

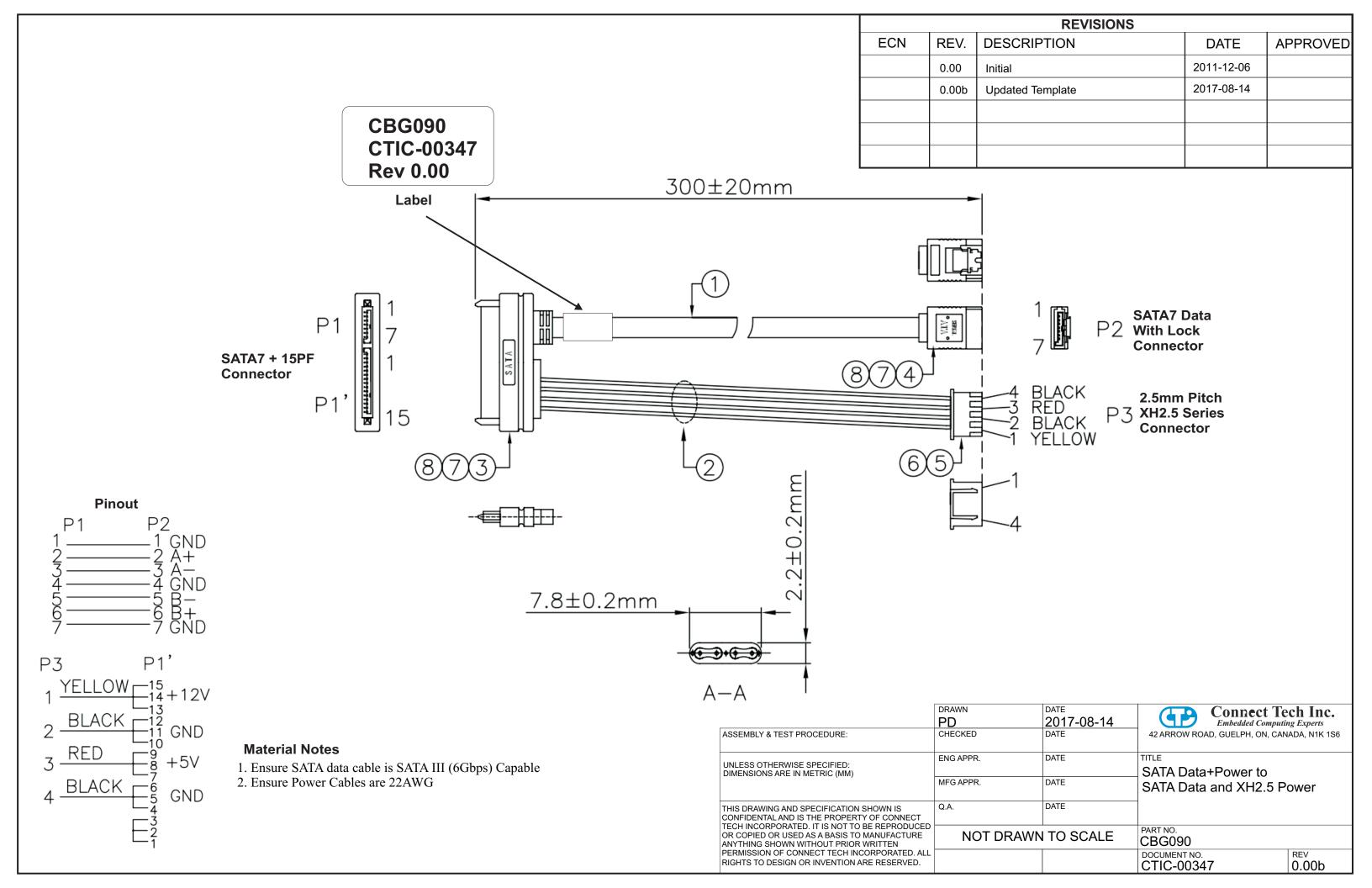
Unterminated Wires	Signal	Colour	10-pin MiniTek w/Latch
-	SYS_RST#	YELLOW	1
-	+5V	RED	2
-	SYS_PWRBTN#	YELLOW	3
-	+5V	RED	4
-	SYS_BATLOW#	YELLOW	5
	RTC-BAT-EXT	GREY	6
•	SUS_S3#	YELLOW	7
•	I2C SCL	BLUE	8
•	SUS_S5#	YELLOW	9
-	I2C SDA	BLUE	10
•	SMB DATA	GREEN	11
-	SPEAKER N	GREY	12
-	SMB CLK	GREEN	13
-	GND	BLACK	14
-	SMB ALERT#	GREEN	15
-	GND	BLACK	16

