



GA.107.201111

## Specification

|                     |   |
|---------------------|---|
| <b>Part No.</b>     | GA.107.201111   |
| <b>Product Name</b> | Magnetic Mount Cellular Penta-band Antenna  |
| <b>Feature</b>      | <p>Delivers high performance for all 2G/3G/3.5 networks worldwide<br/>             800MHz to 2200MHz<br/>             Magnetic mount<br/>             Superior Super Magnet – Neodymium N35<br/>             Custom cables and connectors available<br/>             RoHS Compliant</p> |

## 1. Introduction

The GA.107 magnetic cellular band antenna delivers marked improvements in efficiency and gain across all common frequencies in use for cellular bands today. Now one antenna can be used in place of multiple part numbers.

Small enough to be used indoors and outdoors, the antenna performance has been designed to take advantage of any metal plate (ground-plane) it attaches to deliver best of class performance.

The GA.107 features a superior super magnet made from Neodymium N35, giving the antenna a maximum pull-force of 1.92 kilogram-force (kgf).

A reliable return loss of <10dB when mounted on a metal plate ensures it complies with the industry standards set by module makers and networks worldwide.

## 2. Specification

### Penta-Band Cellular

| Communication System   | AMPS             | GSM     | DCS       | PCS       | UMTS      |
|------------------------|------------------|---------|-----------|-----------|-----------|
| Frequency (MHz)        | 824~896          | 880~960 | 1710~1880 | 1850~1990 | 1710~2170 |
| <b>Peak Gain (dBi)</b> |                  |         |           |           |           |
| Free Space             | 2.6              | 5.0     | -2.2      | -2.3      | -2.1      |
| with metal ground      | 0.1              | -0.3    | -1.0      | -1.0      | -0.7      |
| <b>Efficiency</b>      |                  |         |           |           |           |
| Free Space             | 35%              | 45%     | 21%       | 22%       | 22%       |
| With metal Ground      | 44%              | 40%     | 24%       | 26%       | 26%       |
| Impedance              | 50Ω              |         |           |           |           |
| Polarization           | Linear           |         |           |           |           |
| Radiation Pattern      | Omni-Directional |         |           |           |           |
| V.S.W.R.               | < 2.0 : 1        |         |           |           |           |
| Input Power            | 50 W             |         |           |           |           |

### Mechanical

|              |   |
|--------------|---|
| Dimensions   | Length 116mm, Ø 29.5mm Base                           |
| Cable Type   | RG-174  |
| Cable Length | 2M  |
| Pull Force   | 1.92 kgf Max.   |
| Casing       | 300 series stainless steel with black Duracoat finish |
| Connector    | SMA Male  |

