1.0 SCOPE:

This instruction covers the requirements to properly terminate Liberty AV Solutions IDC style HD Cable and Connector system.

2.0 DEFINITIONS:

1	HDMI®	Registered Trademark of HDMI, LLC High Definition Multimedia Interface®
2	IDC	Insulation Displacement Contact
3	NEC®	Registered Trademark of the National Fire Protection Agency National Electric Code®

3.0 INSTRUCTION:

3.1 This is a proprietary system and the tooling required should not be substituted.

Figure (1): HD Field Terminated Cable

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3.2 Tooling and Supplies required

3.2.1 Tooling

- Crimp Tool P/N DL-HDMHT
- Non-specific tooling required
- Hobby Knife or razor blade
- Wire Cutters
- Wire strippers
- Ruler

Figure (2) DL-HDMT

Figure (3) Hand Tools

3.2.2 Materials

- HDMI Ribbon Cable, 250 foot Reel Box – Part number DL-HDMCBL-250
- HDMI Ribbon Cable, 500 foot Reel Box – Part number DL-HDMCBL-500
- HDMI Connector 10-Pack – Part number DL-HDMCPK

Figure (4) DL-HDMCPK

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3.3 Cable preparation.

3.3.1 Measure 1.5 inches (40mm) from end of the cable and mark the jacket.

3.3.2 Strip the jacket off to the 1.5 inch mark. Be careful not to cut the braided shield.

Figure (5): Measure and Cut

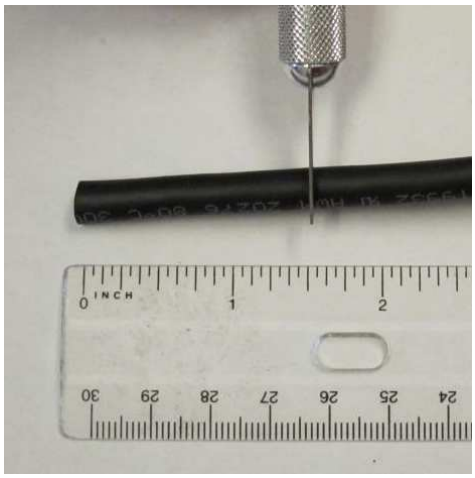


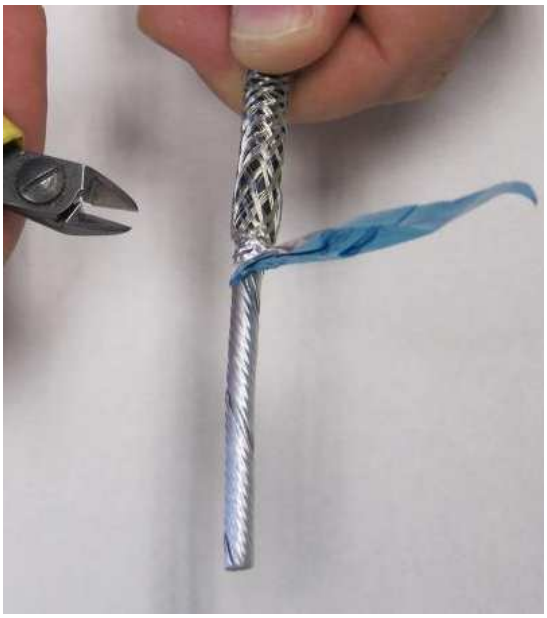
Figure (6): Jacket Strip Complete

3.3.3 Fold the braided shield back over the jacket.

3.3.4 Remove the overall Foil shield. This is easiest to do by locating the seam and nicking the foil at the jacket cut off point. Then peel off the foil shield at the jacket junction.

Figure (7): Braid Shield Folded

Figure (8): Removing overall Foil Shield



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3.3.5 Separate the two fully shielded ribbon cables and cut off the central filler as close as possible to the jacket. The ribbon cables will be curled, straighten the cables out to facilitate further preparation.

