

# **SUPRA<sup>®</sup>** Cables

MADE IN SWEDEN



**HDMI<sup>™</sup>**  
HIGH DEFINITION MULTIMEDIA INTERFACE

Adopter



Member

**2006**

ENGLISH EDITION

## Cable Manufacturing

*The Supra Cables are manufactured in our own in-house production.*

*Made in Sweden.*

## Cable Termination

*All of our soldering team are holders of soldering certification to Military Quality Standards.*

## The SUPRA Story

*Prior to 1976 loudspeaker cables had no identity. They were simply cables.*

*2 x 0.5 mm<sup>2</sup> was the most usual size, while for high specifications the only alternative was 2 x 0.75 mm<sup>2</sup>.*

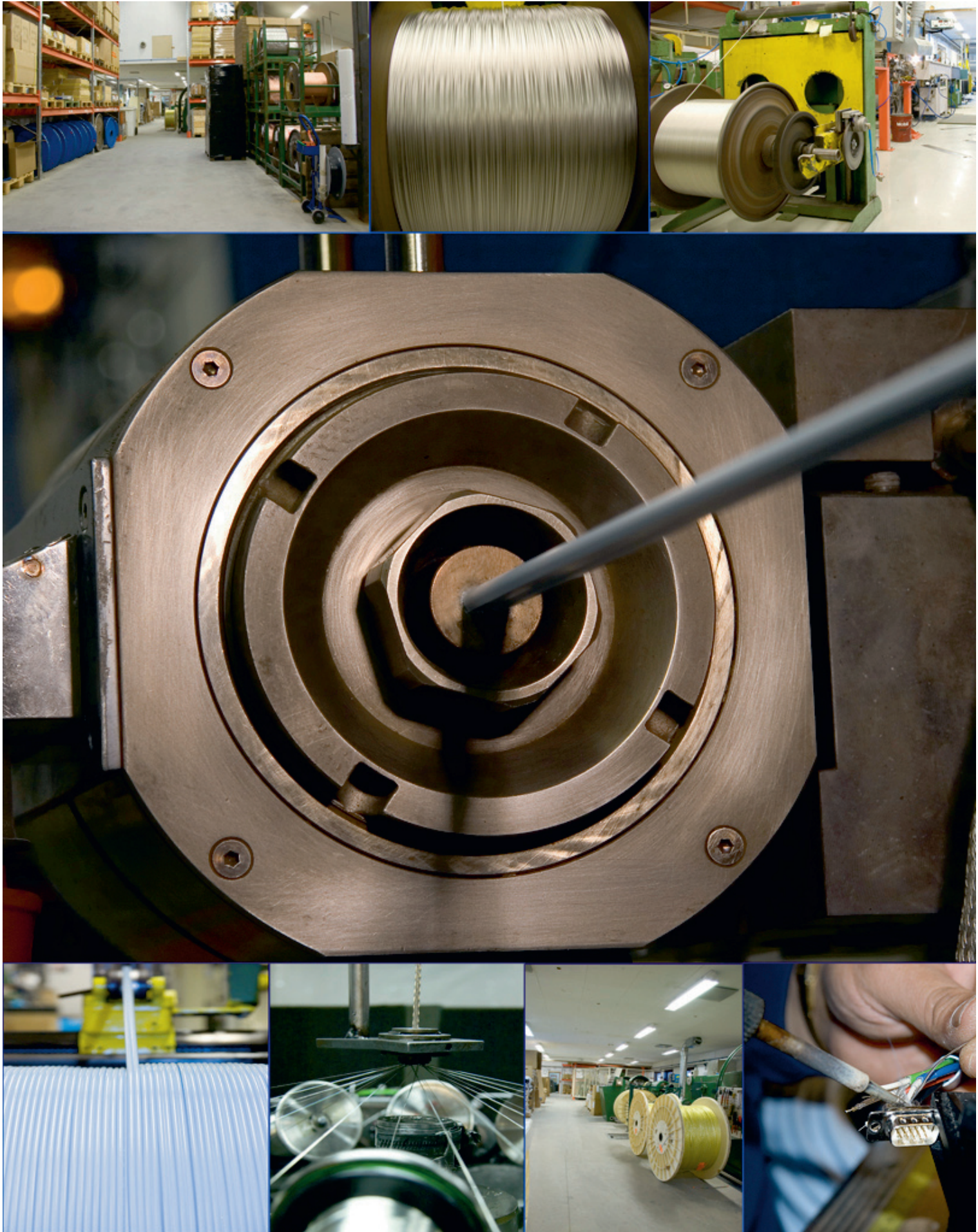
*And then there was SUPRA!*

*It began when we introduced SUPRA 2.5 and shook up the entire market with a whole new concept. All this happened in Sweden 1976. Since then the whole world has followed after us. But then the adjustable spanner, the propeller, the safety pin and Dynamite... have also come from Sweden, so perhaps it is not so surprising.*

*Since SUPRA 2.5 was introduced, other original ideas have come from SUPRA. The Nylon screen, the SWIFT XLR connector, the stretch-proof multicore cable, the PLY conductor concept, the Assurance of Cable Directionality and the Low Radiation mains cable are all examples of our forward thinking technology.*









## LoRad Mains Flex

### LoRad Screened Mains Flex, Patented

LoRad stands for Low Radiation of electric and magnetic alternating fields. Protects your equipment from radiated mains noise as well as from RF pick-up.

The screen protects from the electric fields and the short pitch twisting protects from and cancels the magnetic fields.

*This will typically result in a cleaner sound and more accurate transients, which in turn give you a tighter bass, better 3-Dimension presence and stereo definition. Closer to the truth.*

*Besides this, the human health aspect should be considered. It is scientifically proven that magnetic alternating fields affect the human cell growth.*

**Supra LoRad is the sole audio grade mains cable in the world with full European safety approval.**

SUPRA's screening concept is patented worldwide by Tommy Jenving.



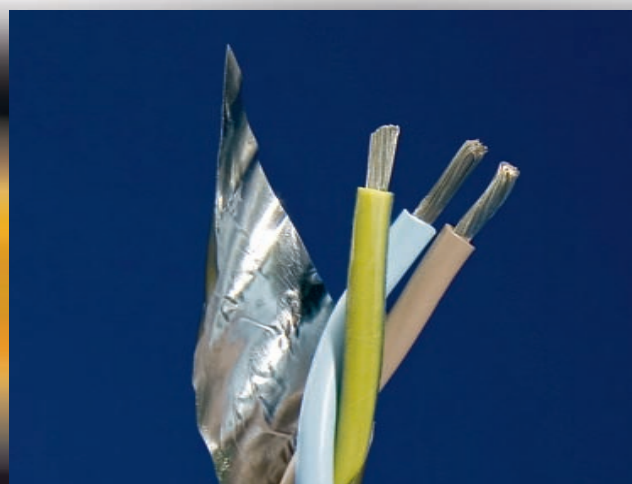
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1:1



Safety approved in compliance with HD 21.5 S3



Hold the AC-sensor against a cable and if it lights up it means the cable is radiating noise fields. Of course, the cable must be connected to the wall socket that is switched on.



Check Supra LoRad in the same way and you will find that it does not indicate any noise radiation.



Please make sure it is connected to an earthed socket.

AC-sensors are available at Supra dealers or electrical stores.

**Supra LoRad Screened Mains Flex**  
**The one and only approved for flex applications.**  
**A Swedish world patent.**

Applications:

- Hi-Fi and studio systems
- Medical equipments
- Measurement and laboratory equipments
- For people sensitive to electric/magnetic radiation
- In any application where electric/magnetic interference is critical

#### Tips and Tricks:

**A simple way to check the cable radiation is to use an AC field sensor.**

Item	Mechanical Specifications												Electrical Spec.		
	Colour	Cross Sec. Area (mm <sup>2</sup> =AWG)	No. of Cond.	Number of Wires	Wire Dia. (mm)	Wire Material	Insulation	Shield Coverage	Jacket	Ext. Size (mm)	Weight (g/m)	Length/Bob. (m = ft)	R (Ω/km)	Voltage Nom. (V)	Current Nom. (A)
LoRad 3G1,5	Ice	1.5 = 15	3	90	0.15	Tinned	2 Layer	Aluminum/PET	Heat & Ageing	Ø8,5	103	100 = 328	10,8	250	10
LoRad 3G2,5	Blue	2.5 = 13		320	0.10	OFC	of PVC	Foil, 100%	Resistant PVC	Ø11	170	50 = 164	6.8		16

Please make sure it is connected to an earthed socket.

## LoRad EU Cord Sets

The EU version cord set, with Schuko plug, the most common throughout Mainland Europe.

Exceptions are Denmark, Italy, UK and Ireland.

### LoRad 1.5 CS-EU

Shielded cord set with LoRad 3G1.5 cable terminated with MCF10 connector (IEC-320) and MC-EU plug.

### LoRad 2.5 CS-EU

Shielded cord set with LoRad 3G2.5 cable terminated with MCF10 connector (IEC-320) and MC-EU plug.

## LoRad BS Cord Sets

The BS version suits the British standard. (BS1363)

This BS-approved cord set is available only in 1.5 sqmm size. UK Regulations do not allow for factory terminated 2.5 sqmm cable.

### LoRad 1.5 CS-BS

Shielded cord set with LoRad 3G1.5 cable terminated with MCF10 connector (IEC-320) and MC-BS plug.

## MCF10 Cord Connector Female

10 Amp IEC-320.  
Takes cable diameter up to 11mm.

## MCH10 Chassis Connector Male

10 Amp IEC-320 Chassis type.  
Gold plated pins.

## MC Mains Plug Male

Gold plated pins.  
Takes cable diameter up to 11mm.

Available for different standards:

**MC-BS** for British standard.

**MC-EU** for Schuko, for most Mainland European outlets. Also applicable for Belgian and French standard.



## SUPRA AC-Sensor 110-230V

The pen lights up in proximity to an alternating electric field.

Item	Mechanical Specifications								Elec. Spec.		Standard Lengths			
	Application	Standard	Conn. < Direction > Conn.		Shield	Conductor	Cable	Colour	Voltage	Current	(1m = 3.28Ft)			
			Wall Socket	Equipment	Connection	Connection	Clamping		Nom. (V)	Nom (A)	(1 m)	(1.5m)	(2 m)	(4 m)
LoRad 1.5 CS-EU	Shielded	Eu/Fr	MC-EU	->	MCF-10	Automatic Screen	Strain Relief		250	10	x	x	x	x
LoRad 1.5 CS-BS	Mains Flex	British	MC-BS	->	MCF-10	Connection. The Earth	with Bending				x	x	x	x
LoRad 2.5 CS-EU	110-250V	Eu/Fr	MC-EU	->	MCF-10	Insulation is Semi-Cond.	Protection				x	x	x	x

Item	Mechanical Specifications											Elec. Spec.	
	Q'ty/ pack	Male/ Female	Connector Type	Standard	Pin Material	Connector Connection	Cable Clamping	Max Cable Dia. (mm)	Cable Inlet	Mounting Hole (mm)	Colour	Voltage Nom. (V)	Current Nom. (A)
MCH-10	1 pc	Male	Earthed Chassis Conn.	International	24K Gold	Screw	-	-	-	26,5 x 20	Ice Blue	250	10
MC-BS		Male	Earthed Mains Plug	British	Plated Brass		Strain Relief with Bending Protection	Ø11	Angled	-	Blue		16
MC-EU		Male		Eu/Fr	Brass						Blue		10
MCF-10		Female		International	Brass						Ice Blue		

## LoRad Mains Distribution Blocks

### LoRad Shielded Mains Distribution Blocks in Aluminium

The mains blocks are entirely shielded from radiation of alternating electric fields by means of aluminium chassis.

### Supra NIF Transient Filter

All models are equipped with Supra NIF (Non-Intrusive Filtering), a mild transient filter which will not influence the transient properties of the equipment. Supra NIF is developed by Ben Duncan Research in England.

### 3-Way Surge Protection

The SP-models, i.e MD06-EU/SP and MD06-US/SP, are equipped with SUPRA's surge protection device which protects all three ways: Live to Earth, Neutral to Earth and Live to Neutral.

Many other surge protectors are only Live to Neutral, and do not protect against field surges by proximate lightning. Lightning is always referred to earth.



MD06-EU Mk II



MD06-EU/SP



MD06-US



MD06-US/SP

#### MD06-EU Mark II

6 EU sockets, Schuko.

Input connector:

IEC-320

10 Amp Fuse

NIF transient filter.

#### MD06-EU/SP

Same as MD06-EU Mark II, but in addition equipped with the 3-way Surge Protection.

#### MD06-US

6 Nema-15 sockets, American standard.

Input connector:

IEC-320

15 Amp Fuse

NIF transient filter.

#### MD06-US/SP

Same as MD06-US, but in addition equipped with the 3-way Surge Protection.

Item	Mechanical Specifications											Elec. Spec.		
	Q'ty/ pack	No. of Sockets	Filter Type	Surge Protection	Standard	Sockets		Pin Material	Chassis	Fuse	Size LxWxH (cm)	Colour	Voltage Nom. (V)	Current Nom. (A)
MD06-EU	1 pc	6 pcs	NIF Transient Filter	-	Schuko,	MCH-10	->	Schuko	24K	10 A	38x9,5x5,5	Silver	250	10
MD06-EU/SP				3-ways	Eu/Fr	MCH-10	->	Schuko	Gold		42x9,5x5,5			
MD06-US				-	Nema,	MCH-10	->	Nema-15	Plated	15 A	32x8,5x5		110	15
MD06-US/SP				3-ways	American	MCH-10	->	Nema-15	Brass		36x8.5x5			



## Sword Cable

SUPRA's flagship. Sword is a patented cable. The secret is the bifilar wound litz conductors, each comprising 24 individually insulated wires.

The bifilar winding is built with 12 of these wires helically wound in one direction and 12 in the opposite direction. This divides the magnetic field into opposing directions resulting in self-cancellation. Because Sword's conductors comprise a number of insulated wires, dynamic skin effect is cancelled.

Therefore Sword behaves as a non-inductive and phase stable cable.

The difference in phase shift from 500Hz to 100kHz is only 0.002 deg.

This allows for perfect timing.

Patent holder: Johnny Svård.

## What does it sound like?

Supra Sword passes the most complex music transients without any deformations. Signal delay is the same at all musical frequencies.

Therefore it vanishes, giving a clear 3-dimensional presence, a sure sign of the highest fidelity.

## Sword is available only as a terminated set

Owing to the special construction with two opposite wound wire groups which cancel each other's fields, the termination quality is very critical.

The termination is done with strong, gas tight crimping, so the joined metals are fused into one unit. This is more pure and secure than any soldering.

Sword is available in standard length of 2m, 3m and 4m pair, delivered in a Mahogany wood case.

Termination: Spade/Banana/BFA combination connector.

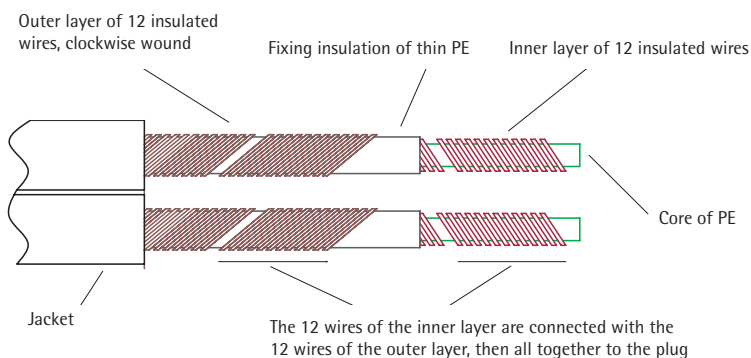
Customised lengths available on order.



## The Sword Combi Connectors

SUPRA Sword comes with crimp-fastened screw adaptors, and a set of connectors that can be screwed onto these. The left picture above shows Banana/BFA connectors, the middle and right pictures show Spades connectors. The tips to the connectors are all interchangeable, between Spade and Banana/BFA types.