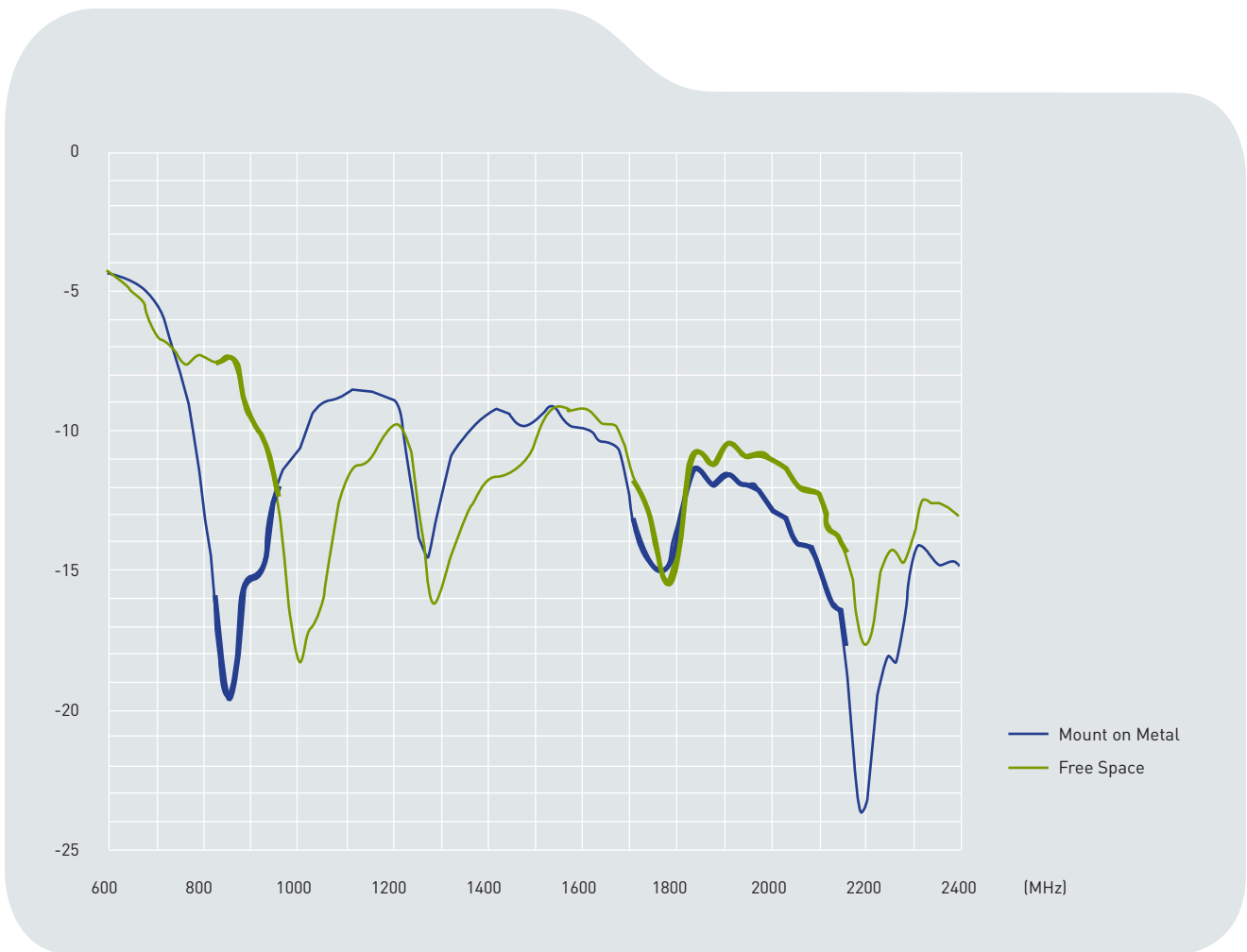
### Environmental

|                   |                            |
|-------------------|----------------------------|
| Temperature Range | -40°C to 85°C              |
| Humidity          | Non-condensing 65°C 95% RH |

\* Note – RF characteristic shown in this data sheet is measured with RG-174 and SMA(M) connector in room temperature.

