

Project:
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ETAP
12.6.0H

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System Harmonics Bus Information

Bus		Voltage Distortion								
ID	kV	Fund. %	RMS %	ASUM %	THD %	TIF	TIHD %	TSHD %	THDG %	THDS %
# Bus1	33.000	100.00	100.03	103.61	2.27	8.93	0.00	0.00	2.27	2.27
# Bus2	33.000	99.99	100.02	103.62	2.28	8.97	0.00	0.00	2.28	2.28
# Bus3	33.000	99.99	100.02	103.63	2.28	8.98	0.00	0.00	2.28	2.28
# Bus4	33.000	99.99	100.01	103.64	2.29	8.99	0.00	0.00	2.29	2.29
# * Bus5	0.400	99.61	99.71	107.46	4.36	10.55	0.00	0.00	4.36	4.36
# Bus6	33.000	99.98	100.00	103.66	2.32	9.02	0.00	0.00	2.32	2.32
# Bus7	33.000	99.95	99.98	103.70	2.36	9.09	0.00	0.00	2.36	2.36
# * Bus8	0.400	99.70	99.80	107.85	4.51	11.04	0.00	0.00	4.51	4.51
# Bus9	33.000	99.95	99.98	103.70	2.37	9.10	0.00	0.00	2.37	2.37
# Bus10	33.000	99.95	99.98	103.71	2.37	9.10	0.00	0.00	2.37	2.37
# Bus11	33.000	99.95	99.98	103.71	2.37	9.11	0.00	0.00	2.37	2.37
# * Bus12	0.400	99.59	99.68	107.28	4.29	10.36	0.00	0.00	4.29	4.29
# Bus13	33.000	99.95	99.97	103.71	2.38	9.11	0.00	0.00	2.38	2.38
# * Bus14	0.400	99.56	99.66	107.49	4.42	10.53	0.00	0.00	4.42	4.42
# Bus15	33.000	99.94	99.97	103.71	2.38	9.12	0.00	0.00	2.38	2.38
# Bus17	33.000	99.94	99.97	103.71	2.38	9.12	0.00	0.00	2.38	2.38
# Bus18	33.000	99.94	99.97	103.72	2.38	9.12	0.00	0.00	2.38	2.38
# * Bus19	0.400	99.59	99.69	107.57	4.43	10.71	0.00	0.00	4.43	4.43
# * Bus20	0.400	99.22	99.32	107.20	4.46	10.38	0.00	0.00	4.46	4.46
# Bus21	33.000	99.99	100.02	103.63	2.29	9.02	0.00	0.00	2.29	2.29
# * Bus22	0.400	99.14	99.23	106.77	4.29	9.67	0.00	0.00	4.29	4.29
# Bus24	33.000	99.96	99.99	103.69	2.33	9.27	0.00	0.00	2.33	2.33
# * Bus25	0.400	99.61	99.71	107.72	4.48	11.03	0.00	0.00	4.48	4.48
# Bus26	33.000	99.96	99.99	103.69	2.33	9.27	0.00	0.00	2.33	2.33
# * Bus27	0.400	99.60	99.69	107.26	4.26	10.43	0.00	0.00	4.26	4.26
# Bus28	33.000	99.95	99.98	103.71	2.36	9.40	0.00	0.00	2.36	2.36
# * Bus30	0.400	99.63	99.73	107.70	4.47	10.90	0.00	0.00	4.47	4.47
# Bus31	33.000	99.94	99.97	103.72	2.37	9.46	0.00	0.00	2.37	2.37
# Bus32	33.000	99.94	99.97	103.72	2.37	9.46	0.00	0.00	2.37	2.37
# * Bus34	0.400	99.25	99.35	107.20	4.44	10.40	0.00	0.00	4.44	4.44
# Bus35	33.000	99.94	99.97	103.73	2.37	9.47	0.00	0.00	2.37	2.37
# * Bus37	0.400	99.57	99.67	107.55	4.42	10.95	0.00	0.00	4.42	4.42
# Bus38	33.000	99.94	99.97	103.74	2.38	9.55	0.00	0.00	2.38	2.38
# * Bus41	0.400	99.59	99.69	107.77	4.52	11.27	0.00	0.00	4.52	4.52
# Bus42	33.000	99.94	99.97	103.74	2.38	9.55	0.00	0.00	2.38	2.38
# Bus43	33.000	99.94	99.96	103.74	2.38	9.55	0.00	0.00	2.38	2.38
# Bus44	33.000	99.93	99.96	103.74	2.39	9.56	0.00	0.00	2.39	2.39
# * Bus46	0.400	98.80	98.89	106.21	4.19	9.38	0.00	0.00	4.19	4.19
# Bus47	33.000	99.93	99.96	103.75	2.39	9.56	0.00	0.00	2.39	2.39
# Bus51	33.000	99.93	99.96	103.75	2.39	9.57	0.00	0.00	2.39	2.39
# * Bus52	0.400	99.59	99.68	107.36	4.31	10.76	0.00	0.00	4.31	4.31

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ID	kV	Fund. %	RMS %	ASUM %	THD %	TIF	TIHD %	TSHD %	THDG %	THDS %
# Bus53	33.000	99.93	99.96	103.75	2.39	9.64	0.00	0.00	2.39	2.39
# Bus54	33.000	99.92	99.95	103.77	2.40	9.72	0.00	0.00	2.40	2.40
# * Bus56	0.400	99.56	99.65	107.34	4.31	10.79	0.00	0.00	4.31	4.31
# Bus57	33.000	99.92	99.95	103.77	2.41	9.76	0.00	0.00	2.41	2.41
# * Bus59	0.400	99.57	99.67	107.80	4.54	11.45	0.00	0.00	4.54	4.54
# Bus60	33.000	99.92	99.95	103.78	2.41	9.77	0.00	0.00	2.41	2.41
# * Bus62	0.400	98.87	98.96	106.69	4.39	10.20	0.00	0.00	4.39	4.39
# Bus63	33.000	99.92	99.95	103.78	2.41	9.82	0.00	0.00	2.41	2.41
# Bus64	33.000	99.91	99.94	103.80	2.43	9.92	0.00	0.00	2.43	2.43
# * Bus66	0.400	99.06	99.16	107.11	4.49	10.75	0.00	0.00	4.49	4.49
# * Bus68	0.400	99.50	99.61	107.67	4.52	11.18	0.00	0.00	4.52	4.52
# Bus69	33.000	99.91	99.94	103.80	2.43	9.92	0.00	0.00	2.43	2.43
# Bus70	33.000	99.90	99.93	103.82	2.44	10.09	0.00	0.00	2.44	2.44
# * Bus72	0.400	99.20	99.31	107.29	4.50	10.84	0.00	0.00	4.50	4.50
# Bus73	33.000	99.90	99.93	103.83	2.45	10.10	0.00	0.00	2.45	2.45
# * Bus75	0.400	99.57	99.68	107.82	4.55	11.58	0.00	0.00	4.55	4.55
# Bus76	33.000	99.90	99.93	103.83	2.45	10.11	0.00	0.00	2.45	2.45
# * Bus78	0.400	99.59	99.69	107.76	4.50	11.65	0.00	0.00	4.50	4.50
# Bus79	33.000	99.90	99.93	103.83	2.45	10.11	0.00	0.00	2.45	2.45
# * Bus81	0.400	99.34	99.44	107.34	4.45	10.78	0.00	0.00	4.45	4.45
# Bus82	33.000	99.90	99.93	103.83	2.45	10.11	0.00	0.00	2.45	2.45
# Bus83	33.000	99.90	99.93	103.83	2.45	10.17	0.00	0.00	2.45	2.45
# * Bus85	0.400	99.31	99.41	107.30	4.45	10.77	0.00	0.00	4.45	4.45
# Bus86	33.000	99.90	99.93	103.83	2.45	10.17	0.00	0.00	2.45	2.45
# Bus87	33.000	99.89	99.92	103.85	2.46	10.33	0.00	0.00	2.46	2.46
# * Bus89	0.400	99.32	99.42	107.37	4.46	11.05	0.00	0.00	4.46	4.46
# Bus90	33.000	99.89	99.92	103.89	2.47	10.59	0.00	0.00	2.47	2.47
# * Bus92	0.400	99.31	99.41	107.54	4.55	11.50	0.00	0.00	4.55	4.55
# Bus93	33.000	99.88	99.91	103.89	2.48	10.60	0.00	0.00	2.48	2.48
# * Bus95	0.400	99.51	99.61	107.71	4.52	11.85	0.00	0.00	4.52	4.52
# Bus96	33.000	99.88	99.91	103.89	2.48	10.61	0.00	0.00	2.48	2.48
# * Bus98	0.400	99.56	99.67	107.88	4.57	11.85	0.00	0.00	4.57	4.57
# Bus99	33.000	99.88	99.91	103.89	2.48	10.61	0.00	0.00	2.48	2.48
# * Bus101	0.400	99.29	99.39	107.67	4.61	12.22	0.00	0.00	4.61	4.61
# Bus102	33.000	99.88	99.91	103.90	2.49	10.61	0.00	0.00	2.49	2.49
# Bus103	33.000	99.88	99.91	103.90	2.49	10.61	0.00	0.00	2.49	2.49
# * Bus105	0.400	99.26	99.36	107.36	4.49	11.23	0.00	0.00	4.49	4.49
# Bus106	33.000	99.88	99.91	103.90	2.49	10.61	0.00	0.00	2.49	2.49
# * Bus108	0.400	99.08	99.18	107.08	4.46	10.81	0.00	0.00	4.46	4.46
# Bus113	33.000	99.89	99.92	103.89	2.47	10.68	0.00	0.00	2.47	2.47
# Bus114	33.000	99.89	99.92	103.90	2.47	10.81	0.00	0.00	2.47	2.47
# * Bus116	0.400	99.46	99.56	107.63	4.50	11.72	0.00	0.00	4.50	4.50
# * Bus119	0.400	99.60	99.70	107.82	4.51	11.94	0.00	0.00	4.51	4.51

