

RF coaxial cables

SMART CONNECTIONS THROUGHOUT YOUR AIRCRAFT

High performance and flexibility,
lower weight



Collins Aerospace

RAISE YOUR EXPECTATIONS FOR WHAT CABLE CAN DO

KEY FEATURES AND BENEFITS

Significantly reduce your radio-frequency cable weight with lightweight, high-performance cables from Collins Aerospace. We offer two FAA- and original equipment manufacturer-approved types: PFLX and TFLX. Both are up to 75 percent lighter than many RG and MIL-C-17 cables, yet still increase electrical performance. They're available in bulk or as prefabricated and certified cable assemblies with electrical documentation and lot traceability.

- PFLX – low-smoke, zero halogen polyethylene
- TFLX – high-temperature, fluorinated ethylene propylene
- Vector Network Analyzer testing up to 3 GHz with detailed assembly reports for phase angle, insertion loss, voltage standing wave ratio, time delay and distance to fault
- Electronic profile data storage
- Moisture-resistant adhesive heat shrink – functions as durable strain relief
- Unique lot number assignment for full traceability and reproductivity
- Testing equipment is calibrated and traceable to National Institute of Standards and Technology standards

SYSTEMS SUPPORTED (NOT ALL INCLUSIVE)

- | | |
|----------------|------------------------|
| • DME | • MMR/GPS |
| • SkyWatch® | • TCAD |
| • HF | • Marker beacon |
| • TAWS | • ELT |
| • Glide slope | • SATCOM |
| • Satellite TV | • XM Satellite Weather |
| • GPS | • Mode S |
| • TCAS | • VHF |
| • MLS | • Radar altimeter |
| • UHF | • VOR/LOC |
| • Iridium® | |

Connectors

Our connectors are designed and fabricated to meet MIL-C-39012, MIL-STD-348, ARINC 600, ARINC 404A and customer requirements. All types of 50 ohm loads, adapters and attenuators are also available.



50 OHM AND 75 OHM COAXIAL CONNECTOR SPECIFICATIONS

Materials	Finishes	Temperature range
Brass per QQ-B-626	Silver plating per QQ-S-365	-55 to 200° C quality assurance
Beryllium copper per QQ-C-530	Gold plating per MIL-G-45204	EN/JSIQ/AS9100:2004
Silicone rubber per ZZ-R-765	Proprietary bright nickel	FAR Part 25
Stainless steel 300 Series		FAR Part 21 Subpart K
Polytetrafluoroethylene per L-P-403		FAR Part 145

50 OHM AND 75 OHM COAXIAL CONNECTOR SPECIFICATIONS

Connector series	Frequency range	Impedance	Voltage rating	Coupling mechanism	Center conductor	Outer conductor
TNC	11 GHz	50 Ω	500 VRMS	Threaded screw	Solder and crimp	Crimp
BNC	4 GHz	50 and 75 Ω	500 VRMS	Bayonet	Solder and crimp	Crimp
N	11 GHz	50 Ω	1000 VRMS	Threaded screw	Solder	Crimp
C	11 GHz	50 Ω	1000 VRMS	Bayonet	Solder	Crimp
HN	4 GHz	50 Ω	1500 VRMS	Threaded screw	Solder	Crimp
SMA	18 GHz	50 Ω	335 VRMS	Threaded screw	Solder	Crimp
ARINC 404A size 1	5 GHz	50 Ω	1000 VRMS	Low insertion force	Solder	Crimp
ARINC 600 size 1	5 GHz	50 Ω	1500 VRMS	Low insertion force	Solder	Crimp
ARINC 600 mod. size 1	5 GHz	50 Ω	1500 VRMS	Low insertion force	Solder	Crimp
ARINC 600 size 5	2 GHz	50 and 75 Ω	1000 VRMS	Low insertion force	Solder	Crimp

