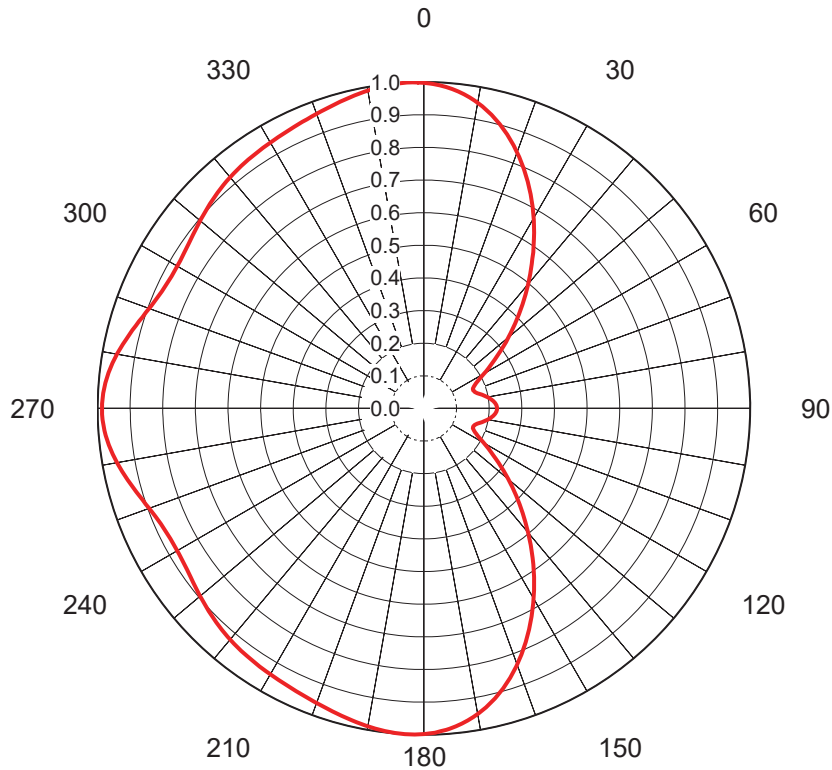


AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C70575-2**
 Date **12-Apr-17**
 Call Letters **WPXE**
 Channel **30**
 Frequency **569 MHz**
 Antenna Type **TFU-22ETT/VP-R 4C160**
 Gain **1.64 (2.16dB)**
 Calculated

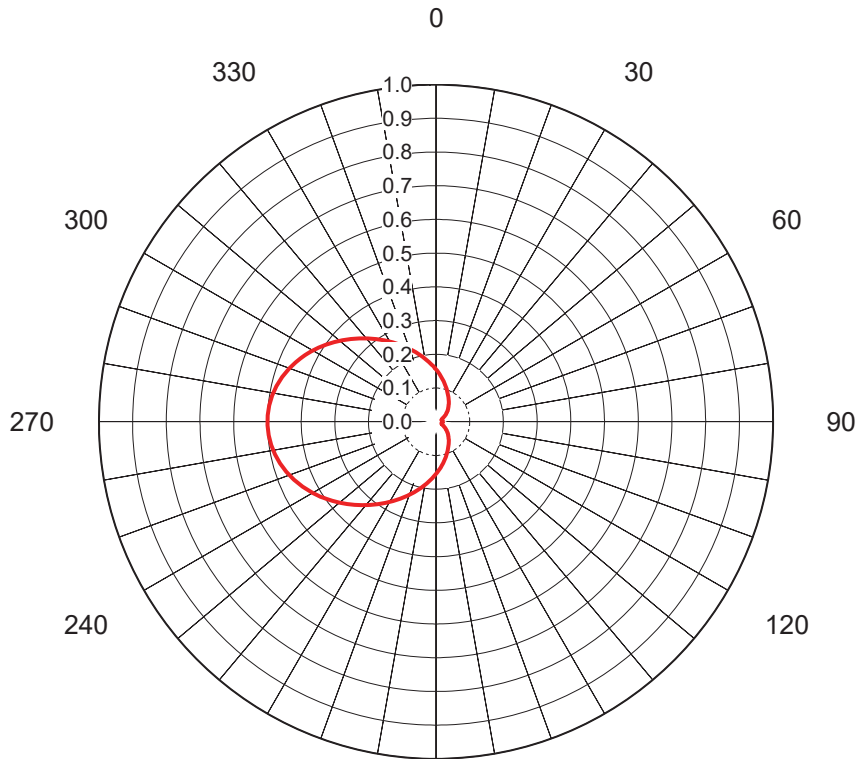


| Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value |
|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| 0 | 0.998 | 36 | 0.566 | 72 | 0.164 | 108 | 0.164 | 144 | 0.566 | 180 | 0.998 | 216 | 0.932 | 252 | 0.907 | 288 | 0.907 | 324 | 0.932 |
| 1 | 0.996 | 37 | 0.549 | 73 | 0.167 | 109 | 0.163 | 145 | 0.584 | 181 | 0.999 | 217 | 0.930 | 253 | 0.913 | 289 | 0.901 | 325 | 0.934 |
| 2 | 0.994 | 38 | 0.531 | 74 | 0.171 | 110 | 0.161 | 146 | 0.602 | 182 | 1.000 | 218 | 0.928 | 254 | 0.919 | 290 | 0.896 | 326 | 0.935 |
| 3 | 0.991 | 39 | 0.514 | 75 | 0.175 | 111 | 0.162 | 147 | 0.619 | 183 | 1.000 | 219 | 0.926 | 255 | 0.925 | 291 | 0.891 | 327 | 0.937 |
| 4 | 0.987 | 40 | 0.497 | 76 | 0.179 | 112 | 0.162 | 148 | 0.637 | 184 | 1.000 | 220 | 0.924 | 256 | 0.931 | 292 | 0.887 | 328 | 0.938 |
| 5 | 0.983 | 41 | 0.480 | 77 | 0.184 | 113 | 0.165 | 149 | 0.655 | 185 | 0.999 | 221 | 0.922 | 257 | 0.937 | 293 | 0.883 | 329 | 0.939 |
| 6 | 0.978 | 42 | 0.463 | 78 | 0.189 | 114 | 0.168 | 150 | 0.672 | 186 | 0.998 | 222 | 0.919 | 258 | 0.943 | 294 | 0.880 | 330 | 0.941 |
| 7 | 0.972 | 43 | 0.447 | 79 | 0.193 | 115 | 0.173 | 151 | 0.690 | 187 | 0.996 | 223 | 0.917 | 259 | 0.949 | 295 | 0.877 | 331 | 0.942 |
| 8 | 0.966 | 44 | 0.430 | 80 | 0.198 | 116 | 0.179 | 152 | 0.707 | 188 | 0.994 | 224 | 0.914 | 260 | 0.955 | 296 | 0.875 | 332 | 0.944 |
| 9 | 0.959 | 45 | 0.414 | 81 | 0.202 | 117 | 0.186 | 153 | 0.724 | 189 | 0.992 | 225 | 0.911 | 261 | 0.960 | 297 | 0.874 | 333 | 0.946 |