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# Bus120	33.000	99.89	99.92	103.91	2.47	10.81	0.00	0.00	2.48	2.48
# Bus121	33.000	99.89	99.92	103.92	2.47	11.05	0.00	0.00	2.47	2.47
# Bus124	33.000	99.89	99.92	103.92	2.47	11.05	0.00	0.00	2.47	2.47
# * Bus125	0.400	99.25	99.35	107.33	4.47	11.35	0.00	0.00	4.47	4.47
# Bus126	33.000	99.89	99.92	103.93	2.47	11.26	0.00	0.00	2.47	2.47
# Bus127	33.000	99.90	99.93	103.95	2.46	11.48	0.00	0.00	2.46	2.46
# * Bus129	0.400	99.55	99.65	107.74	4.48	12.07	0.00	0.00	4.48	4.48
# Bus132	33.000	99.91	99.94	103.97	2.45	11.82	0.00	0.00	2.45	2.45
# * Bus133	0.400	99.45	99.55	107.62	4.47	12.20	0.00	0.00	4.47	4.47
# Bus134	33.000	99.91	99.94	103.97	2.45	11.82	0.00	0.00	2.45	2.45
# Bus135	33.000	99.91	99.94	103.98	2.44	12.00	0.00	0.00	2.44	2.44
# Bus138	33.000	99.92	99.95	103.99	2.43	12.37	0.00	0.00	2.43	2.43
# * Bus139	0.400	98.84	98.94	106.84	4.41	11.66	0.00	0.00	4.41	4.41
# Bus142	33.000	99.89	99.92	103.94	2.47	11.27	0.00	0.00	2.47	2.47
# * Bus143	0.400	99.04	99.14	107.04	4.44	11.05	0.00	0.00	4.44	4.44
# Bus145	33.000	99.94	99.97	103.75	2.41	9.16	0.00	0.00	2.41	2.41
# Bus146	33.000	99.94	99.97	103.76	2.42	9.17	0.00	0.00	2.42	2.42
# * Bus148	0.400	99.07	99.16	106.92	4.42	10.14	0.00	0.00	4.42	4.42
# * Bus150	0.400	99.74	99.84	107.81	4.47	10.94	0.00	0.00	4.47	4.47
# Bus151	33.000	99.94	99.97	103.76	2.42	9.18	0.00	0.00	2.42	2.42
# Bus152	33.000	99.94	99.97	103.76	2.42	9.17	0.00	0.00	2.42	2.42
# * Bus154	0.400	99.86	99.96	107.97	4.48	11.17	0.00	0.00	4.48	4.48
# Bus155	33.000	99.93	99.96	103.78	2.43	9.19	0.00	0.00	2.44	2.44
# * Bus157	0.400	99.74	99.84	107.82	4.48	10.96	0.00	0.00	4.48	4.48
# Bus158	33.000	99.93	99.96	103.78	2.44	9.20	0.00	0.00	2.44	2.44
# Bus159	33.000	99.93	99.96	103.79	2.45	9.21	0.00	0.00	2.45	2.45
# Bus160	33.000	99.93	99.96	103.80	2.45	9.22	0.00	0.00	2.45	2.45
# * Bus162	0.400	99.12	99.22	106.99	4.43	10.03	0.00	0.00	4.43	4.43
# Bus163	33.000	99.93	99.96	103.80	2.46	9.23	0.00	0.00	2.46	2.46
# * Bus165	0.400	99.54	99.64	107.58	4.48	10.68	0.00	0.00	4.48	4.48
# Bus166	33.000	99.92	99.96	103.80	2.46	9.23	0.00	0.00	2.46	2.46
# Bus167	33.000	99.92	99.95	103.81	2.46	9.23	0.00	0.00	2.46	2.46
# Bus168	33.000	99.92	99.95	103.81	2.46	9.23	0.00	0.00	2.46	2.46
# * Bus170	0.400	99.58	99.67	107.41	4.37	10.60	0.00	0.00	4.37	4.37
# Bus171	33.000	99.92	99.95	103.81	2.46	9.24	0.00	0.00	2.46	2.46
# Bus172	33.000	99.93	99.96	103.76	2.43	9.18	0.00	0.00	2.43	2.43
# Bus173	33.000	99.91	99.94	103.79	2.46	9.23	0.00	0.00	2.46	2.46
# * Bus175	0.400	98.71	98.80	106.18	4.25	9.37	0.00	0.00	4.25	4.25
# Bus176	33.000	99.91	99.94	103.80	2.47	9.24	0.00	0.00	2.47	2.47
# * Bus178	0.400	99.00	99.09	106.60	4.30	9.72	0.00	0.00	4.30	4.30
# Bus179	33.000	99.91	99.94	103.80	2.47	9.25	0.00	0.00	2.47	2.47
# Bus180	33.000	99.90	99.93	103.82	2.49	9.27	0.00	0.00	2.49	2.49
# Bus181	33.000	99.89	99.93	103.83	2.50	9.29	0.00	0.00	2.50	2.50

