837J NETWORK
INSTALLATION
AND PRESCRIPTION SETTINGS

1. GENERAL

1.01 This section gives installation and prescription settings for the 837J network. This network is for use as an impedance compensator on 25-gauge H88 loaded metropolitan area trunk (MAT) cable at locations with terminal balance requirements. A description of the 837J network is contained in Section 332-206-158.

1.02 When this section is reissued, the reason for reissue will be given in this paragraph.

2. INSTALLATION

2.01 The 837J network is stud mounted on a shelf near the point where the cable pairs are brought out to the panel wiring boards. Terminals 1 and 2 connect to the cable pair and terminals 3 and 4 connect to the trunk equipment.

3. PRESCRIPTION SETTINGS

3.01 Table A gives the prescription settings for the 837J network when used on an end section consisting entirely of 25-gauge H88 loaded MAT cable. The build-out resistance (BOR), build-out capacitance (BOC), and LATTICE settings in the table describe the positions of the 16 screws on the face of the network.

3.02 The following procedure should be used in determining the 837J network settings when the end section contains mixed gauges (MAT cable plus another type of facility).

(a) Calculate or otherwise obtain the resistance of the 25-gauge MAT cable and the resistance of the other gauge cable. The sum of these is the total cable end section equivalent resistance and is used in Table A to establish BOR and LATTICE settings. (An alternate method is to subtract the sum of the resistance of the two facility types from 393 ohms, which is the resistance of 6000 feet of 25-gauge MAT cable. The resulting value is the amount of LATTICE and BOR resistance needed.) The LATTICE resistance is 196 ohms and the BOR has a maximum resistance of 196 ohms in 28-ohm increments.

(b) Calculate or otherwise obtain the capacitance of the 25-gauge MAT cable and the capacitance of the other gauge cable and add the two together. Subtract this value from 0.071 μF (the capacitance of 6000 feet MAT cable). This is the value of capacitance which must be added by the LATTICE and BOC. The LATTICE capacitance is 0.036 μF and the BOC is a maximum of 0.052 μF adjustable in .001 μF steps.

(c) It is possible in some cases that the need for resistance as calculated in (a) will conflict with the need for capacitance as calculated in (b), eg, one of the calculations will indicate that the LATTICE be IN while the other indicates that the LATTICE be OUT. When this condition occurs, the requirement for capacitance as calculated in (b) dictates the setting for the LATTICE screws. The resistance value is set as close as possible by the BOR.

TABLE A

837J PRESCRIPTION SETTINGS FOR MAT CABLE

END SECTION		BOC							BOR				LATTICE		TOTAL RES. Ω	LOSS (dB)
LENGTH (FEET)	Ω	μF	SCREWS DOWN						Ω	SCREWS DOWN			X SCREWS	Y SCREWS		
LATTICE IN																
0	0	0.036	—	—	.004	.007	—	.025	196	—	—	—	DOWN	UP	417	3.40
200	13	0.034	—	.002	—	.007	—	.025	168	—	—	28			389	3.25
400	26	0.032	—	—	—	.007	—	.025	168	—	—	28			389	3.25
600	39	0.029	—	—	.004	—	—	.025	140	—	56	—			361	3.10
800	52	0.027	—	.002	—	—	—	.025	140	—	56	—			361	3.10
1000	65	0.024	—	—	.004	.007	.013	—	140	—	56	—			361	3.10
1200	78	0.022	—	.002	—	.007	.013	—	112	—	56	28			333	3.00
1400	92	0.019	—	.002	.004	—	.013	—	112	—	56	28			333	3.00
1600	105	0.017	—	—	.004	—	.013	—	84	112	—	—			305	2.85
1800	118	0.015	—	.002	—	—	.013	—	84	112	—	—			305	2.85
2000	131	0.012	.001	—	.004	.007	—	—	56	112	—	28			277	2.70
2200	144	0.010	.001	.002	—	.007	—	—	56	112	—	28			277	2.70
2400	157	0.007	—	—	—	.007	—	—	28	112	56	—			249	2.55
2600	170	0.005	.001	—	.004	—	—	—	28	112	56	—			249	2.55
2800	183	0.002	—	.002	—	—	—	—	0	112	56	28			221	2.40
3000	196	0.000	—	—	—	—	—	—	0	112	56	28			221	2.40
LATTICE OUT																
3200	210	0.034	—	.002	—	.007	—	.025	168	—	—	28	UP	DOWN	193	2.30
3400	223	0.032	—	—	—	.007	—	.025	168	—	—	28			193	2.30
3600	236	0.029	—	—	.004	.007	—	.025	140	—	56	—			165	2.15
3800	249	0.027	—	.002	—	—	—	.025	140	—	56	—			165	2.15
4000	262	0.024	—	—	.004	.007	.013	—	140	—	56	—			165	2.15
4200	275	0.022	—	.002	—	.007	.013	—	112	—	56	28			137	2.00
4400	288	0.019	—	.002	.004	—	.013	—	112	—	56	28			137	2.00
4600	301	0.017	—	—	.004	—	.013	—	84	112	—	—			109	1.90
4800	314	0.015	—	.002	—	—	.013	—	84	112	—	—			109	1.90
5000	327	0.012	.001	—	.004	.007	—	—	56	112	—	28			81	1.75
5200	341	0.010	.001	.002	—	.007	—	—	56	112	—	28			81	1.75
5400	354	0.007	—	—	—	.007	—	—	28	112	56	—			53	1.60
5600	367	0.005	.001	—	.004	—	—	—	28	112	56	—			53	1.60
5800	380	0.002	—	.002	—	—	—	—	0	112	56	28			25	1.45
6000	393	0.000	—	—	—	—	—	—	0	112	56	28			25	1.45