CABLE CHARACTERISTICS

Benefits	PFLX	TFLX
50-75% lighter than RG cable	X	X
Greater flexibility over RG cable	X	X
Smaller bend radius	X	X
Skydrol® and hydraulic fluid resistant	X	X
>90 dB shielding effectiveness	X	X
Low susceptibility to kinking	X	
Low smoke, zero halogen emission	X	
Low coefficient of friction		X
Temperature rating		
Rated for -55 to 85° C	X	
Rated for -55 to 200° C		X

Termination	PFLX	TFLX
Coaxial connectors	X	X
Flammability requirements		
Meets/exceeds FAR part 25, App. F part 1 (a)(3)	X	X
Design and construction requirements		
Meets/exceeds applicable MIL-C-17	X	X
Environmental requirements		
Meets/exceeds RTCA DO-160 and MIL-STD-810	X	X
Meets Boeing and Airbus smoke and toxic gas emission tests	X	X

Polyethylene (PE) – PFLX cable

KEY FEATURES AND BENEFITS

Collins Aerospace's flexible, lightweight cable exceeds FAA flammability testing requirements as a low-smoke, zero halogen solution.

- Small bend radius
- Resistant to kinking
- Temperature rated for -55 to 85° C
- >90 dB shielding effectiveness
- Resistant to Skydrol and other hydraulic fluids
- Lightweight
- Increased flexibility

ABBREVIATIONS

BC	Bare copper
BCCA	Bare copper clad aluminum
EPTFE	Expanded polytetrafluoroethylene
FEP	Fluorinated ethylene propylene
GIFP	Gas injected foam polyethylene
OD	Outer diameter
PVC	Polyvinylchloride
SC	Silver coated copper
SPC	Silver plated copper
TC	Tin coated copper
VSWR	Voltage standing wave ratio
PE	Polyethylene (low smoke, zero halogen, aircraft grade)

50 OHM AIRCRAFT GRADE POLYETHYLENE COAX

Part number	PFLX 140-500	PFLX 195-500	PFLX 240-500	PFLX 240-501	PFLX 340-500	PFLX 400-500	PFLX 500-500	PFLX 900-500
Attenuation (dB/100 ft. nominal)								
400 MHz	12.82	6.8	5.62	4.95	3.46	2.6	2.03	1.05
1000 MHz	20.28	10.9	8.79	8.13	5.70	4.0	3.31	1.70
1030 MHz	20.58	11.0	9.05	8.32	5.89	4.2	3.40	1.80
1600 MHz	27.76	14.0	11.0	10.88	7.59	5.2	4.27	2.20
4300 MHz	47.00	24.0	22.0	18.54	13.62	9.1	8.15	3.80
Mechanical properties								
Weight (lbs./100 ft.)	1.4	2.6	3.8	4.5	7.4	8.4	11.8	26.6
Min. bend radius	0.35"	0.5"	0.75"	0.75"	0.85"	1.0"	1.25"	3.0"
Cable construction								
Center conductor	Strand SPC	Solid SPC	7 strand SPC	Solid SPC	7 strand SPC	Solid BCCA	Solid BCCA	BC tube
Dielectric material	FEP	GIFP	GIFP	GIFP	GIFP	Foam PE	GIFP	GIFP
Shield #1	Bonded alum	Bonded alum	Bonded alum	Bonded alum	Bonded alum	Bonded alum	Bonded alum	Bonded alum
Shield #2	TC braid	TC braid	TC braid	TC braid	TC braid	TC braid	TC braid	TC braid
Outer diameter	0.140"	0.195"	0.242"	0.242"	0.340"	0.405"	0.500"	0.870"

75 OHM AIRCRAFT GRADE POLYETHYLENE COAX

Part number	PFLX 175-075-01	PFLX 190-075-01	PFLX 275-075-01
Attenuation (dB/100 ft. nominal)			
100 MHz	4.70	2.52	1.84
400 MHz	10.1	5.10	3.50
950 MHz	15.4	-	5.80
1000 MHz	16.0	8.16	5.89
1600 MHz	20.5	12.8	7.50
2150 MHz	23.4	15.4	8.95
Mechanical properties			
Weight (lbs./100 ft.)	1.8	2.7	4.29
Min. bend radius	0.5"	0.5"	0.69"
Cable construction			
Center conductor	SPC clad steel	SPC	BC
Dielectric material	Solid PE	Foam FEP	GIP
Shield #1	Semi-bonded aluminum	Semi-bonded aluminum	Semi-bonded aluminum
Shield #2	TC braid	TC braid	TC braid
Outer diameter	0.175"	0.207"	0.274"

All values nominal.

