TAOGLAS®

Datasheet

# Freedom FXP832

**Part No:**
**FXP832.03.0458D**

**Description:**

FXP832 Freedom Wi-Fi® 2.4GHz and 4.9-6GHz Dipole Antenna

**Features:**

Flexible PCB

Very High Efficiency

42mm*7mm*0.1mm

Ground-plane Independent

Cable: 458mm (18 inches) RG174

Connector: RP-SMA(M) Straight

RoHS & REACH Compliant

# 1. Introduction


The Freedom FXP832 is a breakthrough, very high efficiency, small, dual-band Wi-Fi® dipole omni-directional antenna for 2.4/5GHz bands. This antenna is designed for DSRC, V2V, Wi-Fi®, Bluetooth®, Zigbee® and other applications in these bands. It is designed in such a narrow rectangular form factor to cover most of the current applications on the market. Taoglas FXP series are conformal flexible antennas and can fit irregular housings.

With dimensions of 42*7*.01mm it comes with double-sided 3M tape for easy “peel and stick” mounting. This longer cable length version of the FXP832 is ideal for applications in embedded industrial and automotive environments.

Typical Applications include:

- Automotive
- Remote Monitoring
- Security

Like all embedded omni-directional antennas, care should be taken to keep the antenna away from metal as much as possible, a minimum of 10mm is recommended.

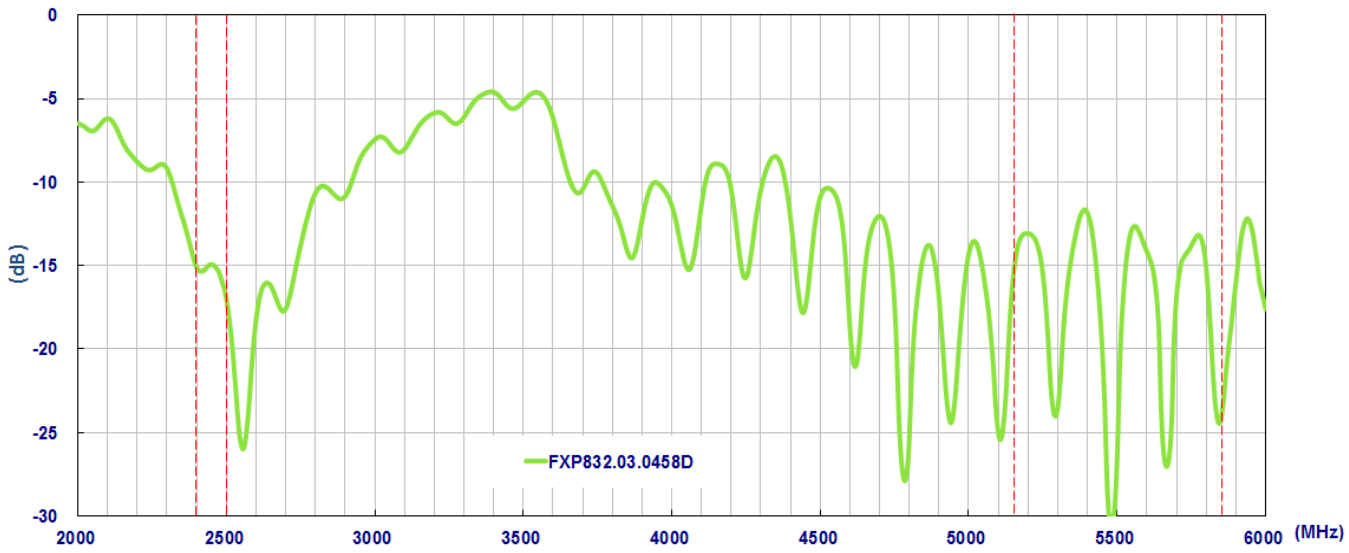
The cable length and connector type are fully customizable, for more information contact your regional Taoglas Customer Support Team.

