TO : ____

SPECIFICATION FOR APPROVAL

DESCRIPITON: USB Type C Connector

FIT PROD. NO: UT11113-1200L-7H

APPROVAL SHEET NO: AN20090020 REV: A

PLEASE RETURN TO US ONE COPY OF "SPECIFICATION FOR APPROVAL"WITH YOUR APPROVED SIGNATURES.

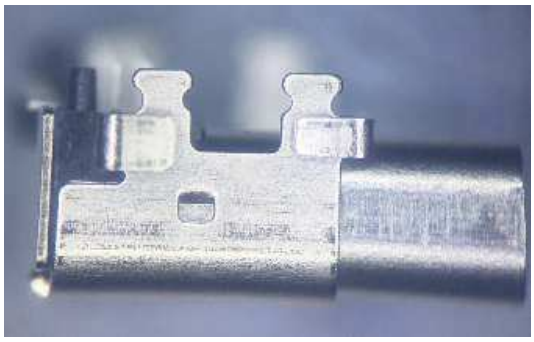
APPROVED SIGNATURES		
Approved By: Nick Lin	Checked By: Gallen Hseih	Prepared By: Qingna Wu

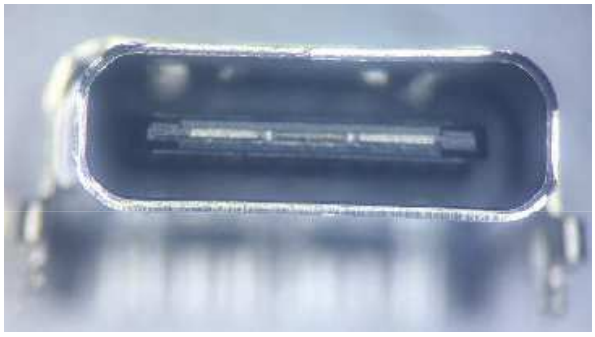
FOXCONN®

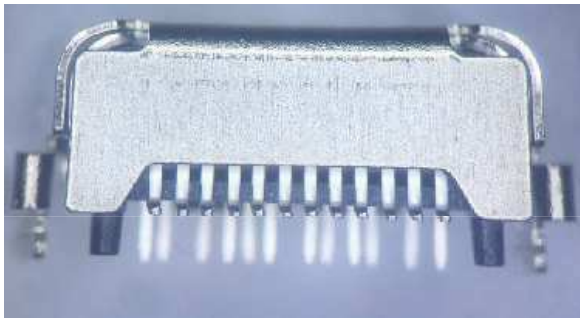
FOXCONN Interconnect Technology (FIT).

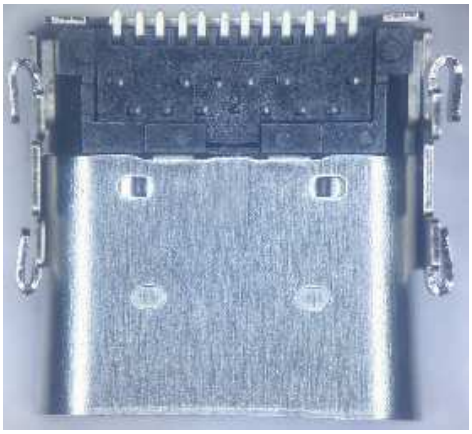
CONTENT:

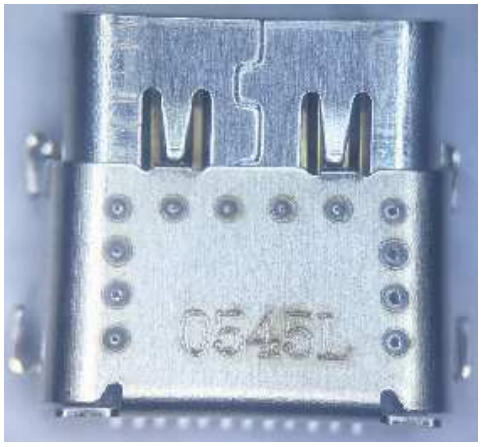
UT11113-1200L-7H











IDEAS GENERATED DRAWING. DON'T CHANGE BY HAND.

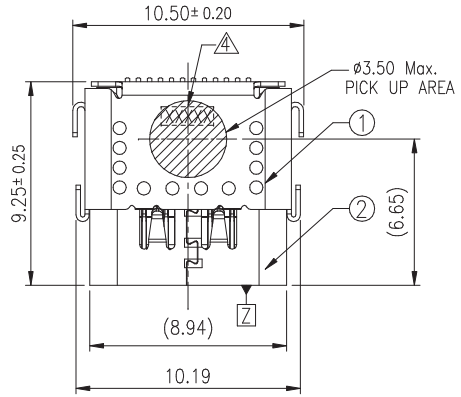
REV.	ECN NO.	APPD.
A	BC-19-0007321	Nick Lin

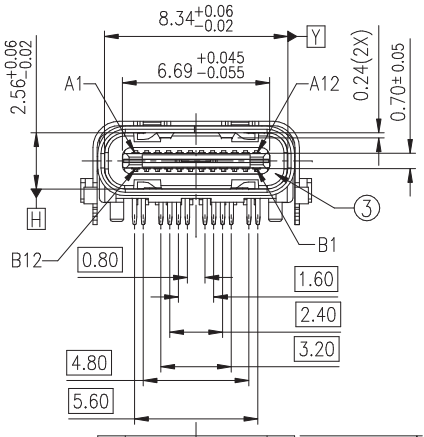
NOTES: UNLESS OTHERWISE SPECIFIED
1. DIMENSIONS SHALL BE INTERPRETED PER ASME Y14.5-2009.
2. ELECTRICAL CHARACTERISTIC:
   2-1. CONTACT CURRENT RATING:
   VBUS AND GND CONTACTS RATED AT 1.25A EA.,
   PARALLELED FOR A TOTAL OF 5A.
   2-2. VOLTAGE RATING: 20V
   2-3. LOW LEVEL CONTACT RESISTANCE:
   40mOhms MAX. FOR VBUS, GND AND OTHER CONTACTS.
3. MECHANICAL CHARACTERISTICS:
   3-1. INSERTION FORCE: 5~20N MAX.
   3-2. EXTRACTION FORCE: 8~20N.
   3-3. DURABILITY: 10,000 MATING CYCLES.
   3-4. OPERATING TEMPERATURE: -55°C TO +85°C.
4. THE DATE CODE IS LOCATED APPROXIMATELY AS SHOWN.
5. THE CONCENTRATION OF Br & Cl SATISFY THE REQUIREMENTS OF Halogen-Free IN DOCUMENT EPI12.
6. PLEASE CONTACT FOXCONN SALES REPRESENTATIVE TO VERIFY PRODUCT DETAILS & AVAILABILITY.

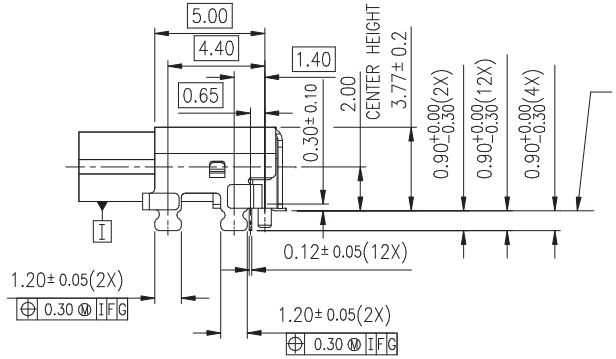
7. PRODUCT NO. MATRIX :

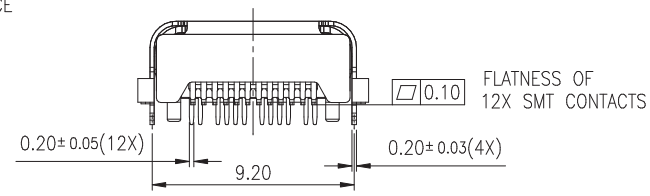
UT 1 1 1 1 3 - 1 20 0 L - 7 H

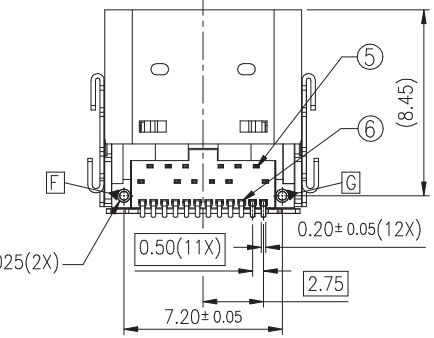
- UT: USB TYPE C CONN.
- CONTACT DESIGN: 1: RECEPTACLE
- TEMINATION TYPE: 1: RIGHT ANGLE, HYBRID SMT AND T/H
- POSITIONS: 1: 24POS
- CONFIGURATION: 2: SINGLE, MID-MOUNT
- CONTACT AREA PLATING: 3: 30u" GOLD; 1: GOLD FLASH
- HOUSING COLOR: 1: BLACK
- CENTER HEIGHT
- SHELL PLATING: 0: NORMAL
- EXTENSION CODE
- PACKAGE CODE: 7: TAPE & REEL
- RoHS & HF CODE: H : HALOGEN FREE

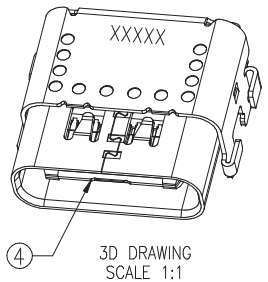


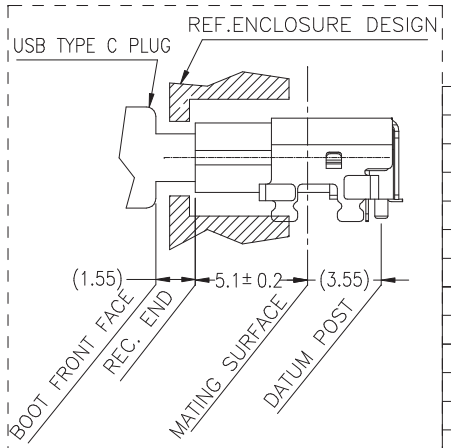












PIN	SIGNAL NAME	PIN	SIGNAL NAME
A1	GND	B12	GND
A2	SSTXp1	B11	SSRXp1
A3	SSTXn1	B10	SSRXn1
A4	VBUS	B9	VBUS
A5	CC1	B8	SBU2
A6	Dp1	B7	Dn2
A7	Dn1	B6	Dp2
A8	SBU1	B5	CC2
A9	VBUS	B4	VBUS
A10	SSRXn2	B3	SSTXn2
A11	SSRXp2	B2	SSTXp2
A12	GND	B1	GND

MATERIALS AND PLATING (UNIT:MICRO-INCHES)

ITEM	DESCRIPTION	Q'TY	MATERIAL	PLATING	THICKNESS
⑥	TOP CONTACT	12	COPPER ALLOY	NICKEL PLATING OVER ALL,MATTE TIN PLATING ON SOLDER AREA. Au PLATING ON CONTACT AREA.	NICKEL :2um MIN. TIN :1.25um MIN. Au :0.75um MIN.
⑤	BOTTOM CONTACT	12	COPPER ALLOY		
④	SHIELDING PLATE	1	STAINLESS STEEL	N/A	N/A
③	HOUSING	1	THERMAL PLASTIC	COLOR:BLACK	HALOGEN FREE
②	MAIN SHELL	1	STAINLESS STEEL	N/A	N/A
①	TOP SHELL	1	STAINLESS STEEL	NICKEL PLATING	1um Min.

