Dielectric®

**Antenna Model:** **TFU-25JTH/VP-R O4 (SP)**

| | |
|---|---|
| **Proposal Number:** | C-70253-2 |
| **Date:** | 20-Nov-17 |
| **Customer:** | SCETV |
| **Location:** | Florence, SC |

## Electrical Specifications

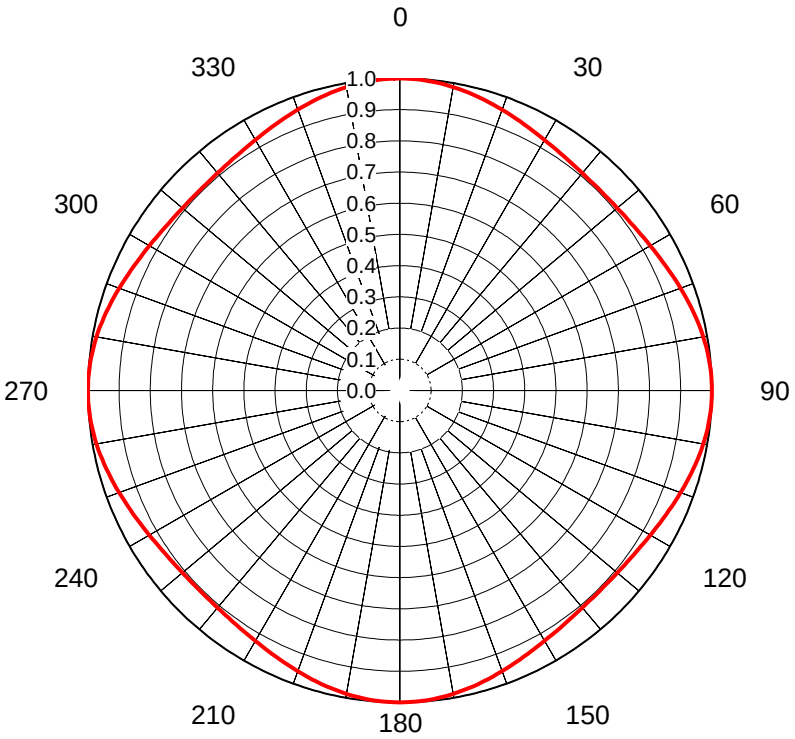
| | | | |
|---|---|---|---|
| **Polarization:** | Elliptical | | |
| **Azimuth Pattern:** | Omni | | |
| **Antenna Input:** | 6-1/8" | 75 Ohm | EIA/DCA |
| **VSWR:** | Channel | 1.08:1 | |
| **Bandwidth:** | 6 MHz | | |
| **Rated Input Power:** | 62 kW | (17.92 dBk) | Maximum Average Power |

## Mechanical Specifications

| | | | | |
|---|---|---|---|---|
| **Mounting:** | Top Mounted | | | |
| **Environmental Protection:** | Full Radome | | | |
| **Height:** | 54.5 ft (16.6m) | less Lightning Protector | 58.5 ft (17.8m) | with Lightning Protector |
| **Weight:** | 7900 lb (3.6t) | | | |
| **Effective Projected Area:** | 64.5 ft² (6m²) | TIA-222-G | **Basic Wind Speed:** | 95 m/h (152.9 km/h) |

## Channel Specifications

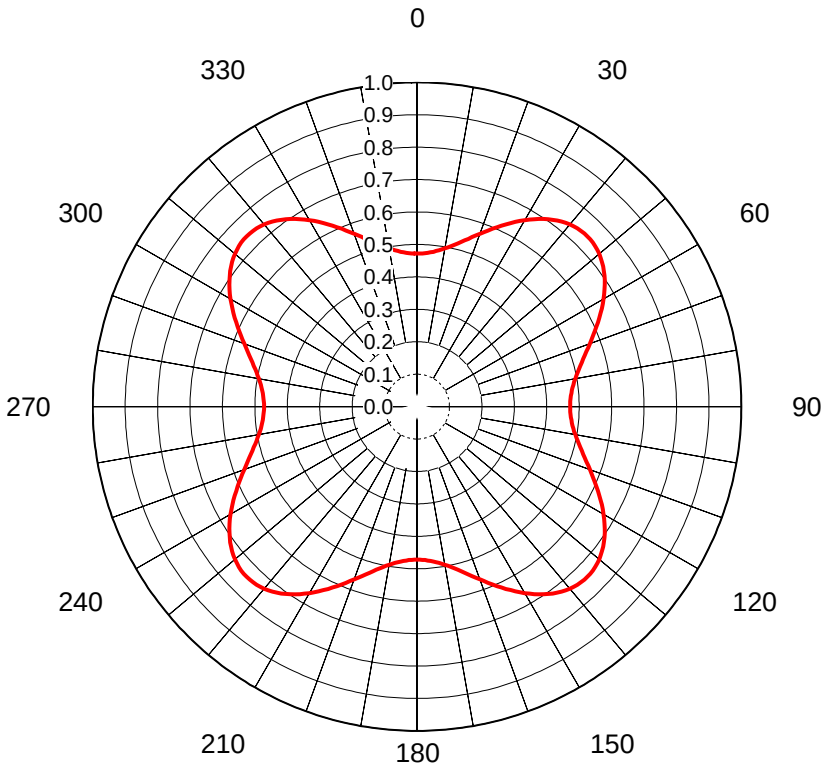
| Call | CH | Freq | Hpol ERP | Vpol ERP | TPO | RMS Main Lobe Hpol Gain | RMS Main Lobe Vpol Gain | RMS at Horizontal Hpol Gain | RMS at Horizontal Vpol Gain |
|---|---|---|---|---|---|---|---|---|---|
| WJPM | 16 | 485 MHz | 67.0 kW (18.26 dBk) | 22.3 kW (13.49 dBk) | 4.9 kW (6.86 dBk) | 17.10 (12.33dB) | 5.70 (7.56dB) | 12.01 (10.79dB) | 4.00 (6.02dB) |