Figure (9): Ribbon Cables Exposed

Figure (10): Removing the filler

3.3.6 Each shielded ribbon cable has a seam on the foil shield. It is easier to peel the foil shield off if you can locate the seam and peel down to the jacket junction. Use a knife or blade to carefully separate the foil shield from the ribbon cable at the end. Do not damage the ribbon cable.

Figure (11): Separating the Ribbon Cable From the shield

Figure (12): Partially removed foil shield

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3.3.7 After the foil shield is peeled off both ribbon cables back to the jacket junction, note that the black striped Ribbon Cable is wider then the other. Lay the black striped ribbon cable out flat and slit the outer conductor OPPOSITE the black stripe down to the jacket junction.

3.3.8 Remove all the insulation from the wire separated in the previous step. Caution: Use care not to break the conductor. If the conductor is broken the termination process must be restarted from the beginning.

3.3.9 Wrap the bare wire around the braid shield. This conductor ensures the connector shell(s) are properly bonded to the cable shield.

Figure (13): Separating the outer Conductor

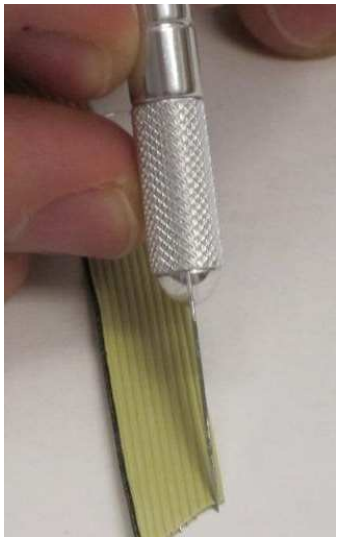


Figure (14): Outer conductor separated

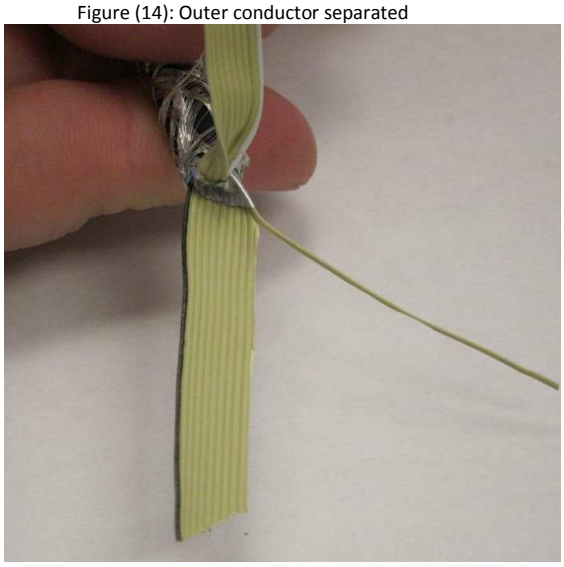


Figure (15): Outer Conductor stripped

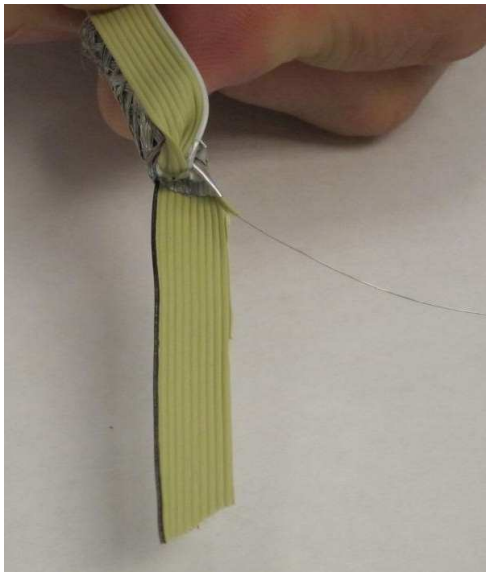
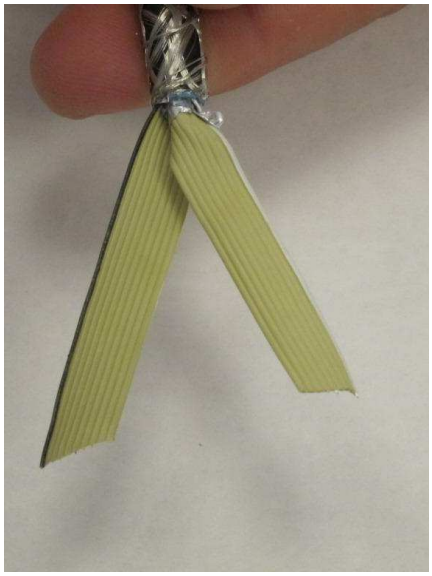