# **Assembly Notes**

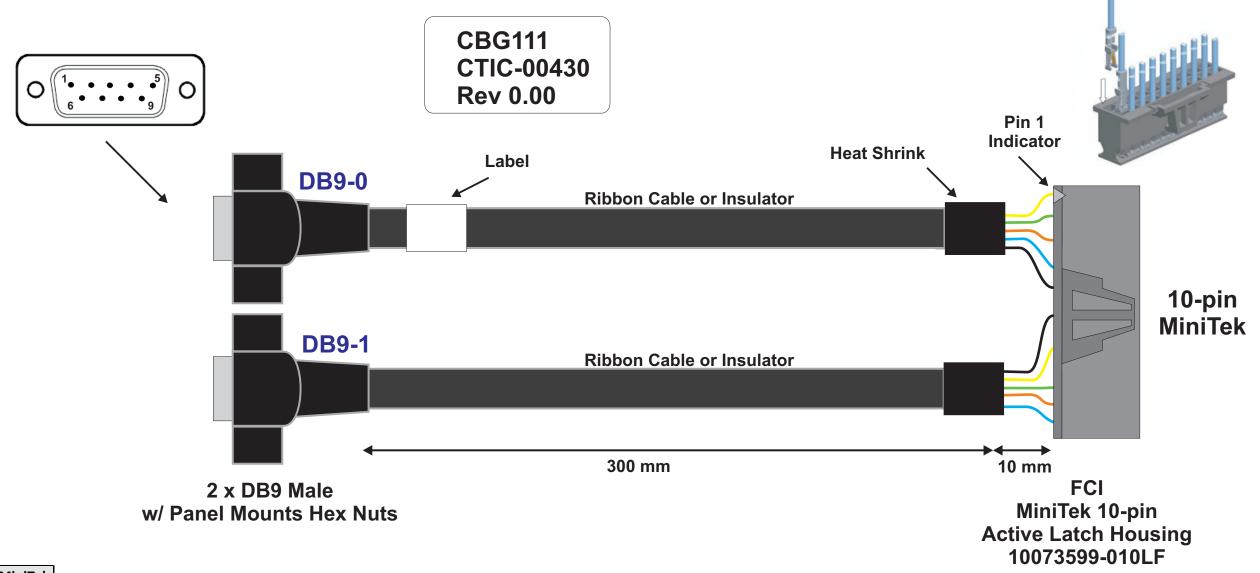
- 1. Cable is made from **RoHS** compliant components and 26-30 AWG
- 2. FCI 10073599-016LF must be used; along with required crimps 77138

Revision	Description
0.00	Initial
0.01	Completed Colour Coding of All Wires
0.02	Fixed Assembly Notes
0.03	Correct FCI Connector

Connect Tech Inc.  Embedded Computing Experts			
Part #:	CTIC-00533 / CBG186		
Drawn By:	Tomas Chester		
Date:	2016/02/16		
Revision:	0.03		



REVISIONS					
ECN	REV.	DESCRIPTION	DATE	APPROVED	
	0.00	Initial	2013-07-22		
	0.00b	Updated Template	2017-08-14		



#### **Pinout**

DB9-0	10-pin MiniTek
3	1
2	2
4	3
1	4
5	5
DB9-1	10-pin MiniTek
<b>DB9-1</b> 5	<b>10-pin MiniTek</b> 6
	•
5	6
5 3	6 7

## **Material Notes**

- 1. Cable is made from **RoHS** compliant components, must be DB9 compliant and conductors must be in the range of 22 to 30 AWG
- 2. FCI 10073599-010LF must be used; along with required crimps 77138 (AWG 26-30) or 10044403 (AWG 22-24)

	DRAWN PD	DATE 2017-08-14	Connect Tech Inc.  Embedded Computing Experts		
ASSEMBLY & TEST PROCEDURE:	CHECKED	DATE	42 ARROW ROAD, GUELPH, ON, CANADA, N1K 1S6		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN METRIC (MM)	ENG APPR.	DATE	10-Pin Minitek to 2x DB9F		
, ,	MFG APPR.	DATE			
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www.connecttech.com

# **Product Change Notification**

**USB 3.0 Optimization** 

PCN Number:	CTIU-00008
Revision:	0.01
Issue Date:	2018-01-08
Effective Date:	2017-12-10
Authors:	ТН



# 1 Product Identification

# 1.1 Product Data

	Effected Products
CTI Part Numbers	ASG001, ASG002, ASG010, ASG011, ASG012, CCG017, CCG018, CCG020, CCG060, CBG131, CBG133, VXG001, VXG002, VXG003, VXG004, VXG005, VXG006, VXG007, VXG008, VXG009, VXG010, VXG011, VXG012, VXG013, VXG014, VXG015, VXG016, VXG017, VXG018, VXG019, VXG020, VXG021, VXG022, VXG023, VXG024, VXG025, VXG026, VXG027, VXG028, VXG029, VXG030, VXG031, VXG032, VXG033, VXG034, VXG035, VXG036, VXG037, VXG038, VXG039, VXG040, VXG041, VXG042, VXG043, VXG044, VXG045, VXG046, VXG101, VXG102, VXG103, VXG104, VXG105, VXG113, VXG201, VXG202, VXG203, VXG204, VXG205, VXG206, VXG301, VXG302, VXG303
Serial Number	N/A
Lot Number	N/A
Hardware Revision	N/A
Firmware Version	N/A

# 1.2 Means of Distinguishing Changed Products

		Remark
Product Number		
Hardware Revision		
Lot Code		
Label		
Other	abla	Products shipped after the date of this PCN release will have the USB 3.0 optimization applied.