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Bus		Voltage Distortion								
ID	kV	Fund. %	RMS %	ASUM %	THD %	TIF	TIHD %	TSHD %	THDG %	THDS %
# * Bus183	0.400	99.28	99.38	107.29	4.50	10.45	0.00	0.00	4.50	4.50
# * Bus184	33.000	99.89	99.92	103.83	2.50	9.29	0.00	0.00	2.50	2.50
# * Bus185	33.000	99.89	99.92	103.84	2.51	9.30	0.00	0.00	2.51	2.51
# * Bus188	0.400	99.70	99.80	107.88	4.55	11.09	0.00	0.00	4.55	4.55
# * Bus189	33.000	99.89	99.92	103.84	2.51	9.30	0.00	0.00	2.51	2.51
# * Bus191	0.400	99.74	99.85	107.95	4.56	11.21	0.00	0.00	4.56	4.56
# * Bus192	33.000	99.89	99.92	103.84	2.51	9.31	0.00	0.00	2.51	2.51
# * Bus193	33.000	99.89	99.92	103.84	2.51	9.30	0.00	0.00	2.51	2.51
# Bus194	33.000	99.90	99.93	103.82	2.49	9.28	0.00	0.00	2.49	2.49
# Bus195	33.000	99.89	99.92	103.82	2.50	9.29	0.00	0.00	2.50	2.50
# Bus196	33.000	99.89	99.92	103.82	2.50	9.29	0.00	0.00	2.50	2.50
# * Bus197	33.000	99.89	99.92	103.82	2.50	9.29	0.00	0.00	2.50	2.50
# * Bus198	33.000	99.89	99.92	103.82	2.50	9.29	0.00	0.00	2.50	2.50
# * Bus200	0.400	99.04	99.15	107.14	4.55	10.47	0.00	0.00	4.55	4.55
# * Bus201	33.000	99.89	99.92	103.83	2.51	9.30	0.00	0.00	2.51	2.51
# * Bus203	0.400	99.70	99.80	107.89	4.55	11.14	0.00	0.00	4.55	4.55
# * Bus204	33.000	99.89	99.92	103.83	2.51	9.30	0.00	0.00	2.51	2.51
# * Bus205	33.000	99.89	99.92	103.83	2.51	9.30	0.00	0.00	2.51	2.51
# * Bus206	33.000	99.89	99.92	103.83	2.51	9.30	0.00	0.00	2.51	2.51
# * Bus208	0.400	99.55	99.66	107.77	4.58	10.93	0.00	0.00	4.58	4.58
# * Bus209	33.000	99.89	99.92	103.83	2.51	9.30	0.00	0.00	2.51	2.51
# * Bus211	0.400	99.34	99.44	107.51	4.57	10.64	0.00	0.00	4.57	4.57
# * Bus212	0.400	99.79	99.98	116.29	6.17	224.55	0.00	0.00	6.17	6.17
# Bus213	33.000	99.92	99.95	103.99	2.43	12.37	0.00	0.00	2.43	2.43

* Indicates THD (Total Harmonic Distortion) Exceeds the Limit.

Indicates IHD (Individual Harmonic Distortion) Exceeds the Limit.

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System Harmonics Branch Information

Bus		Current Distortion											
From Bus ID	To Bus ID	Fund. Amp	RMS Amp	ASUM Amp	THD %	TIF	IT Amp	ITB Amp	ITR Amp	TIHD %	TSHD %	THDG %	THDS %
Bus1	Bus2	45.78	53.42	84.86	60.14	115.39	6163.63	6163.63	0.00	0.00	0.00	60.14	60.14
Bus2	Bus3	16.99	20.48	32.35	67.27	110.59	2264.88	2264.88	0.00	0.00	0.00	67.27	67.27
	Bus21	28.79	33.01	52.64	56.12	127.95	4223.43	4223.43	0.00	0.00	0.00	56.12	56.12
	Bus1	45.78	53.42	84.86	60.14	115.39	6163.63	6163.63	0.00	0.00	0.00	60.14	60.14
Bus3	Bus2	16.99	20.48	32.35	67.27	110.59	2264.88	2264.88	0.00	0.00	0.00	67.27	67.27
	Bus4	16.99	20.48	32.35	67.27	110.59	2264.88	2264.88	0.00	0.00	0.00	67.27	67.27
Bus4	Bus3	16.99	20.48	32.35	67.27	110.59	2264.88	2264.88	0.00	0.00	0.00	67.27	67.27
	Bus6	16.54	19.84	31.26	66.30	109.47	2171.76	2171.76	0.00	0.00	0.00	66.30	66.30
	Bus5	0.46	0.52	0.79	51.56	92.12	48.07	48.07	0.00	0.00	0.00	51.56	51.56
Bus5	Bus4	38.27	83.80	136.80	194.82	50.34	4218.75	3966.14	1437.91	0.00	0.00	194.82	194.82
Bus6	Bus4	16.54	19.84	31.26	66.30	109.47	2171.76	2171.76	0.00	0.00	0.00	66.30	66.30
	Bus7	16.54	19.84	31.26	66.30	109.47	2171.76	2171.76	0.00	0.00	0.00	66.30	66.30
Bus7	Bus9	15.45	18.28	28.58	63.29	105.89	1936.12	1936.12	0.00	0.00	0.00	63.29	63.29
	Bus6	16.54	19.84	31.26	66.30	109.47	2171.76	2171.76	0.00	0.00	0.00	66.30	66.30
	Bus8	1.09	1.25	1.91	55.66	97.98	122.23	122.23	0.00	0.00	0.00	55.66	55.66
Bus8	Bus7	89.92	208.56	338.94	209.27	51.38	10716.65	10083.84	3628.04	0.00	0.00	209.27	209.27
Bus9	Bus7	15.45	18.28	28.58	63.29	105.89	1936.12	1936.12	0.00	0.00	0.00	63.29	63.29
	Bus10	3.18	3.75	5.84	62.22	104.62	391.94	391.94	0.00	0.00	0.00	62.22	62.22
	Bus145	12.27	14.54	22.75	63.56	106.20	1544.18	1544.18	0.00	0.00	0.00	63.56	63.56
Bus10	Bus11	0.30	0.42	0.70	101.06	141.17	59.44	59.44	0.00	0.00	0.00	101.06	101.06
	Bus9	3.18	3.75	5.84	62.22	104.62	391.94	391.94	0.00	0.00	0.00	62.22	62.22
	Bus13	2.89	3.34	5.14	58.21	99.59	332.53	332.53	0.00	0.00	0.00	58.21	58.21
Bus11	Bus10	0.30	0.42	0.70	101.06	141.17	59.44	59.44	0.00	0.00	0.00	101.06	101.06
	Bus12	0.30	0.33	0.50	51.46	91.92	30.62	30.62	0.00	0.00	0.00	51.46	51.46
Bus12	Bus11	24.43	53.60	87.43	195.24	50.16	2688.34	2525.88	920.38	0.00	0.00	195.24	195.24
Bus13	Bus15	2.31	2.61	3.94	52.38	91.77	239.73	239.73	0.00	0.00	0.00	52.38	52.38
	Bus10	2.89	3.34	5.14	58.21	99.59	332.53	332.53	0.00	0.00	0.00	58.21	58.21
	Bus14	0.57	0.62	0.90	41.51	77.28	47.98	47.98	0.00	0.00	0.00	41.51	41.51
Bus14	Bus13	47.30	88.26	145.75	157.54	47.71	4211.05	3958.02	1437.72	0.00	0.00	157.54	157.54
Bus15	Bus17	0.46	0.65	1.08	102.80	142.50	93.15	93.15	0.00	0.00	0.00	102.80	102.80
	Bus13	2.31	2.61	3.94	52.38	91.77	239.73	239.73	0.00	0.00	0.00	52.38	52.38
	Bus20	1.86	1.90	2.37	20.12	40.39	76.59	76.59	0.00	0.00	0.00	20.12	20.12
Bus17	Bus15	0.46	0.65	1.08	102.80	142.50	93.15	93.15	0.00	0.00	0.00	102.80	102.80
	Bus18	0.46	0.65	1.08	102.80	142.50	93.15	93.15	0.00	0.00	0.00	102.80	102.80
Bus18	Bus17	0.46	0.65	1.08	102.80	142.50	93.15	93.15	0.00	0.00	0.00	102.80	102.80
	Bus19	0.46	0.51	0.78	52.46	93.43	48.09	48.09	0.00	0.00	0.00	52.46	52.46
Bus19	Bus18	37.60	83.51	136.15	198.31	50.53	4219.98	3967.32	1438.27	0.00	0.00	198.31	198.31
Bus20	Bus15	153.38	193.93	310.09	77.38	34.66	6721.37	6318.52	2291.98	0.00	0.00	77.38	77.38
Bus21	Bus2	28.79	33.01	52.64	56.12	127.95	4223.43	4223.43	0.00	0.00	0.00	56.12	56.12
	Bus24	27.46	31.63	50.70	57.17	131.31	4152.87	4152.87	0.00	0.00	0.00	57.17	57.17
	Bus22	1.33	1.35	1.65	17.33	34.95	47.28	47.28	0.00	0.00	0.00	17.33	17.33