### 3. Antenna Characteristics

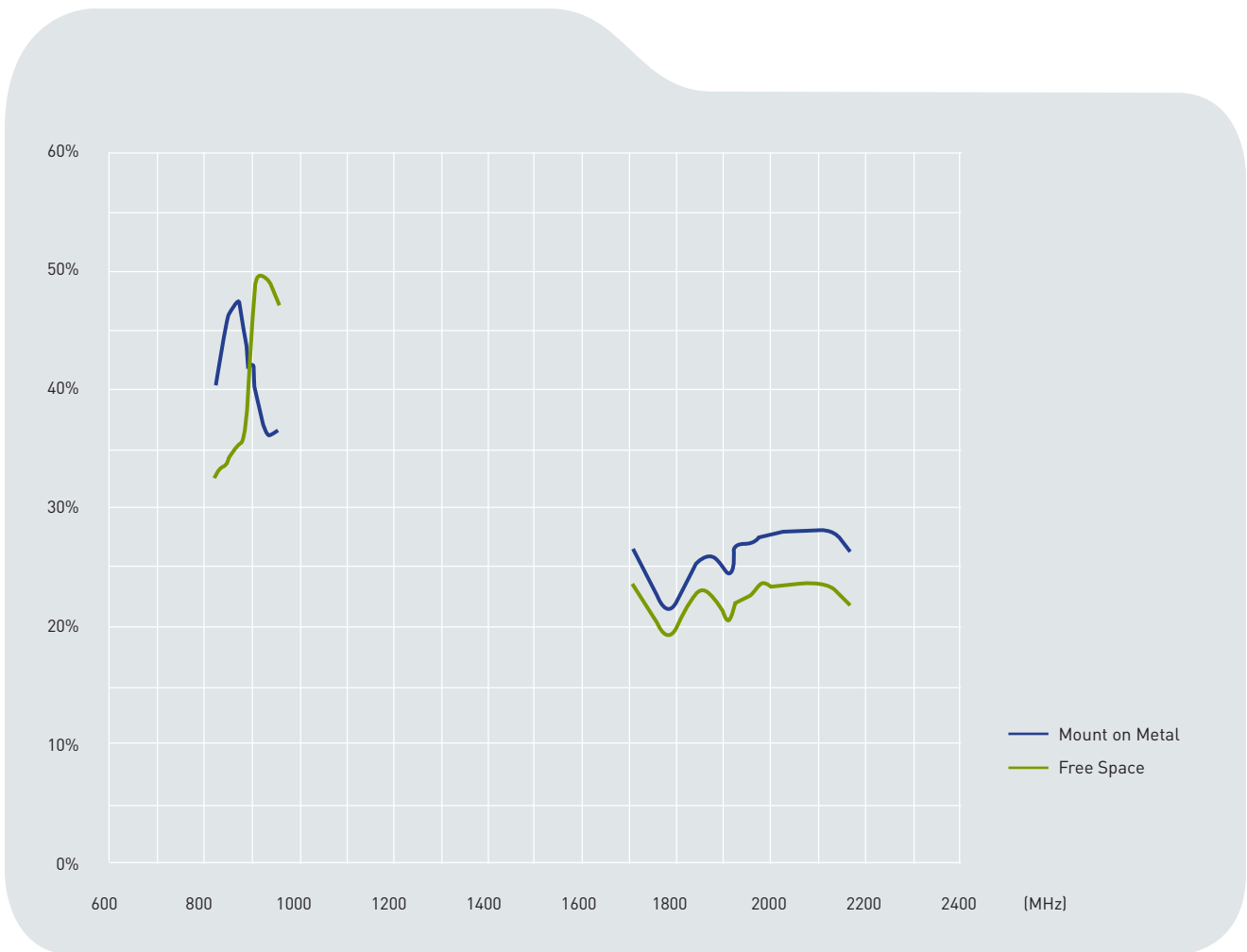
#### 3.1 Return Loss



The highlighted parts are cellular operation frequency.