# 2. Specifications

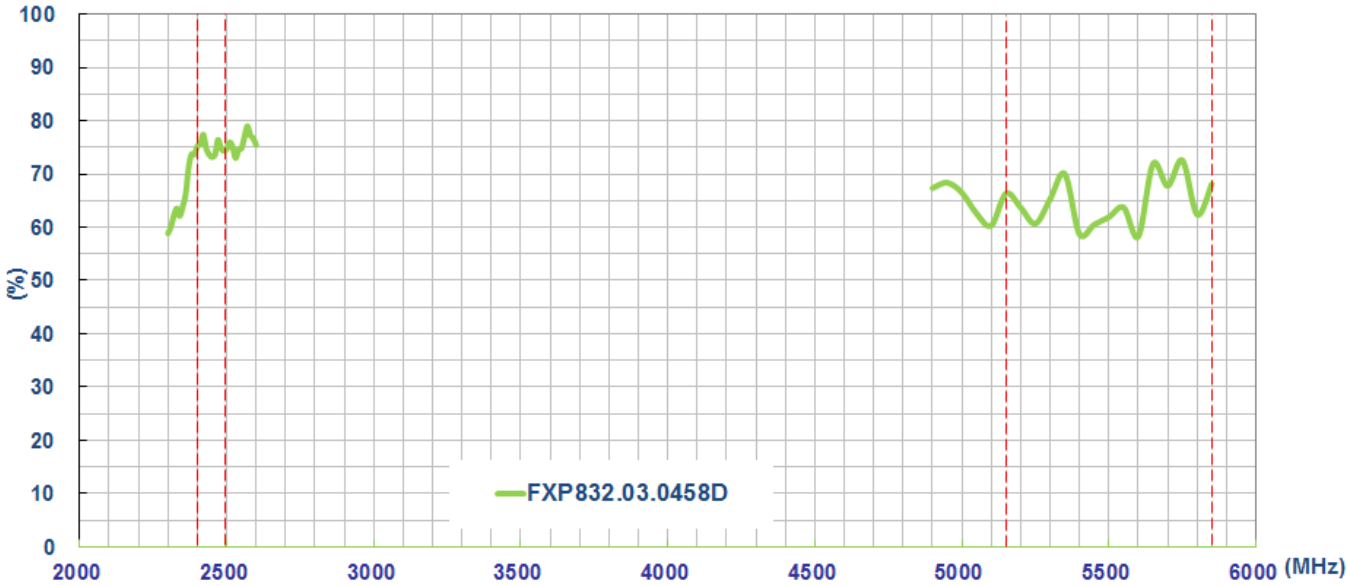
| Electrical | | |
|---|---|---|
| Frequency (MHz) | 2400-2500 | 4900-6000 |
| **Peak Gain (dBi)** | | |
| On 2mm ABS | 3.66 | 5.33 |
| **Average Gain (dB)** | | |
| On 2mm ABS | -1.25 | -1.89 |
| **Efficiency (%)** | | |
| On 2mm ABS | 74.9 | 64.7 |
| Impedance | 50Ω | |
| Polarization | Linear | |
| Radiation Pattern | Omni | |
| Input Power | 2W | |
| **Mechanical** | | |
| Dimensions | 42mm x 7mm | |
| Antenna Body Material | Polymer | |
| Cable | Black 458mm (18 inches) RG174 Coaxial Cable | |
| Connector | RP-SMA(M) Straight | |
| Weight | 7.5g | |
| **Environmental** | | |
| Temperature Range | -40°C to 85°C | |
| Humidity | Non-condensing 65°C 95% RH | |