| 10 | 0.951 | 46 | 0.398 | 82 | 0.207 | 118 | 0.193 | 154 | 0.741 | 190 | 0.989 | 226 | 0.908 | 262 | 0.966 | 298 | 0.872 | 334 | 0.947 |
| 11 | 0.942 | 47 | 0.383 | 83 | 0.211 | 119 | 0.203 | 155 | 0.758 | 191 | 0.987 | 227 | 0.905 | 263 | 0.970 | 299 | 0.872 | 335 | 0.949 |
| 12 | 0.933 | 48 | 0.368 | 84 | 0.214 | 120 | 0.212 | 156 | 0.774 | 192 | 0.984 | 228 | 0.901 | 264 | 0.974 | 300 | 0.872 | 336 | 0.951 |
| 13 | 0.923 | 49 | 0.353 | 85 | 0.217 | 121 | 0.222 | 157 | 0.790 | 193 | 0.981 | 229 | 0.898 | 265 | 0.978 | 301 | 0.873 | 337 | 0.954 |
| 14 | 0.913 | 50 | 0.338 | 86 | 0.220 | 122 | 0.233 | 158 | 0.806 | 194 | 0.978 | 230 | 0.895 | 266 | 0.981 | 302 | 0.874 | 338 | 0.956 |
| 15 | 0.901 | 51 | 0.324 | 87 | 0.222 | 123 | 0.245 | 159 | 0.821 | 195 | 0.975 | 231 | 0.892 | 267 | 0.983 | 303 | 0.876 | 339 | 0.958 |
| 16 | 0.889 | 52 | 0.309 | 88 | 0.223 | 124 | 0.257 | 160 | 0.836 | 196 | 0.972 | 232 | 0.888 | 268 | 0.985 | 304 | 0.877 | 340 | 0.961 |
| 17 | 0.877 | 53 | 0.296 | 89 | 0.224 | 125 | 0.270 | 161 | 0.850 | 197 | 0.969 | 233 | 0.885 | 269 | 0.986 | 305 | 0.880 | 341 | 0.964 |
| 18 | 0.864 | 54 | 0.282 | 90 | 0.225 | 126 | 0.282 | 162 | 0.864 | 198 | 0.966 | 234 | 0.882 | 270 | 0.986 | 306 | 0.882 | 342 | 0.966 |
| 19 | 0.850 | 55 | 0.270 | 91 | 0.224 | 127 | 0.296 | 163 | 0.877 | 199 | 0.964 | 235 | 0.880 | 271 | 0.986 | 307 | 0.885 | 343 | 0.969 |
| 20 | 0.836 | 56 | 0.257 | 92 | 0.223 | 128 | 0.309 | 164 | 0.890 | 200 | 0.961 | 236 | 0.877 | 272 | 0.985 | 308 | 0.888 | 344 | 0.972 |
| 21 | 0.821 | 57 | 0.245 | 93 | 0.222 | 129 | 0.324 | 165 | 0.901 | 201 | 0.958 | 237 | 0.876 | 273 | 0.983 | 309 | 0.892 | 345 | 0.975 |
| 22 | 0.806 | 58 | 0.233 | 94 | 0.220 | 130 | 0.338 | 166 | 0.913 | 202 | 0.956 | 238 | 0.874 | 274 | 0.981 | 310 | 0.895 | 346 | 0.978 |
| 23 | 0.790 | 59 | 0.222 | 95 | 0.217 | 131 | 0.353 | 167 | 0.923 | 203 | 0.954 | 239 | 0.873 | 275 | 0.978 | 311 | 0.898 | 347 | 0.981 |