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Bus22	Bus21	109.96	132.55	207.52	67.32	31.34	4154.61	3900.56	1430.52	0.00	0.00	67.32	67.32
Bus24	Bus28	25.59	29.28	46.87	55.60	134.17	3928.63	3928.63	0.00	0.00	0.00	55.60	55.60
	Bus26	0.30	0.42	0.70	101.09	141.18	59.45	59.45	0.00	0.00	0.00	101.09	101.09
	Bus21	27.46	31.63	50.70	57.17	131.31	4152.87	4152.87	0.00	0.00	0.00	57.17	57.17
	Bus25	1.57	1.69	2.39	38.33	72.40	122.00	122.00	0.00	0.00	0.00	38.33	38.33
Bus25	Bus24	129.82	228.40	378.45	144.76	46.84	10697.93	10065.33	3624.21	0.00	0.00	144.76	144.76
Bus26	Bus24	0.30	0.42	0.70	101.09	141.18	59.45	59.45	0.00	0.00	0.00	101.09	101.09
	Bus27	0.30	0.33	0.50	51.48	91.93	30.62	30.62	0.00	0.00	0.00	51.48	51.48
Bus27	Bus26	24.43	53.60	87.43	195.27	50.16	2688.60	2526.16	920.38	0.00	0.00	195.27	195.27
Bus28	Bus31	24.58	28.03	44.86	54.88	136.23	3818.89	3818.89	0.00	0.00	0.00	54.88	54.88
	Bus24	25.59	29.28	46.87	55.60	134.17	3928.63	3928.63	0.00	0.00	0.00	55.60	55.60
	Bus30	1.02	1.09	1.54	37.45	70.96	77.28	77.28	0.00	0.00	0.00	37.45	37.45
Bus30	Bus28	84.14	146.01	241.95	141.82	46.42	6778.19	6375.38	2301.80	0.00	0.00	141.82	141.82
Bus31	Bus32	2.60	2.86	4.22	46.66	83.47	239.10	239.10	0.00	0.00	0.00	46.66	46.66
	Bus28	24.58	28.03	44.86	54.88	136.23	3818.89	3818.89	0.00	0.00	0.00	54.88	54.88
	Bus38	21.98	25.18	40.66	55.93	144.90	3649.29	3649.29	0.00	0.00	0.00	55.93	55.93
Bus32	Bus31	2.60	2.86	4.22	46.66	83.47	239.10	239.10	0.00	0.00	0.00	46.66	46.66
	Bus35	0.46	0.66	1.09	100.96	141.25	93.13	93.13	0.00	0.00	0.00	100.96	100.96
	Bus34	2.14	2.18	2.65	17.39	35.33	76.89	76.89	0.00	0.00	0.00	17.39	17.39
Bus34	Bus32	176.89	213.00	333.64	67.08	31.66	6744.50	6343.07	2292.10	0.00	0.00	67.08	67.08
Bus35	Bus32	0.46	0.66	1.09	100.96	141.25	93.13	93.13	0.00	0.00	0.00	100.96	100.96
	Bus37	0.46	0.52	0.79	51.52	92.08	48.06	48.06	0.00	0.00	0.00	51.52	51.52
Bus37	Bus35	38.28	83.80	136.80	194.76	50.33	4217.67	3964.99	1437.91	0.00	0.00	194.76	194.76
Bus38	Bus42	2.83	3.34	5.21	62.75	105.25	351.33	351.33	0.00	0.00	0.00	62.75	62.75
	Bus31	21.98	25.18	40.66	55.93	144.90	3649.29	3649.29	0.00	0.00	0.00	55.93	55.93
	Bus53	19.15	21.87	35.49	55.09	156.13	3413.88	3413.88	0.00	0.00	0.00	55.09	55.09
Bus41	Bus42	129.84	228.40	378.46	144.73	46.83	10696.90	10064.23	3624.21	0.00	0.00	144.73	144.73
Bus42	Bus38	2.83	3.34	5.21	62.75	105.25	351.33	351.33	0.00	0.00	0.00	62.75	62.75
	Bus43	1.26	1.39	2.06	46.91	83.68	116.64	116.64	0.00	0.00	0.00	46.91	46.91
	Bus41	1.57	1.69	2.39	38.30	72.39	121.99	121.99	0.00	0.00	0.00	38.30	38.30
	Bus43	1.26	1.39	2.06	46.91	83.68	116.64	116.64	0.00	0.00	0.00	46.91	46.91
Bus43	Bus42	1.26	1.39	2.06	46.91	83.68	116.64	116.64	0.00	0.00	0.00	46.91	46.91
	Bus44	1.26	1.39	2.06	46.91	83.68	116.64	116.64	0.00	0.00	0.00	46.91	46.91
Bus44	Bus47	0.27	0.40	0.67	111.16	147.75	59.52	59.52	0.00	0.00	0.00	111.16	111.16
	Bus43	1.26	1.39	2.06	46.91	83.68	116.64	116.64	0.00	0.00	0.00	46.91	46.91
	Bus46	0.99	1.01	1.19	14.52	29.45	29.60	29.60	0.00	0.00	0.00	14.52	14.52
Bus46	Bus44	82.06	94.65	144.01	57.49	27.54	2607.12	2442.04	912.96	0.00	0.00	57.49	57.49
Bus47	Bus44	0.27	0.40	0.67	111.16	147.75	59.52	59.52	0.00	0.00	0.00	111.16	111.16
	Bus51	0.27	0.40	0.67	111.16	147.75	59.52	59.52	0.00	0.00	0.00	111.16	111.16
Bus51	Bus47	0.27	0.40	0.67	111.16	147.75	59.52	59.52	0.00	0.00	0.00	111.16	111.16
	Bus52	0.27	0.31	0.48	56.68	99.00	30.66	30.66	0.00	0.00	0.00	56.68	56.68
Bus52	Bus51	22.23	52.64	85.26	214.68	51.13	2691.81	2529.50	920.56	0.00	0.00	214.68	214.68
Bus53	Bus54	19.15	21.87	35.49	55.09	156.13	3413.88	3413.88	0.00	0.00	0.00	55.09	55.09
	Bus38	19.15	21.87	35.49	55.09	156.13	3413.88	3413.88	0.00	0.00	0.00	55.09	55.09

