



# SPECIFICATION

**PART NO.** 020180MHAB4M409ZA

**DESCRIPTION.** RJ45+STACK USB W/LED & TRANSFORMER

**CUSTOMER.** \_\_\_\_\_

**REV. :** PB

**REV. DATE :**

	APPROVED	CHECKED	PREPARED
NAME	Kenny Chen	Bryant Tu	Nicole Lee

## 實盈股份有限公司

### SUYIN CORPORATION

**TAIWAN HEAD OFFICE :**

NO. 377.Fu-The First Re., His-Chih,  
Taipei Hsien, Taiwan, R.O.C.  
TEL : (886) 2-2694-7697 (Rep)  
FAX : (886) 2-2694-8407 2694-8047  
E-mail : [Lesley@suyin.com.tw](mailto:Lesley@suyin.com.tw)

**SUYIN ELECTRONICS (DONGGUAN) CO., LTD.**

Suyin Road, San Zhong,  
Qing Xi Town, Dongguan City,  
TEL : (886) 2-2694-7697 (Rep)  
FAX : (886) 2-2694-8407 2694-8047  
E-mail : [kevin@suyin.com.tw](mailto:kevin@suyin.com.tw)

**HONG KONG BRANCH OFFICE :**

TEL : (852) 2-559-6017  
FAX : (852) 2-5596461  
E-mail : [suyin@netvigtor.com](mailto:suyin@netvigtor.com)

**KOREA BRANCH OFFICE :**

TEL : (82) 2-559-6017  
FAX : (82) 2-5596461  
E-mail : [yang@sdint.co.kr](mailto:yang@sdint.co.kr)

**GERMANY BRANCH OFFICE :**

TEL : (+49) 0-8561/238-8880  
FAX : (+49) 0-8561/238/8888  
E-mail : [mail@suyin.de](mailto:mail@suyin.de)

**JAPAN BRANCH OFFICE :**

TEL : (81) 45-266-2488  
FAX : (81) 45-266-2489  
E-mail : [kanashiro@suyinjapan.com](mailto:kanashiro@suyinjapan.com)

**SINGAPOER BRANCH OFFICE :**

90 Lorong 23 Geylang #02-01/02/03 Yong  
DA Industrial Building Singapore 388393  
TEL : (65) 6256-6481  
FAX : (65) 6256-6483  
E-mail : [alice@suyin.com.sg](mailto:alice@suyin.com.sg)

**U.S.A BRANCH OFFICE :**

TEL : (1) 714-750-0378  
FAX : (1) 714-750-0379  
E-mail : [steven@suyinusa.com](mailto:steven@suyinusa.com)

**ISRAEL BRANCH OFFICE :**

TEL : (1) 714-750-0378  
FAX : (1) 714-750-0379  
E-mail : [sales@suyin.co.il](mailto:sales@suyin.co.il)



