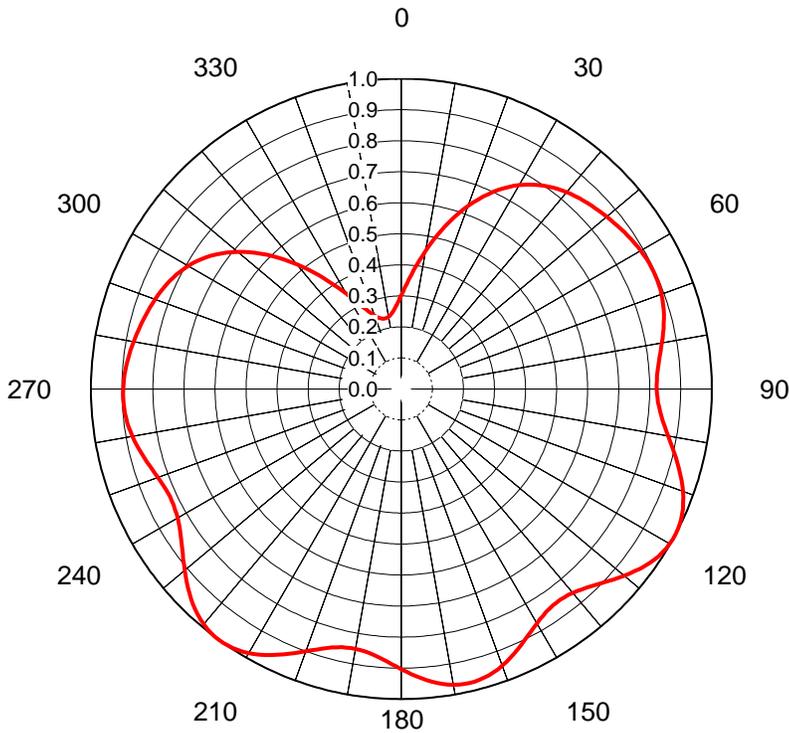


AZIMUTH PATTERN Horizontal Polarization



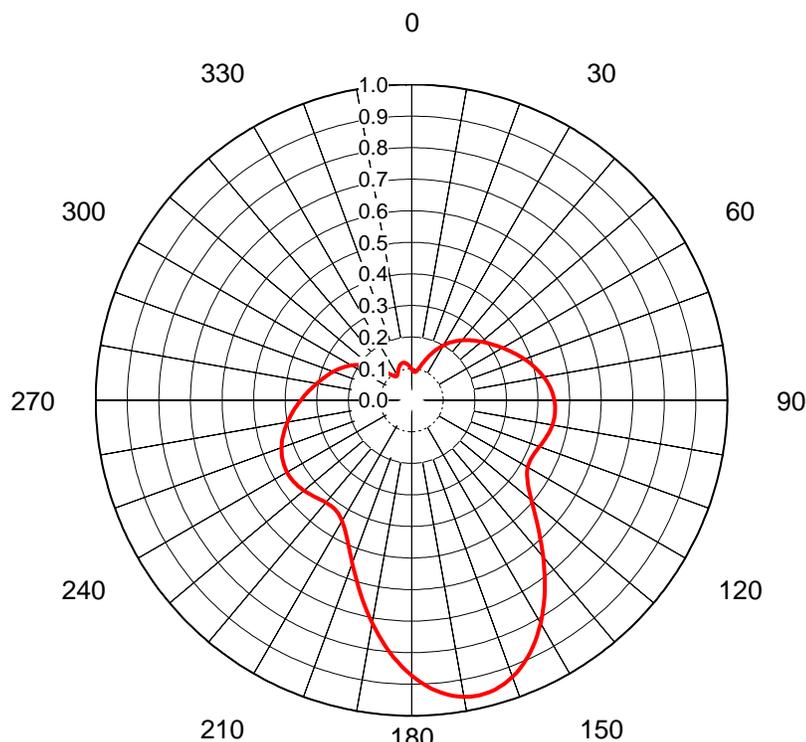
Proposal No. **C-70061-9**
 Date **12-Feb-18**
 Call Letters **WPSG**
 Channel **33**
 Frequency **587 MHz**
 Antenna Type **TFU-24ETT/VP-R 4C150**
 Gain **1.51 (1.8dB)**
 Calculated

