

# TMQ4™ and TMQ5™ Bundle Solutions for 5G

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**T** **TIMES**  
MICROWAVE SYSTEMS  
AN AMPHENOL COMPANY

# Bundle Solutions for 5G

The increasing demand for high coverage MIMO antennas used in 5G applications has led to substantial growth in the number of RF ports. 5G antennas are shrinking in size as higher frequency bands are used to accommodate larger bandwidth requirements translating into more antennas in a smaller space. This densification creates numerous challenges related to installation, torquing, ensuring proper weather sealing and more.



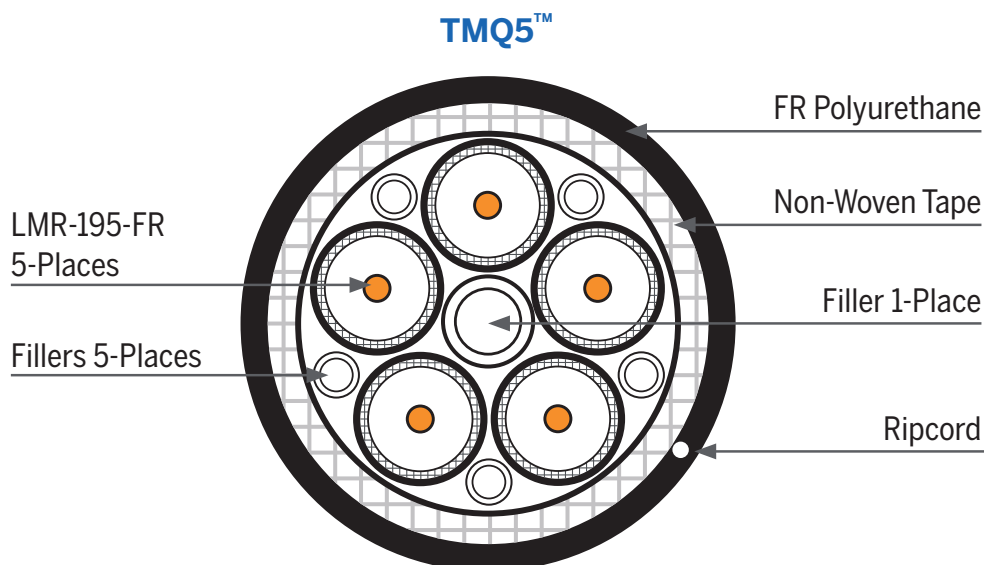
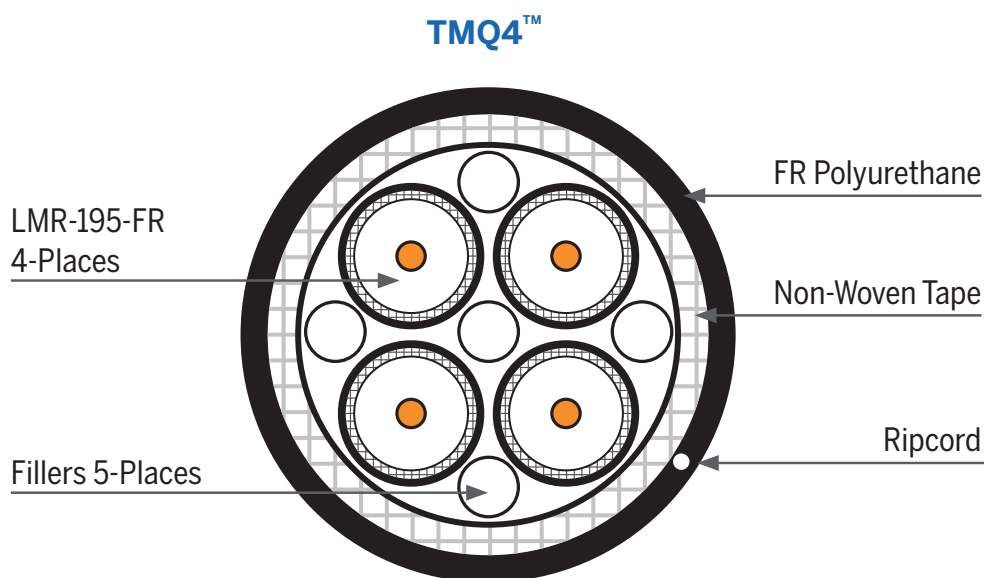
## Solutions at a Glance

