

Cheminax Coaxial Cables

Small, Lightweight Coaxial Cables

Product Facts

- Light weight, small size
- Temperature range of -65°C to 200°C [-85°F to 392°F]
- Low capacitance and attenuation
- High velocity of propagation
- High flexibility



Applications

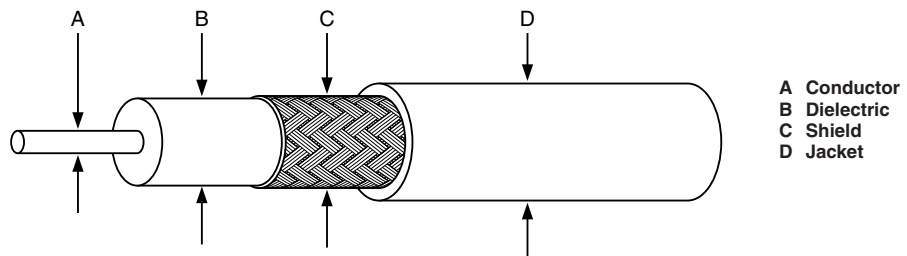
Cheminax controlled electrical cables are used in the aircraft and aerospace industries. They have a wide range of applications in missiles, avionics, radio-frequency and microwave systems, computers, security and surveillance systems, and communications. Cheminax coaxial cables were designed to solve interconnect problems in

electronic systems, such as computers, military equipment, and other areas of high-density packing, where cables are required to perform to more exacting specifications than standard radio-grade (RG) constructions.

TE's advanced materials technology has allowed the design and development of Cheminax miniature coaxial

cables that offer substantial savings in size and weight while improving mechanical performance and reducing attenuation.

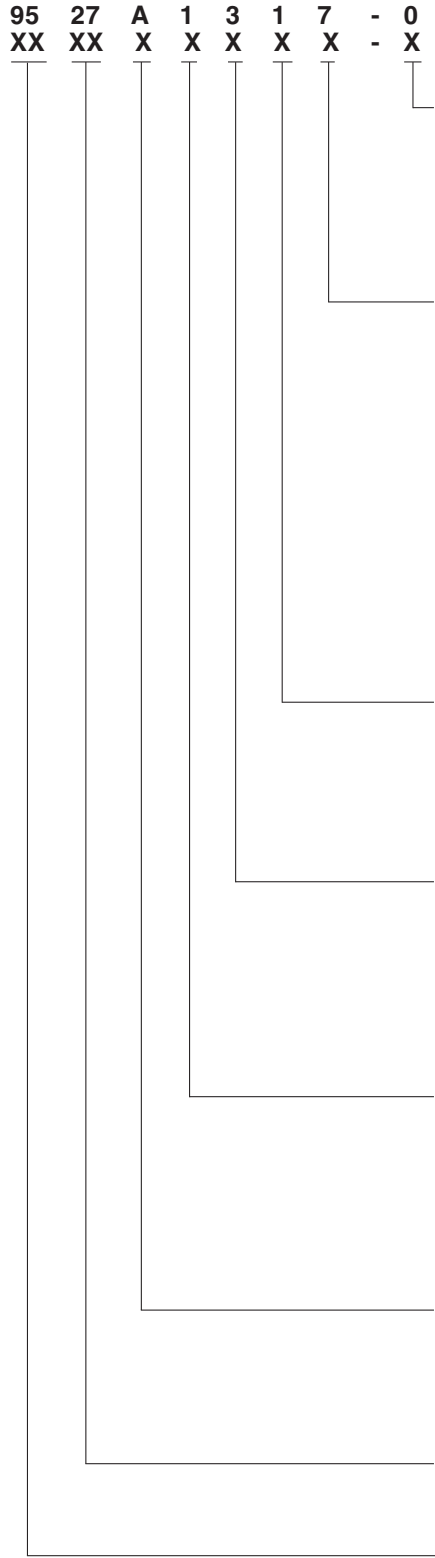
Cables can be designed that are either smaller and lighter than standard RG cables or provide significantly lower attenuation and capacitance with no significant increase in size.



