### **Broadcast and Entertainment Products**

Video Patching Systems

### **2nd Edition**



Tyco Electronics and ADC are now **TE Connectivity** 



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ProPatch® Miniature (PPM) Series

### Super High-Density Coax Patching System

The ProPatch® Miniature (PPM) Series is an all new Super High-Density Coax (SHDC) patching system designed for High Definition (HD), SDI, AES audio,



5.1 and 7.1 audio applications where coax medium is preferred but space is at a premium. The system is available in both 1 and 1.5 rack unit configurations. The 1 rack unit panel features a patent-pending pullout designation strip that dramatically increases space for text, and a high-density 2x48 circuit configuration of ports. The 1.5 rack unit panel features 4x48 ports.

The SHDC jack features a unique patent-pending switchable termination system that allows the user to select terminating and non-terminating 75  $\Omega$  functions on each circuit pair. The normal-through system is also available in a straight-through configuration for tie-line panels and applications where normals are not required. The SHDC high-performance normalling and straight-through LCC jacks are rated to SMPTE 424M HD standard. The SHDC AES jacks are rated for AES digital audio and analog video transmission. Both versions feature modular screwless mounting, circuit identification icons on the rear of the jack, 10,000 insertion/withdrawal cycles and are fully qualified to MIL-STD 202 for the ultimate in durability.

The system features two options. ADC's patented push-pull LCC connector technology on the backplane, or standard 1.0/2.3 connectors and ADC's patented LCC and LCP connectors terminate the same as a BNC using standard tooling.

### 1 Rack Unit Super High-Density Coax Patch Panel



#### **Features**

- High-density: 48 total jacks (2x48)
- Large designation strips: .440" wide designation on top and bottom; plus a 1" slide out designation
- Lightweight: Less then 1 Kg (2 lbs) total panel weight

## 1.5 Rack Unit Super High-Density Coax Patch Panel



#### **Features**

- High-density: 48 total jacks (2x48)
- Large designation strips: .680" designation on top and bottom
- Lightweight: Less then 1.4 Kg (3 lbs) total panel weight

### 1.5 Rack Unit Super High-Density Coax Patch Panel

#### **Features**

- High-density: 96 total jacks (4x48)
- Large designation strips: .440 " wide middle designation, .289 " on top and bottom
- Lightweight: Less then 1.8 Kg (3.8 lbs) total panel weight





### ProPatch® Miniature (PPM) Series

### **Specifications**

#### **ELECTRICAL**

Characteristic impedance: 75  $\Omega$ 

**Voltage rating:** 600 Volts RMS

**Bandwidth** 

 HD LCC:
 Up to 3 GHz

 HD 1.0/2.3:
 Up to 3 GHz

 Straight-through LCC:
 Up to 3 GHz

 Straight-through 1.0/2.3:
 Up to 3 GHz

 AES:
 Up to 500 MHz

**Contact resistance:** .030  $\Omega$  max change post environmental

**Insulation resistance:** 200 M $\Omega$  min change

**MECHANICAL** 

**Mechanical durability:** 10,000 cycles min (Front port: LCP) 500 cycles min (Back port: LCC)

Center contact retention: 6 lbs min
SHDC jack panel retention: 20 lbs min
Patch cord cable bend and twist: 500 cycles min

**ENVIRONMENTAL** 

**Thermal shock:** -40° C to 65° C, operating; -55° C to 85° C, non-operating

Moisture resistance:0% to 95%; MIL-STD-202 Method 106Corrosion (salt spray):MIL-STD-202 Method 101, test condition BFlammability:UL 94-VO rated (center conductor insulator)

Vibration:MIL-STD-202 Method 201Solvent resistance:MIL-STD-202 Method 215

**FINISH** 

**Sheet metal panel:** .060 CRS with protective black finish

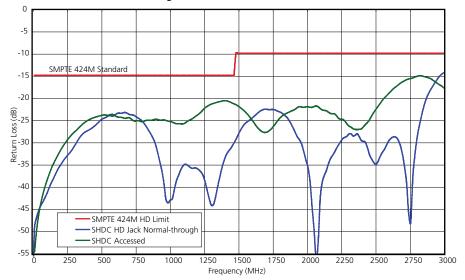
**Jack plastic housing:** 30% Glass Filled Valox

Nickel coax housings: Tarnish-resistant electroless nickel plating

**Springs:** Beryllium copper with 50 millionths inch gold plating

**Center conductors:** 50 millionths inch gold plating

#### Gated Return Loss High-Performance SHDC LCC Jack





# **Video Patching Systems**ProPatch® Miniature (PPM) Series

### **Ordering Information**

Descri	otion				Catalog Number						
ProPat	ProPatch® Miniature (PPM) Panels										
2x48	1 RU	LCC	Normalling	AES and Analog Video	PPM1248-LCC-BK						
				High-Performance, HD	PPM1248-LCCHP-BK						
			Non-Normalling	High-Performance	PPM1248-LCCNN-BK						
		1.0/2.3 jack	Normalling	AES and Analog Video	PPM1248-1023-BK						
				High-Performance, HD	PPM1248-1023HP-BK						
			Non-Normalling	High-Performance	PPM1248-1023NN-BK						
	1.5 RU	LCC	Normalling	AES and Analog Video	PPM15248-LCC-BK						
						High-Performance	PPM15248-LCCHP-BK				
			Non-Normalling	High-Performance	PPM15248-LCCNN-BK						
		1.0/2.3 jack	Normalling	AES and Analog Video	PPM15248-1023-BK						
				High-Performance	PPM15248-1023HP-BK						
			Non-Normalling	High-Performance	PPM15248-1023NN-BK						
4x48	1.5 RU	LCC	Normalling	AES and Analog Video	PPM15448-LCC-BK						
				High-Performance	PPM15448-LCCHP-BK						
			Non-Normalling	High-Performance	PPM15448-LCCNN-BK						
		1.0/2.3 jack	Normalling	AES and Analog Video	PPM15448-1023-BK						
				High-Performance	PPM15448-1023HP-BK						
			Non-Normalling	High-Performance	PPM15448-1023NN-BK						

### SHDC Jack

#### **Features**

- Switchable between terminating and non-terminating normalled-through
- Non-normalled jack offered in same jack housing, looping plug available for circuit patching

	Normalling AES	Straight-Through HD	Normalling HD
	SHDC-LCC	SHDC-LCC-NN	SHDC-LCC-HP
LCC			
	SHDC-1023	SHDC-1023-NN	SHDC-1023-HP
1.0/2.3			Co



ProPatch® Miniature (PPM) Series

### SHDC Jacks for PPM Panels

**ELECTRICAL** 

Characteristic impedance:

Voltage rating: 600 Volts RMS

**Bandwidth** 

HD LCC: Up to 3 GHz HD 1.0/2.3: Up to 3 GHz Straight-through LCC: Up to 3 GHz Straight-through 1.0/2.3: Up to 3 GHz AES: Up to 500 MHz

