

# 承認書

## SPECIFICATION FOR APPROVAL

樣品承認  新品承認  規格/材質變更承認

客戶名稱(Customer):	正文科技股份有限公司		
客戶料號(Customer P/N):	180-100-0986R		
產品料號(Product No.):	A8-A003-00163		
產品品名(Product Name) :	DIP 700MHz~960MHz/1700MHz~2700MHz 0dBi/1dBi OD13 L161 black SMA PLUG		
文件編號(Approved No) :			
日期(Issued Date) :	2019 年 08 月 16 日		
客戶承認簽章 Customer Approval Signature	In Charge	Checked	Approval

**TSKY™** 天凱科技股份有限公司 TSKY CO., LTD.

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業務	核准	審核	主辦員

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# Specification

- **Electrical Properties :**

1. Frequency : 700MHz~960MHz/1700MHz~2700MHz
2. Impedance : 50Ω
3. Return Loss :  $\leq$  -4dB
4. Peak Gain : 0dBi/ 1dBi

- **Physical Properties :**

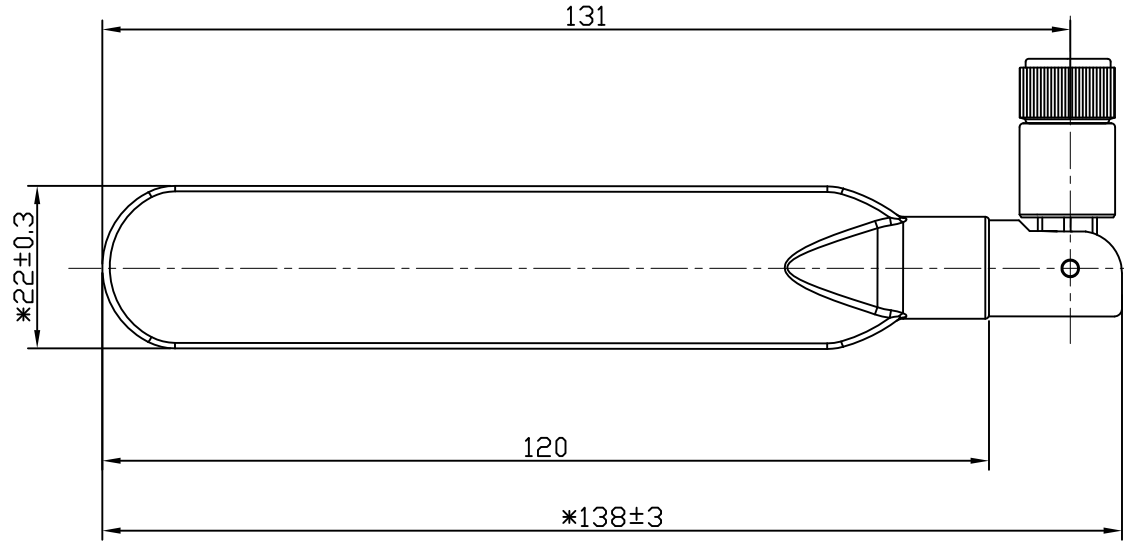
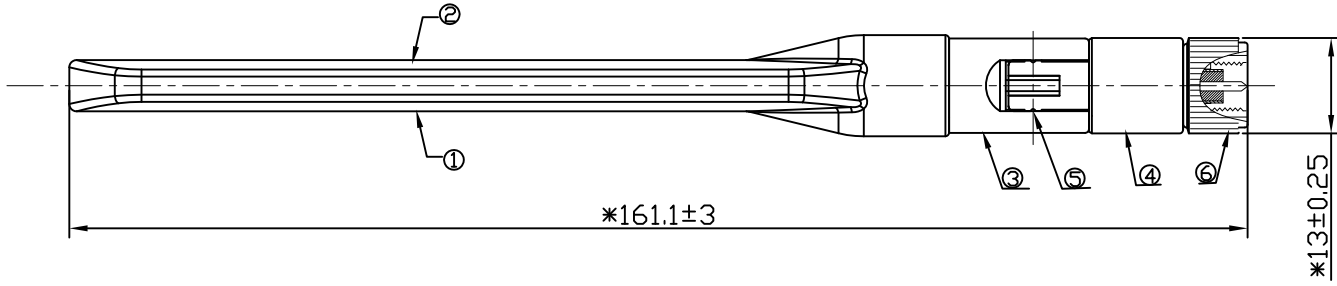
1. Material :

