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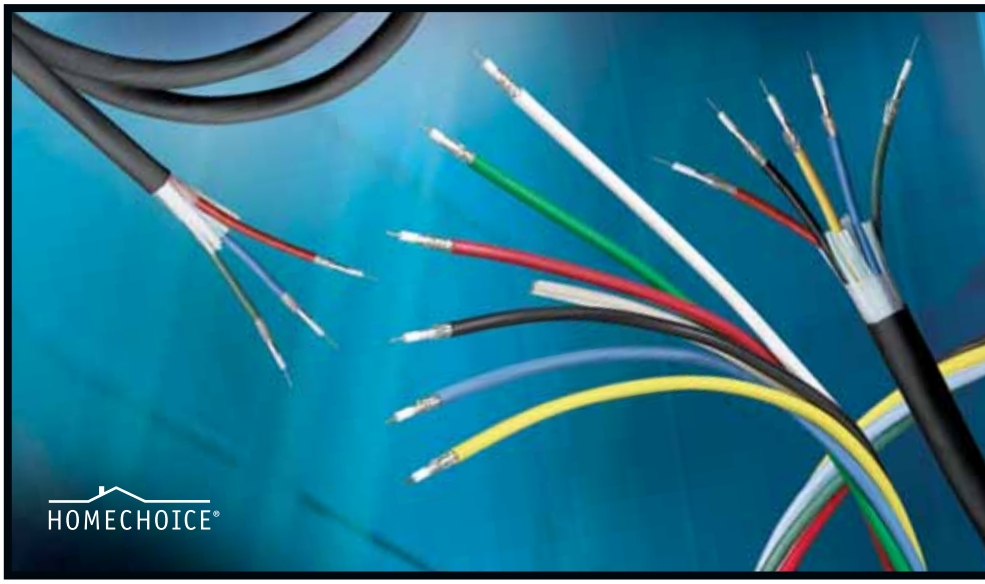
New Product Bulletin

NP 237

HomeChoice® Mini Hi-res Component Video Cables

HomeChoice Mini High-res Component Video cables are the industry's first cables to offer precise 75 ohm impedance to optimize whole-system performance.



Belden® Expands Its HomeChoice Line of Mini High-res Component Video Cables for RGB, DTV and HDTV Applications to Include Banana Peel® Constructions

The RGB standards were designed to address analog video's ability to capture and transmit complex moving images, loaded with information, utilizing analog-only equipment and frequency-limited cables. Most RGB cables available today are still designed for these outdated standards, formats and frequencies.

Precision analog video, utilizing cables that provide greater signal integrity, delivers a better picture than typical RGB transmissions, but digital video and HDTV run at higher frequencies and make better use of component video for even greater picture clarity.

To accommodate the need for higher frequency, longer distance transmissions and the ability to run more demanding applications such as high resolution graphics on large screens, HDTV, Hi-res CAD, animation, editing and special effects, a true 75 ohm, high-frequency cable with optimum design features is needed. HomeChoice Mini High-res Component Video cables meet these new high-end requirements. The unique design of these cables also makes them ideal for multiple runs of composite video signals such as SDI or HDTV (video snake cable).

Banana Peel Constructions Offer Many Labor Saving and Easy-Identification Features

Banana Peel Hi-Res Component Video cables will decrease your labor costs because the overall jacket has been eliminated. Without the overall jacket, a whole step in the termination process has been removed, plus the individual cable components are all instantly identifiable (the individual cables are color-coded and the print legends are immediately visible). And, these cables are ready for termination — just peel the individual cables off the center spline and terminate. The elimination of the overall jacket also means that the composite has a smaller diameter, so the cable's overall bend radius is improved.

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Belden® HomeChoice Mini Component cables meet the needs of demanding hi-res applications such as HDTV, animation and CAD.

Construction Details

Bundled mini coaxial cables are used for component video formatted applications that segment the video signal into Red, Green and Blue elements, identified through use of corresponding cable jacket colors (RGB cables). Synchronization (Sync) and Vertical Hold (Hold) signals can be embedded within one of the elemental video components or they can be transmitted separately utilizing the 4th and 5th coaxes. When present, the 4th coax has a Yellow jacket; the 5th coax has a Black jacket. Contemporary applications sometimes include a 6th White-jacketed coax for digital audio, auxillary audio or video.