Contact resistance: .030  $\Omega$  max change post environmental

Insulation resistance: 200 M $\Omega$  min change

**MECHANICAL** 

Mechanical durability: 10,000 cycles min (Front port: LCP) 500 cycles min (Back port: LCC)

Center contact retention: 6 lbs min SHDC jack panel retention: 20 lbs min Patch cord cable bend and twist: 500 cycles min

**ENVIRONMENTAL** 

Thermal shock: -40° C to 65° C, operating; -55° C to 85° C, non-operating

0% to 95%; MIL-STD-202 Method 106 Moisture resistance: Corrosion (salt spray): MIL-STD-202 Method 101, Test Condition B UL 94-VO rated (center conductor insulator) Flammability:

Vibration: MIL-STD-202 Method 201 Solvent resistance: MIL-STD-202 Method 215

**FINISH** 

.060 CRS with protective black finish Sheet metal panel:

30% Glass Filled Valox Jack plastic housing:

Nickel coax housings: Tarnish-resistant electroless nickel plating

Beryllium copper with 50 millionths inch gold plating Springs:

Center conductors: 50 millionths inch gold plating



# **Video Patching Systems**ProPatch® Miniature (PPM) Series

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	СПППС			ш	

Description					Catalo	g Number	
Super High-Density Co	oax Jacks						
LCC	Normalling	AES and Analog V	'ideo		SHDC-LCC		
		High-Performance,	, HD		SHDC-L	.CC-HP	
	Straight-Through	High-Performance,	, HD		SHDC-L	.CC-NN	
1.0/2.3 Connectors	.0/2.3 Connectors Normalling AES and Analog Video						
		High-Performance			SHDC-1	023-HP	
	Straight-Through	High-Performance			SHDC-1	023-NN	
LCP High-Performance	Patch Cords						
2 feet					BK2VXI	M-LCP-LCP	
3 feet					BK3VXI	M-LCP-LCP	
4 feet					BK4VXI	M-LCP-LCP	
6 feet					BK6VXI	M-LCP-LCP	
Looping plug; LCP .48"	Centers				LP-SHD(	C-480	
			Ca	g Number			
			Cable Ty	ype (d	(or equivalent to)		
Description			1505, 9259 9100, VPM2000	1	1855 DM230 DM250	0.6/2.8 Image360 SDV-25	
LCC Connectors				•			
1 each			LCC-1-BE	LC	C-13-BE	LCC-26-BE	
Bulk (100 pack)			LCC-1B-BE	LC	C-13B-BE	LCC-26B-BE	
Crimp Tools							
Features Ergonomic H	landle for ADC Die Sets		WT-2				
Features Long Ergono	mic Handle for ADC Die :	Sets	WT-3				
Crimp Die Sets			WD-1		WD-2	WD-3	
			WD-2			WD-4	
			WD-3				
			WD-5				
Manual Stripper Tool Includes One Stripper Re	placement Cassette		STC-12B	S	TC-13B	STC-13B	
Manual Stripper Repla	cement Cassette			CC	S-BLK		
Insertion/Withdrawl To	ool			LCA-	400004		
Replacement Tips For Insertion/Withdrawal	Tool (12-Pack)		LCA-400005-12				
LCC Tester			LCA-414001				









**LCP Patch Cords** 

**LCP Looping Plug** 

**Insertion/Withdrawal Tool** 

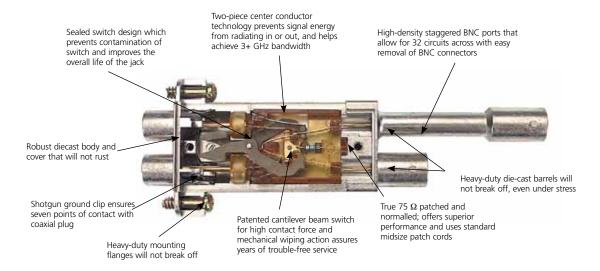
**LCC Connector** 



Jacks

#### WECO HD Midsize Video Jacks

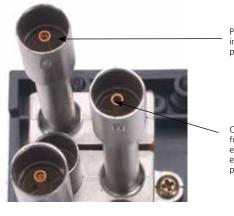
Midsize video jacks have several advantages over standard size jacks in performance and size. All standard size video jacks observing WECO standards are, by definition, not 75  $\Omega$  in the patched state (with the exception of ADC's SVJ-2 standard size Super Video Jack). The physical relationship of the center conductor diameter and the coaxial port diameter creates an impedance violation that causes the video impedance to drop to 58  $\Omega$  in the patched state. In midsize video jacks, the physical relationship has been optimized, providing a constant impedance of 75  $\Omega$  in either the normalled-through mode or the patched mode. This impedance advantage can make a considerable difference in the elimination of bit errors in digital signals especially if the circuit is routed through several patches. The midsize offers 33 percent higher density than standard size for 2x32 configurations, which match typical router decades.



**MVJ-3 Midsize Video Jack Interior View** 

### **Outstanding Performance Features**

ADC video jacks feature precision geometric-molded insulators for true 75  $\Omega$  performance. Closed-entry center contacts are designed to resist damage from damaged plugs or test probes.



Precision geometric-molded insulators make true 75  $\Omega$  performance possible

Closed entry contact features fully supported ring which is extremely durable and is not easily damaged by test probes, preventing intermittent failures.



Jacks

#### WECO HD Midsize Video Jack MVJ-3

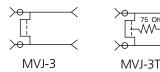
The MVJ-3 midsize to BNC self-normalling video jack is performance matched for data rates up to and including HDTV in the full uncompressed 1.485 and 3 Gbps rates. This premium jack includes a host of outstanding features highlighted in the interior view shown on the previous page.

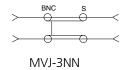
#### **Features**

- 3.0+ GHz bandwidth
- Sealed switch
- 75 Ω performance
- RFI shielding
- 2x32 mounting in one rack space
- Unique captive mounting screws
- Meets MIL-STD-202F for environmental and mechanical reliability



non-terminated





**HD Midsize Video Jack** 

### WECO HD Midsize Straight-Through Video Jacks

For applications requiring independent ground such as tie line panels, the new straight-through CJ3014N and CJ4014N are the logical choice. These jacks have a rated bandwidth up to 2.4 GHz for analog, serial digital, and HDTV video applications. For applications requiring self-terminating jacks, the CJ3014N-75 and the CJ4014N-75 are available.

The short body CJ3014N/3014N-75 and long body CJ4014N/4014-N75 are designed to be mounted in 32-across configurations. The jacks slide into a patented insulated holder with a dovetail joint, which provides outstanding durability and electronic isolation from adjacent jacks. The short and long bodies allow a staggered mounting pattern to provide access to the BNC connectors. A BNC insertion tool such as the BT2000 is recommended for BNC installation.



CJ3014N-75/CJ4014N-75 Terminated

A patented "dovetail" mounting device provides electrical isolation and outstanding durability as compared to tab-and-barrel mounting systems.



CJ3014N/CJ4014N Non-terminated

Jacks shown partially assembled to reveal the dovetail joint.