Antenna cover :ABS(BLACK)

Antenna BASE : PBT+PC (BLACK)

2. Connector : SMA PLUG(PTFE:白色)
3. Cable : RG-178,Brown,50Ω
4. PCB : 120mm\*17.6mm\*0.6T,表面處理:噴錫,文字白色
5. Operation temperature : -10°C ~ +60°C
6. Storage temperature : -10°C ~ +60°C

REV	ECN NO.	DRAWING	DESCRIPTION	APPROVED	DATE
A		Jane	初次發行	Gary	2019/02/15



Electrical :

1. Frequency : 700MHz~960MHz/1700MHz~2700MHz
2. Impedance : 50Ω
3. Return Loss : ≦ -4dB
4. Peak Gain : 700MHz~960MHz@ 0 dBi  
1700MHz~2700MHz@ 1 dBi
5. Operating Temp : -10°C ~ +60°
6. Storage Temp : -10°C ~ +60°

NOTE :

\* 為重點量測尺寸



6	Connector SMA PLUG/Standard	Color: Black	1
5	Rivet	PBT+PC ; Color: Black	2
4	Antena Base	PBT+PC ; Color: Black	1
3	Antena Base	PBT+PC ; Color: Black	1
2	Antena Housing (R)	ABS ; Color: Black	1
1	Antena Housing (L)	ABS ; Color: Black	1

NO.	PART NO.	DESCRIPTION	QTY
TOLERANCE UNLESS OTHERWISE SPECIFIED		<b>TSKY CO., LTD.</b>	
DIMENSION		CONFIDENTIAL	INITIAL MODEL:
.X±	0.2	FINISH:	PART NAME
.XX±	0.1	SIZE: A4	DIP 700MHz~960MHz/1700MHz~2700MHz
.XXX±	0.05	UNIT: mm	0dBi/1dBi OD13 L161 black SMA PLUG
ANGLES		SCALE: 1:1	
X.*±	0.5	DRAWING	DESIGNED
		Jane	CONCURRED
		Gary	APPROVED
		PART NO.	REV. SHT.
		A8-A003-00163	A 1/1

# WRTM-318N 700MHz~2700MHz External Dipole Test Report

**Gemtek Antenna Team**

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<http://www.gemtek.com.tw>

**2016/07/15**

*Confidential*  
-1-

**Gemtek**  
Wireless Broadband Anywhere

- **Product / Antenna Overview**
- **Test Results**
  - ❖ Antenna Return Loss
  - ❖ Antenna Radiation Pattern
  - ❖ Antenna Gain Data & Efficiency

