		0 to 2.3	3.4	4.5	8.0	11.4	
Screw Designation							
HF	IN	○	○	○	○	○	
	75	○	○	○	○	○	
	150 Resistance	○	○	○	○	○	
	300	○	○	○	○	○	
HF	600 Resistance	○	○	○	○	○	
	1200	○	○	○	○	○	
	2400	○	○	○	○	○	
LF	0.25	○	○	○	●	○	
	0.50 Capacitance	○	●	○	●	●	
	1.0	○	●	●	○	○	
	2.0	○	○	○	○	○	
LF	250	●	○	●	●	●	
	500 Resistance	●	●	○	○	○	
	1000	●	●	●	○	○	
	2000	●	●	●	●	○	
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0	2.8	4.2	5.7	10.2	14.7
Loss of Equalizer (dB) at 1 kHz 359A		6.2	6.5	6.7	6.7	6.9	
HF Total Res (Ohms)		∞	∞	∞	∞	∞	
LF Total Cap. (μF)		0	1.5	1.0	.75	.5	
LF Total Res (Ohms)		0	250	500	1500	3500	

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.
 Example: For 42 kft, use the adjustment for the range 24 to 42 kft.

† Dummy equalizer (359E or 359J), which has no adjustment and no loss, is preferred.

CHART 20

**PRESCRIPTION ADJUSTMENTS AND COMPONENT VALUES OF
359A EQUALIZER WITH A 227C OR D AMPLIFIER OR 359D EQUALIZER WITH AN 849B NETWORK
OR 4182C NETWORK**

Cable End Sections		1500 to 4500 Feet				
Gauge of Cable		25H88 LC (MAT) Cable				
Cable Length in Kilofeet*		0 to 12	18	24	30	42
Cable Length in Miles*		0 to 2.3	3.4	4.5	5.7	8.0
Screw Designation						
HF	IN 75 Resistance 150 300	○	○	○	○	○
	600 1200 Resistance 2400	○	○	○	○	○
LF	0.25 0.50 Capacitance 1.0 2.0	○	●	●	●	○
	250 500 Resistance 1000 2000	○	●	○	●	●
1200-Ohm Insertion Loss (dB) of Cable at 1 kHz		0 2.8	4.2	5.7	7.3	10.2
Loss of Equalizer (dB) at 1 kHz	359D	.4	.4	.7	.6	.8
	359A	6.5	6.5	6.9	6.7	6.9
HF Total Res (Ohms)		∞	∞	∞	∞	∞
LF Total Cap. (μF)		1.5	1.25	.75	.75	.5
LF Total Res (Ohms)		250	500	750	1500	2500

* For an exact cable length shown at the top of the table, use the adjustment for the shorter lengths.
Example: For 30 kft, use the adjustment for the range 24 to 30 kft.

○ Indicates "screw up" (3 full turns)

● Indicates "screw down"