| 24 | 0.774 | 60 | 0.212 | 96 | 0.214 | 132 | 0.368 | 168 | 0.933 | 204 | 0.951 | 240 | 0.872 | 276 | 0.974 | 312 | 0.901 | 348 | 0.984 |
| 25 | 0.758 | 61 | 0.203 | 97 | 0.211 | 133 | 0.383 | 169 | 0.942 | 205 | 0.949 | 241 | 0.872 | 277 | 0.970 | 313 | 0.905 | 349 | 0.987 |
| 26 | 0.741 | 62 | 0.193 | 98 | 0.207 | 134 | 0.398 | 170 | 0.951 | 206 | 0.947 | 242 | 0.872 | 278 | 0.966 | 314 | 0.908 | 350 | 0.989 |
| 27 | 0.724 | 63 | 0.186 | 99 | 0.202 | 135 | 0.414 | 171 | 0.959 | 207 | 0.946 | 243 | 0.874 | 279 | 0.960 | 315 | 0.911 | 351 | 0.992 |
| 28 | 0.707 | 64 | 0.179 | 100 | 0.198 | 136 | 0.430 | 172 | 0.966 | 208 | 0.944 | 244 | 0.875 | 280 | 0.955 | 316 | 0.914 | 352 | 0.994 |
| 29 | 0.690 | 65 | 0.173 | 101 | 0.193 | 137 | 0.447 | 173 | 0.972 | 209 | 0.942 | 245 | 0.877 | 281 | 0.949 | 317 | 0.917 | 353 | 0.996 |
| 30 | 0.672 | 66 | 0.168 | 102 | 0.189 | 138 | 0.463 | 174 | 0.978 | 210 | 0.941 | 246 | 0.880 | 282 | 0.943 | 318 | 0.919 | 354 | 0.998 |
| 31 | 0.655 | 67 | 0.165 | 103 | 0.184 | 139 | 0.480 | 175 | 0.983 | 211 | 0.939 | 247 | 0.883 | 283 | 0.937 | 319 | 0.922 | 355 | 0.999 |
| 32 | 0.637 | 68 | 0.162 | 104 | 0.179 | 140 | 0.497 | 176 | 0.988 | 212 | 0.938 | 248 | 0.887 | 284 | 0.931 | 320 | 0.924 | 356 | 1.000 |
| 33 | 0.619 | 69 | 0.162 | 105 | 0.175 | 141 | 0.514 | 177 | 0.991 | 213 | 0.937 | 249 | 0.891 | 285 | 0.925 | 321 | 0.926 | 357 | 1.000 |
| 34 | 0.602 | 70 | 0.161 | 106 | 0.171 | 142 | 0.531 | 178 | 0.994 | 214 | 0.935 | 250 | 0.896 | 286 | 0.919 | 322 | 0.928 | 358 | 1.000 |
| 35 | 0.584 | 71 | 0.163 | 107 | 0.167 | 143 | 0.549 | 179 | 0.996 | 215 | 0.934 | 251 | 0.901 | 287 | 0.913 | 323 | 0.930 | 359 | 0.999 |

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AZIMUTH PATTERN Vertical Polarization

Proposal No. **C70575-2**
 Date **12-Apr-17**
 Call Letters **WPXE**