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# Antenna Overview

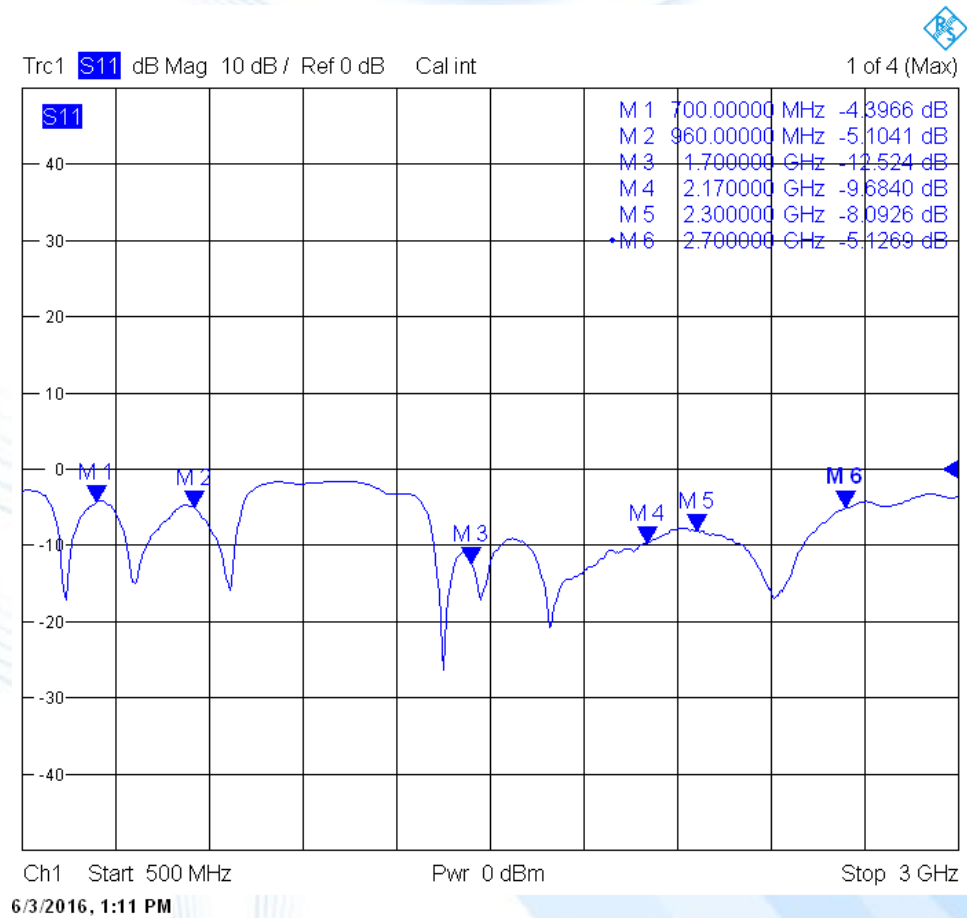


H=161mm

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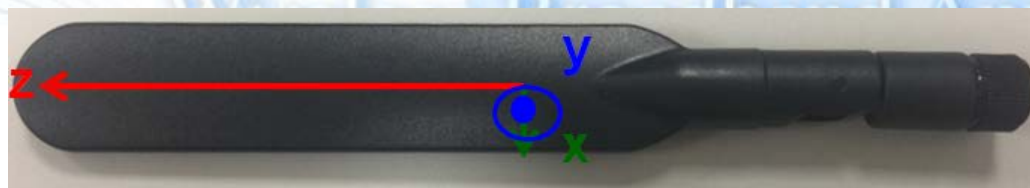
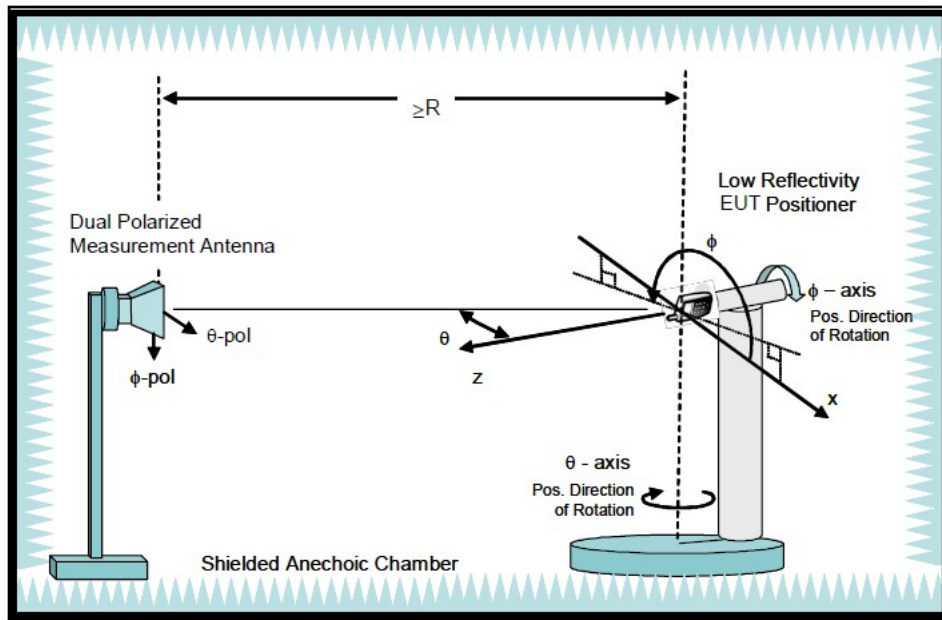
# Antenna Return Loss