# 2 Description and Reason of Change

AVL	Product Improvement	$\checkmark$
Material	BIOS Release	
Assembly Process	Firmware Release	
Assembly BOM	Datasheet / Manual	
Testing	DFM	
Manufacturing Site	Other	
Equipment		

#### **USB 3.0 Re-Driver Settings:**

```
ASG001, ASG002, ASG010, ASG011, ASG012, CCG017, CCG018, CCG020, CCG060, VXG001, VXG002, VXG003, VXG004, VXG005, VXG006, VXG007, VXG008, VXG009, VXG010, VXG011, VXG012, VXG013, VXG014, VXG015, VXG016, VXG017, VXG018, VXG019, VXG020, VXG021, VXG022, VXG023, VXG024, VXG025, VXG026, VXG027, VXG028, VXG029, VXG030, VXG031, VXG032, VXG033, VXG034, VXG035, VXG036, VXG037, VXG038, VXG039, VXG040, VXG041, VXG042, VXG043, VXG044, VXG045, VXG046, VXG101, VXG102, VXG103, VXG104, VXG105, VXG113, VXG201, VXG202, VXG203, VXG204, VXG205, VXG206, VXG301, VXG302, VXG303
```

The Connect Tech Inc. (CTI) products listed above all use USB 3.0 re-drivers for each of the USB 3.0 ports present on that product. Using USB 3.0 compliance testing along with several functional tests the re-driver settings have been optimized on each product to ensure robust operation of the USB 3.0 interfaces across multiple applications.

These improvements should not have any adverse effects on existing systems. If you discover that you have USB 3.0 issues with CTI products please contact our customer support at <a href="mailto:support@connecttech.com">support@connecttech.com</a> with the relevant details of your issue.



#### USB 3.0 Cables: CBG131, CBG133

As part of the USB 3.0 optimization of CTI products, CTI no longer recommends CBG131 and CBG133 for new designs. CTI will continue to offer and support these cables for existing systems. See cable images below; CBG131 is on the left and CBG133 is on the right.



\*Images courtesy of StarTech

Revision: 0.01

For new designs CTI recommends CBG160, CBG287, and CBG288.

CBG160 on the left. CBG287 on the right. Both right-angle PCB connections but one exits 180 degrees in the opposite direction of the other.



CBG288 shown below with vertical connection to the PCB connector.



For more information regarding these cables please read further in this document and/or contact our sales department at sales@connecttech.com.



# 3 Impact of change (positive or negative) on fit, form, function & reliability

# 3.1 Quality and Reliability

The changes listed in Section 2 should have a positive effect on the overall quality and reliability of the USB 3.0 ports of the listed Connect Tech products.

# 3.2 Software Compatibility

N/A

# 3.3 Hardware Compatibility

USB 3.0 ports on the listed Connect Tech Inc. board level products have had their default USB 3.0 re-driver settings optimized based on a wide range of use-cases and applications. These changes should have a positive effect on the operation of the USB 3.0 interfaces. If you have an existing product in which you have characterized the USB 3.0 channels it is recommended that you conduct characterization of these channels again with the post ECN optimized products.

# 3.4 Mechanical Compatibility

Cable colour, length and panel mount geometries are different between the old and new cables. See below for more information.

# 3.4.1 Cable Detail Summary

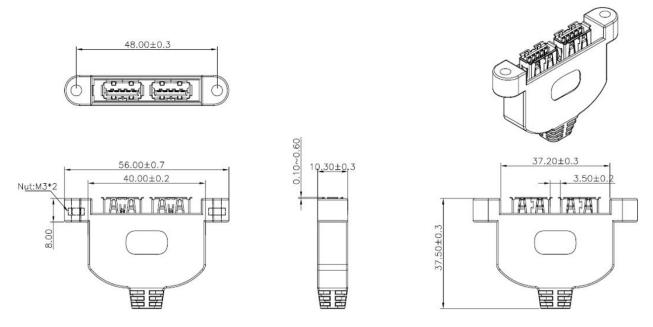
	CTI Cable			Cable	
	Number	OEM	Cable Length	Colour	Board Exit
No Longer	CBG131	StarTech USB3SPLATE	0.5 m (1.6 ft.)	Blue	Vertical
Recommended	CBG133	StarTech USB3SPNLAFHD	0.5 m (1.6 ft.)	Blue	Vertical
	CBG160	Lotes ABA-USB-526-K01	0.3175 m (1.04 ft.)	Black	Right-Angle
Recommended					Right-angle
for New Designs	CBG287	Lotes ABA-USB-067-K01	0.4572 m (1.5 ft.)	Black	180 degrees
	CBG288	Lotes ABA-USB-164-K01	0.7167 m (2.35 ft.)	Black	Vertical

