

## SPECIFICATION

- Part No. : **CM.02.03F21.02806**
- Product Name : Ceiling-mounted 3dBi Wide-band Antenna  
700MHz to 6GHz
- Features : Boosts coverage and data-rate performance of  
following communication systems  
LTE/GSM/CDMA/HSPA/UMTS/WCDMA  
WIFI/ WIMAX/ ISM  
High peak gain, high efficiency ceiling antenna  
Custom cables and connectors available  
**RoHS Compliant**



## 1. Introduction

Taoglas Ceiling Mount Antenna CM.02 is a wideband antenna solution, 700 MHz to 6GHz, covering all cellular, LTE, Wi-Fi and WiMAX applications in one antenna. The antenna has high peak gain and efficiency across all bands enabling very wide coverage areas and high speed data rates. The radiation pattern has excellent Omni-directional properties at all frequencies, a unique feature of this wide-band antenna compared to other designs in the market which tend to have nulls at certain bands. This antenna would provide all CPE and Hotspot needs literally “under one roof”.

Many module manufacturers specify peak gain limits for any antennas that are to be connected to that module. Those peak gain limits are based on free-space conditions. In practice, the peak gain of an antenna tested in free-space can degrade by at least 1 or 2dBi when put inside a device. So ideally you should go for a slightly higher peak gain antenna than mentioned on the module specification to compensate for this effect, giving you better performance.

Upon testing of any of our antennas with your device and a selection of appropriate layout, integration technique, or cable, Taoglas can make sure any of our antennas’ peak gain will be below the peak gain limits. Taoglas can then issue a specification and/or report for the selected antenna in your device that will clearly show it complying with the peak gain limits, so you can be assured you are meeting regulatory requirements for that module.

For example, a module manufacturer may state that the antenna must have less than 2dBi peak gain, but you don't need to select an embedded antenna that has a peak gain of less than 2dBi in free-space. This will give you a less optimized solution. It is better to go for a slightly higher free-space peak gain of 3dBi or more if available. Once that antenna gets integrated into your device, performance will degrade below this 2dBi peak gain due to the effects of GND plane, surrounding components, and device housing. If you want to be absolutely sure, contact Taoglas and we will test. Choosing a Taoglas antenna with a higher peak gain than what is specified by the module manufacturer and enlisting our help will ensure you are getting the best performance possible without exceeding the peak gain limits.

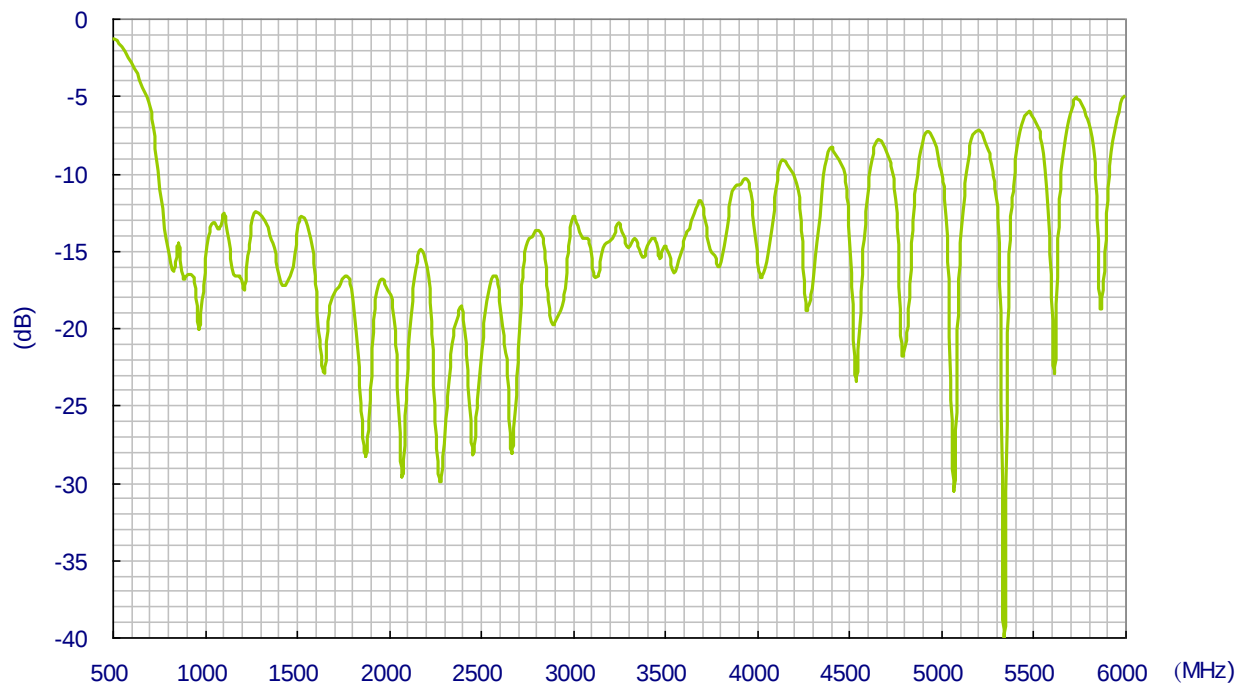
The attractive, extremely light, and covert design allows the antenna to be easily mounted on a ceiling, and would be suited to any indoor area that would require a wireless network - hotels, conference centre's, exhibition halls, offices, retail outlets etc. The design is not obtrusive, only 97.5mm in height, and would blend into any environment.