TFU-4C150-CH33

| Deg | Value |
|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| 0 | 0.302 | 36 | 0.806 | 72 | 0.886 | 108 | 0.949 | 144 | 0.851 | 180 | 0.904 | 216 | 1.000 | 252 | 0.843 | 288 | 0.851 | 324 | 0.453 |
| 1 | 0.314 | 37 | 0.812 | 73 | 0.883 | 109 | 0.958 | 145 | 0.851 | 181 | 0.895 | 217 | 0.999 | 253 | 0.847 | 289 | 0.848 | 325 | 0.435 |
| 2 | 0.327 | 38 | 0.818 | 74 | 0.880 | 110 | 0.965 | 146 | 0.854 | 182 | 0.888 | 218 | 0.997 | 254 | 0.852 | 290 | 0.844 | 326 | 0.418 |
| 3 | 0.340 | 39 | 0.823 | 75 | 0.876 | 111 | 0.973 | 147 | 0.857 | 183 | 0.880 | 219 | 0.994 | 255 | 0.857 | 291 | 0.840 | 327 | 0.401 |
| 4 | 0.355 | 40 | 0.828 | 76 | 0.871 | 112 | 0.979 | 148 | 0.862 | 184 | 0.873 | 220 | 0.990 | 256 | 0.862 | 292 | 0.836 | 328 | 0.385 |
| 5 | 0.369 | 41 | 0.832 | 77 | 0.867 | 113 | 0.986 | 149 | 0.867 | 185 | 0.867 | 221 | 0.986 | 257 | 0.867 | 293 | 0.832 | 329 | 0.369 |
| 6 | 0.385 | 42 | 0.836 | 78 | 0.862 | 114 | 0.990 | 150 | 0.873 | 186 | 0.862 | 222 | 0.979 | 258 | 0.871 | 294 | 0.828 | 330 | 0.355 |
| 7 | 0.401 | 43 | 0.840 | 79 | 0.857 | 115 | 0.994 | 151 | 0.880 | 187 | 0.857 | 223 | 0.973 | 259 | 0.876 | 295 | 0.823 | 331 | 0.340 |
| 8 | 0.418 | 44 | 0.844 | 80 | 0.852 | 116 | 0.997 | 152 | 0.888 | 188 | 0.854 | 224 | 0.965 | 260 | 0.880 | 296 | 0.818 | 332 | 0.327 |
| 9 | 0.435 | 45 | 0.848 | 81 | 0.847 | 117 | 0.999 | 153 | 0.895 | 189 | 0.851 | 225 | 0.958 | 261 | 0.883 | 297 | 0.812 | 333 | 0.314 |
| 10 | 0.453 | 46 | 0.851 | 82 | 0.843 | 118 | 1.000 | 154 | 0.904 | 190 | 0.851 | 226 | 0.952 | 262 | 0.886 | 298 | 0.806 | 334 | 0.302 |
| 11 | 0.470 | 47 | 0.854 | 83 | 0.838 | 119 | 1.000 | 155 | 0.912 | 191 | 0.851 | 227 | 0.940 | 263 | 0.889 | 299 | 0.800 | 335 | 0.291 |
| 12 | 0.488 | 48 | 0.857 | 84 | 0.834 | 120 | 0.998 | 156 | 0.920 | 192 | 0.853 | 228 | 0.930 | 264 | 0.892 | 300 | 0.793 | 336 | 0.282 |
| 13 | 0.506 | 49 | 0.861 | 85 | 0.831 | 121 | 0.996 | 157 | 0.928 | 193 | 0.854 | 229 | 0.921 | 265 | 0.894 | 301 | 0.785 | 337 | 0.272 |
| 14 | 0.524 | 50 | 0.864 | 86 | 0.828 | 122 | 0.993 | 158 | 0.935 | 194 | 0.859 | 230 | 0.911 | 266 | 0.895 | 302 | 0.777 | 338 | 0.265 |
| 15 | 0.542 | 51 | 0.867 | 87 | 0.825 | 123 | 0.989 | 159 | 0.943 | 195 | 0.863 | 231 | 0.901 | 267 | 0.896 | 303 | 0.768 | 339 | 0.257 |
| 16 | 0.560 | 52 | 0.870 | 88 | 0.824 | 124 | 0.983 | 160 | 0.949 | 196 | 0.869 | 232 | 0.891 | 268 | 0.896 | 304 | 0.758 | 340 | 0.252 |
| 17 | 0.577 | 53 | 0.873 | 89 | 0.822 | 125 | 0.977 | 161 | 0.956 | 197 | 0.876 | 233 | 0.882 | 269 | 0.896 | 305 | 0.748 | 341 | 0.246 |