Figure (16): Conductor wrapped Around the braid shield



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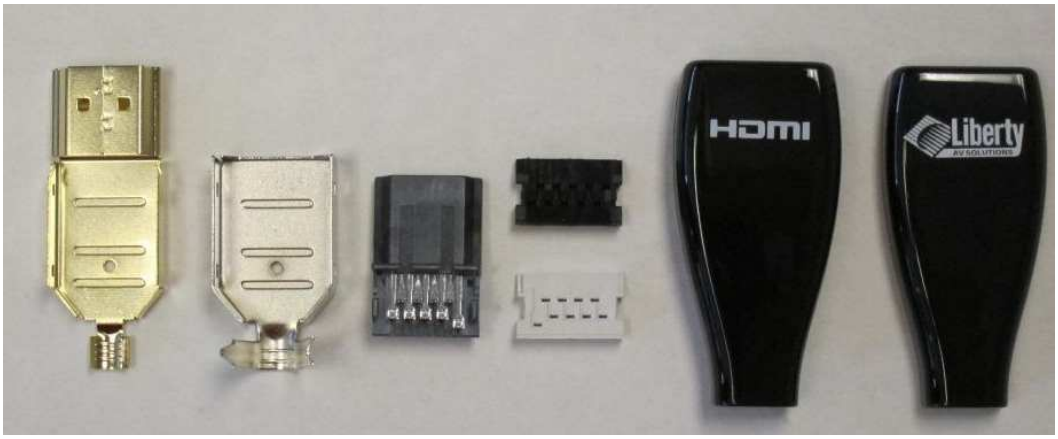
3.4 Connector Application

3.4.1 Locate and remove the components for one complete connection from the DL-HDMCPK. This will include (Left to Right)

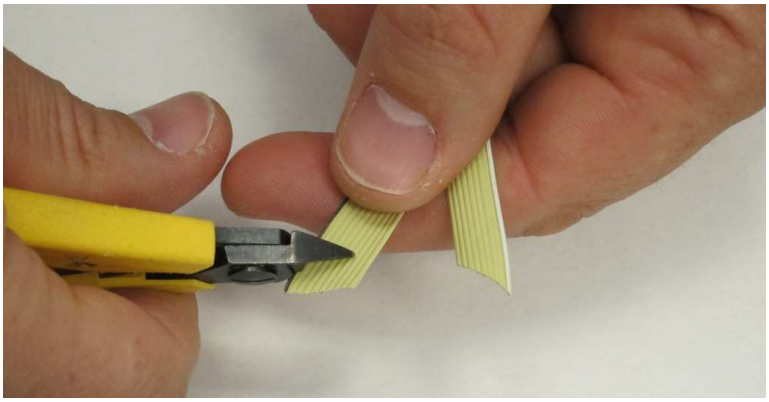
- (1) Connector Upper Shell. Identifiable as the only GOLD component.
- (1) Connector Bottom Shell. Identifiable as the only SILVER Component
- (1) Connector. Identifiable with the IDC termination contacts exposed
- (1) Black Cable Sleeve
- (1) White Cable Sleeve
- (1) Lower Hood. Identifiable with the HDMI logo
- (1) Upper Hood. Identifiable with the posts and the Liberty Logo

Figure (17): Full Connector Bill of Materials



3.4.2 Trim the two flat ribbon cables at a slight angle from perpendicular to the end. The angle facilitates the installation of the ribbon cable into the cable sleeves.