CABLE	NUMBER OF CABLES	LOW PIM	SIZE	FLEXIBILITY	SHIELDING
TFT-5G-401	4	Yes	0.760"	Excellent	Good
TFT-5G-401	5	Yes	0.820"	Excellent	Good
SPO-250	4	Yes	0.860"	Good	Excellent
SPO-250	5	Yes	0.937"	Good	Excellent
LMR-195	4	N/A	0.596"	Excellent	Superior
LMR-195	5	N/A	0.616"	Excellent	Superior

## TMQ4™ and TMQ5™

The TMQ4 and TMQ5 bundled coaxial cable solution reduces the number of individual connections that must be hooked up while creating a rugged solution. It checks off all the boxes in terms of antenna port densification, saving a lot of labor with quick and easy fool-proof installation. The entire

TMQ4/TMQ5 bundle is sealed to IP-67 specification and features excellent UV resistance, adding to the assembly's durability for long term performance. At Times, we offer standard LMR® and low PIM assemblies, as well as custom design options.



# Bundle Solutions for 5G

## Low PIM - TFT 5G-401

- Ultraflexible bundled harness
- -160 dBc for optimal system performance
- Rugged fire retardant polyurethane jacket

### Specifications

$\Omega$  Impedance  
50 Ohms

Op Temp  
-67 to 221°F  
-55 to 105°C

	Diameter	Minimum Bend Radius	Weight	Shielding
Number of Cables	in (mm)	in (mm)	lb/1000ft (kg/1000m)	dB
4	0.760 (19.3)	7.6 (193.04)	367 (166.46)	-80
5	0.265 (6.68)	8.2 (208.28)	455 (206.38)	-80



Number of Cables	450	600	900	1900	2100	2500	3500	4900	5800
	dB/100ft (dB/100m)								
4	5.4 (17.8)	6.4 (21.1)	8.2 (26.9)	13.1 (42.9)	14.0 (45.8)	15.6 (51.2)	19.5 (64.0)	24.5 (80.3)	27.5 (90.2)
5	5.4 (17.8)	6.4 (21.1)	8.2 (26.9)	13.1 (42.9)	14.0 (45.8)	15.6 (51.2)	19.5 (64.0)	24.5 (80.3)	27.5 (90.2)

### Ordering Guide

TMQ	N	TFT401	XX.X	Y	W
	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>
	N-4 = MQ4 N-5 = MQ5		Length / 3 dig	F Feet M Meters	Boot

# Low PIM SPO-250

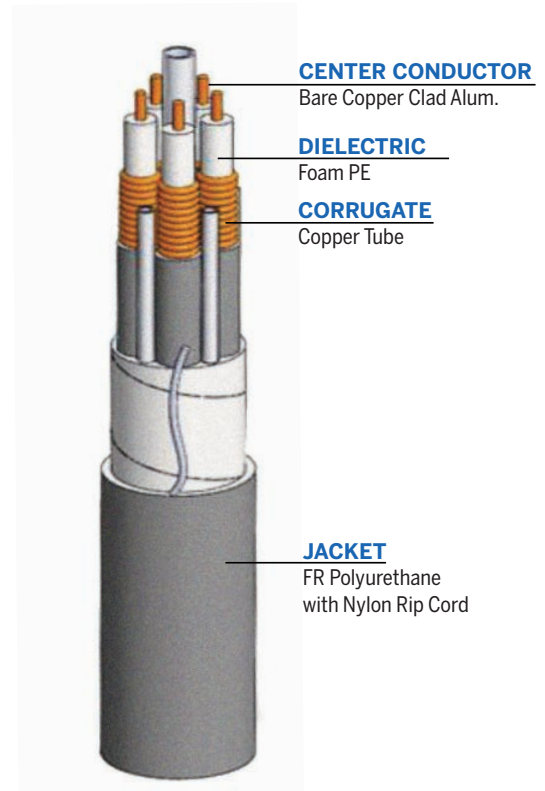
- Flexible bundled harness, > -100dB of shielding effectiveness
- -160 dBc for optimal system performance
- Rugged fire retardant polyurethane jacket