## Supra Sword Patented Bifilar Wound Litz



Item	Mechanical Specifications											Elec. Spec		Stand. Lengths			
	Colour	Cr. Sec. Area (mm <sup>2</sup> =AWG)	Number of Conductors	Number of Wires	Wire Dia. (mm)	Wire Material	Insula- tion	Jacket	Ext. Cable Size (mm)	Attached Connectors			Cable Conn.	Solder Tin (For Disenamelling)	R (Ω/km)	L (μH/m)	(1m = 3.28Ft) (2 m) (3 m) (4 m)
Sword Pair	Ice Blue	3 = 12	2x2	12 + 12	0.4	Enamelled OFC Wire	PE	Heat Et Ageing Resistant PVC	9.3x18.4	Banana	Spade	BFA	Crimp	Almit SR-34 Super Sn 96.5%, Ag 3%, Cu 0.5% Lead Free	5,2	0.25	x x x
Sword Single			1x2							x	x	x					x x x
Sword Jumper			2x2							-	x	-					x x x
Additional Length			1x2							-	-	-					2x28cm Additional Cost /m

## Ply Loudspeaker Cables

### SUPRA Ply – 'A Logical and Progressive Design'

Audio cables' performance is initially determined by their loop resistance (R) & inductance (L) & shunt capacitance (C). For most speakers R & L must be low, but capacitance value, C doesn't matter [1,2] as speakers already act as large cap loads. But simply using larger wire makes R low, at the expense of an increasing ratio to L with musically unacceptable effects. Ways to make inductance L low also with low resistance, include tapes, either stacked or arranged in ribbons. But these types are impractical to fit to nearly every speaker connector without discontinuities, & are stressed & often unsightly when bends are required in real installs & also aren't suited to mobile uses. Litzing with multiple, insulated conductors is more practical, but quality Litzes are expensive

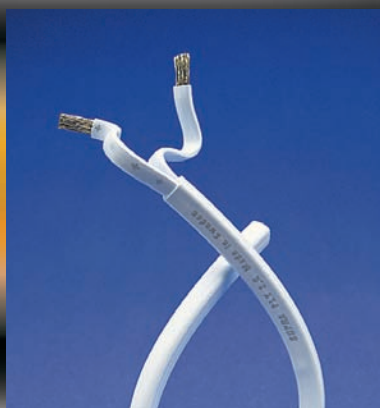
and termination not easy. Other types are gross, like industrial pipes, unsuited to many domestic spaces.

Simplistic fat conductors' rising impedance (due to L) of +6dB/octave is further raised by internal eddy currents causing 'Skin effect', like 'the square root of inductance', adding. +3dB/oct, to the L-reactance slope. For typical cable runs, nett inductivity is such that performance in heavy plain conductors is measurably affected with steady signals just above 1kHz.

Cables with copper or silver stranded conductors suffer from complex oxidation. The semiconductive 'diodes' between the strands aren't seen by steady tests, but look like a high capacitance to music signals. This causes energy storage/release cycles, that

regular tests miss, yet which is audible with music. This problem is also describable as the electron flow being 'trapped' inside strands & twisting away from the direct route.

Supra Ply is a largesection, low resistance cable, overcoming skin effect & transient distortion, using pure tin plating. Tin melds to copper with-out any diodic barrier, & also protects the copper from common corrosions – ideal for outdoors & 12 volt. Most audiograde cables' conductors are damaged by contamination, by plastic out-gassing, from the impure atmosphere, & liquid spills. Some are protected but only by a thin coating that'll one day crack with use and age. Neatly, oxidation forming on Ply is sonically benign.



Ply 2.0  1:1



Ply 3.4  1:1

### Other Advantages

When installing, Ply's rectangular conductor is readily circularised for insertion into receptacles of most regular connectors. Square outer profiling suits most housings too – unlike ribbons, tapes & litzes. Ply is readily coiled, more like thinner, basic cables – making it friendly in temporary setups.

### Demonstrating the Difference

Unlike some audio products, benefits of Supra Ply are readily shown by repeatable measurements. Ply's low-loss behaviour for hf audio (incl. bass transients), is evident. Figs. 1, 2 are time domain scope pics, showing typical dynamic/damping differences with a square wave. After transients, Supra's Ply restrains the peaking & accelerates the signal's return to 0 volts at the speaker end. Peaking in wide spaced cable shows limp damping & hf loss, because it has high L & low C, the opposite of what's required to drive most speakers.

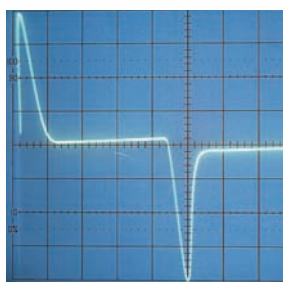


Fig. 1: Losses for wide spaced cable

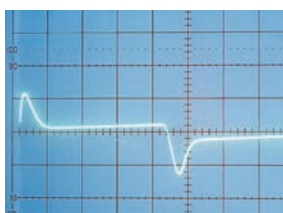


Fig. 2: Oscilloscope graph of losses for SUPRA Ply 2.0

### Research References

Ben Duncan, 'Loudspeaker Cables', RP, Inst. of Acoustics, Nov '95. Also in Studio Sound & B'cast Eng. (all UK); & Stereophile (US) Dec '95. Also 'Modeling Cable', Electronics World (EW), Feb '96, Measuring Spkr Cable Differences, EW, June/July '96, & Black Box, Hi-Fi News (HFN), (all UK), June & July '96.

Other Refs [1] M. Hawksford, Essex Echo, HFN, Aug '85; Aug & Oct '86 & Feb '87. [2] F. E. Davis, Effects of Cable, J. AES, June, '91. [3] T. Ohasi, Nishina & Co, HF Sound above audio – affects brain, '91.

Item	Mechanical Specifications										Elec. Spec.	
	Colour	Cross Sec. Area (mm <sup>2</sup> =AWG)	Number of Conductors	Number of Wires	Wire Dia. (mm)	Wire Material	Insulation & Jacket	Ext. Size (mm)	Weight (g/m)	Length/Bobbin (m = ft)	R (Ω/km)	L (μH/m)
Ply 2.0	Ice Blue	2.0 = 14	2	120	0.15	Tin Plated OFC	Heat & Ageing Resistant PVC	5.8x5.8	74	100 = 328	8.1	0.30
Ply 3.4		3.4 = 12		192				7.2x7.2	97		5.1	0.20

Connect the loudspeaker cables for signal direction = direction of the legend (text) printed on the cable. Explanation on page 38-39.



## The Screened Ply

The screened Supra Ply 3.4/S combines low inductance and tin plating with the shielding concept, making it a top high-end loudspeaker cable.

Read more about the Ply on page 8.

### Ply 3.4/S

2x3.4 mm<sup>2</sup>. Tin plated, sandwich design.

Application examples:

High power systems, or longer lengths in low to medium power systems or where RF levels warrant it or where runs must be next to mains or lower level signal cables.



1:1

## Linc

Supra LINC is designed with an Alu/PET shield which reduces effects from stray electric fields, and a short pitch twisting which minimises the magnetic field as well as giving the cable low inductance. LINC stands for Low Interaction Concept.

### Linc 2.5

2x2.5 mm<sup>2</sup>. Tin plated.

Application examples:

Medium power systems or shorter lengths in high power systems.

### Linc 4.0

2x4.0 mm<sup>2</sup>. Tin plated.

Application examples:

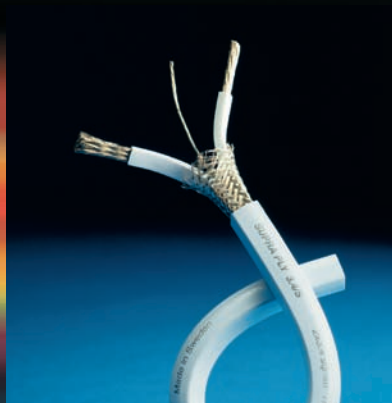
Fixed installations. High power systems or longer lengths in low/medium power systems.



1:1



1:1



The radiation from unshielded loudspeaker cables is often stronger than that from ordinary mains cables.

SUPRA screened loudspeaker cables radiate less interference to low level circuits, inputs and interconnects.

The shielding is also highly effective in rejecting high frequency interference, by minimising aerial pick-up.

The minimising of interference fields is recommended in all fixed installations, with computers playing an increasing part in everyday life. Sensitive networks of low level information control all kinds of operations.

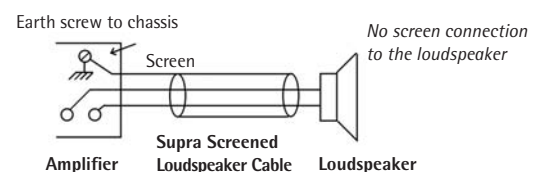
Meanwhile, multi-room installations often require audio, video, data and loudspeaker lines to run through ceilings and walls in very close proximity.

The biological effects of electric and magnetic fields should also be considered.

### Tips and Tricks:

For bi-wiring, Nylon Braid and Heat Shrink are available in KIT-form on page 15!

### Connection of Screened Loudspeaker Cables:



Item	Mechanical Specifications													Elec. Spec.	
	Colour	Cross Sec. Area (mm <sup>2</sup> =AWG)	Number of Conductors	Number of Wires	Wire Dia. (mm)	Wire Material	Insulation	Shield Material	Shield Coverage	Jacket	Ext. Size (mm)	Weight (g/m)	Length/Bobbin (m = ft)	R (Ω/km)	L (μH/m)
Ply 3.4/S	Ice Blue	3.4 = 12	2	192	0.15	Tin	Heat & Ageing	Braid 120x0,15	> 95%	Heat & Ageing	7.3x7.3	156	100 = 328	5.1	0.20
Linc 2.5		2.5 = 13	+	320	0.10	Plated	Resistant	Aluminum/	100%	Resistant	Ø8.1	94		6.8	0.42
Linc 4.0		4.0 = 11	Drain Wire	511	0.10	OFC	PVC	PET Foil		PVC	Ø8.7	135		4.9	0.44

Connect the loudspeaker cables for signal direction = direction of the legend (text) printed on the cable. Explanation on page 38-39.

## Round/Twisted Loudspeaker Cables

### Rondo 2x2.5

2x2.5 mm<sup>2</sup>. Tin plated

#### Application examples:

Hi-Fi or stage use in medium or shorter lengths in high power systems.



1:1

### Rondo 4x2.5

4x2.5 mm<sup>2</sup>. Tin plated

#### Application examples:

Bi-wiring, pair channel cable for medium power systems or single channel connected for high power systems. For Hi-Fi or stage use.



1:1

### Rondo 4x4.0

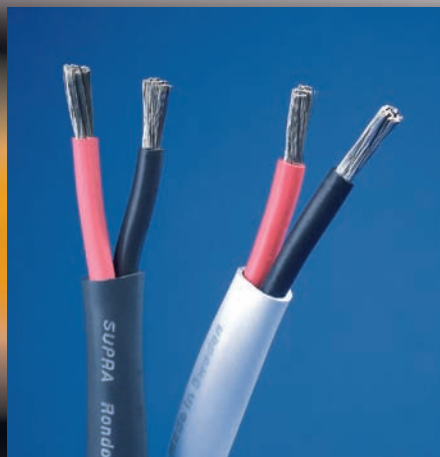
4x4.0 mm<sup>2</sup>. Tin plated

#### Application examples:

Bi-wiring, pair channel cable or single channel connected for high power systems. For Hi-Fi or stage use.



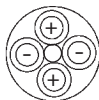
1:1



#### Tips and Tricks:

#### How to connect Supra Rondo 4x2.5 and Rondo 4x4.0 for lowest inductance

Connecting Rondo as shown in the figure below will make a lower inductance of 0.25 and 0.35  $\mu\text{H/m}$ , respectively, which in turn makes them top class high-end loudspeaker cables.



SUPRA Concentric Cables are highly flexible and of short pitch twisting for low inductance and low radiation as well as a high tolerance to frequent bendings and vibrations before bending fatigue.

This short pitch twisting takes special machines and is a slower and more expensive production which you do not often find in other than the Supra portfolio.

Item	Mechanical Specifications										Elec. Spec.	
	Colour	Cross Sec. Area (mm <sup>2</sup> =AWG)	Number of Conductors	Number of Wires	Wire Dia. (mm)	Wire Material	Insulation Et Jacket	Ext. Size (mm)	Weight (g/m)	Length/Bobbin (m = ft)	R ( $\Omega/\text{km}$ )	L ( $\mu\text{H/m}$ )
Rondo 2x2.5	Anthracite	2.5 = 13	2	320	0.10	Tin Plated OFC	Heat Et Ageing Resistant PVC	Ø7.7	110	100 = 328	6.8	0.40
Rondo 2x2.5	Ice Blue											
Rondo 4x2.5	Anthracite	2.5 = 13	4	511	0.10	Tin Plated OFC	Heat Et Ageing Resistant PVC	Ø9.7	170	75 = 246	6.8	0.35
Rondo 4x2.5	Ice Blue											
Rondo 4x4.0	Anthracite	4.0 = 11	4	511	0.10	Tin Plated OFC	Heat Et Ageing Resistant PVC	Ø11	236	50 = 164	4.3	0.40
Rondo 4x4.0	Ice Blue											



**Mini 1.6**  
2x1.6 mm<sup>2</sup>

An economy version of Classic 1.6 of fewer wires.  
Application examples: Low power such as rear speakers of home theatres.  
Available in white only.

**Classic 1.6**  
2x1.6 mm<sup>2</sup>

Application examples: Tweeters in bi-wiring, low power systems or shorter lengths of medium power systems.

**Classic 2.5**  
2x2.5 mm<sup>2</sup>

Application examples: Medium power systems, or shorter lengths in high power systems.  
Available in both Ice Blue and Anthracite Grey.

**Classic 2.5/H Halogen Free**  
2x2.5 mm<sup>2</sup>

Similar to Classic 2.5 but using fire retardant PE insulation. This makes it slightly stiffer and with a lower surface friction, which is good for installation.

**Classic 4.0**  
2x4.0 mm<sup>2</sup>

Application examples: High power systems, or longer lengths in low/medium power systems.

**Classic 6.0**  
2x6.0 mm<sup>2</sup>

Application example: High power systems, even longer lengths.



## The Classic Series

The SUPRA Classic Series comprises highly flexible cables containing tin plated multi-stranded OFC copper of purity degree 5N, which means >99.999% pure, i.e. purer than five nines. The insulation is a special ion stable PVC which minimises corrosion of the sonically benign tin surface.

The tin contributes to a better sound quality by minimising the skin-effect and making less current jumps between the wire surfaces.

This series covers all Hi-Fi applications from low power speakers, such as rear speakers of home theatre systems, to high power systems with long cable lengths.

### Tips and Tricks:

For bi-wiring, Nylon Braid and Heat Shrink are available in KIT-form on page 15.

Item	Mechanical Specifications										Elec. Spec	
	Colour	Cross Sec. Area (mm²=AWG)	Number of Conductors	Number of Wires	Wire Dia. (mm)	Wire Material	Insulation	Ext. Size (mm)	Weight (g/m)	Length/Bobbin (m = ft)	R (Ω/km)	L (μH/m)
Cl. Mini 1.6	White	1.6 = 15	2	90	0.15	Tin Plated OFC	Heat & Ageing Resistant PVC	3.1x6.2	44	300 = 984	10.8	0.40
Classic 1.6	Ice Blue			204	10.5							
Classic 2.5	Anthracite	2.5 = 13		320	0.10		Halogen Free PE	3.6x7.3	65	200 = 656	6.8	0.45
Classic 2.5/H												
Classic 4.0	Ice Blue	4.0 = 11		511	Heat & Ageing Resistant PVC		4.8x9.6	108	100 = 328	4.3	0.55	
Classic 6.0		6.0 = 9		756						2.9	0.55	

Connect the loudspeaker cables for signal direction = direction of the legend (text) printed on the cable. Explanation on page 38-39.

# Loudspeaker Connectors

**Boxcon**

24K gold plated speaker cabinet connector.  
For cables up to 10 mm² or Banana/Fork. For cabinet wall thickness up to 29 mm.

1 pair/pack  
Also available in bulk pack of 50 pairs

**Fork**

24K gold plated spade.  
The width of the fork grip is 5.5 mm. The cable can be connected either on axis or on a 90° angle. Fits up to 10 mm² cables. Adapter screw for 4 mm Banana plug is included.  
Fork is the most copied Supra connector worldwide.

2 pairs/pack  
Also available in bulk pack of 200 pcs

**Fork XL**

A larger variation of the Fork.  
The size of the fork width is 6.5 mm. The adapter screws for Banana plugs are not included in this product.