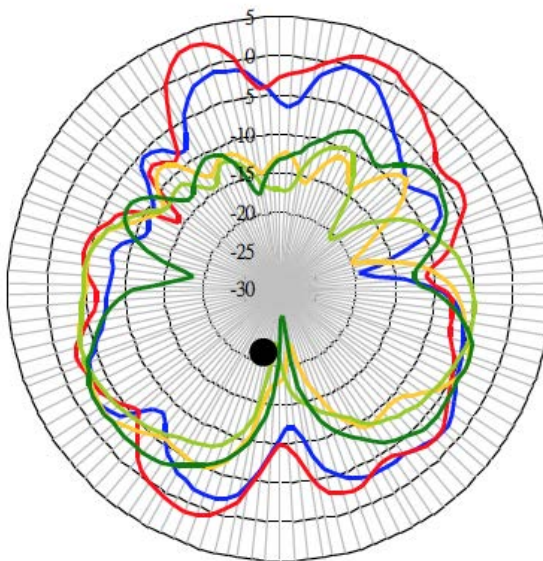
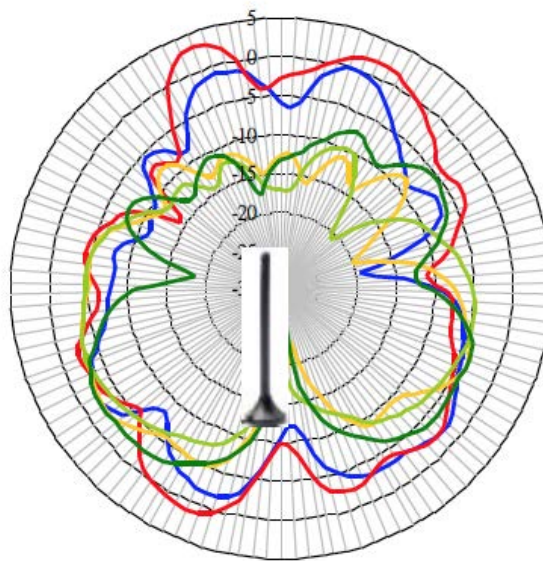
### 3. Antenna Characteristics

#### 3.2 Antenna Efficiency



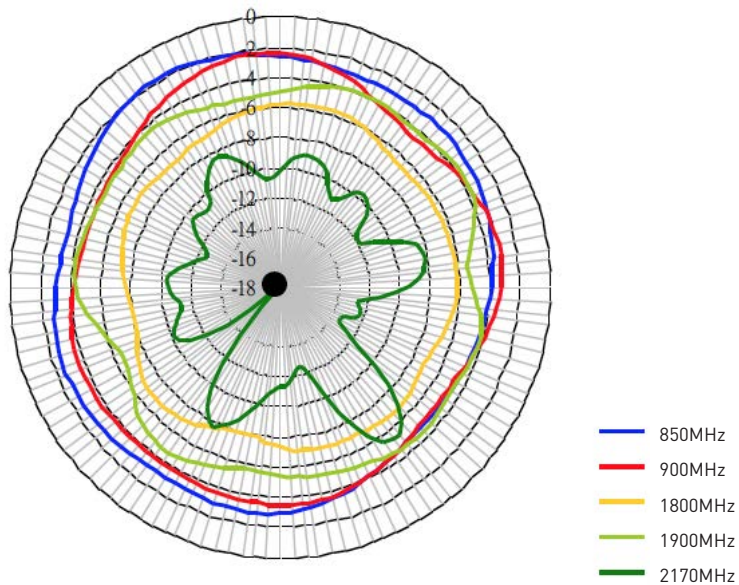
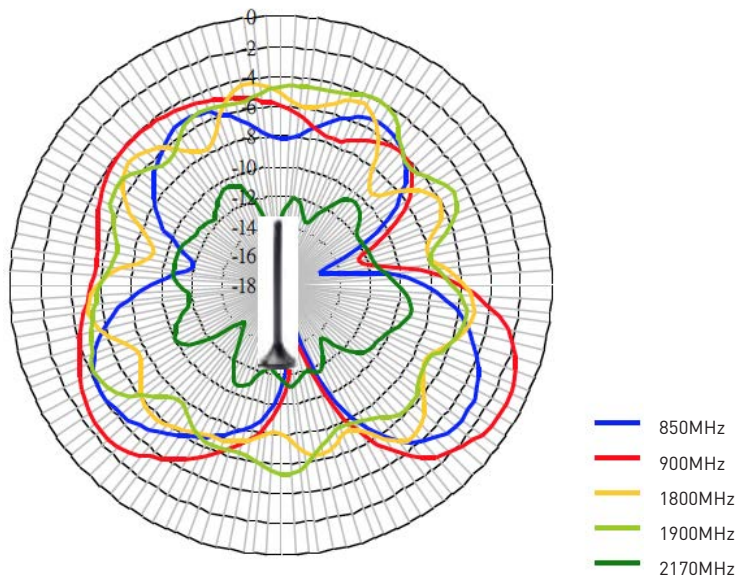
## 4. Antenna Radiation Patterns