Figure (18): Trimming the flat ribbon cable to be an angular point



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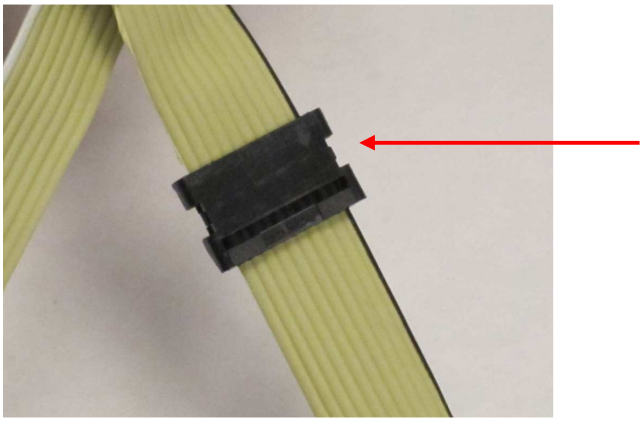
3.4.3 Cable Sleeve Installation. In preparation for this step locate the arrow on each sleeve. The black cable sleeve is for the black striped ribbon cable. The arrow should line up with the black striped conductor. Note: Hold the sleeve by the narrow side when installing. If held by the flat surface it will squeeze on the cable and be difficult to slide into place.

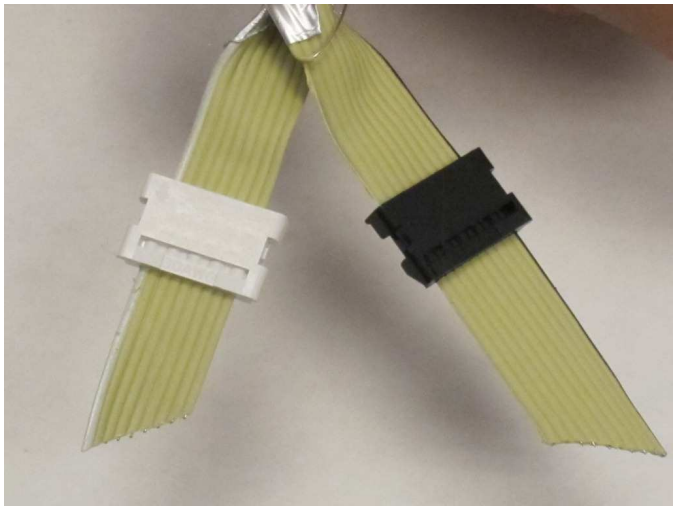
Figure (19): The arrow and its orientation on the cable

Arrow



3.4.4 Install the cable sleeves per the previous step. The distance from the jacket to the sleeve should be about 0.6 inches (15mm). Ensure the sleeves are positioned with the arrows facing out and the IDC alignment slots facing in. It may be necessary to twist the ribbon cable to ensure the IDC slots face in. Ensure the two cable sleeves with IDC slots facing in are facing one another.

Figure (20): Sleeves installed correctl



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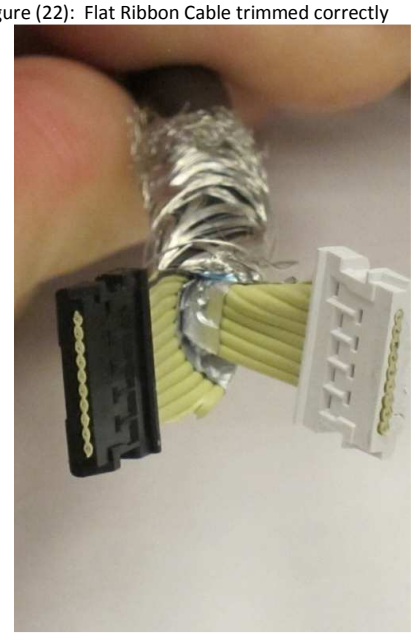
3.4.5 Fully insert the ribbon cable into Slot 1 of the HD Termination Tool.
Note: The side with the arrow should be facing up.
Caution: Ensure the sleeve is fully seated into the tool; otherwise the sleeve may be damaged.
Fully squeeze the crimp tool until the ratchet releases. Remove the sleeve from the crimp tool. The ribbon cable should be cut flush with the sleeve. Repeat this step for the other sleeve.