X.± 0.30	X.°± 5°	UNITS mm	NAME(INTENDED USE) USB 3.1 TYPE-C RECEPTACLE
.X± 0.25	.X°± 2°	MAT'L	
.XX± 0.15	.XX°± 1°		PART NO.(INTENDED USE) UT11113-120*L-7H
.XXX± 0.10	.XXX°±	FINISH	APPD: Nick Lin
		Q'TY	CHKD: Bill He
			DRAW: Victor Xu 4/2'19

FOXCONN INTERCONNECT TECHNOLOGY LIMITED.

CLASS: ☐CONFIDENTIAL ☐SECRET ■GENERAL

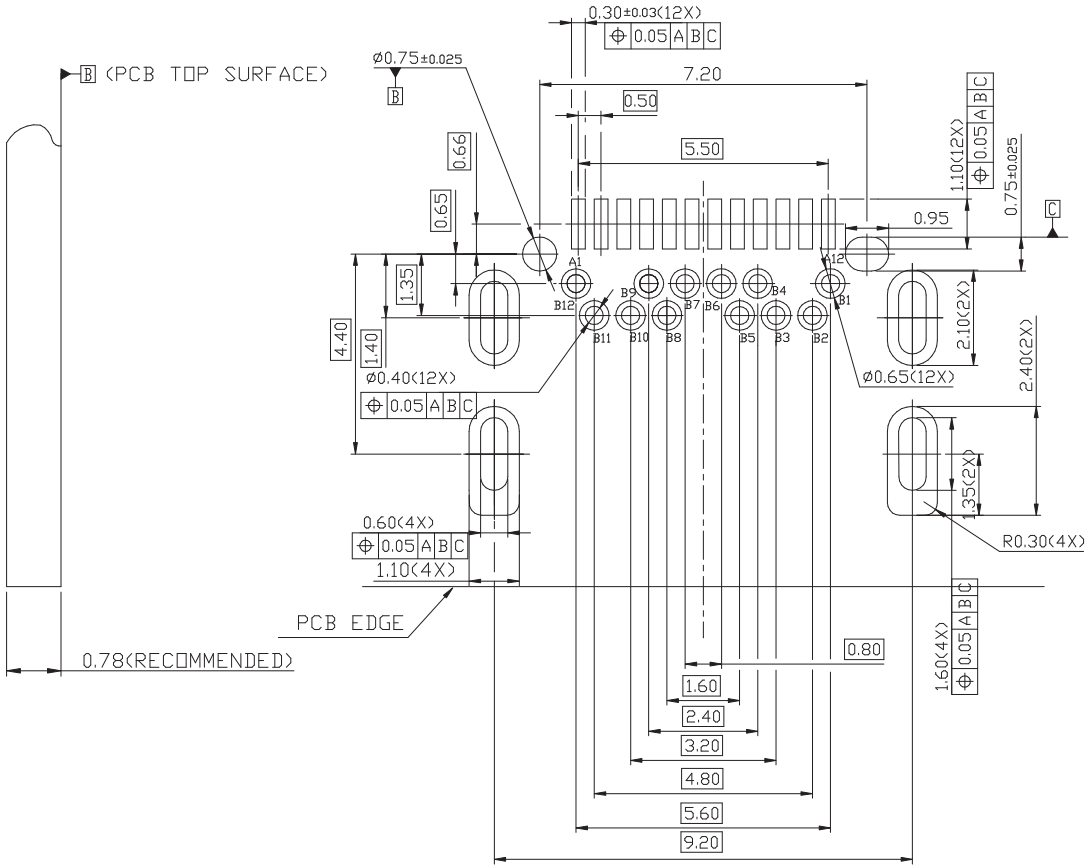
TITLE: CUSTOMER DRAWING(TYPE-C CH2.0)

DWG NO.: 327-0000-3421

SCALE	SHEET	REV.
N/A	1/3	A

IDEAS GENERATED DRAWING. DON'T CHANGE BY HAND.

REV.	ECN NO.	APPD.

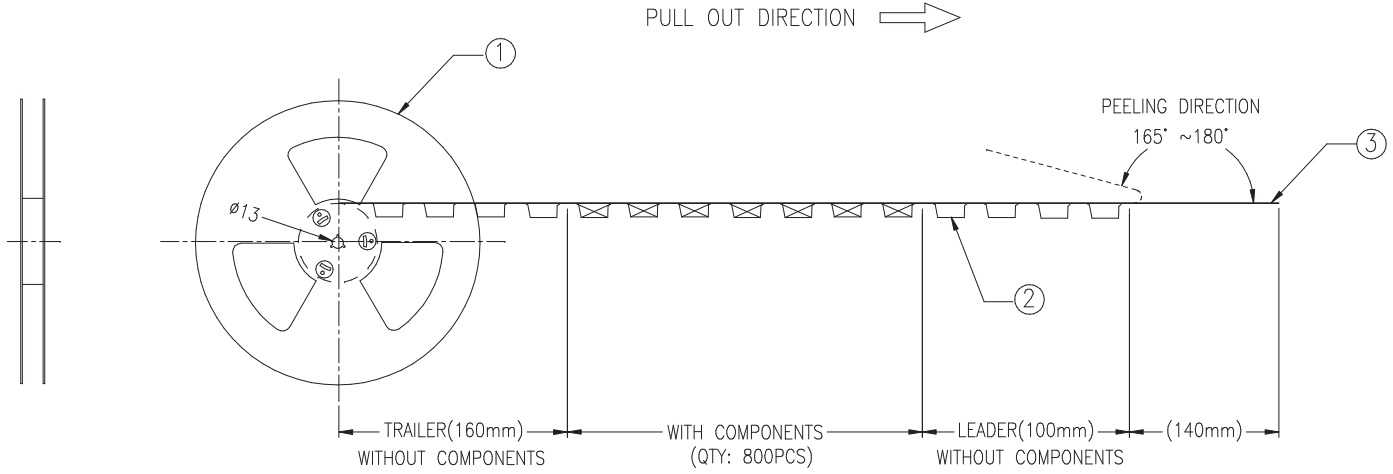


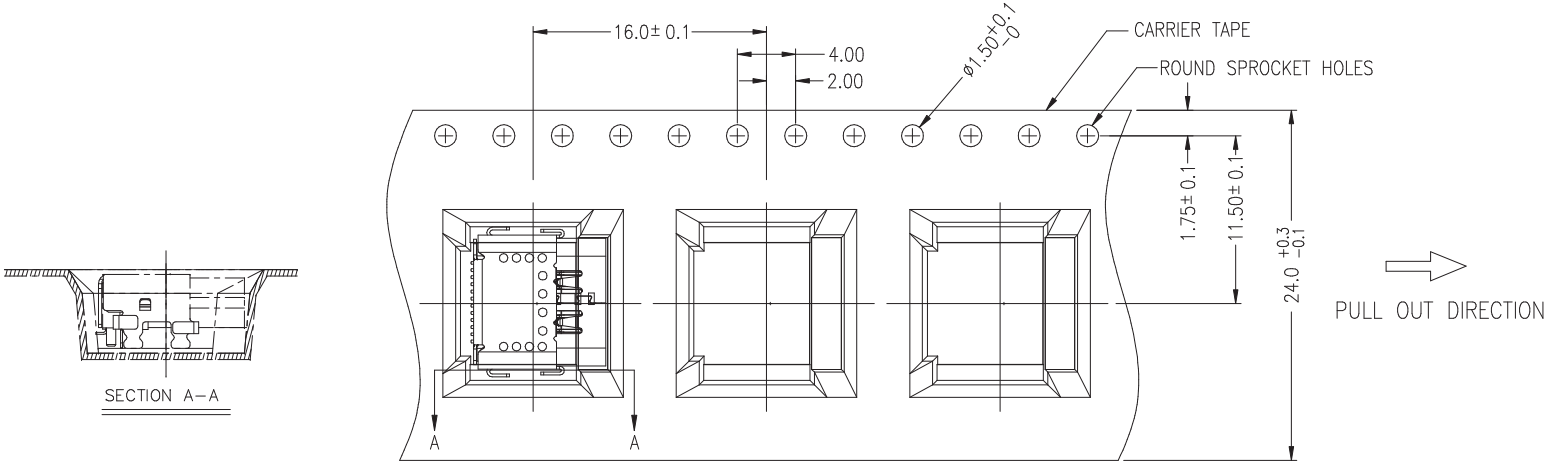
RECOMMENDED PCB LAYOUT
TOLERANCE: ±0.05mm

X.± 0.30	X.°±	UNITS mm	NAME(INTENDED USE) USB REC. ASSEMBLY DRAWING	FOXCONN INTERCONNECT TECHNOLOGY LIMITED.
.X± 0.25	.X°±	MAT'L	PART NO.(INTENDED USE) UT11113-120*L-7H	CLASS: □CONFIDENTIAL □SECRET ■GENERAL
.XX± 0.15	.XX°±		APPD: Nick Lin	TITLE: CUSTOMER DRAWING(TYPE-C CH2.0)
.XXX±0.10	.XXX°±	FINISH	CHKD: Bill Her	DWG NO.: 327-0000-3421
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF FOXCONN INTERCONNECT TECHNOLOGY LIMITED.AND SHALL NOT BE REPRODUCED, COPIED OR USED IN ANY MANNER WITHOUT THE PRIOR WRITTEN CONSENT OF FOXCONN INTERCONNECT TECHNOLOGY LIMITED.		Q'TY	DRAW: Victor Xu 4/2'19	SCALE: NA / SHEET: 2/3 / REV.: A

IDEAS GENERATED DRAWING. DON'T CHANGE BY HAND.

REV.	ECN NO.	APPD.