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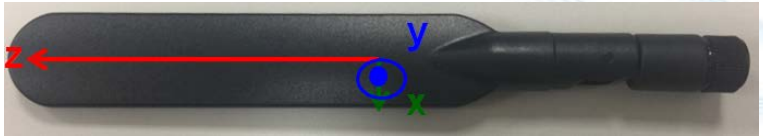


# Antenna Coordinate System Definition

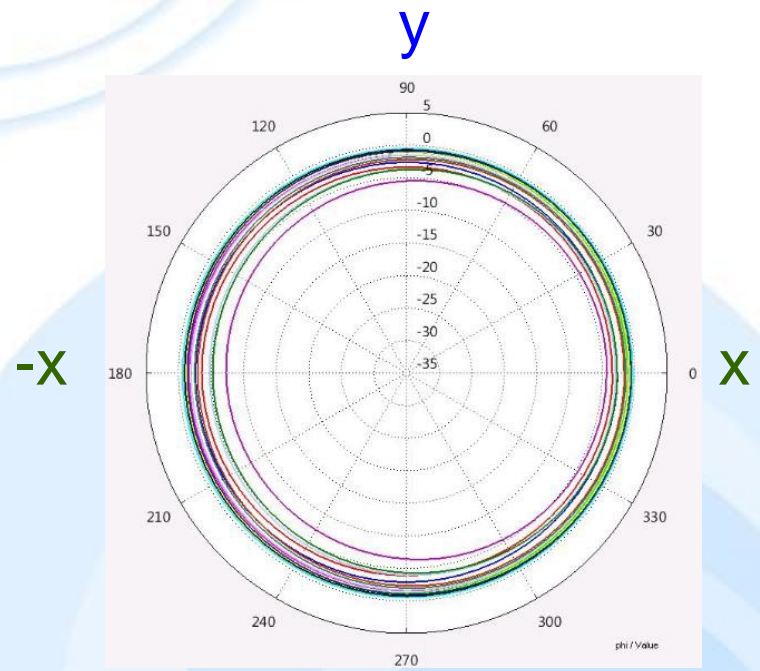


# Ant Gain\_Total at XY-Plane (H-Plane)

(Operation Frequency = 700MHz ~ 960MHz)



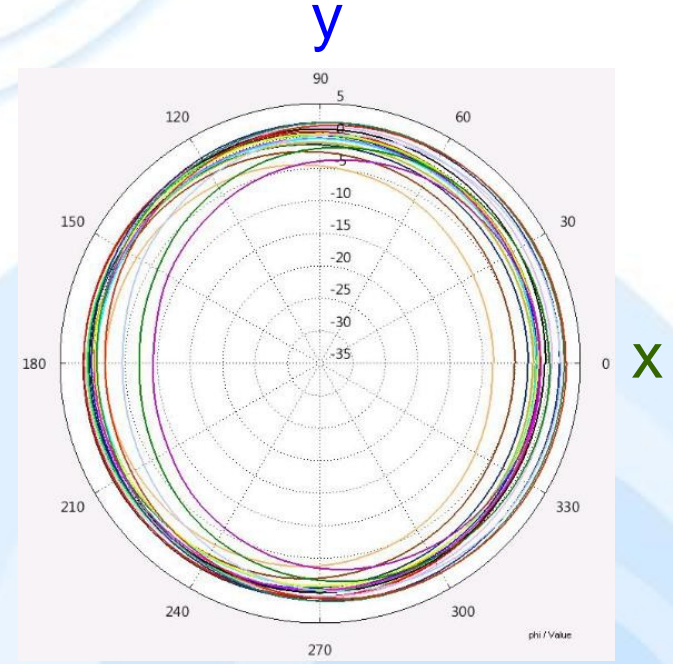
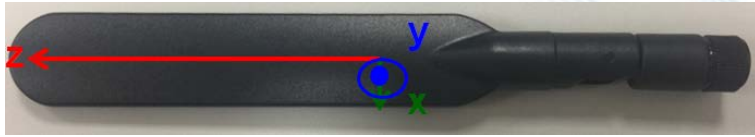
700MHz	Black
720MHz	Blue
740MHz	Green
760MHz	Magenta
780MHz	Cyan
800MHz	Yellow
820MHz	Black
840MHz	Light Purple
860MHz	Dark Blue
880MHz	Dark Green
900MHz	Red
920MHz	Light Blue
940MHz	Dark Green
960MHz	Magenta



