Technical
Data Sheet

7/8" Feeder Cable

P/N: AT1F78-1S

The **7/8" feeder cable** is a high-performance, ultra-low-loss 50-ohm coaxial hardline engineered for high-capacity RF transmission over extended vertical and horizontal runs. Utilizing a corrugated copper outer conductor, it provides 100% EMI shielding and superior mechanical strength compared to smaller 1/2" variants. Its larger diameter significantly reduces signal attenuation and enhances power handling, making it the industry standard for **macro cell sites (5G/LTE)**, **high-power broadcast systems**, and **microwave backhaul**. Featuring a UV-resistant jacket and low Passive Intermodulation (PIM), it ensures high reliability in extreme outdoor environments and large-scale **Distributed Antenna Systems (DAS)**.

Construction Specifications

Description	Material & Plating	Diameter (mm)
Inner Conductor	Smooth Copper Tube	8.85±0.1
Dielectric	Foamed Polyethylene	22.80±0.4
Outer Conductor	Corrugated Copper Tube	24.90±0.4
Jacket	Low Smoke Halogen-free Fire-Retardant PE	27.50±0.5

Electrical Specifications

Parameter	Value	Unit
Operating Frequency	≤ 5.2	GHz
Impedance	50±2	Ω
Propagation Velocity	89	%
Capacitance	75	pF/m
Screening Effectiveness	≥120	dB
Insulation Resistance	5000	MΩ-Km
Inner Conductor Resistance	1.48	Ω/km
Outer Conductor Resistance	1.10	Ω/km
RF Peak Voltage	3.0	kV
Dielectric Strength	10	kV
Peak Power Rating	91	kW
PIM	≤ -160	dBc@(2×43dBm)

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Electrical Performance (VSWR)	
Frequency Range	**Typical VSWR Value**
800~1000 MHz	≤ 1.2
1700~2200 MHz	≤ 1.2
2200~2700 MHz	≤ 1.2
3300~3800 MHz	≤ 1.2

Mechanical Specifications		
Parameter	**Value**	**Unit**
Weight	450	Kg/km
Single Bending Radius	≥ 90	mm
Repeated Bending Radius	≥ 250	mm
Tensile Strength	1300	N
Number of Bends	15	
Recommended Clamp Spacing	1.0	m

Environmental Specifications		
Parameter	**Value**	**Unit**
Storage Temperature	-30 ~ 80	°C
Installation Temperature	-20 ~ 60	°C
Operation Temperature	-30 ~ 80	°C

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Attenuation & Power Rating vs Frequency			
Frequency (MHz)	**Attenuation (dB/100m)**	**Attenuation (dB/100 ft)**	**Average Power Rating (kW)**
100	1.19	0.36	8.62
150	1.47	0.45	7.2
200	1.71	0.52	5.99
280	2.05	0.62	4.94
350	2.3	0.7	4.4
450	2.64	0.8	3.88
800	3.62	1.1	2.83
900	3.87	1.18	2.65
1000	4.1	1.25	2.5
1500	5.16	1.57	1.99
1800	5.73	1.75	1.79
2000	6.09	1.86	1.68
2200	6.44	1.96	1.59
2400	6.78	2.07	1.54
2500	6.95	2.12	1.5
3000	7.74	2.36	1.33
3300	8.25	2.51	1.26
3800	8.95	2.73	1.21
4000	9.28	2.83	1.16

Standard Conditions
For Attenuation: VSWR: 1.0, Cable temperature: 20°C (68°F)
For Average Power: VSWR: 1.0, Ambient temperature: 40°C (104°F), Inner conductor temperature: 100°C (212°F)
Note: Maximum attenuation value shall be 105% off nominal attenuation value.

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