

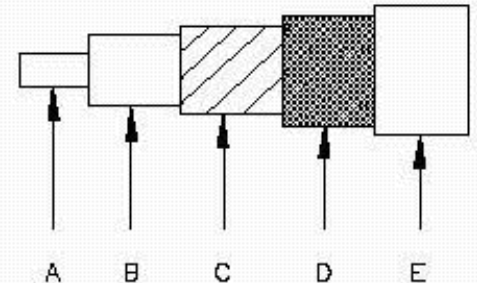
# ATM Flexible Coax Cable, Cable and Connector Specifications

Advanced Technical Materials (ATM) manufactures high performance microwave cable that utilizes only the very best materials, incorporating proprietary manufacturing methods, which yield very low Insertion Loss characteristics, high power capability and is Amplitude and Phase Stable on a level not readily available in the microwave industry. This product line has five different sizes of cable designed to operate from DC-60 GHz. Please call us and discuss your needs with one of our design engineers.



ATM utilizes a solid, silver plated copper center conductor and Expanded PTFE dielectric material which allows for very low Insertion Loss and high power handling capability. The outer conductor is a flat, silver plated copper foil wrapped helically around the dielectric and mechanically locked to the dielectric core to promote superior phase and amplitude stability, as well as, very low VSWR performance. A silver plated copper, braided shield is then added to increase the axial tensile quality of the cable and further enhance RF leakage characteristics. The outer jacket is a tough, high temperature thermoplastic that can withstand temperatures from -65° to +200° Celsius.

All this adds up to a very superior microwave cable product that can meet the most demanding requirements. ATM cables meet military specifications for MIL-C-17 and MIL-DTL-87104. ATM connectors meet MIL-C-39012. This product can be sold in bulk cable form, or as fully guaranteed cable assemblies. ATM tests all cable and assemblies 100% for Impedance, Insertion Loss and VSWR, other electrical requirements can be tested for in our well equipped Test Lab. ATM works for our customers to provide great service, excellent pricing and fast deliveries, with the highest possible quality available in the microwave cable industry. Give ATM your toughest interconnection requirements and let us show you how we can help you save money and solve your interconnect problems.



- A) Silver Plated Copper Center Conductor
- B) Expanded PTFE Dielectric Core
- C) Silver Plated Copper Outer Conductor
- D) Silver Plated Copper Outer Shield
- E) FEP Outer Jacket, Black

# Ordering Information

## Raw Cable lengths

Design a Model # to fit your requirements using the [Cable Type reference table](#) below for cable type. All Model numbers begin with CFR - Cable, unless otherwise specified, will be supplied in multiple lengths to make up quantity ordered. Click here for typical lengths of a given cable type. Minimum ordering length is 25 Ft. Total quantity shipped will be +/-10% of total ordered.

\*TYPICAL PART#: CFR - 210  
 BASIC MODEL#: \_\_\_\_\_  
 CABLE TYPE: \_\_\_\_\_

\* VALUES SHOWN ARE EXAMPLE ONLY. SUBSITUTE DESIRED COMPONENTS

## Cable Assemblies

Design a Model # to fit your requirements using the [Cable Type reference table](#) below for cable type, and the [Connector Type reference table](#) below for Connectors. All model numbers begin with CF.

Note: Option for Armored cable exists. Add suffix "A" to basic cable type. Ex.: CF-210A-72-SM-NM

\*TYPICAL PART#: CF - 210 - 72 -  
 BASIC MODEL#: \_\_\_\_\_  
 CABLE TYPE: \_\_\_\_\_  
 LENGTH (INCHES) \_\_\_\_\_  
 CONNECTOR 1: \_\_\_\_\_  
 CONNECTOR 2: \_\_\_\_\_

\* VALUES SHOWN ARE EXAMPLE ONLY. SUBSITUTE DESIRED COMPONENTS F

# Connector Specifications

## Connectors



Design a Model # to fit your requirements using the reference table below for connector type.

\*Example P/N: SM -210

Connector Type: \_\_\_\_\_  
 Cable Type: \_\_\_\_\_

\*VALUES SHOWN ARE EXAMPLE. SUBSITUTE DESIRED COMPONENTS FOR THOSE SHOWN HERE.

### Connector Types

= Indicates Availability

Connector Type	Freq. (GHz)		Connector Code	Atm Flexible Cable Type						
				100	135	160	210	300	500	
MCX	DC-12.0	FEMALE	MCXF	<span style="background-color: #00A0C0; width: 15px; height: 10px; display: inline-block;"></span>		<span style="background-color: #00A0C0; width: 15px; height: 10px; display: inline-block;"></span>				
		MALE	MCXM	<span style="background-color: #00A0C0; width: 15px; height: 10px; display: inline-block;"></span>		<span style="background-color: #00A0C0; width: 15px; height: 10px; display: inline-block;"></span>				

