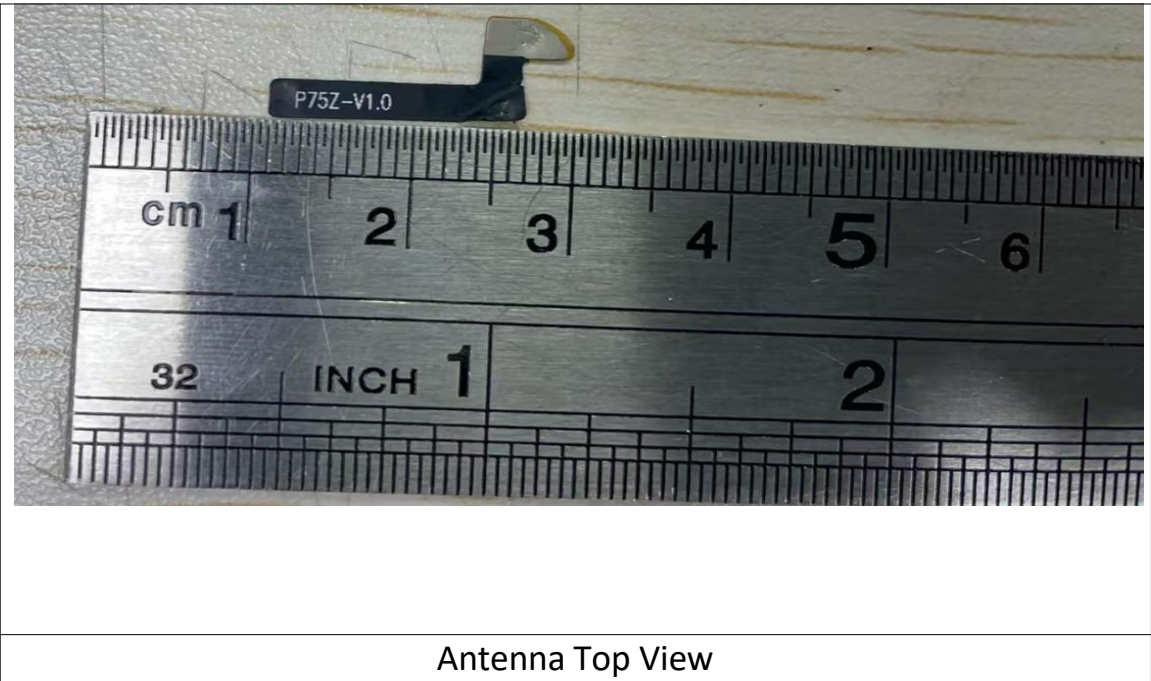
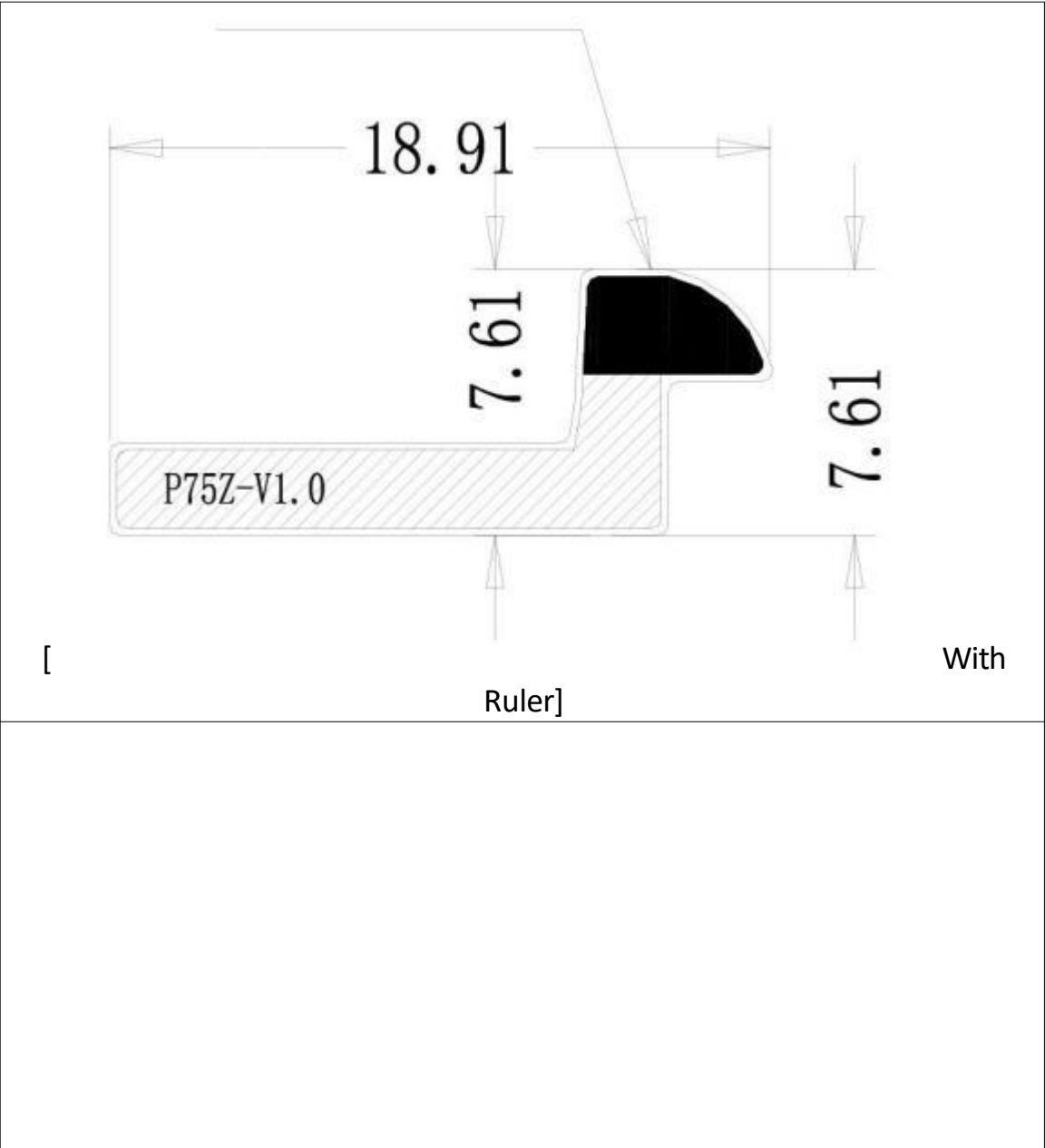


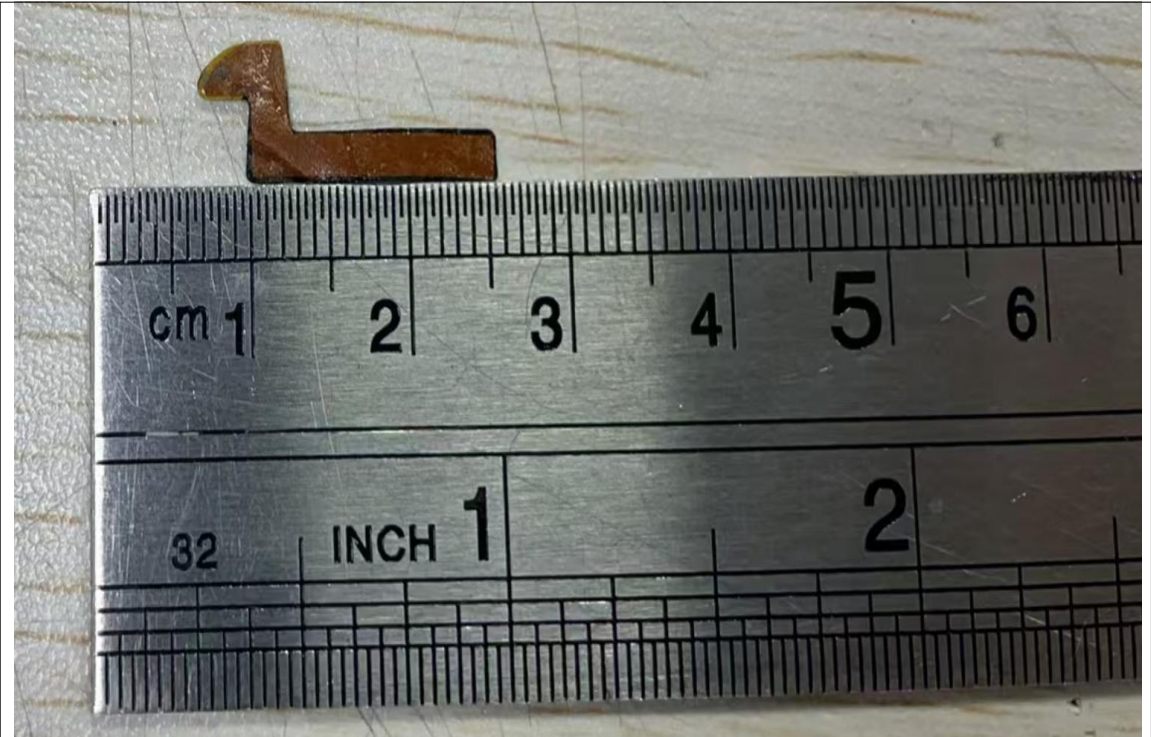
Antenna Information

|                         |                                                                                                                    |
|-------------------------|--------------------------------------------------------------------------------------------------------------------|
| Manufacturer            | Shenzhen Panlong Communication Technology Co., Ltd.                                                                |
| Antenna Type            | Onboard antenna                                                                                                    |
| Antenna Model           | FPC antenna                                                                                                        |
| Antenna Part Number     | 3.30.P75Z.001                                                                                                      |
| Antenna Frequency Range | 2400-2500MHz                                                                                                       |
| Antenna Peak Gain       | -5.09dBi                                                                                                           |
| Manufacturer address    | 201, 2nd Floor, Baisifu Maker, No. 8 North Second Lane, Shiyan Liguang Water Plant, Bao'an District, Shenzhen City |

Antenna Photo







Antenna Bottom View [With Ruler]

Antenna Pattern/Gain Measurement data/Table:

Shenzhen Panlong Communication Technology Co., Ltd.

| Passive -Freq2350.00MHZ |     |        |        |        |        |        |        |        |        |        |        |        |        |     |
|-------------------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----|
| H+V Total<br>(30° Step) |     | 0      | 30     | 60     | 90     | 120    | 150    | 180    | 210    | 240    | 270    | 300    | 330    | 360 |
|                         | 0   | -8.01  | -7.85  | -7.86  | -7.97  | -8.02  | -8.09  | -      | -      | -      | -      | -      | -      | -   |
|                         | 30  | -14.70 | -14.89 | -15.06 | -15.09 | -14.70 | -14.55 | -14.71 | -14.91 | -15.33 | -15.14 | -14.86 | -14.85 | -   |