HomeChoice® Mini Component riser-rated (CMR) cables are available in bundles comprised of 3, 5 or 6 coaxes. The conductors are 25 AWG (solid) tinned copper, rather than the traditional 26 AWG stranded analog style. The insulation is high-density foamed PE. Shielding is Duobond® foil (100%) combined with Belden's unique interlocked serve shield. The individual coax jackets are PVC; the coax bundles are available with an aesthetically pleasing overall PVC jacket or in the exclusive unjacketed Banana Peel® construction.

Exceptional Benefits

Superior cable design means more benefits to both the installer and end-user.

Key features and benefits include:

- Solid copper center conductor — low attenuation, easier termination.
- High velocity, low-loss PE insulation — low attenuation, long distances and improved timing.
- Foil under braid shielding — Broadcast Quality standard, contributes to low attenuation and is easier to terminate.
- The foil layer of the shield is semi-bonded to the dielectric to hold in place for RCA- and F-style connectors, but can also be removed if desired for BNC connectors to minimize conductor- to-shield shorts.
- Unique interlocked serve shield (won't open if bent) — achieves uniform, consistent coverage.
- Jacketed constructions use a round, uniform, flexible jacket — for professional appearance, proper boot fit, easy flexing for installation and equipment hook-up.
- Banana Peel constructions will decrease labor costs because the overall jacket has been eliminated, just peel and terminate.
- Sweep tested — every reel is tested and verified to have a minimum Return Loss of 20dB at all frequencies up to 850 MHz.
- True 75 ohm impedance — ensures no impedance mismatches for optimal whole-system performance, quality signal transmission over long distances.
- Fits standard Mini RGB and coaxial connectors — for installation flexibility.
- Color-coded jackets — for easy circuit identification.
- Rip cord — included for easy jacket removal.
- Sequential marking — for usage tracking during installation.

See table (opposite page) for a features/ benefits comparison of traditional analog Mini RGB cables vs. Belden Mini Component digital-ready cables.

Applications

Belden HomeChoice® Mini Component cables are ideal for high-resolution monitor and projection imaging in the following situations:

- Home theater
- Sophisticated home offices and small offices

Belden's HomeChoice Mini Component Video cables are the ideal choice for Home Theaters, or any high resolution application.

Traditional Analog Styles vs. Belden Digital-Ready Mini RGB Cables

Attribute	Traditional Analog Mini RGB Cables	Belden Digital and Precision Analog Component Cables
Conductor	26 AWG Stranded	25 AWG Solid Lower attenuation, lower DCR. Dramatically easier connectorization.
Dielectric	Foam low-density PE 78% to 81% Velocity Greater material and process variability. Low crush resistance and impedance stability	Foam HDPE 81% Velocity. High-density foam, excellent crush resistance and impedance stability. Better Return Loss. Excellent material and process stability. Lower attenuation, longer distances, improved timing.
Shield	Foil over serve Higher attenuation. Serve opens if bent, serve bunches up under stress. Individual wires aren't stabilized. Lower shield effectiveness.	Unique interlocked serve over foil. Individual wires are stabilized and locked in place by a counter-direction, single weave braided through. Uniform coverage and better shield effectiveness. Foil is under the tinned copper (serve) in accordance with Broadcast Quality cable design convention. This gives significantly lower attenuation and permits the foil to remain on the dielectric, and under the connector collar, for best practice terminations. The foil is lightly bonded to the dielectric, holding in place for RCA and F connectors, or is easily removed, if desired, for BNC connectors.
Impedance	68 to 72 ohms actual Don't be fooled by "nominal."	75 (±3) ohms
Design Frequency	50 MHz, Analog RGB	850 MHz Exceeds the bandwidth requirements for analog RGB, digital RGB, analog component, (Y', P_B', P_R'), digital component (Y', C_B', C_R') and all SDI systems. Exceeds the primary frequency for HD-SDI.
Attenuation	Unnecessarily high	10% lower Provides increased transmission distances.
Return Loss and Sweep Test	No information available.	-20dB min. Guaranteed 5 MHz to 850 MHz. Tested at 75 ohms — fixed bridge. Each cable of each spool tested.

