



HELIAX® Coaxial Cables

50-ohm 1/4" Superflexible Foam Dielectric, FSJ Series

FSJ1-50A

Cable Ordering Information

Description	Type No.
Standard Superflexible Cable	
1/4" Standard Cable, Standard Jacket	FSJ1-50A
Fire Retardant Cables	
1/4" Fire Retardant Jacket (CATVX)	FSJ1RN-50A
1/4" Fire Retardant Jacket (CATVR)	FSJ1RN-50A
Low VSWR and Specialized Cables	
1/4" Low VSWR, specify operating band	FSJ1P-50A-(**)
Phase Stabilized and Phase Measured Cable	See page 456
Jumper Cable Assemblies	
Standard Jumper Assemblies	See page 545
VALUFLEX Cable Assemblies	See page 544

** Insert suffix number from "Low VSWR Specifications" table.

Characteristics

Electrical	
Impedance, ohms	50 ± 1
Maximum Frequency, GHz	20.4
Velocity, percent	84
Peak Power Rating, kW	6.4
dc Resistance, ohms/1000 ft (1000 m)	
Inner	3.0 (9.8)
Outer	2.0 (6.5)
dc Breakdown, volts	1600
Jacket Spark, volts RMS	5000
Capacitance, pF/ft (m)	24.2 (79.4)
Inductance, µH/ft (m)	0.061 (0.200)
Mechanical	
Outer Conductor	Copper
Inner Conductor	Cu-Clad Al
Diameter over Jacket, standard jacket, in (mm)	0.29 (7.4)
Diameter over Jacket, fire-retardant jacket, in (mm)	0.29 (7.4)
Diameter Copper Outer Conductor, in (mm)	0.25 (6.4)
Diameter Inner Conductor, in (mm)	0.075 (1.9)
Minimum Bending Radius, in (mm)	1 (25)
Number of Bends, minimum (typical)	15 (20)
Bending Moment, lb-ft (N•m)	0.8 (1.1)
Cable Weight, lb/ft (kg/m)	0.045 (0.067)
Tensile Strength, lb (kg)	150 (68)
Flat Plate Crush Strength, lb/in (kg/mm)	100 (1.8)

Attenuation and Average Power

Frequency MHz	Attenuation dB/100 ft	Attenuation dB/100m	Average Power kW
0.5	0.125	0.404	6.4
1	0.177	0.574	6.4
1.5	0.217	0.705	6.4
2	0.251	0.814	6.4
10	0.563	1.84	3.96
20	0.799	2.62	2.79
30	0.980	3.22	2.28
50	1.27	4.17	1.76
88	1.69	5.54	1.32
100	1.81	5.94	1.23
108	1.88	6.17	1.18
150	2.23	7.32	1.00
174	2.41	7.91	0.929
200	2.58	8.46	0.865
300	3.19	10.5	0.701
400	3.70	12.1	0.603
450	3.93	12.9	0.567
500	4.16	13.7	0.537
512	4.21	13.8	0.530
600	4.58	15.0	0.488
700	4.97	16.3	0.450
800	5.33	17.5	0.419
824	5.42	17.8	0.412
894	5.66	18.6	0.395
960	5.87	19.3	0.380
1000	6.00	19.7	0.372
1250	6.77	22.2	0.330
1500	7.47	24.5	0.299
1700	7.99	26.2	0.279
2000	8.73	28.6	0.256
2300	9.43	30.9	0.237
3000	10.9	35.8	0.204
4000	12.8	42.0	0.174
5000	14.6	47.9	0.153
6000	16.2	53.2	0.138
8000	19.1	62.7	0.117
10000	21.8	71.5	0.102
12000	24.3	79.7	0.092
14000	26.7	86.3	0.084
16000	29.0	95.2	0.077
18000	31.2	102	0.072
19000	32.3	106	0.069
20000	33.3	109	0.067

Standard Conditions:

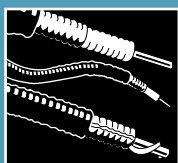
For Attenuation. VSWR 1.0, ambient temperature 24°C (75°F).

For Average Power. VSWR 1.0, ambient temperature 40°C (104°F), inner conductor temperature 100°C (212°F); no solar loading.



