TAOGLAS

Datasheet

# Meteor

**Part No:**
**FW.86.RNT.M**

**Description:**

Meteor-868MHz Flexible Whip Monopole Antenna RP-N Type(M) Straight

**Features:**

External 868MHz Monopole Antenna
Omni-directional
Designed for Outdoor Use
Over 90% efficiency*
Over 4dBi high peak gain*
Robust Inner Steel Core
Antenna height 246mm
RP-N Type(M) Straight Connector
IP65 dust and water-resistant
*Tested on 30cm*30cm Ground Plane
RoHS Compliant

# 1. Introduction

The FW.86 is a flexible 868MHz whip antenna with an RP-N type (M) connector for outdoor use. It features excellent efficiency (>95%) and high peak gain (>4.5 dBi) at 868MHz on a 30x30 cm ground plane.

The antenna was specifically developed for monitoring systems, such as weather monitoring, motion/vibration sensors, and pollutants monitoring.

The FW.86 has an excellent omni-directional radiation pattern, ensuring wide coverage. The antennas high efficiency means that it allows your radio to consume less power than with a lower efficiency antenna when transferring data. It also means a better strength of signal, and better sensitivity in areas of low signal levels. The antenna performs at its best while attached to a ground plane with dimensions of at least 30x30 cm. For an environment where there is no ground-plane available we recommend to use the TI.18 or OMB.868.

The FW.86 whip is made of a flexible inner steel core covered by PE so it is extremely resistant to abrasion and maintains its original shape and RF performance even after shock. This rugged design and IP65 rating on the housing ensure high reliability.

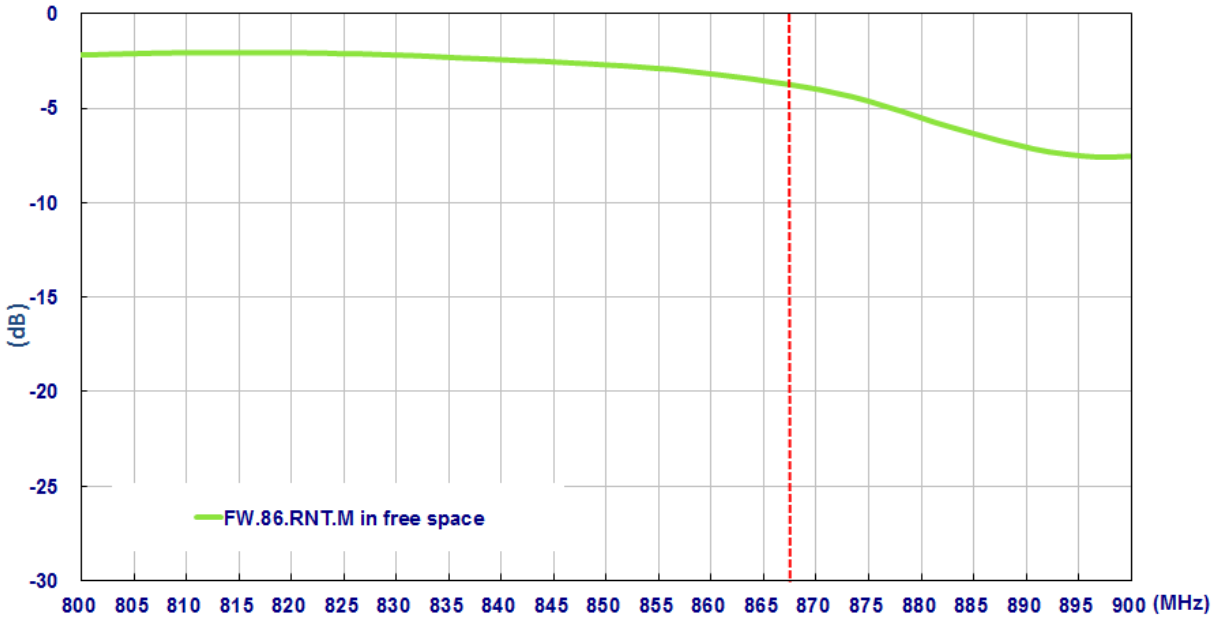
This antenna also comes with SMA(M) connector as standard. Other custom variants can be provided subject to NRE and MOQ. Contact your regional Taoglas office for details.

