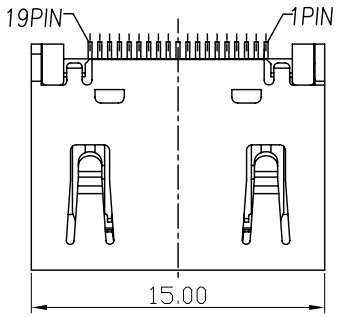
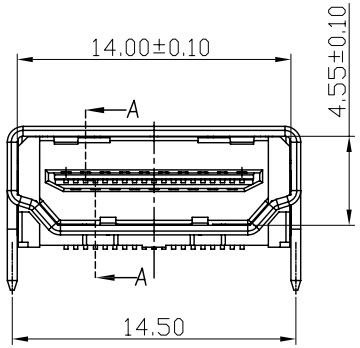
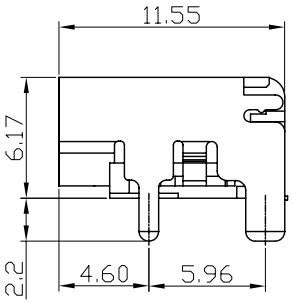
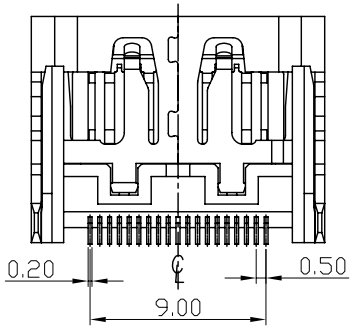


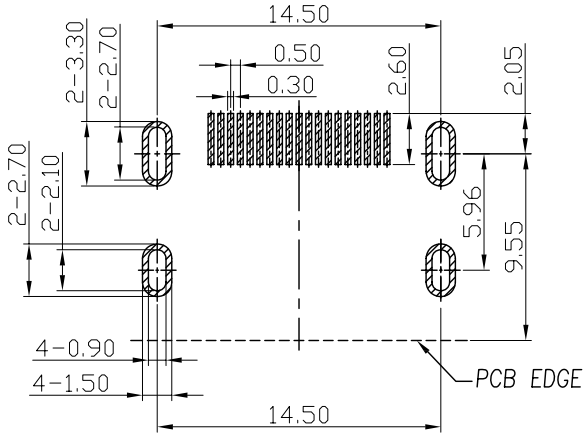






PIN	Signal Assignment
1	TMDS Data2+
2	TMDS Data2 Shield
3	TMDS Data2−
4	TMDS Data1+
5	TMDS Data1 Shield
6	TMDS Data1−
7	TMDS Data0+
8	TMDS Data0 Shield
9	TMDS Data0−
10	TMDS Clock+
11	TMDS Clock Shield
12	TMDS Clock−
13	CEC
14	Reserved (N.C. on device)
15	SCL
16	SDA
17	DDC/CEC Ground
18	+5V Power
19	Hot Plug Detect

Material
1. Housing:LCP, Black UL 94V-0.
2. Terminal:Copper Alloy, Gold Flash Plated At Contact Area, Tin Plated At Solded Area, Nickel Underplated Overall
3. Shell:SPCC, Nickel plated
2. Electrical Performance
2.1 Rated Voltage: 40V AC
2.2 Rated Current: 0.5A
2.3 Contact Resistance: 30mΩ
2.4 Insulation Resistance: 1000MΩ
2.5 Dielectric Strength: 500V AC
3. Mechanical Performance
3.1 Insertion Force: 44.1Newtons
3.2 Withdraval Force: 9.8-39.2Newtons
3.3 Durability: 10,000 Cycles
4. Operating Temperature: -40° C To +85° C



Recommended PCB Pattern Layout
General Tolerance:±0.05

REVISIONS				
REV.	ECN NO.	LOCATION	DESCRIPTION	DATE
			INITIALRELEASE	

SCALE	N/A	DESIGNER	LANG	23/08/16'
REV	A	CHECKED	DAVE	23/08/16'
SHEET	1/1	APPROVE	SEAN	28/08/16'

UNLESS OTHKRWISE SPECIFIED DIMENSIONS ARE IN mm

DIMRNSION		TOLERANCE
.XX	±	0.20
.X	±	0.30
X.	±	0.50
ANGULAR	±	5°
UNIT	mm	

福大電子有限公司

TITLE:	HDMI A TYPE DIP
PART NO.	HAH01-24E1RC48B
DWG. NO.	

SPECIFICATION FOR APPROVAL

承　　認　　書

福大電子有限公司	文件編號	FD-WI-D-401
	發行日期	2015-6-18
SPECIFICATION 規格書	版本：B	頁码：1/6

SERIES 產品系列	**HDMI A/C/D TYPE**		
DRAWN 設　計	Ango	APPD 審　　批	Sean

1. Scope

1.1 Content

This specification is designated the Performance, Tests and quality requirements for High-Definition Multimedia Interface(HDMI) Connector.

1.2 Design and Construction

Product shall be conformed the Design, Construction and Physical dimensions shown as product drawing.

