

tri310n.nec

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CM Catenary three-wire BPL model
CM Center-fed, triangular-horizontal configuration
CM Multi-grounded neutral, three transformers
CM 1.0 meter wire spacing
CM 50 MHz
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43.0
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43.0
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43.0
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43.0
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43.0
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43.0
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43.0
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43.0
CW 9 143 0.0 1.0 12.25 42.5 1.0 12.25 0.0063 3 43.0
CW 10 143 42.5 1.0 12.25 85.0 1.0 12.25 0.0063 3 43.0
CW 11 143 85.0 1.0 12.25 127.5 1.0 12.25 0.0063 3 43.0
CW 12 143 127.5 1.0 12.25 170.0 1.0 12.25 0.0063 3 43.0
CW 13 143 -170.0 1.0 12.25 -127.5 1.0 12.25 0.0063 3 43.0
CW 14 143 -127.5 1.0 12.25 -85.0 1.0 12.25 0.0063 3 43.0
CW 15 143 -85.0 1.0 12.25 -42.5 1.0 12.25 0.0063 3 43.0
CW 16 143 -42.5 1.0 12.25 0.0 1.0 12.25 0.0063 3 43.0
CW 17 143 0.0 2.0 12.0 42.5 2.0 12.0 0.0063 3 43.0
CW 18 143 42.5 2.0 12.0 85.0 2.0 12.0 0.0063 3 43.0
CW 19 143 85.0 2.0 12.0 127.5 2.0 12.0 0.0063 3 43.0
CW 20 143 127.5 2.0 12.0 170.0 2.0 12.0 0.0063 3 43.0
CW 21 143 -170.0 2.0 12.0 -127.5 2.0 12.0 0.0063 3 43.0
CW 22 143 -127.5 2.0 12.0 -85.0 2.0 12.0 0.0063 3 43.0
CW 23 143 -85.0 2.0 12.0 -42.5 2.0 12.0 0.0063 3 43.0
CW 24 143 -42.5 2.0 12.0 0.0 2.0 12.0 0.0063 3 43.0
CW 25 143 0.0 1.0 9.0 42.5 1.0 9.0 0.0063 3 43.0
CW 26 143 42.5 1.0 9.0 85.0 1.0 9.0 0.0063 3 43.0
CW 27 143 85.0 1.0 9.0 127.5 1.0 9.0 0.0063 3 43.0
CW 28 143 127.5 1.0 9.0 170.0 1.0 9.0 0.0063 3 43.0
CW 29 143 -170.0 1.0 9.0 -127.5 1.0 9.0 0.0063 3 43.0
CW 30 143 -127.5 1.0 9.0 -85.0 1.0 9.0 0.0063 3 43.0
CW 31 143 -85.0 1.0 9.0 -42.5 1.0 9.0 0.0063 3 43.0
CW 32 143 -42.5 1.0 9.0 0.0 1.0 9.0 0.0063 3 43.0
GW 33 31 0.0 1.0 9.0 0.0 1.0 0.0 0.0063
GW 34 31 170.0 1.0 9.0 170.0 1.0 0.0 0.0063
GW 35 31 -170.0 1.0 9.0 -170.0 1.0 0.0 0.0063
GW 36 33 0.0 1.0 0.0 0.0 1.0 -2.5 0.0063
GW 37 33 170.0 1.0 0.0 170.0 1.0 -2.5 0.0063
GW 38 33 -170.0 1.0 0.0 -170.0 1.0 -2.5 0.0063
GW 39 7 0.0 1.0 9.0 0.0 0.0 12.0 0.0063
GW 40 7 -170.0 1.0 9.0 -170.0 1.0 12.25 0.0063
GW 41 7 170.0 1.0 9.0 170.0 2.0 12.0 0.0063
GE -1
LD 5 0 0 0 58000000.0 0.0
LD 2 31 1 1 7.7 0.0
LD 0 32 1 1 7.7 0.0
LD 0 33 1 1 7.7 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN

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tri310.nec

```
CM Catenary three-wire BPL model
CM Center-fed, triangular-horizontal configuration
CM No multi-grounded neutral, no transformers
CM 1.0 meter wire spacing
CM 50 MHz
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43.0
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43.0
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43.0
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43.0
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43.0
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43.0
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43.0
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43.0
CW 9 143 0.0 1.0 12.25 42.5 1.0 12.25 0.0063 3 43.0
CW 10 143 42.5 1.0 12.25 85.0 1.0 12.25 0.0063 3 43.0
CW 11 143 85.0 1.0 12.25 127.5 1.0 12.25 0.0063 3 43.0
CW 12 143 127.5 1.0 12.25 170.0 1.0 12.25 0.0063 3 43.0
CW 13 143 -170.0 1.0 12.25 -127.5 1.0 12.25 0.0063 3 43.0
CW 14 143 -127.5 1.0 12.25 -85.0 1.0 12.25 0.0063 3 43.0
CW 15 143 -85.0 1.0 12.25 -42.5 1.0 12.25 0.0063 3 43.0
CW 16 143 -42.5 1.0 12.25 0.0 1.0 12.25 0.0063 3 43.0
CW 17 143 0.0 2.0 12.0 42.5 2.0 12.0 0.0063 3 43.0
CW 18 143 42.5 2.0 12.0 85.0 2.0 12.0 0.0063 3 43.0
CW 19 143 85.0 2.0 12.0 127.5 2.0 12.0 0.0063 3 43.0
CW 20 143 127.5 2.0 12.0 170.0 2.0 12.0 0.0063 3 43.0
CW 21 143 -170.0 2.0 12.0 -127.5 2.0 12.0 0.0063 3 43.0
CW 22 143 -127.5 2.0 12.0 -85.0 2.0 12.0 0.0063 3 43.0
CW 23 143 -85.0 2.0 12.0 -42.5 2.0 12.0 0.0063 3 43.0
CW 24 143 -42.5 2.0 12.0 0.0 2.0 12.0 0.0063 3 43.0
GE -1
LD 5 0 0 0 58000000.0 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN
```