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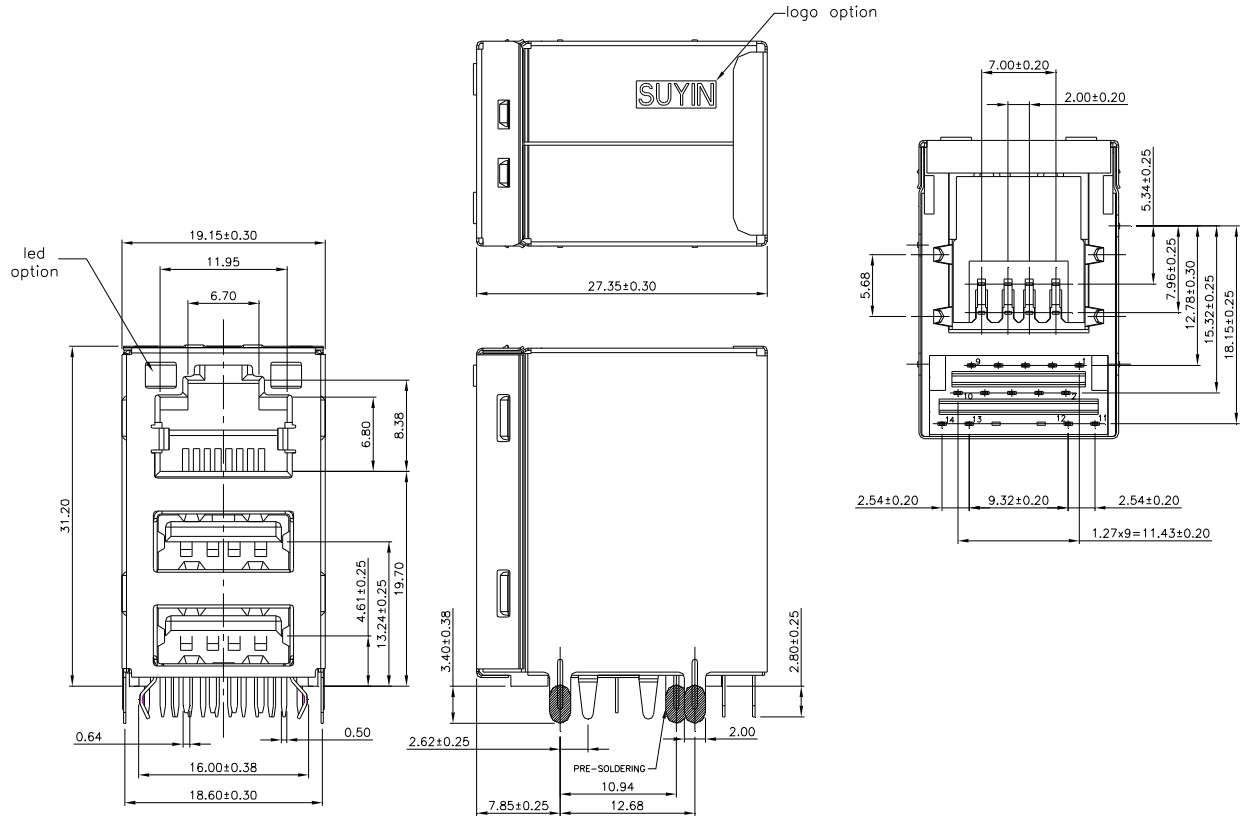
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 CUSTOMER P/N. :

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### 2 MECHANICAL DIMENSIONS

#### 2-1 Dimensions



General Tolerance : 0~10mm: ±0.10  
 10~30mm: ±0.13  
 30~ mm : ±0.30

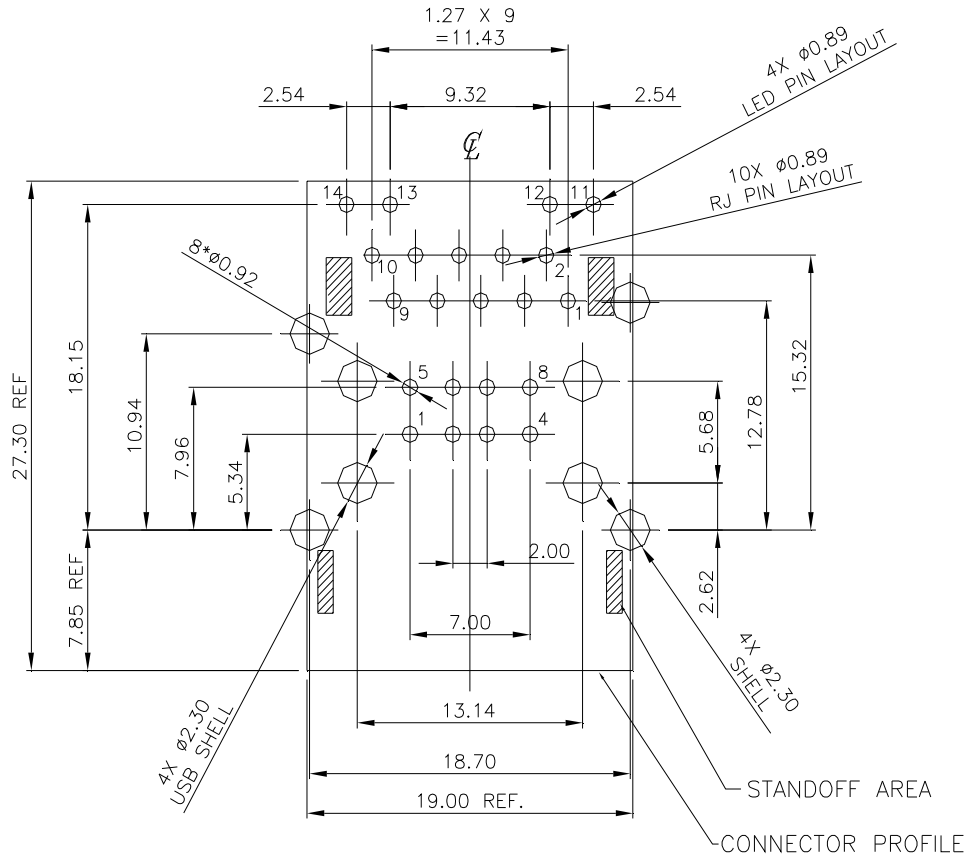
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### 2-2 PCB Layout