# 3. Antenna Characteristics

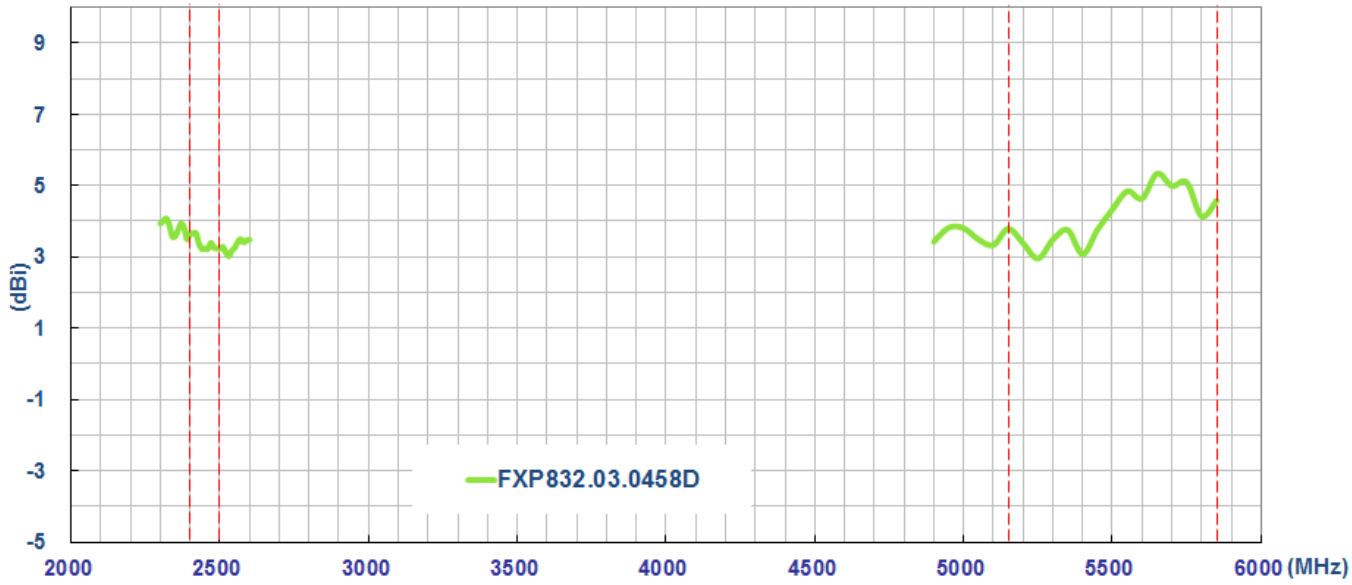
## 3.1 Return Loss




## 3.2 Efficiency

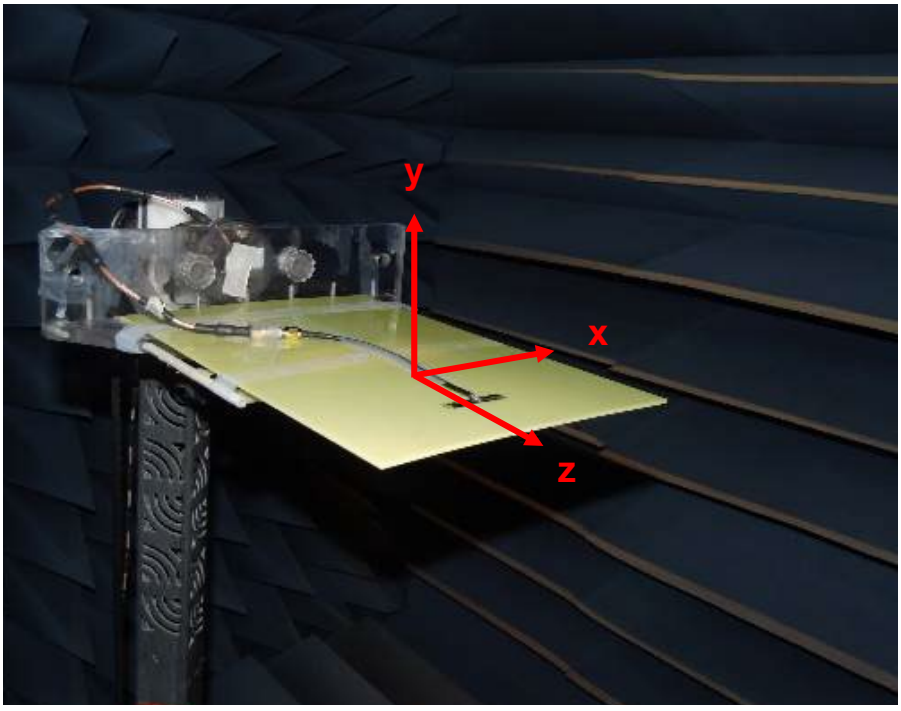


## 3.3 Peak Gain


9
7
5
3
1
-1
-3
-5
(dBi)
2000
2500
3000
3500
4000
4500
5000
5500
6000 (MHz)
FXP832.03.0458D