2 pairs/pack  
Also available in bulk pack of 200 pcs

**Banana**

24K gold plated.  
4 mm Banana plug for up to 10 mm² cables. The banana pin fits also BFA plugs or connectors. Can be connected either on axis or at a 90° angle. Red and Black housings.

2 pairs/pack  
Also available in bulk pack of 50 pairs



Item	Mechanical Specifications										
	Q'ty/ Pack	Connector Type	Mounting	Male/ Female	Material	Connector Fixing	Cable Connection	Max Cable Area (mm²=AWG)	Mount.- Hole	Ext. Size WxHxL (mm)	Colour Identification
Boxcon	1 pair	Banana/Fork/Cable Direct	Chassis	Female	24K	Screw/Clamp	Screw/Sold.	10 = 7	M8	Ø19x35-64	Red/Black
Fork	4 pcs	Fork, 5.5mm	Cord	Male	Gold Plated	-	Screw		-	8x20x21	-
Fork XL		Fork, 6.5mm								10x12.5x26	
Banana	2 pairs	Banana/BFA Plug			Cu	Expansion Pin				10x18x42	Red/Black



## CombiCon Banana

24K gold plated loudspeaker connector for cables up to 6mm<sup>2</sup>.

The banana pin fits also BFA plugs or connectors.

The cable can be attached straight on axis or at a 90 degree angle.

A spade can be attached to the connector body for via connections.

2 pairs/pack

Bulk: 50 pairs of Connector Body

Bulk: 50 pcs of Banana Pin

## CombiCon Spade

24K gold plated loudspeaker connector for cables up to 6 mm<sup>2</sup>.

The cable can be attached straight on axis or at a 90 degree angle.

Another spade can be attached to the connector body for via connections.

2 pairs/pack

Bulk: 50 pairs of Connector Body

Bulk: 50 pcs of Spade

## CombiCon Kit

A set of:

2 pairs of Connector Body

4 pcs of Spade

4 pcs of Banana/BFA

## CombiCon Assortment

An assortment set of:

50 pairs of Connector Body

50 pcs of Banana/BFA

50 pcs of Spade

(For dealers)



## CombiCon

This combination connector comprises two parts: a termination part to be screwed onto a connector body. The connector part is of two types; Spade and Banana pin, which in turn also fit BFA plugs.

### The Connector Body

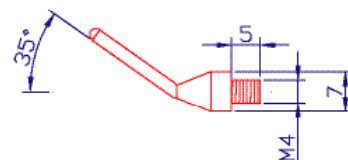
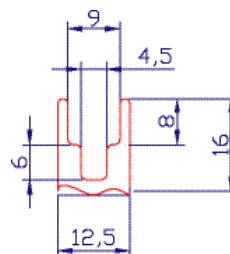
The connector body can be attached to the cable either on axis or in a 90 degree angle. See the R.H. picture above. Also a spade terminated cable can be attached to the connector body. Printing in red and black, respectively, for polarity identification.

### The Termination Parts

The Banana pin also fits BFA connectors.

The Spade is angled for easier mounting in tight spaces. It has a two-step, width opening. See drawing to the right.

The pictures above show both Banana/BFA and Spade connectors, and also how the cable can be connected straight or angled.



Drawing of the CombiCon Spade

Item	Mechanical Specifications									
	Q'ty/ Pack	Connector Type			Material	Connector Fixing	Cable Connection	Max Cable Area (mm²=AWG)	Ext. Size Body DxL (mm)	Colour Identification
CombiCon Banana	2 pairs	x		x	24K Gold	Expansion Pin	Nut	6 = 9	Ø13x20.5	Red/ Black
CombiCon Spade			x		Plated	-	Locking			
CombiCon Kit		2+2 pairs	x	x	x	Cu	Expansion Pin/- Ring			
CombiCon Assortment	50 pcs each	x	x	x						

## Terminated Loudspeaker Cables

### Sword Jumper

28cm pair of SUPRA Sword. Spade termination.

This is a hi-end jumper cable for bi-wire loudspeakers. The usual copper plate connections between the speaker terminals are good examples of how a speaker cable is NOT supposed to be designed. They make the most high inductive connection with their wide spaced conductors.

In order to avoid this weak link we have developed this Sword Jumper.

We also thank Mr Tom Frantzen of the German magazine STEREO for the idea of this product.

### Ply Terminated Loudspeaker Cables

Pair of 2m, 3m or 4m.

Packed in blister box.

### Ply 2.0 Combicon

Pair of Ply 2.0 with Combicon connectors.

### Ply 3.4 Combicon

Pair of Ply 3.4 with Combicon connectors.

### Ply 3.4/S Combicon

Pair of Ply 3.4/S with Combicon connectors.



CUSTOM  
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DESIGN &  
INSTALLATION  
ASSOCIATION

Member

Item	Mechanical Specifications					Elec. Spec.		Stand. Lengths					
	Cr. Sec. Area (mm²=AWG)	Q'ty/ Pack	Attached Connectors			Cable Conn.	Colour	R (Ω/km)	L (μH/m)	(1m = 3.28Ft) (2 m) (3 m) (4 m)			
			Banana	Spade	BFA								
Ply 2.0 Combicon	2.0 = 14	1 Pair	x	x	x	Nut Locking	Ice Blue	8.1	0.30	x	x	x	
Ply 3.4 Combicon	3.4 = 12		x	x	x	with Sliding					x	x	x
Ply S/3.4 Combi			x	x	x	Ring					x	x	x



## Octopower

SUPRA's power supply cables for car audio and marine are tin plated to withstand outdoor use in cars and boats and to prevent poor connections and power loss caused by corrosion.

Octopower is immune to a salty coastal or marine climate.

### Octopower 8

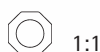
Tin plated, 8 mm<sup>2</sup>

### Octopower 16

Tin plated, 16 mm<sup>2</sup>

### Octopower 25

Tin plated, 25 mm<sup>2</sup>



1:1



1:1



1:1

## Accessories for Bi-Wiring

Bi-wiring is a separation of the music signal current between power amplifier and loudspeaker drive-units into two cables; one for the bass and one for the mid-range/tweeter.

Bi-wire speakers are therefore equipped with separate inputs to the crossover networks.

Bi-wiring makes an audible enhancement.

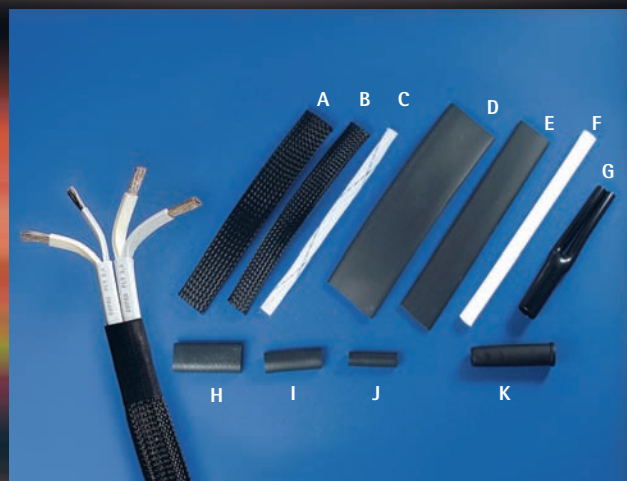
The best combination is a pair of Ply 3.4 or 3.4/S.

## Nylon Braid

A 'hose' for sleeving over the cables to gather them into a more convenient single bi-wire cable pair.

## Nylon Braid Kits

The Nylon Braids are available in Kits with suitable Heat Shrink sleeving.



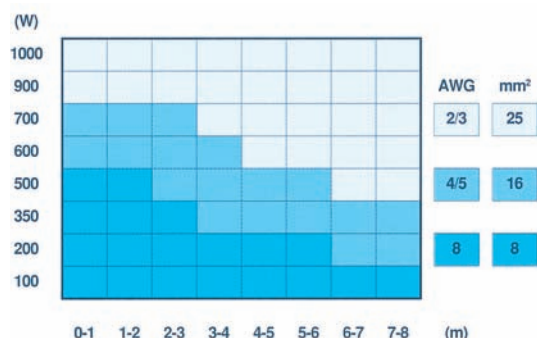
Item	Mechanical Specifications										El. Spec		
	Colour	Cross Sec. Area (mm²=AWG)	Number of Wires	Wire Dia. (mm)	Wire Material	Insulation	Temp.- Range (°C)	Ext. Size Dia. (mm)	Weight (g/m)	Length/Bobbin (m / ft)	Resistance (Ω/km)		
Octopower 8B	Black	8.0 = 8	252	0.19	Tin Plated OFC	Oil Resistive PVC	-35 to +75	Ø7.0	92	100 = 328	2.4		
Octopower 8R	Red												
Octopower 16B	Black	16 = 5	476						Ø8.5		172	50 = 164	1.3
Octopower 16R	Red												
Octopower 25B	Black	25 = 3	735						Ø10	244		0.8	
Octopower 25R	Red												

## You do it like this:

The braid sleeve widens when it is pushed together longitudinally, which makes it very easy to push the cable pair into it. A Heat Shrink sleeve at each end fixes the stretched braid sleeve, and completes the work.

Please be aware: A very tense stretching creates a neat result, but also a less flexible cable.

## Cable Choice Chart



Item	Mechanical Specifications							
	Pict. ref.	Q'ty/ Pack	Application Examples	Colour	Fit Diam. (mm)	Inner Size (mm)	Ext. Size (mm)	Temp. Range (°C)
Bending Protection 7	K	100 pcs	Bend. Prot. Scart/AV-2	Black	Ø5-Ø7.0	Ø7.2	Ø8.5	-30 to +130
Rubber Sleeve 5	J	100 pcs	Bending Protection		Ø5.0-Ø8.0	Ø5.0	Ø6.8	
Rubber Sleeve 7.5	I		AV Series or		Ø7.5-Ø13	Ø7.5	Ø9.2x30	
Rubber Sleeve 10	H		Fixing Nylon Braid		Ø10-Ø16	Ø10	Ø12x35	
Termination Trousers	G	100 pcs	Y-Joint Protection	White	Ø7.5-Ø9.0	Ø8.5	Ø9.5	-30 to +70
Termination Trousers Set		2 pcs	for Biline		Ø7.5-Ø9.0	Ø8.5	Ø9.5	
Heat Shrink Hose 10	F	75 m	Fixing		Ø5-Ø10	Ø10 (Ø5)	Ø13.5	
Heat Shrink Hose 12	E	100 m	of		Ø6.4-Ø12.5	Ø12.7 (Ø6.4)	Ø14	
Heat Shrink Hose 19	D		Nylon Braid	Ø9.5-Ø19.0	Ø19.1 (Ø9.5)	Ø20.5		
Nylon Braid 8	C		Fit Interconnect Cables	White	Ø5-Ø8	Ø8	Ø9	
Nylon Braid 10	B	50 m	Bunching of Bi-Wired	Black	Ø7-Ø15	Ø10	Ø11	-70 to +125
Nylon Braid 15	A		Loudspeaker Cable	Black	Ø10-Ø21	Ø15	Ø16	
Nylon Braid 8 Kit	C+F		5 m	Fit Interconnect Cables	White	Ø5-Ø8	Ø8	
Nylon Braid 10 Kit	B+E	10 m	Bunching of Bi-Wired	Black	Ø7-Ø15	Ø10	Ø11	
Nylon Braid 15 Kit	A+D		Loudspeaker Cable		Black	Ø10-Ø21	Ø15	Ø16

## Analogue Interconnect Cables

### SubLink

A two-core screened interconnect for semi-balanced connection. Low capacitance and efficient noise rejection maintain signal integrity in the long run interconnects, which are often required for subwoofer links. It can be connected balanced or semi-balanced.



1:1

### BiLine

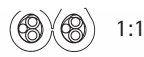
A concentric twin-coax interconnect cable. Each pair is screened and jacketed to make complete cables. Application examples: Y-Links from AV amps with 1 output to subwoofer with 2 inputs or corresponding with mini plug Supra MP-8 from computer to amp. For balanced or semi-balanced connection.



1:1

### Dual

A dual-in-line interconnect cable for semi-balanced connection and with screens of aluminum foil. Low capacitance. Application example: Analogue audio. For balanced or semi-balanced connection.



1:1

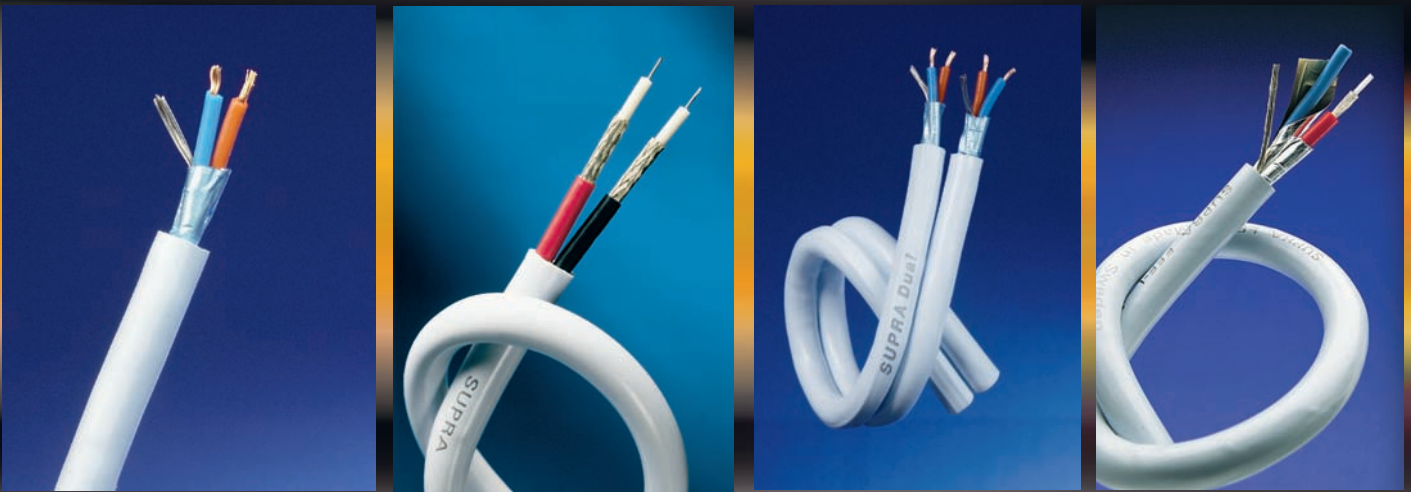
### EFF-I

#### Analogue Interconnect Cable

The multi test winner. Our best interconnect for analogue audio, for example: CD to amp. As well as being one of the world's best for analogue applications, it can also be used for digital audio as a 75 Ohm RCA interface or video interconnect.



1:1



### EFF-I Interconnect Cable

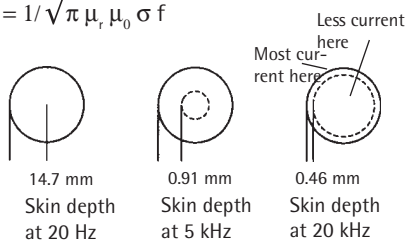
The dynamic influence of the skin effect is of great sonic influence as music and also video signals are nothing but variations. By means of the Equalized Frequency Flow technique (EFF) Supra takes skin effect into account. The EFF-I cable consists of two tube-shaped conductors with a wall thickness of 0.20 mm which is well below the smallest skin depth within the audio range. This makes a wide range of the music (or video) frequencies pass through under the same conditions.

### EFF-I Interconnect Cable Construction

Silver plated OFC copper 0.5 mm<sup>2</sup>/conductor. Tube-shaped flexible conductors with a center core of PE. Two conductors, individually screened, for balanced or semi-balanced connection.