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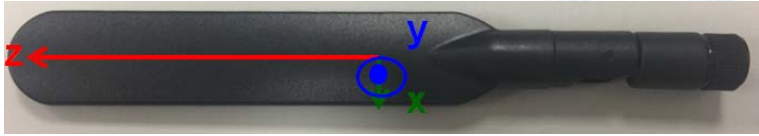
# Ant Gain\_Total at XY-Plane (H-Plane)

(Operation Frequency = 1700MHz ~ 2700MHz)

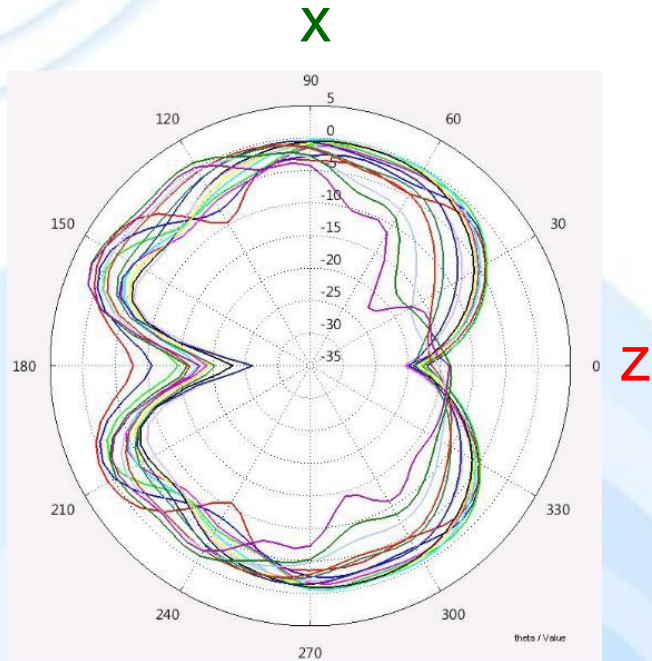


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# Ant Gain\_Total at ZX-Plane (E-Plane) (Operation Frequency = 700MHz ~ 960MHz)



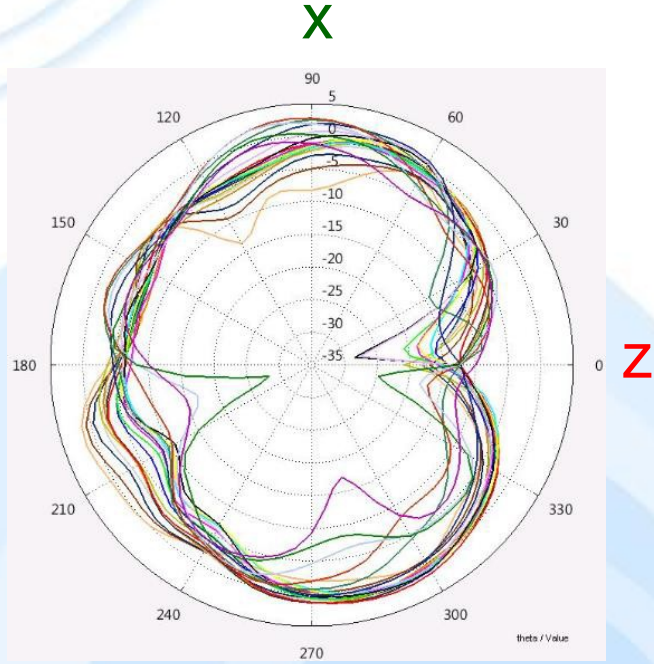
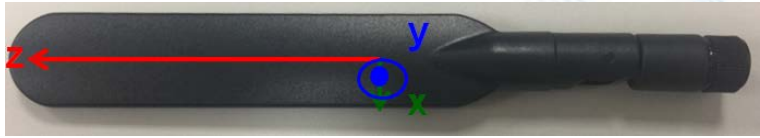
700MHz	Black
720MHz	Blue
740MHz	Green
760MHz	Magenta
780MHz	Cyan
800MHz	Yellow
820MHz	Black
840MHz	Light Purple
860MHz	Dark Blue
880MHz	Dark Green
900MHz	Red
920MHz	Light Blue
940MHz	Dark Green
960MHz	Magenta