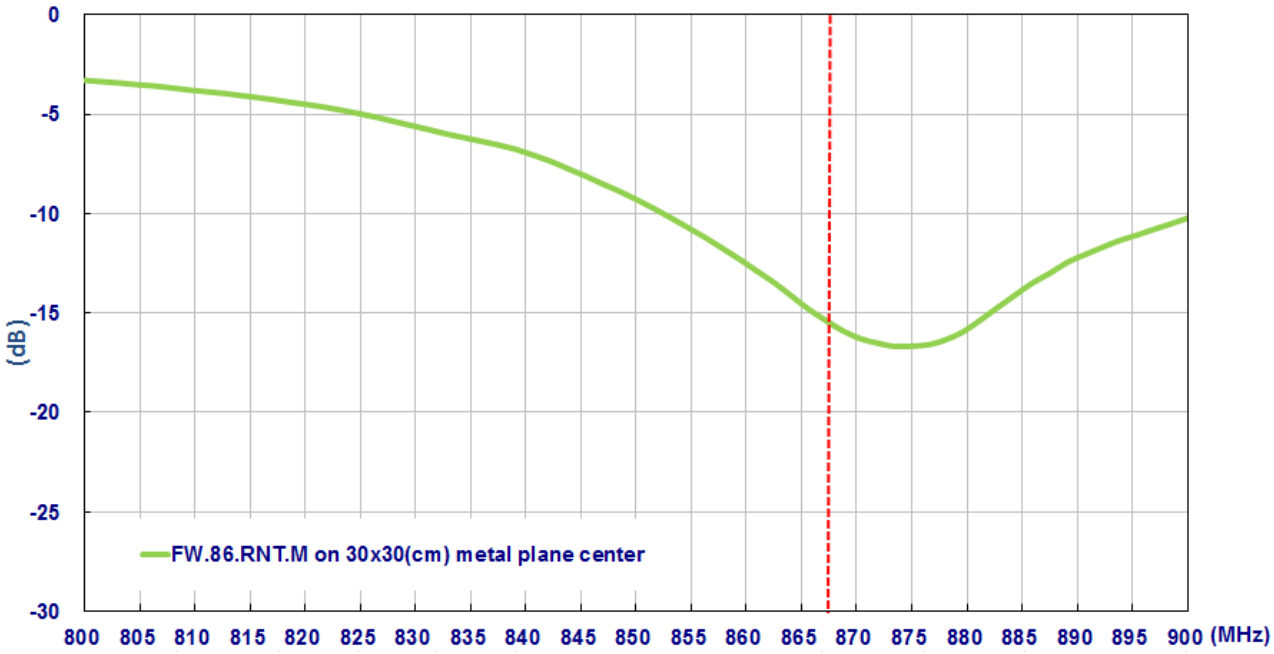
# 2. Specifications

| 868MHz | | |
|---|---|---|
| Center Frequency | 868MHz | |
| | In free space | On 30x30cm ground |
| Efficiency | 27.2 % | 96.6 % |
| Peak Gain | -1.57 dBi | 4.78 dBi |
| Return loss | < -3dB | < -15dB |
| VSWR | ≤ 6:1 | ≤ 2:1 |
| Impedance | 50Ω | |
| Polarization | Linear | |
| Radiation Pattern | Omni-Directional | |
| Input Power | 2 W | |
| Tested Power | 10 W | |
| **Mechanical** | | |
| Dimensions | Height 246 ± 6 mm | |
| Base Diameter | 20 ± 0.5 mm | |
| Whip Diameter | 6.2 ± 0.6 mm | |
| Casing | ABS | |
| Connector | RP-N Type(M) Straight | |
| Weight | 48.5 g | |
| Dust and Water Resistance | IP65 (housing) | |
| **Environmental** | | |
| Temperature Range | -40°C to 85°C | |
| Humidity | Non-condensing 65°C 95% RH | |