| 18 | 0.594 | 54 | 0.876 | 90 | 0.823 | 126 | 0.970 | 162 | 0.961 | 198 | 0.884 | 234 | 0.873 | 270 | 0.896 | 306 | 0.737 | 342 | 0.242 |
| 19 | 0.611 | 55 | 0.879 | 91 | 0.823 | 127 | 0.963 | 163 | 0.965 | 199 | 0.891 | 235 | 0.864 | 271 | 0.895 | 307 | 0.726 | 343 | 0.239 |
| 20 | 0.627 | 56 | 0.881 | 92 | 0.826 | 128 | 0.954 | 164 | 0.968 | 200 | 0.900 | 236 | 0.856 | 272 | 0.894 | 308 | 0.714 | 344 | 0.236 |
| 21 | 0.643 | 57 | 0.884 | 93 | 0.828 | 129 | 0.946 | 165 | 0.971 | 201 | 0.909 | 237 | 0.849 | 273 | 0.893 | 309 | 0.701 | 345 | 0.234 |
| 22 | 0.658 | 58 | 0.886 | 94 | 0.832 | 130 | 0.937 | 166 | 0.972 | 202 | 0.918 | 238 | 0.843 | 274 | 0.891 | 310 | 0.687 | 346 | 0.234 |
| 23 | 0.673 | 59 | 0.889 | 95 | 0.837 | 131 | 0.928 | 167 | 0.973 | 203 | 0.928 | 239 | 0.837 | 275 | 0.889 | 311 | 0.673 | 347 | 0.233 |
| 24 | 0.687 | 60 | 0.891 | 96 | 0.843 | 132 | 0.918 | 168 | 0.972 | 204 | 0.937 | 240 | 0.832 | 276 | 0.886 | 312 | 0.658 | 348 | 0.234 |
| 25 | 0.701 | 61 | 0.893 | 97 | 0.849 | 133 | 0.909 | 169 | 0.971 | 205 | 0.946 | 241 | 0.828 | 277 | 0.884 | 313 | 0.643 | 349 | 0.234 |
| 26 | 0.714 | 62 | 0.894 | 98 | 0.856 | 134 | 0.900 | 170 | 0.968 | 206 | 0.954 | 242 | 0.826 | 278 | 0.881 | 314 | 0.627 | 350 | 0.236 |
| 27 | 0.726 | 63 | 0.895 | 99 | 0.864 | 135 | 0.891 | 171 | 0.965 | 207 | 0.963 | 243 | 0.823 | 279 | 0.878 | 315 | 0.611 | 351 | 0.239 |
| 28 | 0.737 | 64 | 0.896 | 100 | 0.873 | 136 | 0.884 | 172 | 0.961 | 208 | 0.970 | 244 | 0.823 | 280 | 0.876 | 316 | 0.594 | 352 | 0.242 |
| 29 | 0.749 | 65 | 0.896 | 101 | 0.882 | 137 | 0.876 | 173 | 0.956 | 209 | 0.977 | 245 | 0.822 | 281 | 0.873 | 317 | 0.577 | 353 | 0.246 |
| 30 | 0.758 | 66 | 0.896 | 102 | 0.891 | 138 | 0.869 | 174 | 0.949 | 210 | 0.983 | 246 | 0.824 | 282 | 0.870 | 318 | 0.560 | 354 | 0.252 |
| 31 | 0.768 | 67 | 0.896 | 103 | 0.901 | 139 | 0.863 | 175 | 0.943 | 211 | 0.989 | 247 | 0.825 | 283 | 0.867 | 319 | 0.542 | 355 | 0.257 |
| 32 | 0.777 | 68 | 0.895 | 104 | 0.911 | 140 | 0.859 | 176 | 0.935 | 212 | 0.993 | 248 | 0.828 | 284 | 0.864 | 320 | 0.524 | 356 | 0.265 |
| 33 | 0.785 | 69 | 0.894 | 105 | 0.921 | 141 | 0.854 | 177 | 0.928 | 213 | 0.996 | 249 | 0.830 | 285 | 0.861 | 321 | 0.506 | 357 | 0.272 |
| 34 | 0.793 | 70 | 0.892 | 106 | 0.930 | 142 | 0.853 | 178 | 0.920 | 214 | 0.998 | 250 | 0.834 | 286 | 0.857 | 322 | 0.488 | 358 | 0.282 |
| 35 | 0.800 | 71 | 0.889 | 107 | 0.940 | 143 | 0.851 | 179 | 0.912 | 215 | 1.000 | 251 | 0.838 | 287 | 0.854 | 323 | 0.470 | 359 | 0.291 |