tri210n.nec

CM Catenary two-wire BPL model  
 CM Center-fed, triangular-horizontal configuration  
 CM Multi-grounded neutral, three transformers  
 CM 1.0 meter wire spacing  
 CM 50 MHz  
 CE NTIA 2004  
 CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43  
 CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43  
 CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43  
 CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43  
 CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43  
 CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43  
 CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43  
 CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43  
 CW 9 143 0.0 1.0 12.0 42.5 1.0 12.0 0.0063 3 43  
 CW 10 143 42.5 1.0 12.0 85.0 1.0 12.0 0.0063 3 43  
 CW 11 143 85.0 1.0 12.0 127.5 1.0 12.0 0.0063 3 43  
 CW 12 143 127.5 1.0 12.0 170.0 1.0 12.0 0.0063 3 43  
 CW 13 143 -170.0 1.0 12.0 -127.5 1.0 12.0 0.0063 3 43  
 CW 14 143 -127.5 1.0 12.0 -85.0 1.0 12.0 0.0063 3 43  
 CW 15 143 -85.0 1.0 12.0 -42.5 1.0 12.0 0.0063 3 43  
 CW 16 143 -42.5 1.0 12.0 0.0 1.0 12.0 0.0063 3 43  
 CW 17 143 0.0 0.5 9.0 42.5 0.5 9.0 0.0063 3 43  
 CW 18 143 42.5 0.5 9.0 85.0 0.5 9.0 0.0063 3 43  
 CW 19 143 85.0 0.5 9.0 127.5 0.5 9.0 0.0063 3 43  
 CW 20 143 127.5 0.5 9.0 170.0 0.5 9.0 0.0063 3 43  
 CW 21 143 -170.0 0.5 9.0 -127.5 0.5 9.0 0.0063 3 43  
 CW 22 143 -127.5 0.5 9.0 -85.0 0.5 9.0 0.0063 3 43  
 CW 23 143 -85.0 0.5 9.0 -42.5 0.5 9.0 0.0063 3 43  
 CW 24 143 -42.5 0.5 9.0 0.0 0.5 9.0 0.0063 3 43  
 GW 25 31 0.0 0.5 9.0 0.0 0.5 0.0 0.0063  
 GW 26 31 170.0 0.5 9.0 170.0 0.5 0.0 0.0063  
 GW 27 31 -170.0 0.5 9.0 -170.0 0.5 0.0 0.0063  
 GW 28 33 0.0 0.5 0.0 0.0 0.5 -2.5 0.0063  
 GW 29 33 170.0 0.5 0.0 170.0 0.5 -2.5 0.0063  
 GW 30 33 -170.0 0.5 0.0 -170.0 0.5 -2.5 0.0063  
 GW 31 7 0.0 0.5 9.0 0.0 0.0 12.0 0.0063  
 GW 32 7 170.0 0.5 9.0 170.0 1.0 12.0 0.0063  
 GW 33 7 -170.0 0.5 9.0 -170.0 1.0 12.0 0.0063  
 GE -1  
 LD 5 0 0 0 58000000.0 0.0  
 LD 2 31 1 1 7.7 0.0  
 LD 0 32 1 1 7.7 0.0  
 LD 0 33 1 1 7.7 0.0  
 EX 0 1 1 0 1.0 0.0  
 GN 2 0 0 0 15.0 .005  
 FR 0 1 0 0 50 0.0  
 EN

tri210.nec

```
CM Catenary two-wire BPL model
CM Center-fed, triangular-horizontal configuration
CM No multi-grounded neutral, no transformers
CM 1.0 meter wire spacing
CM 50 MHz
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43
CW 9 143 0.0 1.0 12.0 42.5 1.0 12.0 0.0063 3 43
CW 10 143 42.5 1.0 12.0 85.0 1.0 12.0 0.0063 3 43
CW 11 143 85.0 1.0 12.0 127.5 1.0 12.0 0.0063 3 43
CW 12 143 127.5 1.0 12.0 170.0 1.0 12.0 0.0063 3 43
CW 13 143 -170.0 1.0 12.0 -127.5 1.0 12.0 0.0063 3 43
CW 14 143 -127.5 1.0 12.0 -85.0 1.0 12.0 0.0063 3 43
CW 15 143 -85.0 1.0 12.0 -42.5 1.0 12.0 0.0063 3 43
CW 16 143 -42.5 1.0 12.0 0.0 1.0 12.0 0.0063 3 43
GE -1
LD 5 0 0 0 58000000.0 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN
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tri36n.nec