|                         | 60  | -17.33 | -17.91 | -14.90 | -13.73 | -13.73 | -15.48 | -17.76 | -19.93 | -16.50 | -13.20 | -12.75 | -14.13 | -   |
|                         | 90  | -14.65 | -15.31 | -11.38 | -11.44 | -12.29 | -13.69 | -12.57 | -15.73 | -15.02 | -11.67 | -10.82 | -12.06 | -   |
|                         | 120 | -11.03 | -11.67 | -9.82  | -9.79  | -10.34 | -9.62  | -8.78  | -10.99 | -12.25 | -10.42 | -10.14 | -9.80  | -   |
|                         | 150 | -9.35  | -8.76  | -9.08  | -8.79  | -8.41  | -7.23  | -6.33  | -7.49  | -8.20  | -8.25  | -9.82  | -9.21  | -   |
|                         | 180 | -36.50 | -34.30 | -34.61 | -34.55 | -35.86 | -34.10 | -      | -      | -      | -      | -      | -      | -   |
| H<br>(30° Step)         |     | 0      | 30     | 60     | 90     | 120    | 150    | 180    | 210    | 240    | 270    | 300    | 330    | 360 |
|                         | 0   | -8.78  | -8.08  | -9.85  | -14.64 | -18.21 | -11.90 | -      | -      | -      | -      | -      | -      | -   |
|                         | 30  | -15.22 | -15.09 | -17.73 | -27.45 | -25.25 | -18.42 | -15.75 | -15.26 | -17.86 | -22.17 | -20.67 | -17.48 | -   |
|                         | 60  | -21.47 | -18.26 | -20.17 | -30.80 | -32.59 | -31.65 | -23.37 | -20.25 | -26.12 | -22.19 | -18.68 | -21.38 | -   |
|                         | 90  | -19.25 | -15.45 | -13.86 | -16.91 | -24.31 | -20.27 | -15.38 | -15.86 | -24.27 | -20.86 | -16.19 | -17.32 | -   |
|                         | 120 | -13.48 | -11.71 | -12.44 | -15.24 | -16.08 | -12.76 | -10.38 | -11.05 | -15.25 | -21.61 | -21.30 | -14.68 | -   |
|                         | 150 | -11.21 | -8.83  | -12.99 | -22.80 | -18.09 | -11.09 | -6.94  | -7.66  | -10.99 | -18.39 | -22.15 | -15.92 | -   |
|                         | 180 | -38.18 | -34.32 | -37.32 | -47.22 | -47.82 | -37.49 | -      | -      | -      | -      | -      | -      | -   |
| V<br>(30° Step)         |     | 0      | 30     | 60     | 90     | 120    | 150    | 180    | 210    | 240    | 270    | 300    | 330    | 360 |
|                         | 0   | -15.86 | -20.74 | -12.21 | -9.03  | -8.46  | -10.42 | -      | -      | -      | -      | -      | -      | -   |