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AZIMUTH PATTERN Vertical Polarization



Proposal No. **C-70061-9**
 Date **12-Feb-18**
 Call Letters **WPSG**
 Channel **33**
 Frequency **587 MHz**
 Antenna Type **TFU-24ETT/VP-R 4C150**
 Gain **4.32 (6.36dB)**
 Calculated

TFU-4C150-V-CH33

| Deg | Value |
|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| 0 | 0.099 | 36 | 0.230 | 72 | 0.390 | 108 | 0.436 | 144 | 0.717 | 180 | 0.872 | 216 | 0.421 | 252 | 0.432 | 288 | 0.272 | 324 | 0.094 |
| 1 | 0.096 | 37 | 0.234 | 73 | 0.394 | 109 | 0.433 | 145 | 0.735 | 181 | 0.859 | 217 | 0.421 | 253 | 0.428 | 289 | 0.268 | 325 | 0.092 |
| 2 | 0.094 | 38 | 0.239 | 74 | 0.399 | 110 | 0.431 | 146 | 0.752 | 182 | 0.846 | 218 | 0.421 | 254 | 0.424 | 290 | 0.264 | 326 | 0.091 |
| 3 | 0.092 | 39 | 0.243 | 75 | 0.404 | 111 | 0.428 | 147 | 0.768 | 183 | 0.831 | 219 | 0.422 | 255 | 0.421 | 291 | 0.260 | 327 | 0.090 |
| 4 | 0.091 | 40 | 0.248 | 76 | 0.408 | 112 | 0.426 | 148 | 0.785 | 184 | 0.816 | 220 | 0.423 | 256 | 0.417 | 292 | 0.256 | 328 | 0.090 |
| 5 | 0.090 | 41 | 0.252 | 77 | 0.412 | 113 | 0.424 | 149 | 0.801 | 185 | 0.801 | 221 | 0.424 | 257 | 0.412 | 293 | 0.252 | 329 | 0.090 |
| 6 | 0.090 | 42 | 0.256 | 78 | 0.417 | 114 | 0.423 | 150 | 0.816 | 186 | 0.785 | 222 | 0.426 | 258 | 0.408 | 294 | 0.247 | 330 | 0.091 |
| 7 | 0.090 | 43 | 0.260 | 79 | 0.421 | 115 | 0.422 | 151 | 0.831 | 187 | 0.768 | 223 | 0.428 | 259 | 0.404 | 295 | 0.243 | 331 | 0.092 |
| 8 | 0.091 | 44 | 0.264 | 80 | 0.424 | 116 | 0.421 | 152 | 0.846 | 188 | 0.752 | 224 | 0.431 | 260 | 0.399 | 296 | 0.239 | 332 | 0.094 |
| 9 | 0.092 | 45 | 0.268 | 81 | 0.428 | 117 | 0.421 | 153 | 0.859 | 189 | 0.735 | 225 | 0.433 | 261 | 0.394 | 297 | 0.234 | 333 | 0.096 |
| 10 | 0.094 | 46 | 0.272 | 82 | 0.432 | 118 | 0.422 | 154 | 0.872 | 190 | 0.717 | 226 | 0.436 | 262 | 0.390 | 298 | 0.230 | 334 | 0.099 |
| 11 | 0.097 | 47 | 0.276 | 83 | 0.435 | 119 | 0.423 | 155 | 0.885 | 191 | 0.700 | 227 | 0.438 | 263 | 0.385 | 299 | 0.225 | 335 | 0.101 |
| 12 | 0.101 | 48 | 0.280 | 84 | 0.438 | 120 | 0.425 | 156 | 0.896 | 192 | 0.682 | 228 | 0.441 | 264 | 0.380 | 300 | 0.220 | 336 | 0.104 |
| 13 | 0.105 | 49 | 0.284 | 85 | 0.441 | 121 | 0.427 | 157 | 0.907 | 193 | 0.665 | 229 | 0.443 | 265 | 0.375 | 301 | 0.216 | 337 | 0.106 |
| 14 | 0.109 | 50 | 0.288 | 86 | 0.444 | 122 | 0.431 | 158 | 0.916 | 194 | 0.648 | 230 | 0.445 | 266 | 0.370 | 302 | 0.210 | 338 | 0.109 |
| 15 | 0.114 | 51 | 0.292 | 87 | 0.446 | 123 | 0.436 | 159 | 0.925 | 195 | 0.630 | 231 | 0.447 | 267 | 0.365 | 303 | 0.205 | 339 | 0.111 |
| 16 | 0.119 | 52 | 0.296 | 88 | 0.448 | 124 | 0.441 | 160 | 0.933 | 196 | 0.613 | 232 | 0.449 | 268 | 0.361 | 304 | 0.200 | 340 | 0.114 |