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Bus54	Bus57	18.86	21.47	34.80	54.40	157.27	3375.93	3375.93	0.00	0.00	0.00	54.40	54.40
	Bus53	19.15	21.87	35.49	55.09	156.13	3413.88	3413.88	0.00	0.00	0.00	55.09	55.09
	Bus56	0.30	0.33	0.50	51.44	91.90	30.61	30.61	0.00	0.00	0.00	51.44	51.44
Bus56	Bus54	24.44	53.60	87.44	195.21	50.15	2688.11	2525.64	920.38	0.00	0.00	195.21	195.21
Bus57	Bus54	18.86	21.47	34.80	54.40	157.27	3375.93	3375.93	0.00	0.00	0.00	54.40	54.40
	Bus63	15.88	18.09	29.68	54.51	175.86	3181.24	3181.24	0.00	0.00	0.00	54.51	54.51
	Bus60	1.41	1.48	2.03	32.70	61.07	90.53	90.53	0.00	0.00	0.00	32.70	32.70
	Bus59	1.57	1.69	2.39	38.29	72.38	121.99	121.99	0.00	0.00	0.00	38.29	38.29
Bus59	Bus57	129.85	228.41	378.47	144.71	46.83	10696.55	10063.86	3624.21	0.00	0.00	144.71	144.71
Bus60	Bus57	1.41	1.48	2.03	32.70	61.07	90.53	90.53	0.00	0.00	0.00	32.70	32.70
	Bus62	1.41	1.43	1.72	16.27	32.96	47.05	47.05	0.00	0.00	0.00	16.27	16.27
Bus62	Bus60	116.24	137.72	213.50	63.53	30.03	4135.95	3881.72	1427.70	0.00	0.00	63.53	63.53
Bus63	Bus57	15.88	18.09	29.68	54.51	175.86	3181.24	3181.24	0.00	0.00	0.00	54.51	54.51
	Bus64	15.88	18.09	29.68	54.51	175.86	3181.24	3181.24	0.00	0.00	0.00	54.51	54.51
Bus64	Bus69	1.27	1.47	2.27	59.07	100.67	148.13	148.13	0.00	0.00	0.00	59.07	59.07
	Bus63	15.88	18.09	29.68	54.51	175.86	3181.24	3181.24	0.00	0.00	0.00	54.51	54.51
	Bus70	12.43	14.38	24.30	58.12	210.40	3025.76	3025.76	0.00	0.00	0.00	58.12	58.12
	Bus66	2.19	2.22	2.70	16.95	34.49	76.61	76.61	0.00	0.00	0.00	16.95	16.95
Bus66	Bus64	180.67	216.04	337.09	65.57	31.11	6722.17	6320.51	2288.82	0.00	0.00	65.57	65.57
Bus68	Bus69	104.53	158.51	262.09	114.01	42.68	6766.07	6363.30	2299.59	0.00	0.00	114.01	114.01
Bus69	Bus64	1.27	1.47	2.27	59.07	100.67	148.13	148.13	0.00	0.00	0.00	59.07	59.07
	Bus68	1.27	1.32	1.78	29.95	58.32	77.13	77.13	0.00	0.00	0.00	29.95	29.95
Bus70	Bus83	8.13	9.52	16.90	61.06	295.92	2818.12	2818.12	0.00	0.00	0.00	61.06	61.06
	Bus64	12.43	14.38	24.30	58.12	210.40	3025.76	3025.76	0.00	0.00	0.00	58.12	58.12
	Bus73	2.16	2.74	4.43	77.83	121.82	334.07	334.07	0.00	0.00	0.00	77.83	77.83
	Bus72	2.14	2.18	2.66	17.36	35.37	76.98	76.98	0.00	0.00	0.00	17.36	17.36
Bus72	Bus70	176.94	213.04	333.70	67.06	31.69	6752.01	6351.05	2292.10	0.00	0.00	67.06	67.06
Bus73	Bus76	1.28	1.58	2.53	73.05	116.89	185.12	185.12	0.00	0.00	0.00	73.05	73.05
	Bus70	2.16	2.74	4.43	77.83	121.82	334.07	334.07	0.00	0.00	0.00	77.83	77.83
	Bus75	0.89	0.96	1.40	43.19	80.07	77.24	77.24	0.00	0.00	0.00	43.19	43.19
Bus75	Bus73	73.06	139.92	230.89	163.33	48.42	6775.29	6372.34	2301.69	0.00	0.00	163.33	163.33
Bus76	Bus79	0.95	1.06	1.57	49.08	86.94	91.79	91.79	0.00	0.00	0.00	49.08	49.08
	Bus73	1.28	1.58	2.53	73.05	116.89	185.12	185.12	0.00	0.00	0.00	73.05	73.05
	Bus78	0.35	0.43	0.68	68.14	113.03	48.22	48.22	0.00	0.00	0.00	68.14	68.14
Bus78	Bus76	29.08	80.09	127.75	256.61	52.81	4230.03	3977.76	1438.96	0.00	0.00	256.61	256.61
Bus79	Bus76	0.95	1.06	1.57	49.08	86.94	91.79	91.79	0.00	0.00	0.00	49.08	49.08
	Bus82	0.95	1.06	1.57	49.08	86.94	91.79	91.79	0.00	0.00	0.00	49.08	49.08
Bus81	Bus82	78.19	107.87	176.27	95.03	38.82	4186.93	3933.33	1435.03	0.00	0.00	95.03	95.03
Bus82	Bus79	0.95	1.06	1.57	49.08	86.94	91.79	91.79	0.00	0.00	0.00	49.08	49.08
	Bus81	0.95	0.98	1.27	24.71	48.84	47.68	47.68	0.00	0.00	0.00	24.71	24.71
	Bus70	8.13	9.52	16.90	61.06	295.92	2818.12	2818.12	0.00	0.00	0.00	61.06	61.06
Bus83	Bus87	7.14	8.47	15.35	63.69	328.98	2786.19	2786.19	0.00	0.00	0.00	63.69	63.69
	Bus86	0.99	1.10	1.62	46.88	83.71	91.68	91.68	0.00	0.00	0.00	46.88	46.88

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Bus85	Bus86	81.81	110.49	179.83	90.79	37.87	4184.00	3930.39	1434.54	0.00	0.00	90.79	90.79
Bus86	Bus83	0.99	1.10	1.62	46.88	83.71	91.68	91.68	0.00	0.00	0.00	46.88	46.88
	Bus85	0.99	1.02	1.31	23.58	46.76	47.64	47.64	0.00	0.00	0.00	23.58	23.58
Bus87	Bus83	7.14	8.47	15.35	63.69	328.98	2786.19	2786.19	0.00	0.00	0.00	63.69	63.69
	Bus90	6.28	7.53	13.92	66.00	366.27	2756.71	2756.71	0.00	0.00	0.00	66.00	66.00
	Bus89	0.86	0.89	1.18	27.22	53.34	47.67	47.67	0.00	0.00	0.00	27.22	27.22
Bus89	Bus87	71.14	102.88	169.24	104.45	40.69	4186.21	3932.62	1434.87	0.00	0.00	104.45	104.45
Bus90	Bus113	0.81	2.35	5.56	271.15	1115.40	2625.27	2625.27	0.00	0.00	0.00	271.15	271.15
	Bus93	5.25	6.21	9.72	63.28	105.95	658.48	658.48	0.00	0.00	0.00	63.28	63.28
	Bus87	6.28	7.53	13.92	66.00	366.27	2756.71	2756.71	0.00	0.00	0.00	66.00	66.00
	Bus92	1.61	1.65	2.12	23.42	46.65	76.95	76.95	0.00	0.00	0.00	23.42	23.42
Bus92	Bus90	132.50	178.02	289.64	89.73	37.92	6750.35	6348.07	2295.48	0.00	0.00	89.73	89.73
Bus93	Bus96	4.79	5.57	8.63	59.63	101.43	565.44	565.44	0.00	0.00	0.00	59.63	59.63
	Bus90	5.25	6.21	9.72	63.28	105.95	658.48	658.48	0.00	0.00	0.00	63.28	63.28
	Bus95	0.46	0.52	0.79	51.46	92.04	48.05	48.05	0.00	0.00	0.00	51.46	51.46
	Bus93	38.29	83.81	136.82	194.68	50.31	4216.50	3963.75	1437.91	0.00	0.00	194.68	194.68
Bus96	Bus93	4.79	5.57	8.63	59.63	101.43	565.44	565.44	0.00	0.00	0.00	59.63	59.63
	Bus103	2.13	2.33	3.38	43.47	78.57	182.81	182.81	0.00	0.00	0.00	43.47	43.47
	Bus99	1.78	2.14	3.37	66.13	109.61	234.11	234.11	0.00	0.00	0.00	66.13	66.13
	Bus98	1.02	1.09	1.54	37.40	70.96	77.29	77.29	0.00	0.00	0.00	37.40	37.40
Bus98	Bus96	84.17	146.02	242.00	141.75	46.43	6779.24	6376.50	2301.80	0.00	0.00	141.75	141.75
Bus99	Bus102	1.78	2.14	3.37	66.13	109.61	234.11	234.11	0.00	0.00	0.00	66.13	66.13
	Bus96	1.78	2.14	3.37	66.13	109.61	234.11	234.11	0.00	0.00	0.00	66.13	66.13
Bus101	Bus102	146.97	238.18	394.74	127.52	44.60	10623.48	9989.26	3615.67	0.00	0.00	127.52	127.52
Bus102	Bus99	1.78	2.14	3.37	66.13	109.61	234.11	234.11	0.00	0.00	0.00	66.13	66.13
	Bus101	1.78	1.88	2.59	33.64	64.42	121.08	121.08	0.00	0.00	0.00	33.64	33.64
Bus103	Bus96	2.13	2.33	3.38	43.47	78.57	182.81	182.81	0.00	0.00	0.00	43.47	43.47
	Bus106	1.25	1.33	1.87	37.07	68.35	90.95	90.95	0.00	0.00	0.00	37.07	37.07
	Bus105	0.89	0.92	1.21	26.41	51.89	47.62	47.62	0.00	0.00	0.00	26.41	26.41
Bus105	Bus103	73.20	104.28	171.23	101.46	40.10	4181.94	3928.30	1434.25	0.00	0.00	101.46	101.46
Bus106	Bus103	1.25	1.33	1.87	37.07	68.35	90.95	90.95	0.00	0.00	0.00	37.07	37.07
	Bus108	1.25	1.27	1.56	18.51	37.38	47.43	47.43	0.00	0.00	0.00	18.51	18.51
Bus108	Bus106	102.94	126.81	200.60	71.94	32.85	4166.40	3912.83	1431.33	0.00	0.00	71.94	71.94
Bus113	Bus90	0.81	2.35	5.56	271.15	1115.40	2625.27	2625.27	0.00	0.00	0.00	271.15	271.15
	Bus114	0.81	2.35	5.56	271.15	1115.40	2625.27	2625.27	0.00	0.00	0.00	271.15	271.15
Bus114	Bus113	0.81	2.35	5.56	271.15	1115.40	2625.27	2625.27	0.00	0.00	0.00	271.15	271.15
	Bus120	0.45	0.65	1.08	105.08	143.91	93.14	93.14	0.00	0.00	0.00	105.08	105.08
	Bus121	1.69	3.09	6.88	153.07	849.85	2628.56	2628.56	0.00	0.00	0.00	153.07	153.07
	Bus116	0.61	0.65	0.93	38.98	73.32	47.92	47.92	0.00	0.00	0.00	38.98	38.98
Bus116	Bus114	50.25	89.84	148.65	148.23	46.82	4206.89	3953.80	1437.17	0.00	0.00	148.23	148.23
Bus119	Bus120	36.81	83.20	135.47	202.72	50.79	4226.19	3973.58	1439.20	0.00	0.00	202.72	202.72
Bus120	Bus114	0.45	0.65	1.08	105.08	143.91	93.14	93.14	0.00	0.00	0.00	105.08	105.08
	Bus119	0.45	0.51	0.77	53.63	95.13	48.16	48.16	0.00	0.00	0.00	53.63	53.63