NOTES:

1. 10 POCKETS HOLE PITCH CUMULARIVE TOLERANCE: ±0.20mm.
2. NUMBER OF CONNECTORS: 800 PCS/REEL, 4000PCS/CARTON.

ITEM	DESCRIPTION	MATERIAL
③	COVER TAPE	POLYSTYRENE
②	CARRIER TAPE	POLYESTER
①	REEL	POLYSTYRENE

X.± 0.30	X.°± 5°	UNITS mm
.X± 0.25	.X°± 2°	MAT'L
.XX± 0.15	.XX°± 1°	
.XXX± 0.10	.XXX°±	FINISH
		Q'TY

NAME(INTENDED USE)
PACKAGE DRAWING

PART NO.(INTENDED USE)
UT11113-120*L-7H

APPD: Nick Lin

CHKD: Bill He

DRAW: Victor Xu 4/2'19

FOXCONN INTERCONNECT TECHNOLOGY LIMITED.

CLASS:
☐CONFIDENTIAL ☐SECRET ■GENERAL

TITLE: CUSTOMER DRAWING(TYPE-C CH2.0)

DWG NO.: 327-0000-3421

SCALE	SHEET	REV.
N/A	3/3	A

FOXCONN INTERCONNECT TECHNOLOGY LIMITED

包　裝　作　業　規　範

環保要求
符合 EPI12 規定

保密等級	□ 機密 □密 ■一般		
PAGE	1/6	REV.	B

規範編號	EB9-APUT-020			包裝類別	Tape & Reel
適用客戶	ALL	適用產品	USB 3.1 TYPE-C R4 2.0 UT11113-1200L-7H UT11113-120BL-7H		

修訂履歷

ECN No / Rev.	頁次 1	2	3	4	5	6									
A	BC-17-0034731	BC-17-0034731	BC-17-0034731	BC-17-0034731	BC-17-0034731	BC-17-0034731									
B	BC-19-0007253	BC-19-0007253	BC-19-0007253	BC-19-0007253	BC-19-0007253	BC-19-0007253									

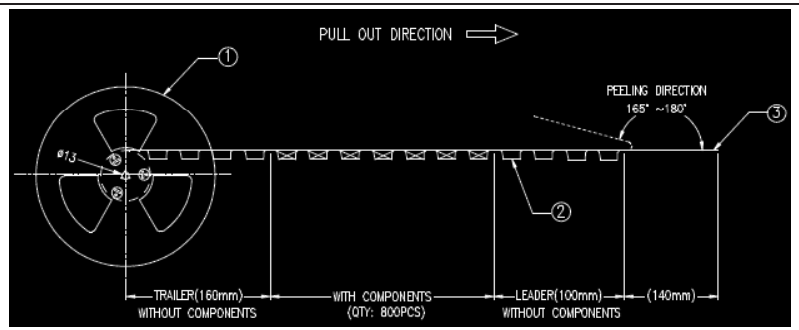
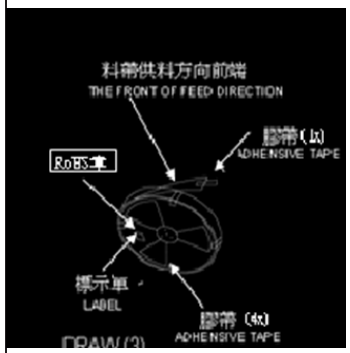
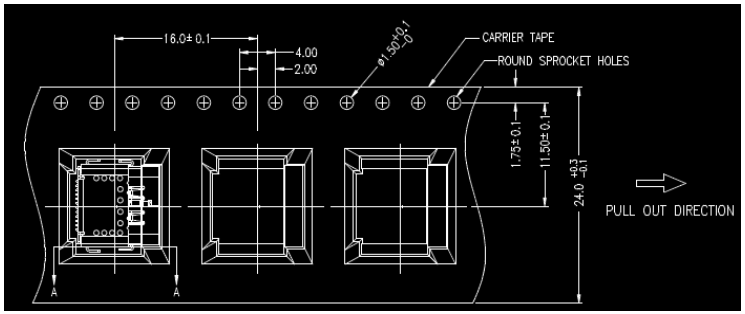
核定	審核	會簽			制作單位	制作人
		*自定義	生產單位	品保單位		
Dickie Huang 4/2'19	Bill He 4/2'19		黃天兵 4/2''19	郭慶賀 4/2'19	IDS1 ME	Victor Xu 4/2"19

FOXCONN INTERCONNECT TECHNOLOGY LIMITED

包　裝　作　業　規　範

環保要求
符合 EPI12 規定

保密等級	☐ 機密　☐密　■一般					
規範編號	EB9-APUT-020			PAGE	2 /6	REV. B
適用客戶	ALL	適用產品	USB 3.1 TYPE-C R4 2.0 UT11113-1200L-7H UT11113-120BL-7H	包裝類別	Tape & Reel	

包裝作業圖示及說明	備　注
	1. 組合輪軸及兩片圓盤。 2. 開始使用Carrier Tape載帶包裝成品時，需在最前頭需預留10個不放成品,用Cover Tape封合空格。 3. 用包裝機，將成品依序置入Carrier Tape中，再以Cover Tape封好。其中成品框口部分按指定包裝TYPE所示放置方向放置(如左側圖所示)。包裝機的操作方法，請詳閱操作手冊。Cover不可貼歪，不可蓋住旁邊Carrier tape載帶孔。 4.產品結束包裝之前，需預留15個,用Cover Tape封帶貼好的空格，再留約300mm的Cover Tape於尾端。最後取一片纖維膠帶固定在Cover Tape封帶的末端。 5. 如該產品需貼BAR CODE,則請將兩個印章位置順移至BAR CODE標簽左側加蓋。出貨包裝時, 需查詢"客戶出貨要求明細表", Doc no: EB4-YY00-040, 以配合客戶出貨的特殊要求 . 6.企劃單位需至FIT網頁(http://10.98.7.51:8250/default.htm), 查詢出貨客戶對於BARCODE之張貼需求(相關作業規定, 請參考:" FIT BARCODE 作業管理辦法", Doc no.: SD-3B0-002) . 7..料帶卷繞完成時,取纖維膠帶,長6cmX寬1.5cm,貼於COVER TAPE并將其固定在REEL之圓周上如圖(三)所示,並貼標示單一張,內容以電腦列印方式填入. AFTER THE TAPE BE REELED, A PIECE OF ADHENSIVE TAPE THAT IS 6cm LONG AND 1.5cm WIDE SHOULD BE ADHIBITED BETWEEN THE TAPE AND THE REEL AS DRAWING (3). PASTE A LABEL ON THE RIGHT POSITION. *.COVER TAPE 有中斷時可用寬18mm長20mm之膠帶各貼在中斷之兩端，將其連接起來.
	
 Packing For Type C R4 2.0中心高, pitch=16.0mm	

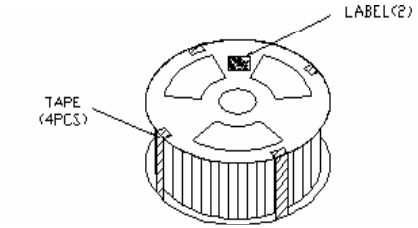
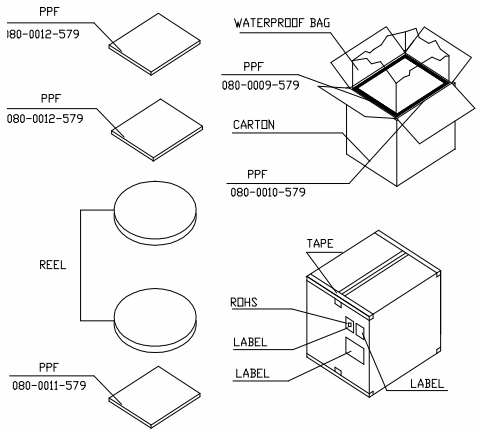
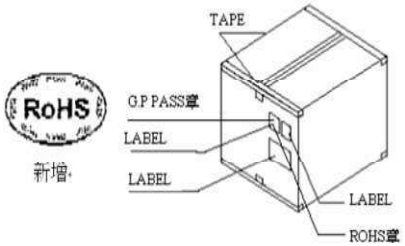
備注: "包裝作業圖示及說明"欄位內應包括但不限於: 整箱包裝模式設計、 整棧板包裝模式設計、可替代包裝模式設計等.

FOXCONN INTERCONNECT TECHNOLOGY LIMITED

包　裝　作　業　規　範

環保要求
符合 EPI12 規定

				保密等級	□ 機密 □密 ■一般		
規範編號	EB9-APUT-020			PAGE	1/6	REV.	B
適用客戶	ALL	適用產品	USB 3.1 TYPE-C R4 2.0 UT11113-1200L-7H UT11113-120BL-7H	包裝類別	Tape & Reel		

包裝作業圖示及說明	備　注
 圖4  圖5  圖6	1.使用4片膠帶黏接兩片圓盤，並在Reel上黏貼成品包裝標籤及製程重金屬合格標籤，字體方向如圖4所示。 2.在紙箱（3A011J403-H38-G-01）的底部放置 084-0008-8849的PPF 2PCS;每長邊，每寬邊放置084-0007-8849的PPF各1pc,放入外箱防水袋 3. 將每卷包裝OK之產品放入內防水袋中(080-0046-038),放入2pcs干燥劑后將防水袋封裝.再將裝滿成品的Reel標籤朝上 4. 將包裝好之Reel依序疊入外箱防水袋內，并在外箱防水袋內放入2pcs干燥劑,此后將防水袋封好.最后再在上面放 1pc PPF(084-0008-8849）對應UT11123-1B101/2-7H和上面放2pcs PPF（084-0008-8849）對應其他產品;如圖5所示。 5.外箱以Tape封合，側邊貼上成品檢驗合格入庫標籤、成品包裝標籤及成品出貨標籤各1pc，如圖6所示。 6. 包裝須通過CNS 2999矩形容器CONDITION 1之測試. 2) 標籤的張貼位置及標籤填寫注意事項,參照生產管理作業標準,外箱瓦楞紙箱及標籤應用管理辦法(文件編號: P103-P01) 7. 有關紙箱封箱作業詳見文件 : ESH-KKG-003 8.包裝完成之紙箱,其堆疊高度不可超過10 箱,出貨時需堆疊於棧板上,以角板固定於堆疊之四角,以防此倒塌,堆滿後以塑膠膜包裹,上方不可再堆疊其他物品. 9. 未滿箱的交貨一律用PPF(084-0008-8849)填滿才可交貨，並採用綠色膠帶黏貼，以利不滿箱數之區別。 10. 放置於外箱內之上下層氣泡布數量應力求均等。 11.出貨包裝時, 需查詢“客戶出貨要求明細 表”, Doc no: EB4-YY00-040, 以配合客戶出貨的特殊要求. 12. 企劃單位需至FIT Barcode網頁　(http://10.98.7.51:8250/default.htm), 查詢出貨,客戶對於BARCODE之張貼需求(相關作業規定, 請參考:“ FIT BARCODE 作業管理辦法”, Doc no.: SD-3B0-002) 13. 產品打開包裝請于8小時內使用完畢，若超過使用時間請用40℃&相對濕度5%環境烘干5天再使用! 14. 送樣樣品若小于或等于1Reel,可使用3A0506201-H38-G紙箱包裝,Reel包裝參照ITEM 3.紙箱上下面及四周需放入適當之泡棉進行填充. 15.整箱產品包裝規格需Pass標準Drop Test&Vibration測試，單盤Reel包裝需經過裸摔測試，具體裸摔測試見P6。