**Jacks** 

#### MVJ-3

### WECO HD Midsize Video Jack Specifications

The MVJ-3 Family is rated to handle digital video data rates up to and including uncompressed HDTV SMPTE 292M 1.485 Gbps and SMPTE 424M 3 Gbps.

**ELECTRICAL** 

Rated bandwidth: 1 MHz to 3 GHz

**Return loss:** Better than -17 dB; 1 MHz to 3 GHz

**Characteristic impedance:** 75  $\Omega$ 

**Insertion loss:** 0.3 dB Loss to 3 GHz

Center conductor

**Diameter:** 0.048 (.12cm)

**Contact resistance:** 0.01 W maximum change **Termination resistor:** 75  $\Omega$ , MVJ-3T only

**MECHANICAL** 

Mechanical shock:Per MIL-STD-202, Method 213Vibration:Per MIL-STD-202, Method 201Insertion force:7 lbs (3.17 Kg) maximumWithdrawal force:1 lb (.452 Kg) minimum

Life cycles: 20,000

**MATERIAL** 

**Body and cover:** Zinc alloy per ASTM B86

Front and rear

**center conductors:** Beryllium copper per ASTM B196

**Insulators:** Unreinforced polyetherimide resin rated UL94-VO for flammability

**Switching springs:** Beryllium copper per ASTM B196

**ENVIRONMENTAL** 

Operating temperature:  $-40^{\circ}$  C to  $65^{\circ}$  C Storage temperature:  $-40^{\circ}$  C to  $65^{\circ}$  C

Thermal shock:

Operating humidity:

Storage humidity:

Salt spray:

Moisture resistance:

Per MIL-STD-202, Method 107

0% to 95%, non-condensing

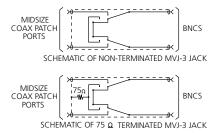
Per MIL-STD-202, Method 101

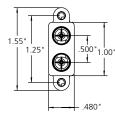
Moisture resistance:

Per MIL-STD-202, Method 106

Per MIL-STD-202, Method 110

O LOCATION OF ADC CATALOG NUMBER 1.866\* 1.866\*





MVJ-3 Midsize Video Jack



Jacks

## WECO HD Midsize Straight-Through Video Jack Specifications

The CJ midsize jacks are rated to handle digital video data rates up to and including uncompressed HDTV SMPTE 292 M 1.485 Gbps. They are also rated for L-Band and S-Band use.

**ELECTRICAL** 

**Characteristic impedance:** 75  $\Omega$  nominal

**Return loss:** > 15 dB; 300 Khz to 3 GHz

Contact resistance:  $10 \text{ m}\Omega$  typical

**Termination resistance** 

(3014N-75/4014N-75): 75  $\Omega$  commercial, 1/8 watt 5%

**MECHANICAL** 

Mechanical shock:Per MIL-STD-202, Method 213Vibration:Per MIL-STD-202, Method 201

Insertion force: 7 lbs max Withdrawal force: 1.5 lbs min

**ENVIRONMENTAL** 

Operating temp: -40° C to 65° C Storage temp: -55° C to 85° C

**Thermal Shock:** Per MIL-STD-202, Method 107

**Humidity:** 0% to 95% non-condensing, operating and non-operating

Salt spray:Per MIL-STD-202, Method 101Moisture resistance:Per MIL-STD-202, Method 106

MATERIAL

Jack sleeve and frame: CDA 360 brass rod per ASTM B16 with electro-deposit nickel plating

per QQ-N-290

**Center conductors:** Phosphor bronze per ASTM B139 with electro-deposited gold plating

per MIL-G-45204

**Insulators:** TFE-Fluorocarbon per ASTM D1710

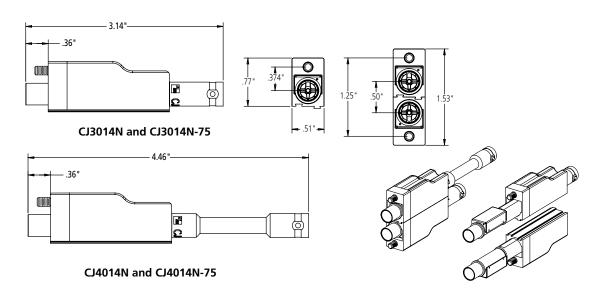
**OTHER** 

**Interface dimensions:** Outside diameter of mating plugs must be .298" (.75 cm) with

pin diameter of .048" (.12 cm)

**Mounting details:** Jacks supplied with a 6-32 UNC-2A 5/16" Phillips head screws

(zinc chromate plated)





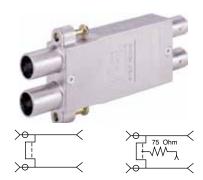
## Video Patching Systems Jacks

### WECO HD Standard Size Super Video Jacks (SVJ)

The SVJ-2 standard size to BNC self-normalling Super Video Jack family features performance matched for data rates up to and including HDTV in the full uncompressed 1.485 and 3 Gbits/second rate. The SVJ-2 combines the unique features of:

- 2.4 GHz bandwidth for the demanding HD data rates
- Sealed switch prevents internal contamination
- True 75  $\Omega$  performance for a zero bit-error rate
- RFI shielding prevents ingress/egress
- 2x24 mounting in one rack space
- Unique captive mounting screws

The SVJ-2 family is designed for use in high data rate applications including uncompressed HDTV, D1 digital video and all lower data rate video transmission methods.

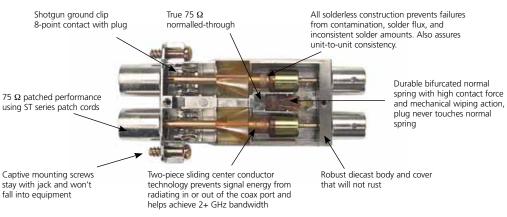


Standard Size Super Video Jack (SVJ-2/SVJ-2T)

#### **Features**

- True 75  $\Omega$  for excellent digital performance when normalled or patched with ADC ST series patch cords
- Gold-plated components assure signal quality and tarnish resistance, minimum 50µ inch
- Sealed switch prevents external contamination
- All-solderless construction eliminates solder-related failures
- Long-beam bifurcated springs provide firm contact and prevent spring fatigue
- Closed-entry BNC center conductor prevents damage and provides reliable contact

- Two-piece center conductor prevents RFI radiation leakage
- Shotgun ground clip contacts plug at multiple points
- Tough diecast body will not rust or flex
- Captive mounting screws will not fall out
- Precision-tooled parts for consistent quality
- Meet MIL-STD-202F for environmental and mechanical reliability
- Patch plug never touches normal switch, dramatically increasing reliability

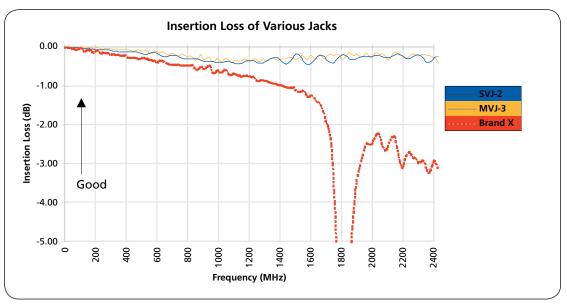


SVJ-2T Standard Size Super Video Jack (Interior View)

