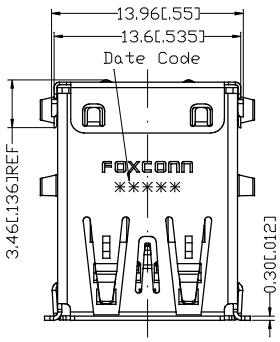
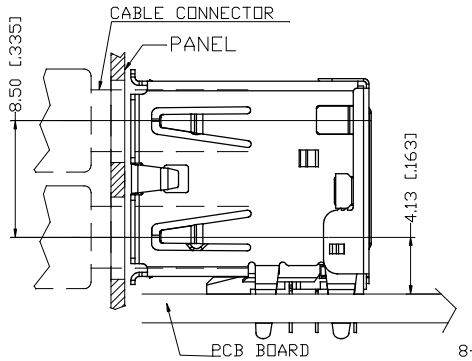
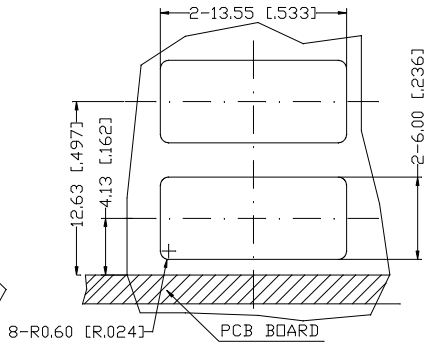
IDEAS GENERATED DRAWING. DON'T CHANGE BY HAND.

REV.	ECN. NO.	APPD.
X1	20181105	Davy Bu
X2	20181116	Davy Bu
X3	2019527	Davy Bu





PRECESSED MOUNTING CONFIGURATION



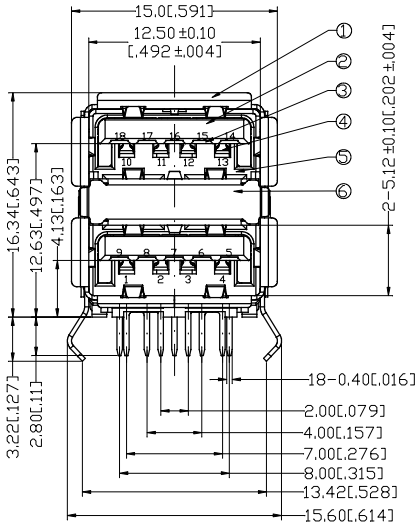
MOUNTING PANEL CUT OUT (INTERAL SIDE)

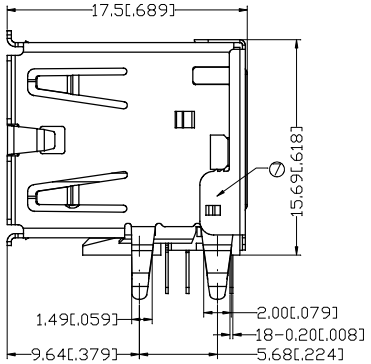
PRODUCT NO.: UAA 1 1 2 C - 84168 - 4 H

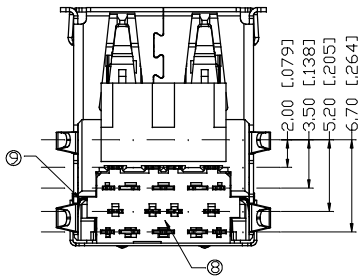
- Series Prefix — UAA: USB 3.1 A TYPE
- Termination Type — 1 = Right Angle T/H
- Connector Type — 1: Female
- No. of Contact Position — 2: 18 Pos.
- Contact Area Plating — C: Gold Flash+30u" Pd/Ni Min
- Extension Code
- Package Code — 4: Soft Tray Package
- Halogen Free Code — H: Halogen Free

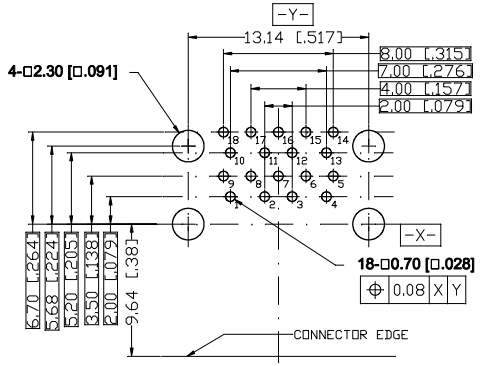
NOTES:

1. ELECTRICAL CHARACTERISTICS :
   - 1-1. CONTACT CURRENT RATING:
     1.8 A FOR VBUS PIN AND ITS CORRESPONDING GND PIN.
     0.25 A MIN FOR ALL OTHER CONTACTS.
   - 1-2. CONTACT RESISTANCE:
     INITIAL 30 MILLIOHMS MAX FOR VBUS AND GND CONTACTS.
     INITIAL 50 MILLIOHMS MAX FOR ALL OTHER CONTACTS.
     AFTER DURABILITY 10 MILLIOHMS MAX CHANGE.
   - 1-3. DIELECTRIC WITHSTANDING VOLTAGE : 100 VRMS AC MIN.
   - 1-4. INSULATION RESISTANCE: 100 MEGOHMS MIN.
2. MECHANICAL CHARACTERISTICS:
   - 2-1. CONNECTOR MATING FORCE: 35N MAX.
   - 2-2. CONNECTOR UNMATING FORCE: 10N MIN INITIAL, 8N MIN AFTER DURABILITY.
   - 2-3. DURABILITY: 5000 CYCLES.
   - 2-4. OPERATING TEMPERATURE: -55° C TO +85° C
3. RECOMMENED PROCESS: WAVE SOLDER 270° C, 6SECONDS.
4. THE CONNECTOR IS ROHS COMPLIANT.
5. RECOMMENDED PCB THICKNESS: 2.10±0.05[.083±.002]mm









RECOMMENDED P.C.B LAYOUT (COMPONENT SIDE)

T=2.1±0.05[0.083±0.02]mm,DEFAULT TOLERANCE: ±0.05[.002]

PIN ASSIGNMENT:

Pin No.	1	2	3	4	5	6	7	8	9
Pin No.	10	11	12	13	14	15	16	17	18
Signal Name	VBUS	D-	D+	GND	STDA_SSRX-	STDA_SSRX+	GND_DRAIN	STDA_SSTX-	STDA_SSTX+
Remark	USB2 Contact Pin				USB3 Contact Pin				

NO.	DESCRIPTION	QTY.	MATERIAL	TREATMENT
⑨	GROUND	1	STAINLESS STEEL	CLEAN
⑧	SPACER	1	PA66+30%GF	MOLDED COLOR: BLACK GF30% UL 94V-0
⑦	REAR SHELL	1	STAINLESS STEEL	CLEAN
⑥	FINGER	1	STAINLESS STEEL	CLEAN
⑤	FRAME	1	PA66+30%GF	MOLDED COLOR: BLACK GF30% UL 94V-0
④	USB2 CONTACT	8	COPPER ALLOY	GOLD FLASH OVER 30u" PD/NI AT CONTACT AREA, LEAD FREE TIN ALLOY AT TERMINATION, NICKER UNDERPLATING OVER ALL
③	USB3 CONTACT	10	COPPER ALLOY	
②	INNER INSULATOR	1	PA66+30%GF	MOLDED COLOR:BLUE(PANTONE:300C)
①	FRONT SHELL	1	STAINLESS STEEL	LEAD FREE TIN ALLOY AT KINK OVER NICKEL PLATED .

X.±	X.°±	UNITS mm[inch]
.X± 0.38[.015]	.X°±	MAT'L N/A
.XX± 0.25[.010]	.XX°±	
.XXX±	.XXX°±	FINISH N/A
Q'TY N/A		

NAME(INTENDED USE): CUSTOMER

PART NO.(INTENDED USE): UAA112C-84168-4H

APPD: Davy Bu 5/27'19

CHKD: Cheery Chen 5/27'19

DRAW: Cathy Sun 5/27'19

FOXCONN INTERCONNECT TECHNOLOGY LIMITED.