## 2. Specification

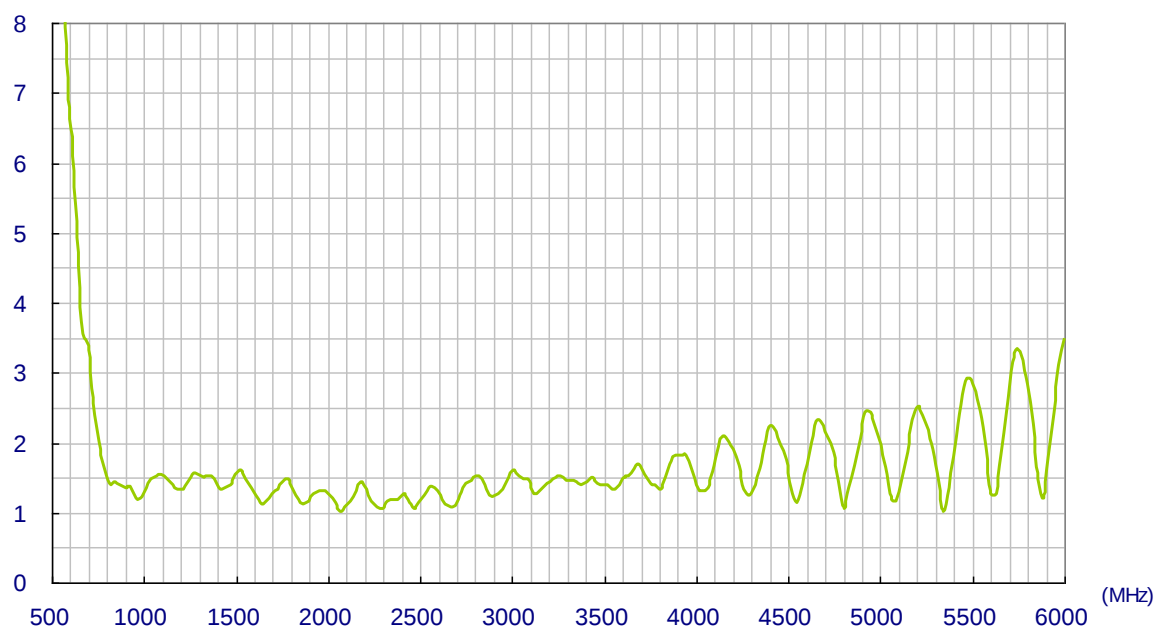
| CELLULAR           |                                        |           |           |           |           |           |
|--------------------|----------------------------------------|-----------|-----------|-----------|-----------|-----------|
| Frequency (GHz)    | 0.7 ~ 1.0                              | 1.0 ~ 2.0 | 2.0 ~ 3.0 | 3.0 ~ 4.0 | 4.0 ~ 5.0 | 5.0 ~ 6.0 |
| Peak Gain (dBi)    | 1.6                                    | 1.9       | 3.0       | 3.6       | 3.6       | 4.4       |
| Average Gain (dBi) | -0.6                                   | -0.6      | -0.7      | -.0.9     | -1.4      | -1.9      |
| Efficiency         | 88%                                    | 87%       | 85%       | 81%       | 73%       | 65%       |
| Impedance          | 50Ω                                    |           |           |           |           |           |
| Polarization       | Vertical                               |           |           |           |           |           |
| Radiation Pattern  | Omni                                   |           |           |           |           |           |
| Input Power        | 50 W                                   |           |           |           |           |           |
| Cable              | 0.3m RG58 standard, fully customizable |           |           |           |           |           |
| Connector          | N Type (Female)                        |           |           |           |           |           |
| MECHANICAL         |                                        |           |           |           |           |           |
| Dimensions         | Height 97.5mm x Diameter 167.5mm       |           |           |           |           |           |
| Casing             | UV resistant ABS                       |           |           |           |           |           |
| Base               | Aluminum                               |           |           |           |           |           |
| Thread             | 17.25 mm ABS                           |           |           |           |           |           |
| Weight             | 208g                                   |           |           |           |           |           |
| ENVIRONMENTAL      |                                        |           |           |           |           |           |
| Temperature Range  | -40°C to 85°C                          |           |           |           |           |           |
| Humidity           | Non-condensing 65°C 95% RH             |           |           |           |           |           |