50 OHM PFLX CONNECTORS

Connector type	Description	PFLX 140-500	PFLX 195-500	PFLX 240-500/-501	PFLX 340-500	PFLX 400-500	PFLX 500-500	PFLX 900-500
TNC male	Straight	TMS130-1	TMS195-1	TMS240-1	TMS340-1	TMS400-1	TMS500-1	-
TNC male	45° angle	-	TM45195-1	TM45240-1	TM45340-1	-	-	-
TNC male	Right angle	TMR130-1	TMR195-1	TMR240-1	TMR340-1	TMR400-1	TMR500-1	-
TNC male	Right angle (crimp/crimp)	TMR130-2	TMR195-2	TMR240-2	TMR340-2	-	-	-
TNC female	Bulkhead straight	TFS130-2	TFS195-2	TFS240-2	TFS340-2	-	TFS500-2	-
TNC female	In-line	TFS130-1	TFS195-1	TFS240-1	TFS340-1	-	-	-
C male	Straight	CMS130-1	CMS195-1	CMS240-1	CMS340-1	-	CMS500-1	-
C male	Right angle	CMR130-1	CMR195-1	CMR240-1	CMR340-1	CMR400-1	CMR500-1	-
N male	Straight	NMS130-1	NMS195-1	NMS240-1	NMS340-1	NMS400-1	NMS500-1	NMS900-1
N male	Right angle	NMR130-1	NMR195-1	NMR240-1	NMR340-1	NMR400-1	NMR500-1	-
N female	Bulkhead straight	NFS130-2	NFS195-2	NFS240-2	NFS340-2	NFS400-2	NFS500-2	NFS900-1
N female	In-line	NFS130-1	NFS195-1	NFS240-1	NFS340-1	NFS400-1	NFS500-1	-
BNC male	Straight	BMS130-1	BMS195-1	BMS240-1	BMS340-1	BMS400-1	BMS500-1	-
BNC male	45° angle	-	BM45195-1	BM45240-1	BM45340-1	-	-	-
BNC male	Right angle	BMR130-1	BMR195-1	BMR240-1	BMR340-1	BMR400-1	BMR500-1	-
BNC male	Right angle (crimp/crimp)	BMR130-2	BMR195-2	-	BMR340-2	-	BMR500-2	-
BNC female	Bulkhead straight	BFS130-2	BFS195-2	BFS240-2	BFS340-2	-	-	-
BNC female	In-line	BFS130-1	BFS195-1	BFS240-1	BFS340-1	-	-	-
HN male	Straight	-	HMS195-1	HMS240-1	HMS340-1	-	HMS500-1	-
HN male	Right angle	-	HMR195-1	HMR240-1	HMR340-1	-	HMR500-1	-
SMA male	Straight	SMS130-1	SMS195-1	SMS240-1	SMS340-1	-	-	-
SMA male	Right angle	SMR130-1	SMR195-1	SMR240-1	SMR340-1	-	-	-
UHF male	Straight	-	UMS195-1	UMS240-1	-	UMS400-1	UMS500-1	-
ARINC 600 size 1	Straight	A61130-1	A61195-1	A61240-1	A61340-1	A61500-1	--	-

Note: All connectors use standard military specification tool frames and dies. Hex die varies with connector. Refer to connector drawing for tooling information.