#### RECOMMENDED PCB LAYOUT

COMPONENT SIDE PCB THICKNESS : 1.60mm

ALL DIMENSION TOLERANCE ARE  $\pm 0.05$  UNLESS OTHERWISE SPECIFIED

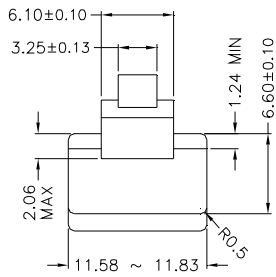
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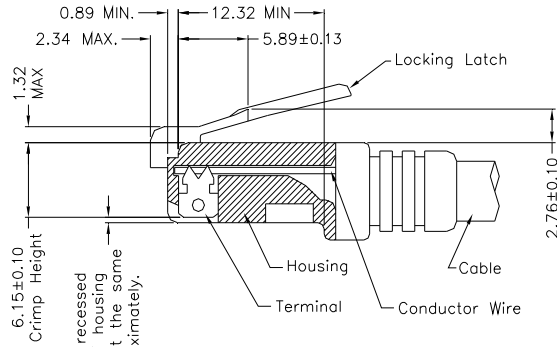
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### 3 RECOMMEND RJ PLUG SPECIFICATION

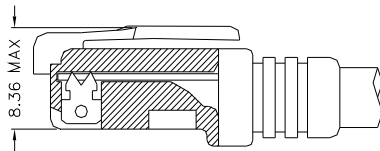


- \* There must be no damage to housing or locking latch. There must be no nicks or cuts in cable.
- \* Durability : 750 cycles generally



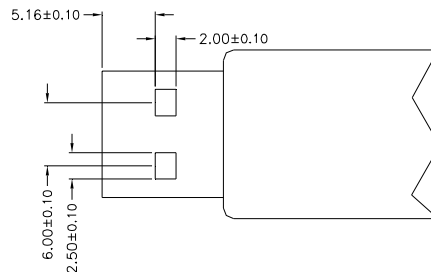
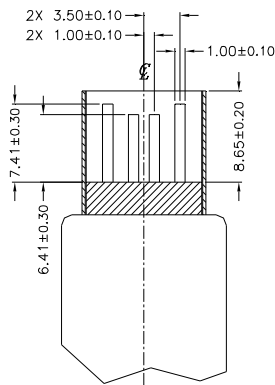
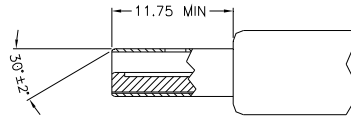
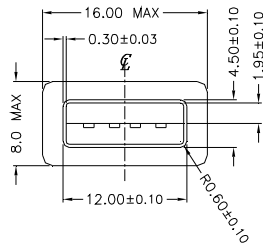
FOLLOW SPECIFICATION : FCC, PART 68,  
 SUBPART F FIGURE 68.500 (C)(2)(i)  
 AND IEC 603-7 FIGURE 23 & 24

All contacts recessed  
 below top of housing  
 and must be at the same  
 height approximately.



FOLLOW SPECIFICATION : FCC, PART 68, SUBPART F  
 FIGURE 68.500 (C)(2)(ii)

### 4 RECOMMEND USB PLUG SPECIFICATION



FOLLOW SPECIFICATION :  
 Universal Series Bus  
 Figure 6-9. USB Series A Plug  
 Interface Drawing

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### 5 MATERIAL SPECIFICATION

5-1 RoHS Compliance per EU Directive 2002/95/EC

5-2 Plastic Housings:

- A. RJ Housing: PBT, UL 94V-0, Black
- B. USB Housing: PBT, UL94V-0, Black
- C. Spacer: PBT, UL94V-0, Black
- D. Transformer Housing: Phenolic, UL94V-0, Black

5-3 Terminals:

- A. RJ Contacts: Phosphor Bronze
- B. RJ Solder Pins: Brass
- C. LED Solder Pins: Brass
- D. USB Contacts & Solder Pins: Phosphor Bronze

5-4 Shields:

- A. Front and Back Shield: Stainless Steel
- B. USB Shield: Brass

5-5 Plating:

- A. RJ Contacts: As P/N specified
- B. RJ Solder Pins: 100u" min. Matte Tin over 50u" Nickel under-plating
- C. LED Solder Pins: 100u" min. Matte Tin over 50u" Nickel under-plating
- D. USB Contact & Solder Pins: Selected GF/ Matte Tin plating over 50u" Nickel under-plating
- E. Shield Grounding Legs: Pre-soldering, Sn/ Ag/ Cu ( 96.5/ 3/ 0.5 )
- F. USB Shield: 100u" min. Tin over 50u" Nickel under-plating

5-6 PCB: FR-4, Two Layer PCB

5-7 Internal Solder Joints: Sn/ Ag/ Cu ( 96.5/ 3/ 0.5 )

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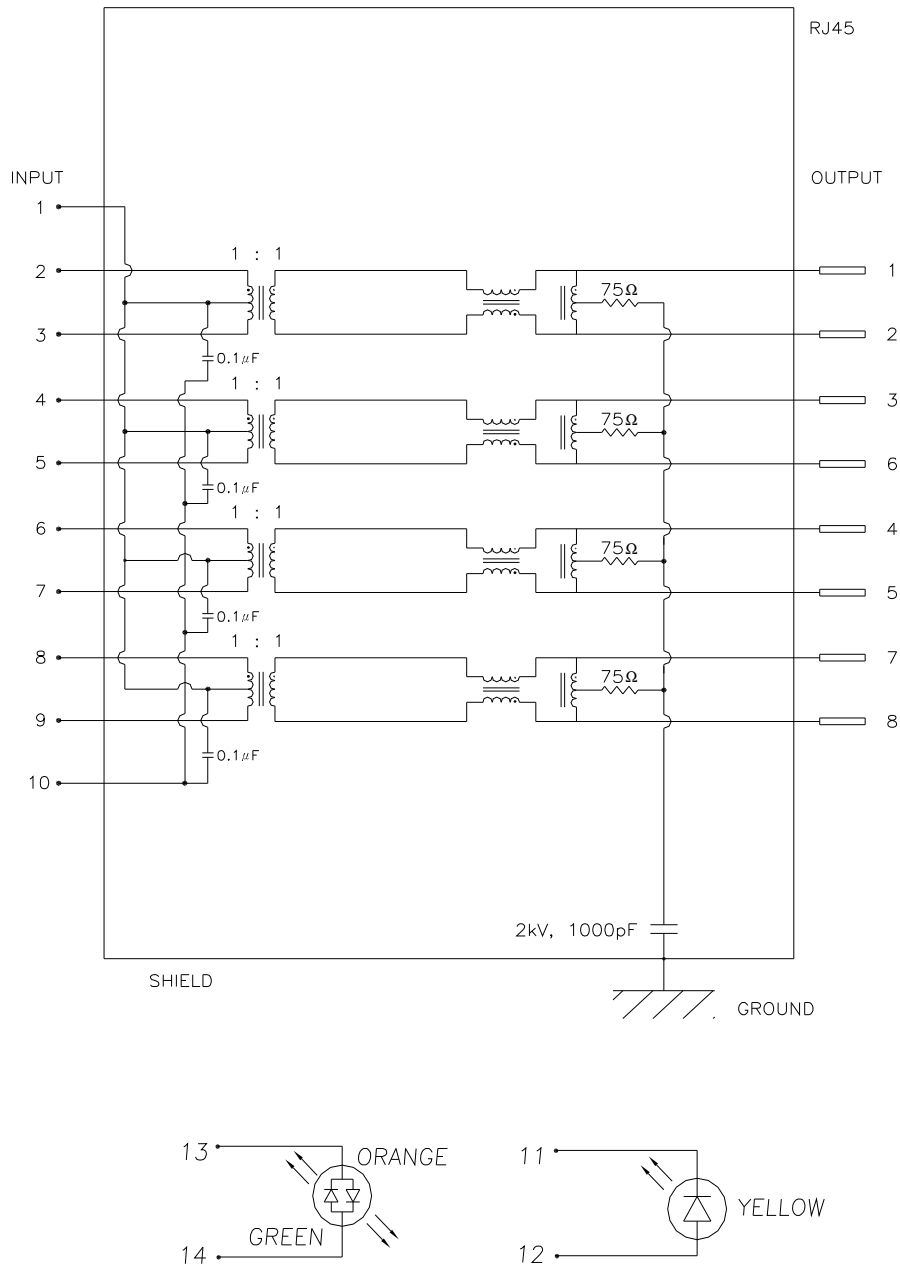
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### 6 ELECTRICAL CHARACTERISTICS