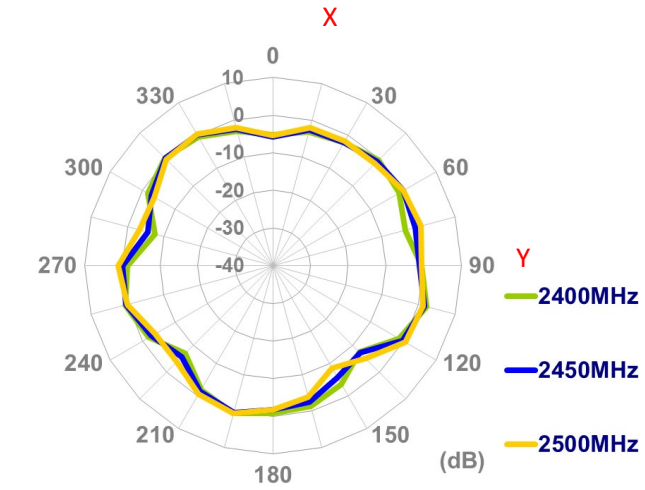
# 4. 2D Radiation Patterns

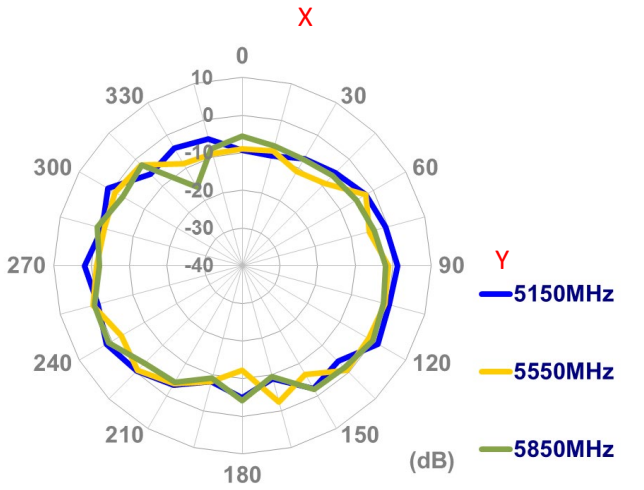
## 4.1 Test Setup



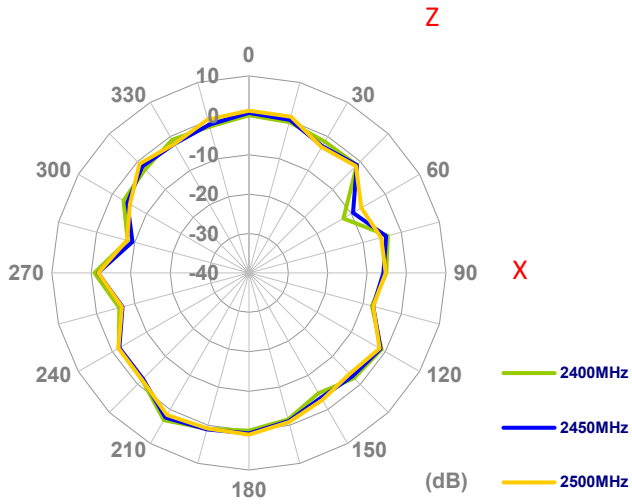

Free space

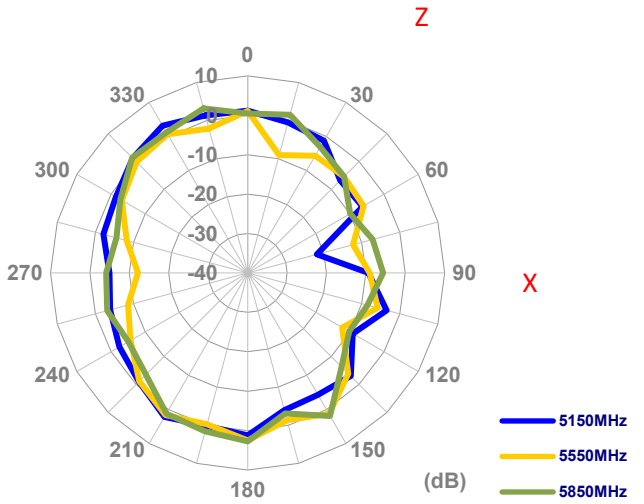
## XY Plane



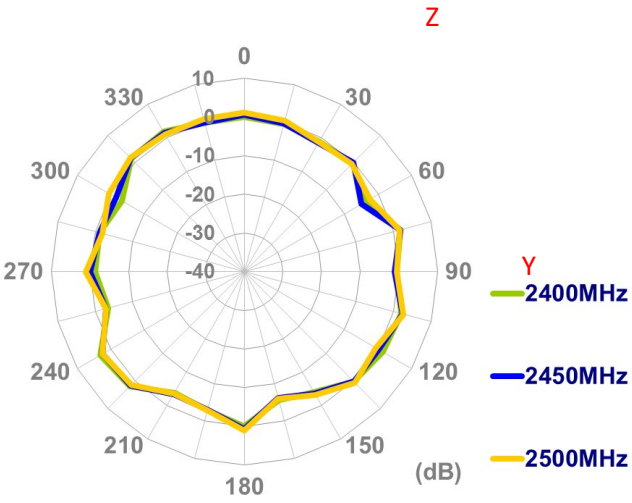



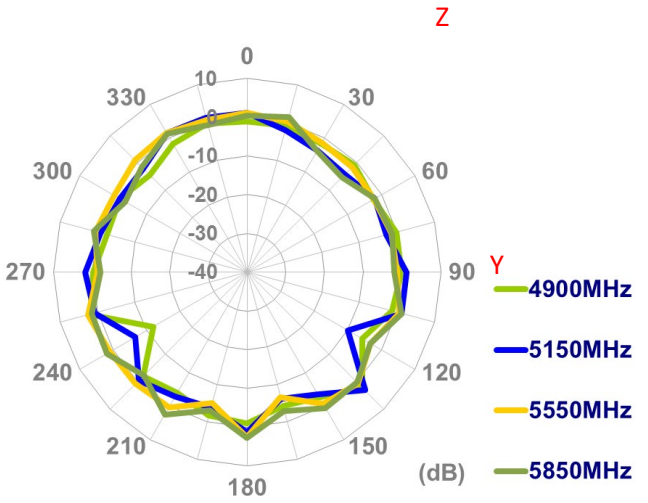

## XZ Plane



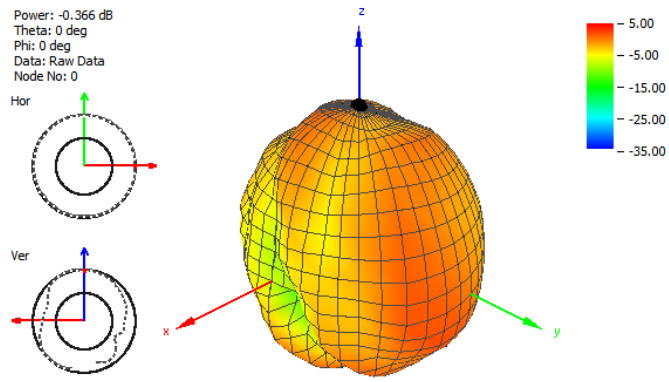

