

承 認 書

A P P R O V A L S H E E T

CUSTOMER: 香港商永道無線射頻標籤有限公司台灣分公司

CUSTOMER MODEL NO.:

JOYMAX MODEL NO.: TWX-1513SAXX-287 (PART NO)

Antenna MODEL NO.: SSP-10319

DESCRIPTION: 2.4+5GHz #1513 1/2 λ Replacement Antenna,
Swivel type

REV.: 00

DATE: 2019/9/6

Customer Approval

Joymax Approval



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Modification History:

Rev.	Date	Content
00	2019/9/6	首次發行

1. Specifications

1.1 Description

The antenna design of TWX-1513SAXX-287 is a $1/2\lambda$ omni-directional, swivel type, white sleeve antenna which is terminated with SMA male connector. It's an ease installation of connector direct mount to IEEE802.11a/b/g/n 2.4+5GHz wireless communication application.

1.2 Electrical Properties

Frequency Range	2.4~2.4835MHz / 5.15~5.85MHz
Impedance	50Ω
V.S.W.R.	
Radiation	Omni
Gain	<5dBi
Polarization	Vertical
Wave length	$1/2\lambda$, Collinear
Beam Width	2.4~2.4835GHz $45^{\circ}\pm 5^{\circ}$ @E-Plane 360° @H-Plane
Test Ground Size	N/A

1.3 Mechanical Properties

Radome Material	TPE
Connector	SMA PLUG
Dimension	L=195mm
Weight	19g (est)

1.4 Environmental Properites

Operating Temperature	-20~+65°C
Storage Temperature	-30~+70°C

*Conformity determination: Electrical Properties are conformed to the specifications.

2. Dimension

This figure shows a technical drawing of a replacement antenna, swivel type, for the JOYMAX SSP-190319 model. The drawing includes a detailed view of the antenna structure, showing its dimensions and electrical/mechanical properties.

The antenna is a vertical, tapered structure with a total height of 195 ± 2 mm. It features a top section with a diameter of Ø6 mm and a base section with a diameter of Ø13 mm. A 90° angle is indicated at the base of the main body. The SMA Plug connector has a length of 30.7 mm and a diameter of Ø12.5 mm.

Electrical Properties

Property	Value
Frequency Range	2.4~2.4835GHz 5.15~5.85GHz
Impedance	50Ω
V.S.W.R.	≤2.0
Radiation	Omni
Gain	<5dBi
Polarization	Vertical
Wave Length , type	1/2λ, Collinear
Beam Width(±3dB)	2.4~2.4835GHz 45°±5°@E-Plane 360°@H-Plane 5.15~5.85GHz 35°±5°@ E-Plane 360°@H-Plane
Test Ground Size	N/A

Mechanical Properties

Property	Value
Radome Material	TPE
Connector Type	SMA Plug
Dimension	L=195mm
Weight	19 g (est)
Operating Temp.	-20℃ ~ +65℃
Storage Temp.	-30℃ ~ +70℃

Dimensions:

- Total Height: 195 ± 2 mm
- Top Diameter: Ø6 mm
- Base Diameter: Ø13 mm
- SMA Plug Length: 30.7 mm
- SMA Plug Diameter: Ø12.5 mm
- Angle at Base: 90°

Properties:

- Frequency Range: 2.4~2.4835GHz, 5.15~5.85GHz
- Impedance: 50Ω
- V.S.W.R.: ≤2.0
- Radiation: Omni
- Gain: <5dBi
- Polarization: Vertical
- Wave Length : 1/2λ, Collinear
- Beam Width(±3dB): 45°±5°@E-Plane, 360°@H-Plane (2.4~2.4835GHz); 35°±5°@ E-Plane, 360°@H-Plane (5.15~5.85GHz)
- Test Ground Size: N/A
- Radome Material: TPE
- Connector Type: SMA Plug
- Dimension: L=195mm
- Weight: 19 g (est)
- Operating Temp.: -20℃ ~ +65℃
- Storage Temp.: -30℃ ~ +70℃