Available in:	Americas	Europe	Asia Pacific
	■	■	■

Cheminax Coaxial Cables (Continued)

Part Numbering System



Example: 9527A1317-0

Jacket Color Identification Code

- | | | |
|------------|------------|------------------------|
| 0 - Black | 4 - Yellow | 8 - Gray |
| 1 - Brown | 5 - Green | 9 - White |
| 2 - Red | 6 - Blue | 9X - Translucent White |
| 3 - Orange | 7 - Violet | X - Clear |

Conductor Type

- 1 - Tin-coated copper
- 2 - Silver-coated copper
- 3 - Nickel-coated copper
- 4 - Silver-coated high strength copper alloy
- 5 - Aluminum
- 6 - Nickel-coated high strength copper alloy
- 7 - Tin-coated copper-clad steel
- 8 - Silver-coated copper-clad steel
- 9 - Bare copper
- 0 - Other
- A - Silver-coated CS95

Dielectric Material

- | | |
|------------------------------|--------------------------------|
| 1 - Rayfoam L (Polyethylene) | 6 - Modified XL-ETFE (SPEC 55) |
| 2 - Rayfoam H (Foamed FEP) | 7 - Flex XL-ETFE |
| 3 - Rayolin F (Solid) | 8 - Rayfoam M (Foamed MFA) |
| 4 - Modified FEP (Solid) | 0 - Other |

Outer Jacket Material

- | | |
|--------------------------------------|-----------------------------------|
| 1 - General purpose PVF ² | 6 - Modified XL-ETFE (SPEC 55) |
| 2 - Outerspace PVF ² | 7 - Flex XL-ETFE (SPEC 80) |
| 3 - Thermorad F & S | 8 - Zerohal & Thermorad Low Smoke |
| 4 - Modified FEP | 9 - None |
| 5 - ETFE (Uncrosslinked) | 0 - Other |

Construction

- | | |
|------------------------|----------------------|
| 1 - Round braid | 6 - Triax - other |
| 2 - Flat braid | 7 - Other |
| 3 - 2 round braids | 8 - Composite shield |
| 4 - 2 shields (other) | 9 - Core only |
| 5 - Triax-round braids | 0 - Other |

Variation

- | | |
|-------------------------------|------------------|
| A - Standard | U - Low Loss |
| B - Sequential within any PNs | W - Waterblocked |
| S - Outer Space Requirements | |

Conductor Size (AWG)

Always 2 digits - 0X if under 10 AWG

Impedance

Always 2 digits - last 2 digits if over 100 ohms
0X (1 digit) if under 10 ohms

Part Numbering System is a cross reference only and not meant for part creation.

Cheminax Coaxial Cables (Continued)

Specifications/Approvals

Series	TE
Cheminax cables	1200

Product Dimensions (Nominal)

Typical Product Part No.	Impedance (ohms)	Capacitance pF/m (pF/ft)	Attenuation at 400 MHz dB/100m (dB/100 ft)	A	B	C	D	Weight in kg/km (lb/1000ft)
				Conductor Diameter	Dielectric Diameter	Shield Diameter	Jacket Diameter	
5012E1339	50	98.4 [30.0]	14.8 [4.5]	2.26 [.089]	7.24 [.285]	7.98 [.314]	10.24 [.403]	162.2 [109.0]
5012M1612	50	82.0 [25.0]	16.1 [4.9]	2.26 [.089]	6.07 [.239]	6.60 [.260]	7.06 [.278]	74.5 [50.1]
5024A1311	50	83.7 [25.5]	50.3 [15.3]	0.62 [.025]	1.70 [.067]	2.18 [.085]	2.67 [.104]	11.8 [7.9]
5026D1027	50	88.9 [27.1]	63.7 [19.4]	0.48 [.019]	1.27 [.050]	1.70 [.067]	2.21 [.087]	11.8 [7.9]
5030A1317	50	90.2 [27.5]	97.5 [29.7]	0.30 [.012]	0.79 [.031]	1.12 [.044]	1.57 [.062]	4.5 [3.0]
5030A1424	50	100.4 [30.6]	94.5 [28.8]	0.30 [.012]	0.86 [.034]	1.19 [.047]	1.60 [.063]	5.7 [3.8]
7520A1311	75	56.1 [17.1]	20.0 [6.1]	1.02 [.040]	4.57 [.180]	5.11 [.201]	6.12 [.241]	43.2 [29.0]
7524A1311	75	56.4 [17.2]	31.8 [9.7]	0.62 [.025]	2.82 [.111]	3.25 [.128]	3.86 [.152]	19.2 [12.9]
7528H1424	75	54.5 [16.6]	44.0 [13.4]	0.32 [.013]	1.37 [.054]	1.73 [.068]	2.13 [.084]	8.9 [6.0]
7530A1317	75	60.4 [18.3]	58.8 [17.9]	0.30 [.012]	1.35 [.053]	1.78 [.07]	2.29 [.09]	8.3 [5.6]
7530H1424	75	57.4 [17.5]	58.1 [17.7]	0.30 [.012]	1.30 [.051]	1.73 [.068]	2.03 [.08]	8.5 [5.7]
9522A1311	95	44.3 [13.5]	19.7 [6.0]	0.79 [.031]	5.51 [.217]	6.05 [.238]	7.32 [.288]	55.1 [37.0]
9527J1528	95	44.3 [13.5]	31.8 [9.7]	0.43 [.017]	2.84 [.112]	3.18 [.125]	3.58 [.141]	19.2 [12.9]
9530H1014	95	44.3 [13.5]	44.3 [13.5]	0.30 [.012]	1.83 [.072]	2.26 [.089]	2.62 [.103]	13.1 [8.8]

