Liberty's Adapter Security System also known popularly as the "Digital Keychain".

Some key questions that led to the creation of the "Digital Keychain".

(1) Do your clients have conference rooms and presentation applications where people bring their own devices (BYOD) to the event and need to connect to display content?

(2) Do you find yourself having to replace adapters again and again because they walk away with the presenter?

If you answered yes to either question then the Digital Keychain system is a product you can offer. Liberty developed this system working with one of the largest organizations in the world. Said organization was losing $30K worth of adapters each month and came to Liberty to solve the issue. Liberty's engineering team put our heads together and came up with a modern equivalent to the old "Hotel Pen on a chain". This system uses a couple of security features to prevent theft and make it easy to customize. First the cable itself is locked together with a set screw collar that resides hidden inside the clamp and second the clamp is assembled with Torx® Pin drive screws, necessitating a not-so-common tool to disassemble the clamp. We made the clamp to look like the typical ferrite choke you find on VGA cables and it applies behind the head of the HDMI cable used in the infrastructure. Two sets of foam rubber inserts allow you to size the clamp to the HDMI cable in use. The aircraft grade cable completes the system, it can be cut by a determined thief, but it will damage most cutters used for copper cabling.

Liberty Patented this design and system, US Patent 9,784,338. We expanded the lineup of adapters and added a clamp for Apple® and other adapters. That Apple clamp can be used to add any other adapter cable that has a cable body with a diameter between 3.5 and 5.5mm. You will find a table at the end of the document listing what we have to offer to make your Keychain complete.

We listen to our customers and their suggestions and feedback. The first changes we've made are slimmer adapters with 4-way eyelets. These new slimmer designs are shipping now. The 4-way eyelet allows you to configure the feed of the security wire. Depending on your application, the wire feed will permit the adapter to lay flat. The slimmer design allows your tablets and smartphones to lay flat on a surface. Unfortunately we are limited by the requirements of the full sized HDMI "A" receptacle, so we can't get much thinner on the hard adapters.

We have a solution though for those very thin BYOD products! We address those very thin tablets and smart phones with newly introduced cable versions of each adapter, commonly called dongles. These have very low profile molded mini connectors on a short flexible cable, permitting both a flat lay and preventing the heavy HDMI infrastructure cable from stressing out the connector. We also revised these to have an overall length of around 5 inches.

Speaking about the connector stress, sometimes these adapters do break. They are designed that way to protect the ports on your client's devices. It is a much better scenario for an inexpensive adapter to break instead of your client's brand new tablet or PC. We keep a large stock on hand for repair and replacement. These do have a 1000 mating cycle lifespan recommendation. We do not warranty the individual adapters for breakage as the use pattern is as an expendable component. Breakage can be minimized by designing the installation to support the cable and the presentation device in a manner to reduce stress on the connector.

Liberty has a special configuration tool on our website where you can choose the adapters you want on your adapter security ring. A custom part number will be assigned for you and you can label the product with your company's information for marketing and service purposes.   Standard non-custom configurations will start with part numbering sequence "DL-AR*".

Don't forget your tools! The Torx™ Pin Drive security screw needs a special tool to open and configure your adapter. Liberty item T10PD is a kitted set of a Torx™ Pin Driver and a 1.5mm Hex wrench. That is all you need to configure your adapter ring.

Add other adapters! Make it a VGA solution instead of an HDMI solution! We have special small clamps under part number DL-AP that will allow you to attach any other dongle to the security ring. All you need is the Torx™ Pin Driver to assemble. Apple™ would not permit edits to their adapters so we developed these to attach the Apple dongles. They fit any other adapters with the same small cable format and we already have customers who have created a VGA ring of dongles.

The standard adapter is rated for WUXGA/1080P, we do have 4K formats for USB C, DisplayPort and Mini-DisplayPort. Some helpful hints in deploying the Digital Keychain:

(1) The mating cable to a 4K adapter should be kept short, 10 feet or less. HDMI Premium® certified cables will work to 15 feet.
(2) Active Optical Cables are not recommended for use with the 4K or active DisplayPort and Mini-DisplayPort adapters, they need power and so does the adapter. 2 power draws on one port can cause system issues.
(3) Active Copper cables are not recommended as most use the RedMere/Spectra7 technology. This technology is not compatible with the chipset used in 4K adapters and dongles.
(4) The USB C adapters use ALT-DP mode, ensure the source device supports ALT-DP. Not all sources support ALT-DP mode.
(5) Non-standard resolutions are not supported, only HDMI specification supported resolutions are supported.
(6) Per the first paragraph above, the adapters and dongles can be broken, we recommend offering dongles on the smaller connectors to reduce breakages. Micro HDMI D, Mini-DP and USB C are smaller formats that can be broken easily.
(7) If you deploy a lot of these, keeps some spares on hand to service the clients. These are consumable units and should be on a preventive maintenance schedule.