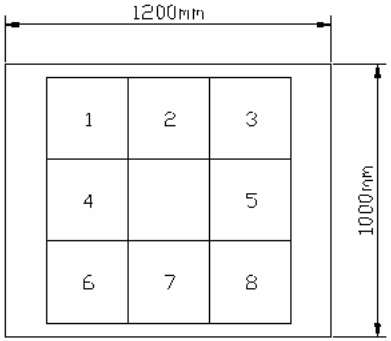
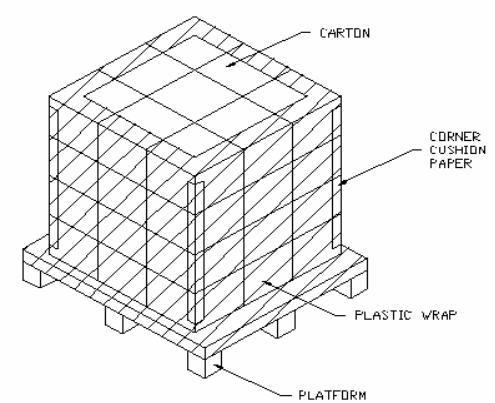
備注: "包裝作業圖示及說明"欄位內應包括但不限於: 整箱包裝模式設計、 整棧板包裝模式設計、可替代包裝模式設計等.

FOXCONN INTERCONNECT TECHNOLOGY LIMITED

包　裝　作　業　規　範

環保要求
符合 EPI12 規定

				保密等級	□ 機密 □密 ■一般		
規範編號	EB9-APUT-020			PAGE	4 /6	REV.	B
適用客戶	ALL	適用產品	USB 3.1 TYPE-C R4 2.0 UT11113-1200L-7H UT11113-120BL-7H	包裝類別	Tape & Reel		

包裝作業圖示及說明	備　　注
1. 包裝外箱堆放棧板作業圖示及說明： (a) 棧板尺寸：1200mm x 1000mm (b) 每個棧板可堆放包裝數量及料號 客戶：COMPAQ：棧板料號080-0001-657，32個外箱：4層 x 8箱/層 客戶：INTEL：棧板料號080-0003-569，32個外箱：4層 x 8箱/層 其它客戶及返台：棧板料號080-0002-569，40個外箱：5層 x 8箱/層 (c) 每層外箱堆放方式如圖示:  • 任一外箱的 LABEL 均朝外	1. 貨箱若以棧板堆疊包裝時，出貨前應將貨箱用打包帶或 PE 膜固定在棧板中央，角邊須以紙角板襯墊，綑綁式樣如下圖所示。 

備注: "包裝作業圖示及說明"欄位內應包括但不限於: 整箱包裝模式設計、 整棧板包裝模式設計、可替代包裝模式設計等.

FOXCONN INTERCONNECT TECHNOLOGY LIMITED

包　裝　作　業　規　範

環保要求
符合 EPI12 規定

保密等級	□ 機密　□密　■一般		
PAGE	5 /6	REV.	B

規範編號	EB9-APUT-020
適用料號	USB 3.1 TYPE-C R4 2.0 UT11113-1200L-7H UT11113-120BL-7H

材料名稱 (/替代材料名稱)	料號 (/替代材料料號)	淨重	用量	產品型號	包裝容量			重　量 (Kg)		
					最內層包裝產品數量	每箱最內層包裝數	每箱包裝產品總數量	每PCS淨重	每箱淨重	每箱毛重
CARRIER TAPE	**083-0001-9418**	0.001	17.6m	UT11113-1200L-7H UT11113-120BL-7H	800	5	4000	0.0006	2.4	6.9
COVER TAPE	081-0124-507	0.001	/							
REEL	081-0024-116	0.345	1pcs							
保利龍 PPF	084-0007-8849	0.1	4pcs							
保利龍 PPF	084-0008-8849	0.1	4pcs							
外瓦楞紙箱	3A011J403-H38-G-01	0.8	1pcs							
內防水袋	080-0046-038	0.1	1pcs							
纖維膠帶	2”	2”	/							
成品包裝標籤	080-1002-319	0.001	/							
成品檢驗合格標籤	080-100*-319	0.001	/							
成品出貨標籤OQC	080-1009-319	0.001	/							
幹燥劑	086-0001-776	0.01	12pcs							

備注:
1.產品淨重 PRODUCT WEIGHT/BOX + 包材總重 PACKING WEIGHT/BOX= 產品總重 G.W./BOX
2.外箱體積 380 X 380X 310 mm

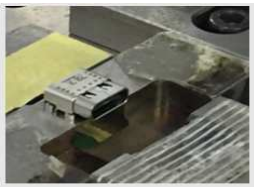
說明:
1）包裝箱/袋上的安規標示要求需在包裝作業規範上注明，如張貼安規標簽，需注明張貼標簽類型/數量/張貼位置.
2）當存在可用於臨時狀態的替代材料時，應於上表中予以界定.

FOXCONN INTERCONNECT TECHNOLOGY LIMITED

包　裝　作　業　規　範

環保要求
符合 EPI12 規定

				保密等級	□ 機密 □密 ■一般		
規範編號	EB9-APUT-020			PAGE	6 /6	REV.	B
適用客戶	ALL	適用產品	USB 3.1 TYPE-C R4 2.0 UT11113-1200L-7H UT11113-120BL-7H	包裝類別	Tape & Reel		

單Reel裸摔測試 圖 示 及 說 明	備　　注
1.裸摔方式： 如下圖所示，手持單盤包裝好的包材在離地1m高水平自由跌落，正反面各裸摔一  裸摔示意 2.裸摔項目Checklist a.跌落后所有產品均可從包材內自由倒出，無卡料現象； b. 外觀確認.跌落后對產品外觀進行全檢無損傷，歪針不良； c.產品焊腳&SMT TP&CO均OK，前後無差異;  撕開Cover Tape 產品自由倒出  ZIF過Guage確認	1.此測試主要模擬包材使用時意外跌落后，確保包材無卡料&產品出現外觀&功能不良現象； 2.新開發產品之包材必需滿足此測試后方可裝箱出貨。

備注: "包裝作業圖示及說明"欄位內應包括但不限於: 整箱包裝模式設計、 整棧板包裝模式設計、可替代包裝模式設計等.

****** 目 錄 ******

****** CONTENTS ******

	APPROVED	CHECKED	PREPARED	ISSUED BY:
BY	Dicke Huang	Bill He	Jesse Zhi	
DATE	11/24'17	11/24'17	11/21'17	

****** 修 訂 履 歷 ******
****** HISTORY OF REVISION ******

版次 REV.	ECN NO.	修 訂 履 歷 History of Revision	修訂人 PREPARED	修訂日期 Revision Date	備 注 Remark
A	BC-14-0066514	初版發行	Jaden Chen	11/17'14	
B	BC-16-0030636	B 版發行(update rev. 1.2 content)	Jesse Zhi	05/04'16	

USB Type-C Cable End Connector

1. SCOPE

1.1 Content

This product specification defines the product performance and the test methods to ascertain the performance of the **USB Type-C Connector** which is designed and manufactured by Foxconn Co., Ltd.

1.2 Qualification

Tests and inspection shall be performed in accordance with the requirements, tests and methods contained herein. All the inspections shall be conducted by using plan for the product drawings and the inspection these products. A re-qualification test shall be conducted immediately following all major process changes.

2. REFERENCED DOCUMENTS

EIA-364-09

EIA-364-1000

EIA-364-32E

EIA-364-31

EIA-364-28E

EIA-364-65

USB Type-C Specification Rev: 1.2

In case of any contradiction between this document and referenced documents, this document will take precedence.

3. REQUIREMENT

3.1 Design
The specification is common used on Type-C Rec. which the product shall be as specified by Foxconn's Type-C customer drawing.

3.2 Material and Finish
3.2.1 Housing: thermalplastic (meet UL94V-0)
Other information see Foxconn's Type-C customer drawing.

3.3 Electrical & Mechanical Requirements
3.3.1 Voltage Rating: 20V rms
3.3.2 Current Rating:
VBUS 5.0A (Pin A4, A9, B4, B9)
GND 1.25A (Pin A1, A12, B1, B12)
Other Contacts 0.25A(Other contacts)
Other Requirements see Foxconn's Type-C customer drawing.

3.4 Application Performance:
3.4.1 Operating Environment: -55°C to +85°C, 85%RH, without loss of function.
3.4.2 Storage Environment: -40°C to +60°C, 85%RH, without loss of function at operating temperatures.
3.4.3 This connector is designed for reflow processing and must meet the specified requirements accordingly.

3.5 High Frequency Performance:
Refer to the USB Type-C Specification 1.2

3.6 Marking
The "FOXCONN" logo shall be molded on the surface of product. The marking orientation and location whichsee Foxconn's customer drawing series as shown below.

3.7 Health, Safety and Environment
Hazardous substances (Environment related to be controlled substances) contained in this product should comply with the regulations specified by Foxconn's EPI12.

3.8 Packaging and Transportation
3.8.1 Hazardous substances (Environment related to be controlled substances) contained in packaging materials should comply with the regulations specified by Foxconn's EPI12.
3.8.2 Packaging carton with products should be subject to falling test.
3.8.3 Other requirements see Foxconn's packaging specification **EB1-APUT-004.**

3.9Test Description

The product is designed to meet the requirements specified in section 3.9. Unless otherwise specified, all tests and measurements are to be performed at the following conditions:

Temperature: 15℃ to 35℃.
Relative Humidity: 25% to 85%.
Atmospheric pressure: 86kPa to 106 kPa.

