



TAOGLAS®



Datasheet

Meteor

Part No:
FW.86.B.SMA.M

Description:

Meteor ISM Band 868MHz Flexible Whip Monopole Antenna SMA(M) Straight

Features:

External 868MHz Monopole Antenna

Designed for Outdoor Use

Over 70% high efficiency*

2.82 dBi high peak gain*

Robust Inner Steel Core

Antenna Length: 240mm

SMA Type(M) Straight Connector

IP65 dust and water-resistant

*Tested on 30cm*30cm Ground Plane

RoHS Compliant

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1. Introduction



The FW.86 is a flexible 868MHz whip antenna with a SMA type (M) connector for outdoor use. It features excellent efficiency (>70%) and high peak gain (>2.82dBi) at 868MHz on a 30*30cm ground plane.

The antenna was developed for low power radio networks (LORA / LPWAN), monitoring systems, and smart metering.

The FW.86 has an excellent omnidirectional radiation pattern, ensuring wide coverage. The antenna's 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 signal strength 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 30*30cm. For an environment where there is no ground-plane available we recommend to use the terminal antenna the TI.18 or the outdoors fiberglass omni antenna the 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.

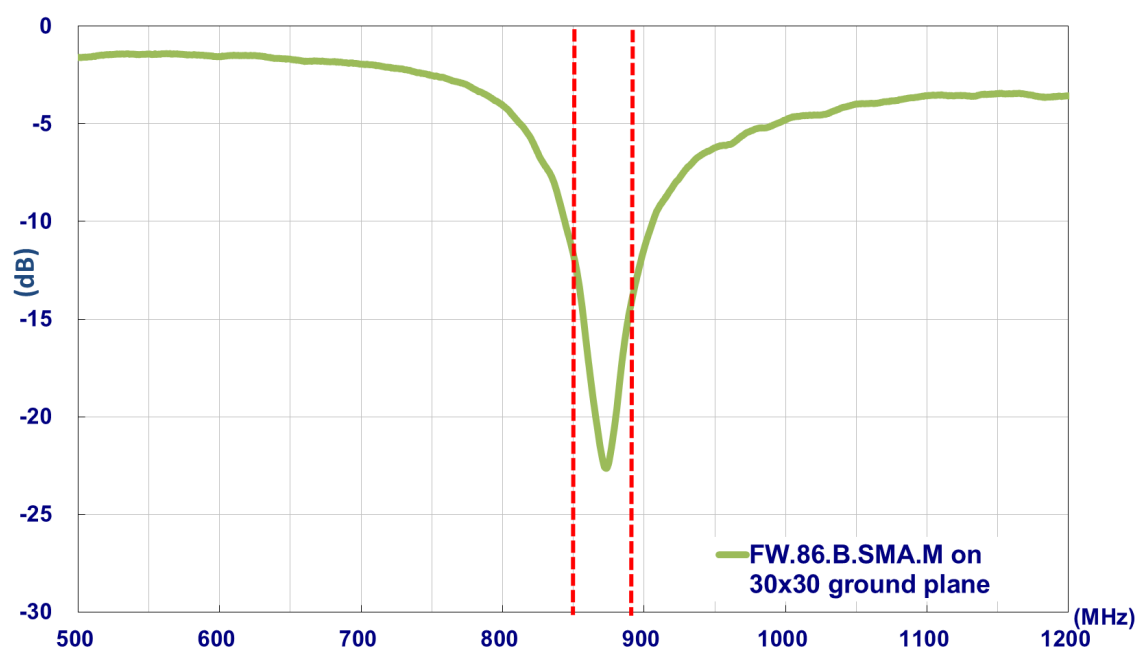
This antenna comes with SMA(M) connector as standard. Other custom variants can be provided subject to NRE and MOQ. Contact your regional Taoglas office for details.

