

Shenzhen QiChen Communication  
Equipment Co. , Ltd.

*APPROVAL*

Customers: Shenzhen Huatuo Security Co. , Ltd.

DESCRIPTION:

PART NO.: QC-4G-250MM-120A

CUS PART NO.: QC-4G-250MM-120A

D A T E: 2024.4.10

Sample signature

| ENGINEERING DEPARTMENT | Q C DEPARTMENT | SALES DEPARTMENT |
|------------------------|----------------|------------------|
| ChenYuanPing           | LiPing         | XiongFang        |

Customer acknowledges signature

| ENGINEERING DEPARTMENT | Q C DEPARTMENT | PURCHASING DEPARTMENT |
|------------------------|----------------|-----------------------|
|                        |                |                       |

Shenzhen QiChen Communication

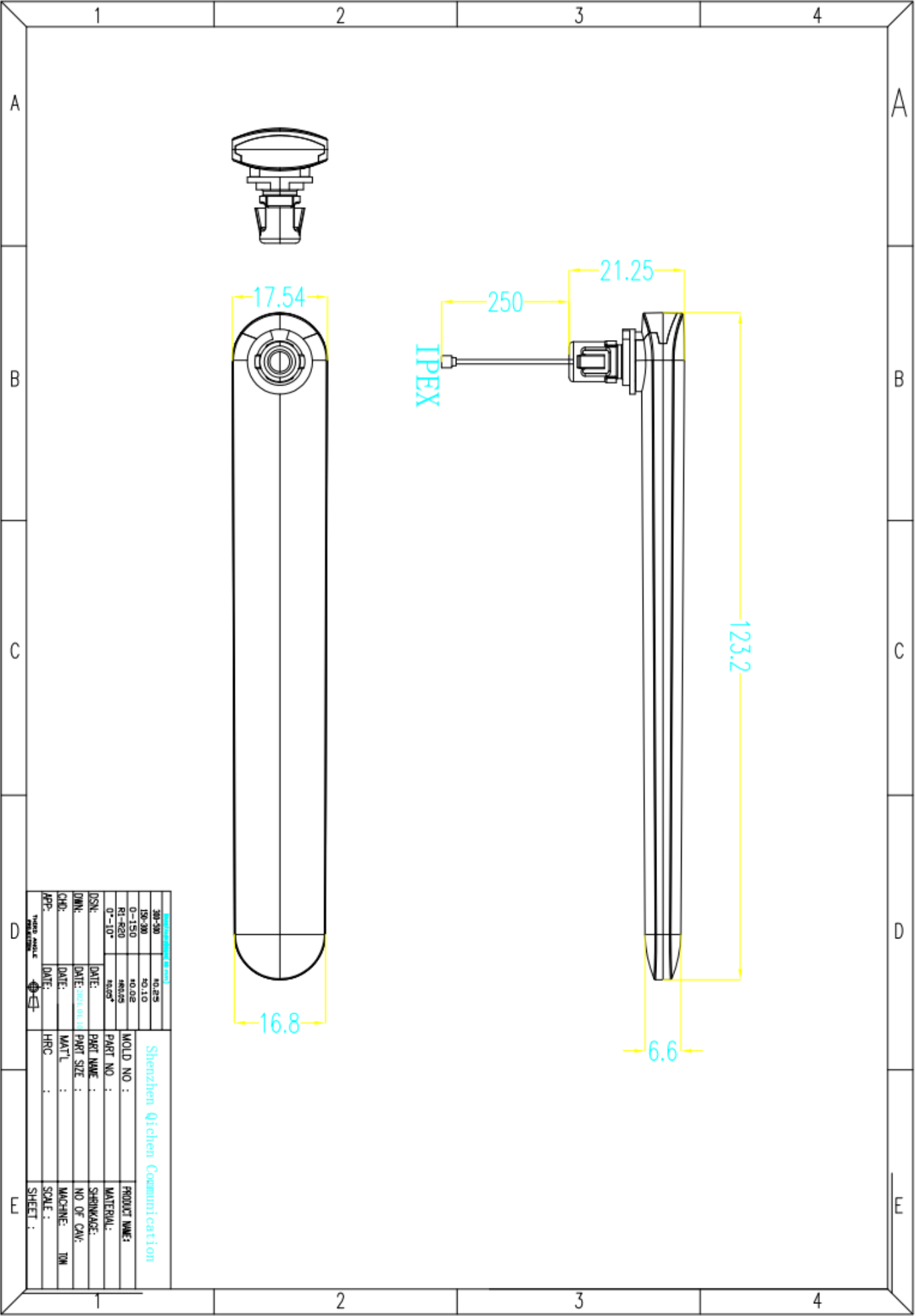
Equipment Co. , Ltd.

