

# HD-BNC Resource and User Guide



Thank you for your interest in Harris Broadcast Communications products using the new Amphenol® HD-BNC™ connector which has greater I/O density. Since this connector represents a change from the widely used BNC connector, there may be concerns about, installation, mechanical robustness and the ability to support higher data rates. This resource guide is intended to provide Selenio users with both basic and detailed information

on the HD-BNC system, enabling a quick transition to using this new form of connector. Facility management, engineers and installers should review this document to become familiar with the features and advantages of high-density BNCs.

Additional questions on HD-BNCs can be answered by calling Harris Customer Service at (888) 534-8246 or e-mailing [hdbnc@harris.com](mailto:hdbnc@harris.com).



## HD-BNC Quick Facts

**Installation:** High-density BNC connectors use the same industry-standard cable stripping dimensions and hex crimp size as standard BNC connectors. Selenio owners will be able to continue to use their current coaxial strippers, crimp tools and dies. Functional crimp tests were performed by Harris and Amphenol on all standard coaxial sizes, and it was found that all commonly used crimp dies (i.e., Canare, Paladin, etc.) worked well with the HD-BNCs. No special installation techniques are required. Please see page 6 for stripping guides and crimp tool specifications.

**Wire Size:** HD-BNC connectors may be used with the most common coaxial types. Specific connectors are available for Belden types 1505A, 1694A and 1855A, as well as equivalents from other vendors. Please see page 3 for a cross reference chart detailing connector part numbers and cable types.

### **HD-BNC Insertion / Extraction Tool and Cable Adaptors:**

To facilitate initial testing and configuration of Harris products that utilize the HD-BNC, there is a HD-BNC Insertion / Extraction Tool and BNC to HD-BNC adaptor cables for video and audio cables. The following may be ordered from your Harris BCD dealer or salesperson.

#### **SELOPTCAB-HD-BNC-V**

HD-BNC Plug to BNC Jack Adaptor Cable for Video (12")

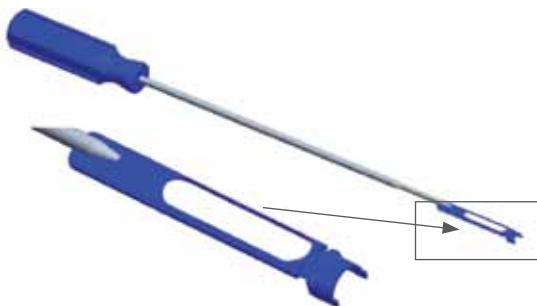
#### **SELOPTCAB-HD-BNC-A**

HD-BNC Plug to BNC Jack Adaptor Cable for Audio (12")

#### **SELOPT-TOOL-CABLE**

HD-BNC Cable Insertion and Extraction Tool

Installation technicians should note the prongs on the sides of the tool, which align with corresponding slots on the ferrule of the HD-BNC connector. Please see page 6 for technical drawings of the connector.



HD-BNC insertion/extraction tool

**Availability:** HD-BNC connectors are currently available from a number of well-known suppliers. Along with direct availability from Amphenol, connectors are also stocked by Digi-Key, Newark, Markertek, Mouser and Argosy. Please see the accompanying vendor list that can be found where this document was downloaded. If you have any difficulty in acquiring HD-BNCs, please contact your Harris sales representative, dealer or send an email to [hdbnc@harris.com](mailto:hdbnc@harris.com).

**Electrical Performance:** Despite the reduced size of the HD-BNC connection system, it meets or exceeds the electrical qualities of the standard BNC connector. Unlike other small-form-factor connectors, the HD-BNC is a true 75 ohm connector. It has been designed and rigorously tested to ensure optimal transmission per SMPTE 292M and 424M standards for both analog and digital video and digital audio signals. The connectors have been designed for extended frequency response up to 6 GHz to allow for the requirements of future high-bandwidth transmission systems. For details on those test procedures and results, please go to the technical reference hyperlinks on page 3.