## Specifications

$\Omega$  Impedance  
50 Ohms

Op Temp  
-67 to 221°F  
-55 to 105°C

	Diameter	Minimum Bend Radius	Weight	Shielding
Number of Cables	in (mm)	in (mm)	lb/1000ft (kg/1000m)	dB
4	0.860 (21.8)	8.6 (218.4)	200 (90.7)	-100
5	0.937 (23.8)	9.5 (241.3)	242 (109.7)	-100



Number of Cables	450	600	900	1900	2100	2500	3500	4900	5800
	dB/100ft (dB/100m)								
4	4.07 (13.35)	4.75 (15.58)	5.91 (19.39)	8.92 (29.27)	9.44 (30.97)	10.41 (34.16)	12.63 (41.44)	15.37 (50.43)	16.99 (55.74)
5	4.07 (13.35)	4.75 (15.58)	5.91 (19.39)	8.92 (29.27)	9.44 (30.97)	10.41 (34.16)	12.63 (41.44)	15.37 (50.43)	16.99 (55.74)

## Ordering Guide

<b>TMQ</b>	<b>N</b>	<b>SPO250</b>	<b>XX.X</b>	<b>Y</b>	<b>W</b>
	<input type="text"/>		<input type="text"/>	<input type="text"/>	<input type="text"/>
	N-4 = MQ4 N-5 = MQ5		Length / 3 dig	F Feet M Meters	Boot

# Bundle Solutions for 5G

## LMR®-195

- Ultraflexible bundled harness
- Rugged fire retardant polyurethane jacket

### Specifications

$\Omega$  Impedance  
50 Ohms

Op Temp  
-40 to 221°F  
-40 to 105°C

	Diameter	Minimum Bend Radius	Weight	Shielding
Number of Cables	in (mm)	in (mm)	lb/1000ft (kg/1000m)	dB
4	0.596 (15.1)	6.0 (152.4)	145 (65.77)	-90
5	0.616 (15.64)	6.5 (165.1)	169 (76.65)	-90



Nuber of Cables	450	600	900	1900	2100	2500	3500	4900	5800
	dB/100ft (dB/100m)								
4	7.8 (25.6)	9.0 (29.6)	11.1 (36.4)	16.4 (54.0)	17.3 (56.9)	19.0 (62.3)	22.8 (74.7)	27.3 (89.5)	29.9 (98.0)
5	7.8 (25.6)	9.0 (29.6)	11.1 (36.4)	16.4 (54.0)	17.3 (56.9)	19.0 (62.3)	22.8 (74.7)	27.3 (89.5)	29.9 (98.0)

### Ordering Guide

**TMQ** **N** **LMR195** **XX.X** **Y** **W**  

N-4 = MQ4  
N-5 = MQ5

Length / 3 dig

F Feet  
M Meters

Boot



## Weather Protection Boots - WPB

Weather Protection Boots are one-piece molded EPDM rubber boots placed behind the connectors during the manufacture of the jumpers. These boots provide an IP-68 seal to the cable. Installation is easy. After installing the jumpers and properly torquing the coupling nut, the installer can slide the boot forward over the connector to create an IP-68 seal to the mated female bulkhead connector. The WPB boot system provides reliable weather protection for the life of the installation and reduces the time, mess and technique associated with traditional weather sealing methods.

- UV resistant EPDM rubber
- Easy slide on and off • Reusable
- Reuseable
- Waterproof to IP68 standard



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