

### Meteor

Part No: FW.24.SMA.M

#### **Description:**

Meteor 2.4GHz Flexible Whip Monopole Antenna

#### Features:

External 2.4GHz Monopole Antenna Rugged Design for Outdoor Use Over 70% Efficiency\* Over 4dBi Peak Gain\* Robust Inner Steel Core Antenna height 316mm SMA(M) Straight Connector IP65 dust and water-resistant \*Tested on 30\*30cm Ground Plane RoHS Compliant

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1.	Introduction	3
2.	Specifications	4
3.	Antenna Characteristics	5
4.	Radiation Patterns	8
5.	Mechanical Drawing	11
6.	Packaging	12
	Changelog	13

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# 1. Introduction



The FW.24 is a flexible 2.4GHz whip antenna with a SMA(M) connector for outdoor use. It features excellent efficiency (>75%) and high peak gain (>4 dBi) between 2400-2500MHz on a 30\*30cm ground plane.

The antenna was specifically developed for applications such as weather monitoring systems, motion/vibration sensors, pollution monitoring, and border guard monitoring systems.

The FW.24 works in the 2.4 GHz Wi-Fi<sup>®</sup>/Bluetooth<sup>®</sup>/ISM band with high efficiency, meaning that it allows your radio to consume less power than with a lower efficiency antenna when transferring data. The antenna performs at its best while attached to a ground plane with dimensions of at least 30\*30cm.

The 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. This rugged design and IP65 rating has been tested by customers to withstand environmental stress and moderate physical shock in the field.

The FW.24.SMA.M 2.4GHz antenna provides a simple solution to any outdoor devices where the FW.24 antenna's rugged design and high efficiency can provide the best value to the application. 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.

Other connector options are available or custom versions can be made subject to NRE and MOQ. Contact your regional Taoglas office for details.



7/

# Specifications

2.

	2.4GHz Wi-Fi	
Frequency	2400~2	2500MHz
	In free space	On 30x30cm ground
Efficiency	64.5%	79.3%
Peak Gain	4.26dBi	4.48dBi
Return loss	< -6dB	< -10dB
VSWR	≤ 3:1	≤ 2:1
Impedance	5	0Ω
Polarization	Lin	near
Radiation Pattern	Omni-D	irectional
Input Power	2	W
Total Power	10	D W
	Mechanical	
Dimensions	Height 3	07 ± 6 mm
Base Diameter	16 ± 0	0.8 mm
Whip Diameter	6.2 ±	0.6 mm
Casing	A	ABS
Connector	SMA Ma	le Straight
Weight	46	5.6 g
Dust and Water Resistance	IF	265
	Environmental	
Temperature Range	-40°C	to 80°C
Humidity	Non-condensi	ng 65°C 95% RH





3.



# 3.2 Efficiency





## 3.3 Peak Gain







4.1 Test Setup

4.



#### Free space



On 30x30 cm ground plane



#### 4.2 3D and 2D Radiation Patterns



#### 3-D Radiation Pattern in free space @2450MHz



180

-2500MHz

(dB)

2500MHz

(dB)

180

(dB)

180





#### 3-D Radiation Pattern on 30cm\*30cm Ground Plane @2450MHz

XY Plane

XZ Plane

YZ Plane





5.





# 6. Packaging

1pcs FW.24.SMA.M per PE Bag Bag Dimensions - 420\*50mm Weight - 41g

50pcs FW.24.SMA.M per Large PE Bag Bag Dimensions - 520\*370mm Weight - 2.2Kg

200pcs FW.24.SMA.M per Carton Carton Dimensions - 360\*310\*150mm Weight - 8.4Kg



SPE-17-8-003-D





Changelog for the datasheet

#### SPE-17-8-003 - FW.24.SMA.M

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

#### **Previous Revisions**

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

Revision: B	
Date:	2017-10-19
Changes:	Changed IP Rating to IP65
Changes Made by:	Carol Faughnan

Revision	A (Origina	l First Release)
	Date:	2017-06-01
	Notes:	
	Author:	Andrew Wei



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