Date: 2018-01-08

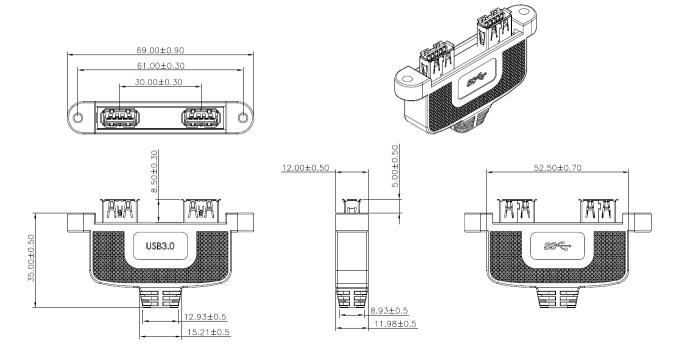


#### 3.4.2 New Panel Mount Geometries

#### 3.4.2.1 CBG160 and CBG287



#### 3.4.2.2 CBG288



<sup>\*</sup>Images courtesy of Lotes

<sup>\*</sup>Dimensions in mm



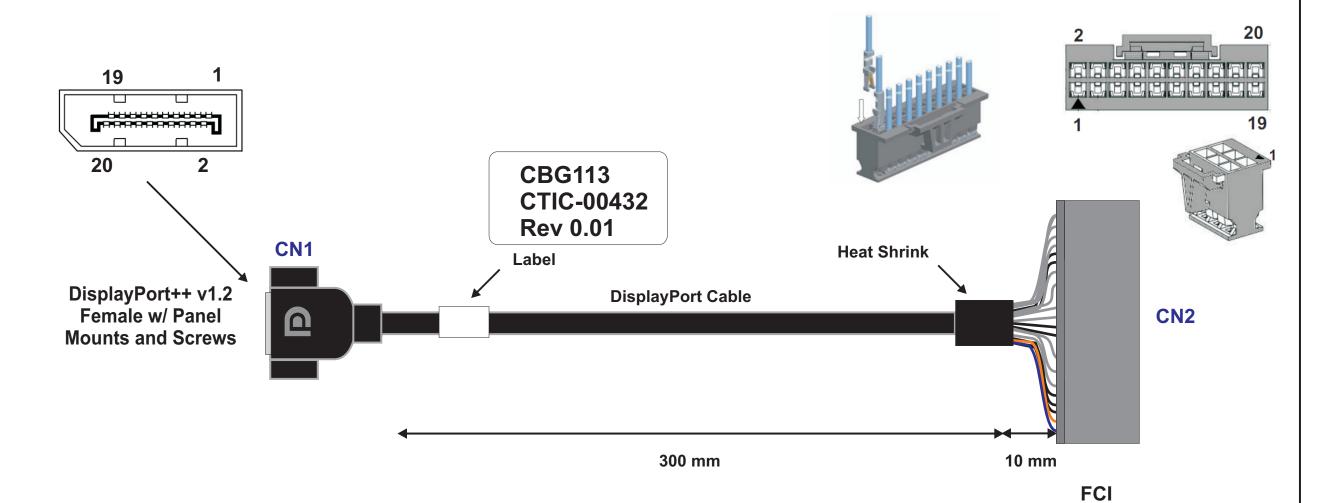
# 4 Product / Revision Discontinuation

These changes take effect immediately open the release of this PCN and only products with the USB 3.0 optimization will be delivered. This does not include products that fall under the RMA process.

# **5** Contact Information

Phone	+1-519-836-1291
Email	sales@connecttech.com

REVISIONS					
ECN	REV.	DESCRIPTION	DATE	APPROVED	
	0.00	Initial	2013-06-04		
	0.01	Updated Pin 1 Detail, Fixed Pin14 Desc	2013-06-09		
	0.01b	Updated Template	2017-08-14		



# Pinout

CN1	Signal	CN2
1	DP0+	1
10	DP3+	2
3	DPO-	3
12	DP3-	4
2	GND	5
5	GND	6
4	DP1+	7
17	DPAUX-	8
6	DP1-	9
15	DPAUX+	10
8	GND	11
11	GND	12
7	DP2+	13
18	DP.HPD	14
9	DP2-	15
14	GND	16
16	GND	17
19	GND	18
20	DP_PWR	19
13	DP_AUX_SEL	20