# AZIMUTH PATTERN
## Horizontal Polarization

| | |
|---|---|
| Proposal No. | **C-70253-2** |
| Date | **20-Nov-17** |
| Call Letters | **WJPM** |
| Channel | **16** |
| Frequency | **485 MHz** |
| Antenna Type | **TFU-25JTH/VP-R O4 (SP)** |
| Gain | **1.1 (0.43dB)** |
| | **Calculated** |
| Circularity | **+/- 1.0 dB** |
| Drawing # | **TFU-04 D16** |

| Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1.000 | 36 | 0.914 | 72 | 0.964 | 108 | 0.964 | 144 | 0.914 | 180 | 1.000 | 216 | 0.914 | 252 | 0.964 | 288 | 0.964 | 324 | 0.914 |
| 1 | 1.000 | 37 | 0.913 | 73 | 0.967 | 109 | 0.961 | 145 | 0.916 | 181 | 1.000 | 217 | 0.913 | 253 | 0.967 | 289 | 0.961 | 325 | 0.916 |
| 2 | 0.999 | 38 | 0.912 | 74 | 0.971 | 110 | 0.958 | 146 | 0.918 | 182 | 0.999 | 218 | 0.912 | 254 | 0.971 | 290 | 0.958 | 326 | 0.918 |
| 3 | 0.999 | 39 | 0.910 | 75 | 0.974 | 111 | 0.954 | 147 | 0.920 | 183 | 0.999 | 219 | 0.910 | 255 | 0.974 | 291 | 0.954 | 327 | 0.920 |
| 4 | 0.998 | 40 | 0.909 | 76 | 0.977 | 112 | 0.951 | 148 | 0.922 | 184 | 0.998 | 220 | 0.909 | 256 | 0.977 | 292 | 0.951 | 328 | 0.922 |
| 5 | 0.997 | 41 | 0.909 | 77 | 0.980 | 113 | 0.948 | 149 | 0.925 | 185 | 0.997 | 221 | 0.909 | 257 | 0.980 | 293 | 0.948 | 329 | 0.925 |
| 6 | 0.995 | 42 | 0.908 | 78 | 0.982 | 114 | 0.945 | 150 | 0.927 | 186 | 0.995 | 222 | 0.908 | 258 | 0.982 | 294 | 0.945 | 330 | 0.927 |
| 7 | 0.994 | 43 | 0.907 | 79 | 0.985 | 115 | 0.941 | 151 | 0.930 | 187 | 0.994 | 223 | 0.907 | 259 | 0.985 | 295 | 0.941 | 331 | 0.930 |
| 8 | 0.992 | 44 | 0.907 | 80 | 0.987 | 116 | 0.938 | 152 | 0.933 | 188 | 0.992 | 224 | 0.907 | 260 | 0.987 | 296 | 0.938 | 332 | 0.932 |
| 9 | 0.990 | 45 | 0.907 | 81 | 0.990 | 117 | 0.935 | 153 | 0.935 | 189 | 0.990 | 225 | 0.907 | 261 | 0.990 | 297 | 0.935 | 333 | 0.935 |
| 10 | 0.987 | 46 | 0.907 | 82 | 0.992 | 118 | 0.932 | 154 | 0.938 | 190 | 0.987 | 226 | 0.907 | 262 | 0.992 | 298 | 0.932 | 334 | 0.938 |
| 11 | 0.985 | 47 | 0.907 | 83 | 0.994 | 119 | 0.930 | 155 | 0.941 | 191 | 0.985 | 227 | 0.907 | 263 | 0.994 | 299 | 0.930 | 335 | 0.941 |
| 12 | 0.982 | 48 | 0.908 | 84 | 0.995 | 120 | 0.927 | 156 | 0.945 | 192 | 0.982 | 228 | 0.908 | 264 | 0.995 | 300 | 0.927 | 336 | 0.945 |
| 13 | 0.980 | 49 | 0.909 | 85 | 0.997 | 121 | 0.925 | 157 | 0.948 | 193 | 0.980 | 229 | 0.909 | 265 | 0.997 | 301 | 0.925 | 337 | 0.948 |
| 14 | 0.977 | 50 | 0.909 | 86 | 0.998 | 122 | 0.922 | 158 | 0.951 | 194 | 0.977 | 230 | 0.909 | 266 | 0.998 | 302 | 0.922 | 338 | 0.951 |
| 15 | 0.974 | 51 | 0.910 | 87 | 0.999 | 123 | 0.920 | 159 | 0.954 | 195 | 0.974 | 231 | 0.910 | 267 | 0.999 | 303 | 0.920 | 339 | 0.954 |
| 16 | 0.971 | 52 | 0.912 | 88 | 0.999 | 124 | 0.918 | 160 | 0.958 | 196 | 0.971 | 232 | 0.912 | 268 | 0.999 | 304 | 0.918 | 340 | 0.958 |
| 17 | 0.967 | 53 | 0.913 | 89 | 1.000 | 125 | 0.916 | 161 | 0.961 | 197 | 0.967 | 233 | 0.913 | 269 | 1.000 | 305 | 0.916 | 341 | 0.961 |
| 18 | 0.964 | 54 | 0.914 | 90 | 1.000 | 126 | 0.914 | 162 | 0.964 | 198 | 0.964 | 234 | 0.914 | 270 | 1.000 | 306 | 0.914 | 342 | 0.964 |
| 19 | 0.961 | 55 | 0.916 | 91 | 1.000 | 127 | 0.913 | 163 | 0.967 | 199 | 0.961 | 235 | 0.916 | 271 | 1.000 | 307 | 0.913 | 343 | 0.967 |
| 20 | 0.958 | 56 | 0.918 | 92 | 0.999 | 128 | 0.912 | 164 | 0.971 | 200 | 0.958 | 236 | 0.918 | 272 | 0.999 | 308 | 0.912 | 344 | 0.971 |
| 21 | 0.954 | 57 | 0.920 | 93 | 0.999 | 129 | 0.910 | 165 | 0.974 | 201 | 0.954 | 237 | 0.920 | 273 | 0.999 | 309 | 0.910 | 345 | 0.974 |
| 22 | 0.951 | 58 | 0.922 | 94 | 0.998 | 130 | 0.909 | 166 | 0.977 | 202 | 0.951 | 238 | 0.922 | 274 | 0.998 | 310 | 0.909 | 346 | 0.977 |
| 23 | 0.948 | 59 | 0.925 | 95 | 0.997 | 131 | 0.909 | 167 | 0.980 | 203 | 0.948 | 239 | 0.925 | 275 | 0.997 | 311 | 0.909 | 347 | 0.980 |
| 24 | 0.945 | 60 | 0.927 | 96 | 0.995 | 132 | 0.908 | 168 | 0.982 | 204 | 0.945 | 240 | 0.927 | 276 | 0.995 | 312 | 0.908 | 348 | 0.982 |
| 25 | 0.941 | 61 | 0.930 | 97 | 0.994 | 133 | 0.907 | 169 | 0.985 | 205 | 0.941 | 241 | 0.930 | 277 | 0.994 | 313 | 0.907 | 349 | 0.985 |
| 26 | 0.938 | 62 | 0.932 | 98 | 0.992 | 134 | 0.907 | 170 | 0.987 | 206 | 0.938 | 242 | 0.932 | 278 | 0.992 | 314 | 0.907 | 350 | 0.987 |
| 27 | 0.935 | 63 | 0.935 | 99 | 0.990 | 135 | 0.907 | 171 | 0.990 | 207 | 0.935 | 243 | 0.935 | 279 | 0.990 | 315 | 0.907 | 351 | 0.990 |
| 28 | 0.932 | 64 | 0.938 | 100 | 0.987 | 136 | 0.907 | 172 | 0.992 | 208 | 0.932 | 244 | 0.938 | 280 | 0.987 | 316 | 0.907 | 352 | 0.992 |
| 29 | 0.930 | 65 | 0.941 | 101 | 0.985 | 137 | 0.907 | 173 | 0.994 | 209 | 0.930 | 245 | 0.941 | 281 | 0.985 | 317 | 0.907 | 353 | 0.994 |
| 30 | 0.927 | 66 | 0.945 | 102 | 0.982 | 138 | 0.908 | 174 | 0.995 | 210 | 0.927 | 246 | 0.945 | 282 | 0.982 | 318 | 0.908 | 354 | 0.995 |
| 31 | 0.925 | 67 | 0.948 | 103 | 0.980 | 139 | 0.909 | 175 | 0.997 | 211 | 0.925 | 247 | 0.948 | 283 | 0.980 | 319 | 0.909 | 355 | 0.997 |
| 32 | 0.922 | 68 | 0.951 | 104 | 0.977 | 140 | 0.909 | 176 | 0.998 | 212 | 0.922 | 248 | 0.951 | 284 | 0.977 | 320 | 0.909 | 356 | 0.998 |
| 33 | 0.920 | 69 | 0.954 | 105 | 0.974 | 141 | 0.910 | 177 | 0.999 | 213 | 0.920 | 249 | 0.954 | 285 | 0.974 | 321 | 0.910 | 357 | 0.999 |
| 34 | 0.918 | 70 | 0.958 | 106 | 0.971 | 142 | 0.912 | 178 | 0.999 | 214 | 0.918 | 250 | 0.958 | 286 | 0.971 | 322 | 0.912 | 358 | 0.999 |
| 35 | 0.916 | 71 | 0.961 | 107 | 0.967 | 143 | 0.913 | 179 | 1.000 | 215 | 0.916 | 251 | 0.961 | 287 | 0.967 | 323 | 0.913 | 359 | 1.000 |




