

# TFD Analysis

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## EZNEC Model

30' x 8", 9' height, 800 Ω terminator resistor, 16:1 transformer  
Wires along N-S line

$$Loss_{dB} = 10 \log \left[ 1 - \left( \frac{SWR - 1}{SWR + 1} \right)^2 \right]$$

Freq (MHz)	N-S HPBW (deg)	E-W HPBW (deg)	SWR (50 Ω)	Gain (dBi)	Mismatch Loss (dB)	Total Gain (dB)
15	63	112	1.33	-1.90	-0.09	-1.99
16	62	113	1.46	-0.86	-0.15	-1.01
17	61	115	1.61	-0.03	-0.24	-0.27
18	61	116	1.75	0.60	-0.34	0.26
19	60	118	1.88	1.06	-0.43	0.63
20	59	120	1.98	1.39	-0.50	0.89
21	58	121	2.07	1.62	-0.56	1.06
22	58	124	2.11	1.76	-0.59	1.17
23	57	126	2.13	1.83	-0.61	1.22
<b>24</b>	<b>56</b>	<b>128</b>	<b>2.14</b>	<b>1.86</b>	<b>-0.61</b>	<b>1.25</b>
25	55	129	2.12	1.84	-0.60	1.24
26	55	131	2.09	1.80	-0.58	1.22
27	53	133	2.04	1.74	-0.54	1.20
28	53	134	2.00	1.66	-0.51	1.15
29	51	135	1.94	1.56	-0.47	1.09
30	50	137	1.89	1.45	-0.43	1.02

TFD - EZNEC Model - SWR & Gain Analysis