| Technical parameters of electrical apparatus |                |                           |                |
|----------------------------------------------|----------------|---------------------------|----------------|
| 电 性 能 指 标                                    |                | Electrical Specifications |                |
| 频率范围                                         | 700MHz/2700MHz | Frequency Range           | 700MHz/2700MHz |
| 电压驻波比                                        | ≤2.0           | VSWR                      | ≤2.0           |
| 天线增益                                         | 5.0DBI         | antenna gain              | 5.0DBI         |
| 输入阻抗                                         | 50 Ω           | Input Impedance           | 50 Ω           |
| 最大输入功率                                       | 50W            | Maximum Input Power       | 50W            |
| 机 械 指 标                                      |                | Mechanical Specifications |                |
| 天线颜色                                         | 白色             | Antenna Color             | White          |
| 接口形式                                         | IPEX           | Input connector           | IPEX           |
| 天线长度                                         | 124mm          | Cable length              | 124mm          |
| 工作温度                                         | -40℃~+85℃      | Working Temperature       | -40℃~+85℃      |
| 工作湿度                                         | 20~80%         | Working Humidity          | 20~80%         |

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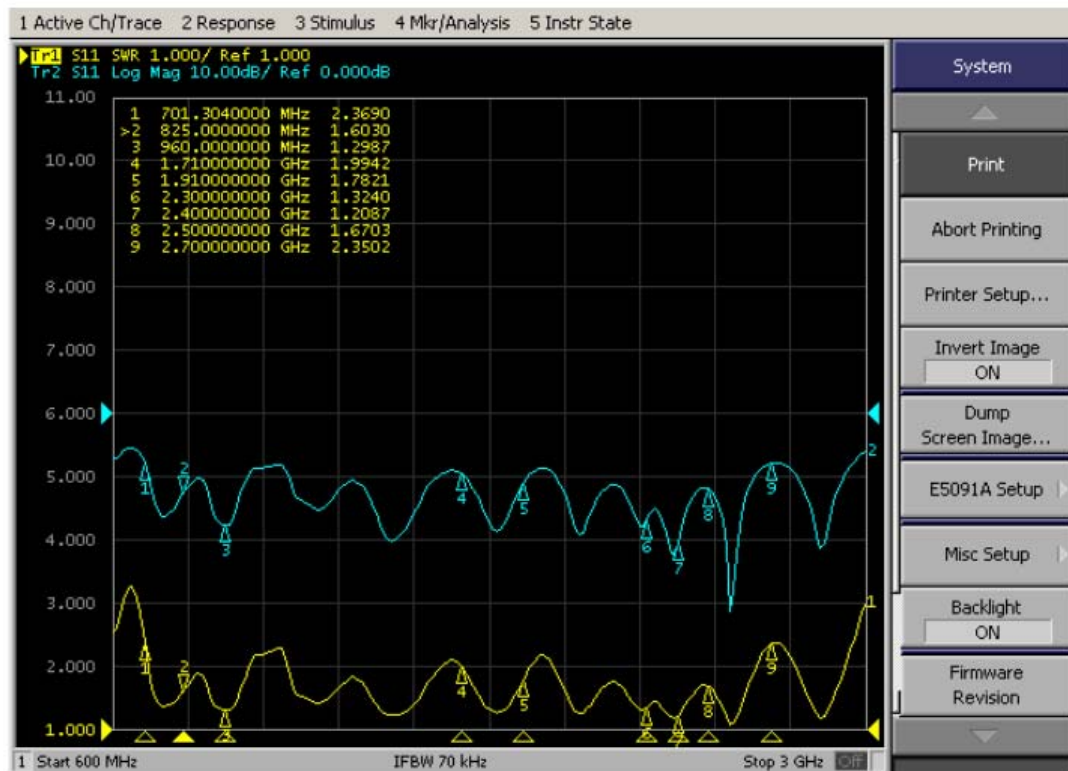
| Frequency Range | antenna gain |
|-----------------|--------------|
| 700-780 MHz     | 2.46 DBI     |
| 800-880 MHz     | 2.71 DBI     |
| 900-1700        | 4.12 DBI     |
| 1750-1950       | 4.36 DBI     |
| 2000-2200       | 3.81 DBI     |
| 2300-2500       | 3.65 DBI     |
| 2550-2700       | 3.88 DBI     |