2. Specifications

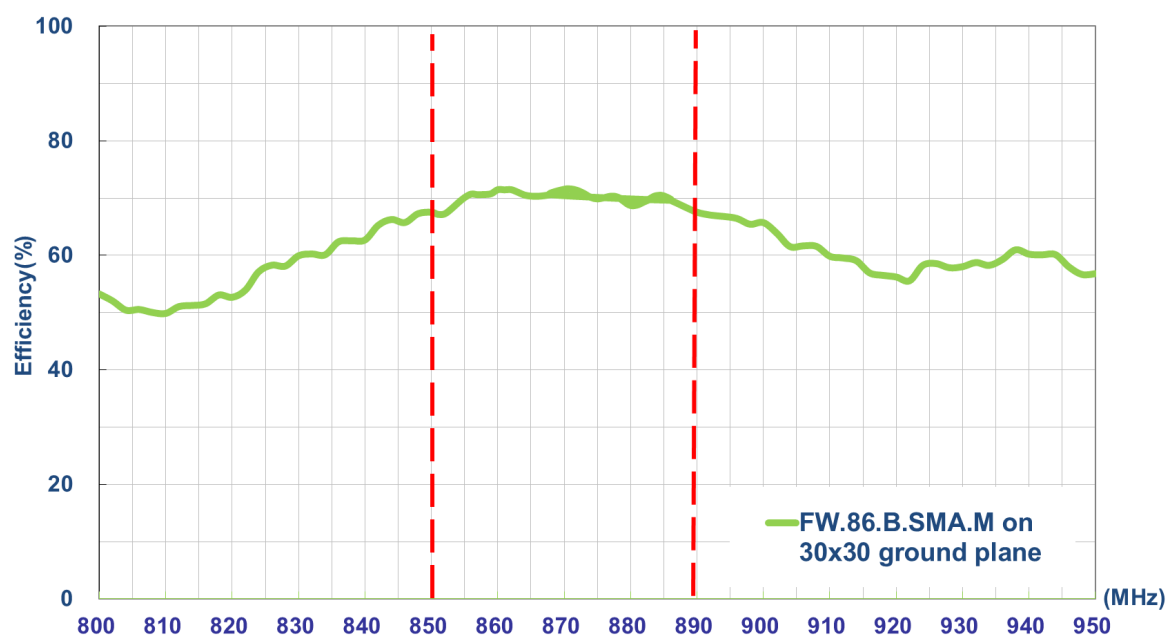
ISM Band 868MHz			
Center Frequency	850MHz	868MHz	890MHz
Design Environment	On 30x30cm ground		
Efficiency	67.52%	70.60%	67.53%
Peak Gain	1.81dBi	2.82dBi	3.57dBi
Return loss	< -10 dB		
VSWR	≤ 2:1		
Impedance	50 Ω		
Polarization	Linear		
Radiation Pattern	Omnidirectional		
Input Power	2 W		
Tested Power	10 W		
Mechanical			
Dimensions	Length 240 ± 6mm		
Base Diameter	16 ± 0.6mm		
Whip Diameter	6.2 ± 0.6mm		
Casing	ABS		
Connector	SMA Type(M) Straight		
Weight	39 g		
Dust and Water Resistance	IP65		
Environmental			
Temperature Range	-40°C to 80°C		
Humidity	Non-condensing 65°C 95% RH		