3.10 Test Requirements and Methods

3.10.1 Visual Examination	100% visually inspect each lot of sample parts for obvious mechanical defects.	Connector & contact shall have no evidence of physical defects or otherwise unfit for testing.

A. Electrical characteristics

Items	Condition & Method	Requirement
3.10.2 Low Level Contact Resistance	Comply with method EIA 364-23b. Open circuit voltage is 20mV maximum and test current is 100mA. Measurement to use Kelvin 4-wire method.	Initial:40 mΩmaximum initial for the Power (VBUS) and Ground (GND) contacts and all other contacts . After test: 50 mΩmaximum for the Power (VBUS) and Ground (GND) contacts and all other contacts.
3.10.3 Dielectric Withstanding Voltage	Comply with method EIA 364-20. The dielectric must withstand 100 VAC (RMS) for one minute at sea level, mated and unmated.	No Breakdown.
3.10.4 Insulation Resistance	Comply with method EIA 364-21. Mated and unmated connector with a voltage of 100V DC for two minutes maximum, or until stabilized between adjacent terminals.	100 MΩminimum.
3.10.5 Contact Current Rating	Comply with method EIA 364-70, Method 2. A current of 5.0 A shall be applied collectively to VBUS pins. A minimum current of 0.25 A shall also be applied individually to all the other contacts.	Not exceed 30 °C at any point on the USB Type-C mated plug and receptacle under test. (Ambient temperature of 25 °C)

B. Mechanical characteristics

Items	Condition & Method	Requirement
3.10.6 Insertion Force	Comply with method EIA 364-13. The mating force is the peak force measured while the plug and receptacle sample are mated normally. Mating speed: 12.5 mm per minute maximum.	5 N min.~ 20 N Max.

3.10.7 Extraction Force	Comply with method EIA 364-13. The unmating force is the peak force measured while the plug and receptacle sample separated from the mated position. Un-mating speed: 12.5 mm per minute maximum.	8 N min.~ 20 N Max initial. 6 N min.~ 20 N Max after durability.
3.10.8 Durability (Preconditioning)	Comply with method EIA 364-09. Perform 4 or 50 unplug/plug cycles, followed by an unplug.(4 cycles:G5;50cycles:G1/G2/G3/G4)	1.No physical damage.
3.10.9 Durability1	Comply with method EIA 364-09. Perform 25 plug/unplug cycles. Cycle rate of –500 ± 50 cycles per hour followed by a plug.	1.No physical damage. 2.8 N min.~ 20 N Max 3. The reduction is within 33% initial.
3.10.10 Durability	Comply with method EIA 364-09. Perform 2,468 plug/unplug cycles. Rotate the receptacle or plug 180º and perform 2,500 plug/unplug cycles. Rotate the receptacle or plug 180º and perform 2,500 plug/unplug cycles. Rotate the receptacle or plug 180º and perform 2,500 plug/unplug cycles. Cycle rate of 500 ± 50 cycles per hour (total of 10,000 plug/unplug cycles, flipping every 2,500 cycles).	No physical damage. After the test, the sample shall pass the requirement of 3.10.2, 3.10.7 specification.
3.10.11 4-Axis Continuity Test	Plugs is cable assembly. A receptacle mounted on a 2-layer printed circuit board (PCB) between 0.8 mm and 1.0 mm. The PCB clamped on either side of the receptacle no further than 5 mm away from the solder tails. The PCB in a horizontal plane, and a 20 N tensile force shall be applied to the cable in a downward direction at least 10 seconds.	This test is repeated for 90 degree, 180 degree and 270 degree rotations. Not exhibit any discontinuities or shorting to the shell greater than 1 µs duration in any of the four orientations
3.10.12 Vibration	Comply with method EIA-364-28E, condition VII.Vibration randomly from 20 to 500HZ at condition VII, letter D(3.10G's). Test duration for each axis is 15 minute(total 45 minute).	Electrical discontinuity of 1 microsecond or longer not be allowed.
3.10.13 Reseating(Manually)	Comply with method EIA-364-1000 : Manually unplug/plug the connector or socket. Perform 3 such cycles.	No physical damage to the cable assembly.

C. Environmental Characteristics

3.10.14 Temperature Life	Temperature Life test temperature and duration: 105℃ for 120 hours. Temperature Life test temperature and duration for preconditioning: 105℃ for 72 hours.	After the test, the sample shall pass the requirement of 3.10.1,3.10.2 specification.
3.10.15 Cyclic Temperature and Humidity	Comply with method EIA 364-31. Cycle the connector or socket between 25 °C ± 3 °C at 80 % ± 3% RH and 65 °C ± 3 °C at 50 % ± 3% RH. Ramp times should be 0.5 hour and dwell times should be 1.0 hour. Dwell times start when the temperature and humidity have stabilized within the specified levels. Perform 24 such cycles.em.	After the test, the sample shall pass the requirement of 3.10.1, 3.10.2 specification.
3.10.16 Thermal Shock	Comply with method EIA 364-32E,Test Condition I. 10 cycles of mated connectors. 5 minutes maximum transition time between two extreme temperatures. a) －55 ℃ for 30 minutes b) +85℃ for 30 minutes	There shall be no evidence of any physical damage.
3.10.17 Thermal disturbance	Cycle the connector or socket between 15 °C ± 3 °C and 85 °C ±3 °C, as measured on the part. Ramps should be a minimum of 2°C per minute, and dwell times should insure that the contacts reach the temperature extremes (a minimum of 5 minutes). Humidity is not controlled. Perform 10 such cycles.	After the test, the sample shall pass the requirement of 3.10.1, 3.10.2 specification.
3.10.18 Mixed Flowing Gas	Comply with method EIA 364-65,Class II A. duration:7-days, Options #1A and #1B as specified in EIA 364-1000.01.	After the test, the sample shall pass the requirement of 3.10.1, 3.10.2 specification.
3.10.19 waterproof test	Compl	After the test, the sample shall pass the requirement of 3.10.1, 3.10.2 specification.

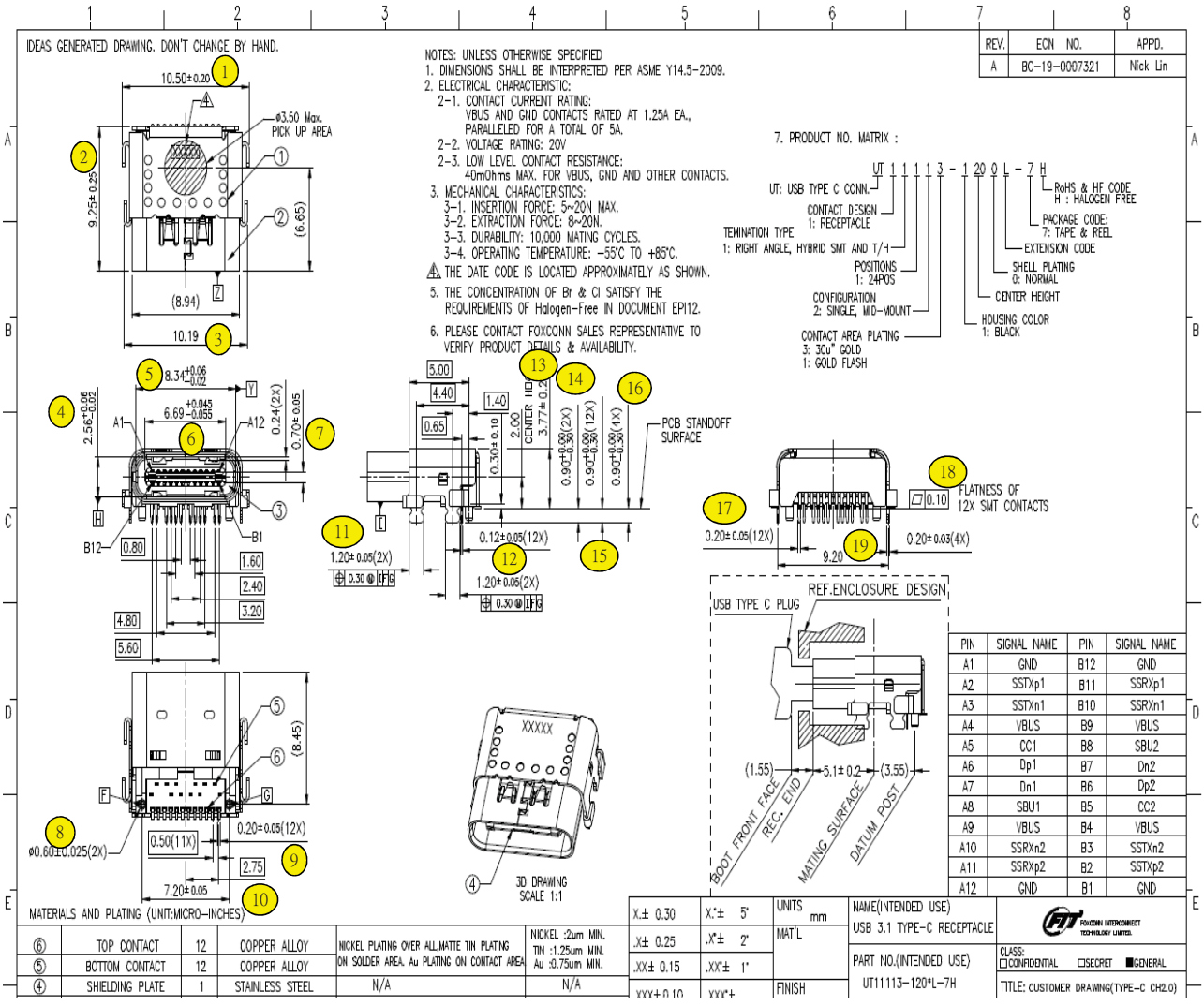
D. Reliability Test Sequence

Item	TEST DESCRIPTION	TEST SEQUENCE							TEST METHOD
		G1	G2	G3	G4	G5	G6	G7	
1	Low level contact resistance	1,4,6	1,4,6,8	1,4,6	1,4,6,8,10	2,10	1,3	1,3	EIA 364-23
2	Durability (preconditioning)	2	2	2	2	3			EIA-364-09
3	Temperature life	3							EIA-364-17, method A
4	Reseating	5	7		9				/
5	Thermal shock		3						EIA 364-32,Test Condition I
6	Cyclic temperature and humidity		5						EIA-364-31
7	Temperature life (preconditioning)			3	3				EIA-364-17, method A
8	Vibration			5					EIA-364-28, test condition VII, test condition letter D
9	Mixed flowing gas				5				EIA 364-65,Class II A
10	Thermal disturbance				7				/
11	Dielectric withstanding voltage					1,11			EIA-364-20, 100 VAC
12	Insertion force					4			EIA 364-13
13	Extraction force					5,7,9			EIA 364-13
14	Durability1					6			EIA 364-09
15	Durability					8			EIA 364-09
16	Insulation Resistance					12			EIA 364-21.
17	4-Axes Continuity						2		/
18	Contact Current Rating							2	EIA 364-70, Method 2
Sample Size(pcs)		5	5	5	10	5	8	3	

