



## Raychem Cheminax RF Coaxial Cables and RF Connectors Selection Guide

Cheminax coaxial cables were designed to solve interconnect problems in electronic systems, such as computers, military equipment, and other areas of high-density packaging, where cables are required to perform to more exacting specifications than standard radio-grade (RG) constructions. Options include coaxial cable constructions that are smaller and lighter, have improved electrical performance, are more flexible, have better fluid resistance, and extended temperature range, over RG constructions. Our RF connectors are specifically designed with matched impedance, and correctly sized to fit the Cheminax coaxial cables referenced in this guide. TE Connectivity is also able to offer fully tested complete assemblies using the coax cables and RF connectors from this selection guide.

### FEATURES AND BENEFITS

- Light weight, small size
- Low capacitance and attenuation
- Improved velocity of propagation
- Improved flexibility
- Extended Temperature range

### PRODUCT APPLICATIONS

- Aircraft / Aerospace
- Missiles
- Avionics
- Radio Frequency / Microwave
- Computers, Security and Surveillance
- Communications

Cable Designation	Part Number	Conductor Stranding/ OD (in/mm) & Material (AWG)	Insulation Material (OD in/mm)	Shield Material (OD in/mm)	Jacket Material (OD in/mm)	Temp Range (°C)	Nom Weight (lbs/kft / kg/km)	Nom Imp (Ω)	Nom Cap (pF/ft / pF/m)	Notes
RG-58	RG-58	19 (0.0355/0.90) TC (21)	PE (0.116/2.95)	1:TC (0.150/3.53)	XL-PE (0.195/4.95)	-30 to +85	23.7/38.69	50	30.8/101.1	
	5021D1831	19 (0.035/0.90) TC (21)	RAYOLIN (0.113/2.87)	1:TC (0.134/3.40)	ZEROHAL (0.184/4.67)	-30 to +105	23.7/35.27	50	31.3/102.7	(1)
	5021F1031	19 (0.035/0.90) TC (21)	RAYOLIN (0.113/2.87)	1:TC (0.134/3.40)	FEP (0.195/4.95)	-65 to +105	29.7/44.20	50	30.7/100.7	(2)
	5021D1331	19 (0.035/0.90) TC (21)	RAYOLIN (0.117/2.97)	1:TC (0.138/3.51)	TH.RAD S (0.188/4.78)	-65 to +105	23.2/34.52	50	32.0/105	(3)
	5021K1011	19 (0.035/0.90) TC (21)	RAYFOAM L (0.083/2.11)	1:TC (0.114/2.90)	XL-ETFE (0.134/3.40)	-65 to +120	14.2/21.11	50	25.0/82.0	(4), (5)
RG-142	RG-142	1 (0.037/0.940) SCCS (19)	PTFE (0.115/2.95)	2:SC (0.166/4.22)	FEP (0.195/4.95)	-55 to 200	48.5/72.2	50	29.3/96.1	
	5019G3818	1 (0.036/0.914) SCCS (19)	RAYFOAM L (0.116/2.95)	2:SC (0.158/4.01)	ZEROHAL (0.184/4.67)	-30 to +105	35.8/53.3	50	29.0/95.4	(1)
	5019D3318	1 (0.036/0.914) SCCS (19)	RAYFOAM L (0.101/2.57)	2:SC (0.139/3.53)	TH.RAD S (0.175/4.45)	-65 to +120	25.1/37.35	50	27.1/88.9	(4), (5)
	5018A3812	19 (0.050/1.27) SC (18)	RAYFOAM L (0.137/3.48)	2:SC (0.171/4.34)	ZEROHAL (0.205/5.21)	-30 to +105	32.7/48.7	50	26.7/87.6	(1), (4), (5)
	5018A3022	19 (0.0490/1.24) SC (18)	RAYFOAM H (0.125/3.18)	2:SC (0.167/4.24)	FEP (0.187/4.75)	-65 to +200	37.4/55.7	50	25.0/82.0	(6), (8)
	5020A3422	19 (0.040/1.02) SC (20)	RAYFOAM H (.105/2.27)	2:SC (0.139/3.53)	FEP (0.169/4.29)	-65 to +200	25.1/37.4	50	25.5/83.7	(4), (5)
RG-174	RG-174	19 (0.019/0.480) CCS (26)	PE (0.060/1.52)	1:TC (0.088/1.98)	XLPE (0.110/2.79)	-40 to +80	10.0/13	50	30.8/101.1	