Approval and Identification:

REV	ZONE	DESCRIPTION	ECN NO.	ENG	APPROVED	DATE

UNLESS OTHERWISE SPECIFIED TOLERANCES ON:

Symbol	Tolerance
X	± 1
X.X	± 0.5
X.XX	± 0.25
ANG.	± 2.0°

THIRD ANGLE PROJECTION

DRAWN BY: Rebecca
DESIGNED BY:
CHECKED BY:
APPROVED BY:

MATERIAL:
FINISH: Black
SCALE: 1/1; UNIT: mm
DATE:

TITLE : 2.4+5GHz #1513 1/2? Replacement Antenna, Swivel type
DRAW NO. : SSP-190319
PART NO. : TWX-1513SAXX-287

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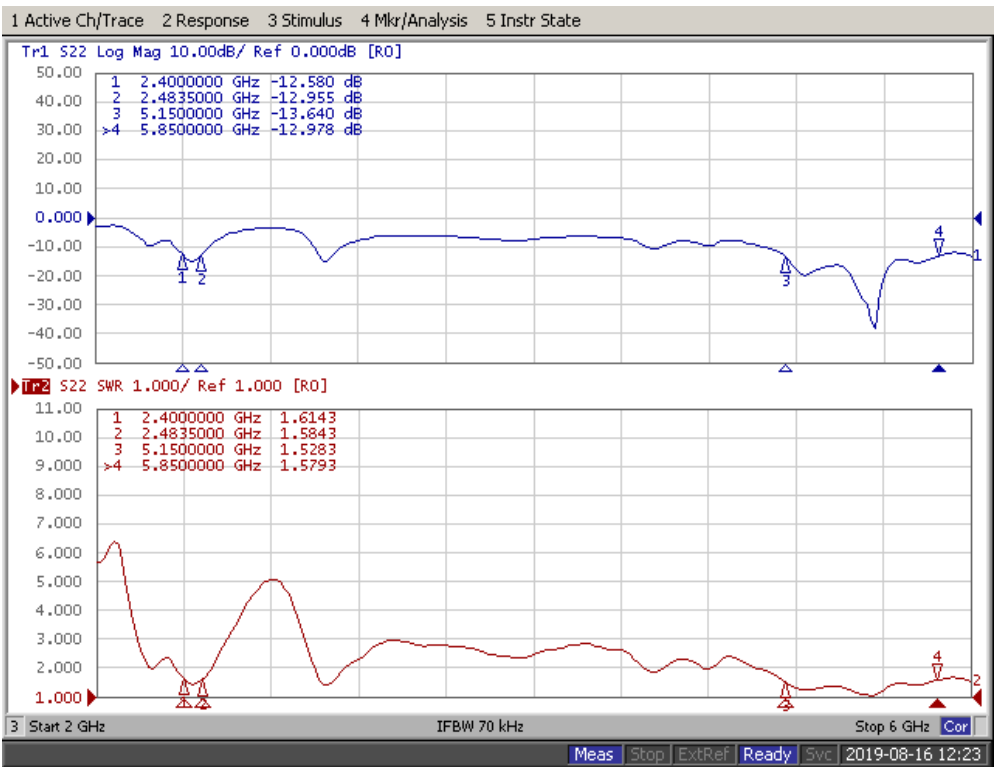
REV: 00