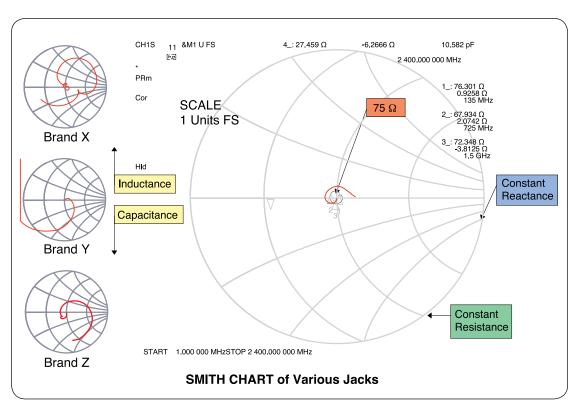


## Video Patching Systems Jacks

### Insertion and SMITH Chart



Insertion loss for ADC's Super Video Jacks stays less than .5 dB to 2.4 GHz.



ADC's Super Video Jacks maintain 75  $\Omega$  impedance throughout the band. Competitive jacks spiral out of control.



**Jacks** 

#### SVJ-2

### Standard Size Super Video Jack Specifications

The SVJ-2 family is rated to handle digital video data rates up to and including uncompressed HDTV SMPTE 292M 1.485 Gbps and SMPTE 424M 3 Gbps.

**ELECTRICAL** 

Rated bandwidth: 2.4 GHz

**Return loss:** Better than -20 dB to 2.4 GHz

**Characteristic impedance:** 75  $\Omega$ 

Insertion loss: <.5 dB Loss to 2.4 GHz
Center conductor diameter: Accepts .09 center conductor

**Contact resistance:** Less than 20 m $\Omega$ **Termination resistor:** 75  $\Omega$ ,  $\pm$  1%

**MECHANICAL** 

**Mechanical shock:** Per MIL-STD-202, Method 213 test condition G

Vibration: Per MIL-STD-202, Method 201

Insertion force: 12 lbs max Withdrawal force: 3 lbs min

**Life cycles:** 20,000 insertion/withdrawal cycles min

**MATERIAL** 

**Body and cover:** Zinc diecast per ASTM B86

Front and rear
Center conductors: Phosphor bronze per ASTM B139

Insulators:Polyethermide resin rated UL 94V-0Switching springs:Beryllium copper per ASTM B196

**ENVIRONMENTAL** 

Temperature

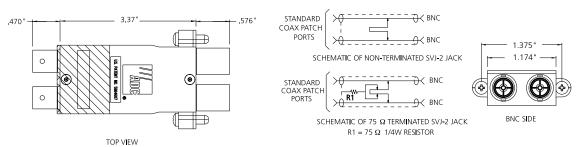
 Operating:
 -40° C to 65° C

 Storage:
 -55° C to 85° C

**Thermal shock:** Per MIL-STD-202, Method 107

Humidity

Operating: 0% to 95%, non-condensing Storage: 0% to 95%, non-condensing Salt spray: Per MIL-STD-202, Method 101 Moisture resistance: Per MIL-STD-202, Method 106 Dust resistance: Per MIL-STD-202, Method 110A



**SVJ-2 Standard Size Super Video Jack** 



Jacks

### WECO Standard Size Straight-Through Video Jacks

For applications requiring independent ground such as tie line panels, the straight-through CJ2014N and the self-terminating CJ2020N-75 jacks are the logical choice. These jacks mount on standard .625" centers and have a rated bandwidth up to 2.4 GHz for analog HDTV, L-Band and S-Band applications.

**NOTE:** The single terminating jacks cannot be installed directly adjacent to switching jacks due to interference with the terminating resistor housing. Leave one empty space between the CJ2020N-75 and switching jacks.



Straight-Through Standard Size Video Jack (CJ2014N)



Straight-Through Standard Size Video Jack with 75  $\Omega$  Termination (CJ2020N-75)



Jacks

## WECO Standard Size Straight-Through Video Jack Specifications CJ2014N and CJ2020N-75 (terminated)

The CJ standard size jacks are rated to handle digital video data rates up to and including uncompressed HDTV 292M 1.485 Gpbs and SMPTE 424M 3 Gbps. They are also rated for L-Band and S-Band use.

#### **ELECTRICAL**

**Characteristic impedance:** 62.5  $\Omega$  nominal

**Return loss:** > -20 dB; 1 MHz to 2 GHz

**Contact resistance:** 0.030  $\Omega$  max change post environment

#### **MECHANICAL**

Mechanical shock:Per MIL-STD-202, Method 213Vibration:Per MIL-STD-202, Method 201

Insertion force:7 lbs (3.17 kg) minWithdrawal force:1.5 lbs (0.675 kg) min

Life: 10,000 insertion/withdrawal cycles min

#### **ENVIRONMENTAL**

**Operating temperature:**  $-40^{\circ}$  C to  $+65^{\circ}$  C

**Non-operating temperature:** -55° C to +85° C non-operating **Thermal shock:** -55° C to +85° C non-operating Per MIL-STD-202, Method 107

**Humidity:** 0% to 95% non-condensing, operating and non-operating

Salt spray:Per MIL-STD-202, Method 101Moisture resistance:Per MIL-STD-202, Method 106

#### MATERIAL

Jack sleeve and frame: Brass per ASTM B16 with electro-deposited nickel

plating per QQ-N-290 or electro-deposited gold plating per MIL-G-

45204

Center conductors

.090" (.23 cm): Beryllium copper per QQ-C-533 with electro-deposited gold plating

per MIL-G-45204 on contact areas only

**Outer conductor contacts:** Phosphor bronze QQ-B-746 with electro-deposited gold plating

per MIL-G-45204 or electro-deposited nickel plating per QQ-N-290

**Insulators:** Rated UL 94V-0 for flammability

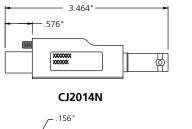
**Crimping sleeves:** Brass per ASTM B16 with tin plating per MIL-T-10727

#### **OTHER**

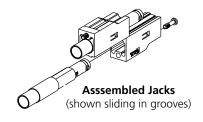
**Interface dimensions:** Outer diameter of mating plugs must be

.375" (.95 cm) with pin diameter of .090" (.23 cm) or .070" (.18 cm)

**Mounting information:** All jacks are supplied with 6-32, 5/16" Phillips head screws

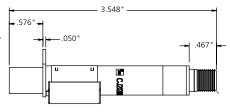






.550"

.576" .568"



CJ2020-N75 CJ2020-N75FF

**Dimensions for CJ2020N-75 and CJ2011N** (CJ2011N has no termination can)

**Dimensions for CJ2020-N75FF** 



Jacks

#### MUSA Standard Video Jacks

ADC is the first company worldwide to offer both MUSA standard and WECO standard mid-sized and standard-sized coaxial video jacks. We offer a complete portfolio of MUSA standard panels and accessories including jacks, U-links, accessories, panels and patch cords. The new line of 75  $\Omega$  HDTV-ready coaxial jacks and accessories offers superior electrical and mechanical performance as well as easier mounting options compared with current industry products.