3. Antenna Characteristics

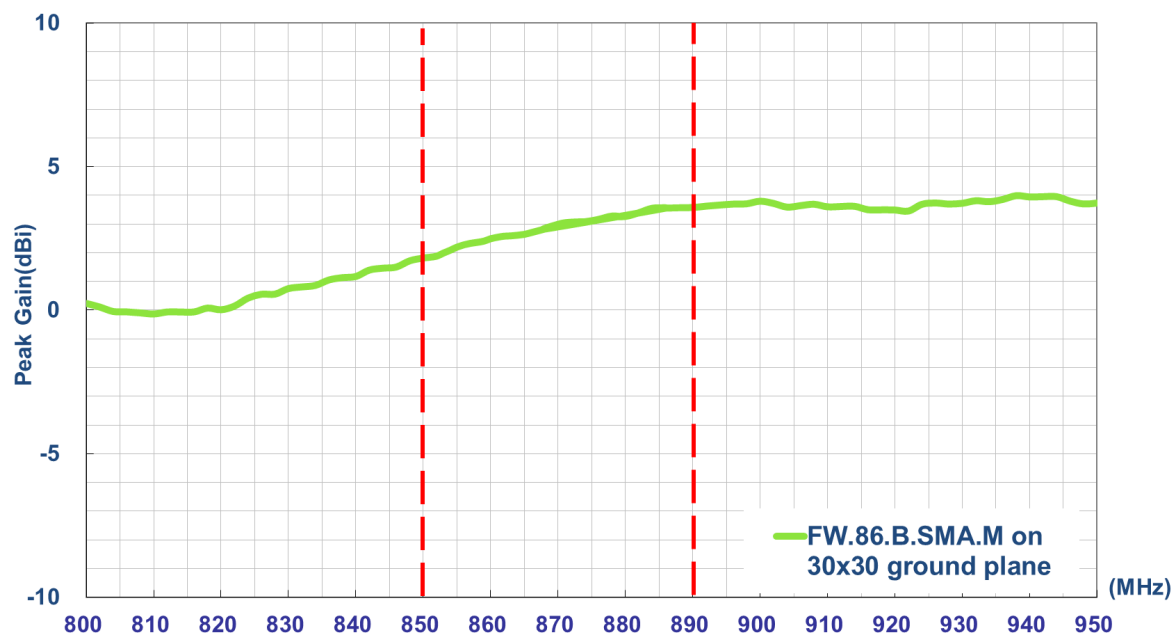
3.1 Return Loss



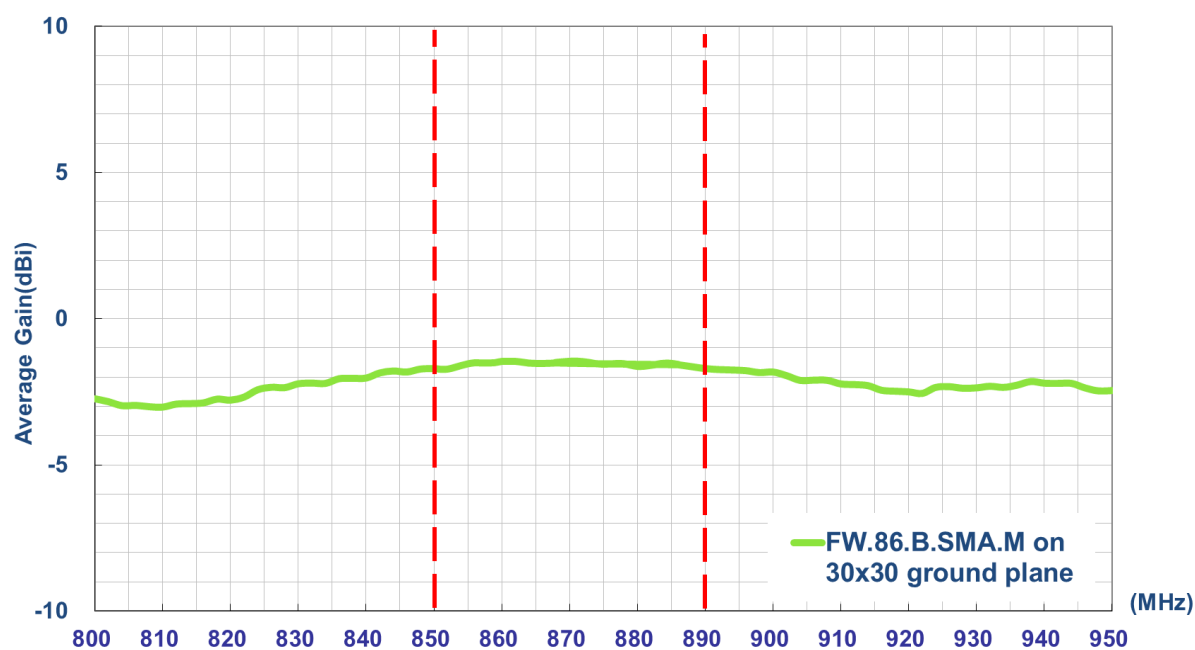
3.2 Efficiency



3.3 Peak Gain