3. Test Condition & Report

3.1 V.S.W.R / Return Loss

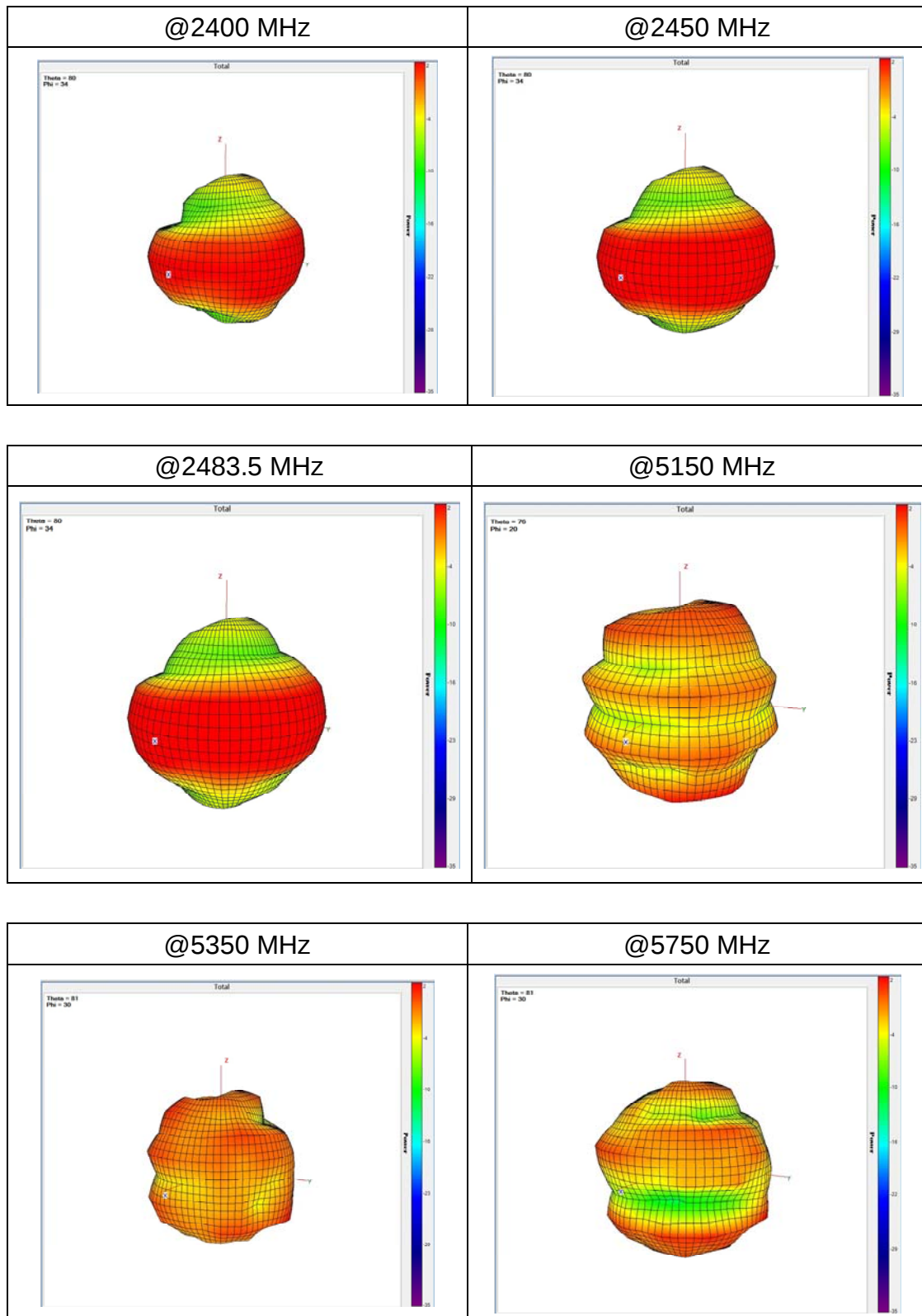
Return Loss

V.S.W.R.