75 OHM PFLX CONNECTORS

Connector type	Description	PFLX 175-075-01	PFLX 190-075-01	PFLX 275-075-01
BNC male	Straight plug	BMS175-075-1	BMS190-075-1	BMS275-075-1
BNC male	90° plug	BMR175-075-1	BMR190-075-1	BMR275-075-1
BNC female	In-line jack	BFS175-075-1	BFS190-075-1	BFS275-075-1
BNC female	Bulkhead jack	BFS175-075-2	BFS190-075-2	BFS275-075-2
Mini BNC	Straight plug	MBMS175-075-1	MBMS190-075-1	MBMS275-075-1
Mini BNC	In-line jack, female	MBFS175-075-1/-2	MBFS190-075-1/-2	MBFS275-075-1/-2
Size 8 removable	Female, for Positronic D-Sub	DFC175-075-1	DFC190-075-1	-
Size 8 removable	Female, for Cannon D-Sub	DFC175-075-2	-	-
Size 8 removable	Male, for Positronic D-Sub	DMC175-075-1	DMC190-075-1	-
Size 8 removable	Male, for Cannon D-Sub	DMC175-075-2	-	-
Type F	Male, straight plug	FMS175-075-1	-	-
Type F	Male, 90° plug	FMR175-075-1	-	-
Type F	Right angle (crimp/crimp)	FMR175-075-2	-	-
ARINC size 5	Pin contact	A65175-075-2	-	-
ARINC size 5	Socket contact	A65175-075-3	-	-
ARINC size 8	Socket contact	A68175-075-1	-	-
ARINC 600 size 8	Female	-	AF68190-075-1	-
ARINC 600 size 8	Male	-	A68190-075-1	-

Fluorinated Ethylene (FEP) – TFLX cable

KEY FEATURES AND BENEFITS

Collins Aerospace's ruggedized, high-temperature coaxial cable.

- Very low coefficient of friction
- High temperature rating of -55 to 150° C
- Jacket rated to 200° C
- >90 dB shielding effectiveness
- Resistant to Skydrol and other hydraulic fluids
- Lightweight
- Increased flexibility

50 OHM AIRCRAFT GRADE FLUORINATED ETHYLENE PROPYLENE COAX

Part number	TFLX 130-100	TFLX 165-100	TFLX 205-100	TFLX 225-100	TFLX 295-100	TFLX 410-100	TFLX 480-100
Attenuation (dB/100 ft. nominal)							
400 MHz	11.4	7.7	6.1	5.6	3.71	2.5	2.2
1000 MHz	16.7	13.0	10.0	8.0	5.95	4.0	3.5
1030 MHz	18.1	13.2	10.3	8.1	6.1	4.1	3.7
1600 MHz	23.5	16.8	13.9	10.2	7.6	5.2	4.5
4300 MHz	39.1	29.0	25.5	18.0	13.8	9.0	7.6
Mechanical properties							
Weight (lbs./100 ft.)	1.5	2.47	3.2	4.1	7.2	15.0	19.4
Min. bend radius	0.65"	0.83"	1.0"	1.13"	1.5"	2"	2.4"
Cable construction							
Center conductor	7 strand SPC	19 strand SPC	19 strand SPC	Solid SPC	7 strand SPC	7 strand SPC	7 strand SPC
Dielectric material	EPTFE	EPTFE	EPTFE	Air spaced PTFE	EPTFE	PTFE tape	Tape wrapped PTFE
Shield #1	Bonded alum	Bonded alum	Bonded alum	Bonded alum	Bonded alum	Bonded alum	Bonded alum
Shield #2	TC braid	TC braid	TC braid	TC braid	TC braid	TC braid	TC braid
Outer diameter)	0.130"	0.165"	0.195"	0.220"	0.295"	0.415"	0.480"

75 OHM AIRCRAFT GRADE FLUORINATED ETHYLENE PROPYLENE COAX

Part number	TFLX 125-075-01	TFLX 180-075-01
Attenuation (dB/100 ft. nominal)		
100 MHz	5.4	3.0
400 MHz	11.2	6.1
950 MHz	16.59	-
1000 MHz	17.06	10.0
1600 MHz	21.8	13.0
2150 MHz	23.5	15.1
Mechanical properties		
Weight (lbs./100 ft.)	1.1	2.4
Min. bend radius	0.6"	1.0"
Cable construction		
Center conductor	Stranded SPC alloy	Stranded SPC
Dielectric material	High temp PTFE	Extruded PTPE
Shield #1	Bonded aluminum	Bonded aluminum polyester tape
Shield #2	TC braid	TC braid
Outer diameter	0.123"	0.18"

All values nominal.