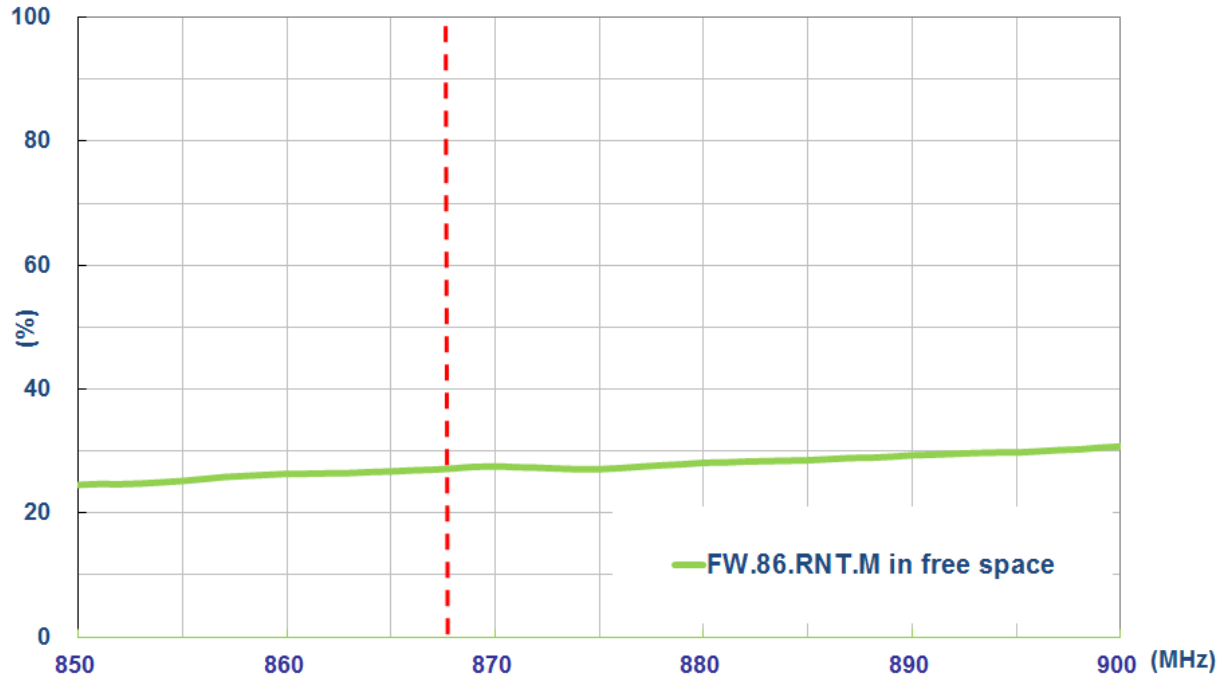
# 3. Antenna Characteristics

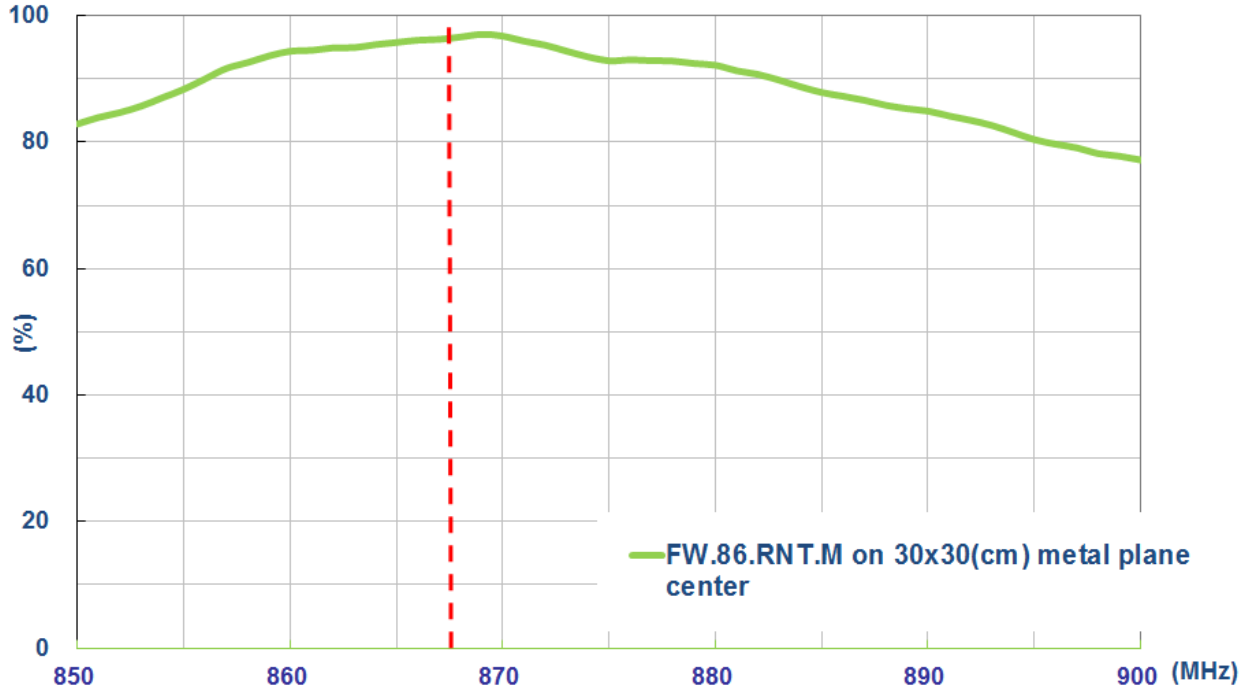
## 3.1 Return Loss



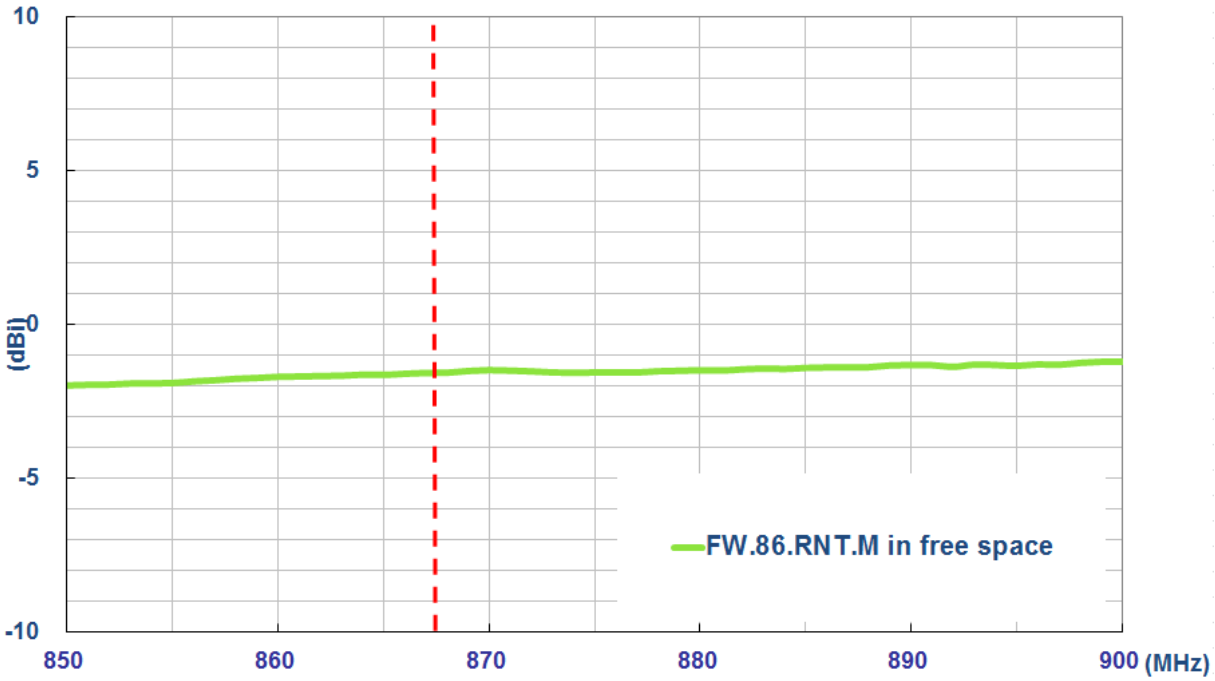