|                         | 30  | -24.16 | -28.20 | -18.44 | -15.35 | -15.10 | -16.84 | -21.42 | -26.03 | -18.89 | -16.10 | -16.19 | -18.27 | -   |
|                         | 60  | -19.45 | -29.10 | -16.42 | -13.81 | -13.79 | -15.58 | -19.15 | -31.39 | -17.01 | -13.79 | -14.03 | -15.04 | -   |
|                         | 90  | -16.50 | -30.13 | -14.98 | -12.88 | -12.57 | -14.77 | -15.79 | -30.88 | -15.57 | -12.22 | -12.31 | -13.60 | -   |
|                         | 120 | -14.69 | -32.50 | -13.26 | -11.25 | -11.69 | -12.50 | -13.91 | -29.87 | -15.28 | -10.76 | -10.48 | -11.50 | -   |
|                         | 150 | -13.93 | -26.66 | -11.35 | -8.97  | -8.90  | -9.53  | -15.17 | -21.90 | -11.45 | -8.69  | -10.09 | -10.25 | -   |
|                         | 180 | -41.46 | -57.69 | -37.94 | -34.79 | -36.15 | -36.76 | -      | -      | -      | -      | -      | -      | -   |

| Test Point ID | Freq. (MHz) | TRP (dBm) | Gain (dBi) | Directivity (dBi) | Efficiency (%) | Efficiency (dB) | Max (dBm) | Theta of Max | Phi of Max | Min (dBm) | Theta of Min | Phi of Min | AVG (dBm) | Max/Min (dB) | Max/AVG (dB) | Min/AVG (dB) |
|---------------|-------------|-----------|------------|-------------------|----------------|-----------------|-----------|--------------|------------|-----------|--------------|------------|-----------|--------------|--------------|--------------|
| 1             | 2350.0      | 2350.00   | -6.33      | 5.36              | 6.8%           | -11.70          | -6.33     | 15000        | 180        | -36.50    | 18000        | 0          | -11.37    | 30.17        | 5.04         | -25.13       |
| 2             | 2355.0      | 2355.00   | -6.19      | 5.30              | 7.1%           | -11.50          | -6.19     | 15000        | 180        | -34.13    | 18000        | 9000       | -11.13    | 27.94        | 4.93         | -23.01       |
| 3             | 2360.0      | 2360.00   | -5.77      | 5.60              | 7.3%           | -11.37          | -5.77     | 15000        | 180        | -32.50    | 18000        | 0          | -10.97    | 26.73        | 5.20         | -21.53       |
| 4             | 2365.0      | 2365.00   | -5.61      | 5.68              | 7.4%           | -11.29          | -5.61     | 15000        | 180        | -32.80    | 18000        | 0          | -10.85    | 27.19        | 5.24         | -21.96       |