### Effective Penetration Depth (Skin Effect)

$$\delta = 1 / \sqrt{\pi \mu_r \mu_0 \sigma f}$$



Item	Mechanical Specifications													Electrical Spec.		
	Colour	Channels/ Cable	Application Examples	Cross Sec. Area (mm²=AWG)	Number of Wires	Wire Dia. (mm)	Wire Material	Insulation	Shield	Jacket	Ext. Size (mm)	Weight (g/m)	Length/Bobbin (m = ft)	R (Ω/km)	C (pF/m)	Velo. Factor
SubLink	Ice Blue	1	Subwoofer, Mono	0.24 = 23	19	0,127	Tin	PE	Alu/PET Foil	Heat Et	Ø6.0	48	100 = 328	72	52	0.66c
BiLine		2	Subwoofer, Stereo	0,20 = 24	1	0,4	Plated	PE Foam	Braid 120x0.10	Ageing	Ø7.0	53		87.5	45	0.78c
Dual			Hi-Fi, Cinema	0.24 = 23	19	0,127	OFC	PE	Alu/PET Foil	Resistant	2 x Ø5.5	70		72	52	0.66c
Eff-i		1	Hi-Fi, High End	0.46 = 21	12	0.22	Aq OFC			PVC	Ø7.2	68		50 = 164	38	75



**AV-2 Audio/Video Cable  
2-Core Coax**

Application examples:  
S-video. Suitable connectors are Supra SVHS-7 and/or Supra Scart plugs.  
S-video = Y/C



1:1

**AV-3 Audio/Video Cable  
3-Core Coax**

Application examples:  
Component video, A/V.  
Suitable connectors are Supra Scart, RCA-3, DVI-I, BNC-3 and VGA plugs.  
Component video = Y/Cb/Cr



1:1

**AV-4 Audio/Video Cable  
4-Core Coax**

Application examples:  
RGB, Component video, A/V.  
Suitable connectors are Supra Scart, RCA-3, DVI-I, BNC-3 and VGA plugs.



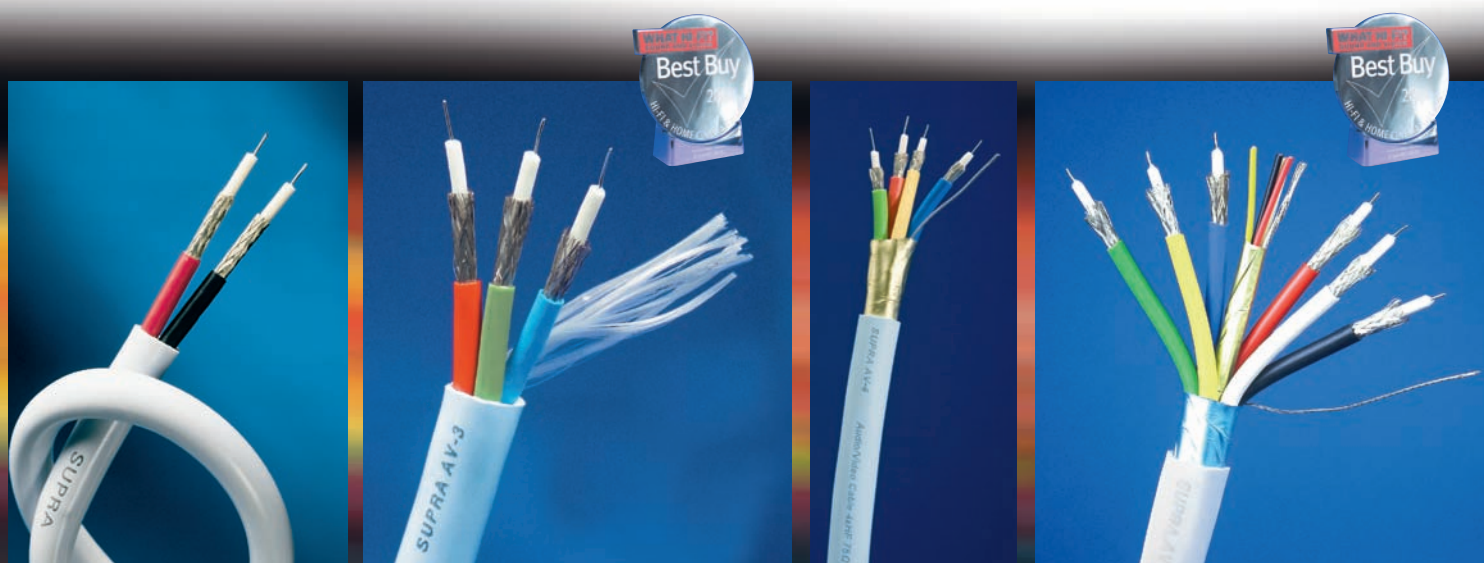
1:1

**AV-6.4 Audio/Video Cable  
6-Core Coax**

AV-6 comprises 6 coax, surrounded by a common foil screen which further minimises RF breakthrough. The centre core is a screened 2-pair audio cable.  
Application examples:  
RGB/S-video/Composite video/Component video. Suitable connectors are Scart, VGA, DVI-I, SVHS-7, BNC-3 and RCA-3.



1:1



**AV Series Audio/Video Multi Core Coax 75 Ohm**

The Supra AV cables are multi-core coaxes of individual 75 Ohm rated coax cores.  
Each core has a braided screen of tin plated OFC.  
The Supra AV series is of very low capacitance owing to the PE foam insulation.

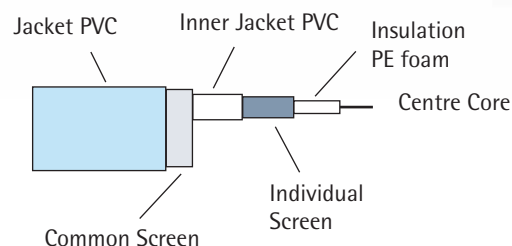
The construction is especially developed for Home Theatre use, and suits several applications with DB25, Scart, RCA, S-VHS and BNC connectors.  
The timing error is less than 2.2 ns which enables accurate RGB transmission.

Applications:

- Home Theatre
- Video walls
- High resolution video projection
- CG workstations
- Studio tie lines

The AV-6.4 comprises a screened 2-pair audio cable as a centre core.

**Construction of the AV Series**



**Supra AV-6.4** is an upgraded version of the "Best Buy" awarded AV-6\*.  
It remains the same 6-core coax cable, unchanged except for the added 2-pair centre core for audio.

\***AV-3 and AV-6** are used in the terminated cables 3RCA-3RCA and Scart-Scart RGB, respectively, which were assigned the "What Hi-Fi Best Buy Award 2002, U.K."

For signal measurements, see page 37.

Item	Mechanical Specifications														Electrical Specifications			
	Colour	Application Examples	No. Coax	Cross. Area (mm <sup>2</sup> =AWG)	No. of Wires	Wire Material	Wire Insulation	Inner Shield Coverage	In. Shield Insulation	Outer Shield Coverage	Jacket	Ext. Size (mm)	Weight (g/m)	Length/Bob. (m = ft)	R (Ω/km)	C (pF/m)	Imp. Z (Ω)	Velo. Factor
AV-2	Ice Blue	Svideo or AV	2	0,20 = 24	1	Tin Plated OFC	PE Foam	Braid 120x0.10 OFC Sn >95%	Chloride Ion-Stabile PVC	-	Heat & Ageing Resistant PVC	Ø7.0	53	100 = 328	87,8	45	75	0.78c
AV-3		Component or AV	3									Ø8.0	68					
AV-4		RGB or AV	4									Ø9.5	105	75 = 246				
AV-6.4			6 (+4)									Ø11.0	147	50 = 164				

Attenuation: 1MHz/1.4 dB, 5MHz/3.1dB, 10MHz/4.4dB, 50MHz/9.8dB



## HF100

HDMI / DVI cable

SUPRA HF100 is specially designed for use over long runs and high resolutions with HDMI and DVI hardware.



1:1

## Rewireable DVI Connectors

Fully shielded by the Aluminium housing.

### DVI-I 24+5 Connector

A combined digital and analogue connector. We use it mainly for analogue applications with our cables AV-3, AV-4 and AV-6.4 for Component or RGB transfer.

### DVI-D 18+1 Connector

A purely digital version that is preferably is being used with our HDMI / DVI Cable HF100.

## Adapters

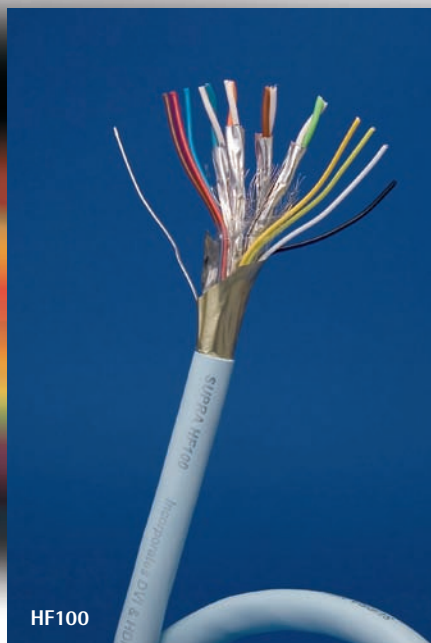
All connection surfaces are 24K gold plated. We do not recommend adapters for cables longer than 8m. For these applications we suggest our SUPRA HDMI-DVI cable.

### DVI to HDMI Adapter

DVI female to HDMI male.

### HDMI to DVI Adapter

HDMI female to DVI male.



HF100



DVI-I



DVI-HDMI



DVI-D



HDMI-DVI

## HF100 Design

The cores of SUPRA HF100 are insulated with PE for low capacitance and high velocity factor.

The digital pairs are impedance stable over the entire frequency range up to 600MHz. The pairs are twisted with different pitch in order to minimize crosstalk.

SUPRA HF100 cable is double shielded. The most important cores are separately screened and in addition there is a common shielding of all cores. The shieldings provide efficient protection from electro-magnetic radiation.

We do not recommend cable runs over 20m for DVI-DVI.

### Tips and Tricks:

With SUPRA rewireable DVI connectors you can install DVI cables in conduits.

**HDMI<sup>™</sup>**  
HIGH DEFINITION MULTIMEDIA INTERFACE

We are a licensed HDMI cable manufacturer.  
Please visit [www.hdmi.org](http://www.hdmi.org)

Item	Mechanical Specifications														Electrical Specifications			
	Colour	Application Examples	Cable Type	Data Link (TMD5)	Cross. Area (mm <sup>2</sup> =AWG)	Wire Material	Wire Insulation	Inner Shield Coverage	Comm. Conduct.	Outer Shield Coverage	Jacket	Ext. Size (mm)	Weight (g/m)	Length/Bob. (m = ft)	R (Ω/km)	C (nF/m)	Imp. Z (Ω)	Velo. Factor
HF100	Ice Blue	HDMI/DVI	Single Link	4x Screened TP	0,26 = 23	Solid OFC	PE Foam	Alum. Foil	7x0.22 PE	Alum. Foil	H.A.R. PVC	Ø9.5	106	75 = 264	75	48	100	0.75c

Attenuation: 1MHz/1.9 dB, 10MHz/5.4dB, 100MHz/17.4dB, 600MHz/44.6dB

Item	Mechanical Specifications									
	Q'ty/pack	Conn. Type < Direction >	Conn. Type	Pin Material	Housing	Connector Fixing	Cable Clamping	Max Cable Dia. (mm)	Ext. Size LxWxH (mm)	Colour
DVI-I	1 pc	DVI-I 24+5 Male		24K	Aluminum, Shielded	Screw	Clamp	Ø11	48x39x15	Antracite
DVI-D		DVI-D 18+1 Male		Gold Plated	PVC, Shielded	Screw/-	-	-	51x40x13	Grey
DVI-HDMI Adapter		DVI-D 24+1 Female	-> HDMI Male							
HDMI-DVI Adapter		HDMI Female	-> DVI-I 24+1 Male	OFC		-/Screw			41x40x15	



## HDMI / DVI Cables

The SUPRA HDMI / DVI cables are based on Supra HF100, which is an impedance stable cable, designed for longer runs. See page 19.

SUPRA HDMI / DVI supports HDTV resolution up to 720p and 1080i.

Application examples: Computer/DVD to Projector or to Plasma/LCD TV.

### HDMI

HDMI stands for High Definition Multimedia Interface.

SUPRA HDMI-HDMI is a high performance, single link HDMI cable, especially designed for digital video and audio over long lengths.

The cable is terminated with overmoulded quality HDMI connectors at both ends or else as an HDMI to DVI-D. The cable is a single link.

The gold plating of the pins is as thick as 0.8 micrometres for longevity and reliability of first rate connection.

DVI and HDMI are compatible for video signals. But DVI is video alone whereas HDMI conveys both Video and Audio.

### DVI

DVI stands for 'Digital Visual Interface'.

SUPRA DVI-DVI high performance cable is a single link especially designed for digital video transfer up to 20m (60 ft). The cable is terminated with Supra's high quality DVI-D connectors.

The DVI connector, DVI-D, is cased in aluminium and therefore fully shielded (unlike common plastic and metal-sprayed types). The connector is rewireable to enable mounting after cable installation in walls or conduits, tubing, trunking, etc. The gold plating of the pins is as thick as 0.8 micrometres for stable and longlived connection quality.



HDMI-HDMI



HDMI-DVI



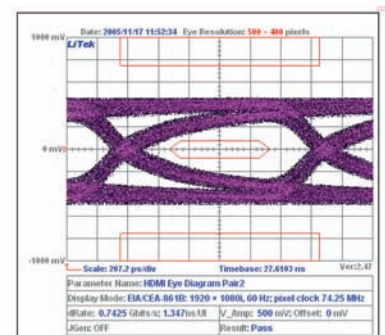
DVI-DVI

### Virtual Reality

HDMI is the very best interface for video available today. Supra's HDMI cable is capable of transferring the finest details between your DVD and TV. The details that are essential to make you experience reality.

### Finally over 12 metres

When our 10m HDMI cable was approved by HDMI's Accredited Testing Centre (ATC) we were one of only two factories in the world, and the only branded Audio/Video manufacturer, with an official certificate granting that the quality will not be degraded on this length. Now, also the 12m cable is tested and approved. First in the world, as far as we know. It means that you are free to arrange your home cinema equipment, not limited by a short cable.



Approved Eye Pattern test for SUPRA HDMI 12m cable

Item	Mechanical Specifications									Standard Lengths					
	Connection Configuration	Application Examples	Conn. < Direction > Conn.		Cable	Solder Tin	Connector Fixing	Cable Clamping	Colour	(1m = 3.28ft)					
			From	To						1m	2m	4m	8m	10m	12m
HDMI <-> HDMI	Single Link	DVD/Projector/TV	HDMI (A)	<-> HDMI (A)	HF100	Almit SR-34 Super	-	Mold	Ice Blue	x	x	x	x	x	x
HDMI <-> DVI		DVD/Computer/Projector/TV	HDMI (A)	<-> DVI-D 18+1		Sn 96.5%, Ag 3%, Cu 0.5%, Lead Free	-/Screw	Mold/Clamp		x	x	x	x	-	x
DVI <-> DVI			DVI-D 18+1	<-> DVI-D 18+1			Screw	Clamp		x	x	x	x	x	x

#### DVI - 3RCA and DVI-3BNC Cable

DVI for component video. Usual application is DVD with 3RCA or BNC out to projector/plasma with DVI-I input. Available in different standard lengths up to 15m. Fully shielded, rewirable connectors.

#### DVI - 4RCA and DVI-4BNC Cable

For analogue RGB transfer with composite sync from DVD or H/V sync from computer. Suitable for DVI-I/ 4RCA or 4BNC out to projector/plasma with DVI-I/4RCA or 4BNC input. Available in different standard lengths up to 15m. Fully shielded, rewirable connectors.