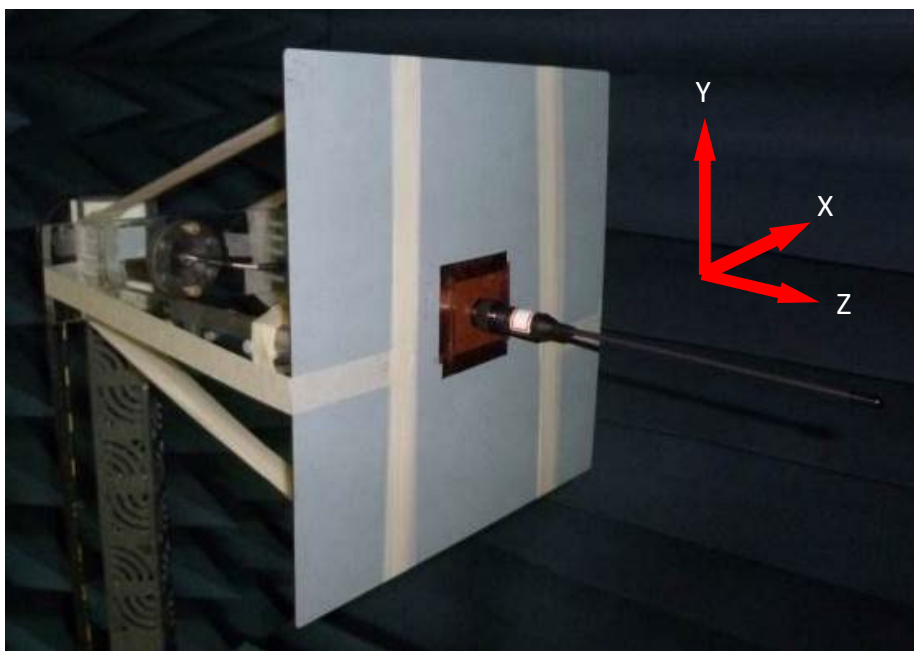


3.4 Average Gain



4. Radiation Patterns

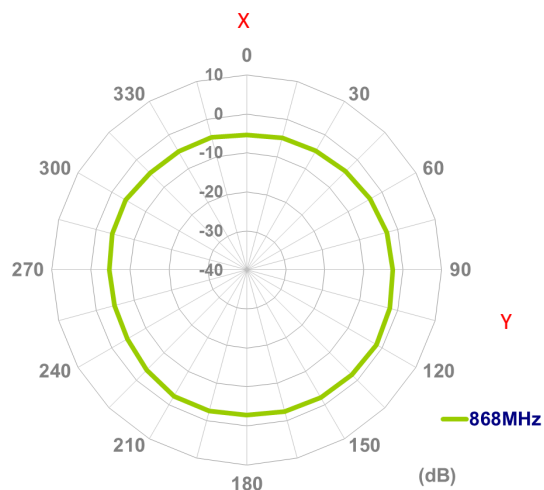
4.1 Test Setup



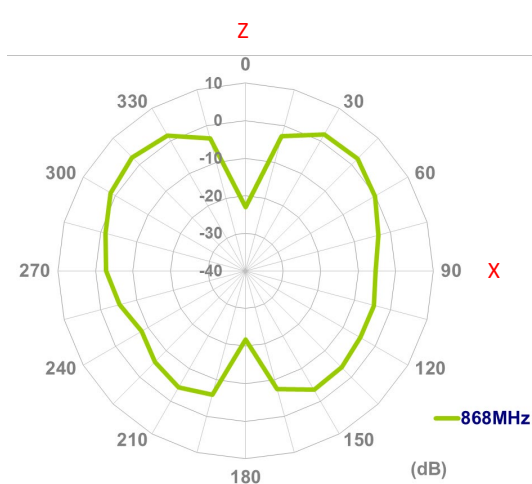