## 3. Antenna Characteristics

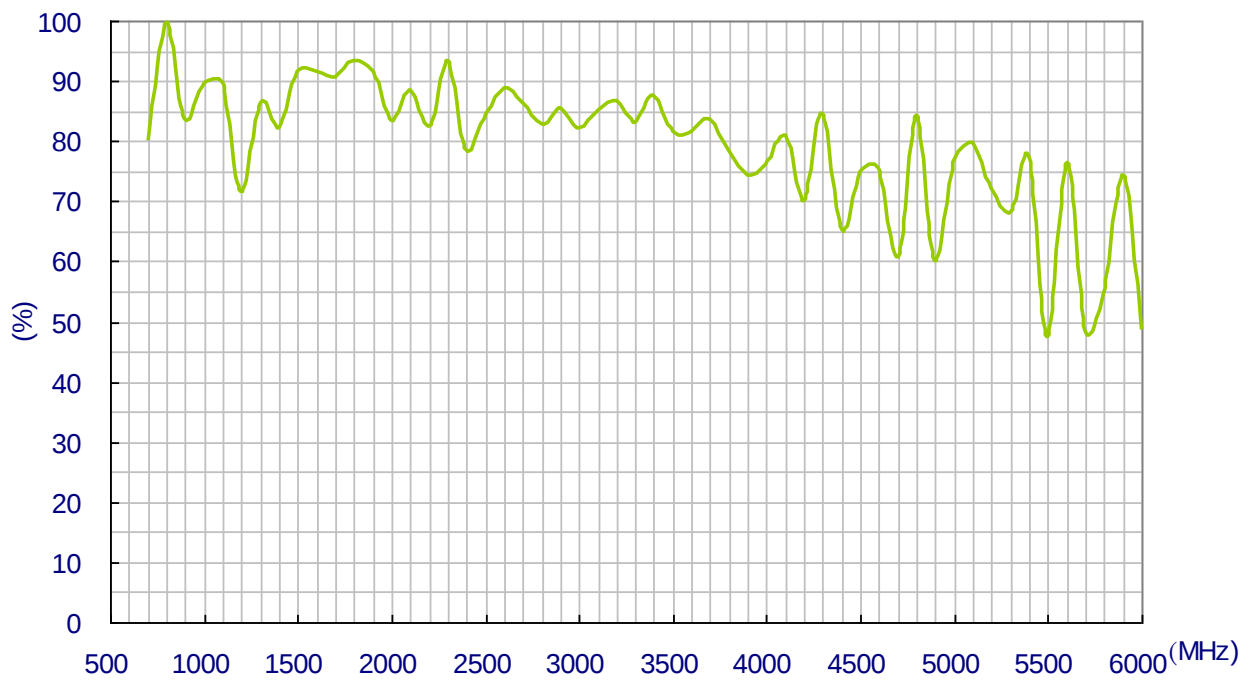
### 3.1. Return Loss



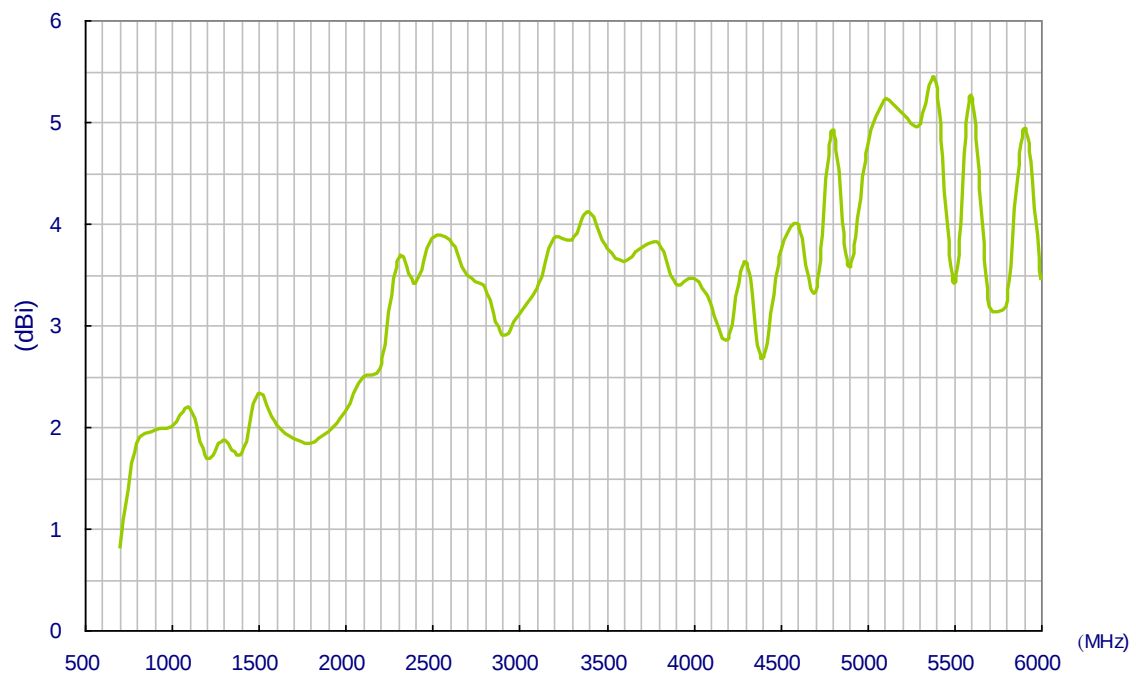
### 3.2. VSWR



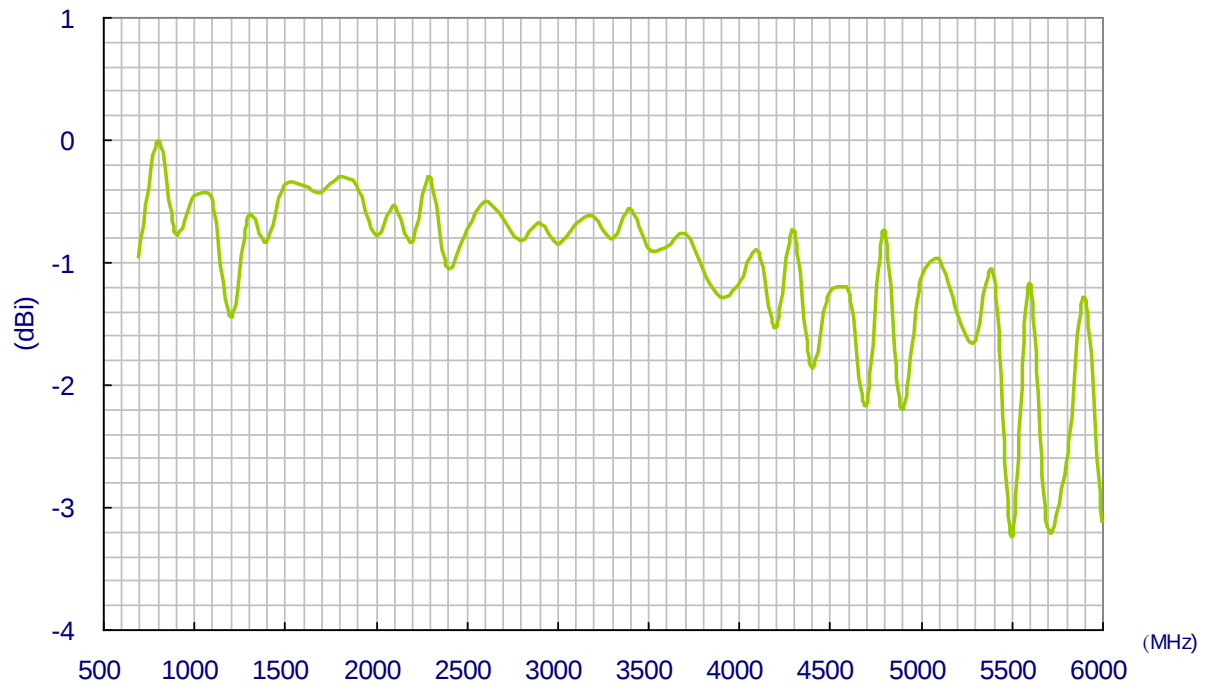
### 3.3. Efficiency



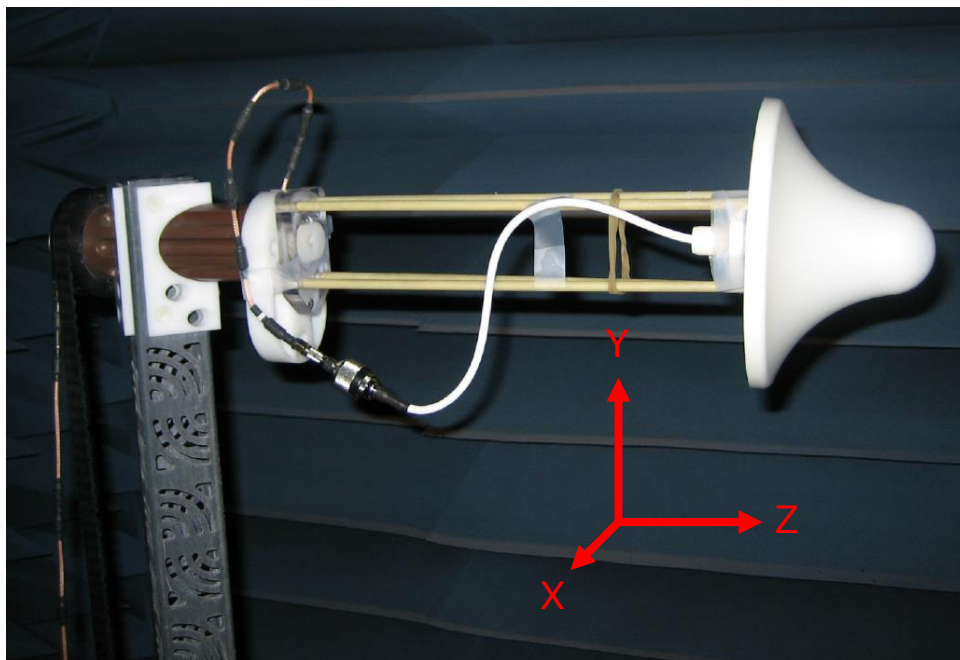