#### DVI - 5RCA and DVI-BNC Cable

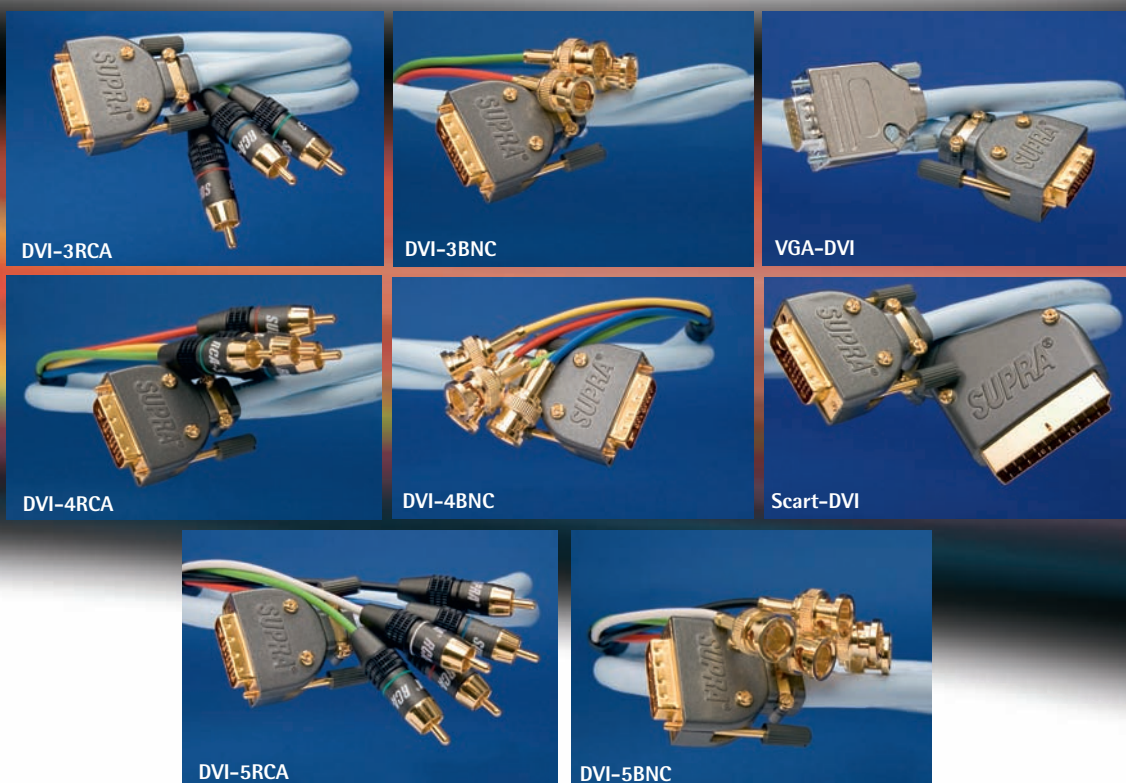
For analogue RGB transfer with separate H and V sync from computer. Suitable for computer with DVI-I out to projector with 5RCA or 5BNC inputs. Available in different standard lengths up to 15m. Fully shielded, rewirable connectors.

#### VGA - DVI Cable

For analogue RGB transfer, suitable between computer and monitor/projector with DVI-I input. Available in different standard lengths up to 15m. Fully shielded, rewirable connectors.

#### Scart - DVI Cable

For analogue RGB transfer, suitable between DVD and monitor/projector with DVI-I input. Available in different standard lengths up to 15m. Fully shielded, rewirable connectors.



Item	Mechanical Specifications									Standard Lengths					
	Connection Configuration	Application Examples	Conn. <Direction> Conn. From To	Cable	Solder Tin	Connector Fixing	Cable Clamping	Colour	(1m = 3.28ft)						
									1m	2m	4m	8m	12m	15m	
DVI <=> 3 RCA	Component,	DVD/Projector/	DVI-I <=> RCA-3	AV-2	Almit SR34	Screw/Expansion	Clamp	Ice Blue	x	x	x	x	x	x	
DVI <=> 3 BNC	Y/Cb/Cr	TV	DVI-I <=> BNC-3	AV-4		Screw/Bayonet	Clamp/Crimp		x	x	x	x	x	x	
DVI <=> 4 RCA	RGB &	Computer/DVD/	DVI-I <=> RCA-3		Super	Screw/Expansion	Clamp		x	x	x	x	x	x	
DVI <=> 4 BNC	C-sync	TV/Projector	DVI-I <=> BNC-3	Sn 96.5%,	Screw/Bayonet	Clamp/Crimp	x		x	x	x	x	x		
DVI <=> 5 RCA	RGB,	Computer/	DVI-I <=> RCA-3	Ag 3%,	Screw/Expansion	Clamp	x		x	x	x	x	x		
DVI <=> 5 BNC	H/V-sync	Projector/Monitor	DVI-I <=> BNC-3	Cu 0.5%	Screw/Bayonet	Clamp/Crimp	x		x	x	x	x	x		
DVI <=> VGA	RGB C/H/V synk	DVD/Computer/	DVI-I <=> VGA-11	Lead Free	Screw	Clamp	x		x	x	x	x	x		
Scart -> DVI	RGB & C-sync	Projector/TV	Scart -> DVI-I	AV-4	Friction Grip/Screw		x		x	x	x	x	x		

## Line Connectors

### BNC-3

24K gold plated BNC plug for crimping.  
Crimping tool: see below.  
Fits 3mm cable dia, e.g. the SUPRA AV-series.

### BNC-6 (Not in picture)

24K gold plated BNC plug for crimping, similar to BNC-3 but for 6mm dia.

### BNC-8

BNC-plug for soldering.  
24K gold plating with Teflon insulation.  
For cable diameters of 7-8.5 mm.

2 pcs/pack

Bulk pack: 50 pcs

### SCART

24K gold-plated Scart connector with shielding housing of metal.  
Fits cable diameters 8-12 mm.

1 pc/pack

Bulk pack: 50 pcs

### SVHS-7

24K gold-plated S-Video connectors with shielding metal housing and Teflon insulation.  
Fits cable diameters up to 7 mm.

2 pcs/pack

Bulk pack: 50 pcs

### MP-8 Mini Jack Plug Stereo

For large diameter cables up to 8 mm.  
24K gold plated mini plug 3.5 mm

2 pcs/pack

Bulk pack: 50 pcs

### DB25-F and DB25-M

24K-gold plated DB25 plugs with metalised shielding housing. Male and female.  
Fits cable diameter 5-11 mm.

1 pc/pack

Bulk pack: 50 pcs

### VGA-11

DB-15 connector with 24K gold-plated pins.  
For cable dia up to 11 mm.  
Fits all SUPRA AV-cables.

1 pc/pack

Bulk pack: 50 pcs

### Acon-F and Acon-M

Antennae connectors 75 Ohms. Gold plated with shielding metal housing.  
Fit the Supra Anco cable.

1 set Male & Female/pack

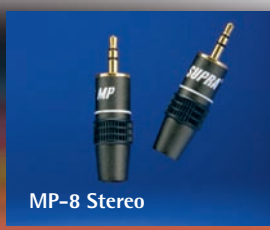
Bulk pack: 50 pcs each



BNC-3 & BNC-6



Scart



MP-8 Stereo



VGA-11



BNC-8



SVHS-7



DB25 M



Acon M/F



**Crimping bosses for 4mm size**  
Specially made for BNC-3 connector  
Fit Abiko Crimper DCC 0908



**Abiko Crimper DCC 0908**

Item	Mechanical Specifications										
	Q'ty/ pack	Connector Type	Male/ Female	Pin Material	Insulation	Housing	Connector Fixing	Cable Clamping	Max Cable Dia. (mm)	Ext. Size WxHxL (mm)	Colour Identification
Acon-M/F set	2 pcs	Antenna	M/F	Gold Plated Cu	PTFE (Teflon)	Shielded	Spring	Clamp	Ø6.2	Ø13x36	-
BNC-3		BNC	Male				Bayonet	Crimp	Ø3.2	Ø15x25	
BNC-6									Ø6.2	Ø15x25	
BNC-8									Ø8.0	Ø13x52	
DB25-F	1 pc	DB25/ D-sub 25	Female		Noryl	Shielded Front Mounted	Screw	Screw/ Clamp	Ø11.0	55x17x51	White
DB25-M											
MP-8 Mono	2 pcs	3.5mm	Male			Shielded	-	Clamp	Ø8.5	Ø13x52	
MP-8 Stereo						Shielded Fr. M.	Spring		Ø8.5	Ø13x52	
Scart	1 pc	Scart				PTFE (Teflon)	Shielded	-	Ø11.0	48x20x60	-
SVHS-7	2 pcs	S-video				Shielded Fr. M.	Screw	Ø7.0	Ø13x42	Yellow	
VGA-11	1 pc	DB15 (HD)					Ø11.0	31x44x15	-		



## Swift XLR Au Set Patented

XLR connector with 24K gold plated pins.  
Fully shielded for noise rejection.  
Easy assembly.  
No loosable screws.  
Nothing to slip on the cable before soldering.

1 set Male & Female/pack  
Bulk pack: 10 pcs male or female (no set)

2 pcs/pack  
Bulk pack: 50 pcs

## RCA-3

24K gold-plated RCA (Phono) plug with Teflon insulation and metal housing.  
Fits 3 mm cable diameter, e.g. the Supra AV-6 core.  
Provided with different Colour rings.

1 pair/pack  
Bulk pack: 50 pairs

## RCA-3 RGB Set

The same plugs as above RCA-3 in set of 3 pcs with Red, Green and Blue marking rings.

3 pcs/pack  
Bulk pack: 50 pcs/colour

## RCA-6

Similar to RCA-6SC below but with standard clamping, not squeeze clamping.

## RCA-6SC

24K gold plated RCA plug with squeeze clamping, only for cable diameters of 5-6 mm.

1 pair/pack  
Bulk pack: 50 pairs

## PPX

Similar design as PPSL below, without squeeze clampings.  
Max cable dia 8.5 mm.

## PPSL

RCA plug in 24K gold plating with squeeze clamping of both front part and cable aperture. Shielding housing, front mounted.  
Teflon insulation. Lathe turned in one piece.  
Max cable dia 7.7 mm.

1 pair/pack  
Bulk pack: 50 pairs



RCA-3 A/V



RCA-6



PPX



RCA-3 RGB



RCA-6SC



PPSL


Supra SWIFT  
Gold plated XLR pins


Item	Mechanical Specifications									
	Q'ty/ Pack	Connector Type	Material	Insulation	Housing	Connector Fixing	Cable Clamping	Max Cable Dia. (mm)	External Size ØxL (mm)	Colour Identification
PPSL	1 pair	RCA Male	24 K Gold Plated Cu	PTFE (Teflon)	Shielded, Front Mounted	Squeeze Lock	Squeeze Lock	Ø7.7	Ø13x53	Red/White
PPX						Screw	Ø8.5	Ø13x43	Red/White	
RCA-3 A/V	3 pcs				Crimp	Ø3.2	Ø12x50	Red/White		
RCA-3 RGB								Red/Green/Blue		
RCA-6	1 pair					Squeeze Lock	Ø6.5	Ø11x35	White	
RCA-6 SC									Red/	
Swift XLR Au Set	1 set F/M	XLR Female/Male		Noryl	Shield.,Fr. Mounted	Quick Lock	Screw	Ø7.4	Ø19x83 / Ø19x77	Red/Black

All SUPRA connectors have shielding housings and the cables are provided with Supra's efficient screens which ensures noise rejective interlinking.

The cables are developed with the focus on low capacitance, high velocity factor and correct and stable characteristic impedance.

The results are improved definition and dynamics.

## Tommy Jenving recommends for stereo interconnects:

Supra EFF-ISL, our best analogue interconnect. Multi test winner and our most sold interconnect.

For balanced with XLR, we recommend the same cable but with the *Swift* connectors: EFF-IXLR.

Supra DAC-X, our fastest cable, for precise transients. A high-end cable at a mid-end price.

Supra Dual-RCA, if you want a high value for money.



### SubLink-RCA

SubLink-RCA is a semi-balanced interconnect from one RCA connector to one RCA connector.

Application example:

From the mono output of the AVR amp to an active mono subwoofer.

### BiLine-MP

BiLine-MP is a semi-balanced interconnect from one mini jack plug to two RCA connectors.

Application example:

From computer audio output to amp.

### Y-Link

Y-Link is a Y-connected semi-balanced interconnect from one RCA connector to two RCA connectors.

Application example:

From the mono output of the AVR amp to an active stereo subwoofer.

Item	Mechanical Specifications											Standard Lengths						
	Q'ty/ pack	Application Examples	Connector Type From	<<< Direction >>>	Connector Type To	Cable	Screen Connection	Solder Tin	Connector Fixing	Cable Clamping	Cable Colour	(1m = 3.28ft)						
												1m	2m	4m	8m	12m	15m	
BiLine MP-RCA	1 pc	Computer/MD/CD	MP-8 3.5mm Stereo	<->	RCA-6	BiLine	Semi-Balanced	Almit SR34 Super Lead Free Sn 96.5%, Ag 3%, Cu 0.5%	- / Expansion	Clamp	Ice Blue	x	x	x	x	x	x	
DAC-SL	1 pair	Analog Hi-Fi,	PPSL RCA	<->	PPSL RCA	DAC	Connection		Squeeze lock	Squeeze Lock	Ice Blue	x	x					
DAC-X		Cinema or	PPX RCA	<->	PPX RCA	EFF-I	Balanced		Expansion	Screw	Anthracite	x	x					
DAC-XLR		High End	SWIFT XLR 3F LIGHT AU	->	SWIFT XLR 3M LIGHT AU		Quick-lock		Quick-lock		x	x						
Dual-RCA		Analog Hi-Fi, Cinema	RCA-6	<->	RCA-6		Dual		Semi-Balanced	Expansion	Crimp	Ice Blue	x	x				
EFF-ISL		Analog Hi-Fi,	PPSL RCA	<->	PPSL RCA		Connection		Squeeze lock	Squeeze Lock	x	x						
EFF-IX		Cinema or	PPX RCA	<->	PPX RCA				Expansion	Screw	x	x						
EFF-IXLR		High End	SWIFT XLR 3F LIGHT AU	->	SWIFT XLR 3M LIGHT AU			Quick-lock	Quick-lock		x	x						
SubLink-RCA	1 pc	Active Mono Sub.	RCA-6	<->	RCA-6	SubLink	Semi-Bal.	Expansion	Crimp	Ice Blue	x	x	x	x	x	x	x	
Y-Link		Active Stereo Sub.	PPX RCA	<->	RCA-6	BiLine	Y-Connect		Screw/Crimp		x	x	x	x	x	x		

### 75 Ohm Interconnects: Trico-RCA, Trico-BNC

The 75 Ohm digital interconnects are designed for RCA (Phono connectors) interfaced transmission between CD transport and digital to analogue converter. They have the capability to transfer the full digital spectrum and can be used with a number of 75 Ohm applications.

### 110 Ohm AES/EBU Interconnect: DAC-XLR AES/EBU

DAC-XLR is a balanced interconnect for digital transfer, mostly in professional equipment.

DAC stands for Digital/Analogue Cable, not to be mixed up with DAC converters.

### Digital Interconnects

General:

Always, in digital applications, the use of a cable with the correct characteristic impedance is very important. There are two standard impedances:

- 75 Ohm S/PDIF interface which uses RCA connectors. This is most common in Hi-Fi applications from CD transport to DAC, as well as home recording.
- 110 Ohm AES/EBU interface which is balanced and has XLR connectors. This is mostly used in professional applications. For example Supra DAC-XLR AES/EBU.



Item	Mechanical Specifications										Standard Lengths				
	Application Examples	Connector Type < Direction > Connector Type		Cable	Screen Conection	Solder Tin	Connector Fixing	Cable Clamping	Coulour	(1m = 3.28Ft)					
		From		To						1m	2m	4m	8m	15m	
DAC-XLR AES/EBU	Digit. AES/EBU 110 W	Swift XLR 3F light Au	->	Swift XLR 3M light Au	DAC	Balanced	Almit SR34	Quick Lock	Screw	Ice Blue/Anth.	x	x			
Trico-BNC	Coaxial Digital 75 Ohm	BNC	<->	BNC	Trico	Semi-Balanced	Super	Bayonet	Crimp	Ice Blue	x	x	x	x	x
Trico-RCA		PPX RCA	<->	PPX RCA			Sn 96.5%,	Expansion	Screw		x	x	x	x	x
Trico MP-RCA		MP-8 Mono 3.5mm	<->	PPX RCA			Ag 3%,	- / Expansion	Crimp/		x	x	x	x	x
Trico RCA-BNC		PPX RCA	<->	PPX RCA			Cu 0.5%	Exp./Bayonet	Screw		x	x	x	x	x



## Optic/Digital Interconnects

### X-ZAC Toslink

An exact mechanical fit is important in order to avoid divergence losses. Therefore X-ZAC is provided with a high precision metal connector.

The fibre optic is principally the same as ZAC but the X-ZAC is machine polished in further 3 stages.

Available in 1m (3ft).

### ZAC Toslink

Our most popular Toslink.

ZAC Toslink is available in 1m (3ft), 2m (6ft), 4m (13ft), 8m (26ft), 15m (49 ft).

### ZAC MinTos

The same concept but fitted with Mini Toslink at one end and a Toslink at the other. Often used between Mini discs and CD players.