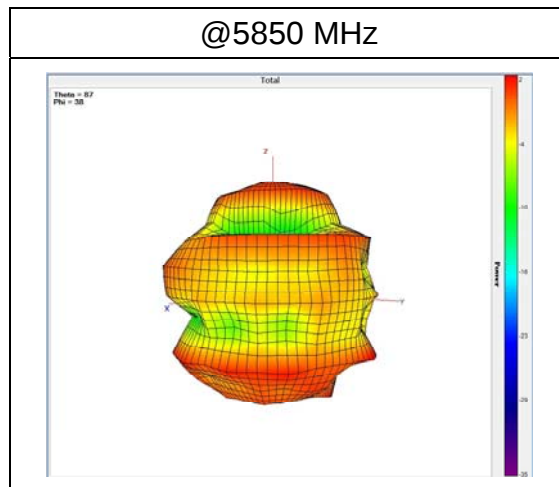


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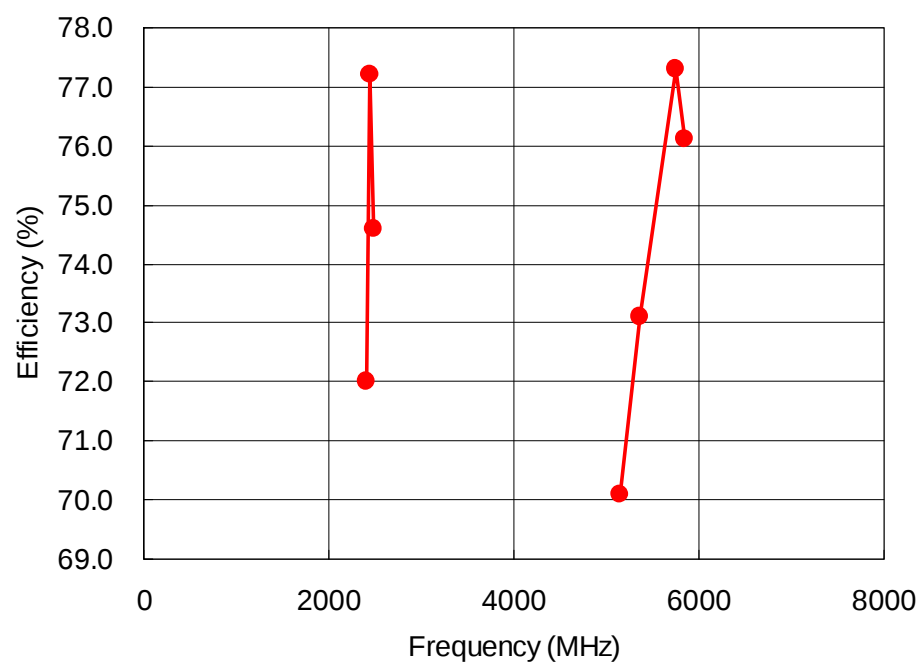
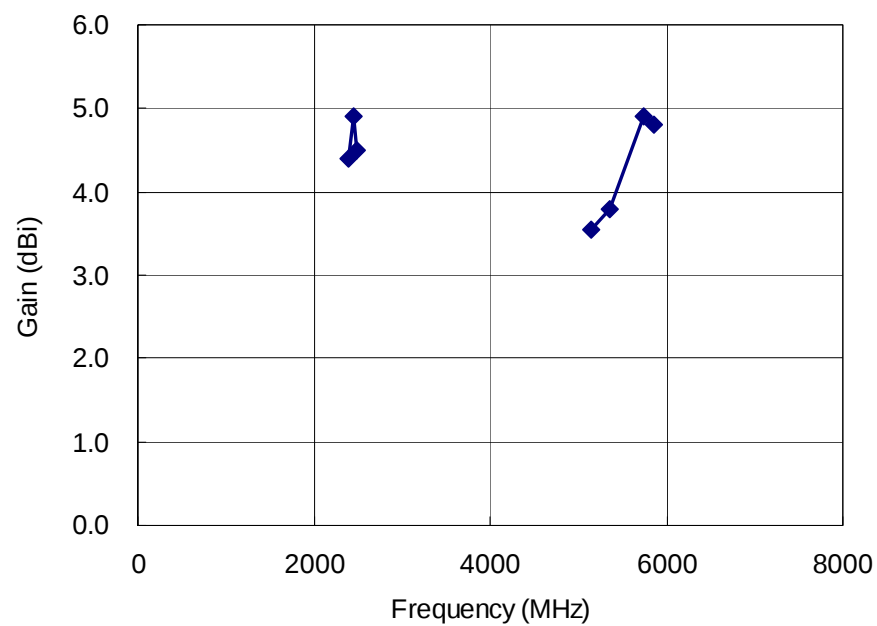
3.2 Pattern