# AZIMUTH PATTERN
## Vertical Polarization

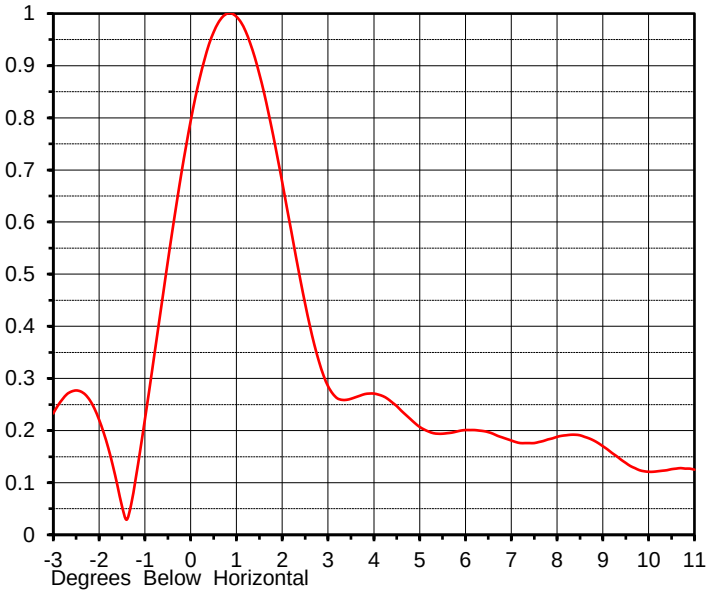
| | |
|---|---|
| Proposal No. | **C-70253-2** |
| Date | **20-Nov-17** |
| Call Letters | **WJPM** |
| Channel | **16** |
| Frequency | **485 MHz** |
| Antenna Type | **TFU-25JTH/VP-R O4 (SP)** |
| Gain | **1.5 (1.76dB)** |
| | **Calculated** |
| Circularity | **+/- 2.0 dB** |
| Drawing # | **TFU-04 D16-V** |

