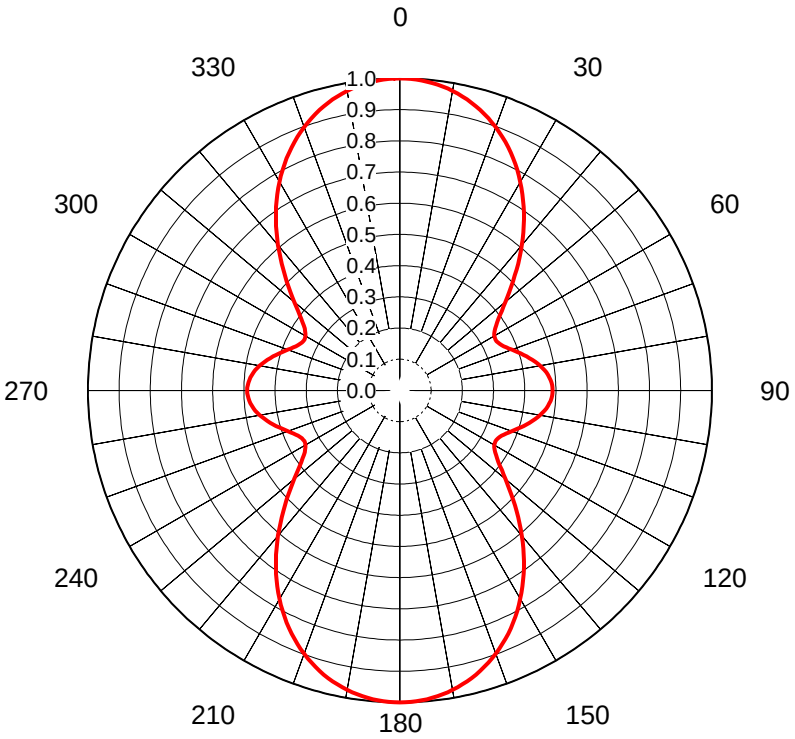



# AZIMUTH PATTERN
## Horizontal Polarization

In Free Space

| | |
|---|---|
| Proposal No. | **C-70958** |
| Date | **25-Aug-17** |
| Call Letters | **WHDT** |
| Channel | **34** |
| Frequency | **593 MHz** |
| Antenna Type | **TFU-27JSC/VP-R P220** |
| Gain | **2.24 (3.51dB)** |
| | Calculated |

| Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.000 | 36 | 0.676 | 72 | 0.397 | 108 | 0.397 | 144 | 0.676 | 180 | 1.000 | 216 | 0.676 | 252 | 0.397 | 288 | 0.397 | 324 | 0.676 |
| 1 | 1.000 | 37 | 0.659 | 73 | 0.405 | 109 | 0.389 | 145 | 0.693 | 181 | 1.000 | 217 | 0.659 | 253 | 0.405 | 289 | 0.389 | 325 | 0.693 |
| 2 | 0.999 | 38 | 0.642 | 74 | 0.413 | 110 | 0.382 | 146 | 0.709 | 182 | 0.999 | 218 | 0.642 | 254 | 0.413 | 290 | 0.382 | 326 | 0.709 |
| 3 | 0.998 | 39 | 0.625 | 75 | 0.421 | 111 | 0.375 | 147 | 0.725 | 183 | 0.998 | 219 | 0.625 | 255 | 0.421 | 291 | 0.375 | 327 | 0.725 |
| 4 | 0.996 | 40 | 0.608 | 76 | 0.428 | 112 | 0.368 | 148 | 0.741 | 184 | 0.996 | 220 | 0.608 | 256 | 0.428 | 292 | 0.368 | 328 | 0.741 |
| 5 | 0.994 | 41 | 0.590 | 77 | 0.436 | 113 | 0.362 | 149 | 0.757 | 185 | 0.994 | 221 | 0.590 | 257 | 0.436 | 293 | 0.362 | 329 | 0.757 |
| 6 | 0.991 | 42 | 0.573 | 78 | 0.443 | 114 | 0.357 | 150 | 0.772 | 186 | 0.991 | 222 | 0.573 | 258 | 0.443 | 294 | 0.357 | 330 | 0.772 |
| 7 | 0.988 | 43 | 0.555 | 79 | 0.450 | 115 | 0.353 | 151 | 0.786 | 187 | 0.988 | 223 | 0.555 | 259 | 0.450 | 295 | 0.353 | 331 | 0.786 |
| 8 | 0.984 | 44 | 0.538 | 80 | 0.456 | 116 | 0.350 | 152 | 0.801 | 188 | 0.984 | 224 | 0.538 | 260 | 0.456 | 296 | 0.350 | 332 | 0.801 |
| 9 | 0.979 | 45 | 0.521 | 81 | 0.462 | 117 | 0.348 | 153 | 0.814 | 189 | 0.979 | 225 | 0.521 | 261 | 0.462 | 297 | 0.348 | 333 | 0.814 |
| 10 | 0.975 | 46 | 0.504 | 82 | 0.468 | 118 | 0.347 | 154 | 0.828 | 190 | 0.975 | 226 | 0.504 | 262 | 0.468 | 298 | 0.347 | 334 | 0.828 |
| 11 | 0.969 | 47 | 0.488 | 83 | 0.473 | 119 | 0.348 | 155 | 0.841 | 191 | 0.969 | 227 | 0.488 | 263 | 0.473 | 299 | 0.348 | 335 | 0.841 |
| 12 | 0.963 | 48 | 0.472 | 84 | 0.477 | 120 | 0.350 | 156 | 0.853 | 192 | 0.963 | 228 | 0.472 | 264 | 0.477 | 300 | 0.350 | 336 | 0.853 |
| 13 | 0.957 | 49 | 0.457 | 85 | 0.481 | 121 | 0.353 | 157 | 0.865 | 193 | 0.957 | 229 | 0.457 | 265 | 0.481 | 301 | 0.353 | 337 | 0.865 |
| 14 | 0.950 | 50 | 0.442 | 86 | 0.484 | 122 | 0.358 | 158 | 0.877 | 194 | 0.950 | 230 | 0.442 | 266 | 0.484 | 302 | 0.358 | 338 | 0.877 |
| 15 | 0.943 | 51 | 0.428 | 87 | 0.486 | 123 | 0.364 | 159 | 0.888 | 195 | 0.943 | 231 | 0.428 | 267 | 0.486 | 303 | 0.364 | 339 | 0.888 |
| 16 | 0.935 | 52 | 0.414 | 88 | 0.488 | 124 | 0.372 | 160 | 0.898 | 196 | 0.935 | 232 | 0.414 | 268 | 0.488 | 304 | 0.372 | 340 | 0.898 |
| 17 | 0.926 | 53 | 0.402 | 89 | 0.489 | 125 | 0.381 | 161 | 0.908 | 197 | 0.926 | 233 | 0.402 | 269 | 0.489 | 305 | 0.381 | 341 | 0.908 |
| 18 | 0.918 | 54 | 0.391 | 90 | 0.489 | 126 | 0.391 | 162 | 0.918 | 198 | 0.918 | 234 | 0.391 | 270 | 0.489 | 306 | 0.391 | 342 | 0.918 |
| 19 | 0.908 | 55 | 0.381 | 91 | 0.489 | 127 | 0.402 | 163 | 0.926 | 199 | 0.908 | 235 | 0.381 | 271 | 0.489 | 307 | 0.402 | 343 | 0.926 |
| 20 | 0.898 | 56 | 0.372 | 92 | 0.488 | 128 | 0.414 | 164 | 0.935 | 200 | 0.898 | 236 | 0.372 | 272 | 0.488 | 308 | 0.414 | 344 | 0.935 |
| 21 | 0.888 | 57 | 0.364 | 93 | 0.486 | 129 | 0.428 | 165 | 0.943 | 201 | 0.888 | 237 | 0.364 | 273 | 0.486 | 309 | 0.428 | 345 | 0.943 |
| 22 | 0.877 | 58 | 0.358 | 94 | 0.484 | 130 | 0.442 | 166 | 0.950 | 202 | 0.877 | 238 | 0.358 | 274 | 0.484 | 310 | 0.442 | 346 | 0.950 |
| 23 | 0.865 | 59 | 0.353 | 95 | 0.481 | 131 | 0.457 | 167 | 0.957 | 203 | 0.865 | 239 | 0.353 | 275 | 0.481 | 311 | 0.457 | 347 | 0.957 |
| 24 | 0.853 | 60 | 0.349 | 96 | 0.477 | 132 | 0.472 | 168 | 0.963 | 204 | 0.853 | 240 | 0.349 | 276 | 0.477 | 312 | 0.472 | 348 | 0.963 |
| 25 | 0.841 | 61 | 0.348 | 97 | 0.473 | 133 | 0.488 | 169 | 0.969 | 205 | 0.841 | 241 | 0.348 | 277 | 0.473 | 313 | 0.488 | 349 | 0.969 |
| 26 | 0.828 | 62 | 0.347 | 98 | 0.468 | 134 | 0.504 | 170 | 0.975 | 206 | 0.828 | 242 | 0.347 | 278 | 0.468 | 314 | 0.504 | 350 | 0.975 |
| 27 | 0.814 | 63 | 0.348 | 99 | 0.462 | 135 | 0.521 | 171 | 0.980 | 207 | 0.814 | 243 | 0.348 | 279 | 0.462 | 315 | 0.521 | 351 | 0.979 |
| 28 | 0.801 | 64 | 0.350 | 100 | 0.456 | 136 | 0.538 | 172 | 0.984 | 208 | 0.801 | 244 | 0.350 | 280 | 0.456 | 316 | 0.538 | 352 | 0.984 |
| 29 | 0.786 | 65 | 0.353 | 101 | 0.450 | 137 | 0.555 | 173 | 0.988 | 209 | 0.786 | 245 | 0.353 | 281 | 0.450 | 317 | 0.555 | 353 | 0.988 |
| 30 | 0.772 | 66 | 0.357 | 102 | 0.443 | 138 | 0.573 | 174 | 0.991 | 210 | 0.772 | 246 | 0.357 | 282 | 0.443 | 318 | 0.573 | 354 | 0.991 |
| 31 | 0.757 | 67 | 0.362 | 103 | 0.436 | 139 | 0.590 | 175 | 0.994 | 211 | 0.757 | 247 | 0.362 | 283 | 0.436 | 319 | 0.590 | 355 | 0.994 |
| 32 | 0.741 | 68 | 0.368 | 104 | 0.428 | 140 | 0.608 | 176 | 0.996 | 212 | 0.741 | 248 | 0.368 | 284 | 0.428 | 320 | 0.608 | 356 | 0.996 |
| 33 | 0.725 | 69 | 0.375 | 105 | 0.421 | 141 | 0.625 | 177 | 0.998 | 213 | 0.725 | 249 | 0.375 | 285 | 0.421 | 321 | 0.625 | 357 | 0.998 |
| 34 | 0.709 | 70 | 0.382 | 106 | 0.413 | 142 | 0.642 | 178 | 0.999 | 214 | 0.709 | 250 | 0.382 | 286 | 0.413 | 322 | 0.642 | 358 | 0.999 |
| 35 | 0.693 | 71 | 0.389 | 107 | 0.405 | 143 | 0.659 | 179 | 1.000 | 215 | 0.693 | 251 | 0.389 | 287 | 0.405 | 323 | 0.659 | 359 | 1.000 |