Available in 1m (3ft).



X-ZAC Toslink



ZAC Toslink



ZAC MinTos

### ZAC Fibre Optic Interconnect

ZAC stands for Zero Attenuation Concept.

The innovative curving of the fibre core tip to get a zero divergence loss enables plastic fibre optic to be used, and achieve the same transmission quality as that of a glass fibre core in combination with the strength and flexibility of the plastic core.

Properties and advantages of the fibre optic cable are:

- Low weight
- Wide band width
- Interference immune
- No radiation
- Independent of voltage

Item	Mechanical Specifications									Standard Lengths					
	Application Examples	Connector < Direction > Connector			Cable	Fibre Type	Lens Polish	Connector Fixing	Cable Clamping	Colour	(1m = 3.28Ft)				
		From		To							1m	2m	4m	8m	15m
X-ZAC TosLink	Optic Digital	Toslink, Metal	<->	TosLink, Metal	ZAC	Plastic	6-step	Quick Lock	Molded / Bending	Ice Blue	x				
ZAC TosLink		Toslink	<->	TosLink	Fibre		3-step					x	x	x	x
ZAC MinTos		Mini Plug 3.5mm	<->	TosLink	Optic			Quick Lock / -			x				

## Composite Video Interconnects

The composite interlinks come in different variations with Scart/RCA/BNC connectors.  
Application examples: DVD/Satelite decoder to TV/Projector.

Composite video = CVBS



## Trico and Anco Interlinks of True 75 Ohm

The properties of Trico and Anco are the secret behind a sharp and clean picture:  
True 75 Ohm for low reflection losses, especially important for longer lengths.

Trico has a double shielding for the least interference.

All connectors are fully shielding.

Item	Mechanical Specifications										Standard Lengths						
	Connection Configuration	Application Examples	Conn. < Direction > Conn.		Cable	Screen Connection	Solder Tin	Connector Fixing	Cable Clamping	Colour	(1m = 3.28Ft)						
			From	To							1m	2m	4m	8m	12m	15m	
1 RCA -> Scart	Video 75 Ohm/ CVBS/ Composite Video	DVD/VHS, Computer, Plasma, TV or Projector	RCA-6	->	Scart	Anco	Un-Balanced	Almit SR34  Super Lead Free Sn 96.5%, Ag 3%, Cu 0.5%	Exp./Friction Gr.	Screw/Squeeze	Ice Blue	x	x	x	x	x	x
Scart -> 1 RCA			Scart	->	RCA-6		Friction Gr./Exp.		Squeeze/Screw	x		x	x	x	x	x	
Anco-BNC Video			BNC-6	<->	BNC-6		Bayonet		Crimp	x		x	x	x	x	x	
Anco-RCA Video			RCA-6	<->	RCA-6		Expansion		Screw	x		x	x	x	x	x	
Anco RCA-BNC Vid.			RCA-6	<->	BNC-6		Exp./Bayonet		Screw/Crimp	x		x	x	x	x	x	
Anco-TV	Antennae 75 Ohm	TV/Radio	ACON-M	<->	ACON-F	Trico	Semi-Balanced		Expansion	Screw/Clamp		x	x	x	x	x	x
Trico-BNC	Video 75 Ohm/ CVBS/ Composite Video	DVD/VHS, Computer, Plasma. TV	BNC-8	<->	BNC-8		Bayonet	Crimp	x	x	x	x		x		x	
Trico-RCA			PPX RCA	<->	PPX RCA		Expansion	Screw	x	x	x	x		x			
Trico RCA-BNC			PPX RCA	<->	BNC-8		Exp./Bayonet	Screw/Clamp	x	x	x	x		x			

## S-video Interconnects

### S-video Interconnects

The S-video interlinks come in different variations with Scart/S-video/RCA connectors.

Application examples: DVD/SVHS to TV/Projector.

S-video = Y/C



### S-Video Interlinks

S-video is a better transfer system than the Composite video, but takes 2 cores providing equal velocity and phase, owing to the synchronising of the two signals luminance and chrominance.

In order to achieve this, the True 75 Ohm impedance is a very important property of the cable.

All connectors are fully shielding.

Item	Mechanical Specifications										Standard Lengths						
	Connection Configuration	Application Examples	Conn. < Direction > Conn.		Cable	Screen Connection	Solder Tin	Connector Fixing	Cable Clamping	Colour	(1m = 3.28Ft)						
			From		To						1m	2m	4m	8m	12m	15m	
Svideo-Svideo	Svideo or Y/C	DVD,	SVHS-7	<->	SVHS-7	AV-2	Separately Shielded Conductors	Almit SR34	-	Crimp	Ice Blue	x	x	x	x	x	x
Scart -> Svideo		Computer,	Scart	->	SVHS-7			Super	Spring Plate/-	Clamp/Crimp		x	x	x	x	x	x
Svideo -> Scart		Plasma,	SVHS-7	->	Scart			Lead Free	-/Spring Plate	Crimp/Crimp		x	x	x	x	x	x
1 RCA/Svideo		Tv or	SVHS-7/RCA-3	<->	SVHS-7/RCA-3			AV-3	Sn 96.5%,	-/Expansion		Crimp	x	x	x	x	x
2 RCA/Svideo	Projector	SVHS-7/RCA-3	<->	SVHS-7/RCA-3	AV-4	Ag 3%,											
4 RCA/Svideo	Component/Video/Svideo	RCA-3/SVHS-7	<->	RCA-3/SVHS-7	AV-6.4	Cu 0.5%											



These cables are "specialized Scart Cables" using the high quality AV-series multi coax of True 75 Ohm and low losses, for best performance.

- All video cores are of 75 Ohm coax type, individually screened.
- Audio cores are separately screened to avoid cross-talk interference.
- All conductors are insulated with PE, which makes low capacitance.
- A common aluminum shield protects from electromagnetic interference.

However there is one necessary exception:

Owing to the larger size of the AV-cores the Full Scart can not be made with this cable, but a smart compromise has been developed. We have focussed on the most important parts and made Supra FS better than most other Full Scarts.



FS (Full Scart)



Scart-3BNC



Scart-6RCA



Scart-2RCA



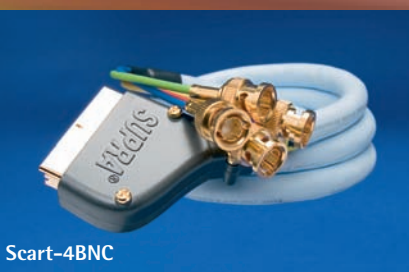
Scart-4RCA



Scart-SVHS/2RCA



Scart-3RCA



Scart-4BNC



Scart-Scart AV-6.4

A choice of the available Scart combination interlinks

The interlinks are available with different configurations as well as for different directions. Check the table below for your application.

Item	Mechanical Specifications										Standard Lengths						
	Connection Configuration	Application Examples	Conn. < Direction > From	Conn. To	Cable	Solder Tin	Connector Fixing	Cable Clamping	Colour	(1m = 3.28Ft)							
FS Full Scart	Fully Connected Scart	DVD/VHS/TV/SAT	Scart	<=>	Scart	FS	Spring Plate	Clamp Lock	Ice Blue	1m	2m	4m	8m	12m	15m		
2 RCA -> Scart Audio	Audio	TV/Amp	RCA-3	->	Scart	AV-2	Expansion	Crimp/Clamp		x	x	x	FS also in 1.5m				
3 RCA -> Scart A/V	Audio & Video	TV/Amp/DVD	RCA-3	->	Scart	AV-3	/			x	x	x	x	x	x		
4 RCA -> Scart RGB	RGB &	DVD/Plasma	RCA-3	->	Scart	AV-4	Friction Grip			x	x	x	x	x	x		
4 BNC -> Scart RGB	C-sync		BNC-3	->	Scart		Bayon./Spring Plate			x	x	x	x	x	x		
Scart -> 2 RCA Audio	Audio	TV/Amp	Scart	->	RCA-3	AV-2	Spring Plate	Crimp/Clamp		x	x	x	x			x	
Scart -> 3 RCA AV	Audio & Video	TV/Amp/DVD	Scart	->	RCA-3		/			x	x	x	x	x	x		
Scart - 3 RCA Component	Component or Y/Cb/Cr	DVD/Projector	Scart	<=>	RCA-3	AV-3	Expansion			x	x	x	x	x	x		
Scart - 3 BNC Component			Scart	<=>	BNC-3		Spring Plate/Bayon.			x	x	x	x	x	x		
Scart -> 4 RCA RGB	RGB &	DVD/SAT/Projector	Scart	->	RCA-3	AV-4	Spring Plate/Exp.	Crimp/Clamp		x	x	x	x	x	x		
Scart -> 4 BNC RGB	C-sync		Scart	->	BNC-3					Spring Plate/Bayon.	x	x	x	x	x	x	
Scart - 6 RCA AV	Audio & Video, In/Out	DVD/Amp/TV	Scart	<=>	RCA-3	AV-6.4	Spring Plate/Exp.			x	x	x	x			x	
Scart - Scart AV-6.4	RGB & Svideo & AV	DVD/TV HiEnd	Scart	<=>	Scart					Spring Plate	Clamp	x	x	x	x	x	x
Scart -> Svideo/ 2 RCA	Svideo &	DVD/Amp/TV	Scart	->	SVHS-7/RCA-3		Spring Plate/Exp.	Clamp/Crimp		x	x	x	x			x	
Svideo/ 2 RCA -> Scart	Audio		SVHS-7/RCA-3	->	Scart			Exp./Spring Plate		Crimp/Clamp	x	x	x	x			x

## Component Video Cables

### Component Video Cables with the AV-3 Multi Coax Cable

Component Video (Y/Cb/Cr) is a better standard as it separates one step further than the S-video which in turn is better than the Composite.



3RCA-3RCA



VGA-3RCA



DVI-3BNC



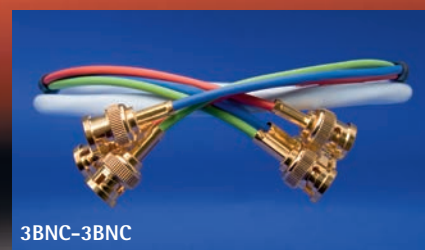
3RCA-3BNC



VGA-3BNC



Scart-3RCA



3BNC-3BNC



DVI-3RCA



Scart-3BNC

Item	Mechanical Specifications									Standard Lengths						
	Connection Configuration	Application Examples	Conn. <Direct.> Conn.		Cable	Solder Tin	Connector Fixing	Cable Clamping	Colour	(1m = 3.28Ft)						
			From	To						1m	2m	4m	8m	12m	15m	
3 BNC – 3 BNC	Y/Cb/Cr	DVD/SAT to Plasma or Projector	BNC-3	<-> BNC-3	AV-3	Almit SR34 Super Lead Free Sn 96.5%, Ag 3%, Cu 0.5%	Bayonet	Crimp	Ice Blue	x	x	x	x	x	x	
3 RCA – 3 BNC	Component/AV		RCA-3	<-> BNC-3			Expansion/Bay.	Clamp/Crimp		x	x	x	x	x	x	
3 RCA – 3 RCA	Y/Cb/Cr Component		RCA-3	<-> RCA-3			Expansion	Clamp		x	x	x	x	x	x	
DVI <-> 3 BNC			DVI-I	<-> BNC-3			Screw/Bayonet	Clamp/Crimp		x	x	x	x	x	x	
DVI <-> 3 RCA			DVI-I	<-> RCA-3			Screw/Expansion	Clamp		x	x	x	x	x	x	
Scart – 3 BNC Comp.			Scart	<-> BNC-3			Spring Plate/Bayon.	Clamp/Crimp		x	x	x	x		x	
Scart – 3 RCA Comp.			Scart	<-> RCA-3			Spring/Expansion	Clamp		x	x	x	x		x	
VGA – 3 BNC			VGA-11	<-> BNC-3			Screw/Bayonet			x	x	x	x	x	x	x
VGA – 3 RCA			VGA-11	<-> RCA-3			Screw/Expansion			x	x	x	x	x	x	x

Component video cables with 3 parallel Anco cables for highest transfer quality.

Note: Component video is not compatible with RGB.

! All of our interlinks are soldered with lead-free silver tin, for performance and ecology.



Anco-RCA Component



Anco-BNC Component



Anco-RCA/BNC Component



4RCA/SVHS

**SUPRA Cable/Connector Combination Chart**

	Acon M/F	BNC-3	BNC-6	BNC-8	DB25M/F	DVI-I	DVI-D	MP-8	PS/2 RCA	PPX RCA	RCA-3	RCA-6	RCA-6SC	Scart	SVHS-7	Swift XLR-3M/F	VGA-11
AnCo	x		x								x	x	x	x			
AV-2		x									x			x	x		
AV-3		x				x					x			x	x		x
AV-4		x				x					x			x	x		x
AV-6.4		x			x	x					x			x	x		x
Biline							x	x	x	x				x			
DAC								x	x			x	x			x	
Dual								x	x			x	x			x	
EFF-I								x	x							x	
HF100							x										
MB-01								x	x			x	x			x	
MBS								x	x			x	x			x	
SubLink								x	x			x	x			x	
Trico				x					x					x			

Item	Mechanical Specifications									Standard Lengths					
	Connection Configuration	Application Examples	Conn. < Direction > Conn.		Cable	Solder Tin	Connector Fixing	Cable Clamping	Colour	(1m = 3.28Ft)					
			From	To						1m	2m	4m	8m	12m	15m
Anco-BNC Component	Y/Cb/Cr	DVD/SAT	3xBNC-6	<-> 3xBNC-6	Anco	Almit SR34	Bayonet	Crimp	Ice Blue	x	x	x	x	x	x
Anco-RCA Component	Component/AV	Plasma or Projector	3xRCA-6	<-> 3xRCA-6		Super, Ag 3%,	Expansion	Screw		x	x	x	x	x	x
Anco RCA-BNC Comp.	Comp./Vid./Svideo		3xRCA-6	<-> 3xBNC-6		Sn 96.5%,	Exp./Bayonet	Screw/Crimp		x	x	x	x	x	x
4 RCA/Svideo			RCA-3/SVHS-7	<-> RCA-3/SVHS-7		Cu 0.5%	-/Expansion	Crimp		x	x	x	x	x	x



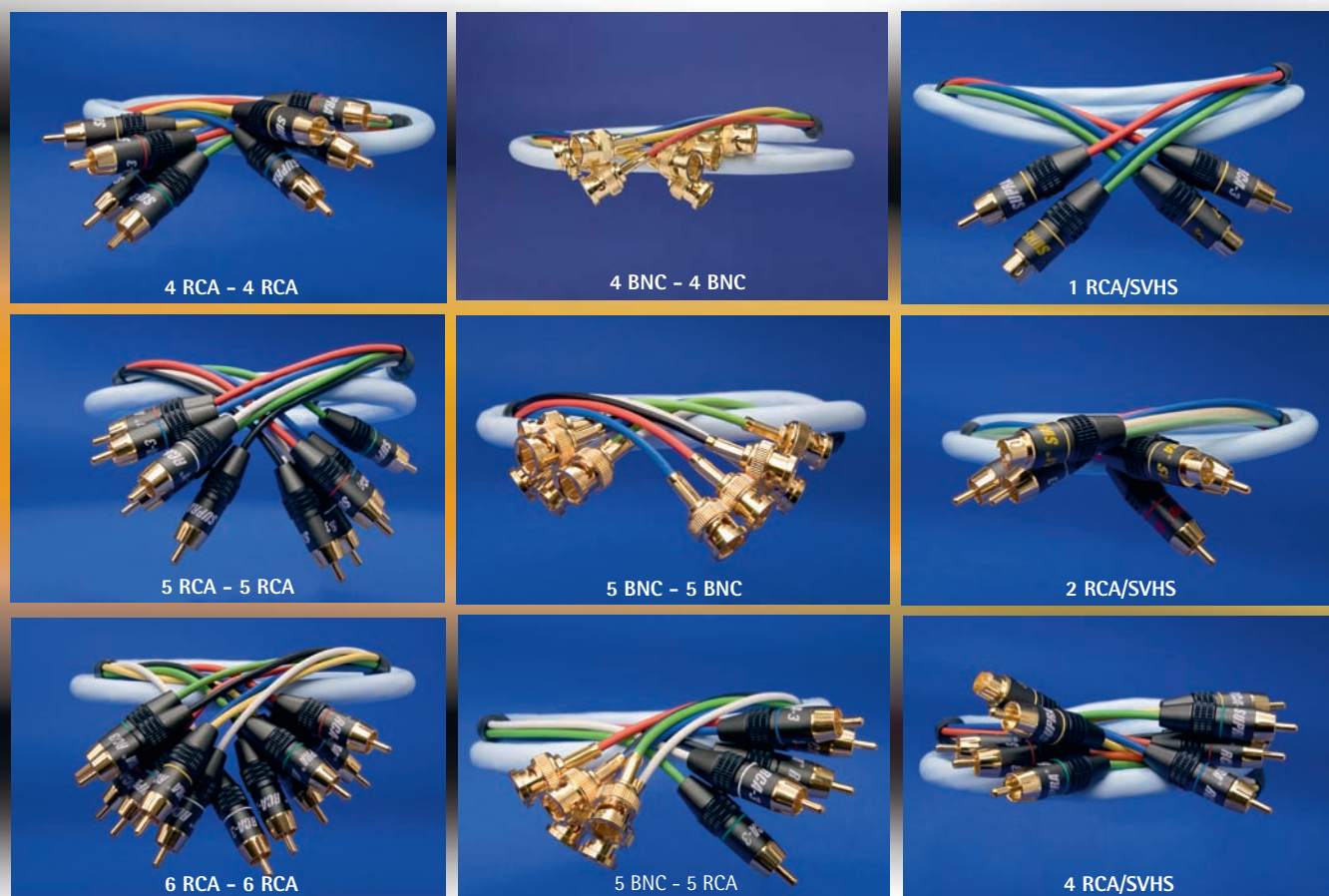
## Home Theatre Interconnects

SUPRA has quite a comprehensive portfolio of Audio/Video interlinks for home theatre. All are equipped with fully shielded connector housings.