**Mechanical Performance:** High-density installations of coaxial cable can produce significant in-line and side loads to connectors and devices. Tightly bundled cable assemblies may also result in a semi-blind mating condition, which can lead to connectors being mated at an off-angle. This can damage both sides of a connection system. Earlier small coaxial connection systems were particularly vulnerable to these issues. HD-BNCs have been designed with these load factors taken into account and will resist 122 lbs. side load (well within the 100 lbs. required for BNC connectors). Testing of the amount of splay (the “wobble” the interface displays when a side-to-side cable movement is applied) showed that the HD-BNCs showed less movement than standard BNCs. This results in lower return loss from the connector. For more information on the technical specifications for the HD-BNC, please see hyperlinks on page 3.

## Links to HD-BNC Technical References

### Harris White Paper:

The New Connectivity – Is the BNC Connector Dead?

[www.broadcast.harris.com/media/BNCConnectorWP\\_25-15158.pdf](http://www.broadcast.harris.com/media/BNCConnectorWP_25-15158.pdf)

### Amphenol White Paper:









SMPTE Meeting Presentation: High-Density Interconnect Standards for Next-Generation Broadcast Networks

[www.amphenolrf.com/HDBNC/HDBNCWhitePaper.asp](http://www.amphenolrf.com/HDBNC/HDBNCWhitePaper.asp)

## Amphenol HD-BNC Part Numbers and Accessories

Type	Belden	Times Fiber	DRAKA/ ARGOSY	HD-BNC Plug	Impedance (ohms)	Core OD	
						inches	mm
RG-6/U (18 AWG)	1694A	T6940A	IMAGE 1000	034-1017-300	75	0.039	1.000
	1695A	—	—	034-1027	75	0.039	1.000
MICRO RG-59/U (23 AWG)	1855A	T8550A	—	034-1026	75	0.24	0.600
	1855ENH	—	0.6/2.8	034-1037			
	1855ENH	—	Image 360	034-1037-100			
RG-59/U (20 AWG)	1505A	T5050A	Image 720	034-1025	75	0.032	0.813
RG-179/U (28 AWG)	83264	—	—	034-1042	75	0.012	0.305

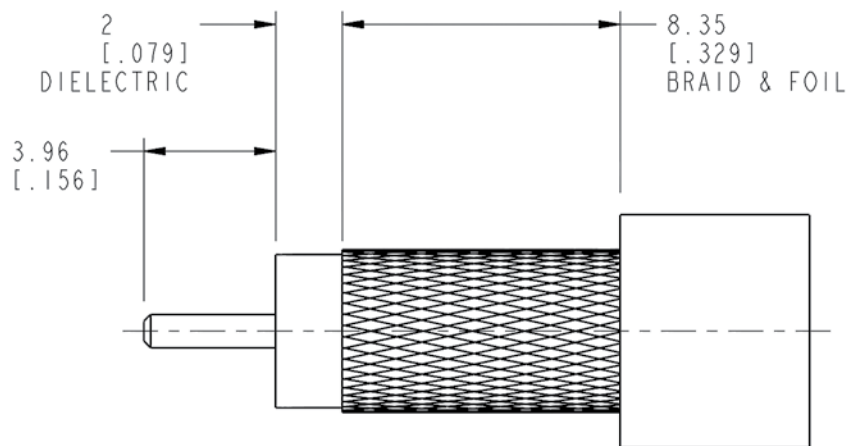
## Amphenol HD-BNC Part Numbers and Accessories