| 5             | 2370.0      | 2370.00   | -5.35      | 5.83              | 7.6%           | -11.18          | -5.35     | 15000        | 180        | -33.66    | 18000        | 3000       | -10.69    | 28.31        | 5.34         | -22.96       |
| 6             | 2375.0      | 2375.00   | -5.40      | 5.79              | 7.6%           | -11.19          | -5.40     | 15000        | 180        | -35.39    | 18000        | 3000       | -10.67    | 29.88        | 5.27         | -24.72       |
| 7             | 2380.0      | 2380.00   | -5.27      | 5.81              | 7.8%           | -11.06          | -5.27     | 15000        | 180        | -37.97    | 18000        | 0          | -10.55    | 32.70        | 5.28         | -27.42       |
| 8             | 2385.0      | 2385.00   | -5.24      | 5.64              | 8.2%           | -10.86          | -5.24     | 15000        | 180        | -35.67    | 18000        | 0          | -10.35    | 30.44        | 5.11         | -25.33       |
| 9             | 2390.0      | 2390.00   | -5.29      | 5.56              | 8.2%           | -10.84          | -5.29     | 15000        | 180        | -34.76    | 18000        | 0          | -10.30    | 29.47        | 5.02         | -24.45       |
| 10            | 2395.0      | 2395.00   | -5.31      | 5.43              | 8.4%           | -10.74          | -5.31     | 15000        | 180        | -33.02    | 18000        | 6000       | -10.22    | 27.71        | 4.91         | -22.80       |
| 11            | 2400.0      | 2400.00   | -5.36      | 5.18              | 8.8%           | -10.54          | -5.36     | 15000        | 180        | -35.24    | 18000        | 3000       | -10.04    | 29.88        | 4.88         | -25.20       |
| 12            | 2405.0      | 2405.00   | -5.31      | 5.12              | 9.1%           | -10.43          | -5.31     | 0            | 0          | -36.10    | 18000        | 6000       | -9.95     | 30.60        | 4.64         | -26.15       |
| 13            | 2410.0      | 2410.00   | -5.26      | 4.99              | 9.4%           | -10.25          | -5.26     | 0            | 0          | -37.32    | 18000        | 6000       | -9.81     | 32.00        | 4.55         | -27.51       |