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## S11 SWR LOG

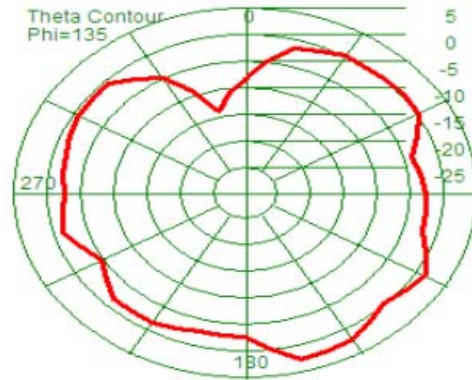
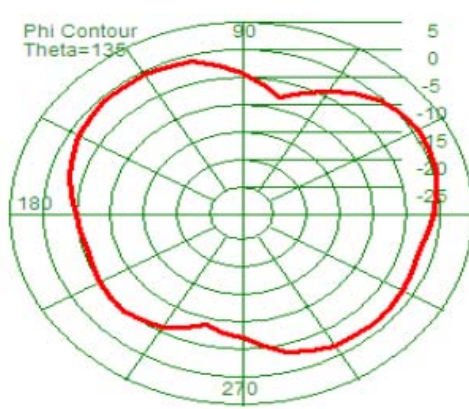
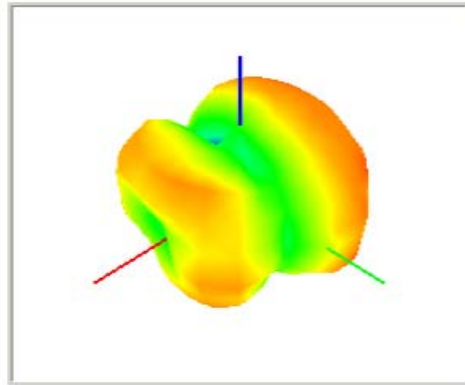