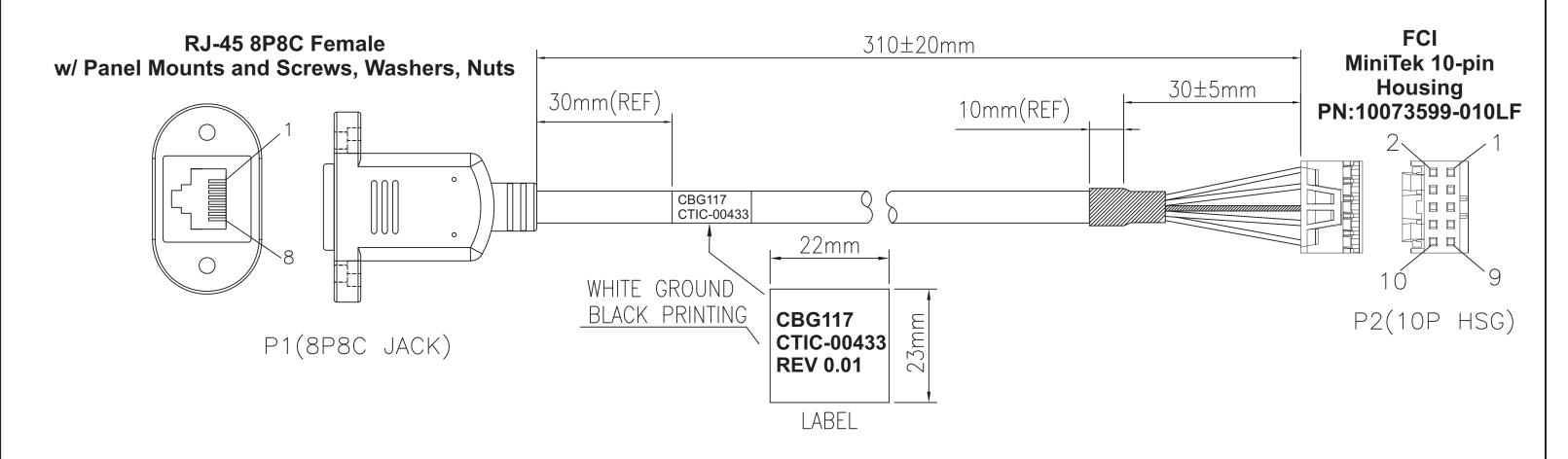
# **Material Notes**

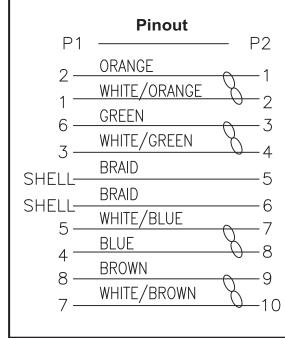
- 1. Cable is made from **RoHS** compliant components, must be DisplayPort++ compliant
- and wires must be 26-30 AWG
- 2. All DPX+/- pairs must be twisted pairs.
- 2. DisplayPort socket must be DisplayPort++ v.1.2 Female
- 3. FCI 10073599-020LF must be used; along with required crimps 77138

	PD	2017-08-14	Connect Tech Inc.  Embedded Computing Experts	
ASSEMBLY & TEST PROCEDURE:	CHECKED	DATE	42 ARROW ROAD, GUELPH, ON, CANADA, N1K 1S6	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN METRIC (MM)	ENG APPR.	DATE	TITLE 20-Minitek to DisplayPort	
, ,	MFG APPR.	DATE		
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MiniTek 20-pin Active Latch Housing 10073599-020LF

REVISIONS					
ECN	REV.	DESCRIPTION	DATE	APPROVED	
	0.00	Initial	2013-06-04		
	0.01	Updated PN Info	2013-06-09		
	0.01b	Updated Template	2017-08-14		



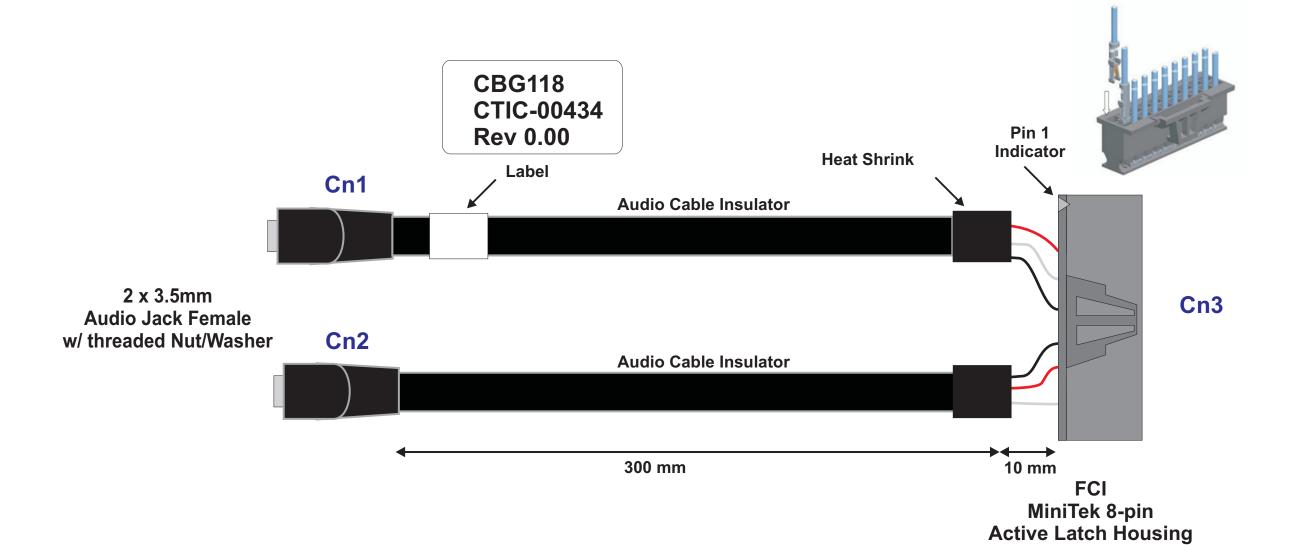


#### **Material Notes**

- 1. Cable is made from **RoHS** compliant components, must be RJ-45 compliant and 26-30 AWG
- 2. RJ-45 socket must be 8P8C (8 Pins, 8 Connectors)
- 3. FCI 10073599-010LF must be used; along with required crimps 77138

	DRAWN PD	DATE 2017-08-14	Connect Tech Inc.  Embedded Computing Experts
ASSEMBLY & TEST PROCEDURE:	CHECKED	DATE	42 ARROW ROAD, GUELPH, ON, CANADA, N1K 1S6
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN METRIC (MM)	ENG APPR.	DATE	10-Minitek to RJ45F
	MFG APPR.	DATE	
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REVISIONS					
ECN	REV.	DESCRIPTION	DATE	APPROVED	
	0.00	Initial	2013-07-22		
	0.00b	Updated Template	2017-08-14		



#### **Pinout**

CN1/CN2	CN3
-	1
-	2
CN1 - Ring	3
CN1 - Tip	4
CN1 - Sleeve	5
CN2 - Sleeve	6
CN2 - Ring	7
CN2 - Tip	8