```

CM Catenary three-wire BPL model
CM Center-fed, triangular-horizontal configuration
CM Multi-grounded neutral, three transformers
CM 0.6 meter wire spacing
CM 50 MHz
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43.0
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43.0
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43.0
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43.0
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43.0
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43.0
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43.0
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43.0
CW 9 143 0.0 .6 12.25 42.5 .6 12.25 0.0063 3 43.0
CW 10 143 42.5 .6 12.25 85.0 .6 12.25 0.0063 3 43.0
CW 11 143 85.0 .6 12.25 127.5 .6 12.25 0.0063 3 43.0
CW 12 143 127.5 .6 12.25 170.0 .6 12.25 0.0063 3 43.0
CW 13 143 -170.0 .6 12.25 -127.5 .6 12.25 0.0063 3 43.0
CW 14 143 -127.5 .6 12.25 -85.0 .6 12.25 0.0063 3 43.0
CW 15 143 -85.0 .6 12.25 -42.5 .6 12.25 0.0063 3 43.0
CW 16 143 -42.5 .6 12.25 0.0 .6 12.25 0.0063 3 43.0
CW 17 143 0.0 1.2 12.0 42.5 1.2 12.0 0.0063 3 43.0
CW 18 143 42.5 1.2 12.0 85.0 1.2 12.0 0.0063 3 43.0
CW 19 143 85.0 1.2 12.0 127.5 1.2 12.0 0.0063 3 43.0
CW 20 143 127.5 1.2 12.0 170.0 1.2 12.0 0.0063 3 43.0
CW 21 143 -170.0 1.2 12.0 -127.5 1.2 12.0 0.0063 3 43.0
CW 22 143 -127.5 1.2 12.0 -85.0 1.2 12.0 0.0063 3 43.0
CW 23 143 -85.0 1.2 12.0 -42.5 1.2 12.0 0.0063 3 43.0
CW 24 143 -42.5 1.2 12.0 0.0 1.2 12.0 0.0063 3 43.0
CW 25 143 0.0 .6 9.0 42.5 .6 9.0 0.0063 3 43.0
CW 26 143 42.5 .6 9.0 85.0 .6 9.0 0.0063 3 43.0
CW 27 143 85.0 .6 9.0 127.5 .6 9.0 0.0063 3 43.0
CW 28 143 127.5 .6 9.0 170.0 .6 9.0 0.0063 3 43.0
CW 29 143 -170.0 .6 9.0 -127.5 .6 9.0 0.0063 3 43.0
CW 30 143 -127.5 .6 9.0 -85.0 .6 9.0 0.0063 3 43.0
CW 31 143 -85.0 .6 9.0 -42.5 .6 9.0 0.0063 3 43.0
CW 32 143 -42.5 .6 9.0 0.0 .6 9.0 0.0063 3 43.0
GW 33 31 0.0 .6 9.0 0.0 .6 0.0 0.0063
GW 34 31 170.0 .6 9.0 170.0 .6 0.0 0.0063
GW 35 31 -170.0 .6 9.0 -170.0 .6 0.0 0.0063
GW 36 33 0.0 .6 0.0 0.0 .6 -2.5 0.0063
GW 37 33 170.0 .6 0.0 170.0 .6 -2.5 0.0063
GW 38 33 -170.0 .6 0.0 -170.0 .6 -2.5 0.0063
GW 39 7 0.0 .6 9.0 0.0 0.0 12.0 0.0063
GW 40 7 -170.0 .6 9.0 -170.0 .6 12.25 0.0063
GW 41 7 170.0 .6 9.0 170.0 1.2 12.0 0.0063
GE -1
LD 5 0 0 0 58000000.0 0.0
LD 2 31 1 1 7.7 0.0
LD 0 32 1 1 7.7 0.0
LD 0 33 1 1 7.7 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN

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tri36.nec

```
CM Catenary three-wire BPL model
CM Center-fed, triangular-horizontal configuration
CM No multi-grounded neutral, no transformers
CM 0.6 meter wire spacing
CM 50 MHz
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43.0
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43.0
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43.0
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43.0
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43.0
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43.0
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43.0
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43.0
CW 9 143 0.0 0.6 12.25 42.5 0.6 12.25 0.0063 3 43.0
CW 10 143 42.5 0.6 12.25 85.0 0.6 12.25 0.0063 3 43.0
CW 11 143 85.0 0.6 12.25 127.5 0.6 12.25 0.0063 3 43.0
CW 12 143 127.5 0.6 12.25 170.0 0.6 12.25 0.0063 3 43.0
CW 13 143 -170.0 0.6 12.25 -127.5 0.6 12.25 0.0063 3 43.0
CW 14 143 -127.5 0.6 12.25 -85.0 0.6 12.25 0.0063 3 43.0
CW 15 143 -85.0 0.6 12.25 -42.5 0.6 12.25 0.0063 3 43.0
CW 16 143 -42.5 0.6 12.25 0.0 0.6 12.25 0.0063 3 43.0
CW 17 143 0.0 1.2 12.0 42.5 1.2 12.0 0.0063 3 43.0
CW 18 143 42.5 1.2 12.0 85.0 1.2 12.0 0.0063 3 43.0
CW 19 143 85.0 1.2 12.0 127.5 1.2 12.0 0.0063 3 43.0
CW 20 143 127.5 1.2 12.0 170.0 1.2 12.0 0.0063 3 43.0
CW 21 143 -170.0 1.2 12.0 -127.5 1.2 12.0 0.0063 3 43.0
CW 22 143 -127.5 1.2 12.0 -85.0 1.2 12.0 0.0063 3 43.0
CW 23 143 -85.0 1.2 12.0 -42.5 1.2 12.0 0.0063 3 43.0
CW 24 143 -42.5 1.2 12.0 0.0 1.2 12.0 0.0063 3 43.0
GE -1
LD 5 0 0 0 58000000.0 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN
```

