



## SPECIFICATION FOR APPROVAL

**Customer name:** Micronet Union technology(Chengdu) Co,LTD

**Product name:** external antenna ( White)

**Equipment Type:** 2.4GHz-2.5GHz /RF1.13Gray L=185mm+IPEX

**Model Number:** 51010148

**Part number in the factory:** VW01-W020064

**Company address:** Dong guan ivy technology co,LTD  
Romm 303,Unit2, Building 8,science and Technology  
Second Road, Songshan Lake park,Dongguan  
City,Guangdong Province,China

Company confirmation:

examine	audit	ratify
MISS Wu	Mr. XU	MR. Wan

Customer Confirmation:

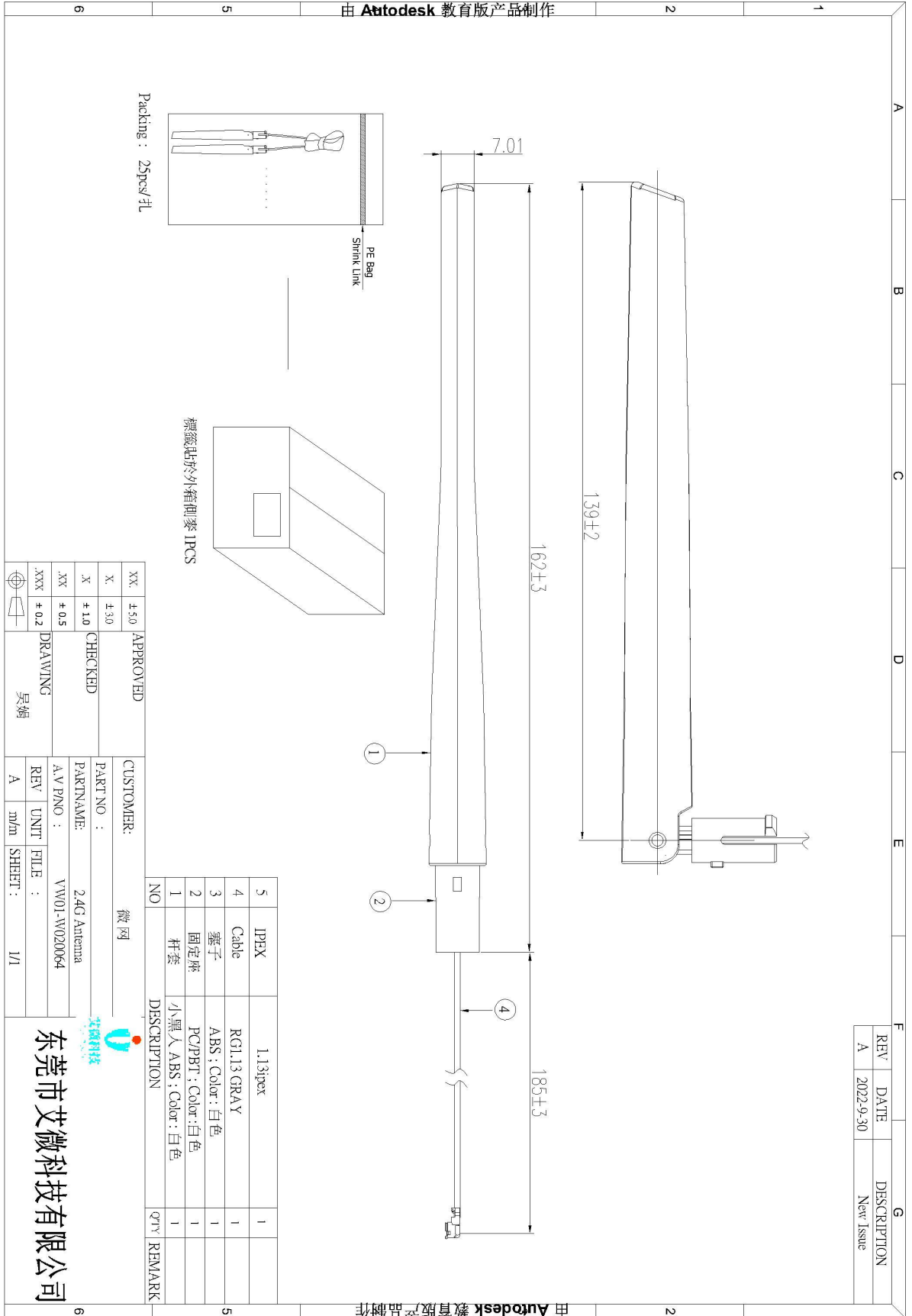
inspect	audit	ratify



1、Specification table:

Main technical specifications	
Frequency Range (MHz)	2400~2500
Impedance( $\Omega$ )	50
Peak Gain(dBi)	3 $\pm$ 0.5
VSWR	Max 2.0
Admitted Power	2W
Polarization	Linear Vertical
Radiation	Omni-directional
Connector Type	IPEX
Physical Properties	
Antenna cable	1.13 Gray Cable
Operating Temp	-40 $^{\circ}$ C~+60 $^{\circ}$ C
Storage Temp	-40 $^{\circ}$ C~+60 $^{\circ}$ C

Product drawing



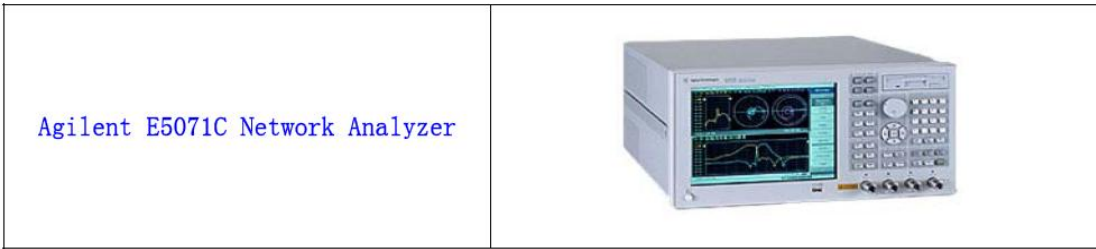
由 Autodesk 教育版产品制作

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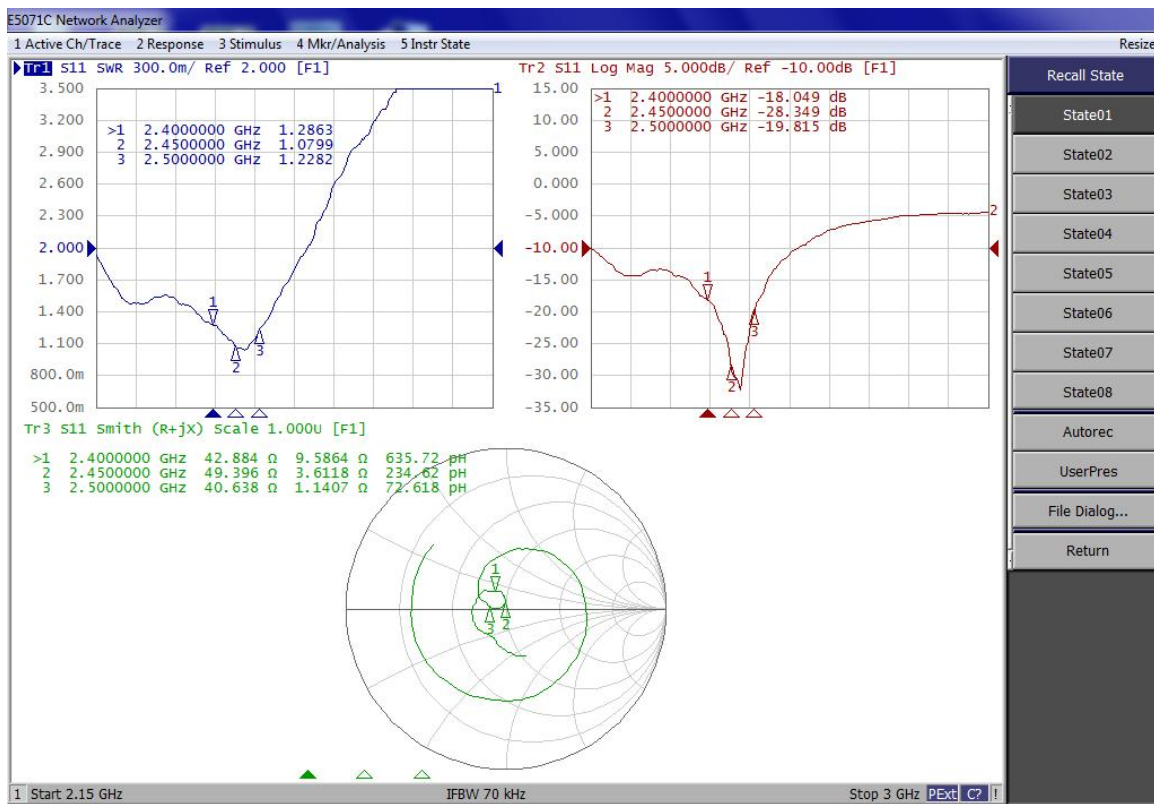
艾微科技  
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REV	DATE	DESCRIPTION
A	2022-9-30	New Issue