| 14            | 2415.0      | 2415.00   | -5.25      | 4.85              | 9.8%           | -10.10          | -5.25     | 0            | 0          | -37.98    | 18000        | 3000       | -9.70     | 32.73        | 4.45         | -28.29       |
| 15            | 2420.0      | 2420.00   | -5.31      | 4.68              | 10.0%          | -9.99           | -5.31     | 0            | 0          | -36.67    | 18000        | 3000       | -9.62     | 31.36        | 4.31         | -27.05       |
| 16            | 2425.0      | 2425.00   | -5.30      | 4.55              | 10.3%          | -9.88           | -5.30     | 15000        | 180        | -34.79    | 18000        | 3000       | -9.52     | 29.49        | 4.22         | -25.27       |
| 17            | 2430.0      | 2430.00   | -5.21      | 4.40              | 10.9%          | -9.62           | -5.21     | 15000        | 180        | -35.39    | 18000        | 6000       | -9.34     | 30.17        | 4.12         | -26.05       |
| 18            | 2435.0      | 2435.00   | -5.14      | 4.27              | 11.5%          | -9.41           | -5.14     | 15000        | 180        | -37.46    | 18000        | 6000       | -9.16     | 32.33        | 4.03         | -28.30       |
| 19            | 2440.0      | 2440.00   | -5.12      | 4.17              | 11.8%          | -9.29           | -5.12     | 15000        | 180        | -36.86    | 18000        | 9000       | -9.08     | 31.74        | 3.96         | -27.79       |
| 20            | 2445.0      | 2445.00   | -5.16      | 4.02              | 12.1%          | -9.17           | -5.16     | 15000        | 180        | -39.07    | 18000        | 9000       | -9.00     | 33.91        | 3.84         | -30.07       |
| 21            | 2450.0      | 2450.00   | -5.17      | 3.89              | 12.4%          | -9.06           | -5.17     | 15000        | 180        | -36.70    | 18000        | 9000       | -8.91     | 31.53        | 3.74         | -27.79       |
| 22            | 2455.0      | 2455.00   | -5.09      | 3.86              | 12.7%          | -8.96           | -5.09     | 15000        | 180        | -33.76    | 18000        | 12000      | -8.83     | 28.67        | 3.73         | -24.93       |