tri26n.nec

```

CM Catenary two-wire BPL model
CM Center-fed, triangular-horizontal configuration
CM Multi-grounded neutral, three transformers
CM 0.6 meter wire spacing
CM 50 MHz
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43
CW 9 143 0.0 0.6 12.0 42.5 0.6 12.0 0.0063 3 43
CW 10 143 42.5 0.6 12.0 85.0 0.6 12.0 0.0063 3 43
CW 11 143 85.0 0.6 12.0 127.5 0.6 12.0 0.0063 3 43
CW 12 143 127.5 0.6 12.0 170.0 0.6 12.0 0.0063 3 43
CW 13 143 -170.0 0.6 12.0 -127.5 0.6 12.0 0.0063 3 43
CW 14 143 -127.5 0.6 12.0 -85.0 0.6 12.0 0.0063 3 43
CW 15 143 -85.0 0.6 12.0 -42.5 0.6 12.0 0.0063 3 43
CW 16 143 -42.5 0.6 12.0 0.0 0.6 12.0 0.0063 3 43
CW 17 143 0.0 0.3 9.0 42.5 0.3 9.0 0.0063 3 43
CW 18 143 42.5 0.3 9.0 85.0 0.3 9.0 0.0063 3 43
CW 19 143 85.0 0.3 9.0 127.5 0.3 9.0 0.0063 3 43
CW 20 143 127.5 0.3 9.0 170.0 0.3 9.0 0.0063 3 43
CW 21 143 -170.0 0.3 9.0 -127.5 0.3 9.0 0.0063 3 43
CW 22 143 -127.5 0.3 9.0 -85.0 0.3 9.0 0.0063 3 43
CW 23 143 -85.0 0.3 9.0 -42.5 0.3 9.0 0.0063 3 43
CW 24 143 -42.5 0.3 9.0 0.0 0.3 9.0 0.0063 3 43
GW 25 31 0.0 0.3 9.0 0.0 0.3 0.0 0.0063
GW 26 31 170.0 0.3 9.0 170.0 0.3 0.0 0.0063
GW 27 31 -170.0 0.3 9.0 -170.0 0.3 0.0 0.0063
GW 28 33 0.0 0.3 0.0 0.0 0.3 -2.5 0.0063
GW 29 33 170.0 0.3 0.0 170.0 0.3 -2.5 0.0063
GW 30 33 -170.0 0.3 0.0 -170.0 0.3 -2.5 0.0063
GW 31 7 0.0 0.3 9.0 0.0 0.0 12.0 0.0063
GW 32 7 170.0 0.3 9.0 170.0 0.6 12.0 0.0063
GW 33 7 -170.0 0.3 9.0 -170.0 0.6 12.0 0.0063
GE -1
LD 5 0 0 0 58000000.0 0.0
LD 2 31 1 1 7.7 0.0
LD 0 32 1 1 7.7 0.0
LD 0 33 1 1 7.7 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN

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tri26.nec

```
CM Catenary two-wire BPL model
CM Center-fed, triangular-horizontal configuration
CM No multi-grounded neutral, no transformers
CM 0.6 meter wire spacing
CM 50 MHz (maximum number of segments)
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43
CW 9 143 0.0 0.6 12.0 42.5 0.6 12.0 0.0063 3 43
CW 10 143 42.5 0.6 12.0 85.0 0.6 12.0 0.0063 3 43
CW 11 143 85.0 0.6 12.0 127.5 0.6 12.0 0.0063 3 43
CW 12 143 127.5 0.6 12.0 170.0 0.6 12.0 0.0063 3 43
CW 13 143 -170.0 0.6 12.0 -127.5 0.6 12.0 0.0063 3 43
CW 14 143 -127.5 0.6 12.0 -85.0 0.6 12.0 0.0063 3 43
CW 15 143 -85.0 0.6 12.0 -42.5 0.6 12.0 0.0063 3 43
CW 16 143 -42.5 0.6 12.0 0.0 0.6 12.0 0.0063 3 43
GE -1
LD 5 0 0 0 58000000.0 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN
```



ver1n.nec

```
CM Catenary one-wire BPL model
CM Center-fed, vertical configuration
CM Multi-grounded neutral, three transformers
CM n/a meter wire spacing
CM 50 MHz
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43
CW 9 143 0.0 0.0 9.0 42.5 0.0 9.0 0.0063 3 43
CW 10 143 42.5 0.0 9.0 85.0 0.0 9.0 0.0063 3 43
CW 11 143 85.0 0.0 9.0 127.5 0.0 9.0 0.0063 3 43
CW 12 143 127.5 0.0 9.0 170.0 0.0 9.0 0.0063 3 43
CW 13 143 -170.0 0.0 9.0 -127.5 0.0 9.0 0.0063 3 43
CW 14 143 -127.5 0.0 9.0 -85.0 0.0 9.0 0.0063 3 43
CW 15 143 -85.0 0.0 9.0 -42.5 0.0 9.0 0.0063 3 43
CW 16 143 -42.5 0.0 9.0 0.0 0.0 9.0 0.0063 3 43
GW 17 31 0.0 0.0 9.0 0.0 0.0 0.0 0.0063
GW 18 31 170.0 0.0 9.0 170.0 0.0 0.0 0.0063
GW 19 31 -170.0 0.0 9.0 -170.0 0.0 0.0 0.0063
GW 20 33 0.0 0.0 0.0 0.0 0.0 -2.5 0.0063
GW 21 33 170.0 0.0 0.0 170.0 0.0 -2.5 0.0063
GW 22 33 -170.0 0.0 0.0 -170.0 0.0 -2.5 0.0063
GW 23 7 0.0 0.0 12.0 0.0 -1.32105 10.50161 0.0063
GW 24 7 170.0 0.0 12.0 171.6 0.0 10.2 0.0063
GW 25 7 -170.0 0.0 12.0 -171.6 0.0 10.2 0.0063
GW 26 7 0.0 0.0 9.0 0.0 -1.32105 10.50161 0.0063
GW 27 7 -170.0 0.0 9.0 -171.6 0.0 10.2 0.0063
GW 28 7 170.0 0.0 9.0 171.6 0.0 10.2 0.0063
GE -1
LD 5 0 0 0 58000000.0 0.0
LD 2 26 1 1 7.7 0.0
LD 0 27 1 1 7.7 0.0
LD 0 28 1 1 7.7 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN
```

ver36.nec