50 OHM TFLX CONNECTORS

Connector type	Description	TFLX 130-100	TFLX 165-100	TFLX 205-100	TFLX 225-100	TFLX 295-100	TFLX 410-100	TFLX 480-100
TNC male	Straight	TMS130-1	TMS165-1	TMS205-1	TMS225-1	TMS295-1	TMS410-1	TMS488-1
TNC male	45° angle	TM45130-1	TM45195-1	TM45205-1	TM45225-1	-	-	-
TNC male	Right angle	TMR130-1	TMR165-1	TMR205-1	TMR225-1	TMR295-1	TMR410-1	TMR488-1
TNC male	Right angle (crimp/crimp)	TMR130-2	TMR165-2	TMR205-2	TMR225-2	TMR295-2	TMR410-2	-
TNC female	Blkhd straight	TFS130-2	TFS165-2	TFS205-2	TFS225-2	TFS295-2	TFS410-2	TFS488-2
TNC female	In-line	TFS130-1	TFS165-1	TFS205-1	TFS225-1	TFS295-1	TFS410-1	-
C male	Straight	CMS130-1	CMS165-1	CMS205-1	CMS225-1	CMS295-1	-	CMS488-1
C male	Right angle	CMR130-1	CMR165-1	CMR205-1	CMR225-1	CMR295-1	-	CMR488-1
N male	Straight	NMS130-1	NMS165-1	NMS205-1	NMS225-1	NMS295-1	NMS410-1	NMS488-1
N male	Right angle	NMR130-1	NMR165-1	NMR205-1	NMR225-1	NMR295-1	NMR410-1	NMR488-1
N female	Blkhd straight	NFS130-2	NFS165-2	NFS205-2	-	NFS295-2	NFS410-2	NFS488-2
N female	In-line	NFS130-1	NFS165-1	NFS205-1	NFS225-1	NFS295-1	-	-
BNC male	Straight	BMS130-1	BMS165-1	BMS205-1	BMS225-1	BMS295-1	BMS410-1	BMS488-1
BNC male	45° angle	BM45130-1	BM45165-1	BM45205-1	BM45225-1	-	-	-
BNC male	Right angle	BMR130-1	BMR165-1	BMR205-1	BMR225-1	BMR295-1	BMR410-1	BMR488-1
BNC male	Right angle (crimp/crimp)	BMR130-2	BMR165-2	BMR205-2	BMR225-2	BMR295-2	-	-
BNC female	Blkhd straight	BFS130-2	BFS165-2	BFS205-2	-	BFS295-2	BFS410-2	-
BNC female	In-line	BFS130-1	BFS165-1	BFS205-1	BFS225-1	BFS295-1	BFS410-1	-
HN male	Straight	-	-	HMS205-1	-	HMS295-1	-	HMS488-1
HN male	Right angle	-	HMR165-1	HMR205-1	-	HMR295-1	-	HMR488-1
SMA male	Straight	SMS130-1	SMS165-1	SMS205-1	SMS225-1	-	-	-
SMA male	Right angle	SMR130-1	SMR165-1	SMR205-1	SMR225-1	SMR295-1	-	-
ARINC 600 size 1	Straight	A61130-1	A61165-1	A61205-1	A61225-1	A61295-1	-	A61488-1
ARINC 600 mod size 1	Straight	A6M1130-1	A6M1165-1	A6M1205-1	A6M1225-1	A6M1295-1	-	A6M1488-1
ARINC 600 size 5	Straight	A65130-1	A65165-1	-	-	-	-	-
ARINC 404 size 1	Straight	A41130-1	A41165-1	A41205-1	A41225-1	A41295-1	-	A41488-1
QMA male	Straight	-	QMS165-1	-	QMS225-1	-	-	-
QMA male	Right angle	-	QMR165-1	-	QMR225-1	-	-	-

Note: All connectors use standard military specification tool frames and dies. Hex die varies with connector. Refer to connector drawing for tooling information.