Part Number :	UT11113-1200L-7H	Date:	2020/9/15
Part Description :	Type C connector	Count:	5pcs
D/C :	N/A	Prepared:	Aimee

Inspection Record

Item No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	10.50+/-020	9.25+/-0.25	10.19+/-0.15	2.56+/-0.04	8.34+0.06/-0.02	6.69+0.045/-0.055	0.70+/-0.05	0.60+/-0.025	0.20+/-0.05	7.2+/-0.05	1.20+/-0.05	0.12+/-0.05	3.77+/-0.02	0.90+0/-0.03	0.90+0/-0.03	0.90+0/-0.03	0.20+/-0.05	0.1	9.20+/-0.15
Sample 1	10.499	9.274	10.154	2.557	8.352	6.712	0.688	0.602	0.191	7.201	1.201	0.116	3.771	0.891	0.889	0.876	0.166	0.053	9.250
Sample 2	10.492	9.293	10.174	2.567	8.363	6.721	0.689	0.599	0.194	7.199	1.203	0.119	3.774	0.892	0.881	0.877	0.167	0.047	9.260
Sample 3	10.510	9.259	10.178	2.568	8.357	6.720	0.694	0.597	0.201	7.198	1.195	0.124	3.769	0.893	0.886	0.879	0.169	0.030	9.240
Sample 4	10.530	9.257	10.186	2.550	8.348	6.719	0.695	0.594	0.196	7.196	1.198	0.123	3.766	0.894	0.887	0.880	0.170	0.044	9.210
Sample 5	10.520	9.250	10.156	2.572	8.365	6.718	0.696	0.599	0.197	7.194	1.194	0.122	3.765	0.895	0.885	0.881	0.174	0.052	9.230
MAX	10.530	9.293	10.186	2.572	8.365	6.721	0.696	0.602	0.201	7.201	1.203	0.124	3.774	0.895	0.889	0.881	0.174	0.053	9.260
MIN	10.492	9.250	10.154	2.550	8.348	6.712	0.688	0.594	0.191	7.194	1.194	0.116	3.765	0.891	0.881	0.876	0.166	0.030	9.210
Avg	10.510	9.267	10.170	2.563	8.357	6.718	0.692	0.598	0.196	7.198	1.198	0.121	3.769	0.893	0.886	0.879	0.169	0.045	9.238
規格上限	10.700	9.500	10.340	2.600	8.400	6.735	0.750	0.625	0.250	7.250	1.250	0.170	3.790	0.900	0.900	0.900	0.250	0.100	9.350
規格下限	10.300	9.000	10.040	2.520	8.320	6.635	0.650	0.575	0.150	7.150	1.150	0.070	3.750	0.870	0.870	0.870	0.150	0.000	9.050
標準差	0.015	0.017	0.014	0.009	0.007	0.004	0.004	0.003	0.004	0.003	0.004	0.003	0.004	0.002	0.003	0.002	0.003	0.009	0.019
Cp 值	4.304	4.858	3.575	1.512	1.858	4.676	4.570	2.825	4.664	6.169	4.347	5.095	1.814	3.162	1.685	2.411	5.351	1.800	2.599
Ca 值	0.051	0.066	0.136	0.073	0.075	0.657	0.152	0.072	0.082	0.048	0.036	0.016	0.050	0.533	0.040	0.427	0.616	0.096	0.253
CPK	4.087	4.535	3.089	1.401	1.719	1.605	3.875	2.622	4.279	5.873	4.191	5.014	1.724	1.476	1.618	1.382	2.055	1.628	1.941
Result	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS



PIN	SIGNAL NAME	PIN	SIGNAL NAME
A1	GND	B12	GND
A2	SSTXp1	B11	SSRXp1
A3	SSTXn1	B10	SSRXn1
A4	VBUS	B9	VBUS
A5	CC1	B8	SBU2
A6	Dp1	B7	Dn2
A7	Dn1	B6	Dp2
A8	SBU1	B5	CC2
A9	VBUS	B4	VBUS
A10	SSRXn2	B3	SSTXn2
A11	SSRXp2	B2	SSTXp2
A12	GND	B1	GND

FIT

Qualification Test Report

USB Type C R4-2.0
(UT11113-1200L-7H)

TEST NO.: MPBY1520BB50318

Rev: A

FIT Precision Industry Co., Ltd.

Approved By: Harry 2020/9/10

Checked By: Leo 2020/9/10

Prepared By: Aimee 2020/9/10

Revision History

Date	Revision	Description
2020/9/10	A	Initial submission of report Rev A.

(1) SCOPE

1.1 APPLICANT: MPBY35

1.2 TESTED SAMPLES: 41 pieces.

1.3 OPERATOR/TESTER ID:F0835710

1.4 PURPOSE

This qualification test is to verify whether the product performance meets the association's requirement.

(2) APPLICABLE DOCUMENTS

2.1 EB1-ASUT-002_B

2.2 USB Type-C Specification, Rev 1.2

2.3 Type-C_Compliance Document_Rev 1.0

2.4 EIA-364

(3) TEST SEQUENCE

3.1 TEST CONDITIONS

Unless otherwise specified, tests and examinations were conducted under conditions within the following ranges:
Temperature: 15~35 degree C
Air Pressure: 86 to 106 kPa
Relative Humidity: 25% to 85%

3.2 QUALIFICATION TEST SEQUENCE

Item	TEST DESCRIPTION	TEST SEQUENCE							TEST METHOD
		G1	G2	G3	G4	G5	G6	G7	
1	Low level contact resistance	1,4,6	1,4,6,8	1,4,6	1,4,6,8,10	2,10	1,3	1,3	EIA 364-23
2	Durability (preconditioning)	2	2	2	2	3			EIA-364-09
3	Temperature life	3							EIA-364-17, method A
4	Reseating	5	7		9				/
5	Thermal shock		3						EIA 364-32, Test Condition I
6	Cyclic temperature and humidity		5						EIA-364-31
7	Temperature life (preconditioning)			3	3				EIA-364-17, method A
8	Vibration			5					EIA-364-28, test condition VII, test condition letter D
9	Mixed flowing gas				5				EIA 364-65,Class II A
10	Thermal disturbance				7				/
11	Dielectric withstanding voltage					1,11			EIA-364-20, 100 VAC
12	Insertion force					4			EIA 364-13
13	Extraction force					5,7,9			EIA 364-13
14	Durability1					6			EIA 364-09
15	Durability					8			EIA 364-09
16	Insulation Resistance					12			EIA 364-21.
17	4-Axes Continuity						2		/
18	Contact Cument Rating							2	EIA 364-70, Method 2
Sample Size(pcs)		5	5	5	10	5	8	3	

(4) TEST METHOD OF INSPECTION

4-1 LLCR

- 40 mΩ (max) initial for VBUS, GND and all other contacts.
- 50 mΩ (max) after test for VBUS, GND and all other contacts.
- Measure at 20 mV (Max) open circuit at 100 mA..

4-2 Durability(preconditioning)

EIA-364-09
Perform 4 or 50 unplug/plug cycles

4-3 Temperature life

EIA-364-17, method A
105º C without applied voltage for 120 hours.
Mated

4-4 Reseating (Manually)

Manually unplug/plug the connector or socket. Perform 3 such cycle*s.*

4-5 Thermal shock

EIA-364-32, test condition I
10 cycles with the exception of exposure times. Place a thermocouple in the center of the largest mass component of the connector that is in the center of the test chamber to insure that the contacts reach the temperature extremes before ramping to the other temperature.

4-6 Cyclic temperature & Humidity

EIA-364-31
Cycle the connector between 25 °C ±3 °C at 80 % ±3% RH and 65 °C ±3 °C at 50 % ±3% RH. Ramp times should be 0.5 hour and dwell times should be 1.0 hour. Dwell times start when the temperature and humidity have stabilized within the specified levels. Perform 24 such cycles.

4-7 Temperature Life (Preconditioning)

EIA-364-17, method A
105º C without applied voltage for 72 hours when used as preconditioning.

4-8 Vibration

EIA-364-28, test condition VII, test condition letter D
Mated connectors subjected to 3.1G'S rms. For 15 minutes in each of three mutually perpendicular planes (total of 45 minutes). The test current of 100mA is applied for all contacts which are wired in series and attached to an electrical discontinuity monitor. Throughout the test, electrical discontinuity of 1 microsecond or longer shall not be allowed.

4-9 Mixed flowing gas

EIA 364-65, Class II A
Class IIA,, 7 days

4-10 Thermal disturbance

Cycle the connector or socket between 15 ° C ± 3 ° C and 85 ° C ± 3 ° C, as measured on the part. Ramps should be a minimum of 2 ° C per minute, and dwell times should insure that the contacts reach the temperature extremes (a minimum of 5 minutes). Humidity is not controlled. Perform 10 such cycles.

4-11 Dielectric withstanding Voltage

No breakdown shall occur when 100 Volts AC (RMS) is applied between adjacent contacts of unmated and mated connectors.

4-12 Insertion Force

The connector insertion force shall be within the range from 5 N to 20 N at a maximum rate of 12.5 mm (0.492") per minute.

4-13 Extraction Force

The connector extraction force shall be within the range of 8 N to 20 N, after the durability 10000cycles shall be within the range of 6 N to 20 N. the rate of 12.5 mm (0.492") per minute.of speed

4-14 Durability

EIA 364-9
Perform 2,468 plug/unplug cycles. Rotate the receptacle or plug 180° and perform 2,500 plug/unplug cycles. Rotate the receptacle or plug180° and perform 2,500 plug/unplug cycles. Rotate the receptacle or plug 180° and perform 2,500 plug/unplug cycles. Cycle rate of 500 ± 50 cycles per hour (total of 10,000 plug/unplug cycles, flipping every 2,500 cycles).