| 23            | 2460.0      | 2460.00   | -5.20      | 3.69              | 12.8%          | -8.94           | -5.20     | 15000        | 180        | -33.02    | 18000        | 9000       | -8.83     | 27.77        | 3.58         | -24.19       |
| 24            | 2465.0      | 2465.00   | -5.38      | 3.57              | 12.7%          | -8.96           | -5.38     | 15000        | 180        | -32.49    | 18000        | 9000       | -8.84     | 27.11        | 3.46         | -23.64       |
| 25            | 2470.0      | 2470.00   | -5.50      | 3.41              | 12.6%          | -8.99           | -5.50     | 15000        | 180        | -34.23    | 18000        | 9000       | -8.87     | 26.60        | 3.29         | -25.37       |
| 26            | 2475.0      | 2475.00   | -5.73      | 3.47              | 12.0%          | -9.20           | -5.73     | 15000        | 180        | -33.64    | 18000        | 9000       | -9.06     | 27.92        | 3.24         | -24.58       |
| 27            | 2480.0      | 2480.00   | -5.89      | 3.44              | 11.7%          | -9.33           | -5.89     | 0            | 15000      | -32.37    | 18000        | 0          | -9.19     | 26.48        | 3.29         | -23.19       |
| 28            | 2485.0      | 2485.00   | -5.83      | 3.60              | 11.4%          | -9.43           | -5.83     | 0            | 15000      | -30.19    | 18000        | 9000       | -9.25     | 24.36        | 3.43         | -20.93       |
| 29            | 2490.0      | 2490.00   | -6.11      | 3.69              | 10.5%          | -9.60           | -6.11     | 0            | 15000      | -29.66    | 18000        | 0          | -9.59     | 23.56        | 3.48         | -20.07       |
| 30            | 2495.0      | 2495.00   | -6.19      | 3.83              | 10.0%          | -10.02          | -6.19     | 0            | 0          | -30.39    | 18000        | 9000       | -9.78     | 24.19        | 3.58         | -20.61       |
| 31            | 2500.0      | 2500.00   | -6.16      | 4.02              | 9.6%           | -10.17          | -6.16     | 0            | 15000      | -31.30    | 18000        | 0          | -9.89     | 25.14        | 3.73         | -21.41       |