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# Ant Gain\_Total at ZX-Plane (E-Plane)

(Operation Frequency = 1700MHz ~ 2700MHz)



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# Ant Gain Data & Efficiency

## 700MHz~960MHz

Frequency (MHz)	700	720	740	760	780	800	820	840	860	880	900	920	940	960
Efficiency (dB)	-3.45	-3.28	-2.59	-3.4	-2.43	-2.7	-2.56	-3.57	-2.83	-3.45	-3.16	-3.97	-3.5	-4.77
Efficiency (%)	45.19	46.99	55.08	45.71	57.15	53.7	55.46	43.95	52.12	45.19	48.31	40.09	44.67	33.34
Peak Gain (dBi)	1.38	0.33	-0.65	-1.18	-0.15	-0.45	-0.43	-1.24	-0.49	-0.83	-0.46	0.23	1.96	1.47

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# Ant Gain Data & Efficiency

## 1700MHz~2700MHz

Frequency (MHz)	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350
Efficiency (dB)	-3.14	-2.59	-2.23	-1.64	-1.55	-1.4	-1.1	-0.84	-1.62	-1.73	-2	-2	-1.7	-1.43
Efficiency (%)	48.53	55.08	59.84	68.55	69.98	72.44	77.62	82.41	68.87	67.14	63.1	63.1	67.61	71.94
Peak Gain (dBi)	1.49	0.75	0.71	1.64	1.23	1.57	1.83	2.1	1.35	1.28	0.94	1.13	1.34	1.71

## 1700MHz~2700MHz

Frequency (MHz)	2400	2450	2500	2550	2600	2650	2700
Efficiency (dB)	-1.28	-0.96	-1.21	-1.53	-2.07	-3.24	-4.52
Efficiency (%)	74.47	80.17	75.68	70.31	62.09	47.42	35.32
Peak Gain (dBi)	1.62	2.19	2.56	2.89	2.16	0.61	-0.53

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作業指導書

料號	A8-A003-00163	<h1>包裝規範</h1>	核准	審核	制作
版本	v1.0				
制訂日期	2019.05.29				
<input checked="" type="checkbox"/> 自製化 <input type="checkbox"/> 客製化					

- 一：
- 1.每PCS裝1 PE袋，用熱風機封口。
  - 2.PE袋:L240\*W160\*0.05mm。
  - 3.PE袋中間貼上所需標籤，標籤內容終端客戶料號（印有180-100-0986R/數量(20pcs)。



- 二：
- 1.每箱裝產品 20包，每包20pcs。
  - 2.頂層放珍珠泡棉，以保護產品。



- 三：
- 1.每箱裝產品400pcs。
  - 2.外箱規格 36\*26\*22cm。



- 四：
- 1.封箱。
  - 2.在外箱左上角貼上所需標籤（客戶標籤/ROHS標籤/日期標籤）。
  - 2.紙箱需標識淨重與毛重（淨重：指產品不包含外包裝重量，毛重：產品含外包裝重量）



備註：