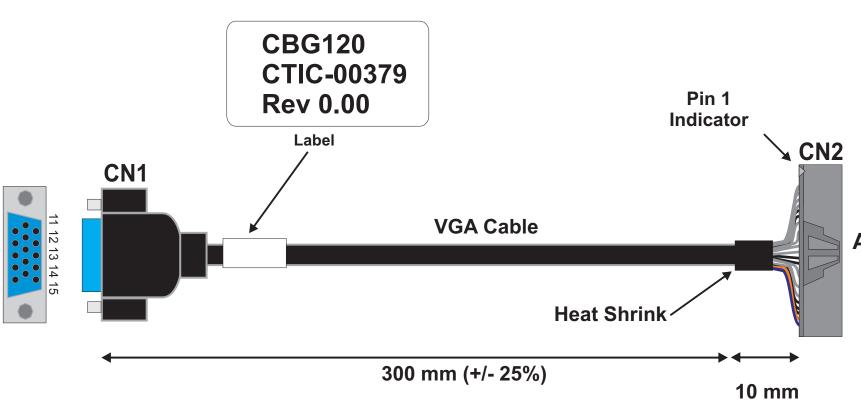
# **Material Notes**

- Cable is made from RoHS compliant components and wires must be 26-30 AWG
   FCI 10073599-008LF must be used; along with required crimps 77138

	DRAWN PD	DATE 2017-08-14	Connect Tech Inc.  Embedded Computing Experts	
ASSEMBLY & TEST PROCEDURE:	CHECKED	DATE	42 ARROW ROAD, GUELPH, ON, CANADA, N1K 1S6	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN METRIC (MM)	ENG APPR.	DATE	TITLE 8-Pin Minitek to	
	MFG APPR.	DATE	2x 3.5 Audio Jacks	
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10073599-008LF

REVISIONS					
ECN	REV.	DESCRIPTION	DATE	APPROVED	
	0.00	Initial	2013-07-22		
	0.00b	Updated Template	2017-08-14		





crimps: 77138

# **Pinout**

VGA - HD-15 Female

**Panel Mount Connector** 

with moulding/cover

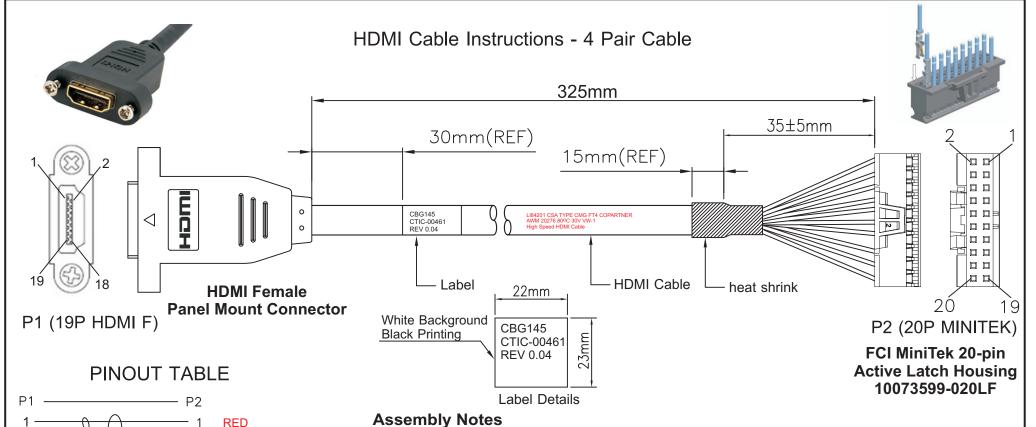
and hex nut screws

CN1 VGA (HD-15)	Signal	CN2 10 Pin Header
1	RED	1
2	GREEN	3
3	BLUE	5
4	NC	-
5	GND	10
6	GND	2
7	GND	2
8	GND	2
9	NC	-
10	GND	10
11	NC	-
12	DDC DATA	8
13	HSync	7
14	VSync	9
15	DDC CLK	6

# **Material Notes**

- Cable must be made from **RoHS** compliant components
- Wires must be 26-30 AWG
- Hex nut screws on CN1 must be installed

	DRAWN PD	DATE 2017-08-14	Connect Tech Inc.  Embedded Computing Experts
ASSEMBLY & TEST PROCEDURE:	CHECKED	DATE	42 ARROW ROAD, GUELPH, ON, CANADA, N1K 1S6
UNLESS OTHERWISE SPECIFIED:	ENG APPR.	DATE	TITLE
DIMENSIONS ARE IN METRIC (MM)			10-Pin Minitek to VGA Cable
	MFG APPR.	DATE	
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# **Assembly Notes**

WHITE (RED)

**BLACK (RED)** 

WHITE (BROWN)

**BLACK (BROWN)** 

WHITE (GREEN)

**BLACK (GREEN)** 

WHITE (BLUE)