### 3.4. Peak Gain



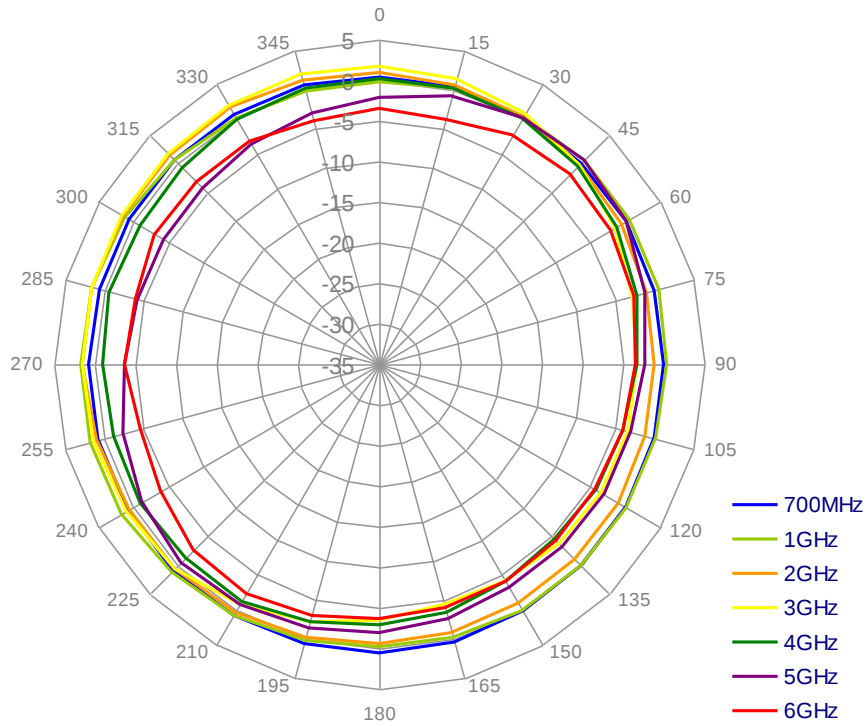
### 3.5. 3D Average Gain



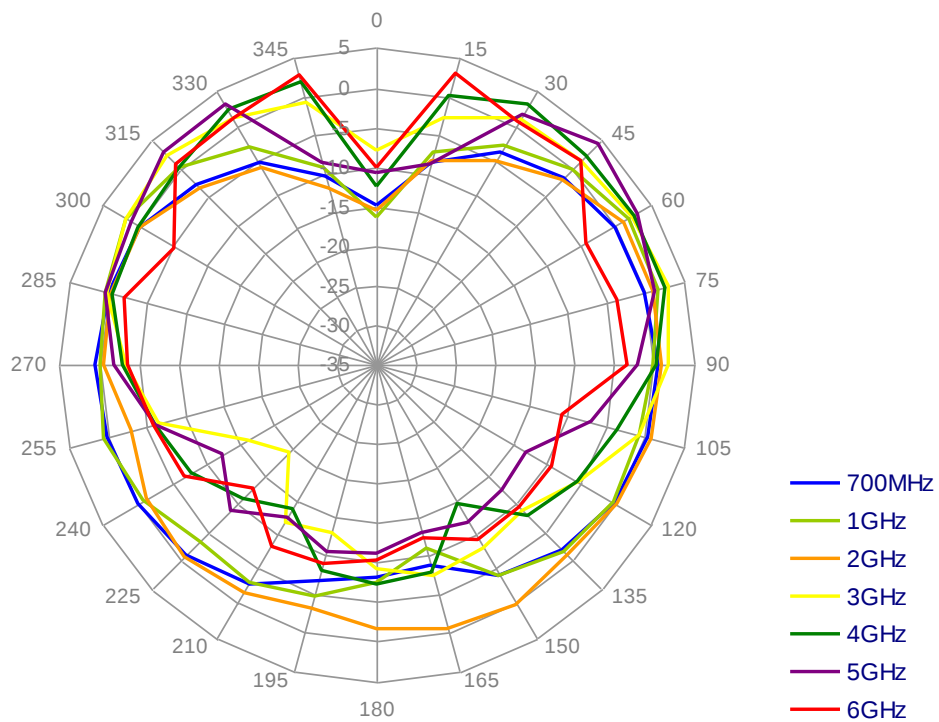
## 4. Radiation Pattern



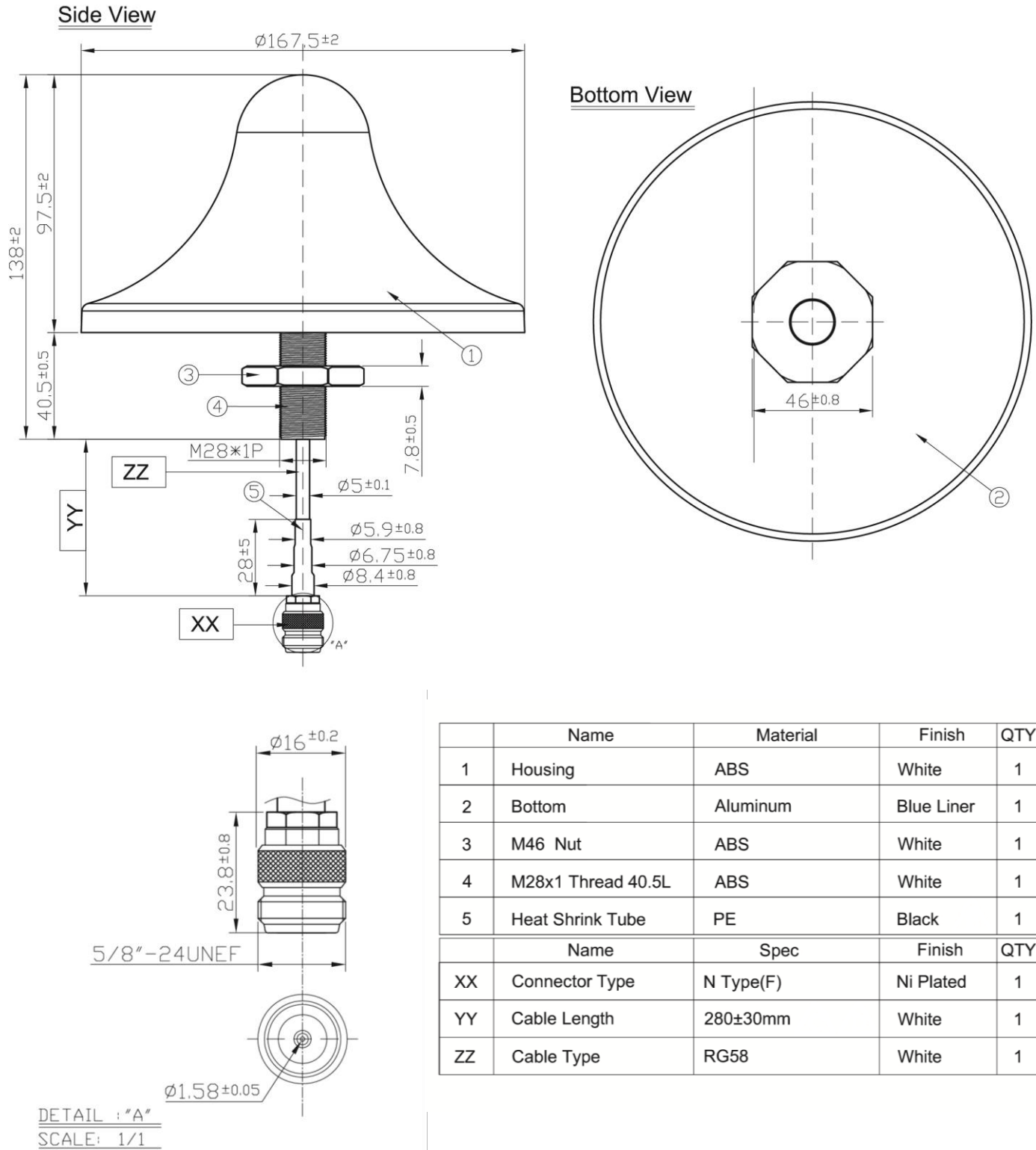
## XY Plane



## XZ Plane



## 5. Antenna Drawing (Unit: mm)

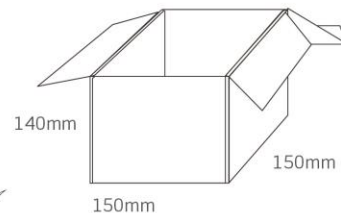