## YZ Plane



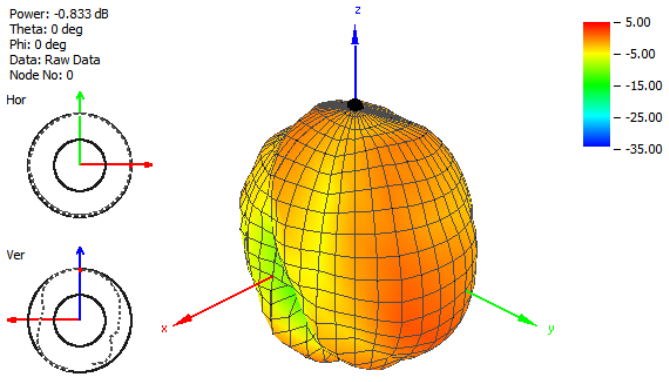



# 5. 3D Radiation Patterns

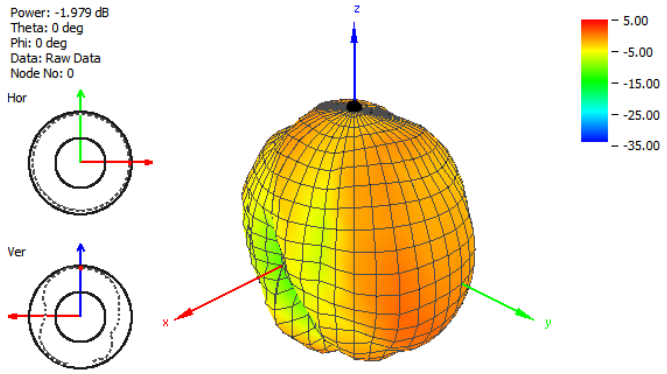
## 5.1 Free Space



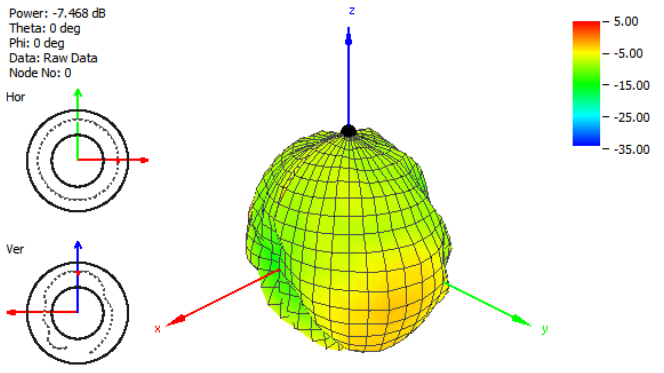

2400MHz



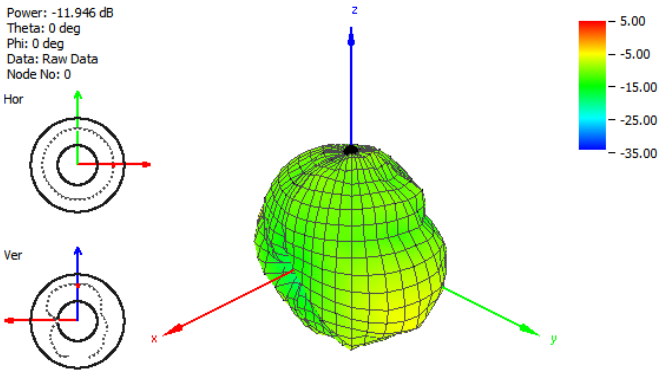

2450MHz



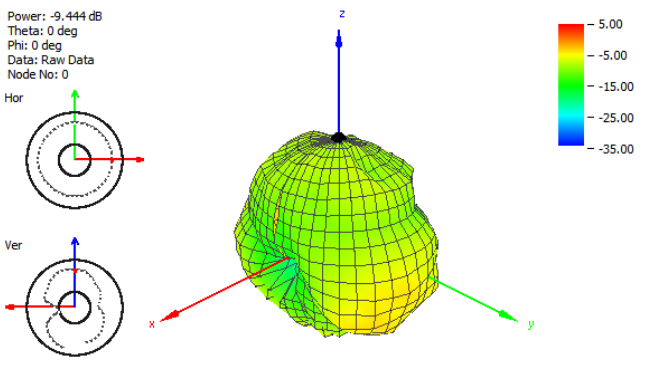

2500MHz



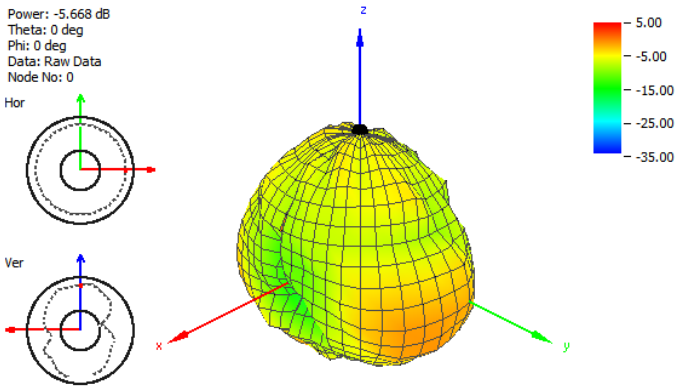

4900MHz




5150MHz




5550MHz


Power: -5.668 dB