| 17 | 0.124 | 53 | 0.301 | 89 | 0.450 | 125 | 0.448 | 161 | 0.940 | 197 | 0.597 | 233 | 0.451 | 269 | 0.356 | 305 | 0.195 | 341 | 0.115 |
| 18 | 0.130 | 54 | 0.305 | 90 | 0.452 | 126 | 0.456 | 162 | 0.946 | 198 | 0.581 | 234 | 0.452 | 270 | 0.351 | 306 | 0.189 | 342 | 0.117 |
| 19 | 0.136 | 55 | 0.309 | 91 | 0.453 | 127 | 0.464 | 163 | 0.951 | 199 | 0.565 | 235 | 0.454 | 271 | 0.346 | 307 | 0.183 | 343 | 0.119 |
| 20 | 0.142 | 56 | 0.314 | 92 | 0.454 | 128 | 0.474 | 164 | 0.954 | 200 | 0.550 | 236 | 0.455 | 272 | 0.341 | 308 | 0.178 | 344 | 0.120 |
| 21 | 0.148 | 57 | 0.318 | 93 | 0.455 | 129 | 0.484 | 165 | 0.957 | 201 | 0.535 | 237 | 0.455 | 273 | 0.336 | 309 | 0.172 | 345 | 0.121 |
| 22 | 0.154 | 58 | 0.322 | 94 | 0.456 | 130 | 0.496 | 166 | 0.959 | 202 | 0.521 | 238 | 0.456 | 274 | 0.332 | 310 | 0.166 | 346 | 0.121 |
| 23 | 0.160 | 59 | 0.327 | 95 | 0.456 | 131 | 0.508 | 167 | 0.959 | 203 | 0.508 | 239 | 0.456 | 275 | 0.327 | 311 | 0.160 | 347 | 0.121 |
| 24 | 0.166 | 60 | 0.332 | 96 | 0.456 | 132 | 0.521 | 168 | 0.959 | 204 | 0.496 | 240 | 0.456 | 276 | 0.323 | 312 | 0.154 | 348 | 0.121 |
| 25 | 0.172 | 61 | 0.336 | 97 | 0.455 | 133 | 0.535 | 169 | 0.957 | 205 | 0.484 | 241 | 0.455 | 277 | 0.318 | 313 | 0.148 | 349 | 0.121 |
| 26 | 0.178 | 62 | 0.341 | 98 | 0.455 | 134 | 0.550 | 170 | 0.954 | 206 | 0.474 | 242 | 0.454 | 278 | 0.314 | 314 | 0.142 | 350 | 0.120 |
| 27 | 0.183 | 63 | 0.346 | 99 | 0.454 | 135 | 0.565 | 171 | 0.951 | 207 | 0.464 | 243 | 0.453 | 279 | 0.309 | 315 | 0.136 | 351 | 0.119 |
| 28 | 0.189 | 64 | 0.351 | 100 | 0.452 | 136 | 0.581 | 172 | 0.946 | 208 | 0.456 | 244 | 0.452 | 280 | 0.305 | 316 | 0.130 | 352 | 0.117 |
| 29 | 0.195 | 65 | 0.356 | 101 | 0.451 | 137 | 0.597 | 173 | 0.940 | 209 | 0.448 | 245 | 0.450 | 281 | 0.301 | 317 | 0.124 | 353 | 0.115 |
| 30 | 0.200 | 66 | 0.361 | 102 | 0.449 | 138 | 0.613 | 174 | 0.933 | 210 | 0.441 | 246 | 0.448 | 282 | 0.296 | 318 | 0.119 | 354 | 0.113 |
| 31 | 0.205 | 67 | 0.365 | 103 | 0.447 | 139 | 0.630 | 175 | 0.925 | 211 | 0.436 | 247 | 0.446 | 283 | 0.292 | 319 | 0.114 | 355 | 0.111 |
| 32 | 0.211 | 68 | 0.370 | 104 | 0.445 | 140 | 0.648 | 176 | 0.916 | 212 | 0.431 | 248 | 0.444 | 284 | 0.288 | 320 | 0.109 | 356 | 0.109 |
| 33 | 0.216 | 69 | 0.375 | 105 | 0.443 | 141 | 0.665 | 177 | 0.907 | 213 | 0.427 | 249 | 0.441 | 285 | 0.284 | 321 | 0.105 | 357 | 0.106 |
| 34 | 0.220 | 70 | 0.380 | 106 | 0.441 | 142 | 0.682 | 178 | 0.896 | 214 | 0.425 | 250 | 0.438 | 286 | 0.280 | 322 | 0.101 | 358 | 0.104 |
| 35 | 0.225 | 71 | 0.385 | 107 | 0.438 | 143 | 0.700 | 179 | 0.885 | 215 | 0.423 | 251 | 0.435 | 287 | 0.276 | 323 | 0.097 | 359 | 0.101 |