	5026A1331	7 (0.019/0.480) TC (26)	RAYOLIN (0.058/1.45)	1:TC (0.075/1.91)	TH.RAD S (0.095/2.41)	-65 to +105	6.9/10.3	50	31.5/103.3	(3)
	5026A1631	7 (0.019/0.480) TC (26)	RAYOLIN (0.057/1.45)	1:TC (0.074/1.88)	XL-ETFE (0.090/2.29)	-65 to +120	6.9/10.3	50	31.3/102.7	(2), (3)
	5026A1811	7 (0.019/0.480) TC (26)	RAYFOAM L (0.047/1.19)	1:TC (0.064/1.63)	ZEROHAL (0.086/2.18)	-30 to +105	6.0/8.9	50	26/85.3	(1), (4), (5)
	5026A1314	7 (0.019/0.480) SHSCA (26)	RAYFOAM L (0.047/1.19)	1:TC (0.064/1.63)	TH.RAD S (0.084/2.19)	-65 to +120	5.6/8.3	50	27.1/88.9	(4), (5)
	5026D1424	7 (0.019/0.480) SHSCA (26)	RAYFOAM H (0.051/1.30)	1:TC (0.068/1.73)	FEP (0.088/2.24)	-65 to +150	7.6/11.3	50	27.6/90.6	(2), (3)
	5024A1311	19 (0.025/0.635) TC (24)	RAYFOAM L (0.067/1.70)	1:TC (0.084/2.13)	TH.RAD S (0.104/2.64)	-65 to +120	7.9/11.8	50	27.5/90.2	(6), (8)
	5024A1811	19 (0.024/0.609) TC (24)	RAYFOAM L (0.067/1.70)	1:TC (0.084/2.13)	ZEROHAL (0.106/2.69)	-30 to +105	8.5/12.7	50	25/82.0	(1), (6), (8)
RG-178	RG-178	7 (0.012/0.305) SCCS (30)	PTFE (0.033/0.84)	1:SC (0.054/1.37)	FEP (0.071/1.80)	-55 to +200	5.7/8.5	50	30/98.4	
	CLFH-178	7 (0.0125/0.32) SCCS (30)	RAYFOAM L (0.032/0.82)	1:TC (0.047/1.2)	ZEROHAL (0.071/1.80)	-30 to +105	4.0/6.0	50	29.9/98.0	(1)
	5030A1444	7 (0.0115/0.29) SHSCA (30)	FEP (0.032/0.82)	1:TC (0.045/1.14)	FEP (0.059/1.50)	-65 to +150	3.7/5.5	50	29.4/96.5	(5), (10)
	5030A1314	7 (0.0125/0.32) SHSCA (30)	RAYFOAM L (0.031/0.79)	1:TC (0.044/1.12)	TH.RAD S (0.062/1.57)	-65 to +120	3.0/4.5	50	28.6/93.8	(3), (4), (5)
	5028A1314	7 (0.015/0.38) SHSCA (28)	RAYFOAM L (0.036/0.61)	1:TC (0.053/1.35)	TH.RAD S (0.071/1.80)	-65 to +120	4.2/6.3	50	27.5/90.2	(3), (5), (6), (8)
	5028G1424	7 (0.015/0.38) SHSCA (28)	RAYFOAM H (0.034/0.86)	1:SC (0.051/1.30)	FEP (0.067/1.70)	-65 to +200	4.6/6.8	50	26.4/86.6	(3), (5), (6), (8)
RG-179	RG-179	7 (0.012/0.305) SCCS (30)	PTFE (0.063/1.60)	1:SC (0.084/2.13)	FEP (0.100/2.54)	-55 to +200	9.7/14.4	75	21.5/70.5	
	CLFH-179	7 (0.0125/0.32) SCCS (30)	RAYFOAM L (0.059/1.51)	1:TC (0.076/1.93)	ZEROHAL (0.100/2.54)	-30 to +105	7.4/11	75	19.8/65	(1)
	7530D1334	7 (0.0115/0.29) SHSCA (30)	RAYOLIN (0.067/1.70)	1:TC (0.084/2.13)	TH.RAD S (0.104/2.64)	-65 to +105	7.6/11.3	75	20.6/67.6	(5)
	7530H1444	7 (0.0125/0.32) SHSCA (30)	FEP (0.063/1.60)	1:SC (0.080/2.03)	FEP (0.100/2.54)	-65 to +200	9.7/14.4	75	19.6/64.3	(7)
	7530H1424	7 (0.0125/0.32) SHSCA (30)	RAYFOAM H (0.051/1.30)	1:SC (0.068/1.73)	FEP (0.080/2.03)	-65 to +200	5.7/8.5	75	17.5/57.4	(4), (5)
	7530A1314	7 (0.0125/0.32) SHSCA (30)	RAYFOAM L (0.053/1.35)	1:SC (0.070/1.78)	TH.RAD S (0.090/2.29)	-65 to +120	5.6/8.3	75	18.3/60.0	(4), (5)
	7528A1424	7 (0.015/0.38) SHSCA (28)	RAYFOAM H (0.066/1.68)	1:TC (0.079/2.01)	FEP (0.099/2.51)	-65 to +150	7.8/11.6	75	17.4/57.1	(5), (6), (8)
	7528A1314	7 (0.015/0.38) SHSCA (28)	RAYFOAM H (0.064/1.63)	1:TC (0.081/2.06)	TH.RAD S (0.105/2.67)	-65 to +120	7.2/10.7	75	17.6/57.7	(5), (6), (8)
7528A1814	7 (0.015/0.38) SHSCA (28)	RAYFOAM H (0.063/1.60)	1:TC (0.080/2.03)	ZEROHAL (0.104/2.64)	-30 to +105	7.5/11.2	75	17.4/57.1	(1), (5), (6), (8)	