Here is a part number listing of the entire Adapter Security System.

ITEM_NBR	DESCRIPTION
Hard Adapters	
ARDPHD	DisplayPort Male to HDMI Female adapter
ARDVHD	DVI-D Single Link Male to HDMI Female adapter
ARMCHD	Mini "C" HDMI Male to HDMI Female adapter
ARMDHD	Micro "D" HDMI Male to HDMI Female adapter
ARMDPHD	Mini-DisplayPort Male to HDMI Female adapter
ARDP4KHF	DisplayPort Male to HDMI Female adapter 4K (Firmware updateable)
ARMDP4KHF	Mini-DisplayPort Male to HDMI Female adapter 4K (Firmware updateable)
ARUCMHDF	USB "C" male to HDMI Female adapter (Firmware updateable)
Flexible Adapter Cables AKA Dongles	
AR-DPM-HDF	DisplayPort Male to HDMI Female Dongle
AR-DVM-HDF	DVI-D Single Link Male to HDMI Female Dongle
AR-MCHM-HDF	Mini "C" HDMI Male to HDMI Female Dongle
AR-MDHM-HDF	Micro "D" HDMI Male to HDMI Female Dongle
AR-MDPM-HDF	Mini-DisplayPort Male to HDMI Female Dongle
AR-MHLM-HDF	MHL (Micro USB) Male to HDMI Female Dongle
AR-UCM-HDF	USB "C" male to HDMI Female Dongle (Firmware updateable)
AR-DP4K-HDF	DisplayPort Male to HDMI Female Dongle 4K (Firmware updateable)
AR-MDP4K-HDF	Mini-DisplayPort Male to HDMI Female Dongle 4K (Firmware updateable)
Accessories and Tools	
T10PD	Security Adapter Tool Kit with T-10 Pin Driver and 1.5mm Hex Wrench
DL-AP	Security Adapter Small Clamp to attach other dongles to the Adapter Ring
DL-CL	Main Security Clamp with hardware, foam inserts and security wire
Apple™ Adapters (A DL-AP needed for each one)	
MD826AM/A	Apple™ Lightning Male to HDMI Female Dongle
MD825ZM/A	Apple™ Lightning Male to VGA Female Dongle **(Discontinued, stock is depleting)**
MC552ZM/B	Apple™ 30-Pin Male to VGA Female Dongle
MMX62AM/A	Apple™ Lightning Male to 3.5 Female Audio Dongle **(NEW)**
MJ1K2AM/A	Apple™ USB "C" to Multimedia HDMI female Dongle **(NEW)**
MB572Z/B	Apple™ Mini-DisplayPort to VGA female Dongle **(NEW)**
MMEL2AM/A	Apple™ Thunderbolt 3 (USB C) to Thunderbolt 2 (mini-DP) Dongle **(NEW)**
Most Popular Pre-configured Formats	
DL-AR	Adapter Ring with DP, Mini-DP, Mini-C, Mini-D, and DVI adapters
DL-AR2	Adapter Ring with DP, Mini-DP, Mini-C, and Mini-D adapters
DL-ADR	Adapter Ring with DP, Mini-DP, Mini-C, Mini-D, and DVI dongles
DL-ADR2	Adapter Ring with DP, Mini-DP, Mini-C, and Mini-D dongles
Need to add a VGA Solution?	
AR-VMU-HDF	VGA+USB to HDMI Female Dongle
DL-AR6	ADAPTER RING MDP/MICRO D-VGA
E-MDPM-VGAF	ADAPTER CABLE, MDP M TO VGA F (DL-AP needed to mount)
P131-06N-MICRO	ADAPTER CBL HDMI D M TO VGAF (DL-AP needed to mount)
E-DPM-VGAF	ADAPTER CABLE, DP M TO VGA F (DL-AP needed to mount)

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