Theta: 0 deg
Phi: 0 deg
Data: Raw Data
Node No: 0
Hor
Ver
z
x
y
5.00
-5.00
-15.00
-25.00
-35.00

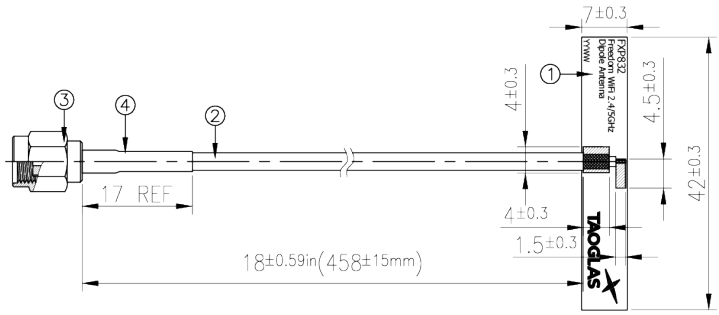
5850MHz

# 6. Mechanical Drawing (Units: mm)

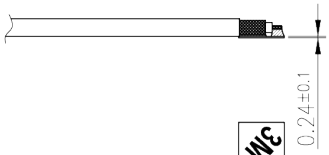
| REV | ZONE | DESCRIPTION | ENG | APPROVED | ISSUED DATE |
|---|---|---|---|---|---|
| B | ALL | Replace the new LOGO <ECR-18-8-259> | Bonnie | Aaron | 2019/08/02 |