Customer Service Center - Call toll-free from:
• Republic of Ireland 1-800-535358

• U.S.A., Canada and Mexico 1-800-255-1479 • U.K. 0800-250055
• Australia 1800-803 219 • New Zealand 0800-441-747



HELIAX® Coaxial Cables



N Male
F1PNM-H



N Male
Right Angle
F1PNR-H



N Female
Bulkhead
F1PNF-BH



SMA Male
F1PSM



SMA Male
Right Angle
F1PSR



SMA Female
Bulkhead
F1PSF



BNC Male
F1PBM



TNC Male
F1PTM-HF



UHF Male
41SP

Connectors on this page, except F1PNM-HF, F1PTM-HF, and 41AENT, are intended for indoor use and do not have a weatherproof seal at the connector to cable interface. For outdoor applications, Andrew recommends Type LDF1-50 foam dielectric cable and connectors, see page 456.

Connectors

Interface	Description	Type Number	Previous Type Number	Inner Contact Attachment	Outer Contact Attachment	Plating Code	Max. Length in (mm)	Max. Dia. in (mm)
N Male	Hex Head	F1PNM-H†	C41SW	Solder	Self-Clamping	SG	2.1 (53)	0.95 (24.1)
N Male	High Freq.	F1PNM-HF	41PW	Solder	Tab Flare	SG	1.3 (33)	0.81 (20.5)
N Male	Right Angle Hex Head	F1PNR-HC	C41ASW-RA	Spring Finger	Self-Clamping	SG	1.7/1.3 (43/33)	0.95 (24.1)
N Female		F1PNF-BH†	C41SPN-BH	Solder	Self-Clamping	SG	2.3 (58)	0.94 (23.9)
BNC Male		F1PBM	C41SWB	Solder	Self-Clamping	SS	2.0 (50)	0.69 (17.5)
UHF Male		41SP		Solder	Solder	BB	1.8 (46)	0.77 (19.6)
UHF Female		41U		Solder	Solder	BS	2.1 (53)	0.77 (19.6)
SMA Male	Up to 6 GHz	F1PSM†	C41SWS	Solder	Self-Clamping	PG	1.7 (43)	0.49 (12.5)
SMA Male	Right Angle	F1PSR	C41ASWS-RA	Solder	Self-Clamping	PG	1.6/.75 (41/19)	0.50 (12.7)
SMA Female	Up to 6 GHz, Bulkhead	F1PSF	C41SNS	Solder	Self-Clamping	PG	1.7 (43)	0.49 (12.5)
SMA Male	Up to 18 GHz	41EWS*		Solder	Tab Flare	G	0.94 (23.9)	0.40 (10.2)
SMA Female	Up to 18 GHz	41ENS*		Solder	Tab Flare	G	1.00 (25.4)	0.40 (10.2)
TNC Male	11 GHz and Below	F1PTM†		Solder	Self-Clamping	SG	1.68 (43)	0.57 (14.5)
TNC Female	Bulkhead	41AENT		Spring Finger	Tab Flare	NG	1.5 (38)	0.70 (17.8)
TNC Male	Hi Freq, Above 11 GHz	F1PTM-HF	41AEWT	Spring Finger	Tab Flare	NG	1.9 (48.8)	0.70 (17.8)
Mini-UHF Male		F1MU	41ASPM	Spring Finger	Crimp	NS	1.53 (39)	0.47 (11.9)
7-16 DIN Male		F1PDM		Solder	Self-Clamping	SS	1.82 (46.3)	1.25 (31.75)
7-16 DIN Female		F1PDF		Solder	Self-Clamping	SS	1.85 (47)	0.551 (14)
7-16 DIN Female	Panel Mount	F1PDF-PM		Solder	Self-Clamping	SS	1.85 (47)	1.26 (32)
7-16 DIN Female	Bulkhead	F1PDF-BH		Solder	Self Clamping	SS	1.85 (47)	1.62 (41)

* Stainless steel body † See page 570 for bulk packs.

Plating Codes: BB - Brass Body and Pin, BS - Brass Body and Silver Plated Pin, NG - Nickel Plated Body and Gold Plated Pin, NS- Nickel Plated Body and Silver Plated Pin, PG - Passivated Body and Gold Plated Pin+A135, SG - Silver Plated Body and Gold Plated Pin, SS - Silver Plated Body and Pin, G - Stainless Steel Body and Gold Plated Pin.