```
CM Catenary three-wire BPL model
CM Center-fed, vertical configuration
CM No multi-grounded neutral, no transformers
CM 0.6 meter wire spacing
CM 50 MHz
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43
CW 9 143 0.0 0.0 11.4 42.5 0.0 11.4 0.0063 3 43
CW 10 143 42.5 0.0 11.4 85.0 0.0 11.4 0.0063 3 43
CW 11 143 85.0 0.0 11.4 127.5 0.0 11.4 0.0063 3 43
CW 12 143 127.5 0.0 11.4 170.0 0.0 11.4 0.0063 3 43
CW 13 143 -170.0 0.0 11.4 -127.5 0.0 11.4 0.0063 3 43
CW 14 143 -127.5 0.0 11.4 -85.0 0.0 11.4 0.0063 3 43
CW 15 143 -85.0 0.0 11.4 -42.5 0.0 11.4 0.0063 3 43
CW 16 143 -42.5 0.0 11.4 0.0 0.0 11.4 0.0063 3 43
CW 17 143 0.0 0.0 10.8 42.5 0.0 10.8 0.0063 3 43
CW 18 143 42.5 0.0 10.8 85.0 0.0 10.8 0.0063 3 43
CW 19 143 85.0 0.0 10.8 127.5 0.0 10.8 0.0063 3 43
CW 20 143 127.5 0.0 10.8 170.0 0.0 10.8 0.0063 3 43
CW 21 143 -170.0 0.0 10.8 -127.5 0.0 10.8 0.0063 3 43
CW 22 143 -127.5 0.0 10.8 -85.0 0.0 10.8 0.0063 3 43
CW 23 143 -85.0 0.0 10.8 -42.5 0.0 10.8 0.0063 3 43
CW 24 143 -42.5 0.0 10.8 0.0 0.0 10.8 0.0063 3 43
GE -1
LD 5 0 0 0 58000000.0 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN
```

ver1.nec

```
CM Catenary one-wire BPL model
CM Center-fed, vertical configuration
CM No multi-grounded neutral, no transformers
CM n/a meter wire spacing
CM 50 MHz
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43
GE -1
LD 5 0 0 0 58000000.0 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN
```

```

CM Catenary two-wire BPL model
CM Center-fed, vertical configuration
CM Multi-grounded neutral, three transformers
CM 0.6 meter wire spacing
CM 50 MHZ
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43
CW 9 143 0.0 0.0 11.4 42.5 0.0 11.4 0.0063 3 43
CW 10 143 42.5 0.0 11.4 85.0 0.0 11.4 0.0063 3 43
CW 11 143 85.0 0.0 11.4 127.5 0.0 11.4 0.0063 3 43
CW 12 143 127.5 0.0 11.4 170.0 0.0 11.4 0.0063 3 43
CW 13 143 -170.0 0.0 11.4 -127.5 0.0 11.4 0.0063 3 43
CW 14 143 -127.5 0.0 11.4 -85.0 0.0 11.4 0.0063 3 43
CW 15 143 -85.0 0.0 11.4 -42.5 0.0 11.4 0.0063 3 43
CW 16 143 -42.5 0.0 11.4 0.0 0.0 11.4 0.0063 3 43
CW 17 143 0.0 0.0 9.0 42.5 0.0 9.0 0.0063 3 43
CW 18 143 42.5 0.0 9.0 85.0 0.0 9.0 0.0063 3 43
CW 19 143 85.0 0.0 9.0 127.5 0.0 9.0 0.0063 3 43
CW 20 143 127.5 0.0 9.0 170.0 0.0 9.0 0.0063 3 43
CW 21 143 -170.0 0.0 9.0 -127.5 0.0 9.0 0.0063 3 43
CW 22 143 -127.5 0.0 9.0 -85.0 0.0 9.0 0.0063 3 43
CW 23 143 -85.0 0.0 9.0 -42.5 0.0 9.0 0.0063 3 43
CW 24 143 -42.5 0.0 9.0 0.0 0.0 9.0 0.0063 3 43
GW 25 31 0.0 0.0 9.0 0.0 0.0 0.0 0.0063
GW 26 31 170.0 0.0 9.0 170.0 0.0 0.0 0.0063
GW 27 31 -170.0 0.0 9.0 -170.0 0.0 0.0 0.0063
GW 28 33 0.0 0.0 0.0 0.0 0.0 -2.5 0.0063
GW 29 33 170.0 0.0 0.0 170.0 0.0 -2.5 0.0063
GW 30 33 -170.0 0.0 0.0 -170.0 0.0 -2.5 0.0063
GW 31 7 0.0 0.0 12.0 0.0 -1.32105 10.50161 0.0063
GW 32 7 170.0 0.0 11.4 171.6 0.0 10.2 0.0063
GW 33 7 -170.0 0.0 11.4 -171.6 0.0 10.2 0.0063
GW 34 7 0.0 0.0 9.0 0.0 -1.32105 10.50161 0.0063
GW 35 7 -170.0 0.0 9.0 -171.6 0.0 10.2 0.0063
GW 36 7 170.0 0.0 9.0 171.6 0.0 10.2 0.0063
GE -1
LD 5 0 0 0 58000000.0 0.0
LD 2 34 1 1 7.7 0.0
LD 0 35 1 1 7.7 0.0
LD 0 36 1 1 7.7 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN

```

ver26.nec