Note: All values are nominal.

Product Characteristics

General	Conductor Range Operating Temperature Range*	12 AWG to 30 AWG -65°C to 200°C [-85°F to 392°F]
Electrical	Impedance range Dielectric constant Velocity of propagation	50 ohms to 125 ohms 1.65–2.3 67%–80%

*Temperature rating varies depending on materials used in specific construction.

Small, Lightweight Coaxial Cables

Properties (per SCD)

Physical	Typical Value of Dielectric Material		
	Rayfoam L	Rayfoam H	Rayolin F
Tensile (min.)	6.8 MPa (1000 psi)	4.1 MPa (600 psi)	12.2 MPa (1800 psi)
Elongation (min.)	50%	50%	200%
Electrical			
Dielectric withstand (min.)	1000 V	1000 V	1000 V
Velocity of propagation (nom.)	78%	78%	67%
Dielectric constant	1.65	1.65	2.2

Physical	Type Value of Jacket Material					
	Thermorad	SPEC 55	FlexLine	FEP	Zerohal	SPEC 44
Tensile (min.)	13.6 MPa (2000 psi)	34 MPa (5000 psi)	20.4 MPa (3000 psi)	13.6 MPa (2000 psi)	8.2 MPa (1200 psi)	27.2 MPa (2500 psi)
Elongation (min.)	250%	50%	100%	200%	150%	150%
Temperature (max.)	125°C [257°F]	200°C [392°F]	200°C [392°F]	200°C [392°F]	125°C [257°F]	150°C [302°F]
Flammability*	Method C	Method B	Method B	Method B	Method B	Method B
Fluid category	C	A	A	A	C	B

*See TE specification WCD-1200 for details.

Solvents

Fluid category	A	B***	C
Fluid resistance	All	Hydrocarbons	Hydrocarbons 50°C
		All fuels and lubes	Petroleum base fuels and lubes ≤50°C
		Alcohols	Alcohols
		Cleaning fluids	Cleaning fluids
		Glycois	Synthetic fuels and lubes
			Glycols
			Ketones

**Test method per TE Specification 1200.

***Use caution with ketones.

Cheminax — High Performance Alternatives to Standard Cables (Continued)

TE Alternatives to RG Cables

RG/U	TE Alternative	Comments
4	5020A3311-0	Small/light
	5018D3311-0	Improved electricals
5	5018D3311-0	Small/light
8	5012E1339-0	Dimensionally similar
11	7518A1311-0	Small/light
29	5020A1311-0	Small/light
31	5012E1339-0	Dimensionally similar
55	5020A3311-0	Small/light
	5018D3311-0	Improved electricals
58	5021D1331-0	Dimensionally similar
	5020A1311-0	Small/light
	5018A1311-0	Improved electricals
59	7523D1331-0	Dimensionally similar
	7524A1311-0	Small/light
62	7520A1311-0	Improved electricals
	9524A1311-0	Small/light
63	2524A1311-0	Small/light
87	5012A3311-0	Small/light
89	5012A3311-0	Small/light
115	5012A3311-0	Small/light
122	5020A1311-0	Improved electricals
124	7524A1311-0	Small/light
133	9524A1311-0	Small/light
140	7524A1311-0	Small/light
141	5020A1311-0	Small/light
142	5019D3318-0	Small/light
	5018D3311-0	Improved electricals
144	7518A1311-0	Small/light
149	7518A1311-0	Small/light