Figure (21): Slot 1

Figure (22): Flat Ribbon Cable trimmed correctly



3.4.6 Orientate the two sleeves so the IDC slots are facing inward per Figure 22.

3.4.7 Retrieve the connector from the staged supplies and locate the side that has one IDC pin longer then the rest. This pin corresponds to the white cable sleeve. Line up the cable sleeves on the connector and press firmly together. There are orientation lugs that line up to show proper fit and the IDC contacts will fit into the IDC guide slots.
CAUTION: The connector may be damaged during the crimp process if the cable sleeves are not properly aligned with the connector.

Figure (23): IDC slots and Connector IDC Pins

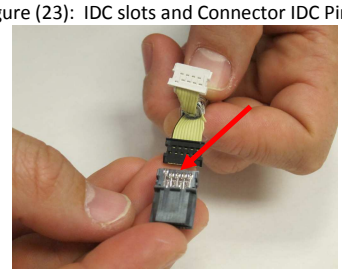
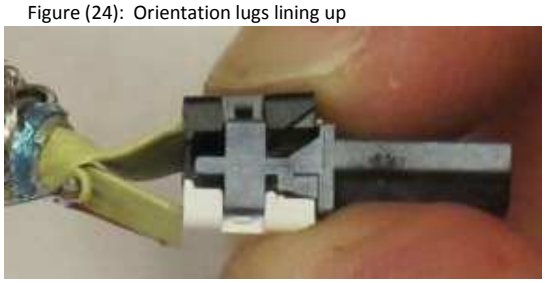


Figure (24): Orientation lugs lining up



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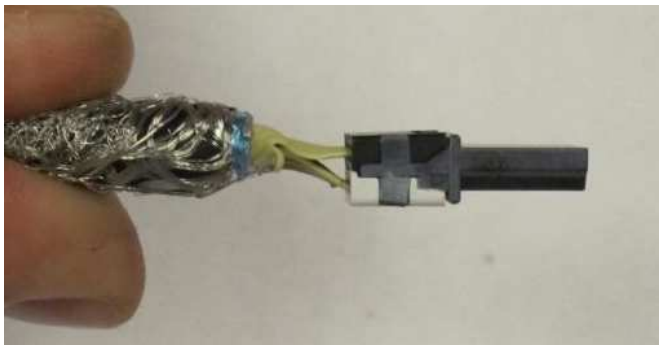
3.4.8 Insert the assembled connector and sleeves into the termination tool slot # 2. Ensure the connector is orientated per the silhouette Figure on the tool. Seat the connector fully against the stop and fully squeeze the crimp tool until the ratchet releases. Remove the connector.

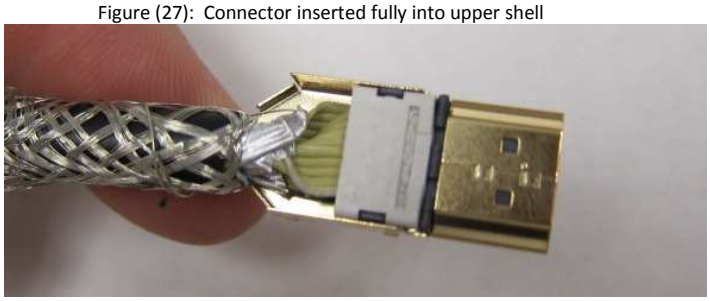
Figure (25): Assembled connector into Slot 2

Figure (26): Correctly crimped connector



3.4.9 Insert the crimped connector with the white cable sleeve facing up into the upper connector shell. There is a slight lip on the shell that the installer will need to lift the nose of the connector to start the insertion. Insert fully as the connector will latch into place when fully loaded.

Figure (27): Connector inserted fully into upper shell



3.4.10 Install the lower connector shell. There are 4 lugs on the upper shell and these must align and snap into place with the 4 openings on the lower shell. There is usually an audible click when these latch together. Caution: Do not put pressure on the exposed tabs as they can injure fingers.