**BLACK (BLUE)** 

**BROWN** 

**GREEN** 

**BLUE** 

PINK

NC X-17 NC x-18

**—** 19

**—** 20

 $13 \rightarrow NC$ 

14 -x NC

**YELLOW RED** 

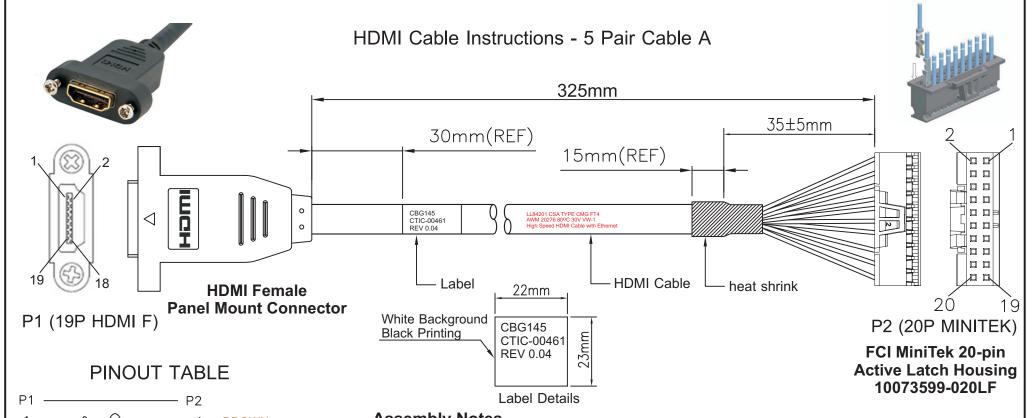
**ORANGE** 

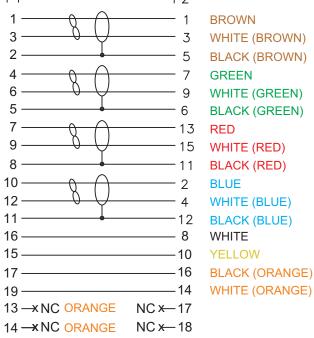
**ORANGE** 

- 0. Determine which Raw Cable Variant you have
  - a. Verify UL/CSA Text Matches Drawing
  - b. Check Connectivity of Pairs 1, 2, 3 to Validate Colours
- 1. Cable is made from RoHS compliant components, must be HDMI compliant and wires must be 26-30 AWG
- 2. P1- Any HDMI Female Panel Mount connector/cable equivalent can be used including:
  - Startech PN: HDMIPNLFM3 << Preferred Cable (Colour Matching on Left)
  - Adafruit PN: 978
  - Cable Leader PN: HM112-1203
  - L-com PN: PMHDMF-0.5
- 3. P2 Must use a FCI PN:10073599-020LF connector, along with required FCI crimps PN:77138
- 4. Two twists per pair are required at P2 end of cable

Revision	Description
0.01	Connected HDMI +5V Power to FCI Pins 19/20
0.02	Added Secondary Drawing (5 Pair vs 4 Pair)
0.03	Fixed Label Details on Cable
0.04	Added New Cable Variants

	Connect Tech Inc.  Embedded Computing Experts		
Part #:	CTIC-00461 / CB	G145	
Drawn By:	Tomas Chester		
Date:	2017/09/12		
Revision:	0.04	1/4	





**RED** 

RED

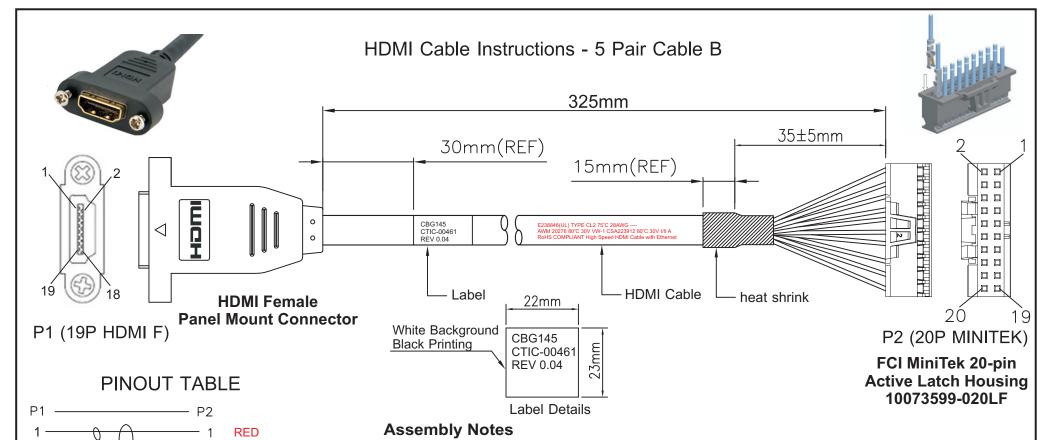
**—** 20

# **Assembly Notes**

- 0. Determine which Raw Cable Variant you have
  - a. Verify UL/CSA Text Matches Drawing
  - b. Check Connectivity of Pairs 1, 2, 3 to Validate Colours
- 1. Cable is made from RoHS compliant components, must be HDMI compliant and wires must be 26-30 AWG
- 2. P1- Any HDMI Female Panel Mount connector/cable equivalent can be used including:
  - Startech PN: HDMIPNLFM3 << Preferred Cable (Colour Matching on Left)
  - Adafruit PN: 978
  - Cable Leader PN: HM112-1203
  - L-com PN: PMHDMF-0.5
- 3. P2 Must use a FCI PN:10073599-020LF connector, along with required FCI crimps PN:77138
- 4. Two twists per pair are required at P2 end of cable