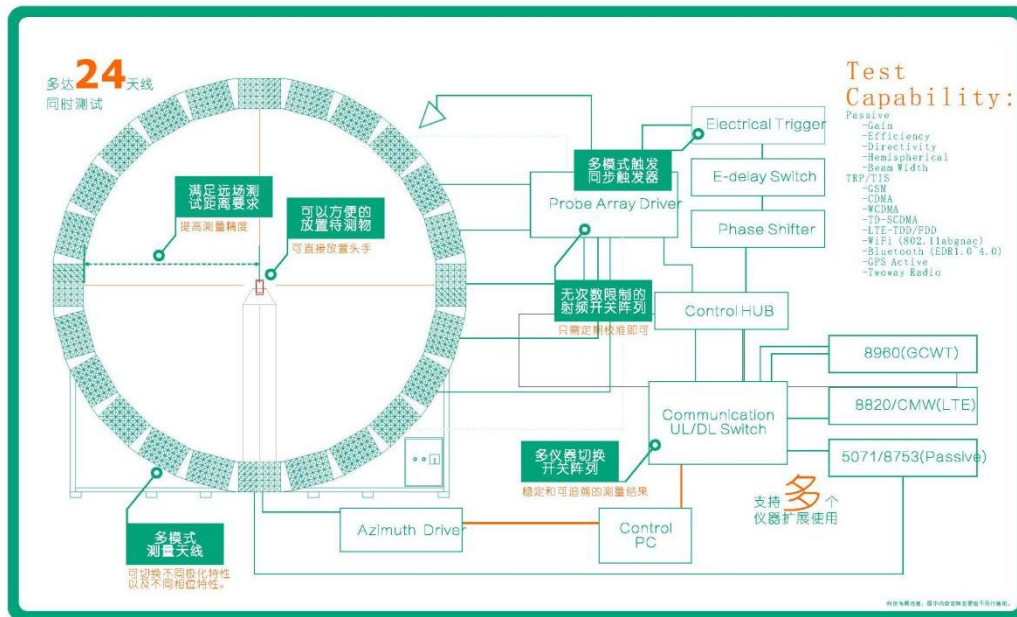
### 三、Product Characteristics



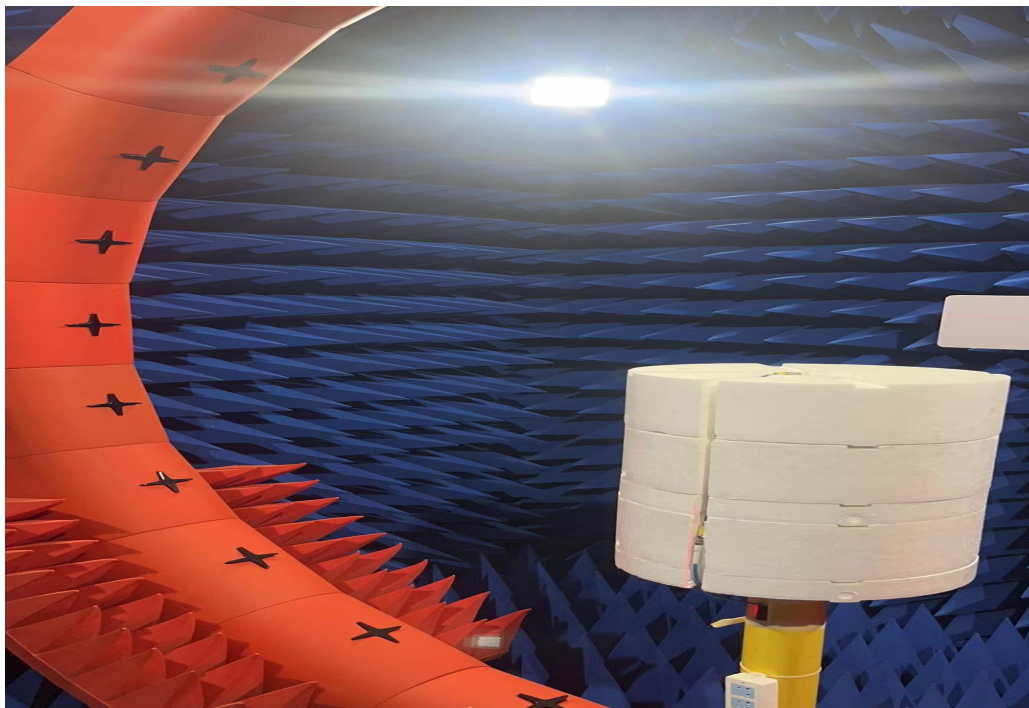
## 2400-2500MHz



### Test philosophy:



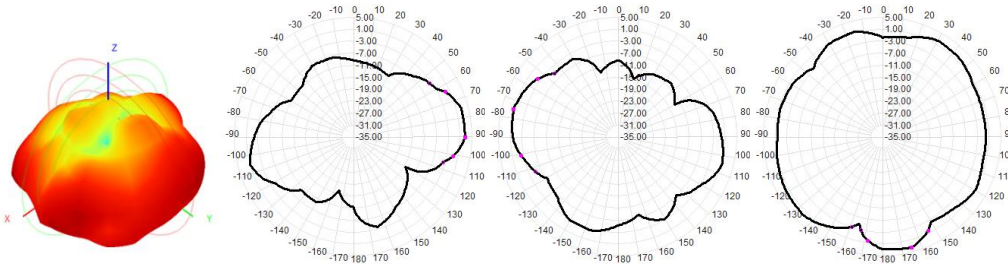
### Darkroom interior picture:



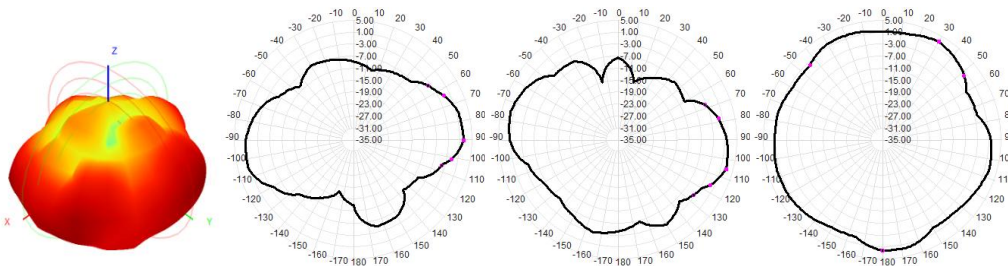
## 暗室 2D、3D Radiation Pattern

### Radiation Pattern

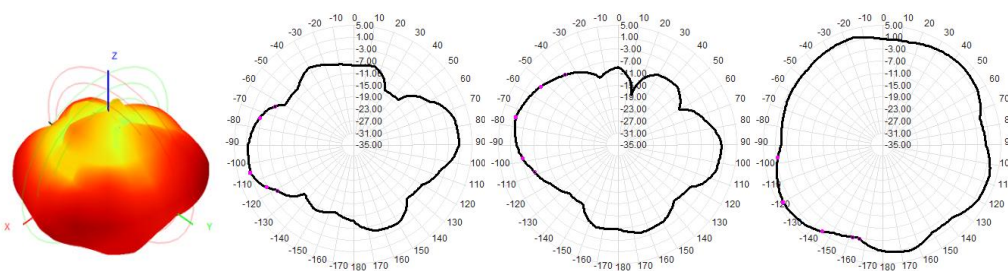
#### 2.4GHz



#### 2.45GHz



#### 2.5GHz





## 1. Gain & Patterns test results

### 2D patterns

### Summary

#### VSWR

	2400MHz	2450MHz	2500MHz
VSWR	1.28	1.07	1.22

### 3D Peak Gain & Efficiency

Frequency	Antenna	
	Peak Gain (dBi)	Efficiency (%)
2400MHz	3.12	72.64
2450MHz	3.54	75.36
2500MHz	3.36	72.41



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## Dongguan ivy technology co.,LTD.

### 1. 适用范围:

Scope

本规格书制定了 RF113 50Ω FEP 绝缘射频电缆的结构和电气特性.

This specification covers the construction and the electrical properties of RF113 50Ω FEP Insulation Coaxial Cable

### 2. 结构/Construction:

单位/Unit:mm

项目/Item	详细资料/Details	
导体/Conductor	材料/Material	镀锡铜线/Tinned plated Copper
	构成(根/mm)/Composition(No./mm)	7/0.08±0.003
	标称直径/NOM. O.D	0.24±0.01
绝缘层/Insulation	材料/Material	聚全氟乙丙烯/FEP
	标称外径/NOM. O.D	0.7±0.03
	颜色/Color	Natural
编织层/Braid Shield	材料/Material	镀锡铜线 Tinned copper
	构成/Composition	16/4/0.05±0.003
	标称直径/NOM. O.D	0.92±0.03
护套/Jacket	材料/Material	聚全氟乙丙烯/FEP
	标称外径/NOM. O.D	1.13±0.05
	颜色/Color	/

### 3. 电气特性(20℃时)/Electrical Properties(at 20℃)

项目/Item	单位/Unit	详细资料/Details	
电容/Capacitance	pF/m	98	
特性阻抗/Conductor Resistance	Ω	50±3.0	
耐压强度/Dielectric Strength	A.C V/1min	1000	
最大工作频率/Max.oper. frequency	MHz	6000	
伸长率/elongation	%	200%	
抗拉强度/Tensile strength	kgf/mm <sup>2</sup>	1.76	
工作温度范围/Operating Temp.	℃	-55to200	
衰减/Attenuation	/	频率 /Frequency (MHz)	dB/1m
		1000	≤2.2
		2000	≤3.1
		3000	≤3.9
		4000	≤4.5
		5000	≤5.0
6000	≤5.5		
驻波比/Standing wave(0-6GHz)	/	≤1.5	