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Bus121	Bus124	1.57	1.73	2.57	47.50	84.66	146.69	146.69	0.00	0.00	0.00	47.50	47.50
	Bus126	3.19	4.43	8.96	96.37	596.32	2641.41	2641.41	0.00	0.00	0.00	96.37	96.37
	Bus114	1.69	3.09	6.88	153.07	849.85	2628.56	2628.56	0.00	0.00	0.00	153.07	153.07
Bus124	Bus121	1.57	1.73	2.57	47.50	84.66	146.69	146.69	0.00	0.00	0.00	47.50	47.50
	Bus125	1.57	1.61	2.08	23.89	47.37	76.22	76.22	0.00	0.00	0.00	23.89	23.89
Bus125	Bus124	129.12	175.44	285.91	92.00	38.15	6693.25	6287.79	2294.20	0.00	0.00	92.00	92.00
Bus126	Bus127	4.50	5.65	10.71	76.12	469.39	2653.97	2653.97	0.00	0.00	0.00	76.12	76.12
	Bus121	3.19	4.43	8.96	96.37	596.32	2641.41	2641.41	0.00	0.00	0.00	96.37	96.37
	Bus142	1.33	1.41	1.96	34.64	64.31	90.78	90.78	0.00	0.00	0.00	34.64	34.64
Bus127	Bus126	4.50	5.65	10.71	76.12	469.39	2653.97	2653.97	0.00	0.00	0.00	76.12	76.12
	Bus132	5.11	6.37	11.80	74.32	419.02	2668.90	2668.90	0.00	0.00	0.00	74.32	74.32
	Bus129	0.63	0.68	0.96	37.55	71.08	48.04	48.04	0.00	0.00	0.00	37.55	37.55
Bus129	Bus127	52.20	91.00	150.73	142.77	46.34	4216.34	3963.49	1438.16	0.00	0.00	142.77	142.77
Bus132	Bus135	5.81	7.17	13.02	72.09	374.85	2687.06	2687.06	0.00	0.00	0.00	72.09	72.09
	Bus127	5.11	6.37	11.80	74.32	419.02	2668.90	2668.90	0.00	0.00	0.00	74.32	74.32
	Bus134	0	0	0	0	0	0.00	2668.90	0.00	0.00	0.00	0.00	0.00
Bus133	Bus133	0.71	0.75	1.03	33.49	64.30	47.91	47.91	0.00	0.00	0.00	33.49	33.49
	Bus132	58.29	94.54	156.66	127.69	44.48	4205.43	3952.45	1436.58	0.00	0.00	127.69	127.69
	Bus134	0	0	0	0	0	0.00	3952.45	1436.58	0.00	0.00	0.00	0.00
Bus135	Bus132	5.81	7.17	13.02	72.09	374.85	2687.06	2687.06	0.00	0.00	0.00	72.09	72.09
	Bus138	5.81	7.17	13.02	72.09	374.85	2687.06	2687.06	0.00	0.00	0.00	72.09	72.09
Bus138	Bus135	5.81	7.17	13.02	72.09	374.85	2687.06	2687.06	0.00	0.00	0.00	72.09	72.09
	Bus139	1.41	1.43	1.72	16.28	33.17	47.36	47.36	0.00	0.00	0.00	16.28	16.28
	Bus213	7.22	8.34	14.55	57.68	367.12	3060.63	3060.63	0.00	0.00	0.00	57.68	57.68
Bus139	Bus138	116.28	137.74	213.67	63.50	30.20	4160.12	3907.61	1427.31	0.00	0.00	63.50	63.50
Bus142	Bus126	1.33	1.41	1.96	34.64	64.31	90.78	90.78	0.00	0.00	0.00	34.64	34.64
	Bus143	1.33	1.35	1.65	17.28	35.09	47.49	47.49	0.00	0.00	0.00	17.28	17.28
Bus143	Bus142	110.03	132.60	207.64	67.26	31.45	4170.83	3917.84	1430.52	0.00	0.00	67.26	67.26
Bus145	Bus146	12.27	14.54	22.75	63.56	106.20	1544.18	1544.18	0.00	0.00	0.00	63.56	63.56
	Bus9	12.27	14.54	22.75	63.56	106.20	1544.18	1544.18	0.00	0.00	0.00	63.56	63.56
Bus146	Bus152	2.51	3.32	5.43	86.32	129.66	430.69	430.69	0.00	0.00	0.00	86.32	86.32
	Bus145	12.27	14.54	22.75	63.56	106.20	1544.18	1544.18	0.00	0.00	0.00	63.56	63.56
	Bus172	8.34	9.57	14.65	56.29	97.02	928.84	928.84	0.00	0.00	0.00	56.29	56.29
	Bus151	0.30	0.56	0.93	158.85	168.53	93.60	93.60	0.00	0.00	0.00	158.85	158.85
	Bus148	1.13	1.15	1.45	20.52	40.95	47.23	47.23	0.00	0.00	0.00	20.52	20.52
Bus148	Bus146	93.21	119.03	190.78	79.44	34.87	4151.03	3896.75	1430.52	0.00	0.00	79.44	79.44
Bus150	Bus151	24.41	78.61	123.24	306.09	53.98	4243.54	3991.55	1440.54	0.00	0.00	306.09	306.09
Bus151	Bus146	0.30	0.56	0.93	158.85	168.53	93.60	93.60	0.00	0.00	0.00	158.85	158.85
	Bus150	0.30	0.38	0.62	81.46	126.78	48.38	48.38	0.00	0.00	0.00	81.46	81.46
Bus152	Bus146	2.51	3.32	5.43	86.32	129.66	430.69	430.69	0.00	0.00	0.00	86.32	86.32
	Bus155	2.39	2.94	4.68	70.98	114.68	336.67	336.67	0.00	0.00	0.00	70.98	70.98
	Bus154	0.12	0.27	0.45	201.94	179.46	48.68	48.68	0.00	0.00	0.00	201.94	201.94
Bus154	Bus152	9.93	75.50	109.00	753.74	56.51	4267.10	4015.98	1442.24	0.00	0.00	753.74	753.74