TC- Tinned Copper  
 SC- Silver Plated Copper  
 BC- Bare Copper  
 SCCS- Silver Plated Copper Covered Steel  
 CCS- Copper Covered Steel  
 SHSCA- Silver Plated High-Strength Copper Alloy

**Notes:**  
 (1) Zero Halogen  
 (2) Excellent fluid resistance  
 (3) Improved temperature range  
 (4) Smaller  
 (5) Lighter weight  
 (6) Similar size  
 (7) Equivalent  
 (8) Improved electrical performance  
 (9) Equivalent dielectric diameter  
 (10) Smaller overall cable diameter

Cable Designation	Part Number	SMA Plug	SMA R/A Plug	SMA BHD Jack	BNC Plug	BNC BHD Jack	BNC R/A Plug	TNC Plug	TNC R/A Plug, Weatherproof	TNC BHD Jack	N-Series Plug	N-Series R/A Plug	N BHD Jack	C-Series Plug
RG-58	RG-58													
	5021D1831													
	5021F1031	1996812-7	1996815-7	1996818-7	1996821-8	1996824-8	2101646-8							
	5021D1331													
	5021K1011	1996812-6	1996815-6	1996818-6	1996821-7	1996824-7	2101646-7							
RG-142	RG-142													
	5019G3818													
	5019D3318	1996812-3	1996815-3	1996818-3	2101645-1	1-1996824-4	2101646-1	2101647-1	2101648-1		2101828-5	2101829-5	2101830-5	2101649-1
	5018A3812													
	5018A3022	1996812-2	1996815-2	1996818-2	1996821-5	1996824-5	2101646-5				2101828-4	2101829-4	2101830-4	
	5020A3422	1996812-4	1996815-4	1996818-4	2101642-1	1-1996824-5	2101643-1		2101644-1		2101828-6	2101829-6	2101830-6	
RG-174	RG-174													
	5026A1331													
	5026A1631	1-1996812-1	1-1996815-1	1-1996818-1	1-1996821-2	1-1996824-2	1-2101646-2							
	5026A1811													
	5026A1314	1-1996812-0	1-1996815-0	1-1996818-0	1-1996821-1	1-1996824-1	1-2101646-1							
	5026D1424													
	5024A1311													
	5024A1811	1996810-1	1996813-1	1996816-1	1996819-1	1996822-1		1996825-1		1996828-1				
RG-178	RG-178													
	CLFH-178	1-1996812-3	1-1996815-3	1-1996818-3										
	5030A1444	1996812-1	1996815-1	1996818-1	1996821-1	1996824-1		1996827-1		1996830-1				
	5030A1314	1-1996812-3	1-1996815-3	1-1996818-3										
	5028A1314													
	5028G1424	1-1996812-2	1-1996815-2	1-1996818-2	1-1996821-3	1-1996824-3	1-2101646-3							
RG-179	RG-179													
	CLFH-179													
	7530D1334													
	7530H1444													
	7530H1424													
	7530A1314													
	7528A1424													
	7528A1314													
	7528A1814													