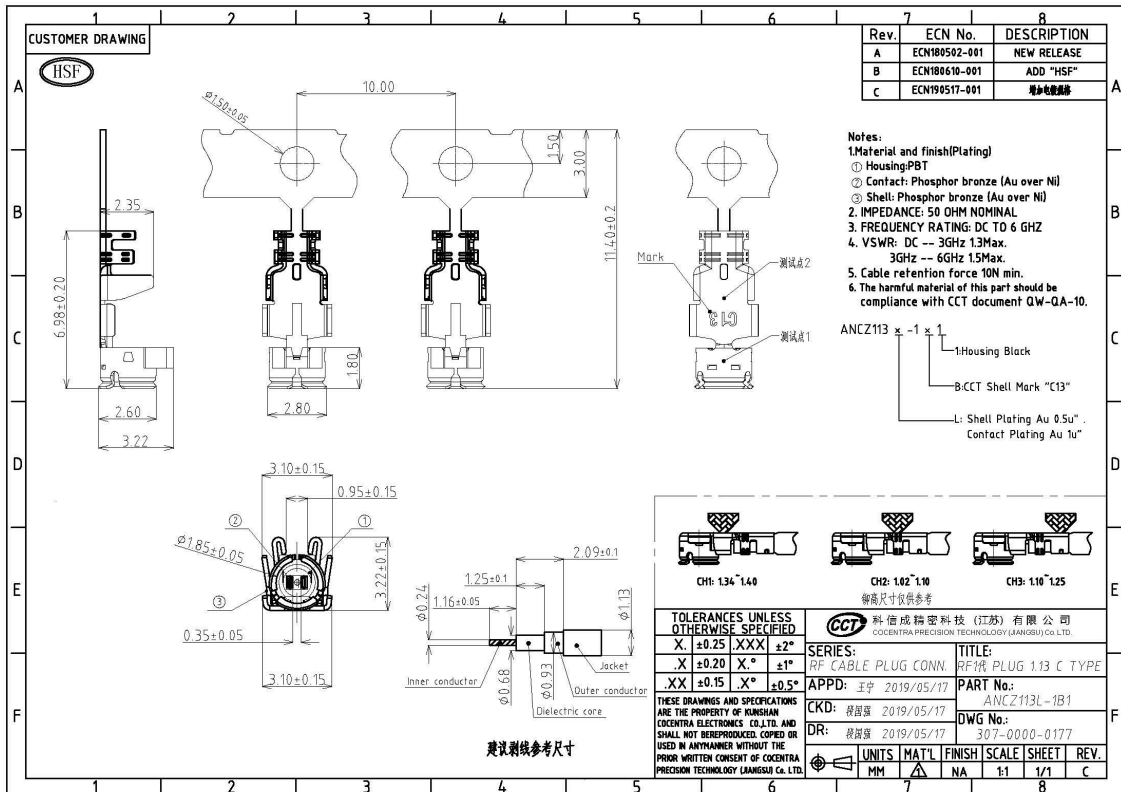


### FR4

NO.	成分名称 Ingredients	所占板材 百分比 (%)	主要构成 Main Composition	
			物质名称 Material	百分比 (%)
1	环氧树脂 Epoxy Resin	37-40%	溴化环氧树脂 Epoxy Resin	99.97%
			水解氯 Cl	0.02-0.035%
2	电解铜箔 Copper Foil	15-20%	铜 Cu	99.9%
			钴 Co	0.028%
			锰 Mn	0.018%
			铬 Cr	0.004%
			锌 Zn	0.01%
3	电子级玻璃布 Fibcr Glass	40-45%	SiO <sub>2</sub>	52-56%
			CaO	16-25%
			Al <sub>2</sub> O <sub>3</sub>	12-16%
			MgO	0-5%
			B <sub>2</sub> O <sub>3</sub>	5-10%
			Na <sub>2</sub> O&K <sub>2</sub> O	0-2%
			Fe <sub>2</sub> O <sub>3</sub>	0.05-0.4%
			TiO <sub>2</sub>	0-0.8%
F <sub>2</sub>	0-1.0%			

注：1. 以上成份均为重量百分比 (Weight Percentage) 。  
2. 溴化环氧树脂中溴的含量占 17-21%

### Ipex





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Dongguan ivy technology co.,LTD.