RG/U	TE Alternative	Comments
159	5020A1311-0	Small/light
174	5026A1311-0	Small/light
	5024A1311-0	Improved electricals
178	5030A1317-0	Small/light
	5028A1317-0	Improved electricals
179	7530A1317-0	Small/light
	7528A1317-0	Improved electricals
180	9530E1014-0	Small/light
	9527A1318-9	Improved electricals
188	5026A1311-0	Small/light
	5024A1311-0	Improved electricals
210	9524A1311-0	Small/light
213	5012E1339-0	Dimensionally similar
214	5012A3311-0	Small/light
223	5019D3318-0	Small/light
	5018D3311-0	Improved electricals
225	5012A3311-0	Small/light
235	5012A3311-0	Small/light
279	7524A1311-0	Dimensionally similar
282	5024A1311-0	Small/light
302	7524A1311-0	Small/light
303	5020A1311-0	Small/light
304	5018A1311-0	Small/light
316	5026A1311-0	Small/light
	5024A1311-0	Improved electricals
393	5012A3311-0	Small/light
400	5020A3311-0	Small/light
	5018D3311-0	Improved electricals
403	5030A5314-0	Small/light

Note: To complement the mechanical and electrical features of Cheminax miniature coax cable, TE offers SolderSleeve, SolderTacts, and PinPak termination devices and RF connector devices. Controlled electrical cables and components are available for data bus systems.

Cheminax Twin Axial Cable

Small, Lightweight Twin Axial Cables

Product Facts

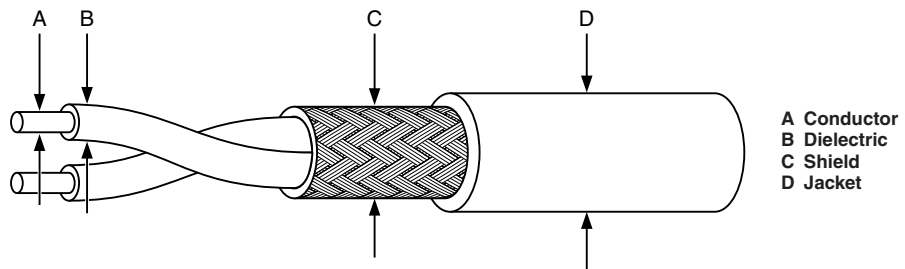
- Light weight, small size
- Temperature range of -65°C to 200°C [-85°F to 392°F]
- Low capacitance
- High data rates
- Excellent shop handling



Applications

These small, lightweight cables are specially designed for use in MIL-STD-1553 CANBUS, and other high speed data bus applications. TE materials technology allows the design and construction of cables that meet rigorous electrical and environmental performance requirements while minimizing size and weight.

Cheminax twin axial cables provide elegant solutions to an increasing range of data bus and multiplex signal transmission applications.



A Conductor
B Dielectric
C Shield
D Jacket

Available in:	Americas	Europe	Asia Pacific
	■	■	■

Cheminax Twin Axial Cables (Continued)