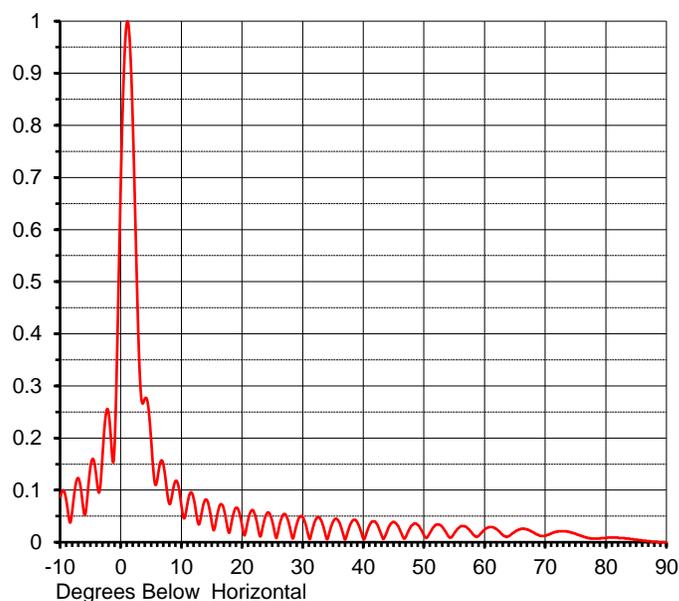
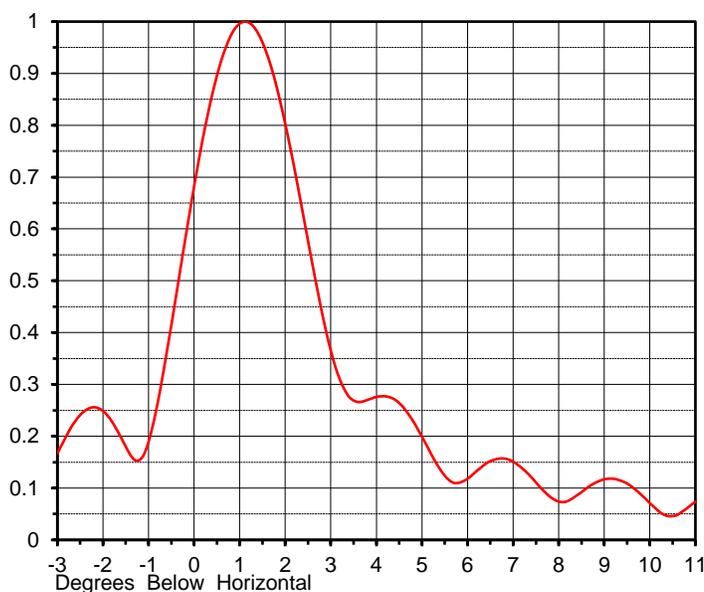
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ELEVATION PATTERN