NICKEL WIRE

Green product

INSPECTION CERTIFICATE

DESCRIPTION:NISWC

PRODCTNO:19XX25

LOTNUMBER:NI190602LK

WEIGHT:52.50KG

TEST ITEM	SPEC	RESULTS
SIZE ( MM )	1.20MM	1.196
TENSIONSTRENGTH	1850-2100N/m m <sup>2</sup>	2015N/m m <sup>2</sup>
TWEST ( MTN )	≥20	36
APPEATANCE	GOOD	GOOD
PLATING	2-4"	2.8"
WELDING	3-6Sec	<3Sec
ANTI-CORROSINON	≥16hr	>48hr

CHEMICALCOMPOSTTION ( % )

EITEM	C	SI	Mn	P	S	Ni
SPEC	0.79	0.15	0.30	MAX	MAX	3.0-4.0
SPEC	0.86	0.35	0.60	0.03	0.03	3.0-4.0
RESULTS	0.82	0.25	0.60	0.015	0.016	2.80

MANAGER-OFQ.A-Dept  
DATE:2019-06-02



东莞市艾微科技有限公司  
Dongguan ivy technology co., LTD.

PC+PBT

測試項目	STM 測試方法	條件	單位	820	770bk
比重	D-792	23℃	Kg/m <sup>3</sup>	1.2	1.2
衝強	D-256	3.2mm	kg/cm-cm	84	72
拉伸強度	D-638	50mm/min	Kg/cm <sup>2</sup>	550	495
彎曲強度	D-790	1.3mm/min	Kg/cm <sup>2</sup>	785	720
熱變形	D-684	3.2mm. 1.82Mpa	℃	110	102
流率	D-1238	300℃/1.2kg	g/10min	15	24
乾燥溫度x4hr			℃	110	110
成型溫度			℃	245~265	245~265
模溫			℃	90	90
表面處理				nd	nd
尺寸				0.03%	0.04%



台灣化學纖維股份有限公司

TAIRILAC® ABS樹脂

項目 Property	單位 Unit	試驗方法 Test Method	試驗條件 Test Condition	一般級 AG15E1
抗張強度 Tensile Strength	kg/cm <sup>2</sup> (Mpa)	ASTM D-638 (ISO 527)	23 °C	490 (48)
彎曲強度 Flexural Strength	kg/cm <sup>2</sup> (Mpa)	ASTM D-790 (ISO 178)	23 °C	870 (86)
彎曲模數 Flexural Modulus	kg/cm <sup>2</sup> (Mpa)	ASTM D-790 (ISO 178)	23 °C	28000 (2750)
洛氏硬度 Rockwell Hardness	R-scale	ASTM D-785 (ISO 2039/2)	23 °C	R-110
Izod 衝擊強度 Izod Impact Strength	kg-cm/cm (J/m)	ASTM D-256 (ISO R180)	23 °C 1/4"	14 (137)
衛氏軟化點 Vicat Softening Point	°C	ASTM D-1525 (ISO 306)	1Kg load	103
熱變形溫度 Heat Deflection Temperature	°C	ASTM D-648 (ISO 75/A)	Unannealed 18.6 kg/cm <sup>2</sup> (1/2"bar)	86
			Annealed (80 °C×8hr)	100
熔融指數 Melt Flow Index	g/10 min	ASTM D-1238 (ISO 1133)	200°C×5kg(49N)	1.8
			220°C×10kg(98N)	20
比重 Specific Gravity		ASTM D-792 (ISO 1183)	23°C/23°C	1.05
燃燒性 Flammability		UL-94	File No. E162823	1.5mm HB All Color
特性 CHARACTERISTICS	高光澤性、高剛性			

以上數值係參考 ASTM、ISO 試驗方法所測得，僅供選擇用途品級之參考。

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