Cable Designation	Part Number	Conductor Stranding/ OD (in/mm) & Material (AWG)	Insulation Material (OD in/mm)	Shield Material (OD in/mm)	Jacket Material (OD in/mm)	Temp Range (°C)	Nom Weight (lbs/kft / kg/km)	Nom Imp (Ω)	Nom Cap (pF/ft / pF/m)	Notes
RG-213	RG-213	7 (0.0888/2.26) BC (12)	PE (0.285/7.24)	1-BC (0.323/8.31)	XL-PE (0.405/10.29)	-40 to +80	115/171	50	32.2/105.6	
	5012E1839	7 (0.089/2.26) BC (12)	RAYOLIN (0.285/7.24)	1-BC (0.314/7.98)	ZEROHAL (0.376/9.55)	-30 to +105	94.8/141	50	30/98.4	(1), (3)
	5012E1632	7 (0.089/2.26) SC (12)	RAYOLIN (0.285/7.24)	1-SC (0.314/7.98)	XL-ETFE (0.334/8.48)	-65 to +105	77.7/115.6	50	30.3/99.4	(2), (3)
	5012E1339	7 (0.089/2.26) BC (12)	RAYOLIN (0.285/7.24)	1-BC (0.314/7.98)	TH.RAD S (0.403/10.24)	-65 to +105	109/162.	50	30/98.43	(3)
	5012E1112	7 (0.089/2.26) SC (12)	RAYFOAM L (0.231/5.87)	1-SC (0.257/6.53)	XL-PVF2 (0.285/7.24)	-65 to +120	53.7/79.9	50	25.7/84.3	(3), (4), (5)
RG-214	RG-214	7 (0.0888/2.26) SC (12)	PE (0.285/7.24)	2-SC (0.348/8.34)	XL-PE (0.425/10.80)	-40 to +80	149/222.	50	30.3/99.4	
	5012F3832	7 (0.089/2.26) SC (12)	RAYOLIN (0.284/7.21)	2-TC (0.336/8.53)	ZEROHAL (0.406/10.31)	-30 to +105	123/183	50	30.8/101.1	(1)
	5012F3332	7 (0.089/2.26) SC (12)	RAYOLIN (0.284/7.21)	2-TC (0.336/8.53)	TH.RAD S (0.406/10.31)	-65 to +105	118/175.6	50	30.8/101.1	(3), (5)
	5012H3012	7 (0.089/2.26) SC (12)	RAYFOAM L (0.239/6.07)	2-SC (0.281/7.14)	XL-ETFE (0.301/7.65)	-65 to +120	67.9/101	50	25.0/82.0	(4), (5)
RG-223	RG-223	1 (0.035/0.889) Solid SC (19)	PE (0.116/2.95)	2-SC (0.166/4.22)	XL-PE (0.212/5.38)	-30 to +85	38.8/57.7	50	30.8/101.1	
	5019G3812	1 (0.0359/0.91) Solid SC (19)	RAYFOAM L (0.116/2.95)	2-SC (0.158/4.01)	ZEROHAL (0.195/4.95)	-30 to +105	34.7/51.6	50	29.0/95.1	(1), (3), (5), (8), (9)