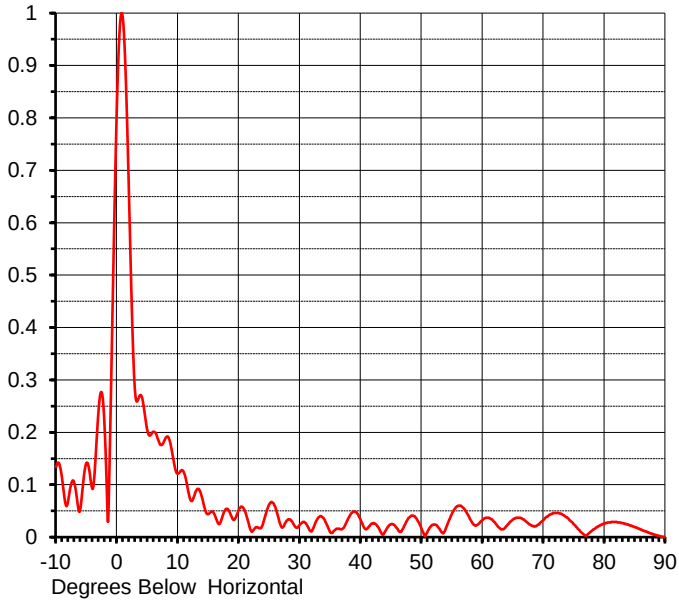
| Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value | Deg | Value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.472 | 36 | 0.712 | 72 | 0.549 | 108 | 0.549 | 144 | 0.712 | 180 | 0.472 | 216 | 0.712 | 252 | 0.549 | 288 | 0.549 | 324 | 0.712 |
| 1 | 0.472 | 37 | 0.718 | 73 | 0.541 | 109 | 0.558 | 145 | 0.705 | 181 | 0.472 | 217 | 0.718 | 253 | 0.541 | 289 | 0.558 | 325 | 0.705 |
| 2 | 0.473 | 38 | 0.724 | 74 | 0.533 | 110 | 0.567 | 146 | 0.698 | 182 | 0.473 | 218 | 0.724 | 254 | 0.533 | 290 | 0.567 | 326 | 0.698 |
| 3 | 0.474 | 39 | 0.729 | 75 | 0.526 | 111 | 0.576 | 147 | 0.690 | 183 | 0.474 | 219 | 0.729 | 255 | 0.526 | 291 | 0.576 | 327 | 0.690 |
| 4 | 0.476 | 40 | 0.733 | 76 | 0.519 | 112 | 0.586 | 148 | 0.682 | 184 | 0.476 | 220 | 0.733 | 256 | 0.519 | 292 | 0.586 | 328 | 0.682 |
| 5 | 0.478 | 41 | 0.736 | 77 | 0.512 | 113 | 0.596 | 149 | 0.673 | 185 | 0.478 | 221 | 0.736 | 257 | 0.512 | 293 | 0.596 | 329 | 0.673 |
| 6 | 0.480 | 42 | 0.739 | 78 | 0.506 | 114 | 0.606 | 150 | 0.664 | 186 | 0.480 | 222 | 0.739 | 258 | 0.506 | 294 | 0.606 | 330 | 0.664 |
| 7 | 0.483 | 43 | 0.741 | 79 | 0.500 | 115 | 0.616 | 151 | 0.655 | 187 | 0.483 | 223 | 0.741 | 259 | 0.500 | 295 | 0.616 | 331 | 0.655 |
| 8 | 0.487 | 44 | 0.742 | 80 | 0.495 | 116 | 0.625 | 152 | 0.645 | 188 | 0.487 | 224 | 0.742 | 260 | 0.495 | 296 | 0.625 | 332 | 0.645 |
| 9 | 0.491 | 45 | 0.743 | 81 | 0.491 | 117 | 0.635 | 153 | 0.635 | 189 | 0.491 | 225 | 0.743 | 261 | 0.491 | 297 | 0.635 | 333 | 0.635 |
| 10 | 0.495 | 46 | 0.742 | 82 | 0.487 | 118 | 0.645 | 154 | 0.625 | 190 | 0.495 | 226 | 0.742 | 262 | 0.487 | 298 | 0.645 | 334 | 0.625 |
| 11 | 0.500 | 47 | 0.741 | 83 | 0.483 | 119 | 0.655 | 155 | 0.616 | 191 | 0.500 | 227 | 0.741 | 263 | 0.483 | 299 | 0.655 | 335 | 0.616 |
| 12 | 0.506 | 48 | 0.739 | 84 | 0.480 | 120 | 0.664 | 156 | 0.606 | 192 | 0.506 | 228 | 0.739 | 264 | 0.480 | 300 | 0.664 | 336 | 0.606 |
| 13 | 0.512 | 49 | 0.736 | 85 | 0.478 | 121 | 0.673 | 157 | 0.596 | 193 | 0.512 | 229 | 0.736 | 265 | 0.478 | 301 | 0.673 | 337 | 0.596 |
| 14 | 0.519 | 50 | 0.733 | 86 | 0.476 | 122 | 0.682 | 158 | 0.586 | 194 | 0.519 | 230 | 0.733 | 266 | 0.476 | 302 | 0.682 | 338 | 0.586 |
| 15 | 0.526 | 51 | 0.729 | 87 | 0.474 | 123 | 0.690 | 159 | 0.576 | 195 | 0.526 | 231 | 0.729 | 267 | 0.474 | 303 | 0.690 | 339 | 0.576 |
| 16 | 0.533 | 52 | 0.724 | 88 | 0.473 | 124 | 0.698 | 160 | 0.567 | 196 | 0.533 | 232 | 0.724 | 268 | 0.473 | 304 | 0.698 | 340 | 0.567 |