4-15 Durability1

plug cycles / Perform 25 unplug/plug cycles

4-16 Insulation Resistance

Applicable to both receptacle and plug. A minimum of 100 MΩ insulation resistance is required between adjacent contacts of unmated and mated connectors

4-17 4-Axis Continuity Test

A USB Type-C receptacle shall be mounted on a 2-layer printed circuit board (PCB) between 0.8 mm and 1.0 mm thickness. The PCB shall be clamped on either side of the receptacle no further than 5 mm away from the solder tails. The PCB shall initially be placed in a horizontal plane, and a 20 N tensile force shall be applied to the cable in a downward direction, perpendicular to the axis of insertion, for a period of at least 10 seconds.
The PCB shall then be rotated 90 degrees such that the cable is still inserted horizontally and the 20 N tensile force shall be applied again in the downward direction and continuity measured as before. This test is repeated for 180 degree and 270 degree rotations. Passing parts shall not exhibit any discontinuities or shorting to the shell greater than 1 μ s duration in any of the four orientations.

4-18 current rating Test

The current rating testing for the Type-C connector (plug and receptacle) shall be conducted per the following set up and procedures:

• A current of 5 A shall be applied collectively to VBUS pins (i.e., pins A4, A9, B4, and B9) and 1.25 A shall be applied to the VCONN pin (i.e., B5) as applicable, terminated through the corresponding GND pins (i.e., pins A1, A12, B1, and B12). A minimum current of 0.25 A shall also be applied individually to all the other contacts, as applicable. When current is applied to the contacts, the temperature of the connector pair shall be allowed to stabilize. The temperature rise of the outside shell surface of the mated pair above the VBUS and GND contacts shall not exceed 30 C above the ambient temperature. Figure C-1 provides an illustration of the measurement location.

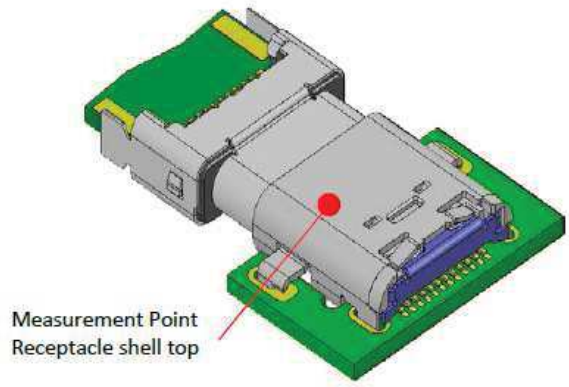
• The measurement shall be done in still air.

• The connectors shall be oriented such that the accessible outer shell surface is on top and horizontal to the ground.

• The plug and receptacle may require modification to access solder tails or cable attachment points.

• Either thermocouple or thermo-imaging (preferred) method may be used for temperature measurement.

• For certification, the connector manufacturer shall provide the receptacle and plug samples under test mounted on a current rating test PCB with no copper planes. The current rating test PCBs shall be of 2-layer construction. Table C-1 defines the requirements for the test PCB thickness and traces. The trace length applies to each PCB (receptacle PCB and plug PCB) and is from the contact terminal to the current source tie point. Figure C-2 provides an informative partial trace illustration of the current rating



(5) THE SUMMARY OF QUALIFICATION TEST RESULTS

Ⅰ. GROUP "G1"

TEST DESCRIPTION	REQUIREMENTS	RESULTS			RATE
1. Low level contact resistance (Initial)	40mΩ Maximum	MIN	MAX	AVG	PASS
		13.47	34.28	23.03	
		Unit: milliohms (Per contact)			
2. Durability （Preconditioning）	Upon completion 50 cycles of durability test,there shall be no physical damage to the samles and the samples shall meet the requirements of the following test items.	No physical damage to the samples			PASS
3.Temperature life	Mated samples were exposed to a temperature of 105℃ for120 hours Upon completion of the test,there shall be no physical damage to the samles and the samples shall meet the requirements of the following test items.	No physical damage to the samples			PASS
4 . Low level contact resistance	50mΩ Maximum	MIN	MAX	AVG	PASS
		11.53	38.82	24.71	
		Unit: milliohms (Per contact)			
5.Reseating(Manually)	After 3 cycles of durability test, the samples shall meet the requirements of the following test items.	No physical damage to the samples			PASS
6 . Low level contact resistance	50mΩ Maximum	MIN	MAX	AVG	PASS
		13.55	40.10	25.43	
		Unit: milliohms (Per contact)			

(5) THE SUMMARY OF QUALIFICATION TEST RESULTS

Ⅱ. GROUP " G2"

TEST DESCRIPTION	REQUIREMENTS	RESULTS			RATE
1. Low level contact resistance (initial)	40mΩ Maximum	MIN	MAX	AVG	PASS
		15.85	37.69	21.21	
		Unit: milliohms (Per contact)			
2. Durability (preconditioning)	Upon completion 50 cycles of durability test, there shall be no physical damage to the samles and the samples shall meet the requirements of the following test items.	No physical damage to the samples			PASS
3. Thermal Shock	The test samples are exposed with following test condition: -55℃ for 30 minutes and +85℃ for 30 minutes for 10 cycles, there shall be no physical damage to the samles.	No physical damage to the samples			PASS
4. Low level contact resistance	50mΩ Maximum	MIN	MAX	AVG	PASS
		12.90	41.31	25.17	
		Unit: milliohms (Per contact)			
5.Cyclic temperature&Humidity	Cycle the connector between 25 °C ±3 °C at 80 % ±3% RH and 65 °C ±3 °C at 50 % ±3% RH. Ramp times should be 0.5 hour and dwell times should be 1.0 hour. Dwell times start when the temperature and humidity have stabilized within the specified levels. Perform 24 such cycles.	No physical damage to the samples			PASS
6. Low level contact resistance	50mΩ Maximum	MIN	MAX	AVG	PASS
		15.19	40.17	23.35	
		Unit: milliohms (Per contact)			

TEST DESCRIPTION	REQUIREMENTS	RESULTS			RATE
7.Reseating(Manually)	After 3 cycles of durability test,the samples shall meet the requirements of the following test items.	No physical damage to the samples			PASS
8. Low level contact resistance	50mΩ Maximum	MIN	MAX	AVG	PASS
		12.74	40.23	26.37	
		Unit: milliohms (Per contact)			

(5) THE SUMMARY OF QUALIFICATION TEST RESULTS

Ⅲ. GROUP ” G3”

TEST DESCRIPTION	REQUIREMENTS	RESULTS			RATE
1. Low level contact resistance (Initial)	40mΩ Maximum	MIN	MAX	AVG	PASS
		18.42	32.73	25.17	
		Unit: milliohms (Per contact)			
2.Durability (preconditioning)	Upon completion 50 cycles of durability test, there shall be no physical damage to the samles and the samples shall meet the requirements of the following test items.	No physical damage to the samples			PASS
3.Temperature (preconditioning)	Mated samples were exposed to a temperature of 105℃ for 72 hours. Upon completion of the test, test samples shall be no evidence of physical damage and shall pass the requirements of following test item(s).	No physical damage to the samples			PASS
4 . Low level contact resistance	50mΩ Maximum	MIN	MAX	AVG	PASS
		20.22	36.80	26.04	
		Unit: milliohms (Per contact)			
5. Random vibration with electrical discontinuity	Throughout the random vibration test of 3.1 Grms over 20 to 500 Hz frequency range per axis .Test duration for each axis was 15 minutes. There shall be no loosened parts or electrical discontinuity greater than 1 microsecond during the test.	No loosened parts or electrical discontinuity.			PASS
6 . Low level contact resistance	50mΩMaximum	MIN	MAX	AVG	PASS
		17.21	33.21	26.15	
		Unit: milliohms (Per contact)			

(5) THE SUMMARY OF QUALIFICATION TEST RESULTS

Ⅳ. GROUP ” G4”

TEST DESCRIPTION	REQUIREMENTS	RESULTS			RATE
1. Low level contact resistance (Initial)	40mΩ Maximum	MIN	MAX	AVG	PASS
		11.14	34.48	25.66	
		Unit: milliohms (Per contact)			
2.Durability (preconditioning)	Upon completion 50 cycles of durability test, there shall be no physical damage to the samles and the samples shall meet the requirements of the following test items.	No physical damage to the samples			PASS
3.Temperature life (preconditioning)	Mated samples were exposed to a temperature of 105℃ for 72 hours. Upon completion of the test, test samples shall be no evidence of physical damage and shall pass the requirements of following test item(s).	No physical damage to the samples			PASS
4 Low level contact resistance	50mΩ Maximum	MIN	MAX	AVG	PASS
		11.10	35.28	25.16	
		Unit: milliohms (Per contact)			
5. Mixed Flowing Gas	The mated samples were subjected to MFG test for 7 days. The test was performed in accordance with EIA-364-65B;class IIA. Upon completion of the test, there shall be no physical damage and shall meet the requirements of subsequent tests.	Pass the specified requirement			PASS
6 .Low level contact resistance	50mΩMaximum	MIN	MAX	AVG	PASS
		13.18	41.77	28.69	
		Unit: milliohms (Per contact)			

7.thermal disturbance	Cycle the connector or socket between 15 ° C ± 3 ° C and 85 ° C ± 3 ° C, as measured on the part. Ramps should be a minimum of 2 ° C per minute, and dwell times should insure that the contacts reach the temperature extremes (a minimum of 5 minutes). Humidity is not controlled. Perform 10 such cycles.	No physical damage to the samples			PASS
8 .Low level contact resistance	50mΩMaximum	MIN	MAX	AVG	PASS
		16.45	41.73	26.45	
		Unit: milliohms (Per contact)			
9.reseating(Manually)	After 3 cycles of durability test,the samples shall meet the requirements of the following test items.	No physical damage to the samples			PASS
10 .Low level contact resistance	50mΩ Maximum	MIN	MAX	AVG	PASS
		20.11	42.47	27.44	
		Unit: milliohms (Per contact)			

(5) THE SUMMARY OF QUALIFICATION TEST RESULTS

Ⅵ. GROUP "G5"

TEST DESCRIPTION	REQUIREMENTS	RESULTS			RATE
1. Dielectric with standing voltage	No breakdown shall occur when 100 Volts AC (RMS) is applied between adjacent contacts of unmated and mated connectors.	No breakdown			PASS
2. Low level contact resistance	40mΩ Maximum	MIN	MAX	AVG	PASS
		15.44	32.47	24.14	
		Unit: milliohms (Per contact)			
3. Durability (preconditioning)	Perform 4 unplug/plug cycles, followedby an unplug.No evidence of physical damage.	No physical damage to the samples			PASS
4.Insertion force	Perform the measurement at a maxmiuspeed of 12.5mm (0.492") per minute.Within range of 5N to 20N.	MIN	MAX	AVG	PASS
		13.42	14.43	13.80	
		Unit: N			
5.Extration force	Perform the measurement at a maxmiu speed of 12.5mm (0.492") per minute.Within range of 8N to 20N.	MIN	MAX	AVG	PASS
		13.12	15.43	14.42	
		Unit: N			
6.Durability1	Perform 25 unplug/plug cycles,Cycle rate of -500+/-50 cycles per hour followed by a plug.No evidence of physical damage.	No physical damage to the samples			PASS
7.Extration force	Perform the measurement at a maxmiu speed of 12.5mm(0.492") per minute. a)33% of initial reading b)8N to 20N	MIN	MAX	AVG	PASS
		12.23	15.17	14.14	
		33% of initial reading			
		Unit: N			