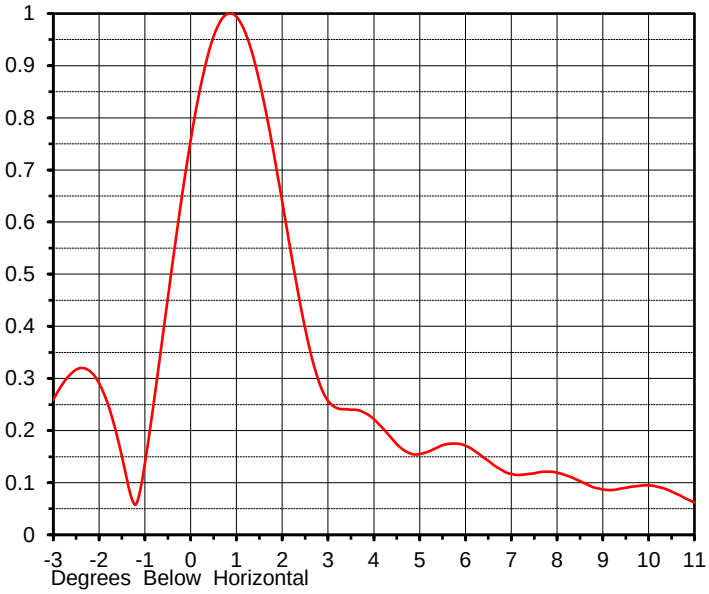
This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.