	5019D3028	1 (0.0359/0.91) Solid SC (19)	RAYFOAM H (0.092/2.34)	2-SC (0.126/3.20)	FEP (0.156/3.96)	-65 to +200	26.2/39.0	50	25.0/82.0	(3), (4), (5)
	5019D3618	1 (0.0359/0.91) Solid SC (19)	RAYFOAM H (0.096/2.44)	2-SC (0.134/3.40)	XL-ETFE (0.150/3.81)	-65 to +120	21.3/31.7	50	26.4/86.6	(2), (3), (4), (5), (8)
RG-316	RG-316	7 (0.020/0.51) SCCS (26)	PTFE (0.060/1.52)	1-SC (0.07/1.98)	FEP (0.098/2.49)	-55 to +200	11.2/16.7	50	29.4/96.46	
	CLFH-316	7 (0.020/0.51) SCCS (26)	RAYFOAM L (0.055/1.40)	1-TC (0.081/2.06)	ZEROHAL (0.098/2.49)	-30 to +105	7.4/11	50	29.9/98	(1), (5)
	5026D1028	7 (0.020/0.51) SCCS (26)	RAYFOAM H (0.051/1.30)	1-TC (0.068/1.73)	FEP (0.088/2.24)	-65 to +150	7.2/10.7	50	27.6/90.6	(4), (5)
	5026A1318	7 (0.0185/0.47) SCCS (26)	RAYFOAM L (0.047/1.19)	1-TC (0.064/1.63)	TH.RAD S (0.084/2.13)	-65 to +120	5.5/8.2	50	27.5/90.2	(4), (5)
	5024A1314	19 (0.025/0.635) TC (24)	RAYFOAM L (0.067/1.70)	1-TC (0.084/2.13)	TH.RAD S (0.104/2.64)	-65 to +120	7.9/11.8	50	27.5/90.2	(6), (8)
	5024A1424	19 (0.025/0.635) TC (24)	RAYFOAM H (0.063/1.60)	1-TC (0.080/2.03)	FEP (0.096/2.44)	-65 to +150	9.0/13.4	50	26.0/85.3	(6), (8)
RG-400	RG-400	19 (0.0384/0.98) SC (20)	PTFE (0.116/2.95)	2-SC (0.166/4.22)	FEP (0.195/4.95)	-55 to 200	48.5/72.2	50	29.3/96.1	
	CLFH-400	19 (0.039/0.98) SC (20)	RAYFOAM L (0.114/2.90)	2-TC (0.156/3.96)	ZEROHAL (0.195/4.95)	-30 to +105	25.5/38	50	29.9/98	(1), (5)
	5020G3442	19 (0.040/1.02) SC (18)	RAYFOAM H (0.114/3.18)	2-SC (0.167/4.24)	FEP (0.187/4.75)	-65 to +200	37.4/55.7	50	25.0/82.0	(5)
	5020A3612	19 (0.040/1.02) SC (20)	RAYFOAM L (0.107/2.72)	2-SC (0.141/3.58)	XL-ETFE (0.157/3.99)	-65 to +120	21.7/32.3	50	26.4/86.6	(4), (5)
	5020A3312	19 (0.040/1.02) SC (20)	RAYFOAM L (0.107/2.72)	2-SC (0.141/3.58)	TH.RAD S (0.157/3.99)	-65 to +120	23.1/34.4	50	26.4/86.6	(4), (5)