```
CM Catenary two-wire BPL model
CM Center-fed, vertical configuration
CM No multi-grounded neutral, no transformers
CM 0.6 meter wire spacing
CM 50 MHz
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43
CW 9 143 0.0 0.0 11.4 42.5 0.0 11.4 0.0063 3 43
CW 10 143 42.5 0.0 11.4 85.0 0.0 11.4 0.0063 3 43
CW 11 143 85.0 0.0 11.4 127.5 0.0 11.4 0.0063 3 43
CW 12 143 127.5 0.0 11.4 170.0 0.0 11.4 0.0063 3 43
CW 13 143 -170.0 0.0 11.4 -127.5 0.0 11.4 0.0063 3 43
CW 14 143 -127.5 0.0 11.4 -85.0 0.0 11.4 0.0063 3 43
CW 15 143 -85.0 0.0 11.4 -42.5 0.0 11.4 0.0063 3 43
CW 16 143 -42.5 0.0 11.4 0.0 0.0 11.4 0.0063 3 43
GE -1
LD 5 0 0 0 58000000.0 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN
```

```

CM Catenary three-wire BPL model
CM Center-fed, vertical configuration
CM Multi-grounded neutral, three transformers
CM 1.0 meter wire spacing
CM 50 MHZ
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43
CW 9 143 0.0 0.0 11.0 42.5 0.0 11.0 0.0063 3 43
CW 10 143 42.5 0.0 11.0 85.0 0.0 11.0 0.0063 3 43
CW 11 143 85.0 0.0 11.0 127.5 0.0 11.0 0.0063 3 43
CW 12 143 127.5 0.0 11.0 170.0 0.0 11.0 0.0063 3 43
CW 13 143 -170.0 0.0 11.0 -127.5 0.0 11.0 0.0063 3 43
CW 14 143 -127.5 0.0 11.0 -85.0 0.0 11.0 0.0063 3 43
CW 15 143 -85.0 0.0 11.0 -42.5 0.0 11.0 0.0063 3 43
CW 16 143 -42.5 0.0 11.0 0.0 0.0 11.0 0.0063 3 43
CW 17 143 0.0 0.0 10.0 42.5 0.0 10.0 0.0063 3 43
CW 18 143 42.5 0.0 10.0 85.0 0.0 10.0 0.0063 3 43
CW 19 143 85.0 0.0 10.0 127.5 0.0 10.0 0.0063 3 43
CW 20 143 127.5 0.0 10.0 170.0 0.0 10.0 0.0063 3 43
CW 21 143 -170.0 0.0 10.0 -127.5 0.0 10.0 0.0063 3 43
CW 22 143 -127.5 0.0 10.0 -85.0 0.0 10.0 0.0063 3 43
CW 23 143 -85.0 0.0 10.0 -42.5 0.0 10.0 0.0063 3 43
CW 24 143 -42.5 0.0 10.0 0.0 0.0 10.0 0.0063 3 43
CW 25 143 0.0 0.0 9.0 42.5 0.0 9.0 0.0063 3 43
CW 26 143 42.5 0.0 9.0 85.0 0.0 9.0 0.0063 3 43
CW 27 143 85.0 0.0 9.0 127.5 0.0 9.0 0.0063 3 43
CW 28 143 127.5 0.0 9.0 170.0 0.0 9.0 0.0063 3 43
CW 29 143 -170.0 0.0 9.0 -127.5 0.0 9.0 0.0063 3 43
CW 30 143 -127.5 0.0 9.0 -85.0 0.0 9.0 0.0063 3 43
CW 31 143 -85.0 0.0 9.0 -42.5 0.0 9.0 0.0063 3 43
CW 32 143 -42.5 0.0 9.0 0.0 0.0 9.0 0.0063 3 43
GW 33 31 0.0 0.0 9.0 0.0 0.0 0.0 0.0063
GW 34 31 170.0 0.0 9.0 170.0 0.0 0.0 0.0063
GW 35 31 -170.0 0.0 9.0 -170.0 0.0 0.0 0.0063
GW 36 33 0.0 0.0 0.0 0.0 0.0 -2.5 0.0063
GW 37 33 170.0 0.0 0.0 170.0 0.0 -2.5 0.0063
GW 38 33 -170.0 0.0 0.0 -170.0 0.0 -2.5 0.0063
GW 39 7 0.0 0.0 12.0 0.0 -1.0 10.75 0.0063
GW 40 7 0.0 0.0 9.0 0.0 -1.0 10.75 0.0063
GW 41 7 -170.0 0.0 9.0 -170.0 0.0 10.0 0.0063
GW 42 7 170.0 0.0 11.0 171.5 0.0 10.3 0.0063
GW 43 7 170.0 0.0 9.0 171.5 0.0 10.3 0.0063
GE -1
LD 5 0 0 0 58000000.0 0.0
LD 2 40 1 1 7.7 0.0
LD 0 41 1 1 7.7 0.0
LD 0 43 1 1 7.7 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN

```