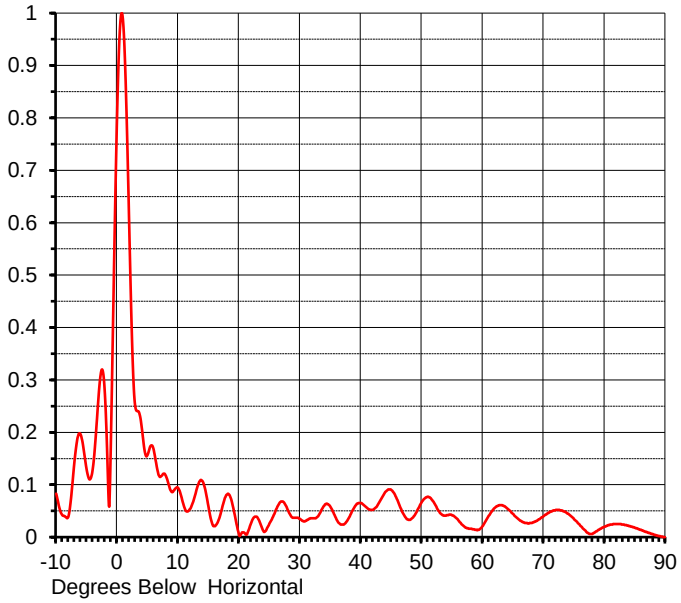
# ELEVATION PATTERN

| | |
|---|---|
| Proposal No. | **C-70958** |
| Date | **25-Aug-17** |
| Call Letters | **WHDT** |
| Channel | **34** |
| Frequency | **593 MHz** |
| Antenna Type | **TFU-27JSC/VP-R P220** |

| | | | |
|---|---|---|---|
| RMS Directivity at Main Lobe | **24.0 ( 13.80 dB )** | Beam Tilt | **0.75 deg** |
| RMS Directivity at Horizontal | **15.7 ( 11.96 dB )** | Pattern Number | **27J240075** |

**Calculated**




| Angle | Field | Angle | Field | Angle | Field | Angle | Field | Angle | Field |
|---|---|---|---|---|---|---|---|---|---|
| -10.0 | 0.083 | 10.0 | 0.094 | 30.0 | 0.035 | 50.0 | 0.067 | 70.0 | 0.040 |
| -9.0 | 0.042 | 11.0 | 0.058 | 31.0 | 0.031 | 51.0 | 0.077 | 71.0 | 0.048 |
| -8.0 | 0.039 | 12.0 | 0.054 | 32.0 | 0.036 | 52.0 | 0.066 | 72.0 | 0.052 |
| -7.0 | 0.144 | 13.0 | 0.089 | 33.0 | 0.040 | 53.0 | 0.046 | 73.0 | 0.051 |
| -6.0 | 0.196 | 14.0 | 0.107 | 34.0 | 0.060 | 54.0 | 0.041 | 74.0 | 0.045 |
| -5.0 | 0.129 | 15.0 | 0.058 | 35.0 | 0.058 | 55.0 | 0.042 | 75.0 | 0.034 |
| -4.0 | 0.130 | 16.0 | 0.021 | 36.0 | 0.034 | 56.0 | 0.032 | 76.0 | 0.022 |
| -3.0 | 0.275 | 17.0 | 0.045 | 37.0 | 0.024 | 57.0 | 0.020 | 77.0 | 0.010 |
| -2.0 | 0.272 | 18.0 | 0.081 | 38.0 | 0.036 | 58.0 | 0.016 | 78.0 | 0.006 |
| -1.0 | 0.195 | 19.0 | 0.059 | 39.0 | 0.058 | 59.0 | 0.014 | 79.0 | 0.014 |
| 0.0 | 0.808 | 20.0 | 0.005 | 40.0 | 0.065 | 60.0 | 0.021 | 80.0 | 0.020 |
| 1.0 | 0.981 | 21.0 | 0.007 | 41.0 | 0.056 | 61.0 | 0.041 | 81.0 | 0.024 |
| 2.0 | 0.587 | 22.0 | 0.027 | 42.0 | 0.052 | 62.0 | 0.056 | 82.0 | 0.025 |
| 3.0 | 0.248 | 23.0 | 0.038 | 43.0 | 0.066 | 63.0 | 0.061 | 83.0 | 0.024 |
| 4.0 | 0.213 | 24.0 | 0.012 | 44.0 | 0.086 | 64.0 | 0.055 | 84.0 | 0.021 |
| 5.0 | 0.157 | 25.0 | 0.026 | 45.0 | 0.090 | 65.0 | 0.044 | 85.0 | 0.018 |
| 6.0 | 0.167 | 26.0 | 0.050 | 46.0 | 0.071 | 66.0 | 0.033 | 86.0 | 0.014 |
| 7.0 | 0.115 | 27.0 | 0.068 | 47.0 | 0.044 | 67.0 | 0.027 | 87.0 | 0.009 |
| 8.0 | 0.117 | 28.0 | 0.052 | 48.0 | 0.033 | 68.0 | 0.027 | 88.0 | 0.005 |
| 9.0 | 0.086 | 29.0 | 0.037 | 49.0 | 0.045 | 69.0 | 0.032 | 89.0 | 0.002 |
| | | | | | | | | 90.0 | 0.000 |