 Channel **30**
 Frequency **569 MHz**
 Antenna Type **TFU-22ETT/VP-R 4C160**
 Gain **3.67 (5.64dB)**
 Calculated



| Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value |
|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| 0 | 0.155 | 36 | 0.064 | 72 | 0.017 | 108 | 0.017 | 144 | 0.065 | 180 | 0.155 | 216 | 0.303 | 252 | 0.470 | 288 | 0.470 | 324 | 0.303 |
| 1 | 0.152 | 37 | 0.063 | 73 | 0.017 | 109 | 0.017 | 145 | 0.066 | 181 | 0.159 | 217 | 0.308 | 253 | 0.473 | 289 | 0.466 | 325 | 0.298 |
| 2 | 0.149 | 38 | 0.061 | 74 | 0.017 | 110 | 0.018 | 146 | 0.068 | 182 | 0.162 | 218 | 0.313 | 254 | 0.476 | 290 | 0.463 | 326 | 0.293 |
| 3 | 0.145 | 39 | 0.059 | 75 | 0.017 | 111 | 0.018 | 147 | 0.070 | 183 | 0.166 | 219 | 0.318 | 255 | 0.479 | 291 | 0.459 | 327 | 0.289 |
| 4 | 0.142 | 40 | 0.057 | 76 | 0.017 | 112 | 0.019 | 148 | 0.071 | 184 | 0.169 | 220 | 0.323 | 256 | 0.481 | 292 | 0.456 | 328 | 0.284 |
| 5 | 0.139 | 41 | 0.056 | 77 | 0.017 | 113 | 0.019 | 149 | 0.073 | 185 | 0.173 | 221 | 0.328 | 257 | 0.484 | 293 | 0.452 | 329 | 0.279 |
| 6 | 0.136 | 42 | 0.054 | 78 | 0.018 | 114 | 0.020 | 150 | 0.075 | 186 | 0.176 | 222 | 0.333 | 258 | 0.486 | 294 | 0.448 | 330 | 0.274 |
| 7 | 0.133 | 43 | 0.052 | 79 | 0.018 | 115 | 0.021 | 151 | 0.077 | 187 | 0.180 | 223 | 0.338 | 259 | 0.488 | 295 | 0.444 | 331 | 0.270 |
| 8 | 0.130 | 44 | 0.051 | 80 | 0.018 | 116 | 0.022 | 152 | 0.079 | 188 | 0.183 | 224 | 0.343 | 260 | 0.490 | 296 | 0.440 | 332 | 0.265 |
| 9 | 0.127 | 45 | 0.049 | 81 | 0.018 | 117 | 0.023 | 153 | 0.081 | 189 | 0.187 | 225 | 0.348 | 261 | 0.492 | 297 | 0.435 | 333 | 0.261 |
| 10 | 0.124 | 46 | 0.048 | 82 | 0.019 | 118 | 0.024 | 154 | 0.083 | 190 | 0.191 | 226 | 0.353 | 262 | 0.494 | 298 | 0.431 | 334 | 0.256 |
| 11 | 0.121 | 47 | 0.046 | 83 | 0.019 | 119 | 0.025 | 155 | 0.086 | 191 | 0.195 | 227 | 0.358 | 263 | 0.495 | 299 | 0.427 | 335 | 0.252 |