3.2 Pattern

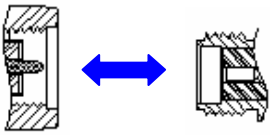
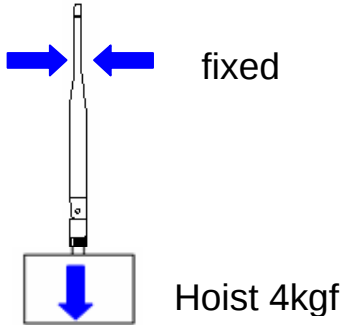
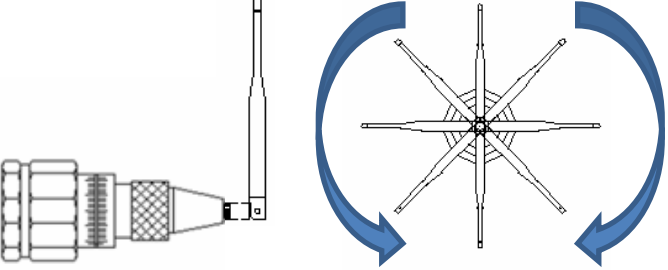
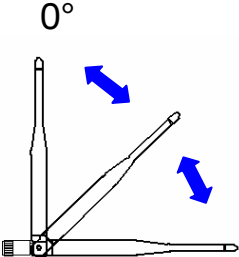


3.2 Pattern



Frequency (MHz)	2400	2450	2483.5	5150	5350	5750	5850
Gain (dBi)	4.4	4.9	4.5	3.5	3.8	4.9	4.8
Efficiency (%)	72.0	77.2	74.6	70.1	73.1	77.3	76.1

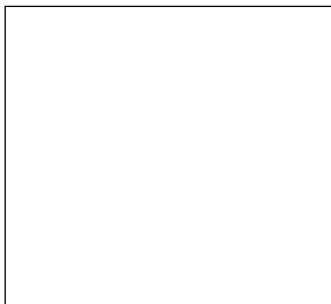
3.3 Mechanical Properties

Mechanical Requirements		Schematic diagram
Durability (mating)	500 cycles	
Pull-out force	4kgf	
Torque	$\geq 0.4\text{kgf-cm}$ Antenna can be rotated any angle does not fall.	
Swivel Angle	0° / 45° / 90°	

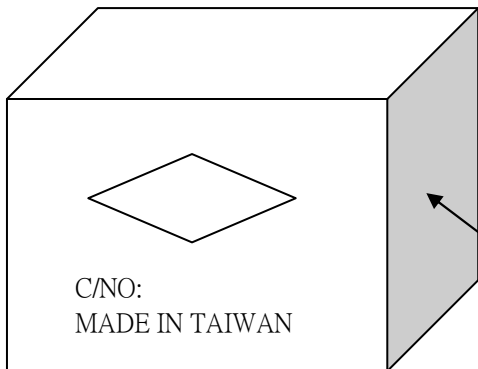
4. Package



- ① 1pcs antenna / 1 PE bag
PE bag size 45*240mm



- ② 50pcs antenna / 1 PE bag
PE bag size 280*450mm



- ③ 400pcs antenna / 1 Carton
Carton size 320*250*290mm

<u>MODEL No.:</u>	
<u>Q'ty:</u>	PCS
<u>N.W:</u>	PCS
<u>G.W:</u>	PCS

Packing q'ty is for reference only, adjust it based on production packing.