| 17 | 0.541 | 53 | 0.718 | 89 | 0.472 | 125 | 0.705 | 161 | 0.558 | 197 | 0.541 | 233 | 0.718 | 269 | 0.472 | 305 | 0.705 | 341 | 0.558 |
| 18 | 0.549 | 54 | 0.712 | 90 | 0.472 | 126 | 0.712 | 162 | 0.549 | 198 | 0.549 | 234 | 0.712 | 270 | 0.472 | 306 | 0.712 | 342 | 0.549 |
| 19 | 0.558 | 55 | 0.705 | 91 | 0.472 | 127 | 0.718 | 163 | 0.541 | 199 | 0.558 | 235 | 0.705 | 271 | 0.472 | 307 | 0.718 | 343 | 0.541 |
| 20 | 0.567 | 56 | 0.698 | 92 | 0.473 | 128 | 0.724 | 164 | 0.533 | 200 | 0.567 | 236 | 0.698 | 272 | 0.473 | 308 | 0.724 | 344 | 0.533 |
| 21 | 0.576 | 57 | 0.690 | 93 | 0.474 | 129 | 0.729 | 165 | 0.526 | 201 | 0.576 | 237 | 0.690 | 273 | 0.474 | 309 | 0.729 | 345 | 0.526 |
| 22 | 0.586 | 58 | 0.682 | 94 | 0.476 | 130 | 0.733 | 166 | 0.519 | 202 | 0.586 | 238 | 0.682 | 274 | 0.476 | 310 | 0.733 | 346 | 0.519 |
| 23 | 0.596 | 59 | 0.673 | 95 | 0.478 | 131 | 0.736 | 167 | 0.512 | 203 | 0.596 | 239 | 0.673 | 275 | 0.478 | 311 | 0.736 | 347 | 0.512 |
| 24 | 0.606 | 60 | 0.664 | 96 | 0.480 | 132 | 0.739 | 168 | 0.506 | 204 | 0.606 | 240 | 0.664 | 276 | 0.480 | 312 | 0.739 | 348 | 0.506 |
| 25 | 0.616 | 61 | 0.655 | 97 | 0.483 | 133 | 0.741 | 169 | 0.500 | 205 | 0.616 | 241 | 0.655 | 277 | 0.483 | 313 | 0.741 | 349 | 0.500 |
| 26 | 0.625 | 62 | 0.645 | 98 | 0.487 | 134 | 0.742 | 170 | 0.495 | 206 | 0.625 | 242 | 0.645 | 278 | 0.487 | 314 | 0.742 | 350 | 0.495 |
| 27 | 0.635 | 63 | 0.635 | 99 | 0.491 | 135 | 0.743 | 171 | 0.491 | 207 | 0.635 | 243 | 0.635 | 279 | 0.491 | 315 | 0.743 | 351 | 0.491 |
| 28 | 0.645 | 64 | 0.625 | 100 | 0.495 | 136 | 0.742 | 172 | 0.487 | 208 | 0.645 | 244 | 0.625 | 280 | 0.495 | 316 | 0.742 | 352 | 0.487 |
| 29 | 0.655 | 65 | 0.616 | 101 | 0.500 | 137 | 0.741 | 173 | 0.483 | 209 | 0.655 | 245 | 0.616 | 281 | 0.500 | 317 | 0.741 | 353 | 0.483 |
| 30 | 0.664 | 66 | 0.606 | 102 | 0.506 | 138 | 0.739 | 174 | 0.480 | 210 | 0.664 | 246 | 0.606 | 282 | 0.506 | 318 | 0.739 | 354 | 0.480 |
| 31 | 0.673 | 67 | 0.596 | 103 | 0.512 | 139 | 0.736 | 175 | 0.478 | 211 | 0.673 | 247 | 0.596 | 283 | 0.512 | 319 | 0.736 | 355 | 0.478 |
| 32 | 0.682 | 68 | 0.586 | 104 | 0.519 | 140 | 0.733 | 176 | 0.476 | 212 | 0.682 | 248 | 0.586 | 284 | 0.519 | 320 | 0.733 | 356 | 0.476 |
| 33 | 0.690 | 69 | 0.576 | 105 | 0.526 | 141 | 0.729 | 177 | 0.474 | 213 | 0.690 | 249 | 0.576 | 285 | 0.526 | 321 | 0.729 | 357 | 0.474 |
| 34 | 0.698 | 70 | 0.567 | 106 | 0.533 | 142 | 0.724 | 178 | 0.473 | 214 | 0.698 | 250 | 0.567 | 286 | 0.533 | 322 | 0.724 | 358 | 0.473 |
| 35 | 0.705 | 71 | 0.558 | 107 | 0.541 | 143 | 0.718 | 179 | 0.472 | 215 | 0.705 | 251 | 0.558 | 287 | 0.541 | 323 | 0.718 | 359 | 0.472 |