The interlinks are suitable for:

- Component Video (Y/Cb/Cr)
- S-video (Y/C)
- RGB
- Audio/Video
- Composite Video (CVBS)

The table below will guide you to the correct choice of interlink.



Item	Mechanical Specifications									Standard Lengths							
	Connection Configuration	Application Examples	Conn. < Direction > From		Conn. To	Cable	Solder Tin	Connector Fixing	Cable Clamping	Colour	(1m = 3.28Ft)						
											1m	2m	4m	8m	12m	15m	
4 RCA - 4 RCA	RGB/Audio/Video	DVD/SAT	RCA-3	<->	RCA-3	AV-4	Almit SR34 Super Lead Free Sn 96.5%, Ag 3%, Cu 0.5%	Expansion	Clamp	Ice Blue	x	x	x	x		x	
5 RCA - 5 RCA			RCA-3	<->	RCA-3	AV-6.4					x	x	x	x		x	
6 RCA - 6 RCA			Audio/Video	RCA-3	<->	RCA-3		AV-6.4	x		x	x	x		x		
4 BNC - 4 BNC	RGB/Audio/Video	Computer, Amp. to Plasma, Projector or Monitor	BNC-3	<->	BNC-3	AV-4		Bayonet	Crimp		Ice Blue	x	x	x	x		x
5 BNC - 5 BNC			BNC-3	<->	BNC-3	AV-6.4						x	x	x	x		x
5 RCA - 5 BNC			RCA-3	<->	BNC-3	AV-6.4		Exp./Bayon.	Cl./Cr.			x	x	x	x		x
1 RCA/Svideo	Svideo & Video		SVHS-7/RCA-3	<->	SVHS-7/RCA-3	AV-3	Expansion	Clamp	Ice Blue	x		x	x	x	x	x	
2 RCA/Svideo	Svideo & Audio/Video		SVHS-7/RCA-3	<->	SVHS-7/RCA-3	AV-4				x		x	x	x	x	x	
4 RCA/Svideo	Comp./Video/Svideo		RCA-3/SVHS-7	<->	RCA-3/SVHS-7	AV-6.4				x		x	x	x	x	x	



VGA-4 RCA

VGA-4 RCA



VGA-5 RCA



VGA-VGA



VGA-4 BNC



VGA-5 BNC



SCART-VGA



### VGA-3RCA Female Adapter

Item	Mechanical Specifications									Standard Lengths						
	Connection Configuration	Application Examples	Conn. < Direction > Conn.		Cable	Solder Tin	Connector Fixing	Cable Clamping	Colour	(1m = 3.28ft)						
			From	To						1m	2m	4m	8m	12m	15m	
VGA - 3 RCA	Component	DVD/Projector	VGA-11	<=>	RCA-3	AV-3	Almit KR-19SHrma Sn 96.6%	Screw	Clamp	Ice Blue	x	x	x	x	x	x
VGA - 4 RCA	RGB & C-synk/VH-synk	Comp./DVD	VGA-11	<=>	RCA-3	AV-4		/	/		x	x	x	x		
VGA - 5 RCA	RGB & V-synk & H-synk	Projector	VGA-11	<=>	RCA-3	AV-6.4	Expansion	Crimp	x		x	x	x	x		x
VGA - 3 BNC	Component	DVD/Projector	VGA-11	<=>	BNC-3	AV-3	Screw	Clamp	x		x	x	x			x
VGA - 4 BNC	RGB & C-synk/VH-synk	Comp./DVD	VGA-11	<=>	BNC-3	AV-4	Ag 2.9%	/	/		x	x	x	x		x
VGA - 5 BNC	RGB & V-synk	Projector	VGA-11	<=>	BNC-3	AV-6.4	Cu 0.5%	Bayonet	Crimp		x	x	x	x		x
VGA-VGA	& H-synk	Comp./DVD	VGA-11	<=>	VGA-11		Rosin	Screw	Clamp		x	x	x	x		
Scart -> VGA	RGB & C-synk	Proj./Monitor	Scart	->	VGA-11	AV-4	Frict./Screw				x	x	x	x		x
VGA-3 RCA(F) ADAPTER	Component	Adapter	VGA-11	<=>	RCA-3 Female	AV-3	Screw/-	Clamp/Crimp		(25cm)						

*Microphone/Line Installation Cables*

**MB-01 Installation Mic/Line Cable, Balanced**

Single pair balanced line cable.  
Application example:  
Installations.



**MB-02 Installation Mic/Line Cable, Balanced**

2-pair cable, similar to MB-01, with individual pair screening and pair jacketing.  
Application example:  
Installations.



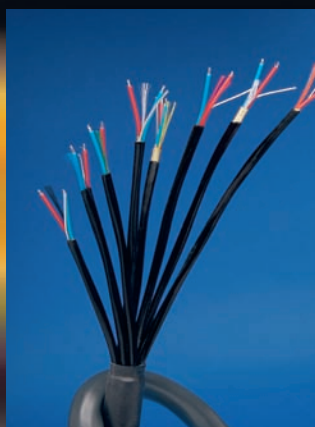
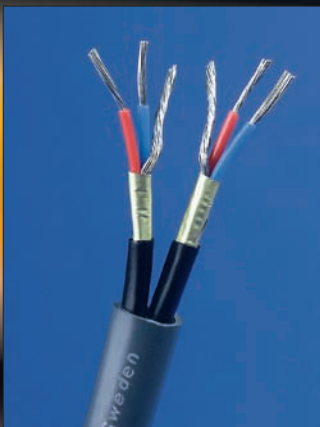
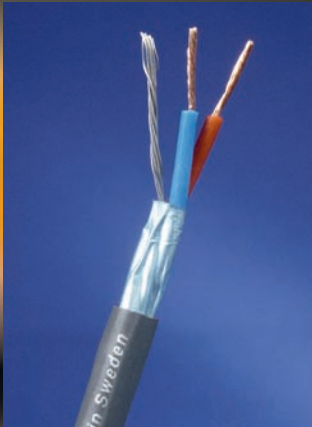
**MB-04 Installation Mic/Line Cable, Balanced**

4-pair cable, similar to MB-02, with individual pair screening and pair jacketing.  
Application example:  
Installations.



**MB-08 Installation Mic/Line Cable, Balanced**

8-pair cable, similar to MB-04, with individual pair screening and pair jacketing.  
Application example:  
Installations.



**MB Series for Fixed Installations**

The conductors are of the same design as of the MBS microphone cable but the jacketing is thinner and the shielding is of polyester based aluminium to better suit installation applications.

MB Series Colour Codes								
Pair	1	2	3	4	5	6	7	8
Yarn Colour	Black	Beige	Red	Orange	Yellow	Green	Blue	White
Screen	Aluminum Foil with Drain Wire for easy Screen Connection							

Item	Mechanical Specifications																Elec. Spec.		
	No. of Pairs	Application Examples	Cr. Sec. Area (mm²=AWG)	No. of Wires	Wire Dia. (mm)	Wire Material	Insulation	Number of Conductors	Tensile Reinforcement	Shield	Pair Jacket	Jacket	Temp.-Range (°C)	Ext. Size (mm)	Weight (g/m)	Length/ Bob. (m=ft)	Colour	R (Ω/km)	C (pF/m)
MB-01	1	Analogue	0.24 = 23	19 pcs each Conductor	0,127	Tim Plated OFC	PE	2 + Drain Wire	-	Aluminum/ PET	PE	Chloride Ion-Stab. PVC	-30 to + 75	Ø4.8	32	300 = 984	Anth. Grey	72	52
MB-02	2	Audio												Ø7.0	42	200 = 656			
MB-04	4	Mic./Line												Ø8.0	72	100 = 328			
MB-08	8	Installation												Ø10.8	130				



## MBS Microphone Cable, Balanced

A non-compromise design, both mechanically and electrically. Negligible microphony, high noise rejection, low capacitance, high flexibility, high bending strength. The best mic and instrument cable.

Application examples:  
Microphone, guitar.



1:1

## MBC Microphone Cable, Balanced

An economy version of the MBS cable, principally of the same design.

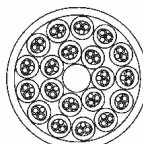
Application examples:  
Microphone, guitar.



1:1

## MS20-JP

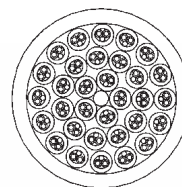
20 jacketed and screened pairs x 0.22 mm<sup>2</sup>. Balanced.



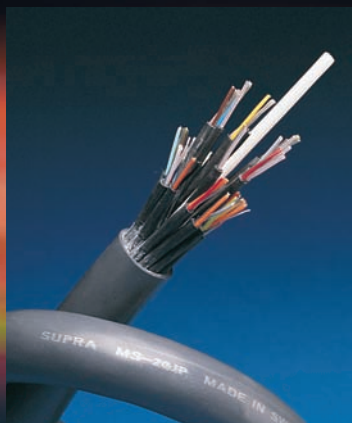
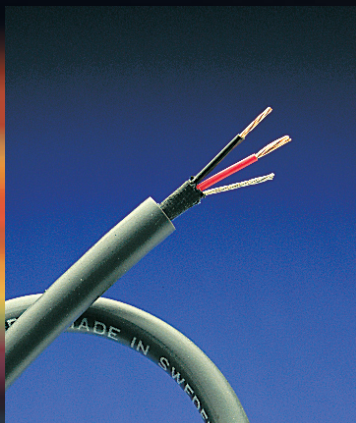
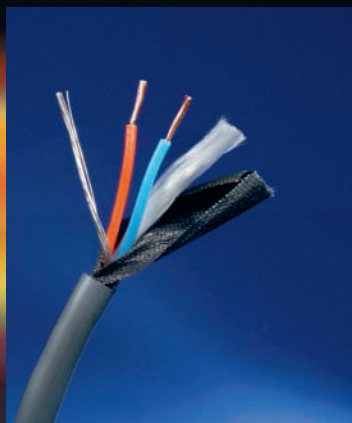
1:1

## MS32-JP

32 jacketed and screened pairs x 0.22 mm<sup>2</sup>. Balanced.



1:1



## Multicore Cables for Stage Use, Pair Jacketed and Stretch-Proof

SUPRA has developed a flexible multi-core cable for use on stage and in heavy and rough handling situations. Every pair is individually jacketed and is a complete cable. Simply solder on a contact - you don't even need to use Heat Shrink. Perfect when you need to make up a line to a stage box. The screen is of semi-conductive Nylon which is extremely strong with regard to bend-fatigue and which at the same time is highly resistant to electro-magnetic interference. The pairs are identified with jacket colours as well as with numbers. See identification chart below.

### Tips and Tricks:

#### You can easily test the microphony of a cable:

Plug the cable into the mixer with the other end of the cable open, without anything connected. Turn up the volume and listen to how sensitive the cable is when you touch it, tap it and move it, or slap it against a base floor, as occurs with mic/guitar cables.

## SUPRA Multicore Cables are Designed for Professionals

The advantages of Supra Nylon screened cables over ordinary braided cables are:

- **Tensile Strength**  
The tensile strength is 500N/50mm.
- **Bending Fatigue**  
In accordance with a military flex test a cable must pass 30,000 bending cycles without damage. After 90,000 bending cycles the test of the Nylon screened Supra MBS was concluded without any damage to the cable.
- **Environmental Immunity**  
Air humidity does not influence the cable's electrical properties.
- **Microphony**  
The softness of the Nylon screen in combination with other design parameters makes a quiet cable, free from auto microphonics.

MS-JP Colour and Number Codes																																	
Pair	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
Colour	Black									Brown									Red									Orange					
Conductor	Red/Black and with a Drain Wire for the Nylon Screen Connection																																

Item	Mechanical Specifications															Electrical Spec.		
	No. of Pairs	Application Examples	Cr. Sec. Area (mm²=AWG)	Number of Cond./Pair	No. of Wires	Wire Dia. (mm)	Insulation	Shield	Pair-/Outer Jacket	Tensile Reinforcement	Ext. Dia. (mm)	Temp.-Range (°C)	Colour	Weight (g/m)	Length/Bobbin (m = ft)	R (Ω/km)	C (pF/m)	Velo. Factor
MBS	1	Mic./Line Flex/Install.	0.24 = 23	2 + Drain Wire	19	0.127 Sn OFC	PE	Semi-Conductive Nylon	-	Polyester/Silk	Ø5.5	-30 to +75	Anth. Grey	34	150 = 492	72	52	0.66c
MBC	20	Mic./Line Flex/Stage	0.22 = 24		7	0.20 OFC			Ion-Stab. PVC	Flexible Plastic Core	Ø18.7							
MS20-JP	32													Ø23.5				

## XLR Connectors & Stage Box

### XLR-C3F and XLR-C3M

### 3-pole Female and Male chassis connectors

## Swift 3F XLR Light and Swift 3M XLR Light

### 3-pole Female and Male

Also available with gold plated pins, in set, see page 23.

Patented by Tommy Jenving.

## SB 16/4 Kit Stage Box

Stage box for 16 channels and 4 returns.  
Countersunk panel for best protection. XLR  
Chassis connectors are fitted.

The Kit comprises Supra Swift XLR cable connectors and cable strain relief.

Multicore cable MS20-JP to be added as per choice of length.

## SB 16/4M Ready Made

Cable length to be advised when placing the order.



## Swift XLR Connectors

The patented Supra Swift has several advantages over other XLR connectors:

- Totally shielded.
- No looseable screws. Only one retained screw. Nothing to slip on to the cable before soldering.
- Strain relief: The screw serves also as a clamp screw and since it is placed at a considerable distance from the aperture there will be no bending forces on the cable at the clamping point.