#### **Jack Features**

- HDTV Super Video Jacks rated to 2.3+ GHz
- Return loss of -17db at 2.3 GHz
- Insertion loss of -.07db to 2.3 GHz
- Jacks rated to 10,000 insertion/withdrawl cycles
- Patented dovetail mounting system provides secure and easy jack replacement
- Exclusive captivated mounting screw
- Molded jack holder provides outstanding durability and isolation between adjacent jacks
- Compatible with BPO MUSA standard products



MUSA U-Link (UL-SM1625)



SMJ-2100N Jack

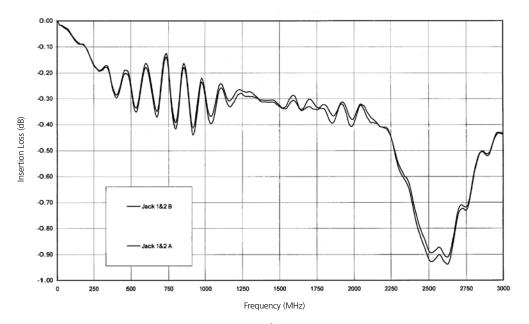
#### **U-Link Features**

- Ergonomically designed handle makes insertion/ withdrawal easier, hole for pull chain
- Solderless construction—Weee and Rohs compliant
- High-performance U-Link matched for uncompressed HDTV signals (1.485 Gbps)
- Precision-molded insulators for true impedance match and greater unit-to-unit consistency compared to machined plastic
- Unique closed-entry center conductor prevents damage and intermitance from misaligned male pins
- One-piece gold-plated center conductor
- Robust diecast body with insulated molded outer shell
- Transparent icon allows designation label underneath
- Plug-in color coded circuit icon available

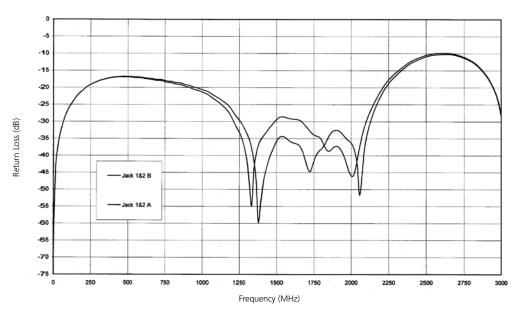


## **Video Patching Systems**Jacks

MUSA Standard Video Jacks Insertion and Return Loss



Insertion Loss
MUSA Video Connectors (SMJ-2100N) with Looping Plug



Return Loss
MUSA Video Connectors (SMJ-2100N) with Looping Plug



Jacks

## MUSA Straight-Through Video Jack Specifications SMJ-2100N

The SMJ family is rated to handle analog and digital video data rates up to and including HDTV SMPTE 242M 1.485 Gbps and SMPTE 424M 3 Gbps. They are also rated for L-Band and S-Band use.

#### **ELECTRICAL**

**Characteristic impedance:** 75  $\Omega$  nominal

**Return loss:** > 17 dB; 300 KHz to 2.4 GHz

Contact resistance: 10 m $\Omega$  typical

**MECHANICAL** 

Mechanical shock:Per MIL-STD-202, Method 213Vibration:Per MIL-STD-202, Method 201

**Insertion force:** 7 lbs maximum **Withdrawal force:** 1.5 lbs minimum

**ENVIRONMENTAL** 

Operating temp:  $-40^{\circ}$  C to 65° C Storage temp:  $-55^{\circ}$  C to 85° C

**Thermal shock:** Per MIL-STD-202, Method 107

**Humidity:** 0% to 95% non-condensing, operating and non-operating

Salt spray: Per MIL-STD-202, Method 101
Moisture resistance: Per MIL-STD-202, Method 106

**MATERIAL** 

Jack sleeve and frame: CDA 360 brass rod per ASTM B16 with electro-deposit nickel plating

per QQ-N-290

**Center conductors:** Phosphor bronze per ASTM B139 with electro-deposited gold plating

per MIL-G-45204

**Insulators:** Unreinforced polyetherimide resin rated UL94-V0 for flammability

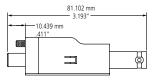
OTHER

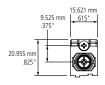
**Interface dimensions:** Outside diameter of mating plugs must be .298" (.75 cm) with

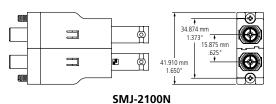
pin diameter of .048" (.12 cm)

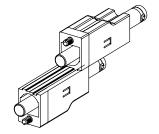
**Mounting details:** Jacks supplied with a 6-32 UNC-2A 5/16" Phillips head screws

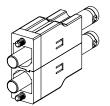
(zinc chromate plated)













Jacks and Accessories

### **Ordering Information**

Description	Catalog Number
Midsize Video Jacks	
Dual self-normalling video jack, non-terminated, HD	MVJ-3
Dual self-normalling video jack, 75 $\Omega$ terminated, HD	MVJ-3T
Dual non-normalled video jack, non-terminated, HD	MVJ-3NN
Single straight-through video Jack, short body, non-terminated, HD	CJ3014N
Single straight-through video Jack, short body, 75 $\boldsymbol{\Omega}$ terminated, HD	CJ3014N-75
Single straight-through video jack, long body, non-terminated, HD	CJ4014N
Single straight-through, video Jack, long body, 75 $\Omega$ terminated, HD	CJ4014N-75
Standard Size Super Video Jacks	
Dual self-normalling super video jack, non-terminated, HD	SVJ-2-X
Dual self-normalling super video jack, 75 $\Omega$ terminated, HD	SVJ-2T-X
Standard Size Video Jacks	
Single straight-through video jack, non-terminated, HD	CJ2014N
Single straight-through video jack, terminated, HD	CJ2020N-75
Single straight-through video jack, terminated with F connector, HD	CJ2020N-75F
Dual self-normalling video jack, non-terminated, analog/SD	SJ2000N
Dual self-normalling video jack, 75 $\Omega$ terminated, analog/SD	SJ2000N-75
MUSA Standard Video Jacks	
Single video jack, MUSA standard, HD	SMJ-2100N
Conversion Plugs and Adapters	
Standard size plug to BNC adapter	CP1051N
Standard size plug to BNC adapter, gold	CP1051G
Midsize plug to BNC adapter, short body	MBNC-3
Midsize plug to BNC adapter, long body	MBNC-3L
Standard size receptacle to midsize receptacle adapter	CAXADPT-1
Midsize plug to standard size receptacle adapter	CAXADPT-2
Standard size plug to midsize receptacle adapter	CAXADPT-3
Coax adapter MUSA plug to BNC	CAXADPT-MU/BNC
Coax adapter MUSA plug to standard receptacle	CAXADPT-MU/CPSTD
Coax adapter MUSA plug to midsized receptacle	CAXADPT-MU/CPMID