# ELEVATION PATTERN

| | |
|---|---|
| Proposal No. | **C-70253-2** |
| Date | **20-Nov-17** |
| Call Letters | **WJPM** |
| Channel | **16** |
| Frequency | **485 MHz** |
| Antenna Type | **TFU-25JTH/VP-R O4 (SP)** |

| | | | |
|---|---|---|---|
| RMS Directivity at Main Lobe | **22.8 ( 13.58 dB )** | Beam Tilt | **0.75 deg** |
| RMS Directivity at Horizontal | **14.4 ( 11.58 dB )** | Drawing Number | **25J228075** |
| | **Calculated** | | |




| Angle | Field | Angle | Field | Angle | Field | Angle | Field | Angle | Field |
|---|---|---|---|---|---|---|---|---|---|
| -10.0 | 0.134 | 10.0 | 0.121 | 30.0 | 0.024 | 50.0 | 0.015 | 70.0 | 0.033 |
| -9.0 | 0.109 | 11.0 | 0.122 | 31.0 | 0.026 | 51.0 | 0.012 | 71.0 | 0.043 |
| -8.0 | 0.072 | 12.0 | 0.072 | 32.0 | 0.012 | 52.0 | 0.024 | 72.0 | 0.046 |
| -7.0 | 0.102 | 13.0 | 0.089 | 33.0 | 0.037 | 53.0 | 0.014 | 73.0 | 0.044 |
| -6.0 | 0.056 | 14.0 | 0.073 | 34.0 | 0.034 | 54.0 | 0.018 | 74.0 | 0.036 |
| -5.0 | 0.142 | 15.0 | 0.044 | 35.0 | 0.009 | 55.0 | 0.046 | 75.0 | 0.024 |
| -4.0 | 0.092 | 16.0 | 0.043 | 36.0 | 0.016 | 56.0 | 0.060 | 76.0 | 0.011 |
| -3.0 | 0.248 | 17.0 | 0.029 | 37.0 | 0.016 | 57.0 | 0.053 | 77.0 | 0.003 |
| -2.0 | 0.196 | 18.0 | 0.054 | 38.0 | 0.037 | 58.0 | 0.033 | 78.0 | 0.013 |
| -1.0 | 0.280 | 19.0 | 0.034 | 39.0 | 0.049 | 59.0 | 0.023 | 79.0 | 0.021 |
| 0.0 | 0.838 | 20.0 | 0.053 | 40.0 | 0.032 | 60.0 | 0.033 | 80.0 | 0.026 |
| 1.0 | 0.983 | 21.0 | 0.049 | 41.0 | 0.016 | 61.0 | 0.037 | 81.0 | 0.028 |
| 2.0 | 0.628 | 22.0 | 0.012 | 42.0 | 0.026 | 62.0 | 0.028 | 82.0 | 0.029 |
| 3.0 | 0.271 | 23.0 | 0.019 | 43.0 | 0.016 | 63.0 | 0.015 | 83.0 | 0.027 |
| 4.0 | 0.269 | 24.0 | 0.028 | 44.0 | 0.011 | 64.0 | 0.022 | 84.0 | 0.023 |
| 5.0 | 0.202 | 25.0 | 0.063 | 45.0 | 0.025 | 65.0 | 0.034 | 85.0 | 0.019 |
| 6.0 | 0.201 | 26.0 | 0.056 | 46.0 | 0.016 | 66.0 | 0.037 | 86.0 | 0.014 |
| 7.0 | 0.178 | 27.0 | 0.019 | 47.0 | 0.018 | 67.0 | 0.031 | 87.0 | 0.010 |
| 8.0 | 0.190 | 28.0 | 0.033 | 48.0 | 0.038 | 68.0 | 0.022 | 88.0 | 0.005 |
| 9.0 | 0.164 | 29.0 | 0.024 | 49.0 | 0.037 | 69.0 | 0.023 | 89.0 | 0.002 |
| | | | | | | | | 90.0 | 0.000 |