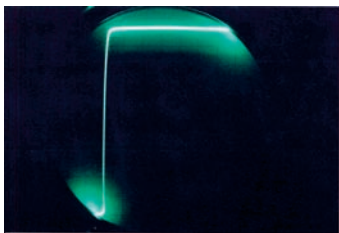
Item	Mechanical Specifications											
	Q'ty/ Pack	Connector Type	Pin Material	Insulation	Housing	Wire Connection	Connector Fixing	Cable Clamping	Max Cable Dia. (mm)	Ext. Size WxHxL (mm)	Mounting Hole (mm)	Colour Identification
XLR-C3F	1 pc	XLR Female Chassis	Silver Plated Cu	Noryl	Shielded	Soldering	Quick Lock	-	-	27x37x31	Ø23.5	-
XLR-C3M		XLR Male Chassis			22x37x21			Ø19.0	-			
Swift XLR 3M Light		XLR Male			Ø19x70			-	Red/Black Extra Colour rings are available			
Swift XLR 3F Light		XLR Female	Ø19x75									
Swift XLR 3M Light Au		XLR Male	Ø19x70									
Swift XLR 3F Light Au		XLR Female	Ø19x75									

Item	Mechanical Specifications												
	Application Examples	Connector Types		Cable	Split Length	Ext. Size, Box WxHxL (cm)	Weight Box (kg)	Screen Connection	Solder Tin	Wire Connection	Connector Fixing	Cable Clamping Box	Cable Colour
SB-16/4 Kit	Analog	16 pcs XLR Female Chassis	16 pcs Swift XLR 3M Light	MS20-JP	50cm	18x30x8	2,7	Balanced	Almit KR-19SHrma	Soldering	Quick Lock	Squeeze Lock, Spring	Anthracite
SB-16/4 Ready Made	Audio	4 pcs XLR Male Chassis	4 pcs Swift XLR 3F Light										

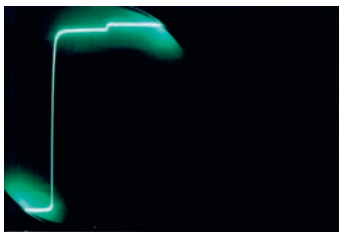
These measurements show that the quality of the SUPRA Cables is on level with a Military spec. (MIL) cable and even outperforms it on velocity.

A Time-Domain Reflection (TDR) tester\* detailedly analyses the response and impedance match of a cable *and* the connectors used, using a pulse that rises in 50 pS\*\*.

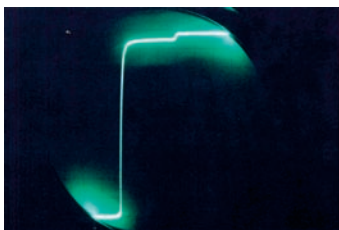
In pictures 2 to 5, the 2<sup>nd</sup> step-up shows the effect of the 75 ohm (video standard) cabling and connectors operating in a standard 50 ohm test system. In 2 & 3, the tidy 'rectangularity' of the step shows that the impedance of the 75 ohm section is quite purely resistive, i.e. nearly ideal.



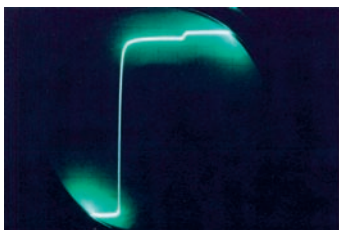
Pict. 1 shows reference with special GR-connected 50 ohm load, acting as a near pure resistance at all frequencies to above 2GHz (high RF).



Pict. 2 shows the response of Supra Trico. See below for explanation of the 2nd step.



Pict. 3 shows the response of Supra AV-3. See below also.



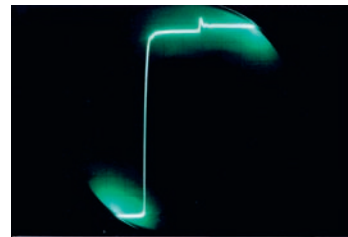
Pict. 4 shows response of RG179, a top-grade, 75 ohm coax made to US Military standard MIL-C-17D. Note that the two Supra cables perform similarly cleanly. Note also that all are fitted with 75 ohm BNC plugs.

The timing of the steps (10ns\*\* per L-R div) shows that the electrical length of the Supra cables (in pictures 2 & 3) is shorter than the reference, by about 14%. As the cable lengths were physically matched to within 0.2%, this shows that signal speed in the Supra cables must be higher - meaning closer to the speed of E-M waves in air.

## BNC is better than RCA on digital interconnects.

The physical dimensions of the RCA connector prevent it from having exactly 75 Ohm characteristic impedance.

Therefore the BNC connected version is always preferred when there is a choice.



Pict. 5 shows Trico with phono/RCA plugs fitted. It could be any of the other cables. The RCA plugs' inconstant impedance match at high RF causes reflections (seen as 'positive spiking'), this kind of

behaviour being *precisely* why BNC plugs were invented in the 1940s as serious RF coax connectors, to replace the 'failed' first generation plugs, namely RCA and UHF types. Thus the RCA was re-cycled as an audio plug.

## The tested Supra Cables



**Supra Trico**



**Supra AV-3**

\*Originally devised & made in 60s by HP, today known as Agilent.

\*\* pS = picosecs = millionth-millionth's (1/1000,000,000,000<sup>th</sup> 's of 1 second). In air and ideal, air-insulated cables, EM waves travel 1m in about 3300pS (3.3nS). In all plastic-insulated cables, the lower speed increases the time to travel 1m by some 140 to 150%.

Tests originally performed by Ben Duncan Research in UK.



For those who prefer to make their own cable sets and for carrying out servicing, we have gathered the following configuration tables. Please be aware of the importance of the soldering quality. All Supra pre-made cables are soldered with lead-free silver-tin with copper and non-corrosive flux, available as *Multicore TSC-96*, which we recommend.

The galvanic potential of silver is closer to copper than is lead to copper and thus the galvanic potential will be minimised.

Poor solderings mostly due to either too high or too low a temperature.

Flux is needed to get through the oxide and avoid a dry joint, without overheating.

A dry joint might work very well for a period of time but as the oxide grow between the tin and the object there will eventually be a poor connection. In the worst case the conductors will loosen and create a short circuit.

All Supra connectors are insulated with

Teflon to withstand the correct soldering temperatures (300°- 400°C).

For these reasons we always recommend leaving the soldering of interlinks with a professional workshop.

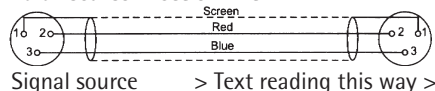
**All of our soldering team are holders of soldering certification to Military Quality Standards.**

S-video (Y/C)			
Pin	Function	Pin	Function
1	Luminance (Y) Ground	3	Luminance (Y)
2	Chrominance (C) Ground	4	Chrominance (C)

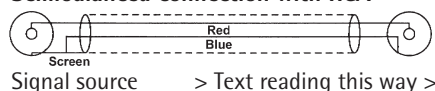
DB-15 HD (VGA)			
Pin	Function	Pin	Function
1	Red +	9	
2	Green +	10	Sync Ground
3	Blue +	11	
4		12	
5		13	H-sync/C-sync
6	Red Ground	14	V-sync
7	Green Ground	15	
8	Blue Ground		Chassis Screen

Scart			
Pin	Function	Pin	Function
1	Audio Out Right	12	Data 1
2	Audio In Right	13	Red Ground
3	Audio Out Left	14	Data Ground
4	Audio Ground	15	Red RGB, C at Y/C
5	Blue Ground	16	RGB Status
6	Audio In Left	17	Video Ground (CVBS)
7	Blue RGB	18	RGB Status Ground
8	CVBS Status	19	Video (CVBS) Out, Y at Y/C
9	Green Ground	20	Video (CVBS) In, Y at Y/C
10	Data 2	21	Ground (Shield)
11	Green RGB		

## Balanced connection with XLR

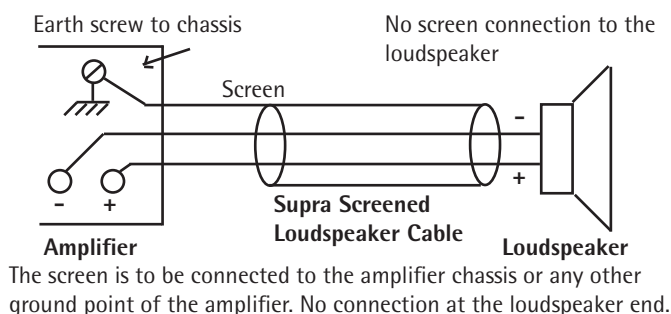


## Semibalanced connection with RCA



XLR			
Pin	Function	Pin	Function
1	Ground/Screen	3	Cold
2	Hot		

## Connection of screened loudspeaker cables:



DVI-I 24+5			
Pin	Signal	Pin	Signal
1	D2-	16	Hot Plug Detect
2	D2	17	D0-
3	Shield	18	D0
4	D4-	19	Shield
5	D4	20	D5-
6	DDC SCL	21	D5
7	DDC SDA	22	Shield
8	V-sync	23	CLK
9	D1-	24	CLK-
10	D1	C1	Red
11	Shield	C2	Green
12	D3-	C3	Blue
13	D3	C4	H-sync
14	+5V	C5	Ground
15	Ground	Chassis	Shield/Ground

DVI-D 18+1			
Pin	Signal	Pin	Signal
1	D2-	16	Hot Plug Detect
2	D2	17	D0-
3	Shield	18	D0
4		19	Shield
5		20	
6	DDC SCL	21	
7	DDC SDA	22	Shield
8		23	CLK
9	D1-	24	CLK-
10	D1		
11	Shield		
12			
13			
14	+5V		
15	Ground	Chassis	Shield/Ground

## Directionality Assurance

All Supra cables are constructed with attention to consistent and equal 'direction' in all the conductors. Simplistic electronics theory says there is no 'directionality' in conductors, but assumes conductors are perfectly isomorphic. It also ignores the inherently directional nature of signal and energy flow. Yet electricity could not be sold without 'energy flow directionality'. [1]

In reality, practical conductors are drawn many times - not cast. This creates highly elongated crystal structures. This in turn creates a physical (mechanical) directional feature or 'axial polarity'. Annealing and also 'burning-in' processes can reduce the 'strength' of the 'drawing imprint', but only to a degree.

All conductors in Supra cables are consistently arranged to point 'forwards, in the direction (left to right) implied by the legend (text) printed on the cable jacket. Directional consistency is ensured in two ways. First, direction of the conductors to be used in each cable

is known from the spooled direction of the conductors received from the copper wire factory. That is a reliable method because an efficient manufacturing process is consistent and omits random re-spooling steps.

## Forward Thinking Technology

Second, the 'directionality' of conductors is now able to be measured, and Supra cables are the first in the world to benefit from a spectral technique developed by audio consultant Ben Duncan [2] in conjunction with Jenving Technology AB. This employs some special test conditions which better approximate audio equipment's real-world usage than standard, pure signal sources. Test results show typical increases in harmonic (noise) levels 0.5dB when cables are connected so the conductors' drawn direction opposes the signal flow direction. In real use the noise difference, which is some dB below the main signal, could be much greater. From this, a reduction in such noise

## Useful to know about...

### Tin Plating

A SUPRA concept for cleaner sound.

The tin is of higher resistance than copper and also protects copper from bad sounding corrosion. It also minimises the current jumps from wire to wire over corroded copper surfaces while more of the signal passes through the pure copper *inside* the wires. The tin layer also minimises the skin-effect, by acting as a semi-Litz.

### Silver Plating

Only when the frequencies are very high, as in digital signals, does it seem wise to go the opposite way, i.e. to silver plate for a lower surface resistance. At such high frequencies it is hard to keep the signal inside the wire, so instead we design for an easier surface current flow.

### Digital Interlinks

Important properties of digital cables are a high propagation velocity factor and a correct and stable characteristic impedance (Z).

### Analogue Interconnects

Low capacitance (C) is important.

### Microphone and Line Cables

Low microphonic effect and low capacitance assist quality.

### Loudspeaker Cables

Loudspeaker cables generally need to be of low inductance (L) and preferably also of low resistance (R). Impedance is of greater importance than simplistic theory suggests because music comprises continuous transients. Phase shift in the frequency domain equals smearing in the time domain (Less distinct transients).

### Directionality Assurance

All Supra Cables are constructed with attention to directionality in the conductors. Supra is the first in the world to prove directionality in conductors by measurements.

These measurements are carried out by Ben Duncan Research on behalf of Jenving Technology. Explanation below.

### Material Constants

Material	Dielectricity	Permeability	Resistivity
	(K)	(μ)	(Ω x mm <sup>2</sup> /m)
PVC	4-5	-	-
PE Flame Ret.	2.3	-	-
PE	2.3	-	-
PTFE/Teflon	2.0	-	-
PE Foam	1.64	-	-
Tin (Sn)	-	μ <sub>r</sub> >1	0.115
Gold (Au)	-	approx.	0.022
Copper (Cu)	-	equal	0.017
Silver (Ag)	-	to 1	0.016
Air/Vacuum	-	1.26x10 <sup>-6</sup> (μ <sub>0</sub> )	-

('more clarity') is what's expected, and it is also one of the things that is heard in practice - when optimum conductor orientation is discovered.

### Experiences of Directionality

In 'high-end' audio, 'Directionality' means: 'a cable used for audio signal transmission offering better sound quality (in various ways) when connected a particular way round.' To those sensitive to the sonic changes, this is repeatable, over spans of time, or in different systems. In other cases, if the less good direction were chosen, it too may approach the preferred direction after burn-in, i.e. a period of use, simple ageing, or even cryogenic treatment. Such 'burn-in' processes involve annealing of the metal.

Some pundits say that 'directionality' (in cables) can be heard even on the low quality 'curvy plastic' low/mid-fi audio equipment sold in high-street shops. On an higher vector, a US high-end enthusiast/

### Conductor Dimensions in AWG to Metric

AWG	Dia.	Area	AWG	Dia.	Area	AWG	Dia.	Area
(No.)	(mm)	(mm <sup>2</sup> )	(No.)	(mm)	(mm <sup>2</sup> )	(No.)	(mm)	(mm <sup>2</sup> )
6/0	14,73	170,3	10	2,59	5,27	25	0,455	0,163
5/0	13,12	135,1	11	2,3	4,15	26	0,405	0,128
4/0	11,68	107,2	12	2,05	3,31	27	0,361	0,102
3/0	10,4	85	13	1,83	2,63	28	0,321	0,0804
2/0	9,27	67,5	14	1,63	2,08	29	0,286	0,0646
0	8,25	53,4	15	1,45	1,65	30	0,255	0,0503
1	7,35	42,4	16	1,29	1,31	31	0,227	0,04
2	6,54	33,6	17	1,15	1,04	32	0,202	0,032
3	5,83	26,7	18	1,024	0,823	33	0,18	0,252
4	5,19	21,2	19	0,912	0,653	34	0,16	0,02
5	4,62	16,8	20	0,812	0,519	35	0,143	0,0161
6	4,11	13,3	21	0,723	0,412	36	0,127	0,0123
7	3,67	10,6	22	0,644	0,325	37	0,113	0,01
8	3,26	8,35	23	0,573	0,259	38	0,101	0,00795
9	2,91	6,62	24	0,511	0,205	39	0,0897	0,00632

### Anglo/American vs. Metric

1 foot = 0.3048 m

1 m = 3.281 feet

1 yard = 0.9144 m

1 m = 1.094 yards

1 pound = 0.4536 kg

1 kg = 2.205 pounds

F° = (C° x 9/5) + 32

C° = (F°-32) x 5/9

### Formulas

#### Characteristic Impedance (Simplified Formula)

$Z = \sqrt{L/C}$  where L = inductance and C = capacitance

#### Velocity Factor (Simplified Formula)

$v = \sqrt{1/K}$  where K = dielectricity of the insulation

#### Effective Skin Depth

$\delta = 1 / \sqrt{\pi \mu_p \mu_0 \sigma f}$  where  $\sigma$  = conductivity = 1/resistivity  
f = frequency  
 $\mu_r$  = permeability of the conductor  
 $\mu_0$  = permeability of air

#### Conductor Resistance

$R = L \times \rho / A$

where L = length in m

$\rho$  = resistivity

A = cross section area in mm<sup>2</sup>

researcher, Doug Blackburn, suggests it is possible that when audiophiles say they hear sonic changes after changing polarity (by swapping conductors at one point - not by swapping ends as with conventional directionality\*) that they've actually heard directionality instead. That's because purely digital ('software') polarity reversals mysteriously don't have the sonic attributes associated with analogue signal polarity reversal.

\*Here, directionality effect being heard is in the connected parts (eg. long inductor wires), rather than in the preceding connective conductors.

### Information

[1] For background, refer to extensive insights in 'Black Box' column, by Ben Duncan, originally in Hi-Fi News & Record Review, reprinted 73 part compendium 1994-2000 available from:

[www.hifiaccessoriesclub.com](http://www.hifiaccessoriesclub.com) - or [www.proaudioaccessories.com](http://www.proaudioaccessories.com).

[2] Ben Duncan Research: [www.BDR-UK.dial.pipex.com](http://www.BDR-UK.dial.pipex.com).



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