ISO NO: EDW-18-8-0904 <Release>

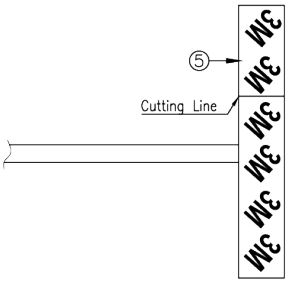
Top View




Side View




Bottom View




NOTES:
1.No dregs or insufficient soldering. Solder thickness 0.3~3.0mm
2.The solder must be smooth and full to the edges of the pad. The solder must not extend outside of the pad area.
3.The connector position has special orientation to the PCB as per drawing.
4.All material must be RoHS compliant.
5.Open/short QC, VSWR required.
6.Soldered area.

| | Name | P/N | Material | Finish | QTY |
|---|---|---|---|---|---|
| 1 | FXP832 FPCB | 100113I000011A | Polymer 0.24t | Black | 1 |
| 2 | RG174 Coaxial Cable | 301315C000000A | PVC | Black | 1 |
| 3 | SMA(M)RP ST | 200213D000013A | Brass | Au Plated | 1 |
| 4 | Heat Shrink Tube | 001315C020000A | PE | Black | 1 |
| 5 | Double-Sided Adhesive | 100113I000011A | 3M 467 | Brown Liner | 1 |

UNLESS OTHERWISE SPECFIED TOLERANCES ON:
.X± 0.2
XX.± 0.5 .XX± 0.1
X.± 0.3 .XXX± 0.05

DATE: 2014/04/28 | MAT'L: FPCB
UNIT: mm | FINISH: Black
THIRD ANGLE PROJECTION | SCALE: 1/1

| APPROVED BY: | CHECKED BY: | DRAWN BY: | CUSTOMERS SIGNATURE / DATE |
|---|---|---|---|
| Wayne | Aine | Sandy | |

TAOGLAS. TW Design Centre


REV B

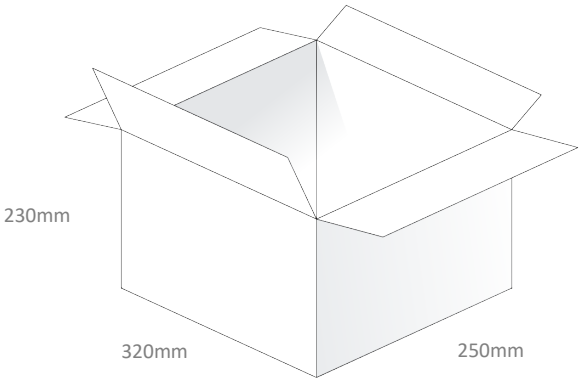
TITLE. : 2.4/4.9-6.0Ghz Flex PCB Antenna 18in(458mm) RG-174 RP-SMA(M)

PART NO. : FXP832.03.0458D

# 7. Packaging

50pcs FXP832.03.0458D per PE Bag
Bag Dimensions: 450*280mm
Weight: 375g


500pcs FXP832.03.0458D per carton
Dimensions: 320*250*230mm
Weight: 3.75Kg



## Changelog for the datasheet

**SPE-17-8-042 – FXP832.03.0458D**

| **Revision: E (Current Version)** | |
|---|---|
| Date: | 2019-11-14 |
| Changes: | Updated Images |
| Changes Made by: | Russell Meyler |

**Previous Revisions**

| **Revision: D** | |
|---|---|
| Date: | 2019-07-23 |
| Changes: | Packaging Amended |
| Changes Made by: | Jack Conroy |

| **Revision: C** | |
|---|---|
| Date: | 2015-06-30 |
| Changes: | Added DSRC |
| Changes Made by: | Aine Doyle |

| **Revision: B** | |
|---|---|
| Date: | 2015-01-20 |
| Changes: | added note on gain and 3D radiation patterns |
| Changes Made by: | Aine Doyle |

| **Revision: A (Original First Release)** | |
|---|---|
| Date: | 2014-04-07 |
| Notes: | |
| Author: | Aine Doyle |

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Authorized Distributor

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FXP832.03.0458D