On 30x30 cm ground plane

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

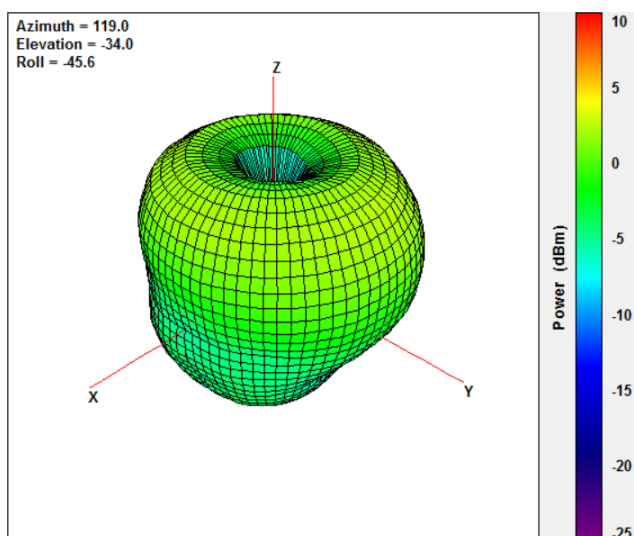
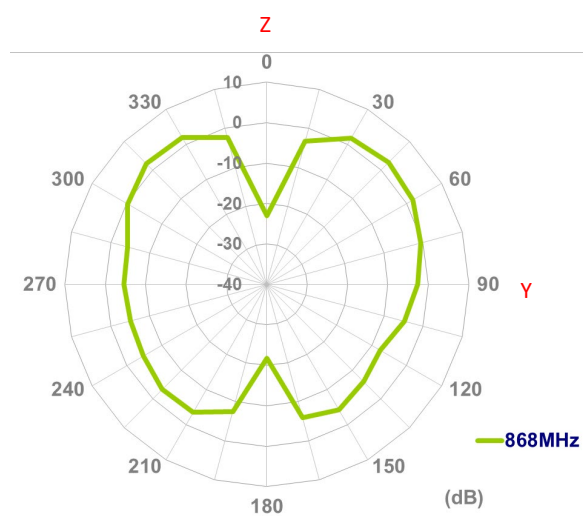
XY Plane