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Bus155	Bus158	2.10	2.43	3.75	58.59	99.98	243.15	243.15	0.00	0.00	0.00	58.59	58.59
	Bus152	2.39	2.94	4.68	70.98	114.68	336.67	336.67	0.00	0.00	0.00	70.98	70.98
	Bus157	0.30	0.38	0.62	81.45	126.78	48.38	48.38	0.00	0.00	0.00	81.45	81.45
Bus157	Bus155	24.41	78.61	123.24	306.09	53.98	4243.55	3991.56	1440.54	0.00	0.00	306.09	306.09
Bus158	Bus155	2.10	2.43	3.75	58.59	99.98	243.15	243.15	0.00	0.00	0.00	58.59	58.59
	Bus159	2.10	2.43	3.75	58.59	99.98	243.15	243.15	0.00	0.00	0.00	58.59	58.59
Bus159	Bus160	2.10	2.43	3.75	58.59	99.98	243.15	243.15	0.00	0.00	0.00	58.59	58.59
	Bus158	2.10	2.43	3.75	58.59	99.98	243.15	243.15	0.00	0.00	0.00	58.59	58.59
Bus160	Bus163	0.84	1.14	1.87	91.05	133.66	152.33	152.33	0.00	0.00	0.00	91.05	91.05
	Bus159	2.10	2.43	3.75	58.59	99.98	243.15	243.15	0.00	0.00	0.00	58.59	58.59
	Bus162	1.26	1.28	1.57	18.40	37.06	47.34	47.34	0.00	0.00	0.00	18.40	18.40
Bus162	Bus160	103.64	127.38	201.23	71.46	32.65	4159.29	3905.29	1431.25	0.00	0.00	71.46	71.46
Bus163	Bus160	0.84	1.14	1.87	91.05	133.66	152.33	152.33	0.00	0.00	0.00	91.05	91.05
	Bus166	0.27	0.40	0.67	111.15	147.75	59.52	59.52	0.00	0.00	0.00	111.15	111.15
	Bus165	0.57	0.62	0.90	41.48	77.29	47.98	47.98	0.00	0.00	0.00	41.48	41.48
Bus165	Bus163	47.31	88.26	145.74	157.52	47.71	4211.27	3958.25	1437.72	0.00	0.00	157.52	157.52
Bus166	Bus167	0.27	0.40	0.67	111.15	147.75	59.52	59.52	0.00	0.00	0.00	111.15	111.15
	Bus163	0.27	0.40	0.67	111.15	147.75	59.52	59.52	0.00	0.00	0.00	111.15	111.15
Bus167	Bus166	0.27	0.40	0.67	111.15	147.75	59.52	59.52	0.00	0.00	0.00	111.15	111.15
	Bus168	0.27	0.40	0.67	111.15	147.75	59.52	59.52	0.00	0.00	0.00	111.15	111.15
Bus168	Bus167	0.27	0.40	0.67	111.15	147.75	59.52	59.52	0.00	0.00	0.00	111.15	111.15
	Bus171	0.27	0.40	0.67	111.15	147.75	59.52	59.52	0.00	0.00	0.00	111.15	111.15
Bus170	Bus171	22.23	52.64	85.25	214.67	51.14	2691.98	2529.69	920.56	0.00	0.00	214.67	214.67
Bus171	Bus168	0.27	0.40	0.67	111.15	147.75	59.52	59.52	0.00	0.00	0.00	111.15	111.15
	Bus170	0.27	0.31	0.48	56.66	99.01	30.66	30.66	0.00	0.00	0.00	56.66	56.66
Bus172	Bus146	8.34	9.57	14.65	56.29	97.02	928.84	928.84	0.00	0.00	0.00	56.29	56.29
	Bus173	8.34	9.57	14.65	56.29	97.02	928.84	928.84	0.00	0.00	0.00	56.29	56.29
Bus173	Bus176	7.35	8.57	13.26	59.95	101.77	871.72	871.72	0.00	0.00	0.00	59.95	59.95
	Bus172	8.34	9.57	14.65	56.29	97.02	928.84	928.84	0.00	0.00	0.00	56.29	56.29
	Bus175	1.00	1.01	1.19	14.45	29.33	29.53	29.53	0.00	0.00	0.00	14.45	14.45
Bus175	Bus173	82.21	94.76	144.07	57.34	27.45	2601.13	2435.91	912.27	0.00	0.00	57.34	57.34
Bus176	Bus173	7.35	8.57	13.26	59.95	101.77	871.72	871.72	0.00	0.00	0.00	59.95	59.95
	Bus179	0.75	0.80	1.14	39.41	72.11	57.97	57.97	0.00	0.00	0.00	39.41	39.41
	Bus180	6.60	7.77	12.12	62.28	104.68	813.78	813.78	0.00	0.00	0.00	62.28	62.28
Bus178	Bus179	61.70	77.77	123.94	76.71	33.77	2626.56	2461.96	915.16	0.00	0.00	76.71	76.71
Bus179	Bus176	0.75	0.80	1.14	39.41	72.11	57.97	57.97	0.00	0.00	0.00	39.41	39.41
	Bus178	0.75	0.76	0.95	19.61	39.15	29.84	29.84	0.00	0.00	0.00	19.61	19.61
Bus180	Bus176	6.60	7.77	12.12	62.28	104.68	813.78	813.78	0.00	0.00	0.00	62.28	62.28
	Bus194	4.15	4.59	6.78	47.08	84.13	386.23	386.23	0.00	0.00	0.00	47.08	47.08
	Bus181	1.40	1.99	3.29	100.03	140.50	279.17	279.17	0.00	0.00	0.00	100.03	100.03
	Bus208	1.04	1.11	1.56	36.59	69.58	77.18	77.18	0.00	0.00	0.00	36.59	36.59