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## 无源效率，增益

| Test Point ID | Freq. (MHz) | TRP (dBm) | Gain (dB) | Directivity (dB) | 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             | 700.0       | 700.00    | 1.15      | 3.94             | 43.6%          | 1.15            | -0.22     | 12000        | 4500       | -13.88    | 7500         | 16680      | -4.35     | 13.65        | 4.13         | -9.52        |
| 2             | 720.0       | 720.00    | 1.29      | 4.79             | 44.7%          | 1.29            | 1.29      | 12000        | 6000       | -13.24    | 9000         | 16500      | -3.90     | 14.53        | 5.18         | -9.35        |
| 3             | 740.0       | 740.00    | 1.68      | 4.90             | 47.7%          | 1.68            | 1.68      | 12000        | 6000       | -12.04    | 7500         | 15180      | -3.79     | 13.72        | 5.47         | -8.25        |
| 4             | 760.0       | 760.00    | 2.46      | 5.39             | 51.0%          | 2.46            | 2.46      | 12000        | 7500       | -11.64    | 9000         | 180        | -3.51     | 14.10        | 5.98         | -8.12        |
| 5             | 780.0       | 780.00    | 2.31      | 5.51             | 47.9%          | 2.31            | 2.31      | 12000        | 7500       | -13.48    | 9000         | 16680      | -3.70     | 15.79        | 6.01         | -9.77        |
| 6             | 800.0       | 800.00    | 2.13      | 5.49             | 46.1%          | 2.13            | 2.13      | 13500        | 7500       | -14.19    | 16500        | 15180      | -3.75     | 16.32        | 5.88         | -10.44       |
| 7             | 820.0       | 820.00    | 2.21      | 5.58             | 46.0%          | 2.21            | 2.21      | 13500        | 9000       | -16.52    | 16500        | 16680      | -3.72     | 18.72        | 5.92         | -12.80       |
| 8             | 840.0       | 840.00    | 2.10      | 5.34             | 47.4%          | 2.10            | 2.10      | 12000        | 7500       | -17.39    | 16500        | 16680      | -3.64     | 19.49        | 5.74         | -13.75       |
| 9             | 860.0       | 860.00    | 2.19      | 5.17             | 50.4%          | 2.19            | 2.19      | 12000        | 7500       | -15.41    | 16500        | 0          | -3.38     | 17.60        | 5.57         | -12.03       |
| 10            | 880.0       | 880.00    | 2.71      | 5.61             | 51.3%          | 2.71            | 2.71      | 13500        | 7500       | -14.91    | 9000         | 180        | -3.15     | 17.62        | 5.86         | -11.75       |
| 11            | 900.0       | 900.00    | 3.16      | 5.85             | 53.8%          | 3.16            | 3.16      | 13500        | 7500       | -17.04    | 10500        | 16680      | -2.85     | 20.20        | 6.01         | -14.19       |
| 12            | 920.0       | 920.00    | 3.37      | 5.78             | 57.4%          | 3.37            | 3.37      | 13500        | 7500       | -19.63    | 10500        | 16680      | -2.52     | 23.01        | 5.89         | -17.11       |
| 13            | 940.0       | 940.00    | 3.66      | 5.99             | 58.4%          | 3.66            | 3.66      | 13500        | 7500       | -20.47    | 10500        | 16680      | -2.31     | 24.12        | 5.97         | -18.15       |
| 14            | 960.0       | 960.00    | 3.83      | 6.27             | 57.1%          | 3.83            | 3.83      | 13500        | 7500       | -21.21    | 10500        | 16680      | -2.21     | 25.04        | 6.04         | -19.00       |
| 15            | 1700.0      | 1700.00   | 4.12      | 8.38             | 56.8%          | 4.12            | 5.92      | 18000        | 13500      | -21.25    | 7500         | 4500       | -0.99     | 27.17        | 6.91         | -20.26       |
| 16            | 1750.0      | 1750.00   | 4.36      | 8.70             | 57.2%          | 4.36            | 6.27      | 18000        | 15000      | -18.74    | 10500        | 9180       | -0.91     | 25.02        | 7.18         | -17.84       |
| 17            | 1800.0      | 1800.00   | 4.15      | 8.67             | 57.1%          | 4.15            | 6.23      | 18000        | 15000      | -19.92    | 10500        | 0          | -1.07     | 26.16        | 7.30         | -18.86       |
| 18            | 1850.0      | 1850.00   | 3.28      | 8.78             | 57.1%          | 3.28            | 6.34      | 18000        | 15000      | -19.19    | 9000         | 0          | -1.21     | 25.53        | 7.56         | -17.97       |
| 19            | 1900.0      | 1900.00   | 3.64      | 8.86             | 55.4%          | 3.64            | 6.30      | 18000        | 15000      | -19.28    | 9000         | 0          | -1.33     | 25.58        | 7.63         | -17.95       |
| 20            | 1950.0      | 1950.00   | 3.82      | 8.27             | 53.5%          | 3.82            | 5.56      | 18000        | 16500      | -20.53    | 9000         | 3000       | -1.42     | 26.08        | 6.98         | -19.11       |
| 21            | 2000.0      | 2000.00   | 3.80      | 7.89             | 51.8%          | 3.80            | 5.03      | 18000        | 16500      | -16.41    | 9000         | 0          | -1.56     | 21.45        | 6.59         | -14.85       |
| 22            | 2050.0      | 2050.00   | 3.81      | 6.70             | 51.4%          | 3.81            | 3.81      | 18000        | 16500      | -15.35    | 15000        | 0          | -1.82     | 19.16        | 5.63         | -13.53       |
| 23            | 2100.0      | 2100.00   | 2.91      | 6.38             | 56.3%          | 2.91            | 2.91      | 18000        | 16500      | -21.62    | 12000        | 3000       | -2.51     | 24.53        | 5.42         | -19.11       |
| 24            | 2150.0      | 2150.00   | 2.75      | 5.80             | 52.3%          | 2.75            | 2.06      | 18000        | 16500      | -20.24    | 6000         | 10680      | -3.03     | 22.30        | 5.09         | -17.22       |
| 25            | 2200.0      | 2200.00   | 2.68      | 5.11             | 50.6%          | 2.68            | 1.01      | 12000        | 10500      | -27.43    | 6000         | 10680      | -3.69     | 28.44        | 4.70         | -23.74       |
| 26            | 2300.0      | 2300.00   | 3.01      | 5.23             | 58.6%          | 3.01            | 1.99      | 13500        | 12000      | -24.86    | 6000         | 10680      | -3.25     | 26.87        | 5.24         | -21.63       |
| 27            | 2350.0      | 2350.00   | 3.09      | 5.10             | 60.2%          | 3.09            | 2.09      | 12000        | 12000      | -21.56    | 1500         | 3000       | -3.15     | 23.65        | 5.24         | -18.41       |
| 28            | 2400.0      | 2400.00   | 3.64      | 5.20             | 65.5%          | 3.64            | 2.64      | 12000        | 12000      | -21.21    | 1500         | 15180      | -2.53     | 23.85        | 5.28         | -18.57       |
| 29            | 2450.0      | 2450.00   | 3.65      | 5.45             | 62.5%          | 3.65            | 2.65      | 15000        | 13500      | -19.09    | 3000         | 10680      | -2.85     | 21.74        | 5.50         | -16.24       |
| 30            | 2500.0      | 2500.00   | 3.17      | 4.88             | 63.5%          | 3.17            | 2.17      | 15000        | 13500      | -18.44    | 3000         | 10680      | -2.76     | 20.61        | 4.93         | -15.68       |
| 31            | 2550.0      | 2550.00   | 2.54      | 5.50             | 60.2%          | 2.54            | 2.54      | 16500        | 15000      | -20.44    | 1500         | 12180      | -2.97     | 22.98        | 5.51         | -17.46       |
| 32            | 2600.0      | 2600.00   | 3.88      | 5.66             | 60.7%          | 3.88            | 2.88      | 16500        | 15000      | -19.39    | 1500         | 10680      | -2.81     | 22.27        | 5.69         | -16.58       |
| 33            | 2650.0      | 2650.00   | 3.39      | 5.46             | 59.6%          | 3.39            | 2.39      | 16500        | 15000      | -21.48    | 1500         | 10680      | -3.05     | 23.87        | 5.44         | -18.43       |
| 34            | 2700.0      | 2700.00   | 3.59      | 5.87             | 58.4%          | 3.59            | 2.59      | 16500        | 15000      | -17.14    | 3000         | 9180       | -3.23     | 19.73        | 5.83         | -13.90       |