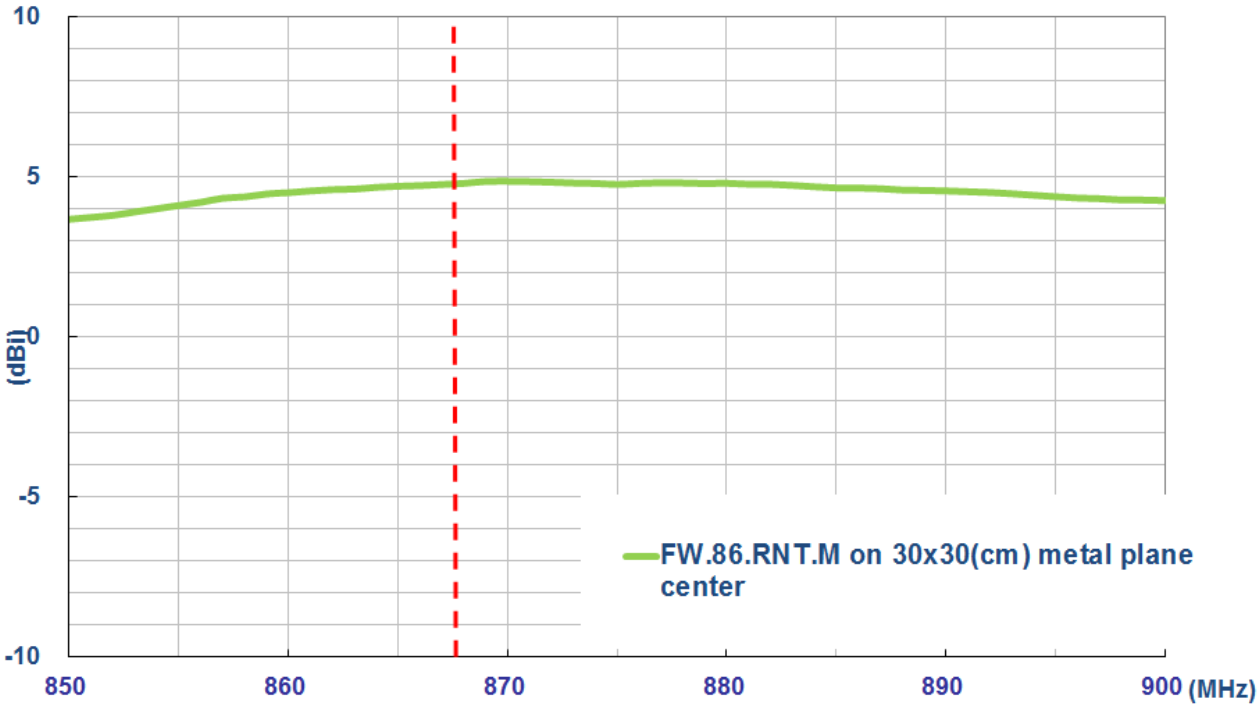
## 3.2 Efficiency



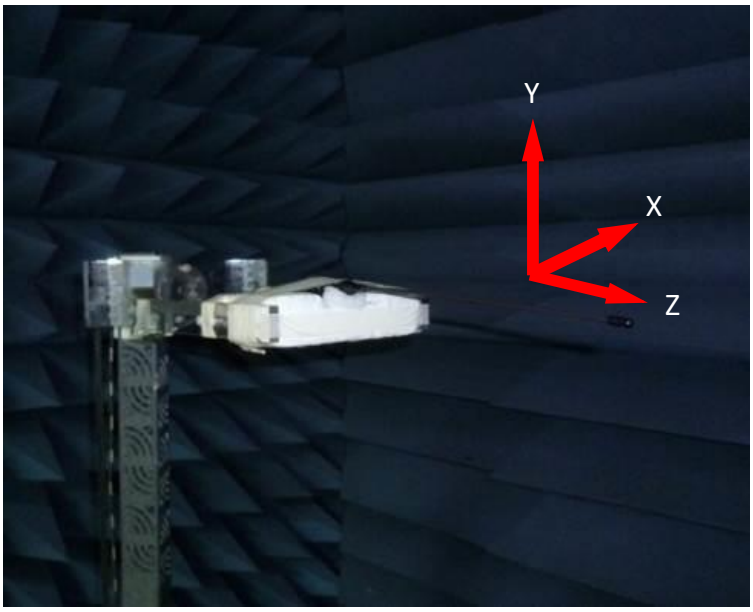
## 3.3 Peak Gain


10
5
0
-5
-10
(dBi)
850
860
870
880
890