```
CM Catenary three-wire BPL model
CM Center-fed, vertical configuration
CM No multi-grounded neutral, no transformers
CM 1.0 meter wire spacing
CM 50 MHz
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43
CW 9 143 0.0 0.0 11.0 42.5 0.0 11.0 0.0063 3 43
CW 10 143 42.5 0.0 11.0 85.0 0.0 11.0 0.0063 3 43
CW 11 143 85.0 0.0 11.0 127.5 0.0 11.0 0.0063 3 43
CW 12 143 127.5 0.0 11.0 170.0 0.0 11.0 0.0063 3 43
CW 13 143 -170.0 0.0 11.0 -127.5 0.0 11.0 0.0063 3 43
CW 14 143 -127.5 0.0 11.0 -85.0 0.0 11.0 0.0063 3 43
CW 15 143 -85.0 0.0 11.0 -42.5 0.0 11.0 0.0063 3 43
CW 16 143 -42.5 0.0 11.0 0.0 0.0 11.0 0.0063 3 43
CW 17 143 0.0 0.0 10.0 42.5 0.0 10.0 0.0063 3 43
CW 18 143 42.5 0.0 10.0 85.0 0.0 10.0 0.0063 3 43
CW 19 143 85.0 0.0 10.0 127.5 0.0 10.0 0.0063 3 43
CW 20 143 127.5 0.0 10.0 170.0 0.0 10.0 0.0063 3 43
CW 21 143 -170.0 0.0 10.0 -127.5 0.0 10.0 0.0063 3 43
CW 22 143 -127.5 0.0 10.0 -85.0 0.0 10.0 0.0063 3 43
CW 23 143 -85.0 0.0 10.0 -42.5 0.0 10.0 0.0063 3 43
CW 24 143 -42.5 0.0 10.0 0.0 0.0 10.0 0.0063 3 43
GE -1
LD 5 0 0 0 58000000.0 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN
```

```

CM Catenary two-wire BPL model
CM Center-fed, vertical configuration
CM Multi-grounded neutral, three transformers
CM 1.0 meter wire spacing
CM 50 MHZ
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43
CW 9 143 0.0 0.0 11.0 42.5 0.0 11.0 0.0063 3 43
CW 10 143 42.5 0.0 11.0 85.0 0.0 11.0 0.0063 3 43
CW 11 143 85.0 0.0 11.0 127.5 0.0 11.0 0.0063 3 43
CW 12 143 127.5 0.0 11.0 170.0 0.0 11.0 0.0063 3 43
CW 13 143 -170.0 0.0 11.0 -127.5 0.0 11.0 0.0063 3 43
CW 14 143 -127.5 0.0 11.0 -85.0 0.0 11.0 0.0063 3 43
CW 15 143 -85.0 0.0 11.0 -42.5 0.0 11.0 0.0063 3 43
CW 16 143 -42.5 0.0 11.0 0.0 0.0 11.0 0.0063 3 43
CW 17 143 0.0 0.0 9.0 42.5 0.0 9.0 0.0063 3 43
CW 18 143 42.5 0.0 9.0 85.0 0.0 9.0 0.0063 3 43
CW 19 143 85.0 0.0 9.0 127.5 0.0 9.0 0.0063 3 43
CW 20 143 127.5 0.0 9.0 170.0 0.0 9.0 0.0063 3 43
CW 21 143 -170.0 0.0 9.0 -127.5 0.0 9.0 0.0063 3 43
CW 22 143 -127.5 0.0 9.0 -85.0 0.0 9.0 0.0063 3 43
CW 23 143 -85.0 0.0 9.0 -42.5 0.0 9.0 0.0063 3 43
CW 24 143 -42.5 0.0 9.0 0.0 0.0 9.0 0.0063 3 43
GW 25 31 0.0 0.0 9.0 0.0 0.0 0.0 0.0063
GW 26 31 170.0 0.0 9.0 170.0 0.0 0.0 0.0063
GW 27 31 -170.0 0.0 9.0 -170.0 0.0 0.0 0.0063
GW 28 33 0.0 0.0 0.0 0.0 0.0 -2.5 0.0063
GW 29 33 170.0 0.0 0.0 170.0 0.0 -2.5 0.0063
GW 30 33 -170.0 0.0 0.0 -170.0 0.0 -2.5 0.0063
GW 31 7 0.0 0.0 12.0 0.0 -1.32105 10.50161 0.0063
GW 32 7 170.0 0.0 11.0 171.6 0.0 10.2 0.0063
GW 33 7 -170.0 0.0 11.0 -171.6 0.0 10.2 0.0063
GW 34 7 0.0 0.0 9.0 0.0 -1.32105 10.50161 0.0063
GW 35 7 -170.0 0.0 9.0 -171.6 0.0 10.2 0.0063
GW 36 7 170.0 0.0 9.0 171.6 0.0 10.2 0.0063
GE -1
LD 5 0 0 0 58000000.0 0.0
LD 2 34 1 1 7.7 0.0
LD 0 35 1 1 7.7 0.0
LD 0 36 1 1 7.7 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN

```



ver210.nec