Specifications/Approvals

Series	TE
Cheminax cables	1200

Product Dimensions*

Typical Product Part No.	Impedance (ohms)	Capacitance pF/m(pF/ft)	A	B	C	D	Weight in kg/km (lb/1000ft)
			Conductor Diameter	Dielectric Diameter	Shield Diameter	Jacket Diameter	
5024A1661	50	104.7 [31.9]	.64 [.025]	0.89 [.035]	2.21 [.087]	2.62 [.103]	14.4 [9.7]
5026A1664	50	136.2 [41.5]	.48 [.019]	0.66 [.026]	1.75 [.069]	2.16 [.085]	10.0 [6.7]
7520A1662	75	74.2 [22.6]	1.02 [.040]	2.03 [.080]	4.60 [.181]	5.05 [.199]	42.9 [28.8]
7526J1660	75	88.6 [27.0]	.48 [.019]	0.99 [.039]	2.41 [.095]	2.82 [.111]	14.9 [10.0]
7820D0331	78	67.3 [20.5]	1.02 [.040]	2.11 [.083]	4.75 [.187]	5.72 [.225]	46.9 [31.5]
7824E0422	78	55.1 [16.8]	.64 [.025]	1.19 [.047]	2.82 [.111]	3.33 [.131]	19.6 [13.2]
0022E0311	100	49.2 [15.0]	.79 [.031]	1.98 [.078]	4.39 [.173]	5.16 [.203]	30.5 [20.5]
0024A0024	100	44.3 [13.5]	.64 [.025]	1.30 [.051]	3.02 [.119]	3.63 [.143]	25.1 [16.9]
0026A0024	100	44.0 [13.4]	.48 [.019]	1.14 [.045]	2.72 [.107]	3.23 [.127]	18.7 [12.6]
2524H0524	125	39.4 [12.0]	.64 [.025]	1.83 [.072]	4.09 [.161]	4.50 [.177]	25.3 [17.7]
2526E1114	125	36.1 [11.0]	.48 [.019]	1.40 [.055]	3.33 [.131]	3.73 [.147]	21.7 [14.6]
2530A0314	125	39.4 [12.0]	.30 [.012]	0.86 [.034]	2.16 [.085]	2.67 [.105]	10.6 [7.1]
10595-24	70	91.9 [28.0]	.64 [.025]	1.19 [.047]	2.82 [.111]	3.23 [.127]	17.9 [12.0]
10606-26	75	91.9 [28.0]	.53 [.021]	0.99 [.039]	2.41 [.095]	2.82 [.111]	13.4 [9.0]
10612-24	77	91.9 [28.0]	.64 [.025]	1.22 [.048]	2.90 [.114]	3.30 [.130]	23.7 [15.9]
10613-24	77	91.9 [28.0]	.64 [.025]	1.22 [.048]	3.33 [.131]	3.73 [.147]	39.0 [26.2]
10614-24	77	91.9 [28.0]	.64 [.025]	1.22 [.048]	3.73 [.147]	4.09 [.161]	40.3 [27.1]

*All dimensions are nominal.

Small, Lightweight Twin Axial Cables

Product Characteristics

General	Conductor range Operating temperature range*	20 AWG to 30 AWG -65°C to 200°C [-85°F to 392°F]
Electrical	Impedance range Capacitance range	50 ohms to 125 ohms 30 pF/ft to 10 pF/ft

*Temperature rating varies depending on materials used in specific construction.

Properties (per SCD)

Physical	Typical Value of Dielectric Material					
	Rayfoam L	Rayfoam H	Rayolin F	FEP (solid)	Radiation-Crosslinked XL ETFE	
Tensile (min.)	6.8 MPa (1000 psi)	9.1 MPa (600 psi)	12.2 MPa (1800 psi)	6.8 MPa (1000 psi)	34 MPa (5000 psi)	
Elongation (min.)	50%	50%	200%	150%	50%	
Electrical						
Dielectric withstand (min.)	1000 V	1000 V	1000 V	1000 V	1000 V	
Velocity of propagation (nom.)	78%	78%	67%	69%	61%	
Permittivity (nom.)	1.65	1.65	2.2	2.1	2.7	
Physical	Typical Value of Jacket Material					
	Thermorad	SPEC 55	FlexLine	FEP	Zerohal	SPEC 44
Tensile (min.)	13.6 MPa (2000 psi)	34 MPa (5000 psi)	20.4 MPa (3000 psi)	13.6 MPa (2000 psi)	8.2 MPa (1200 psi)	27.2 MPa (2500 psi)
Elongation (min.)	250%	50%	100%	200%	150%	150%
Temperature (max.)	125°C [257°F]	200°C [392°F]	200°C [392°F]	200°C [392°F]	125°C [257°F]	150°C [302°F]
Flammability*	Method C	Method B	Method B	Method B	Method B	Method B
Fluid category*	C	A	A	A	C	B

*See solvent Page 9-79 for details.

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