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Bus181	Bus184	0.51	1.07	1.77	184.64	175.22	187.41	187.41	0.00	0.00	0.00	184.64	184.64
	Bus180	1.40	1.99	3.29	100.03	140.50	279.17	279.17	0.00	0.00	0.00	100.03	100.03
	Bus183	0.90	0.93	1.21	26.15	51.39	47.57	47.57	0.00	0.00	0.00	26.15	26.15
Bus183	Bus181	73.88	104.75	171.85	100.53	39.88	4178.13	3924.24	1434.24	0.00	0.00	100.53	100.53
Bus184	Bus181	0.51	1.07	1.77	184.64	175.22	187.41	187.41	0.00	0.00	0.00	184.64	184.64
	Bus185	0.51	1.07	1.77	184.64	175.22	187.41	187.41	0.00	0.00	0.00	184.64	184.64
Bus185	Bus189	0.21	0.52	0.85	220.37	181.57	93.83	93.83	0.00	0.00	0.00	220.37	220.37
	Bus184	0.51	1.07	1.77	184.64	175.22	187.41	187.41	0.00	0.00	0.00	184.64	184.64
	Bus188	0.30	0.38	0.62	81.40	126.76	48.37	48.37	0.00	0.00	0.00	81.40	81.40
Bus188	Bus185	24.42	78.61	123.23	306.01	53.98	4242.85	3990.82	1440.54	0.00	0.00	306.01	306.01
Bus189	Bus193	0	0	0	0	0	0.00	3990.82	1440.54	0.00	0.00	0.00	0.00
	Bus185	0.21	0.52	0.85	220.37	181.57	93.83	93.83	0.00	0.00	0.00	220.37	220.37
	Bus192	0.21	0.52	0.85	220.37	181.57	93.83	93.83	0.00	0.00	0.00	220.37	220.37
Bus191	Bus192	17.62	76.82	116.54	424.43	55.36	4252.98	4001.34	1441.22	0.00	0.00	424.43	424.43
Bus192	Bus189	0.21	0.52	0.85	220.37	181.57	93.83	93.83	0.00	0.00	0.00	220.37	220.37
	Bus191	0.21	0.32	0.54	113.27	150.32	48.50	48.50	0.00	0.00	0.00	113.27	113.27
Bus193	Bus189	0	0	0	0	0	0.00	48.50	0.00	0.00	0.00	0.00	0.00
Bus194	Bus180	4.15	4.59	6.78	47.08	84.13	386.23	386.23	0.00	0.00	0.00	47.08	47.08
	Bus195	4.15	4.59	6.78	47.08	84.13	386.23	386.23	0.00	0.00	0.00	47.08	47.08
Bus195	Bus196	4.15	4.59	6.78	47.08	84.13	386.23	386.23	0.00	0.00	0.00	47.08	47.08
	Bus194	4.15	4.59	6.78	47.08	84.13	386.23	386.23	0.00	0.00	0.00	47.08	47.08
Bus196	Bus195	4.15	4.59	6.78	47.08	84.13	386.23	386.23	0.00	0.00	0.00	47.08	47.08
	Bus197	4.15	4.59	6.78	47.08	84.13	386.23	386.23	0.00	0.00	0.00	47.08	47.08
Bus197	Bus198	2.19	2.31	3.19	33.84	63.07	145.84	145.84	0.00	0.00	0.00	33.84	33.84
	Bus209	1.97	2.31	3.60	61.67	103.92	240.53	240.53	0.00	0.00	0.00	61.67	61.67
	Bus196	4.15	4.59	6.78	47.08	84.13	386.23	386.23	0.00	0.00	0.00	47.08	47.08
Bus198	Bus197	2.19	2.31	3.19	33.84	63.07	145.84	145.84	0.00	0.00	0.00	33.84	33.84
	Bus200	2.19	2.22	2.70	16.92	34.43	76.48	76.48	0.00	0.00	0.00	16.92	16.92
Bus200	Bus198	180.69	216.06	337.00	65.56	31.06	6711.83	6309.51	2288.82	0.00	0.00	65.56	65.56
Bus201	Bus204	0	0	0	0	0	0.00	6309.51	2288.82	0.00	0.00	0.00	0.00
	Bus209	0.27	0.54	0.90	174.59	172.88	93.66	93.66	0.00	0.00	0.00	174.59	174.59
	Bus203	0.27	0.36	0.59	89.57	133.90	48.40	48.40	0.00	0.00	0.00	89.57	89.57
Bus203	Bus201	22.21	77.96	121.05	336.40	54.45	4245.17	3993.25	1440.63	0.00	0.00	336.40	336.40
Bus204	Bus201	0	0	0	0	0	0.00	3993.25	1440.63	0.00	0.00	0.00	0.00
	Bus205	0	0	0	0	0	0.00	3993.25	1440.63	0.00	0.00	0.00	0.00
	Bus206	0	0	0	0	0	0.00	3993.25	1440.63	0.00	0.00	0.00	0.00
Bus205	Bus204	0	0	0	0	0	0.00	3993.25	1440.63	0.00	0.00	0.00	0.00
Bus206	Bus204	0	0	0	0	0	0.00	3993.25	1440.63	0.00	0.00	0.00	0.00
Bus208	Bus180	85.94	147.01	243.63	138.78	46.06	6770.75	6367.72	2301.12	0.00	0.00	138.78	138.78
Bus209	Bus201	0.27	0.54	0.90	174.59	172.88	93.66	93.66	0.00	0.00	0.00	174.59	174.59
	Bus197	1.97	2.31	3.60	61.67	103.92	240.53	240.53	0.00	0.00	0.00	61.67	61.67
	Bus211	1.70	1.74	2.21	22.06	44.13	76.92	76.92	0.00	0.00	0.00	22.06	22.06
Bus211	Bus209	140.42	184.00	297.49	84.68	36.68	6748.29	6345.68	2296.04	0.00	0.00	84.68	84.68

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Bus		Current Distortion											
From Bus ID	To Bus ID	Fund. Amp	RMS Amp	ASUM Amp	THD %	TIF	IT Amp	ITB Amp	ITR Amp	TIHD %	TSHD %	THDG %	THDS %
Bus212	Bus213	610.69	641.19	935.86	32.00	172.36	110514.40	110514.40	0.00	0.00	0.00	32.00	32.00
Bus213	Bus212	7.22	7.60	11.16	32.80	176.25	1339.57	1339.57	0.00	0.00	0.00	32.80	32.80
	Bus138	7.22	8.34	14.55	57.68	367.12	3060.63	3060.63	0.00	0.00	0.00	57.68	57.68

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Bus Tabulation

Harmonic Voltages (% of Fundamental Voltage)

Bus ID: Bus1
Fund. kV: 33.000

Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %
3.00	150.00	0.00	5.00	250.00	1.83	7.00	350.00	1.33	11.00	550.00	0.12	13.00	650.00	0.06	17.00	850.00	0.09
19.00	950.00	0.06	23.00	1150.00	0.07	25.00	1250.00	0.05									

Bus ID: Bus138
Fund. kV: 32.974

Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %
3.00	150.00	0.00	5.00	250.00	1.94	7.00	350.00	1.43	11.00	550.00	0.19	13.00	650.00	0.09	17.00	850.00	0.13
19.00	950.00	0.10	23.00	1150.00	0.11	25.00	1250.00	0.08									

Bus ID: Bus139
Fund. kV: 0.395

Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %
3.00	150.00	2.47	5.00	250.00	2.98	7.00	350.00	2.08	11.00	550.00	0.17	13.00	650.00	0.08	17.00	850.00	0.10
19.00	950.00	0.07	23.00	1150.00	0.07	25.00	1250.00	0.05									

Bus ID: Bus2
Fund. kV: 32.998

Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %
3.00	150.00	0.00	5.00	250.00	1.83	7.00	350.00	1.34	11.00	550.00	0.12	13.00	650.00	0.06	17.00	850.00	0.09
19.00	950.00	0.06	23.00	1150.00	0.07	25.00	1250.00	0.05									

Bus ID: Bus21
Fund. kV: 32.996

Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %
3.00	150.00	0.00	5.00	250.00	1.84	7.00	350.00	1.35	11.00	550.00	0.12	13.00	650.00	0.06	17.00	850.00	0.09
19.00	950.00	0.06	23.00	1150.00	0.07	25.00	1250.00	0.05									

Bus ID: Bus212
Fund. kV: 0.399

Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %
3.00	150.00	0.00	5.00	250.00	3.19	7.00	350.00	0.96	11.00	550.00	2.52	13.00	650.00	1.30	17.00	850.00	2.43
19.00	950.00	1.79	23.00	1150.00	2.56	25.00	1250.00	1.78									

Bus ID: Bus213
Fund. kV: 32.974

Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %
3.00	150.00	0.00	5.00	250.00	1.94	7.00	350.00	1.43	11.00	550.00	0.19	13.00	650.00	0.09	17.00	850.00	0.13
19.00	950.00	0.10	23.00	1150.00	0.11	25.00	1250.00	0.08									

Bus ID: Bus22
Fund. kV: 0.397

Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %	Order	Freq. Hz	Mag. %
3.00	150.00	2.47	5.00	250.00	2.89	7.00	350.00	1.98	11.00	550.00	0.11	13.00	650.00	0.05	17.00	850.00	0.07

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