## 6. Packaging

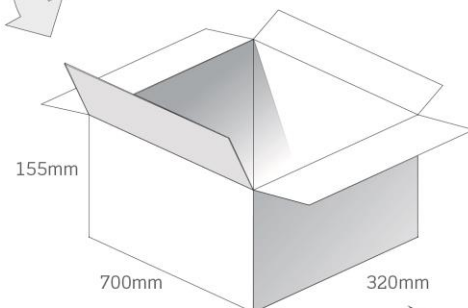
1 No. CM.02.03F21.02806 per PE bag  
Bag Dimensions - 400 x 300mm  
Weight - 209g



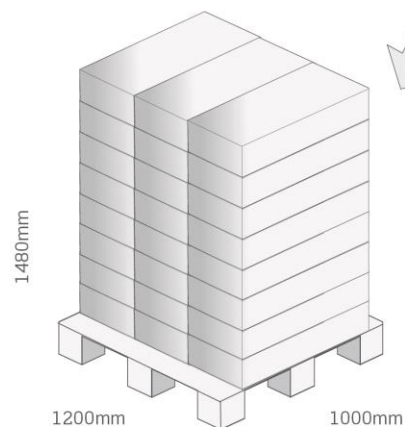
1 No. CM.02.03F21.02806 per small box  
Box Dimensions - 150 x 150 x 140mm  
Weight - 0.3Kg



1 Outer Carton  
Carton Dimensions - 700 x 320 x 155mm  
8 pcs CM.02.03F21.02806 per carton  
Weight - 3.2Kg



Pallet Dimensions 1200\*1000\*1480mm  
24 Cartons per Pallet  
3 Cartons per layer  
8 Layers



Taoglas makes no warranties based on the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Taoglas reserves all rights to this document and the information contained herein.

Reproduction, use or disclosure to third parties without express permission is strictly prohibited.

Copyright © Taoglas Ltd.