CLASS: □CONFIDENTIAL □SECRET ■GENERAL

TITLE: DUAL USB 3.1 A TYPE

DWG NO.: 327-0000-3891

SCALE	SHEET	REV.
N/A	1/1	X3

FK2B00065D

***** 目 錄 ******

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	APPROVED	CHECKED	PREPARED	ISSUED BY
BY	張國華	王立江	熊磊明	
DATE	11/11'14	11/11'14	11/11'14	

****** 修訂履歷 ******

****** HISTORY OF REVISION ******

版 次	ECN NO.	修訂頁次	備 註
A	BC-11-0088284	All	Inital Release
B	BC-14-0066815	All	Change format

USB 3.0 A Type Receptacle

1. SCOPE

1.1 Content

This product specification defines the product performance and the test methods to ascertain the performance of the **USB 3.0 A Type Receptacle** 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-364-1000.01

EIA-364

IEC-801-2

USB 3.0 Specification Rev:1.0

USB 3.0 Connectors and Cable Assemblies Compliance Document Rev:1.0

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

3. REQUIREMENT

3.1 Design

The product shall be as specified by Foxconn's customer drawing **327-0000-****.**

3.2 Material and Finish

See Foxconn's customer drawing **327-0000-****.

3.3 Electrical & Mechanical Requirements

See Foxconn's customer drawing **327-0000-****.

3.4 Application Performance:

3.4.1 Operating Environment: -55℃ to +85℃, 85%RH, without loss of function.

3.4.2 Storage Environment: -40℃ to +60℃, 85%RH, without loss of function at operating temperatures.

3.4.3 This connector is designed for wavesolder or reflow processing and must meet the specified requirements accordingly.

3.5 High Frequency Performance:

Refer to the USB3.0 Specification 0.9.

3.6 Marking

The "FOXCONN" logo shall be molded on the surface of product. The marking orientation and location see Foxconn's customer drawing **327-0000-****.

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. The concentrations of Br&Cl can satisfy the requirement of Halogen-Free in document EPI12 for Halogen-Free product.

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 **EB5-APUE-***.

3.9 Test 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.

3.10.7 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.	10 N min initial and 8 N min after the specified insertion/extraction, or durability cycles .
3.10.8 Durability	Comply with method EIA 364-09. Test sample are subjected to fully mate and unmate for 5000 cycles. Cycle rate of 200 cycles per hour manually or 500 maximum per hour automatically .	After the test, the sample shall pass the requirement of 3.10.2, 3.10.7 specification.
3.10.9 Cable Flexing	Comply with method EIA 364-41, Condition I. Dimension X = 3.7 times the cable diameter and 100 cycles in each of two planes.	No physical damage. No discontinuity over 1 ms during flexing.
3.10.10 Cable Pull-Out	Comply with method EIA 364-38,Condition A. Subjected to a 40 N axial load for a minimum of 1 minute while clamping one end of the cable plug.	No physical damage to the cable assembly.
3.10.11 Solderability	Comply with method EIA 364-52. Soldered at a temperature 255 ℃ +/-5 ℃ for an immersion duration of 5 s.	Solder shall cover a minimum of 95% of the surface being immersed.
3.10.12 Vibration	Comply with method EIA-364-28. 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).	No evidence of physical damages.

C. Environmental Characteristics

Description of Test	Condition & Method	Requirement
3.10.13 Temperature Life	Comply with method EIA 364-17, Method A. Temperature Life test temperature and duration: 105º C without applied voltage for 120 hours. 105º C without applied voltage for 72 hours when used as preconditioning in EIA 364-1000.01.	After the test, the sample shall pass the requirement of 3.10.1,3.10.2 specification.

3.10.14 Cyclic Temperature and Humidity	Comply with method EIA 364-31. Cycle the connector or socket between 25 ℃ ± 3 ℃ at 80 % ± 3% RH and 65 ℃ ± 3 ℃ 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.	After the test, the sample shall pass the requirement of 3.10.1, 3.10.2 specification.
3.10.15 Thermal Shock	Comply with method EIA 364-32,Test Condition I. 10 cycles of mated connectors. a) –55 ℃ for 30 minutes b) +85℃ for 30 minutes	There shall be no evidence of any physical damage.
3.10.16 Thermal disturbance	Cycle the connector or socket between 15 ℃ ± 3 ℃ and 85 ℃ ±3 ℃, as measured on the part.Ramps should be a mi nimum of 2℃ 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.
3.10.17 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.