Figure (28): Applying the lower shell

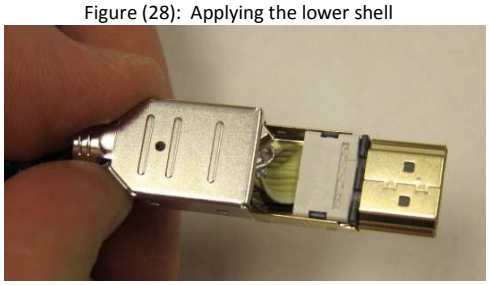
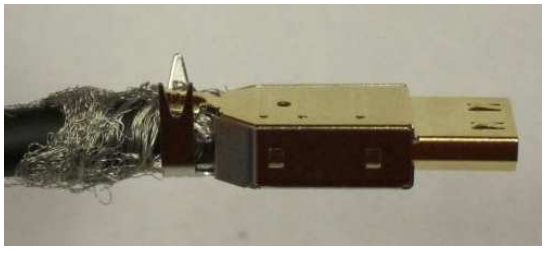


Figure (29): Properly assembled connector shells.



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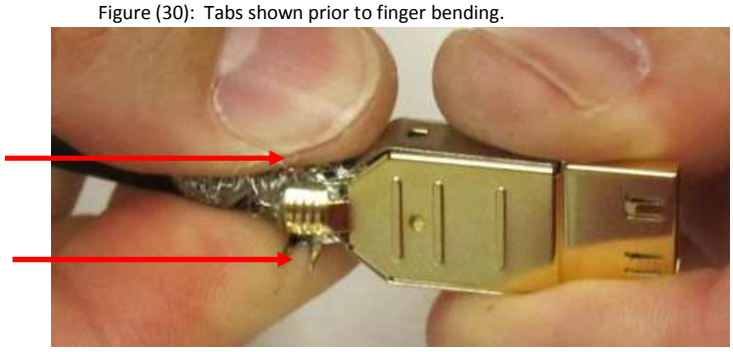
3.4.11 Cable strain relief crimp preparation. Carefully bend the two tabs inward around the cable assembly.

Figure (30): Tabs shown prior to finger bending.



3.4.12 Place connector assembly into HD Termination Tool Slot 3, as shown in figure 31. CAUTION: The connector assembly may be damaged during the crimp process if not properly positioned into slot #3.
Fully squeeze the crimp tool handles until the ratchet is released. Ensure both tabs are fully crimped around the cable jacket. Re-position and re-crimp if necessary.

Figure (31): Strain Relief Crimp

Figure (32): Properly crimped strain relief

3.4.13 Trim off the excess braid shield within 1/8th inch of the strain relief after the strain relief crimp is complete.

Figure (33): Trimming braid shield

Figure (34): Trimmed shield

3.4.14 Upper and Lower Hood assembly. Lay the assembled connector with the silver colored lower shell facing down into the lower hood. The plastic protective film can be removed if desired before assembly. Assemble the upper hood lined up on the lower hood and press firmly together. The units will snap together. Note: Hoods can be removed by gently prying them apart.

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Figure (35): Assembled Connector laid into lower hood.

Figure (36): Final Assembled Connector.

4.0 Testing and Validation.

4.1 Liberty AV Solutions offers an HDMI Continuity tester that will ensure full pin out compliance. Contact your sales representative for more information.

5.0 Product Limitations and restrictions

5.1 Typical performance limitation is 9 meters / 30 feet for maximum passive cabling runs.

5.2 16 meters / 52.5 feet maximum cabling runs with an extender.

5.3 Actual performance may vary and is dependent upon the source and display equipment used.

5.4 Published Electrical Code requires this bulk cable be run in conduit or outside a wall. In-wall cable design is in development. Consult your local code office if you need more assistance.

Liberty AV Solutions supports the custom installer. Do you need help? Do you have feedback? We want to know. E-mail our technical group at techquestions@libav.com or (800) 530-8998 and ask for Technical Assistance.

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