### 4.1 Radiation Pattern (Free Space)



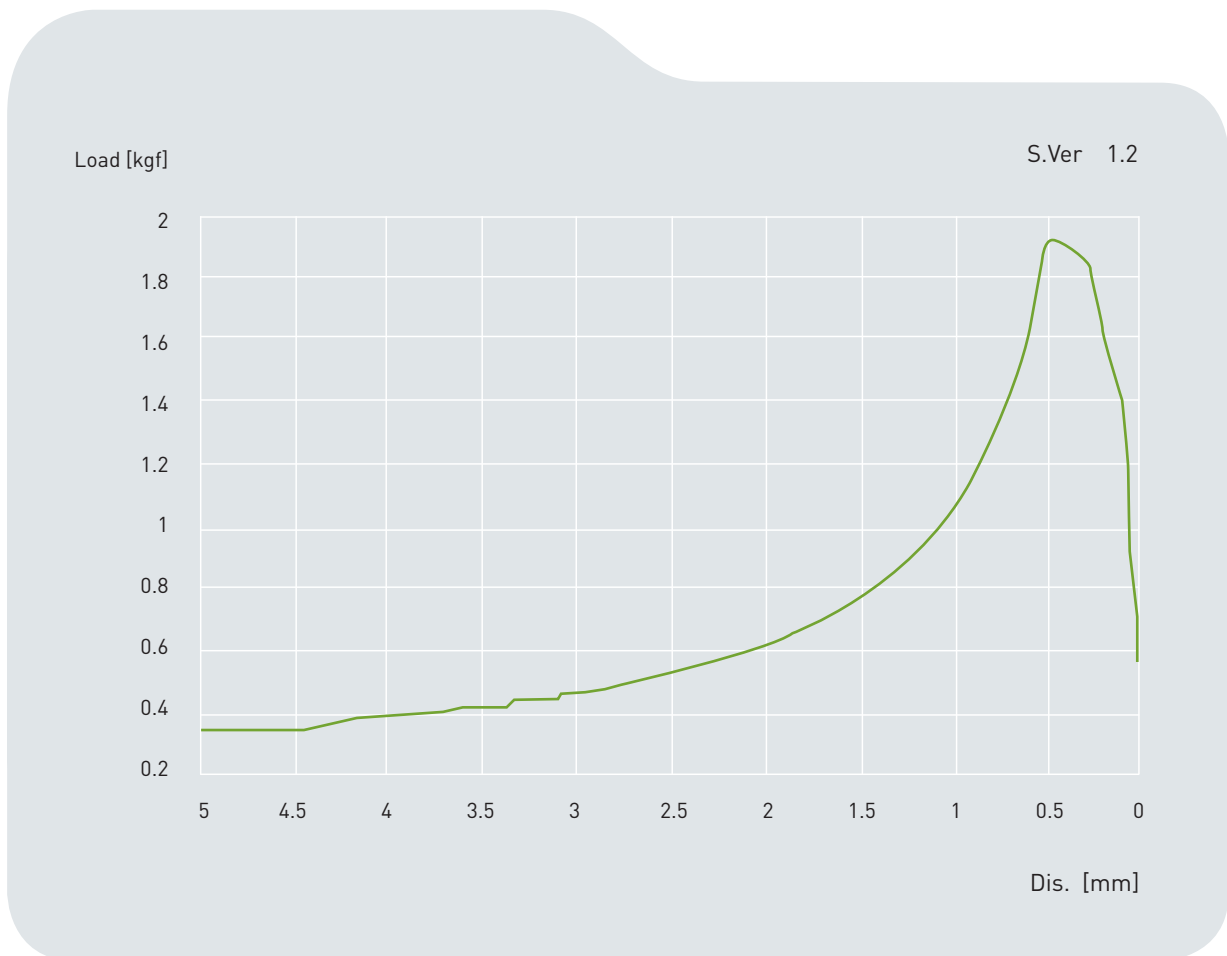
## 4. Antenna Radiation Patterns

### 4.2 