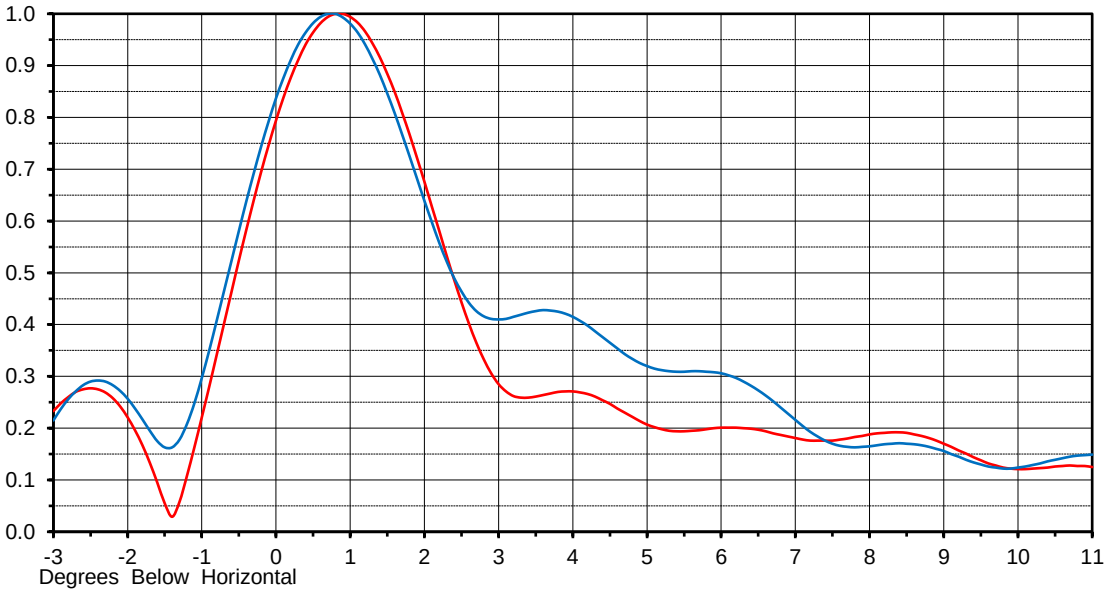
***FutureFill*** *refers to broadband panels or limited bandwidth slotted coaxial antennas that can be modified in the field to provide the flexibility to customize the null structure at a future date.*

## FutureFill OVERLAY

| | |
|---|---|
| Proposal No. | **C-70253-2** |
| Date | **20-Nov-17** |
| Call Letters | **WJPM** |
| Channel | **16** |
| Frequency | **485 MHz** |
| Antenna Type | **TFU-25JTH/VP-R O4 (SP)** |

| | | | | | | |
|---|---|---|---|---|---|---|
| RMS Directivity | 22.8 | **(13.58dB)** | Beam Tilt | 0.75 | Drawing No. 25J228075 | Red |
| RMS Directivity | 18.5 | **(12.67dB)** | Beam Tilt | 0.75 | Drawing No. 25J228075-FF | Blue |