Connector Accessories

	Type Number
Connector Pin-Paks, five replacement pins For F1PNM-H	242881
For C41SW	241051-3
Bulkhead Adapter, for UHF Female	26016-2
End Terminal Adapter, use with N Male connector	13074A

Assemblies

For complete information on assemblies, see page 545

	Lengths feet	Type Number
N Male/N Male, premium	3, 6, 8 or variable	F1-PNMNM-(*)
N Male/Right Angle		
N Male, premium	3, 6, 8 or variable	F1-PNMNR-(*)

Low VSWR Specifications, Type FSJ1P-50A-()

Frequency Band, GHz	Type No.	Using Connector Type No.**	Assembly VSWR, Maximum (R.L., dB)			
			to 10 ft (3 m)	10-20 ft (3-6 m)	20-200 ft (6-60 m)	
0.01- 2.3 GHz	FSJ1P-50A-1A	N Male: F1PNM-H	1.07 (29.4)	1.13 (24.3)	1.27 (18.5)	
		N Male: F1PNM-HF	1.12 (24.9)	1.15 (23.1)	1.35 (16.5)	
		N Female: F1PNF-BH	1.15 (23.1)	1.20 (20.8)	1.40 (15.6)	
		Right Angle N Male: F1PNR-HC	1.31 (17.4)	1.35 (16.5)	1.40 (15.6)	
		SMA Male: F1PSM	1.12 (24.9)	1.25 (19.1)	1.35 (16.5)	
		Right Angle SMA Male: F1PSR	1.30 (17.7)	1.30 (17.7)	1.40 (15.6)	
		SMA Female: F1PSF	1.12 (24.9)	1.25 (19.1)	1.35 (16.5)	
		TNC Male: F1PTM	1.15 (23.1)	1.20 (20.8)	1.40 (15.6)	
		7-16 DIN Male: F1PDM	1.12 (24.9)	1.18 (21.6)	1.40 (15.6)	
		7-16 DIN Female: F1PDF	1.17 (22.1)	1.22 (20.1)	1.40 (15.6)	
0.01- 4.2 GHz	FSJ1P-50A-2A	N Male: F1PNM-H	1.15 (23.1)	1.18 (21.6)	1.31 (17.4)	
		N Female: F1PNF-BH	1.40 (15.6)	1.45 (14.7)	1.50 (14.0)	
		Right Angle N Male: F1PNR-HC	1.38 (16.0)	1.40 (15.6)	1.50 (14.0)	
		SMA Male: F1PSM	1.17 (22.1)	1.40 (15.6)	1.45 (14.7)	
		Right Angle SMA Male: F1PSR	1.40 (15.6)	1.45 (14.7)	1.50 (14.0)	
		SMA Female: F1PSF	1.17 (22.1)	1.40 (15.6)	1.45 (14.7)	
		TNC Male: F1PTM	1.30 (17.7)	1.35 (16.5)	1.45 (14.7)	
		7-16 DIN Male: F1PDM	1.25 (19.1)	1.30 (17.7)	1.45 (14.7)	
		7-16 DIN Female: F1PDF	1.25 (19.1)	1.30 (17.7)	1.45 (14.7)	
0.01-10.2 GHz	FSJ1P-50A-3A	N Male: F1PNM-H	1.40 (15.6)	1.45 (14.7)	1.50 (14.0)	
		SMA Male: 41EWS	1.35 (16.5)	1.40 (15.6)	1.45 (14.7)	
		SMA Female: 41ENS	1.40 (15.6)	1.45 (14.7)	1.50 (14.0)	
		TNC Male: F1PTM-HF	1.45 (14.7)	1.50 (14.0)	1.63 (12.4)	
0.01-18.0 GHz	FSJ1P-50A-4A	N Male: F1PNM-HF	1.55 (13.3)	1.55 (13.3)	1.63 (12.4)	
		SMA Male: 41EWS	1.50 (14.0)	1.55 (13.3)	1.55 (13.3)	
		SMA Female: 41ENS	1.50 (14.0)	1.55 (13.3)	1.55 (13.3)	
0.800-0.960	FSJ1P-50A-5A		to 10 ft (3 m)	10-20 ft (3-6 m)	20-100 ft (6-30 m)	100-200 ft (30-60 m)
		N Male: F1PNM-H	1.08 (28.3)	1.10 (26.4)	1.20 (20.8)	1.27 (18.5)
		N Male: F1PNM-HF	1.07 (29.4)	1.10 (26.4)	1.15 (23.1)	1.20 (20.8)
		N Female: F1PNF-BH	1.10 (26.4)	1.12 (24.9)	1.20 (20.8)	1.27 (18.5)
		Right Angle N Male: F1PNR-HC	1.10 (26.4)	1.12 (24.9)	1.20 (20.8)	1.27 (18.5)
		SMA Male: F1PSM	1.09 (27.3)	1.11 (25.7)	1.20 (20.8)	1.27 (18.5)
		Right Angle SMA Male: F1PSR	1.30 (17.7)	1.30 (17.7)	1.35 (16.5)	1.40 (15.6)
		SMA Female: F1PSF	1.09 (27.3)	1.12 (24.9)	1.25 (19.1)	1.30 (17.7)
		TNC Male: F1PTM	1.10 (26.4)	1.12 (24.9)	1.25 (19.1)	1.30 (17.7)
		7-16 DIN Male: F1PDM	1.10 (26.4)	1.12 (24.9)	1.25 (19.1)	1.30 (17.7)
		7-16 DIN Female: F1PDF	1.10 (26.4)	1.12 (24.9)	1.25 (19.1)	1.30 (17.7)
		N Male: F1PNM-H	1.15 (23.1)	1.20 (20.8)	1.27 (18.5)	1.30 (17.7)
		N Male: F1PNM-HF	1.10 (26.4)	1.15 (23.1)	1.27 (18.5)	1.30 (17.7)
		N Female: F1PNF-BH	1.15 (23.1)	1.20 (20.8)	1.35 (16.5)	1.40 (15.6)
0.800-0.960 and 1.7-2.0	FSJ1P-50A-6A	Right Angle N Male: F1PNR-HC	1.20 (20.8)	1.25 (19.1)	1.35 (16.5)	1.40 (15.6)
		SMA Male: F1PSM	1.12 (24.9)	1.20 (20.8)	1.30 (17.7)	1.35 (16.5)
		Right Angle SMA Male: F1PSR	1.35 (16.5)	1.35 (16.5)	1.45 (14.7)	1.50 (14.0)
		SMA Female: F1PSF	1.15 (23.1)	1.20 (20.8)	1.35 (16.5)	1.35 (16.5)
		TNC Male: F1PTM	1.15 (23.1)	1.20 (20.8)	1.35 (16.5)	1.40 (15.6)
		7-16 DIN Male: F1PDM	1.12 (24.9)	1.15 (23.1)	1.30 (17.7)	1.40 (15.6)
		7-16 DIN Female: F1PDF	1.18 (21.6)	1.20 (20.8)	1.35 (16.5)	1.45 (14.7)