| 12 | 0.118 | 48 | 0.044 | 84 | 0.019 | 120 | 0.027 | 156 | 0.088 | 192 | 0.198 | 228 | 0.363 | 264 | 0.496 | 300 | 0.422 | 336 | 0.247 |
| 13 | 0.115 | 49 | 0.043 | 85 | 0.019 | 121 | 0.028 | 157 | 0.090 | 193 | 0.202 | 229 | 0.368 | 265 | 0.498 | 301 | 0.417 | 337 | 0.243 |
| 14 | 0.113 | 50 | 0.041 | 86 | 0.020 | 122 | 0.029 | 158 | 0.092 | 194 | 0.206 | 230 | 0.373 | 266 | 0.498 | 302 | 0.413 | 338 | 0.239 |
| 15 | 0.110 | 51 | 0.040 | 87 | 0.020 | 123 | 0.031 | 159 | 0.095 | 195 | 0.210 | 231 | 0.379 | 267 | 0.499 | 303 | 0.408 | 339 | 0.234 |
| 16 | 0.107 | 52 | 0.038 | 88 | 0.020 | 124 | 0.032 | 160 | 0.097 | 196 | 0.214 | 232 | 0.384 | 268 | 0.500 | 304 | 0.403 | 340 | 0.230 |
| 17 | 0.105 | 53 | 0.037 | 89 | 0.020 | 125 | 0.034 | 161 | 0.100 | 197 | 0.218 | 233 | 0.388 | 269 | 0.500 | 305 | 0.398 | 341 | 0.226 |
| 18 | 0.102 | 54 | 0.035 | 90 | 0.020 | 126 | 0.035 | 162 | 0.102 | 198 | 0.222 | 234 | 0.393 | 270 | 0.500 | 306 | 0.393 | 342 | 0.222 |
| 19 | 0.100 | 55 | 0.034 | 91 | 0.020 | 127 | 0.037 | 163 | 0.105 | 199 | 0.226 | 235 | 0.398 | 271 | 0.500 | 307 | 0.388 | 343 | 0.218 |
| 20 | 0.097 | 56 | 0.032 | 92 | 0.020 | 128 | 0.038 | 164 | 0.107 | 200 | 0.230 | 236 | 0.403 | 272 | 0.500 | 308 | 0.383 | 344 | 0.214 |
| 21 | 0.095 | 57 | 0.031 | 93 | 0.020 | 129 | 0.040 | 165 | 0.110 | 201 | 0.234 | 237 | 0.408 | 273 | 0.499 | 309 | 0.378 | 345 | 0.210 |
| 22 | 0.092 | 58 | 0.029 | 94 | 0.020 | 130 | 0.041 | 166 | 0.113 | 202 | 0.239 | 238 | 0.413 | 274 | 0.498 | 310 | 0.373 | 346 | 0.206 |
| 23 | 0.090 | 59 | 0.028 | 95 | 0.019 | 131 | 0.043 | 167 | 0.115 | 203 | 0.243 | 239 | 0.417 | 275 | 0.498 | 311 | 0.368 | 347 | 0.202 |
| 24 | 0.088 | 60 | 0.027 | 96 | 0.019 | 132 | 0.045 | 168 | 0.118 | 204 | 0.247 | 240 | 0.422 | 276 | 0.496 | 312 | 0.363 | 348 | 0.198 |