2. Material

2.1 Connector

Shell: Alloy Copper.

Housing: High temperature plastic UL 94V-0.

Terminal: Alloy Copper.

3. Ratings

3-1. Voltage Rating: 40V AC(RMS)

3-2. Current Rating: 0.5A per contact minimum

3-3. Operating temperature: -25℃ ～ +85℃

4. Mechanical Performance

No.	Item	Test Condition	Requirement	
4-1	Vibration	Amplitude:1.52mm P-P or 147m/s²{15G} Sweep time: 50-2000-50Hz in 20 minutes. Duration: 12 times in each (total of 36 Times) X, Y, Z axes. Electrical load: DC100mA current shall be Flowed during the test. (ANSI/EIA-364-28 Condition III)	Appearance	No Damage
			Contact Resistance	Contact: Change from initial value: 30 milliohms maximum. Shell Part: Change from initial value: 50 milliohms maximum.
			Discontinuity	1 μsec maximum.

SPECIFICATION FOR APPROVAL

承　　認　　書

No.	Item	Test Condition	Requirement	
4-2	Shock	Pulse width: 11 msec., Waveform: half sine, 490m/s²{50G}, 3 strokes in each X.Y.Z. axes (ANSI/EIA-364-27, Condition A)	Appearance	No Damage
			Contact Resistance	Contact: Change from initial value: 30 milliohms maximum. Shell: Change from initial value: 50 milliohms maximum.
			Discontinuity	1 μsec maximum.
4-3	Durability	Measure contact and shell resistance after Following. Automatic cycling: 10,000 cycles at 100±50 cycles per hour 5,000 cycles(for Type C and Type D)	Contact Resistance	Contact: Change from initial value: 30 milliohms maximum. Shell: Change from initial value: 50 milliohms maximum.
4-4	Insertionl Force	Insertion and withdrawal speed: 25mm/minute. (ANSI/EIA-364-13)	Insertionl Force	44.1N {4.5kgf} maximum
4-5	Withdrawal Force	Insertion and withdrawal speed: 25mm/minute. (ANSI/EIA-364-13)	Withdrawal Force	Type A: 9.8N--39.2N Type C: 7N--25N Type D: 5N--25N and after 5,000 cycles mating: 3N--25N

5.Electrical Characteristics

No.	Item	Test Condition	Requirement
5-1	Contact Resistance	Mated connectors, Contact: measure by dry circuit, 20 mVolts maximum.,10mA. Shell: measured by open circuit, 5 Volts maximum ,100mA. (ANSI/EIA-364-06B)	Initial Contact resistance excluding conductor resistance: 10 milliohms maximum. (Target design value)

SPECIFICATION FOR APPROVAL

承　　認　　書

No.	Item	Test Condition	Requirement	
5-2	Dielectric Strength	Unmated connectors, apply Type A/C: 500 Volts AC(RMS) Type D: 250V AC(RMS) between adjacent terminal or ground. Mated connector, apply Type A/C:300 Volts AC(RMS.) Type D:150V AC(RMS.) between adjacent terminal and ground. (ANSI/EIA-364-20C, Method A)		No Breakdown
5-3	Insulation Resistance	Unmated connectors, apply 500 Volts DC between adjacent terminal or ground. (ANSI/EIA 364-21C)	100 megaohms minimum (unmated)	
		Mated connectors, apply 150 Volts DC between adjacent terminal or ground.	10 megaohms minimum (mated)	
5-4	Contact Current Rating	55 ℃, maximum ambient 85 ℃, maximum temperature change (ANSI/EIA-364-70A)	Type A/C: 0.5 A minimum Type D: 0.5 A minimum	
5-5	Applied Voltage Rating	40 Volts AC (RMS.) continuous maximum, on any signal pin with respect to the shield.	No Breakdown	

6. Environmental Characteristics

No.	Item	Test Condition	Requirement	
6-1	Thermal Shock	10 cycles of: a) -55° C for 30 minutes b) +85° C for 30 minutes (ANSI/EIA-364-32C, Condition I)	Appearance	No Damage
			Contact Resistance	Contact: Change from initial value:30 milliohms maximum Shell Part: Change from initial value:50 milliohms maximum