#### 6-1 Schematic



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### 6-2 Transmitter & Receiver Filter:

Insertion Loss (dB MAX)	Return Loss at 100Ω (dB MIN)			
	1~30MHz	30~60MHz	60~80MHz	80~100MHz
1~125MHz -1.2	-18	-16	-12	-10

6-3 Common Mode Rejection @ 1~100 MHz: -30dB MIN

6-4 Cross Talk @ 1~100 MHz: -25dB MIN

6-5 Inductance @ 100KHz/ 0.1V, 8mA DC BIAS: 350μH MIN

6-6 HiPot Test: 1500Vrms, 60sec

6-7 LED:

Forward Voltage (V) @ 20mA	
Typical	MAX
2.2	2.6

## 7 OPERATING & TEST REQUIRMENTS

Product is designed to meet electrical, mechanical and environmental performance requirements specified below. All tests are performed at ambient environmental conditions per MIL-STD-1344A and EIA-364 unless otherwise specified

7-1 Operating Temperature Range: 0°C TO +70°C

7-2 Storage Temperature: -40°C to 85°C

7-3 USB module complies with USB 2.0 standards

7-4 USB Ratings

1. Insulation Resistance: 1000 M Ohm(MIN)
2. Contact Resistance : 25 m Ohm(MAX)
2. Dielectric Withstanding Voltage: 750 VAC



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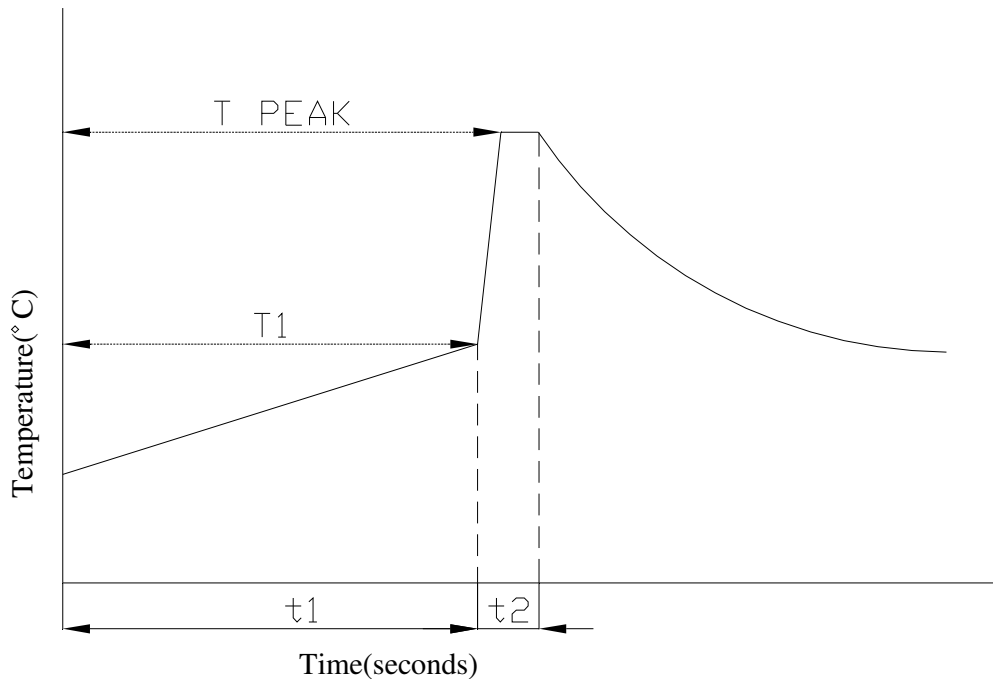
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### 8 STORAGE REQUIRMENTS

All products shall be packaged against any physical damage and corrosion during shipment or in storage.

### 9 RECOMMEND WAVE SOLDERING PROFILE



PARAMETER	REFERENCE	LEAD FREE SPECIFICATION
PREHEAT TEMPERATURE GRADIENT		+1~4°C/sec
PREHEAT TIME	$t_1$	2~3 MIN
PREHEAT TEMPERATURE	$T_1$	>100°C
SOLDER POT TEMPERATURE	T PEAK	260°C ±5°C
DWELL TIME	$t_2$	3.5 SEC
PEAK BOARD TOP TEMPERATURE		190°C
COOLING TEMPERATURE GRADIENT		-6°C/SEC MAX.