Radiation Pattern (On Ground Plane)



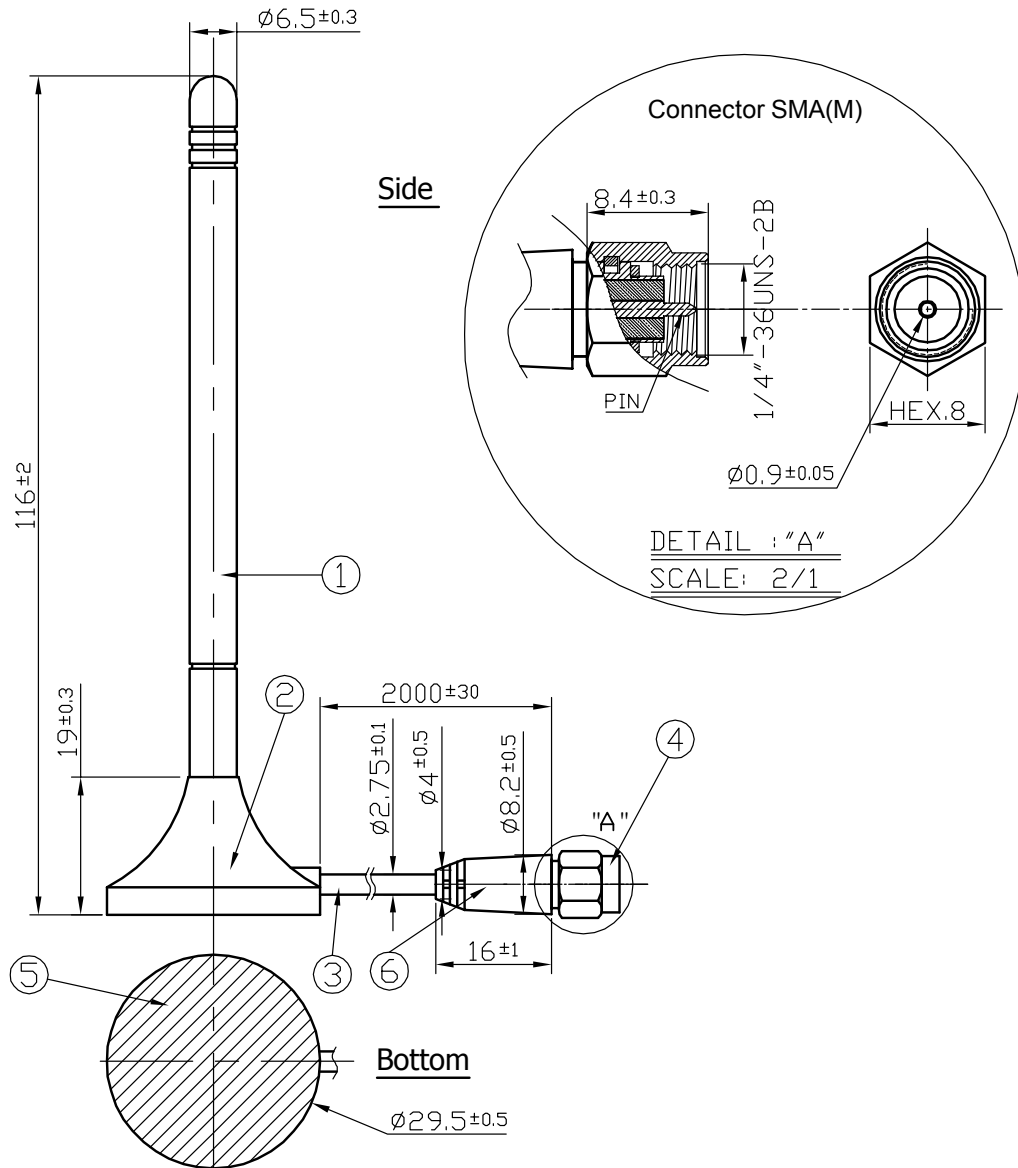
## 5. Magnetic Pull Force (kilogram - force (kgf))