900 (MHz)
FW.86.RNT.M in free space

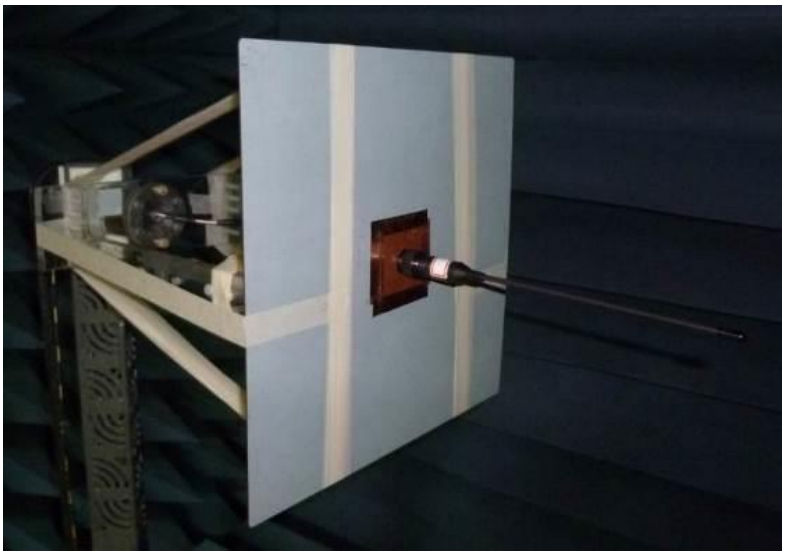

10
5
0
-5
-10
(dBi)
850
860
870
880
890
900 (MHz)
FW.86.RNT.M on 30x30(cm) metal plane center