75 OHM TFLX CONNECTORS

Connector type	Description	TFLX 125-075-01	TFLX 180-075-01
BNC male	Straight plug	BMS125-075-1	BMS190-075-1
BNC male	90° plug	BMR125-075-2	BMR190-075-1
BNC female	In-line jack	BFS125-075-1	BFS190-075-1
BNC female	Bulkhead jack	BFS125-075-2	BFS190-075-2
Mini BNC	Plug connector	MBMS125-075-1	MBMS190-075-1
Mini BNC	Female	MBFS125-075-1/-2	MBFS190-075-1/-2
Size 8 removable	Female, for Positronic D-Sub	DFC125-075-1	DFC190-075-1
Size 8 removable	Male, for Positronic D-Sub	DMC125-075-1	DMC190-075-01
ARINC size 5	Pin contact	A65125-075-2	-
ARINC size 8	Socket contact	A68125-075-1	-
ARINC 600 size 8	Female	-	AF68190-075-1
ARINC size 9	Socket contact	A69125-075-1	-



Cable comparisons

MIL SPECIFICATION COMPARISON TO TFLX

	TFLX 165-100	RG 142	TFLX 295-100	RG 393
Attenuation (dB/100 ft.)				
400 MHz	7.7	7.8	3.9	4.3
1000 MHz	13.0	12.8	5.95	7.2
1030 MHz	13.2	13.0	6.5	7.3
1600 MHz	16.8	16.6	8.3	9.5
Mechanical properties				
Weight (lbs/100 ft.)	2.47	4.3	7.2	16.5
Min. bend radius	1.75"	1"	1.5"	2"
Cable construction				
Center conductor	19 strand SPC	Solid SC	7 strand SPC	7 strand SC
Dielectric material	EPTFE	PTFE	EPTFE	PTFE
Shield #1	Bonded alum	SC	Bonded alum	SC
Shield #2	TC braid	SC	TC braid	SC
Outer diameter (OD)	.165"	.195"	.295"	.390"
Compare TFLX 165-100 vs. RG 142 and TFLX 295-100 vs. RG 393 • Weight savings: 48% - 56%				



MIL SPECIFICATION COMPARISON TO PFLX

	PFLX 240-501	RG 214
Attenuation (dB/100 ft.)		
400 MHz	4.95	4.3
1000 MHz	8.13	7.3
Mechanical properties		
Weight (lbs./100 ft.)	4.5	12.6
Min. bend radius	.75"	2"
Cable construction		
Center conductor	Solid SPC	7 strand SC
Dielectric material	GIFP	PE
Shield #1	Bonded alum	SC
Shield #2	TC braid	SC
Outer diameter	.242"	.425"
Compare PFLX 240-501 vs. RG 214 • Weight savings: 64%		

TOOL FRAME AND DIE PART NUMBERS

Cable type	Hex die	Daniels part no.
PFLX 175-075-01	*	*
PFLX 190-075-01	*	*
TFLX 125-075-01	*	*
TFLX 180-075-01	*	*
PFLX 140-500	B Hex*	Y140
PFLX 195-500	B Hex	Y142
PFLX 240-500	A Hex	Y141
PFLX 240-501	A Hex	Y141
PFLX 340-500	A Hex	Y137
PFLX 400-500	A Hex	Y178
PFLX 500-500	A Hex	Y149
TFLX 130-100	B Hex	Y140
TFLX 165-100	B Hex	Y142
TFLX 205-100	A Hex	Y141
TFLX 225-100	A Hex	Y141
TFLX 295-100	A Hex	Y137
TFLX 410-100	A Hex	Y148
TFLX 480-100	A Hex	Y151

MILSPEC part number for tool frame is M22520/5-01.

*Hex die varies with connector type. Refer to connector drawing for tooling information.

To learn more, go to

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