Revis	ion	Description
0.01		Connected HDMI +5V Power to FCI Pins 19/20
0.02	2	Added Secondary Drawing (5 Pair vs 4 Pair)
0.03	3	Fixed Label Details on Cable
0.04		Added New Cable Variants

Connect Tech Inc.  Embedded Computing Experts		
Part #:	CTIC-00461 / CB	G145
Drawn By:	n By: Tomas Chester	
Date:	2017/09/12	
Revision:	0.04	2/4



- 0. Determine which Raw Cable Variant you have
  - a. Verify UL/CSA Text Matches Drawing
  - b. Check Connectivity of Pairs 1, 2, 3 to Validate Colours
- 1. Cable is made from RoHS compliant components, must be HDMI compliant and wires must be 26-30 AWG
- 2. P1- Any HDMI Female Panel Mount connector/cable equivalent can be used including:
  - Startech PN: HDMIPNLFM3 << Preferred Cable (Colour Matching on Left)
  - Adafruit PN: 978

WHITE (RED)

**BLACK (RED)** 

WHITE (BROWN)

**BLACK (BROWN)** 

WHITE (ORANGE)

**BLACK (ORANGE)** 

WHITE (GREEN)
BLACK (GREEN)

WHITE (BLUE)

**BROWN** 

**ORANGE** 

**GREEN** 

ORANGE YELLOW BLACK (BLUE)

WHITE

WHITE

**—** 20

NC X-17

NC x-18

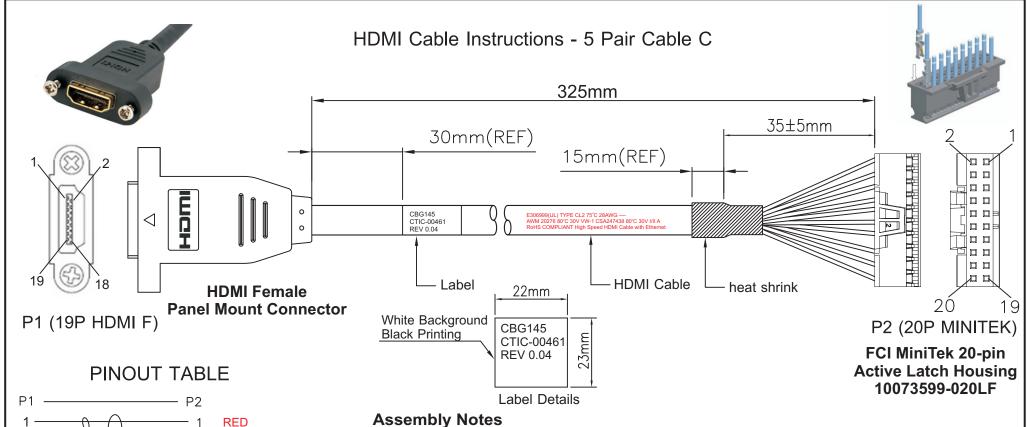
13 -X NC RED

14 -x NC BLUE

- Cable Leader PN: HM112-1203
- L-com PN: PMHDMF-0.5
- 3. P2 Must use a FCI PN:10073599-020LF connector, along with required FCI crimps PN:77138
- 4. Two twists per pair are required at P2 end of cable

Revision	Description
0.01	Connected HDMI +5V Power to FCI Pins 19/20
0.02	Added Secondary Drawing (5 Pair vs 4 Pair)
0.03	Fixed Label Details on Cable
0.04	Added New Cable Variants

Connect Tech Inc.  Embedded Computing Experts		
Part #:	CTIC-00461 / CBG	
Drawn By:	Tomas Chester	
Date:	2017/09/12	
Revision:	0.04	3 / 4



# **Assembly Notes**

WHITE (RED)

**BLACK (RED)** 

WHITE (BROWN)

**BLACK (BROWN)** 

WHITE (ORANGE)

**BLACK (ORANGE)** 

WHITE (GREEN) **BLACK (GREEN)** 

WHITE (BLUE)

**BROWN** 

**ORANGE** 

**GREEN** 

**ORANGE YELLOW BLACK (BLUE)** 

WHITE

WHITE

**—** 20

NC X-17

NC x-18

13 -X NC RED

14 -x NC BLUE

- 0. Determine which Raw Cable Variant you have
  - a. Verify UL/CSA Text Matches Drawing
  - b. Check Connectivity of Pairs 1, 2, 3 to Validate Colours
- 1. Cable is made from RoHS compliant components, must be HDMI compliant and wires must be 26-30 AWG
- 2. P1- Any HDMI Female Panel Mount connector/cable equivalent can be used including:
  - Startech PN: HDMIPNLFM3 << Preferred Cable (Colour Matching on Left)
  - Adafruit PN: 978
  - Cable Leader PN: HM112-1203
  - L-com PN: PMHDMF-0.5
- 3. P2 Must use a FCI PN:10073599-020LF connector, along with required FCI crimps PN:77138
- 4. Two twists per pair are required at P2 end of cable

Revision	Description
0.01	Connected HDMI +5V Power to FCI Pins 19/20
0.02	Added Secondary Drawing (5 Pair vs 4 Pair)
0.03	Fixed Label Details on Cable
0.04	Added New Cable Variants

Connect Tech Inc.  Embedded Computing Experts			
Part #:	CTIC-00461 / CBG145		
Drawn By:	Tomas Chester		
Date:	2017/09/12		
Revision:	0.04	4 / 4	