Connector Availability

Manufacturer	Style	Part No.
Belden	BNC Straight BNC Right Angle RCA Straight RCA Right Angle	HC2920A HC2921A HC2910A HC2911A
ADC	BNC	BNC-16
Extron	BNC	100-074-51
Holland	BNC F RCA	SLC-BNC-MINI25 SLC-MINI25 SLC-RCA-MINI25
ICM	RCA	FSRCA-1RGB
Kings	BNC	2065-25-9
Liberty	BNC	112491-10
Trompeter	BNC	105-2053-9

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Mini High-res Component Video Cables—Jacketed

Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Cond.	Standard Lengths		Standard Unit Weight		Conductor (stranding) Diameter Nom. DCR	Nominal Core OD		Shielding Materials Nom. DCR	Jacket Nom. Diameter		Nom. Imp. (Ω)	Nom. Vel. of Prop.	Nominal Capacitance		Nominal Attenuation		
				Ft.	m	Lbs.	kg		Inch	mm		Inch	mm			pF/Ft.	pF/m	MHz	dB/ 100 Ft.	dB/ 100m

Miniature • 25 AWG Solid .018″ Tinned Copper Conductors • Duobond® Foil (100% Coverage) + Tinned Copper Interlocked Serve Shield

Gas-injected Foam High-density PE Insulation • PVC Inner Jackets • Black PVC Jacket

HC2648R	NEC: CMR CEC: CMG	3	500	152.4	25.5	11.6	25 AWG (solid) .018″ TC 34.0Ω/M′ 111.5Ω/km	.074	1.88	Duobond (100%) + TC Braid 5.4Ω/M′ 17.7Ω/km	Single: .114 2.90 Overall: .320 8.13	75	80%	17.0	.8	1	.50	1.6
																5	1.2	3.9
																10	1.6	5.2
																20	2.4	7.9
																50	3.8	12.1
																71	4.4	14.1
																100	4.9	16.1

HC2650R	NEC: CMR CEC: CMG	5	250 500	76.3 152.4	21.3 40.0	9.2 18.1	same as above	.074	1.88	same as above	Single: .114 2.90 Overall: .403 10.24					135	5.6	18.4
																180	6.4	21.0
																200	6.7	22.0
																270	7.7	25.2
																400	9.5	31.1

HC2654R new	NEC: CMR CEC: CMG	6	250 500	76.2 152.4	19.8 39.5	9.0 17.9	same as above	.074	1.88	same as above	Single: .114 2.90 Overall: .423 10.74					750	13.4	44.0
																1000	15.8	51.8
																2250	26.1	85.6
																3000	32.2	102.3

Sweep Tested 5 MHZ to 850 MHz.
Guaranteed Return Loss –20dB Max

Mini High-res Component Video Cables—Banana Peel® Unjacketed

Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Cond.	Standard Lengths		Standard Unit Weight		Conductor (stranding) Diameter Nom. DCR	Nominal Core OD		Shielding Materials Nom. DCR	Nominal OD		Nom. Imp. (Ω)	Nom. Vel. of Prop.	Nominal Capacitance		Nominal Attenuation		
				Ft.	m	Lbs.	kg		Inch	mm		Inch	mm			pF/Ft.	pF/m	MHz	dB/ 100 Ft.	dB/ 100m

Miniature • 25 AWG Solid .018″ Tinned Copper Conductors • Duobond® Foil (100% Coverage) + Tinned Copper Interlocked Serve Shield

Foam HDPE Insulation • PVC Jackets in Colors (See Chart) **• Center Spline Binder**

HC2651R new	NEC: CMR CEC: CMG	3	500	152.4	15.5	7.0	25 AWG (solid) .018″ TC 32.4Ω/M′ 111.6Ω/km	.074	1.88	Duobond (100%) + TC Serve (95%) 5.4Ω/M′ 17.7Ω/km	Single: .114 2.90 Overall: .246 6.20	75	80%	17.0	.8	1	.50	1.6
																5	1.2	3.9
																10	1.6	5.2
																20	2.4	7.9
																50	3.8	12.1
																71	4.4	14.1
																100	4.9	16.1
																135	5.6	18.4

HC2652R new	NEC: CMR CEC: CMG	5	250 500	76.5 152.4	15.5 31.0	7.0 14.1	same as above	.074	1.88	same as above	Single: .114 2.90 Overall: .308 7.82					180	6.4	21.0
																200	6.7	22.0
																270	7.7	25.2
																400	9.5	31.1
																750	13.4	44.0
																1000	15.8	51.8

HC2653R new	NEC: CM CEC: CMG FT4	6	250 500	76.2 152.4	20.9 41.8	9.5 19.0	same as above	.074	1.88	same as above	Single: .114 2.90 Overall: .342 8.69					2250	26.1	85.6
																3000	32.2	102.3

100% Sweep tested. 5 MHz to 850 MHz.
Guaranteed Return Loss -20db max.
US Patent 7,049,523.

DCR = DC Resistance • HDPE = High-density Polyethylene • TC = Tinned Copper

Color Code Chart:

Cond.	Color	Cond.	Color
1	Red	4	Yellow
2	Green	5	Black
3	Blue	6	White