TC- Tinned Copper  
 SC- Silver Plated Copper  
 BC- Bare Copper  
 SCCS- Silver Plated Copper Covered Steel  
 CCS- Copper Covered Steel  
 SHSCA- Silver Plated High-Strength Copper Alloy

**Notes:**  
 (1) Zero Halogen  
 (2) Excellent fluid resistance  
 (3) Improved temperature range  
 (4) Smaller  
 (5) Lighter weight  
 (6) Similar size  
 (7) Equivalent  
 (8) Improved electrical performance  
 (9) Equivalent dielectric diameter  
 (10) Smaller overall cable diameter

Cable Designation	Part Number	SMA Plug	SMA R/A Plug	SMA BHD Jack	BNC Plug	BNC BHD Jack	BNC R/A Plug	TNC Plug	TNC R/A Plug, Weatherproof	TNC BHD Jack	N-Series Plug	N-Series R/A Plug	N BHD Jack	C-Series Plug
RG-213	RG-213													
	5012E1839				1996821-2	1996824-2	2101646-2				2101828-1	2101829-1	2101830-1	
	5012E1632													
	5012E1339													
	5012E1112													
RG-214	RG-214													
	5012F3832				1996821-4	1996824-4	2101646-4				2101828-3	2101829-3	2101830-3	
	5012F3332													
	5012H3012				1996821-3	1996824-3	2101646-3				2101828-2	2101829-2	2101830-2	
RG-223	RG-223													
	5019G3812	1996812-3	1996815-3	1996818-3	2101645-1	1-1996824-4	2101646-1	2101647-1	2101648-1		2101828-5	2101829-5	2101830-5	2101649-1
	5019D3028													
5019D3618														
RG-316	RG-316													
	CLFH-316	1996812-9	1996815-9	1996818-9	1-1996821-0	1-1996824-0	1-2101646-0							
	5026D1028	1-1996812-0	1-1996815-0	1-1996818-0	1-1996821-1	1-1996824-1	1-2101646-1							
	5026A1318													
	5024A1314	1996812-8	1996815-8	1996818-8	1996821-9	1996824-9	2101646-9							
	5024A1424													
RG-400	RG-400													
	CLFH-400	1996812-4	1996815-4	1996818-4	2101642-1	1-1996824-5	2101643-1		2101644-1		2101828-6	2101829-6	2101830-6	
	5020G3442	1996812-5	1996815-5	1996818-5	1996821-6	1996824-6	2101646-6				2101828-7	2101829-7	2101830-7	
	5020A3612	1996812-4	1996815-4	1996818-4	2101642-1	1-1996824-5	2101643-1		2101644-1		2101828-6	2101829-6	2101830-6	
	5020A3312													

## HOW TO USE THIS REFERENCE

### STEP 1

Look for the relevant RG cable on the left side of the document that your customer has interest in replacing.

### STEP 2

Look to see which Cheminax coax cable offers the features and benefits the customer is looking to enhance:

- a. Higher temperature performance
- b. Smaller size and lighter weight
- c. Better electrical performance
- d. More suitable jacket insulation

### STEP 3

Look to see if the relevant TE coax connector (TNC, BNC, N, type, etc ) is available that fits with the cable you have chosen.

### STEP 4

If both products are available, TE can offer them either as a complete point-to-point harness or as individual components.

### STEP 5

Call Product Management to discuss the opportunity.

## FOR MORE INFORMATION

### Technical Support

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