* Specify frequency band. ** Connectors ordered separately. VSWR values are guaranteed for factory fit assemblies and are typical for field cut lengths. If two different connector interfaces are selected, the higher VSWR value is guaranteed.

Accessories – Photos and descriptions on pages 544-572

Description	Type No.	Description	Type No.
Insulated Hangers and Adapters		Grounding and Surge Protection -	
Insulated Hanger , single, for insulated towers.		for more information, see pages 559-564	
<i>Standard tower configuration spacing is 3-4 feet (1-1.2 m).</i> Recommended maximum spacing for outdoor installation is 1.5 ft (0.46 m) at 125 mph (200 km/h) wind, 1/2" (13 mm) radial ice. For different wind and ice loading spacing recommendations, refer to Cable Hanger Spacing, page 547.	11662-3	Grounding Kit factory attached, one-hole lug, 24 in (610 mm) lead	223158
Angle Adapter , for insulated hanger	40430-1	Arrestor Plus® T-Series Lightning Surge Protector. Connectors on each end (universal version). Non-directional	APT-#*
Stainless Steel Wraplock , for round tower members	12395-1	#, * <i>Interface and frequency band information. See page 563 for details.</i>	
Nylon Cable Tie Kit of 50. Recommended maximum spacing for outdoor installations is 1.5 ft (0.5 m)	40417	Gas Tube Surge Arrestor. Connectors on each end (universal version). Directional, dc pass capability	SA-#*
Nylon Cable Tie Kit in Plastic Box. 100 each, 4, 5.5, and 7.5 inch (101, 140, and 190 mm) ties. Recommended maximum spacing for outdoor installations is 1.5 ft (0.5 m)	CT-K350	#, * <i>Interface and frequency band information. See page 564 for details.</i>	
Velcro Cable Ties. Black, 8 inch. For indoor use only		Connector/Splice Weatherproofing Kit	221213
Kit of 10	VCT8-10	Tools - for more tools see page 569.	
Kit of 50	VCT8-50	EASIAx® Cutting Tool, FSJ1/FSJ4	207865
		Installer Pax. Bulk packs are available for some hangers, adapters, grounding kits and cold shrink weatherproofing kits. See page 570	