```
CM Catenary two-wire BPL model
CM Center-fed, vertical configuration
CM No multi-grounded neutral, no transformers
CM 1.0 meter wire spacing
CM 50 MHz
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43
CW 9 143 0.0 0.0 11.0 42.5 0.0 11.0 0.0063 3 43
CW 10 143 42.5 0.0 11.0 85.0 0.0 11.0 0.0063 3 43
CW 11 143 85.0 0.0 11.0 127.5 0.0 11.0 0.0063 3 43
CW 12 143 127.5 0.0 11.0 170.0 0.0 11.0 0.0063 3 43
CW 13 143 -170.0 0.0 11.0 -127.5 0.0 11.0 0.0063 3 43
CW 14 143 -127.5 0.0 11.0 -85.0 0.0 11.0 0.0063 3 43
CW 15 143 -85.0 0.0 11.0 -42.5 0.0 11.0 0.0063 3 43
CW 16 143 -42.5 0.0 11.0 0.0 0.0 11.0 0.0063 3 43
GE -1
LD 5 0 0 0 58000000.0 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN
```

```

CM Catenary three-wire BPL model
CM Center-fed, vertical configuration
CM Multi-grounded neutral, three transformers
CM 0.6 meter wire spacing
CM 50 MHz
CE NTIA 2004
CW 1 143 0.0 0.0 12.0 42.5 0.0 12.0 0.0063 3 43
CW 2 143 42.5 0.0 12.0 85.0 0.0 12.0 0.0063 3 43
CW 3 143 85.0 0.0 12.0 127.5 0.0 12.0 0.0063 3 43
CW 4 143 127.5 0.0 12.0 170.0 0.0 12.0 0.0063 3 43
CW 5 143 -170.0 0.0 12.0 -127.5 0.0 12.0 0.0063 3 43
CW 6 143 -127.5 0.0 12.0 -85.0 0.0 12.0 0.0063 3 43
CW 7 143 -85.0 0.0 12.0 -42.5 0.0 12.0 0.0063 3 43
CW 8 143 -42.5 0.0 12.0 0.0 0.0 12.0 0.0063 3 43
CW 9 143 0.0 0.0 11.4 42.5 0.0 11.4 0.0063 3 43
CW 10 143 42.5 0.0 11.4 85.0 0.0 11.4 0.0063 3 43
CW 11 143 85.0 0.0 11.4 127.5 0.0 11.4 0.0063 3 43
CW 12 143 127.5 0.0 11.4 170.0 0.0 11.4 0.0063 3 43
CW 13 143 -170.0 0.0 11.4 -127.5 0.0 11.4 0.0063 3 43
CW 14 143 -127.5 0.0 11.4 -85.0 0.0 11.4 0.0063 3 43
CW 15 143 -85.0 0.0 11.4 -42.5 0.0 11.4 0.0063 3 43
CW 16 143 -42.5 0.0 11.4 0.0 0.0 11.4 0.0063 3 43
CW 17 143 0.0 0.0 10.8 42.5 0.0 10.8 0.0063 3 43
CW 18 143 42.5 0.0 10.8 85.0 0.0 10.8 0.0063 3 43
CW 19 143 85.0 0.0 10.8 127.5 0.0 10.8 0.0063 3 43
CW 20 143 127.5 0.0 10.8 170.0 0.0 10.8 0.0063 3 43
CW 21 143 -170.0 0.0 10.8 -127.5 0.0 10.8 0.0063 3 43
CW 22 143 -127.5 0.0 10.8 -85.0 0.0 10.8 0.0063 3 43
CW 23 143 -85.0 0.0 10.8 -42.5 0.0 10.8 0.0063 3 43
CW 24 143 -42.5 0.0 10.8 0.0 0.0 10.8 0.0063 3 43
CW 25 143 0.0 0.0 9.0 42.5 0.0 9.0 0.0063 3 43
CW 26 143 42.5 0.0 9.0 85.0 0.0 9.0 0.0063 3 43
CW 27 143 85.0 0.0 9.0 127.5 0.0 9.0 0.0063 3 43
CW 28 143 127.5 0.0 9.0 170.0 0.0 9.0 0.0063 3 43
CW 29 143 -170.0 0.0 9.0 -127.5 0.0 9.0 0.0063 3 43
CW 30 143 -127.5 0.0 9.0 -85.0 0.0 9.0 0.0063 3 43
CW 31 143 -85.0 0.0 9.0 -42.5 0.0 9.0 0.0063 3 43
CW 32 143 -42.5 0.0 9.0 0.0 0.0 9.0 0.0063 3 43
GW 33 31 0.0 0.0 9.0 0.0 0.0 0.0 0.0063
GW 34 31 170.0 0.0 9.0 170.0 0.0 0.0 0.0063
GW 35 31 -170.0 0.0 9.0 -170.0 0.0 0.0 0.0063
GW 36 33 0.0 0.0 0.0 0.0 0.0 -2.5 0.0063
GW 37 33 170.0 0.0 0.0 170.0 0.0 -2.5 0.0063
GW 38 33 -170.0 0.0 0.0 -170.0 0.0 -2.5 0.0063
GW 39 7 0.0 0.0 12.0 0.0 -1.0 10.75 0.0063
GW 40 7 0.0 0.0 9.0 0.0 -1.0 10.75 0.0063
GW 41 7 -170.0 0.0 9.0 -170.0 0.0 10.8 0.0063
GW 42 7 170.0 0.0 11.4 171.5 0.0 10.3 0.0063
GW 43 7 170.0 0.0 9.0 171.5 0.0 10.3 0.0063
GE -1
LD 5 0 0 0 58000000.0 0.0
LD 2 40 1 1 7.7 0.0
LD 0 41 1 1 7.7 0.0
LD 0 43 1 1 7.7 0.0
EX 0 1 1 0 1.0 0.0
GN 2 0 0 0 15.0 .005
FR 0 1 0 0 50 0.0
EN

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