Plugs for High-Density Cables		
034-1033	Plug for Times Fiber T210HDTV	
034-1026	Plug for Belden 1855A, T8550A	
034-1037	Plug for Belden 185SENH, DRAKA 0.6/2.8 AF	
034-1037-100	Plug for Image 360	
Plugs for Standard Cables		
034-1027	Plug for Belden 1695A, T69SOA	
034-1017-300	Plug for Belden 1694A, Image 1000, T6940A	
034-1025	Plug for Belden 1SOSA, Image 720	
PCB Connectors		
034-1021	Vertical Jack, 3 Leg, Square	
034-1032	Vertical Jack, 3 Leg, Round	
034-1018	Edge Launch, Jack, BH	
034-1030	Right Angle, Jack, BH	
034-1024	Vertical Jack, 4 Leg, Square	
034-1028	Vertical Jack, 4 Leg, Square, BH	
031-1040	Vertical Jack, 4 Leg, Square, Extended, BH	
Adapters		    
APH-BNCJ-HDBNCP	BNC Jack to HD-BNC Plug	
APH-BNCJ-HDBNCJ	BNC Jack to HD-BNC Jack	
APH-BNCP-HDBNCP	BNC Plug to HD-BNC Plug	
APH-BNCP-HDBNCJ	BNC Plug to HD-BNC Jack	
APH-HDBNCP-J	HD-BNC Plug to HD-BNC Jack	
APH-HDBNCJ-J	HD-BNC Jack to HD-BNC Jack	
APH-HDBNCJ-T	HD-BNC Jack Termination	
APH-HDBNCP-T	HD-BNC Plug Termination	
APH-HD-ISO-HD Panel	HD-BNC Jack to HD-BNC Jack, Isolated Adapter	
APH-HD-ISO-BNC Panel	HD-BNC Jack to BNC Jack, Isolated Adapter	
APH-HD-ISO-1 023 Panel	HD-BNC Jack to 1.0/2.3 Jack, Isolated Adapter	
APH-NJ-HDBNCJ	N Jack to HD-BNC Jack	
APH-NJ-HDBNCP	N Jack to HD-BNC Plug	
APH-NP-HDBNCJ	N Plug to HD-BNC Jack	
APH-NP-HDBNCP	N Plug to HD-BNC Plug	
034-1023	HD BNC TEE Adapter, Jack (3)	
Assembly Tools		
227-1490	Spanner NutTool	
227-T2000	Mating   Unmating Tool	
APH-HDBNC-EVAL	Evaluation Kit	

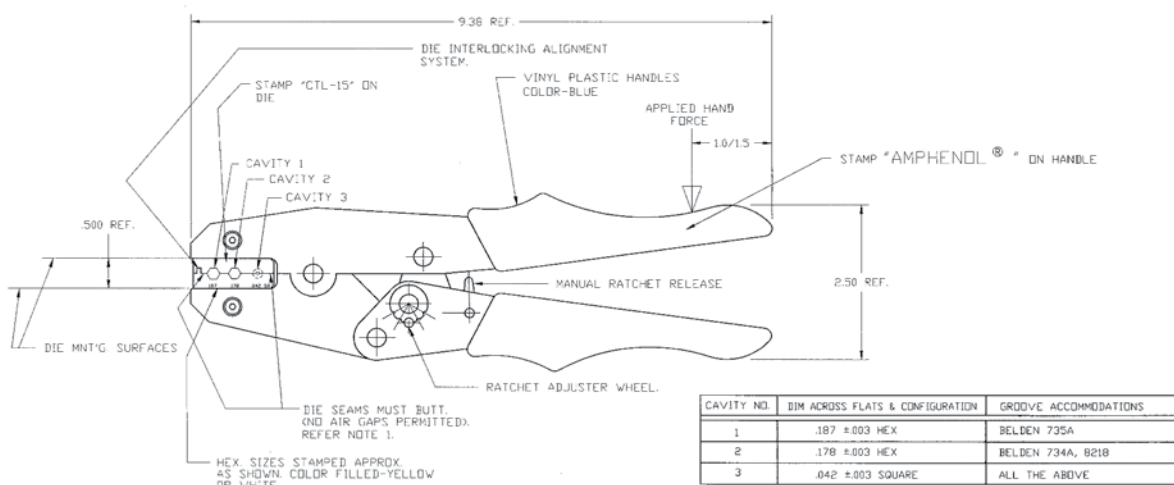
## Argosy HD-BNC Part Numbers and Accessories

High Density BNC	ARGOSY	BELDEN	DRAKA	CRIMP TOOL FRAME	CRIMP TOOL DIE	STRIPPER
BA-65-0100	N/A	1855A	N/A	MA-99-027	MA-99-027	MC-99-012
BA-65-0101	Image 360	1855ENH	0.6/2.8AF	MA-99-027	MA-99-024	MC-99-012
BA-65-0103	Image 720	1505	0.8/3.7AF	MA-99-027	MA-99-045	MC-99-012
BA-65-0105	Image 1000	1694	1.0/4.8AF	MA-99-027	MA-99-024	MC-99-012

## Stripping Dimensions and Crimp Tool Specifications



SCALE 4.000





**For more information, visit:**

[www.broadcast.harris.com/selenio](http://www.broadcast.harris.com/selenio)

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