# 4. Radiation Patterns

## 4.1 Test Setup



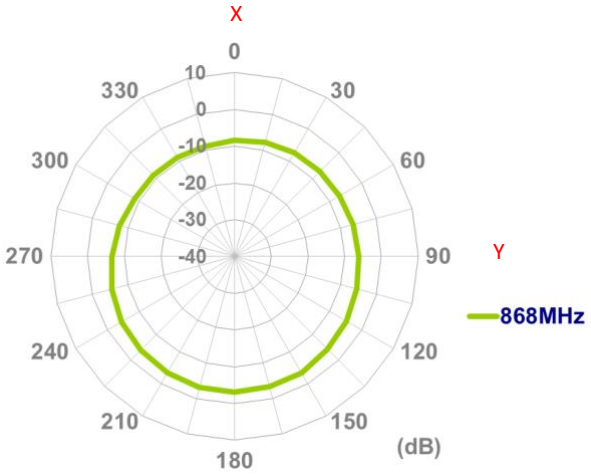

Free Space



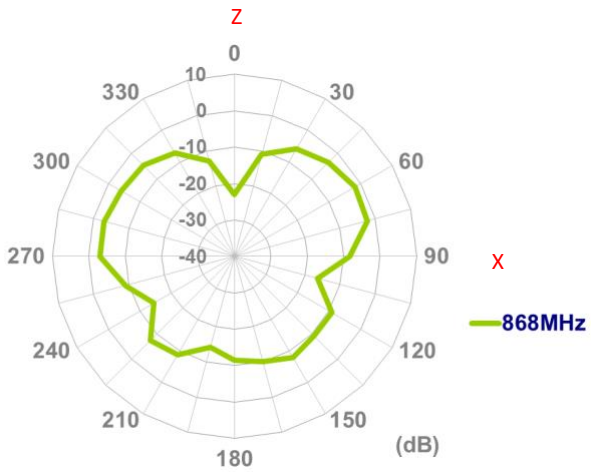
On 30x30 cm ground plane

## 4.2 3D and 2D Radiation Patterns (Free Space)

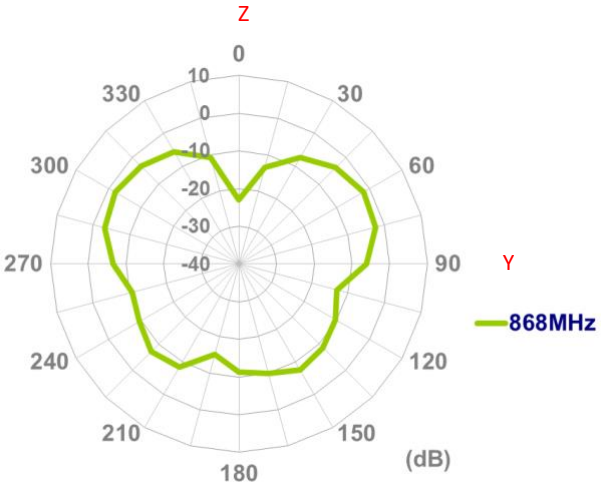
### XY Plane

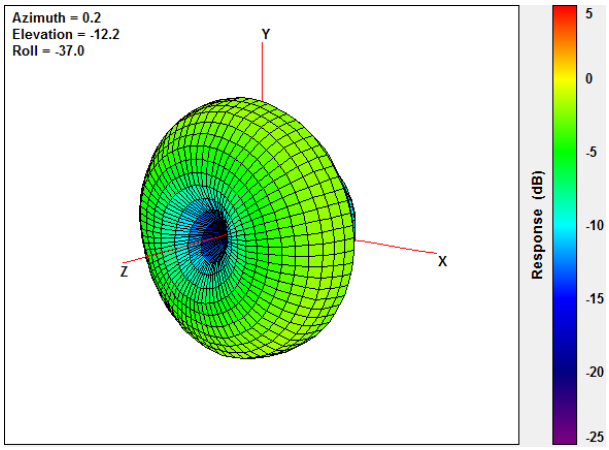



### XZ Plane




### YZ Plane

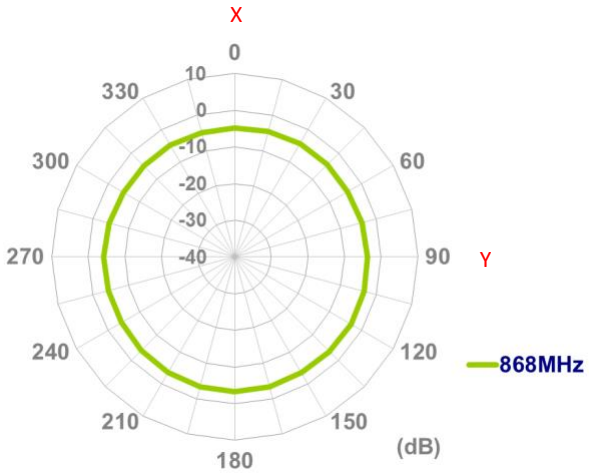


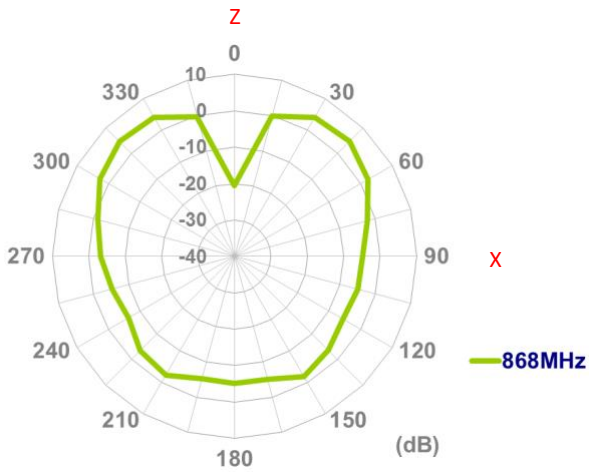

3D Radiation Pattern @ 868MHz

## 4.2 3D and 2D Radiation Patterns (On 30cm*30cm Ground Plane)

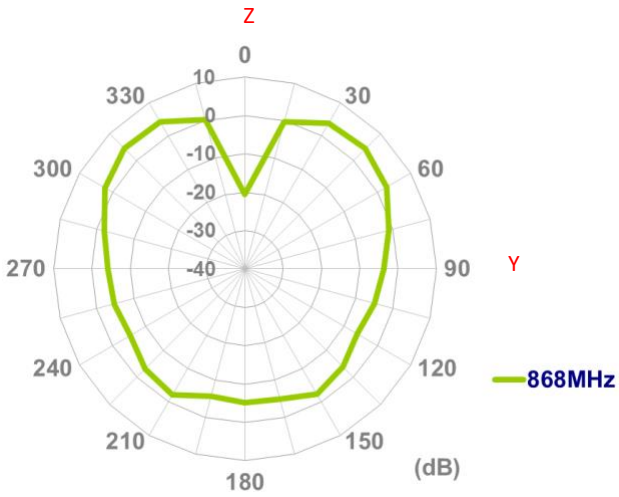
### XY Plane

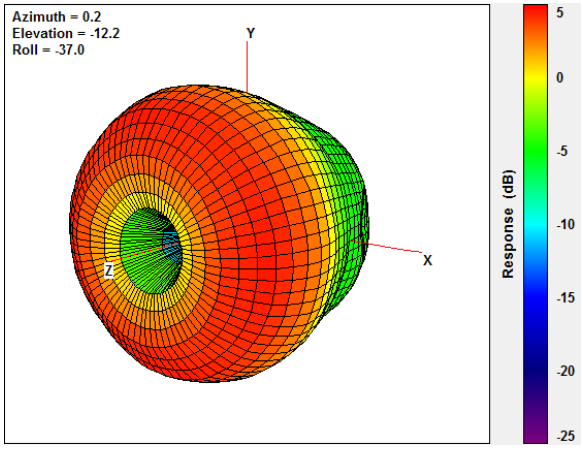



### XZ Plane



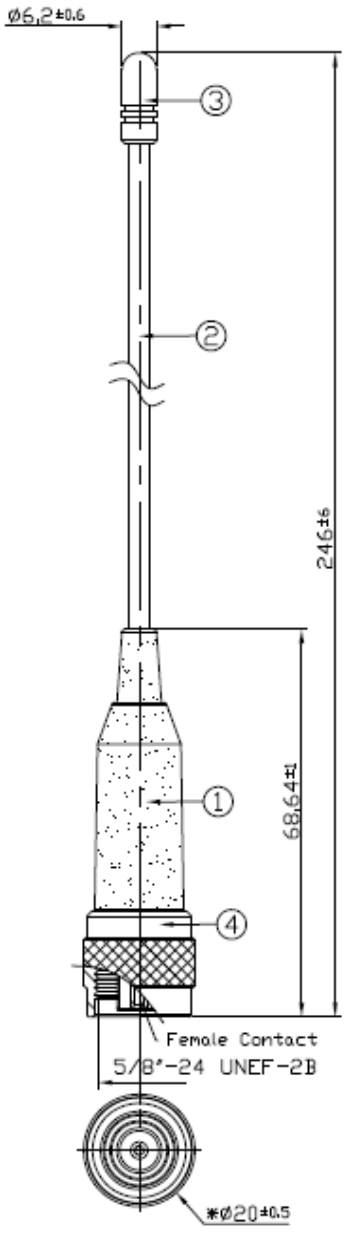