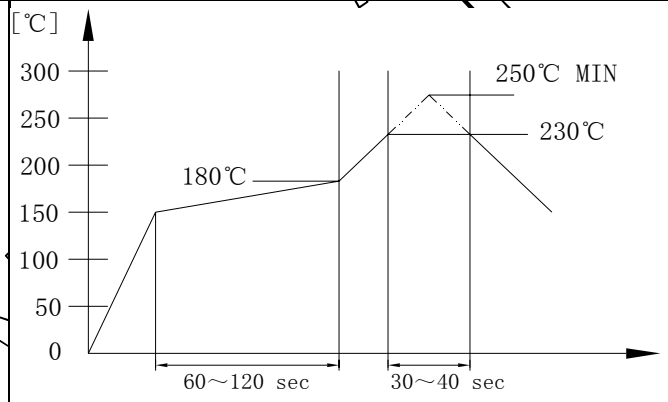
SPECIFICATION FOR APPROVAL

承　　認　　書

No.	Item	Test Condition	Requirement	
6-2	Humidity	Mate connectors together and perform the test asfollows. Temperature: +25 to +85° C Relative Humidity: 80 to 95% Duration: 4 cycles (96 hours) Upon completion of the test specimens shall beconditioned ambient room conditions for 24hours,after which the specified measurements shall be performed. (ANSI/EIA-364-31B)	Appearance	No Damage
			Contact Resistance	Contact: Change from initial value: 30 milliohms maximum. Shell Change from initial value: 50 milliohms maximum
		Unmated each connectors and perform the test asfollows. Temperature: +25 to +85° C Relative Humidity : 80 to 95% Duration: 4 cycles (96 hours) Upon completion of the test specimens shall beconditioned at ambient room conditions for 24hours,after which the specified measurements shall be performed. (ANSI/EIA-364-31B)	Appearance	No Damage
			Dielectric Withstanding Voltage and Insulation Resistance	Conform to item of Dielectric Withstanding Voltage and Insulation Resistance
6-3	Thermal Aging	Mate connectors and expose to +105 ±2℃ for 250hours Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours,after which the specified measurements shall be performed. (ANSI/EIA-364-17B, Condition 4, Method A)	Appearance	No Damage
			Contact Resistance	Contact: Change from initial value: 30 milliohms maximum Shell Part: Change from initial value: 50 milliohms maximum

SPECIFICATION FOR APPROVAL

承　　認　　書

No.	Test description	Procedure	Requirement	
6-4	Withstand Temperature For SMT type	 Preheat: 150～180℃ 60～120 sec Mainheat: 230℃ or more 30～40 sec Peak: 250℃ max. number of time: 2 times	Appearance	No damage

7.Connector Pin Assignments

Type A:

PIN	Signal Assignment	PIN	Signal Assignment
1	TMDS Data2+	2	TMDS Data2 Shield
3	TMDS Data2–	4	TMDS Data1+
5	TMDS Data1 Shield	6	TMDS Data1–
7	TMDS Data0+	8	TMDS Data0 Shield
9	TMDS Data0–	10	TMDS Clock+
11	TMDS Clock Shield	12	TMDS Clock–
13	CEC	14	Utility
15	SCL	16	SDA
17	DDC/CEC Ground	18	+5V Power
19	Hot Plug Detect		

Type C:

PIN	Signal Assignment	PIN	Signal Assignment
1	TMDS Data2 Shield	11	TMDS Clock+
2	TMDS Data2+	12	TMDS Clock-
3	TMDS Data2-	13	DDC/CEC Ground
4	TMDS Data1 Shield	14	CEC
5	TMDS Data1+	15	SCL
6	TMDS Data1-	16	SDA
7	TMDS Data0 Shield	17	Utility
8	TMDS Data0+	18	+5V Power
9	TMDS Data0-	19	Hot Plug Detect
10	TMDS Clock Shield		

Type D:

PIN	Signal Assignment
1	Hot Plug Detect
3	TMDS Data2+
5	TMDS Data2-
7	TMDS Data1 Shield
9	TMDS Data0+
11	TMDS Data0–
13	TMDS Clock Shield
15	CEC
17	SCL
19	+5V Power

PIN	Signal Assignment
2	Utility
4	TMDS Data2 Shield
6	TMDS Data1+
8	TMDS Data1-
10	TMDS Data0 Shield
12	TMDS Clock+
14	TMDS Clock–
16	DDC/CEC Ground
18	SDA

福大電子　产品使用注意事项

product use matters needing attention

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2. 该产品只要没有特殊指定用途，原本被设计制造用于一般电子设备、办公设备、信息/通讯设备、测试仪器、家用电器产品、音像设备等标准用途而设计、制造的产品。因此，**不得用于原子能控制机器，宇宙及航空器上与运行有关的机器等。在上述禁止使用用途以外，用于医疗机器，防盗器，防灾机器，海底用机器等需要高度安全性及信赖性的机器时，请与弊公司营业担当协商，或请确认整套系统是否合适，并在抗故障设计，保护电路，超长电路，误动防止设计，防止火蔓延设计等整套系统上采取安全措施。**（As long as the product has no special purposes. It was originally designed for the manufacture of electronic equipment, office equipment, information / communication equipment, testing instruments, household appliances, audio-visual equipment, standard use and design, manufacturing products. Therefore, don’t be used for atomic energy control machine, space and aircraft and operating the machine etc.. Beside, for medical equipment, burglar alarm, disaster prevention machine, the machine needs high security and reliability of the machine, please bear in consultation with our business, or verify that the system is appropriate, and in the design of protection circuit, fault resistance, long circuit, misoperation preventing design, adopting safety measures to prevent the spread of fire design in the whole system .）
3. 无论任何用途，如需用于高可靠性要求的设备时，建议在采用保护电路及冗长电路等措施，保护设备安全的同时，请顾客进行安全性测试。（Regardless of any use, if it used in equipment with high reliability requirements, please taking the action to protect circuit 、redundant circuit、and other measures . Protecting the safety of equipment at the same time, ask the customer for safety testing）
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