<b>MMCX</b>	DC-12.0	FEMALE	MMCXF						
		MALE	MMCXM						
<b>1.85mm (V)</b>	DC-60.0	FEMALE	VF						
		MALE	VM						
<b>2.4mm</b>	DC-50.0	FEMALE	2.4F						
		MALE	2.4M						
<b>2.9mm (K)</b>	DC-40.0	FEMALE	KF						
		MALE	KM						
<b>SMA</b>	DC-18.0	FEMALE	SF						
		MALE	SM						
<b>SMA (HIGH FREQ.)</b>	DC-26.5	FEMALE	SFH						
		MALE	SMH						
<b>SMA BULKHEAD</b>	DC-18.0	FEMALE	SFB						
		MALE	SMB						
<b>SMA 90° (RT. ANGLE)</b>	DC-18.0	FEMALE	SFR						
		MALE	SMR						
<b>3.5</b>	DC-26.5	FEMALE	3.5F						
		MALE	3.5M						
<b>TYPE-N</b>	DC-18.0	FEMALE	NF						
		MALE	NM						
<b>TYPE-N BULKHEAD</b>	DC-18.0	FEMALE	NFB						
		MALE	NMB						
<b>TYPE-N 90° (RT. ANGLE)</b>	DC-18.0	FEMALE	NFR						
		MALE	NMR						
<b>TNC</b>	DC-18.0	FEMALE	TF						
		MALE	TM						
<b>TNC BULKHEAD</b>	DC-18.0	FEMALE	TFB						
		MALE	TMB						
<b>TNC 90° (RT. ANGLE)</b>	DC-18.0	FEMALE	TFR						
		MALE	TMR						
<b>APC-7</b>	DC-18.0	N/A	APC7						
<b>SC</b>	DC-11.0	FEMALE	SCF						
		MALE	SCM						
<b>SC BULKHEAD</b>	DC-11.0	FEMALE	SCFB						
		MALE	SCMB						
<b>SC 90° (RT. ANGLE)</b>	DC-11.0	FEMALE	SCFR						
		MALE	SCMR						
<b>7/16"</b>	DC-7.5	FEMALE	7/16M						
		MALE	7/16F						
<b>Connector Type</b>			<b>Connector Code</b>	<b>100</b>	<b>135</b>	<b>160</b>	<b>210</b>	<b>300</b>	<b>500</b>
<b>Cable Type</b>									

## Connector/Cable Assembly Procedures

Cable Type:	100	135	160	210	300	500
		2.4M-135	SM-160	SM-210	NM-300	
		SM-135	NMR-160	NM-210	NM-300-1	
		KM-135	NMC-160		SCM-300	
		SMR-135				

## Cable Specifications

Flexible Cable Types						
Cable Type:	100	135	160	210	300	500
<b>Frequency Operation (GHz)</b>	DC - 62	DC - 46	DC - 35	DC - 33	DC - 18	DC - 11
<b>Size O.D. (inches)</b>	0.110	0.145	0.170	0.220	0.310	0.500
<b>Impedance (ohms)</b>	50	50	50	50	50	50
<b>Dielectric Type</b>	SPTFE	EPTFE	SPTFE	EPTFE	EPTFE	PE
<b>Capacitance (pF/ft)</b>	29	24	29	24	24	23
<b>Time Delay (ns/ft)</b>	1.4	1.2	1.4	1.2	1.2	1.15
<b>Velocity (%)</b>	70	84	70	84	84	85
<b>RF Leakage</b>	>100dB to 18 GHz	>100dB to 18GHz 80dB to 40 GHz	>100dB to 18GHz	>100dB to 18 GHz	>100dB to 18 GHz	>100dB to 11 GHz
<b>Cut Off Frequency (GHz)</b>	62	46	35	33	18	11
<b>Weight (lbs/100ft)</b>	1.9	3	6.5	7	12.5	15
<b>Min Bend Radius (in)</b>	0.25	0.5	0.75	1.0	2.0	3.0
<b>Temp Range (min/max °C)</b>	-65°/+200°	-65°/+200°	-65° to +200° C	-65°/+200°	-65°/+200°	-65°/+120°
Please consult factory on specifications regarding phase stability of our cables.						
<b>Typical Assembly* VSWR:</b> (All applicable cable types)  *Spec. includes Connectors			DC - 12 GHz:	1.30: 1		
			DC - 18 GHz	1.35: 1		
			DC - 26.5 GHz	1.40 : 1		
			DC - 40 GHz	1.45 : 1		
			DC - 50 GHz	1.50 : 1		
			DC - 60 GHz	1.60 : 1		
<b>Total Cable Assembly Loss for 12" Assembly @ 10 GHz (dB)</b>	0.75	0.48	0.61	0.46	0.39	0.35
<b>Total Cable Assembly Loss: (dB)</b>	CF100	CF135	CF160	CF210	CF300	CF500

## Average Power

Cable Type:	100	135	160	210	300	500
@ Frequency:	Avg. Power (W)					
<b>1.0 GHz</b>	375	540	625	800	1900	2500
<b>2.0 GHz</b>	250	400	435	600	1400	1600
<b>3.0 GHz</b>	150	300	330	475	1100	1200
<b>6.0 GHz</b>	100	210	225	320	650	700
<b>12.0 GHz</b>	70	160	175	210	520	600 to 11GHz
<b>18.0 GHz</b>	50	100	100	160	400	