Midsize Plug to BNC Adapter (MBNC-3)



Standard to Midsize Conversion Adapter (CAXADPT-1)



Midsize to Standard Conversion Plug (CAXADPT-2)



Standard to Midsize Conversion Plug (CAXADPT-3)



MUSA to BNC Adapter (CAXADPT-MU/BNC)



**MUSA to Midsize Adapter** (CAXADPT-MU/CPMID) (CAXADPT-MU/CPMID)

MUSA to Standard
Size Adapter
(CAXADPT-MU/CPSTD)



Jacks and Accessories

### Humbucker

Common mode hum caused by differences in ground potential is often found in long video cables, incoming and outgoing lines, and separate power distribution systems. The ADC Humbucker eliminates 99.6 percent of a 10 Volt p-p 50/60 Hz ground-induced hum in a 200-foot (61 m) RG59 coaxial cable run. The actual amount of hum reduction depends on cable length, cable type, ground loop potential, and ground loop frequency.



Humbucker (HUM-1)





WECO Looping Plugs (LP-S1625/LP-M1500)



MUSA U-Link (UL-SM1625)

Ordering Information	
Description	Catalog Number
Humbucker Humbucking Coil	HUM-1
Coaxial Patch Plugs	
Standard size HD crimp plug for Belden 1505F	CP1545-1
Midsize HD crimp plug for Belden 1505F	CP1545-3
MUSA HD crimp plug and boot for Belden 1505F, bulk 50 units	CP-1-MU-B50
Termination and Looping Plugs	
Standard size 75 $\Omega$ termination plug, nickel	CPSTD-TP2
Midsize 75 $\Omega$ termination plug, nickel	CPMID-TP2
MUSA 75 $\Omega$ termination plug	MUSA-TP2
Standard size HD looping plug, nickel	LP-S1625
Midsize HD looping plug, nickel	LP-M1500
MUSA HD-U-link, nickel	UL-SM1625
Looping plug colored identification icon, 25 pack	ADCICBXX*
Circuit Guard Plugs, sold in bags of 25	
Standard size	CJP-S-XX
Midsize	CJP-M-XX

### \* XX Icon Colors:

- '	A 10011 CO1013.				
01	Office White	06	Gray	11	Brown
02	Black	07	Snow White	12	Clear
03	Red	80	Orange	13	<b>Putty White</b>
	_				

04 Green 09 Yellow 05 Blue 10 Purple



ProPatch® Integrated (PPI) Series

ProPatch PPI Series Panels are the ideal solution when you need a rugged, full-featured panel that will stand up to the most demanding professional applications. These tough, attractive panels feature a rugged epoxy powder-coated steel weldment chassis with a durable molded ABS jack insert. The panels feature rear silk screening for port identification and an adjustable rear cable support bar for superior strain relief, and ADC's exclusive snap-over designation system that prevents cards and windows from coming loose from the panel as is common with other systems. The durable steel frame ensures against bent, cracked or broken rack ears, and the molded ABS inserts prevent stripped screws and cracked inserts common with phenolic panel inserts. Panels are available in black or gray.



1 RU Midsize 2x32 Panel



1.5 RU Midsize 2x32 Panel



2 RU Midsize 2x32 Panel (rear view)

#### **Features**

- · Tough professional construction
- Welded steel chassis with high-impact ABS plastic-molded inserts
- Adjustable steel strain relief cable bar with holes for cable ties
- Highest quality, widest bandwidth, longest lasting jacks available. True 75  $\Omega$  impedance
- Molded jack inserts are much more durable than phenolic inserts; screws don't strip out
- Snap-on designation windows for labeling jacks
- All jack styles available
- ProPatch PPI series unloaded video panels come in 1 RU and 2 RU models. They feature a tough steel weldment chassis with molded ABS jack insert and a strong, adjustable steel cable support bar with holes for cable ties.
- Panels are available for standard size jacks in 2x24 arrays. For midsize jacks, panels are available in 2x32 and 3x32 arrays. When ordering jacks, alternate short and long jacks to ease cabling.



# **Video Patching Systems**ProPatch® Integrated (PPI) Series

Description	n					Catalog Numbe	er	
		Jack Type	Color		1 RU (1.75")	1.5 RU (2.63")	2 RU (3.50")	
Midsize	Normalling	MVJ-3	Gray	2x32	PPI1232-MVJ	PPI15232-MVJ	PPI2232-MVJ	
	Jacks		Black	2x32	PPI1232-MVJ-BK	PPI15232-MVJ-BK	PPI2232-MVJ-BK	
		MVJ-3Tx	Gray	2x32	PPI1232-MVJT	PPI15232-MVJT	PPI2232-MVJT	
		Terminated	Black	2x32	PPI1232-MVJT-BK	PPI15232-MVJT-BK	PPI2232-MVJT-BK	
	Straight-	CJM	Gray	2x32	PPI1232-CJM	PPI15232-CJM	PPI2232-CJM	
	Through Jacks		Black	2x32	PPI1232-CJM-BK	PPI15232-CJM-BK	PPI2232-CJM-BK	
	Jacks	CJMT	Gray	2x32	PPI1232-CJMT	PPI15232-CJMT	PPI2232-CJMT	
		Terminated	Black	2x32	PPI1232-CJMT-BK	PPI15232-CJMT-BK	PPI2232-CJMT-BK	
	Monitoring	MVJ-3	Black	3x32	-	-	PPI2332-MVJ-MON-BK	
	Panels	MVJ-3T Terminated	Black	3x32	-	-	PPI2332-MVJT-MONT-BK	
	Empty	None	Gray	2x32	PPI1232	PPI15232	PPI2232	
			Black	2x32	PPI1232-BK	PPI15232-BK	PPI2232-BK	
Standard	Normalling Jacks		SVJ-2	Gray	2x24	PPI1224-SVJ	PPI15224-SVJ	PPI2224-SVJ
Size				Black	2x24	PPI1224-SVJ-BK	PPI15224-SVJ-BK	PPI2224-SVJ-BK
		SVJ-2T	Gray	2x24	PPI1224-SVJT	PPI15224-SVJT	PPI2224-SVJT	
		Terminated	Black	2x24	PPI1224-SVJT-BK	PPI15224-SVJT-BK	PPI2224-SVJT-BK	
	Straight-	CJ2014N	Gray	2x24	PPI1224-CJ48	PPI15224-CJ48	PPI2224-CJ48	
	Through Jacks		Black	2x24	PPI1224-CJ48-BK	PPI15224-CJ48-BK	PPI2224-CJ48-BK	
	Jacks	CJ2020N-75	Gray	2x24	PPI1224-CJ48T	PPI15224-CJ48T	PPI2224-CJ48T	
		Terminated	Black	2x24	PPI1224-CJ48T-BK	PPI15224-CJ48T-BK	PPI2224-CJ48T-BK	
	Monitoring	SVJ-2	Gray	3x24	-	-	PPI2324-SVJ-MON	
	Panels		Black	3x24	-	-	PPI2324-SVJ-MON-BK	
		SVJ-2T	Gray	3x24	-	-	PPI2324-SVJT-MONT	
		Terminated	Black	3x24	-		PPI2324-SVJT-MONT-BK	