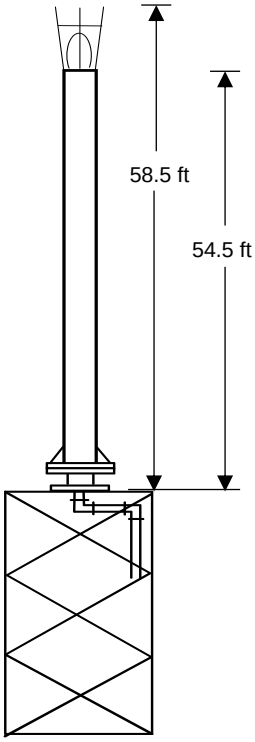
Calculated




Tabulations for 25J228075-FF

| Angle | Field | Angle | Field | Angle | Field | Angle | Field | Angle | Field |
|---|---|---|---|---|---|---|---|---|---|
| -10.0 | 0.154 | 10.0 | 0.124 | 30.0 | 0.010 | 50.0 | 0.065 | 70.0 | 0.018 |
| -9.0 | 0.102 | 11.0 | 0.149 | 31.0 | 0.018 | 51.0 | 0.031 | 71.0 | 0.034 |
| -8.0 | 0.111 | 12.0 | 0.123 | 32.0 | 0.039 | 52.0 | 0.010 | 72.0 | 0.044 |
| -7.0 | 0.136 | 13.0 | 0.082 | 33.0 | 0.051 | 53.0 | 0.024 | 73.0 | 0.046 |
| -6.0 | 0.127 | 14.0 | 0.021 | 34.0 | 0.035 | 54.0 | 0.043 | 74.0 | 0.041 |
| -5.0 | 0.240 | 15.0 | 0.125 | 35.0 | 0.053 | 55.0 | 0.061 | 75.0 | 0.033 |
| -4.0 | 0.098 | 16.0 | 0.154 | 36.0 | 0.076 | 56.0 | 0.066 | 76.0 | 0.023 |
| -3.0 | 0.215 | 17.0 | 0.140 | 37.0 | 0.061 | 57.0 | 0.053 | 77.0 | 0.017 |
| -2.0 | 0.257 | 18.0 | 0.173 | 38.0 | 0.062 | 58.0 | 0.032 | 78.0 | 0.018 |
| -1.0 | 0.297 | 19.0 | 0.161 | 39.0 | 0.101 | 59.0 | 0.034 | 79.0 | 0.023 |
| 0.0 | 0.837 | 20.0 | 0.097 | 40.0 | 0.116 | 60.0 | 0.048 | 80.0 | 0.027 |
| 1.0 | 0.981 | 21.0 | 0.070 | 41.0 | 0.100 | 61.0 | 0.049 | 81.0 | 0.029 |
| 2.0 | 0.639 | 22.0 | 0.108 | 42.0 | 0.074 | 62.0 | 0.038 | 82.0 | 0.028 |
| 3.0 | 0.410 | 23.0 | 0.105 | 43.0 | 0.072 | 63.0 | 0.031 | 83.0 | 0.026 |
| 4.0 | 0.415 | 24.0 | 0.089 | 44.0 | 0.094 | 64.0 | 0.045 | 84.0 | 0.023 |
| 5.0 | 0.320 | 25.0 | 0.137 | 45.0 | 0.099 | 65.0 | 0.060 | 85.0 | 0.019 |
| 6.0 | 0.306 | 26.0 | 0.138 | 46.0 | 0.075 | 66.0 | 0.063 | 86.0 | 0.014 |
| 7.0 | 0.216 | 27.0 | 0.075 | 47.0 | 0.058 | 67.0 | 0.052 | 87.0 | 0.010 |
| 8.0 | 0.165 | 28.0 | 0.012 | 48.0 | 0.078 | 68.0 | 0.033 | 88.0 | 0.005 |
| 9.0 | 0.156 | 29.0 | 0.010 | 49.0 | 0.086 | 69.0 | 0.011 | 89.0 | 0.002 |
| | | | | | | | | 90.0 | 0.000 |

# MECHANICAL SPECIFICATIONS




| | |
|---|---|
| Proposal No. | **C-70253-2** |
| Date | **20-Nov-17** |
| Call Letters | **WJPM** |
| Channel | **16** |
| Frequency | **485 MHz** |
| Antenna Type | **TFU-25JTH/VP-R O4 (SP)** |

Preliminary Specifications

## Top Mounted

### With ice TIA-222-G

| | |
|---|---|
| **Height AGL(z)** | 796 ft (242.6 m) |
| **Basic Wind Speed** | 95 m/h (152.9 km/h) |
| **Structure Class** | II |
| **Exposure Category** | D |
| **Topography Category** | 1 |

| | | |
|---|---|---|
| Design Ice | 0.75 in | $t_{iz}$ = 2.06 in |
| Wind Speed w/Ice | 30 m/h (48.3 km/h) | |

| **Mechanical Specifications** | | **without ice** | **with ice** |
|---|---|---|---|
| Height with Lightning Protector | H4 | 58.5 ft (17.8m) | |
| Height less Lightning Protector | H2 | 54.5 ft (16.6m) | |
| Height of Center of Radiation | H3 | 27.25 ft (8.3m) | |
| Effective Projected Area | $(EPA)_S$ | 64.5 ft² (6m²) | 166.3 ft² (15.4m²) |
| Moment Arm | D1 | 28.8 ft (8.8m) | 29.7 ft (9.1m) |
| Weight | W | 7900 lb (3.6t) | 12000 lb (5.4t) |

Antenna designed in accordance with AISC specifications for design of structural steel as prescribed by TIA-222-G

| | | | | | |
|---|---|---|---|---|---|
| **Prepared by:** | NJS | **Date:** | 20-Nov-17 | **ME:** | **EE:** |
| **Rev. No.2 by:** | NJS | **Date:** | 19-Sep-19 | | |

## Summary

| | |
|---|---|
| Proposal No. | **C-70253-2** |
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## Antenna

| | Hpol | | Vpol | |
|---|---|---|---|---|
| **ERP:** | **67.0 kW** | **( 18.26 dBk )** | **22.3 kW** | **( 13.49 dBk )** |
| RMS Gain* | 17.10 | ( 12.33 dB ) | 5.70 | ( 7.56 dB) |

## Antenna Input Power

**3.9 kW** **( 5.93 dBk )**

## Transmission Line

| | | | |
|---|---|---|---|
| Type: | **Rigid** | Attenuation: | **( 0.93 dB )** |
| Size: | **6-1/8"** | Efficiency: | **80.8%** |
| Impedance: | **75 Ohm** | | |
| Length: | **870 ft** | **265.2 m** | |

## Transmitter Output

**4.9 kW** **( 6.86 dBk )**

Transmitter filter losses not included

* Directivity and Gain are with respect to half wave dipole. The gain includes feed system losses