XZ Plane

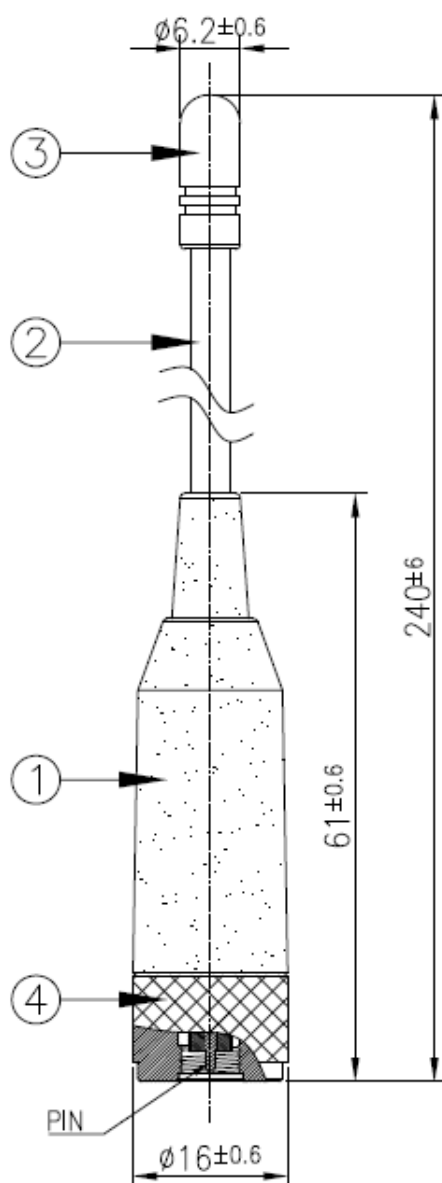


YZ Plane



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	SMA(M)ST	Brass	Black	1

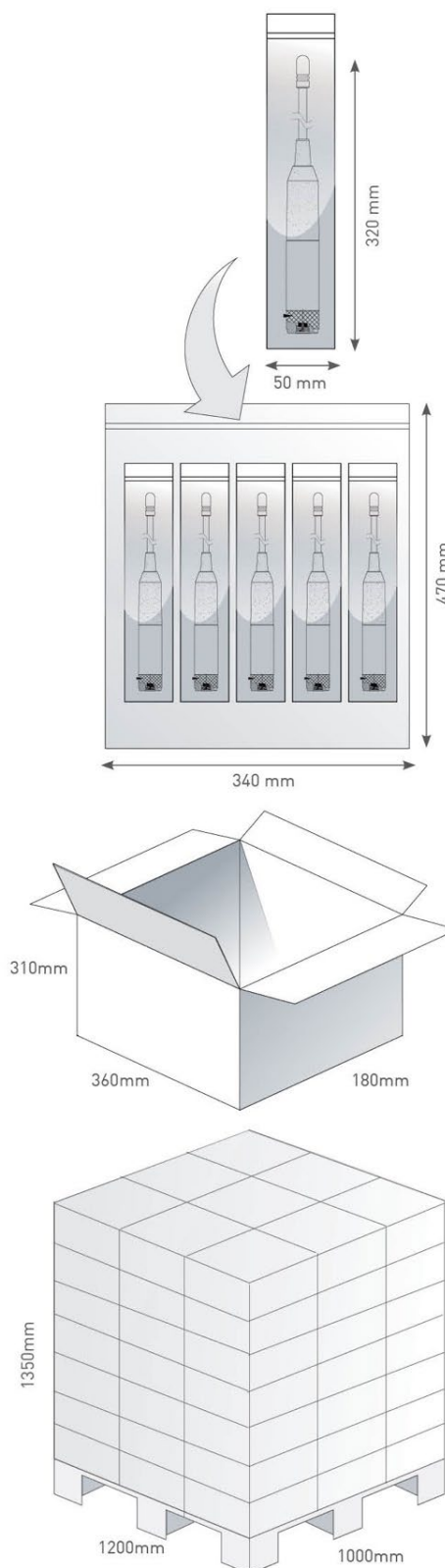
6. Packaging

1pcs FW.86.B.SMA.M per PE Bag
Bag Dimensions - 350*50mm
Weight - 39g

50 PE Bags per Large PE Bag
50 pcs FW.86.B.SMA.M per Large PE Bag
Large PE Bag Dimensions - 470*340mm
Weight - 2Kg

5 Large PE Bags per Carton
250 pcs FW.86.B.SMA.M per Carton
Carton Dimensions - 360*310*180mm
Weight - 10.5Kg

Pallet Dimensions:
1200*1000*1350mm
63 Cartons Per Pallet
9 Cartons Per Layer
7 Layers



Changelog for the datasheet

SPE-16-8-006 - FW.86.B.SMA.M

Revision: D (Current Version)	
Date:	2025-03-24
Changes:	Updated max operation temperature to 80°
Changes Made by:	Conor McGrath

Previous Revisions

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

Revision: B	
Date:	2017-09-01
Changes:	
Changes Made by:	Andy Mahoney

Revision: A (Original First Release)	
Date:	2015-12-01
Notes:	
Author:	Wayne Yang



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