| 25 | 0.086 | 61 | 0.025 | 97 | 0.019 | 133 | 0.046 | 169 | 0.121 | 205 | 0.252 | 241 | 0.427 | 277 | 0.495 | 313 | 0.358 | 349 | 0.194 |
| 26 | 0.083 | 62 | 0.024 | 98 | 0.019 | 134 | 0.048 | 170 | 0.124 | 206 | 0.256 | 242 | 0.431 | 278 | 0.494 | 314 | 0.353 | 350 | 0.191 |
| 27 | 0.081 | 63 | 0.023 | 99 | 0.018 | 135 | 0.049 | 171 | 0.127 | 207 | 0.261 | 243 | 0.435 | 279 | 0.492 | 315 | 0.348 | 351 | 0.187 |
| 28 | 0.079 | 64 | 0.022 | 100 | 0.018 | 136 | 0.051 | 172 | 0.130 | 208 | 0.265 | 244 | 0.440 | 280 | 0.490 | 316 | 0.343 | 352 | 0.183 |
| 29 | 0.077 | 65 | 0.021 | 101 | 0.018 | 137 | 0.053 | 173 | 0.133 | 209 | 0.270 | 245 | 0.444 | 281 | 0.488 | 317 | 0.338 | 353 | 0.180 |
| 30 | 0.075 | 66 | 0.020 | 102 | 0.018 | 138 | 0.054 | 174 | 0.136 | 210 | 0.274 | 246 | 0.448 | 282 | 0.486 | 318 | 0.333 | 354 | 0.176 |
| 31 | 0.073 | 67 | 0.019 | 103 | 0.017 | 139 | 0.056 | 175 | 0.139 | 211 | 0.279 | 247 | 0.452 | 283 | 0.484 | 319 | 0.328 | 355 | 0.173 |
| 32 | 0.071 | 68 | 0.019 | 104 | 0.017 | 140 | 0.057 | 176 | 0.142 | 212 | 0.284 | 248 | 0.456 | 284 | 0.481 | 320 | 0.323 | 356 | 0.169 |
| 33 | 0.070 | 69 | 0.018 | 105 | 0.017 | 141 | 0.059 | 177 | 0.145 | 213 | 0.289 | 249 | 0.459 | 285 | 0.479 | 321 | 0.318 | 357 | 0.166 |
| 34 | 0.068 | 70 | 0.018 | 106 | 0.017 | 142 | 0.061 | 178 | 0.149 | 214 | 0.293 | 250 | 0.463 | 286 | 0.476 | 322 | 0.313 | 358 | 0.162 |
| 35 | 0.066 | 71 | 0.017 | 107 | 0.017 | 143 | 0.063 | 179 | 0.152 | 215 | 0.298 | 251 | 0.466 | 287 | 0.473 | 323 | 0.308 | 359 | 0.159 |

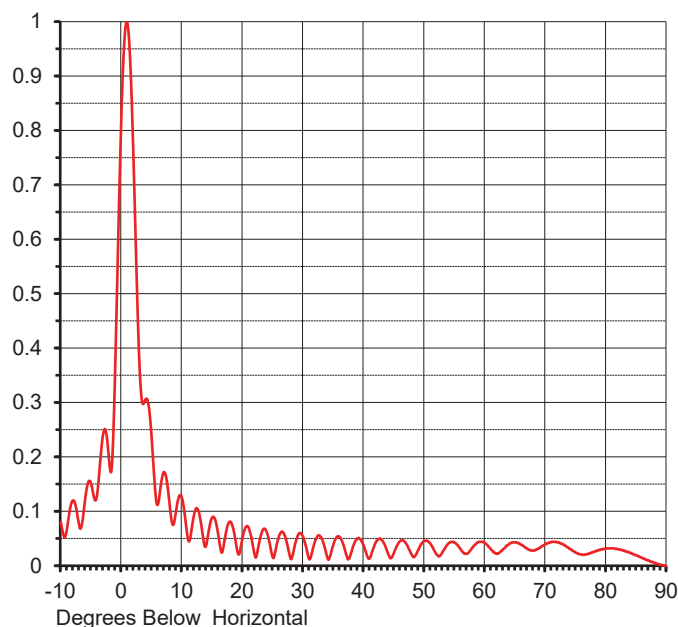
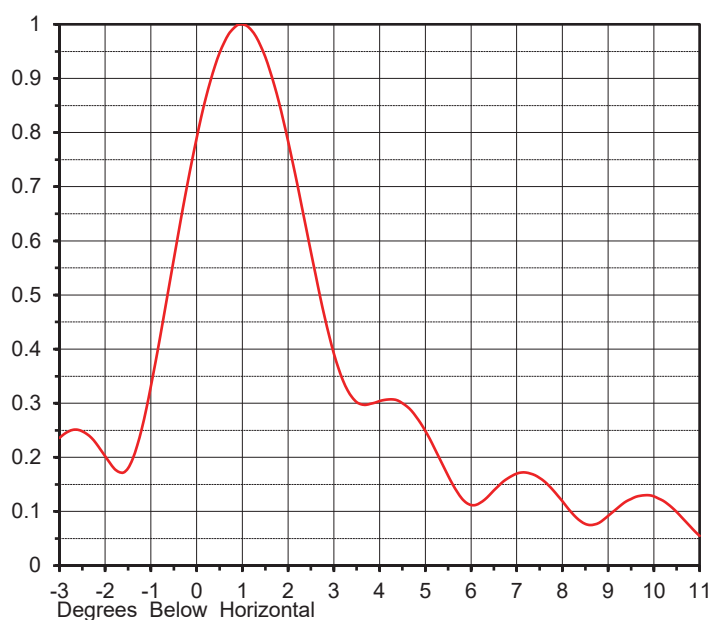
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ELEVATION PATTERN

Proposal No. **C70575-2**
 Date **12-Apr-17**
 Call Letters **WPXE**
 Channel **30**
 Frequency **569 MHz**
 Antenna Type **TFU-22ETT/VP-R 4C160**

RMS Directivity at Main Lobe **21.2 (13.26 dB)**