### YZ Plane




3D Radiation Pattern @ 868MHz

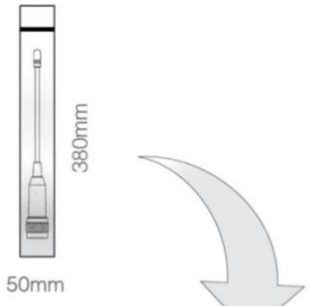
# 5. Mechanical Drawing (Units: mm)



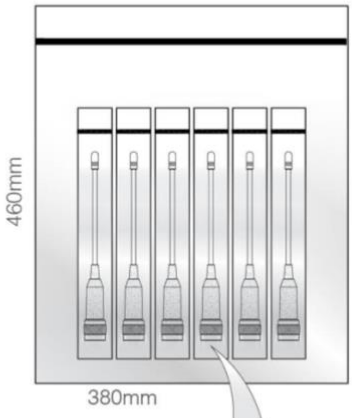

| | Name | Material | FInIsh | QTY |
|---|---|---|---|---|
| ① | HousIng | ABS | Black | 1 |
| ② | Flexible Whip | Steel+PE Jacket | Black | 1 |
| ③ | Cap | ABS | Black | 1 |
| ④ | RP-N-TYPE(M) ST | Brass | Black | 1 |

# 6. Packaging

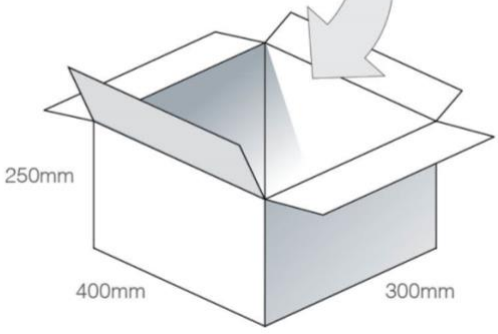
1pcs FW.86.RNT.M per PE Bag
Bag Dimensions - 380*50mm
Weight - 50g



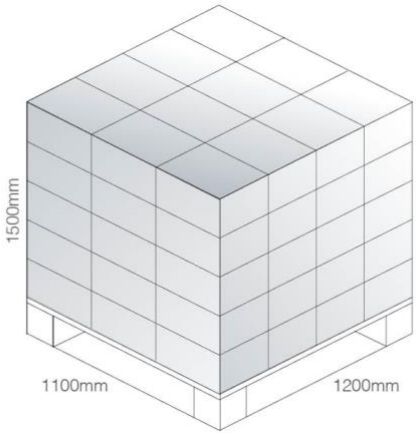

50 PE Bags per Large PE Bag
Large PE Bag Dimensions - 470*340mm
Weight – 2Kg




4 Large PE Bags per Carton
Carton Dimensions - 400*300*250mm
Weight - 10.5Kg




Pallet Dimensions:
1100*1200*1500mm
60 Cartons Per Pallet
12 Cartons Per Layer
5 Layers



## Changelog for the datasheet

### SPE-15-8-035 - FW.86.RNT.M

| Revision: B | |
|---|---|
| Date: | 2019-08-16 |
| Changes: | Updated to new format |
| Changes Made by: | Dan Cantwell |

**Previous Revisions**

| Revision: A (Original First Release) | |
|---|---|
| Date: | 2015-06-15 |
| Notes: | |
| Author: | Wayne Yang |

TAOGLAS®

www.taoglas.com

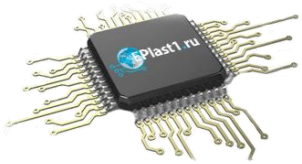
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

**Телефон:** 8 (812) 309 58 32 (многоканальный)
**Факс:** 8 (812) 320-02-42
**Электронная почта:** org@eplast1.ru
**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.