Proposal No. **C-70061-9**
 Date **12-Feb-18**
 Call Letters **WPSG**
 Channel **33**
 Frequency **587 MHz**
 Antenna Type **TFU-24ETT/VP-R 4C150**

RMS Directivity at Main Lobe **24.2 (13.84 dB)**
 RMS Directivity at Horizontal **12.9 (11.11 dB)**
Calculated

Beam Tilt **1.00 deg**
 Pattern Number **24E242100**



| Angle | Field |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| -10.0 | 0.087 | 10.0 | 0.063 | 30.0 | 0.047 | 50.0 | 0.012 | 70.0 | 0.013 |
| -9.0 | 0.075 | 11.0 | 0.080 | 31.0 | 0.007 | 51.0 | 0.020 | 71.0 | 0.017 |
| -8.0 | 0.069 | 12.0 | 0.080 | 32.0 | 0.042 | 52.0 | 0.034 | 72.0 | 0.021 |
| -7.0 | 0.121 | 13.0 | 0.041 | 33.0 | 0.041 | 53.0 | 0.028 | 73.0 | 0.021 |
| -6.0 | 0.052 | 14.0 | 0.082 | 34.0 | 0.006 | 54.0 | 0.011 | 74.0 | 0.019 |
| -5.0 | 0.151 | 15.0 | 0.033 | 35.0 | 0.041 | 55.0 | 0.019 | 75.0 | 0.016 |
| -4.0 | 0.114 | 16.0 | 0.062 | 36.0 | 0.037 | 56.0 | 0.031 | 76.0 | 0.012 |
| -3.0 | 0.184 | 17.0 | 0.059 | 37.0 | 0.007 | 57.0 | 0.028 | 77.0 | 0.008 |
| -2.0 | 0.240 | 18.0 | 0.027 | 38.0 | 0.039 | 58.0 | 0.015 | 78.0 | 0.007 |
| -1.0 | 0.223 | 19.0 | 0.066 | 39.0 | 0.036 | 59.0 | 0.013 | 79.0 | 0.007 |
| 0.0 | 0.731 | 20.0 | 0.027 | 40.0 | 0.006 | 60.0 | 0.025 | 80.0 | 0.008 |
| 1.0 | 1.000 | 21.0 | 0.047 | 41.0 | 0.034 | 61.0 | 0.029 | 81.0 | 0.009 |
| 2.0 | 0.761 | 22.0 | 0.054 | 42.0 | 0.037 | 62.0 | 0.024 | 82.0 | 0.008 |
| 3.0 | 0.334 | 23.0 | 0.012 | 43.0 | 0.011 | 63.0 | 0.013 | 83.0 | 0.008 |
| 4.0 | 0.277 | 24.0 | 0.055 | 44.0 | 0.026 | 64.0 | 0.012 | 84.0 | 0.006 |
| 5.0 | 0.183 | 25.0 | 0.035 | 45.0 | 0.039 | 65.0 | 0.021 | 85.0 | 0.005 |
| 6.0 | 0.125 | 26.0 | 0.028 | 46.0 | 0.022 | 66.0 | 0.026 | 86.0 | 0.003 |
| 7.0 | 0.145 | 27.0 | 0.054 | 47.0 | 0.012 | 67.0 | 0.024 | 87.0 | 0.002 |
| 8.0 | 0.073 | 28.0 | 0.018 | 48.0 | 0.033 | 68.0 | 0.019 | 88.0 | 0.001 |
| 9.0 | 0.118 | 29.0 | 0.037 | 49.0 | 0.032 | 69.0 | 0.013 | 89.0 | 0.000 |
| | | | | | | | | 90.0 | 0.000 |

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