 RMS Directivity at Horizontal **14.6 (11.64 dB)**
Calculated

Beam Tilt **0.90 deg**
 Pattern Number **22E212090**



| Angle | Field | Angle | Field | Angle | Field | Angle | Field | Angle | Field |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| -10.0 | 0.080 | 10.0 | 0.124 | 30.0 | 0.053 | 50.0 | 0.046 | 70.0 | 0.040 |
| -9.0 | 0.067 | 11.0 | 0.049 | 31.0 | 0.012 | 51.0 | 0.041 | 71.0 | 0.044 |
| -8.0 | 0.120 | 12.0 | 0.094 | 32.0 | 0.046 | 52.0 | 0.021 | 72.0 | 0.043 |
| -7.0 | 0.076 | 13.0 | 0.087 | 33.0 | 0.052 | 53.0 | 0.025 | 73.0 | 0.039 |
| -6.0 | 0.121 | 14.0 | 0.038 | 34.0 | 0.015 | 54.0 | 0.041 | 74.0 | 0.031 |
| -5.0 | 0.150 | 15.0 | 0.089 | 35.0 | 0.039 | 55.0 | 0.043 | 75.0 | 0.024 |
| -4.0 | 0.132 | 16.0 | 0.056 | 36.0 | 0.053 | 56.0 | 0.030 | 76.0 | 0.021 |
| -3.0 | 0.243 | 17.0 | 0.045 | 37.0 | 0.025 | 57.0 | 0.022 | 77.0 | 0.022 |
| -2.0 | 0.190 | 18.0 | 0.081 | 38.0 | 0.026 | 58.0 | 0.034 | 78.0 | 0.026 |
| -1.0 | 0.376 | 19.0 | 0.035 | 39.0 | 0.050 | 59.0 | 0.044 | 79.0 | 0.029 |
| 0.0 | 0.829 | 20.0 | 0.052 | 40.0 | 0.037 | 60.0 | 0.042 | 80.0 | 0.032 |
| 1.0 | 0.997 | 21.0 | 0.070 | 41.0 | 0.014 | 61.0 | 0.030 | 81.0 | 0.032 |
| 2.0 | 0.745 | 22.0 | 0.020 | 42.0 | 0.043 | 62.0 | 0.022 | 82.0 | 0.030 |
| 3.0 | 0.365 | 23.0 | 0.055 | 43.0 | 0.047 | 63.0 | 0.030 | 83.0 | 0.028 |
| 4.0 | 0.306 | 24.0 | 0.062 | 44.0 | 0.023 | 64.0 | 0.040 | 84.0 | 0.024 |
| 5.0 | 0.234 | 25.0 | 0.015 | 45.0 | 0.024 | 65.0 | 0.043 | 85.0 | 0.019 |
| 6.0 | 0.112 | 26.0 | 0.054 | 46.0 | 0.045 | 66.0 | 0.039 | 86.0 | 0.014 |
| 7.0 | 0.172 | 27.0 | 0.055 | 47.0 | 0.041 | 67.0 | 0.031 | 87.0 | 0.010 |
| 8.0 | 0.108 | 28.0 | 0.012 | 48.0 | 0.019 | 68.0 | 0.028 | 88.0 | 0.005 |
| 9.0 | 0.099 | 29.0 | 0.052 | 49.0 | 0.029 | 69.0 | 0.033 | 89.0 | 0.002 |
| | | | | | | | | 90.0 | 0.000 |

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