D. High Frequence Characteristics

Description of Test	Condition & Method	Requirement
3.10.18 Contact Capacitance	Comply with method EIA 364-30. The object of this test is to detail a standard method to determine the capacitance between conductive elements of a USB 3.0 connector..	2 pF maximum unmated per contact. D+/D- contacts only.
3.10.19 Propagation Delay	Comply with method EIA 364 -103. The purpose of the test is to verify the end-to-end propagation of the D+/D- lines of the cable assembly. rise time=200ps .	26ns Maximum. D+/D-lines only.
3.10.20 Propagation Delay Skew	Comply with method EIA 364 -103. This test ensures that the signal on both the D+ and D- lines of cable assembly arrive at the receiver at the same time. rise time=200ps .	100ps Maximum. D+/D- lines only.
3.10.21 D+/D- Pair Attenuation	Comply with method EIA 364 -101. This test ensures the D+/D- pair of a cable assembly can provide adequate signal strength to the receiver in order to maintain a low error rate.	-0.67 dB Max @ 12 MHz -0.95 dB Max @ 24 MHz -1.35 dB Max @ 48 MHz -1.90 dB Max @ 96 MHz -3.20 dB Max @ 200.0 MHz -5.80 dB Max @ 400.0 MHz
3.10.22 Mated Connector Impedance (Differential)	Comply with method EIA 364 -108. This test ensures that the signal conductors of the USB 3.0 connectors have the proper impedance. Rise time =50ps(20%-80%) rise time of a differential TDR. (Mated connector includes cable termination areas).	75Ω minimum, 105Ω maximum. (Only for connector Area.) SuperSpeed pairs only.

3.10.23 Differential Insertion Loss of SuperSpeed Pairs of Mated Cable Assembly	Comply with method EIA-360-101. Normalized with a 90-ohm differential impedance.	The differential insertion loss curve must be above or on the curve defined by the following vertices: (100MHz, -1.5 dB), (1.25GHz, -5.0 dB), (2.5GHz, -7.5 dB), and (7.5GHz, -25 dB), See Figure 3-1. SuperSpeed pairs only.
3.10.24 Differential Near End Crosstalk (DDNEXT) between SS Pairs of Mated Cable Assembly	Comply with method EIA-360-90. The DDNEXT shall be measured in time domain with a rise time of 50 ps (20-80%) entering the connector under test.	The mated cable assembly meets the DDNEXT requirement if its peak-to-peak DDNEXT does not exceed the limit 0.9% (see Figure 3-2 for illustration of the peak-to-peak crosstalk): SuperSpeed pairs only.
3.10.25 Differential Near and Far End Crosstalks (DDNEXT and DDFEXT) between SS Pairs and D+/D- pair of Mated Cable Assembly	Comply with method EIA-360-90. The DDNEXT and DDFEXT shall be measured in time domain with a rise time of 500 ps (10-90%) entering the connector under test.	The mated cable assembly meets the DDNEXT/DDFEXT requirement if its peak-to-peak value does not exceed the limit 2%. (see Figure 3-2 for illustration of the peak-to-peak crosstalk):
3.10.26 Differential to Common Mode Conversion	Measure the single-ended S-parameters of the mated cable assembly and derive the Differential to Common Mode Conversion. Normalized with a 90-ohm differential impedance. The main purpose of this requirement is to limit the cable assembly EMI emission.	<= -20 dB from 100 MHz to 7.5 GHz. See Figure 3-3. SuperSpeed pairs only.