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.

## WHDT (Stuart, FL) Proposed Ch. 34 Facility

| **Parameters:** | | **Maxima:** | |
|---|---|---|---|
| ERP: | 621.0 kW | N000E | 27.9 dBk |
| RCAMSL: | 388.8 m | N180E | 27.9 dBk |
| HAAT: | 384.0 m | | |
| | | **Minima:** | |
| | | N062E | 18.7 dBk |
| | | N118E | 18.7 dBk |
| | | N242E | 18.7 dBk |
| | | N298E | 18.7 dBk |

**Directional Antenna dBk Table**

| Bearing | Pattern Azimuth | Relative Field | ERP (dBk) | Distance to Noise-Limited Contour (km) |
|---|---|---|---|---|
| N000E | 0 | 1.000 | 27.93 | 100.9 |
| | 10 | 0.975 | 27.71 | |
| | 20 | 0.898 | 27.00 | |
| | 30 | 0.772 | 25.68 | |
| | 40 | 0.608 | 23.61 | |
| N045E | 45 | 0.521 | 22.27 | 90.7 |
| | 50 | 0.442 | 20.84 | |
| | 60 | 0.349 | 18.79 | |
| | 62 | 0.347 | 18.74 | |
| | 70 | 0.382 | 19.57 | |
| | 80 | 0.456 | 21.11 | |
| N090E | 90 | 0.489 | 21.72 | 89.7 |
| | 100 | 0.456 | 21.11 | |
| | 110 | 0.382 | 19.57 | |
| | 112 | 0.368 | 19.25 | |
| | 118 | 0.347 | 18.74 | |
| | 120 | 0.350 | 18.81 | |
| | 130 | 0.442 | 20.84 | |
| N135E | 135 | 0.521 | 22.27 | 90.7 |
| | 140 | 0.608 | 23.61 | |
| | 150 | 0.772 | 25.68 | |
| | 160 | 0.898 | 27.00 | |
| | 170 | 0.975 | 27.71 | |
| N180E | 180 | 1.000 | 27.93 | 101.0 |
| | 190 | 0.975 | 27.71 | |
| | 200 | 0.898 | 27.00 | |
| | 210 | 0.772 | 25.68 | |
| | 220 | 0.608 | 23.61 | |
| N225E | 225 | 0.521 | 22.27 | 90.8 |
| | 230 | 0.442 | 20.84 | |
| | 232 | 0.414 | 20.27 | |
| | 240 | 0.349 | 18.79 | |
| | 242 | 0.347 | 18.74 | |
| | 250 | 0.382 | 19.57 | |
| | 260 | 0.456 | 21.11 | |
| N270E | 270 | 0.489 | 21.72 | 89.7 |
| | 280 | 0.456 | 21.11 | |
| | 290 | 0.382 | 19.57 | |
| | 298 | 0.347 | 18.74 | |
| | 300 | 0.350 | 18.81 | |
| | 310 | 0.442 | 20.84 | |
| N315E | 315 | 0.521 | 22.27 | 90.7 |
| | 320 | 0.608 | 23.61 | |
| | 330 | 0.772 | 25.68 | |
| | 340 | 0.898 | 27.00 | |
| | 350 | 0.975 | 27.71 | |
| | 352 | 0.984 | 27.79 | |