Ord	ering In	formati	o n				
Description	1					Catalog Numbe	r
		Jack Type	Color		1 RU (1.75")	1.5 RU (2.63")	2 RU (3.50")
MUSA	Straight-	SMJ-2100	Gray	2x24	PPI1224-SMJ	PPI15224-SMJ	PPI2224-SMJ
Standard	Through Jacks		Black	2x24	PPI1224-SMJ-BK	PPI15224-SMJ-BK	PPI2224-SMJ-BK
Standard	Empty	None	Gray	2x24	PPI1224	PPI15224	PPI2224
Size and			Black	2x24	PPI1224-BK	PPI15224-BK	PPI2224-BK



2 RU Midsize 3x32 Monitoring Panel



ProPatch® Economical (PPE) Series

ProPatch PPE Series Panels are designed to offer ADC performance on a modest budget. The tough, attractive panels feature a rugged epoxy powder-coated steel faceplate with a durable molded ABS jack insert. The PPE series panels do not provide any rear silk screening for port identification or cable support bars, but are available with the same jack options as the full-featured PPI series panels. Designation strips are provided with clear slide-in acetate windows, upgradeable to ADC's exclusive snapover designation system. The durable steel faceplate ensures against bent, cracked or broken rack ears, and the molded ABS inserts prevent stripped screws and cracked inserts common with phenolic panel inserts. PPE panels are covered by a one-year warranty against defects.



- Steel chassis with high-impact ABS plasticmolded inserts
- Highest quality, widest bandwidth, longest lasting jacks available. True 75  $\Omega$  impedance
- Snap-over window
- Available in all jack types
- ProPatch\* PPE Series unloaded video panels come in 1, 2, 3 and 4 RU models. They feature a rugged steel faceplate with molded ABS jack inserts.
- Panels are available for standard size jacks in 2x24 arrays. For midsize jacks, panels are available in 2x32 and 3x32 arrays. When ordering jacks, alternate short and long jacks to ease cabling.



1 RU Midsize 2x32 Panel (rear view)



1 RU Standard Size/MUSA 2x24 Panel



1.5 RU Standard Size/MUSA 2x24 Panel



2 RU Midsize 2x32 Panel



4 RU Midsize 6x32 Panel



# **Video Patching Systems**ProPatch® Economical (PPE) Series

The information below explains the catalog numbers contained in the charts on this page and the next. Custom configurations are available; please contact ADC.

Descripti	on					Catalog Numbe	r
		Jack Type	Color		1 RU (1.75")	1.5 RU (2.63")	2 RU (3.50")
Midsize	Normalling	MVJ-3	Gray	2x32	PPE1232-MVJ	PPE15232-MVJ	PPE2232-MVJ
	Jacks		Black	2x32	PPE1232-MVJ-BK	PPE15232-MVJ-BK	PPE2232-MVJ-BK
		MVJ-3T	Gray	2x32	PPE1232-MVJT	PPE15232-MVJT	PPE2232-MVJT
		Terminated	Black	2x32	PPE1232-MVJT-BK	PPE15232-MVJT-BK	PPE2232-MVJT-BK
	Straight- Through Jacks	CJM	Gray	2x32	PPE1232-CJM	PPE15232-CJM	PPE2232-CJM
		ough Jacks	Black	2x32	PPE1232-CJM-BK	PPE15232-CJM-BK	PPE2232-CJM-BK
		CJMT	Gray	2x32	PPE1232-CJMT	PPE15232-CJMT	PPE2232-CJMT
		Terminated	Black	2x32	PPE1232-CJMT-BK	PPE15232-CJMT-BK	PPE2232-CJMT-BK
	Monitoring	MVJ-3	Black	3x32	-	-	PPE2332-MVJ-MON-BK
	Panels	MVJ-3T Terminated	Black	3x32	-	-	PPE2332-MVJT-MONT-BK
	Empty	None	Gray	2x32	PPE1232	PPE15232	PPE2232
			Black	2x32	PPE1232-BK	PPE15232-BK	PPE2232-BK

	lering Inf	or matro	11					
Description	on	Г	r		Catalog Number			
		Jack Type	Color		1 RU (1.75")	1.5 RU (2.63")	2 RU (3.50")	
Standard	Normalling	SVJ-2	Gray	2x24	PPE1224-SVJ	PPE15224-SVJ	PPE2224-SVJ	
Size	Jacks		Black	2x24	PPE1224-SVJ-BK	PPE15224-SVJ-BK	PPE2224-SVJ-BK	
		SVJ-2T	Gray	2x24	PPE1224-SVJT	PPE15224-SVJT	PPE2224-SVJT	
		Terminated	Black	2x24	PPE1224-SVJT-BK	PPE15224-SVJT-BK	PPE2224-SVJT-BK	
	Straight-	CJ2014N	Gray	2x24	PPE1224-CJ48	PPE15224-CJ48	PPE2224-CJ48	
	Through Jacks	acks	Black	2x24	PPE1224-CJ48-BK	PPE15224-CJ48-BK	PPE2224-CJ48-BK	
			CJ2020N-75	Gray	2x24	PPE1224-CJ48T	PPE15224-CJ48T	PPE2224-CJ48T
		Terminated	Black	2x24	PPE1224-CJ48T-BK	PPE15224-CJ48T-BK	PPE2224-CJ48T-BK	
	Monitoring Panel	Monitoring SVJ-2	Gray	3x24	-	-	PPE2324-SVJ-MON	
			Black	3x24	-	-	PPE2324-SVJ-MON-BK	
		SVJ-2T	Gray	3x24	-	-	PPE2324-SVJT-MONT	
		Terminated	Black	3x24	-	-	PPE2324-SVJT-MONT-BK	
MUSA	Straight-	SMJ-2100	Gray	2x24	PPE1224-SMJ	PPE15224-SMJ	PPE2224-SMJ	
Standard	Through Jacks		Black	2x24	PPE1224-SMJ-BK	PPE15224-SMJ-BK	PPE2224-SMJ-BK	
Standard	Empty	None	Gray	2x24	PPE1224	PPE15224	PPE2224	
Size and MUSA			Black	2x24	PPE1224-BK	PPE15224-BK	PPE2224-BK	