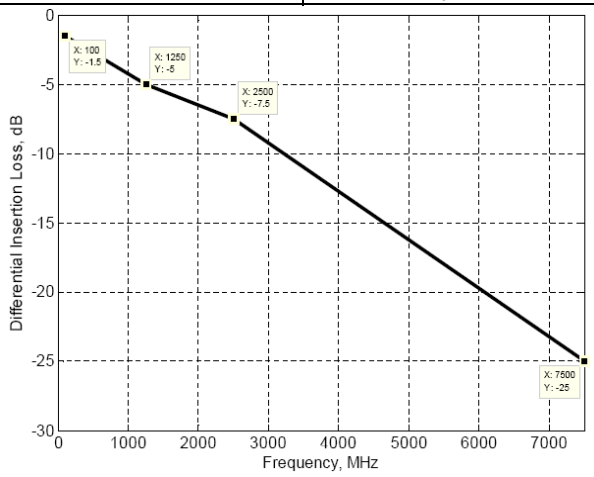

Figure 3-1. SS Differential Insertion Loss

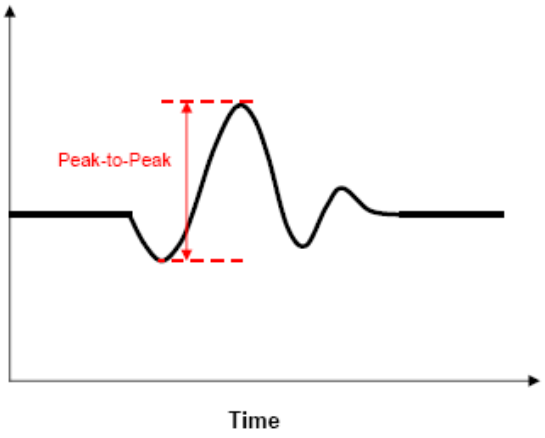

Figure 3-2. Illustration of peak-to-peak crosstalk

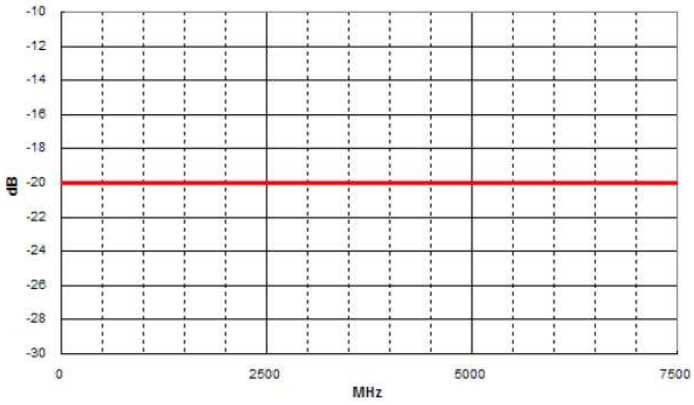

Figure 3-3 SS Differential to Common-mode Conversion (SS) Requirement

D. Test Sequence

	TEST GROUP / TEST DESCRIPTION	A	B	C	D	E	F	G	H	I
1	Visual Examination	1,5	1,4	1,3	1	1	1	1	1	1
2	Low Level Contact Resistance					2,5,7	2,5,7,9	2,5,7	2,5,7,9,11	3,8
3	Dielectric Withstanding									2,9
4	Insulation Resistance		3							
5	Cable Assembly Voltage Drop	4								
6	Insertion Force									4
7	Extraction Force									5,7
8	Durability					3(50Cycles manually), 6(3Cycles manually)	3(50Cycles manually), 8(3Cycles manually)	3(50Cycles manually)	3(50Cycles manually), 10(3Cycles manually)	6
9	Cable Flexing	3								
10	Cable Pull-Out	2								
11	Solderability			2						
12	Vibration							6		
13	Temperature Life					4		4	4	
14	Cyclic Temperature and Humidity						6			
15	Thermal Shock						4			
16	Thermal disturbance								8	
17	Mixed Flowing Gas								6	
18	Contact Capacitance		2							
19	Propagation Delay				3					
20	Propagation Delay Skew				4					
21	D+/D- Pair Attenuation				2					
22	Mated Connector Impedance (Differential)				5					
23	Differential Insertion Loss of SS Pairs of Mated Cable Assembly				6					
24	Differential Near End Crosstalk between SS Pairs of Mated Cable Assembly				8					
25	Differential Near and Far End Crosstalks between SS Pairs and D+/D- pair of Mated Cable Assembly				9					
26	Differential to Common Mode Conversion				7					
Sample Size		8	3	5	3	10	10	10	20	10