8.Durability	Perform 2,468 plug/unplug cycles. Rotate the receptacle or plug 180° and perform 2,500 plug/unplug cycles. Rotate the receptacle or plug180° and perform 2,500 plug/unplug cycles. Rotate the receptacle or plug 180° and perform 2,500 plug/unplug cycles. Cycle rate of 500 ± 50 cycles per hour (total of 10,000 plug/unplug cycles, flipping every 2,500 cycles).	No physical damage to the samples			PASS
9.Extration force	Perform the measurement at a maxmiu speed of 12.5mm(0.492“) per minute.Within the range of 6N to 20N	MIN	MAX	AVG	PASS
		10.80	14.12	12.11	
		Unit: N			
10.Low level contact resistance	50mΩ Maximum.	MIN	MAX	AVG	PASS
		19.43	33.54	26.14	
		Unit: milliohms (Per contact)			
11.Dielectric withstanding voltage	No breakdown shall occur when 100 Volts AC (RMS) is applied between adjacent contacts of unmated and mated connectors. No disruptive discharge	No disruptive discharge			PASS
12.Insulation Resistance	Applicable to both receptacle and plug.A minimum of 100 MΩ insulation resistance is required between adjacent contacts of unmated and mated connectors	MIN	MAX	AVG	status
		31471	156500	61300	Mated
		24340	167800	53460	Unmated
		Unit: MΩ			PASS
		(Per contact)			

(5) THE SUMMARY OF QUALIFICATION TEST RESULTS

Ⅶ. GROUP "G6"

TEST DESCRIPTION	REQUIREMENTS	RESULTS	RATE
1. 4-Axis Continuity Test	The PCB shall be clamped on either side of the receptacle no further than 5 mm away from the solder tails. The PCB shall initially be placed in a horizontal plane, and an 20 N tensile force shall be applied to the cable in a downward direction,perpendicular to the axis of insertion, for a period of at least 10 seconds. The PCB shall then be rotated 90 degrees such that the cable is still inserted horizontally and the 20 N tensile force shall be applied again in the downward direction and continuity measured as before. This test is repeated for 180 degree and 270 degree rotations. Passing parts shall not exhibit any discontinuities or shorting to the shell greater than 1μs duration in any of the four orientations.	No loosened parts or Electrical discontinuity	PASS

(5) THE SUMMARY OF QUALIFICATION TEST RESULTS

Ⅶ. GROUP "G7"

TEST DESCRIPTION	REQUIREMENTS	RESULTS	RATE
1 current rating Test	The temperature rise of the outside shell surface of the mated pair above the VBUS and GND contacts shall not exceed 30℃ above the ambient temperature	The temperature rise not exceed 30℃	PASS

(6) TEST RESULT

USB Type C R4-2.0(UT11113-1200L-7H) passed qualification test.

s

Surface Treatment Dept.

Thickness Measurement Report

Applicant:	IDS-PLATING	**Page:**	4
Name:	UT11113-1200L-7H	**Date:**	2020/09/16
Part No:	NA	**Group:**	10 pcs

The detail data please see the attachment pages

Approved by: Harry. Lu **Checked by:** Leo.LH **Prepared by:** Aimee

Thickness Measurement Report

Part No.: 052-0000-6963 (**UT11113-1200L-7H**)

Spec : TOP CONTACT AU Thickness 30u" min
TOP CONTACT Ni Thickness 80u" min
TOP CONTACT SN Thickness 30u" min

Measure

Equipment: X-RAY

Measure Data(u"):

TOP CONTACT	AU Thickness 30u" min	Ni Thickness 80u" min	SN Thickness 30u" min
No.1	33.5	136.7	72.3
No.2	36.5	134.8	73.5
No.3	34.7	117.7	78.5
No.4	32.5	124.8	77.2
No.5	38.7	119.4	65.2
No.6	42.5	119.5	61.2
No.7	38.9	123.6	66.6
No.8	44.3	124.8	62.7
No.9	40.8	119.9	60.1
No.10	34.4	120.6	69.6

Part No: 052-0000-6984/6985 (**UT11113-1200L-7H**)

Spec : Bottom CONTACT AU Thickness 30u" min
Bottom CONTACT Ni Thickness 80u" min
Bottom CONTACT SN Thickness 30u" min

Measure
Equipment: X-RAY

Measure Data(u"):

Bottom CONTACT 1	AU Thickness 30u" min	Ni Thickness 80u" min	SN Thickness 30u" min
No.1	36.2	128.3	74.3
No.2	34.2	112.3	64.7
No.3	35.5	127.4	66.2
No.4	34.2	113.2	78.5
No.5	36.2	112.2	69.5
No.6	38.5	128.4	67.2
No.7	33.1	127.6	72.2
No.8	39.3	135.1	78.5
No.9	34.8	161.1	74.6
No.10	36.2	137.2	66.5

Bottom CONTACT 2	AU Thickness 30u" min	Ni Thickness 80u" min	SN Thickness 30u" min
No.1	32.1	112.8	77.4
No.2	32.3	138.1	78.5
No.3	36.4	103.4	71.5
No.4	36.3	103.2	76.2
No.5	35.3	103.2	74.25
No.6	34.2	103.5	76.2
No.7	36.3	103.2	75.6
No.8	35.3	103.4	76.9
No.9	34.2	103.5	75.3
No.10	32.8	137.9	78.5

Part No: 026-0000-1637 (**UT11113-1200L-7H**)

Spec : Top shell Ni Thickness 50u" min

Measure
Equipment: X-RAY

Top shell	Ni Thickness 50u" min
No.1	69.5
No.2	62.3
No.3	66.9
No.4	67.4
No.5	69.8
No.6	66.5
No.7	68.8
No.8	67.3
No.9	60.8
No.10	68.4

跌落測試

Product P/N	UT11113-1200L-7H	Test date	2020/8/12
Package P/N	083-0001-9418	Test taker	徐良輝

測試方法

測試步驟：
1.將準備好的樣品對結構最弱紙箱的一角作為跌落時與地面的接觸點進行跌落試驗。
2.再選擇此角相鄰的三棱作為跌落時與地面的接觸線進行跌落試驗。
3.最後以紙箱的六個面作為與地面的接觸面進行跌落試驗
4.檢查產品的變形情況,比較跌落前后包材及外箱損壞情況
測試數量：
1.新開發產品(EVT階段前）
1）reel裝的產品，裝箱至少上中下各一卷
2）tray盤裝產品，上中下各2盤/疊。
2.EVT階段物料需要整箱產品，不可用其他產品替代。

測試條件（跌落高度）

包裝件質量	≦15kg	15~30kg	30~40kg	40~45kg	45~50kg	>50kg
跌落高度	1,000mm	800mm	600mm	500mm	400mm	300mm
	√					

確認細項及判斷標準

紙箱	判定標準： NG:紙箱破損、開裂 OK：紙箱無破損、開裂
Reel	判定標準： NG:Reel盤破損、開裂 OK：Reel盤無破損、開裂
Cover tape/Carrier tape/tray盤	判定標準： NG:Carrier tape/tray盤變形 OK：Carrier tape/tray盤無變形 Cover tape : 撕除cover tape確認產品是否有粘在料帶上，無則OK，有則NG
產品	判定標準： NG:產品變形或產品在型腔內翻轉 OK：產品無變形且產品在型腔內無翻轉翻轉
拋料狀況	判定 標準： NG:產品拋出型腔或產品在型腔內偏位、移位 OK：產品未拋出型腔且產品在型腔內偏位、移位

測試判定結果：OK

核定:何文　　審核:曾鋒　　實驗 品保:朱海燕
制工:徐良輝

FOXCONN®

Tel: 86-755-28010688-22646

Date : 9/18/ 2020

Bao Ke Industry Area,Da-Swei-Kung, Guan-Lan town, BaoAn district, ShenZhen, China

Material Evidence

Supplier Name	Part Number	Description of Homogenous sub-part	Material	Type of Material
USB Type C Connector	UT11113-1200L-7H	Top Contact	金屬	C7025
		Bottom Contact	金屬	C7025
		Shlelding Plate	金屬	SUS301
		Housing	塑膠	LCP E130I
		Main Shell	金屬	SUS304
		Top Shell	金屬	SUS304
		AU Plating	金屬	Au
		Nickel Plating	金屬	NI
		Tin Plating	金屬	TIN

Sincerely yours,
FuDing(shenzhen) Precision Component CO.,LTD

Component - Plastics E106764

Guide Information

POLYPLASTICS CO LTD

18-1 KONAN 2 CHOME, MINATO TOKYO 1088280 JP

E130i(d)(e)(f1)

Liquid Crystal Polymer (LCP), thermotropic aromatic polyester "LAPEROS", furnished as pellets

Color	Min. Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
NC, BK	0.75	V-0	2	0	240	220	240
	1.5	V-0	1	0	240	220	240
	3.0	V-0	0	0	240	220	240

Comparative Tracking Index (CTI): 4
Dielectric Strength (kV/mm): 39
High-Voltage Arc Tracking Rate (HVTR): 0
Dimensional Stability (%): 0

Inclined Plane Tracking (IPT) kV: -
Volume Resistivity (10^x ohm-cm): 16
High Volt, Low Current Arc Resis (D495): 5

(d) - Virgin and regrind up to 50% by weight incl., have the same basic material characteristics in NC and BK with a minimum thickness of 0.75mm.
(e) - Regrind from 26-50% by weight inclusive has an Impact RTI of 180C at thicknesses greater than 1.5mm.
(f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report Date: 1992-08-19
Last Revised: 2017-06-27

IEC and ISO Test Methods

Test Name	Test Method	Units	Thk (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.75	V-0 (NC, BK)
			1.5	V-0 (NC, BK)
			3.0	V-0 (NC, BK)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	℃	0.75	96 0
			1.5	960
			3.0	960
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	℃	0.75	850
			1.5	850
			3.0	900
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	℃	-	-
ISO Heat Deflection (1.80 MPa)	ISO 75-2	℃	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 8256	kJ/m^2	-	-
ISO Izod Impact	ISO 180	kJ/m^2	-	-
ISO Charpy Impact	ISO 179-2	kJ/m^2	-	-