# **Video Patching Systems**ProPatch® Economical (PPE) Series

### Ordering Information

Description	Catalog Number				
		Jack Type	Color		4 RU (7.00")
Midsize	Normalling Jacks	MVJ-3	Gray	6x32	PPE4632-MVJ
			Black	6x32	PPE4632-MVJ-BK
		MVJ-3T Terminated	Gray	6x32	PPE4632-MVJT
			Black	6x32	PPE4632-MVJT-BK
	Straight-Through Jacks	CJM	Gray	6x32	PPE4632-CJM
			Black	6x32	PPE4632-CJM-BK
		CJMT Terminated	Gray	6x32	PPE4632-CJMT
			Black	6x32	PPE4632-CJMT-BK
	Empty	None	Gray	6x32	PPE4632
			Black	6x32	PPE4632-BK
Standard Size	Normalling Jacks	SVJ-2	Gray	6x24	PPE4624-SVJ
			Black	6x24	PPE4624-SVJ-BK
		SVJ-2T Terminated	Gray	6x24	PPE4624-SVJT
			Black	6x24	PPE4624-SVJT-BK
	Straight-Through Jacks	CJ2014N	Gray	6x24	PPE4624-CJ48
			Black	6x24	PPE4624-CJ48-BK
		CJ2020N-75 Terminated	Gray	6x24	PPE4624-CJ48T
			Black	6x24	PPE4624-CJ48T-BK
MUSA Standard	Straight-Through Jacks	SMJ-2100	Gray	6x24	PPE4624-SMJ
			Black	6x24	PPE4624-SMJ-BK
Standard Size and MUSA	Empty	None	Gray	6x24	PPE4624
			Black	6x24	PPE4624-BK
Snap-Over Window Kits					
Window for all 1-rack u	VP-DES-279-A				
Window for all 1-rack u	VP-DES-343-A				
Window for all 1.5-rack	HDW-101115				



#### Coax Patch Cords

ADC offers high-quality video patch cords capable of handling uncompressed high-definition digital video, serial digital video, and analog as well as AES audio. ADC patch cords feature a patented True 75  $\Omega$  design made of the highest quality materials that virtually eliminates bit errors, and provides excellent mechanical durability.

The digital television revolution is stretching the limits of the physical plant technology designed for analog video copper. Cable and connectors not optimized for the digital environment can seriously degrade the



digital signal being transported. The problem is that all WECO-standard jacks and patch cords exhibit an impedance violation of between 58 and 62  $\Omega$  in the patched state. This becomes a major source of attenuation and bit errors in serial digital and high-definition video signals.

#### **Patented HD Patch Cords**

ADC's ST series standard-size patch cords feature a patented design that provides a true 75  $\Omega$  interface in the patched state when used with ADC's SVJ-2 super video jack family. ST series maintains the WECO interface for maximum industry compatibility and provides a true 75  $\Omega$  interface.

#### **HD Rated VX™ Series**

ADC's VX™ standard, midsize and MUSA standard video patch cords feature a unique plug design that optimizes impedance performance during the patched state. The unique plug design is optimized for HD video applications for WECO midsize and MUSA formats. For WECO standard size HD patching, the ST series is recommended.

Both designs reduce or eliminate attenuation and bit errors in serial digital and high-definition video signals, especially in the uncompressed mode.

#### **Features**

- Patented design provides a 75  $\Omega$  interface in the patched state
- Standard size compatible with all WECO .090 standard video jacks
- Performance matched for uncompressed HDTV signals (1.485 Gbit/s)
- Gastight crimp design. 100 percent solderless construction assures quality
- Precision-molded insulators for true impedance match and greater unit-to-unit consistency compared to machined plastic
- HD-rated 1505F cable with matte finish
- Full-molded strain relief defeats abuse
- Gold-plated center conductors
- Available in red, green, blue, black, in 2-foot (.6 m) to 6-foot (1.8 m) lengths
- MUSA format features unique closed-entry center pin to prevent breakage



Coax Patch Cords – For all WECO Standard Size 2x24 and 2x26 Panels

Ordering Information						
Description	Catalog Number					
	1 ft/.3 m	2 ft/.61 m	3 ft/.93 m	4 ft/1.22 m	6 ft/1.83 m	
WECO Standard Size VX to Standard	Size VX Plug					
Black	BK1VX	BK2VX	BK3VX	BK4VX	BK6VX	
Red	R1VX	R2VX	R3VX	R4VX	R6VX	
Green	G1VX	G2VX	G3VX	G4VX	G6VX	
Blue	B1VX	B2VX	B3VX	B4VX	B6VX	
WECO ST Standard Size ST HD to Sta	andard Size Pl	ug				
Black	BK1V-STS	BK2V-STS	BK3V-STS	BK4V-STS	BK6V-STS	
Red	R1V-STS	R2V-STS	R3V-STS	R4V-STS	R6V-STS	
Green	-	G2V-STS	G3V-STS	G4V-STS	G6V-STS	
Blue	-	B2V-STS	B3V-STS	B4V-STS	B6V-STS	

**Note:** Standard patch cord colors are black, red, orange, yellow, green, blue, violet and white. These color cords are available in the standard lengths shown above; please contact ADC for additional custom lengths and leadtime.

Ordering Information								
Description		Catalog Number						
	1 ft/.3 m	2 ft/.61m	3 ft/.93 m	4 ft/1.22 m	6 ft/1.83 m			
WECO Midsize Plug	to Midsize Plug							
Black	BK1V-STM	BK2V-STM	BK3V-STM	BK4V-STM	BK6V-STM			
Red	R1V-STM	R2V-STM	R3V-STM	R4V-STM	R6V-STM			
Green	G1V-STM	G2V-STM	G3V-STM	G4V-STM	G6V-STM			
Blue	B1V-STM	B2V-STM	B3V-STM	B4V-STM	B6V-STM			
White	W1V-STM	W2V-STM	W3V-STM	W4V-STM	W6V-STM			
WECO Midsize Plug	to Standard Size Plug							
Black	BK1V-M-S	BK2V-M-S	BK3V-M-S	BK4V-M-S	BK6V-M-S			
Red	R1V-M-S	R2V-M-S	R3V-M-S	R4V-M-S	R6V-M-S			
Green	G1V-M-S	G2V-M-S	G3V-M-S	G4V-M-S	G6V-M-S			
Blue	B1V-M-S	B2V-M-S	B3V-M-S	B4V-M-S	B6V-M-S			
MUSA to MUSA (HD	0)							
Black	BK300V-MU	BK600V-MU	BK900V-MU	BK1200V-MU	BK1800V-MU			
Red	R300V-MU	R600V-MU	R900V-MU	R1200V-MU	R1800V-MU			
Green	G300V-MU	G600V-MU	G900V-MU	G1200V-MU	G1800V-MU			
Blue	B300V-MU	B600V-MU	B900V-MU	B1200V-MU	B1800V-MU			

**Note:** Standard patch cord colors are black, red, orange, yellow, green, blue, violet and white. These color cords are available in the standard lengths shown above; please contact ADC for additional custom lengths and leadtime.

Tyco Electronics and ADC are now **TE Connectivity** 



#### Website: www.te.com

From North America, Call Toll Free: 1-800-366-3891 • Outside of North America: +1-952-938-8080 Fax: +1-952-917-3237 • For a listing of ADC's global sales office locations, please refer to our website.

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