# 无源效率，增益



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## 1. Scope:

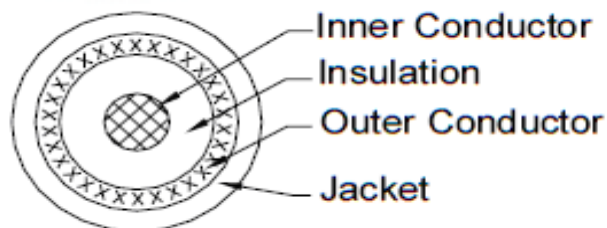
This specification covers FEP insulated High-Frequency coaxial cable for internal wiring of electronic equipment.

## 2. Construction :

| Item            | Unit           | Spec. Value              |
|-----------------|----------------|--------------------------|
| Inner Conductor | Material       | --- Silver plated copper |
|                 | construction   | No./mm 7/0.102           |
|                 | Dia.(approx)   | mm 0.30                  |
| Insulation      | Material       | --- FEP                  |
|                 | Nom. Thickness | mm 0.27                  |
|                 | Dia.(approx)   | mm 0.85±0.05             |
|                 | Color          | --- Natural              |
| Outer Conductor | Type           | --- Braid                |
|                 | Material       | --- Silver plated copper |
|                 | Coverage       | % 16/3/0.10              |
|                 | Dia.(approx)   | mm 1.30                  |
| Jacket          | Material       | --- FEP                  |
|                 | Nom. Thickness | mm 0.27                  |
|                 | Color          | --- BROWN                |
|                 | Dia.(approx)   | mm 1.85±0.10             |

## 3. Characteristics :

| Test Item                           | Unit           | Specified Value                    | Note                               |
|-------------------------------------|----------------|------------------------------------|------------------------------------|
| Appearance                          | -              | Faultless in visible               | -                                  |
| Inner conductor resistance(at 20℃)  | $\Omega$ /km   | Max.354                            | At 20℃                             |
| Insulation resistance 1> (at 20℃)   | M $\Omega$ -km | Min.1000                           | At 20℃                             |
| Dielectric strength                 |                | No breakdown at AC 2000V for 1 min | Outer conductor to inner conductor |
| Capacitance                         | pF/m           | Nom.95                             | At 1KHz                            |
| Characteristic impedance (at D-TDR) | $\Omega$       | 50±2                               | TDR method                         |
| Attenuation                         | dB/m           | 0.45                               | 100MHz                             |
|                                     |                | 1.5                                | 1G                                 |
|                                     |                | 2.1                                | 2G                                 |
|                                     |                | 2.6                                | 3G                                 |



Cross-section of cable