|                         |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|
| <b>Distance (mm)</b>    | 0    | 0.1  | 0.2  | 0.3  | 0.4  | 0.5  | 0.6  | 0.7  | 0.8  | 0.9  | 1    |
| <b>Pull force (kgf)</b> | 0    | 1.37 | 1.61 | 1.85 | 1.9  | 1.92 | 1.64 | 1.42 | 1.28 | 1.15 | 1.06 |
| <b>Distance (mm)</b>    | 1.1  | 1.2  | 1.3  | 1.4  | 1.5  | 1.6  | 1.7  | 1.8  | 1.9  | 2    | 2.1  |
| <b>Pull force (kgf)</b> | 0.98 | 0.92 | 0.86 | 0.82 | 0.76 | 0.74 | 0.7  | 0.68 | 0.64 | 0.62 | 0.6  |
| <b>Distance (mm)</b>    | 2.2  | 2.3  | 2.4  | 2.5  | 2.6  | 2.7  | 2.8  | 2.9  | 3    | 3.1  | 3.2  |
| <b>Pull force (kgf)</b> | 0.58 | 0.56 | 0.54 | 0.52 | 0.52 | 0.5  | 0.49 | 0.47 | 0.46 | 0.45 | 0.44 |
| <b>Distance (mm)</b>    | 3.3  | 3.4  | 3.5  | 3.6  | 3.7  | 3.8  | 3.9  | 4    | 4.1  | 4.2  | 4.3  |
| <b>Pull force (kgf)</b> | 0.44 | 0.42 | 0.42 | 0.42 | 0.4  | 0.4  | 0.4  | 0.38 | 0.36 | 0.36 | 0.36 |
| <b>Distance (mm)</b>    | 4.4  | 4.5  | 4.6  | 4.7  | 4.8  | 4.9  | 5    |      |      |      |      |
| <b>Pull force (kgf)</b> | 0.36 | 0.36 | 0.36 | 0.34 | 0.35 | 0.34 | 0.34 |      |      |      |      |



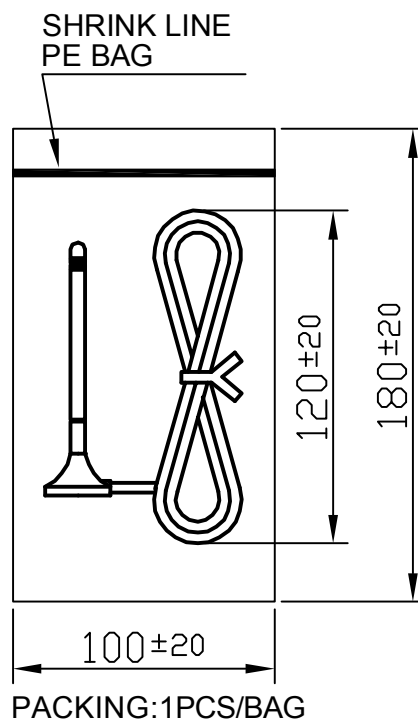


## 6. Drawing



|   | Name                   | Material  | Finish | QTY |
|---|------------------------|-----------|--------|-----|
| 1 | GA.107 Antenna Housing | TPU       | Black  | 1   |
| 2 | Holder                 | ABS       | Black  | 1   |
| 3 | RG174                  | PVC       | Black  | 1   |
| 4 | SMA(M)                 | Brass     | Gold   | 1   |
| 5 | Sticker                | Polyester | White  | 1   |
| 6 | Strain Relief Bushing  | PE        | Black  | 1   |

## 7. Packaging



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